CONTRACT DOCUMENTS AND PLANS

FOR CONSTRUCTION OF:

SR290/SR27
PINES RD BNSF GRADE SEPARATION
SPOKANE COUNTY – MP 8.43

Capital Improvement Project No.: 0223
Federal Aid No.:
STPUL 0027(020)
69A36525420110RASWA
69A36524420020RLDWA

Bid Set

PART 1
INTRODUCTION

Advertisement for Bids
Certification by Engineer
Table of Contents

ADVERTISEMENT FOR BIDS
CITY OF SPOKANE VALLEY
PUBLIC WORKS

SR290/SR27
PINES RD BNSF GRADE SEPARATION
SPOKANE COUNTY – MP 8.43

Capital Improvement Project No.: 0223
Federal Aid Nos.:
STPUL 0027(020)
69A36525420110RASWA
69A36524420020RLDWA

Notice is hereby given that the City of Spokane Valley, Spokane County, Washington will accept sealed bids for the **PINES RD/BNSF GRADE SEPARATION PROJECT**. The project consists of **construction of a new alignment of Pines Road (SR-27) to the east of the existing roadway and beneath the proposed BNSF railroad bridges (to be constructed by BNSF), a roundabout at Trent Avenue (SR-290), a new northern connection to Empire Avenue, drainage improvements, lighting, and a trailhead facility,** all in accordance with the Contract Documents and Plans.

Copies of the bid packet including specifications and plans may be obtained in PDF format at www.cityofspokanevalleyplanroom.com. To be added to the Planholder's list, bidders shall download project files or purchase hard copy documents. Any addenda to this project will be sent only to those listed on the www.cityofspokanevalleyplanroom.com Planholder's List. The Planholder's List is also available at this website. For further information contact Candice Powers-Henderson, Spokane Valley Community and Public Works, at cphenderson@spokanevalleywa.gov or call 509-720-5003 Monday through Friday from 8:00 am to 5:00 pm.

All bids must be accompanied by a bid deposit in the form of a surety bond, postal money order, cash, cashier's check, or certified check in an amount equal to five percent (5%) of the amount of the bid proposed. Failure to furnish a bid bond in compliance with the City's bid deposit surety bond form shall make the bid non-responsive and cause the bid to be rejected.

Bids must be submitted in sealed envelopes addressed to the City Clerk of the City of Spokane Valley, 10210 E. Sprague Avenue, Spokane Valley, Washington, 99206 and received not later than **10:00 a.m. PDT, Friday, June 27, 2025**. Bid openings will be held immediately thereafter and read aloud in the City Council Chambers.

The City of Spokane Valley reserves the right to waive any irregularities or informalities and to reject any or all bids. No bidder may withdraw his bid after the time announced for the bid opening, or before the award and execution of the contract, unless the award is delayed for a period exceeding sixty (60) days.

The City of Spokane Valley, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that in any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.

The City of Spokane Valley in accordance with Section 504 of the Rehabilitation Act (Section 504) and the Americans with Disabilities Act (ADA), commits to nondiscrimination on the basis of disability, in all of its programs and activities. This material can be made available in an alternate format by emailing John Whitehead at jwhitehead@spokanevalleywa.gov or by calling (509) 720-5111.

PUBLISH: **June 6 and June 13, 2025**

CONTRACT DOCUMENTS
AND
PLANS

FOR CONSTRUCTION OF:

SR290/SR27
PINES RD BNSF GRADE SEPARATION
SPOKANE COUNTY – MP 8.43

F.A. PROJECT NO.: STPUL 0027(020)
69A36525420110RASWA
69A36524420020RLDWA

Approved for Construction:

6/5/25
Robert Blegen, P.E., Public Works Director — Date

Reviewed By:

Erica K. Amsden 6/5/25
Engineering Manager — Date

6/5/25
Traffic Engineer — Date

6/5/25
Stormwater Engineer — Date

Engineer Certification:
The technical material and data contained in these Contract Provisions and Plans were prepared under the supervision and direction of the undersigned whose seal as a Professional Engineer licensed to practice in the State of Washington is affixed below.

BRENT JOSEPH KIRKMAN — STATE OF WASHINGTON — 23013867 — REGISTERED PROFESSIONAL ENGINEER
06/02/2025

TERRY M. STULC — STATE OF WASHINGTON — 31416 — REGISTERED PROFESSIONAL ENGINEER
06/02/2025

JAKE S. PI — STATE OF WASHINGTON — 54943 — REGISTERED PROFESSIONAL ENGINEER
06/02/2025

TABLE OF CONTENTS

PART 1 - INTRODUCTION		PAGE
Advertisement for Bids		i
Certification by Engineer		iii
Table of Contents		iv
PART 2 - BID PROPOSAL DOCUMENTS		
Bid Proposal Checklist		1
Proposal Form		2
Contractor's Administrative Information		4
Bidder Qualification Statement		5
Bid Deposit Form		6
Bid Deposit Surety Bond		7
Contractor Certification Wage Law Compliance - Responsibility Criteria		8
Proposal for Incorporating Recycled Materials into the Project		9
Representations and Certifications		10
Local Agency Subcontractor List		12
Non-Collusion Declaration		13
Local Agency Certification for Federal-Aid Contracts		14
Bidder Questionnaire		15
DBE Bid Item Breakdown Form		16
DBE Utilization Certification		17
DBE Written DBE Confirmation		18
DBE Trucking Credit Form		19
Bidder Question Form		21
PART 3 - CONTRACT FORMS		
Contract		C-1
Contractor's Performance Bond		C-3
Contractor's Payment Bond		C-4
PART 4 – REQUIRED FEDERAL AID CONTRACT PROVISIONS		
FHWA 1273 Contract Provisions		
PART 5 – SPECIAL PROVISIONS		
Division 1	General Requirements	SP-2
Division 2	Earthwork	SP-91
Division 4	Bases	SP-105
Division 5	Surface Treatments and Pavements	SP-106
Division 6	Structures	SP-120
Division 7	Drainage Structures, Storm Sewers, Sanitary Sewers, Water Mains, and Conduits	SP-123
Division 8	Miscellaneous Construction	SP-161
Division 9	Materials	SP-200

APPENDIX A – SUMMARY OF GEOTECHNICAL CONDITIONS

APPENDIX B – PHILIPS 66 GENERAL ENCROACHMENT GUIDELINES

APPENDIX C – BNSF CONSTRUCTION AND MAINTENANCE AGREEMENT

APPENDIX D - STANDARD PLANS

APPENDIX E – INADVERTANT DISCOVERY PLAN

APPENDIX F – WSDOT GENERAL PERMIT

APPENDIX G – TRAILHEAD SIGN

APPENDIX H – BNSF BRIDGE PLANS

APPENDIX I – BNSF CONSTRUCTION SPECIFICATIONS

APPENDIX J – STORMWATER PUMP SYSTEM

APPENDIX K – TRAILHEAD PUMP SYSTEM

APPENDIX L – WAGE RATE INFORMATION

APPENDIX M – ASBESTOS SURVEY REPORT

APPENDIX N – TRAILHEAD RESTROOM

APPENDIX O – IRVIN WATER DISTRICT NO 6. GENERAL SPECIFICATIONS

CONTRACT PLANS

PART 2
BID PROPOSAL DOCUMENTS

Bid Proposal Checklist
Proposal Form
Contractor's Administrative Information
Bidder Qualification Statement
Bid Deposit Form
Bid Deposit Surety Bond Form (Use only if submitting Bond for Bid Deposit)
Contractor Certification of Compliance with Wage Payment Statutes
Proposal for Incorporating Recycled Materials into the Project
Representations and Certifications
Local Agency Subcontractor List
Non-Collusion Declaration
Local Agency Certification for Federal-Aid Contracts
Bidder Questionnaire
DBE Bid Item Breakdown Form
DBE Utilization Certification
DBE Written Confirmation
DBE Trucking Credit Form (Use only if submitting DBE trucking firms)

BIDDERS PACKET

PINES RD BNSF GRADE SEPARATION Project
Capital Improvement Project No.: 0223
Federal Aid Project No.:
STUPL 0027(020)
69A365420110RASWA
69A36524420020RLDWA

BID PROPOSAL CHECKLIST

This Checklist and the documents listed below constitute a complete Bid Proposal. Failure to execute any of the following documents, or any addition, condition or limitation in writing to the form of the bid, not explicitly invited in the Bid Documents or Specifications may become cause for rejection of the bid as irregular.

The BIDDER shall check each respective box indicating inclusion of each item:

- [ ] Bid Proposal Checklist
- [ ] Proposal Form
- [ ] Contractor's Administrative Information
- [ ] Bidder Qualification Statement
- [ ] Bid Deposit Form
- [ ] Bid Deposit Surety Bond Form (Use only if submitting Bond for Bid Deposit)
- [ ] Contractor Certification of Compliance with Wage Payment Statutes
- [ ] Proposal for Incorporating Recycled Materials into the Project
- [ ] Representations and Certifications
- [ ] Local Agency Subcontractor List
- [ ] Non-Collusion Declaration
- [ ] Local Agency Certification for Federal-Aid Contracts
- [ ] Bidder Questionnaire
- [ ] DBE Bid Item Breakdown Form
- [ ] DBE Utilization Certification
- [ ] DBE Written Confirmation
- [ ] DBE Trucking Credit Form (Use only if submitting DBE trucking firms as identified on the DBE Utilization Certification)

The above forms have been inserted in a sealed envelope, properly identified and delivered at the place and time described in the Notice to Contractors form.

Person/Entity Name: _____ Signature of Bidder: _____

Company: _____ Date: _____

PROPOSAL FORM

PROJECT NUMBER: **0223**

PROJECT TITLE: **PINES RD BNSF GRADE SEPARATION Project**

NAME OF FIRM SUBMITTING BID: _____

Each bid shall constitute an offer to the City of Spokane Valley as outlined herein and no bidder may withdraw his bid after the hour set for the bid closing except under the conditions explained in the Information to Bidders Section.

RECEIPT OF ADDENDA: Bidder acknowledges receipt of the following addenda by checking the box(es):

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

REJECTION: The City reserves the right to reject any or all proposals, portions or parts thereof and to waive all minor irregularities in bidding. Special attention will be directed to the qualifications of the bidders when considering awarding a contract.

TIME TO COMPLETE: The contract shall be completed in **two hundred and nine (209) working days** from the date of commencement.

BID IS NOT ELIGIBLE FOR CONTRACTOR'S BOND ELECTION to withhold 50% retainage in lieu of furnishing a Contractor's Bond (Payment and Performance Bonds).

FREIGHT: Bid price(s) to include all freight costs to the job site.

SCHEDULES: A Bidder must complete all the schedules or his bid will be rejected as non-responsive.

The undersigned hereby certifies that (he/they) (has/have) personally examined the location and construction details of work as outlined on the plans and specifications for the above project and (has/have) read thoroughly and understands the plans, specifications, and contract governing the work embraced in this improvement and the method by which payment will be made for said work and hereby proposes to undertake and complete the work embraced in this improvement in accordance with said plans, specifications, and contract in accordance with the unit prices provided below.

The Bidder, to be considered responsible, shall provide in legible figures (not words) handwritten in ink or typed, a unit price (except Lump Sum items) and total for each of the items shown on the following schedules:

PROPOSAL FORM-CONTINUED

Bid Schedule A: Road Improvements

Note: State Sales Tax-Rule 171 applies to Schedule A. All unit prices shall include applicable sales tax, see Section 1-07.2(1) of the Special Provisions.

ITEM #	ITEM DESCRIPTION	SPECS	UNITS	QUANTITY	PRICE/UNIT	TOTAL
100	MOBILIZATION	1-09	L.S.	1	L.S.	
101	CLEARING AND GRUBBING	2-01	ACRE	13		
102	REMOVING MANHOLE	2-02	EACH	4		
103	REMOVING DRAINAGE STRUCTURE	2-02	EACH	5		
104	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	2-02	L.S.	1	L.S.	
105	REMOVE CEMENT CONCRETE SIDEWALK/DRIVEWAY APPROACH	2-02	S.Y.	2,886		
106	REMOVE CEMENT CONCRETE CURB	2-02	L.F.	3,930		
107	REMOVE ASPHALT PAVEMENT	2-02	S.Y.	21,014		
108	REMOVE CEMENT CONCRETE MEDIAN CURB AND ISLAND	2-02	S.Y.	109		
109	REMOVING GUARDRAIL	8-11	L.F.	633		
110	REMOVING GUARDRAIL ANCHOR	8-11	EACH	5		
111	REMOVE FENCE	2-02	L.F.	1,005		
112	REMOVAL OF COMMERCIAL STRUCTURE	2-02	L.S.	1	L.S.	
113	REMOVING EXISTING WATER LINE	2-02	L.F.	530		
114	REMOVAL AND DISPOSAL OF ASBESTOS MATERIAL	2-02	L.S.	1	L.S.	
115	ROADWAY EXCAVATION INCL. HAUL	2-03	C.Y.	32,904		
116	EMBANKMENT COMPACTION	2-03	C.Y.	3,799		
117	HAZARDOUS MATERIAL EXCAVATION, HANDLING AND DISPOSAL	2-02	F.A.	1	F.A.	**$1.00**
118	BNSF EXCAVATION, HANDLING AND DISPOSAL	2-02	C.Y.	9,067		
119	TRENCH FENCE SAFETY COMPLIANCE	2-09	CALC.	1	CALC.	**$1.00**
120	TRENCH EXCAVATION SAFETY SYSTEM	2-09	L.S.	1	L.S.	
121	DRAINAGE POND EXCAVATION INCL. HAUL	2-03	C.Y.	7,042		
122	PACKAGED STORMWATER PUMP STATION	7-10	L.S.	1	L.S.	

Bid Schedule A – cont'

ITEM #	ITEM DESCRIPTION	SPECS	UNITS	QUANTITY	PRICE/UNIT	TOTAL
123	GRATE INLET TYPE 2	7-05	EACH	7		
124	PRECAST CONCRETE DRYWELL TYPE A	7-05	EACH	9		
125	MODIFIED PRECAST CONCRETE DRYWELL TYPE B	7-05	EACH	1		
126	QUARRY SPALLS	8-15	C.Y.	61		
127	CATCH BASIN TYPE 1	7-05	EACH	39		
128	CATCH BASIN TYPE 2 48 IN. DIAM.	7-05	EACH	4		
129	TESTING STORM SEWER PIPE	7-04	L.F.	4,904		
130	PVC PRESSURE PIPE 10 IN. DIAM	7-10	L.F.	404		
131	SCHEDULE A STORM SEWER PIPE 12 IN. DIAM.	7-04	L.F.	3,305		
132	SCHEDULE A STORM SEWER PIPE 18 IN. DIAM.	7-04	L.F.	672		
133	SCHEDULE B STORM SEWER PIPE 18 IN. DIAM.	7-04	L.F.	523		
134	MANHOLE 48 IN. DIAM. TYPE 1	7-05	EACH	2		
135	MANHOLE 48 IN. DIAM. TYPE 3	7-05	EACH	1		
136	4'X6' OVERFLOW VAULT	7-05	EACH	1		
137	CATCH BASIN TYPE 1L	7-05	EACH	3		
138	CURB INLET TYPE 1	7-05	EACH	24		
139	CURB INLET TYPE 2	7-05	EACH	3		
140	CRUSHED SURFACING BASE COURSE	4-04	TON	20,100		
141	CRUSHED SURFACING TOP COURSE	4-04	TON	1,500		
142	TEXTURED AND PIGMENTED CEMENT CONCRETE TRUCK APRON	5-05	S.Y.	672		
143	TEXTURED AND PIGMENTED CEMENT CONCRETE TRAFFIC ISLAND	5-05	S.Y.	1,698		

Bid Schedule A – cont'

ITEM #	ITEM DESCRIPTION	SPECS	UNITS	QUANTITY	PRICE/UNIT	TOTAL
144	HMA CL 3/8 IN. PG 64H-28	5-04	TON	12,500		
145	JOB MIX COMPLIANCE PRICE ADJUSTMENT	5-04	CALC	31,240	CALC.	**$1.00**
146	COMPACTION PRICE ADJUSTMENT	5-04	CALC	20,826	CALC.	**$1.00**
147	HMA FOR APPROACH CL. 3/8 IN. PG 64H-28	5-04	TON	220		
148	HMA CL 3/8 IN. PG 64H-28 TEMPORARY PAVEMENT	5-04	TON	750		
149	JOINT ADHESIVE FOR BITUMINOUS PAVEMENT	5-04	L.F.	6,000		
150	IRRIGATION SYSTEM	8-03	L.S.	1	L.S.	
151	IRRIGATION SYSTEM REVISION	8-03	L.S.	1	L.S.	
152	TOPSOIL TYPE B, 4 IN. DEPTH	8-02	ACRE	6.3		
153	PLANT ESTABLISHMENT - SECOND YEAR	8-02	EST.	1	EST.	**$1.00**
154	SOD INSTALLATION	8-02	S.Y.	5,350		
155	SEEDING, FERTILIZING AND MULCHING	8-02	ACRE	6.2		
156	EROSION CONTROL AND WATER POLLUTION PREVENTION	8-01	L.S.	1	L.S.	
157	COSV BIO-INFILTRATION TREATMENT SOIL MIX	8-02	C.Y.	1,796		
158	ROUNDABOUT SPLITTER ISLAND NOSING CURB	8-04	EACH	4		
159	ROUNDABOUT CEMENT CONCRETE CURB AND GUTTER	8-04	L.F.	4,360		
160	CEMENT CONC. TRAFFIC CURB	8-04	L.F.	344		
161	COSV CURB AND GUTTER TYPE B	8-04	L.F.	5,022		
162	CEMENT CONC. PEDESTRIAN CURB	8-04	L.F.	560		
163	ROUNDABOUT CENTRAL ISLAND CEMENT CONCRETE CURB	8-04	L.F.	219		
164	ROUNDABOUT TRUCK APRON CEM. CONC. CURB AND GUTTER	8-04	L.F.	773		

Bid Schedule A – cont'

ITEM #	ITEM DESCRIPTION	SPECS	UNITS	QUANTITY	PRICE/UNIT	TOTAL
165	COSV CURB TYPE A	8-04	L.F.	1,238		
166	BEAM GUARDRAIL TYPE 31	8-11	L.F.	71		
167	BEAM GUARDRAIL TRANSITION SECTION TYPE 23	8-11	EACH	1		
168	BEAM GUARDRAIL TRANSITION SECTION TYPE B CONNECTION	8-11	EACH	2		
169	BEAM GUARDRAIL ANCHOR TYPE 11	8-11	EACH	1		
170	PRECAST CONC. BARRIER TYPE F ANCHORED	6-10	L.F.	531		
171	PLASTIC LINE	8-22	L.F.	3,916		
172	GROOVED PLASTIC LINE	8-22	L.F.	14,328		
173	FLEXIBLE GUIDE POST - FLAT	8-10	EACH	64		
174	FLEXIBLE GUIDE POST - TUBULAR	8-10	EACH	48		
175	PLASTIC TRAFFIC ARROW	8-22	EACH	1		
176	PLASTIC TRAFFIC LETTER	8-22	EACH	16		
177	PERMANENT SIGNING	8-21	L.S.	1	L.S.	
178	ILLUMINATION SYSTEM, COMPLETE	8-20	L.S.	1	L.S.	
179	ITS, COMPLETE	8-20	L.S.	1	L.S.	
180	SEQUENTIAL ARROW SIGN	1-10	HR	7,560		
181	PROJECT TEMPORARY TRAFFIC CONTROL	1-10	L.S.	1	L.S.	
182	PORTABLE CHANGEABLE MESSAGE SIGN	1-10	HR	25,872		
183	REPAIR TRANSPORTABLE ATTENUATOR	1-10	EST.	1	EST.	
184	WORK ZONE SAFETY CONTINGENCY	1-10	EST.	1	EST.	**$1.00**
185	TRAFFIC SIGNAL SYSTEM, COMPLETE	8-20	L.S.	1	L.S.	

Bid Schedule A – cont'

ITEM #	ITEM DESCRIPTION	SPECS	UNITS	QUANTITY	PRICE/UNIT	TOTAL
186	PERMANENT IMPACT ATTENUATOR	8-17	EACH	2		
187	GROOVED PLASTIC WIDE DOTTED EXTENSION LINE	8-22	L.F.	101		
188	GROOVED PLASTIC WIDE DOTTED ENTRY LINE	8-22	L.F.	256		
189	GROOVED PLASTIC CROSSWALK LINE	8-22	S.F.	1,100		
190	GROOVED PLASTIC YIELD LINE SYMBOL	8-22	EACH	41		
191	GROOVED PLASTIC TRAFFIC ARROW	8-22	EACH	26		
192	GROOVED PLASTIC CROSSHATCH MARKING	8-22	L.F.	287		
193	GROOVED PLASTIC WIDE LANE LINE	8-22	L.F.	1,140		
194	GROOVED PLASTIC WIDE DOTTED CIRCULATING LANE LINE	8-22	L.F.	227		
195	GROOVED PLASTIC BICYCLE LANE SYMBOL	8-22	L.F.	3		
196	PLASTIC CROSSHATCH MARKING	8-22	L.F.	84		
197	ADA SYMBOL	8-22	EACH	1		
198	PEDESTRIAN HANDRAIL	8-12	L.F.	1,323		
199	REINFORCING STEEL FOR CIP CONCRETE ENCASEMENT	6-02	LB.	14,520		
200	CIP CONCRETE ENCASEMENT	6-02	C.Y.	370		
201	TYPE C PROGRESS SCHEDULE	1-08	L.S.	1	L.S.	
202	CONSTRUCTION SURVEYING	1-05	L.S.	1	L.S.	
203	BOLLARD TYPE 1	8-35	EACH	8		
204	BOLLARD TYPE 2	8-35	EACH	7		
205	DETECTABLE WARNING SURFACE	8-14	S.F.	216		
206	CEMENT CONC. SIDEWALK	8-14	S.Y.	3,275		

Bid Schedule A – cont'

ITEM #	ITEM DESCRIPTION	SPECS	UNITS	QUANTITY	PRICE/UNIT	TOTAL
207	CEMENT CONC. CURB RAMP TYPE BIKE RAMP	8-14	EACH	2		
208	CEMENT CONC. CURB RAMP TYPE SINGLE DIRECTION	8-14	EACH	17		
209	CEMENT CONC. CURB RAMP TYPE PARALLEL	8-14	EACH	5		
210	CEMENT CONC. DRIVEWAY	8-06	S.Y.	1,165		
211	COATED CHAIN LINK FENCE TYPE 3	8-12	L.F.	2,986		
212	COATED END, GATE, CORNER, PULLPOST FOR CHAIN LINK FENCE	8-12	EACH	36		
213	MAILBOX SUPPORT TYPE 1	8-18	EACH	2		
214	SPCC PLAN	1-07	L.S.	1	L.S.	
215	DOUBLE 20 FT. COATED CHAIN LINK GATE	8-12	EACH	1		
216	FUEL COST ADJUSTMENT	1-09	CALC.	1	CALC.	**$1.00**
217	ADJUST EXISTING WATER VALVE	7-12	EACH	2		
218	ADJUST GAS VALVE	7-11	EACH	2		
219	ADJUST METER BOX	7-09	EACH	3		
220	POTHOLE UTILITY	2-02	EACH	15		
221	RETAINING WALL	6-11	S.F.	3,000		
222	RETAINING WALL (GRAVITY)	6-11	S.F.	648		
223	PREFABRICATED RESTROOM	8-28	L.S.	1	L.S.	
224	PREFABRICATED RESTROOM ELECTRICAL SYSTEM	8-32	L.S.	1	L.S.	
225	EV CHARGING SYSTEM	8-34	L.S.	1	L.S.	
226	TRAILHEAD APPURTENANCES	8-33	L.S.	1	L.S.	

Bid Schedule A – cont'

ITEM #	ITEM DESCRIPTION	SPECS	UNITS	QUANTITY	PRICE/UNIT	TOTAL
227	TRAILHEAD CCTV SYSTEM	8-37	L.S.	1	L.S.	
228	RECORD DRAWINGS	1-05	L.S.	1	L.S.	
229	FIELD OFFICE	8-36	L.S.	1	L.S.	
230	PHILLIPS 66 OBSERVATION PENALTY	1-07	CALC.	1	CALC.	**$1.00**
231	MINOR CHANGE	1-04	CALC.	1	CALC.	**$500,000.00**
232	PUBLIC LIAISON REPRESENTATIVE	1-07	L.S.	1	L.S.	
233	PROJECT PARTNERING	1-04	CALC.	1	CALC.	**$1.00**
					TOTAL SCH. A BID	

Bid Schedule B: Water Improvements

Note: State Sales Tax-Rule 170 applies to Schedule B. All unit prices shall not include retail sales tax, see Section 1-07.2(2) of the Special Provisions. The City will automatically add sales tax to each payment to the Contractor under Schedule B.

ITEM #	ITEM DESCRIPTION	SPECS	UNITS	QUANTITY	PRICE/UNIT	TOTAL
301	TESTING SEWER PIPE	7-17	L.F.	738		
302	PVC SANITARY SEWER PIPE 4 IN. DIAM.	7-17	L.F.	115		
303	ADJUST EXISTING MANHOLE	7-05	EACH	1		
304	PVC SANITARY SEWER PIPE 6 IN. DIAM	7-17	L.F.	175		
305	RESTROOM SEWAGE PACKAGE PUMP STATION	7-10	L.S.	1	L.S	
306	SCHEDULE 80 PVC SANITARY SEWER PIPE 3 IN. DIAM.	7-10	L.F.	448		
307	DUCTILE IRON 8 IN. DIAM. CASING	7-17	L.F.	101		
308	PRESSURE SEWER CLEANOUT	7-19	EACH	4		
309	HYDRANT ASSEMBLY	7-14	EACH	1		
310	PVC PIPE FOR WATER MAIN 8 IN. DIAM	7-09	L.F.	438		
311	SERVICE CONNECTION 2 IN. DIAM.	7-15	EACH	2		
312	STEEL CASING 12 IN. DIAM.	7-09	L.F.	192		
					SUBTOTAL SCH. B BID	
					SALES TAX (8.9%)	
					TOTAL SCH. B BID	
					TOTAL ALL SCHEUDLES	

Person/Entity Name: _____ Signature of Bidder: _____

Company: _____ Date: _____

CONTRACTOR'S ADMINISTRATIVE INFORMATION

1. PERSON/ENTITY

a. Name as registered with the State of Washington:_____

b. Physical Address:_____

c. Mailing Address including zip code:_____

d. Remit To Address including zip code:_____

e. Telephone number including area code:_____

f. Fax number including area code: _____

g. E-mail address for business correspondence:_____

h. Washington State Contractors License Number:_____

i. Federal Tax Identification Number:_____

j. Washington State UBI Number:_____

k. State Industrial Account Identification Number:_____

l. City of Spokane Valley Business License Number:_____
(Business License not required for Bid but will be required prior to Contract execution.)

2. INSURANCE COMPANY:

a. Name of company:_____

b. Mailing Address including zip code:_____

c. Insurance Agent Name:_____

d. Insurance Agent Telephone number including area code:_____

e. Insurance Agent Fax number including area code:_____

3. BONDING COMPANY:

a. Surety Name:_____

b. Surety Mailing Address including zip code:_____

c. Bonding Agent Name:_____

d. Bonding Agent Mailing Address including zip code:_____

e. Bonding Agent Telephone number including area code:_____

f. Bonding Agent Fax number including area code:_____

Person/Entity Name: _____ Signature Of Bidder: _____

Company: _____ Date:_____

BIDDER QUALIFICATION STATEMENT

The following statements of experience, personnel, equipment, and general qualifications of the Bidder are submitted with the assurance that the owner can rely on its accuracy and truthfulness. If more space is required for your answers please attach a continuation sheet(s) to the corresponding bid response page referencing the item number.

1. The company has been in business continuously from (month and year) _____

2. The company has had experience comparable to that required under the proposed contract:

    a. As a prime contractor for _____ years.

    b. As a subcontractor for _____ years.

3. The following is a partial list of work completed that was in order of magnitude equal to or greater in scope and complexity to that required under the proposed contract.

Year	Owner & Person to contact	Phone No.	Location	Contract Value

4. A list of supervisory personnel currently employed by the Bidder and available for work on the project (Construction Manager, principal foreman, superintendents and engineers) is as follows:

Name	Title	Years of Experience

5. Please attach a resume of the qualifications, previous employers, and experience of the project manager who is proposed to be assigned to the project. If a resume is not included in the bid documents the bidder agrees to furnish a resume within 24 hours of notice by the City.

6. Following is a listing of all projects the company has undertaken in the last five years, which have resulted in:

    a. Arbitration or litigation.

    b. Claims or violations being filed by the Federal Government or the Washington State Departments of L & I, Employment Security or Revenue.

    c. Liens being filed by suppliers or subcontractors.

Person/Entity Name: _____ Signature Of Bidder: _____

Company: _____ Date: _____

BID DEPOSIT

FORM OF BID DEPOSIT - CHECK ONE: Please submit this sheet with the bid deposit.

_____ CASH. Attach the deposit behind this sheet.

_____ SURETY BOND - Attach bid bond behind this sheet. *IT IS STRONGLY RECOMMENDED THAT YOU USE THE ATTACHED FORM*.

BID DEPOSIT REQUIRED. No bid may be considered for public work unless it is accompanied by a bid deposit in the form of a surety bond, postal money order, cash, cashier's check, or certified check in an amount equal to five percent (5%) of the amount of the bid proposed. If the bidder to whom the contract is awarded fails to enter into the contract and furnish the contractor's bond as required within ten days after notice of the award, exclusive of the day of notice, the amount of the bid deposit shall be forfeited to the City and the contract awarded to the next lowest and best bidder.

If the deposit is "cash" and is in the form of a postal money order, cashier's check, or certified check, the checks are to be made payable to the City of Spokane Valley. Cash bid deposits are to be accompanied by this form. Cash bid deposits of all unsuccessful bidders shall be returned after the contract is awarded and the required contractor's bond and proof of insurance given by the successful bidder is accepted by the City of Spokane Valley.

If the bid deposit is in the form of a surety bond it must be of a corporate surety licensed to do business in the State of Washington. The City strongly recommends the use of the attached City Bid Deposit Surety Bond Form. If the City's Bid Deposit Surety Bond Form is not used, the bidder is warned to take special care in assuring that the form used does not materially alter, qualify or conflict with the terms and conditions set forth in the City's Bid Deposit Surety Bond Form. The failure to furnish a bid bond in compliance with the City's Bid Deposit Surety Bond Form shall make the bid non-responsive and shall cause the bid to be rejected by the City.

Person/Entity Name: _____ Signature Of Bidder: _____

Company: _____ Date: _____

BOND NO:_____

CONTRACTOR'S BID DEPOSIT SURETY BOND
to City of Spokane Valley, Washington

We, _____, as Principal, existing under and by virtue of the laws of the State of Washington and authorized to do business in the State of Washington, and _____, as Surety, organized and existing under the laws of the State of _____ , are held and firmly bound unto the City of Spokane Valley, a Washington municipality, as Obligee, in the penal sum of 5% of the total amount bid, not to exceed $_____, for the payment of which we jointly and severally bind ourselves, and our legal representatives and successors.

WHEREAS, the Principal has submitted a bid for **PINES RD BNSF GRADE SEPARATION Project #0223**

NOW THEREFORE, the condition of the obligation is such that if the Obligee shall accept the bid of Principal and make timely award to the Principal according to the terms of the bid documents; and the Principal shall, within ten days after notice of the award, exclusive of the day of notice, enter into the contract with the Obligee and furnish the contractor's bonds (performance and payment bonds) with Surety satisfactory to the Obligee in an amount equal to 100% of the amount of the bid proposed including additives, alternatives and Washington State sales tax, then this obligation shall be null and void; otherwise if the Principal fails to enter into the contract and fails to furnish the contractor's bonds within ten days of notice of award, exclusive of the day of notice, the amount of the bid deposit shall be forfeited to the Obligee, payable by the Surety; but in no event will the Surety's liability exceed the face amount of this bid bond.

This bond may be executed in two original counterparts and shall be signed by the parties' duly authorized officers. This bond will only be accepted if it is accompanied by a fully executed and original power of attorney for the officer executing on behalf of the surety.

PRINCIPAL (CONTRACTOR)		SURETY	
_____		_____	
Principal Signature	Date	Surety Signature	Date
_____		_____	
Printed Name		Printed Name	
_____		_____	
Title		Title	

Name, address, and telephone of local office/agent of Surety Company is:

_____

_____

Revised 1.14.13

Contractor Certification
Wage Law Compliance - Responsibility Criteria
Washington State Public Works Contracts

FAILURE TO RETURN THIS CERTIFICATION AS PART OF THE BID PROPOSAL PACKAGE WILL MAKE THIS BID NONRESPONSIVE AND INELIGIBLE FOR AWARD

I hereby certify, under penalty of perjury under the laws of the State of Washington, on behalf of the firm identified below that, to the best of my knowledge and belief, this firm has NOT been determined by a final and binding citation and notice of assessment issued by the Washington State Department of Labor and Industries or through a civil judgment entered by a court of limited or general jurisdiction to have willfully violated, as defined in RCW 49.48.082, any provision of RCW chapters 49.46, 49.48, or 49.52 within three (3) years prior to the date of the Call for Bids.

Bidder Name: _____
Name or Contractor/Bidder – Print full legal entity name of firm

By: _____ _____
Signature of authorized — Print name of person making certifications for firm

Title: _____ **Place:** _____
Title of person signing certificate — Print city and state where signed

Date: _____

Proposal for Incorporating Recycled Materials into the Project

In compliance with the law that went into effect January 1, 2016 (SH1695), the Bidder shall propose below, the total percent of construction aggregate and concrete materials to be incorporated in the Project that are recycled materials. Calculated percentages must be within the amounts allowed in Section 9-03.21(1)E, Table of Maximum Allowable Percent (By Weight) of Recycled Material, of the Standard Specifications.

Proposed total percentage: _____ percent.

Note: *Use of recycled materials is highly encouraged within the limits shown above but does not constitute a Bidder Preference and will not affect the determination of award, unless two or more lowest responsive Bid totals are exactly equal, in which case proposed recycling percentages will be used as a tiebreaker, per APWA GSP in Section 1-03.1(1) of the Special Provisions. Regardless, the Bidder's stated proposed percentages will become a goal the Contractor should do its best to accomplish. Bidders will be required to report on recycled materials actually incorporated into the Project, in accordance with the APWA GSP in Section 1-06.6 of the Special Provisions.*

Person/Entity Name: _____ Signature Of Bidder: _____

Company: _____ Date: _____

REPRESENTATIONS AND CERTIFICATIONS

Pursuant to RCW 9A.72.085, I _____, declare under penalty of perjury under the laws of the State of Washington that the following Representations and Certifications are true and correct:

REPRESENTATION: I am the _____(position) for _____ (company name), (hereinafter "Firm"), and have been duly authorized to make all such representations and certifications herein on behalf of the Firm. Any reference herein to "I," "me," or "we" means the Firm.

ANTI-KICKBACK REPRESENTATION: No officer or employee of the City of Spokane Valley, having the power or duty to perform an official act or action related to this submittal, has, nor will they acquire any interest in this submittal, or have solicited, accepted or granted a present or future gift, favor, service, or other thing of value from or to any person involved in this submittal.

REPRESENTATION: In submitting this bid I represent that the bid documents have been read and understood, that the site has been visited and or that I have become familiarized with the local conditions under which the work is to be performed, that by signature of this proposal I acknowledge all requirements and that I or authorized representatives of the Firm have signed all certificates contained herein.

REPRESENTATION: In submitting this bid I acknowledge and agree to the requirements and conditions applicable to bid deposits in the form of a cash bid deposit or surety bond bid deposit.

NON-COLLUSION: That the Firm and all associated members, officers, and employees of such Firm have not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with the project for which this bid is submitted.

I CERTIFY that pursuant to RCW 39.04.350(1)(d) and RCW 39.06.010, no final determination of violation of RCW 50.12.070(1)(b), 50.16.070(1)(b), or 82.32.070(1)(b) has been made by the Washington State Departments of Employment Security, Labor And Industries or Revenue respectively dated within two years of the date of the closing of this bid. I understand further that no bid may be submitted, considered or contract awarded for a public work to any person or entity that has a determination of violation of the above referenced statutes within two years from the date that a violation is finally determined and the date of this bid closing.

I CERTIFY that the Firm is not in violation of RCW 39.04.350(1)(d) and RCW 39.12.065(3) with regard to payment of prevailing wages.

I CERTIFY that pursuant to RCW 39.04.350(1)(g), in the three-year period immediately preceding the date of the bid solicitation, no final and binding citation and assessment has been issued by the Department of Labor and Industries and no civil judgment has been entered by a court of limited or general jurisdiction for any willful violation of chapters 49.46, 49.48, or 49.52 RCW.

I CERTIFY that pursuant to RCW 39.04.350(1)(f), all necessary members, officers, and employees of the Firm have:

CHECK ONE:

☐ Completed the appropriate training on prevailing wage and public works requirements prior to contract award; or

☐ Completed three or more public works projects and has held a valid Washington business for three or more years.

A copy of evidence of such training or exemption from the Department of Labor and Industries has been attached to this Representation and Certification Form.

I CERTIFY that pursuant to RCW 39.06.020, if selected, I will verify the responsibility criteria for all subcontractors as set forth in RCW 39.04.350(1).

I CERTIFY that to the best of my knowledge the information contained in this proposal is accurate and complete and that I have the legal authority to commit this Firm to a contractual agreement. I realize the final funding for any service is based upon budget levels and the approval of the City of Spokane Valley.

I CERTIFY that by signing the signature page of this bid, I am deemed to have signed and have agreed to the provisions of this declaration.

Name: _____
Person/entity submitting bid (print)

Signature: _____

Title: _____

Date: _____

Place Signed: _____

City of Spokane Valley

10210 East Sprague Avenue
Spokane Valley, WA 99206

Local Agency Subcontractor List

Prepared in compliance with RCW 39.30.060 as amended

To Be Submitted with the Bid Proposal

Project Name _____

Failure to list subcontractors with whom the bidder, if awarded the contract, will directly subcontract for performance of the work of structural steel installation, rebar installation, heating, ventilation and air conditioning, plumbing, as described in Chapter 18.106 RCW, and electrical, as described in Chapter 19.28 RCW or naming more than one subcontractor to perform the same work will result in your bid being non-responsive and therefore void.

Subcontractor(s) with whom the bidder will directly subcontract that are proposed to perform the work of structural steel installation, rebar installation, heating, ventilation and air conditioning, plumbing, as described in Chapter 18.106 RCW, and electrical as described in Chapter 19.28 RCW must be listed below. The work to be performed is to be listed below the subcontractor(s) name.

To the extent the Project includes one or more categories of work referenced in RCW 39.30.060, and no subcontractor is listed below to perform such work, the bidder certifies that the work will either (i) be performed by the bidder itself, or (ii) be performed by a lower tier subcontractor who will not contract directly with the bidder.

Subcontractor Name _____

Work to be performed _____

Subcontractor Name _____

Work to be performed _____

Subcontractor Name _____

Work to be performed _____

Subcontractor Name _____

Work to be performed _____

Subcontractor Name _____

Work to be performed _____

* Bidder's are notified that it is the opinion of the enforcement agency that PVC or metal conduit, junction boxes, etc, are considered electrical equipment and therefore considered part of electrical work, even if the installation is for future use and no wiring or electrical current is connected during the project.

DOT Form 271-015LP
Revised 06/2020

Failure to return this Declaration as part of the bid proposal package will make the bid nonresponsive and ineligible for award.

NON-COLLUSION DECLARATION

I, by signing the proposal, hereby declare, under penalty of perjury under the laws of the United States that the following statements are true and correct:

1. That the undersigned person(s), firm, association or corporation has (have) not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with the project for which this proposal is submitted.
2. **That by signing the signature page of this proposal, I am deemed to have signed and to have agreed to the provisions of this declaration.**

NOTICE TO ALL BIDDERS

To report rigging activities call:

1-800-424-9071

The U.S. Department of Transportation (USDOT) operates the above toll-free "hotline" Monday through Friday, 8:00 a.m. to 5:00 p.m., eastern time. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the "hotline" to report such activities.

The "hotline" is part of USDOT's continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the USDOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

SR

DOT Form 272-036I EF 07/2011

Local Agency Certification for Federal-Aid Contracts

The prospective participant certifies by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

This certification is material representation of the fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each failure.

The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such subrecipients shall certify and disclose accordingly.

SR

DOT Form 272-040A EF
07/2011

Washington State Department of Transportation

Bidder Questionnaire

Agency Name City of Spokane Valley	Federal Aid Number
Prime Contractor Name	Contract Number
Contract Name	

Firm/ Subcontractor Name	Address (incl. Zipcode)	DBE Status	Race	Gender	NAICS Codes	Scope of Work	Firm Age	Firm Gross Receipts

If you have additional Firms or Subcontractors that submitted Bids, please complete additional forms.

Prime Contractor Representative _____ Title _____ Date _____

DOT Form 272-022 Revised 09/2024
• Previous Versions Obsolete •

Form Instructions

The following information on each firm that submitted a bid is required as part of part of 49 CFR 26.11(c)(2):

Firm/Subcontractor Name: Enter the name of each firm or subcontractor who submitted a quote or a bid on the contract.

Address: Enter the date the main address of the firm/subcontractor. Include the zip code.

DBE Status: Enter the DBE status. *Options are DBE and Non-DBE.*

Race: Enter the race of the majority Owner. *Options are "Black American", "Hispanic American", "Native American", "Asian-Paci ic American", "Subcontinent Asian American", and "White".* N/A should only be used if there is not a majority owner such as when the Firm is a corporation.

Gender: Enter the gender of the majority Owner. *Options are "Female" and "Male".* N/A should only be used if there is not a majority owner such as when the Firm is a corporation.

NAICS Codes: Enter the appropriate NAICS Codes for the work the bid was submitted.

Scope of Work: Enter the scope of the work the bid was submitted for.

Firm Age: Enter the age of the Firm.

Firm Gross Receipts: Enter the annual gross receipts. *Options are "Less than $1 million", "$1-$3 million", "$3-$6 million", "$6-$10 million", "$10-$20 million ", "$20-$30.72 million ", "Greater than $30.72 million ".*

Prime Contractor Representative: The name of the person who filled out the form.

DOT Form 272-022 Revised 09/2024
• **Previous Versions Obsolete** •

Washington State Department of Transportation

Disadvantaged Business Enterprise (DBE) Bid Item Breakdown Form

1. Contract Number	2. Contract Name
3. Prime Contractor	4. Prime Contractor Representative Name
5. Prime Contractor Representative Phone Number	6. Prime Contractor Representative Email

Column 1 **Name of UDBE** (See Instructions)	Column 2 **Bid Item #** (See Instructions)	Column 3 **Full/Partial** (See Instructions)	Column 4 **Quantity** (See Instructions)	Column 5 **Description** (See Instructions)	Column 6 **Unit Price** (See Instructions)	Column 7 **Total Unit Cost** (See Instructions)	Column 8 **Dollar Amount to be Applied Towards Goal** (See Instructions)
					Subtotal:		
Name of UDBE	**Bid Item #**	**Full/Partial**	**Quantity**	**Description**	**Unit Price**	**Total Unit Cost**	**Dollar Amount to be Applied Towards Goal**
					Subtotal:		
Name of UDBE	**Bid Item #**	**Full/Partial**	**Quantity**	**Description**	**Unit Price**	**Total Unit Cost**	**Dollar Amount to be Applied Towards Goal**
					Subtotal:		
Name of UDBE	**Bid Item #**	**Full/Partial**	**Quantity**	**Description**	**Unit Price**	**Total Unit Cost**	**Dollar Amount to be Applied Towards Goal**
					Subtotal:		
					TOTAL UDBE Dollar Amount:		

DOT Form 272-054
Revised 09/2020

Instructions for Disadvantaged Business Enterprise (DBE) Bid Item Breakdown Form

Box 1: Provide the Contract Number as stated in the project information webpage.

Box 2: Provide the Name of the project as stated in the project information webpage.

Box 3: Provide the Name of the bidder (Proposal holder) submitting Bid.

Box 4: Provide the name of the prime contractor's representative available to contact regarding this form.

Box 5: Provide the phone number of the prime contractor's representative available to contact regarding this form.

Box 6: Provide the email of the prime contractor's representative available to contact regarding this form.

Column 1: Provide the Name of the Disadvantaged Business Enterprise (DBE) Firm. DBE Firms can be found using the search tools under the Firm Certification section of the Diversity Management and Compliance System (DMCS) webpage https://wsdot.diversitycompliance.com.

Column 2: Provide the Bid Item Number (as it appears in the engineer's estimate bid check report) available on the project information webpage.

Column 3: If the DBE is performing only part of the bid item, mark "Partial". If the DBE is performing the entire bid item, mark "Complete".

Column 4: Provide the estimated quantity for the specific bid item. For trucking firms, use hour or another unit of measure.

Column 5: Provide a description of the work to be performed by the DBE.

Column 6: Provide the price per unit and specify the type of unit used. For trucking firms, use hour or another unit of measure.

Column 7: Provide the estimated total unit cost amount per bid item.

Column 8: Provide the amount of the bid item being used to fulfil the DBE goal. The work to be performed must be consistent with the Certified Business Description of the DBE provided in the DMCS webpage https://wsdot.diversitycompliance.com. Mobilization up to 10% is acceptable. If mobilization is more than 10% additional information and/or justification may be requested. The total amount shown for each DBE shall match the amount shown on the DBE Utilization Certification Form.

Use Additional Sheets if necessary.

Washington State Department of Transportation

Disadvantaged Business Enterprise Utilization Certification

To be eligible for Award of this Contract the Bidder shall fill out and submit, as a supplement to its sealed Bid Proposal, a Disadvantaged Business Enterprise (DBE) Utilization Certification. The Contracting Agency shall consider as non-responsive and shall reject any Bid Proposal that does not contain a DBE Utilization Certification which properly demonstrates that the Bidder will meet the DBE participation requirements in one of the manners provided for in the proposed Contract. **Refer to the instructions on Page 2 when filling out this form or the Bid may be rejected. An example form has been provided on Page 3.** The successful Bidder's DBE Utilization Certification shall be deemed a part of the resulting Contract.

Box 1: _____ certifies that the DBE firms listed below have been contacted regarding participation on this project. If this Bidder is successful on this project and is awarded the Contract, it shall assure that subcontracts or supply agreements are executed with named DBEs. (If necessary, use additional sheets.)

Box 2: _____

Column 1 **Name of DBE** (See instructions)	Column 2 **Project Role** (See instructions)	Column 3 **Description of Work** (See instructions)	Column 4 **Dollar Amount Subcontracted to DBE** (See instructions)	Column 5 **Dollar Amount to be Applied Towards Goal** (See instructions)

Disadvantaged Business Enterprise Condition of Award Contract Goal _____ Box 3

Total DBE Commitment Dollar Amount _____ Box 4

5 ☐ By checking Box 5 the Bidder is stating that their attempts to solicit sufficient DBE participation to meet the COA Contract goal has been unsuccessful and good faith effort will be submitted in accordance with Section 1-02.9 of the Contract

DOT Form 272-056
Revised 03/2018

C

Instructions for Disadvantaged Business Enterprise Utilization Certification Form

Box 1: Name of Bidder (Proposal holder) submitting Bid.

Box 2: Name of the Project.

Column 1: Name of the Disadvantaged Business Enterprise (DBE). DBE firms can be found using the Diversity Management and Compliance System web page: https://wsdot.diversitycompliance.com. Repeat the name of the DBE for each Project Role that will be performed.

Column 2: The Project Role that the DBE will be performing as follows;

- Prime Contractor
- Subcontractor
- Subcontractor (Force Account)
  - Work sublet as Force Account must be listed separately.
- Manufacturer
- Regular Dealer
  - Work sublet to a Regular Dealer must be listed separately.
  - Regular Dealer status must be approved prior to Bid submittal by the Office of Equal Opportunity, Washington State Department of Transportation, on each Contract.
- Broker
  - Work sublet to a Broker must be listed separately.

List each project role to be performed by a single DBE individually on a separate row. The role is used to determine what portion of the amount to be subcontracted (Column 4) may be applied toward meeting the goal (column 5).

Column 3: Provide a description of work to be performed by the DBE. The work to be performed must be consistent with the Certified Business Description of the DBE provided at the Diversity Management and Compliance System web page https://wsdot.diversitycompliance.com

- A Bidder subletting a portion of a bid item shall state **"Partial"** and describe the Work that is included.
  - For example; "Electrical (Partial) – Trenching".
- "Mobilization" will not be accepted as a description of Work.

Column 4: List the total amount to be subcontracted to each DBE for each Project Role they are performing.

Column 5: This is the dollar amount for each line listed in the certification that the prime intends to apply towards meeting the COA Contract goal. It may be that only a portion of the amount subcontracted to a DBE in Column 4 is eligible to be credited toward meeting the goal **See Note 1, Note 2, Note 3.** The Contracting Agency will utilize the sum of this column (Box 4) to determine whether or not the bidder has met the goal. In the event of an arithmetic error in summing column 5 or an error in making appropriate reductions in the amounts in column four, **See Note 1, Note 2, Note 3**, then the mathematics will be corrected and the total (Box 4) will be revised accordingly.

Note 1: For Work sublet as Force Account the bidder **may only claim 50%** of the amount subcontracted (Column 4) towards meeting the goal (Column 5). This information will be used to demonstrate that the DBE contract goal is met at the time that the bidder submits their bid. For example; amount sublet as force account = $100,000 (Column 4) equates to ($100,000 X 50%) = $50,000 (Column 5) to be applied towards the goal.

Note 2: For Work sublet to a Regular Dealer the bidder **may only claim 60%** of the cost of the materials or supplies (Column 4) towards meeting the goal (Column 5). For example; Material cost = $100,000 (Column 4) equates to ($100,000 X 60%) = $60,000 (Column 5) to be applied towards the goal

Note 3: For Work sublet to a Broker the bidder **may only claim the fees** paid to a Broker towards meeting the goal (Column 4). For example; amount sublet to a broker = $100,000 (Column 4) equates to ($100,000 X reasonable fee %) = $ (Column 5) to be applied towards the goal.

Box 3: Box 3 is the COA Contract goal which is the minimum required DBE participation. The goal stated in the Contract will be in terms of a dollar amount or a percentage in the Contract. When expressed as a percentage you must multiply the percentage times the sum total of all bid items as submitted in the Bidder's Proposal to determine the dollar goal and write it in Box 3. In the event of an error in this box, the Contracting Agency will revise the amount accordingly.

Box 4: Box 4 is the sum of the values in column 5. **This value must equal or exceed the COA Contract goal amount written in Box 3 or;**

Box 5: Check Box 5 if insufficient DBE Participation has been achieved and a good faith effort is required. Refer to the subsection titled, *Selection of Successful Bidder/Good Faith Efforts (GFE)* in the Contract.

See the *Disadvantaged Business Enterprise Participation* specification in the Contract for more information.

Washington State Department of Transportation

Disadvantaged Business Enterprise Utilization Certification

To be eligible for Award of this Contract the Bidder shall fill out and submit, as a supplement to its sealed Bid Proposal, a Disadvantaged Business Enterprise (DBE) Utilization Certification. The Contracting Agency shall consider as non-responsive and shall reject any Bid Proposal that does not contain a DBE Utilization Certification which properly demonstrates that the Bidder will meet the DBE participation requirements in one of the manners provided for in the proposed Contract. **Refer to the instructions on Page 2 when filling out this form or the Bid may be rejected. An example form has been provided on Page 3.** The successful Bidder's DBE Utilization Certification shall be deemed a part of the resulting Contract.

Box 1: A Plus Construction Company certifies that the DBE firms listed below have been contacted regarding participation on this project. If this Bidder is successful on this project and is awarded the Contract, it shall assure that subcontracts or supply agreements are executed with named DBEs. (If necessary, use additional sheets.)

Box 2: US 395, Spokane City Limits to Stevens County Line - Paving and Safety

Column 1 **Name of DBE** See instructions)	Column 2 **Project Role** See instructions)	Column 3 **Description of Work** See instructions)	Column 4 **Dollar Amount Subcontracted to DBE** See instructions)	Column 5 **Dollar Amount to be Applied Towards Goal** See instructions)
A Plus Construction Company	Prime	Asphalt and concrete paving, asphalt milling, preleveling and pavement repair	N/A	900,000
In the Line Services, Inc.	Subcontractor (Force Account)	Crack sealing	20,000	10,000
In the Line Services, Inc.	Subcontractor	Guideposts, joint seal, pavement markers, temporary signage, construction sign installation	200,000	200,000
The Everything Guys, LLC	Regular Dealer	Rental and sales of highway construction and related equipment and materials	100,000	60,000
Optimus Prime Trucking, Inc.	Subcontractor	Dump Trucking	50,000	50,000
Metalheads, Inc.	Manufacturer	Dowel Bars	75,000	75,000
Erosion Under Control Co.	Broker	Erosion control blankets, straw bales and wattles, sand bags	15,000	250

EXAMPLE

Disadvantaged Business Enterprise Condition of Award Contract Goal 356,968.16 (Box 3)

Total DBE Commitment Dollar Amount 1,295,250 (Box 4)

5 ☐ By checking Box 5 the Bidder is stating that their attempts to solicit sufficient DBE participation to meet the COA Contract goal has been unsuccessful and good faith effort will be submitted in accordance with Section 1-02.9 of the Contract

DOT Form 272-056
Revised 03/2018

Washington State Department of Transportation

Disadvantaged Business Enterprise (DBE) Written Confirmation Document

See Contract Provisions: *DBE Document Submittal Requirements*
Disadvantaged Business Enterprise Participation

THIS FORM SHALL ONLY BE SUBMITTED TO A DBE THAT IS LISTED ON THE CONTRACTOR'S DISADVANTAGED BUSINESS ENTERPRISE UTILIZATION CERTIFICATION.

THE CONTRACTOR SHALL COMPLETE PART A PRIOR TO SENDING TO THE DBE.

PART A: To be completed by the bidder

The entries below shall be consistent with what is shown on the Bidder's Disadvantaged Business Enterprise Utilization Certification. Failure to do so will result in Bid rejection.

Contract Title: _____

Bidder's Business Name: _____

DBE's Business Name: _____

Description of DBE's Work: _____

Dollar Amount to be Applied Towards DBE Goal: _____

Dollar Amount to be Subcontracted to DBE*: _____
*Optional Field

PART B: To be completed by the Disadvantaged Business Enterprise

As an authorized representative of the Disadvantaged Business Enterprise, I confirm that we have been contacted by the Bidder with regard to the referenced project for the purpose of performing the Work described above. If the Bidder is awarded the Contract, we will enter into an agreement with the Bidder to participate in the project consistent with the information provided in Part A of this form.

Name (printed): _____

Signature: _____

Title: _____

Address: _____ Date: _____

_____

DOT Form 422-031
Revised 07/2016

Washington State Department of Transportation

Disadvantaged Business Enterprise (DBE)Trucking Credit Form

PART A: TO BE COMPLETED BY THE BIDDER

This form is in support of the trucking commitment identified on the DBE Utilization Certification Form submitted with the proposal. Please note that DBE's must be certified prior to time of submittal.

Federal Aid #	Contract #	Project Name
If listing items by hours, or by lump sum amounts, please provide calculations to substantiate the quantities listed.		

Bid Item	Item Description

Use additional sheets as necessary.

Bidder		Name/Title (please print)
Phone	Fax	Signature I certify that the above information is complete and accurate.
Address		
Email		Date

PART B: TO BE COMPLETED BY THE DBE TRUCKING FIRM

Note: DBE trucking firm participation may only be credited as DBE participation for the value of the hauling services, not for the materials being hauled unless the trucking firm is also recognized as a supplier of the materials used on the project and approved for this project as a regular dealer.

1. Type of Material expected to be hauled? _____

2. Number of fully operational trucks expected to be used on this project? _____ Tractor/trailers: _____ Dump trucks: _____

3. Number of trucks and trailers owned by the DBE that will be used on this project? _____ Tractor/trailers: _____ Dump trucks: _____

4. Number of trucks and trailers leased by the DBE that will be used on this project? _____ Tractor/trailers: _____ Dump trucks: _____

DBE Firm Name		Name/Title (please print)
Certification Number		
Phone	Fax	Signature I certify that the above information is complete and accurate.
Address		
Email		Date

DOT Form 272-058
Revised 09/2020

Submit this form to in accordance with section 1-02.9 of the Contract.

Instruction to Bidder: The Bidder shall complete and submit the Disadvantaged Business Enterprise (DBE) Trucking Credit Form in accordance with Section 1-02.9 of the Contract.

INSTRUCTIONS

Please note – All Fields are required

PART A: TO BE COMPLETED BY THE BIDDER

Federal Aid: Include the project federal-aid number.
County: Specify the County where the project will take place.
Contract #: Specify the Project Contract Number which can be found in the Engineer's estimate bid check report.
Bid Item: Provide the Bid Item Number (as it appears in the engineer's estimate bid check report) for which trucking services will be utilized.
Item Description: Provide description of the bid item (as it appears in the engineer's estimate bid check report) for which trucking will be utilized.
Bidder: In this section, provide the bidder's legal name, title, Business address, Phone and email.

The bidder's representative signature is required in addition to the date the form was signed.

PART B: TO BE COMPLETED BY THE DBE TRUCKING FIRM

Question 1: Specify type of material that will be hauled (i.e. Sand, HMA, gravel)
Question 2: Specify the total number of operational trucks that will be used on the project.
Question 3: Specify the total number of operational trucks and trailers owned by the DBE that will be used on the project.
Question 4: Specify the total number of operational trucks and trailers leased by the DBE that will be used on the project.

DBE Firm: In this section, provide the DBE Firm's legal name, DBE Firm's representative legal name and title, certification Number (Found in the firm's OMWBE Profile page in the OMWBE directory), Business address, Phone, fax and email.

The DBE Firm's representative signature is required in addition to the date the form was signed.

DOT Form 272-058
Revised 09/2020

BIDDER QUESTION FORM

PINES RD BNSF GRADE SEPARATION #0223
City of Spokane Valley

In accordance with Section 1-02.4(1) General, the following form is provided for noting errors or conflicts found in the plans or specifications or for asking questions that are pertinent to bidding the contract.

Submit the form by email to Erica Amsden and Candice Powers-Henderson. The Subject line must include the project name and number. See example below:

To: eamsden@spokanevalleywa.gov; cphenderson@spokanevalleywa.gov
Subject: PINES RD BNSF GRADE SEPARATION Project #0223

All emails must be received by 10:00 a.m., 72 hours prior to the bid opening to allow the City time to respond. The Engineer will issue clarifications via addenda, emailed to questioner and all prospective bidders listed on the Planholder's List.

I have the following question:

Specification Reference _____ or Page No:_____

Detail No. _____ Plan Sheet No. _____

Please respond to:[Abstract]

Name:_____

Company: _____

Address: _____

Email address: _____

PART 3
CONTRACT FORMS

Contract
Contractor's Performance Bond
Contractor’s Payment Bond

Contract

This agreement is entered into this _____ day of _____, 2025, between the City of Spokane Valley ("City") and _____("Contractor"), pursuant to Title 35 RCW, as adopted or amended.

In consideration of the terms and conditions contained herein and attached and made a part of this agreement, the parties agree as follows:

I. The Contractor shall do all work and furnish all tools, materials, and equipment for:

SR290/SR27 Pines Rd BNSF Grade Separation, Project No. 0223
Contract 25-__

in accordance with and as described in the Contract Documents. The "Contract Documents" are defined to include the following: this Contract; the Contract Provisions and Plans for CIP No. 0223, the 2025 Standard Specifications for Road, Bridges, and Municipal Construction as prepared by the Washington State of Department of Transportation ("Standard Specifications" available online on WSDOT's website), Addenda (as defined in the Standard Specifications), the Contractor's completed and submitted Bid Proposal Documents, Special Provisions for CIP No. 0223, including the WSDOT Standard Plans and City Standard Plans identified therein, Performance and Payment bonds (attached hereto as Exhibits A and B respectively), all change orders and contract amendments signed by both Parties after the date this Contract has been fully executed, as well as all documents, exhibits, appendices, and attachments to or referenced in any of the aforementioned Contract Documents. All Contract Documents listed here are incorporated herein by reference and made a part hereof. To the extent any documents are incorporated by reference into the Standard Specifications and/or Special Provisions, they are incorporated herein by reference and made part of the Contract Documents.

Contractor shall perform any changes in the work in accord with the Contract Documents. The Contractor shall provide and bear the expense of all equipment, work, and labor, of any sort whatsoever that may be required for the transfer of materials and for constructing and completing the work provided for in these Contract Documents except those items mentioned therein to be furnished by the City.

II. The City hereby promises and agrees with the Contractor to employ, and does employ the Contractor to provide the materials and to do and cause to be done the above described work and to complete and finish the same in accord with the project plans and specification and the terms and conditions herein contained and hereby contracts to pay for the same according to the referenced specifications and the schedule of unit or itemized prices at the time and in the manner and upon the conditions provided for in this contract.

III. The Contractor for himself/herself, and for his/hers heirs, executors, administrators, successors, and assigns, does hereby agree to full performance of all covenants required of the Contractor in the contract.

IV. It is further provided that no liability shall attach to the City by reason of entering onto this contract, except as provided herein.

SAMPLE

V. The prevailing party in any litigation or arbitration arising out of this Agreement shall be entitled to its attorney's fees and costs of such litigation or arbitration (including expert witness fees).

VI. The project was awarded for the bid amount of **$_____, plus applicable sales tax.**

IN WITNESS WHEREOF, the Contractor has executed this instrument, on the date below, and the City has caused this instrument to be executed on the date stated above.

Executed by Contractor _____ , 2025.
Date

_____
Printed Name

_____
Title

_____
Signature

City of Spokane Valley

John Hohman
Printed Name

City Manager
Title

_____
Signature

SAMPLE

BOND NO: _____

CONTRACTOR'S PERFORMANCE BOND
to City of Spokane Valley, Washington

The City of Spokane Valley, Spokane County, Washington, has awarded to _____ (Contractor), as Principal, a contract for the construction of the project designated as **SR290/SR27 Pines Rd BNSF Grade Separation**, Project No. **0223** in Spokane Valley, Washington, and said Principal is required under the terms of the Contract to furnish a performance bond in accordance with chapter 39.08 Revised Code of Washington (RCW).

The Principal, and _____(Surety), a corporation, organized under the laws of _____ and licensed to do business in the State of Washington as surety and named in the current list of "Surety Companies Acceptable in Federal Bonds" as published in the Federal Register by the Audit Staff Bureau of Accounts, U.S. Treasury Dept., are jointly and severally held and firmly bound to the City of Spokane Valley, as Obligee, in the sum of $_____ total Contract amount (including Washington State sales tax), subject to the provisions herein.

This performance bond shall become null and void, if and when the Principal, its heirs, executors, administrators, successors, or assigns shall well and faithfully perform all of the Principal's obligations under the Contract and fulfill all the terms and conditions of all duly authorized modifications, additions, and changes to said Contract that may hereafter be made, at the time and in the manner therein specified; shall warranty the work as provided in the Contract and shall indemnify and hold harmless the Obligee from any defects in the workmanship and materials incorporated into the work for the period identified in the Contract; and if such performance obligations have not been fulfilled, this bond shall remain in full force and effect.

The Surety for value received agrees that no change, extension of time, alteration or addition to the terms of the Contract, the specifications accompanying the Contract, or to the work to be performed under the Contract shall in any way affect its obligation on this bond, and waives notice of any change, extension of time, alteration or addition to the terms of the Contract or the work performed. The Surety agrees that modifications and changes to the terms and conditions of the Contract that increase the total amount to be paid the Principal shall automatically increase the obligation of the Surety on this bond and notice to Surety is not required for such increased obligation.

This bond may be executed in two original counterparts, and shall be signed by the parties' duly authorized officers. This bond will only be accepted if it is accompanied by a fully executed and original power of attorney for the officer executing on behalf of the surety.

PRINCIPAL (CONTRACTOR)	SURETY
_____	_____
Principal Signature Date	Surety Signature Date
_____	_____
Printed Name	Printed Name
_____	_____
Title	Title

Name, address, and telephone of local office/agent of Surety Company is:

_____

_____

_____

Revised 2.9.2023

BOND NO: _____

CONTRACTOR'S PAYMENT BOND (FEDERALLY FUNDED PROJECT)
to City of Spokane Valley, Washington

The City of Spokane Valley, Spokane County, Washington, has awarded to _____ (Contractor), as Principal, a contract for the construction of the project designated as **SR290/SR27 Pines Rd BNSF Grade Separation**, Project No. **0223** in Spokane Valley, Washington, and said Principal is required under the terms of the Contract to furnish a payment bond in accordance with chapter 39.08 Revised Code of Washington (RCW) and chapter 60.28 RCW.

The Principal, and _____(Surety), a corporation organized under the laws of _____ and licensed to do business in the State of Washington as surety and named in the current list of "Surety Companies Acceptable in Federal Bonds" as published in the Federal Register by the Audit Staff Bureau of Accounts, U.S. Treasury Dept., are jointly and severally held and firmly bound to the City of Spokane Valley, as Obligee, in the sum of $_____ total Contract amount, subject to the provisions herein. This payment bond shall cover any and all taxes incurred pursuant to Titles 50 and 51 RCW, taxes imposed on the Principal pursuant to Title 82 RCW, and any additional sales taxes.

This payment bond shall become null and void, if and when the Principal, its heirs, executors, administrators, successors, or assigns shall pay all persons in accordance with chapters 39.08, 39.12, and 60.28 RCW, including all workers, laborers, mechanics, subcontractors, and materialmen, and all persons who shall supply such contractor or subcontractor with provisions and supplies for the carrying on of such work; shall pay all taxes due pursuant to Titles 50, 51, and 82 RCW; and shall indemnify and hold harmless the Obligee from all loss, cost, or damage which Obligee may suffer by reason of the failure of Principal to make such required payments; and if such payment obligations have not been fulfilled, this bond shall remain in full force and effect.

The Surety for value received agrees that no change, extension of time, alteration or addition to the terms of the Contract, the specifications accompanying the Contract, or to the work to be performed under the Contract shall in any way affect its obligation on this bond, except as provided herein, and waives notice of any change, extension of time, alteration or addition to the terms of the Contract or the work performed. The Surety agrees that modifications and changes to the terms and conditions of the Contract that increase the total amount to be paid the Principal shall automatically increase the obligation of the Surety on this bond and notice to Surety is not required for such increased obligation.

This bond may be executed in two original counterparts, and shall be signed by the parties' duly authorized officers. This bond will only be accepted if it is accompanied by a fully executed and original power of attorney for the officer executing on behalf of the surety.

PRINCIPAL (CONTRACTOR)	SURETY
_____	_____
Principal Signature Date	Surety Signature Date
_____	_____
Printed Name	Printed Name
_____	_____
Title	Title

Name, address, and telephone of local office/agent of Surety Company is:

_____

_____

_____

PART 4
REQUIRED FEDERAL AID CONTRACT PROVISIONS

FHWA 1273 Contract Provisions

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. General
II. Nondiscrimination
III. Non-segregated Facilities
IV. Davis-Bacon and Related Act Provisions
V. Contract Work Hours and Safety Standards Act Provisions
VI. Subletting or Assigning the Contract
VII. Safety: Accident Prevention
VIII. False Statements Concerning Highway Projects
IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
X. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion
XI. Certification Regarding Use of Contract Funds for Lobbying
XII. Use of United States-Flag Vessels:

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under title 23, United States Code, as required in 23 CFR 633.102(b) (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services). 23 CFR 633.102(e).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider. 23 CFR 633.102(e).

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services) in accordance with 23 CFR 633.102. The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in solicitation-for-bids or request-for-proposals documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract). 23 CFR 633.102(b).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract. 23 CFR 633.102(d).

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors. 23 U.S.C. 101(a).

II. NONDISCRIMINATION (23 CFR 230.107(a); 23 CFR Part 230, Subpart A, Appendix A; EO 11246)

The provisions of this section related to 23 CFR Part 230, Subpart A, Appendix A are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR Part 60, 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR Part 60, and 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR Part 230, Subpart A, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal Employment Opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (*see* 28 CFR Part 35, 29 CFR Part 1630, 29 CFR Parts 1625-1627, 41 CFR Part 60 and 49 CFR Part 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140, shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR Part 35 and 29 CFR Part 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract. 23 CFR 230.409 (g)(4) & (5).

b. The contractor will accept as its operating policy the following statement:

> "It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, sexual orientation, gender identity, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action or are substantially involved in such action, will be made fully cognizant of and will implement the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to ensure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action

within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs (i.e., apprenticeship and on-the-job training programs for the geographical area of contract performance). In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. 23 CFR 230.409. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established thereunder. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors, suppliers, and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurances Required:

a. The requirements of 49 CFR Part 26 and the State DOT's FHWA-approved Disadvantaged Business Enterprise (DBE) program are incorporated by reference.

b. The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:
(1) Withholding monthly progress payments;
(2) Assessing sanctions;
(3) Liquidated damages; and/or
(4) Disqualifying the contractor from future bidding as non-responsible.

c. The Title VI and nondiscrimination provisions of U.S. DOT Order 1050.2A at Appendixes A and E are incorporated by reference. 49 CFR Part 21.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women.

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of more than $10,000. 41 CFR 60-1.5.

As prescribed by 41 CFR 60-1.8, the contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location under the contractor's control where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size), in accordance with 29 CFR 5.5. The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. 23 U.S.C. 113. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. 23 U.S.C. 101. Where applicable law requires that projects be treated as a project on a Federal-aid highway, the provisions of this subpart will apply regardless of the location of the project. Examples include: Surface Transportation Block Grant Program projects funded under 23 U.S.C. 133 [excluding recreational trails projects], the Nationally Significant Freight and Highway Projects funded under 23 U.S.C. 117, and National Highway Freight Program projects funded under 23 U.S.C. 167.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 “Contract provisions and related matters” with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages (29 CFR 5.5)

a. *Wage rates and fringe benefits.* All laborers and mechanics employed or working upon the site of the work (or otherwise working in construction or development of the project under a development statute), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of basic hourly wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. As provided in paragraphs (d) and (e) of 29 CFR 5.5, the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. Contributions made or costs reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act (40 U.S.C. 3141(2)(B)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.e. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in paragraph 4. of this section. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided,* That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph 1.c. of this section) and the Davis-Bacon poster (WH–1321) must be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. *Frequently recurring classifications.* (1) In addition to wage and fringe benefit rates that have been determined to be prevailing under the procedures set forth in 29 CFR part 1, a wage determination may contain, pursuant to § 1.3(f), wage and fringe benefit rates for classifications of laborers and mechanics for which conformance requests are regularly submitted pursuant to paragraph 1.c. of this section, provided that:

(i) The work performed by the classification is not performed by a classification in the wage determination for which a prevailing wage rate has been determined;

(ii) The classification is used in the area by the construction industry; and

(iii) The wage rate for the classification bears a reasonable relationship to the prevailing wage rates contained in the wage determination.

(2) The Administrator will establish wage rates for such classifications in accordance with paragraph 1.c.(1)(iii) of this section. Work performed in such a classification must be paid at no less than the wage and fringe benefit rate listed on the wage determination for such classification.

c. *Conformance.* (1) The contracting officer must require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract be classified in conformance with the wage determination. Conformance of an additional classification and wage rate and fringe benefits is appropriate only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is used in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.

(3) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken will be sent by the contracting officer by email to DBAconformance@dol.gov. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.

(4) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer will, by email to DBAconformance@dol.gov, refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.

(5) The contracting officer must promptly notify the contractor of the action taken by the Wage and Hour Division under paragraphs 1.c.(3) and (4) of this section. The contractor must furnish a written copy of such determination to each affected worker or it must be posted as a part of the wage determination. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 1.c.(3) or (4) of this section must be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

d. *Fringe benefits not expressed as an hourly rate.* Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor may either pay the benefit as stated in the wage determination or may pay another bona fide fringe benefit or an hourly cash equivalent thereof.

e. *Unfunded plans.* If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, *Provided,* That the Secretary of Labor has found, upon the written request of the contractor, in accordance with the criteria set forth in § 5.28, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

f. *Interest.* In the event of a failure to pay all or part of the wages required by the contract, the contractor will be required to pay interest on any underpayment of wages.

2. Withholding (29 CFR 5.5)

a. *Withholding requirements.* The contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for the full amount of wages and monetary relief, including interest, required by the clauses set forth in this section for violations of this contract, or to satisfy any such liabilities required by any other Federal contract, or federally assisted contract subject to Davis-Bacon labor standards, that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to Davis-Bacon labor standards requirements and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld. In the event of a contractor's failure to pay any laborer or mechanic, including any apprentice or helper working on the site of the work all or part of the wages required by the contract, or upon the contractor's failure to submit the required records as discussed in paragraph 3.d. of this section, the contracting agency may on its own initiative and after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with paragraph

2.a. of this section or Section V, paragraph 3.a., or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its reprocurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901–3907.

3. Records and certified payrolls (29 CFR 5.5)

a. *Basic record requirements* (1) *Length of record retention.* All regular payrolls and other basic records must be maintained by the contractor and any subcontractor during the course of the work and preserved for all laborers and mechanics working at the site of the work (or otherwise working in construction or development of the project under a development statute) for a period of at least 3 years after all the work on the prime contract is completed.

(2) *Information required.* Such records must contain the name; Social Security number; last known address, telephone number, and email address of each such worker; each worker's correct classification(s) of work actually performed; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act); daily and weekly number of hours actually worked in total and on each covered contract; deductions made; and actual wages paid.

(3) *Additional records relating to fringe benefits.* Whenever the Secretary of Labor has found under paragraph 1.e. of this section that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act, the contractor must maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits.

(4) *Additional records relating to apprenticeship.* Contractors with apprentices working under approved programs must maintain written evidence of the registration of apprenticeship programs, the registration of the apprentices, and the ratios and wage rates prescribed in the applicable programs.

b. *Certified payroll requirements* (1) *Frequency and method of submission.* The contractor or subcontractor must submit weekly, for each week in which any DBA- or Related Acts-covered work is performed, certified payrolls to the contracting agency. The prime contractor is responsible for the submission of all certified payrolls by all subcontractors. A contracting agency or prime contractor may permit or require contractors to submit certified payrolls through an electronic system, as long as the electronic system requires a legally valid electronic signature; the system allows the contractor, the contracting agency, and the Department of Labor to access the certified payrolls upon request for at least 3 years after the work on the prime contract has been completed; and the contracting agency or prime contractor permits other methods of submission in situations where the contractor is unable or limited in its ability to use or access the electronic system.

(2) *Information required.* The certified payrolls submitted must set out accurately and completely all of the information required to be maintained under paragraph 3.a.(2) of this section, except that full Social Security numbers and last known addresses, telephone numbers, and email addresses must not be included on weekly transmittals. Instead, the certified payrolls need only include an individually identifying number for each worker (*e.g.,* the last four digits of the worker's Social Security number). The required weekly certified payroll information may be submitted using Optional Form WH–347 or in any other format desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division website at *https://www.dol.gov/sites/dolgov/files/WHD/legacy/files/wh347/.pdf* or its successor website. It is not a violation of this section for a prime contractor to require a subcontractor to provide full Social Security numbers and last known addresses, telephone numbers, and email addresses to the prime contractor for its own records, without weekly submission by the subcontractor to the contracting agency.

(3) *Statement of Compliance.* Each certified payroll submitted must be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor, or the contractor's or subcontractor's agent who pays or supervises the payment of the persons working on the contract, and must certify the following:

(i) That the certified payroll for the payroll period contains the information required to be provided under paragraph 3.b. of this section, the appropriate information and basic records are being maintained under paragraph 3.a. of this section, and such information and records are correct and complete;

(ii) That each laborer or mechanic (including each helper and apprentice) working on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR part 3; and

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification(s) of work actually performed, as specified in the applicable wage determination incorporated into the contract.

(4) *Use of Optional Form WH–347.* The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 will satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(3) of this section.

(5) *Signature.* The signature by the contractor, subcontractor, or the contractor's or subcontractor's agent must be an original handwritten signature or a legally valid electronic signature.

(6) *Falsification.* The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 3729.

(7) *Length of certified payroll retention.* The contractor or subcontractor must preserve all certified payrolls during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

c. *Contracts, subcontracts, and related documents.* The contractor or subcontractor must maintain this contract or subcontract and related documents including, without limitation, bids, proposals, amendments, modifications, and extensions. The contractor or subcontractor must preserve these contracts, subcontracts, and related documents during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

d. *Required disclosures and access* (1) *Required record disclosures and access to workers.* The contractor or subcontractor must make the records required under paragraphs 3.a. through 3.c. of this section, and any other documents that the contracting agency, the State DOT, the FHWA, or the Department of Labor deems necessary to determine compliance with the labor standards provisions of any of the applicable statutes referenced by § 5.1, available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and must permit such representatives to interview workers during working hours on the job.

(2) *Sanctions for non-compliance with records and worker access requirements.* If the contractor or subcontractor fails to submit the required records or to make them available, or refuses to permit worker interviews during working hours on the job, the Federal agency may, after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, that maintains such records or that employs such workers, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available, or to permit worker interviews during working hours on the job, may be grounds for debarment action pursuant to § 5.12. In addition, any contractor or other person that fails to submit the required records or make those records available to WHD within the time WHD requests that the records be produced will be precluded from introducing as evidence in an administrative proceeding under 29 CFR part 6 any of the required records that were not provided or made available to WHD. WHD will take into consideration a reasonable request from the contractor or person for an extension of the time for submission of records. WHD will determine the reasonableness of the request and may consider, among other things, the location of the records and the volume of production.

(3) *Required information disclosures.* Contractors and subcontractors must maintain the full Social Security number and last known address, telephone number, and email address of each covered worker, and must provide them upon request to the contracting agency, the State DOT, the FHWA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or other compliance action.

4. Apprentices and equal employment opportunity (29 CFR 5.5)

a. *Apprentices* (1) *Rate of pay.* Apprentices will be permitted to work at less than the predetermined rate for the work they perform when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship (OA), or with a State Apprenticeship Agency recognized by the OA. A person who is not individually registered in the program, but who has been certified by the OA or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice, will be permitted to work at less than the predetermined rate for the work they perform in the first 90 days of probationary employment as an apprentice in such a program. In the event the OA or a State Apprenticeship Agency recognized by the OA withdraws approval of an apprenticeship program, the contractor will no longer be permitted to use apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) *Fringe benefits.* Apprentices must be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringe benefits must be paid in accordance with that determination.

(3) *Apprenticeship ratio.* The allowable ratio of apprentices to journeyworkers on the job site in any craft classification must not be greater than the ratio permitted to the contractor as to the entire work force under the registered program or the ratio applicable to the locality of the project pursuant to paragraph 4.a.(4) of this section. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in paragraph 4.a.(1) of this section, must be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under this section must be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(4) *Reciprocity of ratios and wage rates.* Where a contractor is performing construction on a project in a locality other than the locality in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyworker's hourly rate) applicable within the locality in which the construction is being performed must be observed. If there is no applicable ratio or wage rate for the locality of the project, the ratio and wage rate specified in the contractor's registered program must be observed.

b. *Equal employment opportunity.* The use of apprentices and journeyworkers under this part must be in conformity with

the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

c. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. 23 CFR 230.111(e)(2). The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeyworkers shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract as provided in 29 CFR 5.5.

6. Subcontracts. The contractor or subcontractor must insert FHWA-1273 in any subcontracts, along with the applicable wage determination(s) and such other clauses or contract modifications as the contracting agency may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses and wage determination(s) in any lower tier subcontracts. The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this section. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and may be subject to debarment, as appropriate. 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract as provided in 29 CFR 5.5.

9. Disputes concerning labor standards. As provided in 29 CFR 5.5, disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility. a. By entering into this contract, the contractor certifies that neither it nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of 40 U.S.C. 3144(b) or § 5.12(a).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of 40 U.S.C. 3144(b) or § 5.12(a).

c. The penalty for making false statements is prescribed in the U.S. Code, Title 18 Crimes and Criminal Procedure, 18 U.S.C. 1001.

11. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the DBA, Related Acts, this part, or 29 CFR part 1 or 3;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under the DBA, Related Acts, this part, or 29 CFR part 1 or 3;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under the DBA, Related Acts, this part, or 29 CFR part 1 or 3; or

d. Informing any other person about their rights under the DBA, Related Acts, this part, or 29 CFR part 1 or 3.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

Pursuant to 29 CFR 5.5(b), the following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchpersons and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek. 29 CFR 5.5.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph 1. of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages and interest from the date of the underpayment. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or

mechanic, including watchpersons and guards, employed in violation of the clause set forth in paragraph 1. of this section, in the sum currently provided in 29 CFR 5.5(b)(2)* for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph 1. of this section.

* $31 as of January 15, 2023 (See 88 FR 88 FR 2210) as may be adjusted annually by the Department of Labor, pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990.

3. Withholding for unpaid wages and liquidated damages

a. *Withholding process.* The FHWA or the contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for any unpaid wages; monetary relief, including interest; and liquidated damages required by the clauses set forth in this section on this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract subject to the Contract Work Hours and Safety Standards Act that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to the Contract Work Hours and Safety Standards Act and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with Section IV paragraph 2.a. or paragraph 3.a. of this section, or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its reprocurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901–3907.

4. Subcontracts. The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs 1. through 5. of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1. through 5. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

5. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in this part;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or this part;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or this part; or

d. Informing any other person about their rights under CWHSSA or this part.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System pursuant to 23 CFR 635.116.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term “perform work with its own organization” in paragraph 1 of Section VI refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions: (based on longstanding interpretation)

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
(2) the prime contractor remains responsible for the quality of the work of the leased employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract. 23 CFR 635.102.

2. Pursuant to 23 CFR 635.116(a), the contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. Pursuant to 23 CFR 635.116(c), the contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract. (based on long-standing interpretation of 23 CFR 635.116).

5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR Part 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract. 23 CFR 635.108.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR Part 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704). 29 CFR 1926.10.

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR Part 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 11, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT (42 U.S.C. 7606; 2 CFR 200.88; EO 11738)

This provision is applicable to all Federal-aid construction contracts in excess of $150,000 and to all related subcontracts. 48 CFR 2.101; 2 CFR 200.327.

By submission of this bid/proposal or the execution of this contract or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, subcontractor, supplier, or vendor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal Highway Administration and the Regional Office of the Environmental Protection Agency. 2 CFR Part 200, Appendix II.

The contractor agrees to include or cause to be included the requirements of this Section in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements. 2 CFR 200.327.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200. 2 CFR 180.220 and 1200.220.

1. **Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction. 2 CFR 180.320.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default. 2 CFR 180.325.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances. 2 CFR 180.345 and 180.350.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900-180.1020, and 1200. “First Tier Covered Transactions” refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction. 2 CFR 180.330.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold. 2 CFR 180.220 and 180.300.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. 2 CFR 180.300; 180.320, and 180.325. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. 2 CFR 180.335. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (https://www.sam.gov/). 2 CFR 180.300, 180.320, and 180.325.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default. 2 CFR 180.325.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.335;.

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property, 2 CFR 180.800;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification, 2 CFR 180.700 and 180.800; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default. 2 CFR 180.335(d).

(5) Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(6) Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability (USDOT Order 4200.6 implementing appropriations act requirements).

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal. 2 CFR 180.335 and 180.340.

* * * * *

3. **Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders, and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200). 2 CFR 180.220 and 1200.220.

a. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances. 2 CFR 180.365.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900 – 180.1020, and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated. 2 CFR 1200.220 and 1200.332.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold. 2 CFR 180.220 and 1200.220.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (https://www.sam.gov/), which is compiled by the General Services Administration. 2 CFR 180.300, 180.320, 180.330, and 180.335.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily

excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment. 2 CFR 180.325.

* * * * *

4. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

a. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(1) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.355;

(2) is a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(3) is a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability. (USDOT Order 4200.6 implementing appropriations act requirements)

b. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000. 49 CFR Part 20, App. A.

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

XII. USE OF UNITED STATES-FLAG VESSELS:

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, or any other covered transaction. 46 CFR Part 381.

This requirement applies to material or equipment that is acquired for a specific Federal-aid highway project. 46 CFR 381.7. It is not applicable to goods or materials that come into inventories independent of an FHWA funded-contract.

When oceanic shipments (or shipments across the Great Lakes) are necessary for materials or equipment acquired for a specific Federal-aid construction project, the bidder, proposer, contractor, subcontractor, or vendor agrees:

1. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels. 46 CFR 381.7.

2. To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, ‘on-board’ commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b)(1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Office of Cargo and Commercial Sealift (MAR-620), Maritime Administration, Washington, DC 20590. (MARAD requires copies of the ocean carrier's (master) bills of lading, certified onboard, dated, with rates and charges. These bills of lading may contain business sensitive information and therefore may be submitted directly to MARAD by the Ocean Transportation Intermediary on behalf of the contractor). 46 CFR 381.7.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS (23 CFR 633, Subpart B, Appendix B)
This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

PART 5
GENERAL SPECIAL PROVISIONS

Division 1	General Requirements
Division 2	Earthwork
Division 4	Bases
Division 5	Surface Treatments and Pavements
Division 6	Structures
Division 7	Drainage Structures, Storm Sewers, Sanitary Sewer, etc.
Division 8	Miscellaneous Construction
Division 9	Materials

INTRO.OptionB.RTF
INTRODUCTION TO THE SPECIAL PROVISIONS

(January 4, 2024 APWA GSP, Option B)

The work on this project shall be accomplished in accordance with the *Standard Specifications for Road, Bridge and Municipal Construction*, 2025 edition, as issued by the Washington State Department of Transportation (WSDOT) and the American Public Works Association (APWA), Washington State Chapter (hereafter "Standard Specifications"). The Standard Specifications, as modified or supplemented by these Special Provisions, all of which are made a part of the Contract Documents, shall govern all of the Work.

These Special Provisions are made up of both General Special Provisions (GSPs) from various sources, which may have project-specific fill-ins; and project-specific Special Provisions. Each Provision either supplements, modifies, or replaces the comparable Standard Specification, or is a new Provision. The deletion, amendment, alteration, or addition to any subsection or portion of the Standard Specifications is meant to pertain only to that particular portion of the section, and in no way should it be interpreted that the balance of the section does not apply.

The GSPs are labeled under the headers of each GSP, with the effective date of the GSP and its source. For example:

(March 8, 2013 APWA GSP)
(April 1, 2013 (for WSDOT GSPs, only use date)
(May 1, 2013 COSV GSP) Agency Special Provision

Project specific special provisions are labeled without a date as such:
(******)

Also incorporated into the Contract Documents by reference are:

- *Manual on Uniform Traffic Control Devices for Streets and Highways*, currently adopted edition, with Washington State modifications, if any
- *Standard Plans for Road, Bridge and Municipal Construction*, WSDOT Manual M21-01, current edition
- City of Spokane Valley Standard Plans

Contractor shall obtain copies of these publications, at Contractor's own expense.

DIVISION1.GR1
DIVISION 1
GENERAL REQUIREMENTS

DESWORK.GR1
DESCRIPTION OF WORK
(March 13, 1995)
This Contract provides for the improvement of *** the SR 27 (Pines Road) and SR 290 (Trent Avenue) intersection located in the City of Spokane Valley. This work is related to grade separating BNSF Railway and Pines Road including roadway excavation and embankment, construction of retaining walls, bike paths, drainage facilities, realigning the Pines and Trent intersection, a roundabout, paving with HMA, illumination, erosion control, seeding, cement concrete curb, shared-use path, sidewalk, pavement markings, permanent signing, traffic control, trailhead restroom *** and other work, all in accordance with the attached Contract Plans, these Contract Provisions, and the Standard Specifications.

1-01 DEFINITIONS AND TERMS

1-01.3.RTF
1-01.3 Definitions
(January 19, 2022 APWA GSP)

Delete the heading **Completion Dates** and the three paragraphs that follow it, and replace them with the following:

Dates

Bid Opening Date
The date on which the Contracting Agency publicly opens and reads the Bids.

Award Date
The date of the formal decision of the Contracting Agency to accept the lowest responsible and responsive Bidder for the Work.

Contract Execution Date
The date the Contracting Agency officially binds the Agency to the Contract.

Notice to Proceed Date
The date stated in the Notice to Proceed on which the Contract time begins.

Substantial Completion Date
The day the Engineer determines the Contracting Agency has full and unrestricted use and benefit of the facilities, both from the operational and safety standpoint, any remaining traffic disruptions will be rare and brief, and only minor incidental work, replacement of temporary substitute facilities, plant establishment periods, or correction or repair remains for the Physical Completion of the total Contract.

Physical Completion Date
The day all of the Work is physically completed on the project. All documentation required by the Contract and required by law does not necessarily need to be furnished by the Contractor by this date.

Completion Date
The day all the Work specified in the Contract is completed and all the obligations of the Contractor under the contract are fulfilled by the Contractor. All documentation required by the Contract and required by law must be furnished by the Contractor before establishment of this date.

Final Acceptance Date
The date on which the Contracting Agency accepts the Work as complete.

Supplement this Section with the following:

All references in the Standard Specifications or WSDOT General Special Provisions, to the terms "Department of Transportation", "Washington State Transportation Commission", "Commission", "Secretary of Transportation", "Secretary", "Headquarters", and "State Treasurer" shall be revised to read "Contracting Agency".

All references to the terms "State" or "state" shall be revised to read "Contracting Agency" unless the reference is to an administrative agency of the State of Washington, a State statute or regulation, or the context reasonably indicates otherwise.

All references to "State Materials Laboratory" shall be revised to read "Contracting Agency designated location".

All references to "final contract voucher certification" shall be interpreted to mean the Contracting Agency form(s) by which final payment is authorized, and final completion and acceptance granted.

Additive
A supplemental unit of work or group of bid items, identified separately in the Bid Proposal, which may, at the discretion of the Contracting Agency, be awarded in addition to the base bid.

Alternate
One of two or more units of work or groups of bid items, identified separately in the Bid Proposal, from which the Contracting Agency may make a choice between different methods or material of construction for performing the same work.

Business Day
A business day is any day from Monday through Friday except holidays as listed in Section 1-08.5.

Contract Bond
The definition in the Standard Specifications for "Contract Bond" applies to whatever bond form(s) are required by the Contract Documents, which may be a combination of a Payment Bond and a Performance Bond.

Contract Documents
See definition for "Contract".

Contract Time
The period of time established by the terms and conditions of the Contract within which the Work must be physically completed.

Notice of Award
The written notice from the Contracting Agency to the successful Bidder signifying the Contracting Agency's acceptance of the Bid Proposal.

Notice to Proceed
The written notice from the Contracting Agency or Engineer to the Contractor authorizing and directing the Contractor to proceed with the Work and establishing the date on which the Contract time begins.

Traffic
Both vehicular and non-vehicular traffic, such as pedestrians, bicyclists, wheelchairs, and equestrian traffic.

1-02.1.RTF

1-02 BID PROCEDURES AND CONDITIONS

1-02.1 Prequalification of Bidders

Delete this section and replace it with the following:

1-02.1 Qualifications of Bidder

(January 24, 2011 APWA GSP)

Before award of a public works contract, a bidder must meet at least the minimum qualifications of RCW 39.04.350(1) to be considered a responsible bidder and qualified to be awarded a public works project.

1-02.2.RTF

1-02.2 Plans and Specifications

(June 27, 2011 APWA GSP)

Delete this section and replace it with the following:

Information as to where Bid Documents can be obtained or reviewed can be found in the Call for Bids (Advertisement for Bids) for the work.

After award of the contract, plans and specifications will be issued to the Contractor at no cost as detailed below:

To Prime Contractor	No. of Sets	Basis of Distribution
Reduced plans (11" x 17")	6	Furnished automatically upon award.
Contract Provisions	6	Furnished automatically upon award.
Large plans (e.g., 22" x 34")	**0**	Furnished at the Contractor's expense.

Additional plans and Contract Provisions may be obtained by the Contractor from the source stated in the Call for Bids, at the Contractor's own expense.

1-02.4 Examination of Plans, Specifications, and Site of Work

1-02.4(1).OptionB.RTF

1-02.4(1) General

(December 30, 2022 APWA GSP Option A)

The first sentence of the ninth paragraph, beginning with "Any prospective Bidder desiring…", is revised to read:

> Prospective Bidders desiring an explanation or interpretation of the Bid Documents, shall request the explanation or interpretation in writing soon enough to allow a written reply to reach all prospective Bidders before the submission of their Bids.

1-02.5.RTF

1-02.5 Proposal Forms

(November 25, 2024 APWA GSP)

Delete this section and replace it with the following:

The Proposal Form will identify the project and its location and describe the work. It will also list estimated quantities, units of measurement, the items of work, and the materials to be furnished at the unit bid prices. The bidder shall complete spaces on the proposal form that call for, but are not limited to, unit prices; extensions; summations; the total bid amount; signatures; date; and, where applicable, retail sales taxes and acknowledgment of addenda; the bidder's name, address, telephone number, and signature; the bidder's DBE commitment, if applicable; a State of Washington Contractor's Registration Number; and a Business License Number, if applicable. Bids shall be in legible figures (not words) written in ink or typed and expressed in U.S. dollars. The required certifications are included as part of the Proposal Form.

The Contracting Agency reserves the right to arrange the proposal forms with alternates and additives, if such be to the advantage of the Contracting Agency. The bidder shall bid on all alternates and additives set forth in the Proposal Form unless otherwise specified.

1-02.6 Preparation of Proposal

(April 22, 2025 APWA GSP, Option A)

The first sentence of the second paragraph is revised to read as follows:

All prices shall be in legible figures (not words) written in ink or typed, and expressed in U.S. dollars.

Supplement the second paragraph with the following:

4. If a minimum bid amount has been established for any item, the unit or lump sum price must equal or exceed the minimum amount stated.

Delete the last two paragraphs, and replace them with the following:

The Bidder shall submit with their Bid a completed Contractor Certification Wage Law Compliance form, provided by the Contracting Agency. Failure to return this certification as part of the Bid Proposal package will make this Bid Nonresponsive and ineligible for Award. A Contractor Certification of Wage Law Compliance form is included in the Proposal Forms.

The Bidder shall make no stipulation on the Bid Form, nor qualify the bid in any manner.

A bid by a corporation shall be executed in the corporate name, by the president or a vice president (or other corporate officer accompanied by evidence of authority to sign).

A bid by a partnership shall be executed in the partnership name and signed by a partner. A copy of the partnership agreement shall be submitted with the Bid Form if any DBE requirements are to be satisfied through such an agreement.

A bid by a joint venture shall be executed in the joint venture name and signed by a member of the joint venture. A copy of the joint venture agreement shall be submitted with the Bid Form if any DBE requirements are to be satisfied through such an agreement.

The Bidder shall submit the following supplemental documents with the Bid in accordance with 1-02.9:

1) Disadvantaged Business Enterprise Utilization Certification (WSDOT Form 272-056)

2) DBE Written Confirmation Form (WSDOT Form 422-031) - For each and every DBE firm listed on the Bidder's completed Disadvantaged Business Enterprise Utilization Certification, the Bidder shall submit written confirmation from that DBE firm that the DBE is in agreement with the DBE participation commitment that the Bidder has made in the Bidder's completed Disadvantaged Business Enterprise Utilization Certification.

3) Good Faith Effort Documentation - Bidder must submit good faith effort documentation with the Disadvantaged Business Enterprise Utilization Certification ONLY In the Event the bidder's efforts to solicit sufficient DBE participation have been unsuccessful.

4) DBE Item Breakdown (WSDOT Form 272-054) The Bidder shall submit a DBE Item Breakdown form defining the scope of work to be performed by each DBE listed on the DBE Utilization Certification.

Directions for delivery of the Disadvantaged Business Enterprise, Written Confirmation Documents, and Disadvantaged Business Enterprise Good Faith Effort documentation are included in Sections 1-02.9 and 1-02.10.

Section 1-02.6 is supplemented with the following:

1-02.6.OPT7.GR1
(September 3, 2024)

Bidder Questionnaire

The Bidder shall submit with their Bid a completed Bidder Questionnaire form (WSDOT Form #272-022). This shall be filled out for each firm who submitted a bid or quote in attempt to participate in the project whether they were successful or not and include the following information:

1. Firm name;

2. Firm address including ZIP code;

3. Firm's status as a DBE or non-DBE;

4. Race and gender information for the firm's majority owner;

5. NAICS code applicable to each scope of work the firm sought to perform in its bid;

6. Age of the firm; and

7. The annual gross receipts of the firm. The Bidder may obtain this information by asking each firm to indicate into what gross receipts bracket they fit (less than $1 million; $1-3 million; $3-6 million; $6-10 million; etc.) rather than requesting an exact figure from the firm.

Failure to return this completed form as part of the Bid Proposal package will cause this Bid to be considered irregular in accordance with Section 1-02.13. A copy of this form is included in the Proposal Forms.

1-02.6.OptionC.RTF
Subcontractor's List

(November 25, 2024 APWA GSP 1-02.6, Option C)
The fourth paragraph of Section 1-02.6 is revised to read:

The Bidder shall submit with the Bid the completed Subcontractor List included in the Contracting Agency Proposal Package. If a Subcontractor List Form is not included in the package, use DOT Form 271-015LP. The Form shall contain the following:

1. Subcontractors who will perform the work of structural steel installation, rebar installation, heating, ventilation, air conditioning, and plumbing as described in RCW 18.106 and electrical as described in RCW 19.28,
2. The Work those subcontractors will perform on the Contract as described in RCW 39.30.060; and
3. No more than one subcontractor for each category of work identified, except, when subcontractors vary with Bid alternates, in which case the Bidder shall identify which subcontractor will be used for which alternate.

1-02.6(1).OptionC.RTF
1-02.6(1) Recycled Materials Proposal
(January 4, 2016 APWA GSP)

Add the following new section:

The Bidder shall submit with the Bid, its proposal for incorporating recycled materials into the project, using the form provided in the Contract Provisions.

(******)

Recycled material shall not be used on railroad property unless contractor receives approval from railroad.

1-02.7.RTF
1-02.7 Bid Deposit
(March 8, 2013 APWA GSP)

Supplement this section with the following:

Bid bonds shall contain the following:

1. Contracting Agency-assigned number for the project;
2. Name of the project;
3. The Contracting Agency named as obligee;
4. The amount of the bid bond stated either as a dollar figure or as a percentage which represents five percent of the maximum bid amount that could be awarded;
5. Signature of the bidder's officer empowered to sign official statements. The signature of the person authorized to submit the bid should agree with the signature on the bond, and the title of the person must accompany the said signature;
6. The signature of the surety's officer empowered to sign the bond and the power of attorney.

If so stated in the Contract Provisions, bidder must use the bond form included in the Contract Provisions.

If so stated in the Contract Provisions, cash will not be accepted for a bid deposit.

1-02.9.OptionC.RTF

1-02.9 Delivery of Proposal

(April 22, 2025 APWA GSP, Option A)

Delete this section and replace it with the following:

GENERAL

Each Proposal shall be submitted in a sealed envelope, with the Project Name and Project Number as stated in the Call for Bids clearly marked on the outside of the envelope, or as otherwise required in the Bid Documents, to ensure proper handling and delivery.

To be considered responsive on a FHWA-funded project, the Bidder may be required to submit the following items, as required by Section 1-02.6:

- DBE Utilization Certification
- DBE Written Confirmation Document (from each DBE firm listed on the Bidder's completed DBE Utilization Certification
- Good Faith Effort (GFE) Documentation (if applicable)
- DBE Bid Item Breakdown

Proposals that are received as required will be publicly opened and read as specified in Section 1-02.12. The Contracting Agency will not open or consider any Bid Proposal that is received after the time specified in the Call for Bids for receipt of Bid Proposals or received in a location other than that specified in the Call for Bids. The Contracting Agency will not open or consider any "Supplemental Information" (Written Confirmations Documents, or GFE Documentation) that is received after the time specified, or received in a location other than that specified in the Call for Bids.

If an emergency or unanticipated event interrupts normal work processes of the Contracting Agency so that Proposals cannot be received at the office designated for receipt of bids as specified in Section 1-02.12 the time specified for receipt of the Proposal will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which the normal work processes of the Contracting Agency resume.

Supplemental bid information submitted after the Proposal submittal but within 48 hours of the time specified for receipt of Proposals, shall be submitted in a sealed envelope labeled the same as for the Proposal, with "Supplemental Information" added.

DBE DOCUMENT SUBMITTAL REQUIREMENTS

DBE Utilization Certification (WSDOT Form 272-056)

The DBE Utilization Certification shall be received at the same location and no later than the time required for delivery of the Proposal. The Contracting Agency will not open or consider any Proposal when the DBE Utilization Certification is received after the time specified for receipt of Proposals or received in a location other than that specified for receipt of Proposals. The DBE Utilization Certification may be submitted in the same envelope as the Bid deposit.

DBE Written Confirmation Document (WSDOT Form 422-031) and/or GFE Documentation, (if applicable)

The DBE Written Confirmation Documents and/or GFE Documentation are not required to be submitted with the Proposal. The DBE Written Confirmation Document(s) and/or GFE Documentation (if applicable) shall be received either with the Bid Proposal or as a Supplement to the Bid. Written Confirmation and/or GFE Documentation shall be received no later than 48 hours (not including Saturdays, Sundays and Holidays) after the time for delivery of the Proposal. To be considered responsive, Bidders shall submit a Written Confirmation Document from each DBE firm listed on the Bidder's completed DBE Utilization Certification and/or the GFE Documentation as required by Section 1-02.6.

DBE Bid Item Breakdown Form (WSDOT Form 272-054)

The DBE Bid Item Breakdown shall be received either with the Bid Proposal or as a Supplement to the Bid. The documents shall be received no later than 48 hours (not including Saturdays, Sundays and Holidays) after the time for delivery of the Proposal. To be considered responsive, Bidders shall submit a completed DBE Bid Item Breakdown, however, the Contractor may correct minor errors to the DBE Bid Item Breakdown for a period up to five calendar days after bid opening (not including Saturdays, Sundays and Holidays). DBE Bid Item Breakdowns that are still incorrect after the correction period will be determined to be non-responsive.

The DBE Bid Item Breakdown will not be included as part of the executed Contract.

1-02.10.RTF

1-02.10 Withdrawing, Revising, or Supplementing Proposal

(July 23, 2015 APWA GSP)

Delete this section, and replace it with the following:

After submitting a physical Bid Proposal to the Contracting Agency, the Bidder may withdraw, revise, or supplement it if:

1. The Bidder submits a written request signed by an authorized person and physically delivers it to the place designated for receipt of Bid Proposals, and
2. The Contracting Agency receives the request before the time set for receipt of Bid Proposals, and
3. The revised or supplemented Bid Proposal (if any) is received by the Contracting Agency before the time set for receipt of Bid Proposals.

If the Bidder's request to withdraw, revise, or supplement its Bid Proposal is received before the time set for receipt of Bid Proposals, the Contracting Agency will return the unopened Proposal package to the Bidder. The Bidder must then submit the revised or supplemented package in its entirety. If the Bidder does not submit a revised or supplemented package, then its bid shall be considered withdrawn.

Late revised or supplemented Bid Proposals or late withdrawal requests will be date recorded by the Contracting Agency and returned unopened. Mailed, emailed, or faxed requests to withdraw, revise, or supplement a Bid Proposal are not acceptable.

1-02.12 Public Opening of Proposals

(2024 COSV GSP)

Section 1-02.12 is deleted and replaced with the following:

Sealed bids are to be received at the Spokane Valley City Hall, 10210 E Sprague Ave, Spokane Valley, WA 99206, prior to the time and date specified in the Advertisement For Bids.

Bids shall be publicly opened and read immediately thereafter.

1-02.14.OptionA.RTF

1-02.14 Disqualification of Bidders

(May 17, 2018 APWA GSP, Option A)

Delete this section and replace it with the following:

A Bidder will be deemed not responsible if the Bidder does not meet the mandatory bidder responsibility criteria in RCW 39.04.350(1), as amended.

The Contracting Agency will verify that the Bidder meets the mandatory bidder responsibility criteria in RCW 39.04.350(1). To assess bidder responsibility, the Contracting Agency reserves the right to request documentation as needed from the Bidder and third parties concerning the Bidder's compliance with the mandatory bidder responsibility criteria.

If the Contracting Agency determines the Bidder does not meet the mandatory bidder responsibility criteria in RCW 39.04.350(1) and is therefore not a responsible Bidder, the Contracting Agency shall notify the Bidder in writing, with the reasons for its determination. If the Bidder disagrees with this determination, it may appeal the determination within two (2) business days of the Contracting Agency's determination by presenting its appeal and any additional information to the Contracting Agency. The Contracting Agency will consider the appeal and any additional information before issuing its final determination. If the final determination affirms that the Bidder is not responsible, the Contracting Agency will not execute a contract with any other Bidder until at least two business days after the Bidder determined to be not responsible has received the Contracting Agency's final determination.

1-03 AWARD AND EXECUTION OF CONTRACT

1-03.1.RTF

1-03.1 Consideration of Bids

(December 30, 2022 APWA GSP)

Revise the first paragraph to read:

> After opening and reading proposals, the Contracting Agency will check them for correctness of extensions of the prices per unit and the total price. If a discrepancy exists between the price per unit and the extended amount of any bid item, the price per unit will control. If a minimum bid amount has been established for any item and the bidder's unit or lump sum price is less than the minimum specified amount, the Contracting Agency will unilaterally revise the unit or lump sum price, to the minimum specified amount and recalculate the extension. The total of extensions, corrected where necessary, including sales taxes where applicable and such additives and/or alternates as selected by the Contracting Agency, will be used by the Contracting Agency for award purposes and to fix the Awarded Contract Price amount and the amount of the contract bond.

1-03.1(1).RTF

1-03.1(1) Identical Bid Totals

(December 30, 2022 APWA GSP)

Revise this section to read:

> After opening Bids, if two or more lowest responsive Bid totals are exactly equal, then the tie-breaker will be the Bidder with an equal lowest bid, that proposed to use the highest percentage of recycled materials in the Project, per the form submitted with the Bid Proposal. If those percentages are also exactly equal, then the tie-breaker will be determined by drawing as follows: Two or more slips of paper will be marked as follows: one marked "Winner" and the other(s) marked "unsuccessful". The slips will be folded to make the marking unseen. The slips will be placed inside a box. One authorized representative of each Bidder shall draw a slip from the box. Bidders shall draw in alphabetic order by the name of the firm as registered with the Washington State Department of Licensing. The slips shall be unfolded and the firm with the slip marked "Winner" will be determined to be the successful Bidder and eligible for Award of the Contract. Only those Bidders who submitted a Bid total that is exactly equal to the lowest responsive Bid, and with a proposed recycled materials percentage that is exactly equal to the highest proposed recycled materials amount, are eligible to draw.

1-03.3.OptionB.RTF

1-03.3 Execution of Contract

(July 8, 2024 APWA GSP Option A)

Revise this section to read:

> Within 3 calendar days of Award date (not including Saturdays, Sundays and Holidays), the successful Bidder shall provide the information necessary to execute the Contract to the Contracting Agency. The Bidder shall send the contact information, including the full name, email address, and phone number, for the authorized signer and bonding agent to the Contracting Agency.
>
> Copies of the Contract Provisions, including the unsigned Form of Contract, will be available for signature by the successful bidder on the first business day following award. The number of copies to be executed by the Contractor will be determined by the Contracting Agency.
>
> Within 5 calendar days after the award date, the successful bidder shall return the signed Contracting Agency-prepared contract, an insurance certification as required by Section 1-07.18, a satisfactory

bond as required by law and Section 1-03.4, the Transfer of Coverage form for the Construction Stormwater General Permit with sections I, III, and VIII completed when provided. Before execution of the contract by the Contracting Agency, the successful bidder shall provide any pre-award information the Contracting Agency may require under Section 1-02.15.

Until the Contracting Agency executes a contract, no proposal shall bind the Contracting Agency nor shall any work begin within the project limits or within Contracting Agency-furnished sites. The Contractor shall bear all risks for any work begun outside such areas and for any materials ordered before the contract is executed by the Contracting Agency.

If the bidder experiences circumstances beyond their control that prevents return of the contract documents within the calendar days after the award date stated above, the Contracting Agency may grant up to a maximum of 7 additional calendar days for return of the documents, provided the Contracting Agency deems the circumstances warrant it.

(July 8, 2024 APWA GSP Option B)

This section is supplemented with the following:

No later than 5 calendar days after the Award date (not including Saturdays, Sundays and Holidays), the successful Bidder shall provide DBE Trucking Credit Form(s) (WSDOT Form 272-058) when trucking appears on the DBE Utilization Certificate (WSDOT Form 272-056). The DBE Trucking Credit Form shall document how the DBE Trucking firm will be able to perform the scope of work subcontracted to them.

Trucking forms will be returned for correction. Trucking Credit Form(s) will not be included as part of the executed Contract.

DBE Trucking Credit Forms shall be submitted via email: at eamsden@spokanevalleywa.gov and jschreindl@spokanevalleywa.gov

1-03.4.RTF

1-03.4 Contract Bond

(July 23, 2015 APWA GSP)

Delete the first paragraph and replace it with the following:

The successful bidder shall provide executed payment and performance bond(s) for the full contract amount. The bond may be a combined payment and performance bond; or be separate payment and performance bonds. In the case of separate payment and performance bonds, each shall be for the full contract amount. The bond(s) shall:

1. Be on Contracting Agency-furnished form(s);
2. Be signed by an approved surety (or sureties) that:
   a. Is registered with the Washington State Insurance Commissioner, and
   b. Appears on the current Authorized Insurance List in the State of Washington published by the Office of the Insurance Commissioner,

3. Guarantee that the Contractor will perform and comply with all obligations, duties, and conditions under the Contract, including but not limited to the duty and obligation to indemnify, defend, and protect the Contracting Agency against all losses and claims related directly or indirectly from any failure:
    a. Of the Contractor (or any of the employees, subcontractors, or lower tier subcontractors of the Contractor) to faithfully perform and comply with all contract obligations, conditions, and duties, or
    b. Of the Contractor (or the subcontractors or lower tier subcontractors of the Contractor) to pay all laborers, mechanics, subcontractors, lower tier subcontractors, material person, or any other person who provides supplies or provisions for carrying out the work;
4. Be conditioned upon the payment of taxes, increases, and penalties incurred on the project under titles 50, 51, and 82 RCW; and
5. Be accompanied by a power of attorney for the Surety's officer empowered to sign the bond; and
6. Be signed by an officer of the Contractor empowered to sign official statements (sole proprietor or partner). If the Contractor is a corporation, the bond(s) must be signed by the president or vice president, unless accompanied by written proof of the authority of the individual signing the bond(s) to bind the corporation (i.e., corporate resolution, power of attorney, or a letter to such effect signed by the president or vice president).

1-03.7.RTF

1-03.7 Judicial Review

(December 30, 2022 APWA GSP)

Revise this section to read:

All decisions made by the Contracting Agency regarding the Award and execution of the Contract or Bid rejection shall be conclusive subject to the scope of judicial review permitted under Washington Law. Such review, if any, shall be timely filed in the Superior Court of the county where the Contracting Agency headquarters is located, provided that where an action is asserted against a county, RCW 36.01.050 shall control venue and jurisdiction.

1-04 SCOPE OF THE WORK

1-04.2 Coordination of Contract Documents, Plans, Special Provisions, Specifications, and Addenda

(December 30, 2022 APWA GSP)

Revise the second paragraph to read:

Any inconsistency in the parts of the contract shall be resolved by following this order of precedence (e.g., 1 presiding over 2, 2 over 3, 3 over 4, and so forth):

1. Addenda,
2. Proposal Form,
3. Special Provisions,
4. Contract Plans,
5. Standard Specifications,
6. Contracting Agency's Standard Plans or Details (if any), and
7. WSDOT Standard Plans for Road, Bridge, and Municipal Construction.

1-04.4 Changes

(January 19, 2022 APWA GSP)

The first two sentences of the last paragraph of Section 1-04.4 are deleted.

1-04.5.GR1
1-04.5 Procedure and Protest by the Contractor

1-04.5.INST1.GR1

Section 1-04.5 is supplemented with the following:

1-04.5.OPT1.GR1

(January 13, 2021)

Project Partnering

The Engineer and the Contractor's Project Manager (PM) will plan and host a Project Partnering workshop as soon as practical after Contract execution. The objective of this Partnering workshop is to promote open lines of communication and teamwork between the Contracting Agency and Contractor staff for the effective completion of the work, and to the standard of quality that will be a source of pride to both the Contracting Agency and the Contractor. Commitments made by both parties shall be memorialized in a Project Partnering Agreement at the conclusion of the Partnering workshop. The Partnering agreement will not affect the terms of the Contract. It is intended only to establish an environment of cooperation and mutual understanding between the parties.

The planning and execution of the Partnering process is intended to be a collaborative effort between the Engineer and the PM. The length of the partnering workshop should be commensurate with the size and complexity of the project, and familiarity of the parties. For simple projects an expanded pre-construction meeting may suffice. The partnering workshop may be facilitated by the Engineer, the Engineer and PM, or a mutually agreeable Partnering Facilitator (PF). Selection of a PF, dates and location of the workshops, materials needed for the workshop, frequency and location for follow up meetings, and estimated cost associated with this effort should be discussed and agreed to prior to moving forward with the Partnering process.

An initial 1 day (or half day) facilitated Project Partnering workshop is recommended to initiate the partnering agreement. After the initial Partnering workshop, quarterly follow up meetings on projects with over 120 working days shall be scheduled to evaluate how the Partnering process is working, acknowledge successes and opportunities for improvement.

The cost to retain the services of a Partnering Facilitator (if mutually selected as the PF), locate and rent a neutral location to hold the workshop (if held offsite), and any additional materials needed to host the workshop, will be paid by the Contractor. The Partnering Field Guide is available as a resource to the Engineer and PM to assist in the planning of the Partnering session(s) at the following link:

https://wsdot.wa.gov/publications/fulltext/construction/WSDOTProjects-Partnering-FieldGuide.pdf

The Contracting Agency will reimburse invoice cost for the Contractor provided Partnering Facilitator, facilities and materials at a rate of 50% under the Bid item, "Project Partnering".

Payment

"Project Partnering", by calculation.

"Project Partnering" will be calculated and paid for as described above.

1-05 CONTROL OF WORK

Control of Work

Authority of the Engineer

Requests for Information (RFI)

The fourth paragraph of Section 1-05.1(2) is revised to read:

(November 4, 2024)

The Contractor may submit a RFI for one of the following reasons:

1. The Contractor believes there is information missing from the Contract Documents (Missing Information).

2. The Contractor believes a clarification of one or more of the Contract requirements is necessary (Clarification).

3. The Contractor needs to substitute a material that provides an equal or better level of performance as the one specified in the Contract (RFC - Material Substitution). Requests shall indicate the location(s), quantity, and shall describe how the material provides an equal or better level of performance as the material originally specified.

4. The Contractor requests a change to the Contract requirements for a reason other than one listed in items 1-3 of this Section (RFC - Other). To be considered, the request must not meet the requirements of a Value Engineering Change Proposal. To be considered, the request shall qualify as a Minor Change in accordance with Section 1-04.4(1) and shall describe how the change is beneficial to the project.

1-05.4 Conformity With and Deviations From Plans and Stakes

(******)

Section 1-05.4 is supplemented with the following:

Contractor Surveying

The Contractor shall furnish all survey necessary for the construction of this project.

The Contractor shall be responsible for setting, maintaining and resetting (as may be required) all horizontal and vertical construction staking necessary for the installation, construction or reconstruction of the utilities, subgrade, base course, top course, drainage, surfacing, walls, curbing, sidewalk, pedestrian pathways, driveway approaches, paving, channelization, illumination, signals, fencing, guardrails, barriers, signing and all other Work defined in the Contract documents. Except for the survey control data to be furnished by the Contracting

Agency, any additional calculations, surveying, and measuring required for setting and maintaining the necessary lines and grades shall be the Contractor's responsibility.

The meaning of words and terms used in this provision shall be as listed in "Definitions of Surveying and Associated Terms" current edition, published by the American Congress on Surveying and Mapping and the American Society of Civil Engineers.

Contractor-supplied survey work shall include but not be limited to the following:

1. Verify the primary horizontal and vertical control furnished by the Contracting Agency and expand into secondary control by adding stakes and hubs as well as additional survey control needed for the project. Vertical secondary control shall be established using spirit levels, not a GPS system. Provide level notes and horizontal control notes and other descriptions of secondary control to the Contracting Agency.

2. Establish intermediate benchmarks as needed to provide vertical control throughout the project. A copy of cut sheets with reference to actual benchmark elevations shall be provided to the Engineer at the same time it is supplied to the Contractor, but not less than 2 working days prior to construction.

3. Establish the centerlines of all alignments by placing hubs, stakes, or marks on centerline or on offsets to centerline at points along the alignments at a maximum spacing of fifty feet and at all grade breaks and curve points (PCs, PTs, and PIs).

4. Establish clearing limits. Stake at all angle points and intermediate points at a maximum spacing of fifty feet between stakes.

5. Establish grading limits, placing slope stakes at centerline increments not more than 50 feet apart. Establish offset reference to all slope stakes. If Global Positioning Satellite (GPS) Machine Controls are used to provide grade control, then slope stakes may be omitted at the discretion of the Contractor.

6. Setting and maintaining 2-inch by 2-inch offset hubs with a tack at 50-foot intervals for all water, storm, culvert and sanitary sewer lines and grades. The offset hubs shall be set perpendicular to the storm and sanitary sewer line, with two hubs set at meter boxes, hydrants, manholes, cleanouts, catch basins, drywells, and storm drain outfalls. The stationing, offset distance, cut to invert, cut to rim, and hub elevation shall be marked on the guard stake.

7. Establish the horizontal and vertical location of all drainage features such as ditches and curb inlets, providing offset stakes at a horizontal interval not greater than 25 feet.

8. Establish roadbed, and surfacing elevations by placing stakes/hubs at the top of subgrade and at the top of each course of surfacing. Subgrade and surfacing stakes/hubs shall be set at horizontal intervals not greater than 50 feet in tangent sections, 25 feet in curve sections with a radius less than 300 feet, and at 10-foot intervals in intersection radii with a radius less than 10 feet. Transverse staking shall be placed at all locations where the roadway slope changes and at additional points such that the transverse spacing of stakes/hubs is not more than 12 feet. If GPS Machine Controls are used to provide grade control, then roadbed and surfacing stakes may be omitted at the discretion of the Contractor.

9. Establish top back of Curb elevations by setting stakes/hubs at horizontal intervals not greater than 25 feet in tangent sections; all point of curvature (PC) stations; point of tangency (PT) stations; at curb radii, at quarter points in all curb curve sections and at center of pedestrian ramp stations showing gutter line grade.

10. Establish sidewalk control points at grade breaks and panel angle points by setting stakes / hubs marked with cuts and fills to finish grade required to construct pedestrian ramp plans after demolition and subgrade is excavated.

11. Block or modular block walls will be staked with a single offset line to the bottom face of wall, placing stakes at beginning and end of walls, horizontal angle points/curves and at approximately 50-foot intervals.

12. Swales shall be staked at top of slope and bottom of slope for all spot elevations shown on the plans and other intermediate points the Contractor may need to facilitate construction.

13. Illumination poles, signal poles, junction boxes, and sign posts will be staked with two offset reference points.

14. For concrete pavement the surveyor shall establish roadbed and surfacing elevations by placing stakes/hubs at the top of subgrade and at the top of each course of surfacing. The subgrade stakes shall be set at all PCC panel corner locations. Top of crushed surfacing stakes shall be set at every PCC panel corner location. During final grading operations, the Contractor will schedule the staking crew to be on site to set missing hubs and correct grades while the Engineer verifies the hubs. The Contractor shall not set forms until the engineer has verified the hubs. The staking crew will record the concrete panel locations. After concrete placement and prior to sawcutting the staking crew shall mark with white paint all angle points in the PCC panel joint layout.

15. According to WAC 332-120 “Survey Monuments – Removal or Destruction”, a surveyor licensed in the State of Washington has been hired by the City to search the proposed construction area for known or existing survey monuments. All found monuments are shown on the plans. If, during construction, the Contractor discovers existing survey monuments, not shown on the plans, he shall immediately notify the Engineer. If a property corner is shown on the plans and it is not shown to be removed and the Contractor’s operations moves or destroys it, the Contractor shall re-establish it or replace it at his own expense. Re-establishment or replacement of property corners shall be done only by a Washington State licensed Land Surveyor and be in accordance with WAC 332-120.

The Contractor shall provide the Contracting Agency copies of any, survey notes, references for monuments, calculations and staking data when requested by the Engineer.

Copies of the primary survey control data provided by the contracting agency are available for the bidder's inspection at the office of the Project Engineer.

Detailed survey records shall be maintained, including a description of the work performed on each shift, the methods utilized, and the control points used. The record shall be adequate to

allow the survey to be reproduced. A copy of each day's record shall be provided to the Engineer within three working days after the end of the shift.

The meaning of words and terms used in this provision shall be as listed in "Definitions of Surveying and Associated Terms" current edition, published by the American Congress on Surveying and Mapping and the American Society of Civil Engineers.

To facilitate the establishment of these lines and elevations, the Contracting Agency will provide the Contractor with primary survey control information consisting of descriptions of a minimum of two primary control points used for the horizontal and vertical control. Primary control points will be described by reference to the project alignment and the coordinate system and elevation datum utilized by the project.

The Contractor shall ensure a surveying accuracy within the following tolerances:

	Vertical	Horizontal
Slope stakes	±0.2 feet	±0.10 feet
Subgrade grade stakes/hubs set 0.04 feet below grade	0.01 feet (high) 0.04 feet (low)	±0.1 feet (parallel to alignment) ±0.1 feet (normal to alignment)
Stationing on roadway	N/A	±0.1 feet
Alignment on roadway	N/A	±0.04 feet
Top of Crushed Surfacing or Paving	±0.01feet	±0.04 feet (parallel to alignment) ±0.04 feet (normal to alignment)
Top of Curb	±0.02 feet	±0.04 feet (parallel to alignment) ±0.04 feet (normal to alignment)
Concrete Panel Joints	±0.02 feet	±0.04 feet (parallel to alignment) ±0.04 feet (normal to alignment)

The Contracting Agency may spot-check the Contractor's surveying. These spot-checks will not change the requirements for normal checking by the Contractor.

When staking roadway alignment and stationing, the Contractor shall perform independent checks from different secondary control to ensure that the points staked are within the specified survey accuracy tolerances.

The Contracting Agency will provide Microstation drawing files showing the horizontal and vertical alignments. The Contractor shall calculate coordinates for the alignment and develop their own staking sheets for the project. The Contractor shall provide a copy of the staking sheets to the Engineer prior to beginning excavation activities.

Stakes shall be provided to construct this project in accordance with the Plans. Additional stakes may be needed that are not described in the Plans; these additional stakes will be required but not limited to intersections and drainage. The Contractor shall thoroughly familiarize themselves with the plans to identify all additional staking not described in items 1-15 above.

Once the offset hubs have been set, the Contractor shall keep them accessible for use by the Agency. If hubs cannot be accessed due to spoil piles or equipment, the Contractor shall place additional hubs in a location acceptable to the Engineer.

Contractor Surveying – ADA Features

ADA Feature Staking Requirements

The Contractor shall be responsible for setting, maintaining, and resetting all alignment stakes, and grades necessary for the construction of the ADA features. Calculations, surveying, and measuring required for setting and maintaining the necessary lines and grades shall be the Contractor's responsibility. The Contractor shall build the ADA features within the specifications in the Standard Plans and contract documents.

ADA Feature Contract Compliance

The Contractor shall be responsible for completing measurements to verify all ADA features comply with the Contract in the presence of the Engineer.

ADA Feature Measurements

The Contractor shall be responsible for providing the latitude and longitude of each ADA feature as indicated on the ADA Post Inspection Form(s) (WSDOT Form 224-020LP).

The completed ADA Post Inspection Form(s) (WSDOT Form 224-020LP) shall be submitted as a Type 3 Working Drawing and transmitted to the Engineer within 30 calendar days of completing the ADA feature. After acceptance, the Contracting Agency will retain the final form(s) for their records.

Contractor Surveying – Rail Offset lines

Rail Offset Lines Staking Requirements

The Contractor shall be responsible for visibly setting stakes, maintaining, and resetting all stakes representing a 25-foot offset from the steel rail that is on the outside edge of the railroad tracks. For this project this is the south rail of Main Track 1 and the north rail of Future Main Track 2. Calculations, surveying, and measuring required for setting and maintaining the necessary lines shall be the Contractor's responsibility.

Rail Offset Lines Contract Compliance

The Contractor shall be responsible for completing measurements to verify all Rail Offset Lines comply with the Contract in the presence of the Engineer.

Measurement

There is no specific measurement for the lump sum item "Construction Surveying."

Payment
Payment will be made in accordance with Section 1-04.1 for the following bid items: when included in the proposal:

Construction Surveying	Lump Sum

"Construction Surveying", per lump sum.

The lump sum price for "Construction Surveying" shall be full pay for furnishing all tools, labor, equipment, and materials required to provide surveying services for road, ADA features, stormwater, signal/illumination, sewer and water construction and rail offset lines described by these specifications.

In the instance where an ADA feature does not meet accessibility requirements, all work to replace non-compliant work and then to measure, record the as-built measurements, and transmit the electronic forms to the Engineer shall be completed at no additional cost to the Contracting Agency.

1-05.5 Tolerances

(2024 COSV GSP)

Section 1-05.5 is supplemented with the following:

The tolerance limits specified in Section 1-05.4 of the Special Provisions shall also apply to the Work.

1-05.7.RTF

1-05.7 Removal of Defective and Unauthorized Work

Section 1-05.7, including title and subsections, is deleted and replaced with the following:

(November 4, 2024)

Nonconforming Work

The Contracting Agency will not pay for Nonconforming Work.

Nonconforming Work is Work that in any way fails to meet the requirements of the Contract. This includes, but is not limited to:

- Work that does not conform to Contract requirements
- Work that does not meet Contract requirements
- Work done beyond the lines and grades set by the Plans or the Engineer
- Extra Work and materials furnished without the Engineer's written approval
- Defective Work
- Noncompliant Work

- Nonconforming Work
- Out of specification Work
- Rejected Work
- Unacceptable Work
- Unauthorized Work
- Unsuitable Work
- Unsatisfactory Work

Identification of Nonconforming Work

The Contractor is responsible for quality control and shall identify all Nonconforming Work. The Contracting Agency may also identify Nonconforming Work during inspection of Work that has been completed, is at an identified hold point, or has been identified by the Contractor as ready for inspection. However, failure by the Contracting Agency to identify Nonconforming Work shall not relieve the Contractor from their responsibility for the quality of the Work, nor shall it constitute acceptance or approval of the Nonconforming Work.

Reporting of Nonconforming Work

Unless otherwise specified, the Contractor shall immediately report all Nonconforming Work to the Engineer along with any relevant information about how the Nonconforming Work shall be remediated. The Contractor shall be responsible and bear all costs for remediating Nonconforming Work.

If the Contract requires the use of the WSDOT Unifier system for Document Control in accordance with Section 1-04.2, reporting and remediation submittals shall follow the "Nonconformance Report" business process in Unifier.

Remediation of Nonconforming Work

Remediation to correct Nonconforming Work shall be completed as soon as possible. However, unless otherwise specified, the Contractor shall not proceed with implementing the remedy until the Engineer has accepted the Contractor's proposed remedy. Any remedial work done prior to the Engineer's acceptance shall be at the Contractor's sole risk and will be subject to further rejection or remediation. The Engineer has the right to reject all or part of the Nonconforming Work, and the Engineer's decision is final and not subject to protest.

Remediation shall be classified in one of the following categories:

1. Rework to Contract requirements
2. Remove and replace
3. Repair to acceptable standards

When disputes occur over which category a remedy belongs, the Engineer's decision will be final and binding.

Rework to Contract Requirements

To be considered rework, the design and construction standards of the proposed completed Work, in the sole judgment of the Engineer, shall meet the design and construction standards applicable to the project.

Reporting of Nonconforming Work that is reworked is not required if all of the following conditions are met:

1. The remediation shall be completed in the same shift as the Nonconforming Work was identified.

2. It shall be remedied without damaging other Work.

3. It shall be remedied without putting the public at risk.

4. The Contractor's proposed remedy is in accordance with the Contract requirements.

5. The Engineer does not request the Nonconforming Work be reported.

Examples of Nonconforming Work that may not need reported if reworked include:

- Missing dobies prior to concrete pouring

- Rebar spacing and missing rebar

- Out of plumb luminaire or sign pole/post

For all other rework the Contractor shall submit all relevant information to the Engineer. The Contractor shall include Type 2 Working Drawings. The Type 2 Working Drawings shall explain how the nonconforming work will be reworked including repairs that will achieve the Contract requirements. For preapproved repair procedures, Type 1 Working drawings shall be included in lieu of the Type 2 Working Drawings.

Remove and Replace

To be considered as remove and replace, the Nonconforming Work shall be removed and replaced and the design and construction standards of the proposed completed Work, in the sole judgment of the Engineer, shall meet the design and construction standards applicable to the project.

Reporting of Nonconforming Work that is removed and replaced is not required if all of the following conditions are met:

1. The remedy shall be completed in the same shift the Nonconforming Work was identified.

2. It shall be removed and replaced without damaging other Work.

3. Both the removal and the replacement meet all Contract requirements.

4. The Engineer does not request the Nonconforming Work be reported.

Examples of Nonconforming Work that may not need reported if removed and replaced include:

- Decompacting and recompacting a lift of embankment to meet compaction requirements

- Removing and replacing an installed and dented luminaire pole with a new one.

For all other remove and replace Work, the Contractor shall submit all relevant information, including Working Drawings of the Type requested by the Engineer.

The Working Drawings shall include how the nonconforming Work will be removed and replaced including protection of other Work if needed. Type 2 Working Drawings shall be required, unless the remediation requires engineering, in which case, Type 2E Working Drawings shall be provided.

Repair to an Acceptable Standard
At the Contractor's written request, the Engineer may approve remediation that includes repairing to an acceptable standard that does not meet the Contract requirements with an appropriate price reduction that may range from no reduction to no payment.

To request to repair Nonconforming work to an acceptable standard, the Contractor shall submit all relevant information. Remedies proposed for this category shall include Type 2E Working Drawings. The Type 2E working drawings shall indicate whether the Work, as repaired, will achieve the same load carrying capacity, and shall assess the effects of the repair on the durability of the Work. Calculations shall be provided to demonstrate that the Work, as repaired, will perform the intended functions for its intended design life.

(October 1, 2005 APWA GSP)

Supplement this section with the following:

If the Contractor fails to remedy defective or unauthorized work within the time specified in a written notice from the Engineer, or fails to perform any part of the work required by the Contract Documents, the Engineer may correct and remedy such work as may be identified in the written notice, with Contracting Agency forces or by such other means as the Contracting Agency may deem necessary.

If the Contractor fails to comply with a written order to remedy what the Engineer determines to be an emergency situation, the Engineer may have the defective and unauthorized work corrected immediately, have the rejected work removed and replaced, or have work the Contractor refuses to perform completed by using Contracting Agency or other forces. An emergency situation is any situation when, in the opinion of the Engineer, a delay in its remedy could be potentially unsafe, or might cause serious risk of loss or damage to the public.

Direct or indirect costs incurred by the Contracting Agency attributable to correcting and remedying defective or unauthorized work, or work the Contractor failed or refused to perform, shall be paid by the Contractor. Payment will be deducted by the Engineer from monies due, or to become due, the Contractor. Such direct and indirect costs shall include in particular, but without limitation, compensation for additional professional services required, and costs for repair and replacement of work of others destroyed or damaged by correction, removal, or replacement of the Contractor's unauthorized work.

No adjustment in contract time or compensation will be allowed because of the delay in the performance of the work attributable to the exercise of the Contracting Agency's rights provided by this Section.

The rights exercised under the provisions of this section shall not diminish the Contracting Agency's right to pursue any other avenue for additional remedy or damages with respect to the Contractor's failure to perform the work as required.

1-05.11.RTF

1-05.11 Final Inspection

Delete this section and replace it with the following:

1-05.11 Final Inspections and Operational Testing

(October 1, 2005 APWA GSP)

1-05.11(1) Substantial Completion Date

When the Contractor considers the work to be substantially complete, the Contractor shall so notify the Engineer and request the Engineer establish the Substantial Completion Date. The Contractor's request shall list the specific items of work that remain to be completed in order to reach physical completion. The Engineer will schedule an inspection of the work with the Contractor to determine the status of completion. The Engineer may also establish the Substantial Completion Date unilaterally.

If, after this inspection, the Engineer concurs with the Contractor that the work is substantially complete and ready for its intended use, the Engineer, by written notice to the Contractor, will set the Substantial Completion Date. If, after this inspection the Engineer does not consider the work substantially complete and ready for its intended use, the Engineer will, by written notice, so notify the Contractor giving the reasons therefor.

Upon receipt of written notice concurring in or denying substantial completion, whichever is applicable, the Contractor shall pursue vigorously, diligently and without unauthorized interruption, the work necessary to reach Substantial and Physical Completion. The Contractor shall provide the Engineer with a revised schedule indicating when the Contractor expects to reach substantial and physical completion of the work.

The above process shall be repeated until the Engineer establishes the Substantial Completion Date and the Contractor considers the work physically complete and ready for final inspection.

1-05.11(2) Final Inspection and Physical Completion Date

When the Contractor considers the work physically complete and ready for final inspection, the Contractor by written notice, shall request the Engineer to schedule a final inspection. The Engineer will set a date for final inspection. The Engineer and the Contractor will then make a final inspection and the Engineer will notify the Contractor in writing of all particulars in which the final inspection reveals the work incomplete or unacceptable. The Contractor shall immediately take such corrective measures as are necessary to remedy the listed deficiencies. Corrective work shall be pursued vigorously, diligently, and without interruption until physical

completion of the listed deficiencies. This process will continue until the Engineer is satisfied the listed deficiencies have been corrected.

If action to correct the listed deficiencies is not initiated within 7 days after receipt of the written notice listing the deficiencies, the Engineer may, upon written notice to the Contractor, take whatever steps are necessary to correct those deficiencies pursuant to Section 1-05.7. The Contractor will not be allowed an extension of contract time because of a delay in the performance of the work attributable to the exercise of the Engineer's right hereunder.

Upon correction of all deficiencies, the Engineer will notify the Contractor and the Contracting Agency, in writing, of the date upon which the work was considered physically complete. That date shall constitute the Physical Completion Date of the contract, but shall not imply acceptance of the work or that all the obligations of the Contractor under the contract have been fulfilled.

1-05.11(3) Operational Testing

It is the intent of the Contracting Agency to have at the Physical Completion Date a complete and operable system. Therefore when the work involves the installation of machinery or other mechanical equipment; street lighting, electrical distribution or signal systems; irrigation systems; buildings; or other similar work it may be desirable for the Engineer to have the Contractor operate and test the work for a period of time after final inspection but prior to the physical completion date. Whenever items of work are listed in the Contract Provisions for operational testing they shall be fully tested under operating conditions for the time period specified to ensure their acceptability prior to the Physical Completion Date. During and following the test period, the Contractor shall correct any items of workmanship, materials, or equipment which prove faulty, or that are not in first class operating condition. Equipment, electrical controls, meters, or other devices and equipment to be tested during this period shall be tested under the observation of the Engineer, so that the Engineer may determine their suitability for the purpose for which they were installed. The Physical Completion Date cannot be established until testing and corrections have been completed to the satisfaction of the Engineer.

The costs for power, gas, labor, material, supplies, and everything else needed to successfully complete operational testing, shall be included in the unit contract prices related to the system being tested, unless specifically set forth otherwise in the proposal.

Operational and test periods, when required by the Engineer, shall not affect a manufacturer's guaranties or warranties furnished under the terms of the contract.

1-05.13.RTF

1-05.13 Superintendents, Labor and Equipment of Contractor

(August 14, 2013 APWA GSP)

Delete the sixth and seventh paragraphs of this section.

1-05.14 Cooperation With Other Contractors

1-05.14.INST1.GR1
Section 1-05.14 is supplemented with the following:

1-05.14.OPT1.FR1
(March 13, 1995)

Other Contracts Or Other Work

It is anticipated that the following work adjacent to or within the limits of this project will be performed by others during the course of this project and will require coordination of the work:

Avista

Providing power services to project facilities.

BNSF:

Removal of existing railroad crossing protection/signals, concrete panels at Pines Road crossing, and bungalow. Work also includes excavation for new alignment of Pines Road, constructing railroad bridges, and relocation of BNSF utilities.

Irvin Water District

Water main installation work from E Pinecroft Way to existing N Pines Road. Extension to trailhead pressure testing and connection to existing Irvin water main.

Centennial Trail Contractor (State Parks):

The City of Spokane Valley will be working on improvements of the Centennial Trail. This includes construction of the connection of the trail from the trailhead facility from approximately 605+90 to the existing Centennial Trail. See sheets TP1 through TP4. This work is shown on the plans to be completed by "others" and requires a shoreline mitigation permit. The contractor may not disturb any vegetation within the proposed shoreline mitigation area.

1-05.15.RTF

1-05.15 Method of Serving Notices

(January 4, 2024 APWA GSP)

Revise the second paragraph to read:

All correspondence from the Contractor shall be served and directed to the Engineer. All correspondence from the Contractor constituting any notification, notice of protest, notice of dispute, or other correspondence constituting notification required to be furnished under the Contract, must be written in paper format, hand delivered or sent via certified mail delivery service with return receipt requested to the Engineer's office. Electronic copies such as e-mails or electronically delivered copies of correspondence will not constitute such notice and will not comply with the requirements of the Contract.

1-05.16.RTF

1-05.16 Water and Power

(October 1, 2005 APWA GSP)

Add the following new section:

The Contractor shall make necessary arrangements, and shall bear the costs for power and water necessary for the performance of the work, unless the contract includes power and water as a pay item.

1-05.18 Record Drawings

Add the following new section:

1-05.18 Record Drawings

(2024 COSV GSP)

The Contractor shall maintain one set of full size electronic (pdf) plans for Record Drawings, updated with clear and accurate red-lined field revisions on a daily basis, and within 2 business days after receipt of information that a change in Work has occurred. The Contractor shall not conceal any work until the required information is recorded.

This Record Drawing set shall be used for this purpose alone, shall be kept separate from other Plan sheets, and shall be clearly marked as Record Drawings.

The preparation and upkeep of the Record Drawings is to be the assigned responsibility of a single, experienced, and qualified individual. The quality of the Record Drawings, in terms of accuracy, clarity, and completeness, is to be adequate to allow the Contracting Agency to modify the computer-aided drafting (CAD) Contract Drawings to produce a complete set of Record Drawings for the Contracting Agency without further investigative effort by the Contracting Agency.

The Record Drawing markups shall document all changes in the Work, both concealed and visible. Items that must be shown on the markups include but are not limited to:

- Actual dimensions, arrangement, and materials used when different than shown in the Plans.
- Changes made by Change Order or Field Order.
- Changes made by the Contractor.
- Accurate locations of storm sewer, sanitary sewer, water mains and other water appurtenances, structures, conduits, light standards, vaults, width of roadways, sidewalks, landscaping areas, building footprints, channelization and pavement markings, etc. Include pipe invert elevations, top of castings (manholes, inlets, etc.).

If the Contract calls for the Contracting Agency to do all surveying and staking, the Contracting Agency will provide the elevations at the tolerances the Contracting Agency requires for the Record Drawings.

When the Contract calls for the Contractor to do the surveying/staking, the applicable tolerance limits include, but are not limited to the following:

	Vertical	Horizontal
As-built sanitary & storm invert and grate elevations	± 0.01 foot	± 0.01 foot
As-built monumentation	± 0.001 foot	± 0.001 foot
As-built waterlines, inverts, valves, hydrants	± 0.10 foot	± 0.10 foot
As-built ponds/swales/water features	± 0.10 foot	± 0.10 foot
As-built buildings (fin. Floor elev.)	± 0.01 foot	± 0.10 foot
As-built gas lines, power, TV, Tel, Com	± 0.10 foot	± 0.10 foot
As-built signs, signals, etc.	N/A	± 0.10 foot

Making Entries on the Record Drawings:

- For all markings on the Record Drawings, shall conform to the following color code:
  - Additions - Red
  - Deletions - Green
  - Comments - Blue
  - Dimensions - Magenta
- Provide the applicable reference for all entries, such as the change order number, the request for information (RFI) number, or the approved shop drawing number.
- Date all entries.
- Clearly identify all items in the entry with notes similar to those in the Contract Drawings (such as pipe symbols, centerline elevations, materials, pipe joint abbreviations, etc.).

The Contractor shall certify on the Record Drawings that said drawings are an accurate depiction of built conditions, and in conformance with the requirements detailed above. The Contractor shall submit final Record Drawings to the Contracting Agency. Contracting Agency acceptance of the Record Drawings is one of the requirements for achieving Physical Completion.

Measurement

There is no specific measurement for the lump sum item "Record Drawings."

Payment

Payment will be made in accordance with Section 1-04.1 for the following bid items: when included in the proposal:

Record Drawings	Lump Sum

Payment for this item will be made on a prorated monthly basis for work completed in accordance with this section up to 75% of the lump sum bid. The final 25% of the lump sum item will be paid upon submittal and approval of the completed Record Drawings set prepared in conformance with these Special Provisions.

1-06 CONTROL OF MATERIAL

Section 1-06 is supplemented with the following:

(******)

Patented/Proprietary Items

The Contracting Agency has specified patented/proprietary items, some of which contain foreign steel and/or iron. The contractor shall be made aware that the foreign steel associated with the patented/proprietary items will apply toward the minor amounts of foreign steel and iron allowed herein.

(March 20, 2025)

General Requirements

In accordance with Buy America requirements contained in 23 CFR 635.410 and 2 CFR 184, the following materials must be produced in the United States:

1. All Iron or Steel Products used in the project. This means all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.

2. All Manufactured Products used in the project. This means the manufactured product was manufactured in the United States.

3. All Construction Materials used in the project. This means that all manufacturing processes for the construction material occurred in the United States.

An article, material, or supply will be classified in one of four categories: 1) Iron or Steel Product, 2) Manufactured Product, 3) Construction Material, or 4) Excluded Material. Only a single category will apply to an item except as follows:

1. With respect to precast concrete products that are classified as Manufactured Products, the components of precast concrete products that consist wholly or predominantly of iron, steel, or combination of both shall meet the requirements for and be tracked as an Iron or Steel Product. The item shall also meet the requirements for a Manufactured Product, and the cost of the iron or steel components shall be included in determining if the Manufactured Product was produced in the United States.

2. With respect to intelligent transportation systems and other electronic hardware systems that are classified as Manufactured Products, the cabinets or other enclosures of such systems that consist wholly or predominantly of iron, steel, or a combination of both, shall meet the requirements for and be tracked as an Iron or Steel Products. The item shall also meet the requirements for a Manufactured Product and the cost of the iron or steel components shall be included in determining if the manufactured product was produced in the United States.

Some contract items are composed of multiple parts that may fall into different categories. Individual components will be categorized as a Construction Material, a Manufactured Product, an Iron or Steel Product, or an excluded material based on their composition when they arrive at the staging area or work site.

Definitions

1. Construction Material: Defined as any article, material, or supply brought to the construction site for incorporation into the final product. Construction materials include an article, material, or supply that is or consists primarily of:

   a. Non-ferrous metals including all manufacturing processes, from initial smelting or melting through final shaping, coating, and assembly;

   b. Plastic and polymer-based products including all manufacturing processes, from initial combination of constituent plastic or polymer-based inputs, or, where applicable, constituent composite materials, until the item is in its final form);

   c. Glass including all manufacturing processes, from initial batching and melting of raw materials through annealing, cooling, and cutting);

   d. Fiber optic cable (includes drop cable) including all manufacturing processes, from initial ribboning (if applicable), through buffering, fiber stranding and jacketing, (fiber optic cable also includes the standards for glass and optical fiber);

e. Optical fiber including all manufacturing processes, from the initial preform fabrication stage, though the completion of the draw;

f. Lumber including all manufacturing processes, from initial debarking through treatment and planing;

g. Drywall including all manufacturing processes, from initial blending of mined or synthetic gypsum plaster and additives through cutting and drying of sandwiched panels; or

h. Engineered wood including all manufacturing processes from the initial combination of constituent materials until the wood product is in its final form.

If a Construction Material is not manufactured in the United States it shall be considered a Foreign Construction Material.

2. Excluded Material: A material where Buy America requirements do not apply. This includes the following:

a. Materials excluded by Section 70917(c) of the Buy America, Build America Act with respect to aggregates this includes cement and cementitious materials, aggregates such as stone, sand, or gravel or aggregate binding agents or additives. These materials shall be classified as excluded materials based on the composition when brought to the work site. It also includes combinations of these excluded materials when mixtures of Excluded Materials are delivered to the work site without final form for incorporation into the project (i.e. wet concrete and HMA). If they are formed prior to delivery, they are a Manufactured Product and not an Excluded Material.

b. Temporary materials that are not being permanently incorporated into the project.

c. Raw or minimal processed materials where the article, material, or supply does not fall into any of the categories, as it is not a Manufactured Product, an Iron or Steel Product, or a Construction Material and when these materials are delivered to the work site without final form for incorporation into the product (i.e. seed mix and topsoil). If they are formed prior to delivery, they are a Manufactured Product and not an Excluded Material.

3. Iron or Steel Product: An article, material, or supply that consist of wholly or predominantly of iron or steel or a combination of both. To be considered predominantly of iron or steel or a combination of both means that the cost of the iron and steel content exceeds 50 percent of the total cost of all its components. The cost of iron and steel is based on a good faith estimate of the cost of the iron or steel components.

4. Manufactured Product: A Manufactured Product includes any item produced as a result of the manufacturing process. Items that should be treated as a manufactured product (rather than a construction material) are: 1) items that consist of two or more of the listed construction materials that have been combined together through a manufacturing process, and 2) items that include at least one of the listed construction materials as defined above, combined with a material that is not listed through a manufacturing process.

If a product is not an Iron or Steel Product, a Construction Material, or an Excluded Material, it is a Manufactured Product.

5. United States: To further define the coverage, a domestic product is a manufactured steel construction material that was produced in one of the 50 states, the District of Columbia, Puerto Rico, or in the territories and possessions of the United States.

Iron or Steel Product Requirements

Iron or Steel Products that are permanently incorporated into the project shall consist of American-made materials only. Buy America requirements do not apply to temporary steel or iron items, e.g., temporary sheet piling, temporary bridges, steel scaffolding and falsework.

Minor amounts of foreign steel and iron may be utilized in this project provided the cost of the foreign material used does not exceed one-tenth of one percent of the total contract cost or $2,500.00, whichever is greater.

American-made material is defined as material having all manufacturing processes occurring domestically.

If domestically produced steel billets or iron ingots are exported outside of the United States, as defined above, for any manufacturing process then the resulting product does not conform to the Buy America requirements. Additionally, products manufactured domestically from foreign source steel billets or iron ingots do not conform to the Buy America requirements because the initial melting and mixing of alloys to create the material occurred in a foreign country.

Manufacturing begins with the initial melting and mixing and continues through the coating stage. Any process which modifies the chemical content, the physical size or shape, or the final finish is considered a manufacturing process. The processes include rolling, extruding, machining, bending, grinding, drilling, welding, and coating. The action of applying a coating to steel or iron is deemed a manufacturing process. Coating includes epoxy coating, galvanizing, aluminizing, painting, and any other coating that protects or enhances the value of steel or iron. Any process from the original reduction from ore to the finished product constitutes a manufacturing process for iron.

Due to a nationwide waiver, Buy America requirements do not apply to raw materials (iron ore and alloys), scrap (recycled steel or iron), and pig iron ore processed, pelletized, and reduced iron ore.

The following are considered to be steel manufacturing processes:

1. Production of steel by any of the following processes:
    a. Open hearth furnace.
    b. Basic oxygen.
    c. Electric furnace.
    d. Direct reduction.
2. Rolling, heat treating, and any other similar processing.
3. Fabrication of the products:
    a. Spinning wire into cable or strand.

b. Corrugating and rolling into culverts.

c. Shop fabrication.

A certification of materials origin will be required for all iron or steel products prior to such items being incorporated into the permanent work. The Contractor will not receive payment until the certification is received by the Engineer. The certification shall be on WSDOT Form 350-109 provided by the Engineer, or such other form the Contractor chooses, provided it contains the same information as WSDOT Form 350-109.

Manufactured Products

Manufactured Products are eligible for the Waiver for De Minimis Costs, as detailed further below, however, the following requirements pertain to the Iron or Steel components of certain manufactured products, and require the submittal of WSDOT Form 350-109:

1. When a precast concrete product is classified as a Manufactured Product, the components that are an Iron or Steel Product shall follow the "Iron and Steel Requirements" of this Specification.

2. When an electronic hardware system such as an intelligent transportation system is classified as a Manufactured Product, the cabinets and the other enclosures of such systems that are an Iron or Steel Product shall follow the "Iron and Steel Requirements" of this Specification.

Waiver for De Minimis Costs

A Contractor provided certification of materials origin for Construction Materials and Manufactured Products will be required before each progress estimate or payment. The Contractor will not receive payment until the certification is received by the Engineer. The Contractor shall certify that all Construction Materials and Manufactured Products installed during the current progress estimate period meet the Buy America requirements. The certification shall be on the form provided by the Engineer, or such other form the Contractor chooses, provided it contains the same information.

Minor amounts of Foreign Construction Materials and Foreign Manufactured Products may be utilized in this project, provided that the total cost of the Foreign Construction Materials and Foreign Manufactured Products does not exceed $1,000,000 and does not exceed 5 percent of the total applicable material costs calculated as follows:

$$\frac{Total\ cost\ of\ Foreign\ Construction\ Materials\ and\ Manufactured\ Products}{Total\ applicable\ material\ costs} < 0.05$$

The total applicable material costs shall be the sum of the costs all Construction Materials, all Iron or Steel Products, and all Manufactured Products. Total applicable material costs does not include Excluded Materials.

1-06.1.GR1

1-06.1 Approval of Materials Prior to Use

1-06.1.INST1.GR1
Section 1-06.1 is supplemented with the following:

1-06.1.OPT1.GR1
(April 3, 2017)
For each proposed material that is required to be submitted for approval using either the QPL or RAM process the Contractor will be allowed to submit for approval two material sources or manufacturers per material type at no cost. Additional material sources or manufacturers may be submitted for approval and will be processed at a cost of $125.00 per material source or manufacturer submitted by QPL submittal and $400.00 per material submitted by RAM. All costs for processing additional material sources or manufacturers will be deducted from monies due or that may come due to the Contractor. Subject to a request by the Contractor and a determination by the Engineer the costs for processing may be waived.

1-06.2 Acceptance of Materials

1-06.2(1) Samples and Tests for Acceptance
(*2024* COSV GSP)

Section 1-06.2(1) is supplement with the following:

The Contractor shall submit a written request to the Contracting Agency two working days in advance, when a material is ready for acceptance tests. The request shall include the type of materials and the locations ready to be tested.

The Contracting Agency will provide testing services through a certified testing firm and laboratory. The Contracting Agency will schedule two material testing service site visit per day. The definition of a site visit is the time necessary to complete all available acceptance testing per the contractor's request. The Contracting Agency's onsite representative, will determine when all active acceptance testing is complete and release the material tester for the day.

The Contractor may request more than two site visits per working day, each additional site visit a deduction for the material tester's mobilization will be made at $200.00 per site visit. The deduction(s) will be subtracted from any money due or coming due to the Contractor.

Failure to have the areas and materials ready for acceptance testing as requested may result in the release of the material tester for the day.

1-06.2(2)B.RTF
1-06.2(2) Statistical Evaluation of Materials for Acceptance

1-06.2(2)B Financial Incentive
(January 4, 2024 AWPA GSP)

Replace the first sentence of this Section with the following:

The maximum Composite Pay Factor shall be 1.00.

1-06.6 Recycled Materials
(2024 COSV GSP)

Section 1-06.6 is deleted and replaced with the following:

The Contractor shall make their best effort to utilize recycled materials in the construction of the project. Approval of such material use shall be as detailed elsewhere in the Standard Specifications.

1-07.1.RTF

1-07 LEGAL RELATIONS AND RESPONSIBILITIES TO THE PUBLIC

1-07.1 Laws to be Observed

(October 1, 2005 APWA GSP)

Supplement this section with the following:

In cases of conflict between different safety regulations, the more stringent regulation shall apply.

The Washington State Department of Labor and Industries shall be the sole and paramount administrative agency responsible for the administration of the provisions of the Washington Industrial Safety and Health Act of 1973 (WISHA).

The Contractor shall maintain at the project site office, or other well-known place at the project site, all articles necessary for providing first aid to the injured. The Contractor shall establish, publish, and make known to all employees, procedures for ensuring immediate removal to a hospital, or doctor's care, persons, including employees, who may have been injured on the project site. Employees should not be permitted to work on the project site before the Contractor has established and made known procedures for removal of injured persons to a hospital or a doctor's care.

The Contractor shall have sole responsibility for the safety, efficiency, and adequacy of the Contractor's plant, appliances, and methods, and for any damage or injury resulting from their failure, or improper maintenance, use, or operation. The Contractor shall be solely and completely responsible for the conditions of the project site, including safety for all persons and property in the performance of the work. This requirement shall apply continuously, and not be limited to normal working hours. The required or implied duty of the Engineer to conduct construction review of the Contractor's performance does not, and shall not, be intended to include review and adequacy of the Contractor's safety measures in, on, or near the project site.

1-07.1(2).GR1

1-07.1(2) Health and Safety

(April 3, 2006)

1-07.1(2).INST1.GR1

Section 1-07.1(2) is supplemented with the following:

1-07.1(2).OPT1.FR1

Confined Space

Confined spaces are known to exist at the following locations:

- New and existing catch basins, manholes and drywells

The Contractor shall be fully responsible for the safety and health of all on-site workers and compliant with Washington Administrative Code (WAC 296-809).

The Contractor shall prepare and implement a confined space program for each of the confined spaces identified above. The Contractors Confined Space program shall be sent to the Contracting Agency at least 7 days prior to the Contractor beginning work in or adjacent to the confined space. No work shall be performed in or adjacent to the confined space until the plan is submitted to the Engineer as required. The Contractor shall communicate with the Project Engineer to ensure a coordinated effort for providing and maintaining a safe worksite for both the Contracting Agency's and Contractor's workers when working in or near a confined space.

All costs to prepare and implement the confined space program shall be included in the bid prices for the various items associated with the confined space work.

1-07.2.RTF

1-07.2 State Taxes

Delete this section, including its sub-sections, in its entirety and replace it with the following:

1-07.2 State Sales Tax
(June 27, 2011 APWA GSP)

The Washington State Department of Revenue has issued special rules on the State sales tax. Sections 1-07.2(1) through 1-07.2(3) are meant to clarify those rules. The Contractor should contact the Washington State Department of Revenue for answers to questions in this area. The Contracting Agency will not adjust its payment if the Contractor bases a bid on a misunderstood tax liability.

The Contractor shall include all Contractor-paid taxes in the unit bid prices or other contract amounts. In some cases, however, state retail sales tax will not be included. Section 1-07.2(2) describes this exception.

The Contracting Agency will pay the retained percentage (or release the Contract Bond if a FHWA-funded Project) only if the Contractor has obtained from the Washington State Department of Revenue a certificate showing that all contract-related taxes have been paid (RCW 60.28.051). The Contracting Agency may deduct from its payments to the Contractor any amount the Contractor may owe the Washington State Department of Revenue, whether the amount owed relates to this contract or not. Any amount so deducted will be paid into the proper State fund.

1-07.2(1) State Sales Tax — Rule 171

WAC 458-20-171, and its related rules, apply to building, repairing, or improving streets, roads, etc., which are owned by a municipal corporation, or political subdivision of the state, or by the United States, and which are used primarily for foot or vehicular traffic. This includes storm or combined sewer systems within and included as a part of the street or road drainage system and power lines when such are part of the roadway lighting system. For work performed in such cases, the Contractor shall include Washington State Retail Sales Taxes in the various unit bid item prices, or other contract amounts, including those that the Contractor pays on the purchase of the materials, equipment, or supplies used or consumed in doing the work.

1-07.2(2) State Sales Tax — Rule 170

WAC 458-20-170, and its related rules, apply to the constructing and repairing of new or existing buildings, or other structures, upon real property. This includes, but is not limited to, the construction of streets, roads, highways, etc., owned by the state of Washington; water mains and their appurtenances; sanitary sewers and sewage disposal systems unless such sewers and disposal systems are within, and a part of, a street or road drainage system; telephone, telegraph, electrical power distribution lines, or other conduits or lines in or above streets or roads, unless such power lines become a part of a street or road lighting system; and installing or attaching of any article of tangible personal property in or to real property, whether or not such personal property becomes a part of the realty by virtue of installation.

For work performed in such cases, the Contractor shall collect from the Contracting Agency, retail sales tax on the full contract price. The Contracting Agency will automatically add this sales tax to each payment to the Contractor. For this reason, the Contractor shall not include the retail sales tax in the unit bid item prices, or in any other contract amount subject to Rule 170, with the following exception.

Exception: The Contracting Agency will not add in sales tax for a payment the Contractor or a subcontractor makes on the purchase or rental of tools, machinery, equipment, or consumable supplies not integrated into the project. Such sales taxes shall be included in the unit bid item prices or in any other contract amount.

1-07.2(3) Services

The Contractor shall not collect retail sales tax from the Contracting Agency on any contract wholly for professional or other services (as defined in Washington State Department of Revenue Rules 138 and 244).

1-07.6 Permits and Licenses

Section 1-07.6 is supplemented with the following:

(January 2, 2018)

The Contracting Agency has obtained the below-listed permit(s) for this project. A copy of the permit(s) is attached as an appendix for informational purposes. Copies of these permits, including a copy of the Transfer of Coverage form, when applicable, are required to be onsite at all times.

Contact with the permitting agencies, concerning the below-listed permit(s), shall be made through the Engineer with the exception of when the Construction Stormwater General Permit coverage is transferred to the Contractor, direct communication with the Department of Ecology is allowed. The Contractor shall be responsible for obtaining Ecology's approval for any Work requiring additional approvals (e.g. Request for Chemical Treatment Form). The Contractor shall obtain additional permits as necessary. All costs to obtain and comply with additional permits shall be included in the applicable Bid items for the Work involved.

***

Name of Document	Permitting Agency	Permit Reference No.
Construction Stormwater General Permit	Washington Department of Ecology	WAR314614

***

(******)
Construction Stormwater General Permit

The Contracting Agency has obtained a permit for Coverage under the Construction Stormwater NPDES Permit from Washington State Department of Ecology. The day to day operational control of the Site along with the permit will be transferred to the Contractor upon award of the Contract. The Contractor shall comply with all provisions of the permit and complete any required renewals. The Contractor shall also be responsible for submitting monthly discharge reports using Ecology's WQWebDMR System. Payment for submitting monthly discharge reports will be covered under the bid items in Section 8-01.

(******)
The Contractor shall obtain, at no cost to the Contracting Agency, all other required permits and shall provide the Engineer with one copy of each permit.

1-07.8 High Visibility Apparel

1-07.8.INT1.GR1
The third and fourth paragraphs of Section 1-07.8 are revised to read:

1-07.8.OPT1.2026.GR1
(November 4, 2024)
High-visibility garments shall always be the outermost garments worn in a manner to ensure 360 degrees of uninterrupted background and retroreflective material encircling the torso.

High-visibility garments shall be labeled as, and in a condition compliant with the ANSI/ISEA 107-2015 publication entitled "American National Standard for High-Visibility Safety Apparel and Accessories," or equivalent revisions.

1-07.8(1) Traffic Control Personnel

1-07.8(1).INT1.GR1
Section 1-07.8(1) is revised to read:

1-07.8(1).OPT1.2026.GR1
(******)
All personnel performing the Work described in Section 1-10 (including traffic control supervisors, flaggers, and others performing traffic control labor of any kind) shall comply with the following:

1. During daylight hours with clear visibility, workers shall wear a high-visibility ANSI/ISEA 107 Type R Class 2 or 3 garment with background material that are fluorescent orange-red; and a high visibility hardhat that is white, yellow, yellow-green, orange, or red in color; and

2. During hours of darkness (½ hour before sunset to ½ hour after sunrise) or other low-visibility conditions (snow, fog, etc.), workers shall wear a high-visibility ANSI/ISEA 107 Type R Class 2 or 3 garment with background material that are fluorescent orange-red,; a high-visibility lower garment meeting ANSI/ISEA 107 Class E, and a high

visibility hardhat marked with at least 12 square inches of retroreflective material applied to provide 360 degrees of visibility.

1-07.9.GR1

1-07.9 Wages

1-07.9(1).GR1

1-07.9(1) General

1-07.9(1).INST1.GR1

Section 1-07.9(1) is supplemented with the following:

1-07.9(1).OPT.GR1

(January 6, 2025)

The Federal wage rates incorporated in this contract have been established by the Secretary of Labor under United States Department of Labor General Decision No. WA20250001.

The State rates incorporated in this contract are applicable to all construction activities associated with this contract.

1-07.9(5) Required Documents

1-07.9(5)A General

(July 8, 2024, APWA GSP)

This section is revised to read as follows:

All Statements of Intent to Pay Prevailing Wages, Affidavits of Wages Paid and Certified Payrolls, including a signed Statement of Compliance for Federal-aid projects, shall be submitted to the Engineer and to the State L&I online Prevailing Wage Intent & Affidavit (PWIA) system. When apprenticeship is a requirement of the contract, include in PWIA all apprentices.

1-07.11 Requirements for Nondiscrimination

Section 1-07.11 is supplemented with the following:

(May 5, 2025)

Requirement for Affirmative Action to Ensure Equal Employment Opportunity

In accordance with 41 CFR § 60-4.2, the clauses contained in 1-4 below are required to be included in this Contract. Nothing in this contract alters the Contractor's responsibility to comply with all applicable Federal regulations, including but not limited to 41 CFR part 60 as currently existing or later amended.

1. The Contractor's attention is called to the "Equal Opportunity Clause and the Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.

2. The goals and timetables for minority and female participation set by the Office of Federal Contract Compliance Programs, expressed in percentage terms for the Contractor's aggregate work force in each construction craft and in each trade on all construction work in the covered area, are as follows:

Women - Statewide

Timetable	Goal
Until further notice	6.9%

Minorities - by Standard Metropolitan Statistical Area (SMSA)

Spokane, WA:
SMSA Counties:
Spokane, WA 2.8
WA Spokane.
Non-SMSA Counties 3.0
WA Adams; WA Asotin; WA Columbia; WA Ferry; WA Garfield; WA Lincoln, WA Pend Oreille; WA Stevens; WA Whitman.

Richland, WA
SMSA Counties:
Richland Kennewick, WA 5.4
WA Benton; WA Franklin.
Non-SMSA Counties 3.6
WA Walla Walla.

Yakima, WA:
SMSA Counties:
Yakima, WA 9.7
WA Yakima.
Non-SMSA Counties 7.2
WA Chelan; WA Douglas; WA Grant; WA Kittitas; WA Okanogan.

Seattle, WA:
SMSA Counties:
Seattle Everett, WA 7.2
WA King; WA Snohomish.
Tacoma, WA 6.2
WA Pierce.
Non-SMSA Counties 6.1
WA Clallam; WA Grays Harbor; WA Island; WA Jefferson; WA Kitsap; WA Lewis; WA Mason; WA Pacific; WA San Juan; WA Skagit; WA Thurston; WA Whatcom.

Portland, OR:
SMSA Counties:
Portland, OR-WA 4.5
WA Clark.
Non-SMSA Counties 3.8
WA Cowlitz; WA Klickitat; WA Skamania; WA Wahkiakum.

These goals are applicable to each nonexempt Contractor's total on-site construction workforce, regardless of whether or not part of that workforce is performing work on a Federal, or federally assisted project, contract, or subcontract until further notice. Compliance with these goals and timetables is enforced by the Office of Federal Contract compliance Programs.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, in each construction craft and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Office of Federal Contract Compliance Programs (OFCCP) within 10 working days of award of any construction subcontract in excess of $10,000 or more that are Federally funded, at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed. The notification shall be sent to:

   U.S. Department of Labor
   Office of Federal Contract Compliance Programs Pacific Region
   Attn: Regional Director
   San Francisco Federal Building
   90 – 7th Street, Suite 18-300
   San Francisco, CA 94103(415) 625-7800 Phone
   (415) 625-7799 Fax

4. As used in this Notice, and in the contract resulting from this solicitation, the Covered Area is as designated herein.

In accordance with 41 CFR § 60-4.3, the clauses contained in 1-15 below are required to be included in this Contract. Nothing in this Contract alters the Contractor's responsibility to comply with all applicable Federal regulations, including but not limited to 41 CFR part 60 as currently existing or later amended.

<u>Standard Federal Equal Employment Opportunity Construction Contract Specifications</u>

1. As used in these specifications:

   a. "Covered Area" means the geographical area described in the solicitation from which this contract resulted;

   b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;

c. "Employer Identification Number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941;

d. "Minority" includes:

(1) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);

(2) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central American, South American, or other Spanish culture or origin, regardless of race);

(3) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and

(4) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification.)

2. Whenever the Contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of $10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through 7p of this Special Provision. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

    a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

    b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

    c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.

    d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

    e. Develop on-the-job training opportunity and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the U.S. Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.

    f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority

and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with on-site supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's work force.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

l. Conduct, at least annually, an inventory and evaluation of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of

solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through 7p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the Contractor is a member and participant, may be asserted as fulfilling any one or more of the obligations under 7a through 7p of this Special Provision provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensure that the concrete benefits of the program are reflected in the Contractor's minority and female work-force participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrate the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).

10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, sexual orientation, gender identity, or national origin.

11. The Contractor shall not enter into any subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspensions, terminations and cancellations of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of this Special Provision, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the government and to keep records. Records shall at

least include, for each employee, their name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, the Contractors will not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

    Additional assistance for Federal Construction Contractors on contracts administered by Washington State Department of Transportation or by Local Agencies may be found at:

    Washington State Dept. of Transportation
    Office of Equity and Civil Rights
    PO Box 47314
    310 Maple Park Ave. SE
    Olympia WA
    98504-7314
    Ph: 360-705-7090
    Fax: 360-705-6801
    http://www.wsdot.wa.gov/equalopportunity/default.htm

1-07.11 Requirements for Nondiscrimination

(September 3, 2024, APWA GSP Option B)

Section 1-07.11 is supplemented with the following:

Disadvantaged Business Enterprise Participation

General

The Disadvantaged Business Enterprise (DBE) requirements of 49 CFR Part 26 and USDOT's official interpretations (i.e., Questions & Answers) apply to this Contract. Demonstrating compliance with these Specifications is a Condition of Award (COA) of this Contract. Failure to comply with the requirements of this Specification may result in your Bid being found to be irregular in accordance with Section 1-02.13 resulting in rejection or other sanctions as provided by the Contract.

DBE Abbreviations and Definitions

Certified Business Description – The approved business description that supplements the North American Industry Classification System (NAICS) code listed in OMWBE's directory of certified firms.

Certified Business Directory – A database of all Minority, Women, and Disadvantaged Business Enterprises currently certified by Washington State. The on-line Directory is available to Bidders for their use in identifying and soliciting interest from DBE firms. The database is located under the Firm Certification section of the Diversity Management and Compliance System web page at: https://omwbe.diversitycompliance.com.

Commercially Useful Function (CUF) –
A firm performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by performing, managing, and supervising the work involved as defined in 49 CFR 26.55(c)(1). To perform a commercially useful function, the firm must also be responsible, with respect to materials and supplies used on the contract, for ordering, negotiating price, paying for, determining quality and quantity, and installing (where applicable) for the material itself.

The DBE firm does not perform a CUF if its role is limited to that of an extra participant in a transaction, contract, or Project through which the funds are passed to obtain the appearance of DBE participation.

Consultant, DBE – An individual, partnership, firm, or corporation who meet the definition of a DBE which has been retained under a contract to provide technical or professional services.

DBE Commitment – The dollar amount and scope of work the Bidder indicates on each line of their DBE Utilization Certification (DOT Form 272-056) for each DBE firm. These Commitments will be incorporated into the Contract and shall be considered Contract requirements.

DBE Condition of Award (COA) Goal – An assigned numerical amount specified as a percentage of the Contract. At Bid, this is the minimum amount that the Bidder must commit to by submission of the DBE Utilization Certification form and, if necessary, by GFE Documentation.

Disadvantaged Business Enterprise (DBE) – A business that is owned and operated independently from other businesses and is certified by the Washington State Office of Minority and Women's Business Enterprises, as meeting the criteria outlined in 49 CFR 26 regarding DBE certification.

Force Account Work – Work measured and paid in accordance with Section 1-09.6.

Good Faith Efforts (GFE)– Efforts to achieve the DBE COA Goal or other requirements of this Provision which, by their scope, intensity, and appropriateness to the objective, can reasonably be expected to fulfill the program requirement.

Good Faith Efforts (GFE) Documentation - The documentation of the Good Faith Effort. GFE Documentation is only required in the event that the Contractor is unable to fulfill the program requirements and shall follow the guidance of 49 CFR Part 26 Appendix A.

Subcontractor, DBE – An individual, partnership, firm, corporation, or joint venture who meet the definition of a DBE and who is sublet part of the Contract.

Supplier, DBE – A Manufacturer, Regular Dealer, Distributor, or Transaction Facilitator who provides supplies or materials for the Contract. The role a Supplier performs is determined on a contract-by contact basis.

Manufacturer, DBE – A DBE firm that operates or maintains a factory or establishment that produces on the premises the materials, supplies, articles, or equipment required under the Contract. A DBE Manufacturer shall produce finished goods or products from raw or

unfinished material or purchase and substantially alters goods and materials to make them suitable for construction use before reselling them.

Regular Dealer, DBE – A DBE firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials or supplies required for the performance of a Contract are bought, kept in stock, and regularly sold to the public in the usual course of business. To be a Regular Dealer, the DBE firm must be an established regular business that engages in as its principal business and in its own name the purchase and sale of the products in question. A Regular Dealer in such items as steel, cement, gravel, stone, and petroleum products need not own, operate or maintain a place of business if it both owns and operates distribution equipment for the products. Any supplementing of regular dealers' own distribution equipment shall be by long-term formal lease agreements and not on an ad-hoc basis. Brokers, packagers, manufacturers' representatives, or other persons who arrange or expedite transactions shall not be regarded as Regular Dealers within the meaning of this definition.

Distributor, DBE –An established DBE firm that engages in the regular sale or lease of the items specified by the contract. A DBE Distributor assumes responsibility for the items it purchases once they leave the point of origin, making it liable for any loss or damage not covered by the carrier's insurance. The Distributor must demonstrate ownership of the items in question and assure all risk for loss or damage during transportation, evidenced by the terms of the purchase order or bill of lading from a third party, indicating Free on Board (FOB) at the point of origin or similar terms that transfer responsibility of the items in question to the DBE distributors.

Transaction Facilitator, DBE – A DBE firm (packagers, brokers, manufacturer's representatives, etc.) who provides a bona fide service arranging, facilitating, or expediting transactions but does not qualify as a Manufacturer, a Regular Dealer, or a Distributor

DBE COA Goal

The Contracting Agency has established a DBE COA Goal for this Contract in the amount of: *** 6% *** which applies to the final Contract amount.

If the Contractor cannot meet the DBE COA Goal, GFE Documentation is required.

Demonstrating compliance with the DBE COA Goal is a Condition of Award of this Contract.

Procedures Prior to Award

Approval of Regular Dealer and Distributors

DBE firms proposed to be used as either a Regular Dealer or a Distributor must be approved before being listed as a COA/used on a project. The Approved Regular Dealer list published on WSDOT's Office of Equity and Civil Rights (OECR) web site must include the specific project for which approval is being requested. For purposes of the DBE COA Goal participation, the Regular Dealer/Distributor must submit the DBE Regular Dealer/Distributor Affirmation Form (USDOT OMB Control 508v3)a minimum of five calendar days prior to bid opening. The DBE Regular Dealer/Distributor Affirmation Form is located at:
https://www.transportation.gov/mission/civil-rights/dbe-regular-dealer-distributor-affirmation

Requests to be listed as a Regular Dealer/Distributor will only be processed if the requesting firm is a material supplier certified by the Office of Minority and Women's Business Enterprises in a NAICS code that falls within the 42XXXX NAICS Wholesale code section.

Disadvantaged Business Enterprise Utilization

To be eligible for award of the Contract, the Bidder shall properly complete and submit a Disadvantaged Business Enterprise (DBE) Utilization Certification with the Bidder's sealed Bid Proposal, as specified in Section 1-02.9 Delivery of Proposal. The Bidder's DBE Utilization Certification must clearly demonstrate how the Bidder intends to meet the DBE COA Goal. A DBE Utilization Certification (WSDOT Form 272-056) is included in the Proposal package for this purpose as well as instructions on how to properly fill out the form.

The Bidder is advised that the items listed below when listed in the Utilization Certification must have their amounts reduced to the percentages shown and those reduced amounts will be the amount applied towards meeting the DBE COA Goal.

1. Force account at 50% of the total amount to be subcontracted
2. Regular dealer at 60% of the cost of the materials or supplies
3. Distributor at 40% of the cost of the materials or supplies
4. Transaction Facilitator not more than 5% of the goods or services

In the event of arithmetic errors in completing the DBE Utilization Certification, the amount listed to be applied towards the DBE COA Goal for each DBE shall govern and the DBE total amount shall be adjusted accordingly.

Bid Proposals submitted that do not contain a DBE Utilization Certification Form that demonstrates how the Bidder intends to meet the DBE COA Goal will be considered irregular in accordance with Section make the Proposal considered to be irregular in accordance with Section 1-02.13 and will be rejected.

Disadvantaged Business Enterprise Written Confirmation Document(s)

The Bidder shall submit a Disadvantaged Business Enterprise (DBE) Written Confirmation Document (completed and signed by the DBE) for each DBE firm listed in the Bidder's completed DBE Utilization Certification. Failure to do so will result in the associated participation being disallowed, which will cause the Bid to be considered irregular in accordance with Section 1-02.13 and will be rejected.

The Confirmation Documents provide confirmation from the DBEs that they are participating in the Contract as provided in the Bidder's Commitment. The Confirmation Documents must be consistent with the Utilization Certification.

A DBE Written Confirmation Document (WSDOT Form 422-031) is included in the Proposal package for this purpose. The form(s) shall be received as specified in the special provisions for Section 1-02.9 Delivery of Proposal.

It is prohibited for the Bidder to require a DBE to submit a Written Confirmation Document with any part of the form left blank. Should the Contracting Agency determine that an incomplete Written Confirmation Document was signed by a DBE, the associated DBE participation may not be allowed.

DBE Bid Item Breakdown

The Bidder shall submit a DBE Bid Item Breakdown Form (DOT Form 272-054) as specified in the Special Provisions for Section 1-02.9, Delivery of Proposal.

Selection of Successful Bidder/Good Faith Efforts (GFE)

The successful Bidder shall be selected on the basis of having submitted the lowest responsive Bid, which demonstrates a good faith effort to achieve the DBE COA Goal. The Contracting Agency, at any time during the selection process, may request a breakdown of the bid items and amounts that are counted towards the overall contract goal for any of the DBEs listed on the DBE Utilization Certification.

GFE to achieve the DBE COA Goal may be accomplished in one of two ways:

1. By meeting the DBE COA Goal
   Submission of the DBE Utilization Certification, supporting DBE Written Confirmation Document(s) showing the Bidder has obtained enough DBE participation to meet or exceed the DBE COA Goal and the DBE Bid Item Breakdown

2. By documentation that the Bidder made adequate GFE to meet the DBE COA Goal
   The Bidder may demonstrate a GFE in whole or part through GFE Documentation only in the event a Bidder's efforts to solicit sufficient DBE participation have been unsuccessful. The Bidder must supply GFE Documentation in addition to the DBE Utilization Certification, supporting DBE Written Confirmation Document(s) and the DBE Bid Item Breakdown form.

In the case where a Bidder is awarded the contract based on demonstrating adequate GFE Documentation, the advertised DBE COA Goal will not be reduced. The Bidder shall demonstrate a GFE during the life of the Contract to attain the advertised DBE COA Goal.

The Contracting Agency will review the GFE Documentation and will determine if the Bidder made an adequate good faith effort.

Procedures between Award and Execution

DBE Trucking Credit Form

The successful Bidder shall submit a DBE Trucking Credit Form (WSDOT Form 272-058), as specified in the Special Provisions for Section 1-03.3, Execution of Contract.

The DBE Trucking Credit Form is required for all DBE Firms performing as a subcontractor for "Trucking" or "Hauling" and are performing a part of a bid item. For example, if the item of Work is Structure Excavation including Haul, and another firm is doing the excavation and the DBE Trucking firm is doing the haul, the form is required. For a DBE subcontractor that is responsible for an entire item of work that may require some use of trucks, the form is not required.

Procedures after Execution

Commercially Useful Function (CUF)

The Contractor may only take credit for the payments made for Work performed by a DBE that is determined to be performing a CUF. Payment must be commensurate with the work actually performed by the DBE. This applies to all DBEs performing Work on a project, whether or not the DBEs are COA, if the Contractor wants to receive credit for their participation. The

Engineer will conduct CUF reviews to ascertain whether DBEs are performing a CUF. A DBE performs a CUF when it is carrying out its responsibilities of its contract by actually performing, managing, and supervising the Work involved. The DBE must be responsible for negotiating price; determining quality and quantity; ordering the material, installing (where applicable); and paying for the material itself. If a DBE does not perform "all" of these functions on a furnish-and-install contract, it has not performed a CUF and the cost of materials cannot be counted toward DBE COA Goal. Leasing of equipment from a leasing company is allowed. However, leasing/purchasing equipment from the Contractor is not allowed. Lease agreements shall be provided prior to the subcontractor beginning Work. Any use of the Contractor's equipment by a DBE will not be credited as countable participation.

The DBE does not perform a CUF if its role is limited to that of an extra participant in a transaction, contract, or project through which the funds are passed in order to obtain the appearance of DBE participation.

In order for a DBE traffic control company to be considered to be performing a CUF, the DBE must be in control of its work inclusive of supervision. The DBE shall employ a Traffic Control Supervisor who is directly involved in the management and supervision of the traffic control employees and services.

The following are some of the factors that the Engineer will use in determining whether a DBE trucking company is performing a CUF:

1. The DBE shall be responsible for the management and supervision of the entire trucking operation for which it is responsible on the contract. The owner demonstrates business related knowledge, shows up on site and is determined to be actively running the business.

2. The DBE itself shall own and operate at least one fully licensed, insured, and operational truck used on the Contract. The drivers of the trucks owned and leased by the DBE must be exclusively employed by the DBE and reflected on the DBE's payroll.

3. Lease agreements for trucks shall indicate that the DBE has exclusive use of and control over the truck(s). This does not preclude the leased truck from working for others provided it is with the consent of the DBE and the lease provides the DBE absolute priority for use of the leased truck.

4. Leased trucks shall display the name and identification number of the DBE.

Truck Unit Listing Log

In addition to the subcontracting requirements of Section 1-08.1, each DBE trucking firm shall submit supplemental information consisting of a completed primary DBE/FSBE Truck Unit Listing Log (DOT Form 350-077) and all Rental/Lease agreements (if applicable). The supplemental information shall be submitted in an electronic format to the Engineer prior to any trucking services being performed for DBE credit. Incomplete or incorrect supplemental information will be returned for correction. The corrected Primary Truck Unit Listing Log and any Updated Primary Truck Unit Listing Logs shall be submitted and accepted by the Engineer no later than ten calendar days of utilizing applicable trucks. Failure to submit or update the DBE Truck Unit Listing Log may result in trucks not being credited as DBE participation.

Each DBE trucking firm shall complete a daily DBE/FSBE Truck Unit Listing Log (DOT Form 350-077) for each day that the DBE performs trucking services for DBE credit. The Daily Truck Unit Listing Log forms shall be submitted by Friday of the week after the Work was performed by email to the following email addresses.

*** Eastern Region – ERRegionOEO@wsdot.wa.gov ***

Joint Checking

A joint check is a check between a subcontractor and the Contractor to the supplier of materials/supplies. The check is issued by the Contractor as payer to the subcontractor and the material supplier jointly for items to be incorporated into the project. The DBE must release the check to the supplier, while the Contractor acts solely as the guarantor.

A joint check agreement must be approved by the Engineer and requested by the DBE involved using the DBE Joint Check Request Form (WSDOT Form 272-053) prior to its use. The form must accompany the DBE Joint Check Agreement between the parties involved, including the conditions of the arrangement and expected use of the joint checks.

The approval to use joint checks and the use will be closely monitored by the Engineer. To receive DBE credit for performing a CUF with respect to obtaining materials and supplies, a DBE must "be responsible for negotiating price, determining quality and quantity, ordering the material, installing and paying for the material itself." The Contractor shall submit DBE Joint Check Request Form to the Engineer and be in receipt of written approval prior to using a joint check.

Material costs paid by the Contractor directly to the material supplier are not allowed. If proper procedures are not followed or the Engineer determines that the arrangement results in lack of independence for the DBE involved, no DBE credit will be given for the DBE's participation as it relates to the material cost.

Prompt Payment

Prompt payment to all subcontractors shall be in accordance with Section 1-08.1. Prompt payment requirements apply to progress payments as well as return of retainage.

Reporting

The Contractor and all subcontractors of any tier, suppliers, service providers, and professional services that utilize DBEs to perform work on the project, shall maintain appropriate records that will enable the Engineer to verify DBE participation throughout the life of the project.

Refer to Section 1-08.1 for additional reporting requirements associated with this Contract.

Crediting DBE Participation

General

Subcontractors proposed as COA must be certified prior to the due date for bids on the Contract. All non-COA DBE subcontractors shall be certified before the subcontract on which they are participating is executed.

DBE participation is only credited upon payment to the DBE.

DBE Prime Contractor and Subcontractor Participation
Only take credit for the Work that the DBE contractor performs with its own forces and is certified to perform.

If the Prime Contractor, subcontractor, or lower tier subcontractor DBE subcontracts a portion of the Work of its contract to another firm, the value of the subcontracted Work may be counted toward the DBE Commitments only if the lower-tier subcontractor is also a DBE.

Work subcontracted to a lower-tier subcontractor that is a DBE may be counted toward the DBE Commitments only if the lower-tier subcontractor self performs a minimum of 30 percent of the Work subcontracted to them.

Work subcontracted by a DBE contractor to a non-DBE does not count towards the DBE COA Goal.

DBE Subcontract and Lower Tier Subcontract Documents

DBE Consultants
A DBE firm providing a bona fide service, such as professional, technical, or managerial services, specifically required for the performance of the contract will be credited as DBE participation

Force Account Work
When the Bidder elects to utilize force account Work to meet the DBE COA Goal, as demonstrated by listing this force account Work on the DBE Utilization Certification form, for the purposes of meeting DBE COA Goal, only 50% of the Proposal amount shall be credited toward the Bidder's Commitment to meet the DBE COA Goal.

One hundred percent of the actual amounts paid to the DBE for the force account Work shall be credited towards the DBE COA Goal or DBE participation.

Temporary Traffic Control Participation
If the DBE firm only provides "Flagging", the DBE firm must provide a traffic control supervisor (TCS) and flagger(s), which are under the direct control of the DBE. The DBE firm shall also provide all flagging equipment for its employees (e.g., paddles, hard hats, and vests).

If the DBE firm provides "Traffic Control Services", the DBE firm must provide a TCS, flaggers, and traffic control items (e.g., cones, barrels, signs, etc.) and be in total control of all items in implementing the traffic control for the project.

Trucking Participation
DBE trucking firm participation may only be credited as DBE participation for the value of the hauling services, not for the materials being hauled unless the trucking firm is also certified as a supplier of those materials. In situations where the DBE's work is priced per ton, the value of the hauling service must be calculated separately from the value of the materials in order to determine DBE credit for hauling

The DBE trucking firm must own and operate at least one licensed, insured and operational truck on the contract. The truck must be of the type that is necessary to perform the hauling duties required under the contract. The DBE receives credit for the value of the transportation

services it provides on the Contract using trucks it owns or leases, licenses, insures, and operates with drivers it employs.

The DBE may lease additional trucks from another DBE firm. The DBE who leases additional trucks from another DBE firm receives credit for the value of the transportation services the lessee DBE provides on the Contract.

The trucking Work subcontracted to any non-DBE trucking firm will not receive credit for Work done on the project.

The DBE may lease trucks from a truck leasing company (recognized truck rental center) but can only receive credit towards DBE participation if the DBE uses its own employees as drivers.

DBE Supplier

The credit of a DBE Supplier is decided on a contract-by-contract basis based on what the role the proposed DBE Supplier will be performing. OECR will make determinations on whether a Supplier qualifies as a Regular Dealer, Distributor, or Transaction Facilitator based on their role for the Contract.

Manufacturer - One hundred percent (100%) of the cost of the manufactured product obtained from a DBE manufacturer may count towards the DBE COA Goal.

Regular Dealer - Sixty percent (60%) of the cost of materials or supplies purchased from a DBE Regular Dealer may be credited toward the DBE Goal.

Distributor – Forty percent (40%) of the cost of materials or supplies purchased from a DBE Distributor may be credited toward the DBE Goal.

Transaction Facilitator - only the fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on the job site, may toward the DBE COA Goal provided the fees are not excessive as compared with fees customarily allowed for similar services. The reasonable fee shall not exceed 5 percent of the total cost of the goods or services. Documentation will be required to support the fee/commission charged by the DBE. The cost of the materials and supplies themselves cannot be counted toward the DBE Goal.

Changes in COA Work Committed to DBE

The Contractor shall utilize the COA DBEs to perform the work and supply the materials for which each is committed unless prior written approval by the Engineer has been received by the Contractor. The Contractor shall not be entitled to any payment for work or material completed by the Contractor or subcontractors that was committed to be completed by the COA DBEs in the DBE Utilization Certification form.

Changes

In the event a change results in a reduction to Work committed to a COA DBE, the Contractor shall substitute other remaining Work to that COA DBE if possible, to avoid a change to the total dollar amount to be applied towards the goal committed to that COA DBE. If there is a reduction to the total dollar amount to be applied towards the goal for a COA DBE Commitment, regardless of the reason, it shall be viewed as DBE termination, and subject to the termination procedures below. A notification to the DBE shall occur as soon as possible but no later than two weeks after the Contractor is aware of the upcoming change.

Original Quantity Underruns
In the event that Work committed to a DBE firm as part of the COA underruns the original planned quantities the Contractor may be required to substitute other remaining Work to another DBE.

Contractor Proposed DBE Substitutions
Requests to substitute a COA DBE must be for good cause (see DBE termination process below) and requires prior written approval of the Engineer. After receiving a termination with good cause approval, the Contractor may only replace a DBE with another certified DBE. When changes between Contract Award and Execution result in a substitution of COA DBE, the substitute DBE shall be certified prior to the bid opening on the Contract.

DBE Termination
Termination of a COA DBE (or an approved substitute DBE) is only allowed in whole or in part for good cause and with prior written approval of the Contracting Agency. If the Contractor terminates a COA DBE without the prior written approval of the Contracting Agency, the Contractor shall not be entitled to payment for work or material committed to, but not performed/supplied by the COA DBE. In addition, sanctions may apply as described elsewhere in this specification.

Prior to requesting approval to terminate a COA DBE, the Contractor shall give notice in writing to the DBE with a copy to the Engineer of its intent to request to terminate DBE Work and the reasons for doing so. The DBE shall have five days to respond to the Contractor's notice. The DBE's response shall either support the termination or advise the Engineer and the Contractor of the reasons it objects to the termination of its subcontract.

If the request for termination is approved, the Contractor is required to substitute with another DBE to perform at least the same amount of work as the DBE that was terminated (or provide GFE Documentation). A plan to replace the COA DBE Commitment amount shall be submitted to the Engineer within 2 days of the approval of termination. The plan to replace the Commitment shall provide the same detail as that required in the DBE Utilization Certification.

As mentioned above, the Contractor must have good cause to terminate a COA DBE.

Good cause typically includes situations where the DBE subcontractor is unable or unwilling to perform the work of its subcontract. Good cause may exist if:

1. The DBE fails or refuses to execute a written contract.

2. The DBE fails or refuses to perform the Work of its subcontract in a way consistent with normal industry standards.

3. The DBE fails or refuses to meet the Contractor's reasonable nondiscriminatory bond requirements.

4. The DBE becomes bankrupt, insolvent, or exhibits credit unworthiness.

5. The DBE is ineligible to work on public works projects because of suspension and debarment proceedings pursuant to federal law or applicable State law.

6. The DBE is ineligible to receive DBE credit for the type of work involved.

7. The DBE voluntarily withdraws from the project and provides written notice of its withdrawal.

8. The DBE's work is deemed unsatisfactory by the Engineer and not in compliance with the Contract.

9. The DBE's owner dies or becomes disabled with the result that the DBE is unable to complete its Work on the Contract.

Good cause does not exist if:

1. The Contractor seeks to terminate a COA DBE so that the Contractor can self-perform the Work.

2. The Contractor seeks to terminate a COA DBE so the Contractor can substitute another DBE contractor or non-DBE contractor after Contract Award.

3. The failure or refusal of the COA DBE to perform its Work on the subcontract results from the bad faith or discriminatory action of the Contractor (e.g., the failure of the Contractor to make timely payments or the unnecessary placing of obstacles in the path of the DBE's Work).

Decertification
When a DBE is "decertified" from the DBE program during the course of the Contract, the participation of that DBE shall continue to count as DBE participation as long as the subcontract with the DBE was executed prior to the decertification notice. The Contractor is obligated to substitute when a DBE does not have an executed subcontract agreement at the time of decertification.

Good Faith Effort (GFE) Documentation
GFE Documentation is required and will be evaluated whenever the Contractor is unable to fulfill the program requirement. This evaluation may need to be repeated when:

1. Determining award of a Contract that has COA goal,

2. When a COA DBE is terminated and substitution is required, and

3. Prior to Physical Completion when determining whether the Contractor has satisfied its DBE commitments.

49 CFR Part 26, Appendix A is intended as general guidance and does not, in itself, demonstrate adequate good faith efforts. The following is a list of types of actions, which would be considered as part of the Bidder's GFE Documentation to achieve DBE participation. It is not intended to be a mandatory checklist, nor is it intended to be exclusive or exhaustive. Other factors or types of efforts may be relevant in appropriate cases.

1. Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBEs who have the capability to perform the Work of the Contract. The Bidder must solicit this interest within sufficient

time to allow the DBEs to respond to the solicitation. The Bidder must determine with certainty if the DBEs are interested by taking appropriate steps to follow up initial solicitations.

2. Selecting portions of the Work to be performed by DBEs in order to increase the likelihood that the DBE COA Goal will be achieved. This includes, where appropriate, breaking out contract Work items into economically feasible units to facilitate DBE participation, even when the Bidder might otherwise prefer to perform these Work items with its own forces.

3. Providing interested DBEs with adequate information about the Plans, Specifications, and requirements of the Contract in a timely manner to assist them in responding to a solicitation.

    a. Negotiating in good faith with interested DBEs. It is the Bidder's responsibility to make a portion of the Work available to DBE subcontractors and suppliers and to select those portions of the Work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBEs that were considered; a description of the information provided regarding the Plans and Specifications for the Work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBEs to perform the Work.

    b. A Bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as the DBE COA Goal into consideration. However, the fact that there may be some additional costs involved in finding and using DBEs is not in itself sufficient reason for a Bidder's failure to meet the DBE COA Goal, as long as such costs are reasonable. Also, the ability or desire of a Bidder to perform the Work of a Contract with its own organization does not relieve the Bidder of the responsibility to make Good Faith Efforts. Bidders are not, however, required to accept higher quotes from DBEs if the price difference is excessive or unreasonable.

4. Not rejecting DBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The Bidder's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the Bidder's efforts to meet the DBE COA Goal.

5. Making efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or Bidder.

6. Making efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance or services.

7. Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, State, and Federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBEs.

8. GFE Documentation must include copies of each DBE and non-DBE subcontractor quotes submitted to the Bidder when a non-DBE subcontractor is selected over a DBE for Work on the Contract. (ref. updated DBE regulations – 26.53(b)(2)(vi) & App. A)

Administrative Reconsideration of GFE Documentation

A Bidder has the right to request reconsideration if the GFE Documentation submitted with their Bid was determined to be inadequate or without merit. If, during the life of the Contract, the Contractor submits an additional GFE Documentation and the Contracting Agency's GFE Documentation review determines a GFE Documentation is inadequate or has no merit, the Contractor has the right to request reconsideration of the Contracting Agency's determination.

1. The Bidder must request reconsideration within 48 hours of notification of GFE Documentation being inadequate or without merit, or the Bidder forfeits the right to reconsideration.

2 The reconsideration decision on the adequacy or merit of the Bidder's GFE Documentation shall be made by an official who did not take part in the original determination.

3 Only original GFE Documentation submitted as a supplement to the Bid will be considered. The Bidder shall not introduce new documentation at the reconsideration hearing.

4 The Bidder shall have the opportunity to meet in person with the official for the purpose of setting forth the Bidder's position as to why the GFE Documentation demonstrates a sufficient effort.

•5 The reconsideration official shall provide the Bidder with a written decision on reconsideration within five working days of the hearing explaining the basis for their finding.

Consequences of Non-Compliance

Breach of Contract

Each contract with a Contractor (and each subcontract the Contractor signs with a subcontractor) must include the following assurance clause:

The Contractor, subrecipient, or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this Contract, which may result in the termination of this Contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

(1) Withholding monthly progress payments;

(2) Assessing sanctions;

(3) Liquidated damages; and/or

(4) Disqualifying the Contractor from future bidding as non-responsible.

If the Contractor or any subcontractor of any tier, supplier, service providers, or professional services is deemed to be in non-compliance, the Contractor will be informed in writing by the Engineer that sanctions will be imposed for failure to meet the DBE COA Commitment and/or submit documentation of good faith efforts. The notice will state the specific sanctions to be imposed which may include impacting a Contractor or other entity's ability to participate in future contracts.

Sanctions
If it is determined that the Contractor's failure to meet all or part of the DBE COA Commitment is due to the Contractor's inadequate good faith efforts throughout the life of the Contract, including failure to submit timely, required Good Faith Efforts information and documentation, the Contractor may be required to pay DBE penalty equal to the amount of the unmet Commitment, in addition to the sanctions outlined in Section 1-07.11(5).

Payment
Compensation for all costs involved with complying with the conditions of this Specification and any other associated DBE requirements is included in payment for the associated Contract items of Work, except otherwise provided in the Specifications.

1.07.11(2).RTF
1-07.11(2) Contractual Requirements
(November 25, 2024 APWA GSP) Optional (Both

Delete item 11 of the first paragraph of Section 1-07.11(2).

1-07.12.GR1
1-07.12 Federal Agency Inspection

1-07.12.INST1.GR1
Section 1-07.12 is supplemented with the following:

1-07.12.OPT1.GR1
(October 3, 2023)
Required Federal Aid Provisions
The Required Contract Provisions Federal Aid Construction Contracts (FHWA 1273) Revised October 23, 2023 and the amendments thereto supersede any conflicting provisions of the Standard Specifications and are made a part of this Contract; provided, however, that if any of the provisions of FHWA 1273, as amended, are less restrictive than Washington State Law, then the Washington State Law shall prevail.

The provisions of FHWA 1273, as amended, included in this Contract require that the Contractor insert the FHWA 1273 and amendments thereto in each subcontract, together with the wage rates which are part of the FHWA 1273, as amended. Also, a clause shall be included in each subcontract requiring the subcontractors to insert the FHWA 1273 and amendments thereto in any lower tier subcontracts, together with the wage rates. The Contractor shall also ensure that this section, REQUIRED FEDERAL AID PROVISIONS, is inserted in each subcontract for subcontractors and lower tier subcontractors. For this purpose, upon request to the Engineer, the

Contractor will be provided with extra copies of the FHWA 1273, the amendments thereto, the applicable wage rates, and this Special Provision.

1-07.15 Temporary Water Pollution Prevention

1-07.15(1) Spill Prevention, Control, and Countermeasures Plan

(2024 , COSV GSP)

Section 1-07.15(1) is supplemented with the following:

Payment will be made for each of the following bid items:

SPCC Plan	Lump Sum

1-07.16 Protection and Restoration of Property

1-07.16(1) Private/Public Property

(*2024* COSV GSP)

Section 1-07.16(1) is supplemented with the following:

Work Area Limits

Easement and right-of-way limits are shown on the plans. The Contractor shall confine all of his operation within these limits unless he obtains written approval from the adjacent property owner(s).

Use of Private Property

The Contractor shall file with the City a copy of each written permission obtained to use private property prior to use.

1-07.17.GR1

1-07.17 Utilities and Similar Facilities

1-07.17.OPT1.FR1

Section 1-07.17 is supplemented with the following:

1-07.17.OPT2.FR1

Locations and dimensions shown in the Plans for existing facilities are in accordance with available information obtained without uncovering, measuring, or other verification.

The following addresses and telephone numbers of utility companies known or suspected of having facilities within the project limits are supplied for the Contractor's convenience:

Call Before you Dig On Call Center Ph. 811	Avista Utilities (Gas) David Smith, P.E. 1411 E. Mission Ave. Spokane, WA 99220 Ph: (509) 495-4664
Spokane County Utilities - Sewer Attn: Louis Graf 1026 W. Broadway Spokane, WA 99260 Ph: (509) 477-7286	Lumen Attn: Mark Welch N. 904 Columbus Road Spokane, WA 99202 Ph: (509) 835-4604
Avista Utilities (Power)	Fatbeam

Attn: Blake Davis 1411 E. Mission Avenue Spokane, WA 99202 Ph: (509) 495-2211	Bruce Hathaway 2065 W Riverstone Dr Ste 202 Coeur d' Alene, ID 83814 Ph: (208) 783-1008
Irvin Water District No. 6 Tom Haggerty, P.E.E&H Engineering, Inc. 12611 W Sunset Hwy Ste. B Airway Heights, WA 99001 (509) 744-0245	Yellowstone Pipeline – Phillips 66 Chad M. Polak 3960 East 56th Avenue, Commerce City, CO 80022 Ph: (303) 376-4363
Zayo Dean Christensen 9515 E 1st Spokane Valley, WA 99206 Ph: (775) 530-3185	Comcast Brent Fischer Ph: (509) 755-4804
Verizon Zack Peebler 155 S Stevens St. Spokane, WA 99201 Ph: (509) 530 9385	Sprint Michael Whitman mwhitman@cogentco.com Kim Gray kigray@cogentco.com Ph: (206) 231-9721
WSDOT Signal Shop Dave Brinkley 3 E Gordon St Spokane, WA 99207 509.323.8475	

The above contacts are provided for the convenience of the contractor and may not include all utilities and contacts. Protection of utilities is the responsibility of the contractor.

Public and private utilities, or their Contractors, will furnish all work necessary to adjust, relocate, replace, or construct their facilities unless otherwise provided for in the Plans or these Special Provisions. Such adjustment, relocation, replacement, or construction will be done during the prosecution of the work for this project. Inspection or observation personnel from Yellowstone Pipeline (Phillips 66) will require coordination by the Contractor. Contractor due diligence is required when working within close proximity of the Avista high pressure gas main. It is anticipated the following utility accommodations during construction within the project limits will be as follows:

*** Yellowstone Pipeline Gas – Protect pipeline during equipment travel, excavation, compaction, and other construction activities within near proximity to the pipeline and required by Phillips 66, including but not limited to field observation by Phillips 66 inspection personnel. The contractor must fulfill the requirements set forth in Appendix B based on the construction and activity schedule in the proximity of the Yellowstone Pipeline. Inspection personnel from Phillips 66 must be scheduled with the city and Phillips 66 a minimum of 3 weeks in advance of construction activities which will be within the Yellowstone Pipeline limits identified in Appendix B or where directed by the Engineer. The contractor will be allowed 4 weeks for inspection personnel, scheduled on a weekly basis. The Contractor may request more than 4 weeks for Phillips 66 inspection personnel. Additional weeks of inspection will be scheduled at the contractor's expense. Costs are calculated on a weekly basis, at a rate of $7,500.00 per calendar week and shall not be prorated. The deduction(s) will be subtracted from any money due or coming due to the Contractor.

Payment

Payment will be made in accordance with Section 1-04.1 for the following bid items:

"Phillips 66 Observation Penalty" by calculation

Phillips 66 Observation Penalty	Calculation

Irvine Water – Provide access to site, including equipment accommodations and construction coordination with Irvine Water District contractor for concurrent construction activities to install complete water main piping through and adjacent to all work limits south of the BNSF tracks.

Sprint Fiber – Provide access to site, including equipment accommodations and construction coordination with Sprint (Cogent) Fiber contractor for concurrent construction activities to relocate fiber optic cable reroute onto BNSF Main Track 1 Bridge – south side including access through and within all work limits south of the BNSF tracks.

Avista High Pressure Gas Main Protection

1. Due Diligence Corridor – This will consist of a corridor extending 15 feet each side of the existing Avista high pressure gas main. The Contractor will account for all possible impacts to the high-pressure gas main from construction activities within this corridor and will utilize the least disruptive methods to complete earth work and pavement placement within the corridor. Construction activities which may cause impact or vibration of the high-pressure gas main will be discussed during construction management meetings with Avista present prior to executing any work within the corridor.
2. Excavation equipment within the Due Diligence Corridor – Excavation equipment will not be allowed to traverse or operate on top of the high-pressure gas main. During excavation within the corridor, the Contractor will provide a spotter to monitor the excavation depth and verify the high-pressure gas main will not be stuck by the excavation bucket rippers or bit.
3. Compaction within the Due Diligence Corridor – Vibratory plate compaction only will be allowed in the corridor and material lift placed for compaction will need to be in compliance with the vibratory plate equipment capability when there is less than 2 feet of cover between the crown of the high-pressure gas main and the finish compaction surface. The Contractor will be required to remove and reinstall lifts not meeting compaction requirements to meet the minimum compaction density required per the project specifications.
4. Subgrade within the Due Diligence Corridor - If finished subgrade elevation is 18 inches or less from the crown of the high pressure gas main, the Contractor will excavate using hand tool to expose the top of the high pressure gas main for a width of 1 foot each side of the 12 inch wide pipe for a total width of 3 feet and place self-consolidating fill containing cement with a maximum compressive strength of 1000 PSI over the top of the gas main for the necessary length to meet the minimum 18 inch cover requirement where plate compaction equipment can be operator.
5. Ride on compaction equipment within the Due Diligence Corridor – Ride on compaction equipment will only be allowed when there is a minimum 2 feet of cover from the crown of the high-pressure gas main to the finish surface to be compactor.

***

The Contractor shall attend a mandatory utility preconstruction meeting with the Engineer, all affected Subcontractors, and all utility owners and their Contractors prior to beginning onsite work.

The following addresses and telephone numbers of utility companies or their Contractors that will be adjusting, relocating, or providing guidance for protecting existing utilities within the project limits are supplied for the Contractor's convenience:

***

Yellowstone Gas Giselle Krebs Operations Engineer O: (+1) 406.255.5757 | M: (+1) 406.435.9082 2626 Lillian Avenue, Billings, MT 59101 Chad M. Polak Agent, Real Estate Services O: (+1) 303.376.4363 | M: (+1) 720.245.4683 3960 East 56th Avenue, Commerce City, CO 80022
Avista Gas David Smith, P.E. Sr. Gas Distribution Engineer O: (+1) 509.495.4664 | M: (+1) 509.939.7361 1411 E Mission Ave MSC-6, Spokane, WA, 99202
Irvin Water District No. 6 Thomas P. Haggerty, P.E. O: (+1) 509.744.0245 | M: (+1) 509.979.6782 E&H Engineering, Inc. 12611 W Sunset Hwy Ste. B Airway Heights, WA 99001 Bob Cunningham Irvine Water District No. 6 O: (+1) 509.924.9320 11907 E Trent Ave, Spokane Valley, WA 99206
Sprint (Cogent) Fiber Michael Whitman mwhitman@cogentco.com Kim Gray kigray@cogentco.com Ph: (+1) (206) 231-9721

***

1-07.18.RTF

1-07.18 Public Liability and Property Damage Insurance

Delete this section in its entirety, and replace it with the following:

1-07.18 Insurance

(January 4, 2024 APWA GSP)

1-07.18(1) General Requirements

A. The Contractor shall procure and maintain the insurance described in all subsections of section 1-07.18 of these Special Provisions, from insurers with a current A. M. Best rating of not less than A-: VII and licensed to do business in the State of Washington. The Contracting Agency reserves the right to approve or reject the insurance provided, based on the insurer's financial condition.

B. The Contractor shall keep this insurance in force without interruption from the commencement of the Contractor's Work through the term of the Contract and for thirty (30) days after the Physical Completion date, unless otherwise indicated below.

C. If any insurance policy is written on a claims-made form, its retroactive date, and that of all subsequent renewals, shall be no later than the effective date of this Contract. The policy shall state that coverage is claims made and state the retroactive date. Claims-made form coverage shall be maintained by the Contractor for a minimum of 36 months following the Completion Date or earlier termination of this Contract, and the Contractor shall annually provide the Contracting Agency with proof of renewal. If renewal of the claims made form of coverage becomes unavailable, or economically prohibitive, the Contractor shall purchase an extended reporting period ("tail") or execute another form of guarantee acceptable to the Contracting Agency to assure financial responsibility for liability for services performed.

D. The Contractor's Automobile Liability, Commercial General Liability and Excess or Umbrella Liability insurance policies shall be primary and non-contributory insurance as respects the Contracting Agency's insurance, self-insurance, or self-insured pool coverage. Any insurance, self-insurance, or self-insured pool coverage maintained by the Contracting Agency shall be excess of the Contractor's insurance and shall not contribute with it.

E. The Contractor shall provide the Contracting Agency and all additional insureds with written notice of any policy cancellation, within two business days of their receipt of such notice.

F. The Contractor shall not begin work under the Contract until the required insurance has been obtained and approved by the Contracting Agency

G. Failure on the part of the Contractor to maintain the insurance as required shall constitute a material breach of contract, upon which the Contracting Agency may, after giving five business days' notice to the Contractor to correct the breach, immediately terminate the Contract or, at its discretion, procure or renew such insurance and pay any and all premiums in connection therewith, with any sums so expended to be repaid to the Contracting Agency on demand, or at the sole discretion of the Contracting Agency, offset against funds due the Contractor from the Contracting Agency.

H. All costs for insurance shall be incidental to and included in the unit or lump sum prices of the Contract and no additional payment will be made.

I. Under no circumstances shall a wrap up policy be obtained, for either initiating or maintaining coverage, to satisfy insurance requirements for any policy required under this Section. A **"**wrap up policy**"** is defined as an insurance agreement or arrangement under which all the parties working on a specified or designated project are insured under one policy for liability arising out of that specified or designated project**.**

1-07.18(2) Additional Insured

All insurance policies, with the exception of Workers Compensation, and of Professional Liability and Builder's Risk (if required by this Contract) shall name the following listed entities as additional insured(s) using the forms or endorsements required herein:

- the Contracting Agency and its officers, elected officials, employees, agents, and volunteers

The above-listed entities shall be additional insured(s) for the full available limits of liability maintained by the Contractor, irrespective of whether such limits maintained by the Contractor are greater than those required by this Contract, and irrespective of whether the Certificate of Insurance provided by the Contractor pursuant to 1-07.18(4) describes limits lower than those maintained by the Contractor.

For Commercial General Liability insurance coverage, the required additional insured endorsements shall be at least as broad as ISO forms CG 20 10 10 01 for ongoing operations and CG 20 37 10 01 for completed operations.

1-07.18(3) Subcontractors

The Contractor shall cause each subcontractor of every tier to provide insurance coverage that complies with all applicable requirements of the Contractor-provided insurance as set forth herein, except the Contractor shall have sole responsibility for determining the limits of coverage required to be obtained by subcontractors.

The Contractor shall ensure that all subcontractors of every tier add all entities listed in 1-07.18(2) as additional insureds, and provide proof of such on the policies as required by that section as detailed in 1-07.18(2) using an endorsement as least as broad as ISO CG 20 10 10 01 for ongoing operations and CG 20 37 10 01 for completed operations.

Upon request by the Contracting Agency, the Contractor shall forward to the Contracting Agency evidence of insurance and copies of the additional insured endorsements of each subcontractor of every tier as required in 1-07.18(4) Verification of Coverage.

1-07.18(4) Verification of Coverage

The Contractor shall deliver to the Contracting Agency a Certificate(s) of Insurance and endorsements for each policy of insurance meeting the requirements set forth herein when the Contractor delivers the signed Contract for the work. Failure of Contracting Agency to demand such verification of coverage with these insurance requirements or failure of Contracting Agency to identify a deficiency from the insurance documentation provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.

Verification of coverage shall include:

1. An ACORD certificate or a form determined by the Contracting Agency to be equivalent.
2. Copies of all endorsements naming Contracting Agency and all other entities listed in 1-07.18(2) as additional insured(s), showing the policy number. The Contractor may submit

a copy of any blanket additional insured clause from its policies instead of a separate endorsement.

3. Any other amendatory endorsements to show the coverage required herein.
4. A notation of coverage enhancements on the Certificate of Insurance shall not satisfy these requirements – actual endorsements must be submitted.

Upon request by the Contracting Agency, the Contractor shall forward to the Contracting Agency a full and certified copy of the insurance policy(s). If Builders Risk insurance is required on this Project, a full and certified copy of that policy is required when the Contractor delivers the signed Contract for the work.

1-07.18(5) Coverages and Limits

The insurance shall provide the minimum coverages and limits set forth below. Contractor's maintenance of insurance, its scope of coverage, and limits as required herein shall not be construed to limit the liability of the Contractor to the coverage provided by such insurance, or otherwise limit the Contracting Agency's recourse to any remedy available at law or in equity.

All deductibles and self-insured retentions must be disclosed and are subject to approval by the Contracting Agency. The cost of any claim payments falling within the deductible or self-insured retention shall be the responsibility of the Contractor. In the event an additional insured incurs a liability subject to any policy's deductibles or self-insured retention, said deductibles or self-insured retention shall be the responsibility of the Contractor.

1-07.18(5)A Commercial General Liability

Commercial General Liability insurance shall be written on coverage forms at least as broad as ISO occurrence form CG 00 01, including but not limited to liability arising from premises, operations, stop gap liability, independent contractors, products-completed operations, personal and advertising injury, and liability assumed under an insured contract. There shall be no exclusion for liability arising from explosion, collapse or underground property damage.

The Commercial General Liability insurance shall be endorsed to provide a per project general aggregate limit, using ISO form CG 25 03 05 09 or an equivalent endorsement.

Contractor shall maintain Commercial General Liability Insurance arising out of the Contractor's completed operations for at least three years following Substantial Completion of the Work.

Such policy must provide the following minimum limits:

$2,000,000	Each Occurrence
$3,000,000	General Aggregate
$3,000,000	Products & Completed Operations Aggregate
$2,000,000	Personal & Advertising Injury each offence
$2,000,000	Stop Gap / Employers' Liability each accident

1-07.18(5)B Automobile Liability

Automobile Liability shall cover owned, non-owned, hired, and leased vehicles; and shall be written on a coverage form at least as broad as ISO form CA 00 01. If the work involves the transport of pollutants, the automobile liability policy shall include MCS 90 and CA 99 48 endorsements.

Such policy must provide the following minimum limit:

$1,000,000 Combined single limit each accident

1-07.18(5)C Workers' Compensation

The Contractor shall comply with Workers' Compensation coverage as required by the Industrial Insurance laws of the State of Washington.

1-07.18.GR1

Public Liability and Property Damage Insurance

1-07.18(5).GR1

Required Insurance Policies

1-07.18(5).INST1.GR1

The first sentence of Item No. 1 of Section 1-07.18(5) is revised to read:

1-07.18(5).OPT1.FR1

(******)

1. Owners and Contractors Protective (OCP) Insurance providing bodily injury and property damage liability coverage, with limits of *** $4,000,000 *** per occurrence and per project in the aggregate for each policy period.

1-07.18(5).INST2.GR1

The first sentence of Item No. 2 of Section 1-07.18(5) is revised to re
d:

1-07.18(5).OPT4.GR1

(September 7, 2021)

2. Commercial General Liability (CGL) Insurance written under ISO Form CG0001 with minimum limits of *** 4,000,000.00 *** per occurrence and in the aggregate for each 1-year policy period.

(******)

BNSF Insurance Requirements

The Contractor shall, at its sole cost and expense, procure and maintain Insurances as required in the BNSF/Contractor Agreement (see Appendix C):

1. Commercial General Liability insurance
2. Business Automobile Insurance
3. Workers Compensation and Employers Liability insurance
4. Railroad Protective Liability insurance

1-07.18(5)K.RTF

1-07.18(5)K Professional Liability

(December 30, 2022 APWA GSP)

The Contractor and/or its subcontractor(s) and/or its design consultant providing construction management, value engineering, or any other design-related non-construction professional

services shall provide evidence of Professional Liability insurance covering professional errors and omissions.

Such policy shall provide the following minimum limits:
$1,000,000 per claim and annual aggregate

If the scope of such design-related professional services includes work related to pollution conditions, the Professional Liability insurance shall include coverage for Environmental Professional Liability.

If insurance is on a claims-made form, its retroactive date, and that of all subsequent renewals, shall be no later than the effective date of this Contract.

1-07.22 Use of Explosives

(2024 COSV GSP)

Section 1-07.22 is deleted in its entirety and replaced with the following:

Blasting is not allowed on City of Spokane Valley public works projects. Rock excavation shall be accomplished by other methods.

1-07.23 Public Convenience and Safety

1-07.23(1).RTF

1-07.23(1) Construction Under Traffic

(May 2, 2017 APWA GSP)

Revise the third sentence of the second paragraph to read:

Accessibility to existing or temporary pedestrian push buttons shall not be impaired; if approved by the Contracting Agency activating pedestrian recall timing or other accommodation may be allowed during construction.

(2024 COSV GSP, Option 1)

The second paragraph of Section 1-07.23(1) is supplemented with the following:

6. Adjacent Property Access

When a property has two or more driveway approaches, the Contractor shall always provide vehicular access to at least one driveway. When a property has only one driveway approach, the Contractor shall notify the business or property owner at least two days in advance of any temporary construction closure. Access to all residences shall not be closed prior to 7:00 AM and shall be restored by 5:00 PM, each day. Access to any business shall not be closed more than two hours during any day.

(2024 COSV GSP, Option 2)

Section 1-07.23(1) is supplemented with the following:

Garbage Collection

The Contractor shall be responsible for the coordination of the garbage collection service with Waste Management during all lane or street closures. The Contractor's schedule shall not reduce the frequency of the existing garbage collection schedule at any time.

(2024 COSV GSP, Option 3)

Section 1-07.23(1) is supplemented with the following:

Public Liaison Representative

The Contractor's Public Liaison Representative shall:

1. Verify and coordinate construction/temporary traffic control is adequate with property owners. The Public Liaison Representative will inform city staff of any issues that may arise.

2. Provide advance notification to business and residential owners of any limited access and/or driveway closures.

3. Provide advance notification to business and residential owners on vehicular and pedestrian access through the construction zone to their properties.

4. Attend weekly construction meetings.

5. Provide daily restriction updates for each parcel adjacent to or within the project limits to the Engineer throughout the project duration.

6. The Public Liaison Representative shall not be the project superintendent.

7. The Public Liaison shall not distribute written correspondence to business and residents prior to obtaining Agency approval.

8. The Public Liaison shall provide a contact phone number and email address to the city no later than at the preconstruction meeting that may be distributed by the city to the public.

9. The Public Liaison shall create a flyer or other written notification and distribute to all properties impacted by construction operations at least 2 days prior to any work that will impact properties. Additional notification is required for each activity that will impact access or use of the property.

Minimum Qualifications

Public Liaison Representative shall have:

1. A minimum of 500 hours of experience involving the preparation and distribution of public information materials to residents and/or business owners. The Public Liaison Representative shall be kind, courteous and polite when dealing directly with the public.

Measurement

No specific unit of measurement will apply to the lump sum item for "Public Liaison Representative".

Payment

Payment will be made in accordance with Section 1-04.1 for the following Bid item included in the Proposal:

Public Liaison Representative	Lump Sum

"Public Liaison Representative", per lump sum.

The lump sum Contract price for "Public Liaison Representative", shall be full pay for furnishing all tools, labor, equipment, and materials required to provide public outreach as described above.

(2024 COSV GSP, Option 4)

Section 1-07.23(1) is supplemented with the following:

Lane, shoulder, and roadway closures are subject to the following restrictions:

***

Eastbound and Westbound SR 290 (Trent Ave)

- One lane in each direction will remain open at all times, except as noted below.
- A single, overnight, full closure to construct improvements tying into existing eastbound bridge over the Spokane River will be allowed starting at 9:00 PM and opening by 5:00 AM the next morning.
- The contractor shall meet the requirements below or be subject to section 1-08.9 Liquidated Damages:
    - All lanes of traffic (two eastbound lanes and two westbound lanes) must be fully open by October 16th of each calendar year, unless written concurrence is obtained from the Engineer.

Northbound and Southbound SR 27 (Pines Rd) .

- Road closures of Pines Road are not permitted when school is in session without written concurrence is obtained from the Engineer.
- Lane closures on Pines Road require approval from the Engineer when school is in session.

Road closures on any of following days require city approval 7 working days in advance:

1. A holiday,
2. A holiday weekend; holidays that occur on Friday, Saturday, Sunday or Monday are considered a holiday weekend. A holiday weekend included Saturday, Sunday, and the holiday,
3. After 12:00 PM on the day prior to a holiday or a holiday weekend, and
4. Before 5:00 AM on the day after a holiday or holiday weekend

***

If the Engineer determines the permitted closure hours adversely affect traffic, the Engineer may adjust the hours accordingly. The Engineer will notify the Contractor in writing of any change in

the closure hours. Exceptions to these restrictions are listed below and when applicable take precedence over closures listed above. The Engineer may also consider on a case-by-case basis additional exceptions following a written request by the Contractor.

Traffic Delays

When Automated Flagger Assistance Devices (AFADs) or flaggers are used to control traffic, traffic shall not be stopped for more than *** fifteen *** minutes at any time. All traffic congestion shall be allowed to clear before traffic is delayed again.

If the delay becomes greater than *** fifteen *** minutes, the Contractor shall immediately begin to take action to cease the operations that are causing the delays. If the *** fifteen *** minute delay limit has been exceeded, as determined by the Engineer, the Contractor shall provide to the Engineer, a written proposal to revise the contractor's work operations to meet the *** fifteen *** minute limit. This proposal shall be accepted by the Engineer prior to resuming any work requiring traffic control.

There shall be no delay to medical, fire, or other emergency vehicles. The Contractor shall alert all flaggers and personnel of this requirement.

General Restrictions

Construction vehicles using a closed traffic lane shall travel only in the normal direction of traffic flow unless expressly allowed in an accepted traffic control plan. Construction vehicles shall be equipped with flashing or rotating amber lights.

No two consecutive roads or intersections shall be closed at the same time and only one ramp at an interchange shall be closed, unless specifically shown in the Plans.

Roads that are designated as part of a detour shall not be closed or restricted during the implementation of that detour, unless specifically shown in the Plans. The Contractor shall place two orange flags above all existing speed limit signs along the designated detour route.

Controlled Access

No special access or egress shall be allowed by the Contractor other than normal legal movements or as shown in the Plans.

Contractor's vehicles of 10,000 GVW or greater shall not exit or enter a lane open to public traffic except as follows:

Egress and ingress shall only occur during the hours of allowable lane closures, and:

1. For exiting an open lane of traffic, by decelerating in a lane that is closed during the allowable hours for lane closures.

2. For entering an open lane of traffic, by accelerating in a closed lane during the allowable hours for lane closures.

Traffic control vehicles are excluded from the gross vehicle weight requirement. If placing construction signs will restrict traveled lanes, then the work will be permitted during the hours of allowable lane closures.

Advance Notification

The Contractor shall notify the Engineer in writing of any traffic impacts related to lane closure, shoulder closure, sidewalk closure, or any combination for the week by 12:00 p.m. (noon) Wednesday the week prior to the stated impacts.

The Contractor shall notify the Engineer in writing ten working days in advance of any traffic impacts related to full roadway closure.

The Contractor shall notify the Engineer in writing of any changes to the stated traffic impacts a minimum of 48 hours prior to the traffic impacts.

1-07.23(1).OPT10.GR1

(October 3, 2022)

If July 4 occurs on a Tuesday, the prior Monday and Friday are considered to be part of a holiday weekend. If July 4 occurs on a Thursday, the following Friday and Monday are considered to be part of a holiday weekend.

1-07.24.RTF

1-07.24 Rights of Way

(April 22, 2025 APWA GSP)

Delete this section and replace it with the following:

Street Right of Way lines, limits of easements, and limits of construction permits are indicated in the Plans. The Contractor's construction activities shall be confined within these limits unless arrangements for use of private property are made as described below.

Generally, the Contracting Agency will have obtained, prior to bid opening, all rights of way and easements, both permanent and temporary, necessary for carrying out the work. Exceptions to this are noted in the Bid Documents or will be brought to the Contractor's attention by a duly issued Addendum.

Whenever any of the work is accomplished on or through property other than public Right of Way, the Contractor shall meet and fulfill all covenants and stipulations of any easement agreement obtained by the Contracting Agency from the owner of the private property. Copies of the easement agreements may be included in the Contract Provisions or made available to the Contractor as soon as practical after they have been obtained by the Engineer.

Whenever easements or rights of entry have not been acquired prior to advertising, these areas are so noted in the Plans. The Contractor shall not proceed with any portion of the work in areas where right of way, easements or rights of entry have not been acquired until the Engineer certifies to the Contractor that the right of way or easement is available or that the right of entry has been received. If the Contractor is delayed due to acts of omission on the part of the Contracting Agency in obtaining easements, rights of entry or right of way, the Contractor will be entitled to an extension of time. The Contractor agrees that such delay shall not be a breach of contract.

Each property owner shall be given 48 hours' notice prior to entry by the Contractor. This includes entry onto easements and private property where private improvements must be adjusted.

The Contractor shall be responsible for providing, without expense or liability to the Contracting Agency, any additional land and access thereto that the Contractor may desire for temporary construction facilities, storage of materials, or other Contractor needs. However, before using any private property, whether adjoining the work or not, the Contractor shall file with the Engineer a written permission of the private property owner, and, upon vacating the premises, a written release from the property owner of each property disturbed or otherwise interfered with by reasons of construction pursued under this contract. The statement shall be signed by the private property owner, or proper authority acting for the owner of the private property affected, stating that permission has been granted to use the property and all necessary permits have been obtained or, in the case of a release, that the restoration of the property has been satisfactorily accomplished. The statement shall include the parcel number, address, and date of signature. Written releases must be filed with the Engineer before the Completion Date will be established.

1-07.28.GR1

1-07.28 Railroads

1-07.28.INST1.GR1

Section 1-07.28 is supplemented with the following:

1-07.28.OPT1.FR1

(October 3, 2022 WSDOT GSP)

Additional Requirements for Working with the Railroad

The term Railroad Company shall be understood to mean each of the following railroad companies:

*** Burlington Northern Santa Fe (BNSF) ***

The Contractor shall keep the right of way and ditches of the Railroad Company open and clean from any deposits or debris resulting from its operations. The Contractor shall be responsible for the cost to clean and restore ballast of the Railroad Company which is disturbed or becomes fouled with dirt or materials when such deposits or damage result from the Contractor's operations, except as provided elsewhere.

The Contractor shall cooperate with the Railroad Company and so conduct operations that the necessary reconstruction of its facilities and the removal of existing facilities can be accomplished without interruption of service.

1-07.28. OPT2.FR1

(October 3, 2022 WSDOT GSP)

The Contracting Agency has entered into an agreement with the Railroad Company as specified in these provisions as contained in Appendix *** C ***.

(******)

The contractor is required to submit right of entry agreement and insurance certificates to Burlington Northern Santa Fe (BNSF) within 3 calendar days after the execution of the contract, as described in section 1-03.3 of the specifications. The contractor shall inform the city of the submittal.

Contractor must comply with the requirements designated to be performed by the Contractor as shown in the excerpts of the BNSF Roadway Underpass Construction and Maintenance Agreement located in Appendix C.

No work shall commence on the Railroad Company's property until the Engineer notifies the Contractor of Railroad Company plan and specification approval.

1-07.28.OPT3.FR1

(October 3, 2022 WSDOT GSP)

Construction Work by Railroad Company

The work by the Railroad Company as described below will be performed by the Railroad Company with its own forces at no cost to the Contractor:

*** Removal of existing railroad crossing protection/signals, concrete panels at Pines Road crossing, and bungalow. Work also includes excavation for new alignment of Pines Road, constructing railroad bridges, and relocation of BNSF utilities.***

1-07.28(1).GR1

1-07.28(1) General

1-07.28(1).INST1.GR1

Section 1-07.28(1) is supplemented with the following:

1-07.28(1).OPT1.FR1

(October 3, 2022 WSDOT GSP)

Contractor's Right of Entry Agreement

The Contractor shall obtain a Right of Entry Agreement from the railroad. For all matters regarding the Contractor's Right of Entry Agreement, the Contractor shall contact:

*** BNSF Manager of Public Projects:
Kyle Leatham
2454 Occidental Ave. S., Suite 2D
Seattle, WA 98134
Office: 425.210.8084
Kyle.Leatham@BNSF.com ***

The Contracting Agency has furnished a SAMPLE Contractor's Right of Entry Agreement in Appendix *** C ***. The SAMPLE Contractor's Right of Entry Agreement is an example which represents the Contracting Agency's assessment of the likely terms and conditions prior to Advertisement for Bids. The final terms and conditions will be determined by the Railroad Company after Contract Execution.

The Contractor is at sole risk for the amount of time it takes to obtain the Right of Entry Agreement from the Railroad Company. Delays in obtaining the right of entry agreement shall not be eligible for a time extension or an equitable adjustment.

1-07.28(2).GR1

1-07.28(2) Submittals and Working Drawings

1-07.28(2).INST1.GR1

Section 1-07.28(2) is supplemented with the following:

1-07.28(2).OPT1.FR1

(October 3, 2022 WSDOT GSP)

The Engineer will require up to *** 60 *** calendar days from the date a Working Drawing is received until it is returned to the Contractor. If a submittal is returned unapproved and then resubmitted, then an additional review time for each subsequent resubmittal of up to *** 35 *** calendar days will be required.

(******)

Submittals also must go to BNSF for final approval if any of that work is within 25 ft of tracks and/or involved with any bridge components that support the bridge over/under the tracks. Construction submittals required for BNSF review include but are not limited to:

- Construction Phasing Plan
- Shoring
- Excavation Plan
- Fill Material
- Falsework/Formwork
- Crane/Boom Equipment Utilization Plan
- Demolition
- Erection
- Erosion Control
- Construction Material Certifications
- Concrete Mix Design
- Utility Support Plans
- Temporary Shoring
- Structural Steel Rebar and Strand Certifications
- 28-day Cylinder Test of Concrete Strength
- Waterproofing Material Certification
- Test reports for fracture critical members
- Foundation Construction Reports (eg.: pile driving records, caisson drilling and/or crosshole sonic log testing for drilled shafts.)
- Other project specific information as requested by the Railroad

1-07.28(6).GR1

1-07.28(6) Railroad Protective Services

1-07.28(6).INST1.GR1

Section 1-07.28(6) is supplemented with the following:

1-07.28(6).OPT1.FR1

(October 3, 2022 WSDOT GSP)

The Contractor shall notify the Railroad Company a minimum of *** Thirty (30) Calendar Days *** in advance of whenever the Contractor is about to perform Work within Railroad Company property or within 25 feet of the centerline of tracks to enable the Railroad Company to provide flagging or other protective services.

The Railroad Company's contact to schedule flagging or other protective services is:

*** BNSF Roadmaster
Dan Mavrinac

Cell: 406.559.0544
Daniel.Mavrinac@bnsf.com

BNSF's Engineering Representative
Will Hilscher
Office: 505.203.9160
Will.Hilscher@BNSF.com

BNSF's Signal Representative
Aaron Leiner
Cell: 509.342.9606
Aaron.Leiner@bnsf.com

BNSF Manager of Public Projects:
Kyle Leatham
2454 Occidental Ave. S., Suite 2D
Seattle, WA 98134
Office: 425.210.8084
Kyle.leatham@BNSF.com ***

1-07.28(8).GR1

1-07.28(8) Measurement and Payment

1-07.28(8).INST1.GR1

Section 1-07.28(8) is revised to read:

1-07.28(8).OPT1.GR1

(October 3, 2022 WSDOT GSP)

The Contracting Agency will make payments to the Railroad for protective services unless:

1. Such services result from the Contractor's failure to comply with the terms and conditions of its contract with the Contracting Agency or with its Contractor's Right of Entry Agreements with the Railroad Company.

2. The Contractor fails to obtain authorization from the Engineer prior to coordinating with the Railroad Company for any flagging requiring overtime payments as specified under Railroad Safety and Flagging.

3. The Contractor arranges for assignment of a railroad flagger and alters project work so that a flagger is no longer needed, and adequate advance notice is not provided to the Railroad Company of such change in the need for a flagger (i.e., causing the Railroad Company to dispatch a flagger billable to the project when one is not required).

4. The Contractor causes an emergency, as specified under Railroad Operations.

5. Protective services are required as a result of a request to the Railroad Company for the Contractor's convenience.

6. The Contract provides for a bid item in the Contract.

All costs to comply with this Section, unless otherwise stated, are incidental to the Contract and are the responsibility of the Contractor. The Contractor shall include all related costs in the unit Bid prices of the Contract.

1-08 PROSECUTION AND PROGRESS

Add the following new section:

1-08.0.RTF

1-08.0 Preliminary Matters

(May 25, 2006 APWA GSP)

1-08.0(1).RTF

1-08.0(1) Preconstruction Conference

(July 8,2024 APWA GSP)

Add the following new section:

Prior to the Contractor beginning the work, a preconstruction conference will be held between the Contractor, the Engineer and such other interested parties as may be invited. The purpose of the preconstruction conference will be:

1. To review the initial progress schedule;
2. To establish a working understanding among the various parties associated or affected by the work;
3. To establish and review procedures for progress payment, notifications, approvals, submittals, etc.;
4. To review DBE Requirements, Training Plans, and Apprenticeship Plans, when applicable.
5. To establish normal working hours for the work;
6. To review safety standards and traffic control; and
7. To discuss such other related items as may be pertinent to the work.

The Contractor shall prepare and submit at the preconstruction conference the following:

1. A breakdown of all lump sum items;
2. A preliminary schedule of working drawing submittals; and
3. A list of material sources for approval if applicable.

1-08.0(2).RTF

Add the following new section:

1-08.0(2) Hours of Work

(December 8, 2014 APWA GSP)

Except in the case of emergency or unless otherwise approved by the Engineer, the normal working hours for the Contract shall be any consecutive 8-hour period between 7:00 a.m. and 6:00 p.m. Monday through Friday, exclusive of a lunch break. If the Contractor desires different than the normal working hours stated above, the request must be submitted in writing prior to the preconstruction conference, subject to the provisions below. The working hours for the Contract shall be established at or prior to the preconstruction conference.

All working hours and days are also subject to local permit and ordinance conditions (such as noise ordinances).

If the Contractor wishes to deviate from the established working hours, the Contractor shall submit a written request to the Engineer for consideration. This request shall state what hours are being requested, and why. Requests shall be submitted for review no later than $$1$$ prior to the day(s) the Contractor is requesting to change the hours.

If the Contracting Agency approves such a deviation, such approval may be subject to certain other conditions, which will be detailed in writing. For example:

1. On non-Federal aid projects, requiring the Contractor to reimburse the Contracting Agency for the costs in excess of straight-time costs for Contracting Agency representatives who worked during such times. (The Engineer may require designated representatives to be present during the work. Representatives who may be deemed necessary by the Engineer include, but are not limited to: survey crews; personnel from the Contracting Agency's material testing lab; inspectors; and other Contracting Agency employees or third party consultants when, in the opinion of the Engineer, such work necessitates their presence.)
2. Considering the work performed on Saturdays, Sundays, and holidays as working days with regard to the contract time.
3. Considering multiple work shifts as multiple working days with respect to contract time even though the multiple shifts occur in a single 24-hour period.
4. If a 4-10 work schedule is requested and approved the non working day for the week will be charged as a working day.

If Davis Bacon wage rates apply to this Contract, all requirements must be met and recorded properly on certified payroll.

1-08.1 Subcontracting

(December 30, 2022 APWA GSP, Option A)

Prior to any subcontractor or lower tier subcontractor beginning work, the Contractor shall submit to the Engineer a certification (WSDOT Form 420-004) that a written agreement between the Contractor and the subcontractor or between the subcontractor and any lower tier subcontractor has been executed. This certification shall also guarantee that these subcontract agreements include all the documents required by the Special Provision Federal Agency Inspection.

A subcontractor or lower tier subcontractor will not be permitted to perform any work under the contract until the following documents have been completed and submitted to the Engineer:

1. Request to Sublet Work (WSDOT Form 421-012), and
2. Contractor and Subcontractor or Lower Tier Subcontractor Certification for Federal-aid Projects (WSDOT Form 420-004).

The Contractor shall submit to the Engineer a completed Monthly Retainage Report (WSDOT Form 272-065) within 15 calendar days after receipt of every monthly progress payment until every subcontractor and lower tier subcontractor's retainage has been released.

The Contractor's records pertaining to the requirements of this Special Provision shall be open to inspection or audit by representatives of the Contracting Agency during the life of the contract and for a period of not less than three years after the date of acceptance of the contract. The

Contractor shall retain these records for that period. The Contractor shall also guarantee that these records of all subcontractors and lower tier subcontractors shall be available and open to similar inspection or audit for the same time period.

1-08.1(8)B.RTF

1-08.1(8)B Clauses Required in Subcontracts of All Tiers

(November 25, 2024 APWA GSP)

Delete item 8 of the second paragraph of Section 1-08.1(8)B.

1-08.1(9).RTF

(November 25, 2024 APWA GSP)

Section 1-08.1(9) is revised to read:

Submittal of Executed DBE Subcontracts

Prior to a DBE performing Work on the Contract, an executed subcontract between the DBE and the Contractor shall be submitted to the Engineer. The executed subcontracts shall be submitted by email to the following email address for the region administering the Contract:

WSDOT OECR Representative: Eastern Region – ERRegionOEO@wsdot.wa.gov
Agency OEO Representative: Jeremiah Schreindl – Jschreindl@spokanevalleywa.gov

1-08.4 Prosecution of Work

Delete this section and replace it with the following:

1-08.4 Notice to Proceed and Prosecution of Work

(July 23, 2015 APWA GSP)

Notice to Proceed will be given after the contract has been executed and the contract bond and evidence of insurance have been approved and filed by the Contracting Agency. The Contractor shall not commence with the work until the Notice to Proceed has been given by the Engineer. The Contractor shall commence construction activities on the project site within ten days of the Notice to Proceed Date, unless otherwise approved in writing. The Contractor shall diligently pursue the work to the physical completion date within the time specified in the contract. Voluntary shutdown or slowing of operations by the Contractor shall not relieve the Contractor of the responsibility to complete the work within the time(s) specified in the contract.

When shown in the Plans, the first order of work shall be the installation of high visibility fencing to delineate all areas for protection or restoration, as described in the Contract. Installation of high visibility fencing adjacent to the roadway shall occur after the placement of all necessary signs and traffic control devices in accordance with 1-10.1(2). Upon construction of the fencing, the Contractor shall request the Engineer to inspect the fence. No other work shall be performed on the site until the Contracting Agency has accepted the installation of high visibility fencing, as described in the Contract.

1-08.5 Time for Completion

(November 25, 2024 APWA GSP, Option A)

Revise the third and fourth paragraphs to read:

Contract time shall begin on the first working day following the Notice to Proceed Date.

Each working day shall be charged to the contract as it occurs, until the contract work is physically complete. If substantial completion has been granted and all the authorized working days have been used, charging of working days will cease. Each week the Engineer will provide the Contractor a statement that shows the number of working days: (1) charged to the contract the week before; (2) specified for the physical completion of the contract; and (3) remaining for the physical completion of the contract. The statement will also show the nonworking days and all partial or whole days the Engineer declares as unworkable The statement will be identified as a Written Determination by the Engineer. If the Contractor does not agree with the Written Determination of working days, the Contractor shall pursue the protest procedures in accordance with Section 1-04.5. By failing to follow the procedures of Section 1-04.5, the Contractor shall be deemed as having accepted the statement as correct. If the Contractor is approved to work 10 hours a day and 4 days a week (a 4-10 schedule) and the fifth day of the week in which a 4-10 shift is worked would ordinarily be charged as a working day then the fifth day of that week will be charged as a working day whether or not the Contractor works on that day.

Revise the sixth paragraph to read:

The Engineer will give the Contractor written notice of the completion date of the contract after all the Contractor's obligations under the contract have been performed by the Contractor. The following events must occur before the Completion Date can be established:

1. The physical work on the project must be complete; and
2. The Contractor must furnish all documentation required by the contract and required by law, to allow the Contracting Agency to process final acceptance of the contract. The following documents must be received by the Project Engineer prior to establishing a completion date:
   a. Certified Payrolls (per Section 1-07.9(5)).
   b. Material Acceptance Certification Documents
   c. Monthly Reports in DMCS of the amounts paid including the final payment confirmation to all firms required by Section 1-08.1(7)A if applicable
   d. Final Contract Voucher Certification
   e. Copies of the approved "Affidavit of Prevailing Wages Paid" for the Contractor and all Subcontractors
   f. A copy of the Notice of Termination sent to the Washington State Department of Ecology (Ecology); the elapse of 30 calendar days from the date of receipt of the Notice of Termination by Ecology; and no rejection of the Notice of Termination by Ecology. This requirement will not apply if the Construction Stormwater General Permit is transferred back to the Contracting Agency in accordance with Section 8-01.3(16).
   g. Property owner releases per Section 1-07.24

1-08.5.OPT7.FR1
Section 1-08.5 is supplemented with the following:

(March 13, 1995)

This project shall be physically completed within *** 209 *** working days.

1-08.6.GR1

1-08.6 Suspension of Work

(February 6, 2023)

1-08.6.INST1.GR1

Section 1-08.6 is supplemented with the following:

1-08.6.OPT2.FR1

Contract time may be suspended for procurement of critical materials (Procurement Suspension). In order to receive a Procurement Suspension, the Contractor shall within 21 calendar days after execution by the Contracting Agency, place purchase orders for all materials deemed critical by the Contracting Agency for physical completion of the contract. The Contractor shall provide copies of purchase orders for the critical materials. Such purchase orders shall disclose the purchase order date and estimated delivery dates for such critical material.

The Contractor shall show procurement of the materials listed below as activities in the Progress Schedule. If the approved Progress Schedule indicates that the materials procurement are critical activities, and if the Contractor has provided documentation that purchase orders are placed for the critical materials within the prescribed 21 calendar days, then contract time will be suspended upon physical completion of all critical work except that work dependent upon the below listed critical materials:

*** Camera Poles, Luminaire poles, Prefabricated Restroom Building, EV Charging Equipment ***

Charging of contract time will resume upon delivery of the critical materials to the Contractor or *** 400 *** calendar days after execution by the Contracting Agency, whichever occurs first.

1-08.9.OptionA.RTF

1-08.9 Liquidated Damages

(******)

Replace Section 1-08.9 with the following:

Time is of the essence on the Contract. Delays inconvenience the traveling public, obstruct traffic, interfere with and delay commerce, and increase risk to Highway users. Delays also cost tax payers undue sums of money, adding time needed for administration, engineering, inspection, and supervision.

Accordingly, the Contractor agrees:

1. To pay liquidated damages in the amount of *** $6700 *** for each working day beyond the number of working days established for Physical Completion, and

2. To authorize the Engineer to deduct these liquidated damages from any money due or coming due to the Contractor.

When the Contract Work has progressed to Substantial Completion as defined in the Contract, the Engineer may determine the Contract Work is Substantially Complete. The Engineer will notify the Contractor in writing of the Substantial Completion Date. For overruns in Contract time occurring after the date so established, liquidated damages identified above will not apply. For overruns in Contract time occurring after the Substantial Completion Date, liquidated damages shall be assessed on the basis of direct engineering and related costs assignable to the project until the actual Physical Completion Date of all the Contract Work. The Contractor shall complete the remaining Work as promptly as possible. Upon request by the Project Engineer, the Contractor shall furnish a written schedule for completing the physical Work on the Contract.

Liquidated damages will not be assessed for any days for which an extension of time is granted. No deduction or payment of liquidated damages will, in any degree, release the Contractor from further obligations and liabilities to complete the entire Contract.

Lane restrictions to through traffic on Trent Avenue (SR-290) will result in impacts to the traveling public, increase fuel consumption, increase vehicle operating costs, increase pollution, and cause other inconveniences and harm. Accordingly, the contractor agrees to:

1. Pay **$13,000 per day** for **each day** that the contractor does not meet the requirements specified in section 1-07.23.
2. Authorize the Engineer to deduct these liquidated damages from any payment due or coming due to the Contactor.

1-09 MEASUREMENT AND PAYMENT

1-09.2(1).OptionB.RTF

1-09.2(1) General Requirements for Weighing Equipment

(November 25, 2024 APWA GSP, Option B)

Revise item 4 of the fifth paragraph to read:

3. Test results and scale weight records for each day's hauling operations are provided to the Engineer daily. Reporting shall utilize WSDOT form 422-027LP, Scaleman's Daily Report, unless the printed ticket contains the same information that is on the Scaleman's Daily Report Form. The scale operator must provide AM and/or PM tare weights for each truck on the printed ticket.

1-09.2(1) General Requirements for Weighing Equipment

(July 8, 2024.Option C)

Revise the sixth and seventh paragraph to read:

Trucks and Tickets – Each truck to be weighed shall bear a unique identification number. This number shall be legible and in plain view of the scale operator. The Contractor shall provide Electronic tickets or Physical tickets for all weighed materials. All Tickets shall, regardless of medium, at a minimum, contain the following information:

1. Date of haul;
2. Contract number;
3. Contract unit Bid item;
4. Unit of measure;

5. Identification number of hauling vehicle; and
6. Weight delivered:
    a. Net weight in the case of batch and hopper scales.
    b. Gross weight, tare (a.m. and p.m. minimum) and net weight in the case of platform scales (tare may be omitted if a tare beam is used).
    c. Approximate load out weight in the case of belt conveyor scales.

Electronic-tickets shall be uploaded to the designated site so that they can be accessed by the material receiver at the material delivery point. Physical tickets shall be handed to the inspector at the delivery point at the time materials are delivered. The material delivery point is defined as the location where the material is incorporated into the permanent Work. The Contractor's representative shall make report summaries available to the Engineer's designated receiver, not later than the end of shift, for reconciliation. Tickets for loads not verified as delivered will receive no pay.

1-09.2(5).RTF
1-09.2(5) Measurement
(December 30, 2022 APWA GSP)

Revise the first paragraph to read:

Scale Verification Checks – At the Engineer's discretion, the Engineer may perform verification checks on the accuracy of each batch, hopper, or platform scale used in weighing contract items of Work.

1-09.3.GR1
1-09.3 Scope of Payment

1-09.2(5).RTF
Section 1-09.3 is supplemented with the following:

1-09.3.INST1.GR1
(August 7, 2017 WSDOT GSP)
Fuel Cost Adjustment
General
The Contracting Agency will make a fuel cost adjustment, either a credit or a payment, for qualifying changes in the index price of on-highway diesel fuel. The adjustment will be applied to partial payments made according to Section 1-09.9.

The adjustment is not a guarantee of full compensation for fuel price changes. Any adjustment provided by this provision shall not obligate the Contracting Agency for any costs due solely to changes in fuel costs beyond the amount adjusted by this provision. The Contracting Agency does not guarantee that fuel will be available at the base fuel cost or monthly fuel cost. No additional adjustment will be made for rates of fuel consumption or actual fuel types that differ from those specified for the purpose of determining the adjustment.

For the purpose of calculating the adjustment, the Base Fuel Cost shall be the *Weekly* fuel price from the ***U.S. Energy Information Administration*** website. The website location and directions are as follows:

- http://www.eia.gov/petroleum/gasdiesel/
- On the web page, click on the ***West Coast less California***, listed under the heading ***U.S On-Highway Diesel Fuel Prices*(dollar per gallon)*** at the lower end of the web page.
- In the pull down box labeled ***Period*** pull down ***Weekly.***
- Click on the fuel price history found under the column heading ***View History*** for the line ***Diesel (On-Highway*) – *All Types***.
- On this web page obtain the nearest weekly fuel cost for the Monday occurring three weeks prior to the date that bids are opened. This weekly fuel cost becomes the Base Fuel Cost and is fixed for the duration of the Contract and will be used in calculating all adjustments.

The Monthly Fuel Cost shall be the most recent *Monthly* fuel price from the U.S. Energy Information Administration website. The website location and directions are as follows:

- http://www.eia.gov/petroleum/gasdiesel/
- On the web page, click on the ***West Coast less California***, listed under the heading ***U.S On-Highway Diesel Fuel Prices*(dollar per gallon)*** at the lower end of the web page.
- In the pull down box labeled ***Period*** pull down ***Monthly.***
- Click on the fuel price history found under the column heading ***View History*** for the line ***Diesel (On-Highway*) – *All Types***.
- On this web page obtain the most current monthly fuel price.

If the specified index ceases to be available for any reason, the Contracting Agency at its discretion will select and begin using a substitute price source or index to establish the Monthly Fuel Cost.

Measurement

No adjustment will be made if the Monthly Fuel Cost is within 10 percent of the Base Fuel Cost. No adjustment will be made for work performed after the authorized Time for Completion.

If the Monthly Fuel Cost is greater than or equal to 110% of the Base Fuel Cost, then:

Adjustment = (Monthly Fuel Cost – (1.10 x Base Fuel Cost)) x Q

If the Monthly Fuel Cost is less than or equal to 90% of the Base Fuel Cost, then:

Adjustment = (Monthly Fuel Cost – (0.90 x Base Fuel Cost)) x Q

Where Q = Σ ((Fuel Usage Factor for each Eligible Bid Item) x (Quantity paid in the current months progress estimate for each Eligible Bid Item)) for all Eligible Bid Items listed below:

Eligible Bid Item	Fuel Usage Factor
***	
ROADWAY EXCAVATION INCL. HAUL	0.29 gal/cy
SHORING OR EXTRA EXCAVATION CLASS B	0.04 gal/dollar
SHORING OR EXTRA EXCAVATION TRENCH	0.04 gal/dollar
CRUSHED SURFACING BASE COURSE	0.70 gal/ton
CRUSHED SURFACING TOP COURSE	0.70 gal/ton
HMA CL. 3/8 IN. PG	0.90 gal/ton
***	

Payment

Payment will be made for the following bid item when included in the bid proposal:

"Fuel Cost Adjustment", by calculation.

To provide a common proposal for all bidders, the Contracting Agency has entered an amount in the proposal to become a part of the Contractor's total bid.

1-09.2(5).RTF

1-09.6 Force Account

(December 30, 2022 APWA GSP)

Supplement this section with the following:

The Contracting Agency has estimated and included in the Proposal, dollar amounts for all items to be paid per force account, only to provide a common proposal for Bidders. All such dollar amounts are to become a part of Contractor's total bid. However, the Contracting Agency does not warrant expressly or by implication, that the actual amount of work will correspond with those estimates. Payment will be made on the basis of the amount of work actually authorized by the Engineer.

1-09.8.GR1

1-09.8 Payment For Material On Hand

1-09.8.INST1.GR1

The last paragraph of Section 1-09.8 is revised to read:

1-09.8.OPT1.GR1

(August 3, 2009 WSDOT GSP)

The Contracting Agency will not pay for material on hand when the invoice cost is less than $2,000. As materials are used in the work, credits equaling the partial payments for them will be taken on future estimates. Each month, no later than the estimate due date, the Contractor shall submit a letter to the Engineer that clearly states: 1) the amount originally paid on the invoice (or other record of production cost) for the items on hand, 2) the dollar amount of the material incorporated into each of he various work items for the month, and 3) the amount that should be retained in material on hand items. If work is performed on the items and the Contractor does not submit a letter, all of the previous material on hand payment will be deducted on the estimate. Partial payment for materials on hand shall not constitute acceptance. Any material will be rejected if found to be faulty even if partial payment for it has been made.

1-09.9.OptionA.RTF

1-09.9 Payments

(July 8, 2024 APWA GSP)

Supplement this section with the following:

Lump sum item breakdowns are not required when the bid price for the lump sum item is less than $20,000.

1-09.9.OptionB.RTF

(July 8, 2024, APWA GSP, Option B)

Delete the fourth paragraph and replace it with the following:

Progress payments for completed work and material on hand will be based upon progress estimates prepared by the Engineer. A progress estimate cutoff date will be established at the preconstruction conference.

The initial progress estimate will be made not later than 30 days after the Contractor commences the work, and successive progress estimates will be made every month thereafter until the Completion Date. Progress estimates made during progress of the work are tentative, and made only for the purpose of determining progress payment. The progress estimates are subject to change at any time prior to the calculation of the Final Payment.

The value of the progress estimate will be the sum of the following:

1. Unit Price Items in the Bid Form — the approximate quantity of acceptable units of work completed multiplied by the unit price.
2. Lump Sum Items in the Bid Form — based on the approved Contractor's lump sum breakdown for that item, or absent such a breakdown, based on the Engineer's determination.
3. Materials on Hand — 100 percent of invoiced cost of material delivered to Job site or other storage area approved by the Engineer.
4. Change Orders — entitlement for approved extra cost or completed extra work as determined by the Engineer.

Progress payments will be made in accordance with the progress estimate less:

1. Retainage per Section 1-09.9(1), on non FHWA-funded projects;
2. The amount of Progress Payments previously made; and
3. Funds withheld by the Contracting Agency for disbursement in accordance with the Contract Documents.

Progress payments for work performed shall not be evidence of acceptable performance or an admission by the Contracting Agency that any work has been satisfactorily completed. The determination of payments under the contract will be final in accordance with Section 1-05.1.

1-09.9(1).GR1

1-09.9(1) Retainage

1-09.9(1).INST1.GR1

Section 1-09.9(1) including title is deleted and replaced with the following:

1-09.9(1).OPT1.GR1

(June 27, 2011)

Vacant

1-09.11(3).RTF

1-09.11(3) Time Limitation and Jurisdiction

(December 30, 2022 APWA GSP)

Revise this section to read:

> For the convenience of the parties to the Contract it is mutually agreed by the parties that any claims or causes of action which the Contractor has against the Contracting Agency arising from the Contract shall be brought within 180 calendar days from the date of final acceptance (Section 1-05.12) of the Contract by the Contracting Agency; and it is further agreed that any such claims or causes of action shall be brought only in the Superior Court of the county where the Contracting Agency headquarters is located, provided that where an action is asserted against a county, RCW 36.01.050 shall control venue and jurisdiction. The parties understand and agree that the Contractor's failure to bring suit within the time period provided, shall be a complete bar to any such claims or causes of action. It is further mutually agreed by the parties that when any claims or causes of action which the Contractor asserts against the Contracting Agency arising from the Contract are filed with the Contracting Agency or initiated in court, the Contractor shall permit the Contracting Agency to have timely access to any records deemed necessary by the Contracting Agency to assist in evaluating the claims or action.

1-09.13(3)A**.RTF**

1-09.13(3)A Administration of Arbitration

(January 19, 2022 APWA GSP)

Revise the third paragraph to read:

> The Contracting Agency and the Contractor mutually agree to be bound by the decision of the arbitrator, and judgment upon the award rendered by the arbitrator may be entered in the Superior Court of the county in which the Contracting Agency's headquarters is located, provided that where claims subject to arbitration are asserted against a county, RCW 36.01.050 shall control venue and jurisdiction of the Superior Court. The decision of the arbitrator and the specific basis for the decision shall be in writing. The arbitrator shall use the Contract as a basis for decisions.

1-09.13(4).RTF

1-09.13(4) Venue for Litigation

(December 30, 2022 APWA GSP)

Revise this section to read:

> Litigation shall be brought in the Superior Court of the county in which the Contracting Agency's headquarters is located, provided that where claims are asserted against a county, RCW 36.01.050 shall control venue and jurisdiction of the Superior Court. It is mutually agreed by the parties that when litigation occurs, the Contractor shall permit the Contracting Agency to have timely access to any records deemed necessary by the Contracting Agency to assist in evaluating the claims or action.

1-10 TEMPORARY TRAFFIC CONTROL

1-10.2 Traffic Control Management

1-10.2.INST1.GR1

Section 1-10.2 is supplemented with the following:

1-10.2.OPT1.GR1

(November 2, 2022)

Work Zone Safety Contingency

Enhancements to improve the effectiveness of the accepted traffic control plans to increase the safety of the work zones shall be discussed on a weekly basis between the Contractor and the Contracting Agency. Enhancements shall be mutually agreed upon by the Contractor and Engineer prior to performing any Work to implement the enhancement.

Enhancements do not include the use of Uniformed Police Officers or WSP, address changes to the allowed work hour restrictions, or changes to the staging plans in the Contract (if applicable). If allowed by the Engineer, these items will be addressed in accordance with Section 1-04.4.

The Contractor shall be solely responsible for submitting any traffic control plan revision to implement the enhancement in accordance with Section 1-10.2(2).

1-10.2(1).GR1

1-10.2(1) General

1-10.2(1).INST1.GR1

Section 1-10.2(1) is supplemented with the following:

1-10.2(1).OPT1.GR1

(October 3, 2022)

The Traffic Control Supervisor shall be certified by one of the following:

The Northwest Laborers-Employers Training Trust
27055 Ohio Ave.
Kingston, WA 98346
(360) 297-3035
https://www.nwlett.edu

Evergreen Safety Council
12545 135th Ave. NE
Kirkland, WA 98034-8709
1-800-521-0778
https://www.esc.org

The American Traffic Safety Services Association
15 Riverside Parkway, Suite 100
Fredericksburg, Virginia 22406-1022
Training Dept. Toll Free (877) 642-4637
Phone: (540) 368-1701
https://atssa.com/training

Integrity Safety
13912 NE 20th Ave.
Vancouver, WA 98686
(360) 574-6071
https://www.integritysafety.com

US Safety Alliance

(904) 705-5660
https://www.ussafetyalliance.com

K&D Services Inc.
2719 Rockefeller Ave.
Everett, WA 98201
(800) 343-4049
https://www.kndservices.net

1-10.2(1).OPT2.GR1

(January 5, 2015)

The primary TCS shall have a minimum of 500 hours of experience providing traffic control as a TCS or traffic control labor on multilane highways with a speed limit of 55 mph or greater. The Contractor shall submit a certification of the TCS's experience with the TCS designation. Documentation of experience shall be available upon request by the Engineer.

1-10.4 Measurement

1-10.4(3).GR1

1-10.4(3) Reinstalling Unit Items With Lump Sum Traffic Control

1-10.4(3).OPT1.GR1

Section 1-10.4(3) is supplemented with the following:

1-10.4(3).OPT1.2026.GR1

(March 20, 2025)

The bid proposal may establish the project as lump sum, in accordance with Section 1-10.4(1) and also include one or more of the items included above in Section 10.4(2).

1-10.5(2).GR1

Item Bids with Lump Sum for Incidentals

1-10.5(2).INST1GR1

Section 1-10.5(2) is supplemented with the following:

1-10.5(2).OPT7.GR1

(November 2, 2022)

"Work Zone Safety Contingency", by force account.

All costs as authorized by the Engineer will be paid for by force account as specified in Section 1-09.6.

For purpose of providing a common proposal for all bidders, the Contracting Agency has entered an amount for the item "Work Zone Safety Contingency" in the Proposal to become a part of the Contractor's total bid.

The Engineer may choose to use existing bid items for the implementation of the agreed upon enhancement.

DIVISION 2
EARTHWORK

2-01 CLEARING, GRUBBING, AND ROADSIDE CLEANUP

2-01.2 Disposal of Usable Material and Debris *Supplement*

(February 7, 2018 COSV GSP)

Section 2-01.2 is supplemented with the following:

The Contractor shall dispose of all debris using Disposal Method No. 2 – Waste Site.

2-01.5 Payment *Supplement*

Section 2-01.5 is supplemented with the following:

(******)

Payment will be made in accordance with Section 1-04.1 for the following bid items:

Clearing and Grubbing	Acre

2-02 REMOVAL OF STRUCTURES AND OBSTRUCTIONS

2-02.1 Description

Section 2-02.1 is supplemented with the following:

(October 4, 2021)

Removal and Disposal of Asbestos Material

This work shall consist of removing, handling, and disposing of Asbestos Containing Material and Presumed Asbestos Containing Material identified in the Good Faith Investigation (GFI). The Contractor shall remove and dispose of asbestos in any and all areas as identified in the GFI.

2-02.3 Construction Requirements

Section 2-02.3 is supplemented with the following:

(October 4, 2021)

Removal and Disposal of Asbestos Material

Prior to performance of any contract work, the Contractor shall obtain all permits from and provide notification to, the Washington State Department of Labor and Industries, the Washington State Department of Ecology, the local clean air agency, and other permitting and regulatory agencies with jurisdiction over the work involving asbestos as the laws, rules, and regulations require.

Prior to commencing asbestos related work, the Contractor shall submit as a Type 1 Working Drawing any and all written verification of approvals and notifications that have been given and/or obtained from the required jurisdictional agencies. The Contractor shall include a schedule of activities for all work involving asbestos removal as part of the Type 1 Working Drawing. Asbestos related work shall also be shown on the Contractor's project progress schedule.

The Contractor shall designate a Washington State Certified Asbestos Supervisor (CAS), certified in accordance with WAC 295-65-012, to supervise the asbestos removal and to ensure that the handling and removal of asbestos is accomplished by certified asbestos workers, pursuant to Washington State Department of Labor and Industries standards. The Contractor shall ensure that the removal and disposal of asbestos meets the requirements of EPA regulation 40 CFR Part 61, local health department regulations, and all other applicable regulations.

The Contractor shall ensure the safety of all workers, visitors to the site, and the public in accordance with all applicable laws, rules, and regulations.

(******)

See Appendix M for Good Faith Investigation (GFI).

(September 7, 2021)

Removal of Obstructions

The following miscellaneous Obstructions shall be removed and disposed of:

***

- Conduit in conflict with retaining wall – Approximately 250 linear feet from Sta P 223+75 to Sta P 221+25
- Guide posts – As identified on the plans, Three (3)
- Paint Lines – As identified on the plans, approximately 1,750 linear feet
- Traffic Markings – As identified on the plans, six (6)
- Painted Crosswalk Line - Traffic Markings – As identified on the plans, approximately 110 square feet

Quantities provided here, and on the plans are for reference only. Extent of removals is as needed to construct new improvements.

***

(******)

Remove Fence

All portions of the fence within the limits for removal including posts, fabric, fittings, gates, and post foundations shall be removed. Contractor shall exercise care in the removal to ensure any portions of fence to remain are protected in place.

Contractor shall notify property owners a minimum of 5 working days in advance of fence removal operations.

(******)

Removal and Disposal of Hazardous Material

Hazardous material is suspected to exist on this project. The site history, prior studies and/or test results indicate a potential for encountering contaminated soils within the BSNF Right-of-Way and in other locations within the project limits.

All necessary permits for this work will be furnished by the Contractor. The Contractor is responsible for all work, records, and reports required to perform the work described in this section. The Contractor will perform all testing of suspected hazardous or contaminated material.

All earthwork material to be removed from within BNSF ROW or City Easement within BNSF ROW will require a sample and analysis plan to be developed and approved by BNSF including the following Environmental Testing but not limited to:

- Total RCRA 8 Metals EPA 6010D
- PAHs by EPA Method 8270D
- VOCs by EPA Method 8260 5035

If the material is not found acceptable for re-use or approved by BNSF to be wasted at a commercial waste site, the material will be disposed of from BNSF property at the following BNSF approved facility:

Waste Management
1820 S Graham Rd
Medical Lake, WA 99022

The Contractor shall notify the Engineer 10 working days prior to beginning work in the area identified in the Plans as contaminated. The Contractor shall notify the Engineer immediately if contamination is discovered in areas other than within the BNSF ROW or is suspected through observations such as an oily sheen or discolored soils that may or may not emit strong chemical odors.

Contaminated Soil and Hazardous Material

The Engineer will determine the limits of excavation required. All material that is designated by the Engineer to be removed shall be handled and stored in a manner that prevents the spread of contamination to adjacent soil or water. Separate stockpiles shall be maintained for known hazardous or contaminated material and for suspected hazardous or contaminated material. The Contractor shall transport hazardous or contaminated material and dispose of it at a permitted facility. The Contractor shall provide the Engineer with a copy of the shipping manifest or bill of lading indicating the amount of material hauled to disposal and bearing the disposal site operator's confirmation for receipt of the material. Manifests shall be submitted in accordance with Section 1-07.5(7).

Contaminated Water

All water that is removed from the areas of contamination, including free water that leaches from contaminated soil stockpiles or water that is suspected of being contaminated, shall be collected, handled and stored in a manner that prevents the spread of contamination to adjacent soil or water. The Contractor shall transport contaminated water and dispose of it at a permitted facility. The Contractor shall provide the Engineer with a copy of the shipping manifest or bill of lading indicating the amount of material hauled to disposal and bearing the disposal site operator's confirmation for receipt of the material. Manifests shall be submitted in accordance with Section 1-07.5(7).

2-02.3(2) Removal of Bridges, Box Culverts, and other Drainage Structures *Supplement*

Section 2-02.3(2) is supplemented with the following:

(******)

Removing Manhole

Frames and grates of manholes to be removed shall be disposed off-site by the contractor. The manholes shall be removed entirely. All piping connections shall be plugged per Section 7-08.3(4). The void shall be backfilled with crushed surfacing top course and compacted per Section 2-03.3(14)C, Method C.

Removing Drainage Structure

Frames and grates of drainage structure to be removed shall be disposed off-site by the contractor. The structures shall be removed entirely. All piping connections shall be plugged per Section 7-08.3(4). The void shall be backfilled with crushed surfacing top course and compacted per Section 2-03.3(14)C, Method C.

Removing Existing Water Line

Where shown on the Plans, or at other locations as determined by the Engineer, the Contractor shall remove water pipe, regardless of size, type or depth of pipe. Each pipe shall be removed in its entirety. The void left by the pipe shall be backfilled with gravel borrow and compacted in accordance with Section 2-03.3(14)C, Method C.

2-02.3(3) Removal of Pavement, Sidewalks, Curbs, and Gutters *Revision*
(February 7, 2018 COSV GSP)

Item 1 and 2 of Section 2-02.3(3) are deleted and replaced with the following:

1. Haul broken-up pieces to a disposal site furnished by the Contractor.

2. Any removed material to be incorporated into the project must meet the materials specifications as applicable for the proposed use.

Section 2-02.3(3) is supplemented with the following:

5. Within the project boundaries, previous roadway overlays and repairs may have placed asphalt fill onto Portland cement concrete driveway approaches. For this project, the Contractor shall be required to remove this asphalt fill material where shown in the Plans or directed by the Engineer. This work shall be paid for at the same unit price as the "Remove Asphalt Concrete Pavement" bid item and no separate payment shall be made.

2-02.3(4) Removal of Abandoned Utilities *New Section*
(February 7, 2018 COSV GSP)

Add the following new section:

2-02.3(4) Removal of Abandoned Utilities

The Contractor shall remove and dispose of abandoned utilities, conduit and vehicle detection loops that interferes with proposed construction found within the proposed road section or under sidewalk and curb areas. The cost for this work shall be included in the cost of the "Roadway Excavation Incl. Haul" bid item.

Add the following new section:

(******)

Removal of Commercial Structure

Prior to beginning any construction, the Contractor shall submit a complete demolition plan indicating equipment to be used, sequence of demolition, dust control procedures. No work will be allowed until the Engineer has reviewed the plan and authorized the Contractor to begin.

Prior to and during demolition activities the Contractor shall secure the site with temporary chain link fence and gates and ensure the building is vacant and that no persons are within the existing building.

Commercial structures and all items associated with the structure within Parcel 45033.0308 if they exist, such as foundations, irrigation systems, domestic water lines, domestic sewer lines, buried septic system, concrete patios, HVAC, air conditioners and fire sprinkler systems shall become the property of the Contractor and be completely removed from the site.

Domestic electric services (by others) shall be removed and terminated in accordance with City of Spokane Valley Standards.

Domestic gas services (by others) shall be removed and terminated in accordance with City of Spokane Valley Standards.

Domestic water services and side sewer services shall be removed to the property line and capped at this location for abandonment unless otherwise noted in plans.

The Contractor shall implement dust control measures in accordance with all applicable local, State, and Federal air pollution control requirements and regulations.

All trucks hauling debris from the site shall be covered.

Water, whether from dust control or weather related, shall not be allowed to leave the site.

The City will obtain the Demolition Permit for this work and transfer it to the Contractor prior to NTP.

2-02.3(5) Utility Potholing and Conflicts *New Section (March 23, 2023 COSV GSP)*

Add the following new section:

2-02.3(5) Utility Potholing and Conflicts

Utility Potholing

Potholing is included as a bid item for use in determining the location of existing utilities in advance of the Contractor's operations. The Contractor shall field verify the elevation and location of existing utilities, whether shown on the plans or based on locates, where the storm, sewer and water improvements cross. Field verification. The potholing shall be undertaken prior to casting adjacent manholes/catch basins and prior to the production any pipe excavation installation operation between the furthest downstream and upstream drainage/sewer structure or 500 linear feet of water main, to give the Engineer the opportunity to make any necessary vertical and horizontal alignment changes, without affecting the production excavation Contractor's operations. The Contractor shall provide the Engineer up to 48 hours to review the information.

The method of potholing, equipment and tools shall be approved by the Engineer. Potholing shall be conducted in the presence of the Engineer and the Utility owner.

The procedure shall be as follows:

1. Notify Underground Service Alert
2. Excavate by whatever means are necessary to protect the utility and public
3. Verify size and material of utility
4. Tie the horizontal location (Sta. and Offset) based on the roadway's centerline alignment.
5. Survey elevation at the top of existing utility pipe or invert elevation of storm sewer pipe, tied to project's datum.
6. Provide the pothole information on the City's "Pothole Utility Record" form and include with a sketch to the Engineer for review.
7. Backfill pothole.

2-02.4 Vacant *Replacement (******)*

Section 2-02.4 including title is deleted and replaced with the following:

2-02.4 Measurement

No specific unit of measurement apply to lump sum item "Removal of Structures and Obstructions", "Pothole Utility", "Removal and Disposal of Asbestos Material", Hazardous Material Excavation, Handling And Disposal, or "Removal of Commercial Structure".

"Remove Cement Concrete Curb", shall be measured per linear foot along the face of existing curb, curb and gutter or pedestrian curb.

"Remove Cement Concrete Median Curb and Island", shall be measured per square yard.

"Remove Cement Concrete Sidewalk / Driveway Approach", shall be measured per square yard along the ground for full depth of existing concrete.

"Remove Asphalt Pavement", shall be measured per square yard along the ground for full depth of existing pavement, regardless of depth.

"Remove Fence", shall be measured per linear foot.

"Removing Manhole", shall be measured per each manhole.

"Removing Drainage Structure", shall be measured per each.

"BNSF Handling, Excavation and Disposal", including haul will be measured by the cubic yard.

"Removing Existing Waterline", shall be measured per linear foot.

2-02.5 Payment *Replacement (******)*

Section 2-02.5 is deleted in its entirety and replaced with the following:

Payment will be made in accordance with Section 1-04.1 for the following bid items:

Removal of Structures and Obstructions	Lump Sum
Remove Cement Concrete Curb	Per Linear Foot
Remove Cement Concrete Median Curb and Island	Per Square Yard
Remove Cement Concrete Sidewalk / Driveway Approach	Per Square Yard
Remove Asphalt Pavement	Per Square Yard
Remove Fence	Per Linear Foot
Pothole Utility	Force Account
Removing Manhole	Per Each
Removing Drainage Structure	Per Each
Removal and Disposal of Asbestos Material	Lump Sum
Removal of Commercial Structure	Lump Sum
BNSF Excavation, Handling And Disposal	Cubic Yard
Hazardous Material Excavation, Handling And Disposal	Force Account
Removing Existing Waterline	Per Linear Foot

Sawcutting shall be included in the cost of other Bid items.

“Removal of Structures and Obstructions”, per lump sum

The lump sum Contract price for “Removal of Structures and Obstructions” shall be full pay for furnishing all tools, labor, equipment, and materials required to remove items called out on the plans to be removed that are not covered by other bid items.

"Remove Cement Concrete Curb", per linear foot.

The unit Contract price per linear foot for "Remove Cement Concrete Curb", per linear foot; shall be full pay for furnishing all tools, labor, equipment, and materials required to sawcut, remove, load, haul and dispose of existing curb, curb and gutter, or pedestrian curb and subgrade.

"Remove Cement Concrete Median Curb and Island", per square yard.

The unit Contract price per square yard for "Remove Cement Concrete Median Curb and Island" shall be full pay for furnishing all tools, labor, equipment, and materials required to sawcut, remove, load, haul and dispose of the median curb and island including dowels, fill material and concrete.

"Remove Cement Concrete Sidewalk / Driveway Approach", per square yard.

The unit Contract price per square yard for "Remove Cement Concrete Sidewalk / Driveway Approach", shall be full pay for furnishing all tools, labor, equipment, and materials required to sawcut, remove, load, haul and dispose of the existing sidewalk or driveway approach and subgrade.

"Remove Asphalt Pavement", per square yard.

The unit Contract price per square yard for "Remove Asphalt Pavement" shall be full pay for furnishing all tools, labor, equipment, and materials required to remove, load, haul and dispose of the existing full depth asphalt pavement and subgrade as specified. If the bid item "Remove Asphalt Pavement" is not included in the bid schedule, all costs associated with pavement removal shall be included in the bid item "Roadway Excavation Incl. Haul".

“Remove Fence”, per linear foot.

The unit Contract price per linear foot for “Remove Fence” shall be full pay for furnishing all tools, labor, equipment, and materials required to remove and dispose of all fencing materials and fill and compact the post holes with native material or topsoil.

“Pothole Utility”, per each.

The unit Contract price per each for “Pothole Utility” shall be full payment for furnishing tools, labor, equipment, and materials required to excavate, identify, survey and backfill (with excavated material) the utility line. Payment will be made for each field verified sewer, storm, water, gas, underground telecommunication, and underground electrical line crossing location shown on the Plans or directed by the Engineer. Payment will be withheld until the Contractor completes the “Pothole Utility Record” form and submits to the Engineer.

"Removing Manhole", per each.

The unit Contract price per each for "Remove Manhole” shall be full pay for furnishing all tools, labor, equipment, and materials required to remove and dispose of the catch basin or inlet as specified. The cost of the plugging existing pipes and filling/compacting the fill in the resulting void shall be included in this bid item.

"Removing Drainage Structure", per each.

The unit Contract price per each for " Removing Drainage Structure” shall be full pay for furnishing all tools, labor, equipment, and materials required to remove and dispose of the drainage structures as specified. The cost of the plugging existing pipes and filling/compacting the fill in the resulting void shall be included in this bid item.

“BNSF Excavation, Handling And Disposal”, by cubic yard.

For areas within BNSF ROW, all costs associated with excavation of material designated to be removed, testing material, hauling it to the stockpile location, storing stockpiled hazardous waste and contaminated soils, collecting, handling and storing contaminated water, loading the stockpiled material into the hauling conveyance for transport to the disposal site, and transporting and disposing of hazardous or contaminated materials at an approved facility for excavation. Including any needed permitting and reporting.

“Removal of Commercial Structure”, per lump sum.

Lump sum price for Removal of Commercial Structure shall include payment for all costs incurred for demolition and hauling of commercial structures and all items associated with the structures; removal and capping of water and sewer side services; securing the site with temporary chain link fence and gates.

"Hazardous Material Excavation, Handling And Disposal", by force account as provided in Section 1-09.6.

For areas outside of BNSF ROW, all costs associated with excavating the material designated to be removed, hauling it to the stockpile location, stockpiled hazardous waste and contaminated soils, collecting, handling and storing contaminated water, loading the stockpiled material into the hauling conveyance for transport to the disposal site, and transporting and disposing of hazardous or contaminated materials at an approved facility will be paid by force account under the item "Hazardous Material Excavation, Handling And Disposal".

"Removing Existing Waterline", per linear foot.

The unit Contract price per linear foot for "Removing Existing Waterline" shall be full pay for furnishing all tools, labor, equipment, and materials required to remove and dispose of the existing waterline as specified. The cost of the plugging existing pipes and filling/compacting the fill in the resulting void shall be included in this bid item.

2-03 ROADWAY EXCAVATION AND EMBANKMENT

2-03.1 Description *Revision*

(February 7, 2018 COSV GSP)

The last sentence of the first paragraph of Section 2-03.1 is deleted.

2-03.3 Construction Requirements

2-03.3(3) Excavation Below Subgrade *Supplement*

(February 7, 2018 COSV GSP)

Section 2-03.3(3) is supplemented with the following:

Material shall be considered rock when, the Engineer witnesses that the Contractor is unable to progress with a Caterpillar 235 Track-Hoe (or equal), or a D-8 Caterpillar equipped with a single tooth ripper (or equal). The cost of equipment, labor and material to operate the above equipment shall be incidental to other bid items.

2-03.3(10) Selected Material *Supplement*

Section 2-03.3(10) is supplemented with the following:
(******)

If select materials is to be stockpiled onsite, the contractor will not stockpile materials under Avista transmission or distribution lines or over top of gas lines within the project limits. The Contractor will make available the onsite safety meetings to Avista.

The use of recycled materials is not permitted within the BNSF Right of Way and/or within COSV Easement on BNSF Right of Way.

2-03.3(13) Borrow *Supplement*

Section 2-03.3(13) is supplemented with the following:
(******)

Material to be used within BNSF ROW and City Permanent Easement on BNSF ROW are required to be from an approved BNSF source. Material from non-BNSF approved sources in these areas will require additional testing (Phase I ESA) and approved by BNSF prior to use, at no additional cost to the contracting agency.

The use of recycled materials is not permitted within the BNSF Right of Way and/or within COSV Easement on BNSF Right of Way.

2-03.3(20) Curb, Sidewalk and Driveway Approach Excavation *New Section (February 7, 2018 COSV GSP)*

2-03.4 Measurement *Revision (******)*

The first paragraph of Section 2-03.4 is deleted and replaced with the following

> "Roadway Excavation Incl. Haul" shall be measured by the neatline cubic yard and shall not be field measured. The excavation neatline cubic yard is defined as the calculated difference between the existing surface area elevations, and the required excavated plan depth below finish grade over the area of excavation, minus the volume removed and paid for in other demolition items, included but not limited to removal of curbs, sidewalks, driveways and pavement. The quantity shown on the Bid Schedule for "Roadway Excavation Incl. Haul" shall be paid unless the Engineer approves Contractor supplied calculations based on the original project topographic survey showing a more accurate quantity. "Roadway Excavation Incl. Haul" does not include excavation necessary to construct the project drainage ponds.
>
> "Drainage Pond Excavation Incl. Haul" shall be measured by the neatline cubic yard and shall not be field measured. The excavation neatline cubic yard is defined as the calculated difference between the existing surface area elevations, and the required excavated plan depth below finish grade over the area of excavation, minus the volume removed and paid for in other demolition items, included but not limited to removal of curbs, sidewalks, driveways and pavement. The quantity shown on the Bid Schedule for "Drainage Pond Excavation Incl. Haul" shall be paid unless the Engineer approves Contractor supplied calculations based on the original project topographic survey showing a more accurate quantity.

The fifth paragraph of Section 2-03.4 is deleted and replaced with the following

> "Embankment Compaction" shall be measured by the neatline cubic yard and shall not be field measured. The excavation neatline cubic yard is defined as the calculated difference between the top of proposed subgrade and the existing surface area elevations after clearing and grubbing over the area of excavation. The quantity shown on the Bid Schedule for "Embankment Compaction" shall be paid unless the Engineer approves Contractor supplied calculations based on the original project topographic survey showing a more accurate quantity.

2-03.5 Payment *Supplement (******)*

Section 2-03.5 is supplemented with the following:

Payment will be made in accordance with Section 1-04.1 for the following bid items:

Drainage Pond Excavation Incl. Haul	Per Cubic Yard

Grading and compacting subgrade shall be included in the cost of other Bid items.

"Drainage Pond Excavation Incl. Haul", per cubic yard.

The unit Contract price per cubic yard for "Drainage Pond Excavation Incl. Haul" shall be full compensation for all costs incurred for excavating, loading, placing, or otherwise disposing of the material.

2-07 WATERING

2-07.1 Description *Supplement*

(February 7, 2018 COSV GSP)

Section 2-07.1 is supplemented with the following:

Water for dust control shall be applied by the Contractor to adequately control dust throughout the entire construction period to the satisfaction of the Engineer. If the Contractor, fails to water project areas when directed by the Engineer, the Engineer will water the project and deduct the invoice cost of the watering from the project pay estimate.

2-07.3 Construction Requirements

2-07.3(1) Water Supplied from Hydrants *New Section*

(February 7, 2018 COSV GSP)

Add the following new section:

2-07.3(1) Water Supplied from Hydrants

The Contractor shall secure permission from and comply with all requirements of the local Water Utility before obtaining water from fire hydrants. The Engineer shall be notified by the Contractor of such permission as soon as granted.

The Contractor shall only use hydrant wrenches to open hydrants. The Contractor shall also make certain that the hydrant valve is open full, since a partially opened valve causes damage to the hydrant. A metered hydrant connection furnished by the Water Utility shall be used as an auxiliary valve on the outlet line for control purposes. Fire hydrant valves must be closed slowly to avoid a surge in the system; which creates undue pressure on water lines. The Contractor shall carefully note the importance of following these directions.

If one of the Contractor's employees damages a hydrant or pipeline resulting from improper hydrant use, he shall immediately notify the Water Utility so that the damage can be repaired as quickly as possible. The Contractor is responsible for damages resulting in hydrant misuse.

Upon completing the use of the hydrants, the Contractor shall notify the Water Utility so that the hydrants may be inspected for possible damage. Any damage resulting from the use of the hydrants by the Contractor will be repaired by the Water Utility, and the cost thereof shall, if necessary be withheld from the final payment to the Contractor.

The Contractor shall furnish all equipment and tools, except the metered hydrant connection, that may be necessary to meet the requirements of the Water Utility pertaining to hydrant use.

Violation of these requirements could render the Contractor liable for damage suits in the event of fire, because of malfunctioning or damaged fire hydrants.

2-09 STRUCTURE EXCAVATION

2-09.3 Construction Requirements

2-09.3(1) General Requirements *Supplement*

(February 1, 2022 COSV GSP)

Section 2-09.3(1) is supplemented with the following:

At the end of each day's work the Contractor shall provide and install a safety fence completely around all excavations greater in depth than 24 inches below finish grade. The fence shall be a minimum 42-inch mesh wire or plastic with temporary steel posts. Plastic fence shall be a bright orange or other color acceptable to the Engineer. Wire fence shall be liberally marked with bright orange flagging acceptable to the Engineer.

Trench Fence Penalty

Each failure occurrence by the Contractor to install a safety fence completely around an excavation shall be subject to a penalty of $1,000. The penalty amount shall be subtracted from the monies owed for work completed under this contract. The penalty will be assessed for each excavation not completely fenced; multiple penalties may be assessed in each day.

Trench Excavation Safety System

The Contractor shall provide a Trench Excavation Safety System, per Chapter 39.04 RCW, meeting the provisions of the Washington Industrial Safety and Health Act, Chapter 49.17 RCW for all trenches more than 4-feet deep.

The Engineer will not review, approve, or have any liability for the adequacy of the Contractor's Trench Excavation Safety System.

2-09.3(1)E Backfilling *Supplement*

(February 7, 2019 COSV GSP)

Section 2-09.3(1)E is supplemented with the following:

A submittal with the mix design is not required if the Contractor is using one of the following mixes:

Supplier	CDF	Lean Concrete

CDA Redi-Mix	020AF38C	030AF38C
Central Pre-Mix Concrete Co.	353005	303030
Interstate Concrete & Asphalt	353005	303030

These mixes will be accepted based on a Certificate of Compliance provided at the jobsite by the supplier per 6-02.3(5)B.

The lean concrete mix shall have 3-sacks of concrete per cubic yard of mix and the maximum aggregate size shall be 3/8-inch. A non-chloride accelerant may be added to decrease set time.

2-09.3(3) Construction Requirements, Structure Excavation, Class A

2-09.3(3)B Excavation Using Open Pits-Extra Excavation *Revision (February 8, 2021 COSV GSP)*

The eighth paragraph of Section 2-09.3(3)B is revised to read:

Excavations using open pits may require design and submittals. The Contractor shall provide a safe work environment and shall execute the work in a manner that does not damage adjacent pavements, utilities, or structures. If the Engineer determines the Contractor's work may potentially affect adjacent traffic, pavements, utilities, or structures, the Engineer may request a Type 1, 2 or 2E Working Drawing from the Contractor at no additional cost to the Contracting Agency. The Contractor shall explain in the Working Drawing how the Engineer's concerns will be addressed, why infrastructure will not be damaged by the work, and how worker safety will be preserved.

The first sentence of the ninth paragraph of Section 2-09.3(3)B is revised to read:

For excavations that have soil types and slope geometries defined in WAC 296-155 part N and are between 4-feet and 20-feet in height, the contractor shall submit type 2 Working Drawings if requested by the Engineer.

Section 2-09.3(3)(D) is supplemented with the following:

(August 2, 2010)
The Contractor shall protect the existing track and facilities of the Railroad Company from damage due to the Contractor's operations, and shall shore all excavation adjacent to the existing railroad track. Shoring shall be steel sheet piling designed for a Cooper E-80 loading according to the American Railway Engineering and Maintenance Association (AREMA) Manual For Railway Engineering. Damage to the railroad track or railroad facilities, due to the Contractor's operations, will be repaired by the Railroad at the Contractor's expense.

(******)
All open cuts/shoring within BNSF ROW will consist of slopes of 2H:1V or flatter.

2-09.4 Measurement *Replacement (February 1, 2022 COSV GSP)*

Section 2-09.4 is deleted and replaced with the following:

For all pipes, pipe arches, structural plate pipes, underpasses, there will be no specific measurement for structural excavation or shoring.

For all manholes, catch basins, grate inlets, and drop inlets there will be no specific measurement for structural excavation or shoring.

For drywells there will be no specific measurement for structural excavation or shoring.

"Trench Fence Safety Compliance", will be calculated and payment deducted for as described in Section 2-09.3(1).

There will be no specific unit of measurement for lump sum item "Trench Excavation Safety System."

2-09.5 Payment *Supplement*

(February 1, 2022 COSV GSP)

Section 2-09.5 is supplemented with the following:

Payment will be made in accordance with Section 1-04.1 for the following bid items when included in the proposal:

Trench Fence Safety Compliance	Calculation
Trench Excavation Safety System	Lump Sum

"Trench Fence Safety Compliance", by calculation.

'Trench Excavation Safety System", per lump sum.

The lump sum Contract price for "Trench Excavation Safety System" shall be full pay for furnishing all tools, labor, equipment, and materials required for all work to furnish and install a safety system meeting all applicable state and federal requirements for all storm drain and water system associated work. Payment for the "Trench Excavation Safety System" shall not be construed as acceptance or approval of the Contractor's Trench Excavation Safety System.

DIVISION 4
BASES

4-04 BALLAST AND CRUSHED SURFACING

4-04.2 Materials *Supplement*

(May 21, 2019 COSV GSP)

Section 4-04.2 is supplemented with the following:

Recycled Concrete Aggregate shall not be used for surfacing material that will ultimately be left exposed to the elements once the project is complete. (gravel driveways, gravel shoulders, etc.). Recycled Concrete Aggregate shall not be used for base course or top course under structures (i.e. retaining walls, foundations, etc.)

4-04.3 Construction Requirements

4-04.3(5) Shaping and Compaction *Supplement*

(February 1, 2022 COSV GSP)

Section 4-04.3(5) is supplemented with the following:

Crushed surfacing placed under areas subject to vehicular traffic (roadway surfaces, parking areas, driveway approaches and curb and gutter) shall be compacted to at least 95 percent of the standard density determined by the requirements of Section 2-03.3(14)D.

Crushed surfacing placed under structures such as catch basins, inlets, curb inlets, pull boxes, junction boxes and inlets shall be compacted to at least 95 percent of the standard density determined by the requirements of Section 2-03.3(14)D.

Crushed surfacing placed under areas subject to pedestrian traffic only sidewalks, pedestrian walking paths shall be compacted to at least 95 percent of the standard density determined by the requirements of Section 2-03.3(14)D.

The Contracting Agency will take only one test on a recycled concrete aggregate source to determine a proctor. Any additional proctors needed to determine field densities, due to the inconsistency of the recycled concrete aggregate, will be at the Contractor's expense. The number of proctors required will be at the contracting agency's discretion based on inspection of the material.

Recycled materials may not be used on BNSF property.

DIVISION 5
SURFACE TREATMENTS AND PAVEMENTS

5-04 HOT MIX ASPHALT

5-04.2 Materials

Section 5-04.2 is supplemented with the following:

(******)

Joint Adhesive for Bituminous Pavement

Joint adhesive material shall conform to the following requirements and each lot will be accepted by a Manufacturer's Certificate of Compliance per Section 1-06.3:

Test	Specification
Cone Penetration, 77ºF (25ºC) (ASTM D 5329)	60 - 100
Flow, 140ºF (60ºC) (ASTM D 5329)	5 mm maximum
Resilience, 77ºF (25ºC) (ASTM D 5329)	30% minimum
Ductility, 77ºF (25ºC) (ASTM D 113)	30 cm minimum
Ductility, 39.2ºF (4ºC) (ASTM D 113)	30 cm minimum
Adhesion, 77ºF (25ºC) (ASTM D 5329)	500% minimum
Softening Point (ASTM D 36)	170ºF (77ºC) minimum
Asphalt Compatibility (ASTM D 5329)	Pass

5-04.2(1) How to Get an HMA Mix Design on the QPL

5-04.2(1)A Mix Designs Containing RAP and/or RAS

(February 8, 2021 COSV GSP)

Section 5-04.2(1)A is supplemented with the following:

Mix designs using RAP must meet the classification of Low RAP per Table 2. "High RAP/Any RAS" mix designs will not be accepted.

5-04.2(2) Mix Design – Obtaining Project Approval

(February 8, 2021 COSV GSP)

Section 5-04.2(2) is deleted and replaced with the following:

No paving shall begin prior to the approval of the mix design by the Engineer.

Fifteen days prior to the first day of paving the contractor shall provide one of the following mix design verification certifications for Contracting Agency review;

- The WSDOT Mix Design Evaluation Report from the current WSDOT QPL, or one of the mix design verification certifications listed below.
- The proposed HMA mix design on WSDOT Form 350-042 with the seal and certification (stamp & signature) of a valid licensed Washington State Professional Engineer.

- The Mix Design Report for the proposed HMA mix design developed by a qualified City or County laboratory that is within one year of the approval date.

The mix design shall be performed by a lab accredited by a national authority such as Laboratory Accreditation Bureau, L-A-B for Construction Materials Testing, The Construction Materials Engineering Council (CMEC's) ISO 17025 or AASHTO Accreditation Program (AAP) and shall supply evidence of participation in the AASHTO: resource proficiency sample program.

Mix designs shall;

- Have the aggregate structure and asphalt binder content determined in accordance with WSDOT Standard Operating Procedure 732 and meet the requirements of Sections 9-03.8(2), except that Hamburg testing for ruts and stripping are at the discretion of the Engineer, and 9-03.8(6).
- Have anti-strip requirements, if any, for the proposed mix design determined in accordance with AASHTO T 283 or T 324, or based on historic anti-strip and aggregate source compatibility from previous WSDOT lab testing. (For commercial mixes, AASHTO T 324 evaluation is not required)

At the discretion of the Engineer, agencies may accept verified mix designs older than 12 months from the original verification date with a certification from the Contractor that the materials and sources are the same as those shown on the original mix design.

For the Bid Item Commercial HMA, the Contractor shall select a class of HMA and design level of Equivalent Single Axle Loads (ESAL's) appropriate for the required use.

5-04.3 Construction Requirements

5-04.3(3) Equipment

5-04.3(3)D Material Transfer Device or Material Transfer Vehicle

(August 3, 2009 COSV GSP)

Section 5-04.3(3)D is deleted in its entirety.

5-04.3(4) Preparation of Existing Paved Surfaces

(February 1, 2022 COSV GSP)

The first sentence of the second paragraph of Section 5-04.3(4) is replaced with the following:

Apply a uniform coat of asphalt (tack coat) to all paved surfaces on which any course of HMA is to be placed or abutted, including each lift on projects with multiple lifts of HMA.

(February 1, 2022 COSV GSP)

Section 5-04.3(4) is supplemented with the following:

Contractor is responsible for replacing any paint or plastic pavement markings covered by tack that is tracked out beyond the paving limits by hauling or other equipment during the any paving operation.

5-04.3(7) Spreading and Finishing

(December 31, 2019 COSV GSP)

Section 5-04.3(7) is supplemented with the following:

The contractor shall bid and construct each project with enough equipment so that, on a roadway with two or more lanes, only one cold longitudinal joint, placed at centerline, shall be constructed in any roadway. A cold longitudinal joint is defined as a longitudinal joint that has been left exposed for more than four hours or the surface temperature of the asphalt has cooled to less than 175 degrees, whichever occurs first.

The mixture shall be laid upon approved surface, spread, and struck off to the grade and elevation established. HMA pavers complying with Section 5-04.3(3) shall be used to distribute the mixture.

The temperature of the mixture at point of transfer into the paver shall not be lower than the recommended compaction temperature as stated on the mix-design, unless otherwise directed by the Engineer in writing.

The minimum compacted depth of any layer in any course is to be as shown in Table 6A, unless approved by the engineer:

Table 6A
Minimum Nominal Compacted Depth of Any Layer

HMA Class	Minimum Lift Thickness (ft)
⅜"	0.08
½"	0.12
¾"	0.20
1"	0.25

5-04.3(8) Aggregate Acceptance Prior to Incorporation in HMA

(December 31, 2019 COSV GSP)

The second paragraph of Section 5-04.3(8) is deleted.

5-04.3(9) HMA Mixture Acceptance

(February 1, 2023 COSV GSP)

Table 7 in Section 5-04.3(9) is revised with the following:

Table 7

Basis of Acceptance for HMA Mixture		
	Visual Evaluation	**Statistical Evaluation**
Criteria for Selecting the Evaluation Method	• Commercial HMA placed at any location • Any HMA placed in: o driveways o ditches o prelevel o pavement patches o paths o trails o temporary pavement[1]	All HMA mixture other than that accepted by Visual Evaluation

	• Other nonstructural applications of HMA as approved by the Engineer	

[1]Temporary pavement is HMA that will be removed before Physical Completion of the Contract.

5-04.3(9)A Mixture Acceptance – Test Section
(February 1, 2023 COSV GSP)

Section 5-04.3(9)A , including its subsections are deleted in its entirety.

5-04.3(9)B Mixture Statistical Evaluation

5-04.3(9)B2 Mixture Statistical Evaluation-Sampling
(February 1, 2023 COSV GSP)

The second sentence of the second paragraph of Section 5-04.3(9)B2 is deleted.

5-04.3(9)B3 Mixture Statistical Evaluation-Acceptance Testing
(February 1, 2023 COSV GSP)

Section 5-04.3(9)B3 is supplemented with the following:

Testing of HMA for compliance of Va will be at the option of the Contracting Agency. If tested, compliance of Va will use WSDOT SOP 731.

5-04.3(9)B5 Mixture Statistical Evaluation – Composite Pay Factors (CPF)
(February 1, 2023 COSV GSP)

The last sentence of section 5-04.3(9)B5 is revised to read:

The maximum CPF for HMA mixture shall be 1.0.

Table 12 of Section 5-04.3(9)B5 is revised to read:

Table 12 HMA Mixture Price Adjustment Factors

Constituent	Factor "f"
All aggregate passing 1 ½", 1", ¾", 3/8" and No. 4 sieves	2
All aggregate passing No. 8 sieve	15
All aggregate passing No. 200 sieve	20
Asphalt binder	40
Voids in Mineral Aggregate	2
Air Voids (Va) (where applicable)	20

5-04.3(9)B6 Mixture Statistical Evaluation – Price Adjustments

(February 1, 2023 COSV GSP)

Section 5-04.3(9)B6 is replaced by the following:

For each HMA mixture lot, a Job Mix Compliance Price Adjustment will be determined and applied, as follows:

$$JMCPA = [0.60 \times (CPF - 1.00)] \times Q \times UP$$

Where
JMCPA = Job Mix Compliance Price Adjustment for a given lot of mixture ($)
CPF = Composite Pay Factor for a given lot of mixture (maximum is 1.00)
Q = Quantity in a given lot of mixture (tons or S.Y.)
UP = Unit price of the HMA in a given lot of mixture ($/ton or S.Y.)

5-04.3(9)B7 Mixture Statistical Evaluation – Retests

(February 1, 2023 COSV GSP)

Section 5-04.3(9)B7 is replaced with the following:

The Contractor may request a sublot be retested. To request a retest, the Contractor shall submit a written request within 7 calendar days after the specific test results have been received. A split of the original acceptance sample will be retested. The split of the sample will not be tested with the same tester that ran the original acceptance test. The sample will be tested for a complete gradation analysis, asphalt binder content, VMA and, at the option of the agency, V_a. The results of the retest will be used for the acceptance of the HMA in place of the original sublot sample test results. The cost of testing will be deducted from any monies due or that may come due the Contractor under the Contract at the rate of $500 per sample.

5-04.3(9)E Mixture Acceptance – Notification of Acceptance Test Results

(December 31, 2019 COSV GSP)

Section 5-04.3(9)E is replaced with the following:

The results of all acceptance testing performed in the field and the Composite Pay Factor (CPF) of the lot after three sublots have been tested will be available to the Contractor upon request to the Engineer.

The Contractor agrees:

1. Quality control, defined as the system used by the Contractor to monitor, assess, and adjust its production processes to ensure that the final HMA mixture will meet the specified level of quality, is the sole responsibility of the Contractor.

2. The Contractor has no right to rely on any testing performed by the Contracting Agency, nor does the Contractor have any right to rely on timely notification by the Contracting Agency of the Contracting Agency's test results (or statistical analysis thereof), for any part of quality control and/or for making changes or correction to any aspect of the HMA mixture.

3. The Contractor shall make no claim for untimely notification by the Contracting Agency of the Contracting Agency's test results or statistical analysis.

5-04.3(10) HMA Compaction Acceptance

5-04.3(10)B HMA Compaction – Cyclic Density

(December 31, 2019COSV GSP)

The first sentence of section 5-04.3(10)B is revised to read:

Low cyclic density areas are defined as spots or streaks in the pavement that are less than **91.0-percent** of the theoretical maximum density.

The third sentence of Section 5-04.3(10)B is revised to read:

A $500 price adjustment will be assessed for any 500-foot section with two or more density readings below 91 percent of the theoretical maximum density.

5-04.3(10)C HMA Compaction Acceptance – Statistical Evaluation

5-04.3(10)C2 HMA Compaction Statistical Evaluation – Acceptance Testing

(February 1, 2023 COSV GSP)

Section 5-04.3(10)C2 is replaced with the following:

The location of the HMA compaction acceptance tests will be randomly selected by the Engineer from within each sublot, with one test per sublot.

5-04.3(10)C3 HMA Statistical Compaction – Price Adjustments

(February 1, 2023 COSV GSP)

The Table in Section 5-04.3(10)C3 is replaced with the following:

Value of CPF	Equation for Calculating CPA
When CPF > 1.00	CPA = $0
When CPF = 1.00	CPA = $0
When CPF < 1.00	CPA = [0.60 x (CPF – 1.00)] x Q x UP

Where

CPA = Compaction Price Adjustment for the compaction lot ($)
CPF = Composite Pay Factor for the compaction lot (maximum is 1.0)
Q = Quantity in the compaction lot (tons or S.Y.)
UP = Unit price of the HMA in the compaction lot ($/ton or $/S.Y.)

5-04.3(12) Joints

Section 5-04.3(12) is supplemented with the following:

(******)

Joint Adhesive for Bituminous Pavement
The Contractor shall install Joint Adhesive for Bituminous Pavement, where shown in the Plans, to all longitudinal joints prior to paving of the wearing course.

Prior to the application of the joint adhesive the face of the longitudinal joint shall be dry and free from any loose material that would inhibit adhesion.

Preparation and installation of joint adhesive shall be in accordance with the manufacturer's recommendations. The application of the Pavement Joint Adhesive shall occur just prior to placement of the HMA so the adhesive will not be damaged or picked up by paving operations, or other construction traffic. At least one week prior to the installation, the Contractor shall supply the Engineer with a copy of the manufacturer's installation recommendations.

5-04.3(12)A HMA Joints

(February 1, 2022 COSV GSP)

Section 5-04.3(12)A is supplemented with the following:

The Contractor shall install tack to all joints longitudinal, transverse and pavement patches on all HMA lifts that are not hot lapped.

Equipment used for performing the tack application shall always be maintained in satisfactory working condition. Prior to the application of tack the face of the joint shall be thoroughly dry and free from any loose material, dust, or other debris that would inhibit adhesion. Joint tack shall be applied concurrent with the final HMA placement and application shall be limited to the surfaces that will be paved during the same working shift.

A heavy application of tack coat (0.16 gallons per square yard) shall be applied to all vertical faces of the joints, including the entire step wedge and any abutting vertical concrete curb surface. The contractor shall re-tack the joint once after pavement compaction is complete per Section 5-04.3(12)A3.

5-04.3(12)A1 Transverse Joints

(December 31, 2019 COSV GSP)

The first sentence of the second paragraph of Section 5-04.3(12)A is revised to read:

Construct a temporary wedge of HMA on a 12:1 for drop offs less than 3 inches and 30:1 for drop offs great than or equal to 3 inches where a transverse joint as a result of paving or planing is open to traffic.

5-04.3(12)A2 Longitudinal Joints

(February 1, 2022 COSV GSP)

Section 5-04.3(12)A2 is supplemented with the following:

Longitudinal step wedge joint
A continuous longitudinal step wedge joint shall be constructed along the longitudinal joint at centerline or as shown on the Plans. The HMA step joint shall consist of a vertical step not less than ¾-inch or more than one-half the compacted lift thickness. The remaining depth below the

vertical step shall be tapered at a slope not steeper than 4:1. The sloped portion of the HMA step wedge joint shall be uniformly compacted with a plate wacker or other device approved by the Engineer. Tack shall be applied on the vertical face of the joint prior to placing the adjoining HMA.

The longitudinal step wedge joint need not be constructed within cul-de-sacs or on residential streets with a centerline length less than 300 feet.

5-04.3(12)A3 Finished Joint Seal
(******)

Section 5-04.3(12)A3 is a new section:

5-04.3(12)A3 Finished Joint Seal

The contractor shall re-tack asphalt to asphalt joints after pavement compaction is complete. A clean sand shall be applied to blot the tack while patching to assure that the tack coat does not track off site. It should be evident that the joint is sealed to the Engineer. If the joint opens up, the contractor shall seal the joint with an approved crack sealant.

The Tack Coat shall be an un-diluted CSS-1 emulsified asphalt. The tack coat shall have sufficient temperature such that it may be applied uniformly at the specified rate of application and shall not exceed the maximum temperature recommended by the emulsified asphalt manufacturer.

5-04.3(13) Surface Smoothness
(February 1, 2023 COSV GSP)

Item 1 under the second paragraph of Section 5-04.3(13) is deleted and replaced with the following:

1. Not Used

Section 5-04.3(13) is supplemented with the following:

Any paved areas that do not shed water, as a result creating a ponding issue; shall be counted as an excessive defect. At the request of the Engineer, any or all paved areas shall be flooded by the contractor to evaluate for ponding. The cost associated with testing for ponding shall be incidental to bid item for HMA.

The last paragraph of Section 5-04.3(13) is deleted and replaced with the following:

All new and existing frames; grates and lids for sewer manholes, storm water manholes and catch basins; water valve boxes; gas valve boxes; communication and power vaults; monument cases; pull boxes; junction boxes and all other utility appurtenances in the roadway shall be adjusted after the final HMA lift.

The center location of each utility appurtenance and all monuments shall be referenced by survey prior to the start of paving operations and a temporary covering shall be placed over the appurtenances to facilitate the continuous paving operation. The Contractor shall place compacted cold mix or HMA over lowered utilities where the travelled way is open to traffic

prior to the final paving. The location of each water valve shall be marked on the surface of the new pavement within 24 hours of the placement of the pavement. After paving has been completed, the Contractor shall install and adjust utility castings/covers on all new and existing public/private utility structures and monuments within 5 working days of placing the final HMA wearing lift.

The HMA pavement shall be cut and removed to a neat circle, as shown in the contract plans. The asphalt shall be cut using a hole saw or coring machine. The location of the HMA removal shall be based upon the survey reference location established by the contractor. The utility appurtenance shall be adjusted to the finished grade utilizing the same methods of construction specified for new construction in Section 7-05 of the Standard Specifications. The utility appurtenance's rim elevation shall be set 1/8 inch to 3/8 inches below the top of the final HMA surface. The HMA removal area shall be backfilled with lean concrete to an elevation of 3 inches below the final HMA surface.

The day following placement of the lean concrete, the edge of asphalt, outer edge of the casting, and top of the lean concrete shall be coated with a heavy application of tack coat. HMA shall be placed and compacted around the utility appurtenance and over the lean concrete with hand tampers and a patching roller. The complete HMA patch shall match the final HMA surface for texture, density, and uniformity of grade. The joint between the patch and the final HMA surface shall be retacked and covered immediately with dry paving sand.

Any erroneous core that creates inadvertent joint(s) in the final HMA surface due to the Contractor improper referencing of the utility appurtenance shall be subject to a $2,500.00 penalty per occurrence. The penalty will be deducted from the Contractor's payment. Any erroneous cores or other pavement repairs completed after paving of the final HMA surface shall be compliant with the Inland Northwest Regional Pavement Cut Policy.

The Contractor may not use pre-manufactured frame inserts.

5-04.4 Measurement

(******)

Section 5-04.4 is supplemented with the following:

If the Contractor elects to remove and replace HMA as allowed by Section 5-04.3(11), the material removed will not be measured.

"HMA CL 3/8 IN. PG 64H-28, TEMPORARY PAVEMENT" will be measured by the ton in accordance with Section 1-09.2, with no deduction being made for the weight of asphalt binder, mineral filler, or other components of the HMA.

Joint Adhesive for Bituminous Pavement will be measured by the linear foot along the line and slope of the completed joint.

5-04.5 Payment

(******)

Section 5-04.5 is supplemented with the following:

"HMA CL 3/8 IN. PG 64H-28, TEMPORARY PAVEMENT" per ton

The unit Contract price for "HMA CL 3/8 IN. PG 64H-28, TEMPORARY PAVEMENT" shall be full compensation for all costs, including anti-stripping additive, incurred to carry out requirements o Section 5-04 except or those costs included in other items which are included in this subsection and which are included in the proposal. No additional payment will be made for removal of temporary HMA and is included in this item.

Payment will be made in accordance with Section 1-04.1 for the following bid items:

Job Mix Compliance Price Adjustment	Calculated
Compaction Price Adjustment	Calculated
Joint Adhesive for Bituminous Pavement	Per Linear Foot

All costs for asphalt tack coat and sand on pavement joints shall be in the cost of other Bid Items

5-05 CEMENT CONCRETE PAVEMENT

5-05.1 Description

Section 5-05.1 is supplemented with the following:

(August 6, 2012)
This Work consists of furnishing and placing pigmented, textured, or textured and pigmented cement concrete pavement at the locations and depth as shown in the Plans.

5-05.2 Materials

Section 5-05.2 is supplemented with the following:

(******)
Pigment color for cement concrete pavement shall be one chosen from the manufactures and colors listed below:

Truck Apron
Primary Pigment - Brick:

Manufacturer	**Pigment Color**
BASF	"Red River Clay", RC5006
Bomanite	"Brick Red"
Davis Colors	"Brick Red", 160
Increte Systems	"Brick Red"
Solomon Colors	Brick", 417

Splitter Islands and Central Island
Primary Pigment – Dark Gray:

Manufacturer	**Pigment Color**

Davis Colors	"Dark Gray (iron oxide) 860"
Increte Systems	"Dark Gray"
Solomon Colors	"Onyx", 920

The pigment shall be incorporated in accordance with the manufacturer's recommendations.

5-05.3 Construction Requirements

Section 5-05.3 is supplemented with the following:

(August 6, 2012)
Pigmented Cement Concrete
Curing shall be in accordance with Section 5-05.3(13) and be applied to the surface in accordance with the manufacturer's recommendations. If liquid membrane-forming concrete curing compound is used it shall meet the requirements of ASTM C 309 Type 1-D.

The Contractor shall provide a 2 foot by 2 foot sample panel, that has been cured a minimum seven days, showing the color of cement concrete to the Engineer for acceptance before placing any pigmented cement concrete pavement.

(******)
Submittals for Approval
A minimum of ten (10) working days prior to placement of the Portland cement concrete traffic island, the Contractor shall provide one (1) finished sample at the worksite, for review by the Engineer and the City of Spokane Valley for their approval. The sample shall be a minimum of 48" by 48" with a minimum thickness of 2 inches. The materials used in the sample shall meet the requirements of these Special Provisions. The samples shall be stamped, cured, and sealed in accordance with these Special Provisions.

(August 6, 2012)
Textured Cement Concrete
Textured cement concrete pavement pattern shall be one chosen from the manufactures and patterns listed below:

***

Truck Apron Pattern – Brick

Manufacturer	**Pattern**
Bomanite	"Running Bond Cobblestone"
Brickform	"Pennsylvania Cobble-Sanded Joint", TM820
Increte Systems, Inc.	"Euro Cobble Running Bond", SECR S001
Matcrete	"Large Cobblestone", P-16
Renew Crete Systems	"London Cobblestone"
Scofield	"Old Belgium Stone: Running Bond" (4530)

Splitter Island and Central Island Pattern – Ashlar Stone

Manufacturer	**Pattern**

Increte Systems, Inc.	"Ashlar Slate"
Renew Crete Systems	"Royal Ashlar"
Bomanite	"Flagstone"

***

A mat or stamp shall be used to imprint the pattern into the concrete surface.

Curing shall be in accordance with Section 5-05.3(13) and be applied to the surface in accordance with the manufacturer's recommendations. If liquid membrane-forming concrete curing compound is used it shall meet the requirements of ASTM C 309 Type 1-D.

(******)

Saw cut 4' by 4', square pattern into finished concrete. Use 18" by 18" square slate pattern set on diagonal, with 12" by 6" slate solider course banding. While initially finished concrete is plastic, accurately align and place stamp "skins" or semi rigid mats in a sequence and changing direction of pattern to avoid visible repeats of pattern over entire area. Uniformly load mats and press into concrete to produce required imprint pattern and depth of imprint on concrete surface. Remove stamp mats immediately. Hand stamp edges and surfaces unable to be imprinted by stamp mats, including step 7-05rs, and treads.

5-05.3(1) Concrete Mix Design for Paving

Section 5-05.3(1) is supplemented with the following:

(November 20, 2023)

Aggregate for Textured Cement Concrete Pavement

Fine aggregate and coarse aggregate shall be a combined gradation in accordance with Section 9-03.1(5) and have a nominal maximum aggregate size equal to ½- inch, ¾-inch, 1-inch, or 1-½-inch sieve.

The Contractor shall select the nominal maximum aggregate size that allows the specified textured cement concrete pavement pattern to be imprinted into the concrete surface to the depth specified for the textured pattern. If the textured cement concrete pattern is unsatisfactory, the Contractor shall remove and replace the concrete pavement at no expense to the Contracting Agency.

5-05.3 Construction Requirements

5-05.3(3) Equipment

5-05.3(3)E Smoothness Testing Equipment

(April 30, 2025 COSV GSP)

Section 5-05.3(3)E and its title is deleted in its entirety.

5-05.3(6) Surface Preparation

(February 7, 2018 COSV GSP)

Section 5-05.3(6) is supplemented with the following:

The subgrade may be trimmed by equipment other than automatically controlled machine using reference lines.

Where thickened edges for pavements are required, such as shown on the Standard Plans, the subgrade shall be excavated and shaped to provide for the section shown.

Wherever possible, vehicles shall be kept off the finished subgrade. If vehicles must travel on the subgrade ahead of the paving, a power drag shall be carried immediately ahead of placing concrete. Irregularities in the subgrade caused by trucks during the placement of concrete shall be smoothed out and compacted immediately ahead of placing the concrete.

5-05.3(10) Tie Bars and Corrosion Resistant Dowel Bars

(February 7, 2018 COSV GSP)

The seventh paragraph of Section 5-05.3(10) is supplemented with the following:

Tie bars and dowels out of compliance with these tolerances shall be cut off or removed and new bars drilled and epoxy grouted into place at no additional cost to the Contracting Agency.

5-05.3(11) Finishing

(February 7, 2018 COSV GSP)

The last paragraph of Section 5-05.3(11) is deleted in its entirety.

5-05.3(16) Protection of Pavement

(February 7, 2018 COSV GSP)

The second paragraph of Section 5-05.3(16) is supplemented with the following:

When concrete is being placed adjacent to an existing pavement or sidewalk, that part of the equipment which is supported on the existing pavement or sidewalk shall be equipped with protective pads on crawler tracks or rubber-tired wheels on which the bearing surface is offset to run a sufficient distance from the edge of the pavement or sidewalk to avoid breaking the pavement or sidewalk edge.

Paving operations adjacent to and abutting the concrete pavement shall not be scheduled until the average of cylinder strength tests exceed 3,000 psi.

5-05.4 Measurement

(February 7, 2018 COSV GSP)

Section 5-05.4 is supplemented with the following:

(August 6, 2012)
Pigmented, textured, or textured and pigmented cement concrete pavement will be measured by the square yard placed.

5-05.5 Payment

(February 7, 2018 COSV GSP)

Section 5-05.5 is supplemented with the following:

"Textured and Pigmented Cement Concrete Traffic Island", per square yard

The unit Contract price per square yard for Textured and Pigmented Cement Concrete Traffic Island shall be full pay for all costs incurred to perform the Work in this Specification.

"Textured and Pigmented Cement Concrete Truck Apron", per square yard

The unit Contract price per square yard for Textured and Pigmented Cement Concrete Truck Apron shall be full pay for all costs incurred to perform

DIVISION 6
STRUCTURES

6-02 CONCRETE STRUCTURES

6-02.1 Description

Section 6-02.1 is supplemented with the following:

(******)

CIP Concrete Encasement consists of cast-in-place concrete with form liner and internal reinforcing steel, encasing each single bent and each double bent on the two Railroad bridges, as detailed in the Plans.

General construction and submittal requirements for the CIP Concrete Encasement shall meet the requirements of Part 1 (General) in Section 04400, Concrete Construction, of the BNSF Railway Standard Construction Specifications dated 8/1/2023 in Appendix I and the requirements in the Plans.

6-02.2 Materials

Section 6-02.2 is supplemented with the following:

(******)

Materials for the CIP Concrete Encasement shall meet the requirements of Part 2 (Materials) in Section 04400, Concrete Construction, of the BNSF Railway Standard Construction Specifications dated 8/1/2023 in Appendix I and the requirements in the Plans.

6-02.3 Construction Requirements

Section 6-02.3 is supplemented with the following:

(******)

Construction and workmanship of the CIP Concrete Encasement shall meet the requirements of Part 3 (Execution) in Section 04400, Concrete Construction, of the BNSF Railway Standard Construction Specifications dated 8/1/2023 in Appendix I and the requirements in the Plans.

For construction of the CIP Concrete Encasement, coordination with the Railroad shall meet the requirements of the Project Special Provisions and the requirements in the Plans.

6-02.3(2) Proportioning Materials

6-02.3(2)B Commercial Concrete *Supplement/Revision*

(March 14, 2018 COSV GSP)

Section 6-02.3(2)B is supplemented with the following:

Commercial concrete used for curb, curb and gutter, curb ramps, sidewalks, driveway approaches and median islands shall have a minimum compressive strength at 28 days of 4,000 psi in accordance with AASHTO T22.

The last sentence of the second paragraph of Section 6-02.3(2)B is revised to read:

Commercial concrete used for curb, curb and gutter, curb ramps, sidewalks, driveway approaches and median islands, it shall have a minimum cementitious material content of 564 pounds per cubic yard of concrete, shall be air entrained, and the tolerances of Section 6-02.3(5)C shall apply.

6-02.3(4) Ready Mix Concrete *Replacement*
(March 14, 2018 COSV GSP)

Section 6-02.3(4) is replaced with the following:

All concrete shall be batched in a pre-qualified manual, semi-automatic, or automatic plant as described in Section 6-02.3(4)A. The Engineer is not responsible for any delays to the Contractor due to problems in getting the plant certified.

6-02.3(5) Acceptance of Concrete

6-02.3(5)B Certification of Compliance *Revision*
(February 7, 2019 COSV GSP)

Delete the last sentence and replace with the following:

The Certificate of Compliance for commercial concrete, 4,000P concrete, Cl 4,000 Commercial concrete, Controlled Density Fill, and lean concrete, shall include, as a minimum, the following information:

Type of Concrete
Admixtures added at the plant
Batching facility
Date and time of batching
Mix Number
Truck No.

6-02.4 Measurement
(February 7, 2019 COSV GSP)

Section 6-02.4 is supplemented with the following:

(******)
CIP Concrete Encasement shall be measured in place by the cubic yard to the neat lines of the Structure as shown in the Plans.

For the CIP Concrete Encasement, no deduction will be made for steel piles, steel cross bracing, form liner indentations, fillets, chamfers, pile heads, reinforcing steel, structural steel, bolts, weep holes, rustications, chamfers, edgers, joint filler, junction boxes, miscellaneous hardware, ducts or less than 6-inch diameter drain pipes when computing concrete quantities for payment.

6-02.5 Payment

Section 6-02.5 is supplemented with the following:

(******)
"CIP Concrete Encasement", per cubic yard.

No separate payment will be made for form liner. Form liner is included in the unit Contract price for "CIP Concrete Encasement".

"Reinforcing Steel for CIP Concrete Encasement", per pound.

6-11 REINFORCED CONCRETE WALLS

6-11.4 Measurement

Section 6-11.4 is supplemented with the following:

(******)
Retaining Wall will be measured per square foot of completed wall, measured from top of wall to top of footing.

Retaining Wall (Gravity) will be measured per square foot of completed wall, measured from top of bottom of wall.

6-11.5 Payment

Section 6-11.5 is supplemented with the following:

(******)
"Retaining Wall", per square foot.

"Retaining Wall (Gravity)", per square foot.

"Retaining Wall", and "Retaining Wall (Gravity)", per square foot. All costs in connection with the construction of the reinforced concrete retaining wall as specified including excavation, shoring, concrete footings and stem walls including all steel reinforcing bars, premolded joint filler, PVC pipe for weep holes, exterior surface finish, and pigmented sealer and anti-graffiti coating (when specified); working drawings; underdrain systems, gravel backfill for drains, concrete gutter at top back of wall, and granular borrow for wall backfill shall be included in the unit Contract price per square foot of "Retaining Wall", and "Retaining Wall (Gravity)".

DIVISION 7
DRAINAGE STRUCTURES, STORM SEWERS, SANITARY SEWERS, WATER MAINS, AND CONDUITS

7-04 STORM SEWERS

7-04.2 Materials *Supplement*

(February 1, 2022 COSV GSP)

Section 7-04.2 is supplemented with the following:

Ductile Iron Pipe shall meet the requirements of Section 9-30.1(1).

Slotted HDPE Pipe shall meet requirements of 9-05.2(7), Type SP with Class 2 perforations.

The last paragraph of Section 7-04.2 is deleted and replaced with the following:

When schedule A or B storm sewer pipe is specified in the Plans, the Contractor shall provide the specified schedule and diameter but has the option of furnishing either Ductile Iron Pipe or Solid Wall PVC Storm Sewer Pipe.

7-04.5 Payment *Supplement*

(February 7, 2018 COSV GSP)

The second to last paragraph of Section 7-04.5 is deleted and replaced with the following:

The unit Contract price per linear foot for storm sewer pipe of the kind and size specified shall be full pay for all tools, labor, equipment, and materials to furnish and install the storm sewer pipe, including; structure excavation Class B; disposing of excavated material; bedding; backfilling; adjustment of inverts to drainage structures; flushing/cleaning construction debris from the pipe and for testing the storm sewer pipe, in those areas shown on the plans or where directed by the Engineer in accordance with the requirements of Section 7-04.3(1).

7-05 MANHOLES, INLETS, CATCH BASINS, AND DRYWELLS

7-05.2 Materials *Supplement*

(December 31, 2019 COSV GSP)

Section 7-05.2 is supplemented with the following:

Manhole Steps and Entry Couplings
Manhole steps are required for all manholes except Type III manholes. Manhole steps shall be reinforced copolymer polypropylene plastic as manufactured by Lane International Corporation or an alternate acceptable to the Engineer. Manhole steps shall have integral restraints to prevent side slippage of feet.

Entry couplings shall be Kor-N-Seal or a PVC manhole adapter as manufactured by GPK Products, Inc. or a Dura-Seal III gasket as manufactured by Dura-Tech, Inc., or acceptable alternate. Gasket material shall comply with the provision of ASTM D-2000 3 BA715. Kor-N-

Seal shall be installed at the manhole manufacturer's plant. Field installation will not be permitted.

Locking Manhole Lids
All manholes not located within paved public roads shall have locking manhole covers conforming to Spokane County Standard Plan U-14.

Manhole Cone Section
All manholes shall be constructed with gasketed eccentric cone sections, unless otherwise specified by the Engineer.

Lids Within a Pedestrian Path
All lids located within a pedestrian path or access route shall either be manufactured or have a coating applied in accordance with manufacturer's recommendations to meet the stable, firm, and slip-resistant requirements of the Americans with Disabilities Act.

7-05.3 Construction Requirements *Supplement*
(December 31, 2019 COSV GSP)

Section 7-05.3 is supplemented with the following:

All openings between the structure and the pipe shall be watertight and filled with mortar/grout that has a minimum compressive strength of 4,000 psi at 7 days.

The Contractor shall be responsible for cleaning out catch basins, drywells, inlets and manholes of gravel, rocks or other construction debris prior to final acceptance by the Agency.

7-05.3(1) Adjusting Manholes, Drywells and Catch Basins to Grade *Supplement*
(February 13, 2023 COSV GSP)

Section 7-05.3(1) is supplemented with the following:

Frames and grates of manholes and catch basins that will be replaced shall be disposed offsite by the Contractor.

When adjusting existing sewer manhole to new grades the maximum vertical distance between the top of the structure and the bottom of grate shall be 13 inches max and 2 inches minimum. If this vertical distance is exceeded, the Contractor shall remove the existing cone or lid, furnish and install a barrel section, and reset the lid or cone before furnishing and installing all necessary concrete collars or rings.

The manhole, drywell and catch basin rim elevations shown on the Plans are estimates only. The Contractor shall set the rim elevations in accordance with Section 5-04.3(13).

All rim and grate adjustments of greater than 1 inch shall be done with concrete adjustment rings. Concrete bricks are not allowed. Adjustment rings and castings shall receive a min. ¼" bed of watertight, non-shrink mortar/grout between them. The adjustment section shall then receive coating of watertight, non-shrink mortar/grout on the outside, with the mortar/grout struck off on the inside with a concave or "V" joint between the rings and casting.

The Contractor shall prevent soil or debris entering manholes, catch basins, drywells or inlets during construction. The Contractor shall remove any debris from an active storm drain or sanitary sewer system within 24 hours of notification by the Engineer.

Prior to final acceptance the Contractor shall jet all storm drain and sanitary sewer pipes and clean out all catch basins, drywells, inlets and manholes within the project limits to the next manhole, catch basin or inlet downstream of the project. The Contractor shall utilize a vacuum truck at the next manhole downstream while cleaning to prevent any debris from flowing beyond the project limits.

7-05.3(2) Abandon Existing Manholes *Revision*
(February 7, 2018 COSV GSP)

Section 7-05.3(2) including title is deleted and replaced with the following:

7-05.3(2) Abandon Existing Manholes, Drywells and Catch Basins

Where shown on the plans or directed by the Engineer, existing manholes, drywells, inlets and catch basins shall be abandoned or removed in accordance with Section 2-02.

7-05.3(5) Pre-Cast Concrete Drywells *New Section*
(February 7, 2018 COSV GSP)

Add the following new section:

7-05.3(5) Pre-Cast Concrete Drywells

This provision covers the work required for removal and installation of precast concrete drywells, connecting to existing drywells and restoration of drywells partially exposed for trench excavation.

Prior to connecting to an existing drywell the Contractor shall clean the existing drywell of debris, soil, and water by vactoring.

Precast concrete drywells shall be constructed or replaced per the standard details as shown on the plans and as directed by the Engineer. Alternate drywells equal and similar to those shown on the plans may be furnished subject to the approval of the Engineer, in writing.

All cement concrete for the precast sections shall be Class "4000" meeting the requirements of Section 6-02 of the Standard Specifications. All components of the dry well shall be subject to the inspection and approval of the Engineer. The Contractor at his expense shall replace any defective component.

The cast-in-place concrete cap shall be poured to the diameter of the excavation.

Concrete caps disturbed when connecting to existing drywells or drywells partially exposed for trench excavation may be replaced with controlled density fill (CDF). The CDF shall be placed on fabric liner to protect the surrounding gravel backfill.

The Contractor shall replace the fabric liner, special backfill, and concrete cap as directed by the Engineer for drywells partially exposed for trench excavation.

7-05.4 Measurement *Supplement (******)*

Section 7-05.4 is supplemented with the following:

"Adjust Existing Manhole", will be measured per each.

“Curb Inlet Type 1”, will be measured per each.

“Curb Inlet Type 2”, will be measured per each.

“Catch Basin Type 1”, will be measured per each.

“Catch Basin Type 1L”, will be measured per each.

“PRECAST CONCRETE DRYWELL, TYPE A “, will be measured per each.

"Modified Precast Concrete Drywell Type B", will be measured per each.

"Structure excavation Class B", "Structure excavation Class B including haul" will not be measured for payment.

7-05.5 Payment *Supplement (******)*

Section 7-05.5 is supplemented with the following:

The cost of "Structure Excavation Class B, including haul" and shoring required for installation of any manhole, inlet, catch basin or drywell structure shall be included in other pay items.

Payment will be made in accordance with Section 1-04.1 for the following bid items:

Catch Basin Type 1	Per Each
Catch Basin Type 1L	Per Each
Curb Inlet, Type 1	Per Each
Curb Inlet, Type 2	Per Each
Cleanout Junction	Per Each
Modified Precast Concrete Drywell Type B	Per Each
PRECAST CONCRETE DRYWELL TYPE A	Per Each

“PRECAST CONCRETE DRYWELL, TYPE A,” per each.

The unit Contract price per each for “PRECAST CONCRETE DRYWELL TYPE A,” shall be full pay furnishing all tools, labor, equipment, and materials to furnish and install a drywell structure conforming to a Type A drywell per Spokane Valley Std plan S-101, required to

complete the installation, including structure excavation Class B; disposing of excavated material; shoring; CSTC bedding; geotextile; gravel backfill for drywell; pipe connections; grouting; concrete adjustment rings; metal frame with grate or solid cover; final utility adjustment per 5-04.3(13); cleaning/removing construction debris from the structure; and other related items.

"Catch Basin Type 1", per each.

The unit Contract price per each for "Catch Basin Type 1" shall be full pay for all tools, labor, equipment, and materials to furnish and install a catch basin conforming to Spokane Valley Std Plan S-112, including structure excavation Class B; disposing of excavated material; CSTC bedding; backfill; pipe connections; grouting; concrete adjustment rings; metal frame with grate or solid cover; final utility adjustment per section 5-04.3(13); cleaning/ removing construction debris from the structure and other related items.

"Catch Basin Type 1L", per each.

The unit Contract price per each for "Catch Basin Type 1L" shall be full pay for all tools, labor, equipment, and materials to furnish and install a catch basin conforming to Spokane Valley Std Plan S-112, including structure excavation Class B; disposing of excavated material; CSTC bedding; backfill; pipe connections; grouting; concrete adjustment rings; metal frame with grate or solid cover; final utility adjustment per section 5-04.3(13); cleaning/ removing construction debris from the structure and other related items.

"Curb Inlet, Type 1", per each.

The unit Contract price per each for "Curb Inlet, Type 1" shall be full pay for furnishing all tools, labor, equipment, and materials required to complete the installation, including structure excavation Class B including haul, furnishing and installing the curb inlet type 1 structure conforming to Spokane Valley Standard Plan S-110, backfill, and other related items.

"Curb Inlet, Type 2", per each.
The unit Contract price per each for "Curb Inlet, Type 2" shall be full pay for furnishing all tools, labor, equipment, and materials required to complete the installation, including structure excavation Class B including haul, furnishing and installing the curb inlet type 2 structure conforming to Spokane Valley Standard Plan S-111, backfill, and other related items.

"Adjust Existing Manhole," per each.

The unit Contract price per each for "Adjust Existing Manhole, " shall be full pay for furnishing all tools, labor, equipment, and materials required or incidental to adjust the existing structures to grade, including, but not limited to: structure excavation Class B including haul, interim adjustments up or down as may be required, excavation, backfilling, compaction, protection of the structures, provisions for continued street drainage, pavement patching, surfacing, restoration of adjacent areas in accordance with the specifications and plans, and removing construction debris after construction is complete. Payment for locating, uncovering, shielding, cleaning and jetting sewer manholes, is included under the "Adjust Existing Manhole" pay item price.

7-05 VACANT *Revision*

Section 7-05 is supplemented with the following:

7-05 4'X6' OVERFLOW VAULT

7-05 Description

This Work consists of designing and constructing buried structure 4'x6' overflow vault in accordance with the Plans and these Specifications.

7-05 Materials

Materials shall conform to Section 6-20.2 and 7-05.2.

7-05 Construction Requirements

Construction requirements shall conform to Section 6-20.3 and 7-05.3.

7-05 Measurement

"4'X6' Overflow Vault", shall be measured per each.

7-05 Payment

Payment will be made in accordance with Section 1-04.1 for the following bid items when included in the proposal:

4'X6' Overflow Vault	Per Each

"4'X6' Overflow Vault", per each.
The unit Contract price per each for "4'X6' Overflow Vault " shall be full pay for all tools, labor, equipment, and materials to furnish and install a catch basin conforming to plan sheet DRD4, including structure excavation Class B; disposing of excavated material; CSTC bedding; designing; manufacturing/precasting; backfill; pipe connections; grouting; concrete adjustment rings; metal frame with grate or solid cover; final utility adjustment per section 5-04.3(13); cleaning/ removing construction debris from the structure and other related items.

7-08 GENERAL PIPE INSTALLATION REQUIREMENTS

7-08.3 Construction Requirements *Supplement (February 7, 2018 COSV GSP)*

Section 7-08.3 is supplemented with the following:

The Contractor shall be responsible for flushing out and cleaning storm and sewer lines of gravel, rocks or other construction debris prior to final acceptance by the Agency.

7-08.3(1) Excavation and Preparation of Trench

7-08.3(1)A Trenches *Supplement*

(February 7, 2018 COSV GSP)

Section 7-08.3(1)A is supplemented with the following:

Stockpiles
Material stockpiles including trench excavation shall not block emergency entrance to side streets. Material stockpiles shall not remain more than 24 hours, excluding weekends and holidays, in any location.

Soil Information
Soils logs are included in Appendices for information only. If a geotechnical report is not provided in the appendices, the Contractor shall make its own interpretation and conclusions on geotechnical conditions, as per Section 1-02.4.

7-08.3(1)C Bedding the Pipe *Revision*

(February 7, 2018 COSV GSP)

The third and fourth sentences in the second paragraph and the third paragraph of Section 7-08.3(1)C are deleted and replaced with the following:

The Contractor shall compact the bedding with a "J" bar or similar device as accepted by the Engineer. A maximum of 6-inches of bedding material shall be placed before use of the "J" bar.

Bedding material shall be placed a minimum of 12-inches horizontally to each side of the pipe to facilitate compaction of the bedding material. Bedding material shall be placed to a minimum depth of 12-inches above the pipe prior to backfilling.

PVC Storm Water Pipe and Ductile Iron Storm Water Pipe Bedding
The Contractor shall furnish and install bedding material meeting the requirements of one of the following materials:

1. Crushed Surfacing Top Course, Section 9-03.9(3), or

2. A clean sand/gravel mixture free from organic matter and conforming to the following gradation:

Sieve Size	Percent Passing
¾" square	100
U.S. No. 4	50-100
U.S. No. 200	0-15

No alternative material will be used.

7-08.3(3) Backfilling *Supplement*

(February 7, 2018 COSV GSP)

Section 7-08.3(3) is supplemented with the following:

The Contractor shall provide, place and consolidate imported backfill to compensate for lost volume of native material due to compaction to specified density and/or removal of unsuitable material, where authorized by the Engineer. The Engineer shall be notified 24 hours prior to placing imported backfill.

Imported backfill shall be excess excavated trench material from other areas of the project or material imported from an outside source. Imported backfill shall be uniformly graded, free of topsoil, organic matter, and frozen soil. Maximum size shall be 4-inch diameter and not more than 15% by weight shall pass the number 200 sieve.

The lift thickness shall be based on the Contractor's ability to maintain the proper compaction throughout the entire depth of the lift as verified by compaction test results. The maximum lift thickness shall be 18-inches unless approved by the Engineer.

When requested by the Engineer, the Contractor shall excavate, including backfill and re-compaction, to the depth requested by the Engineer for density testing at no additional cost to the Owner.

Native material in the bottom of the trench disturbed by the bucket teeth or the Contractor's operation shall be re-compacted with a vibratory or mechanical compactor acceptable to the Engineer before laying the pipe.

The top 2-feet of the pipe trench shall be free of asphalt pavement larger than 1½-inch.

Drywell rock encountered in trench excavation shall be mixed with the native material so as not to exceed 25% by weight.

7-08.3(5) Marking Tape *New Section*

(February 7, 2018 COSV GSP)

Add the following new section:

7-08.3(5) Marking Tape

Marking Tape shall be installed over all utilities. The tape shall be placed at the location where shown on the plans, or if not shown, approximately 18 inches above the top of the pipe over the entire length of the pipe. Marking tape shall meet the requirements of Section 9-15.18.

7-08.4 Measurement *Revision*
(February 1, 2022 COSV GSP)

The third paragraph of Section 7-08.4 is deleted and replaced with the following:

Trench excavation for stormwater, sewer, and water piping shall not be measured.

7-08.5 Payment *Supplement*
(February 1, 2022 COSV GSP)

Section 7-08.5 is supplemented with the following:

All costs associated with structure excavation Class B; disposing of excavated material; pipe bedding; backfilling; adjustment of inverts to drainage or sewer structures; and flushing/cleaning construction debris from the pipe in the installation of stormwater, sewer and water piping shall be included in the unit Contract Price per foot for the size and type of pipe being installed.

7-09 WATER MAINS

7-09.1 Description *Supplement*

Section 7-09.1 is supplemented with the following:

(******)
All water main construction work, materials and methods shall be in accordance with Irvin Water District #6 standards and specifications (*I.W.D #6 standards*). Where a conflict exists between the *Standard Specifications* and the *I.W.D. #6 standards*, the I.W.D. #6 standards shall prevail. These standard can be found in Appendix O.

7-09.2 Materials *Supplement*

Section 7-09.2 is supplemented with the following:

(******)
All backfill material shall be dry and not frozen. Clean, round, granular sand meeting Section 9-03.13 Backfill for Sand Drains is an acceptable alternate bedding material.

No. 9 galvanized tracer wire shall be installed with water main and shall be brought up in valve boxes and vaults.

Steel casing pipe shall be in conformance with ASTM A1097 and of leak proof construction, such as butt welder or interlocking joints which are capable of withstanding the anticipated loading from structures and roadways. Pipe shall have a minimum yield stress, SMYS, of 35,000 psi. The inside diameter of the casing shall be large enough to allow the carrier pipe to be removed subsequently without disturbing the casing pipe. All joints or couplings, supports, insulators or centering devices for the carrier pipe shall be taken into account.

Casing insulators shall be pre-fabricated. Insulators shall be spaced and positioned per the manufacturer requirements. Insulators runner height shall extend beyond the outer diameter of the carrier pipe bell or joint and a minimum of 1". Minimum clearance between the runners at the crown of the carrier pipe and the inside crown of the casing pipe shall be 1" to 2". Casing spacers/insulators shall be manufactured from polyethylene for high impact strength and low coefficient of friction. Casing spacer/insulators shall be manufactured in conformance with ASTM D-638 and ASTM D-651 for tensile strength, ASTM D-792 for density, ASTM D-693 for compressive strength, ASTM D-638 for yield and break strength, ASTM D-570 for water absorption, ASTM D-256 for impact strength, and ASTM D-790 for flexural strength. The only metal is the hardware. Casing spacers/insulators shall be comprised of two halves.

Casing seals shall be synthetic rubber and used at both ends of the casing pipe to create a moisture proof seal. The casing seals shall be secured to both the casing pipe and the carrier pipe with stainless

steel bands. Casing seals shall be “pull on” or “wrap around” type. Casing seals shall be installed to prevent moisture and soil from entering the space between the casing pipe and carrier pipe. Casing seal shall be comprised of 1/8” thick synthetic neoprene rubber. Casing seals shall be clamped to both the casing pipe and the carrier pipe with stainless steel bands. Casing seals shall have an average tensile strength of 1000 psi.

Restrained joints shall be used along the carrier pipe section located within the casing pipe. Restrained joints shall be “push-on” type and be able to resist typical joint separation forces. Restrained joints shall consist of a ductile iron grip ring and gland per ASTM A 536, SBR gasket per ASTM D 2000 MBA 710, and stainless steel hardware per AWWA C111.

7-09.4 Measurement *Supplement*

Section 7-09.4 is supplemented with the following:

(******)
"Structure excavation Class B" and "Structure excavation Class B including haul" and will not be measured for payment when associated with water main and meter box construction.

Measurement for payment of casing will be by the linear foot of casing installed and shall be measured along the casing.

Measurement for adjust meter box will be per each.

7-09.5 Payment *Supplement*

Section 7-09.5 is supplemented with the following:

(******)
The cost of "Structure Excavation Class B, including haul" and shoring required for installation of any water main shall be included in other pay items.

“Steel Casing 12 In. Diam.”, per linear foot.
The unit Contract price per linear foot for each size and kind of “Steel Casing _____ In. Diam” shall be full pay for all Work to complete the procurement and installation of the casing, including but not limited to, trench excavation, laying and welding pipe, installing insulator/spacers, installing pipe end seals, installing restrained joints, pushing the carrier pipe through the casing, and backfilling.

“Adjust Meter Box”, per each.
The unit Contract price per each for “Adjust Meter Box” shall be full pay for all Work to reset the existing water meter box, including meter box extensions or excavating and lower the meter box, backfilling, and compacting backfill.

Payment for restoration will be made under the applicable items shown in the Proposal.

If adjustment to the service line is needed, it shall be completed per Section 7-15 and *I.W.D #6 standards* including laying and jointing the pipe and fittings, testing, flushing and disinfection of the service connection. Adjustments to service connections shall be considered incidental to the Work of adjusting the water meter box, and all costs thereof shall be included in the unit Contract price Bid of “Adjust Meter Box.”

7-10 Vacant *Revision*

Section 7-10 is deleted and replaced with the following:

7-10 Pump Station

7-10.1 Description

Stormwater Pump Station

This work consists of designing, fabricating, installing, testing, and activation of a Pump Station, where shown in the plans. Contractor shall furnish all labor, materials, equipment and all performance of work necessary or incidental to furnish and install a pre-fabricated fiberglass reinforced polyester (FRP) lift station. The lift station shall be a completely factory-assembled unit, including pumps, hardware, and controls. The contractor shall provide all work necessary to power the packaged lift station via connection to the electrical utility, including coordination with the utility to obtain the utility meter, and all required underground trenching for power connections to the utility provided service. The electrical system must operate at 480V 3 phase 3 wire system.

Duplex stormwater pump system control description includes the following functionality:

Equipment: 15HP Pump #1 & Variable Frequency Drive (VFD), 15HP Pump #2 & VFD, Duplex Pump Control Panel

Field Instruments: Float Switches (5), Submersible Level Transducer (1):

ELEVATION	LEVEL TRANSDUCER AND FLOAT SWITCH
1963.80	FLOAT SWITCH – REDUNDANT ON/HIGH LEVEL ALARM
1963.70	HIGH LEVEL ALARM
1962.50	LAG PUMP ON
1962.20	LEAD PUMP ON
1958.72	PUMP(S) OFF
1956.22	TRANSDUCER FACE

1. The pump station vendor shall provide a control panel to locally operate the duplex stormwater pump system. The control panel shall control each duplex pump with two individual HAND-OFF-AUTO selector switches.

2. In OFF each pump shall be powered off and shutdown.

3. In HAND the pump shall manually be powered on and run at the nameplate RPM of the pump. In HAND operators shall be required to return pumps to the OFF or AUTO positions when the desired manual operation has been completed.

4. In AUTO the pumps shall be controlled by a solid-state duplex pump controller that starts/stops the VFDs and determines pump speed based on an analog input from the level transducer. The controller shall provide analog outputs to each VFD. As water level in the wet well rises pump speed shall increase via VFD command. The pumps shall operate in a LEAD/LAG sequence based on wet well elevations (manufacturer determined) detected by the level transducer. In the event of a level transducer failure the duplex pump controller shall provide a digital output signal called “Float Backup Engaged”. Operation shall be switched to engage a backup float controller

that will control the duplex pump system. Operators can also manually engage this override sequence via pushbutton mounted on the control panel face. In “Float Backup Engaged” the pumps shall operate in a LEAD/LAG sequence controlled by OFF, LEAD, and LAG float switches set at elevations determined by the manufacturer**.** The float controller shall choose between: Pump 1 run as lead, Pump 2 run as lag, and automatic alternation of the lead pump after each duty cycle of the lead pump. The OFF float switch shall shutdown both the LEAD/LAG pumps. The LEAD float switch shall power on and run the LEAD pump at the nameplate RPM. The LAG float switch shall power on and run the LAG pump at the nameplate RPM.

5. Pump failure shall be detected by a seal leak detection probe and over temperature heat switch integral to the pump.

6. Each pump’s VFD shall provide overload protection and detect motor fault conditions to shut down the pump.

7. The pump station vendor shall provide a remote telemetry unit (RTU) installed in the duplex control panel to transmit pump operating status and alarms to a cloud-based monitoring platform. This platform shall provide a web dashboard for viewing pump activity, alarm history, and wet well levels, allowing operators to monitor station performance remotely via telemetry. The RTU shall be the SJE Rhombus PanelLink which includes the cloud-based management software. The following inputs and outputs shall be hardwired to the RTU for remote monitoring:
    a. Digital Inputs:
        i. Control Power On
        ii. Pump 1 Running
        iii. Pump 1 General Fault
            1. The following contacts shall be provided in the control wiring in parallel to energize one common control relay coil for a general fault. If any one of the following faults occurs the general fault alarm is initiated:
                a. VFD 1 Fault
                b. Pump 1 Seal Fail
                c. Pump 1 Temperature Switch High
        iv. Pump 2 Running
        v. Pump 2 General Fault
            1. The following contacts shall be provided in the control wiring in parallel to energize one common control relay coil for a general fault. If any one of the following faults occurs the general fault alarm is initiated:
                a. VFD 2 Fault
                b. Pump 2 Seal Fail
                c. Pump 2 Temperature Switch High
        vi. Wet Well High Level Alarm via Float Switch
    b. Analog Inputs:
        i. Wet Well Level via Level Transducer
    c. The following parameters must be configured in the cloud based management platform:
        i. Pump 1 Run Time
        ii. Pump 1 Start Count
        iii. Pump 2 Run Time
        iv. Pump 2 Start Count

8. Local indications via green LEDs mounted on control panel face:
    a. Pump 1 running
    b. Pump 2 running
    c. Control Power On

9. Local alarms via red LEDs mounted on control panel face, requires manual reset:
    a. High Level via high level float switch
    b. VFD 1 Fault
    c. VFD 2 Fault
    d. Pump 1 Seal Fail
    e. Pump 2 Seal Fail
    f. Pump 1 Temperature Switch High
    g. Pump 2 Temperature Switch High

10. Alarm Beacon, requires manual reset:
    a. High Level

11. Hardwired Individual Pump Start Permissives:
    a. Control Power On: Control power on.
    b. VFD Fault: no fault detected
    c. Pump Temperature Switch High: no high temperature detected.

12. The pump station vendor shall provide the control panel complete with all necessary control relay logic to support the hardwired control and alarm functions described above. Where needed, control relays or analog signal splitters shall be used to route signals to both local indicators and remote monitoring systems, ensuring all required alarm and status points are available at both locations.

Restroom Sewage Package Pump Station

This work consisted of constructing the Restroom Sewage Package Pump Station, where shown in the plans. Contractor shall furnish all labor, materials, equipment and all performance of work necessary or incidentals to furnish and install a pre-fabricated fiberglass reinforced polyester (FRP) lift station. The lift station shall be a completely factory-assembled unit, including pumps, hardware, and controls. Required electrical work includes all connections from control panel CP-1 to the packaged pump station components. Electrical power connections to the service are provided under separate pay item.

Duplex sewage pump system control description includes the following functionality:

Equipment: 2HP Pump #3 & VFD, 2HP Pump #4 & VFD, Duplex Pump Control Panel

Field Instruments: Float Switches (5), Submersible Level Transducer (1)

1. The pump station vendor shall provide a control panel to locally operate the duplex Restroom pump system. The control panel shall control each duplex pump with two individual HAND-OFF-AUTO selector switches.

2. In OFF each pump shall be powered off and shutdown.

3. In HAND the pump shall manually be powered on and run at the nameplate RPM of the pump. In HAND operators shall be required to return pumps to the OFF or AUTO positions when the desired manual operation has been completed.

4. In AUTO the pumps shall be controlled by a solid-state duplex pump controller that starts/stops each pump based on digital inputs from float switches in the wet well. The manufacturer shall determine wet well elevations of each float switch. The pumps shall operate in a LEAD/LAG sequence controlled by OFF, LEAD, and LAG float switches set at elevations determined by the manufacturer**.** The float controller shall choose between: Pump 1 run as lead, Pump 2 run as lag, and automatic alternation of the lead pump after each duty cycle of the lead pump. The OFF float switch shall shutdown both the LEAD/LAG pumps. The LEAD float switch shall power on and run the LEAD pump at the nameplate RPM. The LAG float switch shall power on and run the LAG pump at the nameplate RPM. In the event the duplex pump controller has failed the LEAD/LAG float sequence or automatic alternation of the pumps an alarm shall be initiated.

5. The analog level transducer is for monitoring.

6. Pump failure shall be detected by a seal leak detection probe and over temperature heat switch integral to the pump.

7. Each pump shall be provided with a thermal overload protection relay to detect motor overload conditions and shut down the pump.

8. The pump station vendor shall provide a remote telemetry unit (RTU) installed in the duplex control panel to transmit pump operating status and alarms to a cloud-based monitoring platform. This platform shall provide a web dashboard for viewing pump activity, alarm history, and wet well levels, allowing operators to monitor station performance remotely via telemetry. The RTU shall be the SJE Rhombus PanelLink which includes the cloud-based management software. The following inputs and outputs shall be hardwired to the RTU for remote monitoring:
    a. Digital Inputs:
        i. Control Power On
        ii. Pump 3 Running
        iii. Pump 3 General Fault
            1. The following contacts shall be provided in the control wiring in parallel to energize one common control relay coil for a general fault. If any one of the following faults occurs the general fault alarm is initiated:
                a. Pump 3 Seal Fail
                b. Pump 3 Temperature Switch High
                c. Pump 3 Thermal Overload
        iv. Pump 4 Running
        v. Pump 4 General Fault
            1. The following contacts shall be provided in the control wiring in parallel to energize one common control relay coil for a general fault. If any one of the following faults occurs the general fault alarm is initiated:
                a. Pump 4 Seal Fail
                b. Pump 4 Temperature Switch High
                c. Pump 4 Thermal Overload
        vi. Wet Well High Level Alarm via Float Switch

b. Analog Inputs:
    i. Wet Well Level via Level Transducer
c. The following parameters must be configured in the cloud based management platform:
    i. Pump 3 Run Time
    ii. Pump 3 Start Count
    iii. Pump 4 Run Time
    iv. Pump 4 Start Count

9. Local indications via green LEDs mounted on control panel face:
    a. Pump 3 running
    b. Pump 4 running
    c. Control Power On

10. Local alarms via red LEDs mounted on control panel face, requires manual reset:
    a. High Level via high level float switch
    b. Pump 3 Seal Fail
    c. Pump 4 Seal Fail
    d. Pump 3 Temperature Switch High
    e. Pump 4 Temperature Switch High
    f. Pump 3 Thermal Overload
    g. Pump 4 Thermal Overload

11. Alarm Beacon, requires manual reset:
    a. High Level via high level float switch

12. Hardwired Individual Pump Start Permissives:
    a. Control Power On: Control power on.
    b. Pump Temperature Switch High: no high temperature detected.
    c. Pump Thermal Overload: no overload.

13. The pump station vendor shall provide the control panel complete with all necessary control relay logic to support the hardwired control and alarm functions described above. Where needed, control relays or analog signal splitters shall be used to route signals to both local indicators and remote monitoring systems, ensuring all required alarm and status points are available at both locations.

7-10.2 Materials

Stormwater Pump Station

Materials for the Pump Station shall follow the requirements of the Plans and the Packaged FRP Lift Station shall be Automated Flow Systems model AFS-STN-72-144-72-66-40-80-EXT, as supplied by RC Worst & Company, or engineer approved equal. All materials shall be procured by the Contractor. The City is not supplying any materials as part of the project.

Materials for the PVC Pressure Pipe 10 IN. Diam shall be C900 Rated or equivalent to that as required for the pressure from the pump station manufacturer.

Materials for the cable vault shall be a pull box in accordance with WSDOT STD. plan J-90.10-03 and modified as shown in the plans.

1. Fiberglass Reinforced Polyester (FRP) Wet Well and Valve Vault

Unless otherwise indicated, the plastic terminology used shall be in accordance with definitions given in American Society for Testing and Materials (ASTM) designation D883. The reinforcing material shall be a commercial grade of glass fiber having a coupling agent which will provide a suitable bond between the glass reinforcement and the resin. The laminate shall consist of a resin rich inner surface, a chop-spray interior liner, and a chop-hoop filament-wound structural exterior layer. The inner surface shall be free of cracks and crazing with a smooth finish. A minimum of one tenth of an inch of the laminate next to the inner surface shall be reinforced with 25 to 35% percent by weight of non-continuous glass strands having fiber lengths from .5 to 2.0 inches. The exterior layer of the wall laminate shall be of construction suitable for the service in-tended and contain sufficient glass by weight to provide the aggregate strength necessary to meet the tensile and flexural requirements. The exterior surface shall be relatively smooth with no exposed fibers or sharp projections. Hand work finish is acceptable; however enough resin shall be used to prevent fiber show. The vault wall must be designed to withstand collapse based on the assumption that saturated soil exerts hydrostatic pressure of 120 lb/cu ft. The vault wall laminate must be constructed to withstand or exceed two times the actual imposed loading on any depth of basin.

Vault top flange shall have an outside diameter at least four inches larger than the nominal diameter. Vault bottom shall be constructed of encapsulated steel anti-flotation flange. The wet well FRP bottom laminate shall have less than 0.375 inches of center elastic deflection (deformation) when in service in totally submerged conditions. The bottom diameter shall be at least four inches larger than the nominal diameter. The flange shall be constructed to provide anti-flotation countermeasures. The contractor shall place concrete around the anti-flotation flange, if specified by the project engineer.

Perpendicular vault penetrations shall be made using rubber grommets up to and including four inch pipe size. Penetrations four inch or larger, or that are not perpendicular to within ten degrees, shall be made using a GeoFlex® boot, by casting a fiberglass hub directly into the vault wall, or using a bolt-on sleeve. The fiberglass hub and bolt-on sleeve shall utilize a link type gasket to seal the annulus between the pipe and sleeve.

The access hatch shall have a 1/4 inch thick, mill finish, extruded aluminum frame. The door panel shall be 1/4 inch aluminum diamond plate, reinforced to withstand a live load of H-20 loading for low-speed intermittent traffic. Door shall open to 90 degrees and automatically lock with a T-316 stainless steel hold open arm with aluminum release handle. Door shall close flush with the frame. Hinges and all fastening hardware shall be T-316 stainless steel. Unit shall lock with a non-corrosive locking bar and have a non-corrosive handle. The access hatch shall be attached to the FRP vault top flange using series 300 stainless steel fasteners

All fasteners and hardware shall be series 300 stainless steel, aluminum, fiberglass reinforced polyester, or other approved non-corrosive materials suitable for the intended application.

Float switch bracket shall be fabricated using series 300 stainless steel. The bracket shall provide a support for the specified float switches and provide strain relief. The bracket shall include a stationary bracket and a removable bracket so the floats may be easily removed for servicing and inspecting.

Splice boxes shall be provided for pump power cords and float switches as specified on the drawings. Unless specified otherwise, one explosion proof splice box shall be provided for the pump power cords. Another Nema 4X splice box shall be provided for the float switches. Both splice boxes shall have individual conduit connections to the control panel.

2. Pumps

Each pump shall be a non-clog explosion-proof submersible centrifugal rated at 15 hp, 460 volts, three phase, 1750 rpm, Deming model 7365-413-1L-30N and shall be compliant with the Buy America Act and Build America, Buy America Act (BABA). The pump shall produce 670 gpm at 45 ft TDH. The pump shall be non-overloading throughout the entire range of operation without employing service factor. The pump shall have a service factor of 1.20.

The pump shall be equipped with 50 ft. power/control cable with each pump, suitable for submersible wastewater application, sized in accordance with NEC requirements. Provide cable terminal box on side of motor housing, with cable entry sealed to insure that no entry of moisture is possible into the high-voltage motor/ terminal area even if the cable is damaged or severed below water level. Cable seal shall include a compressed rubber grommet to seal the cable exterior and epoxy fill to seal the interior passages. A strain relief device, in direct contact with both the cable and the cast iron entry housing, shall be provided. The cable entry shall be rated by Factory Mutual (or UL) for submerged operating depths to 85 feet.

The stator, rotor and bearings shall be mounted in a sealed submersible type housing. The stator windings shall have Class H insulation, and a dielectric oil-filled motor, Nema B design. Each pump must be equipped with high temperature swtiches in motor windings for use in conjunction with and supplemental to external motor overload protection. Arrange controls to shut down pump should any of the monitors detect high temperature and automatically reset once motor temperature returns to normal. Set temperature monitors at levels recommended by pump manufacturer. Because airfilled motors do not dissipate heat as efficiently as oil-filled motors, air-filled designs shall not be accepted. The pump motor shall be specifically designed so that they may be operated partially or completely submerged in the liquid being pumped. The pump shall not require cooling water jackets or cooling fins. Stators shall be securely held in place with a removable end ring and threaded fasteners so they may be easily removed in the field without the use of heat or a press. Stators held by heat shrink fit shall not be acceptable. No special tools shall be required for pump and motor disassembly.

The pump shall have two mechanical seals, mounted in tandem, with an oil chamber between the seals. John Crane Type 21, BF1C1, seals shall be used with the rotating seal faces being carbon and the stationary seal faces to be ceramic. The lower seal shall be replaceable without disassembly of the seal chamber and without the use of special tools. Provide a detector in the motor's stator cavity which allows a control panel mounted relay to indicate leakage into the motor.

The pump shall be provided with upper and lower bearings, single row (preferred) or double row as needed to provide a B10 life of, at minimum, 100,000 hours at all anticipated axial and radial loadings. Provide sealed/shielded (permanently lubricated) bearings. If open-type (non-shielded) bearings are used, provide re-lubrication ports with positive anti-leak plugs for periodic addition of lubrication from external to the pump.

Provide motors which are FM listed for use in Class I Division 1 Groups C&D hazardous locations as defined by the National Electric Code.

Tests shall be performed in accordance with the Test Code for Centrifugal Pumps per the Standards of the Hydraulic Institute, Level A. Tests shall be performed on the actual assembled pumps to be supplied. Tests shall cover a range from shut-off to at minimum 20% beyond specified design capacity. Conduct test per above specification on all supplied pumps, generating a curve showing actual flow, head, BHP and hydraulic efficiency.

3. Discharge Elbow and Slide Rail System

A discharge elbow shall be furnished with each pump. The discharge elbow shall rest squarely on the floor of the wet well vault and be securely fastened using series 300 stainless steel fasteners. The base elbow shall be equivalent to the nominal pump discharge size. A metal to metal mating surface shall be utilized. The discharge elbow shall include a ball check valve which may be removed with the pump. Slide rails shall be used to direct the pump in proper alignment with the stationary discharge piping shall be of a dual slide rail design. The rails shall be type 304 schedule 40 stainless steel. The slide rail system shall allow the pump to be automatically connected to the discharge elbow without need for personnel to enter the wet well vault. Sealing of the pump to the discharge elbow shall be accomplished by a single down and in motion of the pump.

Each pump shall be supplied with a lifting system. The system may be a stainless steel bail and stainless steel chain, stainless cable, or a grab link mechanism using stainless steel hardware and 1/8" stainless steel guide cable. The system supplied must be sized to safely lift the pump.

4. Discharge Piping and Valves

All discharge piping and fittings shall be fabricated schedule 10 stainless steel. Piping sizing and configuration shall be constructed as illustrated on the project plans.

The gate valves shall be all cast or ductile iron bodied with 125 lb ANSI flanged ends. Valves shall have a resilient wedge with a non-rising stem.

The check valves shall be all cast or ductile iron bodied with 125 lb ANSI flanged end. Check valves shall have a full opening swing style clapper. The clapper shall swing completely clear of the waterway when fully open, permitting full flow through the valve equal to the nominal pipe diameter. The clapper shall include a resilient seat. The clapper shall be mechanically coupled to an external lever and weight.

5. Pump Control Panel (CP-2) - Stormwater

Provide a complete lift station control panel with a solid state duplex pump controller, SJE Rhombus PanelLink RTU, VFDs, surge protective device, electrical protective devices, control power transformer, 24VDC power supplies, intrinsic safety barriers, control relays, pilot devices, and all required appurtenances to perform the functionality described in the control loop description above. The control panel must be service entrance rated The pump control panel shall be manufactured at a facility meeting U.L. Standard 508A/698A for industrial controls.

The control panel enclosure shall be NEMA 4X with an inner and outer door and provisions for padlocking. All operator interface devices shall be located on an inner door, unless otherwise indicated. Each pump shall have a hand-off-auto switch, a running indicator light, fault indicator light, and cycle counter. The control panel shall have a control power on indicator light, climate control with a thermostat and anti-condensate heater and cooling fan, a panel light, a receptacle, and a generator hookup receptacle. All alarms shall be provided with an indicator light, refer to the loop description above. Provide equipment or control panels with Short Circuit Current Rating (SCCR) labeling as required by NFPA 70 and other applicable codes. The control panel shall be strut mounted. All anchoring materials shall be 300 series stainless steel.

The control panel shall be provided with a RTU to transmit pump operating status and alarms to a cloud-based monitoring platform. This platform shall provide a web dashboard for viewing pump activity, alarm history, and wet well levels, allowing operators to monitor station performance remotely via telemetry. The RTU shall be the SJE Rhombus PanelLink which includes the cloud-based management software.

Intrinsic safety isolators shall be UL 698A labeled and used to extend intrinsically safe circuits for level floats and level transducers. All instruments installed in hazardous locations shall be provided with intrinsic safety isolators. Devices shall be DIN-rail mountable and limit voltage and current to prevent ignition from sparks or thermal effects in a potentially explosive atmosphere. Power supplies for the isolators shall be installed in the same enclosure and sized based on the active load of the connected loop-powered field instruments. All equipment shall be furnished and installed in accordance with NEC Article 504 and certified to the latest edition of UL 913 for intrinsic safety applications.

A circuit breaker shall be provided for each pump to protect against line faults and to serve as the means of disconnect from the incoming power supply. The breaker shall be of the thermal-magnetic type, rated for the pump's full load current, and sized in accordance with NEC requirements for motor branch circuit protection. It shall be rated for use as a motor circuit protector and have an interrupting capacity suitable for the available fault current at the installation location. The breaker shall be UL Listed and mounted within the control panel, with provisions for lockout/tagout to ensure safe maintenance and service.

A surge protective device (SPD) rated for Category IC1 shall be provided to protect a dedicated 120 VAC control circuit. The SPD shall be mounted inside the control panel and connected in a series configuration. It shall be suitable for 120 VAC, single-phase, 2-wire plus ground systems and designed specifically for low-energy control and instrumentation circuits. The device shall be UL 1449 listed and protect against transients from lightning, switching, or electrical disturbances. It shall include thermal protection, visual status indication, and optional dry contact output for remote monitoring. The SPD shall have a minimum surge current capacity of 3 kA per mode, a clamping voltage of 400V or less, and a fast response time. It shall be DIN-rail or panel-mounted and housed in a NEMA 4 rated enclosure for industrial use. Installation shall follow the manufacturer's recommendations, with short, straight wiring to ensure effective protection.

A control power transformer (CPT) shall be provided to supply low-voltage power to control circuits. The transformer shall be a dry-type, epoxy-encapsulated unit rated for continuous duty. It shall have a primary voltage matching the system voltage and a secondary voltage of 120V, unless otherwise specified. The transformer shall be sized to handle the total connected control load with a minimum 25% margin, and shall include primary and secondary overcurrent protection in accordance with NEC requirements. The CPT shall be panel-mounted and suitable for industrial environments. Terminals shall be clearly labeled and provide secure screw-type or spring-clamp connections. The transformer shall be UL Listed and comply with applicable NEMA and ANSI standards. Furnish and install per manufacturer recommendations, ensuring all wiring is properly fused and grounded.

A 24VDC power supply shall be provided to power control devices, instruments, and field I/O within the control panel. The power supply shall be industrial-grade, DIN-rail mountable, and rated for continuous duty in harsh environments. It shall accept a universal AC input voltage (85–264 VAC, 47–63 Hz) and provide a regulated 24VDC output with a minimum output accuracy of ±1%. The power supply shall be sized based on the total connected load with a minimum 25% capacity margin. It shall include short-circuit, overload, overvoltage, and thermal protection, with automatic recovery. The output shall be current-limited to prevent damage to connected devices. Status indicators (such as DC OK LED) shall be provided for local monitoring. The unit shall have a minimum operating temperature range of -10°C to +60°C without derating and be certified to UL 508 and UL 61010-1 standards. All wiring connections shall be made using secure screw-type terminals. Power supplies shall be installed in accordance with the manufacturer's instructions and NEC requirements.

Control panel control relays shall be industrial-duty type, designed for continuous operation in harsh environments. Relays shall be plug-in style with a matching DIN-rail or panel-mounted socket, and rated for the control voltage specified (typically 120 VAC or 24 VDC). Each relay shall include a clear status indicator (mechanical flag or LED) and have at least one Form C (SPDT) contact rated for a minimum of 10 amps at 250 VAC or 30 VDC. Contacts shall be silver alloy or better for long life and reliability. Relays and bases shall be UL Listed and suitable for use in industrial control panels. All wiring shall be terminated using screw or spring-clamp terminals.

All pilot devices shall be heavy-duty, NEMA 4/4X rated, and corrosion resistant. Devices shall be mounted in 30.5 mm holes and equipped with contact blocks rated for 10 amps, NEMA A600. The number of contact blocks shall be as required to fulfill the specified functions. Selector switches shall be rotary type, provided in two-, three-, or four-position configurations as necessary to perform the functions shown or specified. Indicating lights shall be full-voltage LED type, rated for either 120 V or 24 V as required, and shall allow bulb replacement without removal from the control panel. Lights shall include a push-to-test feature and have plastic lenses.

Variable frequency drives (VFDs) shall be provided for each pump to enable automatic speed control based on wet well level. Each VFD shall be rated for continuous duty and sized in accordance with the pump's full load amperage. The drives shall be sized to ensure stable operation throughout the entire pump operating range, from minimum to maximum flow, without nuisance tripping or instability. The VFDs shall accept a 4–20 mA analog input signal from the pump controller or level sensor, which shall be used to modulate the pump speed in response to changing wet well levels. The controller logic shall allow adjustable setpoints to define the level range over which speed modulation occurs, including minimum and maximum frequency limits. The drives shall feature programmable acceleration and deceleration ramps, underload and overload protection, and loss-of-signal response modes (such as speed hold or ramp to stop). Drives shall include an integrated keypad for local monitoring and setup, as well as built-in fault and status indicators. Standard features shall include phase loss protection, ground fault protection, short circuit protection, and thermal overload protection. Each drive shall include internal motor overload protection per NEC 430.126. The drive enclosure shall be rated NEMA 1 or NEMA 12, as required by the installation location, and suitable for wall or panel mounting. Drives shall be compatible with three-phase 480 VAC input power and provide variable frequency output to the motor. They shall be capable of operating in ambient temperatures up to 50°C without derating. Drives shall be UL listed and comply with applicable IEEE 519 guidelines for harmonic mitigation when required by the electrical design. VFDs shall be installed in accordance with the manufacturer's recommendations, with all necessary wiring, grounding, and thermal management provisions. Startup and commissioning shall include parameter configuration, functional testing, and verification of speed control in response to level input.

A duplex solid-state pump controller shall be provided to control two pumps in lead/lag or alternating mode. The controller shall be suitable for wastewater applications and operate automatically based on level signals. The controller shall accept one analog input from a submersible level sensor (4–20 mA or 0–10 VDC) and five inputs from normally open float switches. Float switch functions shall include low level, stop, lead start, lag start, and high-level alarm. The controller shall allow switching between analog and float-based control modes. Providing a backup controller for float control is permitted. The controller shall include a digital display for level, pump status indicators, and a keypad or buttons for adjusting setpoints and controlling pumps. It shall alternate pumps to balance runtime, include high-level alarm output, and provide relay outputs for pump run and alarm signals. The unit shall be housed in a NEMA 4X rated enclosure, UL/cUL Listed, and factory-wired and tested. All components shall be industrial grade and designed for continuous use in wastewater environments.

The control panel shall be provided with pump supervision relays for each pump. The relays shall monitor seal leak and high-temperature conditions in small to medium submersible wastewater pumps, providing discrete alarm or shutdown outputs to the control system. The relays shall be properly wired in accordance with pump manufacturer's instructions. Relays shall mount in standard 12-pin socket bases (provided) and shall operate on available control voltage of 24-240 VAC. If relays require an input voltage that is not available in the motor control panel an adequate transformer (with fused input) shall be provided by the pump supplier. Relays shall have a power consumption of no more than 2.8 watt, and shall be UL approved. Relays shall be modular in design, with each relay monitoring no more than two motor sensor functions. Each relay module shall include a dual color (red/green) LED to indicate the status of each monitored sensor. Green will indicate "status OK"; red will indicate a failure or alarm condition. A self-corrected fault will allow the relay output contacts to reset, and cause the LED to change from a steady alarm indication to a flashing signal. The LED shall continue to flash until locally cleared, providing the operator an indication of a potential intermittent fault. Each relay shall also include a power-on LED and both "test" and "reset" pushbuttons. An independent fail-safe (switch on power loss) form-C output contact shall be included for each monitored sensor to provide a normally-open / normally-closed dry contact to initiate a remote alarm device or shut down the motor. Contacts shall be rated for 5 amps at 120 volt.

6. Level Instrumentation

Provide five float switches for level instrumentation. Float materials shall be polypropylene or Teflon-coated Type 316 stainless steel. Cable jackets shall be PVC or neoprene, and cable clamps shall be made of either polypropylene or 316 stainless steel. Float switches shall be mercury-free and supplied complete with flexible electrical cables. Each switch shall include a single-pole, double-throw (SPDT) contact rated for 1 amp at 120 VAC. Switches shall be direct acting, with activation occurring at a rising liquid level and deactivation occurring when the liquid falls 1 inch below the actuation level. Cables shall be terminated in a junction box. The float switches shall be suitable for use in process temperatures up to 120°F and shall be installed in accordance with the drawing details.

Provide one submersible level transducer for level instrumentation. The submersible level transducer shall operate on the differential-pressure (hydrostatic) principle, utilizing either an integrated strain gauge or a Ceramic Capacitive Sensor (CCS) to measure the height of the liquid head. The sensor shall be suitable for both open (vented) and closed (pressurized) tank applications, and shall be fully submersible with a vented cable design. It shall support a minimum to maximum span of 1 to 100 psiG (2.31 to 230.67 feet of water), with an accuracy of ±0.25% of span. The standard process connection requires vertical mounting at the bottom of the tank; however, an optional 1/4-inch NPT connection to the tank is acceptable. The device shall output pressure values that are converted to level, with units reported in psi. Electrical requirements include loop-powered 2-wire operation at 24 VDC, with a 4–20 mA analog signal output into a 600-ohm loop. Cable entry shall be through a 1/4-inch NPT connection to an attached jacketed cable. Materials of construction shall include 316 stainless steel, Viton, and titanium for the probe, and Hytrel, FEP, or HDPE for the cable. The unit shall operate in ambient temperatures from -40°F to 212°F (-40°C to 100°C), in up to 100% non-condensing humidity. It shall also tolerate process temperatures from -4°F to 104°F (-20°C to 60°C) and process pressures from 0 to 35 psiG.

For equivalent products submit for approval the following information to the engineer:

- Lift station shop drawings
- Pump curve
- Pump construction and materials
- Pump electrical data
- Pump and slide rail drawings

- Control panel wiring diagram
- Control panel component cut sheets.

Concrete for cabinet foundation shall be minimum Class 4000P.

Restroom Sewage Package Pump Station

Materials for the Pump Station shall follow the requirements on the Plans and Packaged FRP Lift Station shall be Automated Flow Systems™ SL series or engineer approved equal. All materials shall be procured by the Contractor. The City is not supplying any materials as part of the project.

Materials for the PVC Pressure Pipe 3 IN. Diam shall be schedule 80 Rated or equivalent to that required for the pressure from the pump station.

1. Fiberglass Reinforced Polyester (FRP) Wet Well

Unless otherwise indicated, the plastic terminology used shall be in accordance with definitions given in American Society for Testing and Materials (ASTM) designation D883. The reinforcing material shall be a commercial grade of glass fiber having a coupling agent which will provide a suitable bond between the glass reinforcement and the resin. The laminate shall consist of a resin rich inner surface, a chop-spray interior liner, and a chop-hoop filament-wound structural exterior layer. The inner surface shall be free of cracks and crazing with a smooth finish. A minimum of one tenth of an inch of the laminate next to the inner surface shall be reinforced with 25 to 35% percent by weight of non-continuous glass strands having fiber lengths from .5 to 2.0 inches. The exterior layer of the wall laminate shall be of construction suitable for the service intended and contain sufficient glass by weight to provide the aggregate strength necessary to meet the tensile and flexural requirements. The exterior surface shall be relatively smooth with no exposed fibers or sharp projections. Hand work finish is acceptable; however enough resin shall be used to prevent fiber show. The wet well wall must be designed to withstand collapse based on the assumption that saturated soil exerts hydrostatic pressure of 120 lb/cu ft. The wet well wall laminate must be constructed to withstand or exceed two times the actual imposed loading on any depth of basin.

Wet well top flange shall have an outside diameter at least four inches larger than the nominal diameter. Wet well bottom shall be constructed of encapsulated steel anti-flotation flange. The wet well FRP bottom laminate shall have less than 0.375 inches of center elastic deflection (deformation) when in service in totally submerged conditions. The bottom diameter shall be at least four inches larger than the nominal diameter. The flange shall be constructed to provide anti-flotation countermeasures. The contractor shall place concrete around the anti-flotation flange, if specified by the project engineer.

Perpendicular wet well penetrations shall be made using rubber grommets up to and including four inch pipe size. Penetrations four inch or larger, or that are not perpendicular to within ten degrees, shall be made using a GeoFlex® boot, by casting a fiberglass hub directly into the wet well wall, or using a bolt-on sleeve. The fiberglass hub and bolt-on sleeve shall utilize a link type gasket to seal the annulus between the pipe and sleeve.

The access hatch shall have a 1/4 inch thick, mill finish, extruded aluminum frame. The door panel shall be 1/4 inch aluminum diamond plate, reinforced to withstand a live load of H-20 loading for low-speed intermittent traffic. Door shall open to 90 degrees and automatically lock with a T-316 stainless steel hold open arm with aluminum release handle. Door shall close flush with the frame. Hinges and all fastening hardware shall be T-316 stainless steel. Unit shall lock with a non-corrosive locking bar and have a non-corrosive handle. The access hatch shall be attached to the

FRP wet well top flange using series 300 stainless steel fasteners. A ladder shall be included for access.

All fasteners and hardware shall be series 300 stainless steel, aluminum, fiberglass reinforced polyester, or other approved non-corrosive materials suitable for the intended application.

Float switch bracket shall be fabricated using series 300 stainless steel. The bracket shall provide a support for the specified float switches and provide strain relief. The bracket shall include a stationary bracket and a removable bracket so the floats may be easily removed for servicing and inspecting.

Junction boxes shall be provided for pump power cords and float switches as specified on the drawings. Unless specified otherwise, one explosion proof junction box shall be provided for the pump power cords. Another Nema 4X junction box shall be provided for the float switches. Both splice boxes shall have individual conduit connections to the control panel. The junction boxes shall be mounted wall mounted on the restroom wall with a fully enclosed protective cable shroud. All anchoring materials and protective shroud shall be series 300 stainless steel.

2. Pumps

Each pump shall be a non-clog explosion-proof submersible recessed impeller Keen model K3RNX20 rated at 2 hp, 230 volts, single phase, 1750 rpm or approved equivalent and shall be Build America, Buy America Act (BABA) compliant product. The pump shall produce 70 gpm at 13 ft TDH. The pump shall be non-overloading throughout the entire range of operation without employing service factor. The pump shall have a service factor of 1.20.

The pump shall be equipped with 50 ft. power/control cable with each pump, suitable for submersible wastewater application, sized in accordance with NEC requirements. Provide cable terminal box on side of motor housing, with cable entry sealed to insure that no entry of moisture is possible into the high-voltage motor/ terminal area even if the cable is damaged or severed below water level. Cable seal shall include a compressed rubber grommet to seal the cable exterior and epoxy fill to seal the interior passages. A strain relief device, in direct contact with both the cable and the cast iron entry housing, shall be provided. The cable entry shall be rated by Factory Mutual (or UL) for submerged operating depths to 85 feet.

The stator, rotor and bearings shall be mounted in a sealed submersible type housing. The stator windings shall have Class H insulation, and a dielectric oil-filled motor, Nema B design. Each pump must be equipped with high temperature swtiches in motor windings for use in conjunction with and supplemental to external motor overload protection. Arrange controls to shut down pump should any of the monitors detect high temperature and automatically reset once motor temperature returns to normal. Set temperature monitors at levels recommended by pump manufacturer. Because airfilled motors do not dissipate heat as efficiently as oil-filled motors, air-filled designs shall not be accepted. The pump motor shall be specifically designed so that they may be operated partially or completely submerged in the liquid being pumped. The pump shall not require cooling water jackets or cooling fins. Stators shall be securely held in place with a removable end ring and threaded fasteners so they may be easily removed in the field without the use of heat or a press. Stators held by heat shrink fit shall not be acceptable. No special tools shall be required for pump and motor disassembly

The pump shall have two mechanical seal, mounted in tandem, with an oil chamber between the seals. John Crane Type 21, BF1C1, seal shall be used with the rotating seal faces being carbon and the stationary seal faces to be ceramic. The lower seal shall be replaceable without disassembly of

the seal chamber and without the use of special tools. Provide a detector in the motor's stator cavity which allows a control panel mounted relay to indicate leakage into the motor.

The pump shall be provided with upper and lower bearings, single row (preferred) or double row as needed to provide a B10 life of, at minimum, 100,000 hours at all anticipated axial and radial loadings. Provide sealed/shielded (permanently lubricated) bearings. If open-type (non-shielded) bearings are used, provide re-lubrication ports with positive anti-leak plugs for periodic addition of lubrication from external to the pump.

The combination recessed impeller pump and grinder unit shall be attached to the common motor and pump shaft made of 316 stainless steel. The grinder unit shall be on the suction side of the pump impeller and discharge directly into the impeller inlet leaving no exposed shaft to permit packing of ground solids. The grinder shall consist of two stages. The cutting action of the second stage shall be perpendicular to the plane of the first cut for better control of the particle size. The grinder shall be capable of grinding all materials found in normal domestic sewage, including plastics, rubber, sanitary napkins, disposable diapers, and wooden articles into a finely ground slurry with particle dimensions no greater than 1/4 inch. Both stationary and rotating cutters shall be made of 440C stainless steel hardened to Rockwell 60C and ground to close tolerance. The upper (axial) cutter and stationary cutter ring shall be reversible to provide new cutting edges to double life.

Provide motors which are FM listed for use in Class I Division 1 Groups C&D hazardous locations as defined by the National Electric Code

Tests shall be performed in accordance with the Test Code for Centrifugal Pumps per the Standards of the Hydraulic Institute, Level A. Tests shall be performed on the actual assembled pumps to be supplied. Tests shall cover a range from shut-off to at minimum 20% beyond specified design capacity. Conduct test per above specification on all supplied pumps, generating a curve showing actual flow, head, BHP and hydraulic efficiency.

3. Discharge Elbow and Slide Rail System

A discharge elbow shall be furnished with each pump. The discharge elbow shall rest squarely on the floor of the wet well wet well and be securely fastened using series 300 stainless steel fasteners. The base elbow shall be equivalent to the nominal pump discharge size. A metal to metal mating surface shall be utilized. The discharge elbow shall include a ball check valve which may be removed with the pump. Slide rails shall be used to direct the pump in proper alignment with the stationary discharge piping shall be of a dual slide rail design. The rails shall be type 304 schedule 40 stainless steel. The slide rail system shall allow the pump to be automatically connected to the discharge elbow without need for personnel to enter the wet well wet well. Sealing of the pump to the discharge elbow shall be accomplished by a single down and in motion of the pump.

Each pump shall be supplied with a lifting system. The system may be a stainless steel bail and stainless steel chain, stainless cable, or a grab link mechanism using stainless steel hardware and 1/8” stainless steel guide cable. The system supplied must be sized to safely lift the pump.

4. Discharge Piping

All discharge piping and fittings shall be fabricated schedule 10 stainless steel. Piping sizing and configuration shall be constructed as illustrated on the project plans.

The check valves shall be all cast or ductile iron bodied with 125 lb ANSI flanged end. Check valves shall have a full opening swing style clapper. The clapper shall swing completely clear of

the waterway when fully open, permitting full flow through the valve equal to the nominal pipe diameter. The clapper shall include a resilient seat. The clapper shall be mechanically coupled to an external lever and weight.

5. Pump Control Panel (CP-1) - Restroom

Provide a complete lift station control panel with solid state duplex pump controller, full-voltage non-reversing motor starters, SJE Rhombus PanelLink RTU, surge protective device, electrical protective devices, 24VDC power supplies, intrinsic safety barriers, control relays, pilot devices, NEMA 4X enclosure, and all required appurtenances to perform the functionality described in the control loop description above. The pump control panel shall be manufactured at a facility meeting U.L. Standard 508A/698A for industrial controls.

The control panel enclosure shall be NEMA 4X with an inner and outer door and provisions for padlocking. All operator interface devices shall be located on an inner door, unless otherwise indicated. Each pump shall have a hand-off-auto switch, a running indicator light, fault indicator light, and cycle counter. The control panel shall have a control power on indicator light, climate control with a thermostat and anti-condensate heater and cooling fan, a panel light, a receptacle, and a generator hookup receptacle. All alarms shall be provided with an indicator light, refer to the loop description above. Provide equipment or control panels with Short Circuit Current Rating (SCCR) labeling as required by NFPA 70 and other applicable codes. The control panel shall be wall mounted and anchored to the exterior of the restroom. All anchoring materials shall be 300 series stainless steel.

The control panel shall be provided with a RTU to transmit pump operating status and alarms to a cloud-based monitoring platform. This platform shall provide a web dashboard for viewing pump activity, alarm history, and wet well levels, allowing operators to monitor station performance remotely via telemetry. The RTU shall be the SJE Rhombus PanelLink which includes the cloud-based management software.

Control panel control relays shall be industrial-duty type, designed for continuous operation in harsh environments. Relays shall be plug-in style with a matching DIN-rail or panel-mounted socket, and rated for the control voltage specified (typically 120 VAC or 24 VDC). Each relay shall include a clear status indicator (mechanical flag or LED) and have at least one Form C (SPDT) contact rated for a minimum of 10 amps at 250 VAC or 30 VDC. Contacts shall be silver alloy or better for long life and reliability. Relays and bases shall be UL Listed and suitable for use in industrial control panels. All wiring shall be terminated using screw or spring-clamp terminals.

All pilot devices shall be heavy-duty, NEMA 4/4X rated, and corrosion resistant. Devices shall be mounted in 30.5 mm holes and equipped with contact blocks rated for 10 amps, NEMA A600. The number of contact blocks shall be as required to fulfill the specified functions. Selector switches shall be rotary type, provided in two-, three-, or four-position configurations as necessary to perform the functions shown or specified. Indicating lights shall be full-voltage LED type, rated for either 120 V or 24 V as required, and shall allow bulb replacement without removal from the control panel. Lights shall include a push-to-test feature and have plastic lenses.

Intrinsic safety isolators shall be U.L. 698A labeled with intrinsically safe circuit extensions for floats. All instruments installed in hazardous locations shall be provided with intrinsic safety isolators. DIN rail mountable. Limit voltage and current so that no spark or thermal effect can cause a potentially explosive atmosphere to ignite. Power supplies shall be installed in the same enclosure as the intrinsic safety isolators. Power supplies shall be sized based on the active load of the associated loop powered field instruments. Furnish and install in accordance with requirements

of NEC Article 504, Intrinsically Safe Systems. Certified to be in accordance with latest edition of UL 913 for application.

A circuit breaker shall be provided for each pump to protect against line faults and to serve as the means of disconnect from the incoming power supply. The breaker shall be of the thermal-magnetic type, rated for the pump's full load current, and sized in accordance with NEC requirements for motor branch circuit protection. It shall be rated for use as a motor circuit protector and have an interrupting capacity suitable for the available fault current at the installation location. The breaker shall be UL Listed and mounted within the control panel, with provisions for lockout/tagout to ensure safe maintenance and service.

A surge protective device (SPD) rated for Category IC1 shall be provided to protect a dedicated 120 VAC control circuit. The SPD shall be mounted inside the control panel and connected in a series configuration. It shall be suitable for 120 VAC, single-phase, 2-wire plus ground systems and designed specifically for low-energy control and instrumentation circuits. The device shall be UL 1449 listed and protect against transients from lightning, switching, or electrical disturbances. It shall include thermal protection, visual status indication, and optional dry contact output for remote monitoring. The SPD shall have a minimum surge current capacity of 3 kA per mode, a clamping voltage of 400V or less, and a fast response time. It shall be DIN-rail or panel-mounted and housed in a NEMA 4 rated enclosure for industrial use. Installation shall follow the manufacturer's recommendations, with short, straight wiring to ensure effective protection.

A 24VDC power supply shall be provided to power control devices, instruments, and field I/O within the control panel. The power supply shall be industrial-grade, DIN-rail mountable, and rated for continuous duty in harsh environments. It shall accept a universal AC input voltage (85–264 VAC, 47–63 Hz) and provide a regulated 24VDC output with a minimum output accuracy of ±1%. The power supply shall be sized based on the total connected load with a minimum 25% capacity margin. It shall include short-circuit, overload, overvoltage, and thermal protection, with automatic recovery. The output shall be current-limited to prevent damage to connected devices. Status indicators (such as DC OK LED) shall be provided for local monitoring. The unit shall have a minimum operating temperature range of -10°C to +60°C without derating and be certified to UL 508 and UL 61010-1 standards. All wiring connections shall be made using secure screw-type terminals. Power supplies shall be installed in accordance with the manufacturer's instructions and NEC requirements.

Full voltage non-reversing NEMA-rated magnetic starters shall be provided for each pump and shall be sized according to the pump's full load amperage and horsepower rating. Starters shall include a NEMA-rated contactor with a continuous-duty coil, and auxiliary contacts as required for control and monitoring. The starters shall be suitable for across-the-line starting and be housed within a suitable enclosure, with provisions for manual operation and lockout/tagout. All components shall be UL Listed and rated for the voltage and duty cycle of the associated pump.

Each motor shall be equipped with thermal overload protection relay designed to automatically shut down the motor upon detection of overload conditions. Thermal overload protection relay shall be solid-state; they shall be ambient-insensitive, fully adjustable, and include integrated protection features such as phase loss detection, phase imbalance protection, and manual reset capability. All overload protection devices shall comply with NEMA ICS 2 and UL 508 standards and shall be selected and configured to ensure protection appropriate to the motor's duty, horsepower rating, and environmental conditions. Overload tripping shall result in immediate and complete shutdown of the motor and shall prevent automatic restart until the overload condition is cleared and the fault is manually reset.

A duplex solid-state pump controller shall be provided to control two pumps in lead/lag or alternating mode. The controller shall be suitable for wastewater applications and operate automatically based on level signals. The controller shall accept one analog input from a submersible level sensor (4–20 mA or 0–10 VDC) and five inputs from normally open float switches. Float switch functions shall include low level, stop, lead start, lag start, and high-level alarm. The controller shall allow switching between analog and float-based control modes. Providing a backup controller for float control is permitted. The controller shall include a digital display for level, pump status indicators, and a keypad or buttons for adjusting setpoints and controlling pumps. It shall alternate pumps to balance runtime, include high-level alarm output, and provide relay outputs for pump run and alarm signals. The unit shall be housed in a NEMA 4X rated enclosure, UL/cUL Listed, and factory-wired and tested. All components shall be industrial grade and designed for continuous use in wastewater environments.

The control panel shall be provided with pump supervision relays for each pump. The relays shall monitor seal leak and high-temperature conditions in small to medium submersible wastewater pumps, providing discrete alarm or shutdown outputs to the control system. The relays shall be properly wired in accordance with pump manufacturer's instructions. Relays shall mount in standard 12-pin socket bases (provided) and shall operate on available control voltage of 24-240 VAC. If relays require an input voltage that is not available in the motor control panel an adequate transformer (with fused input) shall be provided by the pump supplier. Relays shall have a power consumption of no more than 2.8 watt, and shall be UL approved. Relays shall be modular in design, with each relay monitoring no more than two motor sensor functions. Each relay module shall include a dual color (red/green) LED to indicate the status of each monitored sensor. Green will indicate "status OK"; red will indicate a failure or alarm condition. A self-corrected fault will allow the relay output contacts to reset, and cause the LED to change from a steady alarm indication to a flashing signal. The LED shall continue to flash until locally cleared, providing the operator an indication of a potential intermittent fault. Each relay shall also include a power-on LED and both "test" and "reset" pushbuttons. An independent fail-safe (switch on power loss) form-C output contact shall be included for each monitored sensor to provide a normally-open / normally-closed dry contact to initiate a remote alarm device or shut down the motor. Contacts shall be rated for 5 amps at 120 volt.

6. Level Instrumentation

Provide five float switches for level instrumentation. Float materials shall be polypropylene or Teflon-coated Type 316 stainless steel. Cable jackets shall be PVC or neoprene, and cable clamps shall be made of either polypropylene or 316 stainless steel. Float switches shall be mercury-free and supplied complete with flexible electrical cables. Each switch shall include a single-pole, double-throw (SPDT) contact rated for 1 amp at 120 VAC. Switches shall be direct acting, with activation occurring at a rising liquid level and deactivation occurring when the liquid falls 1 inch below the actuation level. Cables shall be terminated in a junction box. The float switches shall be suitable for use in process temperatures up to 120°F and shall be installed in accordance with the drawing details.

Provide one submersible level transducer for level instrumentation. The submersible level transducer shall operate on the differential-pressure (hydrostatic) principle, utilizing either an integrated strain gauge or a Ceramic Capacitive Sensor (CCS) to measure the height of the liquid head. The sensor shall be suitable for both open (vented) and closed (pressurized) tank applications, and shall be fully submersible with a vented cable design. It shall support a minimum to maximum span of 1 to 100 psiG (2.31 to 230.67 feet of water), with an accuracy of ±0.25% of span. The standard process connection requires vertical mounting at the bottom of the tank; however, an optional 1/4-inch NPT connection to the tank is acceptable. The device

shall output pressure values that are converted to level, with units reported in psi. Electrical requirements include loop-powered 2-wire operation at 24 VDC, with a 4–20 mA analog signal output into a 600-ohm loop. Cable entry shall be through a 1/4-inch NPT connection to an attached jacketed cable. Materials of construction shall include 316 stainless steel, Viton, and titanium for the probe, and Hytrel, FEP, or HDPE for the cable. The unit shall operate in ambient temperatures from -40°F to 212°F (-40°C to 100°C), in up to 100% non-condensing humidity. It shall also tolerate process temperatures from -4°F to 104°F (-20°C to 60°C) and process pressures from 0 to 35 psiG.

For equivalent products submit for approval the following information to the engineer:

- Lift station shop drawings
- Pump curve
- Pump construction and materials
- Pump electrical data
- Pump and slide rail drawings
- Control panel wiring diagram
- Control panel component cut sheets.

Concrete for cabinet foundation shall be minimum Class 4000P.

7-10.3 Construction Requirements

Stormwater Pump Station

The contractor shall construct the Pump System per all manufacturer's recommendations.

Provide all electrical equipment in accordance with the requirements of the National Fire Protection Association Standard (NFPA) 70 – National Electrical Code, NFPA 820 – Standard for Fire Protection in Wastewater Treatment and Collection Facilities, Washington State Department of Transportation Standard Specifications Section (WSDOT) Section 8-20 – Illumination, Traffic Signal Systems, and Electrical, Institute of Electrical and Electronics Engineers (IEEE) Standard C2 - National Electrical Safety Code, InterNational Electrical Testing Association (NETA) standards, and all device manufacturer's instructions.

The contractor shall coordinate with the utility to procure an electrical meter and facilitate the installation and activation of power to the lift station. The contractor shall provide connection of control panel CP-2 to the utility service. The contractor shall also provide an electrical equipment pedestal for the utility meter and control panel, including a concrete foundation. The utility meter shall be provided in a NEMA 4X enclosure. The contractor shall provide all necessary conduit trenches to connect all electrical equipment at the site in accordance with the project drawings. The contractor shall provide all restoration of existing roadways or pathways as necessary such as roadway patching.

Provide all electrical equipment, including prepurchased equipment, and perform all tests necessary to assure conformance to the Drawings and Specification Sections and ensure that equipment is ready and safe for energization. Test all electrical equipment and connections required by NETA. Provide all conduit installation (including conduit trenches), wiring methods, and grounding and bonding in accordance with WSDOT 8-20.

Do not use equipment that exceed dimensions or reduce clearances indicated on the Drawings or as required by the NFPA 70. Install equipment plumb, square and true with construction features and securely fastened. Install electrical equipment, including pull and junction boxes, minimum of

6 inches from process, gas, air and water piping and equipment. Install equipment so it is readily accessible for operation and maintenance, is not blocked or concealed and does not interfere with normal operation and maintenance requirements of other equipment. Provide all necessary anchoring devices and supports rated for the equipment load based on dimensions and weights verified from approved submittals, or as recommended by the manufacturer.

The contractor shall submit a shop drawing submittal for the Pump System containing all necessary documentation for review. This submittal shall include the pump performance curve, submersible motor data, and lift station shop drawings. It shall also provide details on pump construction and materials, pump electrical data, and pump and slide rail drawings. Additionally, the submittal shall include operation and maintenance manuals as well as relevant project information.

The contractor shall submit shop drawings for the Wet Well, including a preconstruction submittal and detailed design documentation. The preconstruction submittal shall include the quality control procedures established by the precast manufacturer's Quality Control Manual. Shop drawings shall include data for the precast concrete unit, details of anchorage, lifting inserts and devices, and all accessory items. Design data shall be provided along with buoyancy uplift calculations and any relevant test reports. Contract closeout information shall also be included as part of the submittal package.

The contractor shall submit shop drawings for the Control Panel for approval from the engineer, including a table of contents sheet, legend and abbreviation sheets, panel exterior and interior layout drawings, wiring diagrams, communication network drawings, a Bill of Material for each panel, panel door weight calculation, electrical load calculations for each panel, and climate control calculations. Product data shall be provided in the form of manufacturer catalog cut sheets for the enclosure, finish, panel devices, control auxiliaries, and accessories. Contract closeout information shall include operation and maintenance data. Informational submittals shall include confirmation of completion of unwitnessed factory testing.

All control panel shop drawings shall be prepared using computer-aided design (CAD) software and printed on 11 x 17-inch sheets. Drawings shall include a title block with the plant or facility name where the panel(s) are to be installed, drawing title, drawing number, revision list with revision number and date, drawing date, drawing scale, and the manufacturer's name, address, and telephone number. Each drawing set shall include a cover sheet indicating the plant or facility name, project name, submittal description, revision number, and issue date. A table of contents sheet shall be provided for each drawing set, listing each drawing's number, title, and sheet number. Legend and abbreviation sheets shall describe all symbols and abbreviations used, include panel construction notes detailing the NEMA enclosure rating, finish type and color, wire type and color strategy, conductor sizes, wire labeling strategy, and confirm that panels will be affixed with a UL 508A or UL 698A label prior to shipment from the factory.

The Bill of Material for each control panel shall list the instrument tag number, quantity, functional name or description, manufacturer, complete model number, and size or rating of each component. Panel exterior layout drawings shall be to scale and include materials of construction, panel dimensions, total assembled weight (with all dimensions in inches), access openings, and conduit access locations. Conduit entries must allow sufficient bend radius for field cables and must be clearly identified on the layout. Drawings shall include front, side, and top views of the enclosure, front panel device layout, a nameplate schedule indicating nameplate location, dimensions, legend (with text, letter height and color, background color, and material), and required exterior legends per UL. Include SCCR markings per NFPA 70 or a statement of exception, along with any required calculations. The layout shall also include alarm annunciator

window engraving schedules, layouts of graphic panels or mosaic displays, and a statement confirming the panel has been built to UL 508A or UL 698A standards.

Interior layout drawings shall be drawn to scale and show sub-panel or mounting pan dimensions (in inches), interior device layouts with dimensioned locations, wire-way locations, purposes and dimensions, including centerline dimensions for DIN rail and wire-way, terminal strip designations, locations of external wiring or piping connections, lighting fixtures, switches, receptacles, and required interior legends per UL. Wiring diagrams shall include panel power distribution, control and instrumentation wiring, and internal network connections. Diagrams must label each wire as it is to be labeled in the field and include line/rung references. Relay coils and associated contacts shall be cross-referenced and clearly identified. Wires exiting the sheet shall indicate the continuation sheet and applicable line/rung references.

The Contractor shall verify that panel door-mounted equipment does not exceed the manufacturer's maximum allowable weight and submit a door weight calculation that includes the weight of any mounted computer or laptop shelf. Electrical load calculations for each panel shall include panel current draw based on connected load, SCCR calculations, DC power supply load calculations, and climate control calculations.

Contractor shall submit shop drawings for the control panel and utility meter equipment pedestal foundation to show that they meet City of Spokane Valley code requirements, including seismic and building code requirements.

Contractor shall submit proposed underground conduit trench locations for approval by engineer. Contractor shall excavate and backfill for conduit installations as specified in WSDOT section 8-20. Installation of underground conduit shall be placed in basic controlled density filled trenches and be completed as detailed in STD plan J-5.50-00. All conduits trenches beneath roadways or pathways shall be encased in concrete in accordance with expected loads.

The contractor shall conduct a control system functional test to verify proper operation of the control panel, RTU, level instruments, and packaged pump system. The test shall be performed upon completion of equipment acceptance tests and shall demonstrate the correct interaction of all sensing, processing, and action devices. The contractor shall develop a test plan and define test parameters to evaluate the performance of the system. The functional test shall include verification of the correct operation of all interlock safety devices for both fail-safe and design functions, as well as verification of the correct operation of all sensing devices, alarms, and indicating devices. The contractor shall submit test plan 30 days before energization for engineering approval. The contractor must submit completed test result to the engineer.

Restroom Sewage Package Pump Station

Contractor shall construct the Pump System per all manufacturer's recommendations.

Provide all electrical equipment in accordance with the requirements of the National Fire Protection Association Standard (NFPA) 70 – National Electrical Code, NFPA 820 – Standard for Fire Protection in Wastewater Treatment and Collection Facilities, Washington State Department of Transportation Standard Specifications Section (WSDOT) Section 8-20 – Illumination, Traffic Signal Systems, and Electrical, Institute of Electrical and Electronics Engineers (IEEE) Standard C2 - National Electrical Safety Code, InterNational Electrical Testing Association (NETA) standards, and all device manufacturer's instructions.

Provide all electrical equipment, including prepurchased equipment, and perform all tests necessary to assure conformance to the Drawings and Specification Sections and ensure that equipment is ready and safe for energization. Test all electrical equipment and connections required by NETA.

The Contractor shall submit a shop drawing submittal for the Pump System containing all necessary documentation for review. This submittal shall include the pump performance curve, submersible motor data, and lift station shop drawings. It shall also provide details on pump construction and materials, pump electrical data, and pump and slide rail drawings. Additionally, the submittal shall include operation and maintenance manuals as well as relevant project information.

The Contractor shall submit shop drawings for the Wet Well, including a preconstruction submittal and detailed design documentation. The preconstruction submittal shall include the quality control procedures established by the precast manufacturer's Quality Control Manual. Shop drawings shall include data for the precast concrete unit, details of anchorage, lifting inserts and devices, and all accessory items. Design data shall be provided along with buoyancy uplift calculations and any relevant test reports. Contract closeout information shall also be included as part of the submittal package.

The Contractor shall submit shop drawings for the Control Panel for approval from the engineer, including a table of contents sheet, legend and abbreviation sheets, panel exterior and interior layout drawings, wiring diagrams, communication network drawings, a Bill of Material for each panel, panel door weight calculation, electrical load calculations for each panel, and climate control calculations. Product data shall be provided in the form of manufacturer catalog cut sheets for the enclosure, finish, panel devices, control auxiliaries, and accessories. Contract closeout information shall include operation and maintenance data. Informational submittals shall include confirmation of completion of unwitnessed factory testing.

All control panel shop drawings shall be prepared using computer-aided design (CAD) software and printed on 11 x 17-inch sheets. Drawings shall include a title block with the plant or facility name where the panel(s) are to be installed, drawing title, drawing number, revision list with revision number and date, drawing date, drawing scale, and the manufacturer's name, address, and telephone number. Each drawing set shall include a cover sheet indicating the plant or facility name, project name, submittal description, revision number, and issue date. A table of contents sheet shall be provided for each drawing set, listing each drawing's number, title, and sheet number. Legend and abbreviation sheets shall describe all symbols and abbreviations used, include panel construction notes detailing the NEMA enclosure rating, finish type and color, wire type and color strategy, conductor sizes, wire labeling strategy, and confirm that panels will be affixed with a UL 508A or UL 698A label prior to shipment from the factory.

The Bill of Material for each control panel shall list the instrument tag number, quantity, functional name or description, manufacturer, complete model number, and size or rating of each component. Panel exterior layout drawings shall be to scale and include materials of construction, panel dimensions, total assembled weight (with all dimensions in inches), access openings, and conduit access locations. Conduit entries must allow sufficient bend radius for field cables and must be clearly identified on the layout. Drawings shall include front, side, and top views of the enclosure, front panel device layout, a nameplate schedule indicating nameplate location, dimensions, legend (with text, letter height and color, background color, and material), and required exterior legends per UL. Include SCCR markings per NFPA 70 or a statement of exception, along with any required calculations. The layout shall also include alarm annunciator

window engraving schedules, layouts of graphic panels or mosaic displays, and a statement confirming the panel has been built to UL 508A or UL 698A standards.

Interior layout drawings shall be drawn to scale and show sub-panel or mounting pan dimensions (in inches), interior device layouts with dimensioned locations, wire-way locations, purposes and dimensions, including centerline dimensions for DIN rail and wire-way, terminal strip designations, locations of external wiring or piping connections, lighting fixtures, switches, receptacles, and required interior legends per UL. Wiring diagrams shall include panel power distribution, control and instrumentation wiring, and internal network connections. Diagrams must label each wire as it is to be labeled in the field and include line/rung references. Relay coils and associated contacts shall be cross-referenced and clearly identified. Wires exiting the sheet shall indicate the continuation sheet and applicable line/rung references.

The Contractor shall verify that panel door-mounted equipment does not exceed the manufacturer's maximum allowable weight and submit a door weight calculation that includes the weight of any mounted computer or laptop shelf. Electrical load calculations for each panel shall include panel current draw based on connected load, SCCR calculations, DC power supply load calculations, and climate control calculations.

The contractor shall conduct a control system functional test to verify proper operation of the control panel, RTU, level instruments, and packaged pump system. The test shall be performed upon completion of equipment acceptance tests and shall demonstrate the correct interaction of all sensing, processing, and action devices. The contractor shall develop a test plan and define test parameters to evaluate the performance of the system. The functional test shall include verification of the correct operation of all interlock safety devices for both fail-safe and design functions, as well as verification of the correct operation of all sensing devices, alarms, and indicating devices. The contractor shall submit test plan 30 days before energization for engineering approval. The contractor must submit completed test result to the engineer.

Stormwater Pump Station and Restroom Pump Station Telemetry System

The contractor shall construct the telemetry system per all manufacturer's recommendations.

The Stormwater Pump Station and Restroom Pump Station shall each be equipped with SJE Rhombus PanelLink RTUs, which shall be configured by the contractor to operate under a single, unified cloud-based management platform. The contractor shall be responsible for fully configuring the system to provide complete functionality for both pump stations, including real-time status and alarm notifications in accordance with the project specifications. The contractor shall furnish and transfer ownership of all required software applications, licenses, user access credentials, and documentation to the Owner upon commissioning.

The contractor shall conduct owner training for the entire control system including use of the SJE Rhombus PanelLink telemetry system cloud-based management software. The contractor must submit training plan to the engineer for approval 60 days before the planned training date. The training plan must provide two individual eight-hour sessions for four people representing operations and maintenance staff from the owner. The training must include operations and maintenance procedures of the control system and telemetry system.

7-10.4 Measurement

Stormwater Pump Station

Packaged Stormwater Pump Station will be measured per lump sum for the complete operational system.

"PVC Pressure Pipe 10 IN. Diam", shall be measured per linear foot installed, along the invert.

Restroom Sewage Package Pump Station

Restroom Package Pump Station including installation will be measured per lump sum for the complete operational system.

7-10.5 Payment

The cost of "Structure Excavation Class B, including haul" and shoring required for installation of PVC Pressure Pipe 10 IN. Diam and Packaged Stormwater Pump Station shall be included in other pay items.

Stormwater Pump Station

Payment will be made in accordance with Section 1-04.1 for the following bid items:

PVC Pressure Pipe 10 IN. Diam	Per Linear Foot
Packaged Stormwater Pump Station	Per Lump Sum

"PVC Pressure Pipe 10 IN. Diam", per linear foot.

The unit Contract price per linear foot for "PVC Pressure Pipe 10 IN. Diam", shall be full pay for furnishing all tools, labor, equipment, and materials required to complete the installation including excavation, bedding, backfilling, adjustment of inverts to manholes, and for testing the storm sewer pipe, in those areas shown on the plans or where directed by the Engineer in accordance with the requirements of Section 7-04.3(1).

"Packaged Stormwater Pump Station" per lump sum.

The bid item price for "Packaged Stormwater Pump Station" shall be full pay for the construction of the stormwater pump station by providing a completely operational pump system including but not limited to all labor, materials, tools, equipment, and services required to complete the design, fabrication, installation, restoration of existing facilities destroyed or damaged during construction, testing, and activation of the pump system. This includes excavation, bedding, backfill, dewatering, all on-site assembly, piping connections into and out of the wet well structure, testing, sealing, electrical power connections, control panel assembly and mounting, telemetry system RTU and cloud-based management software configuration, electrical conduit installation and pulling of wire or cable to energize the system, conduit trench installations, cable

vault, installation of the generator hookup, installation of equipment pedestal and concrete foundation for the control panel and utility power meter, coordination with the utility to procure the utility meter, and connection to the utility service to assemble the system. All additional materials and labor, not shown in the plans or called for herein and which are required to complete the stormwater pump system, shall be included in the lump sum Contract price.

Restroom Sewage Package Pump Station

Payment will be made in accordance with Section 1-04.1 for the following bid items:

Schedule 80 PVC Sanitary Sewer Pipe 3 IN. Diam	Per Linear Foot
Restroom Sewage Package Pump Station	Per Lump Sum

All additional materials and labor necessary to meet the Spokane County Side Sewer Installation Handbook requirements, not shown in the plans or called for herein which are required to complete the side sewer installation between the Restroom Sewage Packaged Pump Station and the gravity sewer point of connection in Portland Avenue, shall be included in the per linear foot Contract price of "Schedule 80 PVC Sanitary Sewer Pipe 3 IN. Diam.".

7-11 VACANT *Revision*

(February 7, 2018 COSV GSP)

Section 7-11 is deleted and replaced with the following:

7-11 DRY UTILITY ADJUSTMENTS

7-11.1 Description

This section covers the adjustment of existing gas valve, communication and power vaults, within existing roadways.

7-11.2 Materials

Adjustment materials shall conform to Section 5-04.3(13).

7-11.3 Construction Requirements

The gas valve and communication and power vault, junction box and pull box rim elevations shown on the Plans are estimates only. The Contractor shall set the rim elevations in accordance with Section 5-04.3(13).

7-11.4 Measurement

"Adjust Gas Valve", shall be measured per each.

7-11.5 Payment

Payment will be made in accordance with Section 1-04.1 for the following bid items when included in the proposal:

Adjust Gas Valve	Per Each

"Adjust Gas Valve", per each.

The unit Contract price per each for "Adjust Gas Valve" shall be full pay for furnishing all tools, labor, equipment, and materials required or incidental to adjust the structures to grade, including but not limited to: structure excavation Class B including haul, interim adjustments up or down as may be required, excavation, backfilling, compaction, protection of the structures, adjusting existing valve box to finished grade, provisions for continued street drainage, pavement patching, surfacing, restoration of adjacent areas in accordance with the specifications and plans, and removing construction debris after construction is complete.

7-12 VALVES FOR WATER MAINS

7-12.3 Construction Requirements *Supplement*

(February 7, 2018 COSV GSP)

Section 7-12.3 is supplemented with the following:

The water valve box rim elevations shown on the Plans are estimates only. The Contractor shall set the rim elevations in accordance with Section 5-04.3(13).

7-12.4 Measurement *Supplement*

(February 7, 2018 COSV GSP)

Section 7-12.4 is supplemented with the following:

"Adjust Existing Water Valve", shall be measured per each.

7-12.5 Payment *Supplement*

(February 7, 2018 COSV GSP)

Section 7-12.5 is supplemented with the following:

Payment will be made in accordance with Section 1-04.1 for the following bid items:

Adjust Existing Water Valve	Per Each

"Adjust Existing Water Valve", per each.

"Adjust Existing Water Valve", per each, shall be full pay for furnishing all tools, labor, equipment, and materials required or incidental to adjust the structures to grade, including but not limited to: structure excavation Class B including haul, interim adjustments up or down as may be required, excavation, backfilling, compaction, protection of the structures, adjusting existing valve box to finished grade, provisions for continued street drainage, pavement patching, surfacing, restoration of adjacent areas in accordance with the specifications and plans, and removing construction debris after construction is complete.

7-17 SANITARY SEWER SUPPLEMENT

7-17.2 Materials *Supplement*

Section 7-17.2 is supplemented with the following:

(******)

Ductile Iron casing pipe shall be in conformance with Spokane County Standard Plan U-24 and 9-05.13. The inside diameter of the casing shall be large enough to allow the carrier pipe to be removed subsequently without disturbing the casing pipe including all joints or couplings, supports, insulators or centering devices for the carrier pipe.

7-17.4 Measurement *Supplement*

Section 7-17.4 is supplemented with the following:

(******)

"Ductile Iron 8 IN. Diam. Casing" will be by the linear foot of casing installed and shall be measured along the casing.

7-17.5 Payment *Supplement*

Section 7-17.5 is supplemented with the following:

(******)

"Ductile Iron 8 IN. Diam. Casing.", per linear foot.
The unit Contract price per linear foot for each size and kind of "Ductile Iron 8 IN. Diam. Casing" shall be full pay for all Work to complete the procurement and installation of the casing, including but not limited to, trench excavation, laying and welding pipe, special fittings, joint materials, installing insulator/spacers, installing pipe end seals, installing restrained joints, pushing the carrier pipe through the casing, bedding, and backfilling.

7-19 SEWER CLEANOUTS *Revision*

(May 30, 2025 COSV GSP)

Section 7-19 is deleted and replaced with the following:

7-19 PRESSURE SEWER CLEANOUT

7-19.1 Description

This Work consists of constructing pressure sanitary sewer cleanouts in accordance with the Plans, these Specifications, and Spokane County Standard Plans as staked.

7-19.2 Materials

All materials incorporated shall conform to Spokane County standards.

7-19.3 Construction Requirements

A cleanout shall be provided for each total change of 90 degrees of grade or alignment and in no case shall the spacing of cleanouts exceed 100 feet. No cleanout will be required at the connection of the side sewer to a riser on the public sewer. A suitably located cleanout in the house piping or plumbing may be considered as a cleanout for the side sewer. Cleanouts shall consist of a wye branch in the side sewer. All cleanouts located in public rights of way shall be extended to grade. The extension of cleanouts to grade on private property will be optional with the property owner. When extended to grade, cleanouts shall be full side sewer diameter and shall be extended to a point not less than 6 inches nor more than 12 inches below the finished ground surface and shall be plugged with a removable stopper which will prevent passage of dirt or water. When specified, the Contractor shall install an approved casting to provide ready access to the cleanout stopper. A ⅛ bend shall be used to deflect the side sewer upward as a cleanout where the terminal end of the side sewer lies upstream from the last point of connection.

Sewer Cleanouts for sanitary sewer main lines may be allowed in lieu of manholes when approved by the Director and only as a temporary installation. The maximum distance from a main line clean-out to the downstream manhole shall not exceed one hundred feet. All cleanouts located in public rights of way shall be extended to grade and accessible through a traffic-rated valve box.

Adjustments shall conform to Section 5-04.3(13).

7-19.4 Measurement

"Pressure Sewer Cleanout", shall be measured per each.

7-19.5 Payment

Payment will be made in accordance with Section 1-04.1 for the following bid items when included in the proposal:

Pressure Sewer Cleanout	Per Each

“Pressure Sewer Cleanout”, per each.

The unit Contract price per each for "Pressure Sewer Cleanout" shall be full pay for furnishing and placing the wye, pipe, pipe bends, pipe plug, castings, concrete, backfill, excavation, trench safety, and collar as specified herein and as shown on Spokane County Standard Plans.

END OF DIVISION

DIVISION 8
MISCELLANEOUS CONSTRUCTION

8-01 EROSION CONTROL AND WATER POLLUTION CONTROL

8-01.3 Construction Requirements

8-01.3(1) General *Revision*

The tenth paragraph of Section 8-01.3(1) is revised to read:

(January 25)
Erodible Soil Eastern Washington
Erodible soil not being worked whether at final grade or not, shall be covered within the following time period using an approved soil cover practice:

July 1 through September 30	30 days
October 1 through June 30	15 days

Section 8-01.3(1) is supplemented with the following:

(April 1, 2002 WSDOT GSP)
Side Slope Treatment
Slopes shall be compacted within *** ten (10) *** days of exposure of a new section of cut and construction of a new portion of an embankment.

8-01.3(1)C Water Management

8-01.3(1)C4 Management of Off-Site Water

Section 8-01.3(1)C4 is supplemented with the following:

(August 6, 2012 WSDOT GSP)
Off-site Stormwater
Stormwater is known to enter the project site at the following locations:

*** North side of Trent Avenue (SR-290) along the project extents ***

8-01.5 Payment *Supplement*

8-01.5(1) Lump Sum Bid for Project (No Unit Items)

(December 31, 2019 COSV GSP)

Section 8-01.5(1) is supplemented with the following:

Payment will be made in accordance with Section 1-04.1 for the following bid items:

Erosion Control and Water Pollution Prevention	Lump Sum

"Erosion Control and Water Pollution Prevention", per lump sum.

The lump sum contract price for "Erosion Control and Water Pollution Prevention" shall be full pay for all Erosion Control work, including but not limited to: payment for ESC Lead; preparing and submitting a Temporary Erosion and Sediment Control Plan (TESC plan) (revising the TESC Plan sheet in the Contract Documents, as necessary); and installing, inspecting and maintaining the Best Management Practices (BMP's) shown on the TESC plan. Quantities provided on the plans are for reference only.

8-02 ROADSIDE RESTORATION

8-02.2 Materials *Supplement*

(February 7, 2018 COSV GSP)

Section 8-02.2 is supplemented with the following:

Washed River Rock shall consist of washed river cobbles with 100% passing the 3" square sieve and 0.5% passing the 1 inch square sieve.

Bark Mulch shall be manufactured from Pine Bark and shall be free of non-organic and man-made debris. Maximum particle size shall be 2 inches.

Black Weed barrier shall conform to Section 9-33, Construction Geotextile for Permanent Erosion Control, rated "High Survivability" and "Drainage Class A", or approved equal.

8-02.3(5) Roadside Seeding, Lawn and Planting Area Preparation *Supplement*

Section 8-02.3(5) is supplemented with the following:

(******)
COSV Bio-infiltration Treatment Soil Mix shall be placed to the non-compacted depth shown on the plans. The topsoil shall be thoroughly blended prior to placement.

The Contractor shall submit a Type 1 Working Drawing consisting of independent test results from an accredited laboratory demonstrating the COSV Bio-infiltration Treatment Soil Mix meets the requirements of Topsoil Type A "Bioinfiltration Soil" in Section 9-14.2(1). The Type 1 Working Drawing shall also include the Request for Approval of Material in accordance with Section 1-06.1(2).

8-02.3 Construction Requirements *Supplement*

8-02.3(9) Seeding, Fertilizing, and Mulching *Supplement*

(March 4, 2020 COSV GSP)

Section 8-02.3(9) is supplemented with following:

Dryland Seed Mixture

Grass seed shall be of the following composition, proportion and quality:

1. Sheep Fescue 35%

2. Hard Fescue 35%

3. Armadillo Hybrid Bluegrass 20%

4. Perennial Ryegrass 10%

Seeds shall be certified "Weed Free", indicating there are no noxious or nuisance weeds in the seed.
Seeds shall be applied at 7 pounds per 1000 square feet.

Mulching Material
Mulching shall be applied at a rate of 2500 lbs. per acre for hydroseeding operations, and shall meet the requirements for Long-Term Mulch, per WSDOT Specification Section 9-14.4(2)A and can be applied in a single pass.

Water
Clean, fresh and free of substances or matter which could inhibit vigorous growth of grass.

Herbicide
Prohibited from use on any part of this project.

Fertilizer
FS O-F-241, Type 1, Grade A; recommended for grass, with the following proportions:

1. Nitrogen 18%

2. Phosphoric Acid 10%

3. Soluable Potash 10%

4. Sulphur 7 %

5. Fertilizer shall be applied at 8 pounds per 1000 square feet:

Hydroseeding

1. Apply seeded slurry with a hydraulic seeder evenly in two intersecting directions.

2. Mulch/tackifier to be applied as part of the slurry mix, and shall be applied to a thickness of 1/8 inches. Maintain clear of shrubs and trees.

3. Apply water with a fine spray immediately after each area has been mulched.

4. Seed shall be applied within the following windows only:
   a) Spring Seeding: February 15 to March 15

   b) Fall Seeding: September 15 to November 15

8-02.4 Measurement *Supplement*
(February 7, 2018 COSV GSP)

Section 8-02.4 is supplemented with the following:

"Topsoil Type B, 4 In. Depth" will be measured by the square yard along the grade and slope of the area covered immediately after application.

(******)
"COSV Bio-infiltration Treatment Soil Mix" will be measured per cubic yard.

8-02.5 Payment *Supplement*

(February 1, 2022 COSV GSP)

Section 8-02.5 is supplemented with the following:

Payment will be made in accordance with Section 1-04.1 for the following bid items:

Topsoil Type B, 4 In. Depth	Per Square Yard

"Topsoil Type B, 4 In. Depth" per square yard.

The unit Contract price per square yard for "Topsoil Type B, 4 In. Depth" shall be full payment for all costs for the specified Work including pre-excavation weed control, excavating, loading, hauling, intermediate windrowing, stockpiling, weed control on stockpiles or windrows, and removal, placing, spreading, processing, cultivating, and placing the specified topsoil type.

(******)
"COSV Bio-infiltration Treatment Soil Mix", per cubic yard.

The unit Contract price per square yard for " COSV Bio-infiltration Treatment Soil Mix ", shall be full pay for furnishing all tools, labor, equipment, and materials required to bring the area to final grade of the Drainage Ponds shown in the plans.

8-03 IRRIGATION SYSTEMS

8-03.1 Description *Supplement*

(******)

Section 8-03.1 is supplemented with the following:

This work also consists of reconfiguring existing irrigation systems behind back of sidewalk.

The work for "Irrigation System" shall consist of designing and installing new irrigation system based on the roadside restoration plans and provide full irrigation coverage for all new sodded areas at the trailhead facility and surrounding areas where shown in the plans or as directed by the Engineer, all in accordance with section 8-03 of the Standard Specifications and these Special Provisions.

8-03.2 Materials *Supplement*

(February 7, 2018 COSV GSP)

Section 8-03.2 is supplemented with the following:

When revising an existing system, components from the existing system may be re-used, if they are not damaged during removal and relocation. New sprinkler system components shall be the same type when still available.

The Contractor shall provide and install an irrigation system automatic controller for each irrigation system. The controller shall have four (4) zones. The Contractor shall furnish and install the transformer.

8-03.3 Construction Requirements

8-03.3(1) Layout of Irrigation System *Revision*

(February 7, 2018 COSV GSP)

The first sentence of the first paragraph of Section 8-03.3(1) is deleted and replaced with the following:

Contractor shall stake out Engineer-approved irrigation system design after the Contractor's schematic design has been approved during the submittal process.

8-03.3(1)B Design *New Section*

(******)

Add the following new section:

8-03.3(1)B Design

Irrigation subcontractors shall be experienced in the design and installation of irrigation systems for turf applications. The design of an irrigation system at the trailhead facility and surrounding areas shall be coordinated with the Engineer.

The Contractor shall submit shop drawings and calculations to the Engineer and shall receive approval of them prior to the installation of the various irrigation systems. Shop drawings submitted shall include, but not be limited to, the location of all piping, valves, controllers, backflow preventer and connection to the meter box; and connection to the electrical service and details illustrating how the components will be installed. The drawings shall note the size, grade and specifications of all material. The Contractor shall, along with the shop drawings and calculations, also submit manufacturer's literature describing the proposed equipment to be used.

The drainage swales shall be on standalone zones.

Automatic Control Valves

All circuits shall be controlled by Automatic Control Valves and shall meet all requirements listed in Section 9-15.7(2) of the Standard Specifications. Valve assemblies shall be located in valve boxes and shall not be located on the low points. Pressure regulators used shall be adjustable, allowing between 14-70 psi.

Drain Valves

Manual drain valves shall be installed on the irrigation mains for complete drainage, and on the downstream side of each automatic control valve. Drain valves shall be installed at all low elevations so they can adequately drain the mains if necessary. The Contractor shall determine the location of the drain valves at the time of irrigation installation.

8-03.3(6) Electrical Wire Installation *Supplement*
(February 7, 2018 COSV GSP)

Section 8-03.3(6) is supplemented with the following:

The Contractor shall request and pay for an L& I inspection of the meter and irrigation control pedestal. The contractor shall correct any deficiencies noted by the inspection. The City will pay for all Electrical Utility permits and fees for the electrical service. The Electric Utility will install wire from the distribution line up into the meter and irrigation control pedestal. The Contractor shall coordinate the installation of the electric service with the Electric Utility.

8-03.3(10) As Built Plans *Supplement*
(February 7, 2018 COSV GSP)

Section 8-03.3(10) is supplemented with the following:

Operating and Maintenance (O & M) Manuals
The Contractor shall coordinate, assemble and submit a set of operating and maintenance manuals for each irrigation system installed. Submittal of O & M manuals shall take place 30 working days prior to the specified time of completion of the project.

Each O & M manual shall include the following:

1. A title indicating its contents permanently labeled on the outside of the binder.

2. A cover sheet identifying equipment with the process or assembly it is used according to: (a) location, (b) specification section number and title, and (c) Engineers drawing number.

3. A table of contents.

4. A text as prepared by the manufacturer and including the following information or material, as applicable:

    a. System operating instructions including startup and shutdown procedures, safety precautions, and instructions on specific controls.

    b. As built drawings.

    c. Assembly drawings.

    d. Parts list.

    e. Bill of materials.

    f. Wiring diagrams.

    g. Maintenance instructions to cover any routine operation required to insure the satisfactory performance and longevity of the equipment, such as lubrication instructions, lists of lubricants, and belt tensioning.

    h. Maintenance summary forms

Manuals shall be bound in three-ring or spiral binders with plastic or other stain resistant covering. Manuals shall be 8-½ x 11 inches in size except for oversize drawings which shall be bound in fold-out fashion or folded and placed inside a bound-in envelope. Multiple thinner binders are preferred to extra-large and bulky binders where subdivisions of the contents permit. Equipment operating instructions and test reports shall be bound in front of maintenance instructions and other materials. The Contractor shall instruct the Owner of the system in the operation of the system prior to acceptance of the system. The Contractor shall instruct the owner of the system in one winter shutdown and one spring startup operation.

8-03.3(15) Irrigation System Revisions *Revision*
(February 7, 2018 COSV GSP)

Add the following new section:

8-03.3(15) Existing Irrigation System Restoration

The Contractor, in the presence of the Inspector, shall meet with the adjacent property Owner prior to excavation and removal work. The Contractor and Owner shall test the existing system to verify that it currently is operational. The Contractor and Owner, during the meeting shall identify and flag all existing sprinkler head locations; piping locations; and valve locations.

Any modifications necessary to relocate and restore private property irrigation systems will be field directed by the City.

The Contractor shall conduct excavation operations in a manner that will protect existing irrigation systems. Any irrigation systems damaged as a result of the Contractor's operation shall be repaired by the Contractor to the satisfaction of the City at no cost to the Agency.

The Contractor shall flush and test all lines in the system after completion of any modifications. All tests shall be conducted at existing residential household pressure. If head coverage or pressure is not satisfactory to the Owner, the Contractor will replace heads and re-flush the system until it is.

8-03.5 Payment *Supplement*
(******)

Section 8-03.5 is supplemented with the following:

Payment will be made in accordance with Section 1-04.1 for the following bid items:

Irrigation System Revision	Lump Sum
Irrigation System	Lump Sum

"Irrigation System Revision", by lump sum

The lump sum Contract price for "Irrigation System Revision" shall be full pay for furnishing all tools, labor, equipment, and materials required to complete the work as specified in the Contract Documents.

"Irrigation System", per lump sum.

The lump sum Contract price for "Irrigation System" shall be full pay for furnishing all tools, labor, equipment, and materials required to complete the work as specified in the Contract Documents.

8-04 CURBS, GUTTERS, AND SPILLWAYS

8-04.3 Construction Requirements

8-04.3(1) Cement Concrete Curbs, Gutters, and Spillways *Revision*

(February 7, 2018 COSV GSP)

The first paragraph of Section 8-04.3(1) is revised to read:

Cement concrete curb, curb and gutter, gutter, and spillway shall be constructed with air entrained commercial concrete with a minimum compressive strength at 28 days of 4,000 psi in accordance with AASHTO T22.

The first sentence of the fourth paragraph of Section 8-04.3(1) is revised to read:

Expansion joints shall extend the full section and depth of the curb. Expansion joints in the curb or curb and gutter shall be spaced at 100-foot intervals, the beginning and ends of the curb returns, drainage structures, bridges, connections with existing curbing, and match joint locations of adjacent sidewalk.

Section 8-04.3(1) is supplemented with the following:

The Contractor shall place and compact crushed surfacing top course below the curbs, gutters and spillways in accordance with the plans, compacted to the requirements of Section 4-04.

The Contractor shall be responsible for barricading, patrolling, or otherwise protecting the newly placed concrete to prevent damage and/or vandalism. Damaged, vandalized, discolored, stained, or unsightly concrete shall be removed and replaced at the expense of the Contractor.

8-04.5 Payment *Supplement*

(February 7, 2018 COSV GSP)

Section 8-04.5 is supplemented with the following:

(******)
"COSV Curb Type A", per linear foot.
"COSV Curb and Gutter Type B", per linear foot.

8-06 CEMENT CONCRETE DRIVEWAY ENTRANCES

8-06.3 Construction Requirements *Revision*

(February 7, 2018 COSV GSP)

The first paragraph of Section 8-06.3 is revised to read:

Cement concrete driveway approaches shall be constructed with air entrained commercial concrete with a minimum compressive strength at 28 days of 4,000 psi in accordance with AASHTO T22.

Section 8-06.3 is supplemented with the following:

The Contractor shall place and compact crushed surfacing top course below the driveway entrance or approach in accordance with the plans, compacted to the requirements of Section 4-04.

8-06.4 Measurement *Supplement (******)*

Section 8-06.4 is supplemented with the following:

"Cement Conc. Driveway" will be measured by the square yard regardless of the type of driveway.

8-06.5 Payment *Supplement (******)*

Section 8-06.5 is supplemented with the following:

Payment will be made in accordance with Section 1-04.1 for the following bid item:

Cement Conc. Driveway	Per Square Yard

"Cement Conc. Driveway", per square yard.

The unit Contract price per square yard for " Cement Conc. Driveway ", shall be full pay for furnishing all tools, labor, equipment, and materials required or necessary to excavate to subgrade; load, haul and dispose of excavated material; compact the subgrade; furnish, place, finish, cure and protect the approach.

8-10 GUIDE POSTS

8-10.5 Payment *Supplement*

Section 8-10.5 is supplemented with the following:

(******)

"Flexible Guide Post – Flat", per each.

“Flexible Guide Post – Tubular", per each.

The unit Contract price per each for " Flexible Guide Post – Flat" and "Flexible Guide Post – Tubular", shall be full pay for furnishing all tools, labor, equipment, and materials required for and furnishing and installing tubular delineators at all locations shown or called out on the plans or where directed by the Engineer. The cost of temporary traffic control shall be included in other bid items.

8-12 Chain Link Fence and Wire Fence

8-12.1 Description

Section 8-12.1 is supplemented with the following:

(******)
The work also consists of furnishing and constructing pedestrian handrail in accordance with the Plans, these Specifications at the locations shown in the Plans.

8-12.2 Materials

*(*September 8, 2020*)*

Section 8-12.2 is supplemented with the following:

Coated Chain Link Fence
Chain link fence fabric shall be hot-dip galvanized with a minimum of 0.8 ounce per square foot of surface area.

Fencing materials shall be coated with an ultraviolet-insensitive plastic or other inert material at least 2 mils in thickness. Any pretreatment or coating shall be applied in accordance with the manufacturer's written instructions. The Contractor shall provide the Engineer with the manufacturer's written specifications detailing the product and method of fabrication. The color shall match SAE AMS Standard 595 color number *** 17038 (Black) ***.

Samples of the coated fencing materials shall have received the Engineer's acceptance prior to installation on the project.

The Contractor shall supply the Engineer with 10 aerosol spray cans containing a minimum of 14 ounces each of paint of the color specified above. The touch-up paint shall be compatible with the coating system used.

(******)
Pedestrian Handrail
Steel and aluminum shall meet the requirements of Section 9-06.18.

8-12.3 Construction Requirements

Section 8-12.3 is supplemented with the following:

(******)
Pedestrian Handrail
Before fabrication, the Contractor shall submit shop drawings of the pedestrian handrail in accordance with Section 6-03.3(7).

The railing shall be installed true to line and grade. After first setting the railing, the Contractor shall readjust all or part of it, if necessary, to create an overall line and grade pleasing to the eye.

8-12.4 Measurement

Section 8-12.4 is supplemented with the following:

(******)
Pedestrian handrail will be measured by the linear foot along the line and slope at the base of the completed railing.

8-12.5 Payment

Section 8-12.5 is supplemented with the following:

(April 1, 2002)
"Coated Chain Link Fence Type ___", per linear foot.
Payment for clearing of fence line for "Coated Chain Link Fence Type ___" shall be in accordance with Section 2-01.5.
"Coated End, Gate, Corner, Pull Post for Chain Link Fence", per each.
"Double 14 Ft. Coated Chain Link Gate", per each.
"Double 20 Ft. Coated Chain Link Gate", per each.
"Single 6 Ft. Coated Chain Link Gate", per each.

(******)
"Pedestrian Handrail", per linear foot.

8-14 CEMENT CONCRETE SIDEWALKS

8-14.3 Construction Requirements *Revision (February 7, 2019 COSV GSP)*

Section 8-14.3 is deleted in its entirety and replaced with the following:

The concrete in sidewalks and curb ramps shall be constructed with air entrained commercial concrete with a minimum compressive strength at 28 days of 4,000 psi in accordance with AASHTO T22.

Section 8-14.3 is supplemented with the following:

(October 3, 2022)
The Contractor shall request a pre-construction meeting with the Engineer to be held two to five working days before any work can start on cement concrete sidewalks, curb ramps or other pedestrian access routes to discuss construction requirements. Those attending shall include:

1. The Contractor and subcontractor in charge of constructing forms, and placing, and finishing the cement concrete.

2. Engineer (or representative) and Project Inspectors for the cement concrete sidewalk, curb ramp or pedestrian access route Work.

Items to be discussed in this meeting shall include, at a minimum, the following:

1. Slopes shown on the Plans.
2. Inspection
3. Traffic control
4. Pedestrian control, access routes and delineation
5. Accommodating utilities
6. Form work
7. Installation of detectable warning surfaces
8. Contractor ADA survey and ADA Feature as-built requirements
9. Cold Weather Protection

8-14.3(1) Excavation

8-14.3(1)A Crushed Surfacing *New Section*
(February 7, 2018 COSV GSP)

Add the following new section:

8-14.3(1)A Crushed Surfacing

The Contractor shall place and compact crushed surfacing top course below the sidewalk or curb ramp in accordance with the plans, compacted to the requirements of Section 4-04.

8-14.3(3) Placing and Finishing Concrete *Supplement*
(February 7, 2018 COSV GSP)

Section 8-14.3(3) is supplemented with the following:

At all street intersections, the concrete for the sidewalk and curb ramps shall be 6 inches in depth within the curb returns.

When the sidewalk is adjacent to curb, the expansion and contraction joint locations shall match the joints in the curb or curb and gutter.

The Contractor shall use fibrous expansion material, full depth of sidewalk or ramp, in all expansion joints. The contractor shall ensure that all expansion material has been installed per these requirements prior to pouring concrete.

8-14.3(4) Curing *Revision*
(February 7, 2018 COSV GSP)

Section 8-14.3(4) is deleted and replaced with the following:

The curing materials and procedures outlined in Section 5-05.3(13) shall apply, except that white pigmented curing compound shall not be used on sidewalks. The curing agent shall be applied immediately after brushing and be maintained for a period of 5 days.

The curing period for sidewalks shall be a minimum of 3 days. The curing period for driveways shall be a minimum of 7 days. During the curing period, all traffic, both pedestrian and vehicular, shall be excluded. If methods of construction cannot exclude pedestrian or vehicular traffic, the Contractor shall use a high-early strength concrete with the prior approval of the Engineer. In this case, the sidewalk or driveway shall remain closed until the concrete reaches a minimum of 2500 PSI compressive strength, provided that vehicular traffic may be excluded for such additional time, as the Engineer may direct.

The Contractor shall have readily available sufficient protective covering, such as waterproof paper or plastic membrane, to cover the pour of an entire day in the event of rain or other unsuitable weather.

The Contractor shall be responsible for barricading, patrolling, or otherwise protecting the newly placed concrete to prevent damage and/or vandalism. Damaged, vandalized, discolored, stained, or unsightly concrete shall be removed and replaced at the expense of the Contractor.

8-14.5 Payment *Supplement*

(February 7, 2019 COSV GSP)

Section 8-14.5 is supplemented with the following:

Payment will be made in accordance with Section 1-04.1 for the following bid items:

Cement Conc. Sidewalk	Square Yard
Cement Conc. Curb Ramp Type ___	Each
Detectable Warning Surface	Square Foot

8-18 MAILBOX SUPPORT

(February 1, 2022 COSV GSP)

8-18.3 Construction Requirements *Supplement*

Section 8-18.3 is supplemented with the following:

Prior to construction, the Contractor shall inventory all mailboxes to be relocated along the project and either salvage the existing mailboxes or replace in kind. The Contractor shall provide access to all mailboxes during construction. In order to provide access, the Contractor may place temporary mailbox supports during construction, the locations shall be approved by the United States Postal Service and the property owner prior to relocating the mailboxes.

Mailbox supports shall be replaced as shown on the attached Standard Plans and according to the locations shown in the plans, or at the location directed by the Engineer and/or the United States Postal Service.

All mailboxes shall be installed such that the front face of the mailbox is flush with the new edge of road and as per the direction of the Engineer.

Newspaper boxes shall be relocated along the project and shall be relocated back after the completion of the project to the satisfaction of the Engineer.

8-18.5 Payment *Supplement*

Section 8-18.5 is supplemented with the following:

Payment will be made for each of the following bid items:

Mailbox Support, Type 1	Per Each

Payment for the Contract Bid Item "Mailbox Support, Type _ " per Each, shall include all costs for materials, haul, labor, equipment and all other costs necessary to complete the item as specified and no further payment shall be made.

All costs associated with providing temporary mailbox supports, transferring the existing mailboxes and newspaper tubes to the new mailbox supports, including support hardware, clamps, etc. shall be considered incidental to the Bid Items "Mailbox Support Type _" per each, and no further payment shall be made.

8-20 ILLUMINATION, TRAFFIC SIGNAL SYSTEMS, INTELLIGENT TRANSPORTATION SYSTEMS, AND ELECTRICAL

8-20.2 Materials *Supplement*

(January 21, 2021 COSV GSP)

Section 8-20.2 is supplemented with the following:

In accordance with Public Law 115-232, section 889, federally-funded projects are now prohibited from utilizing certain equipment, services, or systems that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. Covered telecommunications equipment is telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).

Or video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities).

Or Telecommunications or video surveillance services provided by such entities or using such equipment.

Or Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

(******)

ITS Cabinet

The cabinet shall conform to Standard Plan J.12.16-00, Type 33xD. The foundation shall conform to standard plan J-10.10-04.

CCTV Standards

CCTV standards shall be furnished and installed in accordance with the methods and materials noted in the design plans. CCTV standard shall consist of an arm extension that projects at an angle anywhere between 38 and 45 degrees above the horizon from the top of the standard's vertical shaft. The vertical shaft of the CCTV standard shall not exceed 17 feet in height to maintain adequate clearance from power lines. The arm extension shall have a horizontal distance of 25 feet from the vertical shaft and shall consist of a flat tenon at the end of the arm that provides a minimum of 2 feet length and 2.5 inch diameter for CCTV camera mounting hardware. The top of the arm extension shall also have a weatherproof 1.75 inch grommet to pass the camera cabling. The total height of the CCTV standard shall not exceed 31 feet. The standard shall include a handhole at the base for access to internal wiring. The standard shall include an internal hook at the top of the vertical shaft for wiring.

All welds shall comply with the latest AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. Welding inspection shall comply with Section 6-03.3(25)A Welding Inspection.

The CCTV standard shall be designed in accordance with loading an allowable stress requirements of the latest AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals.

Yearly mean wind speed = 10 mph
Wind loads = 70 mph
Recurrence interval = 50 years
Fatigue category = III
Max total deflection at end of arm = 4.25 inches

CCTV standard foundation shall be 3' round by 7' deep per WSDOT Standard Plan J-26.10-01 (Alternate #1).

The Contractor shall submit a set of sealed shop drawings to the Engineer for approval prior to fabrication of the standard and hardware.

Rectangular Rapid Flashing Beacons

The Rectangular Rapid Flash Beacon (RRFB) assembly meeting 4(09)-41 (I), IA-21 requirements. This is to include RRFB housing, LEDs, control panel and cabinet. The requirements for this assembly are outlined below.

RRFB Indications

When activated, the two yellow indications in each RRFB shall flash the WW+S (wig-wag plus simultaneous). The RRFB flash pattern shall be based on a flash cycle length of 800 milliseconds,

which results in 75 flash cycles per minute. The 800-millisecond flash cycle shall have the following sequence:

The left-side beacon is on for 50 milliseconds
Both beacons are off for 50 milliseconds

The right-side beacon is on for 50 milliseconds
Both beacons are off for 50 milliseconds

The left-side beacon is on for 50 milliseconds
Both beacons are off for 50 milliseconds

The right-side beacon is on for 50 milliseconds
Both beacons are off for 50 milliseconds

Both beacons are on for 50 milliseconds
Both beacons are off for 50 milliseconds

Both beacons are on for 50 milliseconds
Both beacons are off for 250 milliseconds

RRFB Lens

The RRFB lens shall be waterproof and have a clear cover over amber LEDs. Each Lens shall be 7.23" w x 3.04"h x 1.17" d (frame not to be included). The two RRFB indications shall be aligned horizontally, with the longer dimension horizontal and space between the two indications shall be seven (7 in), measured from inside edge of the one indication to inside edge of the other indication. The lens shall have a minimum of 2 black stainless-steel vandal proof tamper resistant head screws.

Dimming

The RRFB lens shall have a minimum of two light levels- standard for normal light intensity and dimmed intensity for low light conditions to allow reading of signage. Version shall accomplish dimming at point of RRFB head using photocell and solid-state relay circuit.

Confirmation Indication

The confirmation indications shall be a rectangular amber LED light head using optical Lexan and to be hermetically sealed. This LED light head shall meet AE J845, SAE J595 and CAL Title 13 specification standards and use 3 ultra-high intensity LEDs in a 3.3" x 1.2" x .75 device.

RRFB Enclosure

The enclosure shall be 23 inches in length, 4 Inches high, 1 5/8 inches deep to accommodate two LED indications with openings for optional confirmation LED indication on right or left end of enclosure. The enclosure shall be made of 0.125-inch 5052 aluminum with 0.125-inch bottom plate having a minimum of 6 attachment openings and 2 weep openings of 1/16 inch to allow drainage as needed. The enclosure shall be designed with openings to allow surface mounting of the LED indications and backplate and shall use black stainless-steel fasteners. The enclosure will have openings that will accommodate a Pelco SE-1100 mounting bracket. The enclosure shall have a durable weather resistant mini-tex black powder coat finish. (Shall be available in Federal yellow powder coat as option)

RRFB Solar DC Power

Battery

The unit will be a 12VDC battery powered unit that is re-charged via solar panel array. The battery shall be Valve-Regulated, Gelled -Electrolyte, with a nominal voltage of 12 volts and rated at 53.00 to 58.2Ah (100-hour test method). Each battery shall conform to the following:

Weight	37 lbs (17 kg)
Plate Alloy	Lead calcium
Posts	T881 Forged Terminals
Container/Cover	Polypropylene
Operating Temperature Range	-76°F (-60°C) - 140°F (60°C)
Charge Voltage @ 68°F (20°C)	
Cycle	2.30 – 2.35VPC
Float	2.25 – 2.30VPC
Vent	Self- sealing (2 PSI operation)
Electrolyte	Sulfuric acid thixotropic gel
Cycle Life vs. DOD:	5000 or greater @ +20°C (77°F) BCI 2-Hour Capacity

Rated non-spillable by ICAD, IATA and DOT

Battery

The 50/100 Ah battery shall be low self-discharging, leak proof, gelled electrolyte and maintenance free intended for photo voltaic service.

Solar Array

Solar array wattage will be determined by number of hours of RRFB operation. The standard, unless directed otherwise shall be a 30 watt, 12VDC solar array. The solar array shall conform to the following:

- Have top ranked PTC Rating
- The solar module shall be EL tested to guarantee no hotspots
- The solar module shall withstand high wind (2400 Pa) (130mph) and snow loads (5400Pa) (125lbf ft^{-2})
- Have Positive Output Tolerance (0+3%)

Control Panel DC Version

The control panel shall consist of a pedestrian push button activated flash circuit having a settable time period for flash operation. The time circuit shall incorporate a Microcontroller time delay device that can be set to seconds or multiple minutes. The time delay relay shall be field selectable and not require the use of external device such as laptop computer or plug in applications. The Microcontroller time device shall supply a 12VDC output for operating the RRFB unit. Control panel shall have ability to plug into cellular connection and connect to RTC Connect cloud server for system monitoring and health checks as desired.

Field Terminal Block (TB3) Polara Push-Button

A barrier type terminal block shall be used to terminate all wires. The terminal block shall have at least ten (6) positions to terminate the following functions:

1	Org	Light Input to Push-button
2	Wht	Light DC- Input to Polara Push-button
3	Grn	Field Push- button connection
4	Blu	Field Push-button connection
5	Red	DC+ Power to Push-button
6	Blk	DC- for Push-button

Interface Circuit Board (One Battery Cabinet Only)

The flasher cabinet assembly shall include a dual-purpose interface board. The interface board allows connection of a RRFB unit and has flash output connections. A two (2) circuit 12VDC flasher shall be integral to the flasher and interface board. The flasher shall be of all solid-state construction and shall be rated at a minimum of 6.0 Amps per circuit. The flasher shall utilize zero-voltage turn-on and turn-off of current thus eliminating electromagnetic interference.

The interface board shall have two terminal blocks for connecting the wiring of the cabinet. Barrier type terminal blocks shall be used to terminate all wires. The terminal blocks shall terminate the following functions:

1. Solar Panel +
2. Solar Panel -
3. Battery +
4. Battery -
5. RRFB +
6. RRFB -
7. Load-1 from the flasher
8. Load-2 from the flasher
9. DC common from flasher
10. DC common from flasher

1. Time switch relay common
2. Time Switch relay normally open
3. DC + power to time switch
4. DC – to time switch

The above functions shall be clearly silk screened on the circuit board adjacent to the appropriate terminal.

The flasher and interface board shall be pre-wired for connection to a solar regulator. The wires connecting the flasher and interface board to the solar regulator shall be a minimum of 16AWG and shall be permanently soldered to the flasher and interface board.

The flasher and interface board shall include 3 separate ATOF automotive fuses to protect the solar array, the battery and the load. The fuses shall be easily replaceable from the front of the board with the use of a standard fuse removal tool.

It shall be possible to configure the interface board to operate as a 24-hour output with the insertion of an ATOF fuse. The interface circuit board shall have a minimum of 2- ATOF fuse spares

Photovoltaic Controller (Solar Regulator/charger)

The flasher cabinet shall include a 20-amp Photovoltaic Controller (Solar Regulator/Charger) that uses Pulse Width Modulation (PWM) type technology. The PWM controller shall be 100% solid state and be designed for use as a battery charge regulator in photovoltaic (solar) energy systems.

The PWM controller will allow maximum solar panel current to flow into the battery throughout the battery charge cycle and once full charge is reached; the regulator will continually allow small current pulses to maintain a full charge. The PWM type controller shall allow a true 0 to 100% duty charging cycle without having over-current to the battery.

The photovoltaic controller shall have terminals to accept up to 10AWG wire.

The solar regulator shall have LED indicators. One LED indicator shall indicate that the solar array is charging the battery and when the solar array is not charging the battery. A LED shall display normal battery BSOC (Battery State Of Charge) operation and display when the solar regulator has disconnected the load due to a low voltage battery of 11.4 -11.5 volts (**L**ow **V**oltage **D**isconnect). The solar regulator shall automatically reconnect the load if the battery voltage level reaches 12.4 -12.6 volts.

Amperage Rating
The amperage rating of the solar regulator shall be a minimum of 125% greater than the amperage supplied by the solar array.

The solar regulator shall be configurable to work with both sealed and flooded batteries. It shall be possible to switch between sealed and flooded with the use of simple tools or by use of switch setting.

The size shall not exceed 6.3” L x 2.6”H x 1.0 -1.3” D.

Self-Consumption shall be 6.8 – 8 mA (sleep) 60 mA (awake).

The operating temperature shall be -40° (C) to +60° (C)

Cabinet
The cabinet shall have a hinged panel for mounting the time switch, interface board and the solar regulator. This hinged panel shall be in front of the battery compartment. The cabinet shall be designed to mount an optional time switch with dimensions of 10 3/8"h x 4 7/8"w x 4"d with the CPC connector.

The cabinet shall be fabricated of .125-inch sheet aluminum. The cabinet shall be weatherproof using a neoprene gasket and shall be supplied with a standard #2 lock and key. The cabinet shall be of sufficient size to house one (1) 100-amp hour battery. The outside dimensions of the cabinet shall be a minimum of 17"h x 18.5"w x 14.75"d. The outside of the cabinet shall be the natural aluminum finish.

The cabinet shall have a rain flap designed to cover the top of the cabinet door. The rain flap shall extend the width of the cabinet and shall be 1.75” deep. The rain flap shall have a slight down angle and extend past the door of the cabinet when the door is closed to allow rain water to drip past the opening of the cabinet door.

In order to allow battery gasses to escape, the cabinet shall be equipped with vents on the left and right side of the cabinet. The vents shall be covered on the inside of the cabinet with a screen to prevent insects and other debris from entering the cabinet. The battery compartment shall have 1/2" foam on bottom, sides and back to properly insulate the battery. The battery compartment shall be of sufficient size to house one (1) 100-amp hour (Group 31) battery.

The cabinet enclosure will have openings for and will be supplied with a two piece “hinge” bracket capable of mounting to various substrate, ie. 4.5” steel or aluminum poles, tapered steel poles, wooden post and Telespar posts.

Signs

The signs shall be 36".

8-20.2(1) Equipment List and Drawings *Supplement*

Equipment List And Drawings

Section 8-20.2(1) is supplemented with the following:

(March 13, 1995)
Pole base to light source distances (H1) for lighting standards with pre-approved plans will be determined or verified by the Engineer at the request of the Contractor prior to fabrication.

Pole base to light source distances (H1) for lighting standards without pre-approved plans and for combination traffic signal and lighting standards will be furnished by the Engineer as part of the final approved shop drawings prior to fabrication.

The seventh paragraph of Section 8-20.2(1) is supplemented with the following:

(******)
6. Manufacturer's specifications for all conduit, fittings and accessories.

7. Manufacturer's complete specifications for all communication system cables and, associated electronics and hardware components.

8. Manufacturer's complete specifications for optical fiber cable splice closures.

8. A detailed fiber optic installation procedure.

8-20.3 Construction Requirements

8-20.3(1) General *Supplement*
(February 7, 2019 COSV GSP)

Section 8-20.3(1) is supplemented with the following:

Electrical Coordination
The Contractor shall coordinate the installation of the electric service with the Electric Utility. The Contractor shall request and pay for an L& I inspection and permit for the service and work. The contractor shall correct any deficiencies noted by the inspection. The City will pay for all Electrical Utility connection fees for the electrical service. The Electric Utility will install wire from the distribution line up into the meter, or junction box, depending on the Utility. The Contractor shall supply the City a copy of any permits or inspection reports related to new or existing electrical services.

(******)
Salvaged Equipment
The following equipment designated for removal shall remain the property of WSDOT:

- *One (1) signal controller cabinet at Trent Avenue/Pines Road, SE quadrant*

Coordinate with WSDOT Signal Shop for where to deliver Signal equipment.

The following equipment designated for removal shall remain the property of City of Spokane Valley:

- *One (1) ITS cabinet at Trent Avenue/Pines Road, SE quadrant*
- *One (1) PTZ camera at Trent Avenue/Pines Road, SW quadrant*

Coordinate with Spokane Valley Signal Shop for where to deliver ITS equipment.

All other existing electrical equipment and materials designated to be removed shall become the property of the Contractor and be removed from the project.

8-20.3(5) Conduit

8-20.3(5)B Conduit Type *Supplement*

(February 1, 2022 COSV GSP)

Section 8-20.3(5)B is supplemented with the following:

All conduit shall be Sch. 80 PVC Conduit or HDPE equivalent (including sweeps into concrete foundations) unless shown otherwise on the Plans. Sweeps shall be 36" for ITS conduit and a minimum 24" for all junction boxes and other conduit. All couplings for conduit shall be schedule 40 swedge couplings or equivalent.

All conduits that contain fiber optic; and all empty conduit unless otherwise detailed in the Plans shall contain location wire and mule tape. Wire conductor shall be 14 AWG standard orange USE insulate wire and be installed in continuous (no splicing) sections for all underground fiber optic conduit installation. A minimum of 6 feet of location wire shall be extended into each cable vault, pull box, or junction box. The locate wire shall be attached to the "C" channel or the cover hinge bracket with stainless steel bolts and straps. A 1-foot loop of locate wire shall be provided above the channel as shown in the Plans. If trenched the locate wire shall be placed between the conduits in dual conduit installations or on top of conduits for single conduit installations. If conduit is being installed by boring, the location wire shall be installed inside the conduit.

8-20.3(8) Wiring *Supplement*

(February 7, 2019 COSV GSP)

Section 8-20.3(8) is supplemented with the following:

All splices shall be approved by the on-site City/County inspector.

8-20.5 Payment *Supplement*

Section 8-20.5 is supplemented with the following:

(******)

Payment will be made for each of the following bid items:

Illumination System, Complete	Lump Sum
ITS, Complete	Lump Sum
Traffic Signal System, Complete	Lump Sum

The lump sum Contract Price for "Illumination System, Complete" shall be full pay to perform the work as specified including all work related to the removal of existing light poles, and the associated junction box and wiring; the installation of the new illumination system including excavation, backfilling, pole foundations, poles, luminaires, service cabinet, conduit, wiring, junction boxes.

The lump sum Contract Price for "ITS, Complete" shall be full pay to perform the work as specified including all work related to the removal of existing camera pole, ITS cabinet, and the associated junction box and wiring; the installation of the new ITS including excavation, backfilling, pole foundations, poles, PTZ cameras, service cabinet, conduit, wiring, cable vaults.

The lump sum Contract Price for "Traffic Signal System, Complete" shall be full pay to perform the work as specified including all work related to the removal of existing signal poles, pedestrian push button posts, signal controller cabinet, and the associated junction box and wiring at Pines Road/Trent Avenue intersection; the relocation of existing pedestrian signal pole at Pines Road/Mirabeau Parkway; the installation of the new rapid rectangular flashing beacon (RRFB) system including excavation, backfilling, pole foundations, poles, RRFB, conduit, wiring, junction boxes at the new Pines Road/Trent Avenue roundabout.

8-21 PERMANENT SIGNING

8-21.2 Materials

Roadside Sign Structures

Section 9-06.16 is supplemented with the following:

(January 3, 2011)
Perforated Steel Square Sign Post System

Where noted in the Plans, steel sign post systems shall be square, pre-punched galvanized steel tubing, that are NCHRP 350 Test Level 3 Certified and FHWA approved. The steel sign post system shall include all anchor sleeves, and other hardware required for a complete sign installation.

System Acceptance

Systems listed in the current QPL will be accepted per the QPL approval code. Systems not listed in the QPL will be accepted based on a Supplier's Certificate of Compliance. The Supplier's Certificate of Compliance will be a contract specific letter from the supplier stating the system is NCHRP 350 Test Level 3 compliant.

Hardware

Section 9-28.11 is supplemented with the following:

(August 3, 2015)

Locknuts shown in the Plans specifying a locknut or locknut with nylon insert shall conform to one of the following:

1. ANCO Pin Locknut, with stainless steel locking pin, as manufactured by Lok-Mor, Inc.

2. Tri-lock Locknut, as manufactured by Lok-Mor, Inc.

3. Grade DH or 2H hex or heavy hex nuts conforming to one of the ASTM material specifications in the Locknut category of the Hardware table of this Section may be modified by installing a nylon insert washer. A minimum of 60-percent of the original number of threads shall meet the requirements of the applicable ASTM material specification after insertion of the nylon insert washer.

4. Hex or heavy hex nuts conforming to one of the ASTM material specifications in the Locknut category of the Hardware table of this Section may be modified by adding one of the following products to a minimum of one-half of the internal threads of the nut and the entire exterior top surface of the nut:

   a. Nylok Blue Torq-Patch Locknut.

   b. Nylok Precote 30.

   c. ND Patch 360 Ring Patch.

   The nuts with any of the three listed products are permitted for a single use only and shall have a maximum of two nut widths of thread extending beyond the nut after installation.

The alternatives to locknuts specified in Standard Plans G-90.20, G-90.30, and J-75.41 are deleted and replaced with the four options specified above.

Manufacturers for Steel Roadside Sign Supports
(September 8, 2020)

Section 9-28.14 is supplemented with the following:

The Standard Plans lists several steel sign support types. These supports are patented devices and many are sole-source. All of the sign support types listed below are acceptable when shown in the Plans.

Steel Sign Support Type	Manufacturer
Type TP-A & TP-B	Transpo Industries, Inc.
Type PL, PL-T & PL-U	Northwest Pipe Co.
Type AS	Transpo Industries, Inc.
Type AP	Transpo Industries, Inc.
Type ST 1, ST 2, ST 3, & ST 4	Ultimate Highway Solutions, Inc., Allied Tube & Conduit Corp. (Mechanical Division), Trinity Highway Products, LLC.
Type SB-1, SB-2, & SB-3	Ultimate Highway Solutions, Inc., Xcessories Squared Development and Manufacturing Incorporated, Trinity Highway Products, LLC.

8-21.3 Construction Requirements *Supplement*
(February 7, 2018 COSV GSP)

Section 8-21.3 is supplemented with the following:

U-channel sign posts and bases shall be installed per Spokane Valley Standard Plan R-140.

8-21.3(13) Project Signs *New Section*
(February 7, 2018 COSV GSP)

Add the following new section:

8-21.3(13) Project Signs

The Contractor shall furnish and install 2 Project Signs where shown on the plans. The format of each sign shall be in accordance with the details shown on the plans. Each project sign shall be mounted on a sheet of 3/8 inch CDX plywood. The 4 x 4 wood sign posts shall be pressure treated with preservative and embedded into the ground a minimum of 4 feet. The sign and posts shall be removed and disposed of by the Contractor at physical completion of the project. The cost for the signs shall be included in the Lump Sum, "Permanent Signing" bid item.

8-22 PAVEMENT MARKINGS

8-22.2 Materials *Supplement*
(February 1, 2023 COSV GSP)

Section 8-22.2 is supplemented with the following:

The plastic material for pavement markings on concrete pavement shall be Type A as defined in Section 9-34.3 of the Standard Specifications.

The plastic material for pavement markings on asphalt pavement shall be either Type A, B, C-1 or D as defined in Section 9-34.3 of the Standard Specifications.

The Contractor shall identify the reflective properties of the Type B material in the submittal. All Type B material installed on the project shall have the same reflective properties.

Paint for painted lines shall be SWARCO 1160 series (1000 scrub), Sherwin Williams Hotline waterborne 2248 (white)/2259 (yellow), or Ennis-Flint Highbuild Fast Dry Waterborne 985221(white)/985222(yellow) or approved equal.

8-22.3 Construction Requirements

8-22.3(1) Preliminary Spotting *Revision*
(February 7, 2018 COSV GSP

The first sentence of Section 8-22.3(1) is replaced with the following:

The Contractor shall provide preliminary spotting of the lines for Engineer Approval, before marking begins, based on his construction staking control.

8-22.3(3) Marking Application *Supplement*

Section 8-22.3(3) is supplemented with the following:

(******)
All existing pavement marking located on mainline that is within 150 feet of any new hot mix asphalt or rehabilitated cement concrete pavement shall be painted as part of this project. Each continuous run of skip center line including areas such as intersections where the skip center line is not painted, the "skip" pattern shall be maintained on a 40 foot basis as described in Section 8-22.1. All painted lines except center lines shall be applied in the direction of traffic flow.

Where paint is applied on centerline on two-way roads with bituminous surface treatment or centerline rumble strips, the second paint application shall be applied in the opposite direction as the first application direction. This will require minor skip pattern corrections for curves on the second application.

8-22.3(3)F Application Thickness *Supplement*

The fourth paragraph on Section 8-22.3(3)F is supplemented with the following;

(******)
The groove for the plastic symbol markings shall be cut or ground in the exact shape of the symbol to be installed.

8-22.3(4) Tolerance for Lines *Revision*
(January 21, 2021 COSV GSP)

The third tolerance of Section 8-22.3(4) is replaced with the following:

Lane Width – The lane width, which is defined as the lateral width from the edge of pavement to the center of the lane line or between the centers of successive lane lines, shall not vary from the widths shown in the Contract by more than plus or minus 4 inches for lane widths of more than 11 feet or 2 inches for lane widths of 11 feet or less.

8-22.3(5) Installation Instructions *Supplement*
(February 7, 2018 COSV GSP

Section 8-22.3(5) is supplemented with the following:

Pavement Markings-Durable
The Contractor shall install the Type C-1 markings per the manufacturer's specification for hot inlay application only. The manufacturer's installation instructions shall be included with the Request for Approval of Materials (RAM) submittal.

The Contractor shall supplement the manufacturer's Type C-1 markings installation instructions with the following:

The Contractor shall provide a dedicated ten-ton steel-drum finish roller (no vibration) for the marking installation. The markings should be placed at least 4 inches from any asphalt seam or crown. Type C-1 markings must be installed when the paved asphalt temperature is between 160ºF and 130ºF, for hot inlay application.

If the paved asphalt temperature drops below 130ºF, the Contractor shall immediately stop the installation of the Type C-1 markings and place temporary pavement markings (per section 8-23 of the standard specifications) for the remaining paved asphalt sections, so not to delay opening

of the roadway. The remaining permanent pavement markings that were not installed within the temperature range must be installed with contact adhesive following the manufacturer's installation instructions for grooved pavement surface application using diamond cutting blades to groove the surface. The Contractor shall maintain the temporary markings until the permanent markings are installed.
Any additional costs to install and remove temporary pavement markings, groove cutting, groove/surfacing cleaning, additional traffic control, or any delay costs due to the Contractor's inability to install the markings within the temperature range shall be at the Contractor's expense.

Type B Preformed Fused Thermoplastic pavement marking shall not be over heated during application. Type B Preformed Fused Thermoplastic pavement markings that are pock-marked with bubbles will be rejected, and the Contractor shall pay all costs, including temporary traffic control, to remove by grinding and reinstall the material.

8-22.5 Payment **Supplement**

Section 8-22.4 is supplemented with the following:

(******)
Grooved plastic line, grooved plastic wide lane line, grooved plastic wide dotted circulating lane line, grooved plastic wide dotted entry line, grooved plastic wide dotted will be measured by the total length of each line installed. No deduction will be made for the unmarked area when the marking includes a broken line such as, center line, dotted extension line, center line with no-pass line, lane line, reversible lane line, or two-way left turn center line

Grooved plastic crosswalk line will be measured by the total square foot of marking installed.

Grooved plastic yield line symbol, grooved plastic traffic arrow, grooved plastic bicycle lane symbol and ADA symbol will be measured per each.

8-22.5 Payment *Supplement*
(February 1, 2023 COSV GSP

Section 8-22.5 is supplemented with the following:

Payment will be made in accordance with Section 1-04.1 for the following bid items:

Plastic Line	Per Linear Foot
Plastic Wide Line	Per Linear Foot
Plastic Stop Line	Per Linear Foot
Plastic Shared Lane Symbol	Per Each
Plastic Crosswalk Line	Per Square Foot
Plastic Traffic Arrow	Per Each
Removing Plastic Line	Per Linear Foot
Painted Traffic Letter	Per Each
Plastic Traffic Letter	Per Each

(******)

Plastic Crosshatch Marking	Per Linear Foot

Grooved Plastic Line	Per Linear Foot
Grooved Plastic Wide Lane Line	Per Linear Foot
Grooved Plastic Wide Dotted Circulating Lane Line	Per Linear Foot
Grooved Plastic Wide Dotted Entry Line	Per Linear Foot
Grooved Plastic Wide Dotted Extension Line	Per Linear Foot
Grooved Plastic Crosswalk Line	Per Square Foot
Grooved Plastic Yield Line Symbol	Per Each
Grooved Plastic Traffic Arrow	Per Each
Grooved Plastic Crosshatch Marking	Per Linear Foot
Grooved Plastic Strong Lane Line	Per Linear Foot
Grooved Plastic Bicycle Lane Symbol	Per Each
ADA Symbol	Per Each

8-28 VACANT *Revision (******)*

Section 8-28 is deleted and replaced with the following:

8-28 PREFABRICATED RESTROOM

8-28.1 Description

The restroom manufacturer shall provide a fully operational prefabricated restroom with complete HVAC, electrical, and plumbing systems including the installation on a foundation provided by the contractor. Manufacturer and contractor shall coordinate water, sewer, and electrical utility connections to the prefabricated restroom. The manufacturer shall provide all restroom appurtenances listed under materials.

8-28.2 Materials

The Prefabricated restroom shall be Public Restroom Company (PRC) Model PS-021 ES shed style roof restroom building like PRC project #11234 O'Neil Park. The building shall include the following amenities:

1. 2 all Gender Bathrooms
2. Exterior mounted Water Fountain
3. Exterior mounted water bottle filling station
4. Stainless Steel Toilets
5. Hand Dryers
6. Sinks
7. Soap Dispenser
8. Utility chase
9. A Water Bleed off valve to accommodate winterizing the building.
10. 240/120V Single Phase 3-wire electrical panelboard with hardwired connections to each load. Perform all necessary to ensure that equipment is ready and safe for energization. Integral electrical system shall comply with lasted version of NEC.
    a. Panelboard shall have a 100 Amp bus with a minimum 10KAIC rating.
    b. Panelboard materials shall be provided as specified in section 9-29.24.
    c. Manufacturer shall provide panelboard with breakers as specified in section 9-29.24(2) that are sized per NEC requirements for each associated load.

d. Manufacturer shall provide a minimum of 20% spare breakers within the panelboard.
e. Panelboard shall be provided with integral surge protective device.
f. Manufacturer shall provide conduit, wiring, and grounding materials as specified in sections 9-29.1 and 9-29.3.
g. Panelboard shall be grounded as specified in section 8-20.3(9).
h. Conduit and wiring methods shall be provided as specified in sections 8-20.3(5) and 8-20.3(8).

11. Lighting
12. GFCI receptacles (only in utility chase)

Only institutional grade amenities shall be used.

8-28.3 Construction Requirements

Submit shop drawings for approval by the Engineer of the prefabricated restroom depicting building layout with all bathroom appurtenances and utility points of connections for water, sewer, and electrical. Prefabricated restroom manufacturer shall submit shop drawings for approval by the Engineer of any HVAC, electrical, and plumbing systems integral to the restroom.

Backfill and install approved foundation including any necessary utility sleeves prior to placing the prefabricated restroom on the foundation. Allow the foundation concrete to cure 10 calendar days prior to placement. Backfill shall be compacted using Method A as specified in Section 2-03.3(14)C.

Place and install the prefabricated restroom at the elevations shown on the plans. Connect all utilities required to the existing or proposed utilities to have a fully operational restroom.

8-28.4 Measurement

Prefabricated Restroom will be measured by the lump sum not including the concrete sidewalk around the restroom footprint.

8-28.5 Payment

"Prefabricated Restroom," will be measured by the Lump Sum.

The Lump sum contract price for "Prefabricated Restroom" shall be full pay for the construction of the building and amenities, foundation, utility connections as described herein specified, including excavation, backfilling foundations, and for making all required tests. All Additional materials and labor not shown in the plans or called for herein and which are required to complete the prefabricated restroom shall be included in the lump sum Contract price.

8-32 VACANT *Revision (******)*

Section 8-32 is deleted and replaced with the following:

8-32 PREFABRICATED RESTROOM ELECTRICAL SYSTEM

8-32.1 Description

The contractor shall provide an operational electrical system for the EV charger, packaged sewage pump station, and all items associated with the trailhead restroom. The electrical system shall establish a 240/120V single phase power connection with existing Avista overhead power to new service cabinet S-1 located at the restroom exterior. The system shall power the EV charger and submeter, packaged restroom duplex sewage pump system, and branch circuit panelboard provided with the prefabricated restroom. The electrical system described shall comply with the NEC for class 1 division 2 hazardous locations identified in the fire protection standard NFPA 820. Prefabricated Restroom Electrical System does not include construction of the utility overhead power transformer, prefabricated restroom, EV charging Station and Submeter, and packaged restroom sewage duplex pump station.

8-32.2 Materials

The electrical system shall be provided with all necessary materials to ensure proper installation and functionality as shown in the contract drawings. This includes providing all conduit, wiring, junction boxes, grounding and bonding materials, conduit trenches, a modified type B service cabinet S-1 per WSDOT Standard Plan J-10.17-02, and an equipment pedestal and concrete foundation for S-1 shall be installed in accordance with Standard Plan J-10.10-04. The service cabinet shall include breakers as shown on the panel schedules in the contract drawings. A utility meter should also be included. The contractor shall not provide S-1 with a photocell or any other associated lighting controls.

8-32.3 Construction Requirements

Provide all electrical equipment in accordance with the requirements of the National Fire Protection Association Standard (NFPA) 70 – National Electrical Code, NFPA 820 – Standard for Fire Protection in Wastewater Treatment and Collection Facilities, Washington State Department of Transportation Standard Specifications Section (WSDOT) Section 8-20 – Illumination, Traffic Signal Systems, and Electrical, Institute of Electrical and Electronics Engineers (IEEE) Standard C2 - National Electrical Safety Code, InterNational Electrical Testing Association (NETA) standards, and all device manufacturer's instructions.

Provide all electrical equipment, including prepurchased equipment, and perform all tests necessary to assure conformance to the Drawings and Specification Sections and ensure that equipment is ready and safe for energization. Test all electrical equipment and connections required by NETA. Provide all conduit installation (including conduit trenches), wiring methods, and grounding and bonding in accordance with WSDOT 8-20.

Do not use equipment that exceed dimensions or reduce clearances indicated on the Drawings or as required by the NFPA 70. Install equipment plumb, square and true with construction features and securely fastened. Install electrical equipment, including pull and junction boxes, minimum of 6 inches from process, gas, air and water piping and equipment. Install equipment so it is readily accessible for operation and maintenance, is not blocked or concealed and does not interfere with normal operation and maintenance requirements of other equipment. Provide all necessary anchoring devices and supports rated for the equipment load based on dimensions and weights verified from approved submittals, or as recommended by the manufacturer.

Contractor shall submit shop drawings for the S-1 equipment pedestal concrete foundation to show that they meet City of Spokane Valley code requirements, including seismic and building code requirements.

Contractor shall submit proposed underground conduit trench locations for approval by engineer. Contractor shall excavate and backfill for conduit installations as specified in WSDOT section 8-20. Installation of underground conduit shall be placed in basic controlled density filled trenches and be completed as detailed in STD plan J-5.50-00. All conduits trenches beneath roadways or pathways shall be encased in concrete in accordance with expected loads.

Contractor shall provide a Service Cabinet Type B modified as detailed in STD plan J-10.17-02 with breakers as shown on panel schedule in contract plans. Photocell and associated items shall not be provided by the contractor. The enclosure shall be NEMA 4X. Submit revised wiring diagram and breaker schedule for approval by engineer.

Contractor shall coordinate with Avista to procure electrical meter and facilitate the installation of power from the utility service to S-1.

Contractor shall submit proposed junction box locations for approval by engineer.

8-32.4 Measurement

"Prefabricated Restroom Electrical System," will be measured by the Lump Sum.

8-32.5 Payment

"Prefabricated Restroom Electrical System," will be measured by the Lump Sum.

The lump sum contract price for "Prefabricated Restroom Electrical System" shall be full pay for the construction of the complete electrical system, modifying existing systems, or both as described above and as shown in the Plans, and herein specified, including excavation, backfilling, concrete foundations, conduit, wiring, grounding, restoring facilities destroyed or damaged during construction, salvaging existing materials, and for making all required tests. Underground conduit of all sizes shown on contract plans shall be full pay and included in the "Prefabricated Restroom Electrical System" lump sum contract price for furnishing all pipe, pipe connections, elbows, bends, caps, reducers, conduits, unions, junction boxes, and fittings; for placing the pipe in accordance with the above provisions, including all excavation, jacking, or drilling required, backfilling of any voids around casing, conduits, pits, or trenches; restoration of native vegetation disturbed by the operation, chipping of pavement, and bedding of the pipe; and all other Work necessary for the construction of the conduit, except that when conduit is included on any project as an integral part of an illumination, traffic signal, or ITS system, and the conduit is not shown as a pay item, it shall be included in the lump sum price for the system shown. All additional materials and labor, not shown in the Plans or called for herein and which are required to complete the electrical system, operational electrical system for the EV charger, packaged sewage pump station, and all items associated with the trailhead restroom, shall be included in the lump sum Contract price.

(******)

The following new section is added:

8-33 TRAILHEAD APPURTENANCES *New*

8-33.1 Description

This work shall consist of furnishing and installing the trailhead appurtenances and the quantity shown on the plans:

1. Kiosk (1)
2. Trash Receptacle (1)
3. Bicycle Repair Station (1)
4. Picnic Table (4)

8-33.2 Materials

Materials shall meet the requirements of the following:

Kiosk to be 4'x8'x1/2" CDX plywood sheets, 2"x4"x12' KD DF, 2"x4"x8' HEM or Fir Stud, 1"x2"x10' Cedar Trim Board, 4"x4"x8' Treated post, #1 3" gold wood screw, #2 finish nails for cedar shakes, 8D 2.5" #1 Bright common, ½"x10" lag screw, 6"x6"x10' Treated Post, 6"x6"x8' Treated post, cedar shakes to cover 14 square feet, and 3'x5' sheet of lexan. Backfill around posts will be per visual inspection.

Trash Receptacle to be UltraSite or approved equal, 36 gallon capacity "Kensington Receptacle" Powder coated black.

Bicycle Repair Station to be DERO Bike Rack Co, Fix it Rev H powder coated black and to include:

1. Main body: 6 x 3/16" tube.
2. Bike Hanger: 1.5" sch. 40 pipe, ¼" plate.
3. Foot: 10" dia. x .25" plate.
4. Tool tethers: 5/32" stainless steel cable.
5. Manual air pump.
6. Hand tools:
    a. Philips and flat head screwdrivers
    b. 2.5, 3, 4, 5, 6, 8mm Allen wrenches
    c. Headset wrench
    d. Pedal wrench
    e. 8, 9, 10, 11mm box wrenches
    f. Tire levers

Picnic Table to be Global Industrial or approved equal, 6' Rectangular Picnic Table, Expanded Metal black.

8-33.3 Construction Requirements

Locations shown in plans are approximate, final location for each appurtenance shall be coordinated with the Engineer and COSV representative. Installation shall not occur without approval of the Engineer.

Construction shall meet the requirements of the following:

Kiosk shall be built per Washington State Parks and Recreation Commission Standard Drawing "Small Bulletin Board E-3-T" included in Appendix G.

Trash Receptacle to be assembled and staked near the prefabricated restroom as directed by the Engineer.

Bicycle Repair Station to be installed as shown in the plans and per manufacturer recommendations and the back of it mounted a minimum 12" from any wall.

Picnic tables to be assembled and installed per manufacturer recommendations and placed as shown on the plans or as directed by the Engineer.

8-33.4 Measurement

"Trailhead Appurtenances," Lump Sum

8-33.5 Payment

"Trailhead Appurtenances," will be measured by the Lump Sum.

The lump sum contract price for "Trailhead Appurtenances" shall be the full pay for the complete construction and fully operating of the Kiosk, Trash Receptacle, Bicycle Repair Station, and Picnic Tables.

(******)

The following new section is added:

8-34 EV CHARGING STATION *New*

8-34.1 Description

This work shall consist of furnishing and installing a fully operational level 2 non-networked EV Charging Station and EV submeter as shown in the plans. The electric charging station includes all components required to install a charger and supply charging current to an electric vehicle, including but not limited to: charger, charge cords, connector, internal wiring, hardware to securely mount the charger, ancillary equipment required for functional charger, protective bollard, and concrete pedestal. EV Charging Station does not include the cable, conduit, and electrical system leading to the EV Charging Station for energization.

Additional work shall consist of furnishing and installing a type B midrange submeter to track EV Charger usage.

8-34.2 Materials

6. EV Charger

Provide a Level 2 non-networked dual port electric vehicle charger capable of charging one or two vehicles, as indicated on the Drawings. Dual dispensers shall be capable of operating simultaneously. The charger shall be outdoor rated, pedestal-mounted as shown on the Drawings, single-phase, and operate at 60 Hz. Input power shall be 240 VAC at 40 A, with line 1, line 2, and ground connections. Each charge port shall be served by a power share single, two-pole, 50 A non-GFCI circuit breaker. Output power shall be 240 VAC at 40 A. The unit shall operate in ambient temperatures from -22°F to 131°F and up to 95% humidity at 122°F. The enclosure shall meet NEMA 4X requirements and comply with FCC Class B emissions standards.

Charging cables shall include SAE J1772 (CCS1) connectors and have a minimum cable length of 15 feet. Cable management shall be non-retractable and integral with the enclosure. The user interface shall include a power-available status indicator, a blinking blue charging indicator, and a red fault status indicator for system-detected issues. Internal overcurrent protection shall be provided within the charger.

All ancillary equipment integral to the charger shall be provided by the supplier and shall include, but not be limited to, cable management components, mounting brackets or diagrams, and fasteners necessary to secure the equipment to the mounting location. Ancillary equipment shall not include the concrete pad, breakers, conduit, conductors, or utility-supplied power.

7. EV Submeter

Provide a Type B midrange submeter that is microprocessor-based and capable of direct reading or calculating metered values. The submeter shall include an integral LED or LCD display, integral fusing, and be furnished with current and potential transformers as required. The unit shall be capable of operating in ambient temperatures from 0°F to 150°F and shall comply with NEMA/ANSI C12.20 and UL 508 standards.

The submeter shall display, at minimum, the following electrical parameters with the listed accuracy: RMS current per phase (+0.3% full scale), RMS voltage line-to-line and line-to-neutral (+0.3% full scale), total three-phase real power in watts (+0.6% full scale), total three-phase apparent power in volt-amperes (+0.6% full scale), total three-phase reactive power in vars (+0.6% full scale), power factor (+1.0%), frequency (+0.17%), percent current total harmonic distortion (31st), and percent voltage total harmonic distortion (31st).

The unit shall include 128 KB of data logging memory, with selectable logging of the parameters listed above. Software shall be provided for configuration, data retrieval, and trending. The submeter shall operate on a 120 VAC supply voltage and be housed in a NEMA 4X, 300-series stainless steel padlockable enclosure.

Current transformers (CTs) shall comply with IEEE C57.13, with current ratios as required by the submeter manufacturer. Window-type CTs shall be accessible from the front of the cubicle to allow changes or additions without disconnecting bus joints. CTs shall meet a minimum ANSI metering accuracy class of 0.3 through B-0.5 and be mounted and braced to withstand mechanical stresses from short-circuit currents.

Potential transformers (PTs) shall also comply with IEEE C57.13, with voltage ratios as required by the submeter manufacturer. PTs shall be equipped with primary current-limiting fuses and secondary fuses or circuit breakers. Accuracy class shall be 0.3 at burden W through Z and 0.6 at burden ZZ, with a thermal burden rating that exceeds the maximum connected burden.

8-34.3 Construction Requirements

The EV Charging Station shall meet the following quality assurance standards. It shall comply with standards established by the American National Standards Institute (ANSI) and the National Electrical Manufacturers Association (NEMA). Compliance with the Society of Automotive Engineers (SAE) standards is required, including SAE J1772 for Electric Vehicle Conductive Charge Couplers, SAE J2293 for requirements related to electric vehicles and off-board Electric Vehicle Supply Equipment (EVSE), SAE J2847 for digital communication requirements, SAE

J2836 for digital communications between the vehicle and EVSE, and SAE J551 for electromagnetic compatibility standards.

The installation shall also comply with applicable provisions of the National Fire Protection Association (NFPA) 70, National Electrical Code (NEC), including Article 625 for Electric Vehicle Charging and Supply Equipment Systems and Section 110-10 regarding circuit impedance and other characteristics. In addition, the EV Charging Station shall conform to the following Underwriters Laboratories (UL) standards: UL 991 for safety-related controls employing solid-state devices, UL 2202 for electric vehicle charging system equipment, UL 2231-1 for general requirements of personnel protection systems for EV supply circuits, UL 2231-2 for particular requirements of protection devices used in charging systems, UL 2251 for plugs, receptacles, and couplers for electric vehicles, and UL 2594 for electric vehicle supply equipment.

The type B midrange submeter shall be mounted in a separate padlockable NEMA 4X series 300 stainless steel enclosure on the same mounting structure as the service cabinet type B modified provided under the "Prefabricated Restroom Electrical System". The submeter enclosure shall be large enough to house the electrical submeter and meet working clearances for wiring. Contractor shall provide necessary metering components such as Current Transformers and Potential Transformers in accordance with manufacturer metering requirements that will input electrical characteristics of the EV Charging Station into the EV Submeter. Transformers shall be connected to EV Charging Station conductors in the service cabinet. Conduit and cable connections from the EV submeter to the service cabinet shall be provided by the contractor.

Contractor shall submit shop drawings submittal containing the following for the EV Charging Station:

1. Provide submittal product technical data for all products including subcomponents specified in materials:
    a. Charger
    b. Ancillary Equipment
2. Fabrication and/or layout Drawings.
    a. Outline Drawing of each product and accessory required including list of components and equipment supplied.
        i. Include proposed locations, clearances, and power requirements
        ii. Manufacturer's dimension drawings and weight
        iii. Identification of all components and features
    b. Required wiring diagrams for chargers and ancillary equipment.
        i. Include minimum and maximum wire and conduit sizes
        ii. Input ampacity, voltage, and load
        iii. Output ampacity, voltage, and load
        iv. Include power, signal, and control system wiring diagrams
            1. Include typical connection diagrams for components
3. Contract Closeout Information:
    a. Operation and Maintenance Data:
        i. Content of Operation and Maintenance Manual:
        ii. Instruction and maintenance manual.
        iii. Product technical data provided in the submittal.
        iv. One-line drawing updated for as-built conditions.
        v. Factory test report.
        vi. Field test report.

Contractor shall submit shop drawings submittal containing the following for the EV Charging Station Submeter:

1. Product technical data including:
    a. Provide submittal data for all submeter products specified in materials:
2. Fabrication and/or layout drawings.
    a. Electrical wiring/connection diagrams.
3. Contract Closeout Information:
    a. Operation and Maintenance Data:
    b. Content of Operation and Maintenance Manual:
        i. Data sheet of the meters electrical parameters, configuration and characteristics including a complete model number and associated equipment connected too.
        ii. Operating instructions of the meter(s) supplied.
        iii. Operating instructions of the Power Management software.
        iv. Maintenance instructions.
        v. As-constructed electrical wiring/connection diagrams.
        vi. Acceptance testing data.

Contractor shall install EV Charging Station and EV Submeter as shown on plans and per manufacturer requirements.

8-34.4 Measurement

EV Charging Station will be measured by the lump sum.

8-34.5 Payment

"EV Charging Station," will be measured by the Lump Sum.

The Lump sum contract price for "EV Charging Station" shall be full pay for the construction of the complete EV Charging Station, including all components required to install a charger and supply charging current to an electric vehicle, including but not limited to: charger, charge cords, connector, internal wiring, hardware to securely mount the charger, and ancillary equipment required for functional charger. Construction of the EV submeter shall be included for enclosure, mounting, submeter calibration, conduit and cable connections, and transformer connections to EV Charger conductors. All required tests shall be conducted to verify proper operation of EV Charging Station and accurate readings the of EV Submeter. All Additional materials and labor not shown in the plans or called for herein and which are required to complete the EV Charging Stations shall be included in the lump sum Contract price.

8-35 VACANT *Revision (******)*

The following new section is added

(October 3, 2022)

8-35 BOLLARDS

8-35.1 Description

This work shall consist of furnishing and installing steel bollards in accordance with the Plans, Standard Plans, and these Specifications, at the locations shown in the Plans or as staked by the Engineer.

8-35.2 Materials

Posts and Hardware

Type 1 and Type 2 bollard posts shall be in accordance with the Standard Plans and ASTM A 53, NPS 3 (3" Nom.) schedule 80 steel pipe. Post sleeves shall be ASTM A 53, NPS 4 (4"Nom.) schedule 40 steel pipe.

Type 3 bollard posts shall be steel structural tubing in accordance with the Plans and ASTM A 500 Gr B.

Steel plate shall be in accordance with ASTM A 36.

All steel parts shall be hot-dip galvanized after fabrication in accordance with AASHTO M 111.

Reflective Tape

Reflective tape shall be in accordance with Section 9-28.12.

Concrete

Footings shall be constructed using concrete Class 3000.

8-35.3 Construction Requirements

Bollards shall be constructed in accordance with the Standard Plans.

Bollards shall not vary more than ½ inch in 30 inches from a vertical plane.

Bollard posts and the exposed parts of the base assembly shall be painted in accordance with Section 6-07.3(11) for galvanized surfaces. The top coat shall match SAE AMS Standard 595, Color No. 33538 Traffic Signal Yellow.

8-35.4 Measurement

Measurement for bollards will be by the unit for each type of bollard furnished and installed.

8-35.5 Payment

Payment will be made for the following bid items when included in the proposal:

"Bollard Type ___", per each.

Add the following new section:

(******)

8-36 FIELD OFFICE

36-2.1 Description

Provide and maintain a field office at or near the construction site for the Contracting Agency's use for the duration of the project.

8-36.3 Construction Requirements

Provide a portable office trailer at a location agreeable to the Engineer, separate from, but close to the Contractor's office, at least one week before commencing construction activities. Upon

completion of construction and after receiving confirmation from the Engineer, remove the field office from the site and restore the site to its original condition.

The office must be at least 300 square feet in floor area, with at least four windows, electric lighting for both interior and exterior, four 120-volt power sockets, heating, and air-conditioning. The door to the office must be equipped with a satisfactory lock. Provide four door keys to the Engineer.

Provide continuous refrigerated bottled water service.

Perform regular janitorial services (sweeping, dusting, emptying waste receptacles, etc. as necessary) on a weekly basis.

Include the following additional items in the field office:

4 each standard 30x60 inch tables
2 each 30-inch x 8-foot reference table.
4 each office chairs standard arm rest type, adjustable, swivel, tilt-back with caster
4 each side chairs
4 each wastebaskets
1 each white board 36x42 inches
1 each fire extinguisher
1 each first aid kit with standard assortment of supplies, including eyewash
1 each printer/scanner

If the office site is on private property, provide proof of an agreement with the property owner. Any financial arrangements with the property owner are incidental.

8-36.4 Measurement

Field office will be measured by the lump sum.

8-36.5 Payment

"Field Office," will be measured by the Lump Sum.

The Lump sum contract price for "Field Office" shall be full pay for the construction of the complete temporary field office with power hookup, building and amenities, utility costs, including power, sanitation, janitorial, transport, utility connections as described herein specified and removing the facilities. All Additional materials and labor not shown in the plans or called for herein and which are required to complete and remove the field office shall be included in the lump sum Contract price.

(******)

8-37 CCTV CAMERA

8-37.1 Description

This work shall consist of furnishing and installing CCTV cameras at the trailhead as shown in the plans.

8-37.2 Materials

The CCTV Camera's shall be OpenEye OE-C1024T5-S turret camera with OE-CA10PMKIT-01 with pole mount kit and OE-CA10WMKIT-01 wall mount kit for the building or approved equals.

The Network Equipment shall be Extreme Networks Model 5320-16P-2MXT-2X with XN-2P-RMKIT-012 rack mount or approved equal. This equipment shall be mounted in the ITS cabinet.

Camera cabling shall be outdoor rated, shielded, sunlight & oil resistant, 23 AWG, operational at -40°F, CAT6 cabling, to be Belden Model 7953A or approved equal, with grounded RJ-45 connectors to be Sentinel Connector Systems Model 111S08080090H34 or approved equal for cable with an Outer Jacket Diameter of 0.335 inches.

8-37.3 Construction Requirements

Construction shall meet the requirements of Section 8-20.3. Each CCTV Camera shall be tested for operation.

8-37.4 Measurement

There shall be no unit of measure for "Trailhead CCTV System".

8-37.5 Payment

"Trailhead CCTV System", lump sum.

The lump sum Contract price "CCTV Camera" shall be full pay for the construction of the complete electrical system, modifying existing systems, or both, as described above and as shown in the Plans, and herein specified, including excavation, backfilling, concrete foundations, conduit, wiring, restoring facilities destroyed or damaged during construction, salvaging existing materials, and for making all required tests. All additional materials and labor, not shown in the Plans or called for herein and which are required to complete the electrical system, shall be included in the Each Contract price.

All costs for installing conduit containing trailhead wiring shall be included in the Contract prices for the CCTV Camera. All costs for installing junction boxes containing both CCTV Camera wiring shall be included in the Contract price for the CCTV Camera.

DIVISION 9
MATERIALS

9-03 AGGREGATES

9-03.8 Aggregates for Hot Mix Asphalt

9-03.8(2) HMA Test Requirements *Revision*

(February 7, 2018 COSV GSP)

Item 1 of Section 9-03.8(2) is deleted and replaced with the following:

1. The Number of ESAL's for the design and acceptance of the HMA shall be 3 million or greater. (greater than 0.3 million for pedestrian facilities)

9-03.8(3) Grading

9-03.8(3)B Gradation-Recycled Asphalt Pavement and Mineral Aggregate *Revision*

(February 7, 2018 COSV GSP)

The first sentence of Section 9-03.8(3)B is deleted and replaced with the following:

The RAP utilized in the production of HMA shall be sized prior to entering the mixer with 100 percent passing a 1 inch sieve so that a uniform and thoroughly mixed HMA is produced in the mixer.

9-03.12 Gravel Backfill

9-03.12(5) Gravel Backfill for Drywells *Replacement*

(February 7, 2018 COSV GSP)

Section 9-03.12(5) is deleted and replaced with the following:

Special backfill for drywells shall consist of primarily unfractured, naturally occurring, free draining material conforming to the following gradation:

Sieve	% Passing
3"	100
1"	15
U.S. #200	2 max.

Fracture shall be 20 percent max.
All percentages are by weight.

9-05 DRAINAGE STRUCTURES AND CULVERTS

9-05.15 Metal Castings

9-05.15(1) Manhole Ring and Cover *Supplement*

(February 7, 2018 COSV GSP)

Section 9-05.15(1) is supplemented with the following:

Frames shall have all gussets removed if installed in cement concrete pavement.

9-05.50 Precast Concrete Drainage Structures *Supplement*
(February 7, 2019 COSV GSP)

Section 9-05.50(1) is supplemented with the following:

Manholes, Catch basins, inlets and drywells shall be constructed with concrete meeting 4,000 psi compressive strength and meet the requirements of ASTM C-478 or AASHTO M-199.

9-14 EROSION CONTOL AND ROADSIDE PLANTING

9-14.2 Topsoil

9-14.2(1) Topsoil Type A *Supplement*
(January 21, 2022 COSV GSP)

Section 9-14.2(1) is supplemented with the following

The infiltration rate specified for Topsoil Type A "Bioinfiltration Soil" anticipates a long-term infiltration rate reduction to <0.5 in/hr, due to a maximum fouling factor of 4.

Topsoil shall be delivered in an unfrozen and non-muddy condition and shall be approved by the Engineer prior to spreading.

Topsoil Type A shall be Bioretention Soil Media meet one the following requirements:

Bio-infiltration Soil	**Specification**
pH	6.5 to 7.0
Cation Exchange Capacity	>15 meq/100g min
Treatment Infiltration Rate	0.5 to 2 in/hr

Or

Bio-infiltration Soil	**Specification**
pH	6.5 to 7.0
% Total Organic Content by Weight	2%
Treatment Infiltration Rate	0.5 to 2 in/hr

9-14.2(1) Topsoil Type A *Supplement*
(January 21, 2022 COSV GSP)

Section 9-14.2(1) is supplemented with the following

Topsoil Type A shall be Bioretention Soil Media meeting the following requirements:

Planting Soil Mix

1. Soil mix:
   60% well graded aggregate mix and 40% compost (see below).
   Aggregate gradation as shown below (ASTM 2487-11)

Sieve size	Percent Passing
US No. 3/8	100
US No. 4	95-100
US No. 10	75-90
US No. 40	25-40
US No. 100	4-10
US No. 200	2-5

2. Well graded sand for planting soil mix shall hove the following gradation coefficients
   Coefficient of uniformity (Cu) ≥ 4 AND Coefficient of curve (Cc) ≥ 1 and < 3
3. Maximum clay content should be less than 5%.
4. Soil mixture should be uniform, free of stones, stumps, roots or other similar objects larger than 2 inches.
5. On-site soil mixing or placement not allowed if soil is saturated or subjected to water within 48 hours.
6. Cover and store soil accordingly to prevent wetting or saturation.
7. Organic content of the combined soil mixture should be 8% to 12%.
8. Contractor shall submit documentation that the planting soil mix meets those specifications.

Compost

1. Organic soil amendment, suitable for landscaping and storm water management, should be a stable, mature compost derived from organic waste materials including yard debris, manures, bio-solids, wood wastes or other organic materials that meet the intent of the organic soil amendment specification. Compost stability indicates the level of microbial activity in the compost and is measured by the amount of $C0_2$ produced over a given period of time by a sample in a closed container. Unstable compost can render nutrients temporarily unavailable and create objectionable odors.
2. Compost quality can be determined by qualitative testing. Compost shall have the following characteristics:
   a. Earthy smell that is not sour, sweet or ammonia like.
   b. Brown to black in color.
   c. Mixed particle sizes.
   d. Stable temperature and does not get hot when re-wetted.

9-28 SIGNING MATERIALS AND FABRICATION

9-28.1 General *Supplement*

(February 7, 2018 COSV GSP)

Section 9-28.1 is supplemented with the following:

Background reflective sheeting for signs that are not specified shall be Type III or Type IV reflective sheeting. Legend reflective sheeting for signs that are not specified shall be Type III or Type IV reflective sheeting.

9-28.11 Hardware *Supplement*

(February 7, 2019 COSV GSP)

Section 9-28.1 is supplemented with the following:

Steel street sign post and sign hardware shall be:

Bolts shall meet the requirements of ASTM A307
Nuts shall meet the requirements of AASHTO M292 or ASTM A194
Washers shall meet the requirements of AASHTO M293 or ASTM F436
Steel bolts, nuts and washers shall either be stainless steel or be galvanized in accordance with AASHTO M232 or ASTM F2329.

The splice spacer bar shall conform to ASTM A26M.
The Lap splice bolt shall have 1,240 MPa tensile strength.

Aluminum street sign bolts, nuts and washers shall be ASTM F468 2024-T4 Aluminum:

9-28.15 Vacant *Replacement*
(February 1, 2022 COSV GSP)

Section 9-28.15 is deleted and replaced with the following:

9-28.15 Stop Sign, Street Sign and Regulatory Signposts

Signposts shall be a minimum 10 or 12 feet long such that bottom of the sing is at least 7 feet above the sidewalk, "U" channel, 3 lb/foot minimum unit weight, with a breakaway bolted connection. Minimum post and base cross-sectional area (including holes) shall be .837 in^2. Minimum post Sx about the XX axis shall be .336 in^3. Each signpost shall be mounted to a 3 foot long "U" channel, 3 lb/foot minimum unit weight, base driven into the existing ground. Bolts and fasteners shall be either galvanized or stainless steel. Post and base shall be either galvanized or be powder coated green.

The contractor shall submit a sign proof for all new sign installations prior to fabrication.

9-29 ILLUMINATION, SIGNAL, ELECTRICAL

Section 9-29 is supplemented with the following:

(******)

Closed Circuit Television System
Video Camera Assembly
Video cameras shall be supplied as a unit. Each video camera shall be provided with a camera control cable, IP67 RJ45 coupler, PoE++ (Power-over-Ethernet++) injector, PoE++ surge protector, and all other equipment, software, and Pelco mounting components to provide a complete system. If a camera that is specified has been superseded by a newer product that is interchangeable, the newer product shall be supplied.

1. The camera assembly shall be the following:
   CohuHD 4260HD
   PoE++ 70 W Midspan Injector with AC plug

2. The mounting assembly shall be the following:
   Pelco: Cohu signal pole top of pole camera mount

Manufacturers:

CoHuHD Costar
7330 trade St.
San Diego, CA 92121
Telephone: (858) 391-1800

Pelco Products Inc.
320 West 18th St.
Edmond, OK 43013
Phone: (405) 340-3434

9-29.1 Conduit, Innerduct and Outerduct

9-29.1 Marking Tape

(February 7, 2019 COSV GSP)

Section 9-29.1 is supplemented with the following:

Detectable marking tape shall be placed above all installed conduit. The detectable marking tape shall meet the requirements of 9-15.18 Detectable Marking Tape.

9-29.1(11) Foam Conduit Sealant

Section 9-29.1(11) is supplemented with the following:

(January 7, 2019 WSDOT GSP)

The following products are accepted for use as foam conduit sealant:

- CRC Minimal Expansion Foam (No. 14077)
- Polywater FST Foam Duct Sealant
- Superior Industries Foam Seal
- Todol Duo Fill 400

9-29.2 Junction Boxes, Cable Vaults, and Pull Boxes

Section 9-29.2 is supplemented with the following:

(September 3, 2019)
Slip-Resistant Surfacing for Junction Boxes, Cable Vaults, and Pull Boxes

Where slip-resistant junction boxes, cable vaults, or pull boxes are required, each box or vault shall have slip-resistant surfacing material applied to the steel lid and frame of the box or vault. Where the exposed portion of the frame is ½ inch wide or less, slip-resistant surfacing material may be omitted from that portion of the frame.

Slip-resistant surfacing material shall be identified with a permanent marking on the underside of each box or vault lid where it is applied. The permanent marking shall be formed with a mild steel weld bead, with a line thickness of at least 1/8 inch. The marking shall include a two character identification code for the type of material used and the year of manufacture or

application. The following materials are approved for application as slip-resistant material, and shall use the associated identification codes:

1. Harsco Industrial IKG, Mebac #1 - Steel: **M1**

2. W. S. Molnar Co., SlipNOT Grade 3 – Coarse: **S3**

3. Thermion, SafTrax TH604 Grade #1 – Coarse: **T1**

(January 6, 2025)
Light Standards with Type 1 Luminaire Arms

Lighting standards shall be fabricated in conformance with the methods and materials specified on the pre-approved plans listed below, provided the following requirements have been satisfied:

(a) Mounting heights shall be as specified in the Plans

(b) Light source to pole base distances (H1) shall be determined or verified by the Engineer prior to fabrication. Fabrication tolerance shall be ±6 inches.

(c) All other requirements of the Special Provisions have been satisfied.

Fabricator	Pre-Approved Drawing No.	Rev.	Mounting Height(s) (feet)
Valmont Ind., Inc.	DB01164, Sheets 1-5 of 5	B	30, 35, 40, and 50
Ameron Pole Products Division	WA15LT3721, Sheets 1 and 2 of 2	A	20, 25, 30, 35, 40, 45, and 50
Millerbernd Manufacturing Co.	74515-WA-LP1-BB, Sheets 1 and 2 of 2	H	30, 35, 40, and 50
Millerbernd Manufacturing Co.	74515-WA-LP1-ELBOW, Sheets 1-3 of 3	J	30, 35, 40, and 50
Millerbernd Manufacturing Co.	74515-WA-LP1-SB, Sheets 1-3 of 3	G	30, 35, 40, and 50

9-29.6(5) Foundation Hardware

Section 9-29.6(5) is supplemented with the following:

(January 13, 2021)
Anchor bolt assemblies for light standards installed on top of barrier (median barrier mount) shall consist of the following:

- (4) 1-inch diameter threaded rods (bolts), minimum 36 inches in length
- (24) heavy hex nuts, six per anchor rod

- (24) flat washers, six per anchor rod
- Two anchor plates

Each anchor plate shall be constructed from 1/2" ASTM A36 plate and hot-dip galvanized in accordance with AASHTO M111. Each anchor plate shall be ring shaped, with an outside diameter of 16 inches and an inside diameter of 12 inches. Each anchor plate shall have four 1 1/8" diameter holes on a 13.89" bolt circle, with the holes positioned to match the anchor rod layout shown in the Standard Plans.

Anchor rods shall extend a minimum of five inches and a maximum of six inches above the top of the traffic barrier. The lower anchor plate shall be embedded 29 inches below the top of the traffic barrier. Each anchor plate shall be clamped with a heavy hex nut and washer above and below the anchor plate. The lower heavy hex nut for the pole base plate shall be no more than one inch from the top of the traffic barrier.

9-29.12 Electrical Splice Materials

9-29.12(2) Traffic Signal Splice Material

(February 7, 2018 COSV GSP)

Section 9-29.12(2) is deleted and replaced with the following:

Induction loop splices shall be rigid re-enterable type splice kits from the WSDOT Qualified Products List (QPL).

Appendices
(January 2, 2012)
The following appendices are attached and made a part of this contract:

***
APPENDIX A:
Summary of Geotechnical Conditions

APPENDIX B:
Phillips 66 General Encroachment Guidelines

APPENDIX C:
BNSF Construction and Maintenance Agreement

APPENDIX D:
Standard Plans

APPENDIX E:
Inadvertent Discovery Plan

APPENDIX F:
WSDOT General Permit

APPENDIX G:
Trailhead Sign

APPENDIX H:
BNSF Bridge Plans

APPENDIX I:
BNSF Construction Specifications

APPENDIX J:
Stormwater Pump System

APPENDIX K:
Trailhead Pump System

APPENDIX L:
Wage Rate Information

APPENDIX M:
Asbestos Survey Report

APPENDIX N:
Trailhead Restroom

APPENDIX O:
Irvin Water District No. 6 General Specifications

***

(November 4, 2024)
Standard Plans

The Washington State Department of Transportation *Standard Plans* M21-01, published September 2024, is made a part of this Contract with the following revisions:

A-10.30
RISER RING detail (Including SECTION view and RISER RING DIMENSIONS table): The RISER RING detail is deleted from the plan.

INSTALLATION detail, SECTION A: The "1/4"" callout is revised to read "+/- 1/4" (SEE CONTRACT ~ Note: The + 1/4" installation is shown in the Section A view)"

A-40.20
Sheet 1, NOTES 1, 2, 3, and 4 are replaced with the following:

1. Use the ½ inch joint details for bridges with expansion length less than 100 feet and for bridges with L type abutments. Use the 1 inch joint details for other applications.

2. Use detail 5, 6, 7 on steel trusses and timber bridges with concrete bridge deck panels.

3. For details 1, 2, 3, and 4, the item "HMA Joint Seal at Bridge End" shall be used for payment. For details 5 and 6, the item "HMA Joint Seal at Bridge Deck Panel Joint" shall be used for

payment. For detail 7, the item "Clean and Seal Bridge Deck Panel Joint" shall be used for payment.

Sheet 2, Detail 8 reference to "6-09.3(6)" is revised to read "6-21.3(7)".

A-50.40
Sheet 1, Plan View: The callout "BEAM GUARDRAIL TYPE 31 TRANSITION SECTION TYPE 21 OR TYPE 24 (SEE STANDARD PLAN C-25.20 OR C-25.30)" is revised to read "BEAM GUARDRAIL TYPE 31 TRANSITION SECTION TYPE 21, 24, OR 25 (SEE STANDARD PLAN C-25.20, C-25.30, OR C-25.32)"

A-60.40
Note 2 reference to "6-09.3(6)" is revised to read "6-21.3(7)".

B-90.40
Valve Detail – DELETED

C-23.70
Sheet 2, ANCHOR BRACKET ASSEMBLY DETAIL, dimension, "R. 5/16" is revised to read; R. 15/16"
ANCHOR PLATE DETAIL, weld callout (fillet), 1/4" is revised to read; 3/16"

C-60.20
Sheet 1, Plan view, callout – "1/2" (IN) DIAMETER X 6 1/2" (IN) LONG ANCHOR BOLT ~ PER STD. SPEC. SECT. 9-06.5(4) (TYPICAL) (SEE NOTE 7)" is revised to read: "5/8" DIAMETER x 6 1/2" (IN) LONG ANCHOR BOLT ~ PER STD. SPEC. SECT. 9-06.5(4) (TYPICAL) (SEE NOTE 7)"

C-81.15
Sheet 1, General Notes, Add Note 7, to read;"7. The concrete class for the moment slab shall be class 4000 typically and class 4000A when the top of the slab is used as the roadway, or sidewalk, surface. The concrete class for the barrier is defined in Standard Specification Section 6-10.3."

C-85.11
On Section B, the callout "3" EXPANDED POLYSTYRENE AROUND COLUMN (TYP.)" is revised to read "3" EXPANDED POLYSTYRENE OR POLYETHYLENE FOAM AROUND COLUMN (TYP.)"

D-3.09
Sheet 1, Geosynthetic Wall with 2 FT Traffic Surcharge detail, callout – "BARRIER ON WALL ~ SEE Standard Plan D-3.15 or D-3.16" is revised to read: "BARRIER ON WALL ~ SEE Standard Plan C-81.10 and/or C-81.15"

D-3.10
Sheet 1, Typical Section, callout – "FOR WALLS WITH SINGLE SLOPE TRAFFIC BARRIER. USE THE DETAILS ABOVE THE MATCH LINE ON STANDARD PLAN D-3.15" is revised to read; "FOR WALLS WITH SINGLE SLOPE TRAFFIC BARRIER, SEE CONTRACT PLANS"
Sheet 1, Typical Section, callout – "FOR WALLS WITH F-SHAPE TRAFFIC BARRIER. USE THE DETAILS ABOVE THE MATCH LINE ON STANDARD PLAN D-3.16" is revised to read; "FOR WALLS WITH F-SHAPE TRAFFIC BARRIER, SEE CONTRACT PLANS"

D-3.11

Sheet 1, Typical Section, callout – “”B” BRIDGE APPROACH SLAB (SEE BRIDGE PLANS) OR PERMANENT GEOSYNTHETIC WALL BARRIER ~ SEE STANDARD PLANS D-3.15 OR D-3.16” is revised to read; ”B” BRIDGE APPROACH SLAB OR MOMENT SLAB (SEE CONTRACT PLANS)
Sheet 1, Typical Section, callout – “TYPICAL BARRIER ON BRIDGE APPROACH SLAB (SEE BRIDGE PLANS) OR PERMANENT GEOSYNTHETIC WALL BARRIER ~ SEE STANDARD PLANS D-3.15 OR D-3.16” is revised to read; “TYPICAL BARRIER ON BRIDGE APPROACH SLAB OR MOMENT SLAB (SEE CONTRACT PLANS)

D-10.10
Note 7, “If Traffic Barriers are required, See Standard Plans D-15.10, D-15.20 and D-15.30” is revised to read “Traffic Barriers shall not be structurally connected to the Reinforced Concrete Retaining Wall Type 1 and 1SW”.

D-10.15
Note 7, “If Traffic Barriers are required, See Standard Plans D-15.10, D-15.20 and D-15.30” is revised to read “Traffic Barriers shall not be structurally connected to the Reinforced Concrete Retaining Wall Type 2 and 2SW”.

D-10.30
Wall Type 5 may be used in all cases.

D-10.35
Wall Type 6 may be used in all cases.

D-10.40
Note 5, “If Traffic Barriers are required, See Standard Plans D-15.10, D-15.20 and D-15.30” is revised to read “Traffic Barriers shall not be structurally connected to the Reinforced Concrete Retaining Wall Type 7”.

D-10.45
Note 5, “If Traffic Barriers are required, See Standard Plans D-15.10, D-15.20 and D-15.30” is revised to read “Traffic Barriers shall not be structurally connected to the Reinforced Concrete Retaining Wall Type 8”.

F-10.18
General Note 1; “Construct curb joints at concrete pavement transverse joint locations. If all adjacent pavement is HMA, see Standard Plam F-30.10 for Curb Expansion and Contraction Joint Spacing.” Is revised to read – “See Standard Plan F-30.10 and Standard Specification Section 8-04.3 for Curb Expansion and Contraction Joint details and spacing.”

F-30.10
All five instances of the “2.0% MAX.” are replaced with “2.1% MAX.”

F-40.12
The one instance of “2.0% MAX.” is replaced with “2.1% MAX.”
Note 7 is replaced with the following:
7. The running slope of curb ramps shall not exceed 8.3% maximum except as noted herein. If the 8.3% running slope creates a ramp that exceeds 15ft, see contract plans for details. Use a single constant slope from bottom of ramp to top of ramp to match into the landing. Do not include the

abutting landing in the Curb Ramp length measurement. When a ramp is constructed on a radius, the Curb Ramp length is measured on the inside radius along the back of the walkway.
Section B is amended as follows:
Delete: "15' – 0" MAX. (TYP.)"
Section C is amended as follows:
Delete: "15' – 0" MAX. (TYP.)"

F-40.14
The one instance of "2.0% MAX." is replaced with "2.1% MAX."
Note 7 is replaced with the following:
7. The running slope of curb ramps shall not exceed 8.3% maximum except as noted herein. If the 8.3% running slope creates a ramp that exceeds 15ft, see contract plans for details. Use a single constant slope from bottom of ramp to top of ramp to match into the landing. Do not include the abutting landing in the Curb Ramp length measurement. When a ramp is constructed on a radius, the Curb Ramp length is measured on the inside radius along the back of the walkway.
Section A is amended as follows:
Delete: "15' – 0" MAX. (TYP.)"
Section C is amended as follows:
Delete: "15' – 0" MAX. (TYP.)"

F-40.15
The one instance of "2.0% MAX." is replaced with "2.1% MAX."
Note 7 is replaced with the following:
7. The running slope of curb ramps shall not exceed 8.3% maximum except as noted herein. If the 8.3% running slope creates a ramp that exceeds 15ft, see contract plans for details. Use a single constant slope from bottom of ramp to top of ramp to match into the landing. Do not include the abutting landing in the Curb Ramp length measurement.
Section A is amended as follows:
Delete: "15' – 0" MAX. (TYP.)"

F-40.16
The one instance of "2.0% MAX." is replaced with "2.1% MAX."
Note 8 is replaced with the following:
7. The running slope of curb ramps shall not exceed 8.3% maximum except as noted herein. If the 8.3% running slope creates a ramp that exceeds 15ft, see contract plans for details. Use a single constant slope from bottom of ramp to top of ramp to match into the landing. Do not include the abutting landing in the Curb Ramp length measurement.
Section A is amended as follows:
Delete: "15' – 0" MAX. (TYP.)"
Section B is amended as follows:
Delete: "15' – 0" MAX. (TYP.)"

F-80.10
The one instance of "2.0% MAX." is replaced with "2.1% MAX."
Note 6 is replaced with the following:
The running slope of the Pedestrian Ramp shall not exceed 8.3% maximum except as noted herein. If the 8.3% running slope creates a ramp that exceeds 15ft, see contract plans for details. Use a single constant slope from bottom of ramp to top of ramp to match into the sidewalk.
Section A is amended as follows:
Delete: "15" Max."

J-10.10
Sheet 4 of 6, "Foundation Size Reference Table", PAD WIDTH column, Type 33xD=6' – 3" is revised to read: 7' – 3". Type 342LX / NEMA P44=5' – 10" is revised to read: 6' – 10"
Sheet 5 of 6, Plan View, "FOR EXAMPLE PAD SHOWN HERE:, "first bullet" item, "-SPACE BETWEEN TYPE B MOD. CABINET AND 33x CABINET IS 6" (IN)" IS REVISED TO READ: "SPACE BETWEEN TYPE B MOD. CABINET (BACK OF ALL CHANNEL STEEL) AND 33x CABINET IS 6" (IN) (CHANNEL STEEL ADDS ABOUT 5" (IN)"

J-10.16
Key Note 1, Standard Plan J-10.30 revised to Standard Plan J-10.14

J-10.17
Key Note 1, Standard Plan J-10.30 revised to Standard Plan J-10.14

J-10.18
Key Note 1, Standard Plan J-10.30 revised to Standard Plan J-10.14

J-20.10
DELETED

J-20.11
DELETED

J-20.26
Add Note 1, "1. One accessible pedestrian pushbutton station per pedestrian pushbutton post."
Add General Note 2, to read: "Signs shown are for locations with pedestrian signal displays (Accessible Pedestrian Signals/APS). Accessible information device (AID) pushbuttons signs not shown."
Revise View Titles (Both Sheets) to read: "ACCESSIBLE PEDESTRIAN PUSHBUTTON ASSEMBLY"

J-20.16
View A, callout, was – LOCK NIPPLE, is revised to read; CHASE NIPPLE

J-21.10
Sheet 1, Anchor Bolt Template, callout; "9" (IN) BOLT CIRCLE" is revised to read: "9" (IN) DIA.BOLT CIRCLE"
Base Plate Detail, callout; "3/4" (IN) STEEL PLATE WITH HOLE = POLE BASE + 1/6" (IN)" IS REVISED TO READ; "3/4" (IN) STEEL PLATE WITH HOLE = POLE BASE + 1/16" (IN)"
Flat Foundation Detail – Elevation, callout; "ANCHOR BOLTS ~ ¾" (IN) x 30" (IN) FULL THREAD ~ THREE REQ'D. PER ASSEMBLY" is revised to read; "ANCHOR BOLTS ~ ¾" (IN) x 30" (IN) FULL THREAD ~ FOUR REQ'D. PER ASSEMBLY"
Flat Foundation Detail – Elevation, dimension; 4' – 0" is revised to read; "4' – 0" ROUND OR 3' – 0" SQUARE"

J-21.15
Partial View, callout, was – LOCK NIPPLE ~ 1 ½" DIAM., is revised to read; CHASE NIPPLE ~ 1 ½" (IN) DIAM.

J-28.30

General Note 13 – "See Standard Plans C-8b and C-85.14 for steel light standards on traffic barrier" is revised to read; "See Standard Plan C-85.15 for steel light standards on traffic barrier."

J-40.10
Sheet 2 of 2, Detail F, callout, "12 – 13 x 1 ½" S.S. PENTA HEAD BOLT AND 12" S. S. FLAT WASHER" is revised to read; "12 – 13 x 1 ½" S.S. PENTA HEAD BOLT AND 1/2" (IN) S. S. FLAT WASHER"

J-40.36
Note 1, second sentence; "Finish shall be # 2B for backbox and # 4 for the cover." Is revised to read; "Finish shall be # 2B for barrier box and HRAP (Hot Rolled Annealed and Pickled) for the cover.

J-40.37
Note 1, second sentence; "Finish shall be # 2B for backbox and # 4 for the cover." Is revised to read; "Finish shall be # 2B for barrier box and HRAP (Hot Rolled Annealed and Pickled) for the cover.

J-75.20
Key Notes, note 16, second bullet point, was: "1/2" (IN) x 0.45" (IN) Stainless Steel Bands", add the following to the end of the note: "Alternate: Stainless steel cable with stainless steel ends, nuts, bolts, and washers may be used in place of stainless steel bands and associated hardware."

J-75.55
Notes, Note A1, Revise reference, was – G-90.29, should be – G-90.20.

L-5.10
Add new general Note 9 on sheet 1 – "9. The top of wall in Section A on Sheet 1 shall be located as follows: 1) flush with the finished grade when placed within the deflection distance of the long span guardrail system (Std. Plan C-20.40), 2) Two inches maximum above finished grade when placed behind a box culvert guardrail steel post system (Std. Plan C-20.41 or C-20.43), 3) Six inches minimum for all other applications. The bottom rail shall be located at mid height between the top rail and the top of structure."

M-20.30
Wide Dotted Lane Line Detail, reference below title, (SEE NOTE 6) is revised to read: (SEE NOTE 5)

M-40.10
Guide Post Type ~ Reflective Sheeting Applications Table, remove reference - "(SEE NOTE 5)"

The following are the Standard Plan numbers applicable at the time this project was advertised. The date shown with each plan number is the publication approval date shown in the lower right-hand corner of that plan. Standard Plans showing different dates shall not be used in this contract.

A-10.10-00 ..... 8/7/07	A-30.35-00 ..... 10/12/07	A-50.10-02 ..... 7/18/24
A-10.20-00 ..... 10/5/07	A-40.00-01 ..... 7/6/22	A-50.40-01 ..... 8/17/21
A-10.30-00 ..... 10/5/07	A-40.10-04 ..... 7/31/19	A-60.10-03 ..... 12/23/14
A-20.10-00 ..... 8/31/07	A-40.15-00 ..... 8/11/09	A-60.20-03 ..... 12/23/14
A-30.10-00 ..... 11/8/07	A-40.20-04 ..... 1/18/17	A-60.30-01 ..... 6/28/18
A-30.30-01 ..... 6/16/11	A-40.50-03 ..... 9/12/23	A-60.40-00 ..... 8/31/07
B-5.20-03 ..... 9/9/20	B-30.50-03 ..... 2/27/18	B-75.20-03 ..... 8/17/21

B-5.40-02 ..... 1/26/17
B-5.60-02 ..... 1/26/17
B-10.20-03 ..... 8/23/23
B-10.40-02 ..... 8/17/21
B-10.70-03 ..... 8/23/23
B-15.20-01 ..... 2/7/12
B-15.40-01 ..... 2/7/12
B-15.60-02 ..... 1/26/17
B-20.20-02 ..... 3/16/12
B-20.40-04 ..... 2/27/18
B-20.60-03 ..... 3/15/12
B-25.20-02 ..... 2/27/18
B-25.60-03 ..... 8/23/23
B-30.05-00 ..... 9/9/20
B-30.10-03 ..... 2/27/18
B-30.15-00 ..... 2/27/18
B-30.20-04 ..... 2/27/18
B-30.30-03 ..... 2/27/18
B-30.60-00 ..... 9/9/20
B-30.40-03 ..... 2/27/18
B-30.70-04 ..... 2/27/18
B-30.80-01 ..... 2/27/18
B-30.90-02 ..... 1/26/17
B-35.20-00 ..... 6/8/06
B-35.40-01 ..... 8/23/23
B-40.20-00 ..... 6/1/06
B-40.40-02 ..... 1/26/17
B-45.20-01 ..... 7/11/17
B-45.40-01 ..... 7/21/17
B-50.20-00 ..... 6/1/06
B-55.20-03 ..... 8/17/21
B-60.20-02 ..... 9/9/20
B-60.40-01 ..... 2/27/18
B-65.20-01 ..... 4/26/12
B-65.40-00 ..... 6/1/06
B-70.20-01 ..... 3/15/22
B-75.50-02 ..... 3/15/22
B-70.60-01 ..... 1/26/17
B-75.60-00 ..... 6/8/06
B-80.20-00 ..... 6/8/06
B-80.40-00 ..... 6/1/06
B-85.10-01 ..... 6/10/08
B-85.20-00 ..... 6/1/06
B-85.30-00 ..... 6/1/06
B-85.40-00 ..... 6/8/06
B-85.50-01 ..... 6/10/08
B-90.10-00 ..... 6/8/06
B-90.20-00 ..... 6/8/06
B-90.30-00 ..... 6/8/06
B-90.40-01 ..... 1/26/17
B-90.50-00 ..... 6/8/06
B-95.20-02 ..... 8/17/21
B-95.40-01 ..... 6/28/18

1

C-1 ..... 9/8/22
C-1b..... 10/12/23
C-1d..... 10/31/03
C-6a..... 9/8/22
C-7 ..... 9/8/22
C-7a..... 9/8/22
C-20.10-09 ..... 10/12/23
C-20.14-05 ..... 9/8/22
C-20.15-03 ..... 10/12/23
C-20.18-04 ..... 9/8/22
C-20.40-10 ..... 10/12/23
C-20.41-05 ..... 7/18/24
C-20.43-01 ..... 7/18/24
C-20.44-00 ..... 8/13/24
C-20.45-03 ..... 9/8/22
C-20.55-00 ..... 7/30/24
C-22.16-08 ..... 10/17/23
C-22.40-11 ..... 7/21/24
C-22.45-07 ..... 7/21/24
C-23.70-01 ..... 10/16/23
C.24.10-05 ..... 7/21/24
C-24.15-00 ..... 3/15/22
C-25.20-07 ..... 8/20/21
C-25.22-06 ..... 8/20/21
C-25.26-05 ..... 8/20/21
C-25.30-01 ..... 8/20/21
C-25.32-00 ..... 7/29/24
C-25.80-05 ..... 8/12/19
C-60.10-04 ..... 7/21/24
C-60.15-01 ..... 7/21/24
C-60.20-01 ..... 9/8/22
C-60.30-02 ..... 7/21/24
C-60.40-01 ..... 7/21/24
C-60.45-01 ..... 7/21/24
C-60.50-01 ..... 7/21/24
C-60.60-01 ..... 7/21/24
C-60.70-01 ..... 9/8/22
C-60.80-02 ..... 7/21/24
C-70.10-04 ..... 10/16/23
C-70.15-01 ..... 7/21/24
C-75.10-02 ..... 9/16/20
C-75.20-03 ..... 8/20/21
C-75.30-03 ..... 8/20/21
C-80.10-03 ..... 10/16/23
C-80.20-01 .....6/11/14
C-80.30-02 ..... 8/20/21
C-80.40-01 .....6/11/14
C-85.10-00 ..... 4/8/12
C-85.11-01 ..... 9/16/20
C-85.15-03 ..... 10/17/23
C-85-18-03 ..... 9/8/22
C-81.10-00 ..... 9/12/23
C-81.15-00 ..... 9/12/23

2

D-2.36-03 ..... 6/11/14
D-2.46-02 ..... 8/13/21
D-2.84-00 ..... 11/10/05
D-2.92-01 ..... 4/26/22
D-3.09-00 ..... 5/17/12
D-3.10-01 ..... 5/29/13
D-3.11-03 ..... 6/11/14
D-4 ..... 12/11/98
D-6 ..... 6/19/98
D-10.10-01 ..... 12/2/08
D-10.15-01 ..... 12/2/08
D-10.20-01 ..... 8/7/19
D-10.25-01 ..... 8/7/19
D-10.30-00 ..... 7/8/08
D-10.35-00 ..... 7/8/08
D-10.40-01 ..... 12/2/08
D-10.45-01 ..... 12/2/08
D-20.10-00 ..... 10/9/23

3

E-1 ..... 2/21/07
E-2 ..... 5/29/98
E-4 ..... 8/27/03
E-4a 8/27/03
E-20.10-00 ..... 9/12/23
E-20.20-00 ..... 10/4/23

4

F-10.12-04 ..... 9/24/20
F-10.16-00 ..... 12/20/06
F-10.62-02 ..... 4/22/14
F-10.64-03 ..... 4/22/14
F-40.15-04 ..... 9/25/20
F-40.16-03 ..... 6/29/16

F-10.18-04.....6/28/24
F-10.40-04.....9/24/20
F-10.42-00.....1/23/07
F-30.10-04 ..... 9/25/20
F-40.12-03 ..... 6/29/16
F-40.14-03 ..... 6/29/16
F-45.10-05 ..... 6/4/24
F-80.10-04 ..... 7/15/16

1

G-10.10-00 .....9/20/07
G-20.10-03 .....8/20/21
G-22.10-04 .....6/28/18
G-24.10-00 ..... 11/8/07
G-24.20-01 .....2/7/12
G-24.30-02 .....6/28/18
G-24.40-07 .....6/28/18
G-24.50-05..... 8/7/19
G-24.60-05..... 6/28/18
G-25.10-05..... 9/16/20
G-26.10-00..... 7/31/19
G-30.10-04..... 6/23/15
G-50.10-03..... 6/28/18
G-90.10-03 .....7/11/17
G-90.20-05 .....7/11/17
G-90.30-04 .....7/11/17
G-95.10-02 ..... 6/28/18
G-95.20-03 ..... 6/28/18
G-95.30-03 ..... 6/28/18

2

H-10.10-01 .....6/2/24
H-10.11-00 .....6/2/24
H-10.15-01 .....6/2/24
H-10.16-00 .....6/2/24
H-30.10-00..... 10/12/07
H-32.10-00..... 9/20/07
H-60.10-01..... 7/3/08
H-60.20-01..... 7/3/08
H-70.10-02 ..... 8/17/21
H-70.20-02 ..... 8/17/21

3

I-10.10-01.....8/11/09
I-30.10-02.....3/22/13
I-30.15-02.....3/22/13
I-30.16-01.....7/11/19
I-30.17-01.....6/12/19
I-30.20-00 ..... 9/20/07
I-30.30-02 ..... 6/12/19
I-30.40-02 ..... 6/12/19
I-30.60-02 ..... 6/12/19
I-40.10-00 ..... 9/20/07
I-40.20-00..... 9/20/07
I-50.20-02..... 7/6/22
I-60.10-01..... 6/10/13
I-60.20-01..... 6/10/13
I-80.10-02..... 7/15/16

4

J-05.50-00 .....8/30/22
J-10.....7/18/97
J-10.10-04 .....9/16/20
J-10.12-00 .....9/16/20
J-10.14-00 .....9/16/20
J-10.15-01 .....6/11/14
J-10.16-02 .....8/18/21
J-10.17-02 .....8/18/21
J-10.18-02 .....8/18/21
J-10.20-04 .....8/18/21
J-10.21-02 .....8/18/21
J-10.22-03 .....10/4/23
J-10.25-01 .....6/21/24
J-10.26-00 .....8/30/22
J-12.15-00 .....6/28/18
J-12.16-00 .....6/28/18
J-15.10-01 .....6/11/14
J-15.15-02 .....7/10/15
J-20.01-01 .....6/21/24
J-20.05-00 .....6/21/24
J-20.10-05 .....10/4/23
J-20.11-03 .....7/31/19
J-20.15-04 .....6/21/24
J-20.16-02 .....6/30/14
J-20.20-02 .....5/20/13
J-20.26-01 .....7/12/12
J-21.10-05 .....6/21/24
J-21.15-01 .....6/10/13
J-26.10-03 ..... 7/21/16
J-26.15-01 ..... 5/17/12
J-26.20-01 ..... 6/28/18
J-27.10-01 ..... 7/21/16
J-27.15-00 ..... 3/15/12
J-28.01-00 ..... 8/30/22
J-28.10-02..... 8/7/19
J-28.22-00 ..... 8/07/07
J-28.24-02 ..... 9/16/20
J-28.26-01 ..... 12/02/08
J-28.30-04 ..... 6/18/24
J-28.40-02 ..... 6/11/14
J-28.42-01 ..... 6/11/14
J-28.43-01 ..... 6/28/18
J-28.45-03 ..... 7/21/16
J-28.50-03 ..... 7/21/16
J-28.60-03 ..... 8/27/21
J-28.70-04 ..... 8/30/22
J-29.10-02 ..... 8/26/22
J-29.15-01 ..... 7/21/16
J-29.16-02 ..... 7/21/16
J-30.10-01 ..... 8/26/22
J-40.01-00 ..... 8/30/22
J-40.05-00 ..... 7/21/16
J-40.10-04 ..... 4/28/16
J-40.20-03 ..... 4/28/16
J-40.30-04 ..... 4/28/16
J-40.35-01 ..... 5/29/13
J-50.05-00..... 7/21/17
J-50.10-01..... .7/31/19
J-50.11-02..... 7/31/19
J-50.12-02..... 8/7/19
J-50.13-01..... 8/30/22
J-50.15-01..... 7/21/17
J-50.16-01..... 3/22/13
J-50.18-00..... 8/7/19
J-50.19-00..... 8/7/19
J-50.20-00.....6/3/11
J-50.25-00.....6/3/11
J-50.30-00.....6/3/11
J-60.05-01..... 7/21/16
J-60.11-00..... 5/20/13
J-60.12-00..... 5/20/13
J-60.13-00..... 6/16/10
J-60.14-01..... 7/31/19
J-75.10-02..... 7/10/15
J-75.20-01..... 7/10/15
J-75.30-02..... 7/10/15
J-75.50-00..... 8/30/22
J-75.55-00..... 8/30/22
J-80.05-00..... 8/30/22
J-80.10-01..... 8/18/21
J-80.12-00..... 8/18/21
J-80.15-00..... 6/28/18
J-81.10-02..... 8/18/21
J-81.12-00..... 9/3/21

J-21.16-02 .....6/21/24
J-21.17-01 .....6/10/13
J-21.20-01 .....6/10/13
J-22.15-03 .....6/21/24
J-22.16-03 .....7/10/15
J-22.17-00 .....6/21/24
J-40.36-02..... 7/21/17
J-40.37-02..... 7/21/17
J-40.38-01..... 5/20/13
J-40.39-00..... 5/20/13
J-40.40-02..... 7/31/19
J-45.36-00..... 7/21/17
J-84.05-00..... 8/30/22
J-86.10-00..... 6/28/18
J-90.10-03..... 6/28/18
J-90.20-03..... 6/28/18
J-90.21-02..... 6/28/18
J-90.50-00..... 6/28/18

K-70.20-01 .....6/1/16
K-80.10-02 .....9/25/20
K-80.32-00..... 8/17/21
K-80.34-00..... 8/17/21
K-80.35-01 ..... 9/16/20
K-80.37-01 ..... 9/16/20

L-5.10-02 .....6/5/24
L-5.15-00 .....9/19/22
L-10.10-02 .....6/21/12
L-20.10-03..... 7/14/15
L-30.10-02..... 6/11/14
L-40.15-01..... 6/16/11
L-40.20-02..... 6/21/12
L-70.10-01..... 5/21/08
L-70.20-01..... 5/21/08

M-1.20-04 .....9/25/20
M-1.40-03 .....9/25/20
M-1.60-03 .....9/25/20
M-1.80-03 .....6/3/11
M-2.20-03 .....7/10/15
M-2.21-00 .....7/10/15
M-3.10-04 .....9/25/20
M-3.20-04 .....8/2/22
M-3.30-04 .....9/25/20
M-3.40-04 .....9/25/20
M-3.50-03 .....9/25/20
M-5.10-03 .....9/25/20
M-7.50-01 .....1/30/07
M-9.50-02 .....6/24/14
M-9.60-00..... 2/10/09
M-11.10-04..... 8/2/22
M-12.10-04..... 6/28/24
M-15.10-02..... 7/17/23
M-17.10-02..... 7/3/08
M-20.10-04..... 8/2/22
M-20.20-02..... 4/20/15
M-20.30-05..... 6/28/24
M-20.40-03..... 6/24/14
M-20.50-02..... 6/3/11
M-24.20-02..... 4/20/15
M-24.40-02..... 4/20/15
M-24.60-04..... 6/24/14
M-24.65-00..... 7/11/17
M-24.66-00.....7/11/17
M-40.10-04..... 10/17/23
M-40.20-00..... 10/12/07
M-40.30-01.....7/11/17
M-40.40-00..... 9/20/07
M-40.50-00..... 9/20/07
M-40.60-00..... 9/20/07
M-60.10-01.....6/3/11
M-60.20-03..... 8/17/21
M-65.10-03..... 8/17/21
M-80.10-01.....6/3/11
M-80.20-00..... 6/10/08
M-80.30-00..... 6/10/08

APPENDIX A
SUMMARY OF GEOTECHNICAL CONDITIONS

Geotechnical Engineering Evaluation

COSV-BNSF/Pines Underpass Project
Spokane Valley, Washington

for
HDR Engineering, Inc.

May 15, 2023

GeoEngineers
Earth Science + Technology

Geotechnical Engineering Evaluation

COSV–BNSF/Pines Underpass Project
Spokane Valley, Washington

for
HDR Engineering, Inc.

May 15, 2023

GeoEngineers

523 East Second Avenue
Spokane, Washington 99202
509.363.3125

Geotechnical Engineering Evaluation

COSV–BNSF/Pines Underpass Project
Spokane Valley, Washington

File No. 11264-041-00

May 15, 2023

Prepared for:

HDR Engineering, Inc.
835 North Post Street
Spokane, Washington 98104

Attention: Scott Marshall, PE

Vice President, Eastern Washington Transportation Lead

Prepared by:

GeoEngineers, Inc.
523 East Second Avenue
Spokane, Washington 99202
509.363.3125

5/15/23

David R. Lauder, PE
Senior Engineer

Teresa A. Dugger, PE
Associate

DRL:TAD:tjh:mce

Disclaimer: Any electronic form, facsimile or hard copy of the original document (email, text, table and/or figure), if provided, and any attachments are only a copy of the original document. The original document is stored by GeoEngineers, Inc. and will serve as the official document of record.

Table of Contents

1.0 INTRODUCTION 1

2.0 SCOPE OF SERVICES 3

3.0 SITE CONDITIONS 4

3.1. Surface Conditions 4
3.2. Literature Review 4
3.2.1. Geology 4
3.2.2. Soil Survey Map 4
3.3. Subsurface Exploration Program 5
3.4. Soil Conditions 5
3.4.1. Topsoil 5
3.4.2. Fill 5
3.4.3. Flood Gravel 6
3.4.4. Hard Silt and Clay 6
3.5. Groundwater Conditions 6

4.0 CONCLUSIONS AND RECOMMENDATIONS 7

4.1. General 7
4.2. Earthwork Recommendations 8
4.2.1. Initial Site Preparation 8
4.2.2. Excavation 8
4.2.3. Subgrade Evaluation and Preparation 8
4.2.4. Structural Fill Materials 9
4.2.5. Fill Placement and Compaction 9
4.2.6. Weather and Construction Considerations 10
4.3. Temporary Slopes and Shoring 11
4.3.1. Temporary Slopes 11
4.3.2. Temporary Shoring 11
4.4. Permanent Cut and Fill Slopes 12
4.5. Additional Construction Considerations 12
4.5.1. Pile Driving 12
4.5.2. Luminaire and Sign Structures 13
4.5.3. Earthwork Observation and Testing 13
4.6. Bridge Foundations 13
4.6.1. General 13
4.6.2. Axial Resistance 14
4.6.3. Lateral Pile Capacity 15
4.6.4. Group Reduction Factors 15
4.6.5. Preliminary Drivability Analyses 16
4.6.6. Test Pile Program 16
4.6.7. Pile Driving Induced Ground Vibrations, Monitoring and Settlement 17
4.7. Bridge Abutments and Pile Caps 17
4.7.1. Lateral Resistance 17
4.8. Retaining Walls 19

4.8.1. Cast-in-Place (CIP) Reinforced Concrete Wall 19
4.8.2. Cantilevered and Anchored Soldier Pile Walls 21
4.8.3. Soil Nail Walls 25
4.8.4. Retaining Wall Overall Stability 26
4.9. Design Earthquake Parameters 27
4.9.1. Ground Motion Parameters 27
4.9.2. Liquefaction Potential 28
4.9.3. Ground Rupture 28
4.10. Sign and Luminaire Foundations 28
4.10.1. Design Parameters for Use with Standard Plans 28
4.10.2. Special Design Cases 29
4.11. Pavement Thickness Design 29
4.12. Site Drainage 31
4.12.1. Temporary Drainage 31
4.12.2. Stormwater Considerations 31

5.0 LIMITATIONS 38

6.0 REFERENCES 39

LIST OF FIGURES

Figure 1. Vicinity Map
Figure 2. Site Plan

APPENDICES

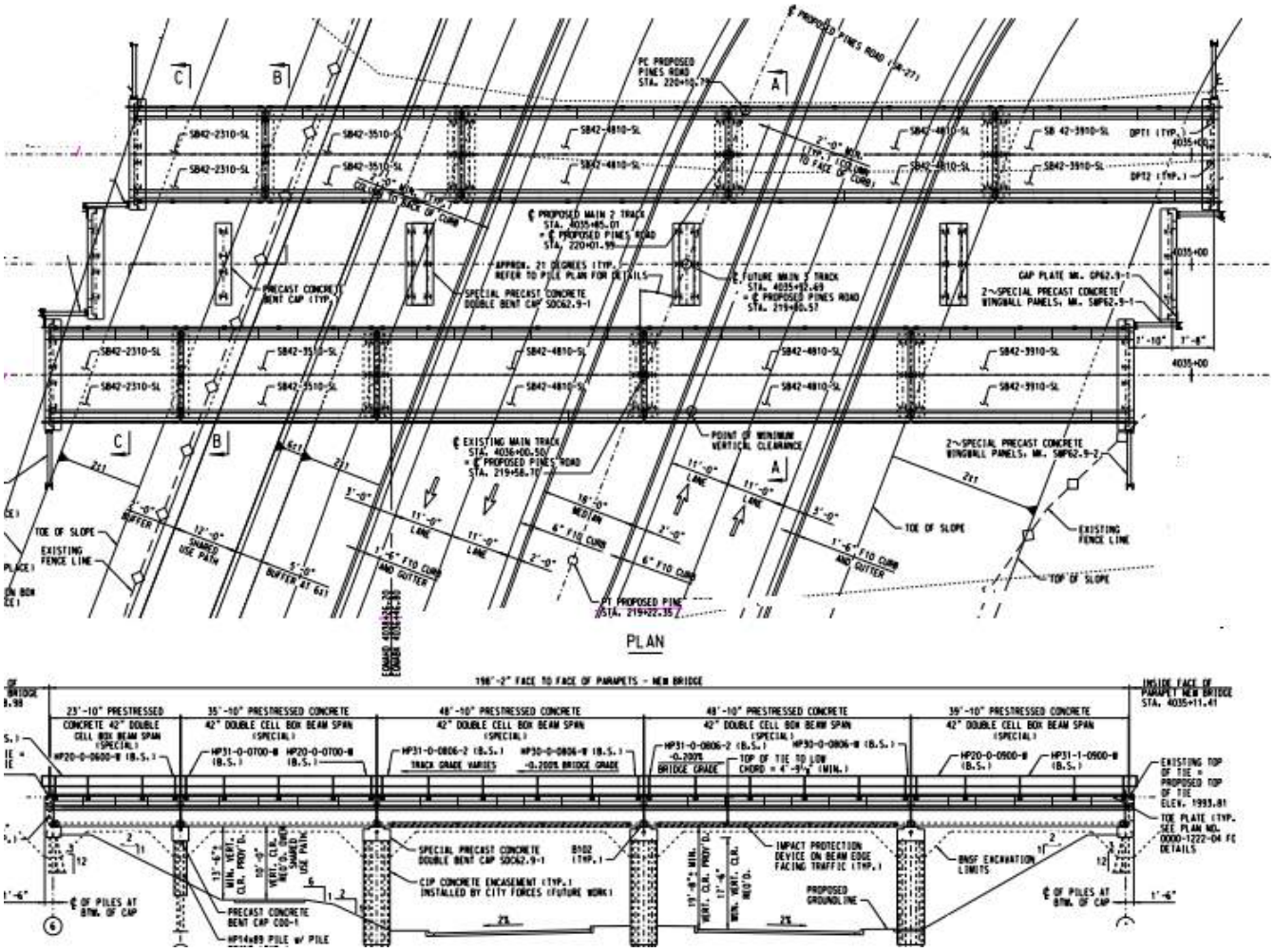
Appendix A. Field Explorations
Figure A-1. Key to Exploration Logs
Figures A-2 through A-16. Logs of Borings
Figures A-17 through A-23. Logs of Test Pits
Figure A-24. DCP Results
Figures A-25 through A-31. Test Pit Photos
Appendix B. Laboratory Testing
Figures B-1 through B-4. Sieve Analysis Results
Figures B-5 and B-6. Compaction Test Results
Figures B-7 and B-8. R-Value Results
Appendix C. Axial Pile Resistance Graphs
Figures C-1 through C-3. Driven Pile Capacity Plots
Appendix D. Retaining Wall Overall (Global) Stability Results
Figures D-1 through D-8. Global Stability Models
Appendix E. Hydraulic Conductivity Estimates
Table E-1. Saturated Hydraulic Conductivity Estimates
Appendix F. Groundwater Mounding Analyses
Figures F-1 through F-12. Groundwater Mounding Analyses Figures
Appendix G. Report Limitations and Guidelines for Use

1.0 INTRODUCTION

This report presents the results of our geotechnical engineering evaluation for the proposed City of Spokane Valley (COSV) BNSF/Pines Road underpass project. The project site is located near the Pines Road (State Route 27) and BNSF Mainline crossing, approximately as shown in the Vicinity Map, Figure 1.

Proposed improvements associated with the project are shown in the Site Plan, Figure 2, and include:

- Constructing two railroad bridges to the east of the current at-grade crossing. One bridge will be situated in-line with the current mainline route. The second bridge will be situated parallel to and offset about 40 feet north of the current mainline to accommodate a future second mainline track. The bridges will be five-spans, each about 378 feet long and about 20 feet wide. The picture below (provided by HDR) shows a graphical layout of the proposed underpass crossing. The figure also shows the installation of foundations for a future third bridge located between the two proposed bridges.



Conceptual Underpass Crossing Layout

At the time of this report, construction sequencing for bridge construction had not been finalized. Based on discussions with HDR, one possible option includes:

- Excavating down to approximate top of pile cap elevations for the north bridge (this would require minimal to no temporary shoring).
- Driving piles to support the abutments and interior piers, followed by constructing the bridge superstructure.
- Constructing a shoofly and shifting rail traffic onto the new bridge.
- Excavating soil from around and below the new bridge to establish finished grades in the vicinity of the crossing. This would require temporary work windows sufficient to allow for excavation around interior piers and installation of cross bracing in accordance with structural plans.
- Constructing the southern bridge after excavating to near finished grades.

  This conceptual construction sequence could reduce or eliminate the need for temporary shoring. However, it would require constructing a shoofly, which in turn would require reduced speeds for rail traffic due to the limited space between the proposed bridges and the existing Spokane River crossing located about 1,200 feet to the east.

  A second alternative could include constructing a shoofly about 20 feet to the north of the existing mainline to reduce the offset between the mainline and shoofly, thereby minimizing speed reduction requirements for rail traffic. For this alternative, the southern bridge along the existing mainline would be constructed first. More extensive temporary shoring could be required to provide grade separation between the shoofly and bridge for this scenario.
- Realignment of Pines Road. This will include shifting the road to the east, starting near the intersection of Pines and Pinecroft Way to pass below the proposed bridges. The finished grade for the proposed realignment will be lowered about 20 to 25 feet at the underpass crossing. From the crossing, the road grade will rise to meet existing site grades, and the alignment will shift to the east, and then back to the north to connect with Trent Road (State Route 290) at a new roundabout situated about 400 to 600 feet west of the SR 290/Spokane River bridges. Pines Road will include two lanes in each direction with a median or two-way left turn lane depending on location. A 12-foot-wide pedestrian pathway will be provided adjacent to Pines along either the northbound or southbound lanes.
- Constructing the roundabout at the new Pines/Trent intersection. The roundabout will include multiple entry and exit lanes for the Pines Road leg on the south, the Trent Avenue legs on the east and west, and for a new segment of Empire Lane on the north.
- Constructing a new two-lane segment of Empire Lane, which will extend from the new roundabout, approximately 1,200 lineal feet to the current intersection with Empire Lane and Cement Road.
- Installing new signs and illumination along Pines and Trent.
- Constructing stormwater facilities along the project. Preliminary plans include disposing of stormwater runoff via infiltration in proposed swales situated along the alignment, with the swales generally concentrated to the north of the proposed roundabout. Stormwater runoff that is routed to the vertical sag along Pines Road near the underpass will be collected in underground vaults and pumped to a stormwater swale for treatment and disposal.

- Site grading to achieve finished grades. This will include constructing permanent slopes from the existing grade down to the proposed finished grade along Pines Road. Relatively minor grading (cuts and fills less than about 5 feet) should be required to establish finished grades near the proposed roundabout and Empire Lane extension.
- Potentially constructing retaining walls along portions of Pines Road for grade separation. At the time of this report, a conceptual retaining wall was under consideration on the east side of Pines Road about 300 to 400 feet north of Pinecroft Way. Final site grades in this area could be lowered about 10 to 20 feet, and the offset from the edge of the proposed roadway and pedestrian path to the right-of-way (ROW) could be in the range of about 12 to 30 feet (final location and offset of the retaining wall from the ROW will depend on final layout of the pedestrian path). A retaining wall could be required to provide grade separation given the planned cut depths relative to available offset to the ROW. Currently, a conventional cast-in-place concrete retaining wall is anticipated; however, alternative top-down wall types, such as a permanent soldier pile wall or soil nail wall, might be considered. It is possible that other short (less than 4-to 5-foot-tall retaining walls could be required along other portions of the alignment.

2.0 SCOPE OF SERVICES

The purpose of our services was to provide geotechnical engineering recommendations for use during design and construction of proposed improvements based on subsurface exploration, laboratory testing and engineering analyses. Our services were completed in general accordance with HDR's Consulting Services Agreement with GeoEngineers dated June 12, 2020. Our services included:

1. Reviewing in-house and published geologic information and reports.
2. Preparing a health and safety plan (HASP).
3. Conducting a site reconnaissance and coordinating utility locates.
4. Exploring soil and groundwater conditions underlying the project site by drilling borings and excavating test pits.
5. Geotechnical laboratory testing of soil samples collected from the explorations.
6. Conducting engineering analyses and providing geotechnical recommendations for:
    a. Site preparation and fill placement.
    b. Design driven steel piles to support the proposed bridges.
    c. Design of sign and illumination pole foundations.
    d. Design of abutment walls and retaining walls.
    e. Seismic parameters based on both American Railway Engineering and Maintenance-of-Way Association (AREMA) and American Association of State Highway and Transportation Officials (AASHTO) criteria.
    f. Pavement layer thickness for Empire Lane extension. (We understand Washington State Department of Transportation [WSDOT] will provide pavement layer thickness for Pines Road and Trent Avenue).

g. On-site disposal of stormwater via infiltration.

h. We also provide a discussion regarding the feasibility of temporary shoring systems including engineering parameters that may be used by the Contractor's shoring designer.

3.0 SITE CONDITIONS

3.1. Surface Conditions

The proposed underpass crossing and most of the proposed Pines Road alignment are located on existing BNSF ROW. The ground surface is generally covered with sparse grass and weeds. A portion of the proposed Pines Road alignment traverses a previous railroad spur line located north of the mainline tracks. The former spur line crossed Trent Avenue just west of the Spokane River bridge and continued north to provide service to an industrial area north of the project site. Based on aerial imagery, the former spur line was removed about 10 years ago. To the south of the BNSF ROW, the proposed alignment crosses undeveloped land. A stand of mature trees is located on the parcel along with grass and weeds. At the time of our field work, a pile of rubble debris also was present on the western portion of the parcel.

The proposed underpass crossing is situated about 100 to 700 feet east of the current at-grade BNSF/Pines crossing. Near the proposed bridges, the existing mainline BNSF tracks are elevated several feet above surrounding site grade on an existing railroad embankment. Site grades along the proposed Pines Road realignment are relatively level, with a slight grade down to the northwest from the intersection of Pines and Pinecroft to the proposed Pines/Trent roundabout. The maximum elevation difference along the proposed alignment is about 10 to 15 feet.

To the north of Trent Avenue, the proposed Empire Lane extension traverses undeveloped and existing commercial developments. The eastern approximately 400 feet of the existing road, east of the Empire/Cement Road intersection will be reconstructed. The exiting road is about 20 feet wide and paved with asphalt surfacing. Site grades along the Empire Lane extension also are relatively level, with maximum elevation difference of about 4 to 5 feet.

3.2. Literature Review

3.2.1. Geology

The Washington State Department of Natural Resources (DNR) "Geologic Map of the Greenacres 7.5-minute Quadrangle, Spokane County, Washington" (Derkey 2004) maps the surficial geology at the site as "Glacial flood-channel deposits, predominantly gravel" (Qfcg). This geologic unit is described as a thick-bedded to massive mixture of boulders, cobbles, gravel and sand containing beds and lenses of both silt and sand. This unit was deposited during repeated catastrophic outburst flood events related to glacial Lake Missoula during the last ice age, about 13,000 to 15,000 years ago.

3.2.2. Soil Survey Map

The United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) online Web Soil Survey indicates that the site is generally underlain by one soil group within the proposed project limits, Urban Land–Opportunity, disturbed complex. This NRCS soil group is described as being formed on outwash plains in gravelly glaciofluvial deposits with minor amounts of volcanic ash and loess in the upper part. The Urban land component of the soil group generally is characterized as disturbed or

reworked surficial soil. Near surface conditions for undisturbed soil typically include silty gravel with cobbles overlying gravel with silt, cobbles and boulders. Opportunity soil is generally characterized as having a low risk of corroding steel, a moderate risk of corroding concrete, moderately high permeability, moderate susceptibility to frost action and is well drained.

3.3. Subsurface Exploration Program

We evaluated subsurface conditions within the project limits: by drilling 14 borings (B-1 through B-14), excavating seven test pits (TP-1 through TP-7) and advancing one dynamic cone penetration test (DCP-1). The approximate locations of the completed explorations are shown in Figure 2. Borings B-1 through B-10, TP-1 through TP-7 and DCP-1 were completed in support of proposed roadway design, grading, luminaire and sign pole foundations, retaining wall and stormwater design. Borings B-11 through B-14 were advanced in support of bridge design.

Soil samples were obtained from the explorations for visual classification and transported to GeoEngineers' laboratory for evaluation and testing of select samples to assess pertinent physical and engineering characteristics. Descriptions of the field exploration equipment and procedures, laboratory test methods, explorations logs, and test pit photographs are provided in Appendix A. A description of the laboratory testing program and laboratory test results are presented in Appendix B.

3.4. Soil Conditions

At the location of DCP-1, advanced at the intersection of Empire Lane and Cement Road, we encountered about 4¼ inches of existing asphalt pavement, overlying about 7 inches of aggregate base. We also encountered about 2 inches of asphalt surfacing at the location of B-4, and about 8 inches of hot mix asphalt (HMA) pavement in boring B-5 (drilled on the shoulder of Trent Avenue, east of the Spokane River Bridge).

Subsurface conditions encountered in our explorations below existing pavement, where encountered, were generally consistent with published literature, in our opinion. For the purposes of this report, we characterized the soil into four general units based on engineering parameters: (1) topsoil; (2) fill; (3) flood gravels; and (4) hard silt and clay. The following paragraphs provide a description of the soil units encountered in the explorations.

3.4.1. Topsoil

We encountered about 6 inches of topsoil consisting of dark brown silty sand and gravel with organic matter and variable cobble and boulder content at the locations of boring B-7 and test pits TP-4 and TP-5. We characterized the topsoil as having low strength, moderate to high compressibility and high susceptibility to changes in moisture content.

3.4.2. Fill

Boring B-5 was drilled near a proposed overhead sign structure on top of the existing approach embankment near the east end of the westbound Spokane River Bridge on Trent Avenue. Below about 8 inches of existing asphalt pavement surfacing, we encountered about 2½ to 3 feet of fill/base consisting of dense gravel with silt and sand. Below the upper base layer, we encountered embankment fill consisting of loose silty sand with gravel. The embankment fill extended to a depth of about 18 feet below ground surface (bgs). We characterized the embankment fill as having low to moderate strength.

We also encountered debris fill at the locations of test pits TP-6 and TP-7, consisting of loose to medium dense silty gravel with sand and debris (concrete, brick, wood and other organic matter). The fill extended to depths of about 2 feet bgs at each location. We characterized the debris fill at TP-6 and TP-7 as having variable, but generally low strength, moderate to high compressibility, low permeability and high susceptibility to changes in moisture content.

3.4.3. Flood Gravel

Below the topsoil and fill, where present, we encountered flood-deposited gravel. In general, the flood deposit can be further characterized into two sub-groups, an upper silty gravel layer and a lower gravel layer as described below:

- Silty Gravel – this soil unit generally consists of brown to dark brown, medium dense silty fine to coarse gravel with sand, cobbles and boulders. It was encountered in borings B-1, B-3, B-6 through B-14, and test pits TP-2 and TP-5 and extended to depths in the range of about 1 to 5 feet bgs. We also encountered a lower zone of silty gravel in borings B-2 and B-4. In B-2, the silty gravel extended from a depth of about 18 feet to the depth explored (25 feet). In B-4, the silty gravel extended from a depth of about 6 feet to the depth explored (13½ feet). We also encountered this unit at the location of DCP-1 underlying the pavement and base course. Results of grain-size analyses on three representative samples indicate the fines (silt- and clay-sized soil particles passing the U.S. No. 200 sieve) content is in the range of about 13 to 22 percent. We characterized this unit as having moderate strength, low compressibility, low permeability and high susceptibility to changes in moisture content.
- Lower Gravel – this soil unit was encountered in each of the explorations, below the topsoil, fill or silty gravel, where present. This unit generally consists of medium dense to very dense fine to coarse gravel with silt, sand, cobbles and boulders. This unit extended to the depths explored in borings B-1, B-3, B-5 through B-10 and test pits TP-1 through TP-7. In borings B-11 through B-14, drilled near the proposed bridges, the lower gravel unit extended to depths in the range of about 85 to 92 feet bgs. Results of grain-size analyses on 24 representative samples indicates the fines content is in the range of about 3 to 12 percent. We characterized the lower gravel unit as having moderate to high strength, low compressibility, high permeability and low susceptibility to changes in moisture content.

3.4.4. Hard Silt and Clay

Underlying the flood gravel unit in borings B-11 through B-14, we encountered hard silt and clay, which extended to the depths explored. We characterized the hard silt and clay unit sediments as having moderate to high strength and low compressibility.

3.5. Groundwater Conditions

We encountered groundwater during drilling in borings B-11 through B-14 at depths in the range of about 70½ to 73 feet bgs (about Elevation 1,914 to 1,914.5). Groundwater below the site is associated with the Rathdrum Prairie–Spokane Valley aquifer, a highly prolific unconfined aquifer that encompasses much of the Rathdrum Prairie area of north Idaho and Spokane Valley in eastern Washington. This aquifer is comprised predominantly of glacial flood deposits and is hydraulically connected to the Spokane River. Based on our experience in the area, including a groundwater monitoring program conducted by GeoEngineers at a site about 1,500 feet north of the Trent/Pines intersection, groundwater levels are expected to fluctuate seasonally on the order of about 10 feet in conjunction with variations in the Spokane River level. Groundwater elevations are typically highest in late winter and spring, and lowest in the summer.

Groundwater elevations encountered at the time of exploration likely represent an intermediate condition. For design purposes, we recommend assuming a seasonal high groundwater elevation of 1,920 feet. However, if construction of below-ground facilities that could be impacted by groundwater could encroach near this elevation, a more detailed assessment of seasonal groundwater elevation fluctuations should be completed.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1. General

Based on the results of our site exploration, literature review and review of project information, we believe the proposed project improvements may be completed as described at the beginning of this report. We should be consulted if changes to the alignment or structures are made so we can review and modify the recommendations of this report, as necessary.

Based on the soil types we encountered during our site exploration, proposed improvements can be constructed using typical earthwork methods capable of handling cobbles and boulders.

Soil conditions below the project site consist predominantly of flood gravels (silty gravel and lower gravel units) that exhibit suitable supporting characteristics (strength and compressibility) for proposed pavements and structures. Conventional earthwork construction methods should be feasible. However, surficial soil (silty gravel) is moderately to highly sensitive to changes in moisture content and will be difficult to work and compact if the moisture content of the soil is more than about 3 percentage points above or below optimum at the time of earthwork. Contract specifications, schedules and budgets should include provisions for treating unsuitable or over-optimum soil. Such treatment could include moisture conditioning, such as disking, scarifying and drying or adding water to on-site soil to moisture condition earth materials to near the optimum moisture content or removing and replacing unsuitable soil with imported structural fill (during wet or cold weather periods). Conversely, the contractor should expect to encounter oversize rock particles, such as cobbles and boulders, during earthwork activities in the fill and flood gravel deposits.

We understand driven piles are the preferred foundation option for BNSF. Driven piles should provide suitable support for bridge foundations. Given the dense granular nature of site soil, and presence of cobbles and boulders, low displacement piles (H-piles) are the preferred pile type, in our opinion. Other foundation alternatives, including shallow spread footings and drilled shafts also are feasible. However, shallow footings could require significantly more temporary shoring compared to deep foundations, which could significantly impact project budget and scheduling. Drilled shafts would require mobilization of a specialty drilling subcontractor, as well as potential modifications to standard BNSF pier design, and potential modifications to roadway layout and bridge length to accommodate round vs. rectangular foundation dimensions. Although, drilled shafts could provide simplicity in construction staging if the foundation and exposed column could be combined into a single element. We can provide recommendations for alternative foundations upon request.

A conventional cast-in-place (CIP) wall is a feasible wall option for site retaining walls. However, temporary shoring or a temporary easement could be required for walls located near existing ROW. Alternatively, a top-down wall such as a permanent cantilevered or anchored (tied-back) soldier pile wall or soil nail wall could be used to reduce temporary shoring or temporary excavation and backfilling. Although, each of these top-down wall alternatives have potential design and construction limitations. Depending on final wall

layout and grading, wall heights might exceed allowable limits for a cantilevered wall. Also, depending on final wall layout, there might not be sufficient horizontal distance between the wall face and ROW to install tie-back anchors for a soldier pile wall. A soil nail wall could face constructability issues due to the granular nature of site soil and likely limited "stand-up time." Accordingly, the feasibility of this option might be limited to a steepened slope versus a vertical wall.

4.2. Earthwork Recommendations

Note that the following recommendations pertain to site preparation and earthwork activities associated with general site grading for the proposed structures and roadways. Refer to our previous report titled "Geotechnical Engineering Evaluation, BNSF Spokane Subdivision, Otis Orchards to Irvin – MP 58.7 to MP 63.3 Double Track, Spokane Valley, Washington," dated May 2, 2019, for recommendations pertaining to site preparation and earthwork associated with future railroad embankments. Additionally, portions of the project, such as Pines and Trent Avenue construction will be subject to WSDOT Standard Specifications, while other portions of the project will be subject to City of Spokane Valley Street Standards. Although City of Spokane Valley standards refer to WSDOT Standard Specifications. References to the WSDOT Standard Specifications in this report are specific to the 2021 edition.

4.2.1. Initial Site Preparation

Initial site preparation and earthwork will include clearing, stripping and grubbing existing vegetation outside of existing roadway areas, and rough grading, including cutting and filling to establish proposed subgrade elevations. We recommend that proposed improvement areas be stripped of all vegetation, and roots larger than ½ inch in diameter, where present, be grubbed. We estimate that stripping required to remove vegetation should be relatively shallow, generally less than 6 inches in most areas. However, stripping and grubbing to greater depths might be required to remove localized zones of loose soil, or soil with more than about 15 percent organic matter (by volume) that could be present in areas of the site that were not explored. The resident engineer should be prepared to require the contractor to increase or decrease stripping depths depending on conditions encountered at the time of initial site preparation.

4.2.2. Excavation

Based on the results of our subsurface explorations, it is our opinion that near-surface fill and natural soil deposits consisting of flood gravels may be excavated using conventional earthmoving equipment in proper working condition. Excavation and earthmoving equipment should be capable of moving and removing cobbles and boulders.

Existing debris fill, such as encountered to depths of about 2 feet below existing site grade in test pits TP-6 and TP-7 should be excavated and properly disposed of off-site.

4.2.3. Subgrade Evaluation and Preparation

Subgrade for City streets should be prepared in accordance with section 8.3.3 of the City of Spokane Valley Street Standards. Specifically, in cut areas, the upper 12 inches of subgrade should be rolled and compacted to at least 95 percent of maximum dry density based on the ASTM D 1557 laboratory test procedure (modified proctor). Subgrade preparation for Pines and Trent should be completed in accordance with Sections 2-03.(14)C and 2-06.3(1) of the WSDOT Standard Specifications, as applicable.

Evaluation of compaction should be accomplished through observation of proof rolling and in-place density testing of prepared areas. Unsuitable zones of subgrade soil should be removed to firm bearing or a depth of 2 feet below subgrade, whichever is less, and replaced with structural fill as recommended in the "Structural Fill" section of this report. Additional structural fill required to establish proposed subgrade elevations may be placed directly on compacted soil as recommended in a following section of this report.

Compaction testing frequency for prepared subgrade for City streets should be conducted in accordance with Chapter 9 of the City of Spokane Valley Street Standards.

4.2.4. Structural Fill Materials

We recommend fill materials conform to applicable sections of the 2021 WSDOT *Standard Specifications*.

- The silty gravel soil encountered in our explorations should be suitable for use as Common Borrow (9-03.14(3) – Option 2). However, this soil is moisture sensitive, and will be difficult to properly work and compact if the moisture content of the soil is not near optimum at the time earthwork is performed. This soil also is more prone to become muddy and unstable if subjected to inclement weather.
- The lower gravel soil encountered in our explorations should be suitable for use as Select Borrow (9-03.14(2)) or Gravel Borrow (9-03.14(1)). Screening of the on-site soil should be anticipated to remove oversized material.
- Structural fill used as embankment fill to establish finished grades below pavement should consist of Common Borrow per 9-03.14(3), Select Borrow per 9-03.14(2) or Gravel Borrow per 9-03.14(1). Structural fill placed within 2 feet of finished subgrade below pavements for Empire Lane should consist of soil exhibiting suitable pavement support characteristics (R-value of at least 45, California Bearing Ratio [CBR] of at least 60 or Resilient Modulus of at least 12,500 pounds per square inch [psi]). If earthwork occurs during extended periods of wet or freezing weather, the fines content should be limited to no more than 5 percent.
- We recommend structural fill placed immediately adjacent (within 5 feet laterally) to bridge abutments (drainage zone) generally consist of Gravel Backfill for Walls (9-03.12(2)). Backfill placed behind conventional cast-in-place concrete retaining walls also should consist of Gravel Backfill for Walls in accordance with WSDOT Standard Plan D-4.
- The structural fill placed below foundations should consist of Gravel Backfill (9-03.12).
- We recommend structural fill placed as backfill behind bridge abutments and the above-referenced drainage zone, consist of Gravel Borrow (9-03.14(1)) or Select Borrow (9-03.14(2)).

Surficial soil containing a vegetative root zone (topsoil) identified in our explorations is unsuitable for use as structural fill and should be wasted in undeveloped portions of the site, or properly disposed of off-site. Debris fill also is unsuitable for reuse as structural fill and should be disposed of off-site.

4.2.5. Fill Placement and Compaction

We recommend that structural fill be mechanically compacted to a firm condition. Structural fill should be placed in loose lifts not exceeding 12 inches in thickness, or to a thickness that can adequately be compacted based on the equipment being used. Each lift should be conditioned to within about 3 percent of the optimum moisture content of the soil estimated in accordance with Section 2-03.3(14)D of the WSDOT Standard Specifications.

Fill placed below roadways should be compacted to at least 95 percent of the maximum dry density (MDD) in accordance with WSDOT Standard Specification 2-03.3(14)C, Method C using density testing methods outlined in section 2-03.3(14)D. Density testing frequency for City streets should be conducted in accordance with Chapter 9 of the City of Spokane Valley Street Standards.

Backfill placed behind bridge abutments should be compacted to at least 95 percent of MDD based on Chapter 8, Part 5, Section 5.5.2 of AREMA guidelines with the additional criteria that backfill be compacted per ASTM D1557.

Backfill for structure excavations, such as backfill providing lateral support for wall foundations, luminaires, and light pole foundations should be compacted in accordance with section 2-09.3(1)E of the WSDOT Standard Specifications. Backfill placed with about 5 feet of the wall face of retaining walls and abutment walls should be compacted using light-weight compaction equipment.

Backfill placed behind retaining walls should be compacted in accordance with 6-11.3(5) of the WSDOT Standard Specifications.

4.2.6. Weather and Construction Considerations

As stated previously, surficial silty gravel soil present on site will be susceptible to disturbance from construction equipment during wet weather. When the moisture content of this soil is more than a few percentage points above the optimum moisture content, it can become muddy and unstable. Disturbance of near-surface soil should be expected if earthwork is completed during periods of wet weather. During dry weather, the soil will: (1) be less susceptible to disturbance; (2) provide better support for construction equipment; and (3) be more likely to meet the required compaction criteria.

Soil at exposed subgrade should be protected from disturbance, especially during wet weather. The contractor should be responsible for selecting the appropriate methods to protect subgrade from deterioration. Haul roads and/or working blankets constructed using angular rock and coarse-grained soil should be used to support construction operations over soil at subgrade that will otherwise pump and rut under construction equipment. Where haul roads and working blankets are used, the first lift of fill placed on exposed site soil should be sufficiently thick (at least 12 inches) to support construction equipment and subsequent filling operations.

Erosion of exposed soil could occur at the subject site. Erosion and sediment control measures should be in place before and during construction. Temporary erosion control should be provided during construction activities and maintained until permanent erosion control measures are functional. Surface water runoff should be properly contained and channeled using drainage ditches, berms, swales, temporary ponds and/or siltation fences. Best management practices that reduce disturbance and removal of vegetation are recommended.

Permanent measures for erosion control include reseeding or replanting the disturbed areas as soon as possible and protecting those areas until new vegetation has been established, or armoring site slopes. Permanent cut slopes in the lower gravel unit might not be conducive to establishing vegetation. Therefore, imported topsoil or amending the surficial soil in the cut face might be required to facilitate suitable conditions to establish vegetation. Sloughing and raveling of surficial soil should be anticipated on vegetated slopes inclined at 2H:1V until vegetation is established. The removal of natural vegetation should

be minimized and limited to active construction areas. Permanent site grading should be accomplished in such a manner that stormwater runoff is not concentrated and not directed to slopes. Surface water and drainage from impervious surfaces should be directed to appropriate stormwater disposal facilities. Care should be taken by the contractor to properly prevent sediment-laden runoff from clogging completed stormwater disposal facilities.

4.3. Temporary Slopes and Shoring

Temporary shoring and excavations for WSDOT structures should be designed in accordance with Section 15-7 of the WSDOT *Geotechnical Design Manual* (GDM), which also references Title 296 of the Washington Administrative Code (WAC), Part N, "Excavation, Trenching and Shoring." Temporary shoring installed for the proposed railroad bridges should be designed and constructed in accordance with the BNSF-UPRR Guidelines for Temporary Shoring.

4.3.1. Temporary Slopes

In our opinion, site soil classifies as Type C for excavation purposes (296-155-664 WAC). The maximum allowable temporary slope for Type C soil is 1.5H:1V (horizontal to vertical) for simple excavations less than 20 feet deep. This slope inclination is based on construction loads such as equipment and materials being setback a distance equal to one half the excavation height from the top of the slope. Additionally, actual slope inclinations will need to be flatter if local sloughing is present at the time of excavation. We emphasize that the contractor is responsible for establishing, maintaining and monitoring temporary slopes at the time of construction.

4.3.2. Temporary Shoring

Based on the results of our explorations, temporary shoring should be retained and be supported by the on-site flood gravel unit. Recommended soil properties (unit weight, friction angle and earth pressure coefficients) for the on-site flood gravel deposit are provided in Section 4.8.2 of this report.

While the selection of temporary shoring means and methods should be left to the Contractor, it is our opinion that sheet piles are not a feasible shoring option for this project. This is because of the presence of medium dense to very dense gravel with cobbles and boulders underlying the site. In our opinion, temporary shoring using cantilevered or tied-back soldier piles are a feasible option. However, anchored systems with tiebacks are often discouraged by the railroad because of possible future utility installation obstructions. Additionally, the railroad often requires the removal of tieback assemblies which can be problematic. Accordingly, we recommend obtaining railroad approval prior to final design and installation of a tied-back system. Design of temporary shoring should include surcharge loads from sloping ground conditions behind the walls, or from vehicular, Cooper E80 train or construction traffic, as applicable.

If temporary shoring is used to provide temporary grade separation during construction of the railroad bridges, careful consideration should be given to allowable movement of the tracks. Specifically, calculated deflections of the temporary shoring system and top of rail elevation should not exceed the criteria outlined in Table 1 below.

TABLE 1. DEFLECTION CRITERIA

Horizontal Distance from Shorting to Track C/L Measured at a Right Angle from Track	Maximum Horizontal Movement of Shoring System	Maximum Acceptable Horizontal or Vertical Movement of Rail
12' < S < 18'	⅜"	¼"
18' < S < 24'	½"	¼"

If tight tolerances on allowable rail movement are required and the use of tiebacks is allowed, the shoring wall should be designed to resist at-rest earth pressures in addition to surcharge loads, and tie-backs should be appropriately tensioned during final lock off. Additionally, the coarse granular nature of site soils might make it difficult to prevent soil from running or raveling during excavation and before placement of lagging and should be considered during the construction process selected by the contractor. Additionally, removal of cobbles or boulders along the wall face could also result in destabilization of the cut face resulting in additional running and raveling of soil from behind the wall. A pre-grouting program could be used to provide additional stability to the soil mass near the wall face to reduce the potential for loss of soil during excavation and placement of lagging.

If a temporary shoring system is installed, the contractor must establish survey hubs along the wall and tracks, monitor and record the top of rail elevation and track alignment for the duration of the project, periodically monitor the wall after it is in place, and provide those results to the resident engineer and BNSF. The contractor also should provide a corrective action plan in the event measured rail movement exceeds tolerances provided in Table 1.

4.4. Permanent Cut and Fill Slopes

We recommend maximum permanent cut and fill slope inclinations of 2H:1V. Exposed soil on permanent slopes should be protected from erosion as soon as possible after grading. Surface water runoff should be collected and directed away from slopes to prevent water from running down the face of the slope.

4.5. Additional Construction Considerations

4.5.1. Pile Driving

The contractor should be prepared to encounter medium dense to very dense gravel with cobbles and boulders and should select a hammer of sufficient rated energy to drive piles to required depths. Overdriving might be required to advance piles to minimum penetration depths to satisfy lateral or uplift resistance requirements, particularly if piles supporting interior piers will be driven from near existing site grade, followed by excavation to planned finished grade after pile installation. Piles that encounter refusal at depths shallower than minimum embedment requirements should be removed, the pile location should be drilled to remove the obstruction, and the pile should be re-driven (if undamaged) to achieve required axial resistance and minimum embedment depth to satisfy axial and lateral resistance requirements.

An approved settlement monitoring program should be implemented during pile driving in accordance with project specifications. Additional discussion is provided in Section 4.6.7 of this report.

4.5.2. Luminaire and Sign Structures

We anticipate cobbles and boulders could be present within the proposed site excavations. Foundation excavation equipment should be selected accordingly. Additionally, the lower gravel unit will be moderately to highly susceptible to caving during construction. The contractor should consider casing excavations for light, luminaire and sign structure foundations, or should plan to otherwise accommodate the potential for caving into the foundation excavations.

4.5.3. Earthwork Observation and Testing

We emphasize that observation during earthwork operations is essential to assess actual soil conditions and adjust the recommendations presented in this report to meet conditions in the field. The resident engineer or geotechnical engineer of record should be available to:

- Evaluate actual topsoil thickness and increase or decrease stripping depths in the field, as necessary.
- Evaluate soil conditions at subgrade (including possible loosening caused by equipment) and monitor compaction activities by the contractor.
- Evaluate suitability of excavated site soil for reuse as structural fill.
- Monitor pile driving activities for the proposed bridges to confirm adequate embedment and capacity.

We will be pleased to discuss these services with you before construction commences.

4.6. Bridge Foundations

4.6.1. General

Based on design information provided by HDR, we understand the proposed underpass bridges will consist of five-span structures supported on a series of driven H-piles. We understand that regionally, BSNF typically uses 14x89 or 14x117 H-piles. These pile sizes should be suitable for foundation support at this site. Piles should be driven to a sufficient depth to achieve both axial (uplift and downward) and lateral resistance to support design loads. Pre-drilling or overdriving piles might be necessary if pile refusal on cobbles or boulders is encountered at penetration depths shallower than requirements to achieve minimum capacities, or if construction sequencing as previously described results in a reduction in pile resistance between driving and final support. If pre-drilling is required, we recommend the pre-drilled hole be about 2 inches larger in diameter than the maximum dimension of the pile. The pre-drilled hole should be backfilled with pea gravel or material meeting criteria for Coarse Aggregate for Concrete, Grading No. 7 per Section 9-03.1(4)C of the WSDOT Standard Specifications. These of similar BNSF standard specifications for pilot hole installation also may be used. Given the anticipated difficult driving conditions, we recommend using H-piles with sufficient cross-sectional areas and section modulus values to withstand driving stresses. To that end, we recommend specifying piles with yield strength of at least 50 kips per square inch (ksi).

We recommend high strength steel tip protection such as APF 77600-B, VB-300P, or approved equal should be used for piles at this site because of the potential for pile damage from driving through cobbles and boulders. Pile splicing should be anticipated for this project. Splices should be specified that allow for full development of the pile axial and bending strength and stiffness.

4.6.2. Axial Resistance

We estimated axial side resistance and end bearing (tip) resistance of 14-inch H-piles using static pile capacity methods. Pile resistance was estimated assuming an unplugged condition, as this condition could likely occur during driving.

Construction sequencing also will impact the final design criteria for piles. For example, if construction sequencing consists of partially excavating to about Elevation 1,985+/- (approximate top of pile/bottom of pile cap elevation), then driving all of the piles for each abutment and pier, constructing the superstructure, then excavating about 15 to 18 feet around interior piers to finished grade below the bridge, this will result in a reduction in post-driving axial resistance of the piles supporting interior piers. Excavation will have a two-fold effect on axial resistance: (1) removal of soil directly against the piles and corresponding elimination of skin friction; and (2) reduction of overburden pressure which will reduce the lateral pressure and skin friction on the remainder of the pile below finished grade. Therefore, for this scenario, piles supporting interior piers will have to be designed to account for the additional capacity that will be present during driving, and then subsequently removed during excavation.

Graphs of the estimated axial resistance for piles are presented in Appendix C and are described below:

- Figure C-1 – Static axial pile resistance plots for abutment piles.
- Figure C-2 – Static axial pile resistance plots for piles supporting interior piers.
- Figure C-3 – Additional axial resistance that should be accounted for during driving of interior pier piles that will no longer be available after excavation to finished grade for the scenario described above where interior pier piles are driven from near Elevation 1,985+/- and excavation occurs later to finished grade.

The pile resistance curves are based on the nominal (unfactored) axial resistance. A safety factor of 2.5 based on direction from BNSF should be applied to the graphs when estimating pile lengths. We recommend that the maximum nominal (unfactored) axial resistance not exceed 600 kips per pile after excavation (see Figure C-3).

Pile response during driving of low-displacement H-piles can vary considerably compared to axial resistance estimated from static analyses. In some cases, piles driven in rounded gravel associated with fluvial deposits can "run" during driving, resulting in longer pile embedment lengths than estimated. Additionally, use of driving shoes that are larger than the pile dimensions can impact the pile/soil interaction along the pile shaft during driving, which can reduce the skin friction during driving. If piles exhibit "running" behavior during driving through the upper gravel layers, we anticipate piles will achieve design axial capacities within the lower hard silt and clay layer.

In other cases, piles can plug during driving, resulting is a significant increase in capacity, and potential overdriving to reach minimum embedment depths.

Finally, piles could potentially encounter refusal on cobbles or boulders at elevations less than estimate or required for minimum penetration criteria.

Actual pile capacity should be determined in the field during driving based on bearing capacity curves developed using wave equation procedures, results of dynamic testing of test piles, or other suitable

dynamic pile capacity formulas. Given the variabilities with driving H-piles in granular deposits, we recommend that test piles be driven as described in a following section of this report.

We estimate that settlement of piles should occur relatively quickly, as load is applied, and should be less than 1 inch. Based on the results of our subsurface explorations, notably the relative density of the gravel deposits and stiffness of the underlying hard silt and clay, we anticipate long-term settlement will be negligible. We also anticipate that down-drag loads will not be a factor for pile design, and that downward axial group capacities can be estimated by summing the capacities of the individual piles.

4.6.3. Lateral Pile Capacity

Lateral loads can be resisted by lateral soil pressures on the vertical piles, the lateral component of battered piles, and by the passive soil pressures on the pile cap. Pile response of vertical piles to lateral loading can be estimated through P-y soil-structure interaction methods using the computer software program LPile. Our recommended parameters for use in LPile are presented in Table 2.

TABLE 2. SOIL INPUT PARAMETERS FOR LPILE ANALYSIS

Soil Unit	LPILE Type	Elevation (ft)	Effective Unit Weight (pcf)	Friction Angle (degrees)	Cohesion (ksf)	K (pci)	Strain Factor (E_{50})
Flood Gravel	Sand (Reese)	1,985 – 1,920	130	35	-	175	-
Flood Gravel	Sand (Reese)	1,920 -1,900	70[1]	32	-	50	-
Hard Silt and Clay	Stiff Clay w/o Free Water	Below 1,900	55[1]	-	5,000	-	0.004

Notes:

[1]Unit weight corrected for soil conditions below the groundwater table.

pcf = pounds per cubic foot; pci = pounds per cubic inch; ksf = kips per square foot

4.6.4. Group Reduction Factors

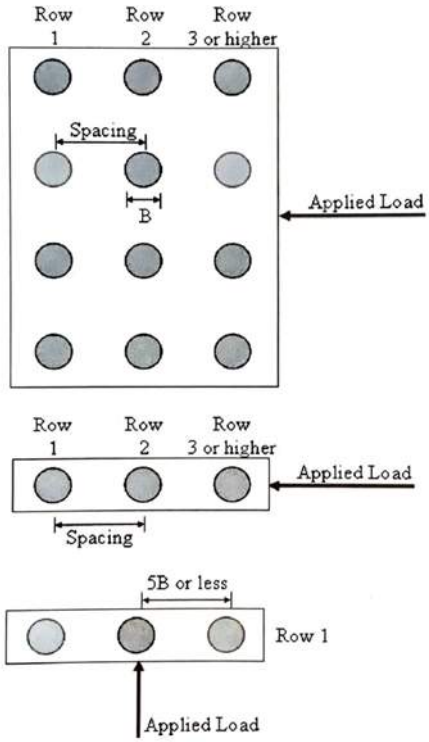
The effect of group interaction should be considered when evaluating pile group horizontal movement. When the P-y method of analysis is used, the values of P should be multiplied by P-multiplier values P_m, to account for the group effects. We recommend using P-multipliers as presented in 10.7.2.4-1 of the 2020 AASHTO Load and Resistance Factor Design (LRFD) Bridge Design Specifications, and as summarized in Table 3.

TABLE 3. RECOMMENDED LATERAL CAPACITY REDUCTION FACTORS PER 2020 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

Pile Spacing (c-c) in the direction of the loading	Design P-multiplier, P_m		
	Row 1	Row 2	Row 3 and higher
3B	0.8	0.4	0.3
5B	1.0	0.85	0.7

Linear interpolation may be used for group reduction factors when pile spacing is between the spacing

shown in the table above. The picture below is excerpted from the AASHTO LRFD *Bridge Design Manual* and provides additional clarification on orientation of lateral loads relative to use of p-multipliers.



Definition of Loading Direction and Spacing for Pile Groups (AASHTO LRFD Bridge Design Manual, 2020).

4.6.5. Preliminary Drivability Analyses

The Contractor should be responsible for the selection of the appropriate pile driving hammer. BNSF typical practice is for piles to be driven with a single-acting diesel hammer with a piston that weighs between 3,500 and 6,000 pounds, and a minimum rated energy of at least 30,000 foot-pounds.

Based on our experience, for piles with an allowable capacity of 300 kips, we recommend a hammer with a rated energy between 50,000 to 75,000 foot-pounds be used in order to achieve bearing resistance without exceeding allowable driving stresses. Additional adjustments to the nominal resistance criteria might be required depending on structural capacity. Minimum hammer energies should be evaluated after final foundation design is completed and design pile capacities are determined. These recommendations are provided for planning and cost estimating purposes only. The Contractor should ultimately be responsible for selecting the appropriate pile driving hammer to achieve the design depths without overstressing the piles.

4.6.6. Test Pile Program

We recommend consideration be given to conducting a test pile program in accordance with Chapter 9, Section 4.3.8 of the AREMA *Design Manual*. This includes dynamic testing using a pile driving analyzer (PDA) on at least one test pile, to develop pile driving criteria and confirm pile capacity. Case Pile Wave Analysis Program (CAPWAP) analysis also could be completed on the test pile at approximately the depth

where the Case Method indicates that the required nominal pile capacity has been achieved during pile driving. We recommend conducting an additional CAPWAP analysis at the end of initial driving. Additional CAPWAP analysis may be needed if the test pile capacity decreases after achieving the design capacity. Successful test piles may be used as production piles, provided the piles meet the final pile driving criteria. The pile installation contractor should conduct the dynamic testing and CAPWAP analyses, and provide the results to BSNF, HDR and GeoEngineers for review. Final driving criteria should be established by HDR or can be established by GeoEngineers, upon request. A test pile program also aids in developing more accurate estimates of total piling quantities. If BNSF elects not to conduct a test pile program, they should anticipate there is a greater potential for differences between estimated and actual piling quantities.

4.6.7. Pile Driving Induced Ground Vibrations, Monitoring and Settlement

Driving piles will induce ground vibrations. The magnitude of ground vibration on the existing rail line during pile driving for the first bridge, and on the first bridge during pile driving for the second bridge will depend, in part, on the distance between the rail line/bridge and pile driving activities, and the impact energy delivered from the impact hammer. We used simplified methods provided by the California Department of Transportation to estimate potential peak particle velocities (PPV) on the existing rail lines from pile driving. Assuming a maximum hammer energy of 75,000 foot-pounds, and a lateral distance of 30 feet from pile driving to the nearest vibration-sensitive structure, we estimate the PPV on site structures caused by pile driving should be less than about 1 inch per second (in/sec). This value is less than the recommended PPV of 2 in/sec provided by AASHTO for bridge structures. Therefore, we anticipate that vibrations caused by impact pile driving should be less than maximum allowable criteria. We should be contacted to evaluate if vibrations from other potential sources, such as vibratory hammers or large construction equipment could produce unacceptable vibrations on site structures.

Based on the medium dense to very dense nature of the flood gravels underlying the site and correspondingly high shear modulus values, we estimate that ground settlement below the existing railroad tracks caused by pile driving-induced vibrations should be negligible. However, we recommend a settlement monitoring program be specified and implemented during pile driving to monitor and record the top of rail elevations and track alignment for the duration of pile driving activities.

Horizontal or vertical displacements exceeding ¼ inch must be immediately reported to the Engineer and the railroad. All work on the project must stop and the Contractor must submit a corrective action plan to the Railroad for review and approval prior to implementation of the plan.

4.7. Bridge Abutments and Pile Caps

4.7.1. Lateral Resistance

The soil pressure available to resist lateral loads applied to proposed abutment and pile cap structures supported on driven piles is a function of the passive resistance which can develop on the face of foundations and wall elements as those foundations and elements move horizontally into the soil. For such structures, allowable lateral resistance may be computed using the parameters provided in Table 4.

We recommend active earth pressure coefficients be used for walls that are free to rotate or translate at least 0.001H (where H is the height of the abutment wall) under static conditions At-rest static earth pressures should be used for abutment wall design for walls that are restrained from movement.

Recommended lateral earth pressure values for static and seismic conditions are summarized in Table 4. Lateral earth pressures have been provided for the 100-, 475- and 2,475-year return period seismic events.

TABLE 4. RECOMMENDED BRIDGE ABUTMENT AT-REST LATERAL EARTH PRESSURE VALUES AND SOIL PARAMETERS

Parameter		Value[1] Horizontal Backslope or Fore slope
Soil Type		Gravel Backfill
Retained Soil Unit Weight (γ_1)		130 pcf
Retained Soil Friction Angle ($\emptyset_1$)		36°
Active Earth Pressure Coefficient (Ka) Equivalent Fluid Density (pcf)		0.26 34
At-Rest Earth Pressure Coefficient (Ko) Equivalent Fluid Density (pcf)		0.41 54
Passive Earth Pressure Coefficient (Kp) Equivalent Fluid Density (pcf)		3.85 500
Seismic Surcharge Earth Pressure Coefficient (Ke)	100-yr (K_h = 0.03g)[3]	0.02
	475-yr (K_h = 0.062g)[3]	0.03
	2475-yr Active (K_h = 0.079g)[2]	0.05
	2475-yr At Rest (K_h = 0.157g)[3]	0.10

Notes:

[1]GeoEngineers should be consulted to revise lateral earth pressure coefficient and equivalent fluid density values if back-slopes or fore slopes with different slope inclinations are planned for bridge abutments.

[2]Based on condition that wall is allowed to move or translate during design seismic event. Active and passive seismic surcharge values are based on ½ the peak ground acceleration.

[3]Based on condition that wall is not allowed to move or translate during design seismic event.

At-rest seismic surcharge values are based on the full site-adjusted peak ground acceleration (PGA) values. Total at-rest seismic pressure is the sum of the at-rest pressure and the seismic surcharge pressures.

Note that seismic surcharge pressures included in Table 4 are additive to the static earth pressures. For seismic design, the seismic surcharge pressure may be estimated by multiplying the surcharge pressure coefficient by the unit weight of the soil and modeling the surcharge pressure as a triangular pressure distribution. For the 100- and 475-year events, the seismic surcharge pressure coefficient was estimated using at-rest conditions, based on the assumption that insufficient movement at these relatively low accelerations would induce sufficient movement to generate active conditions.

The passive pressure resistance should not be considered effective in the upper 2 feet of the subsurface soil profile. We recommend passive resistance not be used unless lateral displacement sufficient to mobilize passive resistance can be tolerated. A lateral deflection of approximately 0.02H (where H is the depth to the bottom of the embedded foundation element) will be required to mobilize full passive resistance (safety factor of 1.0). We recommend using a safety factor of 2 for passive resistance. Lateral movement of about 0.01H should be required to mobilize 50 percent of full passive resistance (i.e., safety factor of 2).

The ultimate (unfactored) equivalent fluid densities provided in Table 4 are for properly drained and compacted backfill and do not include hydrostatic pressures that can develop if groundwater or surface water accumulates behind the retaining structures.

4.8. Retaining Walls

4.8.1. Cast-in-Place (CIP) Reinforced Concrete Wall

As mentioned previously, the conceptual retaining wall located along the east side of the proposed Pines Road alignment, south of the underpass crossing is conceptually envisioned as a conventional cast-in-place Additionally, other short (4- to 5-foot-tall) CIP walls could be required at other locations along the alignment. In our opinion, site soil meets minimum bearing capacity, settlement and sliding criteria for use of WSDOT Standard Plan CIP walls (D-10.10 through D10.45), and therefore standard plan walls may be used for this project. This is provided the walls are founded on properly prepared flood gravel deposits, or on properly compacted structural fill. As indicated in section 4.9.1 of this report, the effective peak ground acceleration for this site is less than 0.2g.

Site-specific design parameters for a conventional CIP wall are presented below.

4.8.1.1. Bearing Resistance and Settlement

Foundation grade should consist of medium dense to very dense lower gravel. Bearing resistance was estimated using procedures outlined in Section 10.6.3.1.2 of the American Association of State Highway and Transportation Officials (AASHTO) LRFD Bridge Design Specifications. Settlement was estimated using the elastic half-space method as outlined in Section 10.6.2.4 of the AASHTO LRFD Bridge Design Specifications. Table 5 below provides bearing resistance values versus effective footing width for the proposed Retaining Wall. Footing grade should be at least 2 feet below finished grade for frost protection.

TABLE 5. CIP WALL BEARING RESISTANCE VALUES

Effective Footing Width (ft)	Unfactored Bearing Resistance (ksf)	Extreme Event Resistance[1] (ksf)	Strength Bearing Resistance[2] (ksf)	Service Limit State Resistance (1" Settlement) (ksf)
2	6.1	4.9	3.4	6.1
4	12.1	9.7	6.6	12.1
6	17.8	14.3	9.8	17.8
8	23.4	18.7	12.8	15.2
10	28.7	23.0	15.8	13.2
12	33.8	27.1	18.6	11.7
14	38.8	31.0	21.3	10.6
16	43.5	34.8	23.9	9.7
18	48.1	38.5	26.4	9.0
20	52.4	41.9	28.8	8.4

Notes:

[1]A resistance factor of 0.8 was used for the extreme event limit state for seismic loading per Section 11.5.8 of the AASHTO LRFD Bridge Design Specifications.

[2]A resistance factor of 0.55 was use for strength limit state per Table 11.5.7-1 of the AASHTO LRFD *Bridge Design Manual*.

Sizing retaining wall footings for bearing resistance should be evaluated in accordance with Section 11.6.3.2 of t the AASHTO *LRFD Bridge Design Specifications*. For footings on soil, this involves calculating the bearing stress assuming a uniformly distributed pressure over the effective base area of the footing.

Settlement of footings bearing on properly prepared soil should occur rapidly, essentially as loads are applied. Loose or disturbed soil not removed or properly recompacted from foundation excavations could result in larger settlements than estimated. As indicated in Table 5, bearing pressures for the service limit state are based on 1 inch of settlement. If design service limit state bearing pressures are less than those shown in Table 5, the magnitude of total settlement should be correspondingly smaller.

4.8.1.2. Lateral Resistance

Lateral loads may be resisted by friction at the base of the footings. We recommend a nominal (unfactored) coefficient of sliding of 0.70 be used for design. Per Table 11.5.7-1, a resistance factor of 1.0 should be used for sliding resistance for semi-gravity CIP retaining walls.

It also may be possible to utilize passive resistance against the footing edges; although we recommend ignoring the upper 2 feet of embedment when estimating passive resistance. Additionally, we recommend passive resistance not be used unless lateral displacement sufficient to mobilize passive resistance can be tolerated. A lateral deflection of approximately 0.02H (where H is the depth to the bottom of the embedded foundation element) will be required to mobilize full passive resistance (resistance factor of 1.0). We recommend using a resistance factor of 0.5 of passive resistance. Lateral movement of about 0.01H will be required to mobilize 50 percent of passive resistance (i.e., strength limit state resistance factor of 0.5). Passive earth pressure parameters are presented in Table 6.

4.8.1.3. Lateral Earth Pressures

We recommend active earth pressure coefficients be used for walls that are free to rotate or translate. If lateral wall movement will be less than about 0.001H (where H is the height of the retaining wall) under static conditions, then at-rest static earth pressures should be used. Recommended lateral earth pressure values for static and seismic conditions are summarized below in Tables 6. These values are based on the condition that wall backfill meets criteria presented in Section 4.2.4 of this report and is compacted in accordance with Section 4.2.5 of this report.

TABLE 6. CIP RETAINING WALL LATERAL EARTH PRESSURES

Parameter	Value	
	Horizontal Backslope	2H:1V Pressure from Uphill Side
Backfill Type	Structural fill (Gravel Backfill for Walls	
Backfill Unit Weight (γ)	130 pcf	
Backfill Soil Friction Angle (Ø)	36°	
Active-Rest Earth Pressure Coefficient (Ka) Equivalent Fluid Density (pcf)	0.26 34	0.37 48
At-Rest Earth Pressure Coefficient (Ko) Equivalent Fluid Density (pcf)	0.41 54	0.60 78
Passive Earth Pressure Coefficient (Kp) Equivalent Fluid Density (pcf)[1]	3.85 500	NA NA

Parameter	Value	
	Horizontal Backslope	2H:1V Pressure from Uphill Side
Seismic Earth Pressure Coefficient (Kae) (Active Condition)	0.31	0.44
Seismic Passive Earth Pressure Coefficient (Kpe)	6.26	NA

Notes: [1]Based on level slope in front of wall.

Seismic earth pressures are based on a k_h value of one-half the site-adjusted peak ground acceleration and the condition that retaining walls can deflect at least 1 to 2 inches during a design seismic event. In accordance with the latest edition of the AASHTO *LRFD Bridge Design Specifications*, the combined effect of seismic and static lateral earth pressures can be calculated using a triangular earth pressure distribution. The effective equivalent fluid density can be calculated using the seismic earth pressure coefficient multiplied by the unit weight of the soil. The resultant force is applied at a point equal to H/3 above the bottom of the wall. The seismic earth pressure coefficients presented in Table 6 include both static and seismic portions. Therefore, static earth pressure should not be included separately when analyzing seismic conditions.

Surcharge loads are additive to the lateral earth pressure. Per Section 15-4.9 of the WSDOT GDM, a vertical live load surcharge pressure of 250 pounds per square foot (psf) should be included for walls with a backslope behind the wall of 4H:1V or flatter. The lateral earth pressure for the surcharge load may be estimated by multiplying the surcharge pressure by the applicable lateral earth pressure coefficient presented in Table 6.

4.8.1.4. Drainage

Drainage should be provided in accordance with Standard Plan D-4. The foundation drain should be daylighted to a suitable discharge point.

4.8.2. Cantilevered and Anchored Soldier Pile Walls

A permanent cantilevered or anchored (tied-back) soldier pile wall also could be a feasible wall alternative for top-down wall construction. Maximum wall heights for cantilevered walls typically are in the range of about 12 to 15 feet, assuming level ground conditions behind the wall. Depending on final design and site grading, anchors (tie-backs) might be required. Anchors require installation through a no-load (active earth pressure) zone behind walls. Additionally, bond zone lengths in the range of 15 to 30 feet are typically required to develop sufficient factored pullout capacity. Note that WSDOT Standard Specifications call for a minimum bond zone length of 15 feet. Depending on the final wall layout, there might not be sufficient lateral distance between the wall face and ROW to accommodate anchors. Therefore, permanent easements might be required for anchors.

Solider piles for permanent walls should be set in pre-drilled holes. The pre-drilled holes should be filled with controlled density fill (CDF) or lean mix concrete. Site soil classifies as Type 1 per section 6-16.3(6)A of the WSDOT Standard Specifications.

4.8.2.1. Lateral Earth Pressures

Figure 3.1.5.6-1 in the AASHTO LRFD Bridge Design Specifications may be used to determine unfactored lateral earth pressures on a cantilevered soldier pile wall. A copy of the figure is presented below.

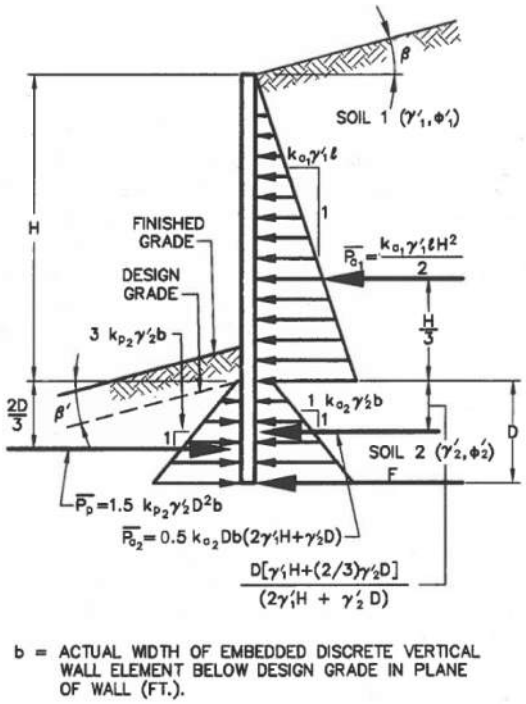


Figure 3.11.5.6-4. Earth Pressure Diagram - Cantilevered Soldier Pile Wall in Granular Soil (AASHTO LRFD Bridge Design Specifications, 2020)

Figure 3.11.5.7.1-1 in the AASHTO LRFD Bridge Design Specifications may be used to determine lateral earth pressures for a soldier pile wall with tiebacks. The no load zone for anchors should be determined based on Figure 11.9.1-1 of the AASHTO LRFD Bridge Design Specifications. The angle to horizontal for the no load zone should be 62 degrees.

Pa for walls with a single anchor can be calculated using the following equation:

$$Pa = K_a \gamma H$$

Pa for walls with multiple rows of anchors can be calculated using the following equation:

$$Pa = \frac{k_a \gamma H^2}{1.5H - 0.5H_1 - 0.5H_{n+1}}$$

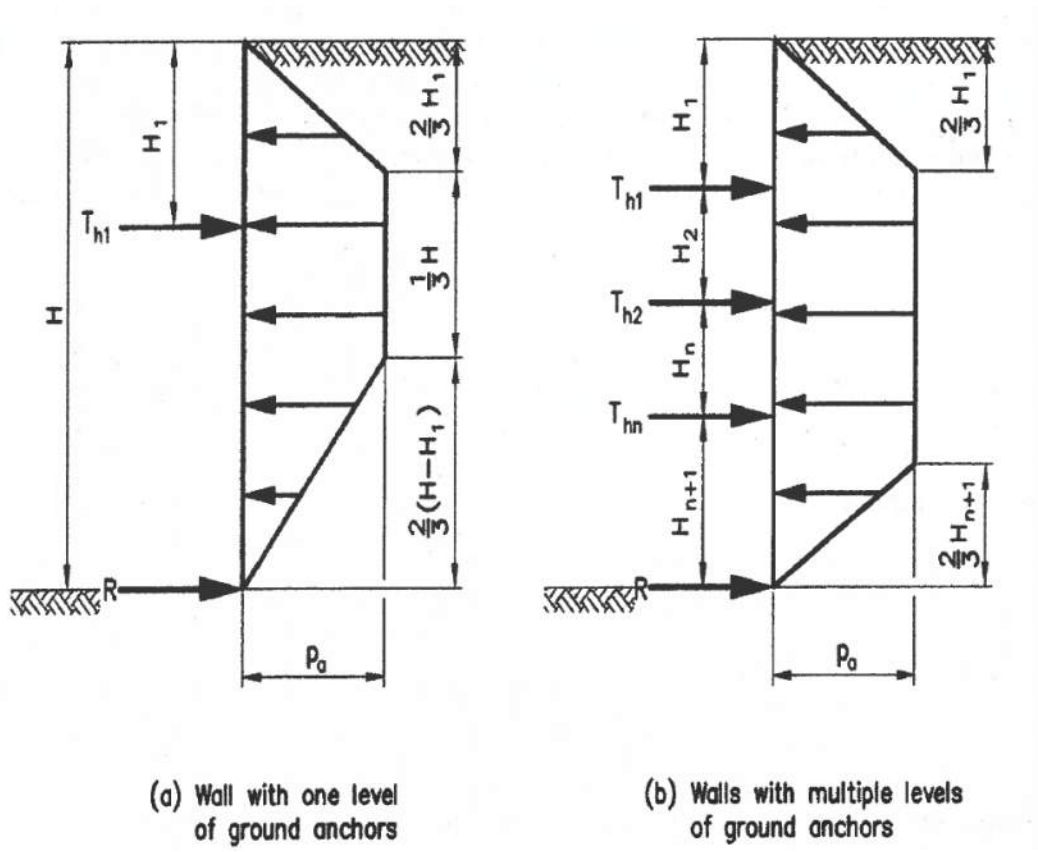


Figure 3.11.5.7.1-1 Apparent Earth Pressure Diagrams for Anchored Walls in Cohesionless Soil (AASHTO LRFD Bridge Design Specifications, 2020)

A summary of unit weight and lateral earth pressures for design of soldier pile walls is presented below in Table 7.

TABLE 7. CANTILEVERED SOLDIER PILE AND ANCHORED WALL LATERAL EARTH PRESSURES

Parameter	Value[1]	
	Horizontal Backslope	2H:1V Pressure from Uphill Side
Soil Type	Natural Flood Gravel Deposit	
Retained Soil Unit Weight (γ_1)	130 pcf	
Retained Soil Friction Angle ($\emptyset_1$)	35°	
Embedded Soil Unit Weight (γ_2)	130 pcf	
Embedded Soil Friction Angle ($\emptyset_2$)	35 °	
Active-Rest Earth Pressure Coefficient (Ka)[2] Equivalent Fluid Density (pcf)	0.27 35	0.39 51
At-Rest Earth Pressure Coefficient (Ko) Equivalent Fluid Density (pcf)	0.43 55	0.62 80
Passive Earth Pressure Coefficient (Kp) Equivalent Fluid Density (pcf)	3.69 480	NA NA

Parameter	Value[1]	
	Horizontal Backslope	2H:1V Pressure from Uphill Side
Seismic Earth Pressure Coefficient (Kae) (Active Condition)	0.30	0.47
Seismic Earth Pressure Coefficient (Kae) (At-rest Condition)	0.33	0.58
Seismic Passive Earth Pressure Coefficient (Kpe)	6.46	NA

Seismic earth pressure coefficients are provided for both the active condition and at-rest condition. We suggest that active seismic earth pressure coefficients be used for cantilevered soldier pile walls, as required deflections in the range of about 1 to 2 inches can be expected during the design seismic event. Preliminarily, we recommend at-rest seismic earth pressures be used for anchored walls, as wall deflections will be partially restrained from movement. More detailed analyses using soil-structure interaction methods can be used, if necessary, to evaluate lateral deflections and resulting earth pressures during the design seismic event as the wall design progresses.

A 250 psf vertical live load surcharge should be included behind walls where the backslope is 4H:1V or flatter to account for possible construction loads or vehicle loads. We should be contacted if specific heavy surcharge loads not accounted for are anticipated behind the retaining walls.

Passive resistance on the buried portion of soldier piles can be estimated assuming a nominal passive earth pressure of 480 pcf. Passive resistance can be assumed to act over a distance of 3 pile diameters. A resistance factor of 0.75 should be used when estimating factored passive resistance.

4.8.2.2. Vertical Resistance of Soldier Piles

For soldier piles set in pre-drilled holes, we estimated the vertical resistance of piles using procedures outlined in Section 10.8.3.5.2 of the AASHTO LRFD Bridge Design Specifications. Table 8 presents nominal side resistance for soldier piles set and grouted in pre-drilled holes.

TABLE 8. AXIAL SIDE RESISTANCE FOR SOLDIER PILES

Embedment Depth (ft)	Nominal Side Resistance (ksf)
0-5	1.0
5-10	1.3
10-15	1.5

We recommend using a resistance factor of 0.55 for side resistance.

End bearing may be estimated using a nominal resistance of 36 ksf. This value should only be applied to the cross-sectional area of the pile, unless the hole is backfilled with structural concrete, in which case the diameters of the drilled hole may be used in estimating end bearing resistance. We recommend using a resistance factor of 0.50 for end bearing.

4.8.2.3. Anchor Capacity and Testing

Based on subsurface conditions encountered in our explorations, we estimate the nominal anchor bond stress (τ_n) for a gravity-grouted anchor in the flood gravel unit is about 2.5 ksf, and about 15 ksf for pressure-grouted anchors. Based on an assumed anchor bond zone diameter of 5 inches, our estimates of preliminary anchor pullout capacity are presented in Table 9. Note that the values presented in Table 9 are solely for estimating the feasible anchor resistance to aid the structural engineer in wall feasibility assessment, and development of anchor layout and factored design loads. Anchors should be designed by the contractor based on the target factored anchor loads provided in the plans and contract documents. A resistance factor of 1.0 may be used for each production anchor that has been proof tested to at least 1.0 times the factored load.

TABLE 9. ESTIMATED ANCHOR RESISTANCE

Anchor Type	Nominal anchor bond stress (τ_n)[1] (ksf)	Resistance Factor[2]	Factored resistance (ksf)	Estimated Factored Resistance (k/ft)
Gravity-Grouted	2.5	0.65	1.6	2
Pressure-Grouted	10	0.65	6.5	8.5

Notes:

[1]Based on experience in similar soil and Table C11.9.4.2-2

[2]Based on Table 11.5.7-1

All production anchors should be proof tested in accordance with Section 6-17.3(8)C of the WSDOT Standard Specifications. Five percent (minimum of three) anchors should be performance tested in accordance with 6-17.3(8)B. In our opinion, given that site soil consists of medium dense to very dense gravel, long-term creep potential is negligible, and therefore verification tests are not required.

Corrosion protection should be provided for permanent ground anchors in accordance with Section 6 of the AASHTO LRFD Bridge Construction Specifications.

4.8.2.4. Wall Drainage

A composite drainage mat should be attached to the lagging prior to casting the permanent facing. The drainage mat should be hydraulically connected to a drainpipe and conveyed to a suitable discharge point.

4.8.3. Soil Nail Walls

A soil nail wall could be used as a top-down wall alternative. The benefits of a soil nail wall include elimination of the need for temporary shoring or excavation similar to a solder pile wall. Additionally, soil nails are typically shorter than soldier pile tie-back anchors, so a permanent easement might not be required. However, construction of a soil nail wall requires the soil to maintain a stable excavation face. Test pits excavated at the site generally experienced some sidewall caving. In our opinion, site soil has limited “stand-up time”, and tends to run or ravel when exposed along a near vertical cut face in an open excavation. Therefore, if a soil nail wall is selected, appropriate design and construction steps should be used to provide a stable temporary cut face. This could include:

- Pre-grouting near the proposed cut face with a low-strength grout before starting wall construction;

- Building the soil nail wall at a permeant inclination in the range of about 1H:1V to 1.25H:1V so that a temporary excavation face can be maintained; or
- Maintaining a soil berm along each wall lift, installing soil nails through the berm, and constructing the permanent wall face in short (10-foot-long) segments along each lift.

Soil nail walls should be designed in accordance with the AASHTO LRFD Bridge Design Specifications and Section 15.5-7 of the WSDOT *Geotechnical Design Manual*. This includes the following:

- Permanent nails should be installed in pre-drilled holes. Soil nails that are installed concurrently with drilling should not be used.
- Soil nail tendons should be number 6 bar or larger with a minimum length of at least 12 feet (final nail lengths should be determined as part of wall design).
- Soil nail spacing should generally be no less than 3 feet vertical and 3 feet horizontal. Maximum spacing could be increased to 6 feet depending on final design requirements.
- Soil nails may be arranged in a square row and column pattern or an offset diamond pattern.
- Soil nails in the top row should have at least 1 foot of soil cover over the top of the drilled hole.
- Soil nails should be inclined downward between about 10 degrees to 30 degrees. Horizontal nails should not be used.
- Each soil nail should be tested in accordance with WSDOT Standard Specifications as described above for solder pile tie-back anchors.
- Soil properties and nominal anchor bond stress values presented in Tables 7 and 9 may be used for soil nail wall design.

4.8.4. Retaining Wall Overall Stability

We conducted overall (global) stability analyses of conceptual retaining wall configurations for the conceptual wall located east of the northbound Pines Road alignment using the Slope/W computer program. Spencer's method was used to evaluate safety factors against potential slope instability. For our analyses, we considered two wall configurations. The first included a wall height of 15 feet, with a 17-foot-wide horizontal bench behind the wall to accommodate the pedestrian path, with a 2H:1V slope behind the bench to finished grade. We assume temporary shoring would be used for this scenario. For the second scenario, we assumed wall height of about 13 feet supporting a 2H:1V backslope up to finished grade.

For the CIP wall, we used wall toe and heel lengths corresponding with standard plan wall dimensions. For the soldier pile wall, we conservatively assumed a negligible pile embedment and no tie-back anchors.

For seismic analyses, we used a horizontal acceleration coefficient of 0.055g (one-half the peak ground acceleration) and a vertical acceleration coefficient of zero.

Our analyses indicate the safety factors for static and seismic conditions exceed minimum criteria for slope stability. Results are presented in Table 10. Graphical output is presented in Appendix D.

We did not specifically complete overall stability analyses for a soil nail wall. However, the overall stability should be at least that for the cantilevered soldier pile wall alternative.

TABLE 10. GLOBAL STABILITY ANALYSES SUMMARY

Wall Type	Scenario	Safety Factor (Static)	Safety Factor (Seismic)
CIP Semi-gravity	1 – 15-foot-tall wall, pedestrian path behind top of wall	1.89	1.74
	2 – 13-foot-tall wall supporting 2H:1V backslope	1.84	1.66
Solider Pile	1 – 15-foot-tall wall, pedestrian path behind top of wall	1.84	1.67
	2 – 13-foot-tall wall supporting 2H:1V backslope	1.60	1.48

Updated analyses should be completed after wall layouts have been finalized.

4.9. Design Earthquake Parameters

4.9.1. Ground Motion Parameters

Based on the results of our explorations, the site can be classified as a seismic Site Class C.

We reviewed seismic design coefficients using guidance from both Chapter 9 of the AREMA Design Manual (2019) and the WSDOT GDM. The proposed bridges will be designed using AREMA design criteria, while site retaining walls could be designed based on AASHTO and WSDOT design criteria. Table 11 below presents seismic design criteria based on AREMA criteria.

TABLE 11. AREMA SEISMIC DESIGN CRITERIA

Parameter	Return Period (Years)		
	100	475	2,475
PGA	0.03	0.055	0.145
(0.2-second) S_s	0.06	0.135	0.340
(1-second) S_1	0.02	0.045	0.095
F_{PGA}	1.2	1.2	1.2
F_a	1.2	1.2	1.2
F_v	1.7	1.7	1.7

Notes:

[1]Values were determined using figures 9-1-41through 9-1-9 in the 2019 AREMA Design Manual.

Note that AREMA design codes differ from WSDOT and AASHTO design codes in determining seismic design criteria. Table 12 presents seismic design criteria based on AASHTO/WSDOT criteria for design of retaining walls and other structures subject to AASHTO/WSDOT design criteria. AASHTO/WSDOT seismic parameters are based on a 7 percent probability of exceedance in 75 years (1,000-year return period) based on the WSDOT *Bridge Design Manual* using the WSDOT Bridgelink software program.

TABLE 12. AASHTO/WSDOT SEISMIC DESIGN PARAMETERS

Parameter	Value
PGA	0.085g
S_s	0.187g
S_1	0.057g
F_{PGA}	1.3
F_a	1.3
F_v	1.5
As	0.11g
S_{DS}	0.243g
S_{D1}	0.086g
Seismic Design Category	A

4.9.2. Liquefaction Potential

Liquefaction is a phenomenon where soils experience a rapid loss of internal strength as pore water pressures increase in response to strong ground shaking. The increased pore water pressure may temporarily meet or exceed soil overburden pressures to produce conditions that allow soil and water to flow, deform or erupt from the ground surface. Ground settlement, lateral spreading and/or sand boils may result from soil liquefaction. Structures supported on or within liquefied soils may suffer foundation settlement or lateral movement that can be damaging to the structure.

Given the relatively low to moderate peak ground acceleration at the site, medium dense to very dense gravel soil deposit and deep groundwater, liquefaction potential is very low in our opinion, and does not warrant specific design considerations.

4.9.3. Ground Rupture

We reviewed the United States Geological Survey (USGS 2014) online Quaternary Faults database. There are no mapped Quaternary faults near the project site.

Based on our observations and the site location with respect to the nearest known faults, it is our opinion the probability of damaging fault rupture on the site is low and does not warrant specific design considerations.

4.10. Sign and Luminaire Foundations

4.10.1. Design Parameters for Use with Standard Plans

Foundation recommendations are based on soil conditions observed in our borings and foundation design parameters outlined in the WSDOT GDM, Section 17.2.1. Where the surrounding ground surface is relatively level, we recommend using an allowable lateral bearing pressure of 2,500 psf for foundations supported by on-site flood-deposited gravel. For the proposed foundation located on Trent Avenue near the east end of the Spokane River Bridge, which will be supported by existing loose embankment fill, we recommend

using an allowable lateral bearing pressure of 1,200 psf. For luminaire foundations founded in embankment fill, a design allowable lateral bearing pressure of 2,000 psf may be used.

These allowable lateral bearing pressures are only valid for relatively flat conditions. If sloping ground is present, additional design considerations are required. For foundations placed on a slope or where the centerline of the foundation is less than 1B from the shoulder (where B is the width or diameter of the foundation), Standard Plan foundation depths should be increased in accordance with Section 17.2.1 of the WSDOT GDM and presented in Table 13.

TABLE 13. FOUNDATION DEPTH INCREASES FOR SLOPES

Maximum Slope Within 'B' of the Sign Pole Centerline	Foundation Depth Increase
3H:1V or flatter	No increase is required
2H:1V	0.5B
1.5H:1V	1.0B

Notes:
B = Sign pole foundation width.

Note that these sloping ground recommendations do not apply to luminaire foundations. For luminaires next to 2H:1V slopes, standard plan Type B foundations should be used in accordance with WSDOT Standard Plan J-28.30-03.

4.10.2. Special Design Cases

If special design is required for any sign structure, we should be contacted to provide design parameters for the specific structure compatible with the design procedure selected by the structural engineer.

4.11. Pavement Thickness Design

For reference, Empire Lane is classified as an Urban Major Collector by the City of Spokane Valley. The City's standard pavement section for collector and arterial streets consists of a minimum of 4 inches of HMA over a minimum of 6 inches of crushed surfacing base course.

We completed pavement thickness design using procedures and criteria outlined in the AASHTO Pavement Design Guide, and the City of Spokane Valley Street Standards (City Standards).

The following input parameters were used in our design:

- Design life of 20 years in accordance with City Standards.
- Traffic – Traffic counts for Empire Lane and Cement Road were provided by the City. Based on 2017 traffic counts, the average daily traffic (ADT) for Empire Lane was 1,100 vehicles per day with 13.9 percent trucks, and the ADT for Cement Road was 1,600 vehicles per day with 15.6 percent trucks. For our analyses, we used the traffic counts for Cement Road to design the Empire Lane extension, based on the assumption that most of the truck traffic will use the new Empire Lane extension than the existing Cement Road after construction of the new roundabout. We also assumed the ADT values are based on 2-way traffic. We assumed a 50/50 directional distribution for the traffic. We further assumed a growth rate of 3.5 percent based on City Standards. Detailed information regarding the type of truck traffic was not available. Therefore, we estimated equivalent single axle

loads for two scenarios. The first scenario was based on the assumption that the average load equivalency factor (LEF) for the truck traffic was 0.42 per truck (City standard for unclassified trucks). On this basis, we estimated the 20-year equivalent single axle loads (ESALs) to be 650,000. For the second scenario, we assumed the LEF for the truck traffic was 1.0 (typical of predominantly tractor trailer unit). On this basis, we estimated the 20-year ESALs to be about 1,500,000 ESALs.

- Subgrade – Results of DCP-1, conducted near the Cement/Empire intersection indicate the resilient modulus of the subgrade soil at the test location was about 15,000 psi. We also conducted laboratory R-value tests of surficial silty gravel soil collected from test pits TP-2 and TP-7, which should be representative of typical subgrade conditions along most of the proposed alignment. R-values for the two samples ranged from about 42 to 44. Correlations indicate the corresponding resilient modulus values of these samples are in the range of about 11,000 to 15,000 psi. For design, we used an average value of 12,500 psi for the subgrade soil based on the field and laboratory results. This value is consistent with other projects we have completed in the area and with similar soil.
- Reliability, R = 90 percent in accordance with City Standards.
- An overall standard deviation, S=0.45 in accordance with City Standards.
- Initial and terminal serviceability indexes of 4.2 and 2.25, respectively, in accordance with City Standards.
- A structural coefficient of 0.42 for new HMA, 0.14 for crushed surfacing base course (CSBC) and top course (CSTC) in accordance with City Standards.
- A drainage coefficient of 1.0 for HMA and CSBC in accordance with AASHTO guidelines and anticipated site conditions.

The results of our analyses are presented in Table 14.

TABLE 14. PAVEMENT THICKNESS DESIGN SUMMARY

Scenario	HMA (inches)	CSBC[1] (inches)
Lower Truck Factors (650,000 ESALs)	5	5
Higher Truck Factors (1,500,000 ESALs)	5.5	6

Notes

[1]The upper 2 inches may consist of CSTC to aid in final grading and leveling.

Results of our analyses indicate that using the higher LEF for trucks results in an additional ½ inch of HMA and 1 inch of base course. Given the lack of detailed information regarding truck types, we suggest using the thicker pavement section to provide additional pavement support in the event the proposed pavement will support more heavily loaded trucks.

HMA, CSBC and CSTC should meet criteria in the 2021 edition of the WSDOT Standard Specifications and City of Spokane Valley Standards.

The recommended pavement sections and associated design life (20 years) presented in this report are based on the condition that a maintenance program be part of the long-term care of the pavement. This could include such activities as periodic condition assessments, crack sealing, seal coating and possible future milling and inlaying to address surface distress.

4.12. Site Drainage

The following sections provide information on temporary drainage and stormwater considerations.

4.12.1. Temporary Drainage

Given the high permeability of the lower gravel unit underlying the site and depth to the regional groundwater table, dewatering of excavations should not be necessary.

Some local ponding of water from precipitation could occur in shallow excavations during construction. Site excavations should be provided with appropriate ditches and sumps to keep exposed areas dry.

4.12.2. Stormwater Considerations

We recommend that all surfaces be sloped to drain away from proposed structures. Pavement surfaces and open spaces should be sloped such that surface runoff is collected and routed to suitable discharge points.

Based on the results of our site exploration, laboratory testing and engineering analyses, it is our opinion that the site is suitable for infiltration of post-development stormwater. In our opinion, the potential for negative on-site or down-gradient impacts (such as surface flooding or creating groundwater mounding issues due to increased post-development infiltration) is very low. This opinion is based on the relatively high permeability of site soils and relatively deep groundwater table.

We anticipate portions of the site stormwater facilities will be designed in accordance with the WSDOT *Highway Runoff Manual* (HRM), while other portions might be designed in accordance with the *Spokane Regional Stormwater Manual* (SRSM). Infiltration facilities should be situated such that applicable setback and other site suitability criteria as outlined in these manuals are met. Typical stormwater facilities in the Spokane area consist of bio-infiltration swales sized to contain, treat and infiltrate the "first-flush" of stormwater from typical precipitation events, with overflow to deeper infiltration facilities (drywells, infiltration trenches, or other suitable infiltration systems) designed to infiltrate stormwater runoff from larger design storm events.

4.12.2.1. Hydraulic Conductivity Estimates

We estimated the hydraulic conductivity of site soils based on correlations with grain-size data as outlined in the WSDOT HRM and SRSM. The WSDOT HRM correlations are principally based on d_{10}, where d_{10} represents the grain-size of which 10 percent of the soil is finer and are based on commonly developed correlation equations. The SRSM correlations are based on the percent passing the No. 200 sieve and were developed by correlating hydraulic conductivity estimates from field pilot infiltration tests and full-scale drywell tests conducted throughout the Spokane area to percent fines of soil samples collected from the test locations. Results of our hydraulic conductivity estimates are presented in Table E-1 in Appendix E.

Our analyses indicate the hydraulic conductivity of the silty gravel is on the order of about 1.5×10^{-4} centimeters per second (cm/s), or about 0.2 inches per hour (in/hr). This is based on the WSDOT HRM correlations, as the SRSM correlations were not developed for soil containing significant silt.

For the lower gravel, the WSDOT HRM correlations result in an average hydraulic conductivity of about 4.6×10^{-2} cm/s, or about 65 in/hr. The SRSM correlations produce an average hydraulic conductivity of about 2×10^{-2} cm/s, or about 28 in/hr. While the results from the WSDOT correlations are slightly more

than double the results from the SRSM correlations, this actually produces relatively consistent results given the extremely wide range of hydraulic conductivity for natural soil deposits (which can typically range over many orders of magnitude). These values do not include any safety factors or correction factors, which should be applied based on the methods and procedures being used for design. We recommend using Table 4D-2 in the WSDOT HRM to reduce the final design infiltration rate based on anticipated long-term maintenance.

The boring and test pit logs located nearest proposed stormwater swales or ponds should be evaluated when determining which soil unit likely will be present at planned swale or pond bottom elevation. In general, excavations more than about 3 to 5 feet below existing site grade to establish proposed swale or pond bottoms likely will be situated within the lower gravel layer.

4.12.2.2. Treatment Capacity of Existing Soil and Use of Imported Topsoil

The hydraulic conductivity of the lower gravel soil exceeds the maximum soil infiltration rate of 3 in/hr as stipulated in the WSDOT HRM site suitability criteria (SSC 5). On this basis, pre-treatment will be required for infiltration facilities that are founded in the lower gravel unit.

Given the limited amount of on-site topsoil, we anticipate that imported topsoil will likely be required to provide treatment for bio-infiltration swales. Additionally, the silty gravel and lower gravel soils likely do not contain sufficient cation exchange capacity (CEC) or organic matter to meet treatment specifications. Imported topsoil should meet thickness, treatment and infiltration rate criteria as stipulated in the applicable design manuals. Careful consideration should be given to specifying an imported topsoil that will not result in pre-mature failure (plugging) of the swales. This can be accomplished by specifying a modified topsoil mix that contains less fines, and more organic matter to provide increased infiltrative capacity and sufficient ability to bind metals and organic pollutants.

The Washington State Department of Ecology (Ecology) has developed a specification for Bioretention Soil Mix that should satisfy treatment and infiltration rate criteria for topsoil.

4.12.2.3. Bio-infiltration Swales

The infiltration rate through bio-infiltration swales likely will be limited to that of the imported topsoil layer.

For bio-infiltration swales designed using the SRSM, there are two different sets of criteria for sizing swales depending on the fines content and corresponding permeability of the soil below the swale bottoms. Specifically, if the soil below the swales contains less than 12 percent fines and has an infiltration rate greater than 0.15 in/hr, equations for reduced swale sizes may be used. If the site soil underlying swale bottoms contains more than 12 percent fines, standard swale sizing equations should be used. Based on this, our recommendations for swale sizing based on SRSM criteria are presented below:

- Option 1 – size all swales using standard swale sizing equations (Equations 6-1b and 6-1d in the SRSM). In this case, silty gravel does not have to be removed from below swale bottoms if present at planned swale bottom elevation.
- Option 2 – size select swales using the equations for reduced swale sizes (Equations 6-1a and 6-1c in the SRSM). For swales designed using this option, swale bottoms should either be located within the lower gravel unit, or project plans should include provisions for overexcavation of the silty gravel, where present at swale subgrade elevations, to expose the lower gravel unit, and replacement with imported

or on-site or imported soil containing less than 12 percent fines to reestablish swale subgrade elevations.

The project civil engineer should select the option which best suits the project criteria from site constraint, grading and cost standpoint. Based on our explorations, excavation in the range of about 1 to 5 feet below current site grade would be required to expose the lower gravel unit.

For swales sized using WSDOT HRM procedures, the applicable equations contained in the HRM should be used. As stated above, the hydraulic conductivity of the treatment topsoil layer will govern infiltration through the swale bottom. Based on the relatively high hydraulic conductivity of the lower gravel unit and depth to the regional groundwater table, development of fully saturated (mounded) conditions should not occur. In our opinion, a hydraulic gradient of 1.0 may be used for design, in our opinion.

4.12.2.4. Drywells

We estimated the allowable outflow rates for drywells using both the SRSM and WSDOT HRM methods. Results are presented in Table E-1. The drywell outflow rates presented in Table E-1 for the WSDOT HRM method include a safety factor of 2. Based on the results of the correlations, we recommend using a design (allowable) outflow rate of 0.5 cfs for single-barrel drywells and a design (allowable) outflow rate of 0.9 cfs for double-barrel drywells.

These design outflow rates are based on the condition drywells are hydraulically connected to the lower gravel unit encountered in our explorations. In order to establish a suitable hydraulic connection, excavations for drywells should extend at least 2 feet into the lower gravel unit. If overexcavation is required to achieve this, the excavation should be backfilled with drain rock to re-establish planned drywell bottom elevation.

4.12.2.5. Design of Infiltration Facility for Undercrossing Sump Area

Stormwater plans include infiltrating runoff collected at the low point of the sag vertical curve on Pines, and routing the runoff to an infiltration facility located several hundred feet to the east. Our understanding of the planned stormwater infiltration facility is based on the drainage profile provided by HDR (Drainage Profile, Figure F-1 in Appendix F). Based on this drainage profile, we understand that stormwater will be conveyed to an inverted conical infiltration facility composed of washed rock. Stormwater will enter the infiltration facility through a conveyance pipe with an invert elevation of approximately 1,960 feet North American Vertical Datum of 1988 (NAVD 88). At this elevation, the conical infiltration facility has a radius of approximately 12½ feet. The facility has approximate radii of 30½ feet at the top, which occurs at an elevation of approximately 1,972 feet NAVD 88, and 4 feet at the bottom, which occurs at an elevation of approximately 1,954 feet NAVD 88.

We also reviewed the following documents as a basis for our infiltration analyses for this facility:

- A drainage profile, included as Attachment A, of the document provided by HDR entitled *SR290/SR27 PINES RD BNSF GRADE SEPARATION, SPOKANE COUNTY – MP 8.43*, dated November 9, 2022.
- StormShed3G output provided by HDR *entitled LPOOLCOMPUTE (Pines Vault Lvl Pool) SUMMARY using Puls, 24 hr Storm Event*, dated November 22, 2022.
- Runoff hydrograph data for the 100-year, 24-hour design storm provided by HDR entitled *Pines Rd-BNSF Grade Separation Type II 100 yr 24hr inflow hydrograph*, dated November 22, 2022.

Runoff Hydrograph

The runoff hydrograph provided by HDR is summarized in Figure F-2. Runoff to the infiltration facility in cubic feet per second (cfs), is presented as a function of time. Runoff rates vary from a minimum of 0.000395 cfs, which occurs during the initial 100 minutes, to a maximum of 2.95 cfs, which occurs at an elapsed time of 720 minutes.

Groundwater Mounding Analyses

Because of the unusual geometry of the planned infiltration facility, GeoEngineers simulated infiltration using two modeling codes.

1. Simulation of stormwater infiltration was initially conducted using the numerical code MODRET (Computer MODel to Design RETention Ponds), which is based on Andreyev and Wiseman (1989). MODRET uses a modified Green and Ampt infiltration equation (Green and Ampt 1911) to calculate unsaturated infiltration and a modified MODFLOW model, originally developed by the US Geological Survey (McDonald and Harbaugh 1984), to calculate saturated infiltration and estimate groundwater mounding effects. Design storm infiltration at the project site was simulated using the platform MODRET, Version 7.0.
2. Stormwater infiltration was also simulated using the SEEP/W groundwater flow and seepage modeling software, which is part of the GeoStudio 2020 suite of specialist geotechnical software programs published by Geo-Slope Inc. The modeling software can represent unsaturated (above the groundwater table) and saturated groundwater flow (below the groundwater table) for specified material and boundary conditions.

Simulation using MODRET

MODRET Model assumptions are summarized below. Within MODRET, GeoEngineers modeled the planned stormwater infiltration facility as a retention pond with the following characteristics:

- A design high-water elevation of 1,972 feet NAVD 88, which is equivalent to the planned top of the infiltration facility. At this elevation, the infiltration facility has an area of approximately 0.067 acres.
- A design low-water elevation (and pond bottom) of 1954 feet NAVD 88, which is equivalent to the planned bottom of the infiltration facility. At this elevation, the infiltration facility has an area of approximately 0.0012 acres.
- A pond volume of 22,124 cubic feet.
- A basin length to width ratio of 1:1.

Hydrogeologic conditions underpinning the analysis were estimated based on information developed during GeoEngineers geotechnical engineering evaluation. Model input parameters included the following inputs:

- The effective base of the lower gravel aquifer was assumed to occur at an elevation of 1,902 feet NAVD 88, based on the top of glaciolacustrine clay and silt in project borings.
- A horizontal hydraulic conductivity of 130 feet per day (ft/day), based on the geometric mean of the analyses for the lower gravel unit.

- A vertical unsaturated hydraulic conductivity of 26 ft/day, based on the assumed horizontal hydraulic conductivity and a correction factor of 0.2.
- Effective unsaturated storage coefficient of 0.3 and effective saturated storage coefficient of 0.3, based on typical values provided by Driscoll (1986) and Andryev and Wiseman (1989).
- Average effective pond storage coefficient equal to 1.
- An initial groundwater elevation of 1,917 feet, based on soil moisture observations during drilling of project borings.
- A baseline (pre-hydrograph) aquifer thickness of 15 feet.

We distributed stormwater runoff from the runoff hydrograph to the planned infiltration pond by creating a hydrograph in MODRET with volumetric runoff occurring within 20 time steps, with increased time step density during the peak runoff period between an elapsed time of approximately 11 ½ to 12 ½ hours. A graphic produced in MODRET that summarizes the runoff hydrograph is shown in Simulated MODRET Hydrograph, Figure F-3.

MODRET Results

Model results are summarized by the following:

- A total of 11,137 cubic feet of runoff is directed to the infiltration facility over a 24-hour period, as shown in Simulated MODRET Runoff, Figure F-4.
- The runoff is infiltrated through the infiltration facility, as shown in Simulated MODRET Infiltration, Figure F-5.
- Storage within the infiltration facility is shown in Simulated MODRET Infiltration Facility Water Level, Figure F-6. The water level within the infiltration facility is projected to peak at approximately 1961.3 feet, which occurs at an elapsed time of approximately 13 hours. The water level declines to the base of the infiltration facility before an elapsed time of approximately 18 hours.

Simulation using SEEP/W

Our SEEP/W analysis was conducted by developing a seepage profile that represents an east-west trending, vertical cross section that bisects the planned infiltration facility as shown in SEEP/W Model Domain, Figure F-7. The model additionally includes the following features:

- Each soil layer is represented by a computational finite element mesh. The mesh is assigned material properties and boundary conditions that allow the flow model to be solved mathematically.
- The model domain is 800 feet long and extends approximately 370 feet east and 370 feet west of the proposed infiltration facility.
- The effective base of the lower gravel aquifer was assumed to occur at an elevation of 1,902 feet NAVD 88, based on the top of glaciolacustrine clay/silt in project borings.
- The initial groundwater table in the lower gravel is represented in the model by specifying constant-head boundary conditions applied at the vertical sides of the model domain. We assigned a seasonal high groundwater elevation ranging from 1916.4 feet NAVD 88 on the west model boundary and

1917.6 feet NAVD 88 on the east model boundary, resulting in a model gradient of 0.0015 feet per foot.

- The base of the model is Elevation 1,880 feet, which forms a no-flow boundary.

Soil material and groundwater parameters were developed based on results of our geotechnical explorations, our experience with previous projects in the area, our interpretation of the site soil and groundwater conditions, and our understanding of the proposed stormwater infiltration facilities. Soil hydraulic parameters used in the model are summarized in Table 15.

The modeled horizontal hydraulic conductivity (Kh) for the lower gravel unit (130 ft/day) was based on the geometric mean of project grain-sized-based analyses. The remaining Kh values, anisotropy ratios and specific yield were selected based on typical values in the hydrogeologic literature (Freeze and Cherry 1979; Heath 1983; Domenico and Schwarz 1990). Soil compressibility was assumed to be 1 x 10^{-5} square feet per pound (ft^2/lb).

TABLE 15. MODELED SOIL HYDRAULIC PROPERTIES

Material	Horizontal Conductivity, Kh (ft/day)	Vertical Conductivity, Kv (ft/day)	Anisotropy Ratio, Kv/Kh	Specific Yield, Sy (-)	Soil Compressibility (ft^2/lb)	Volumetric Water Content and Hydraulic Conductivity Function [1]
Lower Gravel	130	26	0.2	0.25	1 x 10^{-5}	Sand
Glaciolacustrine Clay	0.2	0.02	0.1	0.05	1 x 10^{-5}	Clay
Washed Drain Rock	2,000	2,000	1	0.25	1 x 10^{-5}	Gravel

Note:

[1] Functions are specific to SEEP/W and developed for unsaturated/saturated material models.

Model Simulations

Steady-State

The SEEP/W model was first run to generate hydrogeologic conditions, equal to the seasonal high groundwater elevation, which would apply at the beginning of the design storm event. This was accomplished through a steady-state simulation with no infiltration occurring, but with the boundary condition established to generate a water table and its associated hydrostatic pore pressure distribution at the assumed seasonal high groundwater elevation. Simulated steady-state groundwater conditions below the site are presented in SEEP/W Steady-State Simulation Results, Figure F-8.

Transient-State

Infiltration associated with the design storm hydrograph was modeled using a transient-state simulation in SEEP/W. The transient-state simulation routed the hydrograph described above through the infiltration facility. As infiltration proceeded, hydraulic head increased below the infiltration facility and a phreatic surface developed between the bottom of the infiltration facility and groundwater table. Peak development of the phreatic surface occurred at an elapsed time of 14 hours, which is presented in SEEP/W Transient-State Simulation Results – 14 Hours, Figure F-9. At an elapsed time of 24 hours, infiltration had created a mound in the groundwater table below the infiltration that extended approximately 5 feet above the static groundwater table, as shown in SEEP/W Transient-State Simulation Results, - 24 Hours, Figure F-10.

Figure F-11, Predicted Hydraulic Head and Limited Sensitivity Analysis for the Base of the Infiltration Facility, shows the model-predicted groundwater levels at a specific observation point near the bottom of the infiltration facility backfill during the design storm and 24-hour recovery period. This location is shown in Figure F-7. For the base case (Simulation 1) at this observation point, hydraulic head increased to a maximum elevation of approximately 1,960 feet NAVD 88 in response to infiltration. This peak level is approximately at the level of the pipe invert. Hydraulic head decreased to an elevation of approximately 1,953½ feet NAVD 88 by the end of the recovery period.

Figure F-12, Predicted Hydraulic Head and Limited Sensitivity Analysis for the Unconfined Aquifer, shows the model-predicted groundwater levels at a specific observation point below the steady-state groundwater table beneath the infiltration facility during the design storm and 24-hour recovery period. This location is shown in Figure A-6. For the base case (Simulation 1) at this observation point, hydraulic head increased to a maximum elevation of approximately 1,922½ feet NAVD 88 in response to infiltration. This peak level is approximately 5 feet above the steady-state groundwater level. Hydraulic head decreased to an elevation of approximately 1,922 feet NAVD 88 by the end of the recovery period.

Limited Sensitivity Analysis

We performed two additional simulations to assess the sensitivity of the model results to uncertainty in hydraulic conductivity. The sensitivity run, titled Simulation 2, used the same model inputs as the base case with the following modification:

- The lower gravel Kh and Kv was reduced by a factor of 2 from the base case (to 65 and 13 ft/day, respectively).

Figures F-11 and F-12 shows the predicted groundwater levels for the sensitivity run at the same observation points.

- At the base of the infiltration facility (Figure F-11), Simulation 2 predicts a similar peak hydraulic head. However, the duration of elevated hydraulic head conditions is several hours longer in Simulation 2.
- Within the unconfined aquifer underlying the facility (Figure F-12), Simulation 2 predicts a similar peak hydraulic head. However, peak hydraulic head conditions occur approximately 10 hours later in Simulation 2.

Mounding Analysis Conclusions

Based on the modeling described herein, it is our opinion that the designed stormwater system can be expected to provide suitable infiltration of stormwater. The model suggests that limited mounding would occur within the unconfined aquifer underlying the infiltration facility. Additionally, the model predicts that the height of ponding within the infiltration facility would be limited to at or near the pipe invert elevation (1,960 feet NAVD 88).

4.12.2.6. Stormwater Facility Observation and Testing

We recommend a representative of GeoEngineers observe excavation for stormwater facilities to confirm that applicable target soil units are encountered as designed, and to provide recommendations for modifications as needed. We also recommend that full-scale testing be conducted in newly installed swales and drywells shortly after installation, and before additional site grading is complete. If the results of full-scale testing indicate additional drywells will be needed at a particular swale location, or if drywells should be relocated within in swale to achieve higher outflow rates, those modifications can be made before further site grading is completed.

5.0 LIMITATIONS

We prepared this report for use by HDR for the proposed BNSF/Pines Underpass project in Spokane Valley, Washington. HDR may distribute copies of this report to the City of Spokane Valley and the City of Spokane Valley's authorized agents and regulatory agencies as may be required for the project.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted practices in the field of geotechnical engineering in this area at the time this report was prepared. The conclusions, recommendations and opinions presented in this report are based on our professional knowledge, judgment and experience. No warranty or other conditions, express or implied, should be understood.

Any electronic form, facsimile or hard copy of the original document (email, text, table and/or figure), if provided, and any attachments should be considered a copy of the original document. The original document is stored by GeoEngineers, Inc. and will serve as the official document of record.

Please refer to the Appendix G titled "Report Limitations and Guidelines for Use" for additional information pertaining to use of this report.

6.0 REFERENCES

American Association of State and Highway Transportation Officials (AASHTO) LRFD Design Specifications, 2020.

AASHTO "Guide for Design of Pavement Structures," 1993.

American Railway Engineering and Maintenance-of-Way Association (AREMA) Manual for Railway Engineering, 2019.

Andreyev, N.E., and P.L. Wiseman, 1989. Stormwater Retention Pond Infiltration Analysis in Unconfined Aquifers, Research Report by Jammal & Associates, Inc., Winter Park, Florida; for the Southwest Florida Water Management District, Brooksville, Florida.

Budinger and Associates. "Technical Memorandum, Bridging the Valley: Geotechnical Evaluation MP 62.95 (Pines Road Crossing)", 2004.

Burlington Northern Santa Fe Railway, Union Pacific, "Guidelines for Temporary Shoring," 2004.

California Department of Transportation (Caltrans), "Transportation and Construction Vibration Guidance Manual," September 2013.

City of Spokane Valley Street Standards . Adopted 2009, Revised 2018.

Domenico, P.A. and *Schwartz*, F.W. (*1990*) Physical and Chemical Hydrogeology. John Wiley and Sons, New York, 824 p.

Driscoll, F.G., 1986. Groundwater and Wells, Second Edition. Johnson Screens, St. Paul, MN, 1,089 p.

Freeze, R.A., and *Cherry*, J.A., *1979*, Groundwater: Prentice-Hall, Englewood Cliffs, NJ, 604 p

Green, W.H. and Ampt, G.A., 1911. Studies on Soil Physics I. The Flow of Air and Water through Soils. Journal Agricultural Science, Vol. 4, p. 1-24.

Heath, R.C., 1983. Basic Ground-Water Hydrology. U.S. Geological Survey Water-Supply Paper 2220. 86 p.

Massmann, J., 2003. A Design Manual for Sizing Infiltration Ponds. Washington State Department of Transportation, October.

McDonald, M.G. and Harbaugh, A.W., 1984. A Modular Three-Dimensional Finite Difference Ground-Water Flow Model, U.S. Geological Survey, p. 528.

Spokane Regional Stormwater Manual, 2008.

United States Department of Agriculture (USDA), Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Accessed January 2021.

United States Geologic Survey (USGS), Quaternary fault and fold database for the United States, Available online at: https://earthquake.usgs.gov/hazards. Accessed January 2021.

Washington State Department of Natural Resources, "Geologic Map of the Greenacres 7.5-minute Quadrangle, Spokane County, Washington" (Derkey 2004)

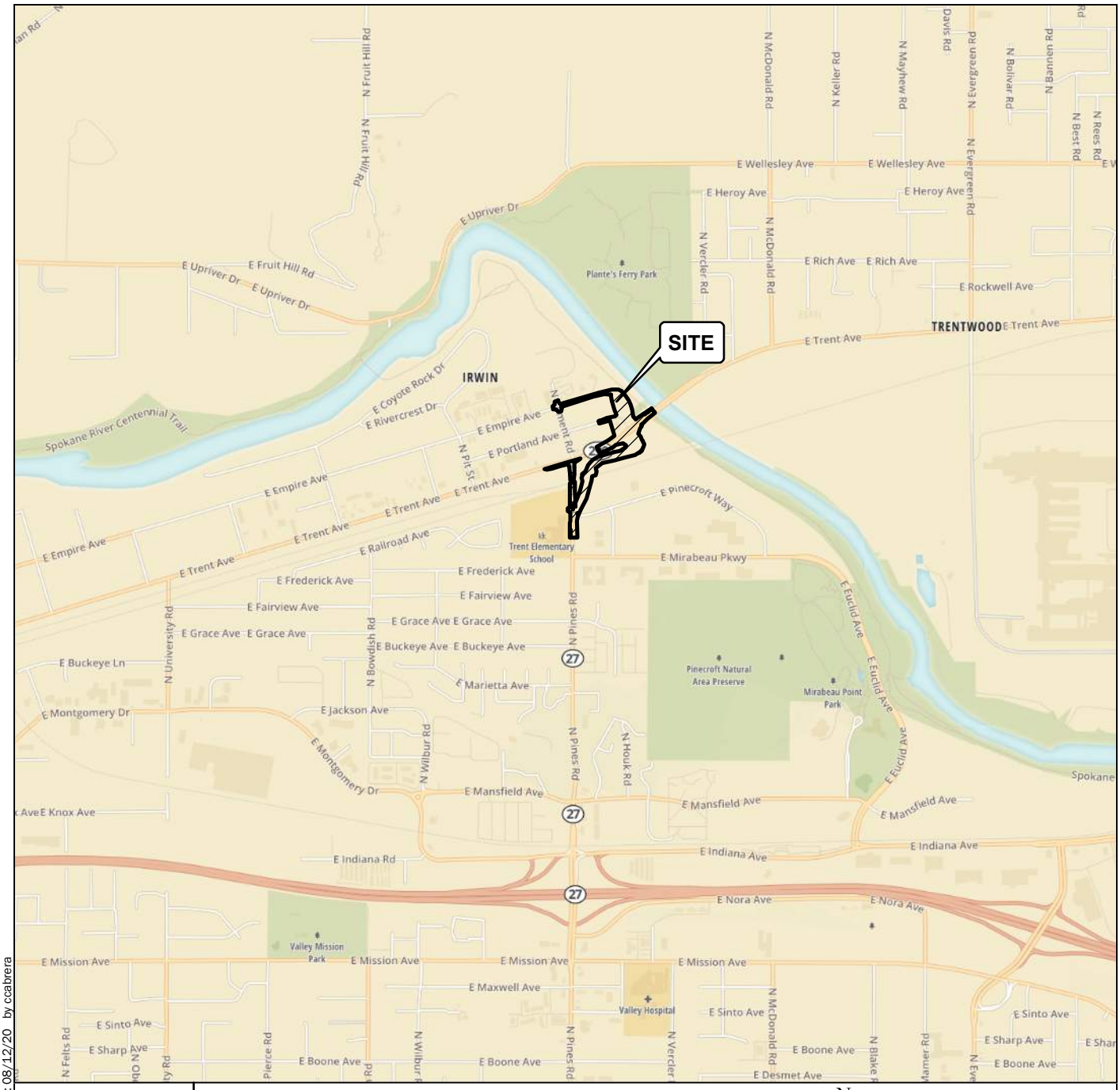
Washington State Department of Transportation. "Standard Specifications for Road, Bridge and Municipal Construction," 2021.

Washington State Department of Transportation, "Geotechnical Design Manual," 2020.

Washington State Department of Transportation, "Highway Runoff Manual," 2019.

FIGURES

GeoEngineers



N
W E
S

2,000 0 2,000

Feet

Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: Mapbox Open Street Map, 2016

Projection: NAD 1983 UTM Zone 11N

Vicinity Map

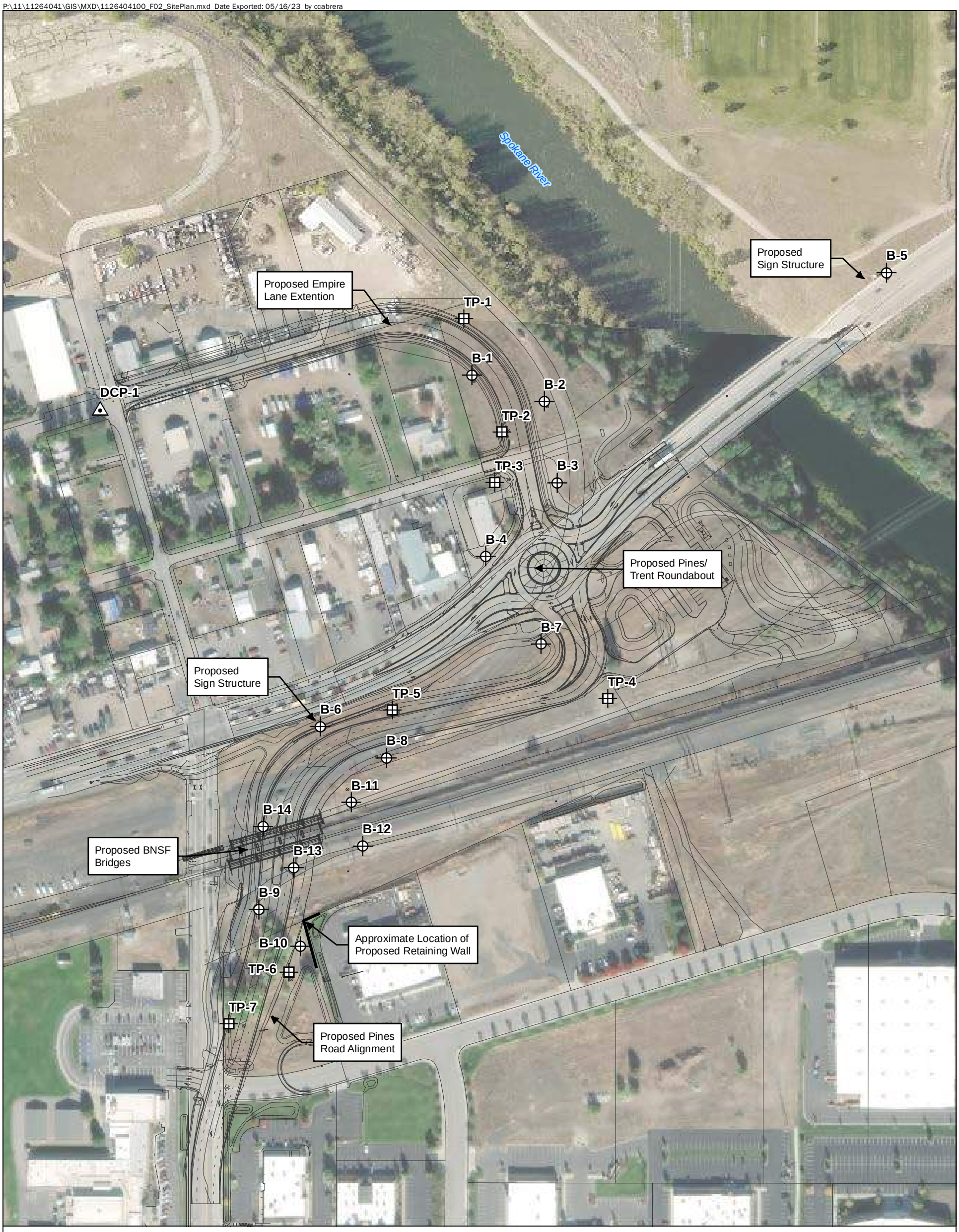
BNSF/Pines
Spokane Valley, Washington

GeoEngineers

Figure 1

P:\11\11264041\GIS\MXD\11264041 00_F01_VicinityMap.mxd Date Exported: 08/12/20 by ccabrera

P:\11\11264041\GIS\MXD\1126404100_F02_SitePlan.mxd Date Exported: 05/16/23 by ccabrera



Legend

- Project Area Approximate Boundary
- Boring Number and Approximate Location
- Test Pit Number and Approximate Location
- DCP Number and Approximate Location

N
W E
S

200 0 200

Feet

Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: CAD drawing from HDR. Aerial Image from ESRI World Imagery.

Projection: NAD 1983 UTM Zone 11N

Site Plan

City of Spokane Valley BNSF/Pines Underpass
Spokane Valley, Washington

GeoEngineers

Figure 2

APPENDICES

GeoEngineers

APPENDIX A
Field Explorations

APPENDIX A
FIELD EXPLORATIONS

General

Soil and groundwater conditions for the proposed BNSF/Pines Underpass project were explored between November 17 to 24, 2020 by drilling 14 borings (B-1 through B-14), excavating seven test pits (TP-1 through TP-7) and conducting one dynamic cone penetration test (DCP-1) at the approximate locations shown in the Site Plan, Figure 2.

Boring Explorations

The borings were advanced to depths in the range of about 11½ to 121½ feet below existing ground surface using a combination of truck-mounted Mobile B-90 air-rotary drill rig owned and operated by Environmental West Exploration, Inc. under subcontract to GeoEngineers, and a truck-mounted CME 75 hollow-stem auger drilled rig owned and operated by GeoEngineers.

Soil sampling was performed at approximate 2.5- to 10-foot-depth intervals using either a 2-inch, outside-diameter, standard split-spoon (SPT) sampler or a 2.4-inch, inside-diameter (California-style), split-barrel sampler. Each sampler was driven into the soil using a 140-pound automatic hammer, falling 30 inches on each blow. The number of blows required to drive the samplers each of three, 6-inch increments of penetration were recorded in the field. The sum of the blow counts for the last two, 6-inch increments of penetration, unless otherwise noted, is reported on the boring logs. The blow counts for the standard split-spoon sampler are reported as the ASTM International (ASTM) D 1586 Standard Penetration Test (SPT) N-value on the boring logs. The approximate standard N-values (SPT N-value) for the California-style sampler also are reported on the logs in the 'Remarks' section. The conversion of non-standard penetration resistance for the California-style sampler to approximate SPT N-values was made using the Lacroix-Horn equation (ASTM SPT-523, 1973). Collected soil samples were transported to GeoEngineers' laboratory for evaluation and testing of select samples to assess pertinent physical and engineering characteristics.

Test Pit Explorations

The test pits were excavated using a Caterpillar 420 rubber-tired backhoe by Spokane Environmental Solutions, inc. (SES) under subcontract to GeoEngineers. Test pits were advanced to depths ranging between about 8 to 10 feet below existing site grade. Bulk samples of soil were obtained at various depths and locations from the test pits. The relative densities noted on the test pit logs are based on the difficulty of excavation, and our experience and judgment.

Dynamic Cone Penetration Test

One dynamic cone penetration test (DCP-1) was completed by GeoEngineers. General soil resistance and modulus properties were evaluated by driving a 60-degree, 0.790-inch-diameter disposable steel cone attached to a ⅝-inch-diameter graduated steel rod using a 17.6 pound-hammer falling approximately 22.6 inches. The penetration depth was observed at selected intervals to a maximum depth of about 17.5 inches bgs. The DCP test was conducted in general accordance with ASTM D 6951. At the test location, the asphalt pavement surfacing was first cored, measured and removed. The DCP test was then started at the top of the existing aggregate base course layer. The test encountered refusal within the base course layer. The base course layer was then excavated by hand to expose the underlying subgrade soil,

which consisted to silty gravel with sand. The DCP test was then advanced into the subgrade until refusal was encountered.

The estimated California Bearing Ratio (CBR) values presented in the report figure are based on the following standard equation:

$$CBR = \frac{292}{DCP^{1.12}}$$

Where:

CBR = California Bearing Ratio

DCP = Dynamic Cone Penetration Index (mm/blow)

The estimated resilient modulus values presented in the figure are based on the following equation presented in the Oregon Department of Transportation (ODOT) Pavement Design Guide:

$$Mr = Cf\ x\ (49023)DCP^{-0.39}$$

Where:

Mr = resilient modulus (psi)

Cf = correction factor to be applied between field and laboratory modulus values per American Association of State Highway and Transportation Officials (AASHTO) 93 procedures. For base course, Cf = 0.62; for subgrade soil, Cf = 0.35

DCP = Dynamic Cone Penetration Index (mm/blow)

Exploration Logs

Each exploration was continuously monitored by a representative from our firm who examined and classified the soil encountered, obtained representative soil samples and maintained a detailed log of the explorations. Soil encountered in the explorations was classified in the field in general accordance with ASTM D 2488, the Standard Practice for Classification of Soils, Visual-Manual Procedure, which is summarized in Figure A-1. Logs of the borings are presented in Logs of Borings, Figures A-2 through A-16. The logs of the test pits are presented in Log of Test Pits, Figures A-17 through A-23. The logs are based on interpretation of the field and laboratory data and indicate the depth at which subsurface materials, or their characteristics change, although these changes might actually be gradual. The log of DCP-1 is presented in DCP Results, Figure A-24. Photographs of the test pit excavations and spoils piles are presented in Figures A-25 through A-31.

The explorations' locations were selected in accordance with collaboration with the project team. Exploration locations and elevations determined in the field using hand-held global positioning devices. Final exploration locations and elevations will be determined by the project surveyor.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% RETAINED ON NO. 200 SIEVE	SAND AND SANDY SOILS	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS
				SP	POORLY-GRADED SANDS, GRAVELLY SAND
	MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS, ROCK FLOUR, CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% PASSING NO. 200 SIEVE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS AND SILTS OF MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: Multiple symbols are used to indicate borderline or dual soil classifications

ADDITIONAL MATERIAL SYMBOLS

SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
	AC	Asphalt Concrete
	CC	Cement Concrete
	CR	Crushed Rock/ Quarry Spalls
	SOD	Sod/Forest Duff
	TS	Topsoil

Groundwater Contact

Measured groundwater level in exploration, well, or piezometer

Measured free product in well or piezometer

Graphic Log Contact

Distinct contact between soil strata

Approximate contact between soil strata

Material Description Contact

Contact between geologic units

Contact between soil of the same geologic unit

Sampler Symbol Descriptions

2.4-inch I.D. split barrel

Standard Penetration Test (SPT)

Shelby tube

Piston

Direct-Push

Bulk or grab

Continuous Coring

Blowcount is recorded for driven samplers as the number of blows required to advance sampler 12 inches (or distance noted). See exploration log for hammer weight and drop.

"P" indicates sampler pushed using the weight of the drill rig.

"WOH" indicates sampler pushed using the weight of the hammer.

Laboratory / Field Tests

%F	Percent fines
%G	Percent gravel
AL	Atterberg limits
CA	Chemical analysis
CP	Laboratory compaction test
CS	Consolidation test
DD	Dry density
DS	Direct shear
HA	Hydrometer analysis
MC	Moisture content
MD	Moisture content and dry density
Mohs	Mohs hardness scale
OC	Organic content
PM	Permeability or hydraulic conductivity
PI	Plasticity index
PL	Point load test
PP	Pocket penetrometer
SA	Sieve analysis
TX	Triaxial compression
UC	Unconfined compression
VS	Vane shear

Sheen Classification

NS	No Visible Sheen
SS	Slight Sheen
MS	Moderate Sheen
HS	Heavy Sheen

NOTE: The reader must refer to the discussion in the report text and the logs of explorations for a proper understanding of subsurface conditions. Descriptions on the logs apply only at the specific exploration locations and at the time the explorations were made; they are not warranted to be representative of subsurface conditions at other locations or times.

Key to Exploration Logs

GeoEngineers

Figure A-1

Drilled Start 11/17/2020 End 11/17/2020	Total Depth (ft) 12.25	Logged By MAM Checked By DRL	Driller GeoEngineers	Drilling Method Hollow-stem Auger	
Surface Elevation (ft) 1976.73 Vertical Datum NAVD88		Hammer Data Automatic 140 (lbs) / 30 (in) Drop		Drilling Equipment Truck-mounted CME-75	
Easting (X) 2525697.21461 Northing (Y) 273034.745012		System Datum WA State Plane North NAD83 (feet)		Groundwater not observed at time of exploration	

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
	0							GM	Brown silty fine to coarse gravel with sand and occasional cobbles (medium dense, moist)			
1975			18	16		1						
			9	19		2		GP-GM	Gray-brown fine to coarse gravel with silt, sand, cobbles and occasional boulders (medium dense to dense, moist)			
	5											
1970				120/5.5"		3		GP	Gray-brown fine to coarse gravel with sand, cobbles, occasional boulders and trace silt (medium dense to dense, moist)			Rock stuck in sampler; blow counts not representative
			10	55		4						
	10											
1965			0	50/2"		5			Boring terminated at approximately 12 feet because of auger refusal			Sampler on cobble or boulder, blow counts not representative

Note: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on Aerial Imagery. Vertical approximated based on Aerial Imagery.

Log of Boring B-1

GeoEngineers

Project: COSV/Pines Road Underpass Phase II
Project Location: Spokane Valley, Washington
Project Number: 11264-041-00

Figure A-2
Sheet 1 of 1

Date:2/2/21 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\11\11264041\GINT\11264041 00 LOGS.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEB_GEOTECH_STANDARD_%F_NO_GW

Drilled Start 11/17/2020 End 11/17/2020	Total Depth (ft) 25	Logged By MAM Checked By DRL	Driller GeoEngineers	Drilling Method Hollow-stem Auger	
Surface Elevation (ft) 1976.11 Vertical Datum NAVD88		Hammer Data Automatic 140 (lbs) / 30 (in) Drop		Drilling Equipment Truck-mounted CME-75	
Easting (X) 2525851.42186 Northing (Y) 272986.382729		System Datum WA State Plane North NAD83 (feet)		Groundwater not observed at time of exploration	

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
1975	0	9	50		1		GP-GM	Light brown fine to coarse gravel with silt, sand, cobbles and occasional boulders (medium dense to very dense, dry to moist)			
		5	78		2						Approximate SPT N-value = 30
1970	5	9	63		3 %F				2	6	
		0	25		4						
1965	10	18	135		5 SA				3	10	Approximate SPT N-value = 56
1960	15										
		16	50		6 SA		GM	Gray-brown silty fine to coarse gravel with sand, cobbles and occasional boulders (medium dense to very dense, dry to moist)	4	14	
1955	20										
		10	90/9"		7						
	25										

Note: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on Aerial Imagery. Vertical approximated based on Aerial Imagery.

Log of Boring B-2

GeoEngineers

Project: COSV/Pines Road Underpass Phase II
Project Location: Spokane Valley, Washington
Project Number: 11264-041-00

Figure A-3
Sheet 1 of 1

Date:2/2/21 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\11\11264041\GINT\11264041100 LOGS.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEB_GEOTECH_STANDARD_%F_NO_GW

Drilled Start 11/23/2020 End 11/23/2020	Total Depth (ft) 26.5	Logged By MAM Checked By DRL	Driller Environmental West	Drilling Method Air Rotary
Surface Elevation (ft) 1977.55 Vertical Datum NAVD88		Hammer Data Automatic 140 (lbs) / 30 (in) Drop		Drilling Equipment Schram T300E
Easting (X) 2525886.52336 Northing (Y) 272817.353256		System Datum WA State Plane North NAD83 (feet)		Groundwater not observed at time of exploration

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
	0						GM	Dark brown silty fine to coarse gravel with sand, cobbles and occasional boulders (medium dense, moist)			
1975		3	21		1		GP-GM	Gray-brown fine to coarse gravel with silt, sand, cobbles and occasional boulders (medium dense to very dense, moist)			
	5	2	33		2						
1970		5	168/8"		3						SPT N-value = 50+
	10	6	64		4						
1965											
	15	11	85		5						
1960											
	20	8	140/11"		6 %F				2	5	Rock stuck in sampler; blow counts not representative
1955											
	25	12	59		7						

Note: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on Aerial Imagery. Vertical approximated based on Aerial Imagery.

Log of Boring B-3

GeoEngineers

Project: COSV/Pines Road Underpass Phase II
Project Location: Spokane Valley, Washington
Project Number: 11264-041-00

Figure A-4
Sheet 1 of 1

Date:2/2/21 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\11\11264041\GINT\11264041 00 LOGS.GPJ DBLibrary:Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEB_GEOTECH_STANDARD_%F_NO_GW

Drilled Start 11/18/2020 End 11/18/2020	Total Depth (ft) 13.5	Logged By MAM Checked By DRL	Driller GeoEngineers	Drilling Method Hollow-stem Auger	
Surface Elevation (ft) 1980.5 Vertical Datum NAVD88		Hammer Data Automatic 140 (lbs) / 30 (in) Drop		Drilling Equipment Truck-mounted CME-75	
Easting (X) 2525744.4951 Northing (Y) 272655.601184		System Datum WA State Plane North NAD83 (feet)		Groundwater not observed at time of exploration	

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
1980	0						AC	Approximately 2 inches asphalt concrete pavement			
		6	12		1		GP-GM	Dark brown fine to coarse gravel with silt, sand, cobbles and occasional boulders (medium dense, moist)			
		9	32		2		GP	Gray-brown fine to coarse gravel with sand, cobbles, occasional boulders and trace silt (medium dense to dense, moist)			
1975	5	0	120/4"		3		GM	Gray brown silty fine to coarse gravel with sand, cobbles and occasional boulders (medium dense to very dense, dry to moist)			Sampler on cobble or boulder, blow counts not representative
		15	139		4 %F						Approximate SPT N-value = 57
1970	10										
		0	50+		5			Boring terminated at approximately 13.5 feet because of auger refusal			Sampler on cobble or boulder, blow counts not representative

Note: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on Aerial Imagery. Vertical approximated based on Aerial Imagery.

Log of Boring B-4

GeoEngineers

Project: COSV/Pines Road Underpass Phase II
Project Location: Spokane Valley, Washington
Project Number: 11264-041-00

Figure A-5
Sheet 1 of 1

Date:2/2/21 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\11\11264041\GINT\11264041 00 LOGS.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEB_GEOTECH_STANDARD_%F_NO_GW

Drilled Start 11/18/2020 End 11/18/2020	Total Depth (ft) 20	Logged By MAM Checked By DRL	Driller GeoEngineers	Drilling Method Hollow-stem Auger	
Surface Elevation (ft) 1984.44 Vertical Datum NAVD88		Hammer Data Automatic 140 (lbs) / 30 (in) Drop		Drilling Equipment Truck-mounted CME-75	
Easting (X) 2526555.71888 Northing (Y) 273292.508193		System Datum WA State Plane North NAD83 (feet)		Groundwater not observed at time of exploration	

Notes:

Elevation (feet)	Depth (feet)	Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
	0						AC	Approximately 8 inches of asphalt concrete pavement			
		12	67		1		GP-GM	Light brown fine to coarse gravel with silt and sand (dense, moist) (fill)			
1980		11	10		2		SM	Dark brown silty fine to coarse sand with gravel (loose, moist) (fill)			
	5	10	14		3 %F				7	15	Approximate SPT N-value = 5
1975		10	7		4						
	10										
1970		8	6		5						
	15										
1965		6	43		6		GP-GM	Gray-brown fine to coarse gravel with silt and sand (medium dense, moist)			Approximate SPT N-value = 16
	20										

Note: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on Aerial Imagery. Vertical approximated based on Aerial Imagery.

Log of Boring B-5

GeoEngineers

Project: COSV/Pines Road Underpass Phase II
Project Location: Spokane Valley, Washington
Project Number: 11264-041-00

Figure A-7
Sheet 1 of 1

Date:2/2/21 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\11\11264041\GINT\11264041 00 LOGS.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEB_GEOTECH_STANDARD_%F_NO_GW

Drilled Start 11/18/2020 End 11/18/2020	Total Depth (ft) 11.5	Logged By MAM Checked By DRL	Driller GeoEngineers	Drilling Method Hollow-stem Auger	
Surface Elevation (ft) 1985.96 Vertical Datum NAVD88		Hammer Data Automatic 140 (lbs) / 30 (in) Drop		Drilling Equipment Truck-mounted CME-75	
Easting (X) 2525415.4447 Northing (Y) 272282.425181		System Datum WA State Plane North NAD83 (feet)		Groundwater not observed at time of exploration	

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
1985	0		8	26		1		GM	Dark brown silty fine to coarse gravel with sand, cobbles and occasional boulders (medium dense, moist)			
			14	75		2		GP-GM	Gray-brown fine to coarse gravel with silt, sand, cobbles and occasional boulders (medium dense to dense, moist)			Approximate SPT N-value = 29
1980	5		15	41		3						
			3	96/9"		4						
1975	10		0	120/0"		5			Boring terminated at approximately 11.5 feet because of auger refusal			Sampler on cobble or boulder, blow counts not representative

Note: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on Aerial Imagery. Vertical approximated based on Aerial Imagery.

Log of Boring B-6

GeoEngineers

Project: COSV/Pines Road Underpass Phase II
Project Location: Spokane Valley, Washington
Project Number: 11264-041-00

Figure A-8
Sheet 1 of 1

Date:2/2/21 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\11\11264041\GINT\11264041100 LOGS.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEB_GEOTECH_STANDARD_%F_NO_GW

Drilled Start 11/20/2020 End 11/20/2020	Total Depth (ft) 21.5	Logged By J.Orr Checked By DRL	Driller Environmental West	Drilling Method Air Rotary	
Surface Elevation (ft) 1980.94 Vertical Datum NAVD88		Hammer Data Automatic 140 (lbs) / 30 (in) Drop		Drilling Equipment Schram T300E	
Easting (X) 2525869.38739 Northing (Y) 272477.666013		System Datum WA State Plane North NAD83 (feet)		Groundwater not observed at time of exploration	

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
1980	0						TS GM	Dark brown silty fine to coarse gravel with sand and trace organic matter (loose, moist) (topsoil)			
								Brown silty fine to coarse gravel with sand (medium dense, moist)			
		4	44		1		GP-GM	Gray-brown fine to coarse gravel with silt, sand, cobbles and occasional boulders (medium dense to very dense, dry to moist)			Approximate SPT N-value = 17
1975	5	3	56		2						
		4	84		3						
1970	10	10	115		4						Approximate SPT N-value = 44
1965	15	3	25		5						
1960	20	4	51		6						

Note: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on Aerial Imagery. Vertical approximated based on Aerial Imagery.

Log of Boring B-7

GeoEngineers

Project: COSV/Pines Road Underpass Phase II
Project Location: Spokane Valley, Washington
Project Number: 11264-041-00

Figure A-9
Sheet 1 of 1

Date:2/2/21 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\11\11264041\GINT\11264041 00 LOGS.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEB_GEOTECH_STANDARD_%F_NO_GW

Drilled Start 11/20/2020 End 11/20/2020	Total Depth (ft) 26.5	Logged By J.Orr Checked By DRL	Driller Environmental West	Drilling Method Air Rotary	
Surface Elevation (ft) 1987 Vertical Datum NAVD88		Hammer Data Automatic 140 (lbs) / 30 (in) Drop		Drilling Equipment Schram T300E	
Easting (X) 2525558.06861 Northing (Y) 272223.50492		System Datum WA State Plane North NAD83 (feet)		Groundwater not observed at time of exploration	

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
1985	0	2	30/2"		1		GM	Brown silty fine to coarse gravel with occasional cobbles and boulders (medium dense, moist)			Sampler bouncing on cobble, blow counts not representative. SPT test terminated.
1980	5	6	22		2		GP	Gray-brown fine to coarse gravel with sand and occasional cobbles (medium dense to very dense, dry to moist)			
		6	75/10"		3						Rock stuck in sampler shoe, blow counts not representative
1975	10	8	52		4						
1970	15	12	83		5						
1965	20	6	62/10"		6						SPT N-Value = 50+
	25	6	67/11"		7						

Note: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on Aerial Imagery. Vertical approximated based on Aerial Imagery.

Log of Boring B-8

GeoEngineers

Project: COSV/Pines Road Underpass Phase II
Project Location: Spokane Valley, Washington
Project Number: 11264-041-00

Figure A-10
Sheet 1 of 1

Date:2/2/21 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\11\11264041\GINT\11264041 00 LOGS.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEB_GEOTECH_STANDARD_%F_NO_GW

Drilled Start 11/20/2020 End 11/20/2020	Total Depth (ft) 25	Logged By J.Orr Checked By DRL	Driller Environmental West	Drilling Method Air Rotary	
Surface Elevation (ft) 1989.15 Vertical Datum NAVD88		Hammer Data Automatic 140 (lbs) / 30 (in) Drop		Drilling Equipment Schram T300E	
Easting (X) 2525305.71313 Northing (Y) 271892.167633		System Datum WA State Plane North NAD83 (feet)		Groundwater not observed at time of exploration	

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
	0						GM	Dark brown silty fine to coarse gravel with sand, cobbles and occasional boulders (medium dense, moist)			
							GP-GM	Gray-brown fine to coarse gravel with silt, sand, cobbles and occasional boulders (medium dense to dense, dry to moist)			
1985		6	11		1						
	5	3	11		2						
		10	75		3 %F				2	7	Approximate SPT N-value = 20
1980											
	10	8	77/8"		4						Sampler on apparent cobble or boulder. Blow count overstated.
							GW	Gray-brown fine to coarse gravel with sand, cobbles, occasional boulders and trace silt (medium dense to very dense, dry to moist)			
1975											
	15	10	62		5						
1970											
	20	10	60		6 SA				2	3	Approximate SPT N-value = 23
1965											
	25	4	60/11"		7						Rock stuck in sampler; blow counts not representative

Note: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on Aerial Imagery. Vertical approximated based on Aerial Imagery.

Date:2/2/21 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\11\11264041\GINT\11264041 00 LOGS.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEB_GEOTECH_STANDARD_%F_NO_GW

Log of Boring B-9

GeoEngineers

Project: COSV/Pines Road Underpass Phase II
Project Location: Spokane Valley, Washington
Project Number: 11264-041-00

Figure A-11
Sheet 1 of 1

Drilled	Start 11/20/2020	End 11/20/2020	Total Depth (ft)	46.5	Logged By	J.Orr	Driller	Environmental West	Drilling Method	Air Rotary
					Checked By	DRL				

Surface Elevation (ft) / Vertical Datum	1990.47 NAVD88	Hammer Data	Automatic 140 (lbs) / 30 (in) Drop	Drilling Equipment	Schram T300E
Easting (X) / Northing (Y)	2525397.18759 271819.278744	System Datum	WA State Plane North NAD83 (feet)	Groundwater not observed at time of exploration	

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
1990	0						GM	Dark brown silty fine to coarse gravel with sand and occasional cobbles (medium dense, moist)			
		2	7		1		GP-GM	Brown fine to coarse gravel with silt, sand, cobbles and occasional boulders (loose, moist)			
1985	5	4	49		2		GP	Gray-brown fine to coarse gravel with sand, cobbles, occasional boulders and trace silt (medium dense to very dense, moist)			Approximate SPT N-value = 19
		0	50/3"								Sampler on cobble or boulder, blow counts not representative
1980	10	3	38		3						
1975	15	6	45		4						Approximate SPT N-value = 17
1970	20	4	65/11"		5						Rock stuck in sampler; blow counts not representative
1965	25	8	64		6						
1960	30	6	35		7						
	35										

Note: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on Aerial Imagery. Vertical approximated based on Aerial Imagery.

Date:2/2/21 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\11\11264041\GINT\11264041 00 LOGS.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEB_GEOTECH_STANDARD_%F_NO_GW

Log of Boring B-10

GeoEngineers

Project: COSV/Pines Road Underpass Phase II
Project Location: Spokane Valley, Washington
Project Number: 11264-041-00

Figure A-12
Sheet 1 of 2

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
1955	35		4	120/11"		8						SPT N-value = 50+
1950	40		4	49		9						
1945	45		6	26		10						

Log of Boring B-10 (continued)

GeoEngineers

Project: COSV/Pines Road Underpass Phase II
Project Location: Spokane Valley, Washington
Project Number: 11264-041-00

Figure A-12
Sheet 2 of 2

Date:2/2/21 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\11\11264041\GINT\11264041 00 LOGS.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEB_GEOTECH_STANDARD_%F_NO_GW

Drilled Start 11/16/2020 End 11/17/2020	Total Depth (ft) 107	Logged By J. Orr Checked By DRL	Driller Environmental West	Drilling Method Air Rotary
Surface Elevation (ft) 1985.14 Vertical Datum NAVD88		Hammer Data Automatic 140 (lbs) / 30 (in) Drop		Drilling Equipment Schram T300E
Easting (X) 2525488.50998 Northing (Y) 272126.211922		System Datum WA State Plane North NAD83 (feet)		See "Remarks" section for groundwater observed

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
	0						GM	Brown silty fine to coarse gravel with sand, cobbles and occasional boulders (medium dense, moist)			
							GP-GM	Brown fine to coarse gravel with silt, sand, cobbles and occasional boulders (medium dense to very dense, moist)			
1980	5	6	38		S-1						
1975	10	8	74/11"		S-2						
1970	15	15	77		S-3 SA				4	10	Approximate SPT N-Value = 30
1965	20	4	14		S-4						
1960	25		30		S-5						
1955	30	5	60/9"		S-6						Rock stuck in sampler; blow counts not representative
	35										

Note: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on Aerial Imagery. Vertical approximated based on Aerial Imagery.

Log of Boring B-11

GeoEngineers

Project: COSV/Pines Road Underpass Phase II
Project Location: Spokane Valley, Washington
Project Number: 11264-041-00

Figure A-13
Sheet 1 of 3

Date:2/2/21 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\11\11264041\GINT\11264041 00 LOGS.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEB_GEOTECH_STANDARD_%F_NO_GW

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
	35	6	51		S-7						Rock stuck in sampler; blow counts not representative
1945	40	5	18		S-8						
							GP	Gray-brown fine to coarse gravel with sand, cobbles, occasional boulders and trace silt (medium dense to very dense, dry to moist)			
1940	45	10	67		S-9 %F				3	5	Approximate SPT N-Value = 30
1935	50	3	16		S-10						
1930	55		11		S-11						
1925	60	6	50/3"		S-12						Approximate SPT N-Value = 50+ Sampler on apparent cobble or boulder. Blow counts not representative.
1920	65	2	65/9"		S-13						Rock stuck in sampler; blow counts not representative
1915	70	5	58		S-14			Becomes wet			Groundwater encountered at approximately 70½ feet below ground surface
1910	75	1	75/3"		S-15						Rock stuck in sampler; blow counts not representative

Date:2/2/21 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\11\11264041\GINT\11264041 00 LOGS.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEB_GEOTECH_STANDARD_%F_NO_GW

Log of Boring B-11 (continued)

GeoEngineers

Project: COSV/Pines Road Underpass Phase II
Project Location: Spokane Valley, Washington
Project Number: 11264-041-00

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	FIELD DATA: Blows/foot	FIELD DATA: Collected Sample / Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
1905	80	10	19	S-16						
1900	85	18	57	S-17		ML	Grayish brown silt with trace sand (hard, moist)			
1895	90	18	70	S-18						
1890	95	17	74/11"	S-19		CL	Gray clay with silt (hard, moist)			
1885	100	17	74/11"	S-20						
1880	105	16	77/10"	S-21						

Log of Boring B-11 (continued)

GeoEngineers

Project: COSV/Pines Road Underpass Phase II
Project Location: Spokane Valley, Washington
Project Number: 11264-041-00

Figure A-13
Sheet 3 of 3

Date:2/2/21 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\11\11264041\GINT\11264041 00 LOGS.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEB_GEOTECH_STANDARD_%F_NO_GW

Drilled Start 11/24/2020 End 11/24/2020	Total Depth (ft) 121.5	Logged By J. Orr Checked By DRL	Driller Environmental West	Drilling Method Air Rotary
Surface Elevation (ft) 1985.68 Vertical Datum NAVD88		Hammer Data Automatic 140 (lbs) / 30 (in) Drop		Drilling Equipment Schram T300E
Easting (X) 2525517.08501 Northing (Y) 272036.063807		System Datum WA State Plane North NAD83 (feet)		See "Remarks" section for groundwater observed

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
1985	0						GM	Brown silty fine to coarse gravel with sand, cobbles and occasional boulders (medium dense, moist)			
							GW	Gray-brown fine to coarse gravel with sand, cobbles, occasional boulders and trace silt (medium dense to very dense, moist)			
1980	5	9	60		S-1						Rock stuck in sampler; blow counts not representative
1975	10	6	50+		S-2						
1970	15	11	62		S-3 SA				2	5	Approximate SPT N-Value = 24
1965	20	6	47		S-4						
1960	25	7	77+		S-5			Grades with more cobbles and boulders			Rock stuck in sampler; blow counts not representative
1955	30	5	146/11"		S-6						Rock stuck in sampler; blow counts not representative
	35										

Note: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on Aerial Imagery. Vertical approximated based on Aerial Imagery.

Date:2/2/21 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\11\11264041\GINT\11264041 00 LOGS.GPJ DBLibrary:Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEB_GEOTECH_STANDARD_%F_NO_GW

Log of Boring B-12

GeoEngineers

Project: COSV/Pines Road Underpass Phase II
Project Location: Spokane Valley, Washington
Project Number: 11264-041-00

Figure A-14
Sheet 1 of 4

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	FIELD DATA: Blows/foot	FIELD DATA: Collected Sample	FIELD DATA: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
1950	35	4	94/8"		S-7						Rock stuck in sampler; blow counts not representative
1945	40	7	76		S-8						Rock stuck in sampler; blow counts not representative
1940	45	1	83/8"		S-9						Rock stuck in sampler; blow counts not representative
1935	50	6	59		S-10						Rock stuck in sampler; blow counts not representative
1930	55										
1925	60	10	57		S-11						
1920	65										
1915	70	0	63		S-12			Becomes wet			Approximate SPT N-Value = 24 Groundwater encountered at approximately 71 feet below ground surface
1910	75										

Date:2/2/21 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\11\11264041\GINT\11264041 00 LOGS.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEB_GEOTECH_STANDARD_%F_NO_GW

Log of Boring B-12 (continued)

GeoEngineers

Project: COSV/Pines Road Underpass Phase II
Project Location: Spokane Valley, Washington
Project Number: 11264-041-00

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	FIELD DATA: Blows/foot	FIELD DATA: Collected Sample / Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
1905	80	6	52	S-13		GP-GM	Gray-brown fine to coarse gravel with silt, sand, cobbles and boulders (very dense, wet)			
1900	85	4	42	S-14		GM	Light brown silty fine to coarse gravel with sand, cobbles and boulders (medium dense to dense, wet)			
1895	90	13	18	S-15		ML	Brown clayey silt (hard, moist to wet)			
1890	95	18	56	S-16						
1885	100	18	102	S-17						Approximate SPT N-Value = 39
1880	105									
1875	110	18	68	S-18						
1870	115									

Date:2/2/21 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\11\11264041\GINT\11264041 00 LOGS.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEB_GEOTECH_STANDARD_%F_NO_GW

Log of Boring B-12 (continued)

GeoEngineers

Project: COSV/Pines Road Underpass Phase II
Project Location: Spokane Valley, Washington
Project Number: 11264-041-00

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	FIELD DATA: Blows/foot	FIELD DATA: Collected Sample / Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
1865	120	18	47	S-19						

Log of Boring B-12 (continued)

GeoEngineers

Project: COSV/Pines Road Underpass Phase II
Project Location: Spokane Valley, Washington
Project Number: 11264-041-00

Figure A-14
Sheet 4 of 4

Date:2/2/21 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\11\11264041\GINT\11264041 00 LOGS.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEB_GEOTECH_STANDARD_%F_NO_GW

Drilled Start 11/19/2020 End 11/19/2020	Total Depth (ft) 101.5	Logged By J. Orr Checked By DRL	Driller Environmental West	Drilling Method Air Rotary	
Surface Elevation (ft) 1987.16 Vertical Datum NAVD88		Hammer Data Automatic 140 (lbs) / 30 (in) Drop		Drilling Equipment Schram T300E	
Easting (X) 2525374.6756 Northing (Y) 271983.174549		System Datum WA State Plane North NAD83 (feet)		See "Remarks" section for groundwater observed	

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
1985	0						GM	Brown silty fine to coarse gravel with sand, cobbles and occasional boulders (medium dense, moist)			
							GP-GM	Gray-brown fine to coarse gravel with silt, sand, cobbles and occasional boulders (medium dense to very dense, moist)			
1980	5	0	50/0"								Sampler on cobble or boulder; blow counts not representative
1975	10	13	57		S-1 %F				4	9	Approximate SPT N-Value = 22
1970	15	3	41		S-2						
1965	20	8	94/11"		S-3						
1960	25	10	81		S-4						
1955	30	10	53		S-5						
	35										

Note: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on Aerial Imagery. Vertical approximated based on Aerial Imagery.

Log of Boring B-13

GeoEngineers

Project: COSV/Pines Road Underpass Phase II
Project Location: Spokane Valley, Washington
Project Number: 11264-041-00

Figure A-15
Sheet 1 of 3

Date:2/2/21 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\11\11264041\GINT\11264041 00 LOGS.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEB_GEOTECH_STANDARD_%F_NO_GW

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	FIELD DATA: Blows/foot	FIELD DATA: Collected Sample / Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
1950	35	8	43	S-6						Approximate SPT N Value = 16
	40	4	28	S-7						
1945	45	6	97/11"	S-8						Rock stuck in sampler; blow counts not representative
1940	50	4	86	S-9						Approximate SPT N-Value = 33
1935	55	4	16	S-10						
1930	60	6	69	S-11						
1925	65	8	97	S-12						Approximate SPT N-Value = 37
1920	70	5	61	S-13			Becomes wet			
1915										Groundwater encountered at 73 feet below ground surface
	75		31	S-14						

Date:2/2/21 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\11\11264041\GINT\11264041 00 LOGS.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEB_GEOTECH_STANDARD_%F_NO_GW

Log of Boring B-13 (continued)

GeoEngineers

Project: COSV/Pines Road Underpass Phase II
Project Location: Spokane Valley, Washington
Project Number: 11264-041-00

Figure A-15
Sheet 2 of 3

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	FIELD DATA: Blows/foot	FIELD DATA: Collected Sample / Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
1910										
	80	6	55	S-15						Approximate SPT N Value = 21
1905										
	85	6	13	S-16						
1900										
	90		33	S-17						
1895						ML	Gray clayey silt (hard, moist to wet)			
	95	18	52	S-18						
1890										
	100	18	66	S-19						

Date:2/2/21 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\11\11264041\GINT\11264041100 LOGS.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEB_GEOTECH_STANDARD_%F_NO_GW

Log of Boring B-13 (continued)

GeoEngineers

Project: COSV/Pines Road Underpass Phase II
Project Location: Spokane Valley, Washington
Project Number: 11264-041-00

Drilled Start 11/17/2020 End 11/18/2020	Total Depth (ft) 121.5	Logged By J. Orr Checked By DRL	Driller Environmental West	Drilling Method Air Rotary
Surface Elevation (ft) 1987.12 Vertical Datum NAVD88		Hammer Data Automatic 140 (lbs) / 30 (in) Drop		Drilling Equipment Schram T300E
Easting (X) 2525306.06693 Northing (Y) 272066.260195		System Datum WA State Plane North NAD83 (feet)		See "Remarks" section for groundwater observed

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
1985	0						GM	Brown silty fine to coarse gravel with sand, cobbles and occasional boulders (medium dense, moist)			
							GP-GM	Gray-brown fine to coarse gravel with silt, sand, cobbles and occasional boulders (medium dense to very dense, moist)			
1980	5	7	22		S-1						
1975	10	13	113		S-2 SA				4	12	Approximate SPT N Value = 43
1970	15	7	92/12"		S-3						
1965	20	7	31		S-4						
1960	25	3	67/9"		S-5						Rock stuck in sampler, blow counts not representative
1955	30	4	87/11"		S-6						
	35										

Note: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on Aerial Imagery. Vertical approximated based on Aerial Imagery.

Date:2/2/21 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\11\11264041\GINT\11264041 00 LOGS.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEB_GEOTECH_STANDARD_%F_NO_GW

Log of Boring B-14

GeoEngineers

Project: COSV/Pines Road Underpass Phase II
Project Location: Spokane Valley, Washington
Project Number: 11264-041-00

Figure A-16
Sheet 1 of 4

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	FIELD DATA: Blows/foot	FIELD DATA: Collected Sample	FIELD DATA: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
	35	2	29		S-7						
1950											
	40	9	69		S-8 SA				3	6	Approximate SPT N Value = 26
1945											
	45	6	46		S-9						
1940											
	50	2	76		S-10						
1935											
	55		43		S-11						
1930											
	60	10	109		S-12 SA				5	7	Approximate SPT N Value = 42
1925											
	65	8	67/11"		S-13						
1920											
	70	14	76		S-14						
1915								Becomes wet			Groundwater encountered at 73 feet below ground surface
	75	3	24		S-15						

Date:2/2/21 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\11\11264041\GINT\11264041 00 LOGS.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEB_GEOTECH_STANDARD_%F_NO_GW

Log of Boring B-14 (continued)

GeoEngineers

Project: COSV/Pines Road Underpass Phase II
Project Location: Spokane Valley, Washington
Project Number: 11264-041-00

Figure A-16
Sheet 2 of 4

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	FIELD DATA: Blows/foot	FIELD DATA: Collected Sample / Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
1910										
	80	4	19	S-16						
1905										
	85	2	27	S-17						
1900										
						ML	Grayish brown silt with clay, trace sand (hard, moist)			
	90	18	56	S-18						
1895										
	95	18	68	S-19						
1890										
	100	18	63	S-20						
1885										
	105									
1880										
	110	18	72	S-21						
1875										
	115									
1870										

Date:2/2/21 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\11\11264041\GINT\11264041 00 LOGS.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEB_GEOTECH_STANDARD_%F_NO_GW

Log of Boring B-14 (continued)

GeoEngineers

Project: COSV/Pines Road Underpass Phase II
Project Location: Spokane Valley, Washington
Project Number: 11264-041-00

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	FIELD DATA: Blows/foot	FIELD DATA: Collected Sample / Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
	120	18	58	S-22						

Log of Boring B-14 (continued)

GeoEngineers

Project: COSV/Pines Road Underpass Phase II
Project Location: Spokane Valley, Washington
Project Number: 11264-041-00

Figure A-16
Sheet 4 of 4

Date:2/2/21 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\11\11264041\GINT\11264041 00 LOGS.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEB_GEOTECH_STANDARD_%F_NO_GW

Date Excavated 11/20/2020	Total Depth (ft) 10	Logged By MAM Checked By DRL	Excavator Equipment CAT 420F2 IT (Backhoe)	Groundwater not observed See "Remarks" section for caving observed	
Surface Elevation (ft) 1976.09 Vertical Datum NAVD88		Easting (X) 2525674.31394 Northing (Y) 273152.171604		Coordinate System WA State Plane North Horizontal Datum NAD83 (feet)	

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
1976	0				GP-GM	Dark brown fine to coarse gravel with silt, sand and cobbles (medium dense, moist)			
1975	1		1 %F				9	10	
1974	2				GP-GM	Gray-brown fine to coarse gravel with silt, sand, cobbles and boulders (medium dense, moist)			
1973	3								
1972	4		2 SA				3	6	
1971	5								
1970	6		3						Minor to moderate caving observed below 7 feet
1969	7								
1968	8								
1967	9		4 %F				5	7	
	10								

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.
Coordinates Data Source: Horizontal approximated based on Aerial Imagery. Vertical approximated based on Aerial Imagery.

Log of Test Pit TP-1

GeoEngineers

Project: COSV/Pines Road Underpass Phase II
Project Location: Spokane Valley, Washington
Project Number: 11264-041-00

Figure A-17
Sheet 1 of 1

Date:2/2/21 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\11\11264041\GINT\11264041 00 LOGS.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEB_TESTPIT_1P_GEOTEC_%F

Date Excavated 11/20/2020	Total Depth (ft) 9	Logged By MAM Checked By DRL	Excavator Equipment CAT 420F2 IT (Backhoe)	Groundwater not observed See "Remarks" section for caving observed
Surface Elevation (ft) 1977.22 Vertical Datum NAVD88		Easting (X) 2525765.99955 Northing (Y) 272918.101311	Coordinate System WA State Plane North Horizontal Datum NAD83 (feet)	

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
1977	0				GM	Dark brown silty fine to coarse gravel with cobbles and boulders (medium dense, moist)			
1976	1		1 SA				9	18	
1975	2				GP	Gray-brown fine to coarse gravel with sand, cobbles and boulders and trace silt (medium dense, moist)			
1974	3								
1973	4								
1972	5		2 SA				4	4	Moderate caving observed below 6 feet
1971	6								
1970	7								
1969	8		3						
	9								

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.
Coordinates Data Source: Horizontal approximated based on Aerial Imagery. Vertical approximated based on Aerial Imagery.

Log of Test Pit TP-2

GeoEngineers

Project: COSV/Pines Road Underpass Phase II
Project Location: Spokane Valley, Washington
Project Number: 11264-041-00

Figure A-18
Sheet 1 of 1

Date:2/2/21 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\11\11264041\GINT\11264041 00 LOGS.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEB_TESTPIT_1P_GEOTEC_%F

Date Excavated 11/20/2020	Total Depth (ft) 10	Logged By MAM Checked By DRL	Excavator Equipment CAT 420F2 IT (Backhoe)	Groundwater not observed See "Remarks" section for caving observed	
Surface Elevation (ft) 1978.3 Vertical Datum NAVD88		Easting (X) 2525755.70433 Northing (Y) 272812.174149		Coordinate System WA State Plane North Horizontal Datum NAD83 (feet)	

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
1978	0				GP-GM	Dark brown fine to coarse gravel with silt, sand and occasional cobbles (medium dense, moist)			
1977	1		1 %F				8	12	
1976	2				GP-GM	Gray brown fine to coarse gravel with silt, sand, cobbles and boulders (medium dense, moist)			
1975	3								
1974	4								
1973	5		2 SA				7	9	Minor caving observed below 6 feet
1972	6								
1971	7								
1970	8		3 %F				4	7	
1969	9								
	10								

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.
Coordinates Data Source: Horizontal approximated based on Aerial Imagery. Vertical approximated based on Aerial Imagery.

Log of Test Pit TP-3

GeoEngineers

Project: COSV/Pines Road Underpass Phase II
Project Location: Spokane Valley, Washington
Project Number: 11264-041-00

Figure A-19
Sheet 1 of 1

Date:2/2/21 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\11\11264041\GINT\11264041 00 LOGS.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEB_TESTPIT_1P_GEOTEC_%F

Date Excavated 11/20/2020	Total Depth (ft) 8	Logged By MAM Checked By DRL	Excavator Equipment CAT 420F2 IT (Backhoe)	Groundwater not observed See "Remarks" section for caving observed	
Surface Elevation (ft) 1977.73 Vertical Datum NAVD88		Easting (X) 2526015.17697 Northing (Y) 272371.125989		Coordinate System WA State Plane North Horizontal Datum NAD83 (feet)	

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
1977	0				TS	Approximately 6 inches dark brown silt with sand and organic matter (medium stiff, moist) (topsoil)			
	1				GW	Gray-brown fine to coarse gravel with sand, occasional cobbles and trace silt (loose to medium dense, moist)			
1976	2		1 SA				5	3	Moderate to severe caving observed below 2 feet
1975	3								
1974	4								
1973	5								
1972	6								
1971	7		2 %F			Grades with boulders	4	4	
1970	8								

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.
Coordinates Data Source: Horizontal approximated based on Aerial Imagery. Vertical approximated based on Aerial Imagery.

Log of Test Pit TP-4

GeoEngineers

Project: COSV/Pines Road Underpass Phase II
Project Location: Spokane Valley, Washington
Project Number: 11264-041-00

Figure A-20
Sheet 1 of 1

Date:2/2/21 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\11\11264041\GINT\11264041 00 LOGS.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEB_TESTPIT_1P_GEOTEC_%F

Date Excavated 11/20/2020	Total Depth (ft) 9	Logged By MAM Checked By DRL	Excavator Equipment CAT 420F2 IT (Backhoe)	Groundwater not observed See "Remarks" section for caving observed	
Surface Elevation (ft) 1984.61 Vertical Datum NAVD88		Easting (X) 2525564.50458 Northing (Y) 272324.862188		Coordinate System WA State Plane North Horizontal Datum NAD83 (feet)	

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
1984	0		1 %F		TS	Dark brown silty fine to coarse gravel with sand, cobbles and organic matter (medium dense, moist) (topsoil)	15	22	
					GM	Brown to dark brown silty fine to coarse gravel with sand and cobbles (medium dense, moist)			
1983	1				GP-GM	Gray-brown fine to coarse gravel with silt and sand, cobbles and boulders (medium dense, moist)			
1982	2								
1981	3								
1980	4		2 %F				6	8	Minor caving observed below 4 feet
1979	5								
1978	6								
1977	7								
1976	8		3 SA				3	7	
	9								

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.
Coordinates Data Source: Horizontal approximated based on Aerial Imagery. Vertical approximated based on Aerial Imagery.

Log of Test Pit TP-5

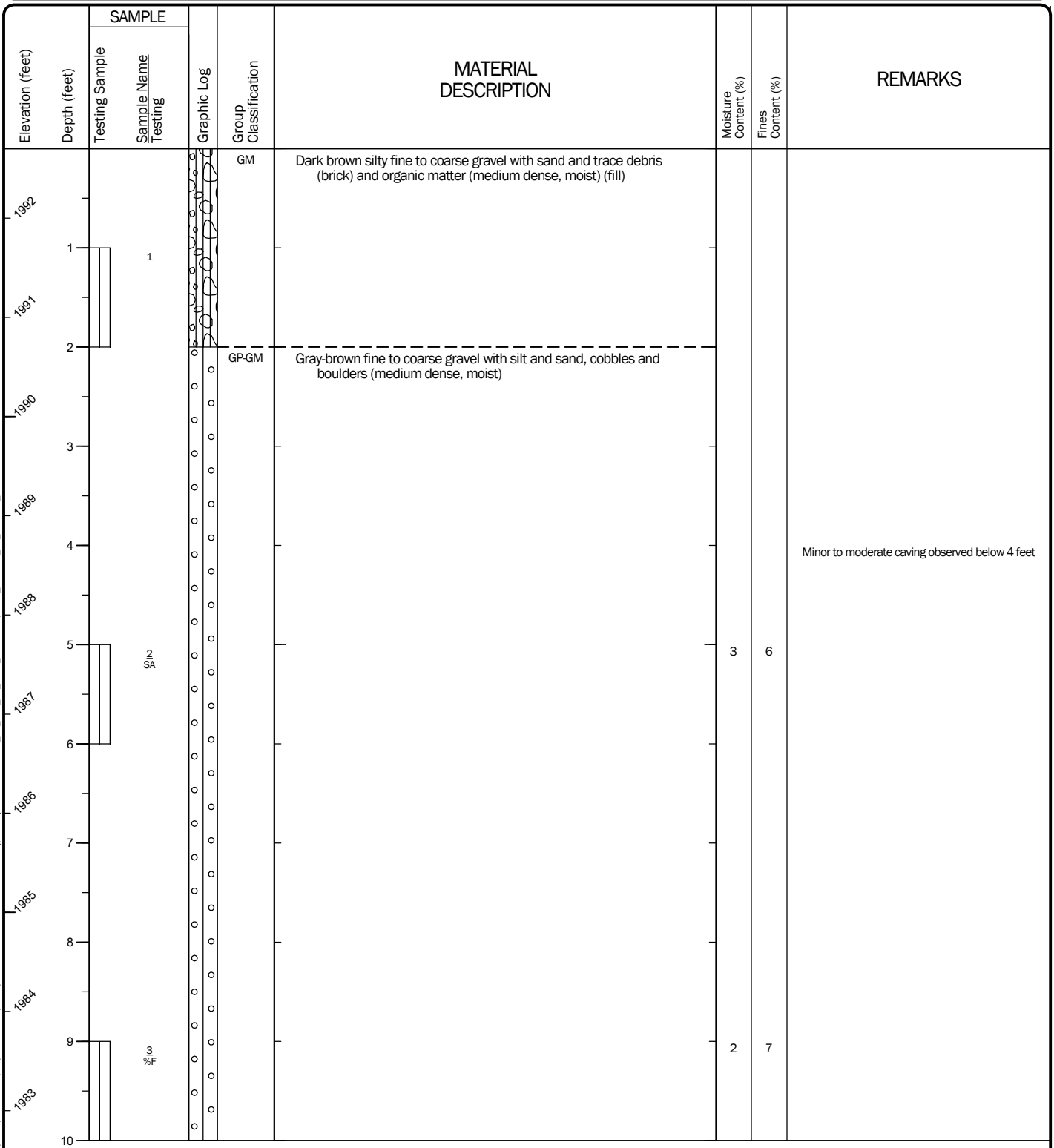
GeoEngineers

Project: COSV/Pines Road Underpass Phase II
Project Location: Spokane Valley, Washington
Project Number: 11264-041-00

Figure A-21
Sheet 1 of 1

Date:2/2/21 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\11\11264041\GINT\11264041 00 LOGS.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEB_TESTPIT_1P_GEOTEC_%F

Date Excavated 11/20/2020	Total Depth (ft) 10	Logged By MAM Checked By DRL	Excavator Equipment CAT 420F2 IT (Backhoe)	Groundwater not observed See "Remarks" section for caving observed	
Surface Elevation (ft) 1992.7 Vertical Datum NAVD88		Easting (X) 2525375.59756 Northing (Y) 271764.185473		Coordinate System WA State Plane North Horizontal Datum NAD83 (feet)	



Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.
Coordinates Data Source: Horizontal approximated based on Aerial Imagery. Vertical approximated based on Aerial Imagery.

Log of Test Pit TP-6

GeoEngineers

Project: COSV/Pines Road Underpass Phase II
Project Location: Spokane Valley, Washington
Project Number: 11264-041-00

Figure A-22
Sheet 1 of 1

Date:2/2/21 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\11\11264041\GINT\11264041 00 LOGS.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEB_TESTPIT_1P_GEOTEC_%F

Date Excavated 11/20/2020	Total Depth (ft) 10	Logged By MAM Checked By DRL	Excavator Equipment CAT 420F2 IT (Backhoe)	Groundwater not observed See "Remarks" section for caving observed
Surface Elevation (ft) 1993.11 Vertical Datum NAVD88		Easting (X) 2525255.28845 Northing (Y) 271650.474674	Coordinate System WA State Plane North Horizontal Datum NAD83 (feet)	

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
1993	0		1 SA		GM	Dark brown silty fine to coarse gravel with sand and debris (concrete rubble, wood) (loose to medium dense, moist) (fill)	10	19	
1992	1								
1991	2				GP-GM	Gray-brown fine to coarse gravel with silt and sand, cobbles and occasional boulders (medium dense, moist)			
1990	3		2						
1989	4								Minor caving observed below 4 feet
1988	5								
1987	6								
1986	7				GP-GM	Gray-brown fine to coarse gravel with silt and sand, cobbles and boulders (medium dense, moist)			
1985	8								
1984	9		3						
	10								

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.
Coordinates Data Source: Horizontal approximated based on Aerial Imagery. Vertical approximated based on Aerial Imagery.

Log of Test Pit TP-7

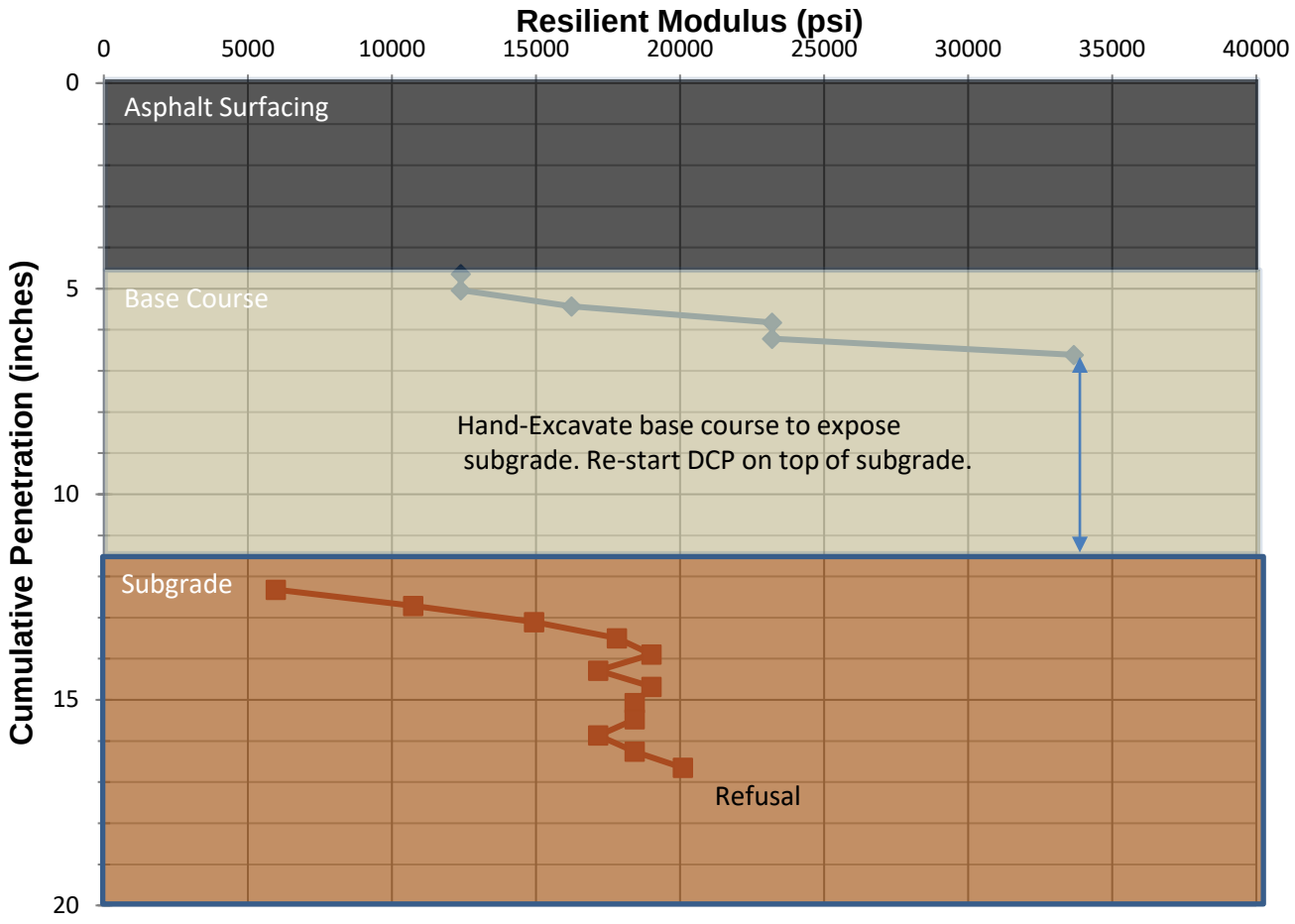
GeoEngineers

Project: COSV/Pines Road Underpass Phase II
Project Location: Spokane Valley, Washington
Project Number: 11264-041-00

Figure A-23
Sheet 1 of 1

Date:2/2/21 Path:\\GEOENGINEERS.COM\WAN\PROJECTS\11\11264041\GINT\11264041 00 LOGS.GPJ DBLibrary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.GLB/GEB_TESTPIT_1P_GEOTEC_%F

Test increment	Number of blows	Cumulative blows	Depth below ground surface	Penetration per increment	Cumulative penetration	Cummulative Penetration	Penetration per blow set	Penetration per blow	Hammer blow factor	DCP Index	DCP Index	CBR	M_R	Soil Unit
#	#	#	(in)	(mm)	(mm)	(in)	(in)	(in)	1 for 8-kg 2 for 4.6-kg hammer	in/blow	mm/blow	%	psi	
1	-	0	4.3	-	108	4.3	-	-	1	-	-	-	-	Base Course
2	1	1	4.6	10.0	118	4.6	0.4	0.4	1	0.39	10.00	22	12382	
3	1	2	5.0	10.0	128	5.0	0.4	0.4	1	0.39	10.00	22	12382	
4	2	4	5.4	10.0	138	5.4	0.4	0.2	1	0.20	5.00	48	16225	
5	5	9	5.8	10.0	148	5.8	0.4	0.1	1	0.08	2.00	134	23195	
6	5	14	6.2	10.0	158	6.2	0.4	0.1	1	0.08	2.00	134	23195	
7	13	27	6.6	10.0	168	6.6	0.4	0.0	1	0.03	0.77	392	33669	
8	0	27	11.7	130.0	298	11.7	5.1	Refusal						
9	1	28	12.3	15.0	313	12.3	0.6	0.6	1	0.59	15.00	14	5967	Subgrade
10	3	31	12.7	10.0	323	12.7	0.4	0.1	1	0.13	3.33	76	10729	
11	7	38	13.1	10.0	333	13.1	0.4	0.1	1	0.06	1.43	196	14930	
12	11	49	13.5	10.0	343	13.5	0.4	0.0	1	0.04	0.91	325	17808	
13	13	62	13.9	10.0	353	13.9	0.4	0.0	1	0.03	0.77	392	19007	
14	10	72	14.3	10.0	363	14.3	0.4	0.0	1	0.04	1.00	292	17158	
15	13	85	14.7	10.0	373	14.7	0.4	0.0	1	0.03	0.77	392	19007	
16	12	97	15.1	10.0	383	15.1	0.4	0.0	1	0.03	0.83	358	18423	
17	12	109	15.5	10.0	393	15.5	0.4	0.0	1	0.03	0.83	358	18423	
18	10	119	15.9	10.0	403	15.9	0.4	0.0	1	0.04	1.00	292	17158	
19	12	131	16.3	10.0	413	16.3	0.4	0.0	1	0.03	0.83	358	18423	
20	15	146	16.7	10.0	423	16.7	0.4	0.0	1	0.03	0.67	460	20098	
21								Refusal						



DCP-1

BNSF/Pines Underpass Bridge Project
Spokane Valley, Washington

GeoEngineers

Figure A-24

Notes:

1. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: GeoEngineers Field Logs

XXXX-XXX-XX Date Exported: 04/09/15

Notes:

1. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: GeoEngineers Field Logs

Test Pit Photo (TP-1)

BNSF/Pines Underpass Bridge Project
Spokane Valley, Washington

GeoEngineers

Figure A-25

XXXX-XXX-XX Date Exported: 04/09/15

Notes:

1. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: GeoEngineers Field Logs

Test Pit Photo (TP-2)

BNSF/Pines Underpass Bridge Project
Spokane Valley, Washington

GeoEngineers

Figure A-26

XXXX-XXX-XX Date Exported: 04/09/15

Test Pit Photo (TP-3)

BNSF/Pines Underpass Bridge Project
Spokane Valley, Washington

GeoEngineers

Figure A-27

Notes:

1. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: GeoEngineers Field Logs

XXXX-XXX-XX Date Exported: 04/09/15

Test Pit Photo (TP-4)

BNSF/Pines Underpass Bridge Project
Spokane Valley, Washington

GeoEngineers

Figure A-28

Notes:

1. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: GeoEngineers Field Logs

XXXX-XXX-XX Date Exported: 04/09/15

Notes:

1. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: GeoEngineers Field Logs

Test Pit Photo (TP-5)

BNSF/Pines Underpass Bridge Project
Spokane Valley, Washington

GeoEngineers

Figure A-29

XXXX-XXX-XX Date Exported: 04/09/15

Test Pit Photo (TP-6)

BNSF/Pines Underpass Bridge Project
Spokane Valley, Washington

GeoEngineers

Figure A-30

Notes:

1. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: GeoEngineers Field Logs

XXXX-XXX-XX Date Exported: 04/09/15

Test Pit Photo (TP-7)

BNSF/Pines Underpass Bridge Project
Spokane Valley, Washington

GeoEngineers

Figure A-31

Notes:

1. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: GeoEngineers Field Logs

XXXX-XXX-XX Date Exported: 04/09/15

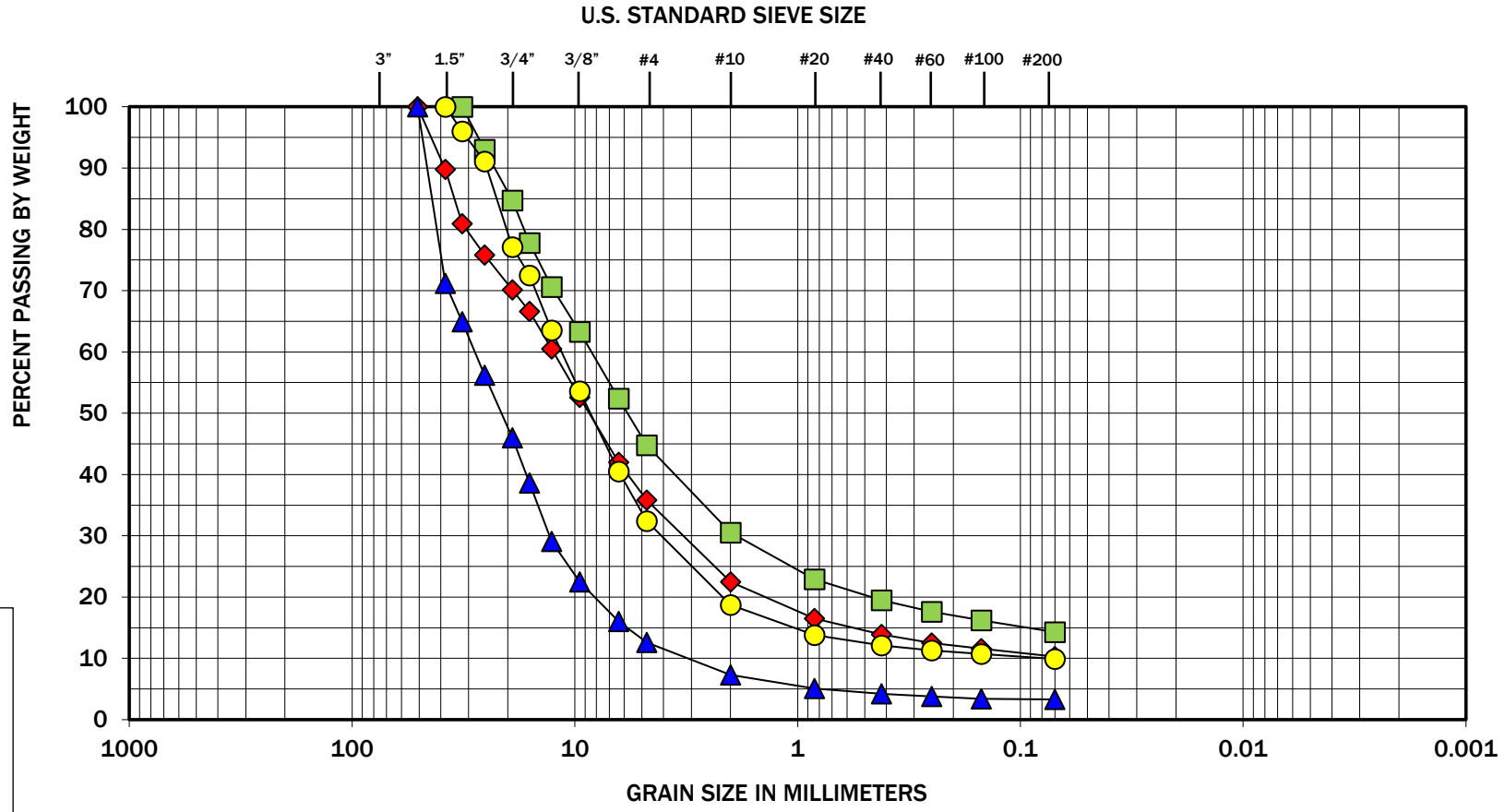
APPENDIX B
Laboratory Testing

APPENDIX B
LABORATORY TESTING

Soil samples obtained from the explorations were transported to our Spokane laboratory to confirm or modify field classifications, as well as to evaluate select engineering properties of the soil encountered. ASTM International (ASTM) D 2487 was used to classify soil based on laboratory test results. A summary of the laboratory tests completed is presented in Table B-1.

TABLE B-1. SUMMARY OF LABORATORY TESTING

Standard Test Method for:	Test Method Designation	Total Tests Performed	Results Location
Laboratory Determination of Water (Moisture) Content of Soil	ASTM D2216	31	Presented in the applicable exploration logs in the "Moisture Content, %" column.
Determining the Amount of Material Finer than 75-µm (No. 200) Sieve in Soils by Washing	ASTM D1140	15	Presented in the applicable exploration logs in the "Fines Content, %" column.
Sieve Analysis of Fine and Coarse Aggregates	ASTM C136	16	Presented in B-1 through B-4 and in the applicable exploration logs in the "Percent Fines, %" column.
Laboratory Compaction Characteristics of Soil Using Modified Effort	ASTM D1557	2	Summarized in Figures B-5 and B-6.
R-value	ITD Method T8	2	Summarized in Figures B-7 and B-8.



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Symbol	Boring Number	Depth (feet)	Moisture (%)	Soil Description
◆	B-2	12½ - 15	3	Fine to coarse gravel with silt and sand (GP-GM)
■	B-2	20 - 21	4	Silty gravel with sand (GM)
▲	B-9	20 – 21½	2	Fine to coarse gravel with sand (GW)
●	B-11	15 – 16½	4	Fine to coarse gravel with silt and sand (GP-GM)

Note: This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations, or generated by separate operations or processes.

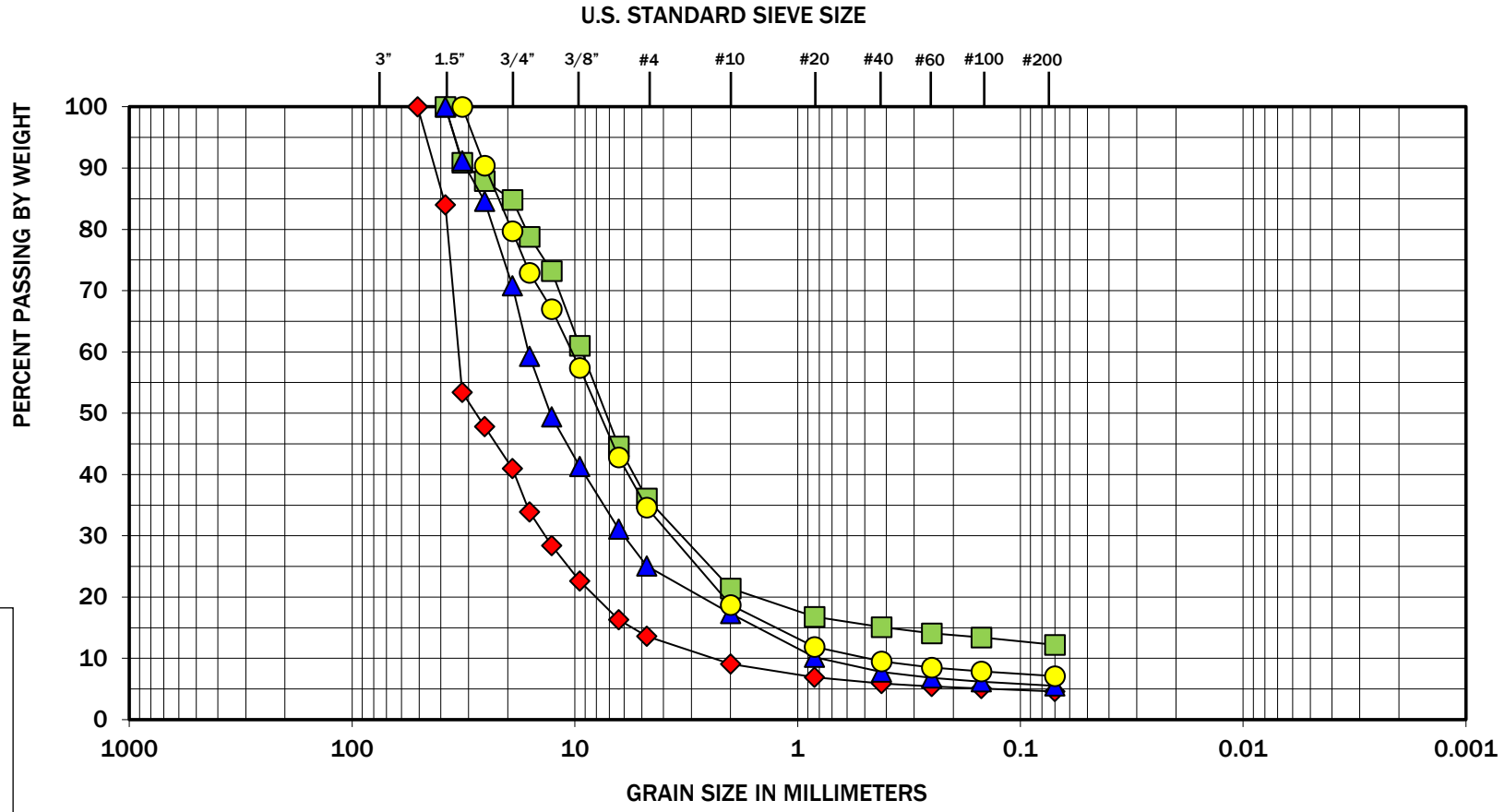
The grain size analysis results were obtained in general accordance with ASTM D 6913.

GeoEngineers

Figure B-1

City of Spokane Valley - BNSF/Pines Underpass
Spokane Valley, Washington

Sieve Analysis Results



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Symbol	Boring Number	Depth (feet)	Moisture (%)	Soil Description
◆	B-12	15 – 16½	2	Fine to coarse gravel with sand (GW)
■	B-14	10 – 11½	4	Silty gravel with sand (GM)
▲	B-14	40 - 41½	3	Fine to coarse gravel with silt and sand (GW-GM)
●	B-14	60 - 61½	5	Fine to coarse gravel with silt and sand (GP-GM)

Note: This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations, or generated by separate operations or processes.

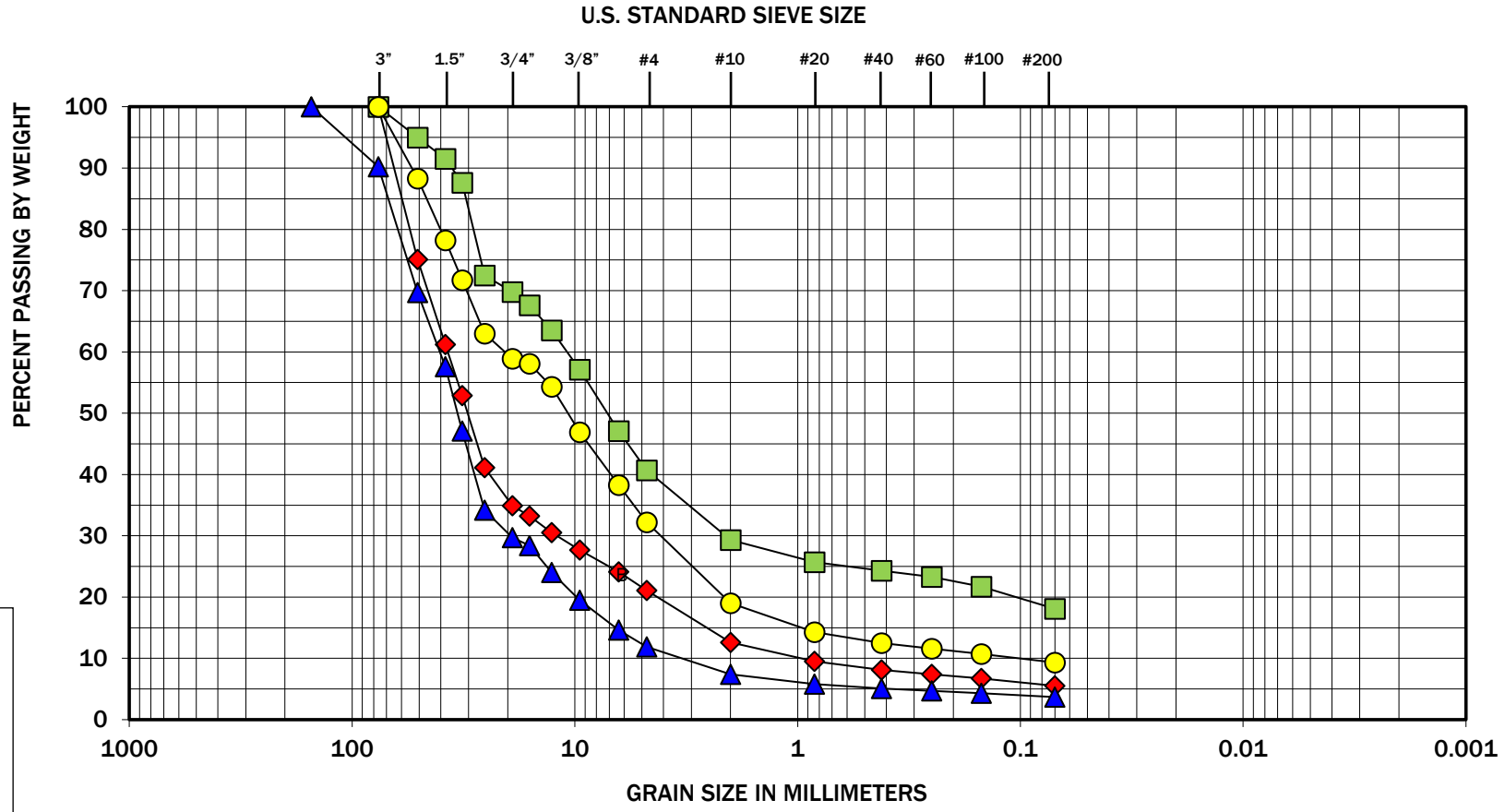
The grain size analysis results were obtained in general accordance with ASTM D 6913.

GeoEngineers

Figure B-2

City of Spokane Valley - BNSF/Pines Underpass
Spokane Valley, Washington

Sieve Analysis Results



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Symbol	Boring Number	Depth (feet)	Moisture (%)	Soil Description
◆	TP-1	4 - 5	3	Fine to coarse gravel with silt and sand (GP-GM)
■	TP-2	1 - 2	9	Silty gravel with sand (GM)
▲	TP-2	5 – 6	4	Fine to coarse gravel with sand (GP)
●	TP-3	5 – 6	7	Fine to coarse gravel with silt and sand (GP-GM)

Note: This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations, or generated by separate operations or processes.

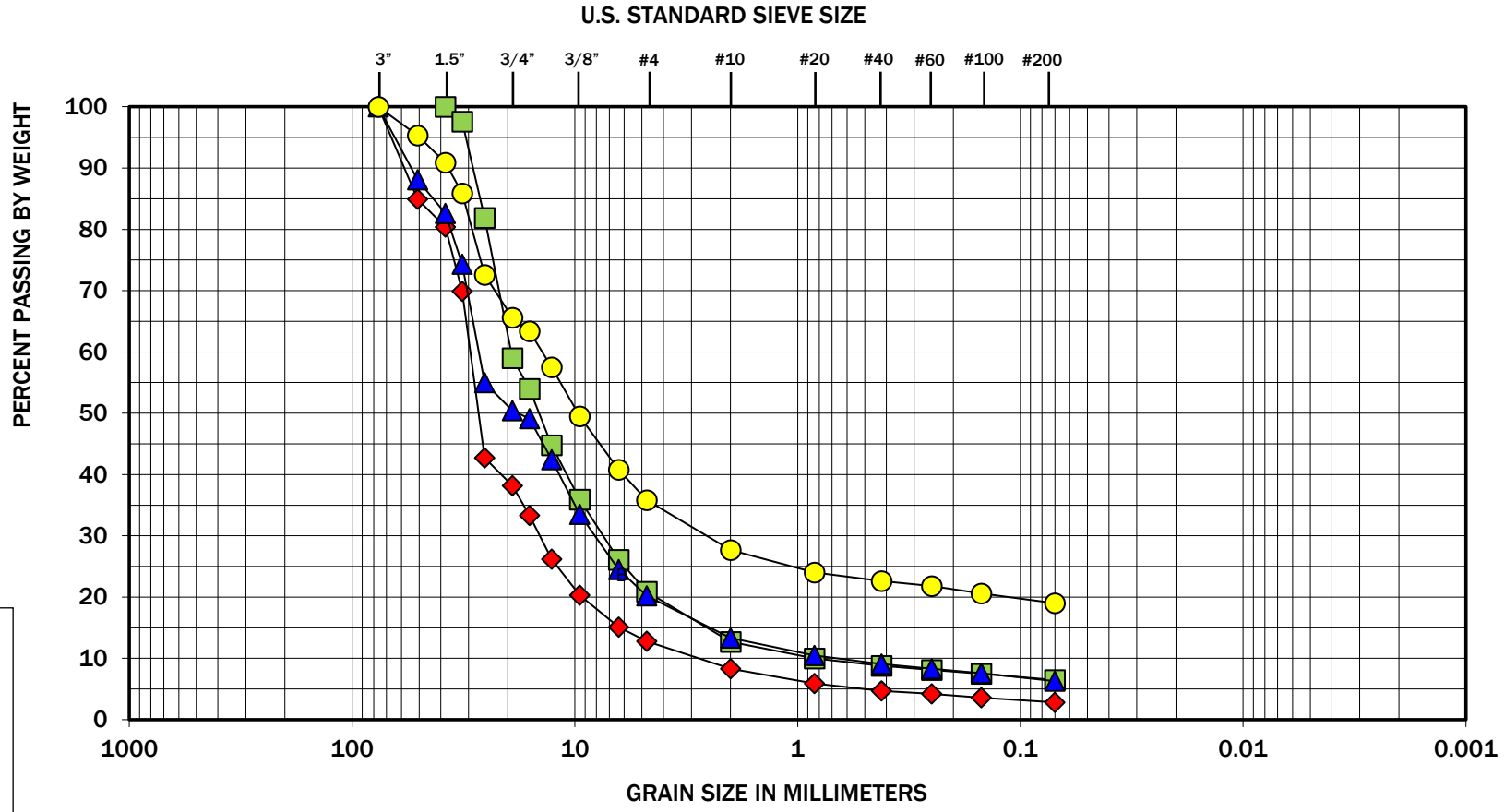
The grain size analysis results were obtained in general accordance with ASTM D 6913.

GeoEngineers

Figure B-3

City of Spokane Valley - BNSF/Pines Underpass
Spokane Valley, Washington

Sieve Analysis Results



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Symbol	Boring Number	Depth (feet)	Moisture (%)	Soil Description
◆	TP-4	2 – 3	5	Fine to coarse gravel with sand (GW)
■	TP-5	8 – 9	3	Fine to coarse gravel with silt and sand (GP)
▲	TP-6	5 – 6	3	Fine to coarse gravel with silt and sand (GP-GM)
●	TP-7	0 – 1	10	Silty gravel with sand (contained wood fragments) (GM)

Note: This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations, or generated by separate operations or processes.

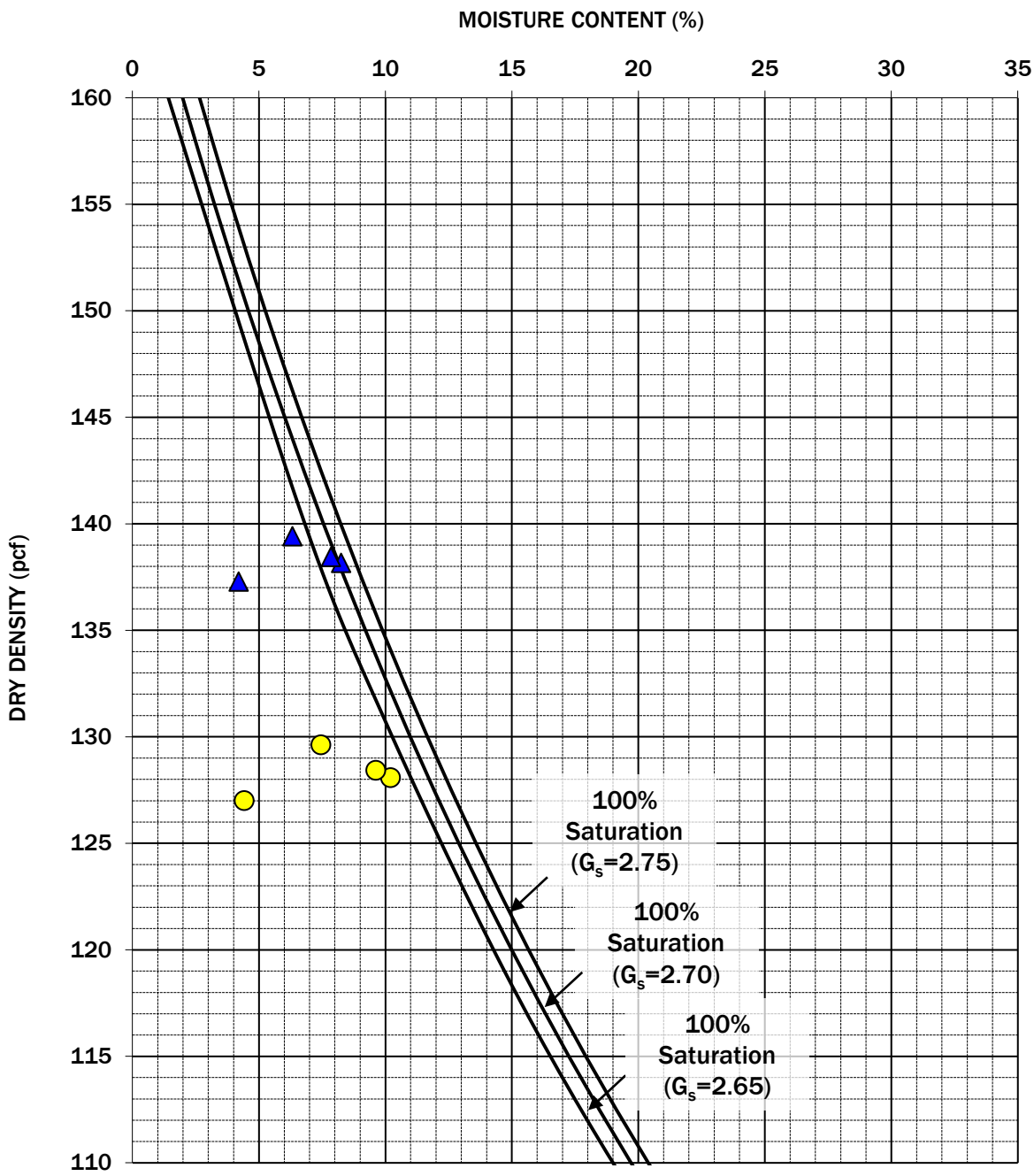
The grain size analysis results were obtained in general accordance with ASTM D 6913.

GeoEngineers

Figure B-4

City of Spokane Valley - BNSF/Pines Underpass
Spokane Valley, Washington

Sieve Analysis Results



Symbol	Boring Number	Depth (feet)	Soil Description	Optimum Moisture (%)	Maximum Dry Density (pcf)
▲ Corrected	TP-2	1 – 2	Silty fine to coarse gravel with sand	6.7	139.7
○ Uncorrected				8.0	130.0

Note: This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations, or generated by separate operations or processes.

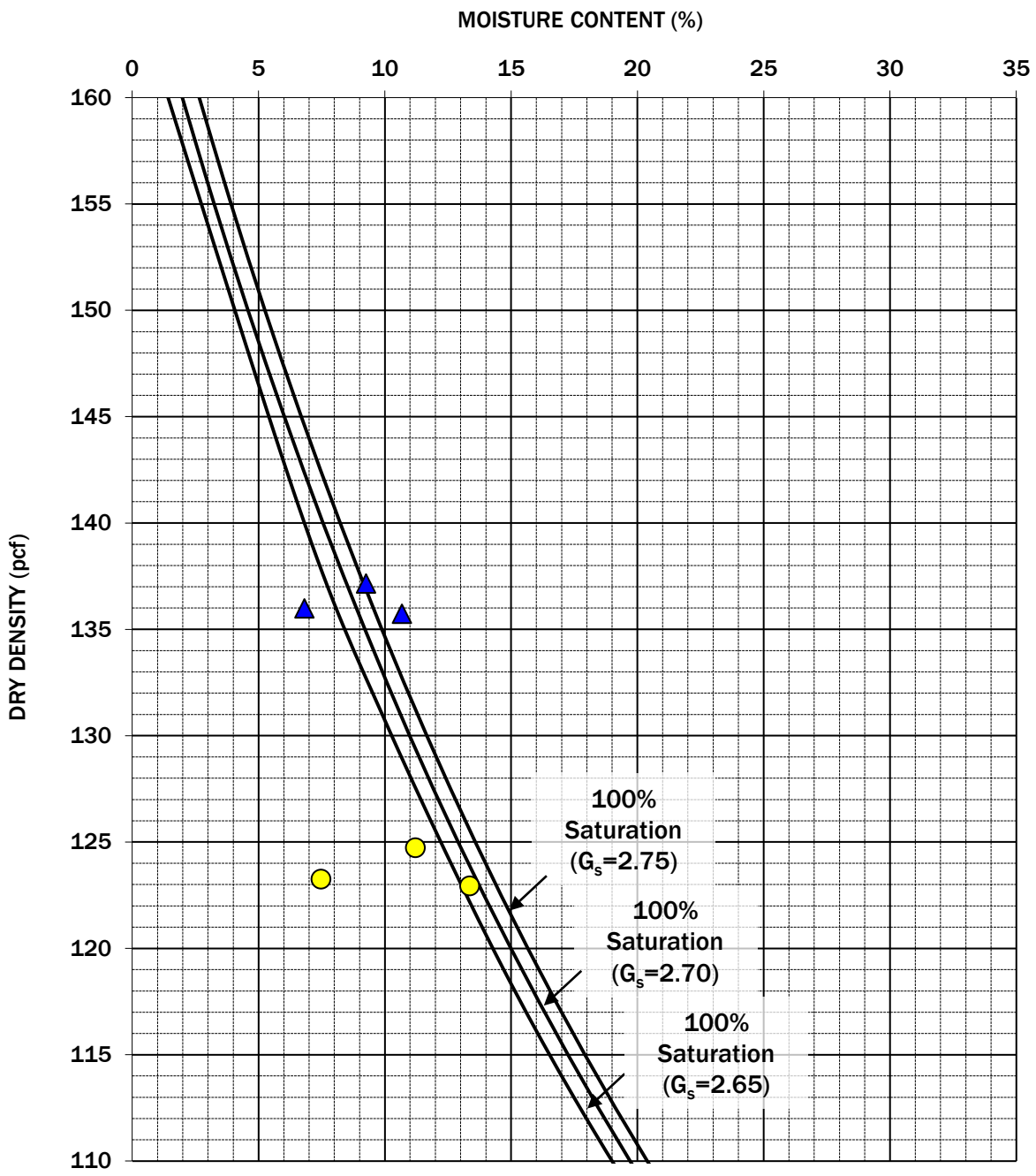
The Proctor results were obtained in general accordance with ASTM D 1557, Method B.

Compaction Test Results

COSV–BNSF/Pines Underpass Project
Spokane Valley, Washington

GeoEngineers

Figure B-5



Symbol	Boring Number	Depth (feet)	Soil Description	Optimum Moisture (%)	Maximum Dry Density (pcf)
▲ Corrected	TP-7	0 – 1	Silty fine to coarse gravel with sand	8.5	137.8
○ Uncorrected				10.0	125.5

Note: This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations, or generated by separate operations or processes.

The Proctor results were obtained in general accordance with ASTM D 1557, Method B.

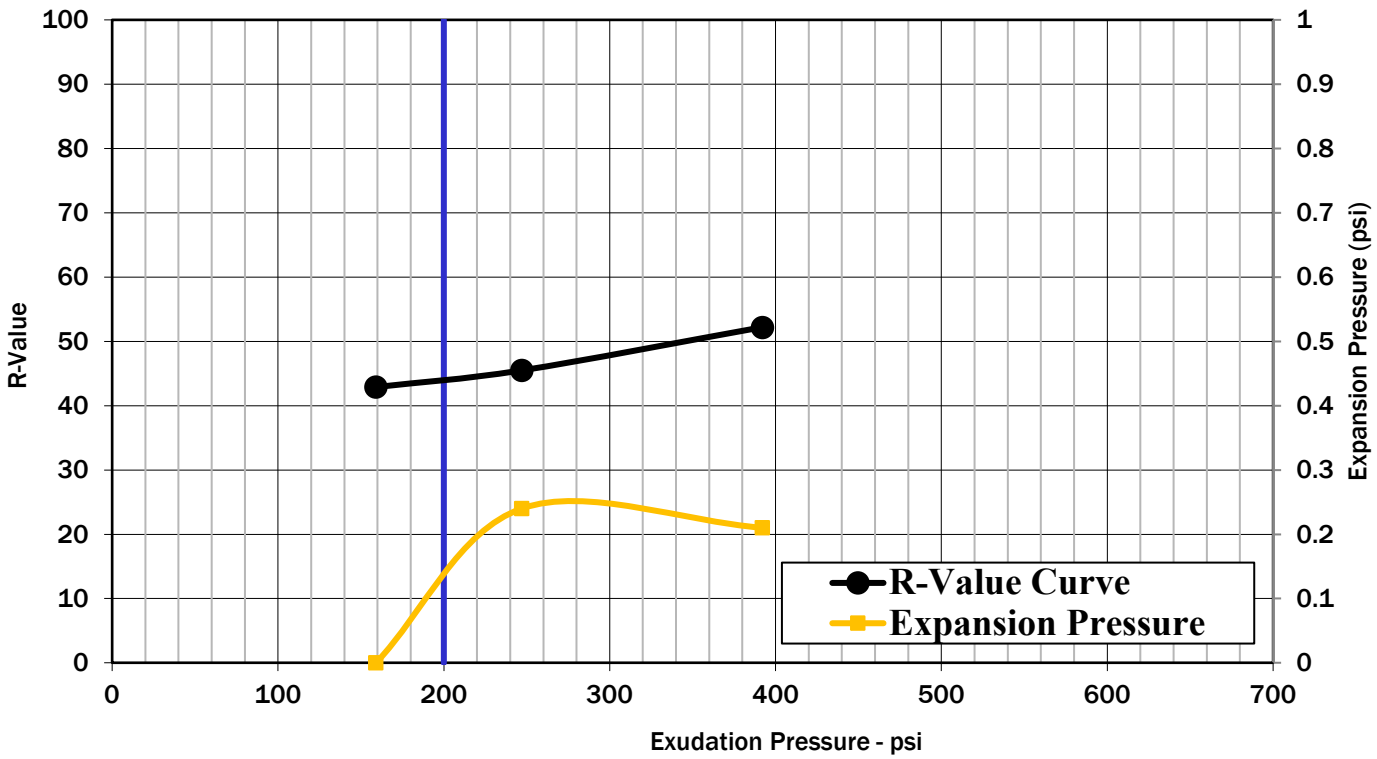
Compaction Test Results

COSV–BNSF/Pines Underpass Project
Spokane Valley, Washington

GeoEngineers

Figure B-6

R-Value Test Report



No.	Compact Pressure (psi)	Density (pcf)	Moisture Content (%)	Expansion Pressure (psi)	Horizontal Press. Psi @ 160 psi	Sample Height (in)	Exud. Pressure (psi)	R Value	R Value Corr.
1	100	122.4	10.1	0.00	78	2.58	159	40.9	42.9
2	100	124.2	9.9	0.00	70	2.43	247	47.3	45.5
3	100	124.2	8.9	0.00	60	2.54	392	52.2	52.2

Boring: TP-2 **Depth**: 1 – 2 feet	**Material Description** Silty fine to coarse gravel with sand (GM)	**R-Value = 44**

Note: This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations, or generated by separate operations or processes.

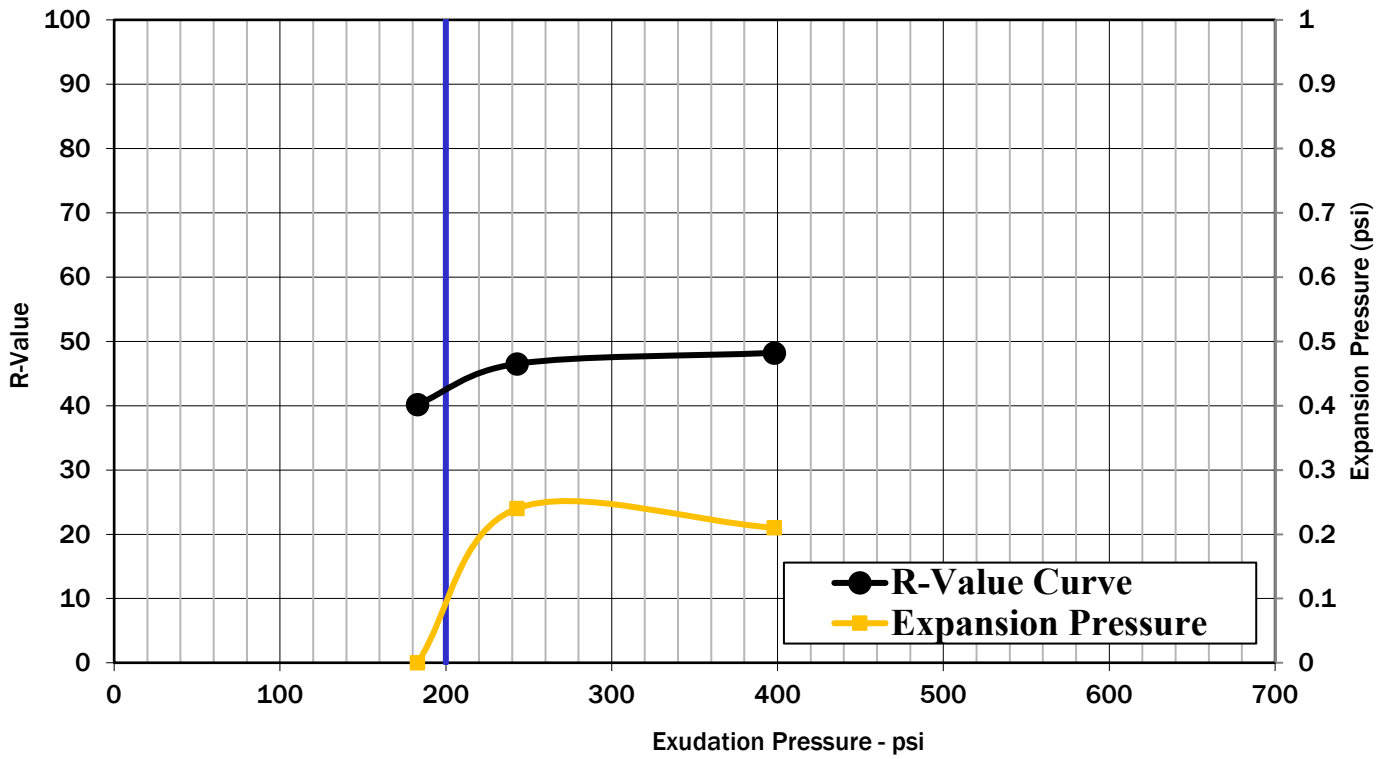
R-value Results

COSV–BNSF/Pines Underpass Project
Spokane Valley, Washington

GeoEngineers

Figure B-7

R-Value Test Report



No.	Compact Pressure (psi)	Density (pcf)	Moisture Content (%)	Expansion Pressure (psi)	Horizontal Press. Psi @ 160 psi	Sample Height (in)	Exud. Pressure (psi)	R Value	R Value Corr.
1	100	120.6	10.2	0.00	70	2.51	243	46.5	46.5
2	100	119.3	11.3	0.00	82	2.57	183	38.5	40.2
3	100	121.3	10.5	0.00	65	2.54	398	48.2	48.2

Boring: TP-7 **Depth**: 0 – 1 feet	**Material Description** Silty fine to coarse gravel with sand (GM)	**R-Value = 42**

R-value Results

COSV–BNSF/Pines Underpass Project
Spokane Valley, Washington

GeoEngineers

Figure B-8

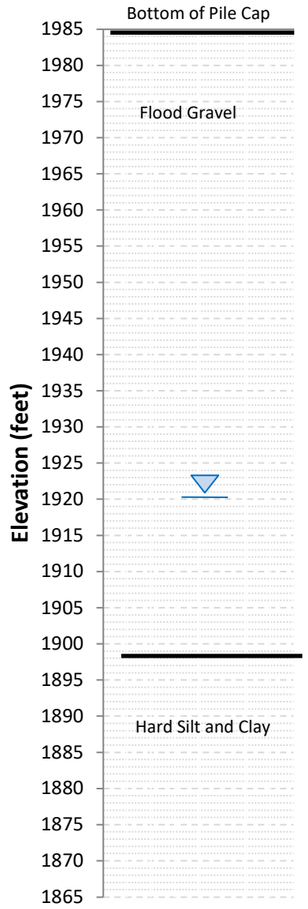
Note: This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations, or generated by separate operations or processes.

APPENDIX C
Axial Pile Resistance Graphs

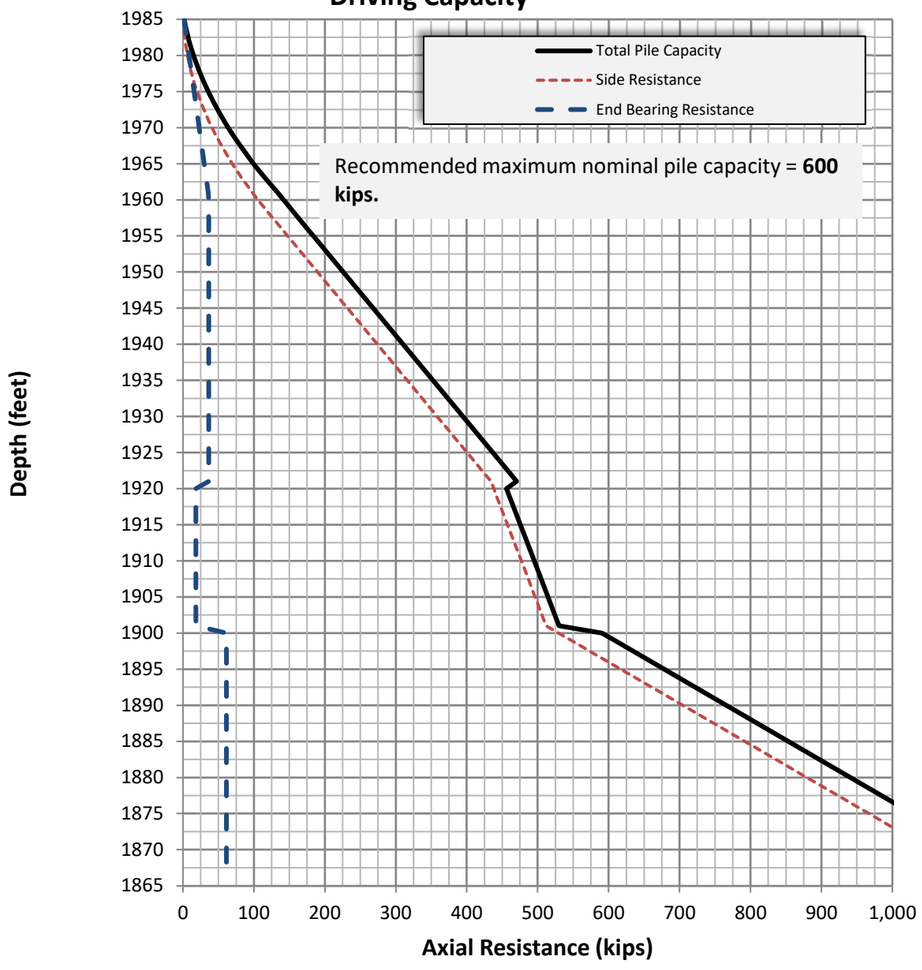
ABUTMENTS DRIVEN PILE CAPACITY

HP 14x89 and 14x117 H-Piles

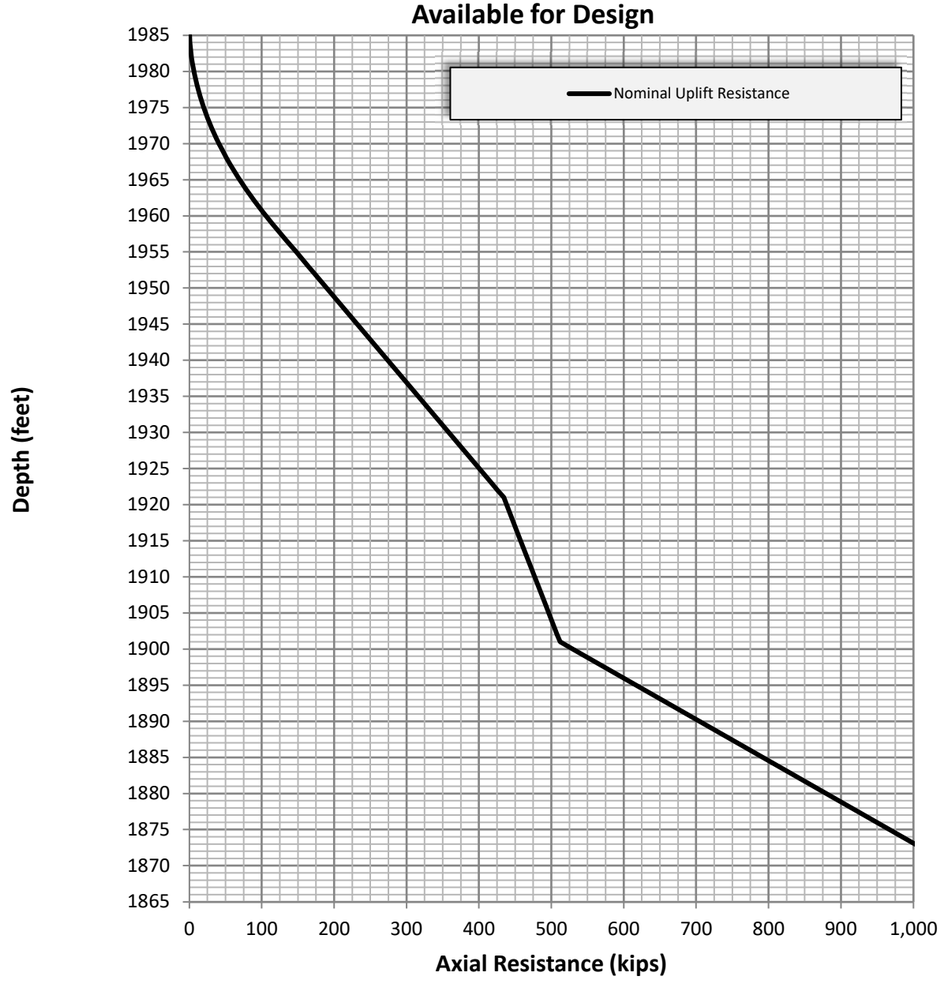
Subsurface Profile



Nominal (Unfactored) Downward Driving Capacity



Nominal (Unfactored) Uplift Resistance Available for Design



Notes:

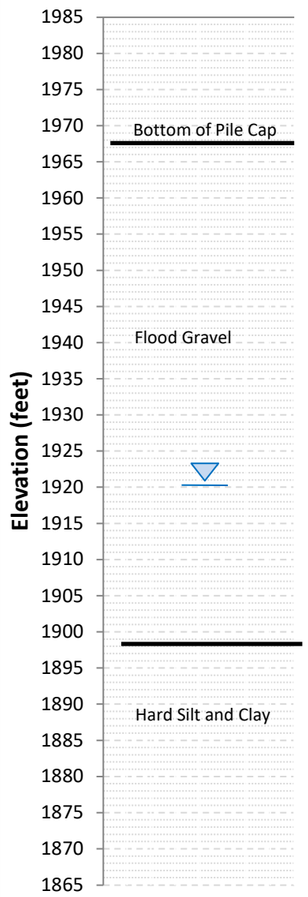
1. The pile capacities were developed using the Nordland/Thurman method.
2. The plots are based on a single pile and do not consider group effects of closely spaced piles.
3. Pile settlement is estimated to be negligible under Service loading conditions.
4. The appropriate safety factors as described in the report text should be applied to the nominal capacities in the plots.

14x89 and 14x117 H-Pile Axial Capacity
BNSF/Pines Underpass Project Spokane Valley, Washington
GeoEngineers | Figure C-1

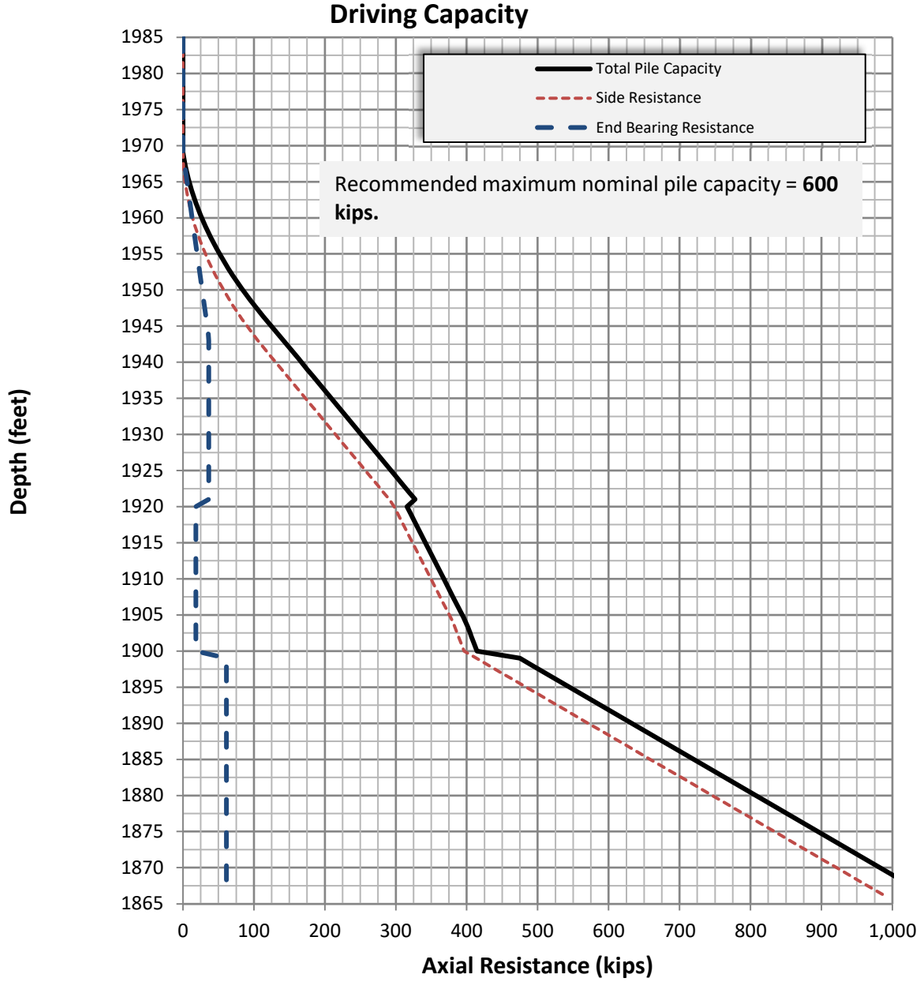
INTERIOR PIER DRIVEN PILE CAPACITY

HP 14x89 and 14x117 H-Piles

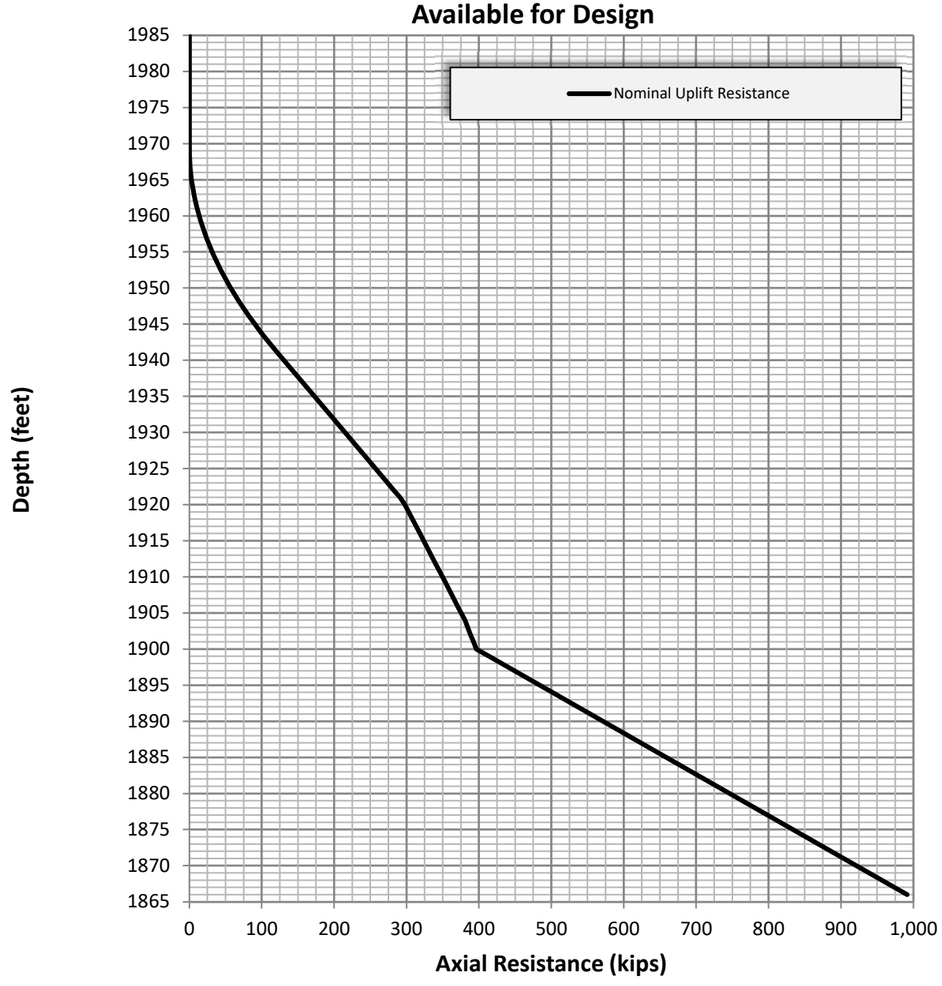
Subsurface Profile



Nominal (Unfactored) Downward Driving Capacity



Nominal (Unfactored) Uplift Resistance Available for Design



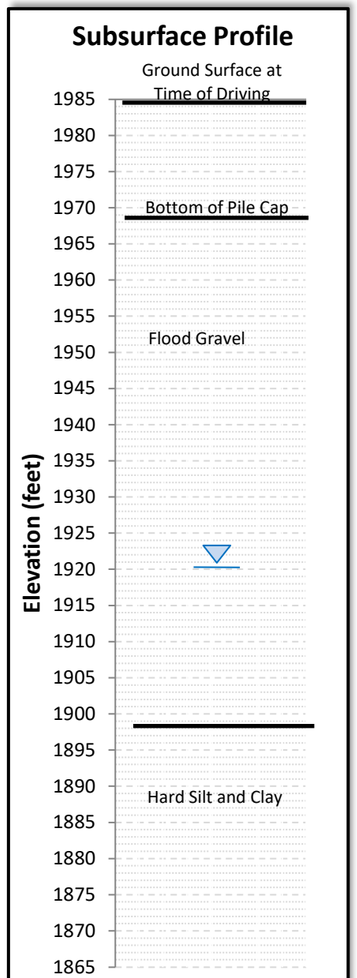
Notes:

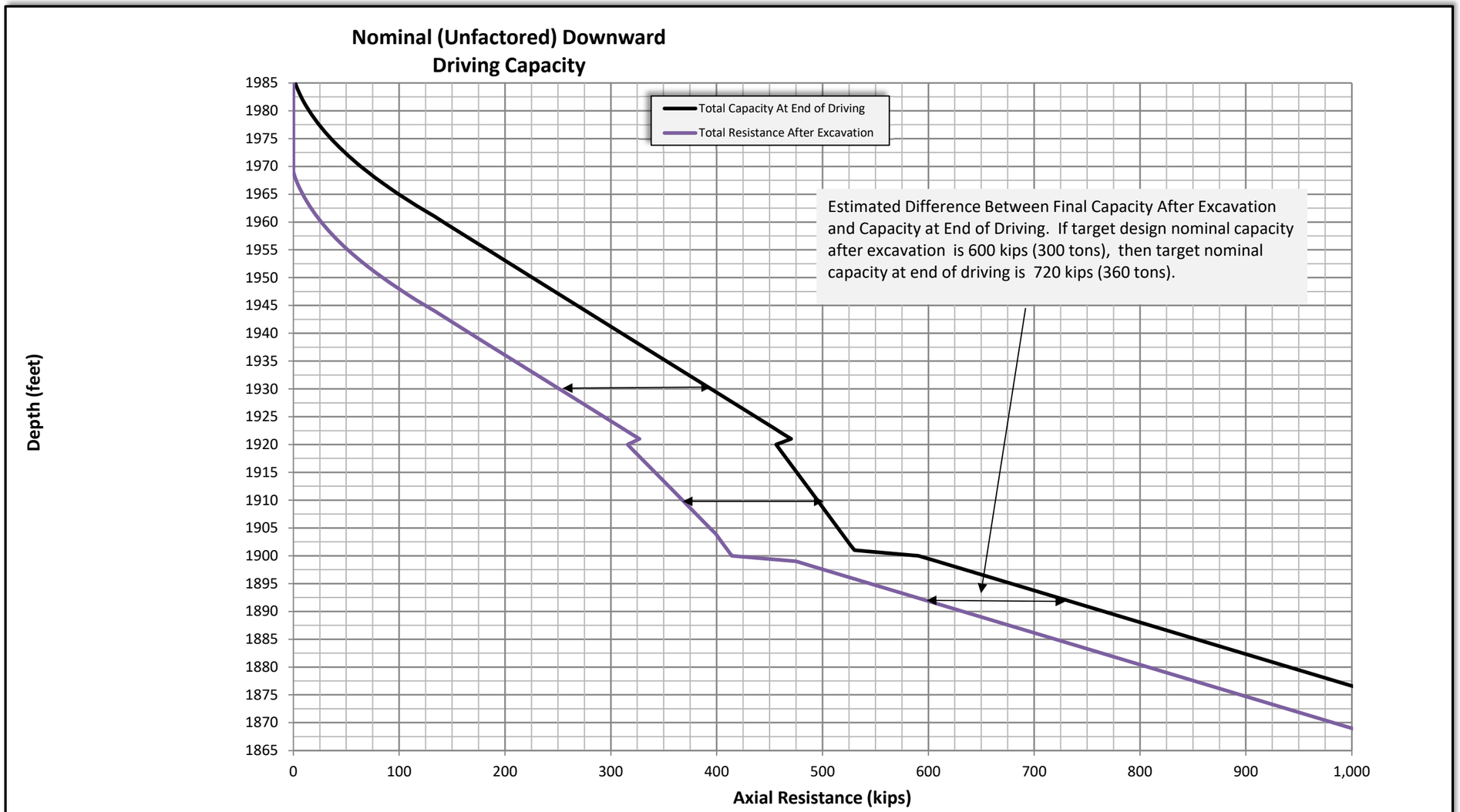
1. The pile capacities were developed using the Nordland/Thurman method.
2. The plots are based on a single pile and do not consider group effects of closely spaced piles.
3. Pile settlement is estimated to be negligible under Service loading conditions.
4. The appropriate LRFD resistance factors as described in the report text should be applied to the nominal capacities in the plots.

14x89 and 14x117 H-Pile Axial Capacity
BNSF/Pines Underpass Project Spokane Valley, Washington
GeoEngineers | Figure C-2

DRIVEN PILE CAPACITY - Difference Between Final Design and End of Driving for Interior Piers Driven Before Excavation to Final Grade

HP 14x89 and 14x117 H-Piles





Notes:

1. The pile capacities were developed using the Nordland/Thurman method.
2. The plots are based on a single pile and do not consider group effects of closely spaced piles.
3. Pile settlement is estimated to be negligible under Service loading conditions.
4. The appropriatesafety factor as described in the report text should be applied to the nominal capacities in the plots.

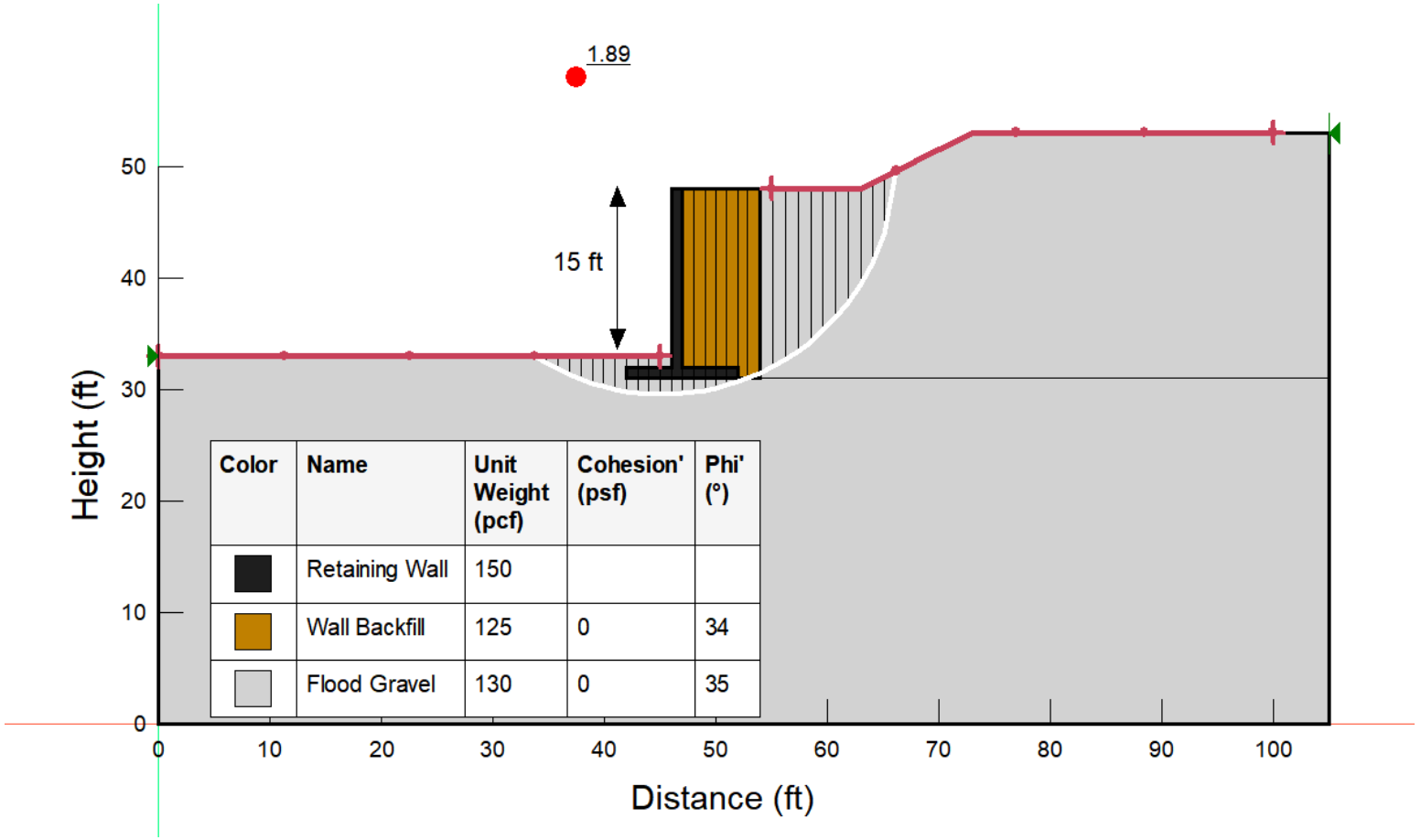
Additional Driving Resistance
14x89 and 14x117 H-Pile Axial Capacity

BNSF/Pines Underpass Project
Spokane Valley, Washington

GeoEngineers

Figure C-3

APPENDIX D
Retaining Wall Overall (Global) Stability Output



Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	Retaining Wall	150		
	Wall Backfill	125	0	34
	Flood Gravel	130	0	35

CIP Wall Global Stability- Static
Scenario 1: 15 ft Tall Wall Supporting Pedestrian Pathway

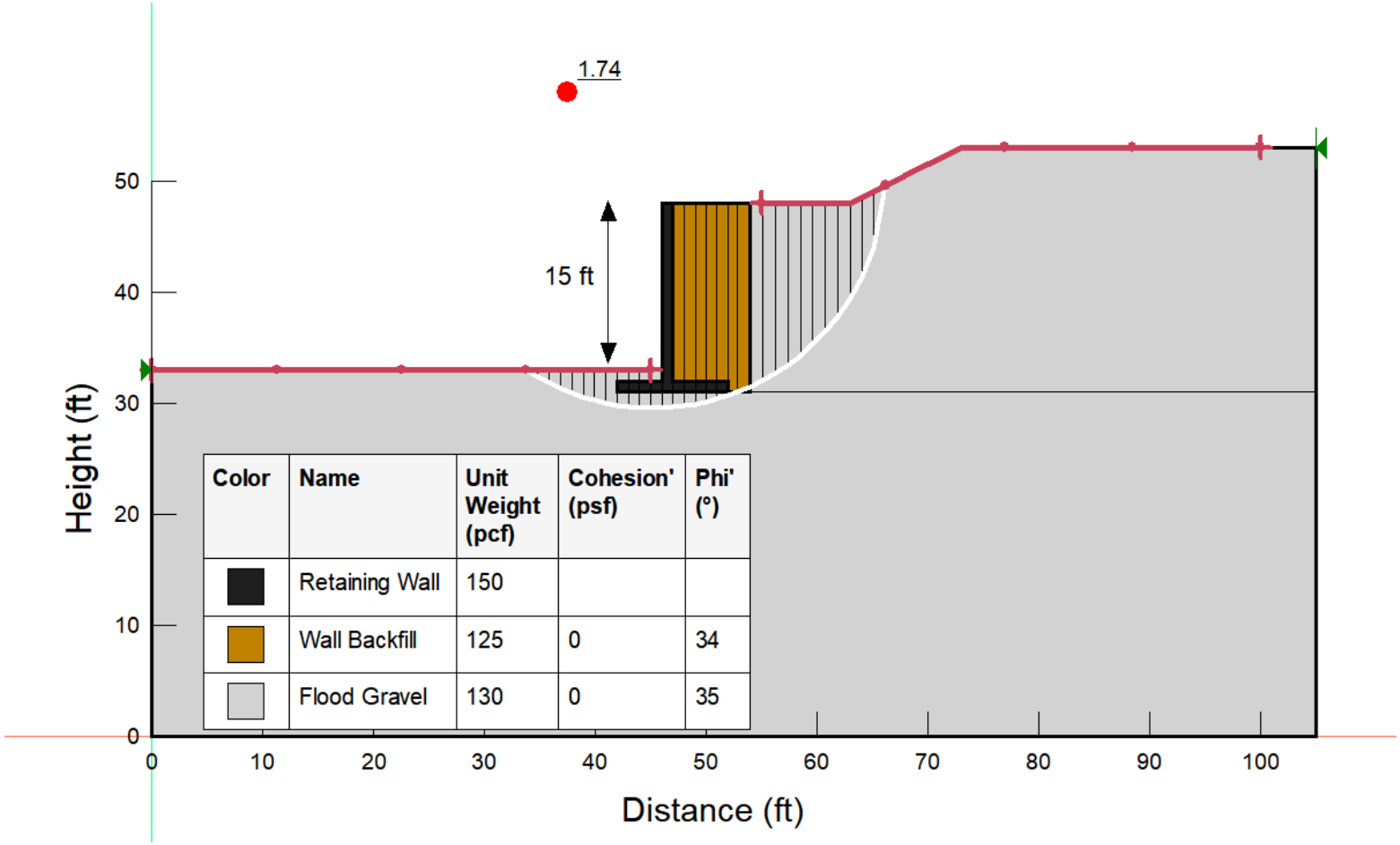
BNSF/Pines Underpass Project
Spokane Valley, Washington

GeoEngineers

Figure D-1

Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
psf = pounds per square foot

Data Source: GeoStudio 2016 (GeoSlope)



Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	Retaining Wall	150		
	Wall Backfill	125	0	34
	Flood Gravel	130	0	35

CIP Wall Global Stability- Seismic
Scenario 1: 15 ft Tall Wall Supporting Pedestrian Pathway

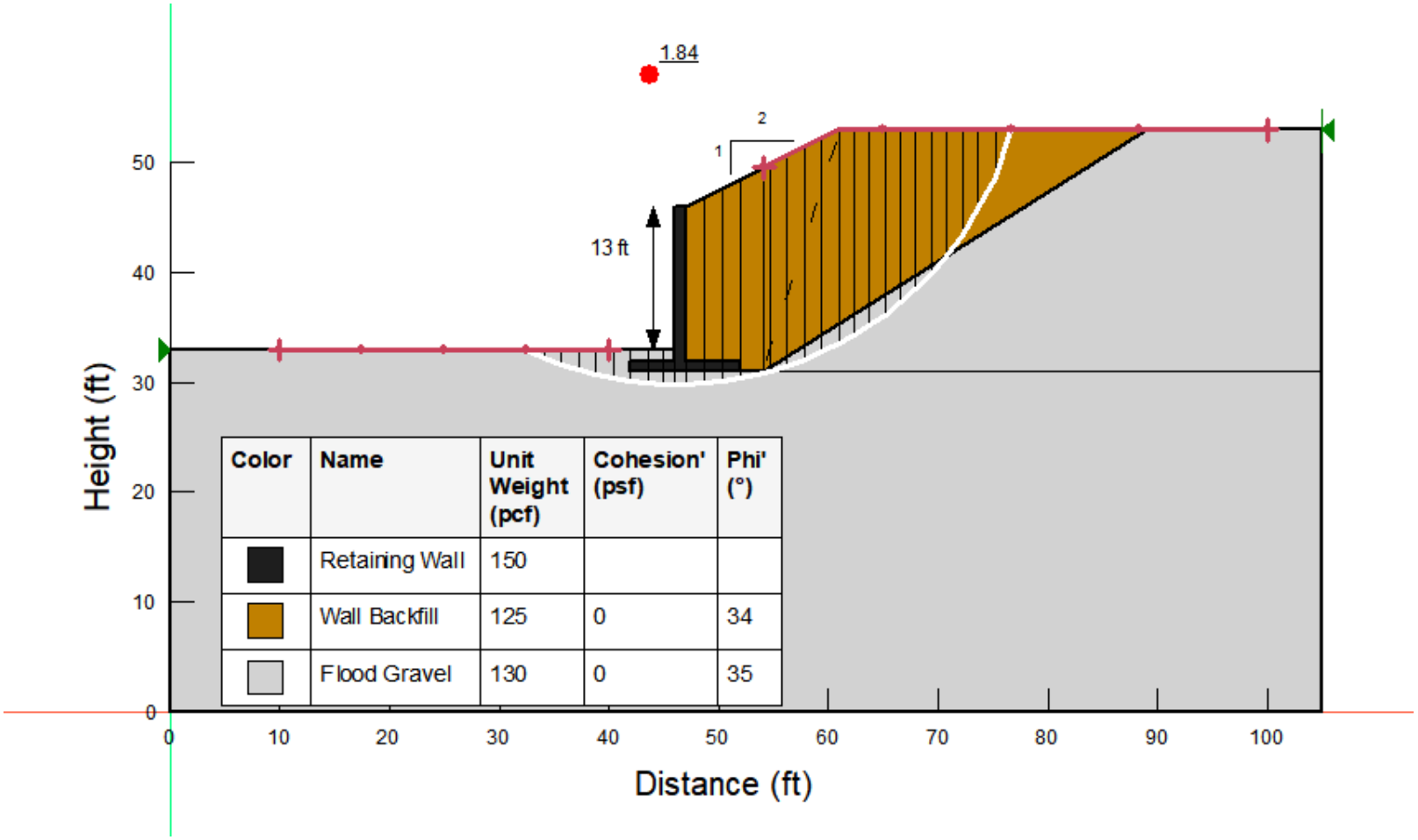
BNSF/Pines Underpass Project
Spokane Valley, Washington

GeoEngineers

Figure D-2

Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
psf = pounds per square foot

Data Source: GeoStudio 2016 (GeoSlope)



CIP Wall Global Stability- Static
Scenario 2: 13 ft Tall Wall Supporting 2H:1V Backslope

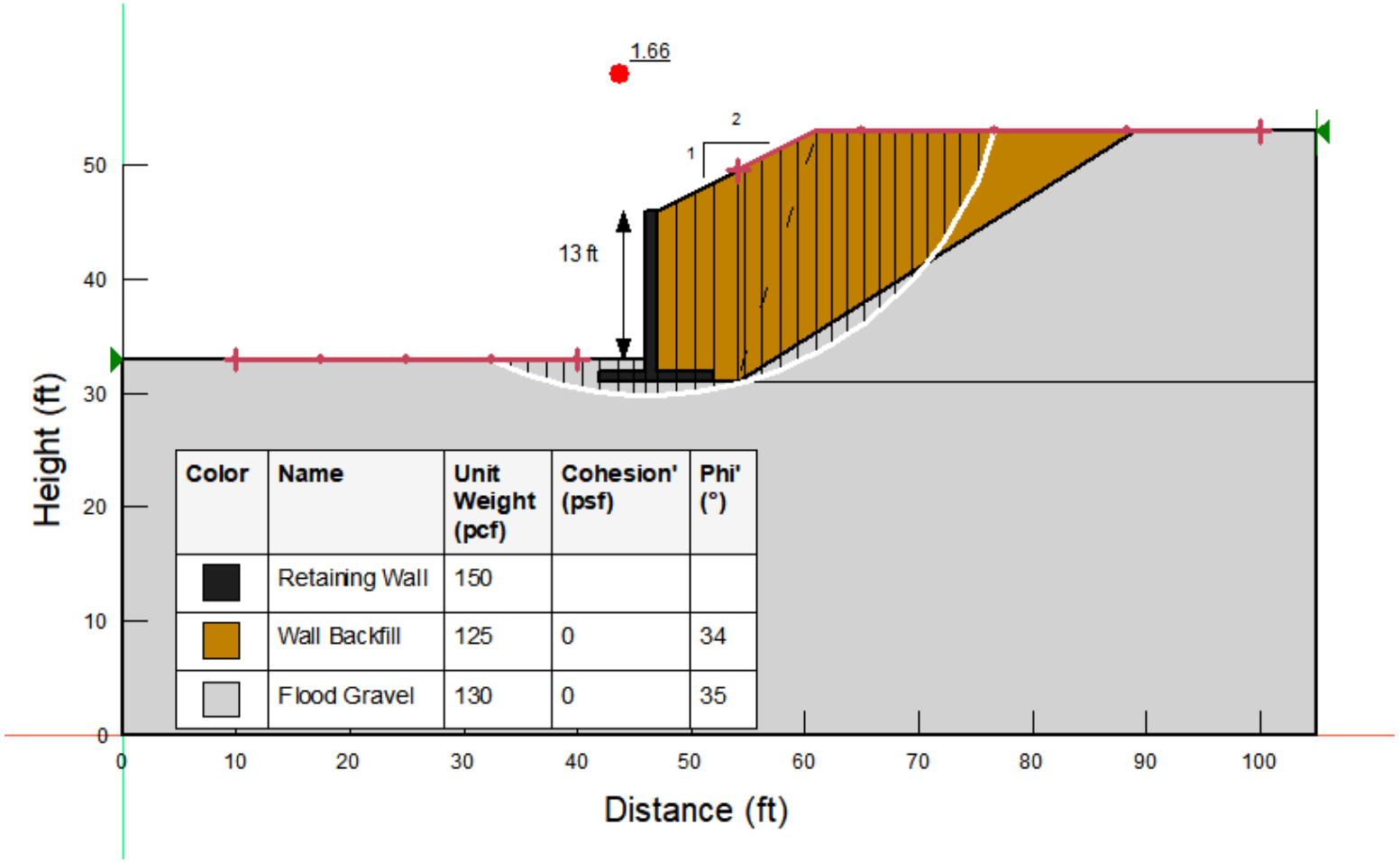
BNSF/Pines Underpass Project
Spokane Valley, Washington

GeoEngineers

Figure D-3

Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
psf = pounds per square foot

Data Source: GeoStudio 2016 (GeoSlope)



Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	Retaining Wall	150		
	Wall Backfill	125	0	34
	Flood Gravel	130	0	35

CIP Wall Global Stability- Seismic
Scenario 2: 13 ft Tall Wall Supporting 2H:1V Backslope

BNSF/Pines Underpass Project
Spokane Valley, Washington

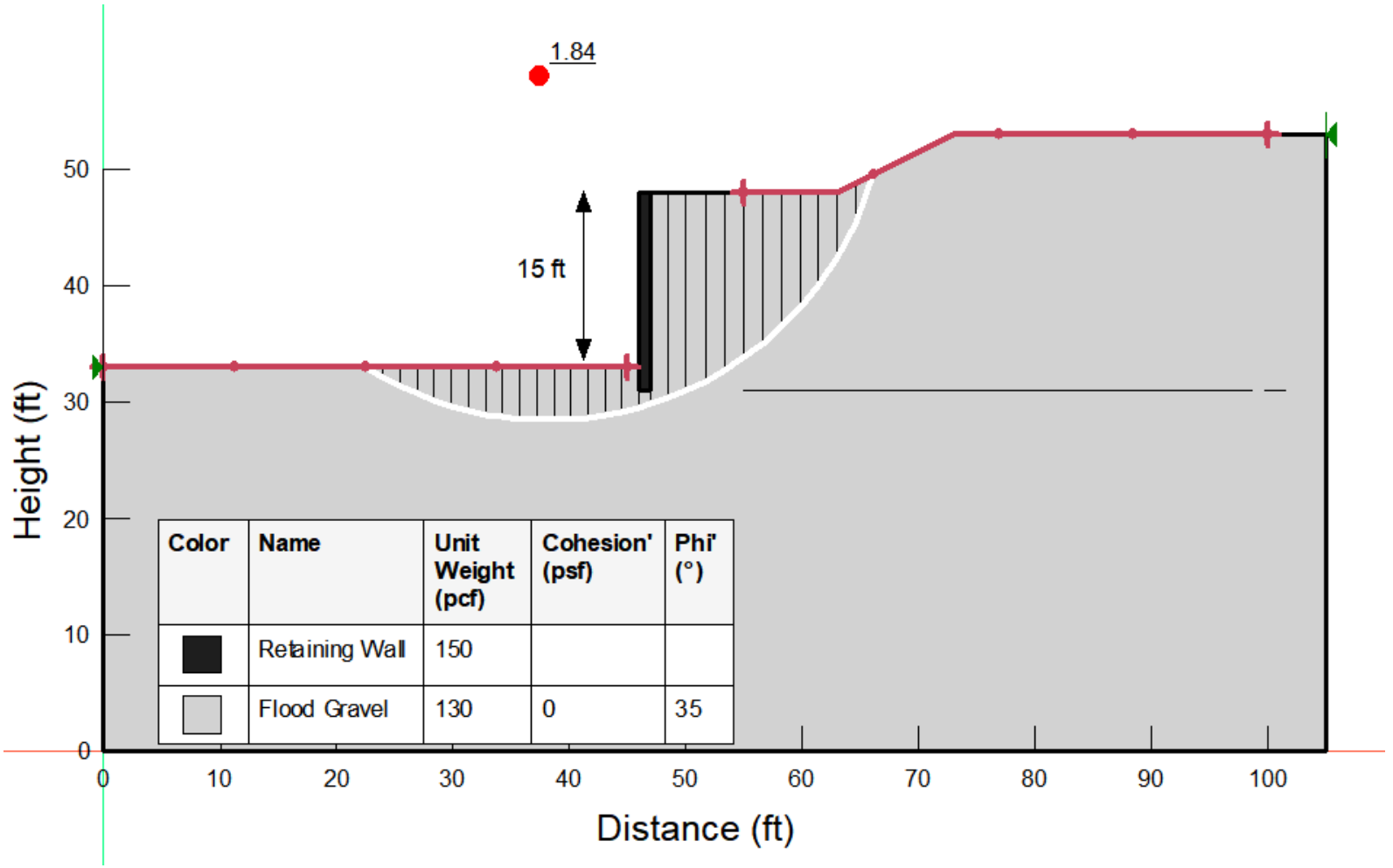
GeoEngineers

Figure D-4

Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

psf = pounds per square foot

Data Source: GeoStudio 2016 (GeoSlope)



Soldier Pile Wall Global Stability- Static
Scenario 1: 15 ft Tall Wall Supporting Pedestrian Path

BNSF/Pines Underpass Project
Spokane Valley, Washington

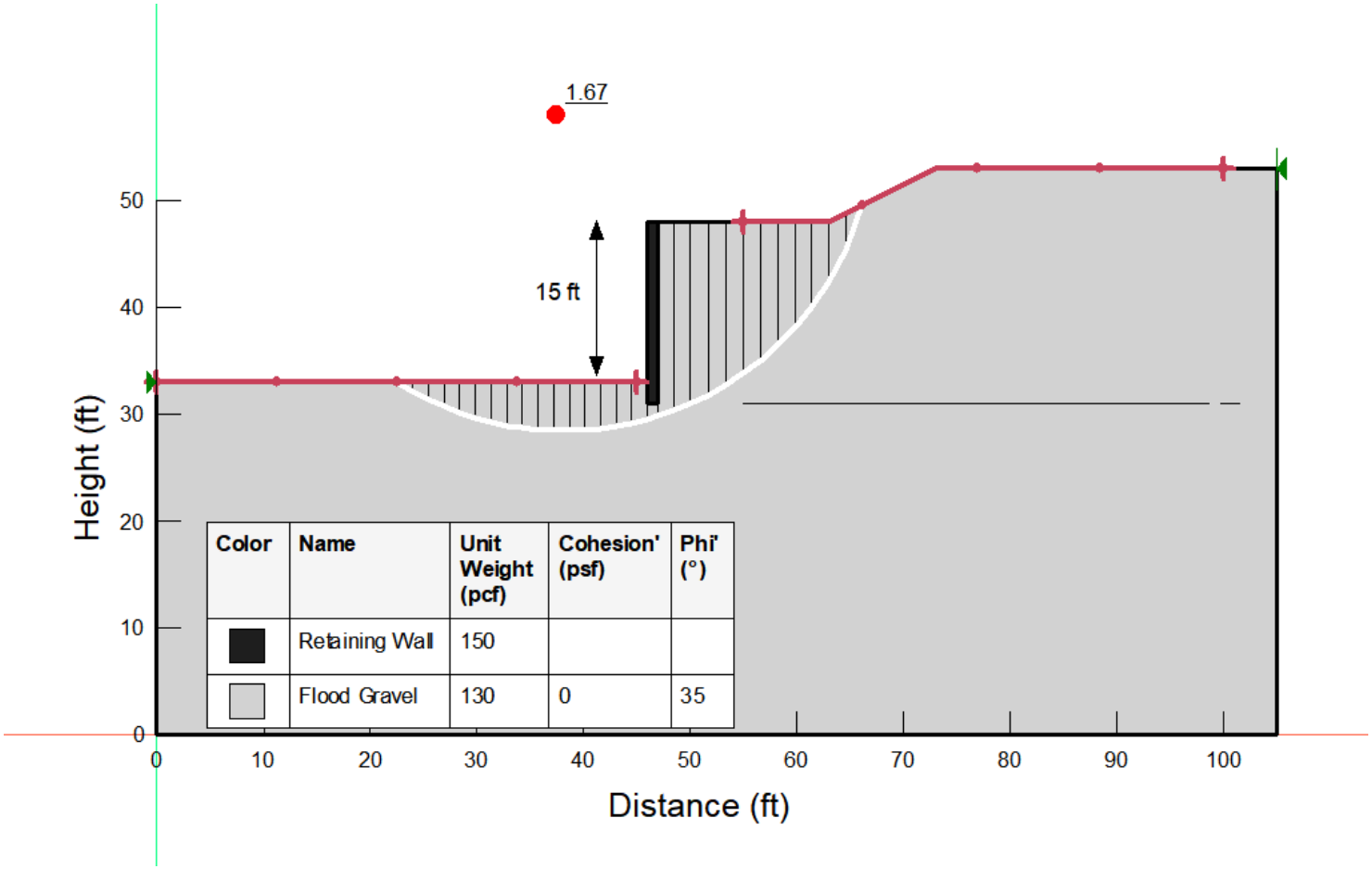
GeoEngineers

Figure D-5

Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

psf = pounds per square foot

Data Source: GeoStudio 2016 (GeoSlope)



Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	Retaining Wall	150		
	Flood Gravel	130	0	35

Soldier Pile Wall Global Stability- Seismic
Scenario 1: 15 ft Tall Wall Supporting Pedestrian Path

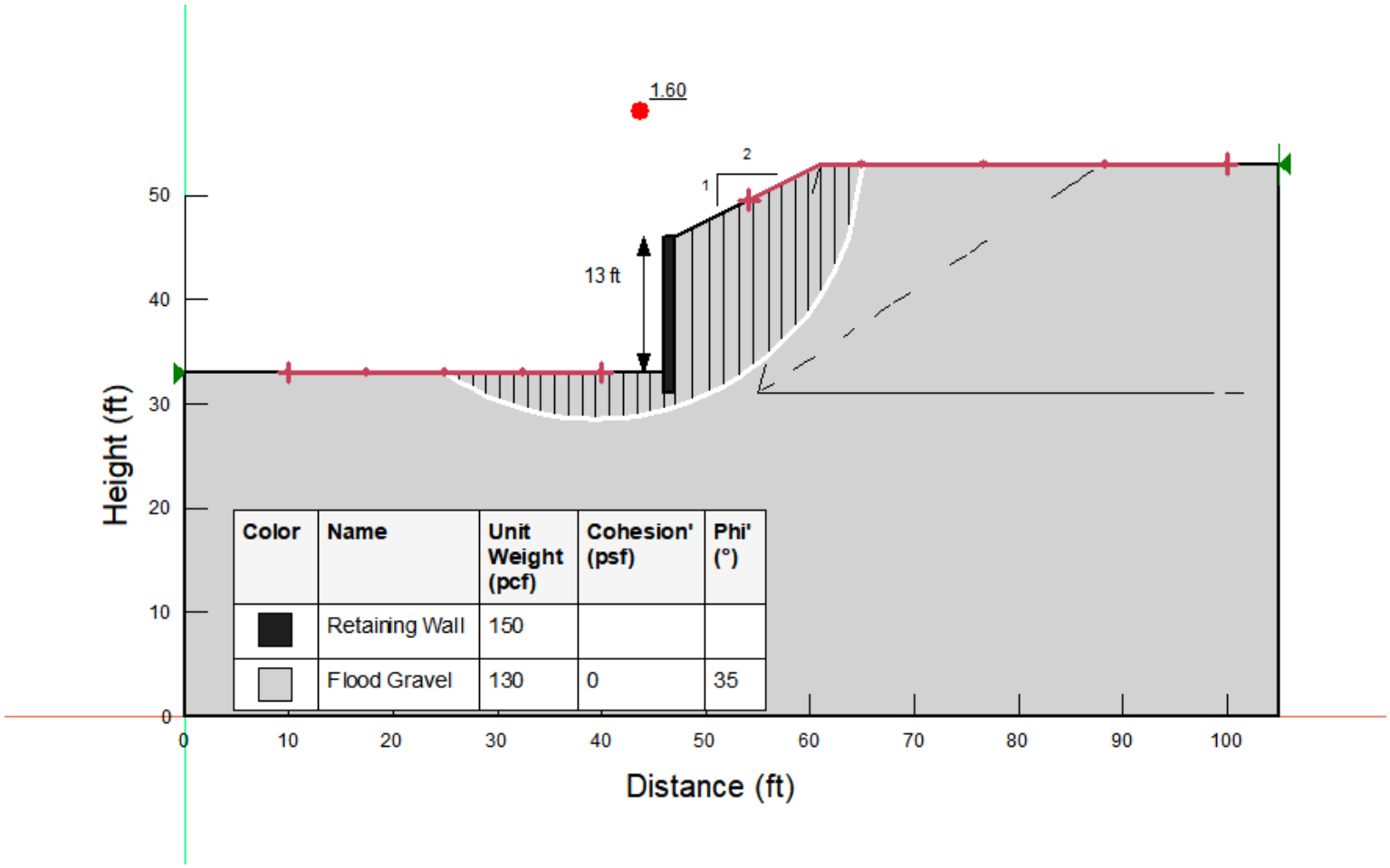
BNSF/Pines Underpass Project
Spokane Valley, Washington

GeoEngineers

Figure D-6

Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
psf = pounds per square foot

Data Source: GeoStudio 2016 (GeoSlope)



Soldier Pile Wall Global Stability- Static
Scenario 2: 13 ft Tall Wall Supporting 2H:1V Backslope

BNSF/Pines Underpass Project
Spokane Valley, Washington

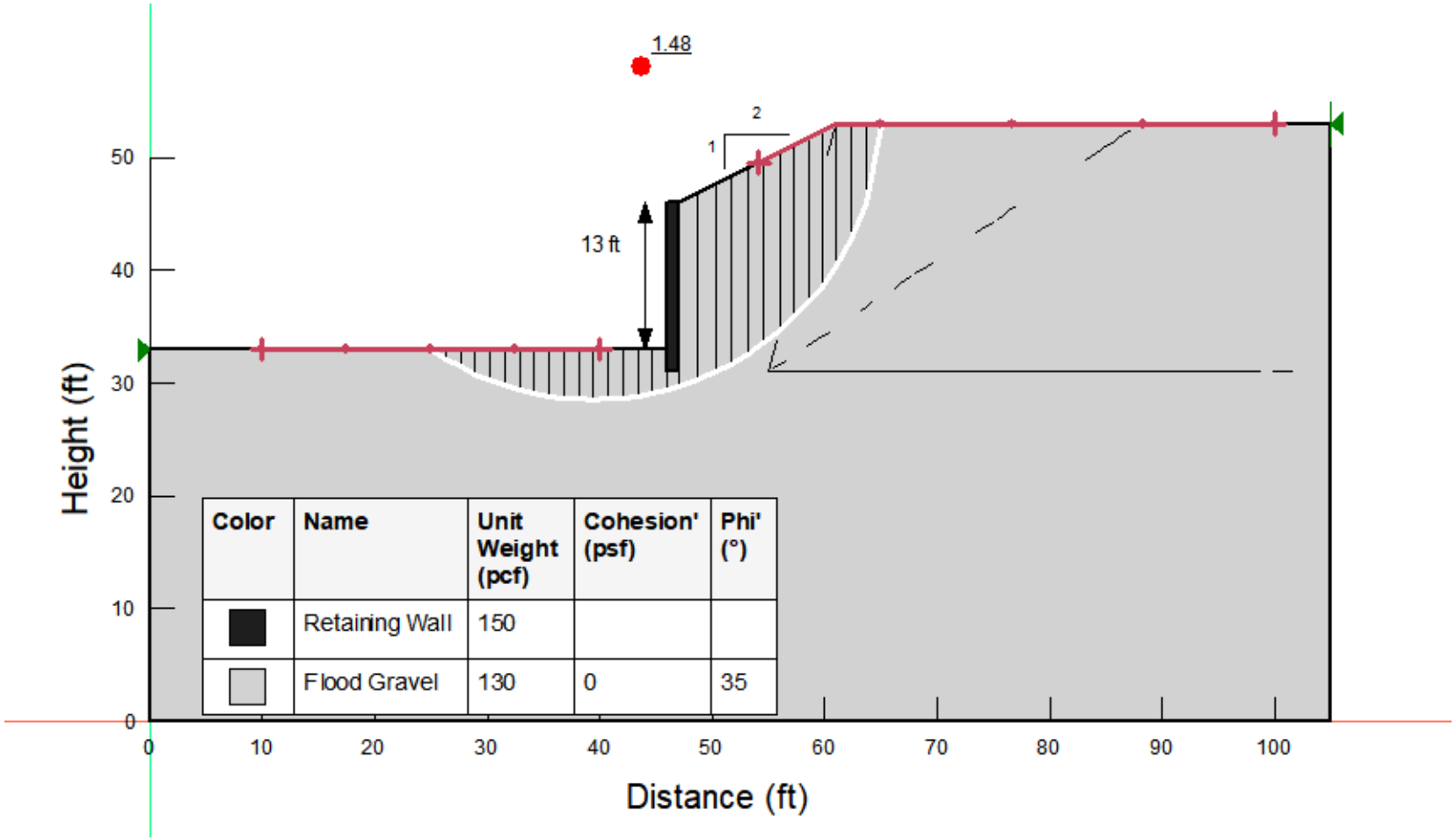
GeoEngineers

Figure D-7

Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

psf = pounds per square foot

Data Source: GeoStudio 2016 (GeoSlope)



Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	Retaining Wall	150		
	Flood Gravel	130	0	35

Soldier Pile Wall Global Stability- Seismic
Scenario 2: 13 ft Tall Wall Supporting 2H:1V Backslope

BNSF/Pines Underpass Project
Spokane Valley, Washington

GeoEngineers

Figure D-8

Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

psf = pounds per square foot

Data Source: GeoStudio 2016 (GeoSlope)

APPENDIX E
Hydraulic Conductivity Estimates

Table E-1

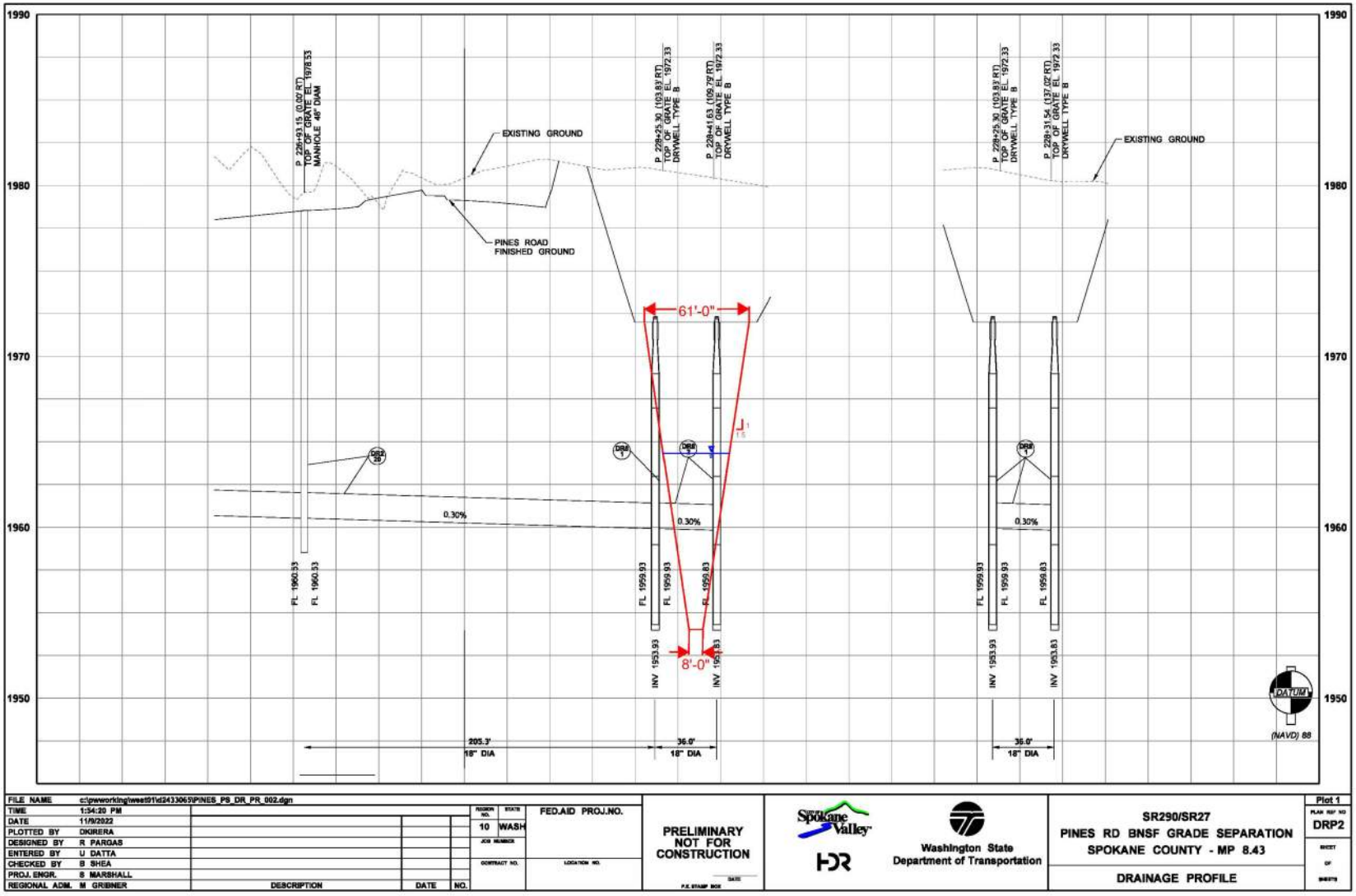
Saturated Hydraulic Conductivity Estimates

BNSF/Pines Underpass Project

Spokane Valley, Washington

									WSDOT 2019 HRM Method				SRSM 200 Method					
											Allowalbe Drywell Outflow Rate						Allowable Outflow Rate	
Soil Unit	Test Method	Exploration ID	Sample Depth (ft)	USC Soil Type	D10 (mm)	D60 (mm)	% fines	Ksat (cm/sec)	Ksat (in/hr)	Single-Depth (cfs)	Double-Depth (cfs)	Ksat (cm/sec)	Ksat (in/hr)	Normalized Drywell Outflow Rate (cfs/ft)	Safety Factor	Single-Depth (cfs)	Double-Depth (cfs)
Silty Gravel	Sieve (ASTM C136)	TP-2	1-2	GM	0.020	10	18	3.10E-04	0.44								
	Sieve (ASTM C136)	TP-7	0-1	GM	0.010	15	19	7.62E-05	0.11								
	Wash (ASTM D 1140)	TP-5	0-1	GM			22										
	Wash (ASTM D 1140)	TP-3	1-2	GP-GM			12										
		Geometric Mean						1.54E-04	0.22								
Lower Gravel	Sieve (ASTM C136)	TP-4	2-3	GW	3.00	30	2.8	1.48E+00	2104	20.11	37.2	9.23E-02	130.8	0.41	1.3	1.89	3.16
	Sieve (ASTM C136)	TP-1	4-5	GP-GM	1.00	37	5.5	1.37E-01	195	1.86	3.4	2.59E-02	36.8	0.20	1.5	0.81	1.34
	Sieve (ASTM C136)	TP-2	5-6	GP	3.20	40	3.7	1.54E+00	2178	20.82	38.5	5.47E-02	77.5	0.31	1.3	1.41	2.35
	Sieve (ASTM C136)	TP-3	5-6	GP-GM	0.10	20	9.3	1.35E-03	1.9	0.02	0.03	9.67E-03	13.7	0.12	2.3	0.30	0.50
	Sieve (ASTM C136)	TP-6	5-6	GP-GM	0.70	27	6.3	7.25E-02	103	0.98	1.8	2.01E-02	28.5	0.17	2	0.52	0.87
	Sieve (ASTM C136)	TP-5	8 -9	GP-GM	0.90	20	6.5	1.27E-01	180	1.72	3.2	1.90E-02	26.9	0.17	2	0.51	0.85
	Sieve (ASTM C136)	B-14	10-11.5	GP-GM	0.04	10	12.0	6.02E-04	1	0.008	0.02	5.99E-03	8.5	0.09	2.7	0.20	0.33
	Sieve (ASTM C136)	B-2	13.5-15	GP-GM	0.07	12	10.3	6.54E-04	0.9	0.009	0.02	7.98E-03	11.3	0.10	2.7	0.23	0.39
	Sieve (ASTM C136)	B-11	15-16.5	GP-GM	0.08	12	9.9	9.75E-04	1.4	0.013	0.02	8.59E-03	12.2	0.11	2.3	0.28	0.47
	Sieve (ASTM C136)	B-12	15-16.5	GW	2.00	32	4.6	2.51E-01	356.4	3.406	6.3	3.63E-02	51.5	0.24	1.3	1.12	1.87
	Sieve (ASTM C136)	B-9	20-21.5	GW	3.00	28	3.3	1.36E+00	1924		34.0	6.78E-02	96.1	0.35	1.3		2.65
	Sieve (ASTM C136)	B-14	40-41.5	GW-GM	0.80	16	5.5	1.67E-01	236			2.59E-02	36.8	0.20	1.5		
	Sieve (ASTM C136)	B-14	60-61.5	GP-GM	0.45	10	7.1	4.77E-02	68			1.61E-02	22.8	0.15	2		
	Wash (ASTM D 1140)	TP-5	4-5	GP-GM			8.4					1.17E-02	16.6	0.13	2.3	0.34	0.56
	Wash (ASTM D 1140)	B-2	6-7.5	GP-GM			6.1					2.14E-02	30.3	0.18	2	0.54	0.90
	Wash (ASTM D 1140)	TP-4	7-8	GP			4.0					4.72E-02	66.9	0.28	1.3	1.30	2.17
	Wash (ASTM D 1140)	B-9	7.5-9	GP-GM			6.8					1.74E-02	24.7	0.16	2	0.48	0.81
	Wash (ASTM D 1140)	TP-1	9-10	GP-GM			6.9					1.69E-02	24.0	0.16	2	0.48	0.79
	Wash (ASTM D 1140)	B-4	8.5-10	GM			12.6					5.46E-03	7.7	0.08	NA		
	Wash (ASTM D 1140)	TP-3	9-10	GP-GM			7.3					1.52E-02	21.6	0.15	2	0.45	0.75
	Wash (ASTM D 1140)	TP-6	9-10	GP-GM			6.8					1.74E-02	24.7	0.16	2	0.48	0.81
	Wash (ASTM D 1140)	B-13	10-11.5	GP-GM			9.3					9.67E-03	13.7	0.12	2.3	0.30	0.50
	Wash (ASTM D 1140)	B-3	20-21	GP-GM			5.4					2.69E-02	38.1	0.21	1.5		
	Wash (ASTM D 1140)	B-11	45-46.5	GP			4.6					3.63E-02	51.5	0.24	1.3		
		Geometric Mean						4.59E-02	65	0.39	1.02	1.95E-02	28			0.52	0.93

APPENDIX F
Groundwater Mounding Analyses

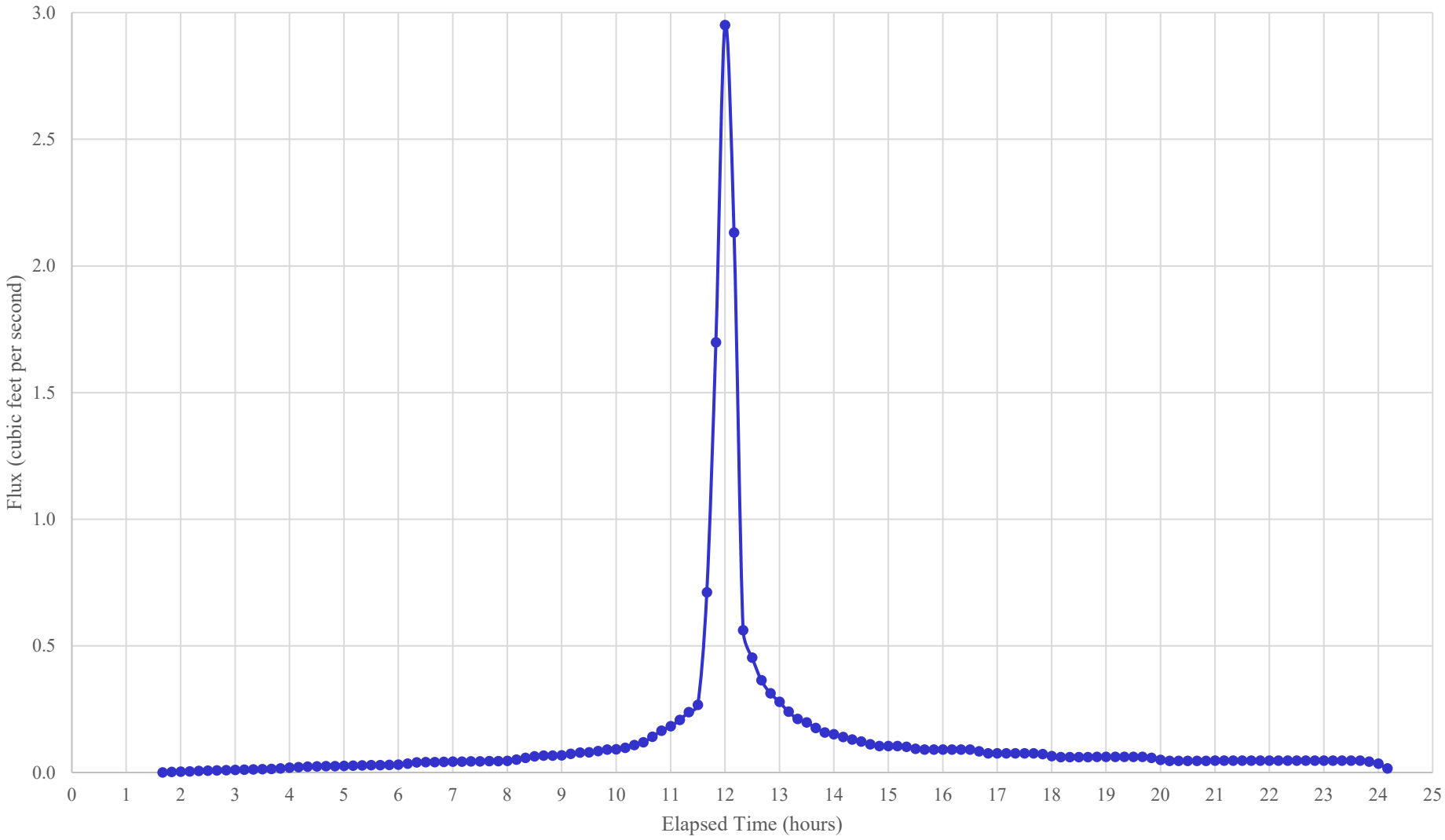


Drainage Profile

BNSF/Pines Underpass Project
Spokane Valley, Washington

GeoEngineers

Figure F-1



Note:

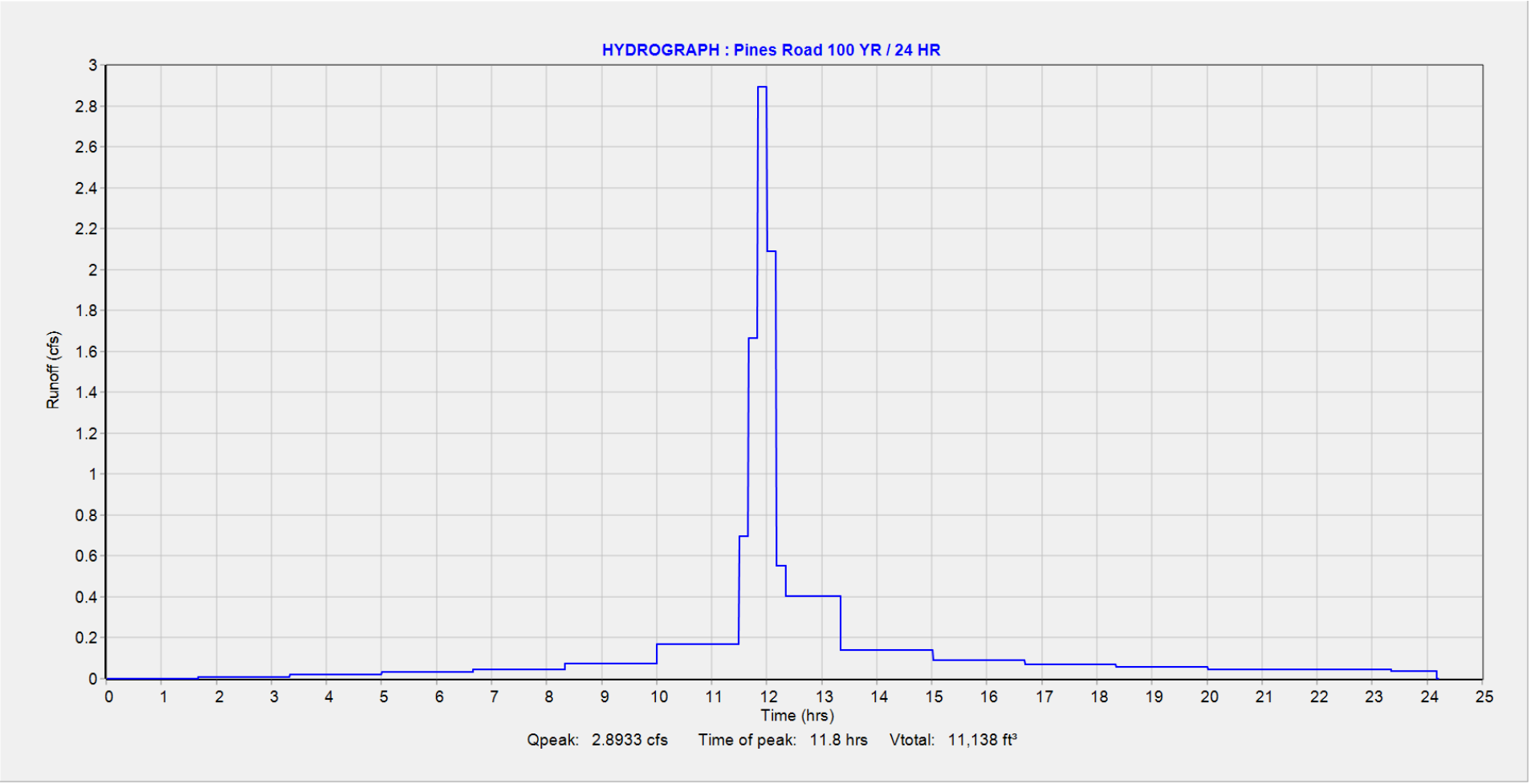
1. Hydrograph data were provided by HDR on November 22, 2022.

Runoff Hydrograph
100-Year, 24-Hour Design Storm

BNSF/Pines Underpass Project
Spokane Valley, Washington

GeoEngineers

Figure F-2



Note:

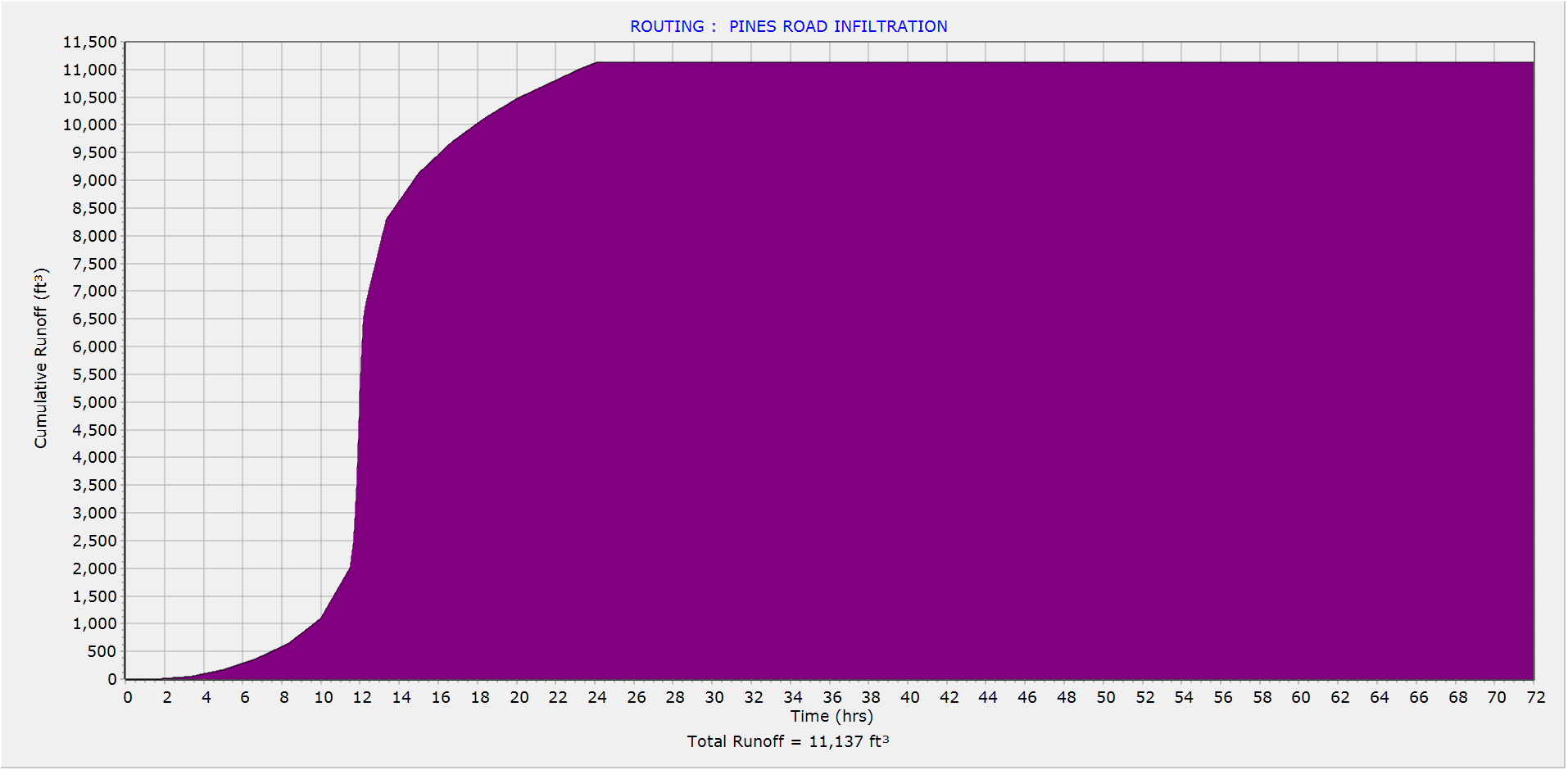
1. The hydrograph was simulated using MODRET Version 7.0 based on runoff data provided by HDR.

Simulated MODRET Hydrograph
100-Year, 24-Hour Design Storm

BNSF/Pines Underpass Project
Spokane Valley, Washington

GeoEngineers

Figure F-3



Note:

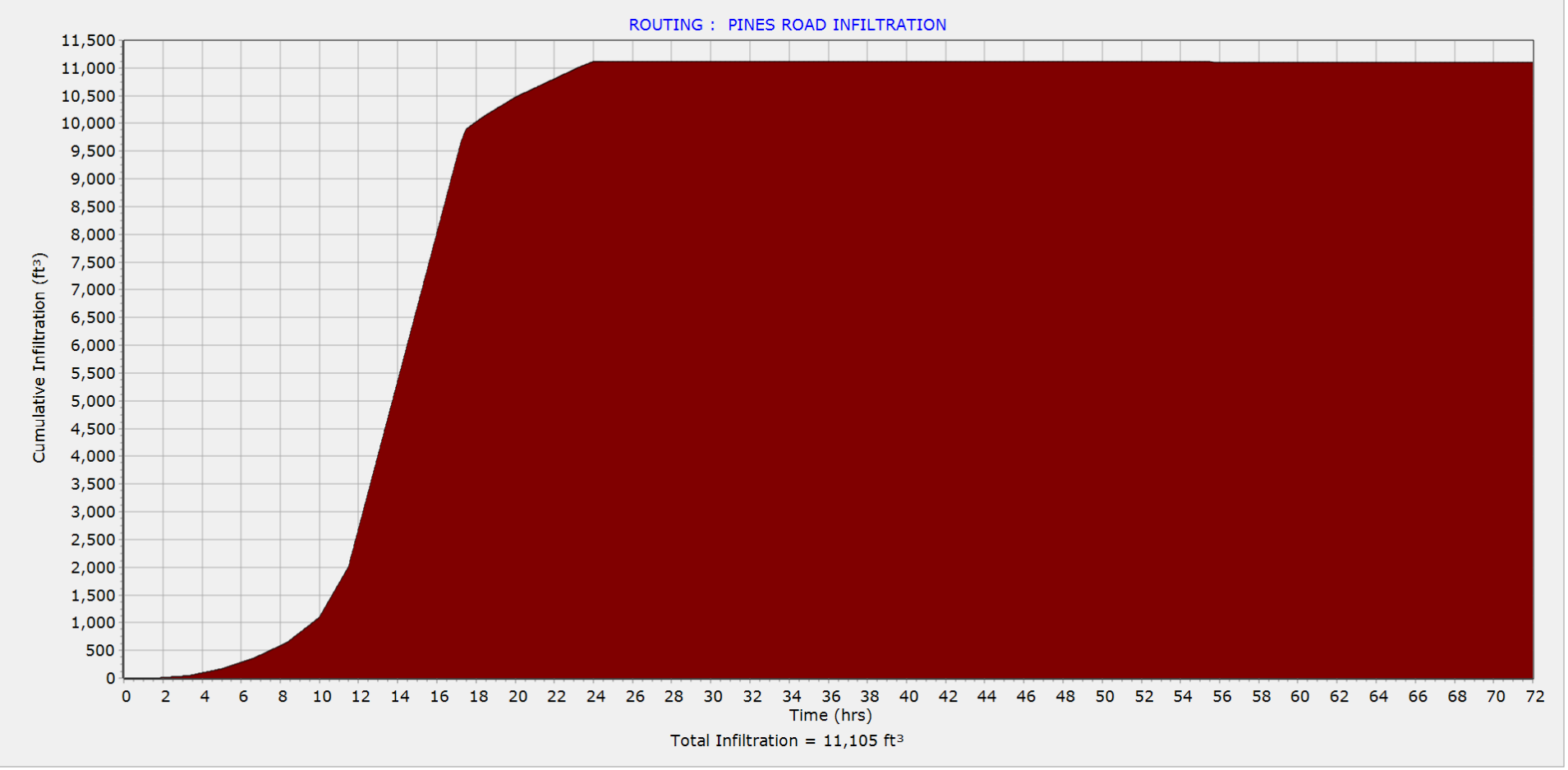
1. Infiltration was simulated using MODRET Version 7.0 based on runoff data provided by HDR.

Simulated MODRET Runoff
100-Year, 24-Hour Design Storm

BNSF/Pines Underpass Project
Spokane Valley, Washington

GeoEngineers

Figure F-4



Note:

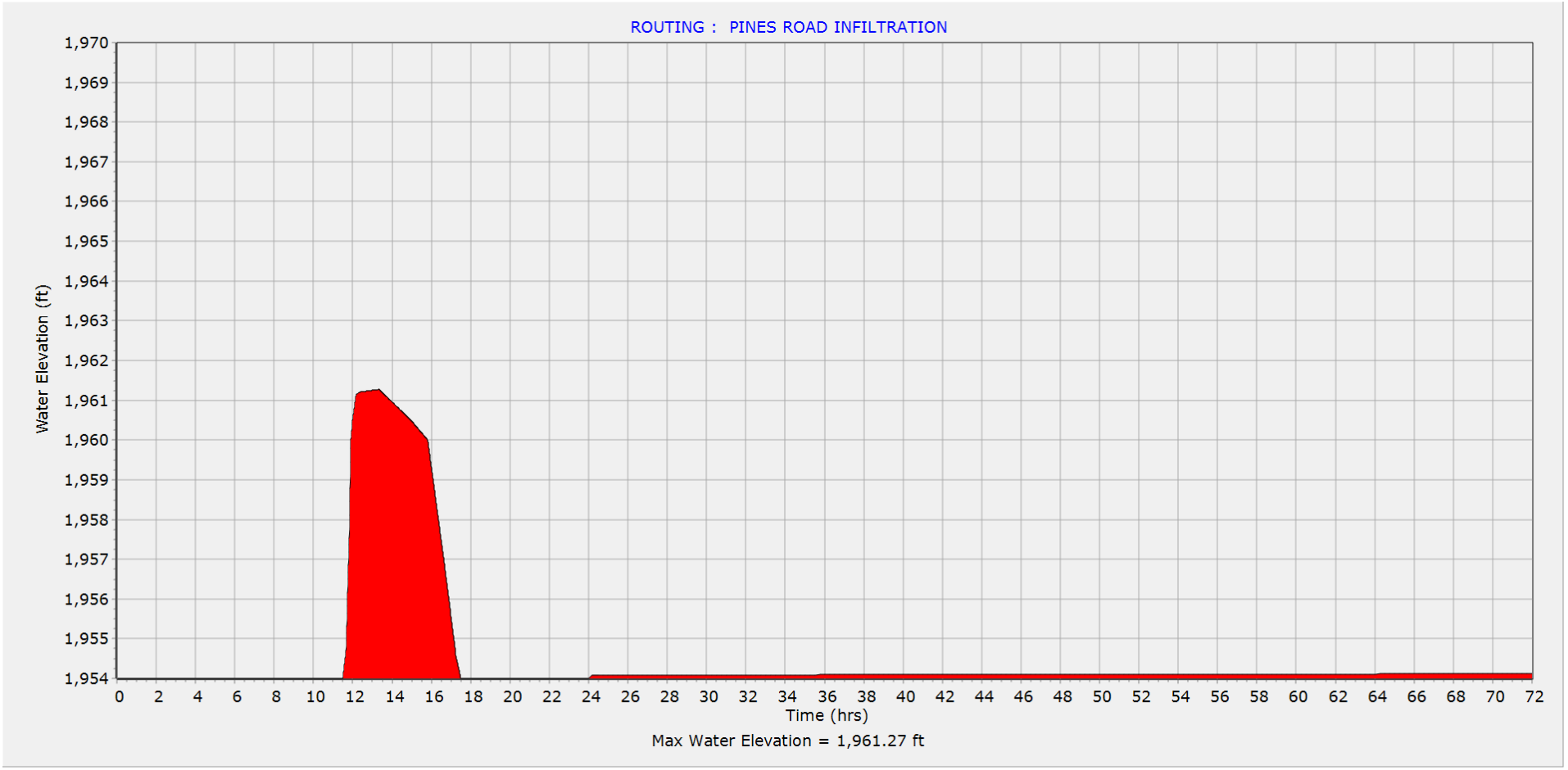
1. Infiltration was simulated using MODRET Version 7.0 based on runoff data provided by HDR.

Simulated MODRET Infiltration
100-Year, 24-Hour Design Storm

BNSF/Pines Underpass Project
Spokane Valley, Washington

GeoEngineers

Figure F-5



Note:

1. Infiltration was simulated using MODRET Version 7.0 based on runoff data provided by HDR.

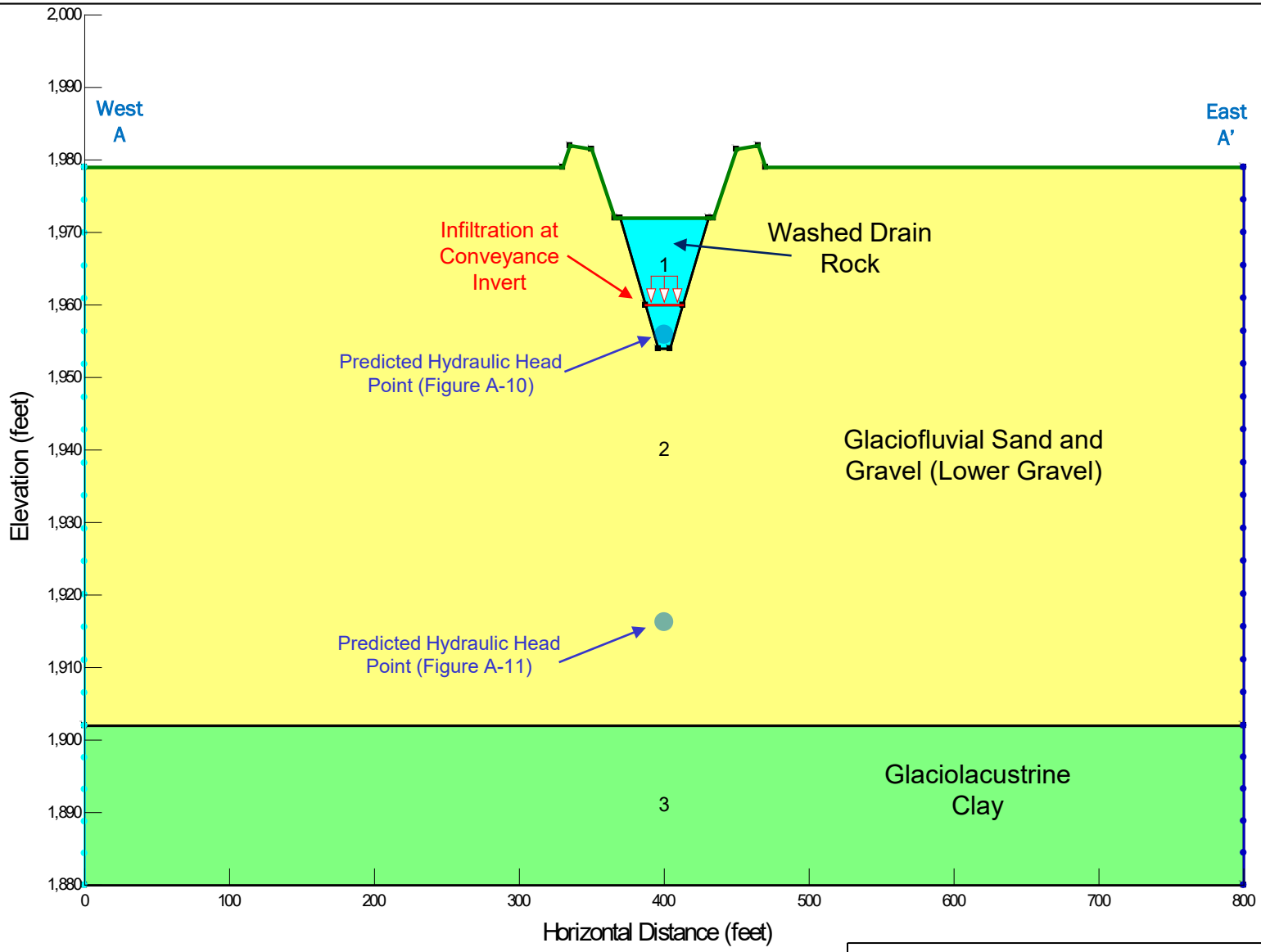
Simulated MODRET Infiltration Facility Water Level
100-Year, 24-Hour Design Storm

BNSF/Pines Underpass Project
Spokane Valley, Washington

GeoEngineers

Figure F-6

3457-010-02



Note:

1. The model domain was simulated using SEEP/W (GeoStudio 2021.3).

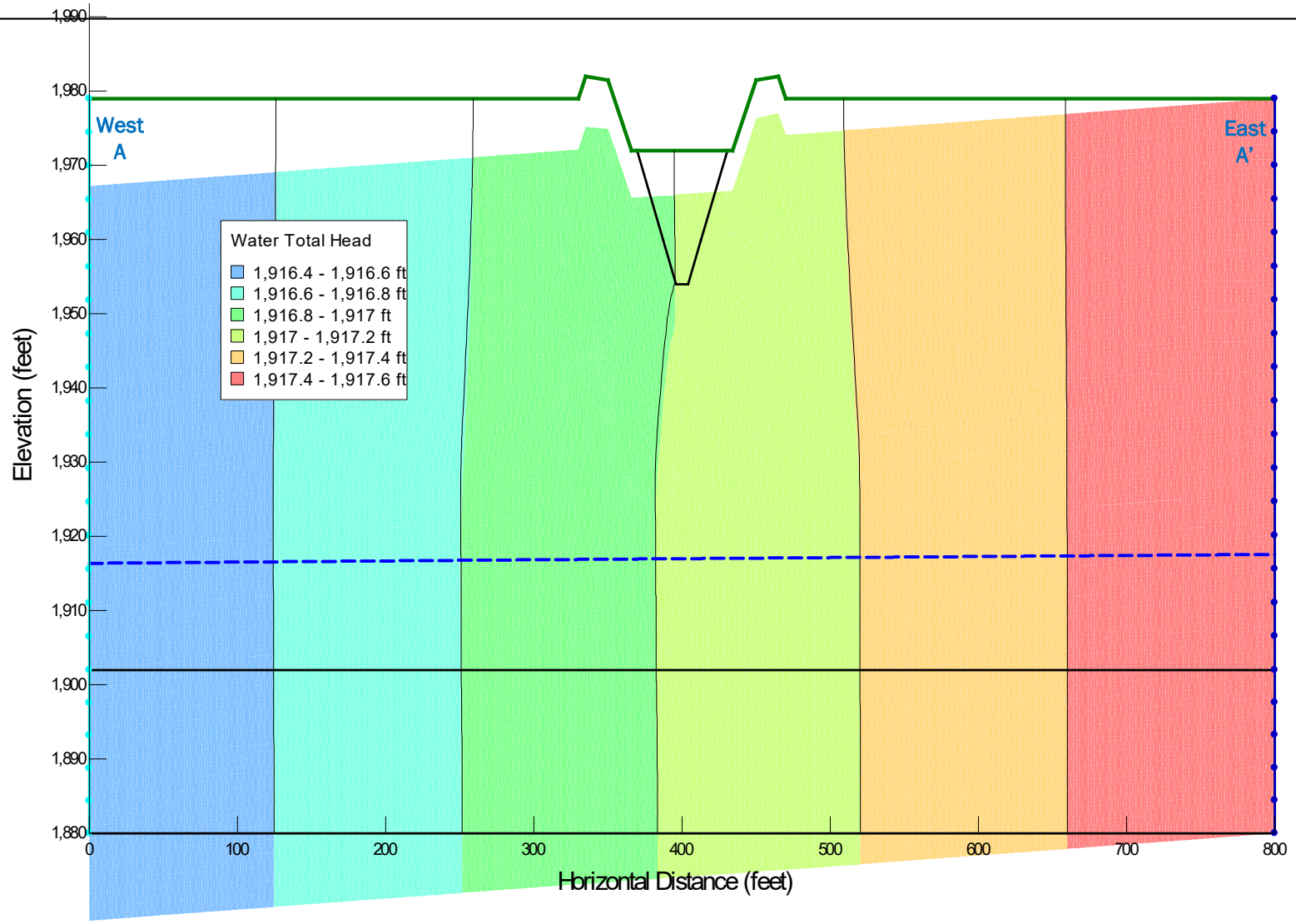
SEEP/W Model Domain

BNSF/Pines Underpass Project
Spokane Valley, Washington

GeoEngineers

Figure F-7

3457-010-02



Note:

1. Steady-state groundwater elevation distribution was simulated using SEEP/W (GeoStudio 2021.3).

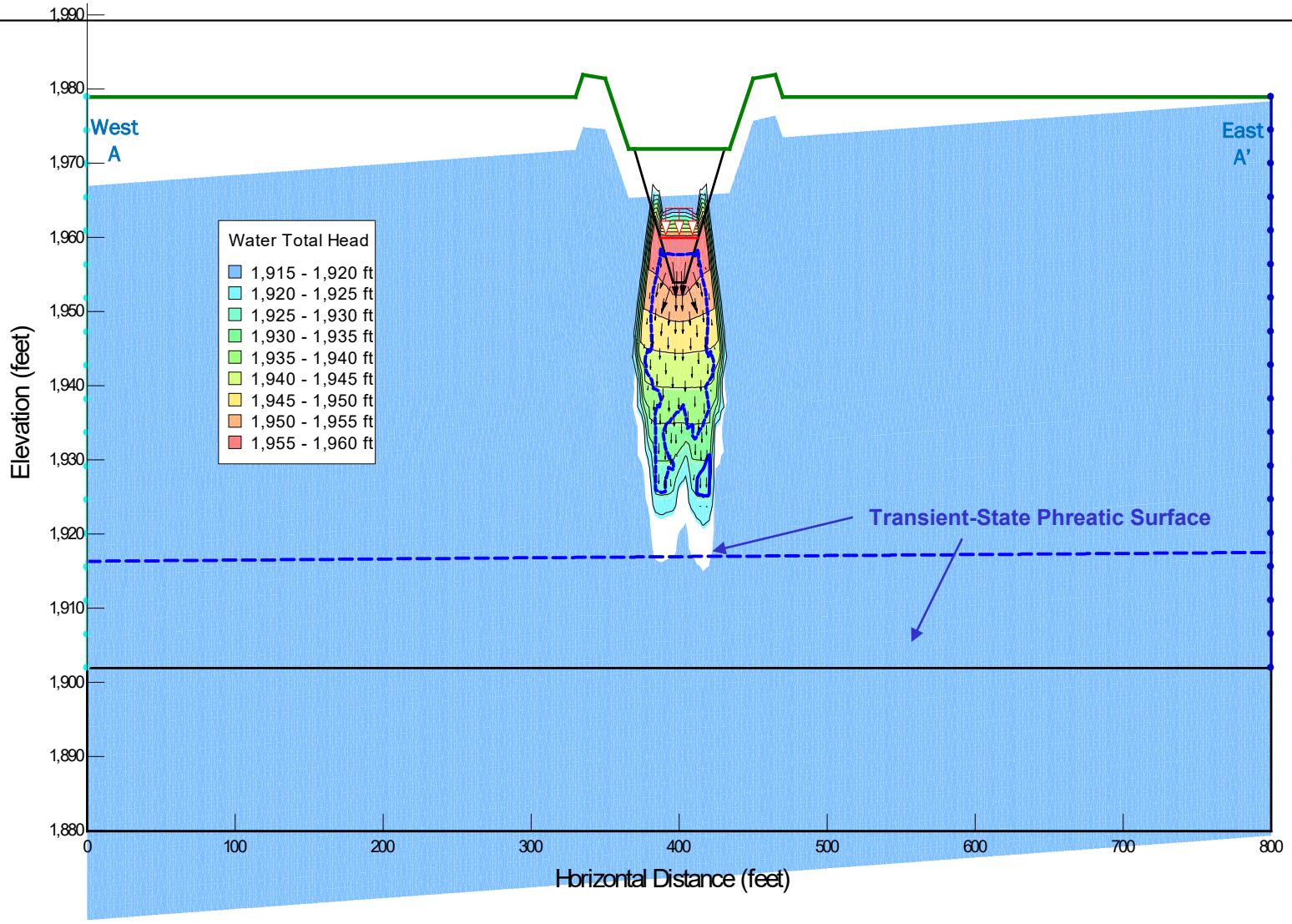
SEEP/W Steady-State Simulation Results

BNSF/Pines Underpass Project
Spokane Valley, Washington

GeoEngineers

Figure F-8

3457-010-02



Note:

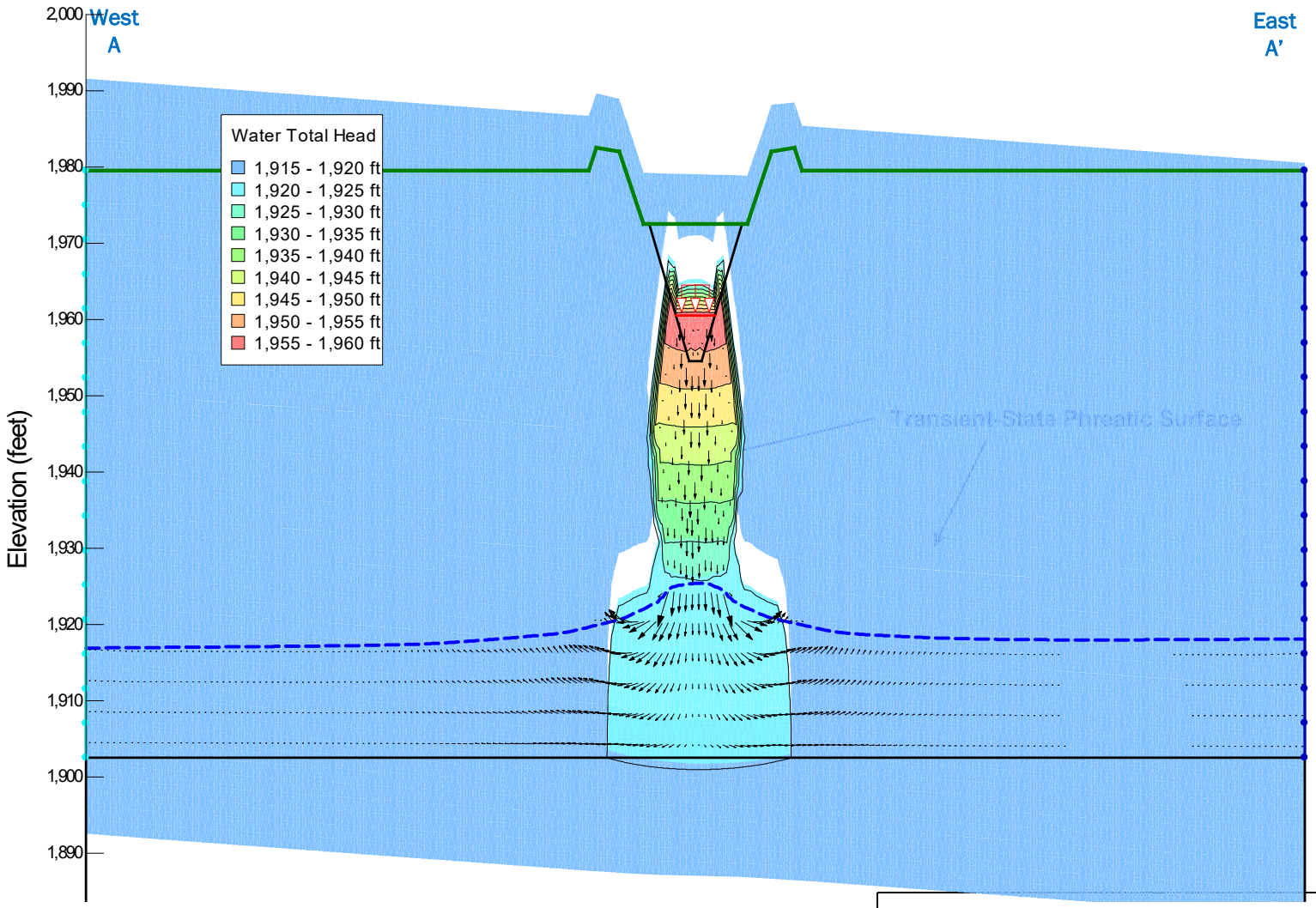
1. Steady-state groundwater elevation distribution was simulated using SEEP/W (GeoStudio 2021.3).

SEEP/W Transient-State Simulation Results
14 Hours

BNSF/Pines Underpass Project
Spokane Valley, Washington

GeoEngineers

Figure F-9



Note:

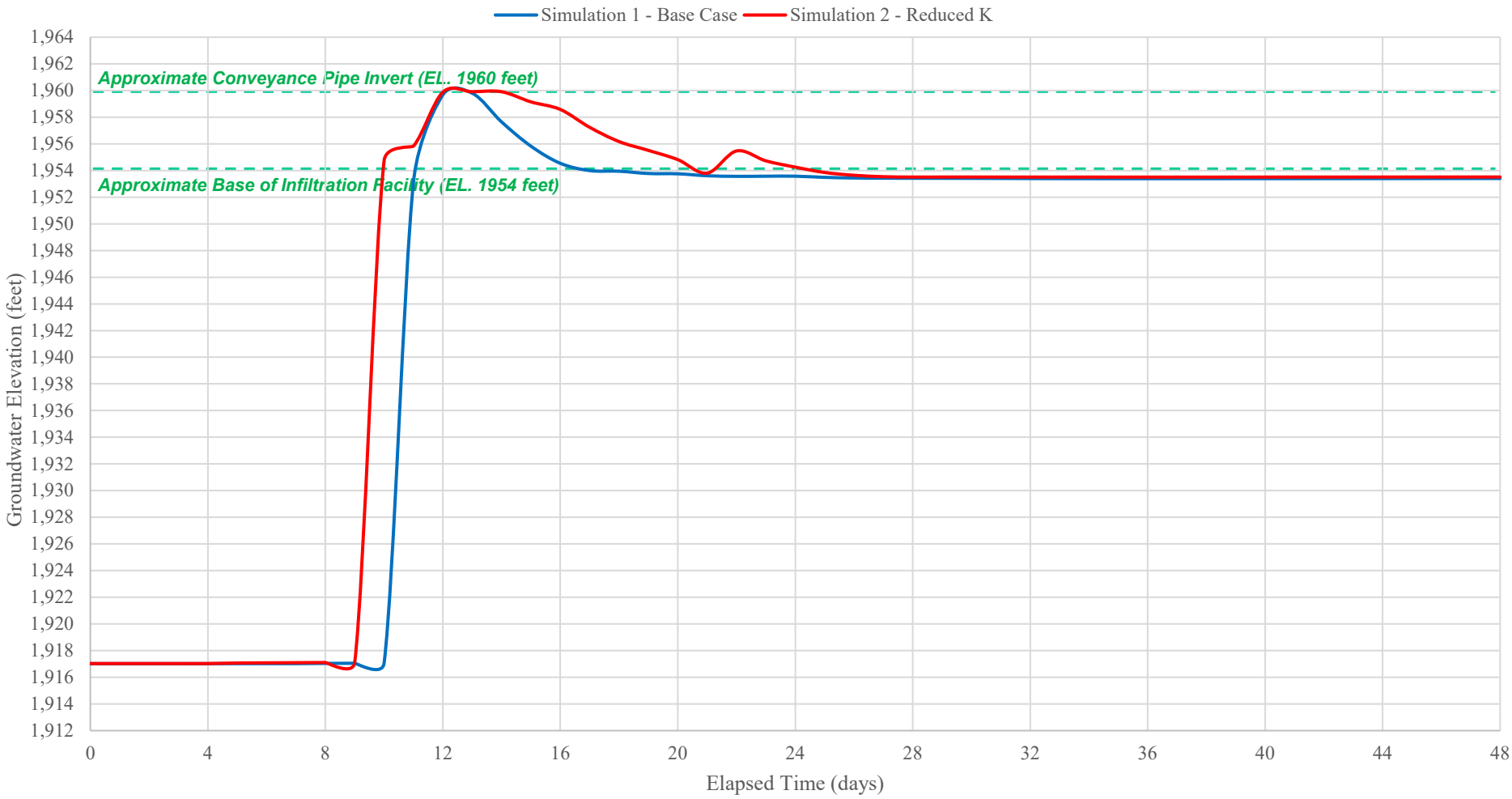
1. Steady-state groundwater elevation distribution was simulated using SEEP/W (GeoStudio 2021.3).

SEEP/W Transient-State Simulation Results
24 Hours

BNSF/Pines Underpass Project
Spokane Valley, Washington

GeoEngineers

Figure F-10



Note:

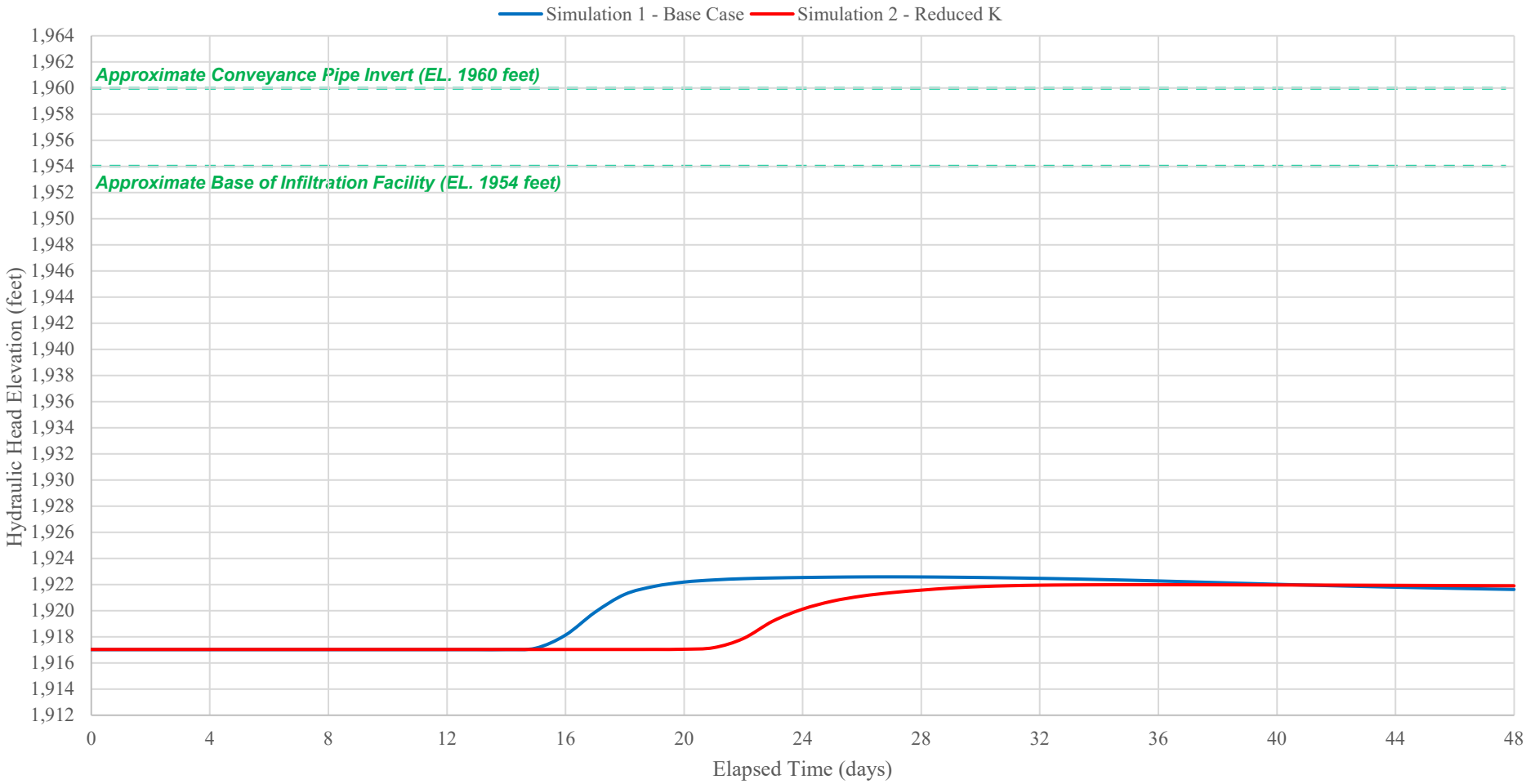
1. Predicted hydraulic head was simulated using SEEP/W (GeoStudio 2021.3).
2. Predicted hydraulic head refers to the hydraulic head point shown in Figure 1.

Predicted Hydraulic Head and Limited Sensitivity Analysis for the Base of the Infiltration Facility

BNSF/Pines Underpass Project
Spokane Valley, Washington

GeoEngineers

Figure F-11



Note:

1. Predicted hydraulic head was simulated using SEEP/W (GeoStudio 2021.3).
2. Predicted hydraulic head refers to the hydraulic head point shown in Figure 1.

Predicted Hydraulic Head and Limited Sensitivity Analysis for the Unconfined Aquifer

BNSF/Pines Underpass Project
Spokane Valley, Washington

GeoEngineers

Figure F-12

APPENDIX G
Report Limitations and Guidelines for Use

APPENDIX G
REPORT LIMITATIONS AND GUIDELINES FOR USE[1]

This appendix provides information to help you manage your risks with respect to the use of this report.

Geotechnical Services Are Performed for Specific Purposes, Persons and Projects

This report has been prepared for HDR, the City of Spokane Valley, and their authorized agents and regulatory agencies. The information contained herein is not applicable to other sites.

GeoEngineers structures our services to meet the specific needs of our clients. No party other than HDR may rely on the product of our services unless we agree to such reliance in advance and in writing. This is to provide our firm with reasonable protection against open-ended liability claims by third parties with whom there would otherwise be no contractual limits to their actions. Within the limitations of scope, schedule and budget, our services have been executed in accordance with our agreements with HDR dated June 12, 2020 and generally accepted geotechnical practices in this area at the time this report was prepared. The use of this report is not recommended for any purpose or project except the one originally contemplated.

A Geotechnical Engineering or Geologic Report is Based on a Unique Set of Project-Specific Factors

This report has been prepared for the BNSF/Pines Underpass project in Spokane Valley, Washington. GeoEngineers considered a number of unique, project-specific factors when establishing the scope of services for this project and report. Unless GeoEngineers specifically indicates otherwise, it is important not to rely on this report if it was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

For example, changes that can affect the applicability of this report include those that affect:

- the function of the proposed structure;
- elevation, configuration, location, orientation or weight of the proposed structure;
- composition of the design team; or
- project ownership.

1 Developed based on material provided by ASFE, Professional Firms Practicing in the Geosciences; www.asfe.org.

If important changes are made after the date of this report, we recommend that GeoEngineers be given the opportunity to review our interpretations and recommendations. Based on that review, we can provide written modifications or confirmation, as appropriate.

Subsurface Conditions Can Change

This geotechnical or geologic report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time, by man-made events such as construction on or adjacent to the site, or by natural events such as floods, earthquakes, slope instability or groundwater fluctuations. If more than a few months have passed since issuance of our report or work product, or if any of the described events may have occurred, please contact GeoEngineers before applying this report for its intended purpose so that we may evaluate whether changed conditions affect the continued reliability or applicability of our conclusions and recommendations.

Most Geotechnical and Geologic Findings Are Professional Opinions

Our interpretations of subsurface conditions are based on field observations from widely spaced sampling locations at the site. Site exploration identifies the specific subsurface conditions only at those points where subsurface tests are conducted or samples are taken. GeoEngineers reviewed field and laboratory data and then applied our professional judgment to render an informed opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ, sometimes significantly, from those indicated in this report. Our report, conclusions and interpretations should not be construed as a warranty of the subsurface conditions.

Geotechnical Engineering Report Recommendations Are Not Final

The construction recommendations included in this report are preliminary and should not be considered final. GeoEngineers' recommendations can be finalized only by observing actual subsurface conditions revealed during construction. GeoEngineers is unable to assume responsibility for the recommendations in this report without performing construction observation.

We recommend that you allow sufficient monitoring, testing and consultation during construction by GeoEngineers to confirm that the conditions encountered are consistent with those indicated by the explorations, to provide recommendations for design changes if the conditions revealed during the work differ from those anticipated, and to evaluate whether earthwork activities are completed in accordance with our recommendations. Retaining GeoEngineers for construction observation for this project is the most effective method of managing the risks associated with unanticipated conditions.

A Geotechnical Engineering or Geologic Report Could Be Subject to Misinterpretation

Misinterpretation of this report by members of the design team or by contractors can result in costly problems. GeoEngineers can help reduce the risks of misinterpretation by conferring with appropriate members of the design team after submitting the report, reviewing pertinent elements of the design team's plans and specifications, participating in pre-bid and preconstruction conferences, and providing construction observation.

Do Not Redraw the Exploration Logs

Geotechnical engineers and geologists prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. The logs included in a geotechnical engineering or geologic report should

never be redrawn for inclusion in architectural or other design drawings. Photographic or electronic reproduction is acceptable, but separating logs from the report can create a risk of misinterpretation.

Give Contractors a Complete Report and Guidance

To help prevent costly problems associated with unanticipated subsurface conditions, we recommend giving contractors the complete geotechnical engineering or geologic report but preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report's accuracy is limited. In addition, encourage them to confer with GeoEngineers and/or to conduct additional study to obtain the specific types of information they need or prefer.

Contractors Are Responsible for Site Safety on Their Own Construction Projects

Our geotechnical recommendations are not intended to direct the contractor's procedures, methods, schedule or management of the work site. The contractor is solely responsible for job site safety and for managing construction operations to minimize risks to on-site personnel and adjacent properties.

Read These Provisions Closely

It is important to recognize that the geoscience practices (geotechnical engineering, geology and environmental science) are less exact than other engineering and natural science disciplines. Without this understanding, there may be expectations that could lead to disappointments, claims and disputes. GeoEngineers includes these explanatory "limitations" provisions in our reports to help reduce such risks. Please confer with GeoEngineers if you need to know more how these "Report Limitations and Guidelines for Use" apply to your project or site.

Biological Pollutants

GeoEngineers' Scope of Work specifically excludes the investigation, detection, prevention or assessment of the presence of Biological Pollutants. Accordingly, this report does not include any interpretations, recommendations, findings or conclusions regarding the detecting, assessing, preventing or abating of Biological Pollutants, and no conclusions or inferences should be drawn regarding Biological Pollutants as they may relate to this project. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria and viruses, and/or any of their byproducts.

A Client that desires these specialized services is advised to obtain them from a consultant who offers services in this specialized field.

GeoEngineers

APPENDIX B
PHILLIPS 66 GENERAL ENCROACHMENT GUIDELINES

MIDSTREAM OPERATIONS

P66-TSD-3501 Appendix B

General Encroachment Guidelines for Property Developers and Land Owners near Phillips 66 Pipeline LLC and Facilities

Rev. 1 – Effective Date: 2022-07-01

SUPERSEDES Rev. 0 - Effective Date: 2011-01-25

Document Summary

This document is intended to provide a general listing of design and construction guidelines to be provided to encroaching parties.

Disclaimer

This standard is subject to revision at any time and will be reviewed according to the procedures of Phillips 66 Midstream Operations and reaffirmed, revised, or withdrawn. Suggestions for improvement of this standard are welcome and they should be sent to the Standards Specialist.

Uncontrolled unless viewed via Livelink.

Official Document Location: Livelink 152364742

Document Management Information: CG01 E+7Y

General Encroachment Guidelines for Design and Construction near Phillips 66 Pipeline LLC and Facilities

Document Summary

This document is intended to provide a general listing of design and construction guidelines to be provided to encroaching parties. By having the general design criteria required by Company (Permittor), to ensure the safety of their pipelines and facilities, the encroaching party can better prepare for their designs near the pipeline and pipeline right-of-way (ROW). In addition to having the design guidelines, the construction policies allow for encroaching parties to be aware of the actual working restrictions on or near the Permittor ROW. The construction guidelines were written with the intent to be utilized on construction drawings, therefore providing details to the challenges of the work being performed near the Permittor pipeline ROW.

1.0 Design Guidelines

Company (Permittor) constructs, repairs, operates and maintains its pipelines in compliance with current U.S. Department of Transportation (DOT) regulations and industry and Company standards for safe operations. Should Encroaching Party (Permittee) propose plans that infringe on Permittor's rights or affect Permittor's ability to meet these requirements, modifications to the pipelines or plans shall be made. **The cost of all such modifications shall be borne by the Permittee**. **The following guidelines apply to Permittee and any contractors, agents and or representatives it uses for construction activities conducted in Permittor's right-of-way and/or affecting Permittor's pipelines:**

1.1. Permittee requesting Permittor to restrict the Right-of-Way (ROW) width will have a metes and bounds survey of the line completed across the land by a registered land surveyor at the Permittee's expense. The Permittee will provide proof of ownership of the property (i.e., warranty deed).

1.2. Uninhabited Buildings and Engineered Works: No buildings, engineering works, patios, in-ground swimming pools, septic systems, or other permanent structures shall be permitted within 25 feet of any pipeline located within Permittor's ROW. No temporary structures, storage containers, construction equipment or vehicle parking will be permitted within 25 feet of any pipeline located within Permittor's ROW, without Permittor's prior written approval. Retaining walls are not permitted. This includes all water retention devices. Large debris such as old cars, trailers, scrap metal, etc., will not be permitted on the ROW. The ROW shall be kept clear for maintenance.

1.3. Inhabited Structures: All private dwellings, industrial buildings, or places of public assembly shall comply with a building setback of 50 feet from the pipeline(s), and this setback requirement will be included as a deed and or plat restriction on any parcel carved out of the above referenced lands that abut the ROW. For easements containing multiple Permittor pipelines, this would be a strip extending 50 feet each side of Permittor's outermost pipelines.

1.4. A greenbelt area will be established around the pipelines in the platting of any new residential or commercial subdivision subject to Permittor's easement. The width of the greenbelt should either be the width of Permittor' easement or, in the case of a blanket easement, extend 25 feet each side of a single Permittor pipeline or 25 feet each side of Permittor's outermost pipelines in the case of multiple Permittor pipelines. The purpose of a platted greenbelt in any new proposed development is to provide that no lot lines or fences cross into the ROW.

1.5. No fences will be allowed on the ROW without Permittor's prior written approval. Fences shall be easily removable and not obstruct the view of the ROW for inspection purposes. No masonry, brick, or stone fences will be allowed. Fences that are perpendicular to the pipeline(s) shall include a gate or other form of access across the width of the ROW. Fence posts shall not be placed within 4 feet of the pipeline(s). Fences that are parallel to the pipeline(s) shall be located at least 10 feet from the nearest pipeline(s), or 25 feet if located on both sides of the line.

1.6. No utility poles shall be allowed to cross the ROW if they interfere with future maintenance. Utility poles, guy wires, or anchors shall not be placed within 8 feet of the pipeline(s). Utility poles running parallel to the pipeline(s) shall be located at least 25 feet from the nearest pipeline(s). All overhead cables shall maintain a minimum height of 20 feet above grade.

1.7. Trees or deep-rooted plants are not permitted on the ROW. Existing trees and vegetation may be removed or side trimmed by Permittor in its sole discretion.

1.8. For new roads running parallel to Permittor's pipeline(s), there shall be at least 25 feet from the edge of the road to the nearest pipeline. All roads passing over Permittor's pipeline(s) shall cross at an angle as close to 90 degrees as possible. Depth of cover shall be at least 48 inches in the barrow ditches and 48 inches under road surfaces from top of pipe to top of surface. Final grade and depth of pipeline shall be surveyed in sensitive areas and results provided to Permittor and Permittee involved with the construction/modification. In addition, it may be necessary to lower and recondition, replace, relocate, or protect the pipeline(s) at the point of crossing to insure that they are not subjected to excessive stress from movement of traffic. Any such modification to the pipeline(s) shall be made at Permittee's expense.

1.9. Construction of parking lots over the pipeline(s) shall not be permitted without Permittor's prior written approval in an Encroachment Agreement releasing Permittor from any and all future damages to the parking lot due to pipeline maintenance and repair. Depth of cover shall be at least 48 inches from top of pipe to top of finished surface. Concrete parking lots shall have jointed sections at no more than 20-foot intervals for ease of repair.

1.10. If the project includes over-excavating to achieve the final grade, pipeline protective measures shall be discussed and agreed to in advance by the Permittor and the Permittee.

1.11. Any utilities that parallel Permittor's pipeline(s) shall maintain a minimum separation distance of 25 feet from the utility's outside wall to the outside wall of Permittor's pipeline(s). All utilities that cross Permittor's pipeline(s) shall pass underneath existing pipeline(s) by a minimum of 24 inches and the crossing shall be as close to 90 degrees as possible and adequately marked on both sides of such pipeline(s). The markers shall be maintained by Permittee in the future. Any future relocation of the utility line due to Permittor's pipeline maintenance shall be done at the Permittee's expense. Any exceptions to these requirements shall not be allowed without Permittor's prior written approval.

1.12. Telephone cables, TV cables, secondary electrical lines (240vac or less), and non-steel gas lines shall be in a minimum Schedule 40 steel or PVC casing. Primary (high voltage) underground electrical lines shall be in a minimum Schedule 40 PVC casing and have a minimum clearance of 24 inches underneath Permittor's pipeline(s). Trenched or open cut crossings shall also be covered with a red concrete slab a minimum of 4 inches thick and 24 inches wide for a distance of 10 feet on both sides of the pipeline(s). Any bored or directionally drilled high voltage line shall have a metallic tape tracer installed inside the casing for ease of locating the high voltage line.

1.13. If any of Permittee's lines that cross or run parallel to Permittor's pipeline(s) are installed and constructed of a material requiring cathodic protection, an interference survey shall be made by Permittor and Permittor shall determine what necessary steps shall be taken to prevent the damage of either line. The survey shall be done at Permittee's expense. Any measures required to address interference issues as a result of the installation of the Permittee's lines shall be done at Permittee's expense.

1.14. Grade or elevation changes may not be made without Permittor's prior written approval. Changes in grade for the purpose of water retention shall not be approved.

1.15. Permittee shall maintain a minimum of 48 inches of soil cover over Permittor's pipeline(s) across the entire width of the Encroachment. If sufficient cover does not currently exist, then at Permittee's sole cost and expense, the line shall be lowered or additional cover provided for placement over the ROW. Cover over the lines may not exceed 6 feet without Permittor's prior written approval. The method of achieving the required depth of cover shall be at Permittor's sole discretion.

1.16. The Permittor retains the right to adequately mark the Permittor's pipelines with permanent line markers to insure public safety and the future safe operation of the lines. DOT Regulations state that any person who willfully and knowingly defaces, damages, removes, or destroys any pipeline sign or right-of-way marker shall be subject to a fine, imprisonment, or both. **The Permittee is required by State law to contact the local One-Call Center at least 48 hours prior to any excavation taking place near the pipeline(s).** The Permittor reserves the right to have an inspector or representative on the job to oversee all construction within the ROW.

1.17. The Permittee shall allow no material or equipment to be used in the construction of the Encroachment that would hinder or impair Permittor's ability to safely maintain and operate Permittor's pipeline(s). Temporary construction roads or crossings over Permittor's pipelines must be approved in advance in writing by Permittor. Permittee shall provide additional cover and/or stabilization to specifications determined by Permittor prior to commencement of traffic across pipelines.

1.18. Permittee shall not allow the Encroachment to create an erosion problem along the ROW, and should such an erosion problem arise then Permittee, at Permittee's sole cost and expense, shall immediately correct the problem.

1.19. Permittee will incorporate Permittor's Design Guidelines contained herein into any of Permittee's design and construction drawings issued "For Bid" purposes. All plan drawings issued either "For Bid" or "For Construction" will display the following statement on the drawings in areas around Permittor's pipeline(s):

WARNING: High PressurePipeline(s)

No Excavation or Construction in this area without ONE-CALL and without contacting Phillips 66 PipeLine LLC (P66PL) at (___) ___-___.

2.0 Construction Guidelines

(If applicable, provide the following in any construction drawing notes)

For planning purposes please notify Phillips 66 Pipeline LLC ("Permittor"), for line marking, depth probing, and prior to start of any construction activities in the pipeline right-of-way. The following guidelines apply to Permittee and any contractors, agents and or representatives it uses for construction activities conducted in Permittor's right-of-way and/or affecting Permittor's pipelines:

2.1. The Permittee is required by State law to contact the local One-Call Center at least 48 hours prior to any excavation taking place near the pipeline(s).

2.2. Permittee shall conduct their activities in compliance with Permittor's Design Guidelines as well as any applicable encroachment agreement in place with Permittee and or the terms of the Construction Guidelines contained herein.

2.3. The continued integrity of Permittor's pipelines and the safety of all individuals in the area of proposed work near Permittor's Facilities are of the utmost importance. Therefore, Permittee shall meet with Permittor representatives prior to construction to provide and receive notification listings for appropriate area operations and emergency personnel. Permittor's on-site representative shall require discontinuation of any work that, in their opinion, endangers the operation or safety of personnel, pipelines, or facilities.

2.4. The use of probing rods for pipeline locating shall be performed by Permittor representatives only to ensure no damage to the pipeline coating. If additional work besides probing is necessary to locate the pipeline, this shall be done at the Permittee's expense under Permittor supervision.

2.5. Notification shall be given to Permittor at least 72 hours before start of construction. A schedule of activities for the duration of the project shall be made available at that time to facilitate the scheduling of Permittor's work site representative. Any Permittee schedule changes shall be provided to Permittor immediately.

2.6. Permittee shall not commence work within twenty-five (25) feet of a Permittor pipeline or aboveground appurtenance without a Permittor representative being on site (unless otherwise agreed to by Permittor). The Permittor reserves the right to have an inspector or representative on the job to oversee all construction within this distance. Depending on size and scope of the work, a Permittor inspector may be an additional cost to the Permittee.

2.7. Heavy-wheeled equipment over 10,000 lbs or tracked equipment over 60,000 lbs working on or near pipeline (e.g. dump trucks, backhoe, trackhoe, crane, bulldozer, logging truck, etc) shall not be allowed to operate directly over Permittor pipelines or in Permittor ROW unless written approval is obtained from Permittor. Heavy-wheeled equipment shall only be allowed to cross Permittor pipelines at locations designated by Permittor. The Permittee shall comply with all precautionary measures required by Permittor to protect its pipelines. When inclement weather exists, provision shall be made to compensate for soil displacement due to subsidence of tires.

2.8. Prior to each excavation, an authorized Permittor representative shall evaluate the proposed excavation to determine if a risk assessment is required. Maps, drawings, and/or records shall be readily available during the assessment and excavations.

2.9. During Installation of underground pipelines or facilities with drilling or boring technology, an authorized Permittor representative shall have the right to evaluate and approve the drilling plan. For a drilled crossing, provide at least 10 ft of vertical separation for crossings and 15 ft for parallel bores between new bore and existing pipelines. In addition, Phillips 66 may require Permitee to excavate an observation hole parallel to and **approximately 5 ft on one or both sides** of Permittor's pipeline(s) extending **at least 1 ft below the pipeline or bore, whichever is shallowest**. The observation hole(s) are to be monitored during both the pilot bore and back reaming.

2.10. Excavation or grading that might result in erosion or that could render the ROW inaccessible shall not be permitted unless the Permittee agrees to restore the area to its original condition and provide protection to Permittor's facility.

2.11. Permittee will remove cutting teeth from excavation equipment bucket when within 10 feet of Permittor's pipeline(s). Mechanical excavation will cease, and only hand excavation shall be permitted, within 18 inches of a crude oil or product pipeline and within 24 inches of a line containing Highly Volatile Liquids (HVL). Excavation will not be allowed to continue until the Permittor's pipeline, valves, and/or fittings top and sides are visible to the spotter. However, proceed with extreme caution when within three (3) feet of the pipe.

2.12. Permittee shall maintain a minimum of 48 inches of soil cover over Permittor's pipeline(s) across the entire width of the Encroachment. If sufficient cover does not currently exist, then at Permittee's sole cost and expense, the line shall be lowered or additional cover provided for placement over the ROW. Cover over the lines may not exceed 6 feet without Permittor's prior written approval. The method of achieving the required depth of cover shall be at Permittor's sole discretion. Projects/modifications may include over excavating to achieve the final grade. **If the project includes over excavating to achieve the final grade, pipeline protective measures shall be discussed and agreed to in advance by the Permittor and the Permittee.**

2.13. Temporary support of any exposed Permittor pipeline by Permittee may be necessary if required by Permittor on-site representative to complete construction of crossing. Depending on the size and the amount of exposed Permittor pipeline, additional pipeline support may be necessary to protect the pipeline from stresses that may be caused by the settling of the soil and pipeline after excavation. Consult a Permittor representative prior to the commencement of excavation for further details as to what may be required.

2.14. No “Non-Explosive” seismic testing or construction equipment with steady state vibrator, intermittent vibrator, or thumper sources shall be conducted within 150 feet of Permittor’s pipeline without Permittor written approval. A vibration analysis will need to be conducted to ensure no potential damage to the pipeline. Work shall only resume with written approval from the Permittor.

2.15. No blasting shall be allowed within 1320 feet of Permittor’s facilities without Permittor written approval. Notification of blasting shall be given to Permittor including a complete blasting plan. A pre-blast meeting shall be conducted by the organization responsible for blasting. Permittor shall have a signed and executed blasting indemnification agreement before authorized permission to blast can be given. A written emergency plan shall be provided by the organization responsible for blasting.

(End of Document)

APPENDIX C
BNSF CONSTRUCTION AND MAINTENANCE AGREEMENT

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

ROADWAY UNDERPASS CONSTRUCTION AND MAINTENANCE AGREEMENT

BNSF File No.: BF20221321
Spokane Valley, WA DOT 982823D Pines Road Underpass
Spokane Subdivision, Line Segment 45; Mile Post 62.95

This Agreement **("Agreement")**, is executed to be effective as of November 2, 2024, by and between **BNSF RAILWAY COMPANY**, a Delaware corporation **("BNSF"),** and the **CITY OF SPOKANE VALLEY**, a municipal corporation of the State of Washington **("Agency").**

RECITALS:

WHEREAS, BNSF owns and operates a line of railroad in and through the City of Spokane Valley, County of Spokane, State of Washington; and

WHEREAS, Agency desires to improve the existing Pines Road at-grade crossing by constructing a new crossing at separated grades to be known as the Pines Road Underpass, U.S. DOT No. 982823D **("Roadway Project")**; and

WHEREAS, Agency's Roadway Project requires Agency to create a roadway underneath BNSF's railway tracks which will, without remediation, remove ground support for said tracks in the area of future Pines Road; and

WHEREAS, Agency is obligated by Federal and Washington State law to provide BNSF with replacement support for BNSF's railway tracks impacted by the Roadway Project; and

WHEREAS, BNSF has future plans to undertake certain improvements to its right-of-way and facilities within the City of Spokane Valley, County of Spokane, State of Washington, but would not undertake said improvements for several years but for Agency's Roadway Project; and

WHEREAS, BNSF's planned improvements also present an opportunity for certain efficiencies and cost savings to the Agency by providing for certain upgrades and improvements to BNSF's right of way which will facilitate the later construction of the Roadway Project; and

WHEREAS, Agency desires that BNSF purchase materials and make certain improvements to its right of way as detailed on the attached Exhibit A as part of BNSF's own planned improvements, including, but not limited to, installation of steel pilings, precast bridge components, and track materials to accommodate a future Underpass to such specifications as Agency provides as part of Phase I of the Roadway Project; and

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

WHEREAS, Phase II of the Roadway Project is understood by the parties to consist of the construction of a public roadway below grade, through the BNSF right-of-way; and

WHEREAS, BNSF is willing to accommodate Phase I and Phase II of the Agency's Roadway Project, at the request of Agency and subject to approved plans and the terms of this Agreement provided below; and

WHEREAS, the existing Pines Road at-grade crossing currently designated as U.S. DOT No. 066367E, Spokane Subdivision, LS 45—MP 62.95, shall be permanently closed, vacated and removed upon completion of Phase II of the Roadway Project and the placing in service of said Underpass; and

NOW, THEREFORE, in consideration of the mutual covenants and agreements of the parties contained herein, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

ARTICLE I – SCOPE OF WORK

1) The term **"Project"** as used herein includes any and all work related to Phase I and Phase II of the proposed Roadway Project and the term "**Structure"** as used herein includes any and all work related to the railroad bridge, more particularly described on the Exhibit A attached hereto and incorporated herein, including, but not limited to, any and all changes to telephone, telegraph, signal and electrical lines and appurtenances, temporary and permanent track work, fencing, grading, alterations to or new construction of drainage facilities, preliminary and construction engineering and contract preparation. Additionally, temporary controls during construction must be in compliance with Section 8A-5, "Traffic Controls During Construction and Maintenance" of the Uniform Traffic Control Devices Manual, U.S. Department of Transportation.

ARTICLE II – BNSF OBLIGATIONS

In consideration of the covenants of Agency set forth herein and the faithful performance thereof, BNSF agrees as follows:

1) Upon receiving the payment from Agency described in the subsequent sentence and provided Agency is in compliance with the terms and conditions of this Agreement, BNSF will grant to Agency, its successors and assigns, an easement (hereinafter called, the "Easement") to enter upon and use that portion of BNSF's right-of-way as is necessary to use and maintain the Project, substantially in the form of Exhibit B attached to this Agreement. Agency must pay BNSF the sum of one million one hundred seventeen thousand eighty six dollars and No/100 Dollars ($1,117,086.00) as compensation for the Easement within thirty (30) days of issuing a Notice to Proceed pursuant to Article III, Section 17 of this Agreement. If Agency fails to pay BNSF within the thirty-day time period

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

set forth in the preceding sentence, BNSF may stop construction of the Project until full payment is received by BNSF.

2) BNSF will furnish all labor, materials, tools, and equipment for railroad work required for the construction of Phase I of the Roadway Project, such railroad work and the estimated cost thereof being as shown on Exhibit D attached hereto and made a part hereof. In the event construction on the Project has not commenced within six (6) months following the Effective Date, BNSF may, in its sole and absolute discretion, revise the cost estimates set forth in said Exhibit D. In such event, the revised cost estimates will become a part of this Agreement as though originally set forth herein. Any item of work incidental to the items listed on Exhibit D not specifically mentioned therein may be included as a part of this Agreement upon written approval of Agency, which approval will not be unreasonably withheld. Construction of the Project must include the following railroad work by BNSF or a BNSF contractor:

A. Procurement of materials, equipment and supplies necessary for the railroad work; and

B. Preliminary engineering, design, and contract preparation for the railroad work; and

C. Furnishing flagging services during construction of the Project as required and set forth in further detail on Exhibit C; and

D. Furnishing engineering and inspection as required in connection with the construction of the Project; and

E. Removal of approximately 250 feet of each main track within Project area to accommodate construction of the Structure; and

F. Removal of the existing embankment to the depth necessary to set the Structure spans, pile caps, and abutments, set forth in further detail on Exhibit A; and

G. Construction of the Structure, to include, but not limited to: pile driving, installation of precast bridge components, handrail, waterproof membrane, ballast, and replacement track panels for BNSF Bridge 62.9A and 62.9. The Parties acknowledge that BNSF may from time to time alter the naming conventions for its structures. The Parties agree that, if such change occurs, the new naming convention shall apply to the underlying structures identified herein, ad does not alter or amend BNSF's obligations under this Agreement in regard to said structures; and

H. Construction of a temporary work track to accommodate the railroad work associated with construction of the Structures; and

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

I. Removal of the existing Pines Road at-grade crossing currently designated as U.S. DOT No. 066367E, Spokane Subdivision, LS 45—MP 62.95, including removal of the automatic warning devices, and obliteration of the crossing between the rails and two feet outside thereof. This work cannot take place until Pines Road is closed at the at-grade crossing, following completion of all phases of work; and

J. Providing a contract project coordinator, at Agency's expense, to serve as a project manager for the Project; and

K. All materials incorporated into the structure must meet FHWA's and FRA's Build American Buy America (BABA) and Buy America Act requirements.

3) BNSF will do all railroad work set forth in Article II, Section 2 above on an actual cost basis, when BNSF, in its sole discretion, determines it is required by its labor agreements to perform such work with its own employees working under applicable collective bargaining agreements. Per 49 U.S.C. § 22905(c)(1)(C), BNSF assures that collective bargaining agreements with the railroad's employees (including terms regulating the contracting of work) will remain in full force and effect according to their terms for work performed by the railroad on the railroad transportation corridor. Nothing in this Agreement shall be construed as prohibiting, limiting, or otherwise restricting BNSF from negotiating and/or modifying (including the removal of any of) the terms (including subcontracting terms) of any applicable collective bargaining agreement now in effect as provided by or pursuant to the Railway Labor Act (45 U.S.C. § 151 et seq., as amended). Further, nothing in this Agreement shall be construed as providing any separate or additional remedy for an alleged breach of a collective bargaining agreement, which are and shall be limited to those remedies provided by such collective bargaining agreement and/or the Railway Labor Act, as applicable.

4) Agency agrees to reimburse BNSF for work of an emergency nature caused by Agency or Agency's contractor in connection with the Project which BNSF deems is reasonably necessary for the immediate restoration of railroad operations, or for the protection of persons or BNSF property. Such work may be performed by BNSF without prior approval of Agency and Agency agrees to fully reimburse BNSF for all such emergency work.

5) BNSF may charge Agency for insurance expenses, including self-insurance expenses when such expenses cover the cost of Employer's Liability (including, without limitation, liability under the Federal Employer's Liability Act) in connection with the construction of the Project. Such charges will be considered part of the actual cost of the Project, regardless of the nature or amount of ultimate liability for injury, loss or death to BNSF's employees, if any.

6) During the construction of the Project, BNSF will send Agency progressive invoices detailing the costs of the railroad work performed by BNSF or its contractor under this

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

Agreement. Agency must reimburse BNSF for completed force-account work . Upon completion of the Project, BNSF will send Agency a detailed invoice of final costs, segregated as to labor and materials for each item in the recapitulation shown on Exhibit D. Pursuant to this section and Article IV, Section 7 herein, Agency must pay the final invoice within ninety (90) days of the date of the final invoice. BNSF will assess a finance charge of .033% per day (12% per annum) on any unpaid sums or other charges due under this Agreement which are past its credit terms. The finance charge continues to accrue daily until the date payment is received by BNSF, not the date payment is made or the date postmarked on the payment. Finance charges will be assessed on delinquent sums and other charges as of the end of the month and will be reduced by amounts in dispute and any unposted payments received by the month's end. Finance charges will be noted on invoices sent to Agency under this section.

BNSF will submit invoices to:

Attn: Accounts Payable
City of Spokane Valley
10210 East Sprague Avenue
Spokane Valley, WA 99206
(509) 720-5000
accountspayable@spokanevalleywa.gov

7) Construction by BNSF will meet the applicable requirements of the Rebuilding America's Infrastructure with Sustainability and Equity (RAISE) Grant Provisions and, subject to the disclaimer in Article II, Section 8, any applicable Federal Rail Administration (FRA) requirements as set forth in Exhibit H.

8) NOTWITHSTANDING ANYTHING TO THE CONTRARY IN THIS AGREEMENT, BNSF IS NOT A CONTRACTOR, AGENT, PARTNER, OR JOINT VENTURER OF THE AGENCY AS A RESULT OF THIS AGREEMENT OR THE PROJECT OR AS A CONSEQUENCE OF BNSF'S PERFORMANCE OF ITS PORTION OF THE WORK. LIKEWISE, BNSF'S EMPLOYEES, AGENTS, CONTRACTORS, AND SUBCONTRACTORS WHO MAY ASSIST BNSF IN PERFORMING ITS PORTION OF THE WORK ARE DOING SO FOR BNSF'S BENEFIT ONLY, AND ARE NOT—AND SHALL NOT BE DEEMED TO BE—EMPLOYEES, CONTRACTORS, SUBCONTRACTORS, SUBCONSULTANTS OR AGENTS OF THE AGENCY. BNSF agrees to observe and comply with the State and Federal laws referenced in this Agreement, but only to the extent such laws may apply to BNSF's portion of the Work. Nothing in this Agreement is intended to waive, nor shall it waive, the preemptive effect of Federal law as to BNSF because of its status as a common carrier. If a conflict exists or arises between this Article II, Section 8, and any other provision of this Agreement and/or its exhibits and attachments, then this Article II, Section 8, shall control.

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

ARTICLE III – AGENCY OBLIGATIONS

In consideration of the covenants of BNSF set forth herein and the faithful performance thereof, Agency agrees as follows:

1) Agency must furnish to BNSF plans and specifications for the Project (excluding plans and specifications BNSF is responsible for pursuant to Article II, paragraph 2 of this Agreement). One electronic copy of said plans (reduced size 11" x 17"), together with one electronic copy of calculations, and one electronic copy of specifications in **English Units**, must be submitted to BNSF for approval prior to commencement of any construction. BNSF will give Agency final written approval of the plans and specifications substantially in the form of Exhibit E, attached to this Agreement and made a part hereof. Upon BNSF's final written approval of the plans and specifications, said plans and specifications will become part of this Agreement and are hereby incorporated herein. Any approval of the plans and specifications by BNSF shall in no way obligate BNSF in any manner with respect to the finished product design and/or construction. Any approval by BNSF shall mean only that the plans and specifications meet the subjective standards of BNSF, and such approval by BNSF shall not be deemed to mean that the plans and specifications or construction is structurally sound and appropriate or that such plans and specifications meet applicable regulations, laws, statutes or local ordinances and/or building codes.

2) Agency must make any required application and obtain all required permits and approvals for the construction of the Project.

3) Agency must provide for and maintain minimum vertical and horizontal clearances, as required and approved by BNSF as part of the plans and specifications for the Project.

4) Agency must acquire all rights of way necessary for the construction of the Project, including easements as may be necessary for maintaining BNSF access to its right-of-way, which may be transferred to BNSF upon substantial completion of the Project by separate agreement and on terms favorable to BNSF.

5) Agency must make any and all arrangements for the installation or relocation of wire lines, pipe lines and other facilities owned by private persons, companies, corporations, political subdivisions or public utilities other than BNSF which may be necessary for the construction of the Project.

6) Agency must construct the Project as shown on the attached Exhibit A and do all work ("Agency's Work") provided for in the plans and specifications for the Project, except railroad work that will be performed by BNSF hereunder. Agency must furnish all labor, materials, tools and equipment for the performance of Agency's Work. The principal elements of Agency's Work to construct the Project are as follows:

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

A. Construction of the roadway underpass and all apparatus thereto, less the Structure work performed by BNSF; and

B. All necessary grading and paving, including backfill of excavations and restoration of disturbed vegetation on BNSF's right-of-way; and

C. Provide suitable drainage, both temporary and permanent; and

D. Installation of a gate in the fence along the boundary of BNSF's right of way in order to provide BNSF with permanent access for maintenance purposes; and

E. As may be necessary, temporary Installation of K-Rail (Jersey) barriers or chain link fencing separating construction of the Structure and BNSF Work from traveled roadways; and

F. Provide appropriate pedestrian control during construction; and

G. Job site cleanup including removal of all construction materials, concrete debris, surplus soil, refuse, contaminated soils, asphalt debris, litter and other waste materials to the satisfaction of BNSF; and

H. Structural excavation for the new Structure, including removal of embankments.

The principal elements of Agency's Work necessary to construct the roadway passing below grade and through BNSF right-of-way are as follows:

A. Removal of existing roadway facilities necessary for construction of new roadway alignment; and

B. Installation and maintenance of temporary erosion and sediment control; and

C. Complete earthwork including clearing/grubbing/grading; and

D. Installation of concrete/asphalt paving beneath the Structure for new roadway; and

E. Installation of pedestrian facilities beneath the Structure as outlined on Exhibit A; and

F. Installation of MUTCD compliant signage required for roadway and pedestrian facilities; and

G. Installation of stormwater facilities and illumination facilities; and

7) Agency must apply and maintain said D.O.T. Crossing number 982823D in a conspicuous location on the Structure.

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

8) Agency's Work must be performed by Agency or Agency's contractor in a manner that will not endanger or interfere with the safe and timely operations of BNSF and its facilities.

9) For any future inspection or maintenance, either routine or otherwise, performed by subcontractors on behalf of the Agency, Agency shall require the subcontractors to execute the Exhibit C documents. Prior to performing any future maintenance with its own personnel, Agency shall: comply with all of BNSF's applicable safety rules and regulations; require any Agency employee performing maintenance to complete the safety training program at the BNSF's Internet Website "contractororientation.com"; notify BNSF when, pursuant to the requirements of exhibit C, a flagger is required to be present; procure, and have approved by BNSF's Risk Management Department, Railroad Protective Liability insurance.

10) In order to prevent damage to BNSF trains and property, Agency must require its contractor(s) to notify BNSF's Roadmaster at least thirty (30) calendar days prior to requesting a BNSF flagman in accordance with the requirements of Exhibit C attached hereto. Additionally, Agency must require its contractor(s) to notify BNSF's Manager of Public Projects thirty (30) calendar days prior to commencing work on BNSF property or near BNSF tracks.

11) Agency or its contractor(s) must submit four (4) copies of any plans (including two sets of calculations in **English Units**) for proposed shoring or cribbing to be used over, under, or adjacent to BNSF's tracks to BNSF's Manager of Public Projects for approval. The shoring or cribbing used by Agency's contractor shall comply with BNSF Bridge Requirements set forth on Exhibit F attached to this Agreement and incorporated herein. Additionally, the shoring and cribbing must comply with all applicable requirements promulgated by state and federal agencies, departments, commissions and other legislative bodies.

12) Agency must include the following provisions in any contract with its contractor(s) performing work on said Project:

A. The Contractor is placed on notice that fiber optic, communication and other cable lines and systems (collectively, the "Lines") owned by various telecommunications companies may be buried on BNSF's property or right-of-way. The locations of these Lines have been included on the plans based on information from the telecommunications companies. The contractor will be responsible for contacting BNSF's Engineering Representative (To Be Determined), BNSF's Signal Representative (To Be Determined) and the telecommunications companies and notifying them of any work that may damage these Lines or facilities and/or interfere with their service. The contractor must also mark all Lines shown on the plans or marked in the field in order to verify their locations. The contractor must also use all reasonable methods when working in the BNSF right-of-way or on BNSF property to determine if any other Lines (fiber optic, cable, communication or otherwise) may exist.

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

B. The Contractor will be responsible for the rearrangement of any facilities or Lines determined to interfere with the construction. The Contractor must cooperate fully with any telecommunications company(ies) in performing such rearrangements.

C. Failure to mark or identify these Lines will be sufficient cause for BNSF's engineering representative (To Be Determined) to stop construction at no cost to the Agency or BNSF until these items are completed.

D. In addition to the liability terms contained elsewhere in this Agreement, the contractor hereby indemnifies, defends and holds harmless BNSF for, from and against all cost, liability, and expense whatsoever (including, without limitation, attorney's fees and court costs and expenses) arising out of or in any way contributed to by any act or omission of Contractor, its subcontractors, agents and/or employees that cause or in any way or degree contribute to (1) any damage to or destruction of any Lines by Contractor, and/or its subcontractors, agents and/or employees, on BNSF's property or within BNSF's right-of-way, (2) any injury to or death of any person employed by or on behalf of any telecommunications company, and/or its contractor, agents and/or employees, on BNSF's property or within BNSF's right-of-way, and/or (3) any claim or cause of action for alleged loss of profits or revenue by, or loss of service by a customer or user of such telecommunication company(ies).

THE LIABILITY ASSUMED BY CONTRACTOR WILL APPLY ONLY TO THE EXTENT OF THE NEGLIGENCE OF CONTRACTOR, ITS AGENTS OR EMPLOYEES, AND WILL NOT BE AFFECTED BY THE FACT, IF IT IS A FACT, THAT THE DAMAGE, DESTRUCTION, INJURY, DEATH, CAUSE OF ACTION OR CLAIM WAS OCCASIONED BY OR CONTRIBUTED TO BY THE NEGLIGENCE OF BNSF, ITS AGENTS, SERVANTS, EMPLOYEES OR OTHERWISE, EXCEPT TO THE EXTENT THAT SUCH CLAIMS ARE PROXIMATELY CAUSED BY THE INTENTIONAL MISCONDUCT OR SOLE NEGLIGENCE OF BNSF.

It is mutually negotiated between the parties that the indemnification obligation shall include all claims brought by Contractor's employees against BNSF, its agents, servants, employees or otherwise, and Contractor expressly waives its immunity under the industrial insurance act (RCW Title 51) and assumes potential liability for all actions brought by its employees.

13) Agency must require compliance with the obligations set forth in this agreement, including Exhibit C and Exhibit C-1, and incorporate in each prime contract for construction of the Project, or the specifications therefor (i) the provisions set forth in Article III; (ii) the provisions set forth in Article IV; and (iii) the provisions set forth in Exhibit C and Exhibit C-1, attached hereto and by reference made a part hereof.

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

14) Except as otherwise provided below in this Section 14, all construction work performed hereunder by Agency for the Project will be pursuant to a contract or contracts to be let by Agency, and all such contracts must include the following:

A. All work performed under such contract or contracts within the limits of BNSF's right-of-way must be performed in a good and workmanlike manner in accordance with plans and specifications approved by BNSF;

B. Changes or modifications during construction that affect safety or BNSF operations will be subject to BNSF's approval;

C. No work will be commenced within BNSF's right-of-way until each of the prime contractors employed in connection with said work have (i) executed and delivered to BNSF a letter agreement in the form of Exhibit C-1 , and (ii) delivered to and secured BNSF's approval of the required insurance; and

D. To facilitate scheduling for the Project, Agency shall have its contractor give BNSF's representative (To Be Determined) four weeks advance notice of the proposed times and dates for work windows. BNSF and Agency's contractor will establish mutually agreeable work windows for the Project. BNSF has the right at any time to revise or change the work windows, due to train operations or service obligations. BNSF will not be responsible for any additional costs and expenses resulting from a change in work windows. Additional costs and expenses resulting from a change in work windows shall be accounted for in the contractor's expenses for the Project.

E. The plans and specifications for the Project must be in compliance with the Bridge Requirements set forth on Exhibit F.

15) Agency must advise the appropriate BNSF Manager of Public Projects, in writing, of the completion date of the Project within thirty (30) days after such completion date. Additionally, Agency must notify BNSF's Manager of Public Projects, in writing, of the date on which Agency and/or its Contractor will meet with BNSF for the purpose of making final inspection of the Project.

16) TO THE FULLEST EXTENT PERMITTED BY THE LAWS OF THE STATE OF WASHINGTON, AGENCY HEREBY RELEASES, INDEMNIFIES, DEFENDS AND HOLDS HARMLESS BNSF, ITS AFFILIATED COMPANIES, PARTNERS, SUCCESSORS, ASSIGNS, LEGAL REPRESENTATIVES, OFFICERS, DIRECTORS, SHAREHOLDERS, EMPLOYEES AND AGENTS FOR, FROM AND AGAINST ANY AND ALL CLAIMS, LIABILITIES, FINES, PENALTIES, COSTS, DAMAGES, LOSSES, LIENS, CAUSES OF ACTION, SUITS, DEMANDS, JUDGMENTS AND EXPENSES (INCLUDING, WITHOUT LIMITATION, COURT COSTS AND ATTORNEYS' FEES) OF ANY NATURE, KIND OR DESCRIPTION OF ANY PERSON (INCLUDING, WITHOUT LIMITATION, THE EMPLOYEES OF THE PARTIES HERETO) OR ENTITY DIRECTLY OR INDIRECTLY ARISING OUT OF,

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

RESULTING FROM OR RELATED TO (IN WHOLE OR IN PART) (I) THE USE, OCCUPANCY OR PRESENCE OF AGENCY, ITS CONTRACTORS, SUBCONTRACTORS, EMPLOYEES OR AGENTS IN, ON, OR ABOUT THE CONSTRUCTION SITE, (II) THE PERFORMANCE, OR FAILURE TO PERFORM BY THE AGENCY, ITS CONTRACTORS, SUBCONTRACTORS, EMPLOYEES, OR AGENTS, ITS WORK OR ANY OBLIGATION UNDER THIS AGREEMENT, (III) THE SOLE OR CONTRIBUTING ACTS OR OMISSIONS OF AGENCY, ITS CONTRACTORS, SUBCONTRACTORS, EMPLOYEES, OR AGENTS IN, ON, OR ABOUT THE CONSTRUCTION SITE, (IV) AGENCY'S BREACH OF THE TEMPORARY CONSTRUCTION LICENSE OR EASEMENT GRANTED TO AGENCY PURSUANT TO ARTICLE II OF THIS AGREEMENT, (V) ANY RIGHTS OR INTERESTS GRANTED TO AGENCY PURSUANT TO THE TEMPORARY CONSTRUCTION LICENSE OR EASEMENT DISCUSSED IN ARTICLE II OF THIS AGREEMENT, (VI) AGENCY'S OCCUPATION AND USE OF BNSF'S PROPERTY OR RIGHT-OF-WAY, INCLUDING, WITHOUT LIMITATION, SUBSEQUENT MAINTENANCE OF THE STRUCTURE BY AGENCY, OR (VII) AN ACT OR OMISSION OF AGENCY OR ITS OFFICERS, AGENTS, INVITEES, EMPLOYEES OR CONTRACTORS OR ANYONE DIRECTLY OR INDIRECTLY EMPLOYED BY ANY OF THEM, OR ANYONE THEY CONTROL OR EXERCISE CONTROL OVER. THE LIABILITY ASSUMED BY AGENCY WILL APPLY ONLY TO THE EXTENT OF THE NEGLIGENCE OF AGENCY, ITS AGENTS OR EMPLOYEES, AND THIS WILL NOT BE AFFECTED BY THE FACT, IF IT IS A FACT, THAT THE DAMAGE, DESTRUCTION, INJURY OR DEATH WAS OCCASIONED BY OR CONTRIBUTED TO BY THE NEGLIGENCE OF BNSF, ITS AGENTS, SERVANTS, EMPLOYEES OR OTHERWISE, EXCEPT TO THE EXTENT THAT SUCH CLAIMS ARE PROXIMATELY CAUSED BY THE INTENTIONAL MISCONDUCT OR SOLE NEGLIGENCE OF BNSF.

It is mutually negotiated between the parties that the indemnification obligation shall include all claims brought by Agency's employees against BNSF, its agents, servants, employees or otherwise, and Agency expressly waives its immunity under the industrial insurance act (RCW Title 51) and assumes potential liability for all actions brought by its employees.

17) Agency must give BNSF's Manager of Public Projects written notice to proceed with the railroad work after receipt of necessary funds for the Project. BNSF will not begin the railroad work (including, without limitation, procurement of supplies, equipment or materials) until written notice to proceed is received from Agency.

18) Agency must perform all necessary work to obtain the permanent closure and vacation of Pines Road across BNSF's right-of-way and must barricade the road approaches prior to completion of the Project. BNSF will cooperate with Agency to achieve the closure and vacation of Pines Road and will remove the crossing surface within its right-of-way.

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

ARTICLE IV – JOINT OBLIGATIONS

IN CONSIDERATION of the premises, the parties hereto mutually agree to the following:

1) All work contemplated in this Agreement must be performed in a good and workmanlike manner and each portion must be promptly commenced by the party obligated hereunder to perform the same and thereafter diligently prosecuted to conclusion in its logical order and sequence. Furthermore, any changes or modifications during construction which affect BNSF will be subject to BNSF's approval prior to the commencement of any such changes or modifications.

2) The work hereunder must be done in accordance with the Bridge Requirements set forth on Exhibit F and the detailed plans and specifications approved by BNSF.

3) Agency must require its contractor(s) to reasonably adhere to the Project's construction schedule for all Project work. The parties hereto mutually agree that either party's failure (or any of their contractors' failure(s)) to complete its work under this Agreement in accordance with the construction schedule due to inclement weather or unforeseen emergencies will not constitute breach of this Agreement and will not subject either party to liability under the Agreement Regardless of the requirements of the construction schedule, BNSF reserves the right to reallocate the labor forces assigned to complete the railroad work in the event of an emergency to provide for the immediate restoration of railroad operations (BNSF or its related railroads) or to protect persons or property on or near any BNSF owned property. BNSF will not be liable for any additional costs or expenses resulting from any such reallocation of its labor forces. The parties mutually agree that any reallocation of labor forces by BNSF pursuant to this provision and any direct or indirect consequences or costs resulting from any such reallocation will not constitute a breach of this Agreement by BNSF.

4) BNSF will have the right to stop construction work on the Project if any of the following events take place: (i) Agency (or any of its contractors) performs the Project work in a manner contrary to the plans and specifications approved by BNSF; (ii) Agency (or any of its contractors), in BNSF's reasonably exercised opinion, prosecutes the Project work in a manner which is hazardous to BNSF property, facilities or the safe and expeditious movement of railroad traffic; (iii) the insurance described in the attached Exhibit C-1 is canceled during the course of the Project; or (iv) Agency fails to pay BNSF for the Temporary Construction License or the Easement pursuant to Article II, Section 1 of this Agreement. The work stoppage will continue until all necessary actions are taken by Agency or its contractor to rectify the situation to the satisfaction of BNSF's Division Engineer or until additional insurance has been delivered to and accepted by BNSF. In the event of a breach of (i) this Agreement, (ii) the Temporary Construction License, or (iii) the Easement, BNSF may immediately terminate the Temporary Construction License or the Easement. Any such work stoppage under this provision will not give rise to any liability on the part of BNSF. BNSF's right to stop the work is in addition to any other rights BNSF may have

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

including, but not limited to, actions or suits for damages or lost profits. In the event that BNSF desires to stop construction work on the Project, BNSF agrees to immediately notify the following individual in writing:

William Helbig
City of Spokane Valley City Hall
10210 E Sprague Avenue
Spokane Valley, WA 99206
bhelbig@spokanevalleywa.gov

5) Agency must supervise and inspect the operations of all Agency contractors to assure compliance with the plans and specifications approved by BNSF, the terms of this Agreement and all safety requirements of the BNSF railroad. If BNSF determines that proper supervision and inspection is not being performed by Agency personnel at any time during construction of the Project, BNSF has the right to stop construction (within or adjacent to its operating right-of-way). Construction of the Project will not proceed until Agency corrects the situation to BNSF's reasonable satisfaction. If BNSF feels the situation is not being corrected in an expeditious manner, BNSF will immediately notify Erica Amsden at eamsden@spokanevalleywa.gov and Jeremiah Schreindl at jschreindl@spokanevalleywa.gov for appropriate corrective action.

6) BNSF will contribute $297,094.00 (**hereinafter referred to as "BNSF's Share")** towards the total actual costs of the Project. BNSF's Share will be based on the costs for preliminary engineering, right-of-way and construction within the following limits;

A. Where a grade crossing is eliminated by grade separation, the structure and approaches required to transition to a theoretical highway profile which would have been constructed if there were no railroad present, for the number of lanes on the existing highway and in accordance with the current design standards of the appropriate state highway agency; and

B. Where another facility, such as a highway or waterway, requiring a bridge structure is located within the limits of a grade separation project, the estimated cost of a theoretical structure and approaches as described in 23 CFR 646.210(c)(1) to eliminate the railroad-highway grade crossing without considering the presence of the waterway or other highway.

Additionally, local, state, and federal funds will be used in the construction of the Project. The total actual cost of construction for the Project is presently estimated to be $38,393,820, more particularly described (together with BNSF's Share) on Exhibit G attached hereto and incorporated herein.

7) Pursuant to this section and Article II, Section 6 herein, Agency must, out of funds made available to it for the construction of the Project, reimburse BNSF in full for the actual costs of all work performed by BNSF under this Agreement, less BNSF's Share

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

as set forth in Article IV, Section 6 herein. BNSF's Share must be paid upon completion of the Project.

8) All expenses detailed in statements sent to Agency pursuant to Article II, Section 6 herein will comply with the terms and provisions of the Federal Aid Highway Program Manual, U.S. Department of Transportation, as amended from time to time, which manual is hereby incorporated into and made a part of this Agreement by reference.

9) The parties mutually agree that no construction activities for the Project, nor future maintenance of the Structure once completed, will be permitted during the fourth quarter of each calendar year, unless agreed to in writing. Emergency work will be permitted only upon prior notification to BNSF's Network Operations Center (telephone number: 800-832-5452). The parties hereto mutually understand and agree that trains cannot be subjected to delay during this time period.

10) Subject to the restrictions imposed by Article IV, Section 9 above, the construction of the Project will not commence until Agency gives BNSF's Manager of Public Projects thirty (30) days prior written notice of such commencement. The commencement notice will reference BNSF's file number BF20221321 and D.O.T. Crossing No. 982823D and must state the time that construction activities will begin.

11) In addition to the terms and conditions set forth elsewhere in this Agreement, including, but not limited to, the terms and conditions stated in Exhibit F, BNSF and Agency agree to the following terms upon completion of construction of the Project:

A. BNSF will, at its sole cost and expense, accept, own, and maintain its roadbed, track, railroad drainage, and all other railroad facilities.

B. Agency will own and maintain, at its sole cost and expense, the Structure, the highway approaches, any access gates installed pursuant to the Project, and appurtenances thereto, lighting, drainage and any access roadways to BNSF gates installed pursuant to this Agreement. BNSF may, at its option, perform maintenance on the Structure in order to avoid conflicts with train operations. BNSF will notify Agency prior to performing any such maintenance on the Structure. In the event such maintenance involves emergency repairs, BNSF will notify Agency at its earliest opportunity. Agency must fully reimburse BNSF for the costs of maintenance performed by BNSF pursuant to this subsection (b). Additionally, Agency and BNSF shall perform the necessary work to obtain the permanent closure of the at-grade crossing at Pines Road, currently designated as U.S. DOT No. 066367E, Spokane Subdivision, LS 45—MP 62.95. Such closure shall be completed upon substantial completion of the Roadway Project and placing in service of the Underpass.

C. Agency must, at Agency's sole cost and expense, keep the Structure painted and free from graffiti.

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

D. Agency must apply and maintain vertical clearance signs which consistently and accurately describe the minimum actual vertical clearance from the bottom of the Structure to the top of any pavement.

E. Agency agrees to reimburse BNSF for the cost of track surfacing due to settlement caused by the construction of the Structure for a period not to exceed four (4) years from the date of final inspection pursuant to Article III, Section 15.

F. Agency must provide BNSF with any and all necessary permits and maintain roadway traffic controls, at no cost to BNSF, whenever requested by BNSF to allow BNSF to inspect the Structure or to make emergency repairs thereto.

G. It is expressly understood by Agency and BNSF that any right to install utilities will be governed by a separate permit or license agreement between the parties hereto.

H. Agency must keep the Structure and surrounding areas clean and free from birds, pigeons, scavengers, vermin, creatures and other animals.

I. If Agency (including its contractors and agents) or BNSF, on behalf of Agency, performs (i) alterations or modifications to the Structure, or (ii) any maintenance or other work on the Structure with heavy tools, equipment or machinery at ground surface level horizontally within 25'-0" of the centerline of the nearest track, or (iii) any maintenance or other work to the superstructure of the Structure, then Agency or its contractors and/or agents must procure and maintain the following insurance coverage:

i) Railroad Protective Liability insurance naming only the ***Railroad*** as the Insured with coverage of at least $5,000,000 per occurrence and $10,000,000 in the aggregate. The policy must be issued on a standard ISO form CG 00 35 12 04 and include the following:

(1) Endorsed to include the Pollution Exclusion Amendment (ISO form CG 28 31 10 93)

(2) Endorsed to include the Limited Seepage and Pollution Endorsement.

(3) Endorsed to remove any exclusion for punitive damages.

(4) No other endorsements restricting coverage may be added.

(5) The original policy must be provided to the ***Railroad*** prior to performing any work or services under this Agreement

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

As used in this paragraph, "***Railroad"*** means "Burlington Northern Santa Fe Corporation", "BNSF RAILWAY COMPANY" and the subsidiaries, successors, assigns and affiliates of each.

In lieu of providing a Railroad Protective Liability Policy, Agency may participate in BNSF's Blanket Railroad Protective Liability Insurance Policy **if available** to Agency or its contractors. The limits of coverage are the same as above.

12) Agency hereby grants to BNSF, at no cost or expense to BNSF, a permanent access easement from Agency property to BNSF tracks for maintenance purposes. Said access shall begin from Pines Road/SR 27 on parcel number 45033.9090, then proceed to BNSF's tracks over said parcel and parcel number 45033.9091. BNSF and Agency agree to memorialize this permanent access right by executing a quitclaim deed within a reasonable time after construction of the access point from Pines Road/SR-27 has been completed.

ARTICLE V – MISCELLANEOUS PROVISIONS

1) Agency must provide one set of as built plans (prepared in **English Units)** to BNSF, as well as one set of computer diskettes containing as built CAD drawings of the Structure and identifying the software used for the CAD drawings. The "as built plans" must comply with the Bridge Requirements set forth on Exhibit F and depict all information in BNSF engineering stationing and mile post pluses. The "as built plans" must also include plan and profile, structural bridge drawings and specifications, and drainage plans. All improvements and facilities must be shown.

2) Subject to the restrictions imposed by Article IV, Section 9 above, Agency must notify and obtain prior authorization from BNSF's Manager of Public Projects before entering BNSF's right-of-way for **Inspection or Maintenance** purposes, and the BNSF Manager of Public Projects will determine if flagging is required. If the construction work hereunder is contracted, Agency must require its prime contractor(s) to comply with the obligations set forth in Exhibit C and Exhibit C-1, as the same may be revised from time to time. Agency will be responsible for its contractor(s) compliance with such obligations.

3) BNSF may, at its expense, make future changes or additions to the railroad components of the Structure if necessary or desirable, in BNSF's sole discretion, including, without limitation the following: (i) the right to raise or lower the grade or change the alignment of its tracks, (ii) the right to lay additional track or tracks, or (iii) the right to build other facilities in connection with the operation of its railroad. Such changes or additions must not change or alter the highway components of the Structure. If it becomes necessary or desirable in the future to change, alter, widen or reconstruct the highway components of the Structure to accommodate railroad projects, the cost of such work, including any cost incidental to alteration of railroad or highway facilities made necessary by any such changes to the Structure, will be borne

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

by the Agency. BNSF and Agency hereby provide assurance in accordance with 49 U.S.C. § 22905(c)(1)(B) that, upon completion, the infrastructure will have sufficient capacity to accommodate both existing and future operations. BNSF's assurance regarding capacity is made by BNSF in consideration of current conditions and presently-known expectations for future capacity needs pursuant to BNSF's review of plans and specifications provided herein, in order to meet the grant purposes including to ensure the project does not limit current or future rail capacity. The provision of said assurance shall in no way obligate, limit, or otherwise restrict either party's rights or obligations under this Agreement or otherwise, or the ability to make changes in and to the project location or BNSF's right of way to accommodate future needs, including but not limited to any needs occasioned by BNSF's provision of rail services as a common carrier.

4) Agency may, at Agency's sole expense, alter or reconstruct the highway components of the Structure if necessary or desirable, due to traffic conditions or pedestrian or other recreational traffic; provided, however, that any such alteration or reconstruction must not encroach further upon or occupy the surface of BNSF's right-of-way to a greater extent than is contemplated by the plans and specifications to be approved by BNSF pursuant to Article III, Section 1 herein, without obtaining BNSF's prior written consent and the execution of a supplement to this Agreement or the completion of a separate agreement.

5) Any books, papers, records and accounts of the parties hereto relating to the work hereunder or the costs or expenses for labor and material connected with the construction will at all reasonable times be open to inspection and audit by the agents and authorized representatives of the parties hereto, as well as the State of Washington, the Federal Railroad Administration, and the Federal Highway Administration for a period of six (6) years from the date of final BNSF invoice under this Agreement.

6) The covenants and provisions of this Agreement are binding upon and inure to the benefit of the successors and assigns of the parties hereto. Notwithstanding the preceding sentence, neither party hereto may assign any of its rights or obligations hereunder without the prior written consent of the other party.

7) In the event construction of the Project does not commence within 48 months of the Effective Date, this Agreement will become null and void.

8) Neither termination nor expiration of this Agreement will release either party from any liability or obligation under this Agreement, whether of indemnity or otherwise, resulting from any acts, omissions or events happening prior to the date of termination or expiration.

9) To the maximum extent possible, each provision of this Agreement will be interpreted in such a manner as to be effective and valid under applicable law. If any provision of this Agreement is prohibited by, or held to be invalid under, applicable law, such

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

provision will be ineffective solely to the extent of such prohibition or invalidity and the remainder of the provision will be enforceable.

10) This Agreement (including exhibits and other documents, manuals, etc. incorporated herein) is the full and complete agreement between BNSF and Agency with respect to the subject matter herein and supersedes any and all other prior agreements between the parties hereto. This includes the following exhibits made part of this Agreement as if fully set forth herein:

- Exhibit A: Plan Overview
- Exhibit B: Underpass Easement Agreement
  - Exhibit A: Premises
  - Exhibit A-1: Legal Description
  - Exhibit B: Memorandum of Easement
  - Exhibit C: Notice of Assignment
- Exhibit C: Contractor Requirements
  - Exhibit C-1: Agreement between BNSF and Contractor
- Exhibit D: Cost Estimate for Railroad Work
- Exhibit E: BNSF's Final Plan Approval Letter
- Exhibit F: BNSF Bridge Requirements
- Exhibit G: Total Project Construction Cost
- Exhibit H: Assurance of Compliance with Applicable Federal Law

11) Any notice provided for herein or concerning this Agreement must be in writing and will be deemed sufficiently given when sent by certified mail, return receipt requested, to the parties at the following addresses:

BNSF: BNSF's Manager of Public Projects
605 Puyallup Ave
Tacoma, WA 98421

Agency: William Helbig, Public Works Director
City of Spokane Valley
10210 E Sprague Avenue
Spokane Valley, WA 99206
PH: 509-720-5320
Email: bhelbig@spokanevalleywa.gov

12) In accordance with 49 U.S.C. § 22905(c)(1)(D) and guidance published by the Federal Railroad Administration dated April 29, 2022, Agency assures that it will comply with liability requirements consistent with 49 U.S.C. § 28103.

13) In accordance with 49 U.S.C. § 22905(c)(2), Agency assures that it agrees to comply with:

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

a. The standards of 49 U.S.C. § 24312, as such section was in effect on September 1, 2003, with respect to the project in the same manner that Amtrak is required to comply with those standards for construction work financed under an agreement made under 49 U.S.C. § 24308(a); and

b. The protective arrangements that are equivalent to the protective arrangements established under 49 U.S.C. § 22404 with respect to employees affected by actions taken in connection with the project.

[SIGNATURE PAGE FOLLOWS]

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

[SIGNATURE PAGE 1 OF 1]

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed and attested by its duly qualified and authorized officials as of the day and year first above written.

BNSF RAILWAY COMPANY

Signature: DocuSigned by: John Cech 535267C9E899435...

Printed Name: John Cech

Title: Vice President Engineering

CITY OF SPOKANE VALLEY

Signature:

Printed Name: JOHN HOHMAN

Title: CITY MANAGER

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

EXHIBIT "C"

CONTRACTOR REQUIREMENTS

1) General

A. The Contractor must cooperate with BNSF RAILWAY COMPANY, hereinafter referred to as "Railway" where work is over or under on or adjacent to Railway property and/or right-of-way, hereafter referred to as "Railway Property", during the construction of Pines Road Underpass Project.

B. The Contractor must execute and deliver to the Railway duplicate copies of the Exhibit “C-1” Agreement, in the form attached hereto, obligating the Contractor to provide and maintain in full force and effect the insurance called for under Section 3 of said Exhibit “C-1”. Questions regarding procurement of the Railroad Protective Liability Insurance should be directed to Rosa Martinez at Marsh, USA, 214-303-8519.

C. The Contractor must plan, schedule and conduct all work activities so as not to interfere with the movement of any trains on Railway Property.

D. The Contractor's right to enter Railway's Property is subject to the absolute right of Railway to cause the Contractor's work on Railway's Property to cease if, in the opinion of Railway, Contractor's activities create a hazard to Railway's Property, employees, and/or operations. Railway will have the right to stop construction work on the Project if any of the following events take place: (i) Contractor (or any of its subcontractors) performs the Project work in a manner contrary to the plans and specifications approved by Railway; (ii) Contractor (or any of its subcontractors), in Railway’s opinion, prosecutes the Project work in a manner which is hazardous to Railway property, facilities or the safe and expeditious movement of railroad traffic; (iii) the insurance described in the attached Exhibit C-1 is canceled during the course of the Project; or (iv) Contractor fails to pay Railway for the Temporary Construction License or the Easement. The work stoppage will continue until all necessary actions are taken by Contractor or its subcontractor to rectify the situation to the satisfaction of Railway’s Division Engineer or until additional insurance has been delivered to and accepted by Railway. In the event of a breach of (i) this Agreement, (ii) the Temporary Construction License, or (iii) the Easement, Railway may immediately terminate the Temporary Construction License or the Easement. Any such work stoppage under this provision will not give rise to any liability on the part of Railway. Railway’s right to stop the work is in addition to any other rights Railway may have including, but not limited to, actions or suits for damages or lost profits. In the event that Railway desires to stop construction work on the Project, Railway agrees to immediately notify the following individual in writing:

_____
_____
_____
_____

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

E. The Contractor is responsible for determining and complying with all Federal, State and Local Governmental laws and regulations, including, but not limited to environmental laws and regulations (including but not limited to the Resource Conservation and Recovery Act, as amended; the Clean Water Act, the Oil Pollution Act, the Hazardous Materials Transportation Act, CERCLA), and health and safety laws and regulations. The Contractor hereby indemnifies, defends and holds harmless Railway for, from and against all fines or penalties imposed or assessed by Federal, State and Local Governmental Agencies against the Railway which arise out of Contractor's work under this Agreement.

F. The Contractor must notify **Agency** at (_____) _____ and Railway's Manager Public Projects, telephone number (_____) _____ at least thirty (30) calendar days before commencing any work on Railway Property. Contractor's notification to Railway must refer to Railway's file _____.

G. For any bridge demolition and/or falsework above any tracks or any excavations located with any part of the excavations located within, whichever is greater, twenty-five (25) feet of the nearest track or intersecting a slope from the plane of the top of rail on a 2 horizontal to 1 vertical slope beginning at eleven (11) feet from centerline of the nearest track, both measured perpendicular to center line of track, the Contractor must furnish the Railway five sets of working drawings showing details of construction affecting Railway Property and tracks. The working drawing must include the proposed method of installation and removal of falsework, shoring or cribbing, not included in the contract plans and two sets of structural calculations of any falsework, shoring or cribbing. For all excavation and shoring submittal plans, the current "BNSF-UPRR Guidelines for Temporary Shoring" must be used for determining the design loading conditions to be used in shoring design, and all calculations and submittals must be in accordance with the current "BNSF-UPRR Guidelines for Temporary Shoring". All submittal drawings and calculations must be stamped by a registered professional engineer licensed to practice in the state the project is located. All calculations must take into consideration railway surcharge loading and must be designed to meet American Railway Engineering and Maintenance-of-Way Association (previously known as American Railway Engineering Association) Coopers E-80 live loading standard. All drawings and calculations must be stamped by a registered professional engineer licensed to practice in the state the project is located. The Contractor must not begin work until notified by the Railway that plans have been approved. The Contractor will be required to use lifting devices such as, cranes and/or winches to place or to remove any falsework over Railway's tracks. In no case will the Contractor be relieved of responsibility for results obtained by the implementation of said approved plans.

H. Subject to the movement of Railway's trains, Railway will cooperate with the Contractor such that the work may be handled and performed in an efficient manner. The Contractor will have no claim whatsoever for any type of damages or for extra or additional compensation in the event his work is delayed by the Railway.

2) Contractor Safety Orientation

A. No employee of the Contractor, its subcontractors, agents or invitees may enter Railway Property without first having completed Railway's Engineering Contractor Safety Orientation, found on the web site www.BNSFContractor.com. The Contractor

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

must ensure that each of its employees, subcontractors, agents or invitees completes Railway's Engineering Contractor Safety Orientation through internet sessions before any work is performed on the Project. Additionally, the Contractor must ensure that each and every one of its employees, subcontractors, agents or invitees possesses a card certifying completion of the Railway Contractor Safety Orientation before entering Railway Property. The Contractor is responsible for the cost of the Railway Contractor Safety Orientation. The Contractor must renew the Railway Contractor Safety Orientation annually. Further clarification can be found on the web site or from the Railway's Representative.

3) Railway Requirements

A. The Contractor must take protective measures as are necessary to keep railway facilities, including track ballast, free of sand, debris, and other foreign objects and materials resulting from his operations. Any damage to railway facilities resulting from Contractor's operations will be repaired or replaced by Railway and the cost of such repairs or replacement must be paid for by the Agency.

B. The Contractor must notify the Railway's Division Engineer _____ at (_____)_____ and provide blasting plans to the Railway for review seven (7) calendar days prior to conducting any blasting operations adjacent to or on Railway's Property.

C. The Contractor must abide by the following temporary clearances during construction:

- 15'-0" Horizontally from centerline of nearest track
- 21'-6" Vertically above top of rail
- 27'-0" Vertically above top of rail for electric wires carrying less than 750 volts
- 28'-0" Vertically above top of rail for electric wires carrying 750 volts to 15,000 volts
- 30'-0" Vertically above top of rail for electric wires carrying 15,000 volts to 20,000 volts
- 34'-0" Vertically above top of rail for electric wires carrying more than 20,000 volts

D. Upon completion of construction, the following clearances shall be maintained:

- 25' Horizontally from centerline of nearest track
- 23' 6" Vertically above top of rail

E. Any infringement within State statutory clearances due to the Contractor's operations must be submitted to the Railway and to the **(Agency)** and must not be undertaken until approved in writing by the Railway, and until the **(Agency)** has obtained any necessary authorization from the State Regulatory Authority for the infringement. No extra compensation will be allowed in the event the Contractor's work is delayed pending Railway approval, and/or the State Regulatory Authority's approval.

F. In the case of impaired vertical clearance above top of rail, Railway will have the option of installing tell-tales or other protective devices Railway deems necessary for protection of Railway operations. The cost of tell-tales or protective devices will be borne by the Agency.

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

G. The details of construction affecting the Railway's Property and tracks not included in the contract plans must be submitted to the Railway by **(Agency)** for approval before work is undertaken and this work must not be undertaken until approved by the Railway.

H. At other than public road crossings, the Contractor must not move any equipment or materials across Railway's tracks until permission has been obtained from the Railway. The Contractor must obtain a "Temporary Construction Crossing Agreement" from the Railway prior to moving his equipment or materials across the Railways tracks. The temporary crossing must be gated and locked at all times when not required for use by the Contractor. The temporary crossing for use of the Contractor will be constructed and, at the completion of the project, removed at the expense of the Contractor.

I. Discharge, release or spill on the Railway Property of any hazardous substances, oil, petroleum, constituents, pollutants, contaminants, or any hazardous waste is prohibited and Contractor must immediately notify the Railway's Resource Operations Center at 1(800) 832-5452, of any discharge, release or spills in excess of a reportable quantity. Contractor must not allow Railway Property to become a treatment, storage or transfer facility as those terms are defined in the Resource Conservation and Recovery Act or any state analogue.

J. The Contractor upon completion of the work covered by this contract, must promptly remove from the Railway's Property all of Contractor's tools, equipment, implements and other materials, whether brought upon said property by said Contractor or any Subcontractor, employee or agent of Contractor or of any Subcontractor, and must cause Railway's Property to be left in a condition acceptable to the Railway's representative.

4) Contractor Roadway Worker on Track Safety Program and Safety Action Plan

A. Each Contractor that will perform work within 25 feet of the centerline of a track must develop and implement a Roadway Worker Protection/On Track Safety Program and work with Railway Project Representative to develop an on track safety strategy as described in the guidelines listed in the on track safety portion of the Safety Orientation. This Program must provide Roadway Worker protection/on track training for all employees of the Contractor, its subcontractors, agents or invitees. This training is reinforced at the job site through job safety briefings. Additionally, each Contractor must develop and implement the Safety Action Plan, as provided for on the web site **www.BNSFContractor.com**, which will be made available to Railway prior to commencement of any work on Railway Property. During the performance of work, the Contractor must audit its work activities. The Contractor must designate an on-site Project Supervisor who will serve as the contact person for the Railway and who will maintain a copy of the Safety Action Plan, safety audits, and Material Safety Datasheets (MSDS), at the job site.

B. Contractor shall have a background investigation performed on all of its employees, subcontractors and agents who will be performing any services for Railroad under this Agreement which are determined by Railroad in its sole discretion **a)** to be on Railroad's

property, or **b)** that require access to Railroad Critical Infrastructure, Railroad Critical Information Systems, Railroad's Employees, Hazardous Materials on Railroad's property or is being transported by or otherwise in the custody of Railroad, or Freight in Transit involving Railroad.

i) The required background screening shall at a minimum meet the rail industry background screening criteria defined by the e-RAILSAFE Program as outlined at **www.eVerifile.com**, in addition to any other applicable regulatory requirements.

ii) Contractor shall obtain written consent from all its employees, subcontractors or agents screened in compliance with the e-RAILSAFE Program to participate in the Program on their behalf and to release completed background information to Railroad's designee. Contractor shall be subject to periodic audit to ensure compliance.

iii) Contractor subject to the e-RAILSAFE Program hereunder shall not permit any of its employees, subcontractors or agents to perform services hereunder who are not first approved under e-RAILSAFE Program standards. Railroad shall have the right to deny entry onto its premises or access as described in this section above to any of Contractor's employees, subcontractors or agents who do not display the authorized identification badge issued by a background screening service meeting the standards set forth in the e-RAILSAFE Program, or who in Railroad's opinion, which may not be unreasonable, may pose a threat to the safety or security of Railroad's operations, assets or personnel.

iv) Contractors shall be responsible for ensuring that its employees, subcontractors and agents are United States citizens or legally working in the United States under a lawful and appropriate work VISA or other work authorization.

5) Railway Flagger Services

A. The Contractor must give Railway's **Roadmaster (telephone _____)** a minimum of thirty (30) calendar days advance notice when flagging services will be required so that the Roadmaster can make appropriate arrangements (i.e., bulletin the flagger's position). If flagging services are scheduled in advance by the Contractor and it is subsequently determined by the parties hereto that such services are no longer necessary, the Contractor must give the Roadmaster five (5) working days advance notice so that appropriate arrangements can be made to abolish the position pursuant to union requirements.

B. Unless determined otherwise by Railway's Project Representative, Railway flagger will be required and furnished when Contractor's work activities are located over, under and/or within twenty-five (25) feet measured horizontally from centerline of the nearest track and when cranes or similar equipment positioned beyond 25-feet from the track centerline could foul the track in the event of tip over or other catastrophic occurrence, but not limited thereto for the following conditions:

i) When, upon inspection by Railway's Representative, other conditions warrant.

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

ii) When any excavation is performed below the bottom of tie elevation, if, in the opinion of Railway's representative, track or other Railway facilities may be subject to movement or settlement.

iii) When work in any way interferes with the safe operation of trains at timetable speeds.

iv) When any hazard is presented to Railway track, communications, signal, electrical, or other facilities either due to persons, material, equipment or blasting in the vicinity.

v) Special permission must be obtained from the Railway before moving heavy or cumbersome objects or equipment which might result in making the track impassable.

C. Flagging services will be performed by qualified Railway flaggers.

i) Flagging crew generally consists of one employee. However, additional personnel may be required to protect Railway Property and operations, if deemed necessary by the Railways Representative.

ii) Each time a flagger is called, the minimum period for billing will be the eight (8) hour basic day.

iii) The cost of flagger services provided by the Railway will be borne by **(Agency)**. The estimated cost for one (1) flagger is approximately between $800.00-$1,600.00 for an eight (8) hour basic day with time and one-half or double time for overtime, rest days and holidays. The estimated cost for each flagger includes vacation allowance, paid holidays, Railway and unemployment insurance, public liability and property damage insurance, health and welfare benefits, vehicle, transportation, meals, lodging, radio, equipment, supervision and other costs incidental to performing flagging services. Negotiations for Railway labor or collective bargaining agreements and rate changes authorized by appropriate Federal authorities may increase actual or estimated flagging rates. **THE FLAGGING RATE IN EFFECT AT THE TIME OF PERFORMANCE BY THE CONTRACTOR HEREUNDER WILL BE USED TO CALCULATE THE ACTUAL COSTS OF FLAGGING PURSUANT TO THIS PARAGRAPH.**

iv) The average train traffic on this route is _____ freight trains per 24-hour period at a timetable speed _____ MPH and _____ passenger trains at a timetable speed of _____ MPH.

6) Contractor General Safety Requirements

A. Work in the proximity of railway track(s) is potentially hazardous where movement of trains and equipment can occur at any time and in any direction. All work performed by contractors within 25 feet of any track must be in compliance with FRA Roadway Worker Protection Regulations.

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

B. Before beginning any task on Railway Property, a thorough job safety briefing must be conducted with all personnel involved with the task and repeated when the personnel or task changes. If the task is within 25 feet of any track, the job briefing must include the Railway's flagger, as applicable, and include the procedures the Contractor will use to protect its employees, subcontractors, agents or invitees from moving any equipment adjacent to or across any Railway track(s).

C. Workers must not work within 25 feet of the centerline of any track without an on track safety strategy approved by the Railway's Project Representative. When authority is provided, every contractor employee must know: (1) who the Railway flagger is, and how to contact the flagger, (2) limits of the authority, (3) the method of communication to stop and resume work, and (4) location of the designated places of safety. Persons or equipment entering flag/work limits that were not previously job briefed, must notify the flagger immediately, and be given a job briefing when working within 25 feet of the center line of track.

D. When Contractor employees are required to work on the Railway Property after normal working hours or on weekends, the Railway's representative in charge of the project must be notified. A minimum of two employees must be present at all times.

E. Any employees, agents or invitees of Contractor or its subcontractors under suspicion of being under the influence of drugs or alcohol, or in the possession of same, will be removed from the Railway's Property and subsequently released to the custody of a representative of Contractor management. Future access to the Railway's Property by that employee will be denied.

F. Any damage to Railway Property, or any hazard noticed on passing trains must be reported immediately to the Railway's representative in charge of the project. Any vehicle or machine which may come in contact with track, signal equipment, or structure (bridge) and could result in a train derailment must be reported immediately to the Railway representative in charge of the project and to the Railway's Resource Operations Center at 1(800) 832-5452. Local emergency numbers are to be obtained from the Railway representative in charge of the project prior to the start of any work and must be posted at the job site.

G. For safety reasons, all persons are prohibited from having pocket knives, firearms or other deadly weapons in their possession while working on Railway's Property.

H. All personnel protective equipment (PPE) used on Railway Property must meet applicable OSHA and ANSI specifications. Current Railway personnel protective equipment requirements are listed on the web site, **www.BNSFContractor.com,** however, a partial list of the requirements include: a) safety glasses with permanently affixed side shields (no yellow lenses); b) hard hats; c) safety shoe with: hardened toes, above-the-ankle lace-up and a defined heel; and d) high visibility retro-reflective work wear. The Railway's representative in charge of the project is to be contacted regarding local specifications for meeting requirements relating to hi-visibility work wear. Hearing protection, fall protection, gloves, and respirators must be worn as required by State and Federal regulations. **(NOTE**

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

– Should there be a discrepancy between the information contained on the web site and the information in this paragraph, the web site will govern.)

I. THE CONTRACTOR MUST NOT PILE OR STORE ANY MATERIALS, MACHINERY OR EQUIPMENT CLOSER THAN 25'-0" TO THE CENTER LINE OF THE NEAREST RAILWAY TRACK. MATERIALS, MACHINERY OR EQUIPMENT MUST NOT BE STORED OR LEFT WITHIN 250 FEET OF ANY HIGHWAY/RAIL AT-GRADE CROSSINGS OR TEMPORARY CONSTRUCTION CROSSING, WHERE STORAGE OF THE SAME WILL OBSTRUCT THE VIEW OF A TRAIN APPROACHING THE CROSSING. PRIOR TO BEGINNING WORK, THE CONTRACTOR MUST ESTABLISH A STORAGE AREA WITH CONCURRENCE OF THE RAILWAY'S REPRESENTATIVE.

J. Machines or vehicles must not be left unattended with the engine running. Parked machines or equipment must be in gear with brakes set and if equipped with blade, pan or bucket, they must be lowered to the ground. All machinery and equipment left unattended on Railway's Property must be left inoperable and secured against movement. (See internet Engineering Contractor Safety Orientation program for more detailed specifications)

K. Workers must not create and leave any conditions at the work site that would interfere with water drainage. Any work performed over water must meet all Federal, State and Local regulations.

L. All power line wires must be considered dangerous and of high voltage unless informed to the contrary by proper authority. For all power lines the minimum clearance between the lines and any part of the equipment or load must be; 200 KV or below - 15 feet; 200 to 350 KV - 20 feet; 350 to 500 KV - 25 feet; 500 to 750 KV - 35 feet; and 750 to 1000 KV - 45 feet. If capacity of the line is not known, a minimum clearance of 45 feet must be maintained. A person must be designated to observe clearance of the equipment and give a timely warning for all operations where it is difficult for an operator to maintain the desired clearance by visual means.

7) Excavation

A. Before excavating, the Contractor must determine whether any underground pipe lines, electric wires, or cables, including fiber optic cable systems are present and located within the Project work area. The Contractor must determine whether excavation on Railway's Property could cause damage to buried cables resulting in delay to Railway traffic and disruption of service to users. Delays and disruptions to service may cause business interruptions involving loss of revenue and profits. Before commencing excavation, the Contractor must contact **BNSF's Field Engineering Representative (_____)**. All underground and overhead wires will be considered HIGH VOLTAGE and dangerous until verified with the company having ownership of the line. **It is the Contractor's responsibility to notify any other companies that have underground utilities in the area and arrange for the location of all underground utilities before excavating.**

B. The Contractor must cease all work and notify the Railway immediately before continuing excavation in the area if obstructions are encountered which do not appear on drawings. If

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

the obstruction is a utility and the owner of the utility can be identified, then the Contractor must also notify the owner immediately. If there is any doubt about the location of underground cables or lines of any kind, no work must be performed until the exact location has been determined. There will be no exceptions to these instructions.

C. All excavations must be conducted in compliance with applicable OSHA regulations and, regardless of depth, must be shored where there is any danger to tracks, structures or personnel.

D. Any excavations, holes or trenches on the Railway's Property must be covered, guarded and**/**or protected when not being worked on. When leaving work site areas at night and over weekends, the areas must be secured and left in a condition that will ensure that Railway employees and other personnel who may be working or passing through the area are protected from all hazards. All excavations must be back filled as soon as possible.

8) Hazardous Waste, Substances and Material Reporting:

A. If Contractor discovers any hazardous waste, hazardous substance, petroleum or other deleterious material, including but not limited to any non-containerized commodity or material, on or adjacent to Railway's Property, in or near any surface water, swamp, wetlands or waterways, while performing any work under this Agreement, Contractor must immediately: (a) notify the Railway's Resource Operations Center at 1(800) 832-5452, of such discovery: (b) take safeguards necessary to protect its employees, subcontractors, agents and/or third parties: and (c) exercise due care with respect to the release, including the taking of any appropriate measure to minimize the impact of such release.

9) Personal Injury Reporting

A. The Railway is required to report certain injuries as a part of compliance with Federal Railroad Administration (FRA) reporting requirements. Any personal injury sustained by an employee of the Contractor, subcontractor or Contractor's invitees while on the Railway's Property must be reported immediately (by phone mail if unable to contact in person) to the Railway's representative in charge of the project. The Non-Employee Personal Injury Data Collection Form contained herein is to be completed and sent by Fax to the Railway at 1(817) 352-7595 and to the Railway’s Project Representative no later than the close of shift on the date of the injury.

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

NON-EMPLOYEE PERSONAL INJURY DATA COLLECTION

(If injuries are in connection with rail equipment accident/incident, highway rail grade crossing accident or automobile accident, ensure that appropriate information is obtained, forms completed and that data entry personnel are aware that injuries relate to that specific event.)

Injured Person Type:

- ☐ Passenger on train (C)
- ☐ Non-employee (N) *(i.e., emp of another railroad, or, non-BNSF emp involved in vehicle accident, including company vehicles)*
- ☐ Contractor/safety
- ☐ Contractor/non-safety sensitive (G)
- ☐ Volunteer/safety sensitive (H)
- ☐ Volunteer/other non-safety sensitive (I)
- ☐ Non-trespasser (D) - to include highway users involved in highway rail grade crossing accidents who did not go around or through gates
- ☐ Trespasser (E) - to include highway users involved in highway rail grade crossing accidents who went around or through gates
- ☐ Non-trespasser (J) - Off railroad property

If train involved, Train ID:
_____

Transmit attached information to Accident/Incident Reporting Center by:
Fax 1-817-352-7595 or by Phone 1-800-697-6736 **or email to:** Accident-Reporting.Center@BNSF.com

Officer Providing Information:

_____ _____ _____
(Name) (Employee No.) (Phone #)

REPORT PREPARED TO COMPLY WITH FEDERAL ACCIDENT REPORTING REQUIREMENTS AND PROTECTED FROM DISCLOSURE PURSUANT TO 49 U.S.C. 20903 AND 83 U.S.C. 490

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

NON-EMPLOYEE PERSONAL INJURY DATA COLLECTION

Please complete this form and provide to the BNSF supervisor, who will input this information into the EHS Star system. For questions, call (817) 352-1267 or email Safety.IncidentReporting@BNSF.com.

Accident City/State: _____ Date: _____ Time: _____

County: _____ Temperature: _____ Weather: _____
(if non-BNSF location)

Name (Last/First/MI): _____

Age: _____ Gender (if available): _____

Company: _____

eRailsafe Badge Number: _____ Expiration Date: _____

BNSF Contractor Badge Number: _____ Expiration Date: _____

Injury: _____ Body Part: _____
(e.g., laceration) (e.g., hand)

Description of accident (including how accident occurred, potential cause, etc.):

_____

_____

Work activity in progress at time of accident: _____

Tools, machinery, or hazardous materials involved in accident: _____

_____

Treatment:

- ☐ First Aid Only
- ☐ Required Medical Treatment
- ☐ Other Medical Treatment: _____

Dr. Name: _____ Date: _____

Dr. Street Address: _____ City: _____ State: _____ Zip: _____

Hospital Name: _____

Hospital Street Address: _____ City: _____ State: _____ Zip: _____

Diagnosis: _____

THIS REPORT IS PART OF BNSF'S ACCIDENT REPORT PURSUANT TO THE ACCIDENT REPORTS STATUTE AND, AS SUCH SHALL NOT "BE ADMITTED AS EVIDENCE OR USED FOR ANY PURPOSE IN ANY SUIT OR ACTION FOR DAMAGES GROWING OUT OF ANY MATTER MENTIONED IN SAID REPORT…." 49 U.S.C. § 20903. See 49 C.F.R. § 225.7(b).

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

EXHIBIT "C-1"

Agreement Between

BNSF RAILWAY COMPANY

and the

CONTRACTOR

Railway File: _____

Agency Project: _____

_____, (hereinafter called "Contractor"), has entered into an agreement (hereinafter called "Agreement") dated _____with the City of Spokane Valley (Agency) for the performance of certain work in connection with the following project: BF-20221321. Performance of such work will necessarily require Contractor to enter **BNSF RAILWAY COMPANY** (hereinafter called "Railway") right of way and property (hereinafter called "Railway Property"). The Agreement provides that no work will be commenced within Railway Property until the Contractor employed in connection with said work for **City of Spokane Valley** (i) executes and delivers to Railway an Agreement in the form hereof, and (ii) provides insurance of the coverage and limits specified in such Agreement and Section 3 herein. If this Agreement is executed by a party who is not the Owner, General Partner, President or Vice President of Contractor, Contractor must furnish evidence to Railway certifying that the signatory is empowered to execute this Agreement on behalf of Contractor.

Accordingly, in consideration of Railway granting permission to Contractor to enter upon Railway Property and as an inducement for such entry, Contractor, effective on the date of the Agreement, has agreed and does hereby agree with Railway as follows:

1) RELEASE OF LIABILITY AND INDEMNITY

Contractor hereby waives, releases, indemnifies, defends and holds harmless Railway for all judgments, awards, claims, demands, and expenses (including attorneys' fees), for injury or death to all persons, including Railway's and Contractor's officers and employees, and for loss and damage to property belonging to any person, arising in any manner from Contractor's or any of Contractor's subcontractors' acts or omissions or any work performed on or about Railway's property or right-of-way.

This obligation shall not include such claims, costs, damages, or expenses which may be caused by the sole negligence of Railway or its contractors, agents or employees; Provided, that if the claims or damages are caused by or result from the concurrent negligence or other acts or omissions of (a) Railway, its

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

contractors, agents or employees and (b) Contractor, its subcontractors, agents or employees, this provision shall be valid and enforceable only to the extent of the negligence of the Contractor, its subcontractors, agents or employees.

A. It is mutually negotiated between the parties that the indemnification obligation shall include all claims brought by Contractor's employees against Railway, its agents, servants, employees or otherwise, and Contractor expressly waives its immunity under the industrial insurance act (RCW Title 51) and assumes potential liability for all actions brought by its employees.

B. THE INDEMNIFICATION OBLIGATION ASSUMED BY CONTRACTOR INCLUDES ANY CLAIMS, SUITS OR JUDGMENTS BROUGHT AGAINST RAILWAY UNDER THE FEDERAL EMPLOYEE'S LIABILITY ACT, INCLUDING CLAIMS FOR STRICT LIABILITY UNDER THE SAFETY APPLIANCE ACT OR THE LOCOMOTIVE INSPECTION ACT, WHENEVER SO CLAIMED.

C. Contractor further agrees, at its expense, in the name and on behalf of Railway, that it will adjust and settle all claims made against Railway, and will, at Railway's discretion, appear and defend any suits or actions of law or in equity brought against Railway on any claim or cause of action arising or growing out of or in any manner connected with any liability assumed by Contractor under this Agreement for which Railway is liable or is alleged to be liable. Railway will give notice to Contractor, in writing, of the receipt or dependency of such claims and thereupon Contractor must proceed to adjust and handle to a conclusion such claims, and in the event of a suit being brought against Railway, Railway may forward summons and complaint or other process in connection therewith to Contractor, and Contractor, at Railway's discretion, must defend, adjust, or settle such suits and protect, indemnify, and save harmless Railway from and against all damages, judgments, decrees, attorney's fees, costs, and expenses growing out of or resulting from or incident to any such claims or suits.

D. In addition to any other provision of this Agreement, in the event that all or any portion of this Article shall be deemed to be inapplicable for any reason, including without limitation as a result of a decision of an applicable court, legislative enactment or regulatory order, the parties agree that this Article shall be interpreted as requiring Contractor to indemnify Railway to the fullest extent permitted by applicable law.

E. It is mutually understood and agreed that the assumption of liabilities and indemnification provided for in this Agreement survive any termination of this Agreement.

2) TERM

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

A. This Agreement is effective from the date of the Agreement until (i) the completion of the project set forth herein, and (ii) full and complete payment to Railway of any and all sums or other amounts owing and due hereunder.

3) INSURANCE

Contractor shall, at its sole cost and expense, procure and maintain during the life of this Agreement the following insurance coverage:

1. **Commercial General Liability "CGL" Insurance**

1. The policy will provide a minimum of $5,000,000 each occurrence and an aggregate limit of at least $10,000,000 but in no event less than the amount otherwise carried by the provider. Coverage must be purchased on a post 2004 ISO occurrence form or equivalent and include coverage for, but not limited to, the following:

    1. Bodily Injury and Property Damage

    2. Personal Injury and Advertising Injury

    3. Fire legal liability

    4. Products and completed operations

2. This policy shall also contain the following endorsements or language, which shall be indicated on the certificate of insurance:

    1. definition of "Insured Contract" will be amended to remove any exclusion or other limitation for any work being done within 50 feet of RAILWAY's property.

    2. Waiver of subrogation in favor of and acceptable to RAILWAY; and

    3. Additional insured endorsement in favor of and acceptable to RAILWAY and include coverage for ongoing operations and completed operations; and

    4. Separation of insureds; and

    5. The policy will be primary and non-contributing with respect to any insurance carried by RAILWAY.

3. It is agreed that the workers' compensation and employers' liability related exclusions in the Commercial General Liability insurance policy(s) required herein are intended to apply to employees of the policy holder and shall not

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

apply to ***Railway*** employees.

4. No other endorsements limiting coverage as respects obligations under this Agreement may be included on the policy with regard to the work being performed under this agreement.

2. **Business Automobile Insurance**

1. The insurance will provide minimum coverage with a combined single limit of at least $1,000,000 per accident, and include coverage for, but not limited to the following:

1. Bodily injury and property damage

2. Any and all vehicles owned, used or hired

2. The policy will include the following endorsements or language, which will be indicated on or attached to the certificate of insurance:

1. Waiver of subrogation in favor of and acceptable to RAILWAY;

2. Additional insured endorsement in favor of and acceptable to RAILWAY;

3. Separation of insureds;

4. The policy shall be primary and non-contributing with respect to any insurance carried by RAILWAY.

3. **Workers Compensation and Employers Liability Insurance**

1. Workers Compensation and Employers Liability insurance including coverage for, but not limited to:

1. Contractor's statutory liability under the worker's compensation laws of the state(s) in which the work is to be performed. If optional under State law, the insurance must cover all employees anyway.

2. Employers' Liability (Part B) with limits of at least $500,000 each accident, $500,000 by disease policy limit, $500,000 by disease each employee.

2. This policy shall also contain the following endorsements or language, which

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

shall be indicated on the certificate of insurance:

1. Waiver of subrogation in favor of and acceptable to Railway.

4. Railroad Protective Liability insurance

1. Railroad Protective Liability insurance naming only the ***Railway*** as the Insured with coverage of at least $5,000,000 per occurrence and $10,000,000 in the aggregate. The policy Must be issued on a standard ISO form CG 00 35 12 04 and include the following:

   1. Endorsed to include the Pollution Exclusion Amendment

   2. Endorsed to include the Limited Seepage and Pollution Endorsement.

   3. Endorsed to remove any exclusion for punitive damages.

   4. No other endorsements restricting coverage may be added.

   5. The original policy must be provided to the ***Railway*** prior to performing any work or services under this Agreement.

   6. Definition of "Physical Damage to Property" shall be endorsed to read: "means direct and accidental loss of or damage to all property owned by any named insured and all property in any named insured' care, custody, and control arising out of the acts or omissions of the contractor named on the Declarations.

In lieu of providing a Railroad Protective Liability Policy, Licensee may participate (if available) in Railway's Blanket Railroad Protective Liability Insurance Policy.

1. Other Requirements:

1. Where allowable by law, all policies (applying to coverage listed above) shall contain no exclusion for punitive damages.

2. Contractor agrees to waive its right of recovery against ***Railway*** for all claims and suits against ***Railway***. In addition, its insurers, through the terms of the policy or policy endorsement, waive their right of subrogation against ***Railway*** for all claims and suits. Contractor further waives its right of recovery, and its insurers

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

also waive their right of subrogation against ***Railway*** for loss of its owned or leased property or property under Contractor's care, custody or control.

3. Allocated Loss Expense shall be in addition to all policy limits for coverages referenced above.

4. Contractor is not allowed to self-insure without the prior written consent of ***Railway.*** If granted by ***Railway***, any self-insured retention or other financial responsibility for claims shall be covered directly by Contractor in lieu of insurance. Any and all ***Railway*** liabilities that would otherwise, in accordance with the provisions of this Agreement, be covered by Contractor's insurance will be covered as if Contractor elected not to include a deductible, self-insured retention or other financial responsibility for claims.

5. Prior to commencing services, Contractor shall furnish to ***Railway*** an acceptable certificate(s) of insurance from an authorized representative evidencing the required coverage(s), endorsements, and amendments. The certificate should be directed to the following address:

BNSF Railway Company
c/o CertFocus
P.O. Box 140528
Kansas City, MO 64114
Toll Free: 877-576-2378
Fax number: 817-840-7487
Email: BNSF@certfocus.com
www.certfocus.com

6. Contractor shall notify Railway in writing at least 30 days prior to any cancellation, non-renewal, substitution or material alteration.

7. Any insurance policy shall be written by a reputable insurance company acceptable to Railway or with a current Best's Guide Rating of A- and Class VII or better, and authorized to do business in the state(s) in which the service is to be provided.

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

8. If coverage is purchased on a “claims made” basis, Contractor hereby agrees to maintain coverage in force for a minimum of three years after expiration, cancellation or termination of this Agreement. Annually Contractor agrees to provide evidence of such coverage as required hereunder.

9. Contractor represents that this Agreement has been thoroughly reviewed by Contractor’s insurance agent(s)/broker(s), who have been instructed by Contractor to procure the insurance coverage required by this Agreement.

10. Not more frequently than once every five years, Railway may reasonably modify the required insurance coverage to reflect then-current risk management practices in the railroad industry and underwriting practices in the insurance industry.

11. If any portion of the operation is to be subcontracted by Contractor, Contractor shall require that the subcontractor shall provide and maintain insurance coverage(s) as set forth herein, naming Railway as an additional insured, and shall require that the subcontractor shall release, defend and indemnify Railway to the same extent and under the same terms and conditions as Contractor is required to release, defend and indemnify Railway herein.

12. Failure to provide evidence as required by this section shall entitle, but not require, Railway to terminate this Agreement immediately. Acceptance of a certificate that does not comply with this section shall not operate as a waiver of Contractor's obligations hereunder.

13. The fact that insurance (including, without limitation, self-insurance) is obtained by Contractor shall not be deemed to release or diminish the liability of Contractor including, without limitation, liability under the indemnity provisions of this Agreement. Damages recoverable by Railway shall not be limited by the amount of the required insurance coverage.

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

14. In the event of a claim or lawsuit involving Railway arising out of this agreement, Contractor will make available any required policy covering such claim or lawsuit.

15. These insurance provisions are intended to be a separate and distinct obligation on the part of the Contractor. Therefore, these provisions shall be enforceable and Contractor shall be bound thereby regardless of whether or not indemnity provisions are determined to be enforceable in the jurisdiction in which the work covered hereunder is performed.

16. For purposes of this section, Railway shall mean “Burlington Northern Santa Fe LLC”, “BNSF Railway Company” and the subsidiaries, successors, assigns and affiliates of each.

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

4) SALES AND OTHER TAXES

A. In the event applicable sales taxes of a state or political subdivision of a state of the United States are levied or assessed in connection with and directly related to any amounts invoiced by Contractor to Railway ("Sales Taxes"), Railway shall be responsible for paying only the Sales Taxes that Contractor separately states on the invoice or other billing documents provided to Railway; *provided, however,* that (i) nothing herein shall preclude Railway from claiming whatever Sales Tax exemptions are applicable to amounts Contractor bills Railway, (ii) Contractor shall be responsible for all sales, use, excise, consumption, services and other taxes which may accrue on all services, materials, equipment, supplies or fixtures that Contractor and its subcontractors use or consume in the performance of this Agreement, (iii) Contractor shall be responsible for Sales Taxes (together with any penalties, fines or interest thereon) that Contractor fails to separately state on the invoice or other billing documents provided to Railway or fails to collect at the time of payment by Railway of invoiced amounts (except where Railway claims a Sales Tax exemption), and (iv) Contractor shall be responsible for Sales Taxes (together with any penalties, fines or interest thereon) if Contractor fails to issue separate invoices for each state in which Contractor delivers goods, provides services or, if applicable, transfers intangible rights to Railway.

B. Upon request, Contractor shall provide Railway satisfactory evidence that all taxes (together with any penalties, fines or interest thereon) that Contractor is responsible to pay under this Agreement have been paid. If a written claim is made against Contractor for Sales Taxes with respect to which Railway may be liable for under this Agreement, Contractor shall promptly notify Railway of such claim and provide Railway copies of all correspondence received from the taxing authority. Railway shall have the right to contest, protest, or claim a refund, in Railway's own name, any Sales Taxes paid by Railway to Contractor or for which Railway might otherwise be responsible for under this Agreement; provided, however, that if Railway is not permitted by law to contest any such Sales Tax in its own name, Contractor shall, if requested by Railway at Railway's sole cost and expense, contest in Contractor's own name the validity, applicability or amount of such Sales Tax and allow Railway to control and conduct such contest.

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

C. Railway retains the right to withhold from payments made under this Agreement amounts required to be withheld under tax laws of any jurisdiction. If Contractor is claiming a withholding exemption or a reduction in the withholding rate of any jurisdiction on any payments under this Agreement, before any payments are made (and in each succeeding period or year as required by law), Contractor agrees to furnish to Railway a properly completed exemption form prescribed by such jurisdiction. Contractor shall be responsible for any taxes, interest or penalties assessed against Railway with respect to withholding taxes that Railway does not withhold from payments to Contractor.

5) EXHIBIT "C" CONTRACTOR REQUIREMENTS

A. The Contractor must observe and comply with all provisions, obligations, requirements and limitations contained in the Agreement, and the Contractor Requirements set forth on Exhibit "C" attached to the Agreement and this Agreement, including, but not be limited to, payment of all costs incurred for any damages to Railway roadbed, tracks, and/or appurtenances thereto, resulting from use, occupancy, or presence of its employees, representatives, or agents or subcontractors on or about the construction site. Contractor shall execute a Temporary Construction Crossing Agreement or Private Crossing Agreement (http://www.bnsf.com/communities/faqs/permits-real-estate/), for any temporary crossing requested to aid in the construction of this Project, if approved by BNSF.

6) TRAIN DELAY

A. Contractor is responsible for and hereby indemnifies and holds harmless Railway (including its affiliated railway companies, and its tenants) for, from and against all damages arising from any unscheduled delay to a freight or passenger train which affects Railway's ability to fully utilize its equipment and to meet customer service and contract obligations. Contractor will be billed, as further provided below, for the economic losses arising from loss of use of equipment, contractual loss of incentive pay and bonuses and contractual penalties resulting from train delays, whether caused by Contractor, or subcontractors, or by the Railway performing work under this Agreement. Railway agrees that it will not perform any act to unnecessarily cause train delay.

B. For loss of use of equipment, Contractor will be billed the current freight train hour rate per train as determined from Railway's records. Any disruption to train traffic may cause delays to multiple trains at the same time for the same period.

C. Additionally, the parties acknowledge that passenger, U.S. mail trains and certain other grain, intermodal, coal and freight trains operate under incentive/penalty contracts between Railway and its customer(s). Under these arrangements, if Railway does not meet its contract service commitments, Railway may suffer loss of performance or incentive pay and/or be subject to penalty payments. Contractor is responsible for any train performance and incentive penalties or

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

other contractual economic losses actually incurred by Railway which are attributable to a train delay caused by Contractor or its subcontractors.

D. The contractual relationship between Railway and its customers is proprietary and confidential. In the event of a train delay covered by this Agreement, Railway will share information relevant to any train delay to the extent consistent with Railway confidentiality obligations. The rate then in effect at the time of performance by the Contractor hereunder will be used to calculate the actual costs of train delay pursuant to this agreement.

E. Contractor and its subcontractors must give Railway's representative (_____) _____ (__) weeks advance notice of the times and dates for proposed work windows. Railway and Contractor will establish mutually agreeable work windows for the project. Railway has the right at any time to revise or change the work windows due to train operations or service obligations. Railway will not be responsible for any additional costs or expenses resulting from a change in work windows. Additional costs or expenses resulting from a change in work windows shall be accounted for in Contractor's expenses for the project.

F. Contractor and subcontractors must plan, schedule, coordinate and conduct all Contractor's work so as to not cause any delays to any trains.

SIGNATURE PAGE FOLLOWS

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

IN WITNESS WHEREOF, each of the parties hereto has caused this Agreement to be executed by its duly authorized officer the day and year first above written.

BNSF RAILWAY COMPANY

Signature:_____

Printed Name:_____

Title: Manager Public Projects

Accepted and effective _____.

_____

CONTRACTOR

Signature:_____

Printed Name:_____

Title:_____

Contact Person:_____

Address:_____

City:_____

State:_____

Zip:_____

Fax:_____

Phone:_____

E-mail:_____

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

Exhibit E

[Public Projects Manager's letterhead]

Date: _____

William Helbig
City of Spokane Valley [Name of Agency Here]
10210 E Sprague Avenue [Address for Agency]
Spokane Valley, WA 99206

Re: Final Approval of Plans and Specifications dated _____, 20__, drafted HDR, Inc. **(hereinafter called, the "Plans and Specifications")**

Dear _____:

This letter serves as BNSF RAILWAY COMPANY's ("BNSF") final written approval of the Plans and Specifications covering the construction of **the Pines Road Underpass Project**. This final written approval is given to the City of Spokane Valley ("Agency") pursuant to Article III, Section 1 of that certain Underpass Agreement between BNSF and Agency, dated _____, 20__. If the Plans and Specifications are revised by Agency subsequent to the date set forth above, this letter shall no longer serve as final written approval of the Plans and Specifications and Agency must resubmit said Plans and Specifications to BNSF for final written approval.

Regards,

_____

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

EXHIBIT F

Grade Separations

BNSF PROCESS REQUIREMENTS FOR DESIGN & CONSTRUCTION OF GRADE SEPARATION PROJECTS BY A PUBLIC AGENCY ON BNSF RIGHT OF WAY, WHICH IMPACT BNSF PROPERTY OR OPERATIONS

1.01 General:

- 1.01.01 The Contractor must cooperate with **BNSF RAILWAY COMPANY**, hereinafter referred to as "**Railway**" where work is over or under on or adjacent to Railway property and/or right-of-way, hereafter referred to as "Railway Property", during the construction of the Pines Road Underpass Project.

- 1.01.02 Definitions:

  - **Operationally Critical, (OC)**: defined as Work that requires a submittal and acceptance by BNSF, which impacts, or could impact BNSF operations, on BNSF right-of-way or adjacent to it.

  - **Acceptance:** BNSF's response to plan submittals indicating a notice to proceed with work in the field; **Disclaimer for Acceptance: *BNSF has reviewed these submittals and no exceptions are taken with regard to BNSF's ability to use or accommodate the project as intended. BNSF has not reviewed the design details or calculations for structural integrity or engineering accuracy. BNSF accepts no responsibility for errors or omissions in the design or execution of the project.**

  - **Inspector/Coordinator, (I/C):** A third party consultant which BNSF hires to assist in the coordination of the project on BNSF's behalf. When referenced, "I/C" refers to the I/C team consisting of I/C-I, I/C-II, and the Resident Engineer (RE). The I/C team's role is to ensure the project is constructed per accepted* plans and specifications for that portion of the project on BNSF right of way, as it affects BNSF. The I/C will monitor construction activities to ensure that improvements used by BNSF meet all requirements of BNSF, and accommodate railroad operations.

- 1.01.03 The following submittals and actions are required by BNSF prior to Operationally Critical, (OC) Work being performed on BNSF property or above tracks being operated by BNSF Railway:

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

2.01 Submittals and Actions Required During the Project Design Phase:

- 2.01.01 The Agency shall be the main contact for BNSF throughout the project. Agency shall be included on all correspondence relating to BNSF.

- 2.01.02 Required Design Submittals: (Allow for 4 weeks for BNSF to review design submittals)

  Agency shall refer to the requirements of the UP/BNSF Guidelines on Grade Separation Projects when designing a grade separation which will impact BNSF Railway. Agency will be required to submit plans for BNSF review and comment. Plans shall not be labeled "final" until all comments have been addressed and BNSF has accepted* the plans.

  Examples of required design submittals may be, but are not limited to:
  Concept, vertical profile of Top of Rail, 30% plans and final plans

  The following submittals will require a Professional Engineer, (PE) stamp:
  Overpass design
  Underpass design
  Hydraulic study
  Any non-standard design of a structure which will carry train loading

  Work covered by a submittal shall not be performed in field without receiving Acceptance from BNSF.

  Work windows will not exceed 6 hours, so project should be designed accordingly.

  The following Disclaimer applies to BNSF acceptance of Agency design plans:
  **BNSF has reviewed these submittals and no exceptions are taken with regard to BNSF's ability to use or accommodate the project as intended. BNSF has not reviewed the design details or calculations for structural integrity or engineering accuracy. BNSF accepts no responsibility for errors or omissions in the design or execution of the project.*

3.01 Submittals and Actions Required During the Construction Phase:

- 3.01.01 The Agency shall be the main contact for BNSF throughout the project. Agency shall be included on all correspondence relating to BNSF. **BNSF will NOT accept submittals directly from the Agency's Contractor.**

- 3.01.02 BNSF will hire a consultant team to perform the duties of an Inspector/Coordinator, (I/C) on behalf of BNSF for the duration

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

of the field construction of the project. The cost of the I/C will be reimbursable to BNSF by the Agency or their Contractor.

BNSF requires the I/C team be involved in the project throughout the construction phase to represent BNSF.

The I/C has authority to remove a contractor's employee from BNSF property if that employee fails to comply with the BNSF safety policy, does not have proper PPE or otherwise ignores instructions regarding work on BNSF right-of-way. The I/C has authority to shut down work on BNSF right-of-way if the contractor works in a manner that is in violation of BNSF's safety policy or FRA regulations.
Anytime instructions to the contractor by BNSF or the I/C are not complied with, the project may be shut down. All equipment and personnel will be removed from BNSF property until issues causing the shutdown are resolved to BNSF's satisfaction.

- 3.01.03 Agency must hold a pre-construction meeting with contractor and BNSF prior to work beginning on BNSF property.

The Pre-Construction meeting shall not be held until 30 days after I/C has been selected – this allows time for the I/C to become familiar with the project.

Recommend scheduling two weeks prior to construction commencing to allow for adjustment to work plans, if needed.

- 3.01.04 Required Construction Submittals: : (Allow for 4 weeks for BNSF to review submittals)

All submittals should flow from the Contractor to the Agency, to the I/C Consultant, to the BNSF Project Engineer, (PE), and to BNSF Structures with responses back through the same communication chain. **BNSF will not accept submittals directly from the Contractor**.

Any changes to the work governed by a submittal requires that the submittal be re-accepted* by BNSF before the work commences.

Examples of construction submittals required include but are not limited to:
Contractors Safety Action Plan, Fire Prevention Plan, Proposed Project Schedule, Demolition, Shoring, Falsework and Lifting of Materials.

The following submittals will require a Professional Engineer, (PE) stamp:
Critical Pick Plan (75% of capacity of crane, or multi-crane pick)
Lifted Material Plan (Placement or Removal) – When lift is within temporary construction clearances and when list is within 25' of the centerline of the nearest track

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

Demolition Plan
Temporary Shoring Plan
Bracing Design Plan (non-standard only per DOT)

For overpasses, Agency shall submit as-built plans of the structure, including final clearance dimensions to the I/C. Vertical clearance must be measured from the Top of Rail, horizontal clearance must be measured from the nearest track centerline.
OPERATIONALLY CRITICAL WORK AND SUBMITTALS: (4 to 6 weeks review timeline) All OC work requires a submittal and acceptance* by BNSF.

- Operationally Critical (OC) submittals are those that have the potential to affect the safe operation of trains and will need to be reviewed carefully. Work must be monitored to ensure it conforms to the submitted/accepted* plan.
- In-person safety review meetings will be required with BNSF representative, I/C, Contractor and Agency representative for all OC work and must be documented. The purpose of the meeting is to ensure all parties understand BNSF requirements and are following the applicable submittals. When a track work window is required the meeting shall occur at least 48 hours in advance of work starting.
- **Submittals must meet the requirements of the UP Railroad - BNSF Railway Guidelines for Railroad Grade Separation Projects**. **Submittals must also follow the requirements outlined in BNSF Review Comment Sheets, Use of Cranes & Lifting of Materials Submittal Schedule, BNSF Guidelines for Preparation of Bridge Demolition & Removal Plan and the BNSF-UPRR Guidelines for Temporary Shoring.** Some submittals are required to be sealed by a licensed professional engineer.

a. See Table 3-1 for Overhead Structures in UP Railroad - BNSF Railway Guidelines for Railroad Grade Separation Projects

b. See Table 3-2 for Underpass Structures UP Railroad - BNSF Railway Guidelines for Railroad Grade Separation Projects

c. Examples of OC submittals included in the above are:

   i. Shoring (Follow BNSF-UPRR Guidelines for Temporary Shoring)

   ii. Falsework

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

iii. Demolition (Need plans for substructure and superstructure. Follow BNSF Guidelines for Preparation of Bridge Demolition & Removal Plan)

iv. Erection (overhead and underpass structures)

v. Construction Phasing Plans

d. Additional OC submittals required, but not included in the Guidelines are:

i. All work plans that remove tracks from service (track outage windows require a detailed Gantt chart when greater than 2 hours)

ii. Contingency plans

iii. Additional OC submittals may be required on a project by project basis.

For underpasses and other railroad bridges, as required in Sections 4.11 and 4.12 of the UP Railroad - BNSF Railway Guidelines for Railroad Grade Separation Projects, a RE will be on site full-time during construction, at the cost of the project. At the discretion of the RE, as accepted by BNSF, an I/C-I or I/C-II maybe assigned for field duties where the work is not critical to ensuring the bridge is built to accepted project plans and specification.

- BNSF requires temporary and new track and railroad bridges be inspected by an FRA qualified BNSF employee prior to being placed into service. Two week advanced notice to BNSF structures department is required. For underpasses, all pile driving records are to be provided within 3-days of driving to the BNSF PE.

- Agency shall submit an as-built survey of shoo-fly final alignments. Alignments must conform to BNSF Shoo-fly procedures.

- 3.01.05 Prior to any work commencing on BNSF right of way:

Contractors C/C-1 or Right of Entry must be fully executed and their insurance must be approved before they can perform work on BNSF property.
Proof of Contractors insurance approval must be produced to the BNSF PE and the I/C.

3.01.06 Contractor must adhere to all other BNSF policies and procedures not specifically mentioned in this agreement.

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

EXHIBIT H

ASSURANCE OF COMPLIANCE WITH APPLICABLE FEDERAL LAW

During the performance of this Agreement, BNSF agrees to the following; provided, however, BNSF's acknowledgments and agreements made in this Exhibit H are each made subject to BNSF's limitations and disclaimer set forth in Article II, Section 8 of this Agreement.

1. **Non-discrimination**:

   BNSF, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. BNSF will not participate directly or indirectly in the discrimination prohibited by the non-discrimination authorities, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 C.F.R. Part 21.

2. **Pertinent Non-Discrimination Authorities**:

   - Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq*., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 C.F.R. Part 21.

   - Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 *et seq*.), (prohibits discrimination on the basis of sex);

   - Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 *et seq*.) as amended, (prohibits discrimination on the basis of disability); and 49 C.F.R. Part 27;

   - The Age of Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq*.), (prohibits discrimination based on the basis of age);

   - The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);

- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131-12189) as implemented by Department of Transportation regulations at 49 C.F.R. Parts 37 and 38;

- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures nondiscrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations; and

- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination include discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100).

3. **Compliance with 23 C.F.R. Part 646, Subpart B**:

Because the Work to be performed by BNSF is to its own tracks and is to eliminate a highway-crossing by grade separation, the provisions of 23 C.F.R. Part 646, Subpart B apply (rather than 2 C.F.R. § 200.320 and other provisions of 2 C.F.R. Parts 200 and 1201) in regard to cost principles, labor procurement, and material procurement. This Agreement shall nonetheless be subject to the audit provisions of 2 C.F.R. Part 200 and the United States Department of Transportation implementing regulations at 2 C.F.R. Part 1202 (see 2 C.F.R. § 200.101).

4. **Prohibition in Trafficking in Persons**:

BNSF and any contractor thereof performing Work identified in the Agreement shall not (a) engage in any form of trafficking in persons during the period of this Agreement; (b) procure a commercial sex act during the period of time that the award is in effect, or (c) use forced labor in the performance of this Agreement. This Agreement shall be terminated if BNSF, a contractor thereof, or any of their employees, officers, or officials is determined to have either violated any provision of this paragraph directly or through conduct imputed to the LOCAL AGENCY or BNSF pursuant to the standards set forth in 2 C.F.R. part 180, as implemented at 2 C.F.R. part 1200. BNSF and any contractors thereof performing Work identified in the Agreement shall notify the LOCAL AGENCY

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

immediately if they receive information from any source alleging a violation of this paragraph during the term of this Agreement.

5. **Federal Railroad Administration Review**: Subject to Article V, Section 5 of the Construction and Maintenance Agreement, BNSF acknowledges that the Federal Railroad Administration (FRA) has the right to review or examine any services provided under or part of this Agreement (including subcontracts) while such services are in progress or upon completion. BNSF agrees to comply with all applicable provisions governing FRA's access to records, accounts, documents, information, facilities, and staff.

6. **Minimum Wage Rates**: To the extent applicable to BNSF's portion of the Work, the amounts paid by BNSF for labor in connection with the work identified in the Agreement shall meet or exceed the amounts predetermined by the United States Secretary of Labor, in accordance with the Davis-Bacon Act, 40 U.S.C. 3141-3148 (as supplemented by Department of Labor regulation in 29 CFR Part 5) and/or 23 U.S.C. 113, that contractors must pay to skilled and unskilled labor. *Provided*, however, that BNSF is not subject to those provisions of the Davis-Bacon Act and/or 23 U.S.C. 113 which, according to the terms of those statutes and pertinent legal authorities, would not otherwise apply to BNSF.

7. **Buy America**:

    a. Steel, iron, and manufactured goods used in the Project are subject to 49 U.S.C. 22905(a), as implemented by the Federal Railroad Administration, as if this award were to carry out chapter 229 of title 49, United States Code. BNSF acknowledges that this Agreement is neither a waiver of 49 U.S.C. 22905(a)(1) nor a finding under 49 U.S.C. 22905(a)(2). BNSF agrees to comply with 49 U.S.C. 22905(a) in performance of this Agreement.

    b. Construction materials used in the Project are subject to the domestic preference requirement at § 70914 of the Build America, Buy America Act, Publ. L. No. 117-58, div. G, tit. IX, subtitle A, 135 Stat. 429, 1298 (2021), as implemented by OMB, USDOT, and FRA. BNSF acknowledges that this Agreement is neither a waiver of § 70914(a) nor a finding under § 70914(b). BNSF agrees to comply with § 70914 of the Build America, Buy America Act in performance of this Agreement.

    c. Under 2 C.F.R. 200.322, as appropriate and to the extent consistent with law, BNSF should, to the greatest extent practicable under this Agreement, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States. BNSF shall include the requirements of 2 C.F.R. 200.322 in all contracts and purchase orders for work or products under this Agreement.

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

8. **Foreign Market Restrictions**: BNSF shall not allow funds provided under this award to be used to fund the use of any product or service of a foreign country during the period in which such foreign country is listed by the United States Trade Representative as denying fair and equitable market opportunities for products and suppliers of the United States in procurement and construction.

9. **Prohibition on Contracting with Entities With Delinquent Tax Liability or a Felony Conviction Under Federal Law:**

   a. Before entry into this Agreement, Agency shall check the System for Award Management (the "SAM") at http://www.sam.gov/ for an entry describing BNSF.

   b. BNSF shall notify Agency of the identities of the third party entities with whom it will contract to complete work under the Agreement before entering into such contract. Agency shall check the System for Award Management "SAM") at http://www.sam.gov/ for an entry describing that entity.

   c. By signing the Agreement, BNSF certifies that BNSF (i) does not have any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability; and (iii) was not convicted of a felony criminal violation under any Federal law within the preceding 24 months.

   d. All third party entities entering into an agreement with BNSF shall make the certifications in 16(c).

   e. Agency shall notify USDOT in writing:

      i. If the SAM entry for BNSF or any entity indicates BNSF or any entity has a tax delinquency or felony conviction; or

      ii. If BNSF or any entity provides affirmative responses to the certification in 16(c); or

      iii. If Agency knows that BNSF's or an entity's certification in 16(c) was inaccurate when made or became inaccurate after being made.

   f. If BNSF, or other entities provide affirmative responses related to the certifications in 16(c), or the certification by BNSF or other entities was inaccurate when made, or the Agency's check of SAM indicates that BNSF or such entity has a Tax Delinquency or Federal Conviction, then Agency or BNSF as the case may be shall not enter into the contract or continue performance under the contract with the third party unless the

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

USDOT has determined in writing that suspension or debarment of that entity are not necessary to protect the interests of the Government.

10. **Certification Regarding Debarment, Suspension, and Other Responsibility Matters – Primary Covered Transactions.**

A. By executing this Agreement, BNSF certifies to the best of its knowledge and belief that it and its principals:

(1) Is not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Has not within a three-year period preceding this proposal been convicted of or had a civil judgment, including a civil settlement, rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Is not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Has not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

B. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

C. BNSF shall require all subcontractors submitting bids or proposals to complete any work in connection with this Agreement to provide the following certification with its bid/proposal:

(1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

(2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

11. **Prohibition on Providing Funds to the Enemy**:

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

a. BNSF must:

1. Exercise due diligence to ensure that none of the funds, including supplies and services, received under this agreement are provided directly or indirectly (including through subcontracts) to a person or entity who is actively opposing the United States or coalition forces involved in a contingency operation in which members of the Armed Forces are actively engaged in hostilities, which must be completed through 2 CFR 180.300 prior to entering into a contract; and

2. Terminate or void in whole or in part any contract with a person or entity listed is SAM as a prohibited or restricted source pursuant to subtitle E of Title VIII of the NDAA for FY 2015, unless the Federal awarding agency provides written approval to continue the contract.

b. BNSF may include the substance of this clause, including paragraph (a) of this clause, in contracts under this Agreement that have an estimated value over $50,000 and will be performed outside the United States, including its outlying areas.

c. The Federal Railroad Administration (FRA) has the authority to terminate or void this Agreement, in whole or in part, if the FRA becomes aware that BNSF failed to exercise due diligence as required by paragraph 18(a) herein or if the FRA becomes aware that any funds received from the Federal government for work identified in the Agreement have been provided directly or indirectly to a person or entity who is actively opposing coalition forces involved in a contingency operation in which members of the Armed Forces are actively engaged in hostilities.

12. **2 CFR Part 200, Appendix II**: BNSF is subject all provisions identified in Appendix II to 2 CFR Part 200. Such provisions that are not otherwise identified in the Agreement or this exhibit are identified below:

a. *Equal Employment Opportunity*. During the performance of this Agreement, BNSF agrees as follows:

(1) BNSF will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. BNSF will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin.

Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.

(3) BNSF will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with BNSF's legal duty to furnish information.

(5) To the extent applicable to BNSF's work under the Agreement, BNSF will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(6) To the extent applicable to BNSF's work under the Agreement, BNSF will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(7) In the event of BNSF's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and BNSF may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

b. *Copeland "Anti-Kickback" Act*. To the extent applicable to BNSF's work under the Agreement, BNSF shall comply with 40 U.S.C. 3145 as supplemented by 29 C.F.R. Part 3. BNSF acknowledges that it is prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. BNSF agrees to timely report all suspected or reported violations to the LOCAL AGENCY.

Docusign Envelope ID: FD9DBE0C-4C9A-43DC-99DF-80FD7EC16E4B

c. *Contract Work Hours and Safety Standards Act*. To the extent applicable to BNSF's work under the Agreement, BNSF shall comply with 40 U.S.C. 3701-3708.

d. *Compliance with Environmental Law.* To the extent applicable to BNSF's work under the Agreement, BNSF shall comply with all applicable provisions of the Clean Air Act (42 U.S.C. 7401-7671q.) and the Federal Water Pollution Control Act (33 U.S.C. 1251-1387), as amended.

e. *Lobbying*. BNSF certifies that it has not and will not use Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any federal agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with the award of any Federal contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative agreement.

   If any funds other than federal appropriated funds have been paid or will be paid to any person for influencing or attempting influence an officer or employee of any federal agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with this federal contract, grant, loan, or cooperative agreement, then BNSF shall complete and submit the Standard Form – LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

f. *Procurement of Recovered Material*. To the extent applicable to the work identified in the Agreement, BNSF shall comply with 2 CFR § 200.323.

g. *Prohibition on Video Surveillance Equipment from Certain Foreign Entities*. To the extent applicable to the work identified in the Agreement, BNSF shall comply with 2 CFR § 200.216.

APPENDIX D
STANDARD PLANS

Spokane Valley Standard Plans

- R-102 Curb Type A, Curb and Gutter Type B
- R-111 Type II Concrete Approach Separated Sidewalk
- R-115 High Volume Concrete Approach
- S-101 Drywell Type A
- S-103 Drywell Details
- S-105 Precast Risers
- U-101 Above Ground Utility Locations
- U-102 Fire Department Hydrant Requirements

WSDOT Standard Plans

- A-20.10-00 Class B Cut Slope Treatment
- B-5.20-03 Catch Basin Type 1
- B-5.40-02 Catch Basin Type 1L
- B-10.20-03 Catch Basin Type 2 48 In. Diameter
- B-15.20-01 Manhole Type 1
- B-15.60-02 Manhole Type 3
- B-30.10-03 Rectangular Frame
- B-30.30-03 Rectangular Vaned Grate
- B-30.70-04 Circular Frame (Ring) and Cover
- B-35.40-01 Grate Inlet Type 2
- B-40.20-00 Welded Grates for Grate Inlet, Type B
- B-70.20-01 Mitered End Sections
- C-60.10-04 Concrete Barrier Type F (Precast)
- D-10.10-01 Reinforced Concrete Retaining Wall Type 1
- F-10.12-04 Cement Concrete Curbs
- F-10.18-04 Roundabout Cement Concrete Curbs
- F-30.10-04 Cement Concrete Sidewalk
- F-40.12-03 Parallel Curb Ramp
- F-40.16-03 Single Direction Curb Ramp
- F-45.10-05 Detectable Warning Surface
- F-80.10-04 Cement Concrete Driveway Entrance Type 3
- G-30.10-04 Sign Installation on Signal and Light Standards
- G-50.10-03 Sign Bracing
- H-70.10-02 Mailbox Support Type 1
- I-10.10-01 High Visibility Fence
- I-30.15-01 Silt Fence
- I-30.30-02 Wattle Installation on Slope
- I-40.20-00 Storm Drain Inlet Protection
- I-50.20-02 Check Dams on Channels
- I-80.10-02 Miscellaneous Erosion Control Details
- J-5.50-00 Controlled Density Fill Encased Conduit
- J-10.10-04 Cabinet Orientation, Conduit Layout and Foundation Detail

- J-10.17-02 Service Cabinet Type B (0-100 Amp Type 120/240 Volt Single Phase)
- J-10.20-04 Service Cabinet Type B Modified (0-200 Amp Type 120/240 Single Phase)
- J-12.16-00 Type 33xD and 34xLX Double-Width Cabinet Housings
- J-20.15-04 Pedestrian Pushbutton (PPB) Post and Foundation
- J-21.10-05 Type PS, Type 1, RM and FB Signal Standard Foundation Details
- J-21.16-02 Flashing Beacon (Type FB) Signal Standard Details
- J-21.17-01 Flashing Beacon Type 1 Signal Standard Electrical Details
- J-28.10-02 Steel Light Standard
- J-28.22-00 Steel Light Standard Placement (Slip Base)
- J-28.26-01 Steel Light Standard Placement (Miscellaneous)
- J-28.30-04 Steel Light Standard Foundation Types A & B
- J-28.40-02 Steel Light Standard Base Mounting
- J-28.42-01 Steel Light Standard Anchor/Slip Plate for Slip Base
- J-28.43-01 Slip Base Adaptor for 4-Bolt Light Standard Base
- J-28.50-03 Steel Light Standard Pole Base and Hand Hole Details
- J-28.70-04 Steel Light Standard Wiring Details
- J-40.05-00 Existing Junction Box Retrofit Grounding Details
- J-40.10-04 Locking Lid Standard Junction Box Types 1 & 2
- J-40.30-04 Locking Lid Standard Duty Junction Box Type 8
- J-40.39-00 Front Entry Nema 4x Surface-Mount Junction Box
- J-60.05-01 Typical Grounding Details
- J-90.10-03 Pull Box
- J-90.20-03 Cable Vault
- L-20.10-03 Chain Link Fence Type 3 and 4
- L-30.10-02 Chain Link Gate
- M-3.40-04 Two Way Left Turn and Median Channelization
- M-9.50-02 Bicycle Lane Symbol Layout
- M-11.10-04 Railroad Crossing Layout
- M-20.10-04 Longitudinal Marking Patterns
- M-12.10-04 Roundabout Pavement Markings
- M-15.10-02 Crosswalk Layout
- M-20.10-04 Longitudinal Marking Patterns
- M-24.40-02 Symbol Markings ~ Traffic Arrows for Low-Speed Roadways
- M-24.60-04 Symbol Markings Miscellaneous
- M-40.10-04 Guidepost and Barrier Delineators
- M-40.40-00 Guidepost Placement Horizontal Curves
- M-80.30-00 Traffic Letters and Numerals (Low Speed Roadways)

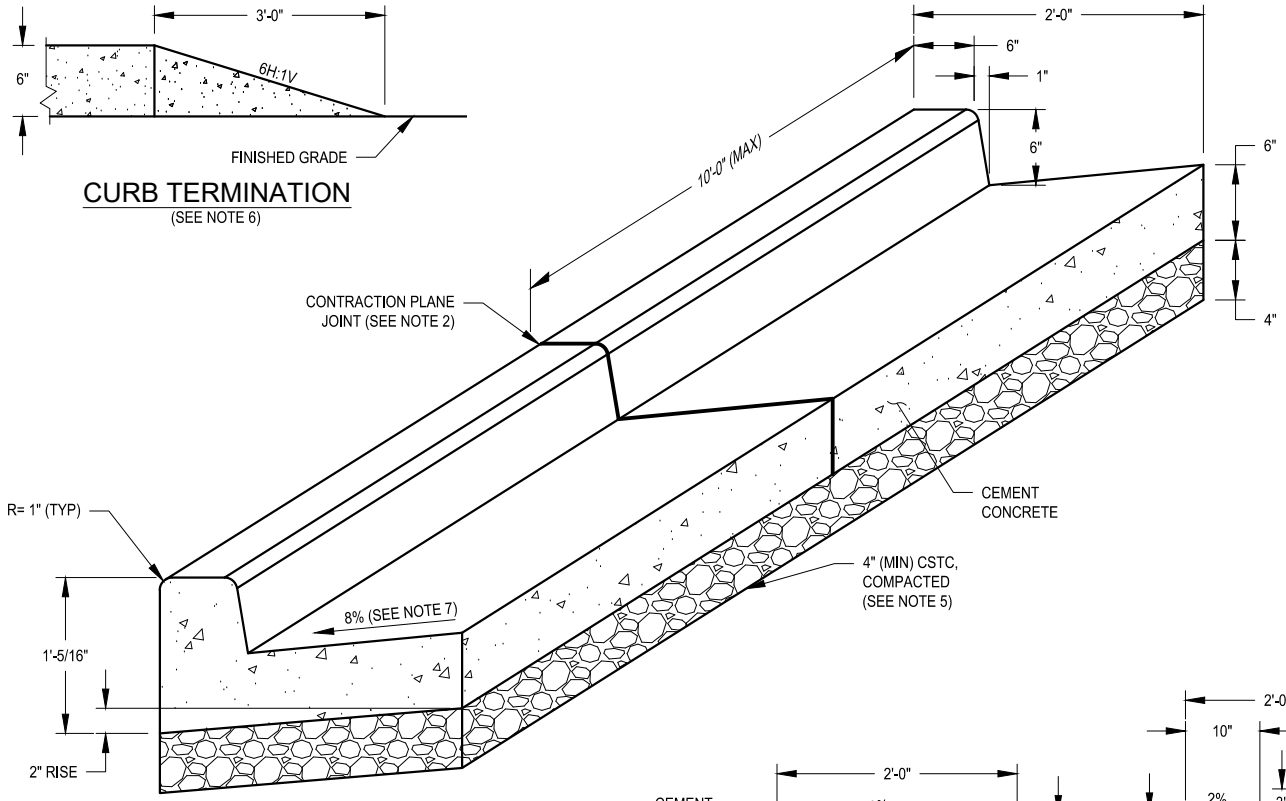
Irvin Water District No. 6

- Detail Drawing No. 101 Typical Water Main Trench
- Detail Drawing No. 102 Thrust Restraint, Bold Sequence, & Torque
- Detail Drawing No. 103 Fire Hydrant Assembly
- Detail Drawing No. 202 1 ½" and 2" Service Connection and Service Pipe
- Detail Drawing No. 302 1 ½" and 2" Meter Assembly and Box

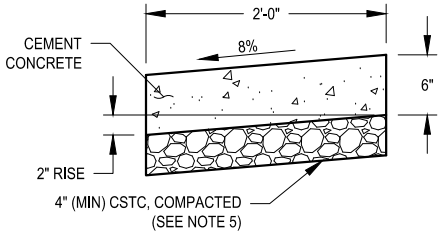
Spokane County Environmental Services Department

- Standard Plan U-18 Pressure Side Sewer Stub Connection to Gravity Sewer
- Standard Plan U-24 Typical Pipe Casing Detail

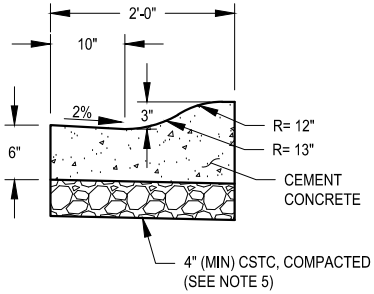
CURB TERMINATION
(SEE NOTE 6)



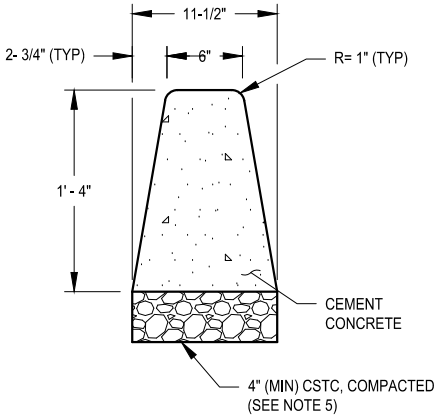
TYPE "B"
QUANTITY = 0.048 CY / LF



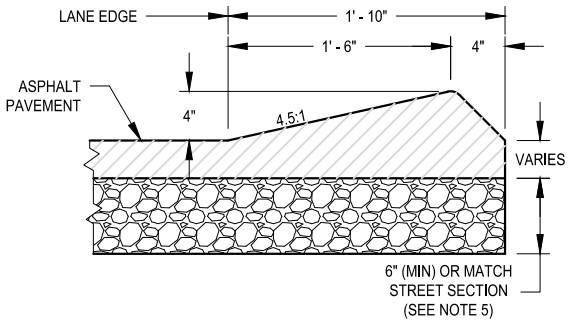
TYPE "S"
QUANTITY = 0.037 CY / LF (SEE NOTES 4 & 8)



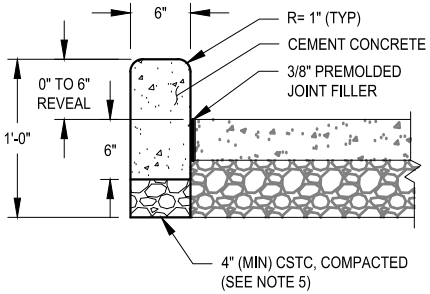
TYPE "R"
QUANTITY = 0.042 CY / LF (SEE NOTE 4)



TYPE "A"
QUANTITY = 0.036 CY / LF (SEE NOTE 4)



TYPE "C"
QUANTITY = 0.023 TONS / LF (SEE NOTE 4)



PEDESTRIAN RAMP CURB
(SEE NOTE 9)

GENERAL NOTES:

1. CEMENT CONCRETE SHALL BE CLASS 4,000 CONCRETE PER SECTION 6-02 OF THE WSDOT STANDARD SPECIFICATIONS.
2. CONTRACTION PLANE JOINTS FOR CEMENT CONCRETE SHALL BE PLACED AT 2 TIMES SIDEWALK WIDTH OR 10' MAXIMUM AND SHALL MATCH SCORES IN SIDEWALK WHERE APPLICABLE.
3. 3/8" EXPANSION MATERIAL SHALL BE PLACED AT ALL CURB RETURNS AND AT ANY STRUCTURE. MAXIMUM 100' SPACING. EXPANSION JOINT SHALL EXTEND THE FULL CONCRETE DEPTH.
4. TYPES A, C, R AND S CURBS TO BE USED ONLY IN SPECIAL CASES WITH APPROVAL OF THE CITY ENGINEER.
5. SUBGRADE AND CSTC UNDER ALL CURBING SHALL BE COMPACTED TO 95%.
6. TRANSITION CURB END TO FINISHED GRADE BY SLOPING TOP OF CURB @ 6H:IV.
7. FOR "SPILL" CURB APPLICATIONS, GUTTER SHALL SLOPE AWAY FROM CURB AT 2%.
8. PROVIDE TYPE 1 INLETS AT LOW POINTS SIMILAR TO STANDARD PLAN S-110 AND SPOKANE REGIONAL STORMWATER MANUAL.
9. PEDESTRIAN CURB TO BE USED ONLY AT PEDESTRIAN CURB RAMPS AND LANDINGS.
10. ALL BROKEN, CRACKED, HEAVED, AND SUNKEN CURB SHALL BE REMOVED AND REPLACED FROM JOINT TO JOINT.
11. EXCEPT FOR JOINTS AND BROOM FINISHING, NO OTHER MARKINGS ARE PERMITTED ON THE FINISHED SURFACE.
12. NO NEW UTILITY COVERS, BOXES, LIDS, OTHER THAN STORM STRUCTURES SHALL BE LOCATED WITHIN THE CURB AND GUTTER.

CITY OF Spokane Valley

APPROVED BY:

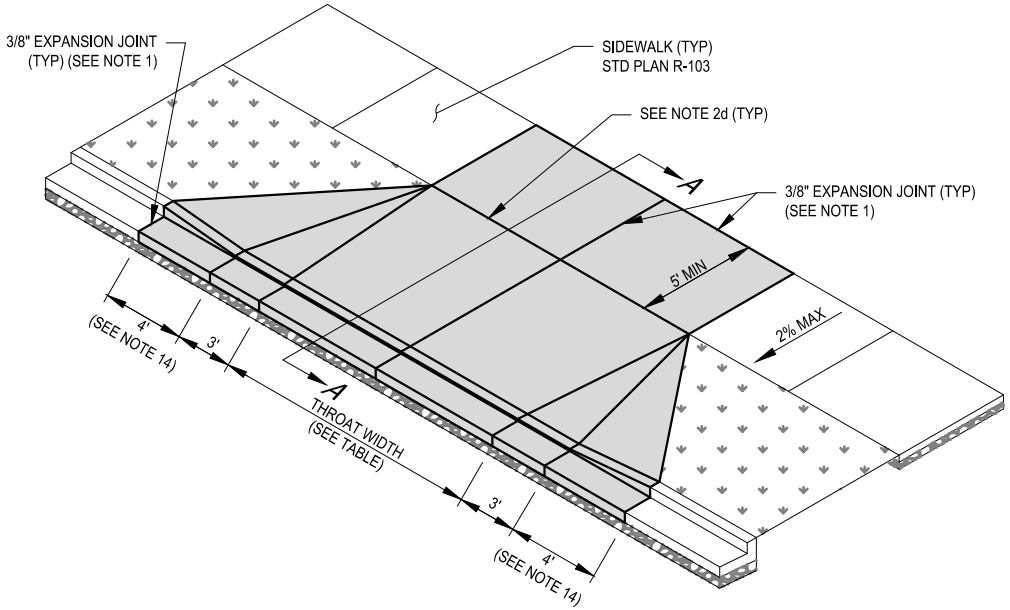
ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

CURBING

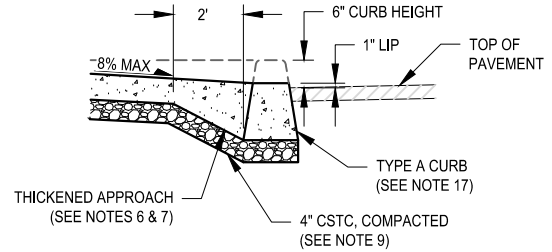
STANDARD PLAN NO. R-102

PUBLICATION DATE:	03/2025
REVISION NO.:	02

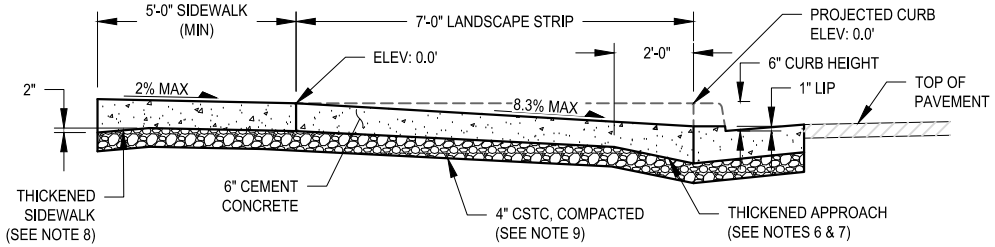
CREATION: 3/24/2025. REVISED: 3/24/2025 BY: JMORSE



ISOMETRIC VIEW



SECTION VIEW - TYPE A CURB
(SEE NOTE 17)



SECTION A-A

GENERAL NOTES:

1. EXPANSION JOINT MINIMUM REQUIREMENTS:
   a. 3/8" EXPANSION JOINT MATERIAL SHALL BE PLACED AT LEAST EVERY 20' IN WIDTH WITHIN THE DRIVEWAY APPROACH AND SHALL LINE UP WITH SIDEWALK EXPANSION JOINTS IF APPLICABLE.
   b. 3/8" EXPANSION JOINT MATERIAL IS REQUIRED BETWEEN DRIVEWAY SLAB AND THE SIDEWALK AND THE DRIVEWAY APPROACH.
   c. EXPANSION JOINT MATERIAL SHALL BE SECURED IN PLACE PRIOR TO CONCRETE PLACEMENT AND SHALL COMPLETELY SEPARATE ADJACENT SLABS EXTENDING FROM THE SURFACE TO GRAVEL BASE. PLACEMENT OF EXPANSION JOINT MATERIAL SHALL NOT BE FLOATED OR PRESSED INTO WET CONCRETE AFTER CONCRETE HAS BEEN PLACED.
   d. AN ALTERNATIVE TO SETTING EXPANSION JOINT MATERIAL PRIOR TO PLACING CONCRETE WOULD BE TO SAW CUT FULL DEPTH 1/2" WIDE AND FILL WITH APPROVED MASTIC PER WSDOT 9-04.2(2) POURED RUBBER JOINT SEALER.
2. CONTROL JOINTS SHALL BE PLACED AT THE DISCRETION OF THE CONTRACTOR. CRACK REPAIR WITHIN THE WARRANTY PERIOD IS THE RESPONSIBILITY OF THE CONTRACTOR. CONTROL JOINT MINIMUM REQUIREMENTS; CONTROL JOINTS SHALL:
   a. BE NO FARTHER APART THAN 10'.
   b. NOT EXCEED A RATIO OF 1 TO 1.25 LENGTH TO WIDTH.
   c. BE A MINIMUM OF 1" DEEP (FOR TROWELED OR SAW CUT).
   d. BE ADDED AT ALL GRADE BREAKS.
3. CEMENT CONCRETE SHALL BE CLASS 4,000 CONCRETE PER SECTION 6-02 OF THE WSDOT STANDARD SPECIFICATIONS.
4. ALL EXTERNAL EDGES SHALL BE TROWELED WITH A 3/8" TO 1/2" RADIUS.
5. A 4" (MIN) THICK CSTC LAYER SHALL BE PLACED UNDER DRIVE APPROACH.
6. FIRST 2' OF DRIVE APPROACH (AT CURB SIDE) SHALL BE THICKENED TO MATCH BOTTOM OF CURB.
7. WHEN AN ASPHALT APPROACH IS USED THE ASPHALT SHALL BE PLACED IN 0.30' LIFTS PER WSDOT 5-04.3(7)
8. LAST 2' OF SIDEWALK (HOUSE SIDE) WILL BE THICKENED 2 EXTRA INCHES WHEN OTHER HARD SURFACES ARE NOT PROPOSED ADJACENT TO THE APPROACH.
9. SUBGRADE AND CSTC UNDER APPROACH SHALL BE COMPACTED TO 95%.
10. ALL BROKEN, CRACKED, HEAVED AND SUNKEN CONCRETE SHALL BE REMOVED AND REPLACED FROM JOINT TO JOINT.
11. PERIMETER EDGING SHALL NOT BE ALLOWED UNLESS IT IS FOR A REPAIR/REPLACEMENT OF EXISTING PANELS AND ONLY WHEN MATCHING ADJACENT PANELS. CONTRACTOR SHALL MAKE AN EFFORT TO MATCH EXISTING PANELS IN ACCORDANCE WITH DIRECTION FROM CITY INSPECTOR.
12. ALL CHANGES IN LEVEL ACROSS JOINT MUST BE FLUSH WITH A MAXIMUM DIFFERENCE IN ELEVATION OF 3/16".
13. MONO-PLACEMENT OF CURBS AND CROSS GUTTER WITH OTHER STRUCTURES SUCH AS SIDEWALKS AND APPROACHES SHALL NOT BE ALLOWED AND SHALL BE SEPARATED WITH EITHER A COLD JOINT OR EXPANSION JOINT SEALED WITH A POURED RUBBER JOINT SEALER PER WSDOT 9-04.2(2).
14. SAWCUTING OF CURB TO CREATE CURB DROP IS NOT ALLOWED.
15. ALL APPROACHES SHALL BE PER CITY STREET STANDARDS 7.3 AND 7.8.
16. EXCEPT FOR JOINTS AND BROOM FINISHING, NO OTHER MARKINGS ARE PERMITTED ON THE WALKING SURFACE.
17. TYPE A CURB TO BE USED ONLY WHEN MATCHING EXISTING CURB AND WITH APPROVAL OF THE CITY ENGINEER.

DESIGN CRITERIA

	RESIDENTIAL	COMMERCIAL
DISTANCE FROM CURB RETURN	15' MIN.	75' MIN.
THROAT WIDTH	16' MIN.* ** 30' MAX.**	30' MIN.** 40' MAX.**
SETBACK FROM SIDE PROPERTY LINE AT R.O.W.	5' MIN.	5' MIN.
SETBACK FROM SIDE PROPERTY LINE	2' MIN.	2' MIN.

* 24' MINIMUM WIDTH IF DRIVEWAY LENGTH IS OVER 75', SEE R-117

** THE TOTAL APPROACH WIDTH SHALL NOT BE GREATER THAN 50% OF TOTAL LOT FRONTAGE WIDTH.

CITY OF Spokane Valley

APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

TYPE II CONCRETE APPROACH SEPARATED SIDEWALK

STANDARD PLAN NO. R-111

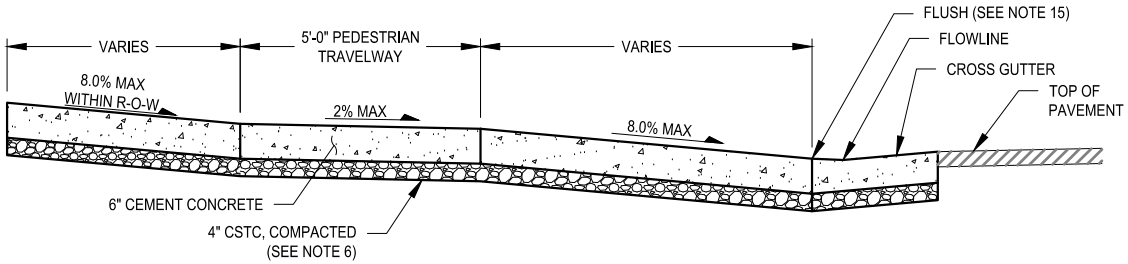
PUBLICATION DATE:	03/2025
REVISION NO.:	02

CREATION: 3/20/2025. REVISED: 4/21/2025 BY: JMORSE

GENERAL NOTES:

SEE PAGE 2 OF 2

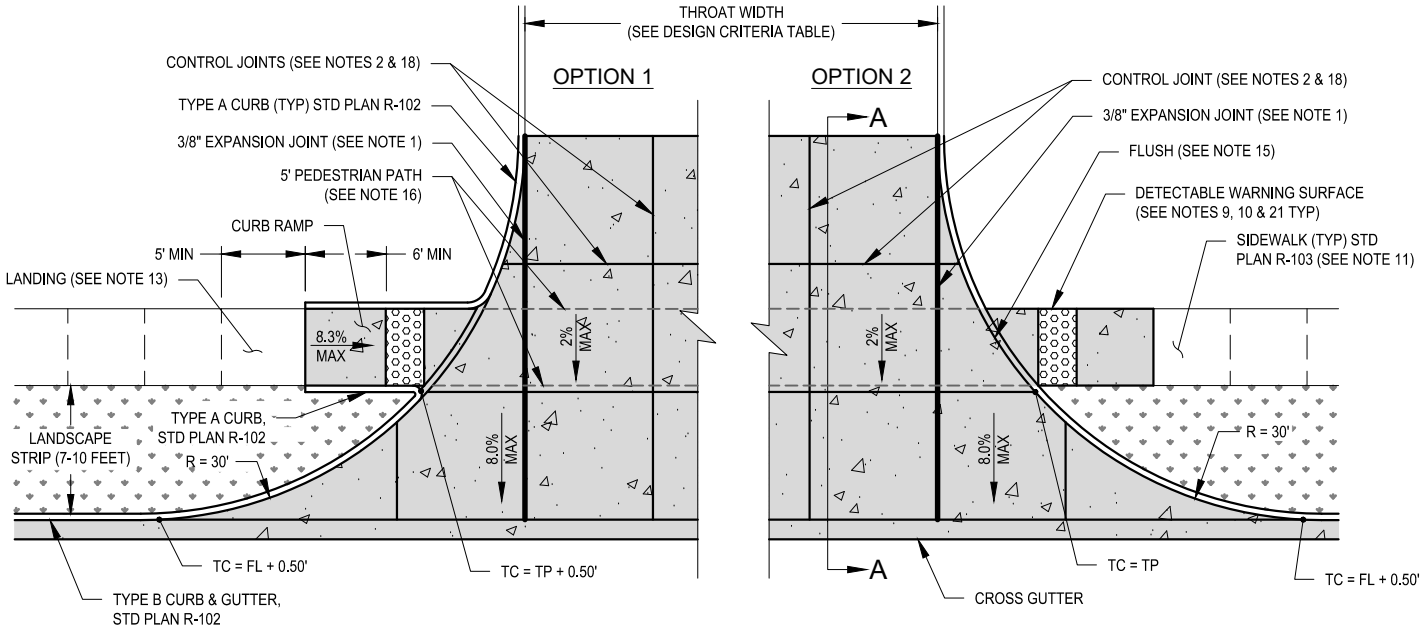
ADA REQUIREMENTS			
	RECOMMENDED	MIN	MAX
FLARED SIDE SLOPE (%)	-	-	-
FLARED SIDE LENGTH (FT)	-	-	-
RAMP SLOPE (%)	7	0.5	8.33
RAMP CROSS SLOPE (%)	1	0.5	2
RAMP LENGTH (FT)	7	6	15
RAMP WIDTH (FT)	5	4	-
LANDING WIDTH (FT)	5	4	-
LANDING SLOPE (%)	1	0.5	2
GUTTER SLOPE (%)	4	2	8
CHANGE IN LEVEL (IN)	FLUSH		0.5" (SEE NOTE 2)



SECTION A-A

DESIGN CRITERIA	
	COMMERCIAL
DISTANCE FROM CURB RETURN	75' MIN.
THROAT WIDTH	30' MIN.** 40' MAX.**
SETBACK FROM SIDE PROPERTY LINE AT R.O.W.	5' MIN.
SETBACK FROM SIDE PROPERTY LINE	2' MIN.
* THE TOTAL APPROACH WIDTH SHALL NOT BE GREATER THAN 50% OF THE TOTAL LOT FRONTAGE WIDTH.	

ABBREVIATIONS	
TC	TOP OF CURB
TP	TOP OF PAVEMENT
FL	FLOWLINE



PLAN VIEW

CITY OF Spokane Valley

APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

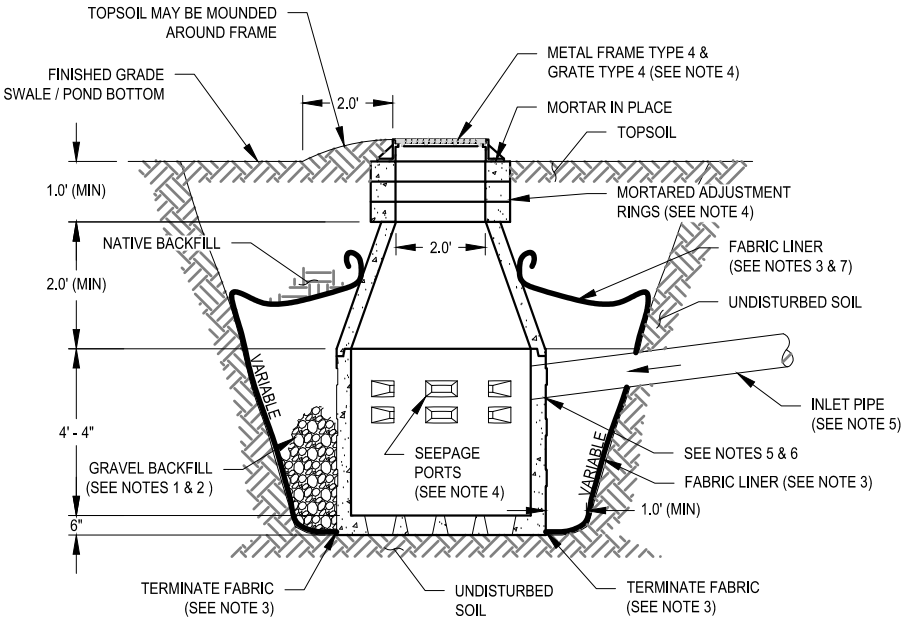
HIGH VOLUME CONCRETE APPROACH

(REQUIRES CITY APPROVAL)

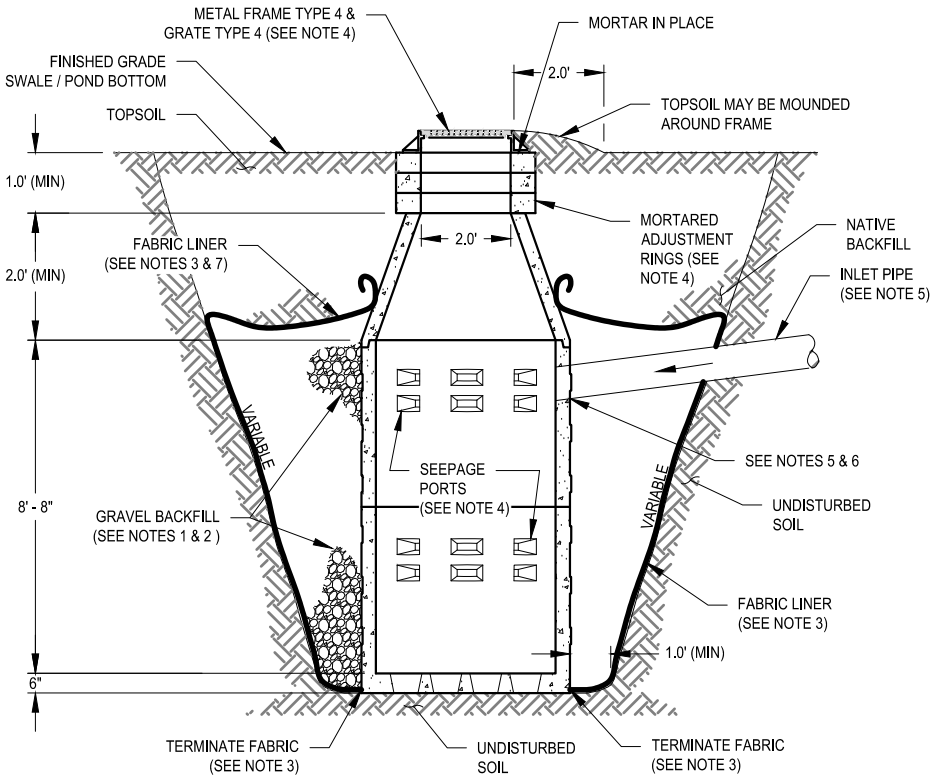
STANDARD PLAN NO. R-115

PUBLICATION DATE:	03/2025
REVISION NO.:	02

CREATION: 3/24/2025. REVISED: 3/24/2025 BY: JMORSE



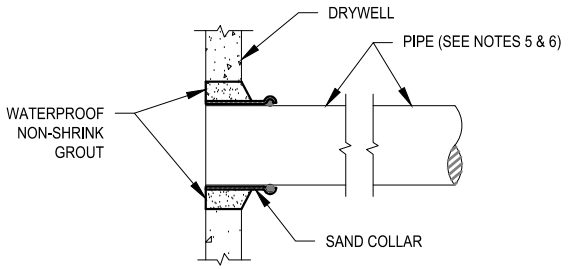
TYPE 'A'



TYPE 'B'

GENERAL NOTES:

1. GRAVEL BACKFILL QUANTITY FOR DRYWELLS:
   TYPE "A" - 30 CUBIC YARDS MINIMUM / 42 TONS.
   TYPE "B" - 40 CUBIC YARDS MINIMUM / 56 TONS.
   OR AS SPECIFIED ON STREET PLANS.
2. GRAVEL BACKFILL FOR DRYWELLS SHALL BE WASHED DRAIN ROCK CONFORMING TO WSDOT STANDARD SPEC. 9-03.12(5).
3. FABRIC SHALL BE MODERATE SURVIVABILITY AS OUTLINED IN WSDOT STANDARD SPEC. 9-33.2(1). FABRIC SHALL NOT BE WRAPPED AROUND DRYWELL BARRELS OR PLACED ON THE BOTTOM OF THE BARREL.
4. SEE PRECAST DRYWELL DETAILS, CITY STANDARD PLANS S-103 AND S-105. PRECAST MORTARED ADJUSTMENT RINGS SHALL BE USED IN LIEU OF ADJUSTING BLOCKS
5. WHEN PVC PIPE IS USED, A SAND COLLAR SHALL BE INSTALLED.
6. PIPES SHALL BE GROUTED INTO DRYWELL WITH WATERPROOF NON-SHRINK GROUT IN ACCORDANCE WITH STANDARD SPECIFICATION 9-20.3.
7. GRAVEL BACKFILL TO BE COMPLETELY COVERED WITH FABRIC.



PVC ADAPTER

CITY OF Spokane Valley

APPROVED BY:

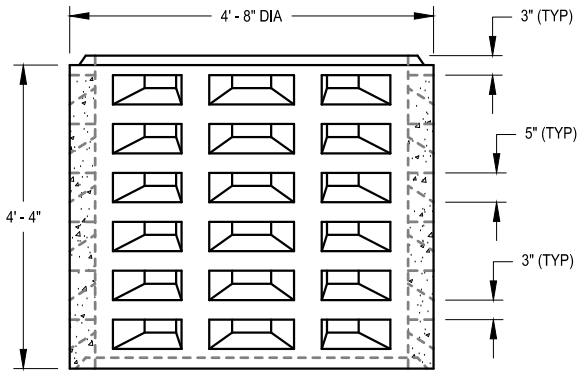
ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

PRECAST DRYWELLS PLACED IN SWALE

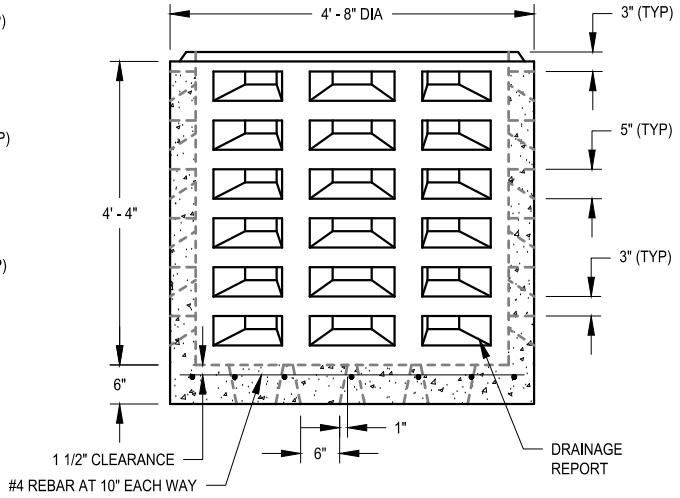
STANDARD PLAN NO. S-101

PUBLICATION DATE:	03/2025
REVISION NO.:	01

CREATION: 4/21/2025. REVISED: 4/21/2025 BY: JMORSE



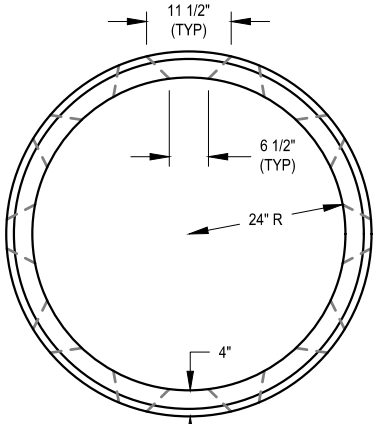
DRYWELL BARREL
(ELEVATION VIEW)



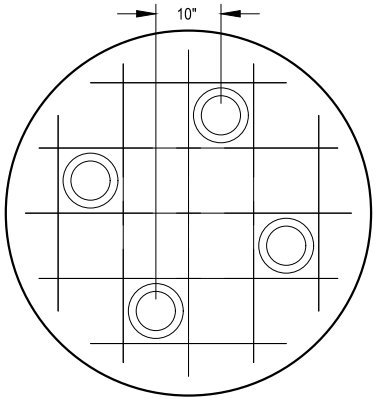
DRYWELL BASE
(ELEVATION VIEW)

GENERAL NOTES:

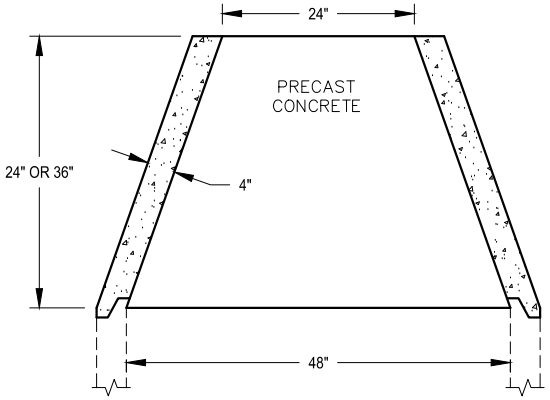
1. CONCRETE DRYWELL ITEMS SHALL BE CONSTRUCTED WITH THE BARRELS AND CONES REINFORCED WITH 0.12 SQ. IN. STEEL GRADE 40, PER LINEAL FOOT OF WALL.
2. TOLERANCE OF DIMENSIONS FOR DRAINAGE PORTS SHALL BE ±1/2".
3. EACH BARREL SECTION SHALL HAVE A MINIMUM OF 6 ROWS OF DRAINAGE PORTS VERTICALLY AND A MINIMUM OF 10 DRAINAGE PORTS AROUND THE CIRCUMFERENCE OF THE BARREL.



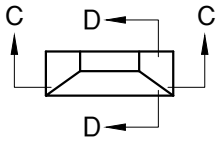
DRYWELL BARREL
(PLAN VIEW)



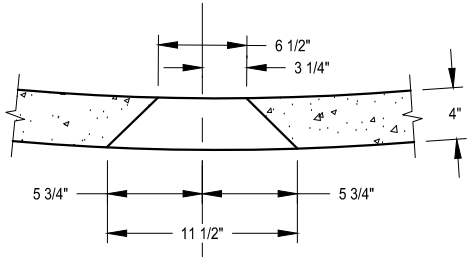
BASE DRAIN HOLE DETAIL
(PLAN VIEW)



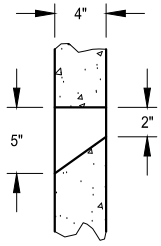
CONCENTRIC CONE



DRAINAGE PORT



SECTION C-C



SECTION D-D

CITY OF Spokane Valley

APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

DRYWELL DETAILS

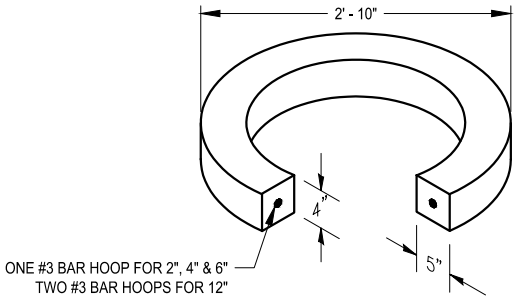
STANDARD PLAN NO. S-103

PUBLICATION DATE:	03/2025
REVISION NO.:	01

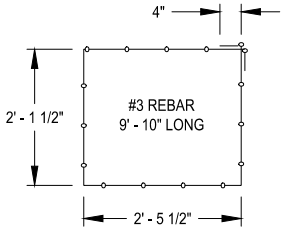
CREATION: 10/2/2023. REVISED: 3/20/2025 BY: JMORSE

GENERAL NOTES:

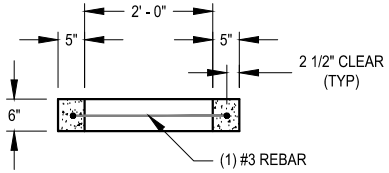
1. CONCRETE ITEMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C-478 (AASHTO M199) & ASTM C-890 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE PROJECT SPECIAL PROVISIONS.



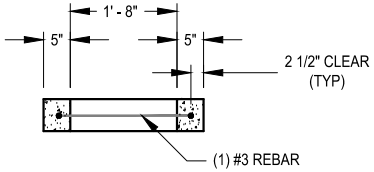
RISER, CIRCULAR



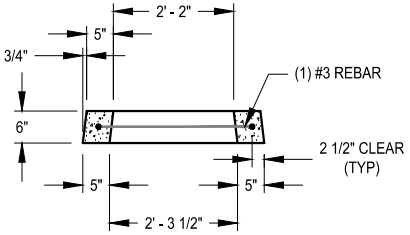
BENDING DETAIL



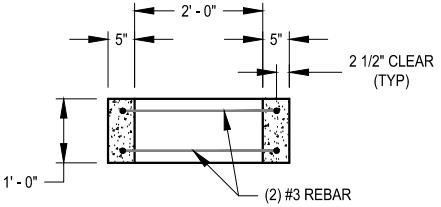
SECTION E-E
6" RISER



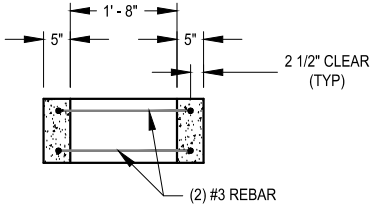
SECTION F-F
6" RISER



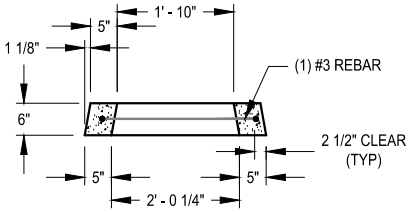
SECTION C-C
6" RISER



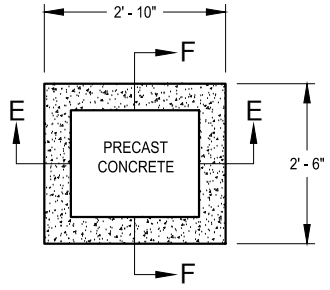
SECTION E-E
1' - 0" RISER



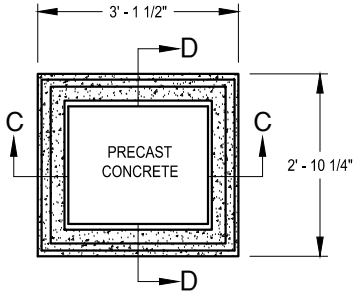
SECTION F-F
1' - 0" RISER



SECTION D-D
6" RISER



RISER, TYPE 1



RISER, TYPE 2

CITY OF Spokane Valley

APPROVED BY:

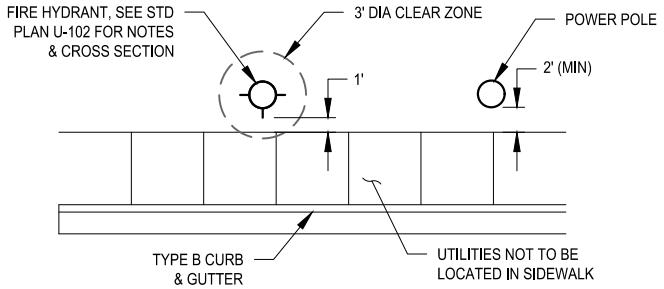
ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

PRECAST RISERS

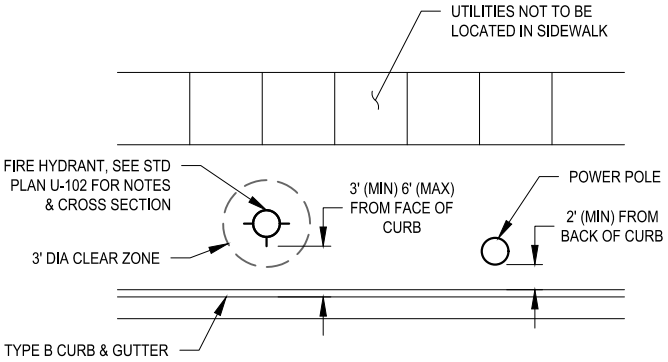
STANDARD PLAN NO. S-105

PUBLICATION DATE:	03/2025
REVISION NO.:	01

CREATION: 3/24/2025. REVISED: 3/24/2025 BY: JMORSE



STREETS WITH ADJACENT SIDEWALK



STREETS WITH SEPARATED SIDEWALK

GENERAL NOTES:

1. WHENEVER POSSIBLE, HYDRANTS SHALL BE LOCATED NEAR INTERSECTIONS.
2. PLACEMENT TO MEET ALL APPLICABLE CLEAR ZONE REQUIREMENTS.
3. THE PREFERRED LOCATION OF POWER POLES FOR NEW STREETS WITH SEPARATED SIDEWALK IS BEHIND THE SIDEWALK; HOWEVER, IF THE POWER POLE IS INSTALLED WITHIN THE PLANTER STRIP, THEN THE FACE OF POWER POLE SHALL BE SET 2' (MIN.) FROM BACK OF CURB.

CREATION: 3/24/2025. REVISED: 4/21/2025 BY: JMORSE

City of Spokane Valley

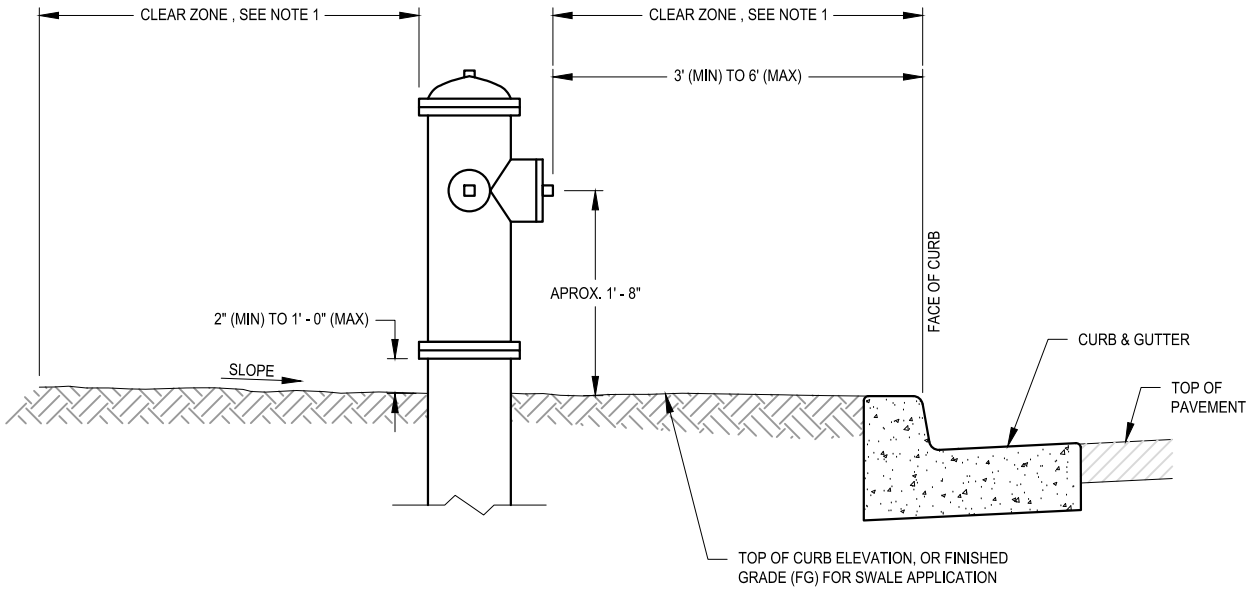
APPROVED BY:

ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

ABOVE GROUND UTILITY LOCATIONS

STANDARD PLAN NO. U-101

PUBLICATION DATE:	03/2025
REVISION NO.:	01



ELEVATION VIEW

GENERAL NOTES:

1. HYDRANTS SHALL STAND PLUMB. THE TRAFFIC BREAKAWAY FLANGE IS TO BE SET WITHIN 2" AT THE FINISHED CURB/GRADE ELEVATION WITH THE LOWEST OUTLET OF THE HYDRANT NO LESS THAN 20" ABOVE THE CURB GRADE. THERE SHALL BE A CLEAR AREA AROUND THE HYDRANT OF NOT LESS THAN 36" AS MEASURED FROM THE OUTSIDE EDGE OF THE BARREL OR OUTLET PORTS, WHICHEVER IS GREATER. HYDRANTS SHALL BE A MINIMUM OF 36" FROM THE FACE OF CURB AND NO MORE THAN 72" FROM THE FACE OF CURB.

2. HYDRANTS SHALL BE LOCATED AT ROADWAY INTERSECTIONS WHENEVER POSSIBLE.

3. ALL FIRE HYDRANTS SHALL HAVE A MINIMUM OF THREE OUTLETS, ONE 4-1/2 INCH INSIDE DIAMETER OUTLET AND TWO 2-1/2 INCH INSIDE DIAMETER OUTLETS. THREADS ON ALL OUTLETS SHALL BE NATIONAL STANDARD THREAD (NST).

4. THE 4-1/2 INCH PORT SHALL FACE THE STREET. WHERE THE STREET CANNOT BE CLEARLY DEFINED (SUCH AS PARKING LOTS) THE PORT SHALL FACE THE MOST LIKELY ROUTE OF APPROACH (E.G., FIRE LANE) AND LOCATION OF THE FIRE APPARATUS WHILE PUMPING, AS DETERMINED BY SPOKANE VALLEY FIRE DEPARTMENT.

5. HYDRANT COLORS SHALL BE AS FOLLOWS:
   a. CHROME YELLOW - HYDRANTS OWNED BY DISTRICTS
   b. RED - PRIVATELY OWNED HYDRANTS

6. CLEAR ZONE SHALL BE FREE OF ALL OBSTRUCTIONS, INCLUDING BOLLARDS, FENCING, TREES, AND SHRUBS.

CREATION: 3/24/2025. REVISED: 3/24/2025 BY: JMORSE

CITY OF Spokane Valley

APPROVED BY:

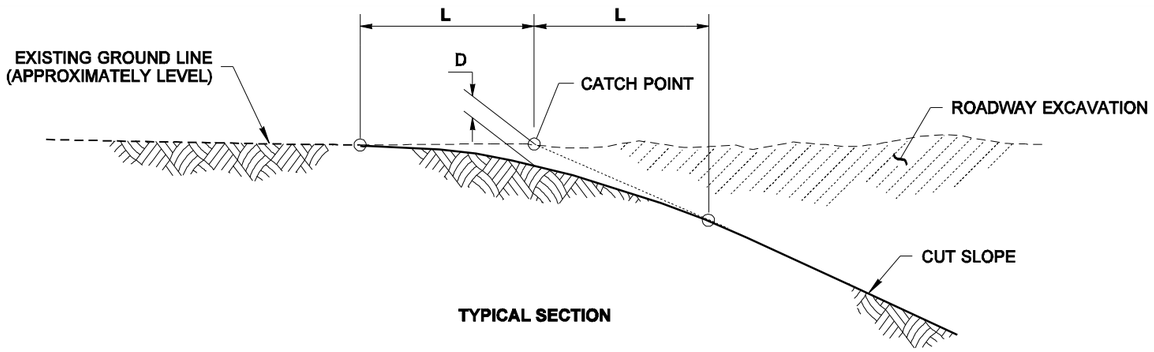
ROBERT B. BLEGEN, P.E.
PUBLIC WORKS DIRECTOR

FIRE DEPARTMENT HYDRENT REQUIREMENTS

STANDARD PLAN NO. U-102

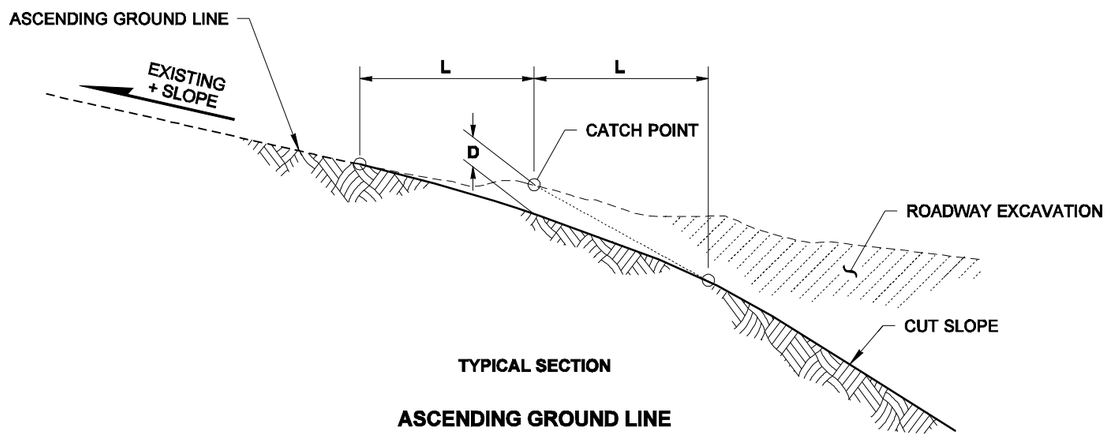
PUBLICATION DATE:	03/2025
REVISION NO.:	01

DRAWN BY: FERN LIDDELL



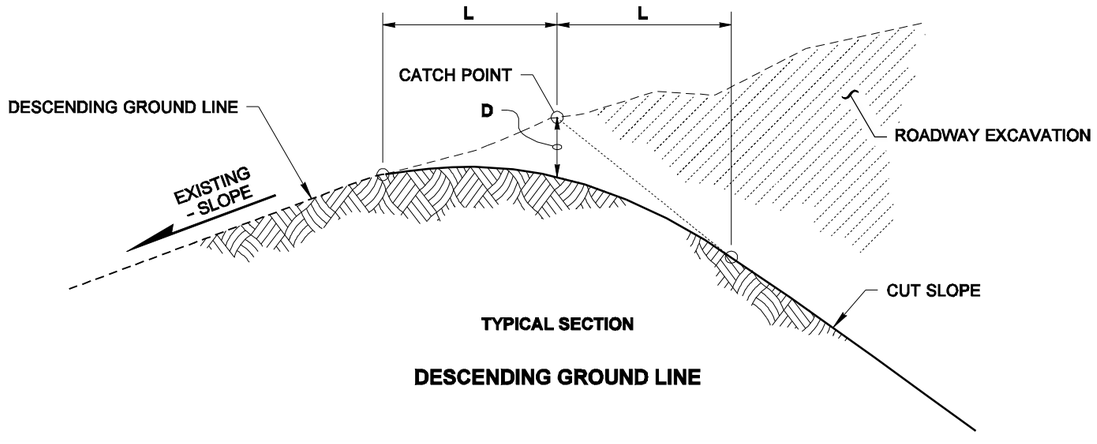
TYPICAL SECTION

LEVEL GROUND LINE



TYPICAL SECTION

ASCENDING GROUND LINE



TYPICAL SECTION

DESCENDING GROUND LINE

NOTES

1. Slope treatment shall be constructed simultaneously with the roadway excavation. Hand trimming will not be required if satisfactory results are obtained with mechanical equipment.

2. Slope treatment is used to provide a transition between the existing ground and the cut slope. The intended purpose is to eliminate the abrupt edge and give the area a more natural appearance. The dimensions shown are approximate and can vary to achieve this purpose.

CUT SLOPE (H : V)	GROUND LINE (H : V)	CLASS A L = 10.0' D	CLASS B L = 5.0' D
1.5 : 1	+2 : 1	0.5'	◇1
	+3 : 1	1.0'	0.5'
	+4 : 1	1.0'	0.5'
	+6 : 1	1.2'	0.8'
	≈ LEVEL	2.0'	1.0'
	-6 : 1	2.2'	1.0'
	-4 : 1	2.0'	1.0'
	-3 : 1	3.0'	1.5'
2 : 1	+3 : 1	0.5'	◇1
	+4 : 1	0.5'	◇1
	+6 : 1	1.2'	0.5'
	≈ LEVEL	1.5'	0.8'
	-6 : 1	2.2'	1.0'
	-4 : 1	2.0'	1.0'
	-3 : 1	3.0'	1.5'
3 : 1	+6 : 1	0.5'	◇1
	≈ LEVEL	1.0'	0.5'
	-6 : 1	1.2'	0.5'
	-4 : 1	1.5'	0.8'
	-3 : 1	2.0'	1.0'
4 : 1	≈ LEVEL	0.5'	◇1
	-6 : 1	1.0'	0.5'
	-4 : 1	1.2'	0.5'
	-3 : 1	1.5'	0.8'
5 : 1	≈ LEVEL	0.5'	◇1
	-6 : 1	1.0'	0.5'
	-4 : 1	1.2'	0.5'
	-3 : 1	1.5'	0.8'

◇1 SLOPE TREATMENT NOT REQUIRED

STATE OF
WASHINGTON
REGISTERED
LANDSCAPE ARCHITECT

MARK W. MAURER
CERTIFICATE NO. 000598

NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT BUT AN ELECTRONIC DUPLICATE. THE ORIGINAL, SIGNED BY THE ENGINEER AND APPROVED FOR PUBLICATION, IS KEPT ON FILE AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST.

SLOPE TREATMENT

STANDARD PLAN A-20.10-00

SHEET 1 OF 1 SHEET

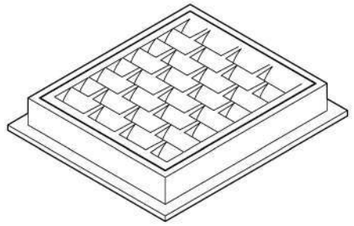
APPROVED FOR PUBLICATION

Pasco Bakotich III — STATE DESIGN ENGINEER

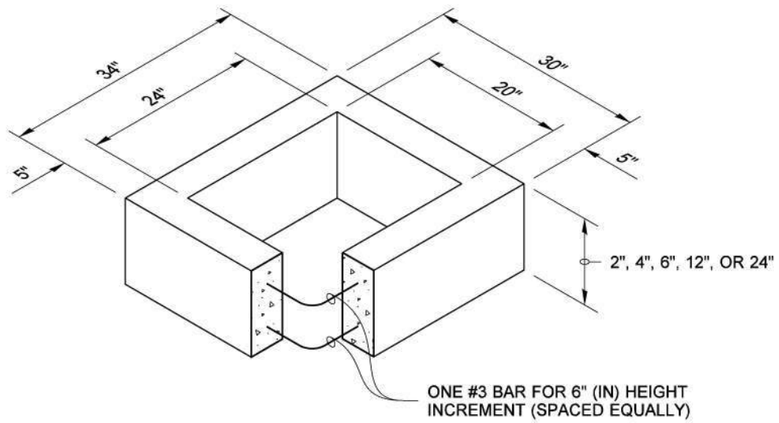
08-31-07 — DATE

Washington State Department of Transportation

DRAWN BY: FERN LIDDELL



FRAME AND VANED GRATE

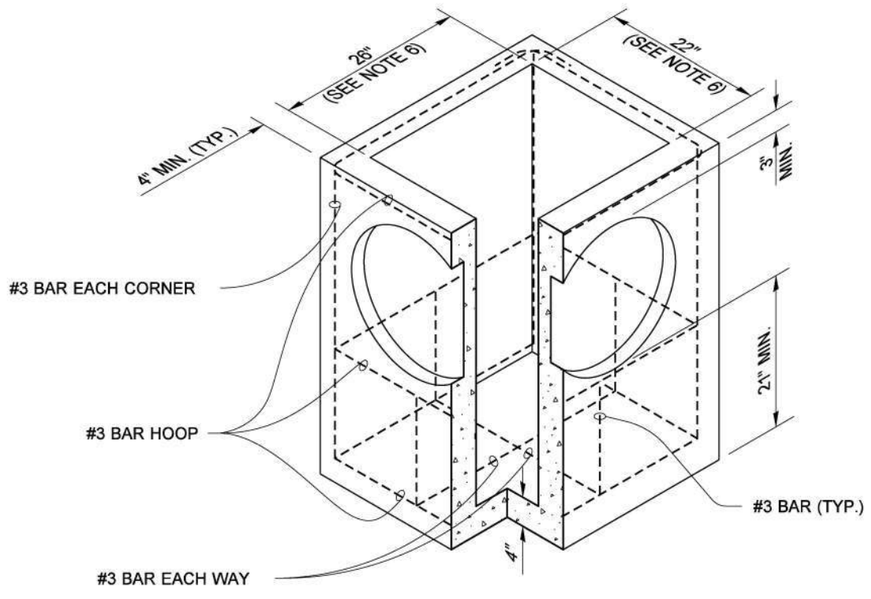


RECTANGULAR ADJUSTMENT SECTION

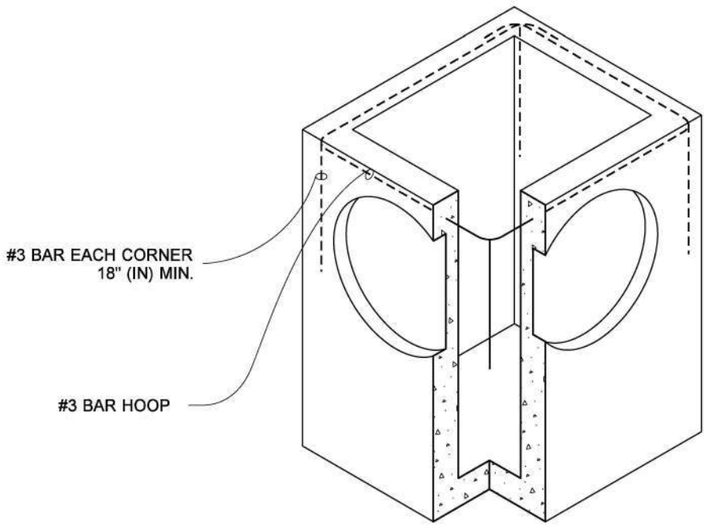
PIPE ALLOWANCES

PIPE MATERIAL	MAXIMUM INSIDE DIAMETER (INCHES)
REINFORCED OR PLAIN CONCRETE	12"
ALL METAL PIPE	15"
CPSSP * **(STD. SPEC. SECT. 9-05.20)**	12"
SOLID WALL PVC **(STD. SPEC. SECT. 9-05.12(1))**	15"
PROFILE WALL PVC **(STD. SPEC. SECT. 9-05.12(2))**	15"

* CORRUGATED POLYETHYLENE STORM SEWER PIPE



PRECAST BASE SECTION



(SEE NOTE 1)

ALTERNATIVE PRECAST BASE SECTION

NOTES

1. As acceptable alternatives to the rebar shown in the **PRECAST BASE SECTION**, fibers (placed according to the Standard Specifications), or wire mesh having a minimum area of 0.12 square inches per foot shall be used with the minimum required rebar shown in the **ALTERNATIVE PRECAST BASE SECTION**. Wire mesh shall not be placed in the knockouts.
2. The knockout diameter shall not be greater than 20" (in). Knockouts shall have a wall thickness of 2" (in) minimum to 2.5" (in) maximum. Provide a 1.5" (in) minimum gap between the knockout wall and the outside of the pipe. After the pipe is installed, fill the gap with joint mortar in accordance with **Standard Specification Section 9-04.3**.
3. The maximum depth from the finished grade to the lowest pipe invert shall be 5' (ft).
4. The frame and grate may be installed with the flange down, or integrally cast into the adjustment section with flange up.
5. The Precast Base Section may have a rounded floor, and the walls may be sloped at a rate of 1 : 24 or steeper.
6. The opening shall be measured at the top of the **Precast Base Section**.
7. All pickup holes shall be grouted full after the basin has been placed.

JULIE HEILMAN
STATE OF WASHINGTON
41819
REGISTERED
PROFESSIONAL ENGINEER

Julie Heilman
Julie Heilman
2020.09.01 07:52:50 -07'00'

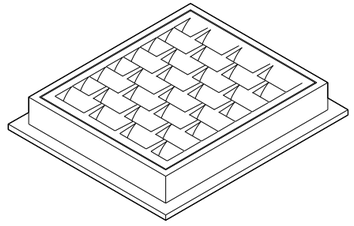
CATCH BASIN TYPE 1

STANDARD PLAN B-5.20-03

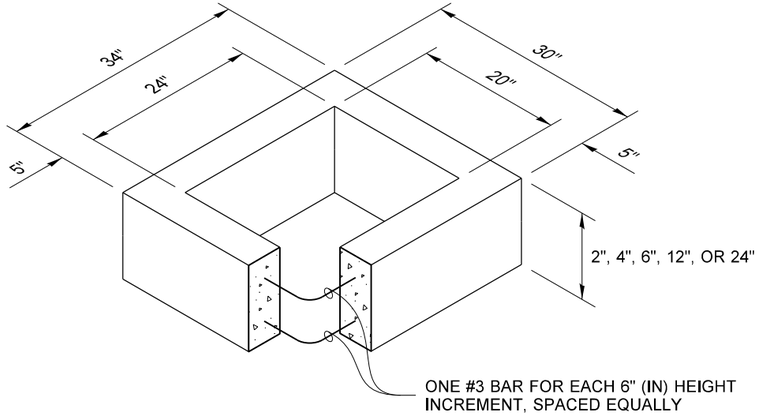
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION
Roark, Steve
Digitally signed by Roark, Steve
Date: 2020.09.09 09:45:23 -07'00'
STATE DESIGN ENGINEER
Washington State Department of Transportation

DRAWN BY: LISA CYFORD



FRAME AND VANED GRATE



RECTANGULAR ADJUSTMENT SECTION

PIPE ALLOWANCES	
PIPE MATERIAL	**MAXIMUM INSIDE DIAMETER (INCHES)**
REINFORCED OR PLAIN CONCRETE	18"
ALL METAL PIPE	21"
CPSSP * **(STD. SPEC. SECT. 9-05.20)**	18"
SOLID WALL PVC **(STD. SPEC. SECT. 9-05.12(1))**	21"
PROFILE WALL PVC **(STD. SPEC. SECT. 9-05.12(2))**	21"

* CORRUGATED POLYETHYLENE STORM SEWER PIPE

NOTES

1. As acceptable alternatives to the rebar shown in the **PRECAST BASE SECTION**, fibers (placed according to the Standard Specifications), or wire mesh having a minimum area of 0.12 square inches per foot, shall be used with the minimum required rebar shown in the ALTERNATIVE **PRECAST BASE SECTION**. Wire mesh shall not be placed in the knockouts.

2. The knockout shall not be greater than 26" (in), in any direction. Knockouts shall have a wall thickness of 2" (in) minimum to 2.5" (in) maximum. Provide a 1.5" (in) minimum gap between the knockout wall and the outside of the pipe. After the pipe is installed, fill the gap with joint mortar in accordance with **Standard Specification Section 9-04.3**.

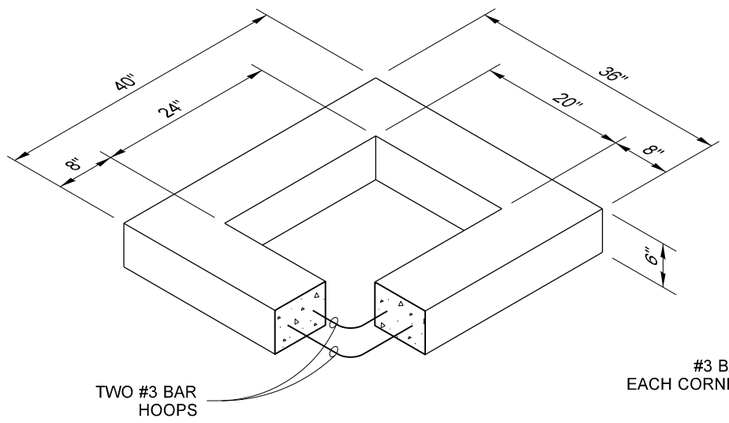
3. The maximum depth from the finished grade to the lowest pipe invert shall be 5' (ft).

4. The frame and grate may be installed with the flange down or integrally cast into the adjustment section with flange up.

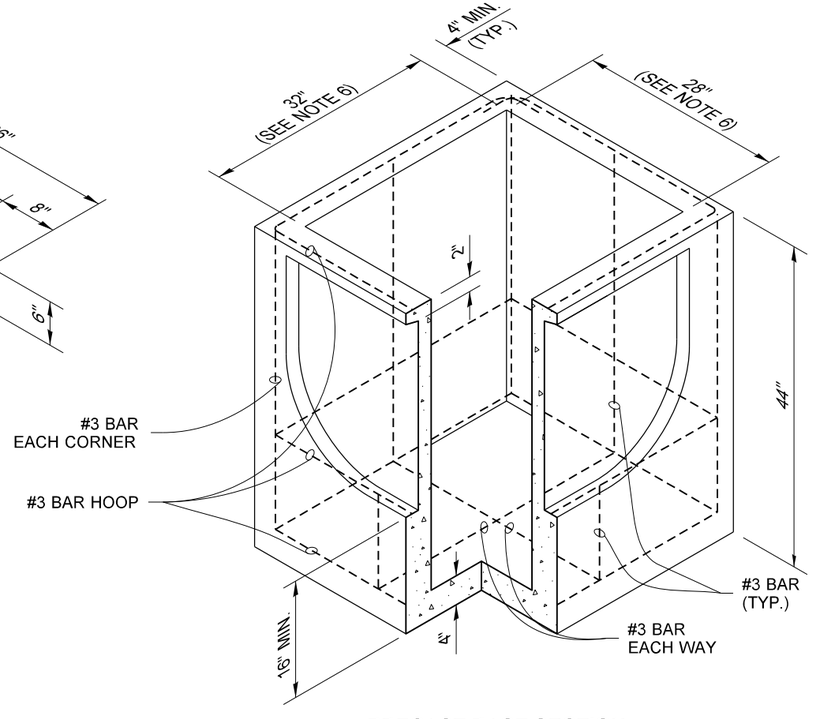
5. The Precast Base Section may have a rounded floor, and the walls may be sloped at a rate of 1 : 24 or steeper.

6. The opening shall be measured at the top of the Precast Base Section.

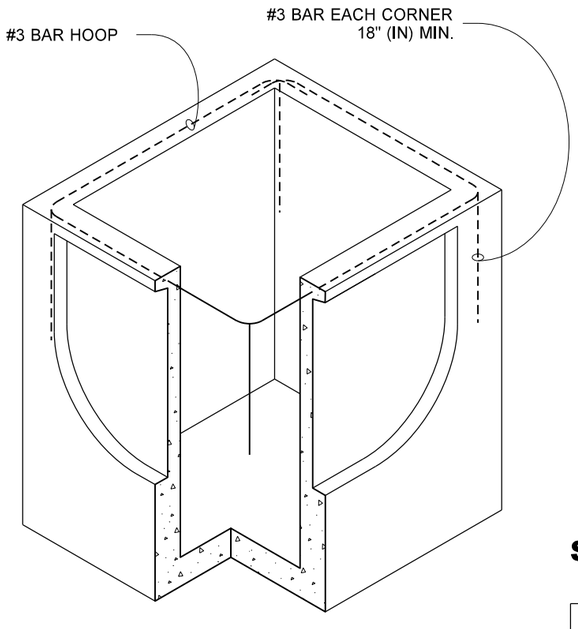
7. All pickup holes shall be grouted full after the basin has been placed.



REDUCING SECTION



PRECAST BASE SECTION



(SEE NOTE 1)

ALTERNATIVE PRECAST BASE SECTION

JULIE HEILMAN
STATE OF WASHINGTON
41819
REGISTERED
PROFESSIONAL ENGINEER

CATCH BASIN TYPE 1L

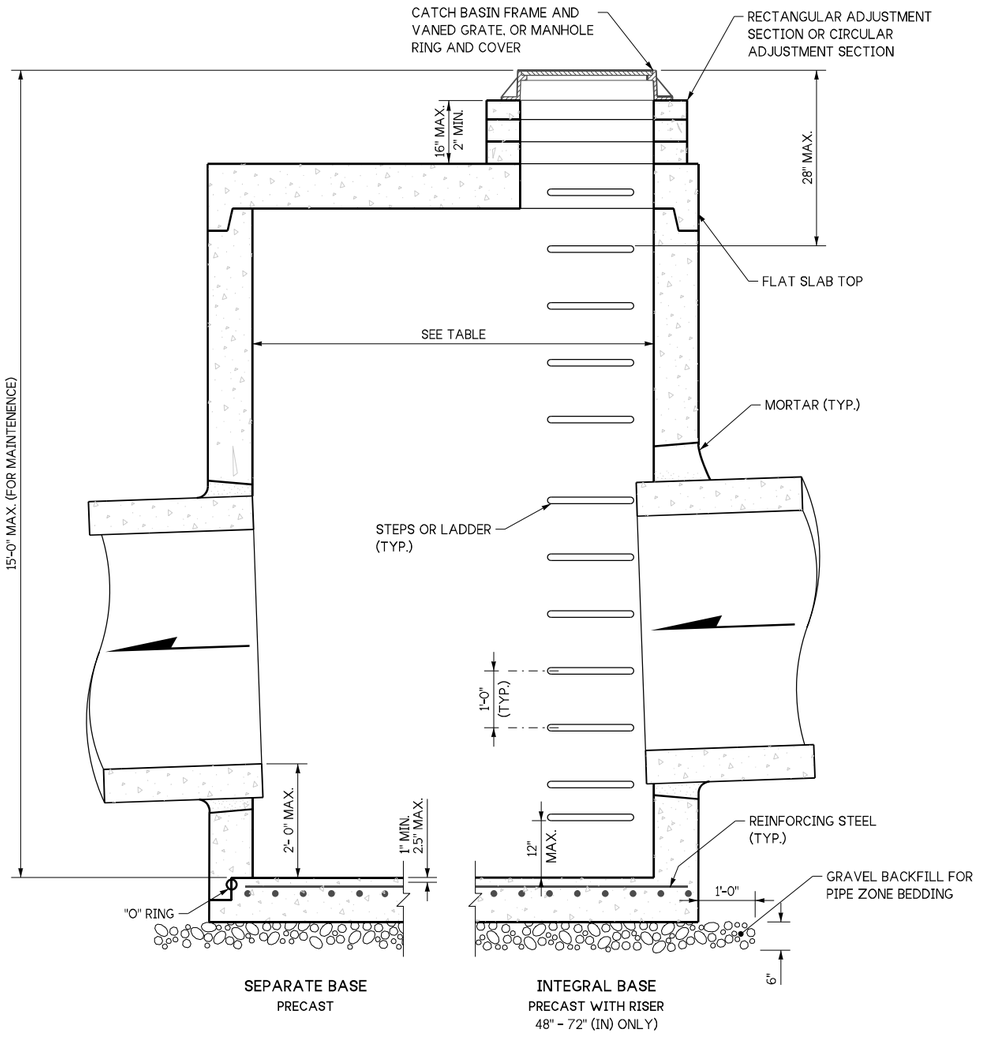
STANDARD PLAN B-5.40-02

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

STATE DESIGN ENGINEER

Washington State Department of Transportation



NOTES:

1. No steps are required when height is 4' or less.
2. The bottom of the precast catch basin may be sloped to facilitate cleaning.
3. The rectangular frame and grate may be installed with the flange up or down. The frame may be cast into the adjustment section.
4. Knockouts shall have a wall thickness of 2" (in) minimum to 2.5" (in) maximum. Provide a 1.5" (in) minimum gap between the knockout wall and the outside of the pipe. After the pipe is installed, fill the gap with joint mortar in accordance with **Standard Specification Section 9-04.3.**
5. Pipe allowances will vary depending on the pipe material used. Contact the Region Hydraulics Engineer for assistance.

CATCH BASIN DIMENSIONS				
CATCH BASIN DIAMETER	MIN. WALL THICKNESS	MIN. BASE THICKNESS	MAXIMUM KNOCKOUT SIZE	MINIMUM DISTANCE BETWEEN KNOCKOUTS
48"	4"	6"	36"	8"
54"	4.5"	8"	42"	8"
60"	5"	8"	48"	8"
72"	6"	8"	60"	12"
84"	8"	12"	72"	12"
96"	8"	12"	84"	12"
120"	10"	12"	96"	12"
144"	12"	12"	108"	12"

PIPE ALLOWANCES					
CATCH BASIN DIAMETER	PIPE MATERIAL WITH MAXIMUM INSIDE DIAMETER				
	CONCRETE	ALL METAL	CPSSP ① PP ④	SOLID WALL PVC ②	PROFILE WALL PVC ③
48"	24"	30"	24"	30"	30"
54"	30"	36"	30"	36"	36"
60"	36"	42"	36"	42"	42"
72"	42"	54"	42"	48"	48"
84"	54"	60"	54"	48"	48"
96"	60"	72"	60"	48"	48"
120"	66"	84"	60"	48"	48"
144"	78"	96"	60"	48"	48"

① Corrugated Polyethylene Storm Sewer Pipe (See **Standard Specification Section 9-05.20**)
② (See **Standard Specification Section 9-05.12(1)**
③ (See **Standard Specification Section 9-05.12)2)**
④ Polypropolyne Pipe (See **Standard Specification Section 9-05.24**)

JULIE HEILMAN
STATE OF WASHINGTON
41819
REGISTERED
PROFESSIONAL ENGINEER

Aug 23, 2023

CATCH BASIN TYPE 2

STANDARD PLAN B-10.20-03

SHEET 1 OF 1 SHEET

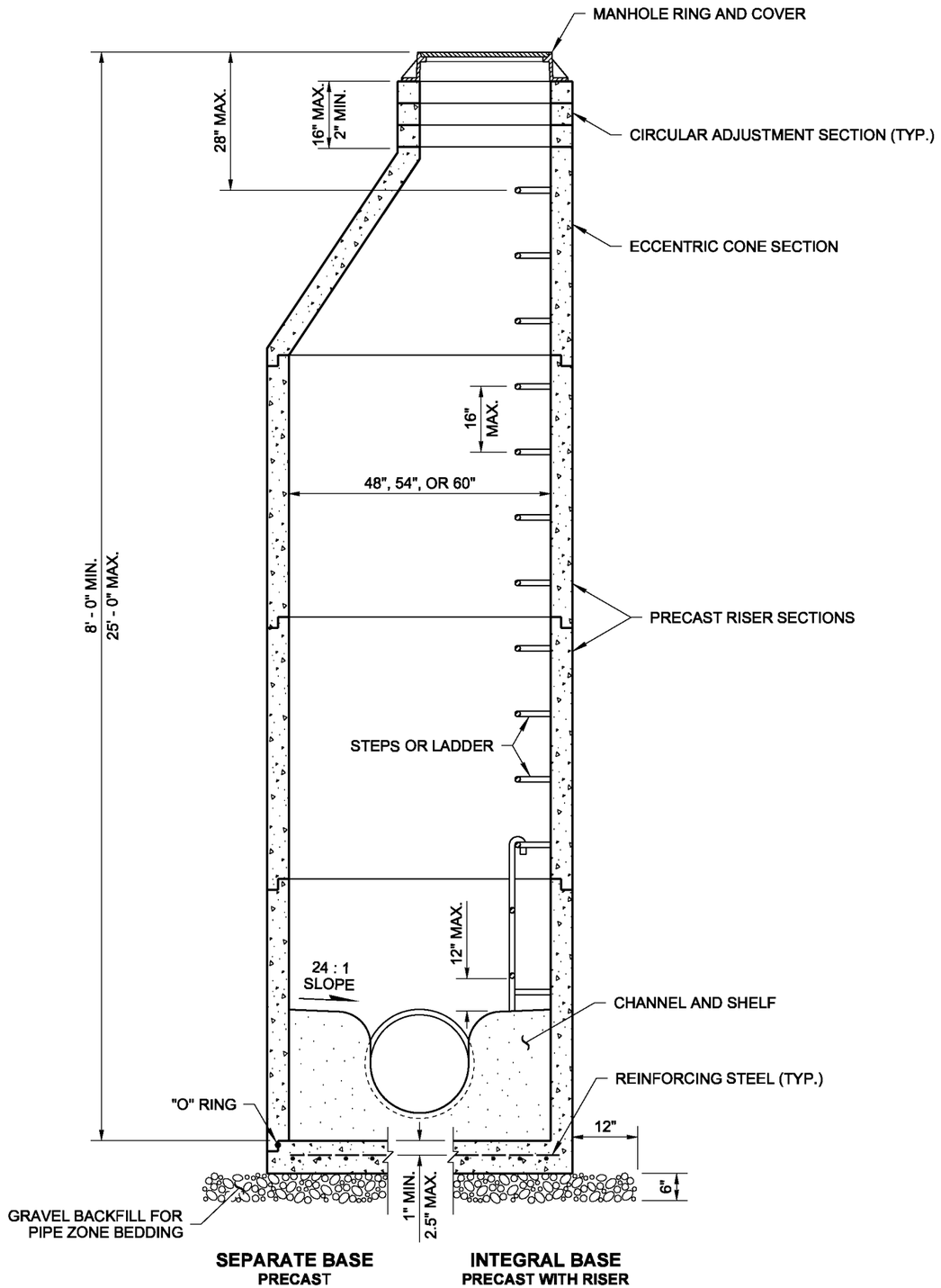
APPROVED FOR PUBLICATION

Mark A Gaines Aug 23, 2023

STATE DESIGN ENGINEER

Washington State Department of Transportation

DRAWN BY: LISA CYFORD



NOTES

1. Knockouts shall have a wall thickness of 2" minimum to 2.5" maximum.
2. For pipe allowances, see **Standard Plan B-10.20.**

MANHOLE DIMENSION TABLE				
DIAM.	MIN. WALL THICKNESS	MIN. BASE THICKNESS	MAXIMUM KNOCKOUT SIZE	MINIMUM DISTANCE BETWEEN KNOCKOUTS
48"	4"	6"	36"	8"
54"	4.5"	8"	42"	8"
60"	5"	8"	48"	8"

NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT BUT AN ELECTRONIC DUPLICATE. THE ORIGINAL, SIGNED BY THE ENGINEER AND APPROVED FOR PUBLICATION, IS KEPT ON FILE AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST.

MANHOLE TYPE 1

STANDARD PLAN B-15.20-01

SHEET 1 OF 1 SHEET

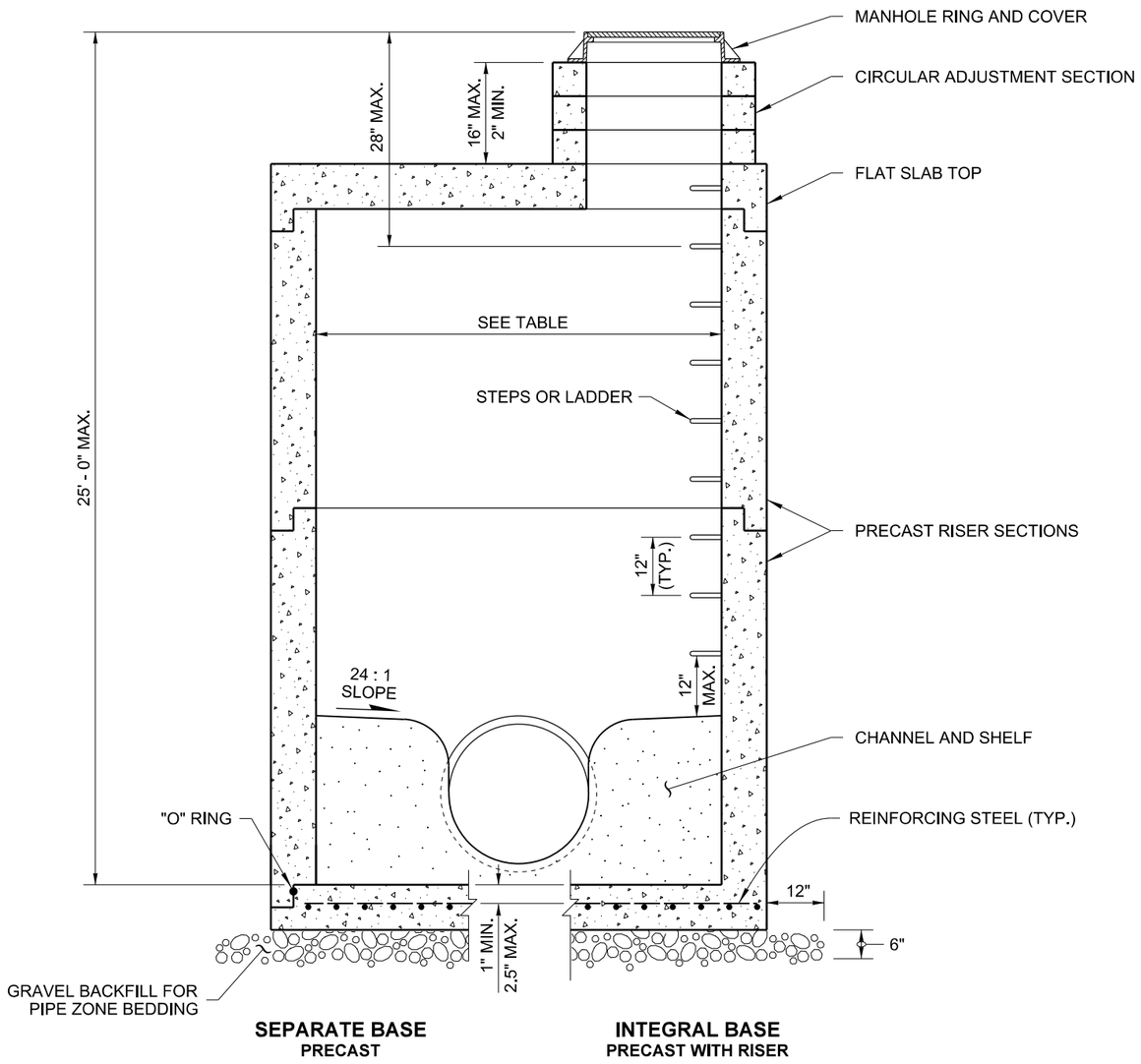
APPROVED FOR PUBLICATION

Pasco Bakotich III — STATE DESIGN ENGINEER

02-07-12 — DATE

Washington State Department of Transportation

DRAWN BY: LISA CYFORD



NOTES

1. Knockouts shall have a wall thickness of 2" (in) minimum to 2.5" (in) maximum.
2. For pipe allowances, see **Standard Plan B-10.20.**
3. No steps are required when height is 4' (ft) or less.

MANHOLE DIMENSION TABLE				
DIAM.	MIN. WALL THICKNESS	MIN. BASE THICKNESS	MAXIMUM KNOCKOUT SIZE	MINIMUM DISTANCE BETWEEN KNOCKOUTS
48"	4"	6"	36"	8"
54"	4.5"	8"	42"	8"
60"	5"	8"	48"	8"
72"	6"	8"	60"	12"
84"	8"	12"	72"	12"
96"	8"	12"	84"	12"
120"	10"	12"	96"	12"
144"	12"	12"	108"	12"

JULIE HEILMAN
STATE OF WASHINGTON
41819
REGISTERED
PROFESSIONAL ENGINEER

MANHOLE TYPE 3

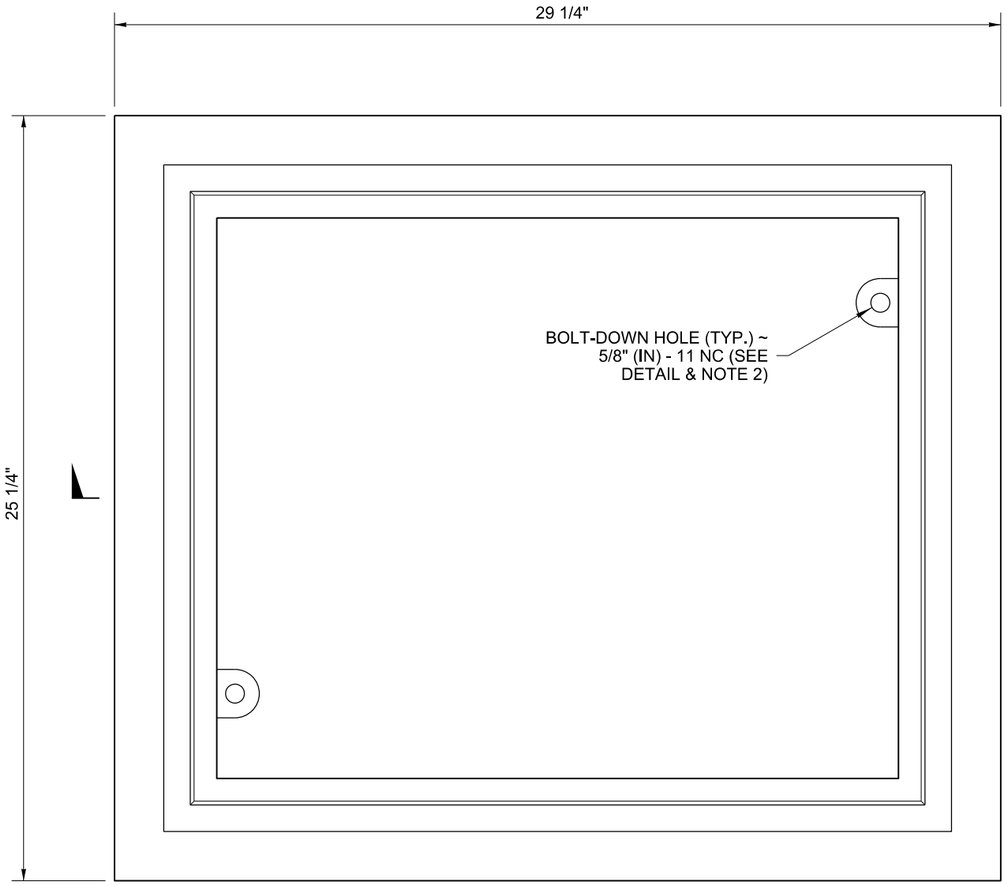
STANDARD PLAN B-15.60-02

SHEET 1 OF 1 SHEET

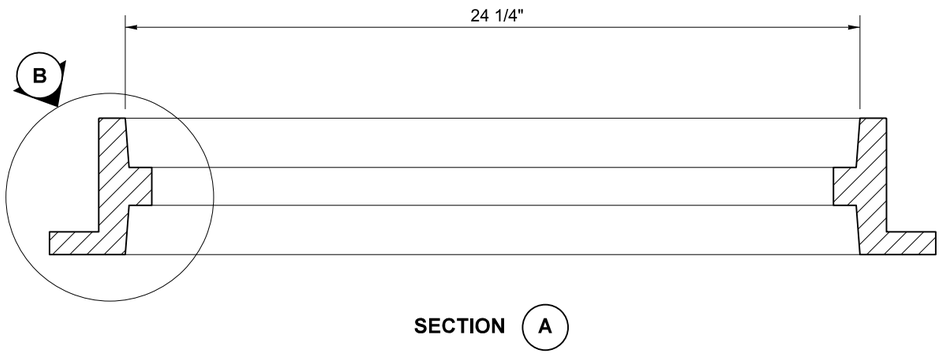
APPROVED FOR PUBLICATION

STATE DESIGN ENGINEER

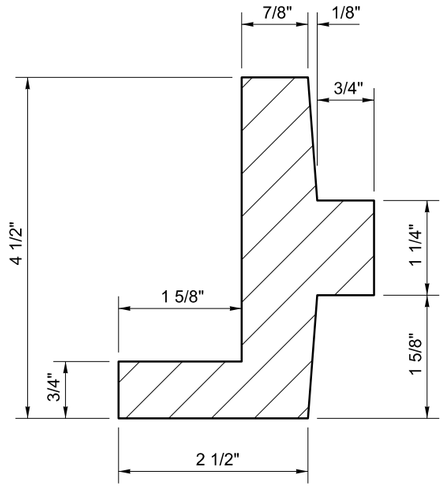
Washington State Department of Transportation



TOP



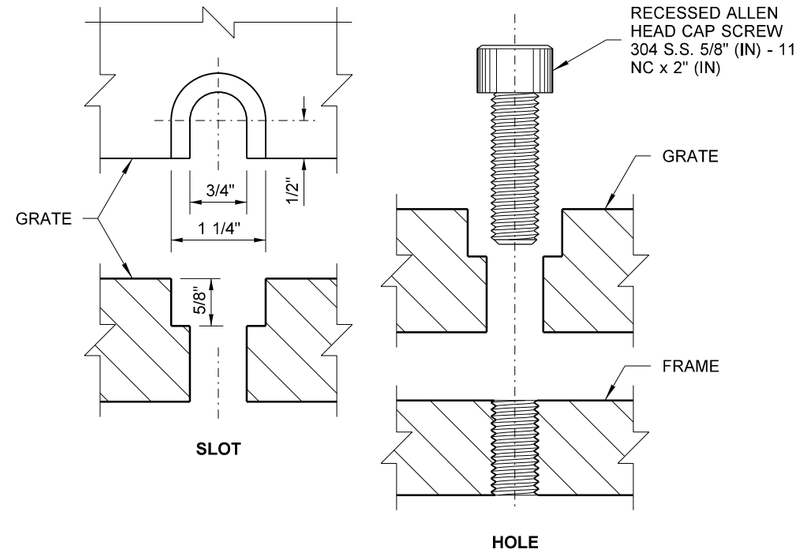
SECTION (A)



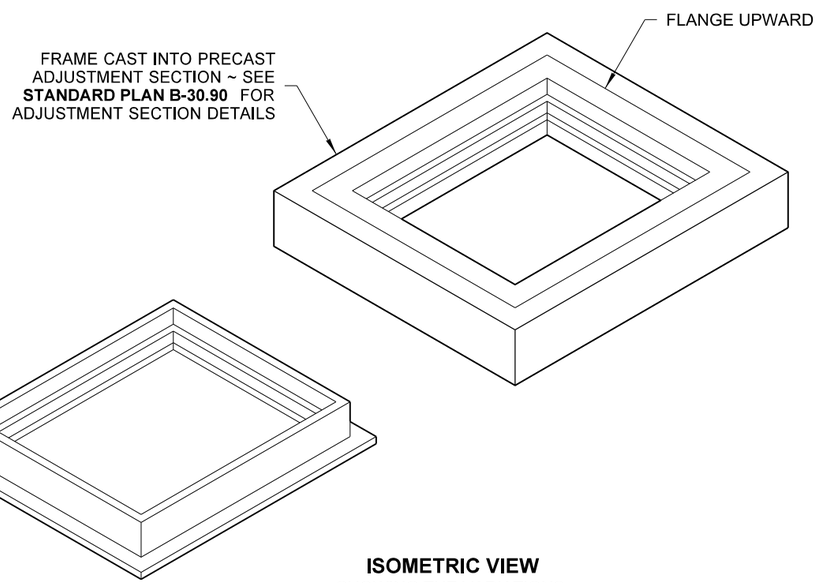
DETAIL (B)

NOTES

1. This frame is designed to accommodate 20" (in) × 24" (in) grates or covers as shown on **Standard Plans B-30.20, B-30.30, B-30.40,** and **B-30.50.**
2. Bolt-down capability is required on all frames, grates, and covers, unless specified otherwise in the Contract. Provide 2 holes in the frame that are vertically aligned with the grate or cover slots. The frame shall accept the 304 Stainless Steel (S.S.) 5/8" (in) - 11 NC × 2" (in) allen head cap screw by being tapped, or other approved mechanism. Location of bolt-down holes varies by manufacturer.
3. Refer to **Standard Specification Section 9-05.15** and **9-05.15(2)** for additional requirements.



BOLT-DOWN DETAILS
SEE NOTE 2



ISOMETRIC VIEW
SHOWING THE VARIATIONS

DRAWN BY: FERN LIDDELL

JULIE HEILMAN
STATE OF WASHINGTON
41819
REGISTERED
PROFESSIONAL ENGINEER

RECTANGULAR FRAME (REVERSIBLE)

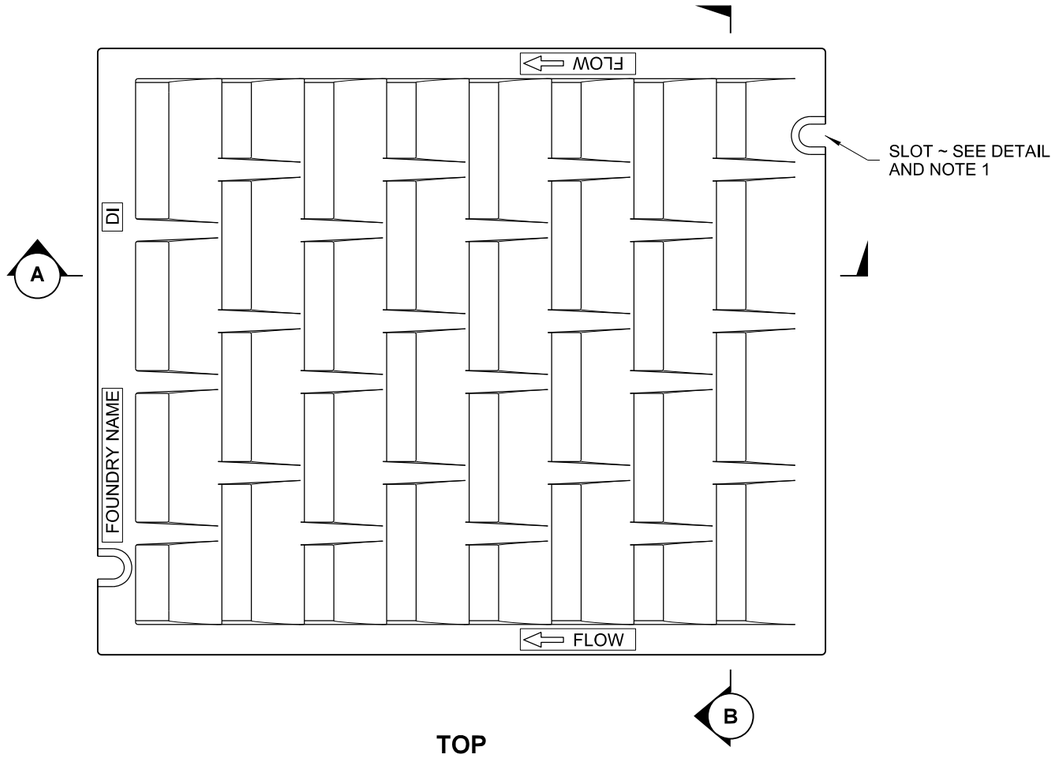
STANDARD PLAN B-30.10-03

SHEET 1 OF 1 SHEET

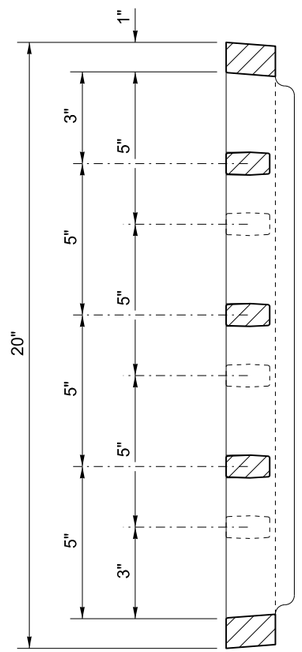
APPROVED FOR PUBLICATION

STATE DESIGN ENGINEER

Washington State Department of Transportation



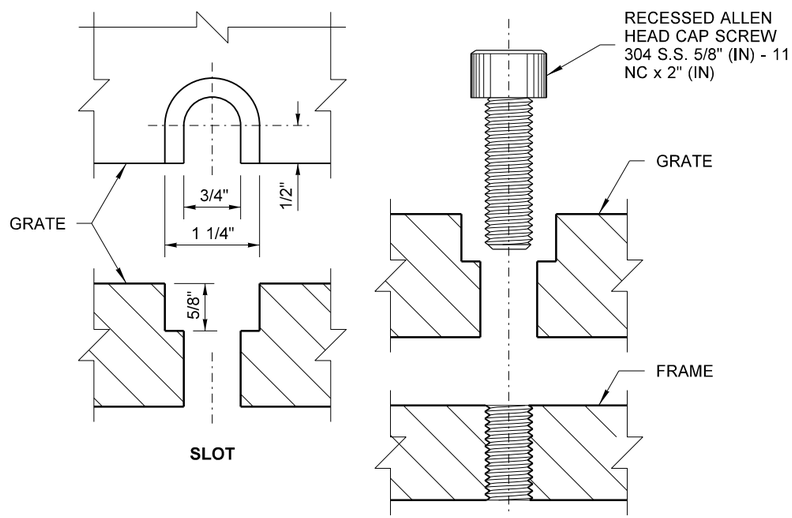
TOP



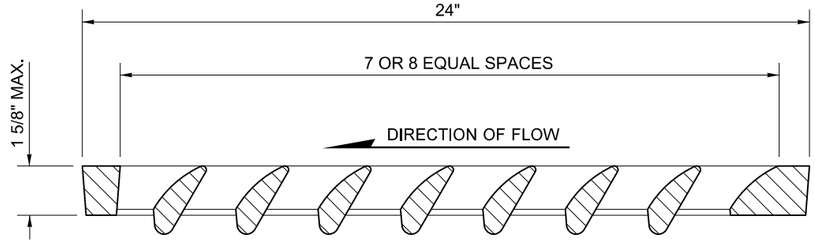
SECTION B

NOTES

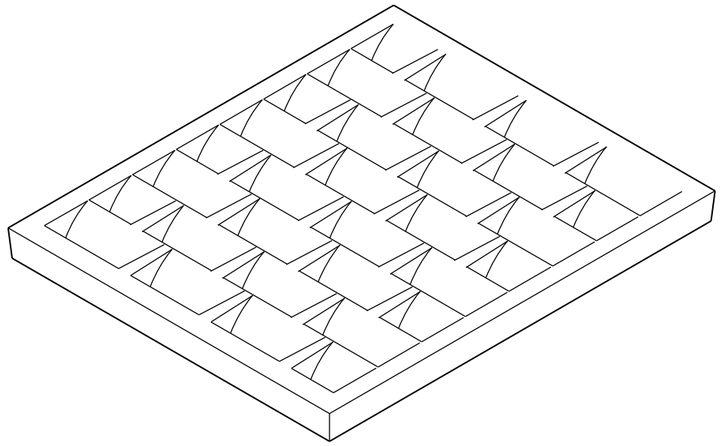
1. Bolt-down capability is required on all frames, grates, and covers, unless specified otherwise in the Contract. Provide 2 holes in the frame that are vertically aligned with the grate or cover slots. The frame shall accept the 304 Stainless Steel (S.S.) 5/8" (in) - 11 NC × 2" (in) allen head cap screw by being tapped, or other approved mechanism. Location of bolt-down holes varies by manufacturer.
2. Refer to **Standard Specification Section 9-05.15** and **9-05.15(2)** for additional requirements.
3. For frame details, see **Standard Plan B-30.10**.



BOLT-DOWN DETAILS
SEE NOTE 1



SECTION A



ISOMETRIC

RECTANGULAR VANED GRATE

STANDARD PLAN B-30.30-03

SHEET 1 OF 1 SHEET

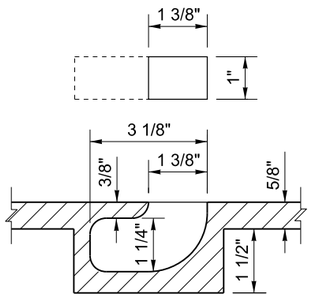
APPROVED FOR PUBLICATION

STATE DESIGN ENGINEER

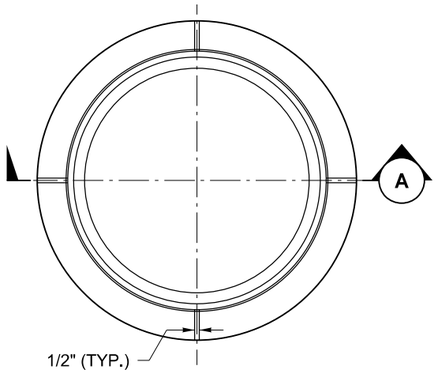
Washington State Department of Transportation

DRAWN BY: FERN LIDDELL

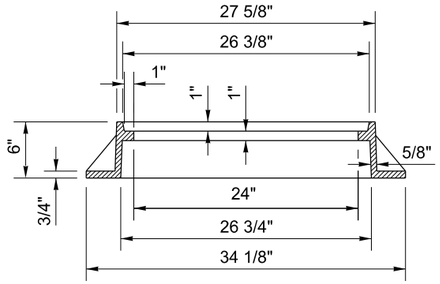
DRAWN BY: FERN LIDDELL



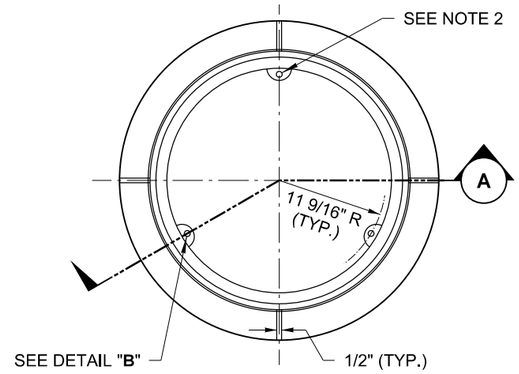
BLIND PICK NOTCH
DETAIL "A"



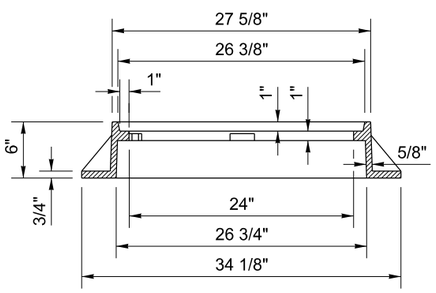
RING PLAN



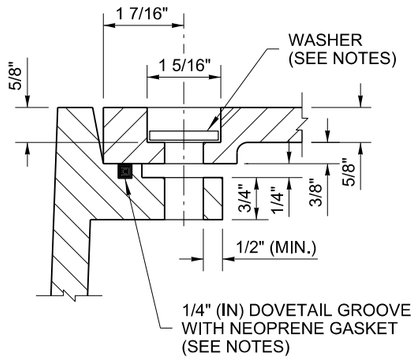
RING SECTION (A)



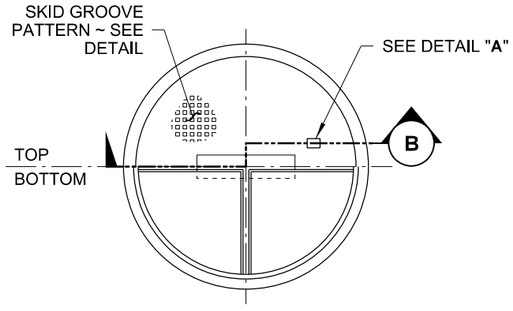
RING PLAN



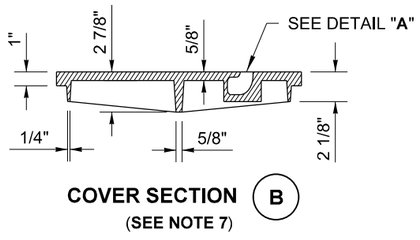
RING SECTION (A)



BOLT-DOWN / WATERTIGHT
DETAIL "B"

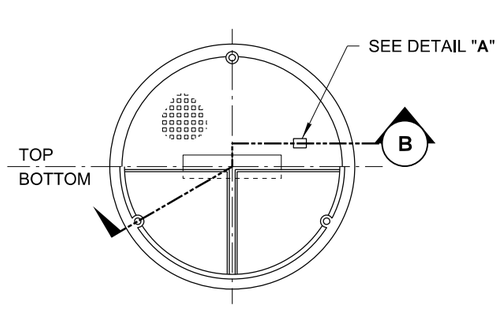


COVER PLAN

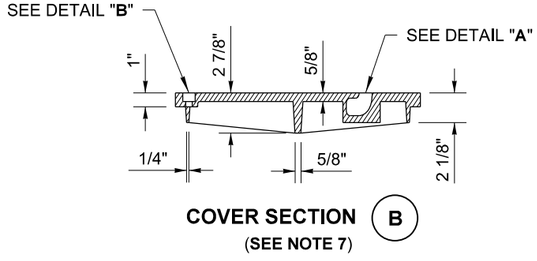


COVER SECTION (B)
(SEE NOTE 7)

STANDARD
TYPE 1



COVER PLAN

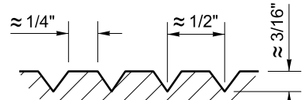


COVER SECTION (B)
(SEE NOTE 7)

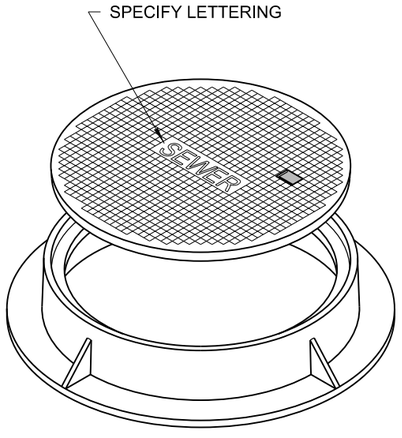
BOLT-DOWN / WATERTIGHT
TYPE 2

NOTES

1. The gasket and groove may be in the seat (frame) or in the underside of the cover. The gasket may be "T" shaped in section. The groove may be cast or machined.
2. Bolt-down capability is required on all frames, grates, and covers, unless specified otherwise in the Contract. Provide 3 holes in the frame that are vertically aligned with the grate or cover slots. The frame shall accept the 304 Stainless Steel (S.S) 5/8" - 11 NC x 2" (in) allen head cap screw by being tapped, or other approved mechanism. Location of bolt down holes varies by manufacturer.
3. For bolt-down manhole ring and covers that are not designated "Watertight," the neoprene gasket, groove, and washer are not required.
4. Washer shall be neoprene (Detail "B").
5. In lieu of blind pick notch for manhole covers, a single 1" (in) pick hole is acceptable. Hole location and number of holes may vary by manufacturer.
6. Alternative reinforcing designs are acceptable in lieu of the rib design.
7. For clarity, the vertical scale of the Cover Section has been exaggerated, it is 1.5 times the horizontal scale (1H:1.5V).



SKID GROOVE PATTERN
DETAIL



ISOMETRIC VIEW

JULIE HEILMAN
STATE OF WASHINGTON
41819
REGISTERED
PROFESSIONAL ENGINEER

CIRCULAR FRAME (RING) AND COVER

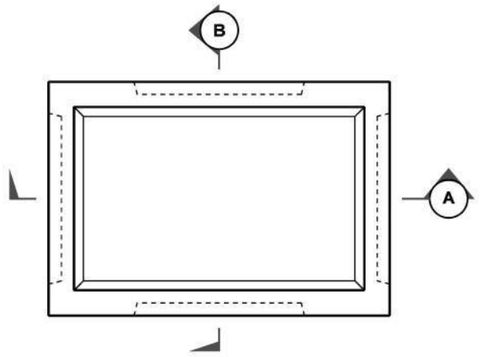
STANDARD PLAN B-30.70-04

SHEET 1 OF 1 SHEET

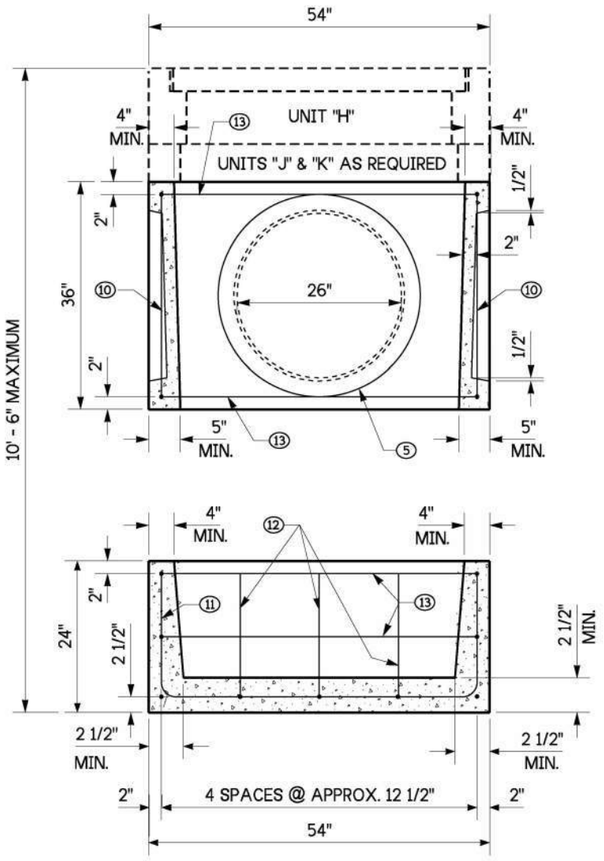
APPROVED FOR PUBLICATION

STATE DESIGN ENGINEER

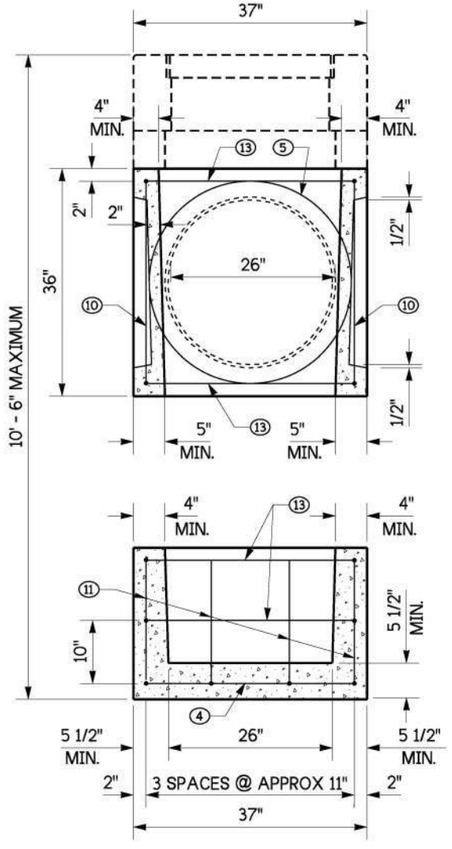
Washington State Department of Transportation



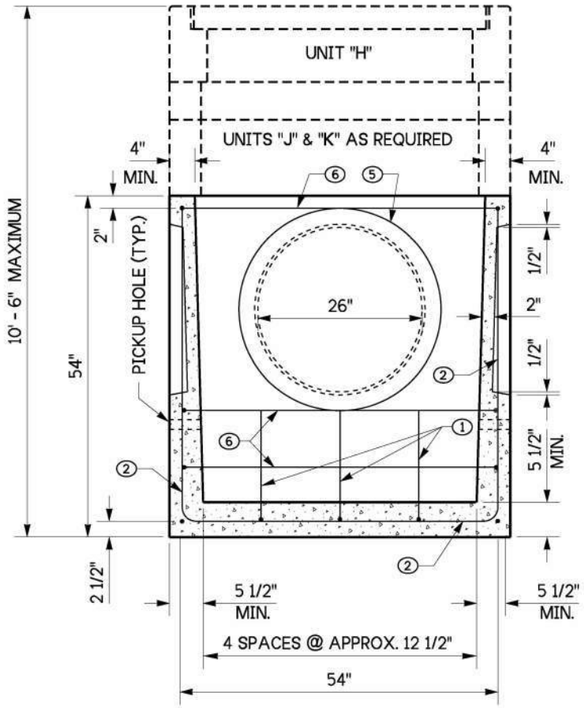
TOP VIEW



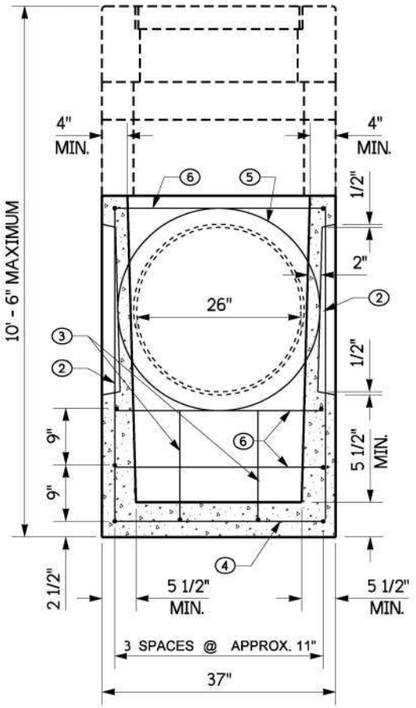
SECTION (A) TWO PIECE BASE



SECTION (B) TWO PIECE BASE



SECTION (A) ONE PIECE BASE



SECTION (B) ONE PIECE BASE

PIPE ALLOWANCES	
PIPE MATERIAL	MAXIMUM INSIDE DIAMETER
REINFORCED OR PLAIN CONCRETE	18"
ALL METAL PIPE	21"
CPSSP * (STD. SPEC. 9-05.20)	18"
SOLID WALL PVC (STD. SPEC. 9-05.12(1))	21"
PROFILE WALL PVC (STD. SPEC. 9-05.12(2))	21"

* CORRUGATED POLYETHYLENE STORM SEWER PIPE

Aug 23, 2023

GRATE INLET TYPE 2

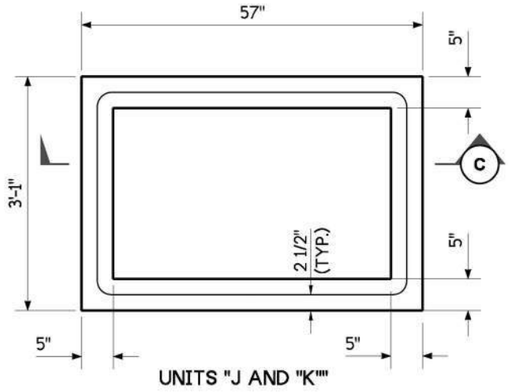
STANDARD PLAN B-35.40-01

APPROVED FOR PUBLICATION

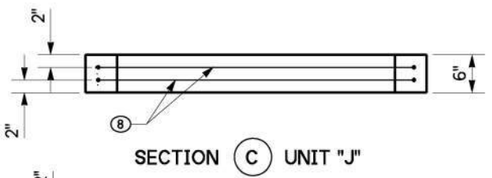
Mark A Gaines Aug 23, 2023

STATE DESIGN ENGINEER

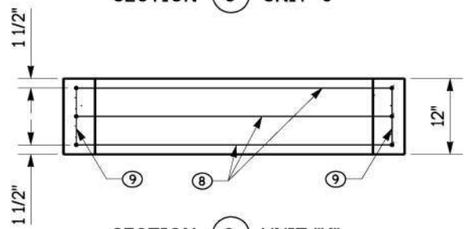
Washington State Department of Transportation



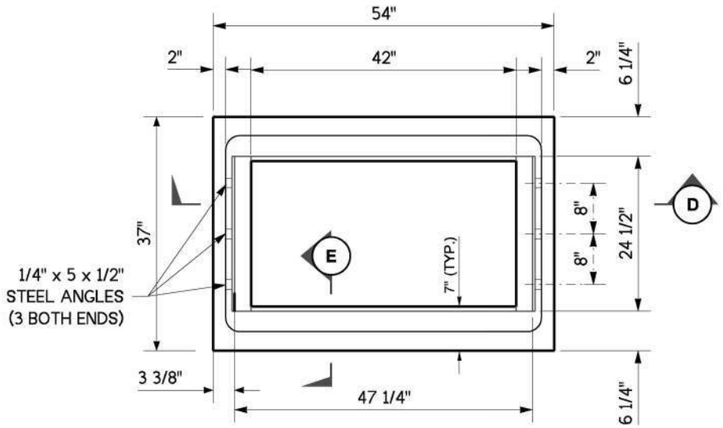
UNITS "J AND "K""



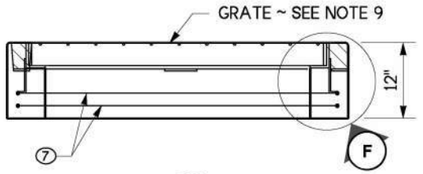
SECTION (C) UNIT "J"



SECTION (C) UNIT "K"



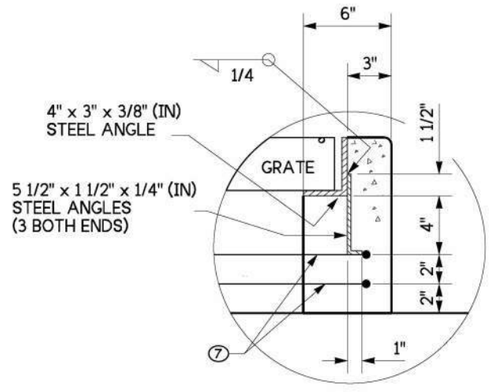
UNIT "H"



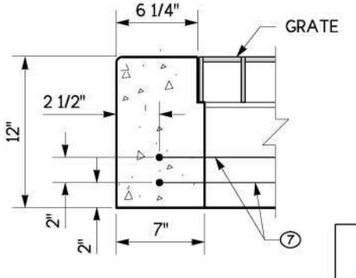
SECTION (D) UNIT "H"

NOTES:

1. The Steel Angles shall be set so that each bearing bar of prefabricated grate shall have full bearing on both ends. The finished top of concrete shall be even with the grate surface.
2. Top of inlet grate shall be placed at ground level to present an unobstructed ditch or median section.
3. All exposed concrete edges shall be finished with a 1/2" (in) radius.
4. Pipes may enter through the knockouts on any side at any reasonable angle, provided the outside of the pipe can be contained between two opposite walls.
5. The flow line of the outlet pipe shall be 18" (in) minimum above the inside bottom of the inlet structure.
6. The grade line of the top inside of any inlet pipe shall enter no lower than the grade line of the top inside of the outlet pipe.
7. Unit "H" and optional extension units "J" and "K" shall be grouted in place to the satisfaction of the Engineer.
8. All pickup holes shall be grouted full after the basin has been placed.
9. See contract for type of grate specified. See **Standard Plan B-40.20 and B-40.40** for grate details.
10. Knockouts shall have a wall thickness of 2" minimum. to 2.5" (in) maximum. Provide a 1.5" (in) minimum gap between the knockout wall and the outside of the pipe. After the pipe is installed, fill the gap with joint mortar in accordance with **Standard Specification Section 9-04.3**.
11. Pipe allowances will vary depending on pipe material used. See Region Hydraulic Engineer for assistance.



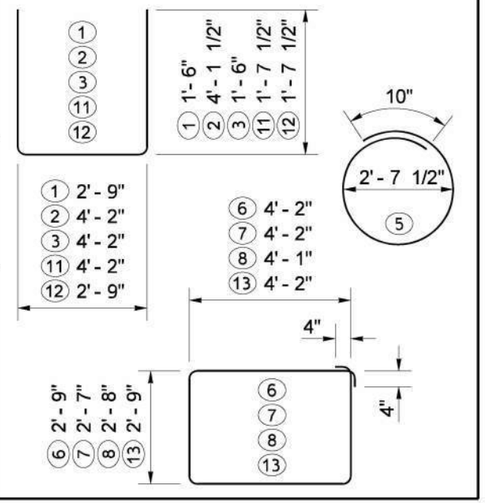
DETAIL (F)



SECTION (E) UNIT "H"

BAR LIST					
MARK		QTY.	SIZE	LENGTH	
①	BOTTOM SLAB AND SIDE WALL	3	3	5' - 9"	
②	BOTTOM SLAB AND SIDE WALL	2		12' - 5"	
③	BOTTOM SLAB AND SIDE WALL	2		7' - 2"	
④	BOTTOM SLAB AND SIDE WALL	2		2' - 9"	STRAIGHT
⑤	WALL	4		9' - 1"	HOOP
⑥	SIDE WALL	3		14' - 6"	HOOP
⑦	UNIT H	2		14' - 2"	HOOP
⑧	UNIT J	2		14' - 2"	HOOP
⑧	UNIT K	3		14' - 2"	HOOP
⑨	UNIT K	4		0' - 9"	STRAIGHT
⑩	SIDE WALL	8		2' - 8"	STRAIGHT
⑪	BOTTOM SLAB AND SIDE WALL	4		7' - 5"	
⑫	BOTTOM SLAB AND SIDE WALL	3		6' - 0"	
⑬	SIDE WALL	4		14' - 6"	HOOP

BENDING DIAGRAM
(ALL DIMENSIONS ARE OUT TO OUT)



JULIE HEILMAN
STATE OF WASHINGTON
41819
REGISTERED
PROFESSIONAL ENGINEER

Aug 23, 2023

GRATE INLET TYPE 2

STANDARD PLAN B-35.40-01

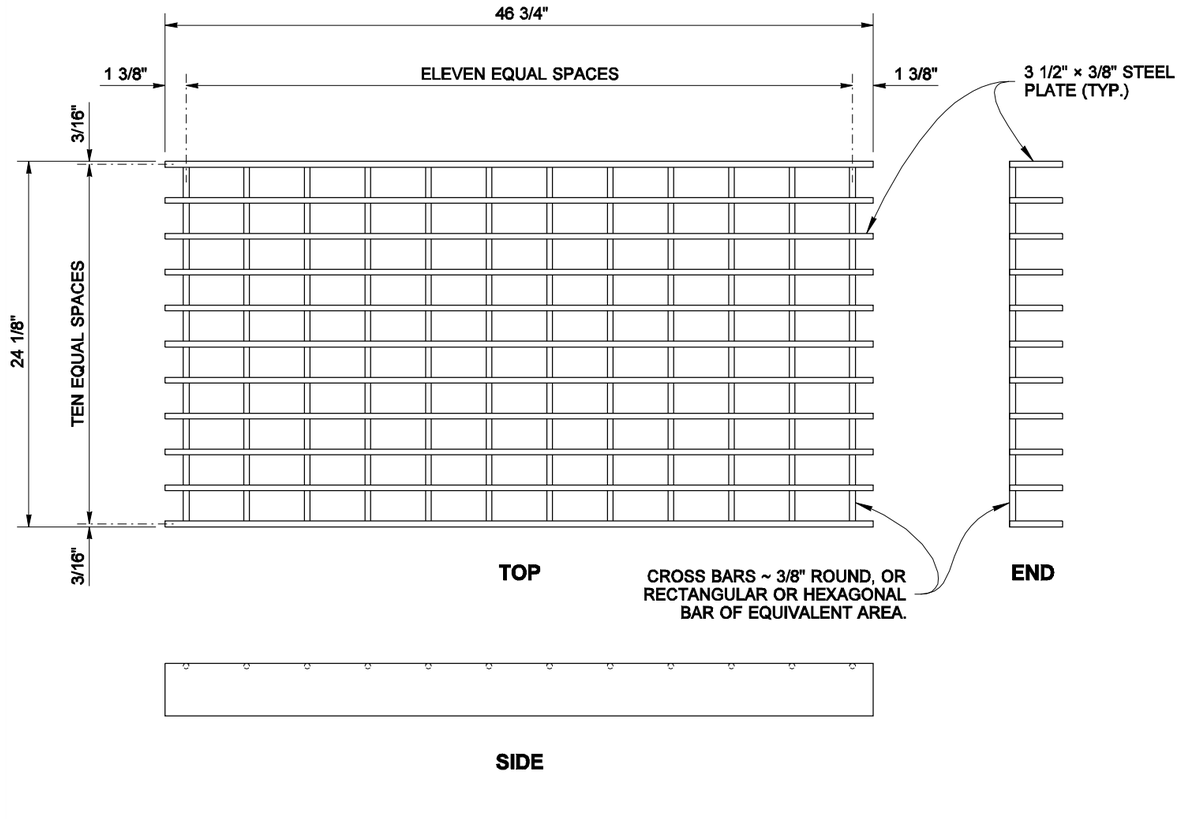
SHEET 2 OF 2 SHEETS

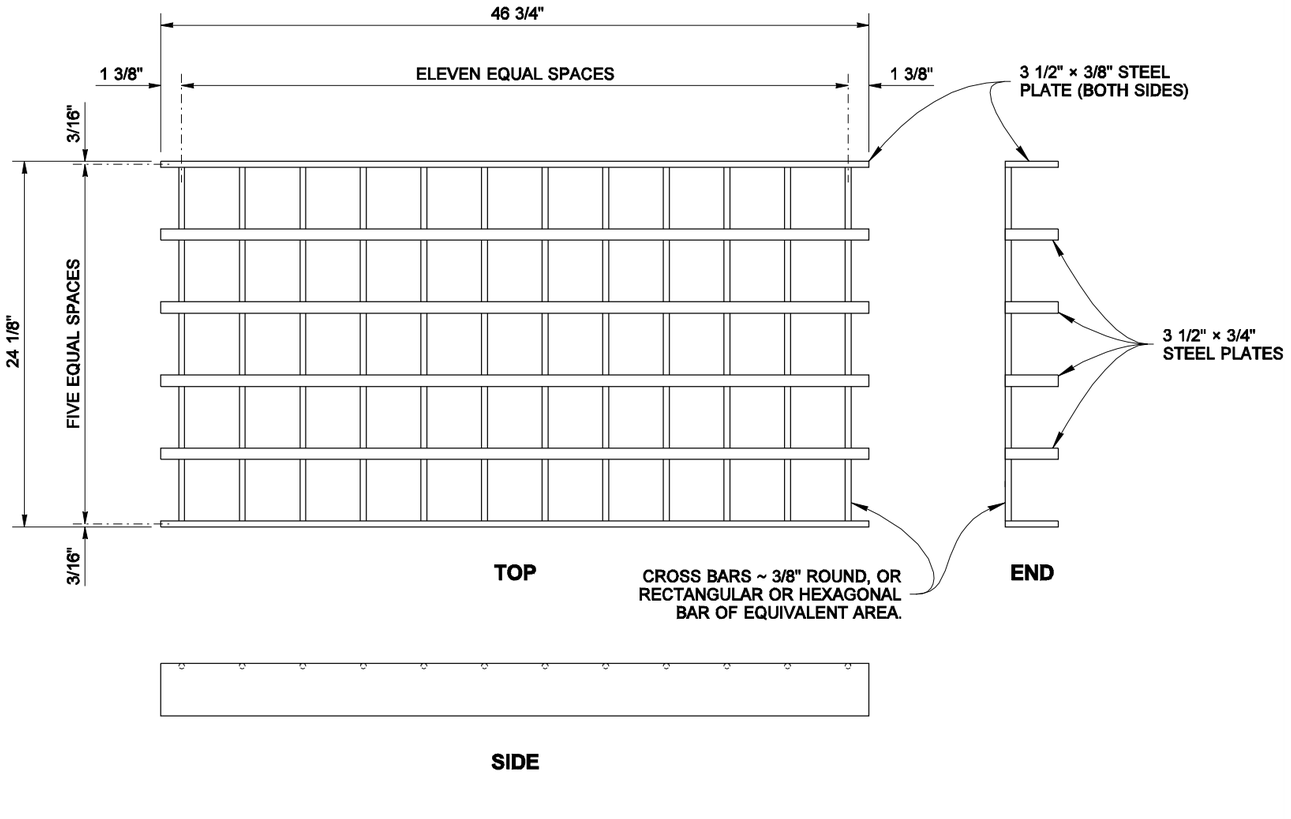
APPROVED FOR PUBLICATION

Mark A Dairs Aug 23, 2023

STATE DESIGN ENGINEER

Washington State Department of Transportation

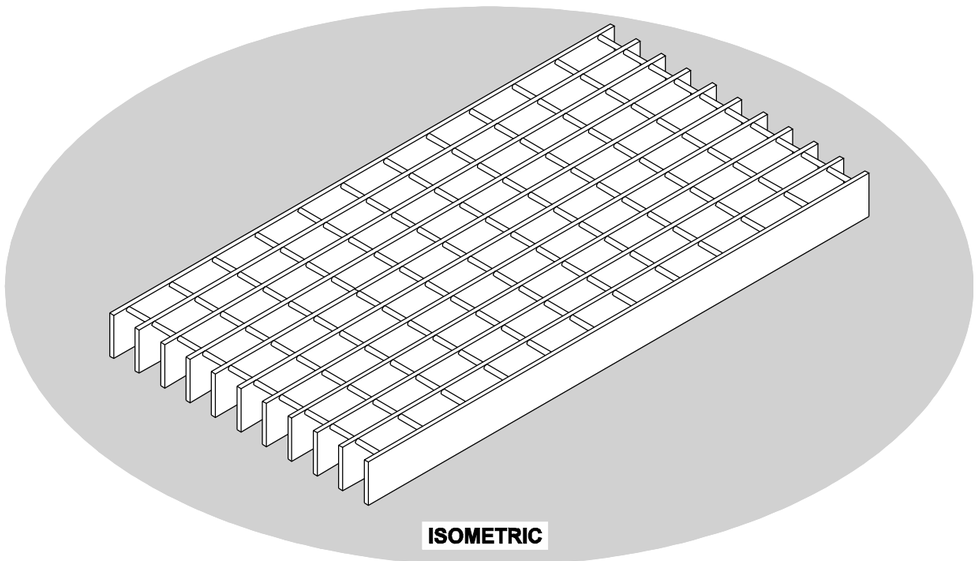




DRAWN BY: MARK SUJKA

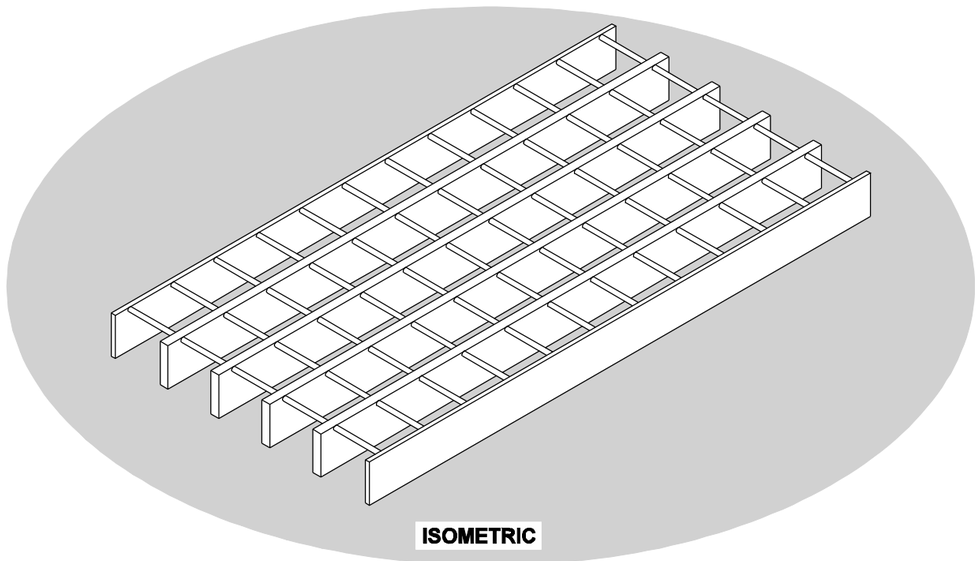
GRATE "A"

(APPROXIMATE WEIGHT 215 LBS)



GRATE "B"

(APPROXIMATE WEIGHT 215 LBS)



EXPIRES JULY 1, 2007

NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT BUT AN ELECTRONIC DUPLICATE. THE ORIGINAL, SIGNED BY THE ENGINEER AND APPROVED FOR PUBLICATION, IS KEPT ON FILE AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST.

WELDED GRATES FOR GRATE INLET

STANDARD PLAN B-40.20-00

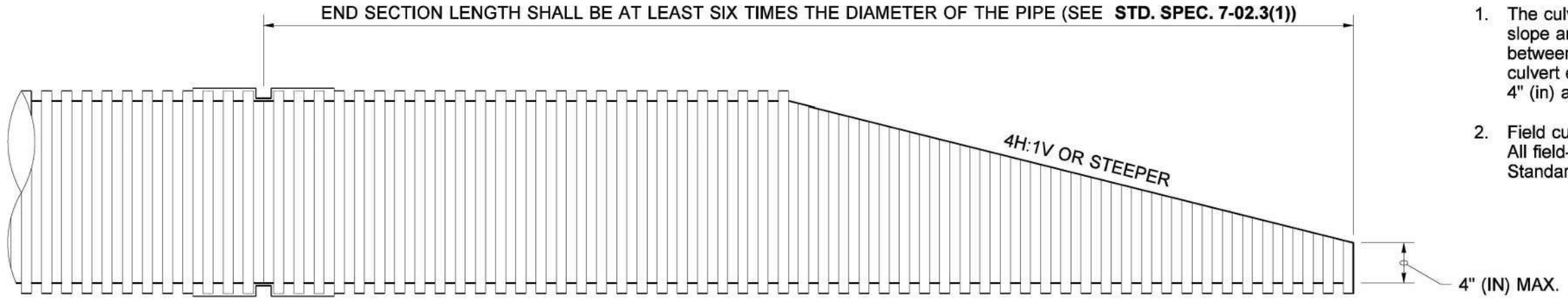
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

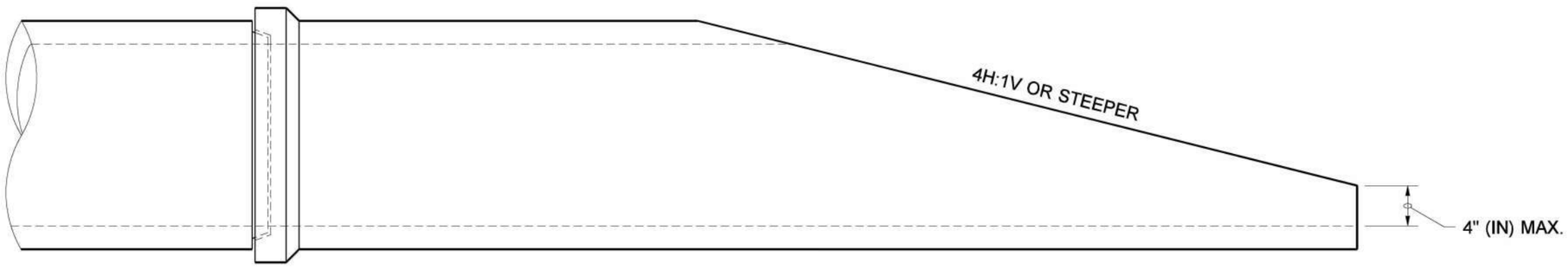
Harold J. Peterfeso — STATE DESIGN ENGINEER

06-01-06 — DATE

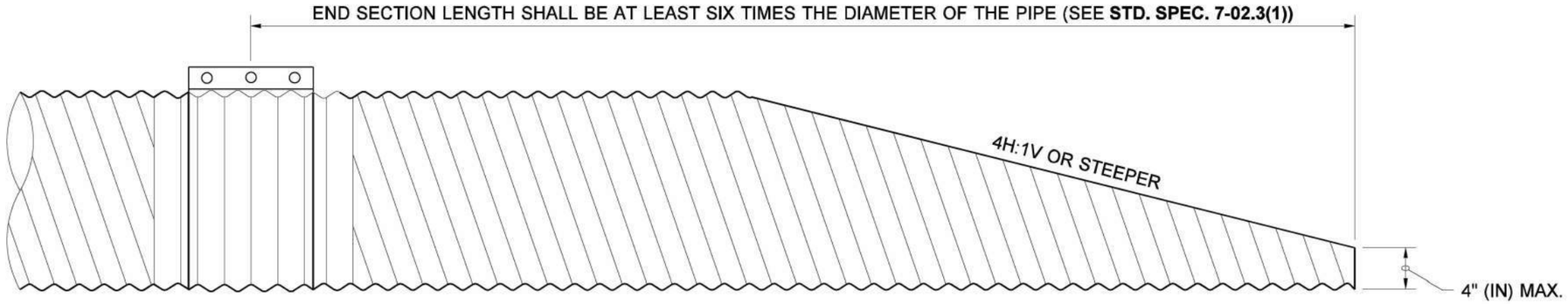
Washington State Department of Transportation



THERMOPLASTIC PIPE



CONCRETE PIPE



METAL PIPE

NOTES

1. The culvert ends shall be mitered to match the embankment or ditch slope and shall not be mitered flatter than 4H : 1V. When slopes are between 4H :1 V and 6H :1 V, shape the slope in the vicintiy of the culvert end to ensure that no part of the culvert protrudes more than 4" (in) above the ground line.

2. Field cutting of culvert ends is permitted when approved by the Engineer. All field-cut culvert pipe shall be treated with treatment as shown in the Standard Specifications or General Special Provisions.

FOR CULVERTS 30" (IN) DIAMETER OR LESS

JULIE HEILMAN
STATE OF WASHINGTON
41819
REGISTERED
PROFESSIONAL ENGINEER

Mar 14, 2022

MITERED END SECTIONS

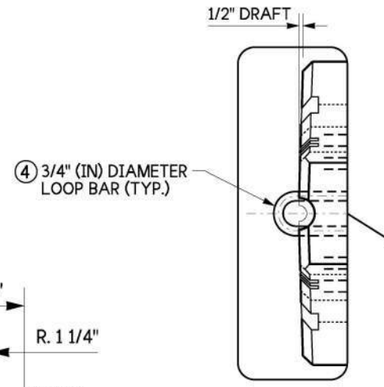
STANDARD PLAN B-70.20-01

SHEET 1 OF 1 SHEET

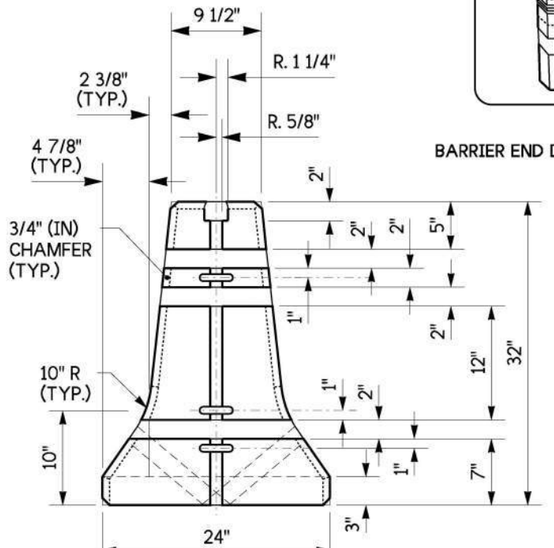
APPROVED FOR PUBLICATION
Mark Gaines
Mark Gaines (Mar 15, 2022 22:26 PDT)
Mar 15, 2022
STATE DESIGN ENGINEER
Washington State Department of Transportation

NOTES:

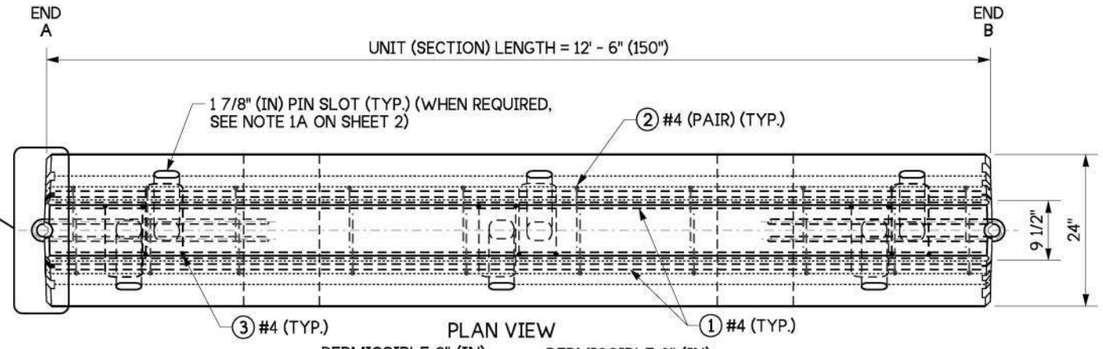
1. Concrete for Barrier Type F (Precast) shall be Class 5000.
2. The reinforcing steel details for the NARROW BASE barrier are the same as those shown for the 24" (in) wide barrier except for the stirrup bars (see Stirrup Bar Narrow Base Detail), Bar - 6 runs along the vertical face of the narrow base barrier with a 1 1/2" (in) clearance.
3. Type F barrier can be placed on horizontal curves with a radius of 150 feet or greater.



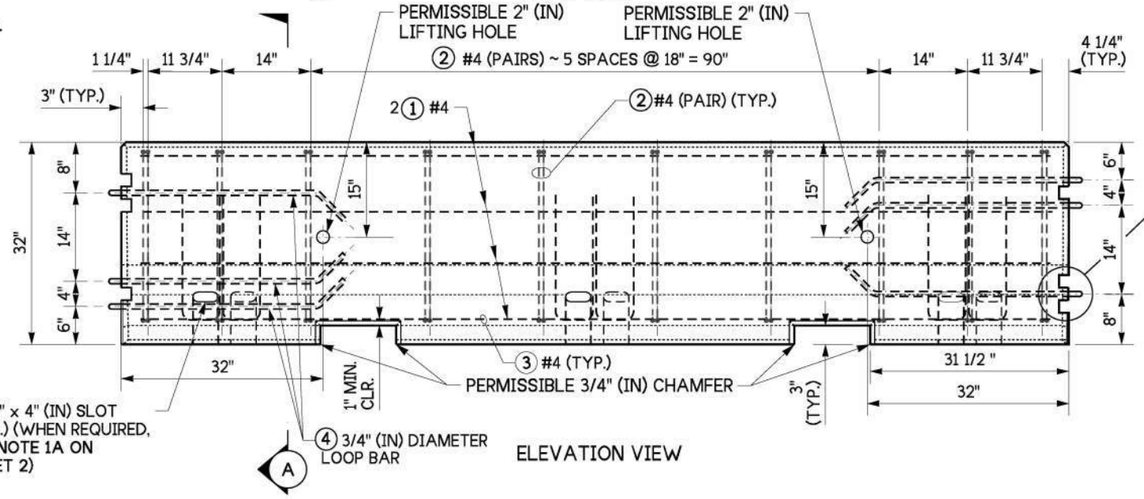
BARRIER END DETAIL



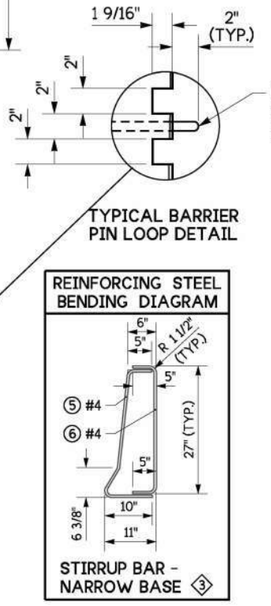
END A



PLAN VIEW

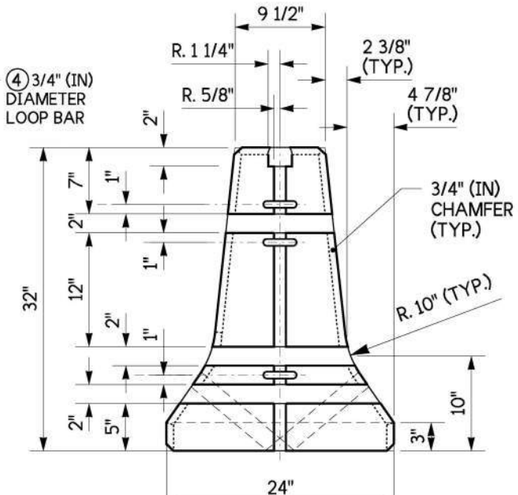


ELEVATION VIEW

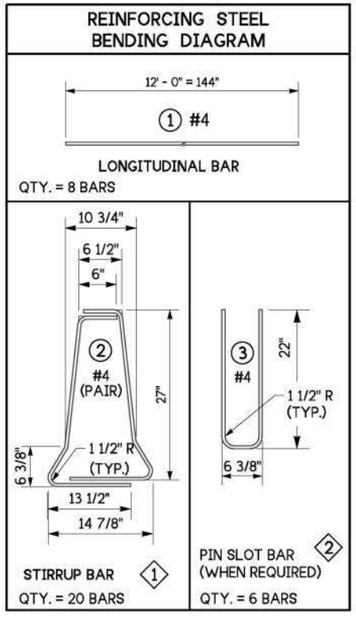


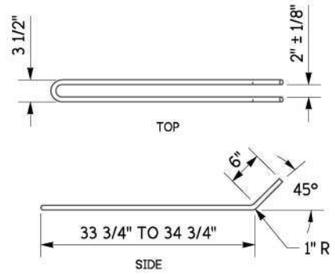
TYPICAL BARRIER PIN LOOP DETAIL

STIRRUP BAR - NARROW BASE ③



END B





LOOP BAR DETAIL

④ 3/4" (IN) DIAM. LOOP BAR PER ASTM A36 HOT ROLL HOT DIP GALVANIZE AFTER FABRICATION PER AASHTO M111.

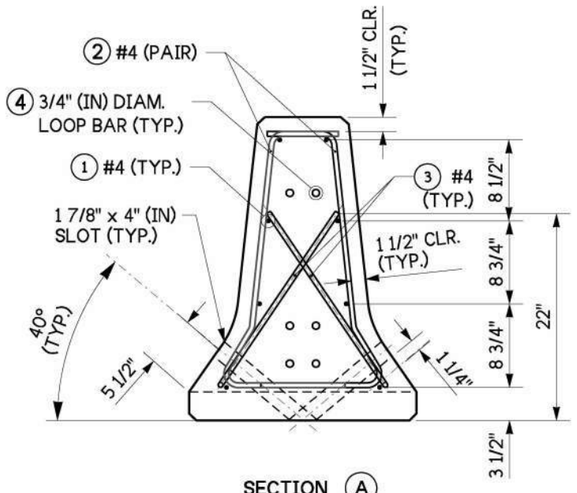
KEY NOTES:

STEEL WELDED WIRE REINFORCEMENT DEFORMED FOR CONCRETE MAY BE SUBSTITUTED FOR REINFORCING STEEL IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 6-10.3

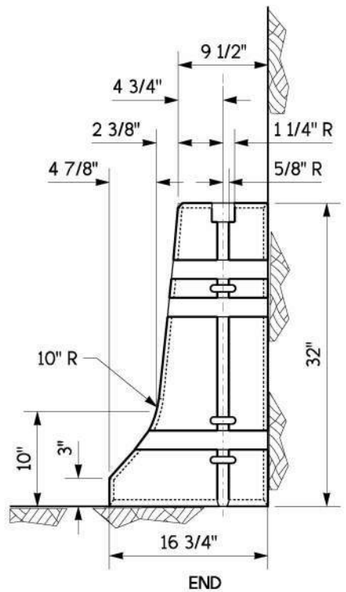
①② STIRRUP BAR MAY BE FABRICATED AS A SINGLE PIECE

②③ HOT DIP GALVANIZE AFTER FABRICATION PER ASTM A767

③ STIRRUP BAR - NARROW BASE MAY BE FABRICATED AS A SINGLE PIECE



SECTION (A)



END

NARROW BASE
(NO PIN SLOTS REQUIRED)

TIMOTHY J MOECKEL
STATE OF WASHINGTON
56294
REGISTERED
PROFESSIONAL ENGINEER

Jul 18, 2024

CONCRETE BARRIER TYPE F (PRECAST)

STANDARD PLAN C-60.10-04

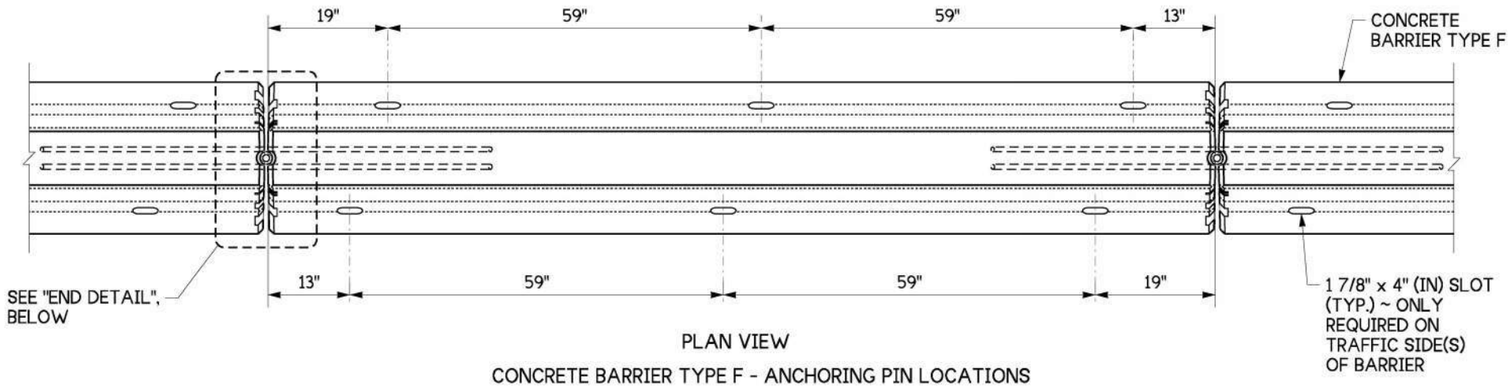
SHEET 1 OF 2 SHEETS

APPROVED FOR PUBLICATION

Mark A Haines Jul 21, 2024

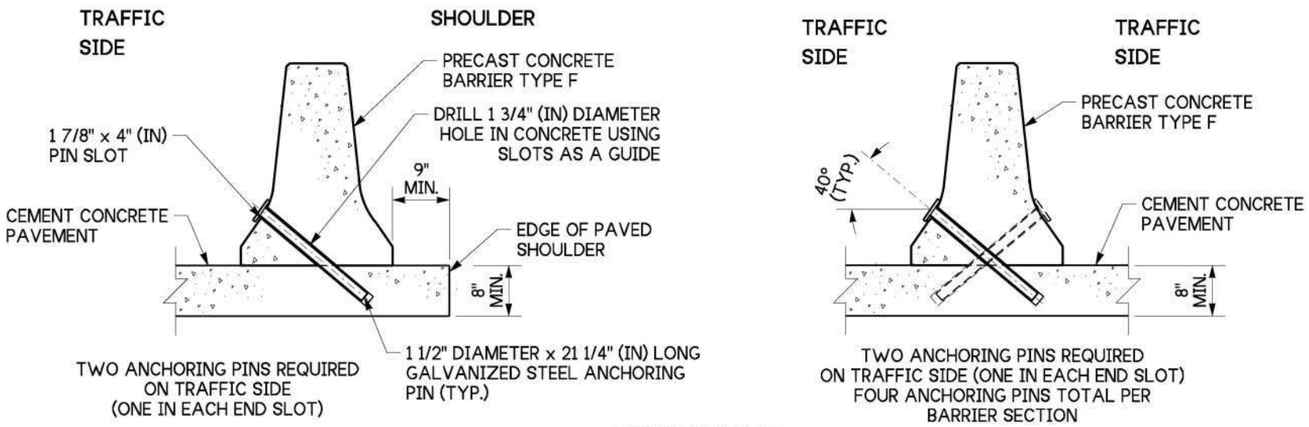
STATE DESIGN ENGINEER

Washington State Department of Transportation



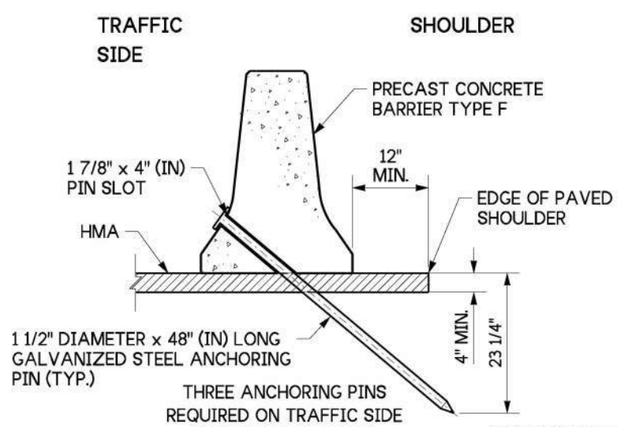
PLAN VIEW

CONCRETE BARRIER TYPE F - ANCHORING PIN LOCATIONS



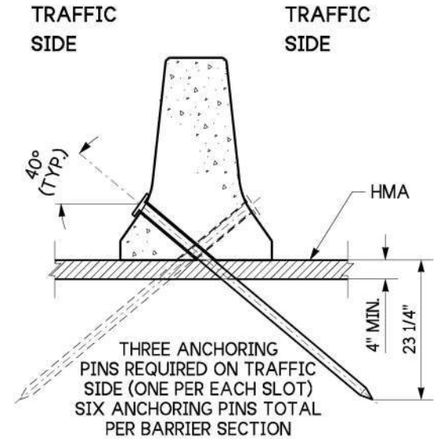
SECTION VIEWS

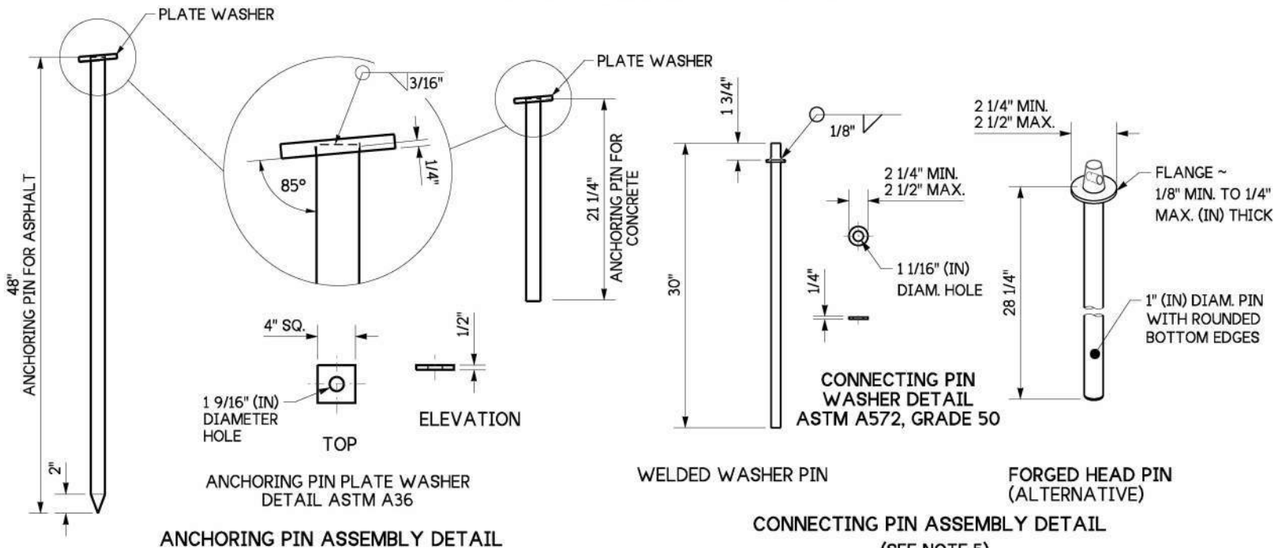
CONCRETE ANCHORING PIN LOCATIONS



SECTION VIEWS

HMA ANCHORING PIN LOCATIONS



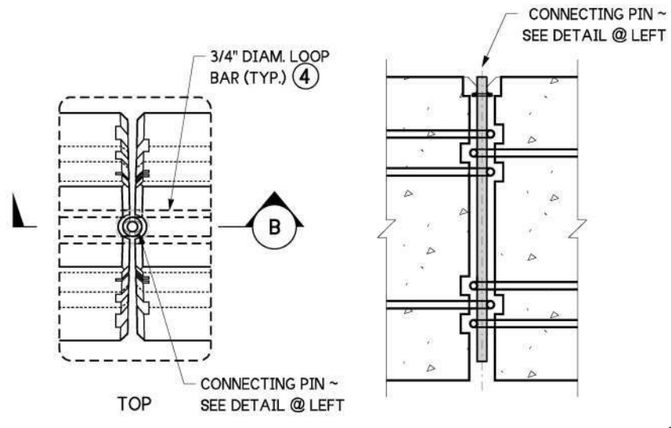


ANCHORING PIN ASSEMBLY DETAIL

1 1/2" (IN0 DIAMETER PER ASTM A36, HOT ROLL, HOT DIP GALVANIZE AFTER FABRICATION PER ASTM F2329

CONNECTING PIN ASSEMBLY DETAIL

(SEE NOTE 5)
1" (IN) DIAMETER PER ASTM A449
HOT DIP GALVANIZE AFTER FABRICATION PER ASTM F2329



END DETAIL

JOINING TWO BARRIER SEGMENTS

NOTES: (Anchoring and Joining Barrier)

1. Precast Concrete Barrier Type F can be installed in the following configurations:

   A. Unanchored on hot mix asphalt (HMA), or cement concrete pavement in permanent or temporary installations, and on compacted soil in temporary installations. It is permissible to manufacture theType F barrier without pin slots and pin slot bars when barrier is not anchored.
   B. Anchored on hot mix asphalt (HMA) or cement concrete pavement in permanent or temporary installations as shown on this plan. See **Standard Plans K-80.35 and K-80.37** for anchoring Type F Narrow Base in temporary installations on cement concrete pavement or bridge decks.

2. See **Standard Plan C-60.70** for anchoring patterns when transitioning from Type F anchored runs to another type of barrier run.

3. After removing the anchoring pins, clean the pin holes and fill them with sealant according to **Std. Specification Section 9-04.2.**

4. Remove slack between barrier segments after inserting the connecting pin.

5. Connecting Pin head designs vary among different Mfrs. Pin designs that are shaped differently than those shown in the details are acceptable if the bearing surface is within the minimum and maximum widths specified.

TIMOTHY J MOECKEL
STATE OF WASHINGTON
56294
REGISTERED
PROFESSIONAL ENGINEER

Jul 18, 2024

CONCRETE BARRIER TYPE F (PRECAST)

STANDARD PLAN C-60.10-04

SHEET 2 OF 2 SHEETS

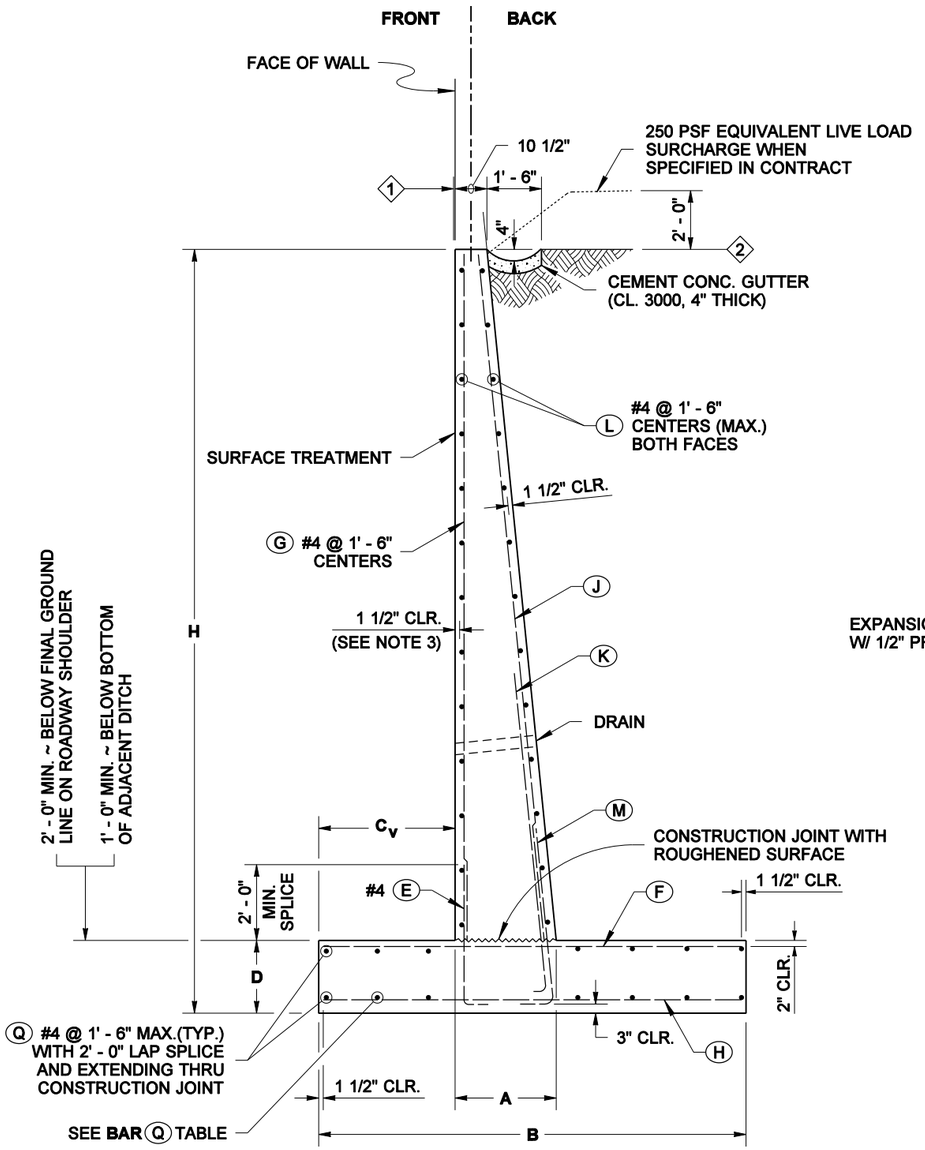
APPROVED FOR PUBLICATION

Mark A Gaines Jul 21, 2024

STATE DESIGN ENGINEER

Washington State Department of Transportation

DRAWN BY: BILL BERENS

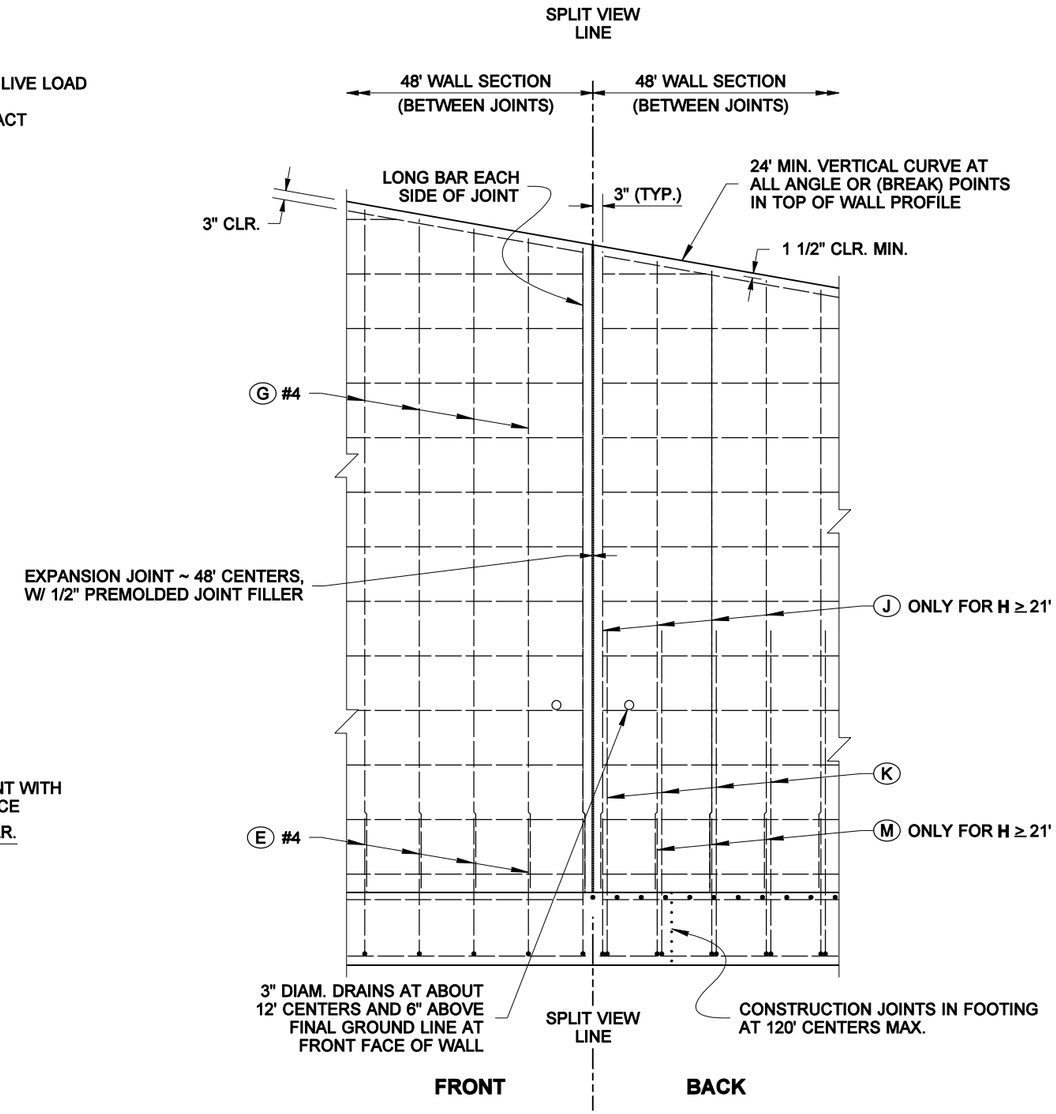


TYPICAL SECTION

BAR Q #4		
LOCATION	**WALL HEIGHT (H)**	**QTY.**
TOP OF FOOTING	≤ 16'	5
	16' ≤ 23'	7
	23' ≤ 28'	9
	29' ≤ 35'	11
BOTTOM OF FOOTING	≤ 16'	5
	16' ≤ 23'	7
	23' ≤ 28'	9
	29' ≤ 35'	11

1. OFFSET ~ SET TOP OF WALL BACK:
   H ≤ 20' ..... OFFSET = 1/2"
   H ≥ 20' ..... OFFSET (inches) = $\frac{H(ft)}{8}$ - 2

2. WHEN THE CONTRACT SPECIFIES CABLE FENCE, BACKFILL AND THE CEMENT CONCRETE GUTTER SHALL BE PLACED 6" MIN. FROM THE TOP OF THE WALL



SPLIT ELEVATION VIEW
(SHOWING SEPARATE REBAR LAYERS)

NOTES

1. All concrete shall be Class 4000, except as noted.
2. For backfill requirements, see Standard Plan D-4.
3. When Wall Type 1SW (saltwater) is specified, the concrete cover over steel in the front face and the total wall thickness shall be increased by 1".
4. When Wall Type 1SW (saltwater) is specified, concrete in the table column "Material Quantity" shall be increased by (0.003 x H) CY/LF.
5. Concrete in the 48 foot wall sections shall be placed separately between expansion joints with a minimum 24 hour period before placing concrete in the adjacent section.
6. This wall has been designed in accordance with the requirements of the AASHTO LRFD Bridge Design Specifications 4th Edition 2007 and interims through 2008. The seismic design of these walls has been completed using an effective PGA of 0.51 g.
7. If Traffic Barriers are required, See Standard Plans D-15.10, D-15.20 and D-15.30.

VERTICAL FACE WALL DESIGN WITH A 250 PSF SURCHARGE OR TRAFFIC BARRIER

BIJAN KHALEGHI
STATE OF WASHINGTON
27695
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER

NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT BUT AN ELECTRONIC DUPLICATE. THE ORIGINAL, SIGNED BY THE ENGINEER AND APPROVED FOR PUBLICATION, IS KEPT ON FILE AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST.

REINFORCED CONCRETE RETAINING WALL TYPE 1 AND 1SW
STANDARD PLAN D-10.10-01

SHEET 1 OF 2 SHEETS

APPROVED FOR PUBLICATION

Pasco Bakotich III — STATE DESIGN ENGINEER
12-02-08 — DATE

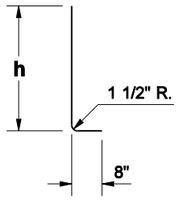
Washington State Department of Transportation

WALL HT H	DIMENSIONS				FOOTING REINFORCEMENT														STEM REINFORCEMENT					MATERIAL QUANTITY		MAXIMUM SOIL PRESSURE (PSF)			
					BAR (E) #4		BAR (F)			BAR (H)			BAR (K)					BAR (M)					BAR (J)			(G) #4					
	B	C_V	D	A	LENGTH	h	SIZE	SPA.	LENGTH	SIZE	SPA.	LENGTH	SIZE	SPA.	LENGTH	h	b	SIZE	SPA.	LENGTH	h	b	SIZE	SPA.	LENGTH	LENGTH	CONC. CY / LF	STEEL LBS / LF	SERVICE	STRENGTH	EXTREME EVENT 1	EXTREME EVENT 2
5'	6' - 6"	2' - 0"	1' - 0"	1' - 4"	3' - 4"	2' - 9"	#4	1' - 0"	6' - 3"	#4	1' - 6"	6' - 3"	#4	1' - 6"	5' - 2"	4' - 7 1/2"	8"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4' - 4"	0.40	25.7	915	1260	1131	1623
6'	6' - 6"	2' - 0"	1' - 0"	1' - 5 1/2"	3' - 4"	2' - 9"	#4	1' - 0"	6' - 3"	#4	1' - 6"	6' - 3"	#4	1' - 6"	6' - 2"	5' - 7 1/2"	8"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5' - 4"	0.45	28.2	992	1350	1311	1850
7'	6' - 6"	2' - 3"	1' - 0"	1' - 6 1/2"	3' - 4"	2' - 9"	#4	1' - 0"	6' - 3"	#4	1' - 6"	6' - 3"	#4	1' - 6"	7' - 2 1/2"	6' - 7 1/2"	8"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6' - 4"	0.51	29.3	1046	1443	1446	2049
8'	6' - 9"	2' - 3"	1' - 0"	1' - 7 1/2"	3' - 4"	2' - 9"	#4	1' - 0"	6' - 6"	#4	1' - 6"	6' - 6"	#4	1' - 0"	8' - 2 1/2"	7' - 7 1/2"	8"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7' - 4"	0.58	33.8	1176	1631	1660	2217
9'	7' - 0"	2' - 3"	1' - 0"	1' - 9"	3' - 4"	2' - 9"	#4	1' - 0"	6' - 9"	#4	1' - 6"	6' - 9"	#4	1' - 0"	9' - 2 1/2"	8' - 7 1/2"	8"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8' - 4"	0.65	38.1	1318	1836	1904	2402
10'	7' - 3"	2' - 3"	1' - 0"	1' - 10"	3' - 4"	2' - 9"	#4	10"	7' - 0"	#4	1' - 0"	7' - 0"	#4	1' - 0"	10' - 2 1/2"	9' - 7 1/2 "	8"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9' - 4"	0.72	43.6	1471	2060	2178	2604
11'	7' - 6"	2' - 3"	1' - 0"	1' - 11 1/2"	3' - 4"	2' - 9"	#4	9"	7' - 3"	#4	1' - 0"	7' - 3"	#4	10"	11' - 2 1/2"	10' - 8"	8"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	10' - 4"	0.80	48.8	1636	2303	2486	2822
12'	7' - 9"	2' - 6"	1' - 0"	2' - 0 1/2"	3' - 4"	2' - 9"	#4	9"	7' - 6"	#4	10"	7' - 6"	#4	10"	12' - 2 1/2"	11' - 8"	8"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	11' - 4"	0.88	53.0	1733	2455	2676	2958
13'	8' - 0"	2' - 6"	1' - 0"	2' - 1 1/2"	3' - 4"	2' - 9"	#4	8"	7' - 9"	#4	10"	7' - 9"	#4	8"	13' - 2 1/2"	12' - 8"	8"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	12' - 4"	0.96	59.7	1915	2728	3041	3202
14'	8' - 3"	2' - 6"	1' - 0"	2' - 3"	3' - 4"	2' - 9"	#4	7"	8' - 0"	#4	8"	8' - 0"	#4	7"	14' - 2 1/2"	13' - 8"	8"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	13' - 4"	1.05	67.9	2109	3022	3451	3462
15'	8' - 9"	2' - 6"	1' - 0"	2' - 4"	3' - 4"	2' - 9"	#5	8"	8' - 6"	#4	8"	8' - 6"	#4	6"	15' - 3"	14' - 8"	8"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14' - 4"	1.16	78.6	2277	3261	3804	3570
16'	9' - 3"	2' - 9"	1' - 3"	2' - 5"	3' - 7"	3' - 0"	#5	8"	9' - 0"	#4	8"	9' - 0"	#5	6"	16' - 4"	15' - 8"	10"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	15' - 1"	1.33	87.1	2377	3403	4031	3628
17'	9' - 9"	3' - 0"	1' - 6"	2' - 6"	3' - 10"	3' - 3"	#5	8"	9' - 6"	#4	8"	9' - 6"	#5	8"	17' - 4"	16' - 8"	10"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	15' - 10"	1.51	91.9	2478	3546	4264	3700
18'	10' - 3"	3' - 3"	1' - 6"	2' - 7"	3' - 10"	3' - 3"	#5	8"	10' - 0"	#5	10"	10' - 0"	#5	6"	18' - 4"	17' - 8"	10"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	16' - 10"	1.63	108.8	2555	3658	4422	3741
19'	10' - 9"	3' - 6"	1' - 9"	2' - 8"	4' - 1"	3' - 6"	#5	8"	10' - 6"	#5	10"	10' - 6"	#6	9"	19' - 5 1/2"	18' - 8 1/2"	1' - 0"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	17' - 7"	1.83	114.2	2658	3803	4664	3834
20'	11' - 6"	3' - 6"	1' - 9"	2' - 9 1/2"	4' - 1"	3' - 6"	#6	9"	11' - 3"	#5	10"	11' - 3"	#6	7"	20' - 5 1/2"	19' - 8 1/2"	1' - 0"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	18' - 7"	1.97	137.0	2790	3970	4926	3905
21'	12' - 0"	3' - 9"	2' - 0"	2' - 10"	4' - 4"	3' - 9"	#6	9"	11' - 9"	#5	10"	11' - 9"	#6	1' - 4"	12' - 10 1/2"	12' - 1"	1' - 0"	#6	1' - 4"	5' - 2 1/2"	4' - 4"	1' - 0"	#6	1' - 4"	19' - 6 1/2"	19' - 4"	2.19	130.1	2892	4115	5173	4012
22'	12' - 6"	4' - 0"	2' - 0"	2' - 11 1/2"	4' - 4"	3' - 9"	#6	8"	12' - 3"	#5	8"	12' - 3"	#6	1' - 4"	14' - 2 1/2"	13' - 5"	1' - 0"	#6	1' - 4"	5' - 2 1/2"	4' - 4"	1' - 0"	#6	1' - 4"	20' - 6 1/2"	20' - 4"	2.34	143.3	2970	4227	5338	4083
23'	13' - 0"	4' - 3"	2' - 3"	3' - 0 1/2"	4' - 7"	4' - 0"	#6	9"	12' - 9"	#5	8"	12' - 9"	#6	1' - 4"	15' - 6 1/2"	14' - 9"	1' - 0"	#6	1' - 4"	5' - 5 1/2"	4' - 7"	1' - 0"	#6	1' - 4"	21' - 3 1/2"	21' - 1"	2.58	146.6	3074	4373	5592	4198
24'	13' - 9"	4' - 3"	2' - 3"	3' - 1 1/2"	4' - 7"	4' - 0"	#6	7"	13' - 6"	#5	7"	13' - 6"	#6	1' - 4"	16' - 10"	16' - 0 1/2"	1' - 0"	#6	1' - 4"	5' - 5 1/2"	4' - 7"	1' - 0"	#6	1' - 4"	22' - 3 1/2"	22' - 1"	2.75	166.0	3207	4544	5860	4311
25'	14' - 3"	4' - 6"	2' - 6"	3' - 2 1/2"	4' - 10"	4' - 3"	#6	7"	14' - 0"	#6	10"	14' - 0"	#6	1' - 4"	18' - 1 1/2"	17' - 4"	1' - 0"	#6	1' - 4"	5' - 8 1/2"	4' - 10"	1' - 0"	#6	1' - 4"	23' - 0 1/2"	22' - 10"	3.01	172.9	3310	4689	6120	4431
26'	14' - 9"	4' - 9"	2' - 6"	3' - 3 1/2"	4' - 10"	4' - 3"	#6	6"	14' - 6"	#6	9"	14' - 6"	#6	1' - 4"	19' - 4 1/2"	18' - 7 1/2"	1' - 0"	#6	1' - 4"	5' - 8 1/2"	4' - 10"	1' - 0"	#6	1' - 4"	24' - 0 1/2"	23' - 10"	3.18	188.8	3388	4802	6290	4515
27'	15' - 6"	5' - 0"	2' - 9"	3' - 4 1/2"	5' - 1"	4' - 6"	#6	6"	15' - 3"	#6	9"	15' - 3"	#6	1' - 0"	18' - 7"	17' - 9 1/2"	1' - 0"	#6	1' - 0"	5' - 11 1/2"	5' - 1"	1' - 0"	#6	1' - 0"	24' - 9 1/2"	24' - 7"	3.48	213.2	3467	4897	6454	4587
28'	16' - 0"	5' - 3"	3' - 0"	3' - 5 1/2"	5' - 4"	4' - 9"	#6	6"	15' - 9"	#6	8"	15' - 9"	#6	10"	18' - 4"	17' - 6 1/2"	1' - 0"	#6	10"	6' - 2 1/2"	5' - 4"	1' - 0"	#6	10"	25' - 6 1/2"	25' - 4"	3.77	237.8	3571	5043	6723	4713
29'	16' - 9"	5' - 6"	3' - 3"	3' - 6 1/2"	5' - 7"	5' - 0"	#7	8"	16' - 6"	#6	8"	16' - 6"	#8	1' - 4"	19' - 11 1/2"	18' - 11"	1' - 3"	#8	1' - 4"	8' - 4 1/2"	7' - 2 1/2"	1' - 3"	#8	1' - 4"	26' - 4"	26' - 1"	4.11	265.1	3653	5143	6898	4796
30'	17' - 3"	5' - 9"	3' - 3"	3' - 7 1/2"	5' - 7"	5' - 0"	#7	7"	17' - 0"	#6	7"	17' - 0"	#8	1' - 4"	21' - 3 1/2"	20' - 3"	1' - 3"	#8	1' - 4"	8' - 4 1/2"	7' - 2 1/2"	1' - 3"	#8	1' - 4"	27' - 4"	27' - 1"	4.30	287.4	3733	5257	7075	4888
31'	18' - 0"	6' - 0"	3' - 6"	3' - 8 1/2"	5' - 10"	5' - 3"	#7	7"	17' - 9"	#6	7"	17' - 9"	#8	1' - 4"	22' - 7"	21' - 6 1/2"	1' - 3"	#8	1' - 4"	8' - 7 1/2"	7' - 5 1/2"	1' - 3"	#8	1' - 4"	28' - 1"	27' - 10"	4.65	298.5	3817	5362	7258	4979
32'	18' - 6"	6' - 3"	3' - 9"	3' - 9 1/2"	6' - 1"	5' - 6"	#7	7"	18' - 3"	#6	7"	18' - 3"	#8	1' - 2"	22' - 7 1/2"	21' - 7"	1' - 3"	#8	1' - 2"	8' - 10 1/2"	7' - 8 1/2"	1' - 3"	#8	1' - 2"	28' - 10"	28' - 7"	4.99	322.9	3923	5509	7540	5111
33'	19' - 3"	6' - 6"	4' - 0"	3' - 10"	6' - 4"	5' - 9"	#7	7"	19' - 0"	#6	7"	19' - 0"	#8	1' - 0"	22' - 4 1/2"	21' - 4"	1' - 3"	#8	1' - 0"	9' - 1 1/2"	7' - 11 1/2"	1' - 3"	#8	1' - 0"	29' - 7"	29' - 4"	5.38	354.3	4009	5618	7733	5208
34'	20' - 0"	6' - 9"	4' - 3"	3' - 11"	6' - 7"	6' - 0"	#7	7"	19' - 9"	#6	7"	19' - 9"	#9	10"	19' - 2 1/2"	17' - 11 1/2"	1' - 6"	#9	10"	10' - 8 1/2"	9' - 4"	1' - 6"	#9	10"	30' - 4"	30' - 1"	5.78	444.8	4097	5729	7933	5308
35'	20' - 6"	7' - 0"	4' - 6"	4' - 0"	6' - 10"	6' - 3"	#7	7"	20' - 3"	#6	7"	20' - 3"	#10	1' - 0"	21' - 1 1/2"	19' - 9"	1' - 8"	#10	1' - 0"	12' - 4"	10' - 10"	1' - 8"	#10	1' - 0"	31' - 1"	30' - 10"	6.16	480.4	4203	5877	8224	5442

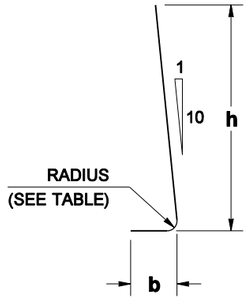
REINFORCEMENT NOTES

(1) IF TRAFFIC BARRIER IS USED, ADD 0.100 CY/LF OF CONCRETE CLASS 4000 FOR BARRIER ALTERNATE 1. ADD 0.123 CY/LF OF CONCRETE CLASS 4000 FOR BARRIER ALTERNATE 2. SEE STANDARD PLAN D-15.10

(2) ADD 28 LB/LF OF REINFORCING STEEL FOR BARRIER ALTERNATE 1 OR 19 LB/LF OF REINFORCING STEEL FOR BARRIER ALTERNATE 2. SEE STANDARD PLAN D-15.10



BAR (E)
@ 1' - 6" CENTERS



BAR	RADIUS
#4	1 1/2"
#5	1 7/8"
#6	2 1/4"
#7	2 5/8"
#8	3"
#9	4 3/4"
#10	5 3/8"
#11	6"

BARS (K) AND (M)

BAR	MIN. SPLICE
#4	2' - 0"
#5	2' - 0"
#6	2' - 0"
#7	2' - 6"
#8	3' - 3"
#9	4' - 2"
#10	5' - 3"

DRAWN BY: BILL BERENS

VERTICAL FACE WALL DESIGN WITH A 250 PSF SURCHARGE OR TRAFFIC BARRIER

BIJAN KHALEGHI
STATE OF WASHINGTON
27695
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER

NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT BUT AN ELECTRONIC DUPLICATE. THE ORIGINAL, SIGNED BY THE ENGINEER AND APPROVED FOR PUBLICATION, IS KEPT ON FILE AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST.

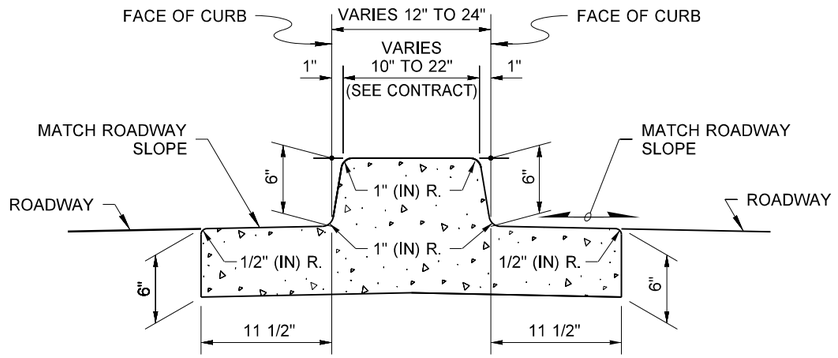
REINFORCED CONCRETE RETAINING WALL TYPE 1 AND 1SW
STANDARD PLAN D-10.10-01

SHEET 2 OF 2 SHEETS

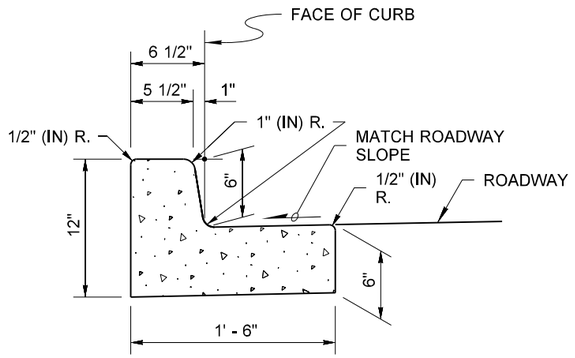
APPROVED FOR PUBLICATION

Pasco Bakotich III — STATE DESIGN ENGINEER
12-02-08 — DATE

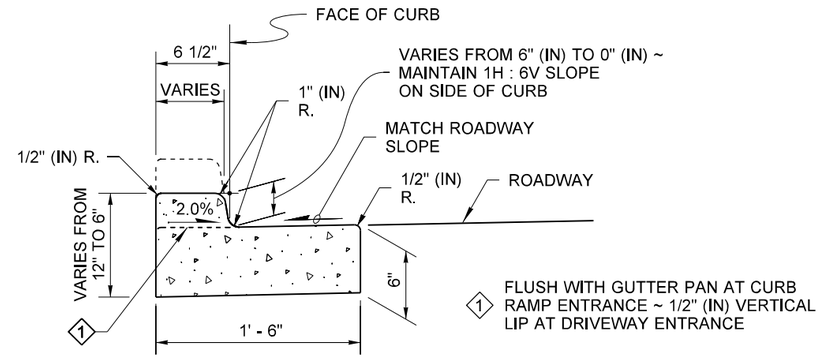
Washington State Department of Transportation



DUAL-FACED CEMENT CONCRETE TRAFFIC CURB AND GUTTER



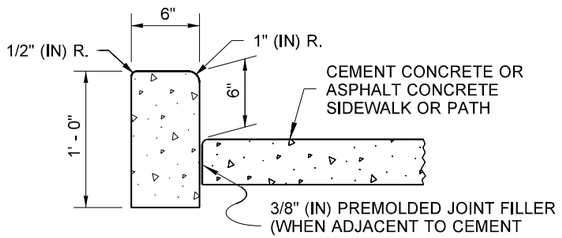
CEMENT CONCRETE TRAFFIC CURB AND GUTTER



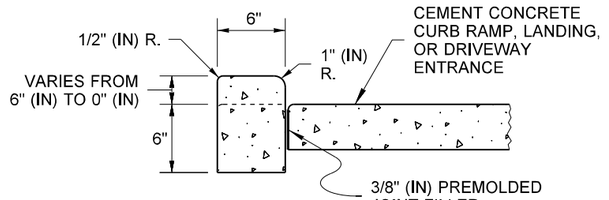
DEPRESSED CURB AND GUTTER SECTION

AT CURB RAMPS AND DRIVEWAY ENTRANCES

DRAWN BY: FERN LIDDELL



CEMENT CONCRETE PEDESTRIAN CURB

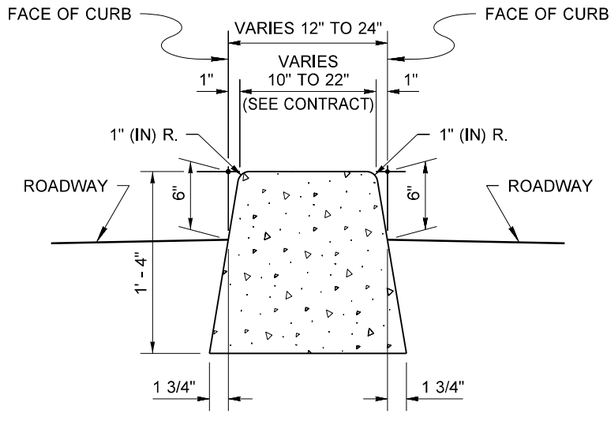


CEMENT CONCRETE PEDESTRIAN CURB

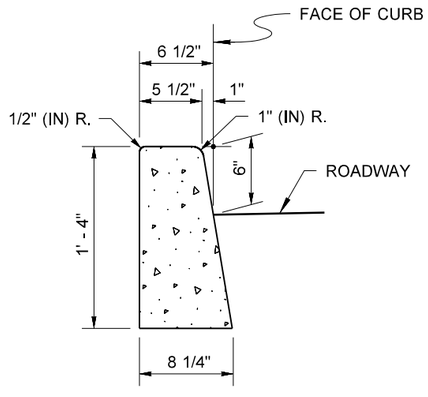
AT CURB RAMPS, LANDINGS, AND DRIVEWAY ENTRANCES

NOTE

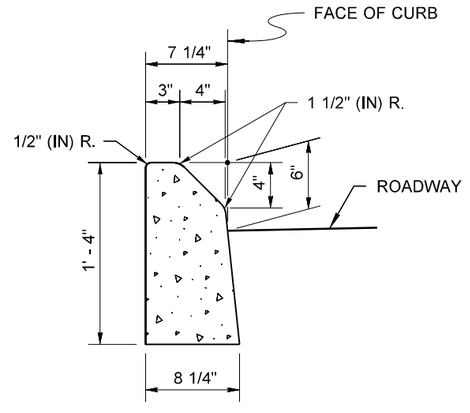
1. See **Standard Plan F-30.10** for Curb Expansion and Contraction Joint spacing. See **Standard Specification, Sections 8-04 and 9-04** for additional requirements.



DUAL-FACED CEMENT CONCRETE TRAFFIC CURB



CEMENT CONCRETE TRAFFIC CURB



MOUNTABLE CEMENT CONCRETE TRAFFIC CURB

Michael S Fleming

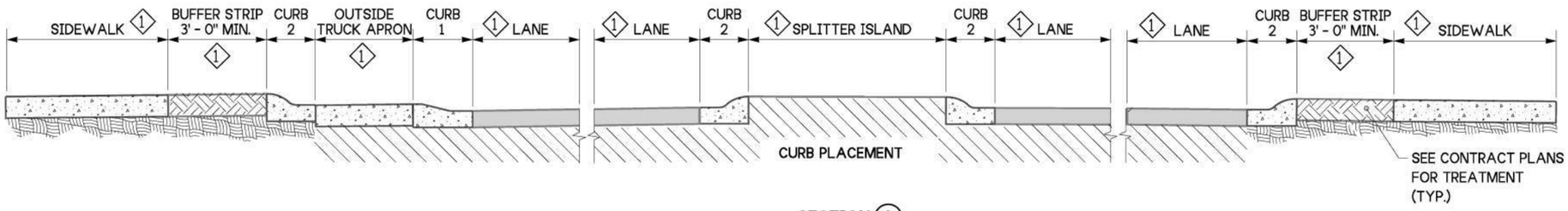
Digitally signed by Michael S Fleming
Date: 2020.09.24 07:39:38 -07'00'

CEMENT CONCRETE CURBS

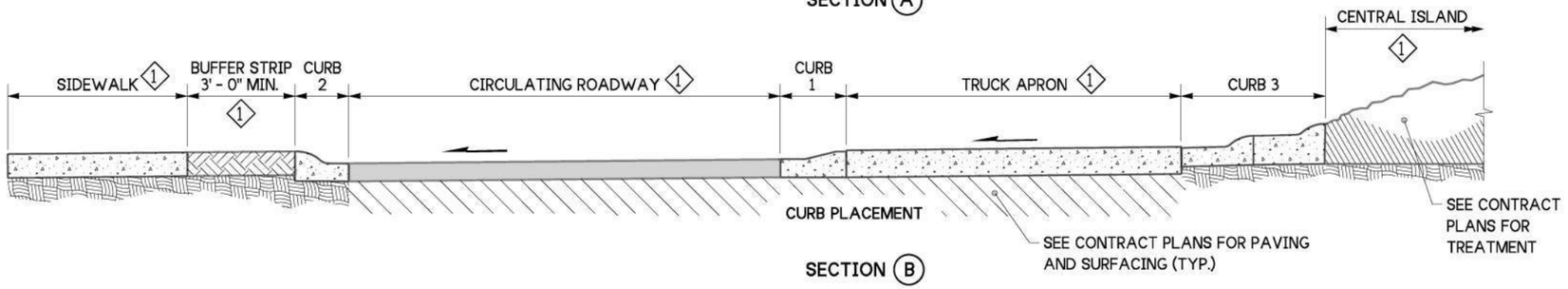
STANDARD PLAN F-10.12-04

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION
Date: 2020.09.24 07:57:43 -07'00'
STATE DESIGN ENGINEER
Washington State Department of Transportation

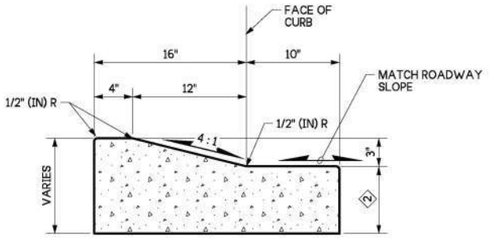


SECTION (A)



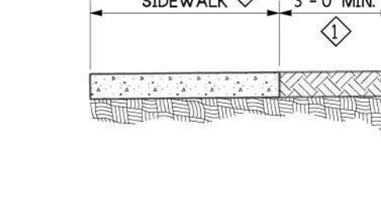
SECTION (B)

ROUNDABOUT CONFIGURATION WILL VARY DEPENDING ON CONTRACT PLANS



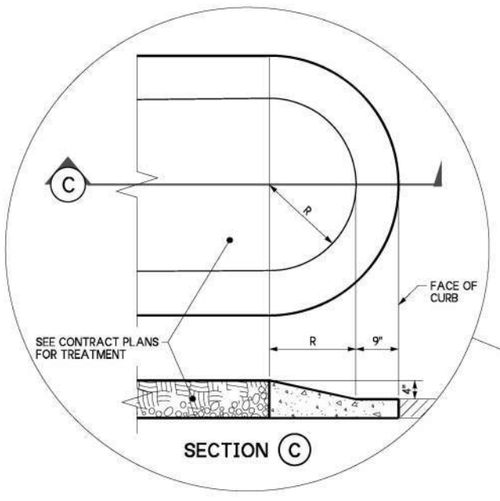
CURB 1

ROUNDABOUT TRUCK APRON
CEMENT CONCRETE CURB AND GUTTER
(SINGLE SLOPE CURB)



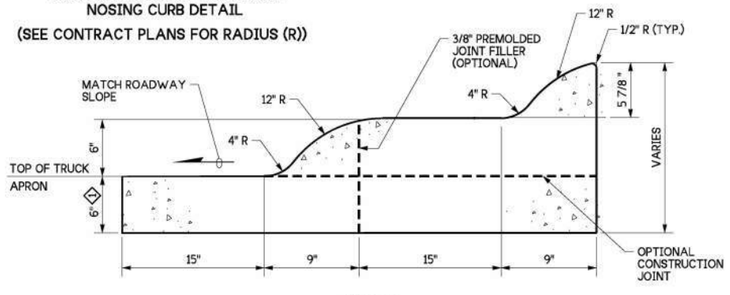
CURB 2

(OUTSIDE, RIGHT SIDE OR SPLITTER ISLAND)
ROUNDABOUT CEMENT CONCRETE CURB AND GUTTER
(SINGLE SLOPE CURB)



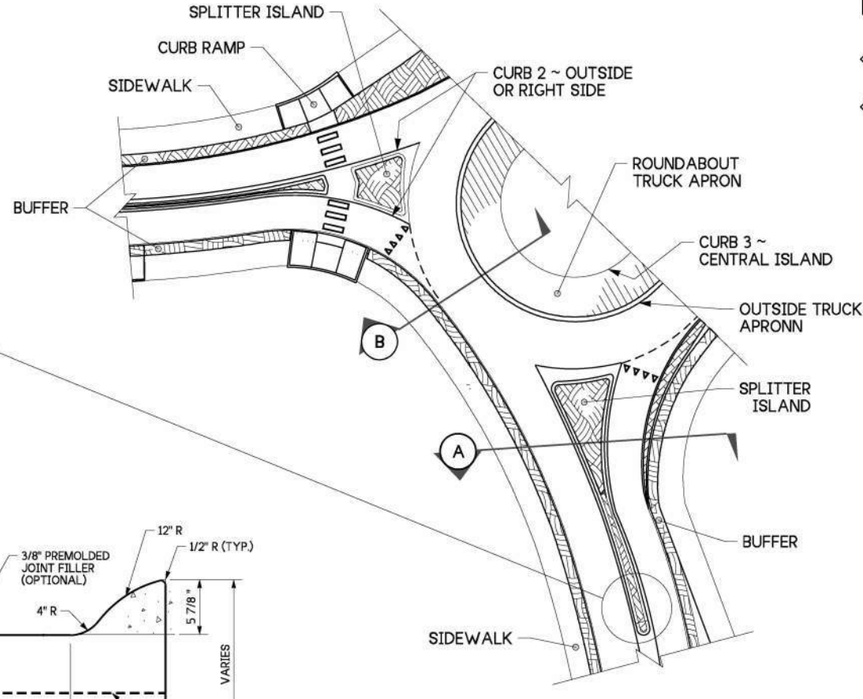
SECTION (C)

ROUNDABOUT SPLITTER ISLAND
NOSING CURB DETAIL
(SEE CONTRACT PLANS FOR RADIUS (R))



CURB 3

ROUNDABOUT CENTRAL ISLAND
CEMENT CONCRETE CURB
(SINGLE SLOPE CURB)



PARTIAL VIEW

NOTES:

1. Construct curb joints at cement concrete pavement transverse joint locations. If all adjacent pavement is HMA, see **Standard Plan F-30.10** for Curb Expansion and Contraction Joint Spacing.
2. See Standard Plan F-45.10 for placement of Detectable Warning Surfaces (DWS).
3. See **Contract Plans** and **Standard Plan M-15.10** for locations and layout of crosswalks,

LEGEND

1 Width varies ~ See Contract Plans.

2 Match adjacent pavement thickness but not less than 6 inches.

SCOTT ANDREW DAVIS
STATE OF WASHINGTON
Scott A. Davis (Jun 28, 2024 08:18 PDT)
37361
REGISTERED
PROFESSIONAL ENGINEER

Jun 28, 2024

ROUNDABOUT CEMENT CONCRETE CURBS

STANDARD PLAN F-10.18-04

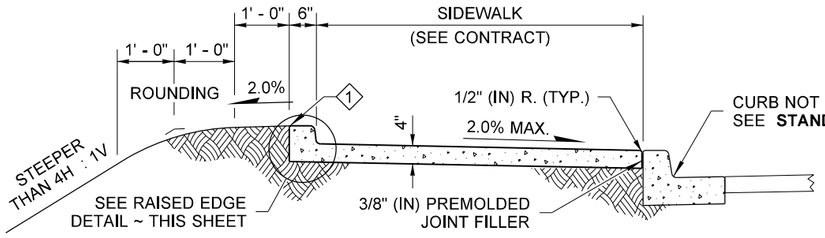
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

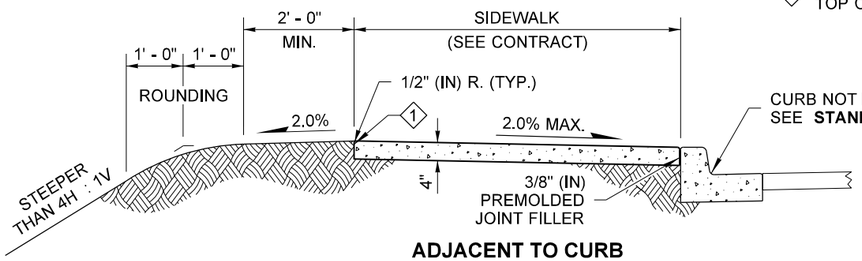
Mark A Dawes Jun 28, 2024

STATE DESIGN ENGINEER

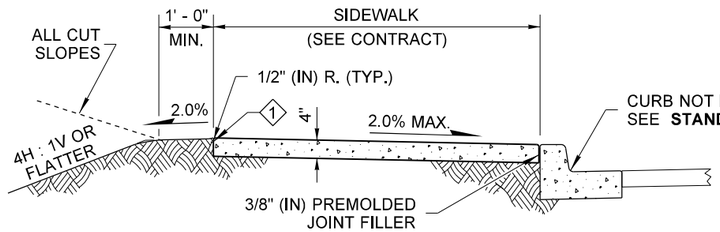
Washington State Department of Transportation



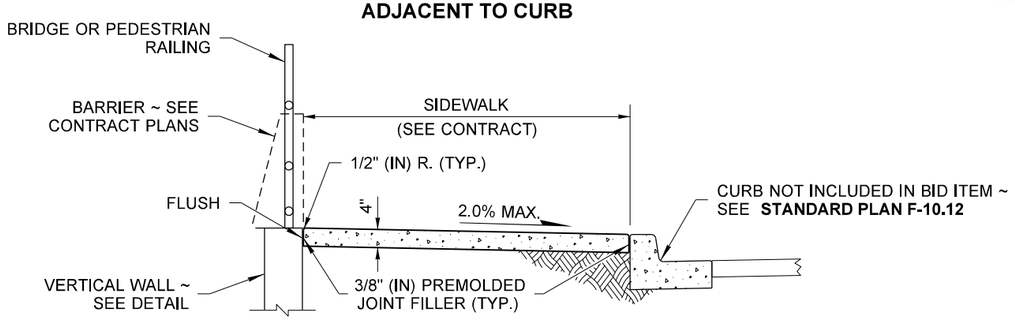
WITH RAISED EDGE



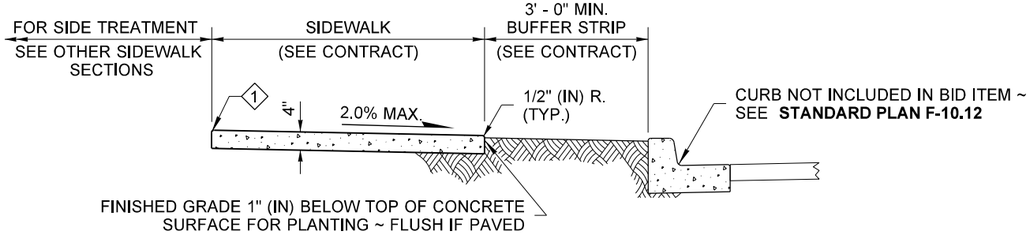
ADJACENT TO CURB
(STEEP FILL SLOPES)



ADJACENT TO CURB

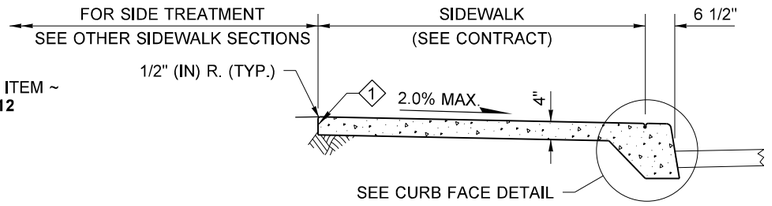


ADJACENT TO CURB AND RAILING OR WALL



ADJACENT TO BUFFER STRIP

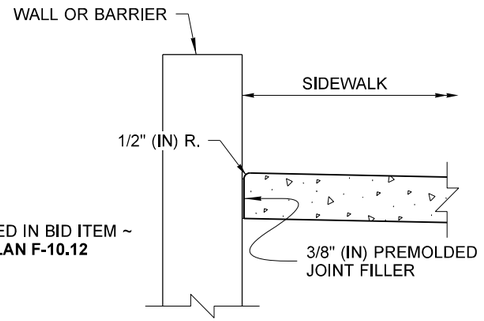
1 FINISHED GRADE 1" (IN) BELOW TOP OF CONCRETE SURFACE



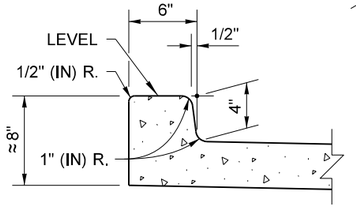
MONOLITHIC CEMENT CONCRETE CURB AND SIDEWALK

NOTE

1. Gratings, Access Covers, Junction Boxes, Cable Vaults, Pull Boxes and other appurtenances within the sidewalk must have slip resistant surfaces, be flush with surface, and match grade of the sidewalk.

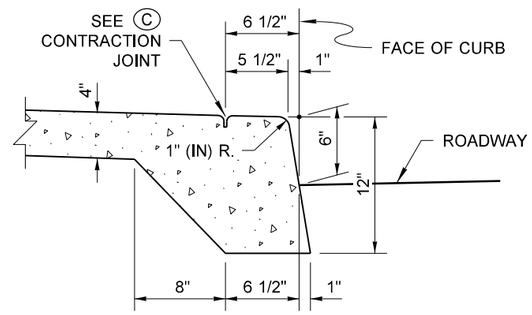


SIDEWALK ADJACENT TO WALL DETAIL



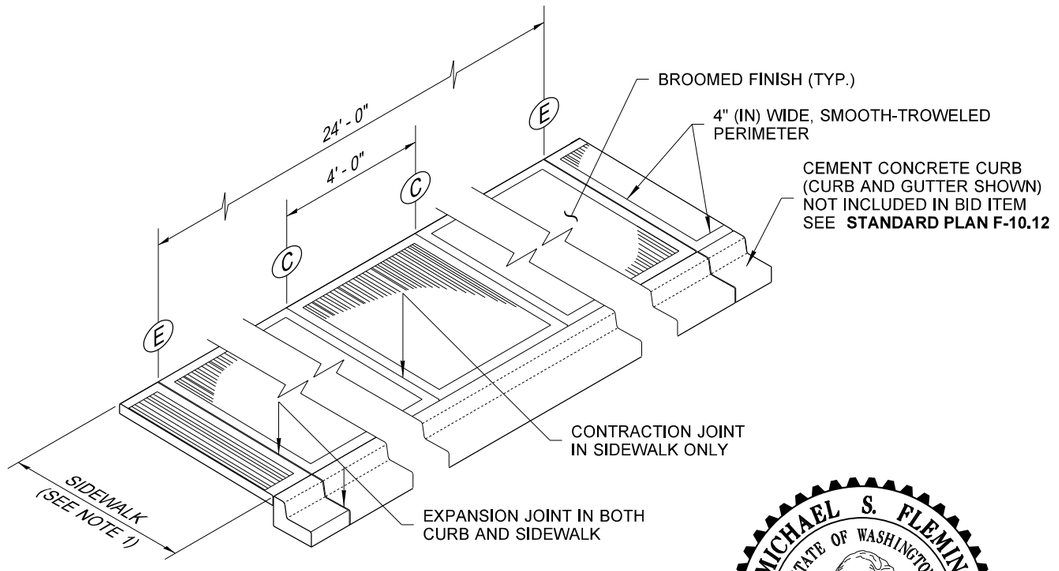
RAISED EDGE DETAIL

EXTEND SIDEWALK TRANSVERSE JOINTS TO INCLUDE RAISED EDGE



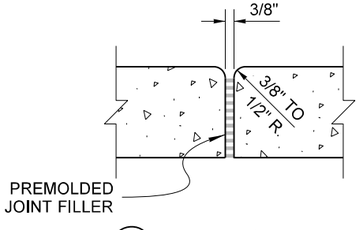
CURB FACE DETAIL

EXTEND SIDEWALK TRANSVERSE EXPANSION JOINTS TO INCLUDE CURB (FULL DEPTH)

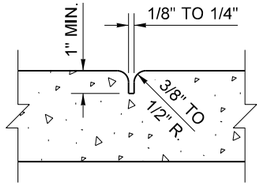


ISOMETRIC VIEW

JOINT AND FINISH DETAIL



E EXPANSION JOINT



C CONTRACTION JOINT

DRAWN BY: LISA CYFORD

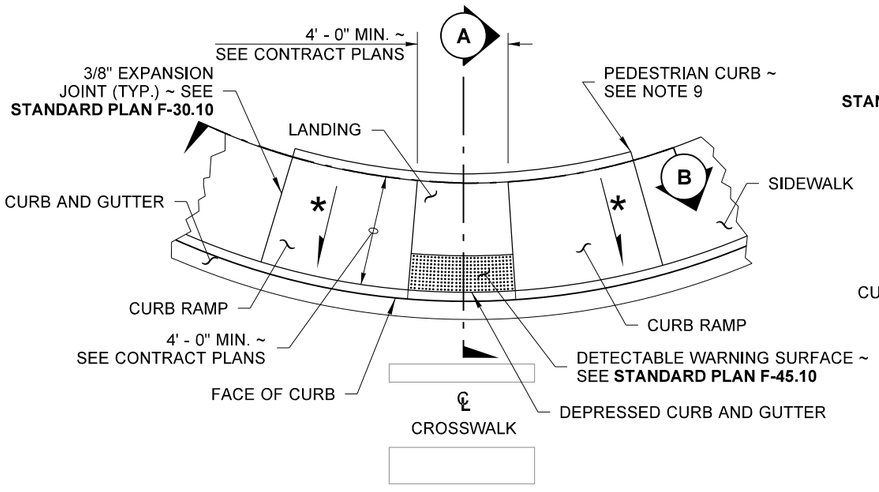
Michael S Fleming
Digitally signed by Michael S Fleming
Date: 2020.09.24 07:40:16 -07'00'

CEMENT CONCRETE SIDEWALK

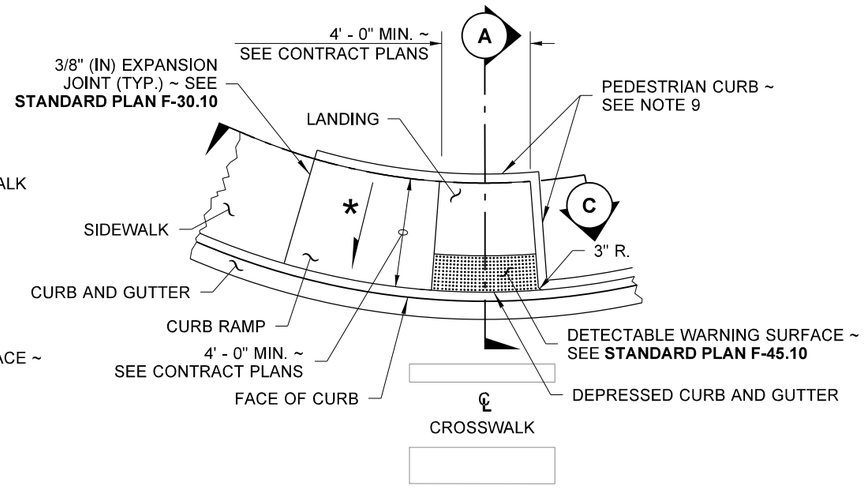
STANDARD PLAN F-30.10-04

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION
Date: 2020.09.25 15:43:50 -07'00'
STATE DESIGN ENGINEER
Washington State Department of Transportation

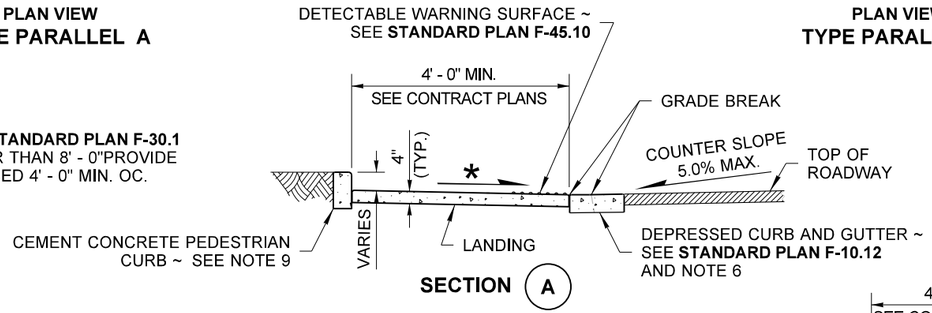


PLAN VIEW
TYPE PARALLEL A

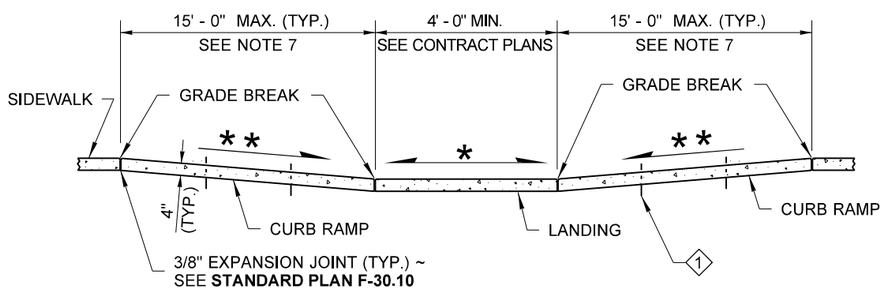


PLAN VIEW
TYPE PARALLEL B

1 CONTRACTION JOINT (TYP.) ~ SEE **STANDARD PLAN F-30.1** FOR CURB RAMP LENGTHS GREATER THAN 8' - 0"PROVIDE CONTRACTION JOINT EQUALLY SPACED 4' - 0" MIN. OC.

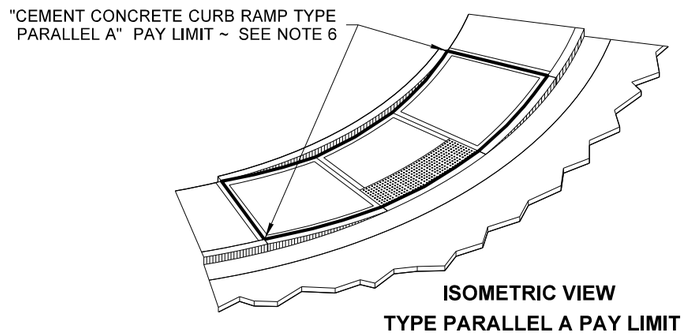


SECTION A

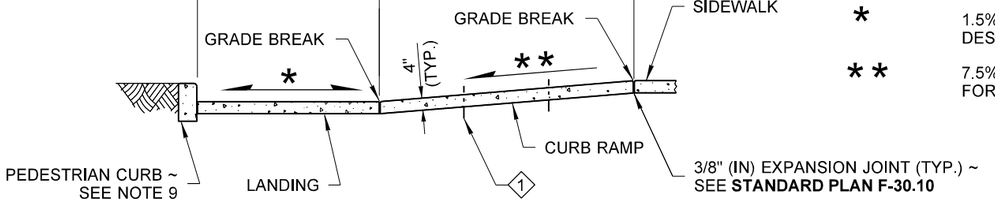


SECTION B

(ALONG INSIDE RADIUS AT BACK OF WALKWAY)

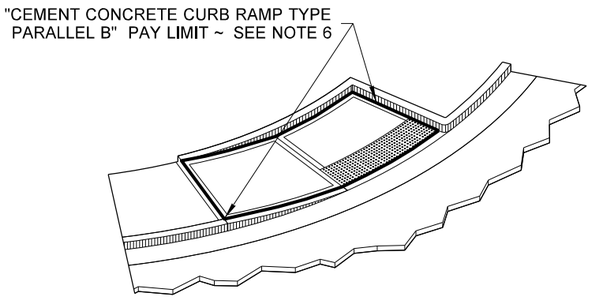


ISOMETRIC VIEW
TYPE PARALLEL A PAY LIMIT



SECTION C

(ALONG INSIDE RADIUS AT BACK OF WALKWAY)



ISOMETRIC VIEW
TYPE PARALLEL B PAY LIMIT

NOTES

1. At marked crosswalks, the connection between the landing and the roadway must be contained within the width of the crosswalk markings.
2. Where "GRADE BREAK" is called out, the entire length of the grade break between the two adjacent surface planes shall be flush.
3. Do not place Gratings, Junction Boxes, Access Covers, or other appurtenances on any part of the Curb Ramp or Landing, or in the Depressed Curb and Gutter where the Landing connects to the roadway.
4. See Contract Plans for the curb design specified. See **Standard Plan F-10.12** for Curb, Curb and Gutter, Depressed Curb and Gutter, and Pedestrian Curb details.
5. See **Standard Plan F-30.10** for Cement Concrete Sidewalk Details. See Contract Plans for width and placement of sidewalk.
6. The Bid Item "Cement Concrete Curb Ramp Type __" does not include the adjacent Curb, Curb and Gutter, Depressed Curb and Gutter, Pedestrian Curb, or Sidewalks.
7. The Curb Ramp length is not required to exceed 15 feet (unless otherwise shown in the Contract Plans). When applying the 15-foot max. length, the running slope of the curb ramp is allowed to exceed 8.3%. Use a single constant slope from bottom of ramp to top of ramp to match into the sidewalk over a horizontal distance of 15 feet. Do not include abutting landing(s) in the15-foot max. measurement. When a ramp is constructed on a radius, the 15-foot max. length is measured on the inside radius along the back of the walkway.
8. Curb Ramps and Landings shall receive a broom finish. See **Standard Specifications 8-14.**
9. Pedestrian Curb may be omitted if the ground surface at the back of the Curb Ramp and/or Landing will be at the same elevation as the Curb Ramp or Landing and there will be no material to retain.

LEGEND

SLOPE IN EITHER DIRECTION

* 1.5% OR FLATTER RECOMMENDED FOR DESIGN/FORMWORK (2% MAX.)

** 7.5% OR FLATTER RECOMMENDED FOR DESIGN/ FORMWORK (8.3% MAX.) ~ SEE NOTE 7

DRAWN BY: FERN LIDDELL

R. SCOTT ZELLER
STATE OF WASHINGTON
28680
REGISTERED
PROFESSIONAL ENGINEER

PARALLEL CURB RAMP

STANDARD PLAN F-40.12-03

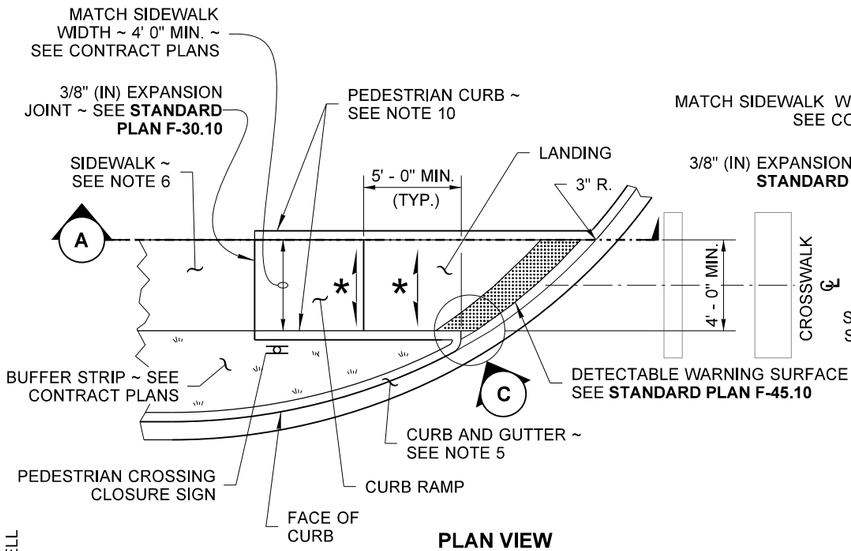
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

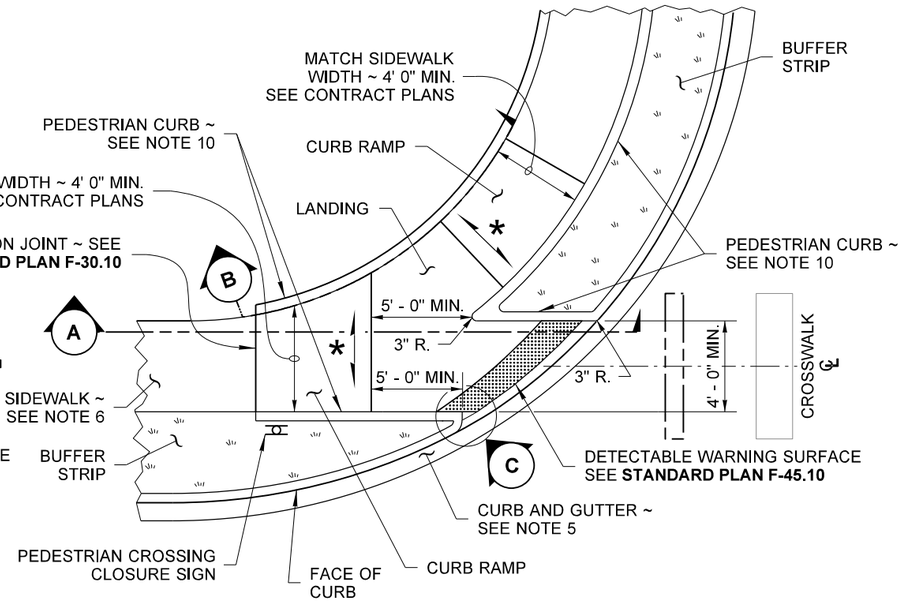
STATE DESIGN ENGINEER

Washington State Department of Transportation

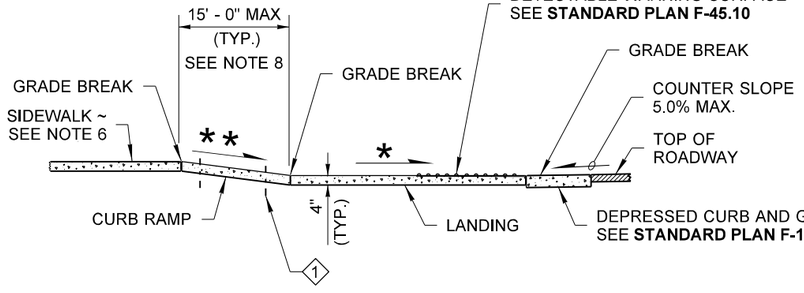
DRAWN BY: FERN LIDDELL



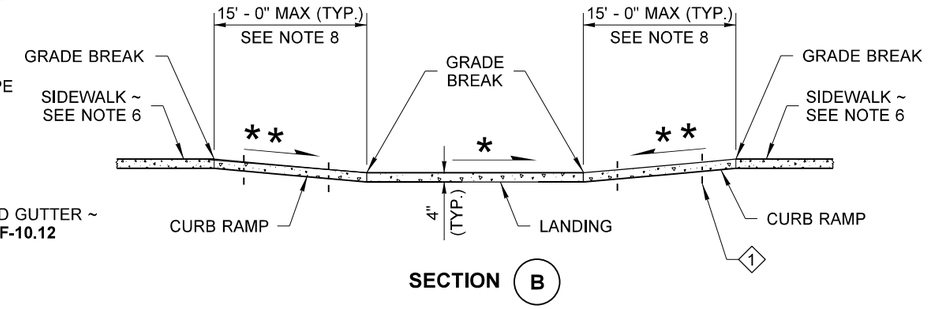
PLAN VIEW
TYPE SINGLE DIRECTION A



PLAN VIEW
TYPE SINGLE DIRECTION B



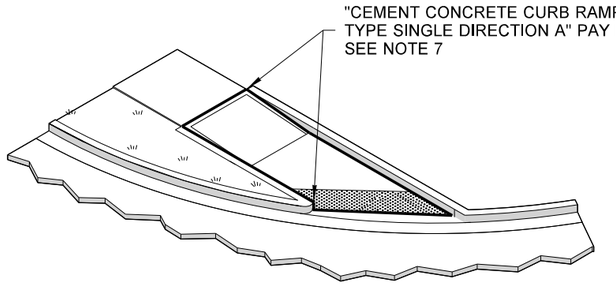
SECTION (A)



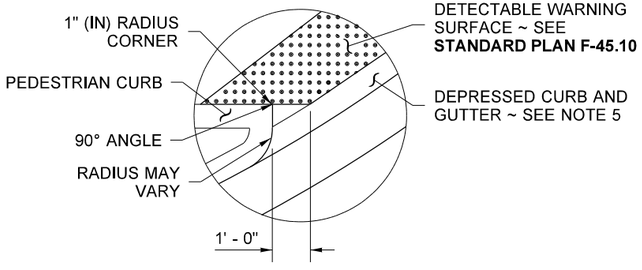
SECTION (B)

1 CONTRACTION JOINT (TYP.) ~ SEE **STANDARD PLAN F-30.10** FOR CURB RAMP LENGTHS GREATER THAN 8' - 0" PROVIDE CONTRACTION JOINT EQUALLY SPACED 4' - 0" MIN. OC.

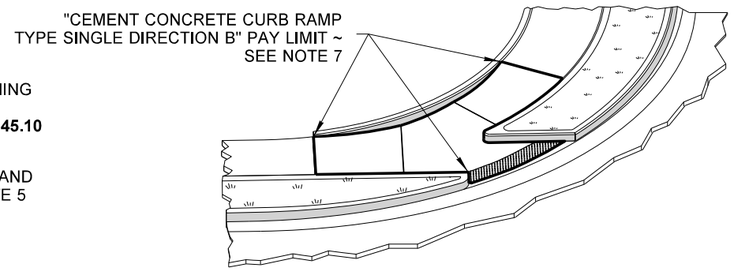
(ALONG INSIDE RADIUS AT BACK OF WALKWAY)



ISOMETRIC VIEW
TYPE SINGLE DIRECTION A
PAY LIMIT



DETAIL (C)



ISOMETRIC VIEW
TYPE SINGLE DIRECTION B
PAY LIMIT

NOTES

1. This plan is to be used where pedestrian crossing in one direction is not permitted.
2. At marked crosswalks, the connection between the Landing and the roadway must be contained within the width of the crosswalk markings.
3. Where "GRADE BREAK" is called out, the entire length of the grade break between the two adjacent surface planes shall be flush.
4. Do not place Gratings, Junction Boxes, Access Covers, or other appurtenances on any part of the Curb Ramp or Landing or in the Depressed Curb and Gutter where the Landing connects to the roadway.
5. See Contract Plans for the curb design specified. See **Standard Plan F-10.12** for Curb, Curb and Gutter, Depressed Curb, Gutter and Pedestrian Curb details.
6. See **Standard Plan F-30.10** for Cement Concrete Sidewalk Details. See Contract Plans for width and placement of sidewalk.
7. The Bid Item "Cement Concrete Curb Ramp Type __" does not include the adjacent Curb, Curb and Gutter, Depressed Curb and Gutter, Pedestrian Curb, or Sidewalks.
8. The Curb Ramp length is not required to exceed 15 feet (unless shown otherwise in the Contract Plans). When applying the 15-foot max. length (measured from back of sidewalk) the running slope of the curb ramp is allowed to exceed 8.3%. Use a single constant slope from bottom of ramp to top of ramp to match into the sidewalk over a horizontal distance of 15 feet.
9. Curb Ramps and Landings shall receive a broom finish. See **Standard Specifications 8-14.**
10. Pedestrian Curb may be omitted if the ground surface at the back of the Curb Ramp and/or Landing will be at the same elevation as the Curb Ramp or Landing and there will not be material to retain.

LEGEND

- ⟷ SLOPE IN EITHER DIRECTION
- * 1.5 OR FLATTER RECOMMENDED FOR DESIGN/FORMWORK (2% MAX.)
- * * 7.5% OR FLATTER RECOMMENDED FOR DESIGN/FORMWORK (8.3% MAX.) SEE NOTE 7

R. SCOTT ZELLER
STATE OF WASHINGTON
28680
REGISTERED
PROFESSIONAL ENGINEER

SINGLE DIRECTION CURB RAMP

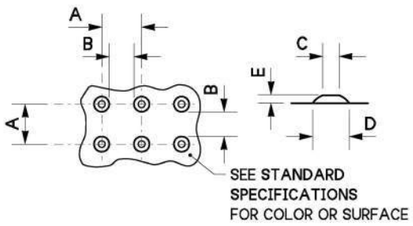
STANDARD PLAN F-40.16-03

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

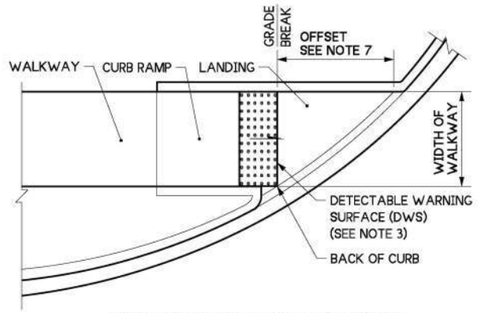
STATE DESIGN ENGINEER

Washington State Department of Transportation

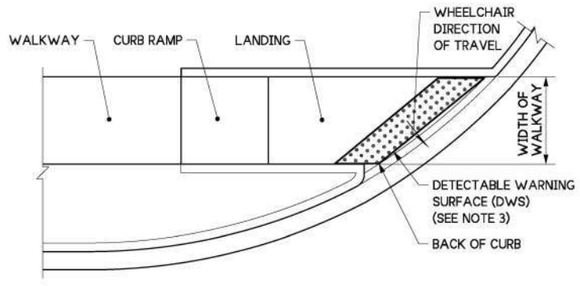


	MIN.	MAX.
A	1.60"	2.40"
B	0.65"	
C	0.45"	0.90"
D	0.90"	1.40"
E	0.20"	0.20"

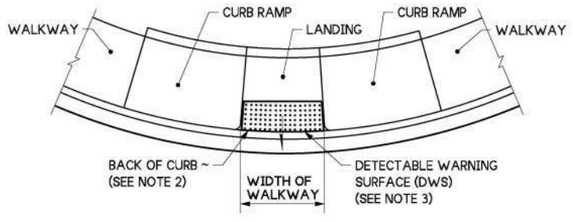
TRUNCATED DOME DETAILS
(SEE NOTE 3)



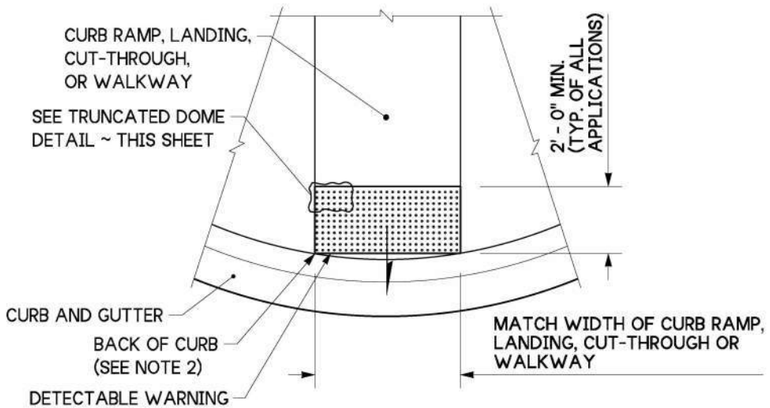
SINGLE DIRECTION CURB RAMP
(GRADE BREAK BETWEEN CURB AND LANDING < 5 FEET FROM BACK OF CURB)
(SEE NOTE 5)



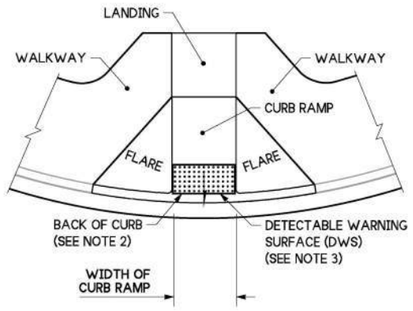
SINGLE DIRECTION CURB RAMP
(GRADE BREAK BETWEEN CURB AND LANDING > 5 FEET FROM BACK OF CURB)
(SEE NOTE 5)



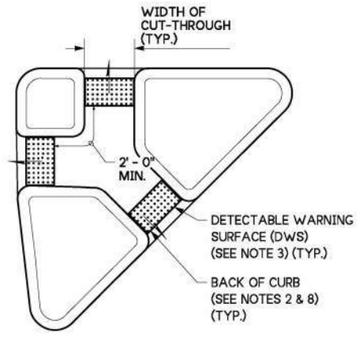
PARALLEL CURB RAMP
(SEE NOTE 6)



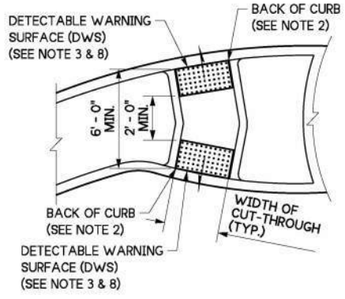
DETECTABLE WARNING SURFACE DETAIL



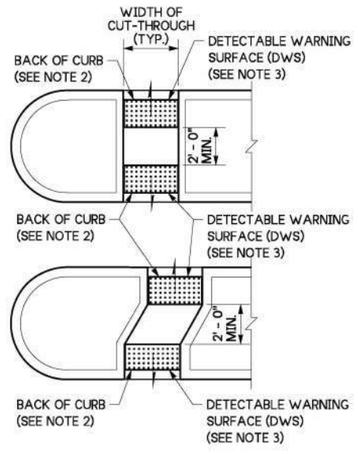
PERPENDICULAR CURB RAMP
(SEE NOTE 6)



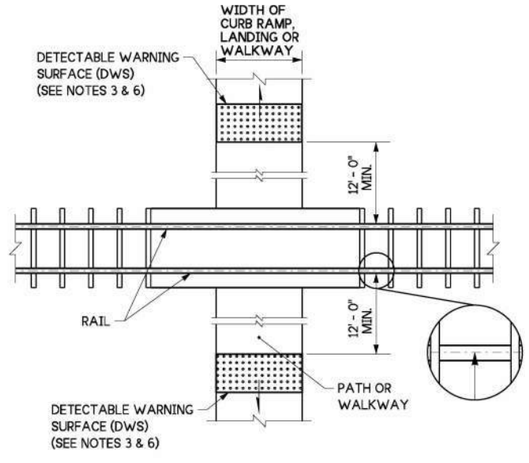
ISLAND CUT-THROUGH



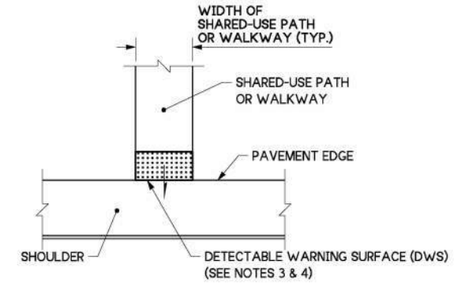
ROUNDABOUT SPLITTER ISLAND



MEDIAN CUT-THROUGH



PEDESTRIAN PAILROAD CROSSING



SHARED-USE PATH CONNECTION

NOTES:

1. Permanent Detectable Warning Surfaces (DWS) shall extend the full width of the curb ramp, landing, or other roadway entrance as applicable. Exception: If the manufacturer of the DWS requires a concrete border around the DWS, a variance of up to 2" (in) on each side of the DWS is permitted.
2. Permanent Detectable Warning Surfaces (DWS) shall be placed on a minimum 4" (in) thick concrete pad. The DWS panel shall be placed adjacent to the back of the curb and with no more than a 2" (in) gap between the DWS and the back of the curb measured at the center of the DWS panel. Exception: If the Manufacturer of the selected DWS requires a concrete border around the DWS, a variance of up to 2" (in) from the back of the curb is permitted (measured at the leading corners of the DWS panel).
3. The rows of truncated domes shall be aligned to be parallel to the direction of travel, and perpendicular to the grade break at the back of curb.
4. If curb and gutter are not present, such as a shared-use path connection, the Detectable Warning Surface shall be placed at the pavement edge.
5. See **Standard Plans** for sidewalk and curb ramp details.
6. If a curb ramp is required, the location of the Detectable Warning Surface must be at the bottom of the ramp and within the required distance from the rail crossing.
7. When the grade break between the curb ramp and the landing is less than or equal to 5 feet from the back of curb at all points, place the Detectable Warning Surface on the bottom of the curb ramp directly above the grade break.
8. Glued or stick down Detectable Warning Surfaces are allowed only for temporary work zone applications.

Jun 4, 2024

DETECTABLE WARNING SURFACE

STANDARD PLAN F-45.10-05

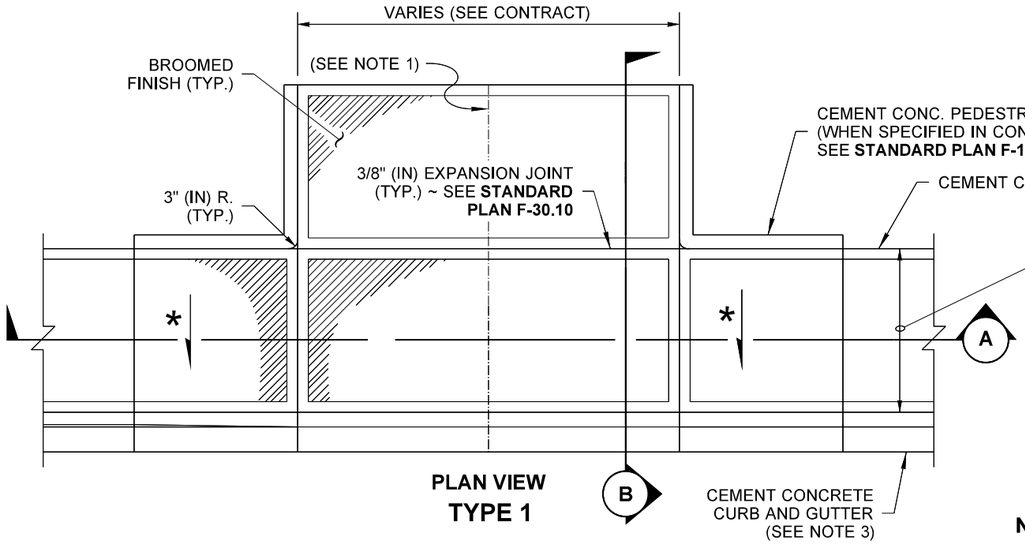
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

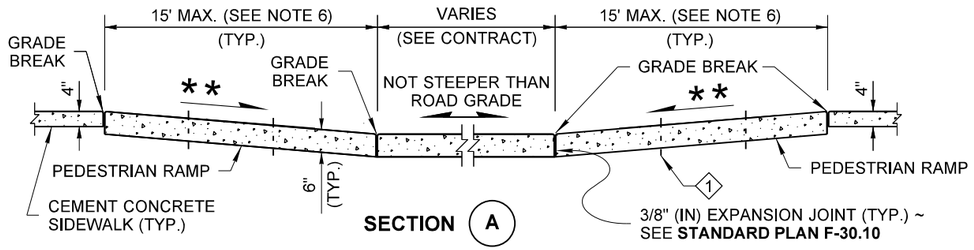
Mark A Dawes Jun 4, 2024

STATE DESIGN ENGINEER

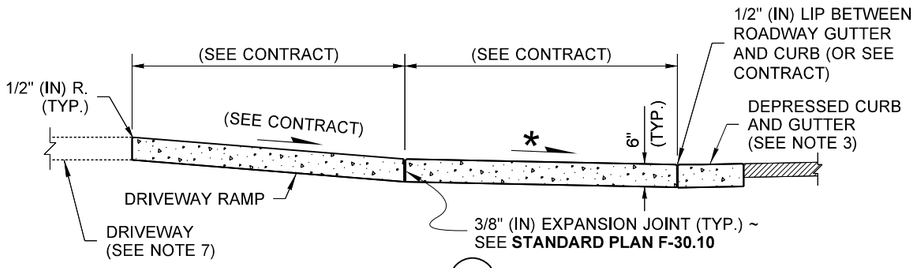
Washington State Department of Transportation



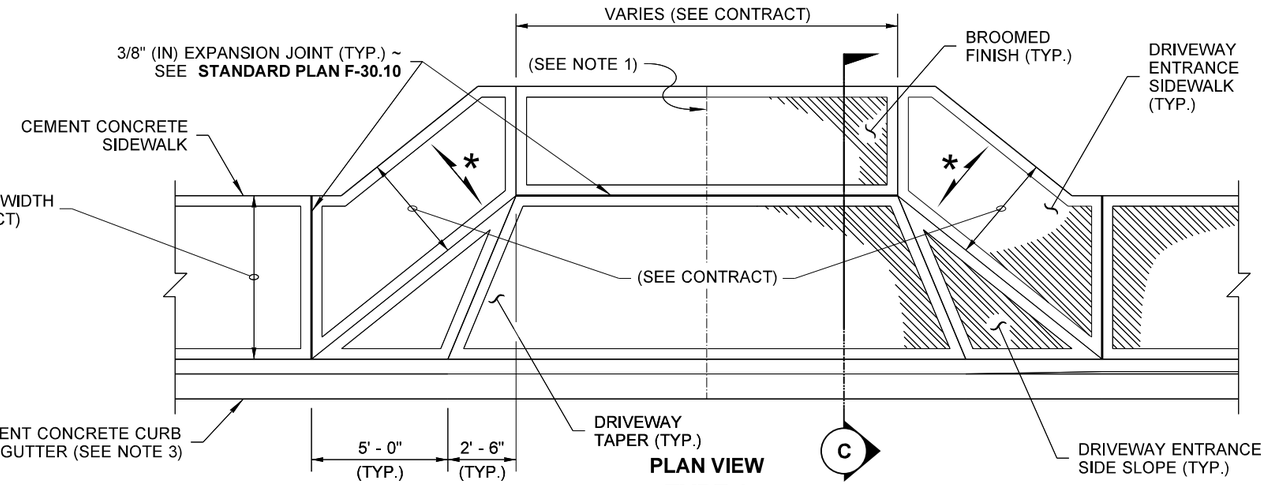
PLAN VIEW
TYPE 1



SECTION (A)



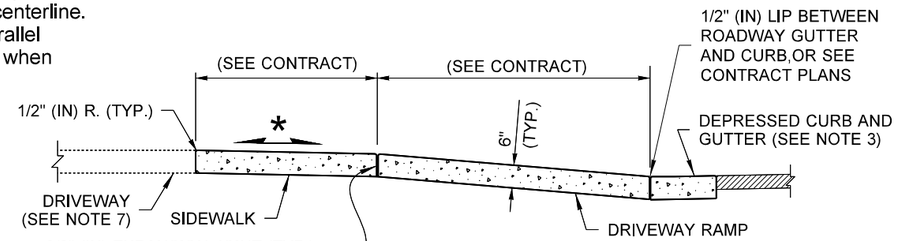
SECTION (B)



PLAN VIEW
TYPE 2

NOTES

1. When the driveway width exceeds 15' (ft), construct a full depth expansion joint with 3/8" (in) joint filler along the driveway centerline. See **Standard Plan F-30.10.** Construct expansion joints parallel with the centerline as required at 15' (ft) maximum spacing when driveway widths exceed 30' (ft).
2. See **Standard Plan F-30.10** for sidewalk details.
3. Curb and Gutter shown; see the Contract Plans for the curb design specified. See **Standard Plan F-10.12** for Curb Details.
4. Avoid placing drainage structures, junction boxes or other obstructions in front of driveway entrances.
5. Where "GRADE BREAK" is called out, the entire length of the line between the two adjacent surface planes shall be flush.
6. The Pedestrian Ramp length is not required to exceed15 feet (unless otherwise shown in the Contract Plans). When applying the 15-foot max. length (measured from back of sidewalk) the running slope of the pedestrian ramp is allowed to exceed 8.3%. Use a single constant slope from bottom of ramp to top of ramp to match into the sidewalk over a horizontal distance of 15 feet.
7. Beyond limits shown. Pay item does not include driveway. See Contract Plans.



SECTION (C)

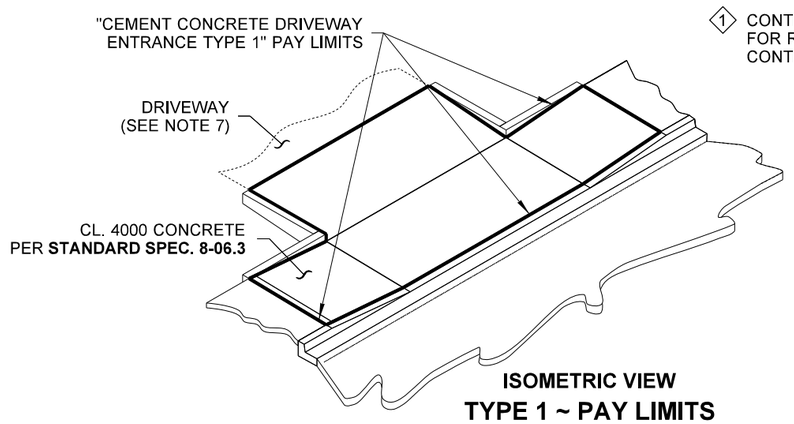
LEGEND

SLOPE IN EITHER DIRECTION

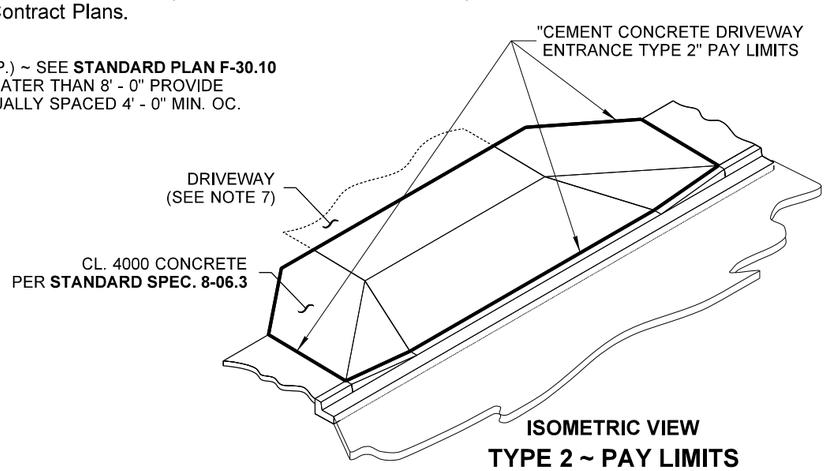
* 1.5% OR FLATTER RECOMMENDED FOR DESIGN/FORMWORK (2% MAX.)

** 7.5% OR FLATTER RECOMMENDED FOR DESIGN/FORMWORK (8.3% MAX.) (SEE NOTE 6)

1 CONTRACTION JOINT (TYP.) ~ SEE **STANDARD PLAN F-30.10** FOR RAMP LENGTHS GREATER THAN 8' - 0" PROVIDE CONTRACTION JOINT EQUALLY SPACED 4' - 0" MIN. OC.



ISOMETRIC VIEW
TYPE 1 ~ PAY LIMITS



ISOMETRIC VIEW
TYPE 2 ~ PAY LIMITS

R. SCOTT ZELLER
STATE OF WASHINGTON
28680
REGISTERED
PROFESSIONAL ENGINEER

CEMENT CONCRETE DRIVEWAY ENTRANCE TYPES 1, 2, 3, & 4

STANDARD PLAN F-80.10-04

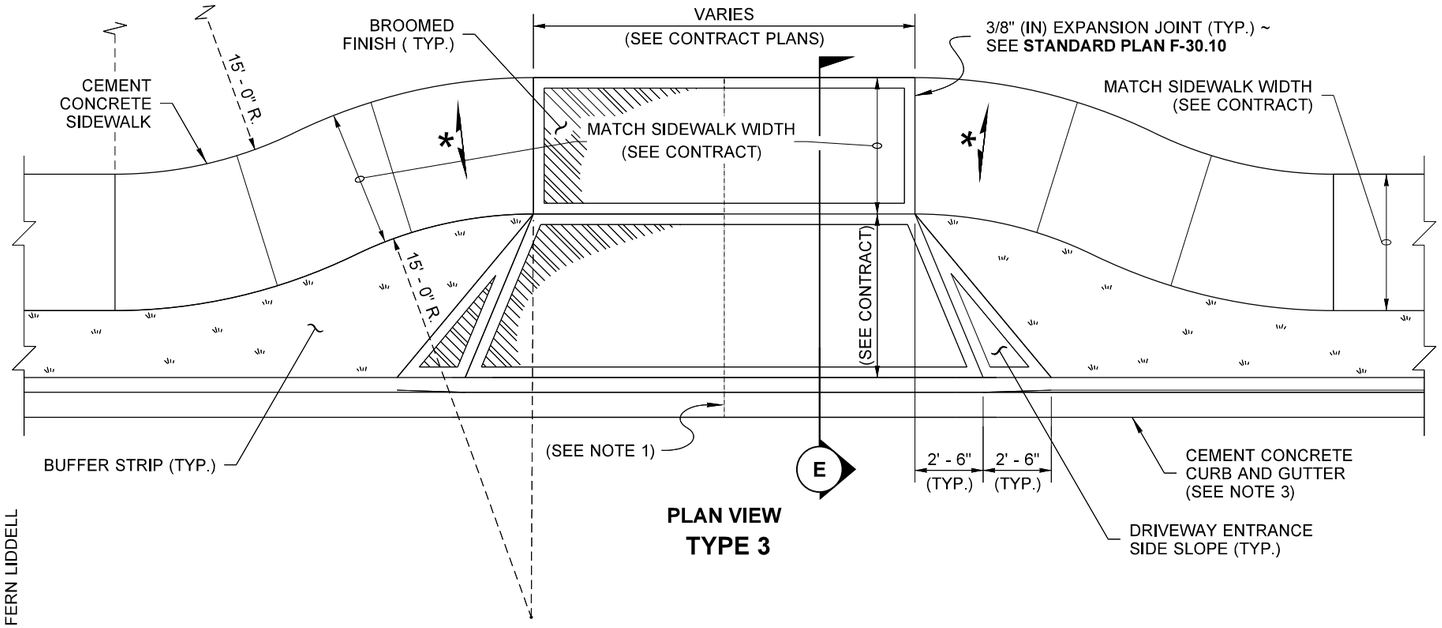
SHEET 1 OF 2 SHEETS

APPROVED FOR PUBLICATION

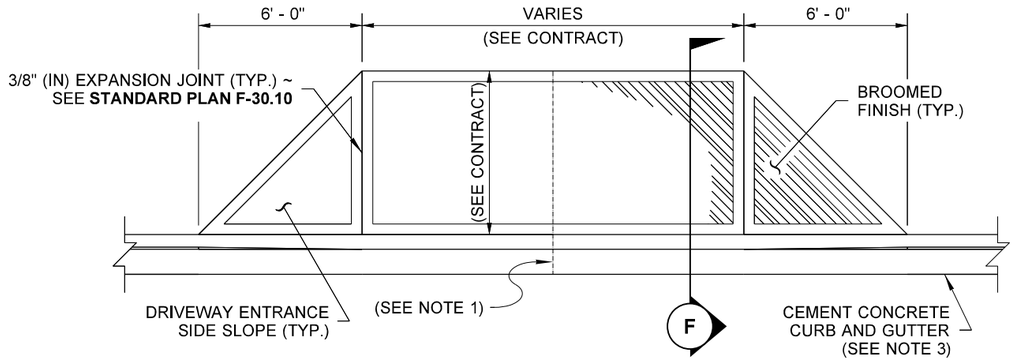
STATE DESIGN ENGINEER

Washington State Department of Transportation

DRAWN BY: FERN LIDDELL



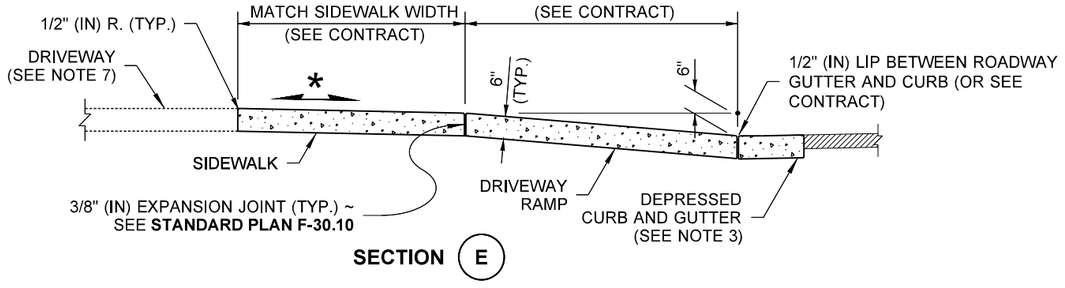
PLAN VIEW
TYPE 3



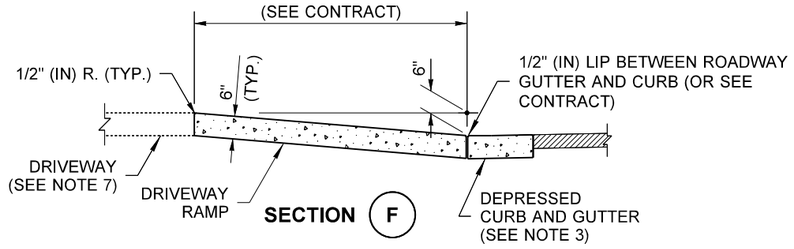
PLAN VIEW
TYPE 4 ✳

✳ THIS ENTRANCE TYPE SHALL NOT BE USED ALONG A PEDESTRIAN ROUTE

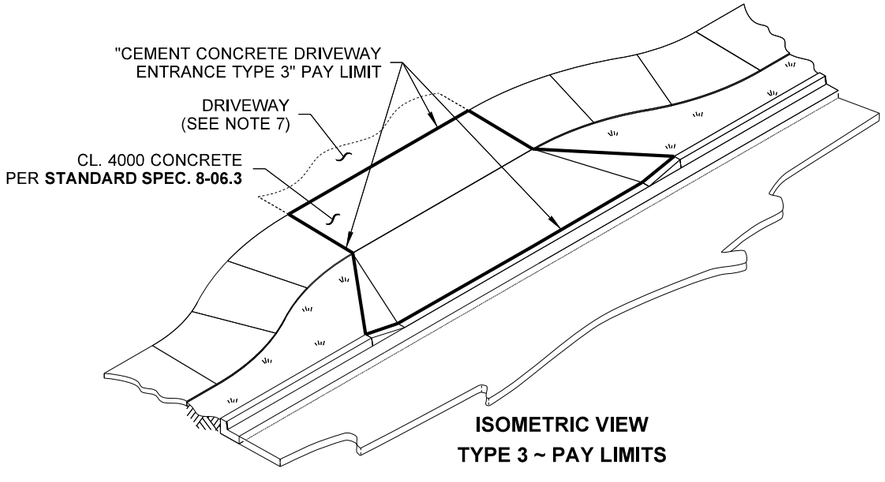
DRAWN BY: FERN LIDDELL



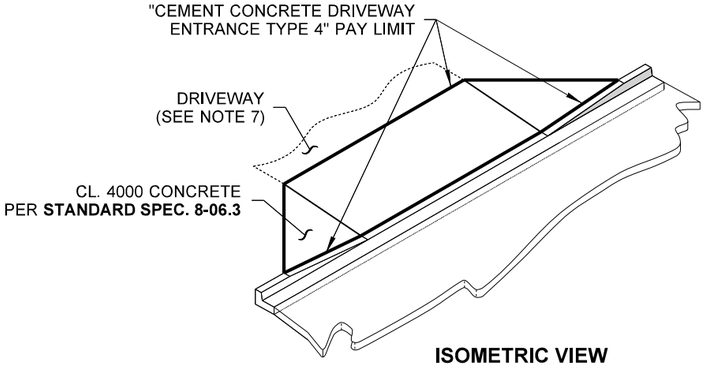
SECTION (E)



SECTION (F)



ISOMETRIC VIEW
TYPE 3 ~ PAY LIMITS



ISOMETRIC VIEW
TYPE 4 ~ PAY LIMITS

R. SCOTT ZELLER
STATE OF WASHINGTON
28680
REGISTERED
PROFESSIONAL ENGINEER

CEMENT CONCRETE DRIVEWAY ENTRANCE TYPES 1, 2, 3, & 4
STANDARD PLAN F-80.10-04

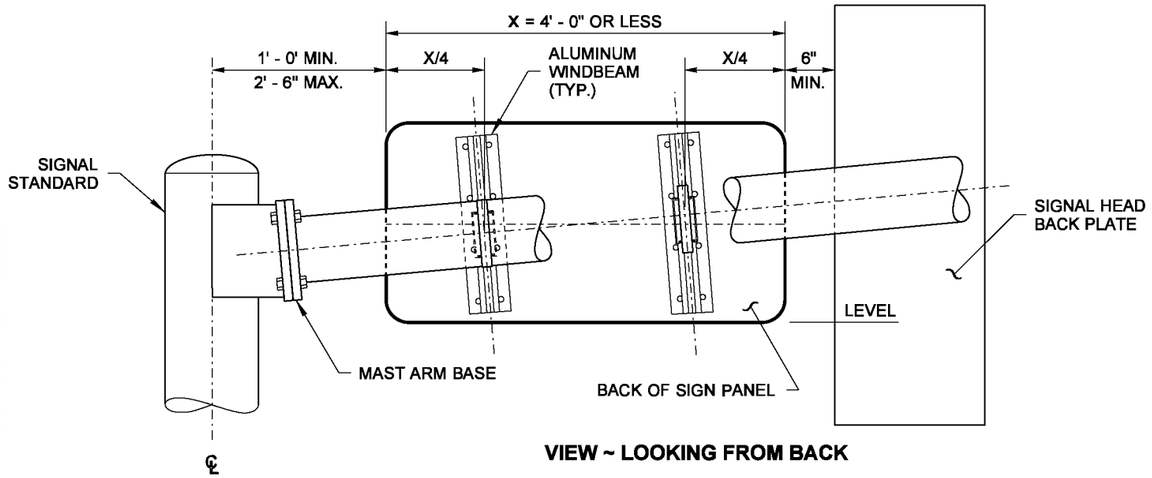
SHEET 2 OF 2 SHEETS

APPROVED FOR PUBLICATION

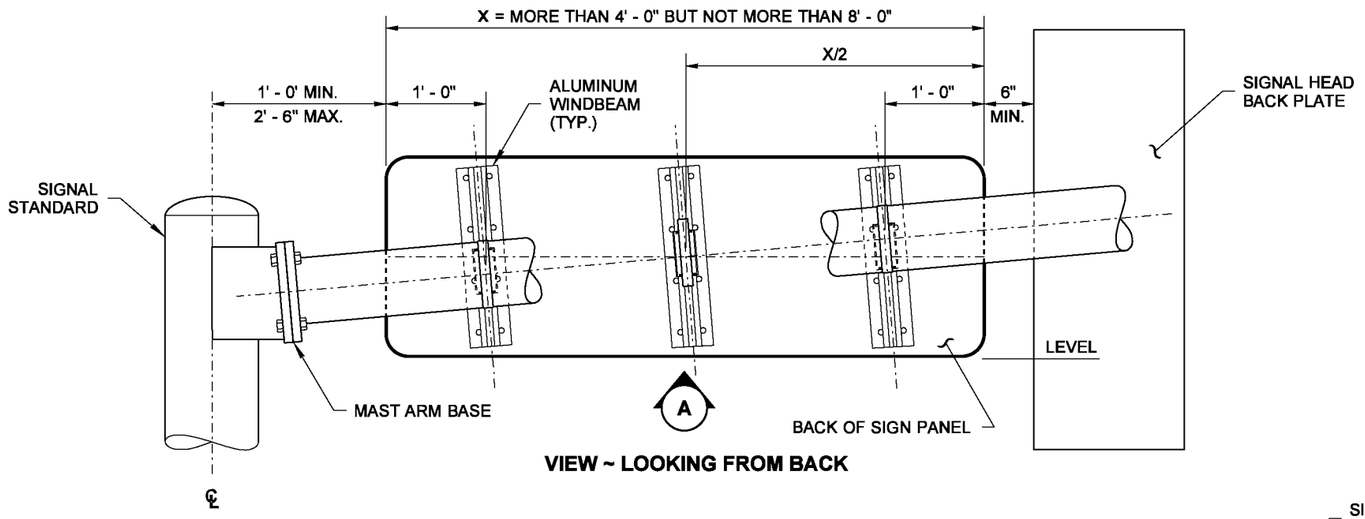
STATE DESIGN ENGINEER

Washington State Department of Transportation

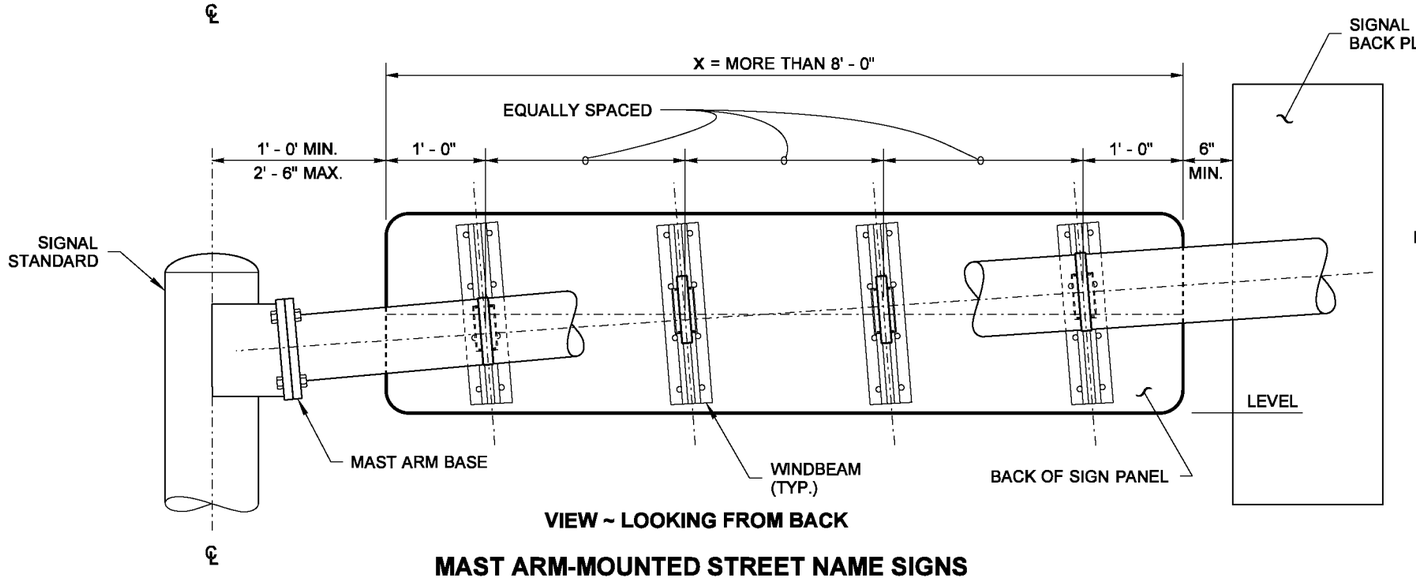
DRAWN BY: FERN LIDDELL



VIEW ~ LOOKING FROM BACK



VIEW ~ LOOKING FROM BACK

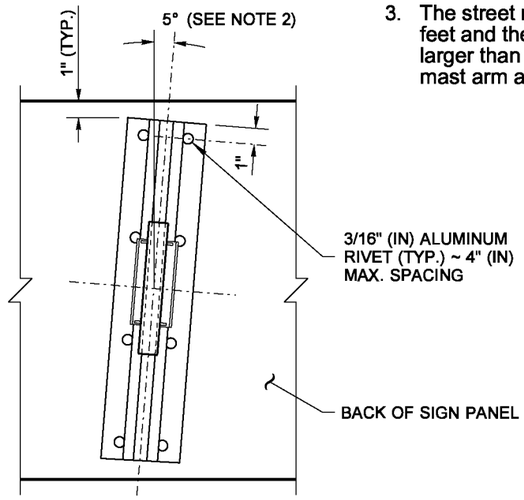


VIEW ~ LOOKING FROM BACK

MAST ARM-MOUNTED STREET NAME SIGNS

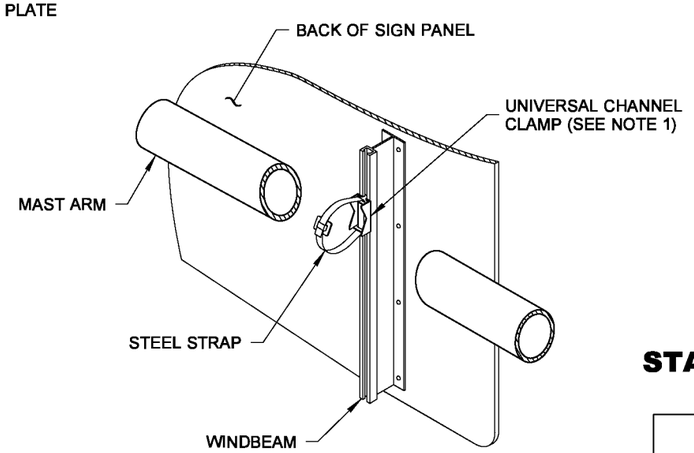
NOTES

1. Mounting brackets with steel straps shall be a stainless steel band and buckle system product or an approved equal. Mounting brackets shall be universal channel clamps; steel straps shall be 3/4" (in) wide and 0.030" (in) thick.
2. All signs installed on mast arms or standards (poles) require windbeams. All signs shall be installed with horizontal edges level. A skewed windbeam is required only when the sign is mounted within 12" (in) of the mast arm base (see Detail "A").
3. The street name sign shall be a maximum of 36 square feet and the sign height is a maximum of 3' (ft); signs larger than 36 square feet require a special design mast arm and signal pole.



DETAIL (A)

TYPICAL FOR EACH CONNECTION



TYPICAL MAST ARM INSTALLATION

JOHN C. NISBET
STATE OF WASHINGTON
29115
REGISTERED
PROFESSIONAL ENGINEER

SIGN INSTALLATION ON SIGNAL AND LIGHT STANDARDS STANDARD PLAN G-30.10-04

SHEET 1 OF 2 SHEETS

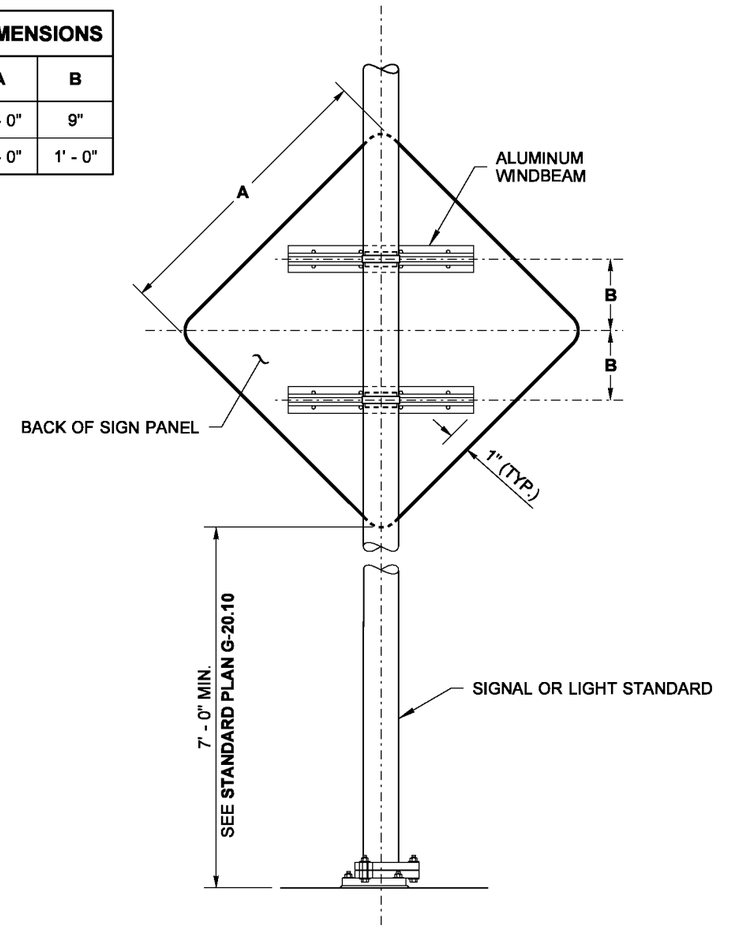
APPROVED FOR PUBLICATION

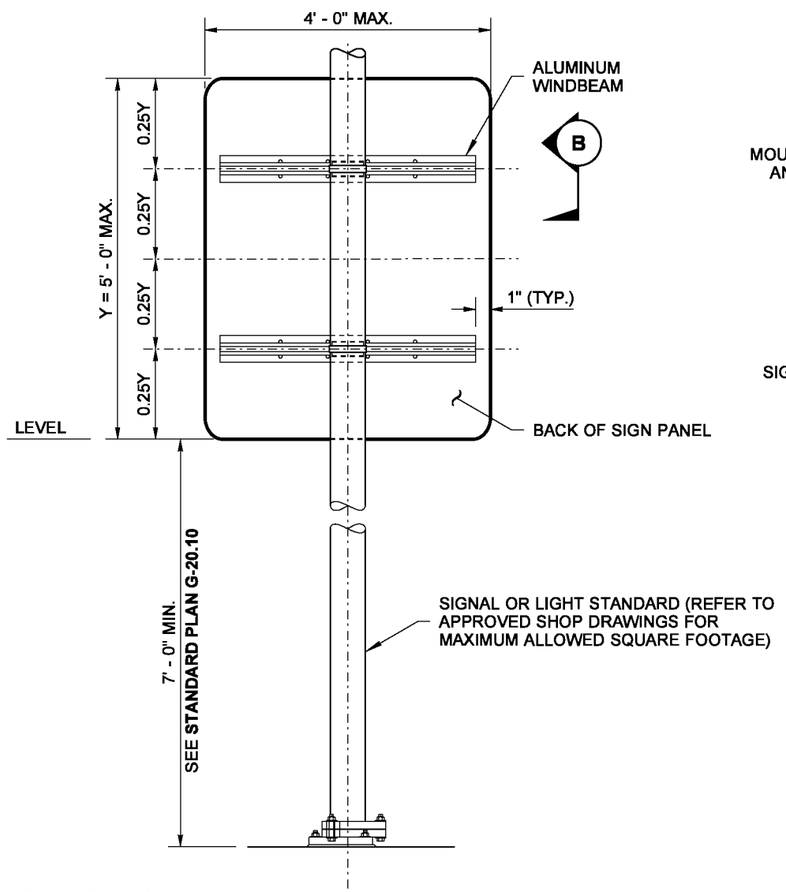
STATE DESIGN ENGINEER

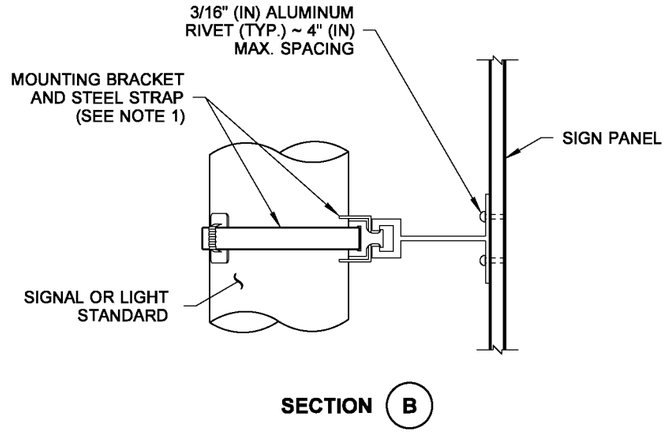
Washington State Department of Transportation

DRAWN BY: FERN LIDDELL

DIMENSIONS	
A	B
3' - 0"	9"
4' - 0"	1' - 0"







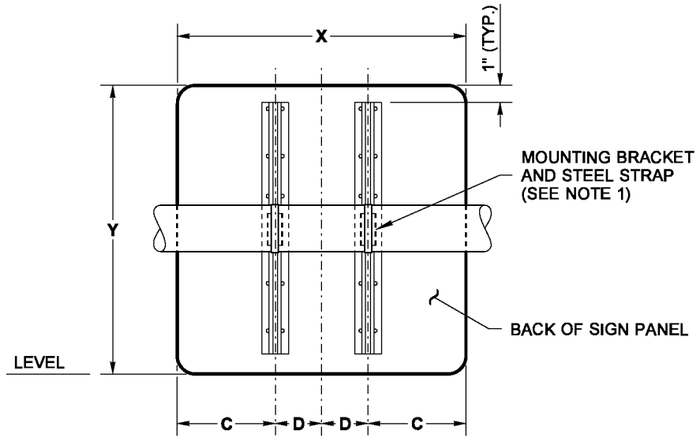
SECTION B

SIGN INSTALLATION ON SIGNAL OR LIGHT STANDARD

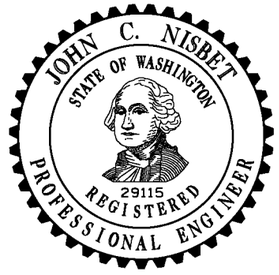
DIMENSIONS			
X	Y	C	D
3' - 0"	2' - 6"	1' - 0"	6"
3' - 0"	3' - 0"	1' - 0"	6"
3' - 0"	4' - 0"	1' - 3"	9"
4' - 0"	2' - 6"	1' - 3"	9"

NOTE:

Any Lane Use Sign greater than 7.5 sq ft. requires a Special Design Mast Arm and Signal Pole.



MAST ARM-MOUNTED LANE USE SIGNS



SIGN INSTALLATION ON SIGNAL AND LIGHT STANDARDS STANDARD PLAN G-30.10-04

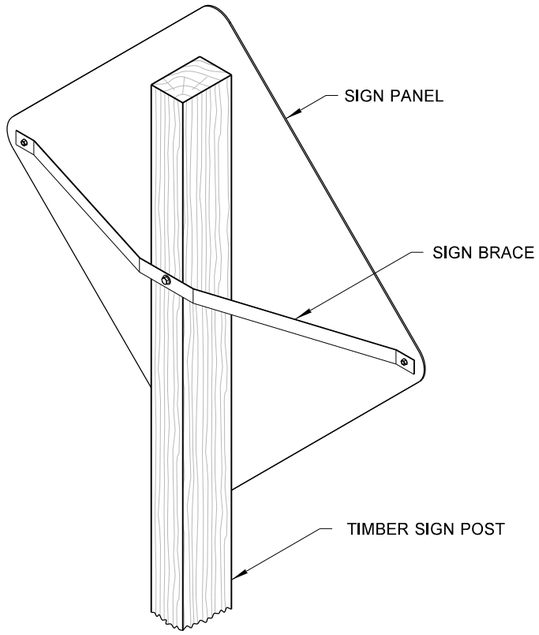
SHEET 2 OF 2 SHEETS

APPROVED FOR PUBLICATION

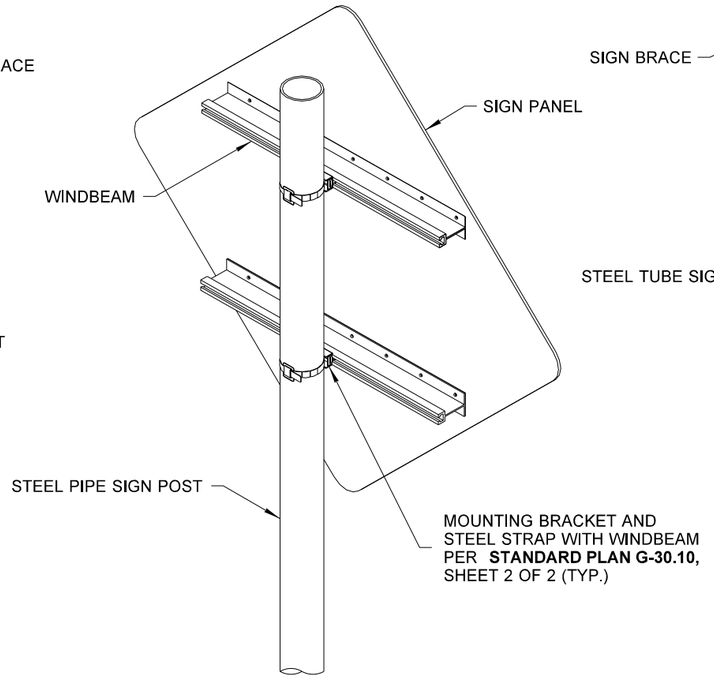
STATE DESIGN ENGINEER

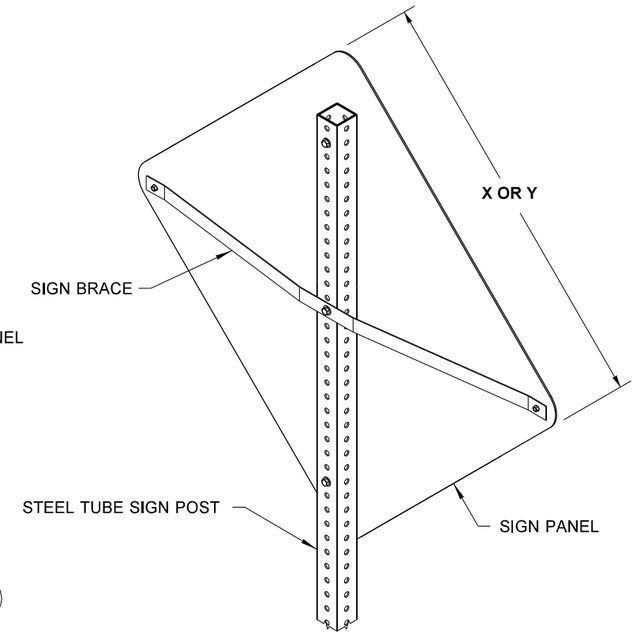
Washington State Department of Transportation

DRAWN BY: FERN LIDDELL



SIGN BRACE ON TIMBER POST



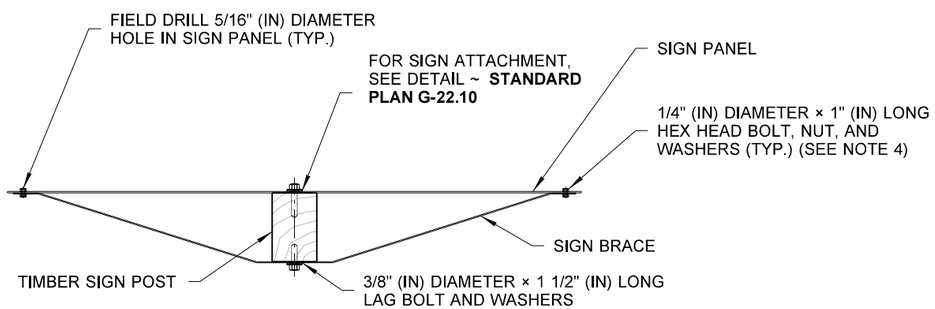


SIGN BRACE ON STEEL TUBE

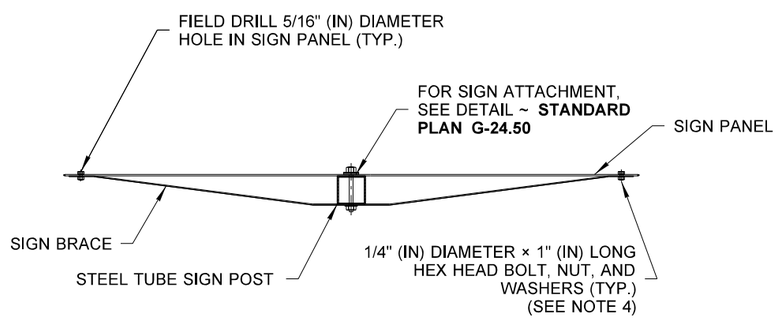
NOTES

1. Mounting brackets with steel straps shall be a stainless steel band and buckle system product or an approved equal. Mounting brackets shall be one bolt, flared leg; steel straps shall be 3/4" (in) wide and 0.030" (in) thick.
2. Sign braces are required for sign widths of 48" (in) or greater. For sign widths of 36" (in) or less, sign braces are only required when specified in the contract.
3. Sign braces are typically necessary on large sign panels that are exposed to high winds, traffic generated wind buffeting, or when snow thrown from plows might impact the sign.
4. A nylon washer shall be placed between the sign and the steel washer when the sign face has Type III, IV, VII or IX sheeting.
5. Signs 48" (in) or greater can be pinned together, back to back.
6. For signs installed back to back on a single post, no bracing is required.

SIGN BRACE ON STEEL PIPE



PLAN



PLAN

JOHN C. NISBET
STATE OF WASHINGTON
29115
REGISTERED
PROFESSIONAL ENGINEER

SIGN BRACING

STANDARD PLAN G-50.10-03

SHEET 1 OF 2 SHEETS

APPROVED FOR PUBLICATION

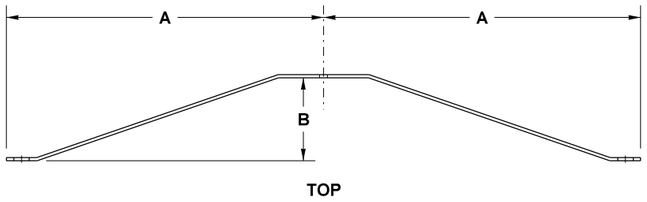
STATE DESIGN ENGINEER

Washington State Department of Transportation

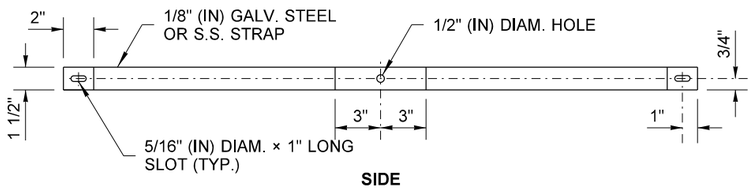
SIGN BRACE DIMENSIONS				
	SIGN TYPE			
	YIELD	DIAMOND-SHAPED	OTHERS	
A	1/3 SIGN WIDTH - 1 3/4"	1/2 SIGN WIDTH - 2 1/4"	1/2 SIGN WIDTH - 1"	
	SIGN POST TYPE			
	4×6 OR 6×6 TIMBER POST	6×8 TIMBER POST	3" DIAM. STEEL PIPE	2 1/2" SQUARE TUBE
B	5 1/2"	7 1/2"	4 3/4"	2 1/2"

NOTE

1. For sign installations on round steel posts, see **Standard Plan G-30.10, sheet 2 of 2.**

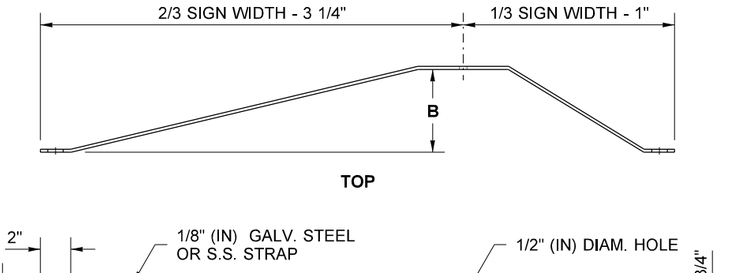


TOP

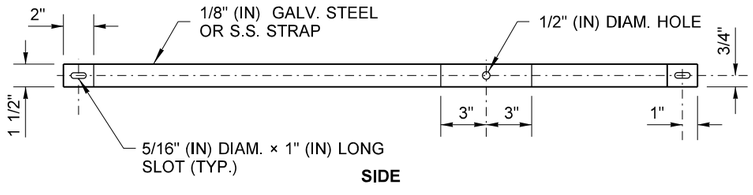


SIDE

SIGN BRACE DETAIL

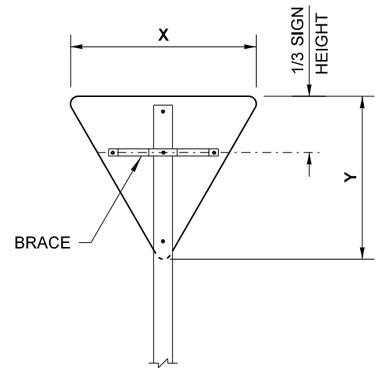


TOP

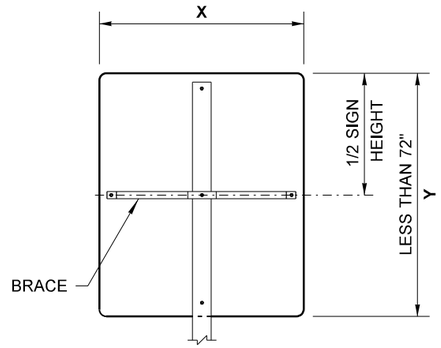


SIDE

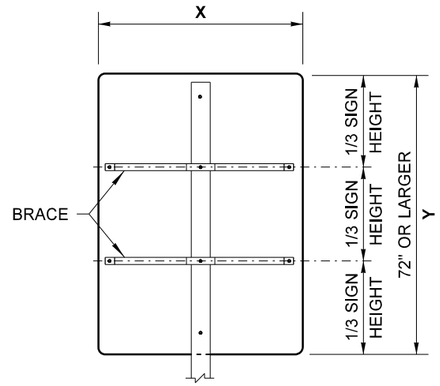
NO PASSING ZONE SIGN BRACE DETAIL



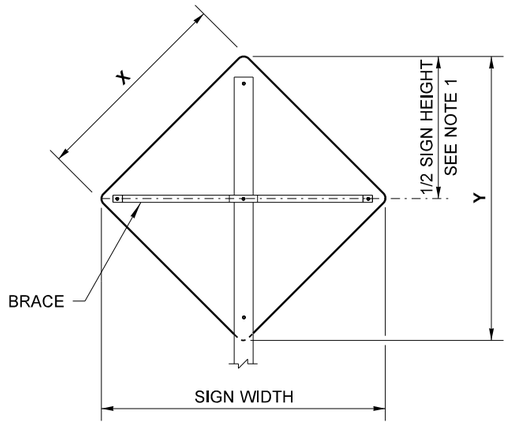
YIELD SIGN



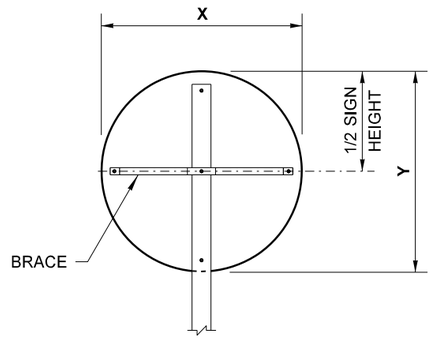
SMALL RECTANGULAR SIGN



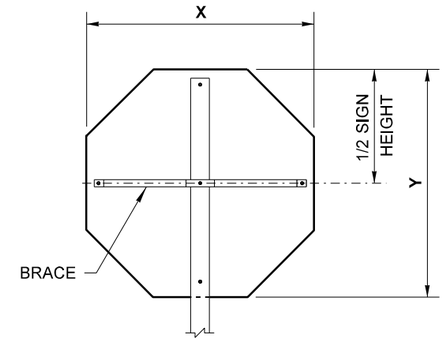
LARGE RECTANGULAR SIGN



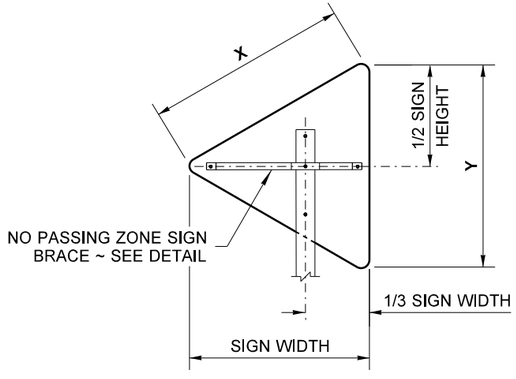
DIAMOND-SHAPED SIGN



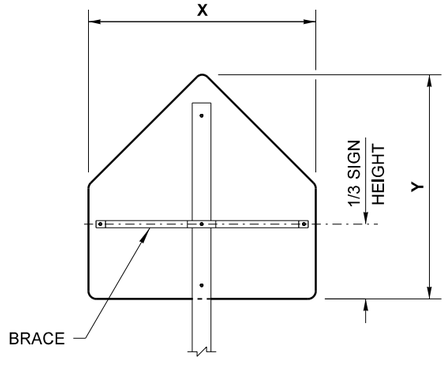
RAILROAD WARNING SIGN



STOP SIGN



NO PASSING ZONE SIGN



SCHOOL ZONE SIGN

SIGN BRACE PLACEMENT

DRAWN BY: FERN LIDDELL

JOHN C. NISBET
STATE OF WASHINGTON
29115
REGISTERED
PROFESSIONAL ENGINEER

SIGN BRACING

STANDARD PLAN G-50.10-03

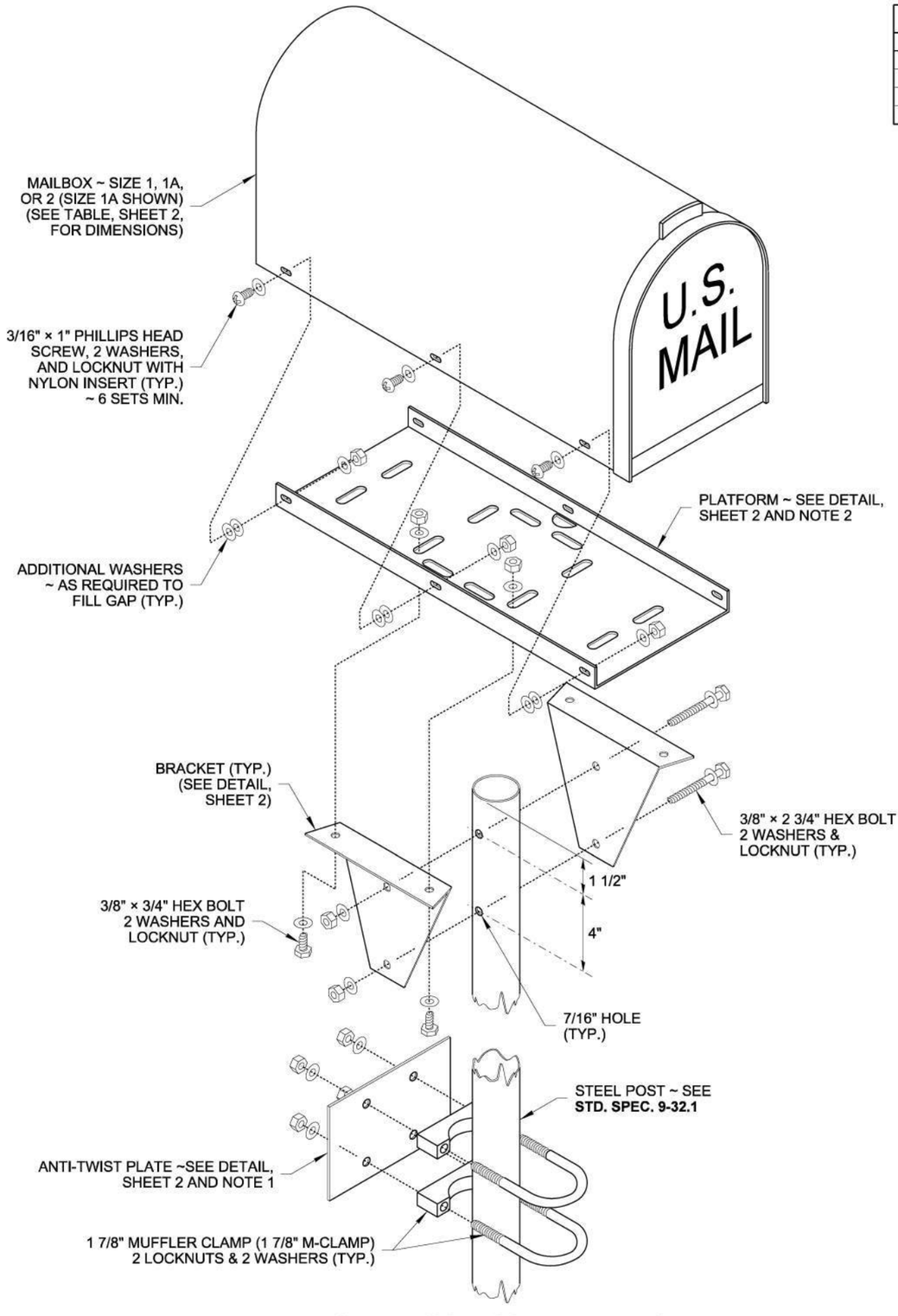
SHEET 2 OF 2 SHEETS

APPROVED FOR PUBLICATION

STATE DESIGN ENGINEER

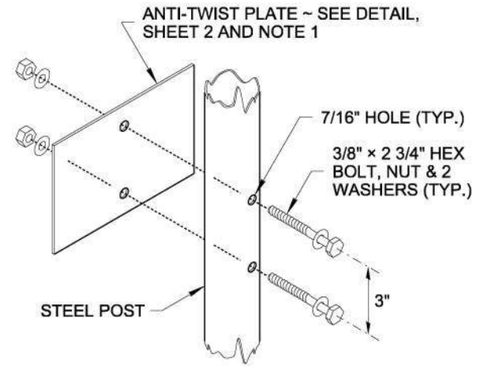
Washington State Department of Transportation

DRAWN BY: MARK SUJKA



STEEL POST ASSEMBLY DETAIL

STEEL POST FASTENERS			
SIZE / TYPE	QUANTITY	WASHERS	LOCKNUTS
3/8" DIAM. × 2 3/4" BOLT	2	4	2
3/8" DIAM. × 3/4" BOLT	4	8	4
3/16" DIAM. × 1" SCREW	6	12	6
1 7/8" M-CLAMP	2	4	4



ALTERNATE ANTI-TWIST PLATE DESIGN

NOTES

1. The anchoring system shall meet MASH crash test criteria. The anti-twist plate anchoring system shown on this plan is deemed MASH compliant by WSDOT.

   The V-Wing socket and wedge assembly in a concrete base shown on **Std. Plan H-70.20** is also deemed MASH compliant by WSDOT and may be substituted in lieu of the anti-twist plate designs shown.

   Other MASH compliant anchoring systems manufactured by or recommended by the Type 1 support manufacturer are allowed to be used in lieu of the anti-twist plate or V-wing socket and wedge assembly.

2. The platform design shown on this plan features slots that accommodate several types of mailbox supports; only those slots necessary for assembling the type being installed are required. An adjustable platform may be used in lieu of this design, but it must fit the bracket design shown on this plan. Brackets are required for all single-post installations. Field drilling may be necessary.

3. Center the mailbox on the platform to ensure space for the mailbox door to open and to allow space for installing the fasteners (see ALIGNMENT DETAIL, Sheet 2). Spacing of mailbox mounting holes varies among manufacturers. Attachment of the mailbox to the platform may require drilling additional holes through the mailbox to fit the platform.

4. Attach a newspaper box to a steel post with two 1 7/8" (in) Muffler Clamps spaced 4" (in) apart. Field drill 7/16" (in) holes in the newspaper box to fit. Newspaper boxes must not extend beyond the front of the mailbox when the mailbox door is closed.

5. A Type 2 Support (**Standard Plan H-70.20**) is required when 2 or more mailboxes are to be installed on one support.

JOHN PATRICK DONAHUE
STATE OF WASHINGTON
29023
REGISTERED PROFESSIONAL ENGINEER
John Donahue (Aug 17, 2021 12:36 PDT)

Aug 17, 2021

MAILBOX SUPPORT TYPE 1

STANDARD PLAN H-70.10-02

SHEET 1 OF 2 SHEETS

APPROVED FOR PUBLICATION

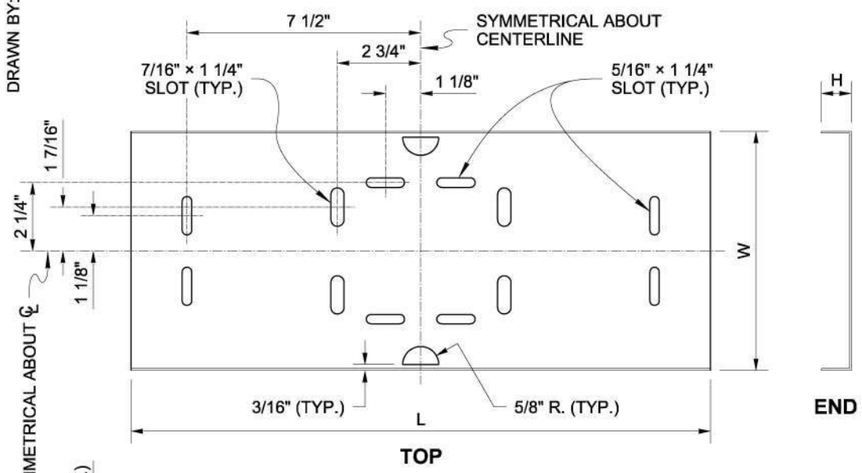
Aug 17, 2021

STATE DESIGN ENGINEER

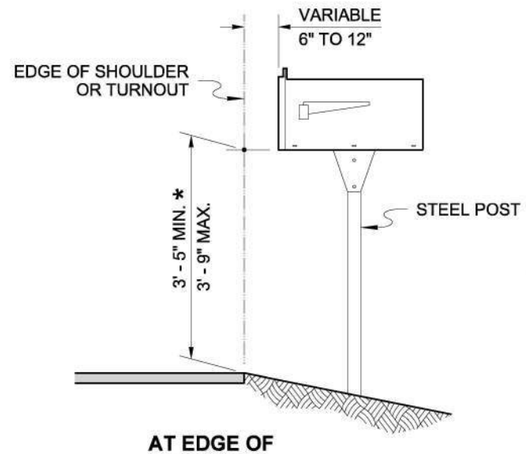
Washington State Department of Transportation

DRAWN BY: MARK SUJKA

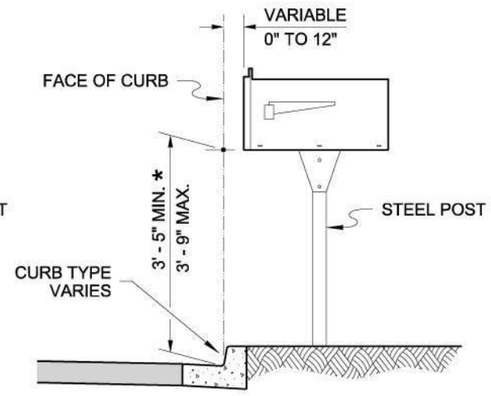
MAILBOX & PLATFORM DIMENSIONS						
SIZE	MAILBOX DIMENSIONS			PLATFORM DIMENSIONS		
	L	W	H	L	W	H
1	19"	6 1/2"	8 1/2"	17"	6"	1"
1A	21"	8"	10 1/2"	19"	7 1/2"	1"
2	24"	11 1/2"	13 1/2"	21"	11"	1"



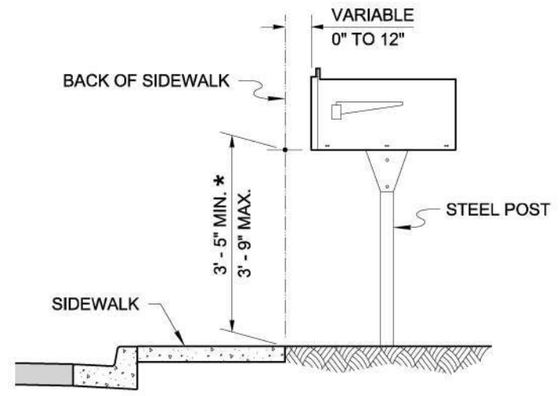
PLATFORM DETAIL



AT EDGE OF SHOULDER



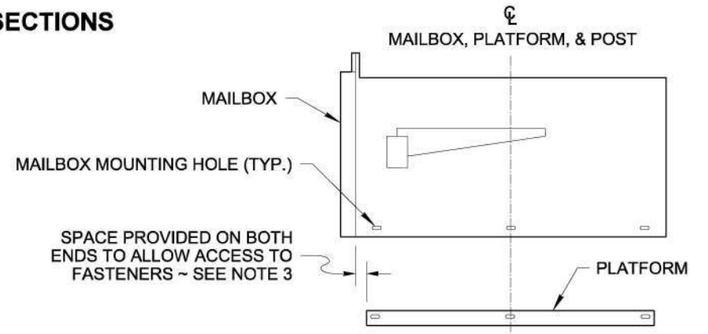
BEHIND CURB



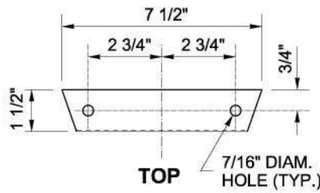
BEHIND SIDEWALK

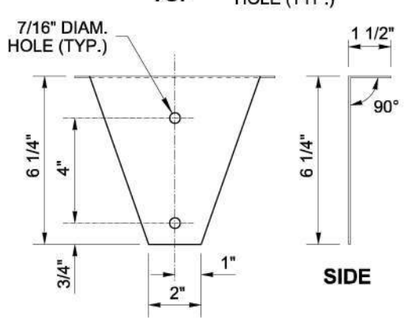
* UNLESS OTHERWISE SHOWN IN THE PLANS

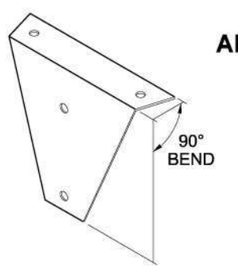
MAILBOX PLACEMENT SECTIONS



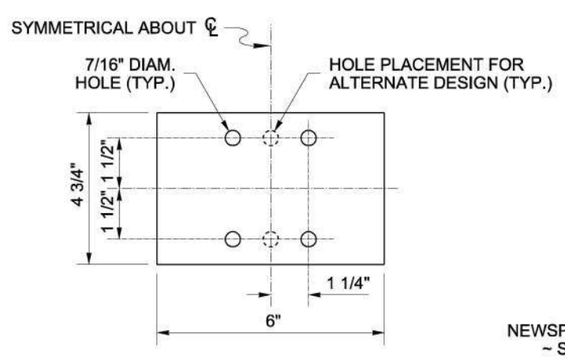
ALIGNMENT DETAIL



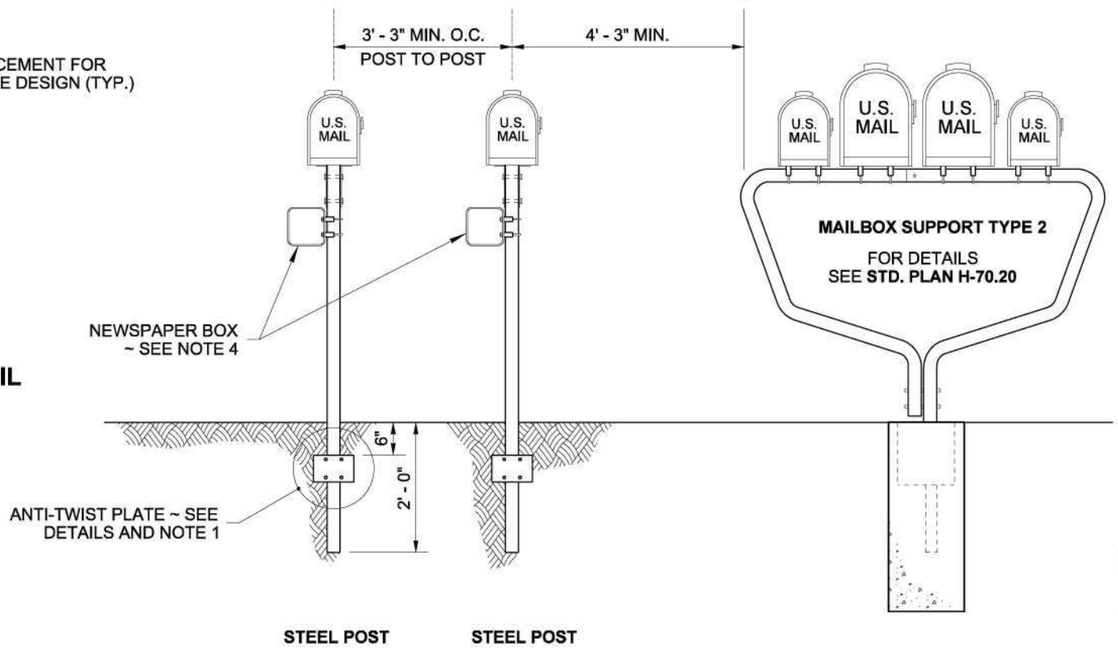




BRACKET DETAIL



ANTI-TWIST PLATE DETAIL



POST PLACEMENT DETAIL

JOHN PATRICK DONAHUE
STATE OF WASHINGTON
29023
REGISTERED PROFESSIONAL ENGINEER
John Donahue (Aug 17, 2021 13:56 PDT)
Aug 17, 2021

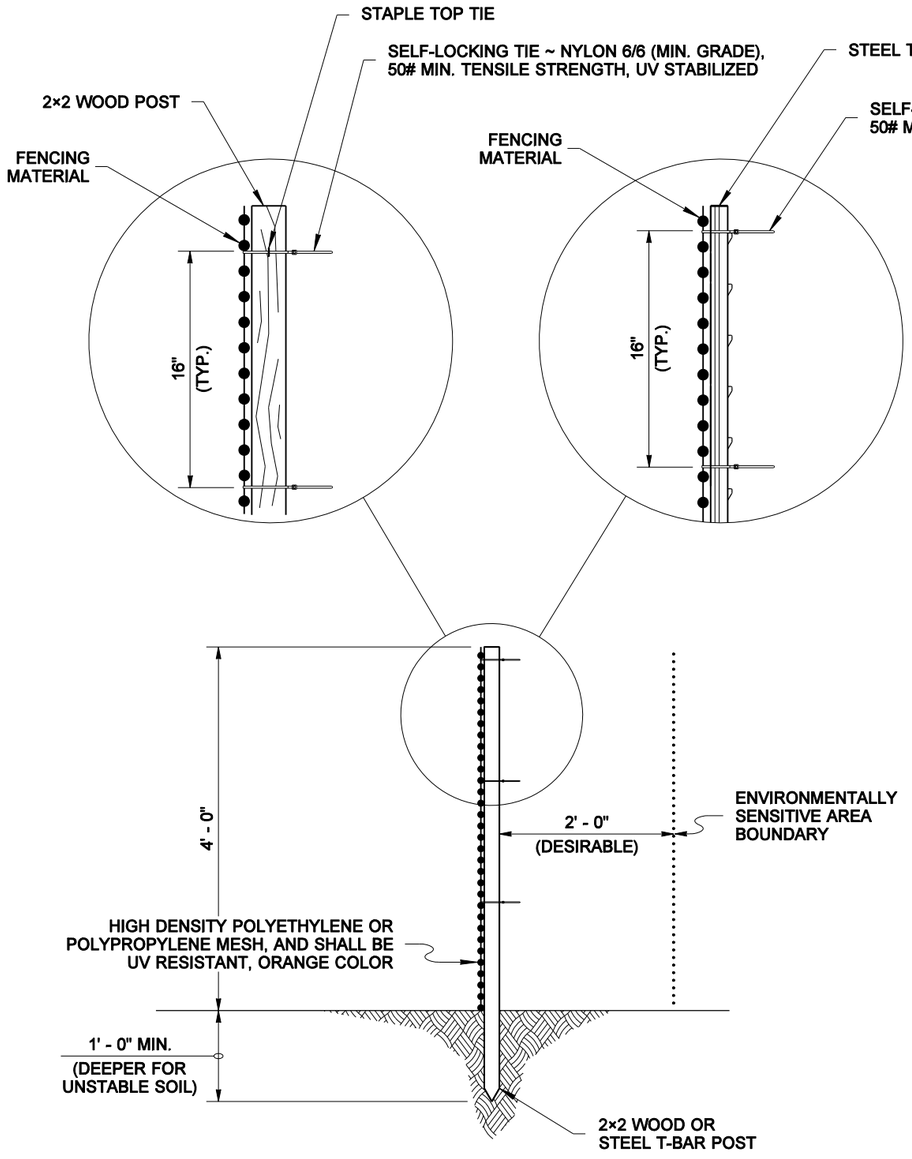
MAILBOX SUPPORT TYPE 1

STANDARD PLAN H-70.10-02

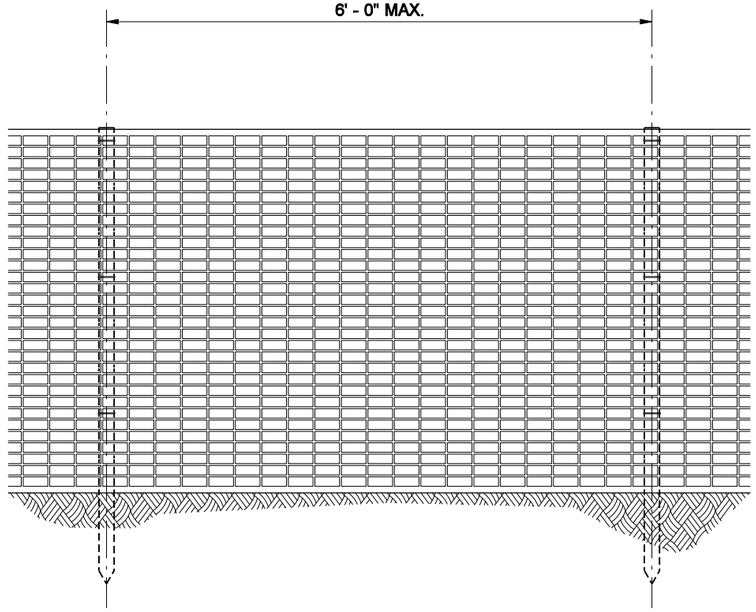
SHEET 2 OF 2 SHEETS

APPROVED FOR PUBLICATION
Aug 17, 2021
STATE DESIGN ENGINEER
Washington State Department of Transportation

DRAWN BY: BILL BERENS



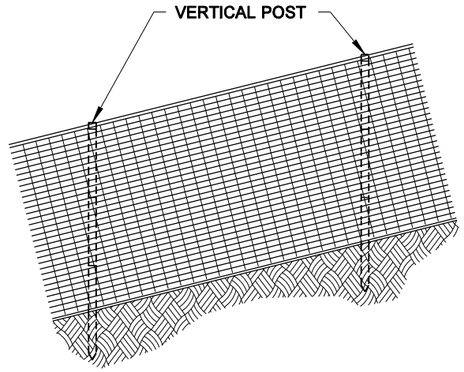
TYPICAL SECTION



ELEVATION

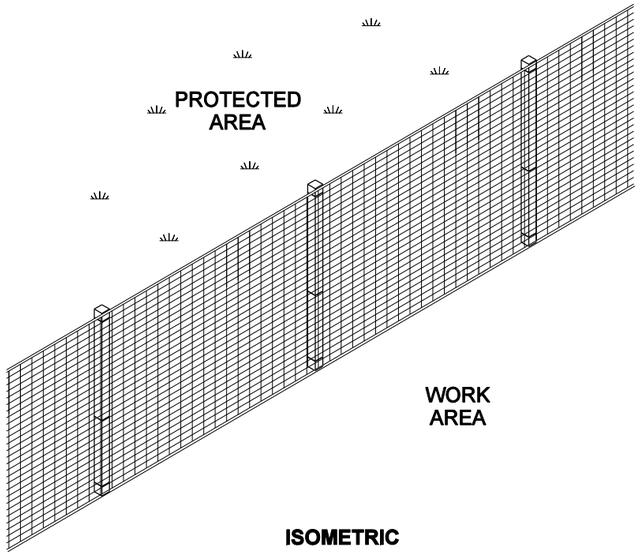
NOTE

1. Post shall have sufficient strength and durability to support the fence through the life of the project.



ELEVATION

FENCE ON SLOPE



ISOMETRIC

STATE OF WASHINGTON
REGISTERED
LANDSCAPE ARCHITECT

MARK W. MAURER
CERTIFICATE NO. 000598

NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT BUT AN ELECTRONIC DUPLICATE. THE ORIGINAL, SIGNED BY THE ENGINEER AND APPROVED FOR PUBLICATION, IS KEPT ON FILE AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST.

HIGH VISIBILITY FENCE

STANDARD PLAN I-10.10-01

SHEET 1 OF 1 SHEET

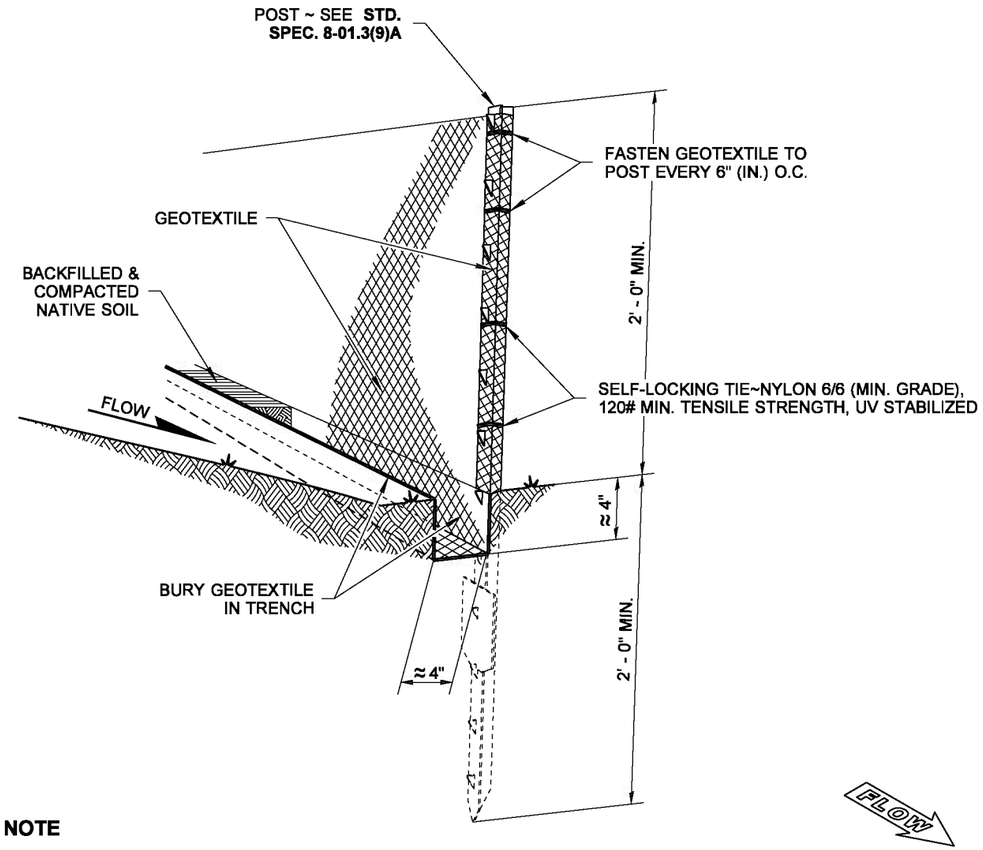
APPROVED FOR PUBLICATION

Pasco Bakotich III — STATE DESIGN ENGINEER

08-11-09 — DATE

Washington State Department of Transportation

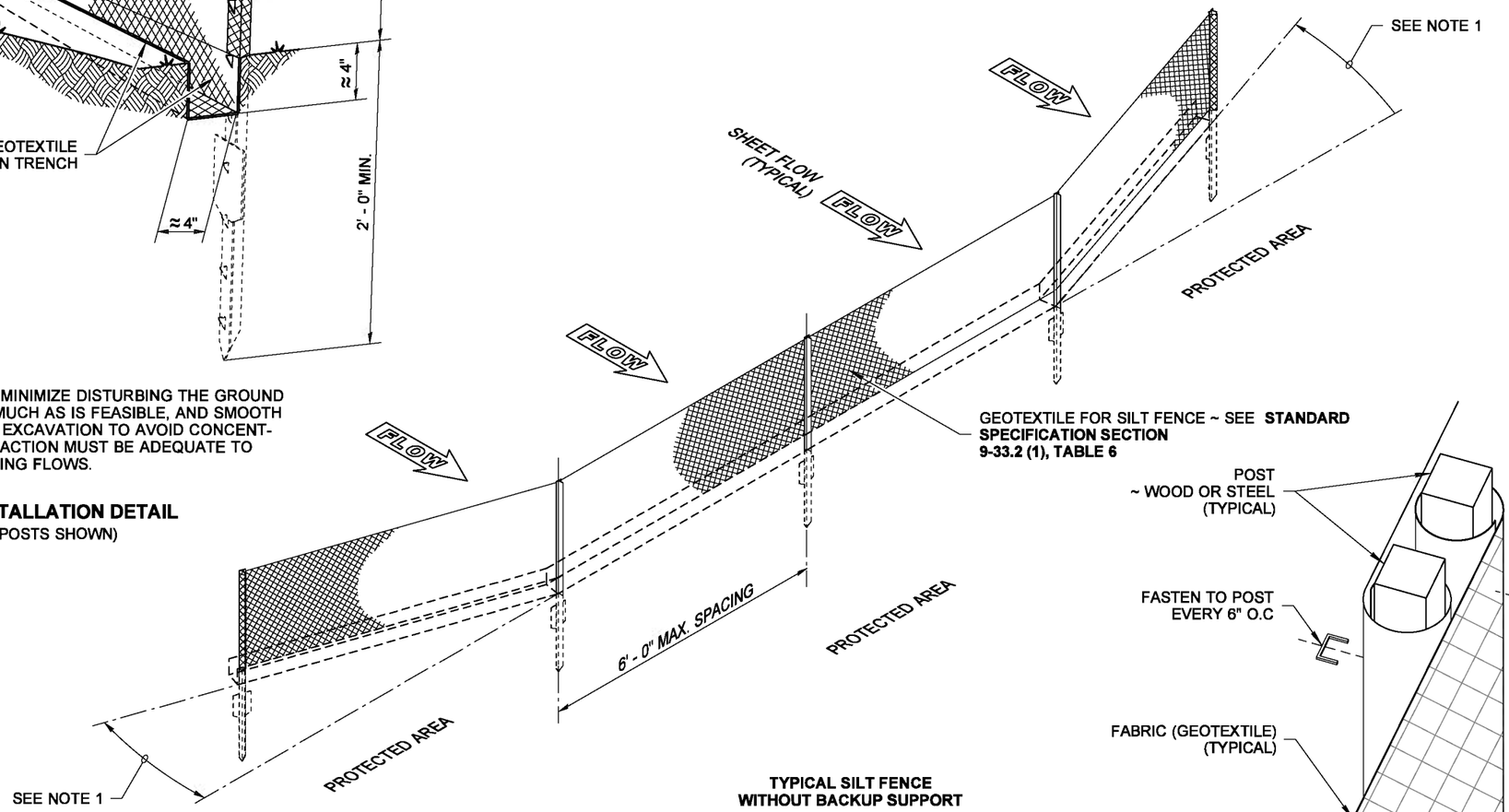
DRAWN BY: BILL BERENS



NOTE

DURING EXCAVATION, MINIMIZE DISTURBING THE GROUND AROUND TRENCH AS MUCH AS IS FEASIBLE, AND SMOOTH SURFACE FOLLOWING EXCAVATION TO AVOID CONCENT-RATING FLOWS. COMPACTION MUST BE ADEQUATE TO PREVENT UNDERCUTTING FLOWS.

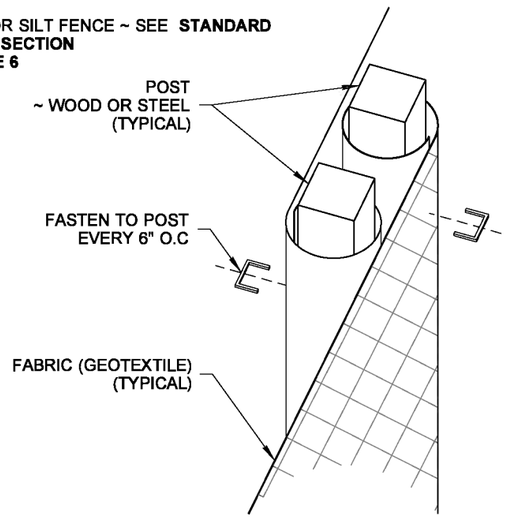
TYPICAL INSTALLATION DETAIL
(STEEL POSTS SHOWN)



TYPICAL SILT FENCE WITHOUT BACKUP SUPPORT
ISOMETRIC
(STEEL POSTS SHOWN)

NOTES

1. Install the ends of the silt fence to point slightly upslope to prevent sediment from flowing around the ends of the fence.
2. Perform maintenance in accordance with **Standard Specifications 8-01.3(9)A and 8-01.3(15)**.
3. Splices shall never be placed in low spots or sump locations. If splices are located in low or sump areas, the fence may need to be reinstalled unless the Project Engineer approves the installation.
4. Install silt fencing parallel to mapped contour lines.



SPLICED FENCE SECTIONS SHALL BE CLOSE ENOUGH TOGETHER TO PREVENT SILT LADEN WATER FROM ESCAPING THROUGH THE FENCE AT THE OVERLAP.

SPLICE DETAIL
(WOOD POSTS SHOWN)

STATE OF WASHINGTON
REGISTERED
LANDSCAPE ARCHITECT

SANDRA L. SALISBURY
CERTIFICATE NO. 000860

NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT BUT AN ELECTRONIC DUPLICATE. THE ORIGINAL, SIGNED BY THE ENGINEER AND APPROVED FOR PUBLICATION, IS KEPT ON FILE AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST.

SILT FENCE

STANDARD PLAN I-30.15-02

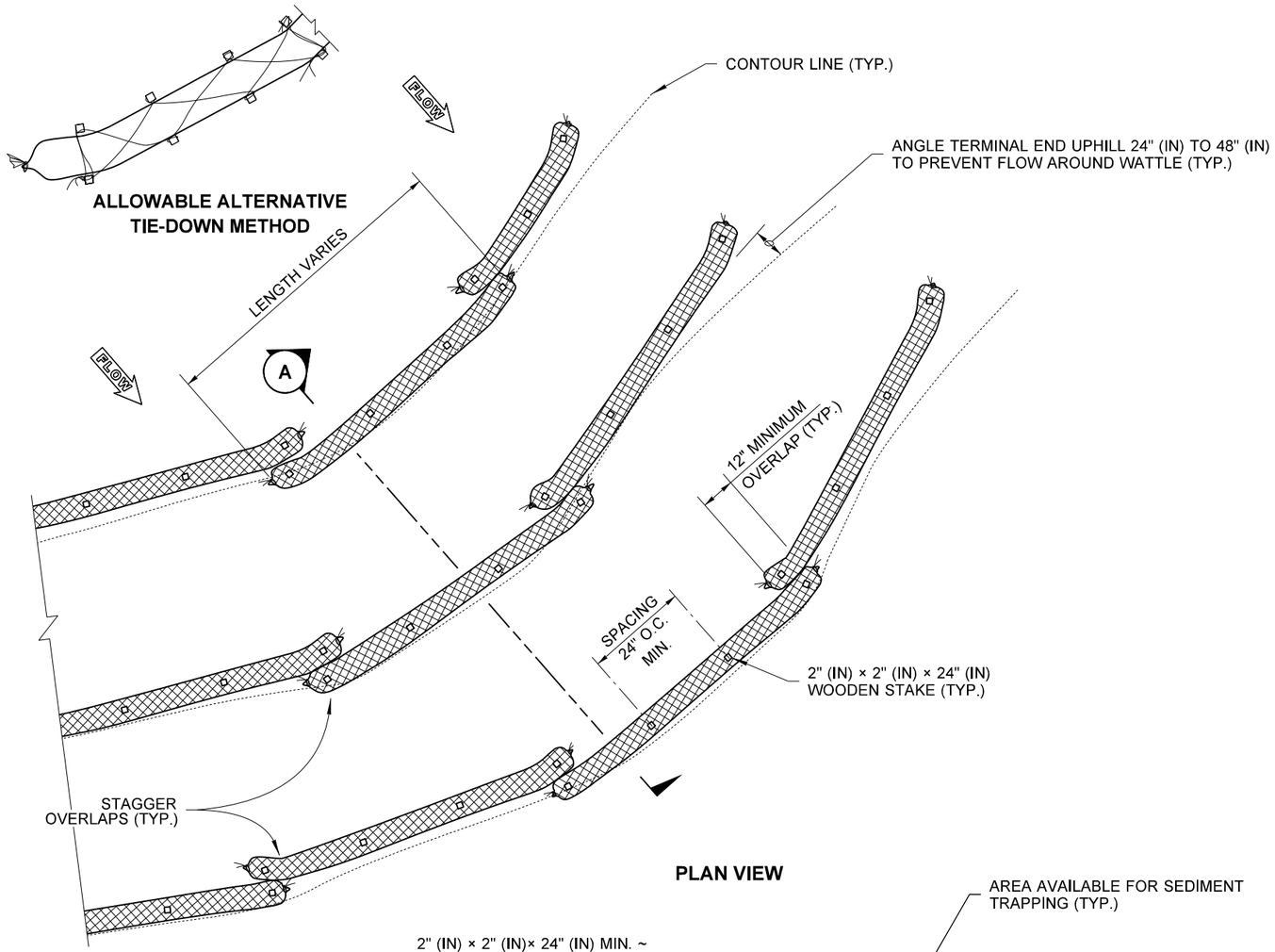
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

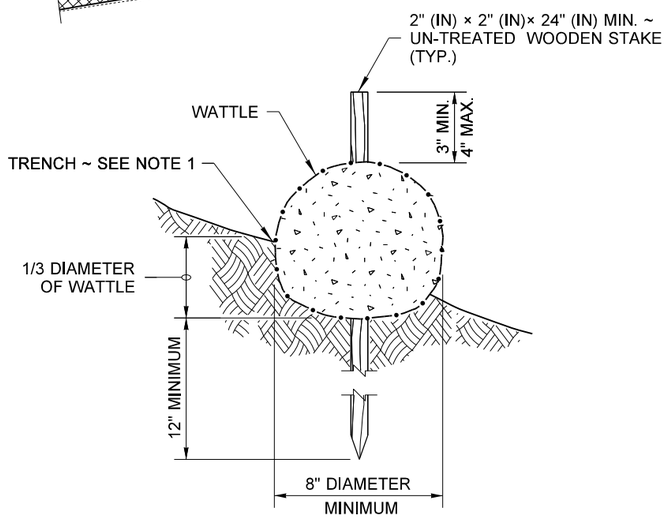
Pasco Bakotich III — STATE DESIGN ENGINEER
3/22/13 — DATE

Washington State Department of Transportation

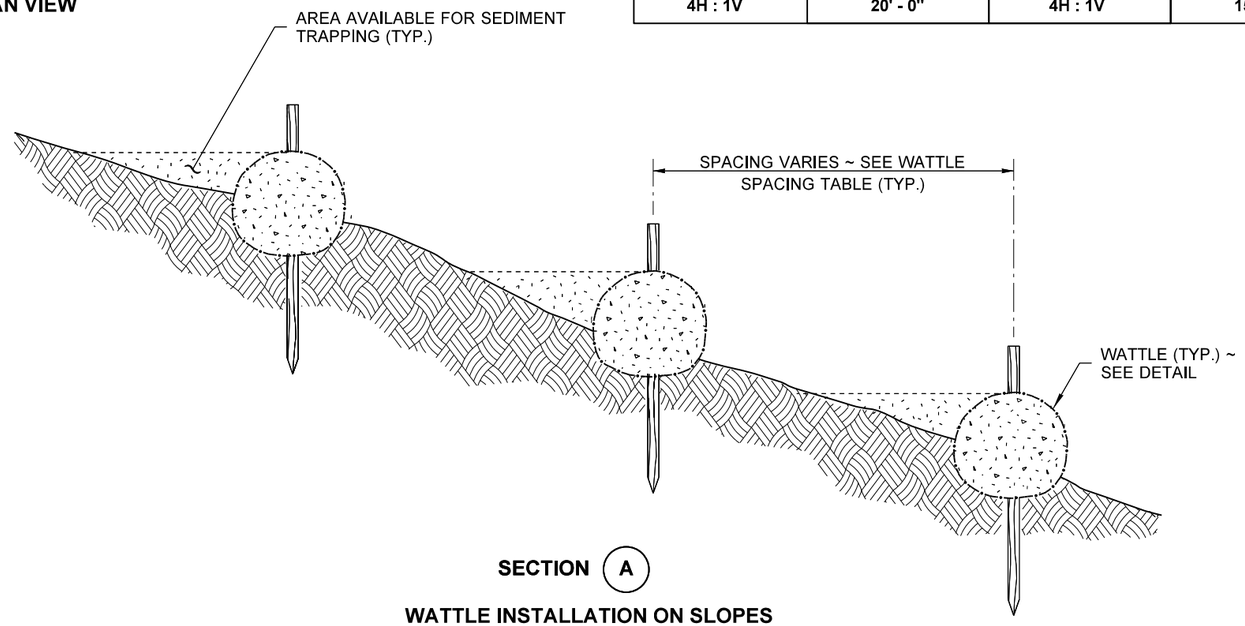
DRAWN BY: FERN LIDDELL



PLAN VIEW



WATTLE DETAIL



SECTION (A)

WATTLE INSTALLATION ON SLOPES

NOTES

1. Wattles shall be in accordance with **Standard Specification, Section 9-14.5(5).** Install Wattles along contours. Installation shall be in accordance with **Standard Specification, Section 8-01.3(10)**.
2. Securely knot each end of Wattle. Overlap adjacent Wattle ends 12" (in) behind one another and securely tie together.
3. Compact excavated soil and trenches to prevent undercutting. Additional staking may be necessary to prevent undercutting.
4. Install Wattle perpendicular to flow along contours.
5. Wattles shall be inspected regularly, and immediately after a rainfall produces runoff, to ensure they remain thoroughly entrenched and in contact with the soil.
6. Perform maintenance in accordance with **Standard Specification, Section 8-01.3(15).**
7. Refer to **Standard Specification, Section 8-01.3(16)** for removal.

WATTLE SPACING TABLE			
TEMPORARY		PERMANENT	
8" - 10" OR 10" - 12" DIAM.		10" - 12" DIAM.	
SLOPE	MAX. SPACING	SLOPE	MAX. SPACING
1H : 1V	5' - 0"	-	-
2H : 1V	10' - 0"	2H : 1V	5' - 0"
3H : 1V	15' - 0"	3H : 1V	10' - 0"
4H : 1V	20' - 0"	4H : 1V	15' - 0"

STATE OF WASHINGTON
JULI DEE HARTWIG
NO. 1422 EXP. 06/21/2021
LANDSCAPE ARCHITECT

WATTLE INSTALLATION ON SLOPE

STANDARD PLAN I-30.30-02

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

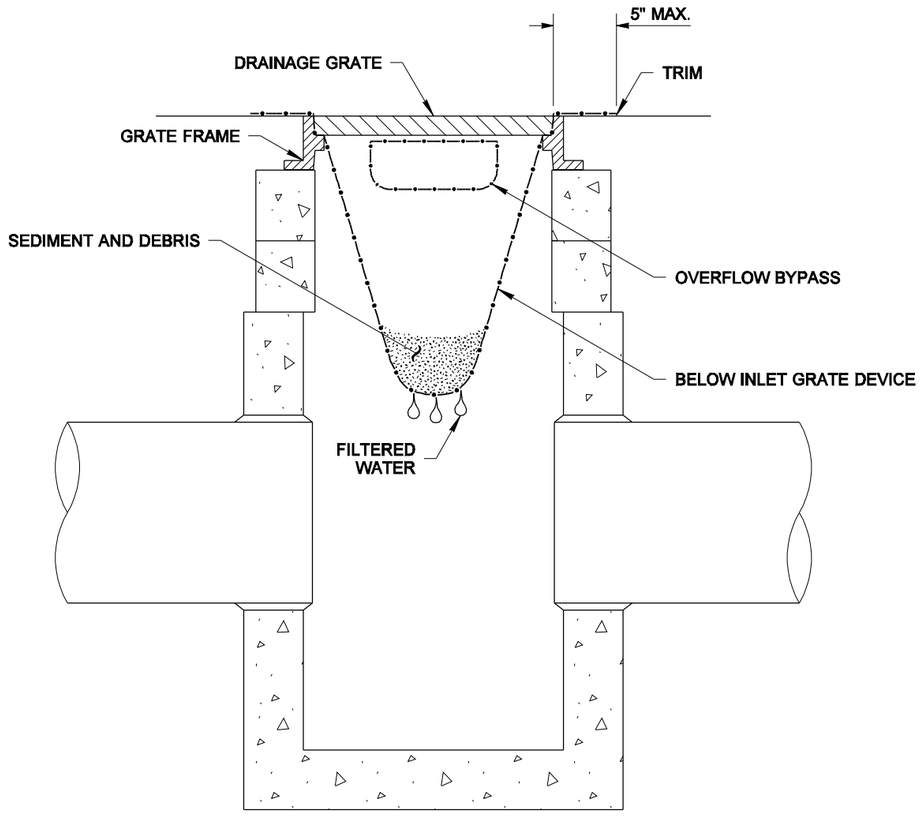
STATE DESIGN ENGINEER

Washington State Department of Transportation

DRAWN BY: LISA CYFORD

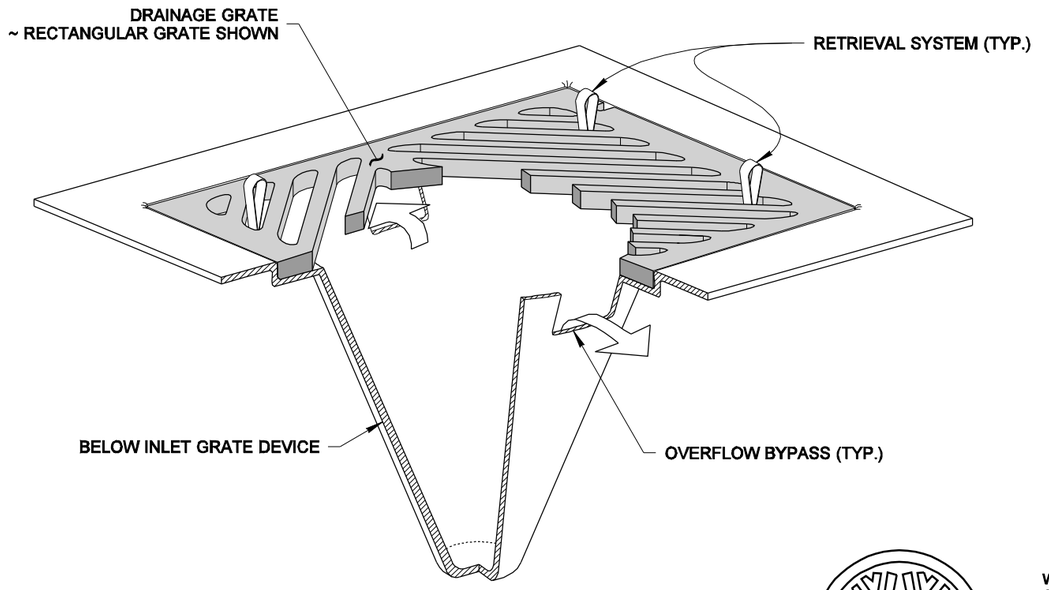
NOTES

1. Size the Below Inlet Grate Device (BIGD) for the storm water structure it will service.
2. The BIGD shall have a built-in high-flow relief system (overflow bypass).
3. The retrieval system must allow removal of the BIGD without spilling the collected material.
4. Perform maintenance in accordance with Standard Specification 8-01.3(15).



SECTION VIEW

NOT TO SCALE



ISOMETRIC VIEW

STATE OF WASHINGTON
REGISTERED
LANDSCAPE ARCHITECT

MARK W. MAURER
CERTIFICATE NO. 000598

NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT BUT AN ELECTRONIC DUPLICATE. THE ORIGINAL, SIGNED BY THE ENGINEER AND APPROVED FOR PUBLICATION, IS KEPT ON FILE AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST.

STORM DRAIN INLET PROTECTION

STANDARD PLAN I-40.20-00

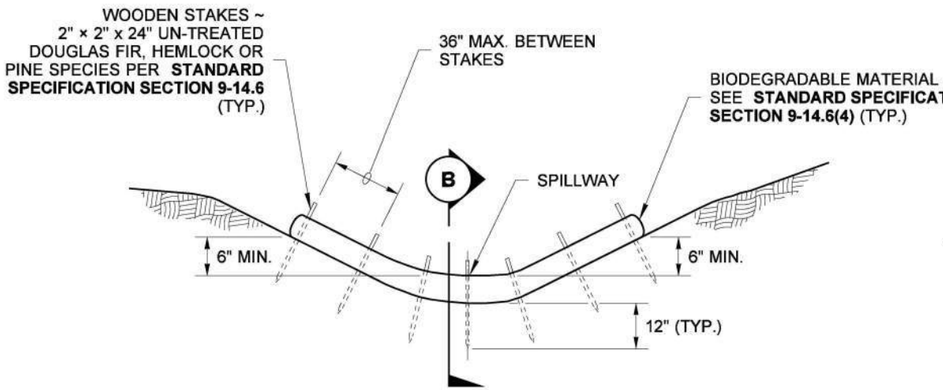
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

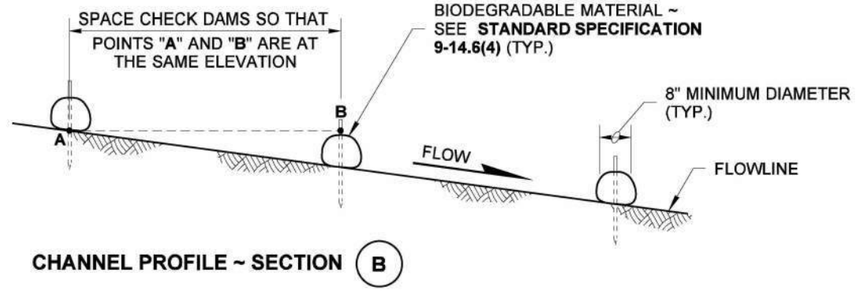
Pasco Bakotich III — STATE DESIGN ENGINEER

09-20-07 — DATE

Washington State Department of Transportation

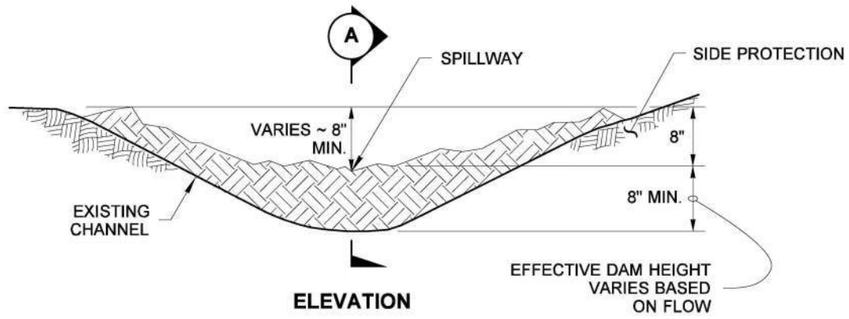


TYPICAL CHANNEL SECTION

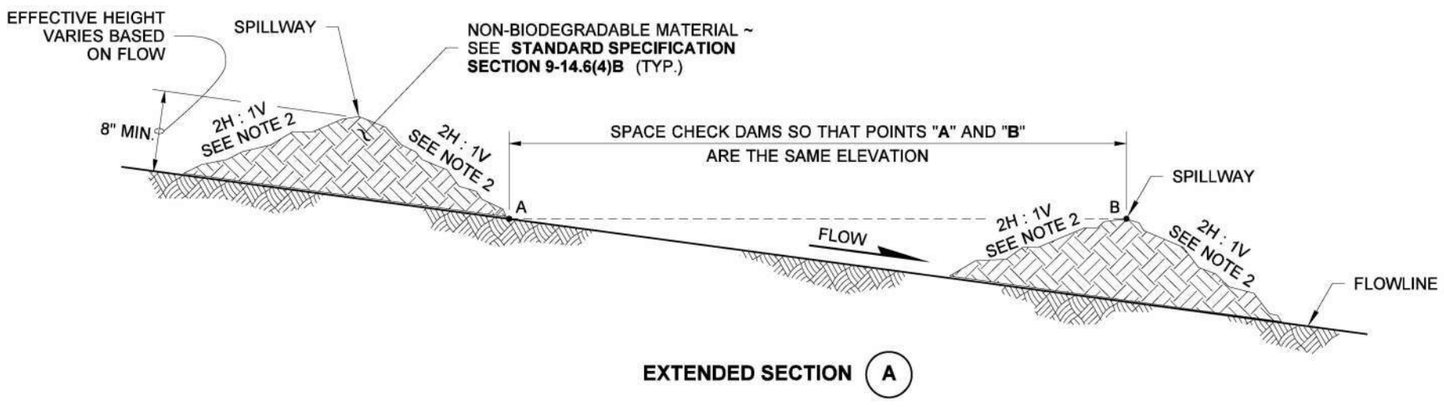


CHANNEL PROFILE ~ SECTION (B)

BIODEGRADABLE CHECK DAM



ELEVATION



EXTENDED SECTION (A)

NON-BIODEGRADABLE CHECK DAM

GENERAL NOTES

1. Check Dams shall meet the requirements of **Standard Specification Sections 8-01.3(6) and 9-14.6(4).**
2. In channels, install the sloped ends of the Check Dam a minimum of 8" higher than the spillway to ensure water flows over the dam and not around it.
3. Perform maintenance in accordance with **Standard Specification Section 8-01.3(15).**
4. Remove Check Dams in accordance with **Standard Specification Section 8-01.3(16).**

BIODEGRADABLE CHECK DAM NOTE

1. Biodegradable Check Dams may need additional or modified staking to prevent undercutting or scouring.

NON-BIODEGRADABLE CHECK DAM NOTES

1. Non-Biodegradable Manufactured Check Dam devices approved for use under **Standard Specification Section 9-14.6(4)B** shall be installed per manufacturer's recommendations and shall perform in accordance with **Standard Specification Section 8-01.3(6).**
2. Rock Check Dams with slopes parallel to the roadway that are steeper than 10 H : 1 V shall be placed outside of the clear zone or behind traffic barrier.
3. To ensure adequate detention time, Rock Check Dams used as sediment control may need to be enhanced with plastic that meets the requirements of **Standard Specification Section 9-14.6(3)** or fabric that meets the geotextile requirements of **Standard Specification Section 9-33.2(1), Table 6.**

DRAWN BY: FERN LIDDELL

STATE OF WASHINGTON · JULI DEE HARTWIG · NO. 1422 EXP. 06/21/2023 · LANDSCAPE ARCHITECT

Jul 6, 2022

CHECK DAMS ON CHANNELS

STANDARD PLAN I-50.20-02

SHEET 1 OF 1 SHEET

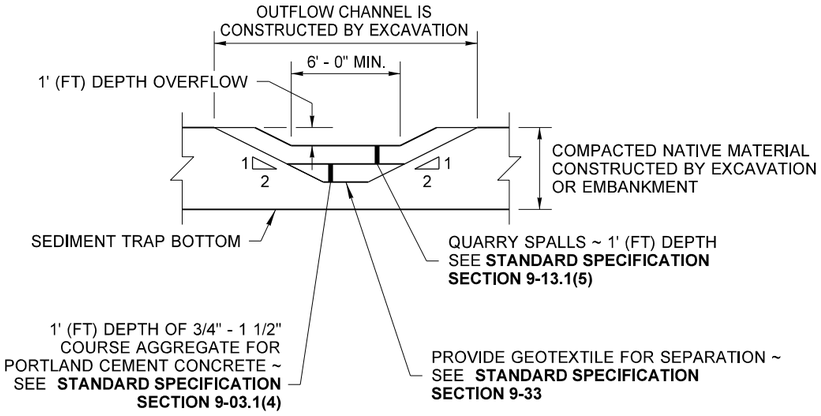
APPROVED FOR PUBLICATION

Mark Gaines (Jul 6, 2022 14:33 PDT) Jul 6, 2022

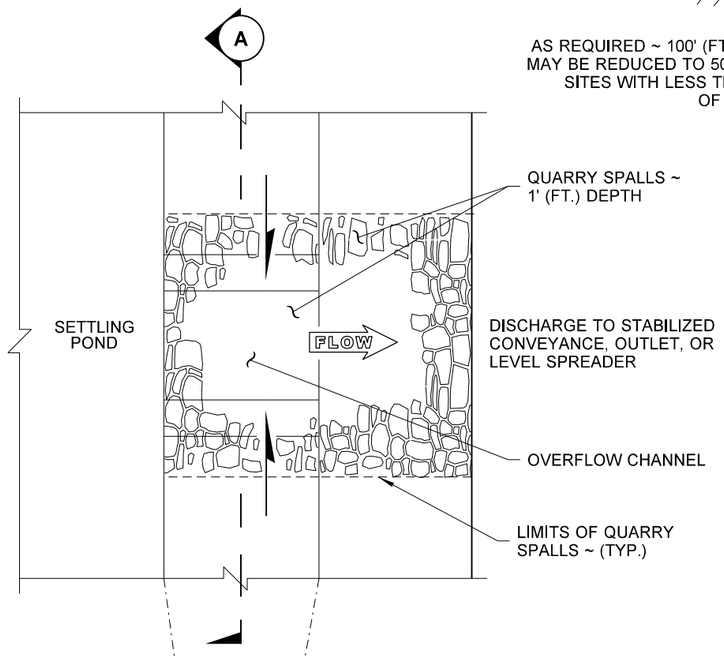
STATE DESIGN ENGINEER

Washington State Department of Transportation

DRAWN BY: FERN LIDDELL

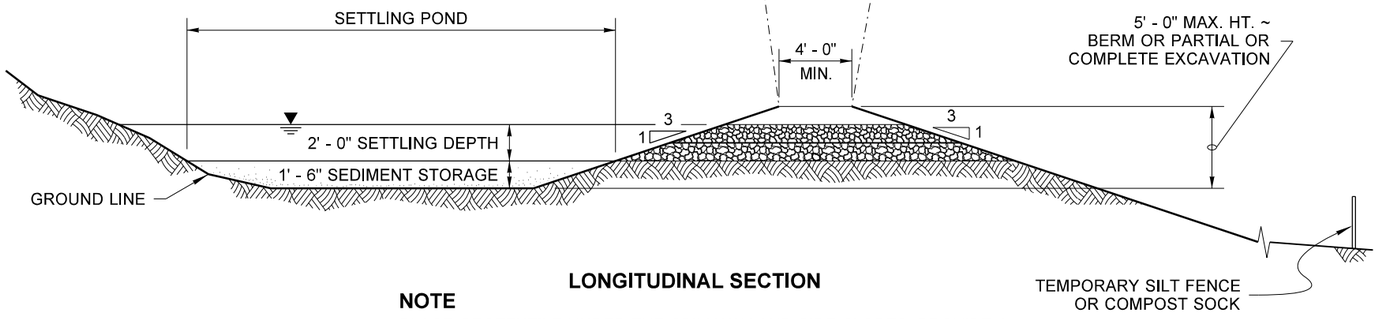


SECTION (A)



PARTIAL PLAN VIEW OF BERM

SHOWN LARGER FOR CLARITY

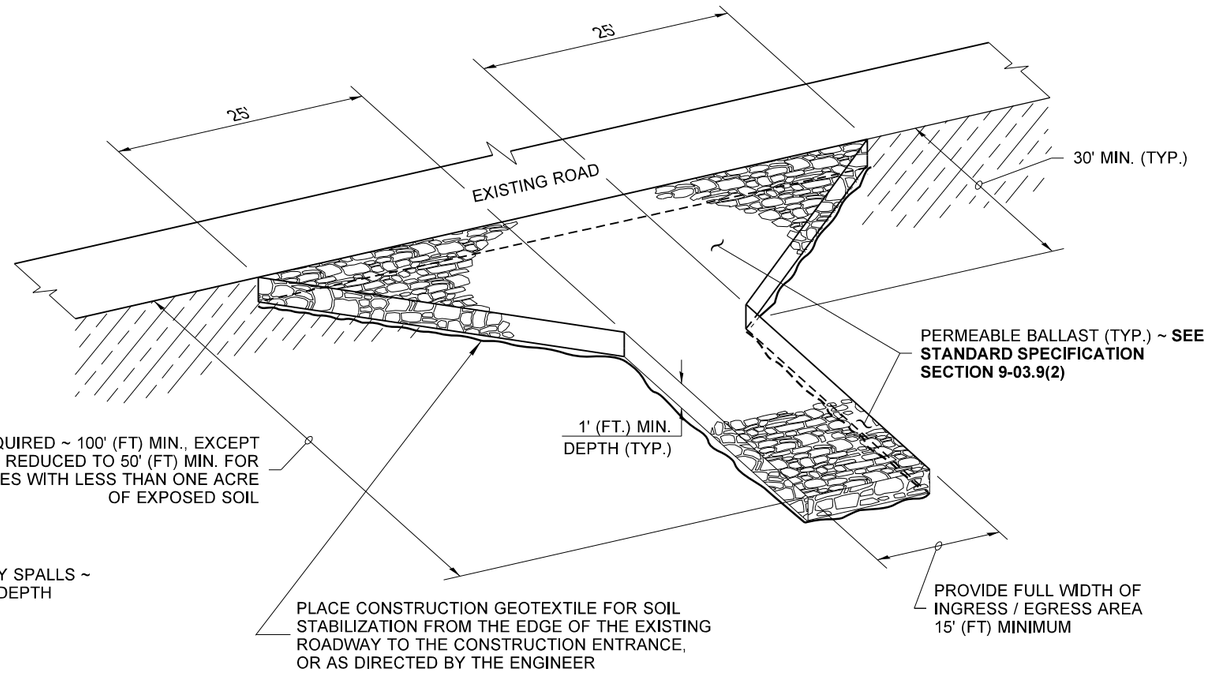


LONGITUDINAL SECTION

NOTE

PLACE GEOTEXTILE UNDER THE SPILLWAY AND SIDE SLOPES. PROVIDE A CONTINUOUS LAYER BETWEEN THE GRAVEL/ROCK AND THE NATIVE EARTHEN MATERIAL.

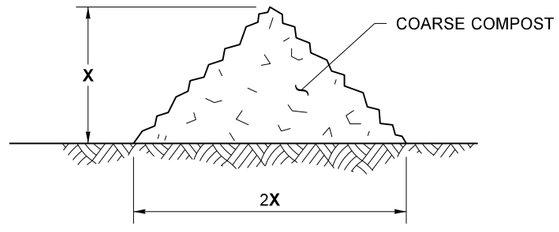
TEMPORARY SEDIMENT TRAP



ISOMETRIC VIEW

STABILIZED CONSTRUCTION ENTRANCE

STABILIZED CONSTRUCTION ENTRANCE SHALL MEET THE REQUIREMENTS OF **STANDARD SPECIFICATION SECTION 8-01.3(7).**



X = 1' - 0" FOR SLOPES 4H:1V OR FLATTER

X = 1' - 6" FOR SLOPES STEEPER THAN 4H:1V

TYPICAL SECTION

COMPOST BERM DETAIL

STATE OF WASHINGTON
REGISTERED
LANDSCAPE ARCHITECT

JULI DEE HARTWIG
LICENSE NO. 1422
DATE: 06-21-17

MISCELLANEOUS EROSION CONTROL DETAILS

STANDARD PLAN I-80.10-02

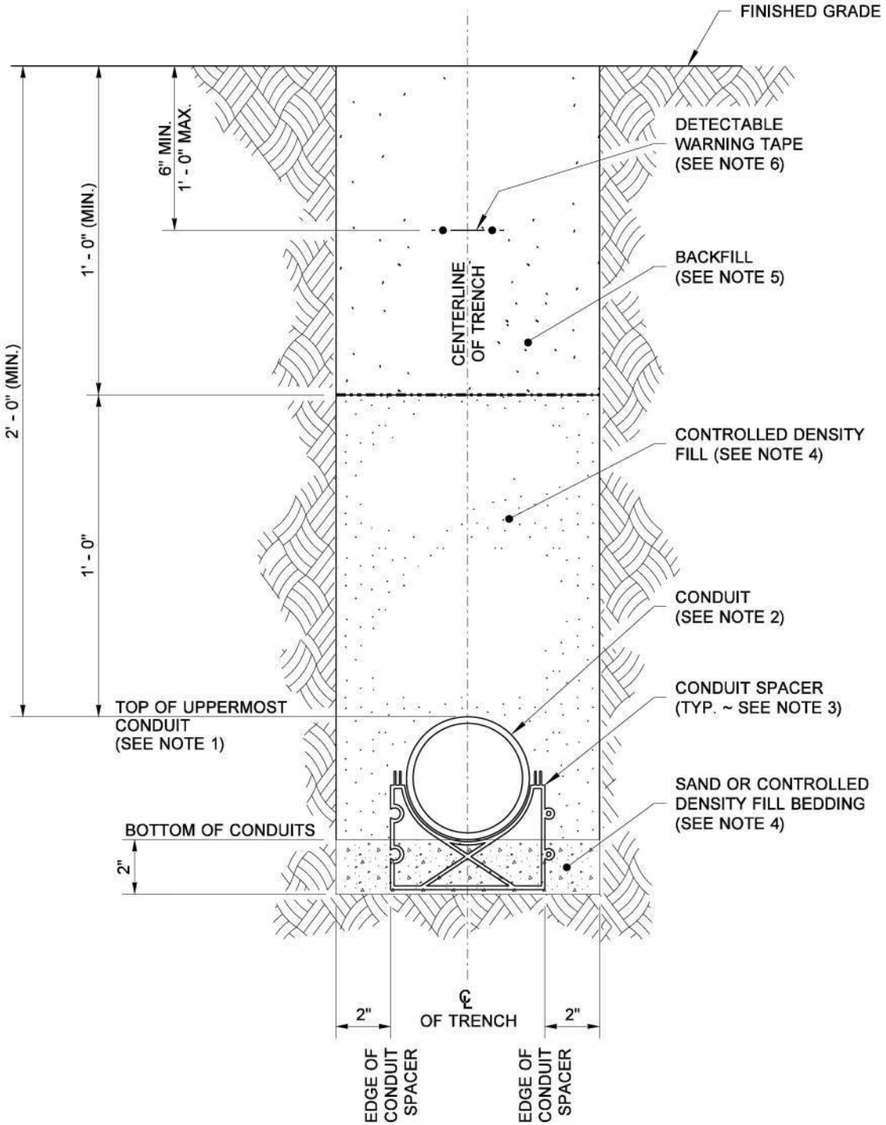
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

STATE DESIGN ENGINEER

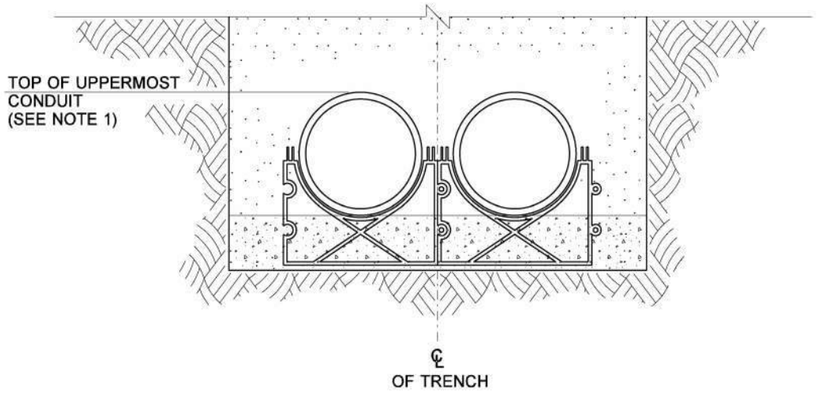
Washington State Department of Transportation

DRAWN BY: FERN LIDDELL



ELEVATION

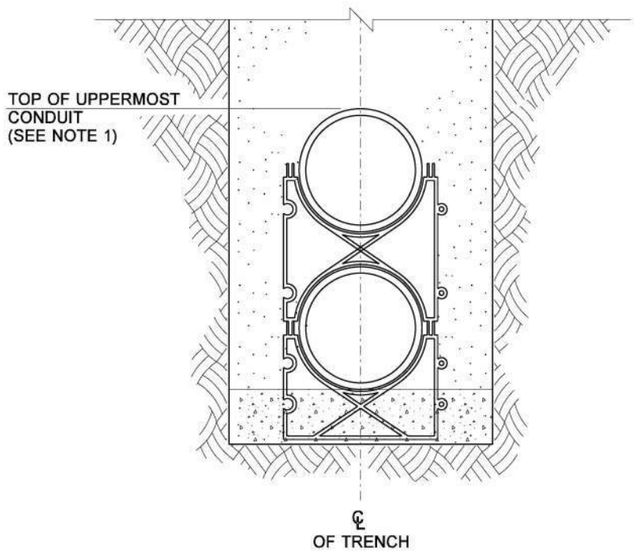
BASIC CONTROLLED DENSITY FILL (CDF) TRENCH DETAIL



ELEVATION

MULTIPLE CONDUIT LAYOUT - STANDARD

(MEASUREMENTS NOT SHOWN)



ELEVATION

MULTIPLE CONDUIT LAYOUT - ALTERNATE

(MEASUREMENTS NOT SHOWN; SEE NOTE 7)

NOTES

1. All depth measurements are referenced from the top of the uppermost conduit, regardless of the number and configuration of conduits.
2. See contract plans for size and number of conduits.
3. Conduit spacers shall be snap together type meeting conduit manufacturer's specifications. Base spacers shall be used for the bottom row of conduits, and positioned so that conduits rest on the trench bedding. Spacer interval shall be in accordance with conduit manufacturer's requirements.
4. Controlled Density Fill (CDF) shall meet the requirements of **Standard Specification Section 2-09.3(1)E**.
5. Backfill above CDF shall be in accordance with **Standard Specification Section 2-09.3(1)E**.
6. Detectable warning tape shall meet the requirements of **Standard Specification Section 9-29.1(6)** and placed in accordance with **Standard Specification Section 8-20.3(5)A1**.
7. Conduits shall normally be laid side by side in the trench unless conditions limit overall trench width.

WILLIAM FLINT JACKSON
STATE OF WASHINGTON
48821
REGISTERED
PROFESSIONAL ENGINEER

Aug 30, 2022

CONTROLLED DENSITY FILL ENCASED CONDUIT STANDARD PLAN J-5.50-00

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

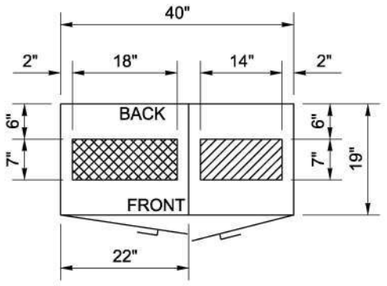
Mark Gaines
Mark Gaines (Aug 30, 2022 11:15 PDT)

Aug 30, 2022

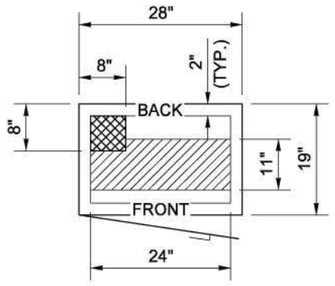
STATE DESIGN ENGINEER

Washington State Department of Transportation

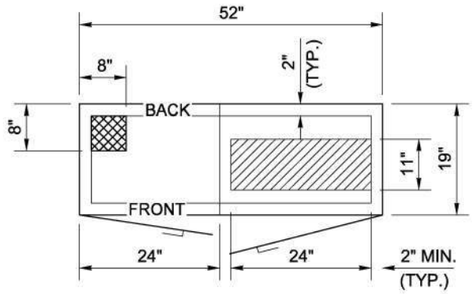
DRAWN BY: BILL BERENS



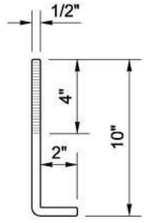
TYPE B MODIFIED SERVICE CABINET



TYPE D SERVICE CABINET



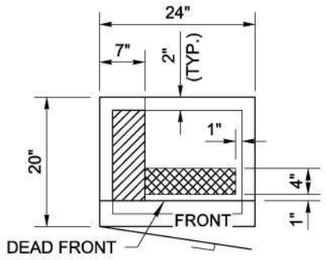
TYPE E SERVICE CABINET



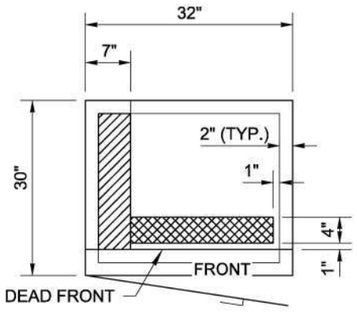
ANCHOR BOLT
(SEE NOTE 1)

CONDUIT PLACEMENT LOCATION AREA

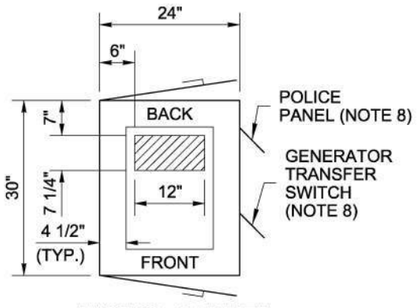
SERVICE: UTILITY CONDUIT AREA
TRANSFORMER: HIGH VOLTAGE CONDUIT AREA



XFMR-S (TRANSFORMER - SMALL) (UP TO 12.5 KVA)



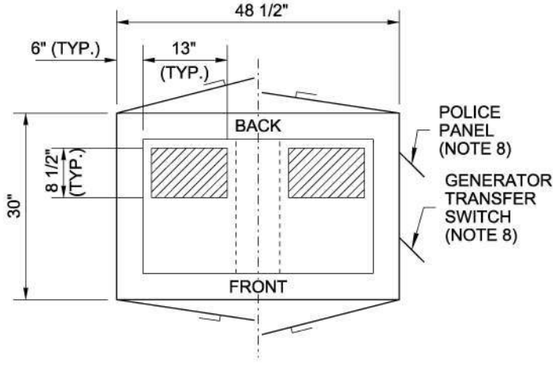
XFMR-L (TRANSFORMER - LARGE) (12.6 TO 37.5 KVA)



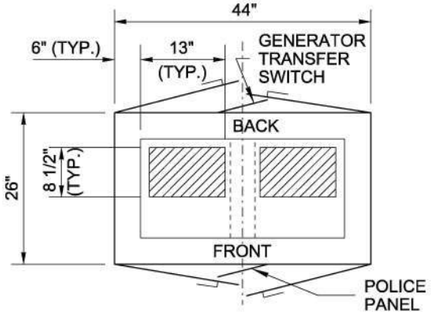
TYPE 33x CABINET

CABINET REFERENCE TABLE			
SERVICE CABINETS	**SIZE W × D (IN)**	**CAPACITY CONDUIT DIAMETER (IN)**	**STANDARD PLAN**
TYPE B MOD.	40" x 19"	12"	J-10.20
TYPE D	28" x 19"	24"	J-10.21
TYPE E	52" x 19"	48"	J-10.22
TRANSFORMER CABINETS	**SIZE W × D (IN)**		
XFMR-S (UP TO 12.5 KVA)	24" × 20"	12"	J-10.25
XFMR-L (12.6 TO 37.5 KVA)	32" × 30"	15"	J-10.25
SIGNAL AND ITS CABINETS	**SIZE W × D (IN)**		
TYPE 33x	24" × 30"	12"	J-12.15
TYPE 33xD	48.5" × 30"	24" (1)	J-12.16
TYPE 342LX	44" × 26"	24" (1)	J-12.16
NEMA P44	44" × 26"	15"	N/A

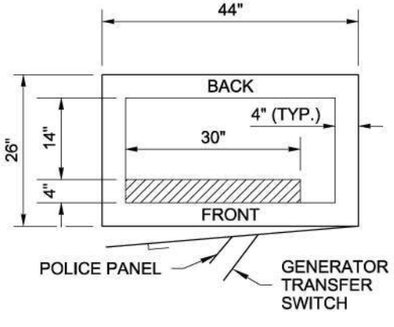
(1) 12" (IN) OF CONDUIT IN EACH LOCATION SHOWN



TYPE 33xD CABINET



TYPE 342LX CABINET



NEMA P44 CABINET

PLAN VIEWS
CABINET ORIENTATION, FOOTPRINT, AND CONDUIT PLACEMENT LOCATIONS

GENERAL NOTES

1. Each pad mounted cabinet shall be attached to the foundation with four 1/2" (in.) x 10" (in.) x 2" (in.) x 4" (in.) anchor bolts (see Anchor Bolt Detail this Sheet). Bolts, washers, and nuts shall be hot-dip galvanized in accordance with **AASHTO M232** and meet the requirements of Standard Specification 9-06.5(1). Stainless steel epoxy anchors may be used as an alternative, and shall be 1/2" (in.) diameter x 9" (in.) or 5/8" (in.) diameter x 8" (in.). Epoxy anchors shall use Type 304 stainless steel hardware: ASTM F593 all threaded rod, ASTM A240 washers, and ASTM F594 nuts. Anchor bolts shall extend 1 1/2" (in.) min. to 2" (in.) max. above the concrete pad.
2. All reinforcing steel shall be embedded 2" (in.) below the surface of concrete.
3. A 1/2" (in.) bead of silicone is required between each cabinet and the concrete foundation.
4. Concrete shall be Class 3000, in accordance with **Standard Specification 8-20.3(4)**. All concrete corners shall have a 1" (in.) chamfer, unless abutting sidewalk, where it shall be square and seaparated from the sidewalk with joint filler.
5. Foundations installed in, or adjacent to, sidewalks shall be constructed with the top flush with the sidewalk surface and grade, not including concrete risers for cabinets.
6. Foundations require additional level clear space to achieve a minimum of 4 feet of level clear space between the face of any cabinet or cabinet riser and the edge of the level clear space. Clear space beyond the edge of the concrete pad shall be made up of crushed surfacing meeting the requirements of **Standard Specification 9-03.9(1)**. Special design may be required where slopes are 3H : 1V or steeper. As an alternative, the concrete pad may be extended out to provide the required clear space.
7. Verify overall pad and concrete riser dimensions with the Engineer prior to placing concrete.
8. Not all Type 33x and 33xD cabinets have a police panel and/or a generator transfer switch (GTS) panel. See Contract for specific cabinet requirements.

WILLIAM FLINT JACKSON
STATE OF WASHINGTON
48821
REGISTERED
PROFESSIONAL ENGINEER

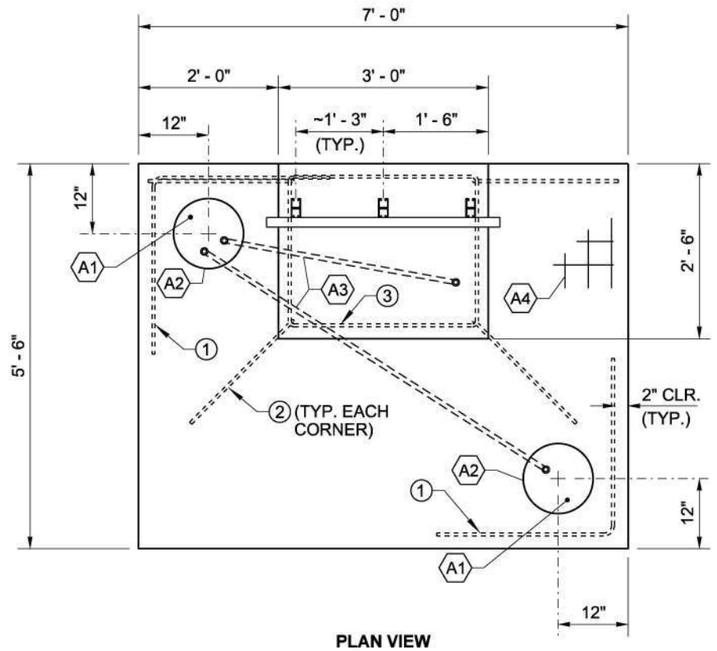
Jackson, Flint
Aug 24 2020 9:36 AM

CABINET ORIENTATION CONDUIT LAYOUT AND FOUNDATION DETAIL
STANDARD PLAN J-10.10-04

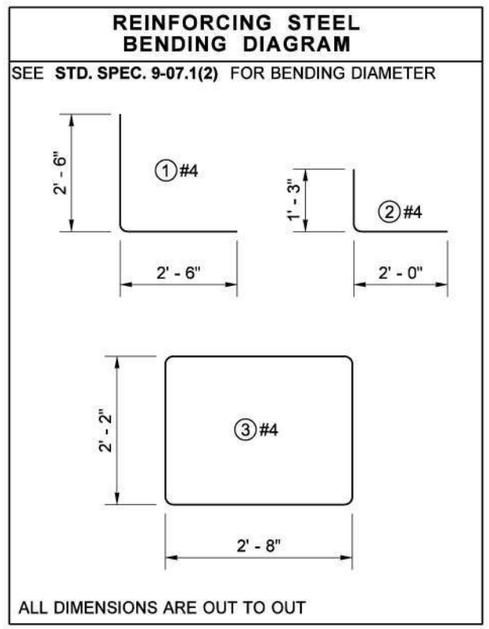
SHEET 1 OF 6 SHEETS

APPROVED FOR PUBLICATION
Date: 2020.09.16 10:06:06 -07'00'
STATE DESIGN ENGINEER
Washington State Department of Transportation

DRAWN BY: BILL BERENS



PLAN VIEW



NOTES - SINGLE STRUT MOUNT CABINET (SHEET 2 OF 6)

A1. Drive gound rods before placing concrete. Ground rods shall be a minimum of 6 feet apart. **See Standard Plan J-60.05** for additional details.

A2. Welded Wire Fabirc (WWF) shall be 4.0 (in.) x 4.0 (in.) ~ W4.0 x W4.0 ~ meeting the requirements of **Standard Specification 9-07.7**. As an alternative, a grid of #3 rebar may be used, with bars spaced at 1'- 0" centers laterally and longitudinally.

A3. Install conduit couplings on all conduits. Couplers shall be installed with the top of the coupler flush with the top of concrete. For PVC conduits, the conduit segment above the coupler shall not be glued to the coupler.

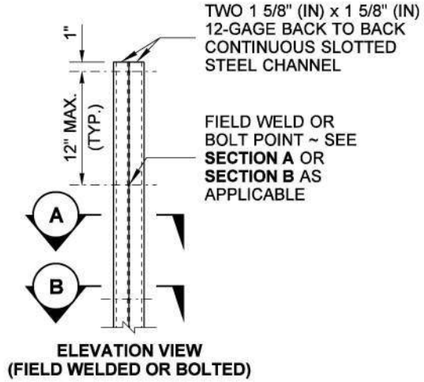
A4. Vertical steel supports shall be two continuous 1 5/8" (in.) x 1 5/8" (in.) 12-gage slotted steel channels installed back-to-back (3 pairs required) ~ see Strut Mount Support Details this sheet for connection details. As an alternative, continuous 1 5/8" (in.) x 3 1/4" (in.) 12-gage slotted steel channel may be used in place of each channel pair. Channels shall be embedded a minimum of 12" (in.) into the concrete foundation. Supports shall be evenly spaced, with the center support centered in the concrete riser, and the outer supports tied to the riser rebar hoop.

A5. Horizontal steel supports shall be continuous 1 5/8" (in.) x 1 5/8" (in.) 12-gage slotted steel channels (two required).

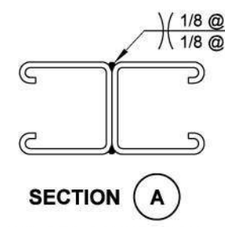
A6. Cabinet height shall be determined by the required height of the utility meter - verify height with serving utilty (typically 5 to 6 feet).

A7. Serving utility may require meter socket to be installed on the outside of the cabinet. Utility feeder conduit shall still terminate in the utility section of the cabinet unless otherwise required by the utility.

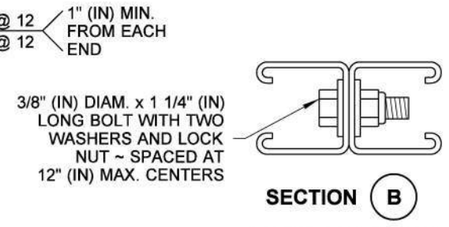
A8. Additional gravel pad not shown. Gravel pad shall extend two feet in front of the concrete pad for the full width of the concrete pad. If the utility meter socket is installed on the outside of the service cabinet, gravel pad shall also extend three feet from the utility side of the cabinet pad. Final gravel area shall be a rectangle.



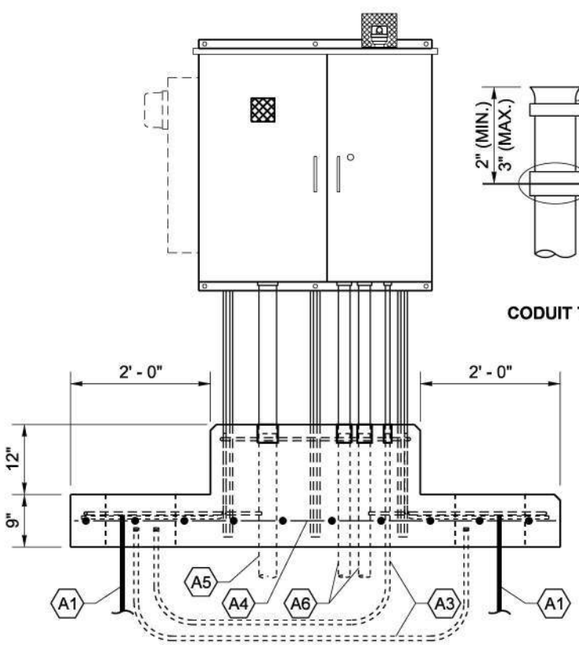
ELEVATION VIEW
(FIELD WELDED OR BOLTED)



SECTION A
(WELDED CONNECTION)

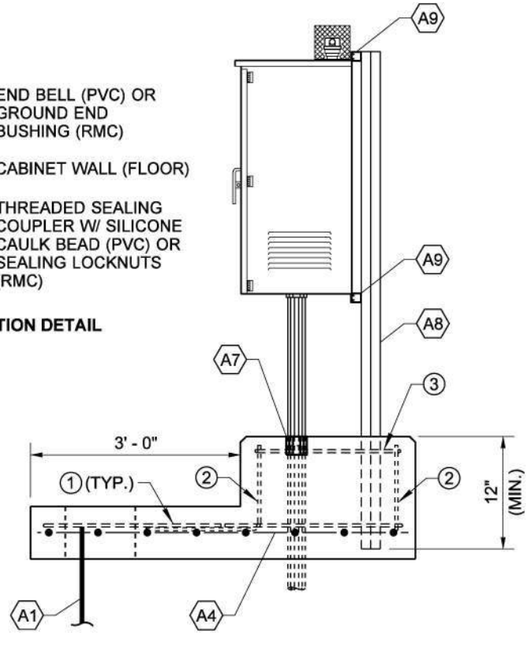


SECTION B
(BOLTED CONNECTION)



CODUIT TERMINATION DETAIL

FRONT ELEVATION VIEW



RIGHT SIDE ELEVATION VIEW

STRUT MOUNT SERVICE CABINET
(TYPE B MODIFIED SERVICE CABINET SHOWN)

STRUT MOUNT SUPPORT DETAILS
(SEE NOTE A4)

KEY NOTES - SHEET 2 OF 6

A1 Ground rod ~ See Note A1, this sheet.
A2 Ground rod well (Ground tile) - 12" diameter concrete
A3 Service ground electrode conduits.
A4 Welded wire fabric ~ See Note A2, this sheet.
A5 Utility entrance conduit. Conduit shall terminate in the utility section of the service cabinet.
A6 Conduits to field equipment. Conduits shall terminate in the customer section of the service cabinet.
A7 Conduit couplers ~ See Note A3, this sheet.
A8 Vertical support steel channel ~ See Note A4, this sheet.
A9 Horizontal support steel channel ~ See Note A5, this sheet.

WILLIAM FLINT JACKSON
STATE OF WASHINGTON
48821
REGISTERED
PROFESSIONAL ENGINEER

Jackson, Flint
Aug 24 2020 9:37 AM

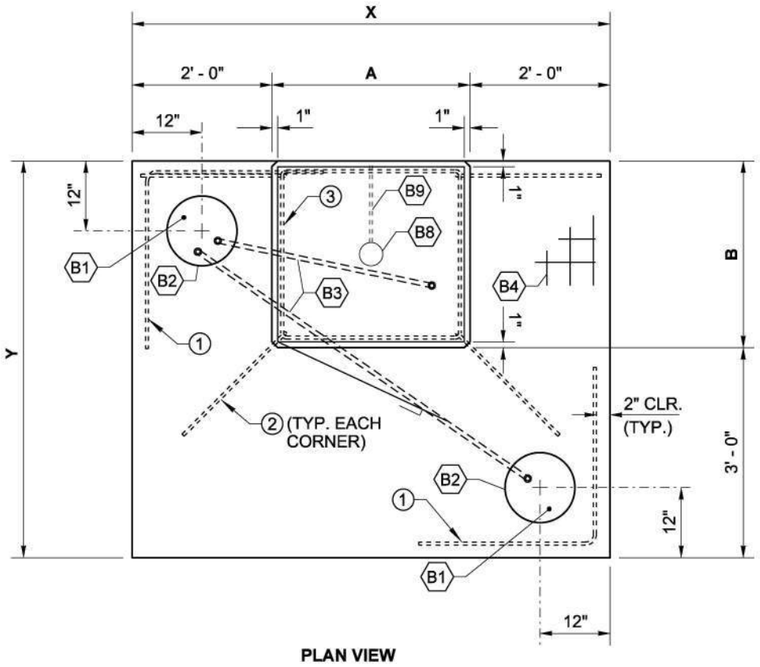
CABINET ORIENTATION CONDUIT LAYOUT AND FOUNDATION DETAIL

STANDARD PLAN J-10.10-04

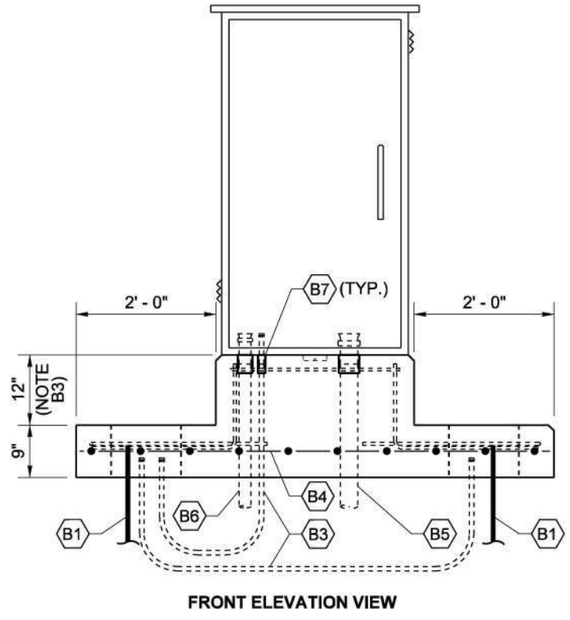
SHEET 2 OF 6 SHEETS

APPROVED FOR PUBLICATION
Date: 2020.09.16 10:07:05 -07'00'
STATE DESIGN ENGINEER
Washington State Department of Transportation

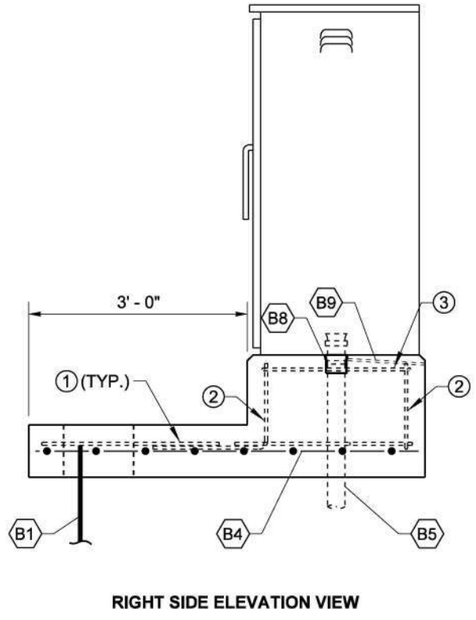
DRAWN BY: BILL BERENS



PLAN VIEW



FRONT ELEVATION VIEW



RIGHT SIDE ELEVATION VIEW

SINGLE PAD MOUNT
SERVICE OR TRANSFORMER CABINET
(XFMR-L CABINET SHOWN)

KEY NOTES - SHEET 3 OF 6

- (B1) Ground rod ~ See Note B1, this sheet.
- (B2) Ground rod well (Ground tile) - 12" diameter concrete
- (B3) Service ground electrode conduits.
- (B4) Welded wire fabric ~ See Note B2, this sheet.
- (B5) Utility entrance (service cabinet) or input power (transformer cabinet) conduit. Conduit shall terminate in the utility or high-voltage section of the cabinet (as applicable).
- (B6) Conduits to field equipment. Conduits shall terminate in the customer section (service cabinet) or low-voltage (transformer cabinet) of the cabinet.
- (B7) Conduit couplers ~ See Note B4, this sheet.
- (B8) 4" (in.) diam. x 1/2" (in.) deep sump.Slope foundation within cabinet footprint toward sump.
- (B9) 3/8" (in.) diam. polyethylene or copper tubing for drain. Tubing shall be straight, but slope downward a minimum of 1" (in.).

NOTES - SINGLE PAD MOUNT SERVICE OR TRANSFORMER CABINET (SHEET 3 OF 6)

B1. Drive gound rods before placing concrete. Ground rods shall be a minimum of 6 feet apart. See **Standard Plan J-60.05** for additional details.

B2. Welded Wire Fabirc (WWF) shall be 4.0 (in.) x 4.0 (in.) ~ W4.0 x W4.0 ~ meeting the requirements of **Standard Specification 9-07.7**. As an alternative, a grid of #3 rebar may be used, with bars spaced at 1'-0" centers laterally and longitudinally.

B3. Omit concrete riser and bar #3 for Type D and Type E service cabinets.

B4. Install conduit couplings on all conduits. Couplers shall be installed with the top of the coupler flush with the top of concrete. For PVC conduits, the conduit segment above the coupler shall not be glued to the coupler.

B5. Conduits shall extend a minimum of 2" (in.) and a maximum of 3" (in.) into the cabinet, as measured from the concrete surface to the top of the end bell (PVC) or ground bushing (RMC).

B6. Serving utility may require meter socket to be installed on the outside of the cabinet. Utility feeder conduit shall still terminate in the utility section of the cabinet unless otherwise required by the utility.

B7. Additional gravel pad not shown. Gravel pad shall extend two feet in front of the concrete pad for the full width of the concrete pad. If the utility meter socket is installed on the outside of the service cabinet, gravel pad shall also extend three feet from the side of the cabinet pad where the meter is installed. Final gravel area shall be a rectangle.

B8. See **Standard Plan J-10.14** for additional details when service or transformer cabinet is installed in fence line.

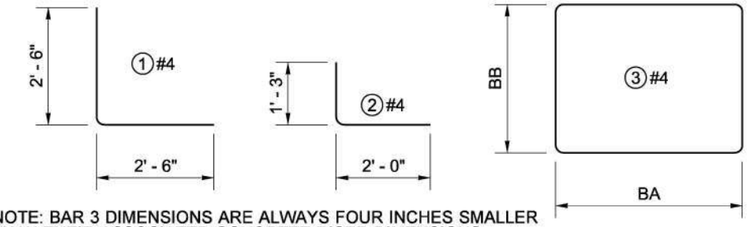
FOUNDATION SIZE REFERENCE TABLE

SERVICE CABINETS	PAD WIDTH (X)	PAD DEPTH (Y)	RISER WIDTH (A)	RISER DEPTH (B)	HOOP ③ WIDTH (BA)	HOOP ③ DEPTH (BB)
TYPE D	6' - 4"	3' - 8"	N/A	N/A	N/A	N/A
TYPE E	8' - 4"	3' - 8"	N/A	N/A	N/A	N/A
TRANSFORMER CABINETS	**PAD WIDTH (X)**	**PAD DEPTH (Y)**	**RISER WIDTH (A)**	**RISER DEPTH (B)**	**HOOP ③ WIDTH (BA)**	**HOOP ③ DEPTH (BB)**
XFMR-S (UP TO 12.5 KVA)	6' - 2"	4' - 11"	2' - 2"	1' - 11"	1' - 10"	1' - 7"
XFMR-L (12.6 TO 37.5 KVA)	6' - 10"	5' - 8"	2' - 10"	2' - 8"	2' - 6"	2' - 4"

REINFORCING STEEL BENDING DIAGRAM

SEE **STD. SPEC. 9-07.1(2)** FOR BENDING DIAM.

ALL DIMENSIONS ARE OUT TO OUT



NOTE: BAR 3 DIMENSIONS ARE ALWAYS FOUR INCHES SMALLER THAN THEIR ASSOCIATED CONCRETE RISER DIMENSIONS.

WILLIAM FLINT JACKSON
STATE OF WASHINGTON
48821
REGISTERED
PROFESSIONAL ENGINEER

Jackson, Flint
Aug 24 2020 9:37 AM

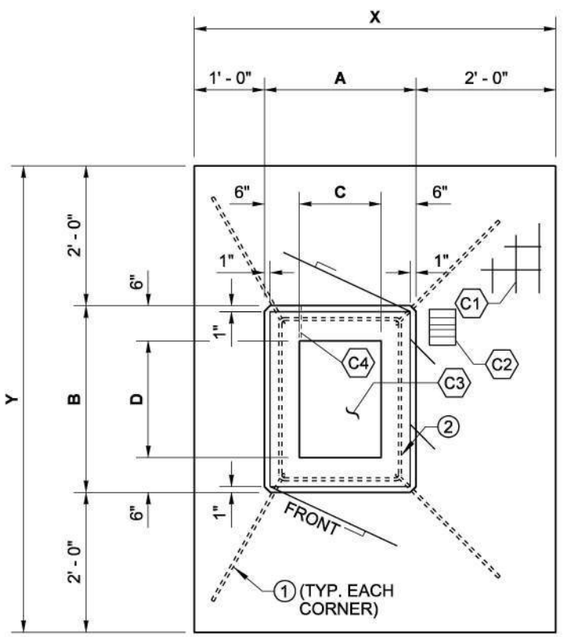
CABINET ORIENTATION CONDUIT LAYOUT AND FOUNDATION DETAIL

STANDARD PLAN J-10.10-04

SHEET 3 OF 6 SHEETS

APPROVED FOR PUBLICATION
Date: 2020.09.16 10:07:52 -07'00'
STATE DESIGN ENGINEER
Washington State Department of Transportation

DRAWN BY: BILL BERENS



PLAN VIEW

KEY NOTES - SHEET 4 OF 6

(C1) Welded wire fabric ~ See Note C1, this sheet.

(C2) Generator Tie-Down Anchor ~ See Note C2, this sheet.

(C3) Cabinet Well ~ See Note C3, this sheet.

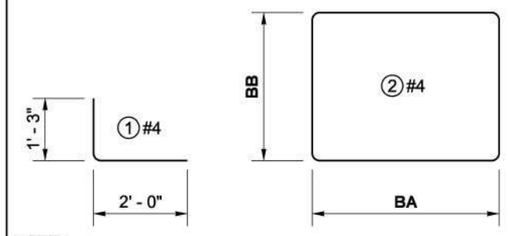
(C4) 3/8" (in.) diam. polyethylene or copper tubing for drain. Tubing shall be straight, but slope downward a minimum of 1" (in.)

(C5) Conduits ~ See Contract Plans for number, type, and function.

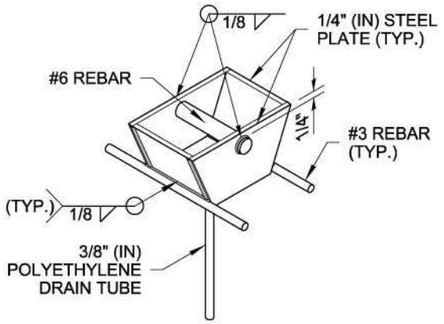
(C6) Conduit couplers ~ See Note C4, this sheet.

REINFORCING STEEL BENDING DIAGRAM

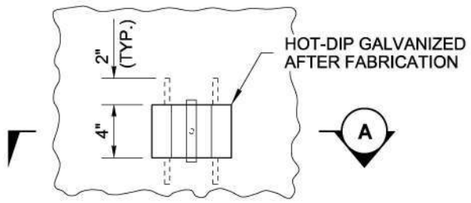
SEE STD. SPEC. 9-07.1(2) FOR BENDING DIAM.



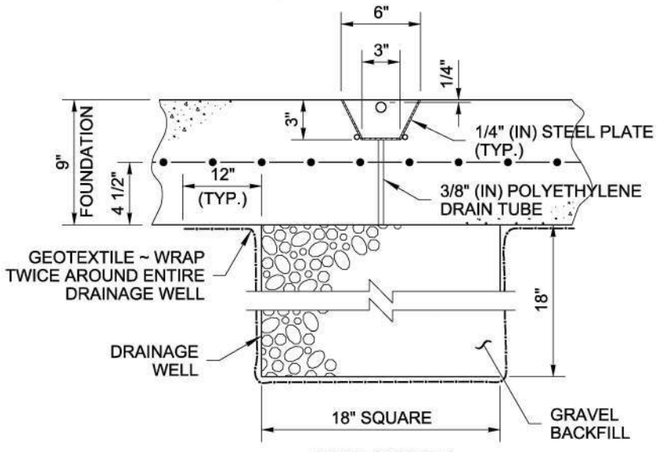
NOTE:
ALL DIMENSIONS ARE OUT TO OUT.
BAR 3 DIMENSIONS ARE ALWAYS FOUR INCHES SMALLER THAN THEIR ASSOCIATED CONCRETE RISER DIMENSIONS.



ISOMETRIC VIEW



PLAN VIEW



ELEVATION VIEW

SECTION (A)

NOTES - SINGLE PAD MOUNT TRAFFIC SIGNAL OR ITS CABINET (SHEET 4 OF 6)

C1. Welded Wire Fabirc (WWF) shall be 4.0 (in.) x 4.0 ~ W4.0 (in.) x W4.0 ~ meeting the requirements of **Standard Specification 9-07.7**. As an alternative, a grid of #3 rebar may be used, with bars spaced at 1'- 0" centers laterally and longitudinally.

C2. Generator Tie-Down Anchors are only required for cabinets with Generator Transfer Switches (GTS). Anchor shall along the side of the cabinet near the back corner of the cabinet riser as shown.

C3. Cabinet well shall be a nominal 10" (in.) deep, sloping towards the corner where the drain tube is installed. Well dimensions are 12" (in.) smaller than the riser length and width dimensions (**A** and **B**). See Cabinet Well Reference Table, this sheet.

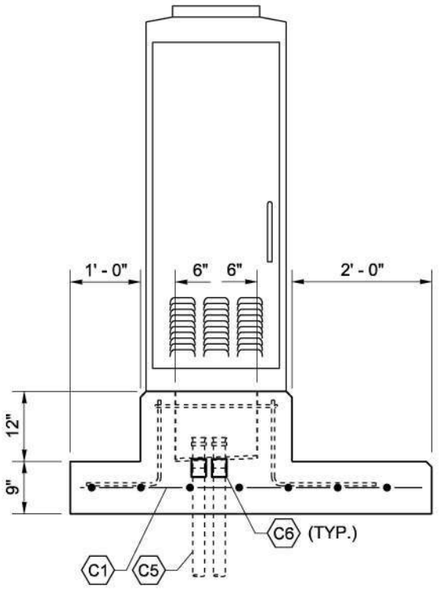
C4. Install conduit couplings on all conduits. Couplers shall be installed with the top of the coupler flush with the top of concrete. For PVC conduits, the conduit segment above the coupler shall not be glued to the coupler.

C5. Conduits shall extend a minimum of 2" (in.) and a maximum of 3" (in.) into the cabinet, as measured from the concrete surface to the top of the end bell (PVC) or ground bushing (RMC).

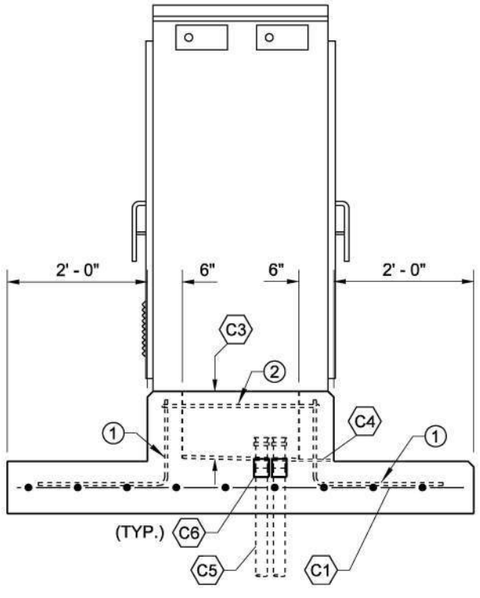
C6. Additional gravel pad not shown. Gravel pad shall extend two feet beyond the front, right, and back of the cabinet pad where the pad is two feet wide. Final gravel area shall be a rectangle.

CABINET WELL REFERENCE TABLE

SIGNAL AND ITS CABINETS	WELL WIDTH (C)	WELL LENGTH (D)
TYPE 33x	1' - 2"	1' - 8"
TYPE 33xD	3' - 2"	1' - 8"
TYPE 342LX / NEMA P44	2' - 10"	1' - 4"



FRONT ELEVATION VIEW



RIGHT SIDE ELEVATION VIEW

SINGLE PAD MOUNT TRAFFIC SIGNAL OR ITS CABINET
(TYPE 33x CABINET SHOWN)

GENERATOR TIE-DOWN ANCHOR
(FABRICATE IF NOT AVAILABLE COMMERCIALLY)

FOUNDATION SIZE REFERENCE TABLE

SIGNAL AND ITS CABINETS	PAD WIDTH (X)	PAD DEPTH (Y)	RISER WIDTH (A)	RISER DEPTH (B)	HOOP (2) WIDTH (BA)	HOOP (2) DEPTH (BB)
TYPE 33x	5' - 2"	6' - 8"	2' - 2"	2' - 8"	1' - 10"	2' - 4"
TYPE 33xD	6' - 3"	6' - 8"	4 - 3"	2' - 8"	3' - 11"	2' - 4"
TYPE 342LX / NEMA P44	5' - 10"	6' - 4"	3' - 10"	2' - 4"	3' - 6"	2' - 0"

WILLIAM FLINT JACKSON
STATE OF WASHINGTON
48821
REGISTERED
PROFESSIONAL ENGINEER

Jackson, Flint
Aug 24 2020 9:37 AM

CABINET ORIENTATION CONDUIT LAYOUT AND FOUNDATION DETAIL

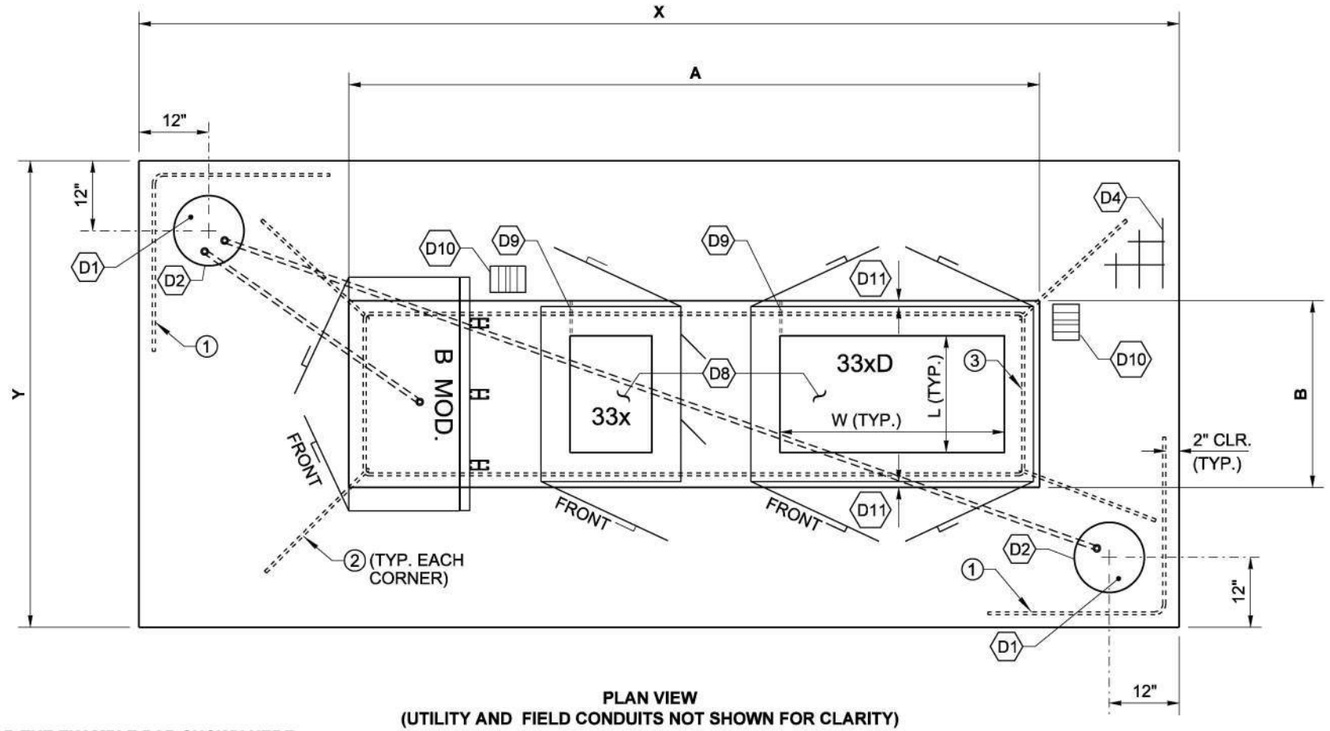
STANDARD PLAN J-10.10-04

SHEET 4 OF 6 SHEETS

APPROVED FOR PUBLICATION
Date: 2020.09.16 10:08:38 -07'00'
STATE DESIGN ENGINEER

Washington State Department of Transportation

DRAWN BY: BILL BERENS

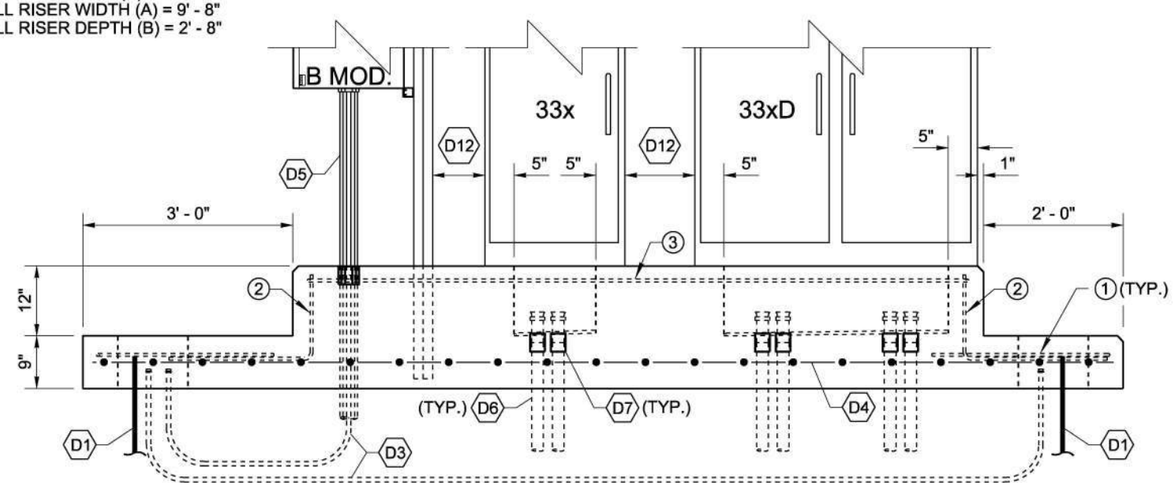


PLAN VIEW
(UTILITY AND FIELD CONDUITS NOT SHOWN FOR CLARITY)

FOR THE EXAMPLE PAD SHOWN HERE:

- SPACE BETWEEN TYPE B MOD. CABINET AND 33x CABINET IS 6" (IN.)
- SPACE BETWEEN 33x AND 33xD CABINET IS 1' - 0"
- OVERALL PAD WIDTH (X) = 14' - 8"
- OVERALL PAD DEPTH (Y) = 6' - 8"
- OVERALL RISER WIDTH (A) = 9' - 8"
- OVERALL RISER DEPTH (B) = 2' - 8"

FOUNDATION PAD DIMENSIONS X, Y, A, AND B SHOULD BE PROVIDED IN THE CONTRACT PLANS.



FRONT ELEVATION VIEW

TYPE A (NARROW) MULTI-CABINET FOUNDATION PAD
(TYPE B MODIFIED SERVICE CABINET, TYPE 33x CABINET, AND TYPE 33xD CABINET SHOWN)

NOTES - TYPE A (NARROW) AND TYPE B (WIDE) MULTI-CABINET FOUNDATION PAD (SHEETS 5 AND 6 OF 6)

D1. Drive gound rods before placing concrete. Ground rods shall be a minimum of 6 feet apart. See **Standard Plan J-60.05** for additional details.

D2. Welded Wire Fabirc (WWF) shall be 4.0 (in.) x 4.0 (in.) ~ W4.0 x W4.0 ~ meeting the requirements of **Standard Specification 9-07.7**. As an alternative, a grid of #3 rebar may be used, with bars spaced at 1'-0" centers laterally and longitudinally.

D3. See Sheet 3 for reinforcing steel bending diagrams.

D4. Concrete riser shall not include Type D or Type E Service Cabinets.

D5. Install conduit couplings on all conduits. Couplers shall be installed with the top of the coupler flush with the top of concrete. For PVC conduits, the conduit segment above the coupler shall not be glued to the coupler.

D6. Conduits shall extend a minimum of 2" (in.) and a maximum of 3" (in.) into the cabinet, as measured from the concrete surface to the top of the end bell (PVC) or ground bushing (RMC).

D7. Serving utility may require meter socket to be installed on the outside of the cabinet. Utility feeder conduit shall still terminate in the utility section of the cabinet unless otherwise required by the utility.

D8. Additional gravel pad not shown. Gravel pad shall extend two feet in front of the concrete pad for the full width of the concrete pad. If the utility meter socket is installed on the outside of the service cabinet, gravel pad shall also extend three feet from the side of the cabinet pad where the meter is installed. Final gravel area shall be a rectangle.

D9. Cabinet wells shall be provided for all Type 33x, Type 33xD, Type 342LX, and NEMA P44 Cabinets. See Note C3 on sheet 4 for Cabinet Well dimensions.

D10. At least one Generator Tie-Down Anchor shall be provided for each multi-cabinet pad foundation. A second Anchor shall be provided if there is a second cabinet with a Generator Transfer Switch (GTS). If a service or transformer cabinet is present, install one Anchor at either of the locations shown, closest to the cabinet with the GTS. If there is no service or transformer cabinet, install Anchors only at the ends of the cabinet riser.

KEY NOTES - SHEET 5 OF 6

D1 Ground rod ~ See Note D1, this sheet.

D2 Ground rod well (Ground tile) - 12" diameter concrete

D3 Service ground electrode conduits.

D4 Welded wire fabric ~ See Note D2, this sheet.

D5 Utility entrance (service cabinet) or input power (transformer cabinet) conduit. Conduit shall terminate in the utility or high voltage section of the cabinet (as applicable).

D6 Conduits to field equipment. Conduits shall terminate in the customer section (service cabinet) or low-voltage (transformer cabinet) of the cabinet.

D7 Conduit couplers ~ See Note D5, this sheet.

D8 Cabinet Well ~ See Note D9, this sheet.

D9 3/8" (in.) diam. polyethylene or copper tubing for drain. Tubing shall be straight, but slope downward a minimum of 1" (in.)

D10 Generator Tie-Down Anchor ~ See Note D10, this sheet.

D11 Riser lip shall be 1" (in.) from the base edge of the largest cabinet to the face of the concrete riser. Smaller cabinets shall be positioned so that the front riser lip is 1" (in.) wide.

D12 For a Type A (Narrow) Pad, cabinet spacing shall be as follows:
a. 12" (in.) between cabinets where at least one cabinet has a police panel or GTS door.
b. 6" (in.) between cabinets where no police panel or GTS door is present.

WILLIAM FLINT JACKSON
STATE OF WASHINGTON
48821
REGISTERED
PROFESSIONAL ENGINEER

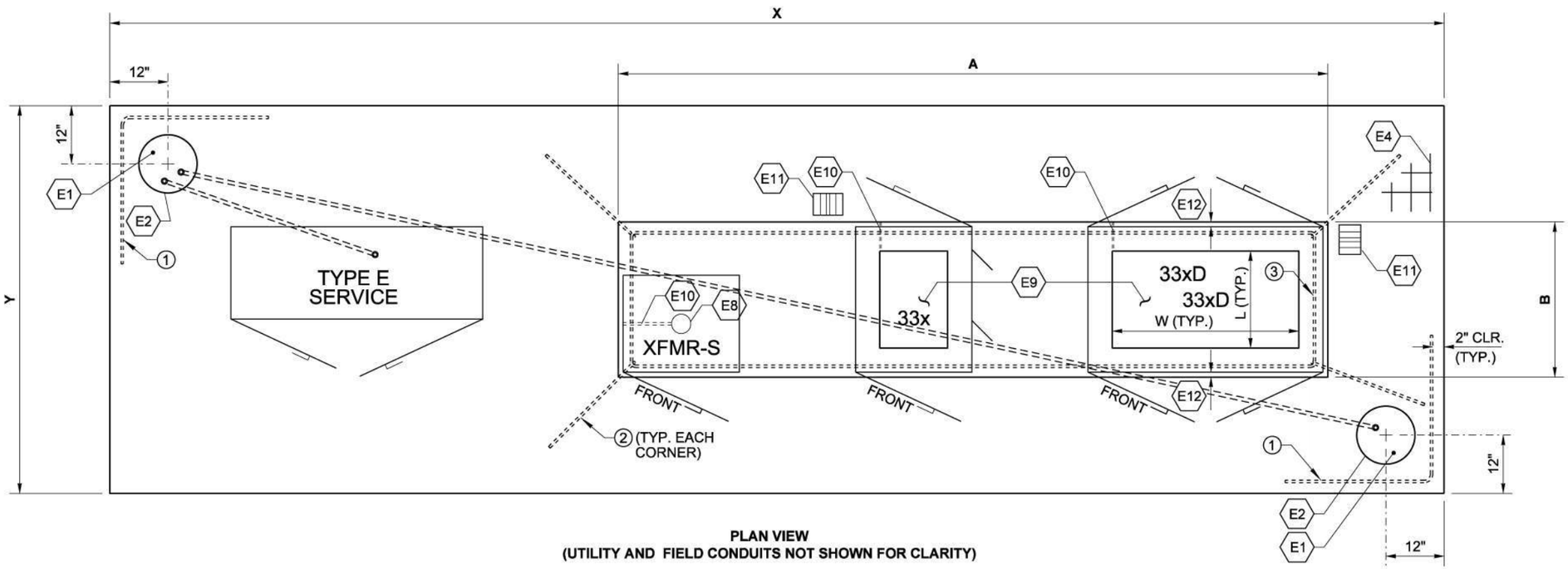
Jackson, Flint
Aug 24 2020 9:37 AM

CABINET ORIENTATION CONDUIT LAYOUT AND FOUNDATION DETAIL
STANDARD PLAN J-10.10-04

SHEET 5 OF 6 SHEETS

APPROVED FOR PUBLICATION
Roark, Steve
Digitally signed by Roark, Steve
Date: 2020.09.16 10:09:31 -07'00'
STATE DESIGN ENGINEER
Washington State Department of Transportation

DRAWN BY: BILL BERENS



PLAN VIEW
(UTILITY AND FIELD CONDUITS NOT SHOWN FOR CLARITY)

CABINET CLEARANCE REFERENCE TABLE

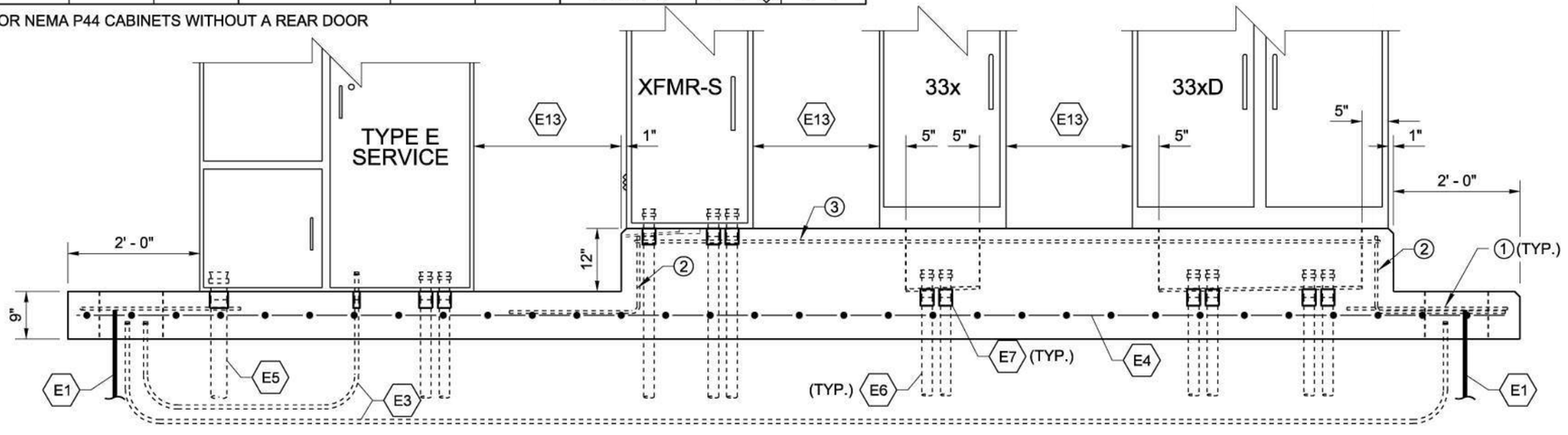
SERVICE CABINETS	LEFT SIDE	RIGHT SIDE	TRANSFORMER CABINETS	LEFT SIDE	RIGHT SIDE	SIGNAL AND ITS CABINETS	LEFT SIDE	RIGHT SIDE
TYPE B MOD.	1' - 10"	1' - 6"	XFMR-S (UP TO 12.5 KVA)	2' - 0"	6"	TYPE 33x	2' - 0"	2' - 0"
TYPE D	2' - 4"	6"				TYPE 33xD	2' - 0"	2' - 0"
TYPE E	2' - 0"	2' - 4"	XFMR-L (12.6 TO 37.5 KVA)	3' - 8"	6"	TYPE 342LX	1' - 10"	1' - 10"
						NEMA P44	3' - 8" 1	3' - 8"

1 6" FOR NEMA P44 CABINETS WITHOUT A REAR DOOR

FOR THE EXAMPLE PAD SHOWN HERE:

- SPACE BETWEEN TYPE E CABINET AND FACE OF CONCRETE RISER IS 2' - 4"
- SPACE BETWEEN XFMR-S CABINET AND 33x CABINET IS 2' - 0"
- SPACE BETWEEN 33x AND 33xD CABINET IS 2' - 0"
- OVERALL PAD WIDTH (X) = 22' - 11"
- OVERALL PAD DEPTH (Y) = 6' - 8"
- OVERALL RISER WIDTH (A) = 12' - 3"
- OVERALL RISER DEPTH (B) = 2' - 8"

FOUNDATION PAD DIMENSIONS X, Y, A, AND B SHOULD BE PROVIDED IN THE CONTRACT PLANS.



FRONT ELEVATION VIEW

TYPE B (WIDE) MULTI-CABINET FOUNDATION PAD
(TYPE E SERVICE CABINET, XFMR-S CABINET, TYPE 33x CABINET, AND TYPE 33xD CABINET SHOWN)

KEY NOTES - SHEET 6 OF 6

- E1 Ground rod ~ See Note D1, Sheet 5 of 6.
- E2 Ground rod well (Ground tile) - 12" diameter concrete
- E3 Service ground electrode conduits.
- E4 Welded wire fabric ~ See Note D2, Sheet 5 of 6.
- E5 Utility entrance (service cabinet) or input power (transformer cabinet) conduit. Conduit shall terminate in the utility or high voltage section of the cabinet (as applicable).
- E6 Conduits to field equipment. Conduits shall terminate in the customer section (service cabinet) or low-voltage (transformer cabinet) of the cabinet.
- E7 Conduit couplers ~ See Note D5, Sheet 5 of 6.
- E8 4" (in.) diam. x 1/2" (in.) deep sump. Slope foundation within cabinet footprint toward sump.
- E9 Cabinet Well ~ See Note D9, Sheet 5 of 6.
- E10 3/8" (in.) diam. polyethylene or copper tubing for drain. Tubing shall be straight, but slope downward a minimum of 1" (in.)
- E11 Generator Tie-Down Anchor ~ See Note D10, Sheet 5 of 6.
- E12 Riser lip shall be 1" (in.) from the base edge of the largest cabinet to the face of the concrete riser. Smaller cabinets shall be positioned so that the front riser lip is 1" (in.) wide.
- E13 For a **Type B** (Wide) Pad, spacing between the cabinets shall match the widest door of the two adjacent cabinets. For **Type D** and **Type E** Service Cabinets, the clearance is to the face of the adjacent concrete riser (when present). See left and right clearance table this sheet.

WILLIAM FLINT JACKSON
STATE OF WASHINGTON
48821
REGISTERED
PROFESSIONAL ENGINEER

Jackson, Flint
Aug 24 2020 9:37 AM

CABINET ORIENTATION CONDUIT LAYOUT AND FOUNDATION DETAIL

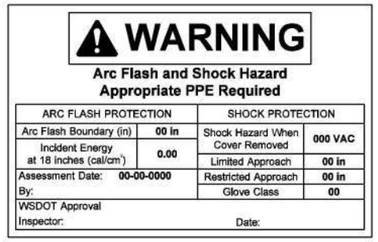
STANDARD PLAN J-10.10-04

SHEET 6 OF 6 SHEETS

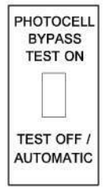
APPROVED FOR PUBLICATION
Date: 2020.09.16 10:10:28 -07'00'
STATE DESIGN ENGINEER
Washington State Department of Transportation

KEY

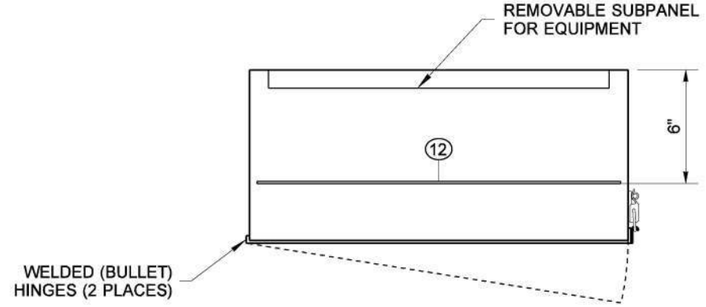
1. METER BASE PER SERVING UTILITY REQUIREMENTS ~ SEE STANDARD PLAN J-10.30.
2. MAIN BREAKER (DPST ~ SIZE PER BREAKER SCHEDULE)
3. PHOTOELECTRIC CONTROL BREAKER (SPST ~ 15 AMP ~ 120/240 VOLT)
4. TEST SWITCH (SPDT ~ SNAP ACTION ~ POSITIVE CLOSE ~ 15 AMP ~ 120/277 VOLT ~ "T" RATED)
5. PHOTOELECTRIC CONTROL UNIT ~ SEE **STANDARD SPECIFICATION 9-29.11(2)**
6. BRANCH BREAKER ~ SEE BREAKER SCHEDULE (DPST ~ 120/240 VOLT)
7. SPARE BREAKER ~ SEE BREAKER SCHEDULE (SPST ~ 20 AMP ~ 120/240 VOLT)
8. CONTACTOR ~ SEE BREAKER SCHEDULE
9. RECEPTACLE BREAKER (SPST ~ 20 AMP ~ 120/240 VOLT)
10. RECEPTACLE ~ GROUNDED (GFCI ~ 20 AMP ~ 125 VOLT)
11. ISOLATED NEUTRAL BUSS ~ 12 LUG COPPER
12. HINGED DEAD FRONT WITH 1/4 TURN FASTENERS OR SLIDE LATCHES ~ DEAD FRONT PANEL BOLTS SHALL NOT EXTEND INTO VERTICAL LIMITS OF THE BREAKER ARRAY(S)
13. CABINET MAIN BONDING JUMPER ASSEMBLY ~ BUSS SHALL BE 12 LUG TINNED COPPER ~ SEE **STANDARD PLAN J-10.20** FOR CABINET MAIN BONDING JUMPER ASSEMBLY DETAILS
14. METAL WIRING DIAGRAM HOLDER
15. 1/4" (IN) DIAMETER DRAIN HOLE ~ DRILL BEFORE GALVANIZING
16. MOUNTING HOLE ~ SEE **STANDARD PLAN J-10.12** CABINET BRACKET MOUNTING DETAIL
17. 12-CIRCUIT PANEL BOARD ~ MINIMUM SIZE WITH BACK-FED MAIN BREAKER
18. LABEL CABINET WITH BUSSWORK RATING
19. ARC FLASH AND SHOCK HAZARD LABEL (FIELD INSTALLED) ~ SEE DETAIL
20. CONNECTION TO GROUND ELECTRODE ~ SEE **STANDARD PLAN J-60.05**
21. 20 KA TYPE 1 OR TYPE 2 SURGE PROTECTION DEVICE ~ DIN RAIL MOUNT WITH PLUG-IN MODULE(S)
22. THREE POSITION DIN RAIL MOUNTED TERMINAL BLOCK ~ TERMINAL BLOCK SECTIONS SHALL BE BLACK, WHITE, AND RED AS SHOWN IN CABINET WIRING DIAGRAM



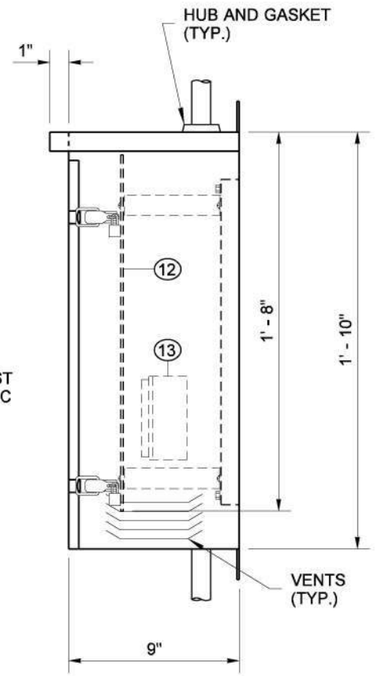
ARC FLASH AND SHOCK HAZARD LABEL DETAIL
(19)



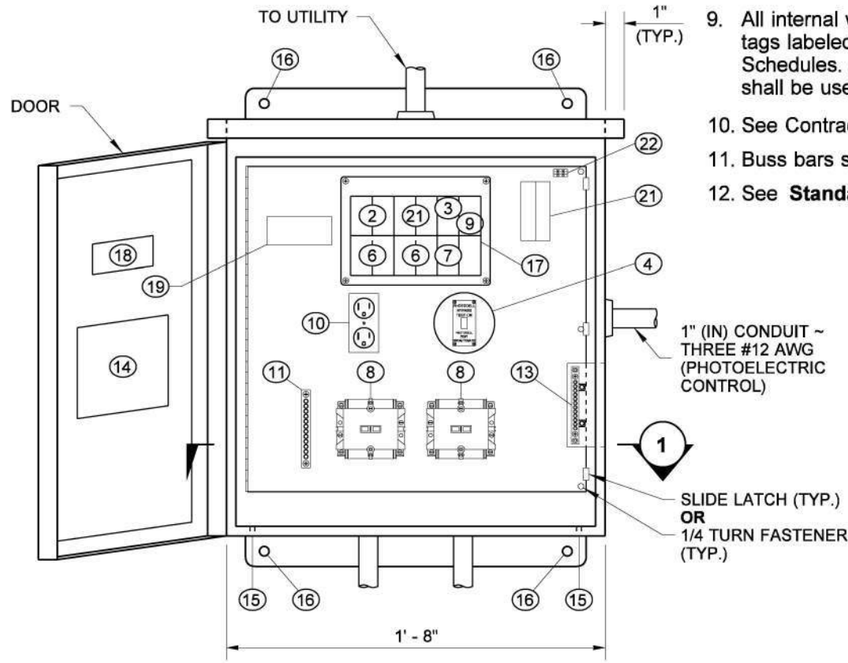
TEST SWITCH LABEL DETAIL
(4)



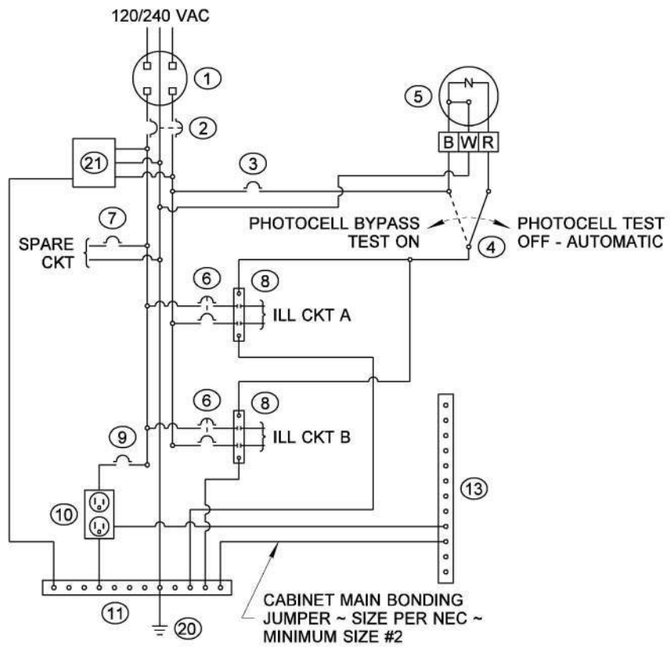
SECTION (1)



SIDE VIEW



ELEVATION VIEW



TYPE B WIRING DIAGRAM ~ 240 VOLT

TYPE B SERVICE CABINET

NOTES

1. See **Standard Specification Section 9-29.24** (Service Cabinets).
2. Cabinet shall be rated NEMA 3R and shall include two rain-tight vents.
3. Dimensions shown are minimum and shall be adjusted to accommodate the various sizes of equipment installed. A 1% tolerance is allowed for all dimensions.
4. Door shall be pad-lockable and gasketed.
5. Hinges shall have stainless steel or brass pins. See **Standard Plan J-10.20** for door hinge details.
6. When using two piece hinge type on galvanized enclosure, remove hinge pin prior to welding hinge to cabinet and prior to hot-dip galvanizing. After galvanizing, replace pin with brass pin and solder in place. See **Standard Plan J-10.20** for alternate door hinge details.
7. Equipment identified by Key Numbers 2, 3, 4, 6, 7, 8, and 9 shall have an appropriately engraved phenolic name plate attached with screws or rivets. The name plate for Key Number 4 shall read as follows:
   "PHOTOCELL BYPASS TEST ON" AND "PHOTOCELL TEST OFF - AUTOMATIC." See service cabinet detail.
8. All busswork shall be **ASTM B187** copper and shall have a minimum rating of 125 amps. All breakers shall bolt on to the busswork. Jumpering of breakers shall not be allowed. Busswork shall accommodate all future equipment as shown in the Breaker Schedule.
9. All internal wire runs shall be identified with "TO - FROM" coded tags labeled with the code letters and/or numbers shown on the Schedules. Approved PVC or polyolefin wire marking sleeves shall be used.
10. See Contract for Breaker and Contactor Schedule.
11. Buss bars shall be sized to accommodate up to #4 AWG wires.
12. See **Standard Plan J-10.14** for pole installation details.

Aug 18, 2021

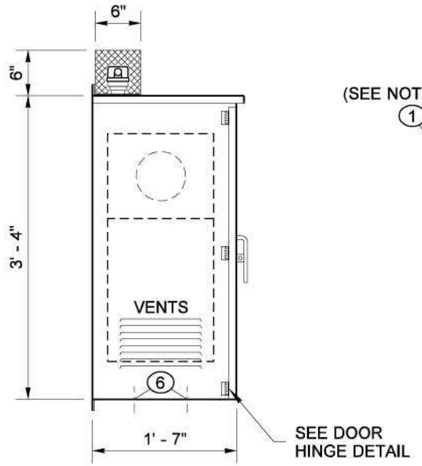
SERVICE CABINET TYPE B (0 - 100 AMP TYPE 120/240 VOLT SINGLE PHASE) STANDARD PLAN J-10.17-02

SHEET 1 OF 1 SHEET

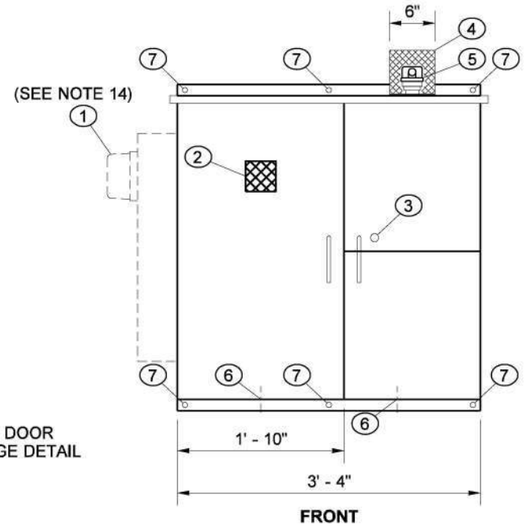
APPROVED FOR PUBLICATION
Aug 18, 2021
STATE DESIGN ENGINEER
Washington State Department of Transportation

DRAWN BY: FERN LIDDELL

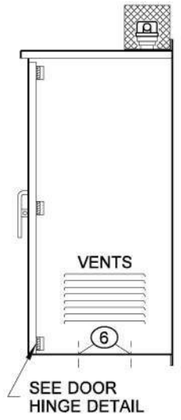
DRAWN BY: FERN LIDDELL



LEFT SIDE (UTILITY SIDE)



FRONT

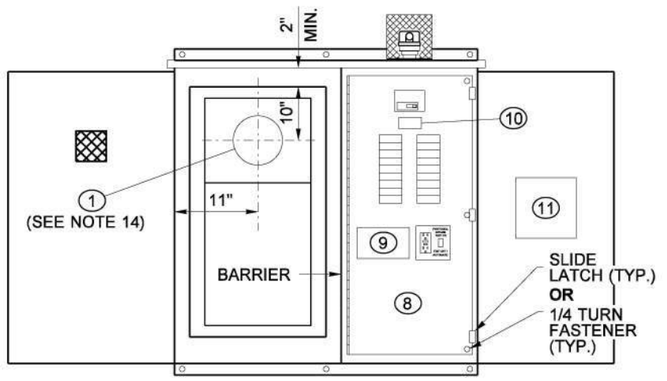


RIGHT SIDE (CUSTOMER SIDE)

SERVICE CABINET DETAIL

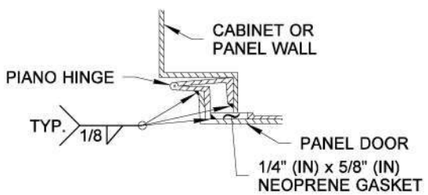
KEY

1. METER SOCKET/BASE PANEL PER UTILITY REQUIREMENTS ~ UTILITY MAY REQUIRE METER TO BE INSTALLED ON THE OUTSIDE OF THE CABINET INSTEAD OF INSIDE THE UTILITY SIDE OF THE CABINET
2. UTILITY SIDE DOOR ~ HINGED FRONT FACING DOOR WITH 4" (IN) x 4" (IN) MINIMUM POLISHED SAFETY GLASS WINDOW
3. CUSTOMER SIDE DOOR WITH BEST CX 6-PIN LOCK CORE
4. PHOTOCELL ENCLOSURE ~ SEE PHOTOCELL MOUNTING DETAIL ~ ENCLOSURE SHALL BE FABRICATED FROM EITHER:
   A. 5/8" (IN) EXPANDED STEEL MESH WITH WELDED SEAMS AND MOUNTING FLANGES ~ HOT-DIP GALVANIZED AFTER FABRICATION ~ OR ~
   B. TYPE 5052 - H32 ALUMINUM WITH 5/8" (IN) x 5/8" (IN) OPENINGS EQUIVALENT TO 5/8" (IN) EXPANDED STEEL MESH
5. PHOTOELECTRIC CONTROL ~ SEE **STANDARD SPECIFICATION, SECTION 9-29.11(2).**
6. 1/4" (IN) DIAMETER DRAIN HOLE ~ DRILL BEFORE GALVANIZING
7. MOUNTING HOLE ~ SEE **STANDARD PLAN J-10.12** CABINET BRACKET MOUNTING DETAIL
8. HINGED DEAD FRONT WITH 1/4 TURN FASTENERS OR SLIDE LATCHES ~ DEAD FRONT PANEL BOLTS SHALL NOT EXTEND INTO VERTICAL LIMITS OF THE BREAKER ARRAY(S)
9. ARC FLASH AND SHOCK HAZARD LABEL (FIELD INSTALLED) ~ SEE DETAIL (SHEET 2)
10. CABINET BUSSWORK RATING LABEL
11. METAL WIRING DIAGRAM HOLDER

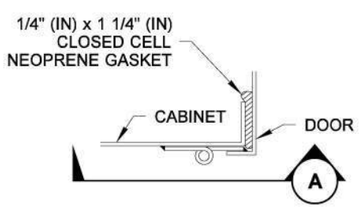


FRONT (SHOWN WITH DOORS OPEN AND DEAD FRONT CLOSED)

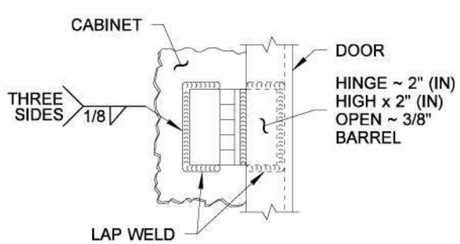
SERVICE CABINET INTERIOR



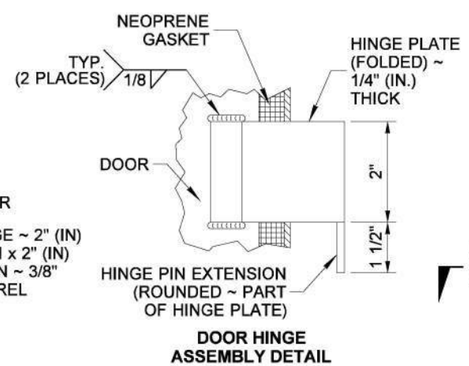
DOOR HINGE DETAIL



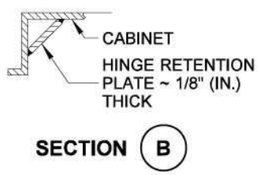
DOOR HINGE DETAIL
ALTERNATE TYPE B MODIFIED CABINET (SEE NOTE 5)



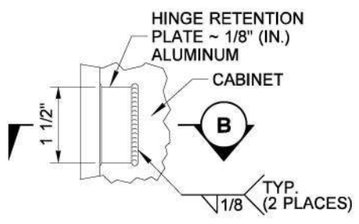
SECTION (A)



DOOR HINGE ASSEMBLY DETAIL



SECTION (B)



HINGE RETAINER DETAIL

DOOR HINGE DETAIL
HEAVY-DUTY (LIFT-OFF) TYPE

NOTES

1. See **Standard Specification Section 9-29.24** (Service Cabinets).
2. Cabinet shall be rated NEMA 3R and shall include two rain-tight vents.
3. Dimensions shown are minimum and shall be adjusted to accommodate the various sizes of equipment installed. A 1% tolerance is allowed for all dimensions.
4. Doors shall be pad-lockable and gasketed. Customer side door shall include a Best CX 6-pin Construction core lock. Each door shall use either a continuous piano hinge, three two-piece hinges, or two heavy-duty lift-off type hinges.
5. Hinges with pins shall have stainless steel or brass pins - see door hinge details. When using two piece hinge type on galvanized enclosure, remove hinge pin prior to welding hinge to cabinet and prior to hot-dip galvanizing. After galvanizing, replace pin with brass pin and solder in place.
6. Equipment identified by Key Numbers 14, 16, 17, 18, 19, 20, 21, 22, and 25 shall have an appropriately engraved phenolic name plate attached with screws or rivets. The name plate for Key Number 21 (Test Switch only) shall read as follows: "PHOTOCELL BYPASS TEST ON" AND "PHOTOCELL TEST OFF - AUTOMATIC." See service cabinet detail.
7. All busswork shall be **ASTM B187** copper and shall have a minimum rating of 250 amps. All breakers shall bolt on to the busswork. Jumpering of breakers shall not be allowed. Busswork shall accommodate all future equipment as shown in the Breaker Schedule.
8. All nuts, bolts, and washers used for mounting the photocell enclosure shall be stainless steel.
9. The photocell unit shall be centered in the photocell enclosure to permit 360 degree rotation of the photocell without removal of the photocell unit or the photocell enclosure.
10. All internal wire runs shall be identified with "TO - FROM" coded tags labeled with the code letters and/or numbers shown on the Schedules. Approved PVC or polyolefin wire marking sleeves shall be used.
11. See Contract for Breaker and Contactor Schedule.
12. Buss bars shall be sized to accommodate up to #4 AWG wires.
13. The meter base portion of this service was designed to meet metering portion of **EUSERC Drawing 309** requirements.
14. Metering arrangements vary with different serving Utilities. The Utility may require meter base mounting in the enclosure, on the side, or on the back of the enclosure. The Utility may require the dimension between the door and the front of the safety socket box to be less than the 11" (in) shown in the Left Side - Safety Socket Box Mounting Detail. The Contractor shall verify the serving Utility's requirements prior to fabrication and installation of the service equipment.
15. Verify the meter setback position with the utility and adjust the meter socket backplate to the required position. For cabinets with separate metering, remove the meter socket or install shunts in the meter socket.

Aug 18, 2021

SERVICE CABINET TYPE B MODIFIED (0 - 200 AMP TYPE 120/240 VOLT SINGLE PHASE) STANDARD PLAN J-10.20-04

SHEET 1 OF 2 SHEETS

APPROVED FOR PUBLICATION

Aug 18, 2021

STATE DESIGN ENGINEER

Washington State Department of Transportation

DRAWN BY: FERN LIDDELL

KEY (CONTINUED)

(12) ALUMINUM BACKPLATE FOR METER SOCKET/BASE

(13) 15" (IN) WIDE BY 36" (IN) TALL ALUMINUM BACKPLATE FOR CUSTOMER SIDE EQUIPMENT

(14) MAIN BREAKER ~ DPST ~ SIZE PER BREAKER SCHEDULE

(15) 18-CIRCUIT PANEL BOARD ~ MINIMUM SIZE WITH SEPARATE MAIN BREAKER

(16) 20 KA TYPE 1 OR TYPE 2 SURGE PROTECTION DEVICE ~ DIN RAIL MOUNT WITH PLUG-IN MODULE(S)

(17) DPST BRANCH BREAKER ~ SEE BREAKER SCHEDULE

(18) SPARE BRANCH BREAKER ~ 20 AMP DPST ~ OMIT IF BREAKER ARRAY IS FULL (SEE BREAKER SCHEDULE)

(19) SPST BRANCH BREAKER ~ SEE BREAKER SCHEDULE

(20) RECEPTACLE BREAKER ~ SPST 20 AMP

(21) PHOTOCELL BREAKER ~ SPST 15 AMP

(22) 2 GANG BOX WITH:
- A. RECEPTACLE (GROUNDED) ~ 125 VOLT 20 AMP GFCI
- B. TEST SWITCH ~ 120/277 VOLT 15 AMP SPDT SNAP ACTION - POSITIVE CLOSE - "T" RATED

BOX MAY INCLUDE A COVER PLATE, OR MAY BE COVERED BY DEAD FRONT PANEL ~ GANG BOX SHALL BE WIRED TO THE CABINET BONDING JUMBER (KEY NUMBER 24)

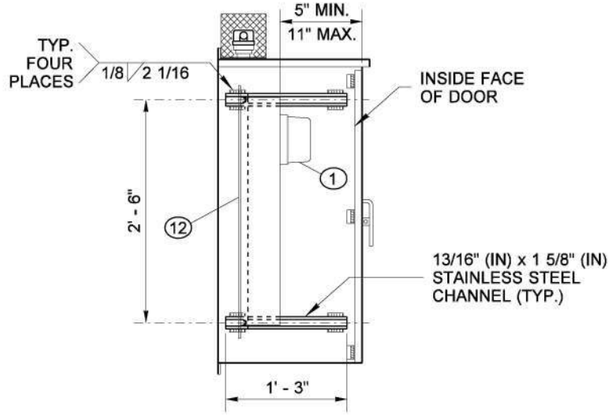
(23) ISOLATED NEUTRAL BUSS ~ 14 LUG COPPER (SEE NOTE 12)

(24) CABINET MAIN BONDING JUMPER ASSEMBLY ~ BUSS SHALL BE 14 LUG TINNED COPPER (SEE NOTE 12) ~ SEE CABINET MAIN BONDING JUMPER ASSEMBLY DETAIL

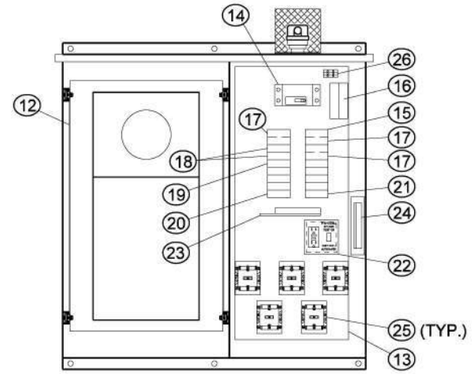
(25) CONTACTOR (BEHIND DEAD FRONT) ~ SEE BREAKER SCHEDULE

(26) THREE POSITION DIN RAIL MOUNTED TERMINAL BLOCK ~ TERMINAL BLOCK SECTIONS SHALL BE BLACK, WHITE, AND RED AS SHOWN IN CABINET WIRING DIAGRAM.

(27) CONNECTION TO GROUND ELECTRODE ~ SEE **STANDARD PLAN J-60.05**

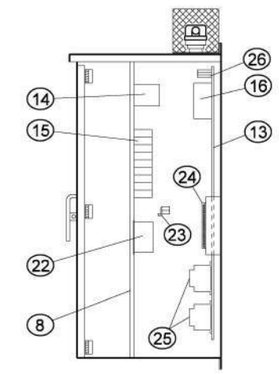


INTERIOR END VIEW UTILITY SIDE



FRONT (SHOWN WITH DEAD FRONT REMOVED)

SERVICE CABINET INTERIOR DETAIL



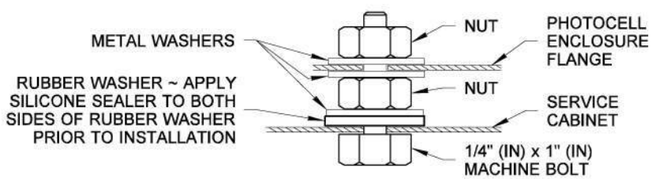
INTERIOR END VIEW CUSTOMER SIDE (SUPPORT FRAMES FOR EQUIPMENT NOT SHOWN)

⚠ WARNING

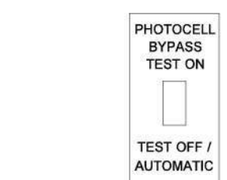
Arc Flash and Shock Hazard
Appropriate PPE Required

ARC FLASH PROTECTION		SHOCK PROTECTION	
Arc Flash Boundary (in)	00 In	Shock Hazard When Cover Removed	000 VAC
Incident Energy at 18 inches (cal/cm²)	0.00	Limited Approach	00 In
Assessment Date: 00-00-0000		Restricted Approach	00 In
By:		Glove Class	00
WSDOT Approval			
Inspector:	Date:		

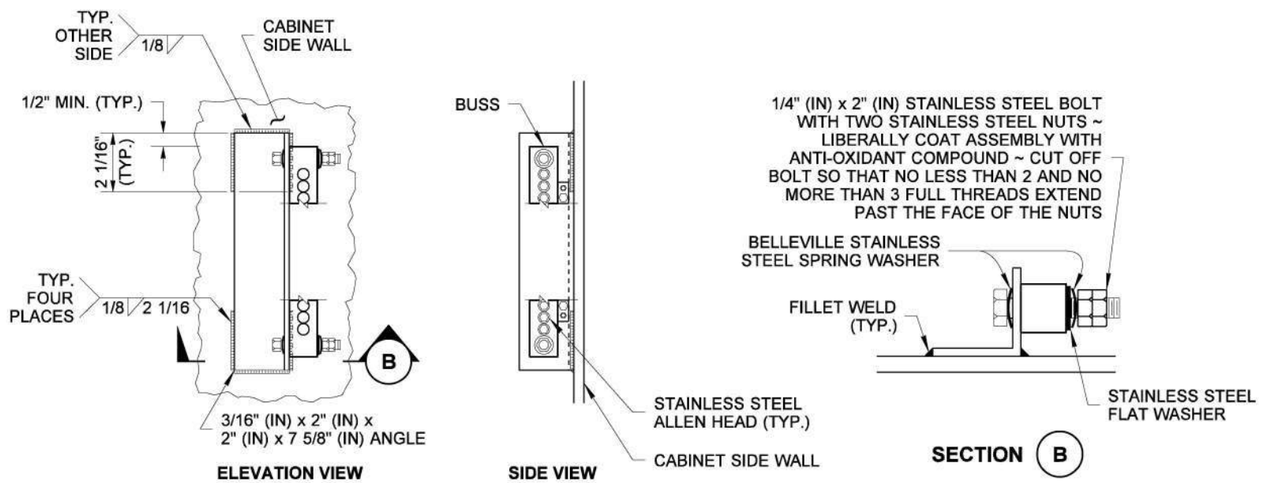
ARC FLASH AND SHOCK HAZARD LABEL DETAIL
(9)



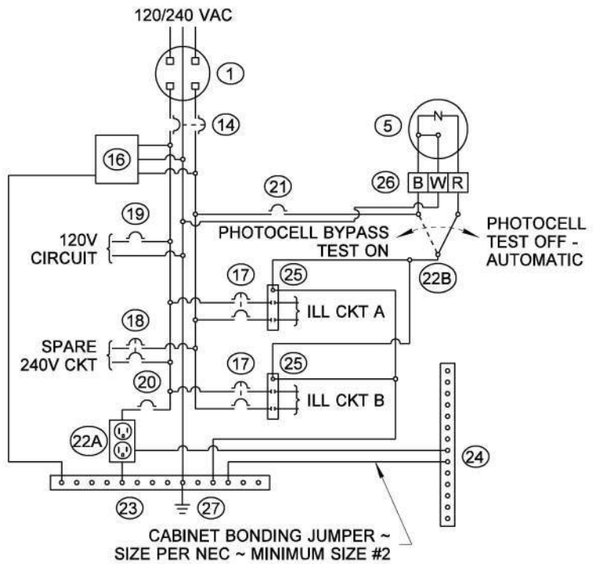
PHOTOCELL ENCLOSURE MOUNTING DETAIL



TEST SWITCH LABEL DETAIL
(22)



CABINET MAIN BONDING JUMPER ASSEMBLY DETAIL



WIRING DIAGRAM

WILLIAM FLINT JACKSON
STATE OF WASHINGTON
48821
REGISTERED
PROFESSIONAL ENGINEER
William Flint Jackson Aug 18, 2021 10:00 PM

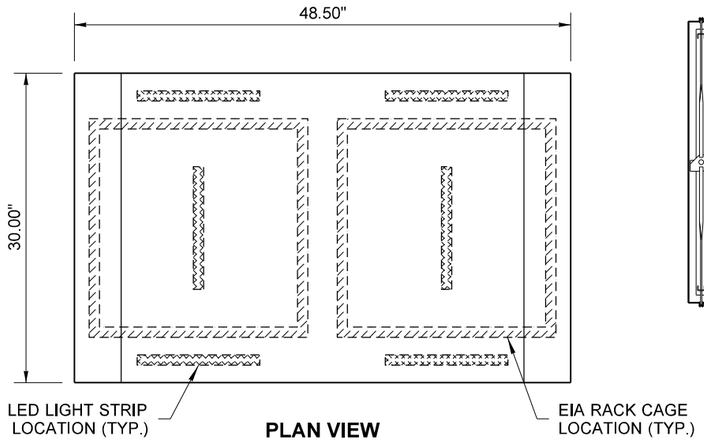
Aug 18, 2021

SERVICE CABINET TYPE B MODIFIED (0 - 200 AMP TYPE 120/240 VOLT SINGLE PHASE) STANDARD PLAN J-10.20-04

SHEET 2 OF 2 SHEETS

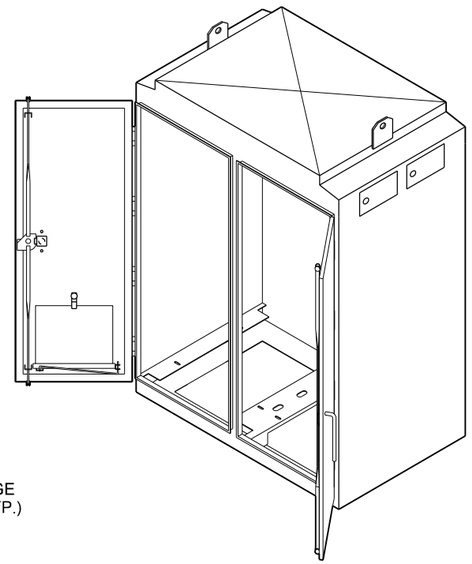
APPROVED FOR PUBLICATION
Aug 18, 2021
STATE DESIGN ENGINEER
Washington State Department of Transportation

DRAWN BY: BILL BERENS

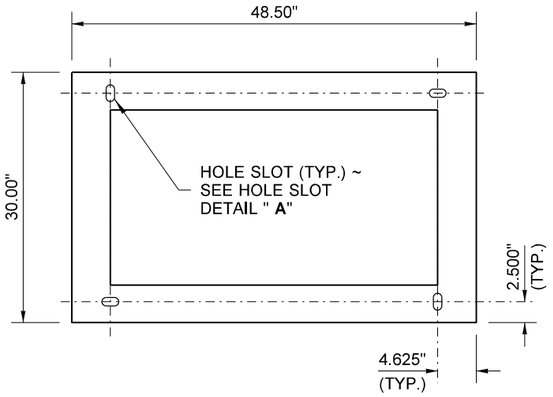


PLAN VIEW

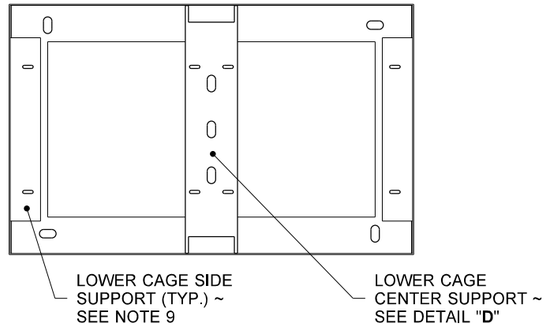
NOTE: DIMENSIONS NOT SHOWN SHALL BE IN ACCORDANCE WITH THE TEES



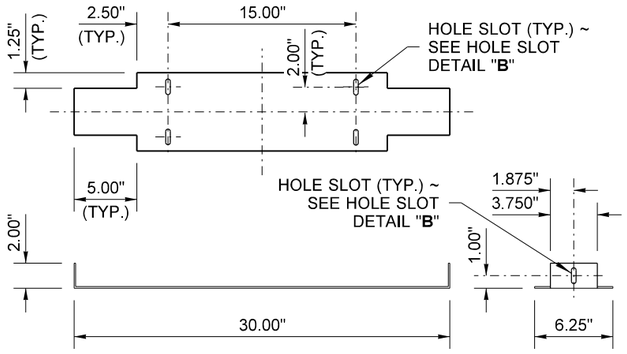
ISOMETRIC VIEW



CABINET BASE DETAIL

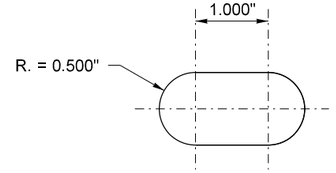


LOWER CAGE SUPPORT DETAIL

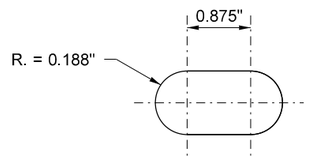


DETAIL C

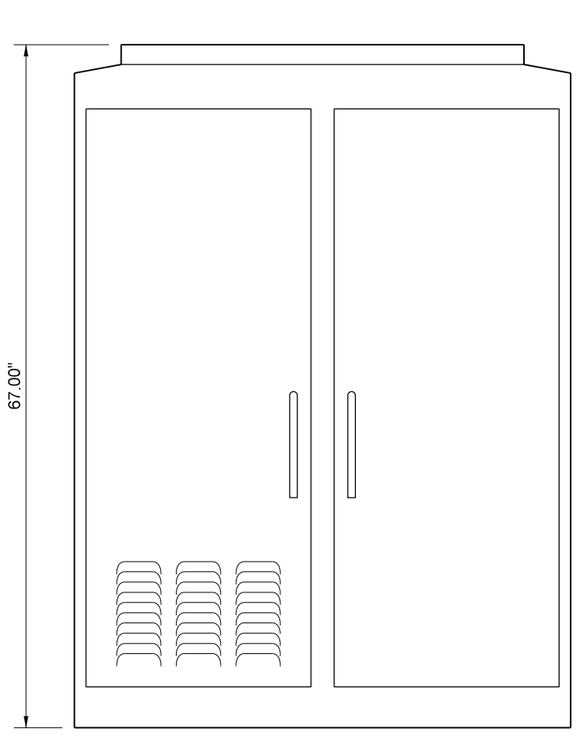
UPPER CAGE CENTER SUPPORT



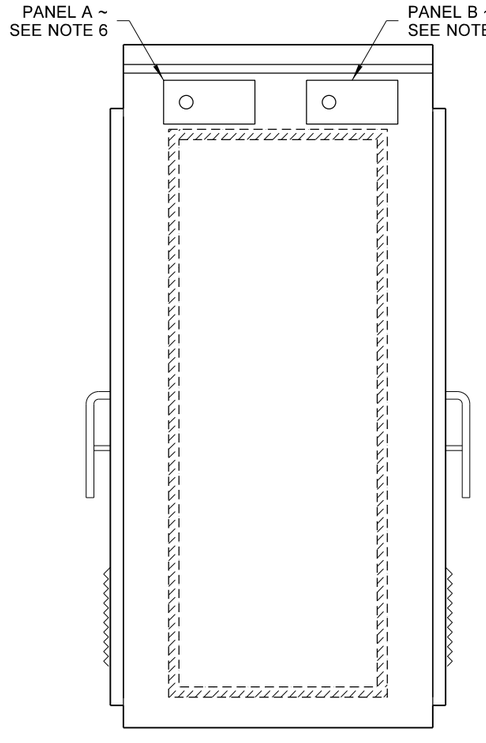
HOLE SLOT DETAIL A



HOLE SLOT DETAIL B

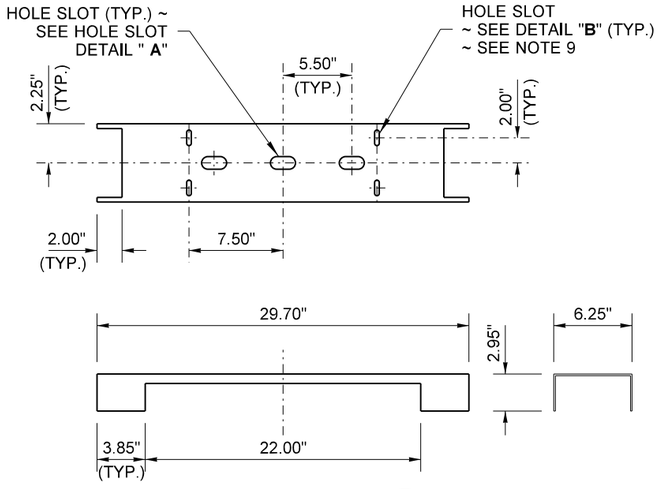


EXTERIOR FRONT VIEW



EXTERIOR SIDE VIEW

CABINET HOUSING #1X



DETAIL D

LOWER CAGE CENTER SUPPORT

MATTHEW J. NEELEY
STATE OF WASHINGTON
46597
REGISTERED
PROFESSIONAL ENGINEER

TYPE 33xD AND 34xLX DOUBLE-WIDTH CABINET HOUSINGS STANDARD PLAN J-12.16-00

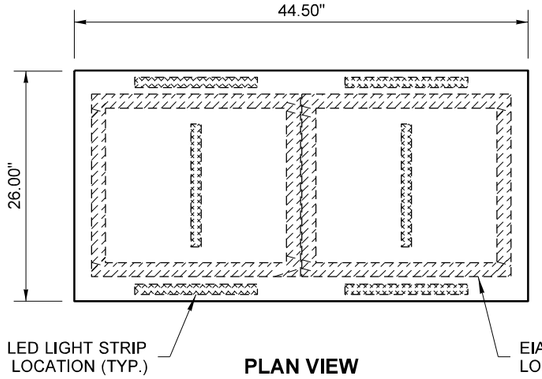
SHEET 1 OF 2 SHEETS

APPROVED FOR PUBLICATION

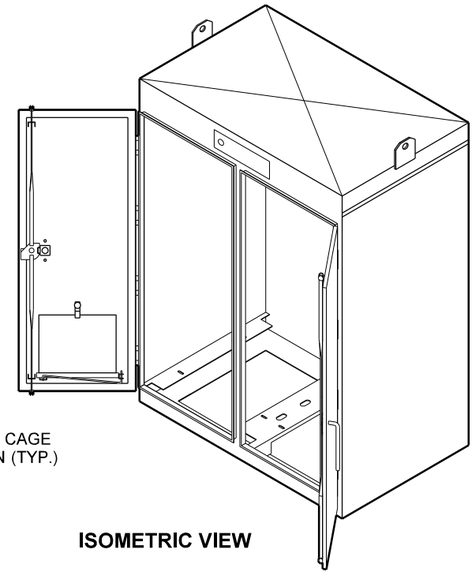
STATE DESIGN ENGINEER

Washington State Department of Transportation

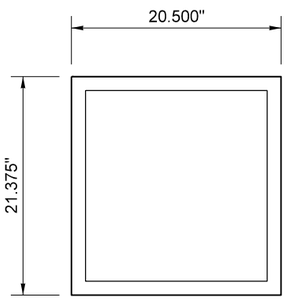
DRAWN BY: BILL BERENS



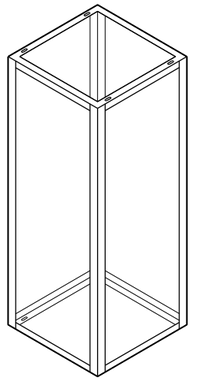
PLAN VIEW



ISOMETRIC VIEW



PLAN VIEW

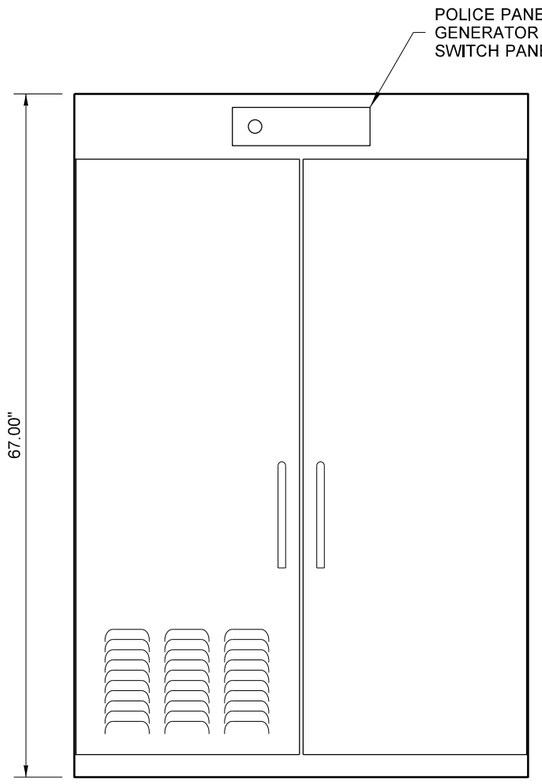


ISOMETRIC VIEW

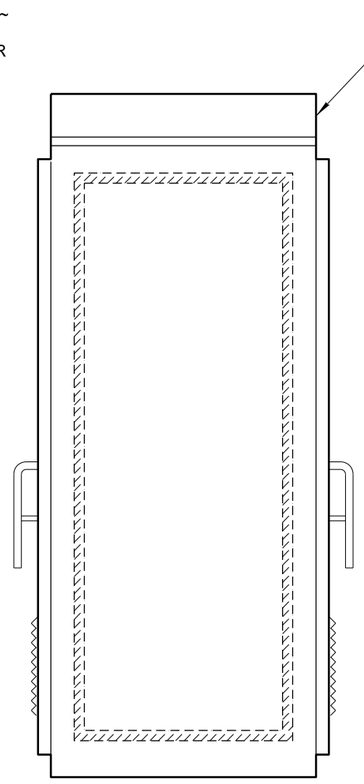
NOTES

1. Cabinet construction shall meet the requirements of **Standard Specification Section 9-29.13(10)**. Aluminum cabinets shall have mill finish.
2. Cabinet construction shall conform to the requirements of Chapter 6, Section 2, of the **California Department of Transportation (CalTrans) Transportation Electrical Equipment Specifications (TEES)** as currently published, including all errata, with modifications as described in **Standard Specification Section 9-29.13(10)**.
3. The Housing and Cage numbers refer to the designations shown in the **TEES**. Cabinet Housing #1X is a double-width version of Cabinet Housing #1 with overall dimensions as shown.
4. Housing #1X shall always use two of Cage #1 - see **Standard Plan J-12.15**. Housing #3 shall always use two ITS Cages.
5. Cage mounting points are designated by rack units (U), which are numbered starting from the bottom of the cage - see **Standard Plan J-12.15**.
6. Install the following in PANEL A location for the applicable cabinet type:
   - Type 331D and 334D Cabinets: Do not install PANEL A.
   - Type 332D Cabinets: Install Generator Transfer Switch.
7. Install the following in PANEL B location for the applicable cabinet type:
   - Type 331D Cabinets: Install Generator Transfer Switch when specified in the contract.
   - Type 332D and 334D Cabinets: Install Police Panel.
8. All cabinet locks shall accept Best 6-pin or 7-pin cores, with the exception of the Police Panel. The Police Panel shall use a standard Police Panel Lock and Keys.
9. Cage side supports for Cabinet Housing #1X shall be as shown in the **TEES** for Cabinet Housing #1B. Cage upper and lower center supports shall be as shown here, and installed in the same manner as shown in the **TEES** for the Cabinet Housing #3 center cage supports.

NOTE: DIMENSIONS NOT SHOWN SHALL BE IN ACCORDANCE WITH THE TEES

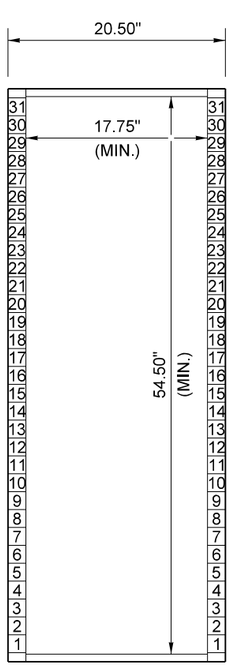


EXTERIOR FRONT VIEW

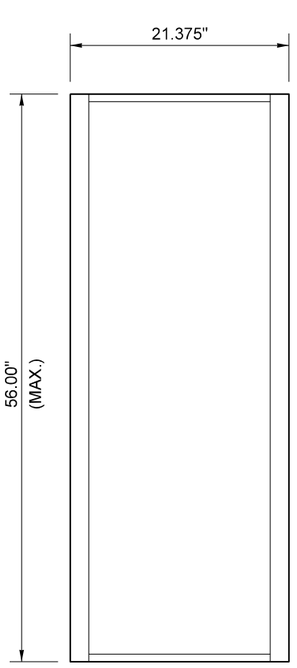


EXTERIOR SIDE VIEW

CABINET HOUSING #3



FRONT VIEW



SIDE VIEW

ITS CAGE (EIA RACK)

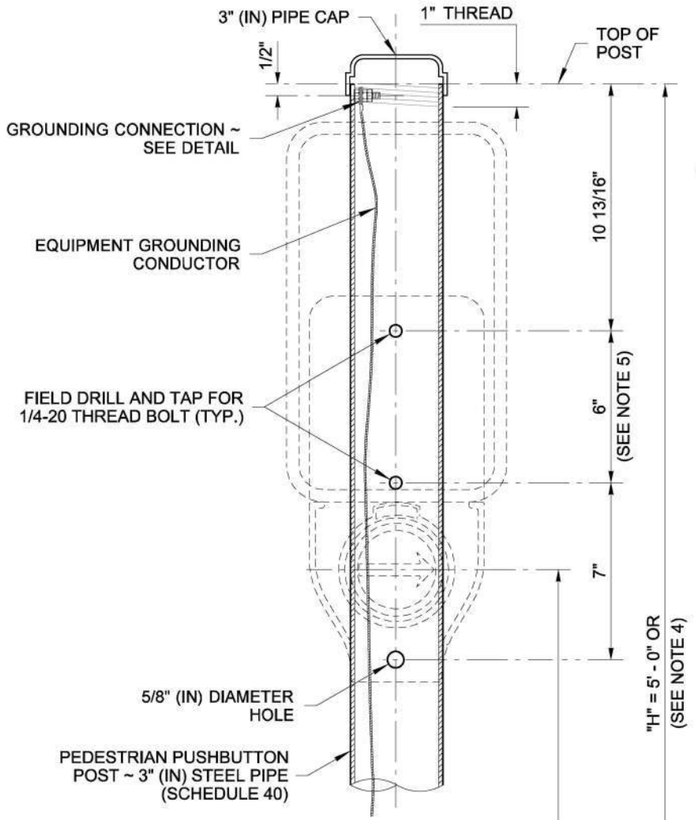
MATTHEW J. NEELEY
STATE OF WASHINGTON
46597
REGISTERED
PROFESSIONAL ENGINEER

TYPE 33xD AND 34xLX DOUBLE-WIDTH CABINET HOUSINGS STANDARD PLAN J-12.16-00

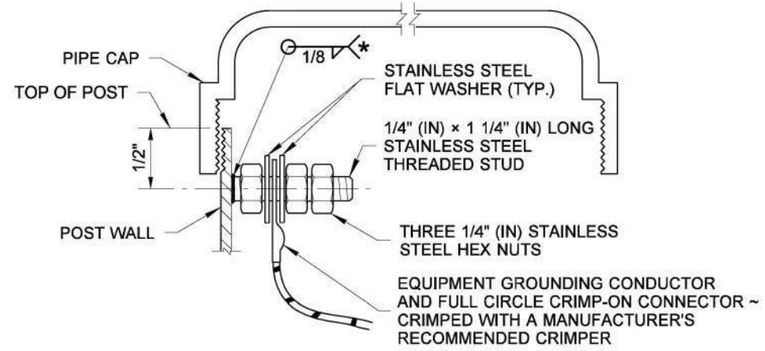
APPROVED FOR PUBLICATION

STATE DESIGN ENGINEER

Washington State Department of Transportation



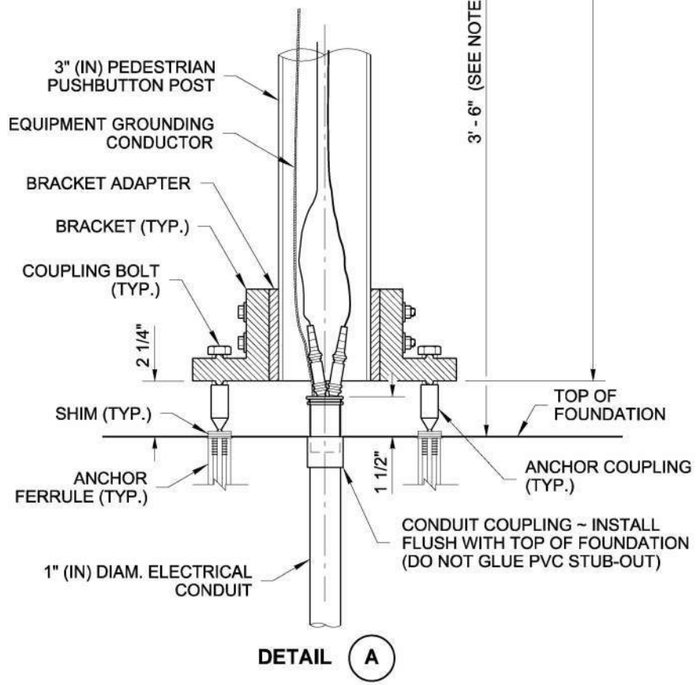
POST DETAIL



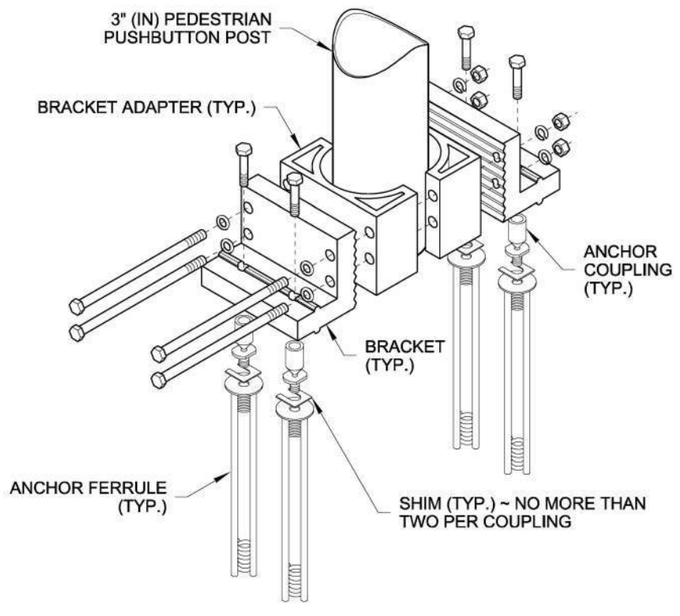
GROUNDING CONNECTION DETAIL

* WELD STUD TO POLE WALL TO MAXIMUM EXTENT POSSIBLE ~ 1/2" (IN) MINIMUM WELD

CONFIGURATIONS VARY AMONG DIFFERENT MANUFACTURERS (SHOWN EXPLODED FOR CLARITY)



DETAIL (A)



EXPLODED VIEW

BREAKAWAY BASE CONNECTOR

(SEE NOTE 1)

NOTES:

1. See **Standard Specification Section 9-06.16** for Breakaway Base Connection details. Dimensions for the parts used to assemble the base connections are intentionally not shown. Base connections are patented manufactured products that are in compliance with NCHRP 350 crash test criteria. The Breakaway Base Connection details are only shown on this plan to illustrate how parts are assembled.
2. See **Standard Plan J-20.26** for Accessible Pedestrian Pushbutton (APS) details; Audible Information Device (AID) pedestrian pushbutton similar.
3. Secure conductor in adjacent Junction Box per detail in **Standard Plan J-28.70**.
4. Where shown in the plans, install plaque (R10-32P) "PUSH BUTTON FOR 2 SECONDS FOR EXTRA CROSSING TIME" above the Accessible Pedestrian Signal (APS) assembly. Add 14" (in) to post height to accommodate plaque and leave a 2" (in) space between signs.
5. Mounting distances vary between manufacturers. See manufacturer's recommendations for mounting information.
6. Junction Box serving the Standard shall preferably be located 5' - 0" (10' - 0" Max.) from the Standard.
7. Two button installation may require adaptor(s) or extension(s).
8. Pushbutton height is measured from the walking surface to the center of the actual pushbutton circle.

Jun 20, 2024

PEDESTRIAN PUSHBUTTON (PPB) POST AND FOUNDATION

STANDARD PLAN J-20.15-04

SHEET 1 OF 2 SHEETS

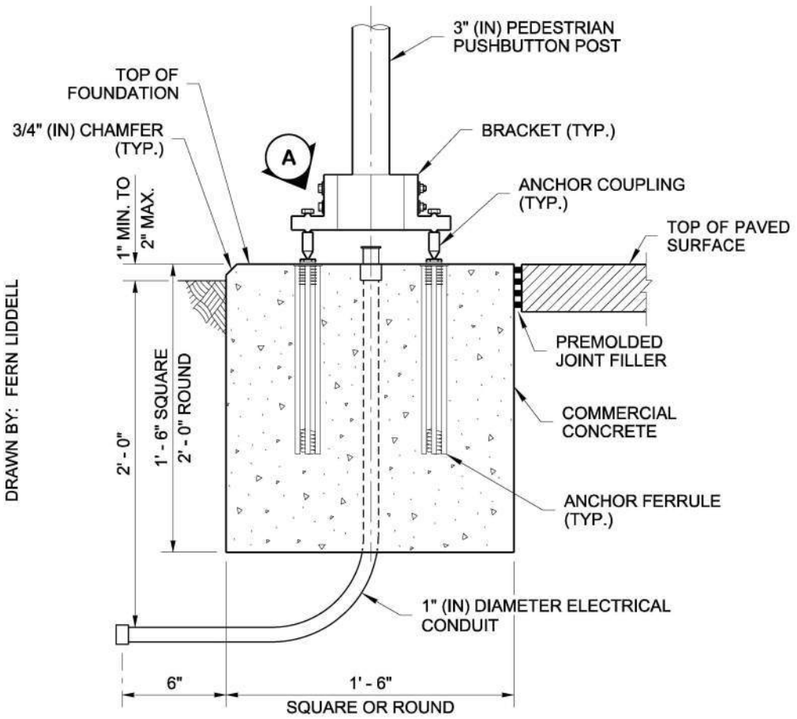
APPROVED FOR PUBLICATION

Mark A Dawes Jun 21, 2024

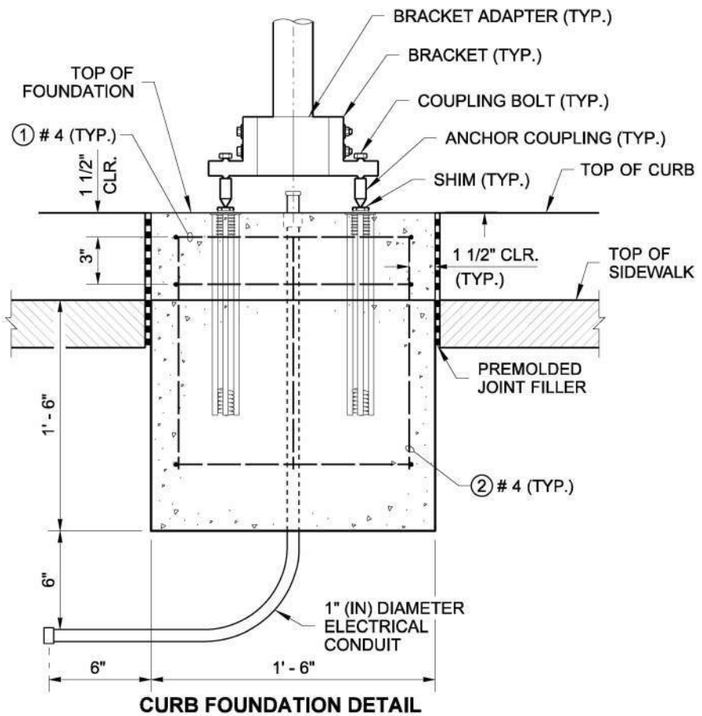
STATE DESIGN ENGINEER

Washington State Department of Transportation

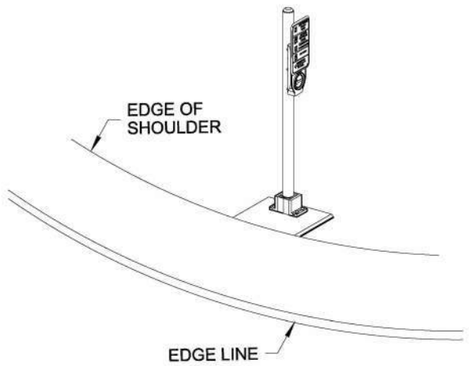
DRAWN BY: FERN LIDDELL



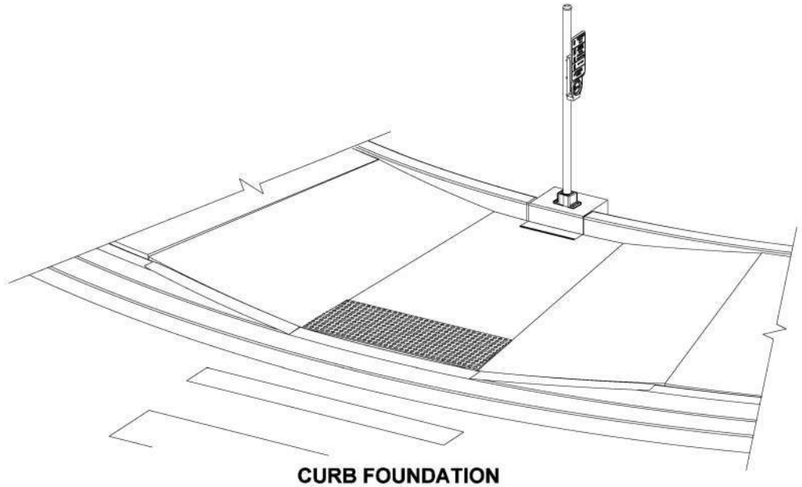
FLAT FOUNDATION DETAIL ELEVATION VIEW



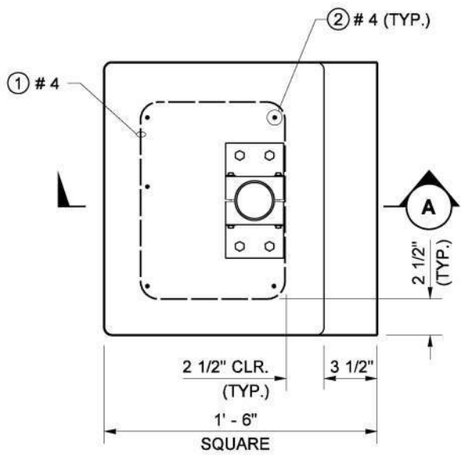
CURB FOUNDATION DETAIL ELEVATION VIEW



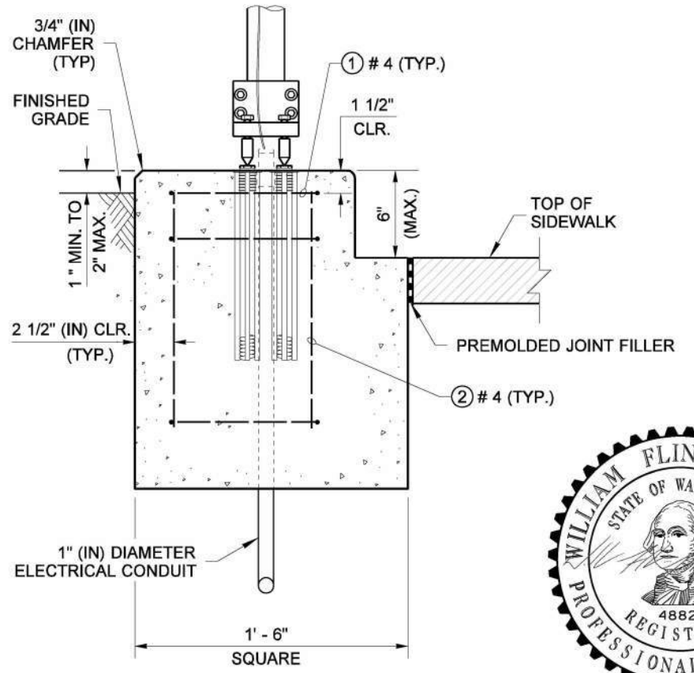
FLAT FOUNDATION PERSPECTIVE VIEW



CURB FOUNDATION PERSPECTIVE VIEW
(SKIRT NOT SHOWN)



CURB FOUNDATION PLAN VIEW

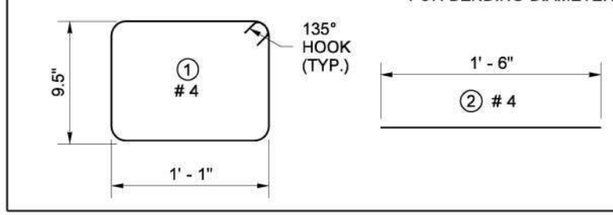


SECTION (A)

REINFORCING STEEL BENDING DIAGRAM

DIMENSIONS ARE OUT TO OUT

SEE **STD. SPEC. SECTN. 9-07.1(2)** FOR BENDING DIAMETERS



Jun 20, 2024

PEDESTRIAN PUSHBUTTON (PPB) POST AND FOUNDATION

STANDARD PLAN J-20.15-04

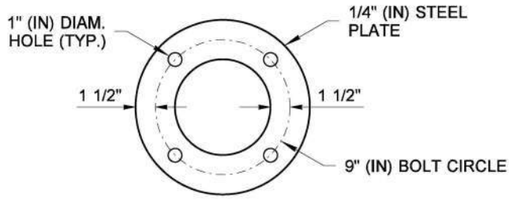
SHEET 2 OF 2 SHEETS

APPROVED FOR PUBLICATION

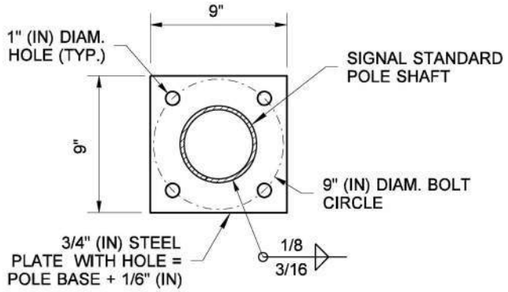
Mark A Bains — Jun 21, 2024

STATE DESIGN ENGINEER

Washington State Department of Transportation



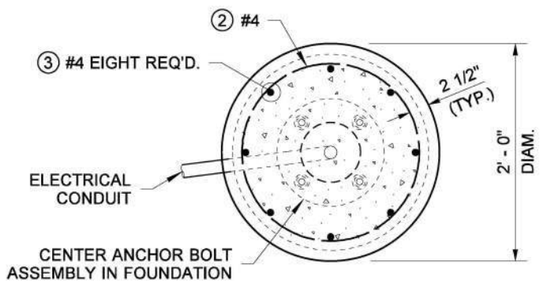
ANCHOR BOLT TEMPLATE



BASE PLATE DETAIL

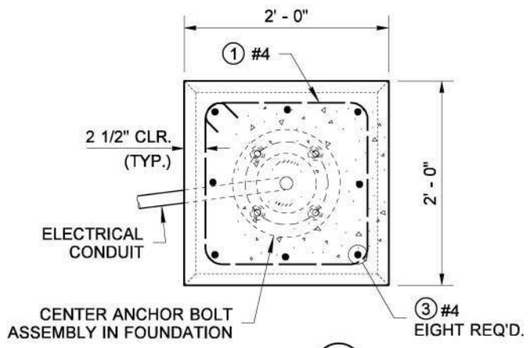
NOTES

1. Round foundations require five reinforcing steel hoops at ~ 10" spacing. Square foundations require three reinforcing steel hoops at ~ 1' - 3 1/2" spacing.
2. Nuts for anchor bolts shall be **ASTM A563** Grade A, D, or DH. Washers for anchor bolts shall meet ASTM F436.
3. Supplemental grounding conductor shall be non-insulated #4 AWG stranded copper and shall be clamped to vertical rebar and anchor bolt with connectors suitable for use embedded in concrete. Supplemental ground shall be verified intact by Contracting Agency Inspector before placing concrete.
4. Junction box serving the Standard shall preferably be located 5' - 0" (10' - 0" Max.) from the Standard.
5. Provide cable tie at wiring entering the junction box ~ See **Detail A, Standard Plan J-28.70**.
6. See **Standard Plan J-20.16**, **J-21.15**, **J-21.16**, or **J-22.15** as applicable for pole details above this point.



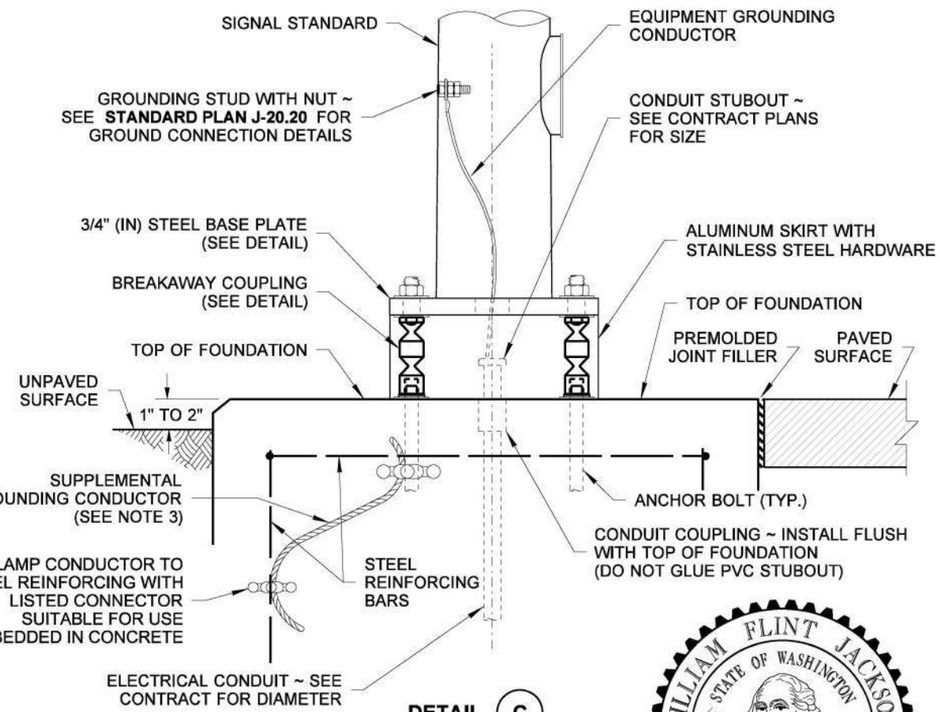
SECTION (A)

ROUND FOUNDATION - PLAN VIEW

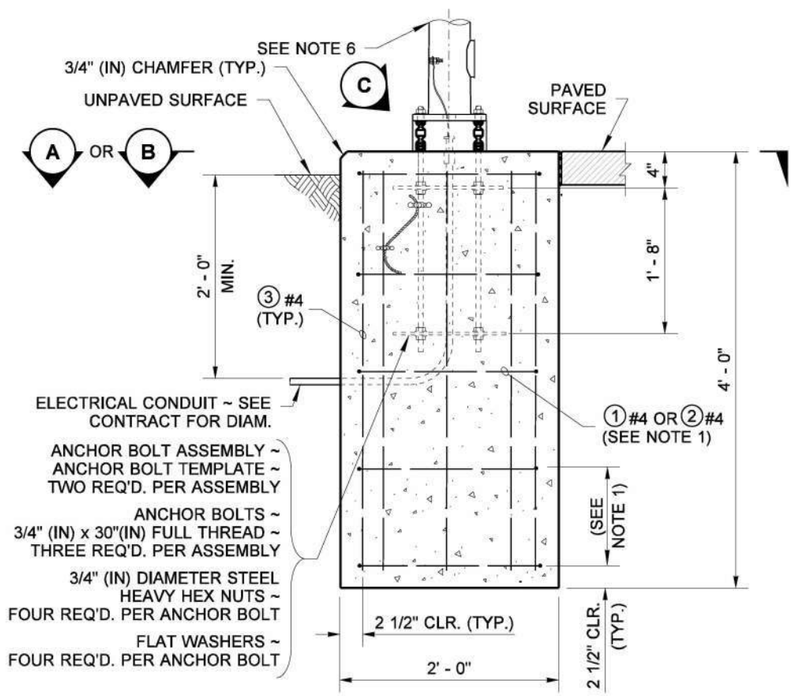


SECTION (B)

SQUARE FOUNDATION - PLAN VIEW



DETAIL (C)

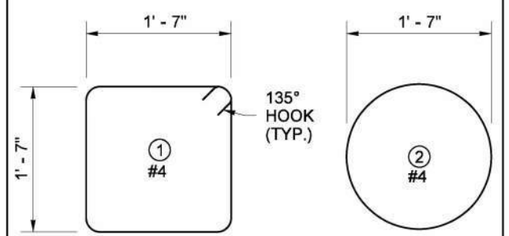


ELEVATION

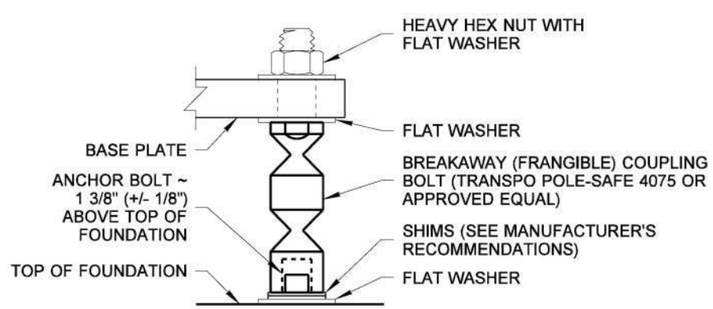
FLAT FOUNDATION DETAIL

REINFORCING STEEL BENDING DIAGRAM

SEE **STD. SPEC. 9-07.1(2)** FOR BENDING DIAM.



DIMENSIONS ARE OUT TO OUT



BREAKAWAY COUPLING DETAIL

Jun 20, 2024

TYPE PS, TYPE 1, RM & FB SIGNAL STANDARD FOUNDATION DETAILS

STANDARD PLAN J-21.10-05

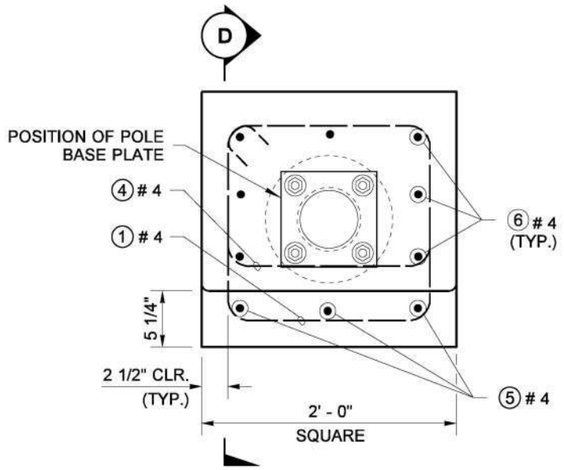
SHEET 1 OF 2 SHEETS

APPROVED FOR PUBLICATION

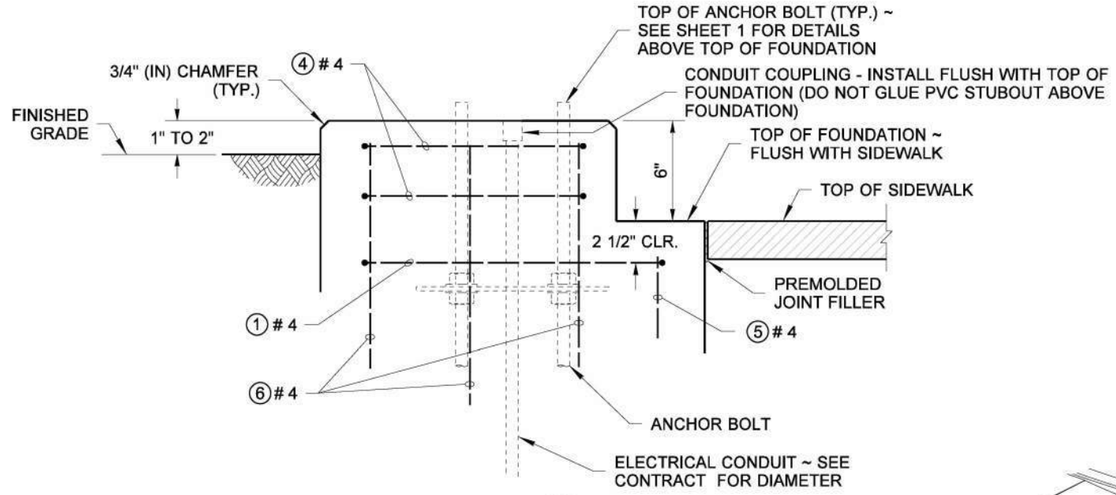
Mark A Dawes Jun 21, 2024

STATE DESIGN ENGINEER

Washington State Department of Transportation

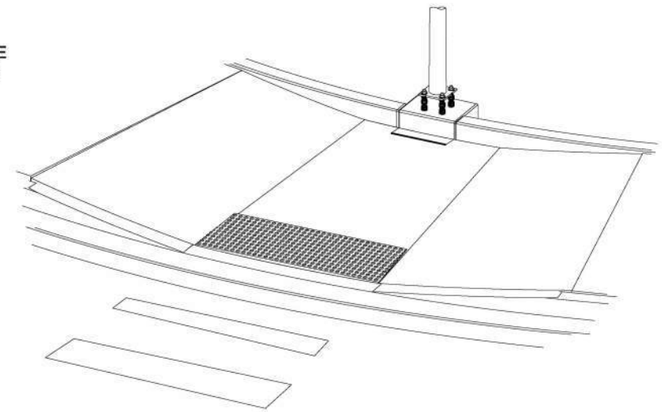


PLAN VIEW



SECTION (D)

FOUNDATION DETAILS



PERSPECTIVE VIEW
(SKIRT NOT SHOWN)

REINFORCING STEEL QUANTITIES LIST				
MARK	①	④	⑤	⑥
QTY.	3	2	3	7

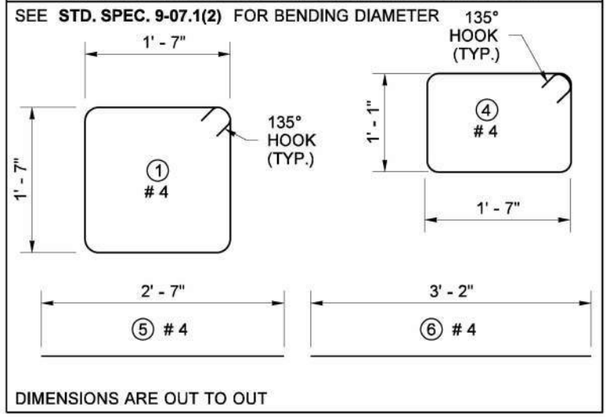
ELEVATION

CURB FOUNDATION DETAIL

(SEE SHEET 1 FOR SUPPLEMENTAL GROUND)

REINFORCING STEEL BENDING DIAGRAM

SEE **STD. SPEC. 9-07.1(2)** FOR BENDING DIAMETER



DIMENSIONS ARE OUT TO OUT

Jun 20, 2024

TYPE PS, TYPE 1, RM & FB SIGNAL STANDARD FOUNDATION DETAILS

STANDARD PLAN J-21.10-05

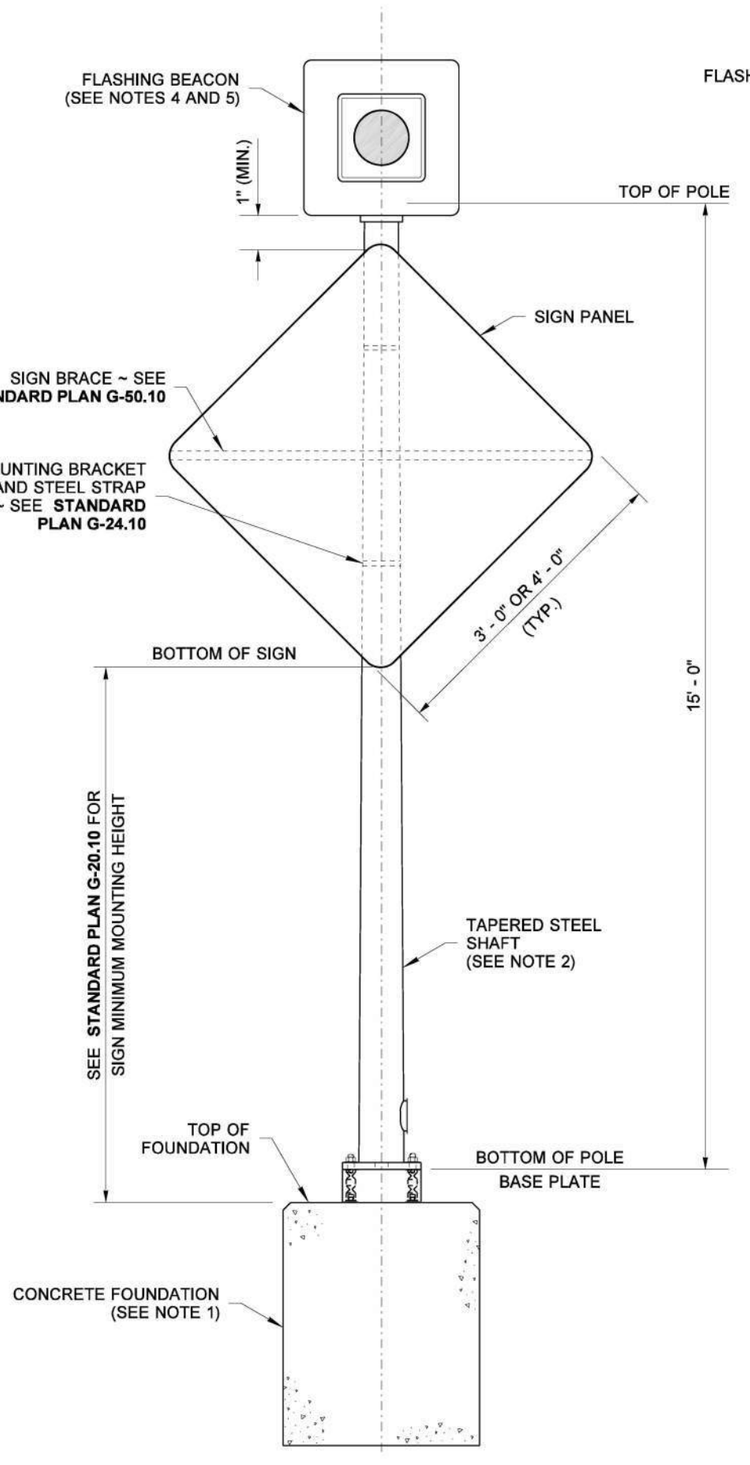
APPROVED FOR PUBLICATION

Mark A Dairies Jun 21, 2024

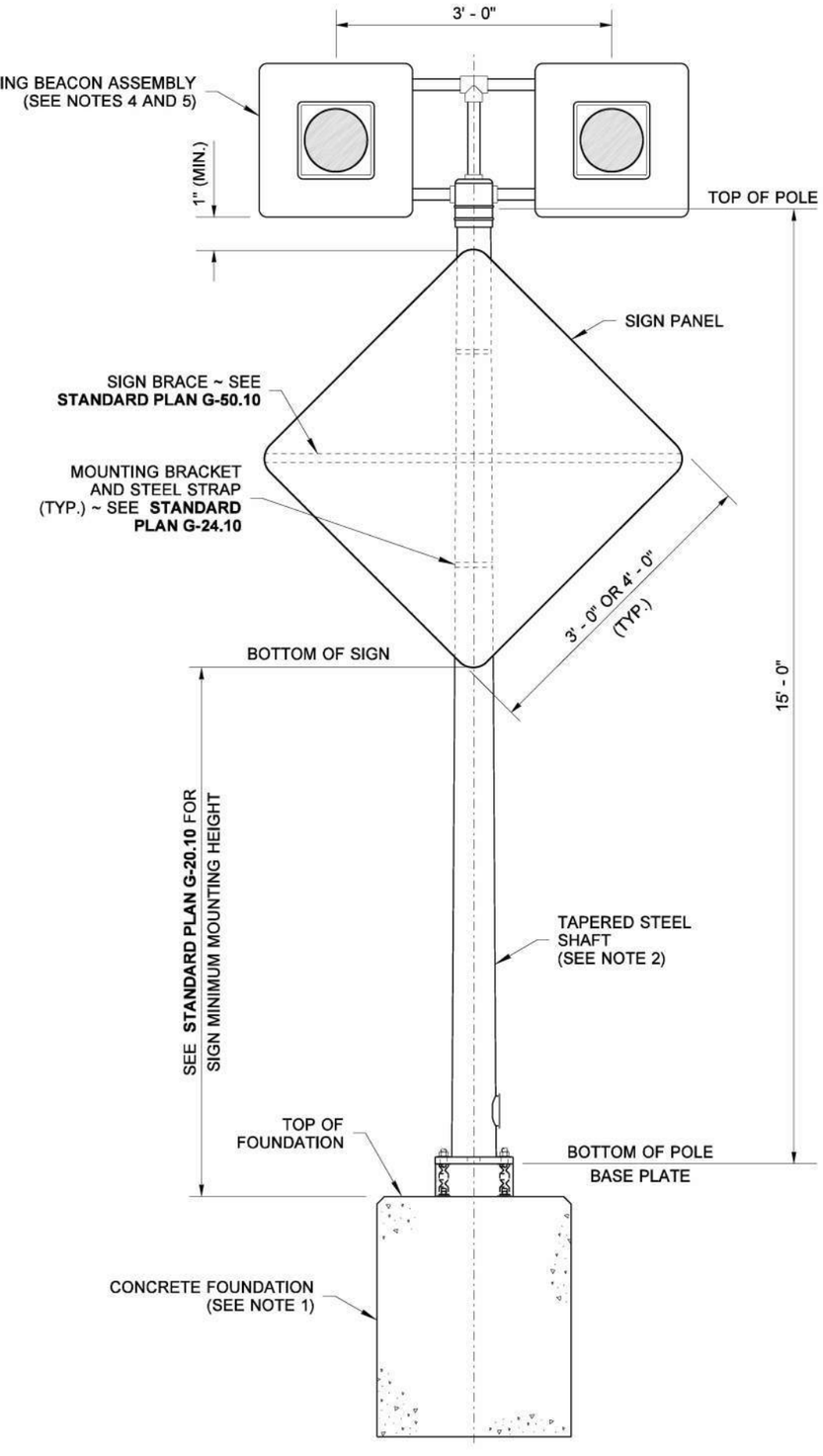
STATE DESIGN ENGINEER

Washington State Department of Transportation

DRAWN BY: FERN LIDDELL



SINGLE FLASHING BEACON



DUAL FLASHING BEACON

NOTES

1. See **Standard Plan J-21.10** for Signal Standard Foundation details.
2. All poles shall be hot-dip galvanized per AASHTO M111.
3. Welding of structures shall be in accordance with the latest edition of the AWS D1.1 Structural Welding Code - Steel. All butt welds shall be ground flush with base metal.
4. Each Flashing beacon display shall consist of a 12-inch signal display of the appropriate color (yellow or red), a cap visor, and a 5-inch backplate (with no reflective tape). 8-inch signal displays may be used only when specified in the Contract Plans.
5. Single flashing beacons shall use Type D mounts. Dual flashing beacons shall use Type F mounts without a terminal compartment. See **Standard Plan J-75.10** for mount details.
6. See **Standard Plan J-21.17** for Electrical details.
7. Junction Box serving the Standard shall preferably be located 5' - 0" (10' - 0" Max.) from the Standard.

WILLIAM FLINT JACKSON
STATE OF WASHINGTON
48821
REGISTERED
PROFESSIONAL ENGINEER

Jun 20, 2024

FLASHING BEACON (TYPE FB) SIGNAL STANDARD DETAILS

STANDARD PLAN J-21.16-02

SHEET 1 OF 1 SHEET

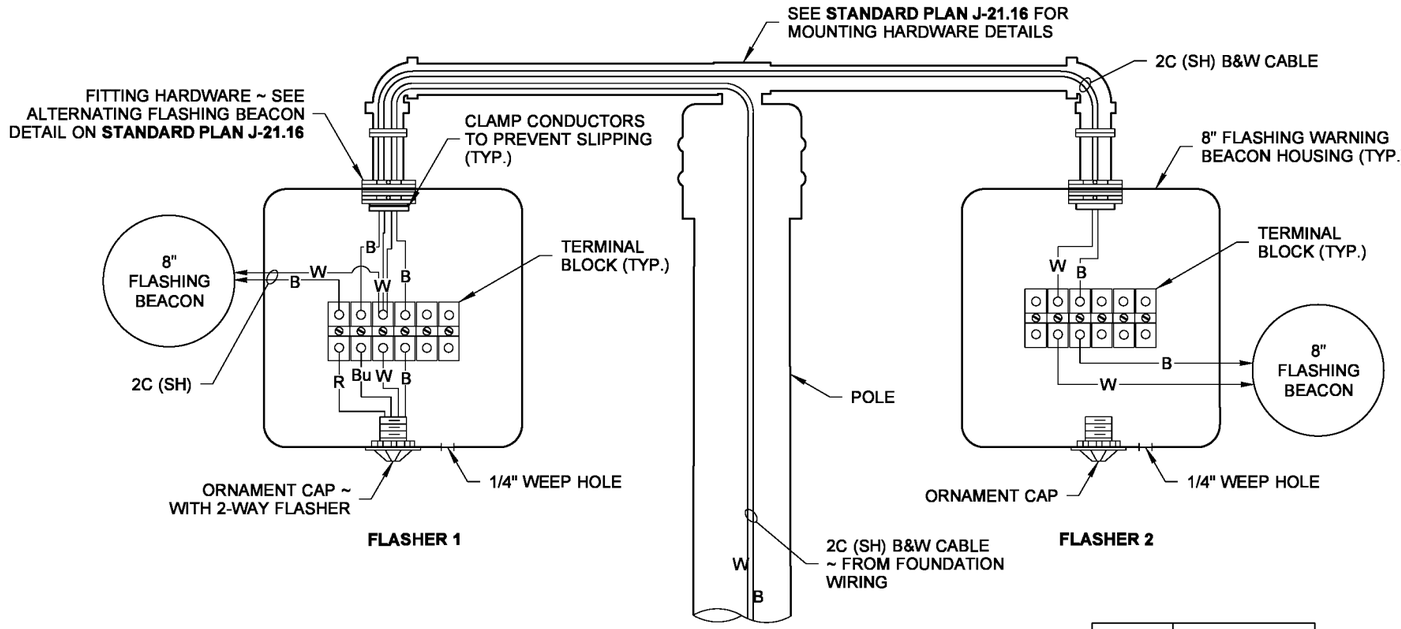
APPROVED FOR PUBLICATION

Mark A Dawes Jun 21, 2024

STATE DESIGN ENGINEER

Washington State Department of Transportation

DRAWN BY: FERN LIDDELL

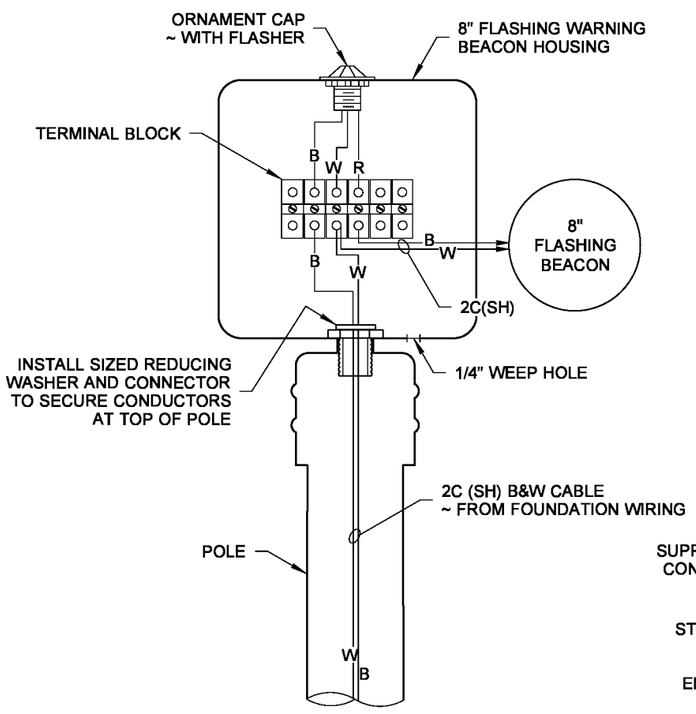


DETAIL A

FLASHING BEACON WIRING

ALTERNATING FLASH WIRING SHOWN

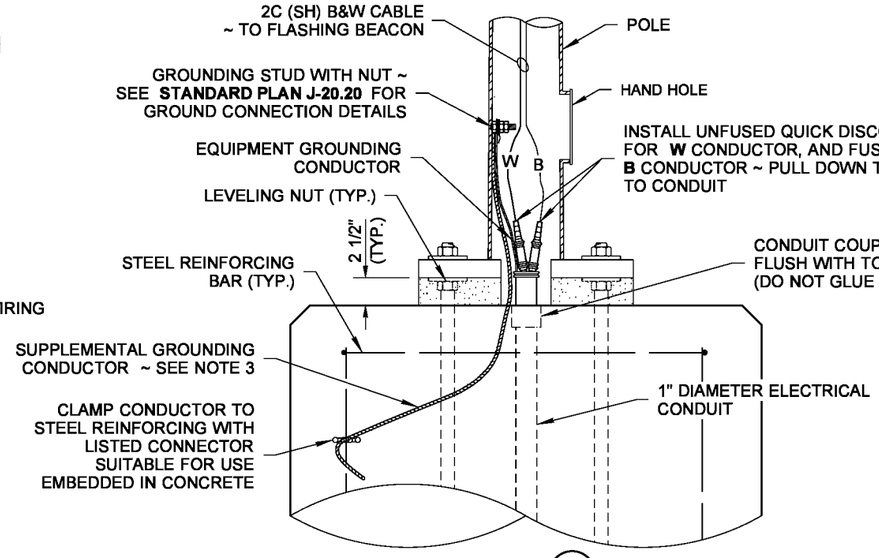
COLOR CODE	USE
B	POWER
W	NEUTRAL
R	FLASHER 1
Bu	FLASHER 2



DETAIL B

FLASHING BEACON WIRING

SINGLE FLASH WIRING SHOWN



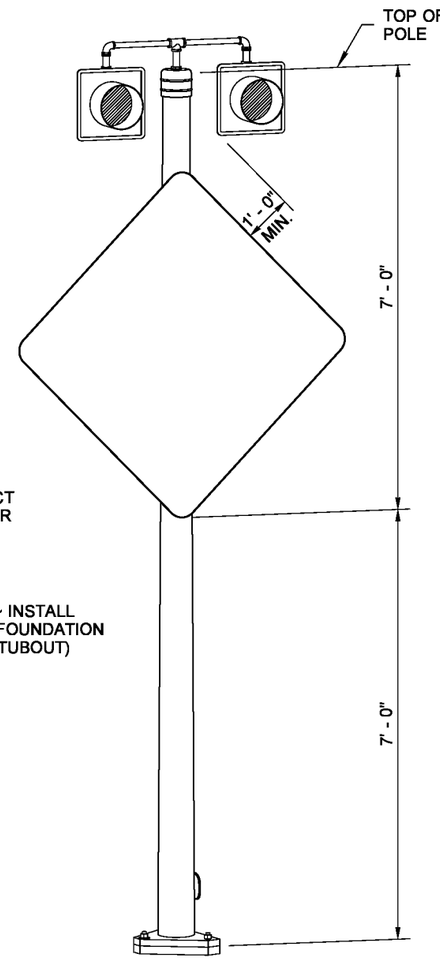
DETAIL C

FOUNDATION WIRING

FIXED BASE SHOWN

NOTES

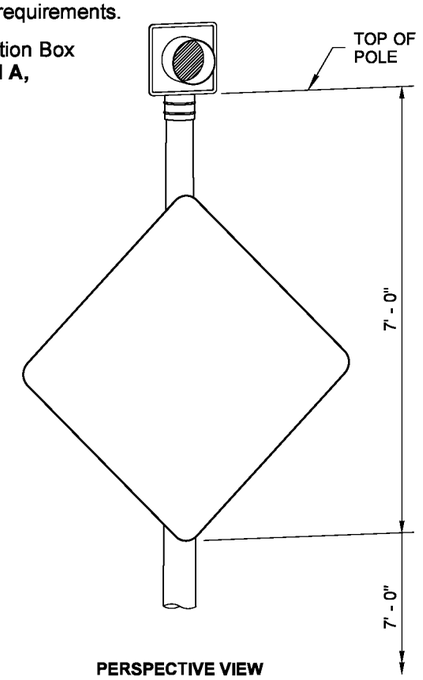
1. See **Standard Specification 9-29.3** for Cable Conductor requirements.
2. See **Standard Plan J-21.16** for Flashing Beacon Type 1 Signal Standard details.
3. Supplemental Grounding Conductor shall be non-insulated #4 AWG stranded copper, provide 3' - 0" min. slack. Clamp to vertical steel reinforcing bar with listed connector suitable for use embedded in concrete.
4. See **Standard Plan J-21.10** for foundation requirements.
5. Provide Cable Tie at wiring entering the Junction Box (for Slip Base installations only) ~ See **Detail A, Standard Plan J-28.70**.



PERSPECTIVE VIEW

FLASHING BEACON TYPE 1

ALTERNATING FLASH BEACON SHOWN



PERSPECTIVE VIEW

FLASHING BEACON TYPE 1

SINGLE FLASH BEACON SHOWN

THEODORE JOSEPH BAILEY
STATE OF WASHINGTON
39820
REGISTERED
PROFESSIONAL ENGINEER

NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT BUT AN ELECTRONIC DUPLICATE. THE ORIGINAL, SIGNED BY THE ENGINEER AND APPROVED FOR PUBLICATION, IS KEPT ON FILE AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST.

FLASHING BEACON TYPE 1 SIGNAL STANDARD ELECTRICAL DETAILS

STANDARD PLAN J-21.17-01

SHEET 1 OF 1 SHEET

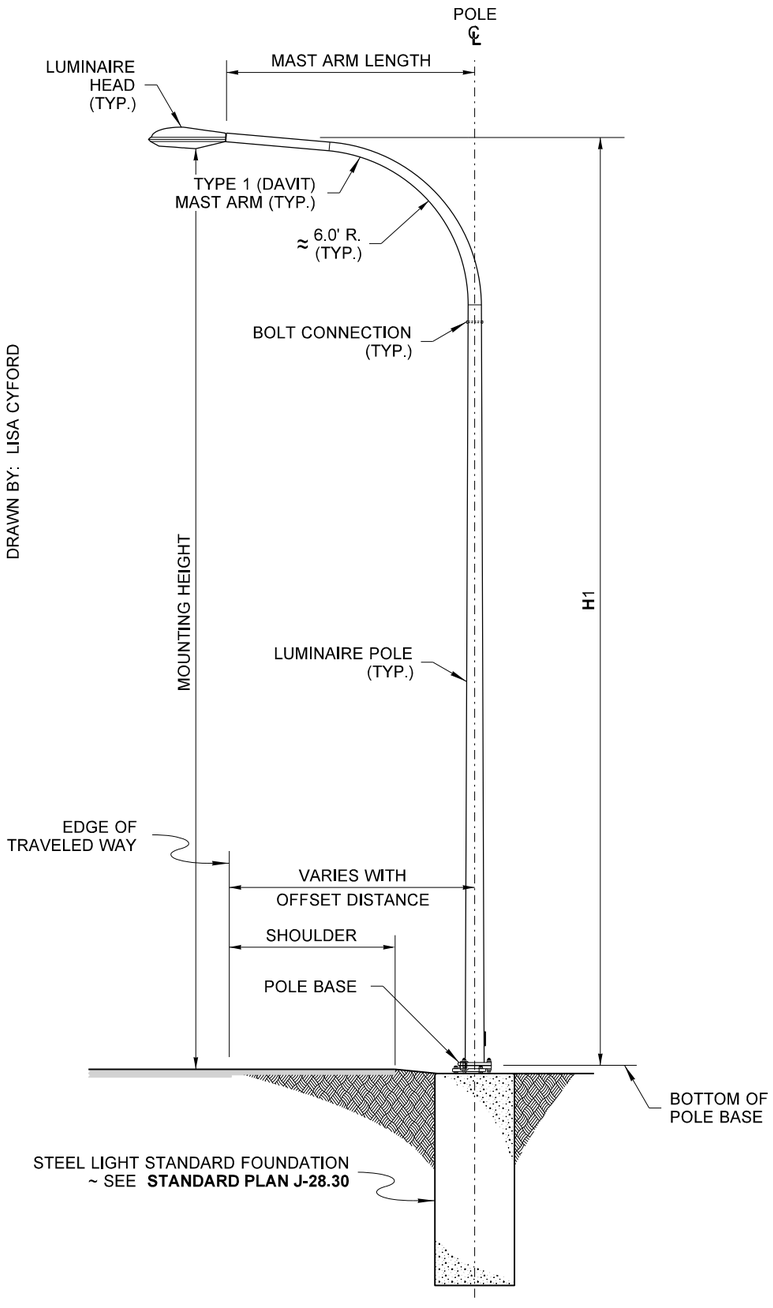
APPROVED FOR PUBLICATION

Pasco Bakotich III — STATE DESIGN ENGINEER

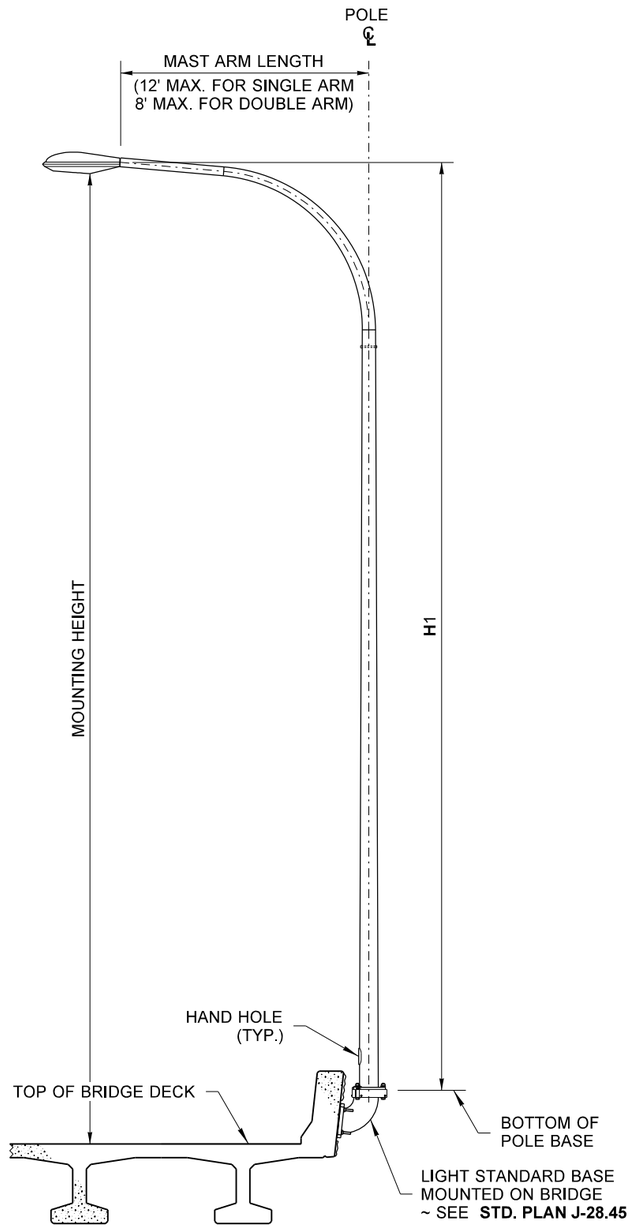
6/10/13 — DATE

Washington State Department of Transportation

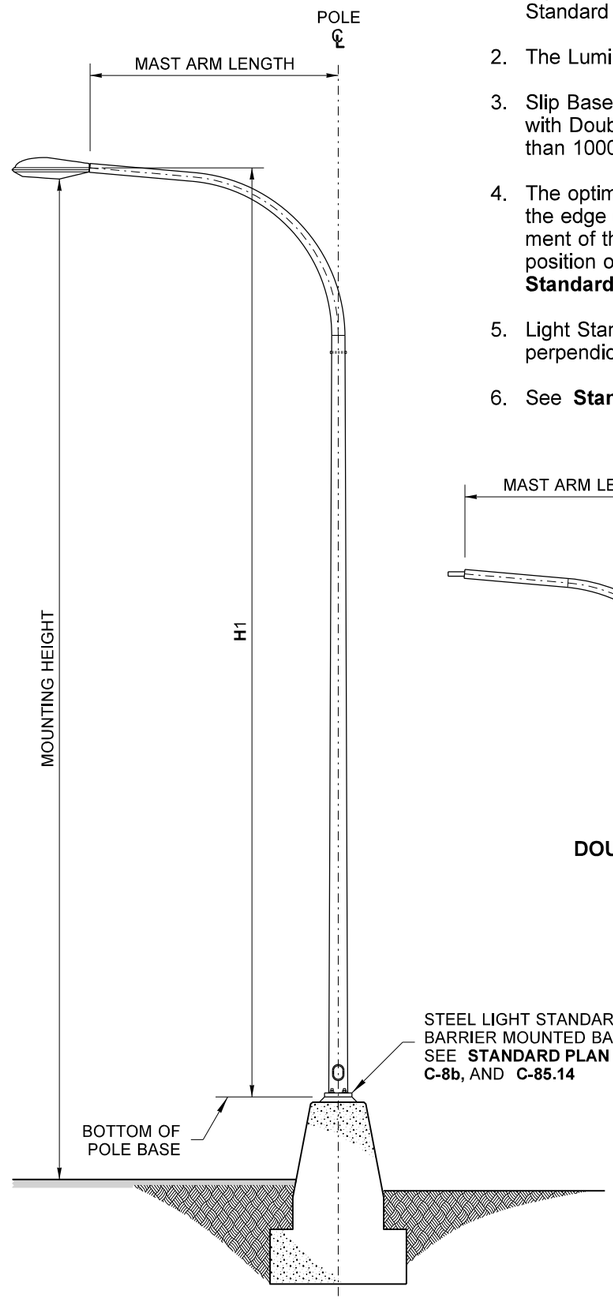
DRAWN BY: LISA CYFORD



STANDARD GROUND MOUNT
(SLIP BASE SHOWN)



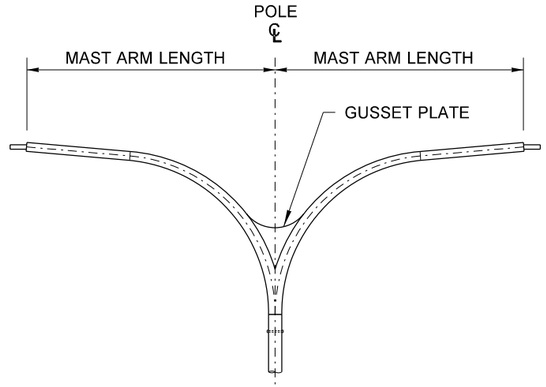
BARRIER ELBOW MOUNT
(BRIDGE BARRIER SHOWN)



TOP OF BARRIER MOUNT

NOTES

1. This plan depicts the Steel Light Standard types and terms commonly referred to in the Contract. All Steel Light Standards are fabricated in accordance with the Standard Specifications and the Contract Provisions.
2. The Luminaire Pole height shall not exceed 50' (ft)(H1).
3. Slip Bases shall not be installed on 50' (ft)(H1) poles with Double Mast Arms, nor on poles weighing more than 1000 lbs.
4. The optimal location of the Luminaire head is over the edge of the traveled way. Based on the placement of the Steel Light Standard foundation, the position of the Luminaire head may vary. See **Standard Plan J-28.22**.
5. Light Standard mast arm orientation is typically perpendicular to roadway centerline.
6. See **Standard Plan J-28.50** for Hand Hole details.



DOUBLE TYPE 1 MAST ARM

WILLIAM FLINT JACKSON
STATE OF WASHINGTON
48821
REGISTERED
PROFESSIONAL ENGINEER

STEEL LIGHT STANDARD

STANDARD PLAN J-28.10-02

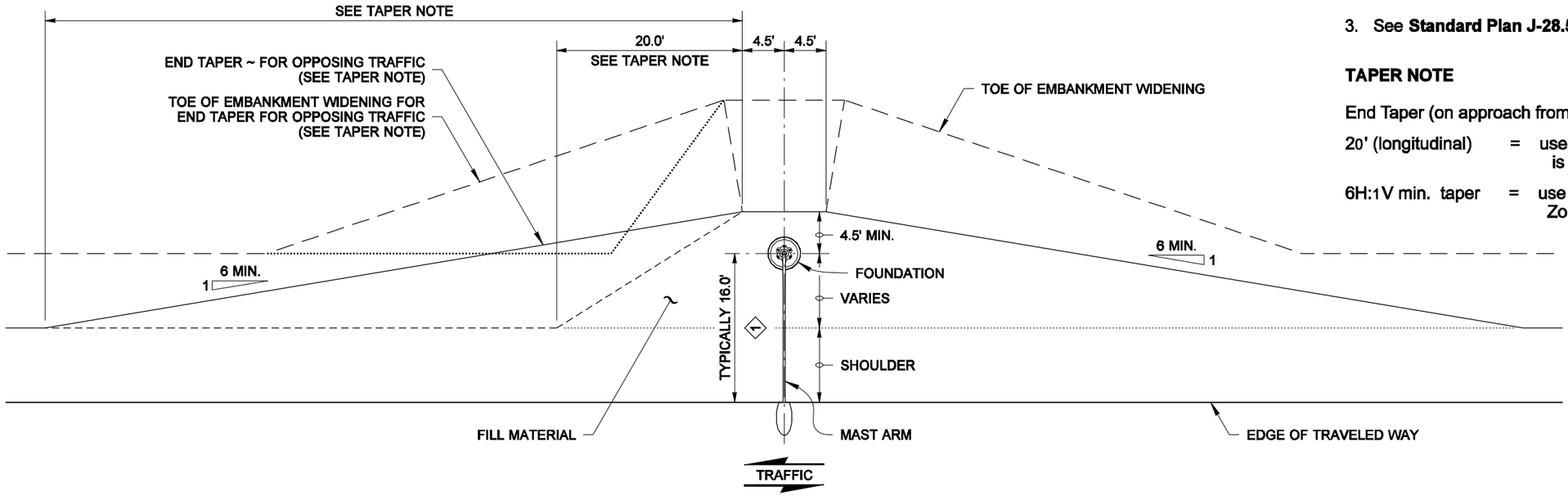
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

STATE DESIGN ENGINEER

Washington State Department of Transportation

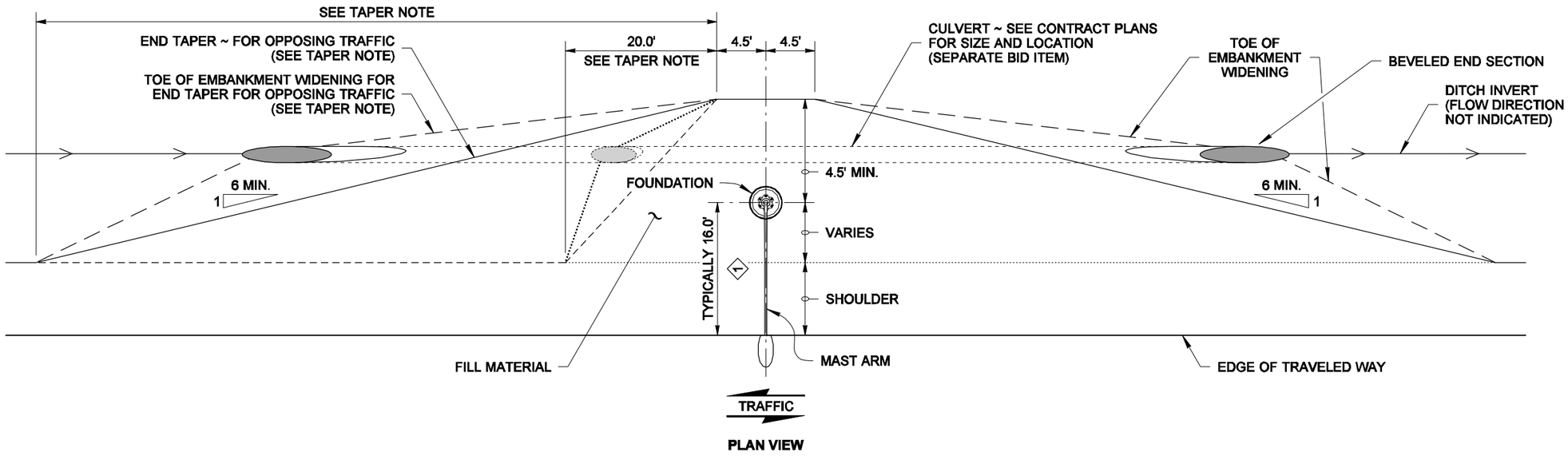
DRAWN BY: BILL BERENS



PLAN VIEW

CASES A & B

EMBANKMENTS



PLAN VIEW

CASE C

DITCH SECTIONS

NOTES

1. The Steel Light Standard Placement depicted on this plan is only intended for installations where roadside conditions allow its usage. Roadside conditions may require a special design by the Bridge Office, as determined by the Project Engineer.
2. See **Standard Plan J-28.30** for foundation details and construction methods.
3. See **Standard Plan J-28.50** for pole base and hand hole details.

TAPER NOTE

End Taper (on approach from opposing traffic):

20' (longitudinal) = use on one-way roadways or where the Light Standard is not in the Design Clear Zone of the opposing traffic.

6H:1V min. taper = use when the Light Standard is in the Design Clear Zone of the opposing traffic.

1 BASED ON FIELD CONDITIONS, STEEL LIGHT STANDARD PLACEMENT CAN BE ADJUSTED ± 4.0', WHEN APPROVED BY THE PROJECT ENGINEER.

THEODORE J. TREPANIER
STATE OF WASHINGTON
25335
REGISTERED
PROFESSIONAL ENGINEER
EXPIRES AUGUST 9, 2007

NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT BUT AN ELECTRONIC DUPLICATE. THE ORIGINAL, SIGNED BY THE ENGINEER AND APPROVED FOR PUBLICATION, IS KEPT ON FILE AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST.

STEEL LIGHT STANDARD PLACEMENT (SLIP BASE)

STANDARD PLAN J-28.22-00

SHEET 1 OF 2 SHEETS

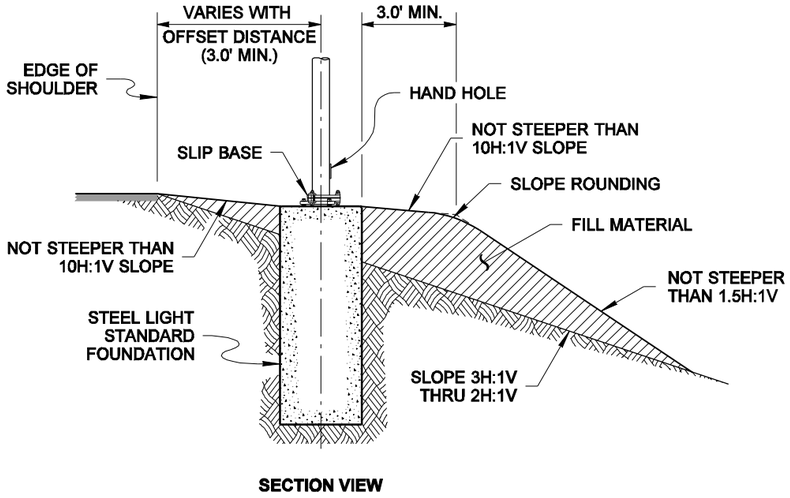
APPROVED FOR PUBLICATION

Pasco Bakotich III — STATE DESIGN ENGINEER

08-07-07 — DATE

Washington State Department of Transportation

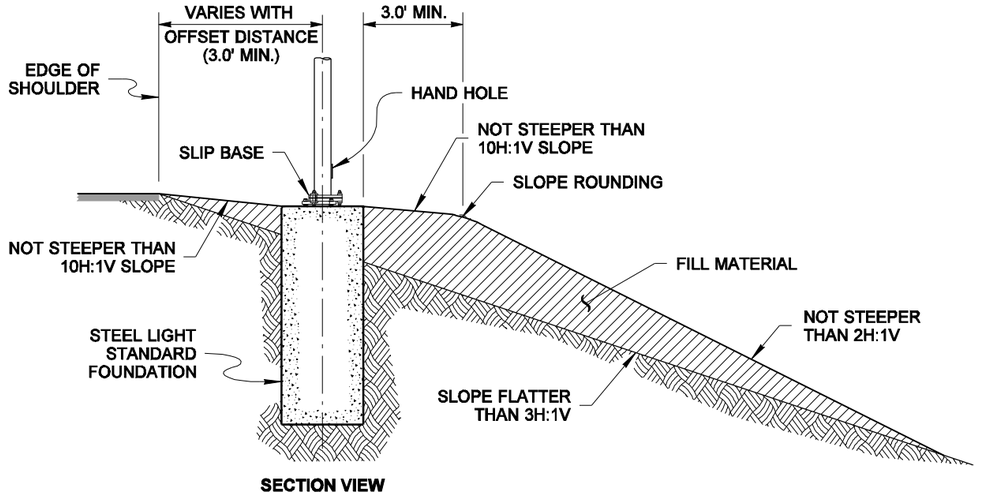
DRAWN BY: BILL BERENS



SECTION VIEW

CASE A

SLOPES 3H:1V THRU 2H:1V (MAX.)

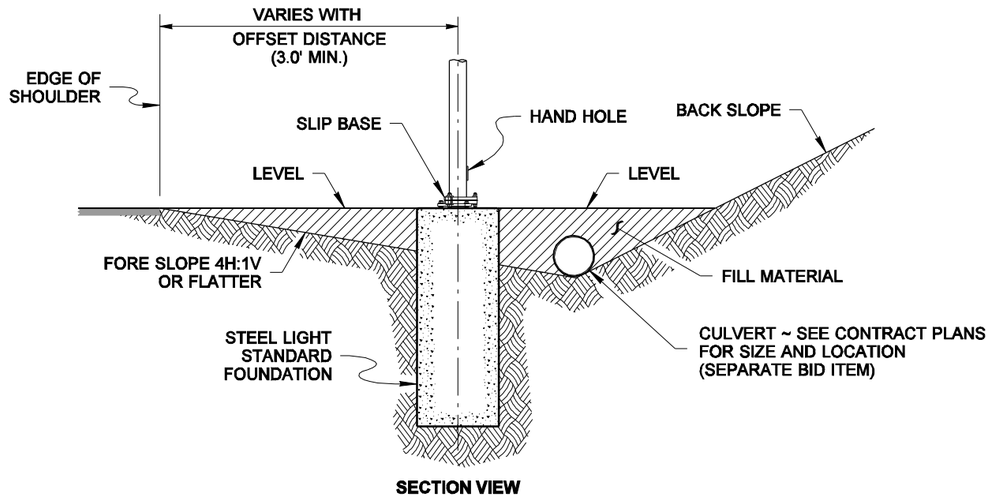


SECTION VIEW

CASE B

SLOPES FLATTER THAN 3H:1V

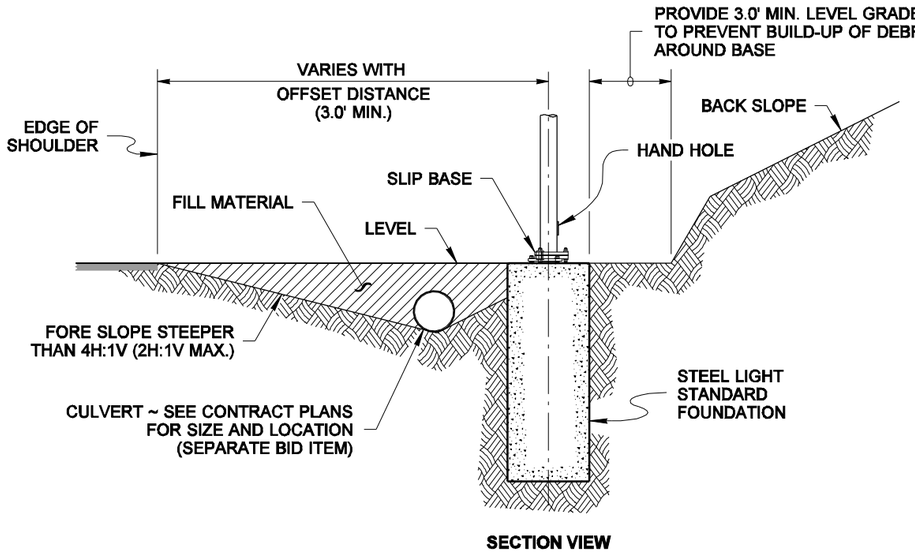
EMBANKMENTS



SECTION VIEW

CASE C

FORE SLOPES 4H:1V OR FLATTER



SECTION VIEW

CASE D

FORE SLOPES STEEPER THAN 4H:1V (2H:1V MAX.)

DITCH SECTIONS

THEODORE J. TREPANIER
STATE OF WASHINGTON
25335
REGISTERED
PROFESSIONAL ENGINEER

EXPIRES AUGUST 9, 2007

NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT BUT AN ELECTRONIC DUPLICATE. THE ORIGINAL, SIGNED BY THE ENGINEER AND APPROVED FOR PUBLICATION, IS KEPT ON FILE AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST.

STEEL LIGHT STANDARD PLACEMENT (SLIP BASE)

STANDARD PLAN J-28.22-00

SHEET 2 OF 2 SHEETS

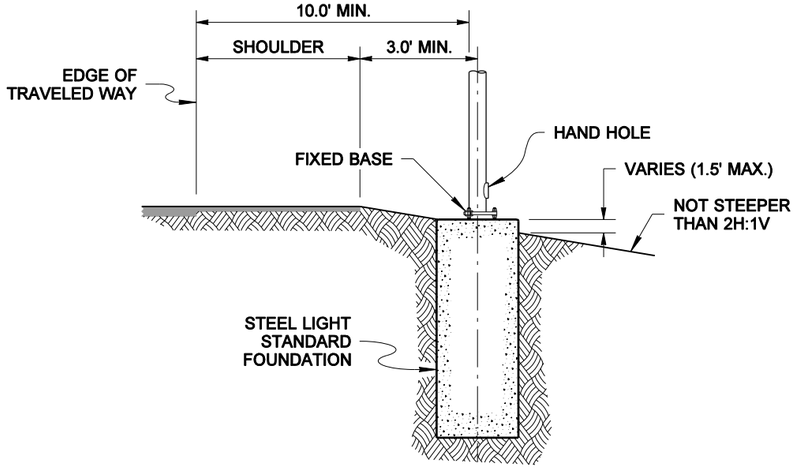
APPROVED FOR PUBLICATION

Pasco Bakotich III — STATE DESIGN ENGINEER

08-07-07 — DATE

Washington State Department of Transportation

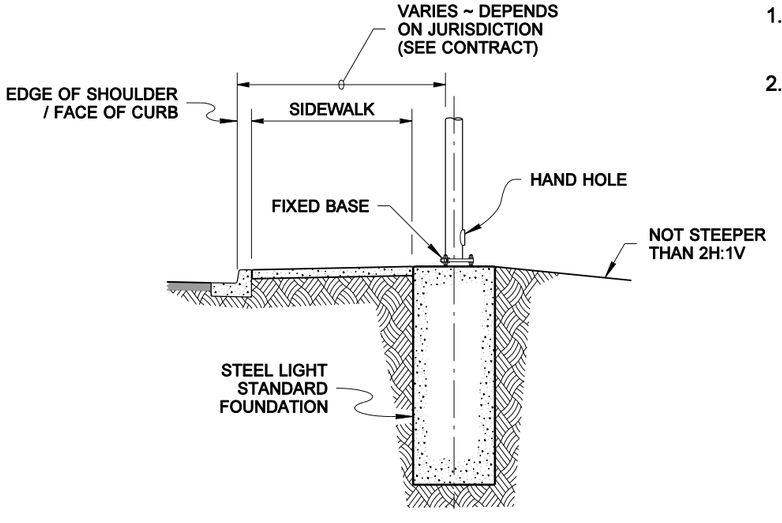
DRAWN BY: BILL BERENS



SECTION VIEW

CASE I

POSTED SPEED LIMIT LESS THAN 35 MPH



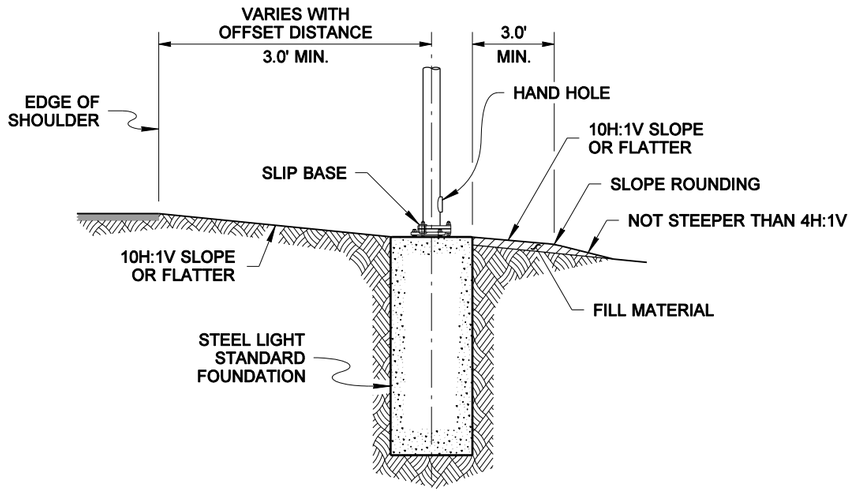
SECTION VIEW

CASE J

POSTED SPEED LIMIT LESS THAN 35 MPH

NOTES

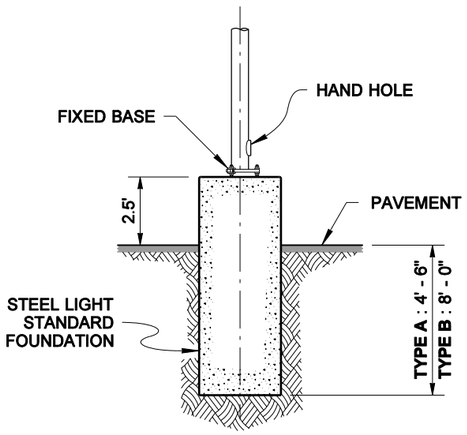
1. See **Standard Plan J-28.30** for foundation details and construction methods.
2. See **Standard Plan J-28.50** for pole base and hand hole details.



SECTION VIEW

CASE K

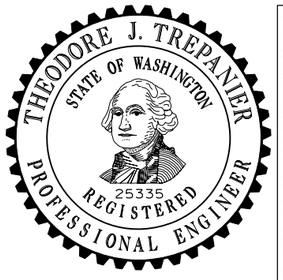
ROADWAYS WITH 10H:1V OR FLATTER SIDE SLOPES



SECTION VIEW

CASE L

PARKING LOTS



NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT BUT AN ELECTRONIC DUPLICATE. THE ORIGINAL, SIGNED BY THE ENGINEER AND APPROVED FOR PUBLICATION, IS KEPT ON FILE AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST.

STEEL LIGHT STANDARD PLACEMENT MISCELLANEOUS

STANDARD PLAN J-28.26-01

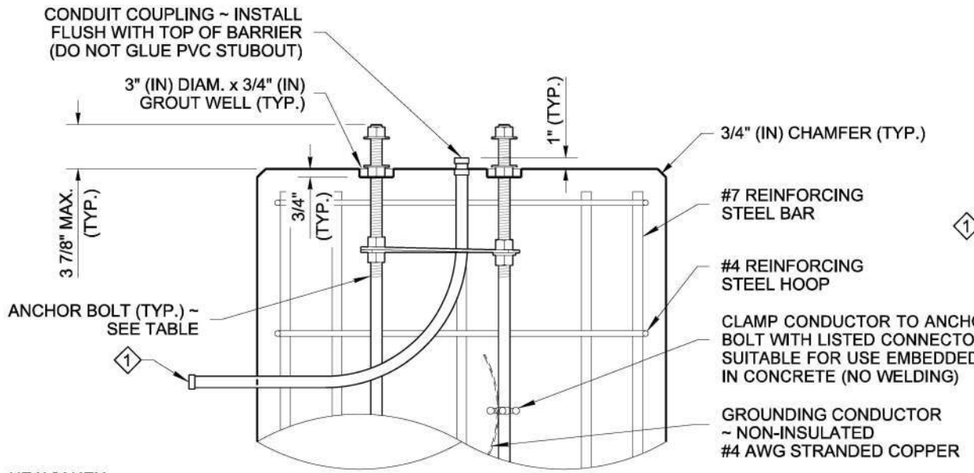
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

Pasco Bakotich III — STATE DESIGN ENGINEER

12-02-08 — DATE

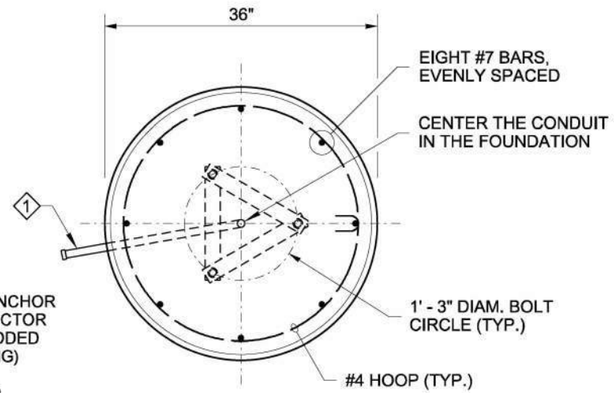
Washington State Department of Transportation



PARTIAL ELEVATION VIEW

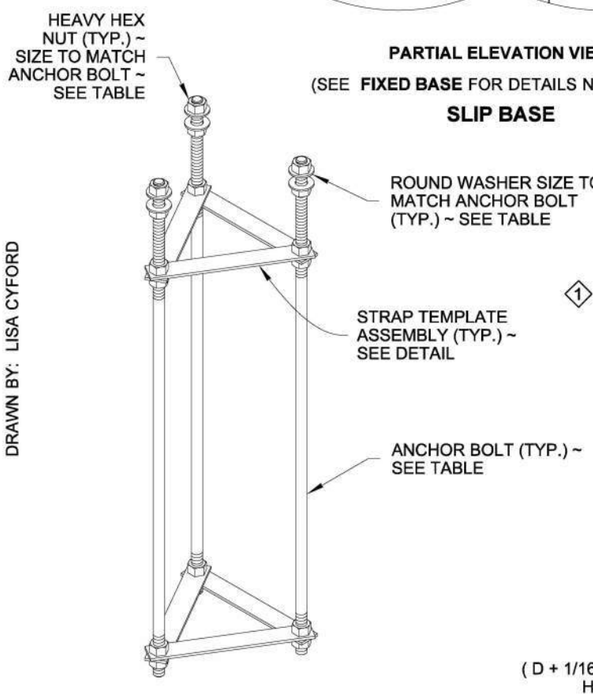
(SEE **FIXED BASE** FOR DETAILS NOT SHOWN)

SLIP BASE



TOP VIEW

FIXED BASE



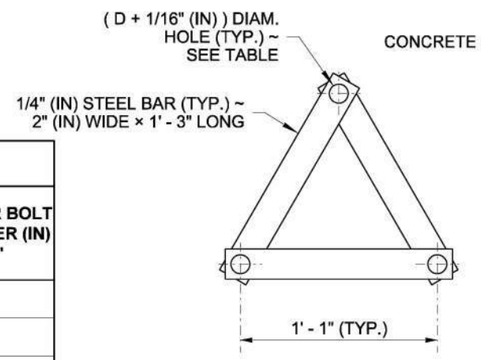
ISOMETRIC VIEW

ANCHOR BOLT ASSEMBLY

(SLIP BASE SHOWN)

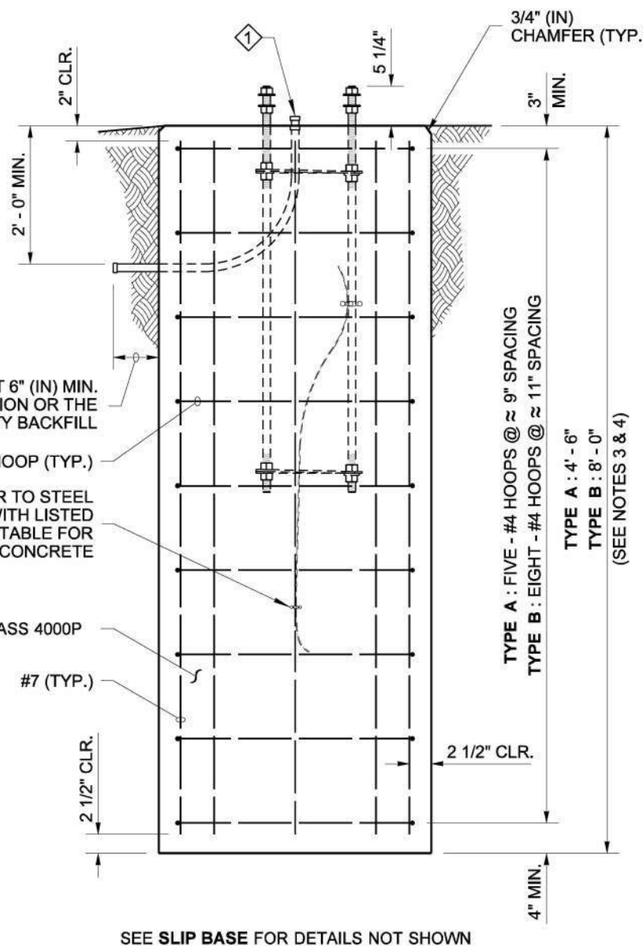
1" (IN) DIAM. CONDUIT ~ CAP EACH END ~ PROVIDE ADDITIONAL CONDUIT FOR COMMUNICATION OR SIGNAL CABLE WHERE SHOWN IN THE CONTRACT

ANCHOR BOLT TABLE			
LUMINAIRE HEIGHT (FT) (H1)	MAST ARM TYPE	MAST ARM LENGTH (FT)	ANCHOR BOLT DIAMETER (IN) "D"
20' TO 50'	SINGLE	6' TO 16'	1"
20' TO 50'	DOUBLE	6' TO 8'	1"
20' TO 45'	DOUBLE	10' TO 16'	1"
46' TO 50'	DOUBLE	10' TO 16'	1 1/8"



TOP VIEW

STRAP TEMPLATE ASSEMBLY



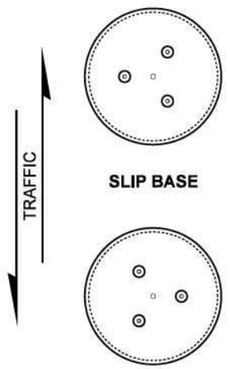
SEE **SLIP BASE** FOR DETAILS NOT SHOWN

ELEVATION VIEW

FIXED BASE

NOTES

1. See **Standard Plan J-28.40** for Luminaire Pole base mounting details.
2. The Strap Templates shall be held in place by nuts, 6" (in) from the top of the foundation and 3" (in) from the bottom of the anchor bolts. Eighteen heavy duty hex nuts and six round washers are required for a slip base assembly. Eighteen heavy duty hex nuts and six plate washers are required for a fixed base assembly.
3. Use Steel Light Standard Foundation **Type A** on level ground or slopes not exceeding 4H : 1V. Use **Type B** for slopes steeper than 4H : 1V, but not exceeding 2H : 1V. Slopes steeper than 2H : 1V shall require a special design.
4. These foundations are designed for a minimum of 2000 PSF **(TYPE A)** or 1500 PSF **(TYPE B)** allowable lateral bearing pressure for the soil. A special foundation shall be required for soil with allowable lateral bearing pressure lower than 1500 PSF.
5. The Luminaire Pole height shall not exceed 50' (ft) (**H1**).
6. Slip bases shall not be installed on 50' (ft) (**H1**) poles with Double Mast Arms, nor on poles weighing more than 1000 lbs.
7. Slip bases are required on poles installed inside the Design Clear Zone, and on poles installed behind traffic barrier that are within the traffic barrier deflection zone.
8. Foundations constructed within Media Filter Drains shall be increased in depth by the depth of the Media Filter Drain.
9. Exposed portions of the foundation shall be formed to create a Class 2 surface finish. All forming shall be removed upon completion of foundation construction.
10. For excavation, concrete placement, and backfill options, see METHOD 1 and METHOD 2 on Sheet 2 of 2.
11. The anchor bolts shall be high-strength steel, manufactured from ASTM F1554 Grade 105, with heavy hex nuts and hardened washers. Galvanize the anchor bolts according to ASTM F2329.
12. The foundation shall be grounded in accordance with the requirements of **Standard Specification Section 8-20.3(4).**
13. See **Standard Plans C-8b** and **C-85.14** for steel light standards on traffic barrier.



SLIP BASE

FIXED BASE

ANCHOR BOLT LAYOUT

Jun 18, 2024

STEEL LIGHT STANDARD FOUNDATION TYPES A & B

STANDARD PLAN J-28.30-04

SHEET 1 OF 2 SHEETS

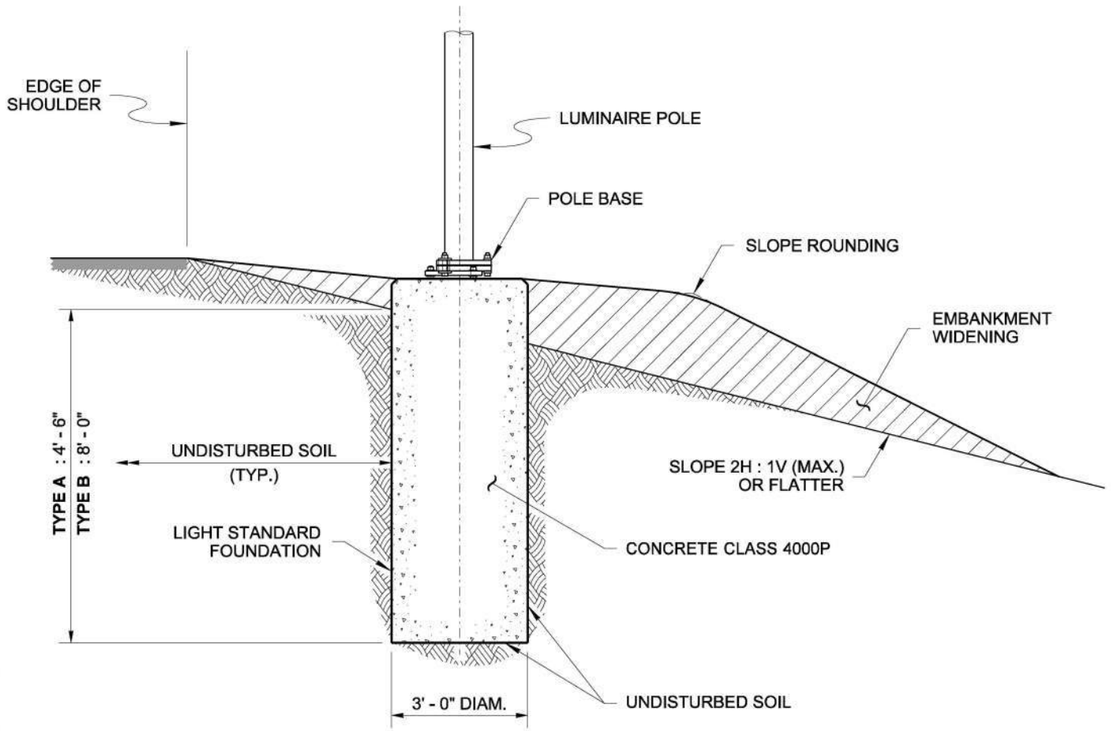
APPROVED FOR PUBLICATION

Jun 18, 2024

STATE DESIGN ENGINEER

Washington State Department of Transportation

DRAWN BY: LISA CYFORD



(CASE A SHOWN)

METHOD 1

NO SUBSURFACE FORM

This option is used only when the existing soil in the hole will remain standing and the cement concrete can be placed without causing the soil to collapse. Concrete shall be cast directly against undisturbed soil.

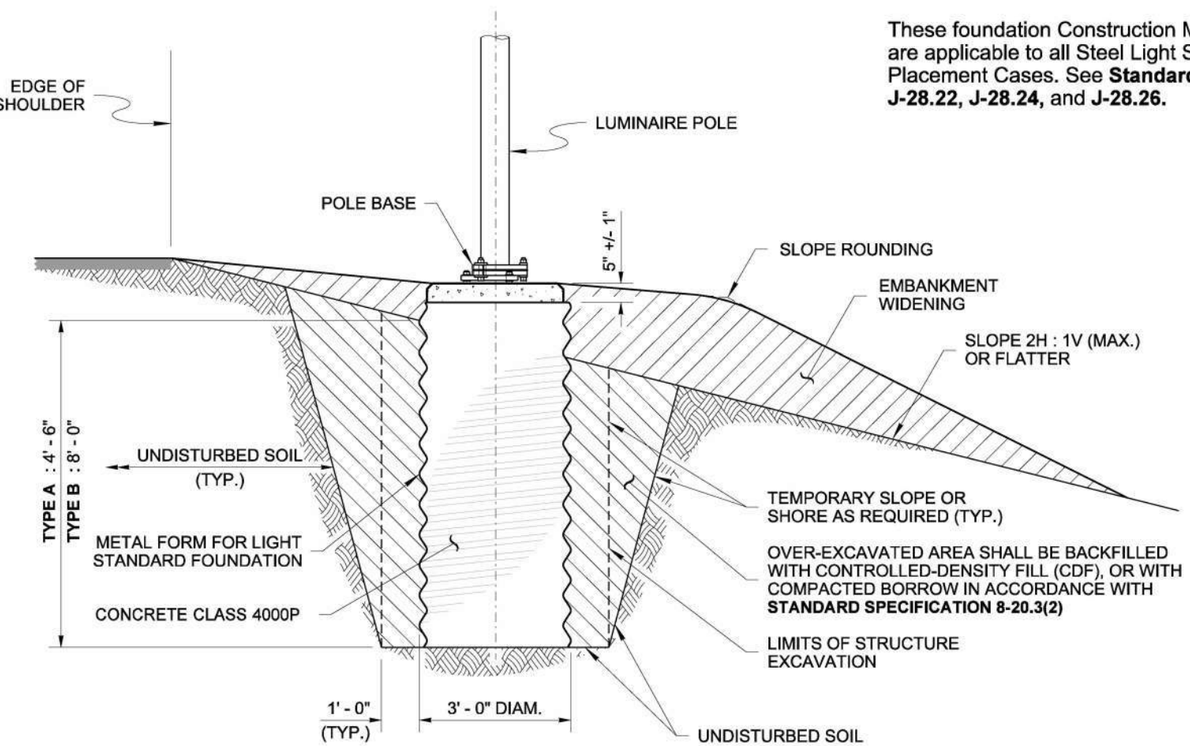
Auger the hole for the foundation. Use a paper or cardboard form to achieve a smooth finish on the final exposed cement concrete. Support the form as necessary to remain plumb.

See **Standard Plans J-28.24** and **J-28.26** for maximum heights of exposed foundation when no embankment widening is to be installed.

Place the concrete foundation.

After concrete has cured, remove the paper or cardboard form portion.

Construct the embankment widening (if required).



(CASE A SHOWN)

METHOD 2

METAL (SUBSURFACE) FORM REQUIRED

When the existing soil will not retain a vertical face, over-excavate the foundation area and install a 36" (in) diameter corrugated metal (pipe) form. The corrugated metal form shall not extend more than 5" (in) +/- 1" (in) below any portion of the foundation that will remain exposed upon final grading. Continue forming to full height using a paper or cardboard form to achieve a smooth finish on final exposed cement concrete. Support the form as necessary to remain plumb.

See **Standard Plans J-28.24** and **J-28.26** for maximum heights of exposed foundation when no embankment widening is to be installed.

Place the concrete foundation.

After concrete has cured, remove the paper or cardboard form portion.

Backfill with controlled-density fill or compacted borrow in accordance with **Standard Specification Section 8-20.3(2).**

Construct the embankment widening (if required).

CONSTRUCTION METHODS

NOTE

These foundation Construction Methods are applicable to all Steel Light Standard Placement Cases. See **Standard Plans J-28.22, J-28.24,** and **J-28.26.**

Jun 18, 2024

STEEL LIGHT STANDARD FOUNDATION TYPES A & B

STANDARD PLAN J-28.30-04

SHEET 2 OF 2 SHEETS

APPROVED FOR PUBLICATION

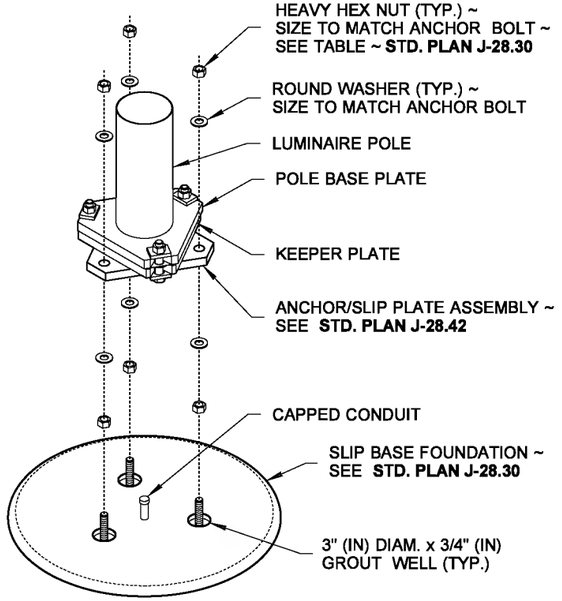
Mark A Dains Jun 18, 2024

STATE DESIGN ENGINEER

Washington State Department of Transportation

DRAWN BY: L ISA CYFORD

DRAWN BY: FERN LIDDELL



EXPLODED VIEW

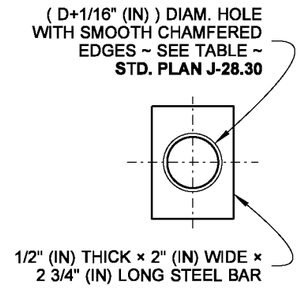
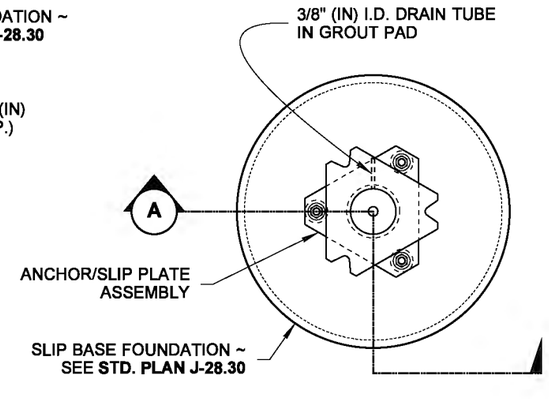
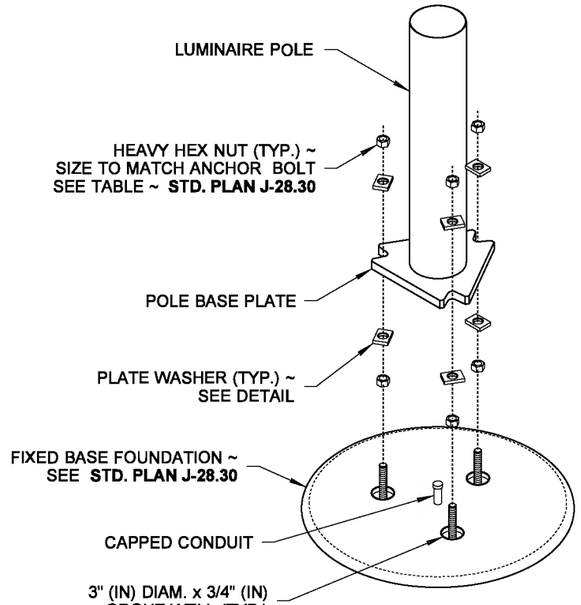


PLATE WASHER DETAIL



PLAN VIEW

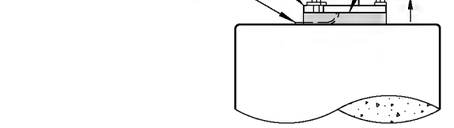
SLIP BASE



EXPLODED VIEW

NOTES

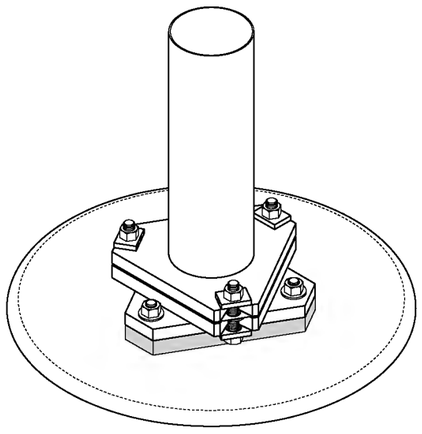
1. 50' (ft) (**H1**) poles with double mast arms or poles weighing in excess of 1000 LBS shall not be installed on a slip base.
2. Galvanizing shall be in accordance with AASHTO M 111.
3. See **Standard Plans C-8b, C-85.15,** and **J-28.60** for foundation and base plate requirements when light standards are mounted on cement concrete traffic barrier.
4. See **Standard Specification Sections 6-03.3(33)** and **8-20.3 (4)** for the torque requirements for all of the anchor bolt installations. Install 1" (in) diameter clamping bolts in all slip bases to **a torque of 95 Foot-Pounds -** See **Standard Specification Section 8-20.3 (13)A. DO NOT OVERTIGHTEN.** After state inspection, burr threads to prevent nut rotation.
5. For anchor bolt Diameter " **D** ", see table, **Standard Plan J-28.30**.



ASSEMBLED AND GROUTED

ELEVATION VIEW

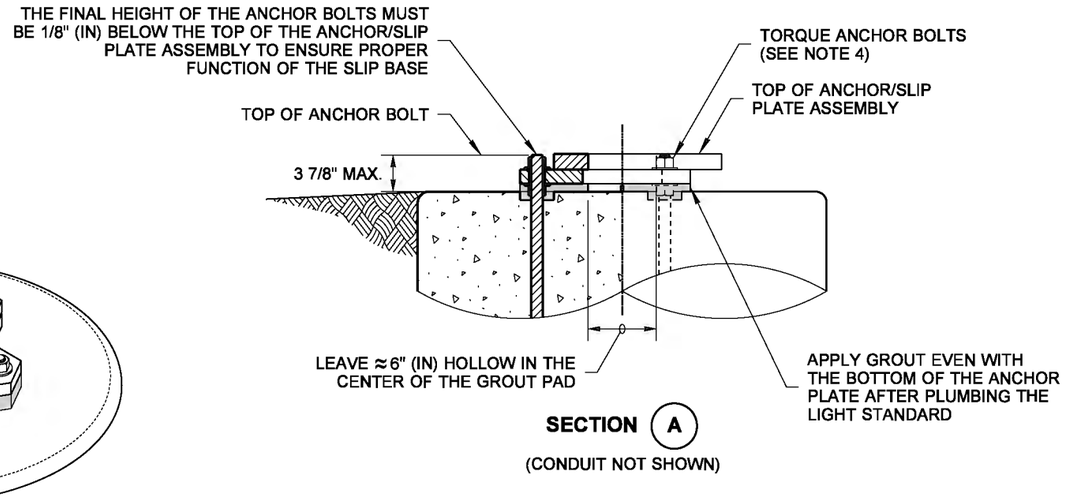
FIXED BASE



ASSEMBLED

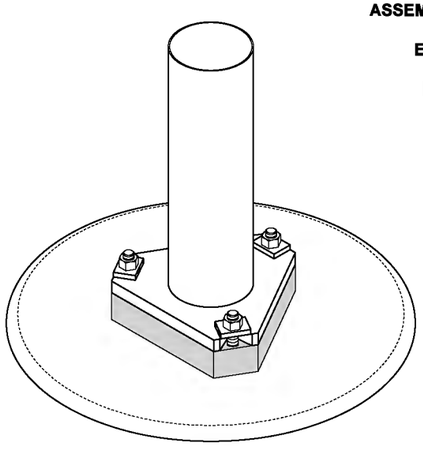
ISOMETRIC VIEW

SLIP BASE



SECTION (A)

(CONDUIT NOT SHOWN)



ASSEMBLED

ISOMETRIC VIEW

FIXED BASE

STEEL LIGHT STANDARD BASE MOUNTING

STANDARD PLAN J-28.40-02

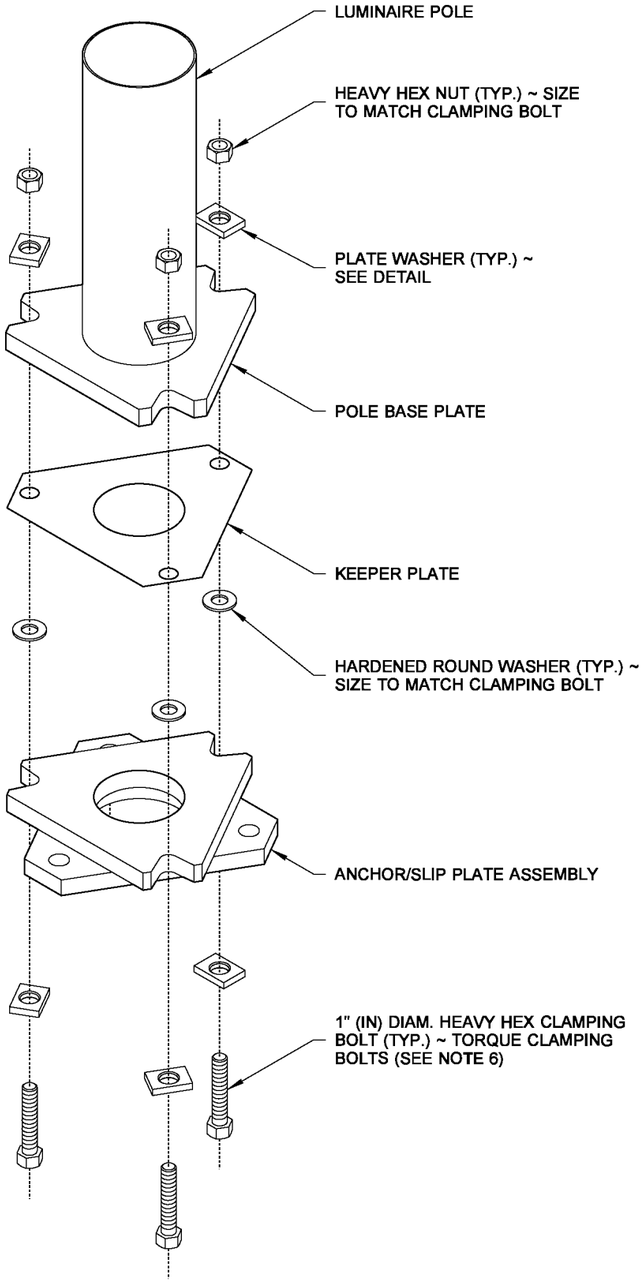
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

STATE DESIGN ENGINEER

Washington State Department of Transportation

DRAWN BY: BILL BERENS



EXPLODED

ISOMETRIC VIEW

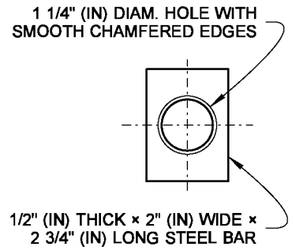


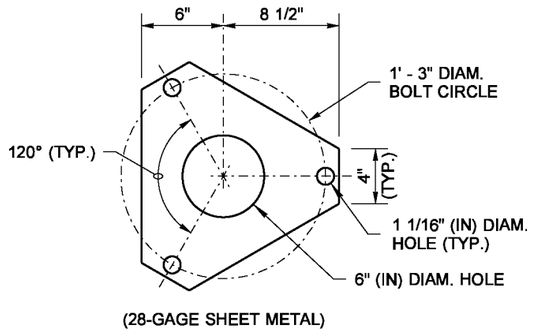
PLATE WASHER DETAIL

CLAMPING BOLT TABLE			
LUMINAIRE HEIGHT (FT) (H1)	MAST ARM TYPE	MAST ARM LENGTH (FT)	CLAMPING BOLT DIAMETER (IN) " D "
20' TO 50'	SINGLE	6' TO 16'	1"
20' TO 45'	DOUBLE	6' TO 8'	1"
46' TO 50'	DOUBLE	6' TO 8'	①
20' TO 45'	DOUBLE	10' TO 16'	①
46' TO 50'	DOUBLE	10' TO 16'	①

① SLIP BASE NOT ALLOWED

NOTES

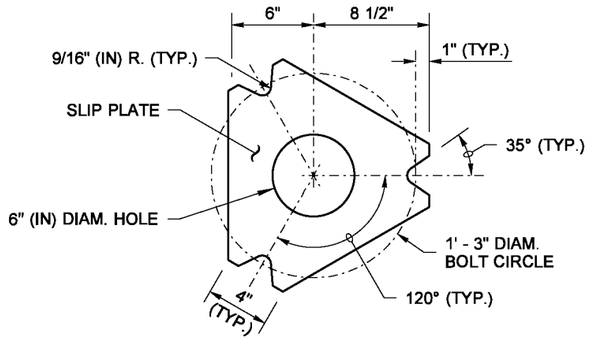
1. 50' (ft) (**H1**) poles with double mast arms or poles weighing in excess of 1000 lbs. shall not be installed on a slip base.
2. The Slip and Anchor Plates shall be manufactured from ASTM A572 GR.50 or ASTM A588. All Slip Plate notched surfaces shall be finished smooth.
3. The clamping bolts shall be high-strength steel, manufactured from AASHTO M 164, with heavy hex nut and hardened washer. Galvanize the Clamping Bolts according to AASHTO M 232.
4. Round and smooth all edges along wire-way to protect the conductors. See **Standard Plan J-28.70** for wiring details.
5. Galvanize the Anchor/Slip Plate after fabrication according to AASHTO M 111.
6. Clamping Bolt diameters may vary on existing installations. Replace them with the same size as the originals when repairing or reusing a luminaire pole.
   For 1" (in) clamping bolts, tighten to 95 ft-lbs.
   For 1 1/4" (in) clamping bolts, tighten to 104 ft-lbs.
   DO NOT OVERTIGHTEN. After state inspection, burr threads to prevent nut rotation.



(28-GAGE SHEET METAL)

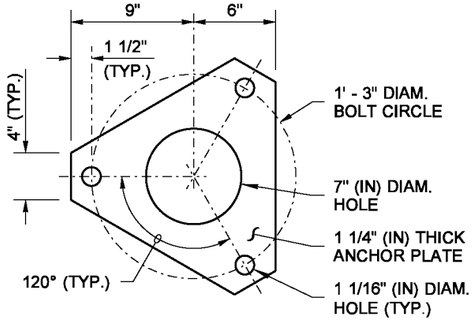
TOP VIEW

KEEPER PLATE



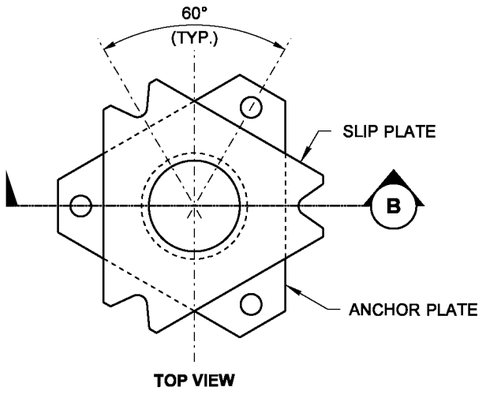
TOP VIEW

SLIP PLATE



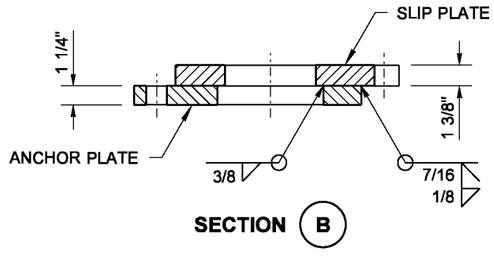
TOP VIEW

ANCHOR PLATE



TOP VIEW

ANCHOR/SLIP PLATE ASSEMBLY



SECTION (B)

STEEL LIGHT STANDARD ANCHOR/SLIP PLATE FOR SLIP BASE

STANDARD PLAN J-28.42-01

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

STATE DESIGN ENGINEER

Washington State Department of Transportation

BASE TABLE				
ADAPTOR TYPE	ANCHOR BOLT (IN) ⟨1⟩	BOLT CIRCLE DIAMETER (IN) "BC" ⟨2⟩	EXISTING BASE TYPE	LUMINAIRE HEIGHT (± 2' - 6")
A-1	1"	11"	WELDED PLATE	⟨3⟩
A-2	1"	12 1/4"	CAST ALUMINUM	⟨3⟩
A-3	1"	12 3/4"	STEEL TRANSFORMER	⟨3⟩
A-4	1 1/8"	14 1/8"	2-PC. ALUM. CLAMP	⟨4⟩
A-5	1 1/4"	14 1/8"	2-PC. ALUM. CLAMP	40'

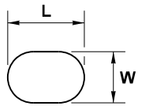
⟨1⟩ USE MATCHING DIAMETER FOR THREADED STUDS.

⟨2⟩ CONTRACTOR SHALL VERIFY BOLT CIRCLE "BC" IN THE FIELD BEFORE ORDERING. IF "BC" OR ANCHOR BOLT SIZES DIFFER FROM THOSE LISTED, CONTACT HQ BRIDGE AND STRUCTURES OFFICE.

⟨3⟩ 40' (FT) LUMINAIRE W/ 1 x 16' (FT) (MAX.) MAST ARM OR 35' (FT) LUMINAIRE W/ 2 x 16' (FT) MAST ARMS.

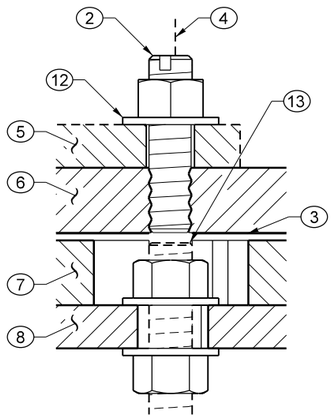
⟨4⟩ 50' (FT) LUMINAIRE W/ 1 x 16' (FT) (MAX.) MAST ARM OR 40' (FT) LUMINAIRE W/ 2 x 16' (FT) MAST ARMS - TOTAL WEIGHT 1000 LBS (MAX.).

DRAWN BY: COLBY FLETCHER



ANCHOR PLATE SLOT DETAIL

ANCHOR PLATE SLOT TABLE		
ANCHOR BOLT DIAMETER (IN)	SIZE W (IN)	SIZE L (IN)
1"	1 1/4"	2"
1 1/8"	1 1/4"	2"
1 1/4"	1 1/2"	2 1/4"



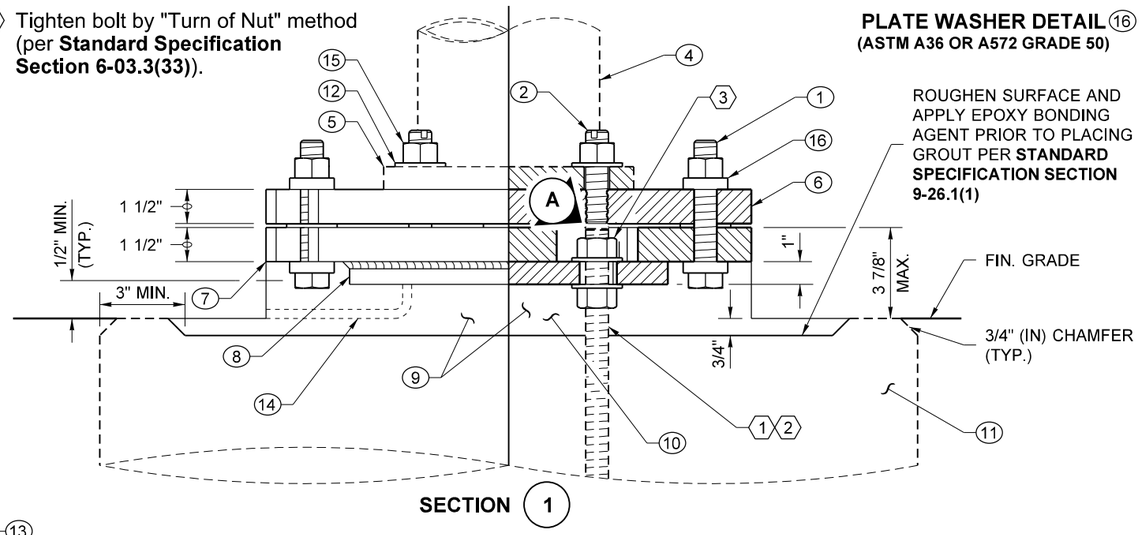
DETAIL ⟨A⟩ (TYP. OF FOUR PLACES)

CONSTRUCTION NOTES

⟨1⟩ Wire brush existing threads.

⟨2⟩ Apply two coats of galvanizing paint (per **Standard Specification Section 9-08.1(2)B**).

⟨3⟩ Tighten bolt by "Turn of Nut" method (per **Standard Specification Section 6-03.3(33)**).



SECTION ⟨1⟩

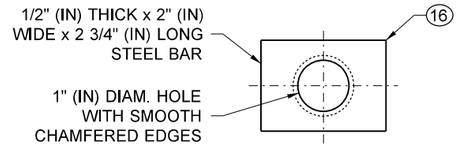
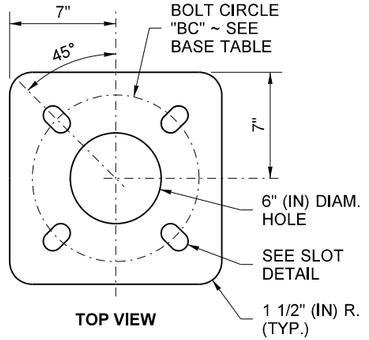


PLATE WASHER DETAIL ⟨16⟩
(ASTM A36 OR A572 GRADE 50)



TOP VIEW

ANCHOR PLATE ⟨8⟩

KEY

⟨1⟩ CLAMPING BOLTS, 7/8" (IN) DIAM. HEX HEAD BOLT AND NUT, TWO PLATE WASHERS, ONE HARDENED ROUND WASHER, 87 FT-LBS TORQUE (THREE CLAMPING BOLT ASSEMBLIES PER SLIP BASE) (**PER ASTM F3125 GRADE A325**)

⟨2⟩ THREADED SLOTTED STUD ~ SEE BASE TABLE FOR DIAMETER, HARDENED WASHER, AND HEAVY HEX NUT (FOUR PER BASE PLATE) INSERT STUD AND CENTER PUNCH AT BOTTOM PERIPHERY TO LOCK TAPPED STUD IN PLACE PRIOR TO GALVANIZING (**PER ASTM F1554 GRADE 105**)

⟨3⟩ KEEPER PLATE ~ 0.0149" (IN) 28 GAGE PLATE (**PER ASTM A653 COATING DESIGNATION G90**)

⟨4⟩ POLE WALL (EXISTING)

⟨5⟩ POLE BASE PLATE (EXISTING)

⟨6⟩ TOP SLIP PLATE (**PER ASTM A572 GR. 50 OR A588**)

⟨7⟩ BOTTOM SLIP PLATE (**PER ASTM A572 GR. 50 OR A588**)

⟨8⟩ ANCHOR PLATE (**PER ASTM A572 GR. 50 OR A588**)

⟨9⟩ REMOVE GROUT (EXISTING WITH DRAIN)

⟨10⟩ NEW GROUT PAD WITH DRAIN

⟨11⟩ FOUNDATION (EXISTING)

⟨12⟩ HARDENED WASHER (**PER ASTM F436**)

⟨13⟩ ANCHOR BOLT (EXISTING) ~ TRIM TO CLEAR SLIP PLATE BY 1/8" (IN) MIN.

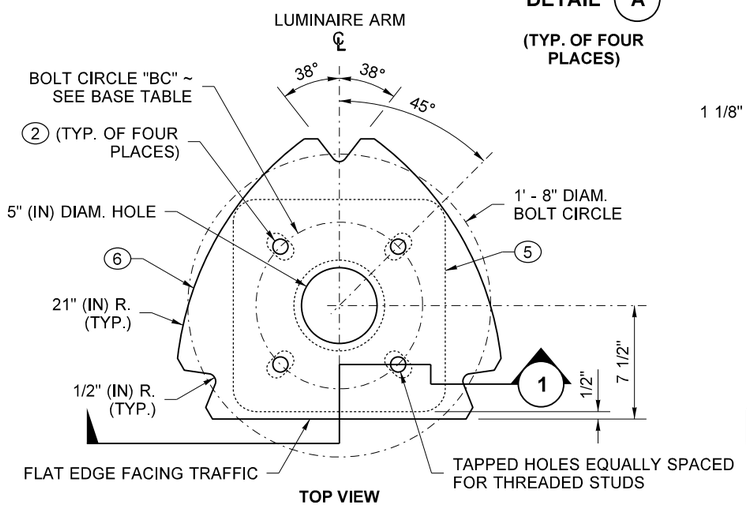
⟨14⟩ 3/8" (IN) DIAM DRAIN TUBE (PER **STANDARD SPECIFICATION SECTION 9-29.2(3)**)

⟨15⟩ HEAVY HEX NUT (TYP.) (**PER ASTM A563 GRADE DH**)

⟨16⟩ PLATE WASHER (**ASTM A36**)

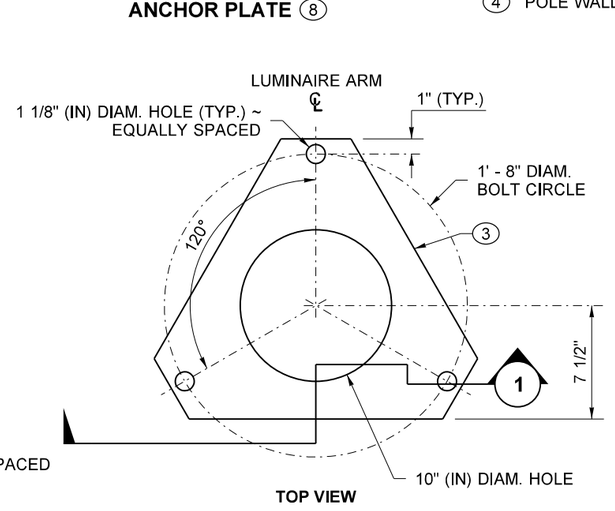
NOTES

1. The purpose of this plan is to provide the details for retrofitting a 4-bolt frangible base with a slip base assembly.
2. Existing anchor bolts shall be inspected for corrosion, thread damage, and galvanizing. To minimize galvanic corrosion between dissimilar metals, ensure galvanizing remains intact while installing aluminum luminaire.
3. After bolting the bottom slip plate assembly to the foundation, fill the slotted bolt holes with mastic per **Standard Specification Section 9-08.7**.
4. Grade around the foundation to ensure the stub height does not exceed 3 7/8" (in). For grading requirements, see **Standard Plan J-28.22**.
5. Removal of the frangible base from the existing base plate is required.
6. Misaligned anchor bolts shall be removed and replaced.
7. This adaptor shall be used only on luminaire poles that contain a handhole. Replace standards and foundation when the handhole is located in the frangible base.
8. Galvanize the anchor plate, bottom slip plate, and top slip plate after fabrication according to **ASTM A123**.
9. Galvanize all hardware according to **ASTM F2329**.



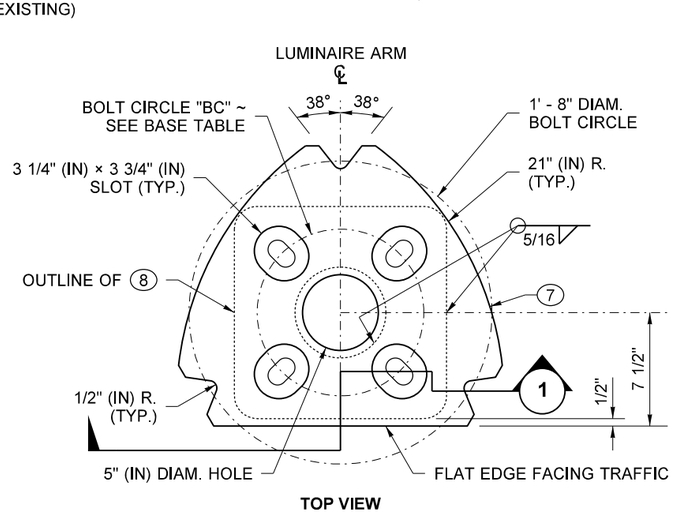
TOP VIEW

TOP SLIP PLATE ⟨6⟩



TOP VIEW

KEEPER PLATE ⟨3⟩



TOP VIEW

BOTTOM SLIP PLATE ⟨7⟩

RICHARD P. ZELDENRUST
STATE OF WASHINGTON
25470
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER

SLIP BASE ADAPTOR FOR 4-BOLT LIGHT STANDARD BASE STANDARD PLAN J-28.43-01

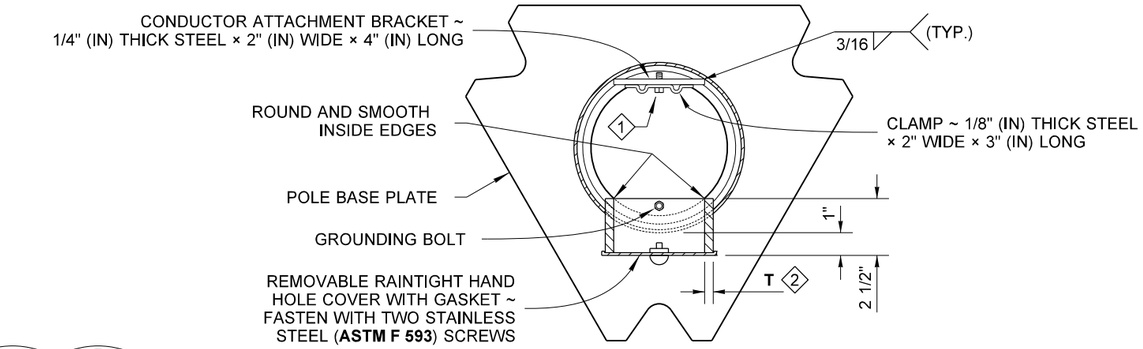
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

STATE DESIGN ENGINEER

Washington State Department of Transportation

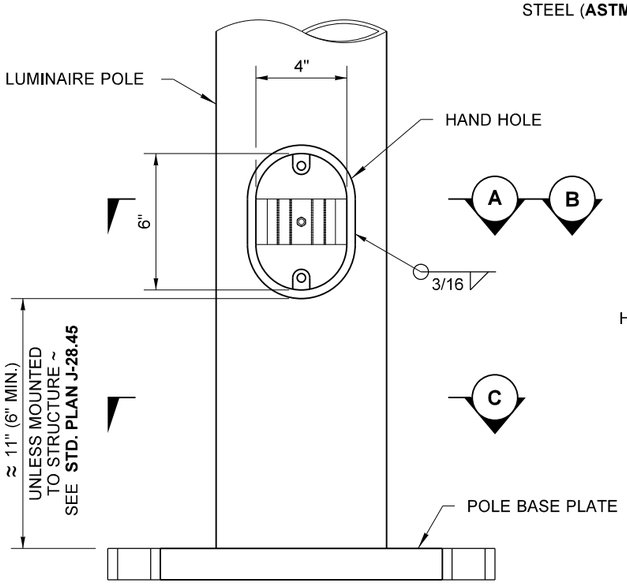
DRAWN BY: FERN LIDDELL



TYPICAL HAND HOLE ORIENTATION

VIEW A

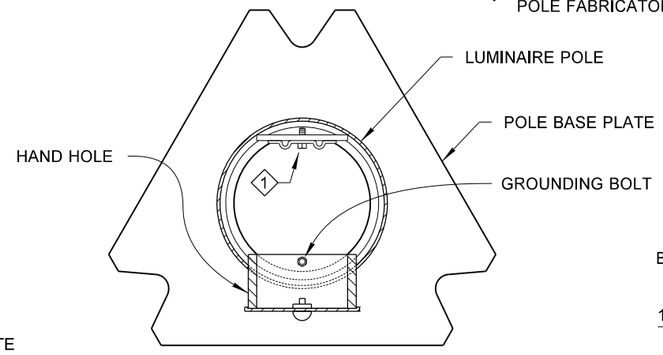
1. THE **CONDUCTOR ATTACHMENT** CONFIGURATIONS VARY AMONG DIFFERENT MANUFACTURERS. CONDUCTOR ATTACHMENTS ARE REQUIRED ON ALL POLES, FIXED OR SLIP BASE.
2. **T** = RIM PLATE THICKNESS BY LUMINAIRE POLE FABRICATOR .



(COVER NOT SHOWN FOR CLARITY)

ELEVATION VIEW

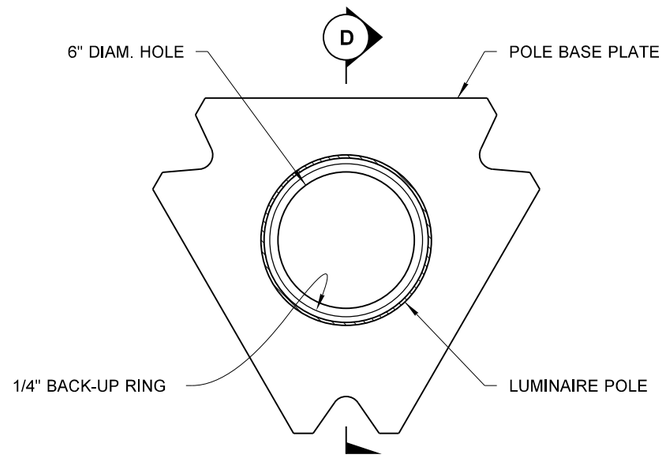
CONFIGURATION AND LOCATION OF THE HAND HOLE VARIES AMONG MANUFACTURERS ~ MINIMUM SIZE OPENING SHOWN



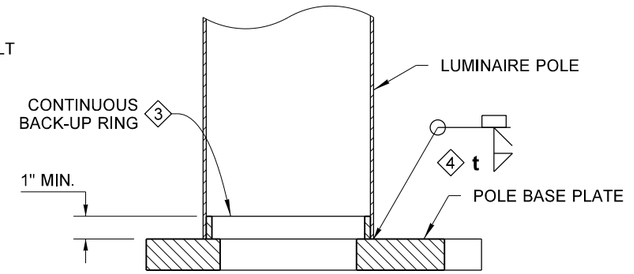
FOR DETAILS NOT SHOWN, SEE VIEW A ABOVE

ORIENTATION FOR INSTALLATION ON BRIDGE OR RETAINING WALL ~ SEE **STANDARD PLAN J-28.45**

VIEW B

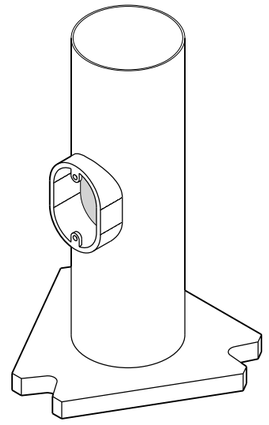


VIEW C



3. 1/4" (IN) THICK, OR NO THINNER THAN POLE WALL THICKNESS. TACK WELD IN ROOT OR CONTINUOUS SEAL WELD TO BASE PLATE OR POLE WALL.
4. **t** = SIZE OF FILLET WELD BY LUMINAIRE POLE FABRICATOR.

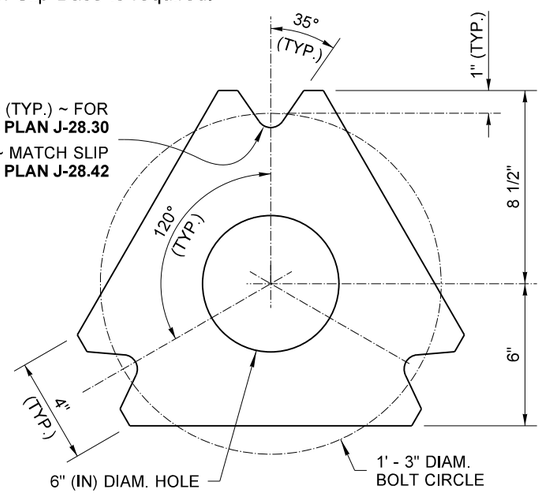
SECTION D



ISOMETRIC VIEW

NOTES

1. Pole Base Plate for a Slip Base design shall be 1 1/4" (in) steel manufactured from **ASTM A572 GR.50** or **ASTM A588.** Pole Base Plate for a Fixed Base design shall be either 1 1/4" (in) steel manufactured from **ASTM A572 GR. 50, ASTM A588,** or 1 1/2" (in) manufactured from **ASTM A36.** All Pole Base Plate notched surfaces shall be finished smooth.
2. Round and smooth all edges along wire-way to protect conductors. See **Standard Plan J-28.70** for wiring details.
3. Galvanizing shall be in accordance with **AASHTO M 111.**
4. See **Standard Plans C-8b, C-85.14,** and **J-28.60** for foundation and base plate requirements when steel light standards are mounted on concrete traffic barrier.
5. See **Standard Plan J-28.42** for details when Slip Base is required.



FOR PLATE THICKNESS, REFER TO NOTE 1

TOP VIEW

POLE BASE PLATE DETAIL

STEEL LIGHT STANDARD POLE BASE AND HAND HOLE DETAILS

STANDARD PLAN J-28.50-03

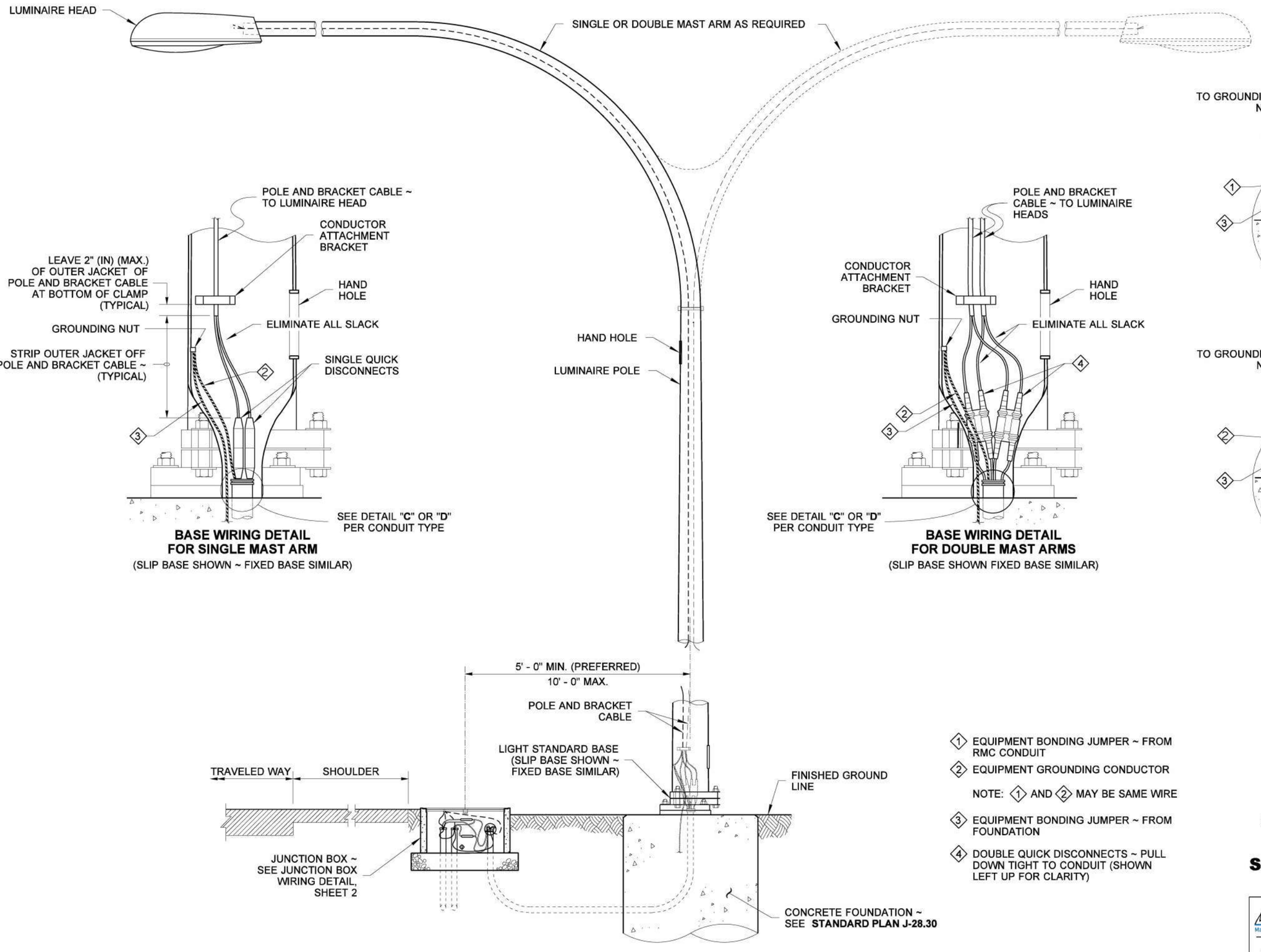
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

STATE DESIGN ENGINEER

Washington State Department of Transportation

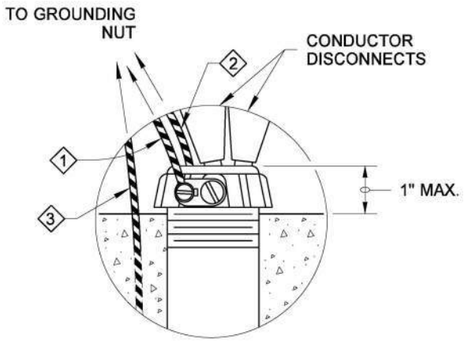
DRAWN BY: FERN LIDDELL



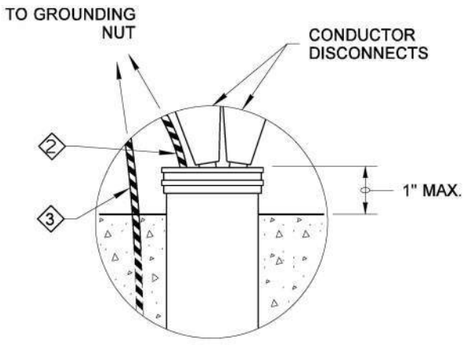
BASE WIRING DETAIL FOR SINGLE MAST ARM
(SLIP BASE SHOWN ~ FIXED BASE SIMILAR)

BASE WIRING DETAIL FOR DOUBLE MAST ARMS
(SLIP BASE SHOWN FIXED BASE SIMILAR)

TYPICAL LOCATION OF JUNCTION BOX AND FOUNDATION



DETAIL "C"
RMC CONDUIT



DETAIL "D"
PVC CONDUIT

1. EQUIPMENT BONDING JUMPER ~ FROM RMC CONDUIT
2. EQUIPMENT GROUNDING CONDUCTOR

   NOTE: 1 AND 2 MAY BE SAME WIRE
3. EQUIPMENT BONDING JUMPER ~ FROM FOUNDATION
4. DOUBLE QUICK DISCONNECTS ~ PULL DOWN TIGHT TO CONDUIT (SHOWN LEFT UP FOR CLARITY)

WILLIAM FLINT JACKSON
STATE OF WASHINGTON
48821
REGISTERED
PROFESSIONAL ENGINEER

Aug 30, 2022

STEEL LIGHT STANDARD WIRING DETAILS

STANDARD PLAN J-28.70-04

SHEET 1 OF 2 SHEETS

APPROVED FOR PUBLICATION

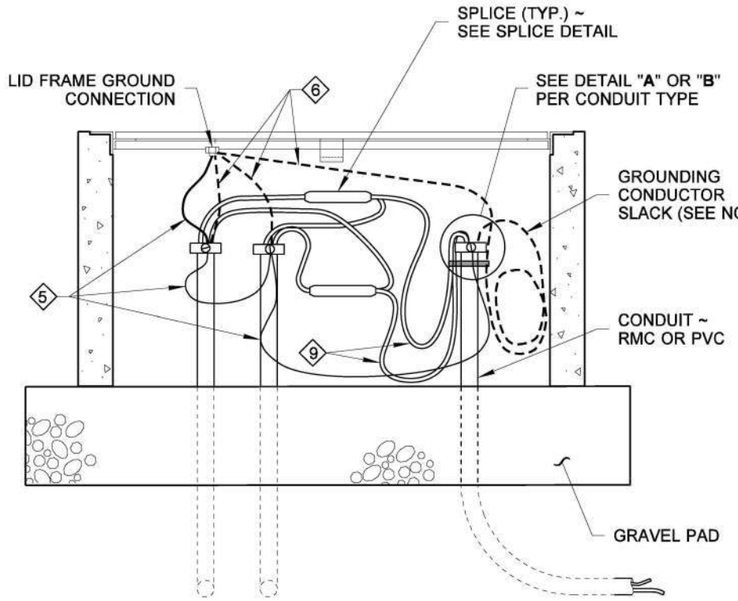
Mark Gaines
Mark Gaines (Aug 30, 2022 11:22 PDT)

Aug 30, 2022

STATE DESIGN ENGINEER

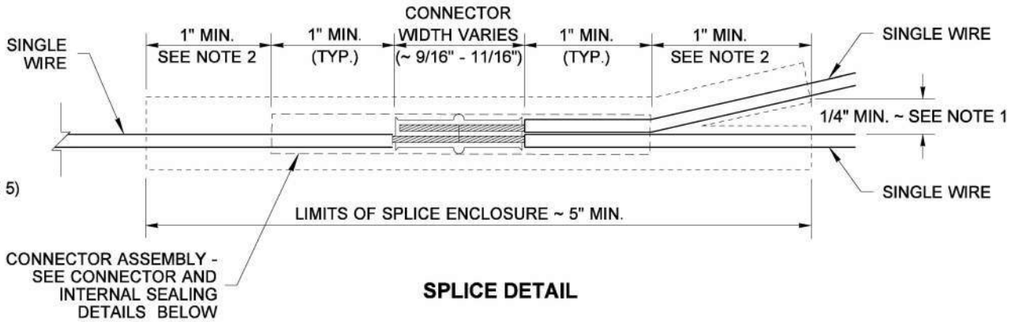
Washington State Department of Transportation

DRAWN BY: FERN LIDDELL



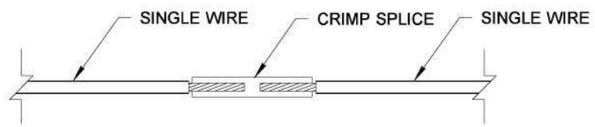
JUNCTION BOX WIRING DETAIL

FOR GROUNDING REQUIREMENTS, SEE **STANDARD PLAN J-60.05**

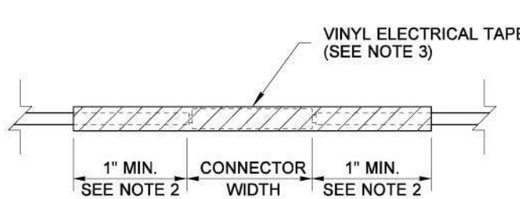


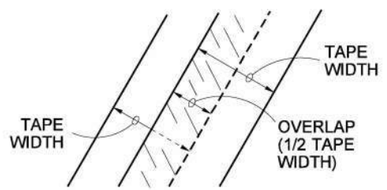
SPLICE DETAIL

STEP 1 - CRIMP CONNECTION



STEP 2 - WRAP CONNECTION



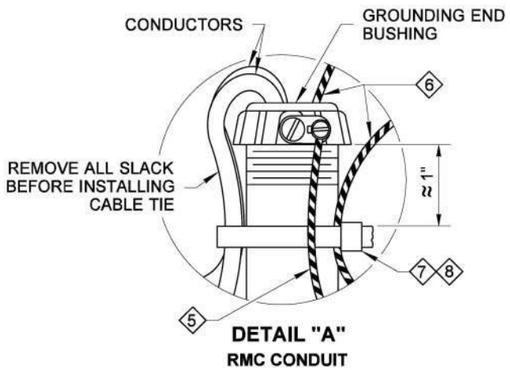


TAPE OVERLAP DIAGRAM

WHEN USING WRAPPED VINYL ELECTRICAL TAPE:

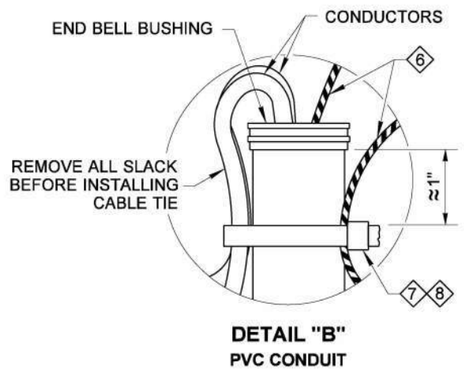
- INSTALL TWO LAYERS OF SPIRAL WRAPPED TAPE.
- EACH SPIRAL LAYER SHALL HAVE AN OVERLAP OF 1/2 OF THE TAPE WIDTH (SEE DIAGRAM ABOVE).

CONNECTOR AND INTERNAL SEALING DETAILS



DETAIL "A"

RMC CONDUIT



DETAIL "B"

PVC CONDUIT

5 EQUIPMENT BONDING JUMPER ~ FROM RMC CONDUIT

NOTE: 5 AND 6 MAY BE SAME WIRE

6 EQUIPMENT GROUNDING CONDUCTOR

7 CABLE TIE ~ 120 POUND TENSILE STRENGTH, BLACK

8 APPLICATION FOR FIXED BASE SIMILAR, EXCEPT NO CABLE TIE IS REQUIRED AT JUNCTION BOX

9 24" (IN) MIN. SLACK REQUIRED TO ALLOW QUICK DISCONNECTS TO BE PULLED OUTSIDE HAND HOLE 6" (IN) MIN.

NOTES

1. Each wire shall be physically separated by at least 1/4" (in) so that sealing material can fill in between the wires; where heat shrink tubing is used for the outer splice enclosure, it shall meet one of the following requirements:

   a. Have separate ports for each conductor ("WYE" or "X" shaped tubing). ~ or ~

   b. Have rubber electrical mastic tape wrapped around each conductor to ensure a weather-proof seal. See Rubber Electrical Mastic Tape Installation Detail, **Standard Plan J-50.05**.

2. Where heat shrink tubing is used, it shall extend a minimum of one inch onto the original wire insulation for each wire in the splice. Rigid splice enclosures shall be centered over the crimped connection.

3. Electrical tape used in splicing applications shall be 3/4" (in) wide, be UL listed under UL 510, and be CSA Certified under C22.2 NO. 197-M1983.

4. Crimp splices shall be installed with an approved crimping tool for the type and size of crimp splice used. Pliers and similar multi-purpose tools may not be used.

5. The equipment grounding conductor connected to the light standard shall include 18 inches of slack on the pole side of the cable tie.

Aug 30, 2022

STEEL LIGHT STANDARD WIRING DETAILS

STANDARD PLAN J-28.70-04

SHEET 2 OF 2 SHEETS

APPROVED FOR PUBLICATION

Mark Gaines
Mark Gaines (Aug 30, 2022 11:22 PDT)

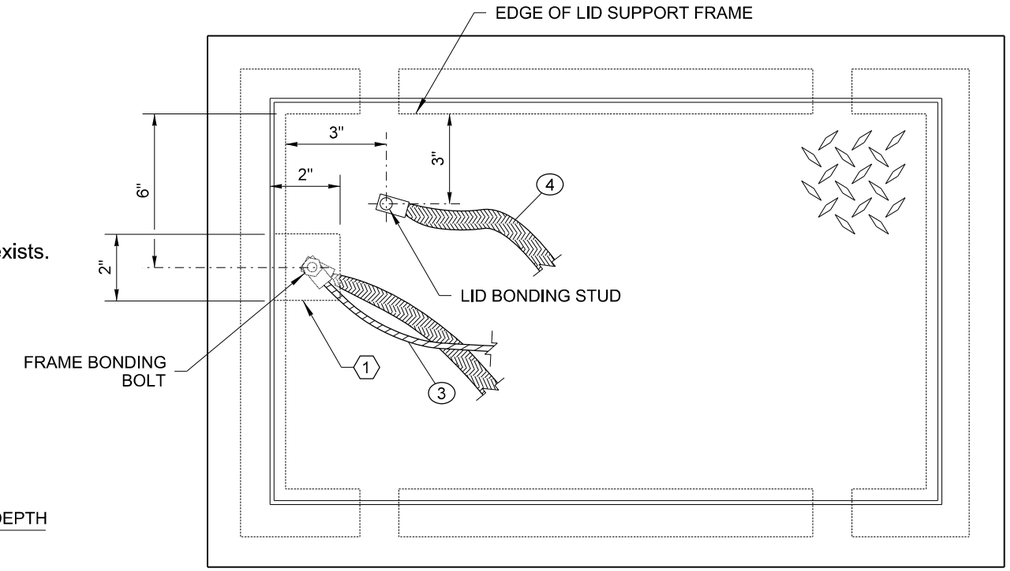
Aug 30, 2022

STATE DESIGN ENGINEER

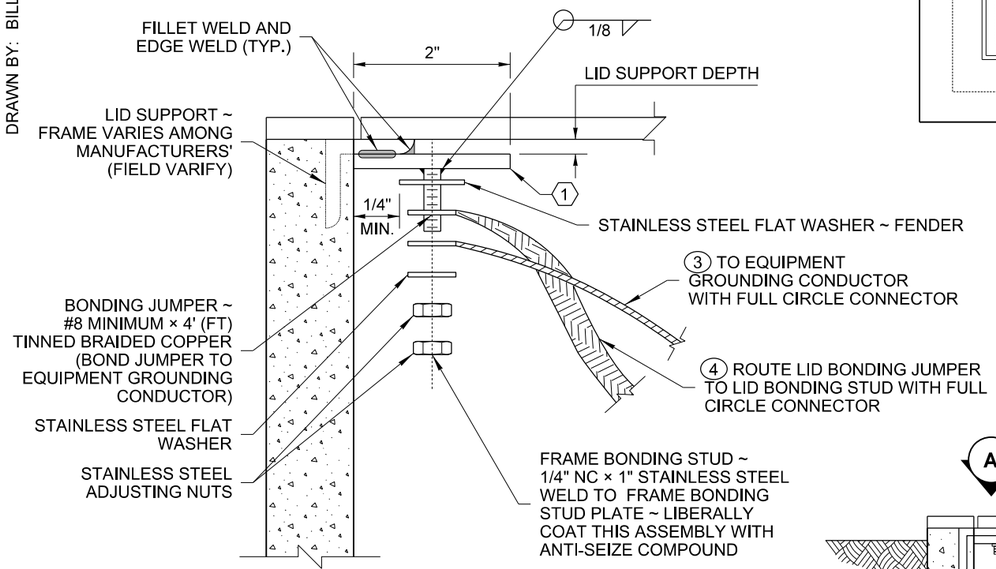
Washington State Department of Transportation

DRAWN BY: BILL BERENS

1. 3/8" (in) × 2" (in) × 2" (in) Frame Bonding Stud Plate with 1/4 NC × 1" Stainless Steel Bonding Stud.
   - Weld Bonding Stud to Frame Bonding Plate.
   - Weld to lid support frame.
   - 1/4" (in) weld ~ 3 sides.
   - Grind lid bearing surface flat after welding.
   - All corners rounded. Corners along exposed sheared or cut edges shall be broken by light grinding to achieve an approximate 1/16" (in) chamfer or rounding.
   - Protect conductors with fireproof cloth prior to welding.
   - Omit Frame Bonding Stud Plate if the Frame Bonding point already exists.
2. Weld all around lid bonding stud ~ 1/4 NC × 1" stainless steel ~ liberally coat entire assembly w/ anti-seize compound.



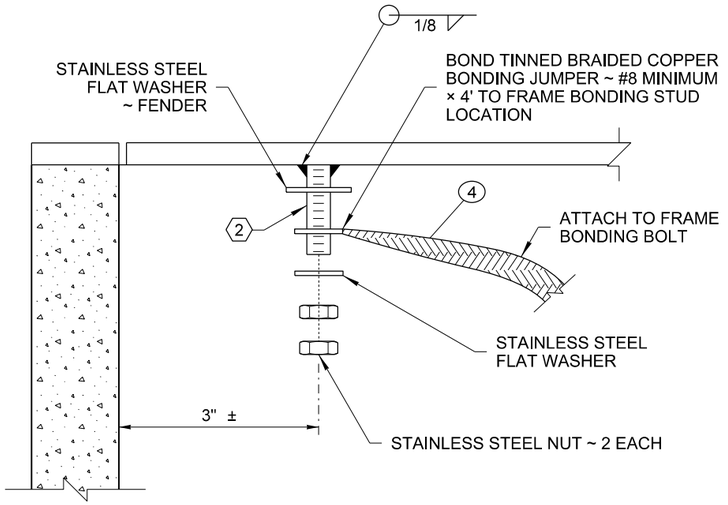
PLAN



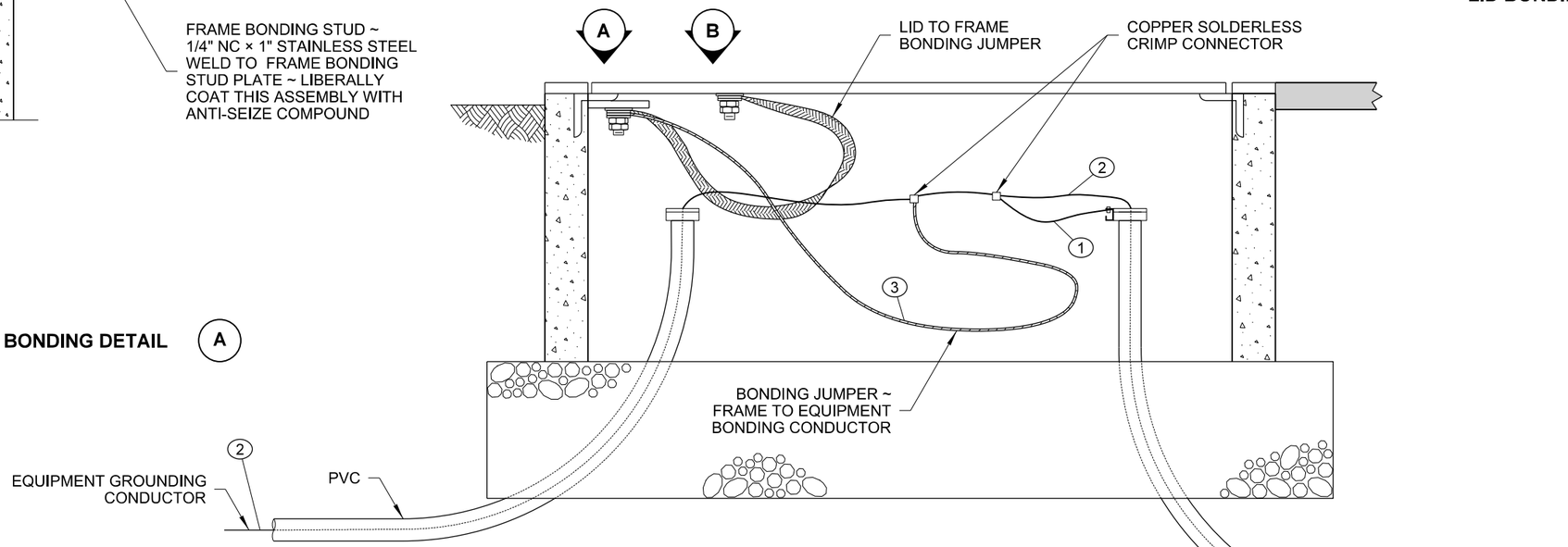
FRAME BONDING DETAIL (A)

KEY

1. BONDING JUMPER
2. EQUIPMENT GROUNDING CONDUCTOR
3. BONDING JUMPER ATTACHED TO BOX WALL COUPLING NUT
4. BONDING JUMPER ATTACHED TO BOX LID(S) GROUND STUD. # 8 AWG (MIN.) × 4' (FT) TINNED BRAIDED COPPER.



LID BONDING DETAIL (B)



ELEVATION

THEODORE JOSEPH BAILEY
STATE OF WASHINGTON
39820
REGISTERED
PROFESSIONAL ENGINEER

EXISTING JUNCTION BOX RETROFIT GROUNDING DETAILS

STANDARD PLAN J-40.05-00

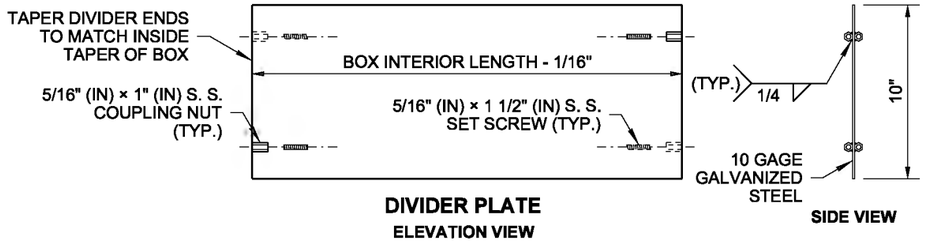
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

STATE DESIGN ENGINEER

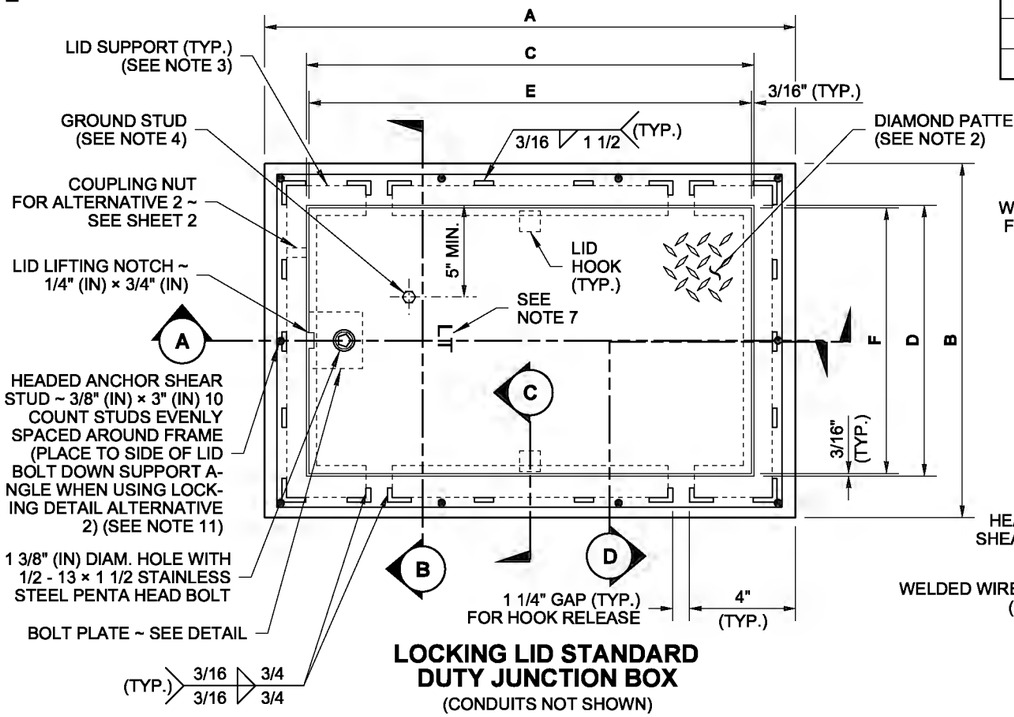
Washington State Department of Transportation

DRAWN BY: LISA CYFORD

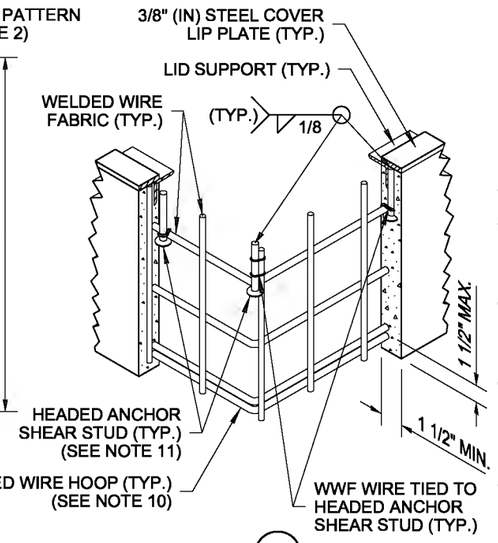


DIVIDER PLATE
ELEVATION VIEW
(FOR TYPE 2 JUNCTION BOX ONLY)

JUNCTION BOX DIMENSION TABLE			
MARK	ITEM	BOX TYPE	
		TYPE 1	TYPE 2
A	OUTSIDE LENGTH OF JUNCTION BOX	22"	33"
B	OUTSIDE WIDTH OF JUNCTION BOX	17"	22 1/2"
C	INSIDE LENGTH OF JUNCTION BOX	18" ~ 19"	28" ~ 29"
D	INSIDE WIDTH OF JUNCTION BOX	13" ~ 14"	17" ~ 18"
E	LID LENGTH	17 5/8"	28 5/8"
F	LID WIDTH	12 5/8"	18 1/8"
	CAPACITY ~ CONDUIT DIAMETER	6"	12"



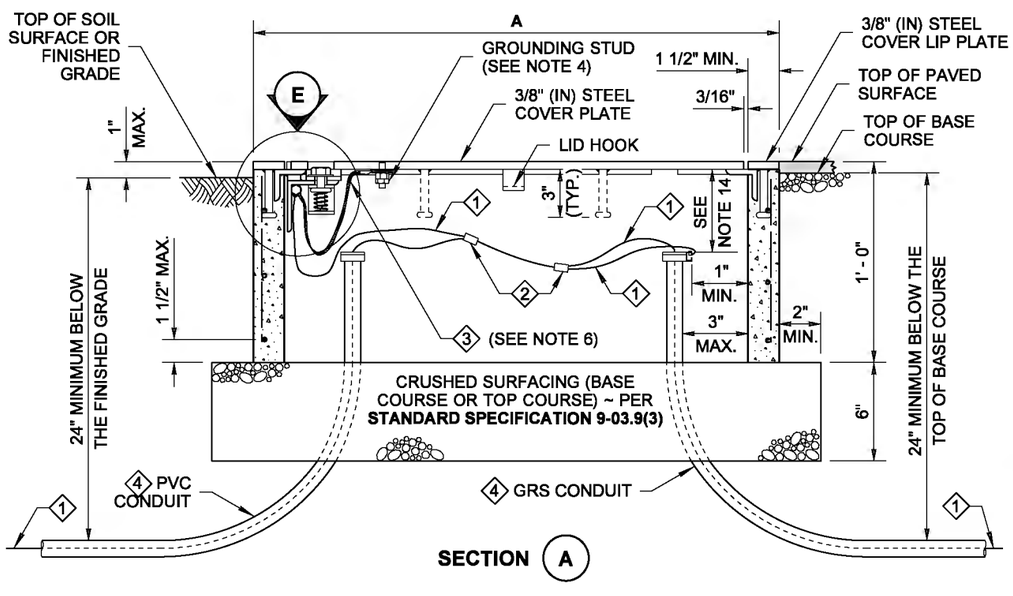
LOCKING LID STANDARD DUTY JUNCTION BOX
(CONDUITS NOT SHOWN)



SECTION D
PERSPECTIVE VIEW

NOTES

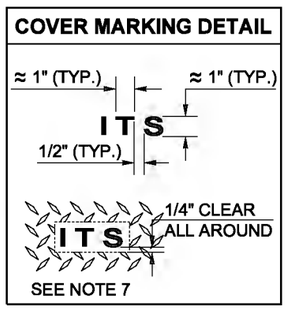
1. All box dimensions are approximate. Exact configurations vary among manufacturers.
2. Minimum lid thickness shown. Junction Boxes installed in sidewalks, walkways, and shared-use paths shall have a slip-resistant coating on the lid and lip cover plate, and shall be installed with the surface flush with and matched to the grade of the sidewalk, walkway, or shared-use path. The non-slip lid shall be identified with permanent markings on the underside, indicating the type of surface treatment (see Contract Documents for details) and the year of manufacture. The permanent marking shall be 1/8" (in) line thickness formed with a mild steel weld bead and shall be placed prior to hot-dip galvanizing.
3. Lid support members shall be 3/16" (in) minimum thick steel C, L, or T shape, welded to the frame.
4. A 1/4-20 NC × 3/4" (in) stainless steel ground stud shall be welded to the bottom of the lid; include (2) stainless steel nuts and (2) stainless steel flat washers.
5. Bolts and nuts shall be liberally coated with anti-seize compound.
6. Equipment Bonding Jumper shall be # 8 AWG min. × 4' (ft) of tinned braided copper.
7. The System Identification letters shall be 1/8" (in) line thickness formed with a mild steel weld bead. See Cover Marking detail. Grind off diamond pattern before forming letters. For System Identification details, see **Standard Specification 9-29.2(4)**.
8. When required in the Contract, provide a 10" (in) x 27 1/2" (in), 10 gage divider plate, complete, with fasteners, in each Type 2 Junction Box where specified.
9. When required in Contract, provide a 12" (in) deep extension for each Type 2 Junction Box where specified.
10. See the **Standard Specifications** for alternative reinforcement and class of concrete.
11. Headed Anchor Shear Studs must be welded to the Steel Cover Lip Plate and wire tied in two places to the vertical Welded Wire Fabric when in contact with each other. Wire tie all other Headed Anchor Shear Studs to the horizontal Welded Wire Fabric.
12. Lid Bolt Down Attachment Tab provides a method of retrofitting by using a mechanical process in lieu of welding. Attachment Tab shown depicts a typical component arrangement; actual configurations of assembly will vary among manufacturers. See approved manufacturers' shop drawings for specifics.
13. Unless otherwise noted in the plans or approved by the Engineer, Junction Boxes, Cable Vaults, and Pull Boxes shall not be placed within the sidewalks, walkways, shared use paths, traveled ways or paved shoulders. All Junction Boxes, Cable Vaults, and Pull Boxes placed within the traveled way or paved shoulders shall be Heavy-Duty.
14. Distance between the top of the conduit and the bottom of the Junction Box lid shall be 6" (in) min. to 8" (in) max. for final grade of new construction only. See **Standard Specification 8-20.3(5)**. Where adjustments are to be made to existing Junction Boxes, or for interim construction stages during the contract, the limits shall be from 6" (in) min. to 10" (in) max. See **Standard Specification 8-20.3(6)**.

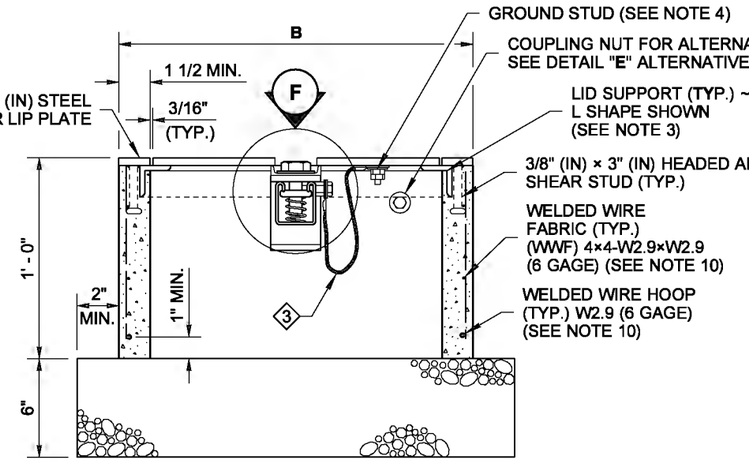


SECTION A

1. Equipment Grounding Conductor
2. Copper Solderless Crimp Connector
3. Equipment Bonding Jumper (See Note 6)
4. See Contract for conduit size and number

COVER MARKING DETAIL





SECTION B
(CONDUITS NOT SHOWN)

JOSEPH THEODORE BAILEY
STATE OF WASHINGTON
39820
REGISTERED PROFESSIONAL ENGINEER

LOCKING LID STANDARD DUTY JUNCTION BOX TYPES 1 & 2 STANDARD PLAN J-40.10-04

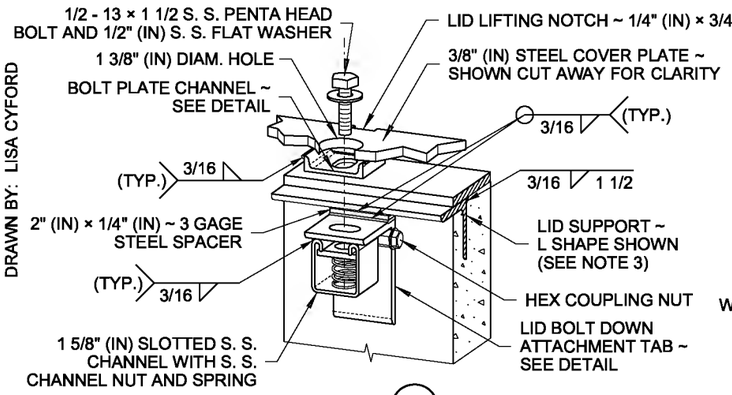
SHEET 1 OF 2 SHEETS

APPROVED FOR PUBLICATION

STATE DESIGN ENGINEER

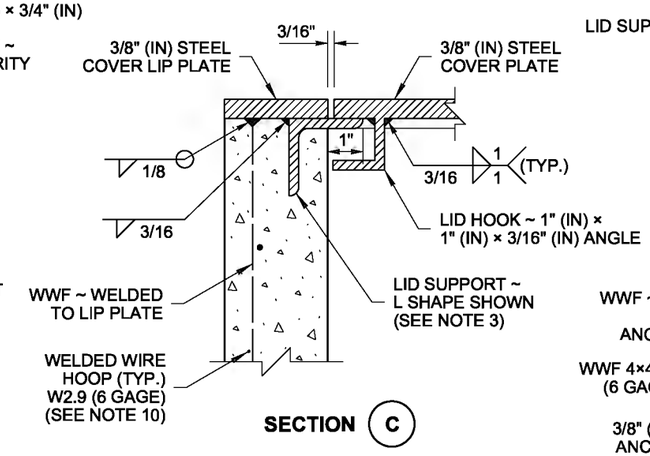
Washington State Department of Transportation

DRAWN BY: LISA CYFORD

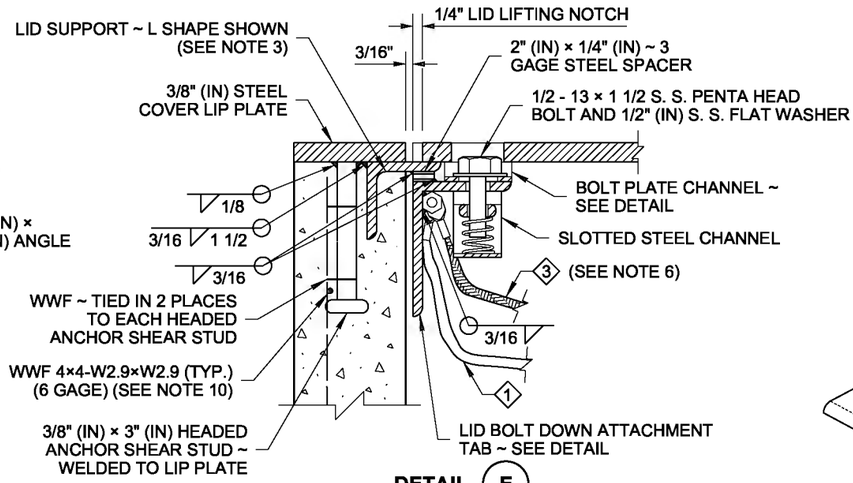


DETAIL (F)

ALTERNATIVE 1 SHOWN
PERSPECTIVE VIEW

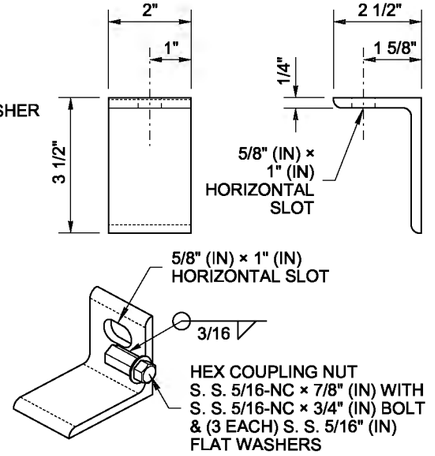


SECTION (C)

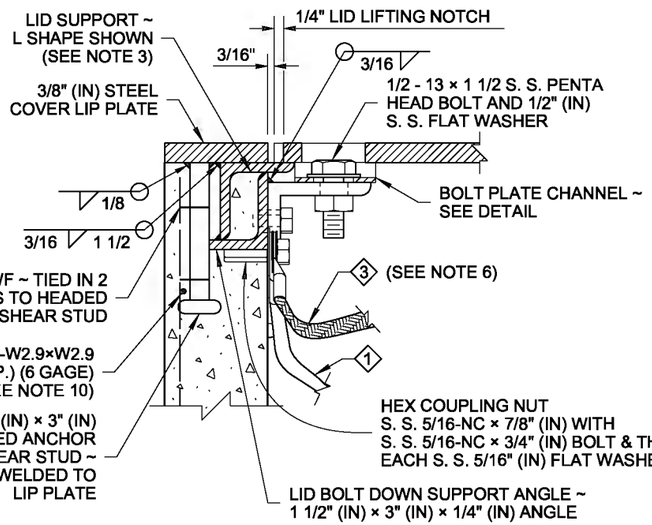


DETAIL (E)

ALTERNATIVE 1 SHOWN

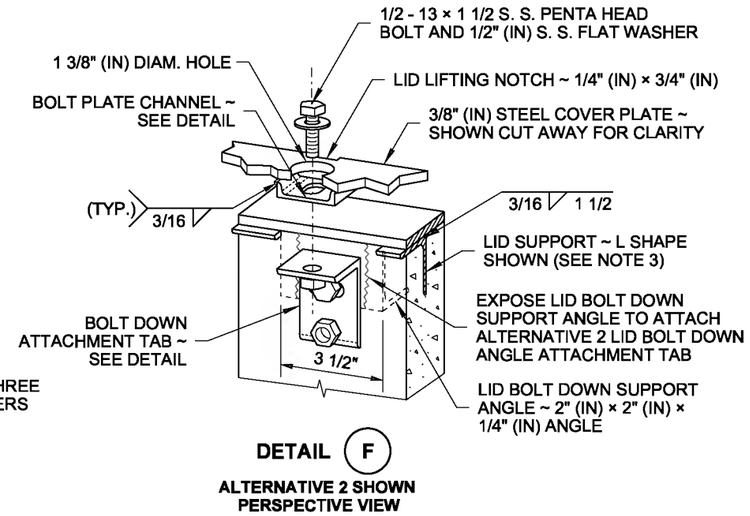


ALTERNATIVE 1
LID BOLT DOWN ATTACHMENT TAB
(SEE NOTE 12)



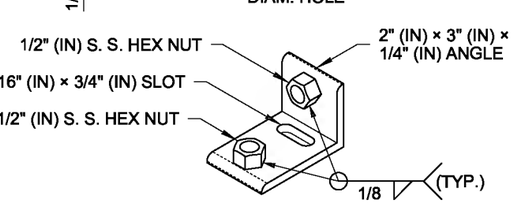
DETAIL (E)

ALTERNATIVE 2 SHOWN



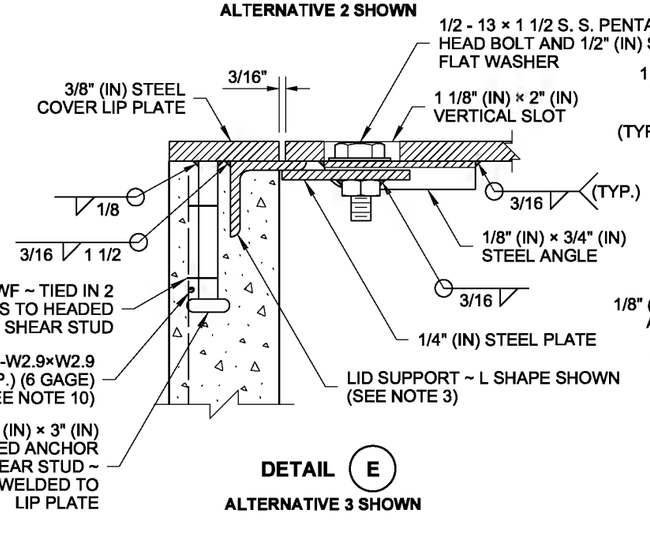
DETAIL (F)

ALTERNATIVE 2 SHOWN
PERSPECTIVE VIEW



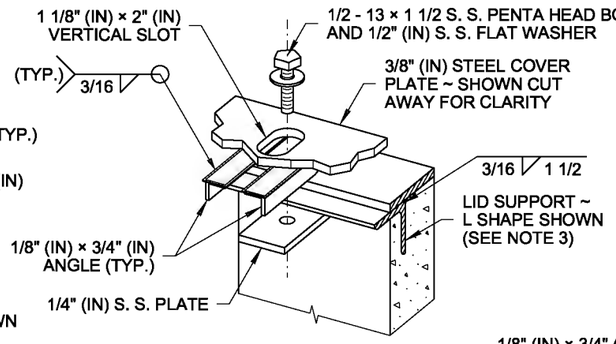
ALTERNATIVE 2
LID BOLT DOWN ATTACHMENT TAB
(SEE NOTE 12)

BOLT PLATE CHANNEL



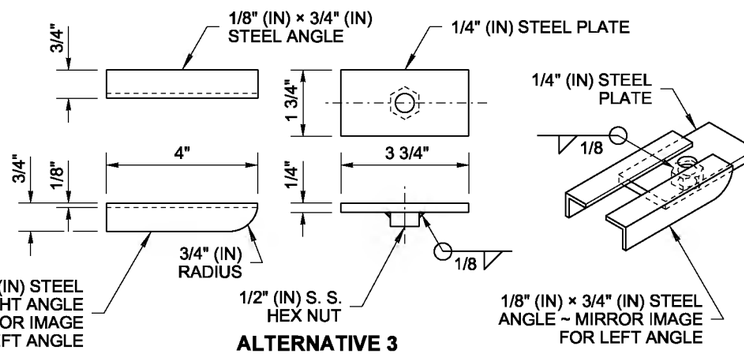
DETAIL (E)

ALTERNATIVE 3 SHOWN

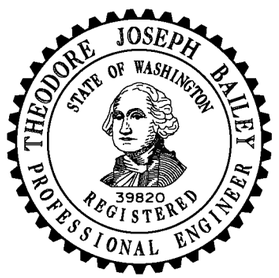


DETAIL (F)

ALTERNATIVE 3 SHOWN
PERSPECTIVE VIEW



ALTERNATIVE 3
LID BOLT DOWN ATTACHMENT TAB
(SEE NOTE 12)



LOCKING LID STANDARD DUTY JUNCTION BOX TYPES 1 & 2 STANDARD PLAN J-40.10-04

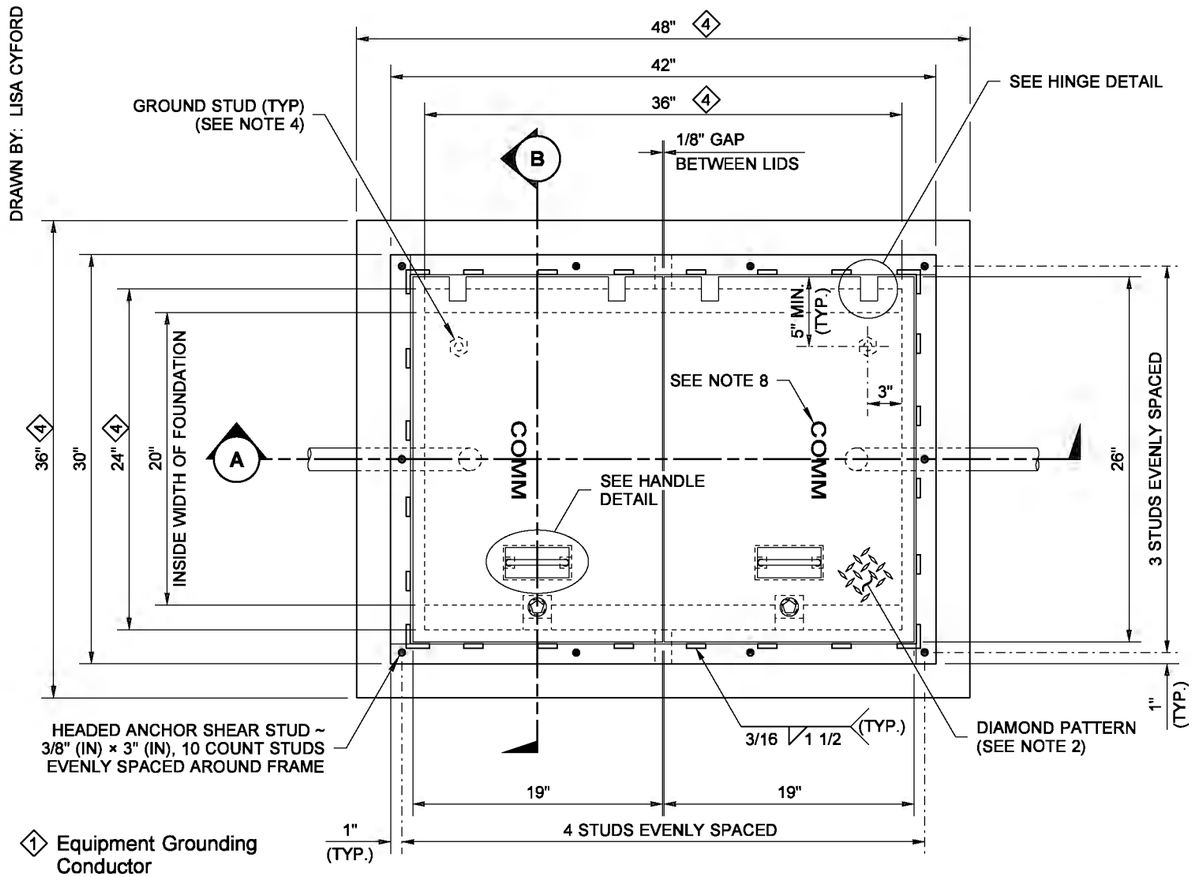
SHEET 2 OF 2 SHEETS

APPROVED FOR PUBLICATION

STATE DESIGN ENGINEER

Washington State Department of Transportation

DRAWN BY: LISA CYFORD

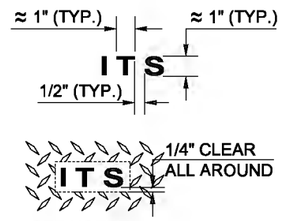


1 Equipment Grounding Conductor
2 Copper Solderless Crimp Connector
3 Equipment Bonding Jumper
4 Foundation
5 See Contract for conduit size and number

PLAN VIEW

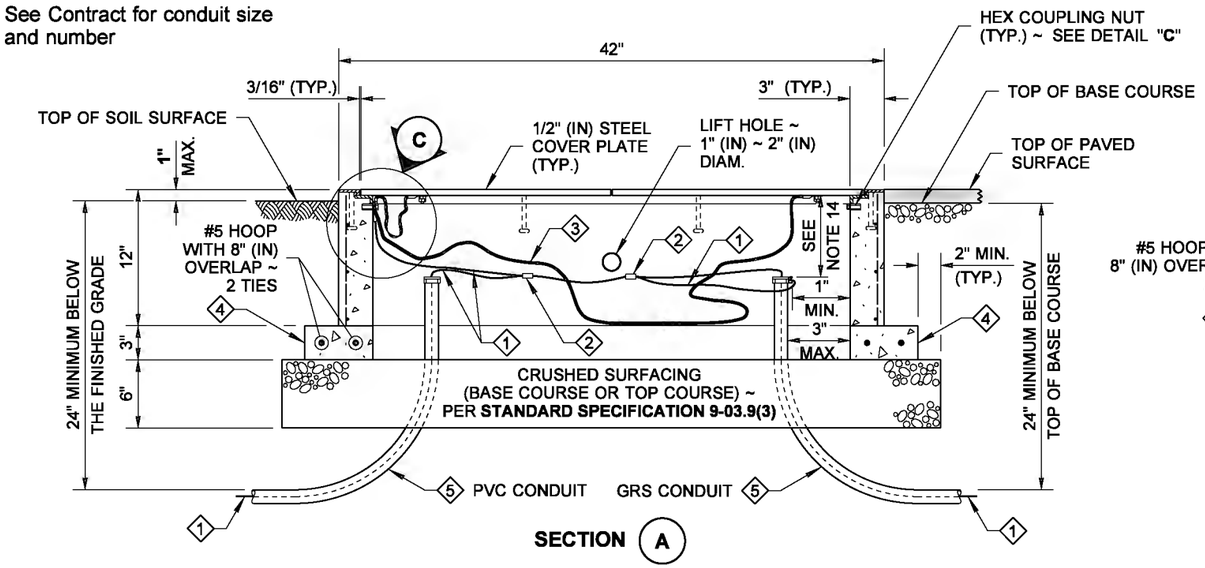
LOCKING LID STANDARD DUTY JUNCTION BOX

COVER MARKING DETAIL

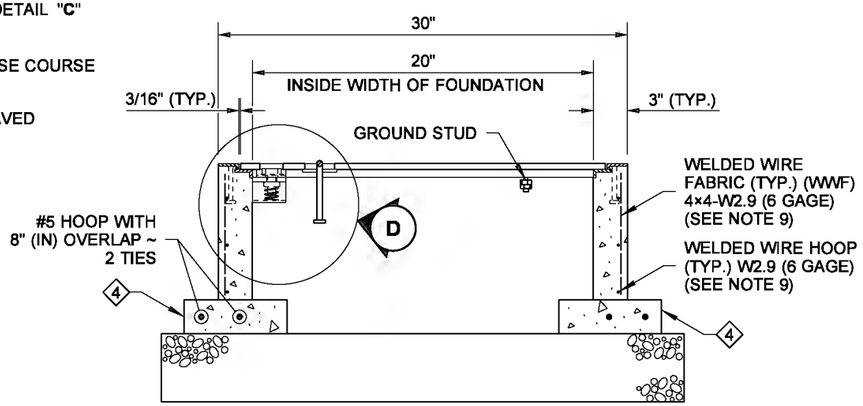


NOTES

1. All box dimensions are approximate. Exact configurations vary among manufacturers.
2. Minimum lid thicknesses are shown. Junction Boxes installed in sidewalks, walkways, and shared-use paths shall have a slip-resistant coating on the lid and lip cover plate and shall be installed with the surface flush with and matched to the grade of the sidewalk, walkway, or shared-use path. The non-slip lid shall be identified with permanent markings on the underside, indicating the type of surface treatment (see Contract Documents for details) and the year of manufacture. The permanent marking shall be 1/8" (in) line thickness formed with a mild steel weld bead and shall be placed prior to hot-dip galvanizing.
3. Lid support members shall be 3/16" (in) min. thick steel C, L, or T shape, welded to the frame. Exact configurations vary among manufacturers.
4. A 1/4-20 NC × 3/4" (in) S. S. ground stud shall be welded to the bottom of each lid; include (2) S. S. nuts and (2) S. S. flat washers.
5. The hinges shall allow the lids to open 180°.
6. Bolts and nuts shall be liberally coated with anti-seize compound.
7. Connect Equipment Bonding Jumper to ground stud on lid. As an alternative to the ground stud connection, the Equipment Bonding Jumper shall be attached to the front face of the hinge pocket with a 5/16-20 NC × 3/4" (in) S. S. bolt, (2) each S. S. nuts, and (2) each S. S. flat washers. Equipment Bonding Jumper shall be #8 AWG min. × 4' (ft) of tinned braided copper.
8. The System Identification letters shall be 1/8" (in) line thickness formed by a mild steel weld bead. See Cover Marking detail. Grind off diamond pattern before forming letters. See **Standard Specification 9-29.2(4)** for details.
9. See the **Standard Specifications** for alternative reinforcement and class of concrete.
10. See **Standard Plan J-40.10** for Welded Wire Fabric and Headed Anchor Shear Stud attachment details.
11. Capacity ~ conduit diameter = 24" (in)
12. Lid Bolt Down Attachment Tab provides a method of retrofitting by using a mechanical process in lieu of welding. Attachment Tab shown depicts a typical component arrangement; actual configurations of assembly will vary among manufacturers. See approved manufacturers' shop drawing for specifics.
13. Unless otherwise noted in the plans or approved by the Engineer, Junction Boxes, Cable Vaults and Pull Boxes shall not be placed within the sidewalk, walkway, shared use path, traveled way or paved shoulders. All Junction Boxes, Cable Vaults, and Pull Boxes placed within the traveled way or paved shoulders shall be Heavy-Duty.
14. Distance between the top of the conduit and the bottom of the Junction Box lid shall be 6" (in) min. to 8" (in) max. for final grade of new construction only. See **Standard Specification 8-20.3(5)**. Where adjustments are to be made to existing Junction Boxes, or for interim construction stages during the contract, the limits shall be from 6" (in) min. to 10" (in) max. See **Standard Specification 8-20.3(6)**.



SECTION A



SECTION B

CONDUITS NOT SHOWN

THEODORE JOSEPH BAILEY
STATE OF WASHINGTON
39820
REGISTERED
PROFESSIONAL ENGINEER

LOCKING LID STANDARD DUTY JUNCTION BOX TYPE 8 STANDARD PLAN J-40.30-04

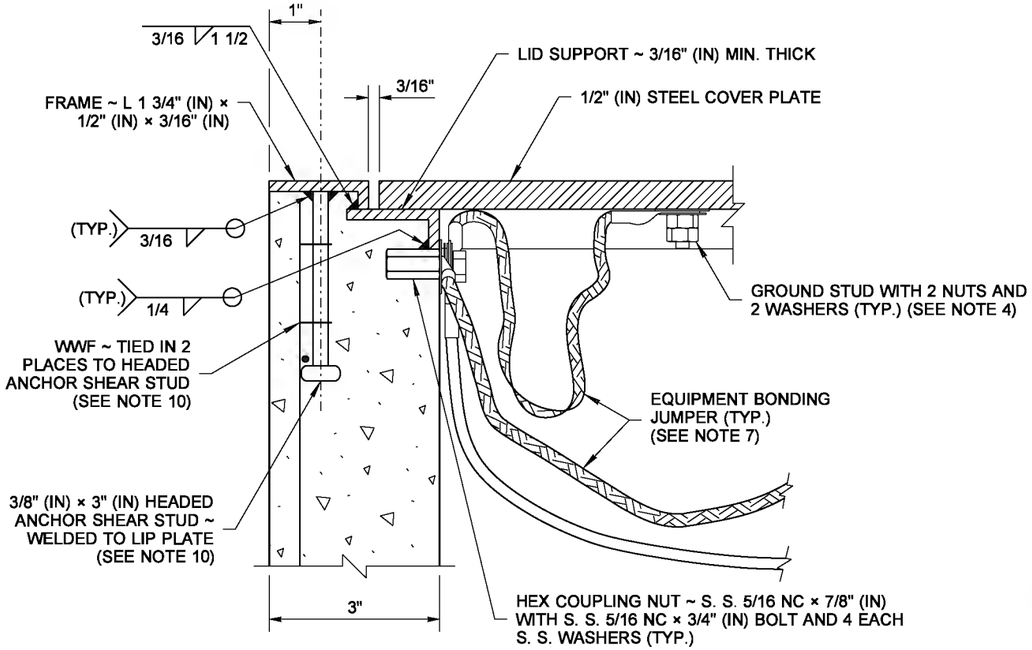
SHEET 1 OF 2 SHEETS

APPROVED FOR PUBLICATION

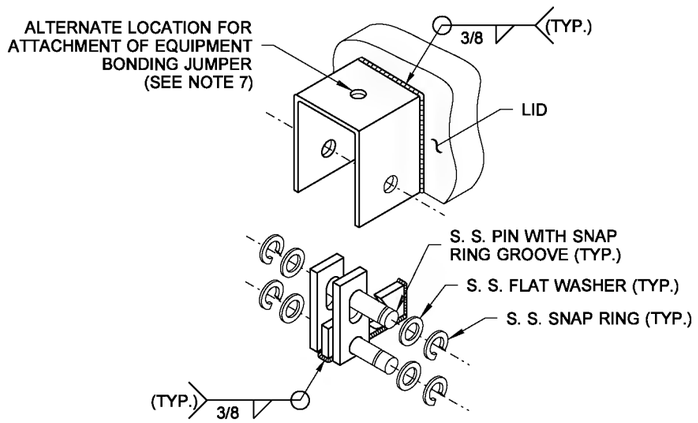
STATE DESIGN ENGINEER

Washington State Department of Transportation

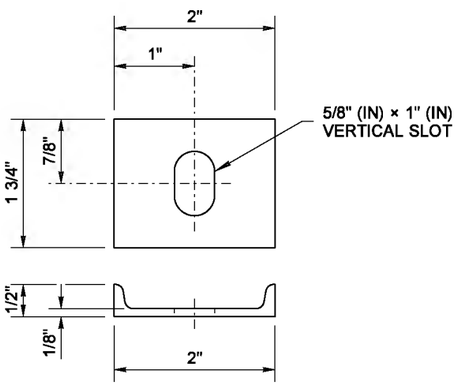
DRAWN BY: LISA CYFORD



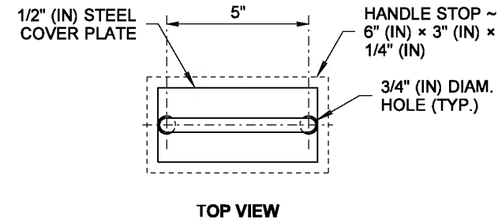
DETAIL (C)



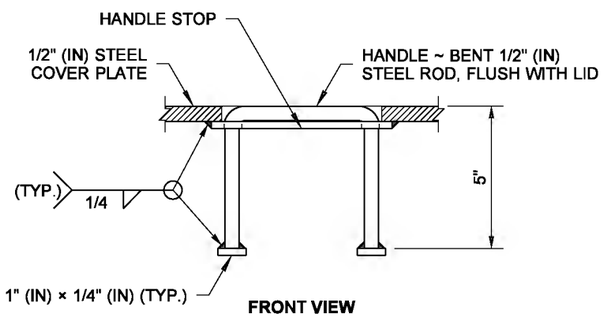
HINGE DETAIL



BOLT PLATE CHANNEL

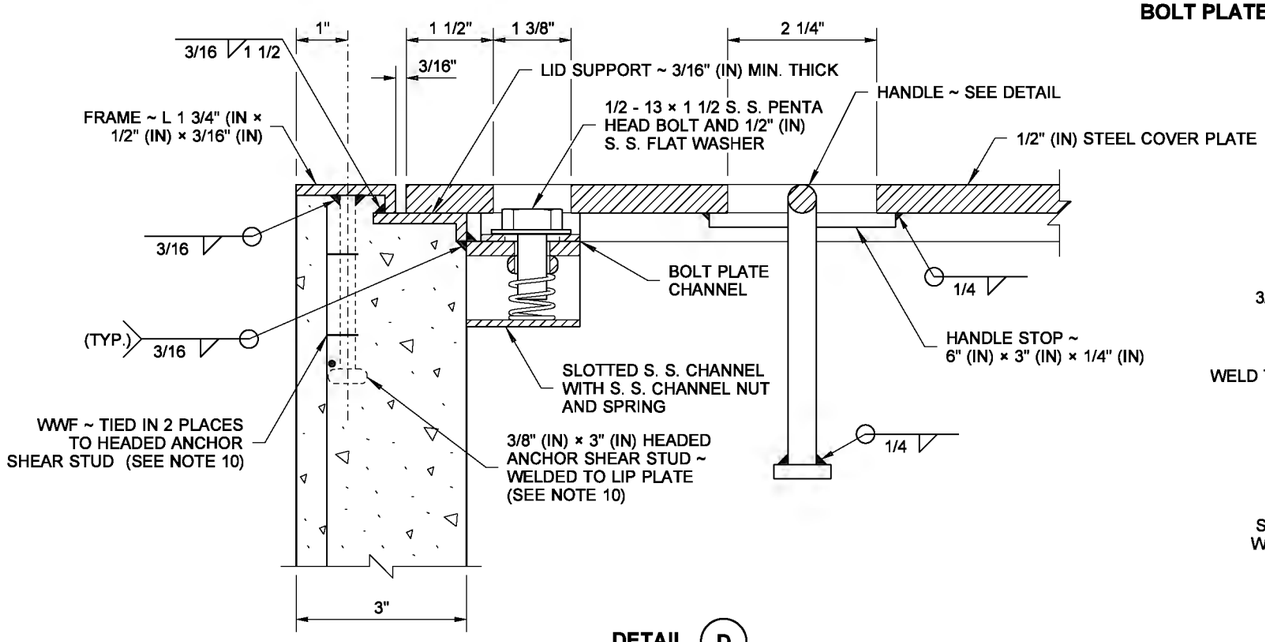


TOP VIEW

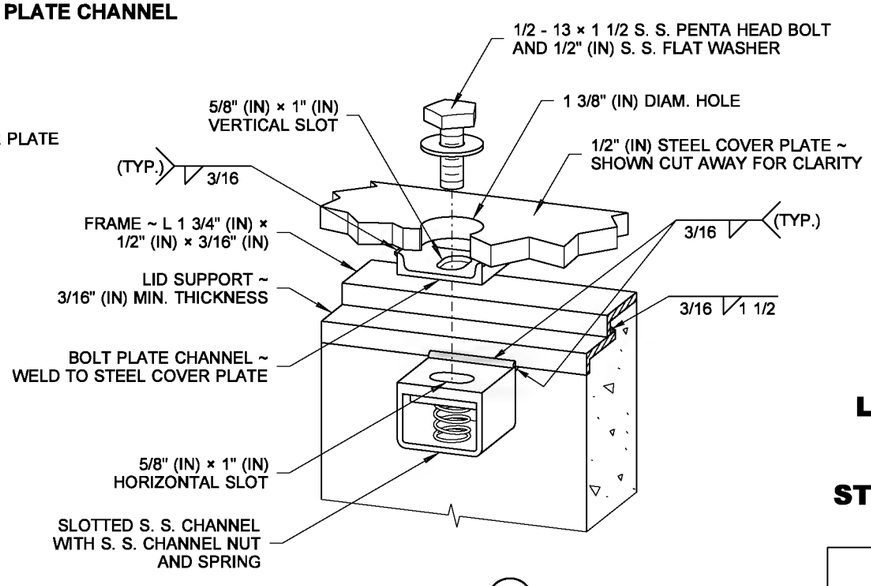


FRONT VIEW

HANDLE DETAIL



DETAIL (D)



DETAIL (D)

ISOMETRIC VIEW

THEODORE JOSEPH BAILEY
STATE OF WASHINGTON
39820
REGISTERED
PROFESSIONAL ENGINEER

LOCKING LID STANDARD DUTY JUNCTION BOX TYPE 8 STANDARD PLAN J-40.30-04

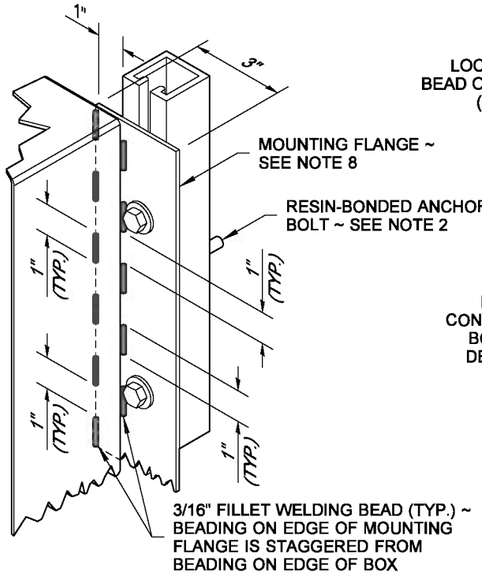
SHEET 2 OF 2 SHEETS

APPROVED FOR PUBLICATION

STATE DESIGN ENGINEER

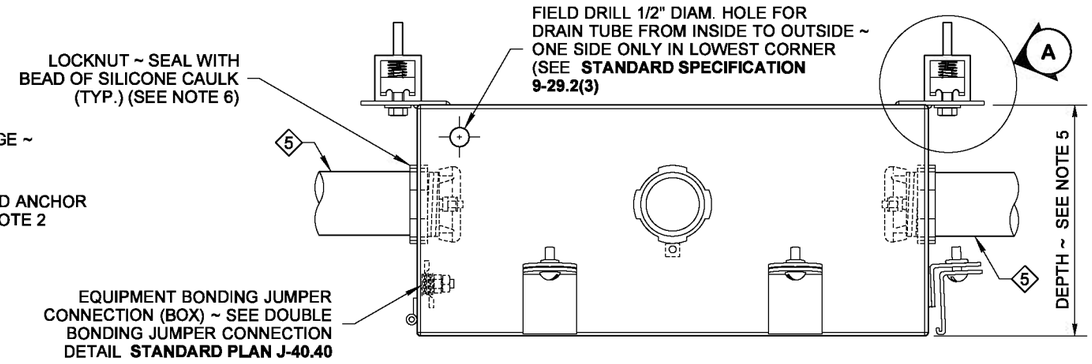
Washington State Department of Transportation

DRAWN BY: LISA CYFORD



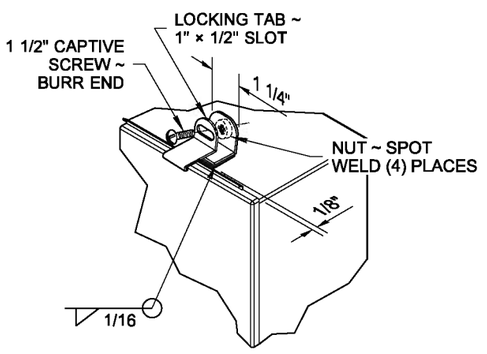
DETAIL (A)

STAINLESS STEEL CHANNEL MOUNTING DETAIL



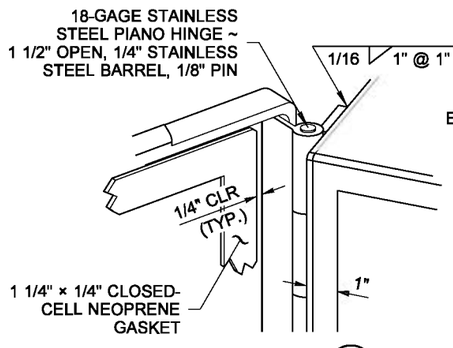
PLAN VIEW

(DOOR AND WIRING NOT SHOWN FOR CLARITY)



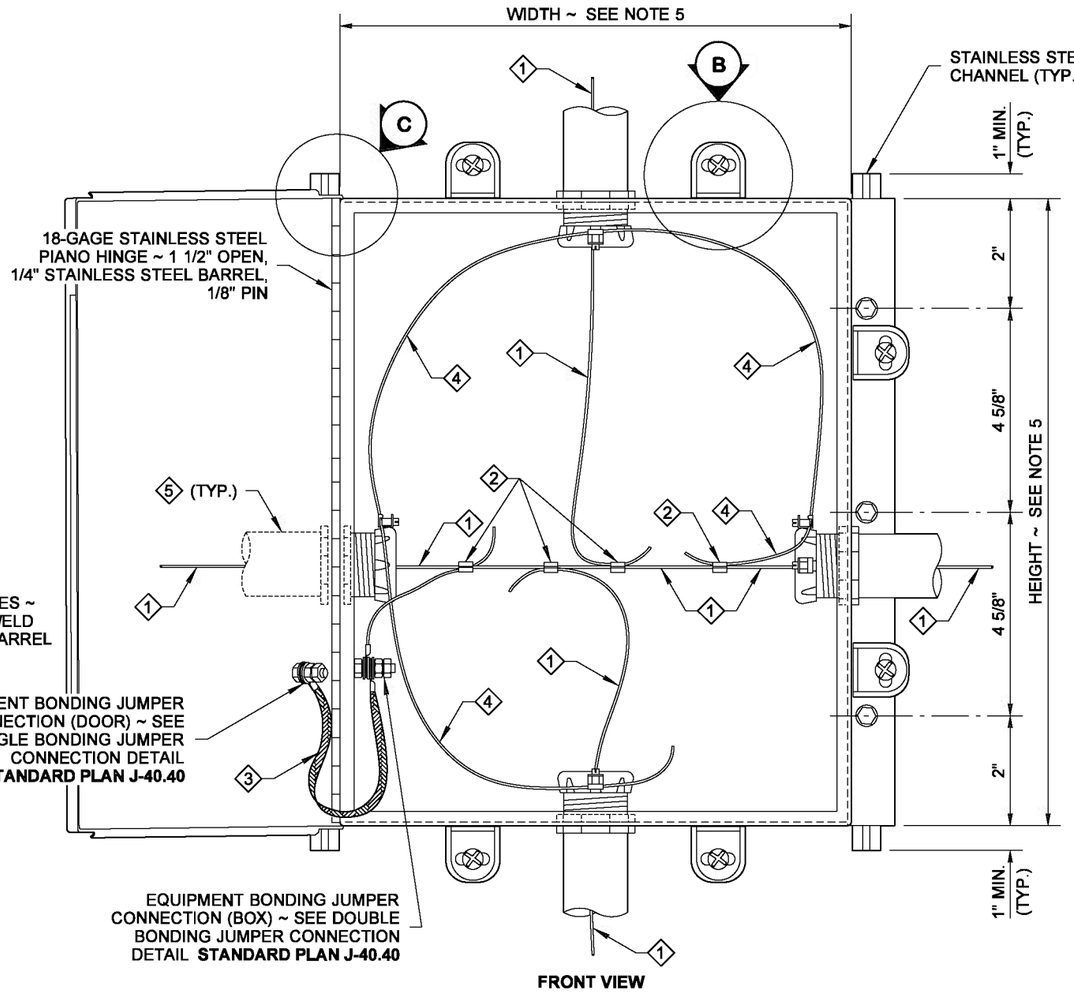
DETAIL (B)

LOCKING TAB DETAIL



DETAIL (C)

PIANO HINGE DETAIL

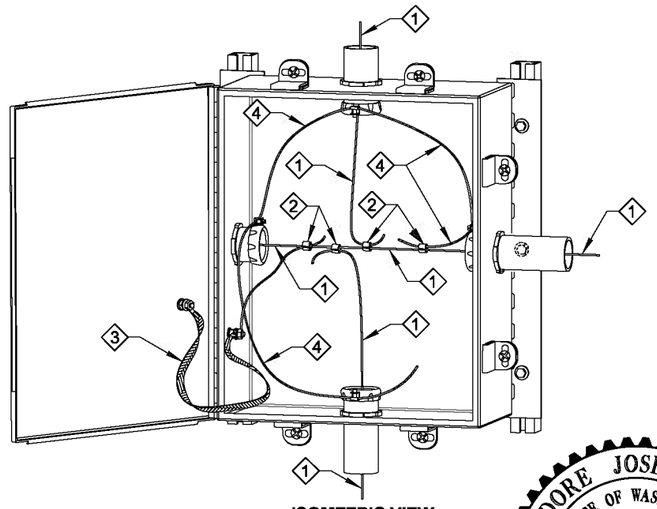


FRONT VIEW

(DOOR OPEN TO SHOW WIRE CONNECTION)

NOTES

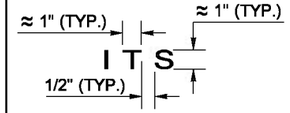
1. Drilling through reinforcing steel is not allowed. If steel is hit while drilling, the location shall be moved and the abandoned hole filled with grout conforming to **Standard Specification 6-02.3(20).**
2. Mount the stainless steel support using an approved resin-bonded anchor system, installed per manufacturer's recommendation. Resin-bonded anchors shall be stainless steel and shall be of 3/8" diameter (Expansion Anchors are not allowed). Anchor bolt embedment shall be 4 1/2" min.
3. There shall be a minimum of 3" edge distance to the centerline of anchor holes in concrete. See **Standard Plan J-60.13** for Stainless Steel Channel details.
4. The System Identification letters on the box lid shall be 1/8" line thickness formed by engraving, stamping, or with a stainless steel weld bead. See System Identification Detail and **Standard Specifications 9-29.2(4).**
5. Junction Box shall be dimensioned as shown in the Contract. If the conduit sizes shown in the Contract are changed, the box dimensions shall be revised in accordance with **NEC 314.28** using the 8 times multiplier for length and width dimensions.
6. Fittings shall be UL listed and CSA-certified watertight on the outside of the Junction Box conduit connection. An insulated grounded end bushing shall be used to terminate Rigid Metal Conduit.
7. Equipment Bonding Jumper shall be # 8 AWG (min.) × 1 foot of tinned, braided copper.
8. Junction Box shall be constructed of 12-gage, Type 304 stainless steel with welded seam construction and # 4 finish. Mounting Flange shall also be 12-gage, Type 304 stainless steel.



ISOMETRIC VIEW

1. Equipment Grounding Conductor
2. Copper Solderless Crimp Connector
3. Equipment Bonding Jumper ~ See note 7
4. Equipment Bonding Jumper shall be a continuous conductor. Route to each grounded end bushing and then terminate at equipment grounding conductor.
5. See Contract for conduit size and number

SYSTEM IDENTIFICATION DETAIL



SEE NOTE 4

THEODORE JOSEPH BAILEY
STATE OF WASHINGTON
39820
REGISTERED
PROFESSIONAL ENGINEER

NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT BUT AN ELECTRONIC DUPLICATE. THE ORIGINAL, SIGNED BY THE ENGINEER AND APPROVED FOR PUBLICATION, IS KEPT ON FILE AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST.

FRONT ENTRY NEMA 4X SURFACE-MOUNT JUNCTION BOX

STANDARD PLAN J-40.39-00

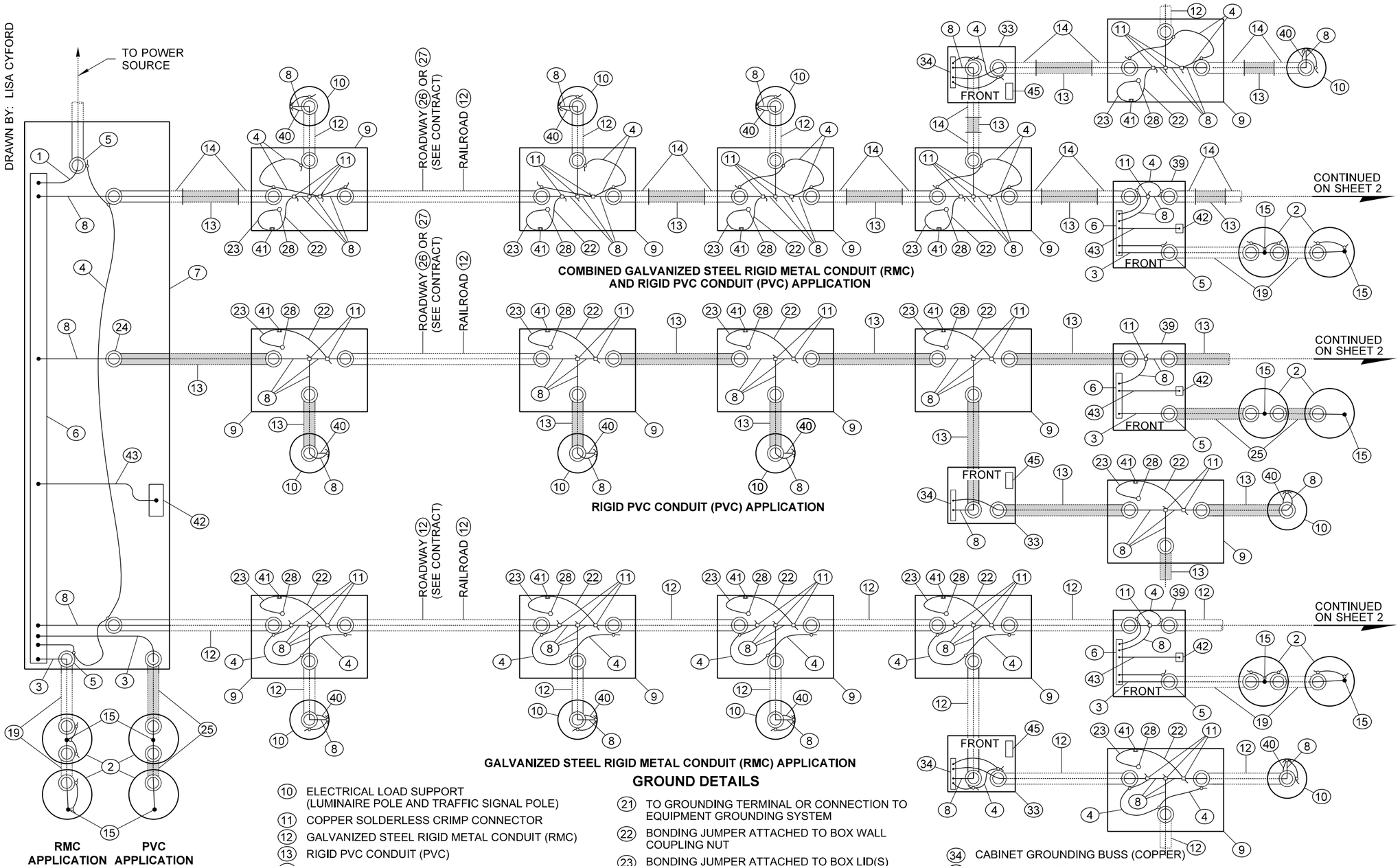
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

Pasco Bakotich III — STATE DESIGN ENGINEER — *5/20/13* — DATE

Washington State Department of Transportation

DRAWN BY: LISA CYFORD



COMBINED GALVANIZED STEEL RIGID METAL CONDUIT (RMC) AND RIGID PVC CONDUIT (PVC) APPLICATION

RIGID PVC CONDUIT (PVC) APPLICATION

GALVANIZED STEEL RIGID METAL CONDUIT (RMC) APPLICATION

KEY

1. SERVICE NEUTRAL
2. SERVICE GROUND
3. GROUNDING ELECTRODE CONDUCTOR
4. BONDING JUMPER
5. GROUNDING BUSHING (TYP. ALL RMC CONDUIT TERMINATIONS)
6. GROUNDED NEUTRAL BUS (COPPER)
7. SERVICE ENCLOSURE
8. EQUIPMENT GROUNDING CONDUCTOR
9. JUNCTION BOX
10. ELECTRICAL LOAD SUPPORT (LUMINAIRE POLE AND TRAFFIC SIGNAL POLE)
11. COPPER SOLDERLESS CRIMP CONNECTOR
12. GALVANIZED STEEL RIGID METAL CONDUIT (RMC)
13. RIGID PVC CONDUIT (PVC)
14. OPTION A - 10' RMC WITH FIELD BEND
    - APPROVED ADAPTER FITTING
    - GROUNDING BUSHING

    OPTION B - 10' RMC
    - GS FACTORY ELBOWS
    - APPROVED ADAPTER FITTING
    - GS COUPLING
    - GROUNDING BUSHING
15. GROUND ROD
16. EDGE OF FOUNDATION, POLE OR SERVICE SUPPORT
17. CLAMP
18. JUNCTION BOX OR 8" DRAIN TILE WITH APPROVED CONCRETE COVER
19. CODE SIZE RMC
20. TO SERVICE NEUTRAL BUS

GROUND DETAILS

21. TO GROUNDING TERMINAL OR CONNECTION TO EQUIPMENT GROUNDING SYSTEM
22. BONDING JUMPER ATTACHED TO BOX WALL COUPLING NUT
23. BONDING JUMPER ATTACHED TO BOX LID(S) GROUND STUD. # 8 AWG (MIN.) × 4' (FT) TINNED BRAIDED COPPER.
24. END BELL BUSHING (TYP. ALL NON-METALLIC CONDUIT TERMINATIONS)
25. CODE SIZED PVC
26. HIGH-DENSITY POLYETHYLENE CONDUIT (HDPE)
27. NON-METALLIC CONDUIT (PVC) SCHEDULE 80
28. BOX LID(S) GROUND STUD
29. CABLE VAULT
30. PULL BOX
31. ITS CABINET
32. EDGE OF FOUNDATION
33. TRAFFIC SIGNAL CABINET
34. CABINET GROUNDING BUSS (COPPER)
35. RIGID PVC OUTERDUCT WITH PVC OR PE INNERDUCT
36. GALVANIZED STEEL RIGID METAL CONDUIT OUTERDUCT WITH PVC OR PE INNERDUCT
37. EQUIPMENT GROUNDING CONDUCTOR CONNECTION POINT IN CABLE VAULT OR PULL BOX BETWEEN SEPERATE SERVICES
38. DETECTABLE UNDERGROUND WARNING TAPE. COIL 2' INSIDE CABINET, CABLE VAULT, OR PULL BOX
39. TRANSFORMER CABINET
40. GROUNDING CONDUCTOR NON-INSULATED (FROM REINFORCING CAGE)
41. BOX FRAME BONDING ATTACHMENT POINT
42. GROUND LUG WELDED TO CABINET WALL (W/ TINNED COPPER BUSS)
43. CABINET MAIN BONDING JUMPER
44. ITS CAMERA, RAMP METER, TRAFFIC DATA STATION, HIGHWAY ADVISORY RADIO
45. UNGROUNDED CABINET NEUTRAL BUSS (COPPER)

NOTES

1. If parallel circuits of different sizes are contained in one conduit, the size of the grounding conductor shall be determined on the basis of the largest conductor. Only one grounding conductor is required for each conduit, regardless of the number of circuits contained.
2. Service ground per serving utility requirement. If the utility uses aluminum service conductors, an approved Al-Cu pressure-type ground connector shall be used to secure the service neutral to the copper neutral bar in the service enclosure. Except for the above, all grounding conductors shall be copper.
3. Equipment grounding conductors and grounding electrode conductors shall be sized in accordance with the National Electrical Code (No. 8 minimum).

THEODORE JOSEPH BAILEY
STATE OF WASHINGTON
39820
REGISTERED
PROFESSIONAL ENGINEER

TYPICAL GROUNDING DETAILS

STANDARD PLAN J-60.05-01

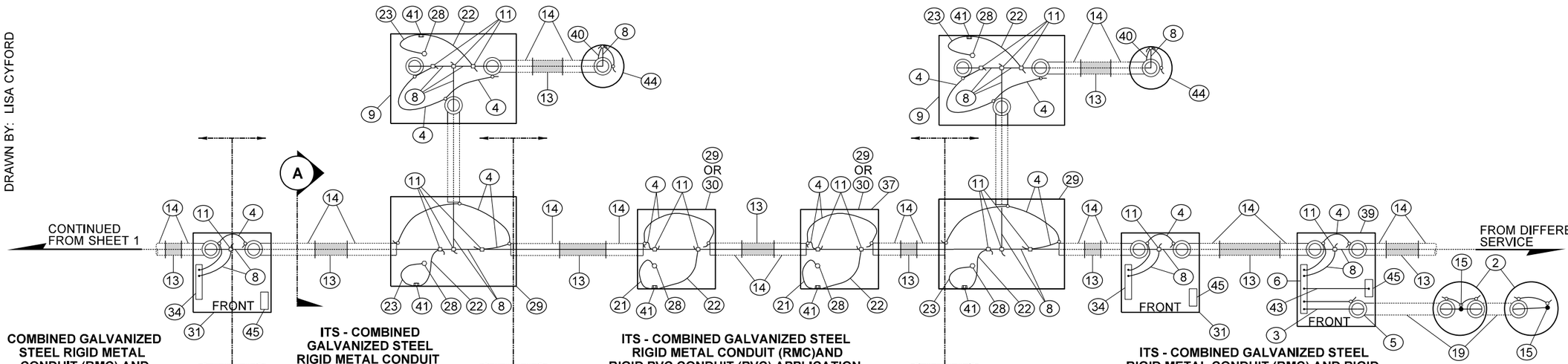
SHEET 1 OF 3 SHEETS

APPROVED FOR PUBLICATION

STATE DESIGN ENGINEER

Washington State Department of Transportation

DRAWN BY: LISA CYFORD

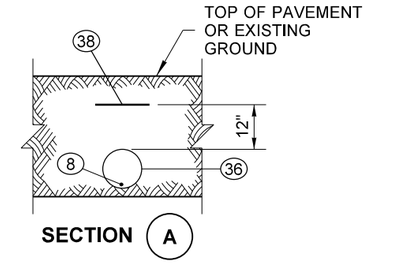


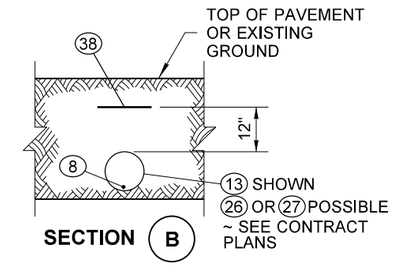
COMBINED GALVANIZED STEEL RIGID METAL CONDUIT (RMC) AND RIGID PVC CONDUIT (PVC) APPLICATION

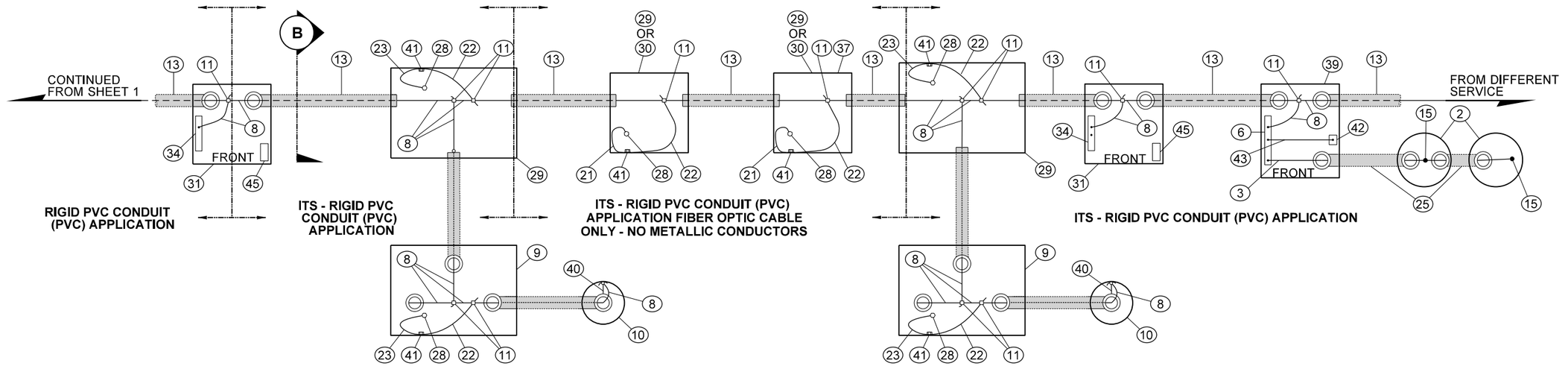
ITS - COMBINED GALVANIZED STEEL RIGID METAL CONDUIT (RMC) AND RIGID PVC CONDUIT (PVC) APPLICATION

ITS - COMBINED GALVANIZED STEEL RIGID METAL CONDUIT (RMC)AND RIGID PVC CONDUIT (PVC) APPLICATION. FIBER OPTIC CABLE ONLY, NO METALLIC CONDUCTORS

ITS - COMBINED GALVANIZED STEEL RIGID METAL CONDUIT (RMC) AND RIGID PVC CONDUIT (PVC) APPLICATION





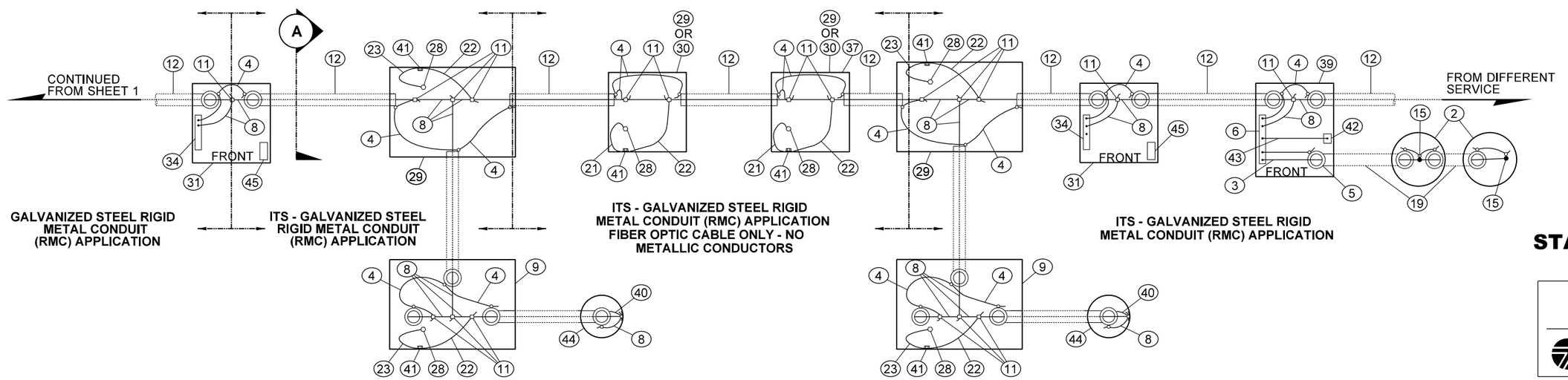


RIGID PVC CONDUIT (PVC) APPLICATION

ITS - RIGID PVC CONDUIT (PVC) APPLICATION

ITS - RIGID PVC CONDUIT (PVC) APPLICATION FIBER OPTIC CABLE ONLY - NO METALLIC CONDUCTORS

ITS - RIGID PVC CONDUIT (PVC) APPLICATION



GALVANIZED STEEL RIGID METAL CONDUIT (RMC) APPLICATION

ITS - GALVANIZED STEEL RIGID METAL CONDUIT (RMC) APPLICATION

ITS - GALVANIZED STEEL RIGID METAL CONDUIT (RMC) APPLICATION FIBER OPTIC CABLE ONLY - NO METALLIC CONDUCTORS

ITS - GALVANIZED STEEL RIGID METAL CONDUIT (RMC) APPLICATION

THEODORE JOSEPH BAILEY
STATE OF WASHINGTON
39820
REGISTERED
PROFESSIONAL ENGINEER

TYPICAL GROUNDING DETAILS

STANDARD PLAN J-60.05-01

SHEET 2 OF 3 SHEETS

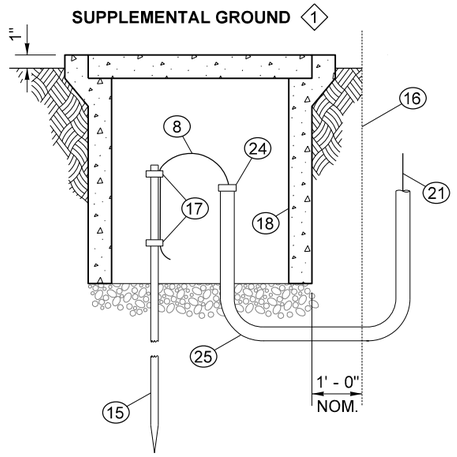
APPROVED FOR PUBLICATION

STATE DESIGN ENGINEER

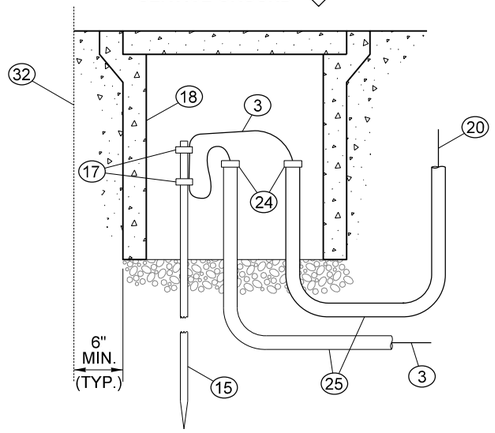
Washington State Department of Transportation

DRAWN BY: LISA CYFORD

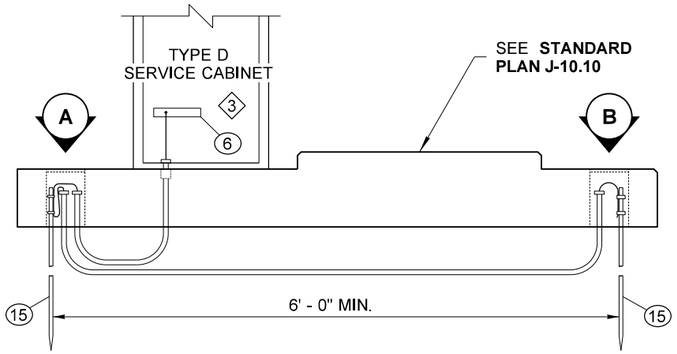
SUPPLEMENTAL GROUND ◇1



SERVICE GROUND ◇2

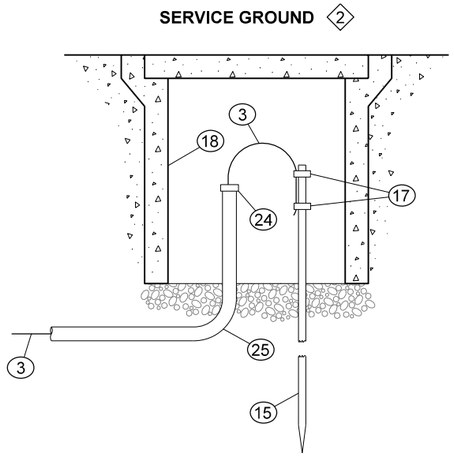


DETAIL (A)



RIGID PVC CONDUIT (PVC) APPLICATION

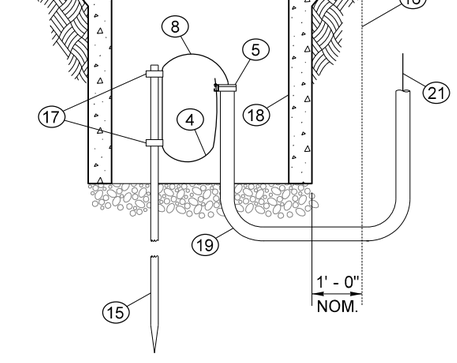
SERVICE GROUND ◇2



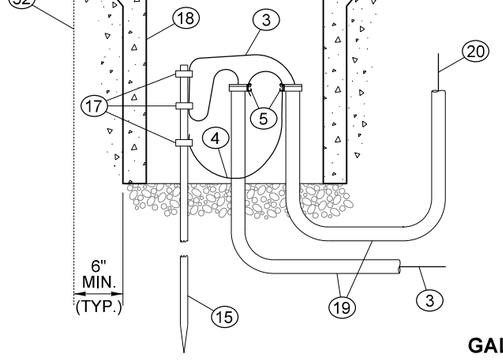
DETAIL (B)

SEE KEY ON SHEET 1 FOR PARTS

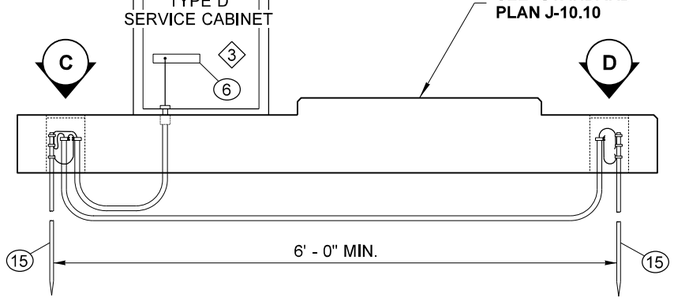
SUPPLEMENTAL GROUND ◇1



SERVICE GROUND ◇2

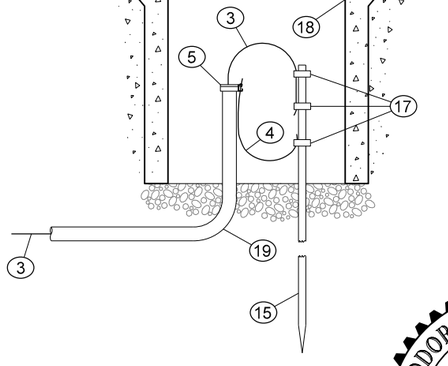


DETAIL (C)



GALVANIZED STEEL RIGID METAL CONDUIT (RMC) APPLICATION

SERVICE GROUND ◇2



DETAIL (D)

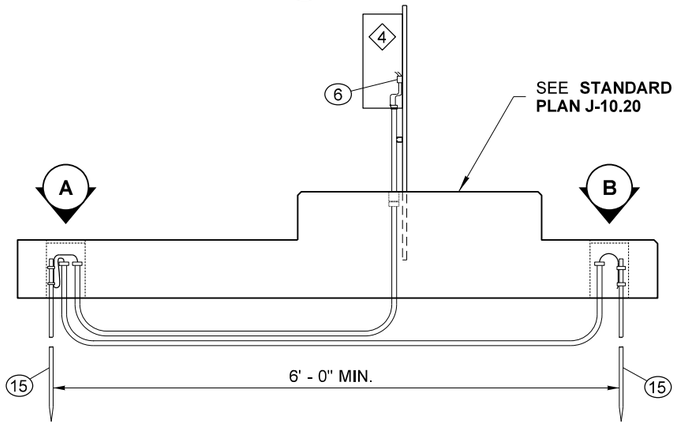
◇1 Required to supplement equipment grounding for luminaire standards with direct burial aerial feeds, or where required in the plans

◇2 Required at all service and separately derived systems

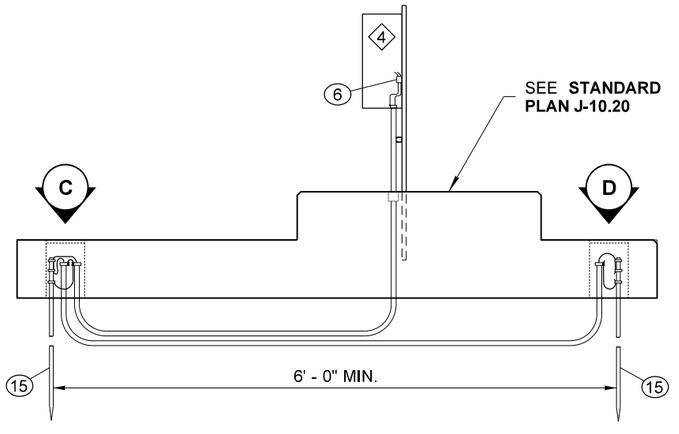
◇3 Type D service cabinet shown. Use this concept for Type E cabinet or transformer. Type D service cabinet shall be installed on lower surface of foundation only. Type B service cabinet and transformer cabinet shall be installed on raised surface of foundation only.

◇4 Type B modified service cabinet

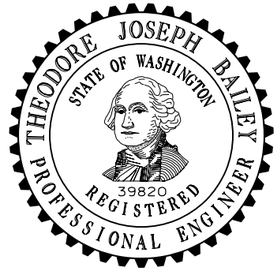
◇5 Grounding electrode conductor and equipment grounding conductor shall not be routed through lug on grounding bushing.



RIGID PVC CONDUIT (PVC) APPLICATION



GALVANIZED STEEL RIGID METAL CONDUIT (RMC) APPLICATION



TYPICAL GROUNDING DETAILS

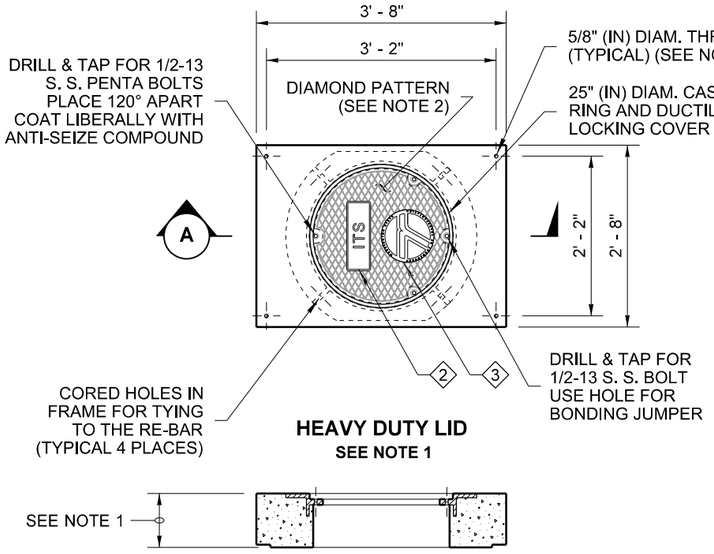
STANDARD PLAN J-60.05-01

SHEET 3 OF 3 SHEETS

APPROVED FOR PUBLICATION

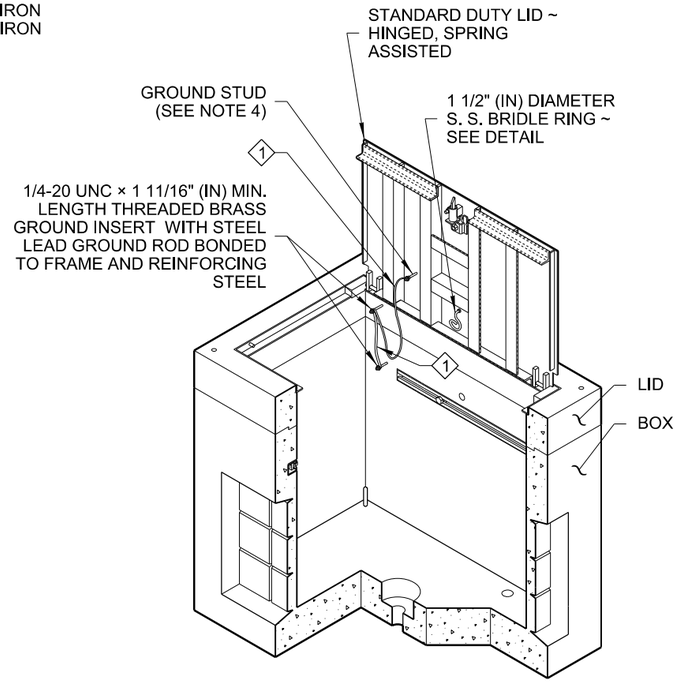
STATE DESIGN ENGINEER

Washington State Department of Transportation



HEAVY DUTY LID
SEE NOTE 1

SECTION (A)
(LID NOT SHOWN)



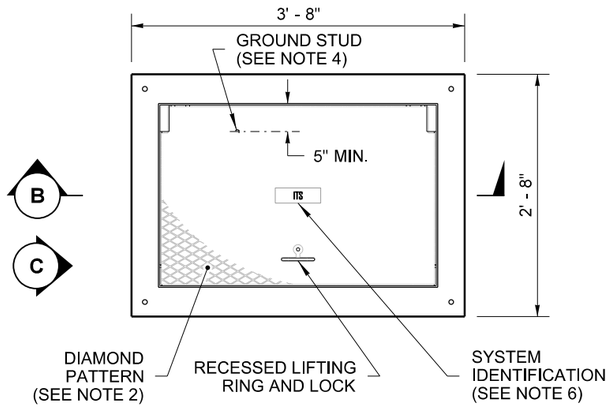
ISOMETRIC CUTAWAY

1. EQUIPMENT BONDING JUMPER (SEE NOTE 5)
2. SYSTEM IDENTIFICATION (SEE NOTE 6)
3. AGENCY LOGO (SEE DETAIL, SHEET 2)

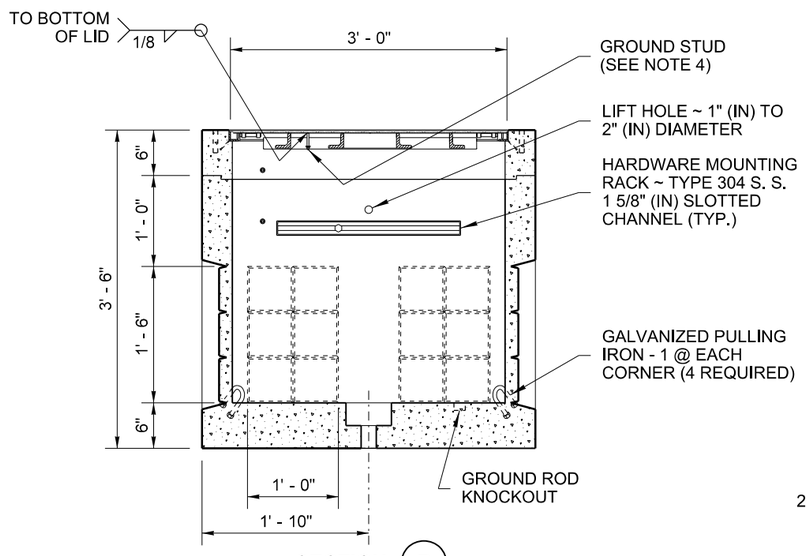
DRAWN BY: LISA CYFORD

NOTES

1. The Heavy Duty Lid thickness varies by installation type:
   a.) 9" (in) for all new installations
   b.) 6" (in) for existing boxes with no roadway overlay
   c.) Such that it is flush with the surface of the new overlay, when a new overlay is specified
2. Minimum lid thickness shown. The diamond pattern shall be a minimum of 3/32" (in) thick.
3. Slip-resistant lids shall be identified with a permanent marking on the underside of the lid, indicating the type of surface treatment (see Contract Documents for details) and the year of manufacture. The marking shall use 1/8" (in) thick lines formed with a weld bead, and shall be placed prior to galvanizing.
4. For Standard Duty Lids, attach a 1/4-20 UNC × 1" (in) S. S. ground stud, coated with anti-sieze compound. For Heavy Duty Lids, install a 1/2-13 UNC × 1 1/4" (in) S. S. bolt in a 5/8" (in) diameter cored hole in the ductile iron lid gusset as a ground stud. All ground studs shall include (3) S. S. nuts and (2) S. S. flat washers. See **Standard Plan J-90.50** for grounding and bonding details.
5. The bonding jumper between the lid and frame shall be #8 AWG (min.) x 4' (ft) tinned braided copper.
6. System identification letters shall use 1/8" (in) wide lines. Cover marking for steel lids shall be formed by casting or with a mild steel weld bead. Cover marking for ductile iron lids shall be recessed. See **COVER MARKING DETAIL** and **Standard Specification section 9-29.2(4)** for additional details. Ductile iron lids shall also provide a minimum 1 1/2" (in) wide x 3 1/2" high x 3/16" (in) thick, flat area for lifting purposes.
7. Cement concrete shall be Class 4000.
8. Plastic plugs shall be put into the lid inserts after fabrication and the lid installation.
9. Conduit Capacity = 40 inches (sum total of all conduit diameters).
10. This drawing depicts a typical Pull Box assembly. Reinforcing not shown. Each manufacturer's Pull Box assembly will vary. Refer to the approved manufacturer's shop drawings for all dimensions and the actual arrangement.
11. The lid is an assembly consisting of the metal lid and frame, reinforcing steel, brass ground inserts, and concrete.
12. #3 reinforcing bar shall be capable of being bent out of the way and restored, to allow for conduit installation.

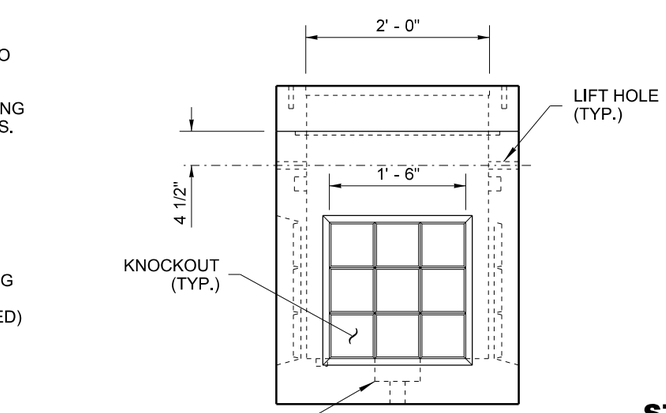


TOP



SECTION (B)

PULL BOX ASSEMBLY
(SHOWN WITH STANDARD DUTY LID)



VIEW (C)

PULL BOX

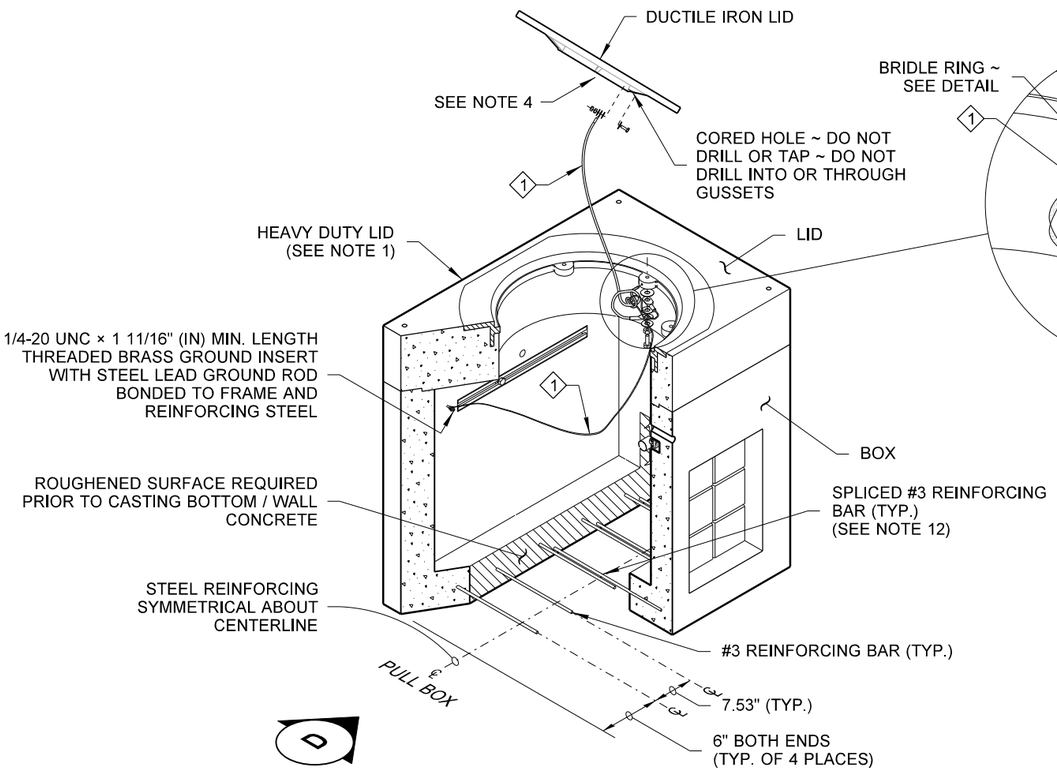
STANDARD PLAN J-90.10-03

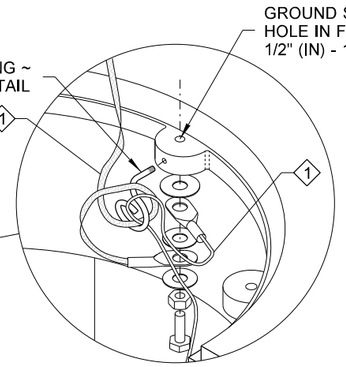
SHEET 1 OF 2 SHEETS

APPROVED FOR PUBLICATION

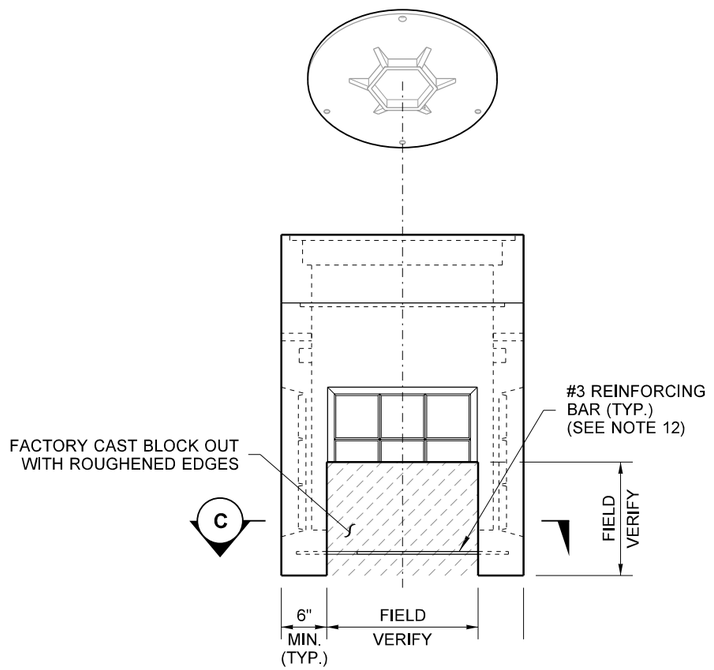
STATE DESIGN ENGINEER

Washington State Department of Transportation





ISOMETRIC CUTAWAY



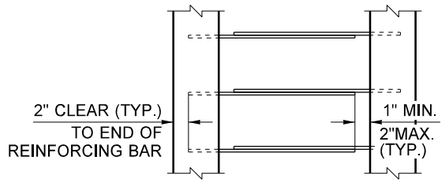
VIEW (D)

OPEN BOTTOM PULL BOX ASSEMBLY

(SHOWN WITH HEAVY DUTY LID)

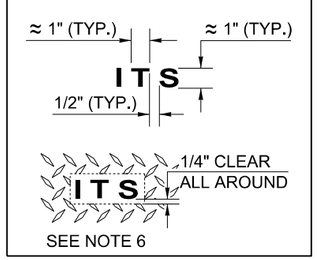
SEE **PULL BOX**, SHEET 1, FOR DIMENSIONS NOT SHOWN

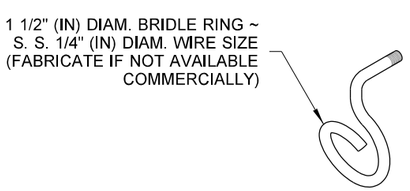
* BOLTS, NUTS AND WASHERS ~ **ASTM F593 OR A193, TYPE 304 OR TYPE 316** STAINLESS STEEL (S.S.)



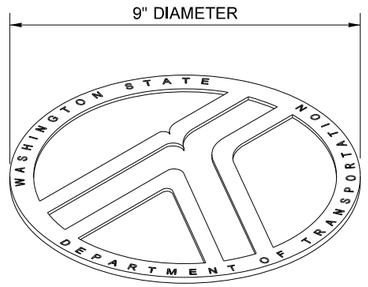
SECTION (C)

COVER MARKING DETAIL





BRIDLE RING DETAIL



LOGO DETAIL

PULL BOX

STANDARD PLAN J-90.10-03

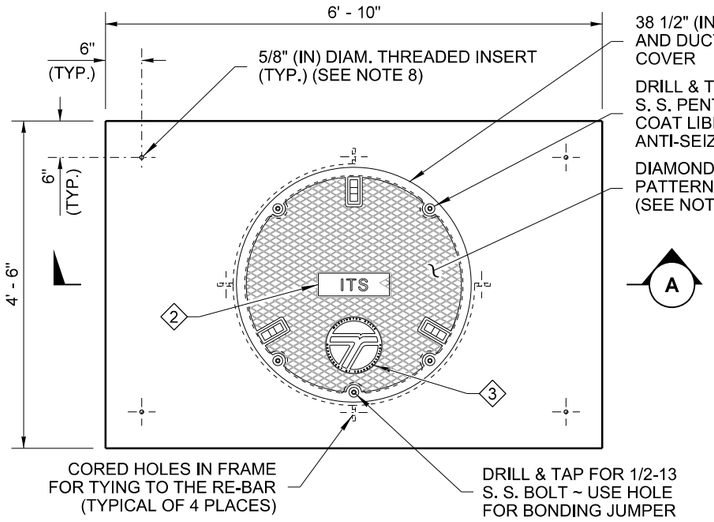
SHEET 2 OF 2 SHEETS

APPROVED FOR PUBLICATION

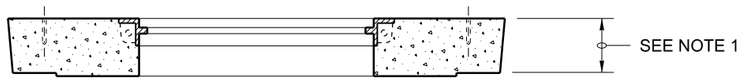
STATE DESIGN ENGINEER

Washington State Department of Transportation

DRAWN BY: LISA CYFORD

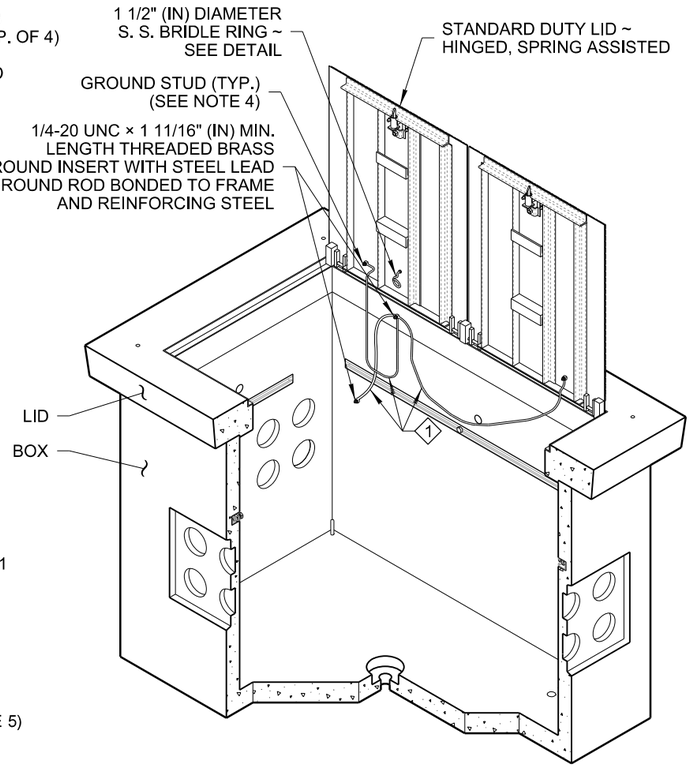


HEAVY DUTY LID
SEE NOTE 1



SECTION (A)

(DUCTILE IRON COVER NOT SHOWN)

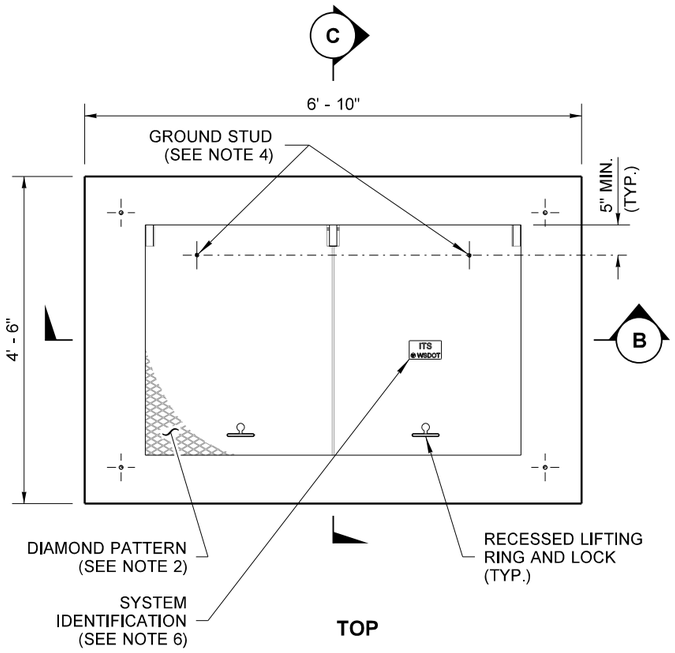


ISOMETRIC CUTAWAY

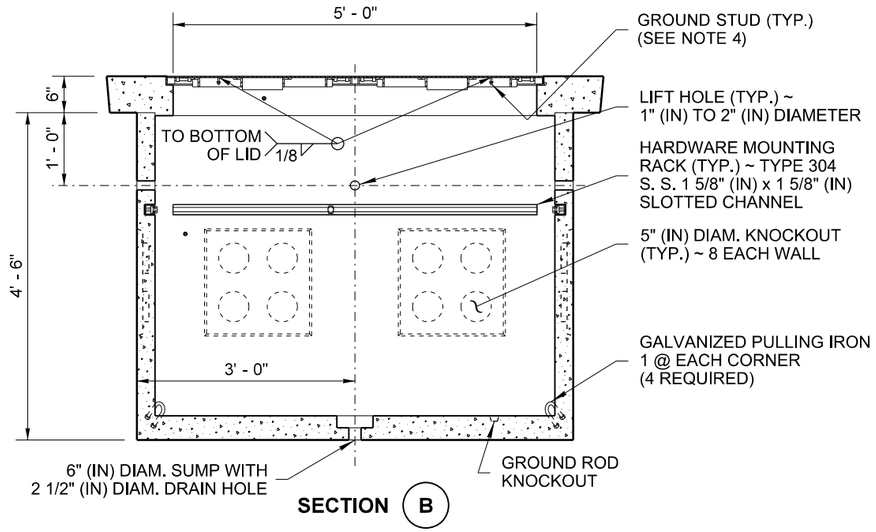
1 EQUIPMENT BONDING JUMPER (SEE NOTE 5)

2 SYSTEM IDENTIFICATION (SEE NOTE 6)

3 AGENCY LOGO (SEE DETAIL, SHEET 2)

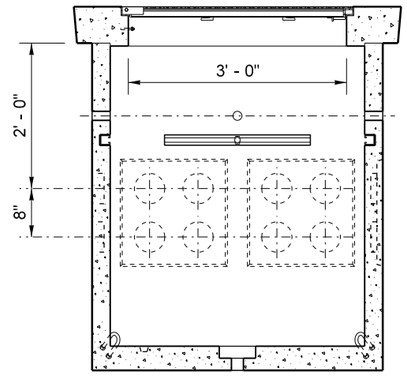


TOP



SECTION (B)

CABLE VAULT
(SHOWN WITH STANDARD DUTY LID)



VIEW (C)

NOTES

1. The Heavy Duty Lid thickness varies by installation type:
   a.) 9" (in) for all new installations
   b.) 6" (in) for existing boxes with no roadway overlay
   c.) Such that it is flush with the surface of the new overlay, when a new overlay is specified
2. Minimum lid thickness shown. The diamond pattern shall be a minimum of 3/32" (in) thick.
3. Slip-resistant lids shall be identified with a permanent marking on the underside of the lid, indicating the type of surface treatment (see Contract Documents for details) and the year of manufacture. The marking shall use 1/8" (in) thick lines formed with a weld bead, and shall be placed prior to galvanizing.
4. For Standard Duty Lids, attach a 1/4-20 UNC × 1" (in) S. S. ground stud, coated with anti-sieze compound. For Heavy Duty Lids, install a 1/2-13 UNC × 1 1/4" (in) S. S. bolt in a 5/8" (in) diameter cored hole in the ductile iron lid gusset as a ground stud. All ground studs shall include (3) S. S. nuts and (2) S. S. flat washers. See **Standard Plan J-90.50** for grounding and bonding details.
5. The bonding jumper between the lid and frame shall be #8 AWG (min.) x 4' (ft) tinned braided copper.
6. System identification letters shall use 1/8" (in) wide lines. Cover markings for steel lids shall be formed by casting or with a mild steel weld bead. Cover marking for ductile iron lids shall be recessed. See **COVER MARKING DETAIL** and **Standard Specification section 9-29.2(4)** for additional details. Ductile iron lids shall also provide a minimum 1 1/2" (in) wide x 3 1/2" high x 3/16" (in) thick flat area for lifting purposes.
7. Cement concrete shall be Class 4000.
8. Plastic plugs shall be put into the lid inserts after fabrication and the lid installation.
9. Conduit Capacity = 60 inches (sum total of all conduit diameters).
10. This drawing depicts a typical assembly. Reinforcing not shown. Each manufacturer's assembly will vary. Refer to the approved manufacturer's shop drawings for all dimensions and the actual arrangement.
11. The lid is an assembly consisting of the metal lid(s) and frame, reinforcing steel, brass ground inserts, and concrete.
12. #3 reinforcing bar shall be capable of being bent out of the way and restored, to allow for conduit installation.

CABLE VAULT

STANDARD PLAN J-90.20-03

SHEET 1 OF 2 SHEETS

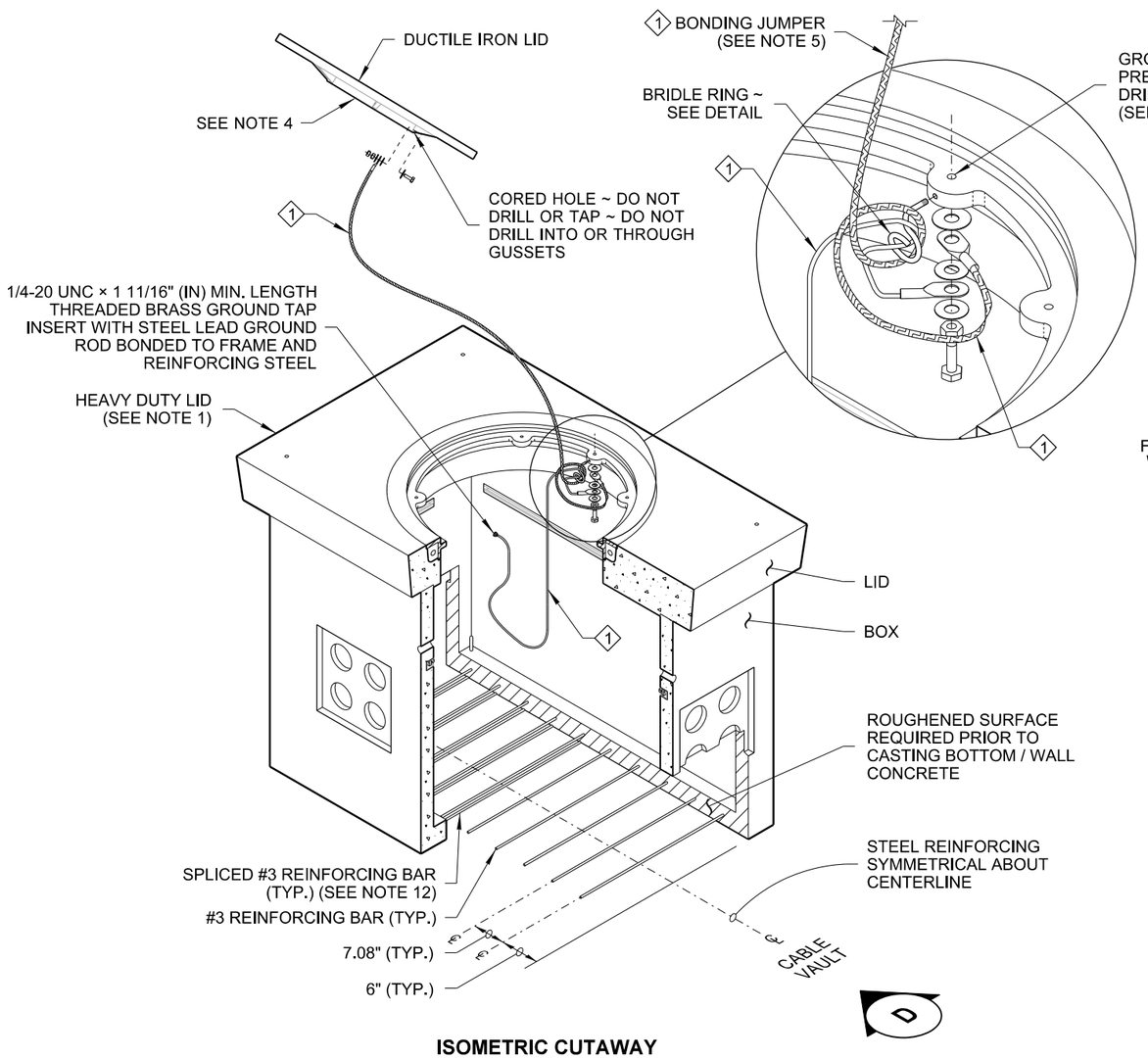
APPROVED FOR PUBLICATION

STATE DESIGN ENGINEER

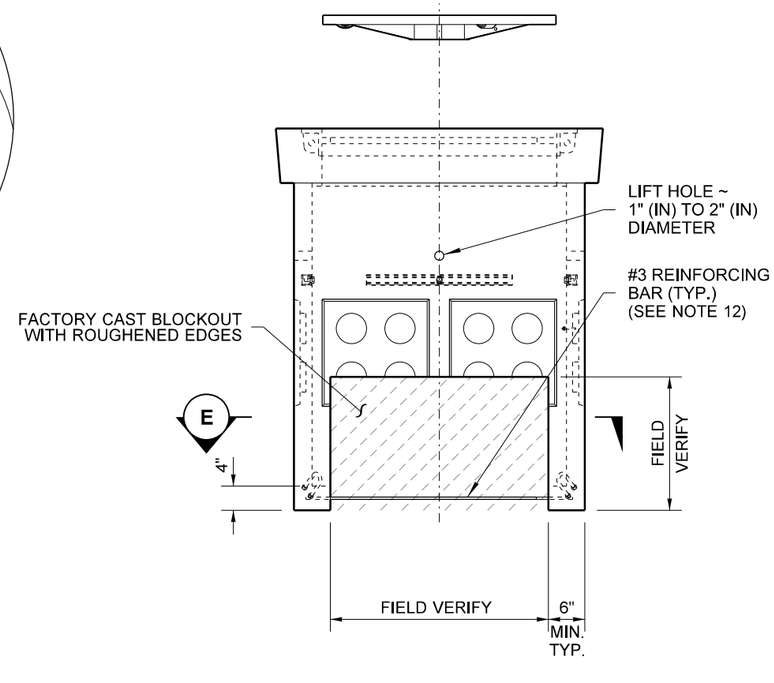
Washington State Department of Transportation

DRAWN BY: LISA CYFORD

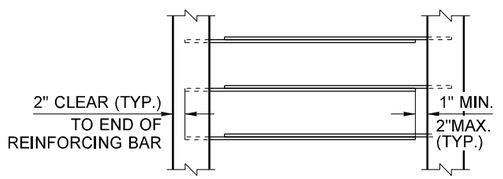
DRAWN BY: LISA CYFORD



ISOMETRIC CUTAWAY



VIEW D



SECTION E

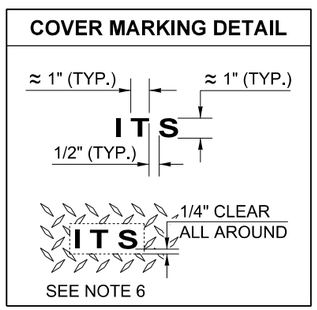
* BOLTS, NUTS AND WASHERS ~ **ASTM F593 OR A193, TYPE 304 OR TYPE 316** STAINLESS STEEL (S.S.)

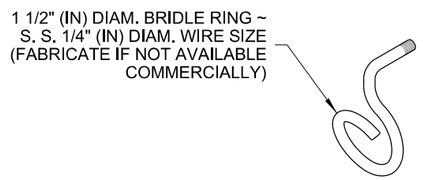
OPEN BOTTOM CABLE VAULT

(SHOWN WITH HEAVY DUTY LID)

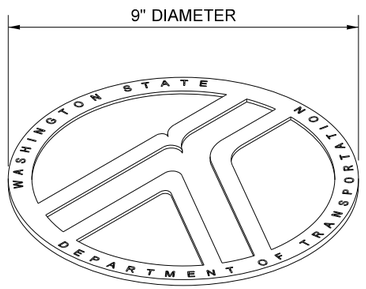
SEE **CABLE VAULT**, SHEET 1, FOR DIMENSIONS NOT SHOWN

COVER MARKING DETAIL





BRIDLE RING DETAIL



LOGO DETAIL

CABLE VAULT

STANDARD PLAN J-90.20-03

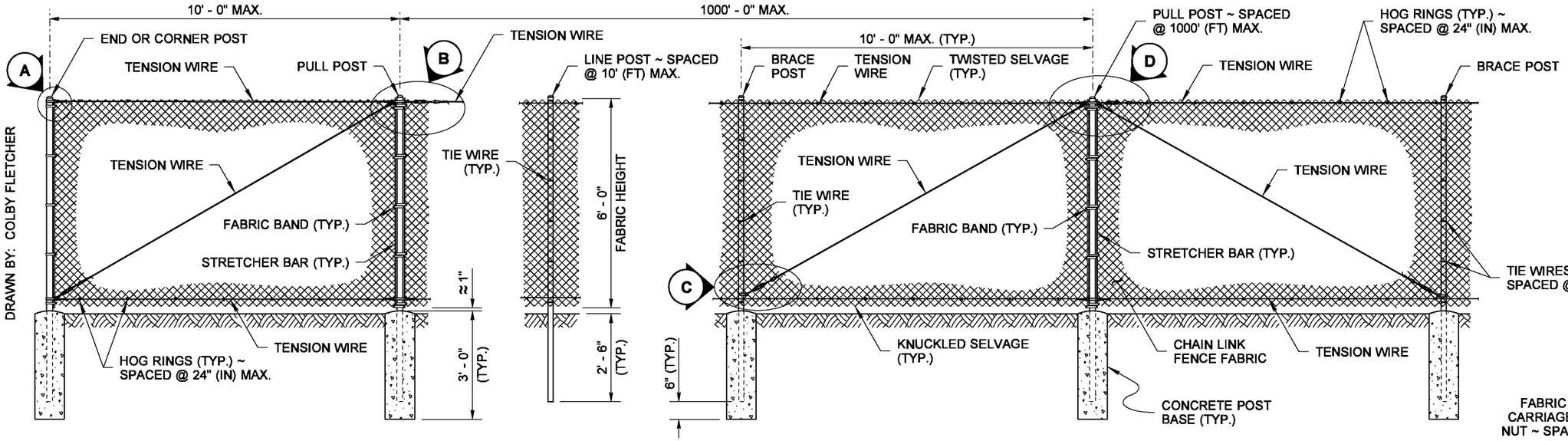
SHEET 2 OF 2 SHEETS

APPROVED FOR PUBLICATION

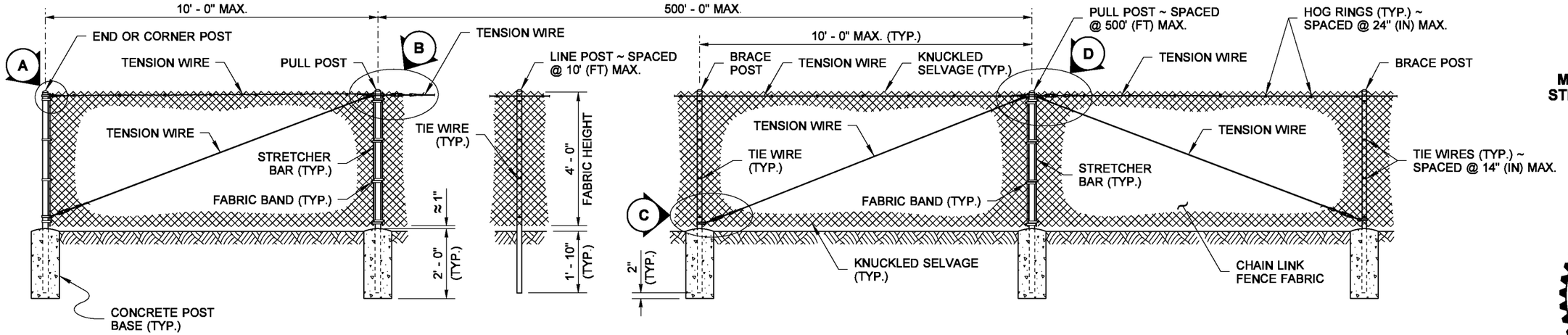
STATE DESIGN ENGINEER

Washington State Department of Transportation

DRAWN BY: COLBY FLETCHER

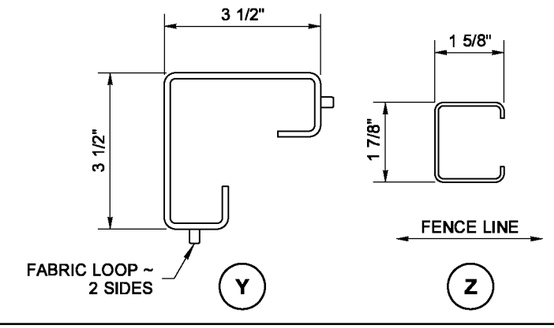


TYPE 3



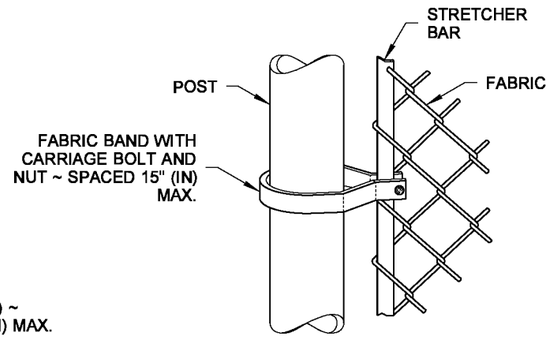
TYPE 4

POST AND RAIL SPECIFICATIONS			
POST	PIPE	ROLL FORMED	
	NOM. SIZE (SCH. 40) I.D.	SECTION	WEIGHT (lb/ft)
END, CORNER, OR PULL POST	2 1/2" DIAM.	Y	5.10
LINE OR BRACE POST	2" DIAM.	Z	1.85



NOTES

1. All concrete post bases shall be 10" (in) minimum diameter.
2. Along the top and bottom, using Hog Rings, fasten the Chain Link Fence Fabric to the Tension Wire within the limits of the first full fabric weave.
3. Details are illustrative and shall not limit hardware design or post selection of any particular fence type.
4. Fencing shall be used for security and boundary delineation only.



METHOD OF FASTENING STRETCHER BAR TO POST

EDWARD PATRICK BARRY
STATE OF WASHINGTON
34363
REGISTERED
PROFESSIONAL ENGINEER

CHAIN LINK FENCE TYPES 3 AND 4

STANDARD PLAN L-20.10-03

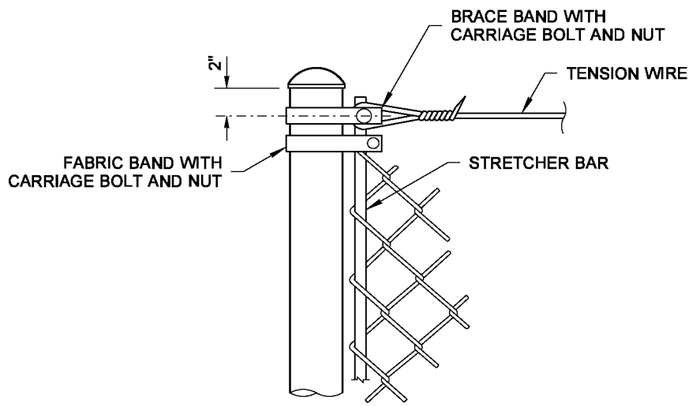
SHEET 1 OF 2 SHEETS

APPROVED FOR PUBLICATION

STATE DESIGN ENGINEER

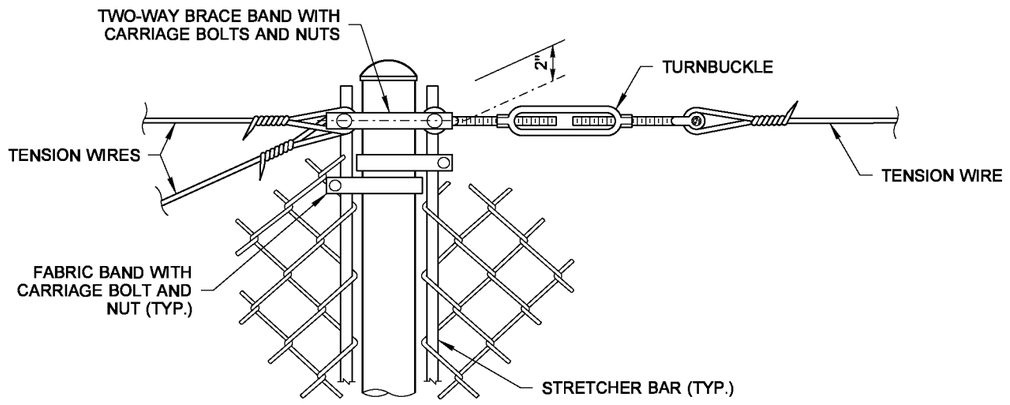
Washington State Department of Transportation

DRAWN BY: COLBY FLETCHER



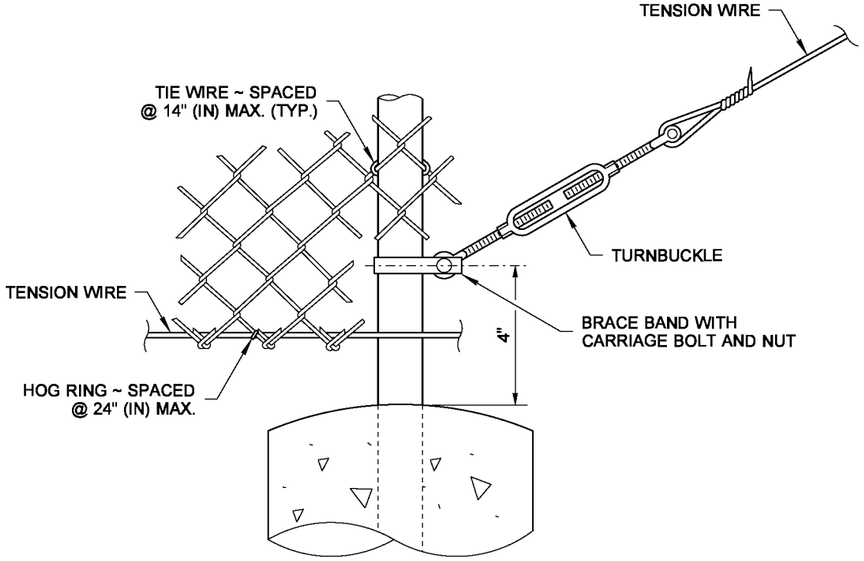
END OR CORNER POST

DETAIL (A)



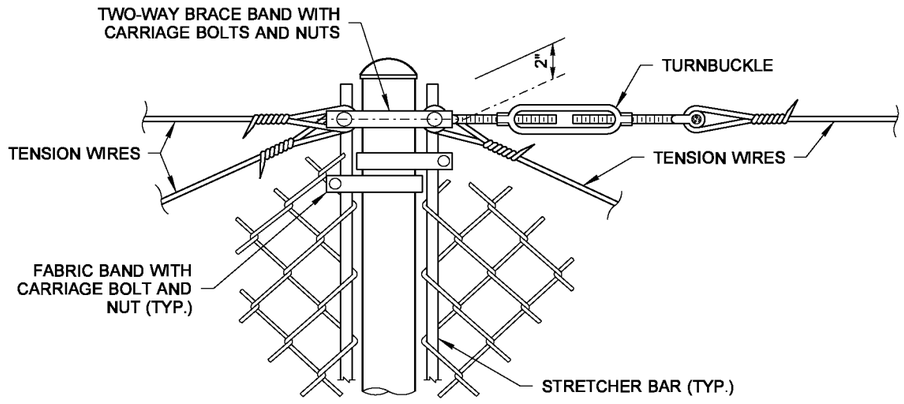
PULL POST (AT END OR CORNER)

DETAIL (B)



BRACE POST

DETAIL (C)



PULL POST (WITHIN RUN)

DETAIL (D)

EDWARD PATRICK BARRY
STATE OF WASHINGTON
34363
REGISTERED
PROFESSIONAL ENGINEER

CHAIN LINK FENCE TYPES 3 AND 4

STANDARD PLAN L-20.10-03

SHEET 2 OF 2 SHEETS

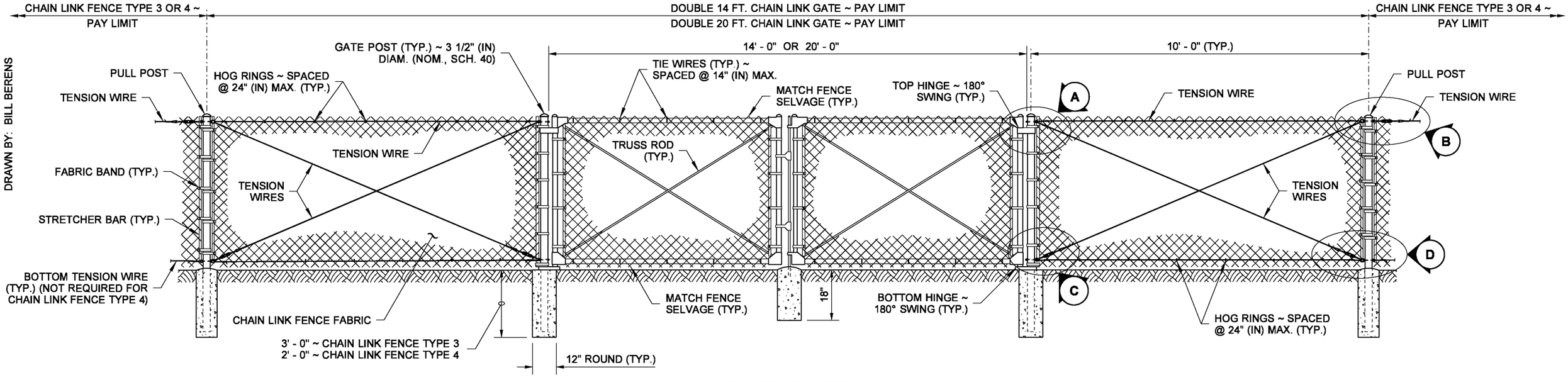
APPROVED FOR PUBLICATION

STATE DESIGN ENGINEER

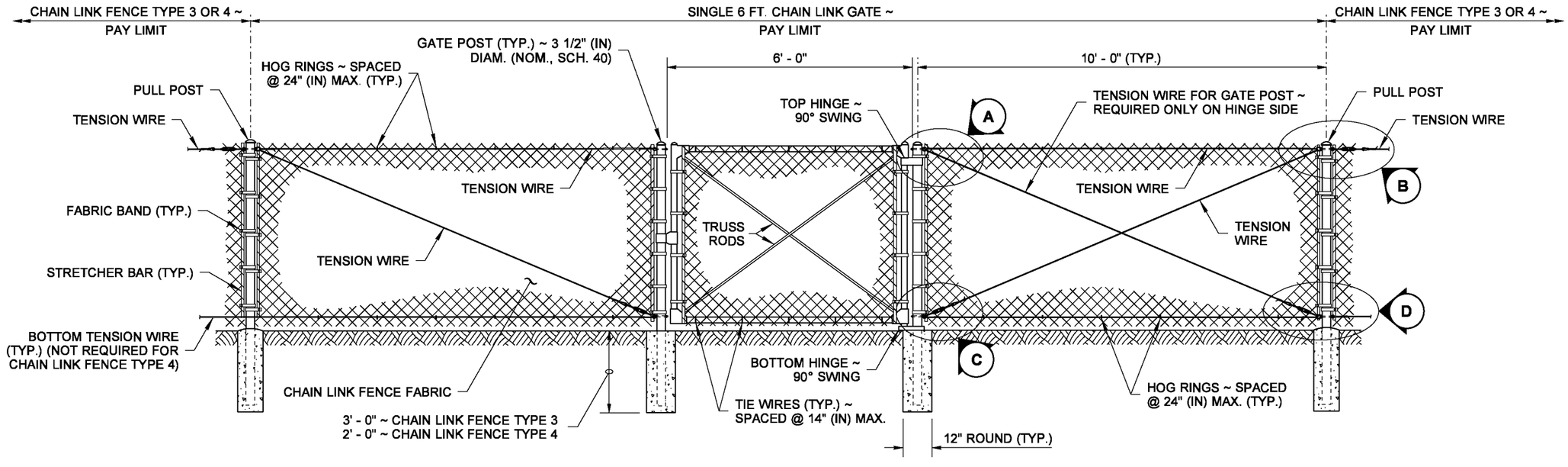
Washington State Department of Transportation

NOTES

1. Materials shall meet the requirements of **Standard Specification 9-16**.



DOUBLE GATE



SINGLE GATE

EDWARD PATRICK BARRY
STATE OF WASHINGTON
34363
REGISTERED
PROFESSIONAL ENGINEER

CHAIN LINK GATE

STANDARD PLAN L-30.10-02

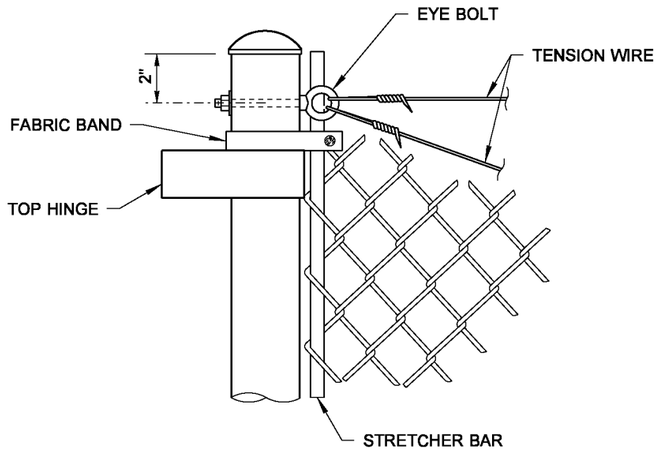
SHEET 1 OF 2 SHEETS

APPROVED FOR PUBLICATION

STATE DESIGN ENGINEER

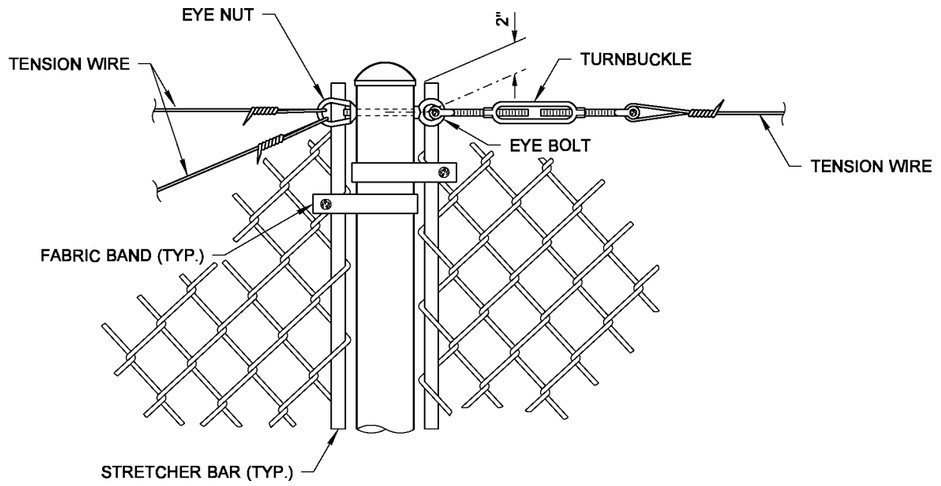
Washington State Department of Transportation

DRAWN BY: BILL BERENS



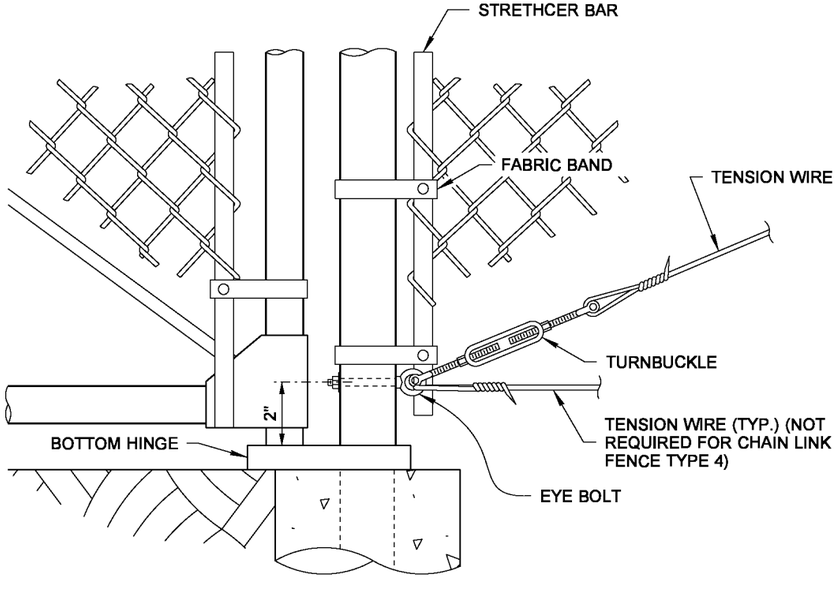
GATE POST

DETAIL (A)



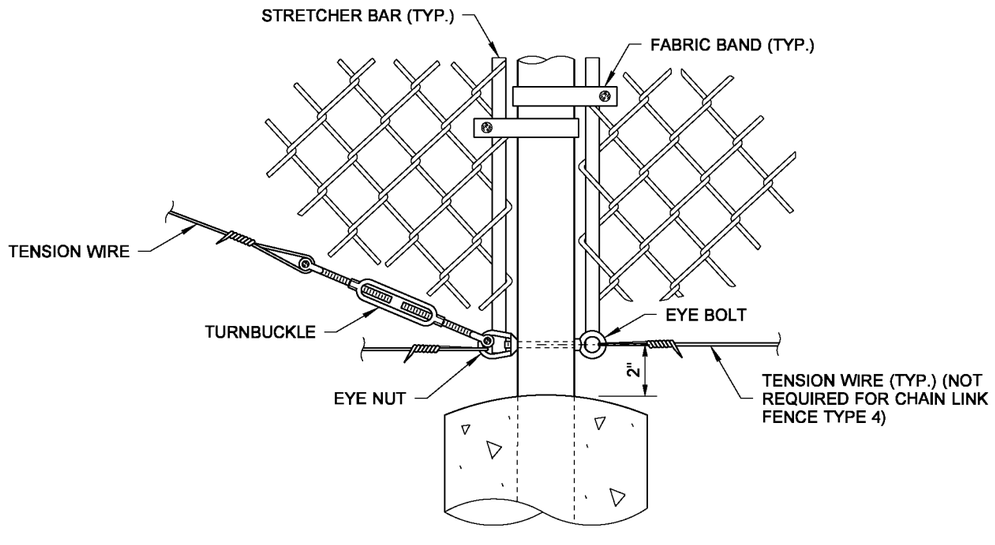
PULL POST

DETAIL (B)



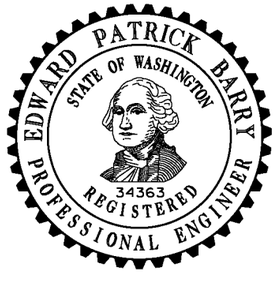
GATE POST

DETAIL (C)



PULL POST

DETAIL (D)



CHAIN LINK GATE

STANDARD PLAN L-30.10-02

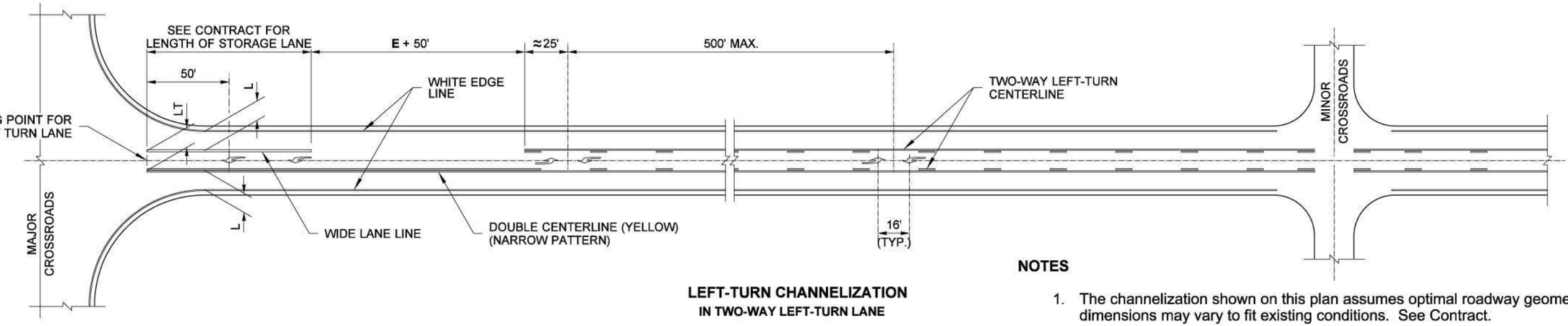
SHEET 2 OF 2 SHEETS

APPROVED FOR PUBLICATION

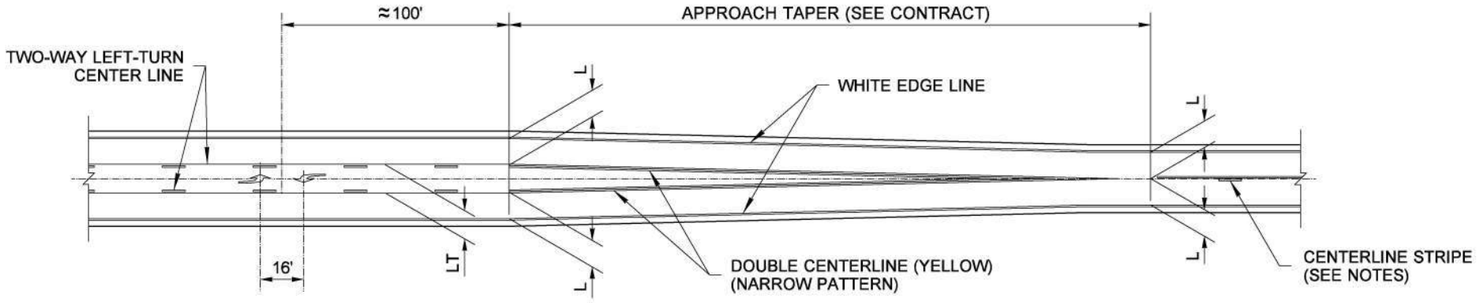
STATE DESIGN ENGINEER

Washington State Department of Transportation

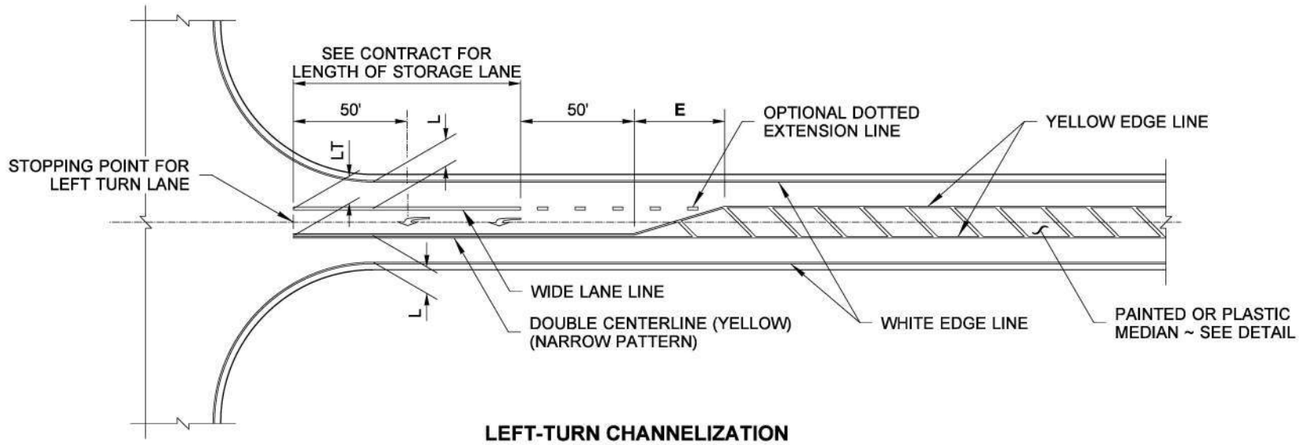
DRAWN BY: FERN LIDDELL



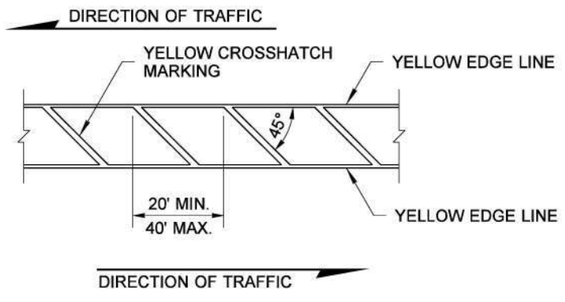
LEFT-TURN CHANNELIZATION
IN TWO-WAY LEFT-TURN LANE



TWO-WAY LEFT-TURN LANE
TRANSITION



LEFT-TURN CHANNELIZATION
IN PAINTED MEDIAN



PAINTED OR PLASTIC MEDIAN
COMPOSED OF LONGITUDINAL MARKINGS

NOTES

1. The channelization shown on this plan assumes optimal roadway geometric design. The dimensions may vary to fit existing conditions. See Contract.
2. The channelization shown on this plan is for a two-lane highway. The channelization plan may be used on four-lane undivided highways with the appropriate considerations.
3. Centerline striping on the approach to raised channelization shall be No Pass in accordance with MUTCD figure 3B-15. Centerline striping on the departure from raised channelization shall be determined by an engineering study.
4. Centerline srtiping on the approach to and departure from painted channelization shall be determined by an engineering study.
5. Centerline striping on four-lane undivided highways shall be a double centerline.
6. The two Type 2L (SL) Traffic Arrows shown in the left-turn storage lane are optional, but recommended. Arrows may be added for longer storage lanes or deleted for shorter storage lanes. See Contract Plans.

POSTED SPEED	DIMENSION E ①
60 MPH	180'
55 MPH	180'
50 MPH	180'
45 MPH	180'
40 MPH	120'
35 MPH	120'
30 MPH	120'
25 MPH	120'
20 MPH	120'

① Can be reduced to a minimum of 50' to increase storage capacity.

LEGEND

L = Lane Width. See Contract for specified lane widths.
L T = Left -Turn Lane width. See Contract

Type 2L (SL) Traffic Arrow

BRIAN J. WALSH
STATE OF WASHINGTON
36103
REGISTERED
PROFESSIONAL ENGINEER

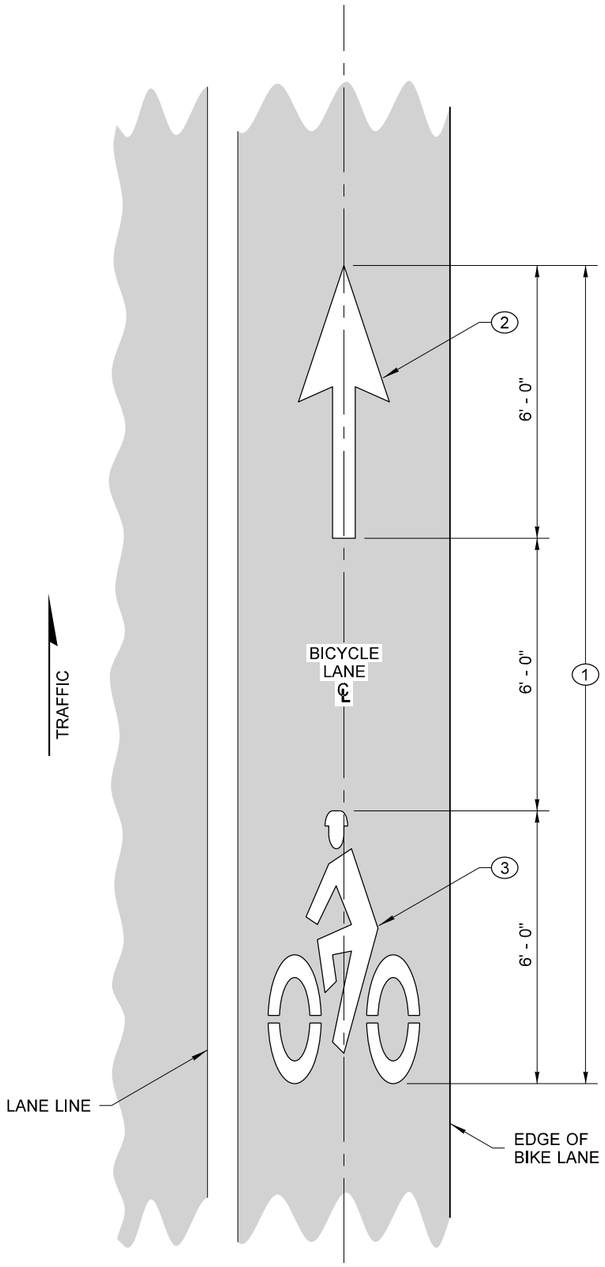
Walsh, Brian
Sep 23 2020 2:03 PM

TWO-WAY LEFT-TURN AND MEDIAN CHANNELIZATION STANDARD PLAN M-3.40-04

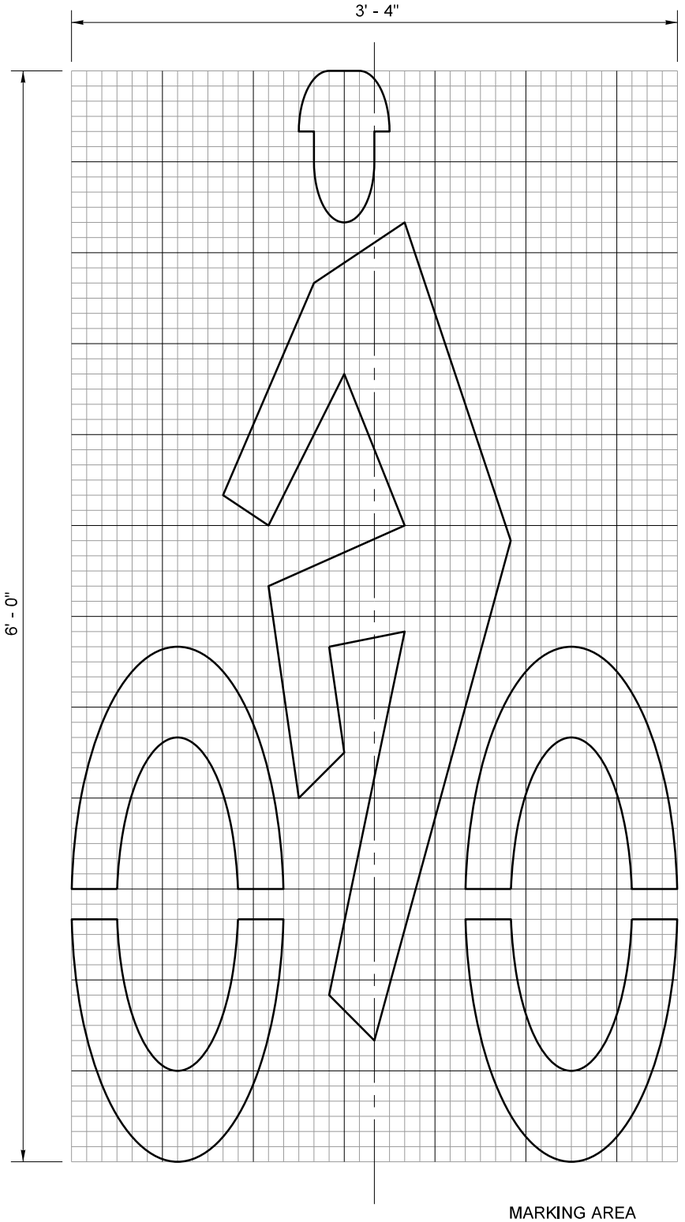
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION
Date: 2020.09.25 14:55:19 -07'00'
STATE DESIGN ENGINEER
Washington State Department of Transportation

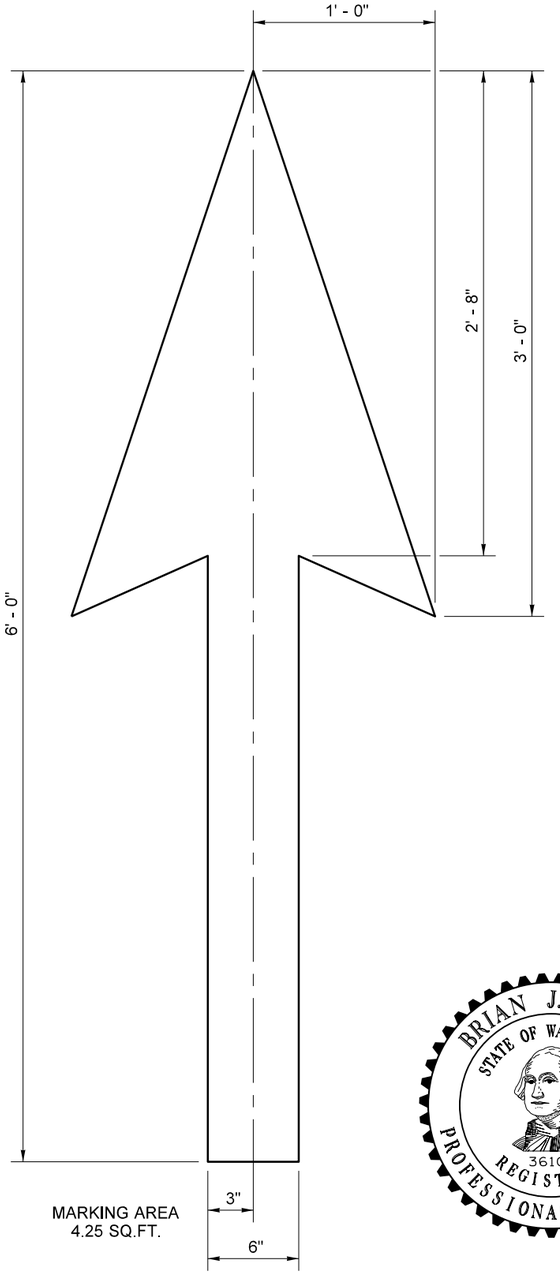
DRAWN BY: MARK SUJKA



BICYCLE LANE SYMBOL LAYOUT



BIKE RIDER SYMBOL DETAIL



BIKE LANE ARROW DETAIL

KEY NOTES

1. Bid Item "Bicycle Lane Symbol" includes Bike Lane Arrow and Bike Rider Symbol.
2. 2' (ft) x 6' (ft) White Bike Lane Arrow.
3. Bike Rider Symbol.

GENERAL NOTE

See Contract for location and material requirements.

BRIAN J. WALSH
STATE OF WASHINGTON
36103
REGISTERED
PROFESSIONAL ENGINEER

BICYCLE LANE SYMBOL LAYOUT

STANDARD PLAN M-9.50-02

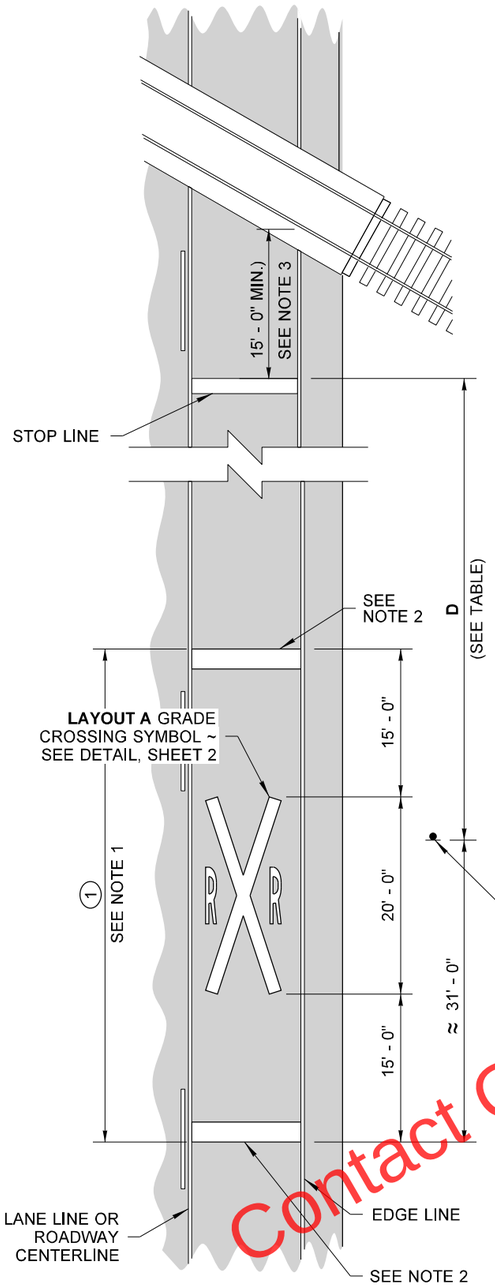
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

STATE DESIGN ENGINEER

Washington State Department of Transportation

DRAWN BY: FERN LIDDELL



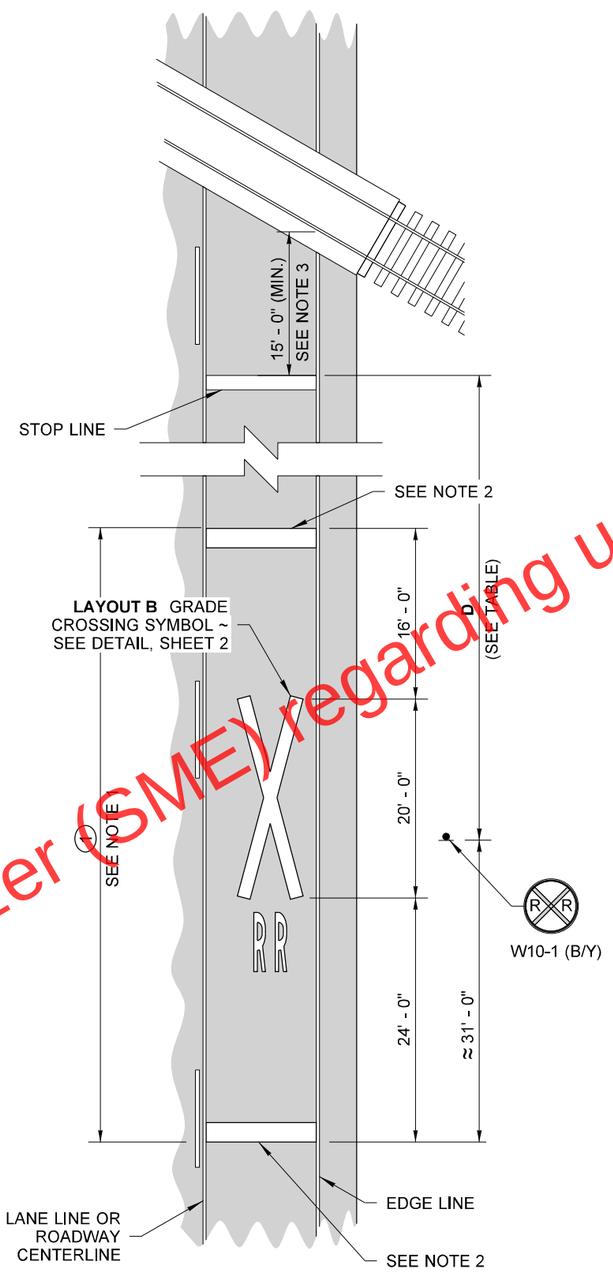
MPH	D*
25	50 Ft.
30	100 Ft.
35	150 Ft.
40	225 Ft.
45	300 Ft.
50	375 Ft.
55	450 Ft.
60	550 Ft.
65	650 Ft.

* DIMENSIONS SHOWN ARE APPROXIMATE (SEE CONTRACT)

① TOTAL MARKING AREA (PER 12' (FT) WIDE LANE) = 109.75 SQ.FT.

LAYOUT A

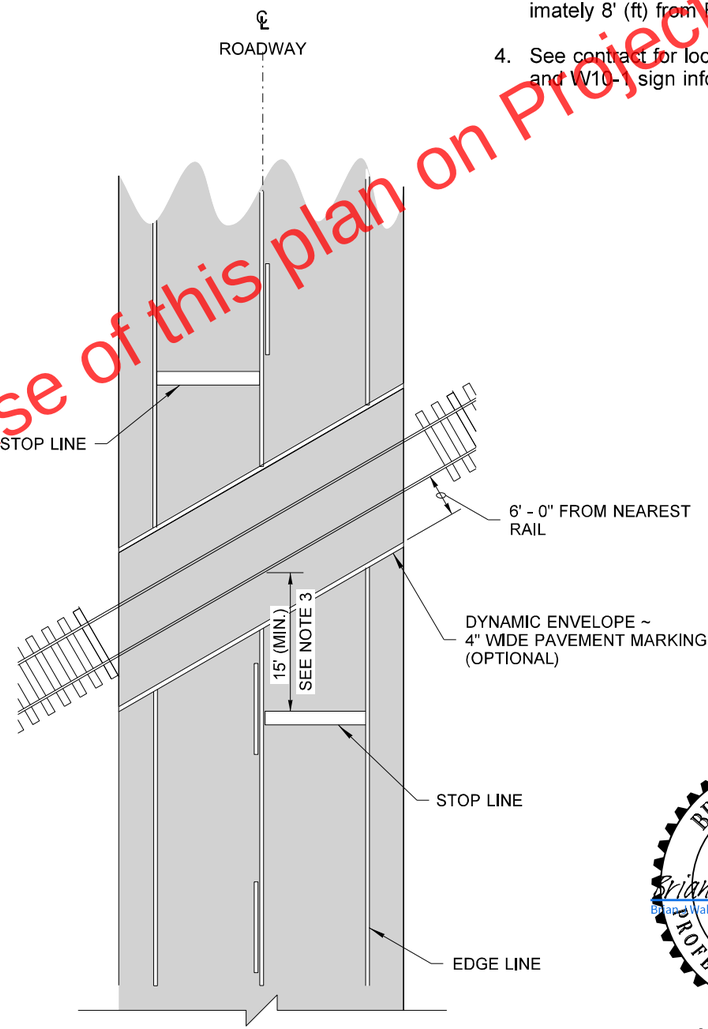
STANDARD SYMBOL



① TOTAL MARKING AREA (PER 12' (FT) WIDE LANE) = 111.59 SQ.FT.

LAYOUT B

(WSDOT PRIMARY ON RURAL ROADWAYS)



RR CROSSING DETAIL

(TRACKS OMITTED FOR CLARITY)

GENERAL NOTES

1. Bid Item "Railroad Crossing Symbol" includes "X" symbol, letters, and two 24" (in) white transverse lines.
2. 24" (in) white transverse line.
3. Place Stop Line 15' (ft) minimum from nearest rail. If gate is present, place stop line approximately 8' (ft) from RR gate.
4. See contract for location, material requirements, and W10-1 sign information

Contact Connie Raezer (SME) regarding use of this plan on Projects

BRIAN J. WALSH
STATE OF WASHINGTON
36103
REGISTERED PROFESSIONAL ENGINEER
Brian J Walsh
Brian J Walsh (Aug 1, 2022 PDT)

Aug 1, 2022

RAILROAD CROSSING LAYOUT

STANDARD PLAN M-11.10-04

SHEET 1 OF 2 SHEETS

APPROVED FOR PUBLICATION

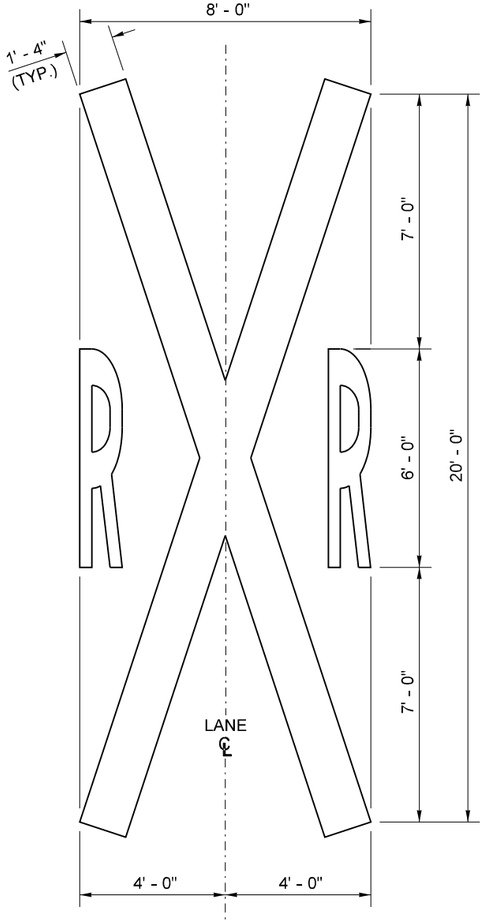
Mark Gaines
Mark Gaines (Aug 2, 2022 10:14 PDT)

Aug 2, 2022

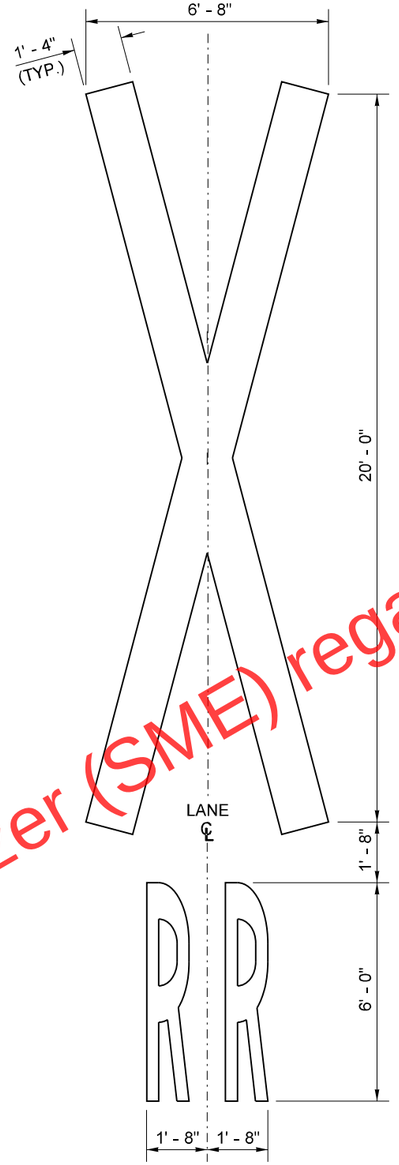
STATE DESIGN ENGINEER

Washington State Department of Transportation

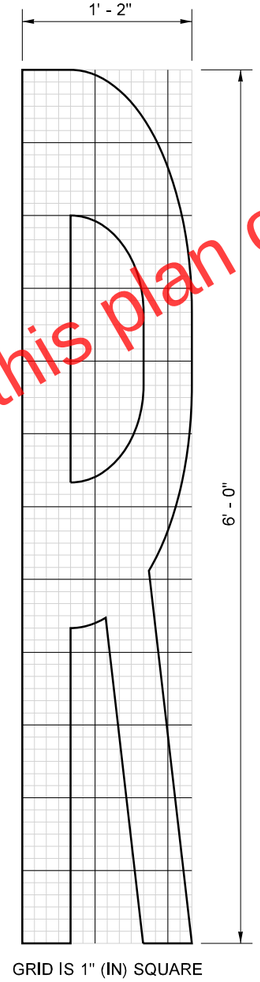
DRAWN BY: FERN LIDDELL



LAYOUT A
GRADE CROSSING SYMBOL DETAIL



LAYOUT B
GRADE CROSSING SYMBOL DETAIL



GRID IS 1" (IN) SQUARE

"R" DETAIL

STANDARD SYMBOL DETAILS

Contact Connie Raezer (SME) regarding use of this plan on Projects

BRIAN J. WALSH
STATE OF WASHINGTON
36103
REGISTERED
PROFESSIONAL ENGINEER

Brian J Walsh
Brian J Walsh (Aug 1, 2022 PDT)

Aug 1, 2022

RAILROAD CROSSING LAYOUT

STANDARD PLAN M-11.10-04

SHEET 2 OF 2 SHEETS

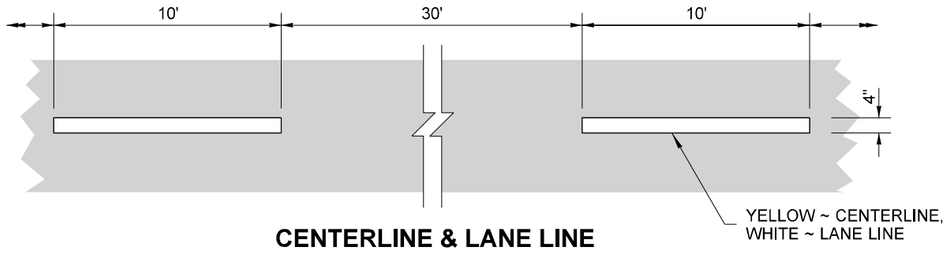
APPROVED FOR PUBLICATION

Mark Gaines
Mark Gaines (Aug 2, 2022 10:14 PDT)

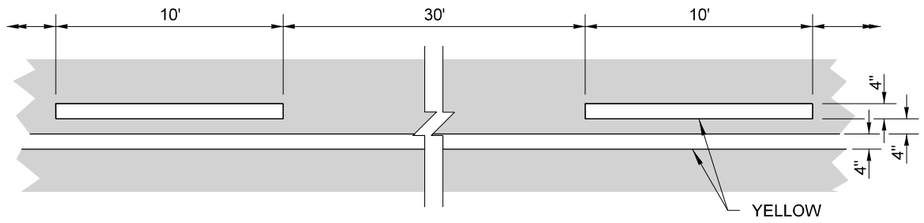
Aug 2, 2022

STATE DESIGN ENGINEER

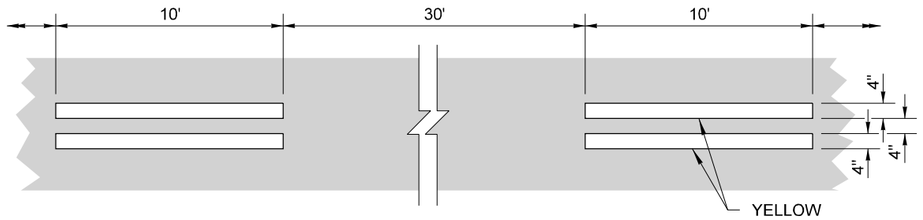
Washington State Department of Transportation



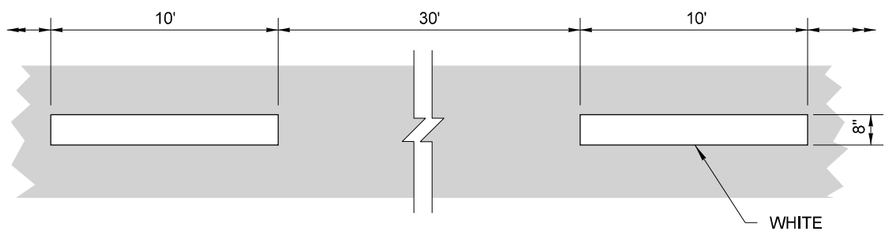
CENTERLINE & LANE LINE



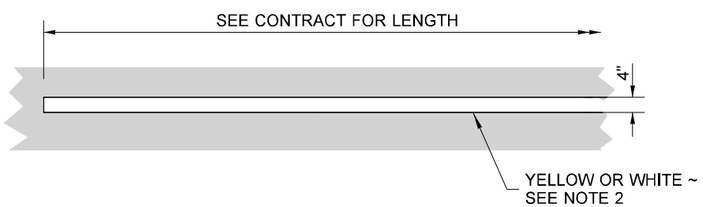
NO-PASS LINE & TWO-WAY LEFT-TURN CENTERLINE



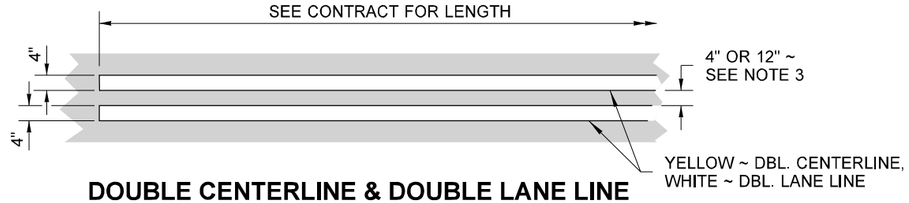
REVERSIBLE LANE LINE



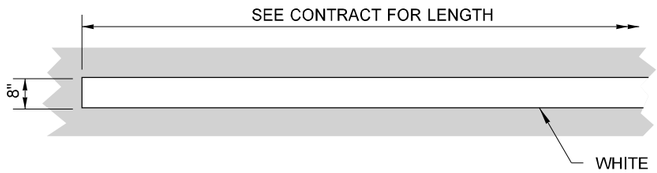
WIDE BROKEN LANE LINE



EDGE LINE & SOLID LANE LINE

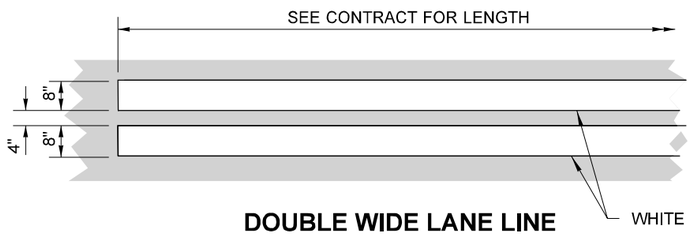


DOUBLE CENTERLINE & DOUBLE LANE LINE

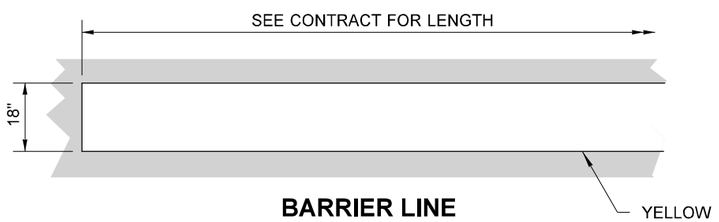


WIDE EDGE LINE & WIDE SOLID LANE LINE

OPTION TO USE AS CIRCULATORY ON ROUNDABOUT APPLICATIONS



DOUBLE WIDE LANE LINE



BARRIER LINE

NOTES

1. Dotted Extension Line shall be the same color as the line it is extending.
2. Edge Line shall be white on the right edge of traveled way, and yellow on the left edge of traveled way (on one-way roadways). Solid Lane Line shall be white.
3. The distance between the lines of the Double Centerline shall be 12" everywhere, except 4" for left-turn channelization and narrow roadways with lane widths of 10 feet or less. Local Agencies (on non-state routes) may specify a 4" distance for all locations.

   The distance between the lines of the Double Lane Line shall be 4".

DRAWN BY: FERN LIDDELL

BRIAN J. WALSH
STATE OF WASHINGTON
36103
REGISTERED
PROFESSIONAL ENGINEER
Brian J Walsh
Brian J Walsh (Aug 1, 2022 PDT)

Aug 1, 2022

LONGITUDINAL MARKING PATTERNS

STANDARD PLAN M-20.10-04

SHEET 1 OF 4 SHEETS

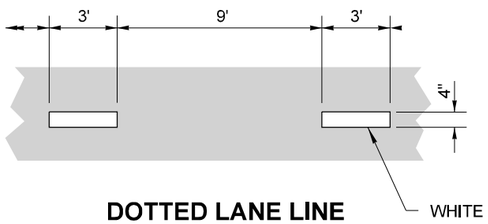
APPROVED FOR PUBLICATION

Mark Gaines
Mark Gaines (Aug 2, 2022 10:17 PDT)

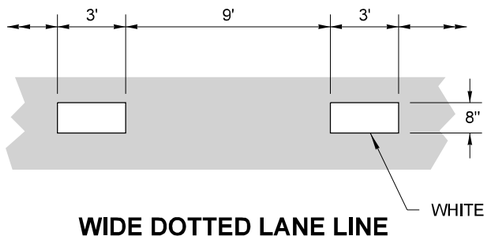
Aug 2, 2022

STATE DESIGN ENGINEER

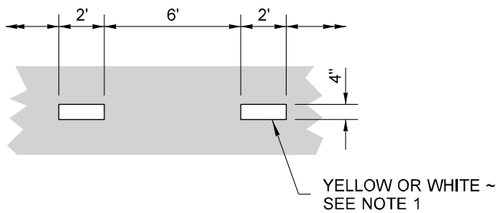
Washington State Department of Transportation



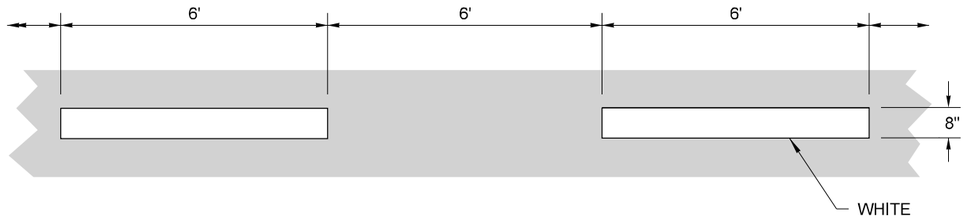
DOTTED LANE LINE



WIDE DOTTED LANE LINE



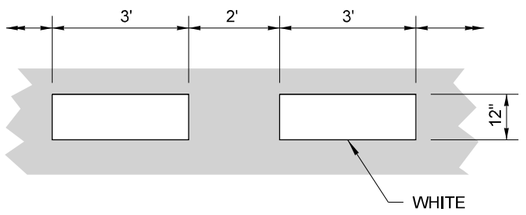
DOTTED EXTENSION LINE



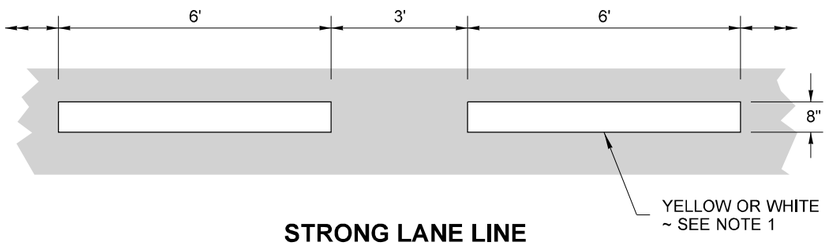
WIDE DOTTED EXTENSION LINE

DRAWN BY: FERN LIDDELL

ROUNDABOUT SPECIFIC LINES

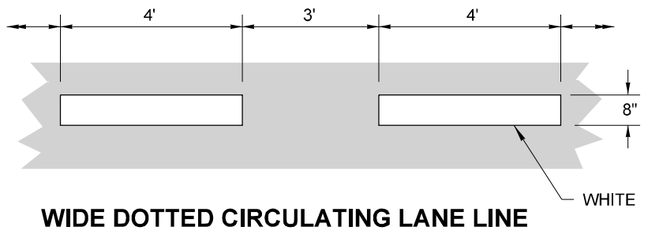


WIDE DOTTED ENTRY LINE



STRONG LANE LINE

OPTION TO USE AS CIRCULATORY ON ROUNDABOUT APPLICATIONS



WIDE DOTTED CIRCULATING LANE LINE

BRIAN J. WALSH
STATE OF WASHINGTON
36103
REGISTERED
PROFESSIONAL ENGINEER

Brian J Walsh
Brian J Walsh (Aug 1, 2022 PDT)

Aug 1, 2022

LONGITUDINAL MARKING PATTERNS

STANDARD PLAN M-20.10-04

APPROVED FOR PUBLICATION

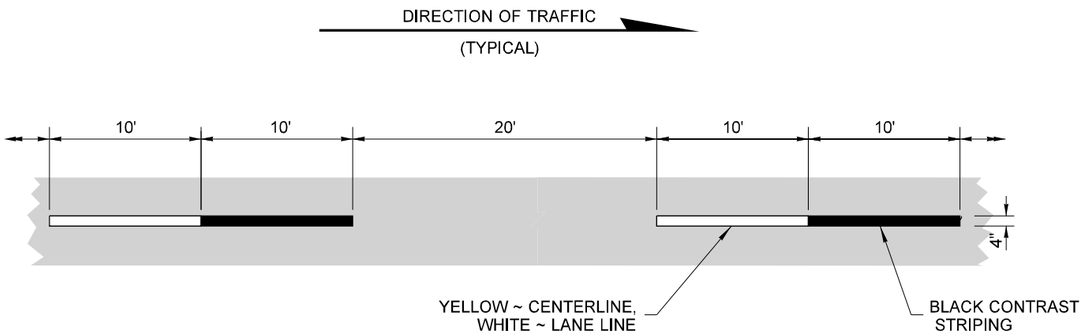
Mark Gaines
Mark Gaines (Aug 2, 2022 10:17 PDT)

Aug 2, 2022

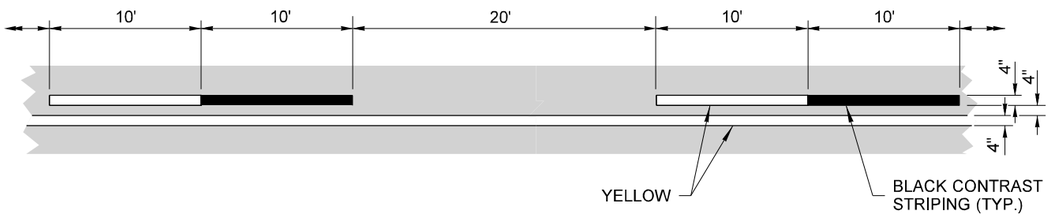
STATE DESIGN ENGINEER

Washington State Department of Transportation

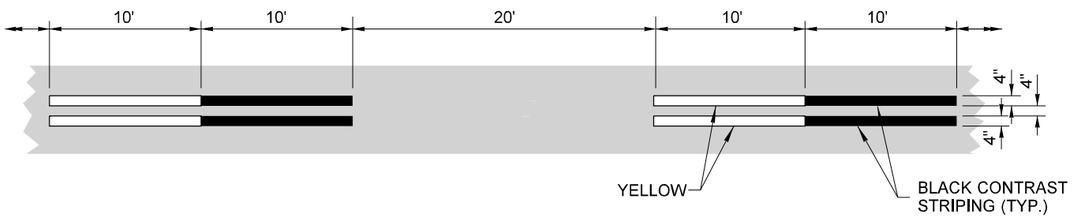
DRAWN BY: FERN LIDDELL



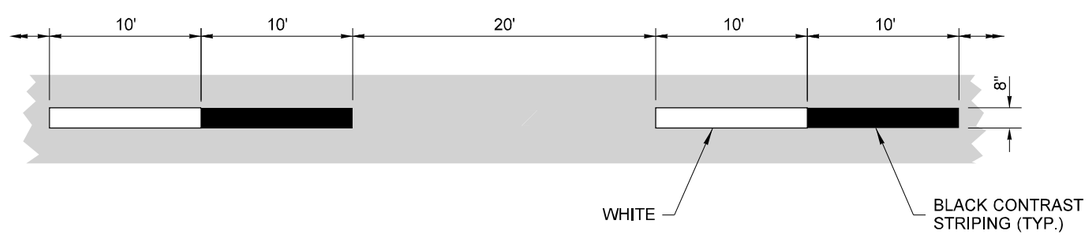
CENTERLINE & LANE LINE



NO-PASS LINE & TWO-WAY LEFT-TURN CENTERLINE



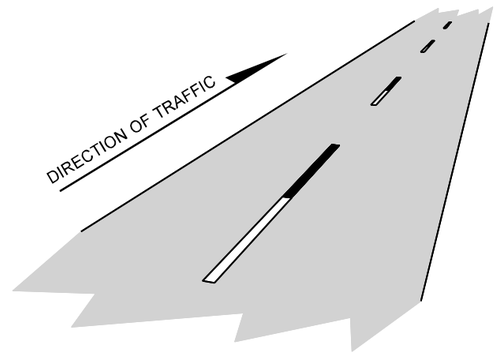
REVERSIBLE LANE LINE



WIDE BROKEN LANE LINE

NOTE

1. Dotted Extension Line shall be the same color as the line it is extending.



ISOMETRIC VIEW

BRIAN J. WALSH
STATE OF WASHINGTON
36103
REGISTERED
PROFESSIONAL ENGINEER

Brian J Walsh
Brian J Walsh (Aug 1, 2022 PDT)

Aug 1, 2022

LONGITUDINAL MARKING PATTERNS

STANDARD PLAN M-20.10-04

SHEET 3 OF 4 SHEETS

APPROVED FOR PUBLICATION

Mark Gaines
Mark Gaines (Aug 2, 2022 10:17 PDT)

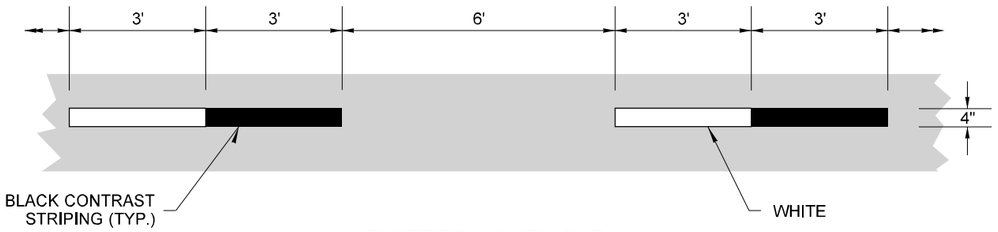
Aug 2, 2022

STATE DESIGN ENGINEER

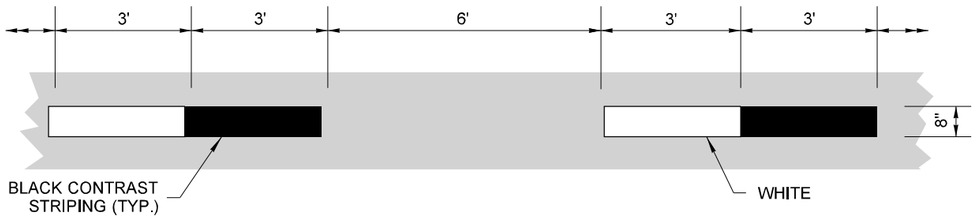
Washington State Department of Transportation

DRAWN BY: FERN LIDDELL

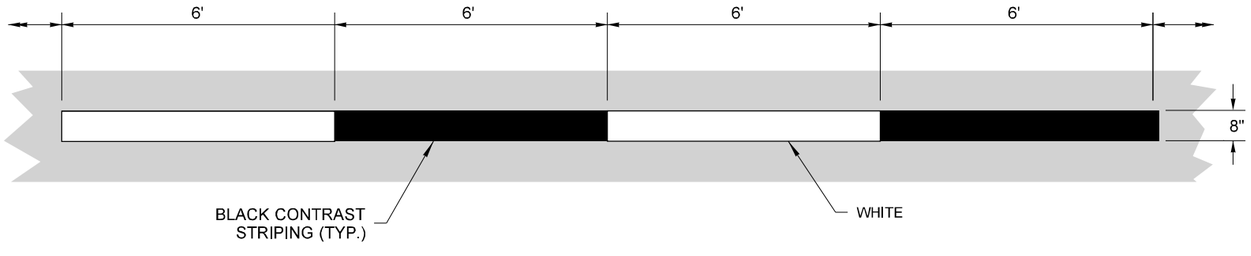
DIRECTION OF TRAFFIC
(TYPICAL)



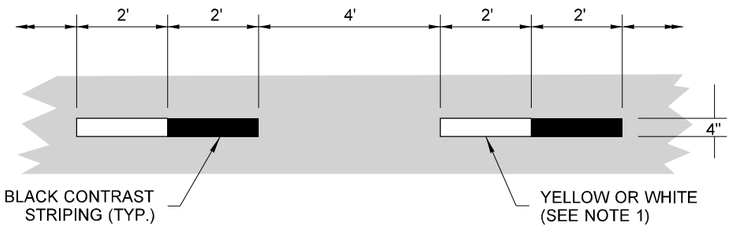
DOTTED LANE LINE



WIDE DOTTED LANE LINE

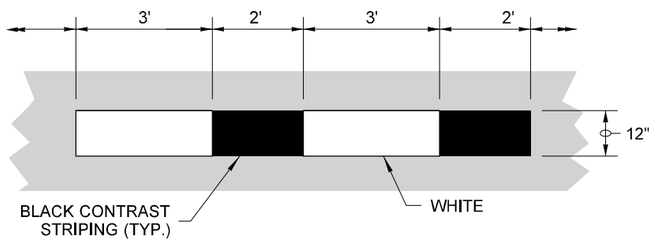


WIDE DOTTED EXTENSION LINE

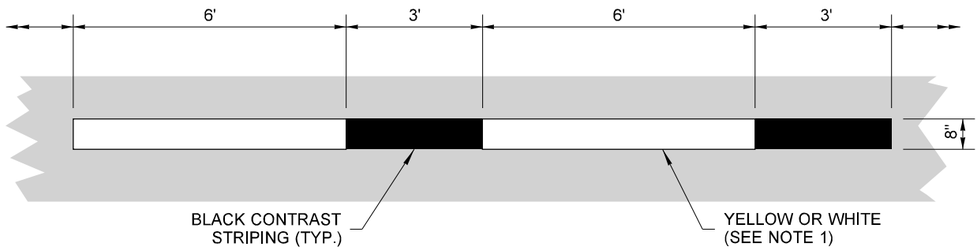


DOTTED EXTENSION LINE

ROUNDABOUT SPECIFIC LINES

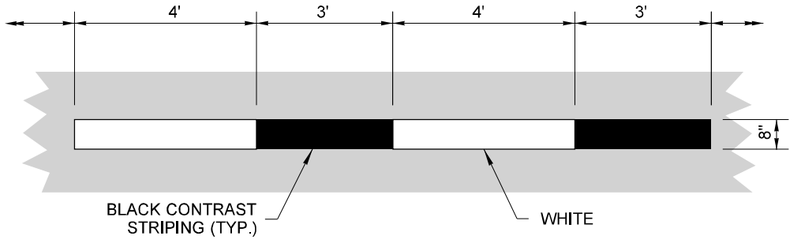


WIDE DOTTED ENTRY LINE



STRONG LANE LINE

OPTION TO USE AS CIRCULATORY ON ROUNDABOUT APPLICATIONS



WIDE DOTTED CIRCULATING LANE LINE

BRIAN J. WALSH
STATE OF WASHINGTON
36103
REGISTERED
PROFESSIONAL ENGINEER
Brian J Walsh
Brian J Walsh (Aug 1, 2022 15:55 PDT)

Aug 1, 2022

LONGITUDINAL MARKING PATTERNS

STANDARD PLAN M-20.10-04

SHEET 4 OF 4 SHEETS

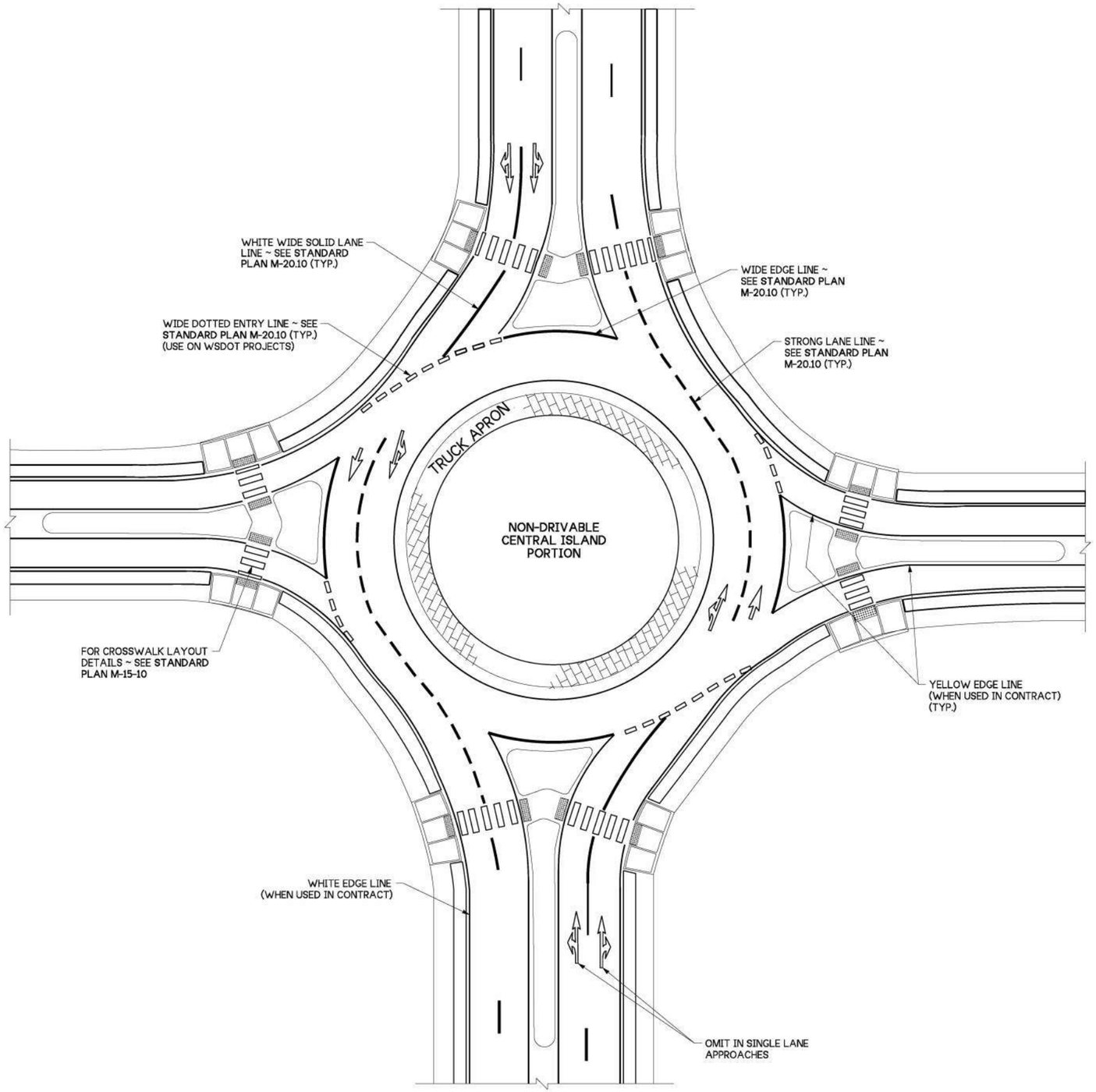
APPROVED FOR PUBLICATION

Mark Gaines
Mark Gaines (Aug 2, 2022 10:17 PDT)

Aug 2, 2022

STATE DESIGN ENGINEER

Washington State Department of Transportation



NOTES:

1. These details can vary greatly according to the Contract plans.
2. The need for Advance Roundabout Traffic Arrows is based upon posted speed of approach roadway.
3. When used, place arrows in the circulating lanes as close as possible to the center of the lane to avoid having them in the wheel paths.
4. Local agencies (on non-state route intersections) may elect to use Yield Line Symbol Type 2 (sharks teeth) prior to the Wide Dotted Entry Line. **See Standard Plan M-24.60** for details.
5. Check with Region Traffic office regarding RPM and Guidepost placement and use.
6. For sidewalk detailing see **Standard Plan F-30.10**. For curb detailing see **Standard Plans F-10.12 & F-10.14**. For Detectable Warning Surfaces (DWS) see **Standard Plan F-45.10**.

SCOTT ANDREW DAVIS
STATE OF WASHINGTON
37361
REGISTERED
PROFESSIONAL ENGINEER

Scott A. Davis (Jun 28, 2024 08:22 PDT)

Jun 28, 2024

ROUNDABOUT PAVEMENT MARKINGS

STANDARD PLAN M-12.10-04

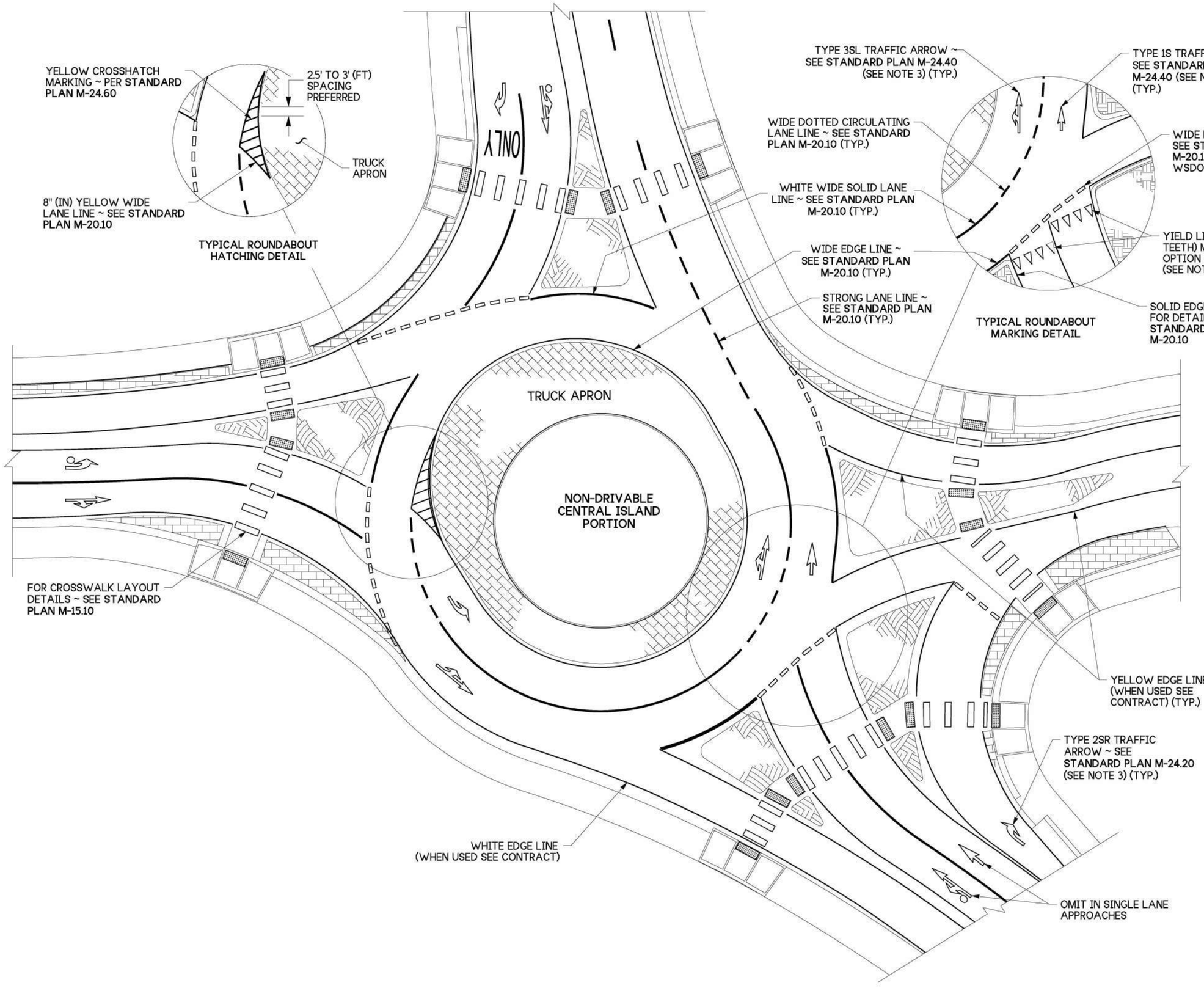
SHEET 1 OF 2 SHEETS

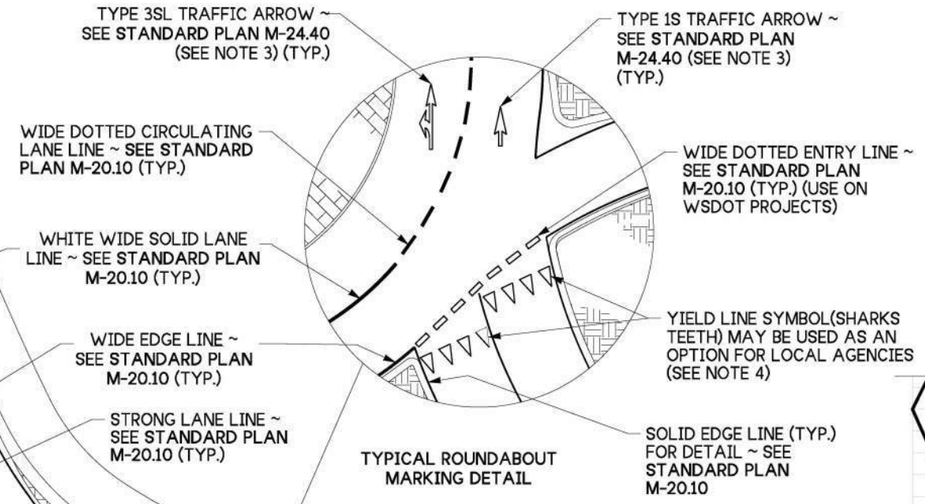
APPROVED FOR PUBLICATION

Mark A Dawes Jun 28, 2024

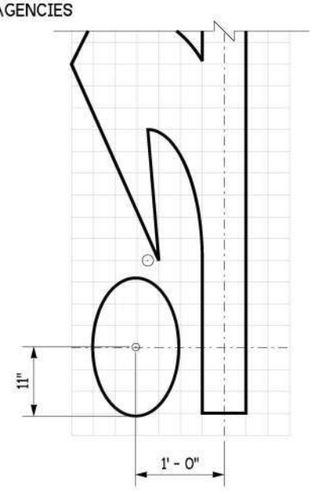
STATE DESIGN ENGINEER

Washington State Department of Transportation





TYPICAL ROUNDABOUT MARKING DETAIL



ROUNDABOUT CIRCLE MARKING DETAIL WITH TYPE 3SL TRAFFIC ARROW (SEE STANDARD PLAN M-24.40)

SCOTT ANDREW DAVIS
STATE OF WASHINGTON
Scott A. Davis (Jun 28, 2024 08:22 PDT)
37361
REGISTERED
PROFESSIONAL ENGINEER

Jun 28, 2024

ROUNDABOUT PAVEMENT MARKINGS

STANDARD PLAN M-12.10-04

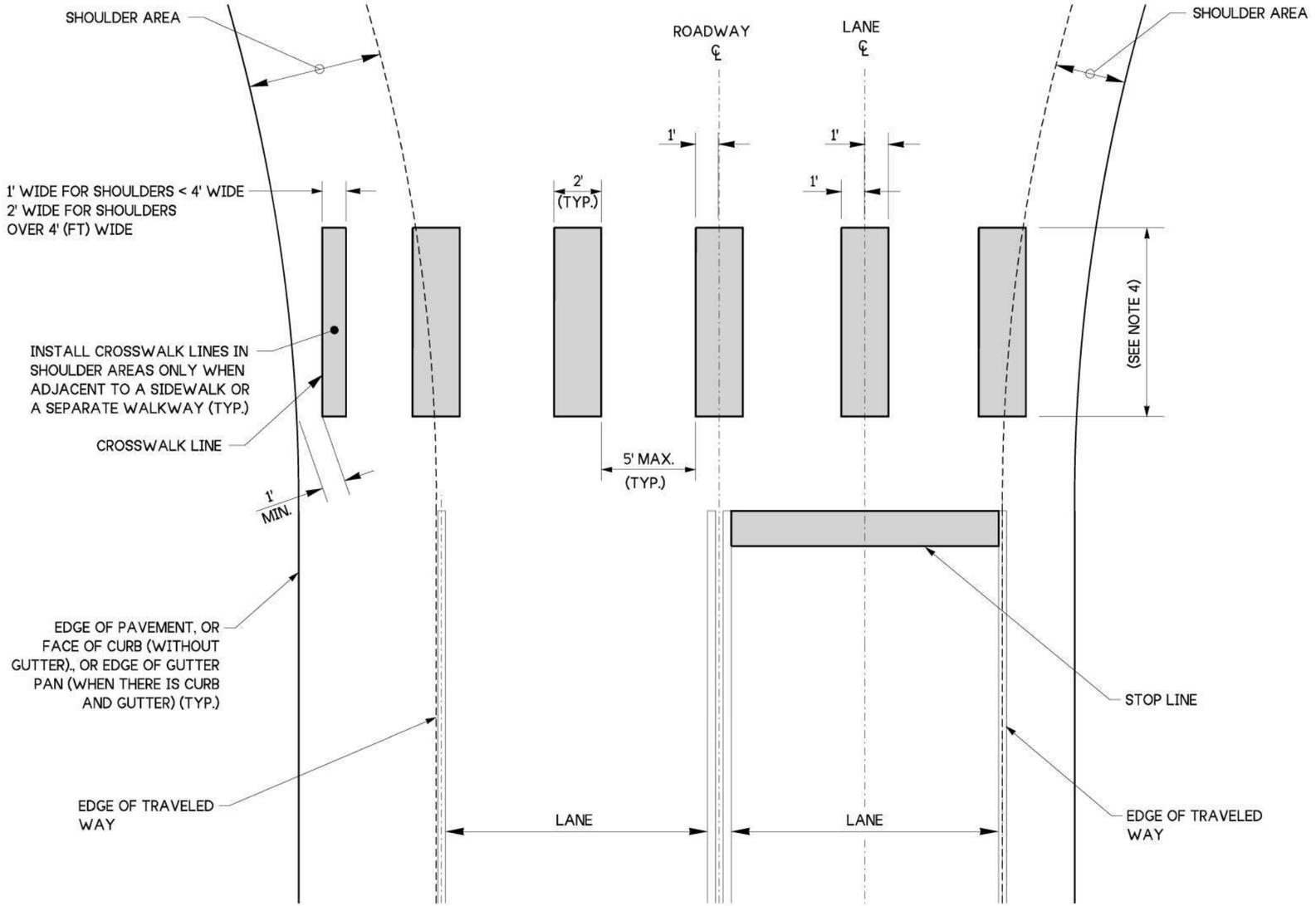
SHEET 2 OF 2 SHEETS

APPROVED FOR PUBLICATION

Mark A Davies Jun 28, 2024

STATE DESIGN ENGINEER

Washington State Department of Transportation



CROSSWALK DETAIL

NOTES:

1. See Contract Plans for crosswalk locations.
2. To the maximum extent possible, curb ramp centerline should be perpendicular to the crosswalk centerline.
3. To the maximum extent possible, crosswalks should be perpendicular to the traveled way centerline.
4. See Contract plans for crosswalk width.
5. To maximim extent possible, place crosswalk bars out of the wheel paths.

SCOTT ANDREW DAVIS
STATE OF WASHINGTON
37361
REGISTERED
PROFESSIONAL ENGINEER

Scott A Davis (Jul 17, 2023 15:49 PDT)

Jul 17, 2023

CROSSWALK LAYOUT

STANDARD PLAN M-15.10-02

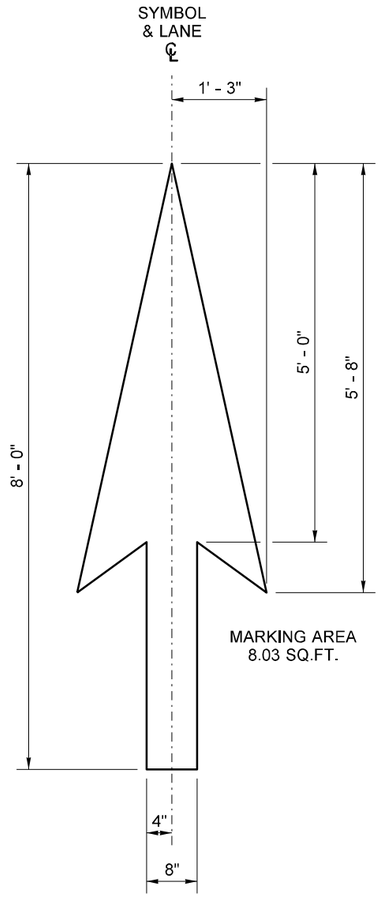
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

Mark A Gaines Jul 17, 2023

STATE DESIGN ENGINEER

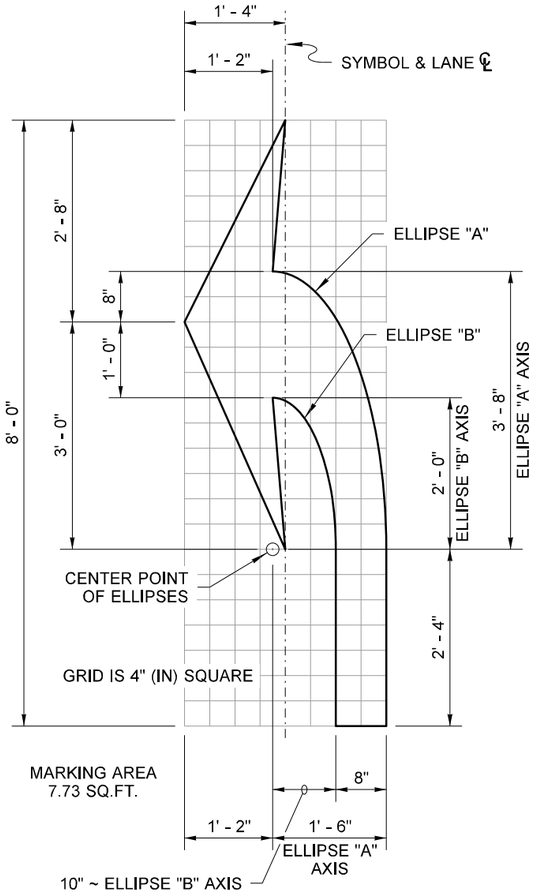
Washington State
Department of Transportation



TYPE 1S
TRAFFIC ARROW

TYPE 2SR (RIGHT)
TRAFFIC ARROW

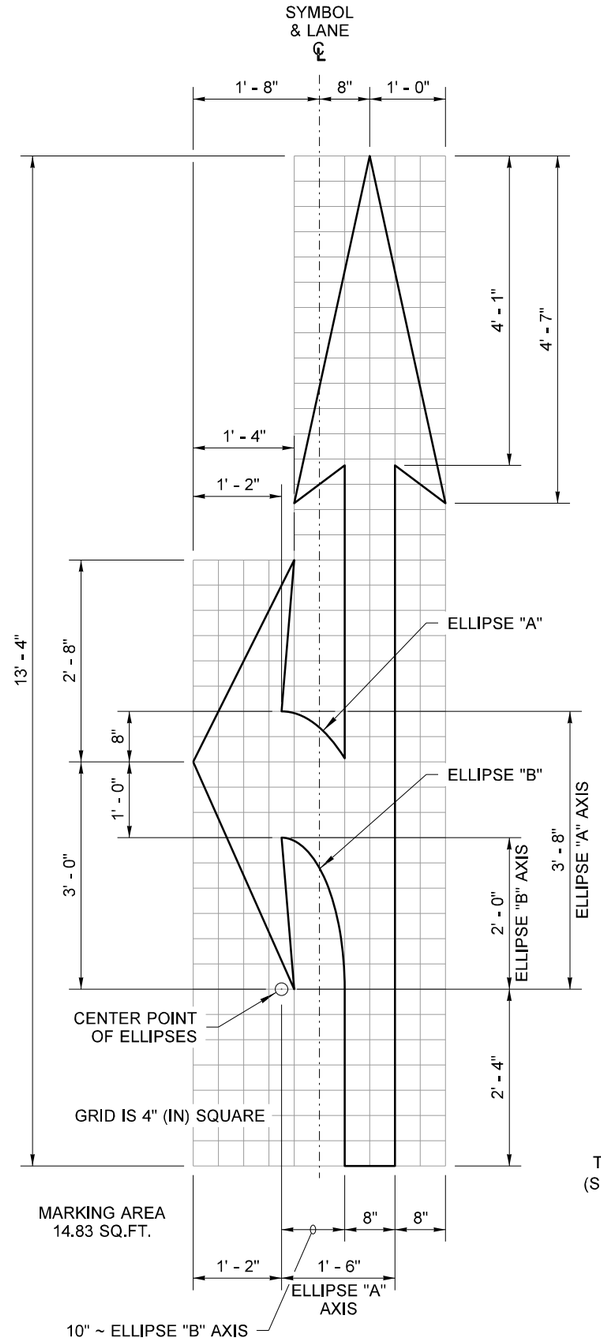
MIRROR IMAGE OF
TYPE 2SL TRAFFIC ARROW
(SHOWN AT REDUCED SCALE)



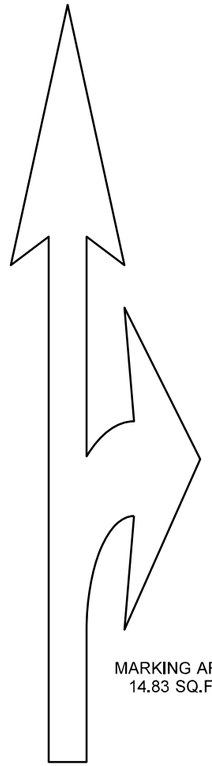
TYPE 2SL (LEFT) TRAFFIC ARROW

NOTE

Use the dimensions shown on this plan for each type of Traffic Arrow being placed on roadways with a posted speed limit of 40 mph or lower.

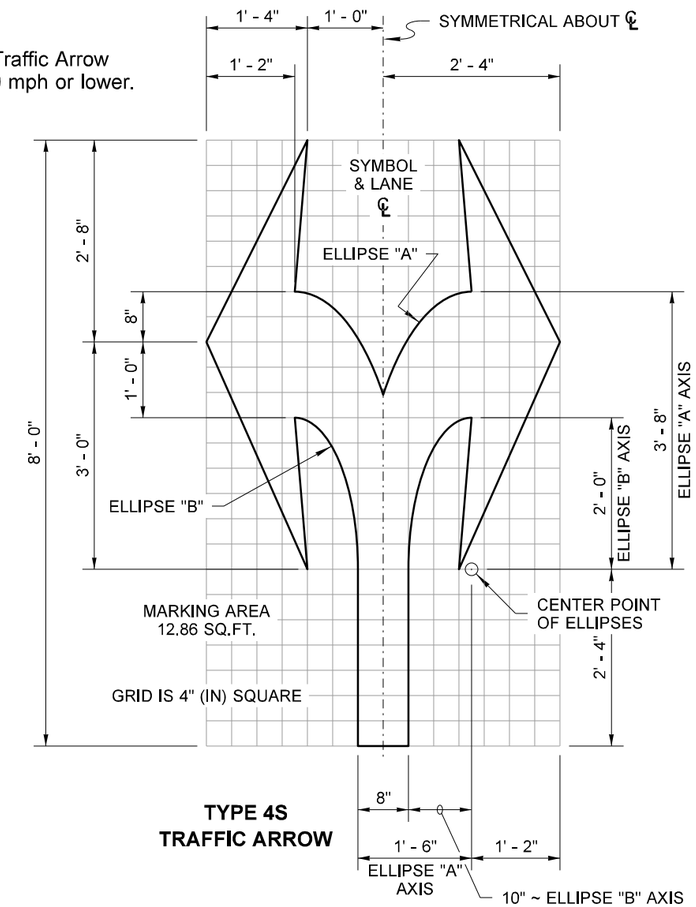


TYPE 3SL (LEFT) TRAFFIC ARROW



TYPE 3SR (RIGHT)
TRAFFIC ARROW

MIRROR IMAGE OF
TYPE 3SL TRAFFIC ARROW
(SHOWN AT REDUCED SCALE)



TYPE 4S
TRAFFIC ARROW

BRIAN J. WALSH
STATE OF WASHINGTON
36103
REGISTERED
PROFESSIONAL ENGINEER

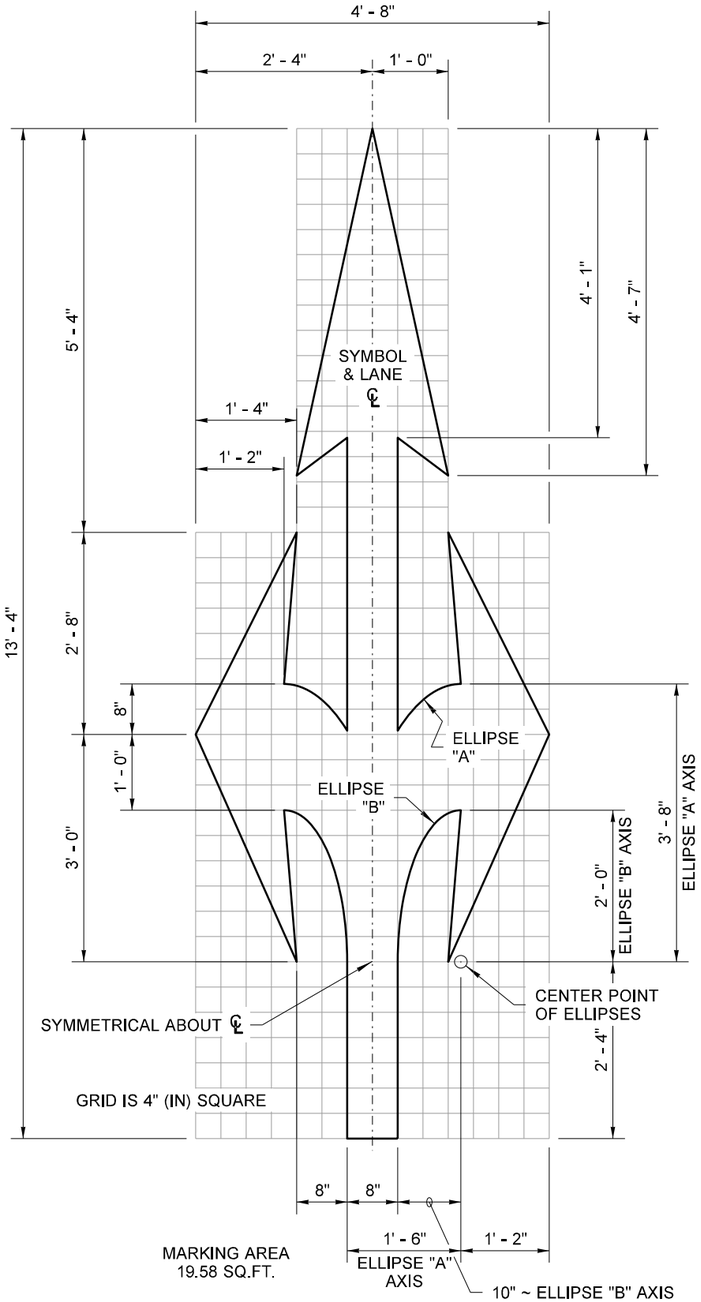
Walsh, Brian
Apr 16 2015 2:21 PM

SYMBOL MARKINGS ~ TRAFFIC ARROWS FOR LOW-SPEED ROADWAYS
STANDARD PLAN M-24.40-02

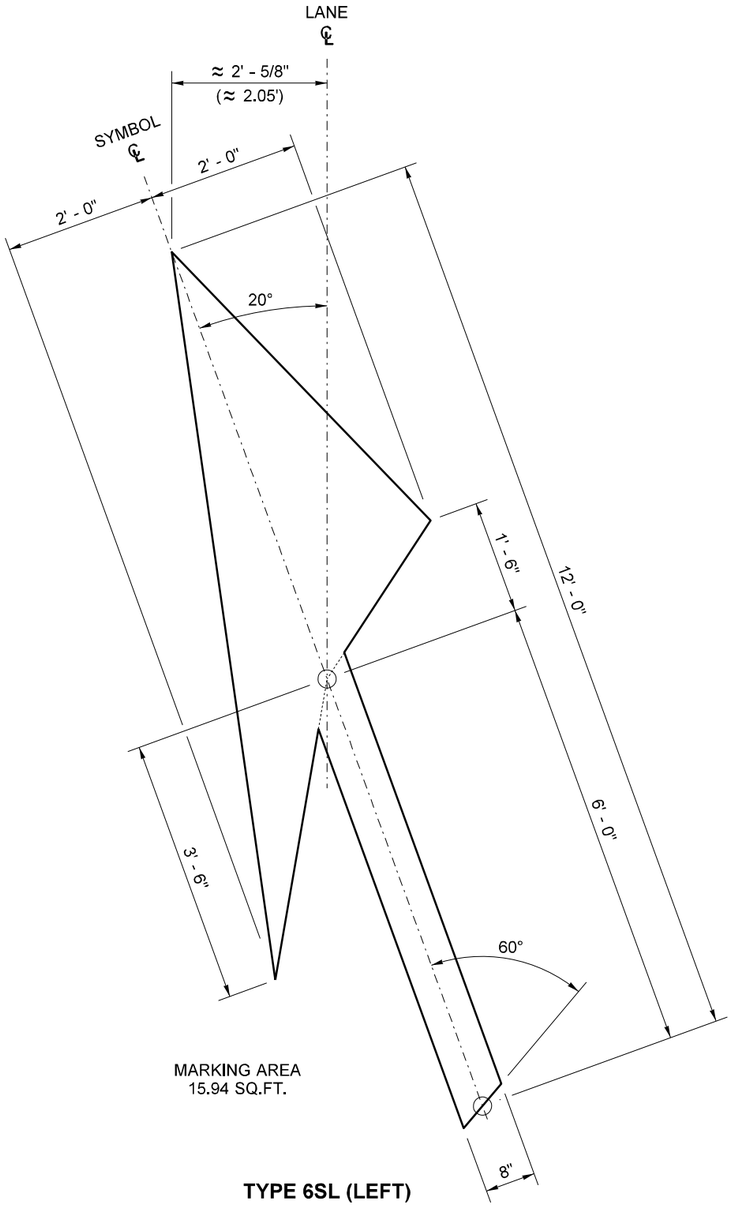
SHEET 1 OF 2 SHEETS

APPROVED FOR PUBLICATION
Bakotich, Pasco
Apr 20 2015 10:11 AM
STATE DESIGN ENGINEER
Washington State Department of Transportation

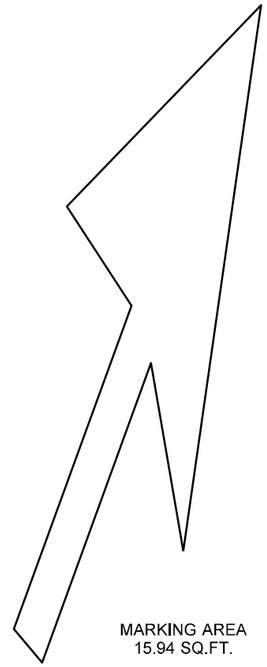
DRAWN BY: COLBY FLETCHER



TYPE 7S TRAFFIC ARROW



**TYPE 6SL (LEFT)
TRAFFIC ARROW**



MARKING AREA
15.94 SQ.FT.

**TYPE 6SR (RIGHT)
TRAFFIC ARROW**

MIRROR IMAGE OF TYPE 6SL
(MIRRORED ABOUT LANE CENTERLINE)
(SHOWN AT REDUCED SCALE)

Walsh, Brian
Apr 16 2015 2:21 PM

SYMBOL MARKINGS ~ TRAFFIC ARROWS FOR LOW-SPEED ROADWAYS
STANDARD PLAN M-24.40-02

SHEET 2 OF 2 SHEETS

APPROVED FOR PUBLICATION

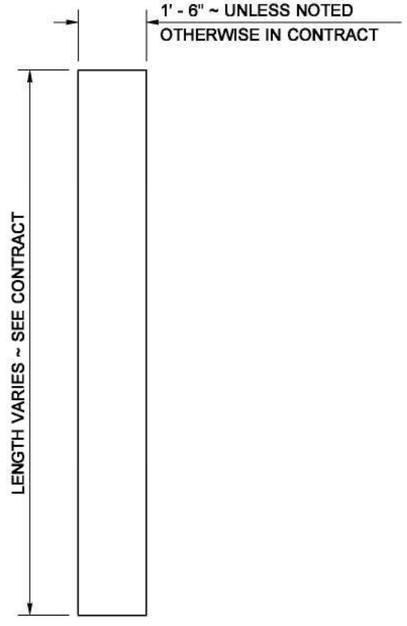
Bakotich, Pasco
Apr 20 2015 10:11 AM

STATE DESIGN ENGINEER

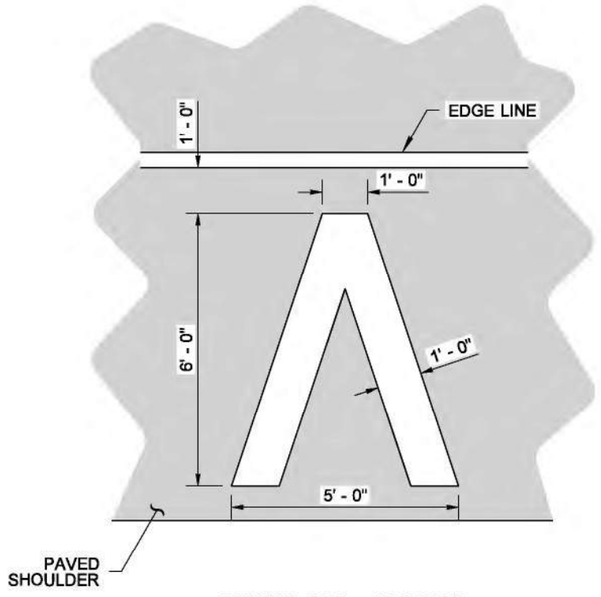
Washington State Department of Transportation

DRAWN BY: COLBY FLETCHER

DRAWN BY: LISA CYFORD

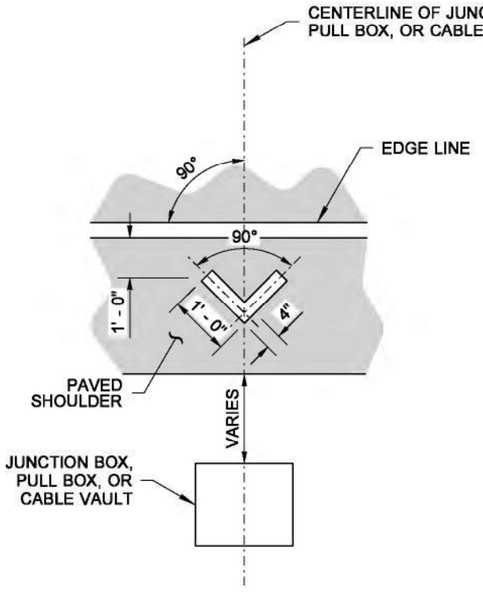


STOP LINE



MARKING AREA = 11.73 SQ.FT.

HALF-MILE MARKER

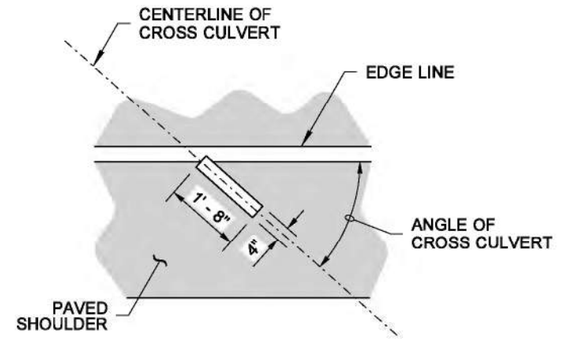


MARKING AREA = 0.56 SQ. FT.

JUNCTION BOX, PULL BOX, OR CABLE VAULT MARKINGS

NOTE

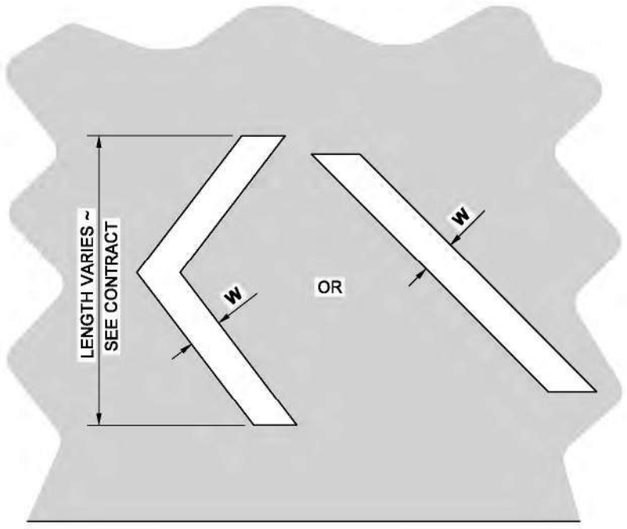
1. If Rumble Strips are present, install marking outside of the Rumble Strip.



MARKING AREA = 0.56 SQ.FT.

CROSS CULVERT

DRAINAGE MARKING

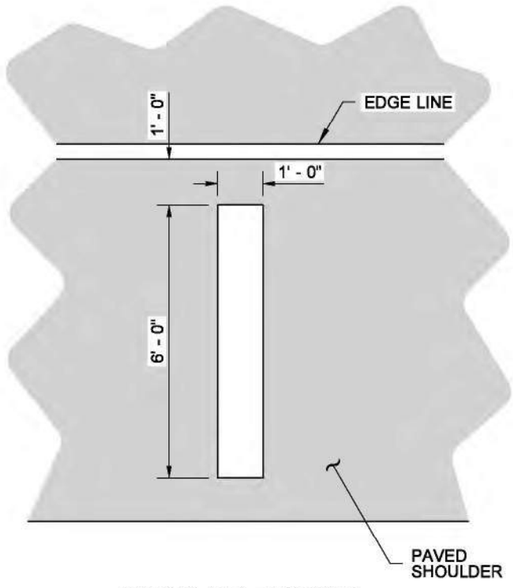


WHITE OR YELLOW ~ SEE CONTRACT

CHEVRON OR DIAGONAL

CROSSHATCH MARKING

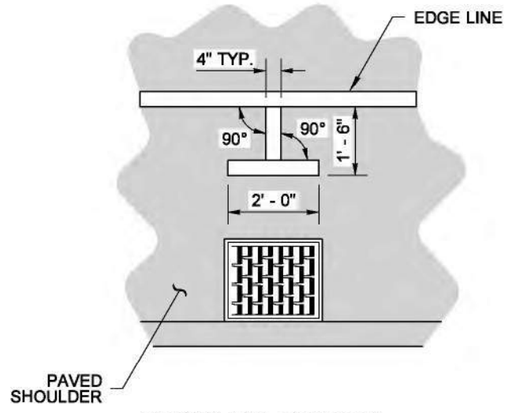
W = 8" (IN) FOR POSTED SPEED LIMIT OF 40 MPH OR LOWER
W = 12" (IN) FOR POSTED SPEED LIMIT OF 45 MPH OR HIGHER



MARKING AREA = 6.00 SQ.FT.

FULL MILE MARKER

AERIAL SURVEILLANCE MARKERS



MARKING AREA = 1.06 SQ.FT.

DRAINAGE STRUCTURE INLET

DRAINAGE MARKING

BRIAN J. WALSH
STATE OF WASHINGTON
36103
REGISTERED
PROFESSIONAL ENGINEER

Walsh, Brian
Jun 24 2014 2:35 PM

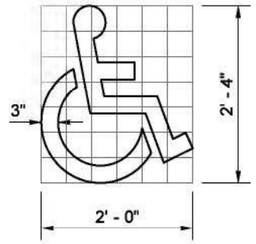
SYMBOL MARKINGS MISCELLANEOUS

STANDARD PLAN M-24.60-04

SHEET 1 OF 2 SHEETS

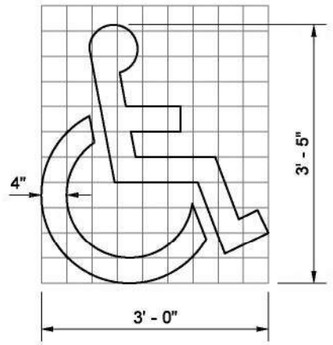
APPROVED FOR PUBLICATION
Bakotich, Pasco
Jun 24 2014 4:43 PM
STATE DESIGN ENGINEER
Washington State Department of Transportation

DRAWN BY: LISA CYFORD



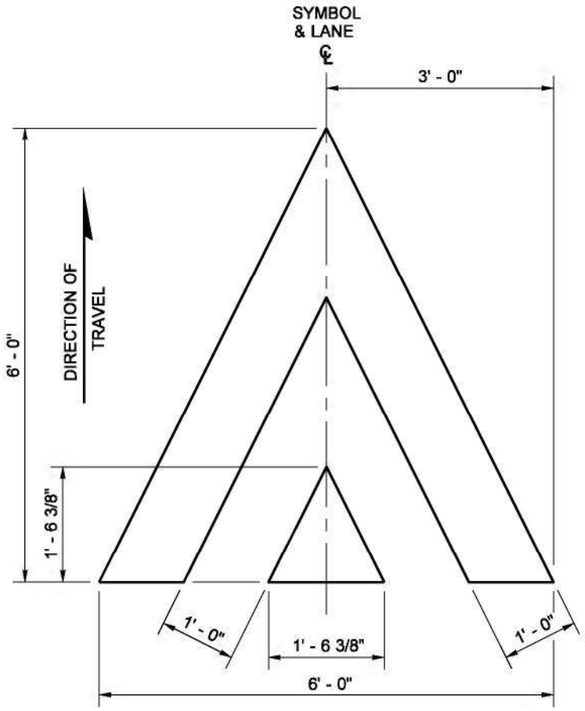
GRID IS 4" (IN) SQUARE MARKING AREA = 1.41 SQ.FT.

ACCESS PARKING SPACE SYMBOL (MINIMUM)



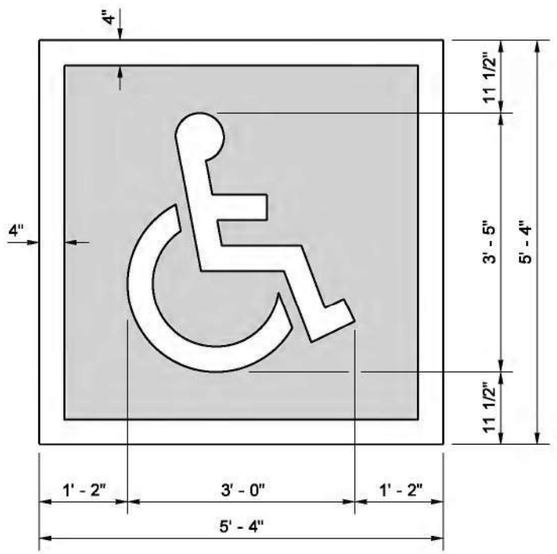
GRID IS 4" (IN) SQUARE MARKING AREA = 3.09 SQ.FT.

ACCESS PARKING SPACE SYMBOL (STANDARD)



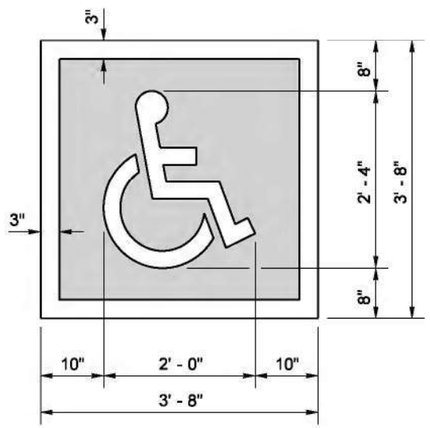
MARKING AREA = 12.08 SQ.FT.

SPEED BUMP SYMBOL



TOTAL MARKING AREA = 28.44 SQ.FT.
WHITE = 9.76 SQ.FT. BLUE = 18.69 SQ.FT.

ACCESS PARKING SPACE SYMBOL (STANDARD)
WITH BLUE BACKGROUND AND WHITE BORDER
(REQUIRED FOR CEMENT CONCRETE SURFACES)

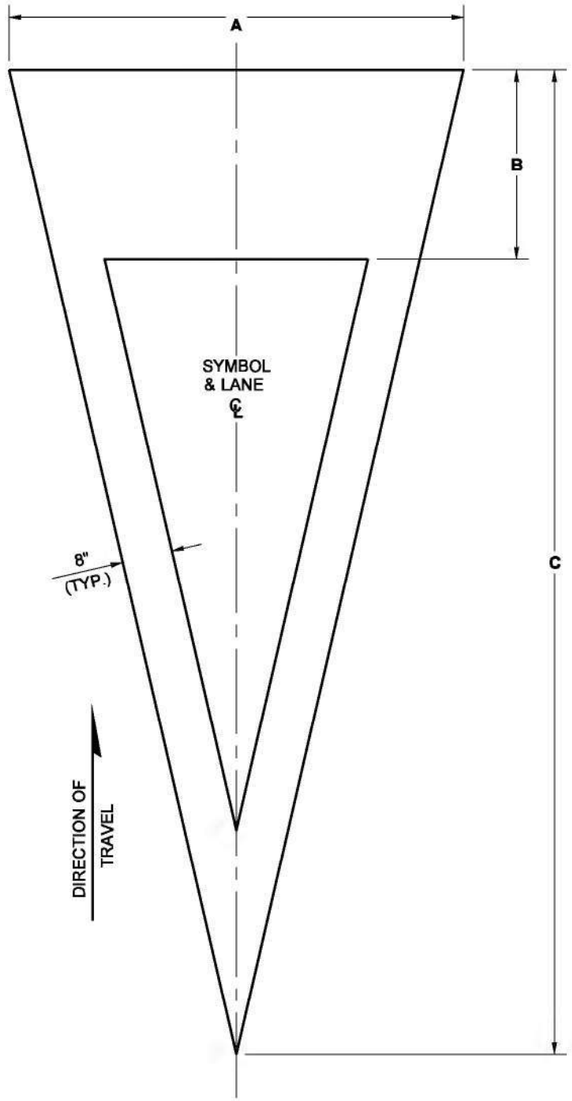


TOTAL MARKING AREA = 13.44 SQ.FT.
WHITE = 4.82 SQ.FT. BLUE = 8.62 SQ.FT.

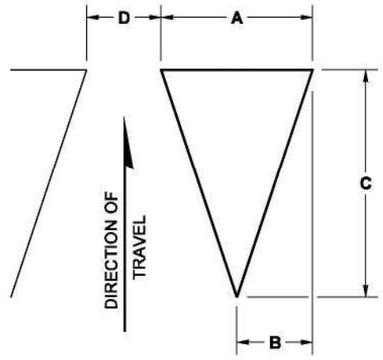
ACCESS PARKING SPACE SYMBOL (MINIMUM)
WITH BLUE BACKGROUND AND WHITE BORDER
(REQUIRED FOR CEMENT CONCRETE SURFACES)

SYMBOL MARKING		A	B	C	D	USE	MARKING AREA
YIELD AHEAD SYMBOL	TYPE 1	6' - 0"	2' - 6"	13' - 0"	N/A	LESS THAN 45 MPH	25.90 SQ.FT.
	TYPE 2	6' - 0"	3' - 0"	20' - 0"	N/A	45 MPH OR GREATER	36.54 SQ.FT.
YIELD LINE SYMBOL	TYPE 1	1' - 0"	6"	1' - 6"	6"	LESS THAN 45 MPH	0.75 SQ.FT.
	TYPE 2	2' - 0"	1' - 0"	3' - 0"	1' - 0"	45 MPH OR GREATER	3.00 SQ.FT.
	TYPE 2	2' - 0"	1' - 0"	3' - 0"	1' - 0"	ROUNDABOUT ENTRY *	3.00 SQ.FT.

* MINIMUM OF 4 IN LANE



YIELD AHEAD SYMBOL



YIELD LINE SYMBOL
(MULTIPLE SYMBOLS REQUIRED FOR TRANSVERSE YIELD LINE ~ SEE CONTRACT)

BRIAN J. WALSH
STATE OF WASHINGTON
36103
REGISTERED
PROFESSIONAL ENGINEER

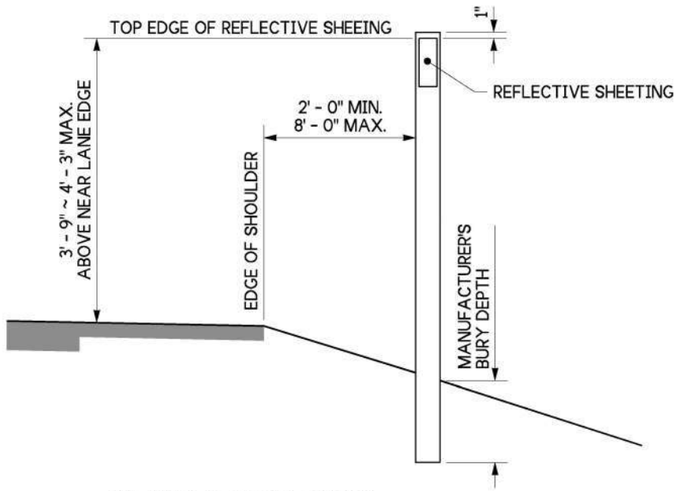
Walsh, Brian
Jun 24 2014 2:37 PM

SYMBOL MARKINGS MISCELLANEOUS

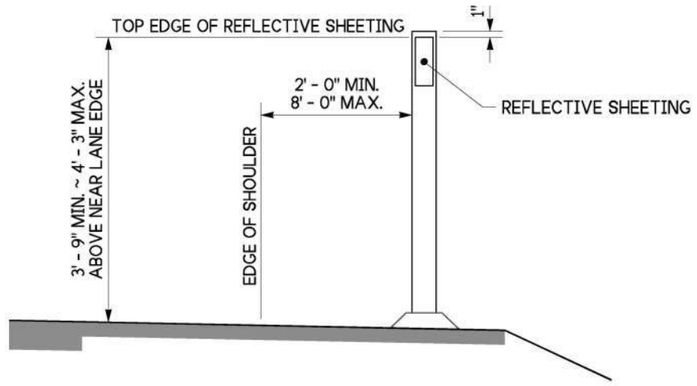
STANDARD PLAN M-24.60-04

SHEET 2 OF 2 SHEETS

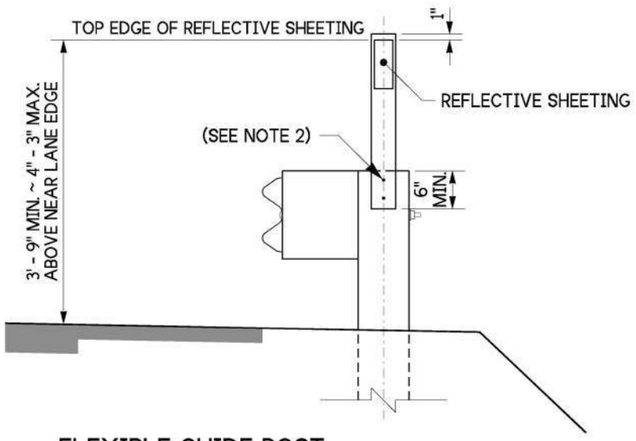
APPROVED FOR PUBLICATION
Bakotich, Pasco
Jun 24 2014 4:43 PM
STATE DESIGN ENGINEER
Washington State Department of Transportation



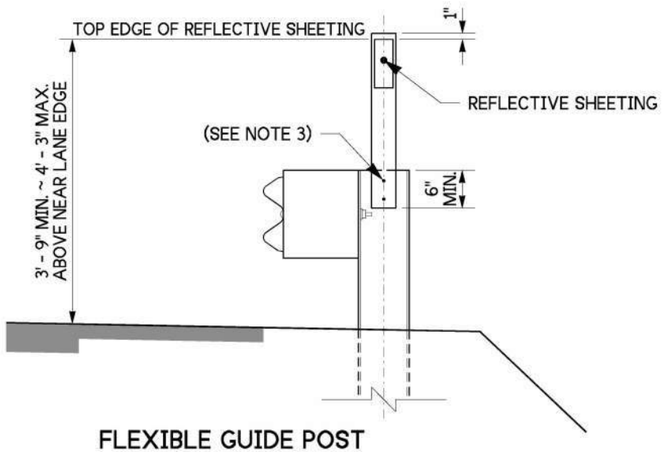
FLEXIBLE GUIDE POST
GROUND MOUNT



FLEXIBLE GUIDE POST
SURFACE MOUNT

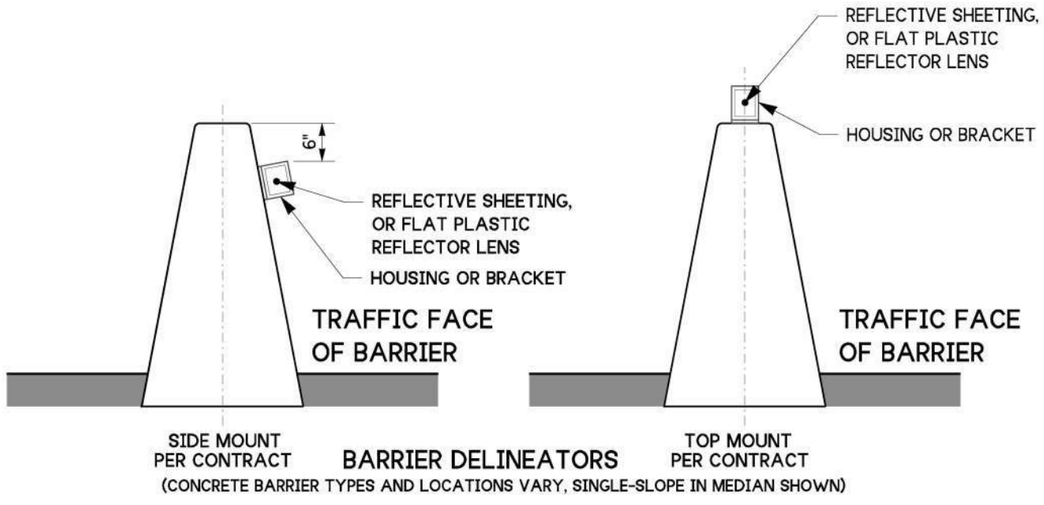


FLEXIBLE GUIDE POST
GUARDRAIL MOUNT
(USE FOR WOODEN GUARDRAIL POSTS)



FLEXIBLE GUIDE POST
GUARDRAIL MOUNT
(USE FOR STEEL GUARDRAIL POSTS)

GUIDE POST TYPE ~ REFLECTIVE SHEETING APPLICATIONS (SEE NOTE 5)			
TYPE W	TYPE WW	TYPE Y	TYPE YY
○	⊖	●	⊕
FACING TRAFFIC: 3" × 8" WHITE	FACING TRAFFIC: 3" × 8" WHITE; BACK SIDE: 3" WHITE, 4", 3" WHITE, 4"	FACING TRAFFIC: 3" × 8" YELLOW	FACING TRAFFIC: 3" × 8" YELLOW; BACK SIDE: 3" × 8" YELLOW



BARRIER DELINEATORS
(CONCRETE BARRIER TYPES AND LOCATIONS VARY, SINGLE-SLOPE IN MEDIAN SHOWN)

NOTES

1. Guide Posts and Barrier Delineators per **Standard Specification Sections 8-10**, 9-17 and **9-18**.

2. Guide posts shall be fastened to the wooden guardrail post using two 2" x 3/8" (in) LAG screws with washers, along centerline of post. Also acceptable is any approved attahment method submitted by the guide post manufacturer.

3. Guide posts shall be fastened to the steel guardrail posts using two Hot Dip galvanized 2" x 3/8" (in) bolts with a washer on both sides, a lock washer, and nut. The nut shall be tightened to properly compress the lock washer. The drilled holes in the guardrail post web shall be painted with galvanizing repair paint as described in **Standard Specification Section 8-11.3(1)B**. Also acceptable is any approved attachment method submitted by the guide post manufacturer.

4. Spacing of Barrier Delineators shall be as shown in the Plans.

BRIAN J. WALSH
STATE OF WASHINGTON
36103
REGISTERED
PROFESSIONAL ENGINEER

Oct 16, 2023

GUIDE POSTS AND BARRIER DELINEATORS

STANDARD PLAN M-40.10-04

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

Mark A Bowles Oct 17, 2023

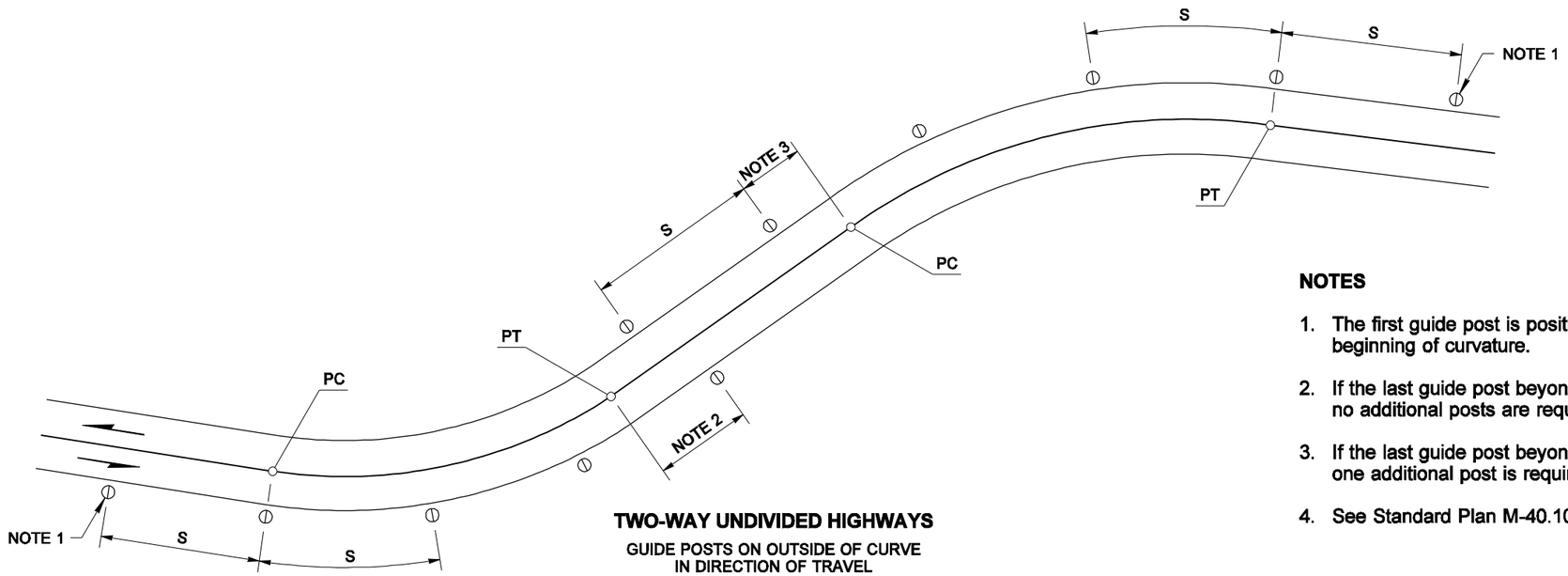
STATE DESIGN ENGINEER

Washington State Department of Transportation

DRAWN BY: MARK SUJKA

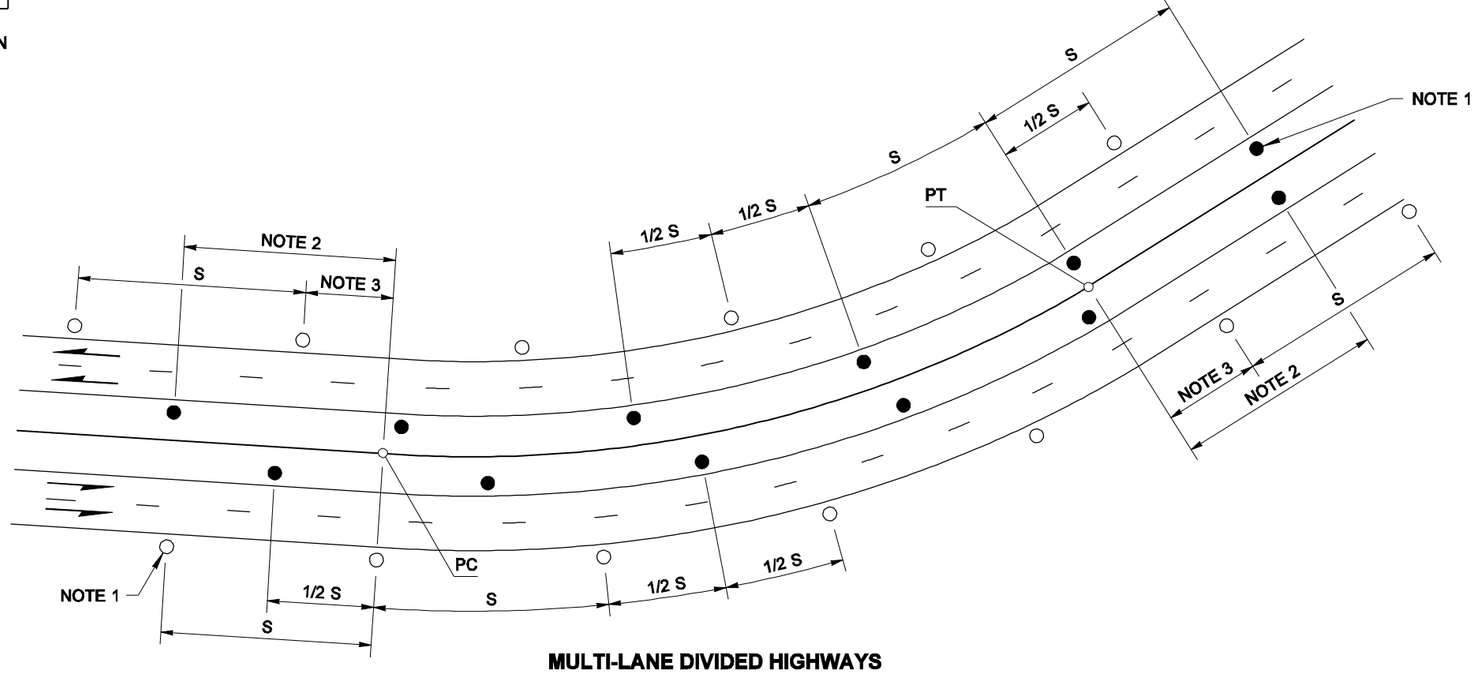
GUIDE POST SPACING (FEET)	
RADIUS	**S**
50	20
115	25
150	30
200	35
250	40
300	50
400	55
500	65
600	70
700	75
800	80
900	85
1,000	90
1,200	100
1,700	120
2,300	140
2,900	160
3,700	180
4,500	200
5,500	220
6,500	240
7,600	260
8,800	280
10,000	300
R>10,000	300

INTERPOLATE FROM THE TABLE FOR RADII NOT SHOWN



TWO-WAY UNDIVIDED HIGHWAYS

GUIDE POSTS ON OUTSIDE OF CURVE
IN DIRECTION OF TRAVEL



MULTI-LANE DIVIDED HIGHWAYS

GUIDE POSTS ON INSIDE AND OUTSIDE OF CURVE
FOR EACH DIRECTION OF TRAVEL

NOTES

1. The first guide post is positioned "S" distance from the beginning of curvature.
2. If the last guide post beyond the curve is 1/2 "S" or more, no additional posts are required.
3. If the last guide post beyond the curve is less than 1/2 "S", one additional post is required.
4. See Standard Plan M-40.10 for Guide Post details.

LEGEND
○ TYPE W
◫ TYPE WW
● TYPE Y

SEE TYPE DEFINITIONS, STD. PLAN M-40.10

THEODORE J. TREPANIER
STATE OF WASHINGTON
25335
REGISTERED
PROFESSIONAL ENGINEER

EXPIRES AUGUST 9, 2009

NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT BUT AN ELECTRONIC DUPLICATE. THE ORIGINAL, SIGNED BY THE ENGINEER AND APPROVED FOR PUBLICATION, IS KEPT ON FILE AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST.

GUIDE POST PLACEMENT HORIZONTAL CURVES

STANDARD PLAN M-40.40-00

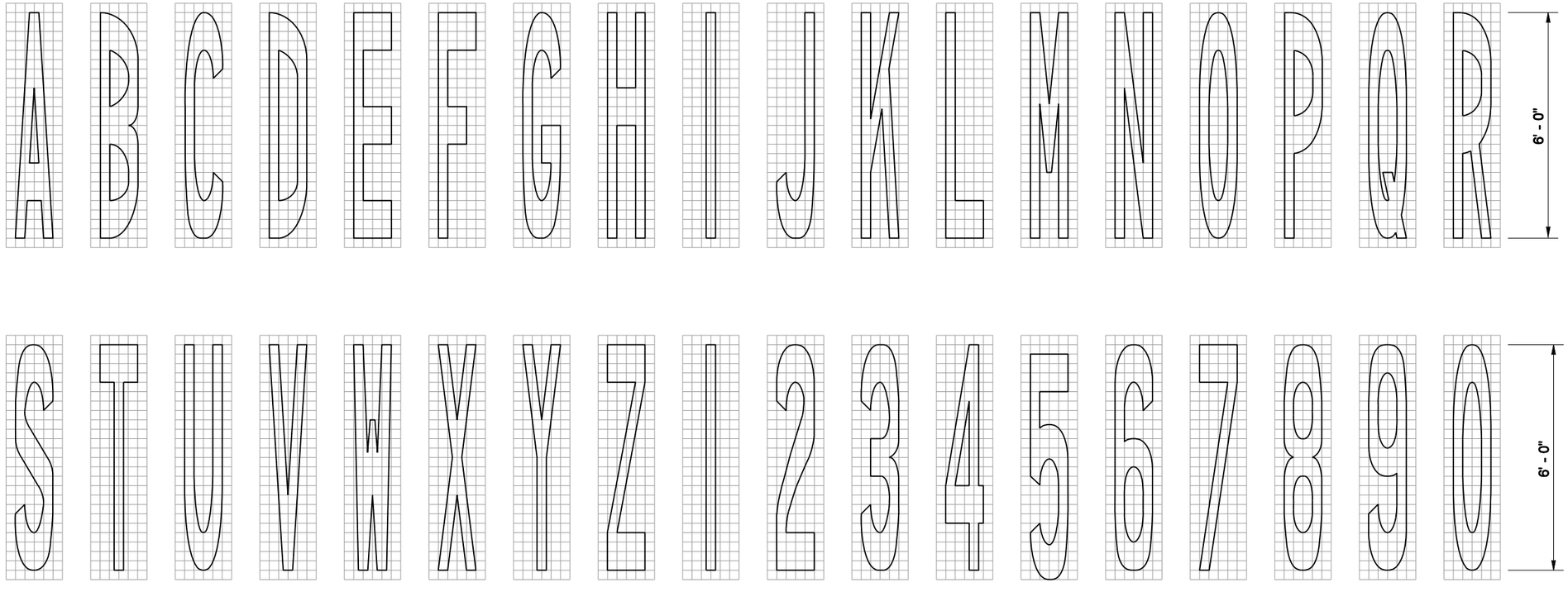
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

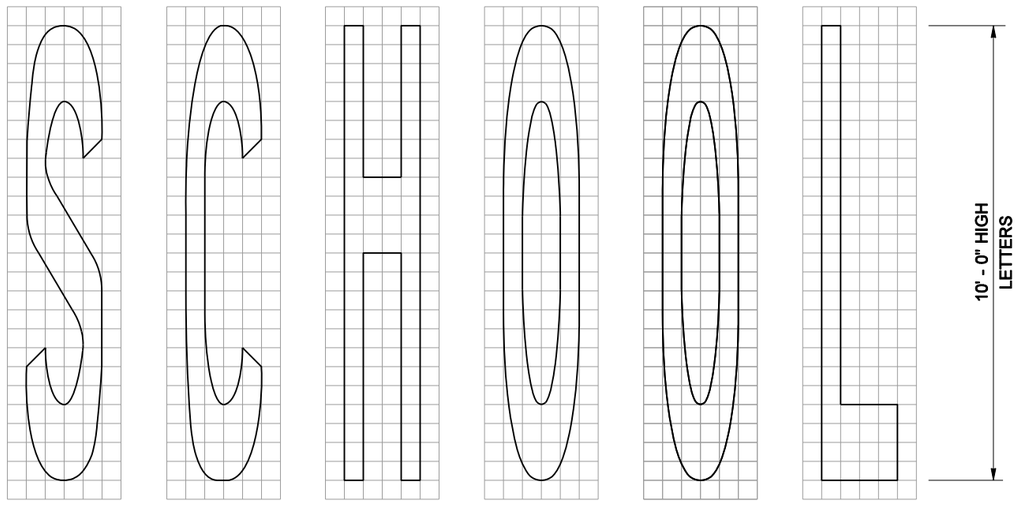
Pasco Bakotich III — STATE DESIGN ENGINEER — *09-20-07* — DATE

Washington State Department of Transportation

DRAWN BY: FERN LIDDELL



SIX FOOT HIGH LETTERS AND NUMERALS SHOWN ON A THREE -INCH SQUARE GRID



TEN FOOT HIGH LETTERS SHOWN ON A FIVE- INCH SQUARE GRID

FOR USE ON ROADWAYS WITH A POSTED SPEED OF 40 MPH OR LESS

THEODORE J. TREPANIER
STATE OF WASHINGTON
25335
REGISTERED
PROFESSIONAL ENGINEER

EXPIRES AUGUST 9, 2009

NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT BUT AN ELECTRONIC DUPLICATE. THE ORIGINAL, SIGNED BY THE ENGINEER AND APPROVED FOR PUBLICATION, IS KEPT ON FILE AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST.

TRAFFIC LETTERS AND NUMERALS (LOW SPEED ROADWAYS) STANDARD PLAN M-80.30-00

SHEET 1 OF 1 SHEET

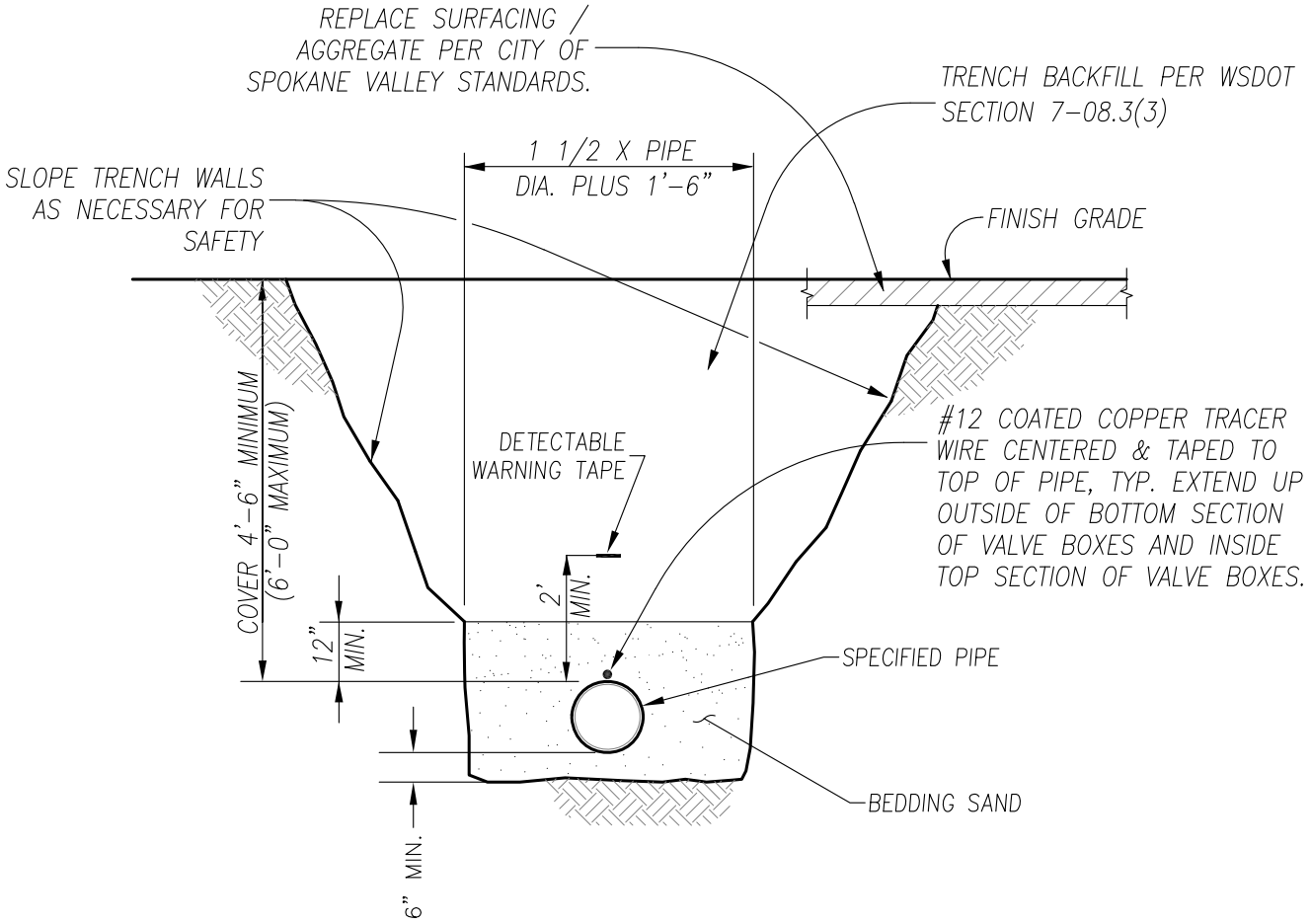
APPROVED FOR PUBLICATION

Pasco Bakotich III — STATE DESIGN ENGINEER

06-10-08 — DATE

Washington State Department of Transportation

DETAIL DRAWING No. 101



NOTES:

SEE O.S.H.A. & W.I.S.H.A. CONSTRUCTION STANDARDS FOR EXCAVATIONS.

CALL BEFORE YOU DIG: 811

TRACER WIRE SPLICING SHALL CONSIST OF A DIRECT BURIAL DEVICE, UL LISTED, FOR THE PURPOSES OF DIRECT BURIAL.

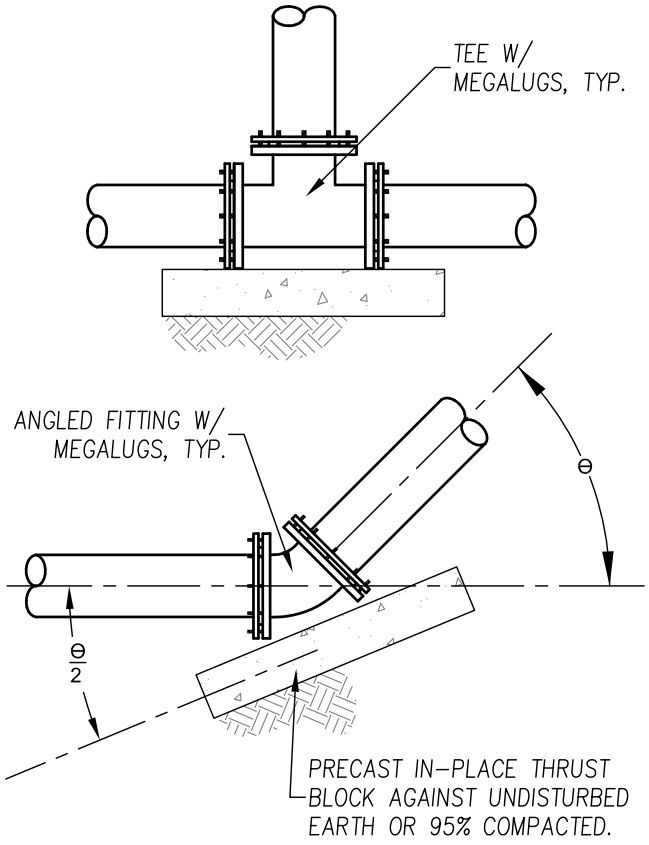
ALL VALVES SHALL HAVE A TRUMBULL VALVE BOX ALIGNMENT DEVICE INSTALLED ON THE OPERATING NUT PRIOR TO VALVE BOX INSTALLATION.

N.T.S.

IRVIN WATER DISTRICT NO. 6

TYPICAL WATER MAIN TRENCH

DETAIL DRAWING No. 102



MIN. THRUST BLOCK SIZING - S.F.

Θ	4"	6"	8"	10"	12"
11¼°	1	1	2	2	3
22½°	1	2	3	4	6
45°	2	3	6	8	12
90°	3	6	10	15	21
TEE/CAP/VALVE	3	5	9	14	20

MIN. RESTRAINED JOINT LENGTH - FT.

Θ	4"	6"	8"	10"	12"	16"
11¼°	3	5	6	7	8	10
22½°	7	9	11	13	16	18
45°	13	18	23	28	32	40
90° TEE/CAP	31	43	54	66	76	97

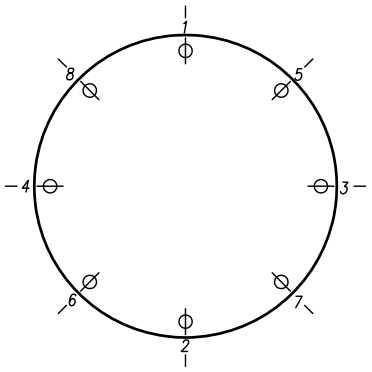
MULTIPLY RESTRAINED LENGTHS BY 1.20 FOR PVC. RESTRAINED LENGTH NOT REQ'D BELOW 12", USE THRUST BLOCKS UNLESS VERT. BENDS EXIST. USE RESTRAINED LENGTH FOR ALL VERT. BENDS, NO REBAR OR VERT. T'BLOCKS.

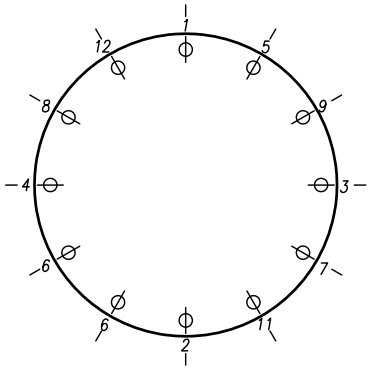
MIN. S.F. OF BEARING AREA AGAINST UNDISTURBED EARTH. CONTRACTOR IS REMINDED THAT VOLUME/WEIGHT OF CONC. CONTRIBUTES LITTLE HORIZ. RESISTANCE AGAINST PIPE THRUST.

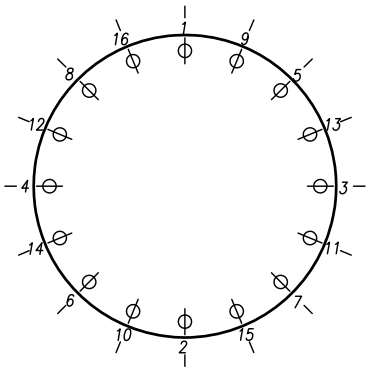
THRUST BLOCKS MAY BE PYRAMIDED TO ACHIEVE AREA IF OVER STD. PRECAST SIZE.

RESTRAINED LENGTH SHALL BE DEVELOPED USING FIELD-LOK OR DIAMOND-LOK GASKETS, NO BELL RESTRAINTS UNLESS SS.

THRUST RESTAINT







SEQUENTIAL ORDER
FOR TIGHTENING BOLTS

8 BOLTS	12 BOLTS	16 BOLTS
1-2	1-2	1-2
3-4	3-4	3-4
5-6	5-6	5-6
7-8	7-8	7-8
	9-10	9-10
	11-12	11-12
		13-14
		15-16

BOLT TORQUE REQUIREMENTS

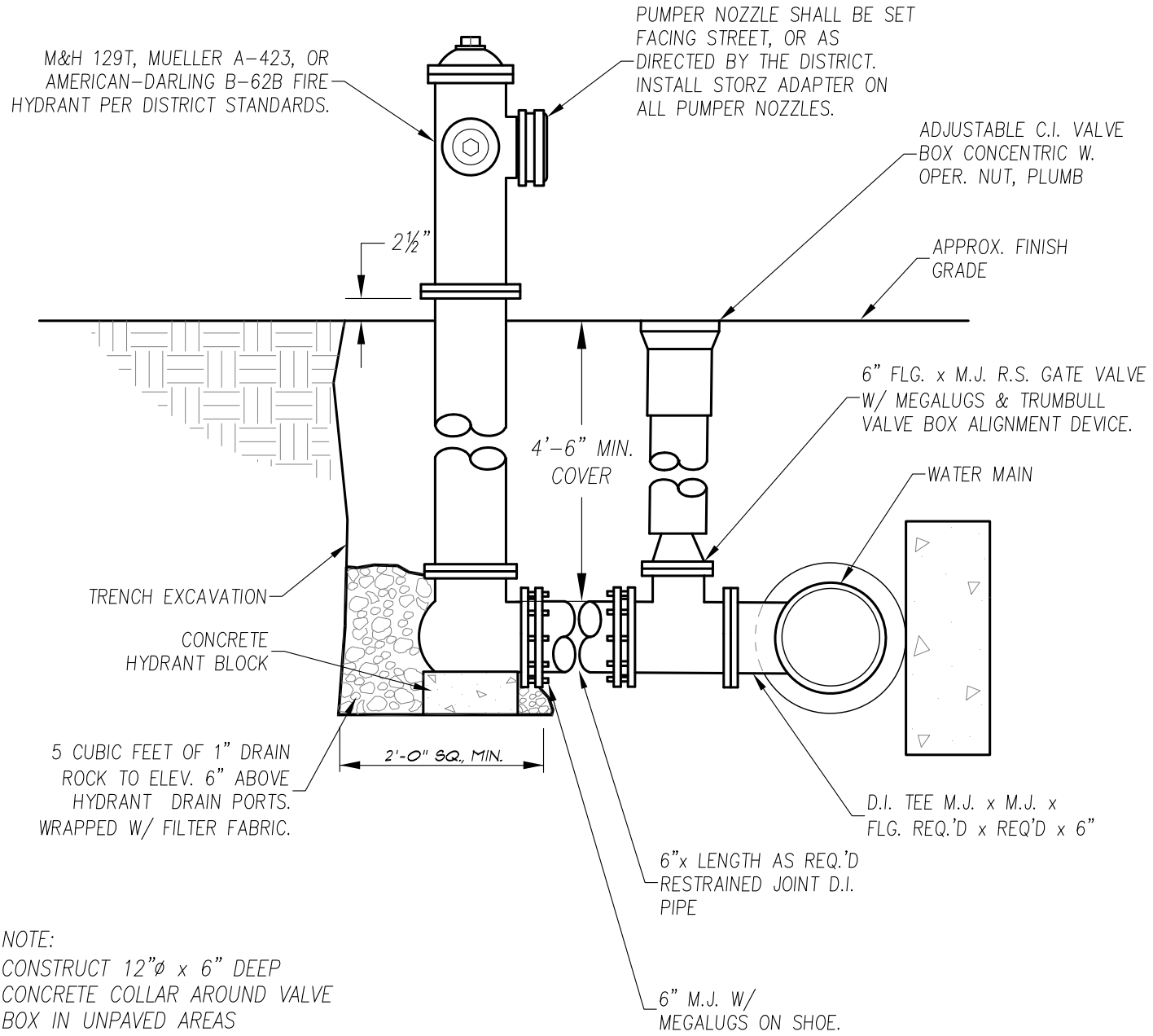
PIPE SIZE	PIPE & FITTINGS 250 PSI
4"	90 FT./LB.
6"	90 FT./LB.
8"	90 FT./LB.
10"	90 FT./LB.
12"	90 FT./LB.
14"	110 FT./LB.
16"	110 FT./LB.
18"	120 FT./LB.

BOLT SEQUENCE & TORQUE

IRVIN WATER DISTRICT NO. 6

THRUST RESTRAINT, BOLT SEQUENCE, & TORQUE

DETAIL DRAWING No. 103



NOTE:
CONSTRUCT 12"ø x 6" DEEP CONCRETE COLLAR AROUND VALVE BOX IN UNPAVED AREAS

ALL VALVES SHALL HAVE A TRUMBULL VALVE BOX ALIGNMENT DEVICE INSTALLED ON THE OPERATING NUT PRIOR TO VALVE BOX INSTALLATION.

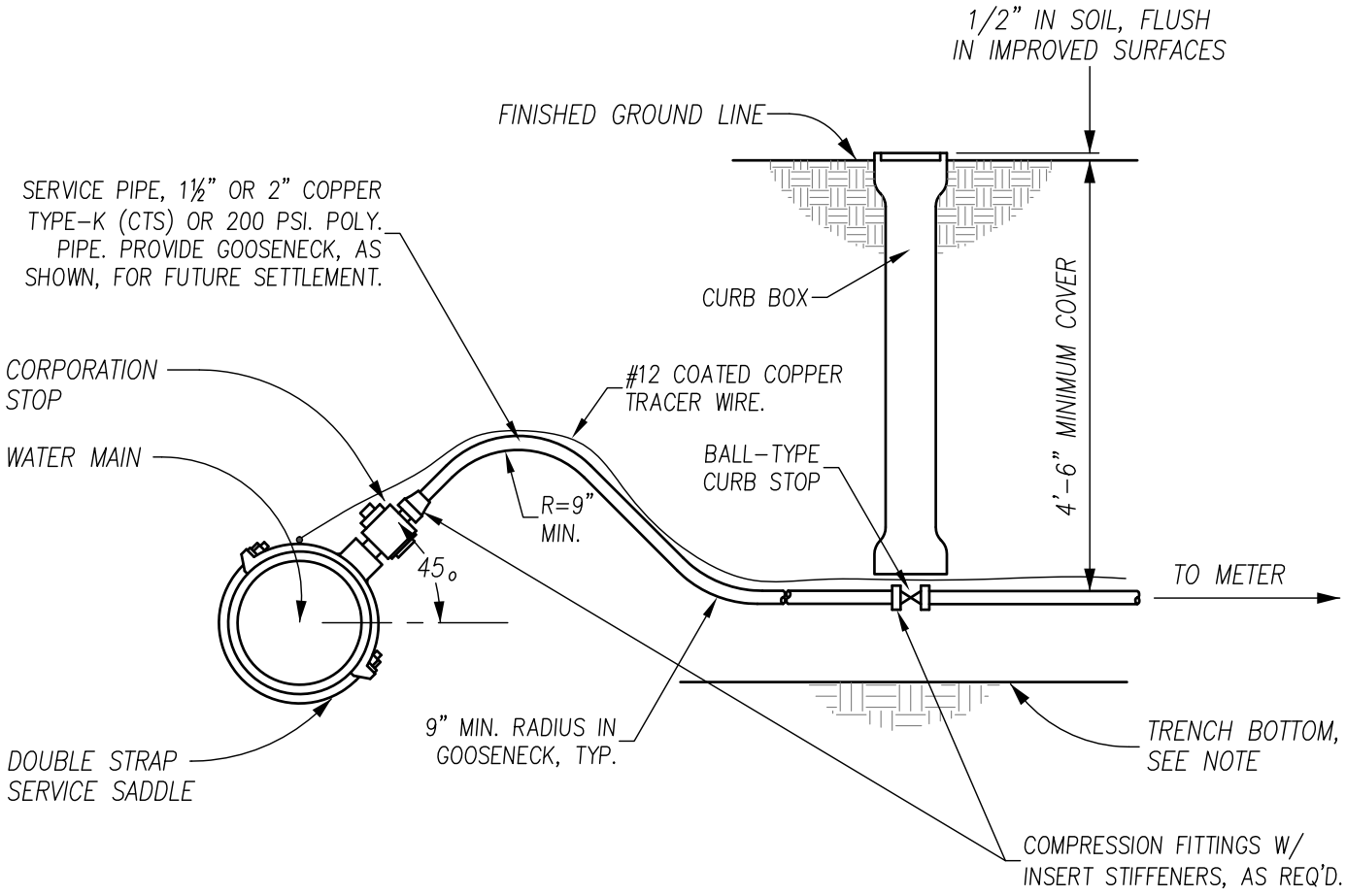
N.T.S.

IRVIN WATER DISTRICT NO. 6

FIRE HYDRANT ASSEMBLY

C:\E&H\IRVIN\STD_DET\IWD-Std. Details.DWG PLOT 1:1 10/13/21

DETAIL DRAWING No. 202



1 ½" AND 2" SERVICE CONNECTION

NOTE:
BEDDING SHALL BE SAND, 6" UNDER AND 12" OVER SERVICE PIPE, TYP.
½" MAXIMUM OCCASIONAL ROCK SIZE AS DIRECTED BY THE ENGINEER.

BACKFILL SHALL BE PER WSDOT STD. SPECIFICATION SECTION 7-08.3(3).

TRACER WIRE SHALL EXTEND UP THE OUTSIDE OF THE BOTTOM SECTION OF CURB STOP BOX AND INSIDE THE TOP SECTION OF CURB STOP BOX.

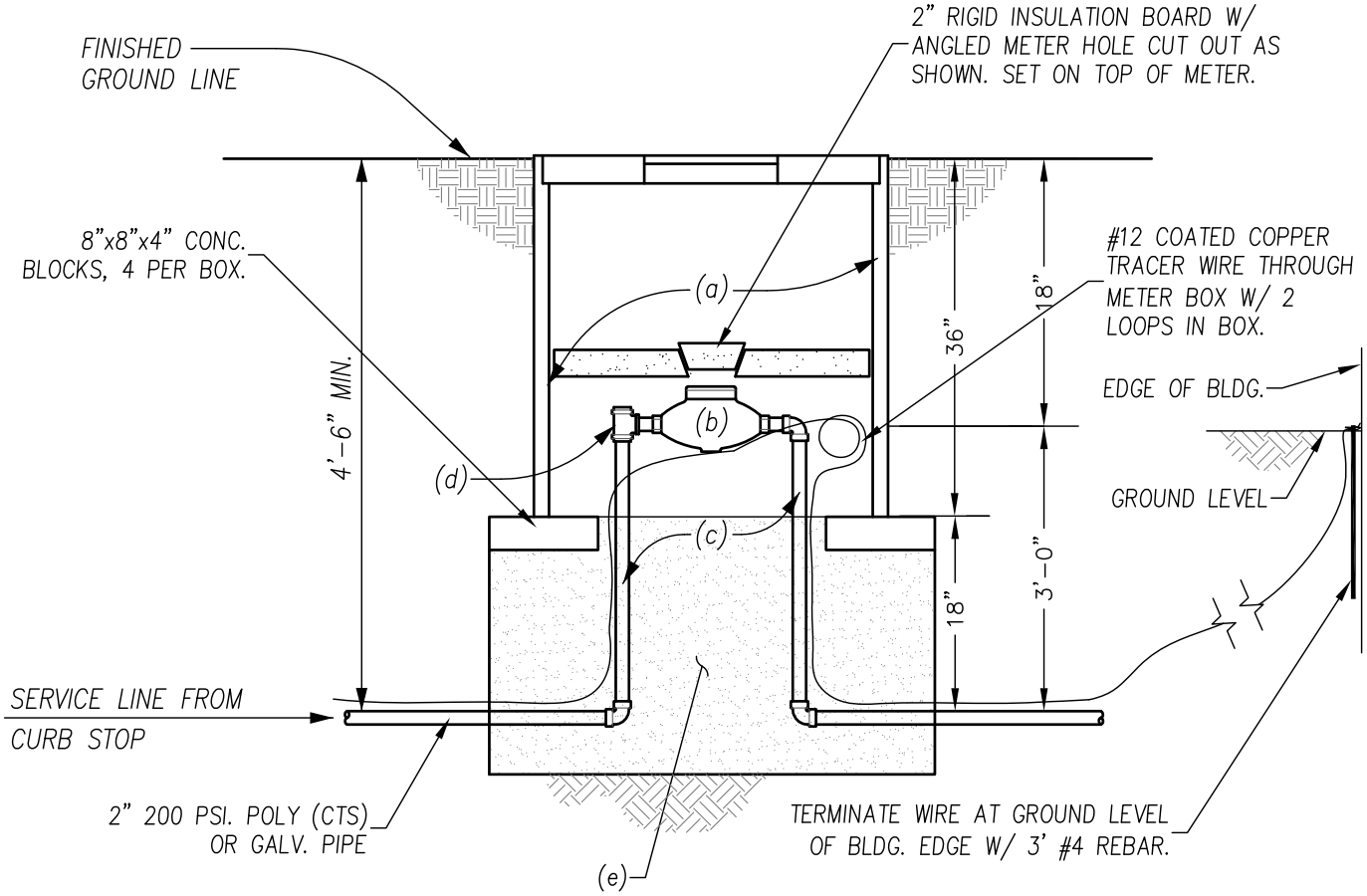
TRACER WIRE SPLICING SHALL CONSIST OF A DIRECT BURIAL DEVICE, UL LISTED, FOR THE PURPOSES OF DIRECT BURIAL.

N.T.S.

IRVIN WATER DISTRICT NO. 6

1 ½" - 2" SERVICE CONNECTION AND SERVICE PIPE

DETAIL DRAWING No. 302



METER ASSEMBLY MATERIALS

(a) METER BOX AND COVER WITH HINGED LID (ARMORCAST 17"x30" BOX, 2-18" SECTIONS, MODEL #A6001640PCX18, W/ CAST IRON HINGED LID, MODEL #A6001643R)

(b) WATER METER: SENSUS OMNI, READING IN C.F.

(c) 1½" & 2" 200 PSI. POLY. OR G.I. PIPE.

(d) ANGLE KEY VALVE WITH LOCK WING

(e) 25" OF SAND, TYP.

NOTE:
METERS SHALL BE SET IN NON-DRIVABLE AREAS ONLY.

N.T.S.

IRVIN WATER DISTRICT NO. 6

1 ½ & 2" METER ASSEMBLY & BOX

C:\E&H\IRVIN\STD_DET\IWD-Std. Details.DWG PLOT 1:1 10/13/21

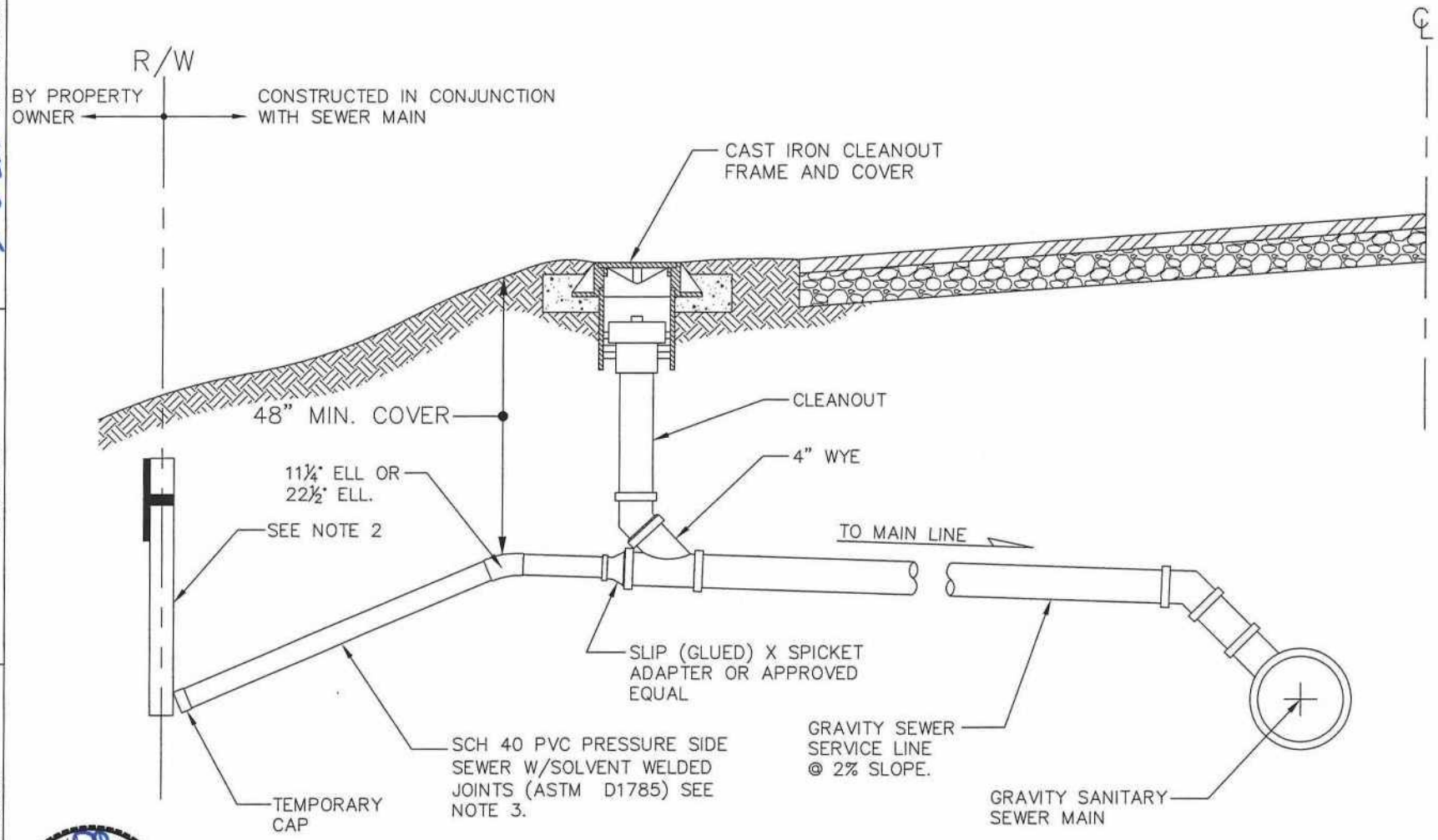
APPROVED:
ENVIRONMENTAL SERVICES DIRECTOR
DATE: 12/12/17

STANDARD

PRESSURE SIDE SEWER STUB
CONNECTION TO GRAVITY SEWER

SPOKANE COUNTY
ENVIRONMENTAL SERVICES DEPARTMENT
SPOKANE, WA. (509) 477-3604

SHEET
U-18



EUGENE A. PETERSEN
STATE OF WASHINGTON
36823
REGISTERED PROFESSIONAL ENGINEER

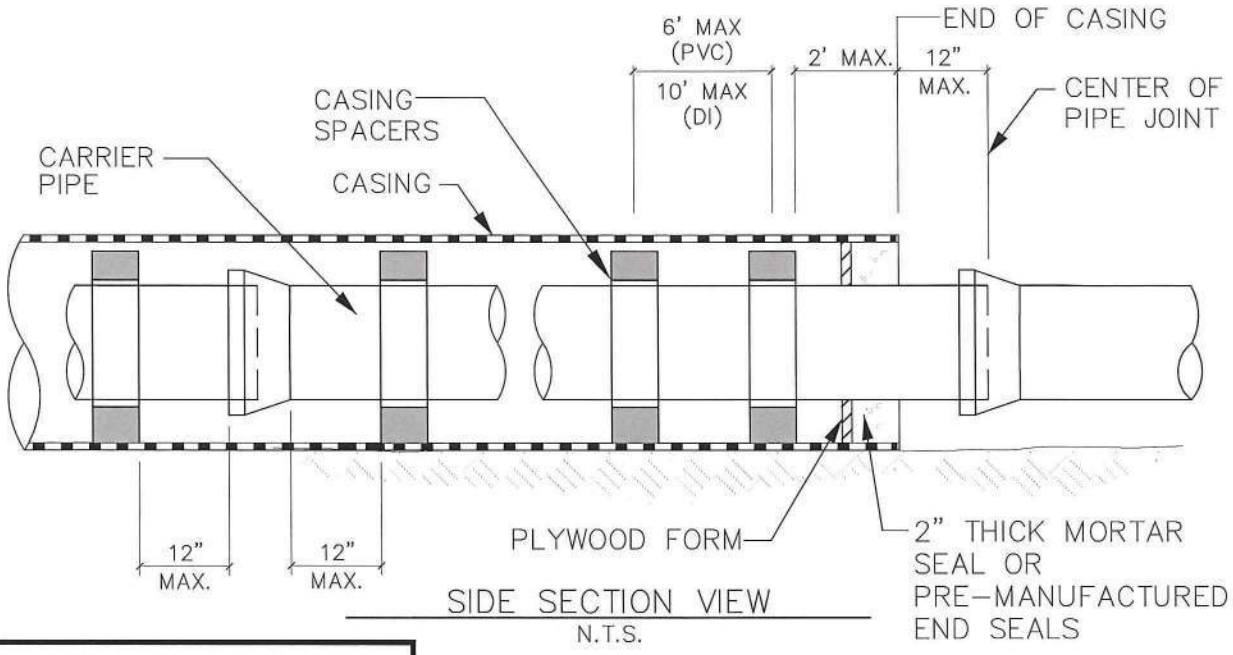
12/12/17

NOTES:

1. SEWAGE PUMP ASSEMBLY CHECK VALVE AND PRESSURE SIDE SEWER INSTALLED BY PROPERTY OWNER.

2. THE END OF THE PIPE (TEMPORARY CAP) SHALL BE MARKED ACCORDING TO SPOKANE COUNTY STANDARD PLAN U-17.

3. PRESSURE SERVICE STUB TO BE CONSTRUCTED IN CONFORMANCE WITH SPOKANE COUNTY STANDARD PLAN U-21 IF WATER MAIN CROSSING IS ENCOUNTERED.

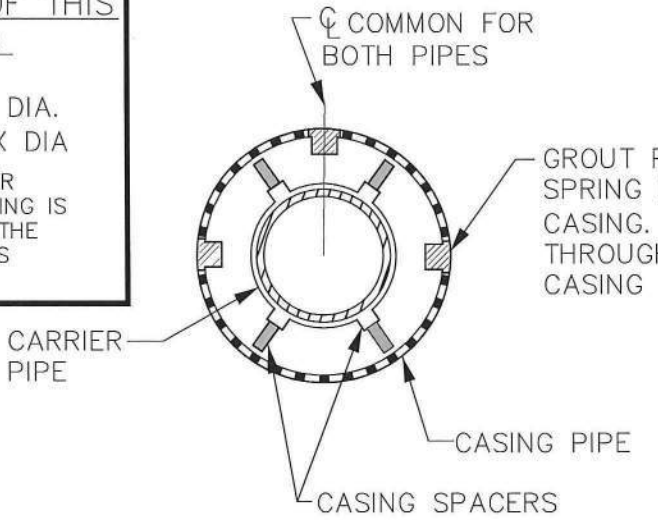


SIDE SECTION VIEW
N.T.S.

LIMITS ON USE OF THIS STANDARD PLAN:

CASING – 36" MAX DIA.
CARRIER – 24" MAX DIA

USE OF LARGER DIAMETER CARRIER PIPES AND CASING IS SUBJECT TO REVIEW BY THE ENVIRONMENTAL SERVICES DEPARTMENT



CROSS-SECTION VIEW
N.T.S.

NOTES:

1) CASING SPACERS SHALL BE A MINIMUM WIDTH OF EIGHT-INCHES (8") CONSTRUCTED OF T-304 SS FOR PVC CARRIER PIPE OR BE COATED STEEL STRUCTURES WITH DIELECTRIC INSULATORS FOR DI CARRIER PIPE AND SHALL BE AS MANUFACTURED BY CASCADE WATERWORKS MFG, OR APPROVED EQUAL.
2) CASING SPACERS SHALL HAVE FOUR (4) RUNNERS. UPPER RUNNERS SHALL EXTEND TO TOP OF CASING ("RESTRAINED" CONFIGURATION).
3) A CASING SPACER SHALL BE INSTALLED ON EACH SIDE OF EACH PIPE JOINT WITHIN THE CASING. DISTANCE FROM THE CENTER OF THE PIPE JOINTS TO THE CENTERS OF THESE CASING SPACERS SHALL BE 1 FT.
4) CENTER-TO-CENTER DISTANCE FOR CASING SPACERS ALONG PIPE SHALL NOT EXCEED SIX (6) FEET FOR PVC AND TEN (10) FEET FOR D.I.
5) IN ADDITION, COMPLY WITH ALL RECOMMENDATIONS OF THE CASING SPACER MANUFACTURER.

EUGENE A. REED STATE OF WASHINGTON 38823 REGISTERED PROFESSIONAL ENGINEER
12/12/17

SHEET
U-24

APPROVED: KR Cooke ENVIRONMENTAL SERVICES DIRECTOR DATE: 12/12/17	STANDARD TYPICAL PIPE CASING DETAIL (PVC OR DI CARRIER PIPE)	SPOKANE COUNTY ENVIRONMENTAL SERVICES DEPARTMENT SPOKANE, WA. (509) 477-3604

APPENDIX E
INADVERTANT DISCOVERY PLAN

PLAN AND PROCEDURES FOR THE UNANTICIPATED DISCOVERY OF CULTURAL RESOURCES AND HUMAN SKELETAL REMAINS

Pines Road/BNSF Grade Separation PROJECT, Spokane COUNTY WASHINGTON

1. INTRODUCTION

The City of Spokane Valley plans to construct the Pines Road/BNSF Grade Separation project. The purpose of this project is to construct a new alignment of Pines Road, a roundabout on Trent Ave, and other features. The following Unanticipated Discovery Plan (UDP) outlines procedures to follow, in accordance with state and federal laws, if archaeological materials or human remains are discovered.

2. RECOGNIZING CULTURAL RESOURCES

A cultural resource discovery could be prehistoric or historic. Examples include:

- An accumulation of shell, burned rocks, or other food related materials
- Bones or small pieces of bone,
- An area of charcoal or very dark stained soil with artifacts,
- Stone tools or waste flakes (i.e. an arrowhead, or stone chips),
- Clusters of tin cans or bottles, logging or agricultural equipment that appears to be older than 50 years,
- Buried railroad tracks, decking, or other industrial materials.

When in doubt, assume the material is a cultural resource.

3. ON-SITE RESPONSIBILITIES

STEP 1: STOP WORK. If any City of Spokane Valley employee, contractor or subcontractor believes that he or she has uncovered any cultural resource at any point in the project, all work adjacent to the discovery must stop. The discovery location should not be left unsecured at any time.

STEP 2: NOTIFY MONITOR. If there is an archaeological monitor for the project, notify that person. If there is a monitoring plan in place, the monitor will follow its provisions.

STEP 3: NOTIFY PROJECT MANAGEMENT AND WSDOT LOCAL PROGRAMS OFFICE. Contact the City of Spokane Valley Project Manager and the Local Programs Archaeologist:

City of Spokane Valley

Project Manager:
Name Erica Amsden
Number 509-720-5012
email eamsden@spokanevalleywa.gov

Locals Programs Archaeologist:
Trent de Boer
360-705-7879
deboert@wsdot.wa.gov

The Local Programs Archaeologist will make all other calls and notifications.

If human remains are encountered, treat them with dignity and respect at all times. Cover the remains with a tarp or other materials (not soil or rocks) for temporary protection in place and to shield them from being photographed. Do not call 911 or speak with the media.

4. FURTHER CONTACTS AND CONSULTATION

A. Project Manager's Responsibilities:

- Protect Find: The Project Manager is responsible for taking appropriate steps to protect the discovery site. All work will stop in an area adequate to provide for the total security, protection, and integrity of the resource. Vehicles, equipment, and unauthorized personnel will not be permitted to traverse the discovery site. Work in the immediate area will not resume until treatment of the discovery has been completed following provisions for treating archaeological/cultural material as set forth in this document.

- Direct Construction Elsewhere On-site: The Project Manager may direct construction away from cultural resources to work in other areas prior to contacting the concerned parties.

- Contact Local Programs Archaeologist: If the Local Programs Archaeologist has not yet been contacted, the Project Manager will do so.

B. Local Programs Archaeologist Responsibilities:

- Identify Find: The Local Programs Archaeologist will ensure that a qualified individual examines the find to determine if it is archaeological.

    - If it is determined not archaeological, work may proceed with no further delay.

    - If it is determined to be archaeological, the Local Programs Archaeologist will continue with notification.

- If the find may be human remains or funerary objects, the Local Programs Archaeologist will ensure that a qualified individual examines the find. If it is determined to be human remains, the procedure described in Section 5 will be followed.

- Notify DAHP: The Local Programs Archaeologist will contact the involved federal agency(s) and the Department of Archaeology and Historic Preservation (DAHP).

- Notify Tribes: If the discovery may relate to Native American interests, the Local Programs Archaeologist will notify the affected Indian tribes.

Federal Agencies:

Federal Highway Administration
Name William Witucki
Area Engineer Eastern/North Central
Number 360-753-9414
Email william.witucki@dot.gov

Agency: Federal Rail Administration
Name Austen Balthazar
Title Environmental Protection Specialist
Number
Email austen.balthazar@dot.gov

Department of Archaeology and Historic Preservation:

Dr. Allyson Brooks
Washington State Historic
Preservation Officer
360-586-3066

or
Dennis Wardlaw
Transportation Archaeologist
360-586-3085

Tribes consulted on this project are:

Tribe: Spokane Tribe of Indians
Name Randy Abrahamson
Title Cultural Resources
Number 509-258-4315
Email randya@spokanetribe.com

Tribe: Coeur d'Alene Tribe
Name Jill Marie Wagner
Title Cultural Resources
Number 208-686-1572
Email jwagner@cdatribe-nsn.gov

Tribe: Colville Confederated Tribes
Name Guy Moura
Title Cultural Resources
Number 509-634-2695
Email guy.moura@colvilletribes.com

Tribe:
Name
Title
Number
Email

Tribe:
Name
Title
Number
Email

Tribe
Name
Title
Number
Email

5. SPECIAL PROCEDURES FOR THE DISCOVERY OF HUMAN SKELETAL MATERIAL

Any human skeletal remains, regardless of ethnic origin, will at all times be treated with dignity and respect.

If the project occurs on federal lands (e.g., National Forest or Park, military reservation) the provisions of the Native American Graves Protection and Repatriation Act of 1990 apply, and the responsible federal agency will follow its provisions. Note that state highways that cross federal lands are on an easement and are not owned by the state.

If the project occurs on non-federal lands, the City of Spokane Valley will comply with applicable state and federal laws, and the following procedure:

A. Notify Law Enforcement Agency or Coroner's Office:

In addition to the actions described in Sections 3 and 4, the Project Manager will immediately notify the local law enforcement agency or coroner's office.

The coroner (with assistance of law enforcement personnel) will determine if the remains are human, whether the discovery site constitutes a crime scene, and will notify DAHP.

Agency Number 509-477-3300

B. Participate in Consultation:

Per RCW 27.53.030, RCW 68.50, and RCW 68.60, DAHP will have jurisdiction over non-forensic human remains. The Local Programs Archaeologist will participate in consultation.

If ground disturbing activities encounter human skeletal remains during the course of construction, then all activity will cease that may cause further disturbance to those remains. The area of the find will be secured and protected from further disturbance until the State provides notice to proceed. The finding of human skeletal remains will be reported to the county medical examiner/coroner and local law enforcement in the most expeditious manner possible. The remains will not be touched, moved, or further disturbed. The county medical examiner/coroner will assume jurisdiction over the human skeletal remains and make a determination of whether those remains are forensic or non-forensic. If the county medical examiner/coroner determines the remains are non-forensic, then they will report that finding to the Department of Archaeology and Historic Preservation (DAHP) who will then take jurisdiction over the remains. The DAHP will notify any appropriate cemeteries and all affected tribes of the find. The State Physical Anthropologist will make a determination of whether the remains are Indian or Non-Indian and report that finding to any appropriate cemeteries and the affected tribes. The DAHP will then handle all consultation with the affected parties as to the future preservation, excavation, and disposition of the remains.

State Physical Anthropologist Guy Tasa (360) 586-3534

6. DOCUMENTATION OF ARCHAEOLOGICAL MATERIALS

Archaeological deposits discovered during construction will be assumed eligible for inclusion in the National Register of Historic Places under Criterion D.

The Local Programs Archaeologist will ensure the proper documentation and assessment of any discovered cultural resources in cooperation with the federal agency(s), DAHP, affected tribes, and a contracted consultant (if any).

All prehistoric and historic cultural material discovered during project construction will be recorded by a professional archaeologist on State of Washington cultural resource site or isolate form using standard techniques. Site overviews, features, and artifacts will be photographed; stratigraphic profiles and soil/sediment descriptions will be prepared for subsurface exposures. Discovery locations will be documented on scaled site plans and site location maps.

Cultural features, horizons and artifacts detected in buried sediments may require further evaluation using hand-dug test units. Units may be dug in controlled fashion to expose features, collect samples from undisturbed contexts, or interpret complex stratigraphy. A test excavation unit or small trench might also be used to determine if an intact occupation surface is present. Test units will be used only when necessary to gather information on the nature, extent, and integrity of subsurface cultural deposits to evaluate the site's significance. Excavations will be conducted using state-of-the-art techniques for controlling provenience.

Spatial information, depth of excavation levels, natural and cultural stratigraphy, presence or absence of cultural material, and depth to sterile soil, regolith, or bedrock will be recorded for each probe on a standard form. Test excavation units will be recorded on unit-level forms, which include plan maps for each excavated level, and material type, number, and vertical provenience (depth below surface and stratum association where applicable) for all artifacts recovered from the level. A stratigraphic profile will be drawn for at least one wall of each test excavation unit.

Sediments excavated for purposes of cultural resources investigation will be screened through 1/8-inch mesh, unless soil conditions warrant ¼-inch mesh.

All prehistoric and historic artifacts collected from the surface and from probes and excavation units will be analyzed, catalogued, and temporarily curated. Ultimate disposition of cultural materials will be determined in consultation with the federal agency(s), DAHP, and the affected tribes.

Within 90 days of concluding fieldwork, a technical report describing any and all monitoring and resultant archaeological excavations will be provided to the Project Manager, who will

forward the report to the Local Programs Archaeologist for review and delivery to the federal agency(s), SHPO, and the affected tribe(s).

If assessment activity exposes human remains (burials, isolated teeth, or bones), the process described in Section 7 below will be followed.

7. PROCEEDING WITH CONSTRUCTION

Project construction outside the discovery location may continue while documentation and assessment of the cultural resources proceed. The Local Programs Archaeologist must determine the boundaries of the discovery location. In consultation with DAHP and affected tribes, Project Manager and the Local Programs Archaeologist will determine the appropriate level of documentation and treatment of the resource. The federal agency(s) will make the final determinations about treatment and documentation.

Construction may continue at the discovery location only after the process outlined in this plan is followed and the Local Programs Archaeologist (and the federal agency(s)) determines that compliance with state and federal laws is complete.

APPENDIX F
WSDOT GENERAL PERMIT

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600, Olympia, WA 98504-7600 • 360-407-6000

June 2, 2025

Robert Blegen
City of Spokane Valley
10210 E Sprague Ave
Spokane Valley, WA 99206-3682
Sent by email only: rblegen@spokanevalleywa.gov

RE: Coverage under the Construction Stormwater General Permit

Permit number:	**WAR314614**
Site Name:	**Pines BNSF Grade Separation Project**
Location:	**Intersection of Pines Rd (SR 27) and Trent Ave (SR 290)**
	Spokane Valley **County: Spokane**
Disturbed Acres:	**12.63**

Dear Robert Blegen:

The Washington State Department of Ecology (Ecology) received your Notice of Intent for coverage under Ecology's Construction Stormwater General Permit (CSWGP). This is your permit coverage letter. Your permit coverage is effective June 2, 2025.

Retain this letter as an official record of permit coverage for your site. You may keep your records in electronic format if you can easily access them from your construction site. You can get the CSWGP, permit forms, and other information at Ecology's CSWGP eCoverage Packet webpage[1]. Contact your Permit Administrator, listed below, if you want a copy of the CSWGP mailed to you. Please read the permit and contact Ecology if you have any questions.

Electronic Discharge Monitoring Reports (WQWebDMR)
This permit requires you to submit monthly discharge monitoring reports (DMRs) for the full duration of permit coverage (from the first full month of coverage to termination). Your first sampling and reporting period will be for the month of **July 2025** and your first DMR must be submitted by **August 15, 2025**.

You must submit your DMRs electronically using Ecology's secure online system, WQWebDMR. To sign up for WQWebDMR go to Ecology's WQWebPortal guidance webpage[2]. If you have

[1] http://www.ecology.wa.gov/eCoverage-packet
[2] https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Water-quality-permits-guidance/WQWebPortal-guidance

questions, contact the portal staff at (360) 407-7097 (Olympia area), or (800) 633-6193/Option 3, or email WQWebPortal@ecy.wa.gov.

Appeal Process
You have a right to appeal coverage under the general permit to the Pollution Control Hearing Board (PCHB). Appeals must be filed within 30 days of the date of receipt of this letter. Any appeal is limited to the general permit's applicability or non-applicability to a specific discharger. The appeal process is governed by chapter 43.21B RCW and chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2). For more information regarding your right to appeal, please reference Ecology's Focus Sheet: *Appeal of General Permit Coverage*[3].

Annual Permit Fees
RCW 90.48.465 requires Ecology to recover the costs of managing the permit program. Permit fees are invoiced annually until the permit is terminated. Termination conditions are described in the permit. For permit fee related questions, please contact the Water Quality Fee Unit at wqfeeunit@ecy.wa.gov or (800) 633-6193/Option 2. You can also visit Water Quality Permit Fees Webpage[4] for more information.

Ecology Field Inspector Assistance
If you have questions regarding stormwater management at your construction site, please contact your Regional Inspector, Chad Sauve of Ecology's Eastern Regional Office in Spokane at chad.sauve@ecy.wa.gov or (509) 934-6202.

Questions or Additional Information
Ecology is here to help. Please review our Construction Stormwater General Permit webpage[5] for more information. If you have questions about the Construction Stormwater General Permit, please contact your Permit Administrator, Max Graham at max.graham@ecy.wa.gov or (564) 200-2505.

Sincerely,

Jeff Killelea, Manager
Permit and Technical Services Section
Water Quality Program

[3] https://apps.ecology.wa.gov/publications/summarypages/1710007.html
[4] https://ecology.wa.gov/Water-Shorelines/Water-quality/Water-quality-permits/Fees
[5] www.ecology.wa.gov/constructionstormwaterpermit

Issuance Date: November 18, 2020
Effective Date: January 1, 2021
Expiration Date: December 31, 2025

CONSTRUCTION STORMWATER GENERAL PERMIT

National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge General Permit for Stormwater Discharges Associated with Construction Activity

State of Washington
Department of Ecology
Olympia, Washington 98504

In compliance with the provisions of
Chapter 90.48 Revised Code of Washington
(State of Washington Water Pollution Control Act)
and
Title 33 United States Code, Section 1251 et seq.
The Federal Water Pollution Control Act (The Clean Water Act)

Until this permit expires, is modified, or revoked, Permittees that have properly obtained coverage under this general permit are authorized to discharge in accordance with the special and general conditions that follow.

Vincent McGowan, P.E.
Water Quality Program Manager
Washington State Department of Ecology

TABLE OF CONTENTS

LIST OF TABLES ..... **ii**

SUMMARY OF PERMIT REPORT SUBMITTALS **1**

SPECIAL CONDITIONS **3**

S1. Permit Coverage 3

S2. Application Requirements 7

S3. Compliance with Standards 9

S4. Monitoring Requirements, Benchmarks, and Reporting Triggers 10

S5. Reporting and Recordkeeping Requirements 17

S6. Permit Fees 20

S7. Solid and Liquid Waste Disposal 20

S8. Discharges to 303(D) or TMDL Waterbodies 20

S9. Stormwater Pollution Prevention Plan 23

S10. Notice Of Termination 32

GENERAL CONDITIONS **34**

G1. Discharge Violations 34

G2. Signatory Requirements 34

G3. Right of Inspection and Entry 35

G4. General Permit Modification and Revocation 35

G5. Revocation of Coverage Under tPermit 35

G6. Reporting a Cause for Modification 36

G7. Compliance with Other Laws and Statutes 36

G8. Duty to Reapply 36

G9. Removed Substance 36

G10. Duty to Provide Information 36

G11. Other Requirements of 40 CFR 37

G12. Additional Monitoring 37

G13. Penalties for Violating Permit Conditions 37

G14. Upset 37

G15. Property Rights 37

G16. Duty to Comply 37

G17. Toxic Pollutants 38

G18. Penalties for Tampering 38

G19. Reporting Planned Changes 38

G20. Reporting Other Information 38

G21. Reporting Anticipated Non-Compliance 38

G22. Requests to Be Excluded From Coverage Under the Permit 39
G23. Appeals..... 39
G24. Severability..... 39
G25. Bypass Prohibited 39
APPENDIX A – DEFINITIONS.....42
APPENDIX B – ACRONYMS.....50

LIST OF TABLES

Table 1 Summary of Required Submittals..... 1
Table 2 Summary of Required On-site Documentation 2
Table 3 Summary of Primary Monitoring Requirements 12
Table 4 Monitoring and Reporting Requirements 14
Table 5 Turbidity, Fine Sediment & Phosphorus Sampling and Limits for 303(d)-Listed Waters 22
Table 6 pH Sampling and Limits for 303(d)-Listed Waters..... 22

SUMMARY OF PERMIT REPORT SUBMITTALS

Refer to the Special and General Conditions within this permit for additional submittal requirements. Appendix A provides a list of definitions. Appendix B provides a list of acronyms.

Table 1 Summary of Required Submittals

Permit Section	Submittal	Frequency	First Submittal Date
S5.A and S8	High Turbidity/Transparency Phone Reporting	As Necessary	Within 24 hours
S5.B	Discharge Monitoring Report	Monthly*	Within 15 days following the end of each month
S5.F and S8	Noncompliance Notification – Telephone Notification	As necessary	Within 24 hours
S5.F	Noncompliance Notification – Written Report	As necessary	Within 5 Days of non-compliance
S9.D	Request for Chemical Treatment Form	As necessary	Written approval from Ecology is required prior to using chemical treatment (with the exception of dry ice, CO_2 or food grade vinegar to adjust pH)
G2	Notice of Change in Authorization	As necessary	
G6	Permit Application for Substantive Changes to the Discharge	As necessary	
G8	Application for Permit Renewal	1/permit cycle	No later than 180 days before expiration
S2.A	Notice of Permit Transfer	As necessary	
G19	Notice of Planned Changes	As necessary	
G21	Reporting Anticipated Non-compliance	As necessary	

NOTE: *Permittees must submit electronic Discharge Monitoring Reports (DMRs) to the Washington State Department of Ecology monthly, regardless of site discharge, for the full duration of permit coverage. Refer to Section S5.B of this General Permit for more specific information regarding DMRs.

Table 2 Summary of Required On-site Documentation

Document Title	Permit Conditions
Permit Coverage Letter	See Conditions S2, S5
Construction Stormwater General Permit (CSWGP)	See Conditions S2, S5
Site Log Book	See Conditions S4, S5
Stormwater Pollution Prevention Plan (SWPPP)	See Conditions S5, S9
Site Map	See Conditions S5, S9

SPECIAL CONDITIONS

S1. PERMIT COVERAGE

A. Permit Area

This Construction Stormwater General Permit (CSWGP) covers all areas of Washington State, except for federal operators and Indian Country as specified in Special Condition S1.E.3 and 4.

B. Operators Required to Seek Coverage Under this General Permit

1. Operators of the following construction activities are required to seek coverage under this CSWGP:

    a. Clearing, grading and/or excavation that results in the disturbance of one or more acres (including off-site disturbance acreage related to construction-support activity as authorized in S1.C.2) and discharges stormwater to surface waters of the State; and clearing, grading and/or excavation on sites smaller than one acre that are part of a larger common plan of development or sale, if the common plan of development or sale will ultimately disturb one acre or more and discharge stormwater to surface waters of the State.

        i. This category includes forest practices (including, but not limited to, class IV conversions) that are part of a construction activity that will result in the disturbance of one or more acres, and discharge to surface waters of the State (that is, forest practices that prepare a site for construction activities); and

    b. Any size construction activity discharging stormwater to waters of the State that the Washington State Department of Ecology (Ecology):

        i. Determines to be a significant contributor of pollutants to waters of the State of Washington.

        ii. Reasonably expects to cause a violation of any water quality standard.

2. Operators of the following activities are not required to seek coverage under this CSWGP (unless specifically required under Special Condition S1.B.1.b, above):

    a. Construction activities that discharge all stormwater and non-stormwater to groundwater, sanitary sewer, or combined sewer, and have no point source discharge to either surface water or a storm sewer system that drains to surface waters of the State.

    b. Construction activities covered under an Erosivity Waiver (Special Condition S1.F).

    c. Routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

C. Authorized Discharges

1. ***Stormwater Associated with Construction Activity.*** Subject to compliance with the terms and conditions of this permit, Permittees are authorized to discharge stormwater associated with construction activity to surface waters of the State or to a storm sewer system that drains to surface waters of the State. (Note that "surface waters of the

State" may exist on a construction site as well as off site; for example, a creek running through a site.)

2. ***Stormwater Associated with Construction Support Activity.*** This permit also authorizes stormwater discharge from support activities related to the permitted construction site (for example, an on-site portable rock crusher, off-site equipment staging yards, material storage areas, borrow areas, etc.) provided:

    a. The support activity relates directly to the permitted construction site that is required to have an NPDES permit; and

    b. The support activity is not a commercial operation serving multiple unrelated construction projects, and does not operate beyond the completion of the construction activity; and

    c. Appropriate controls and measures are identified in the Stormwater Pollution Prevention Plan (SWPPP) for the discharges from the support activity areas.

3. ***Non-Stormwater Discharges.*** The categories and sources of non-stormwater discharges identified below are authorized conditionally, provided the discharge is consistent with the terms and conditions of this permit:

    a. Discharges from fire-fighting activities.

    b. Fire hydrant system flushing.

    c. Potable water, including uncontaminated water line flushing.

    d. Hydrostatic test water.

    e. Uncontaminated air conditioning or compressor condensate.

    f. Uncontaminated groundwater or spring water.

    g. Uncontaminated excavation dewatering water (in accordance with S9.D.10).

    h. Uncontaminated discharges from foundation or footing drains.

    i. Uncontaminated or potable water used to control dust. Permittees must minimize the amount of dust control water used.

    j. Routine external building wash down that does not use detergents.

    k. Landscape irrigation water.

The SWPPP must adequately address all authorized non-stormwater discharges, except for discharges from fire-fighting activities, and must comply with Special Condition S3. At a minimum, discharges from potable water (including water line flushing), fire hydrant system flushing, and pipeline hydrostatic test water must undergo the following: dechlorination to a concentration of 0.1 parts per million (ppm) or less, and pH adjustment to within 6.5 – 8.5 standard units (su), if necessary.

D. Prohibited Discharges

The following discharges to waters of the State, including groundwater, are prohibited:

1. Concrete wastewater

2. Wastewater from washout and clean-up of stucco, paint, form release oils, curing compounds and other construction materials.

3. Process wastewater as defined by 40 Code of Federal Regulations (CFR) 122.2 (See Appendix A of this permit).

4. Slurry materials and waste from shaft drilling, including process wastewater from shaft drilling for construction of building, road, and bridge foundations unless managed according to Special Condition S9.D.9.j.

5. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance.

6. Soaps or solvents used in vehicle and equipment washing.

7. Wheel wash wastewater, unless managed according to Special Condition S9.D.9.

8. Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, unless managed according to Special Condition S9.D.10.

E. Limits on Coverage

Ecology may require any discharger to apply for and obtain coverage under an individual permit or another more specific general permit. Such alternative coverage will be required when Ecology determines that this CSWGP does not provide adequate assurance that water quality will be protected, or there is a reasonable potential for the project to cause or contribute to a violation of water quality standards.

The following stormwater discharges are not covered by this permit:

1. Post-construction stormwater discharges that originate from the site after completion of construction activities and the site has undergone final stabilization.

2. Non-point source silvicultural activities such as nursery operations, site preparation, reforestation and subsequent cultural treatment, thinning, prescribed burning, pest and fire control, harvesting operations, surface drainage, or road construction and maintenance, from which there is natural runoff as excluded in 40 CFR Subpart 122.

3. Stormwater from any federal operator.

4. Stormwater from facilities located on ***Indian Country*** as defined in 18 U.S.C.§1151, except portions of the Puyallup Reservation as noted below.

   Indian Country includes:

   a. All land within any Indian Reservation notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation. This includes all federal, tribal, and Indian and non-Indian privately owned land within the reservation.

   b. All off-reservation Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same.

   c. All off-reservation federal trust lands held for Native American Tribes.

Puyallup Exception: Following the *Puyallup Tribes of Indians Land Settlement Act of 1989*, 25 U.S.C. §1773; the permit does apply to land within the Puyallup Reservation except for discharges to surface water on land held in trust by the federal government.

5. Stormwater from any site covered under an existing NPDES individual permit in which stormwater management and/or treatment requirements are included for all stormwater discharges associated with construction activity.

6. Stormwater from a site where an applicable Total Maximum Daily Load (TMDL) requirement specifically precludes or prohibits discharges from construction activity.

F. Erosivity Waiver

Construction site operators may qualify for an Erosivity Waiver from the CSWGP if the following conditions are met:

1. The site will result in the disturbance of fewer than five (5) acres and the site is not a portion of a common plan of development or sale that will disturb five (5) acres or greater.

2. Calculation of Erosivity "R" Factor and Regional Timeframe:

    a. The project's calculated rainfall erosivity factor ("R" Factor) must be less than five (5) during the period of construction activity, (See the CSWGP homepage http://www.ecy.wa.gov/programs/wq/stormwater/construction/index.html for a link to the EPA's calculator and step by step instructions on computing the "R" Factor in the *EPA Erosivity Waiver Fact Sheet*). The period of construction activity starts when the land is first disturbed and ends with final stabilization. In addition:

    b. The entire period of construction activity must fall within the following timeframes:

        i. For sites west of the Cascades Crest: June 15 – September 15.

        ii. For sites east of the Cascades Crest, excluding the Central Basin: June 15 – October 15.

        iii. For sites east of the Cascades Crest, within the Central Basin: no timeframe restrictions apply. The Central Basin is defined as the portions of Eastern Washington with mean annual precipitation of less than 12 inches. For a map of the Central Basin (Average Annual Precipitation Region 2), refer to: http://www.ecy.wa.gov/programs/wq/stormwater/construction/resourcesguidance.html.

3. Construction site operators must submit a complete Erosivity Waiver certification form at least one week before disturbing the land. Certification must include statements that the operator will:

    a. Comply with applicable local stormwater requirements; and

    b. Implement appropriate erosion and sediment control BMPs to prevent violations of water quality standards.

4. This waiver is not available for facilities declared significant contributors of pollutants as defined in Special Condition S1.B.1.b or for any size construction activity that could

reasonably expect to cause a violation of any water quality standard as defined in Special Condition S1.B.1.b.ii.

5. This waiver does not apply to construction activities which include non-stormwater discharges listed in Special Condition S1.C.3.

6. If construction activity extends beyond the certified waiver period for any reason, the operator must either:

   a. Recalculate the rainfall erosivity "R" factor using the original start date and a new projected ending date and, if the "R" factor is still under 5 *and* the entire project falls within the applicable regional timeframe in Special Condition S1.F.2.b, complete and submit an amended waiver certification form before the original waiver expires; *or*

   b. Submit a complete permit application to Ecology in accordance with Special Condition S2.A and B before the end of the certified waiver period.

S2. APPLICATION REQUIREMENTS

A. Permit Application Forms

1. *Notice of Intent Form*

a. Operators of new or previously unpermitted construction activities must submit a complete and accurate permit application (Notice of Intent, or NOI) to Ecology.

b. Operators must apply using the electronic application form (NOI) available on Ecology's website (http://ecy.wa.gov/programs/wq/stormwater/construction/index.html). Permittees unable to submit electronically (for example, those who do not have an internet connection) must contact Ecology to request a waiver and obtain instructions on how to obtain a paper NOI.

Department of Ecology
Water Quality Program - Construction Stormwater
PO Box 47696
Olympia, Washington 98504-7696

c. The operator must submit the NOI at least 60 days before discharging stormwater from construction activities and must submit it prior to the date of the first public notice (See Special Condition S2.B, below, for details). The 30-day public comment period begins on the publication date of the second public notice. Unless Ecology responds to the complete application in writing, coverage under the general permit will automatically commence on the 31st day following receipt by Ecology of a *completed* NOI, or the issuance date of this permit, whichever is later; unless Ecology specifies a later date in writing as required by WAC173-226-200(2). See S8.B for Limits on Coverage for New Discharges to TMDL or 303(d)-Listed Waters.

d. If an applicant intends to use a Best Management Practice (BMP) selected on the basis of Special Condition S9.C.4 ("demonstrably equivalent" BMPs), the applicant must notify Ecology of its selection as part of the NOI. In the event the applicant selects BMPs after submission of the NOI, the applicant must provide notice of the

selection of an equivalent BMP to Ecology at least 60 days before intended use of the equivalent BMP.

e. Applicants must notify Ecology if they are aware of contaminated soils and/or groundwater associated with the construction activity. Provide detailed information with the NOI (as known and readily available) on the nature and extent of the contamination (concentrations, locations, and depth), as well as pollution prevention and/or treatment BMPs proposed to control the discharge of soil and/or groundwater contaminants in stormwater. Examples of such detail may include, but are not limited to:

   i. List or table of all known contaminants with laboratory test results showing concentration and depth,

   ii. Map with sample locations,

   iii. Related portions of the Stormwater Pollution Prevention Plan (SWPPP) that address the management of contaminated and potentially contaminated construction stormwater and dewatering water,

   iv. Dewatering plan and/or dewatering contingency plan.

2. ***Transfer of Coverage Form***

The Permittee can transfer current coverage under this permit to one or more new operators, including operators of sites within a Common Plan of Development, provided:

   i. The Permittee submits a complete Transfer of Coverage Form to Ecology, signed by the current and new discharger and containing a specific date for transfer of permit responsibility, coverage and liability (including any Administrative Orders associated with the permit); and

   ii. Ecology does not notify the current discharger and new discharger of intent to revoke coverage under the general permit. If this notice is not given, the transfer is effective on the date specified in the written agreement.

When a current discharger (Permittee) transfers a portion of a permitted site, the current discharger must also indicate the remaining permitted acreage after the transfer. Transfers do not require public notice.

3. ***Modification of Coverage Form***

Permittees must notify Ecology regarding any changes to the information provided on the NOI by submitting an Update/Modification of Permit Coverage form in accordance with General Conditions G6 and G19. Examples of such changes include, but are not limited to:

   i. Changes to the Permittee's mailing address,

   ii. Changes to the on-site contact person information, and

   iii. Changes to the area/acreage affected by construction activity.

B. Public Notice

For new or previously unpermitted construction activities, the applicant must publish a public notice at least one time each week for two consecutive weeks, at least 7 days apart, in a newspaper with general circulation in the county where the construction is to take place. The notice must be run after the NOI has been submitted and must contain:

1. A statement that "*The applicant is seeking coverage under the Washington State Department of Ecology's Construction Stormwater NPDES and State Waste Discharge General Permit*."
2. The name, address, and location of the construction site.
3. The name and address of the applicant.
4. The type of construction activity that will result in a discharge (for example, residential construction, commercial construction, etc.), and the total number of acres to be disturbed over the lifetime of the project.
5. The name of the receiving water(s) (that is, the surface water(s) to which the site will discharge), or, if the discharge is through a storm sewer system, the name of the operator of the system and the receiving water(s) the system discharges to.
6. The statement: *Any persons desiring to present their views to the Washington State Department of Ecology regarding this application, or interested in Ecology's action on this application, may notify Ecology in writing no later than 30 days of the last date of publication of this notice. Ecology reviews public comments and considers whether discharges from this project would cause a measurable change in receiving water quality, and, if so, whether the project is necessary and in the overriding public interest according to Tier II antidegradation requirements under WAC 173-201A-320. Comments can be submitted to: Department of Ecology, PO Box 47696, Olympia, Washington 98504-7696 Attn: Water Quality Program, Construction Stormwater*.

S3. COMPLIANCE WITH STANDARDS

A. Discharges must not cause or contribute to a violation of surface water quality standards (Chapter 173-201A WAC), groundwater quality standards (Chapter 173-200 WAC), sediment management standards (Chapter 173-204 WAC), and human health-based criteria in the Federal water quality criteria applicable to Washington. (40 CFR Part 131.45) Discharges that are not in compliance with these standards are prohibited.

B. Prior to the discharge of stormwater and non-stormwater to waters of the State, the Permittee must apply All Known, Available, and Reasonable methods of prevention, control, and Treatment (AKART). This includes the preparation and implementation of an adequate SWPPP, with all appropriate BMPs installed and maintained in accordance with the SWPPP and the terms and conditions of this permit.

C. Ecology presumes that a Permittee complies with water quality standards unless discharge monitoring data or other site-specific information demonstrates that a discharge causes or contributes to a violation of water quality standards, when the Permittee complies with the following conditions. The Permittee must fully:

1. Comply with all permit conditions, including; planning, sampling, monitoring, reporting, and recordkeeping conditions.

2. Implement stormwater BMPs contained in stormwater management manuals published or approved by Ecology, or BMPs that are demonstrably equivalent to BMPs contained in stormwater management manuals published or approved by Ecology, including the proper selection, implementation, and maintenance of all applicable and appropriate BMPs for on-site pollution control. (For purposes of this section, the stormwater manuals listed in Appendix 10 of the *Phase I Municipal Stormwater Permit* are approved by Ecology.)

D. Where construction sites also discharge to groundwater, the groundwater discharges must also meet the terms and conditions of this CSWGP. Permittees who discharge to groundwater through an injection well must also comply with any applicable requirements of the Underground Injection Control (UIC) regulations, Chapter 173-218 WAC.

S4. MONITORING REQUIREMENTS, BENCHMARKS, AND REPORTING TRIGGERS

A. Site Log Book

The Permittee must maintain a site log book that contains a record of the implementation of the SWPPP and other permit requirements, including the installation and maintenance of BMPs, site inspections, and stormwater monitoring.

B. Site Inspections

Construction sites one (1) acre or larger that discharge stormwater to surface waters of the State must have site inspections conducted by a Certified Erosion and Sediment Control Lead (CESCL). Sites less than one (1) acre may have a person without CESCL certification conduct inspections. (See Special Conditions S4.B.3 and B.4, below, for detailed requirements of the Permittee's CESCL.)

Site inspections must include all areas disturbed by construction activities, all BMPs, and all stormwater discharge points under the Permittee's operational control.

1. The Permittee must have staff knowledgeable in the principles and practices of erosion and sediment control. The CESCL (sites one acre or more) or inspector (sites less than one acre) must have the skills to assess the:

    a. Site conditions and construction activities that could impact the quality of stormwater; and

    b. Effectiveness of erosion and sediment control measures used to control the quality of stormwater discharges. The SWPPP must identify the CESCL or inspector, who must be present on site or on-call at all times. The CESCL (sites one (1) acre or more) must obtain this certification through an approved erosion and sediment control training program that meets the minimum training standards established by Ecology. (See BMP C160 in the manual, referred to in Special Condition S9.C.1 and 2.)

2. The CESCL or inspector must examine stormwater visually for the presence of suspended sediment, turbidity, discoloration, and oil sheen. BMP effectiveness must be evaluated to

determine if it is necessary to install, maintain, or repair BMPs to improve the quality of stormwater discharges.

Based on the results of the inspection, the Permittee must correct the problems identified, by:

a. Reviewing the SWPPP for compliance with Special Condition S9 and making appropriate revisions within 7 days of the inspection.

b. Immediately beginning the process of fully implementing and maintaining appropriate source control and/or treatment BMPs, within 10 days of the inspection. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when an extension is requested by a Permittee within the initial 10-day response period.

c. Documenting BMP implementation and maintenance in the site log book.

3. The CESCL or inspector must inspect all areas disturbed by construction activities, all BMPs, and all stormwater discharge points at least once every calendar week and within 24 hours of any discharge from the site. (For purposes of this condition, individual discharge events that last more than one (1) day do not require daily inspections. For example, if a stormwater pond discharges continuously over the course of a week, only one (1) inspection is required that week.) Inspection frequency may be reduced to once every calendar month for inactive sites that are temporarily stabilized.

4. The Permittee must summarize the results of each inspection in an inspection report or checklist and enter the report/checklist into, or attach it to, the site log book. At a minimum, each inspection report or checklist must include:

a. Inspection date and time.

b. Weather information.

c. The general conditions during inspection.

d. The approximate amount of precipitation since the last inspection.

e. The approximate amount of precipitation within the last 24 hours.

f. A summary or list of all implemented BMPs, including observations of all erosion/sediment control structures or practices.

g. A description of:

i. BMPs inspected (including location).

ii. BMPs that need maintenance and why.

iii. BMPs that failed to operate as designed or intended, and

iv. Where additional or different BMPs are needed, and why.

h. A description of stormwater discharged from the site. The Permittee must note the presence of suspended sediment, turbidity, discoloration, and oil sheen, as applicable.

i. Any water quality monitoring performed during inspection.

j. General comments and notes, including a brief description of any BMP repairs, maintenance, or installations made following the inspection.

k. An implementation schedule for the remedial actions that the Permittee plans to take if the site inspection indicates that the site is out of compliance. The remedial actions taken must meet the requirements of the SWPPP and the permit.

l. A summary report of the inspection.

m. The name, title, and signature of the person conducting the site inspection, a phone number or other reliable method to reach this person, and the following statement: *I certify that this report is true, accurate, and complete to the best of my knowledge and belief.*

Table 3 Summary of Primary Monitoring Requirements

Size of Soil Disturbance[1]	Weekly Site Inspections	Weekly Sampling w/ Turbidity Meter	Weekly Sampling w/ Transparency Tube	Weekly pH Sampling[2]	CESCL Required for Inspections?
Sites that disturb less than 1 acre, but are part of a larger Common Plan of Development	Required	Not Required	Not Required	Not Required	No
Sites that disturb 1 acre or more, but fewer than 5 acres	Required	Sampling Required – either method[3]		Required	Yes
Sites that disturb 5 acres or more	Required	Required	Not Required[4]	Required	Yes

[1] Soil disturbance is calculated by adding together all areas that will be affected by construction activity. Construction activity means clearing, grading, excavation, and any other activity that disturbs the surface of the land, including ingress/egress from the site.

[2] If construction activity results in the disturbance of 1 acre or more, and involves significant concrete work (1,000 cubic yards of concrete or recycled concrete placed or poured over the life of a project) or the use of engineered soils (soil amendments including but not limited to Portland cement-treated base [CTB], cement kiln dust [CKD], or fly ash), and stormwater from the affected area drains to surface waters of the State or to a storm sewer stormwater collection system that drains to other surface waters of the State, the Permittee must conduct pH sampling in accordance with Special Condition S4.D.

[3] Sites with one or more acres, but fewer than 5 acres of soil disturbance, must conduct turbidity or transparency sampling in accordance with Special Condition S4.C.4.a or b.

[4] Sites equal to or greater than 5 acres of soil disturbance must conduct turbidity sampling using a turbidity meter in accordance with Special Condition S4.C.4.a.

C. Turbidity/Transparency Sampling Requirements

1. Sampling Methods

    a. If construction activity involves the disturbance of five (5) acres or more, the Permittee must conduct turbidity sampling per Special Condition S4.C.4.a, below.

    b. If construction activity involves one (1) acre or more but fewer than five (5) acres of soil disturbance, the Permittee must conduct either transparency sampling *or* turbidity sampling per Special Condition S4.C.4.a or b, below.

2. Sampling Frequency

    a. The Permittee must sample all discharge points at least once every calendar week when stormwater (or authorized non-stormwater) discharges from the site or enters any on-site surface waters of the state (for example, a creek running through a site); sampling is not required on sites that disturb less than an acre.

    b. Samples must be representative of the flow and characteristics of the discharge.

    c. Sampling is not required when there is no discharge during a calendar week.

    d. Sampling is not required outside of normal working hours or during unsafe conditions.

    e. If the Permittee is unable to sample during a monitoring period, the Permittee must include a brief explanation in the monthly Discharge Monitoring Report (DMR).

    f. Sampling is not required before construction activity begins.

    g. The Permittee may reduce the sampling frequency for temporarily stabilized, inactive sites to once every calendar month.

3. Sampling Locations

    a. Sampling is required at all points where stormwater associated with construction activity (or authorized non-stormwater) is discharged off site, including where it enters any on-site surface waters of the state (for example, a creek running through a site).

    b. The Permittee may discontinue sampling at discharge points that drain areas of the project that are fully stabilized to prevent erosion.

    c. The Permittee must identify all sampling point(s) in the SWPPP and on the site map and clearly mark these points in the field with a flag, tape, stake or other visible marker.

    d. Sampling is not required for discharge that is sent directly to sanitary or combined sewer systems.

    e. The Permittee may discontinue sampling at discharge points in areas of the project where the Permittee no longer has operational control of the construction activity.

4. Sampling and Analysis Methods

   a. The Permittee performs turbidity analysis with a calibrated turbidity meter (turbidimeter) either on site or at an accredited lab. The Permittee must record the results in the site log book in nephelometric turbidity units (NTUs).

   b. The Permittee performs transparency analysis on site with a 1¾ inch diameter, 60 centimeter (cm)-long transparency tube. The Permittee will record the results in the site log book in centimeters (cm).

Table 4 Monitoring and Reporting Requirements

Parameter	Unit	Analytical Method	Sampling Frequency	Benchmark Value
Turbidity	NTU	SM2130	Weekly, if discharging	25 NTUs
Transparency	Cm	Manufacturer instructions, or Ecology guidance	Weekly, if discharging	33 cm

5. Turbidity/Transparency Benchmark Values and Reporting Triggers

   The benchmark value for turbidity is 25 NTUs. The benchmark value for transparency is 33 centimeters (cm). Note: Benchmark values do not apply to discharges to segments of water bodies on Washington State's 303(d) list (Category 5) for turbidity, fine sediment, or phosphorus; these discharges are subject to a numeric effluent limit for turbidity. Refer to Special Condition S8 for more information and follow S5.F – Noncompliance Notification for reporting requirements applicable to discharges which exceed the numeric effluent limit for turbidity.

   a. Turbidity 26 – 249 NTUs, or Transparency 32 – 7 cm:

      If the discharge turbidity is 26 to 249 NTUs; or if discharge transparency is 32 to 7 cm, the Permittee must:

      i. Immediately begin the process to fully implement and maintain appropriate source control and/or treatment BMPs, and no later than 10 days of the date the discharge exceeded the benchmark. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when the Permittee requests an extension within the initial 10-day response period.

      ii. Review the SWPPP for compliance with Special Condition S9 and make appropriate revisions within 7 days of the date the discharge exceeded the benchmark.

      iii. Document BMP implementation and maintenance in the site log book.

   b. Turbidity 250 NTUs or greater, or Transparency 6 cm or less:

      If a discharge point's turbidity is 250 NTUs or greater, or if discharge transparency is less than or equal to 6 cm, the Permittee must complete the reporting and adaptive

management process described below. For discharges which are subject to a numeric effluent limit for turbidity, see S5.F – Noncompliance Notification.

i. Within 24 hours, telephone or submit an electronic report to the applicable Ecology Region's Environmental Report Tracking System (ERTS) number (or through Ecology's Water Quality Permitting Portal [WQWebPortal] – Permit Submittals when the form is available), in accordance with Special Condition S5.A.

- **Central Region** (Okanogan, Chelan, Douglas, Kittitas, Yakima, Klickitat, Benton): (509) 575-2490
- **Eastern Region** (Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman): (509) 329-3400
- **Northwest Region** (Kitsap, Snohomish, Island, King, San Juan, Skagit, Whatcom): (425) 649-7000
- **Southwest Region** (Grays Harbor, Lewis, Mason, Thurston, Pierce, Clark, Cowlitz, Skamania, Wahkiakum, Clallam, Jefferson, Pacific): (360) 407-6300

These numbers and a link to the ERTS reporting page are also listed at the following website: http://www.ecy.wa.gov/programs/wq/stormwater/construction/index.html.

ii. Immediately begin the process to fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible, addressing the problems within 10 days of the date the discharge exceeded the benchmark. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when the Permittee requests an extension within the initial 10-day response period.

iii. Sample discharges daily until:

a) Turbidity is 25 NTUs (or lower); or

b) Transparency is 33 cm (or greater); or

c) The Permittee has demonstrated compliance with the water quality standard for turbidity:

1) No more than 5 NTUs over background turbidity, if background is less than 50 NTUs, or

2) No more than 10% over background turbidity, if background is 50 NTUs or greater; or

*Note: background turbidity in the receiving water must be measured immediately upstream (upgradient) or outside of the area of influence of the discharge.

d) The discharge stops or is eliminated.

iv. Review the SWPPP for compliance with Special Condition S9 and make appropriate revisions within seven (7) days of the date the discharge exceeded the benchmark.

v. Document BMP implementation and maintenance in the site log book.

Compliance with these requirements does not relieve the Permittee from responsibility to maintain continuous compliance with permit benchmarks.

D. pH Sampling Requirements – Significant Concrete Work or Engineered Soils

If construction activity results in the disturbance of 1 acre or more, *and* involves significant concrete work (significant concrete work means greater than 1000 cubic yards placed or poured concrete or recycled concrete used over the life of a project) or the use of engineered soils (soil amendments including but not limited to Portland cement-treated base [CTB], cement kiln dust [CKD], or fly ash), and stormwater from the affected area drains to surface waters of the State or to a storm sewer system that drains to surface waters of the State, the Permittee must conduct pH sampling as set forth below. Note: In addition, discharges to segments of water bodies on Washington State's 303(d) list (Category 5) for high pH are subject to a numeric effluent limit for pH; refer to Special Condition S8.

1. The Permittee must perform pH analysis on site with a calibrated pH meter, pH test kit, or wide range pH indicator paper. The Permittee must record pH sampling results in the site log book.

2. During the applicable pH monitoring period defined below, the Permittee must obtain a representative sample of stormwater and conduct pH analysis at least once per week.

    a. For sites with significant concrete work, the Permittee must begin the pH sampling period when the concrete is first placed or poured and exposed to precipitation, and continue weekly throughout and after the concrete placement, pour and curing period, until stormwater pH is in the range of 6.5 to 8.5 (su).

    b. For sites with recycled concrete where monitoring is required, the Permittee must begin the weekly pH sampling period when the recycled concrete is first exposed to precipitation and must continue until the recycled concrete is fully stabilized with the stormwater pH in the range of 6.5 to 8.5 (su).

    c. For sites with engineered soils, the Permittee must begin the pH sampling period when the soil amendments are first exposed to precipitation and must continue until the area of engineered soils is fully stabilized.

3. The Permittee must sample pH in the sediment trap/pond(s) or other locations that receive stormwater runoff from the area of significant concrete work or engineered soils before the stormwater discharges to surface waters.

4. The benchmark value for pH is 8.5 standard units. Anytime sampling indicates that pH is 8.5 or greater, the Permittee must either:

    a. Prevent the high pH water (8.5 or above) from entering storm sewer systems or surface waters of the state; *or*

    b. If necessary, adjust or neutralize the high pH water until it is in the range of pH 6.5 to 8.5 (su) using an appropriate treatment BMP such as carbon dioxide (CO_2) sparging, dry ice or food grade vinegar. The Permittee must obtain written approval from Ecology before using any form of chemical treatment other than CO_2 sparging, dry ice or food grade vinegar.

S5. REPORTING AND RECORDKEEPING REQUIREMENTS

A. High Turbidity Reporting

Anytime sampling performed in accordance with Special Condition S4.C indicates turbidity has reached the 250 NTUs or more (or transparency less than or equal to 6 cm), high turbidity reporting level, the Permittee must notify Ecology within 24 hours of analysis either by calling the applicable Ecology Region's Environmental Report Tracking System (ERTS) number by phone or by submitting an electronic ERTS report (through Ecology's Water Quality Permitting Portal (WQWebPortal) – Permit Submittals when the form is available). See the CSWGP website for links to ERTS and the WQWebPortal. (http://www.ecy.wa.gov/programs/wq/stormwater/construction/index.html) Also, see phone numbers in Special Condition S4.C.5.b.i.

B. Discharge Monitoring Reports (DMRs)

Permittees required to conduct water quality sampling in accordance with Special Conditions S4.C (Turbidity/Transparency), S4.D (pH), S8 (303[d]/TMDL sampling), and/or G12 (Additional Sampling) must submit the results to Ecology.

Permittees must submit monitoring data using Ecology's WQWebDMR web application accessed through Ecology's Water Quality Permitting Portal.

Permittees unable to submit electronically (for example, those who do not have an internet connection) must contact Ecology to request a waiver and obtain instructions on how to obtain a paper copy DMR at:

Department of Ecology
Water Quality Program - Construction Stormwater
PO Box 47696
Olympia, WA 98504-7696

Permittees who obtain a waiver not to use WQWebDMR must use the forms provided to them by Ecology; submittals must be mailed to the address above. Permittees must submit DMR forms to be received by Ecology within 15 days following the end of each month.

If there was no discharge during a given monitoring period, all Permittees must submit a DMR as required with "no discharge" entered in place of the monitoring results. DMRs are required for the full duration of permit coverage (from the first full month following the effective date of permit coverage up until Ecology has approved termination of the coverage). For more information, contact Ecology staff using information provided at the following website: www.ecy.wa.gov/programs/wq/permits/paris/contacts.html.

C. Records Retention

The Permittee must retain records of all monitoring information (site log book, sampling results, inspection reports/checklists, etc.), Stormwater Pollution Prevention Plan, copy of the permit coverage letter (including Transfer of Coverage documentation) and any other documentation of compliance with permit requirements for the entire life of the construction project and for a minimum of five (5) years following the termination of permit coverage. Such information must include all calibration and maintenance records, and records of all data used to complete the application for this permit. This period of retention must be extended during

the course of any unresolved litigation regarding the discharge of pollutants by the Permittee or when requested by Ecology.

D. Recording Results

For each measurement or sample taken, the Permittee must record the following information:

1. Date, place, method, and time of sampling or measurement.
2. The first and last name of the individual who performed the sampling or measurement.
3. The date(s) the analyses were performed.
4. The first and last name of the individual who performed the analyses.
5. The analytical techniques or methods used.
6. The results of all analyses.

E. Additional Monitoring by the Permittee

If the Permittee samples or monitors any pollutant more frequently than required by this permit using test procedures specified by Special Condition S4 of this permit, the sampling results for this monitoring must be included in the calculation and reporting of the data submitted in the Permittee's DMR.

F. Noncompliance Notification

In the event the Permittee is unable to comply with any part of the terms and conditions of this permit, and the resulting noncompliance may cause a threat to human health or the environment (such as but not limited to spills or fuels or other materials, catastrophic pond or slope failure, and discharges that violate water quality standards), or exceed numeric effluent limitations (see S8 – Discharges to 303(d) or TMDL Waterbodies), the Permittee must, upon becoming aware of the circumstance:

1. Notify Ecology within 24 hours of the failure to comply by calling the applicable Regional office ERTS phone number (refer to Special Condition S4.C.5.b.i, or go to https://ecology.wa.gov/About-us/Get-involved/Report-an-environmental-issue to find contact information for the regional offices.)
2. Immediately take action to prevent the discharge/pollution, or otherwise stop or correct the noncompliance, and, if applicable, repeat sampling and analysis of any noncompliance immediately and submit the results to Ecology within five (5) days of becoming aware of the violation (See S5.F.3, below, for details on submitting results in a report).
3. Submit a detailed written report to Ecology within five (5) days of the time the Permittee becomes aware of the circumstances, unless requested earlier by Ecology. The report must be submitted using Ecology's Water Quality Permitting Portal (WQWebPortal) – Permit Submittals, unless a waiver from electronic reporting has been granted according to S5.B. The report must contain a description of the noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

The Permittee must report any unanticipated bypass and/or upset that exceeds any effluent limit in the permit in accordance with the 24-hour reporting requirement contained in 40 C.F.R. 122.41(l)(6).

Compliance with these requirements does not relieve the Permittee from responsibility to maintain continuous compliance with the terms and conditions of this permit or the resulting liability for failure to comply. Upon request of the Permittee, Ecology may waive the requirement for a written report on a case-by-case basis, if the immediate notification is received by Ecology within 24 hours.

G. Access to Plans and Records

1. The Permittee must retain the following permit documentation (plans and records) on site, or within reasonable access to the site, for use by the operator or for on-site review by Ecology or the local jurisdiction:

    a. General Permit

    b. Permit Coverage Letter

    c. Stormwater Pollution Prevention Plan (SWPPP)

    d. Site Log Book

    e. Erosivity Waiver (if applicable)

2. The Permittee must address written requests for plans and records listed above (Special Condition S5.G.1) as follows:

    a. The Permittee must provide a copy of plans and records to Ecology within 14 days of receipt of a written request from Ecology.

    b. The Permittee must provide a copy of plans and records to the public when requested in writing. Upon receiving a written request from the public for the Permittee's plans and records, the Permittee must either:

        i. Provide a copy of the plans and records to the requester within 14 days of a receipt of the written request; *or*

        ii. Notify the requester within 10 days of receipt of the written request of the location and times within normal business hours when the plans and records may be viewed; and provide access to the plans and records within 14 days of receipt of the written request; *or*

        Within 14 days of receipt of the written request, the Permittee may submit a copy of the plans and records to Ecology for viewing and/or copying by the requester at an Ecology office, or a mutually agreed location. If plans and records are viewed and/or copied at a location other than at an Ecology office, the Permittee will provide reasonable access to copying services for which a reasonable fee may be charged. The Permittee must notify the requester within 10 days of receipt of the request where the plans and records may be viewed and/or copied.

S6. PERMIT FEES

The Permittee must pay permit fees assessed by Ecology. Fees for stormwater discharges covered under this permit are established by Chapter 173-224 WAC. Ecology continues to assess permit fees until the permit is terminated in accordance with Special Condition S10 or revoked in accordance with General Condition G5.

S7. SOLID AND LIQUID WASTE DISPOSAL

The Permittee must handle and dispose of solid and liquid wastes generated by construction activity, such as demolition debris, construction materials, contaminated materials, and waste materials from maintenance activities, including liquids and solids from cleaning catch basins and other stormwater facilities, in accordance with:

A. Special Condition S3, Compliance with Standards.

B. WAC 173-216-110.

C. Other applicable regulations.

S8. DISCHARGES TO 303(d) OR TMDL WATERBODIES

A. Sampling and Numeric Effluent Limits For Certain Discharges to 303(d)-Listed Water Bodies

1. Permittees who discharge to segments of water bodies listed as impaired by the State of Washington under Section 303(d) of the Clean Water Act for turbidity, fine sediment, high pH, or phosphorus, must conduct water quality sampling according to the requirements of this section, and Special Conditions S4.C.2.b-f and S4.C.3.b-d, and must comply with the applicable numeric effluent limitations in S8.C and S8.D.

2. All references and requirements associated with Section 303(d) of the Clean Water Act mean the most current listing by Ecology of impaired waters (Category 5) that exists on January 1, 2021, or the date when the operator's complete permit application is received by Ecology, whichever is later.

B. Limits on Coverage for New Discharges to TMDL or 303(d)-Listed Waters

Construction sites that discharge to a TMDL or 303(d)-listed waterbody are not eligible for coverage under this permit *unless* the operator:

1. Prevents exposing stormwater to pollutants for which the waterbody is impaired, and retains documentation in the SWPPP that details procedures taken to prevent exposure on site; *or*

2. Documents that the pollutants for which the waterbody is impaired are not present at the site, and retains documentation of this finding within the SWPPP; *or*

3. Provides Ecology with data indicating the discharge is not expected to cause or contribute to an exceedance of a water quality standard, and retains such data on site with the SWPPP. The operator must provide data and other technical information to Ecology that sufficiently demonstrate:

    a. For discharges to waters without an EPA-approved or -established TMDL, that the discharge of the pollutant for which the water is impaired will meet in-stream water quality criteria at the point of discharge to the waterbody; *or*

    b. For discharges to waters with an EPA-approved or -established TMDL, that there is sufficient remaining wasteload allocation in the TMDL to allow construction stormwater discharge and that existing dischargers to the waterbody are subject to compliance schedules designed to bring the waterbody into attainment with water quality standards.

    Operators of construction sites are eligible for coverage under this permit only after Ecology makes an affirmative determination that the *discharge will not cause or contribute to the existing impairment or exceed the TMDL.*

C. Sampling and Numeric Effluent Limits for Discharges to Water Bodies on the 303(d) List for Turbidity, Fine Sediment, or Phosphorus

1. Permittees who discharge to segments of water bodies on the 303(d) list (Category 5) for turbidity, fine sediment, or phosphorus must conduct turbidity sampling in accordance with Special Condition S4.C.2 and comply with either of the numeric effluent limits noted in Table 5 below.

2. As an alternative to the 25 NTUs effluent limit noted in Table 5 below (applied at the point where stormwater [or authorized non-stormwater] is discharged off-site), Permittees may choose to comply with the surface water quality standard for turbidity. The standard is: no more than 5 NTUs over background turbidity when the background turbidity is 50 NTUs or less, or no more than a 10% increase in turbidity when the background turbidity is more than 50 NTUs. In order to use the water quality standard requirement, the sampling must take place at the following locations:

    a. Background turbidity in the 303(d)-listed receiving water immediately upstream (upgradient) or outside the area of influence of the discharge.

    b. Turbidity at the point of discharge into the 303(d)-listed receiving water, inside the area of influence of the discharge**.**

3. Discharges that exceed the numeric effluent limit for turbidity constitute a violation of this permit.

4. Permittees whose discharges exceed the numeric effluent limit must sample discharges daily until the violation is corrected and comply with the non-compliance notification requirements in Special Condition S5.F.

Table 5 Turbidity, Fine Sediment & Phosphorus Sampling and Limits for 303(d)-Listed Waters

Parameter identified in 303(d) listing	Parameter Sampled	Unit	Analytical Method	Sampling Frequency	Numeric Effluent Limit[1]
• Turbidity • Fine Sediment • Phosphorus	Turbidity	NTU	SM2130	Weekly, if discharging	25 NTUs, at the point where stormwater is discharged from the site; ***OR*** In compliance with the surface water quality standard for turbidity (S8.C.2.a)

[1] Permittees subject to a numeric effluent limit for turbidity may, at their discretion, choose either numeric effluent limitation based on site-specific considerations including, but not limited to, safety, access and convenience.

D. Discharges to Water Bodies on the 303(d) List for High pH

1. Permittees who discharge to segments of water bodies on the 303(d) list (Category 5) for high pH must conduct pH sampling in accordance with the table below, and comply with the numeric effluent limit of pH 6.5 to 8.5 su (Table 6).

Table 6 pH Sampling and Limits for 303(d)-Listed Waters

Parameter identified in 303(d) listing	Parameter Sampled/Units	Analytical Method	Sampling Frequency	Numeric Effluent Limit
High pH	pH /Standard Units	pH meter	Weekly, if discharging	In the range of 6.5 – 8.5 su

2. At the Permittee's discretion, compliance with the limit shall be assessed at one of the following locations:

   a. Directly in the 303(d)-listed waterbody segment, inside the immediate area of influence of the discharge; *or*

   b. Alternatively, the Permittee may measure pH at the point where the discharge leaves the construction site, rather than in the receiving water.

3. Discharges that exceed the numeric effluent limit for pH (outside the range of 6.5 – 8.5 su) constitute a violation of this permit.

4. Permittees whose discharges exceed the numeric effluent limit must sample discharges daily until the violation is corrected and comply with the non-compliance notification requirements in Special Condition S5.F.

E. Sampling and Limits for Sites Discharging to Waters Covered by a TMDL or another Pollution Control Plan

1. Discharges to a waterbody that is subject to a Total Maximum Daily Load (TMDL) for turbidity, fine sediment, high pH, or phosphorus must be consistent with the TMDL. Refer to http://www.ecy.wa.gov/programs/wq/tmdl/TMDLsbyWria/TMDLbyWria.html for more information on TMDLs.

    a. Where an applicable TMDL sets specific waste load allocations or requirements for discharges covered by this permit, discharges must be consistent with any specific waste load allocations or requirements established by the applicable TMDL.

        i. The Permittee must sample discharges weekly, unless otherwise specified by the TMDL, to evaluate compliance with the specific waste load allocations or requirements.

        ii. Analytical methods used to meet the monitoring requirements must conform to the latest revision of the *Guidelines Establishing Test Procedures for the Analysis of Pollutants* contained in 40 CFR Part 136.

        iii. Turbidity and pH methods need not be accredited or registered unless conducted at a laboratory which must otherwise be accredited or registered.

    b. Where an applicable TMDL has established a general waste load allocation for construction stormwater discharges, but has not identified specific requirements, compliance with Special Conditions S4 (Monitoring) and S9 (SWPPPs) will constitute compliance with the approved TMDL.

    c. Where an applicable TMDL has not specified a waste load allocation for construction stormwater discharges, but has not excluded these discharges, compliance with Special Conditions S4 (Monitoring) and S9 (SWPPPs) will constitute compliance with the approved TMDL.

    d. Where an applicable TMDL specifically precludes or prohibits discharges from construction activity, the operator is not eligible for coverage under this permit.

S9. STORMWATER POLLUTION PREVENTION PLAN

The Permittee must prepare and properly implement an adequate Stormwater Pollution Prevention Plan (SWPPP) for construction activity in accordance with the requirements of this permit beginning with initial soil disturbance and until final stabilization.

A. The Permittee's SWPPP must meet the following objectives:

1. To identify best management practices (BMPs) which prevent erosion and sedimentation, and to reduce, eliminate or prevent stormwater contamination and water pollution from construction activity.

2. To prevent violations of surface water quality, groundwater quality, or sediment management standards.

3. To control peak volumetric flow rates and velocities of stormwater discharges.

B. General Requirements

1. The SWPPP must include a narrative and drawings. All BMPs must be clearly referenced in the narrative and marked on the drawings. The SWPPP narrative must include documentation to explain and justify the pollution prevention decisions made for the project. Documentation must include:

    a. Information about existing site conditions (topography, drainage, soils, vegetation, etc.).

    b. Potential erosion problem areas.

    c. The 13 elements of a SWPPP in Special Condition S9.D.1-13, including BMPs used to address each element.

    d. Construction phasing/sequence and general BMP implementation schedule.

    e. The actions to be taken if BMP performance goals are not achieved—for example, a contingency plan for additional treatment and/or storage of stormwater that would violate the water quality standards if discharged.

    f. Engineering calculations for ponds, treatment systems, and any other designed structures. When a treatment system requires engineering calculations, these calculations must be included in the SWPPP. Engineering calculations do not need to be included in the SWPPP for treatment systems that do not require such calculations.

2. The Permittee must modify the SWPPP if, during inspections or investigations conducted by the owner/operator, or the applicable local or state regulatory authority, it is determined that the SWPPP is, or would be, ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the site. The Permittee must then:

    a. Review the SWPPP for compliance with Special Condition S9 and make appropriate revisions within 7 days of the inspection or investigation.

    b. Immediately begin the process to fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible, addressing the problems no later than 10 days from the inspection or investigation. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when an extension is requested by a Permittee within the initial 10-day response period.

    c. Document BMP implementation and maintenance in the site log book.

    The Permittee must modify the SWPPP whenever there is a change in design, construction, operation, or maintenance at the construction site that has, or could have, a significant effect on the discharge of pollutants to waters of the State.

C. Stormwater Best Management Practices (BMPs)

BMPs must be consistent with:

1. *Stormwater Management Manual for Western Washington* (most current approved edition at the time this permit was issued), for sites west of the crest of the Cascade Mountains; *or*

2. *Stormwater Management Manual for Eastern Washington* (most current approved edition at the time this permit was issued), for sites east of the crest of the Cascade Mountains; *or*

3. Revisions to the manuals listed in Special Condition S9.C.1 & 2, or other stormwater management guidance documents or manuals which provide an equivalent level of pollution prevention, that are approved by Ecology and incorporated into this permit in accordance with the permit modification requirements of WAC 173-226-230; *or*

4. Documentation in the SWPPP that the BMPs selected provide an equivalent level of pollution prevention, compared to the applicable stormwater management manuals, including:

    a. The technical basis for the selection of all stormwater BMPs (scientific, technical studies, and/or modeling) that support the performance claims for the BMPs being selected.

    b. An assessment of how the selected BMP will satisfy AKART requirements and the applicable federal technology-based treatment requirements under 40 CFR part 125.3.

D. SWPPP – Narrative Contents and Requirements

The Permittee must include each of the 13 elements below in Special Condition S9.D.1-13 in the narrative of the SWPPP and implement them unless site conditions render the element unnecessary and the exemption from that element is clearly justified in the SWPPP.

1. Preserve Vegetation/Mark Clearing Limits

    a. Before beginning land-disturbing activities, including clearing and grading, clearly mark all clearing limits, sensitive areas and their buffers, and trees that are to be preserved within the construction area.

    b. Retain the duff layer, native topsoil, and natural vegetation in an undisturbed state to the maximum degree practicable.

2. Establish Construction Access

    a. Limit construction vehicle access and exit to one route, if possible.

    b. Stabilize access points with a pad of quarry spalls, crushed rock, or other equivalent BMPs, to minimize tracking sediment onto roads.

    c. Locate wheel wash or tire baths on site, if the stabilized construction entrance is not effective in preventing tracking sediment onto roads.

    d. If sediment is tracked off site, clean the affected roadway thoroughly at the end of each day, or more frequently as necessary (for example, during wet weather). Remove sediment from roads by shoveling, sweeping, or pickup and transport of the sediment to a controlled sediment disposal area.

    e. Conduct street washing only after sediment removal in accordance with Special Condition S9.D.2.d.

    f. Control street wash wastewater by pumping back on site or otherwise preventing it from discharging into systems tributary to waters of the State.

3. Control Flow Rates

    a. Protect properties and waterways downstream of construction sites from erosion and the associated discharge of turbid waters due to increases in the velocity and peak volumetric flow rate of stormwater runoff from the project site, as required by local plan approval authority.

    b. Where necessary to comply with Special Condition S9.D.3.a, construct stormwater infiltration or detention BMPs as one of the first steps in grading. Assure that detention BMPs function properly before constructing site improvements (for example, impervious surfaces).

    c. If permanent infiltration ponds are used for flow control during construction, protect these facilities from sedimentation during the construction phase.

4. Install Sediment Controls

    The Permittee must design, install and maintain effective erosion controls and sediment controls to minimize the discharge of pollutants. At a minimum, the Permittee must:

    a. Construct sediment control BMPs (sediment ponds, traps, filters, infiltration facilities, etc.) as one of the first steps in grading. These BMPs must be functional before other land disturbing activities take place.

    b. Minimize sediment discharges from the site. The design, installation and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site.

    c. Direct stormwater runoff from disturbed areas through a sediment pond or other appropriate sediment removal BMP, before the runoff leaves a construction site or before discharge to an infiltration facility. Runoff from fully stabilized areas may be discharged without a sediment removal BMP, but must meet the flow control performance standard of Special Condition S9.D.3.a.

    d. Locate BMPs intended to trap sediment on site in a manner to avoid interference with the movement of juvenile salmonids attempting to enter off-channel areas or drainages.

    e. Provide and maintain natural buffers around surface waters, direct stormwater to vegetated areas to increase sediment removal and maximize stormwater infiltration, unless infeasible.

    f. Where feasible, design outlet structures that withdraw impounded stormwater from the surface to avoid discharging sediment that is still suspended lower in the water column.

5. Stabilize Soils

    a. The Permittee must stabilize exposed and unworked soils by application of effective BMPs that prevent erosion. Applicable BMPs include, but are not limited to: temporary and permanent seeding, sodding, mulching, plastic covering, erosion

control fabrics and matting, soil application of polyacrylamide (PAM), the early application of gravel base on areas to be paved, and dust control.

b. The Permittee must control stormwater volume and velocity within the site to minimize soil erosion.

c. The Permittee must control stormwater discharges, including both peak flow rates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and stream bank erosion.

d. Depending on the geographic location of the project, the Permittee must not allow soils to remain exposed and unworked for more than the time periods set forth below to prevent erosion.

West of the Cascade Mountains Crest
During the dry season (May 1 - September 30): 7 days
During the wet season (October 1 - April 30): 2 days

East of the Cascade Mountains Crest, except for Central Basin*
During the dry season (July 1 - September 30): 10 days
During the wet season (October 1 - June 30): 5 days

The Central Basin*, East of the Cascade Mountains Crest
During the dry Season (July 1 - September 30): 30 days
During the wet season (October 1 - June 30): 15 days

***Note: The Central Basin** is defined as the portions of Eastern Washington with mean annual precipitation of less than 12 inches.

e. The Permittee must stabilize soils at the end of the shift before a holiday or weekend if needed based on the weather forecast.

f. The Permittee must stabilize soil stockpiles from erosion, protected with sediment trapping measures, and where possible, be located away from storm drain inlets, waterways, and drainage channels.

g. The Permittee must minimize the amount of soil exposed during construction activity.

h. The Permittee must minimize the disturbance of steep slopes.

i. The Permittee must minimize soil compaction and, unless infeasible, preserve topsoil.

6. Protect Slopes

a. The Permittee must design and construct cut-and-fill slopes in a manner to minimize erosion. Applicable practices include, but are not limited to, reducing continuous length of slope with terracing and diversions, reducing slope steepness, and roughening slope surfaces (for example, track walking).

b. The Permittee must divert off-site stormwater (run-on) or groundwater away from slopes and disturbed areas with interceptor dikes, pipes, and/or swales. Off-site stormwater should be managed separately from stormwater generated on the site.

c. At the top of slopes, collect drainage in pipe slope drains or protected channels to prevent erosion.

i. West of the Cascade Mountains Crest: Temporary pipe slope drains must handle the peak 10-minute flow rate from a Type 1A, 10-year, 24-hour frequency storm for the developed condition. Alternatively, the 10-year, 1-hour flow rate predicted by an approved continuous runoff model, increased by a factor of 1.6, may be used. The hydrologic analysis must use the existing land cover condition for predicting flow rates from tributary areas outside the project limits. For tributary areas on the project site, the analysis must use the temporary or permanent project land cover condition, whichever will produce the highest flow rates. If using the Western Washington Hydrology Model (WWHM) to predict flows, bare soil areas should be modeled as "landscaped area."

ii. East of the Cascade Mountains Crest: Temporary pipe slope drains must handle the expected peak flow rate from a 6-month, 3-hour storm for the developed condition, referred to as the short duration storm.

d. Place excavated material on the uphill side of trenches, consistent with safety and space considerations.

e. Place check dams at regular intervals within constructed channels that are cut down a slope.

7. Protect Drain Inlets

a. Protect all storm drain inlets made operable during construction so that stormwater runoff does not enter the conveyance system without first being filtered or treated to remove sediment.

b. Clean or remove and replace inlet protection devices when sediment has filled one-third of the available storage (unless a different standard is specified by the product manufacturer).

8. Stabilize Channels and Outlets

a. Design, construct and stabilize all on-site conveyance channels to prevent erosion from the following expected peak flows:

i. West of the Cascade Mountains Crest: Channels must handle the peak 10-minute flow rate from a Type 1A, 10-year, 24-hour frequency storm for the developed condition. Alternatively, the 10-year, 1-hour flow rate indicated by an approved continuous runoff model, increased by a factor of 1.6, may be used. The hydrologic analysis must use the existing land cover condition for predicting flow rates from tributary areas outside the project limits. For tributary areas on the project site, the analysis must use the temporary or permanent project land cover condition, whichever will produce the highest flow rates. If using the WWHM to predict flows, bare soil areas should be modeled as "landscaped area."

ii. East of the Cascade Mountains Crest: Channels must handle the expected peak flow rate from a 6-month, 3-hour storm for the developed condition, referred to as the short duration storm.

b. Provide stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes, and downstream reaches at the outlets of all conveyance systems.

9. Control Pollutants

Design, install, implement and maintain effective pollution prevention measures to minimize the discharge of pollutants. The Permittee must:

a. Handle and dispose of all pollutants, including waste materials and demolition debris that occur on site in a manner that does not cause contamination of stormwater.

b. Provide cover, containment, and protection from vandalism for all chemicals, liquid products, petroleum products, and other materials that have the potential to pose a threat to human health or the environment. Minimize storage of hazardous materials on-site. Safety Data Sheets (SDS) should be supplied for all materials stored. Chemicals should be kept in their original labeled containers. On-site fueling tanks must include secondary containment. Secondary containment means placing tanks or containers within an impervious structure capable of containing 110% of the volume of the largest tank within the containment structure. Double-walled tanks do not require additional secondary containment.

c. Conduct maintenance, fueling, and repair of heavy equipment and vehicles using spill prevention and control measures. Clean contaminated surfaces immediately following any spill incident.

d. Discharge wheel wash or tire bath wastewater to a separate on-site treatment system that prevents discharge to surface water, such as closed-loop recirculation or upland land application, or to the sanitary sewer with local sewer district approval.

e. Apply fertilizers and pesticides in a manner and at application rates that will not result in loss of chemical to stormwater runoff. Follow manufacturers' label requirements for application rates and procedures.

f. Use BMPs to prevent contamination of stormwater runoff by pH-modifying sources. The sources for this contamination include, but are not limited to: bulk cement, cement kiln dust, fly ash, new concrete washing and curing waters, recycled concrete stockpiles, waste streams generated from concrete grinding and sawing, exposed aggregate processes, dewatering concrete vaults, concrete pumping and mixer washout waters. (Also refer to the definition for "concrete wastewater" in Appendix A – Definitions.)

g. Adjust the pH of stormwater or authorized non-stormwater if necessary to prevent an exceedance of groundwater and/or surface water quality standards.

h. Assure that washout of concrete trucks is performed off-site or in designated concrete washout areas only. Do not wash out concrete truck drums onto the ground, or into storm drains, open ditches, streets, or streams. Washout of small concrete handling equipment may be disposed of in a formed area awaiting concrete where it will not contaminate surface or groundwater. Do not dump excess concrete on site, except in designated concrete washout areas. Concrete spillage or concrete discharge directly to groundwater or surface waters of the State is

prohibited. At no time shall concrete be washed off into the footprint of an area where an infiltration BMP will be installed.

i. Obtain written approval from Ecology before using any chemical treatment, with the exception of CO_2, dry ice or food grade vinegar, to adjust pH.

j. Uncontaminated water from water-only based shaft drilling for construction of building, road, and bridge foundations may be infiltrated provided the wastewater is managed in a way that prohibits discharge to surface waters. Prior to infiltration, water from water-only based shaft drilling that comes into contact with curing concrete must be neutralized until pH is in the range of 6.5 to 8.5 (su).

10. Control Dewatering

a. Permittees must discharge foundation, vault, and trench dewatering water, which have characteristics similar to stormwater runoff at the site, in conjunction with BMPs to reduce sedimentation before discharge to a sediment trap or sediment pond.

b. Permittees may discharge clean, non-turbid dewatering water, such as well-point groundwater, to systems tributary to, or directly into surface waters of the State, as specified in Special Condition S9.D.8, provided the dewatering flow does not cause erosion or flooding of receiving waters. Do not route clean dewatering water through stormwater sediment ponds. Note that "surface waters of the State" may exist on a construction site as well as off site; for example, a creek running through a site.

c. Other dewatering treatment or disposal options may include:

i. Infiltration

ii. Transport off site in a vehicle, such as a vacuum flush truck, for legal disposal in a manner that does not pollute state waters.

iii. Ecology-approved on-site chemical treatment or other suitable treatment technologies (See S9.D.9.i, regarding chemical treatment written approval).

iv. Sanitary or combined sewer discharge with local sewer district approval, if there is no other option.

v. Use of a sedimentation bag with discharge to a ditch or swale for small volumes of localized dewatering.

d. Permittees must handle highly turbid or contaminated dewatering water separately from stormwater.

11. Maintain BMPs

a. Permittees must maintain and repair all temporary and permanent erosion and sediment control BMPs as needed to assure continued performance of their intended function in accordance with BMP specifications.

b. Permittees must remove all temporary erosion and sediment control BMPs within 30 days after achieving final site stabilization or after the temporary BMPs are no longer needed.

12. Manage the Project

    a. Phase development projects to the maximum degree practicable and take into account seasonal work limitations.

    b. Inspect, maintain and repair all BMPs as needed to assure continued performance of their intended function. Conduct site inspections and monitoring in accordance with Special Condition S4.

    c. Maintain, update, and implement the SWPPP in accordance with Special Conditions S3, S4, and S9.

13. Protect Low Impact Development (LID) BMPs

    The primary purpose of on-site LID Stormwater Management is to reduce the disruption of the natural site hydrology through infiltration. LID BMPs are permanent facilities.

    a. Permittees must protect all LID BMPs (including, but not limited to, Bioretention and Rain Garden facilities) from sedimentation through installation and maintenance of erosion and sediment control BMPs on portions of the site that drain into the Bioretention and/or Rain Garden facilities. Restore the BMPs to their fully functioning condition if they accumulate sediment during construction. Restoring the facility must include removal of sediment and any sediment-laden bioretention/ rain garden soils, and replacing the removed soils with soils meeting the design specification.

    b. Permittees must maintain the infiltration capabilities of LID BMPs by protecting against compaction by construction equipment and foot traffic. Protect completed lawn and landscaped areas from compaction due to construction equipment.

    c. Permittees must control erosion and avoid introducing sediment from surrounding land uses onto permeable pavements. Do not allow muddy construction equipment on the base material or pavement. Do not allow sediment-laden runoff onto permeable pavements or base materials.

    d. Permittees must clean permeable pavements fouled with sediments or no longer passing an initial infiltration test using local stormwater manual methodology or the manufacturer's procedures.

    e. Permittees must keep all heavy equipment off existing soils under LID BMPs that have been excavated to final grade to retain the infiltration rate of the soils.

E. SWPPP – Map Contents and Requirements

The Permittee's SWPPP must also include a vicinity map or general location map (for example, a USGS quadrangle map, a portion of a county or city map, or other appropriate map) with enough detail to identify the location of the construction site and receiving waters within one mile of the site.

The SWPPP must also include a legible site map (or maps) showing the entire construction site. The following features must be identified, unless not applicable due to site conditions.

1. The direction of north, property lines, and existing structures and roads.

2. Cut and fill slopes indicating the top and bottom of slope catch lines.

3. Approximate slopes, contours, and direction of stormwater flow before and after major grading activities.

4. Areas of soil disturbance and areas that will not be disturbed.

5. Locations of structural and nonstructural controls (BMPs) identified in the SWPPP.

6. Locations of off-site material, stockpiles, waste storage, borrow areas, and vehicle/equipment storage areas.

7. Locations of all surface water bodies, including wetlands.

8. Locations where stormwater or non-stormwater discharges off-site and/or to a surface waterbody, including wetlands.

9. Location of water quality sampling station(s), if sampling is required by state or local permitting authority.

10. Areas where final stabilization has been accomplished and no further construction-phase permit requirements apply.

11. Location or proposed location of LID facilities.

S10. NOTICE OF TERMINATION

Partial terminations of permit coverage are not authorized.

A. The site is eligible for termination of coverage when it has met any of the following conditions:

1. The site has undergone final stabilization, the Permittee has removed all temporary BMPs (except biodegradable BMPs clearly manufactured with the intention for the material to be left in place and not interfere with maintenance or land use), and all stormwater discharges associated with construction activity have been eliminated; *or*

2. All portions of the site that have not undergone final stabilization per Special Condition S10.A.1 have been sold and/or transferred (per Special Condition S2.A), and the Permittee no longer has operational control of the construction activity; *or*

3. For residential construction only, the Permittee has completed temporary stabilization and the homeowners have taken possession of the residences.

B. When the site is eligible for termination, the Permittee must submit a complete and accurate Notice of Termination (NOT) form, signed in accordance with General Condition G2, to:

Department of Ecology
Water Quality Program - Construction Stormwater
PO Box 47696
Olympia, WA 98504-7696

When an electronic termination form is available, the Permittee may choose to submit a complete and accurate Notice of Termination (NOT) form through the Water Quality Permitting Portal rather than mailing a hardcopy as noted above.

The termination is effective on the 31st calendar day following the date Ecology receives a complete NOT form, unless Ecology notifies the Permittee that termination request is denied because the Permittee has not met the eligibility requirements in Special Condition S10.A.

Permittees are required to comply with all conditions and effluent limitations in the permit until the permit has been terminated.

Permittees transferring the property to a new property owner or operator/Permittee are required to complete and submit the Notice of Transfer form to Ecology, but are not required to submit a Notice of Termination form for this type of transaction.

GENERAL CONDITIONS

G1. DISCHARGE VIOLATIONS

All discharges and activities authorized by this general permit must be consistent with the terms and conditions of this general permit. Any discharge of any pollutant more frequent than or at a level in excess of that identified and authorized by the general permit must constitute a violation of the terms and conditions of this permit.

G2. SIGNATORY REQUIREMENTS

A. All permit applications must bear a certification of correctness to be signed:

1. In the case of corporations, by a responsible corporate officer.
2. In the case of a partnership, by a general partner of a partnership.
3. In the case of sole proprietorship, by the proprietor.
4. In the case of a municipal, state, or other public facility, by either a principal executive officer or ranking elected official.

B. All reports required by this permit and other information requested by Ecology (including NOIs, NOTs, and Transfer of Coverage forms) must be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described above and submitted to Ecology.
2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters.

C. Changes to authorization. If an authorization under paragraph G2.B.2 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph G2.B.2 above must be submitted to Ecology prior to or together with any reports, information, or applications to be signed by an authorized representative.

D. Certification. Any person signing a document under this section must make the following certification:

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

G3. RIGHT OF INSPECTION AND ENTRY

The Permittee must allow an authorized representative of Ecology, upon the presentation of credentials and such other documents as may be required by law:

A. To enter upon the premises where a discharge is located or where any records are kept under the terms and conditions of this permit.

B. To have access to and copy, at reasonable times and at reasonable cost, any records required to be kept under the terms and conditions of this permit.

C. To inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, methods, or operations regulated or required under this permit.

D. To sample or monitor, at reasonable times, any substances or parameters at any location for purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act.

G4. GENERAL PERMIT MODIFICATION AND REVOCATION

This permit may be modified, revoked and reissued, or terminated in accordance with the provisions of Chapter 173-226 WAC. Grounds for modification, revocation and reissuance, or termination include, but are not limited to, the following:

A. When a change occurs in the technology or practices for control or abatement of pollutants applicable to the category of dischargers covered under this permit.

B. When effluent limitation guidelines or standards are promulgated pursuant to the CWA or Chapter 90.48 RCW, for the category of dischargers covered under this permit.

C. When a water quality management plan containing requirements applicable to the category of dischargers covered under this permit is approved, or

D. When information is obtained that indicates cumulative effects on the environment from dischargers covered under this permit are unacceptable.

G5. REVOCATION OF COVERAGE UNDER THE PERMIT

Pursuant to Chapter 43.21B RCW and Chapter 173-226 WAC, the Director may terminate coverage for any discharger under this permit for cause. Cases where coverage may be terminated include, but are not limited to, the following:

A. Violation of any term or condition of this permit.

B. Obtaining coverage under this permit by misrepresentation or failure to disclose fully all relevant facts.

C. A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge.

D. Failure or refusal of the Permittee to allow entry as required in RCW 90.48.090.

E. A determination that the permitted activity endangers human health or the environment, or contributes to water quality standards violations.

F. Nonpayment of permit fees or penalties assessed pursuant to RCW 90.48.465 and Chapter 173-224 WAC.

G. Failure of the Permittee to satisfy the public notice requirements of WAC 173-226-130(5), when applicable.

The Director may require any discharger under this permit to apply for and obtain coverage under an individual permit or another more specific general permit. Permittees who have their coverage revoked for cause according to WAC 173-226-240 may request temporary coverage under this permit during the time an individual permit is being developed, provided the request is made within ninety (90) days from the time of revocation and is submitted along with a complete individual permit application form.

G6. REPORTING A CAUSE FOR MODIFICATION

The Permittee must submit a new application, or a supplement to the previous application, whenever a material change to the construction activity or in the quantity or type of discharge is anticipated which is not specifically authorized by this permit. This application must be submitted at least sixty (60) days prior to any proposed changes. Filing a request for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not relieve the Permittee of the duty to comply with the existing permit until it is modified or reissued.

G7. COMPLIANCE WITH OTHER LAWS AND STATUTES

Nothing in this permit will be construed as excusing the Permittee from compliance with any applicable federal, state, or local statutes, ordinances, or regulations.

G8. DUTY TO REAPPLY

The Permittee must apply for permit renewal at least 180 days prior to the specified expiration date of this permit. The Permittee must reapply using the electronic application form (NOI) available on Ecology's website. Permittees unable to submit electronically (for example, those who do not have an internet connection) must contact Ecology to request a waiver and obtain instructions on how to obtain a paper NOI.

Department of Ecology
Water Quality Program - Construction Stormwater
PO Box 47696
Olympia, WA 98504-7696

G9. REMOVED SUBSTANCE

The Permittee must not re-suspend or reintroduce collected screenings, grit, solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of stormwater to the final effluent stream for discharge to state waters.

G10. DUTY TO PROVIDE INFORMATION

The Permittee must submit to Ecology, within a reasonable time, all information that Ecology may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The Permittee must also submit to Ecology, upon request, copies of records required to be kept by this permit [40 CFR 122.41(h)].

G11. OTHER REQUIREMENTS OF 40 CFR

All other requirements of 40 CFR 122.41 and 122.42 are incorporated in this permit by reference.

G12. ADDITIONAL MONITORING

Ecology may establish specific monitoring requirements in addition to those contained in this permit by administrative order or permit modification.

G13. PENALTIES FOR VIOLATING PERMIT CONDITIONS

Any person who is found guilty of willfully violating the terms and conditions of this permit shall be deemed guilty of a crime, and upon conviction thereof shall be punished by a fine of up to ten thousand dollars ($10,000) and costs of prosecution, or by imprisonment at the discretion of the court. Each day upon which a willful violation occurs may be deemed a separate and additional violation.

Any person who violates the terms and conditions of a waste discharge permit shall incur, in addition to any other penalty as provided by law, a civil penalty in the amount of up to ten thousand dollars ($10,000) for every such violation. Each and every such violation shall be a separate and distinct offense, and in case of a continuing violation, every day's continuance shall be deemed to be a separate and distinct violation.

G14. UPSET

Definition – "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of the following paragraph are met.

A Permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that: 1) an upset occurred and that the Permittee can identify the cause(s) of the upset; 2) the permitted facility was being properly operated at the time of the upset; 3) the Permittee submitted notice of the upset as required in Special Condition S5.F, and; 4) the Permittee complied with any remedial measures required under this permit.

In any enforcement proceeding, the Permittee seeking to establish the occurrence of an upset has the burden of proof.

G15. PROPERTY RIGHTS

This permit does not convey any property rights of any sort, or any exclusive privilege.

G16. DUTY TO COMPLY

The Permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

G17. TOXIC POLLUTANTS

The Permittee must comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if this permit has not yet been modified to incorporate the requirement.

G18. PENALTIES FOR TAMPERING

The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than two years per violation, or by both. If a conviction of a person is for a violation committed after a first conviction of such person under this condition, punishment shall be a fine of not more than $20,000 per day of violation, or imprisonment of not more than four (4) years, or both.

G19. REPORTING PLANNED CHANGES

The Permittee must, as soon as possible, give notice to Ecology of planned physical alterations, modifications or additions to the permitted construction activity. The Permittee should be aware that, depending on the nature and size of the changes to the original permit, a new public notice and other permit process requirements may be required. Changes in activities that require reporting to Ecology include those that will result in:

A. The permitted facility being determined to be a new source pursuant to 40 CFR 122.29(b).

B. A significant change in the nature or an increase in quantity of pollutants discharged, including but not limited to: a 20% or greater increase in acreage disturbed by construction activity.

C. A change in or addition of surface water(s) receiving stormwater or non-stormwater from the construction activity.

D. A change in the construction plans and/or activity that affects the Permittee's monitoring requirements in Special Condition S4.

Following such notice, permit coverage may be modified, or revoked and reissued pursuant to 40 CFR 122.62(a) to specify and limit any pollutants not previously limited. Until such modification is effective, any new or increased discharge in excess of permit limits or not specifically authorized by this permit constitutes a violation.

G20. REPORTING OTHER INFORMATION

Where the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to Ecology, it must promptly submit such facts or information.

G21. REPORTING ANTICIPATED NON-COMPLIANCE

The Permittee must give advance notice to Ecology by submission of a new application or supplement thereto at least forty-five (45) days prior to commencement of such discharges, of any facility expansions, production increases, or other planned changes, such as process modifications, in the permitted facility or activity which may result in noncompliance with permit limits or conditions. Any maintenance of facilities, which might necessitate unavoidable interruption of

operation and degradation of effluent quality, must be scheduled during non-critical water quality periods and carried out in a manner approved by Ecology.

G22. REQUESTS TO BE EXCLUDED FROM COVERAGE UNDER THE PERMIT

Any discharger authorized by this permit may request to be excluded from coverage under the general permit by applying for an individual permit. The discharger must submit to the Director an application as described in WAC 173-220-040 or WAC 173-216-070, whichever is applicable, with reasons supporting the request. These reasons will fully document how an individual permit will apply to the applicant in a way that the general permit cannot. Ecology may make specific requests for information to support the request. The Director will either issue an individual permit or deny the request with a statement explaining the reason for the denial. When an individual permit is issued to a discharger otherwise subject to the construction stormwater general permit, the applicability of the construction stormwater general permit to that Permittee is automatically terminated on the effective date of the individual permit.

G23. APPEALS

A. The terms and conditions of this general permit, as they apply to the appropriate class of dischargers, are subject to appeal by any person within 30 days of issuance of this general permit, in accordance with Chapter 43.21B RCW, and Chapter 173-226 WAC.

B. The terms and conditions of this general permit, as they apply to an individual discharger, are appealable in accordance with Chapter 43.21B RCW within 30 days of the effective date of coverage of that discharger. Consideration of an appeal of general permit coverage of an individual discharger is limited to the general permit's applicability or nonapplicability to that individual discharger.

C. The appeal of general permit coverage of an individual discharger does not affect any other dischargers covered under this general permit. If the terms and conditions of this general permit are found to be inapplicable to any individual discharger(s), the matter shall be remanded to Ecology for consideration of issuance of an individual permit or permits.

G24. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit, or application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

G25. BYPASS PROHIBITED

A. Bypass Procedures

Bypass, which is the intentional diversion of waste streams from any portion of a treatment facility, is prohibited for stormwater events below the design criteria for stormwater management. Ecology may take enforcement action against a Permittee for bypass unless one of the following circumstances (1, 2, 3 or 4) is applicable.

1. Bypass of stormwater is consistent with the design criteria and part of an approved management practice in the applicable stormwater management manual.

2. Bypass for essential maintenance without the potential to cause violation of permit limits or conditions.

Bypass is authorized if it is for essential maintenance and does not have the potential to cause violations of limitations or other conditions of this permit, or adversely impact public health.

3. Bypass of stormwater is unavoidable, unanticipated, and results in noncompliance of this permit.

   This bypass is permitted only if:

   a. Bypass is unavoidable to prevent loss of life, personal injury, or severe property damage. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass.

   b. There are no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, maintenance during normal periods of equipment downtime (but not if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance), or transport of untreated wastes to another treatment facility.

   c. Ecology is properly notified of the bypass as required in Special Condition S5.F of this permit.

4. A planned action that would cause bypass of stormwater and has the potential to result in noncompliance of this permit during a storm event.

   The Permittee must notify Ecology at least thirty (30) days before the planned date of bypass. The notice must contain:

   a. A description of the bypass and its cause

   b. An analysis of all known alternatives which would eliminate, reduce, or mitigate the need for bypassing.

   c. A cost-effectiveness analysis of alternatives including comparative resource damage assessment.

   d. The minimum and maximum duration of bypass under each alternative.

   e. A recommendation as to the preferred alternative for conducting the bypass.

   f. The projected date of bypass initiation.

   g. A statement of compliance with SEPA.

   h. A request for modification of water quality standards as provided for in WAC 173-201A-110, if an exceedance of any water quality standard is anticipated.

   i. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass.

5. For probable construction bypasses, the need to bypass is to be identified as early in the planning process as possible. The analysis required above must be considered during

preparation of the Stormwater Pollution Prevention Plan (SWPPP) and must be included to the extent practical. In cases where the probable need to bypass is determined early, continued analysis is necessary up to and including the construction period in an effort to minimize or eliminate the bypass.

Ecology will consider the following before issuing an administrative order for this type bypass:

a. If the bypass is necessary to perform construction or maintenance-related activities essential to meet the requirements of this permit.

b. If there are feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, stopping production, maintenance during normal periods of equipment down time, or transport of untreated wastes to another treatment facility.

c. If the bypass is planned and scheduled to minimize adverse effects on the public and the environment.

After consideration of the above and the adverse effects of the proposed bypass and any other relevant factors, Ecology will approve, conditionally approve, or deny the request. The public must be notified and given an opportunity to comment on bypass incidents of significant duration, to the extent feasible. Approval of a request to bypass will be by administrative order issued by Ecology under RCW 90.48.120.

B. Duty to Mitigate

The Permittee is required to take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.

APPENDIX A – DEFINITIONS

AKART is an acronym for "**A**ll **K**nown, **A**vailable, and **R**easonable methods of prevention, control, and **T**reatment." AKART represents the most current methodology that can be reasonably required for preventing, controlling, or abating the pollutants and controlling pollution associated with a discharge.

Applicable TMDL means a TMDL for turbidity, fine sediment, high pH, or phosphorus, which was completed and approved by EPA before January 1, 2021, or before the date the operator's complete permit application is received by Ecology, whichever is later. TMDLs completed after a complete permit application is received by Ecology become applicable to the Permittee only if they are imposed through an administrative order by Ecology, or through a modification of permit coverage.

Applicant means an *operator* seeking coverage under this permit.

Benchmark means a pollutant concentration used as a permit threshold, below which a pollutant is considered unlikely to cause a water quality violation, and above which it may. When pollutant concentrations exceed benchmarks, corrective action requirements take effect. Benchmark values are not water quality standards and are not numeric effluent limitations; they are indicator values.

Best Management Practices (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control stormwater associated with construction activity, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Buffer means an area designated by a local jurisdiction that is contiguous to and intended to protect a sensitive area.

Bypass means the intentional diversion of waste streams from any portion of a treatment facility.

Calendar Day A period of 24 consecutive hours starting at 12:00 midnight and ending the following 12:00 midnight.

Calendar Week (same as **Week**) means a period of seven consecutive days starting at 12:01 a.m. (0:01 hours) on Sunday.

Certified Erosion and Sediment Control Lead (CESCL) means a person who has current certification through an approved erosion and sediment control training program that meets the minimum training standards established by Ecology (See BMP C160 in the SWMM).

Chemical Treatment means the addition of chemicals to stormwater and/or authorized non-stormwater prior to filtration and discharge to surface waters.

Clean Water Act (CWA) means the Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, and 97-117; USC 1251 et seq.

Combined Sewer means a sewer which has been designed to serve as a sanitary sewer and a storm sewer, and into which inflow is allowed by local ordinance.

Common Plan of Development or Sale means a site where multiple separate and distinct construction activities may be taking place at different times on different schedules and/or by different contractors, but still under a single plan. Examples include: 1) phased projects and projects with multiple filings or lots, even if the separate phases or filings/lots will be constructed under separate contract or by separate owners (e.g., a development where lots are sold to separate builders); 2) a development plan that may be phased over multiple years, but is still under a consistent plan for long-term development; 3) projects in a contiguous area that may be unrelated but still under the same contract, such as construction of a building extension and a new parking lot at the same facility; and 4) linear projects such as roads, pipelines, or utilities. If the project is part of a common plan of development or sale, the disturbed area of the entire plan must be used in determining permit requirements.

Composite Sample means a mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite" (collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increases while maintaining a constant time interval between the aliquots.

Concrete Wastewater means any water used in the production, pouring and/or clean-up of concrete or concrete products, and any water used to cut, grind, wash, or otherwise modify concrete or concrete products. Examples include water used for or resulting from concrete truck/mixer/pumper/tool/chute rinsing or washing, concrete saw cutting and surfacing (sawing, coring, grinding, roughening, hydro-demolition, bridge and road surfacing). When stormwater comingles with concrete wastewater, the resulting water is considered concrete wastewater and must be managed to prevent discharge to waters of the State, including groundwater.

Construction Activity means land disturbing operations including clearing, grading or excavation which disturbs the surface of the land (including off-site disturbance acreage related to construction-support activity). Such activities may include road construction, construction of residential houses, office buildings, or industrial buildings, site preparation, soil compaction, movement and stockpiling of topsoils, and demolition activity.

Construction Support Activity means off-site acreage that will be disturbed as a direct result of the construction project and will discharge stormwater. For example, off-site equipment staging yards, material storage areas, borrow areas, and parking areas.

Contaminant means any hazardous substance that does not occur naturally or occurs at greater than natural background levels. See definition of “hazardous substance” and WAC 173-340-200.

Contaminated soil means soil which contains contaminants, pollutants, or hazardous substances that do not occur naturally or occur at levels greater than natural background.

Contaminated groundwater means groundwater which contains contaminants, pollutants, or hazardous substances that do not occur naturally or occur at levels greater than natural background.

Demonstrably Equivalent means that the technical basis for the selection of all stormwater BMPs is documented within a SWPPP, including:

1. The method and reasons for choosing the stormwater BMPs selected.
2. The pollutant removal performance expected from the BMPs selected.

3. The technical basis supporting the performance claims for the BMPs selected, including any available data concerning field performance of the BMPs selected.
4. An assessment of how the selected BMPs will comply with state water quality standards.
5. An assessment of how the selected BMPs will satisfy both applicable federal technology-based treatment requirements and state requirements to use all known, available, and reasonable methods of prevention, control, and treatment (AKART).

Department means the Washington State Department of Ecology.

Detention means the temporary storage of stormwater to improve quality and/or to reduce the mass flow rate of discharge.

Dewatering means the act of pumping groundwater or stormwater away from an active construction site.

Director means the Director of the Washington State Department of Ecology or his/her authorized representative.

Discharger means an owner or operator of any facility or activity subject to regulation under Chapter 90.48 RCW or the Federal Clean Water Act.

Domestic Wastewater means water carrying human wastes, including kitchen, bath, and laundry wastes from residences, buildings, industrial establishments, or other places, together with such groundwater infiltration or surface waters as may be present.

Ecology means the Washington State Department of Ecology.

Engineered Soils means the use of soil amendments including, but not limited, to Portland cement treated base (CTB), cement kiln dust (CKD), or fly ash to achieve certain desirable soil characteristics.

Equivalent BMPs means operational, source control, treatment, or innovative BMPs which result in equal or better quality of stormwater discharge to surface water or to groundwater than BMPs selected from the SWMM.

Erosion means the wearing away of the land surface by running water, wind, ice, or other geological agents, including such processes as gravitational creep.

Erosion and Sediment Control BMPs means BMPs intended to prevent erosion and sedimentation, such as preserving natural vegetation, seeding, mulching and matting, plastic covering, filter fences, sediment traps, and ponds. Erosion and sediment control BMPs are synonymous with stabilization and structural BMPs.

Federal Operator is an entity that meets the definition of "Operator" in this permit and is either any department, agency or instrumentality of the executive, legislative, and judicial branches of the Federal government of the United States, or another entity, such as a private contractor, performing construction activity for any such department, agency, or instrumentality.

Final Stabilization (same as **fully stabilized** or **full stabilization**) means the completion of all soil disturbing activities at the site and the establishment of permanent vegetative cover, or equivalent permanent stabilization measures (such as pavement, riprap, gabions, or geotextiles) which will prevent erosion. See the applicable Stormwater Management Manual for more information on vegetative cover expectations and equivalent permanent stabilization measures.

Groundwater means water in a saturated zone or stratum beneath the land surface or a surface waterbody.

Hazardous Substance means any dangerous or extremely hazardous waste as defined in RCW 70.105.010 (5) and (6), or any dangerous or extremely dangerous waste as designated by rule under chapter 70.105 RCW; any hazardous sub-stance as defined in RCW 70.105.010(14) or any hazardous substance as defined by rule under chapter 70.105 RCW; any substance that, on the effective date of this section, is a hazardous substance under section 101(14) of the federal cleanup law, 42U.S.C., Sec. 9601(14); petroleum or petroleum products; and any substance or category of substances, including solid waste decomposition products, determined by the director by rule to present a threat to human health or the environment if released into the environment. The term hazardous substance does not include any of the following when contained in an underground storage tank from which there is not a release: crude oil or any fraction thereof or petroleum, if the tank is in compliance with all applicable federal, state, and local law.

Injection Well means a well that is used for the subsurface emplacement of fluids. (See **Well**.)

Jurisdiction means a political unit such as a city, town or county; incorporated for local self-government.

National Pollutant Discharge Elimination System (NPDES) means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring, and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of the Federal Clean Water Act, for the discharge of pollutants to surface waters of the State from point sources. These permits are referred to as NPDES permits and, in Washington State, are administered by the Washington State Department of Ecology.

Notice of Intent (NOI) means the application for, or a request for coverage under this general permit pursuant to WAC 173-226-200.

Notice of Termination (NOT) means a request for termination of coverage under this general permit as specified by Special Condition S10 of this permit.

Operator means any party associated with a construction project that meets either of the following two criteria:

- The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or
- The party has day-to-day operational control of those activities at a project that are necessary to ensure compliance with a SWPPP for the site or other permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the SWPPP or comply with other permit conditions).

Permittee means individual or entity that receives notice of coverage under this general permit.

pH means a liquid's measure of acidity or alkalinity. A pH of 7 is defined as neutral. Large variations above or below this value are considered harmful to most aquatic life.

pH Monitoring Period means the time period in which the pH of stormwater runoff from a site must be tested a minimum of once every seven days to determine if stormwater pH is between 6.5 and 8.5.

Point Source means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, and container from which pollutants are or may be discharged to surface waters of the State. This term does not include return flows from irrigated agriculture. (See the Fact Sheet for further explanation)

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, domestic sewage sludge (biosolids), munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste. This term does not include sewage from vessels within the meaning of section 312 of the CWA, nor does it include dredged or fill material discharged in accordance with a permit issued under section 404 of the CWA.

Pollution means contamination or other alteration of the physical, chemical, or biological properties of waters of the State; including change in temperature, taste, color, turbidity, or odor of the waters; or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the State as will or is likely to create a nuisance or render such waters harmful, detrimental or injurious to the public health, safety or welfare; or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses; or to livestock, wild animals, birds, fish or other aquatic life.

Process Wastewater means any non-stormwater which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product. If stormwater commingles with process wastewater, the commingled water is considered process wastewater.

Receiving Water means the waterbody at the point of discharge. If the discharge is to a storm sewer system, either surface or subsurface, the receiving water is the waterbody to which the storm system discharges. Systems designed primarily for other purposes such as for groundwater drainage, redirecting stream natural flows, or for conveyance of irrigation water/return flows that coincidentally convey stormwater are considered the receiving water.

Representative means a stormwater or wastewater sample which represents the flow and characteristics of the discharge. Representative samples may be a grab sample, a time-proportionate *composite sample*, or a flow proportionate sample. Ecology's Construction Stormwater Monitoring Manual provides guidance on representative sampling.

Responsible Corporate Officer for the purpose of signatory authority means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures (40 CFR 122.22).

Sanitary Sewer means a sewer which is designed to convey domestic wastewater.

Sediment means the fragmented material that originates from the weathering and erosion of rocks or unconsolidated deposits, and is transported by, suspended in, or deposited by water.

Sedimentation means the depositing or formation of sediment.

Sensitive Area means a waterbody, wetland, stream, aquifer recharge area, or channel migration zone.

SEPA (State Environmental Policy Act) means the Washington State Law, RCW 43.21C.020, intended to prevent or eliminate damage to the environment.

Significant Amount means an amount of a pollutant in a discharge that is amenable to available and reasonable methods of prevention or treatment; or an amount of a pollutant that has a reasonable potential to cause a violation of surface or groundwater quality or sediment management standards.

Significant Concrete Work means greater than 1000 cubic yards placed or poured concrete or recycled concrete used over the life of a project.

Significant Contributor of Pollutants means a facility determined by Ecology to be a contributor of a significant amount(s) of a pollutant(s) to waters of the State of Washington.

Site means the land or water area where any "facility or activity" is physically located or conducted.

Source Control BMPs means physical, structural or mechanical devices or facilities that are intended to prevent pollutants from entering stormwater. A few examples of source control BMPs are erosion control practices, maintenance of stormwater facilities, constructing roofs over storage and working areas, and directing wash water and similar discharges to the sanitary sewer or a dead end sump.

Stabilization means the application of appropriate BMPs to prevent the erosion of soils, such as, temporary and permanent seeding, vegetative covers, mulching and matting, plastic covering and sodding. See also the definition of Erosion and Sediment Control BMPs.

Storm Drain means any drain which drains directly into a *storm sewer system*, usually found along roadways or in parking lots.

Storm Sewer System means a means a conveyance, or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains designed or used for collecting or conveying stormwater. This does not include systems which are part of *a combined sewer* or Publicly Owned Treatment Works (POTW), as defined at 40 CFR 122.2.

Stormwater means that portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a stormwater drainage system into a defined surface waterbody, or a constructed infiltration facility.

Stormwater Management Manual (SWMM) or **Manual** means the technical Manual published by Ecology for use by local governments that contain descriptions of and design criteria for BMPs to prevent, control, or treat pollutants in stormwater.

Stormwater Pollution Prevention Plan (SWPPP) means a documented plan to implement measures to identify, prevent, and control the contamination of point source discharges of stormwater.

Surface Waters of the State includes lakes, rivers, ponds, streams, inland waters, salt waters, and all other surface waters and water courses within the jurisdiction of the state of Washington.

Temporary Stabilization means the exposed ground surface has been covered with appropriate materials to provide temporary stabilization of the surface from water or wind erosion. Materials include, but are not limited to, mulch, riprap, erosion control mats or blankets and temporary cover crops. Seeding alone is not considered stabilization. Temporary stabilization is not a substitute for the more permanent “final stabilization.”

Total Maximum Daily Load (TMDL) means a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet state water quality standards. Percentages of the total maximum daily load are allocated to the various pollutant sources. A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. The TMDL calculations must include a "margin of safety" to ensure that the waterbody can be protected in case there are unforeseen events or unknown sources of the pollutant. The calculation must also account for seasonable variation in water quality.

Transfer of Coverage (TOC) means a request for transfer of coverage under this general permit as specified by Special Condition S2.A of this permit.

Treatment BMPs means BMPs that are intended to remove pollutants from stormwater. A few examples of treatment BMPs are detention ponds, oil/water separators, biofiltration, and constructed wetlands.

Transparency means a measurement of water clarity in centimeters (cm), using a 60 cm transparency tube. The transparency tube is used to estimate the relative clarity or transparency of water by noting the depth at which a black and white Secchi disc becomes visible when water is released from a value in the bottom of the tube. A transparency tube is sometimes referred to as a “turbidity tube.”

Turbidity means the clarity of water expressed as nephelometric turbidity units (NTUs) and measured with a calibrated turbidimeter.

Uncontaminated means free from any contaminant. See definition of “contaminant” and WAC 173-340-200.

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

Waste Load Allocation (WLA) means the portion of a receiving water’s loading capacity that is allocated to one of its existing or future point sources of pollution. WLAs constitute a type of water quality based effluent limitation (40 CFR 130.2[h]).

Water-Only Based Shaft Drilling is a shaft drilling process that uses water only and no additives are involved in the drilling of shafts for construction of building, road, or bridge foundations.

Water Quality means the chemical, physical, and biological characteristics of water, usually with respect to its suitability for a particular purpose.

Waters of the State includes those waters as defined as "waters of the United States" in 40 CFR Subpart 122.2 within the geographic boundaries of Washington State and "waters of the State" as defined in Chapter 90.48 RCW, which include lakes, rivers, ponds, streams, inland waters, underground waters, salt

waters, and all other surface waters and water courses within the jurisdiction of the state of Washington.

Well means a bored, drilled or driven shaft, or dug hole whose depth is greater than the largest surface dimension. (See **Injection Well**.)

Wheel Wash Wastewater means any water used in, or resulting from the operation of, a tire bath or wheel wash (BMP C106: Wheel Wash), or other structure or practice that uses water to physically remove mud and debris from vehicles leaving a construction site and prevent track-out onto roads. When stormwater comingles with wheel wash wastewater, the resulting water is considered wheel wash wastewater and must be managed according to Special Condition S9.D.9.

APPENDIX B – ACRONYMS

AKART	All Known, Available, and Reasonable Methods of Prevention, Control, and Treatment
BMP	Best Management Practice
CESCL	Certified Erosion and Sediment Control Lead
CFR	Code of Federal Regulations
CKD	Cement Kiln Dust
cm	Centimeters
CPD	Common Plan of Development
CTB	Cement-Treated Base
CWA	Clean Water Act
DMR	Discharge Monitoring Report
EPA	Environmental Protection Agency
ERTS	Environmental Report Tracking System
ESC	Erosion and Sediment Control
FR	Federal Register
LID	Low Impact Development
NOI	Notice of Intent
NOT	Notice of Termination
NPDES	National Pollutant Discharge Elimination System
NTU	Nephelometric Turbidity Unit
RCW	Revised Code of Washington
SEPA	State Environmental Policy Act
SWMM	Stormwater Management Manual
SWPPP	Stormwater Pollution Prevention Plan
TMDL	Total Maximum Daily Load
UIC	Underground Injection Control
USC	United States Code
USEPA	United States Environmental Protection Agency
WAC	Washington Administrative Code
WQ	Water Quality
WWHM	Western Washington Hydrology Model

APPENDIX G
TRAILHEAD SIGN

Riverside State Park

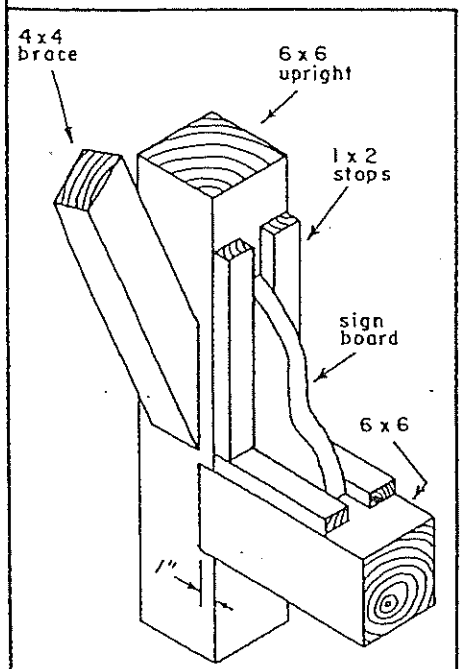
9711 W. Charles Road
Nine Mile Falls, Washington 99026
(509)-465-5064
FAX 509-465-5571
manager@riversidestatepark.org
www.riversidestatepark.org

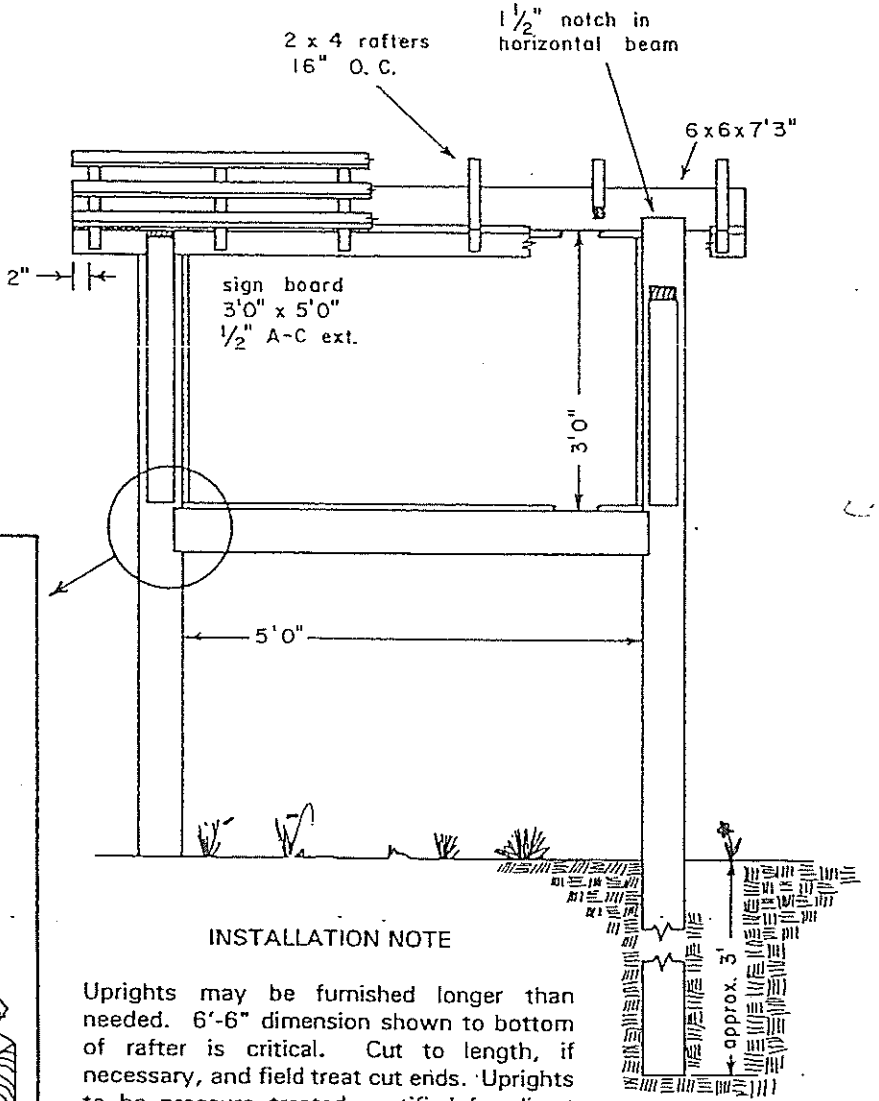
3'X5' Small Bulletin Board Supplies List

2 EA. 4'X8'X1/2" CDX plywood sheets
2 EA 2"X4"X12' KD DF
2 EA 2"X4"X8' HEM or Fir Stud
2 EA 1"X2"X10' Clear cedar trim boards
2 EA 4"X4"X8' Treated post
6-8 EA Premix Concrete 80#
1 EA 1# 3" Gold wood screw
1 EA 2# Finish Nails for cedar shakes
1 EA 8D 2 ½" 1# Bright common
8 EA ½" X 10" Lag Screw
2 EA 6"X6"X10' Treated Post
2 EA 6"X6"X8' Treated Post
1 EA Cedar Shakes to cover 14 square feet
1 EA 3'X5' sheet of lexan (optional)

All lumber shall be standard or better.

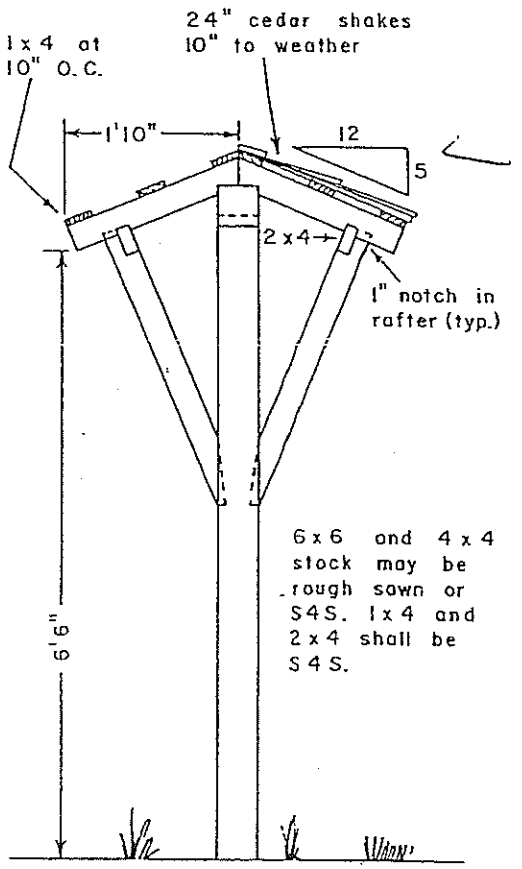
Shakes shall be No. 1 Western red cedar shakes, handsplit and resawn, 24" long with 3/4"-5/4" butts. Ridge shakes 5" x 18".





INSTALLATION NOTE

Uprights may be furnished longer than needed. 6'-6" dimension shown to bottom of rafter is critical. Cut to length, if necessary, and field treat cut ends. Uprights to be pressure treated, certified for direct burial. Tamp backfill in place.



6 x 6 and 4 x 4 stock may be rough sawn or S4S. 1 x 4 and 2 x 4 shall be S4S.

Color: Olympic solid color stain "Avocado".

All hardware hot dip galvanized.

Revised 5-22-91 rlp

SMALL BULLETIN BOARD

E-3-T

WASHINGTON STATE PARKS AND RECREATION COMMISSION

DRAWN BY rlp SCALE as shown

DATE 12-5-77 DRAWING NO.

APPENDIX H
BNSF BRIDGE PLANS

GENERAL NOTES:

1. THE NEW STRUCTURE IS DESIGNED IN ACCORDANCE WITH THE 2021 EDITION OF THE AMERICAN RAILWAY ENGINEERING AND MAINTENANCE-OF-WAY ASSOCIATION (A.R.E.M.A.) MANUAL FOR RAILWAY ENGINEERING, CHAPTER 8 - CONCRETE STRUCTURES AND FOUNDATIONS, CHAPTER 9 - SEISMIC DESIGN, AND CHAPTER 15 - STEEL STRUCTURES.

2. DESIGN LOADING: COOPER E80 WITH DIESEL IMPACT.

3. NEW CONSTRUCTION SHOWN IN HEAVY LINES. CONSTRUCTION BY CITY CONTRACTOR (FUTURE WORK) SHOWN IN LIGHT LINES.

4. ALL WORK REQUIREMENTS SHOWN ON THESE DRAWINGS AND NOT OTHERWISE DETAILED SHALL BE ACCOMPLISHED AS SPECIFIED IN THE BNSF STANDARDS AND THE MOST CURRENT A.R.E.M.A. MANUAL FOR RAILWAY ENGINEERING. IN THE EVENT OF CONFLICTS BETWEEN THE SPECIFICATIONS, THE MORE RESTRICTIVE SHALL APPLY.

5. BRIDGE STATIONING AND ELEVATIONS BASED ON AECOM / BNSF OTIS ORCHARDS SURVEY.

BENCHMARK CONTROL POINT #3
WSDOT MON GP32290-22
NORTHING: 272134.65
EASTING: 2525040.29
ML1 STA. 4040+25.33
OFFSET: 211.15 RT (EX. MAIN 1)
ELEV: 1989.77

6. ALL UTILITES AND BNSF UNDERGROUND CABLING (IF APPLICABLE) SHALL BE LOCATED AND PROTECTED FROM DAMAGE. UPON REQUEST, UNDERGROUND UTILITIES WILL BE LOCATED AND FLAGGED BY THE UTILITIES. EXCAVATION IN THE AREA OF UNDERGROUND UTITLIES SHALL NOT BEGIN UNTIL ALL SUCH UTILITIES HAVE BEEN LOCATED AND IDENTIFIED, AND THEN ONLY WITH EXTREME CARE TO AVOID ANY POSSIBILITY OF DAMAGE TO THE UTILITY FACILITY. CONSTRUCTION EFFORTS SHALL BE COORDINATED WITH ALL OTHER LOCAL UTILITY COMPANIES PERTINENT TO THE PROSECUTION OF WORK. BNSF SHALL NOTIFY UTILITY LOCATORS (811) 48 HOURS PRIOR TO PLANNED WORK.

7. AREAS DISTURBED BY CONSTRUCTION OPERATIONS SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN EXISTING.

8. BNSF TO INSTALL TEMPORARY SHORING AS NECESSARY FOR INSTALLATION OF BENT AND ABUTMENT CAPS.

9. BNSF STANDARD CONSTRUCTION SPECIFICATIONS SHALL BE USED FOR THIS PROJECT.

REFERENCE:

1. BNSF STANDARD BRIDGE & COMPONENT PLANS ISSUED MARCH 1, 2021.

2. BNSF OTIS ORCHARDS TO IRVIN DOUBLE TRACK PROJECT BID PLAN SET BY AECOM DATED 2/12/2020.

3. CITY OF SPOKANE VALLEY PINES ROAD BNSF GRADE SEPARATION PROJECT PLAN SET BY HDR DATED 08/08/2023.

4. GEOTECHNICAL ENGINEERING EVALUATION REPORT BY GEOENGINEERS DATED 09/19/2023.

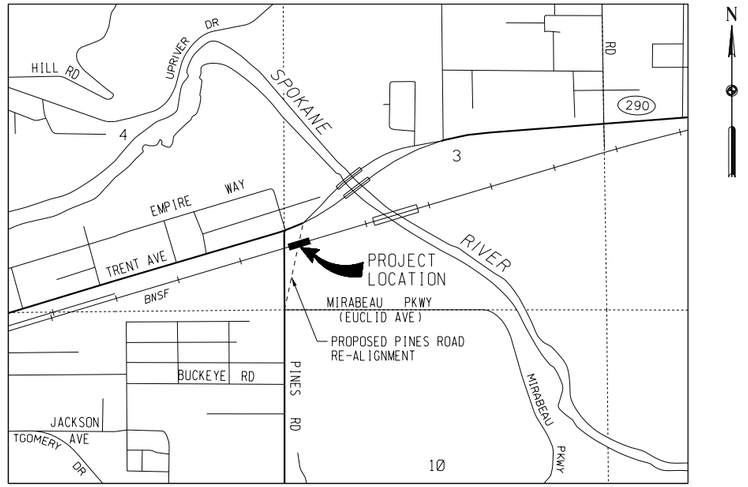
DIVISION OF RESPONSIBILITY:

RAILROAD - THIS PLAN SET
1. BUILD BRIDGE FOR EXISTING MAIN 1.
2. BUILD BRIDGE FOR PROPOSED MAIN 2.
3. PERFORM ROUGH EXCAVATION FOR ROADWAY AND INSTALL BENT CROSS BRACING

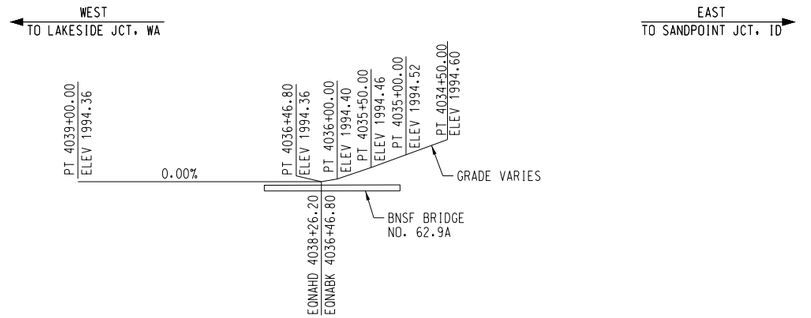
CITY - FUTURE WORK
1. FINISH EXCAVATION AT EACH BENT.
2. INSTALL C.I.P. CONCRETE ENCASEMENT ON BENTS.

LIST OF DRAWINGS - BR. 62.9A & B

	PLAN NO.	TITLE
BNSF FORCES (THIS SET)	0045-0062.900-001	GENERAL NOTES AND INFORMATION (BNSF)
	0045-0062.900-002	GENERAL LAYOUT
	0045-0062.900-003	TYPICAL SECTION - DOUBLE BENT
	0045-0062.900-004	TYPICAL SECTION - SINGLE BENT
	0045-0062.900-005	TYPICAL SECTION - ABUTMENT
	0045-0062.900-006	FOUNDATION PLAN
	0045-0062.900-007	BORING LOGS
	0045-0062.900-008	MISCELLANEOUS DETAILS
	0045-0062.900-009	SPECIAL PRECAST CONCRETE ABUTMENT CAP (SHEET 1 OF 2)
	0045-0062.900-010	SPECIAL PRECAST CONCRETE ABUTMENT CAP (SHEET 2 OF 2)
	0045-0062.900-011	SHEET LEFT BLANK INTENTIONALLY
	0045-0062.900-012	SHEET LEFT BLANK INTENTIONALLY
	0045-0062.900-013	SPECIAL WINGWALL DETAILS
	0045-0062.900-014	SPECIAL PRECAST CONCRETE DOUBLE BENT CAP
	0045-0062.900-015	SPECIAL 42"x23'-10" DOUBLE CELL BOX BEAM (SHEET 1 OF 2)
	0045-0062.900-016	SPECIAL 42"x23'-10" DOUBLE CELL BOX BEAM (SHEET 2 OF 2)
	0045-0062.900-017	MODIFICATIONS TO 42" DOUBLE CELL BOX BEAMS (SHEET 1 OF 2)
	0045-0062.900-018	MODIFICATIONS TO 42" DOUBLE CELL BOX BEAMS (SHEET 2 OF 2)
	0045-0062.900-019	WATERPROOFING LAYOUT AND DETAILS
	0045-0062.900-020	SHEET LEFT BLANK INTENTIONALLY
	0045-0062.900-021	SHEET LEFT BLANK INTENTIONALLY
	0045-0062.900-022	MISCELLANEOUS STEEL DETAILS
	0045-0062.900-023	BNSF BILL OF MATERIAL AND IMPACT PROTECTION DEVICE DETAILS
CITY CONTRACTOR	0045-0062.900-024	GENERAL NOTES AND INFORMATION (CITY)
	0045-0062.900-025	GENERAL LAYOUT
	0045-0062.900-026	TYPICAL SECTION - DOUBLE BENT
	0045-0062.900-027	TYPICAL SECTON - SINGLE BENT
	0045-0062.900-028	BENT ENCASEMENT DETAILS - BENTS 2 THRU 4 (DOUBLE)
	0045-0062.900-029	BENT ENCASEMENT DETAILS - BENT 5 (SINGLE)

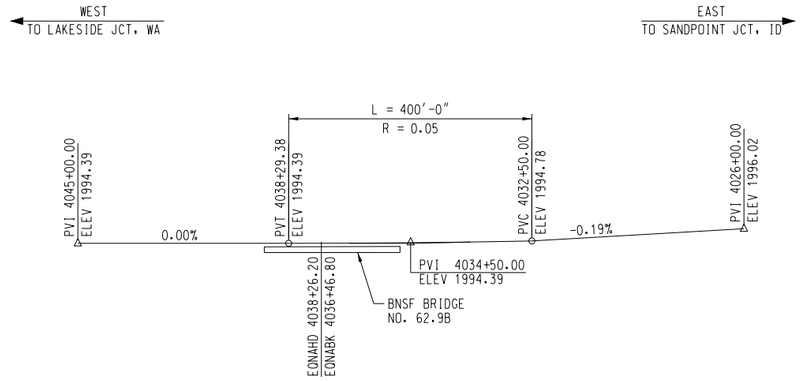


VICINITY MAP
NO SCALE
IN THE CITY OF SPOKANE VALLEY, WASHINGTON



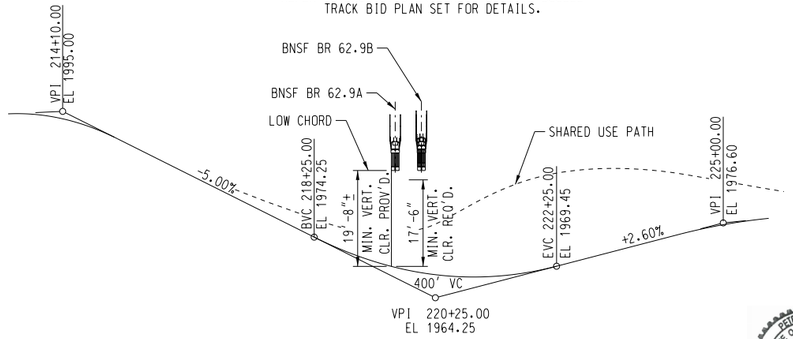
EXISTING MAIN 1 TRACK TOP OF RAIL PROFILE

NO SCALE
REFER TO BNSF OTIS ORCHARDS TO IRVIN DOUBLE TRACK BID PLAN SET FOR DETAILS.



PROPOSED MAIN 2 TRACK TOP OF RAIL PROFILE

NO SCALE
REFER TO BNSF OTIS ORCHARDS TO IRVIN DOUBLE TRACK BID PLAN SET FOR DETAILS.



PINES ROAD PROFILE

NO SCALE
LOOKING RALROAD WEST

REFER TO CITY OF SPOKANE VALLEY PINES ROAD BNSF GRADE SEPARATION PLAN SET FOR DETAILS.

TABLE OF ELEVATIONS

TRACK	LOCATION	TOP/TIE	TOP/CAP	PILE CUTOFF	T/T TO PILE CUTOFF
PROPOSED MAIN 2 BRIDGE 62.9B	ABUTMENT 1	1,993.76	1,988.71	1,986.71	7'-0 1/2"
	BENT 2	1,993.73	1,988.79	1,986.12	7'-7 1/4"
	BENT 3	1,993.71	1,988.89	1,986.22	7'-5 7/8"
	BENT 4	1,993.70	1,988.79	1,986.12	7'-6 7/8"
	BENT 5	1,993.70	1,988.72	1,986.05	7'-7 3/4"
	ABUTMENT 6	1,993.70	1,988.67	1,986.67	7'-0 1/4"
EXISTING MAIN 1 BRIDGE 62.9A	ABUTMENT 1	1,993.81	1,988.71	1,986.71	7'-1 1/4"
	BENT 2	1,993.77	1,988.79	1,986.12	7'-7 3/4"
	BENT 3	1,993.71	1,988.89	1,986.22	7'-5 7/8"
	BENT 4	1,993.67	1,988.79	1,986.12	7'-6 1/2"
	BENT 5	1,993.67	1,988.72	1,986.05	7'-7 3/8"
	ABUTMENT 6	1,993.67	1,988.67	1,986.67	7'-0"

File Location: $FILE$
Date Printed: 1/27/2025 Time Printed: 2:12:42 PM

HDR

CITY OF Spokane Valley

LAT: 47°41'21"N LONG: 117°14'20"W	DES: CSS
DOT # XXXXXXX	DRAWN: AEP
CITY OF SPOKANE VALLEY, SPOKANE COUNTY, WA.	CHECK: PJG
STREET NAME: PINES ROAD	DATE: JAN. 2025
STATE CONTRACT NO.: XX-XXXX	PLAN: XXX
FED. AID. PROJECT NO.: XXXXX-XXXXX(XXX)	LINE SEG: 0045

BNSF RAILWAY
BRIDGE ENGINEERING KANSAS CITY, KS
APPROVED: Madlyn Guarino
ASST. DIRECTOR STRUCTURES DESIGN

JEFFER GRAESSLE — STATE OF WASHINGTON — 44526 — REGISTERED PROFESSIONAL ENGINEER
EXPIRES 10/10/2026 (Professional Engineer)

FINAL PLANS

LAKESIDE JCT. WA TO SANDPOINT JCT. ID
BRIDGE NUMBER 62.9A & B
OVER PINES ROAD
GENERAL NOTES AND INFORMATION (BNSF)

PLAN NO: 0045-0062.900-001 SHEET: 1 OF 29

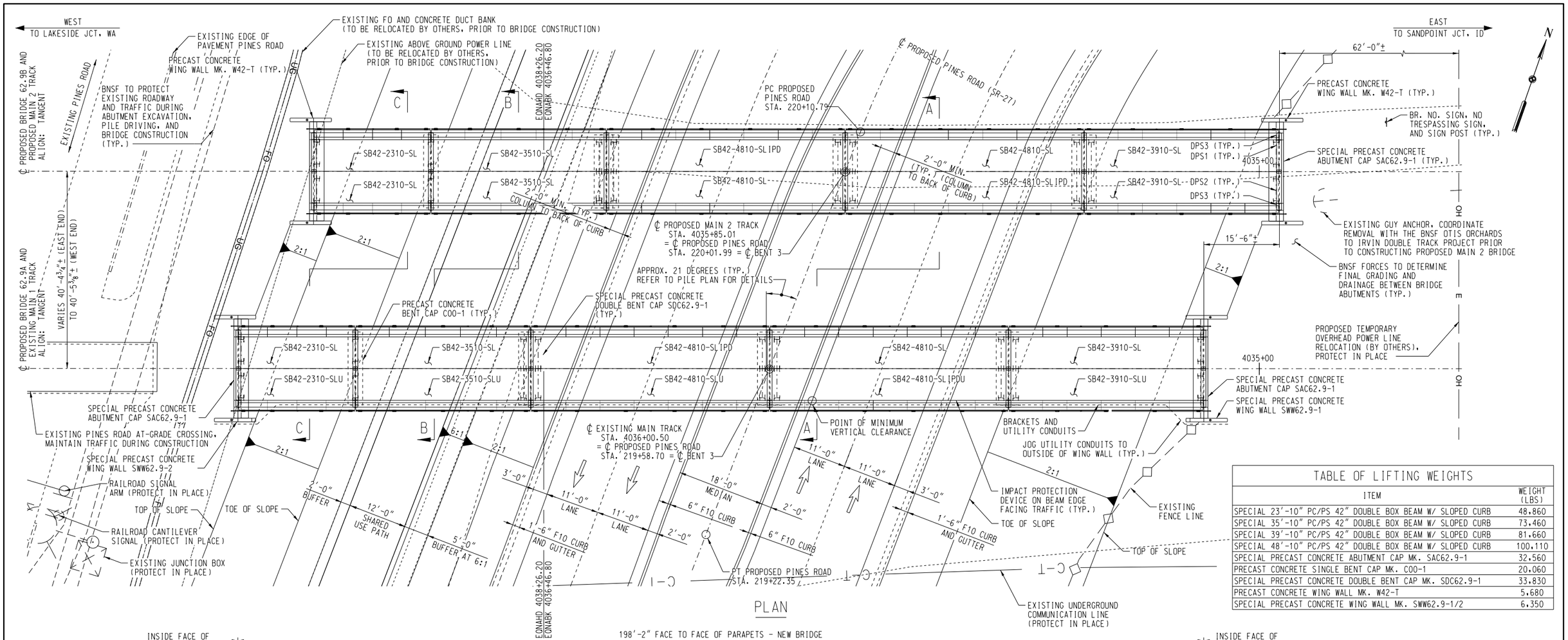
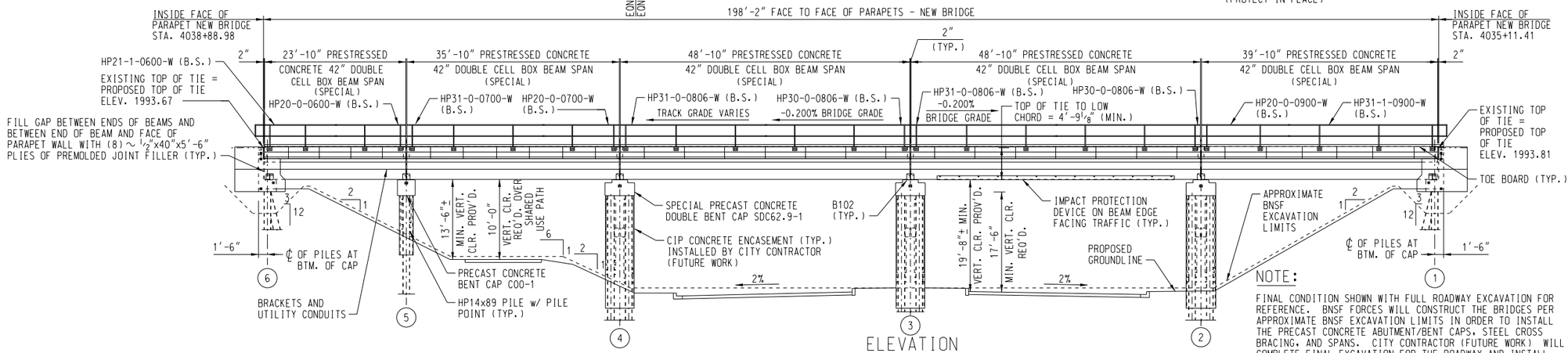


TABLE OF LIFTING WEIGHTS	
ITEM	WEIGHT (LBS)
SPECIAL 23'-10" PC/PS 42" DOUBLE BOX BEAM W/ SLOPED CURB	48,860
SPECIAL 35'-10" PC/PS 42" DOUBLE BOX BEAM W/ SLOPED CURB	73,460
SPECIAL 39'-10" PC/PS 42" DOUBLE BOX BEAM W/ SLOPED CURB	81,660
SPECIAL 48'-10" PC/PS 42" DOUBLE BOX BEAM W/ SLOPED CURB	100,110
SPECIAL PRECAST CONCRETE ABUTMENT CAP MK. SAC62.9-1	32,560
PRECAST CONCRETE SINGLE BENT CAP MK. C00-1	20,060
SPECIAL PRECAST CONCRETE DOUBLE BENT CAP MK. SDC62.9-1	33,830
PRECAST CONCRETE WING WALL MK. W42-T	5,680
SPECIAL PRECAST CONCRETE WING WALL MK. SWW62.9-1/2	6,350



ELEVATION

MAIN 1 BRIDGE SHOWN, MAIN 2 BRIDGE SIMILAR.

BNSF 2021 STANDARD PLAN REFERENCES

PLAN NO. 0000-1000-02	GENERAL NOTES
PLAN NO. 0000-1000-06	HANDRAIL COMPONENTS
PLAN NO. 0000-1110-01	PRECAST BENT CAP C00-1
PLAN NO. 0000-1121-05	WING WALL, 42" BEAM DEPTH
PLAN NO. 0000-1213-01	42" DOUBLE CELL BOX BEAM
PLAN NO. 0000-1213-02	42" DOUBLE CELL BOX BEAM, PRESTRESSING STRAND PATTERN
PLAN NO. 0000-1214-02	24" CONCRETE CURB (SLOPED)
PLAN NO. 0000-1222-02	HANDRAIL DETAILS
PLAN NO. 0000-1222-03	HANDRAIL DETAILS
PLAN NO. 0000-1222-04	HANDRAIL DETAILS
PLAN NO. 0000-1222-05	CURB AND WALK
PLAN NO. 0000-1910-01	LIFTING
PLAN NO. 0000-1910-02	PILE SPLICE AND WELDING
PLAN NO. 0000-1910-03	EMBED PLATES
PLAN NO. 0000-1910-04	DECK AND CURB PLATES
PLAN NO. 0000-1910-05	BRACKET DETAILS

NOTE:

FINAL CONDITION SHOWN WITH FULL ROADWAY EXCAVATION FOR REFERENCE. BNSF FORCES WILL CONSTRUCT THE BRIDGES PER APPROXIMATE BNSF EXCAVATION LIMITS IN ORDER TO INSTALL THE PRECAST CONCRETE ABUTMENT/BENT CAPS, STEEL CROSS BRACING, AND SPANS. CITY CONTRACTOR (FUTURE WORK) WILL COMPLETE FINAL EXCAVATION FOR THE ROADWAY AND INSTALL CONCRETE ENCASEMENT ON BENTS.

ATTENTION !

INFORMATION SHOWN ON THESE PLANS CONCERNING TYPE AND LOCATION OF UNDERGROUND OR ABOVE GROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE.

THE SUPERVISOR OF STRUCTURES OR THE FOREMAN IN CHARGE WILL VERIFY THE LOCATION OF UNDERGROUND AND OVERHEAD UTILITIES BEFORE BEGINNING CONSTRUCTION AND PER THE BNSF ENGINEERING INSTRUCTIONS CHAPTER 26.

PETER GRAGE STATE OF WASHINGTON 46824 REGISTERED PROFESSIONAL ENGINEER EXPIRES 11/04/2026 (Professional Engineer)

HDR

CITY OF Spokane Valley

LAT: 47°41'21"N LONG: 117°14'20"W		DES: CSS	
DOT # XXXXXXX		DRAWN: AEP	
CITY OF SPOKANE VALLEY, SPOKANE COUNTY, WA.		CHECK: PJG	
STREET NAME: PINES ROAD		DATE: JAN. 2025	
STATE CONTRACT NO.: XX-XXXX		PLAN: XXX	
FED. AID. PROJECT NO.: XXXXX-XXXXX(XXX)		LINE SEG: 0045	

BNSF RAILWAY

BRIDGE ENGINEERING KANSAS CITY, KS

APPROVED: Madlen Guarino

ASST. DIRECTOR STRUCTURES DESIGN

FINAL PLANS

LAKESIDE JCT. WA TO SANDPOINT JCT. ID

BRIDGE NUMBER 62.9A & B

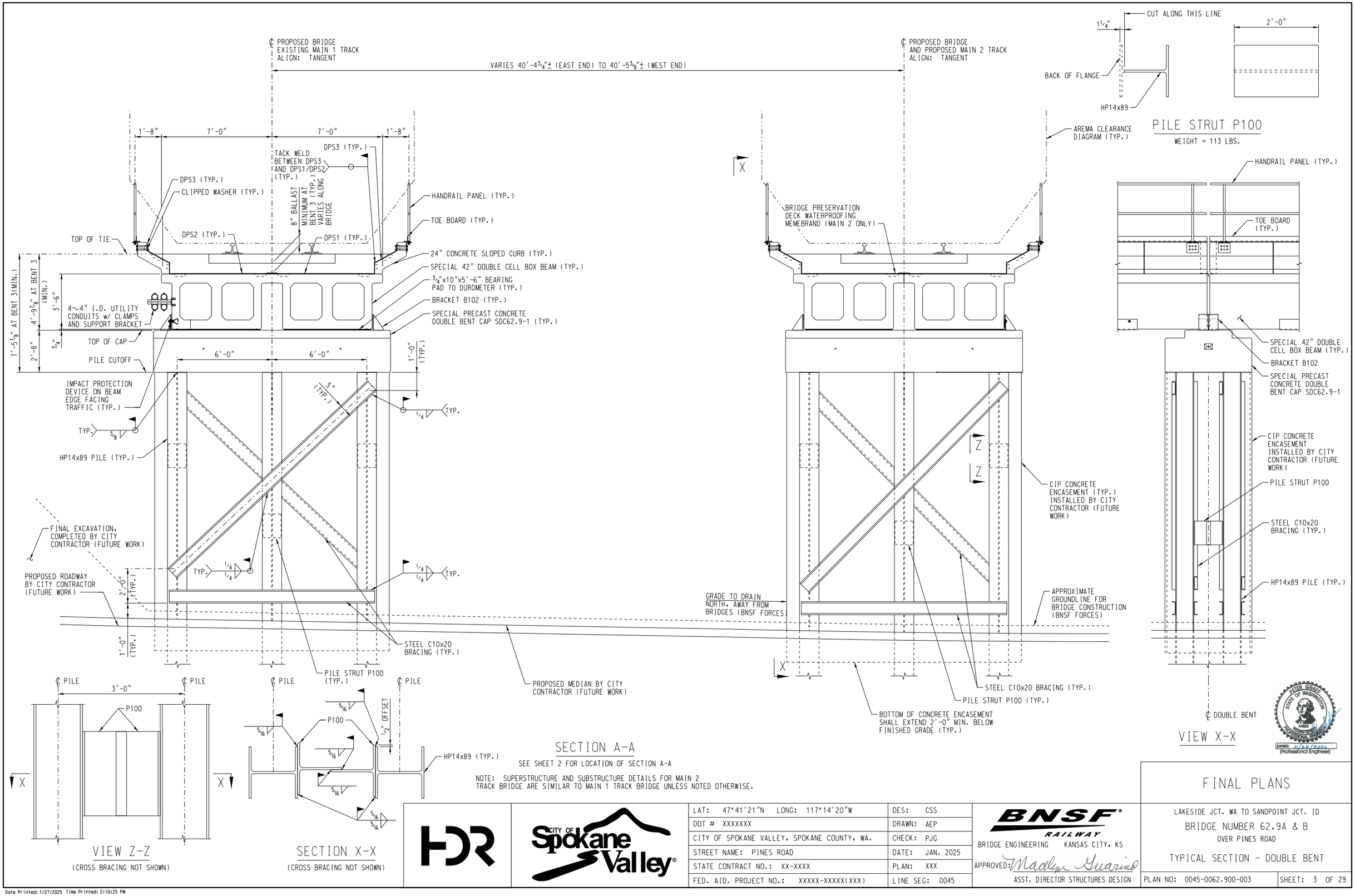
OVER PINES ROAD

GENERAL LAYOUT

PLAN NO: 0045-0062.900-002 SHEET: 2 OF 29

File Location: $FILE$

Date Printed: 1/27/2025 Time Printed: 4:35:51 PM

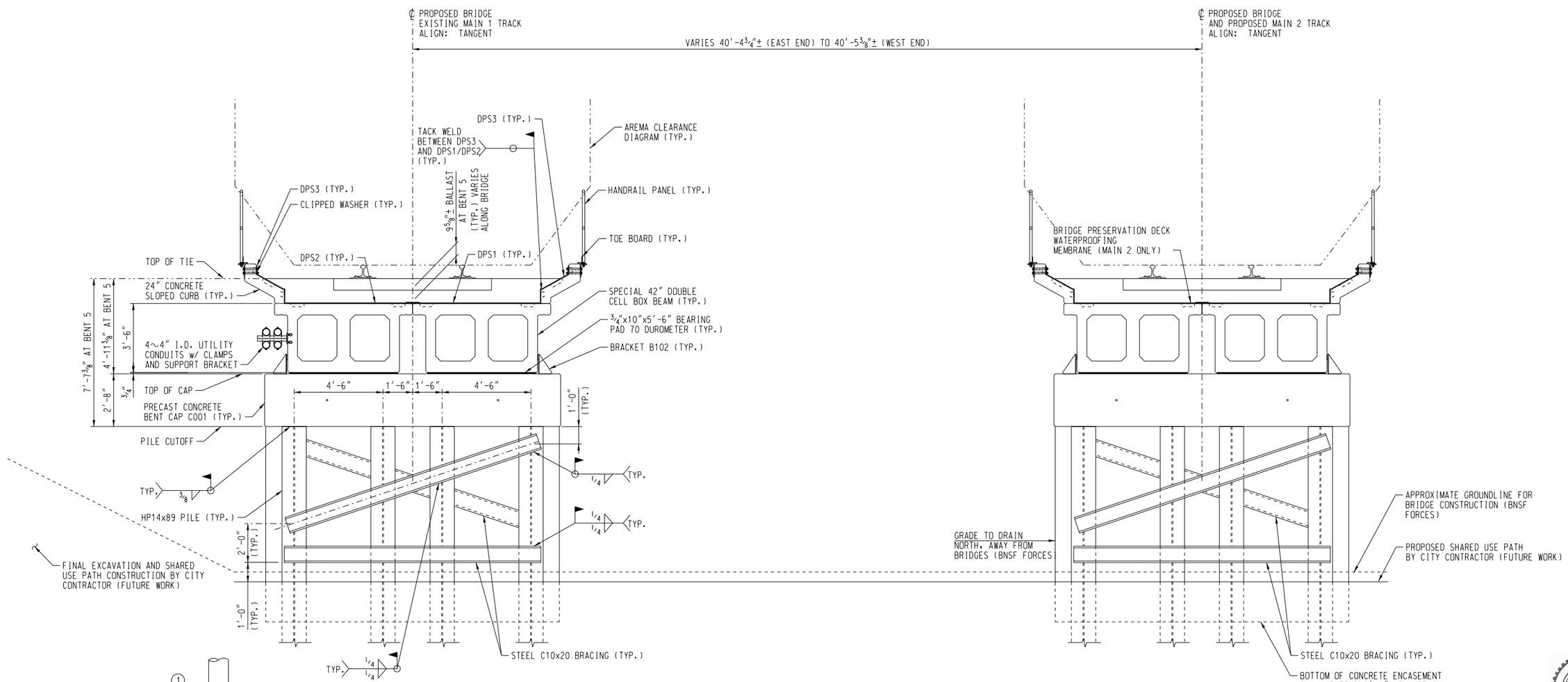


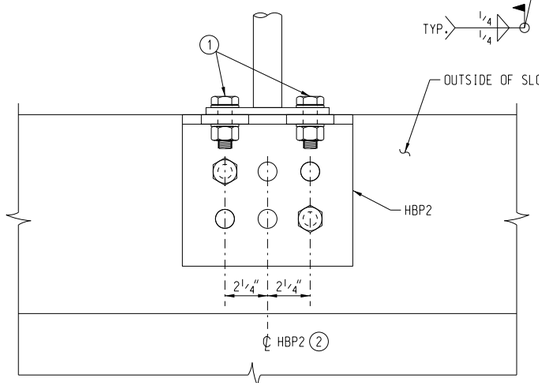
LAT: 47°41′21″N LONG: 117°14′20″W	DES: CSS	BNSF RAILWAY	FINAL PLANS
DOT # XXXXXXX	DRAWN: AEP	BRIDGE ENGINEERING KANSAS CITY, KS	LAKESIDE JCT. WA TO SANDPOINT JCT. ID
CITY OF SPOKANE VALLEY, SPOKANE COUNTY, WA.	CHECK: PJG	APPROVED: Madlyn Guarino	BRIDGE NUMBER 62.9A & B
STREET NAME: PINES ROAD	DATE: JAN. 2025	ASST. DIRECTOR STRUCTURES DESIGN	OVER PINES ROAD
STATE CONTRACT NO.: XX-XXXX	PLAN: XXX		TYPICAL SECTION - DOUBLE BENT
FED. AID. PROJECT NO.: XXXXX-XXXXX(XXX)	LINE SEG: 0045		PLAN NO: 0045-0062.900-003 SHEET: 3 OF 29

JEFFERY GRACE, STATE OF WASHINGTON, 44826, REGISTERED PROFESSIONAL ENGINEER, EXPIRES 11/26/2026 (Professional Engineer)

File Location: SFILES

Date Printed: 1/27/2025 Time Printed: 2:10:25 PM





1 FASTEN HANDRAIL PANEL TO BRACKET WITH:
(2) ¾″ DIA. x 2¼″ BOLTS
(4) WASHERS (15/16″I.D. x 1 7/16″ O.D.)
(2) LOCK NUTS, CENTER LOCKING, ZINC PLATED

2 FASTEN HBP2 BRACKET TO CURB WITH:
(2) ⅞″ DIA. x 9″ BOLTS
(1) WASHER (15/16″I.D. x 2¼″ O.D.)
(1) WASHERS(15/16″I.D. x 2¼″ O.D.) CLIPPED
(2) LOCK NUTS, CENTER LOCKING, ZINC PLATED

HBP2 CONNECTION DETAIL

NOTE: TOE BOARD NOT SHOWN IN DETAIL FOR CLARITY.
SEE SHEET 22 FOR TOE BOARD ATTACHMENT DETAILS.

SECTION B-B

SEE SHEET 2 FOR LOCATION OF SECTION B-B

NOTE: SUPERSTRUCTURE AND SUBSTRUCTURE DETAILS FOR MAIN 2 TRACK BRIDGE ARE SIMILAR TO MAIN 1 TRACK BRIDGE UNLESS NOTED OTHERWISE.

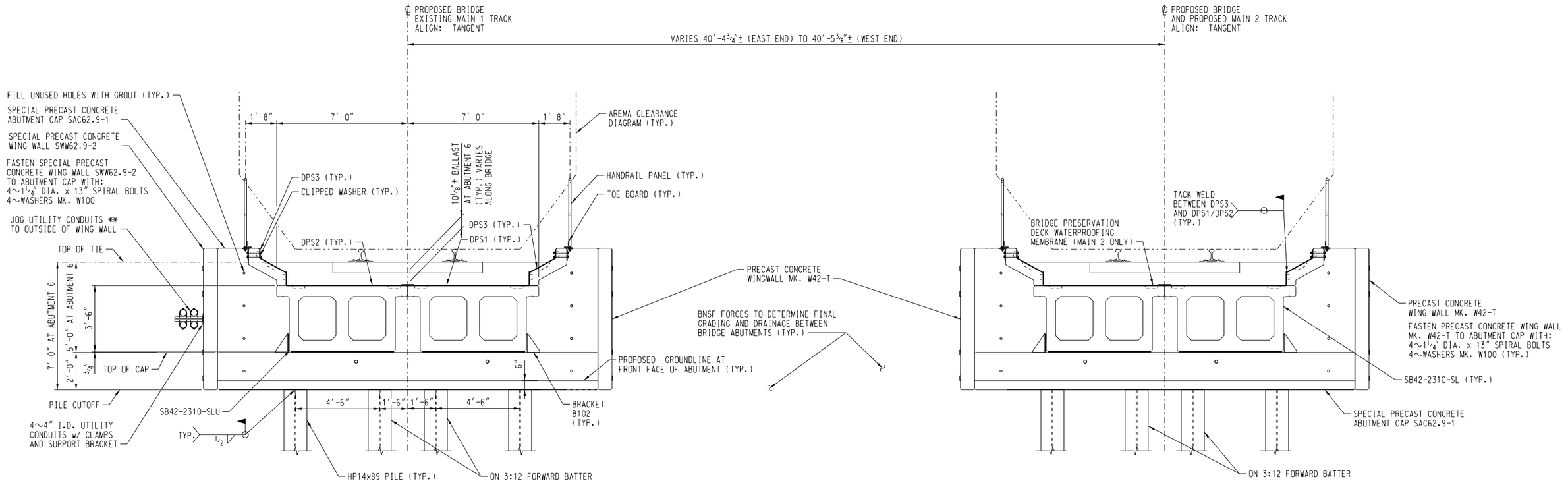
STRUCTURAL STEEL NOTES:

1. FABRICATION AND WORKMANSHIP SHALL CONFORM TO CURRENT AREMA MANUAL FOR RAILWAY ENGINEERING, CHAPTER 15 (STEEL STRUCTURES), AND BNSF STANDARD SPECIFICATIONS.
2. STRUCTURAL STEEL SHALL MEET THE REQUIREMENTS OF ASTM A572 GR. 50. DEBURR ALL EDGES.
3. WELDING SHALL CONFORM TO THE AWS STRUCTURAL WELDING CODE D1.5.
4. FIELD WELDING SHALL BE ACCOMPLISHED WITH THE SMAW OR FCAW PROCESS. WELDERS SHALL POSSESS VALID QUALIFICATIONS.
5. WELDS SHALL BE MADE USING E70XX ELECTRODES, UNLESS NOTED OTHERWISE.
6. WELD MATERIAL SHALL HAVE CORROSION RESISTING PROPERTIES COMPARABLE TO THOSE OF THE BASE METAL.

PETER GRACE — STATE OF WASHINGTON — 44926 — REGISTERED PROFESSIONAL ENGINEER
EXPIRES 11/26/2026 (Professional Engineer)

LAT: 47°41′21″N LONG: 117°14′20″W	DES: CSS	BNSF RAILWAY	FINAL PLANS
DOT # XXXXXXX	DRAWN: AEP	BRIDGE ENGINEERING KANSAS CITY, KS	LAKESIDE JCT. WA TO SANDPOINT JCT. ID
CITY OF SPOKANE VALLEY, SPOKANE COUNTY, WA.	CHECK: PJG	APPROVED: Madelyn Guarino	BRIDGE NUMBER 62.9A & B
STREET NAME: PINES ROAD	DATE: JAN. 2025	ASST. DIRECTOR STRUCTURES DESIGN	OVER PINES ROAD
STATE CONTRACT NO.: XX-XXXX	PLAN: XXX		TYPICAL SECTION - SINGLE BENT
FED. AID. PROJECT NO.: XXXXX-XXXXX(XXX)	LINE SEG: 0045		PLAN NO: 0045-0062.900-004 SHEET: 4 OF 29

File Location: SPILELS
Date Printed: 1/27/2025 Time Printed: 2:12:39 PM

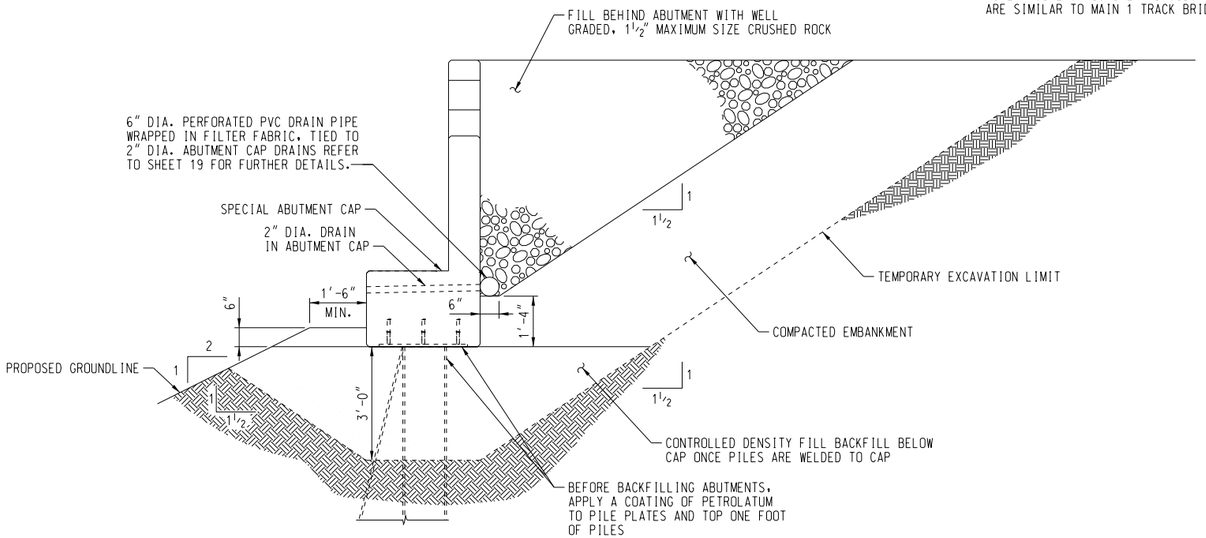


** NOTE: REQUIREMENT FOR BENDING CONDUIT:
MAX. CONDUIT BEND ANGLE : 45 DEGREES
MIN. CONDUIT BEND RADIUS: 18 INCHES
MIN. STRAIGHT RUN BETWEEN TWO CONDUIT BENDS: 60 INCHES

SECTION C-C

SEE SHEET 2 FOR LOCATION OF SECTION C-C

NOTE: SUPERSTRUCTURE AND SUBSTRUCTURE DETAILS FOR MAIN 2 TRACK BRIDGE ARE SIMILAR TO MAIN 1 TRACK BRIDGE UNLESS NOTED OTHERWISE.



HEAD OF BANK DETAIL

PETER GRAHAM — STATE OF WASHINGTON — 44534 — REGISTERED PROFESSIONAL ENGINEER
EXPIRES 11/11/2026 (Professional Engineer)

FINAL PLANS

LAT: 47°41′21″N LONG: 117°14′20″W	DES: CSS
DOT # XXXXXXX	DRAWN: AEP
CITY OF SPOKANE VALLEY, SPOKANE COUNTY, WA.	CHECK: PJG
STREET NAME: PINES ROAD	DATE: JAN. 2025
STATE CONTRACT NO.: XX-XXXX	PLAN: XXX
FED. AID. PROJECT NO.: XXXXX-XXXXX(XXX)	LINE SEG: 0045

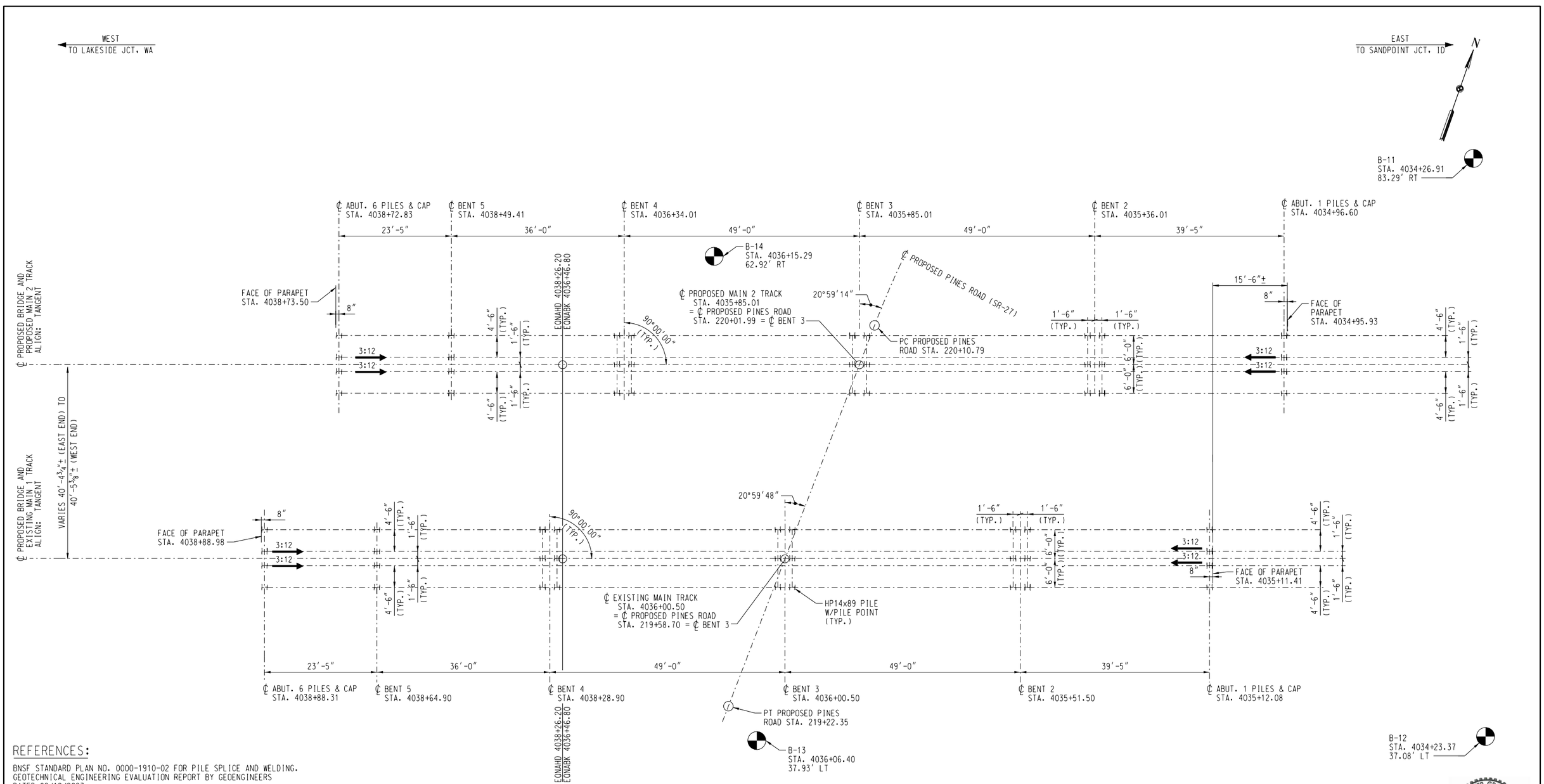
BNSF RAILWAY
BRIDGE ENGINEERING KANSAS CITY, KS
APPROVED: Madlyn Guarino
ASST. DIRECTOR STRUCTURES DESIGN

LAKESIDE JCT. WA TO SANDPOINT JCT. ID
BRIDGE NUMBER 62.9A & B
OVER PINES ROAD
TYPICAL SECTION - ABUTMENT

PLAN NO: 0045-0062.900-005 SHEET: 5 OF 29

File Location: $FILE$

Date Printed: 1/29/2025 Time Printed: 9:58:14 AM



REFERENCES:

BNSF STANDARD PLAN NO. 0000-1910-02 FOR PILE SPLICE AND WELDING.
GEOTECHNICAL ENGINEERING EVALUATION REPORT BY GEOENGINEERS
DATED 09/19/2023.

PILE NOTES:

1. BRIDGE BEARING PILES SHALL BE DRIVEN TO REFUSAL, IF POSSIBLE, OR TO A MINIMUM ULTIMATE RESISTANCE AS FOLLOWS (FS = 2.5):
   BENT PILE: 295 TON (MIN.)
   ABUTMENT PILE: 250 TON (MIN.)

   ESTIMATED PILE LENGTH BELOW CUTOFF:
   BENT PILE: 87'
   ABUTMENT PILE: 78'

   MINIMUM PILE PENETRATION BELOW CUTOFF:
   BENT PILE: 68'
   ABUTMENT PILE: 25'

2. BRIDGE BEARING PILES ARE TO BE DRIVEN WITH REINFORCING TIPS (PILE POINTS). HARD DRIVING CONDITIONS ARE EXPECTED AND PRE-DRILLING MAY BE NECESSARY. REFER TO THE PROJECT GEOTECHNICAL REPORT FOR FURTHER INFORMATION.

3. PILE SPACING SHOWN ARE AT PILE CUTOFF ELEVATIONS.

4. SYMBOL X:12 DENOTES DIRECTION AND AMOUNT OF PILE BATTER.

PILE PLAN

JEFFERY GRAFF — STATE OF WASHINGTON — 24826 — REGISTERED PROFESSIONAL ENGINEER
EXPIRES 11/14/2026 (Professional Engineer)

LAT: 47°41'21"N LONG: 117°14'20"W		DES: CSS	
DOT # XXXXXXX		DRAWN: AEP	
CITY OF SPOKANE VALLEY, SPOKANE COUNTY, WA.		CHECK: PJG	
STREET NAME: PINES ROAD		DATE: JAN. 2025	
STATE CONTRACT NO.: XX-XXXX		PLAN: XXX	
FED. AID. PROJECT NO.: XXXXX-XXXXX(XXX)		LINE SEG: 0045	

BNSF RAILWAY
BRIDGE ENGINEERING KANSAS CITY, KS
APPROVED: Madlyn Guarino
ASST. DIRECTOR STRUCTURES DESIGN

FINAL PLANS

LAKESIDE JCT. WA TO SANDPOINT JCT. ID
BRIDGE NUMBER 62.9A & B
OVER PINES ROAD
FOUNDATION PLAN

PLAN NO: 0045-0062.900-006 | SHEET: 6 OF 29

File Location: $FILE1$
Date Printed: 1/27/2025 Time Printed: 2:10:12 PM

T/BORING ELEV. 1985.14

ELEVATION (FEET)	DEPTH (FEET)	BLOWS/FOOT	GRAPHIC LOG	GROUP CLASSIFICATION	MATERIAL DESCRIPTION
1985				GM	BROWN SILTY FINE TO COARSE GRAVEL WITH SAND, COBBLES AND OCCASIONAL BOULDERS (MEDIUM DENSE, MOIST)
1980	5	38			BROWN FINE TO COARSE GRAVEL WITH SILT, SAND, COBBLES AND OCCASIONAL BOULDERS (MEDIUM DENSE TO VERY DENSE, MOIST)
1975	10	74/11"			
1970	15	77			
1965	20	14			
1960	25	30			
1955	30	60/9"			
1950	35	51			
1945	40	18			
1940	45	67		GP	GRAY-BROWN FINE TO COARSE GRAVEL WITH SAND, COBBLES, OCCASIONAL BOULDERS AND TRACE SILT (MEDIUM DENSE TO VERY DENSE, DRY TO MOIST)
1935	50	16			
1930	55	11			
1925	60	50/3"			
1920	65	65/9"			
1915	70	58			BECOMES WET
1910	75	75/3"			
1905	80	19			
1900	85	57		ML	GRAYISH BROWN SILT WITH TRACE SAND (HARD, MOIST)
1895	90	70			
1890	95	74/11"		CL	GRAY CLAY WITH SILT (HARD, MOIST)
1885	100	74/11"			
1880	105	77/10"			

LOG OF BORING B-11

T/BORING ELEV. 1985.68

ELEVATION (FEET)	DEPTH (FEET)	BLOWS/FOOT	GRAPHIC LOG	GROUP CLASSIFICATION	MATERIAL DESCRIPTION
1985				GM	BROWN SILTY FINE TO COARSE GRAVEL WITH SAND, COBBLES AND OCCASIONAL BOULDERS (MEDIUM DENSE, MOIST)
1980	5	60		GW	GRAY-BROWN FINE TO COARSE GRAVEL WITH SAND, COBBLES, OCCASIONAL BOULDERS AND TRACE SILT (MEDIUM DENSE TO VERY DENSE, MOIST)
1975	10	50+			
1970	15	62			
1965	20	47			
1960	25	77+			GRADES WITH MORE COBBLES AND BOULDERS
1955	30	146/11"			
1950	35	94/8"			
1945	40	76			
1940	45	83/8"			
1935	50	59			
1930	55				
1925	60	57			
1920	65				
1915	70	63			BECOMES WET
1910	75				
1905	80	52		GP-GM	GRAY-BROWN FINE TO COARSE GRAVEL WITH SILT, SAND, COBBLES AND BOULDERS (VERY DENSE, WET)
1900	85	42		GM	LIGHT BROWN SILTY FINE TO COARSE GRAVEL WITH SAND, COBBLES AND BOULDERS (MEDIUM DENSE TO DENSE, WET)
1895	90	18			
1890	95	56		ML	BROWN CLAYEY SILT (HARD, MOIST TO WET)
1885	100	102			
1880	105				
1875	110	68			
1870	115				
1865	120				

LOG OF BORING B-12

T/BORING ELEV. 1987.16

ELEVATION (FEET)	DEPTH (FEET)	BLOWS/FOOT	GRAPHIC LOG	GROUP CLASSIFICATION	MATERIAL DESCRIPTION
1985				GM	BROWN SILTY FINE TO COARSE GRAVEL WITH SAND, COBBLES AND OCCASIONAL BOULDERS (MEDIUM DENSE, MOIST)
1980	5	50/0"		GP-GM	GRAY-BROWN FINE TO COARSE GRAVEL WITH SILT, SAND, COBBLES AND OCCASIONAL BOULDERS (MEDIUM DENSE TO VERY DENSE, MOIST)
1975	10	57			
1970	15	41			
1965	20	94/11"			
1960	25	81			
1955	30	53			
1950	35	43			
1945	40	28			
1940	45	97/11"			
1935	50	86			
1930	55	16			
1925	60	69			
1920	65	97			BECOMES WET
1915	70	61			
1910	75	31			
1905	80	55			
1900	85	13			
1895	90	33		ML	GRAY CLAYEY SILT (HARD, MOIST TO WET)
1890	95	52			
	100	66			

LOG OF BORING B-13

T/BORING ELEV. 1987.12

ELEVATION (FEET)	DEPTH (FEET)	BLOWS/FOOT	GRAPHIC LOG	GROUP CLASSIFICATION	MATERIAL DESCRIPTION
1985				GM	BROWN SILTY FINE TO COARSE GRAVEL WITH SAND, COBBLES AND OCCASIONAL BOULDERS (MEDIUM DENSE, MOIST)
1980	5	22		GP-GM	GRAY-BROWN FINE TO COARSE GRAVEL WITH SILT, SAND, COBBLES AND OCCASIONAL BOULDERS (MEDIUM DENSE TO VERY DENSE, MOIST)
1975	10	113			
1970	15	92/12"			
1965	20	31			
1960	25	67/9"			
1955	30	87/11"			
1950	35	29			
1945	40	69			
1940	45	46			
1935	50	76			
1930	55	43			
1925	60	109			
1920	65	67/11"			
1915	70	76			BECOMES WET
1910	75	24			
1905	80	19			
1900	85	27			
1895	90	56		ML	GRAYISH BROWN SILT WITH CLAY, TRACE SAND (HARD, MOIST)
1890	95	68			
1885	100	63			
1880	105				
1875	110	72			
1870	115				
	120	58			

LOG OF BORING B-14

GENERAL NOTES:

FOR DETAILED GEOTECHNICAL INFORMATION, SEE REPORT BY GEOENGINEERS DATED MAY 2023.

SEE PLAN NO. 0045-0062.900-006 FOR PILE PLAN AND BORING LOCATIONS.

PETER GRAZ — STATE OF WASHINGTON — 44520 — REGISTERED PROFESSIONAL ENGINEER — EXPIRES 11/14/2026 (Professional Engineer)

HDR

CITY OF Spokane Valley

LAT: 47°41'21"N LONG: 117°14'20"W	DES: CSS
DOT # XXXXXXX	DRAWN: AEP
CITY OF SPOKANE VALLEY, SPOKANE COUNTY, WA.	CHECK: PJG
STREET NAME: PINES ROAD	DATE: JAN. 2025
STATE CONTRACT NO.: XX-XXXX	PLAN: XXX
FED. AID. PROJECT NO.: XXXXX-XXXXX(XXX)	LINE SEG: 0045

BNSF RAILWAY

BRIDGE ENGINEERING KANSAS CITY, KS

APPROVED: Madlyn Guarino

ASST. DIRECTOR STRUCTURES DESIGN

FINAL PLANS

LAKESIDE JCT. WA TO SANDPOINT JCT. ID

BRIDGE NUMBER 62.9A & B

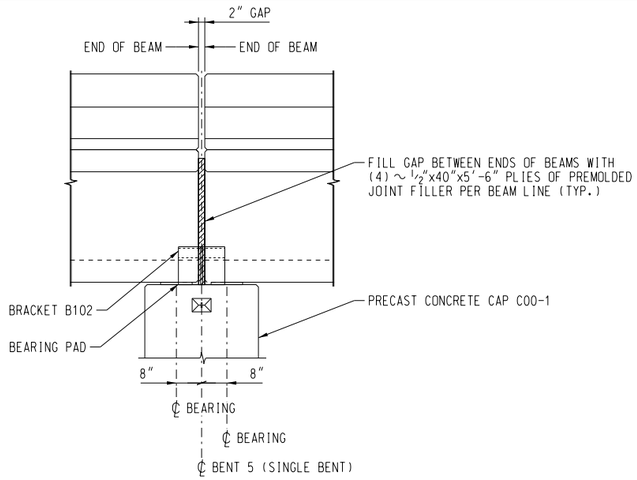
OVER PINES ROAD

BORING LOGS

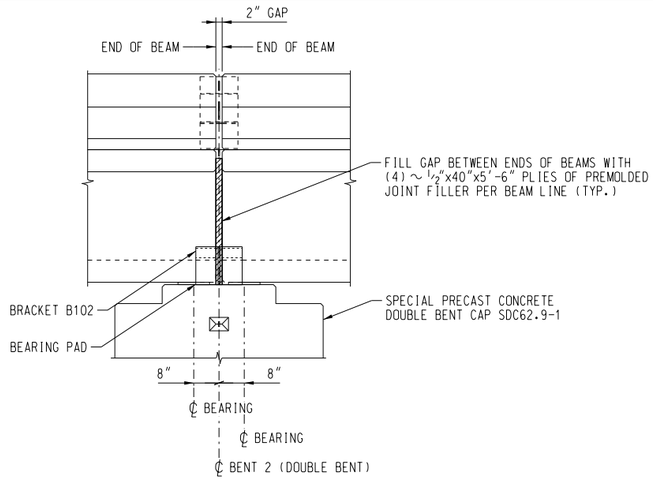
PLAN NO: 0045-0062.900-007 SHEET: 7 OF 29

File Location: $FILE1$

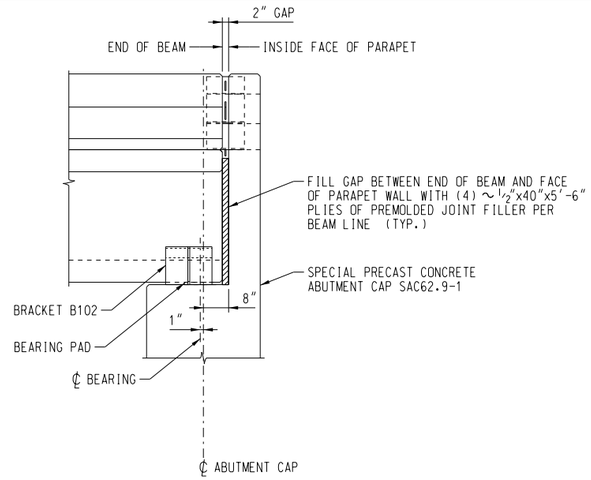
Date Printed: 1/27/2025 Time Printed: 2:10:12 PM



BENT 5 (SINGLE BENT)



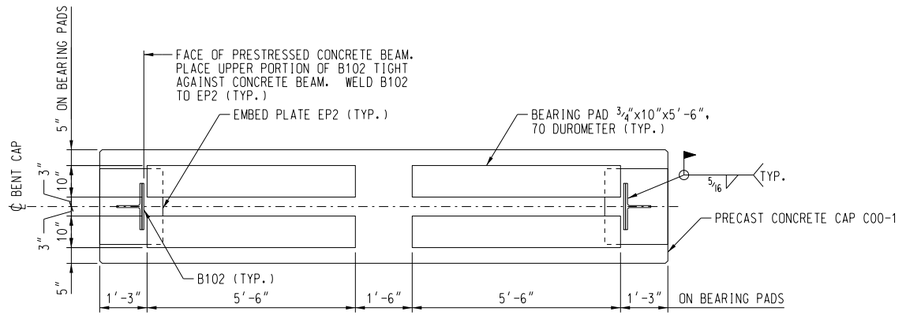
BENT 2 (DOUBLE BENT)
BENTS 3 AND 4 SIMILAR



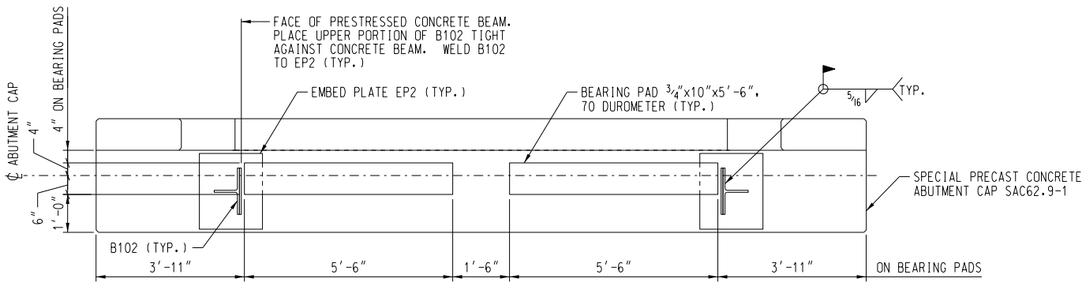
ABUTMENT 1
ABUTMENT 6 SIMILAR

BEARING DETAILS

HANDRAIL AND WINGWALL NOT SHOWN FOR CLARITY.

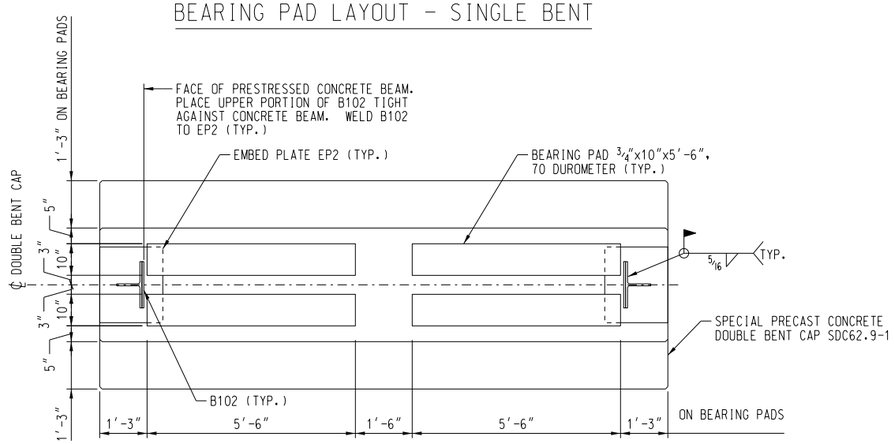


BEARING PAD LAYOUT - SINGLE BENT



BEARING PAD LAYOUT - ABUTMENT

WING WALLS NOT SHOWN



BEARING PAD LAYOUT - DOUBLE BENT

PETER GRAFF — STATE OF WASHINGTON — 44526 — REGISTERED PROFESSIONAL ENGINEER
EXPIRES 11/16/2026 (Professional Engineer)

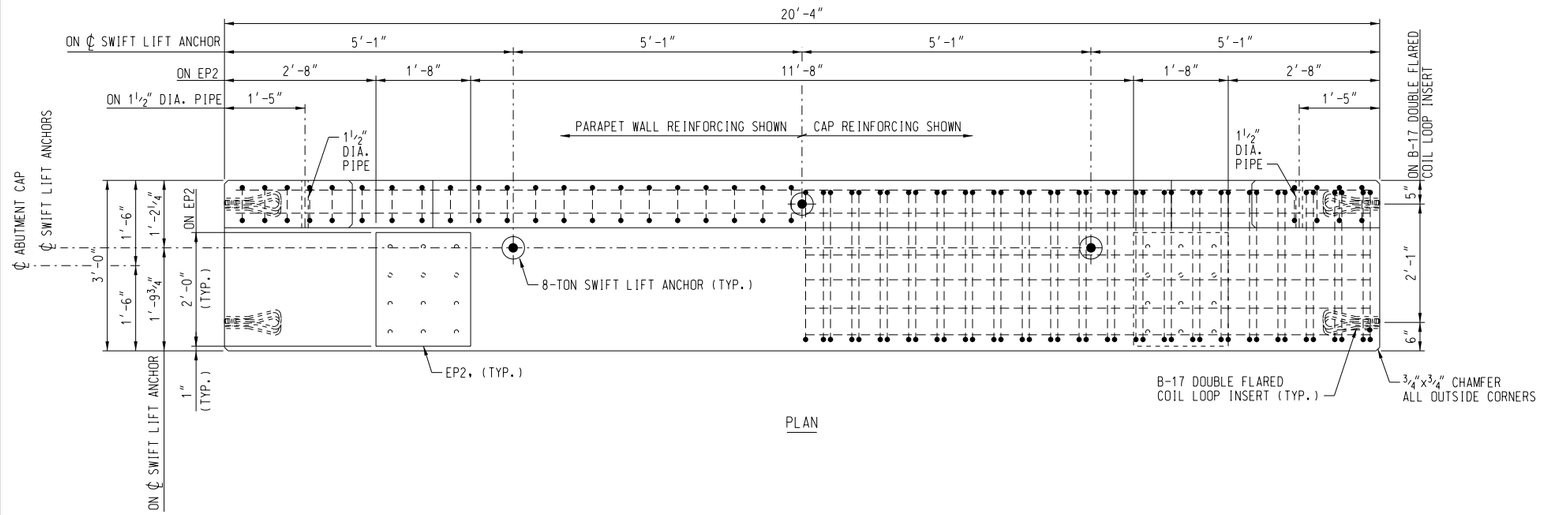
FINAL PLANS

LAKESIDE JCT. WA TO SANDPOINT JCT. ID
BRIDGE NUMBER 62.9A & B
OVER PINES ROAD
MISCELLANEOUS DETAILS

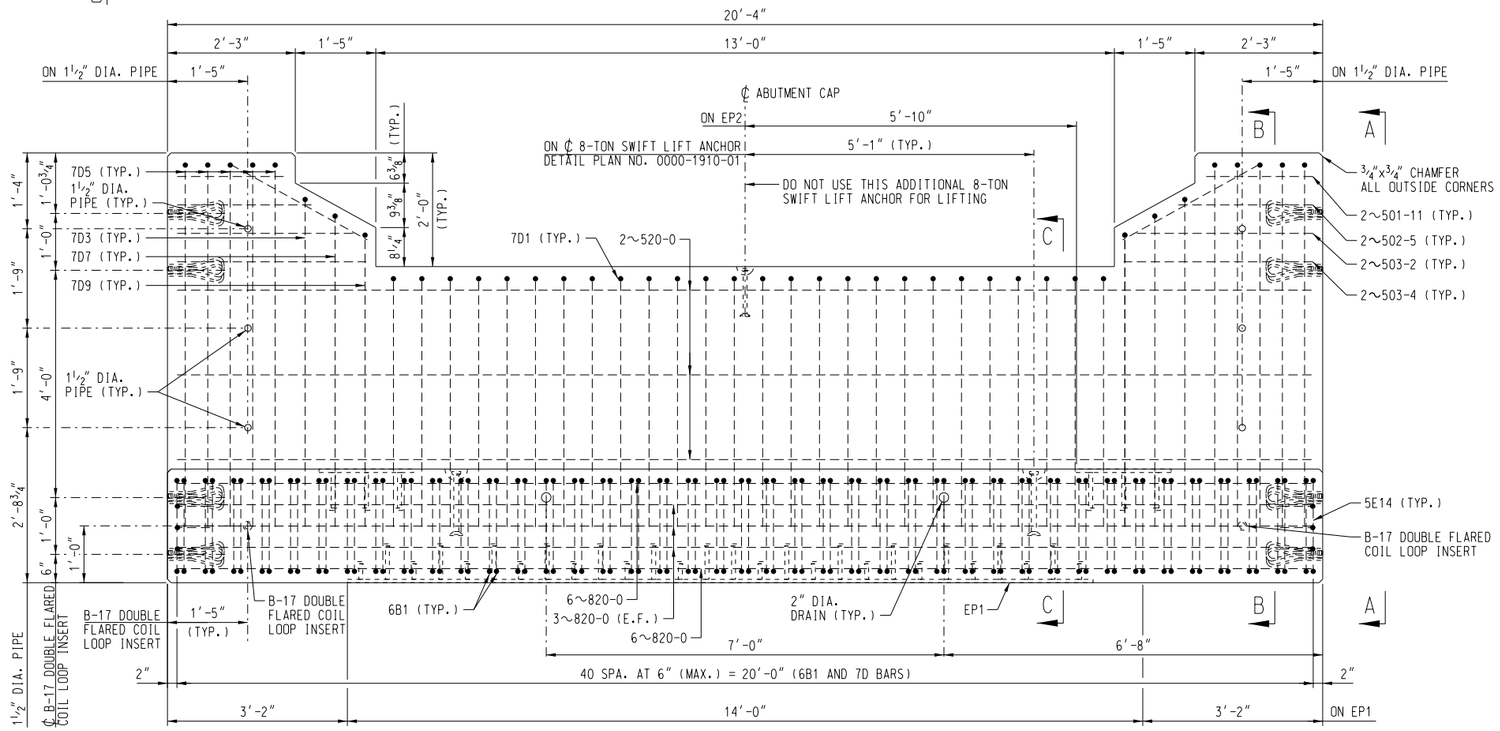
LAT: 47°41'21"N LONG: 117°14'20"W	DES: CSS	BNSF RAILWAY	
DOT # XXXXXXX	DRAWN: AEP	BRIDGE ENGINEERING KANSAS CITY, KS	
CITY OF SPOKANE VALLEY, SPOKANE COUNTY, WA.	CHECK: PJG	APPROVED: Madelyn Guarino	
STREET NAME: PINES ROAD	DATE: JAN. 2025	ASST. DIRECTOR STRUCTURES DESIGN	
STATE CONTRACT NO.: XX-XXXX	PLAN: XXX	PLAN NO: 0045-0062.900-008	SHEET: 8 OF 29
FED. AID. PROJECT NO.: XXXXX-XXXXX(XXX)	LINE SEG: 0045		

File Location: $FILES

Date Printed: 1/27/2025 Time Printed: 2:11:19 PM



PLAN



ELEVATION

SPECIAL PRECAST CONCRETE ABUTMENT CAP SAC62.9-1

4~REQUIRED SAC62.9-1
ESTIMATED WEIGHT = 31,360 LBS. EACH
VOLUME OF CONCRETE 7.2 CU YDS. EACH

SPECIAL PRECAST CONCRETE ABUTMENT CAP NOTES:

GENERAL: ALL MATERIAL AND WORKMANSHIP SHALL BE AS PER THE CURRENT BNSF STANDARD SPECIFICATIONS.

COIL LOOP INSERTS ARE TO BE DOUBLE FLARED TYPE B-17 1¼″ DIA. x 12″ AS MANUFACTURED BY DAYTON-SUPERIOR AND HAVE A SAFE WORKING LOAD OF 13,500 LBS. WITH A 4 TO 1 SAFETY FACTOR. THE INSERTS ARE TO BE COMPLETELY RECESSED WITH 1¼″ DIA. x 13″ SPIRAL BOLTS ATTACHED FOR SHIPMENT.

CONCRETE: THE ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE SHALL BE NOT LESS THAN 4500 p.s.i. IN 28 DAYS. CONCRETE MEMBERS SHALL NOT BE REMOVED FROM THE CASTING BED BEFORE THE CONCRETE REACHES A STRENGTH OF 2500 p.s.i.

ALL EXPOSED EDGES OF CONCRETE MEMBERS SHALL BE CHAMFERED ¾″ INCH.

REINFORCEMENT: MILD STEEL REINFORCEMENT SHALL MEET THE REQUIREMENTS OF THE CURRENT A.S.T.M. DESIGNATION: A615 OR A706, GRADE 60.

FABRICATION OF REINFORCEMENT SHALL BE IN ACCORDANCE WITH CHAPTER 7 OF THE CURRENT C.R.S.I. MANUAL OF STANDARD PRACTICE.

STEEL REINFORCEMENT MAY BE MOVED SLIGHTLY SO AS TO MISS EP1, EP2 OR OTHER EMBEDDED ITEMS.

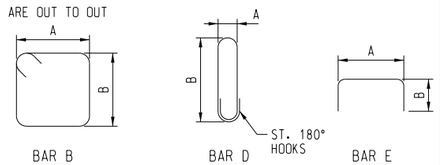
MINIMUM CONCRETE COVER ON REINFORCEMENT SHALL BE TWO (2) INCHES.

LIST OF REINFORCING BARS (EACH CAP)

QTY.	MARK	SIZE	TYPE	A	B	LENGTH
82	6B1	#6	B	1′-8″	1′-8″	8′-0″
26	7D1	#7	D	0′-6″	4′-9″	11′-8″
2	7D3	#7	D	0′-6″	6′-2″	14′-6″
10	7D5	#7	D	0′-6″	6′-9″	15′-8″
2	7D7	#7	D	0′-6″	5′-10″	13′-10″
2	7D9	#7	D	0′-6″	5′-6″	13′-2″
6	5E14	#5	E	2′-6 1/2″	0′-9″	4′-1″
4	501-11	#5	STR.	-	-	1′-11″
4	502-5	#5	STR.	-	-	2′-5″
4	503-2	#5	STR.	-	-	3′-2″
4	503-4	#5	STR.	-	-	3′-4″
6	520-0	#5	STR.	-	-	20′-0″
18	820-0	#8	STR.	-	-	20′-0″

BENDING DETAILS

ALL DIMENSIONS ARE OUT TO OUT



LIST OF MATERIAL (EACH CAP)

QTY.	UNIT	DESCRIPTION
1	EA.	EP1 (SEE DETAIL, PLAN NO. 0000-1910-03)
2	EA.	EP2 (SEE DETAIL, PLAN NO. 0000-1910-03)
3	EA.	8 TON SWIFT LIFT ANCHOR
10	EA.	B-17 DOUBLE FLARED COIL LOOP INSERT w/BOLT
6	EA.	1 1/2″ x 10″ STD. PIPE
8	EA.	NEOPRENE PAD (PLAN NO. 0000-1120-03)

REBEL GRACE STATE OF WASHINGTON 44826 REGISTERED PROFESSIONAL ENGINEER
EXPIRES 11/24/2026 (Professional Engineer)

HDR

CITY OF Spokane Valley

LAT: 47°41′21″N LONG: 117°14′20″W	DES: CSS
DOT # XXXXXXX	DRAWN: AEP
CITY OF SPOKANE VALLEY, SPOKANE COUNTY, WA.	CHECK: PJG
STREET NAME: PINES ROAD	DATE: JAN. 2025
STATE CONTRACT NO.: XX-XXXX	PLAN: XXX
FED. AID. PROJECT NO.: XXXXX-XXXXX(XXX)	LINE SEG: 0045

BNSF RAILWAY
BRIDGE ENGINEERING KANSAS CITY, KS
APPROVED: Madlyn Guarino
ASST. DIRECTOR STRUCTURES DESIGN

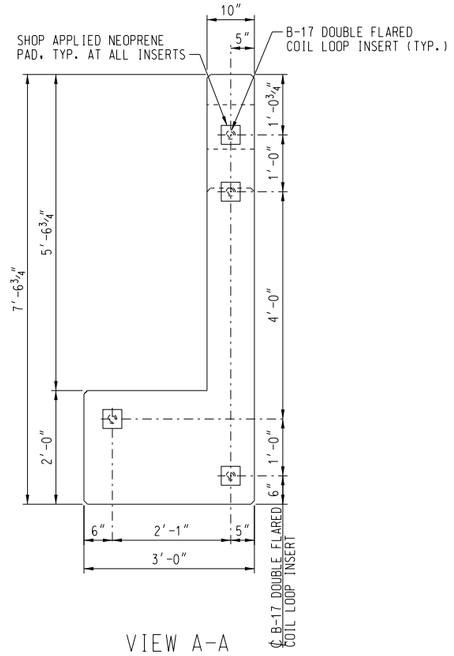
FINAL PLANS

LAKESIDE JCT. WA TO SANDPOINT JCT. ID
BRIDGE NUMBER 62.9A & B
OVER PINES ROAD
SPECIAL PRECAST CONCRETE ABUTMENT CAP (SHEET 1 OF 2)

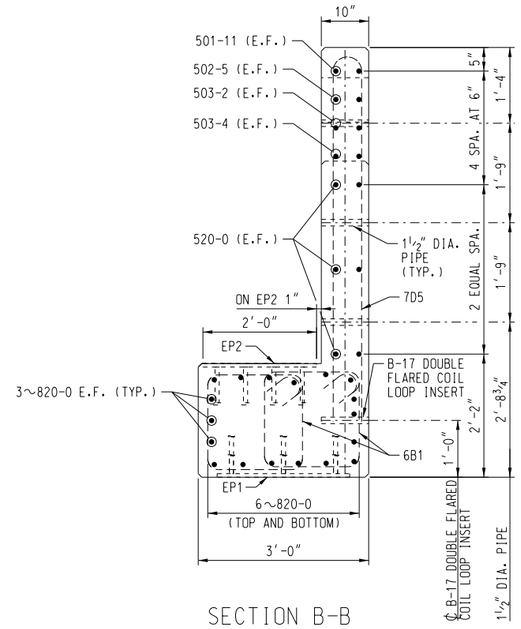
PLAN NO: 0045-0062.900-009 SHEET: 9 OF 29

File Location: $FILE1$

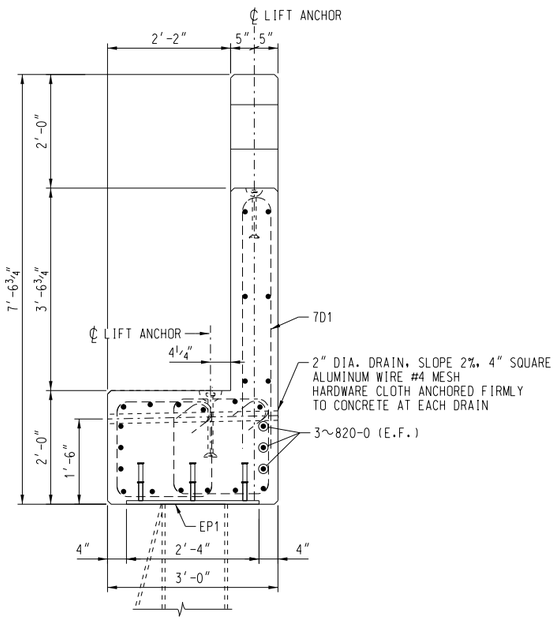
Date Printed: 1/27/2025 Time Printed: 2:11:32 PM



VIEW A-A



SECTION B-B



SECTION C-C

JEFFERY GRAFF STATE OF WASHINGTON 24826 REGISTERED PROFESSIONAL ENGINEER
EXPIRES 11/14/2026 (Professional Engineer)

FINAL PLANS

LAT: 47°41'21"N LONG: 117°14'20"W	DES: CSS	BNSF RAILWAY	LAKESIDE JCT. WA TO SANDPOINT JCT. ID
DOT # XXXXXXX	DRAWN: AEP	BRIDGE ENGINEERING KANSAS CITY, KS	BRIDGE NUMBER 62.9A & B
CITY OF SPOKANE VALLEY, SPOKANE COUNTY, WA.	CHECK: PJG		OVER PINES ROAD
STREET NAME: PINES ROAD	DATE: JAN. 2025	APPROVED: Madlyn Guarino	SPECIAL PRECAST CONCRETE ABUTMENT CAP (SHEET 2 OF 2)
STATE CONTRACT NO.: XX-XXXX	PLAN: XXX	ASST. DIRECTOR STRUCTURES DESIGN	PLAN NO: 0045-0062.900-010 SHEET: 10 OF 29
FED. AID. PROJECT NO.: XXXXX-XXXXX(XXX)	LINE SEG: 0045		

File Location: $FILE1$

Date Printed: 1/27/2025 Time Printed: 2:13:41 PM

SHEET LEFT BLANK INTENTIONALLY

LAT: 47°41'21"N LONG: 117°14'20"W	DES: CSS	BNSF RAILWAY	FINAL PLANS
DOT # XXXXXXX	DRAWN: AEP	BRIDGE ENGINEERING KANSAS CITY, KS	LAKESIDE JCT. WA TO SANDPOINT JCT. ID
CITY OF SPOKANE VALLEY, SPOKANE COUNTY, WA.	CHECK: PJG	APPROVED: Madlyn Guarino	BRIDGE NUMBER 62.9A & B
STREET NAME: PINES ROAD	DATE: JAN. 2025	ASST. DIRECTOR STRUCTURES DESIGN	OVER PINES ROAD
STATE CONTRACT NO.: XX-XXXX	PLAN: XXX		SHEET LEFT BLANK INTENTIONALLY
FED. AID. PROJECT NO.: XXXXX-XXXXX(XXX)	LINE SEG: 0045		PLAN NO: 0045-0062.900-011 SHEET: 11 OF 29

File Location: SPIELS

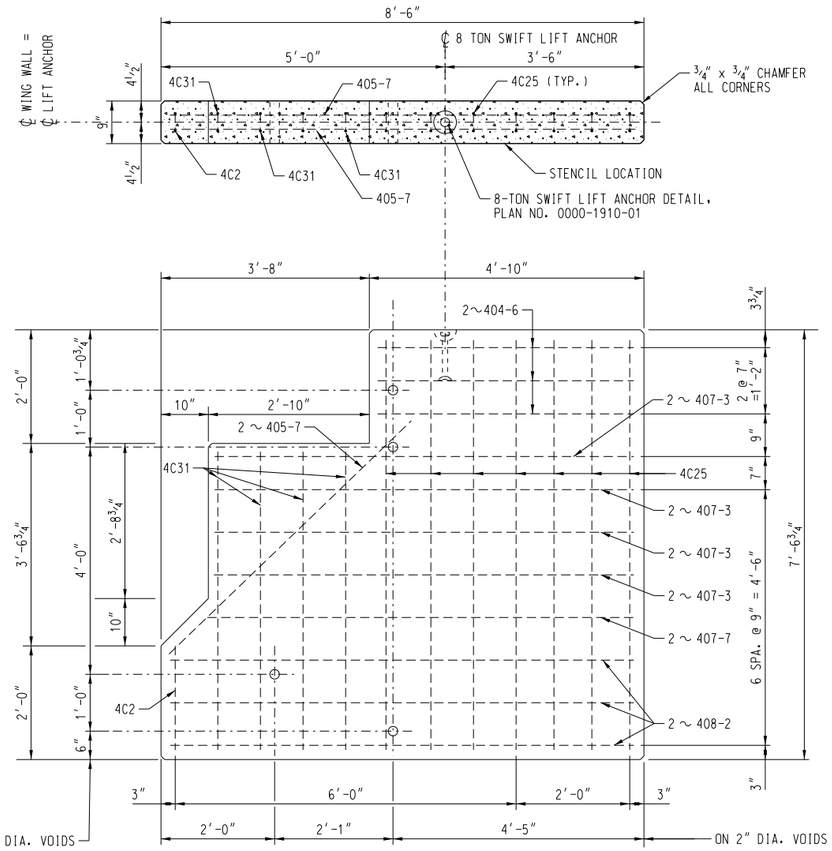
Date Printed: 1/27/2025 Time Printed: 2:13:46 PM

SHEET LEFT BLANK INTENTIONALLY

LAT: 47°41'21"N LONG: 117°14'20"W	DES: CSS	BNSF RAILWAY	FINAL PLANS
DOT # XXXXXXX	DRAWN: AEP	BRIDGE ENGINEERING KANSAS CITY, KS	LAKESIDE JCT. WA TO SANDPOINT JCT. ID
CITY OF SPOKANE VALLEY, SPOKANE COUNTY, WA.	CHECK: PJG	APPROVED: Madlyn Guarino	BRIDGE NUMBER 62.9A & B
STREET NAME: PINES ROAD	DATE: JAN. 2025	ASST. DIRECTOR STRUCTURES DESIGN	OVER PINES ROAD
STATE CONTRACT NO.: XX-XXXX	PLAN: XXX		SHEET LEFT BLANK INTENTIONALLY
FED. AID. PROJECT NO.: XXXXX-XXXXX(XXX)	LINE SEG: 0045		PLAN NO: 0045-0062.900-012 SHEET: 12 OF 29

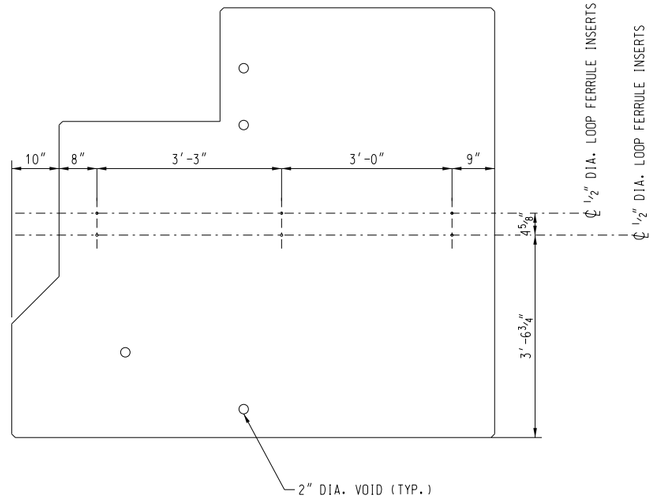
File Location: SPIELS

Date Printed: 1/27/2025 Time Printed: 2:10:30 PM



SPECIAL PRECAST CONCRETE WING WALL SWW62.9-1

SWW62.9-1 SHOWN, SWW62.9-2 OPPOSITE HAND
1 ~ SWW62.9-1 REQUIRED
1 ~ SWW62.9-2 REQUIRED
ESTIMATED WEIGHT = 6,350 LBS.
ESTIMATED VOLUMEN = 1.6 CU. YD. EA.
SEE WING WALL ELEVATION FOR LOCATION OF INSERTS FOR UTILITY BRACKETS



WING WALL ELEVATION - INSERTS FOR UTILITY BRACKETS

SWW62.9-1 SHOWN, SWW62.9-2 OPPOSITE HAND
PLACE INSERTS ON OUTSIDE/EXPOSED FACE OF WING WALL

ESTIMATED LIFTING WEIGHT

COMPONENT NAME	WEIGHT (LBS.)
SWW62.9-1	6,350
SWW62.9-2	6,350

LIST OF MATERIAL

SWW62.9-1	SWW62.9-2	UNIT	DESCRIPTION
1	1	EA.	8-TON SWIFT LIFT ANCHOR
6	6	EA.	LOOP FERRULE INSERT TYPE F42, ½" DIA. x 2 ¾" GALV. W/ BOLT AND WASHER

PRECAST CONCRETE WING WALL NOTES

PRECAST CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,500 psi AT 28 DAYS AS PER THE CURRENT BNSF STANDARD SPECIFICATION FOR PRECAST CONCRETE PRODUCTS.

ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED ¾" UNLESS OTHERWISE SHOWN OR NOTED.

CONCRETE SHALL BE VIBRATED INTERNALLY DURING PLACEMENT TO PROVIDE THOROUGH CONSOLIDATION AND COMPACTION. CARE SHALL BE TAKEN TO AVOID DISPLACEMENT OF EMBEDDED ITEMS.

ALL REINFORCING STEEL SHALL HAVE A MINIMUM 2" CONCRETE COVER UNLESS OTHERWISE SHOWN OR NOTED.

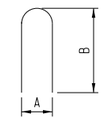
ALL BAR BENDING AND STANDARD HOOK DIMENSIONS SHALL BE IN ACCORDANCE WITH "MANUAL OF STANDARD PRACTICE" AS PUBLISHED BY THE CONCRETE REINFORCING STEEL INSTITUTE UNLESS OTHERWISE SHOWN OR NOTED.

DESIGN LOADING - COOPERS E-80 WITH DIESEL IMPACT PER THE CURRENT AREMA MANUAL.

LIST OF REINFORCING BARS (EACH WING WALL)

QTY.	MARK	SIZE	TYPE	A	B	LENGTH
6	404-6	#4	STR	-	-	4'-6"
2	405-7	#4	STR	-	-	5'-7"
8	407-3	#4	STR	-	-	7'-3"
2	407-7	#4	STR	-	-	7'-7"
6	408-2	#4	STR	-	-	8'-2"
1	4C2	#4	C	5"	1'-9"	3'-11"
7	4C25	#4	C	5"	7'-2 ¾"	14'-10"
4	4C31	#4	C	5"	5'-2 ¾"	10'-10"

BENDING DETAILS
ALL DIMENSIONS ARE OUT TO OUT



BAR C

UTILITY BRACKET INSERT NOTES:

1. FOR UTILITY BRACKET CONNECTIONS, LOOP FERRULE INSERTS ARE TO BE TYPE F42, ½" DIA. x 2 ¾" GALV., AS MANUFACTURED BY DAYTON-SUPERIOR AND HAVE A SAFE WORKING LOAD OF 2,000 LBS. WITH A 3:1 SAFETY FACTOR. THE INSERTS ARE BO BE COMPLETELY RECESSED WITH ½" DIA. GALV. BOLTS ANS WASHERS ATTACHED FOR SHIPMENT.
2. REFER TO SHEET 18 FOR UTILITY BRACKET DETAILS AND ATTACHMENT.

PETER GRAFF STATE OF WASHINGTON 54520 REGISTERED PROFESSIONAL ENGINEER
EXPIRES 11/16/2026 (Professional Engineer)

HDR

CITY OF Spokane Valley

LAT: 47°41'21"N LONG: 117°14'20"W	DES: CSS
DOT # XXXXXXX	DRAWN: AEP
CITY OF SPOKANE VALLEY, SPOKANE COUNTY, WA.	CHECK: PJG
STREET NAME: PINES ROAD	DATE: JAN. 2025
STATE CONTRACT NO.: XX-XXXX	PLAN: XXX
FED. AID. PROJECT NO.: XXXXX-XXXXX(XXX)	LINE SEG: 0045

BNSF RAILWAY
BRIDGE ENGINEERING KANSAS CITY, KS
APPROVED: Madlyn Guarino
ASST. DIRECTOR STRUCTURES DESIGN

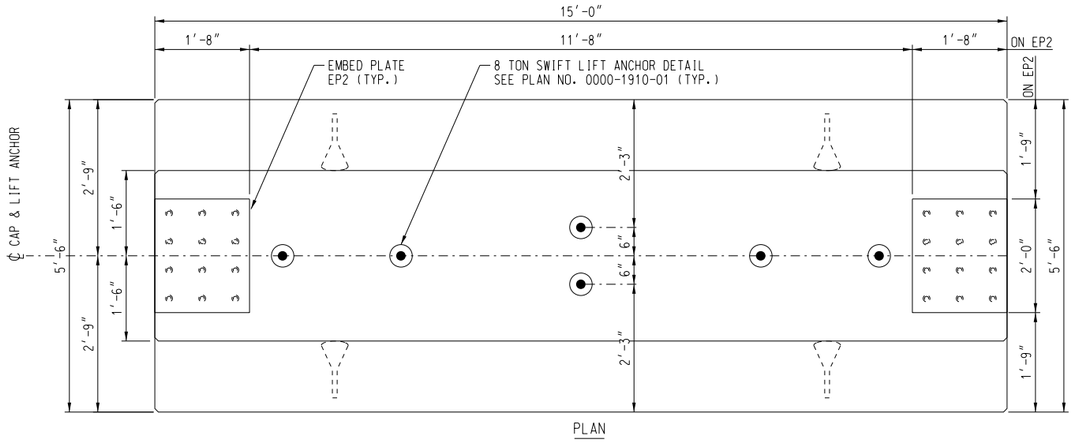
FINAL PLANS

LAKESIDE JCT. WA TO SANDPOINT JCT. ID
BRIDGE NUMBER 62.9A & B
OVER PINES ROAD
SPECIAL WINGWALL DETAILS

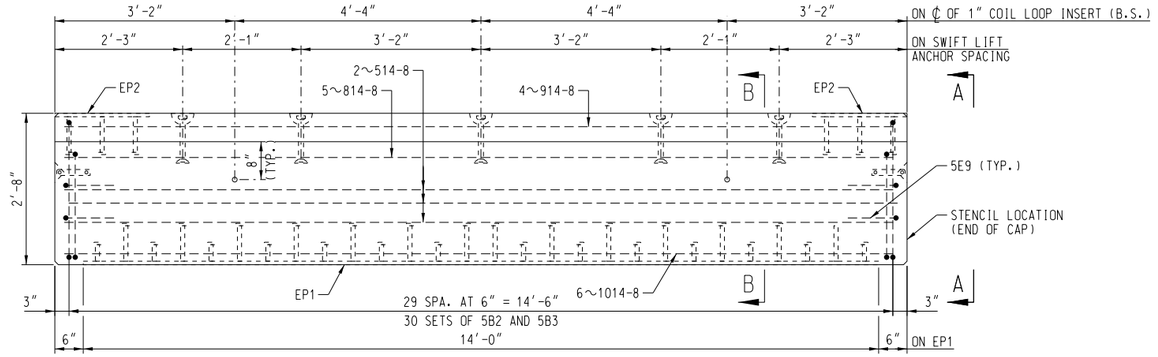
PLAN NO: 0045-0062.900-013 SHEET: 13 OF 29

File Location: SPILES

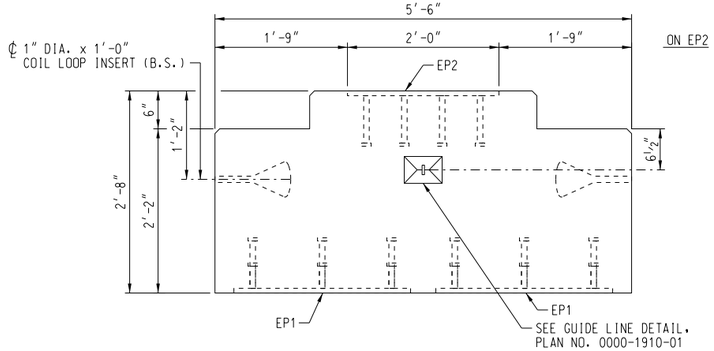
Date Printed: 1/27/2025 Time Printed: 2:10:25 PM



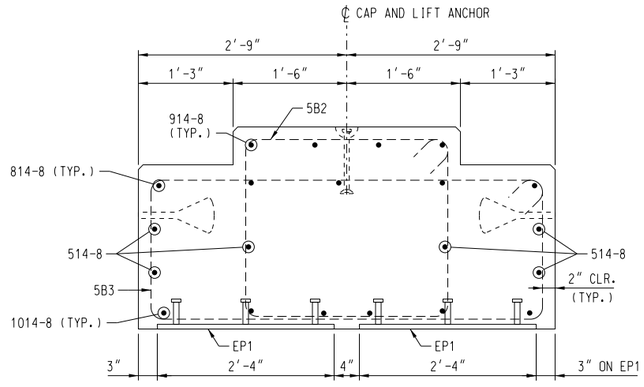
PLAN



ELEVATION



VIEW A-A



SECTION B-B

SPECIAL PRECAST CONCRETE DOUBLE BENT CAP SDC62.9-1

6 ~ REQUIRED
ESTIMATED WEIGHT = 33.830 LBS. EACH
VOLUME OF CONCRETE = 7.4 CU YDS. EACH

SPECIAL PRECAST CONCRETE DOUBLE BENT CAP NOTES:

GENERAL:
ALL MATERIAL AND WORKMANSHIP SHALL BE AS PER THE CURRENT BNSF STANDARD SPECIFICATIONS.

COIL LOOP INSERTS ARE TO BE SINGLE FLARED TYPE B-18 1″ DIA. x 12″ AS MANUFACTURED BY DAYTON SUPERIOR AND HAVE A SAFE WORKING LOAD OF 4,750 LBS. WITH A 4 TO 1 SAFETY FACTOR. THE INSERTS ARE TO BE COMPLETELY RECESSED WITH SPIRAL BOLTS FURNISHED IN THE INSERT.

CONCRETE: THE ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE SHALL BE NOT LESS THAN 4,500 p.s.i. IN 28 DAYS. CONCRETE MEMBERS SHALL NOT BE REMOVED FROM THE CASTING BED BEFORE THE CONCRETE REACHES A STRENGTH OF 2500 p.s.i.

ALL EXPOSED EDGES OF CONCRETE MEMBERS SHALL BE CHAMFERED ¾″ INCH.

REINFORCEMENT: MILD STEEL REINFORCEMENT SHALL MEET THE REQUIREMENTS OF THE CURRENT A.S.T.M. DESIGNATION: A615 OR A706, GRADE 60.

FABRICATION OF REINFORCEMENT SHALL BE IN ACCORDANCE WITH CHAPTER 7 OF THE CURRENT C.R.S.I. MANUAL OF STANDARD PRACTICE.

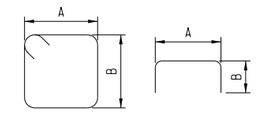
REINFORCEMENT MAY BE MOVED SLIGHTLY SO AS TO MISS EP1 AND EP1.

MINIMUM CONCRETE COVER ON REINFORCEMENT SHALL BE TWO (2) INCHES.

LIST OF REINFORCING BARS (EACH CAP)

QTY.	MARK	SIZE	TYPE	A	B	LENGTH
30	5B2	5	B	2′-8″	2′-4″	10′-11″
30	5B3	5	B	5′-2″	1′-10″	14′-11″
4	5E9	5	E	5′-0 3/4″	0′-10″	6′-9″
6	514-8	5	STR.	-	-	14′-8″
5	814-8	8	STR.	-	-	14′-8″
4	914-8	9	STR.	-	-	14′-8″
6	1014-8	10	STR.	-	-	14′-8″

BENDING DETAILS
ALL DIMENSIONS ARE OUT TO OUT



BAR B BAR E

LIST OF MATERIAL (EACH CAP)

QTY.	UNIT	DESCRIPTION
2	EA.	EP1 (SEE DETAIL, PLAN NO. 0000-1910-03)
2	EA.	EP2 (SEE DETAIL, PLAN NO. 0000-1910-03)
6	EA.	8-TON SWIFT LIFT ANCHOR
2	EA.	8″ 4 TON 5-BAR ANCHOR
4	EA.	1″ DIA. X 1′-0″ COIL LOOP INSERT

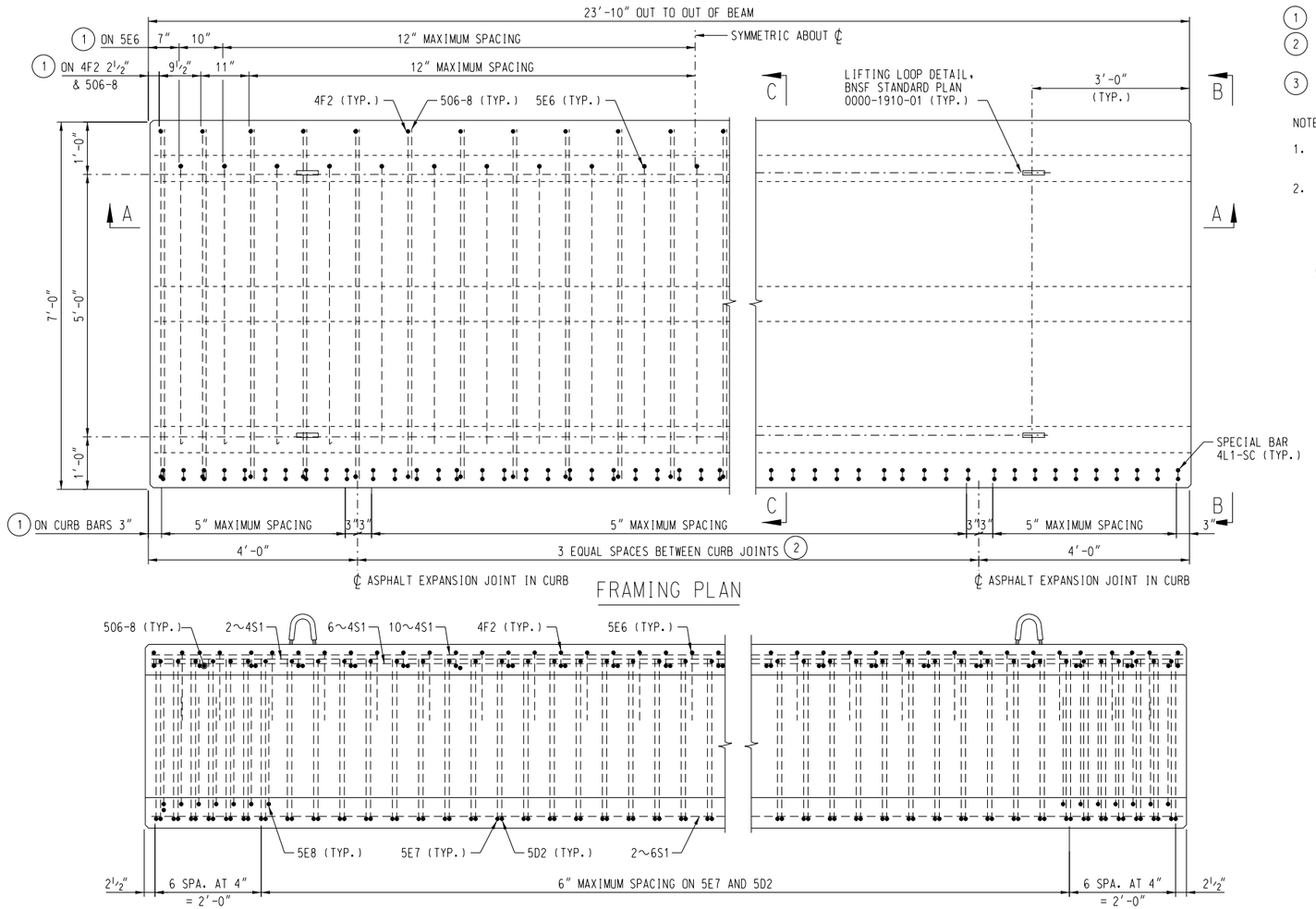
PETER GRAFTON STATE OF WASHINGTON 44826 REGISTERED PROFESSIONAL ENGINEER
EXPIRES 11/16/2026 (Professional Engineer)

FINAL PLANS

LAT: 47°41′21″N LONG: 117°14′20″W	DES: CSS	BNSF RAILWAY BRIDGE ENGINEERING KANSAS CITY, KS	LAKESIDE JCT. WA TO SANDPOINT JCT. ID
DOT # XXXXXXX	DRAWN: AEP		BRIDGE NUMBER 62.9A & B
CITY OF SPOKANE VALLEY, SPOKANE COUNTY, WA.	CHECK: PJG		OVER PINES ROAD
STREET NAME: PINES ROAD	DATE: JAN. 2025		SPECIAL PRECAST CONCRETE DOUBLE BENT CAP
STATE CONTRACT NO.: XX-XXXX	PLAN: XXX	APPROVED: Madlyn Guarino	
FED. AID. PROJECT NO.: XXXXX-XXXXX(XXX)	LINE SEG: 0045	ASST. DIRECTOR STRUCTURES DESIGN	PLAN NO: 0045-0062.900-014 SHEET: 14 OF 29

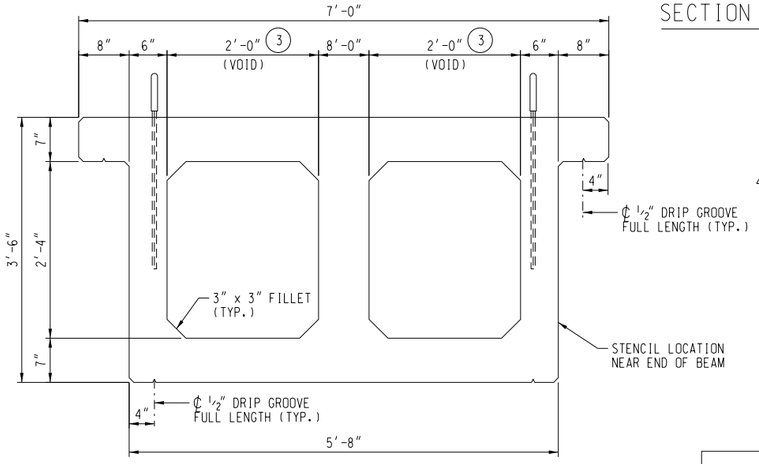
File Location: $FILE$

Date Printed: 1/27/2025 Time Printed: 2:13:52 PM

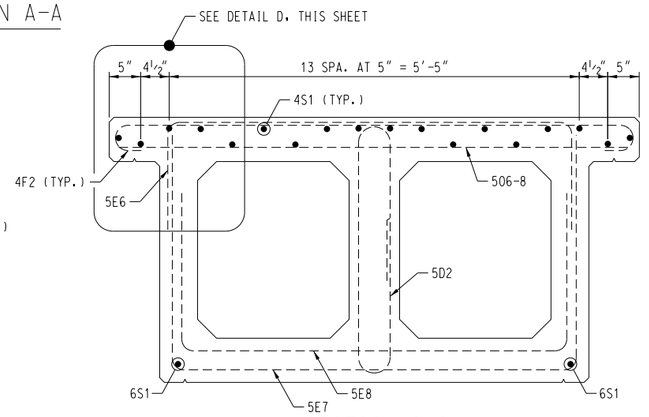


FRAMING PLAN

SECTION A-A



VIEW B-B

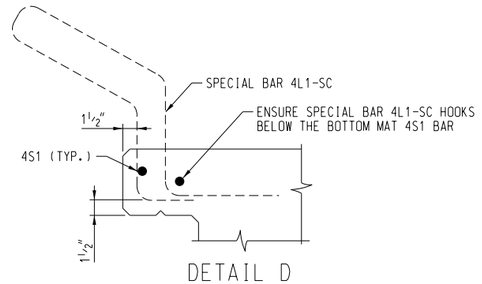


SECTION C-C

1. ADJUST AS REQUIRED TO MISS OTHER REINFORCEMENT AND FERRULE INSERTS.
2. SPACING OF ASPHALT EXPANSION JOINT IN CURB, SPACE EVENLY IN CURB, EXCEPT WHERE ADJUSTMENT IS REQUIRED TO MISS REINFORCING.
3. VOID DIMENSIONS SHOWN ARE MAXIMUM AND MUST NOT BE EXCEEDED AT ANY POINT INCLUDING SPLICES OF VOID FORM.

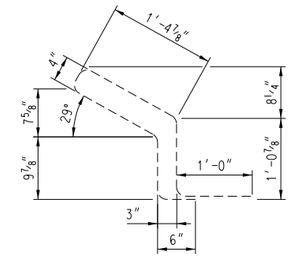
NOTES:

1. SEE BNSF STANDARD PLAN NO. 0000-1910-08 FOR BAR BENDING AND THIS SHEET FOR SPECIAL BAR 4L1-SC.
2. SEE NEXT SHEET FOR SLOPED CURB DETAILS NOT SHOWN HERE.



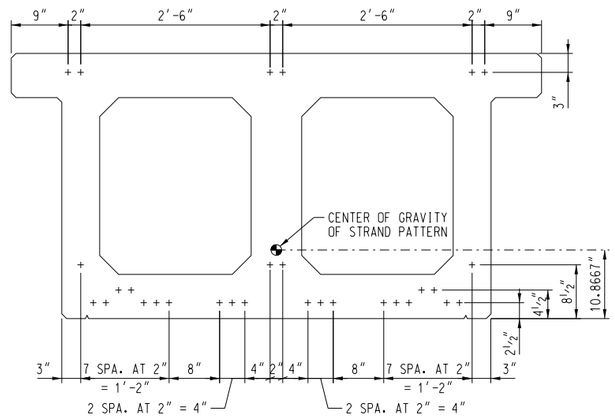
DETAIL D

FOR SLOPED CURBS ON 42" DOUBLE CELL BOX BEAMS ONLY



SPECIAL BAR 4L1-SC

#4 BAR, BENT
ASTM A1035 GRADE 100



PRESTRESSING STRAND PATTERN

L = 23'-10" OUT TO OUT

+ (30~0.6" 270 KSI STRANDS)

SPECIAL SPAN LENGTH

42" DOUBLE CELL	23'-10"

EST. LIFTING WEIGHT

BEAM TYPE	WEIGHT/(PLF)
42" DOUBLE CELL (NO CURB)	1,800

DESIGN DEAD LOADS

LOAD CASE	42" LOADS/(LBS./FT. OF TRACK)
TRACK, FASTENERS, ETC.	200
BALLAST	4,065
CURB, WALK & HANDRAIL	765
BEAMS	3,460

1. FOR LIVE LOAD AND IMPACT SEE GENERAL NOTES 0000-1000-02

PRESTRESSING STRANDS

SPAN LENGTH (FT.)	BEAM DEPTH (IN.)	NO. STRANDS	INITIAL PULL (K)	PS CENTROID FROM BOT. (IN.)
24	42	30	1,318	10.8667

MINIMUM CONCRETE BEAM COMPRESSIVE STRENGTHS

SPAN LENGTH (FT.)	BEAM DEPTH (IN)	AT TRANSFER (PSI)	AT 28 DAYS (PSI)
24	42	4,500	7,000

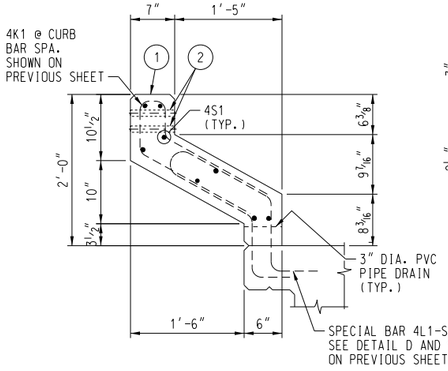
NOTE:

PRESTRESSING STRANDS SHALL BE 0.6 INCH DIAMETER, SEVEN WIRE, UNCOATED, LOW RELAXATION STRAND WHICH IS IN ACCORDANCE WITH THE REQUIREMENTS SPECIFIED IN A.S.T.M. A416. THE STRAND SHALL HAVE AN ULTIMATE TENSILE STRENGTH OF 270 ksi. THE INITIAL PRESTRESS SHALL BE 43,940 LBS. PER STRAND UNLESS NOTED OTHERWISE.

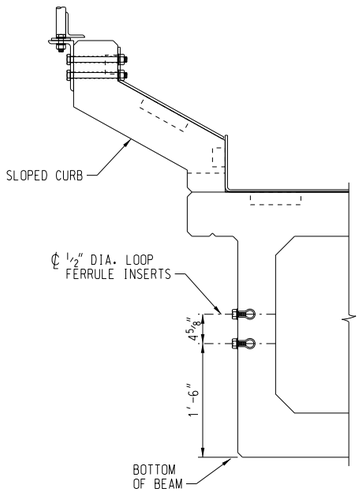
LAT: 47°41'21"N LONG: 117°14'20"W	DES: CSS	BNSF RAILWAY	FINAL PLANS
DOT # XXXXXXX	DRAWN: AEP	BRIDGE ENGINEERING KANSAS CITY, KS	LAKESIDE JCT. WA TO SANDPOINT JCT. ID
CITY OF SPOKANE VALLEY, SPOKANE COUNTY, WA.	CHECK: PJG	APPROVED: Madlyn Guarino	BRIDGE NUMBER 62.9A & B
STREET NAME: PINES ROAD	DATE: JAN. 2025	ASST. DIRECTOR STRUCTURES DESIGN	OVER PINES ROAD
STATE CONTRACT NO.: XX-XXXX	PLAN: XXX		SPECIAL 42" x 23'-10" DOUBLE CELL BOX BEAM (SHEET 1 OF 2)
FED. AID. PROJECT NO.: XXXXX-XXXXX(XXX)	LINE SEG: 0045		PLAN NO: 0045-0062.900-015 SHEET: 15 OF 29

File Location: $FILE$

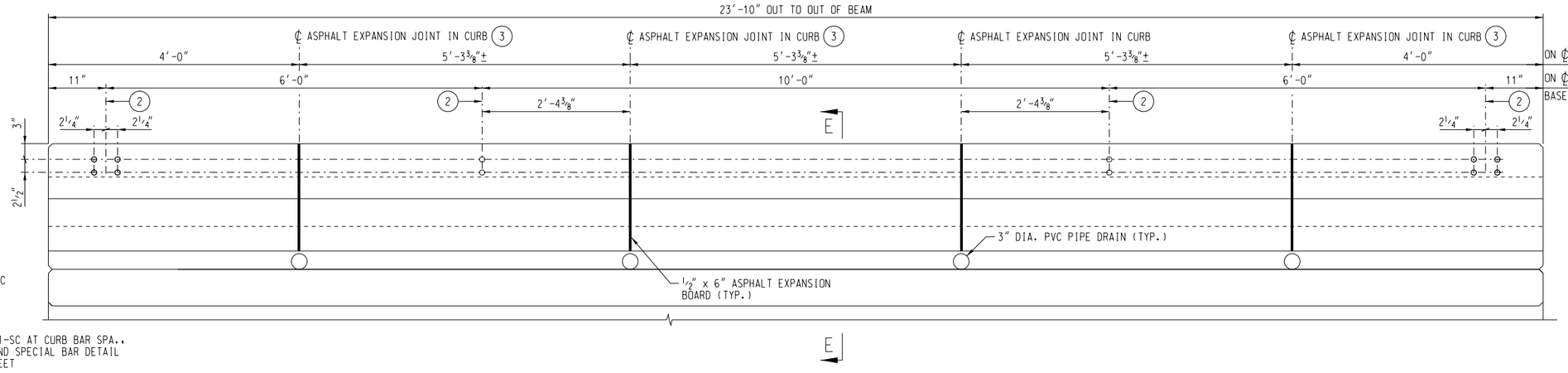
Date Printed: 1/27/2025 Time Printed: 2:13:36 PM



SECTION E-E

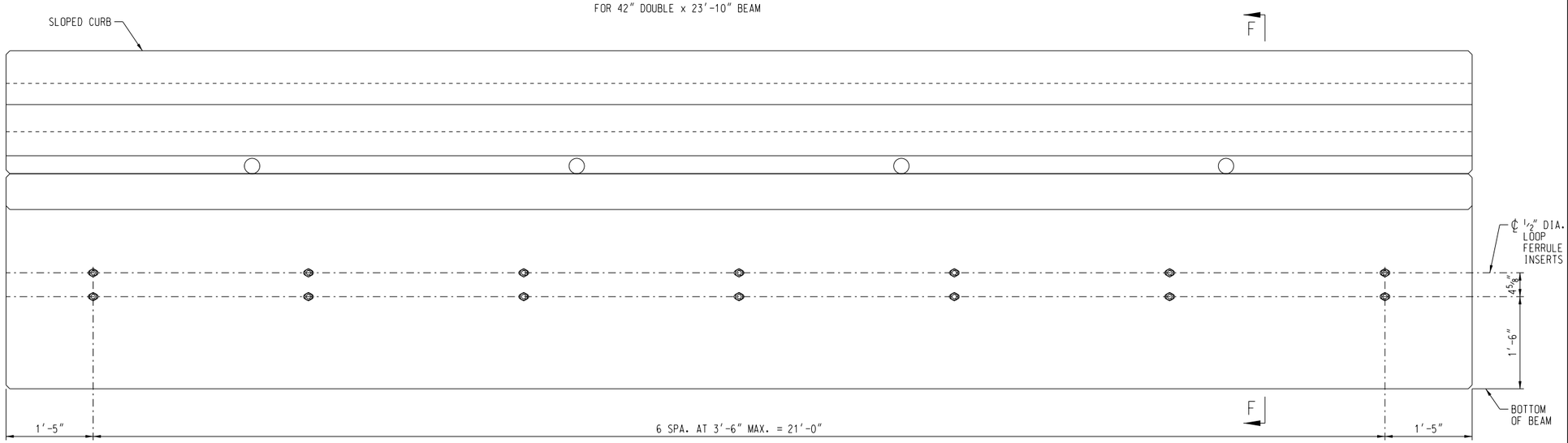


SECTION F-F



ELEVATION - SLOPED CURB

FOR 42" DOUBLE x 23'-10" BEAM



BEAM ELEVATION - INSERTS FOR UTILITY BRACKETS

BEAM SB42-2310-SLU ONLY (COUNT OF 1)

UTILITY BRACKET INSERT NOTES:

1. FOR UTILITY BRACKET CONNECTIONS, LOOP FERRULE INSERTS ARE TO BE TYPE F42, ½" DIA. x 2¾" GALV., AS MANUFACTURED BY DAYTON-SUPERIOR AND HAVE A SAFE WORKING LOAD OF 2,000 LBS. WITH A 3:1 SAFETY FACTOR. THE INSERTS ARE TO BE COMPLETELY RECESSED WITH ½" DIA. GALV. BOLTS AND WASHERS ATTACHED FOR SHIPMENT.
2. REFER TO SHEET 18 FOR UTILITY BRACKET DETAILS AND ATTACHMENT.

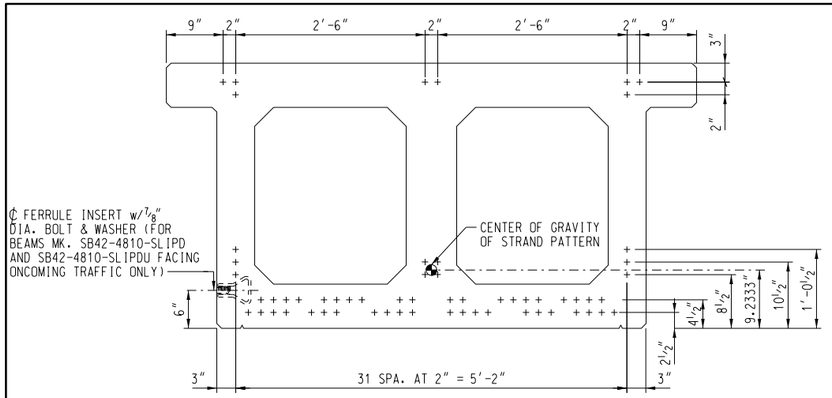
SLOPED CURB NOTES:

1. 3"x6" I.D. PLATE IS TO BE EMBEDDED FLUSH IN TOP OF CURB AND CENTERED 6" FROM END OF CURB. PLATE SHALL CONTAIN THE FOLLOWING INFORMATION IN ½" LETTERING: ITEM NAME, LENGTH, DATE MANUFACTURED AND NAME OF MANUFACTURER.
2. ℄ 1" DIAMETER HOLES FOR HANDRAIL BASE PLATE AND POST.
3. PREFORMED ½" ASPHALT EXPANSION BOARD SHALL BE PLACED TO DIVIDE CURB INTO EQUAL SEGMENTS. SEAL TOP AND SIDES OF CURB AT ASPHALT EXPANSION BOARD WITH APPROVED JOINT SEALANT.

LAT: 47°41'21"N LONG: 117°14'20"W	DES: CSS	BNSF RAILWAY	FINAL PLANS
DOT # XXXXXXX	DRAWN: AEP	BRIDGE ENGINEERING KANSAS CITY, KS	LAKESIDE JCT. WA TO SANDPOINT JCT. ID
CITY OF SPOKANE VALLEY, SPOKANE COUNTY, WA.	CHECK: PJG	APPROVED: Madlyn Guarino	BRIDGE NUMBER 62.9A & B
STREET NAME: PINES ROAD	DATE: JAN. 2025	ASST. DIRECTOR STRUCTURES DESIGN	OVER PINES ROAD
STATE CONTRACT NO.: XX-XXXX	PLAN: XXX		SPECIAL 42" x 23'-10" DOUBLE CELL BOX BEAM (SHEET 2 OF 2)
FED. AID. PROJECT NO.: XXXXX-XXXXX(XXX)	LINE SEG: 0045		PLAN NO: 0045-0062.900-016 SHEET: 16 OF 29

File Location: $FILE1$

Date Printed: 1/27/2025 Time Printed: 2:13:33 PM



PRESTRESSING STRAND PATTERN
L = 48'-10" OUT TO OUT
+ (60 ~ 0.6" 270 KSI STRANDS)

CURB SPACING TABLE			
BEAM LENGTH	"C"	"D"	NO. CURB SEGMENTS
35'-10"	4'-0"	5 EQ. SEGMENTS	7
39'-10"	5'-0"	5 EQ. SEGMENTS	7
48'-10"	4'-0"	6 EQ. SEGMENTS	8

NOTE:
IN ORDER TO OFFSET CURB JOINT BY 1'-0" MINIMUM FROM HANDRAIL POST LOCATIONS, THESE DIMENSIONS DO NOT ALL MATCH BNSF STANDARD PLAN NO. 0000-1000-06 FOR CURB LENGTHS AND/OR NO CURB SEGMENTS.

HANDRAIL POST SPACING TABLE		
BEAM LENGTH	"A"	"B"
35'-10"	7'-0"	2 @ 10'-0"
39'-10"	9'-0"	2 @ 10'-0"
48'-10"	8'-6"	3 @ 10'-0"

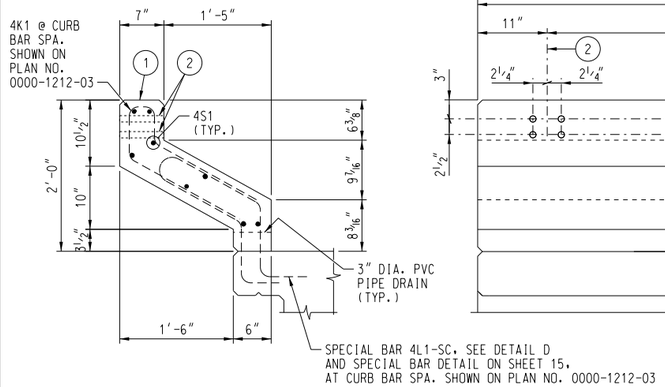
NOTE:
THESE DIMENSIONS MATCH BNSF STANDARD PLAN NO. 0000-1000-06 FOR HANDRAIL POST SPACING FOR EACH BEAM LENGTH.

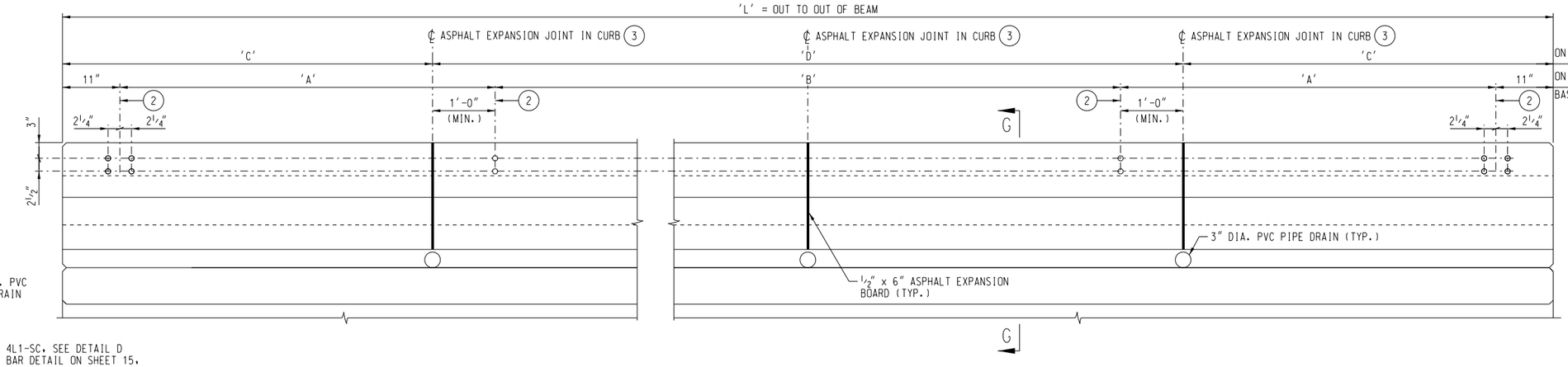
BNSF 2021 STANDARD PLAN REFERENCES:

PLAN NO. 0000-1213-01 42" DOUBLE CELL BOX BEAM
PLAN NO. 0000-1213-02 42" DOUBLE CELL BOX BEAM, PRESTRESSING STRAND PATTERN
PLAN NO. 0000-1214-02 24" CONCRETE CURB (SLOPED)

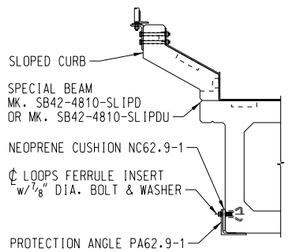
SLOPED CURB NOTES:

1. 3"x6" I.D. PLATE IS TO BE EMBEDDED FLUSH IN TOP OF CURB AND CENTERED 6" FROM END OF CURB. PLATE SHALL CONTAIN THE FOLLOWING INFORMATION IN ½" LETTERING: ITEM NAME, LENGTH, DATE MANUFACTURED AND NAME OF MANUFACTURER.
2. ℄ 1" DIAMETER HOLES FOR HANDRAIL POST.
3. PREFORMED ½" ASPHALT EXPANSION BOARD SHALL BE PLACED TO DIVIDE CURB INTO EQUAL SEGMENTS. SEAL TOP AND SIDES OF CURB AT ASPHALT EXPANSION BOARD WITH APPROVED JOINT SEALANT.

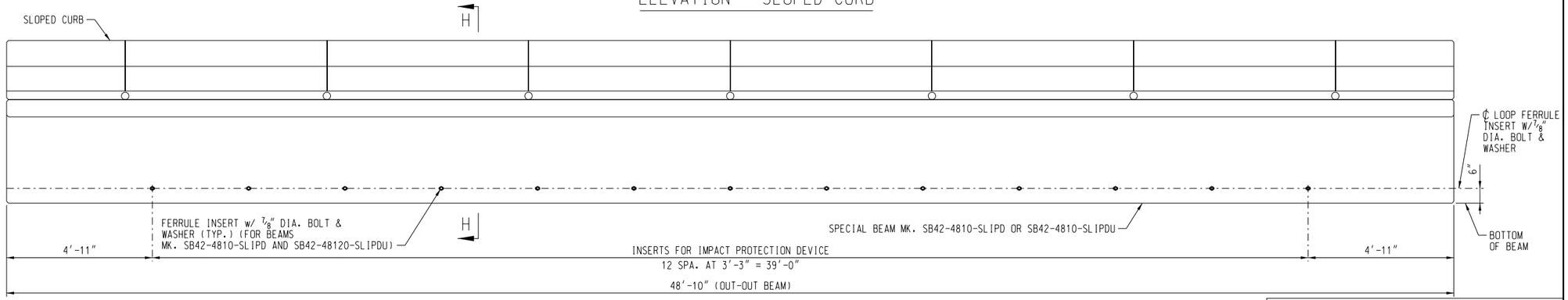




SECTION G-G



ELEVATION - SLOPED CURB



SECTION H-H

ELEVATION - INSERTS FOR IMPACT PROTECTION DEVICE

BEAMS SB42-4810-SLIPD (COUNT OF 3) AND SB42-4810-SLIPDU (COUNT OF 1) ONLY

IMPACT PROTECTION DEVICE NOTES:

1. FOR IMPACT PROTECTION DEVICE CONNECTIONS, LOOP FERRULE INSERTS ARE TO BE TYPE F42, 7/8" DIA. x 6", GALV., AS MANUFACTURED BY DAYTON-SUPERIOR AND HAVE A SAFE WORKING LOAD OF 5,300 LBS. WITH A 3:1 SAFETY FACTOR. THE INSERTS ARE TO BE COMPLETELY RECESSED WITH 7/8" DIA. GALV. BOLTS AND WASHERS ATTACHED FOR SHIPMENT.
2. REFER TO SHEET 23 FOR NEOPRENE CUSHION AND PROTECTION ANGLE DETAILS.

LAT: 47°41'21"N LONG: 117°14'20"W		DES: CSS	
DOT # XXXXXXX		DRAWN: AEP	
CITY OF SPOKANE VALLEY, SPOKANE COUNTY, WA.		CHECK: PJG	
STREET NAME: PINES ROAD		DATE: JAN. 2025	
STATE CONTRACT NO.: XX-XXXX		PLAN: XXX	
FED. AID. PROJECT NO.: XXXXX-XXXXX(XXX)		LINE SEG: 0045	

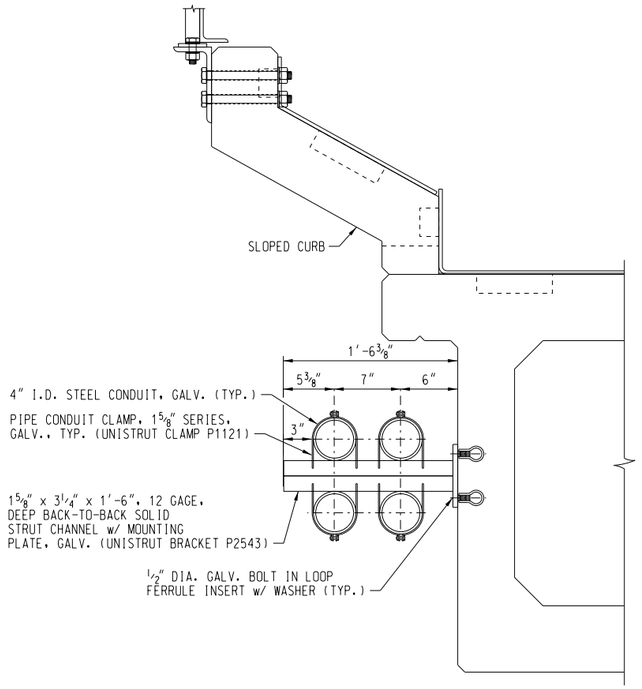
BNSF RAILWAY
BRIDGE ENGINEERING KANSAS CITY, KS
APPROVED: Madlen Guarino
ASST. DIRECTOR STRUCTURES DESIGN

FINAL PLANS

LAKESIDE JCT. WA TO SANDPOINT JCT. ID
BRIDGE NUMBER 62.9A & B
OVER PINES ROAD
MODIFICATIONS TO 42" DOUBLE CELL BOX BEAMS (SHEET 1 OF 2)

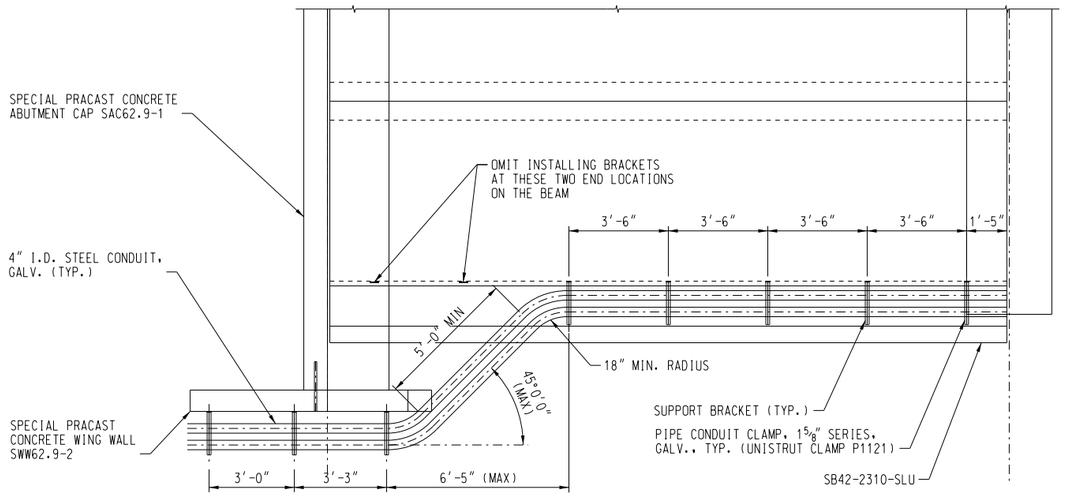
PLAN NO: 0045-0062.900-017 SHEET: 17 OF 29

File Location: $FILE$
Date Printed: 1/27/2025 Time Printed: 2:11:04 PM



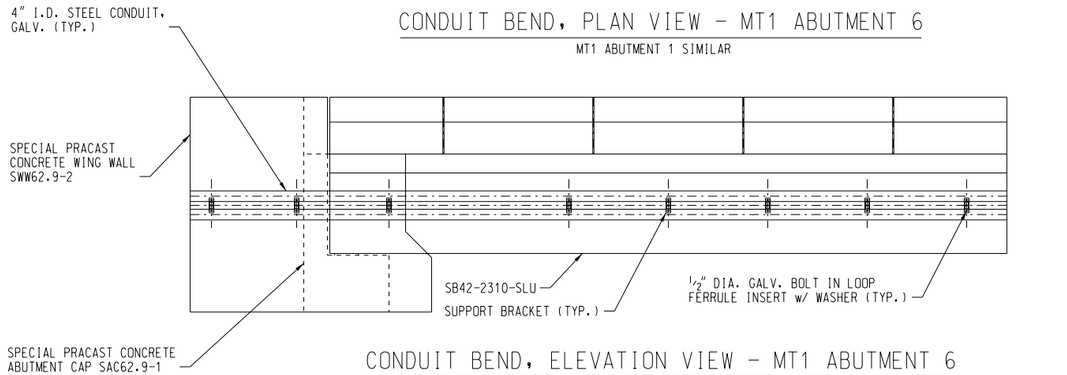
UTILITY BRACKET DETAIL

CONNECTION TO BEAM SHOWN.
CONNECTION TO WING WALL SIMILAR.



CONDUIT BEND, PLAN VIEW - MT1 ABUTMENT 6

MT1 ABUTMENT 1 SIMILAR



CONDUIT BEND, ELEVATION VIEW - MT1 ABUTMENT 6

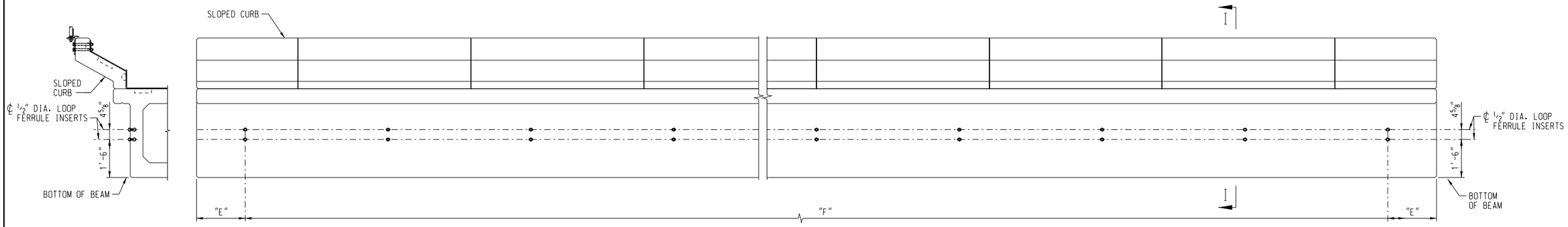
MT1 ABUTMENT 1 SIMILAR

UTILITY SUPPORT NOTES:

1. UTILITY BRACKETS SHALL BE A UNISTRUT PRODUCT OR APPROVED EQUAL. MATERIAL FOR THE UTILITY BRACKETS SHALL MEET ASTM A1011 SS GR. 33.
2. UTILITY BRACKETS SHALL BE HOT-DIP GALVANIZED PER ASTM A123.
3. PIPE CLAMPS AND ASSOCIATED HARDWARE SHALL MEET MATERIAL AND FINISH REQUIREMENTS AS RECOMMENDED BY THE MANUFACTURER FOR COMPATIBILITY WITH THE UTILITY BRACKET MATERIAL AND FINISH.
4. FOR UTILITY BRACKET CONNECTIONS, LOOP FERRULE INSERTS ARE TO BE TYPE F42, 1/2" DIA. x 2 3/4", GALV., AS MANUFACTURED BY DAYTON-SUPERIOR AND HAVE A SAFE WORKING LOAD OF 2,000 LBS. WITH A 3:1 SAFETY FACTOR. THE INSERTS ARE TO BE COMPLETELY RECESSED WITH 1/2" DIA. GALV. BOLTS AND WASHERS ATTACHED FOR SHIPMENT.
5. UTILITY CONDUIT DETAILS, SUCH AS EXPANSION FITTINGS, JOINTS, ETC. SHALL MEET BNSF TELECOM REQUIREMENTS. UTILITY CONDUIT SHALL RUN THE FULL LENGTH OF BRIDGE, AND BENT TO THE OUTSIDE OF THE WING WALLS.
6. ONE CONDUIT SHALL HAVE A MAXCELL EDGE DETECTABLE 3" INNERDUCT. THE OTHER THREE CONDUITS SHALL HAVE PULL CORDS.
7. THE HANDHOLE AT EACH END OF THE BRIDGE SHALL HAVE A METAL TAG STATING: "BRIDGE 62.9A UTILITY SUPPORT SYSTEM DESIGNED FOR 4 ~ 4" STEEL CONDUITS WITH AGGREGATE CONDUIT FILL LOAD OF 80 LBS. PER FOOT." THE METAL TAGS SHALL BE BRASS OR ALUMINUM WITH STAMPED 1/8" TALL LETTERS, WITH SELF-ADHESIVE BACKING AND SIZED TO FIT THE REQUIRED TEXT. TAGS SHALL BE MOUNTED TO THE INSIDE OF THE HANDHOLE LID.
8. REQUIREMENTS FOR BENDING CONDUIT:
   MAX. CONDUIT BEND ANGLE: 45 DEGREES
   MIN. CONDUIT BEND RADIUS: 18 INCHES
   MIN. STRAIGHT RUN BETWEEN TWO CONDUIT BENDS: 60 INCHES

UTILITY BRACKET INSERT SPACING

BEAM MK.	BEAM LENGTH	"E"	"F"
SB42-3510-SLU	35'-10"	1'-11"	8 SPA. AT 4'-0" MAX.
SB42-3910-SLU	39'-10"	1'-5"	3 SPA. AT 3'-6", 4 SPA. AT 4'-0", 3 SPA. AT 3'-6"
SB42-4810-SLU	48'-10"	1'-11"	12 SPA. AT 3'-9" MAX.
SB42-4810-SLIPDU	48'-10"	1'-11"	12 SPA. AT 3'-9" MAX.



SECTION I-I

BEAM ELEVATION - INSERTS FOR UTILITY BRACKETS

BEAMS SB42-3510-SLU (COUNT OF 1), SB42-4810-SLU (COUNT OF 1), SB42-4810-SLIPDU (COUNT OF 1), AND SB42-3910-SLU (COUNT OF 1) ONLY

PETER GRAF, STATE OF WASHINGTON, 24320, REGISTERED PROFESSIONAL ENGINEER, EXPIRES 11/26/2026 (Professional Engineer)

HDR

CITY OF Spokane Valley

LAT: 47°41'21"N LONG: 117°14'20"W	DES: CSS
DOT # XXXXXXX	DRAWN: AEP
CITY OF SPOKANE VALLEY, SPOKANE COUNTY, WA.	CHECK: PJG
STREET NAME: PINES ROAD	DATE: JAN. 2025
STATE CONTRACT NO.: XX-XXXX	PLAN: XXX
FED. AID. PROJECT NO.: XXXXX-XXXXX(XXX)	LINE SEG: 0045

BNSF RAILWAY
BRIDGE ENGINEERING KANSAS CITY, KS
APPROVED: Madlyn Guarino
ASST. DIRECTOR STRUCTURES DESIGN

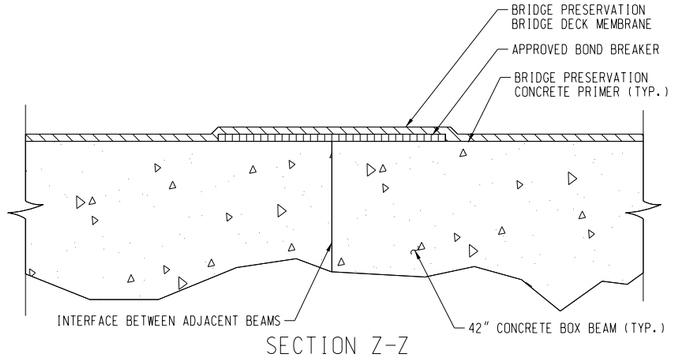
FINAL PLANS

LAKESIDE JCT. WA TO SANDPOINT JCT. ID
BRIDGE NUMBER 62.9A & B
OVER PINES ROAD
MODIFICATIONS TO 42" DOUBLE CELL BOX BEAM (SHEET 2 OF 2)

PLAN NO: 0045-0062.900-018 SHEET: 18 OF 29

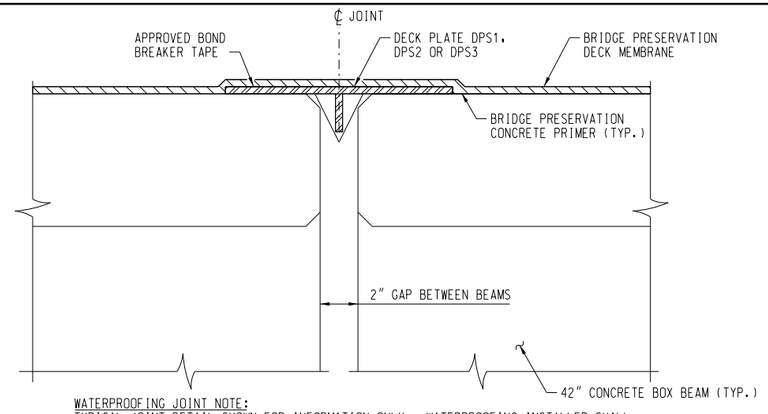
File Location: $FILE$

Date Printed: 1/27/2025 Time Printed: 2:10:08 PM



SECTION Z-Z

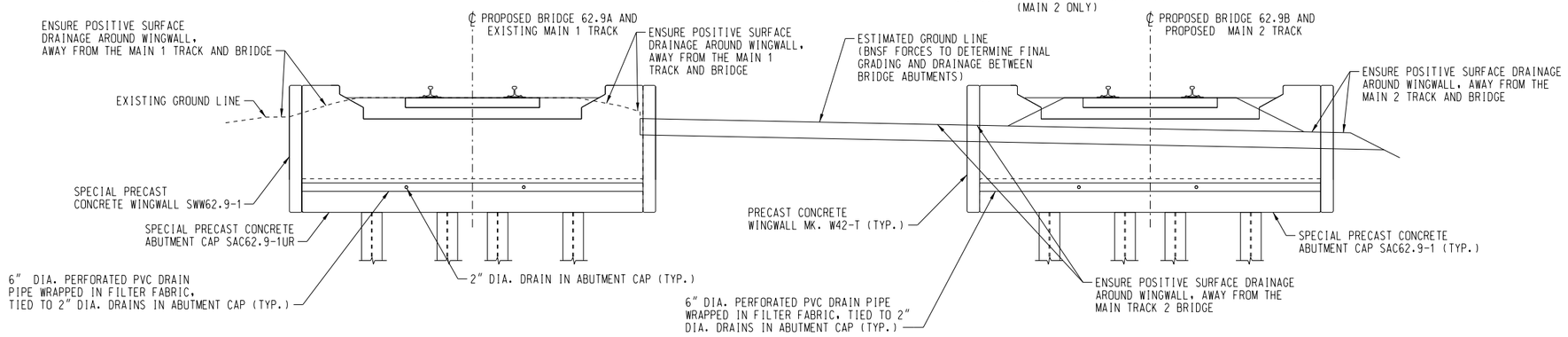
TYPICAL DETAIL
FOR JOINT BETWEEN ADJACENT BEAMS
(MAIN 2 ONLY)



WATERPROOFING JOINT NOTE:
TYPICAL JOINT DETAIL SHOWN FOR INFORMATION ONLY. WATERPROOFING INSTALLER SHALL DETERMINE FINAL DETAILS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

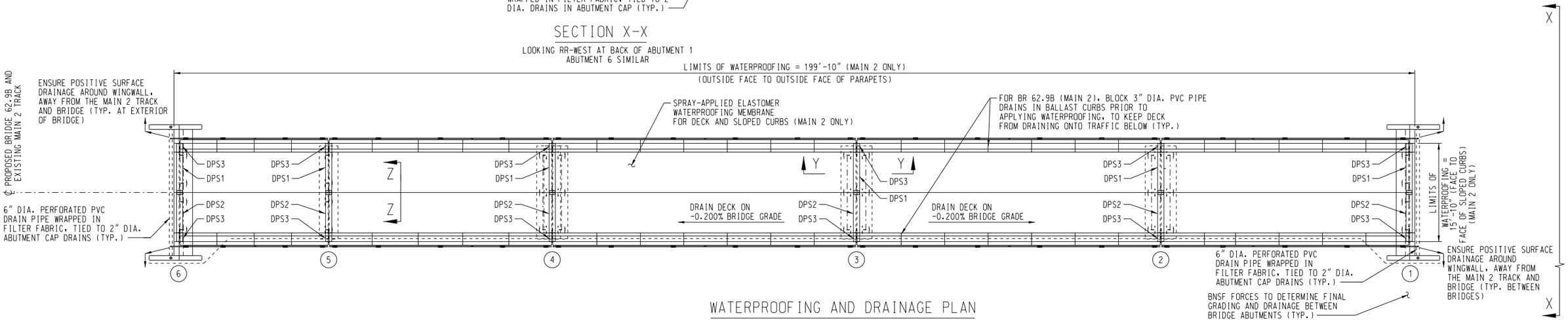
SECTION Y-Y

TYPICAL DETAIL
FOR JOINT BETWEEN BEAM ENDS AT BENT
(MAIN 2 ONLY)



SECTION X-X

LOOKING RR-WEST AT BACK OF ABUTMENT 1
ABUTMENT 6 SIMILAR



WATERPROOFING AND DRAINAGE PLAN

PROPOSED BRIDGE 62.9B SHOWN.
UTILITY CONDUITS AND BRACKETS NOT SHOWN FOR CLARITY.
PROPOSED BRIDGE 62.9A SIMILAR. BUT NO WATERPROOFING.

WATERPROOFING NOTES:

1. WATERPROOFING SYSTEM SHALL BE 120 MIL ACRYLIC-BASED, COLD SPRAY APPLIED SEAMLESS ELASTOMERIC WATERPROOFING MEMBRANE. ALL RELEVANT REQUIREMENTS OUTLINED UNDER AREMA CHAPTER 8, PART 29 SHALL BE FOLLOWED.

2. SPRAY-APPLIED ELASTOMER WATERPROOFING MEMBRANE SHALL BE FURNISHED BY BRIDGE PRESERVATION L.L.C., OR APPROVED EQUAL. PREPARE SURFACES AND APPLY IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS:

   CONTACT:
   BRIDGE PRESERVATION L.L.C.
   CUSTOMER AND SALES SUPPORT
   (913) 321-9000
   info@bridgepreservation.com

3. PRIMER SHALL BE APPLIED TO DECK AND CURB FACE, 1'-4" MINIMUM ON EACH SIDE.

4. FABRICATOR SHALL SUBMIT DETAILED APPLICATION PROCEDURES, MATERIAL, SPECIFICATIONS AND SHOP DRAWINGS FOR THE WATERPROOFING SYSTEM. WATERPROOFING SYSTEM MUST BE APPROVED PRIOR TO INSTALLATION.

5. WATERPROOFING INSTALLATION SHALL BE OBSERVED AND APPROVED BY A QUALIFIED REPRESENTATIVE OF THE MANUFACTURER.

6. IN-PLACE JOINT LEAK TESTING SHALL BE PERFORMED PRIOR TO PLACEMENT OF BALLAST. THE WATERPROOFING MANUFACTURER SHALL SUBMIT A JOINT LEAK TESTING PROGRAM THAT SHALL ALLOW FOR A MINIMUM PERIOD 30 MINUTES. THE JOINT WILL BE CONSIDERED WATERTIGHT IF THERE ARE NO LEAKS THROUGH THE JOINT AFTER THIS 30-MINUTE PERIOD.

DRAINAGE NOTES:

1. FILTER FABRIC SHALL CONFORM TO CLASS A GEOTEXTILE PER AREMA CHAPTER 1 SECTION 10.2, INCLUDING THE REQUIREMENTS OF TABLE 1-10-7 AND TABLE 1-10-8.

REFERENCES:

1. REFER TO BNSF OTIS ORCHARDS TO IRVIN DOUBLE TRACK PROJECT BID PLAN SET BY AECOM DATED 2/12/2020 FOR SOURCE OF PROPOSED GROUND LINE BEHIND ABUTMENT 1.

PETER GRABE
STATE OF WASHINGTON
44024
REGISTERED PROFESSIONAL ENGINEER
EXPIRES 11/16/2026
(Professional Engineer)

HDR

CITY OF Spokane Valley

LAT: 47°41'21"N LONG: 117°14'20"W	DES: CSS
DOT # XXXXXXX	DRAWN: AEP
CITY OF SPOKANE VALLEY, SPOKANE COUNTY, WA.	CHECK: PJG
STREET NAME: PINES ROAD	DATE: JAN. 2025
STATE CONTRACT NO.: XX-XXXX	PLAN: XXX
FED. AID. PROJECT NO.: XXXXX-XXXXX(XXX)	LINE SEG: 0045

BNSF RAILWAY
BRIDGE ENGINEERING KANSAS CITY, KS
APPROVED: Madelyn Guarino
ASST. DIRECTOR STRUCTURES DESIGN

FINAL PLANS

LAKESIDE JCT. WA TO SANDPOINT JCT. ID
BRIDGE NUMBER 62.9A & B
OVER PINES ROAD
WATERPROOFING LAYOUT AND DETAILS

PLAN NO: 0045-0062.900-019 SHEET: 19 OF 29

File Location: SFILES

Date Printed: 1/28/2025 Time Printed: 2:20:59 PM

SHEET LEFT BLANK INTENTIONALLY

LAT: 47°41'21"N LONG: 117°14'20"W	DES: CSS	BNSF RAILWAY	FINAL PLANS
DOT # XXXXXXX	DRAWN: AEP	BRIDGE ENGINEERING KANSAS CITY, KS	LAKESIDE JCT. WA TO SANDPOINT JCT. ID
CITY OF SPOKANE VALLEY, SPOKANE COUNTY, WA.	CHECK: PJG	APPROVED: Madlyn Guarino	BRIDGE NUMBER 62.9A & B
STREET NAME: PINES ROAD	DATE: JAN. 2025	ASST. DIRECTOR STRUCTURES DESIGN	OVER PINES ROAD
STATE CONTRACT NO.: XX-XXXX	PLAN: XXX		SHEET LEFT BLANK INTENTIONALLY
FED. AID. PROJECT NO.: XXXXX-XXXXX(XXX)	LINE SEG: 0045		PLAN NO: 0045-0062.900-020 SHEET: 20 OF 29

File Location: SPIELS

Date Printed: 1/27/2025 Time Printed: 2:11:31 PM

SHEET LEFT BLANK INTENTIONALLY

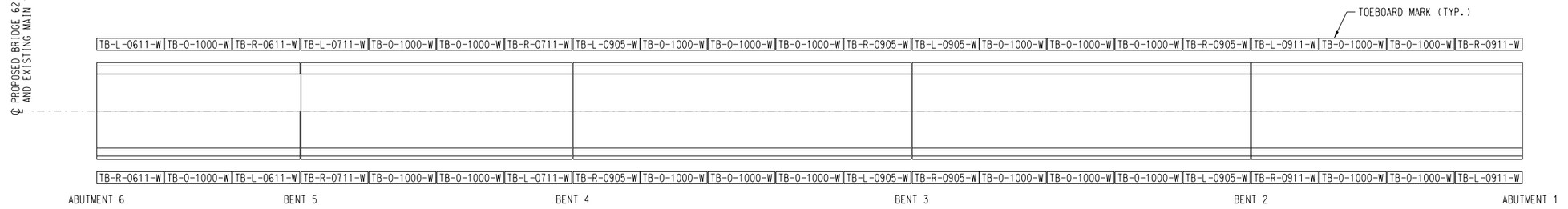
LAT: 47°41'21"N LONG: 117°14'20"W	DES: CSS	BNSF RAILWAY	FINAL PLANS
DOT # XXXXXXX	DRAWN: AEP	BRIDGE ENGINEERING KANSAS CITY, KS	LAKESIDE JCT. WA TO SANDPOINT JCT. ID
CITY OF SPOKANE VALLEY, SPOKANE COUNTY, WA.	CHECK: PJG	APPROVED: Madlyn Guarino	BRIDGE NUMBER 62.9A & B
STREET NAME: PINES ROAD	DATE: JAN. 2025	ASST. DIRECTOR STRUCTURES DESIGN	OVER PINES ROAD
STATE CONTRACT NO.: XX-XXXX	PLAN: XXX		SHEET LEFT BLANK INTENTIONALLY
FED. AID. PROJECT NO.: XXXXX-XXXXX(XXX)	LINE SEG: 0045		PLAN NO: 0045-0062.900-021 SHEET: 21 OF 29

File Location: SPIELS

Date Printed: 1/27/2025 Time Printed: 2:10:11 PM

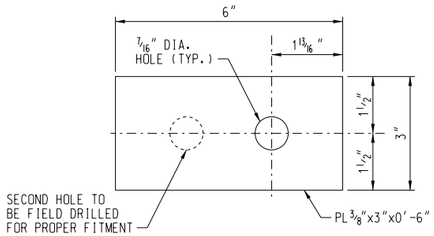
REFERENCE;

REFER TO PREVIOUS SHEET FOR STEEL NOTES.



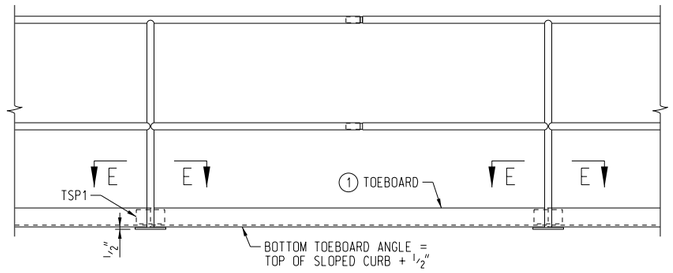
TOEBOARD LAYOUT

PROPOSED BRIDGE 62.9A SHOWN.
PROPOSED BRIDGE 62.9C SIMILAR.

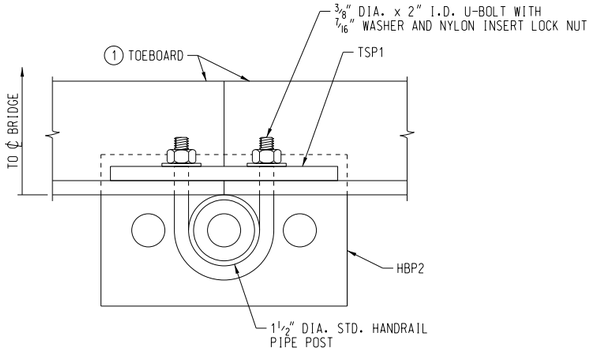


TOEBOARD SPLICE PLATE TSP1

WEIGHT = 2 LBS.
GALVANIZE AFTER FABRICATION
64~TSP1 REQUIRED

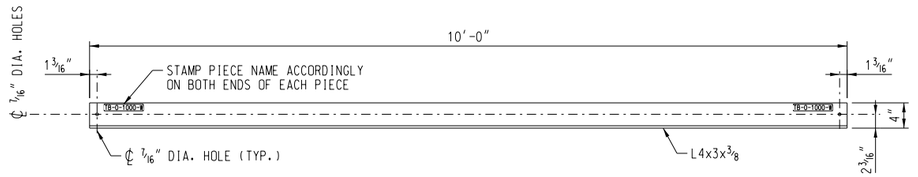


WALKWAY OVER ROADWAY/WALKING PATH



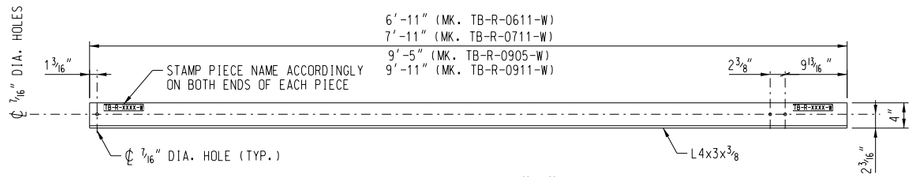
1 4" LEG TO BE VERTICAL WHEN INSTALLED.

SECTION E-E



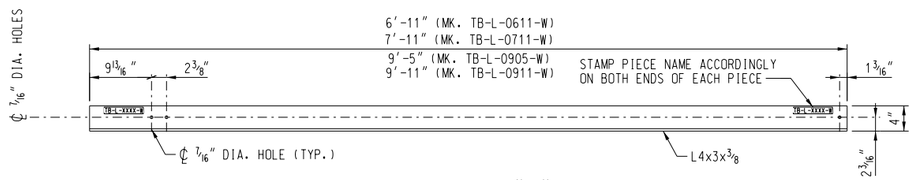
TOEBOARD TB-0-1000-W

GALVANIZE AFTER FABRICATION
44~TB-0-1000-W REQUIRED



TOEBOARD - RIGHT "R" PIECES

GALVANIZE AFTER FABRICATION
4~TB-R-0611-W REQUIRED
4~TB-R-0711-W REQUIRED
8~TB-R-0905-W REQUIRED
4~TB-R-0911-W REQUIRED



TOEBOARD - LEFT "L" PIECES

GALVANIZE AFTER FABRICATION
4~TB-L-0611-W REQUIRED
4~TB-L-0711-W REQUIRED
8~TB-L-0905-W REQUIRED
4~TB-L-0911-W REQUIRED

File Location: $FILE$

Date Printed: 1/27/2025 Time Printed: 2:10:06 PM

LAT: 47°41'21"N LONG: 117°14'20"W		DES: CSS	
DOT # XXXXXXX		DRAWN: AEP	
CITY OF SPOKANE VALLEY, SPOKANE COUNTY, WA.		CHECK: PJG	
STREET NAME: PINES ROAD		DATE: JAN. 2025	
STATE CONTRACT NO.: XX-XXXX		PLAN: XXX	
FED. AID. PROJECT NO.: XXXXX-XXXXX(XXX)		LINE SEG: 0045	

BNSF RAILWAY
BRIDGE ENGINEERING KANSAS CITY, KS
APPROVED: Madlyn Guarino
ASST. DIRECTOR STRUCTURES DESIGN

FINAL PLANS

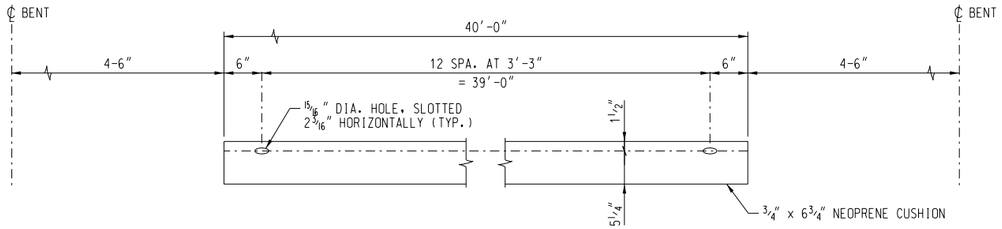
LAKESIDE JCT. WA TO SANDPOINT JCT. ID
BRIDGE NUMBER 62.9A & B
OVER PINES ROAD

MISCELLANEOUS STEEL DETAILS

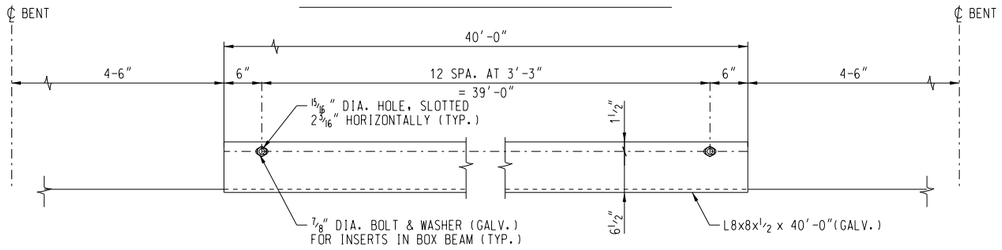
PLAN NO: 0045-0062.900-022 SHEET: 22 OF 29

BILL OF MATERIAL - BRIDGE 62.9A & B

ITEM	QUAN.	UNIT	DESCRIPTION	MARK	SIZE	LENGTH	REMARKS
1	640,800	LBS.	STEEL BEARING PILE (120 PCS.)		HP14x89	60'-0"	ASTM A572 GR. 50
2							
3							
4	60	EA.	PILE POINT	HB-77750			
5	60	EA.	PREFABRICATED OR REINFORCED PLATE PILE SPLICE				PER STD. PLAN 0000-1910-02
6	22,400	LBS.	STEEL CHANNEL BRACING (56 PCS.)		C10x20	20'-0"	ASTM A572 GR. 50
7	36	EA.	STEEL PILE STRUT	P100		2'-0"	ASTM A572 GR. 50, FABRICATED FROM HP14x89
8							
9	4	EA.	SPECIAL PRECAST CONC. ABUTMENT CAP	SAC62.9-1	24"x3'-0"	20'-4"	PER DETAILS ON PLAN 0045-0062.900-9 & 10
10							
11	6	EA.	PRECAST WING WALL	W42-T	9"x7'-6 3/4"	8'-6"	PER STD. PLAN 0000-1121-05
12	1	EA.	SPECIAL PRECAST WING WALL	SWW62.9-1	9"x7'-6 3/4"	8'-6"	PER DETAILS ON PLAN 0045-0062.900-13
13	1	EA.	SPECIAL PRECAST WING WALL	SWW62.9-2	9"x7'-6 3/4"	8'-6"	PER DETAILS ON PLAN 0045-0062.900-13
14	2	EA.	PRECAST CONC. BENT CAP	C00-1	32"x36"	15'-0"	PER STD. PLAN 0000-1110-01
15	6	EA.	SPECIAL PRECAST CONC. DOUBLE BENT CAP	SDC62.9-1	32"x66"	15'-0"	PER DETAILS ON PLAN 0045.0062.900-14
16	3	EA.	SPECIAL P/S CONC. DBL. BOX BEAM w/ SLOPED CURB	SB42-2310-SL	42" x 84"	23'-10"	PER DETAILS ON PLAN 0045-0062.900-15 & 16
17	1	EA.	SPECIAL P/S CONC. DBL. BOX BEAM w/ SLOPED CURB AND UTILITY BRACKET INSERTS	SB42-2310-SLU	42" x 84"	23'-10"	PER DETAILS ON PLAN 0045-0062.900-15 & 16
18	3	EA.	MODIFIED P/S CONC. DBL. BOX BEAM w/ SLOPED CURB	SB42-3510-SL	42" x 84"	35'-10"	PER STD. PLAN 0000-1213-01 & 02 AND AS MODIFIED ON PLAN 0045-0062.900-17 & 18
19	1	EA.	MODIFIED P/S CONC. DBL. BOX BEAM w/ SLOPED CURB AND UTILITY BRACKET INSERTS	SB42-3510-SLU	42" x 84"	35'-10"	
20	3	EA.	MODIFIED P/S CONC. DBL. BOX BEAM w/ SLOPED CURB	SB42-3910-SL	42" x 84"	39'-10"	
21	1	EA.	MODIFIED P/S CONC. DBL BOX BEAM w/SLOPED CURB AND UTILITY BRACKET INSERTS	SB42-3910-SLU	42" x 84"	39'-10"	
22	3	EA.	MODIFIED P/S CONC. DBL. BOX BEAM w/ SLOPED CURB	SB42-4810-SL	42" x 84"	48'-10"	
23	1	EA.	MODIFIED P/S CONC. DBL BOX BEAM w/ SLOPED CURB AND UTILITY BRACKET INSERTS	SB42-4810-SLU	42" x 84"	48'-10"	
24	3	EA.	MODIFIED P/S CONC. DBL BOX BEAM w/SLOPED CURB & INSERTS FOR IMPACT PROTECTION DEVICE	SB42-4810-SLIPD	42" x 84"	48'-10"	
25	1	EA.	MODIFIED P/S CONC. DBL BOX BEAM w/ SLOPED CURB, INSERTS FOR IMPACT PROTECTION DEVICE, AND UTILITY BRACKET INSERTS	SB42-4810-SLIPDU	42" x 48"	48'-10"	
26							
27							
28							
29	12	EA.	DECK PLATE, GALV.	DPS1			PER STD. PLAN 0000-1910-04
30	12	EA.	DECK PLATE, GALV.	DPS2			PER STD. PLAN 0000-1910-04
31	24	EA.	DECK PLATE, GALV.	DPS3			PER STD. PLAN 0000-1910-04
32	24	EA.	RETAINER BRACKET, GALV.	B102			PER STD. PLAN 0000-1910-05
33	32	EA.	WASHER, SQUARE, GALV.	W100	3/4" x 4"	0'-4"	PER STD. PLAN 0000-1910-05
34	4	EA.	PROTECTION ANGLE, ASTM A572 GR. 50, GALV.	PA62.9-1	L8x8x1/2	40'-0"	PER DETAILS THIS SHEET
35							
36							



NEOPRENE CUSHION MK. NC62.9-1



PROTECTION ANGLE MK. PA62.9-1

GALVANIZE AFTER FABRICATION

REFERENCE:

REFER TO SHEET 21 FOR STEEL NOTES.

BILL OF MATERIAL - BRIDGE 62.9A & B (CONTINUED)

ITEM	QUAN.	UNIT	DESCRIPTION	MARK	SIZE	LENGTH	REMARKS
37							
38	55	EA.	UTILITY SUPPORT BRACKET, GALV., UNISTRUT PRODUCT	P2543			PER DETAILS ON PLAN 0045-0062.900-18
39	220	EA.	UTILITY CONDUIT CLAMP, GALV., UNISTRUT PRODUCT	P1121			PER DETAILS ON PLAN 0045-0062.900-18
40	873	L.F.	STEEL CONDUIT, ASTM A53 GR. B, GALV. SCH. 40		4" I.D.		USE THREADED COUPLERS AND EXPANSION
41							JOINTS AS REQUIRED BY BNSF TELECOM
42							REQUIREMENTS
43	4	EA.	HANDRAIL PANEL, ASTM A53, GALV.	HP20-0-0600-W	1 1/2" DIA.	11'-10 1/4"	PER STD. PLAN 0000-1212-02
44	4	EA.	HANDRAIL PANEL, ASTM A53, GALV.	HP20-0-0700-W	1 1/2" DIA.	12'-10 1/4"	PER STD. PLAN 0000-1212-02
45	4	EA.	HANDRAIL PANEL, ASTM A53, GALV.	HP20-0-0900-W	1 1/2" DIA.	14'-10 1/4"	PER STD. PLAN 0000-1212-02
46	4	EA.	HANDRAIL PANEL, ASTM A53, GALV.	HP21-1-0600-W	1 1/2" DIA.	13'-5 3/4"	PER STD. PLAN 0000-1212-02
47	8	EA.	HANDRAIL PANEL, ASTM A53, GALV.	HP30-0-0806-W	1 1/2" DIA.	24'-4 1/4"	PER STD. PLAN 0000-1212-03
48	4	EA.	HANDRAIL PANEL, ASTM A53, GALV.	HP31-0-0700-W	1 1/2" DIA.	22'-10 1/4"	PER STD. PLAN 0000-1212-03
49	8	EA.	HANDRAIL PANEL, ASTM A53, GALV.	HP31-0-0806-W	1 1/2" DIA.	24'-4 1/4"	PER STD. PLAN 0000-1212-03
50	4	EA.	HANDRAIL PANEL, ASTM A53, GALV.	HP31-1-0900-W	1 1/2" DIA.	26'-5 3/4"	PER STD. PLAN 0000-1212-03
51							
52							
53	104	EA.	HANDRAIL BASE PLATE, ASTM A36, GALV.	HBP2			PER STD. PLAN 0000-1222-05
54	208	EA.	BOLT, A307, GALV.		3/4" DIA.	2 1/4"	HANDRAIL PANEL TO HBP2
55	208	EA.	BOLT, A307, GALV.		7/8" DIA.	9"	HBP2 TO SLOPED CURB
56	208	EA.	NUT, CTR. LOCKING, ZINC PLATED		3/4"		HANDRAIL PANEL TO HBP2
57	208	EA.	NUT, CTR. LOCKING, ZINC PLATED		7/8"		HBP2 TO SLOPED CURB
58	416	EA.	WASHER, FLAT, ROUND, GALV.		13/16" I.D. x 1 7/16" O.D.		HANDRAIL PANEL TO HBP2
59	104	EA.	WASHER, FLAT, ROUND, GALV.		15/16" I.D. x 2 1/4" O.D.		HBP2 TO SLOPED CURB
60	104	EA.	CLIPPED WASHER, GALV.				PER STD. PLAN 0000-1222-05
61							
62	4	EA.	TOEBOARD, ASTM A572 GR. 50, GALV.	TB-L-0611-W	L4x3x3/8	6'-11"	PER DETAILS ON PLAN 0045-0062.900-22
63	4	EA.	TOEBOARD, ASTM A572 GR. 50, GALV.	TB-R-0611-W	L4x3x3/8	6'-11"	PER DETAILS ON PLAN 0045-0062.900-22
64	4	EA.	TOEBOARD, ASTM A572 GR. 50, GALV.	TB-L-0711-W	L4x3x3/8	7'-11"	PER DETAILS ON PLAN 0045-0062.900-22
65	4	EA.	TOEBOARD, ASTM A572 GR. 50, GALV.	TB-R-0711-W	L4x3x3/8	7'-11"	PER DETAILS ON PLAN 0045-0062.900-22
66	8	EA.	TOEBOARD, ASTM A572 GR. 50, GALV.	TB-L-0905-W	L4x3x3/8	9'-5"	PER DETAILS ON PLAN 0045-0062.900-22
67	8	EA.	TOEBOARD, ASTM A572 GR. 50, GALV.	TB-R-0905-W	L4x3x3/8	9'-5"	PER DETAILS ON PLAN 0045-0062.900-22
68	4	EA.	TOEBOARD, ASTM A572 GR. 50, GALV.	TB-L-0911-W	L4x3x3/8	9'-11"	PER DETAILS ON PLAN 0045-0062.900-22
69	4	EA.	TOEBOARD, ASTM A572 GR. 50, GALV.	TB-R-0911-W	L4x3x3/8	9'-11"	PER DETAILS ON PLAN 0045-0062.900-22
70	44	EA.	TOEBOARD, ASTM A572 GR. 50, GALV.	TB-0-1000-W	L4x3x3/8	10'-0"	PER DETAILS ON PLAN 0045-0062.900-22
71	64	EA.	TOEBOARD SPLICE PLATE, ASTM A572 GR. 50, GALV.	TSP1	3/8" x 3"	0'-6"	THRU TOEBOARD AT HANDRAIL POSTS, PER DETAILS ON PLAN 0045-0062.900-22
72	104	EA.	U-BOLT, A307, GALV.		3/8" DIA. x 2" I.D.		THRU TOEBOARD SPLICE PLATE AND TOEBOARD AT HANDRAIL POSTS
73	208	EA.	NUT, CTR. LOCKING, ZINC PLATED		3/8"		FOR U-BOLT
74	208	EA.	WASHER, FLAT, ROUND, GALV.		7/16" I.D. x 1 1/16" O.D.		FOR U-BOLT
75							
76	96	EA.	PREMOLDED JOINT FILLER, ASPHALT IMPREGNATED		1/2" x 40"	5'-6"	BETWEEN ENDS OF BEAMS AND ABUTMENT WALLS
77	40	EA.	PAD, URETHANE, DUROMETER 70		3/4" x 10"	5'-6"	BEARING AREA
78	4	EA.	NEOPRENE CUSHION, DUROMETER 70	NC62.9-1	3/4" x 6 3/4"		PER DETAILS ON THIS SHEET, BUTT JOINT AS REQUIRED (INTALLED LENGTH 40'-0" EA.)
79	84	L.F.	PVC PERFORATED DRAIN PIPE W/ FILTER FABRIC WRAP		6" DIA.		SCHEDULE 80, FIELD CUT AS REQUIRED
80							REFER TO PLAN 0045-0062.900-19 FOR FILTER
81							FABRIC REQUIREMENTS
82	2	EA.	BRIDGE NUMBER SIGN	62.9			PER STD. PLAN 3103.01.04 (TRACK STD.)
83	2	EA.	NO TRESPASSING SIGN		18" x 24"		PER STD. PLAN 3070.01.05 (TRACK STD.)
84	4	EA.	SIGN POST			6'-0"	PER STD. PLAN 3001.01.09 (TRACK STD.)

NOTES:

SUPERVISOR STRUCTURES TO FURNISH HARDWARE FOR SIGNS AS REQUIRED, ORGANIC ZINC RICH BRIDGE PAINT, EPOXY AND GROUT FOR BEARING PADS, CONTROLLED DENSITY FILL BACKFILL AT ABUTMENTS, TEMPORARY SHORING, AND PETROLATUM COATING FOR PILE PLATES AND TOPS OF PILES AT ABUTMENTS.

QUANTITIES DO NOT CONTAIN EXTRA OR ROUNDED UP VALUES.

PETER GRAFF — STATE OF WASHINGTON — 44504 — REGISTERED PROFESSIONAL ENGINEER

EXPIRES 11/14/2026 (Professional Engineer)

FINAL PLANS

LAT: 47°41'21"N LONG: 117°14'20"W	DES: CSS	BNSF RAILWAY — BRIDGE ENGINEERING KANSAS CITY, KS	LAKESIDE JCT. WA TO SANDPOINT JCT. ID
DOT # XXXXXXX	DRAWN: AEP		BRIDGE NUMBER 62.9A & B
CITY OF SPOKANE VALLEY, SPOKANE COUNTY, WA.	CHECK: PJG		OVER PINES ROAD
STREET NAME: PINES ROAD	DATE: JAN. 2025		BNSF BILL OF MATERIAL AND IMPACT PROTECTION DEVICE DETAILS
STATE CONTRACT NO.: XX-XXXX	PLAN: XXX	APPROVED: Madelyn Guarino	PLAN NO: 0045-0062.900-023
FED. AID. PROJECT NO.: XXXXX-XXXXX(XXX)	LINE SEG: 0045	ASST. DIRECTOR STRUCTURES DESIGN	SHEET: 23 OF 29

File Location: SHEETS

Date Printed: 1/27/2025 Time Printed: 1:57:44 PM

GENERAL NOTES:

1. THE NEW STRUCTURE IS DESIGNED IN ACCORDANCE WITH THE 2021 EDITION OF THE AMERICAN RAILWAY ENGINEERING AND MAINTENANCE-OF-WAY ASSOCIATION (A.R.E.M.A.) MANUAL FOR RAILWAY ENGINEERING, CHAPTER 8 - CONCRETE STRUCTURES AND FOUNDATIONS, CHAPTER 9 - SEISMIC DESIGN, AND CHAPTER 15 - STEEL STRUCTURES.

2. DESIGN LOADING: COOPER E80 WITH DIESEL IMPACT.

3. NEW CONSTRUCTION SHOWN IN HEAVY LINES.

4. ALL WORK REQUIREMENTS SHOWN ON THESE DRAWINGS AND NOT OTHERWISE DETAILED SHALL BE ACCOMPLISHED AS SPECIFIED IN THE BNSF STANDARDS AND THE MOST CURRENT A.R.E.M.A. MANUAL FOR RAILWAY ENGINEERING. IN THE EVENT OF CONFLICTS BETWEEN THE SPECIFICATIONS, THE MORE RESTRICTIVE SHALL APPLY.

5. BRIDGE STATIIONING AND ELEVATIONS BASED ON AECOM / BNSF OTIS ORCHARDS SURVEY.

BENCHMARK CONTROL POINT #3
WSDOT MON GP32290-22
NORTHING: 272134.65
EASTING: 2525040.29
ML1 STA. 4040+25.33
OFFSET: 211.15 RT (EX. MAIN 1)
ELEV: 1989.77

6. ALL UTILITES AND BNSF UNDERGROUND CABLING (IF APPLICABLE) SHALL BE LOCATED AND PROTECTED FROM DAMAGE. UPON REQUEST, UNDERGROUND UTILITIES WILL BE LOCATED AND FLAGGED BY THE UTILITIES. EXCAVATION IN THE AREA OF UNDERGROUND UTITLIES SHALL NOT BEGIN UNTIL ALL SUCH UTILITIES HAVE BEEN LOCATED AND IDENTIFIED, AND THEN ONLY WITH EXTREME CARE TO AVOID ANY POSSIBILITY OF DAMAGE TO THE UTILITY FACILITY. CONSTRUCTION EFFORTS SHALL BE COORDINATED WITH ALL OTHER LOCAL UTILITY COMPANIES PERTINENT TO THE PROSECUTION OF WORK. CONTRACTOR SHALL NOTIFY UTILITY LOCATORS (811) 48 HOURS PRIOR TO PLANNED WORK.

7. AREAS DISTURBED BY CONSTRUCTION OPERATIONS SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN EXISTING.

8. BNSF STANDARD CONSTRUCTION SPECIFICATIONS SHALL BE USED FOR THIS PROJECT.

REFERENCE:

1. BNSF STANDARD BRIDGE & COMPONENT PLANS ISSUED MARCH 1, 2021.

2. BNSF OTIS ORCHARDS TO IRVIN DOUBLE TRACK PROJECT BID PLAN SET BY AECOM DATED 2/12/2020.

3. CITY OF SPOKANE VALLEY PINES ROAD BNSF GRADE SEPARATION PROJECT PLAN SET BY HDR DATED 08/08/2023.

4. GEOTECHNICAL ENGINEERING EVALUATION REPORT BY GEOENGINEERS DATED 09/19/2023.

DIVISION OF RESPONSIBILITY:

RAILROAD - PREVIOUSLY COMPLETED
1. BUILD BRIDGE FOR EXISTING MAIN 1.
2. BUILD BRIDGE FOR PROPOSED MAIN 2.
3. INITIAL ROUGH ROADWAY EXCAVATION TO LIMITS SHOWN IN BNSF BRIDGE PLANS AND INSTALLATION OF BENT BRACING.

CITY - THIS PLAN SET
1. FINISH EXCAVATION AT EACH BENT.
2. INSTALL C.I.P. CONCRETE ENCASEMENT ON BENTS.

COORDINATION WITH RAILROAD

1. THE CONTRACTOR SHALL CLOSELY COORDINATE BRIDGE WORK AND CONSTRUCTION ACTIVITIES WITH RAILROAD ON RAILROAD RIGHT-OF-WAY.

2. THE CONTRACTOR SHALL MEET BNSF SAFETY, INSURANCE AND TRACK WORKER PROTECTION REQUIREMENTS IN ACCORDANCE WITH THE SPECIFICATIONS.

3. CONTRACTOR SHALL PROVIDE THE RAILROAD WITH A DETAILED CONSTRUCTION PLAN DEFINING THE ACTIVITY, SCHEDULE, AND PROCEDURE FOR EACH ASPECT OF THE WORK.

4. CONSTRUCTION SHALL NOT BEGIN UNTIL THE CONSTRUCTION PLAN HAS BEEN APPROVED BY THE RAILROAD.

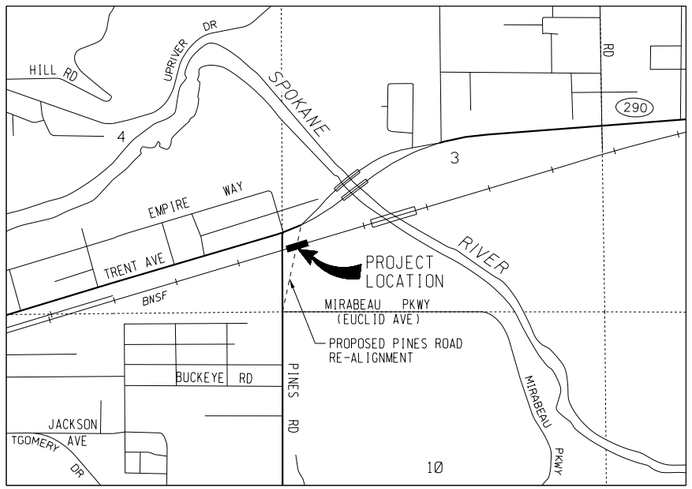
5. COORDINATE A SLOW ORDER ON THE BRIDGE SUBJECT TO RAILROAD LIVE LOAD. FOR THE FIRST 24 HOURS AFTER CONCRETE PLACED AROUND EACH BENT.

BNSF RAILROAD CONTACT

NEED FROM BNSF

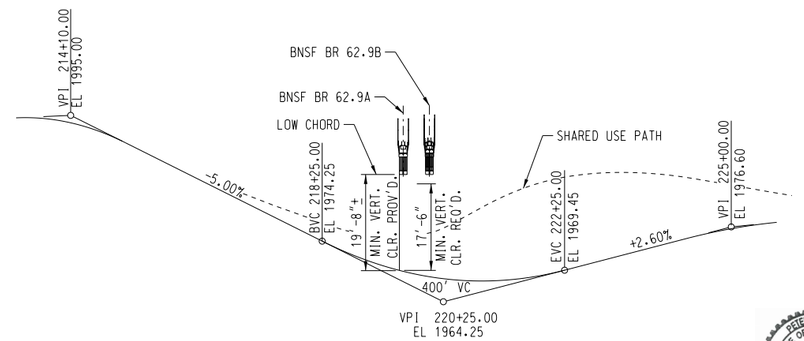
LIST OF DRAWINGS - BR. 62.9A & B

	PLAN NO.	TITLE
BNSF FORCES	0045-0062.900-001	GENERAL NOTES AND INFORMATION (BNSF)
	0045-0062.900-002	GENERAL LAYOUT
	0045-0062.900-003	TYPICAL SECTION - DOUBLE BENT
	0045-0062.900-004	TYPICAL SECTION - SINGLE BENT
	0045-0062.900-005	TYPICAL SECTION - ABUTMENT
	0045-0062.900-006	FOUNDATION PLAN
	0045-0062.900-007	BORING LOGS
	0045-0062.900-008	MISCELLANEOUS DETAILS
	0045-0062.900-009	SPECIAL PRECAST CONCRETE ABUTMENT CAP (SHEET 1 OF 2)
	0045-0062.900-010	SPECIAL PRECAST CONCRETE ABUTMENT CAP (SHEET 2 OF 2)
	0045-0062.900-011	SHEET LEFT BLANK INTENTIONALLY
	0045-0062.900-012	SHEET LEFT BLANK INTENTIONALLY
	0045-0062.900-013	SPECIAL WINGWALL DETAILS
	0045-0062.900-014	SPECIAL PRECAST CONCRETE DOUBLE BENT CAP
	0045-0062.900-015	SPECIAL 42"x23'-10" DOUBLE CELL BOX BEAM (SHEET 1 OF 2)
	0045-0062.900-016	SPECIAL 42"x23'-10" DOUBLE CELL BOX BEAM (SHEET 2 OF 2)
	0045-0062.900-017	MODIFICATIONS TO 42" DOUBLE CELL BOX BEAMS (SHEET 1 OF 2)
	0045-0062.900-018	MODIFICATIONS TO 42" DOUBLE CELL BOX BEAMS (SHEET 2 OF 2)
	0045-0062.900-019	WATERPROOFING LAYOUT AND DETAILS
	0045-0062.900-020	SHEET LEFT BLANK INTENTIONALLY
	0045-0062.900-021	SHEET LEFT BLANK INTENTIONALLY
	0045-0062.900-022	MISCELLANEOUS STEEL DETAILS
	0045-0062.900-023	BNSF BILL OF MATERIAL AND IMPACT PROTECTION DEVICE DETAILS
CITY CONTRACTOR (THIS SET)	0045-0062.900-024	GENERAL NOTES AND INFORMATION (CITY)
	0045-0062.900-025	GENERAL LAYOUT
	0045-0062.900-026	TYPICAL SECTION - DOUBLE BENT
	0045-0062.900-027	TYPICAL SECTION - SINGLE BENT
	0045-0062.900-028	BENT ENCASEMENT DETAILS - BENTS 2 THRU 4 (DOUBLE)
	0045-0062.900-029	BENT ENCASEMENT DETAILS - BENT 5 (SINGLE)



VICINITY MAP

NO SCALE
IN THE CITY OF SPOKANE VALLEY, WASHINGTON



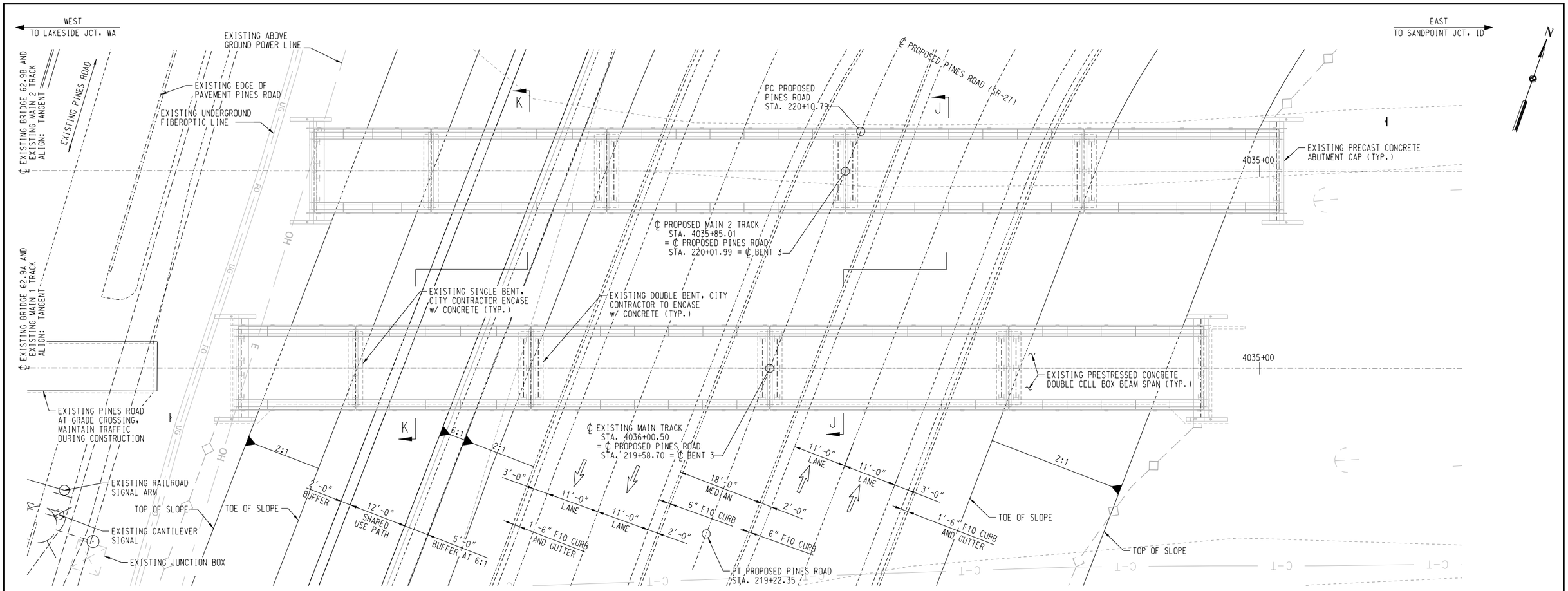
PINES ROAD PROFILE

NO SCALE
LOOKING RALROAD WEST
REFER TO CITY OF SPOKANE VALLEY PINES ROAD BNSF GRADE SEPARATION PLAN SET FOR DETAILS.

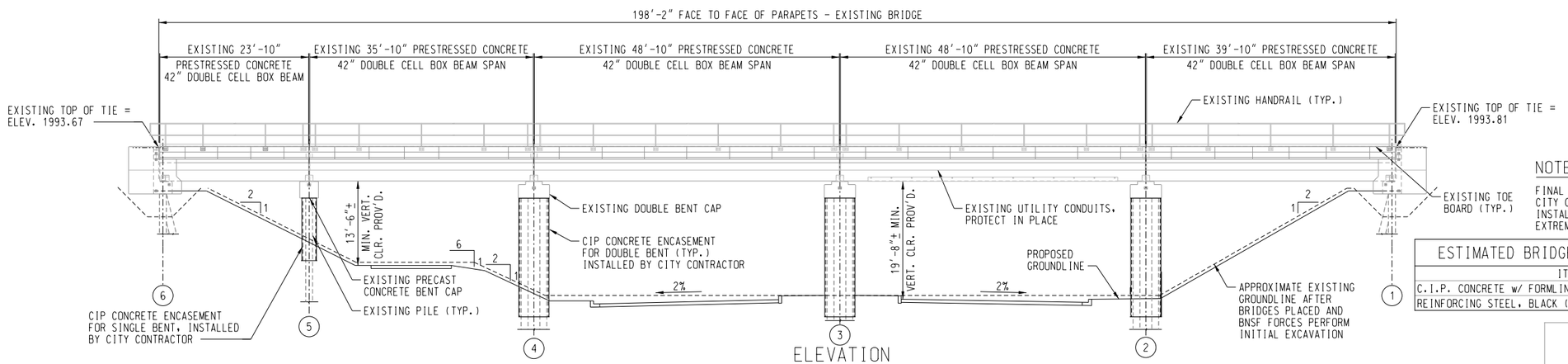
PETER GRAMS — STATE OF WASHINGTON — 44926 — REGISTERED PROFESSIONAL ENGINEER
EXPIRES 11/16/2026 (Professional Engineer)

LAT: 47°41'21"N LONG: 117°14'20"W	DES: CSS	BNSF RAILWAY — BRIDGE ENGINEERING KANSAS CITY, KS	FINAL PLANS
DOT # XXXXXXX	DRAWN: AEP		LAKESIDE JCT. WA TO SANDPOINT JCT. ID
CITY OF SPOKANE VALLEY, SPOKANE COUNTY, WA.	CHECK: PJG		BRIDGE NUMBER 62.9A & B
STREET NAME: PINES ROAD	DATE: JAN. 2025		OVER PINES ROAD
STATE CONTRACT NO.: XX-XXXX	PLAN: XXX	APPROVED: Madlyn Guarino	GENERAL NOTES AND INFORMATION (CITY)
FED. AID. PROJECT NO.: XXXXX-XXXXX(XXX)	LINE SEG: 0045	ASST. DIRECTOR STRUCTURES DESIGN	PLAN NO: 0045-0062.900-024 / SHEET: 24 OF 29

File Location: $FILEL$
Date Printed: 1/27/2025 Time Printed: 1:57:57 PM



PLAN



ELEVATION

EXISTING MAIN 1 BRIDGE SHOWN, OTHER BRIDGE SIMILAR. CROSS BRACING NOT SHOWN FOR CLARITY.

NOTE:

FINAL CONDITION SHOWN WITH FULL ROADWAY EXCAVATION. CITY CONTRACTOR TO FINISH ROADWAY EXCAVATION AND INSTALL CIP CONCRETE ENCASEMENT ON BENTS, TAKING EXTREME CARE TO NOT DAMAGE ANY PART OF THE STRUCTURE.

ESTIMATED BRIDGE QUANTITIES - CITY CONTRACTOR

ITEM	QUANTITY	UNITS
C.I.P. CONCRETE w/ FORMLINER (4,000 PSI)	369.8	C.Y.
REINFORCING STEEL, BLACK (ASTM A615 GR 60)	14,520	LB.

ATTENTION !

CITY CONTRACTOR TO VERIFY THE LOCATION, RELOCATION, ABANDONMENT, AND/OR TEMPORARY SUPPORT OF ALL UTILITIES AFFECTED BY THE CONSTRUCTION. CITY CONTRACTOR SHALL INFORM UTILITY COMPANIES, AGENCIES, AND/OR AUTHORITIES OF ALL PLANNED WORK IN THE AREA CONTAINING UTILITIES. CITY CONTRACTOR SHALL NOTIFY ONE-CALL LOCATORS 48 HOURS PRIOR TO PLANNED WORK (1-800-424-5555). CITY CONTRACTOR IS PLACED ON NOTICE THAT FIBER OPTIC, COMMUNICATIONS, CONTROL SYSTEMS, AND OTHER TYPES OF CABLES MAY BE BURIED ON RAILROAD PROPERTY. BEFORE BEGINNING WORK, CITY CONTRACTOR SHALL ALSO TELEPHONE RAILROAD'S COMMUNICATIONS NETWORK CONTROL CENTER AT 1-800-533-2891.

LAT: 47°41'21"N LONG: 117°14'20"W	DES: CSS
DOT # XXXXXXX	DRAWN: AEP
CITY OF SPOKANE VALLEY, SPOKANE COUNTY, WA.	CHECK: PJG
STREET NAME: PINES ROAD	DATE: JAN. 2025
STATE CONTRACT NO.: XX-XXXX	PLAN: XXX
FED. AID. PROJECT NO.: XXXXX-XXXXX(XXX)	LINE SEG: 0045

BNSF RAILWAY
BRIDGE ENGINEERING KANSAS CITY, KS
APPROVED: Madelyn Guarino
ASST. DIRECTOR STRUCTURES DESIGN

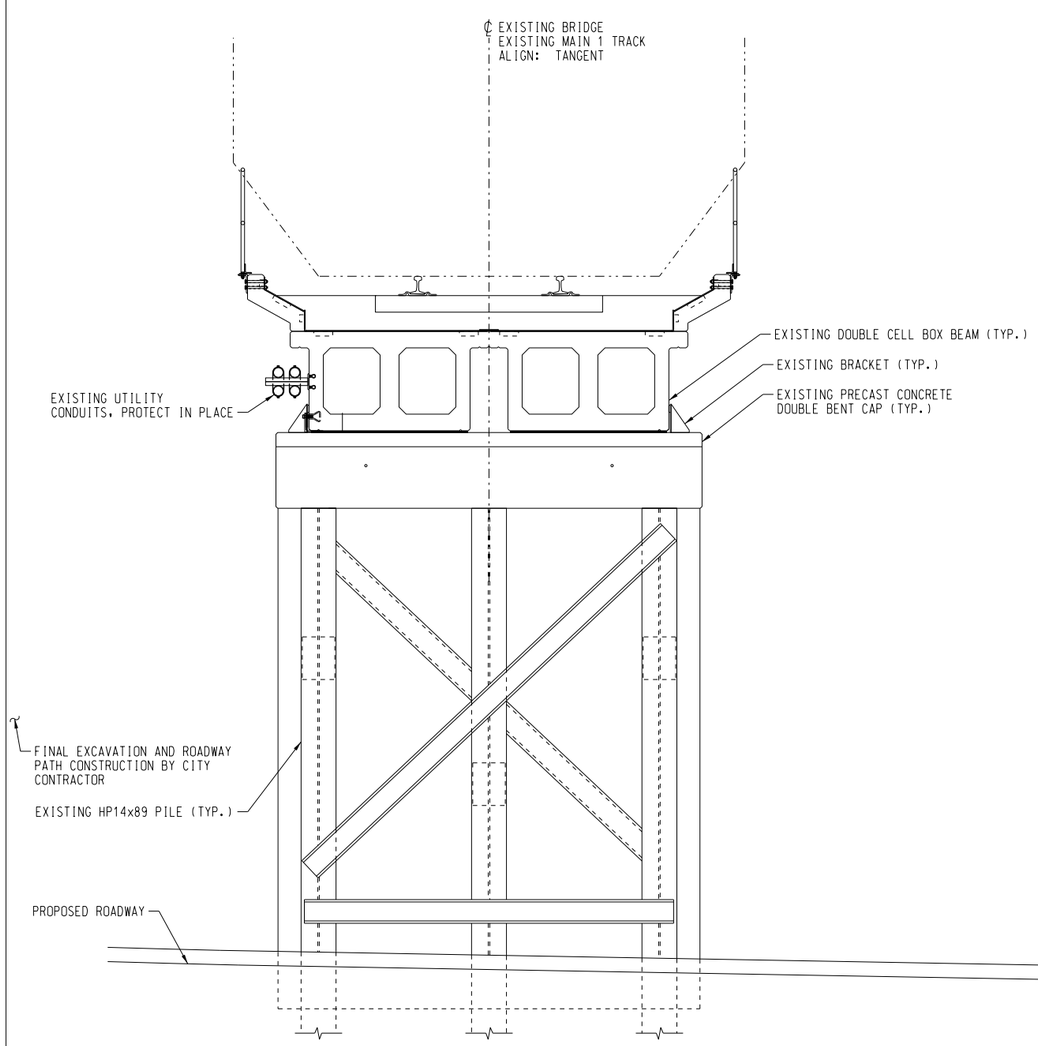
PETER GRACE, STATE OF WASHINGTON, 44826, REGISTERED PROFESSIONAL ENGINEER
EXPIRES 11/16/2026 (Professional Engineer)

FINAL PLANS

LAKESIDE JCT. WA TO SANDPOINT JCT. ID
BRIDGE NUMBER 62.9A & B
OVER PINES ROAD
GENERAL LAYOUT

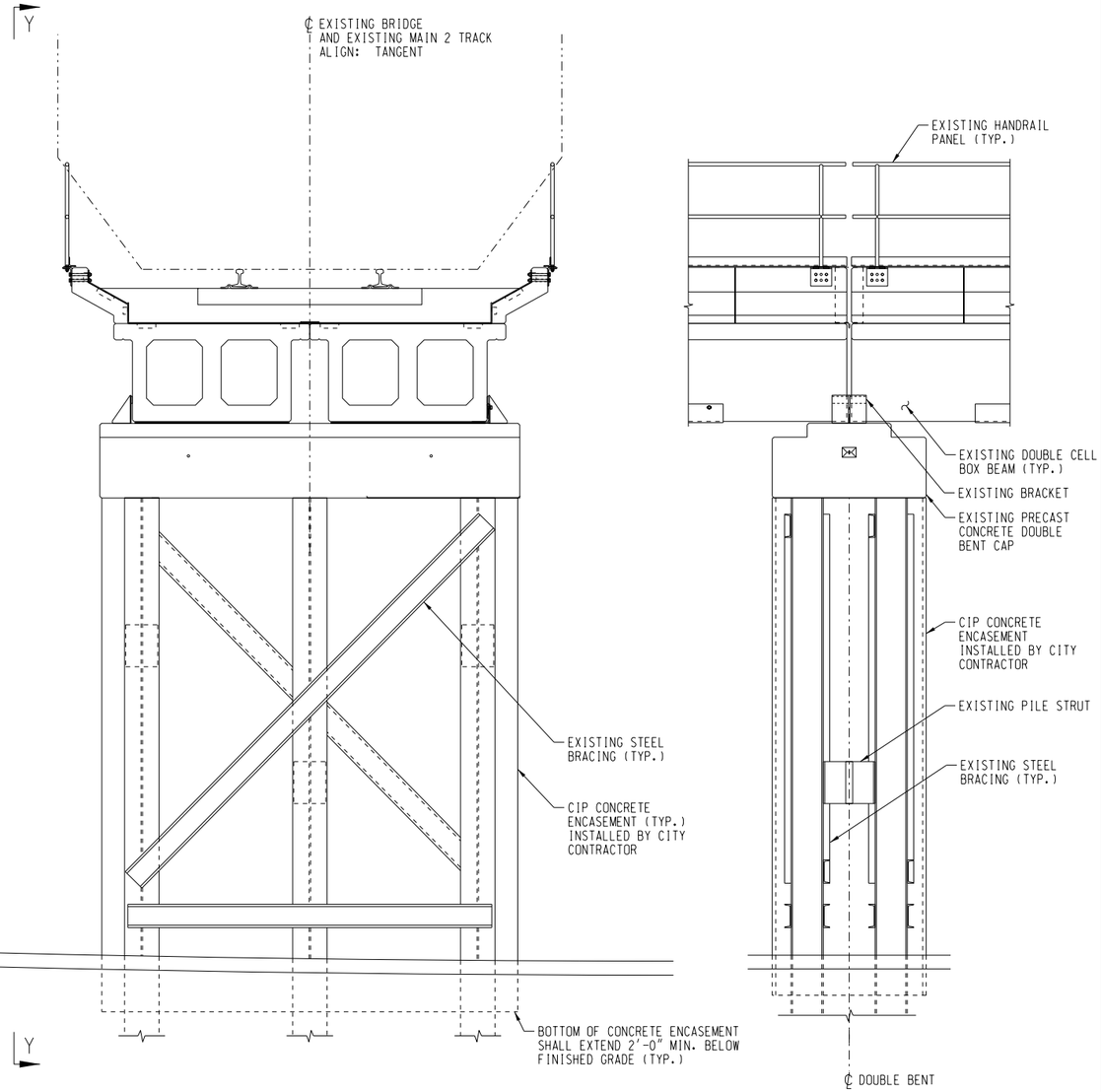
PLAN NO: 0045-0062.900-025 SHEET: 25 OF 29

File Location: $FILE$
Date Printed: 1/27/2025 Time Printed: 1:06:22 PM



SECTION J-J

SEE SHEET 24 FOR LOCATION OF SECTION J-J

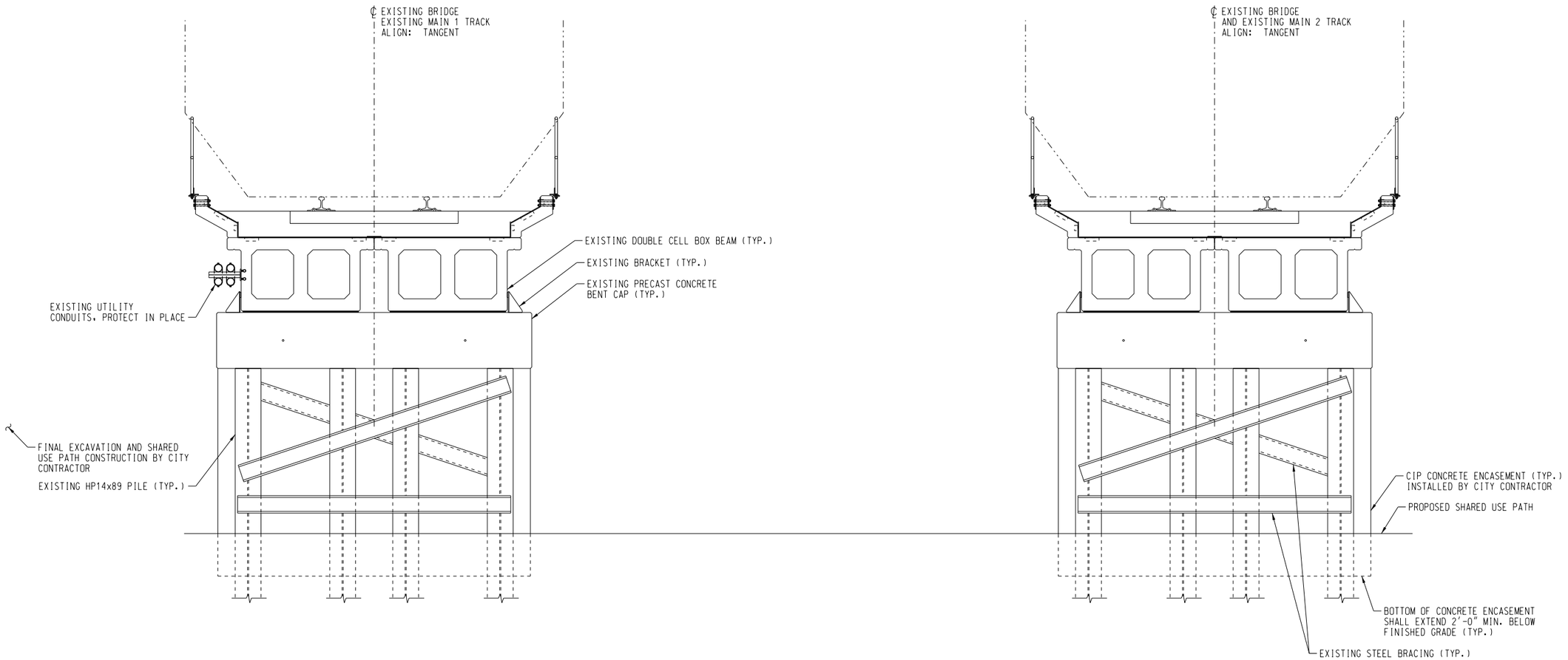


VIEW Y-Y

LAT: 47°41'21"N LONG: 117°14'20"W	DES: CSS	BNSF RAILWAY	FINAL PLANS
DOT # XXXXXXX	DRAWN: AEP	BRIDGE ENGINEERING KANSAS CITY, KS	LAKESIDE JCT. WA TO SANDPOINT JCT. ID
CITY OF SPOKANE VALLEY, SPOKANE COUNTY, WA.	CHECK: PJG	APPROVED: Madelyn Guarino	BRIDGE NUMBER 62.9A & B
STREET NAME: PINES ROAD	DATE: JAN. 2025	ASST. DIRECTOR STRUCTURES DESIGN	OVER PINES ROAD
STATE CONTRACT NO.: XX-XXXX	PLAN: XXX		TYPICAL SECTION - DOUBLE BENT
FED. AID. PROJECT NO.: XXXXX-XXXXX(XXX)	LINE SEG: 0045		PLAN NO: 0045-0062.900-026 SHEET: 26 OF 29

File Location: SFILELS

Date Printed: 1/27/2025 Time Printed: 2:10:03 PM



SECTION K-K

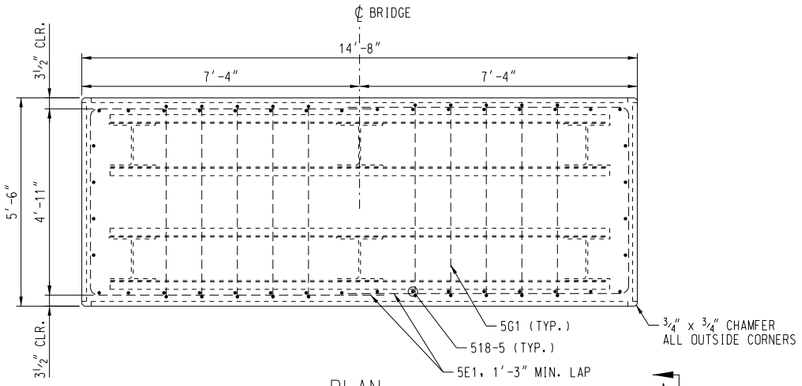
SEE SHEET 25 FOR LOCATION OF SECTION K-K

PETER GRAFF
STATE OF WASHINGTON
44934
REGISTERED PROFESSIONAL ENGINEER
EXPIRES 11/24/2026
(Professional Engineer)

LAT: 47°41'21"N LONG: 117°14'20"W	DES: CSS	BNSF RAILWAY	FINAL PLANS
DOT # XXXXXXX	DRAWN: AEP	BRIDGE ENGINEERING KANSAS CITY, KS	LAKESIDE JCT. WA TO SANDPOINT JCT. ID
CITY OF SPOKANE VALLEY, SPOKANE COUNTY, WA.	CHECK: PJG	APPROVED: Madlyn Guarino	BRIDGE NUMBER 62.9A & B
STREET NAME: PINES ROAD	DATE: JAN. 2025	ASST. DIRECTOR STRUCTURES DESIGN	OVER PINES ROAD
STATE CONTRACT NO.: XX-XXXX	PLAN: XXX		TYPICAL SECTION - SINGLE BENT
FED. AID. PROJECT NO.: XXXXX-XXXXX(XXX)	LINE SEG: 0045		PLAN NO: 0045-0062.900-027 / SHEET: 27 OF 29

File Location: $FILEL$

Date Printed: 1/27/2025 Time Printed: 2:09:45 PM



PLAN

C.I.P. CONCRETE NOTES

FORMLINER SHALL EXTEND DOWN TO 3″ ABOVE FINISHED GROUNDLINE.

ALL EXPOSED EDGES OF CONCRETE MEMBERS SHALL BE CHAMFERED ¾ INCH.

ALL MATERIAL AND WORKMANSHIP SHALL BE PER THE CURRENT BNSF STANDARD SPECIFICATIONS.

THE ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE SHALL BE NOT LESS THAN 4000 p.s.i. IN 28 DAYS. CONCRETE FORMS SHALL NOT BE REMOVED BEFORE THE CONCRETE REACHES A STRENGTH OF 2500 p.s.i. HIGH EARLY STRENGTH CONCRETE SHALL BE USED.

MILD STEEL REINFORCEMENT SHALL MEET THE REQUIREMENTS OF THE CURRENT A.S.T.M. DESIGNATION A615 OR A706, GRADE 60.

FABRICATION OF REINFORCEMENT SHALL BE IN ACCORDANCE WITH CHAPTER 7 OF THE CURRENT C.R.S.I. MANUAL OF STANDARD PRACTICE.

STEEL REINFORCEMENT MAY BE MOVED SLIGHTLY TO MISS EMBEDDED ITEMS.

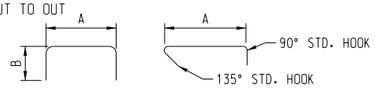
DUE TO PILE PLACEMENT, ADJUST DIMENSIONS TO MAINTAIN RECTANGULAR SHAPE AND CLEARANCE FROM PILE AND REINFORCING STEEL, IN NO CASE SHALL SIZE BE LESS THAN SHOWN.

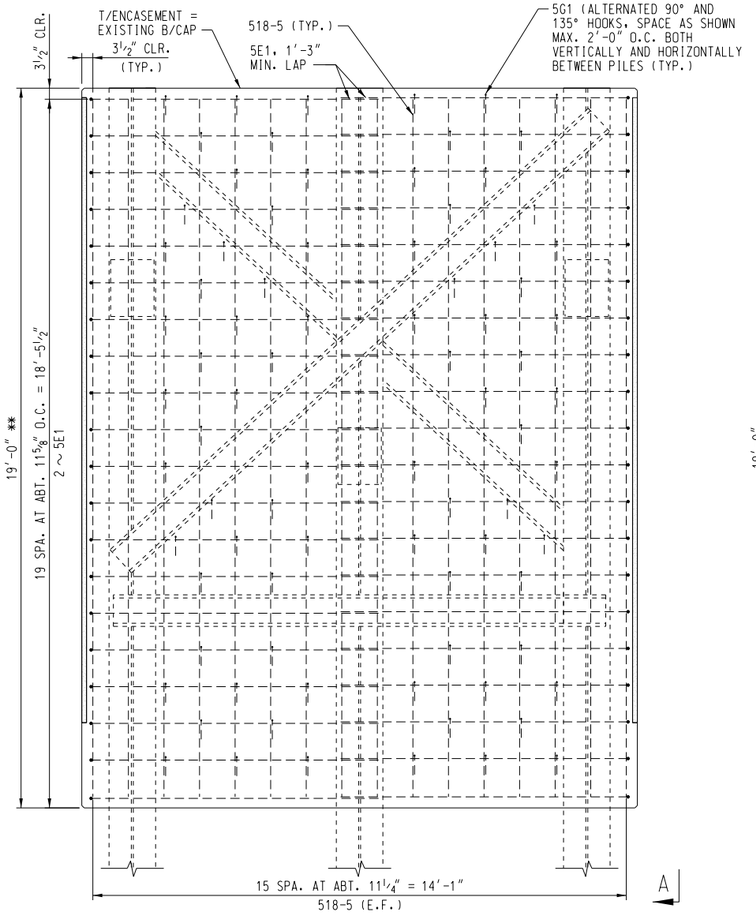
REINFORCING STEEL REQUIRED FOR DOUBLE BENT ENCASEMENT (EACH)

QTY.	MARK	SIZE	TYPE	A	B	LENGTH
40	5E1	5	E	4′-11″	7′-9″	20′-5″
82	5G1	5	G	4′-11″	–	5′-11″
40	518-5	5	STR.	–	–	18′-5″

BENDING DETAILS

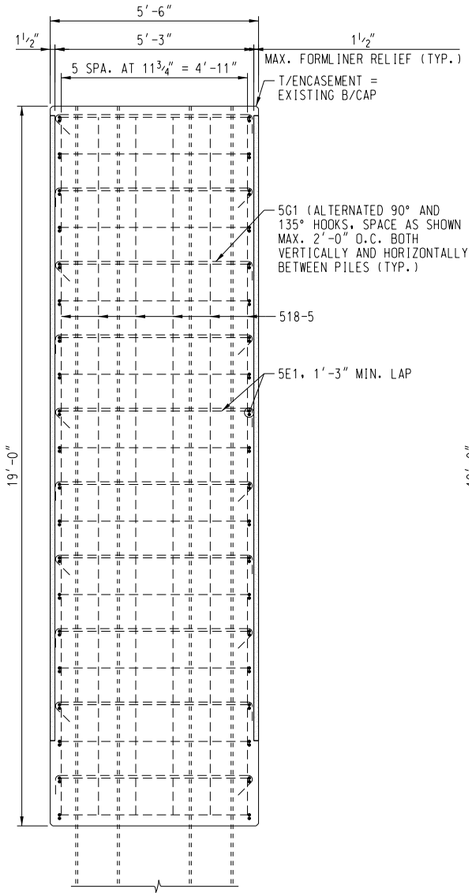
ALL DIMENSIONS ARE OUT TO OUT



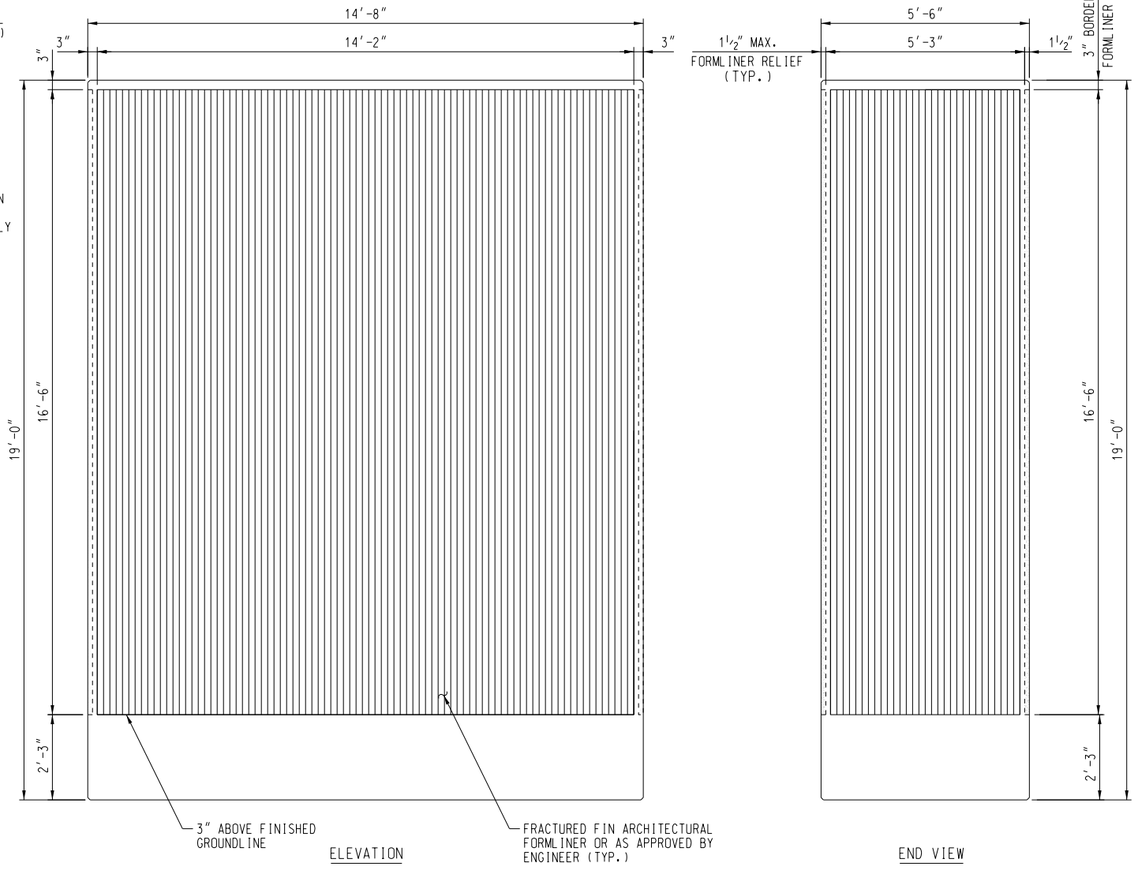


ELEVATION

VOLUME = 56.8 CU. YDS. (EACH), REINFORCING STEEL = 2,130 LBS. (EACH)
EXISTING CAP NOT SHOWN FOR CLARITY.
** NOTE: CONTRACTOR SHALL FIELD VERIFY DIMENSIONS AND ADJUST FOR ACTUAL CONDITIONS.



VIEW A-A



ELEVATION

END VIEW

LIMITS OF ARCHITECTURAL FORMLINER

EXISTING CAP NOT SOWN FOR CLARITY.

PETER GRANGROTH — STATE OF WASHINGTON — 44526 — REGISTERED PROFESSIONAL ENGINEER — EXPIRES 11/07/2025 (Professional Engineer)

HDR

CITY OF Spokane Valley

LAT: 47°41′21″N LONG: 117°14′20″W	DES: CSS
DOT # XXXXXXX	DRAWN: AEP
CITY OF SPOKANE VALLEY, SPOKANE COUNTY, WA.	CHECK: PJG
STREET NAME: PINES ROAD	DATE: JAN. 2025
STATE CONTRACT NO.: XX-XXXX	PLAN: XXX
FED. AID. PROJECT NO.: XXXXX-XXXXX(XXX)	LINE SEG: 0045

BNSF RAILWAY

BRIDGE ENGINEERING KANSAS CITY, KS

APPROVED: Madlyn Guarino

ASST. DIRECTOR STRUCTURES DESIGN

FINAL PLANS

LAKESIDE JCT. WA TO SANDPOINT JCT. ID

BRIDGE NUMBER 62.9A & B

OVER PINES ROAD

BENT ENCASEMENT DETAILS - BENTS 2 THRU 4 (DOUBLE)

PLAN NO: 0045-0062.900-028 SHEET: 28 OF 29

File Location: $FILE1$

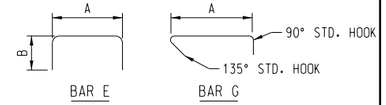
Date Printed: 1/27/2025 Time Printed: 2:13:37 PM

REINFORCING STEEL REQUIRED FOR SINGLE BENT ENCASEMENT (EACH)

QTY.	MARK	SIZE	TYPE	A	B	LENGTH
22	5E2	5	E	2′-1″	7′-9″	17′-7″
40	5G2	5	G	2′-1″	-	3′-1″
34	509-5	5	STR.	-	-	9′-5″

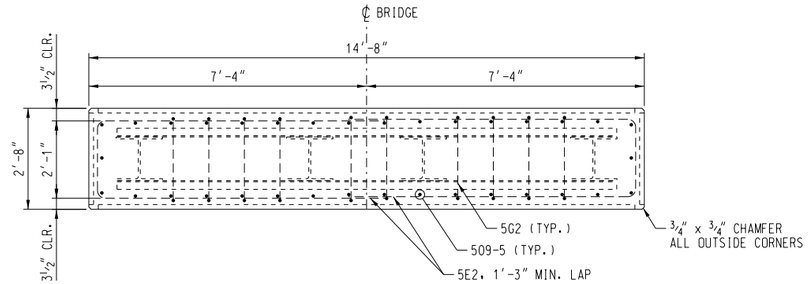
BENDING DETAILS

ALL DIMENSIONS ARE OUT TO OUT

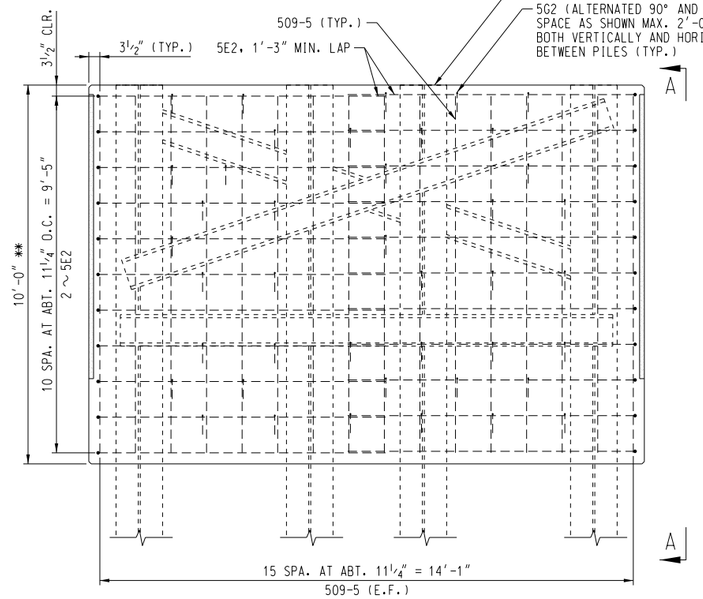


NOTE

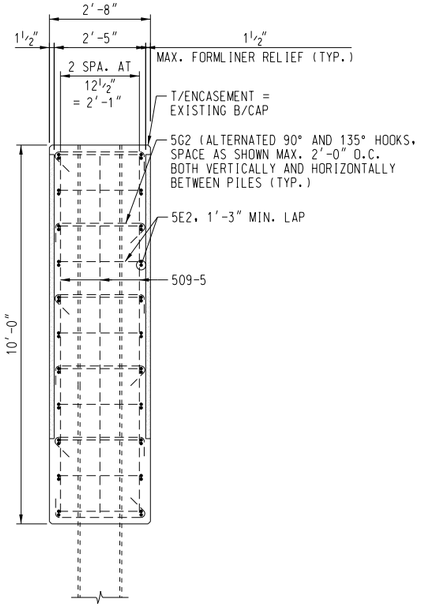
SEE SHEET 28 FOR C.I.P. CONCRETE NOTES.



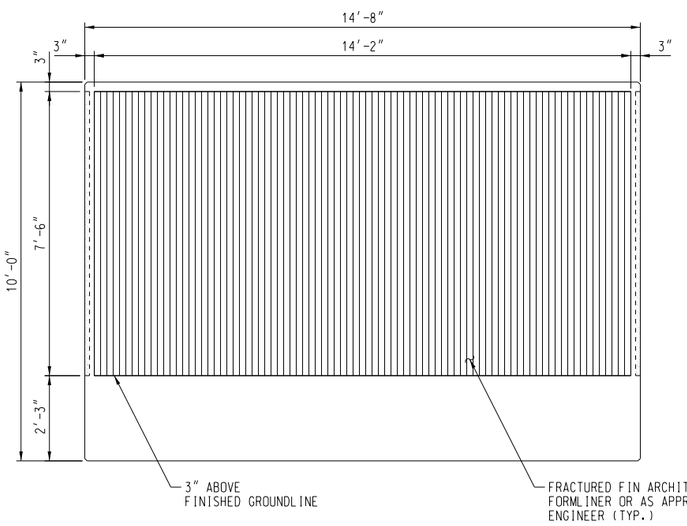
PLAN



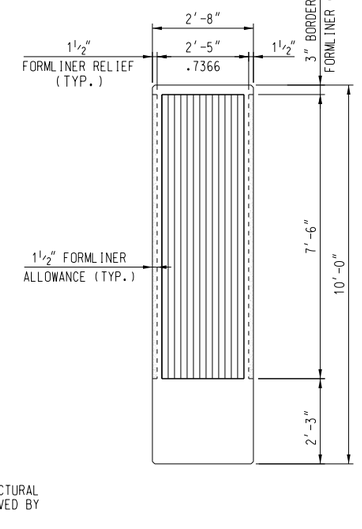
ELEVATION



VIEW A-A



ELEVATION



END VIEW

LIMITS OF ARCHITECTURAL FORMLINER

EXISTING CAP NOT SHOWN FOR CLARITY.

VOLUME = 14.5 CU. YDS. (EACH), REINFORCING STEEL = 870 LBS. (EACH)
EXISTING CAP NOT SHOWN FOR CLARITY.
** NOTE: CONTRACTOR SHALL FIELD VERIFY DIMENSIONS AND ADJUST FOR ACTUAL CONDITIONS.

PRIER GRACE STATE OF WASHINGTON 44824 REGISTERED PROFESSIONAL ENGINEER
EXPIRES 11/16/2026 (Professional Engineer)

HDR

CITY OF Spokane Valley

LAT: 47°41′21″N LONG: 117°14′20″W	DES: CSS
DOT # XXXXXXX	DRAWN: AEP
CITY OF SPOKANE VALLEY, SPOKANE COUNTY, WA.	CHECK: PJG
STREET NAME: PINES ROAD	DATE: JAN. 2025
STATE CONTRACT NO.: XX-XXXX	PLAN: XXX
FED. AID. PROJECT NO.: XXXXX-XXXXX(XXX)	LINE SEG: 0045

BNSF RAILWAY
BRIDGE ENGINEERING KANSAS CITY, KS
APPROVED: Madlyn Guarino
ASST. DIRECTOR STRUCTURES DESIGN

FINAL PLANS

LAKESIDE JCT. WA TO SANDPOINT JCT. ID
BRIDGE NUMBER 62.9A & B
OVER PINES ROAD
BENT ENCASEMENT DETAILS - BENT 5 (SINGLE)

PLAN NO: 0045-0062.900-029 SHEET: 29 OF 29

File Location: $FILE$

Date Printed: 1/27/2025 Time Printed: 2:10:31 PM

APPENDIX I
BNSF CONSTRUCTION SPECIFICATIONS

Revision Date: 2023-08-01	Effective Date: 2023-08-01
Version: 1.0	Document Owner: Engineering Services & Structures

SECTION 04400
CONCRETE CONSTRUCTION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Concrete Construction

1.2 DESCRIPTION

A. These specifications cover the construction of concrete structures and the concrete portion of other structures.

B. All concrete construction shall be in accordance with the design requirements and details shown on the plans or as directed by the Engineer.

1.3 SUBMITTALS

A. Submit design mix to the Engineer for each concrete design mix to be used.

B. Provide material certifications for aggregate, admixtures, curing compounds and reinforcing steel.

PART 2 MATERIALS

2.1 CEMENT

A. Portland cement and air-entraining Portland cement shall conform to the requirements of ASTM C150. One or more of the following types shall be used as specified on the plans, in the special provisions or by the Engineer:

1. Type I and Type IA: For general use where alkali water or soil is not prevalent and for small masses of concrete.
2. Type II and Type IIA: For use when moderate sulfate resistance or when moderate heat of hydration is desired. In Nebraska, Kansas and Iowa, and other locations where the presence of alkali reactive aggregate is a possibility, low alkali Type II or Type IIA shall be used with the alkali equivalent of the cement not exceeding 0.6% as measured by the percentage of Sodium Oxide (NA20) plus 0.658 times the percentage of Potassium Oxide (K20) unless both coarse and fine aggregates are determined to be innocuous when tested in accordance with ASTM C289. The percentage of Sodium Oxide and Potassium Oxide shall be determined in accordance with ASTM C114.
3. Type III and Type IIIA: For use where high early strength is required.
4. Type IV: For use when low heat of hydration is desired.
5. Type V: For use when high sulfate resistance is desired.

B. Unless otherwise specified on the plans or in the special provisions or approved in writing by the Engineer, Type II or Type IIA cement shall be used.

2.2 CONCRETE ADMIXTURES

A. Air-entraining agent conforming to the requirements of ASTM C260 shall be added to normal Portland cement at the mixer for all concrete unless otherwise directed. The air-entraining agent

used shall be a type which will control the entrainment of air within the limits specified and shall be compatible with the cement used.

B. Admixtures, except air-entraining agents, to be used to alter the normal properties of concrete; either for densifying, cement dispersion, retarding, accelerating, plasticizing, or coloring; shall be used only upon the written permission of the Engineer. Acceptable evidence must be presented concerning the material proposed for use, showing that the material will perform in the manner claimed and that the strength, coloring appearance and durability of the concrete will not be adversely affected. Admixtures containing chloride ions shall not be used.

2.3 FINE AGGREGATE

A. Fine aggregate shall consist of natural sand or other approved inert materials with similar characteristics, or a combination thereof. Grains shall be free from adherent coatings. Lightweight fine aggregate shall not be used. Except as noted in Paragraphs B and C, fine aggregates shall be graded within the limits specified below:

Sieve Size	Percentage Passing
3/8”	100
#4	95-100
#8	80-100
#16	50-85
#30	25-60
#50	10-30
#100	2-10

B. The minimum percentages shown above for material passing the No. 50 and No. 100 sieves may be reduced to 5 and 0, respectively, if the aggregate is to be used in air-entrained concrete containing more than 420 lbs. of cement per cubic yard, or in non-air-entrained concrete containing more than 520 lbs. of cement per cubic yard, or if an approved mineral admixture is used to supply the deficiency in percentages passing these sieves. Air-entrained concrete is here considered to be concrete containing air-entraining cement or an air-entraining agent and having an air content of more than 3 percent.

C. The fine aggregate shall have not more than 45 percent retained between any two consecutive sieves of those shown in Paragraph A and its fineness modulus shall be not less than 2.3 nor more than 3.1.

D. For continuing shipments of fine aggregate from a given source, the fineness modulus shall not vary more than 0.20 from the base fineness modulus. Fine aggregate with a fineness modulus exceeding this limit shall be rejected or, at the option of the Engineer, may be accepted provided suitable adjustments are made in concrete proportions to compensate for the difference in grading.

E. The fineness modulus of an aggregate is the sum of the percentages of a sample retained on each of a specified series of sieves divided by 100, using the following standard sieve sizes No. 100, No. 50, No. 30, No. 16, No. 8, No. 4, 3/8 in., 3/4 in., 1-1/2 in. and larger increasing in the ratio of 2 to 1.

F. The amount of deleterious substances in fine aggregate shall not exceed the limits specified below:

Item	Maximum Percent by Weight
Clay lumps	0.25
Soft particles	5.0
Chert that will readily disintegrate (soundness test, five cycles)	1.0
Material finer than #200 sieve	1.0[1]
Coal and lignite	1.0[2]

G. Fine aggregate shall be free of injurious amounts of organic impurities. Except as herein provided, aggregates subjected to the test for organic impurities in accordance with ASTM C40 and producing a color darker than the standard shall be rejected.

1. A fine aggregate failing in the test may be used, provided that the discoloration is due principally to the presence of small quantities of coal, lignite, or similar discrete particles.
2. A fine aggregate failing in the test may be used provided that, when tested for the effect of organic impurities on strength of mortar, the relative strength at seven and 28 days calculated in accordance with ASTM C87, are not less than 95%.

H. Fine aggregate for use in concrete that will be subject to wetting, extended exposure to humid atmosphere, or contact with moist ground shall not contain any materials that are deleteriously reactive with the alkalies in the cement in an amount sufficient to cause excessive expansion of mortar or concrete, except that if such materials are present in injurious amounts, the fine aggregate may be used with the low alkali Type II and Type IA cement as described in Paragraph 2.1A.2.

I. Fine aggregate shall be of such quality that when made into a mortar and subjected to the mortar strength test prescribed in ASTM C87, the mortar shall develop a compressive strength not less than that developed by a mortar prepared in the same manner with the same cement and graded standard sand having a fineness modulus of 2.40 □ 0.10. The graded sand shall conform to the requirements of ASTM C778.

J. Fine aggregate subjected to five cycles of the soundness test in accordance with ASTM C88 shall have a weighted average loss not greater than 10% when sodium sulfate is used or 15% when magnesium sulfate is used.

K. Sampling and testing shall be in accordance with ASTM C33 and the following standard methods of the American Society for Testing and Materials:

Surface Moisture in Fine Aggregate	C70
Specific Gravity and Absorption of Fine Aggregate	C128
Petrographic Examination of Aggregates	C295
Standard Sand	C778
Potential Alkali Reactivity of Aggregates	C1260

[1] In the case of crushed aggregates, if the material finer than the No. 200 sieve consists of the dust of fracture, essentially free from clay or shale, this percentage may be increased to 1.5.
[2] This requirement does not apply to blast furnace slag coarse aggregate.

2.4 COARSE AGGREGATE

A. Normal weight coarse aggregate shall consist of crushed stone, crushed gravel, crushed slag or other approved inert materials with similar characteristics, or a combination thereof, having hard, strong durable pieces free from adherent coatings. Lightweight coarse aggregate shall not be used.

B. Crushed slag shall be rough cubical fragments of air-cooled iron-blast-furnace slag, which when conforming to the grading to be used in the concrete, shall have a compact weight of not less than 70 lbs. per cu. ft. It shall be obtained only from sources approved by the Engineer.

C. Coarse aggregate shall be graded within the limits specified below for the designated sizes.

		Total Passing – Percent by Weight												
Size #	Nominal Size	4"	3 ½"	3"	2 ½"	2"	1 ½"	1"	¾"	½"	3/8"	#4	#8	#16
1	3 ½" – 1 ½"	100	90-100		25-60		0-15		0-5					
2	2 ½" – 1 ½"			100	90-100	35-70	0-15		0-5					
3	2" – 1"				100	90-100	35-70	0-15		0-5				
357	2" - #4				100	95-100		35-70		10-30				
4	1 ½" – ¾"					100	90-100	20-55	0-15		0-5			
467	1 ½" - #4					100	95-100		25-60		0-10	0-5		
56	1 3/8"						100	90-100		20-55	0-10	0-5		
57	1" - #4						100	95-100		25-60		0-10	0-5	
67	¾" - #4							100	90-100		20-55	0-10	0-5	
7	½" - #4								100	90-100	40-70	0-15	0-5	
8	3/8" - #8									100	85-100	10-30	0-10	0-5

D. The maximum size of aggregate shall not be larger than 1/5 of the narrowest dimension between forms of the member for which the concrete is used, nor larger than 1/2 of the minimum clear space between reinforcing bars.

E. The amount of deleterious substances in coarse aggregate shall not exceed the limits specified in 2.3F.

F. Coarse aggregate for use in concrete that will be subject to wetting, extended exposure to humid atmosphere, or contact with moist ground shall not contain any materials that are deleteriously reactive with the alkalis in the cement in an amount sufficient to cause excessive expansion of mortar or concrete, except that if such materials are present in injurious amounts, the coarse aggregate may be used with low alkali Type II or Type IA cement as described in Paragraph 2.1A.2.

G. Coarse aggregate subjected to five cycles of the soundness test in accordance with ASTM Designation: C 88 shall have a weighted average loss not greater than 12% when sodium sulfate is used or 18% when magnesium sulfate is used.

H. Coarse aggregate when subjected to the abrasion resistance test in accordance with ASTM C131 or ASTM C535 shall show a loss of weight not more than the following:

1. For concrete subject to severe abrasion such as concrete in water, precast concrete piles, paving for sidewalks, platforms for roadways, floor wearing surfaces, and concrete cross or bridge ties, the loss of weight shall not exceed 40 percent.
2. For concrete subject to medium abrasion such as concrete exposed to the weather, the loss of weight shall not exceed 50 percent.
3. For concrete not subject to abrasion, the loss in weight shall not exceed 60 percent.

I. Sampling and testing shall be in accordance with ASTM C33 and the following standard methods of the American Society for Testing and Materials:

Specific Gravity and Absorption of Coarse Aggregate	C127
Petrographic Examination of Aggregates	C295
Potential Alkali Reactivity of Aggregates	C1260

2.5 WATER

A. Water used in mixing and curing concrete including free water on aggregates, shall be potable and free from any pronounced taste, odor, or color that would indicate the presence of oils, acids, alkalis, salts, sugars, vegetable matter, or other substances that may be deleterious to concrete or reinforcement and shall not contain more than 1,000 parts per million of chlorides as Cl nor more than 1,000 parts per million of sulfates as SO4.

B. If there is any question regarding compliance with the requirements of Paragraph A, water shall be tested in accordance with ASTM D512 and ASTM D516.

2.6 REINFORCEMENT

A. All steel bars for reinforcement shall be deformed bars and shall conform to the requirements of ASTM A615, Grade 60 or ASTM A706 unless otherwise shown or specified. Reinforcing steel to be structurally welded as indicated on the plans shall comply with ASTM A706.

B. Spiral reinforcement shall be hot-rolled plain round rod or cold drawn wire. The plain round rod shall conform to the requirements of ASTM A615, Grade 60 and the wire shall conform to the requirements of ASTM A1064.

C. Fabricated deformed steel bar mats shall conform to the requirements of the ASTM A184, Grade 60.

D. Welded plain steel wire fabric shall conform to the requirements of ASTM A1064. Welded intersections shall not be spaced further apart than 12 inches in the direction of primary flexural reinforcement.

E. Welded deformed steel wire fabric shall conform to the requirements of ASTM A1064. Welded intersections shall not be spaced further apart than 16 inches in the direction of primary flexural reinforcement.

F. Reinforcement shall be fabricated in accordance with Chapter 7 of the C.R.S.I. Manual of Standard Practice. Standard bending tolerances are applicable unless otherwise specified on the plans. Reinforcement shall be bent cold to conform accurately to the dimensions and shapes shown on the approved working drawings. Bends shall be made accurately in a suitable bending machine. Unless otherwise specifically approved, bars shall be shop bent before shipment and shall not be bent in the field. Reinforcement shall not be straightened or re-bent in a manner that will injure the material.

2.7 MEMBRANE CURING COMPOUND

A. Liquid membrane-forming curing compounds shall conform to the requirements of ASTM C309. The compound may be clear (may contain a fugitive dye), white pigmented, or light gray as specified by the Engineer. Compounds for use in curing bridge decks to be waterproofed shall have a resin base and shall not contain oil, wax or pigment.

2.8 ASPHALT EXPANSION BOARD

A. Asphalt expansion board shall be suitable for concrete construction and shall be smooth, flat, and sufficiently rigid to permit installation.

2.9 WATERSTOPS

A. Except where otherwise indicated on the plans, waterstops may be manufactured from natural or synthetic rubber or from polyvinylchloride.

B. Field splices in rubber waterstop shall be either vulcanized or made with a rubber splicing union of the same stock as the waterstop. Field splices in polyvinylchloride waterstops shall be in accordance with the manufacturer's recommendations.

2.10 STORAGE OF MATERIALS

A. **Storage of Cement:** The Contractor shall provide suitable means for storing and protecting the cement against dampness. Cement, which for any reason, has hardened or become partially set or which contains lumps of caked cement will be rejected and not used in the work. Different brands or different types of cement from the same mill, or the same brand or type from different mills shall be separated and kept in such manner as to permit easy access for proper inspection and identification of each shipment. Cement shall be used in the same order as it is received.

B. Storage of Aggregates:

1. Fine and coarse aggregates shall be stored separately and in such a manner as to avoid the inclusion of dirt and other foreign material in the concrete. Aggregates shall be unloaded and piled in such manner as to maintain the uniform grading of the sizes. Stockpiles of coarse aggregates shall be built in horizontal layers by leveling end dump piles to avoid segregation.
2. A hard base shall be provided to prevent contamination from underlying material, and overlap of the different sizes shall be prevented by suitable walls or ample spacing between piles. Stockpiles shall not be contaminated by swinging aggregate filled buckets or clams over the various stockpiled aggregate sizes. Crushed slag shall be wetted down when necessary to insure not less than 3 percent moisture content.

C. **Storage of Reinforcement:** Reinforcement shall be stored upon platforms, skids or other supports in such a manner as to avoid contact with the ground. If reinforcement is to remain in storage on the site for more than one month it shall be covered to protect it from weather. If reinforcement accumulates heavy rust, dirt, mud, loose scale, paint, oil, or any other foreign substance during storage, it shall be cleaned before being used. Severe deterioration of this kind may be a basis for rejection.

2.11 FALSEWORK

A. The Contractor shall submit detailed plans, stamped by a licensed professional structural engineer in the state where the work is to be done, for falsework for examination by the Engineer. If such plans are not satisfactory to the Engineer, the Contractor shall make such changes in them as may be required, but it is understood that the Engineer's concurrence in the use of the plans as submitted or corrected shall in no way relieve the Contractor of responsibility for obtaining satisfactory results.

B. In the case of very long spans where no intermediate supports are possible, the probable deflection in the forms due to the weight of the fresh concrete shall be taken into account so that the finished members shall conform accurately to the desired line and grade. If adequate foundation for shores cannot be secured, trussed supports shall be provided.

C. For calculating the strength of falsework, a weight of 150 lbs. per cu. ft. shall be assumed for the concrete. The design of the falsework shall take into account the weight of the concrete and also

other loads incidental to the construction operations. All falsework shall be designed and constructed to provide the necessary rigidity and to support the imposed loads without appreciable settlement or deformation. The Contractor shall make allowance for the deflection of forms and for shrinkage and settlement of falsework, in addition to the allowance for the amount of dead load deflection and camber shown on the plans. A method satisfactory to the Engineer shall be used to detect any settlement that may occur during the placing of the concrete.

D. Falsework bents shall generally be founded upon piles driven to a capacity sufficient to support the load without appreciable settlement. If the soil is firm and well compacted, the Contractor may, as an alternate, place falsework bents upon concrete footing or mud sills of sufficient size that the pressure on the soil will not exceed the allowable bearing value determined by the Contractor and approved by the Engineer. When requested by the Engineer, the Contractor shall demonstrate by suitable load tests that the soil bearing values assumed for the design of the falsework do not exceed the supporting capacity of the soil. Or the Contractor may support falsework from the piers or abutments, provided sleeves for any tie bolts can be cast into the concrete and the method proposed meets the approval of the Engineer. Sleeves or other appurtenances cast into the concrete shall be constructed so as to permit their removal to a depth of at least 1-1/2 inches from the face without injury to the concrete. Drilling into existing piers or abutments that are to remain as a part of the final structure will not be permitted for the support of falsework. The Engineer may require the Contractor to use screw jacks or hardwood wedges to take up any settlement in the formwork, either before or during the placing of the concrete.

2.12 FORMS

A. Forms shall conform to the shape, lines, grade and dimensions of the concrete as called for on the plans. The shape, strength, rigidity, cleanness, mortar tightness, and surface smoothness of reused forms shall be maintained at all times. Forms which in the opinion of the Engineer, are unsatisfactory in any respect shall not be reused.

B. Lumber may be used to form unexposed surfaces if approved by the Engineer.

C. Plywood or metal forms shall be used to form exposed surfaces.

D. Forms shall be smooth and mortar tight. The forms shall be so constructed as to be removable in sections without marring or damaging the surface of the concrete.

E. Metal forms shall be of such thickness that they remain true to shape. All fasteners in contact with concrete shall be countersunk.

F. Joints in forms shall be horizontal or vertical and forms shall be sufficiently tight to prevent leakage of mortar. They shall be properly braced or tied together so as to maintain the desired position and shape during and after placing concrete.

G. Suitable moldings or bevels shall be placed in the angles of forms to round or bevel the edges of the concrete, including both sides of expansion board, unless otherwise directed by the Engineer. Bevel only exposed concrete.

H. The inside of forms shall be coated with form oil or other approved bond breaking material or thoroughly wetted, except in freezing weather, immediately before the concrete is placed. Where oil is used, it shall be applied to the forms before they are placed.

I. Forms used in casting concrete bridge floors shall be removed.

J. Permanent metal concrete deck forms may be used only when specified on the plans or in the special provisions or approved in writing by the Engineer. Metal forms shall be at least 18 gage in thickness, perforated to provide exposure of not less than 10 percent of the undersurface of the concrete for evaporation and drainage, galvanized and designed to withstand loads imposed during placement concrete.

K. Temporary openings shall be provided at the base of column and wall forms, and at other points where necessary, to facilitate cleaning and inspection immediately before depositing concrete.

Forms for walls or other thin sections of considerable height shall be provided with openings or other devices which will permit the concrete to be placed in a manner to avoid accumulation of hardened concrete on the forms or reinforcement.

L. Tie rods, bolts and anchorages, within the forms shall be constructed so as to permit their removal to a depth of at least 1-1/2 inches from the face without injury to the concrete. Wire ties, when permitted by the Engineer, shall be cut back at least 1/2 inch from the face of the concrete upon removal of the forms. All fittings for metal ties shall be of such design that, upon their removal, the cavities which are left will be of the smallest practicable size. All cavities which are left shall be filled with dry pack during finishing similar to the method described in Part 3, 3.6, A, 4.

M. When forms appear to be unsatisfactory in any way, either before or during the placing of concrete, the Engineer shall order the work stopped until the defects have been corrected. If forms develop any defects, such as bulging or sagging, after the concrete has been deposited, that portion of the work shall be removed and reconstructed as directed by the Engineer without additional compensation to the Contractor.

2.13 PROPORTIONING CONCRETE

A. General:

1. Concrete for all purposes shall be composed of cement, aggregates, and water of the qualities herein specified and in the required proportions, these ingredients to be well mixed and brought to a proper consistency. The proportions in which these materials are to be used for different parts of the work shall be as required to produce the specified properties and approved by the Engineer from time to time during the progress of the work, and as analyses and tests are made of samples of the aggregate and the resulting concrete. In general, the proportions shall be designed to produce a concrete of maximum practicable economy.
2. All concrete shall be air-entrained, unless otherwise directed by the Engineer. The entrained air may be produced through the use of air-entraining cement, by the addition of an air-entraining admixture at the concrete mixer, or through a combination of both. The method used shall have the approval of the Engineer.
3. The minimum 28 day compressive strength of 6 inch by 12 inch cylinders made and cured in compliance with ASTM C31 and tested in accordance with ASTM C39 shall be as follows for the various classes of concrete:

Class	Minimum 28 Day Strength
20	2,000 psi
25	2,500 psi
20	3,000 psi
35	3,500 psi
40	4,000 psi
50	As specified on the plans or in the special provisions

B. Measurement of Materials:

1. The unit of measure for cement shall be the pound.
2. Material shall be measured by weighing. The apparatus provided for weighing the aggregates and cement shall be suitably designed and constructed for this purpose. The accuracy of all weighing devices shall be such that successive quantities can be measured to within one percent of the desired amount. The mixing water shall be measured by volume or by weight.

The water-measuring device shall be susceptible to control accuracy to plus or minus one-half percent.

3. The accuracy of the material weighing and water measuring devices shall be subject to check at all times. The Contractor shall provide suitable weights approved by the Engineer for this purpose and shall assist the Engineer in making all tests.

C. **Minimum Cement Content:** Unless otherwise authorized in writing by the Engineer, the cement content of concrete shall be not less than that shown below and specified in Paragraph 3.3I.3.

Class of Concrete	Minimum Cement Content (lbs/cy of concrete)
20	420
25	470
30	515
35	560
40 & 50	610

D. Water-Cement Ratio:

1. The proportioning of materials for the class of concrete specified or shown on the plans shall be based on the requirements for a plastic and workable mix. The water-cement material ratio by weight of the mix shall not exceed that specified below:

Class of Concrete	In Air	In Fresh Water	In salt water or when sulfate concentration in soil or ground water exceeds 0.2%.
20	0.69	0.65	0.65
25	0.60	0.56	0.56
30	0.53	0.48	0.48
35	0.49	0.45	0.45
40	0.44	0.40	0.40
50	To be determined by test		

2. In salt water or when sulfate concentration in soil or ground water exceeds 0.2%, Type II, IIA or V cement must be used.
3. The required concrete compressive strength shall be as shown on the plans or specified by the Engineer.
4. Concrete compressive strengths at 28 days shown in Table 5 and 6 shall be attained in 7 days when Type III cement is used.
5. Free water content of the aggregates shall be included in the total water in determining the water-cement ratio.
6. Moisture in the aggregate shall be measured by methods satisfactory to the Engineer, which will give results within one pound for each 100 lbs. of aggregate.

E. Air Content of Air-Entrained Concrete:

1. The volume of entrained air in concrete shall be within the limits shown below:

Maximum Size Coarse Aggregate	Air Content (% by volume)
1 ½", 2" or 2 ½"	4 – 6
¾" or 1"	5 – 7
3/8" or ½"	6 – 8

2. The air content shall be determined by one of the following ASTM methods:

The gravimetric method	C138
The volumetric method	C173
The pressure method	C231

F. Workability:

1. The mixture shall be such as to produce concrete that can be worked readily into the corners and angles of the forms and around the reinforcement without excessive vibration, or without permitting the materials to segregate or free water to collect on the surface. The workability may be controlled by adding or deducting fine or coarse aggregate or both, but in no case shall the amount of coarse aggregate be such as to produce harshness in placing or honeycombing in the structure.
2. Admixtures shall not be used for the purpose of promoting workability, unless specifically authorized by the Engineer.

G. **Slump:** Desired and maximum slump as determined by ASTM C143 shall be as listed below or as specified by the Engineer:

Type of Structure	Desired	Maximum
Massive Structures	1 ½"	2 ½"
Floors laid on ground and bridge decks	1 ½"	3"
Plain footings, caissons and substructure walls	1 ½"	3"
Heavy Reinforced walls, slabs and beams	3 ½"	4 ½"
Ordinary reinforced slabs, beams, columns and walls	3"	4"
Thin reinforced sections	3 ½"	4 ½"
Concrete placed under water	See 3.3I	

H. Testing Concrete:

1. The Contractor shall assist the Engineer in making all tests.
2. Unless otherwise specified by the Engineer, four 6 inch diameter by 12 inch test cylinders shall be made for each 250 cubic yards of concrete deposited, and on no job shall less than four cylinders be made, nor less than four per day, for each design of mix being placed. Test cylinders shall be made and cured in accordance with ASTM C31.
3. These cylinders shall be tested in accordance with ASTM C39.

4. The air content of freshly mixed air-entrained concrete shall be checked at least twice daily for each class of concrete. Changes in air content above or below the amount specified shall be corrected by adjustments in the mix design or quantities of air-entraining material being used.

PART 3 EXECUTION

3.1 PLACING REINFORCEMENT

A. Reinforcement shall not be straightened or re-bent in a manner that will injure the material. Bars with kinks or bends not shown on the plans shall not be used. Heating of reinforcement will be permitted only when the entire operation is approved by the Engineer. Bars partially embedded in concrete shall not be field bent except as shown in the plans or specifically permitted.

B. All reinforcement shall be set in the positions shown in the plans and held securely in place. Placement tolerances of reinforcement shall be in accordance with Chapter 8 of the C.R.S.I. Manual of Standard Practice. Reinforcement bars shall not be placed by sticking or floating into place during or immediately after placement of the concrete.

C. No concrete shall be deposited until the Engineer has inspected the placing of the reinforcement and given permission to place concrete. All concrete placed in violation of this provision shall be rejected and removed.

D. Reinforcing bar supports, their selection and placement, unless otherwise provided, shall be in accordance with Chapter 3 of the C.R.S.I. Manual of Standard Practice. Wire bar supports shall be Class 1, plastic protected bar supports. Bars in the bottom of footings and slabs shall be supported on precast concrete blocks with adequate bearing area using doweled blocks where required. Precast concrete blocks shall have a compressive strength equal to or greater than the specified compressive strength of the concrete being placed. Pebbles, stones, building bricks, and wood blocks shall not be used for bar supports.

3.2 MIXING CONCRETE

A. General:

1. The concrete shall be mixed only in the quantity required for immediate use. Concrete that has developed an initial set shall not be used.
2. The first batch of concrete materials placed in the mixer shall contain a sufficient excess of cement, sand, and water to coat the inside of the drum without reducing the required mortar content of the mix. Upon the cessation of mixing for a considerable period, the mixer shall be thoroughly cleaned.
3. Concrete may be mixed at the site of construction, at a central point, or wholly or in part in truck mixers.
4. Retempering concrete by adding water or by other means shall not be permitted. Concrete that is not within the specified slump limits at time of placement shall not be used.
5. The production of concrete shall meet the applicable requirements of ASTM C94.

B. Machine Mixing:

1. Unless otherwise authorized by the Engineer, the mixing of concrete shall be done in a batch mixer of approved type which will insure a uniform distribution of the material throughout the mass. The equipment at the mixing plant shall be so constructed that all materials (including the water) entering the drum can be accurately measured in accordance with Paragraph 2.13B. The water measuring device shall be controlled from a case which can be kept locked. The mixer shall be equipped with an attachment for automatically locking the discharge lever until the batch has been mixed the required time. After all materials are in the mixer the entire

contents of the drum shall be discharged before recharging. The volume of the mixer materials per batch shall not exceed the manufacturer's rated capacity of the mixer.

2. At a stationary plant, mixing of each batch shall continue not less than the periods shown below during which time the drum shall rotate at a peripheral speed of about 200 feet per minute. The mixing periods shall be measured from the time when the materials (including the water) are in the drum.
   (a) For mixers of a capacity of 1 cubic yard or less - 1-1/2 minutes.
   (b) For mixers of capacities greater than 1 cubic yard - the time of mixing shall be increased 25 seconds for each cubic yard capacity or fraction thereof above 1 cubic yard.
3. Pick-up and throw-over blades in the drum of the mixer which are worn down 3/4 inch or more in depth shall be replaced with new blades when directed by the Engineer.

C. Truck Mixing:
1. Truck mixers shall be an approved design revolving drum type in good condition and shall be capable of thoroughly mixing the concrete materials and of discharging the materials without segregation. All solid materials for the concrete shall be accurately measured according to 2.13B and charged into the drum at the proportioning place. The truck mixer shall leave the batch plant with a full tank of water and shall have a device giving positive control of the amount of water added. No water shall be added until the mixer is at the job site unless authorized by the Engineer. If the water is added and the batch mixed in transit, the truck mixer shall have an approved revolution counter to provide a means of verifying the amount of mixing obtained. The size of the batch shall not exceed the rated capacity of the mixer.
2. When the concrete is mixed in a truck mixer loaded to its maximum capacity, the number of revolutions of the drum at mixing speed shall not be less than 70 nor more than 100. If the batch is at least one-half cubic yard less than maximum capacity, the number of revolutions at mixing speed may be reduced to not less than 50. All revolutions after 100 shall be at agitating speed.
3. Mixing shall begin within 15 minutes after the cement has been added to either the water or the aggregate and shall be completed and the concrete deposited within 1-1/2 hours after the cement has been so added. In hot weather a lesser time, in accordance with Paragraph 3.3H.5, may be specified by the Engineer.
4. Pick-up and throw-over blades in the drum of the mixer which are worn down 3/4 inch or more in depth shall be replaced with new blades when directed by the Engineer.

D. Truck Agitator:
1. Truck agitators shall be of an approved design revolving drum type or an approved design stationary trough type with blades revolving about an axis parallel to the axis of the trough. The truck agitator, when fully loaded, shall be capable of maintaining the mixed concrete in a thoroughly mixed and uniform mass, and of discharging the concrete without segregation.
2. Time allowed for depositing concrete shall be limited according to Paragraph C.3.

E. **Time of Hauling Mixed Concrete:** Concrete transported in hoppers or other non-agitating types of containers shall be discharged at the job within 20 minutes, or as specified in Paragraph 3.3H.5, after the cement has been combined with the water. Such handling is to be used only in specific instances and will require special approval of the Engineer.

3.3 PLACING CONCRETE

A. General: Before beginning placement of concrete, hardened concrete and foreign materials shall be removed from the inner surfaces of the mixing and conveying equipment. Before depositing any concrete, all debris shall be removed from the space to be occupied by the concrete. Forms, if constructed of wood, shall be thoroughly wetted (except in freezing weather) or oiled. Reinforcement shall be free from mud, oil or other nonmetallic coatings that decrease bond and

secured in position and approved by the Engineer. Where concrete is to be placed on a rock foundation, all loose rock, clay, mud, etc., shall be removed from the surface of the rock. Water shall be removed from the space to be occupied by the concrete before concrete is deposited, unless otherwise directed by the Engineer. Any flow of water into an excavation shall be diverted through proper side drains to a sump or be removed by other approved methods which will avoid washing the freshly deposited concrete. If directed by the Engineer, water vent pipes and drains shall be filled by grouting or other means after the concrete has thoroughly hardened.

B. Handling and Placing Concrete:

1. Concrete shall be handled from the mixer, or in the case of ready mixed concrete from the transporting vehicle to the place of final deposit as rapidly as practicable by methods which will prevent the separation or loss of the ingredients. It shall be deposited in the forms, starting at the low end for structures on a grade, as nearly as practicable in its final position to avoid rehandling and shall not have a free fall of more than 4 feet except in drilled shaft foundations, unless otherwise permitted by the Engineer. It shall be so deposited as to maintain, until the completion of the unit, a plastic surface approximately horizontal. Forms for walls or other thin section of considerable height shall be provided with openings in a manner that will avoid accumulations of hardened concrete on the forms or metal reinforcement. Under no circumstances shall concrete that has been partially hardened be deposited in the work. In mass concrete, including bridge substructures, concrete shall be placed in horizontal layers, the thickness of which generally should not exceed 12 inches. When it is necessary by reason of an emergency to place less than a complete horizontal layer in one operation, such layer shall terminate at a vertical bulkhead.
2. Water gain is characterized by an accumulation of water at the surface. Whenever water gain appears in the concrete placed, the succeeding batches must be placed sufficiently dry to correct the over-wet condition by the reduction of the water cement ratio without changing the proportions of the other ingredients.
3. In order to allow for shrinkage or settlement, at least 2 hours shall elapse after placing concrete in walls or columns before depositing concrete in beams or slabs supported thereon, unless otherwise specified or shown on the plans. If the columns are structural steel encased in concrete, the lapse of time to allow for shrinkage or settlement need not be observed.
4. Concrete in beams and slabs shall be placed in one continuous operation for each span, unless otherwise provided. Concrete shall be deposited uniformly for the full length of the span and brought up evenly in horizontal layers.
5. No concrete shall be placed in the superstructure until the pier forms have been stripped sufficiently to determine the character of the concrete in the piers, and the load of the superstructure shall not be allowed to come upon abutments, piers and column bents until they have been in place at least 7 days and the cylinder break results of the 7-day break have been received and approved, unless otherwise permitted by the Engineer.
6. The top flange of girders shall be cleaned of all grease, oil and dirt before deck concrete is placed.
7. Pneumatic placing of concrete shall not be permitted without the specific approval of the Engineer.

C. **Chuting:** When concrete is conveyed by chuting, the plant shall be of such size and design as to insure a practically continuous flow in the chute. The chute shall be of metal or metal lined. The angle of the chute with the horizontal and the shape of the chute shall be such as to allow the concrete to flow without separation of the ingredients. The delivery end of the chute shall be as close as possible to the point of deposit. When the operation is intermittent, the chute shall discharge into a hopper. The chute shall be kept clean and free from coatings of hardened concrete by thoroughly flushing with water before and after each run; the water used for this purpose shall

be discharged outside the forms. The chute must be properly baffled or hooded at the discharging end to prevent separation of the aggregates.

D. Pumping Concrete:

1. The pump and all appurtenances shall be so designed and arranged that the specified concrete can be transported and placed in the forms without segregation. The pump shall be capable of developing a working pressure of at least 300 psi, and the pipeline and fittings shall be designed to withstand twice the working pressure. Aluminum pipe shall not be used, and aluminum shall not be used for any part of the system that will come into contact with fresh concrete.
2. Where it is necessary to lay the pipe on a down grade, a reducer shall be placed at the discharge end of the pipe to provide a choke and thus produce a continuous flow of concrete. When the type of pump is such that it discharges the concrete in small batches, or "belching," a baffle box shall be provided into which the concrete shall be discharged. This box should preferably be of metal, about 2 foot square, with open sides so as to permit the concrete to flow into the forms at right angles to line of discharge.
3. The pipe shall be not less than 6 inches nor more than 8 inches outside diameter, and the line shall be laid with as few bends as possible. When changes in direction are necessary, they shall be made with bends of 45 degrees or less. The maximum distance of delivery of concrete by pumping shall be 1,000 feet, horizontally and 100 feet, vertically, unless otherwise specifically permitted by the Engineer.
4. When pumping is completed, if the concrete remaining in the pipeline is to be used, it shall be ejected in such a manner that there will be no contamination of the concrete or separation of the ingredients. If water is used, it must be discharged outside of the forms.
5. On important work, duplicate pumping equipment and additional pipe shall be provided to prevent delay due to breakdown of equipment.

E. Compacting:

1. All concrete, except concrete placed under water and concrete otherwise exempt, shall be consolidated by mechanical vibration immediately after placement.
2. The vibration shall be internal except that external form vibrators may be used for thin sections when the forms have been designed for external vibration.
3. Vibrators shall be of approved type and design and of a size appropriate for the work. They shall be capable of transmitting vibration to the concrete at frequencies of not less than 4,500 impulses per minute.
4. The Contractor shall provide a sufficient number of vibrators to properly compact each batch immediately after it is placed in the forms. The Contractor shall also have at least one spare vibrator immediately available in case of breakdown. The number and type of vibrators shall be subject to approval of the Engineer.
5. Vibrators shall be manipulated so as to thoroughly work the concrete around the reinforcement and embedded fixtures and into the corners and angles of the forms. Vibration shall be applied at the point of deposit and in the area of freshly deposited concrete. The vibrators shall be inserted and withdrawn out of the concrete slowly in a vertical position. The entire depth of each lift shall be vibrated, allowing the vibrator to penetrate approximately 4 inches into the preceding lift. It shall be withdrawn completely from the concrete before being advanced to the next point of application. The vibration shall be of sufficient duration and intensity to thoroughly consolidate the concrete but shall not be continued so as to cause segregation, honeycombing, or accumulations of water or laitance at the surface. Vibration shall not be continued at any one point to the extent that localized areas of grout are formed. Application of vibrators shall be at points uniformly spaced and not farther apart than 1.5 times the radius over which the vibration is visibly effective.

6. Vibration shall not be applied directly to, or through the reinforcement to sections or layers of concrete which have hardened to the degree that the concrete ceases to be plastic under vibration. Vibrators shall not be used to push or transport concrete in the forms laterally.
7. Vibration shall be supplemented by such spading as is necessary to ensure smooth surfaces and dense concrete along form surfaces and in corners and locations impossible to reach with the vibrators.
8. When approved by the Engineer, concrete for small noncritical elements may be consolidated by the use of suitable rods and spades.

F. Continuous Deposition: Concrete shall be deposited continuously and as rapidly as safe practice permits until the unit of operation, approved by the Engineer, is completed. Construction joints in addition to those provided on the plans will not be allowed unless authorized by the Engineer, and if so authorized, they shall be made as directed by the Engineer.

G. Placing Concrete in Cold Weather:

1. General: When the atmospheric temperature is 40 degree F or lower, or is forecast to drop below that temperature within 24 hours of the time concrete is to be placed, special methods shall be used in producing, placing, protecting, and curing concrete. These special methods shall be followed during all such cold weather work and shall be specifically approved by the Engineer for each type of construction before concreting will be permitted to start. Notwithstanding such approval by the Engineer, the Contractor shall assume all risk connected with placing concrete under cold weather conditions and shall retain full responsibility for proper results. Should concrete placed under such conditions prove unsatisfactory, it will be rejected and shall be removed and replaced with satisfactory concrete. No allowance shall be made for removing and replacing the defective concrete. Rate of placing concrete in structures with an appreciable vertical dimension shall be controlled to prevent excessive pressure on lower portions of forms.
2. Production:
   (a) Adequate equipment for heating the concrete materials shall be provided. No ingredient that is frozen or contains ice shall be placed in the mixer.
   (b) Concrete ingredients shall be heated to produce concrete having temperature at time of delivery of not less than 60 degree F nor greater than 90 degree F. A temperature of 70 degree F is preferred.
   (c) Heating shall be accomplished by heating either the aggregates or the mixing water, or both. When the water temperature is above 165 degree F, the aggregate shall be premixed with the water for at least one minute before the cement is added. Cement shall not be mixed with water or aggregates having a temperature above 100 degree F.
3. Placing and Finishing: Concrete shall not come in contact with forms and equipment containing ice or snow. If required by the Engineer, the formed area shall be covered and an air temperature of 50 degree F maintained for 24 hours on all surfaces against which the concrete is to be placed. During placing and finishing, the temperature of concrete shall be maintained between 50 degree F and 70 degree F. Troweling shall be delayed in order to avoid bringing an excess of fines to this surface.
4. Protection:
   (a) When freezing temperatures are forecast, facilities meeting the approval of the Engineer shall be provided, prior to beginning concrete placement, capable of maintaining the ambient air temperature at the surface of the concrete or forms at not less than 50 degree F for 5 days or 70 degree F for three days. Protective measures shall be maintained for at least four days beyond the period specified above. During this period, the concrete temperatures shall not be allowed to drop below 40 degree F.

(b) Sudden cooling (in excess of 20 degree F temperature change in any 24 hour period) of ambient air temperature at the surface of the concrete of forms will not be permitted.

(c) Insulated forms may be used when approved by the Engineer. Conditions shall be such that the internal concrete temperature will not rise above 130 degree F and sudden cooling at the end of the protection period will not be allowed.

(d) During the entire protection period, adequate means shall be provided to prevent loss of moisture from the concrete surface.

(e) The temperature of concrete surfaces shall be determined by thermometers placed against the surfaces of the concrete. The number of thermometers required shall be determined by the Engineer and furnished by the Contractor. The thermometer should be able to record the high and low temperatures. The high and low records should be able to be cleared (for further monitoring) as the temperatures are recorded by the Engineer.

(f) Provision shall be made in form construction to permit the removal of small sections of forms to accommodate the placing of thermometers against concrete surfaces at locations designated by the Engineer.

(g) After thermometers are placed, the apertures in forms shall be covered in a way to closely simulate the protection afforded by the forms.

(h) In determining the temperatures at angles and corners of a structure, thermometers should be placed not more than 8 inches from the angles and corners.

(i) In determining temperatures of horizontal surfaces, thermometers shall rest upon the surface under the protection covering normal to section involved.

(j) When protection from cold is needed to insure meeting these specification requirements, all necessary materials for covering or housing must be delivered at the site of the work before concreting is started and must be effectively applied or installed, together with such added heat furnished as may be necessary without depending in any way upon the heat of hydration during the first 24 hours after concrete with Type I, IA, II or IA portland cement is placed, or the first 18 hours when Type III or IIIA is used.

(k) When heat is supplied by steam or salamanders, covering or housing of the structure shall be so placed as to permit free circulation of air above and around the concrete within the enclosure, but to the exclusion of air currents from without, excepting that where salamanders are used sufficient ventilation shall be provided to carry off gases. Special care shall be exercised to exclude cold drafts from angles and corners and from all projecting reinforcement.

(l) When salamanders are used, water vessels must be placed over them or other means provided to maintain a high humidity within enclosures, or all exposed surfaces of concrete kept continuously wet during the heating period.

H. Placing Concrete in Hot Weather:

1. In hot weather, suitable provisions shall be taken to reduce the temperature of the concrete coming from the mixer by cooling the mixing water or aggregates or both so that the temperature of the concrete when deposited shall not exceed 90 degree F. Temperatures above 80 degree F require approval of the Engineer.
2. Stockpiled aggregates shall be saturated, and the surface shall be kept moist by intermittent sprinkling or continuous fog spray.
3. Mixing water shall be kept cool by adequate protection of storage tanks and piping. Supply lines shall be shaded, insulated, or buried.
4. When necessary to produce and maintain concrete at an acceptable temperature, chopped or crushed ice shall be added directly into the mixer, up to the limit of 50% by weight of the total water required. Ice shall be added at a rate and in a manner that it will be completely melted

during the mixing period. Chilled mixing water will be acceptable in lieu of chopped or crushed ice.

5. The maximum time interval between the addition of cement to the mixing water or aggregates and the depositing of the concrete shall not exceed the following unless a longer interval is approved in writing by the Engineer:

Air or Concrete Temperature (°F – higher of either)	**Maximum Time**
Non Agitated Concrete	
>80°	15 minutes
80°>	20 minutes
Agitated Concrete	
>90°	30 minutes
89° > 80°	45 minutes
79° > 70°	60 minutes
69° > 40°	90 minutes

6. Wet curing shall be carried out in accordance with Paragraph 3.7B, and exposed unformed concrete shall be protected from wind and direct sun when so directed by the Engineer. Membrane curing, in accordance with Paragraph 3.7C, if approved by the Engineer, may be used after 24 hours of initial wet curing.

I. Depositing Concrete Under Water:

1. When it is necessary to deposit concrete under water, the methods, equipment, materials, and proportions of the mixture to be used shall be submitted to and shall be approved by the Engineer before the work is started.
2. Concrete shall not be placed in water having a temperature below 35 degree F. The temperature of the concrete, when deposited, shall not be less than 60 degree F nor more than 100 degree F.
3. The concrete shall contain not less than 660 lbs. of cement per cubic yard and an anti-washout admixture, Master Builders Rheamac UW450, or equal, in the quantity recommended by the manufacturer.
4. Aggregate for this work shall be of exceptionally good quality, strong and durable. The maximum size of aggregate preferably shall be 2 inches and shall not exceed 3 inches. The coarse aggregate shall be well graded in such proportions that the weight of the coarse aggregate shall be not less than 1.25 nor more than 2.0 times that of the fine aggregate.
5. Cofferdams or forms shall be sufficiently tight to reduce the flow or current of water to 10 feet per minute through the space into which concrete is to be deposited. Cofferdams or forms in still water shall be sufficiently tight to prevent loss of mortar through the walls. Pumping water will not be permitted while concrete is being placed, nor until 24 hours thereafter.
6. Concrete shall be deposited continuously until it is brought to the required height. While depositing, the top surface shall be kept as nearly level as possible and the formation of seams avoided.
7. The method to be used for depositing concrete under water shall be one of the following, preferably pumping:

(a) **Tremie:** shall be watertight and large enough to allow a free flow of concrete. It shall be kept filled with concrete at all times while depositing. The concrete shall be discharged and spread by so moving the tremie as to maintain as nearly as practicable a uniform flow and avoid dropping the concrete through water. If the charge is lost, while depositing, the tremie shall be withdrawn and refilled. The slump of concrete shall be maintained between 5 and 7 inches.

(b) **Drop Bottom Bucket:** The top of the bucket shall be open. The bottom doors shall open freely downward and outward when tripped. The bucket shall be completely filled and slowly lowered to avoid backwash. It shall not be dumped until it rests on the surface upon which the concrete is to be deposited and when discharged shall be withdrawn slowly until well above the concrete. The slump of concrete shall be maintained between 4 and 6 inches.

(c) **Pumping:** Once placement has started, discharge end of hose shall be kept embedded in fresh concrete and moved laterally to maintain a nearly level surface of concrete.

(d) **Bags:** Bags of at least 1 cubic foot capacity, of jute or other coarse cloth, shall be filled about two-thirds full of concrete and securely tied. They shall be placed carefully in header-and-stretcher courses so that the whole mass is interlocked. Bags used for this purpose shall be free from deleterious materials. The slump of concrete shall be maintained between 3 and 5 inches.

8. To minimize the formation of laitance, great care shall be exercised so as not to disturb the concrete while it is being deposited. Upon completion of a section of concrete, all laitance shall be entirely removed before work is resumed.

J. Concrete in Alkali Soils or Alkali Waters:

1. Concrete in alkali soils or waters shall be placed in such a manner as to minimize the number of horizontal or inclined seams, or work planes. Wherever possible, placing shall be continuous until completion of the section or until the concrete it at least 18 inches above ground or water level. Corrosive waters or soils shall be kept from contact with the concrete during placement and for a period of at least 72 hours thereafter.
2. The depth of protection for all reinforcement in concrete exposed to alkali soils or water, including supports, ties, and stirrups, shall be a minimum of 3 inches at all plane or curved surfaces and four inches near the corners of exposed members.

3.4 BONDING

A. Before new concrete is placed against hardened concrete, the surface of hardened concrete shall be cleaned by abrasive blast cleaning to the extent that clean aggregate is exposed and all laitance removed. Immediately before new concrete is placed, the surfaces shall be wetted and standing water removed. Bonding agents may be used if approved in writing by the Engineer.

3.5 JOINTS

A. Instructions given on the plans as to location and construction of joints shall be strictly followed.

B. When the structures or portions of the structures are designed to be monolithic, they shall be cast integrally.

C. The procedure specified in Section 3.4 for bonding new concrete to old shall be followed in the formation of all joints. The reinforcement shall continue through the joint. For concrete without reinforcement, shearing strength shall be provided by means of a concrete key, dowel bars, or both, as the Engineer may direct.

D. Exposed reinforcement bars intended for bonding with future extensions shall be effectively protected from corrosion.

3.6 SURFACE FINISH

A. General:

1. Surface finish is a term used to denote the process or method of mixing, placing, and treating concrete to produce a desired appearance and texture of the surface. Finishing techniques vary depending on whether the surface is formed or unformed.
2. The requirements of the sections of these specifications relating to materials, forms, mixing, curing, conveying, depositing, and protection of concrete shall apply except as they may be modified by these special requirements.
3. The same brand of cement, the same kind and size of aggregates, the same proportions and type of finish shall be used where it is desired to duplicate texture and appearance on any showing surface.
4. Unless otherwise shown on the plans or in the special provisions, surface mortar shall be the basis of the surface finish. The coarse aggregate shall be worked back from the forms so as to bring a full surface of mortar against the forms without voids or aggregate pockets. As soon as the forms are removed, any fins or other projections on the surface shall be carefully removed, offsets leveled, and voids or damaged places immediately saturated with a slurry of water and cement and repaired by filling with a concrete mortar, or dry pack as directed by the Engineer. Plastering shall not be permitted. Voids on the surface of formed concrete, resulting from the accumulation of air on the forms, shall be limited to the extent possible. Air voids larger than approximately 1-1/2 inches diameter and/or ¾ inch deep shall be filled with concrete mortar when directed by the Engineer. The repaired area shall be cured and finished as necessary to provide an appearance as close as possible to that of the adjacent concrete.

B. **Special Surface Finishes (Formed):** when called for on the plans or in the special provisions, shall be obtained by the methods noted below for the required finish:[3]

1. **Rubbed Finish:** The thoroughly cured concrete surface shall be completely wetted, and rubbed or ground with carborundum or other abrasive until it presents a uniform and smooth appearance. Cement mortar may be used in the rubbing, but the surface shall not be brush coated with cement or grout after rubbing.
2. **Scrubbed Finish:** The forms shall be removed before the concrete surface has fully hardened. The surface shall then be completely wetted and scrubbed with stiff fiber or wire brushes using water freely until the surface film of mortar is removed and the aggregate uniformly exposed. The surface shall then be rinsed with clean water. If portions of the surface have become too hard to scrub in equal relief, dilute hydrochloric acid (commercial acid diluted with 4 to 10 parts water) may be used to facilitate the scrubbing, the acid being removed from the finished surface with clean water.
3. **Sandblasted Finish:** The thoroughly cured concrete surface shall be sandblasted with hard, sharp sand until the aggregate is in uniform relief.
4. **Tooled Finish:** The thoroughly cured concrete surface shall be dressed with tools to a uniform texture and even face. The tools ordinarily used are electric, air or hand tools, to give various textured surfaces such as hand-tooled, rough or fine pointed, crandalled, or bush hammered, as specified or as selected from sample surfaces.
5. **Sand-Floated Finish:** The forms shall be removed before the concrete surface has fully hardened. The surface shall then be wetted and fine sand rubbed into the surface with a wood float using a uniform circular motion until the resulting finish is even and uniform.

C. Unformed Exposed Surfaces:

[3] Thoroughly cured concrete shall be concrete that has cured beyond the 28-day cylinder break, unless otherwise defined by the Engineer.

1. Unformed exposed surfaces, including bridge seats, bridge decks and walks, and box culvert inverts, shall receive a wood float finish unless otherwise shown on the plans or directed by the Engineer.
2. Walks and box culvert inverts shall then be given a broom finish transverse to the direction of the walk or culvert. The stiffness of the bristles and the time at which the surface is finished shall be such as to leave well defined brush marks. The brush shall be kept clean at all times to avoid depositing mortar picked up during previous strokes.
3. Bridge seats shall be finished level with a wood float. Final bridge seat elevation shall be within 0.01 foot of plan elevation. The finished bridge seat shall show no deviation in excess of 1/8 inch from the testing edge of a 10-foot straight edge operated in any direction on the bridge seat surface. Top surfaces shall be thoroughly worked and floated by hand with a wood float to leave a fine, clean, smooth, sandy texture. Top surface of abutments and piers which are not covered by bearings shall slope to drain away from bearings at approximately 1/8 inch per foot.
4. In finishing bridge decks, the Contractor shall use the proper combination of revibration or refloating finishing techniques, fog sprays during finishing, or other procedures to eliminate or minimize the development of surface shrinkage cracks.

3.7 CONCRETE CURING

A. General:
   1. The Contractor shall inform the Engineer of the methods proposed for curing; shall provide the proper equipment and material in adequate amounts; and shall have the proposed methods, equipment and material approved prior to placing concrete.
   2. Upon removal of forms, surface defects shall be repaired the same day as specified in Paragraph 3.6A.4, and exposed surfaces shall then immediately be protected with a curing treatment equal to that provided for unformed surfaces.
   3. Inadequate curing and/or facilities shall be cause for the Engineer to delay all concrete placement on the job until remedial action is taken.

B. Wet Curing:
   1. When not otherwise specified, all concrete surfaces, when not protected by forms, must be kept constantly wet for a period of not less than 7 days after concrete is placed when Type I, IA, II or IA Portland cement is used, or not less than 3 days when Type III or IIIA Portland cement is used.
   2. The wet curing period for all concrete which will be in contact with brine drip, sea water, salt spray, alkali or sulfate-bearing soils or water, or similar destructive agents, shall be increased to 50 percent more than the periods specified for normal exposures.
   3. The use of curing water, burlap, canvas or other materials which discolor the concrete or contain deleterious substances will not be permitted.
   4. Inspection shall be made of all exposed surfaces at intervals by the Engineer, and job records will be kept indicating whether surfaces were wet at times of inspection.

C. Membrane Curing:
   1. Membrane curing or membrane curing following preliminary wet curing may be used. Materials shall be in accordance with Paragraph 2.7A and shall not be applied during rainfall.
   2. On structures in hot and dry climates, where appearance is not important, a white pigmented compound shall be used to reflect heat during the curing period.
   3. The compound shall be applied at the coverage rate of 150 or 200 square feet per gallon to all exposed concrete surfaces.

4. The compound shall be sprayed on exposed surfaces as soon as the surface water has disappeared. Spraying equipment shall be of the pressure tank type with provision for continual agitation of the contents during application. If forms are removed during curing period, the concrete shall be sprayed lightly with water and the moistening continued until the surface will not readily absorb more water. The compound shall then be sprayed or brushed on the concrete surface as soon as moisture film has disappeared.
5. Should the film become damaged from any cause within the required curing period, the damaged portions shall be immediately repaired with additional compound.
6. The continuity of the coating must be until the 14th day after the concrete has been placed when Type I, IA, II or IA Portland cement is used, or until the 7th day when Type III or IIIA portland cement is used.

D. Bridge Decks:

1. Liquid membrane-forming curing compound shall be used as an interim cure for bridge decks and shall be applied immediately after disappearance of surface water sheen following final finishing. Curing compound shall be Type 1-D liquid membrane-forming curing compound in accordance with Paragraph 2.7A.
2. The concrete shall be covered with clean mats as soon as the curing compound has dried sufficiently to prevent adhesion, and the concrete surface will support the curing mat without marring or distorting the finish. The mat shall be sufficiently wet at time of placement to prevent moisture absorption from the finished surface and be kept continuously wet for a period of 7 days in accordance with Paragraph B.
3. At the end of the required wet-curing period, mats shall be allowed to dry thoroughly before removal to provide uniform, slow drying of the bridge deck surface. Alternative methods for controlling the rate of drying following wet-curing may be used if approved by the Engineer.

3.8 REMOVAL OF FORMS AND FALSEWORK

A. Before the removal of forms, concrete shall have attained sufficient strength to endure such removal without being damaged. Forms shall be removed carefully so that neither the forms nor the tools used in their removal will deface the concrete. Forms carrying no loads may be removed after 48 hours to facilitate finishing in weather of temperatures above 60 degree F. If the temperature is below 60 degree F, but above 42 degree F, this time shall increase to 4 days. In weather of a temperature below 42 degree F, the forms shall be left in place a longer period as determined by the Engineer, depending on the weather encountered.

B. Falsework shall not be removed until such time as the concrete supported by it is able to sustain itself and any load that is likely to come upon it with absolute safety to the concrete. Falsework supporting cast-in-place concrete, and forms supporting concrete slabs or beams shall remain in place until test cylinders show that the concrete has attained the design strength and also until at least 14 days have elapsed from the time concrete placement is completed, exclusive of days in which the temperature falls below 42 degree F. If high-early-strength Portland cement is used, this period may be reduced as directed by the Engineer. The Contractor shall leave falsework in placed for a longer period of time when required by the Engineer. No superimposed load, either dead or live, will be allowed upon the structure during the period the falsework is required to remain in place unless approved by the Engineer.

C. Falsework shall be removed in such a manner as to permit the concrete to take uniformly and gradually the stress due to its weight.

D. Forms shall be removed in such a manner as not to injure the concrete. In all cases the Contractor is responsible for, and must repair at his own expense, any damage arising from inadequate forms or falsework, or from the premature removal of same.

PART 4 MEASUREMENT AND PAYMENT

4.1 CAST-IN-PLACE CONCRETE

A. The quantities of cast-in-place concrete of the various classifications will be measured by the cubic yard in place. The dimensions used for measurement will be those shown on the plans or as authorized in writing by the Engineer.

B. The quantity of concrete involved in fillets, scorings or chamfers 1 square inch or less in cross sectional area shall be neglected and considered incidental to the cost of cast-in-place concrete.

C. No deductions will be made for embedded reinforcement, embedded portions of steel bearing piles, drains, or expansion joint material. Deductions will be made for the portions of concrete piles, timber piles, steel pipe piles and structural steel embedded in the concrete. The volume of timber piles will be assumed to be 1.0 cubic foot per lineal foot of pile.

D. Cast-in-place concrete shall be paid for at the contract unit price per cubic yard of concrete in place of the proper classification. This price shall be full compensation for furnishing all materials, and for all equipment, tools, falsework, forms, bracing, labor, surface finish, curing (including cold or hot, if required) and all other items of expense required to complete the concrete work shown on the plans, with the exception of reinforcement. This price shall also include the cost and installation of apron plates, expansion joints, joint fillers, waterstop and drains, other than structure drain pipe as specified in SECTION 04100, when required.

E. The above provisions for payment shall not be interpreted to provide payment for concrete in precast piles, drilled shafts, or precast concrete members.

4.2 REINFORCEMENT

A. Acceptable reinforcement incorporated in the concrete will be measured in pounds based on the total computed weight for the sizes and lengths of bars or fabric as shown on the plans or as authorized in writing by the Engineer. The weight of deformed bars shall be computed from the unit weights specified in ASTM A615; the weight of plain bars shall be computed from the theoretical weights of round bars; and the weight of fabric computed from the theoretical weight of plain wire.

B. No allowance will be made for clips, wire, separators, wire chairs, weld metal or other material used in fabricating the reinforcement or fastening it in place.

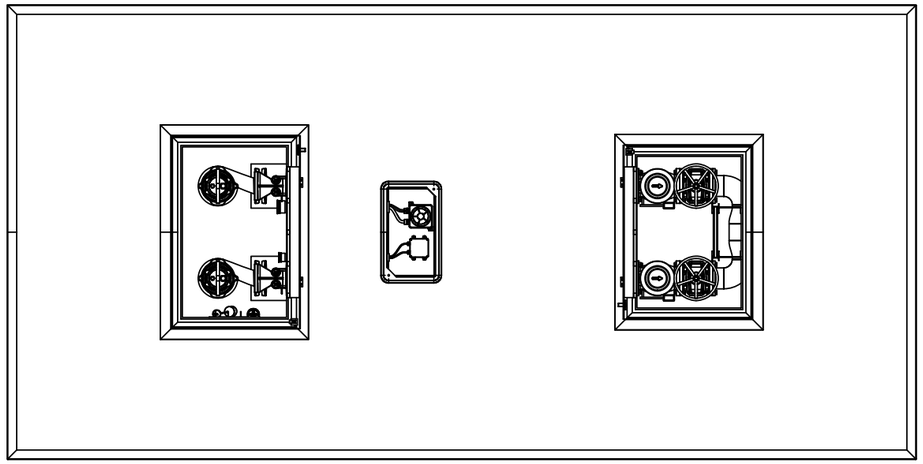
C. When laps are made for splices, other than those shown on the plans for the convenience of the Contractor, the weight of extra steel will not be included.

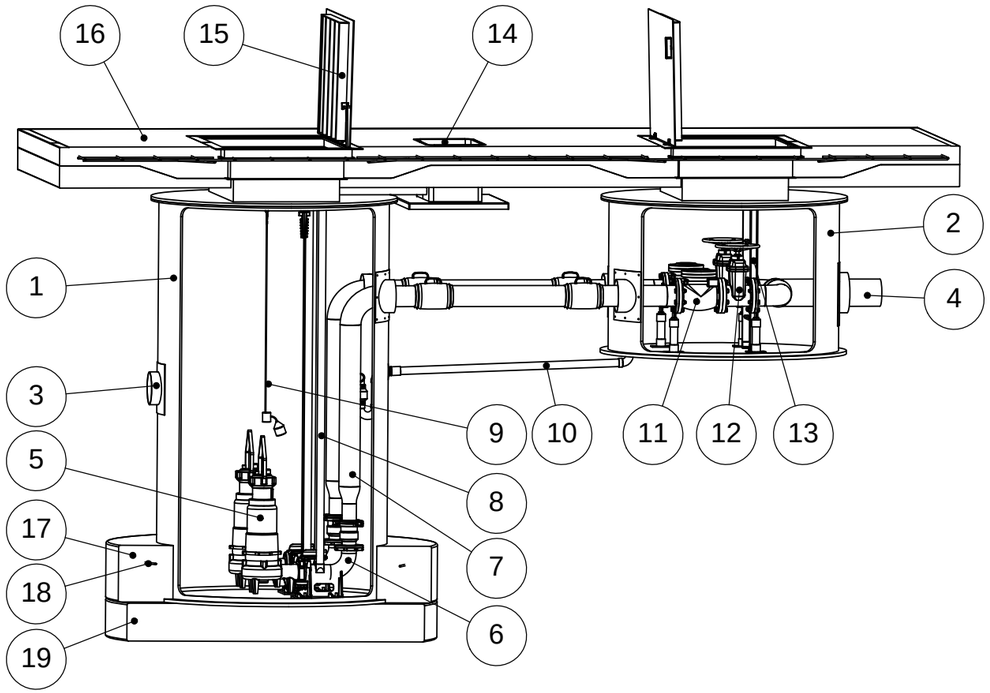
D. Reinforcement steel shall be paid for at the contract unit price per pound of reinforcement in place of the proper classification. This price shall be full compensation for furnishing all materials and for all equipment, tools, bending, fabricating, welding and for placing the reinforcement; for all clips, wire, separators, wire chairs or other material used for fastening the reinforcement in place; and for all labor and incidentals necessary to complete the work.

E. The above provisions for payment shall not be interpreted to provide payment for reinforcement in precast concrete piles, drilled shafts, or precast concrete members.

END OF SECTION

APPENDIX J
STORMWATER PUMP SYSTEM





NO.	ELEV.	DESCRIPTION
1		72 IN X 144 IN FRP WET WELL
	1967.72	RIM
	1955.72	BASE
2		72IN X 66 IN FRP VALVE VAULT
	1962.22	BASE
3	1962.30	IE - 22 IN INLET HUB FOR 18 IN SDR 35 PVC PIPE
		9:00 POSITION
4	1963.72	IE - 8 IN SCH 10 STAINLESS STEEL OUTLET
		3:00 POSITION
5		DEMING 4DM PUMPS, 15 HP, 460V/3
		EXPLOSION-PROOF, 672 GPM @ 45 FT TDH
		SHIPPED LOOSE
6		4 IN MTM DISCHARGE ELBOW
7		6 IN SCH 10 STAINLESS STEEL DISCHARGE MANIFOLD
8		2 IN SCH 40 STAINLESS STEEL SLIDE RAILS
9		LEVEL TRANSDUCER & FLOAT SWITCH
	1963.80	FLOAT SWITCH - REDUNDANT ON/HIGH LEVEL ALARM
	1963.70	HIGH LEVEL ALARM
	1962.50	LAG PUMP ON
	1962.20	LEAD PUMP ON
	1958.72	PUMP(S) OFF
	1956.22	TRANSDUCER FACE
10		2 IN SCH 40 PVC DRAIN
11		6 IN LEVER AND WEIGHT CHECK VALVE
12		6 IN RESILIENT SEAT GATE VALVE
13		LADDER
14		ELECTRICAL HAND HOLE JUNCTION BOX ASSEMBLY
15		H20 ALUMINUM HATCH - INTERMITTANT TRAFFIC
		SHIPPED LOOSE
16		REINFORNCED CONCRETE SLAB - BY OTHERS
17		CONCRETE ANTI-FLOTATION RING - IN WIDE X
		IN TALL - YDS - BY OTHERS
18		#4 REBAR REINFORCEMENT - BY OTHERS
19		12 IN COMPACTED BASE - BY OTHERS
20		DUPLEX ALTERNATING COTROL PANEL (NOT SHOWN)
		SHIPPED LOOSE

AFS STN 72 144 72 66 40 80 SS EXT H20
COSV PINES UNDERPASS - PROJECT #61128
PACKAGED LIFT STATION

SHEET 1 OF 1

Copyright © 2020 by R.C. Worst & Co., Inc.

REV NO.	DATE	SCALE	DRAWN BY	CHECKED BY
1.0	10/10/2022	1:48	RJK	

AFS®
AUTOMATED FLOW SYSTEMS
625 BEST AVE
COEUR D'ALENE, ID 83814
PHONE 208.664.2133
4444 S YELLOWSTONE HWY
IDAHO FALLS, ID 83402
208.529.6868
4101 E BROADWAY
SPOKANE, WA 99202
PHONE 509.534.5616
WWW.RCWORST.COM

Pump Data Sheet - Crane Deming.60

Company: RC Worst & Co.
Name: Ray Koberstine, PE
Date: 12/01/2022

DEMING PUMPS

Pump:

Size:	4DM 3 Frame	Dimensions:	
Type:	D7365 4" Demersible	Suction:	4 in
Synch Speed:	1800 rpm	Discharge:	4 in
Dia:	215 mm		
Curve:	---		

Fluid:

Name:	Water		
SG:	1	Vapor Pressure:	0.256 psi a
Density:	62.4 lb/ft³	Atm Pressure:	14.7 psi a
Viscosity:	1.1 cP		
Temperature:	60 °F	Margin Ratio:	1

Search Criteria:

Flow:	672 US gpm	Near Miss:	---
Head:	51 ft	Static Head:	30 ft

Pump Limits:

Temperature:	104 °F	Sphere Size:	3 in
Wkg Pressure:	---		

Motor:

Standard:	NEMA	Size:	20 hp
Enclosure:	TEFC	Speed:	1800 rpm
Frame:	256T		
Sizing Criteria:	Max Power on Design Curve		

Pump Selection Warnings:

None

--- Duty Point ---

Flow:	689 US gpm
Head:	52.1 ft
Eff:	68%
Power:	13.3 hp
NPSHr:	---
Speed:	1750 rpm

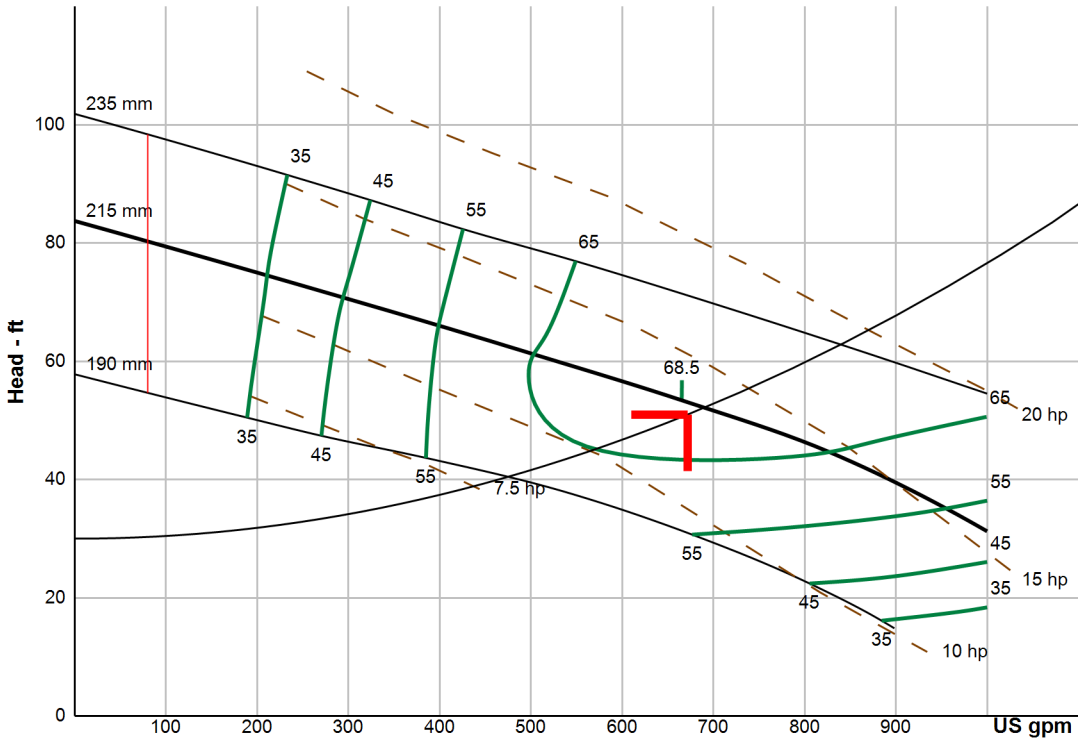
--- Design Curve ---

Shutoff Head:	83.7 ft
Shutoff dP:	36.3 psi
Min Flow:	80 US gpm

BEP: 68.5% @ 665 US gpm
NOL Power:
15.8 hp @ 1000 US gpm

--- Max Curve ---

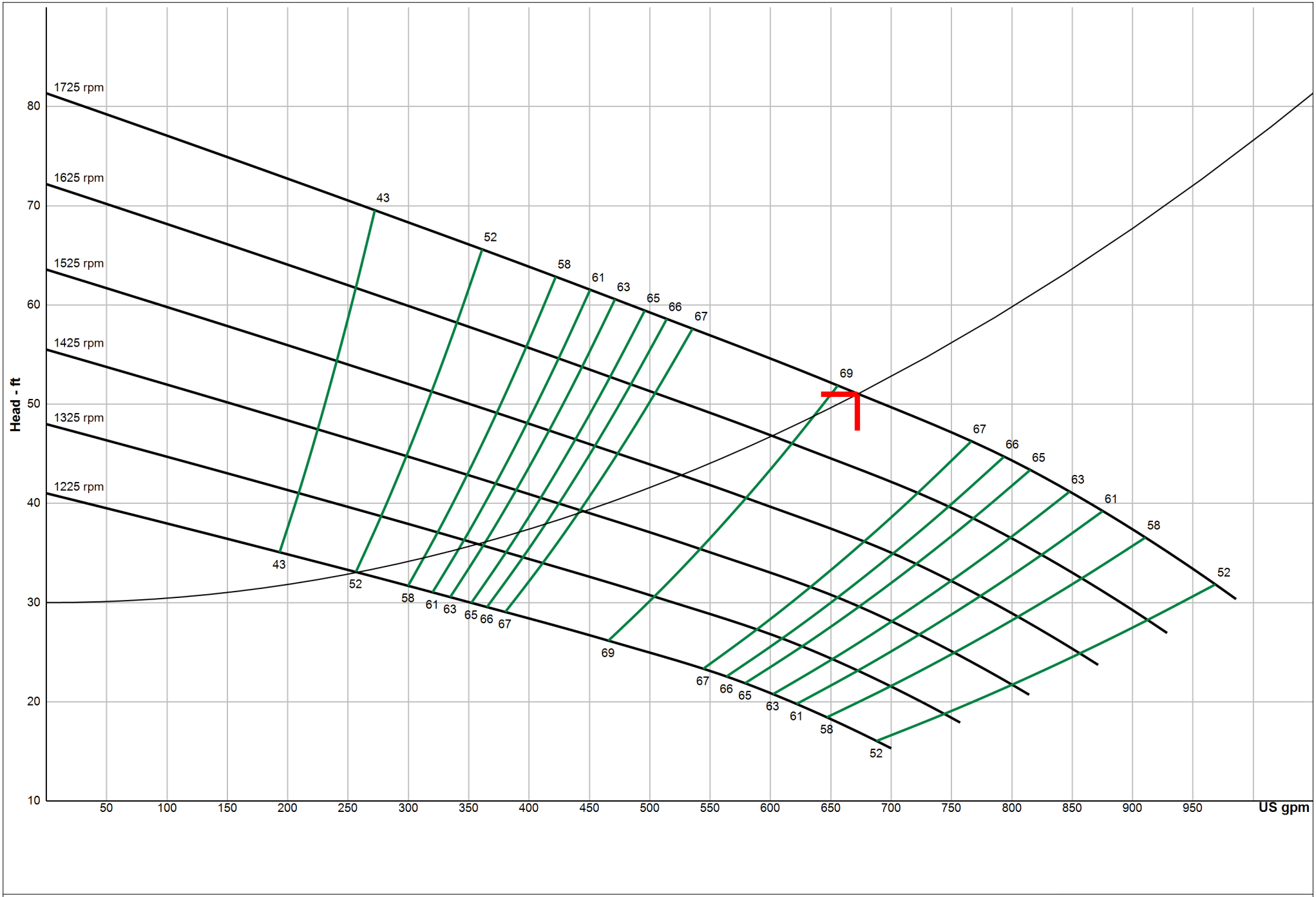
Max Power:
19.8 hp @ 1000 US gpm



Performance Evaluation:

Flow	Speed	Head	Efficiency	Power	NPSHr
US gpm	rpm	ft	%	hp	ft
806	1750	45.8	65	14.2	---
672	1750	53	68	13.1	---
538	1750	59.5	66	12.2	---
403	1750	65.8	55	12.1	---
269	1750	71.9	42	11.6	---

Selected from catalog: Deming.60, Vers 4/23/20



Company:	RC Worst & Co.	Crane Deming.60		Size:	4DM 3 Frame
Name:	Ray Koberstine, PE	Catalog: Deming.60, Vers 4/23/20		Speed:	1750 rpm
Date:	12/01/2022	D7365 4" Demersible - 1800 rpm		Dia:	215 mm
		Design Point: 672 US gpm, 51 ft		Curve:	---
		Static Head: 30 ft			

DEMING PUMPS

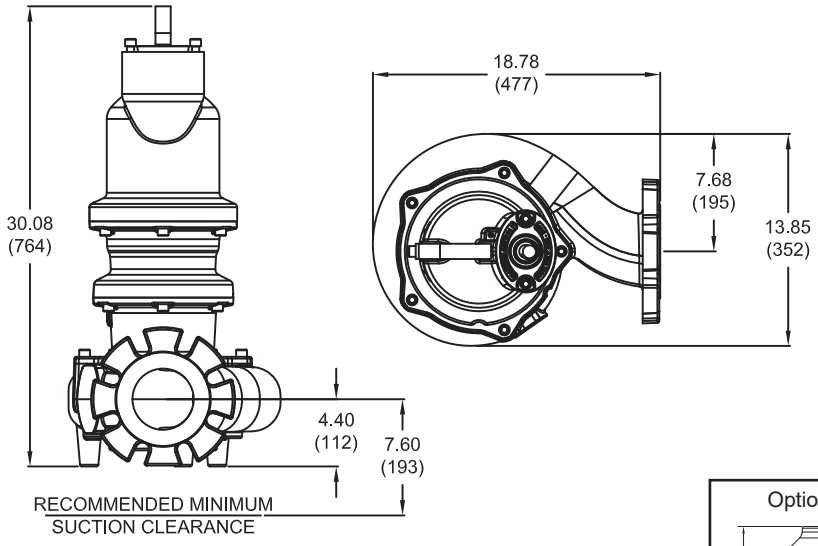
Size 4DM (Dual Vane)

3” Spherical Solids Handling
7365*-413

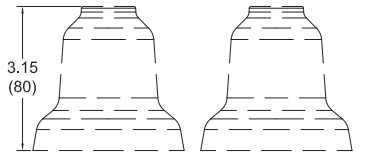
Demersible Non-Clog Pumps

#2 Frame Driver

inches (mm)



Optional Leg Kit - p/n 125506



Model No.	Imp. Dia. inches (mm)	HP	Volt	PH	Hz	RPM	NEMA Start Code	Full Load Amps	S.F.	S.F. Amps	Locked Rotor Amps	Cord P/N ▲	Cord Size
7365*-413-27-10N	6.69 (170)	5	208	1	60	1750	D	27.2	1.2	35.6	99.9	125498	8/4 - 18/4
			230				F	25.4	1.2	30.2	112.4	125498	8/4 - 18/4
7365*-413-1R-30N	6.69 (170)	5	208	3	60	1750	J	15.8	1.2	18.7	82.4	125496	12/4 - 18/4
			230					15.0	1.2	17.2	92.4	125496	12/4 - 18/4
			460					7.5	1.2	8.6	46.2	125497	12/4 - 18/4
7365*-413-72-30N	6.69 (170)	5	575	3	60	1750	J	6.0	1.2	6.9	37.0	125497	12/4 - 18/4
7365*-413-1S-30N	7.28 (185)	7.5	208	3	60	1750	H	23.8	1.2	28.5	105.9	125496	12/4 - 18/4
			230					23.7	1.2	27.2	123.6	125496	12/4 - 18/4
			460					11.9	1.2	13.6	61.8	125497	12/4 - 18/4
7365*-413-87-30N	7.28 (185)	7.5	575	3	60	1750	H	9.5	1.2	10.9	49.4	125497	12/4 - 18/4
7365*-413-1T-30N	7.87 (200)	10	208	3	60	1750	E	32.2	1.2	41.4	105.9	125498	8/4 - 18/4
			230					29.8	1.2	35.6	123.6	125498	8/4 - 18/4
			460					14.9	1.2	17.8	61.8	125497	12/4 - 18/4
7365*-413-88-30N	7.87 (200)	10	575	3	60	1750	E	11.9	1.2	14.2	49.4	125497	12/4 - 18/4

*** FOR NON-EXPLOSION PROOF (STANDARD) MODELS, USE FIGURE NUMBER 7365N.**
▲ CORD SOLD SEPARATELY. CORD SUFFIX: XC - 30 FEET, XF - 50 FEET, XJ - 75 FEET, OR XL - 100 FEET.

IMPORTANT !

1.) MOISTURE AND TEMPERATURE SENSORS **MUST** BE CONNECTED TO VALIDATE THE CSA LISTING.
2.) A SPECIAL MOISTURE SENSOR RELAY IS REQUIRED IN THE CONTROL PANEL FOR PROPER OPERATION OF THE MOISTURE SENSORS.CONTACT CP&S FOR INFORMATION CONCERNING MOISTURE SENSING RELAYS FOR CUSTOMER SUPPLIED CONTROL PANELS.
3.) THESE PUMPS ARE CSA LISTED FOR PUMPING WATER AND WASTEWATER. **DO NOT USE TO PUMP FLAMMABLE LIQUIDS**. NOT SUITABLE FOR ENVIRONMENTS CONTAINING GASOLINE OR HEXANE.
4.) INSTALLATIONS SUCH AS DECORATIVE FOUNTAINS OR WATER FEATURES PROVIDED FOR VISUAL ENJOYMENT MUST BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE ANSI/NFPA 70 AND/OR THE AUTHORITY HAVING JURISDICTION. THIS PUMP IS NOT INTENDED FOR USE IN SWIMMING POOLS, RECREATIONAL WATER PARKS, OR INSTALLATIONS IN WHICH HUMAN CONTACT WITH PUMPED MEDIA IS A COMMON OCCURRENCE.
5.) A **NON-SPARKING** BREAKAWAY FITTING MUST BE USED TO VALIDATE THE EXPLOSION PROOF LISTING.
6.) WINDING RESISTANCE ± 7.5%. WINDING RESISTANCE MEASURED IN OHMS @ 25°C (BETWEEN LINES) AT MOTOR LEADS.
7.) PUMP RATED FOR OPERATION AT ± 10% VOLTAGE AT MOTOR.
8.) ALL EXPLOSION PROOF PUMPS AND MOTORS ARE CSA EXPLOSION-PROOF TO CLASS I DIVSION 1 GROUPS C&D T4 RATING
** CUSTOMER TO SPECIFY IMPELLER DIAMETER WHEN ORDERING.

Size 4DM (Dual Vane)

3” Spherical Solids Handling

7365*-413

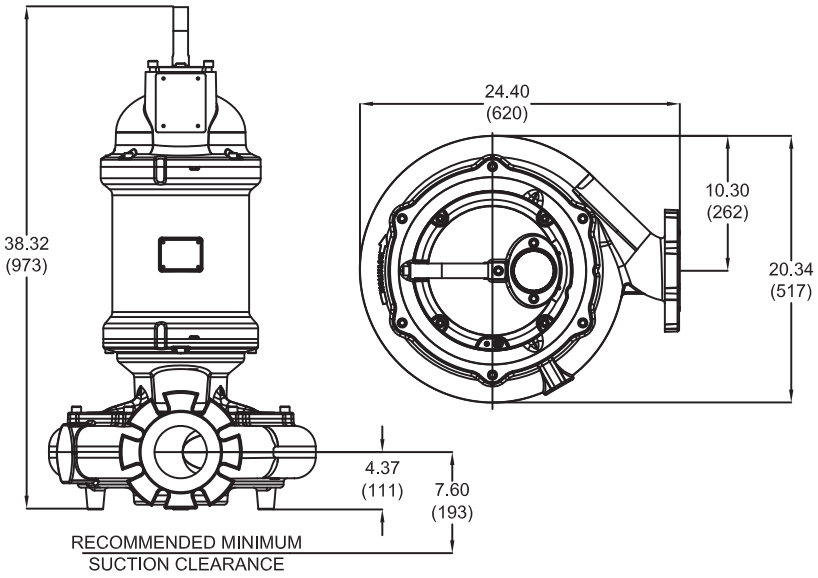
DEMING®

www.cranepumps.com

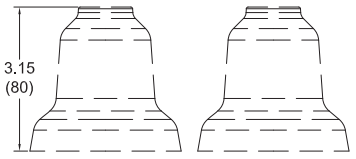
Demersible Non-Clog Pumps

#3 Frame Driver

inches (mm)



Optional Leg Kit - p/n 125506



Model No.	Imp. Dia. inches (mm)	HP	Volt	PH	Hz	RPM	NEMA Start Code	Full Load Amps	S.F.	S.F. Amps	Locked Rotor Amps	Cord P/N ▲	Cord Size
7365*-413-1K-30N	8.25 (210)	15	208	3	60	1750	E	51.8	1.2	59.0	206.6	125498	8/4 - 18/4
			230					46.9	1.2	54.3		125498	8/4 - 18/4
			460					23.4	1.2	27.2	103.3	125497	12/4 - 18/4
7365*-413-75-30N	8.25 (210)	15	575	3	60	1750	E	18.7	1.2	21.7	82.6	125497	12/4 - 18/4
7365*-413-1L-30N	9.25 (235)	20	230	3	60	1750	J	53.7	1.2	59.0	383.9	125498	8/4 - 18/4
			460					26.9	1.2	29.9		125497	12/4 - 18/4
7365*-413-76-30N	9.25 (235)	20	575	3	60	1750	J	21.5	1.2	23.9	153.5	125497	12/4 - 18/4

*** FOR NON-EXPLOSION PROOF (STANDARD) MODELS, USE FIGURE NUMBER 7365N.**

▲ CORD SOLD SEPARATELY. CORD SUFFIX: XF - 50 FEET, XJ - 75 FEET, OR XL - 100 FEET.

IMPORTANT !

1.) MOISTURE AND TEMPERATURE SENSORS **MUST** BE CONNECTED TO VALIDATE THE CSA LISTING.

2.) A SPECIAL MOISTURE SENSOR RELAY IS REQUIRED IN THE CONTROL PANEL FOR PROPER OPERATION OF THE MOISTURE SENSORS.CONTACT CP&S FOR INFORMATION CONCERNING MOISTURE SENSING RELAYS FOR CUSTOMER SUPPLIED CONTROL PANELS.

3.) THESE PUMPS ARE CSA LISTED FOR PUMPING WATER AND WASTEWATER. **DO NOT USE TO PUMP FLAMMABLE LIQUIDS**. NOT SUITABLE FOR ENVIRONMENTS CONTAINING GASOLINE OR HEXANE.

4.) INSTALLATIONS SUCH AS DECORATIVE FOUNTAINS OR WATER FEATURES PROVIDED FOR VISUAL ENJOYMENT MUST BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE ANSI/NFPA 70 AND/OR THE AUTHORITY HAVING JURISDICTION. THIS PUMP IS NOT INTENDED FOR USE IN SWIMMING POOLS, RECREATIONAL WATER PARKS, OR INSTALLATIONS IN WHICH HUMAN CONTACT WITH PUMPED MEDIA IS A COMMON OCCURRENCE.

5.) A **NON-SPARKING** BREAKAWAY FITTING MUST BE USED TO VALIDATE THE EXPLOSION PROOF LISTING.

6.) WINDING RESISTANCE ± 7.5%. WINDING RESISTANCE MEASURED IN OHMS @ 25°C (BETWEEN LINES) AT MOTOR LEADS.

7.) PUMP RATED FOR OPERATION AT ± 10% VOLTAGE AT MOTOR.

8.) ALL EXPLOSION PROOF PUMPS AND MOTORS ARE CSA EXPLOSION-PROOF TO CLASS I DIVSION 1 GROUPS C&D T4 RATING

** CUSTOMER TO SPECIFY IMPELLER DIAMETER WHEN ORDERING.

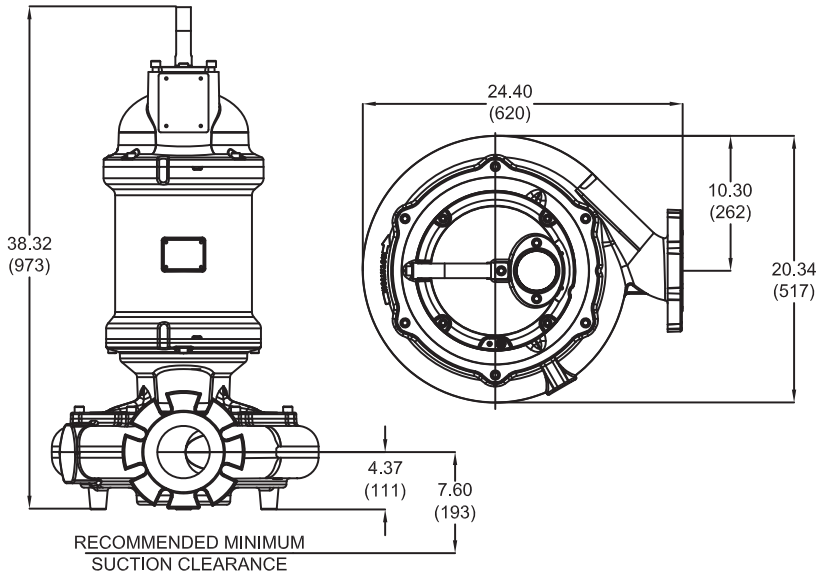
Size 4DM (Dual Vane)

3” Spherical Solids Handling
7365*-448

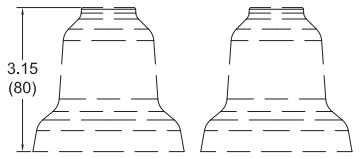
Demersible Non-Clog Pumps

#3 Frame Driver

inches (mm)



Optional Leg Kit - p/n 125506



Model No.	Imp. Dia. inches (mm)	HP	Volt	PH	Hz	RPM	NEMA Start Code	Full Load Amps	S.F.	S.F. Amps	Locked Rotor Amps	Cord P/N ▲	Cord Size
7365*-448-1H-30N	9.25 (235)	7.5	208	3	60	1150	J	24.9	1.2	29.6	137.6	125496	12/4 - 18/4
			230					24.0	1.2	27.6		125496	12/4 - 18/4
			460					12.0	1.2	13.8	68.8	125497	12/4 - 18/4
7365*-448-73-30N	9.25 (235)	7.5	575	3	60	1150	J	9.6	1.2	11.0	55.0	125497	12/4 - 18/4

*** FOR NON-EXPLOSION PROOF (STANDARD) MODELS, USE FIGURE NUMBER 7365N.**
▲ CORD SOLD SEPARATELY. CORD SUFFIX: XF - 50 FEET, XJ - 75 FEET, OR XL - 100 FEET.

IMPORTANT !

1.) MOISTURE AND TEMPERATURE SENSORS **MUST** BE CONNECTED TO VALIDATE THE CSA LISTING.
2.) A SPECIAL MOISTURE SENSOR RELAY IS REQUIRED IN THE CONTROL PANEL FOR PROPER OPERATION OF THE MOISTURE SENSORS.CONTACT CP&S FOR INFORMATION CONCERNING MOISTURE SENSING RELAYS FOR CUSTOMER SUPPLIED CONTROL PANELS.
3.) THESE PUMPS ARE CSA LISTED FOR PUMPING WATER AND WASTEWATER. **DO NOT USE TO PUMP FLAMMABLE LIQUIDS**. NOT SUITABLE FOR ENVIRONMENTS CONTAINING GASOLINE OR HEXANE.
4.) INSTALLATIONS SUCH AS DECORATIVE FOUNTAINS OR WATER FEATURES PROVIDED FOR VISUAL ENJOYMENT MUST BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE ANSI/NFPA 70 AND/OR THE AUTHORITY HAVING JURISDICTION. THIS PUMP IS NOT INTENDED FOR USE IN SWIMMING POOLS, RECREATIONAL WATER PARKS, OR INSTALLATIONS IN WHICH HUMAN CONTACT WITH PUMPED MEDIA IS A COMMON OCCURRENCE.
5.) A **NON-SPARKING** BREAKAWAY FITTING MUST BE USED TO VALIDATE THE EXPLOSION PROOF LISTING.
6.) WINDING RESISTANCE ± 7.5%. WINDING RESISTANCE MEASURED IN OHMS @ 25°C (BETWEEN LINES) AT MOTOR LEADS.
7.) PUMP RATED FOR OPERATION AT ± 10% VOLTAGE AT MOTOR.
8.) ALL EXPLOSION PROOF PUMPS AND MOTORS ARE CSA EXPLOSION-PROOF TO CLASS I DIVSION 1 GROUPS C&D T4 RATING
** CUSTOMER TO SPECIFY IMPELLER DIAMETER WHEN ORDERING.

Pump Data Sheet - Crane Deming.60

Company: RC Worst & Co.
Name: Ray Koberstine, PE
Date: 12/01/2022

DEMING PUMPS

Pump:

Size:	4DM 3 Frame	Dimensions:	
Type:	D7365 4" Demersible	Suction:	4 in
Synch Speed:	1800 rpm	Discharge:	4 in
Dia:	215 mm		
Curve:	---		

Fluid:

Name:	Water		
SG:	1	Vapor Pressure:	0.256 psi a
Density:	62.4 lb/ft³	Atm Pressure:	14.7 psi a
Viscosity:	1.1 cP		
Temperature:	60 °F	Margin Ratio:	1

Search Criteria:

Flow:	672 US gpm	Near Miss:	---
Head:	51 ft	Static Head:	30 ft

Pump Limits:

Temperature:	104 °F	Sphere Size:	3 in
Wkg Pressure:	---		

Motor:

Standard:	NEMA	Size:	20 hp
Enclosure:	TEFC	Speed:	1800 rpm
Frame:	256T		
Sizing Criteria:	Max Power on Design Curve		

Pump Selection Warnings:

None

--- Duty Point ---

Flow:	689 US gpm
Head:	52.1 ft
Eff:	68%
Power:	13.3 hp
NPSHr:	---
Speed:	1750 rpm

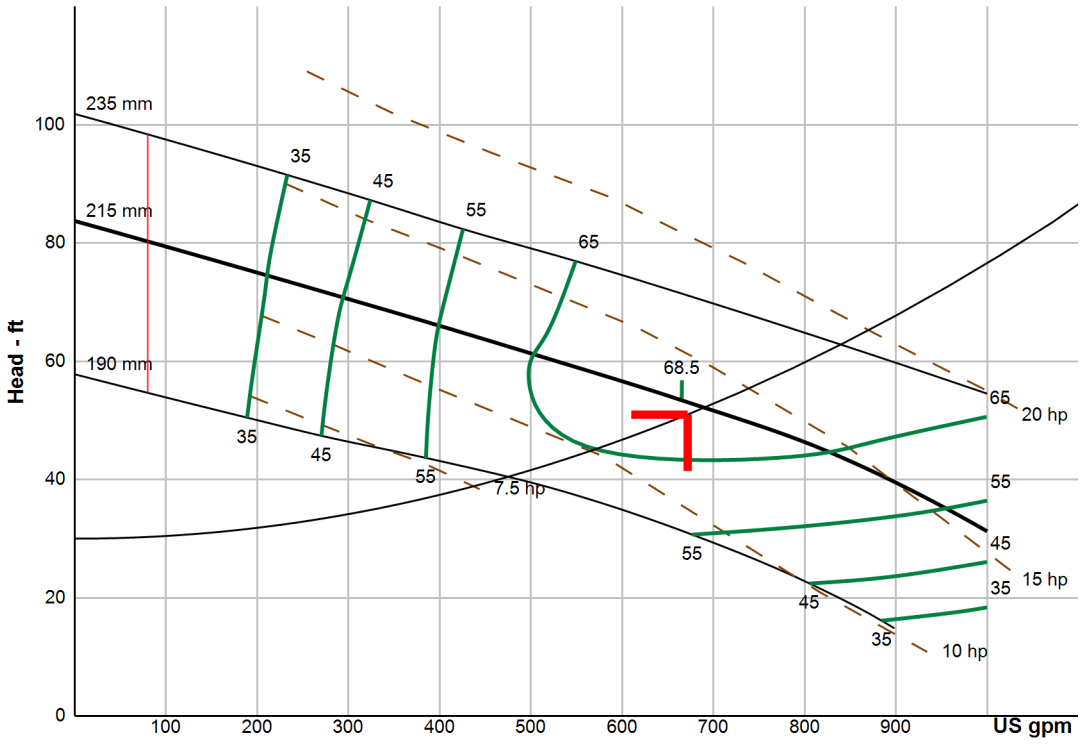
--- Design Curve ---

Shutoff Head:	83.7 ft
Shutoff dP:	36.3 psi
Min Flow:	80 US gpm

BEP: 68.5% @ 665 US gpm
NOL Power:
15.8 hp @ 1000 US gpm

--- Max Curve ---

Max Power:
19.8 hp @ 1000 US gpm

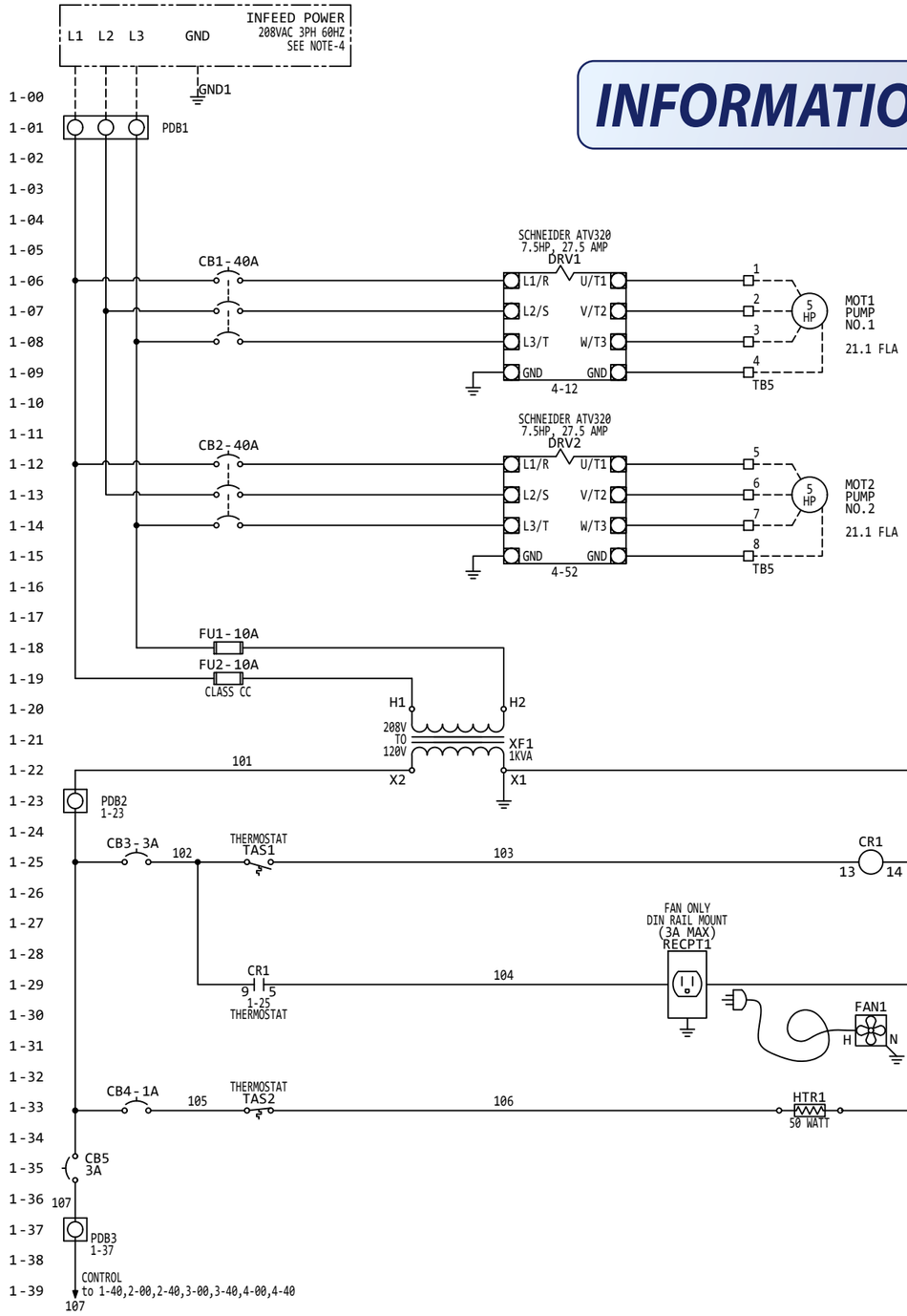


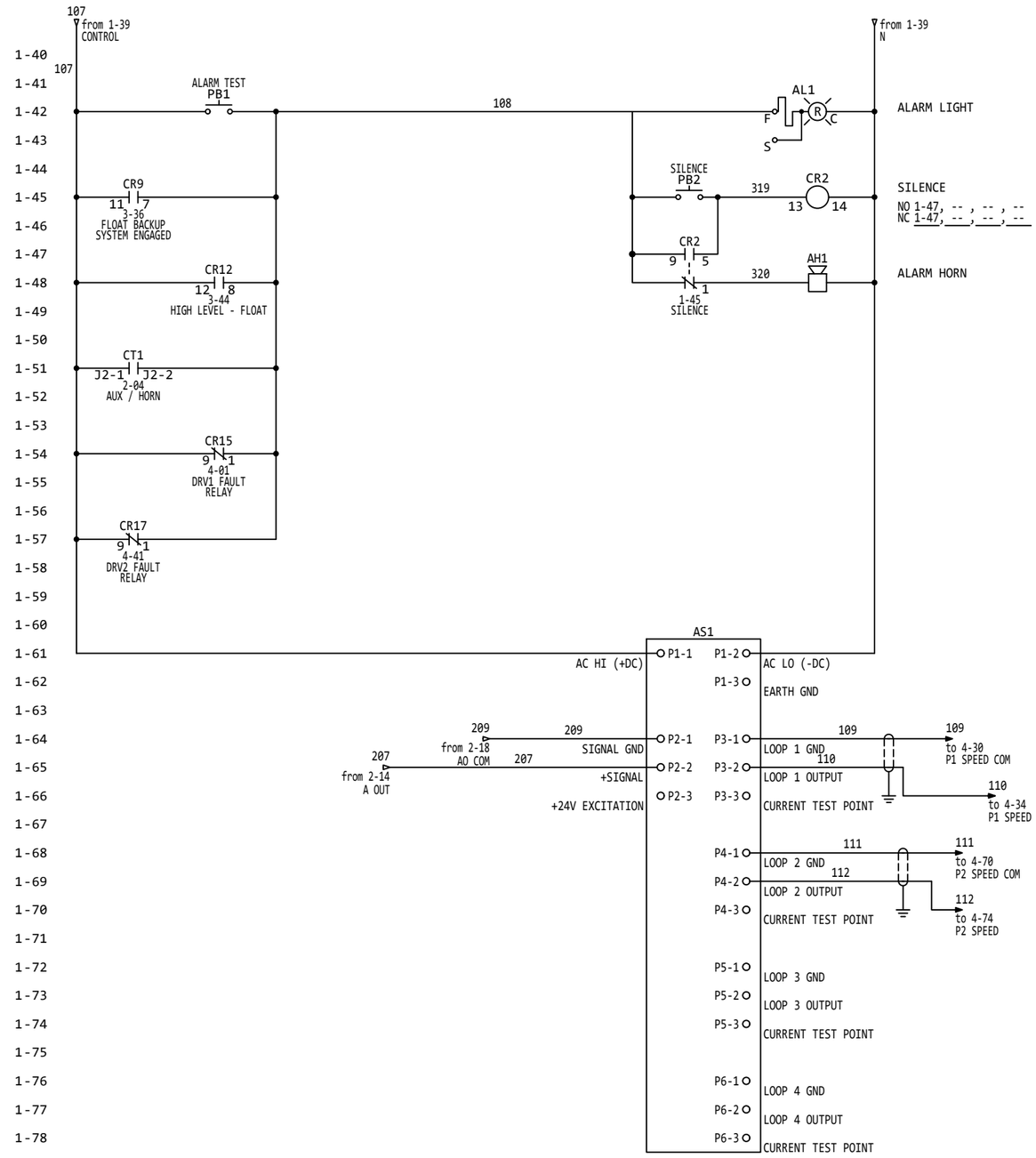
Performance Evaluation:

Flow	Speed	Head	Efficiency	Power	NPSHr
US gpm	rpm	ft	%	hp	ft
806	1750	45.8	65	14.2	---
672	1750	53	68	13.1	---
538	1750	59.5	66	12.2	---
403	1750	65.8	55	12.1	---
269	1750	71.9	42	11.6	---

Selected from catalog: Deming.60, Vers 4/23/20

INFORMATION ONLY





THIS DRAWING CONTAINS PROPRIETARY INFORMATION WHICH MUST NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART WITHOUT PRIOR WRITTEN CONSENT.

SHEET NUMBER
1 OF 6

NO.	REVISION HISTORY	DATE	BY

SJE RHOMBUS
sjerhombus.com
22650 County Highway 6 - Detroit Lakes, MN 56501
1-800-746-6287

R.C. Worst & Company Inc.

Sacajawea

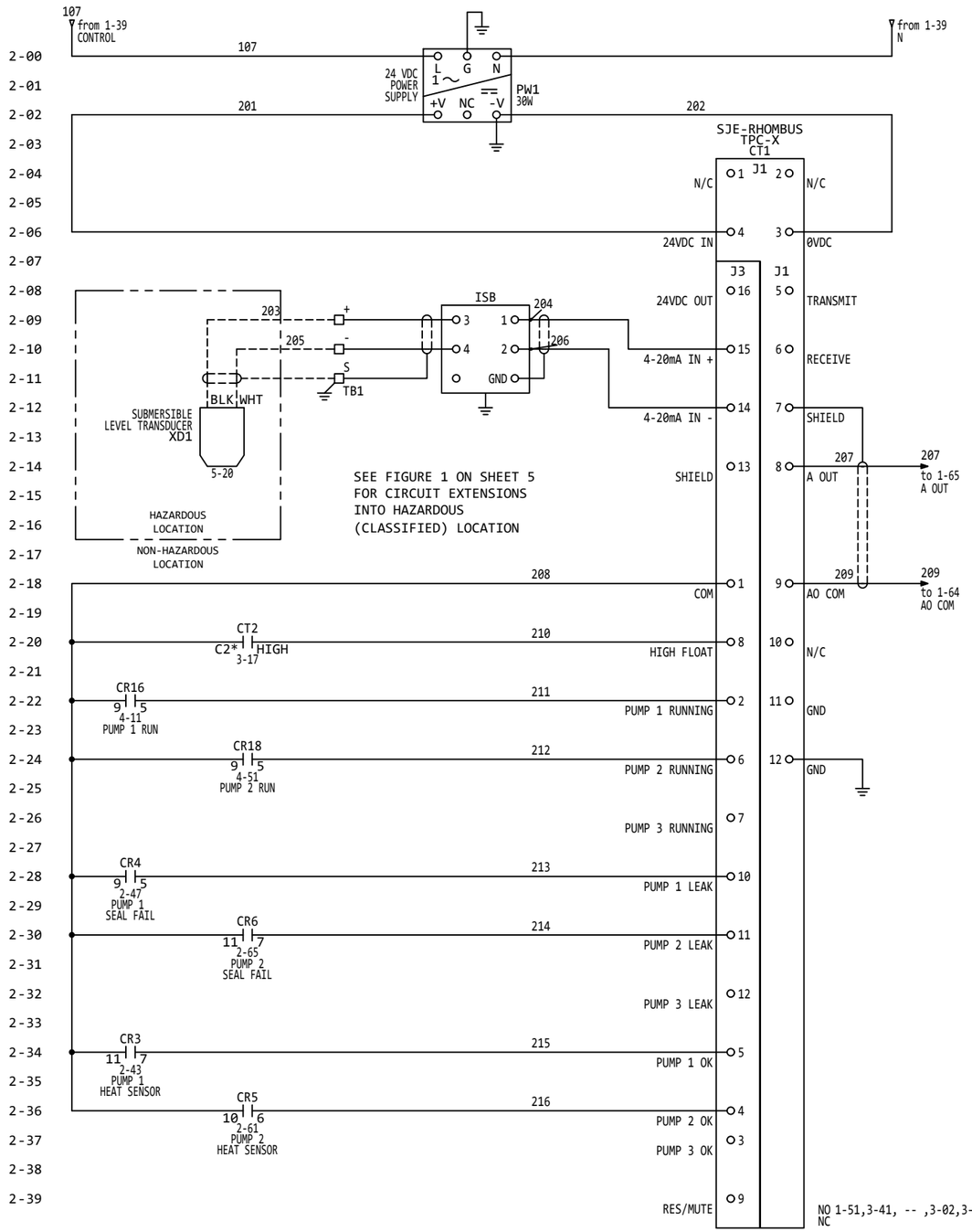
DUPLEX PUMP CONTROL PANEL

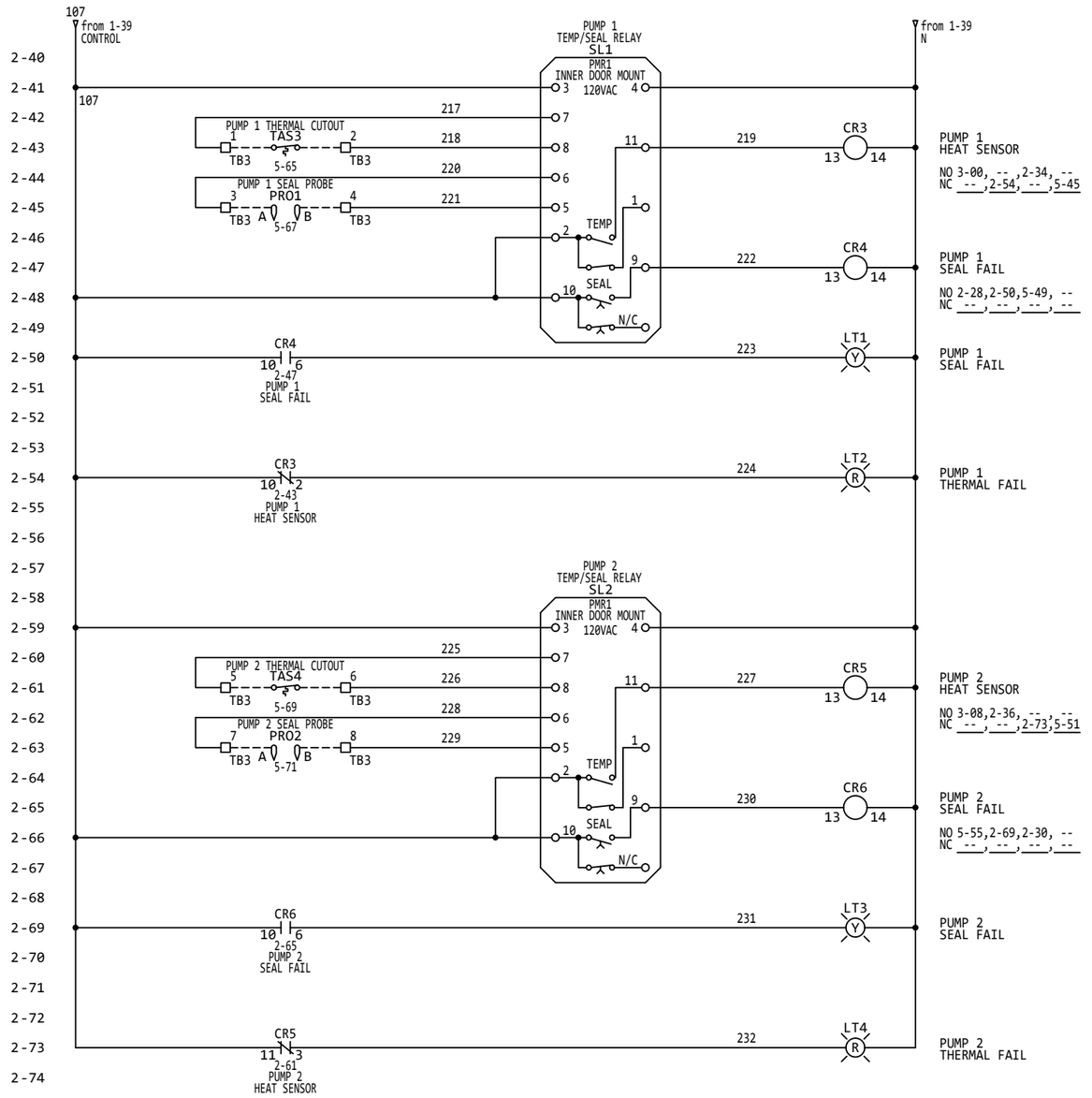
DRAWN BY ACS
DATE 4/4/22

PANEL REQUIREMENTS	
SYM.	
VOLTAGE	208 VAC
PHASE	3 PHASE
FREQUENCY	60 Hz
SCCR	5 kA RMS SYM
TOTAL FLA	47 FLA
TYPE	4

LARGEST MOTOR POWER REQUIREMENTS	
HP	5 HP
FLA	21.1 FLA

PROJECT NUMBER
4008102A





INFORMATION ONLY

THIS DRAWING CONTAINS PROPRIETARY INFORMATION WHICH MUST NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART WITHOUT PRIOR WRITTEN CONSENT.

SHEET NUMBER
2 OF 6

NO.	REVISION HISTORY	DATE	BY

SJE RHOMBUS
sjerhombus.com
22650 County Highway 6 - Detroit Lakes, MN 56501
1-800-746-6287

R.C. Worst & Company Inc.
Sacajawea

DUPLEX PUMP CONTROL PANEL

DRAWN BY ACS
DATE 4/4/22

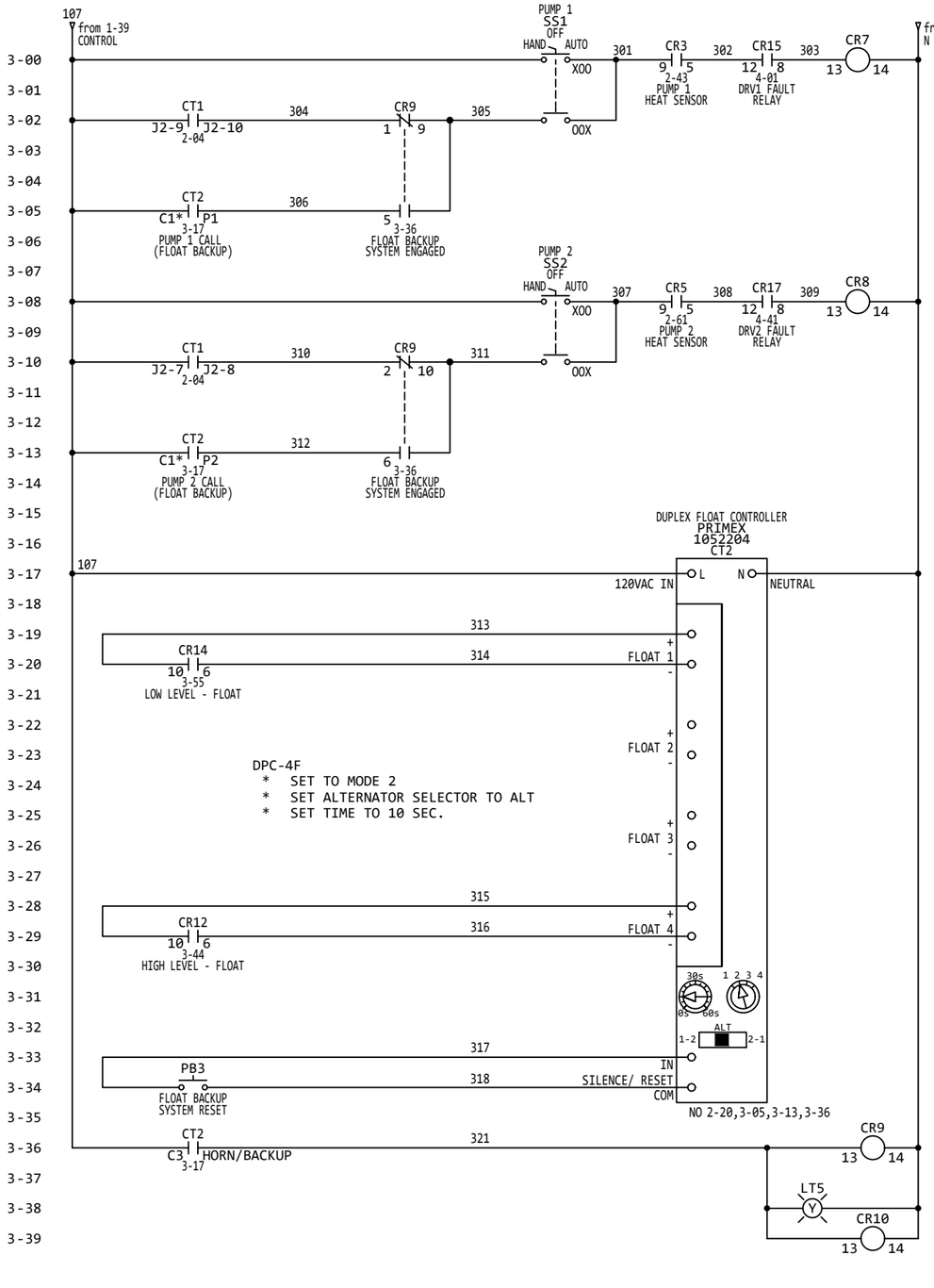
PANEL REQUIREMENTS

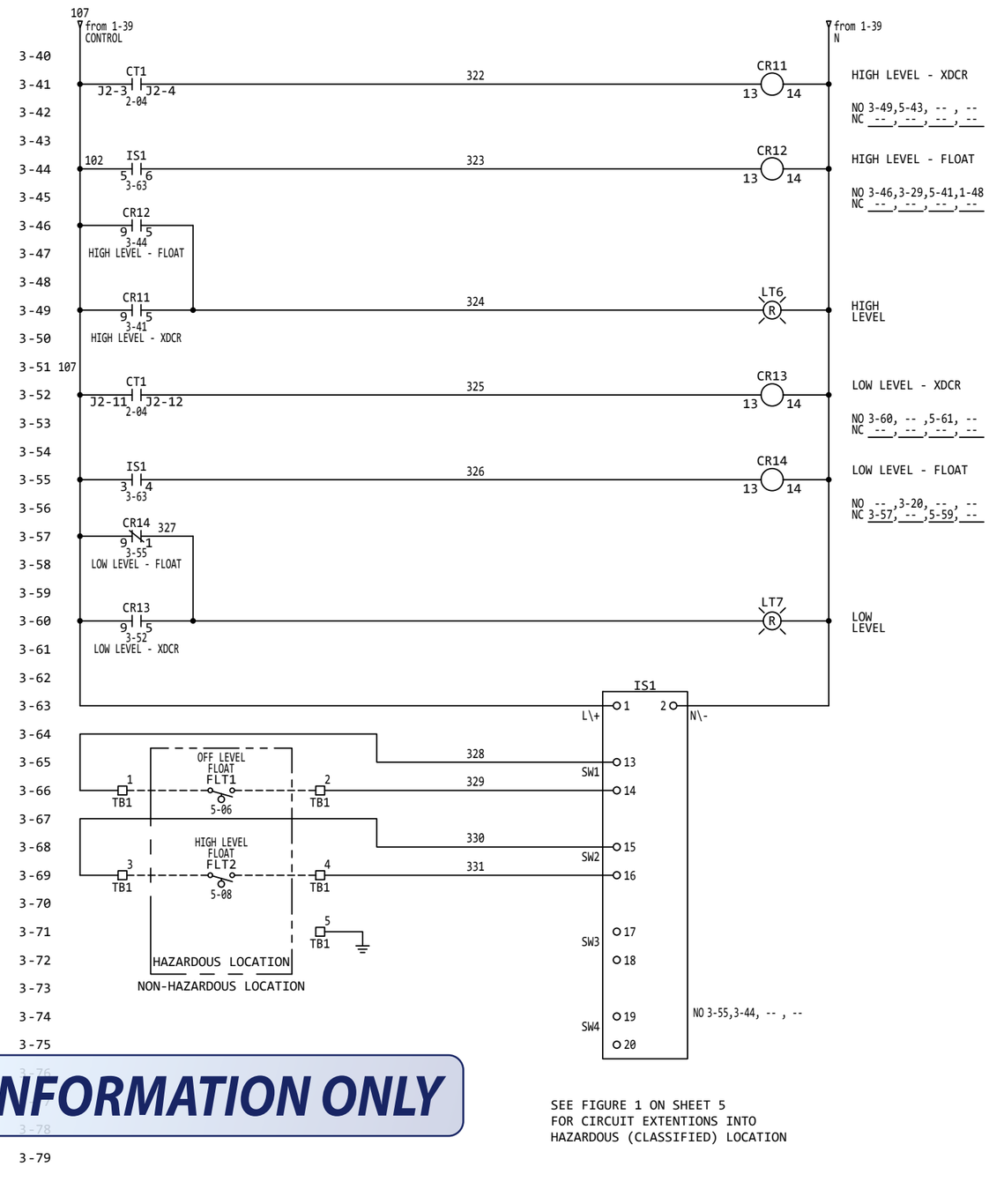
SYM.	
VOLTAGE	208 VAC
PHASE	3 PHASE
FREQUENCY	60 Hz
SCCR	5 kA RMS SYM
TOTAL FLA	47 FLA
TYPE	4

LARGEST MOTOR POWER REQUIREMENTS

HP	5 HP
FLA	21.1 FLA

PROJECT NUMBER
4008102A





INFORMATION ONLY

SEE FIGURE 1 ON SHEET 5
FOR CIRCUIT EXTENTIONS INTO
HAZARDOUS (CLASSIFIED) LOCATION

THIS DRAWING CONTAINS PROPRIETARY INFORMATION WHICH MUST NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART WITHOUT PRIOR WRITTEN CONSENT.

SHEET NUMBER
3 OF 6

NO.	REVISION HISTORY	DATE	BY

SJE RHOMBUS
sjerhombus.com
22650 County Highway 6 - Detroit Lakes, MN 56501
1-800-746-6287

R.C. Worst & Company Inc.

Sacajawea

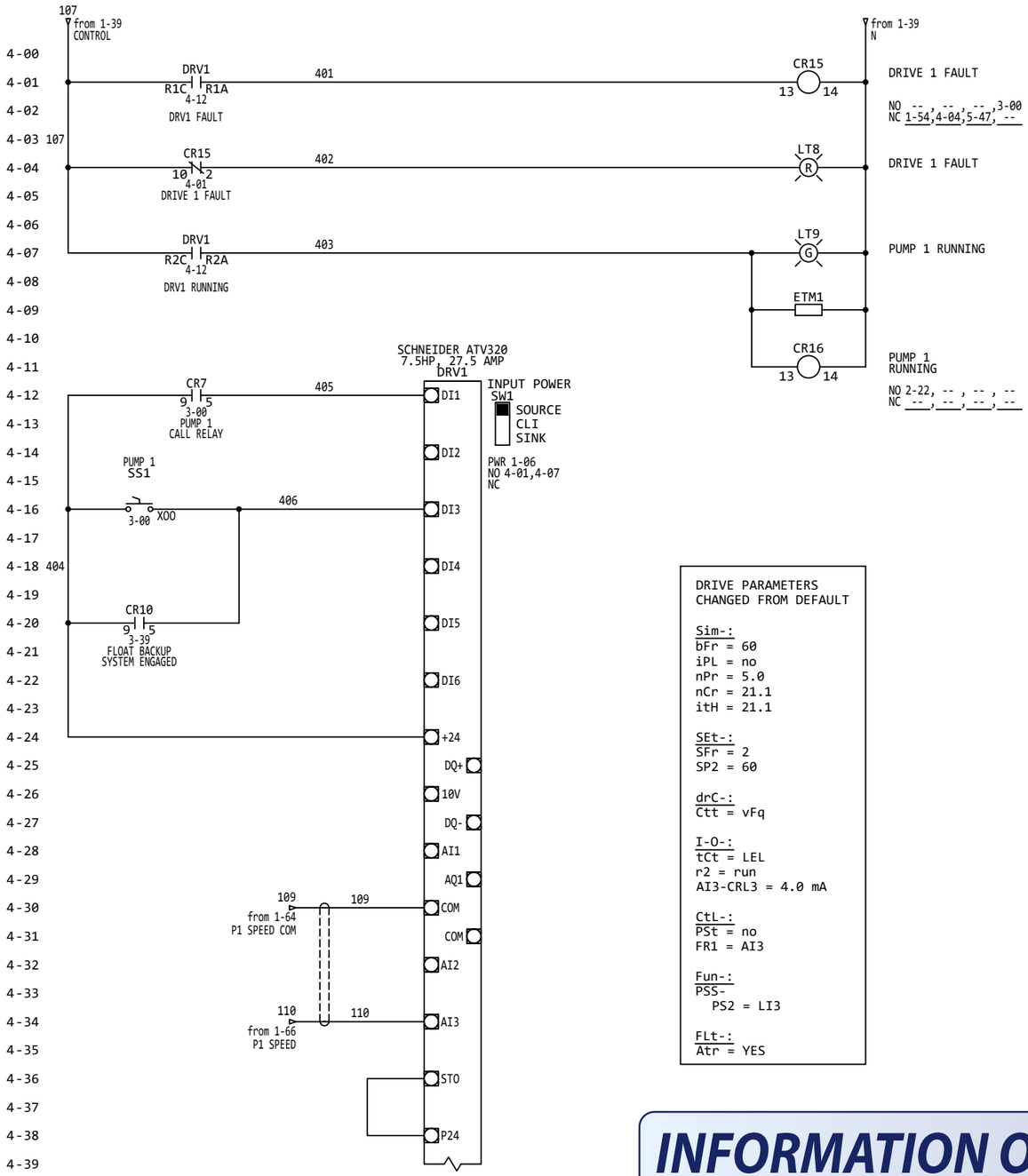
DUPLEX PUMP CONTROL PANEL

DRAWN BY ACS
DATE 4/4/22

PANEL REQUIREMENTS	
SYM.	
VOLTAGE	208 VAC
PHASE	3 PHASE
FREQUENCY	60 Hz
SCCR	5 kA RMS SYM
TOTAL FLA	47 FLA
TYPE	4

LARGEST MOTOR POWER REQUIREMENTS	
HP	5 HP
FLA	21.1 FLA

PROJECT NUMBER
4008102A



DRIVE PARAMETERS
CHANGED FROM DEFAULT

Sim-:
bFr = 60
iPL = no
nPr = 5.0
nCr = 21.1
itH = 21.1

SEt-:
SFr = 2
SP2 = 60

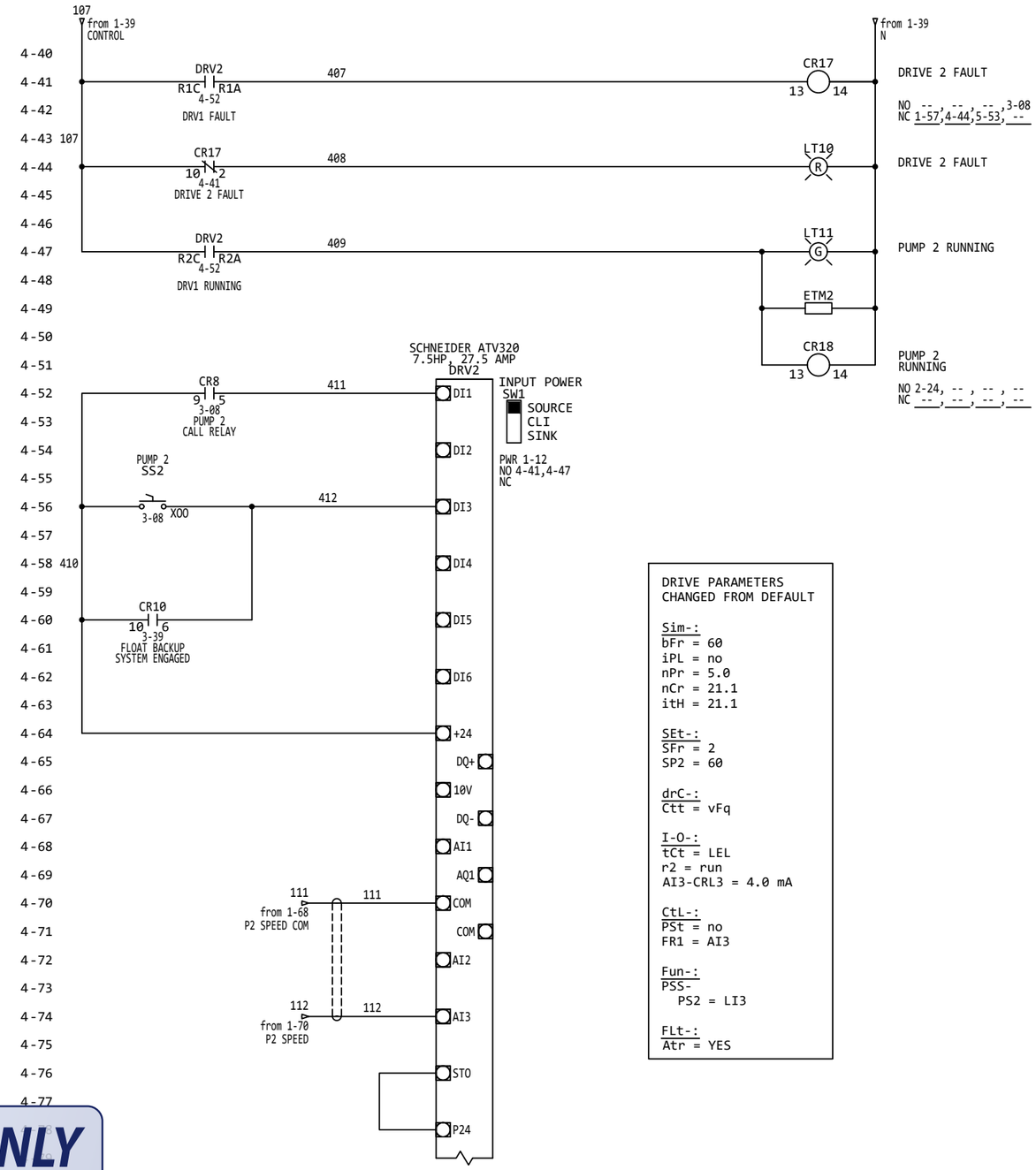
drC-:
Ctt = vFq

I-O-:
tCt = LEL
r2 = run
AI3-CRL3 = 4.0 mA

CtL-:
PSt = no
FR1 = AI3

Fun-:
PSS-
PS2 = LI3

FLt-:
Atr = YES



DRIVE PARAMETERS
CHANGED FROM DEFAULT

Sim-:
bFr = 60
iPL = no
nPr = 5.0
nCr = 21.1
itH = 21.1

SEt-:
SFr = 2
SP2 = 60

drC-:
Ctt = vFq

I-O-:
tCt = LEL
r2 = run
AI3-CRL3 = 4.0 mA

CtL-:
PSt = no
FR1 = AI3

Fun-:
PSS-
PS2 = LI3

FLt-:
Atr = YES

INFORMATION ONLY

THIS DRAWING CONTAINS PROPRIETARY INFORMATION WHICH MUST NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART WITHOUT PRIOR WRITTEN CONSENT.

NO.	REVISION HISTORY	DATE	BY

SJE RHOMBUS.
sjerhombus.com
22650 County Highway 6 - Detroit Lakes, MN 56501
1-800-746-6287

R.C. Worst & Company Inc.

Sacajawea

DUPLEX PUMP CONTROL PANEL

DRAWN BY ACS

DATE 4/4/22

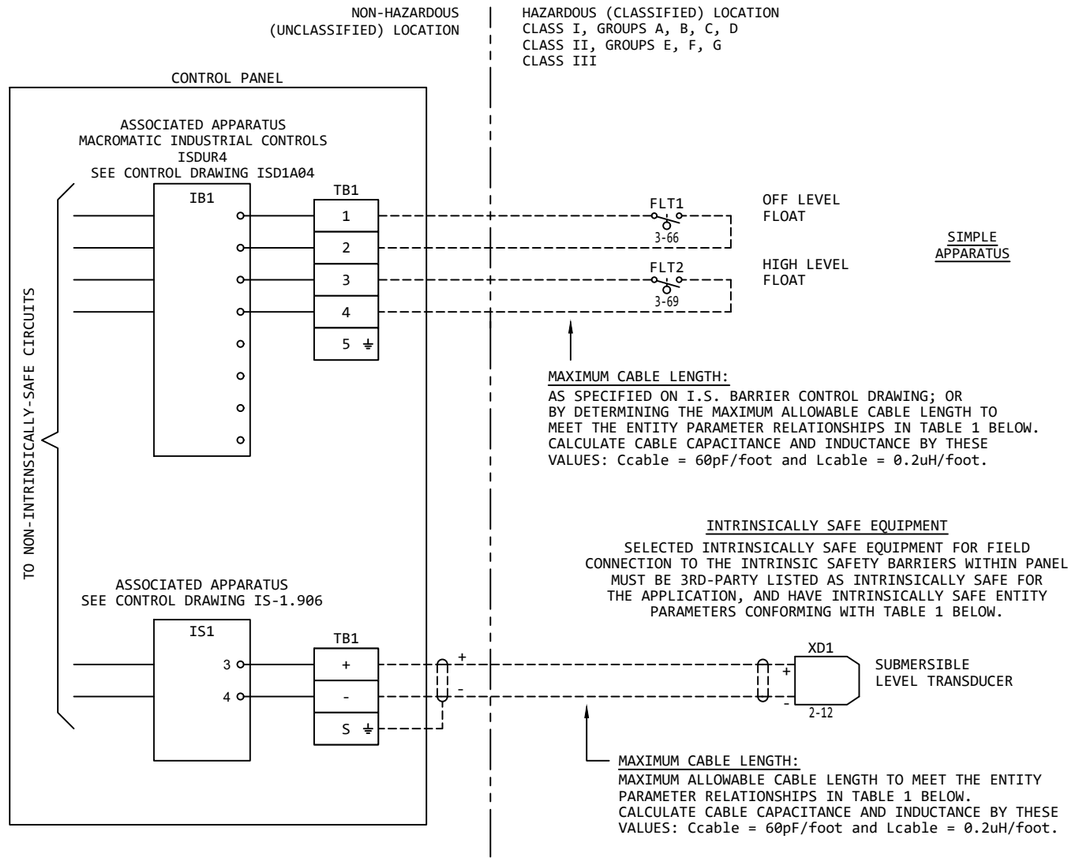
PANEL REQUIREMENTS	
SYM.	
VOLTAGE	208 VAC
PHASE	3 PHASE
FREQUENCY	60 Hz
SCCR	5 kA RMS SYM
TOTAL FLA	47 FLA
TYPE	4

LARGEST MOTOR POWER REQUIREMENTS	
HP	5 HP
FLA	21.1 FLA

PROJECT NUMBER
4008102A

FIELD WIRING SECTION

FIGURE 1
PANEL CONTROL DRAWING



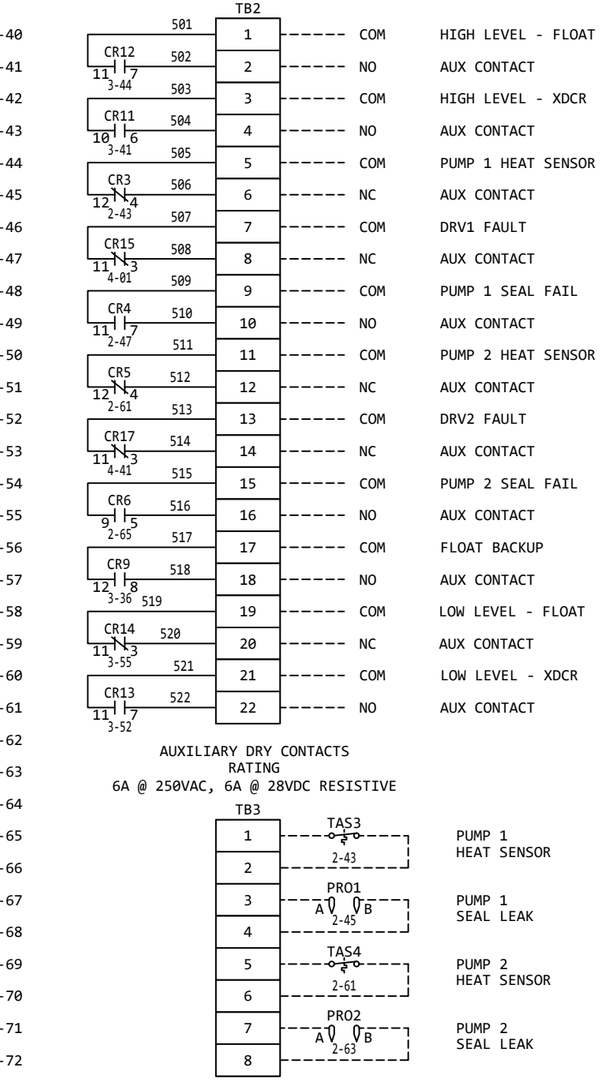
SEE THE CONTROL DRAWING FOR EACH INTRINSICALLY SAFE BARRIER FOR PERMITTED CONNECTIONS AND IDENTIFICATION OF THE ELECTRICAL (ENTITY) PARAMETERS OF EACH BARRIER, ALONG WITH OTHER INFORMATION FOR SAFE INTERCONNECTION.

INSTALL IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) OR CANADIAN ELECTRICAL CODE (CEC); AND ANY APPLICABLE LOCAL CODES BASED ON THE INSTALLATION LOCATION.

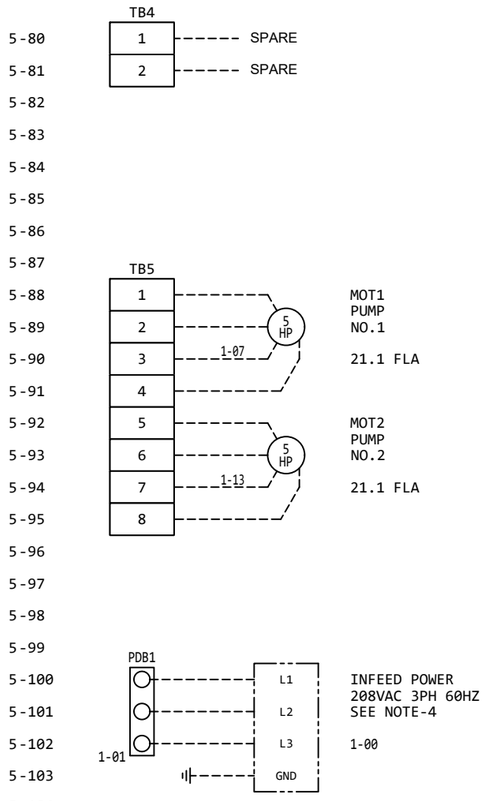
INSTALL IN ACCORDANCE WITH ARTICLE 504 OF THE NATIONAL ELECTRICAL CODE.

TABLE 1

UL LISTED I.S. BARRIER ENTITY PARAMETERS	REQUIRED RELATIONSHIP BETWEEN ENTITY PARAMETERS	I.S. APPARATUS ENTITY PARAMETERS
Voc or Vt (or Uo)	≤	Vmax (or Ui)
Isc or It (or Io)	≤	Imax (or Ii)
Po	≤	Pmax (or Pi)
Ca (or Co)	≥	Ci + Ccable
La (or Lo)	≥	Li + Lcable



FIELD WIRING TORQUE SPECIFICATIONS		
TERMINATION	WIRE SIZE	TORQUE
INCOMING POWER (PDB1)	#6 - 2/0 AWG #8 AWG #14 - #10 AWG	120 LB-IN 40 LB-IN 35 LB-IN
PUMP POWER (TB5)	#20 - #6 AWG	13.3 - 15.9 LB-IN
CONTROL & SENSORS (TB1 - TB4)	#24 - #8 AWG	13.3 - 15.9 LB-IN
GROUND LUG (GND1)	#2 - 1/0 AWG #8 - #4 AWG #14 - #10 AWG	50 LB-IN 45 LB-IN 35 LB-IN



NOTES:
1. FIELD WIRING IS SHOWN ----------
2. TEMPERATURE RATING OF FIELD INSTALLED CONDUCTORS LESS THAN 100 AMPS MUST BE RATED 60DEG C OR ABOVE. FIELD INSTALLED CONDUCTORS GREATER THAN OR EQUAL TO 100 AMPS MUST BE RATED 75 DEG C OR ABOVE.
3. FIELD WIRING WILL ACCEPT COPPER CONDUCTORS ONLY.
4. MAIN DISCONNECT PROVIDED BY INSTALLER.

INFORMATION ONLY

THIS DRAWING CONTAINS PROPRIETARY INFORMATION WHICH MUST NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART WITHOUT PRIOR WRITTEN CONSENT.

NO.	REVISION HISTORY	DATE	BY

SJE RHOMBUS.
sjerhombus.com
22650 County Highway 6 - Detroit Lakes, MN 56501
1-800-746-6287

R.C. Worst & Company Inc.
Sacajawea

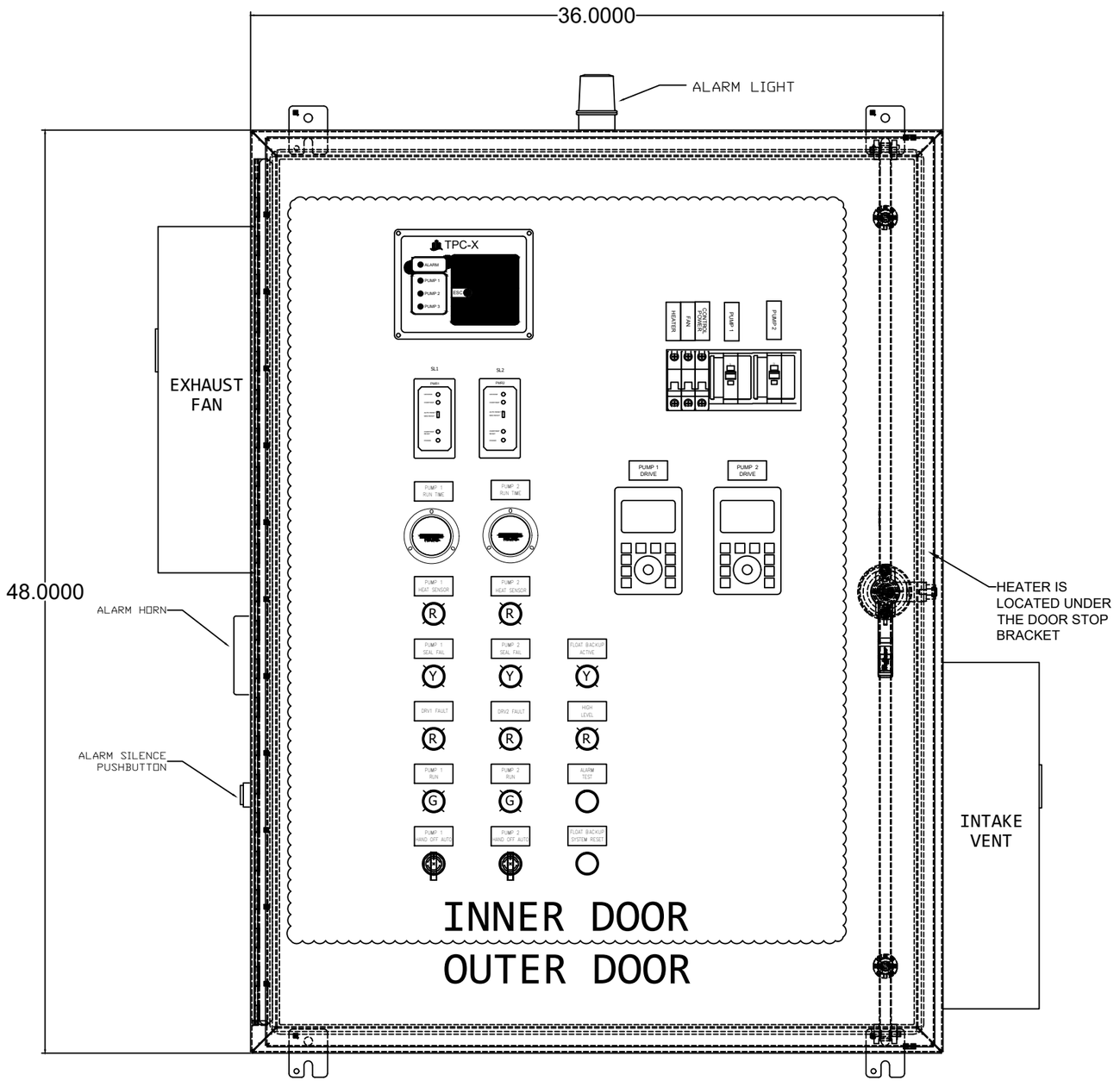
DUPLEX PUMP CONTROL PANEL

DRAWN BY ACS
DATE 4/4/22

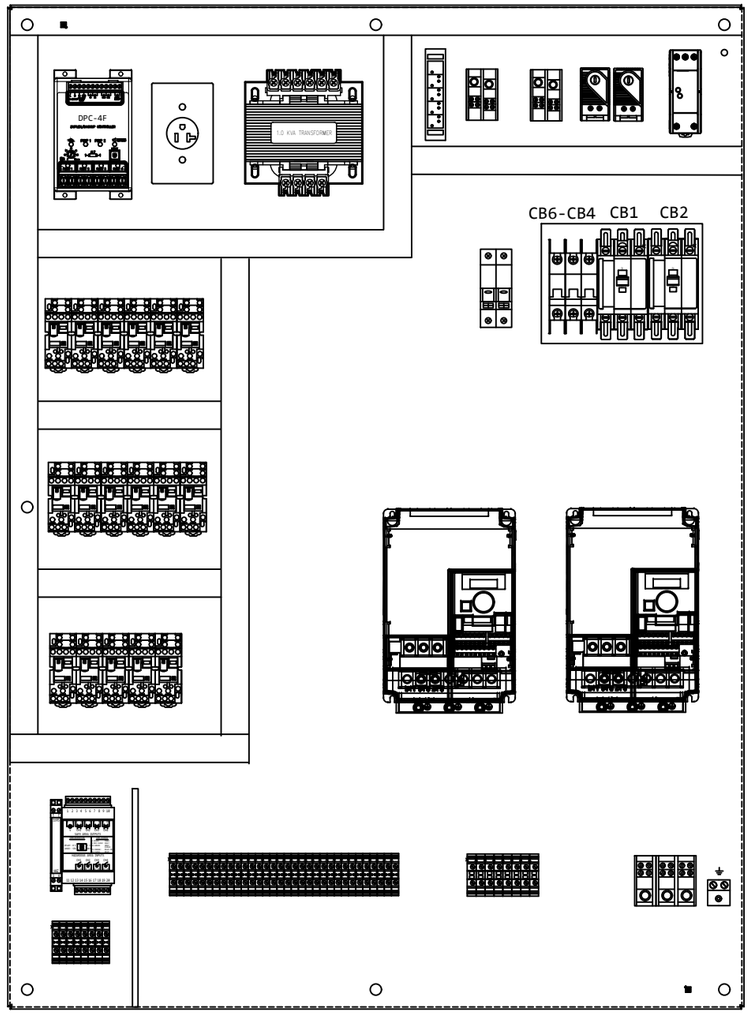
PANEL REQUIREMENTS	
SYM.	
VOLTAGE	208 VAC
PHASE	3 PHASE
FREQUENCY	60 Hz
SCCR	5 kA RMS SYM
TOTAL FLA	47 FLA
TYPE	4

LARGEST MOTOR POWER REQUIREMENTS	
HP	5 HP
FLA	21.1 FLA

PROJECT NUMBER
4008102A



INFORMATION ONLY



LAYOUT SUBJECT TO CHANGE WITHOUT NOTICE.

THIS DRAWING CONTAINS PROPRIETARY INFORMATION WHICH MUST NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART WITHOUT PRIOR WRITTEN CONSENT.

SHEET NUMBER
6 OF 6

NO.	REVISION HISTORY	DATE	BY

PRIMEX
primexcontrols.com
22650 County Highway 6 - Detroit Lakes, MN 56501
888-342-5753

R.C. Worst & Company Inc.
Sacajawea

DUPLEX PUMP CONTROL PANEL

DRAWN BY ACS
DATE 4/4/22

PANEL REQUIREMENTS	
SYM.	
VOLTAGE	208 VAC
PHASE	3 PHASE
FREQUENCY	60 Hz
SCCR	5 kA RMS SYM
TOTAL FLA	47 FLA
TYPE	4

LARGEST MOTOR POWER REQUIREMENTS	
HP	5 HP
FLA	21.1 FLA

PROJECT NUMBER
4008102A

PRIMEX

TAGS	QTY	IFS	CATALOG	MANUFACTURER	DESCRIPTION	QUERY2	QUERY3
ENCLOSURE	1	1041903	A48H36DLP3PT	HOFFMAN	ENCL,N4,STEEL,48X36X12,3PT,HOFFMAN	WALL-MOUNT ENCLOSURE	NEMA 4, 12, 13
STEEL BCKPNL	1	6000687	A48P36	HOFFMAN	PANEL, 45.00 x 33.00 IN, STEEL, WHITE	PANEL	WHITE
ENCLOSURE	1728	1027169	54288958	RYERSON	ALUMINUM, 0.125" x 48" x 96", PVC, B/S 3003-H15	ALUMINUM	INNER DOOR, BACKPLATE,BRACKET,
ENCLOSURE	2	1029398	1029398	SJE-RHOMBUS	INNER DOOR PARTS ASSEMBLY	INNER DOOR PARTS	ASSEMBLY
TAS1	1	1035576	CTS	INGRAM	THERMOSTAT, ADJUSTABLE 30-140 F, 1 NO - FAN	THERMOSTAT	30-140 F
FAN1	1	1052123	IQ150FPW-126-GY-N4	ICE QUBE INC	WASHDOWN FILTER FAN, 155 C.F.M. FREE AIR, 1.9A, STEEL, N4	FILTER FAN	155 C.F.M.
TAS2	1	1035575	HTS	INGRAM	THERMOSTAT, ADJUSTABLE 30-140 F, 1 NC - HEATER	THERMOSTAT	30-140 F
HTR1	1	1048627	394000-512	ACTION FABRICATING	BRACKET, WATLOW 50/100W HEATER	BRACKET	N/A
HTR1	1	1048398	020050C1-A001F	WATLOW	HEATER, WIRE-WOUND ELEMENT, SILICONE, 50W, 120VAC W/BRACKET	HEATER	120VAC, 50W
PDB1	1	6001727	CC1423	MARATHON	Cover: 3-pole bloc 175 Amp 142 SERIES	COVER	2.68" x 2.75"
PDB1	1	1024708	1423570	MARATHON	POWER DISTRIBUTION BLOCK, 3-POLE W/COVER	1x 14-2/0	4x 14-4
PDB2,PDB3	2	1047503	CC1412	MARATHON	Cover: 2-pole bloc 115 Amp 141 SERIES	COVER	1.42" x 2.40"
PDB2,PDB3	2	6000531	1412400	MARATHON	POWER DISTRIBUTION BLOCK, 2-POLE W/COVER	1x 14-2	4x 16-10
TB1,TB2,TB3,TB4	34	1038973	3044131	PHOENIX CONTACT	UNIVERSAL TERMINAL BLOCK - UT 6	FEED-THROUGH	57AMPS
TB1	2	1039246	3044157	PHOENIX CONTACT	UNIVERSAL GROUND TERMINAL BLOCK - UT 6-PE	FEED-THROUGH GROUND	57AMPS
TB5	8	1039243	3044160	PHOENIX CONTACT	UNIVERSAL TERMINAL BLOCK - UT 10	FEED-THROUGH	76AMPS
GND1	1	1026029	AU-0	ILSCO	GROUND LUG, ALUMINIUM, LUG SIZE 0	GROUND LUG	2x 14-1/0
PW1	1	1018742	PS5R-VC24	IDEC	UNIVERSAL 24VDC POWER SUPPLY, CLASS 1-DIV2 RATED, NEC CLASS2 UL508	24VDC/1.3A	SINGLE-PHASE
CB4	1	1029722	M9F42101	SCHNEIDER ELECTRIC	MINIATURE CIRCUIT BREAKER MULTI 9 - C60N - 1 POLE - 1AMP - C CURVE	1-POLE MINIATURE CIRCUIT BREAKER	1AMP
CB1,CB2	2	1003033	QOU340	SCHNEIDER ELECTRIC	MINIATURE CIRCUIT BREAKER QOU - 3 POLE - 40A	3-POLE MINIATURE CIRCUIT BREAKER	40AMP
CB3,CB5	2	1030216	M9F42103	SCHNEIDER ELECTRIC	MINIATURE CIRCUIT BREAKER MULTI 9 - C60N - 1 POLE - 3AMP - C CURVE	1-POLE MINIATURE CIRCUIT BREAKER	3AMP
DRV1,DRV2	2	1052793	ATV320U55M3C	SCHNEIDER ELECTRIC	ALTIVAR 320 VARIABLE SPEED DRIVE, DRIVE, 200 - 240VAC 3PH, 50/60Hz, 27.0A, 7.5HP	ALTIVAR 320	7.5HP

INFORMATION ONLY

PRIMEX

TAGS	QTY	IFS	CATALOG	MANUFACTURER	DESCRIPTION	QUERY2	QUERY3
DRV1,DRV2	2	1044863	VW3A1112	SCHNEIDER ELECTRIC	KEYPAD, VFD, DOOR MOUNT KIT, ATV630	ALTIVAR 630	ACCESSORY
DRV1,DRV2	2	1028436	VW3A1104R30	SCHNEIDER ELECTRIC	CABLE, KEY PAD, RJ45 3 MET, SQD	ATV61	ACCESSORY
DRV1,DRV2	2	1044862	VW3A1111	SCHNEIDER ELECTRIC	KEYPAD, VFD, REMOTE, FOR ATV630, ATV320	ATV630	ACCESSORY
FU1,FU2	2	1040040	FNQ-R-10	BUSSMANN	FUSE - CLASS CC, 10AMPS, 600VAC	TIME DELAY	600VAC
FU1	1	1031448	DFCC2	SCHNEIDER ELECTRIC	2 POLE FUSE BLOCK - CLASS CC, 1/10-30AMPS, 600VAC	FUSE HOLDER	600VAC
XF1	1	1022004	9070T1000D3	SQD	INDUSTRIAL CONTROL TRANSFORMER, CLASS 9070, 1KVA, 208V-120V, 50/60HZ	CONTROL TRANSFORMER	1KVA
XF1	1	1039287	9070FSC2	SQD	FINGER SAFE COVER, 2 PER KIT, ACCESSORY KEY I:T250-T5000 II:T250-T5000	FINGER SAFE COVER	SC2
AS1	1	1036427	QLS-1	LAUREL	QUAD ISOLATED OUTPUT LOOP SPLITTER/RETRANSMITTER, 85-264 VAC	LOOP SPLITTER	QUAD
CT1	1	1050831	TPC-X	SJE-RHOMBUS	CONTROLLER, TPC-X, XDCR CONTROL,ASSEMBLY	CONTROLLER	LIFT STATION CONTROLLER
CT2	1	1052204	1052204	PRIMEX	CONTROLLER, DPC-4F, PRIMEX FLOAT CONTROL	PRIMEX	DPC-4F
SL1,SL2	2	1031278	PMR1	TAMARACK ENGINEERING	REVERSE DOOR MOUNT ASSEMBLY, PUMP MONITOR RELAY, SEAL LEAK ALARM, MOTOR OVER	RELAY	MOISTURE
ISB	1	1047680	MZB87P	TURCK	ZENER BARRIER, 1CH, 4-20MA, K1075, MZB87P, TURCK	1 CHANNEL	20-35VDC
IS1	1	1060507	ISDUR4	MACROMATIC	INTRINSIC BARRIER, 4 CHANNEL INPUT, SCREW TERMINAL, 4 RELAY OUTPUT	4 CHANNEL	120VAC, 10-125VDC
ETM1,ETM2	2	1033953	T50B2	ENM COMPANY	ELAPSED TIME METER, QUARTZ AC HOUR METER II, 5 DIGIT HOURS, 1 DIGIT TENTHS	T50	120VAC
CR1,CR10,CR11,CR12,CR13,CR14,CR15,CR16,C	18	1028815	RXZE2M114M	SCHNEIDER ELECTRIC	SOCKET FOR RELAYS TYPE RXM	TYPE RXM	SOCKET
CR1,CR10,CR11,CR12,CR13,CR14,CR15,CR16,C	18	1030214	RXM4AB2F7	SCHNEIDER ELECTRIC	PLUG-IN MINIATURE RELAY, TYPE RXM, SOCKET RXZE2M114M, WITH LED	TYPE RXM	120VAC
SL1,SL2	2	1028339	SR6P-M11G	IDEC	11 PIN BASE, REVERSE (DOOR MOUNT), OCTAL, RTE SERRIES, SCREW CLAMP	11 PIN BASE	REVERSE (DOOR MOUNT)
SS1,SS2	2	1017226	XB4BJ33	TELEMECANIQUE	XB4 BLACK SELECTOR SWITCH Ã˜22 LONG HANDLE 3 POSITIONS - 2NO	22mm	BLACK
SS1,SS2	2	1022054	ZBE101	TELEMECANIQUE	CONTROL BUTTON CONTACT BLOCK - ZBE Ã˜22 - 1NO	22mm	SCREW-CLAMPS TERMINALS
PB1,PB2,PB3	3	1027100	XB4BA21	TELEMECANIQUE	PUSH BUTTON ASSEMBLY, Ã˜22mm - IP 65 - BLACK	22mm	BLACK
PB2	1	1028513	ZBA147	TELEMECANIQUE	PUSH BUTTON CAP, 22MM, SILENCE INSERT	22mm	SILENCE
LT1,LT3,LT5	3	6001985	XB4BVG5	TELEMECANIQUE	ROUND PILOT LIGHT Ã˜22 - IP 65 - YELLOW - INTEGRAL LED - 120V - LUGS	22mm	120V

INFORMATION ONLY

TAGS	QTY	IFS	CATALOG	MANUFACTURER	DESCRIPTION	QUERY2	QUERY3
LT10,LT2,LT4,LT6,LT7,LT8	6	1024711	XB4BVG4	TELEMECANIQUE	ROUND PILOT LIGHT Ã˜22 - IP 65 - RED - INTEGRAL LED - 120V - LUGS	22mm	120V
LT11,LT9	2	1017411	XB4BVG3	TELEMECANIQUE	ROUND PILOT LIGHT Ã˜22 - IP 65 - GREEN - INTEGRAL LED - 120V - LUGS	22mm	120V
AL1	1	1032874	SBN120AC-R	INGRAM	BEACON, SBN LED, RED, TYPE 4X, 120VAC	LED	120VAC
AH1	1	1034598	AH115A8G	INGRAM	HORN, 120VAC, GRAY	120VAC	HORN
RECPT1	1	1064568	804155	PHOENIX CONTACT	15A SIMPLEX, DIN RAIL MOUNT, 2 POLE, 3-WIRE, UL	15 AMP, 125V	SIMPLEX
WARNING LABEL	1	1005699	1005699	PRIMEX	LABEL, WARNING, DISCONNECT POWER, ENGLISH / FRENCH / SPANISH, LARGE	LABEL	DISCONNECT POWER
UL STICKER	1	1028758	1028758	SJE-RHOMBUS	LABEL, UL698A, ASHLAND, E151538-A	UL	ASSEMBLY
UL STICKER	1	1024481	1024481	PRIMEX	LABEL, WARNING, INTRINSICALLY SAFE CIRCUITS, UL698A, ENGLISH / FRENCH	LABEL	EXPLOSION HAZARD
UL STICKER	1	1028503	1028503	SJE-RHOMBUS	LABEL, SERIAL NUMBER, UL698A, ASHLAND	UL	ASSEMBLY
SCHEMATIC	1	1028516	PRODUCT SCHEMATIC	SJE-RHOMBUS	LABEL, SCHEMATIC, MATCHES PANEL NUMBER	LABEL	SCHEMATIC
LOGO	1	1039124	1039124	PRIMEX	NAME PLATE, PRIMEX, PANEL OVER 30", STICKER	LABEL	ASSEMBLY

INFORMATION ONLY

APPENDIX K
TRAILHEAD PUMP SYSTEM

Pump Data Sheet - Keen Pump Inc.

Company: RC Worst & Co.
Name: Ray Koberstine, PE
Date: 05/30/2023

Pump:

Size:	K3RN	Dimensions:	
Type:	Submersible Sewage	Suction:	3 in
Synch Speed:	1200 rpm	Discharge:	3 in
Dia:	5.75 in		
Curve:	---		

Fluid:

Name:	Water		
SG:	1	Vapor Pressure:	0.256 psi a
Density:	62.4 lb/ft³	Atm Pressure:	14.7 psi a
Viscosity:	1.1 cP		
Temperature:	60 °F	Margin Ratio:	1

Search Criteria:

Flow:	70 US gpm	Near Miss:	---
Head:	13 ft	Static Head:	5 ft

Pump Limits:

Temperature:	---	Sphere Size:	3 in
Wkg Pressure:	---		

Motor:

Standard:	NEMA	Size:	2 hp
Enclosure:	TEFC	Speed:	1200 rpm
Frame:	184T		
Sizing Criteria:	Max Power on Design Curve		

Pump Selection Warnings:

None

--- Duty Point ---

Flow:	70.6 US gpm
Head:	13.1 ft
Eff:	19.4%
Power:	1.21 hp
NPSHr:	---
Speed:	1150 rpm

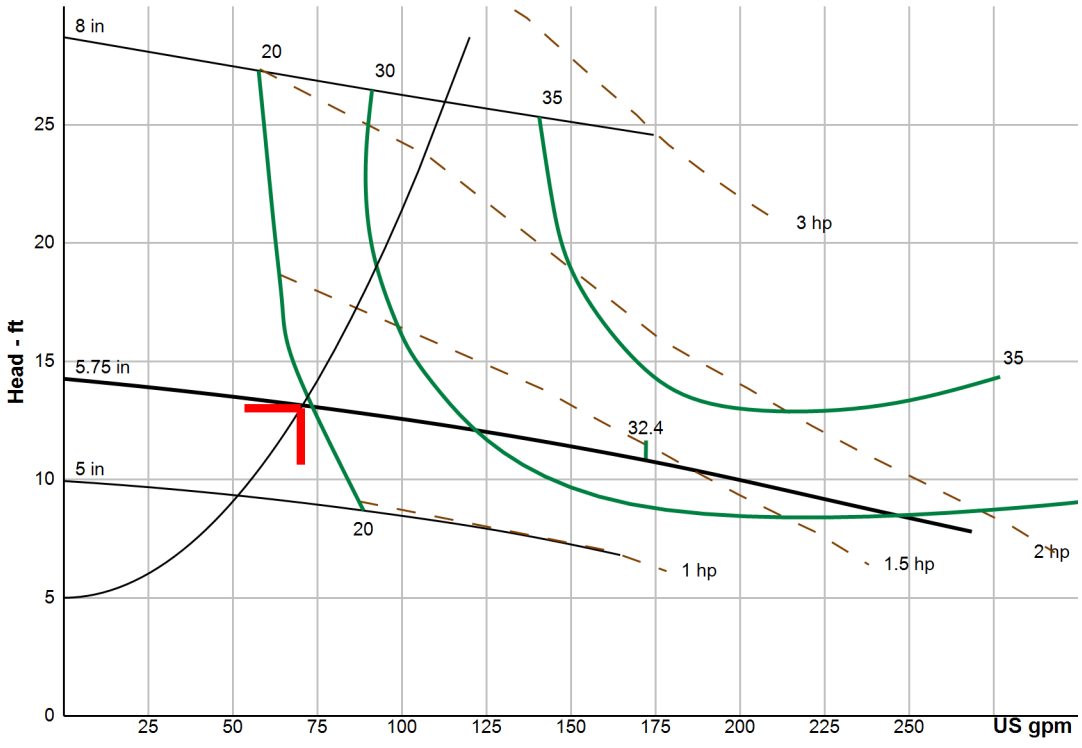
--- Design Curve ---

Shutoff Head:	14.3 ft
Shutoff dP:	6.17 psi
Min Flow:	--- US gpm

BEP: 32.4% @ 172 US gpm
NOL Power:
1.88 hp @ 268 US gpm

--- Max Curve ---

Max Power:
2.99 hp @ 174 US gpm



Performance Evaluation:

Flow	Speed	Head	Efficiency	Power	NPSHr
US gpm	rpm	ft	%	hp	ft
84	1150	12.9	22.2	1.22	---
70	1150	13.1	19.3	1.21	---
56	1150	13.4	16.4	1.2	---
42	1150	13.6	13.5	1.2	---
28	1150	13.8	10.6	1.19	---

APPENDIX L
WAGE RATE INFORMATION

Federal Wage Rates
Washington State – Spokane County
Benefit Code Key
Supplement to Wage Rates

Based on the bid submittal deadline for this project, the applicable effective date for prevailing wages for this project is: June 27, 2025

A copy of the applicable prevailing wage rates are enclosed.

Federal Davis-Bacon wage rates or state wage rates, whichever are higher, shall be paid on this project. Where state wage rates are higher the state prevailing rate of wage to be paid to all workmen, laborers, or mechanics employed in the performance of any part of this contract shall be in accordance with the provisions of Chapter 39.12 RCW, as amended, and the rules and regulations of the Department of Labor and Industries of the State of Washington. The prevailing wage rates for the locality or localities where this contract will be performed shall be determined by the Industrial Statistician of the State Department of Labor and Industries and are by reference made a part of this contract as though fully set forth herein.

The prime CONTRACTOR and all subcontractors must pay the prevailing wage rates on the work performed under this contract.

The CONTRACTOR and all subcontractors must pay all the filing fees required to comply with applicable labor laws.

"General Decision Number: WA20250001 06/06/2025

Superseded General Decision Number: WA20240001

State: Washington

Construction Type: Highway

Counties: Washington Statewide.

HIGHWAY (Excludes D.O.E. Hanford Site in Benton and Franklin Counties)

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least $17.75 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2025.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least $13.30 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2025.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at http://www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/03/2025
1	02/07/2025
2	03/21/2025
3	04/25/2025
4	05/30/2025
5	06/06/2025

CARP0003-001 06/01/2021

SOUTHWEST WASHINGTON: CLARK, COWLITZ, LEWIS (Piledriver only), PACIFIC (South of a straight line made by extending the north boundary line of Wahkiakum County west to Willapa Bay to the

Pacific Ocean), SKAMANIA, and WAHKIAKUM Counties.

	Rates	Fringes
Carpenters:		
CARPENTERS	$ 44.38	16.87
DIVERS TENDERS	$ 49.09	16.87
DIVERS	$ 93.09	16.87
DRYWALL	$ 44.38	16.87
MILLWRIGHTS	$ 46.89	16.87
PILEDRIVERS	$ 44.97	16.87

DEPTH PAY:
50 TO 100 FEET $1.00 PER FOOT OVER 50 FEET
101 TO 150 FEET $1.50 PER FOOT OVER 101 FEET
151 TO 200 FEET $2.00 PER FOOT OVER 151 FEET

Zone Differential (Add up Zone 1 rates):
Zone 2 - $0.85
Zone 3 - 1.25
Zone 4 - 1.70
Zone 5 - 2.00
Zone 6 - 3.00

BASEPOINTS: ASTORIA, LONGVIEW, PORTLAND, THE DALLES, AND VANCOUVER, (NOTE: All dispatches for Washington State Counties: Cowlitz, Wahkiakum and Pacific shall be from Longview Local #1707 and mileage shall be computed from that point.)

ZONE 1: Projects located within 30 miles of the respective city hall of the above mentioned cities
ZONE 2: Projects located more than 30 miles and less than 40 miles of the respective city of the above mentioned cities
ZONE 3: Projects located more than 40 miles and less than 50 miles of the respective city of the above mentioned cities
ZONE 4: Projects located more than 50 miles and less than 60 miles of the respective city of the above mentioned cities.
ZONE 5: Projects located more than 60 miles and less than 70 miles of the respective city of the above mentioned cities
ZONE 6: Projects located more than 70 miles of the respected city of the above mentioned cities

---

* CARP0030-017 06/01/2021

CLALLAM, GRAYS HARBOR, ISLAND, JEFFERSON, KING, KITSAP, LEWIS, MASON, PACIFIC (North of a straight line made by extending the north boundary line of Wahkiakum County west to the Pacific Ocean), PIERCE, SAN JUAN, SKAGIT, SNOHOMISH, THURSTON AND WHATCOM Counties

	Rates	Fringes
CARPENTER		
BRIDGE CARPENTERS	$ 49.18	19.01
CARPENTERS ON CREOSOTE MATERIAL	$ 47.02	19.01
CARPENTERS	$ 49.18	19.01
DIVERS TENDER	$ 54.54	19.01
DIVERS	$ 103.43	19.01
PILEDRIVER, DRIVING, PULLING, CUTTING, PLACING COLLARS, SETTING, WELDING OR CRESOTE TREATED MATERIAL, ALL PILING	$ 49.58	19.01

(HOURLY ZONE PAY: WESTERN AND CENTRAL WASHINGTON - ALL CLASSIFICATIONS EXCEPT MILLWRIGHTS AND PILEDRIVERS

Hourly Zone Pay shall be paid on jobs located outside of the free zone computed from the city center of the following listed cities:

Seattle	Olympia	Bellingham
Auburn	Bremerton	Anacortes
Renton	Shelton	Yakima
Aberdeen-Hoquiam	Tacoma	Wenatchee
Ellensburg	Everett	Port Angeles
Centralia	Mount Vernon	Sunnyside
Chelan	Pt. Townsend	

Zone Pay:

0 -25 radius miles	Free
26-35 radius miles	$1.00/hour
36-45 radius miles	$1.15/hour
46-55 radius miles	$1.35/hour
Over 55 radius miles	$1.55/hour

(HOURLY ZONE PAY: WESTERN AND CENTRAL WASHINGTON - MILLWRIGHT AND PILEDRIVER ONLY)

Hourly Zone Pay shall be computed from Seattle Union Hall, Tacoma City center, and Everett City center

Zone Pay:

0 -25 radius miles	Free
26-45 radius miles	$ .70/hour
Over 45 radius miles	$1.50/hour

CARP0059-002 06/01/2024

ADAMS, ASOTIN, BENTON, CHELAN (East of 120th meridian), COLUMBIA, DOUGLAS, FERRY, FRANKLIN, GARFIELD, GRANT (East of 120th meridian), KITTITAS (East of 120th meridian), LINCOLN, OKANOGAN (East of 120th meridian), PEND OREILLE, SPOKANE, STEVENS, WALLA WALLA, WHITMAN, and YAKIMA (East of 120th meridian) Counties

	Rates	Fringes
CARPENTER		
GROUP 1	$ 41.86	16.56
GROUP 2	$ 47.42	18.96
GROUP 3	$ 47.41	16.61
GROUP 4	$ 45.86	16.56
GROUP 5	$ 105.46	16.56
GROUP 6	$ 51.73	16.56
GROUP 7	$ 52.73	16.56
GROUP 8	$ 48.41	16.56
GROUP 9	$ 55.73	16.56

CARPENTER & DIVER CLASSIFICATIONS:

GROUP 1: Carpenter

GROUP 2: Millwright, Machine Erector

GROUP 3: Piledriver - includes driving, pulling, cutting, placing collars, setting, welding, or creosote treated material, on all piling

GROUP 4: Bridge, Dock, and Wharf carpenters

GROUP 5: Diver Wet

GROUP 6: Diver Tender, Manifold Operator, ROV Operator

GROUP 7: Diver Standby

GROUP 8: Assistant Diver Tender, ROV Tender/Technician

GROUP 9: Manifold Operator-Mixed Gas

ZONE PAY:

ZONE 1	0-45 MILES	FREE

ZONE 2   45-100 $4.00/PER HOUR
ZONE 3   OVER 100 MILES $6.00/PER HOUR

DISPATCH POINTS:
  CARPENTERS/MILLWRIGHTS: PASCO (515 N Neel Street) or Main Post Office of established residence of employee (Whichever is closest to the worksite).

  CARPENTERS/PILEDRIVER: SPOKANE (127 E. AUGUSTA AVE.) or Main Post Office of established residence of employee (Whichever is closest to the worksite).

  CARPENTERS: WENATCHEE (27 N. CHELAN) or Main Post Office of established residence of employee (Whichever is closest to the worksite).

  CARPENTERS: COEUR D' ALENE (1839 N. GOVERNMENT WAY) or Main Post Office of established residence of employee (Whichever is closest to the worksite).

  CARPENTERS: MOSCOW (306 N. JACKSON) or Main Post Office of established residence of employee (Whichever is closest to the worksite).

DEPTH PAY FOR DIVERS BELOW WATER SURFACE:
50-100 feet $2.00 per foot
101-150 feet $3.00 per foot
151-220 feet $4.00 per foot
221 feet and deeper $5.00 per foot

PREMIUM PAY FOR DIVING IN ENCLOSURES WITH NO VERTICAL ASCENT:
0-25 feet Free
26-300 feet $1.00 per Foot

SATURATION DIVING:
  The standby rate applies until saturation starts. The saturation diving rate applies when divers are under pressure continuously until work task and decompression are complete. the diver rate shall be paid for all saturation hours.

WORK IN COMBINATION OF CLASSIFICATIONS:
  Employees working in any combination of classifications within the diving crew (except dive supervisor) in a shift are paid in the classification with the highest rate for that shift.

HAZMAT PROJECTS:

  Anyone working on a HAZMAT job (task), where HAZMAT certification is required, shall be compensated at a premium, in addition to the classification working in as follows:

  LEVEL D + $.25 per hour - This is the lowest level of protection. No respirator is used and skin protection is minimal.

  LEVEL C + $.50 per hour - This level uses an air purifying respirator or additional protective clothing.

  LEVEL B + $.75 per hour - Uses same respirator protection as Level A. Supplied air line is provided in conjunction with a chemical ""splash suit"".

  LEVEL A +$1.00 per hour - This level utilizes a fully encapsulated suit with a self-contained breathing apparatus or a supplied air line.

---
* CARP0096-002 06/01/2025

CLALLAM, GRAYS HARBOR, ISLAND, JEFFERSON, KING, KITSAP, LEWIS, MASON, PACIFIC (North of a straight line made by extending the north boundary line of Wahkiakum County west to the Pacific

Ocean), PIERCE, SAN JUAN, SKAGIT, SNOHOMISH, THURSTON AND
WHATCOM Counties

	Rates	Fringes
MILLWRIGHT	$ 55.39	22.38

---

* CARP0770-004 06/01/2021

WEST OF 120TH MERIDIAN FOR THE FOLLOWING COUNTIES:
CHELAN, DOUGLAS, GRANT, KITTITAS, OKANOGAN, and YAKIMA

	Rates	Fringes
CARPENTER		
CARPENTERS ON CREOSOTE MATERIAL	$ 47.02	19.01
CARPENTERS	$ 49.18	19.01
DIVERS TENDER	$ 54.54	19.01
DIVERS	$ 103.43	19.01
PILEDRIVER, DRIVING, PULLING, CUTTING, PLACING COLLARS, SETTING, WELDING OR CRESOTE TREATED MATERIAL, ALL PILING	$ 49.58	19.01

(HOURLY ZONE PAY: WESTERN AND CENTRAL WASHINGTON - ALL CLASSIFICATIONS EXCEPT MILLWRIGHTS AND PILEDRIVERS

Hourly Zone Pay shall be paid on jobs located outside of the free zone computed from the city center of the following listed cities:

Seattle	Olympia	Bellingham
Auburn	Bremerton	Anacortes
Renton	Shelton	Yakima
Aberdeen-Hoquiam	Tacoma	Wenatchee
Ellensburg	Everett	Port Angeles
Centralia	Mount Vernon	Sunnyside
Chelan	Pt. Townsend	

Zone Pay:

0 -25 radius miles	Free
26-35 radius miles	$1.00/hour
36-45 radius miles	$1.15/hour
46-55 radius miles	$1.35/hour
Over 55 radius miles	$1.55/hour

(HOURLY ZONE PAY: WESTERN AND CENTRAL WASHINGTON - MILLWRIGHT AND PILEDRIVER ONLY)

Hourly Zone Pay shall be computed from Seattle Union Hall, Tacoma City center, and Everett City center

Zone Pay:

0 -25 radius miles	Free
26-45 radius miles	$ .70/hour
Over 45 radius miles	$1.50/hour

---

* CARP1607-010 06/01/2025

CHELAN, DOUGLAS, GRANT, KLICKITAT, KITTITAS, OKANOGAN, and
YAKIMA COUNTIES

	Rates	Fringes
MILLWRIGHT	$ 59.99	25.43

ELEC0046-001 08/05/2024

CALLAM, JEFFERSON, KING AND KITSAP COUNTIES

	Rates	Fringes
CABLE SPLICER	$ 80.94	31.06
ELECTRICIAN	$ 73.58	30.84

---

* ELEC0048-003 01/01/2025

CLARK, KLICKITAT AND SKAMANIA COUNTIES

	Rates	Fringes
CABLE SPLICER	$ 44.22	21.50
ELECTRICIAN	$ 63.50	29.73

HOURLY ZONE PAY:

Hourly Zone Pay shall be paid on jobs located outside of the free zone computed from the city center of the following listed cities:

Portland, The Dalles, Hood River, Tillamook, Seaside and Astoria

Zone Pay:
Zone 1: 31-50 miles $1.50/hour
Zone 2: 51-70 miles $3.50/hour
Zone 3: 71-90 miles $5.50/hour
Zone 4: Beyond 90 miles $9.00/hour

*These are not miles driven. Zones are based on Delorrne Street Atlas USA 2006 plus.

ELEC0048-029 01/01/2025

COWLITZ AND WAHKIAKUM COUNTY

	Rates	Fringes
CABLE SPLICER	$ 44.22	21.50
ELECTRICIAN	$ 63.50	29.73

ELEC0073-001 07/01/2024

ADAMS, FERRY, LINCOLN, PEND OREILLE, SPOKANE, STEVENS, WHITMAN COUNTIES

	Rates	Fringes
CABLE SPLICER	$ 34.10	16.68
ELECTRICIAN	$ 47.55	18.03

ELEC0076-002 02/01/2025

GRAYS HARBOR, LEWIS, MASON, PACIFIC, PIERCE, AND THURSTON COUNTIES

	Rates	Fringes
CABLE SPLICER	$ 69.19	26.63
ELECTRICIAN	$ 62.90	26.26

ELEC0112-005 06/01/2024

ASOTIN, BENTON, COLUMBIA, FRANKLIN, GARFIELD, KITTITAS, WALLA WALLA, YAKIMA COUNTIES

	Rates	Fringes
CABLE SPLICER	$ 60.90	26.01
ELECTRICIAN	$ 58.00	25.92

ELEC0191-003 06/01/2022

ISLAND, SAN JUAN, SNOHOMISH, SKAGIT AND WHATCOM COUNTIES

	Rates	Fringes
CABLE SPLICER	$ 44.23	17.73
ELECTRICIAN	$ 53.20	27.51

ELEC0191-004 06/01/2018

CHELAN, DOUGLAS, GRANT AND OKANOGAN COUNTIES

	Rates	Fringes
CABLE SPLICER	$ 40.82	17.63
ELECTRICIAN	$ 42.45	21.34

ENGI0302-003 06/01/2024

CHELAN (WEST OF THE 120TH MERIDIAN), CLALLAM, DOUGLAS (WEST OF THE 120TH MERIDIAN), GRAYS HARBOR, ISLAND, JEFFERSON, KING, KITSAP, KITTITAS, MASON, OKANOGAN (WEST OF THE 120TH MERIDIAN), SAN JUNA, SKAGIT, SNOHOMISH, WHATCOM AND YAKIMA (WEST OF THE 120TH MERIDIAN) COUNTIES

Zone 1 (0-25 radius miles):

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
Group 1A	$ 59.54	26.57
Group 1AA	$ 60.40	26.57
Group 1AAA	$ 61.27	26.57
Group 1	$ 58.67	26.57
Group 2	$ 57.92	26.57
Group 3	$ 57.27	26.57
Group 4	$ 53.62	26.57

Zone Differential (Add to Zone 1 rates):
Zone 2 (26-45 radius miles) - $1.00
Zone 3 (Over 45 radius miles) - $1.30

BASEPOINTS: Aberdeen, Bellingham, Bremerton, Everett, Kent, Mount Vernon, Port Angeles, Port Townsend, Seattle, Shelton, Wenatchee, Yakima

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1AAA - Cranes-over 300 tons, or 300 ft of boom (including jib with attachments)

GROUP 1AA - Cranes 200 to 300 tons, or 250 ft of boom (including jib with attachments); Tower crane over 175 ft in height, base to boom

GROUP 1A - Cranes, 100 tons thru 199 tons, or 150 ft of boom (including jib with attachments); Crane-overhead, bridge type, 100 tons and over; Tower crane up to 175 ft in height base to boom; Loaders-overhead, 8 yards and over; Shovels, excavator, backhoes-6 yards and over with attachments

GROUP 1 - Cableway; Cranes 45 tons thru 99 tons, under 150 ft of boom (including jib with attachments); Crane-overhead, bridge type, 45 tons thru 99 tons; Derricks on building work; Excavator, shovel, backhoes over 3 yards and under 6 yards; Hard tail end dump articulating off-road equipment 45 yards and over; Loader- overhead 6 yards to, but not including 8 yards; Mucking machine, mole, tunnel, drill and/or shield; Quad 9, HD 41, D-10; Remote control operator on rubber tired earth moving equipment; Rollagon;

Scrapers-self propelled 45 yards and over; Slipform pavers; Transporters, all truck or track type

GROUP 2 - Barrier machine (zipper); Batch Plant Operaor-Concrete; Bump Cutter; Cranes, 20 tons thru 44 tons with attachments; Crane-overhead, bridge type-20 tons through 44 tons; Chipper; Concrete Pump-truck mount with boom attachment; Crusher; Deck Engineer/Deck Winches (power); Drilling machine; Excavator, shovel, backhoe-3yards and under; Finishing Machine, Bidwell, Gamaco and similar equipment; Guardrail punch; Horizontal/directional drill operator; Loaders-overhead under 6 yards; Loaders-plant feed; Locomotives-all; Mechanics-all; Mixers-asphalt plant; Motor patrol graders-finishing; Piledriver (other than crane mount); Roto-mill,roto-grinder; Screedman, spreader, topside operator-Blaw Knox, Cedar Rapids, Jaeger, Caterpillar, Barbar Green; Scraper-self propelled, hard tail end dump, articulating off-road equipment-under 45 yards; Subgrade trimmer; Tractors, backhoes-over 75 hp; Transfer material service machine-shuttle buggy, blaw knox-roadtec; Truck crane oiler/driver-100 tons and over; Truck Mount portable conveyor; Yo Yo Pay dozer

GROUP 3 - Conveyors; Cranes-thru 19 tons with attachments; A-frame crane over 10 tons; Drill oilers-auger type, truck or crane mount; Dozers-D-9 and under; Forklift-3000 lbs. and over with attachments; Horizontal/directional drill locator; Outside hoists-(elevators and manlifts), air tuggers, strato tower bucket elevators; Hydralifts/boom trucks over 10 tons; Loader-elevating type, belt; Motor patrol grader-nonfinishing; Plant oiler- asphalt, crusher; Pumps-concrete; Roller, plant mix or multi-lift materials; Saws-concrete; Scrpers-concrete and carry-all; Service engineer-equipment; Trenching machines; Truck Crane Oiler/Driver under 100 tons; Tractors, backhoe 75 hp and under

GROUP 4 - Assistant Engineer; Bobcat; Brooms; Compressor; Concrete finish mahine-laser screed; Cranes-A frame-10 tons and under; Elevator and Manlift-permanent or shaft type; Gradechecker, Stakehop; Forklifts under 3000 lbs. with attachments; Hydralifts/boom trucks, 10 tons and under; Oil distributors, blower distribution and mulch seeding operator; Pavement breaker; Posthole digger, mechanical; Power plant; Pumps, water; Rigger and Bellman; Roller-other than plant mix; Wheel Tractors, farmall type; Shotcrete/gunite equipment operator

HANDLING OF HAZARDOUS WASTE MATERIALS:

Personnel in all craft classifications subject to working inside a federally designated hazardous perimeter shall be elgible for compensation in accordance with the following group schedule relative to the level of hazardous waste as outlined in the specific hazardous waste project site safety plan.

H-1 Base wage rate when on a hazardous waste site when not outfitted with protective clothing

H-2 Class ""C"" Suit - Base wage rate plus $ .25 per hour.

H-3 Class ""B"" Suit - Base wage rate plus $ .50 per hour.

H-4 Class ""A"" Suit - Base wage rate plus $ .75 per hour.

ENGI0370-002 06/01/2024

ADAMS, ASOTIN, BENTON, CHELAN (EAST OF THE 120TH MERIDIAN), COLUMBIA, DOUGLAS (EAST OF THE 120TH MERIDIAN), FERRY, FRANKLIN, GARFIELD, GRANT, LINCOLN, OKANOGAN (EAST OF THE 120TH MERIDIAN), PEND OREILLE, SPOKANE, STEVENS, WALLA WALLA, WHITMAN AND YAKIMA (EAST OF THE 120TH MERIDIAN) COUNTIES

ZONE 1:

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
GROUP 1	$ 35.91	22.45
GROUP 2	$ 36.28	22.45
GROUP 3	$ 36.99	22.45
GROUP 4	$ 37.18	22.45
GROUP 5	$ 37.37	22.45
GROUP 6	$ 37.69	22.45
GROUP 7	$ 38.01	22.45
GROUP 8	$ 39.88	22.45

ZONE DIFFERENTIAL (Add to Zone 1 rate): Zone 2 - $2.00

Zone 1: Within 45 mile radius of Spokane, Pasco, Washington; Lewiston, Idaho

Zone 2: Outside 45 mile radius of Spokane, Pasco, Washington; Lewiston, Idaho

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Bit Grinders; Bolt Threading Machine; Compressors (under 2000 CFM, gas, diesel, or electric power); Deck Hand; Fireman & Heater Tender; Hydro-seeder, Mulcher, Nozzleman; Oiler Driver, & Cable Tender, Mucking Machine; Pumpman; Rollers, all types on subgrade, including seal and chip coatings (farm type, Case, John Deere & similar, or Compacting Vibrator), except when pulled by Dozer with operable blade; Welding Machine; Crane Oiler-Driver (CLD required) & Cable Tender, Mucking Machine

GROUP 2: A-frame Truck (single drum); Assistant Refrigeration Plant (under 1000 ton); Assistant Plant Operator, Fireman or Pugmixer (asphalt); Bagley or Stationary Scraper; Belt Finishing Machine; Blower Operator (cement); Cement Hog; Compressor (2000 CFM or over, 2 or more, gas diesel or electric power); Concrete Saw (multiple cut); Distributor Leverman; Ditch Witch or similar; Elevator Hoisting Materials; Dope Pots (power agitated); Fork Lift or Lumber Stacker, hydra-lift & similar; Gin Trucks (pipeline); Hoist, single drum; Loaders (bucket elevators and conveyors); Longitudinal Float; Mixer (portable-concrete); Pavement Breaker, Hydra-Hammer & similar; Power Broom; Railroad Ballast Regulation Operator (self-propelled); Railroad Power Tamper Operator (self-propelled); Railroad Tamper Jack Operator (self-propelled; Spray Curing Machine (concrete); Spreader Box (self-propelled); Straddle Buggy (Ross & similar on construction job only); Tractor (Farm type R/T with attachment, except Backhoe); Tugger Operator

GROUP 3: A-frame Truck (2 or more drums); Assistant Refrigeration Plant & Chiller Operator (over 1000 ton); Backfillers (Cleveland & similar); Batch Plant & Wet Mix Operator, single unit (concrete); Belt-Crete Conveyors with power pack or similar; Belt Loader (Kocal or similar); Bending Machine; Bob Cat (Skid Steer); Boring Machine (earth); Boring Machine (rock under 8 inch bit) (Quarry Master, Joy or similar); Bump Cutter (Wayne, Saginau or similar); Canal Lining Machine (concrete); Chipper (without crane); Cleaning & Doping Machine (pipeline); Deck Engineer; Elevating Belt-type Loader (Euclid, Barber Green & similar); Elevating Grader-type Loader (Dumor, Adams or similar); Generator Plant Engineers (diesel or electric); Gunnite Combination Mixer & Compressor; Locomotive Engineer; Mixermobile; Mucking Machine; Posthole Auger or Punch; Pump (grout or jet); Soil Stabilizer (P & H or similar); Spreader Machine; Dozer/Tractor (up to D-6 or equivalent) and Traxcavator; Traverse Finish Machine; Turnhead Operator

GROUP 4: Concrete Pumps (squeeze-crete, flow-crete, pump-

crete, Whitman & similar); Curb Extruder (asphalt or concrete); Drills (churn, core, calyx or diamond); Equipment Serviceman; Greaser & Oiler; Hoist (2 or more drums or Tower Hoist); Loaders (overhead & front-end, under 4 yds. R/T); Refrigeration Plant Engineer (under 1000 ton); Rubber-tired Skidders (R/T with or without attachments); Surface Heater & Plant Machine; Trenching Machines (under 7 ft. depth capacity); Turnhead (with re-screening); Vacuum Drill (reverse circulation drill under 8 inch bit)

GROUP 5: Backhoe (under 45,000 gw); Backhoe & Hoe Ram (under 3/4 yd.); Carrydeck & Boom Truck (under 25 tons); Cranes (25 tons & under), all attachments including clamshell, dragline; Derricks & Stifflegs (under 65 tons); Drilling Equipment(8 inch bit & over) (Robbins, reverse circulation & similar); Hoe Ram; Piledriving Engineers; Paving (dual drum); Railroad Track Liner Operaotr (self-propelled); Refrigeration Plant Engineer (1000 tons & over); Signalman (Whirleys, Highline Hammerheads or similar); Grade Checker

GROUP 6: Asphalt Plant Operator; Automatic Subgrader (Ditches & Trimmers)(Autograde, ABC, R.A. Hansen & similar on grade wire); Backhoe (45,000 gw and over to 110,000 gw); Backhoes & Hoe Ram (3/4 yd. to 3 yd.); Batch Plant (over 4 units); Batch & Wet Mix Operator (multiple units, 2 & incl. 4); Blade Operator (motor patrol & attachments); Cable Controller (dispatcher); Compactor (self-propelled with blade); Concrete Pump Boom Truck; Concrete Slip Form Paver; Cranes (over 25 tons, to and including 45 tons), all attachments including clamshell, dragline; Crusher, Grizzle & Screening Plant Operator; Dozer, 834 R/T & similar; Drill Doctor; Loader Operator (front-end & overhead, 4 yds. incl. 8 yds.); Multiple Dozer Units with single blade; Paving Machine (asphalt and concrete); Quad-Track or similar equipment; Rollerman (finishing asphalt pavement); Roto Mill (pavement grinder); Scrapers, all, rubber-tired; Screed Operator; Shovel(under 3 yds.); Trenching Machines (7 ft. depth & over); Tug Boat Operator Vactor guzzler, super sucker; Lime Batch Tank Operator (REcycle Train); Lime Brain Operator (Recycle Train); Mobile Crusher Operator (Recycle Train)

GROUP 7: Backhoe (over 110,000 gw); Backhoes & Hoe Ram (3 yds & over); Blade (finish & bluetop) Automatic, CMI, ABC, Finish Athey & Huber & similar when used as automatic; Cableway Operators; Concrete Cleaning/Decontamination machine operator; Cranes (over 45 tons to but not including 85 tons), all attachments including clamshell and dragine; Derricks & Stiffleys (65 tons & over); Elevating Belt (Holland type); Heavy equipment robotics operator; Loader (360 degrees revolving Koehring Scooper or similar); Loaders (overhead & front-end, over 8 yds. to 10 yds.); Rubber-tired Scrapers (multiple engine with three or more scrapers); Shovels (3 yds. & over); Whirleys & Hammerheads, ALL; H.D. Mechanic; H.D. Welder; Hydraulic Platform Trailers (Goldhofer, Shaurerly andSimilar); Ultra High Pressure Wateriet Cutting Tool System Operator (30,000 psi); Vacuum Blasting Machine Operator

GROUP 8: Cranes (85 tons and over, and all climbing, overhead,rail and tower), all attachments including clamshell, dragline; Loaders (overhead and front-end, 10 yards and over); Helicopter Pilot

BOOM PAY: (All Cranes, Including Tower)
180 ft to 250 ft $ .50 over scale
Over 250 ft $ .80 over scale

NOTE:
In computing the length of the boom on Tower Cranes, they shall be measured from the base of the Tower to the point of the boom.

HAZMAT:
Anyone working on HAZMAT jobs, working with supplied air

shall receive $1.00 an hour above classification.

---

* ENGI0612-001 06/01/2025

PIERCE County

ON PROJECTS DESCRIBED IN FOOTNOTE A BELOW, THE RATE FOR EACH GROUP SHALL BE 90% OF THE BASE RATE PLUS FULL FRINGE BENEFITS. ON ALL OTHER WORK, THE FOLLOWING RATES APPLY.

Zone 1 (0-25 radius miles):

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
GROUP 1A	$ 62.32	27.32
GROUP 1AA	$ 63.22	27.32
GROUP 1AAA	$ 64.11	27.32
GROUP 1	$ 61.41	27.32
GROUP 2	$ 60.63	27.32
GROUP 3	$ 59.96	27.32
GROUP 4	$ 56.15	27.32

Zone Differential (Add to Zone 1 rates):
Zone 2 (26-45 radius miles) = $1.00
Zone 3 (Over 45 radius miles) - $1.30

BASEPOINTS: CENTRALIA, OLYMPIA, TACOMA

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1 AAA - Cranes-over 300 tons or 300 ft of boom (including jib with attachments)

GROUP 1AA - Cranes- 200 tonsto 300 tons, or 250 ft of boom (including jib with attachments; Tower crane over 175 ft in height, bas to boom

GROUP 1A - Cranes, 100 tons thru 199 tons, or 150 ft of boom (including jib with attachments); Crane-overhead, bridge type, 100 tons and over; Tower crane up to 175 ft in height base to boom; Loaders-overhead, 8 yards and over; Shovels, excavator, backhoes-6 yards and over with attachments

GROUP 1 - Cableway; Cranes 45 tons thru 99 tons under 150 ft of boom (including jib with attachments); Crane-overhead, bridge type, 45 tons thru 99 tons; Derricks on building work; Excavator, shovel, backhoes over 3 yards and under 6 yards; Hard tail end dump articulating off-road equipment 45 yards and over; Loader- overhead, 6 yards to, but not including, 8 yards; Mucking machine, mole, tunnel, drill and/or shield; Quad 9 HD 41, D-10; Remote control operator on rubber tired earth moving equipment; Rollagon; Scrapers-self-propelled 45 yards and over; Slipform pavers; Transporters, all track or truck type

GROUP 2 - Barrier machine (zipper); Batch Plant Operator-concrete; Bump Cutter; Cranes, 20 tons thru 44 tons with attachments; Crane-Overhead, bridge type, 20 tons through 44 tons; Chipper; Concrete pump-truck mount with boom attachment; Crusher; Deck engineer/deck winches (power); Drilling machine; Excavator, shovel, backhoe-3 yards and under; Finishing machine, Bidwell, Gamaco and similar equipment; Guardrail punch; Loaders, overhead under 6 yards; Loaders-plant feed; Locomotives-all; Mechanics- all; Mixers, asphalt plant; Motor patrol graders, finishing; Piledriver (other than crane mount); Roto-mill, roto-grinder; Screedman, spreader, topside operator-Blaw Knox, Cedar Rapids, Jaeger, Caterpillar, Barbar Green; Scraper-self- propelled, hard tail end dump, articulating off-road equipment- under 45 yards; Subgrader trimmer; Tractors, backhoe over 75 hp; Transfer material service machine-shuttle buggy, Blaw Knox- Roadtec; Truck Crane

oiler/driver-100 tons and over; Truck Mount Portable Conveyor; Yo Yo pay

GROUP 3 - Conveyors; Cranes through 19 tons with attachments; Crane-A-frame over 10 tons; Drill oilers-auger type, truck or crane mount; Dozer-D-9 and under; Forklift-3000 lbs. and over with attachments; Horizontal/directional drill locator; Outside Hoists-(elevators and manlifts), air tuggers, strato tower bucket elevators; Hydralifts/boom trucks over 10 tons; Loaders-elevating type, belt; Motor patrol grader-nonfinishing; Plant oiler- asphalt, crusher; Pump-Concrete; Roller, plant mix or multi-lfit materials; Saws-concrete; Scrapers, concrete and carry all; Service engineers-equipment; Trenching machines; Truck crane oiler/driver under 100 tons; Tractors, backhoe under 75 hp

GROUP 4 - Assistant Engineer; Bobcat; Brooms; Compressor; Concrete Finish Machine-laser screed; Cranes A-frame 10 tons and under; Elevator and manlift (permanent and shaft type); Forklifts-under 3000 lbs. with attachments; Gradechecker, stakehop; Hydralifts/boom trucks, 10 tons and under; Oil distributors, blower distribution and mulch seeding operator; Pavement breaker; Posthole digger-mechanical; Power plant; Pumps-water; Rigger and Bellman; Roller-other than plant mix; Wheel Tractors, farmall type; Shotcrete/gunite equipment operator

FOOTNOTE A- Reduced rates may be paid on the following:
1. Projects involving work on structures such as buildings and bridges whose total value is less than $1.5 million excluding mechanical, electrical, and utility portions of the contract.

2. Projects of less than $1 million where no building is involved. Surfacing and paving included, but utilities excluded.

3. Marine projects (docks, wharfs, etc.) less than $150,000.

HANDLING OF HAZARDOUS WASTE MATERIALS: Personnel in all craft classifications subject to working inside a federally designated hazardous perimeter shall be elgible for compensation in accordance with the following group schedule relative to the level of hazardous waste as outlined in the specific hazardous waste project site safety plan.

H-1 Base wage rate when on a hazardous waste site when not outfitted with protective clothing, Class ""D"" Suit - Base wage rate plus $ .50 per hour.
H-2 Class ""C"" Suit - Base wage rate plus $1.00 per hour.
H-3 Class ""B"" Suit - Base wage rate plus $1.50 per hour.
H-4 Class ""A"" Suit - Base wage rate plus $2.00 per hour.

---

* ENGI0612-008 06/01/2025

LEWIS AND PACIFIC (portion lying north of a parallel line extending west from the northern boundary of Wahkaikum County to the sea) COUNTIES

ON PROJECTS DESCRIBED IN FOOTNOTE A BELOW, THE RATE FOR EACH GROUP SHALL BE 90% OF THE BASE RATE PLUS FULL FRINGE BENEFITS. ON ALL OTHER WORK, THE FOLLOWING RATES APPLY.

Zone 1 (0-25 radius miles):

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
GROUP 1A	$ 61.22	27.32
GROUP 1AA	$ 62.12	27.32
GROUP 1AAA	$ 62.99	27.32

GROUP 1	$ 60.32	27.32
GROUP 2	$ 59.56	27.32
GROUP 3	$ 58.89	27.32
GROUP 4	$ 55.13	27.32

Zone Differential (Add to Zone 1 rates):
Zone 2 (26-45 radius miles) = $1.00
Zone 3 (Over 45 radius miles) - $1.30

BASEPOINTS: CENTRALIA, OLYMPIA, TACOMA

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1 AAA - Cranes-over 300 tons or 300 ft of boom (including jib with attachments)

GROUP 1AA - Cranes- 200 tonsto 300 tons, or 250 ft of boom (including jib with attachments; Tower crane over 175 ft in height, bas to boom

GROUP 1A - Cranes, 100 tons thru 199 tons, or 150 ft of boom (including jib with attachments); Crane-overhead, bridge type, 100 tons and over; Tower crane up to 175 ft in height base to boom; Loaders-overhead, 8 yards and over; Shovels, excavator, backhoes-6 yards and over with attachments

GROUP 1 - Cableway; Cranes 45 tons thru 99 tons under 150 ft of boom (including jib with attachments); Crane-overhead, bridge type, 45 tons thru 99 tons; Derricks on building work; Excavator, shovel, backhoes over 3 yards and under 6 yards; Hard tail end dump articulating off-road equipment 45 yards and over; Loader- overhead, 6 yards to, but not including, 8 yards; Mucking machine, mole, tunnel, drill and/or shield; Quad 9 HD 41, D-10; Remote control operator on rubber tired earth moving equipment; Rollagon; Scrapers-self-propelled 45 yards and over; Slipform pavers; Transporters, all track or truck type

GROUP 2 - Barrier machine (zipper); Batch Plant Operator-concrete; Bump Cutter; Cranes, 20 tons thru 44 tons with attachments; Crane-Overhead, bridge type, 20 tons through 44 tons; Chipper; Concrete pump-truck mount with boom attachment; Crusher; Deck engineer/deck winches (power); Drilling machine; Excavator, shovel, backhoe-3 yards and under; Finishing machine, Bidwell, Gamaco and similar equipment; Guardrail punch; Loaders, overhead under 6 yards; Loaders-plant feed; Locomotives-all; Mechanics- all; Mixers, asphalt plant; Motor patrol graders, finishing; Piledriver (other than crane mount); Roto-mill, roto-grinder; Screedman, spreader, topside operator-Blaw Knox, Cedar Rapids, Jaeger, Caterpillar, Barbar Green; Scraper-self- propelled, hard tail end dump, articulating off-road equipment- under 45 yards; Subgrader trimmer; Tractors, backhoe over 75 hp; Transfer material service machine-shuttle buggy, Blaw Knox- Roadtec; Truck Crane oiler/driver-100 tons and over; Truck Mount Portable Conveyor; Yo Yo pay

GROUP 3 - Conveyors; Cranes through 19 tons with attachments; Crane-A-frame over 10 tons; Drill oilers-auger type, truck or crane mount; Dozer-D-9 and under; Forklift-3000 lbs. and over with attachments; Horizontal/directional drill locator; Outside Hoists-(elevators and manlifts), air tuggers, strato tower bucket elevators; Hydralifts/boom trucks over 10 tons; Loaders-elevating type, belt; Motor patrol grader-nonfinishing; Plant oiler- asphalt, crusher; Pump-Concrete; Roller, plant mix or multi-lfit materials; Saws-concrete; Scrapers, concrete and carry all; Service engineers-equipment; Trenching machines; Truck crane oiler/driver under 100 tons; Tractors, backhoe under 75 hp

GROUP 4 - Assistant Engineer; Bobcat; Brooms; Compressor; Concrete Finish Machine-laser screed; Cranes A-frame 10 tons and under; Elevator and manlift (permanent and shaft type); Forklifts-under 3000 lbs. with attachments;

Gradechecker, stakehop; Hydralifts/boom trucks, 10 tons and under; Oil distributors, blower distribution and mulch seeding operator; Pavement breaker; Posthole digger-mechanical; Power plant; Pumps-water; Rigger and Bellman; Roller-other than plant mix; Wheel Tractors, farmall type; Shotcrete/gunite equipment operator

FOOTNOTE A- Reduced rates may be paid on the following:
1. Projects involving work on structures such as buildings and bridges whose total value is less than $1.5 million excluding mechanical, electrical, and utility portions of the contract.

2. Projects of less than $1 million where no building is involved. Surfacing and paving included, but utilities excluded.

3. Marine projects (docks, wharfs, etc.) less than $150,000.

HANDLING OF HAZARDOUS WASTE MATERIALS: Personnel in all craft classifications subject to working inside a federally designated hazardous perimeter shall be elgible for compensation in accordance with the following group schedule relative to the level of hazardous waste as outlined in the specific hazardous waste project site safety plan.

H-1 Base wage rate when on a hazardous waste site when not outfitted with protective clothing, Class ""D"" Suit - Base wage rate plus $ .50 per hour.
H-2 Class ""C"" Suit - Base wage rate plus $1.00 per hour.
H-3 Class ""B"" Suit - Base wage rate plus $1.50 per hour.
H-4 Class ""A"" Suit - Base wage rate plus $2.00 per hour.

---

* ENGI0612-012 06/01/2025

THURSTON COUNTY

ON PROJECTS DESCRIBED IN FOOTNOTE A BELOW, THE RATE FOR EACH GROUP SHALL BE 90% OF THE BASE RATE PLUS FULL FRINGE BENEFITS. ON ALL OTHER WORK, THE FOLLOWING RATES APPLY.

Zone 1 (0-25 radius miles):

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
GROUP 1A	$ 61.81	27.32
GROUP 1AA	$ 62.71	27.32
GROUP 1AAA	$ 63.59	27.32
GROUP 1	$ 60.91	27.32
GROUP 2	$ 60.14	27.32
GROUP 3	$ 59.46	27.32
GROUP 4	$ 55.68	27.32

Zone Differential (Add to Zone 1 rates):
Zone 2 (26-45 radius miles) = $1.00
Zone 3 (Over 45 radius miles) - $1.30

BASEPOINTS: CENTRALIA, OLYMPIA, TACOMA

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1 AAA - Cranes-over 300 tons or 300 ft of boom (including jib with attachments)

GROUP 1AA - Cranes- 200 tonsto 300 tons, or 250 ft of boom (including jib with attachments; Tower crane over 175 ft in height, bas to boom

GROUP 1A - Cranes, 100 tons thru 199 tons, or 150 ft of boom (including jib with attachments); Crane-overhead, bridge

type, 100 tons and over; Tower crane up to 175 ft in height base to boom; Loaders-overhead, 8 yards and over; Shovels, excavator, backhoes-6 yards and over with attachments

GROUP 1 - Cableway; Cranes 45 tons thru 99 tons under 150 ft of boom (including jib with attachments); Crane-overhead, bridge type, 45 tons thru 99 tons; Derricks on building work; Excavator, shovel, backhoes over 3 yards and under 6 yards; Hard tail end dump articulating off-road equipment 45 yards and over; Loader- overhead, 6 yards to, but not including, 8 yards; Mucking machine, mole, tunnel, drill and/or shield; Quad 9 HD 41, D-10; Remote control operator on rubber tired earth moving equipment; Rollagon; Scrapers-self-propelled 45 yards and over; Slipform pavers; Transporters, all track or truck type

GROUP 2 - Barrier machine (zipper); Batch Plant Operator-concrete; Bump Cutter; Cranes, 20 tons thru 44 tons with attachments; Crane-Overhead, bridge type, 20 tons through 44 tons; Chipper; Concrete pump-truck mount with boom attachment; Crusher; Deck engineer/deck winches (power); Drilling machine; Excavator, shovel, backhoe-3 yards and under; Finishing machine, Bidwell, Gamaco and similar equipment; Guardrail punch; Loaders, overhead under 6 yards; Loaders-plant feed; Locomotives-all; Mechanics- all; Mixers, asphalt plant; Motor patrol graders, finishing; Piledriver (other than crane mount); Roto-mill, roto-grinder; Screedman, spreader, topside operator-Blaw Knox, Cedar Rapids, Jaeger, Caterpillar, Barbar Green; Scraper-self- propelled, hard tail end dump, articulating off-road equipment- under 45 yards; Subgrader trimmer; Tractors, backhoe over 75 hp; Transfer material service machine-shuttle buggy, Blaw Knox- Roadtec; Truck Crane oiler/driver-100 tons and over; Truck Mount Portable Conveyor; Yo Yo pay

GROUP 3 - Conveyors; Cranes through 19 tons with attachments; Crane-A-frame over 10 tons; Drill oilers-auger type, truck or crane mount; Dozer-D-9 and under; Forklift-3000 lbs. and over with attachments; Horizontal/directional drill locator; Outside Hoists-(elevators and manlifts), air tuggers, strato tower bucket elevators; Hydralifts/boom trucks over 10 tons; Loaders-elevating type, belt; Motor patrol grader-nonfinishing; Plant oiler- asphalt, crusher; Pump-Concrete; Roller, plant mix or multi-lfit materials; Saws-concrete; Scrapers, concrete and carry all; Service engineers-equipment; Trenching machines; Truck crane oiler/driver under 100 tons; Tractors, backhoe under 75 hp

GROUP 4 - Assistant Engineer; Bobcat; Brooms; Compressor; Concrete Finish Machine-laser screed; Cranes A-frame 10 tons and under; Elevator and manlift (permanent and shaft type); Forklifts-under 3000 lbs. with attachments; Gradechecker, stakehop; Hydralifts/boom trucks, 10 tons and under; Oil distributors, blower distribution and mulch seeding operator; Pavement breaker; Posthole digger-mechanical; Power plant; Pumps-water; Rigger and Bellman; Roller-other than plant mix; Wheel Tractors, farmall type; Shotcrete/gunite equipment operator

FOOTNOTE A- Reduced rates may be paid on the following:

1. Projects involving work on structures such as buildings and bridges whose total value is less than $1.5 million excluding mechanical, electrical, and utility portions of the contract.

2. Projects of less than $1 million where no building is involved. Surfacing and paving included, but utilities excluded.

3. Marine projects (docks, wharfs, etc.) less than $150,000.

HANDLING OF HAZARDOUS WASTE MATERIALS: Personnel in all craft classifications subject to working inside a federally

designated hazardous perimeter shall be elgible for compensation in accordance with the following group schedule relative to the level of hazardous waste as outlined in the specific hazardous waste project site safety plan.

H-1 Base wage rate when on a hazardous waste site when not outfitted with protective clothing, Class ""D"" Suit - Base wage rate plus $ .50 per hour.
H-2 Class ""C"" Suit - Base wage rate plus $1.00 per hour.
H-3 Class ""B"" Suit - Base wage rate plus $1.50 per hour.
H-4 Class ""A"" Suit - Base wage rate plus $2.00 per hour.

ENGI0701-002 01/01/2025

CLARK, COWLITZ, KLICKKITAT, PACIFIC (SOUTH), SKAMANIA, AND WAHKIAKUM COUNTIES

POWER RQUIPMENT OPERATORS: ZONE 1

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
GROUP 1	$ 58.94	17.15
GROUP 1A	$ 61.10	17.15
GROUP 1B	$ 63.26	17.15
GROUP 2	$ 57.03	17.15
GROUP 3	$ 55.88	17.15
GROUP 4	$ 52.55	17.15
GROUP 5	$ 51.31	17.15
GROUP 6	$ 48.09	17.15

Zone Differential (add to Zone 1 rates):
Zone 2 - $3.00
Zone 3 - $6.00

For the following metropolitan counties: MULTNOMAH; CLACKAMAS; MARION; WASHINGTON; YAMHILL; AND COLUMBIA; CLARK; AND COWLITZ COUNTY, WASHINGTON WITH MODIFICATIONS AS INDICATED:

All jobs or projects located in Multnomah, Clackamas and Marion Counties, West of the western boundary of Mt. Hood National Forest and West of Mile Post 30 on Interstate 84 and West of Mile Post 30 on State Highway 26 and West of Mile Post 30 on Highway 22 and all jobs or projects located in Yamhill County, Washington County and Columbia County and all jobs or porjects located in Clark & Cowlitz County, Washington except that portion of Cowlitz County in the Mt. St. Helens ""Blast Zone"" shall receive Zone I pay for all classifications.

All jobs or projects located in the area outside the identified boundary above, but less than 50 miles from the Portland City Hall shall receive Zone II pay for all classifications.

All jobs or projects located more than 50 miles from the Portland City Hall, but outside the identified border above, shall receive Zone III pay for all classifications.

For the following cities: ALBANY; BEND; COOS BAY; EUGENE; GRANTS PASS; KLAMATH FALLS; MEDFORD; ROSEBURG

All jobs or projects located within 30 miles of the respective city hall of the above mentioned cities shall receive Zone I pay for all classifications.

All jobs or projects located more than 30 miles and less than 50 miles from the respective city hall of the above mentioned cities shall receive Zone II pay for all classifications.

All jobs or projects located more than 50 miles from the respective city hall of the above mentioned cities shall receive Zone III pay for all classifications.

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

Group 1
Concrete Batch Plan and or Wet mix three (3) units or more; Crane, Floating one hundred and fifty (150) ton but less than two hundred and fifty (250) ton; Crane, two hundred (200) ton through two hundred ninety nine (299) ton with two hundred foot (200') boom or less (including jib, inserts and/or attachments); Crane, ninety (90) ton through one hundred ninety nine (199) ton with over two hundred (200') boom Including jib, inserts and/or attachments); Crane, Tower Crane with one hundred seventy five foot (175') tower or less and with less than two hundred foot (200') jib; Crane, Whirley ninety (90) ton and over; Helicopter when used in erecting work

Group 1A
Crane, floating two hundred fifty (250) ton and over; Crane, two hundred (200) ton through two hundred ninety nine (299) ton, with over two hundred foot (200') boom (including jib, inserts and/or attachments); Crane, three hundred (300) ton through three hundred ninety nine (399) ton; Crane, Tower Crane with over one hundred seventy five foot (175') tower or over two hundred foot (200') jib; Crane, tower Crane on rail system or 2nd tower or more in work radius

Group 1B

Crane, three hundred (300) ton through three hundred ninety nine (399) ton, with over two hundred foot (200') boom (including jib, inserts and/or attachments); Floating crane, three hundred fifty (350) ton and over; Crane, four hundred (400) ton and over

Group 2
Asphalt Plant (any type); Asphalt Roto-Mill, pavement profiler eight foot (8') lateral cut and over; Auto Grader or ""Trimmer""; Blade, Robotic; Bulldozer, Robotic Equipment (any type); Bulldozer, over one hundred twenty thousand (120,000) lbs. and above; Concrete Batch Plant and/or Wet Mix one (1) and two (2) drum; Concrete Diamond Head Profiler; Canal Trimmer; Concrete, Automatic Slip Form Paver (Assistant to the Operator required); Crane, Boom Truck fifty (50) ton and with over one hundred fifty foot (150') boom and over; Crane, Floating (derrick barge) thirty (30) ton but less than one hundred fifty (150) ton; Crane, Cableway twenty-five (25) ton and over; Crane, Floating Clamshell three (3) cu. Yds. And over; Crane, ninety (90) ton through one hundred ninety nine (199) ton up to and including two hundred foot (200') of boom (including jib inserts and/or attachments); Crane, fifty (50) ton through eighty nine (89) ton with over one hundred fifty foot (150') boom (including jib inserts and/or attachments); Crane, Whirley under ninety (90) ton; Crusher Plant; Excavator over one hundred thirty thousand (130,000) lbs.; Loader one hundred twenty thousand (120,000) lbs. and above; Remote Controlled Earth Moving Equipment; Shovel, Dragline, Clamshell, five (5) cu. Yds. And over; Underwater Equipment remote or otherwise, when used in construction work; Wheel Excavator any size

Group 3
Bulldozer, over seventy thousand (70,000) lbs. up to and including one hundred twenty thousand (120,000) lbs.; Crane, Boom Truck fifty (50) ton and over with less than one hundred fifty foot (150') boom; Crane, fifty (50) ton through eighty nine (89) ton with one hundred fifty foot (150') boom or less (including jib inserts and/or attachments); Crane, Shovel, Dragline or Clamshell three (3) cu. yds. but less than five (5) cu. Yds.; Excavator

over eighty thousand (80,000) lbs. through one hundred thirty thousand (130,000) lbs.; Loader sixty thousand (60,000) lbs. and less than one hundred twenty thousand (120,000) lbs.

Group 4

Asphalt, Screed; Asphalt Paver; Asphalt Roto-Mill, pavement profiler, under eight foot (8') lateral cut; Asphalt, Material Transfer Vehicle Operator; Back Filling Machine; Backhoe, Robotic, track and wheel type up to and including twenty thousand (20,000) lbs. with any attachments; Blade (any type); Boatman; Boring Machine; Bulldozer over twenty thousand (20,000) lbs. and more than one hundred (100) horse up to seventy thousand (70,000) lbs.; Cable-Plow (any type); Cableway up to twenty five (25) ton; Cat Drill (John Henry); Chippers; Compactor, multi-engine; Compactor, Robotic; Compactor with blade self-propelled; Concrete, Breaker; Concrete, Grout Plant; Concrete, Mixer Mobile; Concrete, Paving Road Mixer; Concrete, Reinforced Tank Banding Machine; Crane, Boom Truck twenty (20) ton and under fifty (50) ton; Crane, Bridge Locomotive, Gantry and Overhead; Crane, Carry Deck; Crane, Chicago Boom and similar types; Crane, Derrick Operator, under one hundred (100) ton; Crane, Floating Clamshell, Dragline, etc. Operator, under three (3) cu. yds. Or less than thirty (30) ton; Crane, under fifty (50) ton; Crane, Quick Tower under one hundred foot (100') in height and less than one hundred fifty foot (150') jib (on rail included); Diesel-Electric Engineer (Plant or Floating); Directional Drill over twenty thousand (20,000) lbs. pullback; Drill Cat Operator; Drill Doctor and/or Bit Grinder; Driller, Percussion, Diamond, Core, Cable, Rotary and similar type; Excavator Operator over twenty thousand (20,000) lbs. through eighty thousand (80,000) lbs.; Generator Operator; Grade-all; Guardrail Machines, i.e. punch, auger, etc.; Hammer Operator (Piledriver); Hoist, stiff leg, guy derrick or similar type, fifty (50) ton and over; Hoist, two (2) drums or more; Hydro Axe (loader mounted or similar type); Jack Operator, Elevating Barges, Barge Operator, self-unloading; Loader Operator, front end and overhead, twenty five thousand (25,000) lbs. and less than sixty thousand (60,000) lbs.; Log Skidders; Piledriver Operator (not crane type); Pipe, Bending, Cleaning, Doping and Wrapping Machines; Rail, Ballast Tamper Multi-Purpose; Rubber-tired Dozers and Pushers; Scraper, all types; Side-Boom; Skip Loader, Drag Box; Strump Grinder (loader mounted or similar type); Surface Heater and Planer; Tractor, rubber-tired, over fifty (50) HP Flywheel; Trenching Machine three foot (3') depth and deeper; Tub Grinder (used for wood debris); Tunnel Boring Machine Mechanic; Tunnel, Mucking Machine; Ultra High Pressure Water Jet Cutting Tool System Operator; Vacuum Blasting Machine Operator; Water pulls, Water wagons

Group 5

Asphalt, Extrusion Machine; Asphalt, Roller (any asphalt mix); Asphalt, Roto-Mill pavement profiler ground man; Bulldozer, twenty thousand (20,000) lbs. or less, or one hundred (100) horse or less; Cement Pump; Chip Spreading Machine; Churn Drill and Earth Boring Machine; Compactor, self-propelled without blade; Compressor, (any power) one thousand two hundred fifty (1,250) cu. ft. and over, total capacity; Concrete, Batch Plant Quality control; Concrete, Combination Mixer and compressor operator, gunite work; Concrete, Curb Machine, Mechanical Berm, Curb and/or Curb and Gutter; Concrete, Finishing Machine; Concrete, Grouting Machine; Concrete, Internal Full Slab Vibrator Operator; Concrete, Joint Machine; Concrete, Mixer single drum, any capacity; Concrete, Paving Machine eight foot (8') or less; Concrete, Planer; Concrete, Pump; Concrete, Pump Truck; Concrete, Pumpcrete Operator (any type); Concrete, Slip Form Pumps, power driven hydraulic lifting device for concrete forms; Conveyored Material Hauler; Crane, Boom Truck under twenty (20) tons; Crane, Boom Type lifting

device, five (5) ton capacity or less; Drill, Directional type less than twenty thousand (20,000) lbs. pullback; Fork Lift, over ten (10) ton or Robotic; Helicopter Hoist; Hoist Operator, single drum; Hydraulic Backhoe track type up to and including twenty thousand (20,000) lbs.; Hydraulic Backhoe wheel type (any make); Laser Screed; Loaders, rubber-tired type, less than twenty five thousand (25,000) lbs.; Pavement Grinder and/or Grooving Machine (riding type); Pipe, cast in place Pipe Laying Machine; Pulva-Mixer or similar types; Pump Operator, more than five (5) pumps (any size); Rail, Ballast Compactor, Regulator, or Tamper machines; Service Oiler (Greaser); Sweeper Self-Propelled; Tractor, Rubber-Tired, fifty (50) HP flywheel and under; Trenching Machine Operator, maximum digging capacity three foot (3') depth; Tunnel, Locomotive, Dinkey; Tunnel, Power Jumbo setting slip forms, etc.

Group 6

Asphalt, Pugmill (any type); Asphalt, Raker; Asphalt, Truck Mounted Asphalt Spreader, with Screed; Auger Oiler; Boatman; Bobcat, skid steed (less than one (1) yard); Broom, self-propelled; Compressor Operator (any power) under 1,250 cu. ft. total capacity; Concrete Curing Machine (riding type); Concrete Saw; Conveyor Operator or Assistant; Crane, Tugger; Crusher Feederman; Crusher Oiler; Deckhand; Drill, Directional Locator; Fork Lift; Grade Checker; Guardrail Punch Oiler; Hydrographic Seeder Machine, straw, pulp or seed; Hydrostatic Pump Operator; Mixer Box (CTB, dry batch, etc.); Oiler; Plant Oiler; Pump (any power); Rail, Brakeman, Switchman, Motorman; Rail, Tamping Machine, mechanical, self-propelled; Rigger; Roller grading (not asphalt); Truck, Crane Oiler-Driver

---

IRON0014-005 01/01/2024

ADAMS, ASOTIN, BENTON, COLUMBIA, DOUGLAS, FERRY, FRANKLIN, GARFIELD, GRANT, LINCOLN, OKANOGAN, PEND ORIELLE, SPOKANE, STEVENS, WALLA WALLA AND WHITMAN COUNTIES

	Rates	Fringes
IRONWORKER	$ 38.91	32.27

IRON0029-002 01/02/2023

CLARK, COWLITZ, KLICKITAT, PACIFIC, SKAMANIA, AND WAHKAIKUM COUNTIES

	Rates	Fringes
IRONWORKER	$ 42.27	32.57

IRON0086-002 01/01/2024

YAKIMA, KITTITAS AND CHELAN COUNTIES

	Rates	Fringes
IRONWORKER	$ 38.91	32.27

IRON0086-004 01/01/2024

CLALLAM, GRAYS HARBOR, ISLAND, JEFFERSON, KING, KITSAP, LEWIS, MASON, PIERCE, SKAGIT, SNOHOMISH, THURSTON, AND WHATCOM COUNTIES

	Rates	Fringes
IRONWORKER	$ 53.45	34.02

LABO0238-004 06/01/2023

A-1 AREA: ASOTIN, BENTON, FRANKLIN, GARFIELD, LINCOLN, SPOKANE, WALLA WALLA, & WHITMAN COUNTIES

A-2 AREA: ADAMS, COLUMBIA,DOUGLAS (East of 120th Meridian), FERRY, GRANT, OKANOGAN, PEND OREILLE, & STEVENS COUNTIES

	Rates	Fringes
LABORER (A-1)		
GROUP 1	$ 30.88	15.70
GROUP 2	$ 33.72	15.70
GROUP 3	$ 34.03	15.70
GROUP 4	$ 34.33	15.70
GROUP 5	$ 34.64	15.70
LABORER (A-2)		
GROUP 1	$ 33.88	15.60
GROUP 2	$ 36.72	15.60
GROUP 3	$ 37.03	15.60
GROUP 4	$ 37.33	15.60
GROUP 5	$ 37.64	15.60

LABORERS CLASSIFICATIONS

GROUP 1: Flagman; Landscape Laborer; Scaleman; Traffic Control Maintenance Laborer (to include erection and maintenance of barricades, signs and relief of flagperson); Window Washer/Cleaner (detail cleanup, such as, but not limited to cleaning floors, ceilings, walls, windows, etc. prior to final acceptance by the owner)

GROUP 2: Asbestos Abatement Worker; Brush Hog Feeder; Carpenter Tender; Cement Handler; Clean-up Laborer; Concrete Crewman (to include stripping of forms, hand operating jacks on slip form construction, application of concrete curing compounds, pumpcrete machine, signaling, handling the nozzle of squeezcrete or similar machine,6 inches and smaller); Confined Space Attendant; Concrete Signalman; Crusher Feeder; Demolition (to include clean-up, burning, loading, wrecking and salvage of all material); Dumpman; Fence Erector; Firewatch; Form Cleaning Machine Feeder, Stacker; General Laborer; Grout Machine Header Tender; Guard Rail (to include guard rails, guide and reference posts, sign posts, and right-of-way markers); Hazardous Waste Worker, Level D (no respirator is used and skin protection is minimal); Miner, Class ""A"" (to include all bull gang, concrete crewman, dumpman and pumpcrete crewman, including distributing pipe, assembly & dismantle, and nipper); Nipper; Riprap Man; Sandblast Tailhoseman; Scaffold Erector (wood or steel); Stake Jumper; Structural Mover (to include separating foundation, preparation, cribbing, shoring, jacking and unloading of structures); Tailhoseman (water nozzle); Timber Bucker and Faller (by hand); Track Laborer (RR); Truck Loader; Well-Point Man; All Other Work Classifications Not Specially Listed Shall Be Classified As General Laborer

GROUP 3: Asphalt Roller, walking; Cement Finisher Tender; Concrete Saw, walking; Demolition Torch; Dope Pot Firemen, non-mechanical; Driller Tender (when required to move and position machine); Form Setter, Paving; Grade Checker using level; Hazardous Waste Worker, Level C (uses a chemical ""splash suit"" and air purifying respirator); Jackhammer Operator; Miner, Class ""B"" (to include brakeman, finisher, vibrator, form setter); Nozzleman (to include squeeze and flo-crete nozzle); Nozzleman, water, air or steam; Pavement Breaker (under 90 lbs.); Pipelayer, corrugated metal culvert; Pipelayer, multi- plate; Pot Tender; Power Buggy Operator; Power Tool Operator, gas, electric, pneumatic; Railroad Equipment, power driven, except dual mobile power spiker or puller; Railroad Power Spiker or Puller, dual mobile; Rodder and Spreader; Tamper (to include operation of Barco, Essex and similar tampers); Trencher, Shawnee; Tugger Operator; Wagon Drills; Water Pipe Liner;

Wheelbarrow (power driven)

GROUP 4: Air and Hydraulic Track Drill; Aspahlt Raker;Brush Machine (to include horizontal construction joint cleanup brush machine, power propelled); Caisson Worker, free air; Chain Saw Operator and Faller; Concrete Stack (to include laborers when laborers working on free standing concrete stacks for smoke or fume control above 40 feet high); Gunite (to include operation of machine and nozzle); Hazardous Waste Worker, Level B (uses same respirator protection as Level A. A supplied air line is provided in conjunction with a chemical ""splash suit""); High Scaler; Laser Beam Operator (to include grade checker and elevation control); Miner, Class C (to include miner, nozzleman for concrete, laser beam operator and rigger on tunnels); Monitor Operator (air track or similar mounting); Mortar Mixer; Nozzleman (to include jet blasting nozzleman, over 1,200 lbs., jet blast machine power propelled, sandblast nozzle); Pavement Breaker (90 lbs. and over); Pipelayer (to include working topman, caulker, collarman, jointer, mortarman, rigger, jacker, shorer, valve or meter installer); Pipewrapper; Plasterer Tender; Vibrators (all)

GROUP 5 - Drills with Dual Masts; Hazardous Waste Worker, Level A (utilizes a fully encapsulated suit with a self-contained breathing apparatus or a supplied air line); Miner Class ""D"", (to include raise and shaft miner, laser beam operator on riases and shafts)

LABO0238-006 06/01/2023

COUNTIES EAST OF THE 120TH MERIDIAN: ADAMS, ASOTIN, BENTON, CHELAN, COLUMBIA, DOUGLAS, FERRY, FRANKLIN, GARFIELD, GRANT, LINCOLN, OKANOGAN, PEND OREILLE, STEVENS, SPOKANE, WALLA WALLA, WHITMAN

	Rates	Fringes
Hod Carrier	$ 34.97	15.70

LABO0242-003 06/01/2022

KING COUNTY

	Rates	Fringes
LABORER		
GROUP 1	$ 29.82	13.80
GROUP 2A	$ 34.20	13.80
GROUP 3	$ 42.86	13.80
GROUP 4	$ 43.90	13.80
GROUP 5	$ 44.62	13.80
Group 6	$ 45.91	13.90

BASE POINTS: BELLINGHAM, MT. VERNON, EVERETT, SEATTLE, KENT, TACOMA, OLYMPIA, CENTRALIA, ABERDEEN, SHELTON, PT. TOWNSEND, PT. ANGELES, AND BREMERTON

ZONE 1 - Projects within 25 radius miles of the respective city hall
ZONE 2 - More than 25 but less than 45 radius miles from the respective city hall
ZONE 3 - More than 45 radius miles from the respective city hall

ZONE DIFFERENTIAL (ADD TO ZONE 1 RATES):
ZONE 2 - $1.00
ZONE 3 - $1.30

BASE POINTS: CHELAN, SUNNYSIDE, WENATCHEE, AND YAKIMA

ZONE 1 - Projects within 25 radius miles of the respective city hall

ZONE 2 - More than 25 radius miles from the respective city hall

ZONE DIFFERENTIAL (ADD TO ZONE 1 RATES):
ZONE 2 - $2.25

LABORERS CLASSIFICATIONS

GROUP 1: Landscaping and Planting; Watchman; Window Washer/Cleaner (detail clean-up, such as but not limited to cleaning floors, ceilings, walls, windows, etc., prior to final acceptance by the owner)

GROUP 2A: Batch Weighman; Crusher Feeder; Fence Laborer; Flagman; Pilot Car

GROUP 3: General Laborer; Air, Gas, or Electric Vibrating Screed; Asbestos Abatement Laborer; Ballast Regulator Machine; Brush Cutter; Brush Hog Feeder; Burner; Carpenter Tender; Cement Finisher Tender; Change House or Dry Shack; Chipping Gun (under 30 lbs.); Choker Setter; Chuck Tender; Clean-up Laborer; Concrete Form Stripper; Curing Laborer; Demolition (wrecking and moving including charred material); Ditch Digger; Dump Person; Fine Graders; Firewatch; Form Setter; Gabian Basket Builders; Grout Machine Tender; Grinders; Guardrail Erector; Hazardous Waste Worker (Level C: uses a chemical ""splash suit"" and air purifying respirator); Maintenance Person; Material Yard Person; Pot Tender; Rip Rap Person; Riggers; Scale Person; Sloper Sprayer; Signal Person; Stock Piler; Stake Hopper; Toolroom Man (at job site); Topper-Tailer; Track Laborer; Truck Spotter; Vinyl Seamer

GROUP 4: Cement Dumper-Paving; Chipping Gun (over 30 lbs.); Clary Power Spreader; Concrete Dumper/Chute Operator; Concrete Saw Operator; Drill Operator (hydraulic, diamond, aiartrac); Faller and Bucker Chain Saw; Grade Checker and Transit Person; Groutmen (pressure) including post tension beams; Hazardous Waste Worker (Level B: uses same respirator protection as Level A. A supplied air line is provided in conjunction with a chemical ""splash suit""); High Scaler; Jackhammer; Laserbeam Operator; Manhole Builder-Mudman; Nozzleman (concrete pump, green cutter when using combination of high pressure air and water on concrete and rock, sandblast, gunite, shotcrete, water blaster, vacuum blaster); Pavement Breaker; Pipe Layer and Caulker; Pipe Pot Tender; Pipe Reliner (not insert type); Pipe Wrapper; Power Jacks; Railroad Spike Puller-Power; Raker-Asphalt; Rivet Buster; Rodder; Sloper (over 20 ft); Spreader (concrete); Tamper and Similar electric, air and glas operated tool; Timber Person-sewer (lagger shorer and cribber); Track Liner Power; Tugger Operator; Vibrator; Well Point Laborer

GROUP 5: Caisson Worker; Mortarman and Hodcarrier; Powderman; Re-Timberman; Hazardous Waste Worker (Level A: utilizes a fully encapsulated suit with a self-contained breathing apparatus or a supplied air line).

Group 6: Miner

LABO0252-010 06/01/2022

CLALLAM, GRAYS HARBOR, JEFFERSON, KITSAP, LEWIS, MASON, PACIFIC (EXCLUDING SOUTHWEST), PIERCE, AND THURSTON COUNTIES

	Rates	Fringes
LABORER		
GROUP 1	$ 29.82	13.80
GROUP 2	$ 34.20	13.80
GROUP 3	$ 42.86	13.80
GROUP 4	$ 43.90	13.80

GROUP 5.....$ 44.62 13.80

BASE POINTS: BELLINGHAM, MT. VERNON, EVERETT, SEATTLE, KENT, TACOMA, OLYMPIA, CENTRALIA, ABERDEEN, SHELTON, PT. TOWNSEND, PT. ANGELES, AND BREMERTON

ZONE 1 - Projects within 25 radius miles of the respective city hall
ZONE 2 - More than 25 but less than 45 radius miles from the respective city hall
ZONE 3 - More than 45 radius miles from the respective city hall

ZONE DIFFERENTIAL (ADD TO ZONE 1 RATES):
ZONE 2 - $1.00
ZONE 3 - $1.30

BASE POINTS: CHELAN, SUNNYSIDE, WENATCHEE, AND YAKIMA

ZONE 1 - Projects within 25 radius miles of the respective city hall
ZONE 2 - More than 25 radius miles from the respective city hall

ZONE DIFFERENTIAL (ADD TO ZONE 1 RATES):
ZONE 2 - $2.25

LABORERS CLASSIFICATIONS

GROUP 1: Landscaping and Planting; Watchman; Window Washer/Cleaner (detail clean-up, such as but not limited to cleaning floors, ceilings, walls, windows, etc., prior to final acceptance by the owner)

GROUP 2: Batch Weighman; Crusher Feeder; Fence Laborer; Flagman; Pilot Car

GROUP 3: General Laborer; Air, Gas, or Electric Vibrating Screed; Asbestos Abatement Laborer; Ballast Regulator Machine; Brush Cutter; Brush Hog Feeder; Burner; Carpenter Tender; Cement Finisher Tender; Change House or Dry Shack; Chipping Gun (under 30 lbs.); Choker Setter; Chuck Tender; Clean-up Laborer; Concrete Form Stripper; Curing Laborer; Demolition (wrecking and moving including charred material); Ditch Digger; Dump Person; Fine Graders; Firewatch; Form Setter; Gabian Basket Builders; Grout Machine Tender; Grinders; Guardrail Erector; Hazardous Waste Worker (Level C: uses a chemical ""splash suit"" and air purifying respirator); Maintenance Person; Material Yard Person; Pot Tender; Rip Rap Person; Riggers; Scale Person; Sloper Sprayer; Signal Person; Stock Piler; Stake Hopper; Toolroom Man (at job site); Topper-Tailer; Track Laborer; Truck Spotter; Vinyl Seamer

GROUP 4: Cement Dumper-Paving; Chipping Gun (over 30 lbs.); Clary Power Spreader; Concrete Dumper/Chute Operator; Concrete Saw Operator; Drill Operator (hydraulic, diamond, aiartrac); Faller and Bucker Chain Saw; Groutmen (pressure) including post tension beams; Hazardous Waste Worker (Level B: uses same respirator protection as Level A. A supplied air line is provided in conjunction with a chemical ""splash suit""); Jackhammer; Laserbeam Operator; Manhole Builder-Mudman; Nozzleman (concrete pump, green cutter when using combination of high pressure air and water on concrete and rock, sandblast, gunite, shotcrete, water blaster, vacuum blaster); Pavement Breaker; Pipe Layer and Caulker; Pipe Pot Tender; Pipe Reliner (not insert type); Pipe Wrapper; Power Jacks; Railroad Spike Puller-Power; Raker-Asphalt; Rivet Buster; Rodder; Sloper (over 20 ft); Spreader (concrete); Tamper and Similar electric, air and glas operated tool; Timber Person-sewer (lagger shorer and cribber); Track Liner Power; Tugger Operator; Vibrator; Well Point Laborer

GROUP 5: Caisson Worker; Miner; Mortarman and Hodcarrier;

Grade Checker and Transit Person; High Scaler; Powderman; Re-Timberman; Hazardous Waste Worker (Level A: utilizes a fully encapsulated suit with a self-contained breathing apparatus or a supplied air line).

LABO0292-008 06/01/2022

ISLAND, SAN JUAN, SKAGIT, SNOHOMISH, AND WHATCOM COUNTIES

	Rates	Fringes
LABORER		
GROUP 1	$ 29.82	13.80
GROUP 2	$ 34.20	13.80
GROUP 3	$ 42.86	13.80
GROUP 4	$ 43.90	13.80
GROUP 5	$ 44.62	13.80

BASE POINTS: BELLINGHAM, MT. VERNON, EVERETT, SEATTLE, KENT, TACOMA, OLYMPIA, CENTRALIA, ABERDEEN, SHELTON, PT. TOWNSEND, PT. ANGELES, AND BREMERTON

ZONE 1 - Projects within 25 radius miles of the respective city hall
ZONE 2 - More than 25 but less than 45 radius miles from the respective city hall
ZONE 3 - More than 45 radius miles from the respective city hall

ZONE DIFFERENTIAL (ADD TO ZONE 1 RATES):
ZONE 2 - $1.00
ZONE 3 - $1.30

BASE POINTS: CHELAN, SUNNYSIDE, WENATCHEE, AND YAKIMA

ZONE 1 - Projects within 25 radius miles of the respective city hall
ZONE 2 - More than 25 radius miles from the respective city hall

ZONE DIFFERENTIAL (ADD TO ZONE 1 RATES):
ZONE 2 - $2.25

LABORERS CLASSIFICATIONS

GROUP 1: Landscaping and Planting; Watchman; Window Washer/Cleaner (detail clean-up, such as but not limited to cleaning floors, ceilings, walls, windows, etc., prior to final acceptance by the owner)

GROUP 2: Batch Weighman; Crusher Feeder; Fence Laborer; Flagman; Pilot Car

GROUP 3: General Laborer; Air, Gas, or Electric Vibrating Screed; Asbestos Abatement Laborer; Ballast Regulator Machine; Brush Cutter; Brush Hog Feeder; Burner; Carpenter Tender; Cement Finisher Tender; Change House or Dry Shack; Chipping Gun (under 30 lbs.); Choker Setter; Chuck Tender; Clean-up Laborer; Concrete Form Stripper; Curing Laborer; Demolition (wrecking and moving including charred material); Ditch Digger; Dump Person; Fine Graders; Firewatch; Form Setter; Gabian Basket Builders; Grout Machine Tender; Grinders; Guardrail Erector; Hazardous Waste Worker (Level C: uses a chemical ""splash suit"" and air purifying respirator); Maintenance Person; Material Yard Person; Pot Tender; Rip Rap Person; Riggers; Scale Person; Sloper Sprayer; Signal Person; Stock Piler; Stake Hopper; Toolroom Man (at job site); Topper-Tailer; Track Laborer; Truck Spotter; Vinyl Seamer

GROUP 4: Cement Dumper-Paving; Chipping Gun (over 30 lbs.); Clary Power Spreader; Concrete Dumper/Chute Operator; Concrete Saw Operator; Drill Operator (hydraulic, diamond, aiartrac); Faller and Bucker Chain Saw; Grade Checker and

Transit Person; Groutmen (pressure) including post tension beams; Hazardous Waste Worker (Level B: uses same respirator protection as Level A. A supplied air line is provided in conjunction with a chemical ""splash suit""); High Scaler; Jackhammer; Laserbeam Operator; Manhole Builder-Mudman; Nozzleman (concrete pump, green cutter when using combination of high pressure air and water on concrete and rock, sandblast, gunite, shotcrete, water blaster, vacuum blaster); Pavement Breaker; Pipe Layer and Caulker; Pipe Pot Tender; Pipe Reliner (not insert type); Pipe Wrapper; Power Jacks; Railroad Spike Puller-Power; Raker-Asphalt; Rivet Buster; Rodder; Sloper (over 20 ft); Spreader (concrete); Tamper and Similar electric, air and glas operated tool; Timber Person-sewer (lagger shorer and cribber); Track Liner Power; Tugger Operator; Vibrator; Well Point Laborer

GROUP 5: Caisson Worker; Miner; Mortarman and Hodcarrier; Powderman; Re-Timberman; Hazardous Waste Worker (Level A: utilizes a fully encapsulated suit with a self-contained breathing apparatus or a supplied air line).

LABO0335-001 06/01/2022

CLARK, COWLITZ, KLICKITAT, PACIFIC (SOUTH OF A STRAIGHT LINE MADE BY EXTENDING THE NORTH BOUNDARY LINE OF WAHKIAKUM COUNTY WEST TO THE PACIFIC OCEAN), SKAMANIA AND WAHKIAKUM COUNTIES

	Rates	Fringes
Laborers:		
ZONE 1:		
GROUP 1	$ 37.98	13.80
GROUP 2	$ 38.76	13.80
GROUP 3	$ 39.35	13.80
GROUP 4	$ 39.85	13.80
GROUP 5	$ 34.75	13.80
GROUP 6	$ 31.61	13.80
GROUP 7	$ 27.44	13.80

Zone Differential (Add to Zone 1 rates):
Zone 2 $ 0.65
Zone 3 - 1.15
Zone 4 - 1.70
Zone 5 - 2.75

BASE POINTS: LONGVIEW AND VANCOUVER

ZONE 1: Projects within 30 miles of the respective city all.
ZONE 2: More than 30 miles but less than 40 miles from the respective city hall.
ZONE 3: More than 40 miles but less than 50 miles from the respective city hall.
ZONE 4: More than 50 miles but less than 80 miles from the respective city hall.
ZONE 5: More than 80 miles from the respective city hall.

LABORERS CLASSIFICATIONS

GROUP 1: Asphalt Plant Laborers; Asphalt Spreaders; Batch Weighman; Broomers; Brush Burners and Cutters; Car and Truck Loaders; Carpenter Tender; Change-House Man or Dry Shack Man; Choker Setter; Clean-up Laborers; Curing, Concrete; Demolition, Wrecking and Moving Laborers; Dumpers, road oiling crew; Dumpmen (for grading crew); Elevator Feeders; Median Rail Reference Post, Guide Post, Right of Way Marker; Fine Graders; Fire Watch; Form Strippers (not swinging stages); General Laborers; Hazardous Waste Worker; Leverman or Aggregate Spreader (Flaherty and similar types); Loading Spotters; Material Yard Man (including electrical); Pittsburgh Chipper Operator or Similar Types; Railroad Track Laborers; Ribbon

Setters (including steel forms); Rip Rap Man (hand placed); Road Pump Tender; Sewer Labor; Signalman; Skipman; Slopers; Spraymen; Stake Chaser; Stockpiler; Tie Back Shoring; Timber Faller and Bucker (hand labor); Toolroom Man (at job site); Tunnel Bullgang (above ground); Weight-Man- Crusher (aggregate when used)

GROUP 2: Applicator (including pot power tender for same), applying protective material by hand or nozzle on utility lines or storage tanks on project; Brush Cutters (power saw); Burners; Choker Splicer; Clary Power Spreader and similar types; Clean- up Nozzleman-Green Cutter (concrete, rock, etc.); Concrete Power Buggyman; Concrete Laborer; Crusher Feeder; Demolition and Wrecking Charred Materials; Gunite Nozzleman Tender; Gunite or Sand Blasting Pot Tender; Handlers or Mixers of all Materials of an irritating nature (including cement and lime); Tool Operators (includes but not limited to: Dry Pack Machine; Jackhammer; Chipping Guns; Paving Breakers); Pipe Doping and Wrapping; Post Hole Digger, air, gas or electric; Vibrating Screed; Tampers; Sand Blasting (Wet); Stake-Setter; Tunnel-Muckers, Brakemen, Concrete Crew, Bullgang (underground)

GROUP 3: Asbestos Removal; Bit Grinder; Drill Doctor; Drill Operators, air tracks, cat drills, wagon drills, rubber-mounted drills, and other similar types including at crusher plants; Gunite Nozzleman; High Scalers, Strippers and Drillers (covers work in swinging stages, chairs or belts, under extreme conditions unusual to normal drilling, blasting, barring-down, or sloping and stripping); Manhole Builder; Powdermen; Concrete Saw Operator; Pwdermen; Power Saw Operators (Bucking and Falling); Pumpcrete Nozzlemen; Sand Blasting (Dry); Sewer Timberman; Track Liners, Anchor Machines, Ballast Regulators, Multiple Tampers, Power Jacks, Tugger Operator; Tunnel-Chuck Tenders, Nippers and Timbermen; Vibrator; Water Blaster

GROUP 4: Asphalt Raker; Concrete Saw Operator (walls); Concrete Nozzelman; Grade Checker; Pipelayer; Laser Beam (pipelaying)-applicable when employee assigned to move, set up, align; Laser Beam; Tunnel Miners; Motorman-Dinky Locomotive-Tunnel; Powderman-Tunnel; Shield Operator-Tunnel

GROUP 5: Traffic Flaggers

GROUP 6: Fence Builders

GROUP 7: Landscaping or Planting Laborers

LABO0335-019 06/01/2022

	Rates	Fringes
Hod Carrier	$ 37.98	13.80

LABO0348-003 06/01/2022

CHELAN, DOUGLAS (W OF 12TH MERIDIAN), KITTITAS, AND YAKIMA COUNTIES

	Rates	Fringes
LABORER		
GROUP 1	$ 25.37	13.80
GROUP 2	$ 29.16	13.80
GROUP 3	$ 31.94	13.80
GROUP 4	$ 32.72	13.80
GROUP 5	$ 32.09	13.19

BASE POINTS: BELLINGHAM, MT. VERNON, EVERETT, SEATTLE, KENT, TACOMA, OLYMPIA, CENTRALIA, ABERDEEN, SHELTON, PT. TOWNSEND, PT. ANGELES, AND BREMERTON

ZONE 1 - Projects within 25 radius miles of the respective city hall
ZONE 2 - More than 25 but less than 45 radius miles from the respective city hall
ZONE 3 - More than 45 radius miles from the respective city hall

ZONE DIFFERENTIAL (ADD TO ZONE 1 RATES):
ZONE 2 - $1.00
ZONE 3 - $1.30

BASE POINTS: CHELAN, SUNNYSIDE, WENATCHEE, AND YAKIMA

ZONE 1 - Projects within 25 radius miles of the respective city hall
ZONE 2 - More than 25 radius miles from the respective city hall

ZONE DIFFERENTIAL (ADD TO ZONE 1 RATES):
ZONE 2 - $2.25

LABORERS CLASSIFICATIONS

GROUP 1: Landscaping and Planting; Watchman; Window Washer/Cleaner (detail clean-up, such as but not limited to cleaning floors, ceilings, walls, windows, etc., prior to final acceptance by the owner)

GROUP 2: Batch Weighman; Crusher Feeder; Fence Laborer; Flagman; Pilot Car

GROUP 3: General Laborer; Air, Gas, or Electric Vibrating Screed; Asbestos Abatement Laborer; Ballast Regulator Machine; Brush Cutter; Brush Hog Feeder; Burner; Carpenter Tender; Cement Finisher Tender; Change House or Dry Shack; Chipping Gun (under 30 lbs.); Choker Setter; Chuck Tender; Clean-up Laborer; Concrete Form Stripper; Curing Laborer; Demolition (wrecking and moving including charred material); Ditch Digger; Dump Person; Fine Graders; Firewatch; Form Setter; Gabian Basket Builders; Grout Machine Tender; Grinders; Guardrail Erector; Hazardous Waste Worker (Level C: uses a chemical ""splash suit"" and air purifying respirator); Maintenance Person; Material Yard Person; Pot Tender; Rip Rap Person; Riggers; Scale Person; Sloper Sprayer; Signal Person; Stock Piler; Stake Hopper; Toolroom Man (at job site); Topper-Tailer; Track Laborer; Truck Spotter; Vinyl Seamer

GROUP 4: Cement Dumper-Paving; Chipping Gun (over 30 lbs.); Clary Power Spreader; Concrete Dumper/Chute Operator; Concrete Saw Operator; Drill Operator (hydraulic, diamond, aiartrac); Faller and Bucker Chain Saw; Grade Checker and Transit Person; Groutmen (pressure) including post tension beams; Hazardous Waste Worker (Level B: uses same respirator protection as Level A. A supplied air line is provided in conjunction with a chemical ""splash suit""); High Scaler; Jackhammer; Laserbeam Operator; Manhole Builder-Mudman; Nozzleman (concrete pump, green cutter when using combination of high pressure air and water on concrete and rock, sandblast, gunite, shotcrete, water blaster, vacuum blaster); Pavement Breaker; Pipe Layer and Caulker; Pipe Pot Tender; Pipe Reliner (not insert type); Pipe Wrapper; Power Jacks; Railroad Spike Puller-Power; Raker-Asphalt; Rivet Buster; Rodder; Sloper (over 20 ft); Spreader (concrete); Tamper and Similar electric, air and glas operated tool; Timber Person-sewer (lagger shorer and cribber); Track Liner Power; Tugger Operator; Vibrator; Well Point Laborer

GROUP 5: Caisson Worker; Miner; Mortarman and Hodcarrier; Powderman; Re-Timberman; Hazardous Waste Worker (Level A: utilizes a fully encapsulated suit with a self-contained breathing apparatus or a supplied air line).

PAIN0005-002 07/01/2022

STATEWIDE EXCEPT CLARK, COWLITZ, KLICKITAT, PACIFIC (SOUTH), SKAMANIA, AND WAHKIAKUM COUNTIES

	Rates	Fringes
Painters:		
STRIPERS	$ 33.37	18.53

PAIN0005-004 03/01/2009

CLALLAM, GRAYS HARBOR, ISLAND, JEFFERSON, KING, KITSAP, LEWIS, MASON, PIERCE, SAN JUAN, SKAGIT, SNOHOMISH, THURSTON AND WHATCOM COUNTIES

	Rates	Fringes
PAINTER	$ 20.82	7.44

---

* PAIN0005-006 07/01/2018

ADAMS, ASOTIN; BENTON AND FRANKLIN (EXCEPT HANFORD SITE); CHELAN, COLUMBIA, DOUGLAS, FERRY, GARFIELD, GRANT, KITTITAS, LINCOLN, OKANOGAN, PEND OREILLE, SPOKANE, STEVENS, WALLA WALLA, WHITMAN AND YAKIMA COUNTIES

	Rates	Fringes
PAINTER		
Application of Cold Tar Products, Epoxies, Polyurethanes, Acids, Radiation Resistant Material, Water and Sandblasting	$ 30.19	11.71
Over 30'/Swing Stage Work	$ 22.20	7.98
Brush, Roller, Striping, Steam-cleaning and Spray	$ 22.94	11.61
Lead Abatement, Asbestos Abatement	$ 21.50	7.98

*$.70 shall be paid over and above the basic wage rates listed for work on swing stages and high work of over 30 feet.

PAIN0055-003 04/01/2025

CLARK, COWLITZ, KLICKITAT, PACIFIC, SKAMANIA, AND WAHKIAKUM COUNTIES

	Rates	Fringes
PAINTER		
Brush & Roller	$ 39.94	15.94
Spray and Sandblasting	$ 39.94	15.94

All high work over 60 ft. = base rate + $0.75

PAIN0055-006 04/01/2025

CLARK, COWLITZ, KLICKITAT, SKAMANIA and WAHKIAKUM COUNTIES

	Rates	Fringes
Painters:		
HIGHWAY & PARKING LOT STRIPER	$ 39.94	15.94

PLAS0072-004 06/01/2023

ADAMS, ASOTIN, BENTON, CHELAN, COLUMBIA, DOUGLAS, FERRY,
FRANKLIN, GARFIELD, GRANT, KITTITAS, LINCOLN, OKANOGAN, PEND
OREILLE, SPOKANE, STEVENS, WALLA WALLA, WHITMAN, AND YAKIMA
COUNTIES

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER		
ZONE 1	$ 38.05	16.89

Zone Differential (Add to Zone 1 rate): Zone 2 - $3.00

BASE POINTS: Spokane, Pasco, Lewiston; Wenatchee
Zone 1: 0 - 45 radius miles from the main post office
Zone 2: Over 45 radius miles from the main post office

PLAS0528-001 06/01/2024

CLALLAM, COWLITZ, GRAYS HARBOR, ISLAND, JEFFERSON, KING,
KITSAP, LEWIS, MASON, PACIFIC, PIERCE, SAN JUAN, SKAGIT,
SNOHOMISH, THURSTON, WAHKIAKUM AND WHATCOM COUNTIES

	Rates	Fringes
CEMENT MASON		
CEMENT MASON	$ 54.16	21.27
COMPOSITION, TROWEL MACHINE, GRINDER, POWER TOOLS, GUNNITE NOZZLE	$ 54.66	21.27
TROWELING MACHINE OPERATOR ON COMPOSITION	$ 54.66	21.27

PLAS0555-002 06/01/2023

CLARK, KLICKITAT AND SKAMANIA COUNTIES

ZONE 1:

	Rates	Fringes
CEMENT MASON		
CEMENT MASONS DOING BOTH COMPOSITION/POWER MACHINERY AND SUSPENDED/HANGING SCAFFOLD	$ 45.06	19.95
CEMENT MASONS ON SUSPENDED, SWINGING AND/OR HANGING SCAFFOLD	$ 44.19	19.95
CEMENT MASONS	$ 43.33	19.95
COMPOSITION WORKERS AND POWER MACHINERY OPERATORS	$ 44.19	19.95

Zone Differential (Add To Zone 1 Rates):
Zone 2 - $0.65
Zone 3 - 1.15
Zone 4 - 1.70
Zone 5 - 3.00

BASE POINTS: BEND, CORVALLIS, EUGENE, MEDFORD, PORTLAND,
SALEM, THE DALLES, VANCOUVER

ZONE 1: Projects within 30 miles of the respective city hall
ZONE 2: More than 30 miles but less than 40 miles from the respective city hall.
ZONE 3: More than 40 miles but less than 50 miles from the respective city hall.
ZONE 4: More than 50 miles but less than 80 miles from the respective city hall.
ZONE 5: More than 80 miles from the respective city hall

TEAM0037-002 06/01/2024

CLARK, COWLITZ, KLICKITAT, PACIFIC (South of a straight line made by extending the north boundary line of Wahkiakum County west to the Pacific Ocean), SKAMANIA, AND WAHKIAKUM COUNTIES

	Rates	Fringes
Truck drivers:		
ZONE 1		
GROUP 1	$ 33.09	17.63
GROUP 2	$ 33.24	17.63
GROUP 3	$ 33.40	17.63
GROUP 4	$ 33.72	17.63
GROUP 5	$ 33.97	17.63
GROUP 6	$ 34.18	17.63
GROUP 7	$ 34.42	17.63

Zone Differential (Add to Zone 1 Rates):
Zone 2 - $0.65
Zone 3 - 1.15
Zone 4 - 1.70
Zone 5 - 2.75

BASE POINTS: ASTORIA, THE DALLES, LONGVIEW AND VANCOUVER

ZONE 1: Projects within 30 miles of the respective city hall.

ZONE 2: More than 30 miles but less than 40 miles from the respective city hall.

ZONE 3: More than 40 miles but less than 50 miles from the respective city hall.

ZONE 4: More than 50 miles but less than 80 miles from the respective city hall.

ZONE 5: More than 80 miles from the respective city hall.

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1: A Frame or Hydra lifrt truck w/load bearing surface; Articulated Dump Truck; Battery Rebuilders; Bus or Manhaul Driver; Concrete Buggies (power operated); Concrete Pump Truck; Dump Trucks, side, end and bottom dumps, including Semi Trucks and Trains or combinations there of: up to and including 10 cu. yds.; Lift Jitneys, Fork Lifts (all sizes in loading, unloading and transporting material on job site); Loader and/or Leverman on Concrete Dry Batch Plant (manually operated); Pilot Car; Pickup Truck; Solo Flat Bed and misc. Body Trucks, 0-10 tons; Truck Tender; Truck Mechanic Tender; Water Wagons (rated capacity) up to 3,000 gallons; Transit Mix and Wet or Dry Mix - 5 cu. yds. and under; Lubrication Man, Fuel Truck Driver, Tireman, Wash Rack, Steam Cleaner or combinations; Team Driver; Slurry Truck Driver or Leverman; Tireman

GROUP 2: Boom Truck/Hydra-lift or Retracting Crane; Challenger; Dumpsters or similar equipment all sizes; Dump Trucks/Articulated Dumps 6 cu to 10 cu.; Flaherty Spreader Driver or Leverman; Lowbed Equipment, Flat Bed Semi-trailer or doubles transporting equipment or wet or dry materials; Lumber Carrier, Driver-Straddle Carrier (used in loading, unloading and transporting of materials on job site); Oil Distributor Driver or Leverman; Transit mix and wet or dry mix trcuks: over 5 cu. yds. and including 7 cu. yds.; Vacuum Trucks; Water truck/Wagons (rated capacity) over 3,000 to 5,000 gallons

GROUP 3: Ammonia Nitrate Distributor Driver; Dump trucks, side, end and bottom dumps, including Semi Trucks and Trains or combinations thereof: over 10 cu. yds. and including 30 cu. yds. includes Articulated Dump Trucks;

Self-Propelled Street Sweeper; Transit mix and wet or dry mix truck: over 7 cu yds. and including 11 cu yds.; Truck Mechanic-Welder-Body Repairman; Utility and Clean-up Truck; Water Wagons (rated capacity) over 5,000 to 10,000 gallons

GROUP 4: Asphalt Burner; Dump Trucks, side, end and bottom cumps, including Semi-Trucks and Trains or combinations thereof: over 30 cu. yds. and including 50 cu. yds. includes Articulated Dump Trucks; Fire Guard; Transit Mix and Wet or Dry Mix Trucks, over 11 cu. yds. and including 15 cu. yds.; Water Wagon (rated capacity) over 10,000 gallons to 15,000 gallons

GROUP 5: Composite Crewman; Dump Trucks, side, end and bottom dumps, including Semi Trucks and Trains or combinations thereof: over 50 cu. yds. and including 60 cu. yds. includes Articulated Dump Trucks

GROUP 6: Bulk Cement Spreader w/o Auger; Dry Pre-Batch concrete Mix Trucks; Dump trucks, side, end and bottom dumps, including Semi Trucks and Trains of combinations thereof: over 60 cu. yds. and including 80 cu. yds., and includes Articulated Dump Trucks; Skid Truck

GROUP 7: Dump Trucks, side, end and bottom dumps, including Semi Trucks and Trains or combinations thereof: over 80 cu. yds. and including 100 cu. yds., includes Articulated Dump Trucks; Industrial Lift Truck (mechanical tailgate)

---

* TEAM0174-001 06/01/2025

CLALLAM, GRAYS HARBOR, ISLAND, JEFFERSON, KING, KITSAP, LEWIS, MASON, PACIFIC (North of a straight line made by extending the north boundary line of Wahkiakum County west to the Pacific Ocean), PIERCE, SAN JUAN, SKAGIT, SNOHOMISH, THURSTON AND WHATCOM COUNTIES

	Rates	Fringes
Truck drivers:		
ZONE A:		
GROUP 1:	$ 55.43	27.52
GROUP 2:	$ 54.59	27.52
GROUP 3:	$ 51.78	27.52
GROUP 4:	$ 46.81	27.52
GROUP 5:	$ 54.98	27.52

ZONE B (25-45 miles from center of listed cities*): Add $.70 per hour to Zone A rates.
ZONE C (over 45 miles from centr of listed cities*): Add $1.00 per hour to Zone A rates.

*Zone pay will be calculated from the city center of the following listed cities:

BELLINGHAM	CENTRALIA	RAYMOND	OLYMPIA
EVERETT	SHELTON	ANACORTES	BELLEVUE
SEATTLE	PORT ANGELES	MT. VERNON	KENT
TACOMA	PORT TOWNSEND	ABERDEEN	BREMERTON

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1 - ""A-frame or Hydralift"" trucks and Boom trucks or similar equipment when ""A"" frame or ""Hydralift"" and Boom truck or similar equipment is used; Buggymobile; Bulk Cement Tanker; Dumpsters and similar equipment, Tournorockers, Tournowagon, Tournotrailer, Cat DW series, Terra Cobra, Le Tourneau, Westinghouse, Athye Wagon, Euclid Two and Four-Wheeled power tractor with trailer and similar top-loaded equipment transporting material: Dump Trucks, side, end and bottom dump, including semi-trucks and trains or combinations thereof with 16 yards to 30 yards capacity: Over 30 yards $.15 per hour additional for each 10 yard

increment; Explosive Truck (field mix) and similar equipment; Hyster Operators (handling bulk loose aggregates); Lowbed and Heavy Duty Trailer; Road Oil Distributor Driver; Spreader, Flaherty Transit mix used exclusively in heavy construction; Water Wagon and Tank Truck-3,000 gallons and over capacity

GROUP 2 - Bulllifts, or similar equipment used in loading or unloading trucks, transporting materials on job site; Dumpsters, and similar equipment, Tournorockers, Tournowagon, Turnotrailer, Cat. D.W. Series, Terra Cobra, Le Tourneau, Westinghouse, Athye wagon, Euclid two and four-wheeled power tractor with trailer and similar top-loaded equipment transporting material: Dump trucks, side, end and bottom dump, including semi-trucks and trains or combinations thereof with less than 16 yards capacity; Flatbed (Dual Rear Axle); Grease Truck, Fuel Truck, Greaser, Battery Service Man and/or Tire Service Man; Leverman and loader at bunkers and batch plants; Oil tank transport; Scissor truck; Slurry Truck; Sno-Go and similar equipment; Swampers; Straddler Carrier (Ross, Hyster) and similar equipment; Team Driver; Tractor (small, rubber-tired)(when used within Teamster jurisdiction); Vacuum truck; Water Wagon and Tank trucks-less than 3,000 gallons capacity; Winch Truck; Wrecker, Tow truck and similar equipment

GROUP 3 - Flatbed (single rear axle); Pickup Sweeper; Pickup Truck. (Adjust Group 3 upward by $2.00 per hour for onsite work only)

GROUP 4 - Escort or Pilot Car

GROUP 5 - Mechanic

HAZMAT PROJECTS

Anyone working on a HAZMAT job, where HAZMAT certification is required, shall be compensated as a premium, in addition to the classification working in as follows:
LEVEL C: +$.25 per hour - This level uses an air purifying respirator or additional protective clothing.
LEVEL B: +$.50 per hour - Uses same respirator protection as Level A. Supplied air line is provided in conjunction with a chemical ""splash suit.""
LEVEL A: +$.75 per hour - This level utilizes a fully-encapsulated suit with a self-contained breathing apparatus or a supplied air line.

TEAM0690-004 06/01/2024

ADAMS, ASOTIN, BENTON, CHELAN, COLUMBIA, DOUGLAS, FERRY, FRANKLIN, GARFIELD, GRANT KITTITAS, LINCOLN, OKANOGAN, PEND OREILLE, SPOKANE, STEVENS, WALLA WALLA, WHITMAN AND YAKIMA COUNTIES

	Rates	Fringes
Truck drivers: (AREA 1: SPOKANE ZONE CENTER: Adams, Chelan, Douglas, Ferry, Grant, Kittitas, Lincoln, Okanogan, Pen Oreille, Spokane, Stevens, and Whitman Counties AREA 1: LEWISTON ZONE CENTER: Asotin, Columbia, and Garfield Counties AREA 2: PASCO ZONE CENTER: Benton, Franklin, Walla Walla and Yakima Counties)		

AREA 1:		
GROUP 1	$ 36.83	20.93
GROUP 2	$ 39.47	20.93
GROUP 3	$ 39.58	20.93
GROUP 4	$ 39.91	20.93
GROUP 5	$ 40.02	20.93
GROUP 6	$ 40.22	20.93
GROUP 7	$ 40.56	20.93
GROUP 8	$ 40.88	20.93
AREA 2:		
GROUP 1	$ 33.83	20.93
GROUP 2	$ 36.47	20.93
GROUP 3	$ 36.58	20.93
GROUP 4	$ 36.91	20.93
GROUP 5	$ 37.02	20.93
GROUP 6	$ 37.22	20.93
GROUP 7	$ 37.56	20.93
GROUP 8	$ 37.88	20.93

Zone Differential (Add to Zone 1 rate: Zone 1 + $2.00)

BASE POINTS: Spokane, Pasco, Lewiston
Zone 1: 0-45 radius miles from the main post office.
Zone 2: Outside 45 radius miles from the main post office

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1: Escort Driver or Pilot Car; Employee Haul; Power Boat Hauling Employees or Material

GROUP 2: Fish Truck; Flat Bed Truck; Fork Lift (3000 lbs. and under); Leverperson (loading trucks at bunkers); Trailer Mounted Hydro Seeder and Mulcher; Seeder & Mulcher; Stationary Fuel Operator; Tractor (small, rubber-tired, pulling trailer or similar equipment)

GROUP 3: Auto Crane (2000 lbs. capacity); Buggy Mobile & Similar; Bulk Cement Tanks & Spreader; Dumptor (6 yds. & under); Flat Bed Truck with Hydraullic System; Fork Lift (3001-16,000 lbs.); Fuel Truck Driver, Steamcleaner & Washer; Power Operated Sweeper; Rubber-tired Tunnel Jumbo; Scissors Truck; Slurry Truck Driver; Straddle Carrier (Ross, Hyster, & similar); Tireperson; Transit Mixers & Truck Hauling Concrete (3 yd. to & including 6 yds.); Trucks, side, end, bottom & articulated end dump (3 yards to and including 6 yds.); Warehouseperson (to include shipping & receiving); Wrecker & Tow Truck

GROUP 4: A-Frame; Burner, Cutter, & Welder; Service Greaser; Trucks, side, end, bottom & articulated end dump (over 6 yards to and including 12 yds.); Truck Mounted Hydro Seeder; Warehouseperson; Water Tank truck (0-8,000 gallons)

GROUP 5: Dumptor (over 6 yds.); Lowboy (50 tons & under); Self- loading Roll Off; Semi-Truck & Trailer; Tractor with Steer Trailer; Transit Mixers and Trucks Hauling Concrete (over 6 yds. to and including 10 yds.); Trucks, side, end, bottom and end dump (over 12 yds. to & including 20 yds.); Truck-Mounted Crane (with load bearing surface either mounted or pulled, up to 14 ton); Vacuum Truck (super sucker, guzzler, etc.)

GROUP 6: Flaherty Spreader Box Driver; Flowboys; Fork Lift (over 16,000 lbs.); Dumps (Semi-end); Mechanic (Field); Semi- end Dumps; Transfer Truck & Trailer; Transit Mixers & Trucks Hauling Concrete (over 10 yds. to & including 20 yds.); Trucks, side, end, bottom and articulated end dump (over 20 yds. to & including 40 yds.); Truck and Pup; Tournarocker, DWs & similar with 2 or more 4 wheel-power tractor with trailer, gallonage or yardage scale, whichever is greater Water Tank Truck (8,001- 14,000 gallons); Lowboy(over 50 tons)

GROUP 7: Oil Distributor Driver; Stringer Truck (cable

oeprated trailer); Transit Mixers & Trucks Hauling Concrete (over 20 yds.); Truck, side, end, bottom end dump (over 40 yds. to & including 100 yds.); Truck Mounted Crane (with load bearing surface either mounted or pulled (16 through 25 tons);

GROUP 8: Prime Movers and Stinger Truck; Trucks, side, end, bottom and articulated end dump (over 100 yds.); Helicopter Pilot Hauling Employees or Materials

Footnote A - Anyone working on a HAZMAT job, where HAZMAT certification is required, shall be compensated as a premium, in additon to the classification working in as follows:

LEVEL C-D: - $.50 PER HOUR (This is the lowest level of protection. This level may use an air purifying respirator or additional protective clothing.

LEVEL A-B: - $1.00 PER HOUR (Uses supplied air is conjunction with a chemical spash suit or fully encapsulated suit with a self-contained breathing apparatus.

Employees shall be paid Hazmat pay in increments of four(4) and eight(8) hours.

NOTE:
Trucks Pulling Equipment Trailers: shall receive $.15/hour over applicable truck rate

---

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

==========

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

a) a survey underlying a wage determination
b) an existing published wage determination
c) an initial WHD letter setting forth a position on a wage determination matter
d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2) If an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210.

==========

END OF GENERAL DECISION"

****

Overtime Codes

Overtime calculations are based on the hourly rate actually paid to the worker. On public works projects, the hourly rate must be not less than the prevailing rate of wage minus the hourly rate of the cost of fringe benefits actually provided for the worker.

1. ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS PER DAY OR FORTY (40) HOURS PER WEEK SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE.

B. All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

C. The first two (2) hours after eight (8) regular hours Monday through Friday and the first ten (10) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All other overtime hours and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

D. The first two (2) hours before or after a five-eight (8) hour workweek day or a four-ten (10) hour workweek day and the first eight (8) hours worked the next day after either workweek shall be paid at one and one-half times the hourly rate of wage. All additional hours worked and all worked on Sundays and holidays shall be paid at double the hourly rate of wage.

E. The first two (2) hours after eight (8) regular hours Monday through Friday and the first eight (8) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All other hours worked Monday through Saturday, and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

F. The first two (2) hours after eight (8) regular hours Monday through Friday and the first ten (10) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All other overtime hours worked, except Labor Day, shall be paid at double the hourly rate of wage. All hours worked on Labor Day shall be paid at three times the hourly rate of wage.

G. The first ten (10) hours worked on Saturdays and the first ten (10) hours worked on a fifth calendar weekday in a four-ten hour schedule, shall be paid at one and one-half times the hourly rate of wage. All hours worked in excess of ten (10) hours per day Monday through Saturday and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

H. All hours worked on Saturdays (except makeup days if work is lost due to inclement weather conditions or equipment breakdown) shall be paid at one and one-half times the hourly rate of wage. All hours worked Monday through Saturday over twelve (12) hours and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

I. All hours worked on Sundays and holidays shall also be paid at double the hourly rate of wage.

J. The first two (2) hours after eight (8) regular hours Monday through Friday and the first ten (10) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked over ten (10) hours Monday through Saturday, Sundays and holidays shall be paid at double the hourly rate of wage.

K. All hours worked on Saturdays and Sundays shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays shall be paid at double the hourly rate of wage.

M. All hours worked on Saturdays (except makeup days if work is lost due to inclement weather conditions) shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

Overtime Codes Continued

1. N. All hours worked on Saturdays (except makeup days) shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

O. The first ten (10) hours worked on Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays, holidays and after twelve (12) hours, Monday through Friday and after ten (10) hours on Saturday shall be paid at double the hourly rate of wage.

P. All hours worked on Saturdays (except makeup days if circumstances warrant) and Sundays shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays shall be paid at double the hourly rate of wage.

Q. The first two (2) hours after eight (8) regular hours Monday through Friday and up to ten (10) hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked in excess of ten (10) hours per day Monday through Saturday and all hours worked on Sundays and holidays (except Christmas day) shall be paid at double the hourly rate of wage. All hours worked on Christmas day shall be paid at two and one-half times the hourly rate of wage.

R. All hours worked on Sundays and holidays shall be paid at two times the hourly rate of wage.

U. All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays and holidays (except Labor Day) shall be paid at two times the hourly rate of wage. All hours worked on Labor Day shall be paid at three times the hourly rate of wage.

V. All hours worked on Sundays and holidays (except Thanksgiving Day and Christmas day) shall be paid at one and one-half times the hourly rate of wage. All hours worked on Thanksgiving Day and Christmas day shall be paid at double the hourly rate of wage.

W. All hours worked on Saturdays and Sundays (except make-up days due to conditions beyond the control of the employer)) shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays shall be paid at double the hourly rate of wage.

X. The first four (4) hours after eight (8) regular hours Monday through Friday and the first twelve (12) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked over twelve (12) hours Monday through Saturday, Sundays and holidays shall be paid at double the hourly rate of wage. When holiday falls on Saturday or Sunday, the day before Saturday, Friday, and the day after Sunday, Monday, shall be considered the holiday and all work performed shall be paid at double the hourly rate of wage.

Y. All hours worked outside the hours of 5:00 am and 5:00 pm (or such other hours as may be agreed upon by any employer and the employee) and all hours worked in excess of eight (8) hours per day (10 hours per day for a 4 x 10 workweek) and on Saturdays and holidays (except labor day) shall be paid at one and one-half times the hourly rate of wage. (except for employees who are absent from work without prior approval on a scheduled workday during the workweek shall be paid at the straight-time rate until they have worked 8 hours in a day (10 in a 4 x 10 workweek) or 40 hours during that workweek.) All hours worked Monday through Saturday over twelve (12) hours and all hours worked on Sundays and Labor Day shall be paid at double the hourly rate of wage.

Z. All hours worked on Saturdays and Sundays shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays shall be paid the straight time rate of pay in addition to holiday pay.

Overtime Codes Continued

2. ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS PER DAY OR FORTY (40) HOURS PER WEEK SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE.

   B. All hours worked on holidays shall be paid at one and one-half times the hourly rate of wage.

   F. The first eight (8) hours worked on holidays shall be paid at the straight hourly rate of wage in addition to the holiday pay. All hours worked in excess of eight (8) hours on holidays shall be paid at double the hourly rate of wage.

   M. This code appears to be missing. All hours worked on Saturdays, Sundays and holidays shall be paid at double the hourly rate of wage.

   R. All hours worked on Sundays and holidays and all hours worked over sixty (60) in one week shall be paid at double the hourly rate of wage.

   U. All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked over 12 hours in a day or on Sundays and holidays shall be paid at double the hourly rate of wage.

3. ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS PER DAY OR FORTY (40) HOURS PER WEEK SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE.

   F. All hours worked on Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sunday shall be paid at two times the hourly rate of wage. All hours worked on paid holidays shall be paid at two and one-half times the hourly rate of wage including holiday pay.

   H. All work performed on Sundays between March 16th and October 14th and all Holidays shall be compensated for at two (2) times the regular rate of pay. Work performed on Sundays between October 15th and March 15th shall be compensated at one and one half (1-1/2) times the regular rate of pay.

   J. All hours worked between the hours of 10:00 pm and 5:00 am, Monday through Friday, and all hours worked on Saturdays shall be paid at a one and one-half times the hourly rate of wage. All hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

   K. Work performed in excess of eight (8) hours of straight time per day, or ten (10) hours of straight time per day when four ten (10) hour shifts are established, or forty (40) hours of straight time per week, Monday through Friday, or outside the normal 5 am to 6pm shift, and all work on Saturdays shall be paid at one and one-half times the hourly rate of wage. All work performed after 6:00 pm Saturday to 5:00 am Monday and Holidays, and all hours worked in excess of twelve (12) hours in a single shift shall be paid at double the hourly rate of wage.

   After an employee has worked eight (8) hours at an applicable overtime rate, all additional hours shall be at the applicable overtime rate until such time as the employee has had a break of eight (8) hours or more. When an employee returns to work without at least eight (8) hours time off since their previous shift, all such time shall be a continuation of shift and paid at the applicable overtime rate until he/she shall have the eight (8) hours rest period.

Overtime Codes Continued

4. ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS PER DAY OR FORTY (40) HOURS PER WEEK SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE.

A. All hours worked in excess of eight (8) hours per day or forty (40) hours per week shall be paid at double the hourly rate of wage. All hours worked on Saturdays, Sundays and holidays shall be paid at double the hourly rate of wage

C. On Monday through Friday, the first four (4) hours of overtime after eight (8) hours of straight time work shall be paid at one and one half (1-1/2) times the straight time rate of pay, unless a four (4) day ten (10) hour workweek has been established. On a four (4) day ten (10) hour workweek scheduled Monday through Thursday, or Tuesday through Friday, the first two (2) hours of overtime after ten (10) hours of straight time work shall be paid at one and one half (1-1/2) times the straight time rate of pay. On Saturday, the first twelve (12) hours of work shall be paid at one and one half (1-1/2) times the straight time rate of pay, except that if the job is down on Monday through Friday due to weather conditions or other conditions outside the control of the employer, the first ten (10) hours on Saturday may be worked at the straight time rate of pay. All hours worked over twelve (12) hours in a day and all hours worked on Sunday and Holidays shall be paid at two (2) times the straight time rate of pay.

D. All hours worked in excess of eight (8) hours per day or forty (40) hours per week shall be paid at double the hourly rate of wage. All hours worked on Saturday, Sundays and holidays shall be paid at double the hourly rate of pay. Rates include all members of the assigned crew.

EXCEPTION:
On all multipole structures and steel transmission lines, switching stations, regulating, capacitor stations, generating plants, industrial plants, associated installations and substations, except those substations whose primary function is to feed a distribution system, will be paid overtime under the following rates:

The first two (2) hours after eight (8) regular hours Monday through Friday of overtime on a regular workday, shall be paid at one and one-half times the hourly rate of wage. All hours in excess of ten (10) hours will be at two (2) times the hourly rate of wage. The first eight (8) hours worked on Saturday will be paid at one and one-half (1-1/2) times the hourly rate of wage. All hours worked in excess of eight (8) hours on Saturday, and all hours worked on Sundays and holidays will be at the double the hourly rate of wage.

All overtime eligible hours performed on the above described work that is energized, shall be paid at the double the hourly rate of wage.

E. The first two (2) hours after eight (8) regular hours Monday through Friday and the first eight (8) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All other hours worked Monday through Saturday, and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

On a four-day, ten-hour weekly schedule, either Monday thru Thursday or Tuesday thru Friday schedule, all hours worked after ten shall be paid at double the hourly rate of wage. The Monday or Friday not utilized in the normal four-day, ten hour work week, and Saturday shall be paid at one and one half (1½) times the regular shift rate for the first eight (8) hours. All other hours worked Monday through Saturday, and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

G. All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked Monday through Saturday over twelve (12) hours and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

I. The First eight (8) hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked in excess of eight (8) per day on Saturdays shall be paid at double the hourly rate of wage. All hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

Overtime Codes Continued

4. J. The first eight (8) hours worked on a Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked in excess of eight (8) hours on a Saturday shall be paid at double the hourly rate of wage. All hours worked over twelve (12) in a day, and all hours worked on Sundays and Holidays shall be paid at double the hourly rate of wage.

K. All hours worked on a Saturday shall be paid at one and one-half times the hourly rate of wage, so long as Saturday is the sixth consecutive day worked. All hours worked over twelve (12) in a day Monday through Saturday, and all hours worked on Sundays and Holidays shall be paid at double the hourly rate of wage.

L. The first twelve (12) hours worked on a Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked on a Saturday in excess of twelve (12) hours shall be paid at double the hourly rate of pay. All hours worked over twelve (12) in a day Monday through Friday, and all hours worked on Sundays shall be paid at double the hourly rate of wage. All hours worked on a holiday shall be paid at one and one-half times the hourly rate of wage, except that all hours worked on Labor Day shall be paid at double the hourly rate of pay.

S. On a four (4) day ten (10) hour workweek scheduled Monday through Thursday, or Tuesday through Friday, work performed in excess of (10) hours shall be paid at one and one half (1-1/2) times the hourly rate of pay. On Monday through Friday, work performed outside the normal work hours of 6:00 a.m. and 6:00 p.m. shall be paid at one and one-half (1-1/2) times the straight time rate, (except for special shifts or multiple shift operations).

All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All work performed on Sundays and holidays shall be paid at double the hourly rate of wage. When an employee returns to work without at least eight (8) hours time off since their previous shift, all such time shall be a continuation of shift and paid at the applicable overtime rate until such time as the employee has had a break of eight (8) hours.

Multiple Shift Operations: When the first shift of a multiple shift (a two or three shift) operation is started at the basic straight time rate or at a specific overtime rate, all shifts of that day's operation shall be completed at that rate. Special Shifts: The Special Shift Premium is the basic hourly rate of pay plus $2.00 an hour. When due to conditions beyond the control of the employer or when an owner (not acting as the contractor), a government agency or the contract specifications require more than four (4) hours of a special shift can only be performed outside the normal 6am to 6pm shift then the special shift premium will be applied to the basic straight time for the entire shift. When an employee works on a special shift, they shall be paid the special shift premium for each hour worked unless they are in overtime or double-time status. (For example, the special shift premium does not waive the overtime requirements for work performed on Saturday or Sunday).

U. The first four (4) hours after eight (8) regular hours Monday through Friday and the first twelve (12) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. (Except on makeup days if work is lost due to inclement weather, then the first eight (8) hours on Saturday may be paid the regular rate.) All hours worked over twelve (12) hours Monday through Saturday, and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

Overtime Codes Continued

4. X. All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays and holidays shall be paid at double the hourly rate of wage. Work performed outside the normal shift of 6 am to 6pm shall be paid at one and one-half the straight time rate, (except for special shifts or three shift operations). All work performed on Sundays and holidays shall be paid at double the hourly rate of wage. Shifts may be established when considered necessary by the Employer.

   The Employer may establish shifts consisting of eight (8) or ten (10) hours of work (subject to WAC 296-127-022), that shall constitute a normal forty (40) hour work week. The Employer can change from a 5-eight to a 4-ten hour schedule or back to the other. All hours of work on these shifts shall be paid for at the straight time hourly rate. Work performed in excess of eight hours (or ten hours per day (subject to WAC 296-127-022) shall be paid at one and one-half the straight time rate.

   When due to conditions beyond the control of the Employer, or when contract specifications require that work can only be performed outside the regular day shift, then by mutual agreement a special shift may be worked at the straight time rate, eight (8) hours work for eight (8) hours pay. The starting time shall be arranged to fit such conditions of work.

   When an employee returns to work without at a break of eight (8) hours since their previous shift, all such time shall be a continuation of shift and paid at the applicable overtime rate until such time as the employee has had a break of eight (8) hours.

Overtime Codes Continued

11. ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS PER DAY OR FORTY (40) HOURS PER WEEK SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE.

   B After an employee has worked eight (8) hours, all additional hours worked shall be paid at the applicable overtime rate until such time as the employee has had a break of eight (8) hours or more.

   C The first two (2) hours after eight (8) regular hours Monday through Friday and the first eight (8) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All other overtime hours worked, except Labor Day, and all hours on Sunday shall be paid at double the hourly rate of wage. All hours worked on Labor Day shall be paid at three times the hourly rate of wage. All non-overtime and non-holiday hours worked between 4:00 pm and 5:00 am, Monday through Friday, shall be paid at a premium rate of 15% over the hourly rate of wage.

   D. All hours worked on Saturdays and holidays shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays shall be paid at double the hourly rate of wage.

   After an employee has worked eight (8) hours, all additional hours worked shall be paid at the applicable overtime rate until such time as the employee has had a break of eight (8) hours or more.

   E. The first two (2) hours after eight (8) regular hours Monday through Friday, the first ten (10) hours on Saturday, and the first ten (10) hours worked on Holidays shall be paid at one and one-half times the hourly rate of wage. All hours worked over ten (10) hours Monday through Saturday, and Sundays shall be paid at double the hourly rate of wage.

   After an employee has worked eight (8) hours, all additional hours worked shall be paid at the applicable overtime rate until such time as the employee has had a break of eight (8) hours or more.

Overtime Codes Continued

11. F. The first two (2) hours after eight (8) regular hours Monday through Friday and the first eight (8) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All other hours worked Monday through Saturday, and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

On a four-day, ten-hour weekly schedule, either Monday thru Thursday or Tuesday thru Friday schedule, all hours worked after ten shall be paid at double the hourly rate of wage. The Monday or Friday not utilized in the normal four-day, ten hour work week, and Saturday shall be paid at one-half times the hourly rate of wage for the first eight (8) hours. All other hours worked Monday through Saturday, and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

G. Work performed in excess of eight (8) hours of straight time per day, or ten (10) hours of straight time per day when four ten (10) hour shifts are established, or forty (40) hours of straight time per week, Monday through Friday, or outside the normal 5 am to 6pm shift, and all work on Saturdays shall be paid at one and one-half times the hourly rate of wage.

All work performed after 6:00 pm Saturday to 5:00 am Monday and Holidays, and all hours worked in excess of twelve (12) hours in a single shift shall be paid at double the hourly rate of wage.

After an employee has worked eight (8) hours at an applicable overtime rate, all additional hours shall be at the applicable overtime rate until such time as the employee has had a break of nine (9) hours or more. When an employee returns to work without at least nine (9) hours time off since their previous shift, all such time shall be a continuation of shift and paid at the applicable overtime rate until he/she shall have the nine (9) hours rest period.

H. Work performed in excess of eight (8) hours of straight time per day, or ten (10) hours of straight time per day when four ten (10) hour shifts are established, or forty (40) hours of straight time per week, Monday through Friday, or outside the normal 5 am to 6pm shift, and all work on Saturdays shall be paid at one and one-half times the hourly rate of wage.

All work performed after 6:00 pm Saturday to 5:00 am Monday and Holidays, and all hours worked in excess of twelve (12) hours in a single shift shall be paid at double the hourly rate of wage.

After an employee has worked eight (8) hours at an applicable overtime rate, all additional hours shall be at the applicable overtime rate until such time as the employee has had a break of ten (10) hours or more. When an employee returns to work without at least ten (10) hours time off since their previous shift, all such time shall be a continuation of shift and paid at the applicable overtime rate until he/she shall have the ten (10) hours rest period.

J. All hours worked on holidays shall be paid at double the hourly rate of wage.

K. On Monday through Friday hours worked outside 4:00 am and 5:00 pm, and the first two (2) hours after eight (8) hours worked shall be paid at one and one-half times the hourly rate. All hours worked over 10 hours per day Monday through Friday, and all hours worked on Saturdays, Sundays, and Holidays worked shall be paid at double the hourly rate of wage.

L. An employee working outside 5:00 am and 5:00 pm shall receive an additional two dollar ($2.00) per hour for all hours worked that shift. All hours worked on holidays shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays shall be paid at one and one-half times the hourly rate of wage.

Overtime Codes Continued

11. M. On Monday through Friday, the first four (4) hours of overtime after eight (8) hours of straight time work shall be paid at one and one half (1-1/2) times the straight time rate of pay, unless a four (4) day ten (10) hour workweek has been established. On a four (4) day ten (10) hour workweek scheduled Monday through Thursday, or Tuesday through Friday, the first two (2) hours of overtime after ten (10) hours of straight time work shall be paid at one and one half (1-1/2) times the straight time rate of pay.

Work performed outside the normal work hours of 5:00 a.m. and 6:00 p.m. shall be paid at one and one-half (1-1/2) times the straight time rate, (except for special shifts or multiple shift operations). When the first shift of a multiple shift (a two or three shift) operation is started at the basic straight time rate or at a specific overtime rate, all shifts of that day's operation shall be completed at that rate. When due to conditions beyond the control of the Employer or when contract specifications require that work can only be performed outside the regular day shift of 5:00 am to 6:00 pm, then a special shift may be worked at the straight time rate, plus the shift pay premium when applicable. The starting time of work will be arranged to fit such conditions of work. Such shift shall consist of eight (8) hours work for eight (8) hours pay or ten (10) hours work for ten (10) hours pay for four ten shifts.

On Saturday, the first twelve (12) hours of work shall be paid at one and one half (1-1/2) times the straight time rate of pay. All work performed after 6:00 pm Saturday to 5:00 am Monday, all work performed over twelve (12) hours, and all work performed on holidays shall be paid at double the straight time rate of pay.

Shift Pay Premium: In an addition to any overtime already required, all hours worked between the hours of 6:00 pm and 5:00 am shall receive an additional two dollars ($2.00) per hour.

N. All work performed over twelve hours in a shift and all work performed on Sundays and Holidays shall be paid at double the straight time rate.

Any time worked over eight (8) hours on Saturday shall be paid double the straight time rate, except employees assigned to work six 10-hour shifts per week shall be paid double the straight time rate for any time worked on Saturday over 10 hours.

O. All work performed on Saturdays, Sundays, and Holidays shall be paid at one and one half (1-1/2) times the straight time rate of pay.

Overtime Codes Continued

11. P. Work performed in excess of ten (10) hours of straight time per day when four ten (10) hour shifts are established and all work on Saturdays, except for make-up days shall be paid at time and one-half (1 ½) the straight time rate.

Work performed outside the normal work hours of 5:00 a.m. and 6:00 p.m. shall be paid at one and one-half (1-1/2) times the straight time rate, (except for special shifts or multiple shift operations). When the first shift of multiple shift (a two or three shift) operation is started at the basic straight time rate or at a specific overtime rate, all shifts of that day's operation shall be completed at that rate. When due to conditions beyond the control of the Employer or when contract specifications require that work can only be performed outside the regular day shift of 5:00 a.m. to 6:00 p.m., then a special shift may be worked at the straight time rate, plus the shift pay premium when applicable. The starting time of work will be arranged to fit such conditions of work. Such shifts shall consist of eight (8) hours work for eight (8) hours pay or ten (10) hours work for ten (10) hours pay for four ten-hour shifts.

In the event the job is down due to weather conditions, then Saturday may, be worked as a voluntary make-up day at the straight time rate. However, Saturday shall not be utilized as a make-up day when a holiday falls on Friday. All work performed on Sundays and holidays and work in excess of twelve (12) hours per day shall be paid at double (2x) the straight time rate of pay.

After an employee has worked eight (8) hours at an applicable overtime rate, all additional hours shall be at the applicable overtime rate until such time as the employee has had a break of eight (8) hours.

When an employee returns to work without a break of eight (8) hours since their previous shift, all such time shall be a continuation of shift and paid at the applicable overtime rate until such time as the employee has had a break of eight (8) hours.

Q. All hours worked between the hours of 6:00 pm and 6:00 am, Monday through Saturday, shall be paid at a premium rate of 35% over the hourly rate of wage. Work performed on Sundays shall be paid at double time. All hours worked on holidays shall be paid at double the hourly rate of wage.

R On Monday through Saturday hours worked outside 6:00 am and 7:00 pm, and all hours after eight (8) hours worked shall be paid at one and one-half times the hourly rate. All hours worked on Sundays and Holidays shall be paid at double the hourly rate of wage.

When a holiday falls on a Saturday, the Friday before shall be the observed holiday. When a holiday falls on a Sunday, the following Monday shall be the observed holiday.

S. The first ten (10) hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. In the event the job is down due to weather conditions, or other conditions beyond the control of the Employer, then Saturday may be worked at the straight time rate, for the first eight (8) hours, or the first ten (10) hours when a four day ten hour workweek has been established.

All hours worked Monday through Saturday over twelve (12) hours and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

When an employee returns to work without a break of eight (8) hours since their previous shift, all such time shall be a continuation of shift and paid at the applicable overtime rate until such time as the employee has had a break of eight (8) hours.

11. T. On Monday through Friday, the first four (4) hours of overtime after eight (8) hours of straight time work shall be paid at one and one half (1-1/2) times the straight time rate of pay, unless a four (4) day ten (10) hour workweek has been established. On a four (4) day ten (10) hour workweek scheduled Monday through Thursday, or Tuesday through Friday, the first two (2) hours of overtime after ten (10) hours of straight time work shall be paid at one and one half (1-1/2) times the straight time rate of pay.

On Saturday, the first twelve (12) hours of work shall be paid at one and one half (1-1/2) times the straight time rate of pay, except that if the job is down on Monday through Friday due to weather conditions or other conditions outside the control of the employer, the first ten (10) hours on Saturday may be worked at the straight time rate of pay.

All hours worked over twelve (12) hours in a day and all hours worked on Sunday and Holidays shall be paid at two (2) times the straight time rate of pay.

U. On Monday through Friday, the first four (4) hours of overtime after eight (8) hours of straight time work shall be paid at one and one half (1-1/2) times the straight time rate of pay, unless a four (4) day ten (10) hour workweek has been established. On a four (4) day ten (10) hour workweek scheduled Monday through Thursday, or Tuesday through Friday, the first two (2) hours of overtime after ten (10) hours of straight time work shall be paid at one and one half (1-1/2) times the straight time rate of pay.

On Saturday, the first twelve (12) hours of work shall be paid at one and one half (1-1/2) times the straight time rate of pay, except that if the job is down on Monday through Friday due to weather conditions or other conditions outside the control of the employer, the first ten (10) hours on Saturday may be worked at the straight time rate of pay.

All hours worked over twelve (12) hours in a day and all hours worked on Sunday and Holidays shall be paid at two (2) times the straight time rate of pay.

If, due to conditions beyond the control of the Employer or when contract specifications require that work can only be performed outside the regular day shift, then a Special Shift may be worked, Monday through Friday, at the straight-time rate. The starting time of work for the Special Shift will be arranged to fit such conditions of work. Such Special Shift shall consist of eight (8) hours of work for eight (8) hours of pay or ten (10) hours of work for ten(10) hours of pay on a four-ten workday schedule.

Holiday Codes

5. A. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, and Christmas Day (7).

B. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, the day before Christmas, and Christmas Day (8).

C. Holidays: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (8).

D. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, And Christmas Day (8).

H. Holidays: New Year's Day, Memorial Day, Independence Day, Thanksgiving Day, the Day after Thanksgiving Day, And Christmas (6).

Holiday Codes Continued

5. I. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day (6).

K. Holidays: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday After Thanksgiving Day, The Day Before Christmas, And Christmas Day (9).

L. Holidays: New Year's Day, Martin Luther King Jr. Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, And Christmas Day (8).

N. Holidays: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, The Friday After Thanksgiving Day, And Christmas Day (9).

P. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday And Saturday After Thanksgiving Day, The Day Before Christmas, And Christmas Day (9). If A Holiday Falls On Sunday, The Following Monday Shall Be Considered As A Holiday.

Q. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day (6).

R. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Day After Thanksgiving Day, One-Half Day Before Christmas Day, And Christmas Day. (7 1/2).

S. Paid Holidays: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, And Christmas Day (7).

Z. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (8).

Holiday Codes Continued

6. G. Paid Holidays: New Year's Day, Martin Luther King Jr. Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, and Christmas Eve Day (11).

H. Paid Holidays: New Year's Day, New Year's Eve Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday After Thanksgiving Day, Christmas Day, The Day After Christmas, And A Floating Holiday (10).

T. Paid Holidays: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, The Friday After Thanksgiving Day, The Last Working Day Before Christmas Day, And Christmas Day (9).

Z. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, And Christmas Day (7). If a holiday falls on Saturday, the preceding Friday shall be considered as the holiday. If a holiday falls on Sunday, the following Monday shall be considered as the holiday.

Holiday Codes Continued

7. A. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, And Christmas Day (8). Any Holiday Which Falls On A Sunday Shall Be Observed As A Holiday On The Following Monday. If any of the listed holidays falls on a Saturday, the preceding Friday shall be a regular work day.

B. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, And Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

C. Holidays: New Year's Day, Martin Luther King Jr. Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

D. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (8). Unpaid Holidays: President's Day. Any paid holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any paid holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

E. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (7). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

F. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, the last working day before Christmas day and Christmas day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

Holiday Codes Continued

7. G. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day (6). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday.

H. Holidays: New Year's Day, Martin Luther King Jr. Day, Independence Day, Memorial Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, the Last Working Day before Christmas Day and Christmas Day (9). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

I. Holidays: New Year's Day, President's Day, Independence Day, Memorial Day, Labor Day, Thanksgiving Day, The Friday After Thanksgiving Day, The Day Before Christmas Day And Christmas Day (9). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

J. Holidays: New Year's Day, Independence Day, Memorial Day, Labor Day, Thanksgiving Day and Christmas Day (6). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

Holiday Codes Continued

7. K. Holidays: New Year's Day, Memorial Day, Independence Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, And Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

L. Holidays: New Year's Day, Memorial Day, Labor Day, Independence Day, Thanksgiving Day, the Last Work Day before Christmas Day, And Christmas Day (7). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

N. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (7). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. When Christmas falls on a Saturday, the preceding Friday shall be observed as a holiday.

P. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, And Christmas Day (7). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday.

Q. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, the Last Working Day before Christmas Day and Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. If any of the listed holidays falls on a Saturday, the preceding Friday shall be a regular work day.

S. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, Christmas Day, the Day after Christmas, and A Floating Holiday (9). If any of the listed holidays falls on a Sunday, the day observed by the Nation shall be considered a holiday and compensated accordingly.

V. Holidays: New Year's Day, President's Birthday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, the day before or after Christmas, and the day before or after New Year's Day. If any of the above listed holidays falls on a Sunday, the day observed by the Nation shall be considered a holiday and compensated accordingly.

W. Holidays: New Year's Day, Day After New Year's, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Eve Day, Christmas Day, the day after Christmas, the day before New Year's Day, and a Floating Holiday.

X. Holidays: New Year's Day, Day before or after New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, and the day before or after Christmas day. If a holiday falls on a Saturday or on a Friday that is the normal day off, then the holiday will be taken on the last normal workday. If the holiday falls on a Monday that is the normal day off or on a Sunday, then the holiday will be taken on the next normal workday.

Y. Holidays: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, and Christmas Day. (8) If the holiday falls on a Sunday, then the day observed by the federal government shall be considered a holiday and compensated accordingly.

Z. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, Christmas Eve, and Christmas Day (9). Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday. Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday.

Holiday Codes Continued

15. G. New Year's Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, The Friday After Thanksgiving Day, the last scheduled workday before Christmas, and Christmas Day (9). If any of the listed holidays falls on a Sunday, the day observed by the Nation shall be considered a holiday and compensated accordingly.

H. Holidays: New Year's Day, Martin Luther King Jr. Day, Independence Day, Memorial Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, the Last Working Day before Christmas Day and Christmas Day (9). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

I. Holidays: New Year's Day, President's Day, Independence Day, Memorial Day, Labor Day, Thanksgiving Day, The Friday After Thanksgiving Day, The Day Before Christmas Day And Christmas Day (9). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

J. Holidays: New Year's Day, Martin Luther King Jr. Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, and Christmas Day (9). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. If any of the listed holidays falls on a Saturday, the preceding Friday shall be a regular work day.

K. Holidays: New Year's Day, Memorial Day, Independence Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, And Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

L. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, the Friday after Thanksgiving Day, and Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. If any of the listed holidays falls on a Saturday, the preceding Friday shall be a regular work day.

M. Holidays: New Year's Day, Martin Luther King Jr. Day, Independence Day, Memorial Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Eve Day and Christmas Day (9). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. If any of the listed holidays falls on a Saturday, the preceding Friday shall be a regular work day.

N. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, the Friday after Thanksgiving Day, and Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday.

O. Holidays: New Year's Day, Martin Luther King Jr. Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, the day before Christmas day, and Christmas Day (10). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday.

Note Codes

8. D. Workers working with supplied air on hazmat projects receive an additional $1.00 per hour.

L. Workers on hazmat projects receive additional hourly premiums as follows -Level A: $0.75, Level B: $0.50, And Level C: $0.25.

M. Workers on hazmat projects receive additional hourly premiums as follows: Levels A & B: $1.00, Levels C & D: $0.50.

N. Workers on hazmat projects receive additional hourly premiums as follows -Level A: $1.00, Level B: $0.75, Level C: $0.50, And Level D: $0.25.

S. Effective August 31, 2012 – A Traffic Control Supervisor shall be present on the project whenever flagging or spotting or other traffic control labor is being utilized. Flaggers and Spotters shall be posted where shown on approved Traffic Control Plans or where directed by the Engineer. All flaggers and spotters shall possess a current flagging card issued by the State of Washington, Oregon, Montana, or Idaho. This classification is only effective on or after August 31, 2012.

T. Effective August 31, 2012 – A Traffic Control Laborer performs the setup, maintenance and removal of all temporary traffic control devices and construction signs necessary to control vehicular, bicycle, and pedestrian traffic during construction operations. Flaggers and Spotters shall be posted where shown on approved Traffic Control Plans or where directed by the Engineer. All flaggers and spotters shall possess a current flagging card issued by the State of Washington, Oregon, Montana, or Idaho. This classification is only effective on or after August 31, 2012.

U. Workers on hazmat projects receive additional hourly premiums as follows – Class A Suit: $2.00, Class B Suit: $1.50, And Class C Suit: $1.00. Workers performing underground work receive an additional $0.40 per hour for any and all work performed underground, including operating, servicing and repairing of equipment. The premium for underground work shall be paid for the entire shift worked. Workers who work suspended by a rope or cable receive an additional $0.50 per hour. The premium for work suspended shall be paid for the entire shift worked. Workers who do “pioneer” work (break open a cut, build road, etc.) more than one hundred fifty (150) feet above grade elevation receive an additional $0.50 per hour.

8. V. In addition to the hourly wage and fringe benefits, the following depth and enclosure premiums shall be paid. The premiums are to be calculated for the maximum depth and distance into an enclosure that a diver reaches in a day. The premiums are to be paid one time for the day and are not used in calculating overtime pay.

Depth premiums apply to depths of fifty feet or more. Over 50' to 100' - $2.00 per foot for each foot over 50 feet. Over 101' to 150' - $3.00 per foot for each foot over 101 feet. Over 151' to 220' - $4.00 per foot for each foot over 220 feet. Over 221' - $5.00 per foot for each foot over 221 feet.

Enclosure premiums apply when divers enter enclosures (such as pipes or tunnels) where there is no vertical ascent and is measured by the distance travelled from the entrance. 25’ to 300’ - $1.00 per foot from entrance. 300’ to 600’ - $1.50 per foot beginning at 300’. Over 600’ - $2.00 per foot beginning at 600’.

W. Meter Installers work on single phase 120/240V self-contained residential meters. The Lineman/Groundmen rates would apply to meters not fitting this description.

Note Codes Continued

X. Workers on hazmat projects receive additional hourly premiums as follows - Class A Suit: $2.00, Class B Suit: $1.50, Class C Suit: $1.00, and Class D Suit: $0.50. Special Shift Premium: Basic hourly rate plus $2.00 per hour.

When due to conditions beyond the control of the Employer or when an owner (not acting as the contractor), a government agency or the contract specifications requires that work can only be performed outside the normal 5 am to 6pm shift, then the special shift premium will be applied to the basic hourly rate. When an employee works on a special shift, they shall be paid a special shift premium for each hour worked unless they are in OT or Double-time status. (For example, the special shift premium does not waive the overtime requirements for work performed on Saturday or Sunday.)

Y. Tide Work: When employees are called out between the hours of 6:00 p.m. and 6:00 a.m. to work on tide work (work located in the tide plane) all time worked shall be at one and one-half times the hourly rate of pay.

Swinging Stage/Boatswains Chair: Employees working on a swinging state or boatswains chair or under conditions that require them to be tied off to allow their hands to be free shall receive seventy-five cents ($0.75) per hour above the classification rate.

Z. Workers working with supplied air on hazmat projects receive an additional $1.00 per hour.

Special Shift Premium: Basic hourly rate plus $2.00 per hour. When due to conditions beyond the control of the Employer or when an owner (not acting as a contractor), a government agency or the contract specifications require that more than (4) hours of a special shift can only be performed outside the normal 6 am to 6pm shift, then the special shift premium will be applied to the basic straight time for the entire shift. When an employee works on a special shift, they will be paid a special shift premium for each hour worked unless they are in overtime or double-time status. (For example, the special shift premium does not waive the overtime requirements for work performed on Saturday or Sunday.)

Note Codes Continued

9. A. Workers working with supplied air on hazmat projects receive an additional $1.00 per hour.

Special Shift Premium: Basic hourly rate plus $2.00 per hour. When due to conditions beyond the control of the Employer or when an owner (not acting as the contractor), a government agency or the contract specifications require that more than four (4) hours of a special shift can only be performed outside the normal 6 am to 6pm shift, then the special shift premium will be applied to the basic straight time for the entire shift. When an employee works on a special shift, they shall be paid a special shift premium for each hour worked unless they are in overtime or double-time status. (For example, the special shift premium does not waive the overtime requirements for work performed on Saturday or Sunday.)

Certified Crane Operator Premium: Crane operators requiring certifications shall be paid $0.50 per hour above their classification rate.

Boom Pay Premium: All cranes including tower shall be paid as follows based on boom length:

(A) – 130’ to 199’ – $0.50 per hour over their classification rate.
(B) – 200’ to 299’ – $0.80 per hour over their classification rate.
(C) – 300’ and over – $1.00 per hour over their classification rate.

Note Codes Continued

9. B. The highest pressure registered on the gauge for an accumulated time of more than fifteen (15) minutes during the shift shall be used in determining the scale paid.

Tide Work: When employees are called out between the hours of 6:00 p.m. and 6:00 a.m. to work on tide work (work located in the tide plane) all time worked shall be at one and one-half times the hourly rate of pay. Swinging Stage/Boatswains Chair: Employees working on a swinging stage or boatswains chair or under conditions that require them to be tied off to allow their hands to be free shall receive seventy-five cents ($0.75) per hour above the classification rate.

C. Tide Work: When employees are called out between the hours of 6:00 p.m. and 6:00 a.m. to work on tide work (work located in the tide plane) all time worked shall be at one and one-half times the hourly rate of pay. Swinging Stage/Boatswains Chair: Employees working on a swinging stage or boatswains chair or under conditions that require them to be tied off to allow their hands to be free shall receive seventy-five cents ($0.75) per hour above the classification rate.

Effective August 31, 2012 – A Traffic Control Supervisor shall be present on the project whenever flagging or spotting or other traffic control labor is being utilized. A Traffic Control Laborer performs the setup, maintenance and removal of all temporary traffic control devices and construction signs necessary to control vehicular, bicycle, and pedestrian traffic during construction operations. Flaggers and Spotters shall be posted where shown on approved Traffic Control Plans or where directed by the Engineer. All flaggers and spotters shall possess a current flagging card issued by the State of Washington, Oregon, Montana, or Idaho. These classifications are only effective on or after August 31, 2012.

D. Industrial Painter wages are required for painting within industrial facilities such as treatment plants, pipelines, towers, dams, bridges, power generation facilities and manufacturing facilities such as chemical plants, etc., or anywhere abrasive blasting is necessary to prepare surfaces, or hazardous materials encapsulation is required.

E. Heavy Construction includes construction, repair, alteration or additions to the production, fabrication or manufacturing portions of industrial or manufacturing plants, hydroelectric or nuclear power plants and atomic reactor construction. Workers on hazmat projects receive additional hourly premiums as follows -Level A: $1.00, Level B: $0.75, Level C: $0.50, And Level D: $0.25.

F. Industrial Painter wages are required for painting within industrial facilities such as treatment plants, pipelines, towers, dams, power generation facilities and manufacturing facilities such as chemical plants, etc., or anywhere abrasive blasting is necessary to prepare surfaces, or hazardous materials encapsulation is required.

H. One (1) person crew shall consist of a Party Chief. (Total Station or similar one (1) person survey system). Two (2) person survey party shall consist of a least a Party Chief and a Chain Person. Three (3) person survey party shall consist of at least a Party Chief, an Instrument Person, and a Chain Person.

9. I. In addition to the hourly wage and fringe benefits, the following depth and enclosure premiums shall be paid. The premiums are to be calculated for the maximum depth and distance into an enclosure that a diver reaches in a day. The premiums are to be paid one time for the day and are not used in calculating overtime pay.

Depth premiums apply to depths of fifty feet or more. Over 50' to 100' - $2.00 per foot for each foot over 50 feet. Over 101' to 150' - $3.00 per foot for each foot over 101 feet. Over 151' to 220' - $4.00 per foot for each foot over 220 feet. Over 221' - $5.00 per foot for each foot over 221 feet.

Enclosure premiums apply when divers enter enclosures (such as pipes or tunnels) where there is no vertical ascent and is measured by the distance travelled from the entrance. 25’ to 300’ - $1.00 per foot from entrance. 300’ to 600’ - $1.50 per foot beginning at 300’. Over 600’ - $2.00 per foot beginning at 600’.

Employees may be required to perform any combination of work within the Diving team/crew, (with the exception of dive Supervisor) provided they are paid at the highest rate at which he/she has worked for the shift.

L. Workers on hazmat projects receive additional hourly premiums as follows -Level A: $0.75, Level B: $0.50, And Level C: $0.25.

Tide Work: When employees are called out between the hours of 6:00 p.m. and 6:00 a.m. to work on tide work (work located in the tide plane) all time worked shall be at one and one-half times the hourly rate of pay.

Swinging Stage/Boatswains Chair: Employees working on a swinging stage or boatswains chair or under conditions that require them to be tied off to allow their hands to be free shall receive seventy-five cents ($0.75) per hour above the classification rate.

State of Washington
Department of Labor & Industries
Prevailing Wage Section - Telephone 360-902-5335
PO Box 44540, Olympia, WA 98504-4540

Washington State Prevailing Wage
The PREVAILING WAGES listed here include both the hourly wage rate and the hourly rate of fringe benefits. On public works projects, worker's wage and benefit rates must add to not less than this total. A brief description of overtime calculation requirements are provided on the Benefit Code Key.

Journey Level Prevailing Wage Rates for the Effective Date: 6/27/2025

Spokane County

Trade	Job Classification	Wage	Holiday	Overtime	Note	Risk Class
Asbestos Abatement Workers	Journey Level	$51.50	**7B**	**1M**	**8Z**	**View**
Building Service Employees	Janitor	$20.16	**5Q**	**1**		**View**
Building Service Employees	Shampooer	$20.17	**5Q**	**1**		**View**
Building Service Employees	Waxer	$20.17	**5Q**	**1**		**View**
Building Service Employees	Window Cleaner	$20.25	**5Q**	**1**		**View**
Carpenters	Acoustical Worker	$58.42	**15J**	**11U**	**9L**	**View**
Carpenters	Bridge, Dock & Wharf Carpenter	$62.42	**15J**	**11U**	**9L**	**View**
Carpenters	Floor Layer & Floor Finisher	$58.42	**15J**	**11U**	**9L**	**View**
Carpenters	Form Builder	$58.42	**15J**	**11U**	**9L**	**View**
Carpenters	General Carpenter	$58.42	**15J**	**11U**	**9L**	**View**

Carpenters	Heavy Construction Carpenter	$62.42	**15J**	**11U**	**9L**	**View**
Carpenters	Scaffold/Shoring Erecting & Dismantling	$62.42	**15J**	**11U**	**9L**	**View**
Cement Masons	Journey Level	$56.59	**7B**	**1N**		**View**
Electrical Fixture Maintenance Workers	Journey Level	$30.89		**1**		**View**
Electricians - Inside	Journeyman	$66.10	**7G**	**1E**		**View**
Electricians - Powerline Construction	Cable Splicer	$102.42	**5A**	**4D**		**View**
Electricians - Powerline Construction	Certified Line Welder	$93.99	**5A**	**4D**		**View**
Electricians - Powerline Construction	Groundperson	$59.30	**5A**	**4D**		**View**
Electricians - Powerline Construction	Heavy Line Equipment Operator	$93.99	**5A**	**4D**		**View**
Electricians - Powerline Construction	Journey Level Lineperson	$93.99	**5A**	**4D**		**View**
Electricians - Powerline Construction	Line Equipment Operator	$80.96	**5A**	**4D**		**View**
Electricians - Powerline Construction	Meter Installer	$59.30	**5A**	**4D**	**8W**	**View**
Electricians - Powerline Construction	Pole Sprayer	$93.99	**5A**	**4D**		**View**
Electricians - Powerline Construction	Powderperson	$69.84	**5A**	**4D**		**View**
Fabricated Precast Concrete Products	Journey Level	$20.23		**1**		**View**

Fabricated Precast Concrete Products	Journey Level - In-Factory Work Only	$20.23		1		View
Fence Erectors	Fence Erector	$51.50	7B	1M	8Z	View
Flaggers	Journey Level	$48.55	7B	1M	8Z	View
Industrial Power Vacuum Cleaner	Journey Level	$16.66		1		View
Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Cleaner Operator, Foamer Operator	$16.66		1		View
Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Grout Truck Operator	$16.66		1		View
Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Head Operator	$16.66		1		View
Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Technician	$16.66		1		View
Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Tv Truck Operator	$16.66		1		View
Insulation Applicators	Journey Level	$58.42	15J	11U	9L	View
Ironworkers	Journeyman	$74.44	15K	11N		View
Laborers	Air And Hydraulic Track Drill	$52.14	7B	1M	8Z	View
Laborers	Asphalt Raker	$52.14	7B	1M	8Z	View
Laborers	Asphalt Roller, Walking	$51.82	7B	1M	8Z	View
Laborers	Brick Pavers	$51.50	7B	1M	8Z	View

Laborers	Brush Hog Feeder	$51.50	**7B**	**1M**	**8Z**	**View**
Laborers	Brush Machine	$52.14	**7B**	**1M**	**8Z**	**View**
Laborers	Caisson Worker, Free AIr	$52.14	**7B**	**1M**	**8Z**	**View**
Laborers	Carpenter Tender	$51.50	**7B**	**1M**	**8Z**	**View**
Laborers	Cement Finisher Tender	$51.82	**7B**	**1M**	**8Z**	**View**
Laborers	Cement Handler	$51.50	**7B**	**1M**	**8Z**	**View**
Laborers	Chain Saw Operator & Faller	$52.14	**7B**	**1M**	**8Z**	**View**
Laborers	Clean-up Laborer	$51.50	**7B**	**1M**	**8Z**	**View**
Laborers	Compaction Equipment	$51.82	**7B**	**1M**	**8Z**	**View**
Laborers	Concrete Crewman	$51.50	**7B**	**1M**	**8Z**	**View**
Laborers	Concrete Saw, Walking	$51.82	**7B**	**1M**	**8Z**	**View**
Laborers	Concrete Signalman	$51.50	**7B**	**1M**	**8Z**	**View**
Laborers	Concrete Stack	$52.14	**7B**	**1M**	**8Z**	**View**
Laborers	Confined Space Attendant	$51.50	**7B**	**1M**	**8Z**	**View**
Laborers	Construction Specialist	$52.34	**7B**	**1M**	**8Z**	**View**
Laborers	Crusher Feeder	$51.50	**7B**	**1M**	**8Z**	**View**
Laborers	Demolition	$51.50	**7B**	**1M**	**8Z**	**View**
Laborers	Demolition Torch	$51.82	**7B**	**1M**	**8Z**	**View**
Laborers	Dope Pot Fireman, Non-mechanical	$51.82	**7B**	**1M**	**8Z**	**View**

Laborers	Driller Helper (when Required To Move & Position Machine)	$51.82	**7B**	**1M**	**8Z**	**View**
Laborers	Drills With Dual Masts	$52.46	**7B**	**1M**	**8Z**	**View**
Laborers	Dry Stack Walls	$51.50	**7B**	**1M**	**8Z**	**View**
Laborers	Dumpman	$51.50	**7B**	**1M**	**8Z**	**View**
Laborers	Erosion Control Laborer	$51.50	**7B**	**1M**	**8Z**	**View**
Laborers	Firewatch	$51.50	**7B**	**1M**	**8Z**	**View**
Laborers	Form Cleaning Machine Feeder, Stacker	$51.50	**7B**	**1M**	**8Z**	**View**
Laborers	Form Setter, Paving	$51.82	**7B**	**1M**	**8Z**	**View**
Laborers	General Laborer	$51.50	**7B**	**1M**	**8Z**	**View**
Laborers	Grade Checker	$54.43	**7B**	**1M**	**8Z**	**View**
Laborers	Grout Machine Header Tender	$51.50	**7B**	**1M**	**8Z**	**View**
Laborers	Guard Rail	$51.50	**7B**	**1M**	**8Z**	**View**
Laborers	Gunite	$52.14	**7B**	**1M**	**8Z**	**View**
Laborers	Hazardous Waste Worker (level A)	$52.46	**7B**	**1M**	**8Z**	**View**
Laborers	Hazardous Waste Worker (level B)	$52.14	**7B**	**1M**	**8Z**	**View**
Laborers	Hazardous Waste Worker (level C)	$51.82	**7B**	**1M**	**8Z**	**View**
Laborers	Hazardous Waste Worker (level D)	$51.50	**7B**	**1M**	**8Z**	**View**
Laborers	Hdpe Or Similar Liner Installer	$51.50	**7B**	**1M**	**8Z**	**View**

Laborers	High Scaler	$52.14	**7B**	**1M**	**8Z**	**View**
Laborers	Industrial Technician	$73.60	**7B**	**1M**	**8Z**	**View**
Laborers	Jackhammer Operator Miner, Class "b"	$51.82	**7B**	**1M**	**8Z**	**View**
Laborers	Laser Beam Operator	$52.14	**7B**	**1M**	**8Z**	**View**
Laborers	Miner, Class "a"	$51.50	**7B**	**1M**	**8Z**	**View**
Laborers	Miner, Class "c"	$52.14	**7B**	**1M**	**8Z**	**View**
Laborers	Miner, Class "d"	$52.46	**7B**	**1M**	**8Z**	**View**
Laborers	Monitor Operator, Air Track Or Similar Mounting	$52.14	**7B**	**1M**	**8Z**	**View**
Laborers	Mortar Mixer	$52.14	**7B**	**1M**	**8Z**	**View**
Laborers	Nipper	$51.50	**7B**	**1M**	**8Z**	**View**
Laborers	Nozzleman	$52.14	**7B**	**1M**	**8Z**	**View**
Laborers	Nozzleman, Water (to Include Fire Hose), Air Or Steam	$51.82	**7B**	**1M**	**8Z**	**View**
Laborers	Pavement Breaker, 90 Lbs. & Over	$52.14	**7B**	**1M**	**8Z**	**View**
Laborers	Pavement Breaker, Under 90 Lbs.	$51.82	**7B**	**1M**	**8Z**	**View**
Laborers	Pilot Car	$48.55	**7B**	**1M**	**8Z**	**View**
Laborers	Pipelayer	$52.14	**7B**	**1M**	**8Z**	**View**
Laborers	Pipelayer, Corrugated Metal Culvert And Multi-Plate	$52.14	**7B**	**1M**	**8Z**	**View**
Laborers	Pipewrapper	$52.14	**7B**	**1M**	**8Z**	**View**

Laborers	Plasterer Tenders	$52.14	**7B**	**1M**	**8Z**	**View**
Laborers	Pot Tender	$51.82	**7B**	**1M**	**8Z**	**View**
Laborers	Powderman	$54.05	**7B**	**1M**	**8Z**	**View**
Laborers	Powederman Helper	$51.82	**7B**	**1M**	**8Z**	**View**
Laborers	Power Buggy Operator	$51.82	**7B**	**1M**	**8Z**	**View**
Laborers	Power Tool Operator, Gas, Electric, Pneumatic	$51.82	**7B**	**1M**	**8Z**	**View**
Laborers	Rad-Con Technician	$73.60	**7B**	**1M**	**8Z**	**View**
Laborers	Railroad Equipment, Power Driven, Except Dual Mobile	$51.82	**7B**	**1M**	**8Z**	**View**
Laborers	Railroad Power Spiker Or Puller, Dual Mobile	$51.82	**7B**	**1M**	**8Z**	**View**
Laborers	Remote Equipment Operator	$52.46	**7B**	**1M**	**8Z**	**View**
Laborers	Remote Equipment Operator (i.e Compaction And Demolition)	$51.82	**7B**	**1M**	**8Z**	**View**
Laborers	Rigger/signal Person	$51.82	**7B**	**1M**	**8Z**	**View**
Laborers	Riprap Person	$51.50	**7B**	**1M**	**8Z**	**View**
Laborers	Rodder & Spreader	$51.82	**7B**	**1M**	**8Z**	**View**
Laborers	Sand Hogs Under Compressed Air Conditions	$304.86	**7B**	**1M**	**8Z**	**View**
Laborers	Sandblast Tailhoseman	$51.50	**7B**	**1M**	**8Z**	**View**
Laborers	Scaffold Erector, Wood Or Steel	$51.50	**7B**	**1M**	**8Z**	**View**

Laborers	Scaleman	$48.55	**7B**	**1M**	**8Z**	**View**
Laborers	Stake Jumper	$51.50	**7B**	**1M**	**8Z**	**View**
Laborers	Structural Mover	$51.50	**7B**	**1M**	**8Z**	**View**
Laborers	Tailhoseman (water Nozzle)	$51.50	**7B**	**1M**	**8Z**	**View**
Laborers	Timber Bucker & Faller (by Hand)	$51.50	**7B**	**1M**	**8Z**	**View**
Laborers	Track Laborer (rr)	$51.50	**7B**	**1M**	**8Z**	**View**
Laborers	Traffic Control Laborer	$48.55	**7B**	**1M**	**8Z**	**View**
Laborers	Traffic Control Supervisor	$51.50	**7B**	**1M**	**8Z**	**View**
Laborers	Trencher, Shawnee	$51.82	**7B**	**1M**	**8Z**	**View**
Laborers	Trenchless Technology Technician	$52.14	**7B**	**1M**	**8Z**	**View**
Laborers	Truck Loader	$51.50	**7B**	**1M**	**8Z**	**View**
Laborers	Truck Mounted Attenuator	$48.55	**7B**	**1M**	**8Z**	**View**
Laborers	Tugger Operator	$51.82	**7B**	**1M**	**8Z**	**View**
Laborers	Vibrators, All	$52.14	**7B**	**1M**	**8Z**	**View**
Laborers	Wagon Drills	$51.82	**7B**	**1M**	**8Z**	**View**
Laborers	Water Pipe Liner	$51.82	**7B**	**1M**	**8Z**	**View**
Laborers	Welder, Electrical, Manual Or Automatic (hdpe Or Similar Pipe And Liner)	$52.46	**7B**	**1M**	**8Z**	**View**
Laborers	Well-point Person	$51.50	**7B**	**1M**	**8Z**	**View**

Laborers	Wheelbarrow, Power Driven	$51.82	**7B**	**1M**	**8Z**	**View**
Laborers	Window Washer, Cleaner	$48.55	**7B**	**1M**	**8Z**	**View**
Laborers - Underground Sewer & Water	General Laborer & Topman	$52.14	**7B**	**1M**	**8Z**	**View**
Laborers - Underground Sewer & Water	Pipe Layer	$52.14	**7B**	**1M**	**8Z**	**View**
Landscape Construction	Landscape Laborer	$48.55	**7B**	**1M**	**8Z**	**View**
Landscape Construction	Landscape Operator	$59.63	**7Z**	**4S**	**9A**	**View**
Landscape Maintenance	Groundskeeper	$16.66		**1**		**View**
Metal Fabrication (In Shop)	Fitter	$16.66		**1**		**View**
Metal Fabrication (In Shop)	Laborer	$16.66		**1**		**View**
Metal Fabrication (In Shop)	Machine Operator	$16.66		**1**		**View**
Metal Fabrication (In Shop)	Painter	$16.66		**1**		**View**
Metal Fabrication (In Shop)	Welder	$16.66		**1**		**View**
Modular Buildings	Journey Level	$16.66		**1**		**View**
Pile Driver	Journey Level	$64.02	**15J**	**11U**	**9L**	**View**
Playground & Park Equipment Installers	Journey Level	$16.66		**1**		**View**
Plumbers & Pipefitters	Journey Level	$74.03	**7E**	**1J**		**View**
Power Equipment Operators	A-frame Truck (2 Or More Drums)	$59.44	**7Z**	**4S**	**9A**	**View**
Power Equipment Operators	A-frame Truck (single Drum)	$58.73	**7Z**	**4S**	**9A**	**View**

Power Equipment Operators	All Tower Cranes	$64.09	7Z	4S	9A	View
Power Equipment Operators	Asphalt Plant Operator	$60.14	7Z	4S	9A	View
Power Equipment Operators	Assistant Plant Operator, Fireman Or Pugmixer (asphalt)	$58.73	7Z	4S	9A	View
Power Equipment Operators	Assistant Refrigeration Plant & Chiller Operator (over 1000 Ton)	$59.44	7Z	4S	9A	View
Power Equipment Operators	Assistant Refrigeration Plant (under 1000 Ton)	$58.73	7Z	4S	9A	View
Power Equipment Operators	Automatic Subgrader (ditches & Trimmers)	$60.14	7Z	4S	9A	View
Power Equipment Operators	Backfillers (cleveland & Similar)	$59.44	7Z	4S	9A	View
Power Equipment Operators	Backhoe & Hoe Ram (under 3/4 Yd.)	$59.82	7Z	4S	9A	View
Power Equipment Operators	Backhoe (45,000 Gw & Under)	$59.82	7Z	4S	9A	View
Power Equipment Operators	Backhoe (45,000 Gw To 110,000 Gw)	$60.14	7Z	4S	9A	View
Power Equipment Operators	Backhoe (over 110,000 Gw)	$60.46	7Z	4S	9A	View
Power Equipment Operators	Backhoes & Hoe Ram (3 Yds & Over)	$60.46	7Z	4S	9A	View
Power Equipment Operators	Backhoes & Hoe Ram (3/4 Yd. To 3 Yd.)	$60.14	7Z	4S	9A	View
Power Equipment Operators	Bagley Or Stationary Scraper	$58.73	7Z	4S	9A	View
Power Equipment Operators	Batch & Wet Mix Operator (multiple Units, 2 & Incl. 4)	$60.14	7Z	4S	9A	View
Power Equipment Operators	Batch Plant & Wet Mix Operator, Single Unit (concrete)	$59.44	7Z	4S	9A	View

Power Equipment Operators	Batch Plant (over 4 Units)	$60.14	7Z	4S	9A	View
Power Equipment Operators	Belt Finishing Machine	$58.73	7Z	4S	9A	View
Power Equipment Operators	Belt Loader (kocal Or Similar)	$59.44	7Z	4S	9A	View
Power Equipment Operators	Belt-crete Conveyors With Power Pack Or Similar	$59.44	7Z	4S	9A	View
Power Equipment Operators	Bending Machine	$59.44	7Z	4S	9A	View
Power Equipment Operators	Bit Grinders	$58.36	7Z	4S	9A	View
Power Equipment Operators	Blade (finish & Bluetop), Automatic, Cmi, Abc, Finish Athey & Huber & Similar When Used As Automatic	$60.46	7Z	4S	9A	View
Power Equipment Operators	Blade Operator (motor Patrol & Attachments)	$60.14	7Z	4S	9A	View
Power Equipment Operators	Blower Operator (cement)	$58.73	7Z	4S	9A	View
Power Equipment Operators	Boat Operator	$58.36	7Z	4S	9A	View
Power Equipment Operators	Bob Cat (skid Steer)	$59.44	7Z	4S	9A	View
Power Equipment Operators	Bolt Threading Machine	$58.36	7Z	4S	9A	View
Power Equipment Operators	Boom Cats (side)	$60.14	7Z	4S	9A	View
Power Equipment Operators	Boring Machine (earth)	$59.44	7Z	4S	9A	View
Power Equipment Operators	Boring Machine (Rock Under 8 inch Bit - Quarry Master, Joy Or Similar)	$59.44	7Z	4S	9A	View
Power Equipment Operators	Bump Cutter (wayne, Saginau Or Similar)	$59.44	7Z	4S	9A	View

Power Equipment Operators	Cableway Controller (dispatcher)	$60.14	7Z	4S	9A	View
Power Equipment Operators	Cableway Operators	$60.46	7Z	4S	9A	View
Power Equipment Operators	Canal Lining Machine (concrete)	$59.44	7Z	4S	9A	View
Power Equipment Operators	Carrydeck & Boom Truck (under 25 Tons)	$59.82	7Z	4S	9A	View
Power Equipment Operators	Cement Hog	$58.73	7Z	4S	9A	View
Power Equipment Operators	Chipper (Without Crane)	$59.44	7Z	4S	9A	View
Power Equipment Operators	Clamshell, Dragline	$62.33	7Z	4S	9A	View
Power Equipment Operators	Cleaning & Doping Machine (Pipeline)	$59.44	7Z	4S	9A	View
Power Equipment Operators	Compactor (self-propelled With Blade)	$60.14	7Z	4S	9A	View
Power Equipment Operators	Compressor (2000 Cfm Or Over, 2 Or More, Gas Diesel Or Electric Power)	$58.73	7Z	4S	9A	View
Power Equipment Operators	Compressors (under 2000 Cfm, Gas, Diesel Or Electric Power)	$58.36	7Z	4S	9A	View
Power Equipment Operators	Concrete Cleaning / Decontamination Machine Operator	$60.46	7Z	4S	9A	View
Power Equipment Operators	Concrete Pump Boom Truck	$60.14	7Z	4S	9A	View
Power Equipment Operators	Concrete Pumps (squeeze-crete, Flow-crete, Whitman & Similar)	$59.63	7Z	4S	9A	View

Power Equipment Operators	Concrete Saw (multiple Cut)	$58.73	**7Z**	**4S**	**9A**	**View**
Power Equipment Operators	Concrete Slip Form Paver	$60.14	**7Z**	**4S**	**9A**	**View**
Power Equipment Operators	Conveyor Aggregate Delivery Systems (c.a.d.)	$60.14	**7Z**	**4S**	**9A**	**View**
Power Equipment Operators	Crane Oiler & Cable Tender, Mucking Machine	$58.36	**7Z**	**4S**	**9A**	**View**
Power Equipment Operators	Crane Oiler - Driver (cdl Required)	$58.73	**7Z**	**4S**	**9A**	**View**
Power Equipment Operators	Cranes (100 to 299 Tons) All Attachments	$63.26	**7Z**	**4S**	**9A**	**View**
Power Equipment Operators	Cranes (25 Tons & Under), All Attachments Incl. Clamshell, Dragline	$59.82	**7Z**	**4S**	**9A**	**View**
Power Equipment Operators	Cranes (25 Tons To And Including 44 Tons), All Attachments Incl. Clamshell, Dragline	$60.14	**7Z**	**4S**	**9A**	**View**
Power Equipment Operators	Cranes (300 Tons and Over) All Attachments	$64.09	**7Z**	**4S**	**9A**	**View**
Power Equipment Operators	Cranes (45 Tons To 55 Tons), All Attachments Incl. Clamshell And Dragline	$60.46	**7Z**	**4S**	**9A**	**View**
Power Equipment Operators	Cranes (56 to 99 tons) and overhead, rail and Quick Tower. All attachment incl. Clamshell, Dragline	$62.33	**7Z**	**4S**	**9A**	**View**
Power Equipment Operators	Crusher Feeder	$58.36	**7Z**	**4S**	**9A**	**View**
Power Equipment Operators	Crusher, Grizzle & Screening Plant Operator	$60.14	**7Z**	**4S**	**9A**	**View**

Power Equipment Operators	Curb Extruder (asphalt Or Concrete)	$59.63	7Z	4S	9A	View
Power Equipment Operators	Deck Engineer	$59.44	7Z	4S	9A	View
Power Equipment Operators	Deck Hand	$58.36	7Z	4S	9A	View
Power Equipment Operators	Derricks & Stifflegs (65 Tons & Over)	$60.46	7Z	4S	9A	View
Power Equipment Operators	Derricks & Stifflegs (under 65 Tons)	$59.82	7Z	4S	9A	View
Power Equipment Operators	Distributor Leverman	$58.73	7Z	4S	9A	View
Power Equipment Operators	Ditch Witch Or Similar	$58.73	7Z	4S	9A	View
Power Equipment Operators	Dope Pots (power Agitated	$58.73	7Z	4S	9A	View
Power Equipment Operators	Dozer / Tractor (up To D-5 Or Equivalent) And Traxcavator	$59.44	7Z	4S	9A	View
Power Equipment Operators	Dozer / Tractors (d-6 & Equivalent & Over)	$60.14	7Z	4S	9A	View
Power Equipment Operators	Dozer, 834 R/t & Similar	$60.14	7Z	4S	9A	View
Power Equipment Operators	Drill Doctor	$60.14	7Z	4S	9A	View
Power Equipment Operators	Driller Licensed	$62.33	7Z	4S	9A	View
Power Equipment Operators	Drillers Helper	$58.36	7Z	4S	9A	View
Power Equipment Operators	Drilling Equipment (8 inch Bit & Over - Robbins, Reverse Circulation & Similar)	$59.82	7Z	4S	9A	View
Power Equipment Operators	Drills (churn, Core, Calyx Or Diamond)	$59.63	7Z	4S	9A	View
Power Equipment Operators	Elevating Belt (holland Type)	$60.46	7Z	4S	9A	View

Power Equipment Operators	Elevating Belt-type Loader (euclid, Barber Green & Similar)	$59.44	7Z	4S	9A	View
Power Equipment Operators	Elevating Grader-type Loader (dumor, Adams Or Similar)	$59.44	7Z	4S	9A	View
Power Equipment Operators	Elevator Hoisting Materials	$58.73	7Z	4S	9A	View
Power Equipment Operators	Equipment Serviceman, Greaser & Oiler	$59.63	7Z	4S	9A	View
Power Equipment Operators	Fireman & Heater Tender	$58.36	7Z	4S	9A	View
Power Equipment Operators	Fork Lift Or Lumber Stacker, Hydra-life & Similar	$58.73	7Z	4S	9A	View
Power Equipment Operators	Generator Plant Engineers (diesel Or Electric)	$59.44	7Z	4S	9A	View
Power Equipment Operators	Gin Trucks (pipeline)	$58.73	7Z	4S	9A	View
Power Equipment Operators	Grade Checker	$59.82	7Z	4S	9A	View
Power Equipment Operators	Gunite Combination Mixer & Compressor	$59.44	7Z	4S	9A	View
Power Equipment Operators	H.d. Mechanic	$60.46	7Z	4S	9A	View
Power Equipment Operators	H.d. Welder	$60.46	7Z	4S	9A	View
Power Equipment Operators	Heavy Equipment Robotics Operator	$60.46	7Z	4S	9A	View
Power Equipment Operators	Helicopter Pilot	$62.33	7Z	4S	9A	View
Power Equipment Operators	Helper, Mechanic Or Welder, H.D	$58.36	7Z	4S	9A	View
Power Equipment Operators	Hoe Ram	$59.82	7Z	4S	9A	View
Power Equipment Operators	Hoist (2 Or More Drums Or Tower Hoist)	$59.63	7Z	4S	9A	View

Power Equipment Operators	Hoist, Single Drum	$58.73	7Z	4S	9A	View
Power Equipment Operators	Hydraulic Platform Trailers (goldhofer, Shaurerly And Similar)	$60.46	7Z	4S	9A	View
Power Equipment Operators	Hydro-seeder, Mulcher, Nozzleman	$58.36	7Z	4S	9A	View
Power Equipment Operators	Lime Batch Tank Operator (recycle Train)	$60.14	7Z	4S	9A	View
Power Equipment Operators	Lime Brain Operator (recycle Train)	$60.14	7Z	4S	9A	View
Power Equipment Operators	Loader (360 Degrees Revolving Koehring Scooper Or Similar)	$60.46	7Z	4S	9A	View
Power Equipment Operators	Loader Operator (front-end & Overhead, 4 Yds. Incl. 8 Yds.)	$60.14	7Z	4S	9A	View
Power Equipment Operators	Loaders (bucket Elevators And Conveyors)	$58.73	7Z	4S	9A	View
Power Equipment Operators	Loaders (overhead & Front-end, Over 8 Yds.)	$60.46	7Z	4S	9A	View
Power Equipment Operators	Loaders (overhead & Front-end, Under 4 Yds.. R/t)	$59.63	7Z	4S	9A	View
Power Equipment Operators	Loaders (overhead And Front-end, 10 Yds. & Over)	$62.33	7Z	4S	9A	View
Power Equipment Operators	Locomotive Engineer	$59.44	7Z	4S	9A	View
Power Equipment Operators	Longitudinal Float	$58.73	7Z	4S	9A	View
Power Equipment Operators	Master Environmental Maintenance Technician	$60.46	7Z	4S	9A	View
Power Equipment Operators	Mixer (portable - Concrete)	$58.73	7Z	4S	9A	View

Power Equipment Operators	Mixermobile	$59.44	7Z	4S	9A	View
Power Equipment Operators	Mobile Crusher Operator (recycle Train)	$60.14	7Z	4S	9A	View
Power Equipment Operators	Mucking Machine	$59.44	7Z	4S	9A	View
Power Equipment Operators	Multiple Dozer Units With Single Blade	$60.14	7Z	4S	9A	View
Power Equipment Operators	Pavement Breaker, Hydra-hammer & Similar	$58.73	7Z	4S	9A	View
Power Equipment Operators	Paving (dual Drum)	$59.82	7Z	4S	9A	View
Power Equipment Operators	Paving Machine (asphalt And Concrete)	$60.14	7Z	4S	9A	View
Power Equipment Operators	Piledriving Engineers	$59.82	7Z	4S	9A	View
Power Equipment Operators	Plant Oiler	$58.36	7Z	4S	9A	View
Power Equipment Operators	Posthole Auger Or Punch	$59.44	7Z	4S	9A	View
Power Equipment Operators	Power Broom	$58.73	7Z	4S	9A	View
Power Equipment Operators	Pump (grout Or Jet)	$59.44	7Z	4S	9A	View
Power Equipment Operators	Pumpman	$58.36	7Z	4S	9A	View
Power Equipment Operators	Quad-track Or Similar Equipment	$60.14	7Z	4S	9A	View
Power Equipment Operators	Railroad Ballast Regulation Operator (self-propelled)	$58.73	7Z	4S	9A	View
Power Equipment Operators	Railroad Power Tamper Operator (self-propelled)	$58.73	7Z	4S	9A	View
Power Equipment Operators	Railroad Tamper Jack Operator (self-propelled)	$58.73	7Z	4S	9A	View

Power Equipment Operators	Railroad Track Liner Operator (self-propelled)	$59.82	**7Z**	**4S**	**9A**	**View**
Power Equipment Operators	Refrigeration Plant Engineer (1000 Tons & Over)	$59.82	**7Z**	**4S**	**9A**	**View**
Power Equipment Operators	Refrigeration Plant Engineer (under 1000 Ton)	$59.63	**7Z**	**4S**	**9A**	**View**
Power Equipment Operators	Rollerman (finishing Asphalt Pavement)	$60.14	**7Z**	**4S**	**9A**	**View**
Power Equipment Operators	Rollers, All Types On Subgrade, Including Seal And Chip Coating (farm Type, Case, John Deere And Similar,or Compacting Vibrator), Except When Pulled B	$58.36	**7Z**	**4S**	**9A**	**View**
Power Equipment Operators	Roto Mill (pavement Grinder)	$60.14	**7Z**	**4S**	**9A**	**View**
Power Equipment Operators	Rotomill Groundsman	$59.63	**7Z**	**4S**	**9A**	**View**
Power Equipment Operators	Rubber-tired Scrapers (multiple Engine With Three Or More Scrapers)	$60.46	**7Z**	**4S**	**9A**	**View**
Power Equipment Operators	Rubber-tired Skidders (r/t With Or Without Attachments)	$59.63	**7Z**	**4S**	**9A**	**View**
Power Equipment Operators	Scrapers, All, Rubber-tired	$60.14	**7Z**	**4S**	**9A**	**View**
Power Equipment Operators	Screed Operator	$60.14	**7Z**	**4S**	**9A**	**View**
Power Equipment Operators	Shovels (3 Yds. & Over)	$60.46	**7Z**	**4S**	**9A**	**View**
Power Equipment Operators	Shovels (under 3 Yds.)	$60.14	**7Z**	**4S**	**9A**	**View**
Power Equipment Operators	Signalman (whirleys, Highline, Hammerheads Or Similar)	$59.82	**7Z**	**4S**	**9A**	**View**

Power Equipment Operators	Soil Stabilizer (p & H Or Similar)	$59.44	7Z	4S	9A	View
Power Equipment Operators	Spray Curing Machine (concrete)	$58.73	7Z	4S	9A	View
Power Equipment Operators	Spreader Box (self-propelled)	$58.73	7Z	4S	9A	View
Power Equipment Operators	Spreader Machine	$59.44	7Z	4S	9A	View
Power Equipment Operators	Steam Cleaner	$58.36	7Z	4S	9A	View
Power Equipment Operators	Straddle Buggy (ross & Similar On Construction Job Only)	$58.73	7Z	4S	9A	View
Power Equipment Operators	Surface Heater & Planer Machine	$59.63	7Z	4S	9A	View
Power Equipment Operators	Tractor (farm Type R/t With Attachments, Except Backhoe)	$58.73	7Z	4S	9A	View
Power Equipment Operators	Traverse Finish Machine	$59.44	7Z	4S	9A	View
Power Equipment Operators	Trenching Machines (7 Ft. Depth & Over)	$60.14	7Z	4S	9A	View
Power Equipment Operators	Trenching Machines (under 7 Ft. Depth Capacity)	$59.63	7Z	4S	9A	View
Power Equipment Operators	Tug Boat Operator	$60.14	7Z	4S	9A	View
Power Equipment Operators	Tugger Operator	$58.73	7Z	4S	9A	View
Power Equipment Operators	Turnhead (with Re-screening)	$59.63	7Z	4S	9A	View
Power Equipment Operators	Turnhead Operator	$59.44	7Z	4S	9A	View
Power Equipment Operators	Ultra High Pressure Wateriet Cutting Tool System Operator, (30,000 Psi)	$60.46	7Z	4S	9A	View
Power Equipment Operators	Vactor Guzzler, Super Sucker	$60.14	7Z	4S	9A	View

Power Equipment Operators	Vacuum Blasting Machine Operator	$60.46	7Z	4S	9A	View
Power Equipment Operators	Vacuum Drill (reverse Circulation Drill Under 8 Inch Bit)	$59.63	7Z	4S	9A	View
Power Equipment Operators	Welding Machine	$58.36	7Z	4S	9A	View
Power Equipment Operators	Whirleys & Hammerheads, All	$60.46	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	A-frame Truck (2 Or More Drums)	$59.44	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	A-frame Truck (single Drum)	$58.73	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	All Tower Cranes	$64.09	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Asphalt Plant Operator	$60.14	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Assistant Plant Operator, Fireman Or Pugmixer (asphalt)	$58.73	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Assistant Refrigeration Plant & Chiller Operator (over 1000 Ton)	$59.44	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Assistant Refrigeration Plant (under 1000 Ton)	$58.73	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Automatic Subgrader (ditches & Trimmers)	$60.14	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Backfillers (cleveland & Similar)	$59.44	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Backhoe & Hoe Ram (under 3/4 Yd.)	$59.82	7Z	4S	9A	View

Power Equipment Operators-Underground Sewer & Water	Backhoe (45,000 Gw & Under)	$59.82	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Backhoe (45,000 Gw To 110,000 Gw)	$60.14	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Backhoe (over 110,000 Gw)	$60.46	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Backhoes & Hoe Ram (3 Yds & Over)	$60.46	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Backhoes & Hoe Ram (3/4 Yd. To 3 Yd.)	$60.14	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Bagley Or Stationary Scraper	$58.73	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Batch & Wet Mix Operator (multiple Units, 2 & Incl. 4)	$60.14	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Batch Plant & Wet Mix Operator, Single Unit (concrete)	$59.44	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Batch Plant (over 4 Units)	$60.14	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Belt Finishing Machine	$58.73	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Belt Loader (kocal Or Similar)	$59.44	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Belt-crete Conveyors With Power Pack Or Similar	$59.44	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Bending Machine	$59.44	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Bit Grinders	$58.36	7Z	4S	9A	View

Power Equipment Operators-Underground Sewer & Water	Blade (finish & Bluetop), Automatic, Cmi, Abc, Finish Athey & Huber & Similar When Used As Automatic	$60.46	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Blade Operator (motor Patrol & Attachments)	$60.14	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Blower Operator (cement)	$58.73	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Boat Operator	$58.36	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Bob Cat (skid Steer)	$59.44	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Bolt Threading Machine	$58.36	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Boom Cats (side)	$60.14	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Boring Machine (earth)	$59.44	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Boring Machine (Rock Under 8 inch Bit - Quarry Master, Joy Or Similar)	$59.44	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Bump Cutter (wayne, Saginau Or Similar)	$59.44	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Cableway Controller (dispatcher)	$60.14	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Cableway Operators	$60.46	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Canal Lining Machine (concrete)	$59.44	7Z	4S	9A	View

Power Equipment Operators-Underground Sewer & Water	Carrydeck & Boom Truck (under 25 Tons)	$59.82	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Cement Hog	$58.73	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Chipper (Without Crane)	$59.44	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Clamshell, Dragline	$62.33	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Cleaning & Doping Machine (Pipeline)	$59.44	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Compactor (self-propelled With Blade)	$60.14	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Compressor (2000 Cfm Or Over, 2 Or More, Gas Diesel Or Electric Power)	$58.73	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Compressors (under 2000 Cfm, Gas, Diesel Or Electric Power)	$58.36	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Concrete Cleaning / Decontamination Machine Operator	$60.46	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Concrete Pump Boom Truck	$60.14	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Concrete Pumps (squeeze-crete, Flow-crete, Whitman & Similar)	$59.63	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Concrete Saw (multiple Cut)	$58.73	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Concrete Slip Form Paver	$60.14	7Z	4S	9A	View

Power Equipment Operators-Underground Sewer & Water	Conveyor Aggregate Delivery Systems (c.a.d.)	$60.14	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Crane Oiler & Cable Tender, Mucking Machine	$58.36	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Crane Oiler - Driver (cdl Required)	$58.73	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Cranes (100 to 299 Tons) All Attachments	$63.26	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Cranes (25 Tons & Under), All Attachments Incl. Clamshell, Dragline	$59.82	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Cranes (25 Tons To And Including 44 Tons), All Attachments Incl. Clamshell, Dragline	$60.14	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Cranes (300 Tons and Over) All Attachments	$64.09	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Cranes (45 Tons To 55 Tons), All Attachments Incl. Clamshell And Dragline	$60.46	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Cranes (56 to 99 tons) and overhead, rail and Quick Tower. All attachment incl. Clamshell, Dragline	$62.33	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Crusher Feeder	$58.36	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Crusher, Grizzle & Screening Plant Operator	$60.14	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Curb Extruder (asphalt Or Concrete)	$59.63	7Z	4S	9A	View

Power Equipment Operators-Underground Sewer & Water	Deck Engineer	$59.44	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Deck Hand	$58.36	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Derricks & Stifflegs (65 Tons & Over)	$60.46	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Derricks & Stifflegs (under 65 Tons)	$59.82	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Distributor Leverman	$58.73	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Ditch Witch Or Similar	$58.73	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Dope Pots (power Agitated	$58.73	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Dozer / Tractor (up To D-5 Or Equivalent) And Traxcavator	$59.44	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Dozer / Tractors (d-6 & Equivalent & Over)	$60.14	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Dozer, 834 R/t & Similar	$60.14	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Drill Doctor	$60.14	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Driller Licensed	$62.33	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Drillers Helper	$58.36	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Drilling Equipment (8 inch Bit & Over - Robbins, Reverse Circulation & Similar)	$59.82	7Z	4S	9A	View

Power Equipment Operators-Underground Sewer & Water	Drills (churn, Core, Calyx Or Diamond)	$59.63	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Elevating Belt (holland Type)	$60.46	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Elevating Belt-type Loader (euclid, Barber Green & Similar)	$59.44	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Elevating Grader-type Loader (dumor, Adams Or Similar)	$59.44	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Elevator Hoisting Materials	$58.73	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Equipment Serviceman, Greaser & Oiler	$59.63	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Fireman & Heater Tender	$58.36	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Fork Lift Or Lumber Stacker, Hydra-life & Similar	$58.73	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Generator Plant Engineers (diesel Or Electric)	$59.44	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Gin Trucks (pipeline)	$58.73	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Grade Checker	$59.82	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Gunite Combination Mixer & Compressor	$59.44	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	H.d. Mechanic	$60.46	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	H.d. Welder	$60.46	7Z	4S	9A	View

Power Equipment Operators-Underground Sewer & Water	Heavy Equipment Robotics Operator	$60.46	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Helicopter Pilot	$62.33	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Helper, Mechanic Or Welder, H.D	$58.36	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Hoe Ram	$59.82	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Hoist (2 Or More Drums Or Tower Hoist)	$59.63	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Hoist, Single Drum	$58.73	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Hydraulic Platform Trailers (goldhofer, Shaurerly And Similar)	$60.46	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Hydro-seeder, Mulcher, Nozzleman	$58.36	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Lime Batch Tank Operator (recycle Train)	$60.14	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Lime Brain Operator (recycle Train)	$60.14	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Loader (360 Degrees Revolving Koehring Scooper Or Similar)	$60.46	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Loader Operator (front-end & Overhead, 4 Yds. Incl. 8 Yds.)	$60.14	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Loaders (bucket Elevators And Conveyors)	$58.73	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Loaders (overhead & Front-end, Over 8 Yds.)	$60.46	7Z	4S	9A	View

Power Equipment Operators-Underground Sewer & Water	Loaders (overhead & Front-end, Under 4 Yds.. R/t)	$59.63	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Locomotive Engineer	$59.44	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Longitudinal Float	$58.73	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Master Environmental Maintenance Technician	$60.46	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Mixer (portable - Concrete)	$58.73	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Mixermobile	$59.44	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Mobile Crusher Operator (recycle Train)	$60.14	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Mucking Machine	$59.44	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Multiple Dozer Units With Single Blade	$60.14	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Pavement Breaker, Hydra-hammer & Similar	$58.73	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Paving (dual Drum)	$59.82	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Paving Machine (asphalt And Concrete)	$60.14	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Piledriving Engineers	$59.82	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Plant Oiler	$58.36	7Z	4S	9A	View

Power Equipment Operators-Underground Sewer & Water	Posthole Auger Or Punch	$59.44	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Power Broom	$58.73	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Pump (grout Or Jet)	$59.44	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Pumpman	$58.36	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Quad-track Or Similar Equipment	$60.14	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Railroad Ballast Regulation Operator (self-propelled)	$58.73	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Railroad Power Tamper Operator (self-propelled)	$58.73	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Railroad Tamper Jack Operator (self-propelled)	$58.73	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Railroad Track Liner Operator (self-propelled)	$59.82	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Refrigeration Plant Engineer (1000 Tons & Over)	$59.82	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Refrigeration Plant Engineer (under 1000 Ton)	$59.63	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Rollerman (finishing Asphalt Pavement)	$60.14	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Rollers, All Types On Subgrade, Including Seal And Chip Coating (farm Type, Case, John Deere And Similar,or Compacting Vibrator), Except When Pulled B	$58.36	7Z	4S	9A	View

Power Equipment Operators-Underground Sewer & Water	Roto Mill (pavement Grinder)	$60.14	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Rotomill Groundsman	$59.63	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Rubber-tired Scrapers (multiple Engine With Three Or More Scrapers)	$60.46	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Rubber-tired Skidders (r/t With Or Without Attachments)	$59.63	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Scrapers, All, Rubber-tired	$60.14	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Screed Operator	$60.14	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Shovels (3 Yds. & Over)	$60.46	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Shovels (under 3 Yds.)	$60.14	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Signalman (whirleys, Highline, Hammerheads Or Similar)	$59.82	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Soil Stabilizer (p & H Or Similar)	$59.44	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Spray Curing Machine (concrete)	$58.73	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Spreader Box (self-propelled)	$58.73	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Spreader Machine	$59.44	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Steam Cleaner	$58.36	7Z	4S	9A	View

Power Equipment Operators-Underground Sewer & Water	Straddle Buggy (ross & Similar On Construction Job Only)	$58.73	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Surface Heater & Planer Machine	$59.63	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Tractor (farm Type R/t With Attachments, Except Backhoe)	$58.73	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Traverse Finish Machine	$59.44	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Trenching Machines (7 Ft. Depth & Over)	$60.14	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Trenching Machines (under 7 Ft. Depth Capacity)	$59.63	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Tug Boat Operator	$60.14	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Tugger Operator	$58.73	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Turnhead (with Re-screening)	$59.63	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Turnhead Operator	$59.44	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Ultra High Pressure Wateriet Cutting Tool System Operator, (30,000 Psi)	$60.46	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Vactor Guzzler, Super Sucker	$60.14	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Vacuum Blasting Machine Operator	$60.46	7Z	4S	9A	View
Power Equipment Operators-Underground Sewer & Water	Vacuum Drill (reverse Circulation Drill Under 8 Inch Bit)	$59.63	7Z	4S	9A	View

Power Equipment Operators-Underground Sewer & Water	Welding Machine	$58.36	**7Z**	**4S**	**9A**	**View**
Power Equipment Operators-Underground Sewer & Water	Whirleys & Hammerheads, All	$60.46	**7Z**	**4S**	**9A**	**View**
Power Line Clearance Tree Trimmers	Journey Level In Charge	$64.20	**5A**	**4A**		**View**
Power Line Clearance Tree Trimmers	Spray Person	$60.74	**5A**	**4A**		**View**
Power Line Clearance Tree Trimmers	Tree Equipment Operator	$64.20	**5A**	**4A**		**View**
Power Line Clearance Tree Trimmers	Tree Trimmer	$57.29	**5A**	**4A**		**View**
Power Line Clearance Tree Trimmers	Tree Trimmer Groundperson	$43.05	**5A**	**4A**		**View**
Sheet Metal Workers	Journey Level (Field or Shop)	$74.38	**6Z**	**1B**		**View**
Sign Makers & Installers (Electrical)	Journey Level	$16.66		**1**		**View**
Sign Makers & Installers (Non-Electrical)	Sign Installer	$19.12		**1**		**View**
Sign Makers & Installers (Non-Electrical)	Sign Maker	$16.66		**1**		**View**
Street And Parking Lot Sweeper Workers	Journey Level	$20.47		**1**		**View**
Surveyors	All Classifications	$19.84	**0**	**1**		**View**
Telecommunication Technicians	Journey Level	$56.78	**5I**	**1B**		**View**
Telephone Line Construction - Outside	Cable Splicer	$41.35	**5A**	**2B**		**View**

Telephone Line Construction - Outside	Hole Digger/Ground Person	$27.31	**5A**	**2B**	**View**
Telephone Line Construction - Outside	Telephone Equipment Operator (Light)	$34.53	**5A**	**2B**	**View**
Telephone Line Construction - Outside	Telephone Lineperson	$39.07	**5A**	**2B**	**View**
Traffic Control Stripers	All cleanup required in connection with traffic control stripers work (Group 1)	$92.44	**15L**	**1K**	**View**
Traffic Control Stripers	Handling, painting and installing of all car stops, stop signs and any other type sign (Group 2)	$55.54	**15L**	**1K**	**View**
Traffic Control Stripers	Installation of guard rail and posts and similar protective devices (Group 2)	$55.54	**15L**	**1K**	**View**
Traffic Control Stripers	Installation of parking gates, ticket spitters and other mechanical and automatic control devices (Group 2)	$55.54	**15L**	**1K**	**View**
Traffic Control Stripers	Installation of plastic metal or composition button, or lines used instead of paint (Group 1)	$92.44	**15L**	**1K**	**View**
Traffic Control Stripers	Line removal; chemical sand and hydro-blast, paint and button (Group 1)	$92.44	**15L**	**1K**	**View**
Traffic Control Stripers	Manufacturing and installation of all car stops and control devices and similar traffic regulators (Group 2)	$55.54	**15L**	**1K**	**View**
Traffic Control Stripers	Manufacturing, painting, stenciling, servicing, repairing,	$55.54	**15L**	**1K**	**View**

	placing and removal of traffic safety and control devices/barricades (Group 2)					
Traffic Control Stripers	Painting and installing lines, arrows, bumpers, curbs, etc., on parking lots, air fields, highways, game courts (Group 1)	$92.44	**15L**	**1K**		**View**
Traffic Control Stripers	Preparation and maintenance of all surfaces (Group 1)	$92.44	**15L**	**1K**		**View**
Traffic Control Stripers	Seal coating, slurry coating and other surface protection (Group 2)	$55.54	**15L**	**1K**		**View**
Truck Drivers	Asphalt Mix Over 20 Yards	$59.45	**5D**	**1V**	**8M**	**View**
Truck Drivers	Asphalt Mix To 20 Yards	$59.25	**5D**	**1V**	**8M**	**View**
Truck Drivers	Dump Truck	$59.25	**5D**	**1V**	**8M**	**View**
Truck Drivers	Dump Truck & Trailer	$59.45	**5D**	**1V**	**8M**	**View**
Truck Drivers	Other Trucks	$59.14	**5D**	**1V**	**8M**	**View**
Truck Drivers - Ready Mix	Transit Mixers 20 yards and under	$59.45	**5D**	**1V**	**8M**	**View**
Truck Drivers - Ready Mix	Transit Mixers over 20 yards	$59.79	**5D**	**1V**	**8M**	**View**
Well Drillers & Irrigation Pump Installers	Irrigation Pump Installer	$21.00		**1**		**View**
Well Drillers & Irrigation Pump Installers	Oiler	$16.66		**1**		**View**
Well Drillers & Irrigation Pump Installers	Well Driller	$18.00		**1**		**View**

Washington State Department of Labor and Industries
Policy Statement
(Regarding the Production of "Standard" or "Non-standard" Items)

Below is the department's (State L&I's) list of criteria to be used in determining whether a prefabricated item is "standard" or "non-standard". For items not appearing on WSDOT's predetermined list, these criteria shall be used by the Contractor (and the Contractor's subcontractors, agents to subcontractors, suppliers, manufacturers, and fabricators) to determine coverage under RCW 39.12. The production, in the State of Washington, of non-standard items is covered by RCW 39.12, and the production of standard items is not. The production of any item outside the State of Washington is not covered by RCW 39.12.

1. Is the item fabricated for a public works project? If not, it is not subject to RCW 39.12. If it is, go to question 2.

2. Is the item fabricated on the public works jobsite? If it is, the work is covered under RCW 39.12. If not, go to question 3.

3. Is the item fabricated in an assembly/fabrication plant set up for, and dedicated primarily to, the public works project? If it is, the work is covered by RCW 39.12. If not, go to question 4.

4. Does the item require any assembly, cutting, modification or other fabrication by the supplier? If not, the work is not covered by RCW 39.12. If yes, go to question 5.

5. Is the prefabricated item intended for the public works project typically an inventory item which could reasonably be sold on the general market? If not, the work is covered by RCW 39.12. If yes, go to question 6.

6. Does the specific prefabricated item, generally defined as standard, have any unusual characteristics such as shape, type of material, strength requirements, finish, etc? If yes, the work is covered under RCW 39.12.

Any firm with questions regarding the policy, WSDOT's Predetermined List, or for determinations of covered and non-covered workers shall be directed to State L&I at (360) 902-5330.

WSDOT's
Predetermined List for
Suppliers - Manufactures - Fabricator

Below is a list of potentially prefabricated items, originally furnished by WSDOT to Washington State Department of Labor and Industries, that may be considered non-standard and therefore covered by the prevailing wage law, RCW 39.12. Items marked with an X in the "YES" column should be considered to be non-standard and therefore covered by RCW 39.12. Items marked with an X in the "NO" column should be considered to be standard and therefore not covered. Of course, exceptions to this general list may occur, and in that case shall be evaluated according to the criteria described in State and L&I's policy statement.

	ITEM DESCRIPTION	YES	NO
1.	Metal rectangular frames, solid metal covers, herringbone grates, and bi-directional vaned grates for Catch Basin Types 1, 1L, 1P, and 2 and Concrete Inlets. See Std. Plans		X
2.	Metal circular frames (rings) and covers, circular grates, and prefabricated ladders for Manhole Types 1, 2, and 3, Drywell Types 1, 2, and 3 and Catch Basin Type 2. See Std. Plans		X
3.	Prefabricated steel grate supports and welded grates, metal frames and dual vaned grates, and Type 1, 2, and 3 structural tubing grates for Drop Inlets. See Std. Plans.		X
4.	Concrete Pipe - Plain Concrete pipe and reinforced concrete pipe Class 2 to 5 sizes smaller than 60 inch diameter.		X
5.	Concrete Pipe - Plain Concrete pipe and reinforced concrete pipe Class 2 to 5 sizes larger than 60 inch diameter.		X
6.	Corrugated Steel Pipe - Steel lock seam corrugated pipe for culverts and storm sewers, sizes 30 inch to 120 inches in diameter. May also be treated, 1 thru 5.		X
7.	Corrugated Aluminum Pipe - Aluminum lock seam corrugated pipe for culverts and storm sewers, sizes 30 inch to 120 inches in diameter. May also be treated, #5.		X

	ITEM DESCRIPTION	YES	NO
8.	Anchor Bolts & Nuts - Anchor Bolts and Nuts, for mounting sign structures, luminaries and other items, shall be made from commercial bolt stock. See Contract Plans and Std. Plans for size and material type.		X
9.	Aluminum Pedestrian Handrail - Pedestrian handrail conforming to the type and material specifications set forth in the contract plans. Welding of aluminum shall be in accordance with Section 9-28.14(3).	X	
10.	Major Structural Steel Fabrication - Fabrication of major steel items such as trusses, beams, girders, etc., for bridges.	X	
11.	Minor Structural Steel Fabrication - Fabrication of minor steel Items such as special hangers, brackets, access doors for structures, access ladders for irrigation boxes, bridge expansion joint systems, etc., involving welding, cutting, punching and/or boring of holes. See Contact Plans for item description and shop drawings.	X	
12.	Aluminum Bridge Railing Type BP - Metal bridge railing conforming to the type and material specifications set forth in the Contract Plans. Welding of aluminum shall be in accordance with Section 9-28.14(3).		X
13.	Concrete Piling--Precast-Prestressed concrete piling for use as 55 and 70 ton concrete piling. Concrete to conform to Section 9-19.1 of Std. Spec..	X	
14.	Precast Manhole Types 1, 2, and 3 with cones, adjustment sections and flat top slabs. See Std. Plans.		X
15.	Precast Drywell Types 1, 2, and with cones and adjustment Sections. See Std. Plans.		X
16.	Precast Catch Basin - Catch Basin type 1, 1L, 1P, and 2 With adjustment sections. See Std. Plans.		X

	ITEM DESCRIPTION	YES	NO
17.	Precast Concrete Inlet - with adjustment sections, See Std. Plans		X
18.	Precast Drop Inlet Type 1 and 2 with metal grate supports. See Std. Plans.		X
19.	Precast Grate Inlet Type 2 with extension and top units. See Std. Plans		X
20.	Metal frames, vaned grates, and hoods for Combination Inlets. See Std. Plans		X
21.	Precast Concrete Utility Vaults - Precast Concrete utility vaults of various sizes. Used for in ground storage of utility facilities and controls. See Contract Plans for size and construction requirements. Shop drawings are to be provided for approval prior to casting		X
22.	Vault Risers - For use with Valve Vaults and Utilities X Vaults.		X
23.	Valve Vault - For use with underground utilities. See Contract Plans for details.		X
24.	Precast Concrete Barrier - Precast Concrete Barrier for use as new barrier or may also be used as Temporary Concrete Barrier. Only new state approved barrier may be used as permanent barrier.		X
25.	Reinforced Earth Wall Panels – Reinforced Earth Wall Panels in size and shape as shown in the Plans. Fabrication plant has annual approval for methods and materials to be used. See Shop Drawing. Fabrication at other locations may be approved, after facilities inspection, contact HQ. Lab.	X	
26.	Precast Concrete Walls - Precast Concrete Walls - tilt-up wall panel in size and shape as shown in Plans. Fabrication plant has annual approval for methods and materials to be used	X	

	ITEM DESCRIPTION	YES	NO
27.	Precast Railroad Crossings - Concrete Crossing Structure Slabs.	X	
28.	12, 18 and 26 inch Standard Precast Prestressed Girder – Standard Precast Prestressed Girder for use in structures. Fabricator plant has annual approval of methods and materials to be used. Shop Drawing to be provided for approval prior to casting girders. See Std. Spec. Section 6-02.3(25)A	X	
29.	Prestressed Concrete Girder Series 4-14 - Prestressed Concrete Girders for use in structures. Fabricator plant has annual approval of methods and materials to be used. Shop Drawing to be provided for approval prior to casting girders. See Std. Spec. Section 6-02.3(25)A .	X	
30.	Prestressed Tri-Beam Girder - Prestressed Tri-Beam Girders for use in structures. Fabricator plant has annual approval of methods and materials to be used. Shop Drawing to be provided for approval prior to casting girders. See Std. Spec. Section 6-02.3(25)A	X	
31.	Prestressed Precast Hollow-Core Slab – Precast Prestressed Hollow-core slab for use in structures. Fabricator plant has annual approval of methods and materials to be used. Shop Drawing to be provided for approval prior to casting girders. See Std. Spec. Section 6-02.3(25)A.	X	
32.	Prestressed-Bulb Tee Girder - Bulb Tee Prestressed Girder for use in structures. Fabricator plant has annual approval of methods and materials to be used. Shop Drawing to be provided for approval prior to casting girders. See Std. Spec. Section 6-02.3(25)A	X	
33.	Monument Case and Cover See Std. Plan.		X

	ITEM DESCRIPTION	YES	NO
34.	Cantilever Sign Structure - Cantilever Sign Structure fabricated from steel tubing meeting AASHTO-M-183. See Std. Plans, and Contract Plans for details. The steel structure shall be galvanized after fabrication in accordance with AASHTO-M-111.	X	
35.	Mono-tube Sign Structures - Mono-tube Sign Bridge fabricated to details shown in the Plans. Shop drawings for approval are required prior to fabrication.	X	
36.	Steel Sign Bridges - Steel Sign Bridges fabricated from steel tubing meeting AASHTO-M-138 for Aluminum Alloys. See Std. Plans, and Contract Plans for details. The steel structure shall be galvanized after fabrication in accordance with AASHTO-M-111.	X	
37.	Steel Sign Post - Fabricated Steel Sign Posts as detailed in Std Plans. Shop drawings for approval are to be provided prior to fabrication		X
38.	Light Standard-Prestressed - Spun, prestressed, hollow concrete poles.	X	
39.	Light Standards - Lighting Standards for use on highway illumination systems, poles to be fabricated to conform with methods and materials as specified on Std. Plans. See Specia Provisions for pre-approved drawings.	X	
40.	Traffic Signal Standards - Traffic Signal Standards for use on highway and/or street signal systems. Standards to be fabricated to conform with methods and material as specified on Std. Plans. See Special Provisions for pre-approved drawings	X	
41.	Precast Concrete Sloped Mountable Curb (Single and DualFaced) See Std. Plans.		X

	ITEM DESCRIPTION	YES	NO
42.	Traffic Signs - Prior to approval of a Fabricator of Traffic Signs, the sources of the following materials must be submitted and approved for reflective sheeting, legend material, and aluminum sheeting. **NOTE:** *** Fabrication inspection required. Only signs tagged "Fabrication Approved" by WSDOT Sign Fabrication Inspector to be installed	X	X
		Custom Message	Std Signing Message
43.	Cutting & bending reinforcing steel		X
44.	Guardrail components	X	X
		Custom End Sec	Standard Sec
45.	Aggregates/Concrete mixes	Covered by WAC 296-127-018	
46.	Asphalt	Covered by WAC 296-127-018	
47.	Fiber fabrics		X
48.	Electrical wiring/components		X
49.	treated or untreated timber pile		X
50.	Girder pads (elastomeric bearing)	X	
51.	Standard Dimension lumber		X
52.	Irrigation components		X

ITEM DESCRIPTION	YES	NO
53. Fencing materials		X
54. Guide Posts		X
55. Traffic Buttons		X
56. Epoxy		X
57. Cribbing		X
58. Water distribution materials		X
59. Steel "H" piles		X
60. Steel pipe for concrete pile casings		X
61. Steel pile tips, standard		X
62. Steel pile tips, custom	X	

Prefabricated items specifically produced for public works projects that are prefabricated in a county other than the county wherein the public works project is to be completed, the wage for the offsite prefabrication shall be the applicable prevailing wage for the county in which the actual prefabrication takes place.

It is the manufacturer of the prefabricated product to verify that the correct county wage rates are applied to work they perform.

See RCW 39.12.010
(The definition of "locality" in RCW 39.12.010(2) contains the phrase "wherein the physical work is being performed." The department interprets this phrase to mean the actual work site.

WSDOT's List of State Occupations not applicable to Heavy and Highway Construction Projects

This project is subject to the state hourly minimum rates for wages and fringe benefits in the contract provisions, as provided by the state Department of Labor and Industries.
The following list of occupations, is comprised of those occupations that are not normally used in the construction of heavy and highway projects.
When considering job classifications for use and / or payment when bidding on, or building heavy and highway construction projects for, or administered by WSDOT, these Occupations will be excepted from the included "Washington State Prevailing Wage Rates For Public Work Contracts" documents.

- Building Service Employees
- Electrical Fixture Maintenance Workers
- Electricians - Motor Shop
- Heating Equipment Mechanics
- Industrial Engine and Machine Mechanics
- Industrial Power Vacuum Cleaners
- Inspection, Cleaning, Sealing of Water Systems by Remote Control
- Laborers - Underground Sewer & Water
- Machinists (Hydroelectric Site Work)
- Modular Buildings
- Playground & Park Equipment Installers
- Power Equipment Operators - Underground Sewer & Water
- Residential *** ALL ASSOCIATED RATES ***
- Sign Makers and Installers (Non-Electrical)
- Sign Makers and Installers (Electrical)
- Stage Rigging Mechanics (Non Structural)

The following occupations may be used only as outlined in the preceding text concerning "WSDOT's list for Suppliers - Manufacturers - Fabricators"

- Fabricated Precast Concrete Products
- Metal Fabrication (In Shop)

Definitions for the Scope of Work for prevailing wages may be found at the Washington State Department of Labor and Industries web site and in WAC Chapter 296-127.

Washington State Department of Labor and Industries
Policy Statements
(Regarding Production and Delivery of Gravel, Concrete, Asphalt, etc.)

WAC 296-127-018 Agency filings affecting this section

Coverage and exemptions of workers involved in the production and delivery of gravel, concrete, asphalt, or similar materials.

(1) The materials covered under this section include but are not limited to: Sand, gravel, crushed rock, concrete, asphalt, or other similar materials.

(2) All workers, regardless of by whom employed, are subject to the provisions of chapter 39.12 RCW when they perform any or all of the following functions:

(a) They deliver or discharge any of the above-listed materials to a public works project site:

(i) At one or more point(s) directly upon the location where the material will be incorporated into the project; or

(ii) At multiple points at the project; or

(iii) Adjacent to the location and coordinated with the incorporation of those materials.

(b) They wait at or near a public works project site to perform any tasks subject to this section of the rule.

(c) They remove any materials from a public works construction site pursuant to contract requirements or specifications (e.g., excavated materials, materials from demolished structures, clean-up materials, etc.).

(d) They work in a materials production facility (e.g., batch plant, borrow pit, rock quarry, etc.,) which is established for a public works project for the specific, but not necessarily exclusive, purpose of supplying materials for the project.

(e) They deliver concrete to a public works site regardless of the method of incorporation.

(f) They assist or participate in the incorporation of any materials into the public works project.

(3) All travel time that relates to the work covered under subsection (2) of this section requires the payment of prevailing wages. Travel time includes time spent waiting to load, loading, transporting, waiting to unload, and delivering materials. Travel time would include all time spent in travel in support of a public works project whether the vehicle is empty or full. For example, travel time spent returning to a supply source to obtain another load of material for use on a public works site or returning to the public works site to obtain another load of excavated material is time spent in travel that is subject to prevailing wage. Travel to a supply source, including travel from a public works site, to obtain materials for use on a private project would not be travel subject to the prevailing wage.

(4) Workers are not subject to the provisions of chapter 39.12 RCW when they deliver materials to a stockpile.

(a) A "stockpile" is defined as materials delivered to a pile located away from the site of incorporation such that the stockpiled materials must be physically moved from the stockpile and transported to another location on the project site in order to be incorporated into the project.

(b) A stockpile does not include any of the functions described in subsection (2)(a) through (f) of this section; nor does a stockpile include materials delivered or distributed to multiple locations upon the project site; nor does a stockpile include materials dumped at the place of incorporation, or adjacent to the location and coordinated with the incorporation.

(5) The applicable prevailing wage rate shall be determined by the locality in which the work is performed. Workers subject to subsection (2)(d) of this section, who produce such materials at an off-site facility shall be paid the applicable prevailing wage rates for the county in which the off-site facility is located. Workers subject to subsection (2) of this section, who deliver such materials to a public works project site shall be paid the applicable prevailing wage rates for the county in which the public works project is located.

[Statutory Authority: Chapter 39.12 RCW, RCW 43.22.051 and 43.22.270. 08-24-101, § 296-127-018, filed 12/2/08, effective 1/2/09. Statutory Authority: Chapters 39.04 and 39.12 RCW and RCW 43.22.270. 92-01-104 and 92-08-101, § 296-127-018, filed 12/18/91 and 4/1/92, effective 8/31/92.]

APPENDIX M
ASBESTOS SURVEY REPORT

January 18, 2021

Mr. Mitch Youngs, E.I.T.
Assistant Engineer
City of Spokane Valley
10210 East Sprague Avenue
Spokane Valley, Washington 99206

RE: Asbestos Survey Report
Fitness Fanatics Building
12425 East Trent Avenue
Spokane Valley, Washington
ALLWEST Project No. 220-376E

Mr. Youngs:

ALLWEST is presenting this asbestos survey report for the above referenced site. This assessment was performed in accordance with our proposal dated December 15, 2021.

We appreciate the opportunity to perform these services. If you have any questions, or if you need additional information, please call us at (509) 534-4411.

Sincerely,

ALLWEST

Prepared by:

Cole W. Warrick, P.G.
Testing Services Manager
AHERA Cert. No. ON-4644-10007-061720
By: Asbestos Institute

Attachments: Figure Sample Locations
Chain-of-Custody and Laboratory Analytical Reports
AHERA Certification

SCOPE OF SERVICES

Our scope of services included sampling building materials that will be disturbed during demolition.

FIELD ACTIVITIES

The sampling was performed on January 5th, 2021 by Mr. Cole Warrick a United States Environmental Protection Agency (EPA), Asbestos Hazard Emergency Response Act (AHERA) Certified Building Inspector with ALLWEST. A total of 20 bulk samples were collected from the building.

LABORATORY ANALYSIS

Asbestos

The bulk samples of the suspect asbestos containing materials were submitted to Mountain Laboratories in Spokane Valley, Washington for analysis (NVLAP Lab Code 1011890-0).

Polarized Light Microscopy (PLM) is the EPA recommended method for bulk sample analysis and utilizes the unique optical and crystallographic properties of the various constituents of the sample for material identification purposes. These properties, refractive indices, birefringence, sign of elongation and extinction angle, are characteristically unique to each asbestos form and were used to identify asbestos types present in the samples.

Summary of Observations and Analytical Results

Asbestos

Suspect ACM sample locations are shown on the Sample Location Diagrams (Figure 1A through Figure 1D). Asbestos analytical results are summarized below:

Sample Number	Location	*Material	Results/Approximate Quantity
1-1,1-2,1-3,1-4	Men's restroom	SRWS	Top 2 Layers samples 1-1 & 1-2: 0.25 to 0.50% Asbestos
2-1, 2-2, 2-3	Women's restroom	SRWS	N.D.
3-1, 3-2	Kitchen	VFT	N.D.
4-1, 4-2, 4-3	Main room	TSI	N.D.
5-1, 5-2	Main room	Insultation	N.D.
6-1, 6-2	Exterior west side vent	Caulk	N.D.
7-1, 7-2	Exterior foundation	Concrete	N.D.
8-1, 8-2	Exterior north duct	Caulk	**3-5% Chrysotile**

*Samples include mastics where applicable

SRWS – Sheet Rock Wall System
TSI – Thermal System Insulation

VFT – Vinyl Floor Tile
ND – Non Detect
Bold and Highlighted – Denotes Greater Than 1% Asbestos

The asbestos chain-of-custody and laboratory analytical reports are included in Appendix B.

REGULATORY OVERVIEW

Asbestos

The asbestos NESHAP (40 CFR Part 61, Subpart M) regulates asbestos fiber emissions and asbestos waste disposal practices. It also requires the identification and classification of existing building materials prior to demolition or renovation activity. Under NESHAP, asbestos-containing building materials are classified as either friable, Category I non-friable or Category II non-friable ACM. Friable materials are those that, when dry, may be crumbled, pulverized or reduced to powder by hand pressure. Category I non-friable ACM includes packings, gaskets, resilient floor coverings and asphalt roofing products containing more than 1% asbestos. Category II non-friable ACM are any materials other than Category I materials that contain more than 1% asbestos.

Friable ACM, Category I and Category II non-friable ACM, which is in poor condition and has become friable or which will be subjected to drilling, sanding, grinding, cutting or abrading and which could be crushed or pulverized during anticipated renovation or demolition activities are considered regulated ACM (RACM).

The OSHA Asbestos standard for construction (29 CFR 1926.1101) regulates workplace exposure to asbestos. The OSHA standard requires that employee exposure to airborne asbestos fibers be maintained below 0.1 asbestos fibers per cubic centimeter of air (0.1f/cc). The OSHA standard classifies construction and maintenance activities which could disturb ACM, and specifies work practices and precautions which employers must follow when engaging in each class of regulated work. States which administer their own federally-approved state OSHA programs may require additional precautions.

FINDINGS, OPINIONS AND RECOMMENDATIONS

- The following materials were identified as containing asbestos:
    - Duct caulking on the north side of building as seen below. Roof access was not possible at the time of sampling due to wet and slippery metal roof conditions. Roof penetration caulking should be considered ACM if encountered elsewhere on the roof.

- Asbestos greater than 1% was not detected in the other building materials sampled and tested.

- Identified ACMs should be removed by a licensed asbestos abatement contractor prior to demolition or remodel. All federal, state and local regulations should be followed during ACM removal and demolition or remodel of the building.

LIMITATIONS

Reasonable efforts were made by ALLWEST personnel to locate and sample suspect asbestos materials and observe items within our specified scope of services. Materials not sampled as part of the scope of services performed for this project may not be assumed to be negative. If additional suspect hazardous materials are discovered during demolition or renovation, it should be assumed to be hazardous until sampling and analysis proves otherwise. This report is limited to the materials and activities described in this report, and are intended to aid in the identification of the specified items in our scope of services for materials within the building remnants.

Our services consist of professional opinions made referencing generally accepted consulting and sampling principles and practices, as they exist at the time of this report and in Washington. This acknowledgment is in lieu of all express or implied warranties.

FITNESS FANATICS

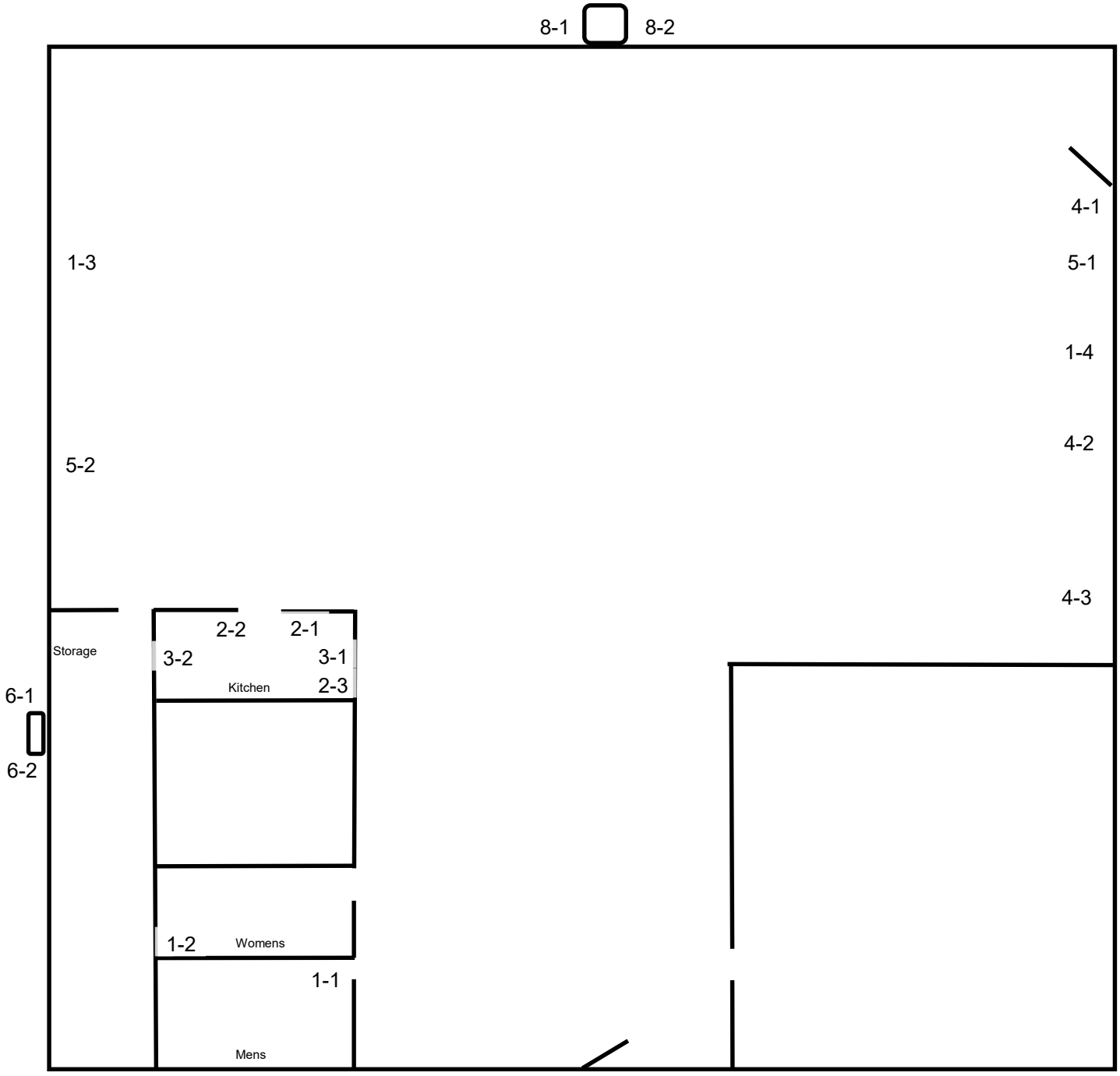


DIAGRAM IS FOR GENERAL LOCATION ONLY

N
W E
S

ALLWEST

3005 N. Industrial Lane 5th Street, #S-21
Spokane Valley, Washington
www.allwesttesting.com

FIGURE 1B- SAMPLE LOCATIONS

ASBESTOS SURVEY

FITNESS FANATICS

SPOKANE VALLEY, WASHINGTON

Client Name: CITY OF SPOKANE VALLEY

Project No.: 220-376E

Date: JANUARY 2021

Mountain Laboratories
9922 East Montgomery Suite 13
Spokane Valley, WA 99206
(509) 922-1365 ● Fax (509) 922-1380

NVLAP®
TESTING
NVLAP LAB CODE 101890-0

January 11, 2021

Allwest Testing & Engineering
Cole Warrick
690 West Capstone Court
Hayden, Idaho 83835

Project: Fitness Fanatics
Project #: 220-376E

Dear Mr. Warrick,

The enclosed report details results for the analysis of the bulk sample(s) submitted to Mountain Laboratories on January 7, 2021. Sample analysis was performed to determine asbestos type and content using Polarized Light Microscopy, supplemented by Dispersion Staining (PLM/DS).

This report includes a summary of the analytical results and chain of custody. Analytical results are only reflective of the samples, which were tested and presented in this report. Mountain Laboratories limits warranty to proper analysis methods and takes no responsibility for sample procurement.

It has been our pleasure providing you with these analytical services. If you have any questions regarding this report, please do not hesitate to call us at (509) 922-1365.

Sincerely,

Heidi L. Porret
Laboratory Manager
Mountain Laboratories
Mountain Laboratories NW, Inc.

Enclosure: 1975.0561.0580

MOUNTAIN LABORATORIES
MOUNTAIN LABORATORIES
BULK SAMPLE ANALYSIS FOR ASBESTOS

Allwest Testing & Engineering
Cole Warrick
690 West Capstone Court
Hayden, Idaho 83835

Project: Fitness Fanatics
Project #: 220-376E

Test Method: EPA-600/R-93/116: Interim Method for the Determination of Asbestos in Bulk Building Materials. Customer #: 1975

Laboratory No.	B21-0561	B21-100173	B21-0562
Sample ID No.	1-1	1-1-A	1-2
Sample Description	SRWS	Sub sample of 1-1 Top 2 Layers & Paper Layer	SRWS
Sample Treatment	Teased/Crushed	Teased/Crushed Heated	Teased/Crushed
Homogeneous	No	No	No
Layered	Yes	Yes	Yes
Fibrous	Yes	Yes	Yes
Sample Color	Brown/Off White	White/Off White Beige	Brown/Off White
Asbestos Present	No	Yes	No
Asbestos Type and Percentage	Sheetrock: N.D.	Top 2 Layers: Chrysotile <1% Paper Layer: N.D.	Sheetrock: N.D.
Total % Asbestos	None		None
Other Fibrous Material In Sample	Cellulose 5%	Paper Layer: Cellulose 98%	Cellulose 5%
Non-Fibrous Material	Binder/Filler 5% Gypsum 90%	Paper Layer: Binder/Filler 2% Top 2 Layers: Gypsum 99% **Paint not analyzed**	Binder/Filler 5% Gypsum 90%

Date Analyzed: January 8, 2021 Analyzed By: Liz Templeton

Mountain Laboratories, Mountain Laboratories NW, Inc. limits warranty to proper analysis methods only and takes no responsibility for sample procurement. Mountain Laboratories, Mountain Laboratories NW, Inc., 9922 E. Montgomery Suite #13, Spokane Washington 99206 (509) 922-1365 - Fax (509) 922-1380. PLM has been known to miss asbestos in a small percentage of samples. Thus negative or <1% PLM results should be tested with either SEM or TEM. Customer is responsible for sample separation. This report may only be reproduced in full with written approval by Mountain Laboratories. Soil/Dust samples are not covered under NVLAP Accreditation.

Sample results must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

BULK SAMPLE ANALYSIS FOR ASBESTOS

Allwest Testing & Engineering
Cole Warrick
690 West Capstone Court
Hayden, Idaho 83835

Project: Fitness Fanatics
Project #: 220-376E

Test Method: EPA-600/R-93/116: Interim Method for the Determination of Asbestos in Bulk Building Materials. Customer #: 1975

Laboratory No.	B21-100174	B21-0563	B21-0564
Sample ID No.	1-2-A	1-3	1-4
Sample Description	Sub sample of 1-2 Top 2 Layers & Paper Layer	SRWS	SRWS
Sample Treatment	Teased/Crushed Heated	Teased/Crushed Heated	Teased/Crushed Heated
Homogeneous	No	No	No
Layered	Yes	Yes	Yes
Fibrous	Yes	Yes	Yes
Sample Color	White/Off White Beige	White/Brown Off White	Brown/Off White
Asbestos Present	Yes	No	No
Asbestos Type and Percentage	Top 2 Layers: Chrysotile <1% Paper Layer: N.D.	Sheetrock: N.D.	Sheetrock: N.D.
Total % Asbestos		None	None
Other Fibrous Material In Sample	Paper Layer: Cellulose 98%	Cellulose 5% Glass Fibers <1%	Cellulose 5% Glass Fibers <1%
Non-Fibrous Material	Paper Layer: Binder/Filler 2% Top 2 Layers: Gypsum 99% **Paint not analyzed**	Binder/Filler 5% Mica <1% Gypsum 87% Paint <1% Other 100% **Painted Sheetrock only in sample.**	Binder/Filler 5% Mica <1% Gypsum 88%

Date Analyzed: January 8, 2021 Analyzed By: Liz Templeton

Mountain Laboratories, Mountain Laboratories NW, Inc. limits warranty to proper analysis methods only and takes no responsibility for sample procurement. Mountain Laboratories, Mountain Laboratories NW, Inc., 9922 E. Montgomery Suite #13, Spokane Washington 99206 (509) 922-1365 - Fax (509) 922-1380. PLM has been known to miss asbestos in a small percentage of samples. Thus negative or <1% PLM results should be tested with either SEM or TEM. Customer is responsible for sample separation. This report may only be reproduced in full with written approval by Mountain Laboratories. Soil/Dust samples are not covered under NVLAP Accreditation.

Sample results must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

MOUNTAIN LABORATORIES
BULK SAMPLE ANALYSIS FOR ASBESTOS

Allwest Testing & Engineering
Cole Warrick
690 West Capstone Court
Hayden, Idaho 83835

Project: Fitness Fanatics
Project #: 220-376E

Test Method: EPA-600/R-93/116: Interim Method for the Determination of Asbestos in Bulk Building Materials. Customer #: 1975

Laboratory No.	B21-100175	B21-0565	B21-0566
Sample ID No.	1-4-A	2-1	2-2
Sample Description	Sub sample of 1-4 Top Layer	VFT	VFT
Sample Treatment	Teased/Crushed Heated	Teased/Heated	Teased/Heated
Homogeneous	N	No	No
Layered	Y	Yes	Yes
Fibrous	Yes	No	No
Sample Color	White/Tan	Tan/Clear Yellow	Tan/Clear Yellow
Asbestos Present	Yes	No	No
Asbestos Type and Percentage	Top Layer: Chrysotile <1%	VFT: N.D. Clear Adhesive: N.D.	VFT: N.D. Clear Adhesive: N.D.
Total % Asbestos	<1%	None	None
Other Fibrous Material In Sample			
Non-Fibrous Material	Gypsum 99% **Paint not analyzed** **Extremely thin layer.**	VFT: Vinyl 55% Binder/Filler 45% Clear Adhesive: Other 100%	VFT: Vinyl 55% Binder/Filler 45% Clear Adhesive: Other 100%

Date Analyzed: January 8 & 11, 2021 Analyzed By: Liz Templeton

Mountain Laboratories, Mountain Laboratories NW, Inc. limits warranty to proper analysis methods only and takes no responsibility for sample procurement. Mountain Laboratories, Mountain Laboratories NW, Inc., 9922 E. Montgomery Suite #13, Spokane Washington 99206 (509) 922-1365 - Fax (509) 922-1380. PLM has been known to miss asbestos in a small percentage of samples. Thus negative or <1% PLM results should be tested with either SEM or TEM. Customer is responsible for sample separation. This report may only be reproduced in full with written approval by Mountain Laboratories. Soil/Dust samples are not covered under NVLAP Accreditation.

Sample results must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

MOUNTAIN LABORATORIES
BULK SAMPLE ANALYSIS FOR ASBESTOS

Allwest Testing & Engineering
Cole Warrick
690 West Capstone Court
Hayden, Idaho 83835

Project: Fitness Fanatics
Project #: 220-376E

Test Method: EPA-600/R-93/116: Interim Method for the Determination of Asbestos in Bulk Building Materials. Customer #: 1975

Laboratory No.	B21-0567	B21-0568	B21-0569
Sample ID No.	2-3	3-1	3-2
Sample Description	VFT	CB	CB
Sample Treatment	Teased/Heated	Teased/Heated	Teased/Heated
Homogeneous	No	No	No
Layered	Yes	Yes	Yes
Fibrous	No	No	No
Sample Color	Tan/Clear Yellow	Black/Off White	Black/Off White
Asbestos Present	No	No	No
Asbestos Type and Percentage	VFT: N.D. Clear Adhesive: N.D.	Cove Base: N.D. Off White Adhesive: N.D.	Cove Base: N.D. Off White Adhesive: N.D.
Total % Asbestos	None	None	None
Other Fibrous Material In Sample			
Non-Fibrous Material	VFT: Vinyl 55% Binder/Filler 45% Clear Adhesive: Other 100%	Cove Base: Vinyl 60% Binder/Filler 40% Off White Adhesive: Other 100%	Cove Base: Vinyl 60% Binder/Filler 40% Off White Adhesive: Other 100%

Date Analyzed: January 11, 2021 Analyzed By: Liz Templeton

Mountain Laboratories, Mountain Laboratories NW, Inc. limits warranty to proper analysis methods only and takes no responsibility for sample procurement. Mountain Laboratories, Mountain Laboratories NW, Inc., 9922 E. Montgomery Suite #13, Spokane Washington 99206 (509) 922-1365 - Fax (509) 922-1380. PLM has been known to miss asbestos in a small percentage of samples. Thus negative or <1% PLM results should be tested with either SEM or TEM. Customer is responsible for sample separation. This report may only be reproduced in full with written approval by Mountain Laboratories. Soil/Dust samples are not covered under NVLAP Accreditation.

Sample results must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

MOUNTAIN LABORATORIES
BULK SAMPLE ANALYSIS FOR ASBESTOS

Allwest Testing & Engineering
Cole Warrick
690 West Capstone Court
Hayden, Idaho 83835

Project: Fitness Fanatics
Project #: 220-376E

Test Method: EPA-600/R-93/116: Interim Method for the Determination of Asbestos in Bulk Building Materials. Customer #: 1975

Laboratory No.	B21-0570	B21-0571	B21-0572
Sample ID No.	4-1	4-2	4-3
Sample Description	TSI	TSI	TSI
Sample Treatment	Teased/Heated	Teased/Heated	Teased/Heated
Homogeneous	No	No	No
Layered	Yes	Yes	Yes
Fibrous	Yes	Yes	Yes
Sample Color	Gold/Clear	Gold/Clear	Gold/Clear
Asbestos Present	No	No	No
Asbestos Type and Percentage	N.D.	N.D.	N.D.
Total % Asbestos	None	None	None
Other Fibrous Material In Sample	Glass Fibers 98%	Glass Fibers 98%	Glass Fibers 98%
Non-Fibrous Material	Other <1% Binder/Filler <1%	Other <1% Binder/Filler <1%	Other <1% Binder/Filler <1%

Date Analyzed: January 11, 2021 Analyzed By: Liz Templeton

Mountain Laboratories, Mountain Laboratories NW, Inc. limits warranty to proper analysis methods only and takes no responsibility for sample procurement. Mountain Laboratories, Mountain Laboratories NW, Inc., 9922 E. Montgomery Suite #13, Spokane Washington 99206 (509) 922-1365 - Fax (509) 922-1380. PLM has been known to miss asbestos in a small percentage of samples. Thus negative or <1% PLM results should be tested with either SEM or TEM. Customer is responsible for sample separation. This report may only be reproduced in full with written approval by Mountain Laboratories. Soil/Dust samples are not covered under NVLAP Accreditation.

Sample results must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

MOUNTAIN LABORATORIES
BULK SAMPLE ANALYSIS FOR ASBESTOS

Allwest Testing & Engineering
Cole Warrick
690 West Capstone Court
Hayden, Idaho 83835

Project: Fitness Fanatics
Project #: 220-376E

Test Method: EPA-600/R-93/116: Interim Method for the Determination of Asbestos in Bulk Building Materials. Customer #: 1975

Laboratory No.	B21-0573	B21-0574	B21-0575
Sample ID No.	5-1	5-2	6-1
Sample Description	Insulation	Insulation	Caulk
Sample Treatment	Teased/Heated	Teased/Heated	Teased/Heated
Homogeneous	No	No	Yes
Layered	Yes	Yes	No
Fibrous	Yes	Yes	Yes
Sample Color	Pale Green/Gold	Pale Green/Gold	Gray
Asbestos Present	No	No	No
Asbestos Type and Percentage	N.D.	N.D.	N.D.
Total % Asbestos	None	None	None
Other Fibrous Material In Sample	Glass Fibers 98%	Glass Fibers 98%	Cellulose 10%
Non-Fibrous Material	Other <1% Binder/Filler <1%	Other <1% Binder/Filler <1%	Other 90%

Date Analyzed: January 11, 2021 Analyzed By: Liz Templeton

Mountain Laboratories, Mountain Laboratories NW, Inc. limits warranty to proper analysis methods only and takes no responsibility for sample procurement. Mountain Laboratories, Mountain Laboratories NW, Inc., 9922 E. Montgomery Suite #13, Spokane Washington 99206 (509) 922-1365 - Fax (509) 922-1380. PLM has been known to miss asbestos in a small percentage of samples. Thus negative or <1% PLM results should be tested with either SEM or TEM. Customer is responsible for sample separation. This report may only be reproduced in full with written approval by Mountain Laboratories. Soil/Dust samples are not covered under NVLAP Accreditation.

Sample results must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

MOUNTAIN LABORATORIES
BULK SAMPLE ANALYSIS FOR ASBESTOS

Allwest Testing & Engineering
Cole Warrick
690 West Capstone Court
Hayden, Idaho 83835

Project: Fitness Fanatics
Project #: 220-376E

Test Method: EPA-600/R-93/116: Interim Method for the Determination of Asbestos in Bulk Building Materials. Customer #: 1975

Laboratory No.	B21-0576	B21-0577	B21-0578
Sample ID No.	6-2	7-1	7-2
Sample Description	Caulk	Concrete	Concrete
Sample Treatment	Teased/Heated	Teased/Crushed	Teased/Crushed
Homogeneous	Yes	Yes	Yes
Layered	No	No	No
Fibrous	Yes	No	No
Sample Color	Gray	Gray	Gray
Asbestos Present	No	No	No
Asbestos Type and Percentage	N.D.	N.D.	N.D.
Total % Asbestos	None	None	None
Other Fibrous Material In Sample	Cellulose 10%		
Non-Fibrous Material	Other 90%	Concrete 100%	Concrete 100%

Date Analyzed: January 11, 2021 Analyzed By: Liz Templeton

Mountain Laboratories, Mountain Laboratories NW, Inc. limits warranty to proper analysis methods only and takes no responsibility for sample procurement. Mountain Laboratories, Mountain Laboratories NW, Inc., 9922 E. Montgomery Suite #13, Spokane Washington 99206 (509) 922-1365 - Fax (509) 922-1380. PLM has been known to miss asbestos in a small percentage of samples. Thus negative or <1% PLM results should be tested with either SEM or TEM. Customer is responsible for sample separation. This report may only be reproduced in full with written approval by Mountain Laboratories. Soil/Dust samples are not covered under NVLAP Accreditation.

Sample results must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

MOUNTAIN LABORATORIES
BULK SAMPLE ANALYSIS FOR ASBESTOS

Allwest Testing & Engineering
Cole Warrick
690 West Capstone Court
Hayden, Idaho 83835

Project: Fitness Fanatics
Project #: 220-376E

Test Method: EPA-600/R-93/116: Interim Method for the Determination of Asbestos in Bulk Building Materials. Customer #: 1975

Laboratory No.	B21-0579	B21-0580	
Sample ID No.	8-1	8-2	
Sample Description	Caulk	Caulk	
Sample Treatment	Teased/Heated	Teased/Heated	
Homogeneous	Yes	Yes	
Layered	No	No	
Fibrous	Yes	Yes	
Sample Color	Black/Gray	Black/Gray	
Asbestos Present	Yes	Yes	
Asbestos Type and Percentage	Chrysotile 3-5%	Chrysotile 3-5%	
Total % Asbestos	3-5%	3-5%	
Other Fibrous Material In Sample			
Non-Fibrous Material	Foam 30-32% Other 65%	Foam 30-32% Other 65%	

Date Analyzed: January 11, 2021 Analyzed By: Liz Templeton

Mountain Laboratories, Mountain Laboratories NW, Inc. limits warranty to proper analysis methods only and takes no responsibility for sample procurement. Mountain Laboratories, Mountain Laboratories NW, Inc., 9922 E. Montgomery Suite #13, Spokane Washington 99206 (509) 922-1365 - Fax (509) 922-1380. PLM has been known to miss asbestos in a small percentage of samples. Thus negative or <1% PLM results should be tested with either SEM or TEM. Customer is responsible for sample separation. This report may only be reproduced in full with written approval by Mountain Laboratories. Soil/Dust samples are not covered under NVLAP Accreditation.

Sample results must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

CHAIN OF CUSTODY RECORD

Mountain Laboratories
9922 E. Montgomery Drive, Suite 13
Spokane Valley, WA 99206
Phone: 509-922-1365
Fax: 509-922-1380
Email: heidi@mountainlaboratories.com

Billing Information (if different)
Contact Name, Address & Phone
ALLWEST 690 CAPstone Court Hayden, Idaho 83835

Project Name: Fitness Fanatics

Project No: 220-376E

Results: (check box)

- ☐ FAX:
- ☐ PHONE: 208-277-4792
- ☐ E-MAIL: CWarnick@allwesttesting.com
- ☐ MAIL

Customer Information: Cole Warnick

TURNAROUND
☐ 1 HR ☐ 48 HR
☐ 3 HR ☒ 3 Day
☐ 24 HR ☐ 5 Day

SAMPLE #	SAMPLE DESCRIPTION/ID	DATE/TIME	# OF CONTAINERS	PLM - BULK	REMARKS
1-1	SAWS - White	1/6/2021 7:00			Mens
1-2	↓	↓			Womens
1-3	↓	↓			Main wall West
1-4	↓	↓			Main wall EAST
2-1	VFT - Biege	↓			Kitchen
2-2	↓	↓			↓
2-3	↓	↓			↓
3-1	CB - Black	↓			Kitchen
3-2	CB - Black	↓			Kitchen
4-1	TSI - yellow	↓			Main Room
4-2	↓	↓			↓
4-3	↓	↓			↓
5-1	Insulation - green/yellow	↓			Main room - EAST wall
5-2	↓	↓			Main Room - west wall

RELEASED BY (Signature)	DELIVERY METHOD	RECEIVED BY (Signature)	COMPANY	DATE / TIME RECEIVED	CONDITION
[signature]	hand	Christy Collins	Mountain Laboratories	1/7/21 12:45 pm	Good

CHAIN OF CUSTODY RECORD

Mountain Laboratories
9922 E. Montgomery Drive, Suite 13
Spokane Valley, WA 99206
Phone: 509-922-1365
Fax: 509-922-1380
Email: heidi@mountainlaboratories.com

Billing Information (if different)
Contact Name, Address & Phone

Project Name: Fitness Fanatics

Project No: 220-376E

Results: (check box)

- ☐ FAX:
- ☐ PHONE: 208-277-4792
- ☐ E-MAIL:
- ☐ MAIL

Customer Information: 2 of 2

TURNAROUND: ☐ 1 HR ☐ 3 HR ☐ 24 HR ☐ 48 HR ☒ 3 Day ☐ 5 Day

SAMPLE #	SAMPLE DESCRIPTION/ID	DATE/TIME	# OF CONTAINERS	PLM - BULK	REMARKS
6-1	Caulk				West Vent - Exterior
6-2	Caulk				↓
7-1	Concrete				Foundation exterior
7-2	concrete				↓
8-1	Caulk				North Duct
8-2	caulk				North Duct

RELEASED BY (Signature)	DELIVERY METHOD	RECEIVED BY (Signature)	COMPANY	DATE / TIME RECEIVED	CONDITION
	hand	Christy Collins	*Mountain Laboratories*	1/7/21 12:45pm	Good.

Mountain Laboratories

9922 East Montgomery Suite 13
Spokane Valley, WA 99206
(509) 922-1365 • Fax (509) 922-1380

January 18, 2021

Allwest Testing & Engineering
Cole Warrick
690 W. Capstone Court
Hayden, ID 83835

Project: Fitness Fanatics
Project # 220-376E

Dear Mr. Warrick,

The enclosed report details the results for the bulk sample submitted to Mountain Laboratories on January 13, 2021. The sample has been point counted at your request, using (40 CFR Part 763, Subpart E, Appendix E, Section 1.7.2.4.) protocol. The results are listed in the table below. Mountain Laboratories participates in the National Voluntary Laboratory Accreditation Program (NVLAP) for Bulk Asbestos Analysis. This report includes a summary of the analytical results and a chain of custody.

Results of Sample Point Count

Sample ID	Fibers/ Fields	Fibers/ Fields	Fibers/ Fields	Fibers/ Fields	Fibers/ Fields	Fibers/ Fields	Fibers/ Fields	Fibers/ Fields	Total % Chrysotile in Sample
1-1-PC	0/50	0/50	0/50	1/50	0/50	0/50	0/50	0/50	0.25%
1-2-PC	0/50	1/50	0/50	o/50	0/50	0/50	1/50	0/50	0.50%

It has been our pleasure providing you with these analytical services. If you have any questions regarding this report, please do not hesitate to contact me at (509) 922-1365.

Sincerely,

Heidi L. Porret
Laboratory Manager
Mountain Laboratories
Mountain Laboratories NW, Inc.

1066.1067

CHAIN OF CUSTODY RECORD

Mountain Laboratories
9922 E. Montgomery Drive, Suite 13
Spokane Valley, WA 99206
Phone: 509-922-1365
Fax: 509-922-1380
Email: heidi@mountainlaboratories.com

Billing Information (if different)
Contact Name, Address & Phone
ALLWEST 690 CAPstone Court Hayden, Idaho 83835

Project Name: Fitness Fanatics

Project No: 220-376E

Results: (check box)

	FAX:
	PHONE: 208-277-4792
	E-MAIL: Cwarrick@allwesttesting.com
	MAIL

Customer Information: Cole Warrick

SAMPLE #	SAMPLE DESCRIPTION/ID	DATE/TIME	# OF CONTAINERS	PLM - BULK	REMARKS
1-1	- SPWS - White	1/6/2021 7:00			Mens
1-2					Womens
1-3					main wall West
1-4					Main wall EAST
2-1	VFT - Biege				Kitchen
2-2					↓
2-3					Kitchen
3-1	CB - Black				Kitchen
3-2	CB - Black				Main Room
4-1	TSI - yellow				↓
4-2					Main room - EAST wall
4-3					main Room - west wall
5-1	Insulation - green/yellow				
5-2					

TURNAROUND
- ☐ 1 HR
- ☐ 48 HR
- ☐ 3 HR
- ☒ 3 Day
- ☐ 24 HR
- ☐ 5 Day

Please Point Count Samples 1-1-A & 1-2-A W/ a 3DAY Tat per Cole

RELEASED BY (Signature)	DELIVERY METHOD	RECEIVED BY (Signature)	COMPANY	DATE / TIME RECEIVED	CONDITION
[signature]	hand	Christy Collins	Mountain Laboratories	1/7/21 12:45 pm	Good

Liz Templeton 1/13/21 10:55am

CHAIN OF CUSTODY RECORD

Mountain Laboratories
9922 E. Montgomery Drive, Suite 13
Spokane Valley, WA 99206
Phone: 509-922-1365
Fax: 509-922-1380
Email: heidi@mountainlaboratories.com

Billing Information (if different)
Contact Name, Address & Phone

Project Name: Fitness Fanatics

Project No: 220-376E

Results: (check box)

	FAX:
	PHONE: 208-277-4792
	E-MAIL:
	MAIL

Customer Information: 2 of 2

TURNAROUND: ☐ 1 HR ☐ 48 HR ☐ 3 HR ☒ 3 Day ☐ 24 HR ☐ 5 Day

SAMPLE #	SAMPLE DESCRIPTION/ID	DATE/TIME	# OF CONTAINERS	PLM - BULK	REMARKS
6-1	Caulk				West Vent - Exterior
6-2	Caulk				↓
7-1	Concrete				Foundation exterior
7-2	concrete				↓
8-1	Caulk				North Duct
8-2	Caulk				North Duct

RELEASED BY (Signature)	DELIVERY METHOD	RECEIVED BY (Signature)	COMPANY	DATE / TIME RECEIVED	CONDITION
	hand	Christy Collins	Mountain Laboratories	1/7/21 12:45pm	Good.

Liz Templeton 1/13/21 10:55am

THE ASBESTOS INSTITUTE

Certifies that

Cole Warrick

has attended and received instruction in the EPA approved course

AHERA Building Inspector Refresher

on

June 17, 2020

and successfully completed and passed the competency exam.

Certificate:
ON-4644-10007-061720

Date of Examination:
17-Jun-2020
Date of Expiration:
17-Jun-2021

William T. Cavness
Director

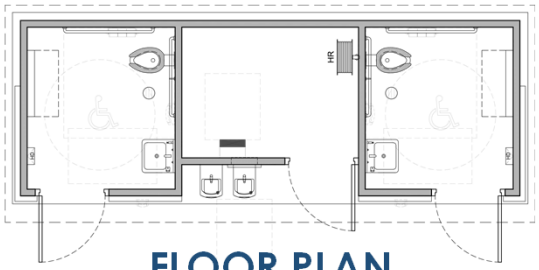
Approved Instructor

THE ASBESTOS INSTITUTE
20033 N. 19th Ave, Building 6, Phoenix, AZ 85027
602-864-6564 – www.theasbestosinstitute.com

This training meets all requirements for asbestos certification under Toxic Substance Control Act Title II.

APPENDIX N
TRAILHEAD RESTROOM

PROJECT REF#: 11234-2/23/2022-2



FLOOR PLAN

SCALE: NOT TO SCALE

RESTROOM BUILDING

SACRAMENTO, CALIFORNIA

O'NEIL PARK

ARTIST IMPRESSION: 3D RENDERING ONLY FOR REPRESENTATION. COLORS AND MATERIALS ARE SUBJECT TO CHANGE

COPYRIGHT 2022, PUBLIC RESTROOM COMPANY THIS MATERIAL IS THE EXCLUSIVE PROPERTY OF PUBLIC RESTROOM COMPANY AND SHALL NOT BE REPRODUCED, USED OR DISCLOSED TO OTHERS EXCEPT AS AUTHORIZED BY THE WRITTEN PERMISSION OF PUBLIC RESTROOM COMPANY.

PUBLIC RESTROOM COMPANY

Building Better Places To Go.℠

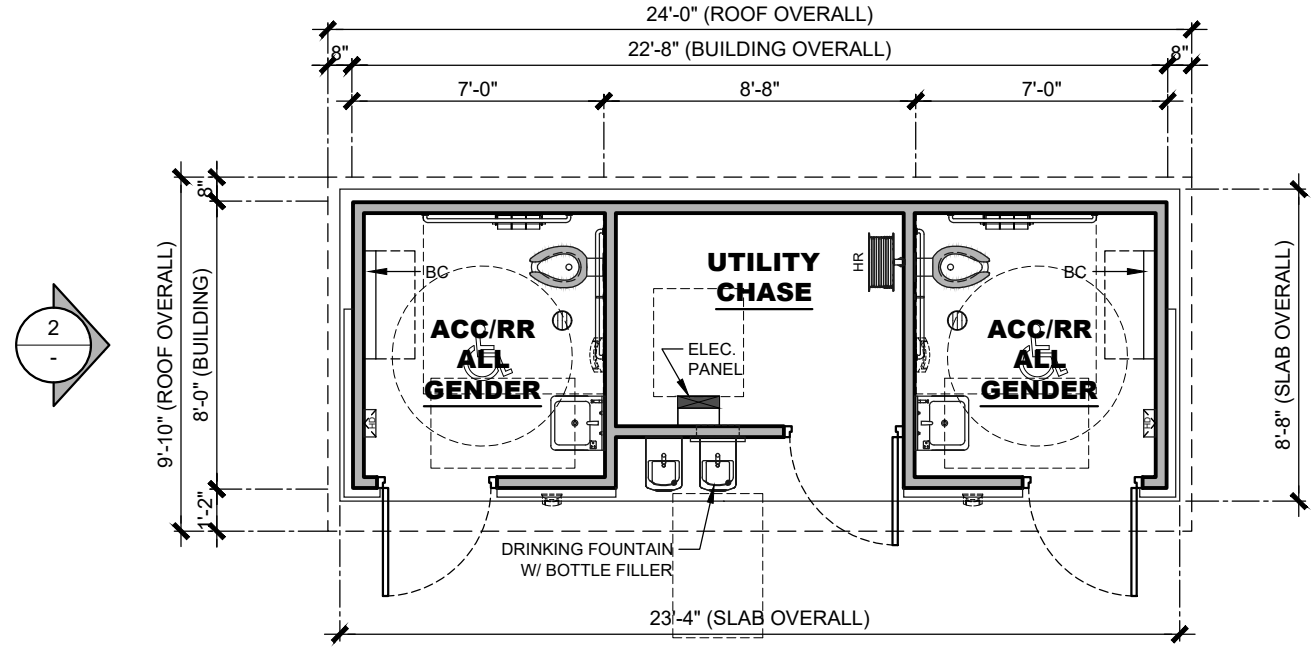
www.PublicRestroomCompany.com

2587 BUSINESS PARKWAY

MINDEN NEVADA 89423

P: 888-888-2060 F: 888-888-1448

PROJECT REF#: *11234-2/23/2022-2*

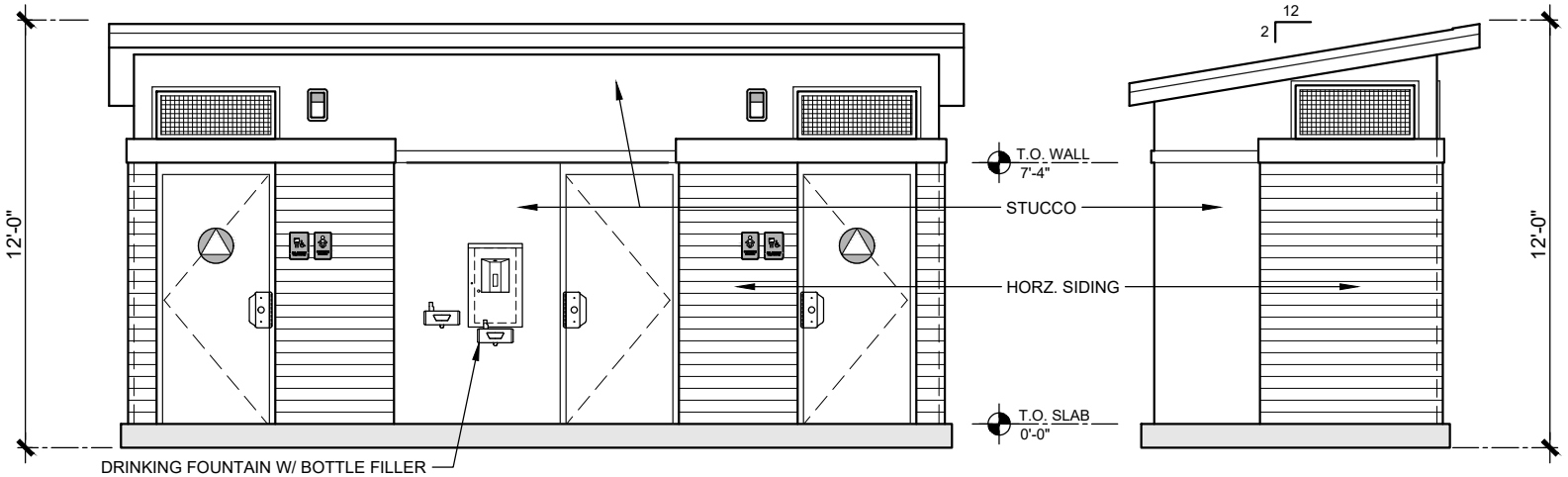


2 / -

1 / -

FLOOR PLAN

SCALE: 3/16"=1'0"



ELEVATION 1

SCALE:3/16"=1'-0"

ELEVATION 2

SCALE:3/16"=1'-0"

PUBLIC RESTROOM COMPANY
Building Better Places To Go.℠

COPYRIGHT 2022. PUBLIC RESTROOM COMPANY THIS MATERIAL IS THE EXCLUSIVE PROPERTY OF PUBLIC RESTROOM COMPANY AND SHALL NOT BE REPRODUCED, USED, OR DISCLOSED TO OTHERS EXCEPT AS AUTHORIZED BY THE WRITTEN PERMISSION OF PUBLIC RESTROOM COMPANY.

BUILDING TYPE: **RESTROOM BUILDING**	REVISION # **2**	REVISION DATE: **2/23/2022**	SHEET#	
		DRAWN BY: EOR		
PROJECT: **O'NEIL PARK SACRAMENTO, CA**	PROJECT #: **11234**	START DATE: **2/10/2022**	MAX. PERSON / HOUR: **90 S**	
		DRAWN BY: EOR		

Ph: 888-888-2060 | Fax: 888-888-1448

~NOT FOR CONSTRUCTION ~ PRELIMINARY DESIGN DRAWING ONLY ~ DO NOT SCALE, DIMENSIONS PRESIDE

OWNER / GENERAL CONTRACTOR AND PUBLIC RESTROOM COMPANY RESPONSIBILITIES

PUBLIC RESTROOM COMPANY RESPONSIBILITIES:

1. PROVIDE FULL ARCHITECTURAL PLANS AND ENGINEERING CALCULATIONS, STAMPED BY STATE GOVERNING AGENCY SUITABLE FOR GENERAL CONTRACTOR TO FILE FOR REQUIRED BUILDING PERMIT.
2. FURNISH AND INSTALL UNDERGROUND UTILITIES UNDER SLAB (INCLUDING TRENCHING) EXTENDING 6 FEET MAX. BEYOND THE BUILDING LINE, MIN. OF 24" - MAX OF 36" BELOW GRADE.
3. FURNISH AND INSTALL SLAB TO FOUNDATION ANCHORS PER DETAILS INCLUDED HEREIN. APPLICABLE ONLY TO BUILDINGS WITH FOUNDATIONS.

GENERAL NOTES:

1. THE DIFFERENCE IN THE ELEVATION BETWEEN THE FINISH FLOOR OF THE BUILDING AT EXTERIOR DOORS AND THE SIDEWALK OUTSIDE IS 1/4" MAX. PRC RECOMMENDS SIDEWALK TO BE FLUSH WITH FINISH FLOOR AT ALL DOORS.
2. THE PLAN & DETAILS HEREIN ARE SPECIFIC TO THE BUILDING SIZE AND MODULE CONFIGURATION OF THIS BUILDING MODEL.

OWNER / GENERAL CONTRACTOR RESPONSIBILITIES:

1. PREPARE BUILDING PAD AND OR FOUNDATION.
2. PROVIDE SITE PLAN & ENGINEERED FOUNDATION PLAN (IF APPLICABLE) AND ATTACH IT TO THE PUBLIC RESTROOM COMPANY'S DEPARTMENT OF HOUSING APPROVED DOCUMENTS AND OBTAIN NECESSARY PERMITS FROM LOCAL JURISDICTION.
3. VERIFY AND SCHEDULE NECESSARY INSPECTIONS WITH LOCAL JURISDICTION FOR SITE PERFORMED WORK BY OTHERS, AND FOR UNDER BUILDING SLAB PLUMBING CONNECTIONS MADE BY PRC.
4. COORDINATE SEWER INVERT ELEVATION WITH THE PUBLIC RESTROOM COMPANY PRIOR TO BUILDING INSTALLATION, VERIFY & COORDINATE LOCATION OF EXISTING UTILITIES INCLUDING WATER METER SIZE, TYPE, AND LOCATION OF EXISTING UTILITIES COMING INTO THE BUILDING SUPPLIED BY PRC
5. MAKE FINAL UTILITY CONNECTIONS (INCLUDING NECESSARY UTILITY BOXES).
6. PREPARE SITE FOR MINIMUM ALLOWABLE SOIL BEARING PRESSURE OF 1,500 psf, WITH SUB-GRADE COMPACTED TO 90% M.D.D.
7. SUPPLY AND STOCK PILE REQUIRED QUANTITY OF COARSE MASON SAND WITHIN BUILDING PROXIMITY FOR USE BY PRC FOR UTILITY TRENCH BACKFILL.
8. PROJECTS WITH FOOTINGS: PROVIDE SLEEVES IN FOOTINGS ACCORDING TO UTILITY LOCATION PLAN AND PAD / FOUNDATION PLAN DIRECTION.

GENERAL SITE CONDITION LIABILITY NOTE:

PUBLIC RESTROOM COMPANY (PRC) PROVIDES BUILDING PAD / FOUNDATION PLAN DRAWINGS FOR PLACEMENT OF OUR BUILDING ON SITE FOUNDATIONS / PADS FOR **REFERENCE ONLY**. PRC DRAWINGS DO NOT INCORPORATE SITE DESIGN FOR LOCAL CODES, SOILS CONDITIONS, FOOTING REQUIREMENTS, AND / OR ANY OTHER CONTRIBUTING SITE FACTORS UP TO AN INCLUDING HIGH WATER TABLES. IT IS THE RESPONSIBILITY OF THE OWNER / GENERAL CONTRACTOR TO PROVIDE A PROPER SITE DESIGN TO ACCOMMODATE THE BUILDING AS WELL AS PROVIDE PROPER SITE CRITERIA SO PRC MAY MODEL SEWER, WATER, AND ELECTRICAL DESIGNS WITHIN THE BUILDING. OUR BUILDING DESIGN INCLUDES AN 8" THICK REINFORCED CONCRETE SLAB AND ASSUMES FULL SLAB BEARING ON SOILS WITH A MINIMUM OF 1500 PSF BEARING CAPACITY. OUR BUILDING DESIGNS SURCHARGE THE SOIL BENEATH THE MAT SLAB AT APPROXIMATE 208 PSF. ANY BUILDING FOUNDATION IN ADDITION TO THE INTEGRAL MAT SLAB ARE SHOWN FOR **REFERENCE ONLY** AND SHOULD BE VERIFIED BY A LICENSED SOILS ENGINEER TO CONFORM WITH REQUIRED CODES.
PRC ASSUMES NO LIABILITY FOR THE OWNER OR GENERAL CONTRACTOR ACCEPTANCE OF THESE TYPICAL DRAWINGS WITHOUT VERIFICATION BY A LICENSED SOILS / FOUNDATION ENGINEER.

PUBLIC RESTROOM COMPANY
Building Better Places To Go.
Ph: 888-888-2060 | Fax: 888-888-1448

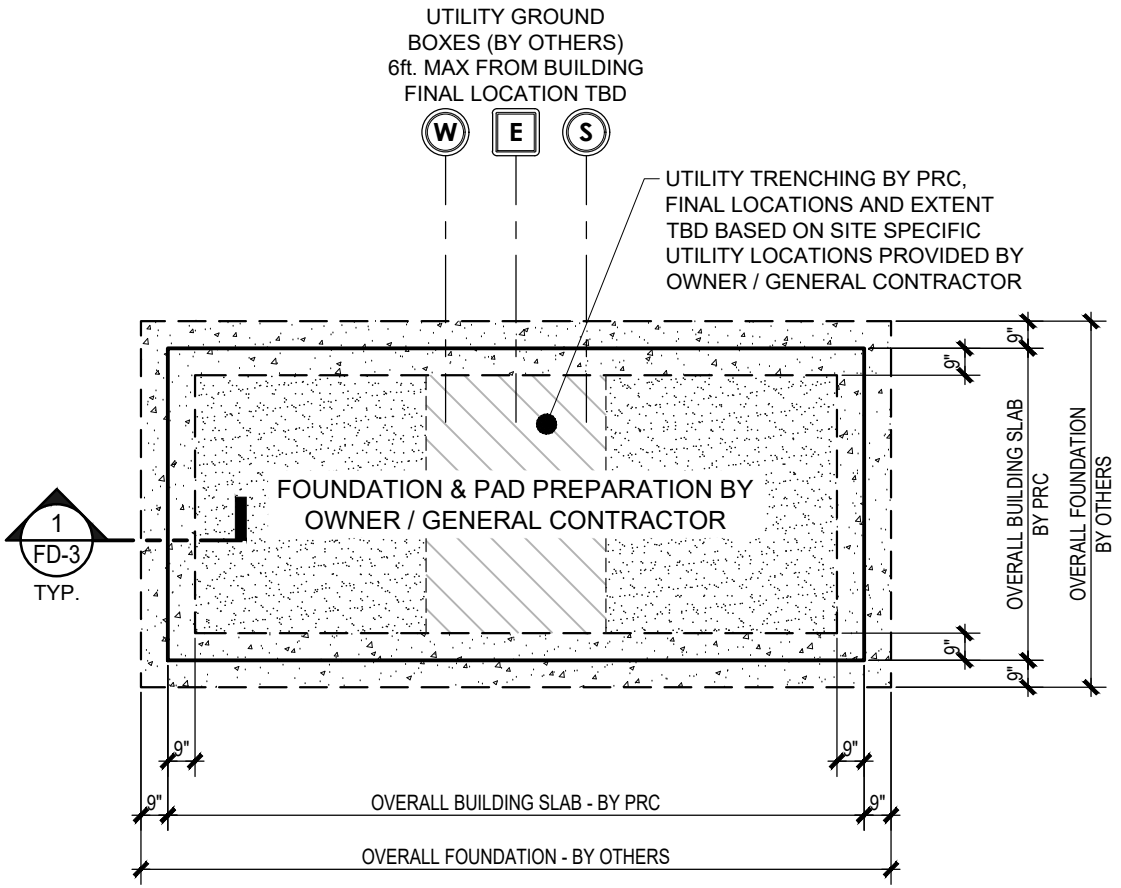
COPYRIGHT 2021, PUBLIC RESTROOM COMPANY THIS MATERIAL IS THE EXCLUSIVE PROPERTY OF PUBLIC RESTROOM COMPANY AND SHALL NOT BE REPRODUCED, USED, OR DISCLOSED TO OTHERS EXCEPT AS AUTHORIZED BY THE WRITTEN PERMISSION OF PUBLIC RESTROOM COMPANY.

BUILDING TYPE: **RESTROOM BUILDING**	DATE: -	DRAWN BY: -
	PROJECT #: -	
PROJECT: -	SHEET: 1 OF 4	**FD-1**

~NOT FOR CONSTRUCTION ~ PRELIMINARY DESIGN DRAWING ONLY ~ DO NOT SCALE, DIMENSIONS PRESIDE

NOTES:

1. **BOTTOM OF PRE-FAB BLDG. MANUFACTURERS SLAB IS DEAD FLAT. TOP OF FOOTINGS & COMPACTED BACK FILL MUST BE DEAD LEVEL. POUR FOOTING WITH LASER TRANSIT TO VERIFY TOP OF FOOTING. IF SHIM PLATES ARE REQUIRED A CHANGE ORDER IS REQUIRED.**
2. **REQUIRED ALLOWABLE SOIL BEARING PRESSURE = 1500 PSF; FIELD VERIFIED BY OTHERS**



1
FD-2

EXAMPLE FOUNDATION / PAD PREPARATION PLAN

SCALE: NOT TO SCALE

EXAMPLE FOR REFERENCE ONLY

PUBLIC RESTROOM COMPANY
Building Better Places To Go.
Ph: 888-888-2060 | Fax: 888-888-1448

COPYRIGHT 2021, PUBLIC RESTROOM COMPANY THIS MATERIAL IS THE EXCLUSIVE PROPERTY OF PUBLIC RESTROOM COMPANY AND SHALL NOT BE REPRODUCED, USED, OR DISCLOSED TO OTHERS EXCEPT AS AUTHORIZED BY THE WRITTEN PERMISSION OF PUBLIC RESTROOM COMPANY.

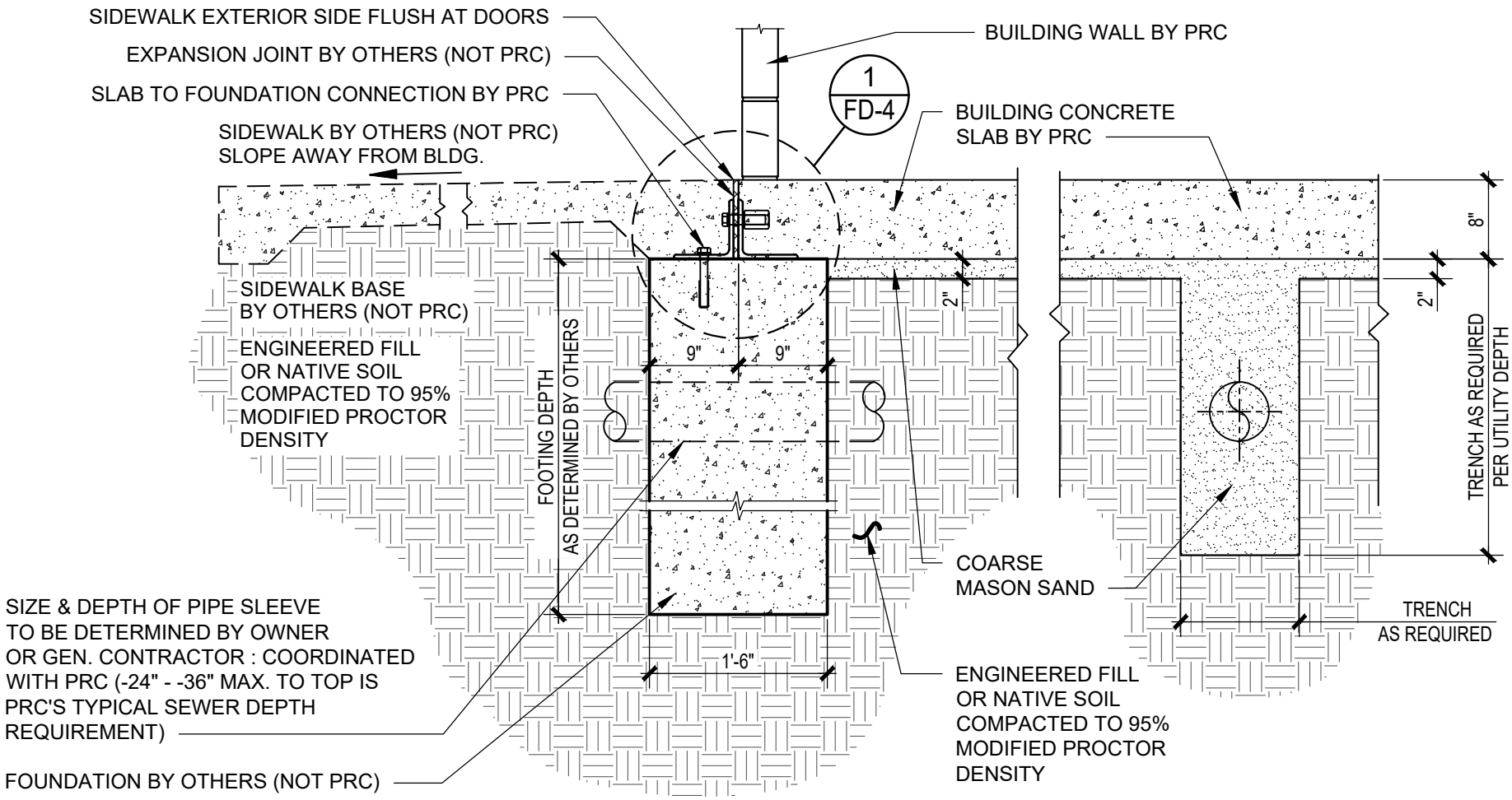
BUILDING TYPE: **RESTROOM BUILDING**	DATE: -	DRAWN BY: -
	PROJECT #: -	
PROJECT: -	SHEET: 2 OF 4	**FD-2**

~NOT FOR CONSTRUCTION ~ PRELIMINARY DESIGN DRAWING ONLY ~ DO NOT SCALE, DIMENSIONS PRESIDE

NOTES:

1. **BOTTOM OF PRE-FAB BLDG. MANUFACTURERS SLAB IS DEAD FLAT. TOP OF FOOTINGS & COMPACTED BACK FILL MUST BE DEAD LEVEL. POUR FOOTING WITH LASER TRANSIT TO VERIFY TOP OF FOOTING. IF SHIM PLATES ARE REQUIRED A CHANGE ORDER IS REQUIRED.**

2. **REQUIRED ALLOWABLE SOIL BEARING PRESSURE = 1500 PSF; FIELD VERIFIED BY OTHERS**



1 / FD-3 TYPICAL FOUNDATION SECTION DETAIL

SCALE: NOT TO SCALE

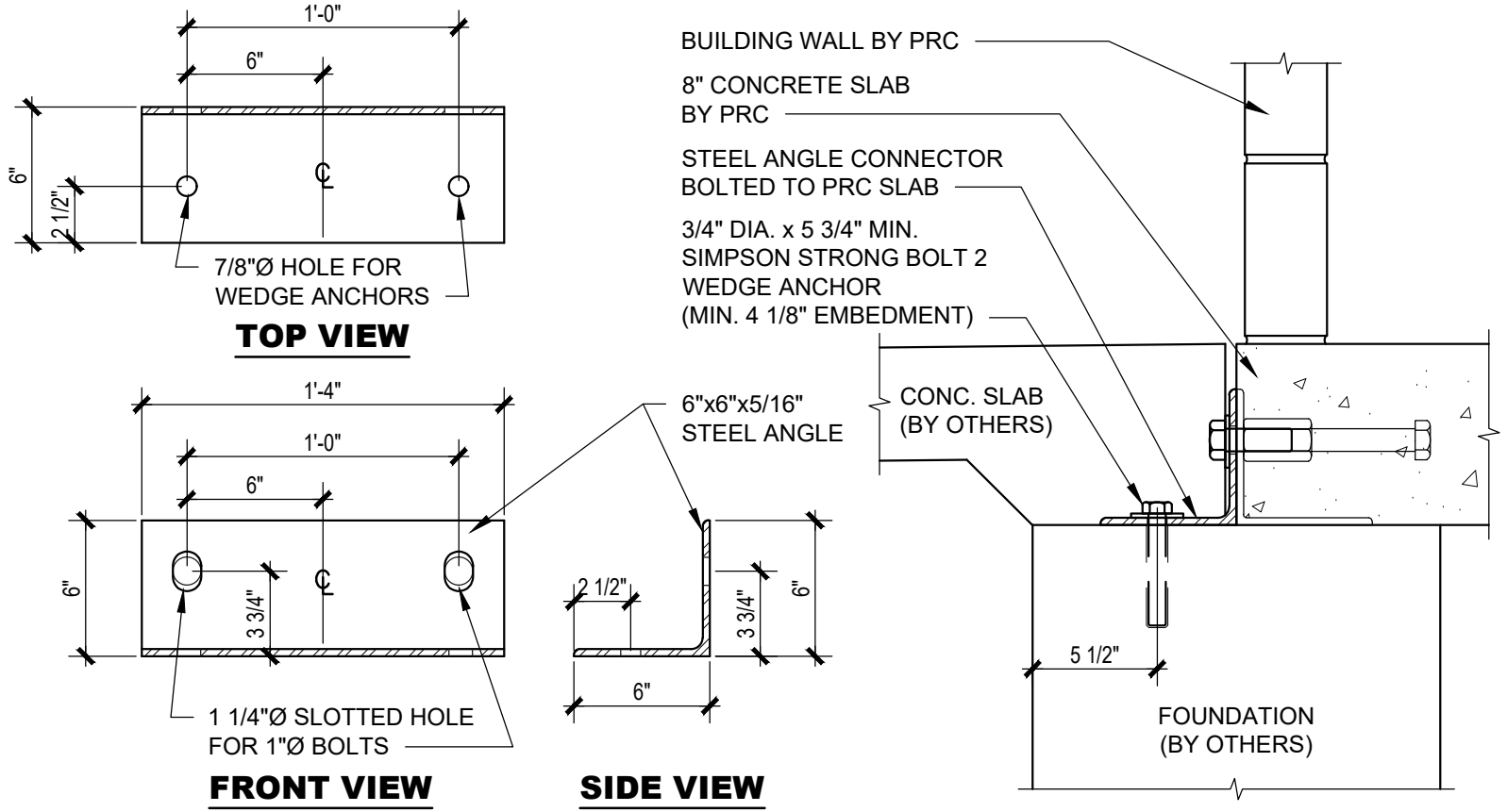
PUBLIC RESTROOM COMPANY
Building Better Places To Go.
Ph: 888-888-2060 | Fax: 888-888-1448

COPYRIGHT 2021, PUBLIC RESTROOM COMPANY THIS MATERIAL IS THE EXCLUSIVE PROPERTY OF PUBLIC RESTROOM COMPANY AND SHALL NOT BE REPRODUCED, USED, OR DISCLOSED TO OTHERS EXCEPT AS AUTHORIZED BY THE WRITTEN PERMISSION OF PUBLIC RESTROOM COMPANY.

BUILDING TYPE: **RESTROOM BUILDING**	DATE: -	DRAWN BY: -
	PROJECT #: -	
PROJECT: -	SHEET: 3 OF 4	**FD-3**

~NOT FOR CONSTRUCTION ~ PRELIMINARY DESIGN DRAWING ONLY ~ DO NOT SCALE, DIMENSIONS PRESIDE

NOTE:
QUANTITY AND LOCATIONS OF ANCHORS TO BE DETERMINED BY PRC ENGINEER



1
FD-4

SLAB TO FOUNDATION ANCHOR DETAIL (BY PRC)

SCALE: NOT TO SCALE

PUBLIC RESTROOM COMPANY
Building Better Places To Go.
Ph: 888-888-2060 | Fax: 888-888-1448

COPYRIGHT 2021, PUBLIC RESTROOM COMPANY THIS MATERIAL IS THE EXCLUSIVE PROPERTY OF PUBLIC RESTROOM COMPANY AND SHALL NOT BE REPRODUCED, USED, OR DISCLOSED TO OTHERS EXCEPT AS AUTHORIZED BY THE WRITTEN PERMISSION OF PUBLIC RESTROOM COMPANY.

BUILDING TYPE: **RESTROOM BUILDING**	DATE: -	DRAWN BY: -
	PROJECT #: -	
PROJECT: -	SHEET: 4 OF 4	**FD-4**

~NOT FOR CONSTRUCTION ~ PRELIMINARY DESIGN DRAWING ONLY ~ DO NOT SCALE, DIMENSIONS PRESIDE

APPENDIX O
IRVIN WATER DISTRICT NO. 6 GENERAL SPECIFICATIONS

IRVIN WATER DISTRICT NO. 6
DESIGN CRITERIA AND GENERAL SPECIFICATIONS
FOR
WATER MAIN INSTALLATIONS (Updated 10/7/21)

I. GENERAL

The Irvin Water District No. 6 has adopted the Standard Specifications for Road, Bridge, and Municipal Construction of the Washington State Department of Transportation and the American Public Works Association (WSDOT/APWA) latest edition as a standard and uses AWWA as a guide. The applicable portions of these Standard Specifications shall apply to all work performed on or for the Irvin Water District water system.

The following items shall apply to all projects:

1. Prior to construction, plans of proposed facilities are to be submitted in duplicate to the District for approval. Said plans must bear the seal of a professional engineer licensed in the State of Washington. If fire flow is involved, the submitted plans must also bear the signature of the Fire District to be accepted. One copy of the plans bearing the approval signature of the District will be returned to the Owner and these approved plans must be on the job site at all times during construction. Exceptions to the plan requirements can only be granted by the Water District Board of Commissioners.

   Prior to submitting design documents for District review, the developer shall prepare project documentation as follows:

   Two sets of design drawings and one pdf of each plan/profile sheet, details, service area boundary plan, plat, and design calculations. The cover sheet of the design drawing set shall include the following two items:

a. Project design criteria - minimum information as follows:

- Total # of water service meters _____Each
- Peak demand for each meter _____GPM
- Number of buildings _____Each
- Floor space of largest building _____Sq. Ft.
- Total floor space – all buildings _____Sq. Ft.
- Number of floors each building _____Each

- Type of construction (I, IIA/B, II, IV, etc.) _____
- Occupancy _____
- Number of fire hydrants _____Each
- Fire hydrant spacing, proximity to structures _____Feet
- Number of buildings w/ approved automatic sprinkler system _____Each
- Number of fire line connections _____Each

b. Signature block for construction approval shall be as follows:

CONSTRUCTION APPROVAL STATEMENT

WATER PURVEYOR

Irvin Water District No. 6, with PWSID# 36050-R, has reviewed and approved this design for construction.

_____	_____	_____
Signature	Title	Date

FIRE DISTRICT

The Spokane Valley Fire Department has reviewed and approved, for construction, the fire hydrant locations shown on these drawings and the following project design criteria

BLDG. FIRE FLOW_____GPM DURATION_____HOURS

_____	_____	_____
Signature	Title	Date

2. The District's Engineer shall review and approve all Plans prior to construction at the expense of the Owner/Developer. A minimum of fifteen (15) days shall be allowed for this review process.

3. The Owner/Developer shall be responsible for obtaining plan approval or clearance from the Washington State Department of Health for his/her proposal, as may be necessary.

4. Prior to the start of construction, a preconstruction meeting shall be held at the District office. The Contractor and Owner shall be in attendance and shall be expected to provide the schedule and method of work, anticipated shut-offs dates, any material delays, questions, and general discussion of any foreseen issues during construction. The District

shall have their Engineer's Construction Inspector on site, at all times, during the specific construction of the water facilities. The construction inspector shall inspect all water construction work at the expense of the Owner/Developer including all water main installation, bedding and the first 3′ of backfill, valve assemblies, service connections, meter assemblies, vault installations, vault piping, and all other work associated with the installation of the water utility facilities. It shall be incumbent upon the Owner/Developer to coordinate his construction activities and scheduling with the inspector as his/her time shall be billed for showing up on site if the Contractor is absent without notification.

5. The District Manager or his authorized representative are the only individuals with authority to open or close existing valves for construction purposes. The Owner/Developer shall notify the District at least 48 hours prior to their need to turn off water for construction purposes.

6. Obtaining necessary permits shall be the responsibility of the Developer, Builder, Contractor, or property Owner, affected.

7. Where franchises, permits, easements, or deeds to property are required, as deemed necessary by the District, it shall be the responsibility of the affected party to acquire the same and submit appropriate documentation both on plans and by filing with the County Auditor.

8. Fire Protection Requirements shall be established by the City of Spokane Valley Fire Department.

9. Any changes to the plans or specifications shall be submitted to the District for approval fifteen (15) days prior to construction. Changes shall be submitted on an individual basis and treated as same.

10. Within ten (10) days after construction has ceased, complete and accurate "As Built" drawings shall be submitted to the District in AutoCAD format (.dwg). These drawings shall include dimensions from permanent reference points for all water lines, elbows, valves, and other such appurtenances in sufficient detail to facilitate future location.

11. The Owner/Developer shall reimburse the District for all Legal, Engineering, and other incidental costs that the District may incur as a result of his/her proposal. This shall include the District Engineer's costs associated with adding the new facilities to the District's Official Water System Map, and Hydraulic Analysis Model. Failure to pay these fees shall be grounds for immediate water shut off to the development. Current hourly rates for Legal, Engineering, and Inspection fees may be obtained by contacting the District.

12. Prior to the start of construction, all construction permits must be in hand and the Owner/Developer must have reimbursed the District for all review costs. After that the District will release one set of approved plans and construction can be initiated.

II. WATER DISTRIBUTION

These specifications are intended for use in construction and as an aid to the Licensed Professional Engineer in their design of facilities to become a part of the Irvin Water District Water System. All design must be approved by the District prior to submitting to Department of Health as per their appropriate rules and regulations.

All distribution pipelines shall be looped. In some limited instances, dead ends may be permitted, at the District's sole discretion and without reason for cause; however, tees and crosses are required for future system extension. Dead-end pipelines shall require a blow-off or fire hydrant for flushing. In-line valves are necessary at street intersections for isolation and control of the system. Water mains shall be installed across the entire front of the property, corner to corner. If the lot is on a corner, the main shall be installed around the corner to the end of the property. Water mains shall extend the entire length of frontage property within the development including to the end of any contiguous property. At the end of the property, the main shall terminate with a hydrant/blowoff and valve, or at minimum a valve, and 20′ of same size pipe.

All construction materials furnished shall be approved by District and shall be new and unused.

A. Design Flows

1. Design fire flows will be the current flows as required by the City of Spokane Valley Fire Department.
2. District will review anticipated flow requirements for a new area to be served prior to final design of system.

   Depending on type of development, lot size, etc., requirements may vary and should be established before design of system starts. The District shall also verify that supply is available and net effect of increased demand on the District's system.
3. Minimum size distribution main shall be eight (8) inch.
4. Main sizing shall be based on a flow velocity not exceeding 8 Ft./Sec. at peak daily flow plus fire flow. Minimum residual pressure shall be 40 p.s.i.

B. Water Mains

1. All mains shall have a minimum of four and a half (4½′) feet, and a maximum of six (6′), of earth cover above the top of pipe. Minimum cover shall be maintained under all '208' or other swale systems. Less than 4′-6″ cover may be acceptable for short distances where vertical transitions are needed to connect to existing water lines or as approved by the District.

2. Where the bottom of the trench is found to have unstable and/or unsuitable soils or rock the trench shall be excavated to a point at least 6" below the bottom of the pipe and backfilled with approved bedding material to a point 8" above the top of the pipe. Bedding material may be secured from local sources and shall be clean, coarse, granular material with 100% passing a 1/2" sieve.

   In all cases the trench shall be backfilled by hand to a point at least 8" above the top of the pipe, or in accordance with the manufacturer's recommendations with select material containing no large stones, roots, or other material which might endanger or disturb the pipe. The applicable provisions of AWWA Standards C600 shall apply to all excavation and backfilling work. Shaping, backfilling and compaction shall be done in compliance with the requirements of the District, State Highway and/or City Road Departments, as may be appropriate. Settling of the trench within a period of one year after completion of the work shall be considered incontrovertible evidence of inadequate compaction and the Owner/Developer shall be responsible for remedying the condition, including the replacement of surfacing, if necessary, at the cost of the Owner/Developer.

3. Permits and any other such arrangements that may be required for working on City right-of-way and private easements shall be the responsibility of the Owner/Developer and shall be obtained prior to start of work.

4. Water mains shall be installed under normal conditions above all sewer lines. When deviations occur, water main shall be encased in the same material and SDR as the carrier pipe with a minimum interior separation of 2", a perpendicular distance of ten (10) feet on either side of the water main or in accordance with Dept. of Ecology standards.

5. Water mains shall have a minimum clearance of fifty (50) feet from all drain fields.

6. Type of pipe: Pipe may be any of the following, at the option of the District. In general, pipe 12" and smaller may be PVC and pipe 16" and larger shall be ductile iron.

   a. Ductile iron, Class 50 may be used for distribution mains, according to AWWA. C151, & ANSI A21.51 latest edition. Pipe thickness to be in accordance with manufacturer's recommendations for particular installation.

   b. All PVC pipe shall be Class 150 SDR 18 with OD matching D.I. or C.I. and conform in all respects to AWWA Standard C-900 or C-905, latest edition. Special circumstances may require Class 200 or ductile iron pipe in areas of high pressure and/or physical conditions.

   d. Service lines from mains to curb stops shall be copper tubing per ASTM B 88, Type K or 200 psi polyethylene pipe.

   e. All fittings shall have the same working pressure and be designed for the pipe being installed. Makeshift and/or incompatible fittings, couplings, and other appurtenances will not be permitted. All PVC and ductile iron pipe fittings shall be cement mortar lined ductile iron.

f. Tracer wire shall be #12 coated copper, taped to the top of the pipe, in a continuous strand for locating pipe. Splices shall be made using a direct burial device, UL Listed for direct burial use. Tracer wire shall extend and wrap around the base, at ground level, of all fire hydrants. Tracer wire shall extend along all service lines and through all meters, DCVA boxes, and vaults with two 3-inch diameter loops inside. Tracer wire shall extend from the meter box/DCVA to the foundation of any served buildings and shall terminate with a 3' #4 rebar at the edge of foundation. Tracer wire shall extend up all valve boxes; the wire shall run on the outside of the bottom section of valve box, and inside the top section of valve box.

7. Thrust blocks shall be placed on all bends, tees, end caps, fire hydrants or other locations as may be deemed necessary and as shown on plans to prevent pipeline separation due to water hammer. The blocks shall be poured in place. 3,000 psi. in 28 days concrete shall be used. All blocks shall be poured to undisturbed earth, but in all cases shall have a minimum of four square feet of direct contact with undisturbed earth. Thrust Blocks shall be sized to resist design flows and pressures, including water hammer.

8. Mains shall be located generally on the side of streets, avenues, highways, and right-of-ways.

9. Placement of mains in right-of-ways shall be as follows:

   Inside the North or East curb line and in accordance with City of Spokane Valley Engineer's requirements.

   Where mains are extended into private property, easements for construction and perpetual maintenance shall be obtained prior to acceptance by District. Easements shall be at least 15' wide or as may be required by the District, and shall specify that no permanent buildings, fences or other structures shall be erected over water mains(s).

10. No field welding or torch cutting of pipe shall be allowed on coated pipe. All cuttings shall be accomplished with a specified cutter. Welds shall be done in a shop and coatings equal to original re-applied.

11. Badly bent or stressed pipe shall be removed and replaced. All damaged wrapping shall be repaired with coatings approved by the District. In all cases the minimum accepted coating shall be Koppers Pankote "300" enamel.

12. Lead caulked, flared, soldered, or solvent weld joints shall not be allowed.

13. All gaskets required between flanges shall be one-eighth inch (1/8) thick red rubber ring gaskets only, no full-faced gaskets. They shall comply with AWWA specifications.

14. All mains and their appurtenances shall be hydrostatically tested at 200 p.s.i. at the highest point in the line and maintain this pressure, for a period of one hour. Testing shall include all mains, service piping to meter angle-stop valve, and opened hydrants. This shall also apply to all mains having joints open for inspection. No leakage will be allowed, and all defects shall be remedied and the line retested until it complies with the above

requirements. Testing for cut-in facilities that cannot be tested shall be open and visually inspected with a paper towel beneath the applicable facilities for a period of 2 hours. Final testing shall be done in the presence of the District's Inspector, Engineer, or authorized representative. All necessary equipment, gauges, tools, etc., for testing the installed piping shall be provided by the Owner/Developer including any temporary facilities required where blowoffs or hydrants are not available.

15. Disinfection of all mains shall be accomplished according to AWWA specifications and the Washington State Department of Health. Mains shall then be flushed and sampled by the District. These actions must be accomplished prior to placing mains in service for domestic consumption, as per Spokane County Health District Requirements. Owner/Developer shall be responsible to contact District for clearance from same and bear all costs for the sampling process.

    Placement of chlorine in the pipe during the laying operation shall be by granular hypochlorite only at each joint. Tabular form of hypochlorite is not acceptable. Use sufficient hypochlorite to obtain 25 mg/l (ppm) chlorine residual; use a fill velocity of less than 1 ft/sec.; allow water to remain in pipe at least 24 hours. Provide sufficiently sized ports to accomplish a minimum flushing flow velocity of 2 ft/sec. to remove foreign material. Use same flushing velocity if pipe is flushed prior to disinfection. This entire process must be repeated if unsatisfactory bacteriological test results are obtained.

16. Connection to existing pipelines where cut-ins are to be made in existing pipes shall be made by the District or in their inspector's presence only upon approval by the District.

Valves:

In general, valves shall be placed on every leg of every tee or cross in the proposed development except where no services or connections exist between two valves on the same pipe. The District shall determine the number and valve placement for all water facilities.

A. Buried

17. To accomplish standardization, the following brands of gate valves will be allowed:

Mueller	Flanged, hub end, or mechanical joint
Dresser	Flanged, hub end, or mechanical joint
Kennedy	Flanged, hub end, or mechanical joint

All gate valves shall have "O" ring type packing glands and be resilient seat.

18. To accomplish standardization the following butterfly valves will be allowed:

Dresser Style 450	Flanged, hub end, or mechanical joint

Butterfly valves shall be used only where special applications are approved and on pipe 16-inches and larger. When installed they shall have a valve indicator which clearly shows position of disc.

19. All gate valves shall be resilient seat with non-rising stem with 60,000 lb. tensile strength stem, conforming to AWWA C-509.

20. Two-inch square operating nuts will be provided for all underground buried valves.

21. Valve boxes will be set so the bell on the bottom section is at the base of the operating nut only. Box shall not set on valve bonnet. Valve box bottom section barrel shall be not less than six (6) inches in diameter. If extensions are required five (5) inch double hub soil pipe will be allowed, however normal bottom sections must be used initially. The top of the bottom section must be inside the top section not less than four (4) inches and not more than ten (10) inches. Box shall be adjustable. A Trumbull Valve Box Alignment Device shall be installed on the operating nut of all valves prior to the installation of the valve box.

22. Valve boxes will be set to final finished grade. Where pavement is to be installed the contractor shall be responsible for the setting of boxes to final pavement grade. Final acceptance of these items shall not be given until this is completed. (This also applies to concrete sidewalks and curbs).

23. Top sections shall be minimum fourteen inches (14") in length having lip at the bottom of section and capable of holding Tyler 16T 6855 6865 lid or equal.

24. Thrust or bearing blocks will be required wherever City personnel and/or Engineer require.

25. All valves shall open to the left only.

Fire Hydrants

Fire Hydrants located on the Irvin Water District distribution system are owned and maintained by the District. All fire hydrants installed must conform to the District's specifications. Hydrants provided shall be traffic model Type M & H, style 129T, American-Darling B-62-B, or Mueller A-423 with 2-1/2" hose nozzles, 4-1/2" steamer nozzle, MVO 5-1/4", 4-1/2' bury (minimum), 2-1/16" drain holes, mechanical joint shoe connection, 1-1/2" point to flat pentagon operating nut and open left (counter-clockwise). Pre-approved alternate fire hydrants will be considered by the District. All hydrants shall include a gate valve placed at the main. Hydrants shall be installed in accordance with the Standard Plan provided in these Specifications. A Storz Adapter shall be installed on the pumper port of all hydrants.

Services and Metering Thereof

26. Applications for service will be made at the Water District Office including a legal description of the property to be served. A plot plan may be required. The size of the service will be determined by the District with a 1" minimum. HOOK UP FEE will be paid before installation

will be made. Any other charges incidental to the extension of service lines to the applicant's property will be paid by the applicant.

Each service shall be served by a separate service line tapped to a District distribution main. All taps 2" and smaller must be made by District personnel, at the District's discretion. The Owner/Developer must provide all materials (dbl. strap saddle) and pay the District's fee for the tap.

Minimum size domestic service shall be one inch.

27. Meters shall be required for all water use from the District's system.

28. Water Meter. On each property there shall be installed at the expense of the user a water meter of a type approved by the District (See Standard Plan) for each dwelling, building, or other structure except apartment houses or single service multiple purpose structure.

29. Location. The location of the meter or meters used in measuring the customer's use of water shall generally be at the property line and be in a place satisfactory to the District's representative before services will be supplied. The water meter must be located in such manner as to provide ready and convenient access. All meter and DCVA's shall be placed in non-drivable surfaces only.

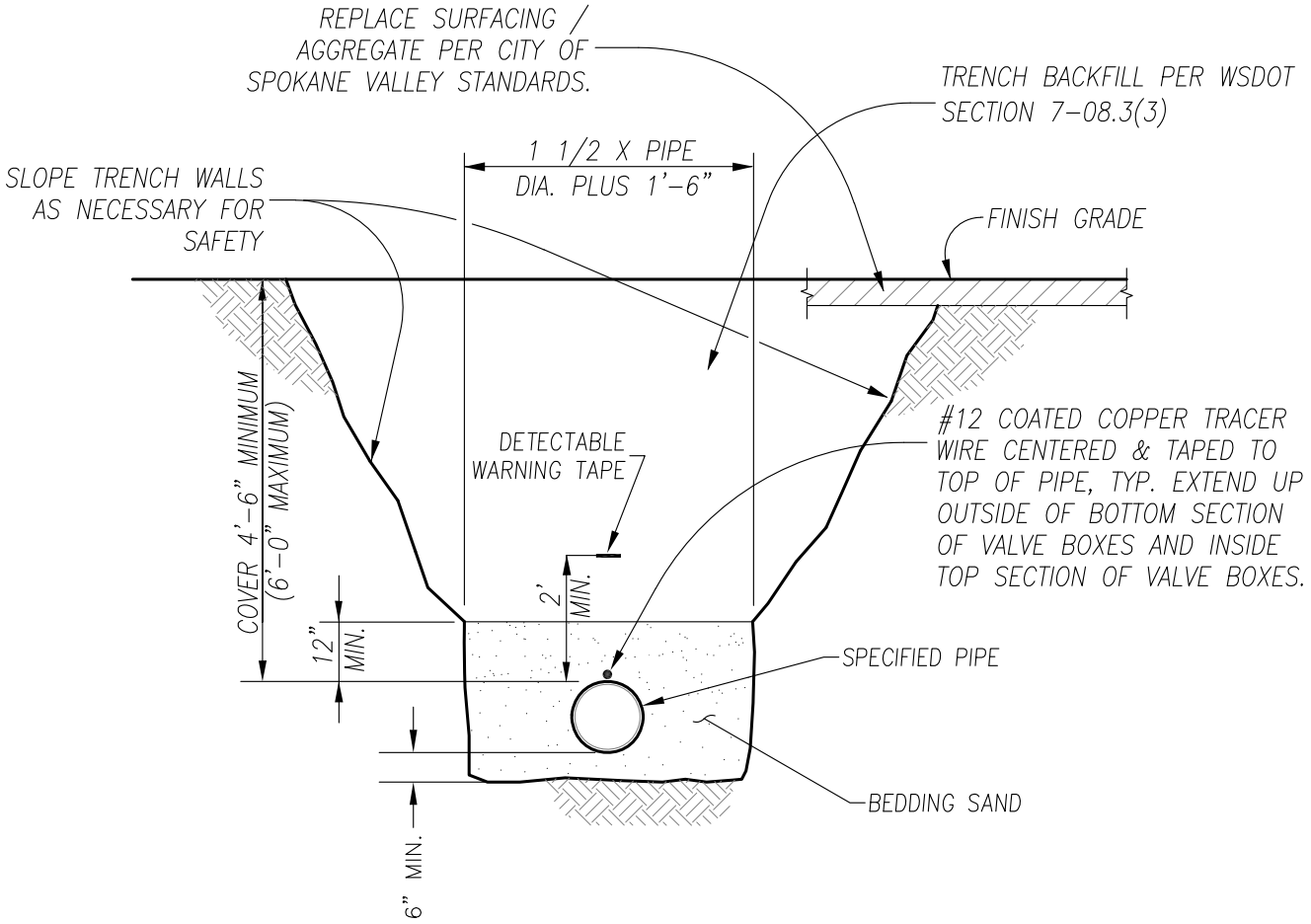
III. WORKMANSHIP AND MATERIALS

All construction work shall be performed by workers skilled in the trade at which they are performing and completed work shall be neat, sound and particularly suited for its intended use. All materials shall be new and unused and specifically designed for its intended use. If, in the opinion of the District Manager or his authorized representative, the completed work does not show a degree of craftsmanship, materials used are inferior or otherwise not suited for use in the Irvin Water District Water System, or other makeshift connections, devices, or appurtenances have been installed, then this shall be cause to reject the work. All such rejected work shall be removed and replaced to the District's satisfaction and at the Owner/Developer expense.

IV. STANDARD DETAILS

The attached standard details shall be included on the construction drawings, as applicable, for the various items of work.

DETAIL DRAWING No. 101



NOTES:

SEE O.S.H.A. & W.I.S.H.A. CONSTRUCTION STANDARDS FOR EXCAVATIONS.

CALL BEFORE YOU DIG: 811

TRACER WIRE SPLICING SHALL CONSIST OF A DIRECT BURIAL DEVICE, UL LISTED, FOR THE PURPOSES OF DIRECT BURIAL.

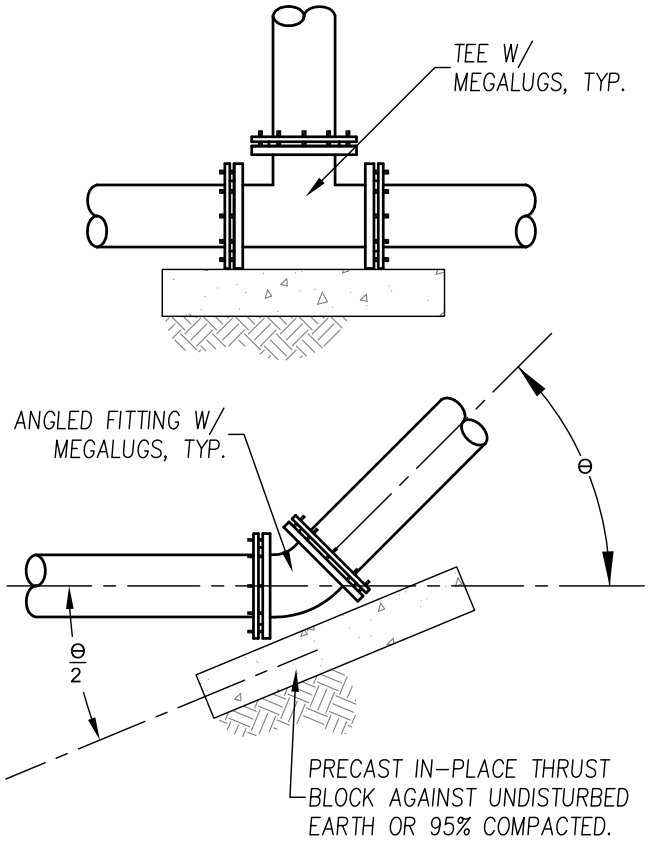
ALL VALVES SHALL HAVE A TRUMBULL VALVE BOX ALIGNMENT DEVICE INSTALLED ON THE OPERATING NUT PRIOR TO VALVE BOX INSTALLATION.

N.T.S.

IRVIN WATER DISTRICT NO. 6

TYPICAL WATER MAIN TRENCH

DETAIL DRAWING No. 102



MIN. THRUST BLOCK SIZING - S.F.

Θ	4"	6"	8"	10"	12"
11¼°	1	1	2	2	3
22½°	1	2	3	4	6
45°	2	3	6	8	12
90°	3	6	10	15	21
TEE/CAP/VALVE	3	5	9	14	20

MIN. RESTRAINED JOINT LENGTH - FT.

Θ	4"	6"	8"	10"	12"	16"
11¼°	3	5	6	7	8	10
22½°	7	9	11	13	16	18
45°	13	18	23	28	32	40
90° TEE/CAP	31	43	54	66	76	97

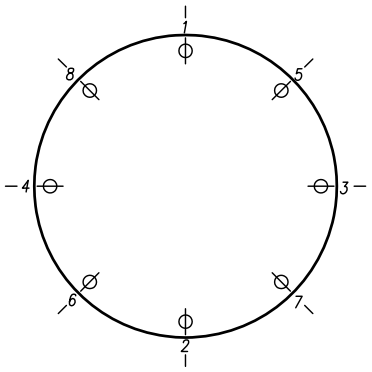
MULTIPLY RESTRAINED LENGTHS BY 1.20 FOR PVC. RESTRAINED LENGTH NOT REQ'D BELOW 12", USE THRUST BLOCKS UNLESS VERT. BENDS EXIST. USE RESTRAINED LENGTH FOR ALL VERT. BENDS, NO REBAR OR VERT. T'BLOCKS.

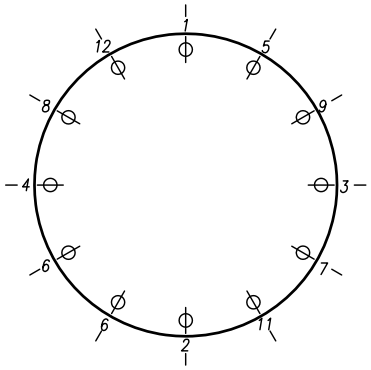
MIN. S.F. OF BEARING AREA AGAINST UNDISTURBED EARTH. CONTRACTOR IS REMINDED THAT VOLUME/WEIGHT OF CONC. CONTRIBUTES LITTLE HORIZ. RESISTANCE AGAINST PIPE THRUST.

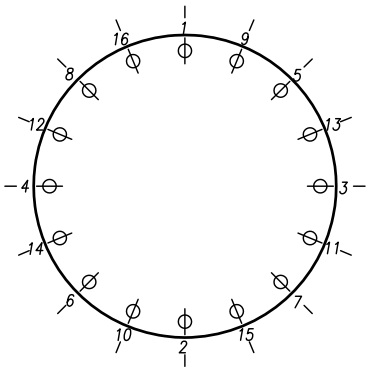
THRUST BLOCKS MAY BE PYRAMIDED TO ACHIEVE AREA IF OVER STD. PRECAST SIZE.

RESTRAINED LENGTH SHALL BE DEVELOPED USING FIELD-LOK OR DIAMOND-LOK GASKETS, NO BELL RESTRAINTS UNLESS SS.

THRUST RESTAINT







SEQUENTIAL ORDER
FOR TIGHTENING BOLTS

8 BOLTS	12 BOLTS	16 BOLTS
1-2	1-2	1-2
3-4	3-4	3-4
5-6	5-6	5-6
7-8	7-8	7-8
	9-10	9-10
	11-12	11-12
		13-14
		15-16

BOLT TORQUE REQUIREMENTS

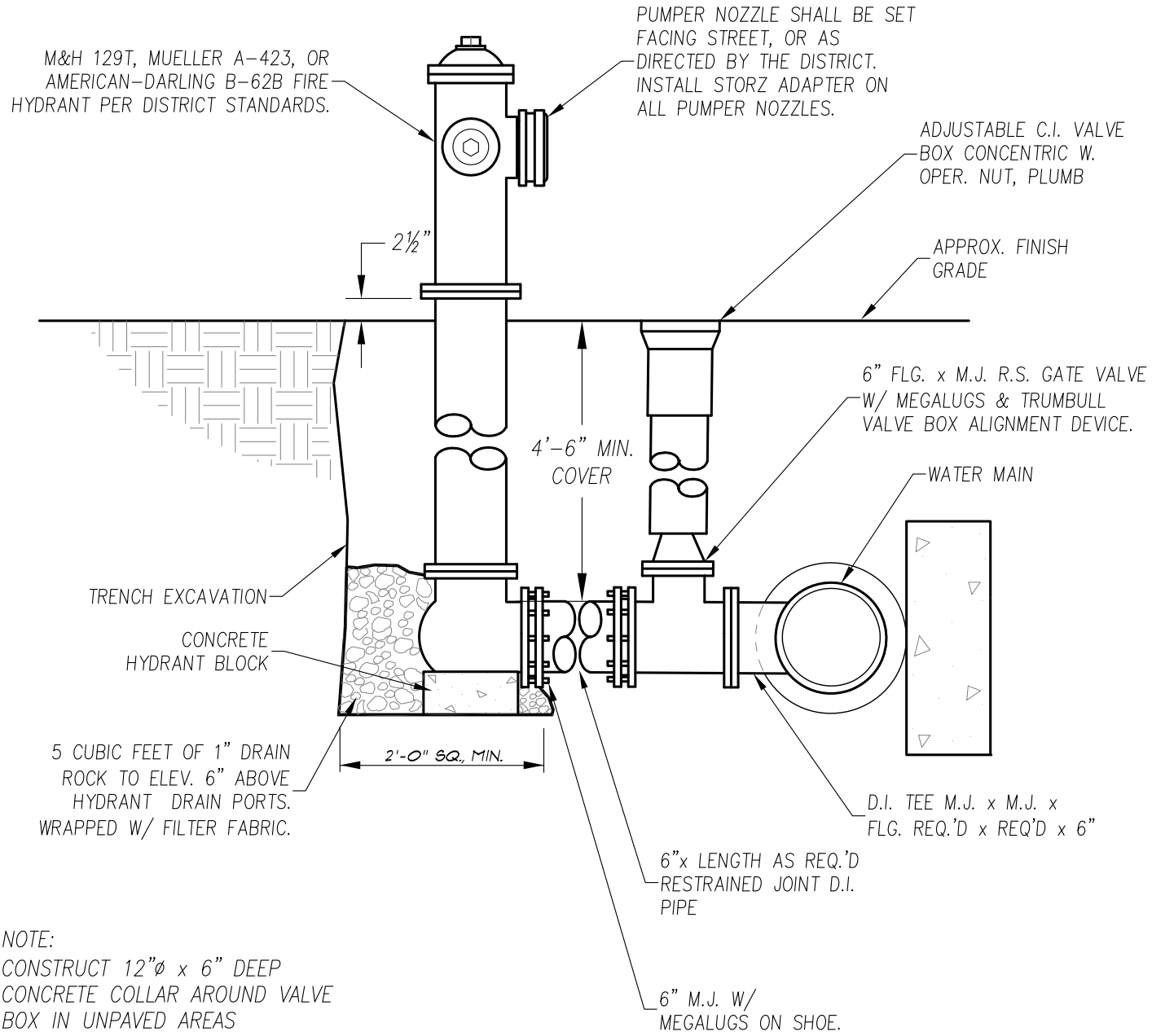
PIPE SIZE	PIPE & FITTINGS 250 PSI
4"	90 FT./LB.
6"	90 FT./LB.
8"	90 FT./LB.
10"	90 FT./LB.
12"	90 FT./LB.
14"	110 FT./LB.
16"	110 FT./LB.
18"	120 FT./LB.

BOLT SEQUENCE & TORQUE

IRVIN WATER DISTRICT NO. 6

THRUST RESTRAINT, BOLT SEQUENCE, & TORQUE

DETAIL DRAWING No. 103



NOTE:
CONSTRUCT 12"ø x 6" DEEP CONCRETE COLLAR AROUND VALVE BOX IN UNPAVED AREAS

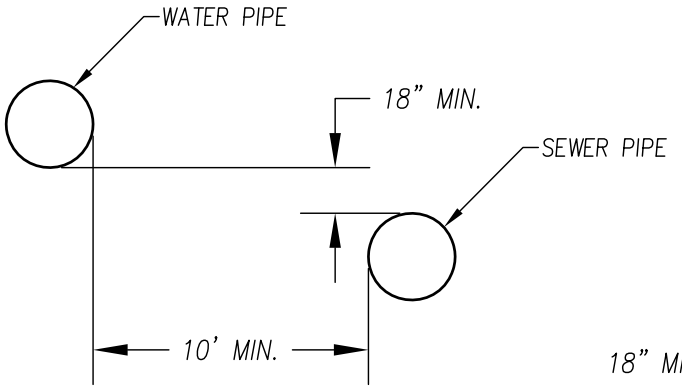
ALL VALVES SHALL HAVE A TRUMBULL VALVE BOX ALIGNMENT DEVICE INSTALLED ON THE OPERATING NUT PRIOR TO VALVE BOX INSTALLATION.

N.T.S.

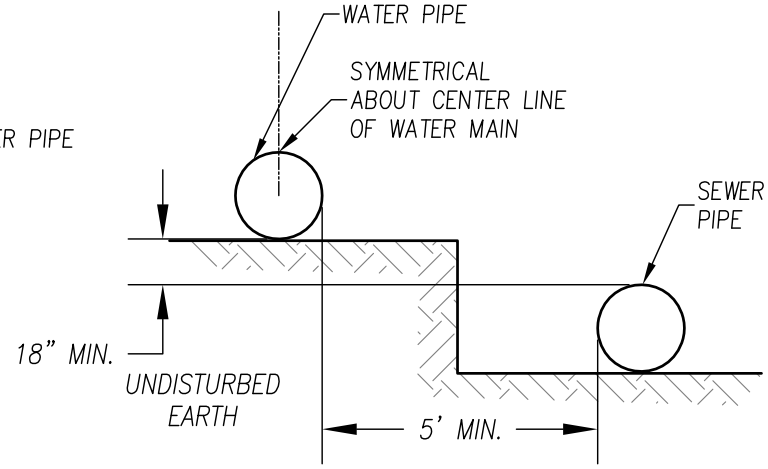
IRVIN WATER DISTRICT NO. 6

FIRE HYDRANT ASSEMBLY

DETAIL DRAWING No. 104



REQUIRED SEPARATION BETWEEN WATER AND SEWER PIPELINES (PARALLEL CONSTRUCTION)



STANDARD

UNUSUAL

HORIZONTAL AND VERTICAL SEPARATION (PARALLEL)

A MINIMUM HORIZONTAL SEPARATION OF 10 FEET BETWEEN SANITARY SEWERS, RECLAIMED WATER LINES, AND ANY EXISTING POTABLE WATER LINES, AND A MINIMUM VERTICAL SEPARATION OF 18 INCHES BETWEEN THE BOTTOM OF THE DRINKING WATER LINE AND THE CROWN OF THE SEWER SHALL BE MAINTAINED.THE DISTANCE SHALL BE MEASURED EDGE TO EDGE (I.E., FROM THE OUTER DIAMETER OF THE PIPES.) SEWERS.

FIGURE C1–2 REQUIRED SEPARATION BETWEEN POTABLE WATER LINES, RECLAIMED WATER LINES, AND SANITARY SEWERS, PARALLEL CONSTRUCTION

FIGURE C1–3 REQUIRED SEPARATION BETWEEN WATER LINES AND SANITARY SEWERS, UNUSUAL CONDITIONS PARALLEL CONSTRUCTION C1–24 AUGUST 2008 CRITERIA FOR SEWAGE WORKS DESIGN

UNUSUAL CONDITIONS (PARALLEL)

WHEN LOCAL CONDITIONS PREVENT THE SEPARATIONS DESCRIBED ABOVE, A SEWER MAY BE LAID CLOSER THAN 10 FEET HORIZONTALLY OR 18 INCHES VERTICALLY TO A WATER LINE OR RECLAIMED WATER LINE, PROVIDED THE GUIDELINES BELOW ARE FOLLOWED:

IT IS LAID IN A SEPARATE TRENCH FROM THE WATER LINE.

WHEN THIS VERTICAL SEPARATION CANNOT BE OBTAINED, THE SEWER SHALL BE CONSTRUCTED OF MATERIALS AND JOINTS THAT ARE EQUIVALENT TO WATER MAIN STANDARDS OF CONSTRUCTION AND SHALL BE PRESSURE TESTED TO ENSURE WATER TIGHTNESS PRIOR TO BACKFILLING. ADEQUATE RESTRAINT SHOULD BE PROVIDED TO ALLOW TESTING TO OCCUR.

IF SEWERS MUST BE LOCATED IN THE SAME TRENCH AS A POTABLE WATER LINE, SPECIAL CONSTRUCTION AND MITIGATION IS REQUIRED. BOTH WATER LINES AND SEWER LINES SHALL BE CONSTRUCTED WITH A CASING PIPE OF PRESSURE–RATED PIPE MATERIAL DESIGNED TO WITHSTAND A MINIMUM STATIC PRESSURE OF 150 PSI.

R LINE SHALL BE PLACED ON A BENCH OF UNDISTURBED EARTH WITH THE BOTTOM OF THE WATER PIPE AT LEAST 18 INCHES ABOVE THE CROWN OF THE SEWER, AND SHALL HAVE AT LEAST 5 FEET OF HORIZONTAL SEPARATION AT ALL TIMES. ADDITIONAL MITIGATION EFFORTS, SUCH AS IMPERMEABLE BARRIERS, MAY BE REQUIRED BY THE APPROPRIATE STATE AND LOCAL AGENCIES.

VERTICAL SEPARATION (PERPENDICULAR)

SEWER LINES CROSSING WATER LINES AT ANGLES INCLUDING PERPENDICULAR SHALL BE LAID BELOW THE WATER LINES TO PROVIDE A SEPARATION OF AT LEAST 18 INCHES BETWEEN THE INVERT OF THE WATER LINE AND THE CROWN OF THE SEWER.

UNUSUAL CONDITIONS (PERPENDICULAR)

WHEN LOCAL CONDITIONS PREVENT A VERTICAL SEPARATION AS DESCRIBED ABOVE, CONSTRUCTION SHALL BE USED FOR CROSSING PIPES AS FOLLOWS:

A. GRAVITY SEWERS PASSING UNDER WATER LINES

ALL OF THE FOLLOWING SHALL APPLY TO GRAVITY SEWERS:

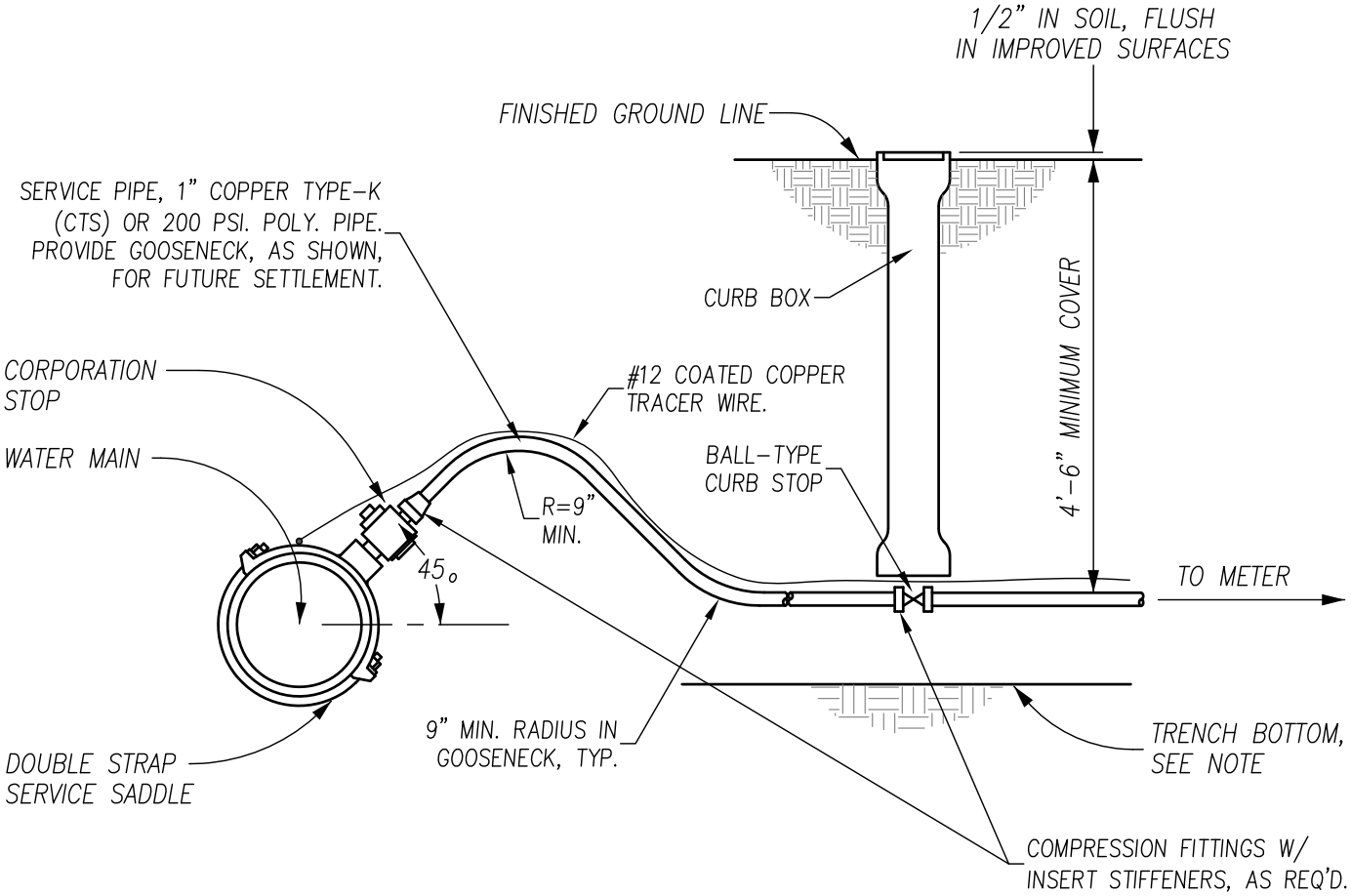
CONSTRUCTED OF MATERIAL IS THE ONE SEGMENT OF THE MAXIMUM STANDARD LENGTH OF PIPE (BUT NOT LESS THAN 18 FEET LONG) SHALL BE USED WITH THE PIPES CENTERED TO MAXIMIZE JOINT SEPARATION.

STANDARD GRAVITY–SEWER MATERIAL ENCASED IN CONCRETE OR IN A ONE QUARTER–INCH THICK CONTINUOUS STEEL, DUCTILE IRON, OR PRESSURE RATED PVC PIPE WITH A DIMENSION RATIO (DR) (THE RATIO OF THE OUTSIDE DIAMETER TO THE PIPE WALL THICKNESS) OF 18 OR LESS, WITH ALL VOIDS PRESSURE–GROUTED WITH SAND–CEMENT GROUT OR BENTONITE. COMMERCIALLY AVAILABLE PIPE SKIDS AND END SEALS ARE ACCEPTABLE. WHEN USING STEEL OR DUCTILE IRON CASING, DESIGN CONSIDERATION FOR CORROSION PROTECTION SHOULD BE CONSIDERED.

HE LENGTH OF SEWER PIPE SHALL BE CENTERED AT THE POINT OF CROSSING SO THAT THE JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE WATER LINE. THE SEWER PIPE SHALL BE THE LONGEST STANDARD LENGTH AVAILABLE FROM THE MANUFACTURER.

IRVIN WATER DISTRICT NO. 6

REQUIRED SEPARATION BETWEEN WATER LINES AND SANITARY SEWER



1" SERVICE CONNECTION

NOTE:
BEDDING SHALL BE SAND, 6" UNDER AND 12" OVER SERVICE PIPE, TYP.
½" MAXIMUM OCCASIONAL ROCK SIZE AS DIRECTED BY THE ENGINEER.

BACKFILL SHALL BE PER WSDOT STD. SPECIFICATION SECTION 7-08.3(3).

TRACER WIRE SHALL EXTEND UP THE OUTSIDE OF THE BOTTOM SECTION OF CURB STOP BOX AND INSIDE THE TOP SECTION OF CURB STOP BOX.

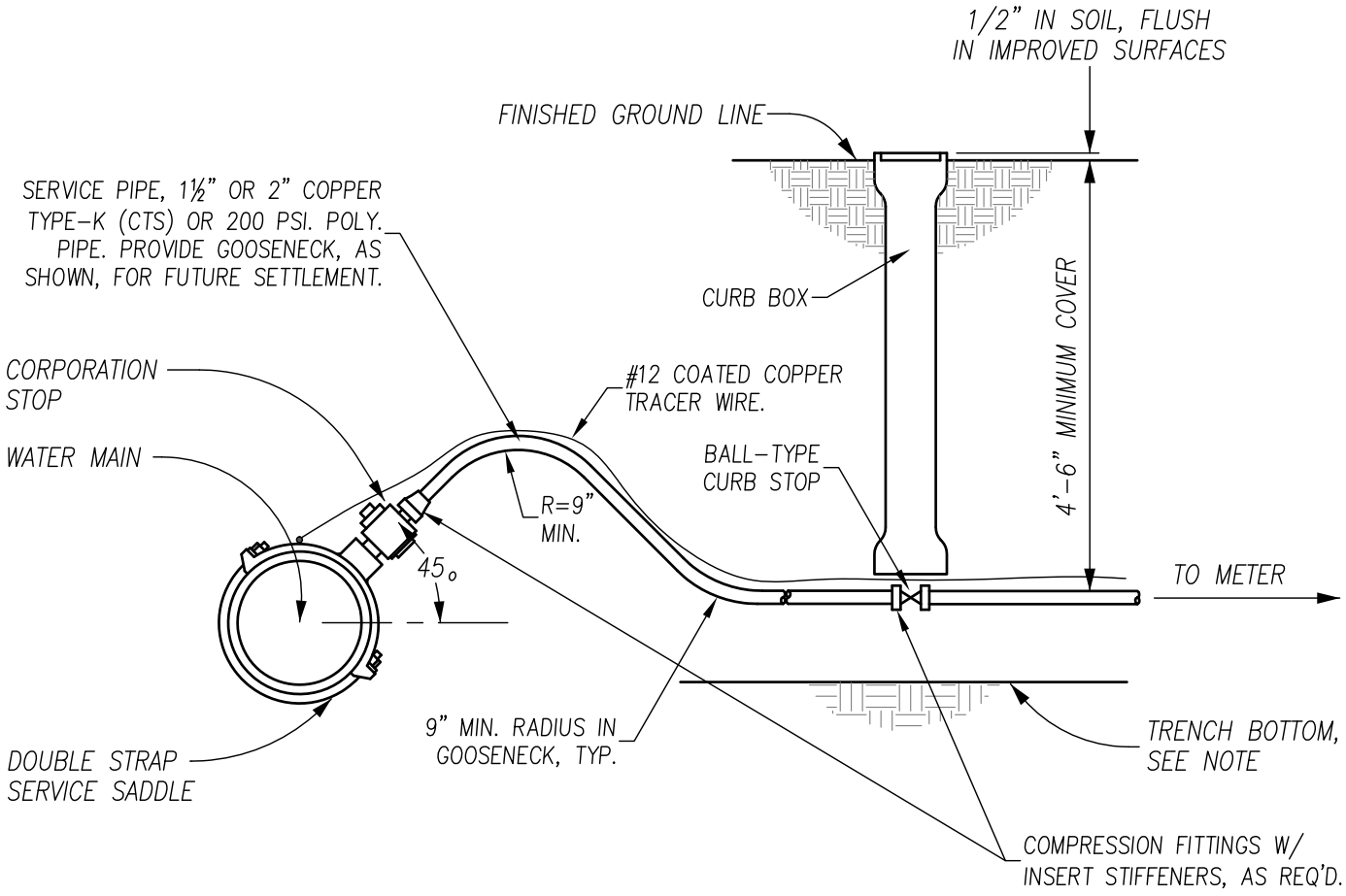
TRACER WIRE SPLICING SHALL CONSIST OF A DIRECT BURIAL DEVICE, UL LISTED, FOR THE PURPOSES OF DIRECT BURIAL.

N.T.S.

IRVIN WATER DISTRICT NO. 6

1" SERVICE CONNECTION AND SERVICE PIPE

DETAIL DRAWING No. 202



1 ½" AND 2" SERVICE CONNECTION

NOTE:
BEDDING SHALL BE SAND, 6" UNDER AND 12" OVER SERVICE PIPE, TYP.
½" MAXIMUM OCCASIONAL ROCK SIZE AS DIRECTED BY THE ENGINEER.

BACKFILL SHALL BE PER WSDOT STD. SPECIFICATION SECTION 7-08.3(3).

TRACER WIRE SHALL EXTEND UP THE OUTSIDE OF THE BOTTOM SECTION OF CURB STOP BOX AND INSIDE THE TOP SECTION OF CURB STOP BOX.

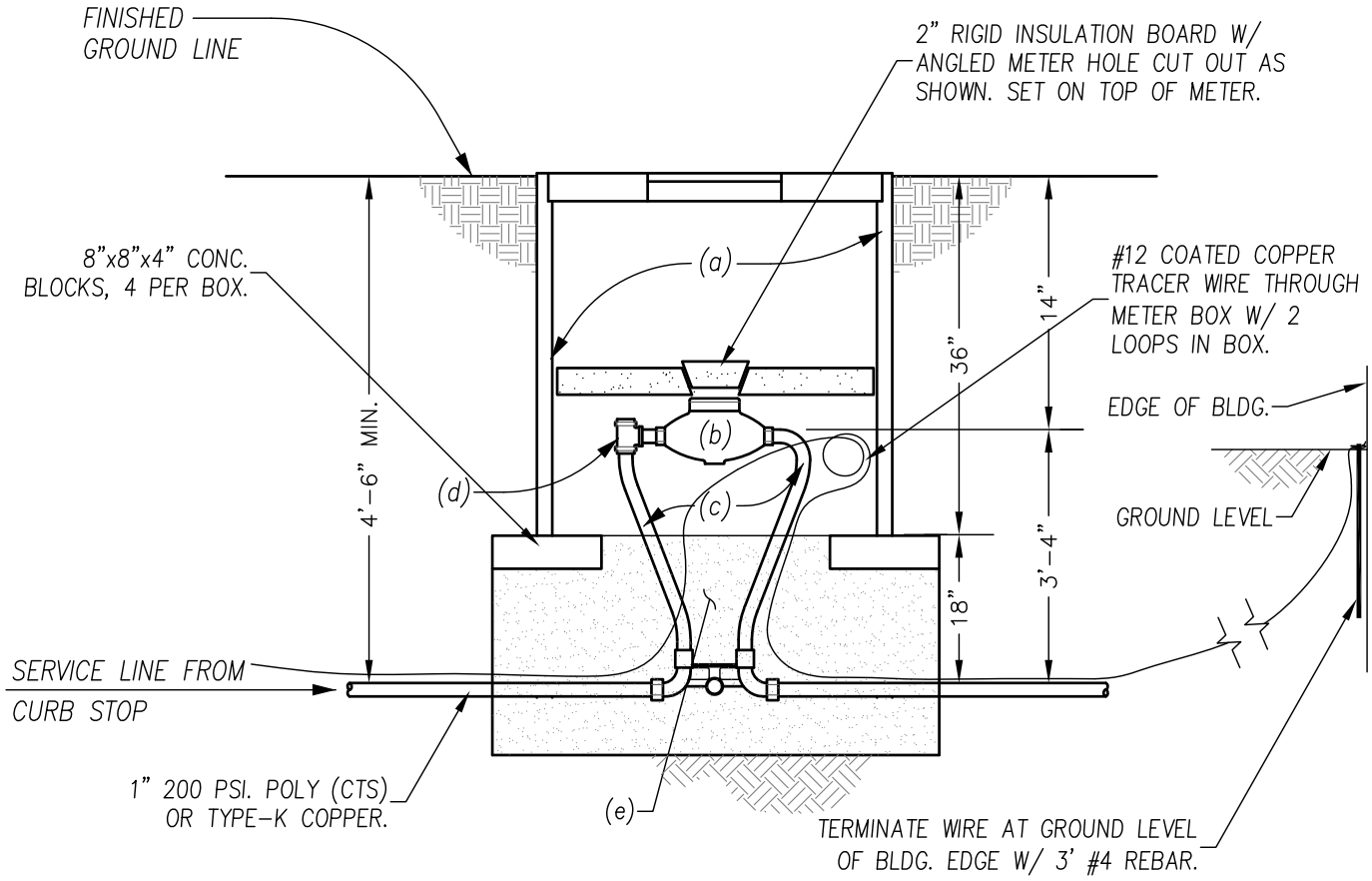
TRACER WIRE SPLICING SHALL CONSIST OF A DIRECT BURIAL DEVICE, UL LISTED, FOR THE PURPOSES OF DIRECT BURIAL.

N.T.S.

IRVIN WATER DISTRICT NO. 6

1 ½" - 2" SERVICE CONNECTION AND SERVICE PIPE

DETAIL DRAWING No. 301



1" METER ASSEMBLY MATERIALS

(a) METER BOX AND COVER WITH HINGED LID (ARMORCAST 13"x24" BOX, 2-18" SECTIONS, MODEL #A6001946APCX18, W/ CAST IRON HINGED LID, MODEL #A6001866R)

(b) WATER METER: SENSUS SRII, READING IN C.F.

(c) 36" COPPERSETTER METER YOKE

(d) ANGLE KEY VALVE WITH LOCK WING

(e) 25" OF SAND, TYP.

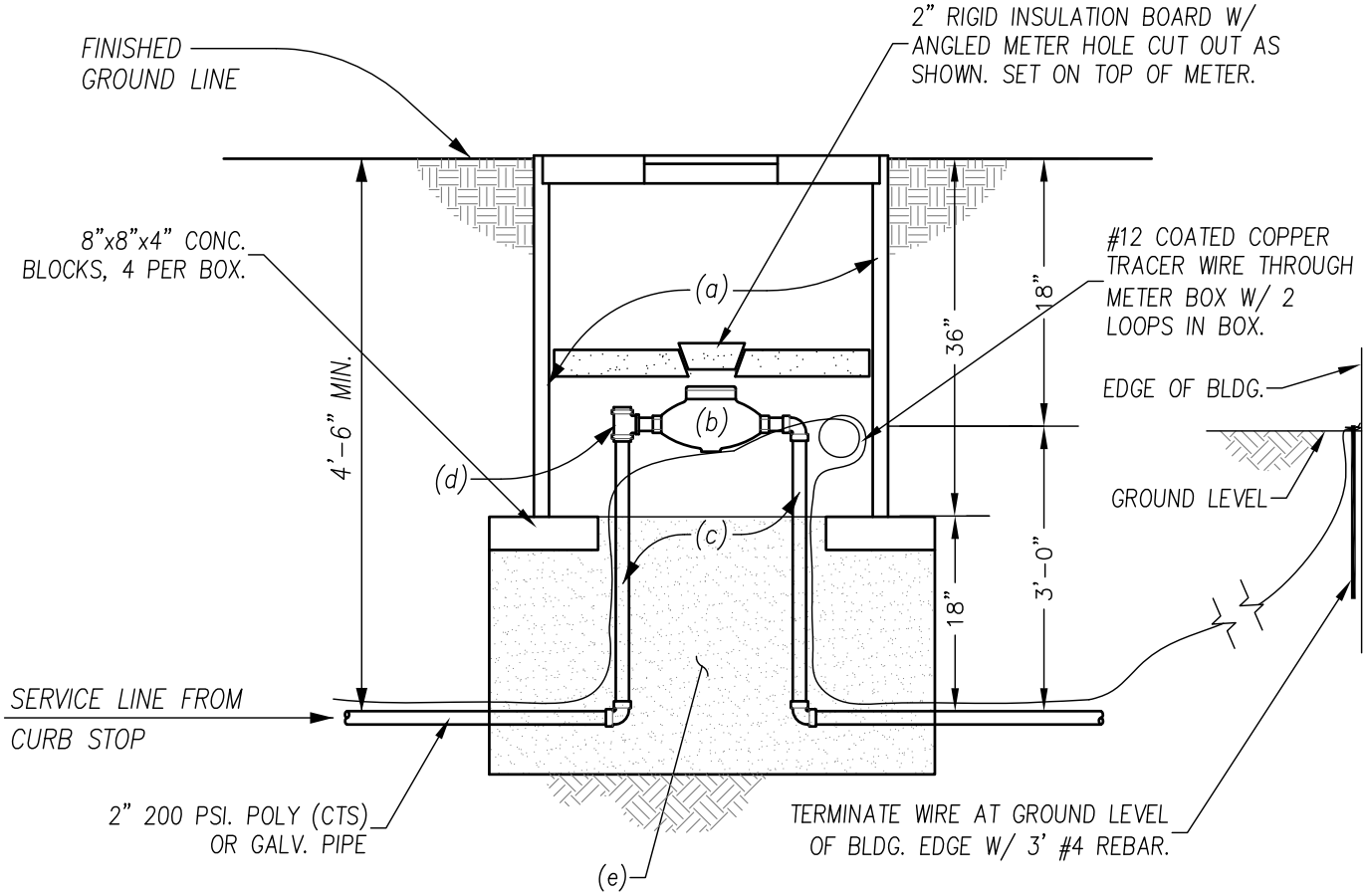
NOTE:
METERS SHALL BE SET IN NON-DRIVABLE AREAS ONLY.

N.T.S.

IRVIN WATER DISTRICT NO. 6

1" METER ASSEMBLY & BOX

DETAIL DRAWING No. 302



METER ASSEMBLY MATERIALS

(a) METER BOX AND COVER WITH HINGED LID (ARMORCAST 17"x30" BOX, 2-18" SECTIONS, MODEL #A6001640PCX18, W/ CAST IRON HINGED LID, MODEL #A6001643R)

(b) WATER METER: SENSUS OMNI, READING IN C.F.

(c) 1½" & 2" 200 PSI. POLY. OR G.I. PIPE.

(d) ANGLE KEY VALVE WITH LOCK WING

(e) 25" OF SAND, TYP.

NOTE:
METERS SHALL BE SET IN NON-DRIVABLE AREAS ONLY.

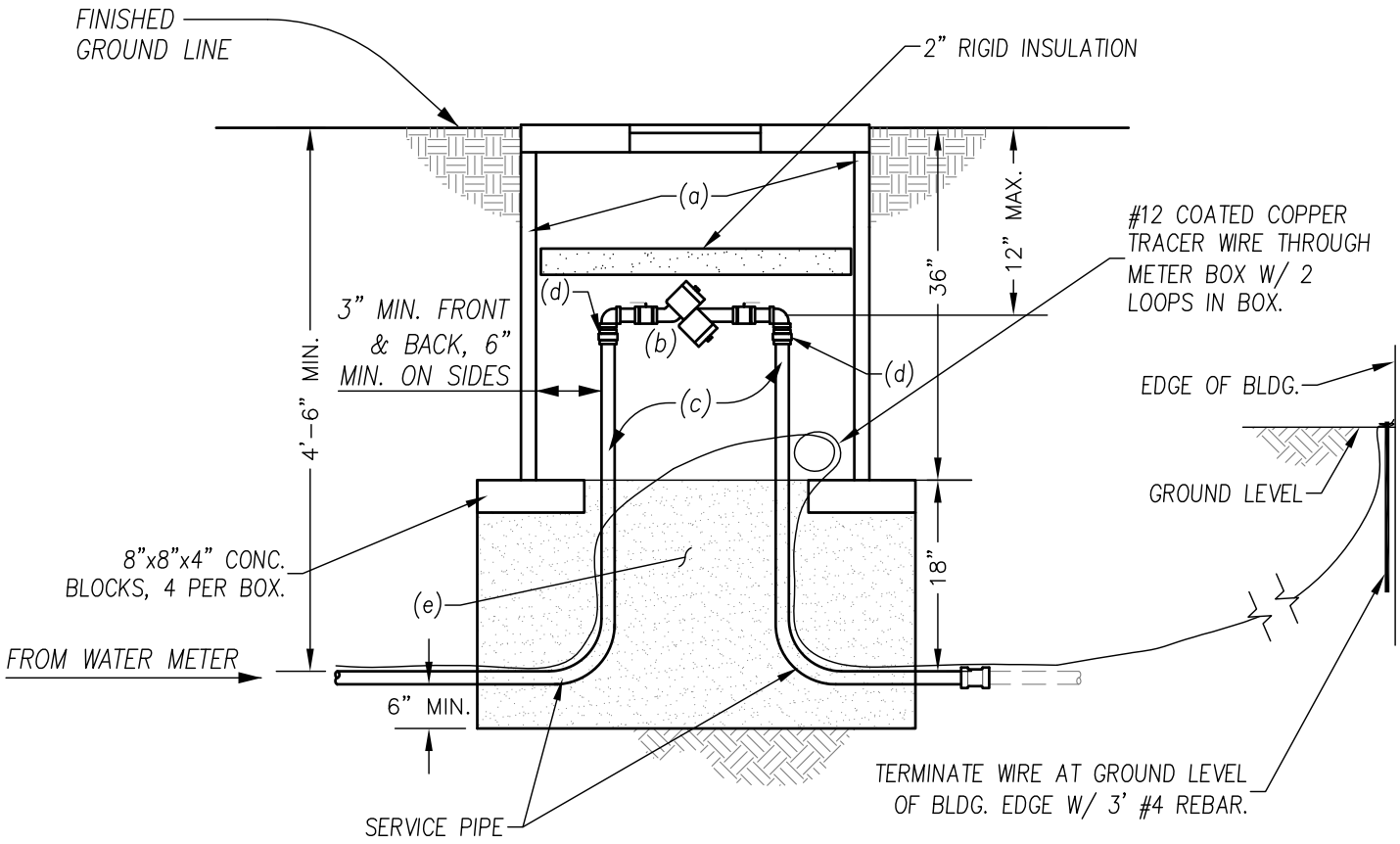
N.T.S.

IRVIN WATER DISTRICT NO. 6

1 ½ & 2" METER ASSEMBLY & BOX

C:\E&H\IRVIN\STD_DET\IWD-Std. Details.DWG PLOT 1:1 10/13/21

DETAIL DRAWING No. 401



BACKFLOW PREVENTION ASSEMBLY MATERIALS

(a) METER BOX AND COVER WITH HINGED LID (ARMORCAST 17"x30" BOX, 2-18" SECTIONS, MODEL #A6001640PCX18, W/ CAST IRON HINGED LID, MODEL #A6001643R)

*(b) PREVENTION DEVICE MUST BE LISTED AS AN APPROVED WA ST. D.O.H. DEVICE.

(c) SERVICE PIPE 200 PSI POLY. (C.T.S.) OR G.I. PIPE.

(d) COMPRESSION COUPLING OR UNION W. 90° STREET ELL.

(e) 25" OF SAND, TYP.

NOTE:
DCVA'S SHALL BE SET IN NON-DRIVABLE AREAS ONLY.

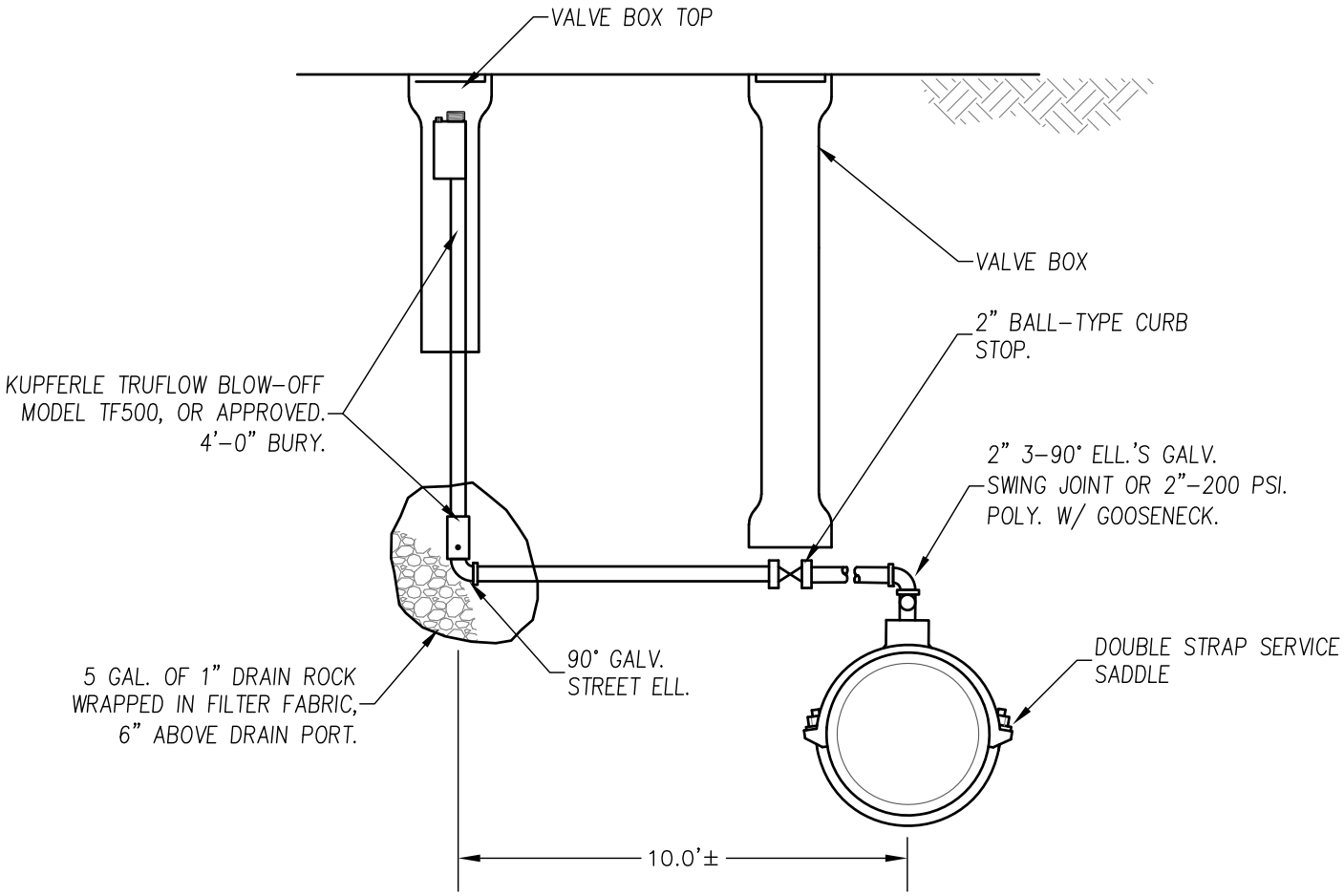
* THIS DEVICE CREATES A CLOSED SYSTEM ON THE PREMISE.

N.T.S.

IRVIN WATER DISTRICT NO. 6

1" - 2" DOUBLE CHECK VALVE ASSEMBLY (DCVA) & BOX

DETAIL DRAWING No. 402



NOTE:
SUPPLY RISER PIPE AND OPERATING SCREW WRENCH W/ BLOWOFF ASSEMBLY (1 PER PROJECT).

IRVIN WATER DISTRICT NO. 6

PERMANENT BLOWOFF ASSEMBLY