

C140-1125-2024  
June 13, 2024



SW-C1125

PROJECT MANUAL

FOR

REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD

AT

CAPE DISAPPOINTMENT STATE PARK

IN

PACIFIC COUNTY

**BID OPENING: 1:00 P.M., WEDNESDAY, JULY 24, 2024**  
**ELECTRONIC BID RESPONSES ONLY: Bid responses will only be accepted electronically via Email/Email Attachment to [BidBox@parks.wa.gov](mailto:BidBox@parks.wa.gov). (PDF scan encouraged).**

WASHINGTON STATE PARKS & RECREATION COMMISSION  
111 ISRAEL ROAD SW  
TUMWATER, WA 98501-6512  
POST OFFICE BOX 42650  
OLYMPIA, WASHINGTON 98504-2650



**PROJECT MANUAL**

**FOR**

**REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

**AT**

**CAPE DISAPPOINTMENT STATE PARK**

**IN**


**PACIFIC COUNTY**

Approved for Construction *Heather Saunders*  
Heather Saunders, Director of Parks Development

**WASHINGTON STATE PARKS AND RECREATION COMMISSION  
1111 ISRAEL ROAD SW  
TUMWATER, WASHINGTON 98501-6512  
P.O. BOX 42650  
OLYMPIA, WASHINGTON 98504-2650**

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS AT CAMPGROUND ACCESS ROAD**


The following sections of the Technical Specifications contained, herein, have been prepared by or under the supervision of the licensee described under "Prepared by" in the following table:

Section No.	Section Name	Prepared by
01 14 14	Control of Work	 03/22/2024
01 50 00	Temporary Facilities and Control	
02 30 00	Subsurface Investigation	
02 41 00	Demolition	
26 05 00	General Requirements for Electrical Work	
26 05 33	Raceway and Boxes for Electrical Systems	
26 05 85	Utility Coordination	
31 05 13	Soils for Earthwork	
31 05 16	Aggregates for Earthwork	
31 10 00	Site Clearing	
31 22 13	Rough Grading	
31 23 16	Excavation	
31 23 17	Trenching	
31 23 18	Rock Removal	
31 23 19	Dewatering	
31 23 23	Fill	
31 25 00	Erosion and Sediment Control	
32 01 16	Flexible Paving Rehabilitation	
32 05 13	Soils for Exterior Improvements	
32 11 23	Aggregate Base Courses	
32 12 16	Asphalt Pavement	
32 13 13	Concrete Paving	
32 16 23	Sidewalks	
32 17 23	Pavement Markings	
33 05 50	Existing Pipe Abandonment	
33 11 10	Water Utility Distribution and Transmission Piping	
33 13 00	Testing and Disinfection of Water Utility Piping	
33 34 00	Sanitary Utility Sewerage Force Main	
33 42 13.1	Contractor Furnished Box Culverts	
34 71 13	Vehicle Barriers	

[Licensee(s); Consor]

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS AT CAMPGROUND ACCESS ROAD**

The following sections of the Technical Specifications contained, herein, have been prepared by or under the supervision of the licensee described under "Prepared by" in the following table:

Section No.	Section Name	Prepared by
32 40 00	Stream Construction	 <p>3/26/2024</p> <p>Hunter L. White, PE; ESA</p>
32 92 00	Turf and Grasses	

Diana Dupuis,  
Director



STATE OF WASHINGTON  
**WASHINGTON STATE PARKS AND RECREATION COMMISSION**

1111 Israel Road SW • PO Box 42650 • Olympia, WA 98504-2650 • (360) 902-8500  
Internet Address: <http://www.parks.wa.gov>

July 1, 2024

**Re: Letter of Advertisement – Cape Disappointment State Park – Replace Failing Culverts on Campground Access Road – SW-C1125**

To whom it may concern:

Please publish the following legal advertisement under your “Advertisement for Bid” section for two (2) consecutive days beginning on **Tuesday, July 2, 2024**, *or at your earliest possible convenience*. An Affidavit of Publication will be required by this office. A voucher form is enclosed for your convenience in billing.

**ADVERTISEMENT FOR BID**

Sealed bids will be received for the following project:

PROJECT NUMBER:	SW-C1125
PROJECT TITLE:	Replace Failing Culverts on Campground Access Road
PROJECT DESCRIPTION:	This project includes the replacement of two failing CMP culverts along Fort Canby Rd. with concrete structures. The project includes the removal of existing culverts, installation of new structures, roadway profile adjustments, improvements, and paving. Utilities relocation is also included in the project scope
PROJECT LOCATION:	The project is located at Cape Disappointment State Park along Fort Canby between Jetty Road and Fort Canby Park Road in Ilwaco, Washington 98624
ESTIMATED BID RANGE:	\$ 2,026,000 - \$ 2,285,000
PROCUREMENT COORDINATOR	Brett Taylor
BID OPENING TIME:	<b>1:00 PM on Wednesday, July 24, 2024</b>
PREBID WALKTHROUGH:	<b>10 AM on Wednesday, July 10, 2024</b> , at job site, parking along campground Rd. at O’Neil Lake. Project Rep will arrive early to direct contractor parking

**PLANS, SPECIFICATIONS, ADDENDA, AND PLAN HOLDERS LIST:** Are available on-line through Builders Exchange of Washington, Inc. at <http://www.bxwa.com>. Click on: “bxwa.com”; “Posted Projects”; “Public Works”, “Washington State Parks & Recreation”, and **“07/24/2024”**. (Note: Bidders are encouraged to “Register as a Bidder”, in order to receive automatic email notification of future addenda and to be placed on the “Bidders List”. This service is provided free of charge to Prime Bidders, Subcontractors, and Vendors bidding on this project.)

Alternatively, bidders have the option to access Bid Documents, including Specifications and Drawings, at [www.parks.wa.gov/contracts](http://www.parks.wa.gov/contracts) by clicking on the Construction Projects link for reference purposes. However, the official channel for notifications is through the Builders Exchange of Washington.

PLANS MAY ALSO BE VIEWED THROUGH: Associated Builders And Contractors, Spokane WA; Tri City Construction Council, Kennewick WA; Daily Journal of Commerce, Seattle WA; Weekly Construction Reporter, Bellingham WA; Daily Journal Of Commerce Plan Center, Portland OR; Lower Columbia Contractor Plan Center, Longview WA; Abadan Spokane Plan Center, Spokane WA; ARC Document Solutions, Seattle, WA; Associated General Contractors, Boise, ID; Dodge Construction, Bedford, MA; Hermiston Plan Center, Hermiston, OR; Contractor Plan Center, Clackamas, OR; Wenatchee Plan Center, Wenatchee, WA; Spokane Regional Plan Center, Spokane, WA; Associated General Contractors, Spokane, WA; Walla Walla Valley Plan Center, Walla Wall, WA; Yakima Plan Center, Yakima, WA.

TECHNICAL QUESTIONS regarding this project shall be directed to: **Tim Bell**, Project Representative at telephone: **(360) 725-9759**, email: [tim.bell@parks.wa.gov](mailto:tim.bell@parks.wa.gov) , 1111 Israel Rd SW, Tumwater, WA 98501.

BID RESULTS will be published on the State Parks Builders Exchange of Washington webroom and in the Construction Projects section at [www.parks.wa.gov/contracts](http://www.parks.wa.gov/contracts) after the bid opening. This practice ensures that those involved and interested can readily view bid outcomes, enhancing transparency and efficiency in the bidding process.

THE STATE OF WASHINGTON PREVAILING WAGE RATES are applicable for this public works project. Bidders are responsible to verify and use the most recent prevailing wage rates. The “Effective Date” for this project is the bid submittal time and date above.

BIDDER RESPONSIBILITY will be evaluated for this project. In determining bidder responsibility, the Owner shall consider an overall accounting of the criteria set forth in Division 00 – Instructions To Bidders. Please direct questions regarding this subject to the office of the Project Engineer.

MANDATORY 15% APPRENTICE LABOR HOURS of the total labor hours are a requirement of this construction contract. Voluntary workforce diversity goals for this apprentice participation are identified in the Instructions to Bidders. Bidders may contact the Department of Labor & Industries, Apprenticeship Section, to obtain information on available apprenticeship programs.

SUBCONTRACTOR LISTINGS: Per RCW 39.30.060, when the bid proposal combined with any alternates totals one million dollars or more, the Bidder must list the Subcontractors they intend to use for structural steel, rebar installation, heating, ventilation, and air conditioning (HVAC), plumbing, and electrical work on the Subcontractor Utilization List form for this project.

ACCESS EQUITY: The successful Bidder is required to complete their vendor registration in Access Equity, a secure B2GNow online vendor management system. Prime Contractors already registered with B2GNow for any public entity must ensure their information is up to date. The system can be accessed either directly at <https://omwbe.diversitycompliance.com/> or via the Office of Minority and Women’s Business Enterprises (OMWBE) website at <https://omwbe.wa.gov/>.

FOR THIS PROJECT, VOLUNTARY DIVERSITY GOALS HAVE BEEN SET: 10% for Minority Business Enterprises (MBE), 6% for Women's Business Enterprises (WBE), 5% for Washington Small Businesses, and 5% for Veteran-owned businesses. While meeting these goals is not mandatory, it is strongly encouraged to promote diversity in business participation.

Bidders may contact the Office of Minority and Women's Business Enterprise (OMWBE) at: <http://omwbe.wa.gov/> to obtain information on certified firms. Bidders may also utilize Washington Small Businesses registered in WEBS at <https://pr-webs-vendor.des.wa.gov/> and Veteran-owned Businesses at <https://www.dva.wa.gov/veterans-their-families/veteran-ownedbusinesses/vob-search>.

Washington State Parks reserves the right to accept or reject any or all proposals and to waive informalities.

Sincerely,



Brett Taylor, Procurement Coordinator

STATE OF WASHINGTON  
PARKS AND RECREATION COMMISSION  
CONTRACTS AND GRANTS

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

"ADVERTISEMENT FOR BID" LETTERS

INVITATION TO BID ..... i - iii

INSTRUCTIONS TO BIDDERS ..... 17 pages

SUPPLEMENTAL BIDDER CRITERIA.....10 pages

AVAILABLE INFORMATION

Appendix A - Geotechnical Investigation Cape Disappointment State Park Culvert Replacements  
and Campground Road Improvements – August 31, 2023. ....40 pages

BID PROPOSAL FORM..... 5 pages

GENERAL CONDITIONS ..... 42 pages

PREVAILING WAGE STATEMENT.....1 page

DIVISION 1 - GENERAL REQUIREMENTS

Section 010000 - General Requirement ..... 5 pages

Section 010099 – Surveying ..... 2 pages

Section 011414 – Control of Work ..... 3 pages

Section 013300 – Submittal Procedures ..... 4 pages

Section 013501 – Inadvertent Discovery of Cultural Resources and Skeletal Remains ..... 5 pages

Section 014000 - Quality Requirements ..... 7 pages

Section 014100 - Regulatory Requirements ..... 2 pages

Section 014200 - References ..... 3 pages

Section 015000 - Temporary Facilities and Controls ..... 5 pages

Section 015639 - Temporary Tree and Plant Protection..... 7 pages

Section 016000 - Product Requirements..... 3 pages

Section 017329 Cutting and Patching..... 4 pages

Section 017419 - Construction Waste Management and Disposal ..... 1 pages

Section 017700 - Closeout Procedures ..... 3 pages

DIVISION 2 – EXISTING CONDITIONS

Section 023000 – Subsurface Investigation ..... 1 pages

Section 024100 – Demolition ..... 6 pages

DIVISION 26 – ELECTRICAL

Section 260500 – General Requirements for Electrical Work..... 8 pages

Section 260533 – Raceway and Boxes for Electrical Systems..... 6 pages

Section 260585 – Utility Coordination ..... 3 pages



**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

**DIVISION 31 – EARTHWORK**

Section 310513 – Soils for Earthwork .....	4 pages
Section 310516 – Aggregates for Earthwork .....	4 pages
Section 311000 – Site Clearing .....	7 pages
Section 312213 – Rough Grading .....	4 pages
Section 312316 – Excavation .....	8 pages
Section 312317 – Trenching .....	20 pages
Section 312318 – Rock Removal.....	3 pages
Section 312319 – Dewatering .....	4 pages
Section 312323 – Fill .....	7 pages
Section 312500 – Erosion and Sediment Control .....	5 pages

**DIVISION 32 – EXTERIOR IMPROVEMENTS**

Section 320116 – Flexible Paving Rehabilitation .....	4 pages
Section 320513 – Soils for Exterior Improvements .....	3 pages
Section 321123 – Aggregate Base Courses .....	6 pages
Section 321216 – Asphalt Pavement .....	3 pages
Section 321313 – Concrete Paving .....	6 pages
Section 321623 – Sidewalks .....	7 pages
Section 321723 – Pavement Markings .....	7 pages
Section 324000 – Stream Construction.....	3 pages
Section 329200 – Turf and Grasses .....	4 pages

**DIVISION 33 – UTILITIES**

Section 330550 – Existing Pipe Abandonment.....	3 pages
Section 331110 – Water Utility Distribution and Transmission Piping .....	19 pages
Section 331300 – Testing and Disinfection of Water Utility Piping .....	9 pages
Section 333400 – Sanitary Utility Sewerage Force Main.....	7 pages
Section 334213.1 – Contractor Furnished Box Culverts .....	6 pages

**DIVISION 34 – TRANSPORTATION**

Section 347113 – Vehicle Barriers .....	3 pages
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END OF SECTION

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

INVITATION TO BID

Public Works
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1.1 SPECIAL NOTICE(S)

- A. Cape Disappointment State Park is closing for construction beginning September 15, 2024. Notice to Proceed will be issued prior to park closure for the ordering of materials only, specifically box culverts.

1.2 DESCRIPTION OF WORK

- A. This project includes the replacement of two failing CMP culverts along Fort Canby Rd. with concrete structures. The project includes the removal of existing culverts, installation of new structures, roadway profile adjustments, improvements, and paving. Utilities relocation is also included in the project scope.

1.3 LOCATION OF PROJECT

- A. The project is located at Cape Disappointment State Park along Fort Canby between Jetty Road and Fort Canby Park Road in Ilwaco, Washington 98624.

244 Robert Gray Dr SW, Ilwaco, WA 98624-9165

1.4 TECHNICAL QUESTIONS

- A. Direct project questions to Tim Bell, Project Representative at (360) 725-9759, [tim.bell@park.wa.gov](mailto:tim.bell@park.wa.gov).

1.5 PRE-BID PROJECT SITE TOUR

DATE:	Wednesday, July 10, 2024
TIME:	10:00 AM
LOCATION:	Meet at job site, parking along campground Rd. at O'Neil Lake. Project Representative will arrive early to direct contractor parking.

1.6 BID OPENING

- A. Bid responses will only be accepted electronically via email/email attachment [BidBox@parks.wa.gov](mailto:BidBox@parks.wa.gov). See Section 7.1 of the Instructions to Bidders for expanded details. Subject line shall read, SW-C1125 Bid [Your Company Name] in Bids are due at 1:00 p.m., Wednesday, July 24, 2024.
- B. Bid result notification is made by e-mail within three (3) business days of the bids due date. Bid results can be obtained on the State Parks webpage at [www.parks.wa.gov/contracts](http://www.parks.wa.gov/contracts) or through Builders Exchange of Washington at [www.bxwa.com](http://www.bxwa.com)

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

- C. The Agency reserves the right to accept or reject all bids and to waive informalities. The Bidder will allow 60 days from bid opening date for acceptance of its bid by the Agency.

1.7 COVID 19

- A. COVID-19 Refer to the Department of Labor & Industries website for requirements regarding any safety plans needed. [Novel Coronavirus Outbreak \(COVID-19\) Resources \(wa.gov\)](https://www.wa.gov/industry/employment-and-labor/covid-19)

1.8 FOR INFORMATION ON:

- A. Bidder Responsibility: Bidder Responsibility will be evaluated for this project. In determining bidder responsibility, the Owner shall consider an overall accounting of the criteria set forth in Division 00 – Instructions To Bidders. Please direct questions regarding this subject to the office of the Project Engineer.
- B. Reciprocal Preference: See Instructions to Bidders 2.1 Reciprocal Preference for Resident Contractors.
- C. Apprenticeship Requirements: For projects estimated at or over \$1,000,000, Apprenticeship Participation, Mandatory 15 percent apprentice labor, see Instructions to Bidders 4.1B Apprenticeship Participation.
- D. Subcontractor Listings: When the base bid combined with any alternates totals \$1,000,000 or more, the Bidder must list the Subcontractors they intend to use for structural steel, rebar installation, heating, ventilation, and air conditioning (HVAC), plumbing, and electrical work on the Subcontractor Utilization List form for this project, see Instructions to Bidders 4.1A Subcontractor Listing.
- E. MWBE goals: See Instructions To Bidders 3.1 Minority And Women's Business Enterprise (MWBE) Utilization. For Veteran-Owned and Small Business utilization, see Instruction to Bidders 3.2.
- F. Modification of Bid: See Instructions to Bidders 8.1 Modification of Bid.
- G. Withdrawal of Bid: See Instructions to Bidders 9.1 Withdrawal of Bid.
- H. Bid Security: See Instructions to Bidders 11.1 Bid Bond. No particular bid bond form is required.
- I. Bid Tabulation and Bid Record: See Instructions to Bidders 12.1B for Bid Tabulation, Bid Record, and Announcement of Apparent Low Bid.
- J. Records Request: All submitted bids are subject to public records request once the lowest bidder has been determined and officially announced. See Instructions to Bidders 12.1D Records Request.

1.9 ACCESSIBILITY

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

- A. Sites may not be fully accessible to people with disabilities. Please contact the Project Representative at least five (5) days prior to scheduled pre-bid tour if special accommodation is required for your attendance.

END OF SECTION

**WASHINGTON STATE PARK AND RECREATION COMMISSION  
PUBLIC WORKS PROJECT**

1.1 BIDDER DEFINED

- A. A "*Bidder*" is an entity or person who submits a bid proposal for the work described in the contract documents.
- B. The Bidder must be registered by the Washington State Department of Labor and Industries in accordance with RCW 18.27.020. Insert the contractor registration number, expiration date, Uniform Business Identifier (UBI) number, and federal tax identification number on the Bid Proposal Form in the applicable spaces.

2.1 RECIPROCAL PREFERENCE FOR RESIDENT CONTRACTORS

- A. In accordance with RCW 39.04.380 the State of Washington is enforcing a Reciprocal Preference for Resident Contractors. Any public works bid received from a nonresident contractor from a state that provides an in-state percentage bidding preference, a comparable percentage disadvantage must be applied to the bid of that nonresident contractor.

A nonresident contractor from a state that provides a percentage bid preference means a contractor that:

- a) is from a state that provides a percentage bid preference to its resident contractors bidding on public works contracts.
- b) at the time of bidding on a public works project, does not have a physical office located in Washington.

The state of residence for a nonresident contractor is the state in which the contractor was incorporated or, if not a corporation, the state where the contractor's business entity was formed, and for an individual, the individual's state of residence.

All nonresident contractors will be evaluated for out of state bidder preference. If the state of the nonresident contractor provides an in-state contractor preference, a comparable percentage disadvantage will be applied to their bid prior to contract award.

This section does not apply to public works procured pursuant to RCW 39.04.155, 39.04.280, or any other procurement exempt from competitive bidding.

- B. A Comparable Percentage Disadvantage (CPD) will be applied to the bid of that nonresident contractor. The CPD is the in-state contractor percent advantage provided by the contractor's home state. For the purpose of determining the successful bidder, multiply the Nonresident Contractor bid amount by the CPD. The "bid amount" is be the total of the base bid and all accepted alternate bid items. The CPD is added to the Nonresident Contractor bid amount which equates to the Nonresident Disadvantage Total. The Nonresident Disadvantage Total is compared to the Washington contractor bid amounts. The bidder with the lowest total is the successful bidder. See example below.

Alaska Nonresident Contractor Bid Amount	\$100,000
Multiplied by the Alaska CPD	x 0.05
<hr/>	
Alaska CPD Total	\$ 5,000
Alaska Nonresident Contractor Bid Amount	\$100,000
Alaska CPD Total	\$ 5,000
<hr/>	
Nonresident Disadvantage Total	\$105,000*

## WASHINGTON STATE PARK AND RECREATION COMMISSION PUBLIC WORKS PROJECT

\* Note – If the Nonresident Disadvantage Total is lower than all other Washington contractor bid amounts, the Alaska Nonresident Contractor is the successful bidder and will be awarded a contract for the bid amount of \$100,000.

If the Nonresident Disadvantage Total is higher than a Washington contractor bid amount, the successful Washington bidder will be awarded a contract for the bid amount.

### 3.1 MINORITY AND WOMEN'S BUSINESS ENTERPRISE (MWBE) UTILIZATION

In accordance with the legislative findings and policies set forth in Chapter 39.19 RCW, the State of Washington encourages participation in contracts by MWBE firms certified by the Office of Minority and Women's Business Enterprises (OMWBE). Participation may be either on a direct basis in response to this solicitation/invitation or as a subcontractor to a Bidder. However, unless required by federal statutes, regulations, grants, or contract terms referenced in the contract documents, no preference will be included in the evaluation of bids, no minimum level of MWBE participation is required as a condition for receiving an award, and bids will not be rejected or considered non-responsive on that basis. Any affirmative action requirements set forth in federal regulations or statutes included or referenced in the contract documents will apply.

#### A. VOLUNTARY MWBE GOALS

1. The following voluntary numerical MWBE participation goals have been established for this solicitation:

MBE 10% WBE 6%

2. These goals are voluntary, but achievement of the goals is encouraged. Bidders may contact OMWBE at <http://omwbe.wa.gov/> to obtain information on certified firms.

#### B. REPORTING REQUIREMENTS

1. If any part of the contract, (including the supply of materials and equipment) is subcontracted using certified MWBE firms during completion of the work, then prior to final acceptance or completion of the contract or as otherwise indicated in the contract documents the Bidder shall submit a statement of participation indicating that MWBEs were used and the dollar value of their subcontracts.
2. The provisions of this section are not intended to replace or otherwise change the requirements of RCW 39.30.060. If said statute is applicable to this contract then the failure to comply with RCW 39.30.060 will still render a bid non-responsive.

#### C. RECORD KEEPING

1. The Bidder shall maintain, for at least three years after completion of this contract, relevant records and information necessary to document the level of utilization of MWBEs and other businesses as subcontractors and suppliers in this contract as well as any efforts the Bidder makes to increase the participation of MWBEs. The Bidder shall also maintain, for at least three years after completion of this contract, a record of all quotes, bids, estimates, or proposals submitted to the Bidder by all businesses seeking to participate as subcontractors or suppliers in this contract. The State shall have the right to inspect and copy such records. If this contract involves federal funds, Bidder shall comply with all record keeping requirements set forth in any federal rules, regulations, or statutes included or referenced in the contract documents

**WASHINGTON STATE PARK AND RECREATION COMMISSION  
PUBLIC WORKS PROJECT**

**D. SUGGESTED EFFORTS TO INCREASE PARTICIPATION BY MWBEs**

1. Bidders are encouraged to advertise opportunities for subcontractors or suppliers in a manner reasonably designed to provide MWBEs capable of performing the work with timely notice of such opportunities, and all advertisements shall include a provision encouraging participation by MWBE firms. Advertising may be done through general advertisement (e.g., newspapers, journals, etc.) or by soliciting bids directly from MWBEs.
2. Additional Voluntary Efforts. Bidders are encouraged to:
  - (a) Break down total requirements into smaller tasks or quantities, where economically feasible, in order to permit maximum participation by MWBEs and other small businesses.
  - (b) Provide interested MWBEs with adequate and timely information about plans, specifications, and requirements of the Contract.
  - (c) Establish delivery schedules, where the requirements of this contract permit, that encourage participation by MWBEs and other small businesses.
  - (d) Reduce bonding requirements where practicable.
  - (e) Utilize the services of available minority community organizations, minority contractor groups, local minority assistance offices, and organizations that provide assistance in the recruitment and placement of MWBEs and other small businesses.
3. The actions described in this section should supplement efforts to provide information to all qualified firms, and nothing in this section is intended to prevent or discourage the Bidders from inviting proposals for participation from non-MWBE firms as well as MWBE firms.

**E. NON-DISCRIMINATION**

1. Bidders shall not create barriers to open and fair opportunities for all businesses including MWBEs to participate in all State contracts and to obtain or compete for contracts and subcontracts as sources of supplies, equipment, construction and services. In considering offers from and doing business with subcontractors and suppliers, the Bidder shall not discriminate on the basis of race, color, creed, religion, sex, age, nationality, marital status, or the presence of any mental or physical disability in an otherwise qualified disabled person.

**F. SANCTIONS**

1. Any violation of the mandatory requirements of this part of the contract shall be a material breach of contract for which the Bidder may be subject to a requirement of specific performance, or damages and sanctions provided by contract, by RCW 39.19.090, or by other applicable laws.

**3.2 VETERAN-OWNED BUSINESS AND SMALL, MINI, AND MICRO BUSINESS UTILIZATION**

The State of Washington encourages participation in all of its contracts by Veteran-owned businesses (defined in RCW 43.60A.010) and located at:

**WASHINGTON STATE PARK AND RECREATION COMMISSION  
PUBLIC WORKS PROJECT**

<http://www.dva.wa.gov/program/certified-veteran-and-servicemember-owned-businesses> and Small, Mini and Micro businesses (defined in RCW 39.26.010) which have registered in WEBS at <https://pr-webs-vendor.des.wa.gov/>.

1. The following voluntary numerical WDVA and Small Business participation goals have been established for this solicitation:

WDVA 5% Small Business 5%

2. These goals are voluntary, but achievement of the goals is encouraged. Bidders may search Washington Small Businesses registered in WEBS at:

<https://pr-webs-vendor.des.wa.gov/> and WA Veteran-owned Businesses at <https://www.dva.wa.gov/veterans-their-families/veteran-ownedbusinesses/vob-search> to obtain information on registered firms.

4.1 REQUIREMENTS FOR PROJECTS ESTIMATED AT \$1,000,000 OR MORE

A. SUBCONTRACTOR LISTING

Pursuant to [RCW 39.30.060](#), if the base bid combined with the sum of the alternates exceeds one million dollars (\$1,000,000.00) or more for the construction, alteration, or repair of any public building or public work of the state shall require each Bidder to submit as part of the bid the names of subcontractors with whom the Bidder, if awarded the contract, will subcontract for performance of the work of heating, ventilation and air conditioning, plumbing, and electrical, structural steel installation, rebar installation or to name itself for the work. The Bidder shall not list more than one subcontractor for each category of work identified, unless subcontractors vary with bid alternates, in which case the Bidder must indicate which subcontractor will be used for which alternate.

**Failure of the Bidder to submit as part of the bid, the names of such subcontractors, or to name itself to perform such work, or the naming of two or more subcontractors to perform the same work, shall render the bid as non-responsive and therefore void.**

B. APPRENTICESHIP PARTICIPATION

In projects estimated to cost One Million Dollars or more, be aware that the following requirements will be part of the resulting contract.

In accordance with [RCW 39.04.320](#) (Apprenticeship Training Programs), for all public works estimated by the WSPRC Project Engineer to cost **one million dollars or more**, the state of Washington requires no less than **15% of the labor hours be performed by apprentices**. A contractor or subcontractor may not be required to exceed the 15% requirement. The bid advertisement and Bid Proposal Form shall establish a minimum required percentage of apprentice labor hours compared to the total labor hours.

1. **Incentives** - The Contractor who meets or exceeds this utilization requirement on eligible contracts, will be awarded a monetary incentive described in the Apprentice Utilization Requirements section of the Bid Form.
2. **Penalties** - The Contractor who fails to meet the utilization requirement and fails to demonstrate a Good Faith Effort, as outlined below, is subject to penalties described in



**WASHINGTON STATE PARK AND RECREATION COMMISSION  
PUBLIC WORKS PROJECT**

the Apprentice Utilization Requirements section of the contract Bid Form. Contractor will receive an invoice payable to the Owner within 30 days.

3. **Cost Value** - The expected cost value associated with meeting the goal is included in the Base Bid as described on the Bid Form.
4. **Utilization Plan** - The Contractor shall provide an Apprentice Utilization Plan (Plan) demonstrating how and when they intend to achieve the Apprenticeship Utilization Requirement. The Plan shall have enough information to track the Contractor's progress in meeting the utilization requirement. The Contractor shall submit the Plan on the Apprentice Utilization Plan template within 10 business days of Notice to Proceed of the contract and prior to submitting the first invoice. The Contractor shall provide an updated Plan during the course of construction when there are significant changes to the Plan which may affect their ability to meet the requirement.
  - a) The Plan shall be uploaded to the Department of Labor & Industries' (L&I): ***Prevailing Wage Intents and Affidavit (PWIA) system on L&I's website.***
  - b) The Plan is not submitted for approval.
  - c) It is expected that the Contractor will actively seek out opportunities to meet the Apprentice Utilization Requirement during construction even if the Plan indicates a shortfall in meeting the requirement.
  - d) If the Plan indicates that the Contractor will not attain the Apprentice Utilization Requirement, then Contractor must submit "Good Faith Effort" (GFE) documentation with their Plan to L&I's PWIA system.

C. APPRENTICESHIP - GOOD FAITH EFFORT (GFE)

1. **Good Faith Effort (GFE)** documentation shall describe in detail why the Contractor is not or was not able to attain the Apprentice Utilization Requirement.
  - a) Contractors may submit Good Faith Effort (GFE) documentation at any time during the construction.
  - b) All GFE documentation must be submitted no later than 30 days before substantial completion.
  - c) Good Faith Effort (GFE) documentation must be in signed letter format uploaded to the PWIA system and include:
    1. The contract number, title and the apprentice utilization requirements,
    2. The amount of apprentice labor hours the contract can or did attain along with the percentage of labor hours,
    3. Contractors may receive a GFE credit for graduated Apprentice hours through the end of the calendar year for all projects worked on as long as the Apprentice remains continuously employed with the same Contractor they were working for when they graduated. If an Apprentice graduates during employment on a project of significant duration, they may be counted towards a GFE credit for up to one year after their graduation or until the end of the project (whichever

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comes first). Determination of whether or not Contract requirements were met in good faith will be made by subtracting the hours from the journeyman total reported hours for the project and adding them to the apprentice hour total. If the new utilization percentage meets the Contract requirement, the Contractor will be reported as meeting the requirement in good faith,

4. Anticipated or actual shortfall (in apprentice labor hours and percentage) and the reason(s) for not attaining the required apprentice labor hours,
5. Information from one or more of the following areas:
  - (a) Names of any State-Approved Apprentice Training Programs contacted with the name(s) of person(s) contacted and dates of contacts, and a copy of each response from the Training Program(s),
  - (b) Reference Contract Specifications or documents that affected the Contractor's ability to attain apprentice utilization,
  - (c) Discuss efforts the Contractor has taken to require Subcontractors to solicit and employ apprentices,
6. Backup documentation to the letter consisting of the following:

Letters, emails, phone logs including names dates and outcomes, posters, photos, payrolls, time cards, schedules, copies or references to other contract specifications or documents.

**Additional Resource Information**

- (a) For questions regarding how to complete the Apprentice Utilization Plan template or Good Faith Effort documentation, please contact the Project Manager listed in the Bid Advertisement.
- (b) Step-by-step instructions on how to access and navigate the L&I's PWIA system, including uploading required documents can be found on the L&I website.
- (c) Additional information about apprentice utilization on Public Works Project can be found on the L&I website.

**5.1 EXAMINATION OF THE WORK SITE AND BIDDING DOCUMENTS**

- A. Bidder acknowledges that it has taken steps necessary to ascertain the nature and location of the work, and that it has investigated and satisfied itself as to the general and local conditions which can affect the work or its cost, including but not limited to (1) conditions bearing upon transportation, disposal, handling, and storage of materials; (2) the availability of labor, water, electric power, and road; (3) uncertainties of weather, river stages, tides, or similar physical conditions at the site; (4) the conformation and conditions of the ground; and (5) the character of equipment and facilities needed preliminary to and during the work.

The bidder also acknowledges that it has satisfied itself as to character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including exploratory work done by the Owner, as well as from the drawings and specifications made a part of this contract. Any

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failure of the Bidder to take the actions described and acknowledged in this paragraph will not relieve the Bidder from responsibility for estimating properly the difficulty and cost of successfully performing the work.

- B. No statement by any officer, agent, or employee of the Agency pertaining to the physical conditions of the site of the work will be binding on the Agency other than those statements issued in the contract documents.
- C. Bidders shall promptly notify the Agency of ambiguities, inconsistencies, or errors, if any, which they may discover upon examination of the Bidding Documents or of the site and local conditions.
- D. Interpretations and Clarifications
  - 1) Every request for interpretation or clarification should be submitted to the project representative as listed in the Invitation to Bid. If a Bidder does not have on-line capability, then submit in writing, addressed to the project representative at the address as listed in the Invitation to Bid. To be given consideration the request must be received seven (7) working days prior to the date fixed for the opening of the bids.
  - 2) The Agency's responses, if there are any, which do not change the Scope of Work described in the contract documents may be mailed, delivered, faxed, or by other electronic means, to all planholders of record, at the respective address furnished for such purposes, prior to the date fixed for the receipt of bids. Such letters of clarification shall not be considered part of the contract documents and therefore need not be acknowledged by the Bidders as part of the Bid Form. The Agency will determine at its sole discretion whether or not any clarification or interpretation changes the Scope of Work and should be included in the Contract Documents.
  - 3) Clarifications, interpretations, or supplemental instructions which do change the Scope of Work and or schedule described in the contract documents, will be issued only in the form of written ADDENDA.
  - 4) Oral interpretations or clarifications will be without legal effect.
- E. Substitutions
  - 1) The product, equipment, materials, or methods described or noted within the Bidding Documents, whether currently available or not, are to establish a standard of quality, function, appearance and dimension. A proposed substitution shall have equal attributes in all respects.
  - 2) No substitution will be considered unless a written request for approval is submitted by the Contractor, after Award, in accordance with the applicable provisions of Section 012500 of the specifications. If no Section 012500 is available, then see section 016000 Product Requirements, sub-section 1.5. Each such request shall describe the proposed substitution in its entirety including name of the material or equipment, drawings, catalog cuts, performance or test data and all other information required for an evaluation. The submittal shall also include a statement noting all changes required in adjoining, dependent or other interrelated work necessitated by the incorporation of the proposed substitute. The Bidder shall bear the burden of proof of merit of the proposed substitution. The Project Representative's decision of approval or disapproval of a proposed substitution shall be final.

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6.1 BID PROPOSAL

- A. The Bidder shall submit its bid on the forms included with these instructions. All blank spaces in the Bid Proposal Form must be properly filled in. If the bid is made by a partnership or co-partnership, it must be so stated and it must be signed in the firm's name, followed by the written signature of the signing partner. If the bid is made by a corporation, it must be signed in the name of the corporation, followed by the written signature of the officer signing, and the printed or typewritten designation of their office within the corporation. The full and complete address of the Bidder must be typed or printed on the bid in the spaces provided. The bid must be a scan of the original bid, complete with an original signature (pen to paper).
- B. Except as otherwise provided in these instructions, bid proposals that are incomplete, or that are conditioned in any way, or that contain erasures, alterations, or items not called for in the contract documents, or that do not conform to the call for bids, may be rejected as non-responsive at the discretion of the Agency unless the law requires that the omission be deemed non-responsive, in which case the bid will be rejected as non-responsive. Only the amounts and information asked for on the Bid Proposal Form and the plans and specifications furnished will be considered as the bid. Bid amounts include all taxes imposed by law, **except** for Washington Sales Tax unless noted otherwise.
- C. Each Bidder shall bid upon the work exactly as specified and as provided in the Bid Proposal Form. The Bidder shall bid upon all alternates if alternates are indicated on the Bid Proposal Form. When bidding on alternates for which there is no charge, the Bidder shall write the words "no charge" in the space provided on the Bid Proposal Form.
- D. Bidders shall acknowledge receipt of any ADDENDA to the solicitation for bids on the Bid form. Failure to do so may result in the bid being declared non-responsive.

7.1 SUBMISSION OF BID

- A. Bid responses will only be accepted electronically via email/email attachment [BidBox@parks.wa.gov](mailto:BidBox@parks.wa.gov).
- B. Marking of The Bid Response (Email Subject Line):
- Subject line should include the bid's identification number, "Bid" and Company name.
- Example email subject line: NW-C9999 Bid John Smith Construction LLC
  - Example email subject line: EW-C9999 Bid Sunshine Construction Corp.
- C. People with disabilities who wish to request special accommodation, (e.g., sign language interpreters, braille, etc.) need to contact the Agency ten (10) working days prior to the scheduled bid opening.
- D. Signature (what is acceptable):

The purpose of a signature is to ensure a manifestation of asset by the signer and to legally bind the signer to the documents submitted.

In 2020 Washington State enacted law allowing for alternatives to hardcopy original wet-ink signatures. While the Bidder cannot force any process upon the Agency, the Agency can mandate and accept alternatives to an original wet-ink signature.

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The Agency will accept a picture of an original wet-ink signature, such as a PDF scan. .JPG, TIFF-Group 4 (or similar technology). These three (3) technologies are known to work. The Bidder's use of other technology is at the Bidder's risk and peril. Bids or bid formats that the Agency cannot open, and view shall be deemed non-responsive.

For clarity: Print out the competition document, review it, include any other required document(s) (such as the Bid Bond if required), complete where necessary, sign where indicated with a pen onto the paper, when you believe your bid response is ready to be submitted to the Agency, scan it as a PDF file, check the PDF file to make sure all pages are legible, then attach the file to your business email and send it to [BidBox@parks.wa.gov](mailto:BidBox@parks.wa.gov).

It is the Agency's expectation that the Bidder's bid response email will contain a PDF attachment with all of the required documents scanned as a PDF, including any required signatures.

### 7.2 BID CLOCK:

After the bid opening (due date deadline), Agency staff will review the bids. The email's date and timestamp that is visible on the email, from the Agency's perspective, shall serve as the bid clock and it is this information that will be used to determine if the bid was timely.

**CAUTION:** Submit your bid response early as a safeguard against any technological slow-down or delays and/or malfunctions. Bids received after the deadline for any reason, no matter the cause, regardless of responsibility, will be rejected. When and whatever time the email comes in, the Agency will reference the email's timestamp to determine responsiveness.

You are welcome to follow up with an email to [contracts@parks.wa.gov](mailto:contracts@parks.wa.gov) and ask confirmation of receipt and the Agency can send a reply to the sender of the bid response. However, our ability to respond is not instantaneous, not guaranteed, and works best if there's at least three (3) business days of time to respond.

### 8.1 MODIFICATION OF BID

#### A. Modifying And Supplementing Prior To Bid Opening:

**Modifying:** Modifying refers to a bid that has already been submitted to the Agency. Modifying means altering information already contained in the Bidder's bid response that has already been submitted to the Agency.

**Supplementing:** Supplementing refers to a bid that has already been submitted to the Agency. Supplementing means adding to the bid response for materials, documents, or information not already in the Bidder's bid response.

**HOW:** Bidder may modify or supplement its bid prior to the bid due date by sending a replacement bid by email to: [BidBox@parks.wa.gov](mailto:BidBox@parks.wa.gov). In the body of the email clearly explain that this bid response is replacing an earlier one. Follow the example subject line.

Example email subject line: SW-C9999 Replacement Bid ACME Construction Inc.

**Do not send in a piece of a bid response asking the Agency to link it up with the earlier bid response. Send in a full and complete replacement.**

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9.1 WITHDRAWAL OF BID

- A. Withdrawal refers to a bid that has already been submitted to the Agency. A bid response may be withdrawn by a Bidder before the Bid Opening (due date deadline) for the bid. The FAILURE TO WITHDRAW a bid prior to the bid due date deadline exposes the Bidder to the possibility that the Agency will make a demand against the Bidders bid bond.
- B. Procedure for Withdrawing a Bid Before Bid Due Date: Bidder may withdraw its bid prior to the bid due date by sending an email to: [BidBox@parks.wa.gov](mailto:BidBox@parks.wa.gov). In the body of the email clearly explains that the earlier bid submission is being withdrawn. Follow the example subject line. Example email subject line: SW-C9999 Withdraw Bid ACME Construction Inc.
- C. Procedure for Withdrawing a Bid After Bid Opening Due to Error: If a Bidder discovers an error in its bid following the bid opening, the Bidder must submit written notification of the withdrawal to [contracts@parks.wa.gov](mailto:contracts@parks.wa.gov) within 24 hours following the bid opening. Follow the example subject line. Example email subject line: SW-C9999 Withdraw Bid ACME Construction Inc.
- The Bidder must provide written documentation of the claimed error to the satisfaction of the Agency within 72 hours following the bid opening.
  - The Agency will approve or disapprove the request for withdrawal of the bid in writing. If the Bidder's request for withdrawal of its bid is approved, the Bidder will be released from further obligation to the Agency without penalty. If it is disapproved, the Agency may retain the Bidder's bid bond.

10.1 REJECTION OF BID

- A. The Agency reserves the right to reject any or all bids and to waive informalities in connection with the bids.

11.1 BID BOND

- A. When the total bid amount is \$35,000 or less, a bid bond is not required. When the sum of the base bid plus all additive bid alternates is \$35,000.00 or less, bid security is not required.
- B. When the sum of the base bid plus all additive alternates is greater than \$35,000.00, a bid guarantee in the amount of 5% of the base bid amount is required. Failure of the Bidder to provide bid guarantee when required shall render the bid non-responsive.
- C. Acceptable forms of bid guarantee are: A bid bond. A copy of the bid bond must be included along with your bid response to the Agency. See also, Section 7.1 SUBMISSION OF BIDS – SECTION A.
- D. The Bidder will allow 60 days from bid opening date for acceptance of its bid by the Agency.
- E. Should the successful Bidder fail to enter into a contract and furnish a satisfactory performance bond within 15 days after receiving properly prepared contract forms from the Agency, the bid bond may be forfeited as liquidated damages for advertisements and administration of bid procedures.
- F. Bid bonds must be held for the three low bids for 30 days or until a contract is executed with the successful Bidder. All other bid bonds will be released or returned to the Bidders within 15 days of the bid opening.

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12.1 BID EVALUATION AND AWARD OF CONTRACT

- A. Award of contract will be made by the Agency based upon any combination of the base bid and alternates that, in the Agency's sole discretion, is in the Agency's best interest considering price, schedule, and other factors. The numbering of the alternates in the bid proposal bears no relationship to the order in which the alternates may be selected by the Agency. Additionally, the Agency reserves the right to negotiate base bid prices (including changes to the contract plans and specifications) with the low responsive, responsible Bidder to bring the final contract amount within the funds available.
- B. BID TABULATION, BID RECORD AND ANNOUNCEMENT OF APPARENT LOW BID:

The Agency does not guarantee when the Bid results will be released to the public. The bid results are usually released within three business days of the bid opening and often the same day. Bid results can be obtained by accessing the Washington State Parks webpage at [www.parks.wa.gov/contracts](http://www.parks.wa.gov/contracts) (see "Construction Projects- Public works bid results"). The Bid Tabulation results may also be released through Builders Exchange of Washington at [www.bxwa.com](http://www.bxwa.com). But, Bidders are cautioned that the Washington State Parks website is the official release point for the Bid Tabulation for this competition.

**The bid tabulation** will identify all bids received by the Agency. Bids that were not rejected and not withdrawn prior to the bid opening will be ranked by base bid price. The first three lowest base bids will reflect detailed pricing information. The remaining Bidders will reflect only the base bid pricing. Bids that were rejected for any reason will reflect **Non-Responsive** in the bid tabulation but may include its total pricing.

**The bid record** will list all bids received, ordered alphabetically. Rejected bids will not show detailed pricing. The bid record is used for projects with Alternates. The Agency may consider Alternate Bid Items in any combination. The low Bidder for award purposes is the responsive Bidder offering the lowest aggregate amount for the base bid plus selected alternates, within available project funds.

Release of the Bid Tabulation or Announcement of the Apparent Low bid information that a Firm was identified as the apparent low base bid simply means that at this point in time the Agency believes the subject bid was the lowest cost responsive bid, but designation as the apparent low responsive bid is not a guarantee of a contract with the Agency. The Agency reserves the right to reevaluate the bid and determine whether the bid was responsive and responsible and successful as first thought. The Bidder identified as the apparent low responsive bid is cautioned not to commit funds, resources, and effort prior to receiving an actual executed contract. The Bidder identified as the apparent low responsive bid that commits funds, resources, and effort prior to a contract do so at its own risk and peril.

Within two (2) business days following the day of the release of the Bid Tabulation/Bid Record or the Announcement of the Apparent Low bid, the Bidder may file a Protest (Protest procedures are outlined in Section 13.1).

- C. REJECTION LETTER & PROTEST: No matter the phase of the evaluation, if the Agency determines that the bid is not responsive or the Bidder is not responsible, the Agency will reject the bid/bidder, and send the bidder a Rejection Letter explaining why the bid/bidder was rejected. Within two (2) business days following the day of the release of the Rejection Letter, the Bidder may file a Protest, provided it meets one of the three (3) protest grounds (Protest procedures are outlined in Section 13.1). The Rejection Letter will be sent by email/email attachment to the email address provided by the Bidder in the Bidder's bid response.



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- D. RECORDS REQUEST: All submitted bids are subject to public records request once the lowest bidder has been determined and officially announced.

After the announcement of the lowest bidder, any member of the public may request access to the bid documents. No official format is required for making a records request; however, the Agency recommends that requestors submit requests using our website for public records requests: <https://parks.wa.gov/about/contact-us/public-records-requests>.

- E. The intent of the Agency is to award a contract to the low responsive, responsible bidder by considering the following:

**RESPONSIBLE** - A Bidder must meet the following mandatory responsibility criteria under RCW 39.04.350 (1) to be considered a responsible Bidder and qualified to be awarded a public works project. The Bidder must:

1. At the time of bid submittal, have a certificate of registration in compliance with [RCW 18.27](#), a plumbing contractor license in compliance with [RCW 18.106](#), an elevator contractor license in compliance with [RCW 70.87](#), or an electrical contractor license in compliance with [RCW 19.28](#) as required under the provisions of those chapters;
2. Have a current state Unified Business Identifier (UBI) number;
3. If applicable, have industrial insurance coverage for the Bidder's employees working in Washington as required in [RCW 51](#); an employment security department number as required in [RCW 50](#); and a state excise tax registration number as required in [RCW 82](#);
4. Not be disqualified from bidding on any public works contract under [RCW 39.06.010](#) or [39.12.065\(3\)](#);
5. If bidding on a public works project subject to the apprenticeship utilization requirements in RCW 39.04.320, not have been found out of compliance by the Washington State Apprenticeship and Training Council for working apprentices out of ratio, without appropriate supervision, or outside their approved work processes as outlined in their standards of apprenticeship under Chapter 49.04 RCW for the one-year period immediately preceding the date of the bid solicitation; and
6. Public Works and Prevailing Wage Training/Exemption. Bidders shall have received training on the requirements related to public works and prevailing wage under this chapter and chapter [39.12 RCW](#). The bidder must designate a person or persons to be trained on these requirements. The training must be provided by the department of labor and industries or by a training provider whose curriculum is approved by the department. The department, in consultation with the prevailing wage advisory committee, must determine the length of the training. Bidders that have completed three or more public works projects and have had a valid business license in Washington for three or more years are exempt from this subsection. The department of labor and industries must keep records of entities that have satisfied the training requirement or are exempt and make the records available on its website. Responsible parties may rely on the records made available by the department regarding satisfaction of the training requirement or exemption. <https://lni.wa.gov/licensing-permits/public-works-projects/contractors-employers/contractor-training>
7. Within the three-year period immediately preceding the bid solicitation, not have been determined by a final a binding citation and notice of assessment issued by the department



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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 Chapters 49.46, 49.48, or 49.52 RCW. By signing the Bid Proposal Form, the bidder verifies under penalty of perjury, pursuant to RCW 9A.72.085. that the bidder is in compliance with this subsection

8. Supplemental Responsibility Criteria: In addition to the mandatory Bidder responsibility, the Agency may adopt relevant supplemental criteria for determining Bidder responsibility applicable to a particular project which the Bidder must meet (RCW 39.04.350 (3)).
  - a. If applicable, the Agency shall consider an overall accounting of the attached supplemental criteria for determining Bidder responsibility "DIVISION 00 SUPPLEMENTAL RESPONSIBILITY CRITERIA".
  - b. At least seven (7) days prior to the bid submittal deadline, a potential Bidder may request that the Agency modify the supplemental responsibility criteria. The Agency will evaluate the information submitted by the potential Bidder and respond before the bid submittal deadline. If the evaluation results in a change of the criteria, the Agency will issue an ADDENDA to the bidding documents identifying the new criteria.
  - c. Upon the Agency's request, the apparent low Bidder must supply the requested responsibility information within two (2) business days of request by the Agency. Withholding information or failure to submit all the information requested within the time provided may render the bid non-responsive and the bid/Bidder may be rejected by Rejection Letter.
  - d. The Agency will not execute a contract with any other Bidder until two (2) business days after the Bidder determined to be not responsible has received the rejection letter.

**RESPONSIVE** - A bid will be considered responsive if its electronic response meets the following requirements:

1. It is received at the proper time and place.
2. It meets the stated requirements of the Bid Proposal Form.
3. It meets the requirements as stated in section 6.1.A of the Instructions To Bidders.
4. It is submitted by a licensed/registered contractor within the state of Washington at the time of bid opening and is not banned from bidding by the Department of Labor and Industries.
5. It is accompanied by a bid guarantee, if required.

If inconsistencies or errors are noted in the bid proposal prices, **prices shown in words have precedence over prices shown in figures.** The **unit and lump sum prices have precedence over their total amounts;** and the **total amounts have precedence over the total bid.**

The apparent low Bidder, for purpose of award, is the responsive and responsible Bidder offering the low aggregate amount for the base bid plus selected additive or deductive bid alternates and meeting all other bid submittal requirements.

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13.1 PROTEST PROCEDURES

A. GENERAL:

This protest process is a courtesy provided by the Agency and it is not governed by Washington's Administrative Procedures Act (APA), RCW 34.05, nor does it confer any additional rights above and beyond what the Bidder already enjoys as a taxpayer. The purpose of this process is to allow the Agency to correct evaluation process errors and problems before a contract is executed.

Only a Bidder may file a protest regarding this competition.

The Bidder must strictly adhere to the protest process as set forth herein, the failure of which may result in a summary determination that the protest is without merit without an opportunity to cure.

B. FORM AND CONTENT:

All protests must:

- Be in writing.
- The protest must state and clearly articulate the grounds for the protest with specific facts and complete statements of the action(s) being protested.
- A description of the relief or corrective action being requested should also be included.
- All protests shall be addressed to the Procurement Coordinator.

C. CONTENT LIMITATIONS:

The Agency does not currently mandate any page limitation. However, the protest must be clearly articulated, succinct, organized, logical, and professional.

The Agency will reject protests that:

- fail to state and clearly articulate at least one of the three GROUNDS;
- contain rants, attacks, and/or disparaging or abusive remarks;
- include multiple attachments or references (document dumping, document overload); or,
- appear to require the reader piece together voluminous amounts of material to decipher the argument being made.

D. SUBMISSION OF PROTEST:

- All protests must be submitted within two (2) business days following the day of the release of the Bid Tabulation/Announcement of the Apparent Low bid or after the formal Rejection Letter is sent. For purposes of timing the day of the release of the Bid Tabulation or the day of the Rejection Letter is sent to the Bidder shall not count.
- Bidders must send all protests to: [contracts@parks.wa.gov](mailto:contracts@parks.wa.gov). See also Subject Line.
- SUBJECT LINE: Must include the bid's identification number, and "PROTEST" in the subject line. Failure by the Bidder to include this information in the subject line may result in Bidder's protest not being timely recognized.

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**E. GROUNDS WHICH MAY BE PROTESTED:**

- Conflict of Interest on the part of Agency staff.
- Errors in computing the score.
- Non-compliance with procedures described in the procurement document.

Protests will be rejected as without merit if they do not clearly and convincingly meet one of the GROUNDS above and/or seems to address issues such as:

- An evaluator's professional judgment on the quality of a response, or
- The Agency's assessment of its own and/or other agencies' needs or requirements, or,
- Issues, concerns, objections, or requests for changes that were or could have been addressed prior to the bids due date deadline.

Protests that do not clearly and convincingly meet the requirements and standards described herein are without merit and may be rejected.

**F. MANAGER ASSIGNMENT AND REVIEW:**

Upon receipt of a protest that meets the requirements described herein, a protest review will be held by the Agency. The Agency will assign a Manager. The Manager is responsible for reviewing and investigating the Bidder's written protest and may meet with agency staff or the agency program that was involved in the competition. The Manager may consider the record and all reasonably available facts and will issue a protest determination in writing within fifteen (15) business days from receipt of the protest. If additional time is needed, the Manager will notify the protesting party of the need for additional time within 15 business days from receipt of the protest.

In the event a protest may affect the interest of another Bidder that submitted a response, the Agency may reach out to that Bidder, may provide an unedited copy of the protest to that Bidder, and may invite that Bidder to submit its views and any relevant information on the protest to the Manager.

**G. PROTEST DETERMINATION AND FINDINGS AND DISSEMINATION:**

The Manager's protest determination may:

- Find the protest lacking in merit and reject the protest;
- Find only technical or harmless errors in the Agency's acquisition process and determine the Agency to be in substantial compliance and reject the protest; OR
- Find merit in the protest and provide THE AGENCY options which may include:
  - Correcting the errors and re-evaluating all responses;
  - Canceling the competition and possibly for a new competition to take place; OR
  - Making other findings and determining other courses of action as appropriate.

If the Agency rejects the protest, the Agency will enter into a contract with the Apparent Successful Bidder no sooner than two (2) business days after issuance of the protest determination by email to the protesting party at the email address indicated on the party's bid documents. For the purposes of timing, the date the protest determination is sent to the protesting party shall not count.

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Dissemination: The Agency will disseminate the decision to all interested Bidders via email/email attachment to the email address provided by the Bidder in the Bidder's bid response.

**H. AGENCY DECISION IS FINAL:**

The Manager's protest determination constitutes the agency's final decision regarding the protest. If the protesting party disagrees with the protest determination, the Bidder may seek judicial relief in the Washington Superior Court for Thurston County within two (2) business days of the issuance of the protest determination.

**I. STRICT COMPLIANCE**

Strict compliance with these protest procedures is essential in furtherance of the public interest. Any aggrieved party that fails to comply strictly with these protest procedures is deemed, by such failure, to have waived and relinquished forever any right or claim with respect to alleged irregularities in connection with the solicitation or award of the Contract. No person or party may pursue any judicial or administrative proceedings challenging the solicitation or award of this Contract, without first exhausting the administrative procedures specified herein.

**J. REPRESENTATION**

An aggrieved party may participate personally or, if a corporation or other artificial person, by a duly authorized representative. Whether or not participating in person, an aggrieved party may be represented, at the party's own expense, by counsel.

**K. COMPUTATION OF TIME**

In computing any period of time prescribed by this procedure, the day of the act or event from which the designated period of time begins to run is not included. The last day of the period is included. The term "business day" does not include Sunday, Saturday, or Washington State recognized holiday.

**L. ACKNOWLEDGEMENT**

By submitting a bid in response to this solicitation, the Bidder acknowledges that it has reviewed and acquainted itself with the bid protest procedures herein and agrees to be bound by such procedures as a condition of submitting a bid.

**14.1 EXECUTION OF CONTRACT**

- A. The successful bidder will be required to execute the contract and furnish performance bond and insurance certificate satisfactory to the Agency within 15 days after receiving properly prepared contract documents from the Agency.

**15.1 SUBCONTRACTOR PARTICIPATION MONITORING AND REPORTING**

- A. Once a contract is awarded through the solicitation or proposal process, the awarded Prime Contractor is obligated to complete the vendor registration in Access Equity. Access Equity is a secure online vendor management system (B2GNow). Confidential information (Tax ID, etc.) will not be published. Prime Contractors that have previously registered with B2Gnow for any public entity, must verify the system has updated information. Contractors can access the system at:

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PUBLIC WORKS PROJECT**

<https://omwbe.diversitycompliance.com/> or through a direct link on the Office of Minority and Women's Business Enterprises (OMWBE) website at: <https://omwbe.wa.gov/>.

- B. Each month during the contract, the Prime Contractor will report payments to ALL Subcontractors through the Access Equity system. This monthly reporting information includes total payment in dollars made to the Subcontractor, payment dates, and any additional information required to verify payment to Subcontractors. The Prime Contractor will enter this payment information into the Access Equity system, and the Subcontractors will verify this payment information in the system. Online training is available through the Access Equity/B2Gnow system. This requirement applies to both Prime Contractors and Subcontractors.

**END OF INSTRUCTIONS TO BIDDERS**

/ / / / /

CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD

**SUPPLEMENTAL BIDDER RESPONSIBILITY CRITERIA  
WITH INCLUSION PLAN AND APPRENTICESHIP REQUIREMENTS**

**Low Responsible Bidder**

It is the intent of the Agency to award a contract to the lowest responsive and responsible Bidder. In determining the Bidder's responsibility, the Agency shall consider an overall accounting of the items listed below. Potential Bidders may request the Agency modify the Bidder responsibility criteria. The request must be in writing and submitted at least 7 days prior to the bid opening.

The apparent low bidder shall submit the required information within **two (2)** business days of receiving request from the Agency. This request may be made in the form of a telephone call or email message. The required information shall be provided on the referenced forms bound herein. Electronic copies may be made available upon request. Failure to submit such information to the satisfaction of the Agency within the time provided may render the Bidder as not responsible.

1.1 REQUIRED INFORMATION/CRITERIA

- A. For the purposes of the Supplemental Bidder Responsibility evaluation process, the scope of this project generally involves:
- *Replacement of two failing CMP culverts along Fort Canby Rd. with concrete structures, including removal of existing culverts, installation of new structures, roadway profile adjustments, improvements, and paving.*
  - *Utilities relocation is included in the project scope.*
- B. Experience Of Contractor On Projects Of Similar Size And Complexity: Contractor is required to have successfully completed at least **three (3)** projects of similar type, size and complexity to this project, each with a contract amount of at least **\$900,000**, within the last **seven (7)** years.
- C. List of Completed Projects (Use Form 1, Contractor Experience Detail): Provide a list of all the construction contracts **\$900,000** and above your firm has completed within the past **five (5)** years, giving the name of the project; name, address, and phone numbers of Owner and architect representatives; final contract amount; date of completion; and percentage of the cost of the work performed with your firm's own forces. This information will be used for reference reviews.

2.1 EXPERIENCE OF KEY PERSONNEL

- A. Experience of Project Manager (Use Form 2, Résumé of Key Personnel for Proposed Contract): Submit resume and references for the proposed Project Manager. This person shall have managed, as lead project manager, a minimum of **three (3)** projects of similar type, size and complexity to this project, and successfully completed those projects within the last **ten (10)** years.
- B. Experience of Superintendent (Use Form 2, Résumé of Key Personnel for Proposed Contract): Submit resume and references for the proposed project Superintendent. This person shall have performed as the lead Superintendent for a minimum of **three (3)** projects of similar type, size and complexity to this project, and successfully completed those projects within the last **ten (10)** years.

CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD

3.1 DIVERSE BUSINESS INCLUSION PLAN (USE FORM 3)

- A. Washington state goals are: Minority Business Enterprise (MBE) 10%, Women's Business Enterprise (WBE) 6%, WA Small Business 5% and WA Veterans 5%. The apparent low bidder is required to submit a Diverse Businesses Inclusion Plan for all projects with a Maximum Allowable Construction Cost (MACC) over \$1M.

The Diverse Business Inclusion plan shall include the apparent low bidder's anticipated participation goals, the subcontractors anticipated to be used on this project, a list of diverse businesses near the project, the project's diverse expert, and past performance using diverse businesses.

4.1 APPRENTICESHIP (USE FORMS 1 & 4)

- A. For each public works project with an apprenticeship utilization goal that was completed by the Bidder within three (3) years of the bid submittal date for this project, the Bidder shall submit the following:

- A list of such projects;
- The owner and contact information for the owner's representative;
- The apprenticeship utilization percentage goal for the project;
- The actual utilization percentage by the Bidder; and
- An explanation of any extenuating circumstances that contributed to the Bidder not meeting the goals.

(Use Form 4 for projects not listed on Form 1)

The Agency may contact previous owners to validate the information provided by the Bidder and shall consider whether the goals were mandatory or voluntary, and the validity of any explanation of extenuating circumstances.

5.1 REFERENCES FROM OWNERS AND ARCHITECTS FOR PREVIOUS PROJECTS (AGENCY USES FORM 5, REFERENCE EVALUATION QUESTIONNAIRE)

- A. The Agency may check references by contacting owners and architects of the bidder's previous projects regarding the bidder's performance and that of key staff. A reference score sheet will be utilized and the rating shall be satisfactory or better on a five-category scale with "satisfactory" at mid-scale.

6.1 OVERALL SCORING (FORM 6, RESPONSIBILITY CRITERIA EVALUATION SCORE SHEET)

- A. The Agency will use this form to complete and document the overall evaluation process.

END OF SECTION

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

**Supplemental Bidder Responsibility  
Form 1 - Contractor Experience Detail**

<b>Contractor Information:</b>		
Contractor Legal Name:		Contact Person and their Position/Title:
Project Superintendent:		Project Manager:
Physical Address (Physical and Mailing Addresses are the Same <input type="checkbox"/> ):		Mailing Address:
Telephone:	Cell Phone:	Email Address:

<b>Project Information:</b> Is this project relevant to the proposed project? Yes <input type="checkbox"/> No <input type="checkbox"/>	
Project:	Location:
Project Description:	As Prime: <input type="checkbox"/> As Sub: <input type="checkbox"/>
Original Contract Amount: \$ Final Contract Amount: \$	Original Contract Days: Final Contract Days:

<b>Owner Information:</b>	
Owner's Business Name:	Contact Person and their Position/Title:
Mailing Address :	Telephone: Email Address:

<b>Architect/Engineering Information:</b>	
Owner's Business Name:	Contact Person and their Position/Title:
Mailing Address :	Telephone: Email Address:



**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD  
Supplemental Bidder Responsibility  
Form 2 - Resume of Key Personnel**

Name:	Role in this Contract:	Years Experience	
		Total	With Current Firm
Firm Name and Location (City and State):			
Training/Education/Specialization:			
Years of Experience in the Proposed Role:			

RELEVANT PROJECTS			
Project Title:		Year Completed	
Project Owner:			
Brief Description (Brief scope, size, cost, etc.) and specific role:		Check if project performed with current firm. <input type="checkbox"/>  If performed with different firm list the firm name	
Reference Name & Contact Information:			
Project Owner:		Project Architect:	
Name:		Name:	
Phone:		Phone:	
E-mail		E-mail:	

RELEVANT PROJECTS			
Project Title:		Year Completed	
Project Owner:			
Brief Description (Brief scope, size, cost, etc.) and specific role:		Check if project performed with current firm. <input type="checkbox"/>  If performed with different firm list the firm name	
Reference Name & Contact Information:			
Project Owner:		Project Architect:	
Name:		Name:	
Phone:		Phone:	
E-mail		E-mail:	

RELEVANT PROJECTS			
Project Title:		Year Completed	
Project Owner:			
Brief Description (Brief scope, size, cost, etc.) and specific role:		Check if project performed with current firm. <input type="checkbox"/>  If performed with different firm list the firm Name	
Reference Name & Contact Information:			
Project Owner:		Project Architect:	
Name:		Name:	
Phone:		Phone:	
E-mail		E-mail:	

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

RELEVANT PROJECTS		
Project Title:		Year Completed
Project Owner:		
Brief Description (Brief scope, size, cost, etc.) and specific role:		Check if project performed with current firm. <input type="checkbox"/>
		If performed with different firm list the firm Name
Reference Name & Contact Information:		
Project Owner:		Project Architect:
Name:		Name:
Phone:		Phone:
E-mail		E-mail:

RELEVANT PROJECTS		
Project Title:		Year Completed
Project Owner:		
Brief Description (Brief scope, size, cost, etc.) and specific role:		Check if project performed with current firm. <input type="checkbox"/>
		If performed with different firm list the firm Name
Reference Name & Contact Information:		
Project Owner:		Project Architect:
Name:		Name:
Phone:		Phone:
E-mail		E-mail:

RELEVANT PROJECTS		
Project Title:		Year Completed
Project Owner:		
Brief Description (Brief scope, size, cost, etc.) and specific role:		Check if project performed with current firm. <input type="checkbox"/>
		If performed with different firm list the firm Name
Reference Name & Contact Information:		
Project Owner:		Project Architect:
Name:		Name:
Phone:		Phone:
E-mail		E-mail:

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

**Supplemental Bidder Responsibility  
Form 3 - Prime Contractor Diverse Business Inclusion Plan**

Prime Contractor Name: \_\_\_\_\_

For the purposes of this form, Washington State-certified diverse businesses are defined as follows:

- *Minority Business Enterprise (MBE)*, *Women’s Business Enterprise (WBE)*, or combination of the two. Certified by the Office of Minority and Women’s Business Enterprises (OMWBE): <http://omwbe.wa.gov/>
- *Veteran-owned Business*. Certified by the Department of Veteran’s Affairs (DVA): <http://dva.wa.gov/>
- *Small Business* (includes Mini and Micro businesses). Certified through the Washington Electronic Business Solution (WEBS): <https://fortress.wa.gov/ga/webs/home.html>

**Anticipated Certified Diverse Business Participation Goals**

Subcontracting means direct performance of commercially useful work through subcontracting as part of the proposed project team. Of the total contract work, what are the diverse business participation goals proposed for subcontracting on your team? Please only include the above-listed Washington State certification types in your “Contractor-defined Anticipated Percent of Contract Amount (Goals)” estimate. Zero percent (0%) is not a goal.

Anticipated Certified Diverse Business Participation Goals	Washington State Goals	Contractor-defined Anticipated Percent of Contract Amount (Goals)
<b>Minority-owned business (MBE)</b>	<b>10%</b>	%
<b>Women-owned business (WBE)</b>	<b>6%</b>	%
<b>Veteran-owned business (DVA)</b>	<b>5%</b>	%
<b>Small business</b>	<b>5%</b>	%

**Subcontracting Team**

List the names of the diverse businesses you anticipate using on this project. Generally describe the work you expect the diverse business to perform and identify the percent of total contract value intended for each diverse business. Please include the above-listed Washington State certification types. *If necessary, add more rows below.*

Name of Diverse Business	Specify Diverse Business Certification (circle one or more)	Describe Trade or Task	Anticipated Percent of Contract Amount
	MBE, WBE, DVA, Small		%
	MBE, WBE, DVA, Small		%
	MBE, WBE, DVA, Small		%
	MBE, WBE, DVA, Small		%
	MBE, WBE, DVA, Small		%

**Attach a list of diverse businesses near the project location to this form:**

1. Go to <https://omwbe.wa.gov/directory-certified-firms>
2. Click on “OMWBE DIRECTORY”
3. Click on “Search Certified Firm Directory”
4. Select MBE, MWBE, SBE, and WBE certifications.
5. Enter a City, Zip Code, or County near the project site address and then press “Search” at the bottom of the page. If you do not have many results, please expand your search to include nearby locations.
6. Print and attach the results to this form with your submittal

**Diverse Expert:**

Diverse Expert responsibilities would typically include, but are not limited to:

- Outreach to qualified diverse businesses.
- Submit and discuss updates on a regular basis to the state project manager regarding Diverse Business utilization and progress.
- Ongoing outreach to diverse businesses for required contract work, including any changes in scope.
- Assist diverse businesses with successful contract performance.

## CAPE DISAPPOINTMENT STATE PARK REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD

A qualified Diverse Expert brings knowledge of the identity, capabilities and capacities of diverse business subcontractors and suppliers; experience recruiting and working with diverse businesses for construction; and assisting diverse businesses to develop working relationships with contractors.

Identify the person within your team to manage your diverse inclusion responsibility.

Diverse Expert Name:

---

Diverse Expert Contact Information:

---

Diverse Expert Firm (if another firm is managing participation):

---

### **Past Performance**

Please select **five (5) of your projects** with Washington State-certified diverse business participation (MBE, WBE, DVA, and/or Small/Mini/Micro) and list them below **for the last five (5) years**. If you do not have any projects that tracked or reported diverse business participation, you may leave this section blank. In that case, please attach an additional sheet with explanation.

You may have projects with diverse business participation for an organization or entity that required *different* diverse business categories (including self-certification). If so, please attach a sheet with the same column data and information, but include percentages for the categories that were tracked during the project.

Contract Name	Contracting Agency or Entity	Contract Amount	Year	Percent of Contract Amount	
				Minority-owned business:	%
				Women-owned business:	%
				Veteran-owned business:	%
				Small/mini/micro business:	%
Contract Name	Contracting Agency or Entity	Contract Amount	Year	Percent of Contract Amount	
		\$		Minority-owned business:	%
				Women-owned business:	%
				Veteran-owned business:	%
				Small/mini/micro business:	%
Contract Name	Contracting Agency or Entity	Contract Amount	Year	Percent of Contract Amount	
		\$		Minority-owned business:	%
				Women-owned business:	%
				Veteran-owned business:	%
				Small/mini/micro business:	%
Contract Name	Contracting Agency or Entity	Contract Amount	Year	Percent of Contract Amount	
		\$		Minority-owned business:	%
				Women-owned business:	%
				Veteran-owned business:	%
				Small/mini/micro business:	%
Contract Name	Contracting Agency or Entity	Contract Amount	Year	Percent of Contract Amount	
		\$		Minority-owned business:	%
				Women-owned business:	%
				Veteran-owned business:	%
				Small/mini/micro business:	%

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

**Supplemental Bidder Responsibility  
Form 4 – Apprenticeship Utilization**

<b>Contractor Information:</b>		
Contractor Legal Name:		Contact Person and their Position/Title:
Project Superintendent:		Project Manager:
Physical Address (Physical and Mailing Addresses are the Same <input type="checkbox"/> ):		Mailing Address:
Telephone:	Cell Phone:	Email Address:

<b>Project Information:</b> Is this project relevant to the proposed project? Yes <input type="checkbox"/> No <input type="checkbox"/>	
Project:	Location:
Project Description:	As Prime: <input type="checkbox"/> As Sub: <input type="checkbox"/>
Original Contract Amount: \$ Final Contract Amount: \$	Original Contract Days: Final Contract Days:

<b>Owner Information:</b>	
Owner's Business Name:	Contact Person and their Position/Title:
Mailing Address :	Telephone: Email Address:

<b>Architect/Engineering Information:</b>	
Owner's Business Name:	Contact Person and their Position/Title:
Mailing Address :	Telephone: Email Address:

1. Did this project require Apprenticeship Participation? Yes  No  (If NO, stop here)
2. If yes, what was the Apprenticeship percentage? \_\_\_\_\_ %
3. What was the actual percentage achieved? \_\_\_\_\_ %
4. Was the apprenticeship requirement met? Yes  No
5. If NO to question 4, explain Why.

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

**Supplemental Bidder Responsibility  
Form 5 - Reference Evaluation Questionnaire**

Evaluated Firm :
Project Manager:
Superintendent:
Evaluated Project Name:

- Prime  
 Subcontractor

Approx. Start Date	Approx. End Date	Approx. Final Project Cost

**PERFORMANCE EVALUATION**

Rating Criteria - Rate on a scale of 1 to 5

- **5 = Superior** based on performance (would hire this firm/individual again)
- **4 = More than Satisfactory**
- **3 = Satisfactory** based on performance (would hire this firm/individual again)
- **2 = Less than Satisfactory**
- **1= Totally Unsatisfactory** based on performance (would never hire the firm/individual again)

Criteria	Rating		
	Company	PM	Super
1 Ability to meet client's expectations			
2 Quality of workmanship			
3 Ability to manage project costs and minimize change orders			
4 Ability to maintain project schedule			
5 Ability to manage subcontractors			
6 Professionalism, leadership and communication in issues management (RFI, shop drawing submittal, timely resolution of issues/questions)			
7 Ability to follow the owner's rules, regulations, and requirements (housekeeping, safety, etc.)			
8 Ability to manage closeout process (Prompt submittal of punch list, warranty, as-builts, operation manuals, tax clearances, etc.)			
9 Comfort level in hiring firm or individual again based on performance			
<b>Total Score</b>			
<b>Average Score</b>			

Evaluator Information	
Name of Evaluator:	Title:
Firm/Company Name:	
Firm Address:	
Phone:	Email:

## Form 6 – Supplemental Responsibility Criteria Evaluation Score Sheet

Project Location \_\_\_\_\_  
 Project Name \_\_\_\_\_  
 Contract Number \_\_\_\_\_  
 Project Representative \_\_\_\_\_

<b>1. Experience of Contractor</b> - On projects of similar size & complexity (Form 1)	Pass or Fail
--	--------------

<b>2. Experience of Key Personnel</b> (Form 2)	
Superintendent	Pass or Fail
Project Manager	Pass or Fail
Other(s) if specified in Division 00	Pass or Fail

<b>3. Diverse Business Inclusion Plan</b> (Form 3) <i>(Applies only to projects with Diverse Business Plan Inclusion requirements; i.e. MACC over \$1M)</i>	Pass, Fail, or N/A
---	--------------------

<b>4. Contractor Compliance with Apprenticeship Requirements</b> - Requirements were met or if not, a good faith effort was demonstrated (Forms 1 & 4) <i>Applies only to projects with apprenticeship participation requirements; i.e. MACC over \$1M</i>	Not Scored
--	------------

<b>5. References from Previous Projects</b> (Form 5) Evaluate contractor's references information and using the rating numbers: 1 = NOT Satisfactory (requires a written comment below) 2 = Less THAN Satisfactory 3 = Satisfactory 4 = More THAN Satisfactory 5 = Superior	<b>Rating Score 1-5</b> (3 is Satisfactory)
Company	
Project Manager	
Superintendent	
Total Score:	
Average score (divide total score by number of ratings)	

In determining the bidder responsibility, an overall accounting of the ratings shall be made. A score of "Pass" is required for categories 1 - 4 and an average score of 3.0 or higher is required to meet the minimum Supplemental Bidder Responsibility requirements.

Comments \_\_\_\_\_

Determination  Responsible  
 Not Responsible (Preliminary Determination)

Evaluated by \_\_\_\_\_ Date \_\_\_\_\_  
 State Parks Project Representative

Signature \_\_\_\_\_

# **Geotechnical Investigation Cape Disappointment State Park Culvert Replacements and Campground Road Improvements**

Ilwaco, Washington

**August 31, 2023**

**Prepared for**

Environmental Science Associates  
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**Prepared by**



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### APPENDICES

Appendix A:	Field Explorations and Laboratory Testing
Appendix B:	Geoprofessional Business Association Guidance Document

## 1 INTRODUCTION

At your request, GRI conducted a geotechnical investigation for the Cape Disappointment Culvert Replacement and Campground Road Improvements located at Cape Disappointment State Park in Ilwaco, Washington. The general location of the project site is shown on the Vicinity Map, Figure 1. The purpose of the investigation was to evaluate the subsurface conditions at the locations of the proposed improvements and provide our conclusions and recommendations for design and construction of the new culverts and roadway widening. The investigation included a review of existing geologic information for the area, exploratory borings, laboratory testing, and engineering studies and analyses. This report describes the work accomplished and provides our conclusions and recommendations for use in the design and construction of the proposed improvements.

Unless otherwise noted, all elevations referenced in this report are based on the North American Vertical Datum of 1988 (NAVD 88).

## 2 PROJECT DESCRIPTION

We understand that the project includes the replacement of two undersized culverts (referred to as the West Culvert and the East Culvert) with new precast concrete box culverts at the same locations to improve drainage between wetland areas on the north and south sides of the Campground Road; widening of the Campground Road near the East Culvert location to accommodate a 5-foot-wide pedestrian pathway; repairing sinkholes, over-steepened embankment slopes, and locally undermined pavements; relocation of utilities; and reconstruction of the roadway pavement. The location of the West and East Culverts are presented on the Site Plans, Figures 2 and 3, respectively.

The West Culvert will be about 14 feet wide and 30 feet long and the East Culvert will be about 20.5 feet wide and 36.5 feet long. The foundation subgrade of the West Culvert will be at about elevation 10.5 feet and about 6.5 feet below the existing roadway grades, and 2 feet to 3 feet below the grades of the adjacent wetland area. The foundation subgrade of the East Culvert will be at about elevation 9 feet and about 8.5 feet below the existing roadway grades, and 4 feet to 5 feet below the grades of the adjacent wetland areas. Several feet of fill will be placed over each of the box culverts. Cast-in-place concrete, precast concrete, modular block, or mechanically stabilized earth wingwalls will be used at each location.

The culverts will be designed in general conformance with the American Association of State Highway and Transportation Officials (AASHTO) Load and Resistance Factor Design Bridge Design Specifications (LRFD BDS) and the Washington State Department of Transportation (WSDOT) Bridge Design Manual (BDM) and Geotechnical Design Manual (GDM). Based on our review of Section 8.3.3 of the WSDOT BDM, considerations of potential impacts from seismic liquefaction is not required for culverts with a span of less

than 20 feet. The WSDOT BDM requires that wingwalls and headwalls be designed for seismic inertial loading.

### **3 SITE DESCRIPTION**

#### **3.1 Topography and Surface Conditions**

Campground Road bisects a wetland area in the central portion of Cape Disappointment State Park. The access road includes a single, asphalt-paved travel lane in each direction with narrow or non-existent shoulders. Grades along Campground Road are relatively level and are situated between about elevation 17 feet to 21 feet. Campground Road is typically 4 feet to 5 feet above the grades in the wetland area to the north and south on an embankment with slopes as steep as 1½H:1V (Horizontal to Vertical). Two sets of culverts (i.e., the West and East Culverts) underneath the roadway convey water from the north to the south side of the embankment. The westernmost existing culvert (West Culvert) is located approximately 450 feet east of the recreational vehicle dump station and consists of a 36-inch by 24-inch corrugated metal pipe culvert. Two 36-inch concrete culverts are located about 250 feet east of the McKenzie Head Trail parking area (East Culverts). Utilities in the roadway prism include a waterline in the westbound travel lane and sanitary sewer lines in the eastbound travel lane.

Numerous arcuate cracks were observed in the westbound travel lane near the East Culvert. The area of cracking extends from about 80 feet west to 40 feet east of the East Culvert. Some of the cracks extend to near the center of the westbound travel lane but are more commonly located within 2 feet of the fog line. Portions of the pavement in this area have been locally repaired and arcuate cracking is present in these repaired areas. In this area, the top of the embankment is situated about 5 feet above the elevation of the wetland area. The embankment slopes steeply into the water and is typically covered with grass and low-lying vegetation. Localized embankment failures were observed consisting of erosion or sloughing. In areas of more extensive cracking and patches, crushed rock backfill was observed on the slope apparently to repair embankment failures. The pavement along the remaining stretch of Campground Road, including near the West Culvert, appears to be in relatively good condition.

#### **3.2 Geology and Groundwater**

According to Walsh (1987), near-surface materials at the project site consist of beach deposits consisting of fine- to coarse-grained sand. A basalt outcrop, McKenzie Head, is located south of Campground Road and basalt likely underlies the beach deposits at depth. We anticipate the water level in the wetland represents the groundwater level at the site.

## **4 SUBSURFACE CONDITIONS**

### **4.1 General**

Subsurface materials and conditions were evaluated on March 27, 2023, with two borings designated SB-1 and SB-2. The approximate location of the borings completed for this study are shown on the Site Plans, Figures 2 and 3. The borings were each advanced to a depth of about 46.5 feet below the existing ground surface. A discussion of the field exploration and laboratory testing program is provided in Appendix A of this report. Logs of the borings are provided on Figures 1A and 2A in Appendix A. The terms and symbols used to describe the soils encountered in the borings are provided in Table 1A and the attached legend. Geotechnical laboratory test results are summarized in Table 2A, on Figures 3A and 4A in Appendix A, and on the summary boring logs.

### **4.2 Soils**

For the purpose of discussion, the materials disclosed by the explorations have been grouped into the following units based on their physical characteristics and engineering properties. Listed as they were encountered from the ground surface downward, the units are:

- a. PAVEMENT
- b. FILL
- c. SAND
- d. Silty SAND

The following paragraphs provide a description of the materials encountered and a discussion of the groundwater conditions at the site.

#### **a. PAVEMENT**

Borings SB-1 and SB-2 were advanced through the paved right-of-way of Campground Road. The pavement section at the boring locations consists of between 4 and 5 inches of asphalt concrete (AC) pavement underlain by 4 inches to 5 inches of crushed-rock base course (CRBC).

#### **b. FILL**

Fill was encountered under the pavement section in each boring. The fill extends to a depth of about 4 feet in boring SB-1 and to a depth of about 8 feet in boring SB-2. The fill consists of fine-grained sand with trace to some silt and up to trace gravel. Based on SPT N-values, the relative density of the sand fill is very loose to medium dense. The natural moisture content of a sample of the fill is about 23%.

### c. SAND

Sand was encountered below the fill in borings SB-1 and SB-2. The sand extends to a depth of about 40 feet in boring SB-1 and to the maximum depth explored, about 46.5 feet, in boring SB-2. The sand contains of trace to some silt and up to a trace of gravel. The sand is fine-grained. Wood debris was encountered in the upper several feet of sand encountered in boring SB-2. Based on SPT N-values, the relative density of the sand is very loose to dense and is typically medium dense. The natural moisture content of the sand varies from 20 to 37%. The results of sieve analyses completed on samples of the sand obtained from the borings are provided on Figures 3A and 4A in Appendix A.

### d. Silty SAND

Silty sand was encountered below the sand in boring SB-1 to the maximum depth explored, about 46.5 feet. The sand is fine- to coarse-grained. Based on SPT N-values, the relative density of the silty sand is medium dense. The natural moisture content of the silty sand varies from 27 to 28%.

## 4.3 Groundwater

Based on information provided by Environmental Science Associates (ESA), we understand that the water level in the wetland area is at about elevation 15 feet in the winter months and is slightly lower during the summer months. The 100-year wetland surface is at about elevation 16.3 feet at the West Culvert location and about elevation 17.0 feet at the East Culvert location. We anticipate that the groundwater at the site will be equal to the water level in the adjacent wetlands.

## 5 CONCLUSIONS AND RECOMMENDATIONS

### 5.1 General

Based on the borings advanced for this study, subsurface materials at both culvert sites consist of sand fill underlain by very loose to medium-dense sand with a trace to some silt. During the winter months, we understand that the water level in the adjacent wetland areas is at about elevation 15 feet near the West and East Culvert locations and is slightly lower during the summer months.

Our analysis indicates that the near-surface materials at the site are susceptible to liquefaction at the AASHTO *LRFD BDS* code-based hazard level. At this site, liquefaction is anticipated to result in ground-surface settlement and significant raveling and slope failures of the existing and proposed roadway embankments. Based on our review of the WSDOT *Bridge Design Manual*, seismic design of the foundations of the proposed box culverts to account for the impacts of soil liquefaction is not required. Specific details regarding the foundation loads for the proposed box culverts have not been determined. In our opinion, foundation loads of the relatively light precast-concrete box culverts can be supported by the base of the culvert being established in the native sand located below

the existing roadway embankment. Excavations for the box culvert foundations will extend below the wetland water level, and temporary watertight shoring with internal dewatering wells or well-points may be needed in order to construct the culverts in the dry.

The following sections of this report provide our conclusions and recommendations for design and construction of the project.

## **5.2 Earthwork**

### **5.2.1 General**

We understand that the subgrade elevation for the West Culvert and East Culvert will be at approximately elevation 10.5 feet (about 6.5 feet below existing roadway grades) and elevation 9.0 feet (about 8.5 feet below the existing roadway grades), respectively. We understand that the water levels in the adjacent wetland areas are estimated to be at about elevation 15.0 feet. In this regard, excavations for the new culverts and embankment widening will extend below the wetland water elevation and groundwater control will be required.

The method of excavation and groundwater control and the design of the excavation support is typically the responsibility of the contractor and should conform to applicable local, state, and federal regulations. We recommend the contractor submit for review by the Owner and Owner's design team, an excavation, shoring, and dewatering plan prepared by a professional engineer registered in Washington. The information provided below is for the use of our client and should not be interpreted to mean we are assuming responsibility for the contractor's actions or site safety. The soil disclosed by our borings should be classified as a Type C soil according to the most recent Occupational Safety and Health Administration regulations.

### **5.2.2 Excavation**

The inclination of temporary excavation slopes will depend on the groundwater conditions encountered at the time of construction and the soil type. Temporary excavation slopes extending below the wetland water level will be subject to fluctuating water levels and should be no steeper than 2H:1V (Horizontal to Vertical) to reduce the risk of slumps and raveling. Temporary excavation slopes above the wetland water level should be no steeper than 1.5H:1V. If significant seepage and running-soil conditions or slope instability are observed during excavation, flatter excavation slopes or shoring may be necessary. Some amount of sloughing, slumping, or running of temporary slopes should be anticipated during and shortly after excavation, particularly if there is seepage caused by wetland water level fluctuations. A blanket of relatively clean, well-graded, crushed rock placed on the slopes may be required to reduce the risk of these conditions, particularly if seepage

is observed in the slopes. We recommend the use of relatively clean, well-graded crushed rock, with maximum size of about 4 inches, for this purpose. The required thickness of the granular blanket should be evaluated based on actual conditions but could be in the range of 12 inches to 24 inches. Heavy surcharge loads should not be allowed within about 15 feet of the top of the cut.

Sheetpiles, steel sheets installed between soldier piles, or other braced shoring could also be used to shore temporary excavations. The lateral earth pressure criteria shown on Figures 4 and 5 can be used for design of temporary cantilevered shoring and braced excavation support systems, respectively. The lateral earth pressure diagrams shown on Figures 4 and 5 assume the retained ground surface is horizontal behind the temporary shoring or braced shoring systems. Additional pressures due to surcharge loads, such as construction equipment operating adjacent to the shoring at the top of the excavation, can be computed in accordance with the criteria shown on Figure 6. Alternative shoring approaches or layouts are feasible and can be evaluated if needed.

### **5.2.3 Groundwater Control**

Groundwater levels are expected to be consistent with the water level in the wetlands, and challenges associated with controlling water in excavations could potentially be reduced by scheduling construction during low wetland water levels that most commonly occur in the summer months. The appropriate method of groundwater control will depend on the water levels at the time of construction. The actual dewatering approach selected at each location will depend on the soil and groundwater levels encountered in the excavation and the contractor's approach to the work. The borings advanced at the project site primarily encountered sand with trace to some sand. These sands may yield substantial inflows of groundwater and are susceptible to sloughing, running, and base heave/instability when excavated and subject to seepage pressures.

Given the anticipated depth of excavation below the water level and the anticipated permeability of the site soils, the use of sump pumps installed within an interlocking steel sheetpile or braced shoring system will likely not be adequate to dewater the excavation and control base heave or instability. In this regard, we anticipate that dewatering wells or well points installed within interlocking steel sheetpiles or braced shoring systems may be needed. The dewatering system should be capable of lowering the water level to a minimum of 2 feet below the planned subgrade excavation elevation or as necessary to provide a stable subgrade for construction to occur in dry conditions.

#### **5.2.4 Excavation Bottom Stabilization**

Due to the need to excavate moisture-sensitive soils near or below the groundwater level, we recommend overexcavation of the subgrade and installation of granular stabilization material to provide level and uniform support of the culvert and wingwalls. It has been our experience that 1- to 2-feet of overexcavation will likely be needed; however, the actual depth of the overexcavation would be best established based on conditions observed at the time of construction.

In general, stabilization material and other fills placed in water should consist of clean, free-draining, angular, fragmental rock with a maximum size of up to about 2½ inches, less than 5% passing the No. 4 sieve, and less than 2% passing the No. 100 sieve. Permeable ballast meeting the requirements of Section 9-03.9(2) of the WSDOT *Standard Specifications* would be suitable for use as the leveling course for below-water subgrade preparation. The in-water stabilization material structural fill should be placed in a single lift and compacted with vibratory equipment or tamped in until well-keyed. We recommend that construction in the wet be staged such that excavation is advanced in relatively short segments that allow excavation and backfill with stabilization material to be completed within one work shift.

Prior to placing the stabilization material, a non-woven geotextile fabric should be placed on the subgrade to provide separation and reduce the risk of significant intrusion of the existing fine-grained sand into the fill. The geotextile fabric should be staked or weighted down to prevent buoyancy or movement during subsequent placement of the stabilization ballast. The geotextile fabric should be placed on horizontal benches as the fill is placed and should not be placed on sloped surfaces.

#### **5.2.5 Embankment Widening**

To reduce the risk of continued movement and failures of the steep embankment slopes and associated long-term maintenance requirements, the roadway embankment will be widened and the embankment slopes flattened by placing structural fill against the oversteep embankment slopes. Dewatering of the embankment widening will likely be impractical due to the high permeability of the sand, the water level in the embankment, and the size of the embankment to be widened. We recommend that construction of the embankment widening be staged such that stripping and placement of embankment fill are advanced in relatively short segments that allow backfill to be completed within one work shift.

Fill for the proposed embankment widening should extend a minimum of 4 feet beyond the toe of the existing embankment. Prior to placing any structural fill, the embankment slope and area to receive fill should be cleared of vegetation and stripped of the rooted



zone and any soft, unsuitable soil. To minimize disturbance of the near-surface, fine-grained sand soils, we recommend site stripping and all excavations be completed with excavators equipped with smooth-edged buckets. Upon completion of site stripping and excavation to subgrade level, the resulting subgrade should be observed by a qualified geotechnical engineer. Any soft areas or areas of unsuitable material should be overexcavated to firm, undisturbed soil and backfilled with structural fill.

Fill placed to construct the widened embankment slopes should consist of stabilization material as described in Section 5.2.4 of this report. The stabilization material should be placed in 1- to 2-foot-thick layers and compacted with vibratory equipment or by tamping with a backhoe bucket until well-keyed. A non-woven geotextile fabric should be placed on the subgrade prior to placing the embankment material. As the fill is being placed against the existing embankment slope, the slope should be benched to key the new fill into the slope. At a minimum, the bench should extend a horizontal distance equal to the lift thickness into the existing embankment slope. Permanent embankment slopes should be no steeper than 2H:1V (horizontal to vertical). If necessary, a thin veneer of sand could be placed directly on top of the stabilization material to promote vegetation growth; however, surface runoff from the road will cause erosion of unprotected sand fill slopes.

#### **5.2.6 Structural Fill Placement and Compaction**

On-site soils free of organics and other deleterious materials are suitable for use as structural fill above the water level and away from the embankment-widening slopes. However, the on-site soils consist primarily of fine-grained sand that can only be placed and adequately compacted above the groundwater level. The on-site sand removed from excavations will likely be above the optimum moisture content and will require drying to meet compaction requirements.

Imported granular material used to construct structural fills above the water level can consist of relatively clean granular material, such as sand, sand and gravel, or crushed rock, with a maximum size of about 2-inches and not more than about 7% passing the No. 200 sieve (washed analysis). Material meeting the requirements for Gravel Borrow in Section 9-03.14(1) of the WSDOT Standard Specifications is suitable for this purpose. The fill should be placed in 9- to 12-inch-thick loose lifts and compacted to at least 95% of the maximum dry density as determined by ASTM D698 using a medium-weight (48-in.-diameter drum), smooth, steel-wheeled, vibratory roller. Generally, a minimum of four passes with the roller are required to achieve compaction.

The near-surface soils are primarily granular and relatively dense. In this regard, we anticipate that settlement resulting from the embankment widening and raised site grades

will be relatively small and will occur relatively quickly during construction as the fill is placed.

### 5.3 Seismic Design Considerations

We understand that the proposed box culverts will have a clear span of less than 20 feet and be classified as a Class 1 Buried Structure per the WSDOT BDM. Section 8.3.3.H of the WSDOT BDM indicates that potential impacts resulting from seismic liquefaction including ground-surface settlement, reduced nominal bearing resistances, and slope instability do not need to be considered in design of Class 1 Buried Structures. The WSDOT BDM requires that impacts of seismic inertial loading on the culvert wingwalls and headwalls be considered in the design.

#### 5.3.1 Culvert Design

The earthquake-induced peak bedrock and spectral response acceleration and spectral response accelerations for the site are based on an approximate 1,000-year return-interval seismic hazard (7% probability of exceedance in 75 years). The site response can be determined in accordance with AASHTO LRFD BDS using the seismic design parameters provided in Table 5-1. The seismic design parameters were estimated using the guidelines in the WSDOT GDM, which is based on the 2014 USGS probabilistic seismic-hazard study.

**Table 5-1: SEISMIC DESIGN PARAMETERS (AASHTO LRFD BDS)**

Site Latitude and Longitude at Mid-Point of Alignment:	45.2856 / -124.0617
Site Class Based on Soil Conditions:	Site Class = E
Peak Horizontal Ground-Acceleration Coefficient on Class B Rock, g:	PGA = 0.50
0.2-Second Period Spectral Acceleration Coefficient on Class B Rock, g:	$S_s = 1.02$
1.0-Second Period Spectral Acceleration Coefficient on Class B Rock, g:	$S_1 = 0.41$
Site Coefficient for the Peak Ground-Acceleration Coefficient:	$F_{pga} = 1.20$
Site Coefficient for 0.2-Second Period Spectral Acceleration:	$F_a = 0.99$
Site Coefficient for 1.0-Second Period Spectral Acceleration:	$F_v = 2.38$
Effective Peak Ground-Acceleration Coefficient, g:	$A_s = F_{pga}(PGA) = 0.60$
Design Earthquake Response Spectral Acceleration Coefficient at 0.2-Second Period, g:	$S_{DS} = F_a S_s = 1.00$
Design Earthquake Response Spectral Acceleration Coefficient at 1.0-Second Period, g:	$S_{D1} = F_v S_1 = 0.98$

### **5.3.2 Roadway Embankment Seismic Considerations**

A general assessment of the seismic hazards along the Campground Access Road was completed in general accordance with the recommendations contained in the AASHTO LRFD BDS and the WSDOT GDM.

Liquefaction is a process through which saturated, granular materials, such as sand, and non-plastic and low-plasticity silts, temporarily lose strength during and immediately after a seismic event. Liquefaction occurs as seismic shear stresses propagate through a saturated soil and distort the soil structure, causing loosely packed groups of particles to contract or collapse. If drainage is impeded and cannot occur quickly, the collapsing soil structure increases the pore-water pressure between the soil grains. If the pore-water pressure increases to a level approaching the weight of the overlying soil, the soil temporarily behaves as a viscous liquid rather than a solid.

The potential for liquefaction of the soil at both the West and East culvert sites was assessed using the procedure outlined by Boulanger and Idriss (2014). The liquefaction analysis indicates the saturated sand located within about 10 feet of the existing roadway grades and scattered layers of sand below this depth are susceptible to liquefaction and strength loss at the code-based earthquake. Liquefaction is anticipated to result in  $\frac{1}{2}$  foot to  $\frac{3}{4}$  foot of free-field settlement with about half of the estimated settlement occurring in the upper 10 feet. In this regard, we anticipate that potential differential settlement between the precast concrete box culvert and the adjacent ground may be on the order of  $\frac{1}{4}$  foot to  $\frac{1}{2}$  foot.

Liquefaction could also potentially result in significant raveling and slope failures of the existing and proposed roadway embankments. Potential impacts to the proposed culverts may include settlement which may approach the free-field settlement, differential settlement along the length of the culvert, and differential settlement between the culvert and the adjacent roadway embankment. However, as stated above, it is our understanding that the proposed culverts will not be designed to accommodate these potential impacts.

## **5.4 Culvert and Wingwall Design**

### **5.4.1 General**

We understand that the West Culvert will be about 14 feet wide and 31 feet long and that the East Culvert will be about 20.5 feet wide and 36.5 feet wide. The subgrade for the West Culvert and East Culvert will be at about elevation 10.5 feet and 9 feet, respectively. We understand that cast-in-place concrete, precast concrete, modular block or structural earth wingwalls will be used to retain the embankment fill at each culvert location.

#### 5.4.2 Foundation Design

To provide a suitable bearing surface and to reduce the potential of post-construction settlement, the subgrade for the base of the precast-concrete box culverts and wingwall foundations should be prepared as described in Section 5.2 of this report. Excavations for the foundations should be made with excavators equipped with smooth-edged buckets, and the subgrade should be evaluated by geotechnical engineering staff from GRI. If loose or soft soil is encountered at the base of the excavation, it may be necessary to further overexcavate and replace the unsuitable materials with in-water stabilization material.

For the Strength I Limit State, a nominal bearing resistance,  $q_n$ , of 19,000 pounds per square foot (psf) may be assumed for the proposed West and East box culvert foundations. A resistance factor of 0.45 should be applied to the above nominal bearing resistance for the Strength I Limit State. A nominal resistance of 2,500 psf and resistance factor of 1.0 is appropriate at the Service I Limit State. This nominal resistance was selected for a total estimated box culvert foundation settlement of about 1 inch. We anticipate most of the settlement described above will occur during construction and as the excavation is being backfilled. Assuming relatively uniform loading conditions, we estimate differential settlement between two points over the length of the box culverts will be about half the total settlement.

Based on our review of the 60% project drawings, we understand that the grades in front of the wingwalls will be relatively level. In our opinion, cast-in-place concrete or precast concrete wingwalls should be embedded a minimum of 18 inches below the planned scour elevation. Modular block or structural earth walls should be embedded a minimum of 12 inches below the planned scour elevation.

Assuming level grades in front of the wall and minimum embedment depths described above, the nominal bearing resistance,  $q_n$ , for the wingwall foundations founded as discussed above may be proportioned at the Strength I Limit State using the following equation:

$$q_n \text{ (psf)} = 1500 + 1100 * B'$$

where  $B'$  is the effective footing width in feet.

At the Strength I Limit State, resistance factors of 0.55, 0.45, and 0.65 should be applied to the nominal bearing resistance for precast or cast-in-place concrete, modular block, and mechanically stabilized earth wing walls, respectively.

In our opinion, a resistance factor of 1.00 and nominal bearing resistance of 2,500 psf is appropriate at the Service I Limit State for the wingwalls. The nominal bearing resistance

was selected to limit total foundation settlement to less than about 1 inch for effective wingwall footing widths of 6 feet or less. We anticipate most of the settlement described above will occur during construction as the wall is backfilled. We estimate differential settlement along the length of the wingwalls may approach half of the total settlement and will decrease proportionally with wall height and loading.

#### 5.4.4 Lateral Earth Pressures

Design lateral earth pressures for the culvert abutments and wingwalls depend on the drainage condition provided behind the wall, the ability of the wall to yield, the slope behind the wall, and other factors. The two possible conditions regarding the ability of the wall to yield are the at-rest and active earth pressure cases. The at-rest earth pressure case is applicable to a wall considered to be relatively rigid and laterally supported at its top and bottom and therefore unable to yield. The active earth pressure case is applicable to a wall capable of yielding slightly away from the backfill by either sliding or rotating about its base.

Table 5-2 provides recommended equivalent fluid weights (pcf) for the culvert abutment walls and wingwalls. The equivalent fluid weights assume that drainage is provided (i.e., drained conditions) and are provided for active (horizontal backslope and 2H:1V backslopes) and at-rest conditions (horizontal backslope only). The retaining walls may be subjected to the influence of surcharge loading due to vehicular traffic and construction loads and should be designed for additional horizontal pressure. It is typical design practice to accommodate traffic and typical construction equipment loading with a vertical surcharge pressure of 250 psf. Larger surcharge loads, such as loads induced by cranes, should be addressed individually or by the use of a higher surcharge pressure. Lateral pressure due to surcharge loading in the backfill area can be estimated using the guidelines provided on Figure 6.

**Table 5-2: EQUIVALENT FLUID WEIGHTS FOR DESIGN OF ABUTMENT AND WINGWALLS**

Design Condition	Active, pcf		At-Rest, pcf
	Horizontal	2H:1V	Horizontal
Static (Service and Strength I Limit State)	35	49	55
Seismic (Extreme Event I Limit State)	61	105	101

Note: pcf = pounds per cubic foot.

For the Extreme Event I Limit State, the horizontal earth pressure should be calculated and distributed as a single triangular pressure as specified in Section 11.6.5 of the AASHTO LRFD BDS. The resultant of the horizontal earth pressure can be assumed to act at a point  $1/3H$  above the base of the wall, where  $H$  is the height of the wall (including embedment) in feet. The seismic equivalent fluid weights for the Extreme Event I Limit State include

both static and dynamic lateral pressures and therefore must not be added to the static lateral earth pressure. Temporary construction surcharges do not need to be included in the seismic load case.

If internal design of a modular block or structural earth wall is completed using a wall design software program, the following soil parameters in Table 5-3 should be used for design. The recommended parameters assume imported granular backfill will be used to backfill the walls, as described in Section 5.5.6 of this report. Design of modular block and mechanically stabilized earth walls should include appropriate lateral earth pressures caused by sloping backfill and adjacent surcharge loads as discussed above.

**Table 5-3: MODULAR BLOCK AND MSE WALL SOIL DESIGN PARAMETERS**

Soil Property	Wall Backfill	Retained Soil	Foundation Soil
Unit Weight, pcf	130	115	115
Friction Angle	34°	32°	34°
Cohesion, psf	0	0	0
	<b>Strength I Limit State</b>	<b>Extreme Event I Limit State</b>	
Effective Peak Ground Acceleration, A <sub>s</sub>	Not Applicable	0.60 g	

#### 5.4.5 Resistance to Lateral Loads

Friction developed between the base of the foundation and the supporting subgrade will resist lateral loads transmitted from the abutment or wingwalls to the foundation soil. Table 5-4 provides nominal sliding coefficients to compute the nominal sliding resistance between the soil and the foundation. The nominal sliding coefficient should be applied to vertical buoyant dead loads only. Strength I and Extreme Event I limit state resistance factors for each wall type are also provided in Table 5-4.

**Table 5-4: NOMINAL SLIDING COEFFICIENT AND RESISTANCE FACTORS**

Wall/Foundation Type	Nominal Sliding Coefficient	Strength I Limit State Resistance Factor	Extreme Event I Limit State Resistance Factor
Cast-in-Place Concrete Wingwall Footings	0.73	0.8	1.0
Precast Concrete Box Culvert and Wingwall Footings	0.55	0.9	1.0
Precast Concrete Modular Block Wall	0.55	0.9	1.0
Gabion Modular Block Wall	0.57	0.9	1.0
MSE Wall with Discontinuous Reinforcements	0.67	1.0	1.0
MSE Wall with Continuous Reinforcements	0.42	1.0	1.0

If necessary, passive earth pressures can be combined with the frictional resistance to resist lateral loads. The nominal passive earth pressures can be estimated using an equivalent fluid weight of 330 pcf. The nominal passive earth pressure assumes saturated conditions and has not been reduced to limit wall deflections; wall deflections on the order of 1% of the wall height (loads acting away from the culvert channel) or embedment depth (loads acting toward the culvert channel) will be needed to mobilize the nominal passive earth pressures. Resistance factors of 0.50 and 1.00 should be applied to the nominal passive pressures for the Strength I and Extreme Event I limit states, respectively. Determination of the design passive earth pressures should account for any loss of ground due to scour or other factors that could affect the height of the passive wedge. The above passive pressures are for horizontal ground conditions.

#### **5.5.6 Wall Backfill and Drainage**

To provide positive drainage and prevent unbalanced hydrostatic forces from developing during high-water levels, wall backfill placed below the wetland water level and/or within 2 feet from the back of the retaining wall should consist of free-draining granular meeting the requirements for Gravel Backfill for Drains in Section 9-03.12(4) of the WSDOT Standard Specifications. Wall backfill placed above the wetland water level and greater than 2 feet from the back of the wall should consist of onsite or imported material as described in Section 5.2.6 of this report. All wall backfill should be placed and compacted as described in Section 5.2.6 of this report. To limit the buildup of excess lateral pressures on the walls, we recommend all backfill located within 5 feet of the back of the wall be compacted with hand-operated or lightweight compaction equipment.

The Gravel Backfill for Drains should be encapsulated by a Non-Woven Geotextile for Underground Drainage meeting the requirements for Moderate Survivability in Section 9-33.2(1) of the WSDOT Standard Specifications. Weepholes could also be provided in the concrete abutment wall in order to provide drainage from behind the retaining wall.

To reduce the possibility of water ponding and infiltrating into the subsurface behind the walls, the adjacent ground surface behind the wall should be sloped to promote runoff away from the top of the wall.

## **6 DESIGN REVIEW AND CONSTRUCTION SERVICES**

We welcome the opportunity to review and discuss construction plans and specifications for this project as they are being developed. In addition, GRI should be retained to review all geotechnical-related portions of the plans and specifications to evaluate whether they are in conformance with the recommendations provided in our report and to observe compliance with the intent of our recommendations, the design concepts, and the plans and specifications. Our construction-phase services will allow for timely design changes if

site conditions are encountered that are different from those described in our report. If we do not have the opportunity to confirm our interpretations, assumptions, and analyses during construction, we cannot be responsible for the application of our recommendations to subsurface conditions different from those described in this report.

## **7 LIMITATIONS**

This report has been prepared to assist the project team in the evaluation and design of the Cape Disappointment State Park Culvert and Campground Road Improvements project in Ilwaco, Washington. The scope is limited to the specific project and location described in this report, and our description of the project represents our understanding of the significant aspects of the project relevant to the design and construction of the roadway widening and culvert replacements. In the event that any changes in the design or location of the proposed improvements as outlined in this report are planned, we should be given the opportunity to review the changes and modify or reaffirm the conclusions and recommendations of this report in writing.

The conclusions and recommendations submitted in this report are based on the data obtained from the subsurface explorations made for this investigation at the locations shown on Figures 2 and 3 and other sources of information discussed in this report. In the performance of subsurface investigations, specific information is obtained at specific locations at specific times. However, it is acknowledged that variations in soil conditions may exist between boring locations. This report does not reflect any variations that may occur between these explorations. If, during construction, subsurface conditions differ from those encountered in the explorations, we should be advised at once so that we can observe and review these conditions and reconsider our recommendations where necessary.

We have included the Geoprofessional Business Association (GBA) guidance document "Important Information about This Geotechnical-Engineering Report" to assist you and others in understanding the use and limitations of this report, included as Appendix B. We recommend you read this document.



Please contact the undersigned if you have any questions regarding this report.

Submitted for GRI,



A handwritten signature in black ink that reads "B.A. Bennetts".

Issued: 04/1999

Renews: 11/2023

Mathew S. Shanahan, PE  
Principal

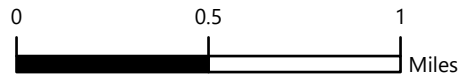
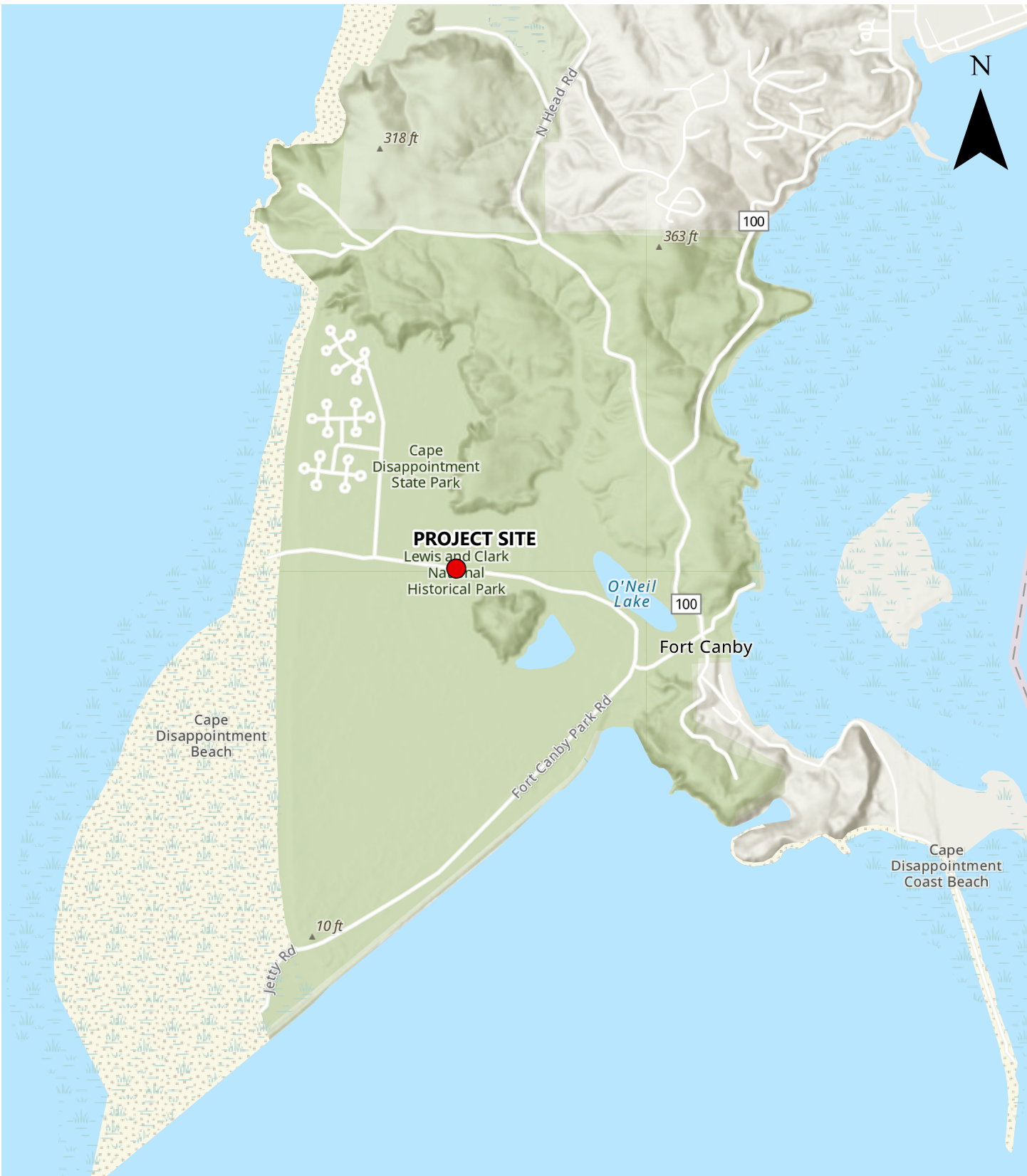
Brian A. Bennetts, PE  
Associate

This document has been submitted electronically.

## 8 REFERENCES

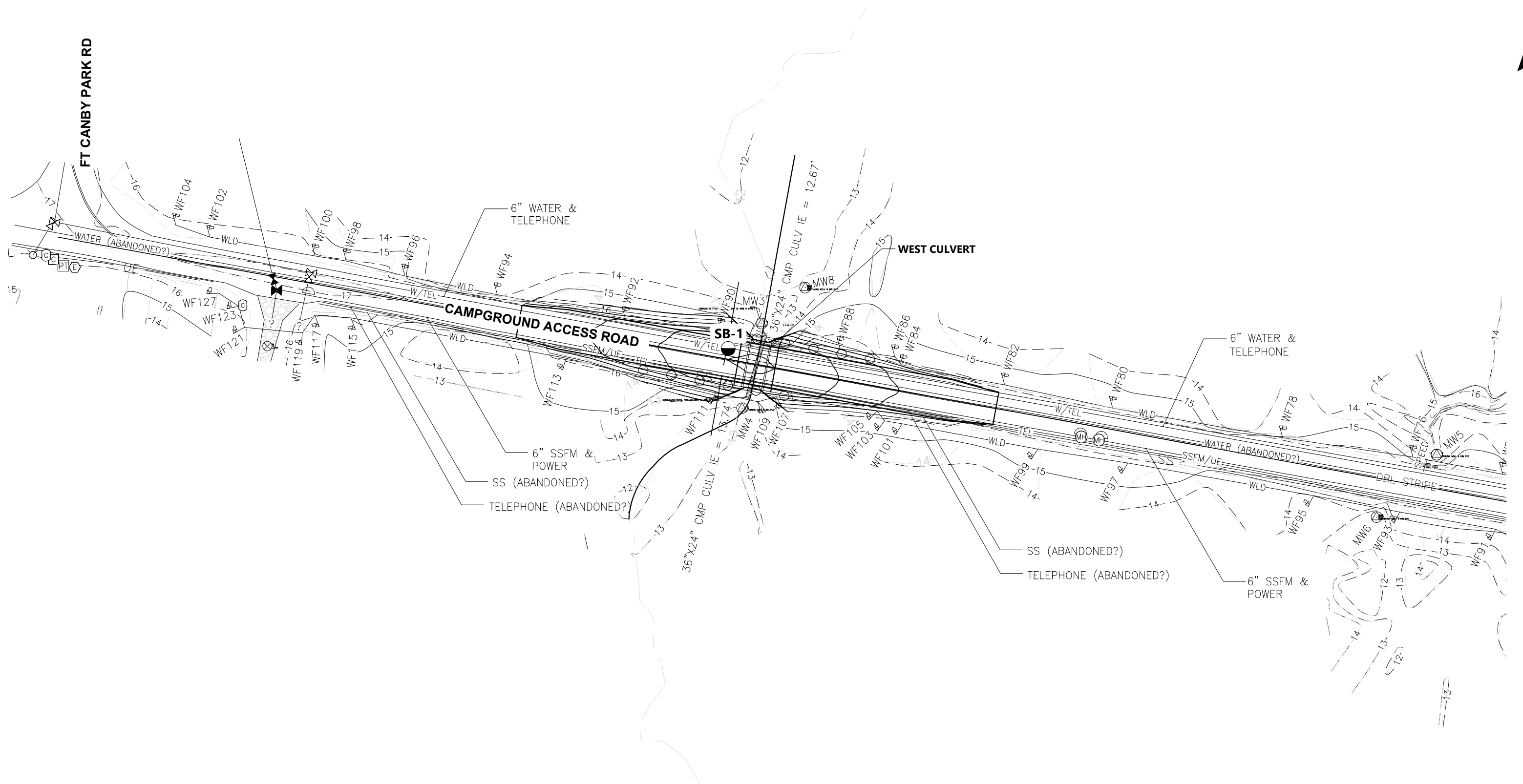
Boulanger, R.W., and Idriss, I.M., 2014, CPT and SPT liquefaction triggering procedure, Report No. UCD/GCM-14/01, Center for Geotechnical Modeling, University of California, Davis, 138 pp.

Walsh, T.J., 1987, Geologic map of the Astoria and Ilwaco Quadrangles, Washington and Oregon, Washington State Department of Natural Resources, Open File Report 87-2.



ENVIRONMENTAL SCIENCE ASSOCIATES  
CAPE DISAPPOINTMENT STATE PARK  
CAMPGROUND ACCESS ROAD CULVERT  
REPLACEMENTS

## VICINITY MAP



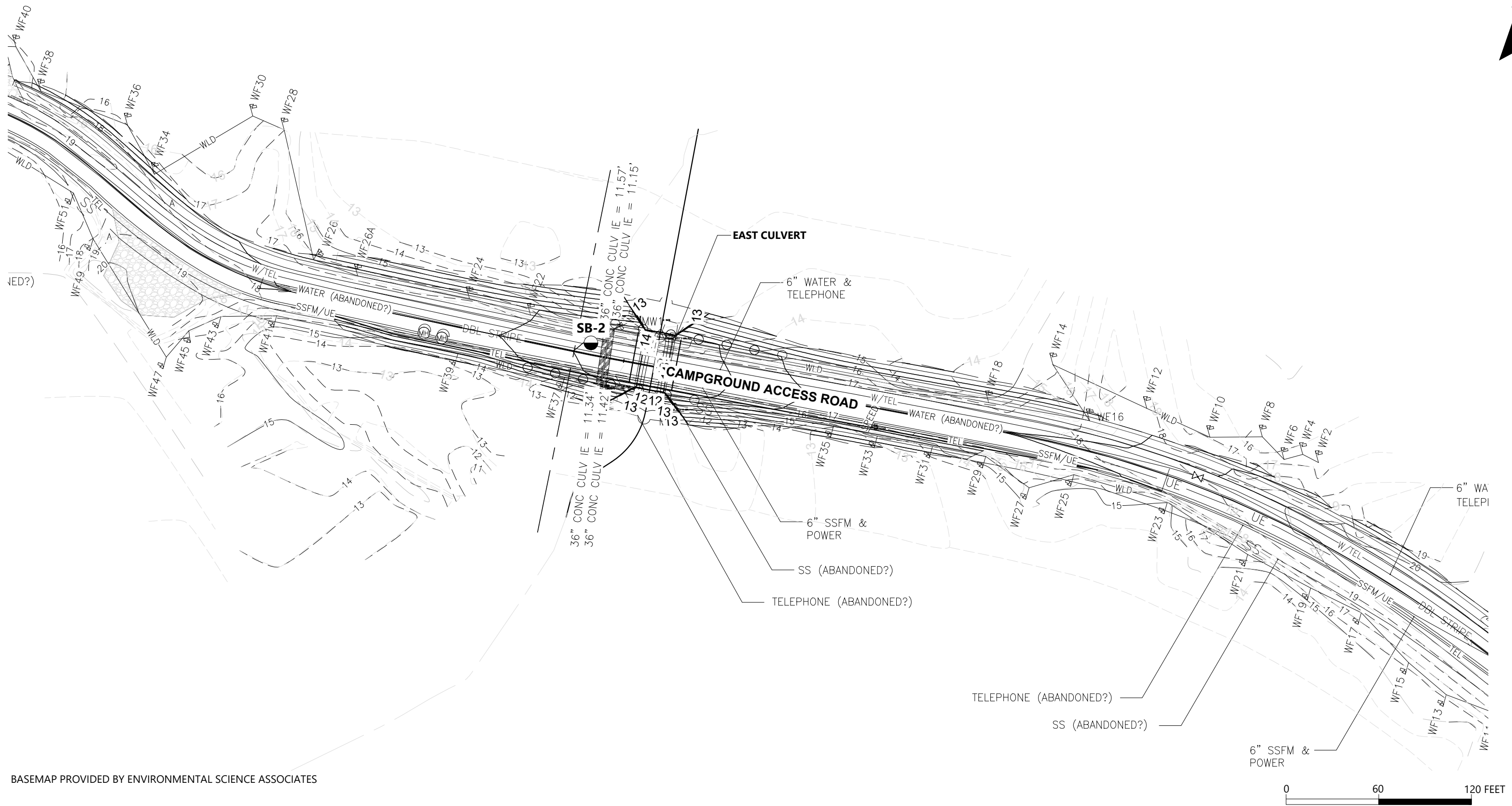
BASEMAP PROVIDED BY ENVIRONMENTAL SCIENCE ASSOCIATES

● SOIL BORING COMPLETED BY GRI  
(MARCH 27, 2023)



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CAPE DISAPPOINTMENT STATE PARK  
CAMPGROUND ACCESS ROAD CULVERT  
REPLACEMENTS

## WEST CULVERT SITE PLAN



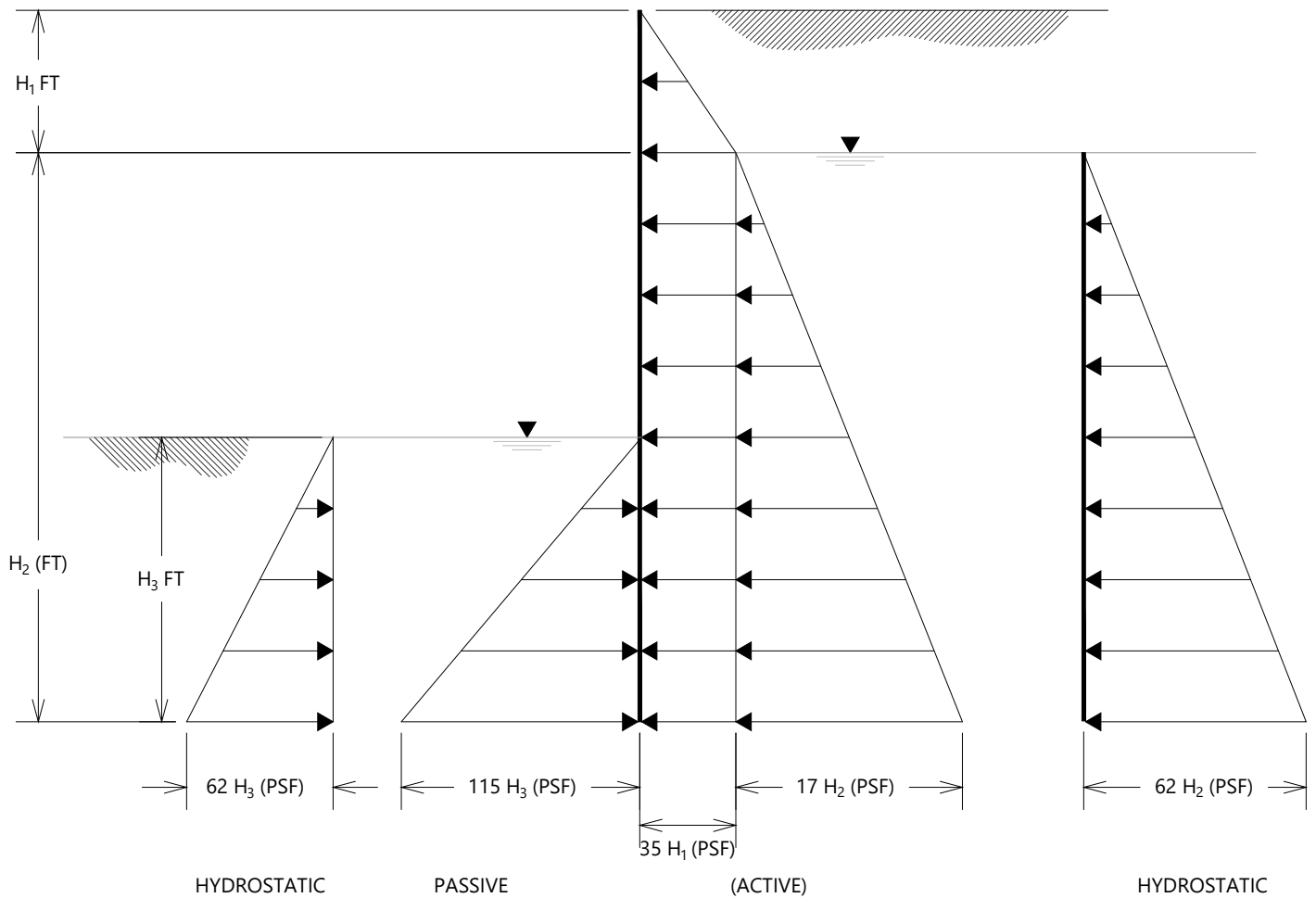
BASEMAP PROVIDED BY ENVIRONMENTAL SCIENCE ASSOCIATES

● SOIL BORING COMPLETED BY GRI  
(MARCH 27, 2023)



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CAMPGROUND ACCESS ROAD CULVERT  
REPLACEMENTS

# EAST CULVERT SITE PLAN



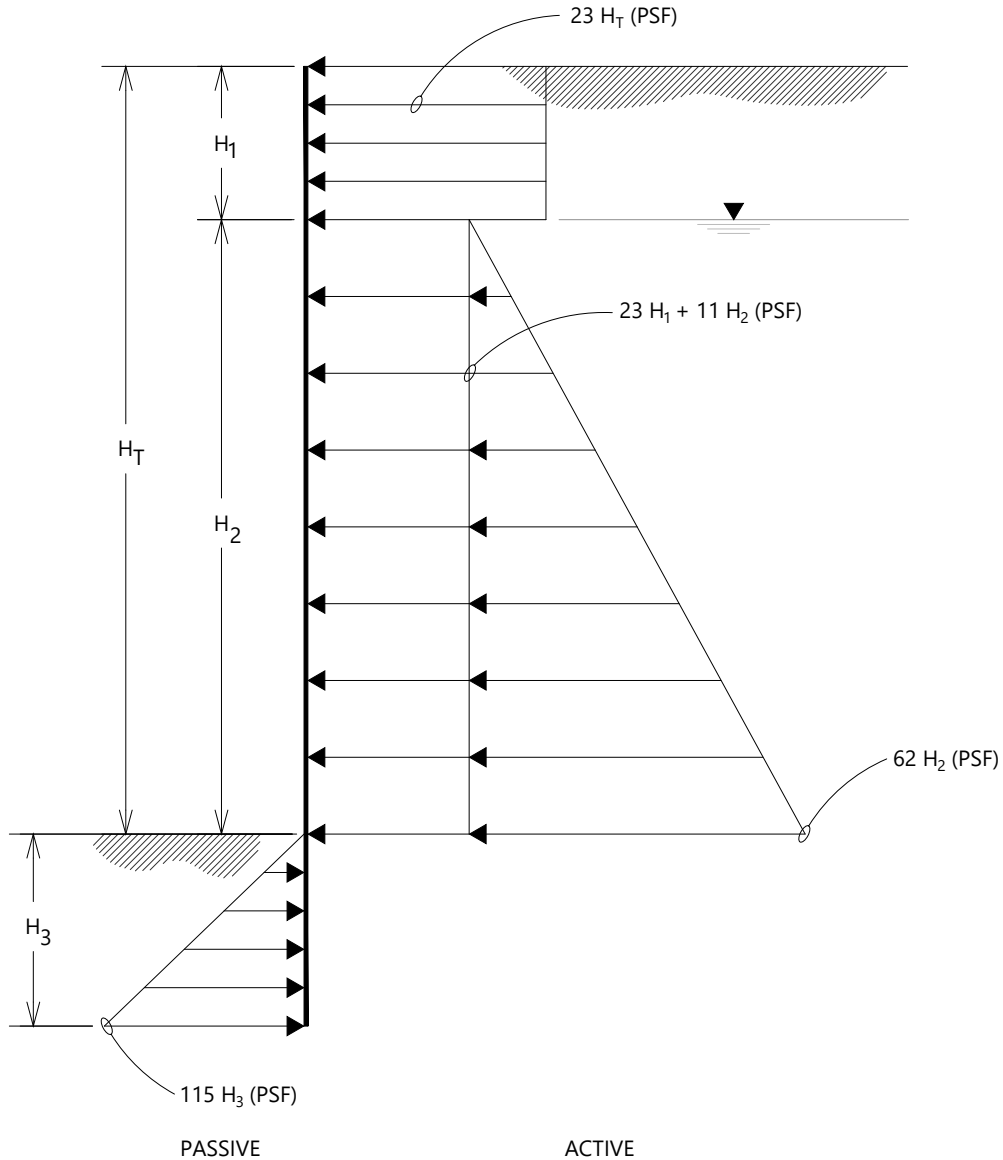
NOTES:

1. LATERAL EARTH PRESSURES ARE FOR A CANTILEVERED SHEETPILE SHORING SYSTEM.
2. LATERAL EARTH PRESSURES ASSUME DEWATERING IS USED TO LOWER THE GROUNDWATER ON THE INSIDE OF THE EXCAVATION TO BELOW THE BASE OF THE EXCAVATION.
3. ACTIVE AND PASSIVE PRESSURES ACT OVER THE SURFACE AREA OF THE SHEETS.
4. SURCHARGE EFFECTS FROM TRAFFIC, CONSTRUCTION EQUIPMENT, ETC., SHOULD BE ADDED TO THE ABOVE DESIGN EARTH PRESSURES. THE ACTUAL AMOUNT OF THIS SURCHARGE WILL DEPEND ON THE CONTRACTOR'S APPROACH TO THE WORK; HOWEVER, WE RECOMMEND USING A MINIMUM UNIFORM VERTICAL SURCHARGE PRESSURE OF 300 PSF. REFER TO FIGURE 6 FOR SURCHARGE-INDUCED LATERAL EARTH PRESSURES.



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 CAMPGROUND ROAD CULVERT  
 REPLACEMENTS

LATERAL EARTH PRESSURE DIAGRAM  
 FOR CANTILEVERED SHEET PILE SHORING



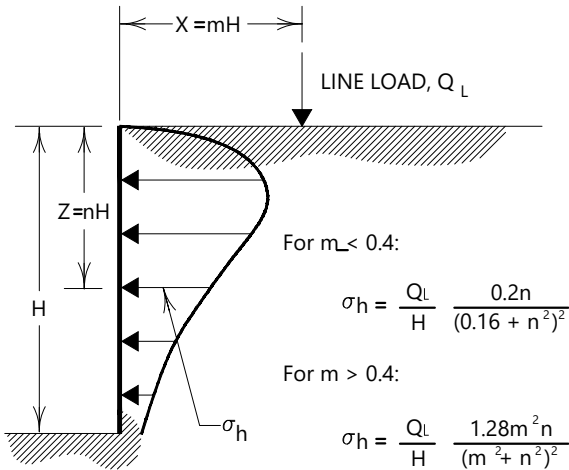
NOTES:

1. LATERAL EARTH PRESSURES ARE FOR BRACED EXCAVATIONS OR POSITIVE PRESSURE SHORING SYSTEM.
2. LATERAL EARTH PRESSURES ASSUME DEWATERING IS USED TO LOWER THE GROUNDWATER ON THE INSIDE OF THE EXCAVATION TO BELOW THE BASE OF THE EXCAVATION.
3. ACTIVE AND PASSIVE ACT OVER THE SURFACE AREA OF THE SHORING.
4. SURCHARGE EFFECTS FROM TRAFFIC, CONSTRUCTION EQUIPMENT, ETC., SHOULD BE ADDED TO THE ABOVE DESIGN PRESSURES. THE ACTUAL AMOUNT OF THIS SURCHARGE WILL DEPEND ON THE CONTRACTOR'S APPROACH TO THE WORK; HOWEVER, WE RECOMMEND USING A MINIMUM UNIFORM VERTICAL SURCHARGE PRESSURE OF 300 PSF. REFER TO FIGURE 6 FOR SURCHARGE-INDUCED LATERAL EARTH PRESSURES.

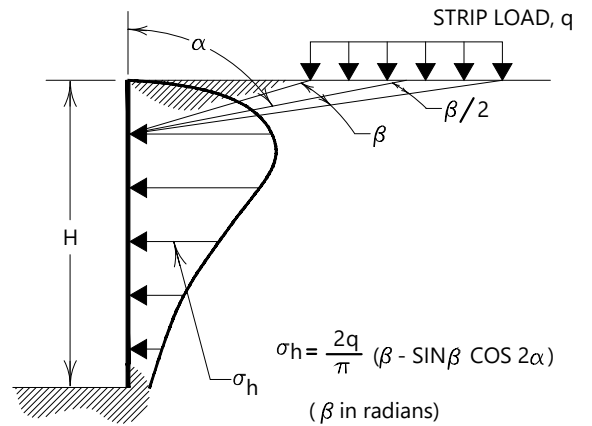


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 REPLACEMENTS

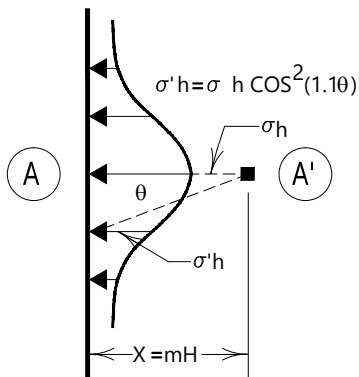
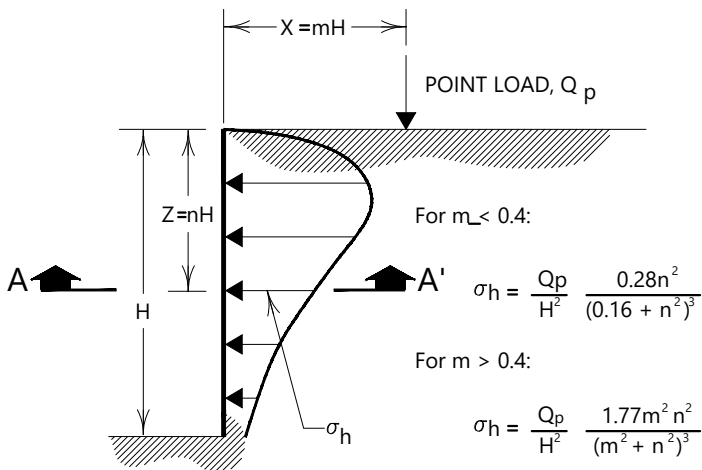
## LATERAL EARTH PRESSURE DIAGRAM FOR BRACED SHORING



LINE LOAD PARALLEL TO WALL



STRIP LOAD PARALLEL TO WALL



DISTRIBUTION OF HORIZONTAL PRESSURES

VERTICAL POINT LOAD

NOTES:

1. THESE GUIDELINES APPLY TO RIGID WALLS WITH POISSON'S RATIO ASSUMED TO BE 0.5 FOR BACKFILL MATERIALS.
2. LATERAL PRESSURES FROM ANY COMBINATION OF ABOVE LOADS MAY BE DETERMINED BY THE PRINCIPLE OF SUPERPOSITION.



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 CAMPGROUND ACCESS ROAD CULVERT  
 REPLACEMENT

SURCHARGE-INDUCED  
 LATERAL PRESSURE



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## **APPENDIX A**

### *Field Explorations and Laboratory Testing*

## APPENDIX A FIELD EXPLORATIONS AND LABORATORY TESTING

### A.1 FIELD EXPLORATIONS

Subsurface materials and conditions at the site were evaluated on March 27, 2023, with two borings, designated SB-1 and SB-2. The approximate locations of the borings completed for this investigation are shown on the Site Plans, Figures 2 and 3. An experienced member of GRI's geology staff directed the explorations and maintained a log of the materials and conditions disclosed during the course of the work.

Borings SB-1 and SB-2 were each advanced to a depth of about 46.5 feet, below the roadway surface. The borings were completed with mud-rotary drilling techniques using a GeoProbe 7822 DT track-mounted drill rig provided and operated by Western States Soil Conservation of Hubbard, Oregon. Disturbed and undisturbed samples were typically obtained at 2.5-foot intervals of depth in the upper 12.5 to 15 feet and 5-foot intervals below this depth. At the time of sampling, the standard penetration test (SPT) was conducted. This test consists of driving a standard split spoon sampler into the soil a distance of 18 inches using a 140-pound hammer dropped 30 inches. The number of blows required to drive the standard split-spoon sampler the last 12 inches is known as the Standard Penetration Resistance, or SPT N-value. The SPT N-values provide a measure of the relative density of granular soils, such as sand, and the relative consistency of cohesive soils, such as silt and clay. The split-spoon samples were carefully examined in the field, and portions of the soil from the split-spoon were saved in plastic bags. In addition, a relatively undisturbed sample was collected by pushing a 3-inch-outside-diameter Shelby tube into the undisturbed soil a distance of 18 inches using a Piston sampler. All samples were returned to our laboratory for further examination and physical testing.

Logs of the borings are provided on Figures 1A and 2A. Each log presents a descriptive summary of the various types of materials encountered in the boring and notes the depths at which the materials and/or characteristics of the materials change. To the right of the descriptive summary, the depth to groundwater and the numbers and types of samples are indicated. Farther to the right, SPT N-values are shown graphically, along with natural moisture contents, and percent passing the No. 200 sieve. The terms and symbols used to describe the soils encountered in the borings are defined in Tables 1A and on the attached legend.

## **A.2 LABORATORY TESTING**

### **A.2.1 General**

The samples obtained from the borings were examined in our laboratory, where the physical characteristics of the samples were noted, and the field classifications modified where necessary. Geotechnical laboratory testing completed in our laboratory included natural moisture content and grain size analyses on selected samples obtained from the explorations. A summary of the laboratory test results is provided in Table 2A. The following paragraphs describe the testing program in more detail.

### **A.2.2 Natural Moisture Content**

Natural moisture content determinations were made in conformance with ASTM International (ASTM) D2216. The results are summarized on the borings logs, Figures 1A and 2A, and in Table 2A.

### **A.2.3 Grain-Size Analysis**

Washed-sieve grain-size analyses were performed on selected soil samples to evaluate the percentage of material passing the No. 200 sieve. The test is performed by taking a sample of known dry weight and washing it over a No. 200 sieve. The material retained on the sieve is oven-dried and weighed. The percentage of material passing the No. 200 sieve is then calculated. The results are summarized on the borings logs, Figures 1A and 2A, and in Table 2A.

Dry sieve analyses were completed on selected samples in substantial conformance with ASTM D6913-04. The test is performed by taking a sample of known dry weight and washing it over a No. 200 sieve. The material retained on the sieve is oven-dried and weighed, and the percentage of material passing the No. 200 sieve is calculated. The soil retained on the No. 200 sieve is then screened through a series of sieves of various sizes using a sieve shaker. The weight of each sieve is measured prior to and after the test. The weight of the sample retained on each sieve is recorded and expressed as a percentage of the total sample weight. The test results are shown on Figures 3A and 4A.

**Table 1A**

**GUIDELINES FOR CLASSIFICATION OF SOIL**

**Description of Relative Density for Granular Soil**

Relative Density	Standard Penetration Resistance (N-values) blows/foot	3-Inch Sampler (140-lb Hammer) (N-values) blows/foot	3-Inch Sampler (300-lb Hammer) (N-values) blows/foot
Very Loose	0 - 4	0-11	0-4
Loose	4 - 10	11-26	4-10
Medium Dense	10 - 30	26-74	10-30
Dense	30 - 50	74-120	30-47
Very Dense	over 50	over 120	over 47

**Description of Consistency for Fine-Grained (Cohesive) Soils**

Consistency	Standard Penetration Resistance (N-values) blows per ft	3-Inch Sampler (140-lb Hammer) (N-values) blows/foot	3-Inch Sampler (300-lb Hammer) (N-values) blows/foot	Torvane or Undrained Shear Strength, tsf
Very Soft	0 - 2	less than 3	less than 2	less than 0.125
Soft	2 - 4	3-6	2-5	0.125 - 0.25
Medium Stiff	4 - 8	6-12	5-9	0.25 - 0.50
Stiff	8 - 15	12-25	9-19	0.50 - 1.0
Very Stiff	15 - 30	25-65	19-31	1.0 - 2.0
Hard	over 30	over 65	over 31	over 2.0

Grain-Size Classification	Modifier for Subclassification		
<i>Boulders:</i> > 12 inches		Primary Constituent SAND or GRAVEL	Primary Constituent SILT or CLAY
<i>Cobbles:</i> 3 inches - 12 inches	Adjective	Percentage of Other Material (By Weight)	
	trace:	5 - 15 (sand, gravel)	5 - 15 (sand, gravel)
<i>Gravel:</i> 1/4 inch - 3/4 inch (fine) 3/4 inch - 3 inches (coarse)	some: sandy, gravelly:	15 - 30 (sand, gravel) 30 - 50 (sand, gravel)	15 - 30 (sand, gravel) 30 - 50 (sand, gravel)
<i>Sand:</i> No. 200 - No. 40 sieve (fine) No. 40 - No. 10 sieve (medium) No. 10 - No. 4 sieve (coarse)	trace: some: silty, clayey:	<5 (silt, clay) 5 - 12 (silt, clay) 12 - 50 (silt, clay)	<i>Relationship of clay and silt determined by plasticity index test</i>
<i>Silt/Clay:</i> Pass No. 200 sieve			

**Table 2A**  
**SUMMARY OF LABORATORY RESULTS**

<b>Sample Information</b>				<b>Atterberg Limits</b>				<b>Fines Content, %</b>	<b>Soil Type</b>
<b>Location</b>	<b>Sample</b>	<b>Depth, ft</b>	<b>Elevation, ft</b>	<b>Moisture Content, %</b>	<b>Dry Unit Weight, pcf</b>	<b>Liquid Limit, %</b>	<b>Plasticity Index, %</b>		
SB-1	S-1	5.0	12.0	25	--	--	--	--	SAND
	S-2	7.5	9.5	26	--	--	--	5	SAND
	S-3	10.0	7.0	24	--	--	--	7	SAND
	S-4	15.0	2.0	24	--	--	--	6	SAND
	S-5	20.0	-3.0	20	--	--	--	8	SAND
	S-6	25.0	-8.0	26	--	--	--	7	SAND
	S-7	30.0	-13.0	26	--	--	--	8	SAND
	S-8	35.0	-18.0	27	--	--	--	--	SAND
	S-9	40.0	-23.0	28	--	--	--	--	Silty SAND
	S-10	45.0	-28.0	27	--	--	--	--	Silty SAND
SB-2	S-1	2.5	15.0	23	--	--	--	--	FILL
	S-3	7.8	9.8	29	--	--	--	2	SAND
	S-4	9.0	8.5	21	--	--	--	6	SAND
	S-5	12.5	5.0	20	--	--	--	7	SAND
	S-6	15.0	2.5	28	--	--	--	5	SAND
	S-7	20.0	-2.5	24	--	--	--	5	SAND
	S-8	25.0	-7.5	27	--	--	--	7	SAND
	S-9	30.0	-12.5	25	--	--	--	6	SAND
	S-10	35.0	-17.5	25	--	--	--	--	SAND
	S-11	40.0	-22.5	36	--	--	--	--	SAND
	S-12	45.0	-27.5	37	--	--	--	--	SAND

# BORING AND TEST PIT LOG LEGEND

## SOIL SYMBOLS

Symbol	Typical Description
	LANDSCAPE MATERIALS
	FILL
	GRAVEL; clean to some silt, clay, and sand
	Sandy GRAVEL; clean to some silt and clay
	Silty GRAVEL; up to some clay and sand
	Clayey GRAVEL; up to some silt and sand
	SAND; clean to some silt, clay, and gravel
	Gravelly SAND; clean to some silt and clay
	Silty SAND; up to some clay and gravel
	Clayey SAND; up to some silt and gravel
	SILT; up to some clay, sand, and gravel
	Gravelly SILT; up to some clay and sand
	Sandy SILT; up to some clay and gravel
	Clayey SILT; up to some sand and gravel
	CLAY; up to some silt, sand, and gravel
	Gravelly CLAY; up to some silt and sand
	Sandy CLAY; up to some silt and gravel
	Silty CLAY; up to some sand and gravel
	PEAT

## BEDROCK SYMBOLS

Symbol	Typical Description
	BASALT
	MUDSTONE
	SILTSTONE
	SANDSTONE

## SURFACE MATERIAL SYMBOLS

Symbol	Typical Description
	Asphalt concrete PAVEMENT
	Portland cement concrete PAVEMENT
	Crushed rock BASE COURSE

## SAMPLER SYMBOLS

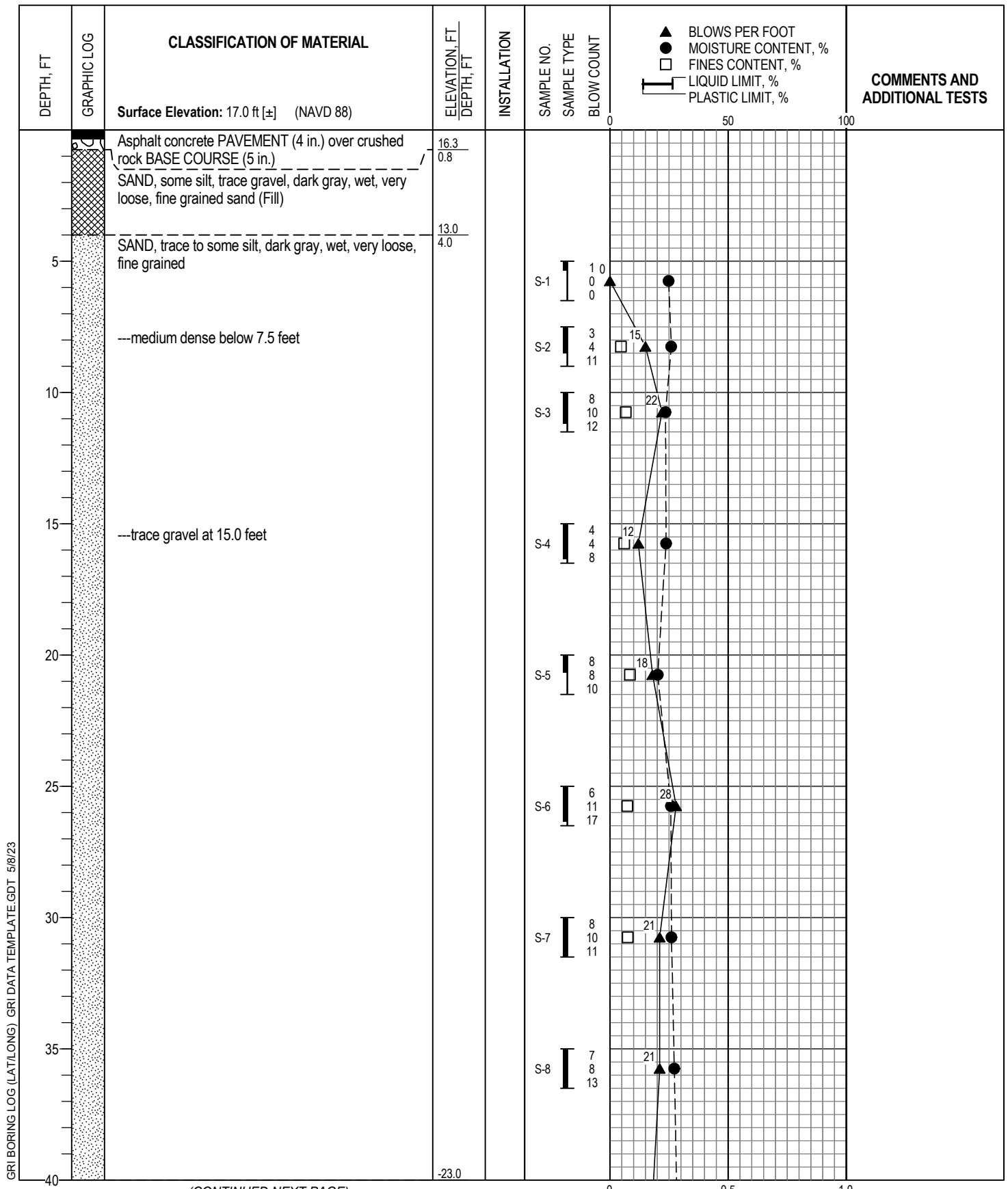
Symbol	Sampler Description
	2.0 in. O.D. split-spoon sampler and Standard Penetration Test with recovery (ASTM D1586)
	Shelby tube sampler with recovery (ASTM D1587)
	3.0 in. O.D. split-spoon sampler with recovery (ASTM D3550)
	Grab Sample
	Rock core sample interval
	Sonic core sample interval
	Push probe sample interval

## INSTALLATION SYMBOLS

Symbol	Symbol Description
	Flush-mount monument set in concrete
	Concrete, well casing shown where applicable
	Bentonite seal, well casing shown if applicable
	Filter pack, machine-slotted well casing shown where applicable
	Grout, vibrating-wire transducer cable shown where applicable
	Vibrating-wire pressure transducer
	1-in.-diameter solid PVC
	1-in.-diameter hand-slotted PVC
	Grout, inclinometer casing shown where applicable

## FIELD MEASUREMENTS

Symbol	Typical Description
	Groundwater level during drilling and date measured
	Groundwater level after drilling and date measured
	Rock/sonic core or push probe recovery (%)
	Rock quality designation (RQD, %)



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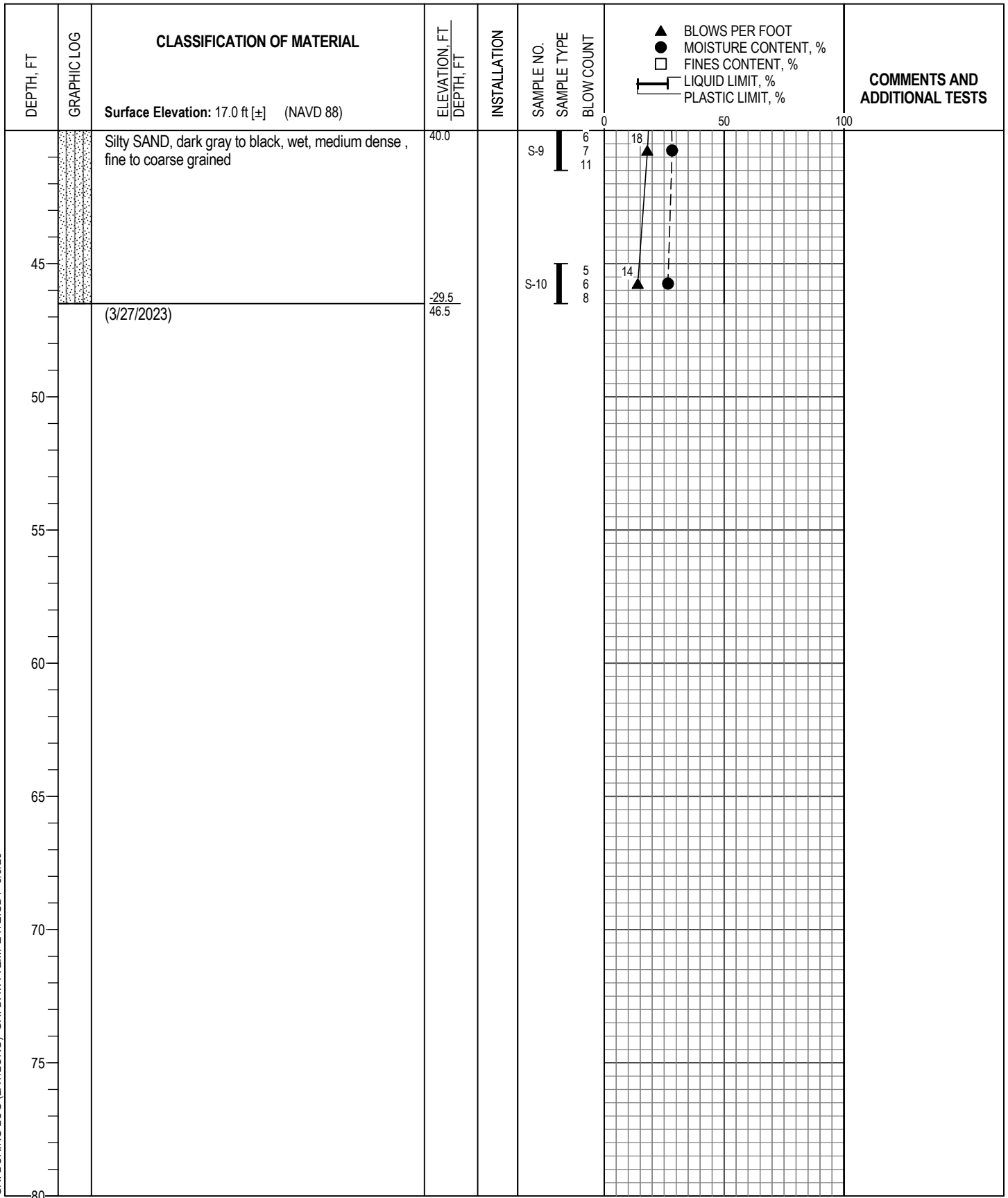
Logged By: A. Horst	Drilled by: Western States Soil Conservation, Inc.
Date Started: 3/27/23	Coordinates: 46.2865° N -124.0702° W (WGS 84)
Drilling Method: Mud Rotary	Hammer Type: Auto Hammer
Equipment: 7822-DT Track-Mounted Geoprobe Rig	Weight: 140 lb
Hole Diameter: 5 in.	Drop: 30 in.
Note: See Legend for Explanation of Symbols	Energy Ratio: 77%

- ◆ TORVANE SHEAR STRENGTH, TSF
- UNDRAINED SHEAR STRENGTH, TSF



# BORING SB-1

GRI BORING LOG (LAT/LONG) GRI DATA TEMPLATE.GDT 5/8/23

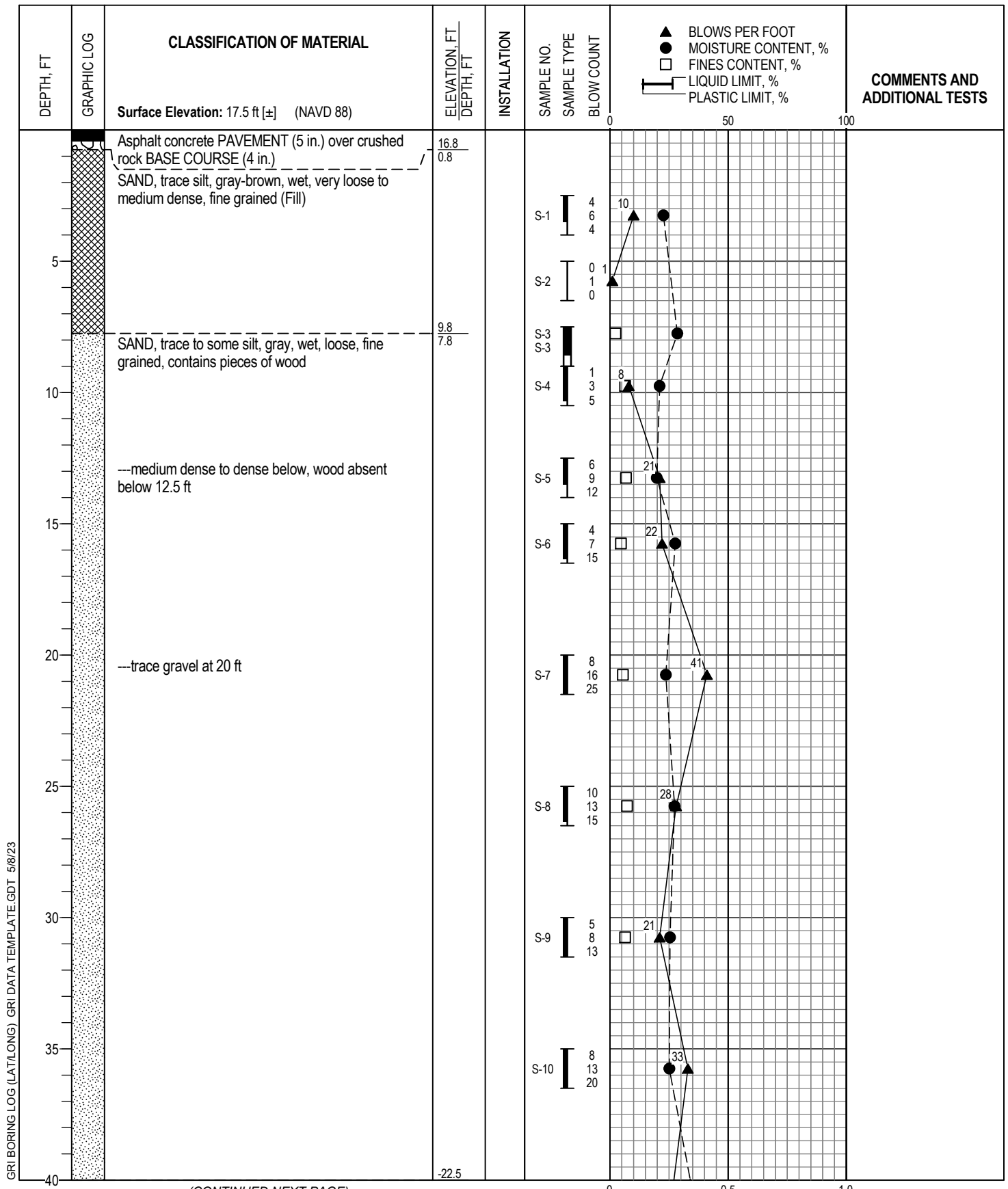


◆ TORVANE SHEAR STRENGTH, TSF  
 ■ UNDRAINED SHEAR STRENGTH, TSF



# BORING SB-1





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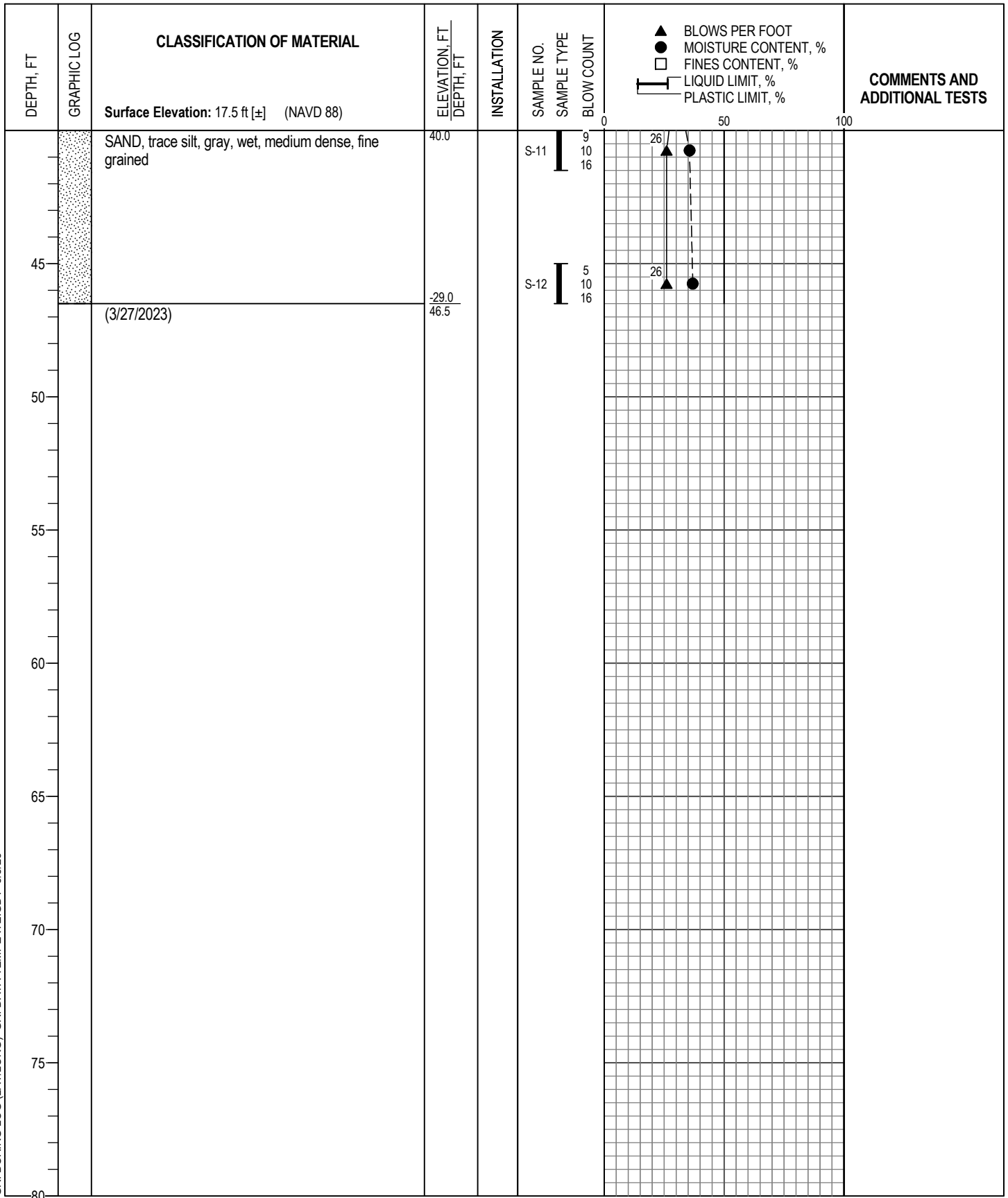
Logged By: A. Horst	Drilled by: Western States Soil Conservation, Inc.
Date Started: 3/27/23	Coordinates: 46.2855° N -124.0622° W (WGS 84)
Drilling Method: Mud Rotary	Hammer Type: Auto Hammer
Equipment: 7822-DT Track-Mounted Geoprobe Rig	Weight: 140 lb
Hole Diameter: 5 in.	Drop: 30 in.
Note: See Legend for Explanation of Symbols	Energy Ratio: 77%

- ◆ TORVANE SHEAR STRENGTH, TSF
- UNDRAINED SHEAR STRENGTH, TSF

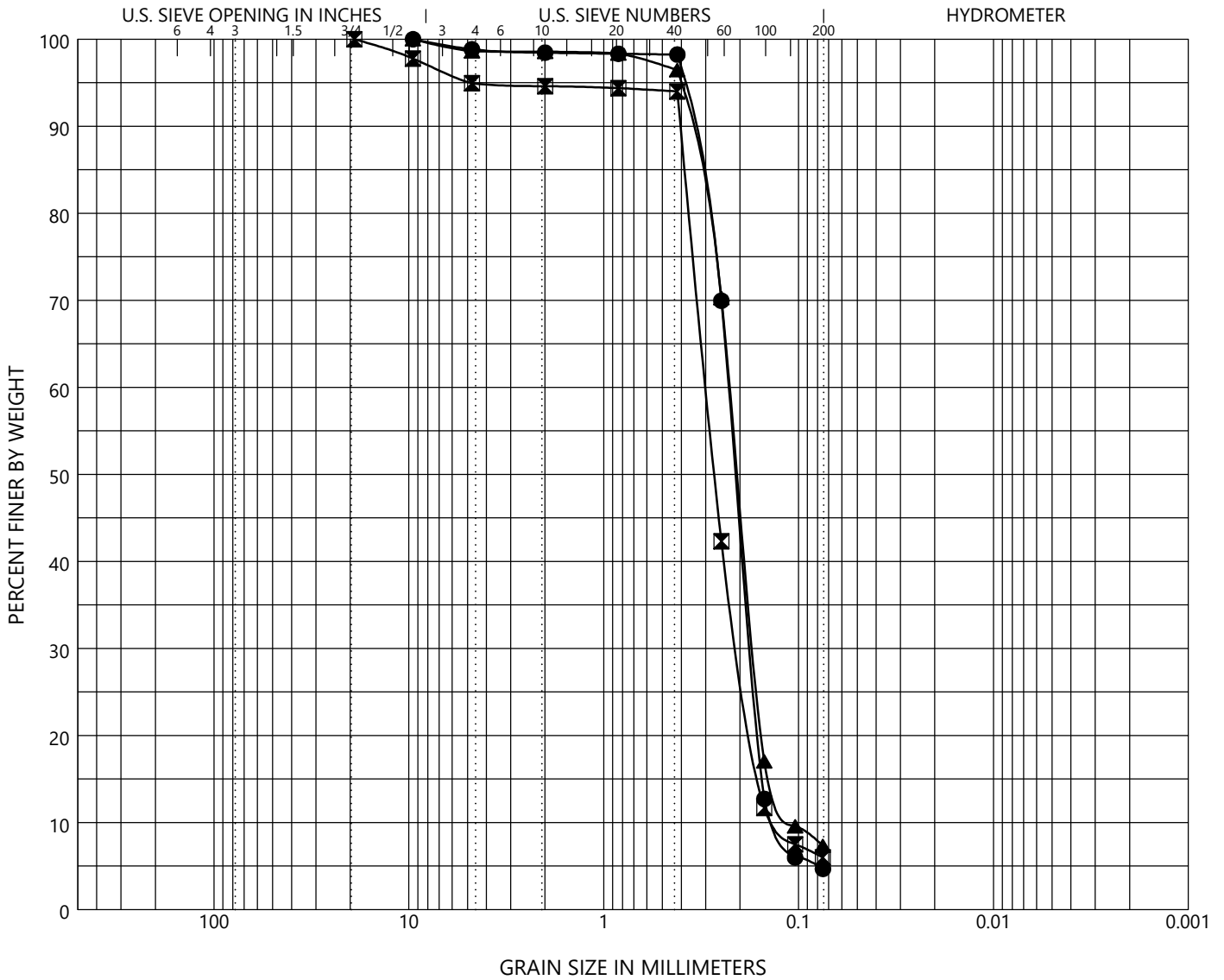


# BORING SB-2

GRI BORING LOG (LAT/LONG) GRI DATA TEMPLATE.GDT 5/8/23



# BORING SB-2

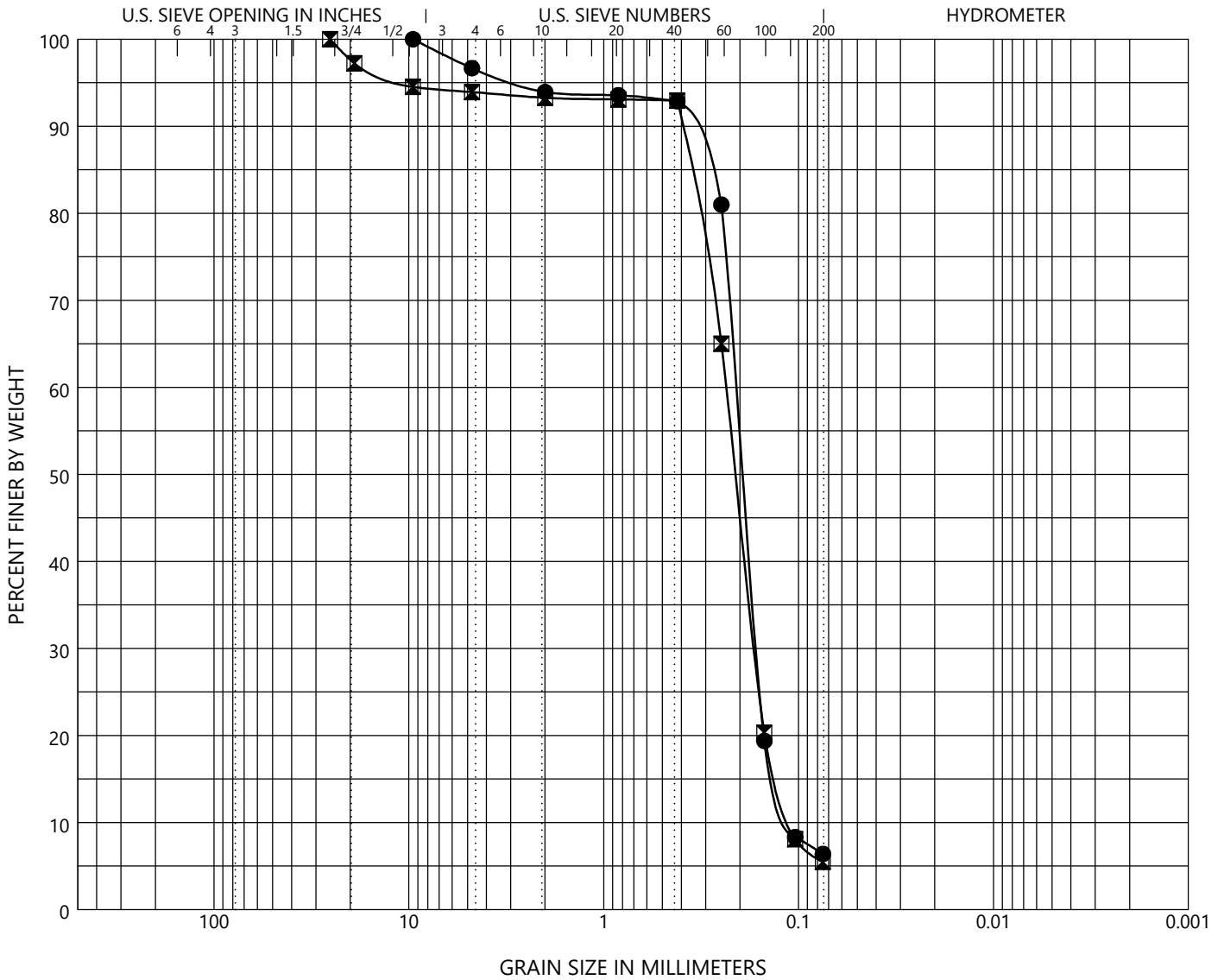


COBBLES	GRAVEL		SAND			SILT OR CLAY
	Coarse	Fine	Coarse	Medium	Fine	

Location	Sample	Depth, ft	Classification	Gravel, %	Sand, %	Fines, %	
●	SB-1	S-2	7.5	SAND, trace silt, fine grained	1.1	94.2	4.7
⊠	SB-1	S-4	15.0	SAND, some silt, trace gravel, fine grained	5.1	89.0	6.0
▲	SB-1	S-6	25.0	SAND, some silt, fine grained	1.4	91.3	7.3



# GRAIN SIZE DISTRIBUTION



COBBLES	GRAVEL		SAND			SILT OR CLAY
	Coarse	Fine	Coarse	Medium	Fine	

Location	Sample	Depth, ft	Classification	Gravel, %	Sand, %	Fines, %
● SB-2	S-4	9.0	SAND, some silt, fine grained	3.3	90.3	6.4
◻ SB-2	S-7	20.0	SAND, some silt, trace gravel, fine grained	6.1	88.5	5.5



# GRAIN SIZE DISTRIBUTION

## **APPENDIX B**

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*Geoprofessional Business Association Guidance Document*

# Important Information about This

# Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

**The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.**

## Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

## Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer

will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

## Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

## You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

### Most of the “Findings” Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site’s subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

### This Report’s Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

### This Report Could Be Misinterpreted

Other design professionals’ misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals’ plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

### Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note*

*conspicuously that you’ve included the material for information purposes only.* To avoid misunderstanding, you may also want to note that “informational purposes” means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

### Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled “limitations,” many of these provisions indicate where geotechnical engineers’ responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

### Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a “phase-one” or “phase-two” environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

### Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer’s services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, *proper implementation of the geotechnical engineer’s recommendations will not of itself be sufficient to prevent moisture infiltration.* **Confront the risk of moisture infiltration** by including building-envelope or mold specialists on the design team. **Geotechnical engineers are not building-envelope or mold specialists.**



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CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD

**BIDS DUE:**  
1:00PM, WEDNESDAY,  
JULY 24, 2024

BID DELIVERY LOCATION:

DELIVER BIDS ELECTRONICALLY TO [BIDBOX@PARKS.WA.GOV](mailto:bidbox@parks.wa.gov)

Subject line to read: "SW-C1125 [YOUR COMPANY NAME]."

**\*\*\* Bid Proposal and Signature: See Sections 7.1 and 11.1 of the Instructions to Bidders for expanded instructions for bid submittal. \*\*\***

BIDS SUBMITTED IN COMPLIANCE WITH THE CONTRACT DOCUMENTS

**\*\* PLEASE PRINT CLEARLY BELOW \*\***

<h1>TOTAL BASE BID</h1>	
(NOT INCLUDING SALES TAX)	
↓ PRICE WRITTEN-OUT COMPLETELY IN WORDS ↓	↓ PRICE IN NUMBERS ONLY ↓
_____ _____ (U.S.) DOLLARS	\$ _____

Printed Name of Person Signing Bid Proposal ↑	Firm Name (Printed legibly) ↑
Title ↑ (Estimator, Vice-President, Owner, Principal, etc.)	Physical Street Address ↑ <b>(NO PO Boxes Here)</b>
Contractor Registration No. & Expiration Date ↑	City ↑ State Zip + PLUS 4
Taxpayer Identification Number ↑	( ) Area Code Phone Number ↑
Washington UBI Number ↑	( ) Area Code Fax Number ↑
Employment Security Department Number ↑	( ) Area Code Cellular Phone Number ↑
PO Box for US Mail Delivery (if any) ↑	E-Mail Address (Enter N/A if none) ↑





**CAPE DISAPPOINTMENT STATE PARK  
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Unit prices and estimated quantities shall be used to determine the Base Bid. These prices shall also be used to adjust the Contract in the event there is an increase or decrease in the estimated quantities. All costs shall be “in place” costs and complete, **excluding State Sales Tax.** *In the event of an irregularity, the unit price prevails. The Agency reserves the right to make mathematical corrections of multiplication or addition errors on the bid form.*

Trench Excavation Safety Provisions: If the contract contains any work which requires trenching exceeding a depth of four (4) feet, all costs for adequate trench safety systems shall be identified as a separate bid item in compliance with Chapter 39.04 RCW. The purpose of this provision is to ensure that the bidder agrees to comply with all relevant trench safety requirements of Chapter 49.17 RCW. This bid amount shall be considered part of the total base bid. **Include a lump sum dollar amount (even if the value is \$0.00) to be considered responsive to the bid solicitation.**

Wage Certification. The bidder certifies under penalty of perjury under the laws of the State of Washington that the foregoing is true and correct: within the three-year period immediately preceding the bid solicitation date, the bidder has not been a “willful” violator, as defined in RCW 49.48.082, of any provision of chapters 49.46, 49.48, or 49.52 RCW, as determined by a final and binding citation and notice of assessment issued by the Department of Labor and Industries or through a civil judgment entered by a court of limited or general jurisdiction.

**BASE BID ITEMS**

**BE SURE TO INCLUDE UNIT PRICES IF THE BOX IS NOT SHADED**

ITEM NO.	DESCRIPTION	EST QTY	UNIT PRICE	TOTAL AMOUNT
1.	TRENCH EXCAVATION SAFETY PROVISIONS	1 L.S.		
2.	MOBILIZATION, CLEAN UP, AND DEMOBOLIZATION	1 L.S.		
3.	CULVERTS/ROAD IMPROVEMENTS	1 L.S.		
ITEM TOTAL MUST AGREE WITH PAGE 1 BID AMOUNT →				\$

Minority and Women’s Business Enterprises (MWBE), WA Small Business, WA Veteran-Owned Business Utilization Certification: The bidder certifies good faith efforts to provide opportunities to MWBEs, Small Businesses, and Veteran-Owned Businesses. If awarded, the bidder commits to utilizing these firms or approved substitutes on the project. If no such firms will be used, enter “N.A.” on the first line.



**CAPE DISAPPOINTMENT STATE PARK  
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Firm Name, Address and Federal I.D. #	Type of Work	Certificate Number	MBE%	WBE%	Small Business%	Veteran Business%
1						
2						
<b>TOTALS</b>						

Bidder may attach a separate sheet for additional MWBE Utilization Certification.

The Bidder declares that they have carefully examined the site of the proposed work, the Drawings, Specifications and all of the conditions affecting the work. Therefore, the Bidder proposes to provide all labor, equipment, materials, and permits and to perform all work as required by, and in strict accordance with the Contract Documents for the bid amounts as follows.

The Agency reserves the right to accept or reject all bids and to waive informalities. The Bidder will allow 60 days from bid opening date for acceptance of its bid by the Agency.

Bidder agrees to complete project (including accepted alternates) in accordance with drawings and specifications within 90 calendar days from the date provided on the Notice to Proceed letter.

It is agreed that liquidated damages, in the amount of \$1,000.00, shall be levied for each and every calendar day by which the completion of the work is delayed beyond the time fixed for completion or extension of the contract.

Apprentice Utilization Requirements. The apprentice labor hours required for this project are 15% of the total labor hours. The undersigned agrees to utilize this level of apprentice participation. A monetary incentive of \$1,000.00 will be paid to the contractor meeting the apprentice utilization requirement. A monetary penalty will be applied to the contractor failing to meet the utilization requirement and failing to demonstrate a Good Faith Effort. The penalty will be \$100.00 per percentage point not utilized.

**Expected Apprenticeship Utilization cost value to be included in the bid associated with meeting the goals: \$ \_\_\_\_\_.**

**Addenda: Receipt of addenda numbered [ ] through [ ] is hereby acknowledged.**

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**Signature of Authorized Official**



CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD

SUBCONTRACTORS UTILIZATION LIST  
(If Applicable)

In compliance with the contract documents, the following subcontractor list is submitted:

SUBCONTRACTOR LISTING – RCW 39.30.060

If the base bid and the sum of the additive alternates is **ONE MILLION DOLLARS OR MORE**, the Bidder shall provide names of the subcontractors with whom the Bidder will **directly** subcontract for performance of the following work. If the Bidder intends to perform the work, the Bidder must enter its name for that category of work.

- A. Submission Deadline: The completed and signed Subcontractors List must be submitted with bid.
- B. List Subcontractors: The Bidder shall indicate on the Subcontractors List the names of the subcontractors with whom the Bidder, if awarded the contract, will directly subcontract for performance of the work of heating, ventilation, and air conditioning, plumbing as described in Chapter 18.106 RCW, electrical as described in Chapter 19.28 RCW, structural steel installation, and rebar installation.
- C. List Bidder if Bidder Performing Work: If the Bidder will self-perform the work in any of the five areas required, the Bidder shall name itself for the work on the Subcontractors List.
- D. Name Only One Firm for Each Category of Work: The Bidder shall not list more than one firm (subcontractor or Bidder) for each category of work identified, unless subcontractors vary with bid Alternatives or Additives, in which case the Bidder must indicate which firm will be used for which Alternate or Additive.
- E. Substitution of Subcontractors: Substitution of any listed subcontractor may only be according to the procedure and parameters set forth in RCW 39.30.060.
- F. Factors Relating to Non-Responsiveness: **Failure of the Bidder to submit the names of such subcontractors or to name itself to perform such work or the naming of two or more firms (subcontractors or Bidder) to perform the same work shall render the Bidder's bid nonresponsive and, therefore, VOID.**
- G. The Subcontractor Utilization List is intended to discourage bid shopping, not to verify subcontractor qualifications. The Agency does not use the Subcontractor Utilization List as a tool to disqualify or qualify bidders.
- H. Applicable to Direct Subcontractors: The requirement of this section to name the Bidders' proposed heating, ventilation and air conditioning, plumbing, electrical, structural steel installation, and rebar installation subcontractors applies only to proposed heating, ventilation and air conditioning, plumbing, electrical, structural steel installation, and rebar installation subcontractors who will contract directly with the Bidder.



**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

1. HVAC, Electrical, Plumbing: The requirement of this section to name the bidder's proposed heating, ventilation and air conditioning, plumbing and electrical subcontractors applies only to proposed heating, ventilation, and air conditioning, plumbing and electrical subcontractors who will contract directly with the bidder.

Category of Work	<b>Bidder MUST check one box for each Category of Work.</b> If subcontracting the work, bidder must name the subcontractor.
HVAC (Heating, Ventilation & Air Conditioning)	<input type="checkbox"/> Name of Subcontractor: _____ <input type="checkbox"/> Bidder will self-perform this work, or the project does not include this work.
Electrical	<input type="checkbox"/> Name of Subcontractor: _____ <input type="checkbox"/> Bidder will self-perform this work, or the project does not include this work.
Plumbing	<input type="checkbox"/> Name of Subcontractor: _____ <input type="checkbox"/> Bidder will self-perform this work, or the project does not include this work.

Bidder may attach a separate sheet for additional alternate bid subcontractors

2. Structural Steel Installation and Rebar Installation: The requirement of this section to name the bidder's proposed names of the subcontractors with whom the bidder, if awarded, will subcontract for performance of the work of structural steel installation and rebar installation.

Category of Work	<b>Bidder MUST check one box for each Category of Work.</b> If subcontracting the work, bidder must name the subcontractor.
Structural Steel Installation	<input type="checkbox"/> Name of Subcontractor: _____ <input type="checkbox"/> Bidder will self-perform this work, or the project does not include this work.
Rebar Installation	<input type="checkbox"/> Name of Subcontractor: _____ <input type="checkbox"/> Bidder will self-perform this work, or the project does not include this work.

Bidder may attach a separate sheet for additional alternate bid subcontractors

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**Signature of Authorized Official**

## GENERAL CONDITIONS FOR CONSTRUCTION AT WASHINGTON STATE PARKS

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# GENERAL CONDITIONS FOR CONSTRUCTION AT WASHINGTON STATE PARKS

## PART 1 - GENERAL PROVISIONS

### 1.01 DEFINITIONS

- A. "Application for Payment" means a written request submitted by Contractor to A/E for payment of Work completed in accordance with the Contract Documents and approved Schedule of Values, supported by such substantiating data as Owner or A/E may require.
- B. "Architect," "Engineer," or "A/E" shall mean that person designated by the State Parks and Recreation Commission to be in charge of the work covered by this contract.
- C. "Change Order" means a written instrument signed by Owner and Contractor stating their agreement upon all of the following: (1) a change in the Work; (2) the amount of the adjustment in the Contract Sum, if any, and (3) the extent of the adjustment in the Contract Time, if any.
- D. "Claim" means Contractor's exclusive remedy for resolving disputes with Owner regarding the terms of a Change Order or a request for equitable adjustment, as more fully set forth in part 8.
- E. "Contract Award Amount" is the sum of the Base Bid and any accepted Alternates.
- F. "Contract Documents" means the Advertisement for Bids, Instructions for Bidders, completed Form of Proposal, General Conditions, Modifications to the General Conditions, Supplemental Conditions, Public Works Contract, other Special Forms, Drawings and Specifications, and all addenda and modifications thereof.
- G. "Contract Sum" is the total amount payable by Owner to Contractor for performance of the Work in accordance with the Contract Documents, including all taxes imposed by law and properly chargeable to the Work, except Washington State sales tax.
- H. "Contract Time" is the number of calendar days allotted in the Contract Documents for achieving Substantial Completion of the Work.
- I. "Contractor" means the person or entity who has agreed with Owner to perform the Work in accordance with the Contract Documents.
- J. "Drawings" are the graphic and pictorial portions of the Contract Documents showing the design, location, and dimensions of the Work, and may include plans, elevations, sections, details, schedules, and diagrams.
- K. "Final Acceptance" means the written acceptance issued to Contractor by Owner after Contractor has completed the requirements of the Contract Documents, as more fully set forth in Section 6.09 B.
- L. "Final Completion" means that the Work is fully and finally completed in accordance with the Contract Documents, as more fully set forth in Section 6.09 A.
- M. "Force Majeure" means those acts entitling Contractor to request an equitable adjustment in the Contract Time, as more fully set forth in paragraph 3.05 A.
- N. "Notice" means a written notice which has been delivered in person to the individual or a member of the firm or entity or to an officer of the corporation for which it was intended or, if delivered or sent by registered or certified mail, to the last business address known to the party giving notice.
- O. "Notice to Proceed" means a notice from Owner to Contractor that defines the date on which the Contract Time begins to run.
- P. "Owner" shall mean the Washington State Parks and Recreation Commission and its authorized representative with the authority to enter into, administer and/or terminate contracts and make related determinations and findings.
- Q. "Person" means a corporation, partnership, business association of any kind, trust, company, or individual.

## GENERAL CONDITIONS FOR CONSTRUCTION AT WASHINGTON STATE PARKS

- R. "Prior Occupancy" means Owner's use of all or parts of the Project before Substantial Completion, as more fully set forth in Section 6.08 A.
- S. "Progress Schedule" means a schedule of the Work, in a form satisfactory to Owner, as further set forth in section 3.02.
- T. "Project" means the total construction of which the Work performed in accordance with the Contract Documents may be the whole or a part and which may include construction by Owner or by separate contractors.
- U. "Project Manual" means the volume usually assembled for the Work which may include the bidding requirements, sample forms, and other Contract Documents.
- V. "Project Record" means the separate set of Drawings and Specifications as further set forth in paragraph 4.02A.
- W. "Schedule of Values" means a written breakdown allocating the total Contract Sum to each principle category of Work, in such detail as requested by Owner.
- X. "Specifications" are that portion of the Contract Documents consisting of the written requirements for materials, equipment, construction systems, standards, and workmanship for the Work, and performance of related services.
- Y. "Subcontract" means a contract entered into by Subcontractor for the purpose of obtaining supplies, materials, equipment, or services of any kind for or in connection with the Work.
- Z. "Subcontractor" means any person, other than Contractor, who agrees to furnish or furnishes any supplies, materials, equipment, or services of any kind in connection with the Work.
- AA. "Substantial Completion" means that stage in the progress of the Work where Owner has full and unrestricted use and benefit of the facilities for the purposes intended, as more fully set forth in section 6.07.
- AB. "Work" means the construction and services required by the Contract Documents, and includes, but is not limited to, labor, materials, supplies, equipment, services, permits, and the manufacture and fabrication of components, performed, furnished, or provided in accordance with the Contract Documents.

### 1.02 ORDER OF PRECEDENCE

Any conflict or inconsistency in the Contract Documents shall be resolved by giving the documents precedence in the following order.

1. Signed Public Works Contract, including any Change Orders, and any Special Forms.
2. Supplemental Conditions.
3. General Conditions.
4. Addenda
5. Specifications--provisions in Division 1 shall take precedence over provisions of any other Division.
6. Drawings--in case of conflict within the Drawings, large scale drawings shall take precedence over small scale drawings.
7. Signed and Completed Form of Proposal.
8. Instructions to Bidders.
9. Advertisement for Bids.

# GENERAL CONDITIONS FOR CONSTRUCTION AT WASHINGTON STATE PARKS

## 1.03 EXECUTION AND INTENT

Contractor makes the following representations to Owner:

1. The Contract Sum is reasonable compensation for the Work and the Contract Time is adequate for the performance of the Work, as represented by the Contract Documents;
2. Contractor has carefully reviewed the Contract Documents, visited and examined the Project site, become familiar with the local conditions in which the Work is to be performed, and satisfied itself as to the nature, location, character, quality and quantity of the Work, the labor, materials, equipment, goods, supplies, work, services and other items to be furnished and all other requirements of the Contract Documents, as well as the surface and subsurface conditions and other matters that may be encountered at the Project site or affect performance of the Work or the cost or difficulty thereof;
3. Contractor is financially solvent, able to pay its debts as they mature, and possesses sufficient working capital to complete the Work and perform Contractor's obligations required by the Contract Documents; and
4. Contractor is able to furnish the plant, tools, materials, supplies, equipment and labor required to complete the Work and perform the obligations required by the Contract Documents and has sufficient experience and competence to do so.

## **PART 2 - INSURANCE AND BONDS**

### 2.01 CONTRACTOR'S LIABILITY INSURANCE

Prior to commencement of the Work, Contractor shall obtain all the insurance required by the Contract Documents and provide evidence satisfactory to Owner that such insurance has been procured. Review of the Contractor's insurance by Owner shall not relieve or decrease the liability of Contractor. Companies writing the insurance to be obtained by this part shall be licensed to do business under Chapter 48 RCW or comply with the Surplus Lines Law of the State of Washington. Contractor shall include in its bid the cost of all insurance and bond costs required to complete the base bid work and accepted alternates. Insurance carriers providing insurance in accordance with the Contract Documents shall be acceptable to Owner, and its A. M. Best rating shall be indicated on the insurance certificates.

- A. Contractor shall maintain the following insurance coverage during the Work and for one year after Final Acceptance. Contractor shall also maintain the following insurance coverage during the performance of any corrective Work required by section 5.16.
  1. Commercial General Liability (CGL) on an Occurrence Form:
    - a. Completed operations/products liability;
    - b. Explosion, collapse, and underground; and
    - c. Employer's liability coverage.
  2. Automobile liability
- B. Contractor shall comply with the Washington State Industrial Insurance Act and, if applicable, the Federal Longshoremen's and Harbor Workers' Act and the Jones Act.
- C. All insurance coverages shall protect against claims for damages for personal and bodily injury or death, as well as claims for property damage, which may arise from operations in connection with the Work whether such operations are by Contractor or any Subcontractor.
- D. All insurance coverages shall be endorsed to include Owner as an additional named insured for Work performed in accordance with the Contract Documents, and all insurance certificates shall evidence the Owner as an additional insured.



# GENERAL CONDITIONS FOR CONSTRUCTION AT WASHINGTON STATE PARKS

## 2.02 COVERAGE LIMITS INSURANCE COVERAGE CERTIFICATES

**A. Insurance Coverage Certificates**

The Contractor shall furnish acceptable proof of insurance coverage on the State of Washington Certificate of Insurance form SF500A dated 07/02/92 or an acceptable ACORD form.

**B. Required Coverages**

1. For a contract less than \$100,000.00, the coverage required is:

a. Public Liability Insurance – The Contractor shall at all times during the term of this contract, at its cost and expense, carry and maintain general public liability insurance, including contractual liability, against claims for bodily injury, personal injury, death or property damage occurring or arising out of services provided under this contract. This insurance shall cover claims caused by any act, omission, or negligence of the Contractor or its officers, agents, representatives, assigns or servants. The limits of liability insurance, which may be increased as deemed necessary by the contracting parties, shall be:

Each Occurrence	\$1,000,000.00
General Aggregate Limits (other than products – commercial operations)	\$1,000,000.00
Products – Commercial Operations Limit	\$1,000,000.00
Personal and Advertising Injury Limit	\$1,000,000.00
Fire Damage Limit (any one fire)	\$50,000.00
Medical Expense Limit (any one person)	\$5,000.00

b. If the contract is for underground utility work, then the Contractor shall provide proof of insurance for that above in the form of Explosion, Collapse and Underground (XCU) coverage.

c. Employers Liability on an occurrence basis in an amount not less than \$1,000,000.00 per occurrence.

2. For contracts over \$100,000.00 but less than \$5,000,000.00 the contractor shall obtain the coverage limits as listed for contracts below \$100,000.00 and General Aggregate and Products – Commercial Operations Limit of not less than \$2,000,000.00.

3. Coverage for Comprehensive General Bodily Injury Liability Insurance for a contract over \$5,000,000.00 is:

Each Occurrence	\$2,500,000.00
General Aggregate Limits (other than products – commercial operations)	\$5,000,000.00
Products – Commercial Operations limit	\$5,000,000.00
Personal and Advertising Injury Limit	\$2,500,000.00
Fire Damage Limit (any one fire)	\$50,000.00
Medical Expense Limit (any one Person)	\$5,000.00

4. For all Contracts – Automobile Liability: in the event that services delivered pursuant to this contract involve the use of vehicles or the transportation of clients, automobile liability insurance shall be required. If Contractor-owned personal vehicles are used, a Business Automobile Policy covering at a minimum Code 2 “owned autos only” must be secured. If Contractor employee’s vehicles are used, the Contractor must also include under the Business Automobile Policy Code 9, coverage for non-owned autos. The minimum limits for automobile liability is: \$1,000,000.00 per occurrence, using a combined single limit for bodily injury and property damage.

5. For Contracts for Hazardous Substance Removal (Asbestos Abatement, PCB Abatement, etc.)

a. In addition to providing insurance coverage for the project as outlined above, the Contractor shall provide Environmental Impairment Liability insurance for the hazardous substance removal as follows:

<u>EACH OCCURRENCE</u>	<u>AGGREGATE</u>
\$500,000.00	\$1,000,000.00

or \$1,000,000.00 each occurrence/aggregate bodily injury and property damage combined single limit.

## GENERAL CONDITIONS FOR CONSTRUCTION AT WASHINGTON STATE PARKS

- 1) Insurance certificate must state that the insurer is covering hazardous substance removal.
- 2) Should this insurance be secured on a "claims made" basis, the coverage must be continuously maintained for one year following the project's "final completion" through official completion of the project, plus one year following.

For Contracts where hazardous substance removal is a subcomponent of contracted work, the general contractor shall provide to the Owner a certificate of insurance for coverage as defined in 5a. above. The State of Washington must be listed as an additional insured. This certificate of insurance must be provided to the Owner prior to commencing work.

### 2.03 INSURANCE COVERAGE CERTIFICATES

- A. Prior to commencement of the Work, Contractor shall furnish to Owner a completed certificate of insurance coverage.
- B. All insurance certificates shall name Owner's Project number and Project title.
- C. All insurance certificates shall specifically require 45 (forty-five) days prior notice to Owner of cancellation or any material change, except 30 (thirty) days for surplus line insurance.

### 2.04 PAYMENT AND PERFORMANCE BONDS

AIA Payment and Performance Bonds, form A312, or equivalent, is required by the Owner for the work of this contract. The forms shall be obtained from the Contractor's bonding company. The Payment Bond shall cover payment to laborers and mechanics, including payments to Employee Benefit Funds, and payments to subcontractors, material suppliers, and persons who shall supply such person or persons, or subcontractors with materials and supplies.

### 2.05 ALTERNATIVE SURETY

Contractor shall promptly furnish alternative security required to protect Owner and persons supplying labor or materials required by the Contract Documents if:

- A. Owner has a reasonable objection to the surety; or
- B. Any surety fails to furnish reports on its financial condition if requested by Owner.

### 2.06 BUILDER'S RISK

- A. Contractor shall purchase and maintain property insurance in the amount of the Contract Sum including all Change Orders for the Work on a replacement cost basis until Substantial Completion. The insurance shall cover the interest of Owner, Contractor, and any Subcontractors, as their interests may appear. For projects not involving New Building Construction, 'Installation Floater' is an acceptable substitute for the Builder's Risk Insurance.
- B. Contractor property insurance shall be placed on an "all risk" basis and insure against the perils of fire and extended coverage and physical loss or damage including theft, vandalism, malicious mischief, collapse, false work, temporary buildings, debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for A/E's services and expenses required as a result of an insured loss.
- C. Owner and Contractor waive all subrogation rights against each other, any Subcontractors, A/E, A/E's subconsultants, separate contractors described in section 5.20, if any, and any of their subcontractors, for damages caused by fire or other perils to the extent covered by property insurance obtained pursuant to this section or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by Owner as fiduciary. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

# GENERAL CONDITIONS FOR CONSTRUCTION AT WASHINGTON STATE PARKS

## PART 3 - TIME AND SCHEDULE

### 3.01 PROGRESS AND COMPLETION

- A. Contractor shall diligently prosecute the Work, with adequate forces, achieve Substantial Completion within the Contract Time, and achieve Final Completion within 30 (thirty) calendar days thereafter, unless otherwise noted in Division 1 of the specifications.
- B. The Contractor shall notify the Engineer at least two (2) weekdays in advance if work is to be performed on a Saturday, Sunday, or legal holiday. No excavation work will be allowed on Saturdays, Sundays, or legal holidays unless specifically authorized by the Engineer.

### 3.02 CONSTRUCTION SCHEDULE

- A. Unless otherwise provided in Division 1, Contractor shall, within 14 (fourteen) calendar days after issuance of the Notice to Proceed, submit a preliminary Progress Schedule. The Progress Schedule shall show the sequence in which Contractor proposes to perform the Work, and the dates on which Contractor plans to start and finish major portions of the Work, including dates for shop drawings and other submittals, and for acquiring materials and equipment.
- B. The Progress Schedule shall be in the form of a Critical Path Method (CPM) logic network or, with the approval of the Owner, a bar chart schedule may be submitted. The scheduling of construction is the responsibility of the Contractor and is included in the contract to assure adequate planning and execution of the work. The schedule will be used to evaluate progress of the work for payment based on the Schedule of Values. The schedule shall show the Contractor's planned order and interdependence of activities, and sequence of work. As a minimum the schedule shall include:
  - 1. Date of Notice to Proceed;
  - 2. Activities (resources, durations, individual responsible for activity, early starts, late starts, early finishes, late finishes, etc.);
  - 3. Utility Shutdowns;
  - 4. Interrelationships and dependence of activities;
  - 5. Planned vs. actual status for each activity;
  - 6. Substantial completion;
  - 7. Punch list;
  - 8. Final inspection;
  - 9. Final completion, and
  - 10. Float time

The Schedule Duration shall be based on the Contract Time of Completion listed on the Bid Proposal form. The Owner shall not be obligated to accept any Early Completion Schedule suggested by the Contractor. The Contract Time for Completion shall establish the Schedule Completion Date.

If the Contractor feels that the work can be completed in less than the Specified Contract Time, then the Surplus Time shall be considered Project Float. This Float time shall be shown on the Project Schedule. It shall be available to accommodate changes in the work and unforeseen conditions.

Neither the Contractor nor the Owner have exclusive right to this Float Time. It belongs to the project.

- C. Owner shall return comments on the preliminary Progress Schedule to Contractor within 14 (fourteen) days of receipt. Review by Owner of Contractor's schedule does not constitute an approval or acceptance of Contractor's construction means, methods, or sequencing, or its ability to complete the Work within the Contract Time. Contractor shall revise and resubmit its schedule, as necessary. Owner may withhold a portion of progress payments until a Progress Schedule has been submitted which meets the requirements of this section.
- D. Contractor shall utilize and comply with the Progress Schedule. On a monthly basis, or as otherwise directed by Owner, Contractor shall submit an updated Progress Schedule at its own expense to Owner indicating actual progress. If, in the opinion of Owner, Contractor is not in conformance with the Progress Schedule for reasons other than acts of Force Majeure as identified in section 3.05, Contractor shall take

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such steps as are necessary to bring the actual completion dates of its work activities into conformance with the Progress Schedule, or revise the Progress Schedule to reconcile with the actual progress of the Work.

- E. Contractor shall promptly notify Owner in writing of any actual or anticipated event which is delaying or could delay achievement of any milestone or performance of any critical path activity of the Work. Contractor shall indicate the expected duration of the delay, the anticipated effect of the delay on the Progress Schedule, and the action being or to be taken to correct the problem. Provision of such notice does not relieve Contractor of its obligation to complete the Work within the Contract Time.

### 3.03 OWNER'S RIGHT TO SUSPEND THE WORK FOR CONVENIENCE

- A. Owner may, at its sole discretion, order Contractor, in writing, to suspend all or any part of the Work for up to 90 (ninety) days, or for such longer period as mutually agreed.
- B. Upon receipt of a written notice suspending the Work, Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of cost of performance directly attributable to such suspension. Within a period up to 90 (ninety) days after the notice is delivered to Contractor, or within any extension of that period to which the parties shall have agreed, Owner shall either:
  - 1. Cancel the written notice suspending the Work; or
  - 2. Terminate the Work covered by the notice as provided in the termination provisions as more fully set forth in Part 9.
- C. If a written notice suspending the Work is cancelled or the period of the notice or any extension thereof expires, Contractor shall resume Work.
- D. Contractor shall be entitled to an equitable adjustment in the Contract Time, or Contract Sum, or both, for increases in the time or cost of performance directly attributable to such suspension, provided Contractor complies with all requirements set forth in Part 7.

### 3.04 OWNER'S RIGHT TO STOP THE WORK FOR CAUSE

- A. If Contractor fails or refuses to perform its obligations in accordance with the Contract Documents, Owner may order Contractor, in writing, to stop the Work, or any portion thereof, until satisfactory corrective action has been taken.
- B. Contractor shall not be entitled to an equitable adjustment in the Contract Time or Contract Sum for any increased cost or time of performance attributable to Contractor's failure or refusal to perform or from any reasonable remedial action taken by Owner based upon such failure.

### 3.05 DELAY

- A. Any delay in or failure of performance by Owner or Contractor, other than the payment of money, shall not constitute a default hereunder if and to the extent the cause for such delay or failure of performance was unforeseeable and beyond the control of the party ("Force Majeure"). Acts of Force Majeure include, but are not limited to:
  - 1. Acts of God or the public enemy;
  - 2. Acts or omissions of any government entity;
  - 3. Fire or other casualty for which Contractor is not responsible;
  - 4. Quarantine or epidemic;
  - 5. Strike or defensive lockout;
  - 6. Unusually severe weather, in excess of weather conditions which could not have been reasonably anticipated; and

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7. Unusual delay in receipt of supplies or products which were ordered and expedited and for which no substitute reasonably acceptable to Owner was available.
- B. Contractor shall be entitled to an equitable adjustment in the Contract Time for changes in the time of performance directly attributable to an act of Force Majeure, provided it makes a request for equitable adjustment according to section 7.03. Contractor shall not be entitled to an adjustment in the Contract Sum resulting from an act of Force Majeure.
- C. Contractor shall be entitled to an equitable adjustment in Contract Time, and may be entitled to an equitable adjustment in Contract Sum, if the cost or time of Contractor's performance is changed due to the fault or negligence of Owner, provided the Contractor makes a request according to sections 7.02 and 7.03.
- D. Contractor shall not be entitled to an adjustment in Contract Time or in the Contract Sum for any delay or failure of performance to the extent such delay or failure was caused by Contractor or anyone for whose acts Contractor is responsible.
- E. To the extent any delay or failure of performance was concurrently caused by the Owner and Contractor, Contractor shall be entitled to an adjustment in the Contract Time for that portion of the delay or failure of performance that was concurrently caused, provided it makes a request for equitable adjustment according to section 7.03, but shall not be entitled to an adjustment in Contract Sum.
- F. Contractor shall make all reasonable efforts to prevent and mitigate the effects of any delay, whether occasioned by an act of Force Majeure or otherwise.
- G. The Owner has acquired ownership and/or easement of lands for the construction, as indicated on the drawings, without cost to the Contractor. The Contractor understands and agrees that, should it appear at any time that the Owner has not acquired title to all of the right-of-ways and lands necessary for the performance of the work under the provisions of this contract, and that if any delay in the performance of said work occasioned by the failure of the Owner, its officers, or employees to acquire a title of any of said lands or right-of-way, such failure shall extend the contract completion date the number of days equal to the period of such delay. The Contractor waives any and all claims for damages against the Owner which the Contractor may sustain by reason of this delay in the work.

### 3.06 NOTICE TO OWNER OF LABOR DISPUTES

- A. If Contractor has knowledge that any actual or potential labor dispute is delaying or threatens to delay timely performance in accordance with the Contract Documents, Contractor shall immediately give notice, including all relevant information, to Owner.
- B. Contractor agrees to insert a provision in its Subcontracts and to require insertion in all sub-subcontracts, that in the event timely performance of any such contract is delayed or threatened by delay by any actual or potential labor dispute, the Subcontractor or Sub-subcontractor shall immediately notify the next higher tier Subcontractor or Contractor, as the case may be, of all relevant information concerning the dispute.

### 3.07 DAMAGES FOR FAILURE TO ACHIEVE TIMELY COMPLETION

- A. Liquidated Damages
  1. Timely performance and completion of the Work is essential to Owner and time limits stated in the Contract Documents are of the essence. Owner will incur serious and substantial damages if Substantial Completion of the Work does not occur within the Contract Time. However, it would be difficult if not impossible to determine the exact amount of such damages. Consequently, provisions for liquidated damages are included in the Contract Documents.
  2. The liquidated damage amounts set forth in the Contract Documents will be assessed not as a penalty, but as liquidated damages for breach of the Contract Documents. This amount is fixed and agreed upon by and between the Contractor and Owner because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the Owner would in such event sustain. This amount shall be construed as the actual amount of damages sustained by the Owner, and may be retained by the Owner and deducted from periodic payments to the Contractor.

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3. Assessment of liquidated damages shall not release Contractor from any further obligations or liabilities pursuant to the Contract Documents.

### B. Actual Damages

Actual damages will be assessed for failure to achieve Final Completion within the time provided. Actual damages will be calculated on the basis of direct architectural, administrative, and other related costs attributable to the Project from the date when Final Completion should have been achieved, based on the date Substantial Completion is actually achieved, to the date Final Completion is actually achieved. Owner may offset these costs against any payment due Contractor.

## **PART 4 - SPECIFICATIONS, DRAWINGS, AND OTHER DOCUMENTS**

### 4.01 DISCREPANCIES AND CONTRACT DOCUMENT REVIEW

- A. The intent of the Specifications and Drawings is to describe a complete Project to be constructed in accordance with the Contract Documents. Contractor shall furnish all labor, materials, equipment, tools, transportation, permits, and supplies, and perform the Work required in accordance with the Drawings, Specifications, and other provisions of the Contract Documents.
- B. The Contract Documents are complementary. What is required by one part of the Contract Documents shall be binding as if required by all. Anything mentioned in the Specifications and not shown on the Drawings, or shown on the Drawings and not mentioned in the Specifications, shall be of like effect as if shown or mentioned in both.
- C. Contractor shall carefully study and compare the Contract Documents with each other and with information furnished by Owner. If, during the performance of the Work, Contractor finds a conflict, error, inconsistency, or omission in the Contract Documents, it shall promptly and before proceeding with the Work affected thereby, report such conflict, error, inconsistency, or omission to A/E in writing.
- D. Contractor shall do no Work without applicable Drawings, Specifications, or written modifications, or Shop Drawings where required, unless instructed to do so in writing by Owner. If Contractor performs any construction activity, and it knows or reasonably should have known that any of the Contract Documents contain a conflict, error, inconsistency, or omission, Contractor shall be responsible for the performance and shall bear the cost for its correction.
- E. Contractor shall provide any work or materials the provision of which is clearly implied and is within the scope of the Contract Documents even if the Contract Documents do not mention them specifically.
- F. Questions regarding interpretation of the requirements of the Contract Documents shall be referred to the A/E.

### 4.02 PROJECT RECORD

- A. Contractor shall legibly mark in ink on a separate set of the Drawings and Specifications all actual construction, including depths of foundations, horizontal and vertical locations of internal and underground utilities and appurtenances referenced to permanent visible and accessible surface improvements, field changes of dimensions and details, actual suppliers, manufacturers and trade names, models of installed equipment, and Change Order Proposals (COP). This separate set of Drawings and Specifications shall be the "Project Record."
- B. The Project Record shall be maintained on the project site throughout the construction and shall be clearly labeled "PROJECT RECORD". The Project Record shall be updated at least weekly noting all changes and shall be available to Owner at all times.
- C. Contractor shall submit the completed and finalized Project Record to A/E prior to Final Acceptance.

### 4.03 SUBMITTALS

- A. "Submittals" means documents and other information required to be submitted to A/E by Contractor pursuant to the Contract Documents, showing in detail: the proposed fabrication and assembly of structural

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elements; and the installation (i.e. form, fit, and attachment details) of materials and equipment. Submittals include, but are not limited to, drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, samples, and similar materials furnished by Contractor to explain in detail specific portions of the Work required by the Contract Documents. For materials and equipment to be incorporated into the Work, Contractor submittal shall include the name of the manufacturer, the model number, and other information concerning the performance, capacity, nature, and rating of the item. When directed, Contractor shall submit all samples at its own expense. Owner may duplicate, use, and disclose Submittals provided in accordance with the Contract Documents.

- B. Contractor shall coordinate all Shop Drawings, and review them for accuracy, completeness, and compliance with the Contract Documents and shall indicate its approval thereon as evidence of such coordination and review. Where required by law, Shop Drawings shall be stamped by an appropriate professional licensed by the state of Washington. Shop Drawings submitted to A/E without evidence of Contractor's approval shall be returned for resubmission. Contractor shall review, approve, and submit Shop Drawings with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of Owner or separate contractors. Contractor's submittal schedule shall allow a reasonable time for A/E review. A/E will review, approve, or take other appropriate action on the Shop Drawings. Contractor shall perform no portion of the Work requiring submittal and review of Shop Drawings until the respective submittal has been reviewed and the A/E has approved or taken other appropriate action. Owner and A/E shall respond to Shop Drawing submittals with reasonable promptness. Any Work by Contractor shall be in accordance with reviewed Shop Drawings. Submittals made by Contractor which are not required by the Contract Documents may be returned without action.
- C. Approval, or other appropriate action with regard to Submittals, by Owner or A/E shall not relieve Contractor of responsibility for any errors or omissions in such Submittals, nor from responsibility for compliance with the requirements of the Contract Documents. Unless specified in the Contract Documents, review by Owner or A/E shall not constitute an approval of the safety precautions employed by Contractor during construction, or constitute an approval of Contractor's means or methods of construction. If Contractor fails to obtain approval before installation and the item or work is subsequently rejected, Contractor shall be responsible for all costs of correction.
- D. If Shop Drawings show variations from the requirements of the Contract Documents, Contractor shall describe such variations in writing, separate from the Shop Drawings, at the time it submits the Shop Drawings containing such variations. If A/E approves any such variation, an appropriate Change Order will be issued. If the variation is minor and does not involve an adjustment in the Contract Sum or Contract Time, a Change Order need not be issued; however, the modification shall be recorded upon the Project Record.
- E. Unless otherwise provided in Division I, Contractor shall submit to A/E for approval 5 (five) copies of all Submittals. Unless otherwise indicated, 3 (three) sets of all Submittals shall be retained by A/E and 2 (two) sets shall be returned to Contractor.

### 4.04 ORGANIZATION OF SPECIFICATIONS

Specifications are prepared in sections which conform generally with trade practices. These sections are for Owner and Contractor convenience and shall not control Contractor in dividing the Work among the Subcontractors or in establishing the extent of the Work to be performed by any trade.

### 4.05 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS, AND OTHER DOCUMENTS

- A. The Drawings, Specifications, and other documents prepared by A/E are instruments of A/E's service through which the Work to be executed by Contractor is described. Neither Contractor nor any Subcontractor shall own or claim a copyright in the Drawings, Specifications, and other documents prepared by A/E, and A/E shall be deemed the author of them and will, along with any rights of Owner, retain all common law, statutory, and other reserved rights, in addition to the copyright. All copies of these documents, except Contractor's set, shall be returned or suitably accounted for to A/E, on request, upon completion of the Work.
- B. The Drawings, Specifications, and other documents prepared by the A/E, and copies thereof furnished to Contractor, are for use solely with respect to this Project. They are not to be used by Contractor or any

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Subcontractor on other projects or for additions to this Project outside the scope of the Work without the specific written consent of Owner and A/E. Contractor and Subcontractors are granted a limited license to use and reproduce applicable portions of the Drawings, Specifications, and other documents prepared by A/E appropriate to and for use in the execution of their Work.

- C. Contractor and all Subcontractors grant a non-exclusive license to Owner, without additional cost or royalty, to use for its own purposes (including reproduction) all Shop Drawings, together with the information and diagrams contained therein, prepared by Contractor or any Subcontractor. In providing Shop Drawings, Contractor and all Subcontractors warrant that they have authority to grant to Owner a license to use the Shop Drawings, and that such license is not in violation of any copyright or other intellectual property right. Contractor agrees to defend and indemnify Owner pursuant to the indemnity provisions in section 5.03 and 5.23 from any violations of copyright or other intellectual property rights arising out of Owner's use of the Shop Drawings hereunder, or to secure for Owner, at Contractor's own cost, licenses in conformity with this section.
- D. The Shop Drawings and other submittals prepared by Contractor, Subcontractors of any tier, or its or their equipment or material suppliers, and copies thereof furnished to Contractor, are for use solely with respect to this Project. They are not to be used by Contractor or any Subcontractor of any tier, or material or equipment supplier, on other projects or for additions to this Project outside the scope of the Work without the specific written consent of Owner. The Contractor, Subcontractors of any tier, and material or equipment suppliers are granted a limited license to use and reproduce applicable portions of the Shop Drawings and other submittals appropriate to and for use in the execution of their Work under the Contract Documents.

### **PART 5 - PERFORMANCE**

#### **5.01 CONTRACTOR CONTROL AND SUPERVISION**

- A. Contractor shall supervise and direct the Work, using its best skill and attention, and shall perform the Work in a skillful manner. Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences, and procedures and for coordinating all portions of the Work, unless the Contract Documents give other specific instructions concerning these matters. Contractor shall disclose its means and methods of construction when requested by Owner.
- B. Performance of the Work shall be directly supervised by a competent superintendent who is satisfactory to Owner and has authority to act for Contractor. The superintendent shall not be changed without the prior written consent of Owner. Owner may require Contractor to remove the superintendent from the Work or Project site, if Owner reasonably deems the superintendent incompetent, careless, or otherwise objectionable, provided Owner has first notified Contractor in writing and allowed a reasonable period for transition. The superintendent shall be on-site at all times while the Work is being performed, unless approved in writing by owner, in advance.
- C. Contractor shall be responsible to Owner for acts and omissions of Contractor, Subcontractors, and their employees and agents.
- D. Contractor shall enforce strict discipline and good order among Contractor's employees and other persons performing the Work. Contractor shall not permit employment of persons not skilled in tasks assigned to them. Contractor's employees shall at all times conduct business in a manner which assures fair, equal, and nondiscriminatory treatment of all persons. Owner may, by written notice, request Contractor to remove from the Work or Project site any employee Owner reasonably deems incompetent, careless, or otherwise objectionable.
- E. Contractor shall, at all times, keep on the Project site a copy of the Drawings, Specifications, addenda, reviewed Shop Drawings, permits, and permit drawings.
- F. Contractor shall ensure that its owner(s) and employees, and those of its Subcontractors, comply with the Ethics in Public Service Act RCW 42.52, which, among other things, prohibits state employees from having an economic interest in any public works contract that was made by, or supervised by, that employee. Contractor shall remove, at its sole cost and expense, any of its, or its Subcontractors', employees, if they are in violation of this act.



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### 5.02 PERMITS, FEES, AND NOTICES

- A. The Owner has obtained a Shorelines Substantial Development Permit and/or other environmental permits as required for this project. The permits with provisions which affect the construction methods or schedule have been incorporated into these specifications. The Contractor shall abide by all restrictions noted in these permits as the construction is in progress.
- B. All other permits or fees required by local, state or federal governmental agencies necessary for the construction of this project shall be obtained and paid by the Contractor. Only the cost for the building permit will be reimbursed by the Owner.
- C. The Contractor shall conform to all local, State and National Codes in all phases of this project. Where conflicts arise between plans, specifications and code requirements, the code shall prevail unless the plans or specifications are more stringent.

### 5.03 PATENTS AND ROYALTIES

Contractor is responsible for, and shall pay, all royalties and license fees. Contractor shall defend, indemnify, and hold Owner harmless from any costs, expenses, and liabilities arising out of the infringement by Contractor of any patent, copyright, or other intellectual property right used in the Work; however, provided that Contractor gives prompt notice, Contractor shall not be responsible for such defense or indemnity when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents. If Contractor has reason to believe that use of the required design, process, or product constitutes an infringement of a patent or copyright, it shall promptly notify Owner of such potential infringement.

### 5.04 PREVAILING WAGES

- A. Contractor and all subcontractors shall pay the prevailing rate of wages to all workers, laborers, or mechanics employed in the performance of any part of the Work in accordance with RCW 39.12 and the rules and regulations of the Department of Labor and Industries. The schedule of prevailing wage rates for the locality or localities of the Work is determined by the Industrial Statistician of the Department of Labor and Industries. It is the Contractor's responsibility to verify the applicable prevailing wage rate.
- B. Before payment is made by the Owner to the Contractor for any work performed by the Contractor and subcontractors whose work is included in the application for payment, the Contractor shall submit, or shall have previously submitted to the Owner for the Project, a Statement of Intent to Pay Prevailing Wages, approved by the Department of Labor and Industries, certifying the rate of hourly wage paid and to be paid each classification of laborers, workers, or mechanics employed upon the Work by Contractor and Subcontractors. Such rates of hourly wage shall not be less than the prevailing wage rate.
- C. Prior to release of retainage, the Contractor shall submit to the Owner an Affidavit of Wages Paid, approved by the Department of Labor and Industries, for the Contractor and every subcontractor, of any tier, that performed work on the Project.
- D. Disputes regarding prevailing wage rates shall be referred for arbitration to the Director of the Department of Labor and Industries. The arbitration decision shall be final and conclusive and binding on all parties involved in the dispute as provided for by RCW 39.12.060.
- E. Each Application for Payment submitted by Contractor shall state that prevailing wages have been paid in accordance with the prefled statement(s) of intent, as approved. Copies of the approved intent statement(s) shall be posted on the job site with the address and telephone number of the Industrial Statistician of the Department of Labor and Industries where a complaint or inquiry concerning prevailing wages may be made.
- F. In compliance with chapter 296-127 WAC, Contractor shall pay to the Department of Labor and Industries the currently established fee(s) for each statement of intent and/or affidavit of wages paid submitted to the Department of Labor and Industries for certification.
- G. Copies of approved Intents to Pay Prevailing Wages for the Contractor and all subcontractors shall be submitted with the Contractor's first application for payment. As additional subcontractors perform work on

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the project, their approved Intent forms shall be submitted with the Contractor's next application for payment.

- H. The Contractor or subcontractor directly contracting for "Off-Site, Prefabricated, Non-Standard, Project Specific Items" shall identify and report information required on the affidavit of wages paid form filed with the Department of Labor and Industries. The Contractor shall include language in its subcontracts requiring subcontractors and lower-tier subcontractors to comply with the reporting requirements for "Off-Site, Prefabricated, Non-Standard, Project Specific Item(s)" on the affidavit of wages paid.

The reporting requirement for Items shall apply for all public works contracts estimated to cost over \$1 million entered into by the Owner and Contractor between September 1, 2010 and December 31, 2013.

"Off-site, prefabricated, nonstandard, project specific item(s)" means products or items that are:

1. Made primarily of architectural or structural precast concrete, fabricated steel, pipe and pipe systems, or sheet metal and sheet metal duct work;
2. Produced specifically for the public work and not considered to be regularly available shelf items;
3. Produced or manufactured by labor expended to assemble or modify standard items; and
4. Produced at an off-site location outside Washington.

The Contractor or subcontractor shall comply with the reporting requirements and instructions on the affidavit of wages paid form, and shall report the following information on the affidavit of wages paid form submitted to the Department of Labor and Industries in order to comply with the reporting requirements for use of "Off-Site, Prefabricated, Non-Standard, Project Specific item(s)":

1. The estimated cost of the public works project;
2. The name of the awarding agency and the project title;
3. The contract value of the off-site, prefabricated, nonstandard, project specific item(s) produced outside of Washington State, including labor and materials; and
4. The name, address, and federal employer identification number of the contractor that produced the off-site, prefabricated, nonstandard, project specific item(s).

The owner may direct the contractor, at no additional cost to the owner, to remove and substitute any subcontractor(s) found to be out of compliance with the "Off-Site Prefabricated Non-Standard Project Specific Item(s)" reporting requirements more than one time as determined by the Department of Labor and Industries.

- I. The Contractor and all subcontractors shall promptly submit to the Owner certified payroll copies if requested.

### 5.05 HOURS OF LABOR

- A. Contractor shall comply with all applicable provisions of RCW 49.28 and they are incorporated herein by reference. Pursuant to that statute, no laborer, worker, or mechanic employed by Contractor, any Subcontractor, or any other person performing or contracting to do the whole or any part of the Work, shall be permitted or required to work more than eight (8) hours in any one calendar day, provided, that in cases of extraordinary emergency, such as danger to life or property, the hours of work may be extended, but in such cases the rate of pay for time employed in excess of eight (8) hours of each calendar day shall be not less than one and one-half times (x1.5) the rate allowed for this same amount of time during eight (8) hours service.
- B. Notwithstanding the preceding paragraph, RCW 49.28 permits a contractor or subcontractor in any public works contract subject to those provisions, to enter into an agreement with its employees in which the employees work up to ten (10) hours in a calendar day. No such agreement may provide that the employees work ten-hour days for more than four (4) calendar days a week. Any such agreement is subject to approval by the employees. The overtime provisions of RCW 49.28 shall not apply to the hours, up to forty (40) hours per week, worked pursuant to any such agreement.

### 5.06 NONDISCRIMINATION

- A. Discrimination in all phases of employment is prohibited by, among other laws and regulations, Title VII of the Civil Rights Act of 1964, the Vietnam Era Veterans Readjustment Act of 1974, sections 503 and 504 of the Vocational Rehabilitation Act of 1973, the Equal Employment Act of 1972, the Age Discrimination Act of

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1967, the Americans with Disabilities Act of 1990, the Civil Rights Act of 1991, Presidential Executive Order 11246, Executive Order 11375, the Washington State Law Against Discrimination, RCW 49.60, and Gubernatorial Executive Order 85-09. These laws and regulations establish minimum requirements for affirmative action and fair employment practices which Contractor must meet.

- B. During performance of the Work:
1. Contractor shall not discriminate against any employee or applicant for employment because of race, creed, color, national origin, sex, age, marital status, or the presence of any physical, sensory, or mental disability, Vietnam era veteran status, or disabled veteran status, nor commit any other unfair practices as defined in RCW 49.60.
  2. Contractor shall, in all solicitations or advertisements for employees placed by or for it, state that the contractor is an "equal opportunity employer".
  3. Contractor shall send to each labor union, employment agency, or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice advising the labor union, employment agency, or workers' representative of Contractor's obligations according to the Contract Documents and RCW 49.60.
  4. Contractor shall permit access to its books, records, and accounts, and to its premises by Owner, and by the Washington State Human Rights Commission, for the purpose of investigation to ascertain compliance with this section of the Contract Documents.
  5. Contractor shall include the provisions of this section in every Subcontract.
- C. Nondiscrimination Requirement. During the term of this Contract, Contractor, including any subcontractor, shall not discriminate on the bases enumerated at RCW 49.60.530(3). In addition, Contractor, including any subcontractor, shall give written notice of this nondiscrimination requirement to any labor organizations with which Contractor, or subcontractor, has a collective bargaining or other agreement.
- D. Obligation to Cooperate. Contractor, including any subcontractor, shall cooperate and comply with any Washington state agency investigation regarding any allegation that Contractor, including any subcontractor, has engaged in discrimination prohibited by this Contract pursuant to RCW 49.60.530(3).
- E. Default. Notwithstanding any provision to the contrary, Owner may suspend Contractor, including any subcontractor, upon notice of a failure to participate and cooperate with any state agency investigation into alleged discrimination prohibited by this Contract, pursuant to RCW 49.60.530(3). Any such suspension will remain in place until Owner receives notification that Contractor, including any subcontractor, is cooperating with the investigating state agency. In the event Contractor, or subcontractor, is determined to have engaged in discrimination identified at RCW 49.60.530(3), Owner may terminate this Contract in whole or in part, and Contractor, subcontractor, or both, may be referred for debarment as provided in RCW 39.26.200. Contractor or subcontractor may be given a reasonable time in which to cure this noncompliance, including implementing conditions consistent with any court-ordered injunctive relief or settlement agreement.
- F. Remedies for Breach. Notwithstanding any provision to the contrary, in the event of Contract termination or suspension for engaging in discrimination, Contractor, subcontractor, or both, shall be liable for contract damages as authorized by law including, but not limited to, any cost difference between the original contract and the replacement or cover contract and all administrative costs directly related to the replacement contract, which damages are distinct from any penalties imposed under Chapter 49.60, RCW. Owner shall have the right to deduct from any monies due to Contractor or subcontractor, or that thereafter become due, an amount for damages Contractor or subcontractor will owe Owner for default under this provision.

### 5.07 SAFETY PRECAUTIONS

- A. In performing this contract, the Contractor shall provide for protecting the lives and health of employees and other persons; preventing damage to property, materials, supplies, and equipment; and avoid work interruptions. For these purposes, the Contractor shall:

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1. Follow Washington Industrial Safety and Health Act (WISHA) regional directives and provide a site-specific safety program that will require an accident prevention and hazard analysis plan for the contractor and each subcontractor on the work site. The Contractor shall submit a site-specific safety plan to the Owner's representative prior to the initial scheduled construction meeting.
  2. Provide adequate safety devices and measures including, but not limited to, the appropriate safety literature, notice, training, permits, placement and use of barricades, signs, signal lights, ladders, scaffolding, staging, runways, hoist, construction elevators, shoring, temporary lighting, grounded outlets, wiring, hazardous materials, vehicles, construction processes, and equipment required by Chapter 19.27 RCW, State Building Code (International Building, Electrical, Mechanical, Fire, and Uniform Plumbing Codes); Chapter 212-12 WAC, Fire Marshal Standards, Chapter 49.17 RCW, WISHA; Chapter 296-155 WAC, Safety Standards for Construction Work; Chapter 296-65 WAC; WISHA Asbestos Standard; WAC 296-62-071, Respirator Standard; WAC 296-62, General Occupation Health Standards, WAC 296-24, General Safety and Health Standards, WAC 296-24, General Safety and Health Standards, Chapter 49.70 RCW, and Right to Know Act.
  3. Comply with the State Environmental Policy Act (SEPA), Clean Air Act, Shoreline Management Act, and other applicable federal, state, and local statutes and regulations dealing with the prevention of environmental pollution and the preservation of public natural resources.
  4. Post all permits, notices, and/or approvals in a conspicuous location at the construction site.
  5. Provide any additional measures that the Owner determines to be reasonable and necessary for ensuring a safe environment in areas open to the public. Nothing in this part shall be construed as imposing a duty upon the Owner or A/E to prescribe safety conditions relating to employees, public, or agents of the Contractors.
  6. The Contractor shall make available a list of hazardous products being used on the project, and their respective Material Safety Data Sheets (MSDS) to the Engineer. This information will be required at the pre-construction conference.
- B. In carrying out its responsibilities according to the Contract Documents, Contractor shall protect the lives and health of employees performing the Work and other persons who may be affected by the Work; prevent damage to materials, supplies, and equipment whether on site or stored off-site; and prevent damage to other property at the site or adjacent thereto. Contractor shall comply with all applicable laws, ordinances, rules, regulations, and orders of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury, or loss; shall erect and maintain all necessary safeguards for such safety and protection; and shall notify owners of adjacent property and utilities when prosecution of the Work may affect them.
- C. Contractor shall maintain an accurate record of exposure data on all incidents relating to the Work resulting in death, traumatic injury, occupational disease, or damage to property, materials, supplies, or equipment. Contractor shall immediately report any such incident to Owner. Owner shall, at all times, have a right of access to all records of exposure.
- D. Contractor shall provide all persons working on the Project site with information and training on hazardous chemicals in their work at the time of their initial assignment, and whenever a new hazard is introduced into their work area.
1. Information. At a minimum, Contractor shall inform persons working on the Project site of:
    - a. The requirements of chapter 296-62 WAC, General Occupational Health Standards;
    - b. Any operations in their work area where hazardous chemicals are present; and
    - c. The location and availability of written hazard communication programs, including the required list(s) of hazardous chemicals and material safety data sheets required by chapter 296-62 WAC.
  2. Training. At a minimum, Contractor shall provide training for persons working on the Project site which includes:

## GENERAL CONDITIONS FOR CONSTRUCTION AT WASHINGTON STATE PARKS

- a. Methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area (such as monitoring conducted by the employer, continuous monitoring devices, visual appearance or odor of hazardous chemicals when being released, etc.);
  - b. The physical and health hazards of the chemicals in the work area;
  - c. The measures such persons can take to protect themselves from these hazards, including specific procedures Contractor, or its Subcontractors, or others have implemented to protect those on the Project site from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures, and personal protective equipment to be used; and
  - d. The details of the hazard communications program developed by Contractor, or its Subcontractors, including an explanation of the labeling system and the material safety data sheet, and how employees can obtain and use the appropriate hazard information.
- E. Contractor's responsibility for hazardous, toxic, or harmful substances shall include the following duties:
1. Contractor shall not keep, use, dispose, transport, generate, or sell on or about the Project site, any substances now or hereafter designated as, or which are subject to regulation as, hazardous, toxic, dangerous, or harmful by any federal, state or local law, regulation, statute or ordinance (hereinafter collectively referred to as "hazardous substances", in violation of any such law, regulation, statute, or ordinance, but in no case shall any such hazardous substance be stored more than 90 days on the Project site.
  2. Contractor shall promptly notify Owner of all spills or releases of any hazardous substances which are otherwise required to be reported to any regulatory agency and pay the cost of cleanup. Contractor shall promptly notify Owner of all failures to comply with any federal, state, or local law, regulation, or ordinance; all inspections of the Project site by any regulatory entity concerning the same; all regulatory orders or fines; and all responses or interim cleanup actions taken by or proposed to be taken by any government entity or private party on the Project site.
- F. All Work shall be performed with due regard for the safety of the public. Contractor shall perform the Work so as to cause a minimum of interruption of vehicular traffic or inconvenience to pedestrians. All arrangements to care for such traffic shall be Contractor's responsibilities. All expenses involved in the maintenance of traffic by way of detours shall be borne by Contractor.
- G. In an emergency affecting the safety of life or the Work or of adjoining property, Contractor is permitted to act, at its discretion, to prevent such threatened loss or injury, and Contractor shall so act if so authorized or instructed.
- H. Nothing provided in this section shall be construed as imposing any duty upon Owner or A/E with regard to, or as constituting any express or implied assumption of control or responsibility over, Project site safety, or over any other safety conditions relating to employees or agents of Contractor or any of its Subcontractors, or the public.

### 5.08 OPERATIONS, MATERIAL HANDLING, AND STORAGE AREAS

- A. Contractor shall confine all operations, including storage of materials, to Owner-approved areas.
- B. Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be provided by Contractor only with the consent of Owner and without expense to Owner. The temporary buildings and utilities shall remain the property of Contractor and shall be removed by Contractor at its expense upon completion of the Work.
- C. Contractor shall use only established roadways or temporary roadways authorized by Owner. When materials are transported in prosecuting the Work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by federal, state, or local law or regulation.
- D. Ownership and control of all materials or facility components to be demolished or removed from the Project site by Contractor shall immediately vest in Contractor upon severance of the component from the facility or severance of the material from the Project site. Contractor shall be responsible for compliance with all

## GENERAL CONDITIONS FOR CONSTRUCTION AT WASHINGTON STATE PARKS

laws governing the storage and ultimate disposal. Contractor shall provide Owner with a copy of all manifests and receipts evidencing proper disposal when required by Owner or applicable law.

- E. Contractor shall be responsible for the proper care and protection of its materials and equipment delivered to the Project site. Materials and equipment may be stored on the premises subject to approval of Owner. When Contractor uses any portion of the Project site as a shop, Contractor shall be responsible for any repairs, patching, or cleaning arising from such use.
- F. Contractor shall protect and be responsible for any damage or loss to the Work, or to the materials or equipment until the date of Substantial Completion, and shall repair or replace without cost to Owner any damage or loss that may occur, except damages or loss caused by the acts or omissions of Owner. Contractor shall also protect and be responsible for any damage or loss to the Work, or to the materials or equipment, after the date of Substantial Completion, and shall repair or replace without cost to Owner any such damage or loss that might occur, to the extent such damages or loss are caused by the acts or omissions of Contractor, or any Subcontractor.
- G. Any removed item shall be salvaged without undue damage and stockpiled in a neat and orderly fashion in an area designated by the Engineer. All removed items shall remain the property of the Owner, unless, due to their condition, they are rejected by the Engineer. All materials of whatever nature that are rejected shall be properly disposed by the Contractor in compliance with all laws and regulations.
- H. If designated campsites or emergency overflow areas are approved for use, the Contractor shall comply with all campground rules and regulations of the Washington State Parks and Recreation Commission and the park manager.

### 5.09 PRIOR NOTICE OF EXCAVATION

- A. "Excavation" means an operation in which earth, rock, or other material on or below the ground is moved or otherwise displaced by any means, except the tilling of soil less than 12 (twelve) inches in depth for agricultural purposes, or road ditch maintenance that does not change the original road grade or ditch flow line. Before commencing any excavation, Contractor shall provide notice of the scheduled commencement of excavation to all owners of underground facilities or utilities, through locator services.

### 5.10 UNFORESEEN PHYSICAL CONDITIONS

- A. If Contractor encounters conditions at the site which are subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Contract Documents, or unknown physical conditions of an unusual nature which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, then Contractor shall give written notice to Owner promptly and in no event later than 7 (seven) days after the first observance of the conditions. Conditions shall not be disturbed prior to such notice.
- B. If such conditions differ materially and cause a change in Contractor's cost of, or time required for, performance of any part of the Work, the Contractor may be entitled to an equitable adjustment in the Contract Time or Contract Sum, or both, provided it makes a request therefore as provided in part 7.

### 5.11 PROTECTION OF EXISTING STRUCTURES, EQUIPMENT, VEGETATION, UTILITIES, AND IMPROVEMENTS

- A. Contractor shall protect from damage all existing structures, equipment, improvements, utilities, and vegetation: at or near the Project site; and on adjacent property of a third party, the locations of which are made known to or should be known by Contractor. Contractor shall repair any damage, including that to the property of a third party, resulting from failure to comply with the requirements of the Contract Documents or failure to exercise reasonable care in performing the Work. If Contractor fails or refuses to repair the damage promptly, Owner may have the necessary work performed and charge the cost to Contractor.
- B. Contractor shall only remove trees when specifically authorized to do so, and shall protect vegetation that will remain in place.
- C. In general, the locations of existing major utilities and equipment, whether above ground or underground, are indicated on the drawings. This information has been obtained from utility maps and verbal

## GENERAL CONDITIONS FOR CONSTRUCTION AT WASHINGTON STATE PARKS

descriptions. The Engineer does not guarantee the accuracy or completeness of this information. Other above ground or underground facilities not shown on the drawings may be encountered during the course of the work for which the Contractor is fully responsible to properly locate and identify within the construction area.

- D. Existing above ground and underground facilities and appurtenant structures, which includes but is not limited to, power transmission and distribution, telephone, alarm systems, sanitary sewers, gas services, water service and house or yard drains and fences, shall be located, protected, maintained, relocated, rerouted, removed and restored as may be necessary by the Contractor for completion of the work, but in a manner satisfactory to their respective owners and operators of the services and to the Engineer with the least possible interruption to existing services.
- E. The Contractor shall be responsible for location and maintenance of existing utilities and improvements. Under no circumstances will errors or omissions in location of utilities or improvements, whether they be visible from the surface, buried, or otherwise obscured, be considered as a basis for a claim for additional compensation by the Contractor.
- F. All utilities shall be protected and maintained in continuous operation except where special arrangements have been made with the appropriate utility owner. All damaged utilities shall be restored to original condition, subject to the approval of its owner and at the Contractor's own expense.
- G. If requested, the Contractor shall provide record information about locations, depths, and dimensions of lines, appurtenances, and structures, and any other relevant information about electrical power, water, sewer, and other utilities.
- H. The Contractor shall provide the Engineer with the data required to make a detailed set of record plans. This data will be obtained and recorded by the Contractor during construction on plans supplied by the Engineer. The Contractor shall ensure that the data is obtained. Typical information to be gathered includes the locations of:
  - 1. Buried utilities
  - 2. Junctions of sewer wyes
  - 3. Junctions of electrical taps
  - 4. Clean-outs
  - 5. Deflection points of utilities
  - 6. Valves
- I. Procedure for obtaining this information will be developed by the Engineer working with the Contractor.
- J. Contractor shall protect all existing facilities using whatever methods are necessary, subject to the Engineer's approval. Trees, shrubs, vegetation, or lawn shall not be damaged, scarred, or destroyed unless deemed necessary for work on this contract. All trees damaged during construction shall be immediately repaired using SEAL AND HEAL or other materials as directed by the Engineer. Any damage to the above-mentioned items shall be repaired at the Contractor's expense and to the Engineer's satisfaction.
- K. In the event that archaeological resources are found or unearthed on public land during the performance of this contract, the Contractor shall be required to comply with RCW 27.44 and RCW 27.53 and the rules and regulations of the office of Archaeology and Historic Preservation, including compliance with all archaeological excavation permit requirements.

### 5.12 LAYOUT OF WORK

- A. Contractor shall plan and lay out the Work in advance of operations so as to coordinate all work without delay or revision.
- B. Contractor shall lay out the Work from Owner-established baselines and bench marks indicated on the Drawings, and shall be responsible for all field measurements in connection with the layout. Contractor shall furnish, at its own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the Work. Contractor shall be responsible for executing the Work to the lines

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and grades that may be established. Contractor shall be responsible for maintaining or restoring all stakes and other marks established.

- C. The indicated limits of work shall be the controlling factor in the Contractor's scope of operation and no payment shall be due for work done out of the limits. Damage to areas not in the Contractor's work area shall be repaired at the Contractor's expense. Questions of what constitutes the work area shall be determined by the Engineer. Only the best methods of construction will be allowed.
- D. The Engineer may adjust or relocate any portion of the system to meet site requirements or to improve the system without additional compensation to the Contractor, provided such adjustments do not represent appreciable costs for additional labor and materials.

### 5.13 MATERIAL AND EQUIPMENT

- A. All equipment, material, and articles incorporated into the Work shall be new and of the most suitable grade for the purpose intended, unless otherwise specifically provided in the Contract Documents. References in the Specifications to equipment, material, articles, or patented processes by trade name, make, or catalog number, shall be regarded as establishing a standard quality and shall not be construed as limiting competition. Contractor may, at its option, use any equipment, material, article, or process that, in the judgment of A/E, is equal to that named in the specifications, unless otherwise specifically provided in the Contract Documents.
- B. Contractor shall do all cutting, fitting, or patching that may be required to make its several parts fit together properly, or receive or be received by work of others set forth in, or reasonably implied by, the Contract Documents. Contractor shall not endanger any work by cutting, excavating, or otherwise altering the Work and shall not cut or alter the work of any other contractor unless approved in advance by Owner.
- C. Should any of the Work be found defective, or in any way not in accordance with the Contract Documents, this work, in whatever stage of completion, may be rejected by Owner.
- D. The Contractor shall furnish proof of equality in all respects to the specified items when proposing alternate brands or materials. Any significant deviations from specifications, drawings, or equality must be noted by the Contractor when submitting alternate products or materials for approval. The Engineer shall be the sole judge of the equality and suitability of any products, materials, or components proposed by the Contractor as alternates to specified items. The Contractor shall bear all costs and make all secondary changes required to incorporate an approved substitute or alternate into the work. No offers for substitution will be acknowledged from suppliers, distributors, manufacturers, or subcontractors.

### 5.14 AVAILABILITY AND USE OF UTILITY SERVICES

- A. Owner shall make all reasonable utilities available to Contractor from existing outlets and supplies, as specified in the Contract Documents. Unless otherwise provided in the Contract Documents, the utility service consumed shall be charged to or paid for by Contractor at prevailing rates charged to Owner or, where the utility is produced by Owner, at reasonable rates determined by Owner. Contractor will carefully conserve any utilities furnished.
- B. Contractor shall, at its expense and in a skillful manner satisfactory to Owner, install and maintain all necessary temporary connections and distribution lines, together with appropriate protective devices, and all meters required to measure the amount of each utility used for the purpose of determining charges. Prior to the date of Final Acceptance, Contractor shall remove all temporary connections, distribution lines, meters, and associated equipment and materials.

### 5.15 TESTS AND INSPECTION

- A. Contractor shall maintain an adequate testing and inspection program and perform such tests and inspections as are necessary or required to ensure that the Work conforms to the requirements of the Contract Documents. Contractor shall be responsible for inspection and quality surveillance of all its Work and all Work performed by any Subcontractor. Unless otherwise provided, Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. Contractor shall give Owner timely notice of when and where tests and



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inspections are to be made. Contractor shall maintain complete inspection records and make them available to Owner.

- B. Owner may, at any reasonable time, conduct such inspections and tests as it deems necessary to ensure that the Work is in accordance with the Contract Documents. Owner shall promptly notify Contractor if an inspection or test reveals that the Work is not in accordance with the Contract Documents. Unless the subject items are expressly accepted by Owner, such Owner inspection and tests are for the sole benefit of Owner and do not:
  - 1. Constitute or imply acceptance;
  - 2. Relieve Contractor of responsibility for providing adequate quality control measures;
  - 3. Relieve Contractor of responsibility for risk of loss or damage to the Work, materials, or equipment;
  - 4. Relieve Contractor of its responsibility to comply with the requirements of the Contract Documents; or
  - 5. Impair Owner's right to reject defective or nonconforming items, or to avail itself of any other remedy to which it may be entitled.
- C. Neither observations by an inspector retained by Owner, the presence or absence of such inspector on the site, nor inspections, tests, or approvals by others, shall relieve Contractor from any requirement of the Contract Documents, nor is any such inspector authorized to change any term or condition of the Contract Documents.
- D. Contractor shall promptly furnish, without additional charge, all facilities, labor, material and equipment reasonably needed for performing such safe and convenient inspections and tests as may be required by Owner. Owner may charge Contractor any additional cost of inspection or testing when Work is not ready at the time specified by Contractor for inspection or testing, or when prior rejection makes re-inspection or retest necessary. Owner shall perform its inspections and tests in a manner that will cause no undue delay in the Work.
- E. The Owner shall have the right to appoint an Inspector who will have the authority to reject materials or workmanship which does not fulfill the requirements of these specifications. In case of dispute, the Contractor may appeal to the Engineer whose decision shall be final. The acceptance of any material by the Inspector shall not hinder its subsequent rejection if found defective. Rejected materials and workmanship shall be replaced promptly or be made good by the Contractor without additional cost to the Owner.
- F. Contractor shall deliver one (1) key for each type of lock installed on the project to the Engineer to enable the Engineer to enter all facilities under construction for the purpose of inspection. This includes temporary as well as State Parks' key-coded locks. All keys for key-coded locks shall be delivered to the Engineer as they are made available to the Contractor. These coded keys shall then be signed out to the Contractor on an accountable basis for security purposes.

### 5.16 CORRECTION OF NONCONFORMING WORK

- A. If a portion of the Work is covered contrary to the requirements in the Contract Documents, it must, if required in writing by Owner, be uncovered for Owner's observation and be replaced at the Contractor's expense and without change in the Contract Time.
- B. If, at any time prior to Final Completion, Owner desires to examine the Work, or any portion of it, which has been covered, Owner may request to see such Work and it shall be uncovered by Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an adjustment in the Contract Sum for the costs of uncovering and replacement, and, if completion of the Work is thereby delayed, an adjustment in the Contract Time, provided it makes a request therefore as provided in part 7. If such Work is not in accordance with the Contract Documents, the Contractor shall pay the costs of examination and reconstruction.
- C. Contractor shall promptly correct Work found by Owner not to conform to the requirements of the Contract Documents, whether observed before or after Substantial Completion and whether or not fabricated, installed, or completed. Contractor shall bear all costs of correcting such nonconforming Work, including additional testing and inspections.

## GENERAL CONDITIONS FOR CONSTRUCTION AT WASHINGTON STATE PARKS

- D. If, within one year after the date of Substantial Completion of the Work or designated portion thereof, or within one year after the date for commencement of any system warranties established under section 6.08, or within the terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, Contractor shall correct it promptly after receipt of written notice from Owner to do so. Owner shall give such notice promptly after discovery of the condition. This period of one year shall be extended, with respect to portions of Work first performed after Substantial Completion, by the period of time between Substantial Completion and the actual performance of the Work. Contractor's duty to correct with respect to Work repaired or replaced shall run for one year from the date of repair or replacement. Obligations under this paragraph shall survive Final Acceptance.
- E. Contractor shall remove from the Project site portions of the Work which are not in accordance with the requirements of the Contract Documents and are neither corrected by Contractor nor accepted by Owner.
- F. If Contractor fails to correct nonconforming Work within a reasonable time after written notice to do so, Owner may replace, correct, or remove the nonconforming Work and charge the cost thereof to the Contractor.
- G. Contractor shall bear the cost of correcting destroyed or damaged Work, whether completed or partially completed, caused by Contractor's correction or removal of Work which is not in accordance with the requirements of the Contract Documents.
- H. Nothing contained in this section shall be construed to establish a period of limitation with respect to other obligations which Contractor might have according to the Contract Documents. Establishment of the time period of one (1) year as described in paragraph 5.16D relates only to the specific obligation of Contractor to correct the Work, and has no relationship to the time within which the Contractor's obligation to comply with the Contract Documents may be sought to be enforced, including the time within which such proceedings may be commenced.
- I. If Owner prefers to accept Work which is not in accordance with the requirements of the Contract Documents, Owner may do so instead of requiring its removal and correction, in which case the Contract Sum may be reduced as appropriate and equitable.

### 5.17 CLEAN UP

Contractor shall at all times keep the Project site, including hauling routes, infrastructures, utilities, and storage areas, free from accumulations of waste materials. Before completing the Work, Contractor shall remove from the premises its rubbish, tools, scaffolding, equipment, and materials. Upon completing the Work, Contractor shall leave the Project site in a clean, neat, and orderly condition satisfactory to Owner. If Contractor fails to clean up as provided herein, and after reasonable notice from Owner, Owner may do so and the cost thereof shall be charged to Contractor.

### 5.18 ACCESS TO WORK

Contractor shall provide Owner and A/E access to the Work in progress wherever located.

### 5.19 OTHER CONTRACTS

Owner may undertake or award other contracts for additional work at or near the Project site. Contractor shall reasonably cooperate with the other contractors and with Owner's employees and shall carefully adapt scheduling and perform the Work in accordance with these Contract Documents to reasonably accommodate the other work.

### 5.20 SUBCONTRACTORS AND SUPPLIERS

- A. The Contractor shall include the language of this paragraph in each of its first tier subcontracts, and shall require each of its subcontractors to include the same language of this section in each of their subcontracts, adjusting only as necessary the terms used for the contracting parties. Upon request of the Owner, the Contractor shall promptly provide documentation to the Owner demonstrating that the subcontractor meets the subcontractor responsibility criteria below. The requirements of this paragraph apply to all subcontractors regardless of tier. At the time of subcontract execution, the Contractor shall verify that each of its first tier subcontractors meets the following bidder responsibility criteria:

## GENERAL CONDITIONS FOR CONSTRUCTION AT WASHINGTON STATE PARKS

1. Have a current certificate of registration as a contractor in compliance with chapter 18.27 RCW, which must have been in effect at the time of subcontract bid submittal;
  2. Have a current Washington Unified Business Identifier (UBI) number;
  3. If applicable, have:
    - a. Industrial Insurance (workers' compensation) coverage for the subcontractor's employees working in Washington, as required in Title 51 RCW;
    - b. A Washington Employment Security Department number, as required in Title 50 RCW;
    - c. A Washington Department of Revenue state excise tax registration number, as required in Title 82 RCW;
    - d. An electrical contractor license, if required by Chapter 19.28 RCW;
    - e. An elevator contractor license, if required by Chapter 70.87 RCW.
  4. Not be disqualified from bidding on any public works contract under RCW 39.06.010 or 39.12.065 (3).
  5. On a project subject to the apprenticeship utilization requirements in RCW 39.04.320, not have been found out of compliance by the Washington state apprenticeship and training council for working apprentices out of ratio, without appropriate supervision, or outside their approved work processes as outlined in their standards of apprenticeship under chapter 49.04 RCW for the one-year period immediately preceding the date of the Owner's first advertisement of the project.
- B. Prior to submitting the first Application for Payment, Contractor shall furnish in writing to Owner, on Owner provided form(s), the names, addresses, telephone numbers, and Tax Identification Numbers (TIN) of all subcontractors, as well as suppliers providing materials in excess of \$2,500.00 which Contractor believes to be MBE or WBE owned businesses, or have identified themselves to the Contractor as MBE or WBE, or are Washington State OMWBE certified. The Contractor shall indicate the anticipated dollar value of each MWBE subcontract. Contractor shall utilize subcontractors and suppliers, which are experienced and qualified, and meet the requirements of the Contract Documents, if any. Contractor shall not utilize any subcontractor or supplier to whom the Owner has a reasonable objection, and shall obtain Owner's written consent before making any substitutions or additions. The Owner may direct the Contractor, at no additional cost to the Owner, to remove and substitute any subcontractor(s) found to be out of compliance with the "Off-Site Prefabricated Non-Standard Project Specific Items" reporting requirements more than one time as determined by the Department of Labor and Industries and as defined in EHB 2805 that amends RCW 39.04.
- C. All Subcontracts must be in writing. By appropriate written agreement, Contractor shall require each Subcontractor, so far as applicable to the Work to be performed by the Subcontractor, to be bound to Contractor by terms of the Contract Documents, and to assume toward Contractor all the obligations and responsibilities which Contractor assumes toward Owner in accordance with the Contract Documents. Each Subcontract shall preserve and protect the rights of Owner in accordance with the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights. Where appropriate, Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. However, nothing in this paragraph shall be construed to alter the contractual relations between Contractor and its Subcontractors with respect to insurance or bonds.
- D. Contractor shall schedule, supervise, and coordinate the operations of all Subcontractors. No Subcontracting of any of the Work shall relieve Contractor from its responsibility for the performance of the Work in accordance with the Contract Documents or any other obligations of the Contract Documents.
- E. Each subcontract agreement for a portion of the Work is hereby assigned by Contractor to Owner provided that:
1. The assignment is effective only after termination by Owner for cause pursuant to section 9.01 and only for those Subcontracts which Owner accepts by notifying the Subcontractor in writing; and
  2. After the assignment is effective, Owner will assume all future duties and obligations toward the Subcontractor which Contractor assumed in the Subcontract.
  3. The assignment is subject to the prior rights of the surety, if any, obligated under any bond provided in accordance with the Contract Documents.

# GENERAL CONDITIONS FOR CONSTRUCTION AT WASHINGTON STATE PARKS

## 5.21 WARRANTY OF CONSTRUCTION

- A. In addition to any special warranties provided elsewhere in the Contract Documents, Contractor warrants that all Work conforms to the requirements of the Contract Documents and is free of any defect in equipment, material, or design furnished, or workmanship performed, by Contractor.
- B. With respect to all warranties, express or implied, for Work performed or materials furnished according to the Contract Documents, Contractor shall:
  - 1. Obtain all warranties that would be given in normal commercial practice;
  - 2. Require all warranties to be executed, in writing, for the benefit of Owner;
  - 3. Enforce all warranties for the benefit of Owner, if directed by Owner; and
  - 4. Be responsible to enforce any subcontractor's, manufacturer's, or supplier's warranty should they extend beyond the period specified in the Contract Documents.
- C. The obligations under this section shall survive Final Acceptance.

## 5.22 INDEMNIFICATION

- A. Contractor shall defend, indemnify, and hold Owner and A/E harmless from and against all claims, demands, losses, damages, or costs, including but not limited to damages arising out of bodily injury or death to persons and damage to property, caused by or resulting from:
  - 1. The sole negligence of Contractor or any of its Subcontractors;
  - 2. The concurrent negligence of Contractor, or any Subcontractor, but only to the extent of the negligence of Contractor or such Subcontractor; and
  - 3. The use of any design, process, or equipment which constitutes an infringement of any United States patent presently issued, or violates any other proprietary interest, including copyright, trademark, and trade secret.
- B. In any action against Owner and any other entity indemnified in accordance with this section, by any employee of Contractor, its Subcontractors, Sub-subcontractors, agents, or anyone directly or indirectly employed by any of them, the indemnification obligation of this section shall not be limited by a limit on the amount or type of damages, compensation, or benefits payable by or for Contractor or any Subcontractor under RCW Title 51, the Industrial Insurance Act, or any other employee benefit acts. In addition, Contractor waives immunity as to Owner and A/E only, in accordance with RCW Title 51.

## PART 6 - PAYMENTS AND COMPLETION

### 6.01 CONTRACT SUM

Owner shall pay Contractor the Contract Sum for performance of the Work, in accordance with the Contract Documents. The Contract Sum shall include all taxes imposed by law and properly chargeable to the Project, including sales tax.

### 6.02 SCHEDULE OF VALUES

Before submitting its first Application for Payment, Contractor shall submit to Owner for approval a breakdown allocating the total Contract Sum to each principle category of work, in such detail as requested by Owner ("Schedule of Values"). The approved Schedule of Values shall include appropriate amounts for demobilization, record drawings, O&M manuals, and any other requirements for Project closeout, and shall be used by Owner as the basis for progress payments. Payment for Work shall be made only for and in accordance with those items included in the Schedule of Values.

### 6.03 APPLICATION FOR PAYMENT

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- A. At monthly intervals, unless determined otherwise by Owner, Contractor shall submit to Owner an itemized Application for Payment for Work completed in accordance with the Contract Documents and the approved Schedule of Values. Each application shall be supported by such substantiating data as Owner may require.
- B. By submitting an Application for Payment, Contractor is certifying that all Subcontractors have been paid, less earned retainage in accordance with RCW 60.28.010, as their interests appeared in the last preceding certificate of payment. By submitting an Application for Payment, Contractor is recertifying that the representations set forth in section 1.03 are true and correct, to the best of Contractor's knowledge, as of the date of the Application for Payment.
- C. At the time it submits an Application for Payment, Contractor shall analyze and reconcile, to the satisfaction of Owner, the actual progress of the Work with the Progress Schedule.
- D. If authorized by Owner, the Application for Payment may include request for payment for material delivered to the Project site and suitably stored, or for completed preparatory work. Payment may similarly be requested for material stored off the Project site, provided Contractor complies with or furnishes satisfactory evidence of the following:
  - 1. The material will be placed in a warehouse that is structurally sound, dry, lighted, and suitable for the materials to be stored;
  - 2. The warehouse is located within a 10-mile radius of the Project. Other locations may be utilized, if approved in writing, by Owner;
  - 3. Only materials for the Project are stored within the warehouse (or a secure portion of a warehouse set aside for the Project);
  - 4. Contractor furnishes Owner a certificate of insurance extending Contractor's insurance coverage for damage, fire, and theft to cover the full value of all materials stored, or in transit;
  - 5. The warehouse (or secure portion thereof) is continuously under lock and key, and only Contractor's authorized personnel shall have access;
  - 6. Owner shall at all times have the right of access in company of Contractor;
  - 7. Contractor and its surety assume total responsibility for the stored materials; and
  - 8. Contractor furnishes to Owner certified lists of materials stored, bills of lading, invoices, and other information as may be required, and shall also furnish notice to Owner when materials are moved from storage to the Project site.

### 6.04 PROGRESS PAYMENTS

- A. Owner shall make progress payments, in such amounts as Owner determines are properly due, within 30 days after receipt of a properly executed Application for Payment. Owner shall notify Contractor in accordance with RCW 39.76 if the Application for Payment does not comply with the requirements of the Contract Documents.
- B. Owner shall retain 5% (five percent) of the amount of each progress payment until forty-five (45) days after Final Acceptance and receipt of all documents required by law or the Contract Documents, including, at Owner's request, consent of surety to release of the retainage. In accordance with RCW 60.28, Contractor may request that monies reserved be retained in a fund by Owner, deposited by Owner in a bank or savings and loan, or placed in escrow with a bank or trust company to be converted into bonds and securities to be held in escrow with interest to be paid to Contractor. Owner may permit Contractor to provide an appropriate bond in lieu of the retained funds.
- C. Title to all Work and materials covered by a progress payment shall pass to Owner at the time of such payment free and clear of all liens, claims, security interests, and encumbrances. Passage of title shall not, however, relieve Contractor from any of its duties and responsibilities for the Work or materials, or waive any rights of Owner to insist on full compliance by Contractor with the Contract Documents.

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- D. Payments due and unpaid in accordance with the Contract Documents shall bear interest as specified in RCW 39.76.

### 6.05 PAYMENTS WITHHELD

- A. Owner may withhold or, on account of subsequently discovered evidence, nullify the whole or part of any payment to such extent as may be necessary to protect Owner from loss or damage for reasons including but not limited to:
1. Work not in accordance with the Contract Documents;
  2. Reasonable evidence that the Work required by the Contract Documents cannot be completed for the unpaid balance of the Contract Sum;
  3. Work by Owner to correct defective Work or complete the Work in accordance with section 5.17;
  4. Failure to perform in accordance with the Contract Documents; or
  5. Cost or liability that may occur to Owner as the result of Contractor's fault or negligent acts or omissions.
- B. In any case where part or all of a payment is going to be withheld for unsatisfactory performance, Owner shall notify Contractor in accordance with RCW 39.76.

### 6.06 RETAINAGE AND BOND CLAIM RIGHTS

- A. Prior to release of the contract retainage, an "Affidavit of Wages Paid", approved by the Washington State Department of Labor and Industries, must be on file in the Owner's office. Contracts over \$20,000, including tax, necessitate a clearance from the Washington State Department of Revenue and the Washington State Department of Employment Security. The Owner shall initiate action for the releases from the Departments of Revenue and Employment Security.
- B. RCW chapters 39.08 and 60.28, concerning the rights and responsibilities of Contractor and Owner with regard to the performance and payment bonds and retainage, are made a part of the Contract Documents by reference as though fully set forth herein.
- C. In accordance with RCW 60.28, the lien period for filing liens against the contract retainage shall be forty-five (45) days. Persons performing labor or furnishing supplies toward the completion of the contract who intend to file a lien against the contract retainage must do so within forty-five (45) days from the date of Final Acceptance of the contract by the Owner and in the manner as described in RCW 39.08.030.

### 6.07 SUBSTANTIAL COMPLETION

Substantial Completion is the stage in the progress of the Work (or portion thereof designated and approved by Owner) when the construction is sufficiently complete, in accordance with the Contract Documents, so Owner can fully occupy the Work (or the designated portion thereof) for the use for which it is intended. All Work other than incidental corrective or punch list work shall be completed. Substantial Completion shall not have been achieved if all systems and parts are not functional, if utilities are not connected and operating normally, if all required occupancy permits have not been issued, or if the Work is not accessible by normal vehicular and pedestrian traffic routes. The date Substantial Completion is achieved shall be established in writing by Owner. Contractor may request an early date of Substantial Completion which must be approved by Change Order. Owner's occupancy of the Work or designated portion thereof does not necessarily indicate that Substantial Completion has been achieved.

### 6.08 PRIOR OCCUPANCY

- A. Owner may, upon written notice thereof to Contractor, take possession of or use any completed or partially completed portion of the Work ("Prior Occupancy") at any time prior to Substantial Completion. Unless otherwise agreed in writing, Prior Occupancy shall not: be deemed an acceptance of any portion of the Work; accelerate the time for any payment to Contractor; prejudice any rights of Owner provided by any insurance, bond, guaranty, or the Contract Documents; relieve Contractor of the risk of loss or any of the

## GENERAL CONDITIONS FOR CONSTRUCTION AT WASHINGTON STATE PARKS

obligations established by the Contract Documents; establish a date for termination or partial termination of the assessment of liquidated damages; or constitute a waiver of claims.

- B. Notwithstanding anything in the preceding paragraph, Owner shall be responsible for loss of or damage to the Work resulting from Prior Occupancy. Contractor's one (1) year duty to repair and any system warranties shall begin on building systems activated and used by Owner as agreed in writing by Owner and Contractor.

### 6.09 FINAL COMPLETION, ACCEPTANCE, AND PAYMENT

- A. Final Completion shall be achieved when the Work is fully and finally complete in accordance with the Contract Documents. The date Final Completion is achieved shall be established by Owner in writing.
- B. Final Acceptance is the formal action of Owner acknowledging Final Completion. Prior to Final Acceptance, Contractor shall, in addition to all other requirements in the Contract Documents, submit to Owner a written notice of any outstanding disputes or claims between Contractor and any of its Subcontractors, including the amounts and other details thereof. Neither Final Acceptance, nor final payment, shall release Contractor or its sureties from any obligations of these Contract Documents or the Public Works Bond, or constitute a waiver of any claims by Owner arising from Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Acceptance of final payment by Contractor, or any Subcontractor, shall constitute a waiver and release to Owner of all claims by Contractor, or any such Subcontractor, for an increase in the Contract Sum or the Contract Time, and for every act or omission of Owner relating to or arising out of the Work, except for those Claims made in accordance with the procedures, including the time limits, set forth in part 8.

## **PART 7 - CHANGES**

### 7.01 CHANGES IN THE WORK

- A. Owner may, at any time and without notice to Contractor's surety, order additions, deletions, revisions, or other changes in the Work. These changes in the Work shall be incorporated into the Contract Documents through the execution of Change Orders. If any change in the Work ordered by Owner causes an increase or decrease in the Contract Sum or the Contract Time, an equitable adjustment shall be made as provided in section 7.02 or 7.03, respectively, and such adjustment(s) shall be incorporated into a Change Order.
- B. If Owner desires to order a change in the Work, it may request a written Change Order Proposal (COP) from Contractor. Contractor shall submit a Change Order Proposal within 14 (fourteen) days of the request from Owner, or within such other period as mutually agreed. Contractor's Change Order Proposal shall be full compensation for implementing the proposed change in the Work, including any adjustment in the Contract Sum or Contract Time, and including compensation for all delays in connection with such change in the Work and for any expense or inconvenience, disruption of schedule, or loss of efficiency or productivity occasioned by the change in the Work.
- C. Upon receipt of the Change Order proposal, or a request for equitable adjustment in the Contract Sum or Contract Time, or both, as provided in sections 7.02 and 7.03, Owner may accept or reject the proposal, request further documentation, or negotiate acceptable terms with Contractor. Pending agreement on the terms of the Change Order, Owner may direct Contractor to proceed immediately with the Change Order Work. Contractor shall not proceed with any change in the Work until it has obtained Owner's approval. All Work done pursuant to any Owner-directed change in the Work shall be executed in accordance with the Contract Documents.
- D. If Owner and Contractor reach agreement on the terms of any change in the Work, including any adjustment in the Contract Sum or Contract Time, such agreement shall be incorporated in a Change Order. The Change Order shall constitute full payment and final settlement of all claims for time and for direct, indirect, and consequential costs, including costs of delays, inconvenience, disruption of schedule, or loss of efficiency or productivity, related to any Work either covered or affected by the Change Order, or related to the events giving rise to the request for equitable adjustment.

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- E. If Owner and Contractor are unable to reach agreement on the terms of any change in the Work, including any adjustment in the Contract Sum or Contract Time, Contractor may at any time in writing, request a final offer from Owner. Owner shall provide Contractor with its written response within 30 (thirty) days of Contractor's request. Owner may also provide Contractor with a final offer at any time. If Contractor rejects Owner's final offer, or the parties are otherwise unable to reach agreement, Contractor's only remedy shall be to file a Claim as provided in part 8.
- F. Field Authorization
1. The Field Authorization (FA) is executed as a directive to proceed with work when the processing time for an approved change order would impact the project.
  2. A scope of work must be defined, a maximum not to exceed cost agreed upon, and any estimated modification to the contract completion time determined. The method of final cost verification must be noted and supporting cost data must be submitted in accordance with the requirements of Part 7 of the General Conditions. Upon satisfactory submittal and approval of supporting cost data, the completed FA will be processed into a change order. No payment will be made to the Contractor for FA work until that FA is converted to a Change Order.

### 7.02 CHANGES IN THE CONTRACT SUM

#### A. General Application

1. The Contract Sum shall only be changed by a Change Order. Contractor shall include any request for a change in the Contract Sum in its Change Order Proposal.
2. If the cost of Contractor's performance is changed due to the fault or negligence of Owner, or anyone for whose acts Owner is responsible, Contractor shall be entitled to make a request for an equitable adjustment in the Contract Sum in accordance with the following procedure. No change in the Contract Sum shall be allowed to the extent: Contractor's changed cost of performance is due to the fault or negligence of Contractor, or anyone for whose acts Contractor is responsible; the change is concurrently caused by Contractor and Owner; or the change is caused by an act of Force Majeure as defined in Section 3.05.
  - a. A request for an equitable adjustment in the Contract Sum shall be based on written notice delivered to Owner within 7 (seven) days of the occurrence of the event giving rise to the request. For purposes of this part, "occurrence" means when Contractor knew, or in its diligent prosecution of the Work should have known, of the event giving rise to the request. If Contractor believes it is entitled to an adjustment in the Contract Sum, Contractor shall immediately notify Owner and begin to keep and maintain complete, accurate, and specific daily records. Contractor shall give Owner access to any such records and, if requested shall promptly furnish copies of such records to Owner.
  - b. Contractor shall not be entitled to any adjustment in the Contract Sum for any occurrence of events or costs that occurred more than 7 (seven) days before Contractor's written notice to Owner. The written notice shall set forth, at a minimum, a description of: the event giving rise to the request for an equitable adjustment in the Contract Sum; the nature of the impacts to Contractor and its Subcontractors of any tier, if any; and to the extent possible the amount of the adjustment in Contract Sum requested. Failure to properly give such written notice shall, to the extent Owner's interests are prejudiced, constitute a waiver of Contractor's right to an equitable adjustment.
  - c. Within 30 (thirty) days of the occurrence of the event giving rise to the request, unless Owner agrees in writing to allow an additional period of time to ascertain more accurate data, Contractor shall supplement the written notice provided in accordance with subparagraph a. above with additional supporting data. Such additional data shall include, at a minimum: the amount of compensation requested, itemized in accordance with the procedure set forth herein; specific facts, circumstances, and analysis that confirms not only that Contractor suffered the damages claimed, but that the damages claimed were actually a result of the act, event, or condition complained of and that the Contract Documents provide entitlement to an equitable adjustment to Contractor for such act, event, or condition; and documentation sufficiently detailed to permit an informed analysis



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of the request by Owner. When the request for compensation relates to a delay, or other change in Contract Time, Contractor shall demonstrate the impact on the critical path, in accordance with section 7.03C. Failure to provide such additional information and documentation within the time allowed or within the format required shall, to the extent Owner's interests are-prejudiced, constitute a waiver of Contractor's right to an equitable adjustment.

- d. Pending final resolution of any request made in accordance with this paragraph, unless otherwise agreed in writing, Contractor shall proceed diligently with performance of the Work.
  - e. Any requests by Contractor for an equitable adjustment in the Contract Sum and in the Contract Time that arise out of the same event(s) shall be submitted together.
3. The value of any Work covered by a Change Order, or of any request for an equitable adjustment in the Contract Sum, shall be determined by one of the following methods:
    - a. On the basis of a fixed price as determined in paragraph 7.02B.
    - b. By application of unit prices to the quantities of the items involved as determined in paragraph 7.02C.
    - c. On the basis of time and material as determined in paragraph 7.02D.
  4. When Owner has requested Contractor to submit a Change Order proposal, Owner may direct Contractor as to which method in subparagraph 3 above to use when submitting its proposal. Otherwise, Contractor shall determine the value of the Work, or a request for an equitable adjustment, on the basis of the fixed price method.

### B. Change Order Pricing -- Fixed Price

When the fixed price method is used to determine the value of any Work covered by a Change Order or a request for an equitable adjustment in the Contract Sum, the following procedures shall apply:

1. Contractor's Change Order Proposal, or request for adjustment in the Contract Sum, shall be accompanied by a complete itemization of the costs, including labor, material, subcontractor costs, and overhead and profit. The costs shall be itemized in the manner set forth below, and shall be submitted on breakdown sheets in a form approved by Owner.
2. All costs shall be calculated based upon appropriate industry standard methods of calculating labor, material quantities, and equipment costs.
3. If any of Contractor's pricing assumptions are contingent upon anticipated actions of Owner, Contractor shall clearly state them in the proposal or request for an equitable adjustment.
4. The cost of any additive or deductive changes in the Work shall be calculated as set forth below, except that overhead and profit shall not be included on deductive changes in the Work. Where a change in the Work involves additive and deductive work by the same Contractor or Subcontractor, small tools, overhead, profit, bond, and insurance markups will apply to the net difference.
5. If the total cost of the change in the Work or request for equitable adjustment does not exceed \$1,000, Contractor shall not be required to submit a breakdown if the description of the change in the Work or request for equitable adjustment is sufficiently definitive for Owner to determine fair value.
6. If the total cost of the change in the Work or request for equitable adjustment is between \$1,000 and \$2,500, Contractor may submit a breakdown in the following level of detail if the description of the change in the Work or if the request for equitable adjustment is sufficiently definitive to permit the Owner to determine fair value:
  - a. lump sum labor;
  - b. lump sum material;
  - c. lump sum equipment usage;
  - d. overhead and profit as set forth below; and
  - e. insurance and bond costs as set forth below.

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7. Any request for adjustment of Contract Sum based upon the fixed price method shall include only the following items:
- a. Craft labor costs: These are the labor costs determined by multiplying the estimated or actual additional number of craft hours needed to perform the change in the Work by the hourly labor costs. Craft hours should cover direct labor, as well as indirect labor due to trade inefficiencies. The hourly costs shall be based on the following:
    - 1) Basic wages and benefits: Hourly rates and benefits as stated on the Department of Labor and Industries approved "statement of intent to pay prevailing wages." Direct supervision shall be a reasonable percentage not to exceed 15% (fifteen percent) of the cost of direct labor. No supervision markup shall be allowed for a working supervisor's hours.
    - 2) Worker's insurance: Direct contributions to the state of Washington for industrial insurance; medical aid; and supplemental pension, by the class and rates established by the Department of Labor and Industries.
    - 3) Federal insurance: Direct contributions required by the Federal Insurance Compensation Act; Federal Unemployment Tax Act; and the State Unemployment Compensation Act.
    - 4) Travel allowance: Travel allowance and/or subsistence, if applicable, not exceeding those allowances established by regional labor union agreements, which are itemized and identified separately.
    - 5) Safety: Cost incurred due to the Washington Industrial Safety and Health Act, which shall be a reasonable percentage not to exceed 2% (two percent) of the sum of the amounts calculated in (1), (2), and (3) above.
  - b. Material costs: This is an itemization of the quantity and cost of materials needed to perform the change in the Work. Material costs shall be developed first from actual known costs, second from supplier quotations or if these are not available, from standard industry pricing guides. Material costs shall consider all available discounts. Freight costs, express charges, or special delivery charges, shall be itemized.
  - c. Equipment costs: This is an itemization of the type of equipment and the estimated or actual length of time the construction equipment appropriate for the Work is or will be used on the change in the Work. Costs will be allowed for construction equipment only if used solely for the changed Work, or for additional rental costs actually incurred by the Contractor. Equipment charges shall be computed on the basis of actual invoice costs or if owned, from the current edition of one of the following sources:
    - 1) Associated General Contractors - Washington State Department of Transportation (AGC-WSDOT) Equipment Rental Agreement; current edition, on the Contract execution date.
    - 2) The state of Washington Utilities and Transportation Commission for trucks used on highways.
    - 3) The National Electrical Contractors Association for equipment used on electrical work.
    - 4) The Mechanical Contractors Association of America for equipment used on mechanical work.

The Data Quest Rental Rate (Blue Book) shall be used as a basis for establishing rental rates of equipment not listed in the above sources. The maximum rate for standby equipment shall not exceed that shown in the AGC WSDOT Equipment Rental Agreement, current edition, on the Contract execution date.
  - d. Allowance for small tools, expendables, and consumable supplies: Small tools consist of tools which cost \$250 or less and are normally furnished by the performing contractor. The maximum rate for small tools shall not exceed the following:

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- 1) For Contractor, 3% (three percent) of direct labor costs.
- 2) For Subcontractors, 5% (five percent) of direct labor costs.

Expendables and consumable supplies directly associated with the change in Work must be itemized.

- e. Subcontractor costs: This is defined as payments Contractor makes to Subcontractors for changed Work performed by Subcontractors of any tier. The Subcontractors' cost of Work shall be calculated and itemized in the same manner as prescribed herein for Contractor.
- f. Allowance for overhead: This is defined as costs of any kind attributable to direct and indirect delay, acceleration, or impact, added to the total cost to Owner of any change in the Contract Sum but not to the cost of any change in the Contract Time for which contractor has been compensated pursuant to the conditions set forth in Section 7.03. This allowance shall compensate Contractor for all non-craft labor, temporary construction facilities, field engineering, schedule updating, record drawings, home office cost, B&O taxes, office engineering, estimating costs, additional overhead because of extended time, and any other cost incidental to the change in the Work. It shall be strictly limited in all cases to a reasonable amount, mutually acceptable, or if none can be agreed upon to an amount not to exceed the rates below:

**1) For projects where the Contract Award Amount is under \$3 million, the following shall apply:**

- a) For Contractor, for any Work actually performed by Contractor's own forces, 16% (sixteen percent) of the first \$50,000 of the cost, and 4% (four percent) of the remaining cost, if any.
- b) For each Subcontractor (including lower tier subcontractors), for any Work actually performed by its own forces, 16% (sixteen percent) of the first \$50,000 of the cost, and 4% (four percent) of the remaining cost, if any.
- c) For Contractor, for any work performed by its Subcontractor(s), 6% (six percent) of the first \$50,000 of the amount due each Subcontractor, and 4% (four percent) of the remaining amount if any.
- d) For each Subcontractor, for any Work performed by its Subcontractor(s) of any lower tier, 4% (four percent) of the first \$50,000 of the amount due the sub-Subcontractor, and 2% (two percent) of the remaining amount if any.
- e) The cost to which overhead is to be applied shall be determined in accordance with subparagraphs a.-e. above.

**2) For projects where the Contract Award Amount is equal to or exceeds \$3 million, the following shall apply:**

- a) For Contractor, for any Work actually performed by Contractor's own forces, 12% (twelve percent) of the first \$50,000 of the cost, and 4% (four percent) of the remaining cost, if any.
- b) For each Subcontractor (including lower tier subcontractors), for any Work actually performed by its own forces, 12% (twelve percent) of the first \$50,000 of the cost, and 4% (four percent) of the remaining cost, if any.
- c) For Contractor, for any Work performed by its Subcontractor(s), 4% (four percent) of the first \$50,000 of the amount due each Subcontractor, and 2% (two percent) of the remaining amount if any.
- d) For each Subcontractor, for any Work performed by its Subcontractor(s) of any lower tier, 4% (four percent) of the first \$50,000 of the amount due the sub-Subcontractor, and 2% (two percent) of the remaining amount if any.

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- e) The cost to which overhead is to be applied shall be determined in accordance with subparagraphs a.- e. above.
- g. Allowance for profit: This is an amount to be added to the cost of any change in contract sum, but not to the cost of change in Contract Time for which contractor has been compensated pursuant to the conditions set forth in section 7.03. It shall be limited to a reasonable amount, mutually acceptable, or if none can be agreed upon, to an amount not to exceed the rates below:
  - 1) For Contractor or Subcontractor of any tier for work performed by their forces, 6% (six percent) of the cost developed in accordance with Section 7.02 b. 7a.- e.
  - 2) For Contractor or Subcontractor of any tier for work performed by a subcontractor of a lower tier, 4% (four percent) of the Subcontractor cost developed in accordance with Section 7.02 b. 7a. - h.
- h. Cost of change in insurance or bond premium: This is defined as:
  - 1) Contractor's liability insurance: The cost of any changes in Contractor's liability insurance arising directly from execution of the Change Order; and
  - 2) Public works bond: The cost of the additional premium for Contractor's bond arising directly from the changed Work.

The costs of any change in insurance or bond premium shall be added after overhead and allowance for profit are calculated in accordance with subparagraph f. and g. above.

### C. Change Order Pricing -- Unit Prices

- 1. Whenever Owner authorizes Contractor to perform Work on a unit-price basis, Owner's authorization shall clearly state:
  - a. Scope of work to be performed;
  - b. Type of reimbursement including pre-agreed rates for material quantities; and
  - c. Cost limit of reimbursement.
- 2. Contractor shall:
  - a. Cooperate with Owner and assist in monitoring the Work being performed. As requested by Owner, Contractor shall identify workers assigned to the Change Order Work and areas in which they are working;
  - b. Leave access as appropriate for quantity measurement; and
  - c. Not exceed any cost limit(s) without Owner's prior written approval.
- 3. Contractor shall submit costs in accordance with paragraph 7.02B. and satisfy the following requirements:
  - a. Unit prices shall include reimbursement for all direct and indirect costs of the Work, including overhead and profit, and bond and insurance costs; and
  - b. Quantities must be supported by field measurement statements signed by Owner.

### D. Change Order Pricing -- Time-and-Material Prices

- 1. Whenever Owner authorizes Contractor to perform Work on a time-and-material basis, Owner's authorization shall clearly state:
  - a. Scope of Work to be performed;
  - b. Type of reimbursement including pre-agreed rates, if any, for material quantities or labor; and
  - c. Cost limit of reimbursement.
- 2. Contractor shall:

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- a. Cooperate with Owner and assist in monitoring the Work being performed. As requested by Owner, identify workers assigned to the Change Order Work and areas in which they are working;
  - b. Identify on daily time sheets all labor performed in accordance with this authorization. Submit copies of daily time sheets within 2 working days for Owner's review;
  - c. Leave access as appropriate for quantity measurement;
  - d. Perform all Work in accordance with this section as efficiently as possible; and
  - e. Not exceed any cost limit(s) without Owner's prior written approval.
3. Contractor shall submit costs in accordance with paragraph 7.02B and additional verification supported by:
- a. Labor detailed on daily time sheets; and
  - b. Invoices for material.

### 7.03 CHANGES IN THE CONTRACT TIME

- A. The Contract Time shall only be changed by a Change Order. Contractor shall include any request for a change in the Contract Time in its Change Order Proposal.
- B. If the time of Contractor's performance is changed due to an act of Force Majeure, or due to the fault or negligence of Owner or anyone for whose acts Owner is responsible, Contractor shall be entitled to make a request for an equitable adjustment in the Contract Time in accordance with the following procedure. No adjustment in the Contract Time shall be allowed to the extent Contractor's changed time of performance is due to the fault or negligence of Contractor, or anyone for whose acts Contractor is responsible.
1. A request for an equitable adjustment in the Contract Time shall be based on written notice delivered within 7 (seven) days of the occurrence of the event giving rise to the request. If Contractor believes it is entitled to adjustment of Contract Time, Contractor shall immediately notify Owner and begin to keep and maintain complete, accurate, and specific daily records. Contractor shall give Owner access to any such record and if requested, shall promptly furnish copies of such record to Owner.
  2. Contractor shall not be entitled to an adjustment in the Contract Time for any events that occurred more than 7 (seven) days before Contractor's written notice to Owner. The written notice shall set forth, at a minimum, a description of: the event giving rise to the request for an equitable adjustment in the Contract Time; the nature of the impacts to Contractor and its Subcontractors of any tier, if any; and to the extent possible the amount of the adjustment in Contract Time requested. Failure to properly give such written notice shall, to the extent Owner's interests are prejudiced, constitute a waiver of Contractor's right to an equitable adjustment.
  3. Within 30 (thirty) days of the occurrence of the event giving rise to the request, unless Owner agrees in writing to allow an additional period of time to ascertain more accurate data, Contractor shall supplement the written notice provided in accordance with subparagraph 7.03B.2 with additional supporting data. Such additional data shall include, at a minimum: the amount of delay claimed, itemized in accordance with the procedure set forth herein; specific facts, circumstances, and analysis that confirms not only that Contractor suffered the delay claimed, but that the delay claimed was actually a result of the act, event, or condition complained of, and that the Contract Documents provide entitlement to an equitable adjustment in Contract Time for such act, event, or condition; and supporting documentation sufficiently detailed to permit an informed analysis of the request by Owner. Failure to provide such additional information and documentation within the time allowed or within the format required shall, to the extent Owner's interests are prejudiced, constitute a waiver of Contractor's right to an equitable adjustment.
  4. Pending final resolution of any request in accordance with this paragraph, unless otherwise agreed in writing, Contractor shall proceed diligently with performance of the Work.
- C. Any change in the Contract Time covered by a Change Order, or based on a request for an equitable adjustment in the Contract Time, shall be limited to the change in the critical path of Contractor's schedule attributable to the change of Work or event(s) giving rise to the request for equitable adjustment. Any Change Order proposal or request for an adjustment in the Contract Time shall demonstrate the impact on the critical path of the schedule. Contractor shall be responsible for showing clearly on the Progress

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Schedule that the change or event: had a specific impact on the critical path, and except in case of concurrent delay, was the sole cause of such impact; and could not have been avoided by resequencing of the Work or other reasonable alternatives.

- D. Contractor may request compensation for the cost of a change in Contract Time in accordance with this paragraph, 7.03D, subject to the following conditions:
1. The change in Contract Time shall solely be caused by the fault or negligence of Owner or A/E;
  2. Compensation under this paragraph is limited to changes in Contract Time for which Contractor is not entitled to be compensated under section 7.02;
  3. Contractor shall follow the procedure set forth in paragraph 7.03B;
  4. Contractor shall establish the extent of the change in Contract Time in accordance with paragraph 7.03C; and
  5. The daily cost of any change in Contract Time shall be limited to the items below, less funds that may have been paid pursuant to a change in the Contract Sum that contributed to this change in Contract Time:
    - a. cost of nonproductive field supervision or labor extended because of the delay;
    - b. cost of weekly meetings or similar indirect activities extended because of the delay;
    - c. cost of temporary facilities or equipment rental extended because of the delay;
    - d. cost of insurance extended because of the delay;
    - e. general and administrative overhead in an amount to be agreed upon, but not to exceed 3% (three percent) of Contract Sum divided by the Contract Time for each day of the delay.

### **PART 8 - CLAIMS AND DISPUTE RESOLUTION**

#### **8.01 CLAIMS PROCEDURE**

- A. If the parties fail to reach agreement on the terms of any Change Order for Owner-directed Work as provided in section 7.01, or on the resolution of any request for an equitable adjustment in the Contract Sum as provided in section 7.02 or the Contract Time as provided in section 7.03, Contractor's only remedy shall be to file a Claim with Owner as provided in this section.
- B. Contractor shall file its Claim within the earlier of: 120 (one hundred twenty) days from Owner's final offer in accordance with either paragraph 7.01E or the date of Final Acceptance.
- C. The Claim shall be deemed to cover all changes in cost and time (including direct, indirect, impact, and consequential) to which Contractor may be entitled. It shall be fully substantiated and documented. At a minimum, the Claim shall contain the following information:
1. A detailed factual statement of the Claim for additional compensation and time, if any, providing all necessary dates, locations, and items of Work affected by the Claim;
  2. The date on which facts arose which gave rise to the Claim
  3. The name of each employee of Owner or A/E knowledgeable about the Claim;
  4. The specific provisions of the Contract Documents which support the Claim;
  5. The identification of any documents and the substance of any oral communications that support the Claim;
  6. Copies of any identified documents, other than the Contract Documents, that support the Claim;
  7. If an adjustment in the Contract Time is sought: the specific days and dates for which it is sought; the specific reasons Contractor believes an extension in the Contract Time should be granted; and

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Contractor's analysis of its Progress Schedule to demonstrate the reason for the extension in Contract Time;

8. If an adjustment in the Contract Sum is sought, the exact amount sought and a breakdown of that amount into the categories set forth in, and in the detail required by, section 7.02; and
  9. A statement certifying, under penalty of perjury, that the Claim is made in good faith, that the supporting cost and pricing data are true and accurate to the best of Contractor's knowledge and belief, that the Claim is fully supported by the accompanying data, and that the amount requested accurately reflects the adjustment in the Contract Sum or Contract Time for which Contractor believes Owner is liable.
- D. After Contractor has submitted a fully documented Claim that complies with all applicable provisions of parts 7 and 8, Owner shall respond, in writing, to Contractor as follows:
1. If the Claim amount is less than \$50,000, with a decision within 60 (sixty) days from the date the Claim is received; or
  2. If the Claim amount is \$50,000 or more, with a decision within 60 (sixty) days from the date the Claim is received, or with notice to Contractor of the date by which it will render its decision. Owner will then respond with a written decision in such additional time.
- E. To assist in the review of Contractor's Claim, Owner may visit the Project site, or request additional information, in order to fully evaluate the issues raised by the Claim. Contractor shall proceed with performance of the Work pending final resolution of any Claim. Owner's written decision as set forth above shall be final and conclusive as to all matters set forth in the Claim, unless Contractor follows the procedure set forth in section 8.02.
- F. Any Claim of the Contractor against the Owner for damages, additional compensation, or additional time, shall be conclusively deemed to have been waived by the Contractor unless timely made in accordance with the requirements of this section.

### 8.02 ARBITRATION

- A. If Contractor disagrees with Owner's decision rendered in accordance with paragraph 8.01D, Contractor shall provide Owner with a written demand for arbitration. No demand for arbitration of any such Claim shall be made later than 30 (thirty) days after the date of Owner's decision on such Claim; failure to demand arbitration within said 30-day period shall result in Owner's decision being final and binding upon Contractor and its Subcontractors.
- B. Notice of the demand for arbitration shall be filed with the American Arbitration Association (AAA), with a copy provided to Owner. The parties shall negotiate or mediate under the Voluntary Construction Mediation Rules of the AAA, or mutually acceptable service, before seeking arbitration in accordance with the Construction Industry Arbitration Rules of AAA as follows:
1. Disputes involving \$30,000 or less shall be conducted in accordance with the Northwest Region Expedited Commercial Arbitration Rules; or
  2. Disputes over \$30,000 shall be conducted in accordance with the Construction Industry Arbitration Rules of the AAA, unless the parties agree to use the expedited rules.
- C. All Claims arising out of the Work shall be resolved by arbitration. The judgment upon the arbitration award may be entered, or review of the award may occur, in the superior court having jurisdiction thereof. No independent legal action relating to or arising from the Work shall be maintained.
- D. Claims between Owner and Contractor, Contractor and its Subcontractors, Contractor and A/E, and Owner and A/E shall, upon demand by Owner, be submitted in the same arbitration or mediation.
- E. If the parties resolve the Claim prior to arbitration judgment, the terms of the resolution shall be incorporated in a Change Order. The Change Order shall constitute full payment and final settlement of the Claim, including all claims for time and for direct, indirect, or consequential costs, including costs of delays, inconvenience, disruption of schedule, or loss of efficiency or productivity.

## GENERAL CONDITIONS FOR CONSTRUCTION AT WASHINGTON STATE PARKS

### 8.03 CLAIMS AUDITS

- A. All Claims filed against Owner shall be subject to audit at any time following the filing of the Claim. Failure of Contractor, or Subcontractors of any tier, to maintain and retain sufficient records to allow Owner to verify all or a portion of the Claim or to permit Owner access to the books and records of Contractor, or Subcontractors of any tier, shall constitute a waiver of the Claim and shall bar any recovery.
- B. In support of Owner audit of any Claim, Contractor shall, upon request, promptly make available to Owner the following documents:
1. Daily time sheets and supervisor's daily reports;
  2. Collective bargaining agreements;
  3. Insurance, welfare, and benefits records;
  4. Payroll registers;
  5. Earnings records;
  6. Payroll tax forms;
  7. Material invoices, requisitions, and delivery confirmations;
  8. Material cost distribution worksheet;
  9. Equipment records (list of company equipment, rates, etc.);
  10. Vendors', rental agencies', Subcontractors', and agents' invoices;
  11. Contracts between Contractor and each of its Subcontractors, and all lower-tier Subcontractor contracts and supplier contracts;
  12. Subcontractors' and agents' payment certificates;
  13. Cancelled checks (payroll and vendors);
  14. Job cost report, including monthly totals;
  15. Job payroll ledger;
  16. Planned resource loading schedules and summaries;
  17. General ledger;
  18. Cash disbursements journal;
  19. Financial statements for all years reflecting the operations on the Work. In addition, the Owner may require, if it deems it appropriate, additional financial statements for 3 (three) years preceding execution of the Work;
  20. Depreciation records on all company equipment whether these records are maintained by the company involved, its accountant, or others;
  21. If a source other than depreciation records is used to develop costs for Contractor's internal purposes in establishing the actual cost of owning and operating equipment, all such other source documents;
  22. All non-privileged documents which relate to each and every Claim together with all documents which support the amount of any adjustment in Contract Sum or Contract Time sought by each Claim;
  23. Work sheets or software used to prepare the Claim establishing the cost components for items of the Claim including but not limited to labor, benefits and insurance, materials, equipment, Subcontractors,



## GENERAL CONDITIONS FOR CONSTRUCTION AT WASHINGTON STATE PARKS

all documents which establish the time periods, individuals involved, the hours for the individuals, and the rates for the individuals; and

24. Work sheets, software, and all other documents used by Contractor to prepare its bid.

- C. The audit may be performed by employees of Owner or a representative of Owner. Contractor, and its Subcontractors, shall provide adequate facilities acceptable to Owner, for the audit during normal business hours. Contractor, and all Subcontractors, shall make a good faith effort to cooperate with Owner's auditors.

### **PART 9 - TERMINATION OF THE WORK**

#### **9.01 TERMINATION BY OWNER FOR CAUSE**

- A. Owner may, upon 7 (seven) days written notice to Contractor and to its surety, terminate (without prejudice to any right or remedy of Owner) the Work, or any part of it, for cause upon the occurrence of any one or more of the following events:
1. Contractor fails to prosecute the Work or any portion thereof with sufficient diligence to ensure Substantial Completion of the Work within the Contract Time;
  2. Contractor is adjudged bankrupt, makes a general assignment for the benefit of its creditors or a receiver is appointed on account of its insolvency;
  3. Contractor fails in a material way to replace or correct Work not in conformance with the Contract Documents;
  4. Contractor repeatedly fails to supply skilled workers or proper materials or equipment;
  5. Contractor repeatedly fails to make prompt payment due to Subcontractors or for labor;
  6. Contractor materially disregards or fails to comply with laws, ordinances, rules, regulations, or orders of any public authority having jurisdiction; or
  7. Contractor is otherwise in material breach of any provision of the Contract Documents.
- B. Upon termination, Owner may at its option:
1. Take possession of the Project site and take possession of or use all materials, equipment, tools, and construction equipment and machinery thereon owned by Contractor to maintain the orderly progress of, and to finish, the Work;
  2. Accept assignment of subcontracts pursuant to section 5.20; and
  3. Finish the Work by whatever other reasonable method it deems expedient.
- C. Owner's rights and duties upon termination are subject to the prior rights and duties of the surety, if any, obligated under any bond provided in accordance with the Contract Documents.
- D. When Owner terminates the Work in accordance with this section, Contractor shall take the actions set forth in paragraph 9.02B, and shall not be entitled to receive further payment until the Work is accepted.
- E. If the unpaid balance of the Contract Sum exceeds the cost of finishing the Work, including compensation for A/E's services and expenses made necessary thereby and any other extra costs or damages incurred by Owner in completing the Work, or as a result of Contractor's actions, such excess shall be paid to Contractor. If such costs exceed the unpaid balance, Contractor shall pay the difference to Owner. These obligations for payment shall survive termination.
- F. Termination of the Work in accordance with this section shall not relieve Contractor or its surety of any responsibilities for Work performed.

## GENERAL CONDITIONS FOR CONSTRUCTION AT WASHINGTON STATE PARKS

- G. If Owner terminates Contractor for cause, and it is later determined that none of the circumstances set forth in paragraph 9.01A exist, then such termination shall be deemed a termination for convenience pursuant to section 9.02.

### 9.02 TERMINATION BY OWNER FOR CONVENIENCE

- A. Owner may, upon written notice, terminate (without prejudice to any right or remedy of Owner) the Work, or any part of it, for the convenience of Owner.
- B. Unless Owner directs otherwise, after receipt of a written notice of termination for either cause or convenience, Contractor shall promptly:
1. Stop performing Work on the date and as specified in the notice of termination;
  2. Place no further orders or subcontracts for materials, equipment, services or facilities, except as may be necessary for completion of such portion of the Work as is not terminated;
  3. Cancel all orders and subcontracts, upon terms acceptable to Owner, to the extent that they relate to the performance of Work terminated;
  4. Assign to Owner all of the right, title, and interest of Contractor in all orders and subcontracts;
  5. Take such action as may be necessary or as directed by Owner to preserve and protect the Work, Project site, and any other property related to this Project in the possession of Contractor in which Owner has an interest; and
  6. Continue performance only to the extent not terminated.
- C. If Owner terminates the Work or any portion thereof for convenience, Contractor shall be entitled to make a request for an equitable adjustment for its reasonable direct costs incurred prior to the effective date of the termination, plus a reasonable allowance for overhead and profit on Work performed prior to termination, plus the reasonable administrative costs of the termination, but shall not be entitled to any other costs or damages, whatsoever, provided however, the total sum payable upon termination shall not exceed the Contract Sum reduced by prior payments. Contractor shall be required to make its request in accordance with the provisions of part 7.
- D. If Owner terminates the Work or any portion thereof for convenience, the Contract Time shall be adjusted as determined by Owner.

## **PART 10 - MISCELLANEOUS PROVISIONS**

### 10.01 GOVERNING LAW

The Contract Documents and the rights of the parties herein shall be governed by the laws of the state of Washington. Venue shall be in the county in which Owner's principal place of business is located, unless otherwise specified.

### 10.02 SUCCESSORS AND ASSIGNS

Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to the other party hereto and to partners, successors, assigns, and legal representatives of such other party in respect to covenants, agreements, and obligations contained in the Contract Documents. Neither party shall assign the Work without written consent of the other, except that Contractor may assign the Work for security purposes, to a bank or lending institution authorized to do business in the state of Washington. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations set forth in the Contract Documents.

### 10.03 MEANING OF WORDS

Unless otherwise stated in the Contract Documents, words which have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings. Reference to standard specifications, manuals, or codes of any technical society, organization, or association, or

## GENERAL CONDITIONS FOR CONSTRUCTION AT WASHINGTON STATE PARKS

to the code of any governmental authority, whether such reference be specific or by implication, shall be to the latest standard specification, manual, or code in effect on the date for submission of bids, except as may be otherwise specifically stated. Wherever in these Drawings and Specifications an article, device, or piece of equipment is referred to in the singular manner, such reference shall apply to as many such articles as are shown on the drawings, or required to complete the installation.

### 10.04 RIGHTS AND REMEDIES

No action or failure to act by Owner or A/E shall constitute a waiver of a right or duty afforded them under the Contract Documents, nor shall such action or failure to act constitute approval of an acquiescence in a breach therein, except as may be specifically agreed in writing.

### 10.05 CONTRACTOR REGISTRATION

Pursuant to RCW 39.06, Contractor shall be registered or licensed as required by the laws of the State of Washington, including but not limited to RCW 18.27.

### 10.06 TIME COMPUTATIONS

When computing any period of time, the day of the event from which the period of time begins shall not be counted. The last day is counted unless it falls on a weekend or legal holiday, in which event the period runs until the end of the next day that is not a weekend or holiday. When the period of time allowed is less than 7 (seven) days, intermediate Saturdays, Sundays, and legal holidays are excluded from the computation.

### 10.07 RECORDS RETENTION

The wage, payroll, and cost records of Contractor, and its Subcontractors, and all records subject to audit in accordance with section 8.03, shall be retained for a period of not less than 6 (six) years after the date of Final Acceptance.

### 10.08 THIRD-PARTY AGREEMENTS

The Contract Documents shall not be construed to create a contractual relationship of any kind between: A/E and Contractor; Owner and any Subcontractor; or any persons other than Owner and Contractor.

### 10.09 ANTITRUST ASSIGNMENT

Owner and Contractor recognize that in actual economic practice, overcharges resulting from antitrust violations are in fact usually borne by the purchaser. Therefore, Contractor hereby assigns to Owner any and all claims for such overcharges as to goods, materials, and equipment purchased in connection with the Work performed in accordance with the Contract Documents, except as to overcharges which result from antitrust violations commencing after the Contract Sum is established and which are not passed on to Owner under a Change Order. Contractor shall put a similar clause in its Subcontracts, and require a similar clause in its sub-Subcontracts, such that all claims for such overcharges on the Work are passed to Owner by Contractor.

### 10.10 MINORITY AND WOMEN'S BUSINESS ENTERPRISES (MWBE) PARTICIPATION

In Accordance with the legislative findings and policies set forth in Chapter 39.19 RCW the State of Washington encourages participation in all of its contracts by MWBE firms certified by the Office of Minority and Women's Business Enterprises (OMWBE). Participation may be either on a direct basis in response to this solicitation or as a subcontractor to a Bidder. Any affirmative action requirements set forth in federal regulations or statutes included or referenced in the contract documents will apply. Bidders may contact OMWBE to obtain information on certified firms for potential subcontractors/suppliers.

- A. When referred to in this Contract, the terms Minority Business Enterprise (MBE) and Women's Business Enterprise (WBE) will be as defined by OMWBE, WAC 326-02-030.

## GENERAL CONDITIONS FOR CONSTRUCTION AT WASHINGTON STATE PARKS

- B. The OMWBE has compiled a directory of certified firms. Copies of this directory may be obtained through the OMWBE. For information regarding the certification process or the certification status of a particular firm, contact:
- OMWBE, 406 South Water Street, PO Box 41160, Olympia, WA 98504-1160, telephone (360) 753-9693.
- C. Eligible MWBEs or M/W firms
- MWBE firms utilized for this project for voluntary MWBE goals may be certified by Washington State OMWBE or self identified as minority or women owned (M/W firm).
- D. MWBE Voluntary Goals
- The Owner has established voluntary goals for MWBE participation for this project. The voluntary goals are set forth in the Advertisement for Bids.
- E. If any part of the contract, including the supply of materials and equipment, is anticipated to be subcontracted, then prior to receipt of the first payment, Contractor shall submit, pursuant to Section 5.20 A, a list of all subcontractors/suppliers it intends to use, designate whether any of the subcontractors/suppliers are MWBE firms, indicate the anticipated dollar value of each MWBE subcontract, and provide Tax Identification Number (TIN).
- F. If any part of the contract, including the supply of materials and equipment is actually subcontracted during completion of the work, then prior to final acceptance or completion of the contract or as otherwise indicated in the contract documents, the Contractor shall submit a statement of participation indicating what MWBEs were used and the dollar value of their subcontracts.
- G. The provisions of this section are not intended to replace or otherwise change the requirements of RCW 39.30.060. If said statute is applicable to this contract then the failure to comply with RCW 39.30.060 will still render a bid non-responsive.
- H. The Contractor shall maintain, for at least three years after completion of this contract, relevant records and information necessary to document the level of utilization of MWBEs and other businesses as subcontractors and suppliers in this contract, as well as any efforts the Contractor makes to increase the participation of MWBEs as listed in section I below. The Contractor shall also maintain, for at least three years after completion of this contract, a record of all quotes, bids, estimates, or proposals submitted to the Contractor by all businesses seeking to participate as subcontractors or suppliers in this contract. The state shall have the right to inspect and copy such records. If this contract involves federal funds, Contractor shall comply with all record keeping requirements set forth in any federal rules, regulations, or statutes included or referenced in the contract documents.
- I. Bidders should advertise opportunities for subcontractors or suppliers in a manner reasonably designed to provide MWBEs capable of performing the work with timely notice of such opportunities, and all advertisements shall include a provision encouraging participation by MWBE firms. Advertising may be done through general advertisements (e.g. newspapers, journals, etc.) or by soliciting bids directly from MWBEs. Bidders shall provide MWBEs that express interest with adequate and timely information about plans, specifications, and requirements of the contract.
- J. Contractors shall not create barriers to open and fair opportunities for all businesses including MWBEs to participate in all State contracts and to obtain or compete for contracts and subcontracts as sources of supplies, equipment, construction and services.
- K. Any violation of the mandatory requirements of this part of the contract shall be a material breach of contract for which the Contractor may be subject to a requirement of specific performance, or damages and sanctions provided by contract, by RCW 39.19.090, or by other applicable laws.

### 10.11 MINIMUM LEVELS OF APPRENTICESHIP PARTICIPATION

In accordance with Executive Order 00-01 the State of Washington may require apprenticeship participation for projects of a certain cost. The bid advertisement and Bid Proposal form shall establish the minimum percentage of apprentice labor hours as compared to the total labor hours.

## GENERAL CONDITIONS FOR CONSTRUCTION AT WASHINGTON STATE PARKS

- A. Voluntary workforce diversity goals have been established for the apprentice hours. These goals are that one-fifth (1/5) of the apprentice hours be performed by minorities, and one-sixth (1/6) of the apprentice hours be performed by women.
- B. Apprentice participation, under this contract, may be counted towards the required percentage (%) only if the apprentices are from an apprenticeship program registered and approved by the Washington State Apprenticeship and Training Council (RCW 49.04 and WAC 296-04).
- C. Bidders may contact the Department of Labor and Industries, Specialty Compliance Services Division, Apprenticeship Section, P.O. Box 44530, Olympia, WA 98504-4530 by phone at (360) 902-5320, and e-mail at [thum235@lni.wa.gov](mailto:thum235@lni.wa.gov), to obtain information on available apprenticeship programs.
- D. For each project that has apprentice requirements, the contractor shall submit a "Statement of Apprentice/Journeyman Participation" on forms provided by the Department of General Administration, with every request for progress payment. The Contractor shall submit consolidated and cumulative data collected by the Contractor and collected from all subcontractors by the Contractor. The data to be collected and submitted includes the following:
  1. Contractor name and address
  2. Contract number
  3. Project name
  4. Contract value
  5. Reporting period "Notice to Proceed" through "Invoicing Date"
  6. Craft/trade/occupation of all (contractor and subcontractor trades working on the project) apprentices and journeymen
  7. Total number of apprentices and total number of hours worked by apprentices, both categorized by gender and ethnicity
  8. Total number of journeymen and total number of hours worked by journeymen, both categorized by gender and ethnicity
  9. Cumulative combined total of apprentice and journeymen labor hours.
  10. Total percentage of apprentice hours worked
  11. No changes to the required percentage (%) of apprentice participation shall be allowed without written approval of the Owner. In any request for the change the Contractor shall clearly demonstrate a good faith effort to comply with the requirements for apprentice participation.
  12. Any substantive violation of the mandatory requirements of this part of the contract may be a material breach of the contract by the Contractor. The Owner may withhold payment pursuant to Part 6.05, stop the work for cause pursuant to Part 3.04, and terminate the contract for cause pursuant to Part 9.01.

### 10.12 HEADINGS AND CAPTIONS

Headings for convenience only: All headings and captions used in these General Conditions are only for convenience of reference and shall not be used in any way in connection with the meaning, effect, interpretation, construction, or enforcement of the General Conditions, and do not define the limit or describe the scope or intent of any provision of these General Conditions.

### 10.13 SUBCONTRACTOR PAYMENTS REPORTING REQUIREMENTS

This Contract is subject to compliance tracking using the State's business diversity management system, Access Equity (B2Gnow). Access Equity is web-based and can be accessed at the Office of Minority and Women's Business Enterprises at <https://omwbe.diversitycompliance.com/>. The Contractor and all Subcontractors shall report and confirm receipt of payments made to the Contractor and each Subcontractor through Access Equity.

## GENERAL CONDITIONS FOR CONSTRUCTION AT WASHINGTON STATE PARKS

The Contractor may contact State Parks Contracts and Grants at [contracts@parks.wa.gov](mailto:contracts@parks.wa.gov) for technical assistance in using the Access Equity system. User guides and documentation related to Contractor and Subcontractor access to and use of Access Equity are available online at <https://omwbe.wa.gov/access-equity-help-center>. The Public Owner reserves the right to withhold payments from the Contractor for non-compliance with this section. For purposes of this section, Subcontractor means any subcontractor working on the Contract, at any tier and regardless of status as certified WMBE or Non-WMBE.

The Contractor shall:

- a. Register and enter all required Subcontractor information into Access Equity no later than 15 days after the Public Owner creates the Contract Record.
- b. Complete the required user training (two (2) one-hour online sessions) no later than 20 days after the Public Owner creates the Contract Record.
- c. Report the amount and date of all payments (i) received from the Public Owner, and (ii) paid to Subcontractors, no later than 30 days, issuance of each payment made by the Public Owner to the Contractor, unless otherwise specified in writing by the Public Owner, except that the Contractor shall mark as "Final" and report the final Subcontractor payments) into Access Equity no later than thirty (30) days after the final payment is due the Subcontractor(s) under the Contract, with all payment information entered no later than sixty (60) days after end of fiscal year.
- d. Monitor contract payments and respond promptly to any requests or instructions from the Public Owner or system-generated messages to check or provide information in Access Equity.
- e. Coordinate with Subcontractors, or Public Owner when necessary, to resolve promptly any discrepancies between reported and received payments.
- f. Require each Subcontractor to: (i) register in Access Equity and complete the required user training; (ii) verify the amount and date of receipt of each payment from the Contractor or a higher tier Subcontractor, if applicable, through Access Equity; (iii) report payments made to any lower tier Subcontractors, if any, in the same manner as specified herein; (iv) respond promptly to any requests or instructions from the Contractor or system-generated messages to check or provide information in Access Equity; and (v) coordinate with Contractor, or Public Owner when necessary, to resolve promptly any discrepancies between reported and received payments.

**END OF CONDITIONS**

/ / / / /

Approved as to Form:  
William Van Hook /s/  
Asst. Attorney General  
02/2007  
08/2010 GA Updates – jrc  
09/2010 to AAG Schwartz



## **PREVAILING WAGES**

### **Instruction for Prevailing Wage Rates**

The State of Washington prevailing wage rates for this public works project, which is located in Pacific County, may be found at the following website address of the Department of Labor and Industries:

<https://secure.lni.wa.gov/wagelookup/>

The prevailing wages for this project are those that are in effect on the date that the bids are due.

### **Contractor to Pay Prevailing Wages**

The Contractor shall pay the prevailing rate of wages to all workers, laborers, or mechanics employed in the performance of any part of the Work in accordance with RCW 39.12 and the rules and regulations of the Department of Labor and Industries. The schedule of prevailing wage rates for the locality or localities of the Work is determined by the Industrial Statistician of the Department of Labor and Industries. It is the Contractor's responsibility to verify the applicable prevailing wage rate.

A copy of the applicable wage rates is available upon request. Please request a copy by email at: [contracts@parks.wa.gov](mailto:contracts@parks.wa.gov).

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

SECTION 010000 – GENERAL REQUIREMENTS

PART 1 - GENERAL

1.1 SPECIAL NOTICE

- A. Cape Disappointment State Park is closing for construction beginning September 15, 2024. Notice to Proceed will be issued prior to park closure for the ordering of materials only, specifically box culverts.

1.2 DESCRIPTION OF WORK

- A. This project includes the replacement of two failing CMP culverts along Fort Canby Rd. with concrete structures. The project includes the removal of existing culverts, installation of new structures, roadway profile adjustments, improvements, and paving. Utilities relocation is also included in the project scope.

1.3 TIME FOR COMPLETION OF PROJECT

- A. Substantially complete project in accordance with the drawings and specifications within 90 calendar days from date on Notice to Proceed letter. Final completion in accordance with Contract Documents within 30 calendar days from substantial completion date.

1.4 HOURS OF WORK

- A. Work hours are between 7 a.m. and 7 p.m. Monday through Friday, excluding national holidays.

1.5 LIQUIDATED DAMAGES

- A. If Contractor fails to complete Contract within stipulated time, an assessment of \$1,000.00 per day will be made against Contractor for each additional day required to complete contract, unless an extension of time was granted through Change Order. This assessment is to cover Commission's liquidated damages and is not to be construed as a penalty.
- B. Contract authorizes the Washington State Parks and Recreation Commission to deduct liquidated damages from money due at completion of contract.

1.6 PRE-CONSTRUCTION CONFERENCE

- A. Following notification of award to Contractor, the date for an on-site pre-construction conference will be set. Do not commence Work prior to conference or until written clearance has been obtained from Project Representative.



**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

- B. Furnish Project Representative with following:
1. Complete list of sub-contractors, including business address, telephone numbers, items of Work, and registration numbers. List is to be updated during contract life.
  2. Name and contact information of Contractor's staff who is in charge and responsible for site safety and will be on site at all times.
  3. A Site-Specific Safety Plan that is in compliance with the Department of Labor and Industries and 000011 – General Conditions specifically for this project.
  4. A progress schedule in accordance with General Conditions.
  5. A detailed cost breakdown for lump sum bid items. Furnish a fair evaluation of actual cost of each items of Work listed. This will be used in processing Contractor's requests for partial payment. Submittal of breakdown does not affect the Contract terms.
  6. Written document detailing plans to comply with 15 percent Apprenticeship Participation requirement stated in Instruction to Bidders 4.1B.
- C. Project Representative will supply a list of hazardous products that could be encountered on Project. Appropriate Safety Data Sheet (SDS) will be on file at park.

1.7 PROGRESS CLEANING

- A. Remove rubbish and debris from park property daily unless otherwise directed do not allow accumulation. Store materials that cannot be removed daily only in areas specified by the Project Representative.
- B. Maintain worksites in a neat and orderly condition.
- C. Cleanup operations are incidental to the Contract and no extra compensation will be made.

1.8 UTILITY MONUMENTS

- A. Contractor is responsible for installing monuments in accordance with drawings and at locations designated by Project Representative to permanently mark utilities installed on Project. Install monuments in trenches during backfilling operations.

1.9 AS-BUILT DRAWINGS

- A. Keep a clean set of full-sized drawings at job site to use to identify changes.
- B. PROJECT CONDITIONS Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
  - i. Hazardous materials [will be removed by Owner before start of the Work] [have been removed by Owner under a separate contract].
  - ii. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Project Representative and Owner. Owner will remove hazardous materials under a separate contract.

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

1.10 PROJECT SIGN

- A. Provide following temporary sign. Sign location is shown on drawings or determined by Project Representative. Upon Project completion, remove sign and restore area to original condition.

1.11 PROJECT SIGN LETTERING

TITLE OF PROJECT:	REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD
NAME OF FACILITY:	CAPE DISAPPOINTMENT STATE PARK
NAME OF CONTRACTOR:	(Place Contractor's Name here)
ADDRESS OF CONTRACTOR:	(Place Contractor's Address here)
FUNDING TITLE NUMBER 1:	STATE BUILDING CONSTRUCTION ACCOUNT
FUNDING TITLE NUMBER 2	(LEAVE BLANK FOR THIS PROJECT)

1.12 PARTNERSHIP IN THE CONTRACT

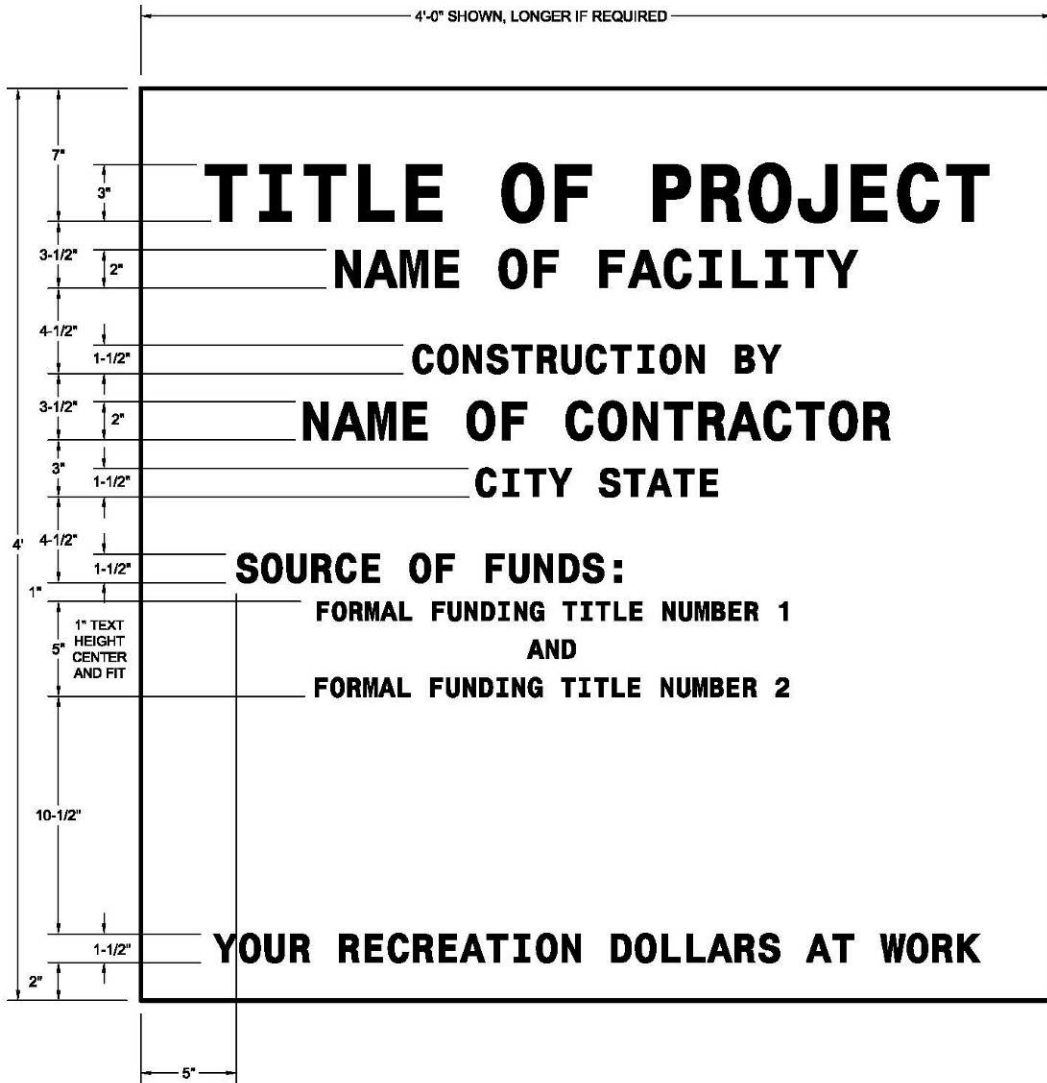
- A. As partners in this contract, both Contractor and Commission recognize the value of a successful Project. Both parties recognize, besides the tangible benefits to Contractor and the Commission, the citizens of Washington State and visitors to Washington State Parks will benefit immensely from the successful completion of a quality Project.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

PROJECT SIGN DETAIL

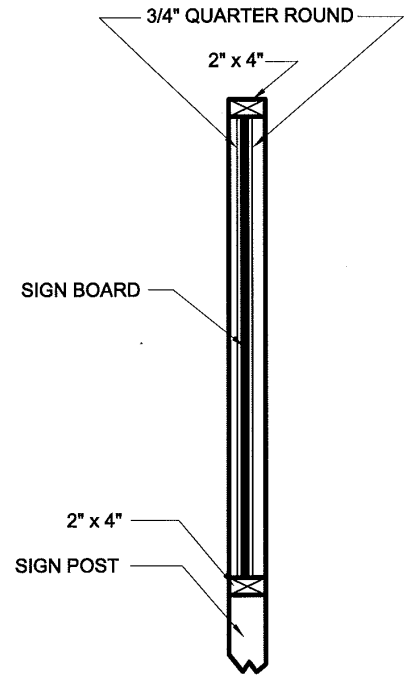
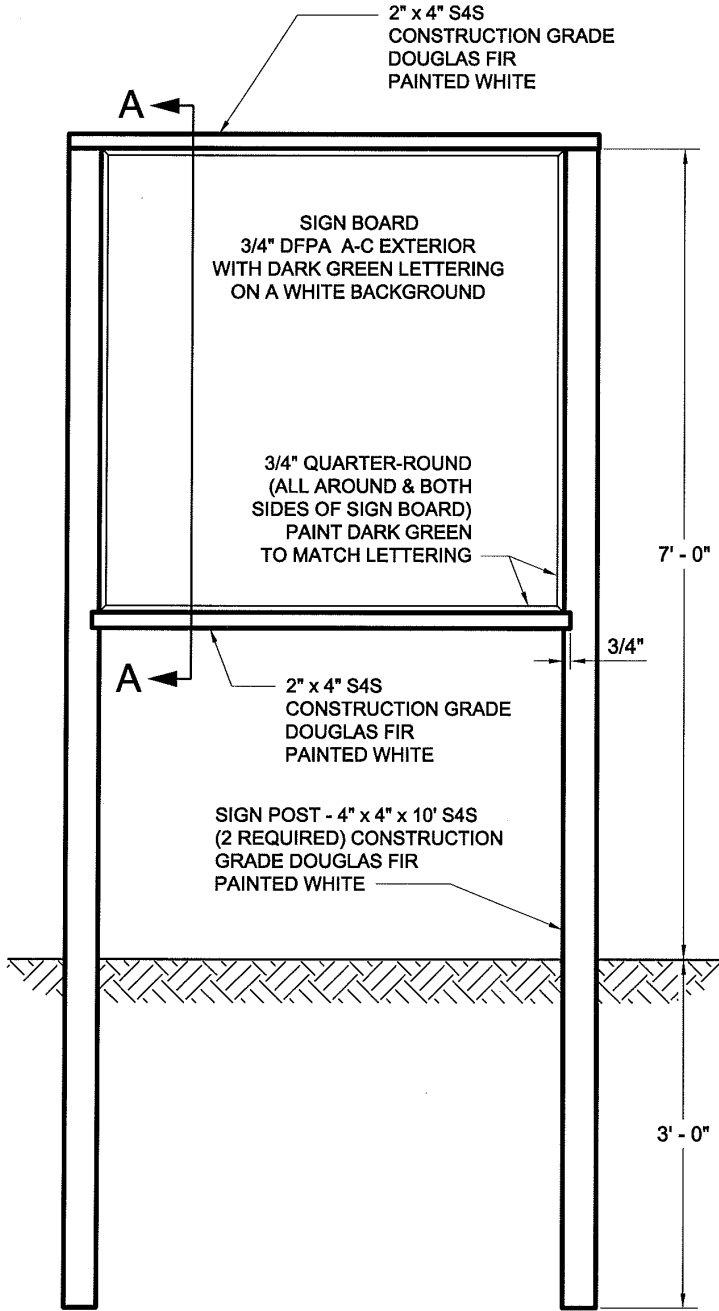


LAY OUT SIGN TO FIT ON A PORTION OF ONE (1) SHEET OF PLYWOOD. IF PLYWOOD IS THE FINAL SURFACE, PAINT IT WITH TWO (2) OR MORE COATS OF WHITE PAINT TO FORM A SMOOTH, NONABSORBENT SURFACE. PROVIDE DARK GREEN WELL FORMED LETTERS, EVENLY SPACED, NEAT IN APPEARANCE, AND ALIGNED AS SHOWN ABOVE.

**WASHINGTON STATE PARKS  
PROJECT SIGN DETAIL**

CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD

PROJECT SIGN DETAIL



SECTION A - A

END OF SECTION

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

SECTION 010099 – SURVEYING

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

- A. Set and maintain alignment and grades necessary for construction; including clearing limits, grading, utilities, roads, trails, and structures. Except for the data specified to be furnished by the Owner, the Contractor is responsible for calculations, surveying materials and measuring required for setting and maintaining the necessary lines and grades. Furnish copies of calculations and staking data, when requested by Project Representative. AutoCAD design data will be supplied by the State.
- B. Staking requirements that do not fit field conditions will be reviewed and, if necessary, adjusted by the Engineer. Revisions to the staking information will be provided for completing the work.

1.2 SURVEY CONTROL AND DATA

- A. To facilitate establishment of lines and elevations, Owner will furnish the following survey control and data:
  - 1. Elevation benchmarks, and horizontal control points, for one time only.
  - 2. Provide technical advice, if requested.
- B. Give three weeks' notice to allow adequate time to provide data.

1.3 TOLERANCES

- A. Ensure accuracy of line and elevations within a tolerance of 0.01 foot.
- B. Set subgrade blue tops and surfacing red and yellow tops at 50 foot intervals in tangent sections, 25 foot intervals in curve sections and 10 foot intervals in intersection radii.
- C. In disputes concerning line and elevation accuracy, resolve dispute to Project Representative's satisfaction. Correct discrepancies before proceeding. No additional time or compensation will be provided for corrective work.

1.4 PAYMENT

- A. Lump sum price for "Surveying" includes full pay costs for labor, tools, survey instruments, materials, other equipment, and traffic control necessary for the setting and maintaining horizontal locations and grades as specified.

PART 2 – PRODUCTS (NOT USED)

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REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

PART 3 – EXECUTION (NOT USED)

END OF SECTION

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

SECTION 011414 – CONTROL OF WORK

PART 1 - GENERAL

1.1 DIMENSION OF EXISTING STRUCTURES

- A. Where the dimensions and locations of existing structures are of importance in the installation or connection of any part of the Work, the Contractor shall verify such dimensions and locations in the field before the fabrication of any material or equipment which is dependent on the correctness of such information.

1.2 OPEN EXCAVATIONS

- A. All open excavations shall be adequately safeguarded by providing temporary barricades, fencing, caution signs, lights, and other means to prevent accidents to persons and damage to property. The Contractor shall, at their own expense, provide suitable and safe bridges and other crossings for accommodating travel by pedestrians and workers. Bridges provided for access during construction shall be removed when no longer required. The length or size of excavation will be controlled by the particular surrounding conditions but shall always be confined to the limits prescribed by the Engineer. If the excavation becomes a hazard, or if it excessively restricts traffic at any point, the Engineer may require special construction procedures such as limiting the length of the open trench, prohibiting stacking excavated material in the street, and requiring that the trench shall not remain open overnight.
- B. The Contractor shall take precautions to prevent injury to the public and Owner/Engineer staff due to open excavations. All potentially dangerous excavations, excavated material, equipment, or other obstacles shall be clearly marked.

1.3 TEST PITS

- A. Test pits for the purpose of locating underground pipeline or structures in advance of the construction shall be excavated and backfilled by the Contractor at the direction of the Engineer. Test pits shall be backfilled immediately after their purpose has been satisfied and the surface restored and maintained in a manner satisfactory to the Engineer.

1.4 CARE AND PROTECTION OF PROPERTY

- A. The Contractor shall be responsible for the preservation of all public and private property and shall use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work on the part of the Contractor, such property shall be restored by the Contractor, at their expense, to a condition similar or equal to that existing before the damage was done, or they shall make good the damage in other manner acceptable to the Engineer.

1.5 PROTECTION AND RELOCATION OF EXISTING STRUCTURES AND UTILITIES

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REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

- A. The Contractor shall assume full responsibility for the protection of all buildings, structures, and utilities, public or private, including poles, signs, services to buildings, utilities in the street, gas pipes, water pipes, hydrants, sewers, drains, and electric and telephone cables, whether or not they are shown on the Drawings. Contractor shall carefully support and protect all such structures and utilities from injury of any kind and repair at own expense any resulting damage.
- B. The Contractor shall bear full responsibility for obtaining all locations of underground structures and utilities (including existing water services, drain lines, and sewers). Services to buildings shall be maintained, and all costs or charges resulting from damage thereto shall be paid by the Contractor.
- C. Protection and temporary removal and replacement of existing utilities and structures as described in this Section shall be a part of the work under the Contract and all costs in connection therewith shall be included in the Total Price Bid in the Bid Form.
- D. The Contractor shall notify all utility companies in writing at least 72 hours (excluding Saturdays, Sundays, and Legal holidays) before excavating in any public way. Contractor shall also notify Washington Utility Notification Center, telephone number 1-800-424-5555 (or 811) at least 72 hours prior to start of work.

1.6 CLEANUP AND DISPOSAL OF EXCESS MATERIAL

- A. During the course of the work, the Contractor shall keep the site of their operations in as clean and as neat a condition as is possible. They shall dispose of all residue resulting from the construction work and, at the conclusion of the work, they shall remove and haul away any surplus excavation, broken pavement, lumber, equipment, temporary structures, and any other refuse remaining from the construction operations, and shall leave the entire site of the work in a neat and orderly condition.
- B. In order to prevent environmental pollution arising from the construction activities related to the performance of this Contract, the Contractor and their subcontractors shall comply with all applicable Federal, State, and local laws, and regulations concerning waste material disposal, as well as the requirements of this work.

1.7 CONSTRUCTION SURVEYING

- A. Scope: Contractor shall provide all construction surveying work as necessary to complete the work as indicated on the Drawings according to state, federal and local codes and regulations.
- B. Measurement: No measurement of quantities will be made for construction surveying.
- C. Payment: Payment for construction surveying will be paid for at the Contract lump sum amount for the item "Construction Surveying". Payment will be in full for furnishing of material, equipment, labor and incidentals necessary to complete the work as specified. No separate or additional payment will be made for any temporary traffic control measures including flaggers or signing necessary for the performance of construction surveying. No separate or additional payment will be made for preparing surveying documents including but not limited to office time, preparing and checking surveying notes, and all other related preparation work.



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- D. Costs incurred caused by survey errors will be at no additional cost to the Owner. Repair any damage to the Work caused by Contractor's survey errors at no additional cost to the Owner. The Owner may make an equitable adjustment, which may decrease the Contract Amount, if the required survey work is not performed.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

SECTION 013300 – SUBMITTAL PROCEDURES

PART 1 – GENERAL

1.1 WORK IN THIS SECTION

- A. General: The types of submittal requirements specified in this Section include Shop Drawings, product data, Samples and miscellaneous Work-related submittals. Specialized submittal requirements are specified in applicable Sections for each unit of Work. Refer to other Division 01 Sections and other Contract documents for requirements of administrative submittals.
- B. Definitions: Work-related submittals of this Section are categorized for convenience as follows:
  - 1. Shop Drawings: Specially-prepared technical data for this Project, including Drawings, diagrams, performance curves, data sheets, schedules, templates, patterns, reports, calculations, instructions, measurements and similar information not in standard printed form for general application to several projects.
  - 2. Product Data: Standard printed information on materials, products and systems; not specially-prepared for this Project, other than the designation of selections from among available choices printed therein.
  - 3. Samples: Fabricated and unfabricated physical examples of materials, products and units of Work; both as completed units and as smaller portions of units of Work; either for limited visual inspection or (where indicated) for more detailed testing and analysis.
  - 4. Miscellaneous: Submittals related directly to the Work (non-administrative) include warranties, informational, maintenance agreements, workmanship bonds, Project photographs, survey data and reports, physical Work records, quality testing and certifying reports, copies of industry standards, record drawings, field measurement data, operating and maintenance materials, overrun stock, and similar information, devices and materials applicable to the Work and not processed as Shop Drawings, product data or Samples. See Specification Sections.

1.2 RELATED REQUIREMENTS

- A. General Conditions 4.03
- B. Section 014000 - Quality Requirements
- C. Section 017700 – Closeout Procedures

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1.3 GENERAL SUBMITTAL REQUIREMENTS

- A. Coordination and Sequencing: Coordinate preparation and processing of submittals with performance of the Work so that Work will not be delayed by submittals. Coordinate and sequence different categories of submittals for same Work, and for interfacing units of Work, so that one will not be delayed for coordination with another.
- B. Preparation of Submittals: Provide permanent marking on, or with, each submittal to identify Project, date, Contractor, sub-contractor, submittal name and similar information to distinguish it from other submittals.

1.4 SPECIFIC SUBMITTAL REQUIREMENTS

- A. General:
  - 1. Except as otherwise indicated in individual Work Sections, comply with requirements specified herein for each indicated category of submittal.
  - 2. Provide and process intermediate submittals, where required between initial and final, similar to initial submittals.
  - 3. Include a transmittal with all submittals.
- B. Shop Drawings:
  - 1. General: No claims for extras may be initiated, based on Work shown on Shop Drawings.
  - 2. Where Work of more than one sub-contractor is involved, submit composite Drawings, clearly defining the Work of each separate sub-contractor.
  - 3. No extension of time in respect to the final completion date of building will be granted to Contractor because of failure to have any Shop Drawings submitted in ample time to allow for checking.
  - 4. Verify all dimensions by taking field measurements. Do not begin Work until required submittals have been returned by the Engineer with stamp and initials indicating review. If Work has been done which is contrary to the approved Drawings, it will be corrected at no additional cost to the Commission. Maintain one complete set of shop drawings at the site for use by the Engineer.
  - 5. Submit four (4) copies. Engineer will retain two (2) copies and return two (2) copies.
- C. Product Data:
  - 1. General:
    - a. Collect required data into one submittal for each unit of Work or system; and mark each copy to show which choices and options are applicable to Project. Include manufacturer's standard printed recommendations for application and use, compliance with standards, application of labels and seals, notation of field measurements which have been checked, and modify details as required for application into the Work. Include color selection information where necessary.

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- b. Do not proceed with installation of materials, products or systems until final copy of applicable product data is in possession of Installer. Maintain one complete set of product data at the site for use by Project Representative.
  2. Preparation and Processing: Do not submit product data, or allow its use on the Project, until compliance with requirements of Contract documents has been confirmed by Contractor. Submittal is for information and record, unless otherwise indicated. Initial submittal is final submittal unless returned by Engineer, marked with an "Action" which indicates an observed noncompliance.
  3. Submit four (4) copies. Engineer will retain two (2) copies and return two (2) copies to the Contractor.
- D. Samples:
1. General: Provide units identical with final condition of proposed materials or products for the Work. Include "range" Samples (not less than three (3) units) where there are unavoidable variations between units of each set. Provide full set of optional Samples where Engineer's selection is required. Prepare Samples to match Engineer's sample where indicated. Include information with each sample to show generic description, source or product name and manufacturer, limitations, and compliance with standards. Samples are submitted for review and confirmation of color, pattern, texture and "kind" by Engineer. Engineer will not "test" Samples (except as otherwise indicated) for compliance with other requirements, which are, therefore, for exclusive responsibility of the Contractor.
  2. Processing: Submit two (2) sets of Samples for Engineer's review and "Action"; one (1) set will be returned. Large Samples, which may be incorporated into the Work, may be submitted singly.
  3. Reusable Samples: Returned Samples which are intended or permitted to be incorporated in the Work are so indicated in the individual Work sections, and must be in undamaged condition at time of use.
- E. Warranties and Guarantees: In addition to copies desired for Contractor's use, furnish three (3) executed copies, except furnish additional copies where required for maintenance manuals.
- F. Survey Data: Refer to other Sections for specific general requirements on property surveys, field measurements, quantitative records of actual Work, damage surveys, photographs and similar data required by individual Work Sections of these specifications. None of specified copies will be returned.

1.5 ACTION ON SUBMITTALS

- A. Engineer's Action: Engineer will review each submittal, mark with "Action", and where possible return within two (2) weeks of receipt. Where submittal must be held for coordination, they will be returned to the Contractor within two (2) weeks of receipt for the Contractor to resubmit when it is appropriate.
1. Final Unrestricted Release: Work may proceed, provided it complies with Contract documents, when submittal is returned with marking: "Approved as Submitted".

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2. Final-But-Restricted Release: Work may proceed, provided it complies with notations and corrections on submittal and with Contract documents, when submittal is returned with the marking: "Approved as Noted".
3. Returned and Rejected: Do not proceed with Work. Submittal item is not acceptable and may not be used on the Project when noted as "Not Approved".

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

SECTION 013501 – INADVERTENT DISCOVERIES OF CULTURAL RESOURCES AND HUMAN SKELETAL REMAINS

PART 1 - GENERAL

1.1 PROJECT SPECIFIC REQUIREMENTS

- A. No cultural resource sites are known to exist within Work area. However, there always exist the potential for unanticipated discoveries during excavation work.

1.2 EMERGENCY CONTACTS

WSPRC Archaeologists

Jennifer Wilson, Archaeology Program Manager	(360) 787-6511 (cell)
Email: <a href="mailto:jennifer.wilson@parks.wa.gov">jennifer.wilson@parks.wa.gov</a>	(360) 902-8637 (office)
Shari Silverman, Archaeologist SW Region	(435) 260-9894 (cell)
Email: <a href="mailto:shari.silverman@parks.wa.gov">shari.silverman@parks.wa.gov</a>	(360) 902- 8640 (office)
Kayley Bass, Archaeologist SW Region	(360) 701-1277 (cell)
Emails: <a href="mailto:kayley.bass@parks.wa.gov">kayley.bass@parks.wa.gov</a>	

WSPRC Curator of Collections/NAGPRA Specialist

Alicia L. Woods, Statewide Curator of Collections & NAGPRA Specialist (360) 586-0206 (office)

State Physical Anthropologist

Guy Tasa, PhD, Dept. of Archaeology and Historic Preservation (360) 790-1633 (cell)

Assistant State Physical Anthropologist

Julie Berger, Dept. of Archaeology and Historic Preservation(360) 890-2633 (cell)

County Coroner/Examiner

David Burke (360) 875-9361

Area Manager

Evan Roberts (360) 642-3078 (office)

Region Manager

Darrel Hopkins (360) 725-9781 (office)

Local Law Enforcement (if can't get ahold of any park staff)

Pacific County Sherriff – Daniel Garcia (360) 642-9395

1.3 INADVERTENT DISCOVERIES OF CULTURAL RESOURCES AND HUMAN SKELETAL REMAINS

- A. Many of Washington's most important heritage sites reside on lands owned or managed by the Washington State Parks and Recreation Commission (WSPRC). Nearly all Washington State

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Parks contain one or more important historic buildings, structures, or archaeological sites. For this reason, archaeological surveys and historic building inventories are ordinarily commissioned as a part of background analysis and information gathering for park developments and undertakings. Results of these surveys are used during project planning to ensure every effort is made to avoid impacts to cultural resources. Yet, despite these efforts, there **always** remains some potential for unanticipated discoveries while working in Washington State Parks.

- B. All unanticipated discoveries, both cultural resources and human skeletal remains, are subject to all applicable federal and state statutes, regulations, and executive orders. For these reasons, the Inadvertent Discovery Plan (IDP) provides useful guidance and instructions for circumstances when cultural resources or human skeletal remains are found. Please carefully read these instructions. If you have any questions, please contact the appropriate WSPRC Area Manager or the WSPRC archaeologist assigned to the undertaking. It is also strongly recommended that anyone conducting ground-disturbing activities watch the training video produced by Washington State Dept of Ecology: [Inadvertent Discovery of Cultural Resources or Human Remains: Training for Field Staff](#). This IDP for cultural resources and human skeletal remains is based on [RCW 27.53](#), [RCW 68.50.645](#), [RCW 27.44.055](#), and [RCW 68.60.055](#) and [recommended language](#) from the Department of Archaeology and Historic Preservation (DAHP).

1.4 INADVERTENT DISCOVERY PLAN FOR CULTURAL RESOURCES

- A. If cultural resources are found during a project, activity in the immediate area of the find should be discontinued (**stop**), the area secured (**protect**), and the WSPRC archaeologists notified to assess the find (**notify**). *When in doubt, assume the material is a cultural resource and implement the IDP outlined below.*
- B. **Recognizing Cultural Resources-Types of Historic/Prehistoric Artifacts and/or Activity Areas That May Be Found**
1. Artifacts- Both historic and prehistoric artifacts may be found exposed in backhoe trenches or back dirt piles.
    - a) Prehistoric artifacts may range from finished tools such as stone pestles, arrowheads/projectile points, shell beads, or polished bone tools to small pieces or “flakes” or “chips” of exotic stone such as chert, jasper, or obsidian.
    - b) Historic artifacts may include older (more than 50 years) nails, plates/ceramics, bottles, cans, coins, glass insulators, or bricks.
    - c) Old abandoned industrial materials from farming, logging, railways, lighthouses, and military installations.
  2. Activity Area/Cultural Features- While excavating trench lines look for evidence of buried activity areas/cultural features such as old campfire hearths or buried artifacts.
    - a) An area of charcoal or very dark stained soil with artifacts or burned rocks may be a fire hearth.
    - b) A concentration of shell with or without artifacts may be shell midden deposits.
    - c) Modified or stripped trees, often cedar or aspen, or other modified natural features, such as rock drawings or carvings

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3. Historic building foundation/structural remains- During excavation, buried historic structures (e.g., privies, building foundations) that are more than 50 years old may be found.
4. Bone- Complete or broken pieces of bones may be discovered exposed in trench walls or in back dirt piles. Bone of recent age is usually transparent or white in color. Older bone is usually found in various shades of brown. Burned bone is usually black or, if heavily burned, bluish-white.

C. STEPS TO TAKE IF A CULTURAL RESOURCE IS FOUND DURING CONSTRUCTION

1. **Stop** if a cultural resource(s) is observed or suspected, all work within the immediate area of the discovery must stop.
2. **Protect** the area from further disturbance. Do not touch, move, or further disturb the exposed materials/artifacts. Create a protected area with temporary fencing, flagging, stakes, or other clear markings that is large enough (30 feet or larger) to protect the discovery location area. The WSPRC archaeologist can help determine the size of the protected area. Do not permit vehicles, equipment, or unauthorized personnel to traverse the discovery site.
3. **Notify** the WSPRC archaeologist. If the area needs to be secured, notify the Park Ranger or Park staff as well.
4. If requested by the WSPRC archaeologist, take photographs with a scale (e.g., pen, coin, etc.) and collect geospatial information of the discovery site to document the initial finds.

D. WHAT NOT TO DO IF A CULTURAL RESOURCE IS FOUND DURING CONSTRUCTION

1. Do not remove any artifacts from the site of the discovery.
2. Do not dig out objects protruding from any trench walls as this may cause further damage to artifacts and/or destroy important contextual information.
3. Do not share any information about the find, including on social media, except as necessary to implement the IDP.

E. WHAT HAPPENS NEXT?

1. The find will be assessed by a professional archaeologist (may be a WSPRC archaeologist or an archaeology consultant).
  - a) If the find is not a cultural resource, construction work may resume.
  - b) If the find is a cultural resource, the WSPRC archaeologist will contact the DAHP and affected Tribes, as appropriate, to develop a suitable treatment plan for the resource.
2. Construction work may resume in the protected area after the WSPRC archaeologist assigned to the undertaking has determined that the find has been adequately investigated and, if necessary, a treatment plan and monitor are in place to protect any remaining archaeological deposits.

1.5 INADVERTENT DISCOVERY PLAN FOR HUMAN SKELETAL REMAINS

- A. Native American burials and historic grave sites are uncommon features on Washington State Park lands. These remains, as well as any associated artifacts or funerary objects, are protected under state law and, if the park is a federal lease, applicable federal law. If you discover human remains (or bones that you believe may be human remains) during construction, please follow



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these important instructions. It is imperative that reporting and treatment of any human remains found during construction or any ground-disturbing activities are treated with utmost dignity and respect.

**B. Steps to Take If Human Skeletal Remains are Found During Construction**

1. **Stop** if human skeletal remains observed or suspected, all work within the immediate area of the discovery must stop.
2. **Protect** the area from further disturbance. Do not touch, move, or further disturb the remains. Cover the remains with a tarp or other materials (not soil or rocks) for temporary protection in place and shield them from being photographed. Create a protected area with temporary fencing, flagging, stakes, or other clear markings that is large enough (30 feet or larger) to protect the discovery location area. The WSPRC archaeologist can help determine the size of the protected area. Do not permit vehicles, equipment, or unauthorized personnel to traverse the discovery site.
3. **Notify** law enforcement and the appropriate county medical examiner/coroner as soon as possible. If you are unsure if the remains are human, the physical anthropologist at DAHP may be called. Also notify the Park Ranger, the WSPRC archaeologist, and the WSPRC Curator of Collections/NAGRPA Specialist of the discovery of the remains.
4. If requested by law enforcement, the county coroner/examiner, the DAHP physical anthropologist, or the WSPRC archaeologist, take photographs with a scale (e.g., pen, coin, etc.) and geospatial information of the discovery site to document the initial finds.

**C. What Not to Do If Human Skeletal Remains are Found During Construction**

1. Do not pick up or remove anything.
2. Do not take any photographs of the remains unless instructed to do so by law enforcement, the county coroner/examiner, the DAHP physical anthropologist, or the WSPRC archaeologist. If pictures are requested, be prepared to photograph them with a scale (e.g., pen, coin, etc.) and collect geospatial information of the remains.
3. Do not call 911 unless you cannot reach law enforcement or the coroner/examiner by other means.
4. Do not share any information about the find, including on social media, except as necessary to implement the IDP.

**D. What Happens Next?**

1. The county medical examiner/coroner will assume jurisdiction over the human skeletal remains and decide whether those remains are forensic (crime-related) or non-forensic.
  - a) If forensic, the county medical examiner/coroner will retain jurisdiction over the remains.
  - b) If non-forensic, the county medical examiner/coroner will report that finding to the DAHP who will then take jurisdiction over the remains. The DAHP will notify any appropriate cemeteries and all affected Tribes of the remains. The State Physical Anthropologist will decide 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.

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Note: The WSPRC archaeologist assigned to the undertaking will be coordinating and consulting with the DAHP, affected Tribes, and other groups as necessary. Additionally, WSPRC's Curator of Collections/NAGPRA Specialist should be included on all written and/or verbal correspondence until the remains have been officially transferred from WSPRC's possession to an outside authority. Until the remains are transferred off of WSPRC's property, it is the responsibility of the Curator of Collections/NAGPRA Specialist to document and track the information regarding all human remains and associated funerary objects (including all material from excavation areas/units from which the human remains were removed).

2. Construction work may resume in the protected area after the WSPRC archaeologist assigned to the undertaking has determined that the find has been adequately investigated and, if necessary, a treatment plan and monitor are in place.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

**CAPE DISAPPOINTMENT STATE PARK  
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SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
  - 1. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
  - 2. Requirements for Contractor to provide quality-assurance and -control services required by Project Representative, Owner, or Authorities Having Jurisdiction are not limited by provisions of this Section.
- C. Related Requirements:
  - 1. Divisions 02 through 49 Sections for specific test and inspection requirements.

1.2 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Project Representative.
- C. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.
- D. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to Authorities Having Jurisdiction, to establish product performance and compliance with specified requirements.
- E. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.

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- F. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- G. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- H. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
  - 1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).
- I. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of (five) 5 previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.3 CONFLICTING REQUIREMENTS

- A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Project Representative for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Project Representative for a decision before proceeding.

1.4 QUANTITY SHEETS/WEIGHT TICKETS

- A. For bulk items, supply quantity sheets (load receipts) to account for each load delivered to the jobsite. Deliver quantity sheets to Inspector on job at delivery time. If Inspector is not on job, deliver quantity sheets on a daily basis to place designated by Project Representative.
- B. No payment shall be made for materials delivered for which quantity tickets have not been turned into Inspector or delivered to designated place at end of working day. Backdated tickets are not acceptable as a basis for payment, except at Project Representative's discretion.
- C. If bid item for material to be delivered to jobsite is stated in TONS, only weight slips from approved scale are acceptable for payment purposes, unless approved in advance by Project Representative.

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- D. No payment for materials will be made until proper accounting has been made. Final quantity records are approved by Project Representative, with payment at Project Representative's discretion.

1.5 INFORMATIONAL SUBMITTALS

- A. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

1.6 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
  - 1. Date of issue.
  - 2. Project title and number.
  - 3. Name, address, and telephone number of testing agency.
  - 4. Dates and locations of samples and tests or inspections.
  - 5. Names of individuals making tests and inspections.
  - 6. Description of the Work and test and inspection method.
  - 7. Identification of product and Specification Section.
  - 8. Complete test or inspection data.
  - 9. Test and inspection results and an interpretation of test results.
  - 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
  - 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
  - 12. Name and signature of laboratory inspector.
  - 13. Recommendations on retesting and reinspecting.
- B. Manufacturer's Field Reports: Prepare written information documenting tests and inspections specified in other Sections. Include the following:
  - 1. Name, address, and telephone number of representative making report.
  - 2. Statement on condition of substrates and their acceptability for installation of product.
  - 3. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
  - 4. Results of operational and other tests and a statement of whether observed performance complies with requirements.
  - 5. Other required items indicated in individual Specification Sections.
- C. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

1.7 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.
- F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
  - 1. Requirements of Authorities Having Jurisdiction shall supersede requirements for specialists.
- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to **ASTM E 329** and with additional qualifications specified in individual Sections; and, where required by Authorities Having Jurisdiction, that is acceptable to authorities.
  - 1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
  - 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- H. Manufacturer's Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
  - 1. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Project Representative with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

1.8 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
  2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, **and the Contract Sum will be adjusted by Change Order.**
- B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.
1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
    - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
  2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
  3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
  4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
  5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. Manufacturer's Field Services: Where indicated, engage a manufacturer's representative to observe and inspect the Work. Manufacturer's representative's services include examination of substrates and conditions, verification of materials, inspection of completed portions of the Work, and submittal of written reports.
- D. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- E. Testing Agency Responsibilities: Cooperate with Project Representative and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Project Representative and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
  2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
  3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
  4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
  6. Do not perform any duties of Contractor.
- F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
  2. Incidental labor and facilities necessary to facilitate tests and inspections.
  3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
  4. Facilities for storage and field curing of test samples.
  5. Delivery of samples to testing agencies.
  6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
  7. Security and protection for samples and for testing and inspecting equipment at Project site.
- G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.

1.9 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Contractor will engage a qualified special inspector to conduct special tests and inspections required by authorities as follows:
1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviews the completeness and adequacy of those procedures to perform the Work.
  2. Notifying Project Representative and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
  3. Submitting a certified written report of each test, inspection, and similar quality-control service to Project Representative with copy to Contractor and to Authorities Having Jurisdiction.
  4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
  5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
  6. Retesting and reinspecting corrected work.



**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

- A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:
  - 1. Date test or inspection was conducted.
  - 2. Description of the Work tested or inspected.
  - 3. Date test or inspection results were transmitted to Project Representative.
  - 4. Identification of testing agency or special inspector conducting test or inspection.
  
- B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Project Representative's and Commissioning Authority's reference during normal working hours.

3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
  - 1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.
  
- B. Protect construction exposed by or for quality-control service activities.
  
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

SECTION 014100 - REGULATORY REQUIREMENTS

PART 1 - GENERAL

1.1 PERMITS, CODES AND REGULATIONS

A. The following permits have been applied for (or are on file) and incorporated into the contract:

1. S.E.P.A. – Determination of Non-Significance
2. Shoreline Conditional Use / Variance permit
3. Section 401 WQ Certification
4. Hydraulic Project Approval
5. Construction Stormwater General Permit
6. Building/Grading
  
7. HPA states that Work may start immediately and are not restricted to fish windows provided no fish are discovered during construction. If fish are found to be present at the site, work must stop and WDFW must be notified for further instructions.

B. Conform with the requirements of listed permits and additional or other applicable permits, codes, and regulations as may govern Work.

C. Obtain and pay fees for licenses, permits, inspections, and approvals required by laws, ordinances, and rules of appropriate governing or approving agencies necessary for proper completion of Work (other than those listed under item 1.1A. above and Special Inspections called for by the International Building Code).

D. Conform with current applicable codes, regulations and standards, which is the minimum standard of quality for material and workmanship. Provide labor, materials, and equipment necessary for compliance with code requirements or interpretations, although not specifically detailed in the Drawings or specifications. Be familiar with applicable codes and standards prior to bidding.

E. Process through Project Representative, requests to extend, modify, revise, or renew any of the permits (listed in 1.1A above). Furnish requests in writing and include a narrative description and adequate Drawings to clearly describe and depict proposed action. Do not contact regulatory agency with requests for permit extensions, modifications, revisions, or renewals without the prior written consent of Project Representative.

1.2 VARIATIONS WITH CODES, REGULATIONS AND STANDARDS

A. Nothing in the drawings and specifications permits Work not conforming to codes, permits or regulations. Promptly submit written notice to Project Representative of observed variations or discrepancies between the Contract documents and governing codes and regulations.

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

- B. Appropriate modifications to the Contract documents will be made by Change Order to incorporate changes to Work resulting from code and/or regulatory requirements. Contractor assumes responsibility for Work contrary to such requirements if Work proceeds without notice.
- C. Contractor is not relieved from complying with requirements of Contract documents which may exceed, but not conflict with requirements of governing codes.

1.3 COORDINATION WITH REGULATORY AGENCIES

- A. Coordinate Work with appropriate governing or regulating authorities and agencies.
- B. Provide advance notification to proper officials of Project schedule and schedule revisions throughout Project duration, in order to allow proper scheduling of inspection visits at proper stages of Work completion.
- C. Regulation coordination is in addition to inspections conducted by Project Representative. Notify Project Representative of scheduled inspections involving outside regulating officials, to allow Project Representative to be present for inspections.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

SECTION 014200 – REFERENCES

PART 1 - GENERAL

1.1 DEFINITIONS

- A. General: Basic Contract definitions are included in the General Conditions of the Contract.
- B. "Approved": When used to convey Project Representative's action on Contractor's submittals, applications, and requests, "approved" is limited to Project Representative's duties and responsibilities as stated in the General Conditions of the Contract.
- C. "Directed": A command or instruction by Project Representative. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- H. "Provide": Furnish and install, complete and ready for the intended use.
- I. "Project Engineer", "Project Architect", "Engineer", and "Architect" are interchangeable terms.
- J. Project Representative and Owners Representative are interchangeable terms.
- K. "As-built Drawings": Drawings done by the Contractor in the field showing changes to the Work.
- L. "Record Drawings": Drawings prepared based on the information on the As-built Drawings.

1.2 GENERAL

- A. Applicable standards of the construction industry have the same force and effect (and are made a part of the Contract Documents by reference) as if directly copied or bound herein.

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

1.3 PUBLICATION DATES

- A. Where compliance with an industry standard is required, comply with the standard in effect on Bid Date.

1.4 ABBREVIATIONS AND NAMES

- A. The following acronyms or abbreviations, referenced in the Contract documents, are defined to mean the associated name. Applicable standards include, but are not limited to the following:

1.	AASHTO	American Association of State Highway & Transportation Officials
2.	ACI	American Concrete Institute
3.	AGA	American Gas Association
4.	AI	Asphalt Institute
5.	AIA	American Institute of Architects (The)
6.	AISC	American Institute of Steel Construction, Inc.
7.	AISI	American Iron and Steel Institute
8.	AITC	American Institute of Timber Construction
9.	ANSI	American National Standards Institute
10.	APA	Engineered Wood Association (The)
11.	APWA	American Public Works Association
12.	ASME	American Society of Mechanical Engineers
13.	ASTM	American Society for Testing and Materials International
14.	AWPA	American Wood Protection Association
15.	AWS	American Welding Society
16.	AWWA	American Water Works Association
17.	CRSI	Concrete Reinforcing Steel Institute
18.	EPA	Environmental Protection Agency
19.	HPVA	Hardwood Plywood and Veneer Association
20.	IBC	International Building Code
21.	IEEE	Institute of Electrical & Electronics Engineers, Inc. (The)
22.	IES	Illuminating Engineering Society of North America
23.	LPI	Lighting Protection Institute
24.	MCAA	Mechanical Contractors Association of America, Inc.
25.	NIST	National Institute of Standards and Technology
26.	NCMA	National Concrete Masonry Association
27.	NEC	National Electrical Code
28.	NECA	National Electrical Contractors Association, Inc.
29.	NFPA	National Fire Protection Association
30.	NHLA	National Hardwood Lumber Association
31.	NSF	National Sanitation Foundation International
32.	OSHA	Occupational Safety & Health Administration
33.	PCA	Portland Cement Association, (The)
34.	SEPA	State Environmental Policy Act
35.	UL	Underwriters Laboratories, Inc.
36.	UPC	Uniform Plumbing Code
37.	WCLIB	West Coast Lumber Inspection Bureau (Grading Rules)
38.	WRI	Wire Reinforcement Institute
39.	WSDOE or ECY	Washington State Department of Ecology
40.	WSDOH or DOH	Washington State Department of Health

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- |     |       |   |
|-----|-------|---|
| 41. | WSDOT | Washington State Department of Transportation     |
| 42. | WSPRC | Washington State Parks and Recreation Commission  |
| 43. | WWPA  | Western Wood Products Association (Grading Rules) |

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

SECTION 015000 – TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 PROTECTION OF PROPERTY AND EXISTING FACILITIES

- A. Provide protections necessary to prevent damage to park property and facilities.
- B. Only rubber-tired equipment are permitted to operate on paved park roads.
- C. Protect existing trees and other vegetation indicated to remain in place against cutting, breaking or skinning of roots, skinning and bruising of bark, or smothering of trees by stockpiling materials within dripline. Provide necessary temporary guards to protect trees and vegetation to remain in place.
- D. Make every effort to minimize damage and cutting major tree roots during excavation operations. Provide protection for larger tree roots exposed or cut during excavation operations.

1.2 ENVIRONMENTAL PROTECTIONS

- A. Scope:
  - 1. Provide labor, materials, equipment and perform Work required for protection of environment during and as a result of construction operations under contract.
- B. Applicable Regulations:
  - 1. Comply with applicable federal, state and local laws and regulations concerning environmental pollution control and abatement, and specific requirements elsewhere in specifications and drawings to prevent and provide for control of environmental pollution.
- C. Protection of Land Resources:
  - 1. Give special attention to the effect of Contractor's operations upon surroundings. Take special care to maintain natural surroundings undamaged and conduct Work in compliance with following requirements:
    - a. When Work is completed, remove storage and other Contractor buildings and facilities, and sites restored to a neat and presentable condition appropriate to surrounding landscape, unless otherwise specified. Remove debris resulting from Contractor's operation.
    - b. Store petroleum products, industrial chemicals and similar toxic or volatile materials in durable containers approved by the Authority Having Jurisdiction and located in areas where accidental spillage will not enter water. Store substantial quantities of materials in an area surrounded by containment dikes of sufficient capacity to contain an aggregate capacity of tanks.

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

D. Protection and Restoration of Property:

1. Preserve public and private property, monuments, power and telephone lines, other utilities, prevention of damage to natural environment, etc., insofar as they may be endangered by Work.
2. When or where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect or misconduct in execution of Work, or in consequence of non-execution of Contractor, restore, or have restored at Contractor's expense, such property to a condition similar and equal to that existing before such damage or injury was done, by repairing, rebuilding, or otherwise restoring same, or make good damage or injury in some other manner acceptable to Project Representative.

E. Protection of Water Resources:

1. Perform Work not to create conditions injurious to fish or to their habitat, or which would make water unsuitable for private, municipal, or industrial use.
2. Take special measures to prevent chemicals, fuels, oils, grease, bituminous materials, waste washings, herbicides, insecticides, lime, wet concrete, cement, silt or organic or other deleterious material from entering waterways.
3. Dispose of offsite, in a lawful manner conforming to applicable local, state and federal laws wastes, effluents, trash, garbage, oil, grease, chemicals, cement, bitumen, etc., petroleum, and chemical products or wastes containing such products. Furnish Owner with documentation showing compliance with this requirement.
4. Conform to applicable local, state and federal laws for disposal of effluents. Dispose of waters used to wash down equipment in a manner to prevent their entry into a waterway. If waste material is dumped in unauthorized areas, remove material and restore area to condition of adjacent, undisturbed area. If necessary, excavate contaminated ground and disposed of as directed by Project Representative and replace with suitable compacted fill material with surface restored to original condition.

F. Dust Control:

1. Dust control is required on roads used by Contractor. Maintain excavations, embankments, stockpiles, roads, plant sites, waste areas, borrow areas and other Work areas within or without the Project boundaries free from dust which would cause a hazard or nuisance to others. Provide approved, temporary methods of stabilization consisting of sprinkling, chemical treatment, light bituminous treatment or equal methods to control dust. If sprinkling is used, sprinkling must be repeated at intervals to keep disturbed areas at least damp.

G. Temporary Water Pollution/Erosion Controls:

1. Provide for prevention, control and abatement of soil erosion and water pollution within the limits of Project, to prevent and/or minimize damage to adjacent bodies of water and Work itself.
2. Coordinate temporary soil erosion/water pollution control measures with permanent drainage and erosion control Work to ensure effective and continuous controls are maintained throughout Project life.



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3. Develop a written spill prevention and response plan for construction activities adjacent to/and over any surface waters and/or wetlands. “Adjacent” means within 150’ as measured on a horizontal plane. Plan addresses:
  - a. Narrative description of the proposed construction methods, materials, and equipment to be used for Work
  - b. Assessment and listing of hazardous materials and/or potential contaminants that could be released during execution of Work
  - c. SDS sheets with cleanup instructions for potential contaminants
  - d. Spill response/cleanup materials and instructions for use
  - e. Procedures and precautions to prevent spills
  - f. Spill response training for on-site personnel, including the location of the containment and cleanup materials at site
  - g. Emergency notification in case of a spill or release. Park Manager and Project Representative must be included on the list of notified.
4. Comply with applicable codes and ordinances for spill prevention and response plan and submit a copy to Project Representative before commencing Work adjacent to or over any waters and/or wetlands.

H. Emergency Spill Response Notification

1. Under state law, Ecology must be notified when any amount of regulated waste or hazardous material that poses an imminent threat to life, health, or the environment is released to the air, land, or water, or whenever oil is spilled on land or to waters of the state. The spiller is always responsible for reporting a spill. Failure to report a spill in a timely manner may result in enforcement actions. If you are not responsible for a spill, making the initial notification does not make you liable. However, please consult with Ecology’s response team before attempting any type of response or cleanup. Also notify Park Manager and Project Representative.
2. If oil or hazardous materials are spilled to state waters, the spiller must notify both federal and state spill response agencies. The federal agency is the National Response Center at 1-800-424-8802. For state notification, call the Washington Emergency Management Division (EMD) at 1-800-258-5990 or 1-800-OILS-911 AND the appropriate Ecology regional office for your county (see numbers below). An Ecology spill responder will normally call reporting party back to gather more information. The agency will then determine its response actions. Also notify Park Manager and Project Representative.
3. Ecology Regional Spill Reporting Numbers:
  - a. Southwest Regional Office: (360) 407-6300 (Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Lewis, Mason, Pacific, Pierce, Skamania, Thurston, and Wahkiakum counties)  
TDD: Washington Relay Service 711 or (800) 833-6388.

1.3 PARK TRAFFIC/PEDESTRIAN CONTROLS

- A. Properly warn the public of construction equipment and activities, open trenches, and/or other unsafe conditions by providing all necessary warning equipment. Equipment includes warning signs, barricades, fencing, flashing lights and traffic control personnel (flaggers).

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

- B. Conduct operations with the least possible obstruction and inconvenience to the public in accordance with appropriate Section(s) of the WSDOT "Standard Specifications".

1.4 PROTECTION OF WORK

- A. Protect Work, materials, and equipment against damage, weather conditions, or other hazards. Equipment, Work or materials found damaged or in other than new condition will be rejected by Project Representative.

1.5 REMOVAL AND REPLACEMENT OF STATE-OWNED ITEMS

- A. Should any state-owned items, such as signs, bumper blocks, or related items, interfere with the proper construction process, remove and reinstall such items to the satisfaction of Project Representative.

1.6 USE OF PARK SPACE

- A. Only in areas of park that Contract covers and only during active inclusive dates of Contract.
- B. Contractor vehicle and equipment parking only as designated by Project Representative.
- C. Contractor will be issued temporary parking passes for construction crew, vehicles and equipment, valid for the duration of the contract only.

1.7 ROADWAY CLOSURE

- A. Closure of the park is not in the best interest of the general public, only close roads being trenched while conduits, etc., are being installed, and immediately reopened for traffic. Supply necessary barricades, etc., to effectively prevent automotive traffic from entering upon any traveled way while trenches are open, unless other approved appropriate safety measures are taken.

1.8 UTILITIES

- A. Existing subsurface utilities on Project are represented on Contract Drawings to the best of the Commission's knowledge. It is Contractor's responsibility to verify existence of utilities and determine exact location and depth. Maintain use of utilities during construction through temporary connections or other measures suitable to Commission. No extra compensation will be made for removal, temporary connections, relocations, or replacement of utilities.

1.9 SERVICE OUTAGES

- A. Coordinate and schedule outages for, power, water, and sewer service connections/repairs with Park Manager, so as not to inconvenience park staff or public.

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REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

1.10 SANITARY FACILITIES

- A. Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of Authorities Having Jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

SECTION 015639 - TEMPORARY TREE AND PLANT PROTECTION

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the administrative and procedural requirements for the protection of trees, shrubs, and plant material not designated for removal. Trees, shrubs, and plant material not designated for removal shall be left in place and protected from damage or injury during construction using full and adequate methods of protection in order to preserve these natural resources, ecological function, and aesthetic character of the park.

1.2 REFERENCES

A. Definitions

1. Arborist Qualifications: An Arborist approved of by the Project Representative or certified by the International Society of Arboriculture (ISA) or Association of Consulting Arborists (ASCA) and licensed in the jurisdiction where project is located.
2. Critical Root Zone (CRZ): The portion of the root system nearest the stem that is critical for the stability and vitality of the tree. The minimum CRZ is a circular area having a radius of one foot for each one inch of trunk diameter defined by measuring the trunk diameter at 4.5 feet above ground level. For example, a tree that has a diameter of 20 inches would have a CRZ with a radius of 20 feet from the base of the tree. This is a MINIMUM CRZ radius for healthy trees; the CRZ often extends beyond the dripline of the tree. A critical root zone defined by 2.5 feet radius for each 1-inch diameter is desirable for old growth, historic, and character trees as designated by the Project Representative.
3. Vegetation Protection Zone (VPZ): A defined area of any size within the project area where existing vegetation (trees, shrubs, or other plant material) is to be protected from construction impacts. The zone may be accomplished by physical barriers or other means (e.g., soil protection layers or treatments).
4. Soil Protection Zone (SPZ): A defined area of any size within the project area where sensitive native soils are to be protected from construction impacts. The zone may be accomplished by physical barriers or other means (e.g., soil protection layers, durable matting, or other treatments as specified by the Project Representative).
5. High Risk Tree: Any tree with a structural defect and/or disease that makes the tree highly prone to failure, and which has a target and may result in personal injury or property damage. A high risk tree is the same as an "Emergency Tree" as defined in WAC 352-28-005 (<https://apps.leg.wa.gov/wac/default.aspx?cite=352-28-005>)

B. Reference Standards

1. ANSI A300. Specifications for Tree, Shrub, and Other Woody Plant Management including Section 5: Management of Trees and Shrubs During Site Planning, Site Development, and Construction.
2. ANSI Z133-2012. Safety Requirements for Arboricultural Operations.

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

3. Council of Tree and Landscape Appraisers. (2020). *Guide for Plant Appraisal*, 10th ed. International Society of Arboriculture, Champaign, Illinois.

1.3 SUBMITTALS

- A. Tree Removal and Pruning Schedule: Written schedule from project Arborist detailing scope and extent of tree removals and pruning of trees to remain that interfere with or are affected by construction.
- B. Certification: From project Arborist, certifying that trees indicated to remain have been protected during construction according to recognized standards and that trees were promptly and properly treated and repaired when damaged.
- C. Maintenance Recommendations: From project Arborist, for care and protection of trees affected by construction during and after completing the Work.

1.4 QUALITY ASSURANCE

- A. Tree Pruning Standard: Comply with ANSI A300 (Part 1), "Tree, Shrub, and Other Woody Plant Maintenance--Standard Practices (Pruning)."
- B. Construction Management Standard: Comply with ANSI A300 (Part 5): Management of Trees and Shrubs During Site Planning, Site Development, and Construction
- C. Tree Planting: Comply with ANSI A300 (Part 6) Planting and Transplanting
- D. Tree Root Protection and Management: Comply with ANSI A300 (Part 8) - 2013 Root Management Standard

PART 2 - PRODUCTS

2.1 TREE PROTECTION MATERIALS

- A. Temporary Fencing
  1. Chain link fencing panels 6 feet tall by any length up to 14 feet. Panels must be braced and must be secured to stands and weighted per manufacturers specifications.
  2. Continuous molded safety mesh 36 inches wide with clear openings no more than 1-1/2 inches x 2 inches. Orange, 40 grams per square foot, high density polyethylene with U-V inhibitor suitable for above-grade use installed around the circumference of the CRZ.
  3. Posts five-foot steel heavy-duty "T" posts, 1-3/8 inches x 1-3/8 inches x 7/64 inches with steel anchor placed at 8' intervals at or beyond the CRZ.
  4. Nylon zip straps having a minimum breaking strength of 150 lbs.

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

2.2 SOIL AND ROOT PROTECTION

- A. Mulch: Ground, shredded bark, or wood and bark chips, or “hog fuel” free from deleterious materials. Or new straw mulch, free from weeds, weed seeds, and foreign materials.
- B. Landscape fabric: American Excelsior Stabilenka 140, Celanese Mirafi 140, Propex 45-45, or approved equivalent geotextile.
- C. Filter Fabric: Manufacturer’s standard, nonwoven, pervious, geotextile fabric of polypropylene, nylon, or polyester fibers.
- D. Ground staples: 9 inches x 9 inches wire staples sufficient for holding landscape fabric or filter fabric in place for required time period.
- E. Ground protection mats: Construction mats or timber mats, as a temporary road surface of sufficient weight rating for the equipment being operated in the work area.

2.3 TREE TRUNK PROTECTION

- A. Where work has been approved to take place within the CRZ, tree trunk protection shall be installed vertically around tree trunk on all sides exposed to construction activity.
- B. Common wood 2 inches x 4 inches lumber, 8 feet long, without nails, other hardware, concrete residue, or other material that may be detrimental to plant health.
- C. Strapping sufficient to hold 2 x 4’s

PART 3 - EXECUTION

3.1 PLANNING AND NOTIFICATION

- A. Where existing trees and other vegetation are in the area of work, or where existing trees outside the area of work have a CRZ extending into the area of work, employ methods to minimize adverse impact to the existing trees (including limbs, stems, and roots), understory vegetation and their root systems, and soils. Where VPZ are designated by the Project Representative and/or in project plans, observe protection measures set forth herein. Notify the Project Representative of any construction work within the CRZ of trees at least two (2) working days before the scheduled activity.

3.2 PREPARATION

- A. Prior to Construction: Erect tree and plant protection prior to beginning any site work. Protect trees to remain against cutting, breaking, skinning, or compaction of roots; skinning or bruising of bark; breaking of branches and foliage. Review locations, fencing, and other markings of any VPZ and CRZ for trees within the construction area with the Project Representative.
- B. Tree Removal: Trees that are scheduled for removal as part of the project should be removed before construction to prevent hazards during construction.

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

- C. **Material Storage:** Do not store construction materials, debris, or excavated material inside critical root zones or vegetation protection zones.
- D. **Vehicle and Foot Traffic:** Designate access routes within construction area and limitations on equipment and vehicles. Designate parking on existing pavement or away from critical root zones of trees. Tree protection fencing will serve as an exclusion zone within the CRZ except for where plans stipulate work will take place within the CRZ.

**3.3 CRITICAL ROOT ZONE AND VEGETATION PROTECTION ZONE DESIGNATION**

- A. **Temporary Fencing:** Install temporary fencing around CRZ, VPZ, or SPZ of either chain link or plastic mesh as indicated by Project Representative. Maintain temporary fence during construction and remove only when construction is complete.
  - 1. For plastic mesh, line posts space at eight feet maximum. Set posts vertically to minimum 18 inches depth. Posts may be driven provided method of driving does not damage posts. Ensure that posts do not damage tree roots.
  - 2. Where plastic fence is used, secure plastic fencing to posts with nylon zip-straps, minimum three per post. Draw fence material tight and vertical. Where chain link panels are used join panels with manufacturers clamps that require tool removal.
  - 3. With Project Representative's approval, sections of tree protection fencing may be removed temporarily to allow approved short-term construction activities. Reinstall fencing immediately when construction operations permit.
- B. **Tree Trunk Protection:** Where required tree trunks shall be protected by placing 2 x 4 lumber around the trunk, spaced so that strapping will not come in contact with the tree bark and lumber does not damage branches. Use strapping to hold lumber in place. Secure straps without nailing into or otherwise damaging tree bark.

**3.4 SOIL COMPACTION, LOSS, AND DAMAGE WITHIN THE CRITICAL ROOT ZONE**

- A. Protection against soil compaction within the CRZ may include but will not be limited to the following methods:
  - 1. Application of a minimum 6-inch thick layer of mulch (or wood chips salvaged from clearing and grubbing operations) within the CRZ. Replenish mulch as necessary to maintain a 6-inch depth. Do not place mulch within 6 inches of tree trunks. Where mulch is to be removed following project completion it should be underlaid with a porous geotextile.
  - 2. Ground protection mats, such as: timber or steel planking, construction mats, 1/2 inches thick CDX grade (or better) plywood, or brush for protection of surface roots and vegetation from equipment.
  - 3. Where equipment operating within the CRZ exceeds 12,000 lbs use a 6-inch layer of mulch overlaid with ground protection mats described above.
- B. Protection of soils against erosion and loss within the critical root zone of trees may require application of mulch, wood chips, ground protection mats, or landscape fabric at the request of the Project Representative.

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

- C. Noxious Materials: Protect soils from damage caused by runoff or spillage of noxious materials while operating, mixing, placing, or storing construction materials and equipment; this includes washout of concrete mixing vessels, dewatering operations, equipment cleanup, maintenance, and service; ponding, erosion, or excessive wetting may incur a Stop-Work order at the discretion of the Project Representative.
- 3.5 TRENCHING, DIGGING, TUNNELING, AND GRADING WITHIN THE CRITICAL ROOT ZONE:
- A. Disturbance to soils and impacts to roots within the CRZ may require any of, and will not be limited to, the following methods, practices, and restrictions:
1. Maintain existing grade within CRZ of trees unless otherwise directed.
    - a. Lowering grades (cutting): Where existing grade is above new finish grade shown around trees, carefully excavate within CRZ to new grade. Document roots exposed in this process with photographs to be shared with project Representative.
    - b. Raising grades (filling): Where existing grade is raised within the CRZ to greater than 4 inches above existing grade these roots shall be considered damaged by smothering. Methods to increase air exchange of tree roots within these areas may be required. Examples of such methods may include and will not be limited to:
      - 1) Application of a 6 inch or thicker layer of large clean aggregate (2 inches by 4 inches or larger) covered with landscape fabric below fill material to maintain large pore space.
      - 2) Selection of a fill material with high porosity and minimal compressibility, which may include mulch. Compaction will not be required except as required by structural load requirements, to limit soil compaction.
  2. Alternative excavation methods that minimize root damage may be required. These may include but are not limited to: hand digging, horizontal boring, use of an air excavation tool, or other methods as otherwise deemed necessary by the Project Representative.
- B. Only limited intrusions into tree CRZ zones will be allowed as shown on the plans and with the approval of the Project Representative. Where trenching for utilities or irrigation is required within CRZ's of trees the following may be required:
1. No cutting of roots greater than two inches diameter. Tunnel under or around roots by drilling, auger boring, air excavation, or digging by hand.
  2. Where necessary for installation, cut roots with sharp pruning instruments flush with the edge of the trench or tunnel; do not break or chop.
  3. Avoid hitting roots with heavy equipment. Roots that are ripped by equipment should be excavated by hand, photographed, kept moist with mulch or burlap layers, and inspected by the Project Representative.
  4. Pile excavated soil outside of the CRZ of residual trees and return area to original grade upon completion of work.
  5. Cover exposed roots with soil as soon as possible or at the end of each day; the soil compacted to the original firmness only; and, watered when conditions are dry.
  6. Tree root pruning or other tree root treatments may be required as directed by the Project Representative.



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REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

7. Root painting is not permitted.

3.6 STEM AND BRANCH PRUNING:

- A. Any unnecessary cutting, breaking, skinning, or bruising of bark; breaking of branches and foliage; damage or clearing of vegetation in the work area will not be permitted. Where permitted, stem and branch pruning must follow ANSI A300 Standards (including Part 1 and Part 5).
- B. Temporarily tie-up of low limbs is permitted where designated by the project representative.
- C. All final pruning cuts shall be made in branch tissue close to the trunk or parent limb, without cutting into the branch bark ridge or branch collar and without leaving a stub. Flush cuts to the tree trunk that remove the branch collar are unacceptable. Flush cuts result in a larger wound and expose trunk tissues to the possibility of decay.
- D. All significant tree pruning must have prior approval of Project Representative. An approved Arborist may be required, at the Contractors expense, for extensive or technically challenging pruning activities. Such requirements will be made explicit to the Contractor prior to the start of work.
- E. Only proper branch pruning techniques will be accepted. Improperly pruned trees could be irreparably damaged and are subject to section 3.7 DAMAGE TO TREES AND TREE REPLACEMENT.

3.7 DAMAGE TO TREES AND TREE REPLACEMENT:

- A. Should any tree or vegetation designated to remain be damaged in the course of construction activities immediately notify the Project Representative for inspection and direction for remedy.
- B. Remedies for damage will, at the Owner's discretion, require removal and disposal of the damaged tree(s) and be one of the following, at the discretion of the Project Representative.
  - 1. Compensate the Owner in cash or as a credit to the contract for up to the full value of the damaged tree, as appraised by an ISA certified Arborist according to the latest edition of the "Guide for Plant Appraisal".
  - 2. Replace each damaged tree under 6 inches diameter at breast height measurement with one replacement tree of 1-3/4 inches caliper measure. Replace each damaged tree over 6 inches diameter at breast height measurement with one replacement tree of 1-3/4 inches caliper measure for each 6 inches of diameter at breast height measure of the damaged tree. The new trees may or may not be the same species, at the discretion of the Project Representative. Select nursery stock, plant, and maintain as specified in Section 1.4 QUALITY ASSURANCE.
  - 3. For identified old-growth trees specified to remain, the Project Representative may be provided alternative remediation requirements from Parks Stewardship staff above and beyond requirements of 3.7.B.1 and 3.7.B.2.

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- C. Notify Project Representative in any case where construction called for in the contract documents cannot be completed without damage to trees identified to remain. Approval of the Project Representative is required prior to beginning construction described in the contract documents that might damage a tree designated to remain. Any tree designated to remain which is damaged without Project Representative's written approval, even if damage is necessary to complete the work, will subject the Contractor to remedies described in section 3.7 B above.

END OF SECTION

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

SECTION 016000 – PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 IMPLIED/INCIDENTAL MATERIALS

- A. Minor materials required for proper Project completion although not specifically mentioned or shown in Contract documents, are part of materials to be provided by Contractor as a part of Contract and are considered incidental to the total cost of Project. No additional compensation is due to the Contractor for providing such items.

1.2 QUALITY OF MATERIALS

- A. Materials are to be new, free from defects, and of quality specified in the drawings and specifications.
- B. Select and provide materials to ensure satisfactory operation and rated life in prevailing environmental conditions were installed.
- C. Same make and quality throughout the entire job, for each type. Furnish materials of latest standard design products of manufacturers regularly engaged in their production.

1.3 SPECIFIED MATERIALS

- A. Drawings and specifications generally reference only one make and model for each item of material or equipment required. This is not intended to be restrictive but indicates the standard of quality, design, and features required.
- B. Specified product is the basis of design regarding physical size, strength, and performance. Products named indicate minimum acceptable product and are "or equal" unless noted otherwise.

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1.4 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.
1. Conditions: Project Representative will consider Contractor's request for substitution when the following conditions are satisfied:
    - a. Requested substitution is consistent with Contract Documents and will produce indicated results.
    - b. Requested substitution provides sustainable design characteristics that specified product provided.
    - c. Requested substitution will not adversely affect Contractor's construction schedule.
    - d. Requested substitution has received necessary approvals of Authorities Having Jurisdiction.
    - e. Requested substitution is compatible with other portions of Work.
    - f. Requested substitution has been coordinated with other portions of Work.
    - g. Requested substitution provides specified warranty.
    - h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
- B. Substitutions for Convenience: Project Representative will consider requests for substitution if received within 30 days after the Notice of Award.
1. Conditions: Project Representative will consider Contractor's request for substitution when the following conditions are satisfied:
    - a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Engineer for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
    - b. Requested substitution does not require extensive revisions to Contract Documents.
    - c. Requested substitution is consistent with Contract Documents and will produce indicated results.
    - d. Requested substitution will not adversely affect Contractor's construction schedule.
    - e. Requested substitution has received necessary approvals of Authorities Having Jurisdiction.
    - f. Requested substitution is compatible with other portions of Work.
    - g. Requested substitution has been coordinated with other portions of Work.
    - h. Requested substitution provides specified warranty.
    - i. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

1.5 SUBSTITUTION OF MATERIALS ("OR EQUAL")

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REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

- A. Proposed equipment to be considered "or equal" will necessitate written approval by the Engineer prior to substitution.
- B. On requests for substitution of materials clearly define and describe proposed substitute.
- C. Accompany requests by complete specifications, samples, records of performance, certified test reports, and such other information as the Engineer may request to evaluate the substitute product.
- D. Contractor is responsible for a substitute item suiting the installation requirements and for additional costs incurred as a result of substitution.
- E. Final decisions regarding quality and suitability of proposed substitutions rests solely with Engineer and will be based on information submitted.

1.6 TECHNICAL DATA

- A. Technical data and information contained herein relies entirely on tests and ratings provided by manufacturers who are solely responsible for their accuracy. Project Representative, by use of this information in no way implies that Project Representative has tested or otherwise verified the results of published manufacturer's information.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Transport products by methods to avoid product damage. Only deliver products to the site that are undamaged and free from defects.
- B. Provide proper equipment and personnel to handle and transport materials/products to the Project sites safely and undamaged.
- C. Promptly inspect material to assure that products comply with Contract requirements, quantities are correct, and products are undamaged.
- D. Store and/or stockpile materials and products only in areas of park designated and approved by Project Representative prior to delivery.
- E. Arrange storage to provide easy access for inspections. Original product labels, certifications, stamps, etc. to be intact and readily visible for inspection purposes.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

SECTION 017329 – CUTTING AND PATCHING

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes procedural requirements for cutting and patching.

1.2 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other Work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.3 SUBMITTALS

- A. Cutting and Patching Proposal: For work not clearly indicated as cutting and patching on the drawings or specifications, submit a proposal describing procedures at least seven (7) days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information, as applicable:
1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
  2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
  3. Products: List products to be used and firms or entities that will perform the Work.
  4. Utility Services and Mechanical/Electrical Systems: List services/systems that cutting and patching procedures will disturb or affect. List services/systems that will be relocated and those that will be temporarily out of service. Indicate how long services/systems will be disrupted.
  5. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
  6. Roofing Elements: Where cutting and patching involve cutting and patching roofing. Submit product data and samples of roofing material to be used.
  7. Noise and Dust Protection Plan.
- B. Architect or Engineer's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

1.4 QUALITY ASSURANCE

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity, load-deflection ratio, or seismic bracing capacity.
- B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operating elements include the following:
  - 1. Primary operational systems and equipment.
  - 2. Air or smoke barriers.
  - 3. Fire-suppression systems.
  - 4. Mechanical systems piping and ducts.
  - 5. Control systems.
  - 6. Communication systems.
  - 7. Conveying systems.
  - 8. Electrical wiring systems.
  - 9. Operating systems of special construction in Division 13 Sections
- C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
- D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- E. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

1.5 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

- B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
  - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

**PART 3 - EXECUTION**

**3.1 EXAMINATION**

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
  - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
  - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

**3.2 PREPARATION**

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection:
  - 1. Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
  - 2. Take precautions required by regulations and Standard Specifications to protect personnel and property.
  - 3. Take all necessary precautions for temporary fire protection during welding and cutting.
    - a. Carefully mask or shield adjacent surfaces to prevent damage from heat or welding materials. Take particular care to prevent fires.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

**3.3 PERFORMANCE**

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.



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1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
  
- B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
  1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
  2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
  3. Concrete: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
  4. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting. If a valve is used, provide access to the valve.
  5. Proceed with patching after construction operations requiring cutting are complete.
  
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible.
  1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
  2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
    - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    - b. Restore damaged pipe covering to its original condition.
  
- D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL (NOT USED)

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 DISPOSAL OF WASTE

- A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to Authorities Having Jurisdiction.
  - 1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
  - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Waste and debris removed from the worksite and not specified for reuse becomes the responsibility of the Contractor and disposed of off park property in areas authorized by the applicable county and/or state agencies and in accordance with current rules and regulations governing the disposal of solid waste. Disposal fees and sundry charges are paid by the Contractor and are incidental to the contract.
- C. Burning: Do not burn waste materials.
- D. Disposal: Remove waste materials from Owner's property and legally dispose of them.

END OF SECTION

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

SECTION 017700 – CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 AS-BUILTS

- A. Before final acceptance of Project, furnish Project Representative "As-Builts" which shows as-built locations and dimensions of major items constructed. Include locations and elevations of existing utilities encountered during excavation. Show location of pipes, manholes, buildings, structures, etc. by field measurements consisting of at least two (2) ties to permanent surface objects such as hydrants, buildings, etc.
- B. Final payment: No more than 95 percent until As-Built Drawings received. Payment made after receipt and acceptance of drawings by Project Representative. Lack of As-Built Drawings will not be a cause for contract extensions.

1.2 SPECIAL TOOLS

- A. Deliver special tools required for maintenance and adjustment of equipment to Project Representative upon completion and before final acceptance of Project.

1.3 SPARE MATERIALS AND PARTS

- A. Before final acceptance, deliver spare materials, parts and other similar items to storage locations specified by Project Representative.

1.4 CERTIFICATES AND PERMITS

- A. Submit signed original certificates of compliance and final approval from Authorities Having Jurisdiction.

1.5 OUTSTANDING DOCUMENTS

- A. Expedite and submit outstanding administrative documents including outstanding cost proposals, Change Orders, etc.

1.6 SUBSTANTIAL COMPLETION

- A. Reference General Conditions.
- B. Notify Project Representative in writing a minimum of seven (7) days in advance of the scheduled date of completion. Project Representative will conduct a "pre-final" inspection and formulate a final punchlist of Work items to be completed prior to final inspection. Project Representative will establish the date of substantial completion based on pre-final inspection

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findings. Following this inspection, Project Representative will either issue notice of substantial completion or advise the Contractor of deficient items which must be corrected prior to issuance of substantial completion.

1.7 DAMAGE TO FACILITIES, ROADS, VEGETATION OR PROPERTY

- A. During the course of construction, should any park facility be damaged by the Contractor's actions, operations or neglect, repair any such damages to their original condition, as acceptable to the Project Representative, at no cost to the Commission.
- B. Repair, restore or replace any park roads, vegetation or property damaged by the Contractor to the original condition at the time construction began. Repair or replace trees and vegetation indicated to remain, which has been damaged by construction operations, in a manner acceptable to the Project Representative.

1.8 FINAL CLEAN-UP

- A. Upon completion of the Work and prior to final inspection and acceptance, clean up the entire construction site and all grounds occupied by the Contractor in connection with the Work.
- B. Fine graded, rake clean and smooth all worksites and disturbed areas. Remove from the park rubbish, surplus and discarded materials, falsework, temporary structures, equipment, and debris.
- C. Leave all phases of the Project clean and ready for public use prior to final acceptance.
- D. Inspect all materials and surfaces for damage, scratches, marring, untreated ends of sawcuts, etc. and repair to original or intended condition.

1.9 FINAL INSPECTION AND ACCEPTANCE

- A. Reference General Conditions.
- B. Notify Project Representative in writing when Work, including punchlist items, has been completed.
- C. Project Representative will schedule and conduct a final inspection to verify that outstanding Work items are complete.
- D. Owner will establish the date of final acceptance based on the results of final inspection. Complete/correct any items identified as outstanding during final inspection prior to final acceptance of Project.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

END OF SECTION

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

SECTION 023000 - SUBSURFACE INVESTIGATION

PART 1        GENERAL

1.1    SUMMARY

- A.    Subsurface investigations and reporting have been performed for the purpose of obtaining data for the planning and design of this Project. Copies of such reporting are attached to the Contract Documents as Supplementary Information.

1.2    REFERENCES

- A.    Document GRI W1319-B: Geotechnical report; bore hole locations and findings of subsurface materials.

1.3    LIMITATIONS

- A.    The subsurface investigations and reporting are being made available solely for the convenience of the Bidder and shall not relieve the Bidder or the Contractor of any risk, duty to make examinations and investigations or any other responsibility under the Contract Documents.
- B.    It is mutually agreed to by all parties:
  - 1.    Written reports are reference documents and are not part of the Contract Documents.
  - 2.    Subsurface investigations are for the purpose of obtaining data for planning and design of the Project.
  - 3.    Data concerning borings and test pits is intended to represent with reasonable accuracy conditions and material found in specific borings and test pits at the time the borings and test pits were made.
- C.    It is expressly understood and agreed the Owner and Engineer assume no responsibility whatsoever in respect to the sufficiency or accuracy of the investigation thus made, the records thereof, or of the interpretations set forth therein, or made by the Owner in the Owner's use thereof; and there is no warranty or guarantee, either expressed or implied, that the conditions indicated by such investigations, or records thereof, are representative of those existing throughout such areas, or any part, or that unforeseen developments may not occur.
- D.    The Owner's subsurface investigations and reporting are made available to Bidder or Contractor only on the basis of the understandings and agreement herein stated.

PART 2        PRODUCTS - Not Used

PART 3        EXECUTION - Not Used

END OF SECTION

**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

SECTION 024100 – DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
  - 1. Demolition and removal of existing facilities.
  - 2. Abandoning and removing utilities.
- B. Related Sections:
  - 1. Section 310516 - Aggregates for Earthwork
  - 2. Section 311000 - Site Clearing
  - 3. Section 312213 - Rough Grading
  - 4. Section 312316 – Excavation
  - 5. Section 330550 - Existing Pipe Abandonment

1.2 SUBMITTALS

- A. Section 013300 - Submittal Procedures: Requirements for submittals.
- B. Submit to Engineer a copy of written permission of private property owners, with copy of fill permit for said private property, as may be required for disposal of materials.

1.3 QUALITY ASSURANCE

- A. Existing Conditions: Determine the extent of work required and limitations before proceeding with Work.
- B. Conform to applicable local, state, and federal codes for environmental requirements in relation to disposal of debris.
  - 1. Burning at the Site for the disposal of refuse, debris, and waste materials resulting from demolition and site clearing operations shall not be permitted.
- C. Permits: The Contractor is responsible for obtaining all necessary permits required for completion of the Work described in this Section.

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- D. Protection of Persons and Property: Meet all federal, state, and local safety requirements for the protection of workmen, other persons, and property in the vicinity of the Work and requirements of the General Provisions.
- E. If the existing material to be demolished and removed contains any hazardous materials which will require special handling upon removal, such as asbestos or lead, it is the responsibility of the Contractor to remove and dispose of the material in accordance with all applicable federal, state, and local regulations.

**PART 2 - PRODUCTS**

**2.1 MATERIALS**

- A. Existing Materials: All materials, equipment, miscellaneous items, and debris involved, occurring, or resulting from demolition, clearing, and grubbing work shall become the property of the Contractor at the place of origin, except as otherwise indicated in the Drawings or Specifications.
- B. Crushed Rock: As specified in Section 310516-2.1, Aggregates for Earthwork. Of the size shown in the Drawings or specified herein.
- C. Sand: As specified in Section 310516-2.2, Aggregates for Earthwork.

**PART 3 - EXECUTION**

**3.1 EXAMINATION**

- A. The Owner assumes no responsibility for the actual condition of the facilities to be demolished. The Contractor shall visit the site, inspect all facilities and be familiar with all existing conditions and utilities.
- B. Demolition drawings identify major equipment and structures to be demolished only. Auxiliary utilities such as water, air, chemicals, drainage, lubrication oil, hydraulic power fluid, electrical wiring, controls, and instrumentation are not necessarily shown shall be considered incidental to all demolition work.
- C. Identify waste and salvage areas for placing removed materials.

**3.2 PREPARATION**

- A. Carefully coordinate the work of this section with all other work and construction.  
Washington: 1-800-424-5555
- B. Call Local Utility Line Information service at 360-642-3191, not less than three working days before performing Work.



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1. Request underground utilities to be located and marked within and surrounding construction areas.
2. Disconnect or arrange for disconnection of utilities (if any) affected by required work.
3. Keep all active utilities intact and in continuous operations.

3.3 Protection

- A. Utilities: Locate, identify, and protect utilities located by utilities and indicated in the Drawings to remain from damage.
- B. Survey control: Protect benchmarks, survey control points, and existing structures from damage or displacement.
- C. Preservation and Trimming of Trees, Shrubs and Other Vegetation: As specified in Section 311000-3.4.C, Site Clearing.
- D. Landscaped Areas: Protect existing landscaped areas as specified in Section 311000-3.4.D, Site Clearing.
- E. Miscellaneous Site Features: Protect all existing miscellaneous site features from damage by excavating equipment and vehicular traffic, including but not limited to existing structures, fences, mailboxes, sidewalks, paving, guy wires, utility poles, and curbs.
- F. Repair and Replacement:
  1. Damaged items, including but not restricted to those noted above, shall be repaired, or replaced with new materials as required to restore damaged items or surfaces to a condition equal to and matching that existing prior to damage or start of Work of this contract.
  2. Any damage to existing facilities or utilities to remain as caused by the Contractor's operations shall be repaired at the Contractor's expense.

3.4 Demolitions

- A. Areas which are to be excavated for the purpose of demolition shall be cleared and stripped in accordance with Section 311000-3.6, Site Clearing.
- B. Carefully consider all bearing loads and capacities for placement of equipment and material on site. In the event of any questions as to whether an area to be loaded has adequate bearing capacity, consult with Engineer prior to the placement of such equipment or material.
- C. Demolition of Existing Structures:
  1. Excavate around existing structures as required to perform demolition operations and to plug associated existing pipelines where shown in the Drawing.
  2. Provide shoring, bracing, and supports, as required, to ensure adjacent structures are not damaged and structural elements of existing structure are not overloaded during demolition activities.
    - a. Increase structural supports or adding new supports as may be required as a result of any cutting, removal, or demolition work performed under any part of this Contract.

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- b. Remove all temporary protection when the Work is complete or when so authorized by the Engineer.
  3. Any floors that are to remain in place shall be completely cracked through to allow for drainage. Cracking shall be accomplished by dropping a demolition ball or by other methods approved by the Engineer.
  4. Remove and dispose of all exposed and/or protruding metalwork, piping, plumbing, and conduits resulting from demolition activities, and all woodwork, roofing, and electrical and mechanical equipment removed from demolished structures.
    - a. Reinforcing bars shall be cut flush with final wall elevations as shown in the Drawings.
    - b. No detached metalwork, excluding concrete reinforcing bars, shall be buried with the concrete and masonry rubble.
- D. Backfill at Demolished Structures:
  1. For structures designated to be abandoned and/or demolished in place, concrete and/or masonry rubble and excavated soils resulting from demolition activities shall be used for backfill or placed in the bottoms of said structures only as directed by the Engineer.
  2. Concrete and masonry rubble used for backfilling shall be broken into pieces no larger than 12 inches on any one side.
  3. Materials resulting from abandonment/demolition activities approved for backfill shall be combined with imported filler sand to create a dense, compacted backfill.
  4. Backfilling or placement of the excavated material in the structures shall meet the following requirements.
    - a. Furnish, place and compact filler sand along with the concrete and masonry rubble so that all voids are filled and a dense, compacted backfill is obtained.
    - b. Filler sand shall be placed in horizontal layers completely filling all voids between pieces of rubble and not exceeding 12 inches in thickness.
    - c. Each layer of filler sand shall be compacted to obtain at least 90 percent of maximum density as determined by ASTM Method D-698-78 (AASHTO T-99).
    - d. Water shall be furnished by the Contractor and added to each layer as required to maintain optimum moisture content.
    - e. The amount of filler sand used shall only be the amount needed to fill all voids created by placement of the concrete and asphalt rubble, as directed by the Engineer.
    - f. At locations where concrete and masonry rubble are used for backfill, they shall be placed such that a minimum of 3 feet of compacted non-rubble backfill material (crushed rock) exists between any rubble and finished grade. Protruding reinforcing bars shall be cut to lengths that allow granular backfill to be placed and compacted to required levels in and above the rubble.
  5. Disposal of all materials not used for backfill shall be performed off-site and in compliance with applicable local, state, and federal codes and requirements.

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6. In areas where new construction will take place, no trace of these structures shall remain prior to placing of backfill.
  - E. Backfilling within the footprint of new structures with rubble material resulting from demolition activities will not be allowed.
  - F. All existing improvements designated in the Drawings or specified to be removed, including but not limited to structures, pipelines, walls, footings, foundations, slabs, pavements, curbs, fencing, and similar structures occurring above, at, or below existing ground surface shall be included in the demolition work.
  - G. Unless otherwise specified, any resulting voids shall be backfilled with suitable excavated or imported material compacted to the density of the adjacent soil.
- 3.5 Existing Water Utility Piping Abandonment
- A. As specified in Section 330550, Existing Pipe Abandonment.
- 3.6 Electrical and Control System Demolition
1. Not Used
- 3.7 Permanent Abandonment of Wells
- A. Not Used
- 3.8 Asphaltic Concrete Demolition
- A. Asphalt pavement shall be removed to the limits shown in the Drawings.
  - B. The limits of the removal shall be saw cut.
  - C. Asphalt pavement may not be used as rubble fill.
- 3.9 Removal
- A. Remove debris, rock, excavated materials, rubble, abandoned piping, and extracted plant life resulting from abandonment and/or demolition activities from site.
  - B. Continuously clean-up and remove waste materials from site. Do not allow materials to accumulate on site.
  - C. Removal: All material resulting from demolition, clearing, and grubbing, and trimming operations shall be removed from the Project Site and disposed of in a lawful manner. Materials placed on property of private property owners shall be by written permission only.
- 3.10 Grading
- A. All grading work shall be completed in accordance with Section 312213, Rough Grading.
- 3.11 Cleanup
- A. During and upon completion of work, promptly remove all unused tools and equipment, surplus materials, debris, and dust and shall leave all areas affected by the work in a clean, condition, as may be subject to Engineer approval.

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- B. Adjacent structures shall be cleaned of dust, dirt, and debris resulting from demolition.
- C. Adjacent areas shall be returned to their existing condition prior to the start of work.

3.12 Schedules

- A. The following structures are to be demolished and removed for the Project Site:

- 1. Existing CMP culvert at the western crossing of Fort Canby Road.
- 2. Existing two (2) concrete culverts at the eastern crossing of Fort Canby Road.

- 3.13 Existing concrete utility encasement above existing eastern crossing culverts under Fort Canby Road.

END OF SECTION

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**SECTION 260500 - GENERAL REQUIREMENTS FOR ELECTRICAL WORK**

PART 1        GENERAL

1.1    SUMMARY

- A.    This Section specifies general requirements applicable to all electrical work to be completed at the facility. This may include such things as underground conduit, surface conduit, motors, control components and similar.
  
- B.    Section includes:
  - 1.    Scope.
  - 2.    Definitions.
  - 3.    Reference Standards.
  - 4.    Quality Assurance.
  - 5.    Submittals.
  - 6.    Drawings.
  - 7.    Project Site Conditions.
  - 8.    Equipment Coordination.
  - 9.    Basis of Design.
  - 10.   Products.
  - 11.   Execution – General.
  - 12.   Testing.

1.2    SCOPE

- A.    This section specifies general requirements for electrical work. Detailed requirements for specific electrical items are specified in other sections but are subject to the general requirements of this section.
  
- B.    The contractor is responsible for coordinating with the Electrical Utility Owner to deenergize and remove conflicting electrical service lines as indicated on the Drawings. The contractor is responsible for trenching and installation of electrical service conduit, pull lines, junction boxes and other materials as coordinated with the Utility Owner to restore the conflicting electrical utility service as indicated on the Drawings.
  
- C.    Related Sections:
  - 1.    The Contract Documents are complementary; what is called for by one is as binding as if called for by all.
  - 2.    It is the Contractor's responsibility for scheduling and coordinating the Work of subcontractors, suppliers, and other individuals or entities performing or furnishing any of Contractor's Work.
  - 3.    Section 26 05 33 Raceway and Boxes for Electrical Systems.
  - 4.    Section 26 05 85 Utility Coordination.

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D. Interfaces to Equipment, Instruments, and Other Components:

1. The Drawings, Specifications, and overall design are based on preliminary information furnished by various equipment manufacturers, which identify a minimum scope of supply from the manufacturers. This information pertains to, but is not limited to, instruments, control devices, electrical equipment, packaged mechanical systems, and control equipment provided with mechanical systems.
2. Provide all material and labor needed to install the actual equipment furnished. Include additional conduit, wiring, terminals, or other electrical hardware to the work, which may be necessary to make a complete functional installation, based on the actual equipment furnished:
  - a. Make all changes necessary to meet the manufacturer's wiring requirements.
3. Submit all such changes and additions to the Engineer for acceptance in accordance with the General Conditions.
4. Review the complete set of Drawings and Specifications in order to ensure that all items related to the electrical power are completely accounted for. Include items that appear on Drawings or in Specifications from another discipline in the scope of Work:
  - a. If a conflict between Drawings and Specifications is discovered, refer conflict to the Engineer as soon as possible for resolution.

E. All electrical equipment and systems for the entire project shall comply with the requirements of Division 26, whether referenced in the individual equipment specifications or not:

1. The requirements of Division 26 apply to all electrical work specified in other Divisions and Sections, Instruments Junction Boxes (IJBs), Power Junction Boxes (PJBs) and enclosures.
2. The Owner is not responsible for any additional costs due to the failure of the Contractor to notify all Subcontractors and suppliers of the Division 26 requirements.

F. Contract Documents:

1. General:
  - a. The Drawings and Specifications are complementary and are to be used together to fully describe the Work.
2. Contract Drawings:
  - a. Locations of equipment, conduits, boxes, and panels are approximate only, exercise professional judgment in executing the Work to ensure the best possible installation:
    - 1) The equipment locations and dimensions shown on plans and elevations are approximate. Use the Shop Drawings to determine the proper layout, foundation, and pad requirements for final installation. Coordinate with all Subcontractors to ensure that all electrical equipment is compatible with other equipment and space

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requirements. Make changes required to accommodate differences in equipment dimensions.

- 2) The Contractor has the freedom to select any of the named manufacturers, as identified in the individual specification sections.

b. Installation Details:

- 1) The Contract Drawings include typical installation details, which show the means and methods the Contractor is to use to install electrical equipment. For cases where a typical detail does not apply, develop installation details that may be necessary for completing the Work, and submit these details for review by the Engineer.

G. Utility Coordination:

1. The Contractor shall coordinate with the local electric Utility and Owner for the installation of the electrical service at the Owner's facility as specified in section 26 05 85.

1.3 DEFINITIONS

- A. WIRING, ELEMENTARY OR SCHEMATIC DIAGRAM: Not Used.
- B. ONE-LINE DIAGRAM: Not used.
- C. BLOCK DIAGRAM: Not used.
- D. CONNECTION DIAGRAM: Not used.
- E. INTERCONNECTION DIAGRAM: Not used.
- F. ARRANGEMENT, LAYOUT, and/or OUTLINE DRAWINGS: The Drawings depict a general arrangement and layout of the required electrical service restoration required. The arrangement depicted is subject to the requirements of the local electric Utility. The Contractor is responsible for Utility Coordination per 26 05 85.

1.4 REFERENCE STANDARDS

- A. This Section incorporates by reference the latest revisions of the following documents. They are part of this Section insofar as specified and modified herein. In the event of conflict between the requirements of this Section and those of the listed documents, the requirements of this Section shall prevail.
- B. Unless otherwise specified, references to documents shall mean the documents in effect on the effective date of the Agreement. If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the document before it was discontinued.

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Reference	Title
NECA-1	National Electrical Contractors Association – Standard Practices for Good Workmanship in Electrical Contracting
NFPA-70 NFPA-70E	National Electrical Code (NEC) Electrical Safety in the Workplace
NEMA	National Electrical Manufacturers Association
IEEE	Institute of Electrical and Electronic Engineers
IES	Illuminating Engineering Society
WAC	Washington Administration Code

**1.5 QUALITY ASSURANCE**

**A. IDENTIFICATION OF LISTED PRODUCTS:**

1. Electrical equipment and materials shall be listed for the purpose for which they are to be used, by an independent testing laboratory. Three such organizations are Underwriters Laboratories (UL), Factory Mutual (FM), and Electrical Testing Laboratories (ETL). Independent testing laboratory shall be acceptable to the inspection authority having jurisdiction.
2. When a product is not available with a testing laboratory listing for the purpose for which it is to serve, the product may be required by the inspection authority, to undergo inspection at the manufacturer's place of assembly. All costs and expenses incurred for such inspections shall be included in the original contract price. Contractor shall comply with Washington Administrative Code regulations concerning Listing requirements for electrical equipment.

**B. FACTORY TESTS:** Where specified in the individual product specification section, factory tests shall be performed at the place of fabrication and performed on completion of manufacture or assembly. The costs of factory tests shall be included in the contract price.

**C. DELIVERY AND STORAGE:**

1. Not Used.

**1.6 SUBMITTALS**

**A. PROCEDURES:** Section 01 33 00

**B. SUBMITTAL ITEMS FOR THIS SECTION:**



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1. Review of Shop Drawings and Brochures shall not relieve the Contractor of responsibility for dimensions and/or errors that may be contained therein, or deviations from Contract Document requirements. It shall be clearly understood that the noting of some errors, but the overlooking of others does not grant the Contractor permission to proceed in error. Regardless of any information contained in the Shop Drawings and Brochures, the requirements of the Contract Documents shall govern and are not waived or superseded in any way by the review of the Shop Drawings and Brochures.
2. Where submitted items deviate from specification requirements, a list of any specification sections that are not being met by the submitted item must be provided. The list is to be organized by specification section and paragraph and shall list the product requirement and in what way submitted item does not comply with the requirement. A detailed written explanation of the reasons for requesting the deviation must also be included.
  - a. The Owner shall be the final authority for determining acceptability of requested deviations. The remaining portions of the paragraph not underlined will signify compliance with the specifications.
  - b. Failure to include a list of the specification section deviations along with justification(s) for any requested deviations to the specification requirements, with the submittal shall be sufficient cause for rejection of the entire submittal with no further consideration.
3. Include product data sheets of equipment, devices, and materials requested by the individual specification sections.
  - a. Catalog information shall include technical specifications and application information, including ratings, range, weight, accuracy, etc.
  - b. Catalog cuts shall be edited to show only the items, model numbers, and information which apply.
  - c. Where submittals are made electronically in PDF format, the PDF shall be organized by specification section and linked to an index. The PDF shall be searchable.
    4. Interconnection diagram: The Contractor shall prepare interconnection diagrams depicting all cable requirements together with their actual terminations as specified.
5. Safety disconnect switch list including legend with equipment tag, equipment description, and power feeder circuit source and location information.
6. Manufacturer's written instructions for testing and adjusting.

1.7 WARRANTY

- A. Provide a written warranty covering the work done under this Division as required by the General Conditions. Incandescent lamps will be excluded from this warranty.
- B. Apparatus:

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1. Free of defects of material and workmanship and in accord with the Contract Documents.
  2. Built and installed to deliver its full rated capacity at the efficiency for which it was designed.
  3. Operate at full capacity without objectionable noise or vibration.
- C. Systems: Any system damage caused by failures of any system component shall be included.
- 1.8 DRAWINGS
- A. Not Used.
- 1.9 PROJECT/SITE CONDITIONS
- A. GENERAL: Unless otherwise specified, equipment and materials shall be sized and derated for the ambient condition of 40 degrees C at an elevation ranging from sea level to 3000 feet without exceeding the manufacturer's stated tolerances.
- B. OPERATING FACILITY: Not used.
- C. HAZARDOUS (CLASSIFIED) AREAS: All areas are designated as 'Unclassified' in accordance with the NEC, NFPA 820.
- D. SEISMIC: Not used.
- 1.10 ELECTRICAL NUMBERING SYSTEMS: Not Used.
- 1.11 CONDUCTOR NUMBERS:
- A. Not used.
- 1.12 INDICATING LAMP COLORS
- A. Not used.
- 1.13 EQUIPMENT COORDINATION
1. Not Used.
- 1.14 BASIS OF DESIGN
- A. Contractor to verify requirements and coordinate with Utility owner prior to construction.
- 1.15 ARC FLASH MITIGATION METHODS
1. Not used.

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**PART 2        PRODUCTS**

**2.1    EQUIPMENT AND MATERIALS**

- A.    **GENERAL:** Equipment and materials shall be new and free from defects. All material and equipment of the same or a similar type shall be of the same manufacturer throughout the work. Standard production materials shall be used wherever possible.
- B.    **EQUIPMENT FINISH:** Not used.
- C.    **GALVANIZING:** Not used.

**2.2    WIRE MARKERS**

- 1.    Not Used.

**2.3    NAMEPLATES**

- A.    Not Used.

**2.4    TERMINAL BLOCKS**

- A.    **GENERAL:**
  - 1.    Not Used.
- B.    **DIGITAL TERMINALS:**
  - 1.    Not Used.
- C.    **ANALOG TERMINALS:**
  - 1.    Not Used.
- D.    **FUSED TERMINALS:**
  - 1.    Not Used.

**PART 3        EXECUTION**

**3.1    GENERAL**

- A.    **CONSTRUCTION**
  - 1.    The work under Division 26 shall be performed in accordance with these specifications.
  - 2.    Unless otherwise detailed or dimensioned, electrical layout drawings are diagrammatic. The Contractor shall coordinate the field location of electrical material or equipment with the work of other disciplines and subcontractors. Minor changes in location of electrical material or equipment made prior to installation shall be made at no cost to the Owner.

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**B. HOUSEKEEPING:**

1. Electrical equipment shall be protected from dust, water and damage.
2. Electrical equipment temporarily exposed to weather, debris, liquids, or damage during construction shall be adequately protected.

**C. ELECTRICAL EQUIPMENT LABELING:**

1. Electrical equipment shall have field marked signs and labeling to warn qualified persons of the potential electric arc flash hazards per NEC Article 110.16 Flash Protection.

**D. MOTOR CONNECTIONS: Not used.**

**E. CONDUCTOR INSTALLATION: Not Used.**

**3.2 DELIVERY, STORAGE AND HANDLING**

- A. Handle and store equipment in accordance with manufacturer's Installation and Maintenance Manual. One (1) copy of this document shall be provided with the equipment at the time of shipment.
- B. Store indoors in clean dry space with uniform temperature to prevent condensation and per manufacturer's recommendations. Protect from exposure to dirt, fumes, water, corrosive substances, and physical damage.

**3.3 TESTING**

- A. Not Used.

**3.4 ADJUSTING**

- A. Not used.

**3.5 CLEANING**

- A. On completion of installation, inspect interior and exterior of enclosures. Remove paint splatters and other spots. Vacuum dirt and debris; do not use compressed air to assist in cleaning. Repair exposed surfaces to match original finish.

**3.6 OPERATION AND MAINTENANCE MANUALS**

- A. Comply with Section 01 70 00 - Project Closeout.

END OF SECTION

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**SECTION 260533 - RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS**

**PART 1 GENERAL**

**1.1 SUMMARY**

- A. Section includes:
  - 1. Scope.
  - 2. Reference Standards.
  - 3. Quality Assurance.
  - 4. Definitions.
  - 5. Submittals.
  - 6. Products.
  - 7. Execution.

**1.2 SCOPE**

This Section describes the products and execution requirements relating to furnishing and installing raceways and boxes and related systems as part of a raceway system for electrical, communications, and low-voltage systems for the project.

**1.3 REFERENCE STANDARDS**

- A. Section 260500 General Requirements for Electrical Work.
- B. Section 321313 Concrete Paving.
- C. This Section incorporates by reference the latest revisions of the following documents. They are part of this Section insofar as specified and modified herein. In the event of conflict between the requirements of this Section and those of the listed documents, the requirements of this Section shall prevail.
  - 1. Unless otherwise specified, references to documents shall mean the documents in effect on the effective date of the Agreement. If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the document before it was discontinued.

Reference	Title
NFPA 70	National Electric Code (NEC)
IEEE 802	IEEE Standards for Local and Metropolitan Area Networks: Overview and Architecture
ANSI/SCTE 77-2017	Specifications for Underground Enclosure Integrity

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#### 1.4 QUALITY ASSURANCE

- A. REQUIREMENTS: Section 260500 General Requirements for Electrical Work
- B. The manufacturer shall warranty the above specified equipment for twelve months from equipment start-up or eighteen months from the date of shipment, whichever occurs first, to be free from defects in design, workmanship or materials.

#### 1.5 SUBMITTALS

- A. PROCEDURES: Section 013300
- B. SUBMITTAL ITEMS FOR THIS SECTION:
  - 1. Conduit and fittings –
  - 2. Boxes – provide product data showing configurations, finishes, dimensions, and manufacturer's instructions.

## PART 2 PRODUCTS

### 2.1 GENERAL

- A. Furnish conduit and junction box infrastructure materials as shown and according to utility owner Construction Standards.
- B. All steel fittings and conduits bodies shall be galvanized.
- C. All conduit transitional fittings shall be listed for installed application.
- D. No cast metal or split-gland type fittings permitted.
- E. C-condulets shall not be used in lieu of pull boxes.
- F. All boxes shall be of sufficient size to provide free space for all conductors enclosed in the box and shall comply with NEC requirements.
- G. Conduit sizes are 2-inch and 4-inch diameter as indicated on the plans.

### 2.2 RIGID METAL CONDUIT (RMC) AND FITTINGS

- A. Conduit: Heavy wall threaded, galvanized steel.
- B. Fittings and Conduit Bodies: Use all steel threaded fittings and conduit bodies.

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- C. Expansion Fittings/ Expansion Joints: Expansion Fittings shall be Internal Grounding type and shall not rely on external bonding jumpers to maintain grounding between raceway components.
- D. Conduit Bends: Bends are required for runs of 150-feet or longer, or a run of any length that has more than. All bends must be factory made. Sweep radii must be 36-inch minimum.

#### 2.3 RIGID POLYVINYL CHLORIDE CONDUIT (PVC) AND FITTINGS

- A. Conduit: Rigid non-metallic conduit, Schedule 40 PVC minimum, Listed, sunlight resistant, rated for 900 C conductors. Schedule 80 for locations exposed to physical damage or as required.
- B. Fittings and Conduit Bodies: NEMA TC 2, Listed.
- C. Conduit Bends: Bends are required for runs of 150-feet or longer, or a run of any length that has more than. PVC bends must have two extra-deep, fabricated PVC couplings. All bends must be factory made. Sweep radii must be 36-inch minimum.

#### 2.4 FIBERGLASS RESIN CONDUIT (RTRC) AND FITTINGS

- A. As approved by the utility owner.

#### 2.5 PULL AND JUNCTION BOXES

- A. Exterior Boxes and Wet Location Installations: Type 4 and Type 6, flat flanged, surface mounted junction box, UL listed as rain-tight. Galvanized cast iron box and cover with ground flange, neoprene gasket, and stainless steel cover screws.
- B. Box extensions and adjacent boxes within 48 inches of each other are not allowed for the purpose of creating more wire capacity.
- C. Junction boxes 6 inch-by-6 inch or larger size shall be without stamped knock-outs.
- D. Wireways shall not be used in lieu of junction boxes.

### PART 3 EXECUTION

#### 3.1 CONDUIT SIZING, ARRANGEMENT, AND SUPPORT

- A. Changes in direction shall be made with symmetrical bends, cast steel boxes, stamped metal boxes or cast steel conduit bodies.
- B. For indoor and exposed exterior conduits, no continuous conduit run shall exceed 100 feet (30 meters) without a junction box.

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- C. For exterior below grade conduits, no continuous conduit run shall exceed 250 feet (75 meters) without hand hole, manhole or pull box without project specific DFDM electrical inspector approval.
- D. All conduits installed in exposed areas shall be installed with a box offset before entering box.

#### 3.2 CONDUIT INSTALLATION

- A. Cut conduit square; de-burr cut ends.
- B. Bend conduit according to manufacturer's recommendations. Torches or open flame shall not be used to aid in bending of PVC conduit.
- C. Use suitable conduit caps or other approved seals to protect installed conduit against entrance of dirt and moisture.
- D. Provide 1/8 inch (3 mm) nylon pull string in empty conduit, except sleeves and nipples.
- E. Install expansion joints where direct-buried conduit is subject to Earth Movement by settlement or frost per NEC 300.5(J), especially where conduit exits the ground exposed and enters a box, cabinet, or enclosure attached to a building or structure.
- F. Install expansion fitting in exterior PVC conduit runs per NEC table 352.44 utilizing a minimum temperature change of 120 degree F.
- G. Avoid moisture traps where possible. Where moisture traps are unavoidable, provide junction boxes with drain fittings at conduit low points.
- H. PVC conduit shall transition to galvanized rigid metal conduit before it enters a foundation wall or up through a concrete encasement.
- I. All conduit installed underground shall be buried a minimum of 30 inches below finished grade, whether or not the conduit is concrete encased. Install warning tape 12" below finish grade over all buried conduits. Underground warning tape shall be detectable, 2" wide minimum, 5 mil thickness, containing a foil core. Tape color shall be red and labeled with the words "CAUTION-BURIED ELECTRIC LINE BELOW" as manufactured by Presco or similar.
- J. Conduits penetrating underground foundation walls: Individual conduits or each conduit as part of a duct bank penetrating underground foundation walls (excluding manholes) shall be sealed against water intrusion into the building.
- K. Clean PVC conduit with solvent, and dry before application of glue. The temperature rating of glue/cement shall match weather conditions. Apply full even coat of cement/glue to entire area that will be inserted into fitting. The entire installation shall meet manufacturer's recommendations.



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#### 3.3 CONDUIT INSTALLATION SCHEDULE

- A. Conduit other than that specified below for specific applications shall not be used.
  - 1. Horizontal Directional Drilling (Directional Boring) Installations: HDPE conduit.
  - 2. Underground Installations That Penetrate Foundation Walls: Rigid metal conduit within five feet (1.5 m) of the foundation wall. Conduit may transition to Fiberglass Resin Conduit (BG) or PVC conduit five feet (1.5 m) from the foundation walls.
  - 3. Underground Installations That Do Not Penetrate Foundation Walls: Rigid metal conduit, Fiberglass Resin Conduit (BG), or PVC conduit.
  - 4. Underground Installations Emerging from Grade: Buried conduit emerging from grade shall be Rigid metal conduit extending from the minimum cover distance of 24 inches below grade to the conduit termination point above grade.
  - 5. Underground Installations Under Concrete Slab: Rigid metal conduit or Schedule 40 PVC conduit.
  - 6. Underground Installations Emerging through Concrete Slab: Rigid metal conduit.
- B. Concealed in Poured Concrete Walls: Rigid Metal Conduit, or PVC conduit.

#### 3.4 PVC COATED RIGID METAL CONDUIT INSTALLATION

- A. Installers of PVC Coated Rigid Metal Conduit shall be factory trained and certified in the proper installation methods for this type of conduit. Proof of such certification shall be kept on the project site at all times and shall be produced upon request.

#### 3.5 PULL AND JUNCTION BOX INSTALLATION

- A. Pull boxes and junction boxes shall be minimum 4 inches square (100 mm) by 2 1/8 inches (54 mm) deep for use with 1 inch (25 mm) conduit and smaller. On conduit systems using 1 1/4 inch (31.75 mm) conduit, minimum junction box size shall be 4 11/16 inches square by 2 1/8 inches deep.
- B. Provide Pull and Junction boxes for communications and other low voltage applications (a) in any section of conduit longer than 100 feet, (b) where there are bends totaling more than 180 degrees between pull points or pull boxes and (c) wherever there is a reverse bend in run. Support pull and junction boxes independent of conduit.

END OF SECTION

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**SECTION 260585 - UTILITY COORDINATION**

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes requirements for:
  - 1. Coordination with the Utility companies to provide service.
  - 2. Contractor's responsibilities for connecting to utilities and providing utility service to the facilities.
  - 3. Descriptions of utility services required.
- B. The Contractor shall coordinate with the local electric Utility for the installation of the primary electrical service.
  - 1. Electric Utility:
    - a. Utility: PUD #2 of Pacific County
    - b. Contact: Bernie Boucher
    - c. Phone number: 360-642-3191 ext. 603
  - 2. Contractor shall coordinate with the Owner and PUD #2 of Pacific County prior to installing underground conduit. See Drawings for the separation point between the local electric utility and the Contractor.
  - 3. Temporary power is not currently available to the project site. Contractor shall coordinate and provide temporary power at the project site when required and necessary.

1.2 REFERENCES

- A. Refer to Section 260500.
- B. Section 260533 Raceway and Boxes for Electrical Systems.

1.3 DEFINITIONS

- A. Refer to Section 260500.

1.4 SYSTEM DESCRIPTION

- A. Electrical Service:
  - 1. Provide electrical ducts, raceways, conductors, and connections indicated on the Drawings per Section 260533. Work and materials required for a complete electrical service shall include but not be limited to the following:

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- a. Electrical service conduits from the point of Electric Utility connection to the service entrance equipment.
- b. Metering conduits and conductors from the instrument transformers to the meters.

B. General:

- 1. Coordinate and obtain inspections and final installation approval from serving utilities and other authorities having jurisdiction.

1.5 SUBMITTALS

A. Furnish submittals in accordance with Section 013300 and 260500.

B. Certification:

- 1. Submit certification that the intended installation has been coordinated with the Utility companies.
- 2. Certification shall include a narrative description of the Utility's requirements and points of connection and names and telephone numbers for contacts at the Utilities.

1.6 QUALITY ASSURANCE

A. Refer to Section 260500.

B. Materials and equipment used in performance of electrical work shall be listed or labeled by Underwriter's Laboratories or other equivalent recognized independent testing laboratory.

1.7 PROJECT OR SITE CONDITIONS

A. Refer to Section 260500.

1.8 SCHEDULING

A. General:

- 1. Before start of site work, make arrangements for temporary electrical service as required.

B. Electrical systems:

- 1. Before bidding, the Contractor shall contact the Utilities to determine the work and materials provided by the Contractor, and all fees and permits that will be required, so that all utility systems furnished by the Contractor will be included in the bid.
- 2. Coordinate with the Electric Utility for electrical installation, connection and turn-on.

C. Before commencing site work, coordinate underground conduit installations with other work to eliminate conflicts and avoid interferences with other underground systems.

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1.9 WARRANTY

- A. Refer to Section 260500.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Furnish materials in accordance with the applicable requirements of the utilities and these Specifications.

2.2 EQUIPMENT

- A. Furnish equipment in accordance with the applicable requirements of the Utilities and these Specifications.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Installation of service equipment to be in coordination with utility requirements
- B. Refer to Section 260500.

END OF SECTION

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SECTION 310513 - SOILS FOR EARTHWORK

PART 1 GENERAL

1.1 SUMMARY

- A. This Section includes range of soil and subsoil materials intended to be referenced by other sections, generally for fill and grading purposes. Materials are indicated by "Type" to assist in referencing from other sections and on Drawing notes.
- B. Section includes:
  - 1. Subsoil materials
  - 2. Topsoil materials
- C. Related Sections
  - 1. Section 310516, Aggregates for Earthwork
  - 2. Section 311000, Site Clearing
  - 3. Section 312213, Rough Grading
  - 4. Section 312316, Excavation
  - 5. Section 312317, Trenching
  - 6. Section 312318, Rock Removal
  - 7. Section 312323, Fill

1.2 REFERENCES

- A. American Association of State Highway and Transportation Officials:
  - 1. AASHTO T99 - Standard Specification for Moisture-Density Relations of Soils Using a 2.5-kg (5.5-lb) Rammer and a 305-mm (12-in.) Drop
- B. ASTM International (ASTM):
  - 1. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup> (600 kN-m/m<sup>3</sup>))
  - 2. ASTM D2487 - Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System)
  - 3. ASTM D6938 - Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
- C. Document GRI W1319-B: Geotechnical report; bore hole locations and findings of subsurface materials.

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1.3 SUBMITTALS

- A. Section 013300, Submittal Procedures: Requirements for submittals.
- B. Materials Source: Submit name of imported materials source.
- C. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.4 QUALITY ASSURANCE

- A. Furnish materials of each type from same source throughout the Work.
- B. Soil Testing:
  - 1. Soil sampling and testing to be completed by an independent laboratory approved by the Engineer.
  - 2. Frequency of testing shall be determined by the Engineer.
  - 3. All soil testing shall be paid for by the Contractor.
- C. Compaction Tests:
  - 1. Maximum density at optimum moisture content determined by ASTM D698.
  - 2. In-place density in accordance with Nuclear Testing Method, ASTM D6938.
- D. Soil Classification: All imported materials shall be classified in accordance with ASTM D2487.

PART 2 PRODUCTS

2.1 SUBSOIL MATERIALS

- A. Subsoil Type S1, Select Native Material:
  - 1. Not Used.
- B. Subsoil Type S2, Imported Fill Material:
  - 1. Imported earth approved for use by Engineer.
  - 2. Graded.
  - 3. Free of peat, humus, vegetative matter, organic matter, and rocks larger than 2 inches in diameter.
  - 4. Processed as required to be placed in thickness as prescribed and at the optimum moisture content to obtain level of compaction required by these specifications.

2.2 TOPSOIL MATERIALS

- A. Topsoil Type TS1, Select Native Topsoil Material:
  - 1. Top 6 - 12 inches of existing soil containing organic matter.

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2. Engineer decision shall be final as to determination of what material is topsoil quality.
  3. Graded.
  4. Free of roots, rocks larger than 1/2-inch subsoil, debris, large weeds, and foreign matter.
    - a. Screening: Single screened.
- B. Topsoil Type TS2, Imported Topsoil Material:
1. Imported borrow.
  2. Friable loam.
  3. Reasonably free of roots, rocks larger than 1/2-inch, subsoil, debris, large weeds, and foreign matter.
    - a. Screening: Single screened.
  4. Acidity range (pH) of 5-1/2 to 7-1/2.
  5. Containing minimum of 4 percent and maximum of 25 percent inorganic matter.

### 2.3 SPOILS

- A. All excess material not suitable or not required for backfill and grading shall be hauled off site and disposed of at a location provided by the Contractor and approved by the Engineer.
- B. Make arrangements for disposal of the material at no additional cost to the Owner.
- C. Landfill permit to be obtained by the Contractor and provided to Engineer prior to commencement of disposal.

### 2.4 SOURCE QUALITY CONTROL

- A. Testing and Analysis of Subsoil Material: Perform in accordance with ASTM D698.
- B. When tests indicate materials do not meet specified requirements, change material, or vary compaction methods and retest. Additional testing shall be completed and paid for by the Contractor with no reimbursement by the Owner.
- C. Furnish materials of each type from same source throughout the Work.

## PART 3 EXECUTION

### 3.1 EXCAVATION

- A. Excavate material of every nature and description to the lines and grades as indicated on the Drawings and/or as required for construction of facilities.
- B. Site within clearing limits shall be stripped of topsoil as required to obtain additional topsoil necessary to complete Work indicated in the Drawings or as specified.
- C. When practical, do not excavate wet topsoil.



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- D. Stockpile excavated material meeting requirements for subsoil materials and topsoil materials.
- E. Remove excess excavated subsoil and topsoil not intended for reuse from Site.
- F. Remove excavated materials not meeting requirements for subsoil materials and topsoil materials from Site.

**3.2 STOCKPILING**

- A. Stockpile soils at locations as approved by Engineer for redistribution as specified.
  - 1. Site may not have sufficient area to stockpile excavated material that will be required for fill later in the Project. If additional stockpile area is required to complete the Project on schedule, arrange off-site stockpile areas.
  - 2. No additional payments will be made for stockpiling excavated materials off-site.
- B. Stockpile in sufficient quantities to meet Project schedule and requirements.
- C. Separate differing materials with dividers or stockpile apart to prevent mixing.
- D. Prevent intermixing of soil types or contamination.
- E. Direct surface water away from stockpile site to prevent erosion or deterioration of materials.
  - 1. Grade surface of stockpiles to prevent ponding of water.
  - 2. Cover stockpiles to minimize the infiltration of water.
- F. Stockpile unsuitable and/or hazardous materials on impervious material and cover to prevent erosion and leaching, until disposed of.

**3.3 STOCKPILE CLEANUP**

- A. Remove stockpile, leave area in clean and neat condition. Grade site surface to prevent free standing surface water.
- B. When borrow area is indicated, leave area in clean and neat condition. Grade site surface to prevent free standing surface water.

END OF SECTION

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SECTION 310516 - AGGREGATES FOR EARTHWORK

PART 1        GENERAL

1.1    SUMMARY

- A.    This Section includes a range of coarse and fine aggregate materials intended to be referenced by other Sections, generally for fill and grading purposes. Materials are indicated by "Type" to assist in referencing from other Sections and in Drawing notes.
  
- B.    Section Includes:
  - 1.    Coarse aggregate materials
  - 2.    Fine aggregate materials
  
- C.    Related Sections
  - 1.    Section 310513, Soils for Earthwork
  - 2.    Section 312213, Rough Grading
  - 3.    Section 312317, Trenching
  - 4.    Section 312319, Dewatering
  - 5.    Section 312323, Fill
  - 6.    Section 321123, Aggregate Base Courses
  - 7.    Section 331110, Water Utility Distribution and Transmission Piping

1.2    REFERENCES

- A.    American Association of State Highway and Transportation Officials:
  - 1.    AASHTO M147 - Standard Specification for Materials for Aggregate and Soil-Aggregate Subbase, Base and Surface Courses
  - 2.    AASHTO T27 - Sieve Analysis of Fine and Coarse Aggregates
  - 3.    AASHTO T99 - Standard Specification for Moisture-Density Relations of Soils Using a 2.5-kg (5.5-lb) Rammer and a 305-mm (12-in.) Drop
  - 4.    AASHTO T335 - Standard Method of Test for Determining the Percentage of Fracture in Coarse Aggregate
  
- B.    ASTM International (ASTM):
  - 1.    ASTM C136 - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
  - 2.    ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup> (600 kN-m/m<sup>3</sup>))

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3. ASTM D2487 - Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System)
  4. ASTM D4318 - Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
  5. ASTM D6938 - Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
- C. Document GRI W1319-B: Geotechnical report; bore hole locations and findings of subsurface materials.

1.3 SUBMITTALS

- A. Section 013300, Submittal Procedures: Requirements for submittals.
- B. Materials Source: Submit name of imported materials suppliers.
- C. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.
- D. Results of aggregate sieve analysis and standard proctor tests for all granular material.

1.4 QUALITY ASSURANCE

- A. Furnish each aggregate material from single source throughout the Work.
- B. Aggregate Testing:
  1. Aggregate sampling and testing to be completed by an independent laboratory approved by the Engineer.
  2. The frequency of testing shall be determined by the Engineer.
  3. All aggregate testing shall be paid for by the Contractor.
- C. Compaction Tests:
  1. Maximum density at optimum moisture content determined by ASTM D698.
  2. In-place density in accordance with Nuclear Testing Method, ASTM D6938.
- D. Aggregate Classification: All imported materials shall be classified in accordance with ASTM D2487.

PART 2 PRODUCTS

2.1 COARSE AGGREGATE MATERIALS

- A. Coarse Aggregate Type A1: Crushed or uncrushed rock or gravel as shown on the Drawings and equal to Gravel Borrow per WSDOT Section 9-03.14(1) shall be used for above-water structural fill.

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- B. Coarse Aggregate Type A2: Free draining granular rock as shown on the Drawings and equal to Gravel Backfill for Drains per WSDOT Section 9-03.12(4) shall be used for gravel backfill of walls and drains.
- C. Coarse Aggregate Type A3: Angular, fragmental rock as shown on the Drawings and equal to Permeable Ballast per WSDOT Section 9-03.9(2) shall be used for below-water structural fill.
- D. Coarse Aggregate Type A4: Crushed or uncrushed rock or gravel as shown on the Drawings and equal to Gravel Backfill for Pipe Zone Bedding per WSDOT Section 9-03.12(3).

2.2 SAND

- A. Section 32 05 16 Fine Aggregate Type A5: Sand backfill as shown on the Drawings and equal to Backfill for Sand Drains per WSDOT Section 9-03.13.

2.3 SOURCE QUALITY CONTROL

- A. Coarse Aggregate Material - Testing and Analysis: Perform in accordance with ASTM C136 and ASTM D698.
- B. Sand - Testing and Analysis: Perform in accordance with ASTM C136 and ASTM D698.
- C. When tests indicate materials do not meet specified requirements, change material and retest. Additional testing shall be completed and paid for by the Contractor with no reimbursement by the Owner.

PART 3 EXECUTION

3.1 STOCKPILING

- A. Stockpile materials imported to site at locations as approved by Engineer for redistribution as specified.
- B. Separate different aggregate materials with dividers or stockpile individually to prevent mixing.
- C. Prevent intermixing of aggregate types or contamination.
- D. Direct surface water away from stockpile site to prevent erosion or deterioration of materials.
  - 1. Grade surface of stockpiles to prevent ponding of water.
  - 2. Cover stockpiles to minimize the infiltration of water.

3.2 STOCKPILE CLEANUP

- A. Remove stockpile, leave area in clean and neat condition. Grade site surface to prevent free standing surface water.
- B. When borrow area is indicated, leave area in clean and neat condition. Grade site surface to prevent free standing surface water.

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END OF SECTION

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SECTION 311000 - SITE CLEARING

PART 1 GENERAL

1.1 SUMMARY

- A. This Section includes clearing site of incidental paving and curbs, debris, grass, trees, and other plant life in preparation for site or building excavation work.
- B. Related Sections:
  - 1. Section 024100, Demolition
  - 2. Section 312213, Rough Grading
  - 3. Section 312318, Rock Removal

1.2 REFERENCES

- A. Document GRI W1319-B: Geotechnical report; bore hole locations and findings of subsurface materials.

1.3 DEFINITIONS

- A. Clearing: Removal of interfering or objectionable material lying on or protruding above ground surface.
- B. Grubbing: Removal of vegetation and other organic matter including stumps, buried logs, and roots greater than 2-inch caliper to a depth of 12 inches below subgrade.
- C. Interfering or Objectionable Material: Trash, rubbish, and junk; vegetation and other organic matter, whether alive, dead, or decaying; topsoil.
- D. Limits of Disturbance: Work area boundary as shown on the Drawings.
- E. Root Wad: Tree stump and root mass including all roots greater than 1-inch diameter.
- F. Stripping: Removal of topsoil remaining after applicable scalping is completed.

1.4 SUBMITTALS

- A. Section 013300, Submittal Procedures: Requirements for submittals.
- B. Clearing, Grubbing, and Stripping Plan: Drawings clearly showing proposed limits to clearing, grubbing, and stripping activities at Site.
- C. Certification or disposal permit for landfill and/or waste disposal site.
- D. A copy of written permission of private property owners, with copy of fill permit for said private property, as may be required for disposal of materials.

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1.5 QUALITY ASSURANCE

- A. Existing Conditions: Determine the extent of Work required and limitations before proceeding with Work.
- B. Obtain Engineer's approval of staked clearing, grubbing, and stripping limits prior to commencing clearing, grubbing, and stripping.
- C. Conform to applicable local, state, and federal codes for environmental requirements and disposal of debris,
  - 1. Burning on Project Site will not be permitted.
  - 2. Use of herbicides will not be permitted.
- D. Permits: The Contractor is responsible for obtaining all necessary permits required for completion of the Work described in this Section.
- E. Protection of Persons and Property: Meet all federal, state, and local safety requirements for the protection of laborers, other persons, and property in the vicinity of the work and requirements of the General Provisions.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Existing Materials: All materials, equipment, miscellaneous items, and debris involved, occurring or resulting from demolition, clearing, and grubbing work shall become the property of the Contractor at the place of origin, except as otherwise indicated on the Drawings or specifications.
- B. Wound Paint: Emulsified asphalt formulated for use on damaged plant tissues.

PART 3 EXECUTION

3.1 GENERAL

- A. Clear, grub, and strip areas needed for waste disposal, borrow, or Site improvements within limits shown in approved Clearing, Grubbing, and Stripping Plan.
- B. Remain within the property lines at all times.
- C. Do not injure or deface vegetation or structures that are not designated for removal.

3.2 EXAMINATION

- A. Verify existing plant life designated to remain is tagged or identified.
- B. Identify waste and salvage areas for placing removed materials.

3.3 PREPARATION

- A. Carefully coordinate the work of this Section with all other work and construction.

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- B. Call Washington Utility Notification Center at 1-800-424-5555 and Local Utility Line Information service at 360-642-3191 not less than 3 working days before performing Work.
- C. Request underground utilities to be located and marked within and surrounding construction areas.
  - 1. Disconnect or arrange for disconnection of utilities (if any) affected by required work.
  - 2. Keep all active utilities intact and in continuous operations.
- D. Prepare Site only after:
  - 1. Erosion and sediment controls are in place.
    - a. Limit areas exposed uncontrolled to erosion during installation of temporary erosion and sediment controls and in compliance with **permits**.
  - 2. Tree and vegetation protection is installed.
    - a. Protect existing site improvements, trees, and shrubs to remain to preclude damage during construction.
    - b. Follow the provisions set forth in 01 56 39, Temporary Tree and Plant Protection for all temporary tree and plant protection measures.
  - 3. Temporary silt fencing is installed as shown on Drawings.
  - 4. Notification of utility agencies; disconnect or arrange for disconnection of utilities (if any) affected by required work. Keep all active utilities intact and in continuous operation.

**3.4 PROTECTION**

- A. Utilities: Locate, identify, and protect utilities located by utilities and indicated on the Drawings to remain from damage.
- B. Survey control: Protect benchmarks, survey control points, and existing structures from damage or displacement.
- C. Preservation and Trimming of Trees, Shrubs, and Other Vegetation:
  - 1. Avoid injury to trees, shrubs, vines, plants, grasses, and other vegetation growing outside of the areas to be cleared and grubbed and those trees and shrubs designated to be preserved.
  - 2. Protect existing trees and shrubs against cutting, breaking, or skinning of roots, skinning and bruising of bark, smothering of roots by stockpiling construction materials, excavated materials, excess foot or vehicular traffic, and parking of vehicles within drip line.
  - 3. Provide temporary guards, as necessary, to protect trees and vegetation to be left standing.



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4. Temporarily cover exposed roots with wet burlap to prevent roots from drying out, cover with earth as soon as possible.
5. Provide protection for roots and limbs over 1-1/2-inch diameter cut during construction operations. Coat cut faces with emulsified asphalt.
6. Repairable damage to trees and shrubs designated to remain shall be made by a professional tree surgeon approved by the Engineer. Cost shall be borne by the Contractor.

D. Landscaped Areas:

1. When any portion of the Work crosses private property or landscaped areas, excavate topsoil separately and pile it on the opposite side of the trench from the subsoil.
2. Conduct Work in a manner that will restore original conditions as nearly as practicable.
3. Remove and replace any trees, shrubs, plants, sod, or other vegetative material as needed to complete Work.
4. All shrubs or plants shall be balled by experienced workers, carefully handled and watered, and replaced in their original positions without damage. Sod shall be handled in a similar manner.
5. Wherever sod cannot be saved and restored, the ground must be reseeded and cared for until a stand of grass is reestablished.
6. Plants or shrubs killed or destroyed shall be replaced and paid for by the Contractor.
7. It is the intent of this paragraph that the Contractor shall leave the surface and plantings in substantially the same conditions as before the Work is undertaken.

E. Miscellaneous Site Features: Protect all existing miscellaneous site features from damage by excavating equipment and vehicular traffic, including but not limited to existing structures, fences, mailboxes, sidewalks, paving, and curbs.

F. Repair and Replacement:

1. Damaged items, including but not restricted to those noted above, shall be repaired or replaced with new materials as required to restore damaged items or surfaces to a condition equal to and matching that existing prior to damage or start of work of this contract.
2. Any damage to existing facilities or utilities to remain as caused by the Contractor's operations shall be repaired at the Contractor's expense.

3.5 LIMITS

- A. As follows, but not to extend beyond Limits of Disturbance and within the approved disturbance limits in the Environmental Zones:

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1. Excavation: 5 feet beyond top of cut slopes.
  2. Trench Excavation: 6 feet from trench centerline, regardless of actual trench width.
  3. Fill: 5 feet beyond toe of permanent fill.
    - a. Clearing and Grubbing: 5 feet beyond toe of permanent fill.
    - b. Stripping: 2 feet beyond toe of permanent fill.
  4. Structures: 15 feet outside of new structures.
  5. Roadways: Clearing, grubbing, scalping, and stripping 5 feet from roadway shoulders.
  6. Other Areas: As shown.
- B. Remove rubbish, trash, and junk from entire area within the Limits of Disturbance as material is generated. Stockpiling shall not be permitted without written approval of Owner.

**3.6 CLEARING AND GRUBBING**

- A. Clear and grub areas within limits shown in Drawings.
- B. Except in areas to be excavated, all holes resulting from the clearing and grubbing operations shall be backfilled and compacted in accordance with the applicable sections of these Specifications.
- C. Clearing:
1. Remove trees, saplings, snags, stumps, shrubs, brush, vines, grasses, weeds, and other vegetative growth within the clearing limits shown on the Drawings, except those trees and shrubs noted to remain on the Drawings or as directed by the Engineer.
  2. Clearing shall be performed in such a manner as to remove all evidence of the presence of vegetative growth from the surface of the Project Site and shall be inclusive of sticks and branches of thickness or diameter greater than 3/8-inch and of grasses, weeds, exceeding 12 inches in height except as otherwise indicated.
  3. Clear undergrowth and deadwood, without disturbing subsoil.
- D. Grubbing: Clear areas required for access to site and execution of Work and remove all stumps, root wads, and roots over 1-inch diameter to the following depths:
- |   |           |
|---|-----------|
| 1. Future Structures and Building Areas | 24 Inches |
| 2. Roads and Parking Areas              | 18 Inches |
| 3. All other Areas                      | 12 Inches |

**3.7 TREE REMOVAL**

- A. Not Used

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**3.8 REMOVAL AND DISPOSAL**

- A. Native vegetation may be mulched and used on Site.
- B. Asphalt and Gravel Surfaces:
  - 1. Asphalt, concrete, and gravel surfaces designated for removal shall be done to full depth.
  - 2. Asphalt, concrete, and gravel removed at Site may be reused at Site where shown on the Drawings or following approval of the Engineer.
  - 3. Haul removed asphalt, concrete, and gravel which is unsuitable for reuse or that exceeds quantity required.
- C. Remove debris, rock, abandoned piping, and extracted plant life from Site.
- D. Remove from the Site all debris, materials, equipment, and items found thereon and materials and debris resulting from the Work, except as otherwise indicated.
  - 1. All existing improvements designated on the Drawings or specified to be removed including but not limited to structures, pipelines, walls, footings, foundations, slabs, pavements, curbs, fencing, and similar structures occurring above, at, or below existing ground surface shall be included in the Work.
  - 2. Unless otherwise specified, any resulting voids shall be thoroughly cracked out for drainage and backfilled with suitable excavated or imported material compacted to the density of the adjacent soil.
- E. Continuously clean-up and remove waste materials from site. Do not allow materials to accumulate on site.
- F. Do not burn or bury materials on site. Leave site in clean condition.
- G. Removal: All material resulting from demolition, clearing, and grubbing, and trimming operations shall be removed from the Site and disposed of in a lawful manner. Materials placed on property of private property owners shall be by written permission only.
- H. Cleanup: During and upon completion of work, promptly remove all unused tools and equipment, surplus materials, and debris.
- I. Adjacent areas shall be returned to their existing condition prior to the start of Work.

**3.9 CLEANUP**

- A. During the time Work is in progress, make every effort to maintain the Site in a neat and orderly condition.
- B. All refuse, broken pipe, excess fill material, cribbing, and debris shall be removed as soon as practicable.
- C. Should the Work not be maintained in a satisfactory condition, the Owner may cause the work to stop until the cleanup of the Work has been done to the satisfaction of the Engineer.

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- D. The Work will not be considered complete, or the final payment certificate issued until all rubbish, unused material, or equipment shall have been removed and the premises left in a condition satisfactory to the Owner and the Engineer.

END OF SECTION

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SECTION 312213 - ROUGH GRADING

PART 1 GENERAL

1.1 SUMMARY

- A. This Section includes rough grading and filling associated with contouring of Site in preparation for building excavation and subsequent site work.
- B. Section Includes:
  - 1. Excavating topsoil
  - 2. Excavating subsoil
  - 3. Cutting, grading, filling, and rough contouring of Site
- C. Related Sections:
  - 1. Section 014000, Quality Control
  - 2. Section 310513, Soils for Earthwork
  - 3. Section 310516, Aggregates for Earthwork
  - 4. Section 311000, Site Clearing
  - 5. Section 312316, Excavation
  - 6. Section 312317, Trenching
  - 7. Section 312318, Rock Removal
  - 8. Section 312323, Fill

1.2 REFERENCES

- A. American Association of State Highway and Transportation Officials:
  - 1. AASHTO T99 - Standard Specification for Moisture-Density Relations of Soils Using a 2.5-kg (5.5-lb) Rammer and a 305-mm (12-in.) Drop
- B. ASTM International (ASTM):
  - 1. ASTM C136 - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
  - 2. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup> (600 kN-m/m<sup>3</sup>))
  - 3. ASTM D2419 - Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate
  - 4. ASTM D2434 - Standard Test Method for Permeability of Granular Soils (Constant Head)

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- 5. ASTM D6938 - Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
- C. Document GRI W1319-B: Geotechnical report; bore hole locations and findings of subsurface materials.

1.3 SUBMITTALS

- A. Section 013300, Submittal Procedures: Requirements for submittals.
- B. Soils for Earthwork: As specified in Section 310513, Soils for Earthwork.
- C. Aggregates for Earthwork: As specified in Section 310516, Aggregates for Earthwork.

1.4 CLOSEOUT SUBMITTALS

- A. Project Record Documents: Accurately record actual locations of utilities remaining by horizontal dimensions, elevations or inverts, and slope gradients.

1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with ASTM C136, ASTM D2419, and ASTM D2434.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Subsoil Fill: As specified in Section 310513, Soils for Earthwork.
- B. Topsoil: As specified in Section 310513, Soils for Earthwork.
  - 1. Type TS1, Select Native Topsoil Material, as may be available.
  - 2. TS2, Imported Topsoil Material, as may be required.
- C. Structural Fill: Type A3, Permeable Ballast as specified in Section 310516, Aggregates for Earthwork. Size of aggregate as shown on the Drawings.
- D. Granular Fill: Type A2, Granular Drain Backfill Material as specified in Section 310516, Aggregates for Earthwork. Size of aggregate as shown on the Drawings.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify survey benchmark and intended elevations for the Work are as indicated on Drawings.

3.2 PREPARATION

Washington 1-800-424-5555

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- A. Call Local Utility Line Information service at 360-642-3191 not less than 3 working days before performing Work.
  - 1. Request underground utilities to be located and marked within and surrounding construction areas.
  - 2. Notify Engineer of any potential conflicts resulting from utility locations and the Drawings.
  - 3. Notify utility company to remove and relocate utilities, as may be necessary.
- B. Identify required lines, levels, contours, and datum.
- C. See Section 31 10 00, Site Clearing for additional requirements in protection of existing utilities, survey control, plant life, and landscaped areas in coordination with the Work of this Section.

**3.3 TOPSOIL EXCAVATION**

- A. Excavate and stockpile topsoil as specified in Section 310513, Soils for Earthwork.

**3.4 SUBSOIL EXCAVATION**

- A. Excavate subsoil from areas to be further excavated, re-landscaped, or re-graded as shown on the Drawings.
- B. When practical, do not excavate wet subsoil. When wet subsoil must be excavated and is to be reused on site for the Work, process wet material to obtain optimum moisture content.
- C. Stockpile excavated material in area designated onsite in accordance with Section 310513, Soils for Earthwork.
- D. When excavating through roots, perform Work by hand and cut roots with sharp axe.
- E. Benching Slopes: Horizontally bench existing slopes greater than 1:2 to key placed fill material to slope to provide firm bearing.
- F. Stability: Replace damaged or displaced subsoil as specified for fill.

**3.5 FILLING**

- A. General:
  - 1. Grading and filling operations shall not take place when weather conditions and moisture content of fill materials prevent the attainment of specified density.
  - 2. Vertical curves or roundings at abrupt changes in slope shall be established as approved by Engineer.
  - 3. Bring all graded areas to a relatively smooth, even grade and slope by blading or dragging. Remove high spots and fill depressions.
- B. Fill areas to contours and elevations shown on the Drawings with unfrozen materials.
- C. Topsoil Fill:

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1. Scarify prepared subgrade to depth of 4 inches immediately prior to placing topsoil.
  2. Place topsoil in areas to be seeded to depths indicated on the Drawings, minimum depth of 6 inches.
  3. Place topsoil material loose; do not compact, do not place in wet or muddy conditions.
- D. Place material in continuous layers as follows:
1. Subsoil Fill: Maximum 8 inches compacted depth.
  2. Structural Fill: Maximum 12 inches compacted depth.
  3. Granular Fill: Maximum 12 inches compacted depth.
- E. Maintain optimum moisture content of fill materials to attain required compaction density.
- F. Slope grade away from building minimum 2 percent slope for minimum distance of 10 feet, unless noted otherwise.
- G. Make grade changes gradual. Blend slope into level areas.
- H. Repair or replace items indicated on the Drawings to remain which are damaged by excavation or filling. All costs shall be borne by the Contractor.

3.6 TOLERANCES

- A. Top Surface of Subgrade: Plus or minus 1/10 of a foot from required elevation.

3.7 FIELD QUALITY CONTROL

- A. Perform laboratory material tests in accordance with AASHTO T99.
- B. Perform in place compaction tests in accordance with the following:
1. Density Tests: ASTM D6938
  2. Moisture Tests: ASTM D3017
- C. Frequency and location of testing is dependent upon type of material placed. See Section 014000, Quality Control for testing requirements.
- D. When tests indicate Work does not meet specified requirements, remove Work, replace, and retest at the sole expense of the Contractor.

END OF SECTION



**CAPE DISAPPOINTMENT STATE PARK  
REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD**

**SECTION 312316 – EXCAVATION**

**PART 1 GENERAL**

**1.1 SUMMARY**

- A. This Section includes excavation required for site structures, or under slabs-on-grade or paving. Excavating for utilities outside building is included in Section 312317, Trenching.
- B. Section Includes:
  - 1. Excavating for paving, roads, and parking areas
  - 2. Excavating for slabs-on-grade
  - 3. Excavating for site structures
  - 4. Excavating for landscaping
- C. Related Sections:
  - 1. Section 002060 -Earthwork Contractor Statement of Qualifications Form
  - 2. Section 002113 - Instructions to Bidders
  - 3. Section 014000 - Quality Control
  - 4. Section 024100 - Demolition
  - 5. Section 310513 - Soils for Earthwork
  - 6. Section 310516 - Aggregates for Earthwork
  - 7. Section 311000 - Site Clearing
  - 8. Section 312213 - Rough Grading
  - 9. Section 312317 - Trenching
  - 10. Section 312318 - Rock Removal
  - 11. Section 312319 - Dewatering
  - 12. Section 312323 – Fill
  - 13. Section 330550 - Existing Pipe Abandonment
  - 14. Section 331110 - Water Utility Distribution and Transmission Piping.

**1.2 REFERENCES**

- A. Document GRI W1319-B: Geotechnical report; bore hole locations and findings of subsurface materials.

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1.3 DEFINITIONS

- A. Common Excavation: All excavation required for Work, regardless of the type, character, composition, or condition of the material encountered. Common Excavation shall further include all debris, junk, broken concrete, and all other material. All excavation shall be classified as Common Excavation, unless provided as Rock for under Section 312318, Rock Removal below.
- B. Common Material: All soils, aggregate, debris, junk, broken concrete, and miscellaneous material encountered in Common Excavation, excluding rock as defined below.
- C. Concrete Excavation: The removal of pieces of concrete larger than 1 cubic yard in volume that requires drilling, splitting and breaking methods, or a necessitating a trench width increase of 18 inches or more than the width of the preceding 10 feet of trench. Concrete excavation includes materials composed of Portland cement that are not identified other than manholes, structures, sewer pipe, or other appurtenances.
- D. Exploratory Excavation: The removal and replacement of material from locations shown on the Drawings, or as directed for the purpose of investigating underground conditions and identifying potential utility conflict between existing and proposed utilities.
- E. Overbreak: Material beyond and outside of the slope limits established by the Owner's Representative, which becomes displaced or loosened during excavation and is excavated.
- F. Pothole Excavation: Pothole excavation is the removal and replacement of all materials via coring, vacuum extraction, or similar method, not classified as exploratory excavation, for the purposes of locating an underground utility and to investigate underground conditions.
- G. Rock Removal: As defined in Section 312318, Rock Removal.
- H. Spoils: Excavated materials from Site unsuitable for use as fill or not required for backfill and grading.
- I. Unsuitable Materials: See Spoils.

1.4 REFERENCES

- A. Local utility standards when working within 24 inches of utility lines.

1.5 SUBMITTALS

- A. Section 013300, Submittal Procedures: Requirements for submittals.
- B. Excavation Protection Plan: At a minimum, to include the following:
  - 1. Methods and sequencing of mass excavation.
  - 2. Proposed onsite and off-site spoil disposal locations.
  - 3. Anticipated difficulties and proposed resolutions.
  - 4. Proposed routes for Owner's access to Owner's facilities impacted by excavation Work.
  - 5. Proposed haul routes.

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1.6 QUALITY ASSURANCE

- A. Allowable Tolerances: Final grades shall be plus or minus 0.1-foot.
- B. Provide adequate survey control to avoid unauthorized over-excavation.
- C. Weather Limitations:
  - 1. Material excavated when frozen or when air temperature is less than 32 degrees Fahrenheit (F) shall not be used as fill or backfill until material completely thaws.
  - 2. Material excavated during inclement weather shall not be used as fill or backfill until after material drains and dries sufficiently for proper compaction.

1.7 QUALIFICATIONS

Special minimum experience qualifications apply to the subgrade preparation and excavation in high-groundwater conditions for this Project. The Earthwork Contractor must be qualified by the Engineer prior to bidding. A Statement of Qualifications Form shall be submitted to the Engineer for review and approval by those prospective earthwork contractors not already listed as prequalified contractors in Section 00 21 13, Instructions to Bidders. Refer to Section 00 21 13, Instructions to Bidders and Section 00 20 60, Earthwork Contractor Statement of Qualifications Form for prequalification information.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.1 PREPARATION

- A. Prior to commencing work in this Section, become familiar with site conditions. In the event discrepancies are found, notify the Engineer as to the nature and extent of the differing conditions.
- B. Call Washington Utility Notification Center at 1-800-424-5555 and Local Utility Line Information service at 360-642-3191 not less than 3 working days before performing Work.
  - 1. Request underground utilities to be located and marked within and surrounding construction areas.
  - 2. Coordinate with and notify utility companies should it be necessary to remove or relocate facilities.
- C. Identify required lines, levels, contours, and datum.
- D. See Section 311000, Site Clearing for additional requirements in protection of existing utilities, survey control, plant life, and landscaped areas in coordination with Work in this Section.

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**3.2 SITE CONDITIONS**

- A. Quantity Survey: The Contractor shall be responsible for calculations for quantities and volume of cut and fill from existing site grades to finish grades established under this contract as indicated in the Drawings or specified and shall include the cost for all earthwork in the total basic bid.
- B. Dust Control: Must meet all federal, state, and local requirements. Protect persons and property from damage and discomfort caused by dust. Water surfaces as necessary and when directed by Engineer to quell dust.
- C. Soil Control: Soil shall not be permitted to accumulate on surrounding streets or sidewalks nor to be washed into sewers.

**3.3 EXISTING UNDERGROUND UTILITIES**

- A. Protect active utilities encountered, located or otherwise, and notify persons or agencies owning same.
- B. Remove inactive or abandoned utilities from within the project grading limits in accordance with Section 330550, Existing Pipe Abandonment.
- C. For sewer and other miscellaneous drainage facilities, fill and plug pipes as follows:
  - 1. General:
    - a. Remove all structures to a minimum of 3 feet below subgrade, unless otherwise noted.
    - b. Cover top surface of all abandoned structures with two sheets of nonwoven geotextile, extended at least 1-foot beyond the outside walls of the abandoned manhole, sump, or basin.
    - c. Plug all abandoned pipes with permanent plugs as specified in Section 330550, Existing Pipe Abandonment.
  - 2. Sumps:
    - a. Remove existing sediment, soil, and water. Properly dispose of these materials in accordance with the requirements of these specifications.
    - b. Remove top cone and first solid concrete section to a depth of approximately 8 to 10 feet below ground.
    - c. Fill sump with flowable fill as approved by the Engineer.
    - d. Backfill remaining voids for facilities within existing or proposed roadways with approved materials meeting the requirements of Section 321123, Aggregate Base Courses.
  - 3. Salvaging Manhole Frames, Covers, and Grates:
    - a. Not Used
  - 4. Existing Manhole Frames and Covers: Not Used.

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**3.4 PRESERVATION OF EXISTING IMPROVEMENT**

- A. Protect adjacent existing structures which may be damaged by excavation work.
  - 1. Conduct operations in such a manner that existing street facilities, utilities, railroad tracks, structures, and other improvements, which are to remain in place, will not be damaged. Furnish and install cribbing and shoring or whatever means necessary to support material around existing facilities, or to support the facilities themselves, and maintain such supports until no longer needed.
  - 2. Open slopes shall not be cut within 5 feet of any existing spread footings unless approved by the Engineer.
  - 3. Do not interfere with 45 degree bearing splay of foundations unless approved by the Engineer
  - 4. Excavated material shall not be placed adjacent to existing or proposed structures.

**3.5 EXCAVATION**

- A. General:
  - 1. Method of excavation shall be the Contractor's option, but care shall be exercised as final grade is approached to leave it in undisturbed condition.
  - 2. If the final grade for supporting structures is disturbed, it shall be restored to requirements of these Specifications and satisfaction of the Engineer at no additional cost to Owner.
  - 3. The Contractor is advised that footings should be poured as soon as possible to minimize unfavorable final grade conditions from developing.
  - 4. Provide all measures to ensure public safety.
- B. Control of Water:
  - 1. Provide and maintain equipment to remove and dispose of water during the course of the work of this Section and keep excavations dry and free of frost or ice.
  - 2. Bearing surfaces that become softened by water or frost must be re-excavated to solid bearing at Contractor's expense and backfilled with compacted crushed rock at Contractor's expense.
  - 3. Grade top perimeter of excavation to prevent surface water from draining into excavation.
  - 4. See additional requirements in Section 312319, Dewatering.
- C. Frozen Ground: Frost protection shall be provided for all structural excavation work. Foundation work shall not be placed on frozen ground.
- D. Excavate material of every nature and description to the lines and grades as indicated in the Drawings and/or as required for construction of the facility.
  - 1. Allow for forms, shoring, working space, granular base, topsoil, and similar items, wherever applicable.

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2. Trim excavations to neat lines. Remove loose matter and lumped subsoil.
- E. Excavated Materials: Soils excavated at Site will be treated and used as one of two general categories of material as provided below.
1. Fill:
    - a. Subsoil Type S1, Select Native Fill, only as approved for use by Engineer.
  2. Spoils:
    - a. Ensure there is sufficient suitable material available to complete embankments and other required fillings prior to disposing of any excavated materials.
    - b. Make arrangements for disposal of spoils and include as part of contract work in preparing of project bids.
    - c. Landfill permit or written permission from private property owner to be obtained by the Contractor and provided to the Engineer.
- F. Shoring:
1. The Contractor shall be solely responsible for excavation protection and worker safety and shall provide sheeting and shoring wherever required, all in accordance with current local, state, and federal laws, codes, and ordinances.
  2. Where shoring, sheet piling, sheeting, bracing, lagging, or other supports are necessary to prevent cave-ins or damage to existing structures, it shall be the responsibility of the Contractor to design, furnish, place, maintain, and remove such supports in accordance with applicable ordinances and safety requirements. Design shall be completed by a Licensed Civil Engineer and submitted to the owner for review.
  3. The design, planning, installation, and removal of all sheeting accomplished in such a manner as to maintain the undisturbed state of the soil below and adjacent to the excavation.
- G. Slope existing banks with machine to angle of repose or less until shored.
1. Shape, trim, and finish cut slopes to conform to lines, grades, and cross-sections shown, with proper allowance for topsoil or slope protection, where shown.
  2. Protection of excavation side slopes:
    - a. Use excavation methods that will not shatter or loosen excavation slopes.
    - b. Where practical, excavate materials without previous loosening and in limited layers or thickness to avoid breaking the material back of the established slope line.
    - c. Avoid overbreaks. Overbreak is incidental to the Work, except in cases where the Owner's Representative determines that such overbreak was unavoidable.
    - d. Excavation in rock or rocky cuts:
      - 1) Once completed, thoroughly test the slopes with bars or other approved means to remove all loose, detached, broken, or otherwise unstable material.

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- 2) Remove jutting points. Scale slopes using mine scaling rods or other approved methods to remove loose or overhanging materials and provide a safe, trim, neat, and stable condition.
  - 3) Dispose of the materials removed under this subparagraph in the same manner as other excavated material.
- e. Remove all exposed roots, debris, and all stones more than 3 inches in size which are loose or could become loosened.
3. Construct slopes free of all exposed roots.
  4. Construct slopes free of unstable rock and loose stones exceeding 3 inches in diameter.
  5. Round tops of cut slopes in soil to not less than a 6-foot radius, provided such rounding does not extend off-site, outside of easements, outside of rights-of-way, or adversely impacts existing facilities, adjacent property, or completed Work.
  6. Trim all surfaces neatly and smoothly.
- H. Compact disturbed load bearing soil in direct contact with foundations to original bearing capacity; perform compaction in accordance with Section 312317, Trenching and Section 31 23 23, Fill. Load bearing soil beneath the water level should be firm and unyielding and be evaluated by the Engineer.
- I. Notify Engineer of unexpected subsurface conditions.
- J. Over-excavation for Unsuitable Foundation Conditions:
1. Cross-sectional dimensions and depths of excavations shown in the Drawings shall be subject to such changes as may be found necessary by the Engineer to secure foundations free from soft, weathered, shattered, and loose material or other objectionable materials.
  2. Unsuitable materials encountered shall be removed and replaced with Coarse Aggregate Type A3, as specified in Section 310516, Aggregates for Earthwork. All material placed shall be compacted to 95 percent of maximum dry density.
  3. Unsuitable materials shall be removed and replaced only as directed in writing by Engineer.
- K. Rock Removal:
1. Remove boulders and rock up to 1/2 cubic yard measured by volume per the requirements of this Section.
  2. Remove larger boulders and rock material as specified in Section 312318, Rock Removal.
  3. Concrete removal, as defined herein, shall be treated as Rock Removal.
- L. Stockpile excavated material in area(s) designated on or off site in accordance with Section 310513, Soils for Earthwork.

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3.6 FIELD QUALITY CONTROL

- A. Perform excavation and controlled fill operations in accordance with the requirements of this Section.
- B. Coordinate the visual inspection and approval of all bearing surfaces by Engineer before installing subsequent work.

3.7 PROTECTION

- A. Prevent displacement or loose soil from falling into excavation; maintain soil stability and store excavated materials at a distance from top of excavation.
- B. Protect structures, utilities, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth operations.

END OF SECTION



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SECTION 312317 - TRENCHING

PART 1 GENERAL

1.1 SUMMARY

- A. This Section includes the requirements for excavation and backfill of all utilities, including installation of pipe bedding, pipe zone backfill, trench backfill, and related Work as shown on the Drawings and as specified.
- B. Section includes:
  - 1. Excavating trenches for pipe, utility vaults, and other utilities.
  - 2. Compacted fill from top of utility bedding to final grades.
  - 3. Trench and utility vault backfilling and compaction.
- C. Related Sections:
  - 1. Section 014000, Quality Control
  - 2. Section 310513, Soils for Earthwork
  - 3. Section 310516, Aggregates for Earthwork
  - 4. Section 311000, Site Clearing
  - 5. Section 312213, Rough Grading
  - 6. Section 312316, Excavation
  - 7. Section 312318, Rock Removal
  - 8. Section 312323, Fill
  - 9. Section 321313 Concrete Paving
  - 10. Section 331110, Water Utility Distribution and Transmission Piping
  - 11. Section 333400, Sanitary Utility Sewerage Force Main

1.2 REFERENCES

- A. American Association of State Highway and Transportation Officials:
  - 1. AASHTO T99 - Standard Specification for Moisture-Density Relations of Soils Using a 2.5-kg (5.5-lb) Rammer and a 305-mm (12-in.) Drop
- B. ASTM International (ASTM):
  - 1. ASTM C403 - Standard Test Method for Time of Setting of Concrete Mixtures by Penetration Resistance

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2. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup> (600 kN-m/m<sup>3</sup>))
  3. ASTM D6938 - Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
  4. D4832, Standard Test Method for Preparation and Testing of Controlled Low Strength Material (CLSM) Test Cylinders
- C. Document GRI W1319-B: Geotechnical report; bore hole locations and findings of subsurface materials.

1.3 DEFINITIONS

- A. Controlled Low Strength Material (CLSM): Also referred to as Flowable Fill. Lean cement concrete fill. A self-compacting, cementitious material.
- B. Flexible Pipe: For the purposes of these Specifications, tubing between 1/2-inch and 4-inch diameter constructed of polyvinyl chloride (PVC) and high-density polyethylene (HDPE) are considered flexible pipes. HDPE piping 4 inches in diameter and larger is also considered flexible pipe.
- C. Geosynthetics: Geotextiles, geogrids, geomembranes, and drainage composite materials.
- D. Imported Material: Materials obtained from sources offsite, suitable for specified use.
- E. Lift: Loose (uncompacted) layer of material.
- F. Obstructions: Items which may be encountered during utility and vault trenching which do not require replacement.
- G. Optimum Moisture Content:
1. Determined in accordance with ASTM Standard specified to determine maximum dry density for relative compaction.
  2. Determine field moisture content on basis of fraction passing 3/4-inch sieve.
- H. Pipe Bedding: Trench backfill zone for full trench width which extends from the bottom outside surface of the pipe to a minimum of 6 inches below the bottom outside surface of pipe, conduit, cable, or duct bank to the trench foundation so as to uniformly support the barrel of the pipe.
- I. Pipe Zone: Trench backfill zone for full trench width which extends from the bottom outside surface of the pipe to a minimum of 6 inches above the top outside surface of pipe, conduit, cable, or duct bank.
- J. Pipe Bedding, Pipe Zone, and Trench Backfill Classifications:
1. Class A: Backfill with suitable native or imported material that is approved to meet the characteristics required for the specific surface loading or other criteria of the backfill zone.

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2. Class B: Backfill with imported granular material consisting of gravel or crushed rock meeting the requirements of this Section and Coarse Aggregate Type A4 as specified in Section 310516, Aggregates for Earthwork; typical designated size shall be 1-inch-0 or 3/4-inch-0.
  3. Class C: Backfill with Fine Sand, as specified in Section 310516, Aggregates for Earthwork.
  4. Class D: Backfill with approved pit run or bar run material, well-graded from coarse to fine; maximum dimension shall be 3 inches.
  5. Class E: Backfill with CLSM.
- K. Pothole Excavations: Removal and replacement of all materials via coring, vacuum extraction, or similar method for the purposes of locating an underground utility and to investigate underground conditions.
- L. Prepared Trench Bottom: The bottom of the trench on which the pipe bedding is to lie, and which provides support for the pipe.
- M. Relative Compaction: Ratio, in percent, of as-compacted field dry density to laboratory maximum dry density as determined in accordance with ASTM Standards.
- N. Rigid Pipe: For the purposes of these Specifications, pipe constructed of PVC, ductile iron, steel, concrete, and clay pipes are considered rigid pipes.
- O. Sewer, Pipes, and Mains: Conduits of circular or other geometric shapes, used to convey liquids or gases, or other material.
- P. Trench Backfill: Trench backfill zone for full trench width extending from the top of the pipe zone to pavement base rock, ground surface, or other surface material.
- Q. Trench Stabilization: Removal of unsuitable material in the bottom of a trench and replacement with specified material for support of a pipe, main, conduit, structure, or appurtenances.
- R. Utility: Any buried pipe, duct, conduit, or cable.
- S. Well-Graded: A mixture of particle sizes with no specific concentration or lack thereof of one or more sizes that, when compacted, produces a strong and relatively incompressible soil mass free from detrimental voids.

1.4 SUBMITTALS

- A. Section 013300, Submittal Procedures: Requirements for submittals.
- B. Excavation Protection Plan: At a minimum, to include the following:
  1. Methods and sequencing of mass excavation.
  2. Proposed on-site and off-site spoil disposal locations.
  3. Anticipated difficulties and proposed resolutions.

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4. Proposed routes for Owner's access to Owner's facilities impacted by excavation Work.
5. Proposed haul routes.
- C. Product Data:
  1. Geotextile fabric, indicating fabric and construction
  2. Marking tapes
  3. Tracer wire
  4. Connectors for tracer wire and/or marking tapes
  5. Tracer wire locate boxes
  6. Marker balls
  7. Locator stations
  8. Ground wires
- D. Imported Materials:
  1. Materials Source: Submit name and location of imported fill materials suppliers.
  2. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.
  3. Submit results of aggregate sieve analysis and standard proctor test for granular material.
- E. CLSM: Not used.
- F. Concrete: Mix designs in accordance with Submittal requirements of Section 321313 Concrete Paving.

**1.5 QUALITY ASSURANCE**

- A. Subsoil and topsoil fill materials: In accordance with Quality Assurance requirements stated in Section 310513, Soils for Earthwork.
- B. Aggregate fill materials: In accordance with Quality Assurance requirements stated in Section 310516, Aggregates for Earthwork.
- C. CLSM: Not used.
- D. Allowable Tolerances: Final grades shall be plus or minus 0.1-foot.

**1.6 QUALIFICATIONS**

Special minimum experience qualifications apply to the installation of water mains for this Project. The Water Main Contractor must be qualified by the Engineer. A Statement of Qualifications Form shall be submitted to the Engineer for review and approval by those prospective water main contractors not already listed as prequalified contractors in Section 002113, Instructions to Bidders. Refer to Section 002113, Instructions to Bidders and Section 002050, Water Main Contractor Statement of Qualifications Form for prequalification information.

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1.7 COORDINATION

- A. Verify Work associated with lower elevation utilities is complete before placing higher elevation utilities.
- B. Coordinate trenching and utility installation work with other work at utility construction location occurring near or adjacent to specified herein.

PART 2 PRODUCTS

2.1 FILL MATERIALS

- A. Subsoil Fill: Type S2, Select Imported Material as specified in Section 310513, Soils for Earthwork.
- B. Imported Granular Fill: Coarse Aggregate Type A4, Dense-Graded Aggregate with gradation as shown in the Drawings and specified in Section 310516, Aggregates for Earthwork.
- C. Concrete:
  - 1. Lean concrete per WSDOT Section 6-02.3(2)D with compressive strength of 100 pounds per square inch (psi).
  - 2. Class 3000 concrete per WSDOT Section 6-02.3(2)B with compressive strength of 3,000 psi.
- D. Drain Rock: Coarse Aggregate Type A2, Granular Drain Backfill Material with gradation as shown in the Drawings and specified in Section 310516, Aggregates for Earthwork.
- E. Sand: As specified in Section 310516, Aggregates for Earthwork.
- F. Trench Stabilization Material: Coarse Aggregate Type A3, as specified in Section 310516, Aggregates for Earthwork.

2.2 MARKING TAPE

- A. Detectable:
  - 1. Solid aluminum foil, visible on unprinted side, encased in protective high visibility, inert polyethylene plastic jacket.
  - 2. Foil Thickness: Minimum 0.35 mils.
  - 3. Laminate Thickness: Minimum 5 mils.
  - 4. Width: 6 inches.
  - 5. Identifying Lettering: Minimum 1-inch high, permanent black lettering imprinted continuously over entire length.
  - 6. Joining Clips: Tin or nickel-coated furnished by Tape Manufacturer.

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7. Manufacturers and Products:

- a. Reef Industries; Terra Tape, Sentry Line Detectable
- b. Mutual Industries; Detectable Tape
- c. Presco; Detectable Tape

B. Color: In accordance with APWA Uniform Color Code for Temporary Marking of Underground Facilities and as specified in NEMA Z535.1, Safety Color Code.

<b>Color</b>	<b>Facility</b>
Red	Electric power lines, cables, conduit, and lightning cables
Orange	Communicating alarm or signal lines, cables, or conduit
Yellow	Gas, oil, steam, petroleum, or gaseous materials
Green	Sewers and drain lines
Blue	Potable water
Purple	Reclaimed water, irrigation, and slurry lines

2.3 ELECTRONIC LOCATING MATERIALS

A. Marker Balls: Not used.

B. Tracer Wire:

- 1. Direct burial No. 12 AWG solid, annealed copper-clad steel (CCS) high strength tracer wire.
- 2. Tensile Breaking Load: 380-pound average.
- 3. Jacket:
  - a. High molecular weight high-density polyethylene complying with ASTM D1248, 30-volt rating.
  - b. Color: Provide in colors per Article 2.03.B above.
- 4. Manufacturer and Product: Copperhead Industries; LLC, 12 CCS high strength reinforced tracer wire, or equal.

C. Tracer Wire Connectors:

- 1. Waterproof, corrosion proof and suitable for No. 12 AWG solid core wire.
- 2. Prefilled with silicone and suitable for use with low-voltage tracer lines of less than 50 volts.
- 3. Lug Connectors:
  - a. Waterproof plastic housing that encases the silicone prefilled lug terminals.
  - b. Manufacturer and Product: King Innovations; DryConn™ Direct Bury Lug or equal.
- 4. Twist Connectors:

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- a. Waterproof epoxy-filled packaging that encases the silicone prefilled twist connectors.
- b. Manufacturer and Product: 3M Division; DBY Direct Bury Splice Kit 09053 connectors or equal.
- D. Ground Wire: No. 12 AWG bare solid copper wire.
- E. Locator Station:
  - 1. Test Station:
    - a. Lexan® polycarbonate.
    - b. Color: Provide in colors per Article 2.03.B above.
  - 2. Terminals suitable for No. 12 AWG leads.
  - 3. Use single (two lead) locator stations with two terminals, one for ground wire and one for tracer wire, when only one tracer wire is terminated in manhole.
  - 4. Use multi-lead locator stations with the appropriate number of terminals when 2 or more tracer wire leads are terminated in manhole.
  - 5. Manufacturer and Product: Cott Manufacturing Company; FlangeFink® Cathodic Protection Test Station.

**2.4 VISUAL IDENTIFICATION MATERIALS**

- A. Tracer Wire Locate Boxes:
  - 1. Material: Polyolefin.
  - 2. Cover:
    - a. Color: Provide in colors per Article 2.03.B above.
    - b. Provide box cover identification marking for facility type such as “Sewer Locate Wire”, as approved by Owner.
    - c. Locking type with a nominal 6-inch opening.
  - 3. Manufacturer and Product: Carson Industries LLC; L Series Model 708 or equal.
- B. Service Lateral Plastic or Copper Markers:
  - 1) Not Used.
- C. Service Lateral 2-inch by 4-inch Markers:
  - 1. Not Used.

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**PART 3 EXECUTION**

**3.1 PREPARATION**

- A. Call Washington Utility Notification Center at 1-800-424-5555 and Local Utility Line Information service at 360-642-3191 not less than 3 working days before performing Work.
  - 1. Request underground utilities to be located and marked within and surrounding construction areas.
  - 2. Coordinate with and notify utility companies should it be necessary to remove or relocate facilities.
  - 3. Maintain and protect above and below grade utilities indicated to remain.
- B. Identify required lines, levels, contours, and datum locations.
- C. Drawings and/or Specifications cover and govern replacement and restoration of foreseeable damage.
- D. The site of an open cut excavation shall be first cleared of all obstructions preparatory to excavation in accordance with Section 311000, Site Clearing.
- E. See Section 311000, Site Clearing for additional requirements in protection of existing utilities, survey control, plant life, and landscaped areas in coordination with Work in this Section.
  - 1. Intent of Drawings and Specifications is that all streets, structures, and utilities be left in condition equal to or better than original condition.
  - 2. Where damage occurs, and cannot be repaired or replaced, the Contractor shall purchase and install new material, which is satisfactory to Owner.
- F. **Potholing / Exploratory Test Pits:** Dig such exploratory test pits and perform potholing as may be necessary in advance of trenching to determine the exact location and elevation of subsurface structures, pipelines, duct banks, conduits, and other obstructions which are likely to be encountered or need to be connected to and shall make acceptable provision for their protection, support, and maintenance of their continued operation.
- G. **Paved or Surfaced Streets:**
  - 1. Wherever paved or surfaced streets are cut, saw wheel, or approved cutting devices shall be used.
  - 2. Width of pavement cut shall be as shown on the Drawings.
  - 3. Any cut or broken pavement shall be removed from site during excavation.
- H. **Traffic:**
  - 1. Maintain street traffic at all times as required by the Drawings and as specified herein.



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2. Erect and maintain barricades, warning signs, traffic cones, and other safety devices during construction in accordance with the latest edition of Manual of Uniform Traffic Control Devices (MUTCD), Part 6, to protect the traveling public in any area applicable.
3. Provide flaggers as required during active work in roadway areas.
  - I. Operations shall be confined to rights-of-way and easements provided. Avoid encroachment on, or damage to, private property or existing utilities unless prior arrangements have been made with copy of said arrangement submitted to Engineer.

**3.2 EASEMENTS**

- A. Where portions of the Work are located on private property, easements and permits will be obtained by the Owner. Easements shall provide for the use of property for construction purposes to the extent indicated on the easements.
- B. Copies of these easements and permits will be available from the Owner for inspection by the Contractor. It shall be the Contractor's responsibility to determine the adequacy of the easement obtained in every case.
- C. Confine construction operations to within the easement limits or street right-of-way limits or make special arrangements with the property owners for the additional area required and notify the Engineer with a copy of the written approval from property owners of any such conditions.
- D. Any damage to private property, either inside or outside the limits of right-of-way or easements provided by the Owner, resulting from Work shall be the responsibility of the Contractor. Before the Engineer will authorize final payment, the Contractor will be required to furnish the Owner with written releases from property owners where the Contractor has obtained special agreements or easements or where the Contractor's operations, for any reason, have not been kept within the construction right-of-way obtained by the Owner.

**3.3 PROTECTION**

- A. Existing Facilities:
  1. It is the intent of these specifications that all streets, structure, and utilities be left in a condition equal to or better than original condition at the completion of the Project.
  2. Where damage occurs, and cannot be repaired or replaced, the Contractor shall purchase and install new material to the satisfaction to the Engineer.
  3. Drawings and/or specifications cover and govern replacement and restoration of foreseeable damage.
- B. Removal of Water:
  1. As specified in Section 312319, Dewatering.
  2. At all times during construction provide and maintain ample means and devices with which to remove promptly and dispose of properly all water entering the excavations or other parts of the Work.

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3. Keep all excavations dry until the utilities or vaults to be placed therein are completed. In water bearing sand, well points, dewatering wells, sumps, and/or sheeting shall be supplied, together with pumps and other appurtenances of ample capacity to keep the excavation dry as specified.
  4. Dispose of water from the Work in a suitable legal manner without damage to adjacent property or structures.
  5. Contractor to provide a dewatering plan prepared by a Licensed Civil Engineer or Hydrogeologist and submit to the Owner for review prior to beginning dewatering work.
- C. Trench Protection:
1. Provide the materials, labor, and equipment necessary to protect trenches at all times.
  2. Trench protection shall provide safe working conditions in the trench and protect the Work, existing property, utilities, pavement, etc.
  3. The method of protection shall be according to the Contractor's design.
  4. The Contractor may elect to use a combination of shoring, overbreak, tunneling, boring, sliding trench shields, or other methods of accomplishing the work provided the method meets the approval of all applicable local, state, and federal safety codes.
  5. Damages resulting from improper shoring, improper removal of shoring, or from failure to shore shall be the sole responsibility of the Contractor.

3.4 LINES AND GRADES

- A. Trench excavation for piping, utility vaults, and other utilities shall be performed to the alignment and grade as indicated on the Drawings.
- B. Where grades are not shown on the Drawings, utilities shall be laid to grade between control elevations shown.
- C. Water and sewer mains shall be installed with a minimum cover of 36 inches.
- D. The Engineer reserves right to make changes in lines, grades, and depths of utilities when changes are required for Project conditions.
- E. Changes in the grade and horizontal alignment of the pipeline as shown on the Drawings or as provided elsewhere in the Specifications may be necessary due to unanticipated interferences or other reasons.
  1. No additional compensation will be allowed the Contractor for changes in horizontal alignment.
  2. No additional compensation will be allowed for changes in grade which require additional depth of trench excavation and backfill up to 2 feet from those shown on the Drawings.
- F. Use laser-beam instrument with qualified operator to establish lines and grades.

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**3.5 OBSTRUCTIONS**

- A. Obstructions to the construction of the trench, such as tree roots, stumps, abandoned pilings, abandoned buildings and concrete structures, logs, rubbish, and debris of all types shall be removed without additional compensation from the Owner.
- B. The Engineer may, if requested by the Contractor or Owner, make changes in the trench alignment to avoid major obstructions if such alignment changes can be made within the perpetual easement and right-of-way and without adversely affecting the intended function of the facility or increasing costs to the Owner.

**3.6 INTERFERING ROADWAYS AND STRUCTURES**

- A. Remove, replace and/or repair any damage done during trenching activities to fences, buildings, cultivated fields, drainage crossings, and any other properties without additional compensation from the Owner.
  - 1. Replace or repair these structures to a condition as good as or better than their pre-construction condition prior to commencing work in the area.
- B. Paved Roadways:
  - 1. Where paved roadways are cut as part of trenching activities, Class D trench backfill will be required to the bottom of pavement base.
  - 2. New pavement shall be equal to or better than the existing paved surface.
  - 3. New surface shall not deviate by more than 1/4-inch from the existing finish elevation.
- C. Existing Structures:
  - 1. If existing structures are encountered as part of trenching activities which will prevent construction and are not adequately shown on the Drawings, the Contractor shall notify the Engineer before continuing with the Work.
  - 2. The Engineer may make such field revisions to the utility alignment as necessary to avoid conflict with the existing conditions.
  - 3. The cost of waiting or “down time” during such field revisions shall be borne by the Contractor without additional cost to the Owner or liability to the Engineer.
  - 4. If the Contractor fails to so notify the Engineer when a conflict of this nature is encountered, but proceeds with construction despite this interference, the Contractor shall do so at the Contractor’s own risk with no additional payment.

**3.7 TRENCHING**

- A. Excavate subsoil as required for construction of utilities to elevations shown on the Drawings.
- B. Remove boulders and rock up to 1/2 cubic yard measured by volume per the requirements of this Section. Remove larger boulders and rock material as specified in Section 312318, Rock Removal.

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- C. Open Trench Limit:
1. Do not advance open trench beyond the distance which will be backfilled and compacted the same day.
  2. A maximum length of open trench shall not exceed 100 feet at any one time.
  3. Temporary resurfacing shall be completed within 300 feet of the associated open trench limit for each main pipe laying operation.
  4. Cover or backfill excavations at the end of each day.
  5. If the trench is not backfilled at the end of each working day:
    - a. Provide means to prevent caving of excavation sides, as necessary, during non-working hours.
    - b. Cover the excavation with a system as needed to provide public safety and prevention of entry during non-working hours.
    - c. Provide signed and stamped submittal of caving prevention system and cover system.
  6. New trenching shall not be started when earlier trenches need backfilling, or the surfaces of streets or other areas need to be restored to a safe and proper condition.
- D. Utility Crossings: Avoid horizontal and vertical conflicts with existing utilities.
1. Perform excavation within 24 inches of existing utility service in accordance with utility's requirements.
  2. Vertical clearance between the new pipe and existing utilities shall be 12 inches minimum, unless otherwise noted on the Drawings.
  3. Where existing utility lines are damaged or broken during trenching activities, the utility shall be repaired or replaced. For water or sewer bearing lines, care being taken to insure a smooth flow line and absolutely no leakage at the new joints.
  4. All expenses involved in the repair or replacement of leaking or broken utility lines that have occurred due to the Contractor's operations shall be borne by the Contractor, and the amount thereof shall be absorbed in the unit prices of its bid.
- E. Water Lines Crossing Sewer Lines: Whenever water lines cross sewer lines, the Contractor shall comply with local Health Department requirements.
1. Wherever possible, the bottom of the water line shall be 18 inches or more above the top of sewer pipe. One full length of the water line pipe shall be centered at the crossing.
  2. For clearances less than 1-1/2 feet, the Contractor shall replace the existing sewer pipe with ductile iron or PVC of equal size, centered at the utility crossing, or shall encase existing sewer pipe with concrete for a minimum of 10 feet on both sides of crossing, as directed by the Engineer, at no additional cost to the Owner.

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- F. Excavate trenches to width and depth as indicated on Drawings. No additional payment will be provided for trenching activities beyond dimensions shown on the Drawings.
1. Excavation for trenches in which pipelines are to be installed shall provide adequate space for workers to place and joint the pipe properly and safely, but in every case the trench shall be kept to a minimum width.
  2. The width of the pipe trench at and below the top of the pipe shall be such that the clear space between the barrel of the pipe and the trench shall not exceed 12 inches on either side of the pipe.
  3. Excavation for utility vaults and other structures shall be wide enough to provide 18 inches between the structure surface and the sides of the excavation.
  4. For pipe or utility vaults to have bedding material, excavate to a depth of 6 inches below the bottom of the pipe or utility vault. Care shall be taken not to excavate below depths required.
  5. If over digging occurs, the trench bottom shall be filled to grade with compacted bedding material.
- G. Remove water or materials that interfere with Work.
1. The trench at all times shall be kept free from water to facilitate fine grading, the proper laying and joining of pipe, and prevention of damage to completed joints.
  2. Adequate pumping equipment shall be provided to handle and dispose of the water without damage to adjacent property.
  3. Water in the trench shall not be allowed to flow through the pipe while construction work is in progress unless special permission to do so has been given by the Engineer.
  4. An adequate screen shall be provided to prevent the entrance of objectionable material into the pipe.
  5. Remove and dispose of existing abandoned sewer pipe, structures, and other facilities as necessary to construct the improvements.
    - a. Where the excavation activities require the removal of portions of an abandoned pipeline, masonry plugs shall be installed in the open ends of the pipe, unless otherwise noted on the Drawings or by the Engineer.
    - b. Coordinate with Engineer prior to plugging.
    - c. For plugs less than 36 inches in diameter, 8-inch-deep masonry units shall be used. For plugs in larger pipelines, 12-inch-deep masonry units shall be used.
  6. The costs associated with the removal of water and materials noted above will be considered incidental to trench excavation and backfill.
- H. Over-excavation for Unsuitable Trench Foundation Conditions:

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1. Cross-sectional dimensions and depths of excavations shown on the Drawings shall be subject to such changes as may be found necessary by the Engineer to secure foundations free from soft, weathered, shattered, and loose material or other objectionable materials.
2. Unsuitable materials shall be removed and replaced only as directed in writing by Engineer.
3. Unsuitable materials encountered shall be removed and replaced with Coarse Aggregate Type A3, as specified in Section 31 05 16, Aggregates for Earthwork. All material placed shall be compacted to 95 percent of maximum dry density.
4. Install nonwoven geotextile under trench stabilization material, over the soft or yielding excavated surface.
  - a. Install the nonwoven geotextile ahead of placement of the trench stabilization material, continuously along the excavation bottom and centered on the pipe centerline.
  - b. Use nonwoven geotextile width equal to the pipe diameter plus 2 feet.
  - c. Place laps or splices in the geotextile in the direction of the pipe laying.
- I. Trim excavation. Hand trim for bell and spigot pipe joints. Remove loose matter.
- J. Excavated material shall be placed at locations and in such a manner that it does not create a hazard to pedestrian or vehicular traffic or interfere with the function of existing drainage facilities or system operation.
- K. Remove excess subsoil not intended for reuse from site.
- L. Stockpile excavated material in area designated on site in accordance with Section 31 05 13, Soils for Earthwork.

3.8 TUNNELING

1. Not Used.

3.9 SHEETING AND SHORING

- A. Sheet, shore, and brace excavations to prevent danger to persons, new and existing structures, and adjacent and neighboring properties and to prevent caving, erosion, settlement, and loss of surrounding subsoil.
- B. Support trenches more than 5 feet deep excavated through unstable, loose, or soft material. Provide sheeting, shoring, bracing, or other protection to maintain stability of excavation.
- C. Repair damage caused by failure of the sheeting, shoring, or bracing and for settlement of filled excavations or adjacent soil.
- D. Repair damage to new and existing Work from settlement, water or earth pressure or other causes resulting from inadequate sheeting, shoring, or bracing.
- E. Design sheeting and shoring to be removed at completion of excavation work, unless shown otherwise on the Drawings.

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- F. Contractor to provide a shoring plan prepared by a Licensed Civil Engineer and submit to the Owner for review prior to beginning shoring work.
- G. Construction Sheeting Left in Place:
  - 1. Furnish, install, and leave in place construction sheeting and bracing when specified or when indicated or shown on the Drawings.
  - 2. Construction sheeting and bracing originally intended for temporary installation, placed by the Contractor to protect adjacent and neighboring structures, may be left in place if desired by the Contractor and approved by the Engineer. All such sheeting and bracing left in place shall be included in the cost for excavation.
  - 3. Any construction sheeting and bracing which the Contractor has placed to facilitate its work may be ordered in writing by the Engineer to be left in place. The right of the Engineer to order sheeting and bracing left in place shall not be construed as creating an obligation on its part to issue such orders. Failure of the Engineer to order sheeting and bracing left in place shall not relieve the Contractor of its responsibility under the contract.
  - 4. For sheeting and shoring to be left in place as part of the completed Work, cut off minimum 18 inches below finished grade.

**3.10 COMPACTION**

- A. Testing will be required to show specified densities of compacted backfill are being achieved by the Contractor's compaction methods.
- B. Moisture Control:
  - 1. Moisture condition backfill material to within 2 percent of optimum moisture content required for compaction throughout each lift of the fill.
  - 2. Add moisture to granular backfill by sprinkling during compaction operation.
  - 3. Compaction by ponding or jetting is not permitted.
- C. Compact all materials and areas that are not accessible for in-place density testing, as determined by the Engineer, in place by whatever equipment and method is practicable or specified, and as approved by the Engineer.
  - 1. Perform compaction at such moisture content as is required to produce well-filled, dense, and firm material in place that will show no appreciable deflection or reaction under the compacting equipment.

**3.11 BEDDING**

- A. All utility vaults, potable water pipe 4-inch nominal diameter and over, all steel pipe, all concrete sewer pipe, all plastic pipe, all pipe under existing or future structures or roadways, and any and all utilities at a depth greater than 6 feet shall be laid in pipe bedding material.

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- B. Unless otherwise noted on the Drawings, pipe, or conduit of less than 4-inch diameter, outside structure lines and at a depth of less than 6 feet shall be bedded in native material properly shaped as specified below, all as detailed on the Drawings.
- C. Compacted bedding material shall be placed the full width of the excavated trench to a depth as shown on the trench detail included on the Drawings.
  - 1. In lieu of a detail, the depth shall be 6 inches.
- D. Spread the bedding smoothly over entire width of trench to the proper grade so that the pipe is uniformly supported along the barrel.
- E. Hand grade and compact each lift to provide a firm, unyielding surface along the entire pipe length. For rigid pipe, compact to at least 90 percent relative compaction.
- F. Excavate bell holes at each joint to permit proper assembly and inspection of the joint.
- G. Check grade and correct irregularities in bedding material.
- H. Center pipes horizontally in trench width.

**3.12 BACKFILLING**

- A. Backfill trenches to contours and elevations with unfrozen fill materials.
- B. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen, or spongy subgrade surfaces.
- C. Maintain optimum moisture content of fill materials to attain required compaction density.
- D. Place fill material, with the exception of CLSM, in continuous layers and compact in 6- to 8-inch lifts.
  - 1. Prevent pipe from moving either horizontally or vertically during placement and compaction of pipe zone material.
  - 2. Where trenches are under existing or future structures, paved areas, road shoulders, driveways, or sidewalks, or where designated on the Drawings or specified elsewhere in these specifications, the trench backfill shall be Class B or Class E and pipe zone backfill shall be Coarse Aggregate Type A4. Class B backfill shall be compacted to 95 percent of maximum density at optimum moisture content.
  - 3. Where trenches are outside existing or future structures, paved areas, road shoulders, driveways, or sidewalks, or where designated on plans or specified elsewhere, the trench backfill shall be Class A and pipe zone backfill in these areas shall be Class B. For these locations, compaction of Class B backfill shall be to not less than 90 percent of maximum density at optimum moisture content. Class B backfill shall be compacted to not less than 95 percent of maximum density at optimum moisture content.
- E. Employ placement method that does not disturb or damage nearby or adjacent foundation perimeter drainage or utilities in trench.
- F. Do not use power-driven impact compactors to compact pipe zone material.



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- G. Backfill Immediately: All trenches and excavations shall be backfilled immediately after pipe or conduit is in approved condition to receive it and shall be carried to completion as rapidly as possible, unless otherwise directed by the Engineer.
- H. Under no circumstances shall water be permitted to rise in open trenches after pipe has been placed.
- I. Do not allow backfill material to free fall into the trench or allow heavy, sharp pieces of material to be placed as backfill until after at least 2 feet of backfill has been provided over the top of pipe.
- J. Use hand compactors for compaction until at least 2 feet of backfill is placed over top of pipe. Thoroughly tamp each lift, including area under haunches, with handheld tamping bars supplemented by “walking in” and slicing material under haunches with a shovel to ensure that voids are completely filled before placing each succeeding lift.
- K. Placement of Sand:
  - 1. Place medium sand in lifts not exceeding 8 inches in uncompacted thickness.
  - 2. Compact each lift to a minimum of 95 percent relative compaction prior to placing succeeding lifts.
- L. Placement of CLSM:
  - 1. Discharge from truck-mounted drum-type mixer into trench.
  - 2. Place in lifts not exceeding 2 feet in thickness.
  - 3. No compaction of CLSM is allowed.
  - 4. Use steel plates to protect the CLSM from traffic a minimum of 24 hours. After 24 hours, the CLSM may be paved, or opened to traffic until permanent surface restoration is completed if it has hardened sufficiently to prevent rutting.
- M. New trenching shall not be started when earlier trenches need backfilling, or the surfaces of streets or other areas need to be restored to a safe and proper condition.
- N. Do not leave trench open at end of working day.

**3.13 MARKING TAPE INSTALLATION**

- A. Continuously install marking tape along centerline of all buried piping, install 24 inches below finished grade. Coordinate with piping installation Drawings.

**3.14 ELECTRONIC LOCATING FACILITY INSTALLATION**

- A. Marker Balls: Not used.
- B. Tracer Wire and Terminal Appurtenances:
  - 1. Tracer Wire:

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- a. Install as shown or directed directly over the pipe centerline and on top of the pipe zone in all sewer trenches, including mainline sewers, service laterals and storm sewer inlet leads.
  - b. Connect mainline and service lateral tracer wires using either an approved direct-bury lug connector or direct-bury twist connector.
  - c. Extend tracer wire to locator stations in manholes, locator boxes, storm inlets, or other visually identifiable terminal appurtenances, allowing for access with electronic locating equipment, as shown or directed and according to the following requirements:
2. Locator Stations:
- a. Install locator stations as shown within manholes.
  - b. Mount locator station to manhole wall within 18 inches of manhole rim with two stainless steel expansion anchors.
  - c. Drill a minimum 3/8-inch diameter hole through the manhole wall within 18 inches of the finish grade of the manhole rim.
  - d. Extend the tracer wire from the pipe trench in one continuous piece up the outside of the manhole and through the hole and into a locator station and attach to one of the lugs in the locator station.
  - e. When multiple tracer wires are terminated in manhole install a multi-lead locator station.
  - f. Extend a ground wire from the locator station through a minimum 3/8-inch diameter hole in the manhole wall.
  - g. Install ground wire approximately 3 feet deep and extend from the outside manhole wall a minimum of 3 feet horizontally in any direction.
  - h. Seal all holes drilled in manhole walls with silicone sealant.
3. Storm Inlet Tracer Wire Termination: Terminate tracer wire inside inlet and directly over storm outlet pipe by placing tracer wire as follows:
- a. Drill a minimum 3/8-inch diameter hole through inlet wall to pass tracer wire through to inside inlet wall.
  - b. Seal hole with silicon sealer or material approved by Engineer.
  - c. Leave 6 inches of coiled tracer wire along inside of inlet wall approximately 3 inches below the inlet frame and grate or as directed by Engineer.
4. Service Lateral Tracer Wire Termination: Terminate tracer wire at ends of service laterals as shown or directed, as follows:
- a. Termination in Tracer Wire Locate Boxes: Extend the tracer wire in one continuous piece up vertically from the pipe trench and into the bottom of the locate box. Leave 18 inches of coiled tracer wire inside locate box.

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- b. Termination at 2-inch by 4-inch Markers: Extend tracer wire in one continuous piece directly up service lateral 2-inch by 4-inch markers and leave 18 inches of tracer wire wrapped around the exposed top end of 2-inch by 4-inch marker.

**3.15 VISUAL IDENTIFICATION FACILITIES**

- A. Tracer Wire Locate Boxes: Install tracer wire locate boxes directly over service laterals at property line, service boundary, or other location as shown or directed by the Engineer.
- B. Service Lateral Plastic or Copper Markers:
  - 1. Install plastic or copper markers in the concrete curb directly over the centerline of the service lateral, as shown or directed by the Engineer.
  - 2. Either plastic or copper markers may be used.
  - 3. If there is not suitable concrete curb for marker placement, then install a lateral cleanout as close to property line as practical at location approved by Engineer.
- C. Service Lateral 2-inch by 4-inch Markers:
  - 1. Place a 2-inch by 4-inch marker at the end of each new service lateral not connected to a building sewer.
  - 2. Omit markers only as approved.
  - 3. Block the capped or plugged service lateral end with a wood block against undisturbed earth and install the marker.
  - 4. Extend the marker from the blocked service lateral invert to at least 12 inches above the existing or proposed finish ground surface.
  - 5. Install marker in one piece. No splicing will be accepted.
  - 6. Paint the exposed portion of the marker after its installation with quality quick drying enamel white paint for a storm only sewer and green paint for a sanitary or combined sewer.
  - 7. After the paint has dried, use black, quick drying enamel, and neatly indicate the distance from the ground surface to the top of the service lateral in feet and inches.
  - 8. Do not disturb the position and location of the marker during the backfilling operation.
  - 9. If the marker is broken, moved out of location, or vertical alignment is changed during the backfilling operation, reopen the trench, and replace the marker.

**3.16 FIELD QUALITY CONTROL**

- A. All testing and reporting shall be conducted and completed by an independent laboratory provided by the Owner. Initial testing will be paid for by the Owner. Subsequent testing after failure of initial acceptance testing shall be paid by the Contractor.
- B. Perform laboratory material tests in accordance with ASTM D698.

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- C. In-place compaction testing of pipeline backfill materials shall be performed at 2-foot elevation increments, one test per 50 lineal feet of pipeline trench as measured along pipe centerline.
  - 1. The Engineer may reduce the frequency when satisfied with method of compaction.
  - 2. The Engineer may direct testing at a higher frequency at no additional cost to the Owner upon failure to obtain specified densities or if the Contractor changes compaction equipment or methods of compaction.
  - 3. The Engineer shall determine all test locations.
- D. Perform in place compaction tests in accordance with the following:
  - 1. Density Tests: ASTM D6938
  - 2. Moisture Tests: ASTM D3017
- E. When tests indicate Work does not meet specified requirements, remove Work, replace, and retest at the sole expense of the Contractor.

**3.17 SURFACE RESTORATION AND CLEANUP**

- A. Open Trenches: At the end of each workday, all open trenches shall be backfilled and all trenches within streets shall be temporarily paved or covered to the satisfaction of the Engineer and the local permitting agency.
  - 1. Temporary paving shall be replaced with permanent street paving at the completion of construction within street rights-of-way, or sooner, if deemed necessary by the Engineer.
  - 2. No gravel-filled trenches shall be left open within the street right-of-way at the end of the workday.
- B. Topsoil:
  - 1. Where trenches cross lawns, garden areas, pastures, cultivated fields, or other areas on which reasonable topsoil conditions exist, remove the topsoil to the specified depth and place the material in a stockpile.
  - 2. Topsoil shall not be mixed with other excavated material.
  - 3. After the trench has been backfilled, the topsoil shall be replaced.
- C. Clean up and remove all excess materials, construction materials, debris from construction, etc. Replace or repair any fences, mailboxes, signs, landscaping, or other facilities removed or damaged during construction. Replace all lawns, topsoil, shrubbery, flowers, etc., damaged or removed during construction. The Contractor shall be responsible for seeing that lawns, shrubs, etc. remain alive and leave premises in condition equal to original condition before construction.

END OF SECTION

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SECTION 312318 - ROCK REMOVAL

PART 1 GENERAL

1.1 SUMMARY

- A. This Section includes removal of subsurface rock during excavation by mechanical method. The use of explosives for rock removal is not permitted for this Project.
- B. Section Includes:
  - 1. Removing identified and discovered rock during excavation.
  - 2. Expansive tools to assist rock removal.
- C. Related Sections:
  - 1. Section 312213, Rough Grading
  - 2. Section 312316, Excavation: Building excavation
  - 3. Section 312317, Trenching: Trenching and backfilling for utilities
  - 4. Section 312323, Fill: Backfill materials

1.2 REFERENCES

- A. Document GRI W1319-B: Geotechnical report; bore hole locations and findings of subsurface materials.

1.3 DEFINITIONS

- A. Common Excavation: All excavation required for Work, regardless of the type, character, composition, or condition of the material encountered. All excavation shall be classified as Common Excavation, unless provided for under Rock Removal below.
- B. Common Material: All soils, aggregate, debris, junk, broken concrete, and miscellaneous material encountered in Common Excavation, excluding rock as defined below.
- C. Rock: Solid mineral material, including boulders, solid bedrock, or ledge rock, with volume in excess of 1/2 cubic yard or solid material which, by actual demonstration, cannot be reasonably excavated with suitable machinery as defined herein. The Engineer may waive the requirements for actual demonstration if the material encountered is well-defined rock.
- D. Rock Removal: Removal of rock as defined herein by systematic and continuous drilling, hammering, breaking, splitting, or other methods approved by the Engineer.
- E. Suitable Machinery: A track-mounted hydraulic excavator of the 52,800- to 72,500-pound class equipped with a single shank ripper.

1.4 SUBMITTALS

- A. Section 013300, Submittal Procedures: Submittal procedures.

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- B. Shop Drawings: Indicate proposed method of rock removal.
- C. Equipment: Manufacturer information regarding pound class of machinery proposed for rock removal.
- D. Survey Report: Submit survey report mapping extent and locations of rock encountered, to be used in calculating total volume of rock removal.

1.5 QUALITY ASSURANCE

- A. Not used.

1.6 PROJECT CONDITIONS

- A. Conduct survey of rock uncovered in excavation for structures or trenching for utilities prior to removal of material.

1.7 SCHEDULING

- A. Not Used.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Not Used

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify site conditions and note subsurface irregularities affecting Work of this section.

3.2 PREPARATION

- A. Identify required lines, levels, contours, and datum.
- B. Engineer Approval for Rock Removal:
  - 1. Prior to commencement of rock removal, expose all material anticipated to be rock by removing the common material above it and then notify the Engineer.
  - 2. The Engineer, in association with the Contractor or the Contractor's representative, will measure the amount of material to be removed in an effort to reach a mutually agreeable volume for anticipated rock removal.
  - 3. Prior to commencing the proposed rock removal, the Contractor must receive written approval by the Engineer stating the approximate volume of excepted rock removal to receive payment.
  - 4. During rock removal activities, should it become apparent the previously agreed upon volume of rock removal will be exceeded, notify the Engineer immediately. Should the

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Contractor proceed with rock removal in excess of the previously agreed upon volume, the Contractor will do so at their own risk and expense.

**3.3 ROCK REMOVAL BY MECHANICAL METHOD**

- A. Excavate and remove rock by mechanical method.
  - 1. Use single shank ripper to fracture rock.
  - 2. Drill holes and use expansive tools and wedges to fracture rock.
- B. Cut away rock at bottom of excavation to form level bearing.
- C. Remove shaled layers to provide sound and unshattered base for footings and foundations.
- D. In utility trenches, excavate to 6 inches below invert elevation of pipe and 24 inches wider than pipe diameter.
- E. For vaults and other structures, excavate to the depth necessary to install the structure and to a maximum of 18 inches beyond the outside walls of the vault or structure.
- F. Remove excavated materials from site.
- G. Correct unauthorized rock removal associated with structural excavations in accordance with backfilling and compacting requirements of Section 312316, Excavation and as directed by Engineer.
- H. Correct unauthorized rock removal associated with utility work in accordance with backfilling and compacting requirements of Section 312317, Trenching and as directed by Engineer.
- I. If material which would be classified as rock as defined herein is mechanically removed with equipment of a larger size than specified as Suitable Machinery herein, it shall be understood that any added costs for the removal of rock by this method shall be included in the unit price for common excavation and not paid for under this pay item. If material which would be classified as rock as defined herein is mechanically removed without hammering, breaking, or splitting, it will be considered common excavation and not paid for under this pay item. If equipment larger than the suitable machinery as defined herein is brought on the Project Site for the sole purpose of rock removal without hammering, breaking, or splitting, then such excavation will be considered rock removal.

**3.4 ROCK REMOVAL BY EXPLOSIVE METHODS**

- A. Not Used

**3.5 FIELD QUALITY CONTROL**

- A. Request visual inspection of foundation bearing surfaces by Engineer before installing subsequent work.

END OF SECTION

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SECTION 312319 – DEWATERING

PART 1        GENERAL

1.1    SUMMARY

- A.    This Section includes temporary dewatering and surface water control systems for open excavations and utility trenches.
- B.    Section includes:
  - 1.    Dewatering systems.
  - 2.    Surface water control systems.
  - 3.    System operation and maintenance.
  - 4.    Water disposal.
- C.    Related Sections:
  - 1.    Section 023000 - Subsurface Investigations
  - 2.    Section 310516 - Aggregates for Earthwork
  - 3.    Section 312316 - Excavation
  - 4.    Section 312317 - Trenching

1.2    REFERENCES

- A.    Document GRI W1319-B: Geotechnical report; bore hole locations and findings of subsurface materials.

1.3    SUBMITTALS

- A.    Dewatering Plan:
  - 1.    Descriptions of proposed groundwater and surface water control facilities including, but not limited to, equipment; methods; standby equipment and power supply; pollution control facilities; discharge locations to be utilized; and provisions for immediate temporary water supply as required by this Section.
  - 2.    Dewatering and shoring plan should be completed by a Washington state licensed Civil Engineer or hydrogeologist experienced in construction dewatering design.
  - 3.    The dewatering contractor and dewatering engineer shall submit qualifications demonstrating expertise with at least three similar projects within the last three years.
  - 4.    Plan to be reviewed by the Engineer prior to the beginning of construction activities requiring dewatering. Review by the Engineer of the design shall not be construed as a detailed analysis of the adequacy of the dewatering system, nor shall any provisions of the



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above requirements be construed as relieving the Contractor of its overall responsibility and liability for the work.

1.4 DEFINITIONS

A. Dewatering includes the following:

1. Lowering of ground water table and intercepting horizontal water seepage to prevent ground water from entering excavations, trenches, tunnels, and /or shafts.
2. Reducing piezometric pressure within strata to prevent failure or heaving of excavations, trenches, tunnels, and /or shafts.
3. Disposing of removed water.

B. Surface Water Control: Removal of surface water within open excavations.

1.5 QUALITY CONTROL

A. All dewatering operations shall be adequate to assure the integrity of the finished project and shall be the responsibility of the Contractor.

B. Provide all labor, materials, and equipment necessary to dewater trench and structure excavations, in accordance with the requirements of the Contract Documents.

C. Secure all necessary permits to complete the requirements of this Section.

D. Control the rate and effect of the dewatering in such a manner as to avoid all objectionable settlement and subsidence.

E. Where the critical structures or facilities exist immediately adjacent to areas of proposed dewatering, reference points shall be established and observed at frequent intervals to detect any settlement which may develop.

1. The responsibility for conducting the dewatering operation in a manner which will protect adjacent structures and facilities rests solely with the Contractor.

2. The cost of repairing any damage to adjacent structures and restoration of facilities shall be the responsibility of the Contractor.

PART 2 PRODUCTS

2.1 EQUIPMENT

Dewatering, where required, may include the use of well points, pumping wells, sump pumps, sheet pile cutoff walls, temporary pipelines for water disposal, rock or gravel placement, and other means. Standby pumping equipment shall be maintained on the jobsite.

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**PART 3 EXECUTION**

**3.1 DEWATERING**

- A. Provide all equipment necessary for dewatering.
  - 1. Have on hand, at all times, sufficient pumping equipment and machinery in good working condition.
  - 2. Have available, at all times, competent workers for the operation of the pumping equipment.
  - 3. Adequate standby equipment shall be kept available at all times to insure efficient dewatering and maintenance of dewatering operation during power failure.
- B. Dewatering for structures and pipelines shall commence when groundwater is first encountered and shall be continuous until such times as water can be allowed to rise in accordance with the provisions of this Section or other requirements.
- C. Site Grading:
  - 1. At all times, site grading shall promote drainage.
  - 2. Surface runoff shall be diverted from excavations.
  - 3. Water entering the excavation from surface runoff shall be collected in shallow ditches around the perimeter of the excavation, drained to sumps, and be pumped or drained by gravity from the excavation to maintain a bottom free from standing water.
- D. Dewatering shall at all times be conducted in such a manner as to preserve the undisturbed bearing capacity of the subgrade soils at proposed bottom of excavation.
- E. If foundation soils are disturbed or loosened by the upward seepage of water or an uncontrolled flow of water, the affected areas shall be excavated and replaced with drain rock.
- F. Maintain the water level 2 feet below the bottom of excavation, or as necessary to maintain stable subgrade, in all work areas where groundwater occurs during excavation construction, backfilling, and up to acceptance.
- G. Flotation shall be prevented by maintaining a positive and continuous removal of water. The Contractor shall be fully responsible and liable for all damages which may result from failure to adequately keep excavations dewatered.
- H. If well points or wells are used, they shall be adequately spaced to provide the necessary dewatering and shall be sandpacked and/or other means used to prevent pumping of fine sands or silts from the subsurface. A continual check shall be maintained to ensure that the subsurface soil is not being removed by the dewatering operation.
- I. Dispose of water from the work in a suitable manner without damage to the environment or adjacent property. No water shall be drained into work built or under construction without prior consent of the Engineer. Water shall be filtered using an approved method to remove sand and fine sized soil particles before disposal into any drainage system.

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- J. The release of groundwater to its static level shall be performed in such a manner as to maintain the undisturbed state of the natural foundation soils, prevent disturbance of compacted backfill and prevent flotation or movement of structures, pipelines, and sewers.
- K. Dewatering of trenches and other excavations shall be considered as incidental to the construction of the work and all costs thereof shall be included in the various contract prices in the bid forms.

END OF SECTION

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SECTION 312323 – FILL

PART 1 GENERAL

1.1 SUMMARY

- A. This Section includes backfilling required at building perimeter and site structures to subgrade elevations, fill under interior and exterior slabs-on-grade or pavement, and fill under landscaped areas. Backfilling for utilities within building proper is included within this section; backfilling for utilities outside building is included in Section 312317, Trenching.
- B. Section includes:
  - 1. Backfilling building perimeter to subgrade elevations.
  - 2. Backfilling site structures to subgrade elevations.
  - 3. Fill under slabs-on-grade.
  - 4. Fill under paving.
  - 5. Fill for over-excavation.
- C. Related Sections:
  - 1. Section 310513, Soils for Earthwork
  - 2. Section 310516, Aggregates for Earthwork
  - 3. Section 312213, Rough Grading
  - 4. Section 312316, Excavation
  - 5. Section 312317, Trenching
  - 6. Section 312500, Erosion and Sediment Controls
  - 7. Section 331110, Water Utility Distribution and Transmission Piping

1.2 REFERENCES

- A. American Association of State Highway and Transportation Officials:
  - 1. AASHTO T99 - Standard Specification for Moisture-Density Relations of Soils Using a 2.5-kg (5.5-lb) Rammer and a 305-mm (12-in.) Drop.
- B. ASTM International (ASTM):
  - 1. ASTM C403 - Standard Test Method for Time of Setting of Concrete Mixtures by Penetration Resistance

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2. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup> (600 kN-m/m<sup>3</sup>)).
  3. ASTM D6938 - Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).
  4. ASTM D4832 - Standard Test Method for Preparation and Testing of Controlled Low Strength Material (CLSM) Test Cylinders.
- C. Document GRI W1319-B: Geotechnical report; bore hole locations and findings of subsurface materials.

1.3 DEFINITIONS

- A. Controlled Low Strength Material (CLSM): Also referred to as Flowable Fill elsewhere in these Specifications. A self-compacted, cementitious material.
- B. Imported Material: Materials obtained from sources offsite, suitable for specified use.
- C. Lift: Loose (uncompacted) layer of material.
- D. Optimum Moisture Content:
1. Determined in accordance with ASTM Standard specified to determine maximum dry density for relative compaction.
  2. Determine field moisture content on basis of fraction passing 3/4-inch sieve.

1.4 SUBMITTALS

- A. Section 013300, Submittal Procedures: Requirements for submittals.
- B. Imported Materials:
1. Materials Source: Submit name and location of imported fill materials suppliers.
  2. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.
  3. Submit results of aggregate sieve analysis and standard proctor test for granular material.
- C. CLSM: Mix designs in accordance with Submittal requirements per WSDOT 2-09.3(1) E Backfilling.

1.5 QUALITY ASSURANCE

- A. Subsoil and topsoil fill materials: In accordance with Quality Assurance requirements stated in Section 310513, Soils for Earthwork.
- B. Aggregate fill materials: In accordance with Quality Assurance requirements stated in Section 310516, Aggregates for Earthwork.
- C. CLSM:
1. In-place testing: In accordance with ASTM C403.

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- 2. Compressive testing: In accordance with ASTM D4832.
- D. Allowable Tolerances: Final grades shall be plus or minus 0.1-foot.

**PART 2 PRODUCTS**

**2.1 FILL MATERIALS**

- A. Subsoil Fill: Type S2, Imported Fill Material, as specified in Section 310513, Soils for Earthwork.
- B. Imported Granular Fill: Coarse Aggregate Type A1, for above-water structural fill as specified in Section 310516, Aggregates for Earthwork.
- C. Drain Rock: Coarse Aggregate Type A2, Granular Drain Backfill Material as shown in the Drawings and specified in Section 310516, Aggregates for Earthwork for backfill of walls and drains.
- D. Foundation Stabilization Material: Coarse Aggregate Type A3, for below-water structural fill as shown in the Drawings and specified in Section 310516, Aggregates for Earthwork.
- E. Gravel Backfill for Pipe Zone Bedding as shown in the Drawings and as specified in Section 31 05 16, Aggregates for Earthwork.

**PART 3 EXECUTION**

**3.1 EXAMINATION**

- A. Prior to Work in this Section, become familiar with Site conditions. In the event discrepancies are found, notify Engineer as to the nature and extent of the differing conditions.
- B. Verify sub-drainage, damp-proofing, or waterproofing installation has been inspected.
- C. Verify structural ability of unsupported walls to support loads imposed by fill.

**3.2 SITE CONDITIONS**

- A. Quantity Survey: The Contractor shall be responsible for calculations for quantities and volume of cut and fill from existing site grades to finish grades established under this contract as indicated in the Drawings or specified and shall include the cost for all earthwork in the total basic bid.
- B. Dust Control: Must meet all federal, state, and local requirements. Protect persons and property from damage and discomfort caused by dust. Water surfaces as necessary and when directed by Engineer to quell dust.
- C. Soil Control: Soil shall not be permitted to accumulate on surrounding streets or sidewalks nor to be washed into sewers.
- D. See provisions for Work in Section 31 25 00, Erosion and Sediment Controls.

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**3.3 PREPARATION**

- A. Identify required lines, levels, contours, and datum locations.
- B. Control of Water above groundwater level:
  - 1. Excavated areas shall be kept free of water and frost.
  - 2. Bearing surfaces which become softened by water or frost shall be re-excavated to solid bearing at Contractor's expense and backfilled with compacted crushed rock at Contractor's expense.
  - 3. See Section 312319, Dewatering for additional details.
- C. Control of Water below groundwater level:
  - 1. Excavations will extend below the wetland water level and temporary watertight dewatering, well-points, dewatering wells, and sumps may be needed in order to construct below the water level.
- D. Compact subgrade to density requirements for subsequent backfill materials.
- E. Cut out soft areas of subgrade not capable of compaction in place and replace with specified granular fill material. See Article 3.5, Over-excavation for Unsuitable Foundation Conditions in Section 312316, Excavation for additional details.
- F. Proof roll to identify soft spots; fill and compact to density equal to or greater than requirements for subsequent fill material.
- G. Subgrade to be approved by Engineer prior to placement of structures and commencement of backfill activities.
- H. Do not allow or cause any work performed or installed to be covered up or enclosed prior to required tests and approvals. Should any Work be enclosed or covered up, uncover at Contractor's expense.

**3.4 BACKFILLING**

- A. Backfill areas to contours and elevations shown in the Drawings with unfrozen materials.
- B. Do not place materials when weather conditions and/or moisture content prevent attainment of specified density.
- C. Maintain optimum moisture content of backfill materials to attain required compaction density.
- D. Employ placement method that does not disturb or damage other work.
- E. Mechanical tampers permitted in confined areas.
- F. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen, or spongy subgrade surfaces.
- G. Foundation Base for Structures:

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1. Bring excavation to required subgrade elevation shown in the Drawings.
  2. Place foundation base material to required grade shown in the Drawings.
  3. A non-woven geotextile shall be placed on the subgrade prior to placement of fill.
  4. Placement of Permeable Ballast, below-water structural fill should be in 1 to 2 foot layers compacted until well-keyed.
  5. The Engineer shall review the proposed placement of any fill and evaluate the subgrade prior to fill placement.
  6. The proposed compaction equipment shall be approved by the Engineer prior to fill placement to evaluate loads on embedded walls.
- H. Backfill for Structures:
1. Prior to placing backfill, remove forms, temporary construction, and debris below grade.
  2. Backfill shall not be placed against poured concrete until 28 days have passed from completion of original concrete pour, unless otherwise approved by Engineer.
  3. Heavy compactors and large pieces of construction equipment shall be kept away from any embedded wall a distance of a least 5 feet in order to avoid the build-up of excessive lateral pressures.
    - a. Over-compaction of fill near walls should be avoided.
  4. Compaction within 5 feet of the walls shall be accomplished using hand-operated vibratory plate compactors or tamping units.
  5. The maximum particle size of granular material placed against buried structures shall be limited to no greater than 1-1/2-inch diameter.
  6. Structural fill backfill material shall be brought up on all sides of the walls and footings in such a manner as to avoid adverse differential lateral earth pressures on the vertical surfaces.
  7. Appropriate lift thickness will depend on the type of compaction equipment used and the type of material being placed. All material shall be compacted to at least 95 percent of the standard maximum dry density.
    - a. For moderate- to heavy-weight compactors, a maximum loose lift thickness of 12 inches shall be used.
    - b. For hand-operated or small compactors, a maximum loose lift thickness of 8 inches shall be used.
  8. Particular care must be taken to avoid damage to the pipe connections to the structure.
  9. Utility trench backfill within 10 feet of all structural perimeters shall meet the requirements for structural fill.



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- I. For areas receiving surface structures or existing paved areas to be constructed or replaced, such as roadways and sidewalks:
  - 1. Place Coarse Aggregate Type A1, Dense-Graded Aggregate, 3/4-inch-0 gradation in 6-inch lifts.
  - 2. Compact with vibratory equipment to 95 percent maximum density, unless otherwise specified or shown in the Drawings.
  
- J. Permanent Embankment Fill:
  - 1. On the sloping ground around the roadway improvements, the new embankment fill shall be placed in horizontal lifts on a continuous series of minimum horizontal benches excavated into the surface of the existing slope with smooth-edged buckets. Fill shall extend a minimum of 4 feet beyond the toe of existing embankment. At a minimum, the bench should extend a horizontal distance equivalent to the lift thickness into the existing embankment slope.
  - 2. A non-woven geotextile shall be placed on the subgrade prior to placement of fill.
  - 3. Placement of Permeable Ballast, below-water structural fill should be in 1 to 2 foot layers compacted until well-keyed.
  - 4. Fill slopes shall be slightly overbuilt and then trimmed back to final grade using a track hoe with a smooth-edged bucket.
  - 5. The Engineer shall review the proposed placement of any fill and evaluate the subgrade prior to fill placement.
  - 6. The proposed compaction equipment shall be approved by the Engineer prior to fill placement to evaluate loads on embedded walls.
  - 7. Permanent embankment fill placed beyond 5 feet of the embedded walls and beneath buildings, pavement, and other structures should be compacted to at least 95 percent of the maximum dry density.
  - 8. Landscape fill shall be compacted to at least 90 percent of the maximum dry density as determined by ASTM D 698. Landscape fill should be no steeper than 2.5H:1V, unless shown otherwise.
  
- K. Make gradual grade changes. Blend slope into level areas.
  
- L. Remove surplus backfill materials from Site in accordance with Section 31 23 16, Excavation.

**3.5 FIELD QUALITY CONTROL**

- A. All testing and reporting shall be conducted and completed by an independent laboratory provided by the Contractor.
  
- B. In-place compaction testing for structural fill material shall be performed at 2-foot elevation increments in the fill material with at a minimum of one test per each **2,500** square feet of material placed. The Engineer shall be provided with the results of each compaction test at the time of testing.

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- C. Perform in place compaction tests in accordance with the following:
  - 1. Density Tests: ASTM D6938.
  - 2. Moisture Tests: ASTM D3017.
- D. When tests indicate Work does not meet specified requirements, remove Work, replace, and retest at the sole expense of the Contractor.
- E. When testing of subgrade is not possible or feasible as detailed above, proof roll compacted fill surfaces under slabs-on-grade, pavers, paving, and as may be otherwise required by the Engineer.

3.6 PROTECTION OF FINISHED WORK

- A. Reshape and re-compact fills subjected to vehicular traffic.

3.7 SCHEDULE

END OF SECTION

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SECTION 312500 – EROSION AND SEDIMENT CONTROLS

PART 1 GENERAL

1.1 SCOPE

- A. This section covers the requirements for temporary and permanent erosion and sedimentation control necessary to prevent migration of sediment and silt laden water to adjacent surface water bodies and drainage structures.
- B. The Contractor shall provide all materials, labor, and equipment necessary to install adequate erosion and sedimentation controls.

1.2 QUALITY CONTROL

The Owner will apply to the Washington State Department of Ecology (Ecology) and obtain a Construction Stormwater General Permit. All fees and permit costs will be borne by the Owner. If Contractor proposes to modify the approved erosion control plan, the Contractor shall work with Ecology to revise application/permit. Contractor shall obtain the final permit and shall be responsible for compliance with all permit provisions and shall accommodate all special inspections required thereof, all at no additional expense to the Owner beyond prices as bid.

- A. In addition to the conditions of the Erosion Control Permits issued by Ecology erosion control provisions shall conform to regulatory requirements of the following agencies.
  - 1. Federal Clean Water Act – Section 402 and title 33, Sect 1251 et seq.
  - 2. Revised Code of Washington – Chapter 90.48

1.3 SUBMITTALS

- A. Following the Preconstruction Conference, the Contractor shall request Owner to transfer permit to the Contractor by submitting a completed Transfer of Coverage Construction Stormwater General Permit to Ecology. The Construction Stormwater General Permit will be transferred to Contractor who will have sole responsibility for compliance with all the permit requirements and the day-to-day implementation of the Erosion and Sediment Control Plan.
- B. Upon completion of and acceptance of all Work, Contractor shall submit Notice of Termination Application for NPDES General Permit to Discharge Storm Water Associated with Construction Activity to Ecology.

1.4 SCHEDULE

- A. Required temporary erosion and sedimentation control Best Management Practices (BMPs) must be constructed and in operation prior to land clearing or other construction activities to ensure that sediment laden water does not leave the site.
- B. Temporary sediment facilities shall be maintained in a satisfactory condition until such time that permanent ESC facilities are in place or sufficient vegetation has been established and potential for on-site erosion has passed.

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- C. The implementation, maintenance, replacement, and additions to erosion/sedimentation control systems shall be the responsibility of the Contractor.

**PART 2 PRODUCTS**

**2.1 CHECK DAM SAND OR GRAVEL BAGS**

- A. Bags to be either burlap or woven "Geotextile" fabric filled with gravel or sand.

**2.2 JUTE MATTING**

- A. Be of a uniform open plain weave of unbleached, single jute yarn treated with a fire-retardant chemical.
- B. The yarn shall be of a loosely twisted construction and shall not vary in thickness by more than one-half of its normal diameter.
- C. Furnished in rolled strips 48 inches wide by approximately 50 yards long.
- D. Average weight of 0.92 pounds per square yard with an allowable tolerance of plus or minus 1 inch in width and 5 percent in weight.

**2.3 FILTER FABRIC FENCE**

- A. Filter Fabric
  - 1. Filter fabric for the erosion protection barriers shall be Mirafi 140, or equivalent.
- B. Wire
  - 1. Wire for the erosion protection barriers shall be 2 by 2 mesh, 12-gauge galvanized wire.
- C. Support Posts
  - 1. Support posts for the erosion protection barriers shall be minimum 2-inch by 2-inch, Douglas Fir No. 1, or better wood posts.

**2.4 CLEAR PLASTIC COVERING**

- A. Clear plastic covering for protection of slopes and cuts shall meet the requirements of the ASTM D2103 for Polyethylene sheeting having a minimum thickness of 6 mil.

**2.5 INLET PROTECTION**

- A. Not Used

**2.6 STABILIZED CONSTRUCTION ENTRANCE**

- A. Wherever construction vehicles enter or leave a construction site, a Stabilized Construction Entrance is required.

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2.7 WATTLES

- A. Reference WSDOT Standard 8-01.3(10)

2.8 EROSION CONTROL BLANKETS

- A. Reference WSDOT Standard 9-14.6(2)

2.9 TURBIDITY CURTAIN

- A. Reference WSDOT Standard 8-01.3(1)C7

PART 3 EXECUTION

3.1 EROSION CONTROL

- A. Erosion control provisions shall meet or exceed the requirements of the local agency having jurisdiction.
- B. When provisions are specified and shown on the drawings, they are the minimum requirements.
- C. Contractor shall not permit sediment-laden waters to leave the site.
- D. As construction progresses and seasonal conditions dictate, more siltation control facilities may be required. It shall be the responsibility of the Contractor to address new conditions that may be created and to provide additional facilities over and above minimum requirements as may be required.
- E. Provide temporary erosion control measures to prevent erosion from piles of topsoil or fill material. Before completing the Contract, any areas of bare soil shall be permanently seeded.
- F. Additional measures may be necessary depending on construction activity and weather. Contractor will be responsible for carrying out the erosion control provisions of the approved ESC Plan.
  - 1. Keep streets and paved surfaces clean of mud and debris. Install gravel construction entrances as shown on the Plans and maintain them for the duration of the construction period.
- G. For installation of wattles and erosion control blankets, reference WSDOT Standards 8-01.3(10) and 9-14.6(2), respectively.

3.2 SILTATION CONTROL

- A. Siltation control is required. Check dams or silt fences may be placed in streams or ditches receiving stormwater from areas disturbed by construction.

3.3 FILTER FABRIC FENCES

- A. Filter fabric fence shall consist of filter fabric fastened to wire fabric with staples or wire rings.
- B. Wire shall be fastened to posts set at 6 foot-maximum centers.

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- C. Fabric shall be buried into ground a minimum of 4 inches to prevent silt from washing under fabric.
- D. Fence shall be located to catch silt and prevent discharge to drainage courses.

**3.4 EROSION CONTROL CHECK DAM**

- A. Sand or gravel filled bags shall be installed in drainage way to catch silt.
- B. Spillway shall be lower than outer edge of dam. Leave a one sandbag gap in top row to provide spillway.

**3.5 PLACING JUTE MATTING**

- A. Seed and fertilizer shall be placed prior to placing of matting.
- B. Jute matting shall be unrolled parallel to the flow of water. Where more than one strip of jute matting is required to cover the given area, it shall overlap the adjacent mat a minimum of 4 inches. The ends of matting shall overlap at least 6 inches with the upgrade section on top.
- C. The up-slope end of each strip of matting shall be staked and buried in a 6-inch-deep trench with the soil firmly tamped against the mat. Three stakes per width of matting (one stake at each overlap) shall be driven below the finish ground line prior to backfilling of the trench.
- D. Engineer may require that any other edge exposed to more than normal flow of water or strong prevailing winds be staked and buried in a similar manner.
- E. Check-slots shall be laced between the ends of strips by placing a tight fold of the matting at least 6 inches vertically into the soil. These shall be tamped and stapled the same as up-slope ends. Check-slots must be placed so that one check-slot or one end occurs within each 50 feet of slope.
- F. Edges of matting shall be buried around the edges of catch basins and other structures as herein described. Matting must be spread evenly and smoothly and in contact with the soil at all points.
- G. Matting shall be held in place by approved wire staples, pins, spikes, or wooden stakes driven vertically into the soil. Matting shall be fastened at intervals not more than 1.5 feet apart in three rows for each strip of matting, with one row along each edge and one row alternately spaced in the middle. All ends of the matting and check-slots shall be fastened at 6-inch intervals across their width. Length of fastening devices shall be sufficient to securely anchor matting against the soil and driven flush with the finished grade.

**3.6 PLACING CLEAR PLASTIC COVERING**

- A. Clear plastic covering shall be installed on erodible embankment slopes.
- B. The clear plastic covering shall be installed immediately after completion of the application of roadside seeding. It is the intent of this specification that clear plastic covering will be in place before the fall rainfall begins.

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- C. Maintain the cover tightly in place by using sandbags or ties on slopes with a minimum of 10-foot grid spacing in all directions. All seams shall be taped or weighted down full length. There shall be at least a 12-inch overlap of all seams.
- D. Immediately repair all damaged areas.

3.7 EXISTING DRAINAGE FACILITIES

- A. Not Used.

3.8 DRAINAGE DIVERSION

- A. Contractor may divert up-gradient surface runoff water around the site as required. Contractor will be responsible for routing diverted surface water to its original flow path downstream of the site and providing energy dissipation and/or dispersion as needed to mimic pre-diverted flow characteristics, as required by the Engineer. Diversion shall be constructed to not cause erosion at the upstream or downstream ends. Pump intakes shall be fitted with fish screens or placed within a location that has been isolated from fish and fish have been salvaged and removed.
- B. Drainage shall be restored to condition existing prior to construction unless otherwise shown on the drawings.

END OF SECTION

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SECTION 320116 - FLEXIBLE PAVING REHABILITATION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Heating, milling, remixing, placing, and compacting existing asphaltic concrete.

B. Related Sections:

1. Section 321723 – Pavement Markings.
2. Section 321216 - Asphalt Concrete Pavement.

1.2 UNIT PRICE – MEASUREMENT AND PAYMENT

A. Pavement Surface Scarifying, Milling, Mixing, and Recycling:

1. Basis of Measurement: By square yard.
2. Basis of Payment: Includes surface cleaning, pre-heating, milling, mixing, and relaying, compacting and rolling; protection to adjacent surfaces.

B. Recycling Agent:

1. Basis of Measurement: By gallon.
2. Basis of Payment: Includes proportioning and mixing.

C. Seal Coat:

1. Basis of Measurement: By square yard.
2. Basis of Payment: Includes preparing surfaces and applying.

1.3 REFERENCES

A. Asphalt Institute:

1. AI MS-19 - Basic Asphalt Emulsion Manual.
2. AI MS-20 - Asphalt Hot-Mix Recycling.

B. Asphalt Recycling and Reclaiming Association:

1. ARRA ARS 5-HR - Hot-Mix Recycling.

C. ASTM International:

1. ASTM C1371 - Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emissometers.



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2. ASTM C1549 - Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer.
3. ASTM E408 - Standard Test Methods for Total Normal Emittance of Surfaces Using Inspection-Meter Techniques.
4. ASTM E903 - Standard Test Method for Solar Absorptance, Reflectance, and Transmittance of Materials Using Integrating Spheres.
5. ASTM E1918 - Standard Test Method for Measuring Solar Reflectance of Horizontal and Low-Sloped Surfaces in the Field.
6. ASTM E1980 - Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces.

1.4 SUBMITTALS

- A. Section 013300 - Submittal Procedures: Requirements for submittals.
- B. Product Data: Not applicable.
- C. Mix Design: Not applicable.
- D. Equipment: Submit list of equipment intended for use on the Work.
- E. Procedures: Submit schedule of intended removal, remixing, and rolling procedures.

1.5 SUSTAINABLE DESIGN SUBMITTALS

- A. Not Used.

1.6 QUALITY ASSURANCE

- A. Perform Work in accordance with ARRA ARS 5-HR, AI MS-20.
- B. Perform Work in accordance with Washington Department of Ecology's standard.
- C. Maintain one copy of each document on site.

1.7 QUALIFICATIONS

- A. Recycler: Not Used.

1.8 PRE-INSTALLATION MEETINGS

- A. Convene minimum one week prior to commencing Work of this section.

1.9 ENVIRONMENTAL REQUIREMENTS

- A. Do not perform Work when weather conditions will not permit successful completion of the Work.
- B. When ambient air temperature is below 50 degrees F, obtain Architect/Engineer's approval prior to proceeding with the Work.

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**PART 2 PRODUCTS**

**2.1 FLEXIBLE PAVEMENT SURFACING RECOVERY**

- A. Furnish materials in accordance with State standards.

**2.2 SUSTAINABILITY CHARACTERISTICS**

- A. Not Used.

**2.3 MATERIALS**

- A. Not Used.

**2.4 EQUIPMENT**

- A. Milling Unit: Type for intended purpose as follows:
  1. Self-propelled; wheelbase sufficient to maximize leveling action.
  2. Capable of loosening pavement material to 2 inch depth.

**2.5 RECYCLED MIX**

- A. Not Used.

**PART 3 EXECUTION**

**3.1 PREPARATION**

- A. Mechanically sweep pavement surfaces immediately prior to commencement of Work. Clean pavement surfaces of loose foreign matter. Verify surfaces are dry.

**3.2 REMOVAL**

- A. Do not disfigure adjacent Work.  
  
Execute removal to depth not less than 1 inch at each point across full width of surface without detrimental aggregate degradation.

**3.3 MIXING**

- A. Not Used.

**3.4 PLACING**

- A. Not Used.

**3.5 ROLLING AND COMPACTING**

- A. Not Used.

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3.6 PROTECTION OF FINISHED WORK

- A. Do not permit traffic over surface for 2 hours.

3.7 SCHEDULES

- A. Not Used.

END OF SECTION

**CAPE DISAPPOINTMENT STATE PARK  
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SECTION 320513 - SOILS FOR EXTERIOR IMPROVEMENTS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Subsoil materials.
2. Topsoil materials.

B. Related Sections:

1. Section 310513 - Soils for Earthwork.
2. Section 312213 - Rough Grading.
3. Section 312317 - Trenching.
4. Section 312323 - Fill.
5. Section 320516 - Aggregates for Exterior Improvements.
6. Document GRI W1319-B – Appendix A: Geotechnical report; bore hole locations and findings of subsurface materials.

1.2 UNIT PRICES – MEASUREMENT AND PAYMENT

A. Subsoil:

1. Basis of Measurement: By cubic yard.
2. Basis of Payment: Includes excavating existing subsoil, supplying subsoil materials, stockpiling.

B. Topsoil:

1. Basis of Measurement: By cubic yard.
2. Basis of Payment: Includes excavating existing topsoil, supplying topsoil materials, stockpiling.

1.3 REFERENCES

A. American Association of State Highway and Transportation Officials:

1. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.

B. ASTM International:

1. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup> (600 kN-m/m<sup>3</sup>)).

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2. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft<sup>3</sup>. (2,700 kN-m/m<sup>3</sup>)).
3. ASTM D2487 - Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System).

1.4 SUBMITTALS

- A. Section 013300 - Submittal Procedures: Requirements for submittals.
- B. Samples: Not applicable.
- C. Materials Source: Submit name of imported materials source.
- D. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

1.5 SUSTAINABLE DESIGN SUBMITTALS

- A. Not Used.

1.6 QUALITY ASSURANCE

- A. Furnish each topsoil material from single source throughout the Work.
- B. Perform Work in accordance with Washington Department of Ecology's standard.
- C. Maintain one copy on site.

PART 2 PRODUCTS

2.1 SUSTAINABILITY CHARACTERISTICS

- A. Materials and Resources Characteristics:
  1. Regional Materials: Not applicable.

2.2 SUBSOIL MATERIALS

- A. Section 310513 – Soils for Earthwork: Subsoil Type S1.
- B. Section 310513 – Soils for Earthwork: Subsoil Type S2.

2.3 TOPSOIL MATERIALS

- A. Section 310513 – Soils for Earthwork: Topsoil TS1.
- B. Section 310513 – Soils for Earthwork: Topsoil TS2.

2.4 SOURCE QUALITY CONTROL

- A. Section 014000 - Quality Control Testing and analysis of soil material.
- B. Testing and Analysis of Subsoil Material: Perform in accordance with ASTM D698.

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- C. Testing and Analysis of Topsoil Material: Analyze to determine percentage of nitrogen, phosphorus, potash, soluble salt, organic matter, and pH.
- D. When tests indicate materials do not meet specified requirements, change material and retest.
- E. Furnish materials of each type from same source throughout the Work.

**PART 3 EXECUTION**

**3.1 EXCAVATION**

- A. Excavate topsoil from areas designated. Strip topsoil to full depth of topsoil in designated areas.
- B. Stockpile excavated material meeting requirements for topsoil materials.
- C. Remove excess excavated materials not intended for reuse, from site.
- D. Remove excavated materials not meeting requirements for topsoil materials from site.

**3.2 STOCKPILING**

- A. Stockpile materials on site at locations designated by Engineer.
- B. Stockpile in sufficient quantities to meet Project schedule and requirements.
- C. Separate differing materials with dividers or stockpile apart to prevent mixing.
- D. Stockpile topsoil 8 feet high maximum.
- E. Prevent intermixing of soil types or contamination.
- F. Direct surface water away from stockpile site to prevent erosion or deterioration of materials.

**3.3 STOCKPILE CLEANUP**

- A. Remove stockpile, leave area in clean and neat condition. Grade site surface to prevent free standing surface water.
- B. When borrow area is indicated, leave area in clean and neat condition. Grade site surface to prevent free standing surface water.

END OF SECTION

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SECTION 321123 - AGGREGATE BASE COURSES

PART 1        GENERAL

1.1    SUMMARY

- A.    This Section includes construction of an aggregate subbase and base course for placement under asphalt or concrete paving, unit paving, or placed and left exposed.
- B.    Section Includes:
  - 1.    Aggregate subbase
  - 2.    Aggregate base course
- C.    Related Sections:
  - 1.    Section 312213 - Rough Grading
  - 2.    Section 312317 - Trenching
  - 3.    Section 312323 - Fill
  - 4.    Section 310516 - Aggregates for Earthwork
  - 5.    Section 321216 - Asphalt Concrete Paving

1.2    REFERENCE STANDARDS

- A.    American Association of State Highway and Transportation Officials (AASHTO):
  - 1.    AASHTO M288 - Standard Specification for Geotextile Specification for Highway Applications
  - 2.    T11, Standard Method of Test for Materials Finer Than 75 $\mu$ m (No. 200) Sieve in Mineral Aggregates by Washing
  - 3.    T27, Standard Method of Test for Sieve Analysis of Fine and Coarse Aggregates
  - 4.    AASHTO T99 - Standard Specification for Moisture-Density Relations of Soils Using a 2.5-kg (5.5-lb) Rammer and a 305-mm (12-in.) Drop
- B.    ASTM International (ASTM):
  - 1.    ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup> (600 kN-m/m<sup>3</sup>))
  - 2.    ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method
  - 3.    ASTM D6938 – Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

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4. ASTM D2940 - Standard Specification for Graded Aggregate Material for Bases or Subbases for Highways or Airports

1.3 DEFINITIONS

- A. Completed Course: Compacted, unyielding, free from irregularities and standing water, with smooth, tight, even surface, true to grade, line, and cross-section.
- B. Completed Lift: Compacted with uniform cross-section thickness.
- C. Keystone: Fine aggregate used to aid in binding of loose surface stone.

1.4 SUBMITTALS

- A. Section 013300 - Submittal Procedures: Requirements for submittals.
- B. Product Data:
  1. Submit data for geotextile fabric and herbicide.
- C. Materials Source: Submit name of aggregate materials suppliers.
- D. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.5 QUALITY ASSURANCE

- A. Furnish each aggregate material from single source throughout the Work.

PART 2 PRODUCTS

2.1 CRUSHED SURFACING TOP COURSE

- A. As indicated on the drawings.
- B. Coarse Aggregate: Type A6, Crushed Surfacing Top Course Aggregate equal to Crushed Surfacing Top Course per WSDOT Section 9-03.9(3).

2.2 CRUSHED SURFACING BASE COURSE

- A. As indicated on the drawings.
- B. Coarse Aggregate: Type A7, Crushed Surfacing Base Course Aggregate equal to Crushed Surfacing Base Course per WSDOT Section 9-03.9(3).

2.3 SOURCE QUALITY CONTROL

- A. Perform tests necessary to locate acceptable source of materials meeting specified requirements.
- B. Final approval of aggregate material will be based on test results of installed materials.
- C. Should separation of coarse from fine materials occur during processing or stockpiling, immediately change methods of handling materials to correct uniformity in grading.



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2.4 EQUIPMENT

- A. Compaction Equipment: Adequate in design and number to provide compaction and to obtain specified density for each layer.

2.5 ACCESSORIES

- A. Geotextile Fabric: AASHTO M288, Class 2; non-woven, polypropylene.

PART 3 EXECUTION

3.1 SUBGRADE PREPARATION

- A. Obtain Engineer's acceptance of subgrade before placing base course or surfacing material.
- B. Verify below-water compacted substrate is compacted is ready to support imposed loads.
  - 1. In-water stabilization material structural fill should be placed in a single lift.
  - 2. Compact with vibratory equipment or tamp in until well-keyed.
  - 3. Non-woven geotextile fabric shall be placed on the subgrade prior to placing in-water stabilization material and shall be staked or weighted to prevent movement during subsequent placements of stabilization material.
- C. Verify above-water compacted substrate is dry and ready to support paving and imposed loads.
  - 1. Proof roll substrate with equipment approved by the Engineer in minimum two perpendicular passes to identify soft spots.
  - 2. Remove soft substrate and replace with compacted fill as specified in Section 312323.

3.2 PREPARATION

- A. Correct irregularities in substrate gradient and elevation by scarifying, reshaping, and re-compacting.
- B. Do not place base course or surfacing materials in snow or on soft, muddy, or frozen subgrade.

3.3 HAULING AND SPREADING

- A. Hauling Materials:
  - 1. Do not haul over surfacing in process of construction.
  - 2. Loads: Of uniform capacity.
  - 3. Maintain consistent gradation of material delivered; loads of widely varying gradations will be cause for rejection.
- B. Spreading Materials:

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1. Distribute material to provide required density, depth, grade, and dimensions with allowance for subsequent lifts.
2. Produce even distribution of material on prepared surface without segregation.
3. Should segregation of coarse from fine materials occur during placing, immediately change methods of handling materials to correct uniformity in grading.
4. Maintain consistent gradation of material. Widely varying gradation will be cause for rejection.

**3.4 CONSTRUCTION OF COURSES**

**A. Untreated Aggregate Base Course:**

1. If the required compacted depth of the base course exceeds 6 inches, construct it in two or more layers of nearly equal thickness. The maximum compacted thickness of any one layer shall not exceed 6 inches.
2. Completed Course Total Thickness: As shown on the Plans, 8-inch minimum.
3. Spread lift on preceding course to required cross-section. Place each layer in spreads as wide as practical and to the full width of the course before a succeeding layer is placed.
4. Lightly blade and roll surface until thoroughly compacted.
5. Add keystone to achieve compaction and as required when aggregate does not compact readily due to lack of fines or natural cementing properties, as follows:
  - a. Use 3/4-inch leveling course or surfacing material as keystone.
  - b. Spread evenly on top of base course, using spreader boxes or chip spreaders.
  - c. Roll surface until keystone is worked into interstices of base course without excessive displacement.
  - d. Continue operation until course has become thoroughly keyed, compacted, and will not creep or move under roller.
6. Blade or broom surface to maintain true line, grade, and cross-section.

**B. Gravel Surfacing and Leveling Course:**

1. Place shoulder aggregates in a single layer, or two or more layers of nearly equal thickness. The maximum compacted thickness of any one layer shall not exceed 9 inches.
2. Spread on preceding course in accordance with cross-section shown.
3. Blade lightly and roll surface until material is thoroughly compacted.
4. Complete Total Thickness: As shown on the Plans, 8-inch minimum.

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**3.5 ROLLING AND COMPACTION**

- A. Commence compaction of each layer of base immediately after spreading operations and continue until density of 95 percent of maximum density has been achieved as determined by AASHTO T99.
- B. Roll each layer of material until there is no appreciable reaction or yielding under the compactor before succeeding layer is applied.
- C. Shape and maintain the surface of each layer during compaction operations. Commence rolling at outer edges and continue toward center; do not roll center of road first.
- D. Apply water as needed to obtain specified densities.
- E. Place and compact each lift to the required density before succeeding lift is placed.
- F. Surface Defects: Remedy by loosening and rerolling. Reroll entire area, including surrounding surface, until thoroughly compacted.
- G. Finished surface shall be true to grade and crown before proceeding with surfacing.

**3.6 SURFACE TOLERANCES**

- A. Blade or otherwise work surfacing as necessary to maintain grade and cross-section at all times, and to keep surface smooth and thoroughly compacted.
- B. Finished Surface of Untreated Aggregate: Within plus or minus 0.04-foot of grade shown at any individual point.
- C. Overall Average: Within plus or minus 0.04-foot from crown and grade specified.

**3.7 FIELD QUALITY CONTROL**

- A. Quality control testing shall be performed by an independent testing laboratory provided by the Owner.
- B. Refer to table below for minimum sampling and testing requirements for aggregate base course and surfacing. The Owner reserves the right to complete additional testing.

<b>Property</b>	<b>Test Method</b>	<b>Frequency</b>	<b>Sampling Point</b>
Gradation	AASHTO T11 and AASHTO T27	One sample every 500 tons but at least every 4 hours of production	Roadbed after processing
Moisture Density (Maximum Density)	AASHTO T99	One test for every aggregate grading produced	Production output or stockpile
In-Place Density and Moisture Content	AASHTO T310	One for each 500 ton but at least every 10,000 square feet of area	In-place completed, compacted area

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3.8 CLEANING

- A. Remove excess material from the Work area. Clean stockpile and staging areas of all excess aggregate. Restore per Specifications as applicable.

END OF SECTION

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SECTION 321216 - ASPHALT PAVEMENT

PART 1 GENERAL

1.1 SCOPE

- A. This section covers the construction of hot mix asphalt pavement.

1.2 REFERENCE STANDARDS

- A. References herein to "AASHTO" shall mean Association of American State Highway Transportation Officials.
- B. References herein to "Standard Specifications" shall mean the 2023 edition of the Washington State Department of Transportation (WSDOT) Standard Specifications for Road, Bridge, and Municipal Construction. Where reference is made to a specific part of the Standard Specifications, such applicable part shall be considered as part of this section of the Specifications. In case of a conflict in the requirements of the Standard Specifications and the requirements stated herein, the requirements herein shall prevail.

1.3 QUALITY ASSURANCE

- A. All testing to determine compliance with the specifications shall be performed by an independent testing laboratory retained by the OWNER. A minimum of five (5) nuclear densometer readings shall be taken in random locations within every test area. Each test area shall not exceed 200 tons of asphalt; however, smaller areas may be designated by the ENGINEER.
- B. The surface smoothness of the new asphalt pavement shall be such that when a 10-foot straightedge is laid longitudinally across the paved area in any direction, the new pavement shall not deviate from the straightedge more than 1/8-inch. Surface drainage shall be maintained. Additionally, paving must conform to the design grade and crown and contain no abrupt edges, low or high areas or any other imperfections as determined by the ENGINEER. Pavement construction not meeting these requirements will be repaired by grinding the existing pavement to a 1-1/2-inch depth and replacing Hot Mix Asphalt (HMA), per Section 5-04 of the WSDOT Standard Specifications, the full width at no cost to OWNER.

1.4 SUBMITTALS

- A. Provide product information, and materials certification for all products specified herein.

PART 2 PRODUCTS

2.1 AGGREGATE MATERIAL

- A. Base Course: Base course shall be Aggregate for Gravel Base as specified in Section 320516, Aggregates for Earthwork.

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- B. Leveling and Top Course: The aggregate material shall be a clean, well-graded crushed base aggregate conforming to requirements for Crushed Surfacing Top Course as specified in Section 320516, Aggregates for Earthwork.

2.2 HOT MIX ASPHALT PAVEMENT:

- A. Hot Mix Asphalt: Use hot mix asphalt class ½”, PG 64-22. Conforming to the requirements as specified in Section 5-04.2 of the WSDOT Standard Specifications.
- B. Asphalt Prime Coat: Liquid asphalt for use as a prime coat under asphalt pavement shall be MC 250 liquid asphalt, CSS-1.
- C. Tack Coat: Liquid asphalt for use as a tack coat as specified herein shall be CSS-1, CSS-1h, or STE-1, unless otherwise approved by the ENGINEER.

PART 3 EXECUTION

3.1 AGGREGATE PAVEMENT BASE

- A. Place aggregate pavement base to the depth shown on the Drawings or as specified in all cases, pavement base shall be compacted to a minimum depth of ten (10) inches. Bring the top of the pavement base to a smooth, even grade at a distance below finished grade equivalent to the required pavement depth.
- B. Compact the pavement base with mechanical vibratory to a density of not less than 95 percent of the maximum density, as determined by AASHTO T-99.

3.2 HOT MIX ASPHALT PAVEMENT

- A. CONTRACTOR shall conform to the requirements for prime coat and tack coat in Standard Specifications. Tack coat all edges of existing pavement, manhole and clean out frames, inlet boxes and like items. When rate is not specified, asphalt will be applied at the rate of 0.1 gallon per square yard.
- B. Asphalt pavement shall be constructed as follows:
  - 1. Except as specifically modified herein, conform to the requirements for construction in the Standard Specifications.
  - 2. Place the asphalt pavement to the specified depth on the prepared sub-grade. Minimum depth of pavement shall be four (4) inches. When a prime coat is specified, place asphalt pavement after the prime coat has set. Maximum thickness for any one lift of pavement shall not exceed 2-inches. Spread and level the asphalt pavement with hand tools or by use of a mechanical spreader.
  - 3. Settlement of 1/4-inch or greater for asphalt pavement, occurring within one year of substantial completion, shall require repair or replacement as directed by the ENGINEER at the CONTRACTOR’S expense.

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4. Cracking or raveling of the pavement occurring within one year of substantial completion shall require repair or replacement as directed by the ENGINEER at the CONTRACTOR'S expense.

END OF SECTION

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SECTION 321313 – CONCRETE PAVING

PART 1        GENERAL

1.1    SECTION INCLUDES

- A.    Driveways.
- B.    Roadways.
- C.    Parking lots.
- D.    Curbs and gutters.
- E.    Related Sections
  - 1.    Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Section, apply to this Section
  - 2.    Section 312213 – Rough Grading
  - 3.    Section 312323 - Fill: Compacted subbase for paving.
  - 4.    Section 321123 - Aggregate Base Courses
  - 5.    Section 321623 - Sidewalks

1.2    REFERENCE STANDARDS

- A.    AASHTO M 182 - Standard Specification for Burlap Cloth Made from Jute or Kenaf and Cotton Mats 2005 (Re-approved 2017).
- B.    ACI 117 - Specification for Tolerances for Concrete Construction and Materials 2010 (Reapproved 2015).
- C.    ACI 301 - Specifications for Concrete Construction 2020.
- D.    ASTM C33/C33M - Standard Specification for Concrete Aggregates.
- E.    ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete.
- F.    ASTM C150/C150M - Standard Specification for Portland Cement.
- G.    ASTM C171 - Standard Specification for Sheet Materials for Curing Concrete.
- H.    ASTM C260/C260M - Standard Specification for Air-Entraining Admixtures for Concrete.
- I.    ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
- J.    ASTM C595/C595M - Standard Specification for Blended Hydraulic Cements.
- K.    ASTM C979/C979M - Standard Specification for Pigments for Integrally Colored Concrete.



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- L. ASTM C989/C989M - Standard Specification for Slag Cement for Use in Concrete and Mortars.
- M. ASTM C1116/C1116M - Standard Specification for Fiber-Reinforced Concrete.
- N. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
- O. ASTM D1752 - Standard Specification for Preformed Sponge Rubber, Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction 2018.

1.3 SUBMITTALS

- A. Division 01 for submittal procedure.
- B. Product Data: For each type of product.
- C. Sustainable Design Submittals: Not used.
- D. Samples: For each type of product, ingredient, or admixture requiring color selection.
- E. Design Mixtures: For each concrete paving mixture. Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1.4 QUALITY ASSURANCE

- A. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C94/C94M requirements for production facilities and equipment.
  - 1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities" (Quality Control Manual - Section 3, "Plant Certification Checklist").

1.5 PRECONSTRUCTION TESTING

- A. Preconstruction Testing Service: Engage a qualified independent testing agency to perform preconstruction testing on concrete paving mixtures.

PART 2 PRODUCTS

2.1 CONCRETE, GENERAL

- A. ACI Publications: Comply with ACI 301 (ACI 301M) unless otherwise indicated.

2.2 FORM MATERIALS

- A. Form Materials: Comply with ACI 301.
- B. Joint Filler: Preformed; non-extruding bituminous type (ASTM D1751) or sponge rubber or cork (ASTM D1752).
  - 1. Thickness: 1/2 inch

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**2.3 CONCRETE MATERIALS**

- A. Cementitious Materials: Use the following cementitious materials, of same type, brand, and source throughout Project:
  - 1. Portland Cement: ASTM C150/C150M, gray Portland cement Type I, II, or III.
  - 2. Fly Ash: ASTM C618, Class C or Class F
  - 3. Slag Cement: ASTM C989/C989M, Grade 100 or 120.
  - 4. Blended Hydraulic Cement: ASTM C595/C595M, Either Type IS, Portland blast-furnace slag, Type IP, Portland-pozzolan, Type IL, Portland-limestone, Type IT, ternary blended cement.
- B. Normal-Weight Aggregates: ASTM C33/C33M, Class 4S uniformly graded. Provide aggregates from a single source.
- C. Air-Entraining Admixture: ASTM C260/C260M.
- D. Chemical Admixtures: Admixtures certified by Manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material.
- E. Color Pigment: ASTM C979/C979M, synthetic mineral-oxide pigments or colored water-reducing admixtures; color stable, free of carbon black, nonfading, and resistant to lime and other alkalis.
- F. Water: Potable and complying with ASTM C94/C94M.

**2.4 CURING MATERIALS**

- A. Absorptive Cover: AASHTO M 182, Class 3, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. dry or cotton mats.
- B. Moisture-Retaining Cover: ASTM C171, polyethylene film or white burlap-polyethylene sheet.
- C. Water: Potable.
- D. Evaporation Retarder: Waterborne, monomolecular, film forming, manufactured for application to fresh concrete.
- E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C309, Type 1, Class B, dissipating.
- F. White, Waterborne, Membrane-Forming Curing Compound: ASTM C309, Type 2, Class B, dissipating.

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2.5 MIXING

- A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C94/C94M and ASTM C1116/C1116M. Furnish batch certificates for each batch discharged and used in the Work.

2.6 JOINT SEALANTS

- A. Hot poured sealant for HMA placed adjacent to cement concrete pavement shall meet the requirements of Section 9-04.2 of the WSDOT Standard Specification, 2022.
- B. Closed Cell Foam Backer Rod for joints shall meet the requirements of Section 9-04.2 of the WSDOT Standard Specification, 2022.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Proof-roll prepared subbase surface below concrete paving to identify soft pockets and areas of excess yielding.

3.2 PREPARATION

- A. Remove loose material from compacted subbase surface immediately before placing concrete.

3.3 FORMING

- A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.
- B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.4 PLACING CONCRETE

- A. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.
- B. Comply with ACI 301 (ACI 301M) requirements for measuring, mixing, transporting, and placing concrete.
- C. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
- D. Screed paving surface with a straightedge and strike off.
- E. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleedwater appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.

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**3.5 JOINTS**

- A. General: Form construction, isolation, and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline unless otherwise indicated.
- B. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at isolation joints.
- C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, other fixed objects, and where indicated.
- D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness:
- E. Edging: After initial floating, tool edges of paving, gutters, curbs, and joints in concrete with an edging tool to a 3/8-inch radius. Repeat tooling of edges after applying surface finishes. Eliminate edging-tool marks on concrete surfaces.

**3.6 FINISHING**

- A. General: Do not add water to concrete surfaces during finishing operations.
- B. Float Finish: Begin the second floating operation when bleedwater sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.
- C. Burlap Finish: Drag a seamless strip of damp burlap across float-finished concrete, perpendicular to line of traffic, to provide a uniform, gritty texture.
- D. Medium-to-Fine-Textured Broom Finish: Draw a soft-bristle broom across float-finished concrete surface, perpendicular to line of traffic, to provide a uniform, fine-line texture.
- E. Medium-to-Coarse-Textured Broom Finish: Provide a coarse finish by striating float-finished concrete surface 1/16 to 1/8 inch deep with a stiff-bristled broom, perpendicular to line of traffic.

**3.7 CONCRETE PROTECTION AND CURING**

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
- B. Comply with ACI 306.1 for cold-weather protection.
- C. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to Manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete but before float finishing.

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- D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.
- E. Curing Methods: Cure concrete by moisture curing, moisture-retaining-cover curing, curing compound or a combination of these.

3.8 TOLERANCES

- A. Comply with tolerances in ACI 117 (ACI 117M) and as follows:
- B. Elevation: 3/4 inch.
- C. Thickness: Plus 3/8-inch, minus 1/4 inch.
- D. Surface: Gap below 10-feet long; unlevelled straightedge not to exceed 1/2 inch.
- E. Joint Spacing: 3 inches.
- F. Contraction Joint Depth: Plus 1/4 inch, no minus.
- G. Joint Width: Plus 1/8 inch, no minus

3.9 REPAIR AND PROTECTION

- A. Remove and replace concrete paving that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Architect.
- B. Protect concrete paving from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.
- C. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION

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SECTION 321623 - SIDEWALKS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Concrete paving for sidewalks.
- B. Related Requirements:
  - 1. Section 312213 - Rough Grading: Preparation of Site for paving and base grade.
  - 2. Section 312323 - Fill: Compacted subgrade for paving.
  - 3. Section 321123 - Aggregate Base Courses

1.2 UNIT PRICE – MEASUREMENT AND PAYMENT

- A. Sidewalks:
  - 1. Basis of Measurement: By square yard.
  - 2. Basis of Payment: Includes subbase, forms, reinforcing, concrete, accessories, placing, finishing, curing, and testing.

1.3 REFERENCE STANDARDS

- A. References herein to “Standard Specifications” shall mean the 2023 edition of the Washington State Department of Transportation (WSDOT) Standard Specifications for Road, Bridge, and Municipal Construction. Where reference is made to a specific part of the Standard Specifications, such applicable part shall be considered as part of this section of the Specifications. In case of a conflict in the requirements of the Standard Specifications and the requirements stated herein, the requirements herein shall prevail.
- B. American Association of State Highway and Transportation Officials:
  - 1. AASHTO M182 - Standard Specification for Burlap Cloth Made from Jute or Kenaf and Cotton Mats.
- C. American Concrete Institute:
  - 1. ACI 304 - Guide for Measuring, Mixing, Transporting, and Placing Concrete.
- D. ASTM International:
  - 1. ASTM C31/C31M - Standard Practice for Making and Curing Concrete Test Specimens in the Field.
  - 2. ASTM C33/C33M - Standard Specification for Concrete Aggregates.
  - 3. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
  - 4. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete.

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5. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete.
6. ASTM C150/C150M - Standard Specification for Portland Cement.
7. ASTM C171 - Standard Specification for Sheet Materials for Curing Concrete.
8. ASTM C172/C172M - Standard Practice for Sampling Freshly Mixed Concrete.
9. ASTM C173/C173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.
10. ASTM C231/C231M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
11. ASTM C260/C260M - Standard Specification for Air-Entraining Admixtures for Concrete.
12. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
13. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete.
14. ASTM C595/C595M - Standard Specification for Blended Hydraulic Cements.
15. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.
16. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
17. ASTM C979/C979M - Standard Specification for Pigments for Integrally Colored Concrete.
18. ASTM C989/C989M - Standard Specification for Slag Cement for Use in Concrete and Mortars.
19. ASTM C1064/C1064M - Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete.
20. ASTM C1315 - Standard Specification for Liquid Membrane-Forming Compounds Having Special Properties for Curing and Sealing Concrete.
21. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
22. ASTM D1752 - Standard Specification for Preformed Sponge Rubber Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction.
23. ASTM D5893/D5893M - Standard Specification for Cold Applied, Single Component, Chemically Curing Silicone Joint Sealant for Portland Cement Concrete Pavements.
24. ASTM D6690 - Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements.

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1.4 PREINSTALLATION MEETINGS

- A. Section 013300 - Administrative Requirements: Requirements for preinstallation meeting.
- B. Convene minimum one week prior to commencing Work of this Section.

1.5 SUBMITTALS

- A. Section 013300 - Submittal Procedures: Requirements for submittals.
- B. Product Data:
  - 1. Submit required information regarding concrete materials.
  - 2. Mix Design:
    - a. Submit concrete mix design for each concrete strength prior to commencement of Work.
    - b. Submit separate mix designs if admixtures are required for hot- and cold-weather concrete Work.
    - c. Identify mix ingredients and proportions, including admixtures.
  - 3. Identify chloride content of admixtures and whether or not chloride was added during manufacture.
- C. Samples: Not used.
- D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- E. Source Quality-Control Submittals: Indicate results of shop tests and inspections.
- F. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.
- G. Qualifications Statement:
  - 1. Submit qualifications for manufacturer and installer.

1.6 SUSTAINABLE DESIGN SUBMITTALS

- A. Not used.

1.7 QUALITY ASSURANCE

- A. Perform Work according to State standard specifications 8-14.
- B. Obtain cementitious materials from same source throughout.
- C. Perform Work according to Washington Department of Ecology standards.
- D. Maintain one copy of each standard affecting Work of this Section on Site.



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1.8 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years' documented experience.
- B. Installer: Company specializing in performing Work of this Section with minimum three years' documented experience.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.
- B. Inspection: Accept materials on Site in Manufacturer's original packaging and inspect for damage.
- C. Store materials according to Manufacturer instructions.
- D. Protection:
  - 1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
  - 2. Provide additional protection according to Manufacturer instructions.

1.10 AMBIENT CONDITIONS

- A. Section 015000 - Temporary Facilities and Controls: Requirements for ambient condition control facilities for product storage and installation.
- B. Minimum Conditions: Do not place concrete if base surface temperature is less than 40 deg. F, or if surface is wet or frozen.
- C. Subsequent Conditions: Maintain minimum 50 deg. F, for not less than 72 hours after placing, and at a temperature above freezing for remainder of curing period.

1.11 EXISTING CONDITIONS

- 1. Not applicable.

PART 2 PRODUCTS

2.1 AGGREGATE SUBGRADE

- A. As specified in Section 321123 - Aggregate Base Courses.

2.2 SUSTAINABILITY CHARACTERISTICS

- A. Not used.

2.3 MATERIALS

- A. Forms:
  - 1. Material:

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- a. Wood: Straight and free from warping, twisting, loose knots, splits, or other defects.
- 2. Profile: To suit conditions.
- 3. Joint Filler:
  - a. Material: Asphalt-impregnated fiberboard or felt.
  - b. Comply with ASTM D1751.
  - c. Thickness: ¼ inch
- B. Concrete:
  - 1. Concrete Materials:
    - a. Furnish materials according to State standard specifications 8-14.2 and Washington Department of Ecology standards.

2.4 MIXES

- A. Concrete:
  - 1. Concrete shall be air entrained Class 3000 conforming to State standard specifications 8.14.

2.5 FINISHES

2.6 SOURCE QUALITY CONTROL

- A. Section 014000 - Quality Requirements: Requirements for testing, inspection, and analysis.
- B. Testing: Comply with ASTM C94/C94M.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 017700 - Execution and Closeout Requirements: Requirements for installation examination.
- B. Verify that compacted subgrade is dry and ready to support paving and imposed loads.
- C. Verify that gradients and elevations of subgrade are as indicated on Drawings.
- D. Verify reinforcing placement for proper size, spacing, location, and support.

3.2 PREPARATION

- A. Section 017700 - Execution and Closeout Requirements: Requirements for installation preparation.
- B. Moisten substrate to minimize absorption of water from fresh concrete.
- C. Notify Engineer minimum 24 hours prior to commencement of concreting operations.

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**3.3 INSTALLATION**

**A. Subgrade:**

1. As specified in Section 321123 - Aggregate Base Courses.
2. Comply with Washington Department of Ecology standards.

**B. Forms:**

1. Place and secure forms and screeds to correct location, dimension, profile, and gradient.
2. Assemble formwork to permit easy stripping and dismantling without damaging concrete.
3. Wood Forms: Thoroughly wet with water before concrete is placed.

**C. Placing Concrete:**

1. Comply with State standard specifications 8-14.3(3).

**D. Finishing and Curing:**

1. Comply with State standard specifications 8-14.3(3).

**3.4 TOLERANCES**

**A. Section 014000 - Quality Requirements: Requirements for tolerances.**

**B. Maximum Variation of Surface Flatness: 1/2 inch in 10 feet.**

**C. Maximum Variation from True Position: 1/2 inch.**

**D. Line and Grade for Forms: 1/8 inch in any 10-foot long section.**

**3.5 FIELD QUALITY CONTROL**

**A. Section 014000 – Quality Control.**

**B. Inspection and Testing:**

1. Comply with Washington State Department of Transportation standards.
2. Samples:
  - a. Sampling Procedures: Comply with ASTM C172/C172M.
  - b. Cylinder Molding and Curing Procedures: Comply with ASTM C31/C31M, field cured.
  - c. Sample concrete and make one set of three cylinders for every 75 cu. yd. or less of each class of concrete placed each day, and for every 5,000 sq. ft. of surface area paving.
  - d. Make one additional cylinder during cold-weather concreting, and field cure.

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3. Cylinder Compressive Strength:
  - a. Comply with ASTM C39/C39M.
  - b. Acceptance:
    - 1) Average Compressive Strength of Three Consecutive Tests: Maximum 500 psi less than specified compressive strength.
  - c. Test one cylinder at seven days, and two cylinders at 28 days.
  - d. Dispose of remaining cylinders if testing is not required.
4. Slump, Temperature, and Air Content:
  - a. Measure for each compressive-strength concrete sample.
  - b. Slump: Comply with ASTM C143/C143M.
  - c. Air Content: Comply with ASTM C173/C173M.
  - d. Temperature: Comply with ASTM C1064/C1064M.
5. Records:
  - a. Maintain records of placed concrete items.
  - b. Record date, location of pour, quantity, air temperature, number of test samples taken.

**3.6 PROTECTION**

- A. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, rain and flowing water, and mechanical injury.
- B. Do not permit traffic, pedestrian and vehicular over sidewalk for minimum of three days after finishing. Vehicular traffic over sidewalks should be discouraged until the concrete has reached design strength.
- C. Damaged Concrete:
  1. Remove and reconstruct concrete that has been damaged for entire length between scheduled joints.
  2. Refinishing damaged portion is not acceptable.
  3. Dispose of damaged portions.

END OF SECTION

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SECTION 321723 - PAVEMENT MARKINGS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Traffic lines and markings.
2. Legends.
3. Paint.
4. Glass beads.

B. Related Sections:

1. Section 321216 - Asphalt Paving: Asphalt paving for roads, parking areas, and sidewalks.
2. Section 321313 - Concrete Paving: Concrete paving for roads, parking areas, and sidewalks.

1.2 UNIT PRICE – MEASUREMENT AND PAYMENT

A. Traffic Lines and Markings:

1. Basis of Measurement: By linear feet.
2. Basis of Payment: Includes furnishing, installing, inspecting, and maintaining pavement markings for minimum of three years, and related maintenance and protection of traffic.

B. Legends:

1. Basis of Measurement: By each.
2. Basis of Payment: Includes furnishing, installing, inspecting, and maintaining pavement markings for minimum of three years, and related maintenance and protection of traffic.

1.3 REFERENCE STANDARDS

A. American Association of State Highway and Transportation Officials:

1. AASHTO M247 - Standard Specification for Glass Beads Used in Pavement Markings.

B. ASTM International:

1. ASTM D34 - Standard Guide for Chemical Analysis of White Pigments.
2. ASTM D126 - Standard Test Methods for Analysis of Yellow, Orange, and Green Pigments Containing Lead Chromate and Chromium Oxide Green.
3. ASTM D562 - Standard Test Method for Consistency of Paints Measuring Krebs Unit (KU) Viscosity Using a Stormer-Type Viscometer.

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4. ASTM D711 - Standard Test Method for No-Pick-Up Time of Traffic Paint.
5. ASTM D713 - Standard Practice for Conducting Road Service Tests on Fluid Traffic Marking Materials.
6. ASTM D1301 - Standard Test Methods for Chemical Analysis of White Lead Pigments.
7. ASTM D1394 - Standard Test Methods for Chemical Analysis of White Titanium Pigments.
8. ASTM D1475 - Standard Test Method for Density of Liquid Coatings, Inks, and Related Products.
9. ASTM D1640/D1640M - Standard Test Methods for Drying, Curing, or Film Formation of Organic Coatings.
10. ASTM D2202 - Standard Test Method for Slump of Sealants.
11. ASTM D2371 - Standard Test Method for Pigment Content of Solvent-Reducible Paints.
12. ASTM D2621 - Standard Test Method for Infrared Identification of Vehicle Solids From Solvent-Reducible Paints.
13. ASTM D4280 - Standard Specification for Extended Life Type, Nonplowable, Raised Retroreflective Pavement Markers.
14. ASTM D4505 - Standard Specification for Preformed Retroreflective Pavement Marking Tape for Extended Service Life.

1.4 SUBMITTALS

- A. Section 013300 - Submittal Procedures: Requirements for submittals.
- B. Product Data: Submit paint formulation for each type of paint.
- C. Samples:
  1. Plates:
    - a. Submit eight samples of each color of material.
    - b. Prepare four without glass beads and four with glass beads for each different batch of material.
    - c. After approval, Owner will retain these plates for field comparisons of applied paint.
  2. Paint:
    - a. Submit two one-gallon and four one-quart paint samples accompanied by properly executed test reports.
  3. Glass Beads: Submit samples according to AASHTO M247.
- D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

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- E. Test and Evaluation Reports: Indicate source and acceptance test results according to AASHTO M247.
- F. Manufacturer Instructions:
  - 1. Submit instructions for application temperatures, eradication requirements, application rate, line thickness, type of glass beads, and bead embedment and application rate.
  - 2. Submit detailed instructions on installation requirements, including storage and handling procedures.
- G. Source Quality-Control Submittals: Indicate results of factory tests and inspections.
- H. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.
- I. Qualifications Statements:
  - 1. Submit qualifications for Manufacturer and applicator.
  - 2. Submit Manufacturer's approval of applicator.

1.5 SUSTAINABLE DESIGN SUBMITTALS

- A. Not used.

1.6 QUALITY ASSURANCE

- A. Perform Work according to Washington Department of Ecology standards.
- B. Maintain one copy of each standard affecting Work of this Section on Site.

1.7 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years' experience.
- B. Applicator: Company specializing in performing Work of this Section with minimum three years' experience.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Inspection: Accept materials on Site in Manufacturer's original packaging and inspect for damage.
- B. Storage:
  - 1. According to Manufacturer instructions.
  - 2. Paint:
    - a. Invert containers several days prior to use if paint has been stored more than two months.
    - b. Minimize exposure to air when transferring paint.

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c. Seal drums and tanks when not in use.

C. Protection:

1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
2. Provide additional protection according to Manufacturer instructions.

1.9 AMBIENT CONDITIONS

- A. Do not apply materials if surface and ambient temperatures are outside temperature ranges required by Paint Product Manufacturer.
- B. Do not apply exterior coatings during rain or snow if relative humidity is outside range required by Paint Manufacturer, or if moisture content of surfaces exceeds that required by Paint Manufacturer.
- C. Minimum Conditions: Do not apply paint if temperatures are expected to fall below 50 deg. F within 24 hours after application.
- D. Thermoplastic Compound: Do not apply unless pavement surface temperature is minimum 40 deg. F and rising.
- E. Maximum VOCs: Do not exceed limit required by State or Environmental Protection Agency.

PART 2 PRODUCTS

2.1 PAINTED PAVEMENT MARKINGS

A. Manufacturers:

1. INSL-X Latex Traffic Paint, or equivalent.
2. Substitutions: As approved by the owner.
3. Furnish materials according to Washington State Department of Transportation and Washington Department of Ecology standards.

B. Performance and Design Criteria:

1. Paint Adhesion: Adhere to road surface, forming smooth continuous film one minute after application.
2. Paint Drying: Tack free by touch as not to transfer by vehicle tires within two minutes after application.

2.2 APPLICATION EQUIPMENT

- A. Conforming to Washington State Department of Transportation standards.

2.3 SUSTAINABILITY CHARACTERISTICS

- A. Not used.



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2.4 SOURCE QUALITY CONTROL

- A. Section 014000 - Quality Control
- B. Test and analyze traffic paints conforming to Washington State Department of Transportation standards
- C. Certificate of Compliance:
  - 1. If Manufacturer is approved by authorities having jurisdiction, submit certificate of compliance indicating Work performed at Manufacturer's facility conforms to Contract Documents.
  - 2. Specified shop tests are not required for Work performed by approved manufacturer.

PART 3 EXECUTION

3.1 PREPARATION

- A. Section 017000 - Execution and Closeout Requirements: Requirements for application preparation.
- B. Do not apply paint to concrete surfaces until concrete has cured for 28 days.
- C. Agitate paint for 1 to 15 minutes prior to application to ensure even distribution of pigment.
- D. Maintenance and Protection of Traffic:
  - 1. Prevent interference with marking operations and prevent traffic on newly applied markings before dry.
- E. Surface Preparation.
  - 1. Clean and dry paved surfaces prior to painting.
  - 2. Blow or sweep surface free of dirt, debris, oil, grease, or gasoline.
  - 3. Spot location of final pavement markings, as specified and as indicated on Drawings, by applying pavement spots 25 feet o.c.
  - 4. Request inspection by Engineer after placing pavement spots and minimum three days prior to applying traffic lines.

3.2 DEMOLITION

- A. Remove existing markings in an acceptable manner, using methods that will cause least damage to pavement structure or surface.
- B. Do not remove existing pavement markings by painting over with blank paint.
- C. Repair pavement or surface damage caused by removal methods.
- D. Clean and repair existing or reinstalled lines and legends.

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3.3 APPLICATION

- A. Conforming to Washington State Department of Transportation standards.

3.4 TOLERANCES

- A. Section 014000 - Quality Requirements: Requirements for tolerances.
- B. Maximum Variation from Wet Film Thickness: 1 mil.
- C. Maximum Variation from Wet Paint Line Width: Plus or minus 1/8 inch.
- D. Automatic Line-Length Gauges: Plus or minus 25 ft./mi.
- E. Cycle Length Timer: Plus or minus 6 in./40 ft.
- F. Paint Line-Length Timer: Plus or minus 3 in./10 ft
- G. Paint Guns: Plus or minus 1 mil

3.5 FIELD QUALITY CONTROL

- A. Section 014000 - Quality Control
- B. Inspect for incorrect location, insufficient thickness, line width, coverage, retention, uncured or discolored material, and insufficient bonding.
- C. Acceptance:
  - 1. Repair lines and markings which after application and curing do not meet following criteria:
    - a. Incorrect location.
    - b. Insufficient thickness, width, coverage, or retention.
    - c. Uncured or discolored material.
    - d. Insufficient bonding.

3.6 CLEANING

- A. Section 017000 - Execution and Closeout Requirements: Requirements for cleaning.
- B. Collect and legally dispose of residues from painting operations.

3.7 PROTECTION

- A. Section 017000 - Execution and Closeout Requirements: Requirements for protecting finished Work.
- B. Protect painted pavement markings from vehicular and pedestrian traffic until paint is dry and track free.

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- C. Unless material is track free at end of paint application convoy, use traffic cones to protect markings from traffic until track free.
- D. If vehicle crosses a marking and tracks it, or if splattering or overspray occurs, eradicate affected marking and resultant tracking, and apply new markings.
- E. Follow Manufacturer instructions or use minimum of 30 minutes of dry time.
- F. Barrier cones are satisfactory protection for materials being dried.

3.8 MAINTENANCE

- A. Section 017000 - Execution and Closeout Requirements: Requirements for maintenance service.

3.9 ATTACHMENTS

END OF SECTION

**REPLACE FAILING CULVERTS ON CAMPGROUND ACCESS ROAD  
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SECTION 324000 – STREAM CONSTRUCTION

PART 1 - GENERAL

1.1 SUMMARY

- A. Summary: This section includes all work for furnishing, processing, hauling, placing, and compacting the constructed streambed. This work consists of construction of the:
1. Pre-cast box culvert
  2. Stream channel, including placement of streambed materials
- B. References:
1. Washington State Water Quality Standards. WAC 173-201A
  2. Washington State Department of Transportation Standard Specifications for Road and Bridge and Municipal Construction, 2023 (WSDOT)
  3. Washington State Department of Transportation General Special Provisions, 2023 (WSDOT)
  4. All applicable environmental permits.
- C. Related Sections: The work of the following Sections is related to the work of this Section. Other Sections, not referenced below, may also be related to the proper performance of this work:
1. Section 333400 – Sanitary Utility Sewerage Force Main
  2. Section 331110 – Water Utility Distribution and Transmission Piping
  3. Section 312316 – Excavation
  4. Section 334213.1 – Contractor Furnished Box Culverts

PART 2 - PRODUCTS

2.1 MATERIALS & EQUIPMENT:

- A. All cobbles and gravels used in streambed construction shall be smooth and round or subangular, clean, hard, durable material from a river or stream source and not broken or crushed. Cobbles and gravels shall have a well-graded distribution of sizes. Some broken stone pieces may be accepted if approved by Engineer. Streambed Cobble Mix shall be as follows. Percentages are by volume.
1. 70% 8” Streambed Cobble – graded as outlined in WSDOT GSP 8-SA4.FR8
  2. 30% Streambed Sediment – graded as outlined in WSDOT GSP 8-SA4.FR8
  3. Material shall be well mixed before placement. If material has separated, the engineer may require it to be remixed on site.
- B. Native Material shall be native soils, sands, and gravels salvaged during excavation. It shall be clean and free of vegetation, roots, concrete, or other debris.
- C. Geotextile for Separation shall be Nonwoven Construction Geotextile for Separation per WSDOT Standard Specification 9-33.2(1), Table 3. Torn fabric will not be accepted.

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- D. The Contractor shall submit the name of all material suppliers in addition to all data sheets and test results for confirmation compliance testing and material gradations to the Engineer at least 2 weeks prior to delivery to the site. Cobble and rock shall be inspected by the engineer at the quarry prior to delivery to the site.
- E. After submitting test results for confirmation compliance testing and gradations to the Engineer, the Contractor shall arrange a meeting of the Engineer, Contractor and each Supplier at the Supplier's quarry or stockpile. The cobble and rock proposed for use will be inspected and evaluated for acceptability at the source location. All rock and cobble shall be accepted by the Engineer prior to delivery to the site.

**PART 3 - EXECUTION**

**3.1 GENERAL:**

- A. Excavation carried below the sub-grade lines shown on the Plans shall be replaced with Native Material as shown on the Plans. The Contractor shall bear all costs for correcting over-excavated areas.
- B. Perform all shaping of the sub-grade to the elevations, lines, and grades, as shown. Shape, trim, and finish slopes of channels to conform to the sub-grade lines, grades, and cross sections as shown. The finished sub-grade associated with the constructed streambed shall be reviewed and accepted by the Engineer prior to placement of any new material.
- C. The Contractor shall provide all material, testing, excavation, labor, and equipment necessary for the separation, transport and placement of cobble and rock.

**3.2 STREAM CHANNEL AND CULVERT ROCK PLACEMENT:**

- A. Place constructed streambed materials within concrete box culvert and channel grading tie in areas as shown on the Plans. Adjust tie-in grading as directed by Engineer to maximize downstream drainage. Place full-depth constructed streambed within box culvert and taper thickness of streambed material to grading limits.
- B. Mix streambed aggregates according to WSDOT Spec Section 8-30.3(2) Mixing of Streambed Aggregates.
- C. Place streambed aggregates as described in WSDOT Spec Section 8-30.3(3) Placement of Streambed Aggregates. Conform placement of streambed materials to subgrade, bottom of concrete box culvert, and utility pipe casings including grouted base.
- D. Use a pressurized water source to wash Streambed Sediment into the voids within the rock layer. Continue to wash in streambed sediment until flows pool on and flow across the surface (not subsurface flow). The finished lift shall be reviewed and accepted by the Engineer prior to placement of subsequent lifts

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- E. Ensure that, downstream of the Pre-cast box culvert, the channel bedform is 'V' shaped with the bed sloping towards a center low point that is 1-inch deeper than the toe of the streambank in order to provide for a low flow channel through the center of the streambed.

END OF SECTION

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SECTION 329200 - TURF AND GRASSES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section specifies materials, preparation, placement and maintenance of seeded areas.

1.2 RELATED SECTIONS

- A. Coordinate with related Work specified in other parts of the Project Manual.
- B. Coordinate with the General Conditions and Supplemental Conditions in the Contract.

1.3 REFERENCES

- A. This Section incorporates by reference the latest revision of the following documents. These references are part of this Section as specified and modified. In case of conflict between the requirements of this Section and those of the listed documents, the requirements of this Section shall prevail.

<u>Reference</u>	<u>Title</u>
WSDOT	Washington Department of Transportation 2023 Standard Specifications and Standard Plans for Road, Bridge, and Municipal Construction

1.4 QUALITY ASSURANCE

- A. Qualifications:
  - 1. Installer: Thoroughly familiar with the type of materials being installed, the proper materials and methods for their installation, and the proper timing for installation.
  - 2. Installer Lead Foreman:
    - a. Minimum five (5) years of experience in hydroseed application and grass stand establishment and maintenance.
    - b. Familiar with the type of materials being installed and the proper materials and methods.

1.5 SUBMITTALS

- A. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture stating the botanical and common name and percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.
- B. Seed Mix: Product information, with supplier's certification of material.

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1.6 DELIVERY AND STORAGE

- A. All seed varieties shall be packed in separate, clean, sound container of uniform weight.
- B. The Contractor shall deliver the seed to the Project Site in the original containers showing weight, analysis, and name of grower.
- C. Seed shall be stored in a manner that prevents all wetting and deterioration of seed, until the seed is approved, mixed and sown.

1.7 FIELD CONDITIONS

- A. Planting Restrictions: Plant during one of the following periods.
  - 1. Spring Planting: April 1 through May 31.
  - 2. Fall Planting: September 1 through October 31.
- B. Weather Limitations: Proceed with seeding only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Seed:
  - 1. Seed mixes are indicated on plans.
  - 2. Native Grass Seed: Fresh, clean, dry, new seed, mixed species: Sunmark Seeds International Troutdale, Oregon (503) 241-7333, or approved equal.
  - 3. Pure Live Seed (PLS)
    - a. PLS application rate for an individual seed species is determined as follows:
      - 1) PLS specified rate is listed in the plans.
      - 2) PLS factor is obtained by multiplying the seed label germination percentage times the seed label purity percentage. Use the purity and germination percentages from the label on actual bags of seed to be used on the Project.
      - 3) PLS application rate is obtained by dividing the PLS specified rate by the PLS factor.
- B. Fertilizer:
  - 1. Do not apply fertilizer.
- C. Hydromulch:
  - 1. Mulch shall be wood cellulose fiber from clean wood chips, containing no growth or germination inhibiting substances. Hydromulch shall be dyed a suitable color to facilitate placement.
  - 2. Application Rate: 50 lbs per 1000 sf
- D. Soil Binding Agent:
  - 1. Soil Binding agent shall consist of non-toxic, biodegradable materials that are environmentally safe such as MG 250F, Guar Gum Powder or approved equal..
  - 2. Application Rate: 1 lb per 1000 sf



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**PART 3 - EXECUTION**

**3.1 SOIL PREPARATION**

- A. See Section 320513 – Soils for Exterior Improvements.

**3.2 SEEDED AREA INSTALLATION**

- A. General: Hydroseed all seeded areas as shown on the Plans.
- B. Seed and mulch shall be applied in one operation with approved hydraulic equipment. Apply materials at the following rates:
  - 1. Wood Fiber Mulch – 50 pounds per 1,000 square feet.
  - 2. Seed – apply as specified under materials.
  - 3. Fertilizer – Do not apply fertilizer.
  - 4. Soil-Binding Agent – one pound per 1,000 square feet.
- C. Do not seed during windy weather or when the ground is frozen. Contractor shall give the Owner's Representative 48 hours of notice of seeding operation.
- D. Seeding season: Seeding shall not be done during windy weather (above 25 mph) or when ground is overly wet (saturated) or frozen. Contractor shall give Owner's representative 48 hour notice of seeding operations. Seeding, fertilizing and mulching of prepared areas shall be performed during the following time frames
  - 1. Hydroseeding shall be done from April 1 to May 31 or from September 1 to October 31.
  - 2. No hydroseeding shall be done before or after these dates without the Owner's Representative's written approval. Written approval to seed between June 1 and August 31 may be granted only if automatic irrigation is available and operational at the site or with the approval of the Contractor's watering and establishment plan by Owner's Representative.
- E. Equipment shall utilize water as carrying-agent utilizing continuous built-in agitation system. Equipment with a gear pump is not acceptable.
- F. Pump a continuous, non-fluctuating supply of homogenous slurry to provide a uniform distribution of material over designated areas.

**3.3 MAINTENANCE AND ESTABLISHMENT**

- A. Maintain all seeded areas until seed mix is well established and exhibits vigorous growth.
- B. Provide water, hose and lawn watering equipment as required.
- C. Provide weeding and a minimum of two mowing cycles.
- D. Restrict traffic from seeded areas until grass stand is established. Erect signs and barriers as required.
- E. Areas failing to show a uniform stand of grass shall be reseeded at the contractor's expense.

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3.4 CLEANUP

- A. Perform cleaning both during installation, maintenance and upon completion of the work. Remove from the site all excess materials, soil, debris and equipment. Repair any damage resulting from seeding operations.

3.5 WARRANTY AND REPLACEMENT

- A. All seed areas must have a relatively uniform stand of grass or other seeded mixtures as specified with no bare spots over 12 inches square at the time of Substantial Completion. Reseed at the original rate for all blended materials. All areas failing to vigorously establish within 90 days after germination or one growing season (whichever is longest), shall be redone at the contractor's expense.

END OF SECTION

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SECTION 330550 - EXISTING PIPE ABANDONMENT

PART 1 GENERAL

1.1 SUMMARY

- A. This Section includes the removal of existing buried piping and abandonment in place of existing buried piping.
- B. Section includes:
  - 1. Pipe removal.
  - 2. In-place abandonment of pipe.
- C. Related Sections:
  - 1. Section 312316, Excavation.
  - 2. Section 312317, Trenching.
  - 3. Section 312319, Dewatering.
  - 4. Section 312323, Fill.

1.2 SUBMITTALS

- A. Provide all submittals in accordance with Section 013300, Submittal Procedures.
- B. Piping Abandonment Plan:
  - 1. Identify locations specified for pipe abandonment.
  - 2. Provide method to be utilized to abandon the pipe, including whether the pipe will be left in place or removed in its entirety.
- C. CLSM: Not used.

1.3 REQUIREMENTS OF REGULATORY AGENCIES

- A. Permits: The Contractor is responsible for obtaining all necessary permits required for completion of the work described herein.
- B. Protection of Persons and Property: Meet all federal, state, and local safety requirements for the protection of workmen, other persons, and property in the vicinity of the work and requirements of the General Provisions.

1.4 PROTECTION OF EXISTING WORK

- A. Carefully examine the Contract Documents to determine the extent of the work of this Section.
- B. Carefully coordinate the work of this Section with all other work and construction.

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- C. Take all necessary precautions to prevent damage to existing facilities or utilities which are to remain in place and be responsible for any damages to existing facilities or utilities, which are caused by the operations.

1.5 REPAIR OF DAMAGE

- A. Work procedures shall provide for safe conduct of the work; careful removal and disposition of materials and equipment; protection of facilities, utilities and property which are to remain undisturbed; coordination with existing facilities and utilities to remain in service.
- B. Any damage to existing facilities or utilities to remain as caused by the Contractor's operations shall be repaired to acceptance of Engineer.
- C. Damaged items shall be repaired or replaced with new materials as required to restore damaged items or surfaces to a condition equal to and matching that existing prior to damage or start of work of this contract.

1.6 EXISTING CONDITIONS

- A. If the pipe material contains any hazardous materials, such as asbestos, requiring special handling upon removal, it is the responsibility of the Contractor to remove and dispose of the material in accordance with all applicable federal, state, and local regulations.

PART 2 PRODUCTS

2.1 OWNERSHIP OF EXISTING MATERIALS

- A. All materials, equipment, miscellaneous items, and debris involved, occurring, or resulting from pipe removal work shall become the property of the Contractor at the place of origin, unless otherwise specified in the Drawings or by the Engineer.

2.2 CONTROLLED LOW STRENGTH MATERIAL

- A. Not used.

PART 3 EXECUTION

3.1 PIPE REMOVAL

- A. Where identified on the Drawings, remove, and dispose of all pipe material and associated appurtenances.
  - 1. All fire hydrants, air release valves service lines and appurtenances being abandoned shall be removed to 36 inches below finished grade.
  - 2. Existing service line appurtenances, including valve and meter boxes, shall be removed to 36 inches below finished grade.
- B. All exposed ends of pipes and fittings to remain in service shall be capped or plugged with an appropriate ductile iron blind flange, cap or plug and restrained.

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1. A pipe shall be considered in service if it is possible to flood the pipe with water by opening valves in the water system.
  - C. All excavation and backfilling associated with pipe removal shall be performed in accordance with 312317, Trenching.
- 3.2 IN-PLACE ABANDONMENT OF PIPING
- A. Not used.
- 3.3 FILLING PIPE WITH CLSM
- A. Not used.
- 3.4 CLEANUP
- A. During and upon completion of work of this Section, promptly remove all unused tools and equipment, surplus materials, and debris.
  - B. Adjacent areas shall be returned to their existing condition prior to the start of work.

END OF SECTION

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SECTION 331110 - WATER UTILITY DISTRIBUTION AND TRANSMISSION PIPING

PART 1 GENERAL

1.1 SUMMARY

- A. Work under this Section applies to furnishing and installation of pipe materials, fittings, and appurtenances normally encountered with water distribution, including potable water and fire water systems.
- B. Section includes:
  - 1. Pipe and fittings
  - 2. Flexible couplings
  - 3. Flanged coupling adapters
  - 4. Insulating flanged joints
  - 5. Tapping sleeves and valves
  - 6. Flexible expansion joints
  - 7. Steel Casing
  - 8. Bedding and cover materials
  - 9. Geomembrane for gas line crossings
- C. Related Requirements:
  - 1. General
    - a. Furnish and install all piping systems shown and specified in accordance with the requirements of the Contract Documents.
    - b. Each buried piping system shall be complete, with all necessary fittings, valves, accessories, lining and coating, testing, excavation, backfill and encasement, to provide a functional installation.
    - c. Piping layouts shown in the Drawings are intended to define the general layout, configuration, and routing for pipe, as well as the size and type of piping to be installed. The piping plans are not pipe construction or fabrication drawings.
    - d. The Contractor shall cause the Supplier of pipes, valves, fittings, and appurtenances to coordinate piping installation such that all equipment is compatible and is capable of achieving the performance requirements specified in the Contract Documents.
    - e. It is the Contractor's responsibility to develop the details necessary to construct all piping systems, to accommodate the specific equipment

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provided, and to provide and install all spools, spacers, adapters, connectors, valves, gaskets, fittings, appurtenances etc., for a complete and functional system.

D. Related Sections:

1. Section 310513 - Soils for Earthwork
2. Section 310516 - Aggregates for Earthwork
3. Section 312316 - Excavation
4. Section 312317 - Trenching
5. Section 312323 - Fill
6. Section 331300 - Testing and Disinfecting of Water Utility Piping

1.2 REFERENCE STANDARDS

A. American Association of State Highway and Transportation Officials (AASHTO):

1. AASHTO T99 - Standard Specification for Moisture-Density Relations of Soils Using a 2.5-kg (5.5-lb) Rammer and a 305-mm (12-in.) Drop

B. American Society of Mechanical Engineers (ASME):

1. ASME B16.1 - Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250
2. ASME B16.5 - Pipe Flanges and Flanged Fittings, Steel Nickel Alloy, and other Special Alloys
3. ASME B16.21 - Nonmetallic Flat Gaskets for Pipe Flanges
4. ASME B31.10 - Standards of Pressure Piping

C. ASTM International (ASTM):

1. ASTM A36 - Standard Specification for Carbon Structural Steel
2. ASTM A123 - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
3. ASTM A193 - Standard Specification for Alloy-Steel and Stainless Steel Bolting for High Temperature or High Pressure Service and Other Special Purpose Applications
4. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength
5. ASTM A536, Standard Specification for Ductile Iron Castings.

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6. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup> (600 kN-m/m<sup>3</sup>))
7. ASTM D1598 - Standard Test Method for Time-to-Failure of Plastic Pipe Under Constant Internal Pressure
8. ASTM D1784 - Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds
9. ASTM D1785 - Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120
10. ASTM D2241 - Standard Specification for Poly (Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series)
11. ASTM D3139 - Standard Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals
12. ASTM D6938 - Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
13. ASTM F477 - Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe

D. American Water Works Association (AWWA):

1. AWWA C104 - Cement-Mortar Lining for Ductile-Iron Pipe and Fittings
2. AWWA C105 - Polyethylene Encasement for Ductile-Iron Pipe Systems
3. AWWA C110 - Ductile-Iron and Gray-Iron Fittings
4. AWWA C111 - Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings
5. AWWA C115 - Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges
6. AWWA C151 - Ductile-Iron Pipe, Centrifugally Cast
7. AWWA C153 - Ductile-Iron Compact Fittings
8. AWWA C219 - Bolted, Sleeve-Type Couplings for Plain-End Pipe
9. AWWA C600 - Installation of Ductile-Iron Mains and Their Appurtenances
10. AWWA C605 - Underground Installation of Polyvinyl Chloride (PVC) and Molecularly Oriented Polyvinyl Chloride (PVCO) Pressure Pipe and Fittings
11. AWWA C606 - Grooved and Shouldered Joints
12. AWWA C900 - Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 In. Through 60 In. (100 mm Through 1,500 mm), for Water Transmission and Distribution



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- E. Manufacturers Standardization Society of the Valve and Fittings Industry:
  - 1. MSS SP-60 - Connecting Flange Joints between Tapping Sleeves and Tapping Valves
- F. NSF International (NSF):
  - 1. NSF Standard 61 - Drinking Water System Components – Health Effects
  - 2. NSF Standard 372 - Drinking Water System Components – Lead Content
  - 3. NSF 600 – Health Effects Evaluation and Criteria for Chemicals in Drinking Water
- G. SUBMITTALS
  - 1. Section 013300 - Submittal Procedures: Requirements for submittals.
  - 2. Product Data: Submit data on pipe materials, pipe fittings, restrained joint systems, and accessories.
  - 3. Shop Drawings: Indicate piping layout, including piping specialties.
    - a. Layout Schedule for applicable segments of proposed transmission main alignment. Schedule shall include layout plan and dimensions, schedule of pipe fittings and specials, materials and class for each size and type of pipe, joint details, pipe supports, and any special provisions required for assembly.
  - 4. Lining and coating data.
  - 5. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
  - 6. Manufacturer's handling, delivery, storage, and installation requirements.
  - 7. Field Quality-Control Submittals:
    - a. Pipeline hydrostatic testing plan.
    - b. Indicate results of Contractor-furnished tests and inspections.
  - 8. Preconstruction Photographs:
    - a. Submit digital files of colored photographs of Work areas and material storage areas.

1.3 CLOSEOUT SUBMITTALS

- A. As-Built Drawings:
  - 1. Record actual locations of piping mains, valves, connections, thrust restraints, and invert elevations.

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2. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.4 QUALITY ASSURANCE

A. Materials:

1. Unless otherwise noted, all water works materials provided for the Project shall be new, of first-class quality and shall be made by reputable manufacturers.
2. All material of a like kind shall be provided from a single manufacturer unless otherwise approved by the Owner's Representative.
3. All material shall be carefully handled and installed in good working order free from defect in manufacture, storage, and handling.

B. Markings:

1. Pipes and Fittings: Mark each pipe and fitting at plant. Include date of manufacture, Manufacturer's identification, specification standard, inside diameter of pipe, dimension ratio as applicable, pipe class as applicable, pipe number for laying purposes as applicable, and other information required for type of pipe.
2. Bolting materials (washers, nuts, and bolts) shall be marked with material type.

C. Testing:

1. Except where otherwise specified, all materials used in the manufacture of the pipe shall be tested in accordance with the applicable Specifications and Standards.

1.5 MATERIAL DELIVERY, STORAGE, AND HANDLING

A. In accordance with Manufacturer's written recommendations and as specified in these Contract Documents.

B. Pipe, specials, and fittings delivered to Project Site in damaged condition will not be accepted.

C. Storage:

1. Store and support pipe securely to prevent accidental rolling and to avoid contact with mud, water, or other deleterious materials.
2. Pipe and fittings shall not be stored on rocks, gravel, or other hard material that might damage pipe. This includes storage area and along pipe trench.
3. Do not store materials in direct sunlight.
4. Gaskets: Do not allow contact with oils, fuels, petroleum, or solvents.

D. Handling:

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1. Pipe and appurtenances shall be handled in accordance with Manufacturer's recommendations or requirements contained in this section or subsequent sections dealing with the specific pipe material, whichever is more stringent.
2. Pipe shall be handled with proper equipment in a manner to prevent distortion or damage. Use of hooks, chains, wire ropes, or clamps that could damage pipe, damage coating or lining, or kink and bend pipe ends is not permitted.
3. Use heavy canvas, or nylon slings of suitable strength for lifting and supporting materials.
4. Lifting pipe during unloading or lifting into trench shall be done using two slings placed at quarter point of pipe section. Pipe may be lifted using one sling near center of pipe, provided pipe is guided to prevent uncontrolled swinging and no damage will result to pipe or harm to workers. Slings shall bear uniformly against pipe.

E. Pipe Plugs:

Provide and install a cap or plug on each end of pipe during transportation and onsite storage to protect linings and coatings from debris. Install watertight plug-in end of installed pipe at the end of the workday. Under no circumstances shall materials be dropped or dumped into the trench.

PART 2 PRODUCTS

2.1 WATER PIPING

A. General

1. All piping materials and specials shall meet the specifications of this Section and of the appropriate AWWA Standard Specifications. In the case of conflict, the more stringent specifications shall apply.
2. All coatings and materials specified herein which may come in contact with potable water shall conform to National Sanitation Foundation (NSF) Standard 61, 372 and 600.
3. Minimum Pressure Ratings: Unless otherwise specified herein or shown in the Drawings, the minimum working pressure rating of all water works materials specified herein shall be 1-1/2 times the operating pressure or 150 pounds per square inch (psi) minimum.
4. Gaskets:

- a. Material: Styrene Butadiene Rubber (SBR) composition.

B. Ductile Iron Pipe:

1. Not Used.

C. PVC:

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1. All PVC pressure pipe shall be manufactured with an integral bell design capable of receiving an elastomeric gasket.
2. All PVC pressure pipe shall be dimensionally compatible with standard cast/ductile iron fittings produced according to AWWA C110 or AWWA C153, as applicable.
3. Deflection:
  - a. PVC pressure pipe may be deflected both horizontally and vertically at the joints after assembly.
  - b. Deflection by bending of the pipe rather than at the joints is not allowed.
  - c. The maximum pipe deflection shall not exceed one half of the Manufacturer's stated joint deflection allowance.
4. Joints:
  - a. Solvent-cement couplings are not permitted.
5. Gaskets: Comply with ASTM F477.
6. Size: 4-inch through 12-inch diameter
  - a. Comply with AWWA C900, DR 14, Class 305, unless shown otherwise in the Drawings or specified elsewhere.
7. Size: 14-inch through 48-inch diameter
  - a. Not Used.
8. Restrained Joints:
  - a. For push-on pipe joint at pipe bells:
    - 1) Material:
      - (a) Body: Ductile iron. Comply with ASTM A536.
      - (b) Bell Restraint Systems: Corten steel tie rods.
      - (c) Coatings: Shop-applied liquid epoxy.
    - 2) Construction:
      - (a) A split serrated ring shall be used behind the pipe bell. A split serrated ring shall also be used to grip the pipe and a sufficient number of bolts shall be used to connect the bell ring and the gripping ring.
      - (b) System shall be designed for a minimum 2 to 1 safety factor.
    - 3) Manufacturers:

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- (a) 4-inch through 12-inch diameter: EBAA Iron, Inc. - Series 1900 Bell Restraint Harness.
  - (b) 14-inch through 48-inch diameter: EBAA Iron, Inc. - Series 2800 Bell Restraint Harness.
- b. At mechanical joint fittings:
- 1) Material: Ductile iron. Comply with ASTM A536.
  - 2) Coatings: Shop-applied liquid epoxy.
  - 3) Construction:
    - (a) Restraint accomplished by a restraint device consisting of a follower gland utilizing multiple gripping wedges.
    - (b) The restraint system shall have a sufficient number of fastening bolts to connect the ring to the mechanical joint.
    - (c) System shall be designed for a minimum 2 to 1 safety factor.
  - 4) Fasteners:
    - (a) T-bolts and nuts: High strength, low alloy steel.
    - (b) Comply with AWWA C111.
  - 5) Manufacturers:
    - (a) EBAA Iron, Inc. - MEGALUG, Series 2000PV
    - (b) Romac Industries, Inc. – 470 Series Pipe Restraining System

**2.2 FITTINGS**

- A. Material: Ductile iron, complying with AWWA Standard C110.
  - 1. Fittings conforming to AWWA C153 may be substituted in lieu of AWWA C110 fittings.
- B. Fittings used for joining ductile iron and PVC pipe shall be of the type, size, and strength designated on the Plans, elsewhere in the specifications.
  - 1. Fittings shall be mechanical joint, push-on type, flanged or plain-end as required and shown on the Drawings.
  - 2. All restraint systems and flanged fittings shall be provided with bolts and gaskets as specified herein.
- C. Pressure ratings: As specified for joining pipe above and as shown on the Drawings.
- D. Coating and Lining:

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1. Asphaltic exterior coating in accordance with AWWA Standard C110.
  2. Cement Mortar Lining: Comply with AWWA C104.
  3. Wax Tape Coating System (Field Coating): Petrolatum wax tape coating system where specified or shown on drawings:
    - a. General: Apply a wax tape coating system generally per AWWA C217 and consists of three parts: surface primer, wax-tape, and outer covering. All three parts shall be the product of the same manufacturer.
    - b. The primer shall be a blend of petrolatum, plasticizer, and corrosion inhibitors having a paste like consistency. It shall have a pour point of 100-degrees F to 110-degrees F and a flash point of 350-degrees. Use Trenton Wax-Tape Primer or approved equal.
    - c. The wax-tape shall consist of a synthetic-fiber felt, saturated with a blend of high melt microcrystalline wax, solvents, and corrosion inhibitors, forming a tape coating that is easily formable over irregular surfaces and which firms up after application. The tape shall have a saturant pour point between 125-degrees F and 130-degrees F and a dielectric strength equal to a minimum of 100-volts per mil. Tape thickness shall be 50-mils to 90-mils in 6-inch-wide rolls. Use Trenton No. 1 wax-tape or equal.
    - d. The outer covering shall consist of two layers of a plastic wrapper at total of one 150 gauge or three 50 gauge wound together as a single sheet. The plastic wrapper material shall consist of clear polyvinylidene chloride, high cling membranes wound together as a single sheet. Use Trenton Poly-Ply or approved equal.
- E. Following information cast upon fittings:
1. Manufacturer's identification.
  2. Country of manufacture.
  3. Pressure rating.
  4. For bends, number of degrees and/or fractions of a circle.
- F. Owner may require additional metallurgical documentation or other certifications.
- 2.3 NUTS, BOLTS, AND WASHERS
- A. All bolts shall have heavy hex head with heavy hex nuts.
- B. For operating pressures greater than 150 psi:
1. Bolts: Steel alloy composition. Comply with ASTM A193.
  2. Nuts: Comply with ASTM A194, Grade 2H.
  3. Washers: Comply with ASTM F436.

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- C. For operation pressures of 150 psi or less:
  - 1. Bolts: Low-carbon steel composition. Comply with ASTM A307, Grade B.
  - 2. Nuts: Comply with ASTM A563A, Heavy Hex.
  - 3. Washers: Comply with ASTM F844.
- D. Higher-strength bolts with higher torque values as specified above for operation pressures greater than 150 psi shall not be used for assembly of flange joints including gray-iron flanges.

**2.4 FLEXIBLE COUPLINGS**

**A. General**

- 1. All flexible couplings shall be constructed to inside diameters that properly fit the connecting pipes.
- 2. The Contractor shall be responsible for selecting sleeve lengths appropriate to the application, subject to review and approval of the Engineer, recognizing that longer sleeves allow for larger deflections and may ease installation.

**B. Flexible Couplings:**

- 1. Description:
  - a. Comply with AWWA C219.
  - b. Type: Bolted, sleeved.
  - c. Configuration: Straight, transition, or reducing as shown in the Drawings.
  - d. Center rings and end rings: Ductile iron. Comply with ASTM A536.
  - e. Gaskets: Virgin styrene butadiene rubber (SBR) compounded for water service. Comply with ASTM D2000.
  - f. Bolts and nuts: High strength low alloy steel. Comply with AWWA C111.
  - g. Lining and coating: Factory-applied fusion bonded epoxy.
  - h. Working pressure: Up to 260 psi.
- 2. Manufacturers:
  - a. For 2-inch to 24-inch diameter:
    - 1) Romac Industries, Inc. – Style 501 or equal.
  - b. For 12-inch diameter and larger:
    - 1) Romac Industries, Inc. – 400 Series or equal.

**C. Insulating Flexible Couplings:**

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1. The Contractor shall be responsible for selecting couplings appropriate to the application, subject to review and approval of the Engineer, recognizing that different pipe materials will require specific sizing and material selection for couplings.
2. Description:
  - a. Comply with Flexible Coupling specifications above.
  - b. Insulating Boot: Ethylene propylene diene monomer (EPDM) compounded for water service. Comply with ASTM D2000.
3. Manufacturers:
  - a. For 4-inch to 14-inch diameter:
    - 1) Romac Industries, Inc. – Style IC501 or equal.
  - b. For 12-inch to 96-inch diameter:
    - 1) Romac Industries, Inc. – Style IC400 or equal.

**D. Restrained Flexible Couplings:**

1. Description:
  - a. Body: Steel. Comply with ASTM A36.
  - b. Restrained gland: Ductile iron. Comply with ASTM A536, Grade 65-45-12.
  - c. Gaskets: Virgin styrene butadiene rubber (SBR) compounded for water service. Comply with ASTM D2000.
  - d. Bolts and nuts: All-thread rod, at a minimum complying with ASTM A193 Grade B7. Nuts per ASTM A194 Grade 2H.
  - e. Lining and coating: Factory-applied fusion bonded epoxy.
  - f. Working pressure: 350 psi. Test pressure: 500 psi.
2. Manufacturers:
  - a. EBAA Iron – 3800 MEGA-COUPLING

**2.5 FLANGED COUPLING ADAPTERS**

**A. Flanged Coupling Adapters:**

1. All flanged coupling adapters shall be constructed to diameters that properly fit the connecting plain end pipe and the flanged fitting.
2. Description:



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- a. Comply with AWWA C219.
  - b. Flange: AWWA Class D Steel Ring Flange, compatible with ANSI Class 125 and 150 bolt circles.
  - c. End ring and body:
    - 1) Steel. Comply with ASTM A36.
    - 2) Ductile iron. Comply with ASTM A536, Grade 65-45-12.
  - d. Flange: Compatible with ANSI Class 125 and 150 bolt circles.
  - e. Gaskets: Virgin styrene butadiene rubber (SBR) compounded for water service. Comply with ASTM D2000.
  - f. Bolts and nuts: High strength low alloy steel bolts and nuts. Comply with AWWA C111 composition requirements.
  - g. Lining and coating: Factory-applied fusion bonded epoxy.
  - h. Working pressure rating: Equal to the maximum rating of the flange.
3. Manufacturers:
- a. Romac Industries, Inc.
    - 1) Style FCA501
      - a) For 3-inch to 16-inch diameter.
      - 2) Style FC400.
    - b. For 12-inch to 96-inch diameter.
- B. Restrained Flanged Coupling Adapters:
1. Description:
    - a. Gland and flange body: Ductile iron. Comply with ASTM A536.
    - b. Flange: Compatible with ANSI Class 125 and 150 bolt circles.
    - c. Gaskets: Virgin styrene butadiene rubber (SBR) compounded for water service. Comply with ASTM D2000.
    - d. Restraining bolts and lugs: Ductile iron. Comply with ASTM A536.
    - e. T-bolts, Bolts, and nuts: High strength low alloy steel. Comply with AWWA C111 composition requirements.
    - f. Lining and coating: Factory-applied fusion bonded epoxy.
  2. Manufacturers:

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- a. EBAA Iron – MEGAFLANGE Restrained Flange Adapter.

2.6 TAPPING SLEEVES AND VALVES

1. Not Used.

2.7 FLEXIBLE EXPANSION JOINTS

A. Description

1. Installed at locations indicated in the Drawings.
2. End connections: As shown in the Drawings.
3. Material: Ductile iron, AWWA C153.
4. Working pressure: 350 psi, minimum.
5. Construction:
  - a. An expansion joint designed and cast as an integral part of a double ball and socket type flexible joint.
  - b. Manufactured of ductile iron, conforming to requirements of AWWA C153 and ASTM A536.
  - c. Deflection: Minimum of 15 degrees deflection per ball.
  - d. Expansion:
    - 1) 12-inch diameter and under: 8-inch.
    - 2) Greater than 12-inch diameter: 16 inches.
  - e. Each flexible expansion joint shall be hydrostatically tested to the Manufacturer's published pressure rating prior to shipment.
  - f. Lining: All interior "wetted" parts shall be shop-lined with a minimum of 15 mils of fusion bonded epoxy conforming to the applicable requirements of AWWA C213 and shall be holiday tested with a 1500-volt spark test conforming to said specification.
  - g. Coating: Coal tar epoxy.
6. Quality Assurance: Hydrostatically tested to Manufacturer's published pressure rating prior to shipment.
7. Appropriately sized polyethylene sleeves, meeting AWWA C105 requirements, shall be included for direct bury applications.

B. Manufacturers

1. EBAA Iron, Inc. – Flex-Tend or equal. Force Balanced Flex-Tend where specified or shown on plans.

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2.8 UNDERGROUND PIPE MARKERS

- A. As specified in Section 312317, Trenching.

2.9 STEEL CASING

- A. Casing Pipe material shall be ASTM A252 Grade 2 steel, fabricated in sections for welding or press-fit steel joints. Diameter and wall thickness shall be as shown on the Plans, but not less than one-quarter (1/4) of an inch. Casing pipe diameter noted on the Plans are inside diameters unless noted otherwise. Steel pipe design shall conform to ASTM 120 or AWWA 200.
- B. Spacers shall be GPT Ranger II MDI or approved equal.
- C. A Neoprene, or approved equal, rubber end seal with T-304 stainless steel bands shall be installed over the casing and product pipe to provide a water-tight barrier to backfill and seepage.

2.10 BEDDING AND COVER MATERIALS

- A. Bedding and Cover:
  - 1. Pipe Bedding: Coarse Aggregate Material Type A1, as specified in Section 310516, Aggregates for Earthwork. Aggregate size as shown in the Drawings.
  - 2. Pipe Zone Backfill: Coarse Aggregate Material Type A1, as specified in Section 31 05 16, Aggregates for Earthwork. Aggregate size as shown in the Drawings.
  - 3. Trench Backfill from Pipe Zone to Finish Grade:
    - a. Material type varies by location, as shown in the Drawings.
    - b. Coarse Aggregate Material Type A1, as specified in Section 310516, Aggregates for Earthwork. Aggregate size as shown in the Drawings. See local or State DOT requirements for soil classifications.
    - c. Subsoil Type S1 and/or S2, as specified in Section 310513, Soils for Earthwork. See local or State DOT requirements for soil classifications.

2.11 GEOMEMBRANE FOR GAS LINE CROSSINGS

- A. Furnish 40 mil reinforced geomembrane with 300V/mil dielectric strength and minimum 150# puncture resistance and 150# tensile strength. Geomembrane shall be XR-5 as manufactured by Seaman Corporation or equal.

2.12 ACCESSORIES

- A. Miscellaneous Steel Rods, Bolt, Lugs, and Brackets:
  - 1. Comply with ASTM A36 or ASTM A307.
  - 2. Grade A carbon steel.

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**PART 3 EXECUTION**

**3.1 EXAMINATION**

- A. Verify that existing utility water main size, location, and invert are as indicated on Drawings.

**3.2 PREPARATION**

A. Preconstruction Site Photos:

1. Take photographs along centerline of proposed pipe trench; minimum one photograph for each 50 feet of pipe trench.
2. Show mailboxes, curbing, lawns, driveways, signs, culverts, and other existing Site features.
3. Include Project name, date taken, and sequential number of each photograph in physical log or CD.

B. Inspection:

1. All pipe sections, specials, and jointing materials shall be carefully examined for defects.
2. No piping or related materials shall be laid that is known to be defective. Any defective piece installed shall be removed and replaced with a new pipe section in a manner satisfactory to the Engineer at the Contractor's expense.
3. Defective material shall be marked and removed from the job site before the end of the day.

C. Pipe Cutting:

1. Cut pipe ends square, ream pipe and tube ends to full pipe diameter, and remove burrs.
2. Use only equipment specifically designed for pipe cutting; use of chisels or hand saws is not permitted.
3. Grind edges smooth with beveled end for push-on connections.
4. Prior to assembly of field cut pipe, the reference mark shall be re-established with a pencil or crayon. The location of the reference mark at the proper distance from the bevel end shall be in accordance with the Manufacturer's recommendations.

- D. Remove scale and dirt on inside and outside before assembly. Cleaning of each pipe or fitting shall be accomplished by swabbing out, brushing out, blowing out with compressed air, or washing to remove all foreign matter.

- E. Prepare pipe connections to equipment with flanges or unions.

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3.3 INSTALLATION

A. Bedding:

1. Excavation:
  - a. Excavate pipe trench as specified in Section 312317, Trenching for Work of this Section.
  - b. All pipe trenches shall be excavated below the proposed pipe invert as required to accommodate the depths of pipe bedding material as scheduled on the Drawings.
  - c. Remove large stones or other hard matter which could damage pipe or impede consistent pipe bedding backfilling or compaction.
  - d. Trench base shall be inspected prior to placement of pipe.
  - e. Hand trim excavation for accurate placement of pipe to elevations as indicated on Drawings.
2. Dewater excavation as specified in Section 312319, Dewatering to maintain dry conditions and to preserve final grades at bottom of excavation.
3. Provide sheeting and shoring as specified in Section 312317, Trenching.
4. Place bedding material at trench bottom, level fill materials in one continuous layer not exceeding 6 inches compacted depth and compact to 95 percent of maximum density.

B. Piping:

1. Install pipe according to AWWA C605.
2. Handle and assemble pipe according to Manufacturer instructions and as indicated on Drawings.
3. Lift or roll pipe into position. Do not drop or drag pipe over prepared bedding.
4. Steel Rods, Bolt, Lugs, and Brackets: Coat buried steel with one coat of coal tar coating before backfilling.
5. Sanitary Sewer Separation:
  - a. Install new water lines and appurtenances in compliance with local and state regulations governing the horizontal and vertical separations between water and sewer facilities.
  - b. Variance:
    - 1) If a variance is proposed due to requested design revisions or if an existing facility has been installed at a different location or

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elevation than indicated on the Plans, submit written proposal for review and approval by the Engineer.

- 2) Include the reason for the variance, type of material and condition of the sewer line, location of the water and sewer facilities, horizontal and vertical skin-to-skin clearances and corrective measures proposed.
  - 3) Each variance will be considered on a case-by-case basis.
  - 4) Review Time: Allow a minimum of 5 working days review and response to each proposal.
6. Install ductile iron fittings according to AWWA C600.
7. Joints:
- a. Pipe jointing surfaces shall be clean and dry when preparing surfaces for joining.
  - b. Lubricants, primers, adhesives, etc. shall be used as recommended by the Pipe or Joint Manufacturer's specifications.
  - c. The jointing materials or factory-fabricated joints shall then be placed, fitted, joined, and adjusted in such a manner as to obtain a watertight joint.
  - d. Trenches shall be kept water-free and as dry as possible during bedding, laying, and jointing.
  - e. As soon as possible after the joint is made, sufficient backfill material shall be placed along each side of the pipe to prevent movement of the pipe from any cause.
8. Flanged Joints: Not to be used in underground installations except within structures, unless shown otherwise in the Drawings.
9. Deflection:
- a. PVC pressure pipe may be deflected both horizontally and vertically at the joints after assembly.
  - b. Deflection by bending of the pipe rather than at the joints is not allowed.
  - c. The maximum pipe deflection shall not exceed one-half of the Manufacturer's stated joint deflection allowance.
  - d. Set a laser, string line, or other approved alignment guide along the centerline of previously installed pipe to the point where pipe joint deflection is required. The approved alignment guide shall extend to the end of the proposed subsequent pipe length. A measurement will be taken from the alignment guide to the centerline of the subsequent pipe length to determine the amount of pipe joint deflection proposed. Measured

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deflection shall not exceed the specified allowable deflection for the purposes of aligning the pipe.

10. Install pipe and fittings to the line and grade specified on the Drawings, with joints centered, pipe properly supported and restrained against movement, and all valve stems plumb. Re-lay pipe that is out of alignment or grade.
  11. High Points:
    - a. Install pipe with no high points, unless otherwise shown in the Drawings.
    - b. If unforeseen field conditions arise that necessitate high points, install air release valves as directed by Engineer.
  12. Bearing:
    - a. Install pipe to have bearing along entire length of pipe.
    - b. Excavate bell holes to permit proper joint installation where necessary or as directed by Engineer.
    - c. Do not lay pipe in wet or frozen trench.
  13. Prevent foreign material from entering pipe during placement.
  14. Install pipe to allow for expansion and contraction without stressing pipe or joints.
  15. Close pipe openings with watertight plugs during Work stoppages.
  16. All pipe ends which are to be permanently closed shall be plugged or capped and restrained against internal pressure.
  17. Install access fittings to permit disinfection of water system performed under Section 331300 – Testing and Disinfecting of Water Utility Piping.
  18. Cover:
    - a. Establish elevations of buried piping with not less than 36 inches of cover.
    - b. Measure depth of cover from final surface grade to top of pipe barrel.
  19. Pipe Markers:
    - a. Install as specified in Section 312317, Trenching.
- C. Tapping Sleeves and Valves:
  1. Not Used.
- D. Polyethylene Encasement:
  1. Not Used.
- E. Thrust Restraints:

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1. Provide valves, tees, bends, caps, and plugs with concrete thrust blocks at locations shown in the Drawings and as required to facilitate testing of lines.
2. Pour concrete thrust blocks against undisturbed earth.
3. Locate thrust blocks to ensure that pipe and fitting joints will be accessible for repair.
4. Provide thrust restraint bearing area on subsoil as shown in details within the Drawings.
5. Install tie rods, clamps, setscrew retainer glands, or restrained joints.
6. Protect metal-restrained joint components against corrosion with polyethylene film or wax tape as specified herein.
7. Avoid encasing mechanical and flanged joints in concrete. Provide clearance between concrete and mechanical and flange joints to allow future bolt removal.

F. Backfilling:

1. Backfill of piping systems shall be as specified in Section 312317, Trenching.

G. Testing and Disinfection of Potable Water Piping System:

1. In accordance with AWWA C605, AWWA C651 and as specified in Section 331300, Testing and Disinfecting of Water Utility Piping.
2. All chlorinated water used in disinfection of the water main shall either be discharged through an approved connection to a public sanitary sewer system or shall be dechlorinated to limits acceptable by the Washington State Department of Ecology (DOE), see local and state specific requirements and provide appropriate agency reference for the state in which the project is located prior to discharge into any storm drainage system or open drainage way.
3. No chlorinated water shall be discharged into a storm drainage system or open drainage way without a dechlorination under a plan meeting DOE's requirements.

3.4 FIELD QUALITY CONTROL

- A. Compaction Testing: See Section 312317, Trenching for Compaction Testing requirements for piping trenches.

END OF SECTION



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SECTION 331300 - TESTING AND DISINFECTION OF WATER UTILITY PIPING

PART 1 GENERAL

1.1 SUMMARY

- A. This Section includes hydrostatic pressure testing, disinfection, and purity testing of potable water systems piping, fittings, valves, and domestic water services.
- B. Section Includes:
  - 1. Pressure testing and disinfection of potable water distribution and transmission piping systems and appurtenances.
  - 2. Testing and reporting of results.
- C. Related Sections:
  - 1. Section 331110 - Water Utility Distribution and Transmission Piping

1.2 REFERENCE STANDARDS

- A. American Water Works Association (AWWA):
  - 1. AWWA B300 - Hypochlorites
  - 2. AWWA B301 - Liquid Chlorine
  - 3. AWWA C600 - Installation of Ductile-Iron Mains and Their Appurtenances
  - 4. AWWA C605 - Underground Installation of PVC and PVCO Pressure Pipe and Fittings
  - 5. AWWA C651 - Disinfecting Water Mains
  - 6. AWWA C655 - Field Dechlorination

1.3 SUBMITTALS

- A. Section 013300 –Submittals Procedures: Requirements for submittals.
- B. Product Data: Submit procedures, proposed chemicals, and treatment levels.
- C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- D. Pipeline Testing and Disinfection Plan: To be submitted for review and approval by the Engineer a minimum of 1 month before testing is to start. As a minimum, the plan shall include the following:
  - 1. Testing schedule.
  - 2. Hydrostatic Testing Plan:
    - a. Narrative of the proposed process.

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- b. Proposed equipment to be used.
- c. Disposal location for excess water used to fill mains.
- 3. Disinfection Plan:
  - a. Narrative of the proposed process.
  - b. Proposed chemicals and equipment (including list of all pumps and meters) to be used.
  - c. Calculations for the amount of chlorine required to achieve required chlorine residual levels.
  - d. Proposed method of mixing, injecting, and distributing of chlorine solution throughout all portions of the new water system facilities.
  - e. Proposed plan for testing chlorine levels throughout the length of pipeline.
- 4. Proposed testing locations.
- 5. Proposed plan for water conveyance, including flow rates.
- 6. Proposed plan for water control.
- 7. Proposed plan for water disposal, including flow rates. Include proposed plan for dechlorination of disinfection water, including discharge points.
- 8. Proposed measures to be incorporated in the Project to minimize erosion while discharging water from the pipeline.

1.4 CLOSEOUT SUBMITTALS

- A. Disinfection Report:
  - 1. Type and form of disinfectant used.
  - 2. Date and time of disinfectant injection start and time of completion.
  - 3. Test locations.
  - 4. Name of person collecting samples.
  - 5. Initial and 24-hour disinfectant residuals in treated water in parts-per million (ppm) for each outlet tested.
  - 6. Date and time of flushing start and completion.
  - 7. Disinfectant residual after flushing in ppm for each outlet tested.

1.5 QUALITY ASSURANCE

- A. Perform Work according to AWWA C651.

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**PART 2 PRODUCTS**

**2.1 EQUIPMENT**

- A. All test equipment, chemicals for chlorination, temporary valves, bulkheads, or other water control equipment and materials shall be determined and furnished by the Contractor subject to the Engineer's review. No materials shall be used which would be injurious to the construction or its future functions.
- B. All temporary thrust restraint and equipment and facilities required for hydrostatic testing will be considered incidental.
- C. As a minimum, furnish the following equipment and materials for the testing:

<b>Amount</b>	<b>Description</b>
2	Graduated containers approved by the Engineer.
1	Hydraulic pump approved by the Engineer with hoses, valves, and fittings as needed and required for the testing and disinfection of the facilities.
1	High range chlorine test kit, as approved by Engineer, with digital readout. Range of detection shall be between 5 and 200 ppm. Accuracy of 3 percent.
2	Pressure gauges with pressure range at least 120 percent greater than the required maximum test pressure with graduations in 2 pounds per square inch (psi) increments. Gauges shall have been calibrated with 90 days of pressure testing.

**2.2 DISINFECTION CHEMICALS**

- A. Chemicals:
  - 1. Hypochlorite: Comply with AWWA B300.
  - 2. Liquid chlorine: Comply with AWWA B301.

**2.3 DECHLORINATION CHEMICALS**

- A. Chemicals:
  - 1. Comply with AWWA C655.

**PART 3 EXECUTION**

**3.1 HYDROSTATIC TESTING OF WATER PIPING**

- A. Make all necessary provisions for conveying water to the points of use and for the disposal of test water.
- B. No section of the pipeline shall be hydrostatically tested until backfill has been placed, compacted, and passed required density testing and all field-placed concrete or mortar has attained full strength.

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1. At the Contractor's option, early strength concrete may be used when the full-strength requirements conflict with schedule requirements.
  2. All such substitutions and installations shall be approved by the Engineer prior to installation.
- C. Provide 72-hour notification to the Engineer and Owner prior to conducting hydrostatic testing.
1. Provide coordination and scheduling required for the Owner and Engineer to witness and provide necessary labor for operating Owner's existing system during hydrostatic testing and disinfecting procedures.
  2. The Contractor shall not operate any part of the existing water systems.
- D. Pipe Filling:
1. Fill pipes slowly from the lowest elevation to highest point along test section with potable water.
  2. Take all required precautions to prevent entrapping air in the pipes.
  3. Allow for natural absorption of water by the lining of the pipe to occur.
  4. Apply specified test pressure by pumping.
- E. Testing of Mains:
1. Ductile Iron: In accordance with AWWA C600.
  2. Polyvinyl chloride (PVC): In accordance with AWWA C605.
  3. General:
    - a. Tests shall be conducted under a hydrostatic test pressure not less than 1.25 times the stated anticipated maximum sustained working pressure of the pipeline measured at the highest elevation along the test section and not less than 1.5 times the stated working pressure at the lowest elevation of the test section, minimum 150 psi, unless otherwise shown in the Drawings.
    - b. In no case shall the test pressure exceed the rated working pressure for any joint, thrust restraint, valve, fitting, or other connected appurtenance of the test section.
    - c. Testing shall be performed by applying the specified test pressure by pumping.
    - d. Once the test pressure has been attained, the pump shall be valved off.
    - e. The test will be conducted for a 2-hour period with the allowable leakage not to exceed the value as calculated per the Allowable Leakage formula below.
    - f. During the test period, there shall be no appreciable or abrupt loss in pressure.
  4. Allowable Leakage:

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- a. Flanged Joints: Pipe, fittings, and valves with flanged joints shall be completely watertight. No leakage allowed.
- b. Mechanical or Push-on Joints: Pipe, fittings, and valves with rubber gasketed joints shall have a measured loss not to exceed the rate given in the following Allowable Leakage formula:

$$AL = \frac{LD(P)^{1/2}}{148,000}$$

In the above formula:

- AL = Allowable leakage, in gallons per hour
- L = Length of pipe tested, in feet
- D = Nominal diameter of pipe, in inches
- P = Average test pressure during the leakage test, in pounds per square inch.

5. Maintaining Pressure:

- a. During the test period, operate the pump as required to maintain pressure in the pipe within 5 psi of the specified test pressure at all times.
- b. At the end of test period, operate the pump until the specified test pressure is again obtained.
  - 1) The pump suction shall be in a clean, graduated barrel, or similar device or metered so that the amount of water required to restore the test pressure may be accurately measured.
  - 2) Sterilize this makeup water by adding chlorine to a concentration of 25 milligrams per liter (mg/L).
- c. The Engineer will determine the quantity of water required to maintain and restore the required pressure at the end of the test period.
- d. Each hour's loss stands on its own and will not be averaged.

6. Defects, Leakage, Failure:

- a. If the test reveals any defects, leakage in excess of the allowable, or failure, furnish all labor, equipment, and materials required to locate and make necessary repairs.
- b. Correct any visible leakage regardless of the allowable leakage specified above.
- c. All leaks shall be repaired in a manner acceptable to the Engineer.
- d. The testing of the line shall be repeated until a test satisfactory to the Engineer has been achieved.

3.2 DISINFECTION OF WATER PIPING

- A. Disinfection shall be in accordance with the latest version of AWWA C651 following Engineer's acceptance of hydrostatic testing.

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- B. Chlorination by means of tablets or powders (calcium hypochlorite) placed in each length of pipe during installation is specifically prohibited.
- C. Flush all foreign matter from the pipeline, branches, and services.
  - 1. Provide at no additional cost to the Owner, hoses, temporary pipes, ditches, etc., as required to dispose of flushing water without damage to adjacent properties.
  - 2. Flushing velocities shall be at least 2.5 feet per second (fps).
  - 3. For large diameter pipe where it is impractical or impossible to flush the pipe at 2.5 fps velocity, clean the pipe in place from the inside by brushing and sweeping, then flush the line at a lower velocity.
- D. Chlorine Application:
  - 1. Fill the test section of main from the lowest elevation and maintain a steady flow rate while injecting the water main with chlorinated water.
  - 2. Flow (bleed) a blow-off, standpipe or hydrant at the water main's high point(s) to allow air to escape and ensure all interior pipe surfaces are wetted.
- E. Chlorine Residual:
  - 1. Measure chlorine residual with a high-range chlorine test kit at a point near to the injection point while filling the main.
  - 2. Adjust the dose rate as necessary to maintain the target dose rate.
- F. Potable water piping shall be disinfected with a solution containing a minimum 25 ppm and a maximum 50 ppm chlorine.
  - 1. Once the main is completely filled with super-chlorinated water, measure the chlorine residual a minimum of once every 200 feet of main and once for each main branch, 2-inch service, or as directed by the Engineer.
  - 2. The chlorine solution shall remain in the piping system for a period of 24 hours, after which time the sterilizing mixture shall have a strength of at least 10 ppm of chlorine.
  - 3. If check samples fail to produce acceptable results, the disinfection procedure shall be repeated at the expense of the Contractor until satisfactory results are obtained.
- G. Flush piping, branches, and services with municipal potable water until the chlorine residual is below 1.5 ppm and approximately the same as the source water.
  - 1. There is no minimum flushing velocity for this step.
- H. Disposal of any water containing chlorine shall be performed in accordance with the latest edition of AWWA C651 and C655, and all state or local requirements.
  - 1. Disposal may be made into existing sanitary sewer systems providing approvals are obtained from the respective system owners.

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2. Any chlorinated water discharged to open stream channels must be dechlorinated prior to discharge to levels acceptable by DOE.

**3.3 DISINFECTION AND TESTING OF WATER MAIN END CONNECTIONS AND TIE-INS**

- A. Disinfection of potable water piping and appurtenances at end connections and tie-ins to the existing system which are required to remain in service due to restrictions in allowable shutdown time shall be disinfected as described below.
- B. Prior to connecting new potable water piping and appurtenances with existing piping and appurtenances, the interior of all new pipe, fittings, valves, and appurtenances shall be swabbed or sprayed with a 1 percent to 5 percent calcium hypochlorite solution.
- C. In accordance with AWWA C651, swabbing or spraying of connection piping is allowed only if the total length of piping is equal to or less than one pipe length (18 feet). All runs of new piping over 18 feet in total length will require hydrostatic pressure testing, flushing and disinfection as detailed elsewhere in this Section.
- D. Following the disinfection procedures described above, connection of the new piping and appurtenances to the existing water system shall be made.
  1. During the system startup, the Engineer and Contractor shall visually inspect all new fittings, piping, valves, and appurtenances for evidence of leakage.
  2. Any leakage observed during this period shall be promptly repaired by the Contractor, at Contractor's expense, as required by the Engineer.

**3.4 FIELD QUALITY CONTROL**

- A. Bacteriological Sampling and Testing:
  1. The Owner will collect samples after the line is flushed in accordance with the latest edition of AWWA C651.
    - a. The locations for sample collection shall be at the sole discretion of the Owner and Engineer.
    - b. The chlorine residual must be below 1.5 ppm or restored to the level maintained in the Owner's distribution system, when the sample is taken.
  2. Bacterial Testing: After completing the chlorination procedure, test the main according to the following:
    - a. Bacterial Sampling
      - 1) Option A:
        - a) Take an initial set of samples using sampling site procedures outlined herein.
        - b) Resample after a minimum of 24 hours' time has elapsed using sampling site procedures outlined herein.

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- c) Both sets of successive samples must pass for the main to be approved for service.
    - 2) Option B:
      - a) Allow main to sit for a minimum of 24 hours without any water use.
      - b) Using sampling site procedures outlined herein, collect two sets of samples a minimum of 15 minutes apart while the sampling taps are left running.
      - c) Both sets of samples must pass for the main to be approved for service.
    - 3) Allow 24 hours for the test results for each sample set.
  - b. Sampling Locations
    - 1) The Owner will take one bacteriological sample from the end of the main and on each branch.
    - 2) For long runs of main, at least one sample will be taken for every 1,200 feet of new main and as directed.
  - c. Sample Testing
    - 1) The Owner will test the sample set for coliform bacteria and publish the test results within 24 hours.
  - d. Evaluating the Test Results
    - 1) If one or more of the sample set tests positive for coliforms (fails), repeat chlorination and sampling processes specified herein after correcting the cause of the failure and as directed by the Engineer.
    - 2) When two consecutive sample sets test negative (passing) for coliform bacteria, the bacterial testing is complete.
  - e. Completion of Bacterial Testing
    - 1) Upon completion of bacterial testing, notify the Owner shall notify the Engineer and Contractor in writing that the testing is complete and the main is ready for tie-in.
  - f. Multiple Positive (Failing) Test Results
    - 1) If sample sets continue to test positive for coliforms, the Engineer will determine how to proceed, up to and including repeating the chlorination procedure or rejecting the pipe.
  3. Results of the bacteriological testing shall be satisfactory with the Washington State Department of Health and/or other appropriate regulatory agencies, or disinfection shall be repeated by the Contractor.
- B. Optional Sampling and Testing



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1. If a pipeline is not promptly returned to service, the situation will be evaluated by the Owner to determine if the water quality may have been impacted and if additional testing as specified herein is warranted.

END OF SECTION

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SECTION 333400 - SANITARY UTILITY SEWERAGE FORCE MAINS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Force mains.
2. Bedding and cover materials.
3. Steel Casing

B. Related Sections

1. Section 310513 - Soils for Earthwork: Soil backfill from above pipe to finish grade.
2. Section 310516 - Aggregates for Earthwork: Aggregate for pipe bedding and cover.
3. Section 312317 - Trenching: Excavation, backfilling, compacting, and fill over underground pipe markers.

1.2 UNIT PRICE – MEASUREMENT AND PAYMENT

A. Pipe and Fittings:

1. Basis of Measurement: By linear foot.
2. Basis of Payment: Includes hand trimming, excavation, backfill, bedding, thrust restraints, pipe, fittings, connections to flexible joints, and installation within casings.

1.3 REFERENCE STANDARDS

A. American Association of State Highway and Transportation Officials:

1. AASHTO T180 - Standard Method of Test for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.

B. American Water Works Association:

1. AWWA C104 - Cement-Mortar Lining for Ductile-Iron Pipe and Fittings.
2. AWWA C110 - Ductile-Iron and Gray-Iron Fittings.
3. AWWA C111 - Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
4. AWWA C151 - Ductile-Iron Pipe, Centrifugally Cast.
5. AWWA C900 - Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 In. through 12 In. (100 mm through 300 mm), for Water Transmission and Distribution.

C. ASTM International:

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1. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup> (600 kN-m/m<sup>3</sup>)).
  2. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft<sup>3</sup> (2,700 kN-m/m<sup>3</sup>)).
  3. ASTM D1785 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
  4. ASTM D2241 - Standard Specification for Poly(Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series).
  5. ASTM D2466 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40.
  6. ASTM D2467 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80.
  7. ASTM D6938 - Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).
- D. Ductile Iron Pipe Research Association (DIPRA):
1. Thrust Restraint Design for Ductile Iron Pipe.

1.4 COORDINATION

- A. Section 013300 - Administrative Requirements: Requirements for coordination.
- B. Coordinate Work of this Section with connection to existing Pacific County PUD.

1.5 PREINSTALLATION MEETINGS

- A. Section 013000 - Administrative Requirements: Requirements for preinstallation meeting.
- B. Convene minimum one week prior to commencing Work of this Section.

1.6 SUBMITTALS

- A. Section 013300 - Submittal Procedures: Requirements for submittals.
- B. Product Data: Submit Manufacturer information indicating pipe material used, pipe accessories, valves, and joints.
- C. Shop Drawings:
  1. Indicate piping piece numbers and locations.
  2. Indicate restrained joint locations.
- D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

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- E. Delegated Design Submittals: Submit signed and sealed Shop Drawings with design calculations and assumptions for restrained joints, including establishing lengths of restrained joint piping required.
- F. Manufacturer Instructions: Indicate special procedures required to install specified products.
- G. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.
- H. Qualifications Statements:
  - 1. Submit qualifications for Manufacturer, installer, and licensed professional.

**1.7 CLOSEOUT SUBMITTALS**

- A. Section 017000 - Execution and Closeout Requirements: Requirements for submittals.
- B. Project Record Documents: Record invert elevations and actual location of pipe runs and connections.
- C. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

**1.8 QUALITY ASSURANCE**

- A. Design ductile-iron pipe restrained joints according to DIPRA standards.
- B. Perform Work according to Pacific County PUD standards.

**1.9 QUALIFICATIONS**

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years' experience.
- B. Installer: Company specializing in performing Work of this Section with minimum three years' experience.
- C. Licensed Professional: Professional Engineer experienced in design of specified Work and licensed in the State of Washington.

**1.10 DELIVERY, STORAGE, AND HANDLING**

- A. Section 016000 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.
- B. Inspection: Accept materials on Site in Manufacturer's original packaging and inspect for damage.
- C. Storage:
  - 1. Store materials according to Manufacturer instructions.
  - 2. Do not place materials on private property without written permission of property owner.

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3. Do not stack pipe higher than recommended by Pipe Manufacturer.

D. Protection:

1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
2. Store gaskets for mechanical and push-on joints in cool and dry location, out of direct sunlight, and not in contact with petroleum products.
3. Provide additional protection according to Manufacturer instructions.

1.11 EXISTING CONDITIONS

A. Field Measurements:

1. Verify field measurements prior to fabrication.
2. Indicate field measurements on Shop Drawings.

PART 2 PRODUCTS

2.1 FORCE MAIN

A. Ductile-Iron Pipe:

1. Comply with AWWA C151 and AWWA C104.
2. Standard cement-mortar lining and outside coated.
3. Pressure Classes:
  - a. Sizes 3 to 12 Inches: 350 psig.
  - b. Sizes 14 to 20-Inches: 350 psig.
  - c. Size 24 Inches : 350 psig.
  - d. Sizes 30 to 48 Inches : 350 psig.

B. Ductile-Iron Fittings:

1. Comply with AWWA C110.
2. Pressure Rating: 350 psig.
3. Cement mortar lined and outside coated.

C. Joints:

1. Comply with AWWA C111.
2. Type: Mechanical.

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D. Rubber Gaskets, Lubricants, Glands, Bolts, and Nuts: Comply with AWWA C111.

2.2 PVC PIPE

A. PVC Pressure Sewer Pipe and Fittings, 12-Inch Nominal Size and Smaller:

1. Comply with ASTM D1785.
2. Schedule 80.
3. Fittings: Comply with ASTM D2467.

2.3 STEEL CASING

- A. Casing Pipe material shall be ASTM A252 Grade 2 steel, fabricated in sections for welding or press-fit steel joints. Diameter and wall thickness shall be as shown on the Plans, but not less than one-quarter (1/4) of an inch. Casing pipe diameter noted on the Plans are inside diameters unless noted otherwise. Steel pipe design shall conform to ASTM 120 or AWWA 200.
- B. Spacers shall be GPT Ranger II MDI or approved equal.
- C. A Neoprene, or approved equal, rubber end seal with T-304 stainless steel bands shall be installed over the casing and product pipe to provide a water-tight barrier to backfill and seepage.

2.4 MATERIALS

A. Bedding and Cover:

1. Bedding: Fill Type A4, as specified in Section 310516 - Aggregates for Earthwork.
2. Cover: Fill Type A4, as specified in Section 310516 - Aggregates for Earthwork.
3. Soil Backfill from above Pipe to Finish Grade: Soil Type S1 or S2, as specified in Section 310513 - Soils for Earthwork.
4. Subsoil: No rocks more than 6 inches in diameter, frozen earth, or foreign matter.

2.5 MIXES

A. Concrete: Class 3000 per WSDOT Section 6-02.3(2)B.

2.6 ACCESSORIES

A. Pipe Markers: As specified in Section 312317 - Trenching.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 017000 - Execution and Closeout Requirements: Requirements for installation examination.
- B. Verify that trench cut is ready to receive Work.

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- C. Verify that excavations, dimensions, and elevations are as indicated on Drawings.

3.2 PREPARATION

- A. Section 017000 - Execution and Closeout Requirements: Requirements for installation preparation.
- B. Correct over-excavation with Pipe Bedding.
- C. Remove large stones or other hard matter capable of damaging pipe or of impeding consistent backfilling or compaction.

3.3 INSTALLATION

- A. Bedding:
  - 1. Excavate pipe trench as specified in Section 312317 - Trenching.
  - 2. Place bedding material at trench bottom.
  - 3. Level materials in continuous layers not exceeding 6 inches in depth.
  - 4. Maintain optimum moisture content of bedding material to attain required compaction density.
- B. Piping:
  - 1. Install pipe, fittings, and accessories as indicated on Drawings.
  - 2. Route piping in straight line.
  - 3. Install bedding at sides and over top of pipe to minimum compacted thickness of 12 inches.
  - 4. Backfilling and Compacting:
    - a. As specified in Section 312317 - Trenching.
    - b. Do not displace or damage pipe while compacting.
  - 5. Connect to Pacific County PUD sewer system.
  - 6. Pipe Markers: As specified in Section 312317 - Trenching.
  - 7. Installation Standards: Install Work according to Pacific County PUD standards.
- C. Thrust Restraints:
  - 1. Provide pressure pipeline with restrained joints or concrete thrust blocking at bends, tees, and changes in direction.
  - 2. Construct concrete thrust blocking as indicated on Drawings.
- D. Cradles and Encasements:
  - 1. Provide concrete cradles and encasements for pipelines where indicated on Drawings.

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3.4 FIELD QUALITY CONTROL

- A. Section 014000 - Quality Requirements: Requirements for inspecting and testing.
- B. Inspections: Request inspection by Owner prior to and immediately after placing bedding.
- C. Testing:
  - 1. If tests indicate that Work does not meet specified requirements, remove Work, replace, and retest.
  - 2. Perform tests on Site sanitary sewage system according to WSDOT Section 7-17.3.
  - 3. Compaction Testing:
    - a. Comply with Section 312323 – Fill and ASTM D6938.

3.5 PROTECTION

- A. Section 017000 - Execution and Closeout Requirements: Requirements for protecting finished Work.
- B. Protect pipe and aggregate cover from damage or displacement until backfilling operation is in progress.

END OF SECTION



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SECTION 334213.1 – CONTRACTOR FURNISHED BOX CULVERTS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Contractor designed, furnished and installed reinforced concrete box culvert to the lines, grades and dimensions as shown, including precast or cast-in-place wingwalls and headwall.

B. Related Sections:

1. Section 310516 – Aggregates for Earthwork: Aggregate for backfill in trenches.
2. Section 312316 – Excavation: Excavating for structure.
3. Section 312323 – Fill: Backfilling.
4. Section 312319 – Dewatering: Dewatering for structure excavation.
5. Section 347113 – Vehicle Barriers

1.2 REFERENCE STANDARDS

A. Washington State Department of Transportation (WSDOT) Standard Specifications for Road, Bridge and Municipal Construction, current edition.

B. American Association of State Highway and Transportation Officials:

1. AASHTO – LRFD Bridge Design Specifications.
2. AASHTO M198 – Preformed Flexible Joint Sealant.

C. ASTM International:

1. ASTM C1786 – Standard Specification for Precast Split Reinforced Concrete Box Culverts.
2. ASTM C990 – Standard Specification for Preformed Flexible Joint Sealant.
3. ASTM C1677 – Standard Specification for Rubber Gaskets.

D. Document GRI W1319-B: Geotechnical report; Geotechnical design parameters, bore hole locations and findings of subsurface materials.

1.3 PRESINSTALLATION MEETINGS

A. Section 013300 – Administrative Requirements: Requirements for preinstallation meeting.

B. Convene minimum two weeks prior to commencing Work of this Section.

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1.4 SUBMITTALS

- A. Section 013300 – Submittal Procedures: Requirements for submittals.
- B. Product Design:
  - 1. Perform design according to AASHTO LRFD Bridge Design Specifications.
  - 2. Unless otherwise shown or specified, cast-in-place box culverts or wing walls may be substituted in place of precast. Precast substitution is not permitted for headwalls or for features shown as cast-in-place concrete.
  - 3. Submit stamped design calculations and stamped Working Drawings, prepared by the manufacturer according to Section 013300, conforming to ASTM C1786, AASHTO LRFD Bridge Design Specifications and Document GRI W1319-B Geotechnical report for geotechnical design parameters. Include the following information:
    - a. Structural analysis methods;
    - b. Structural design criteria and calculations;
    - c. Structure detail shop drawings;
    - d. Detailed plans including culvert geometry;
    - e. Line and grade layout;
    - f. Joint connection details;
    - g. Pipe penetration details, and;
    - h. Lifting devices.
- C. Product Construction Specifications: Submit Manufacturer construction specifications regarding box culvert, wing walls, headwalls, joint seals and accessories.
- D. Product Data: Submit Manufacturer information regarding box culvert, wing walls, headwalls, joint seals and accessories.
- E. Manufacturer’s Certificate: Certify that products meet or exceed specified requirements.
- F. Manufacturer Instructions: Submit special procedures required to install specified products in the form of a stamped installation plan according to 013300. Ensure installation plan is consistent with the Drawings and manufacturer’s design. Include the following information:
  - 1. Methods and equipment to be used for handling;
  - 2. Methods to ensure uniform bearing of the box culvert base;
  - 3. Culvert installation, and;
  - 4. Requirements for construction loads.

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- G. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.
- H. Qualifications Statement:
  - 1. Submit qualifications for Manufacturer.

1.5 SUSTAINABLE DESIGN SUBMITTALS

- A. Not used.

1.6 CLOSEOUT SUBMITTALS

- A. Section 017000 – Execution and Closeout Requirements: Requirements for submittals.
- B. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.7 QUALITY ASSURANCE

- A. Perform Work according to manufacturer supplied standards.
- B. Maintain copies of each standard affecting Work of this Section on Site.
- C. Prepare at least three acceptance test cylinders per day for each concrete strength used in the production of box sections. Cylinders shall be exposed to the same curing conditions as the manufactured box sections and shall remain with the sections until tested. When the compressive strength of the cylinders tested does not conform to the acceptance criteria stated in AASHTO M 259, Section 10.2.3.1 or Section 10.2.3.2, the Engineer may allow cores according to Section 10.3 for acceptance.

1.8 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years' documented experience.

PART 2 PRODUCTS

- A. Precast Reinforced Concrete Box Culvert:
  - 1. Do not begin precast box culvert fabrication or construction before receiving written approval from the engineer.
  - 2. Fabricate precast boxes, wingwalls and headwalls according to ASTM C1786 Standard Specification for Precast Split Reinforced Concrete Box Culverts.

2.2 MATERIALS

- A. Bedding and Cover:
  - 1. As specified in Section 310516 - Aggregates for Earthwork.
- B. Concrete:

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1. As specified in WSDOT Standard Specifications Section 6-02.2.
- C. Reinforcing Steel:
1. As specified in WSDOT Standard Specifications Section 6-02.2.

**2.3 ACCESSORIES**

1. Joint Sealant per ASTM C990 – Standard Specification for Preformed Flexible Joint Sealant.
2. Rubber Gaskets per ASTM C1677 – Standard Specification for Rubber Gaskets.
3. Section 34 71 13 Vehicle Barriers - Standard Specification for Box Culvert Embedded Anchor Guardrail Steel Post – Type 31.

**PART 3 EXECUTION**

**3.1 EXAMINATION**

- A. Section 017000 - Execution and Closeout Requirements: Requirements for installation examination.
- B. Verify that excavation base is ready to receive Work.
- C. Verify that excavations, dimensions, and elevations are as indicated on Working Drawings and Drawings.

**3.2 PREPARATION**

- A. Section 017700 - Execution and Closeout Requirements: Requirements for installation preparation.
- B. Section 312319 – Dewatering: Requirements for dewatering.
- C. Correct over-excavation with Permeable Ballast per Section 310516.
- D. Remove large stones and other hard matter that could damage box culvert or impede consistent backfilling or compaction.

**3.3 INSTALLATION**

- A. Excavation and Bedding:
  1. Excavate as specified in Section 312316 and as shown in the Drawings.
  2. Hand trim excavation for accurate placement to indicated elevations.
  3. Backfilling and Compaction:
    - a. As specified in Section 312323 - Fill.
    - b. Do not displace or damage pipe while compacting.

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- c. Maintain optimum moisture content of bedding material to attain required compaction density.
- d. Place geotextile fabric over backfill as indicated in Section 312316.

4. Install culvert end gratings.

3.4 TOLERANCES

- A. Section 014000 - Quality Requirements: Requirements for tolerances.
- B. Maximum Variation from Indicated Slope: 1/8 inch in 10 feet.
- C. Maximum Variation from Intended Elevation of Culvert Invert: 1/2 inch.
- D. Maximum Offset of Pipe from Indicated Alignment: 1 inch.

3.5 FIELD QUALITY CONTROL

- A. Section 014000 - Quality Requirements: Requirements for inspecting and testing.
- B. Inspection: Request inspection from Engineer prior to placing aggregate cover over pipe.

3.6 PROTECTION

- A. Section 017700 - Execution and Closeout Requirements: Requirements for protecting finished Work.
- B. Protect culvert and bedding from damage or displacement until backfilling operation is in progress.

3.7 ATTACHMENTS

- A. Not used.

3.8 SCHEDULES

- A. The following box culverts, wing walls, and headwalls are to be designed, furnished and constructed according to this Section and as indicated on the Drawings.
  - 1. Western Crossing Box Culvert
    - a. One 12 foot-by-5 foot opening precast reinforced box culvert
    - b. Four (4) precast reinforced concrete wing walls and footings
    - c. Two (2) cast-in-place headwalls
  - 2. Eastern Crossing Box Culvert
    - a. One 18 foot-by-5 foot opening precast reinforced box culvert
    - b. Four (4) precast reinforced concrete wing walls and footings

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- c. Two (2) cast-in-place headwalls

END OF SECTION

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SECTION 347113 - VEHICLE BARRIERS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Steel guardrail and accessories.

B. Related Sections:

1. Section 334213.1 – Contractor Furnished Box Culverts

1.2 UNIT PRICE – MEASUREMENT AND PAYMENT

A. Guardrail:

1. Basis of Measurement: By linear foot.
2. Basis of Payment: Includes rail, accessories, posts, finished.

B. Box Culvert Guardrail Steel Post:

1. Basis of Measurement: By each.
2. Basis of Payment: Includes anchoring to concrete box culvert, posts, backfilling and compacting at posts.

C. Guardrail Non-Flared Terminal:

1. Basis of Measurement: By each.
2. Basis of Payment: Includes excavating, posts, anchors and anchor footings, backfilling and compacting at posts.

1.3 REFERENCES

- A. Washington State Department of Transportation Standard Specifications for Road, Bridge and Municipal Construction, Current Edition

1.4 SYSTEM DESCRIPTION

- A. Beam Guardrail Type 31 as indicated on WSDOT Standard Plan C-20.10-08.
- B. Beam Guardrail Type 31 Non-Flared Terminal as indicated in WSDOT Standard Plan C-22.45-06.
- C. Box Culvert Embedded Anchor Guardrail Steel Post – Type 31 as indicated on WSDOT Standard Plan C-20.41-04

1.5 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.

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- B. Shop Drawings: Indicate plan layout, spacing of components, post foundation dimensions, anchorage, and schedule of components.
- C. Product Data: Submit data on rail, posts, accessories, hardware, and structural capabilities of rail section.

1.6 SUSTAINABLE DESIGN SUBMITTALS

- A. Not used.

1.7 QUALITY ASSURANCE

- A. Perform Work in accordance with Washington Department of Transportation standards.

1.8 FIELD MEASUREMENTS

- A. Verify field measurements are as indicated on drawings.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers:
  - 1. Furnish materials in accordance with Washington State Department of Transportation Standards.

2.2 SUSTAINABILITY CHARACTERISTICS

- A. Not used.

2.3 MATERIALS

- 1. Furnish materials in accordance with Washington State Department of Transportation Standards.

2.4 ACCESSORIES

- A. Hardware: Steel, bolts, nuts, and washers to suit rail profile.

2.5 FINISHES

- A. In accordance with Washington State Department of Transportation Standards.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify location of underground utilities and adjust location of posts to avoid damaging utilities.



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3.2 INSTALLATION

- A. Install in accordance with Washington State Department of Transportation Standards.

3.3 ERECTION TOLERANCES

- A. Section 014000 - Quality Requirements: Tolerances.

3.4 SCHEDULES

- A. Not used.

END OF SECTION