



Washington
Department of
**FISH and
WILDLIFE**

MARINE MAMMAL LAB SEWER CONNECTION

DIRECTOR:
KELLY SUSEWIND

PROGRAM DIRECTOR:
TIMOTHY W. BURNS, P.E.

CHIEF ENGINEER:
GLENN F. GERTH, P.E.



DATE:
FEBRUARY 2022

PROJECT NO.
PE:R39:2021-1

PROJECT MANAGER:
KELLY L. SMITH

WDFW Title VI Clause

It is the policy of Washington Department of Fish and Wildlife (WDFW) to provide equal access to its programs, services, activities, and facilities under Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, Title II of the Americans with Disabilities Act of 1990, the Age Discrimination Act of 1975, and the Architectural Barriers Act of 1968. WDFW is a recipient of state and federal financial assistance.

WDFW prohibits discrimination on the basis of race, color, religion, national origin, including language, sex, age, mental or physical disability, reprisal, sexual orientation, status as a parent, and genetic information.

If you believe you have been discriminated against, please contact the WDFW Title VI Manager, PO Box 43139, Olympia, WA 98504, or online at: <https://wdfw.wa.gov/accessibility/grievances> within 20 calendar days of the alleged incident to file a formal complaint, or you can file with the Washington State Human Rights Commission directly at: 1-800-233-3247, or you can write to: Chief, Public Civil Rights Division, Department of the Interior, 1849 C Street NW, Washington DC 20240.

Persons who need to receive this information in an alternative format, different language, or who need a reasonable accommodation to participate in WDFW sponsored public meetings, or other activities, may contact the Title VI Manager by phone at: (360) 902-2349, or TDD (711), or email Title6@dfw.wa.gov.

If you need further assistance or information, please contact the Olympia office of the Washington Department of Fish and Wildlife: (360) 902-2464, or Telecommunications Device for the Deaf, TDD (711).

**MARINE MAMMAL LAB SEWER CONNECTION
TABLE OF CONTENTS**

**DIVISION 0 - BID DOCUMENTS, INFORMATION
& AND GENERAL CONDITIONS**

00030 Notice to Contractors
 Vicinity Map to Bid Opening Site

00100 Instructions to Bidders
 00110 Prebid Requirements
 00120 Required Bid Documents
 00130 Bid Format
 00135 Bid Opening
 00140 Bid Submittal Deadline
 00145 Reasonable Accommodations
 00150 Mandatory Responsibility Criteria
 00155 Basis of Award
 00160 Period of Acceptance
 00170 Payment and Performance Bonds
 00175 Builders Risk Insurance
 00180 Interpretations
 00190 Minority and Women's Business
 Enterprise (MWBE) Participation
 00195 Contract Responsiveness

00200 Contractor Checklist
 00230 Prior to Contract Execution
 00235 Prior to Notice to Proceed
 00240 Submit With Pay Request
 00250 During Progress of Contract
 00260 For Substantial Completion
 00270 For Final Completion
 00280 For Retainage to be Released

00300 Bid Form

00400 Supplements to Bid Form
 00420 Qualification Questionnaire
 00440 Supplemental Bidder
 Responsibility Criteria

00500 Agreement Form

00600 Bond and Certificates
 00620 Retainage in Lieu of Performance
 Bond Option on Contracts of
 \$150,000 or Less
 00630 Retainage Options
 00640 Certificate of Liability Insurance
 00650 Schedule of Values
 00660 Verification of Monthly Payments
 to MWBEs Form
 00670 Statement of Apprentice
 Journeyman Participation Form

00700 General Conditions
 00701 Definitions
 00702 Insurance and Bonds
 00703 Time and Schedule
 00704 Specifications, Drawings, and
 Other Documents
 00705 Performance
 00706 Payments and Completion
 00707 Changes
 00708 Claims and Dispute Resolution
 00709 Termination of the Work
 00710 Miscellaneous Provisions

00800 Supplemental Conditions
 00802 Builders Risk Insurance
 00810 Abbreviations of Administrative
 Organizations

DIVISION 1 – GENERAL REQUIREMENTS

01010 Summary of Work
01011 Owner Furnished Items
01012 Contract Time
01025 Unit Price Measurement & Payment
01030 Schedule of Values
01040 Coordination
01060 Regulatory Requirements
01100 Special Project Procedures
01200 Project Meetings
01300 Contractor Submittals
01510 Temporary Utilities
01730 Operations and Maintenance (O&M)
 Manuals

ATTACHMENT 1 – PERMITS

- Pierce County Sewer Line Extension Permit #963258 (Conceptually Approved)
- Pierce County Sewer Service Commercial Permit #963226 (Conceptually Approved)
- Pierce County Sewer Service Commercial Permit #963228 (Conceptually Approved)
- Pierce Sewer Development Permit #963277 (Conceptually Approved)
- City of Lakewood Plumbing Permit #BP-21-00652 (Conceptually Approved)

ATTACHMENT 2 – MONITORING PLAN

- Inadvertent Discovery Plan for Cultural Resources (IDP)

**ATTACHMENT 3 – PHOTOS & SOIL
SAMPLES**

- Site and Lab Photos
- Sample Locations_32421
- Sample Locations_42821
- Soil Sample Analysis_32421
- Soil Sample Analysis_42841
- Tacoma-Pierce County Health Department
Septic/Pump Tank Decommissioning Guide

DIVISION 2 – SITE WORK

- 02000 General Site Work Provisions
- 02010 Subsurface Investigation
- 02050 Demolition
- 02060 Structure Demolition
- 02100 Site Preparation
- 02150 Shoring and Underpinning
- 02220 Excavation, Backfill, and Compaction
- 02270 Slope Protection and Erosion Control
- 02401 Sanitary Sewer Service
- 02930 Lawns and Grasses

DIVISION 3 – CONCRETE

- 03000 General Concrete Provisions
- 03100 Concrete Formwork
- 03210 Reinforcing Steel
- 03301 Commercial and Small Batch Cast-in-Place
Concrete
- 03370 Concrete Curing
- 03400 Precast Structural Concrete

DIVISION 4 – MASONRY – NOT USED

DIVISION 5 – METALS

- 05000 General Metal Provisions
- 05050 Fasteners
- 05091 Welding
- 05126 Galvanizing
- 05500 Metal Fabrication
- 05990 Miscellaneous Metals

DIVISION 6 – WOOD AND PLASTIC – NOT USED

**DIVISION 7 – THERMAL AND MOISTURE
PROTECTION**

- 07100 Moisture Protection
- 07200 Thermal Protection
- 07310 Fiberglass Shingle Roofing

**DIVISION 8 – DOORS AND WINDOWS – NOT
USED**

DIVISION 9 – FINISHES

- 09000 General Finishes Provisions
- 09800 Protective Coating

DIVISIONS 10 – 16 – NOT USED

DIVISION 0 – BID AND CONTRACT DOCUMENTS

**SECTION 00030
NOTICE TO CONTRACTORS**

Sealed bids for the following Public Works Project will be received until 2:00 p.m. on March 3, 2022 at 600 Capitol Way North, MS: 43158, Olympia, Washington, 98501-1091, and will be publicly opened and read.

Due to the safety and health of the public and employees WDFW CAMP is temporarily closing Bid Openings to public attendance. Bid opening results will be made public within 24 hours of opening. Please Note: The Public will not be able to attend this bid opening.

PROJECT:

Marine Mammal Lab Sewer Connection

NUMBER:

PE:R39:2021-1

Provide all labor, material, equipment, and permits to install sewer line, cleanouts, and owner provided sediment interceptor, install two manholes, cap existing sewer line at unoccupied office building, install owner provided equipment, plumbing, owner provided solids interceptor and exhaust venting in the wet lab, and decommission two septic systems at the Department's South Puget Sound Marine Mammal Lab, located at 7801 Phillips Road SW, Lakewood, Washington, in Pierce County.

Engineer's Estimate: \$130,000

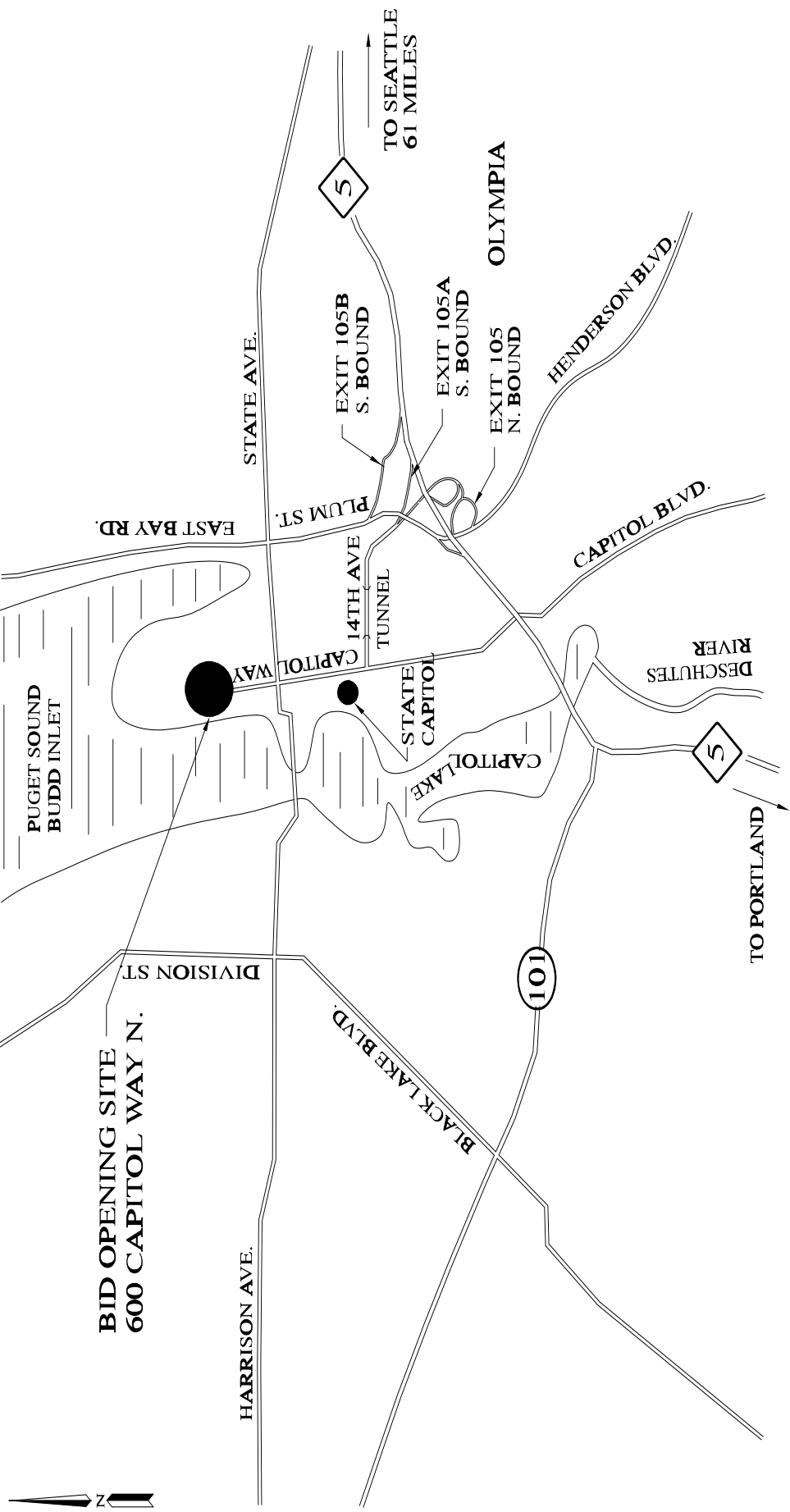
No pre-bid walkthrough is scheduled, **Contractors are strongly encouraged to independently visit the site.**

For access to Drawings, Specifications, Addenda, plan holders list, and additional information for this project, please visit Builders Exchange of Washington, Inc. at <http://www.bxwa.com> – the official projects bidding affiliate for WA Department of Fish and Wildlife Public Works bidding projects. Click on “Posted Projects”; “Public Works”, “Washington State Department of Fish and Wildlife”, “Projects Bidding.”

For information or technical questions regarding this project, email CAMP.Bids@dfw.wa.gov with the project title and project number in subject line. This email may also be used to request copies of the project's posted documents (Drawings, Specifications, Addenda).

Minority and Women's Business Enterprises (MWBE) are encouraged to participate in the bidding as prime contractors, subcontractors, or suppliers.

WASHINGTON DEPARTMENT OF FISH AND WILDLIFE
Timothy Burns, Capital and Asset Management Program Director
By
Glenn F. Gerth, P.E., Chief Engineer
Capital and Asset Management Program



BID OPENING SITE
600 CAPITOL WAY N.

BID OPENING SITE
600 CAPITOL WAY N.
OLYMPIA, WA 98501-1091

STATE OF WASHINGTON
DEPARTMENT OF FISH AND WILDLIFE

DATE DRAWN: 04-10-95 **SCALE: N.T.S.**

DIVISION 0 – BID AND CONTRACT DOCUMENTS

**SECTION 00100
INSTRUCTIONS TO BIDDER**

00110 PREBID REQUIREMENTS

- A. Carefully examine all project documents.
- B. Be fully informed of all existing conditions and limitations, including any activities by City, County, State, Federal or private entities affecting access to the project.
- C. Include in the bid sufficient amount to cover all costs required by Bid Documents to complete the work, but not limited to applicable federal, state, and local taxes (except State Retail Sales Tax), insurance, bonding license(s), payment of prevailing wage rates, L&I filing fees, and all costs that may be necessary to complete the work.
- D. No Apprenticeship Participation requirements for projects estimated less than \$1,000,000.
- E. The project is not federally funded.

00120 REQUIRED BID DOCUMENTS

Failure to submit ALL PAGES of the following forms is sufficient cause to reject the bid.

- A. **Bid Form**: The ENTIRE current Bid Form Section 00300 must be signed. Check for addenda at Builders Exchange of Washington, Inc. (<http://www.bxwa.com>) before submitting bid.
- B. **Standard Questionnaire for Qualification of Contractors Form**: Submit the completed form immediately following bid opening or submit with bid form.
- C. **Bid Bond**: For bids of \$35,000 or less, no bid guarantee is required. Bids greater than \$35,000 shall be accompanied by a certified check, cashier's check, or bid bond payable to the Treasurer of the State of Washington in an amount equal to at least five-percent of the bid as evidence of good faith and as a guarantee that, if awarded the Contract, the bidder will execute the Contract and give separate bond as required, see Section 00702.06.

00130 BID FORMAT

- A. Each bid must be submitted on the current Bid Form, Section 00300 contained in these Bid Documents. Place your required bid documents into an envelope clearly marked on the outside with "BID ENCLOSED", the project name, and project number. Envelope shall clearly identify your Company's name and address as shown below.

Company Name Address City, State Zip	BID ENCLOSED PROJECT NAME PROJECT NUMBER BID OPENING
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- B. No oral, email, telephonic, faxed bids or modifications will be accepted or considered.

00135 BID OPENING

Bidders must submit their bid to the Washington Department of Fish and Wildlife, Capital and Asset Management Program, located at 600 Capitol Way North, MS: 43158, Olympia, Washington 98501-1091 before the bid submittal deadline for this solicitation. Sending your bid through the United States Postal Services (USPS) or United States Express Mail will not guarantee your bid will be received at the above location on time.

PLEASE NOTE: As a state agency, USPS mail is routed through the State’s Consolidated Mail Service with unpredictable delivery times. We encourage the following:

- Hand delivery;
- Courier service;
- Allow sufficient amount of time;
- Third party (i.e. Federal Express, United Parcel Service) for overnight delivery;
- Clearly label the outside of your envelope using the format in Section 00130.

00140 BID SUBMITTAL DEADLINE

- A. Sealed bids for this project will be received by an authorized representative within the Washington Department of Fish and Wildlife, Capital and Asset Management Program located at 600 Capitol Way North, MS: 43158, Olympia, Washington, 98501-1091 until the time and date indicated on the current Bid Form, Section 00300. **Due to the safety and health of the public and employees, WDFW CAMP has temporarily closed Bid Openings to public attendance. Bid opening results will be made public within 24-hours of opening.**
- B. Bids submitted after deadline will not be accepted.

00145 REASONABLE ACCOMMODATIONS

- A. Persons with disabilities who need reasonable accommodations to participate in the bid openings are invited to contact Capital and Asset Management Program at (360) 902-8300 or CAMP.Bids@dfw.wa.gov. Reasonable accommodation requests should be received at least three business days prior to the bid opening to ensure availability.
- B. **Bid Results:** After bid opening, bidders may obtain bid results from Builders Exchange of Washington, Inc. at <http://bxwa.com> the next business day.

00150 MANDATORY RESPONSIBILITY CRITERIA

Before award of a public works contract, 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:

- A. At time of bid submittal, have a certificate of registration in compliance with Chapter 18.27 RCW;
- B. Have a current state Unified Business Identifier (UBI) number;
- C. If applicable, have industrial insurance coverage for the bidder’s employees working in Washington as required in Title 51 RCW; an employment security department number as required in Title 50 RCW; and a state excise tax registration number as required in Title 82 RCW;

DIVISION 0 – BID AND CONTRACT DOCUMENTS

- D. Not be disqualified from bidding on any public works contract under RCW 39.06.010 or 39.12.065(3);
- E. 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;
- F. 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 web site. Responsible parties may rely on the records made available by the department regarding satisfaction of the training requirement or exemption; and

Labor and Industries (LNI) Training Information Link:

<https://www.lni.wa.gov/TradesLicensing/PrevWage/Contractors/Training.asp>

- G. Within the three-year period immediately preceding the date of the bid solicitation, not have been 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 to have willfully violated, as defined in RCW 49.48.082, and provision of Chapter 49.46, 49.48 or 49.52 RCW.
- H. Before award of a public works contract, a bidder shall submit to the contracting agency a signed statement in accordance with RCW 9A.72.085 verifying under penalty of perjury that the bidder is in compliance with the responsible bidder criteria requirement of subsection G above. A contracting agency may award a contract in reasonable reliance upon such a sworn statement.

00155 BASIS OF AWARD

The lowest responsive bid and responsible bidder is based upon the Base Bid. The Owner reserves the right to award the contract amount based on any or all of the bid items listed, to restrict the contract amount to the funds available, and to reject any or all bids for any reason whatsoever and waive informalities.

00160 PERIOD OF ACCEPTANCE

All bids may be held 45 calendar days from bid opening date. At the end of this period, the three lowest bids may be retained for 15 additional days, or as may be further extended by the Owner with the approval of the bidding companies.

00170 PAYMENT AND PERFORMANCE BONDS

- A. Base bids greater than \$150,000; Contractor shall provide separate Payment and Performance Bonds, each executed by Contractor and Contractor's Surety.

DIVISION 0 – BID AND CONTRACT DOCUMENTS

B. Base bids \$150,000 or less, Contractor shall provide separate Payment and Performance Bonds, each executed by Contractor and Contractor's Surety, unless the Contractor agrees Owner may, in lieu of the bond(s), retain 10 percent of the Contract Sum for the period allowed by RCW 39.08.010.

C. For additional information see Section 00702.04.

00175 BUILDERS RISK INSURANCE

Builders Risk Insurance is not required, see Section 00802.07.

00180 INTERPRETATIONS

For information or technical questions regarding this project email CAMP.Bids@dfw.wa.gov with the project title and project number in subject line and address questions to the Project Manager. Questions resulting in changes to the scope or nature of the drawings, specifications, or bid documents will be answered by addendum/addenda reflective of the Owner's process.

The Owner will **NOT** answer questions received after 2:00 p.m. on February 28, 2022. All addenda issued are part of the bid documents. The Owner will not be responsible for any oral interpretations.

00190 MINORITY AND WOMEN'S BUSINESS ENTERPRISE (MWBE) PARTICIPATION

Minority and Women's Business Enterprises (MWBE) are encouraged to participate in the bidding as prime contractors, subcontractors, or suppliers.

00195 CONTRACT RESPONSIVENESS

Contractor shall return all required contract documents and signed contract no later than 21 calendar days from date of Award Letter.

END OF SECTION 00100

DIVISION 0 – BID AND CONTRACT DOCUMENTS

SECTION 00200 CONTRACTOR CHECKLIST

00230 PRIOR TO CONTRACT EXECUTION

Submit the following to WDFW's Contract Administrator within 21 calendar days from the date of the Award Letter:

- A. Signed Public Works Contract Agreement.
- B. Performance and Payment Bonds Forms: Separate performance and payment bonds executed by Contractor and Contractor's Surety.
- C. Retainage in Lieu of Performance Bond Option on Contracts of \$150,000 or Less: If Contractor elects, Owner may retain ten percent of the Contract Sum in lieu of the Performance and Payment Bonds, see Section 00620.
- D. Retainage Options Form, see Section 00630.
- E. Certificate of Liability Insurance Form, see Section 00640.
- F. Statewide Payee Form, Form W-9, Request for Taxpayer ID Number and Certification: for General Contractors and Subcontractors.

00235 PRIOR TO NOTICE TO PROCEED

- A. Provide to the Project Manager:
 - 1. List of subcontractors and major suppliers of work and materials greater than \$2,500.
 - 2. Construction Schedule for approval, see Section 00703.2.
 - 3. Schedule of Values for approval, see Section 00650.
- B. Attend preconstruction conference.

00240 SUBMIT WITH PAY REQUEST

- A. First invoice: include Statement of Intent to Pay Prevailing Wage Rates for Contractor and all Subcontractors, filed and approved by the Department of Labor and Industries (L&I). Information regarding Prevailing Wages is found at the L&I website: <http://www.lni.wa.gov/TradesLicensing/PrevWage/IntentAffidavits/File/default.asp>.
- B. All invoices: include Verification of Monthly Payments to MWBEs, see Section 00660.
- C. For contract sums of \$1,000,000 or more include Statement of Apprentice/Journeyman Participation, see Section 00670.

00250 DURING PROGRESS OF CONTRACT

- A. Provide Submittals and Shop Drawings as required, see Section 01300.
- B. If work exceeds 30 calendar days, Contractor may request partial payment once per month. If work is 30 calendar days or less, Contractor requests payment when project is complete.

00260 FOR SUBSTANTIAL COMPLETION

- A. Owner/operator training completed.
- B. Submit Operation and Maintenance Manual draft to Owner, see Section 01730.
- C. Written Certificate of Occupancy received by Owner.
- D. Owner provides Contractor final punch list.
- E. Owner provides written Substantial Completion.

00270 FOR FINAL COMPLETION

- A. Contractor completes final punch list.
- B. Owner completes walkthrough and validates final punch list.
- C. Contractor submits final Operation and Maintenance Manuals to Owner, see Section 01730.
- D. Contractor submits Project Record to Owner if required in the contract.
- E. Contractor provides all signed permits to the Owner.
- F. Contractor provides all expressed warranties greater than one year to Owner.
- G. Owner issues Final Completion Letter to Contractor.
- H. Contractor submits final invoice after receipt of the Final Completion Certificate.
- I. Contractor submits Affidavit of Wages Paid to L&I.
- J. L&I approves the Affidavit of Wages Paid for Contractor and all Subcontractors working on the project.
- K. Owner submits a Notice of Completion Form to L&I, the Department of Revenue, and the Employment Security Department.
- L. Owner's Contract Administrator receives the notarized Contractor's Release of Claims Form.

00280 FOR RETAINAGE TO BE RELEASED

- A. Contract must not be in dispute.
- B. Owner processes final progress payment.
- C. Owner administers 60-day legal lien period.
- D. Owner's Contract Administrator receives releases from Department of Revenue, Employment Security Department, and Labor & Industries.

END OF SECTION 00200

**SECTION 00300
BID FORM**

**FAILURE TO SUBMIT ALL PAGES OF BID FORM SHALL BE
SUFFICIENT CAUSE TO REJECT THE BID.**

To: Washington Department of Fish & Wildlife Chief Engineer 600 Capitol Way North, MS: 43158 Olympia, WA 98501-1091	Project Title: Marine Mammal Lab Sewer Connection Project No.: PE:R39:2021-1 Bid Opening: 2:00 p.m. March 3, 2022
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00310 BID

Pursuant to and in compliance with the Bid Documents, the undersigned Bidder agrees to submit all bid form pages and perform the Work for the following Base Bid amount for the above referenced project:

Lump Sum Items	
Bid Item 1: Provide all labor, materials, equipment, and miscellaneous items necessary and incidental to install sanitary sewer line, cleanouts, owner provided sediment interceptor, and shallow manhole behind the wet lab. Cap and seal existing sewer line at Unoccupied Office No. 2 and install polymer concrete manhole at force main gravity stub.	\$
Bid Item 2: Provide all labor, materials, equipment, and miscellaneous items necessary and incidental for chlorine treatment and disinfection of the area and components and decommission existing septic system behind the wet lab in compliance with Tacoma-Pierce County Health Department requirements.	\$
Bid Item 3: Provide all labor, materials, equipment, and miscellaneous items necessary and incidental to installing owner provided equipment, plumbing, owner provided solids interceptor, and exhaust venting in the wet lab.	\$
Bid Item 4: Provide all labor, materials, equipment, and miscellaneous items necessary and incidental to decommission existing 1000 gallon septic tank at public South Puget Sound WLA restroom in compliance with Tacoma-Pierce County Health Department requirements.	\$
Base Bid (Sum of bid items 1 thru 4, excluding Washington State Sales Tax)	\$

TRENCH EXCAVATION SAFETY PROVISIONS

If the bid amounts contain any work in which trench excavation will exceed a depth of four feet, all costs for adequate trench safety systems amount shall be included in base bid in compliance with RCW 39.04.180. The Bidder agrees to comply with all the relevant trench safety requirements of Chapter 49.17 RCW and WAC 296-155-66411.

If trench excavation safety provisions do not pertain to this project, enter "N/A" for the dollar amount. Failure to complete this requirement shall be sufficient cause to reject the bid.

Trench Excavation Safety Provisions	\$
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00320 CONTRACT COMPLETION TIME

The bidder agrees to achieve Substantial Completion in 60 calendar days after date of Notice to Proceed and achieve Final Completion within 15 calendar days of Substantial Completion.

00330 LIQUIDATED DAMAGES

The undersigned agrees to pay the Owner as liquidated damages the sum of \$325.00 for each consecutive calendar day that is in default after the Contract Time. Liquidated damages shall be deducted from the Contract by Change Order.

00340 MINORITY AND WOMEN’S BUSINESS ENTERPRISES (MWBE) UTILIZATION CERTIFICATION

The bidder certifies they have, in good faith, afforded maximum opportunities to MWBEs, and if they are the successful bidder on this project, the following MWBE firms or approved substitutes shall be utilized on the project and compensated in the amounts shown. **If the bidder does not expect to utilize MWBE firms, enter “N.A.” on line one below.**

Firm Name, Address and Federal I.D. #	Telephone Number	Type of Work	Certificate Number	MBE%	WBE%
1					
2					
TOTALS					

00350 IDENTIFICATION OF SUBCONTRACTORS FOR PROJECTS GREATER THAN \$1,000,000

Not Used.

00360 CONTRACT EXECUTION

- A. Contract Execution: If the Owner awards a contract based on this bid within 60 calendar days (unless otherwise negotiated) of the bid submission deadline, the Bidder agrees to execute a contract for the above work, for compensation computed from the above stated bid amounts, on the WDFW Public Works Contract Form.
- B. Bonds and Insurance: If Bidder fails to submit the documents listed in Section 00230, within 21 calendar days after date on the Award Letter, the Owner may revoke the award.
- C. Failure to Execute Contract: If the successful bidder, fails to submit the documents listed in Section 00230, the Owner may revoke the award. The bid guarantee may be retained by Owner as liquidated damages, not as penalty.

If a contract is not awarded within 60 calendar days (unless otherwise negotiated) after the bid submission deadline or Contractor fails to submit the documents listed in Section 00230, the certified or cashier’s check submitted as the bid guarantee shall be returned to the bidder, or the Bid Bond shall become void.

00370 DECLARATION

- A. Familiarity with Bid Document and Site: The undersigned Bidder hereby certifies to have personally and carefully examined the Bid Documents issued for the above referenced project, the site where the Work is to be performed and the conditions affecting the Work.
- B. Proposal to Perform Work: The Bidder hereby proposes to furnish all labor, materials, equipment, and services and to perform all work which may be required to complete the Work within the time fixed and in strict accordance with the Contract Documents for the above-referenced project for the Base Bid indicated above. The bid prices cover all expenses of the Bidder, including but not limited to, overhead, profit, insurance, and bonding, to perform the Work in accordance with the Contract Documents.
- C. Non-Collusion: The Bidder affirms that the bid is a genuine and not a sham or collusive bid or made in the interest or on behalf of any person not therein named. The Bidder has not directly or indirectly induced or solicited any bidder on the work to put in a sham bid, or any other person or corporation to refrain from bidding, and that the Bidder has not in any manner sought by collusion to secure for itself an advantage over any other bidder or bidders. The Bidder has not entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free, competitive bidding in the preparation and submission of this bid to the Owner for the project described in the Bid Documents.
- D. Certification of Compliance with Wage Payment Statutes: The bidder hereby certifies that, within the 3 year period immediately preceding the bid solicitation date the bidder is not 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.

00380 ACKNOWLEDGEMENT

I certify by signing the current Bid Form that all Addendum/Addenda, Contract Execution and Declarations have been acknowledged. Contractor shall review online bid documents at Builders Exchange of Washington, Inc. <http://www.bxwa.com> to ensure all information is considered in bid proposal.

Bidder's Business Name:		
Unified Business Number (UBI):	Contractor's License Number:	
Physical Business Street Address		
City:	State:	Zip Code:
Phone Number:		
Email Address:		
If the above address is not in Washington State, check ONE of the boxes below:		
<input type="checkbox"/> Physical office in WA: _____ <div style="display: flex; justify-content: space-around; width: 100%;"> Street Address City Zip Code </div>		
OR		
<input type="checkbox"/> State of incorporation or where business entity was formed, if not corporation: _____		

OFFICIAL AUTHORIZED TO SIGN FOR BIDDER:

"I certify (or declare) under penalty of perjury under the laws of the State of Washington that the foregoing is true and correct":	
Signature of Authorized Official:	Date:
Print Name	Title

FAILURE TO SUBMIT ALL PAGES OF BID FORM SHALL BE SUFFICIENT CAUSE TO REJECT THE BID.

END OF SECTION 00300

**SECTION 00400
SUPPLEMENTS TO BID FORM**

00420 QUALIFICATION QUESTIONNAIRE

- A. Information and Instructions - Standard Questionnaire for Qualification of Contractors:
1. Any person, firm, or corporation bidding on this project shall execute and submit with their bid a Standard Questionnaire for Qualification of Contractors Form. Failure to submit the completed form immediately following the bid opening may be sufficient cause to reject the bid.
 2. The Chief Engineer will make the sole determination as to the adequacy of the experience and responsibility of the bidder.
 3. All information furnished will be treated as confidential to the extent that such policy is compatible with the provisions of the general statutes affecting the conduct of public offices.
- B. Preparation of Standard Questionnaire for Qualification of Contractors Form:
1. Bidder shall submit the Standard Questionnaire for Qualification of Contractors Form only in the exact name under which the bid is submitted. Answers and entries shall be specific and complete in detail.
 2. Bidder shall verify that Representative or Project Manager Contact information is current and valid prior to submission.
- C. Joint Ventures: The bids of Joint Ventures will be accepted if qualification has been satisfactorily established by each of the firms bidding in the name of the Joint Venture.

**STANDARD QUESTIONNAIRE
FOR QUALIFICATION OF CONTRACTORS**

PROJECT NO. _____

Submitted by: _____
Name Title

Street Address City State Zip () Phone Number

Signature

QUESTIONNAIRE

A. How many years has your organization been in business under your present business name?

B. List three projects your organization has completed or has underway on this date reflecting the type of work for which you desire to qualify.

1.	Owner	Owner's Representative or PM	Representative or PM Phone Number
Project Name		Contract Amount	
Class of Work Performed			
2.	Owner	Owner's Representative or PM	Representative or PM Phone Number
Project Name		Contract Amount	
Class of Work Performed			
3.	Owner	Owner's Representative or PM	Representative or PM Phone Number
Project Name		Contract Amount	
Class of Work Performed			

C. Has your organization ever failed to complete a construction contract?

YES NO

If Yes, state reason why:

00440 SUPPLEMENTAL BIDDER RESPONSIBILITY CRITERIA

Not Used.

END OF SECTION 00400



SECTION 00500

PUBLIC WORKS CONTRACT

TITLE: [REDACTED]

CONTRACT NUMBER: [REDACTED]

CONTRACTOR: [REDACTED]

ENGINEERING #: [REDACTED]

CONTRACT AMOUNT: [REDACTED]

MASTER INDEX: [REDACTED]

TYPE: Payable / Engineering / Public Works

PROJECT MANAGER: [REDACTED]

CONTRACT PERIOD: [REDACTED]

A. PARTIES TO THIS CONTRACT

This Contract is entered into under the authority of Chapter 39.04 of the Revised Code of Washington (RCW) between the Washington State Department of Fish and Wildlife (WDFW), 600 Capitol Way North, Olympia, WA 98501-1091; and (Contractor), Company Address, Company City, Company State, Company Postal Code; and shall be binding upon the agents and all persons acting by or through the parties.

B. PURPOSE OF CONTRACT

The Contractor shall provide those goods and /or services in accordance with and as described in the plans and drawings designated as "State of Washington Department of Fish & Wildlife Engineer Number XX:XX:XXXX together with the Contractor's bid opened at 2:00 P.M. Pacific Time on XX/XX/XXXX; and in full compliance with terms, conditions and stipulations of the General Conditions of the Contract, Release of Claims, the Special Conditions of the contract and material, Rights-of-Way and Easements (other than those provided by the State), licenses, permits, for this contract, now referred to and by this reference incorporated herein and made a part hereof as fully, for all purposes as if here set forth at length.

C. DESCRIPTION OF PROJECT

The Contractor shall perform the project as described in Attachments, which are incorporated herein by this reference:
Attachment "A" Specifications and Drawings (WDFW Engineer Number: XX/XXXX/XXXX)

D. PERIOD OF PERFORMANCE

The Contractor shall begin work as stated in the Notice to Proceed letter from WDFW; and shall complete all work under this contract not later than **DATE**. No expenditures made before or after this period are eligible for reimbursement unless incorporated by written amendment into this Contract. The Contract may be terminated or the performance period extended pursuant to terms set forth in Attachment "A."

WDFW may suspend the work of the Contractor due to weather or other needs of WDFW. The Contractor shall suspend all work on the contract upon the receipt of a Notice to Suspend from WDFW; and shall not re-commence work until a Notice to Resume Work is received from WDFW.

E. COMPENSATION / PAYMENT

WDFW hereby promises and agrees with the Contractor to employ, and does employ the Contractor to provide the materials and to do and cause to be done the above-described work, and to complete and finish the same according to the plans designated, and the attached specifications and the terms and conditions herein contained, and hereby contracts to pay for the same in the manner set out in the specifications the sum of **\$00.00** plus applicable Washington State sales tax at the time and upon the conditions provided for in this contract and every part thereof.

DIVISION 0 – BID AND CONTRACT DOCUMENTS

That WDFW further agrees to employ the Contractor to perform any alterations in or additions to the work covered by this contract and any force account work that may be ordered, if the construction or labor required by such changes or force work is to be executed during the period specified herein for the completion of the work under this contract, and to pay for the same under the terms of this contract. Except as otherwise provided in Section 00707 of Attachment "A" of the contract, no alteration or modification of any of the terms, conditions, price, quality, quantity or specifications of this contract will be effective if not in writing and signed by WDFW.

The Contractor is required to be registered in the Statewide Vendor Payment System prior to submitting a request for payment under this contract. The Washington State Office of Financial Management (OFM) maintains the Statewide Vendor Payment System; to obtain registration materials, forms are available on the OFM payee registration [website](#) or contact the Statewide Payee Help Desk at HereToHelp@ofm.wa.gov (360) 407.9100.

F. RIGHTS AND OBLIGATIONS

All rights and obligations of the parties of this Contract are subject to this Contract, including the Attachments, which are incorporated herein by this reference. By signing this Contract the Contractor acknowledges that they have read, fully understand, and agree to be bound by all terms and conditions set forth in this Contract.

G. ORDER OF PRECEDENCE

In the event of an inconsistency in this contract, unless otherwise provided herein, the inconsistency shall be resolved by giving precedence in the following order:

- Applicable Federal and State of Washington statutes and regulations;
- Special Terms and Conditions as contained in this basic contract instrument;
- Attachment "A" Specifications and Drawings (WDFW Engineer Number: XX/XXXX/XX); and
- Any other provision, term or material incorporated herein by reference or otherwise incorporated.

H. CONTRACT REPRESENTATIVES

The below named representatives for each of the parties shall be the contact people for all communications and billings regarding the performance of this Contract. All written communications regarding this Contract shall be sent to the designated representatives at the addresses below unless notified in writing of any change.

Contractor's Representative

Name:
Company Name:
Address:
Office Phone:
Email:

WDFW's Representative

Project Manager:
Capital and Asset Management Program
PO Box 43158
Olympia, WA 98504-3158
(360) 902-8300
Email:

I. ENTIRE CONTRACT

This Contract, along with all attachments and exhibits, constitutes the entire agreement of the parties. No other understandings, verbal or otherwise, regarding this Contract shall exist or bind any of the parties.

J. APPROVAL

This contract shall be subject to the written approval of WDFW'S authorized representative and shall not be binding until so approved. This Contract may be altered, amended, or waived only by a written amendment executed by both parties.

DIVISION 0 – BID AND CONTRACT DOCUMENTS

IN WITNESS WHERE, WDFW and the Contractor have signed this contract.

CONTRACTOR NAME

WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

Signature and Date

Signature and Date

Printed Name and Title

Timothy W. Burns, PE
Program Director
Capital and Asset Management Program

APPROVED AS TO FORM BY THE OFFICE OF THE ATTORNEY GENERAL 12/19/2014

DIVISION 0 – BID AND CONTRACT DOCUMENTS

SECTION 00600

00620 RETAINAGE IN LIEU OF PERFORMANCE BOND OPTION ON CONTRACTS
OF \$150,000 OR LESS



Contract No. _____

Project Name: _____

Agency: DEPARTMENT OF FISH AND WILDLIFE _____

Contractor: _____

Pursuant to *RCW 39.08.010* you are permitted to exercise your option, IN WRITING, on whether to provide a performance bond, or in lieu of bond to have retention increased to 10 percent. You are therefore requested to complete and return this form prior to receiving the *Notice to Proceed*.

OPTION 1:

Provide a performance bond in accordance with *SECTION 00702.04* of the *GENERAL CONDITIONS*.

I request Option #1 _____

OPTION 2:

Retain 10 percent of the contract payments in lieu of providing a performance bond in accordance with *SECTION 00702.04* of the *GENERAL CONDITIONS*.

I request Option #2 _____

Signature

Title

Date

00630 RETAINAGE OPTIONS



Contract No.: _____ Project: _____

Chapter 60.28 RCW requires in part that all contracts for public improvements or work by a public body must provide for retention from the amounts earned by the Contractor. Such monies are to be retained in accordance with the provision of the law for the protection and payment of any person supplying labor or material for such work and the State for taxes due from the Contractor.

The monies reserved from amounts due a Contractor at his/her option shall be: (Contractor mark choice):

- _____ A. Retained in a fund by the public body until 60 days following the final acceptance of said improvement or work as completed; or
- _____ B. Deposited by the public body in an interest bearing account in a bank, mutual savings bank, or savings and loan association, not subject to withdrawal until 60 days after the final acceptance of said improvement or work as completed, or until agreed to by both parties: Provided, that interest on such account shall be paid to the Contractor.
- _____ C. Placed in escrow with a bank or trust company until 60 days following final acceptance of said work or improvement as completed.
- _____ D. Contractor will submit a retainage bond for all or any portion of funds to be retained by Washington State Department of Fish and Wildlife.

The warrant or check representing monies to be placed in escrow shall be made payable jointly to the bank or trust company and the Contractor. Such monies must be converted into bonds and securities and held in escrow. The bonds and securities are to be chosen by the Contractor and approved by the State. When interest on such investments accrues and is paid, it must be forwarded to the Contractor.

The escrow agreement, in the form prescribed by WAC Chapter 82-32 and in addition to other requirements, must also provide for payment of all escrow costs and fees by the Contractor. A copy of the completed escrow agreement shall be provided by the escrow agent, the Contractor and the state agency prior to the time the first progress payment is made.

This completed option must be returned with the signed Contract Documents. No progress payment shall be made until the Contractor has exercised this option in writing.

Contractor Signature Date



00640

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME:	
	PHONE (A/C, No. Ext):	FAX (A/C, No):
	E-MAIL ADDRESS:	
	INSURER(S) AFFORDING COVERAGE	NAIC #
INSURED	INSURER A :	
	INSURER B :	
	INSURER C :	
	INSURER D :	
	INSURER E :	
	INSURER F :	

COVERAGES**CERTIFICATE NUMBER:****REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
	COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:						EACH OCCURRENCE \$ DAMAGE TO RENTED PREMISES (Ea occurrence) \$ MED EXP (Any one person) \$ PERSONAL & ADV INJURY \$ GENERAL AGGREGATE \$ PRODUCTS - COMP/OP AGG \$ \$
	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS						COMBINED SINGLE LIMIT (Ea accident) \$ BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
	UMBRELLA LIAB <input type="checkbox"/> OCCUR EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED RETENTION \$						EACH OCCURRENCE \$ AGGREGATE \$ \$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N	N/A				<input type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ E.L. DISEASE - EA EMPLOYEE \$ E.L. DISEASE - POLICY LIMIT \$

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER**CANCELLATION**

	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE

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**STATE OF WASHINGTON
00650 SCHEDULE OF VALUES**

CERTIFICATE FOR PAYMENT. For period from: date to date
 Contract for: **project title** Date: 01/00/00
 Location: **project location** Certificate No.: _____
 Contractor: _____ Contract No.: _____

Original Contract Amount: \$0.00
 Net change in Contract Amount to Date: \$0.00
 Adjusted Contract amount **\$0.00**

ITEM NO.	SCHEDULE OF VALUES DETAIL	ESTIMATED VALUE	AMOUNT EARNED	%	PREVIOUSLY CLAIMED	THIS INVOICE
1		\$0.00	\$0.00	#####	\$0.00	\$0.00
2		\$0.00	\$0.00	#####	\$0.00	\$0.00
3		\$0.00	\$0.00	#####	\$0.00	\$0.00
4		\$0.00	\$0.00	#####	\$0.00	\$0.00
5		\$0.00	\$0.00	#####	\$0.00	\$0.00
6		\$0.00	\$0.00	#####	\$0.00	\$0.00
7		\$0.00	\$0.00	#####	\$0.00	\$0.00
8		\$0.00	\$0.00	#####	\$0.00	\$0.00
9		\$0.00	\$0.00	#####	\$0.00	\$0.00
10		\$0.00	\$0.00	#####	\$0.00	\$0.00
11		\$0.00	\$0.00	#####	\$0.00	\$0.00
12		\$0.00	\$0.00	#####	\$0.00	\$0.00
13		\$0.00	\$0.00	#####	\$0.00	\$0.00
14		\$0.00	\$0.00	#####	\$0.00	\$0.00
15		\$0.00	\$0.00	#####	\$0.00	\$0.00
16		\$0.00	\$0.00	#####	\$0.00	\$0.00
17		\$0.00	\$0.00	#####	\$0.00	\$0.00
18		\$0.00	\$0.00	#####	\$0.00	\$0.00
19	Change Orders:					
20	1.	\$0.00	\$0.00	#####	\$0.00	\$0.00
21	2.	\$0.00	\$0.00	#####	\$0.00	\$0.00
22	3.	\$0.00	\$0.00	#####	\$0.00	\$0.00
23	4.	\$0.00	\$0.00	#####	\$0.00	\$0.00
24	5.	\$0.00	\$0.00	#####	\$0.00	\$0.00
25	6.	\$0.00	\$0.00	#####	\$0.00	\$0.00
26	7.	\$0.00	\$0.00	#####	\$0.00	\$0.00
27	8.	\$0.00	\$0.00	#####	\$0.00	\$0.00
28	6.	\$0.00	\$0.00	#####	\$0.00	\$0.00
	SUBTOTAL	\$0.00	\$0.00	#####	\$0.00	\$0.00
TAX	SALES TAX	\$0.00	\$0.00		\$0.00	\$0.00
	TOTAL	\$0.00	\$0.00		\$0.00	\$0.00
Less Retainage..	5%		\$0.00		\$0.00	\$0.00
	NET		\$0.00		\$0.00	\$0.00
	Less Previous Payments...		\$0.00			
Additional Tax	0.00%	\$0.00			\$0.00	
	AMOUNT DUE THIS ESTIMATE		\$0.00			\$0.00

check
\$0.00
\$0.00
\$0.00
\$0.00
\$0.00

This is to certify that the contractor, having complied with the terms and conditions of the above mentioned contract, is due and payable from the State of Washington, the amount set after "AMOUNT DUE THIS ESTIMATE."

0

 (Contracting Firm) (Architect or Engineer)

By _____ By _____
 [SIGN IN INK] [SIGN AND DATE]



00660 VERIFICATION OF MONTHLY PAYMENTS TO MWBES

State of Washington Department of Fish and Wildlife, 600 Capitol Way North, Olympia, Washington, 98501-1091, (360) 902-8300

Project No _____ Project Title _____ Sheet _____ of _____

Contractor _____ Payment # _____

Federal Tax Identification #	Contractor/Supplier	WBE or MBE	Nature of Work or Type of Supplies	Bid Total Utilization Dollars	Amount Paid This Month	Amount Paid to Date

CONTRACTOR: _____
 Authorized Signature

DATE: _____

Washington Department of Fish and Wildlife

STATEMENT OF APPRENTICE/JOURNEYMAN PARTICIPATION

Firm Name, Address, City, State & ZIP+4	Project Name (Title)	Contract No.
	Contract Award Amount:	Notice to Proceed Date
	\$	

Reporting Period from: _____ to _____ Required Apprenticeship Percentage: **15%**

APPRENTICE SUMMARY

Apprentice Name	Craft or Trade	Apprentice Registration Number	Name of Contractor or Sub-Contractor	Apprentice	
				Total Number	Hours Worked

JOURNEYMEN SUMMARY

Journeymen Name	Craft or Trade	Journeymen Registration Number	Name of Contractor or Sub-Contractor	Journeymen	
				Total Number	Hours Worked

Apprentice total hours worked this period:	0
Journeyman total hours worked this period:	0

	Previous Total	New Total	Percentage
Cumulative Apprentice hour Total brought forward from last reporting period:	previous total		
Cumulative Journeymen hour Total brought forward from last reporting period:	previous total		

I, the undersigned, do hereby certify under penalty of perjury that the items listed herein represent the proper hourly totals for Apprenticeship/Journeyman participation during this reporting period.

Printed Name:	Signature:	Date:	Title:
---------------	------------	-------	--------

DES Labor Form 100412

END OF SECTION 00600

**SECTION 00700
TABLE OF CONTENTS**

00701	Definitions			00705.12	Layout of Work
	00701.01	Definitions		00705.13	Material and Equipment
	00701.02	Order of Precedence		00705.14	Availability and Use of Utility Services
	00701.03	Execution and Intent			
00702	Insurance and Bonds			00705.15	Tests and Inspection
	00702.01	Contractor's Liability Insurance		00705.16	Correction of Nonconforming Work
	00702.02	Coverage Limits			
	00702.03	Insurance Coverage Certificates		00705.17	Cleanup
	00702.04	Payment and Performance Bonds		00705.18	Access to Work
	00702.05	Additional Bond Security		00705.19	Other Contracts
	00702.06	Bid Bond or Proposal Guarantee		00705.20	Subcontractors and Suppliers
	00702.07	Builder's Risk		00705.21	Warranty of Construction
00703	Time and Schedule			00705.22	Indemnification
	00703.01	Progress and Completion		00705.23	Required Payroll Documents
	00703.02	Construction Schedule		00705.24	Statement of Apprentice/Journeyman Participation
	00703.03	Owner's Right to Suspend the Work for Convenience			
	00703.04	Owner's Right to Stop the Work for Cause		00705.25	Federally Funded Contract Conditions
	00703.05	Delay	00706	Payments and Completion	
	00703.06	Notice to Owner of Labor Disputes		00706.01	Contract Sum
	00703.07	Damages for Failure to Achieve Timely Completion		00706.02	Schedule of Values
00704	Specifications, Drawings, and Other Documents			00706.03	Application for Payment
	00704.01	Discrepancies and Contract Document Review		00706.04	Progress Payments
	00704.02	Project Record		00706.05	Payments Withheld
	00704.03	Shop Drawings		00706.06	Retainage and Bond Claim Rights
	00704.04	Organization of Specifications	00707	Changes	
	00704.05	Ownership and Use of Drawings, Specifications, and Other Documents		00707.01	Changes in the Work
00705	Performance			00707.02	Change in the Contract Sum
	00705.01	Contractor Control and Supervision		00707.03	Change in the Contract Time
	00705.02	Permits, Fees, and Notices	00708	Claims and Dispute Resolution	
	00705.03	Patents and Royalties		00708.01	Claims Procedure
	00705.04	Prevailing Wages	00709	Termination of the Work	
	00705.05	Hours of Labor		00709.01	Termination by Owner for Cause
	00705.06	Nondiscrimination		00709.02	Termination by Owner for Convenience
	00705.07	Safety Precautions	00710	Miscellaneous Provisions	
	00705.08	Operations, Material Handling, and Storage Areas		00710.01	Governing Law
	00705.09	Prior Notice of Excavation		00710.02	Successors and Assigns
	00705.10	Unforeseen Physical Conditions		00710.03	Abbreviations of Administrative Organizations
	00705.11	Protection of Existing Structures, Equipment, Vegetation, Utilities, and Improvements		00710.04	Rights and Remedies
				00710.05	Contractor Registration
				00710.06	Time Computations

- 00710.07 Records Retention
- 00710.08 Third-Party Agreements
- 00710.09 Antitrust Assignment
- 00710.10 Identification of Subcontractor
for Projects Greater than
\$1,000,000

PART 1 - 00701.00 DEFINITIONS

00701.01 DEFINITIONS

- A. Application for Payment: 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, Owner, or A/E: A person or entity lawfully entitled to practice architecture or engineering, representing Owner within the limits of its delegated authority.
- C. Change Order: 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: 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 *SECTION 00708 - CLAIMS AND DISPUTE RESOLUTION*.
- E. Contract Documents: The Advertisement for Bids, Instructions to 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.
- F. Contract Sum: The total amount payable by Owner to Contractor for performance of the Work in accordance with the Contract Documents.
- G. Contract Time: The number of calendar days allotted in the Contract Documents for achieving Substantial Completion of the Work.
- H. Contractor: The person or entity who has agreed with Owner to perform the Work in accordance with the Contract Documents.
- I. Drawings: 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.
- J. Final Acceptance: The written acceptance issued to Contractor by Owner after Contractor has completed the requirements of the Contract Documents.
- K. Final Completion: The Work is fully and finally completed in accordance with the Contract Documents.

DIVISION 0 – GENERAL CONDITIONS

- L. Force Majeure: Those acts entitling Contractor to request an equitable adjustment in the Contract Time, as more fully set forth in *SECTION 00703.05A*.
- M. Notice: A written notice that 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.
- N. Notice to Proceed: A notice from Owner to Contractor that defines the date on which the Contract Time begins to run.
- O. Owner: The state agency, institution, or its authorized representative with the authority to enter into, administer, and/or terminate the Work in accordance with the Contract Documents and make related determinations and findings.
- P. Person: A corporation, partnership, business association of any kind, trust, company, or individual.
- Q. Prior Occupancy: Owner's use of all or parts of the Project before Substantial Completion.
- R. Construction Schedule: A schedule of the Work, in a form satisfactory to Owner, as further set forth in *SECTION 00703.02*.
- S. Project: 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.
- T. Project Manual: The volume usually assembled for the Work, which may include documents such as the bidding requirements, sample forms, and other Contract Documents.
- U. Project Record: The separate set of Drawings and Specifications as further set forth in *SECTION 00704.02A*
- V. Schedule of Values: A written breakdown allocating the total Contract Sum to each principle category of Work, in such detail as requested by Owner.
- W. Specifications: 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.
- X. Subcontract: A contract entered between the Contractor and a Subcontractor for the purpose of obtaining supplies, materials, equipment, or services of any kind for, or in connection with, the Work.
- Y. Subcontractor: Any person other than the Contractor who agrees to furnish or furnishes any supplies, materials, equipment, or services of any kind in connection with the Work.
- Z. Substantial Completion: 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 00706.07*.

DIVISION 0 – GENERAL CONDITIONS

- AA. Work: 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.

00701.02 ORDER OF PRECEDENCE

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

- A. Signed Public Works Contract, including any Change Orders and any Special Forms
- B. *SUPPLEMENTAL CONDITIONS*
- C. *GENERAL CONDITIONS*
- D. Specifications: Provisions in *DIVISION 1* shall take precedence over provision of any other division.
- E. Drawings: In case of conflict within the Drawings, large-scale drawings (24" x 36" shall take precedence over reduced scale drawings.
- F. Signed and Completed *Bid Form*
- G. Instructions to Bidder
- H. Notice to Contractor

00701.03 EXECUTION AND INTENT

Contractor makes the following representations to Owner:

- A. 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.
- B. 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, labor, materials, equipment, goods, supplies, 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.
- C. 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.
- D. Contractor is able to furnish the plants; tools, materials, supplies, equipment, and labor required to complete the Work and perform the obligations required by the Contract Documents and have sufficient experience and competence to do so.

PART 2 - 00702.00 INSURANCE AND BONDS

00702.01 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 section 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 bonds required to complete the base bid work and accepted alternates. Insurance carriers providing insurance in accordance with the Contract Documents shall be rated "B+" or better by A.M. Best and ratings shall be indicated on the insurance certificates.

- A. Contractor shall maintain the following insurance coverage during the Work and for 1 year after Final Acceptance. Contractor shall also maintain the following insurance coverage during the performance of any corrective Work required by *SECTION 00705.16*.
 - 1. General liability on the *ISO 1986 New Occurrence Form* or its equivalent, which will include:
 - a. Completed operations/products liability
 - b. Explosion, collapse, and underground
 - 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.

00702.02 COVERAGE LIMITS

- A. Required Insurance Coverages:
 - 1. For a contract less than \$100,000.00, the coverage required is:
 - a. Comprehensive General 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.

DIVISION 0 – GENERAL CONDITIONS

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 Limited	\$1,000,000.00
Personal and Advertising Injury Limit	\$1,000,000.00
Fire Damage Limit (any one fire)	\$50,000.00
Medical Expenses Limit (any one person)	\$5,000.00

- b. If the contract is for underground utility work 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	\$2,000,000.00
General Aggregate Limits (other than products – commercial operations)	\$4,000,000.00
Products – Commercial Operations Limited	\$4,000,000.00
Personal and Advertising Injury Limit	\$2,000,000.00
Fire Damage Limit (any one fire)	\$50,000.00
Medical Expenses 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.

DIVISION 0 – GENERAL CONDITIONS

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 Pollution 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.

- 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 1 year following the project’s “final completion” through official completion of the project, plus 1 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.

00702.03 INSURANCE COVERAGE CERTIFICATES

- A. Prior to the commencement of the Work, Contractor shall furnish acceptable proof of insurance on the State of Washington Certificate of Insurance Form SF500A, as well as copies of insurance policies.
- B. All insurance certificates shall name Owner's Project number and Project title.
- C. All insurance certificates shall specifically require 45 days prior notice to Owner of cancellation or any material change, except 30 days for surplus line insurance.

702.04.1 PAYMENT AND PERFORMANCE BONDS

- A. Contractor shall provide separate performance and payment bonds, each executed by the Contractor and the Contractor’s Surety.
- B. Option: Contract sums of \$150,000 or less, Owner will not require performance and payments bonds; if Contractor agrees Owner may, in lieu of the bond, retain 10 percent of the Contract Sum.

00702.05 ADDITIONAL BOND SECURITY

Contractor shall promptly furnish additional 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.

00702.06 BID BOND OR PROPOSAL GUARANTEE

- A. For bids of \$35,000 or less, no bid bond is required. Bids greater than \$35,000 shall be accompanied by a certified check, cashier's check, or bid bond payable to the Treasurer of the State of Washington in an amount equal to at least 5 percent of the bid as evidence of good faith and as a guarantee that, if awarded the Contract, the bidder will execute the Contract and give Performance Bond as required. All proposal guarantees may be held a maximum of 30 calendar days, and the 3 lowest bids may be held 45 calendar days from the date of the bid opening. At the end of the 30 calendar day period, all proposal guarantees, except those accompanying the 3 lowest bids, will be returned to the respective bidders. After the Contract and bonds have been executed, the remaining 3 proposal guarantees will be returned to their respective bidders.
- B. Only a cashier's check or certified check will be accepted in lieu of a bid bond. State statute requires deposit of negotiable receipts at the time of receipt. The bidder should be prepared to accept an additional 60 to 90 day delay in obtaining repayment from the State Treasurer.
- C. Fiscal procedures in preparing repayment are time consuming, and result in the requirement for additional time. Failure to comply with this section will cause bid to be considered nonresponsive.

00702.07 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 Final Completion. The insurance shall cover the interest of Owner, Contractor, and any Subcontractors, as their interests may appear.
- 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/Es' services and expenses required as a result of an insured loss.

DIVISION 0 – GENERAL CONDITIONS

- C. Owner and Contractor waive all subrogation rights against each other, any Subcontractors, A/E, A/Es' sub consultants, separate contractors described in *SECTION 00705.20*, 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.

PART 3 - 00703.00 TIME AND SCHEDULE

00703.01 PROGRESS AND COMPLETION

Contractor shall diligently prosecute the Work, with adequate forces, achieve Substantial Completion within the Contract Time, and achieve Final Completion within a reasonable period thereafter.

00703.02 CONSTRUCTION SCHEDULE

- A. The Contractor shall, at the Preconstruction Conference and prior to Notice to Proceed, submit a Construction Schedule showing the sequence in which the Contractor proposes to perform the work, including dates on which the contractor plans to start and finish major portions of the work, dates for submitting shop drawings and other submittals, and dates for acquisition of materials and equipment.
- B. The Construction Schedule shall be in the form of a bar chart, or a critical path method analysis, as specified by Owner. The preliminary Construction Schedule may be general, showing the major portions of the Work, with more specific Construction Schedules in subsequent months as directed by Owner.
- C. Owner shall return comments on the preliminary Construction Schedule to Contractor within 14 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 progress payments until a Construction Schedule has been submitted that meets the requirements of this section.
- D. Contractor shall utilize and comply with the Construction Schedule. On a monthly basis, or as otherwise directed by Owner, Contractor shall submit an updated Construction Schedule at its own expense to Owner indicating actual progress. If, in the opinion of the Owner, Contractor is not in conformance with the Construction Schedule for reasons other than acts of *force majeure* as identified in *SECTION 00703.05*, Contractor shall take such steps as are necessary to bring the actual completion dates of its work activities into conformance with the Construction Schedule, or revise the Construction Schedule to reconcile with the actual progress of the Work.

DIVISION 0 – GENERAL CONDITIONS

- E. Contractor shall promptly notify Owner in writing of any actual or anticipated event that 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 Construction 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.
- F. The Contractor shall notify the Owner or Owner at least 2 weeks in advance if work is to be performed on a Saturday, Sunday, and/or state holiday.
- G. No excavation work, as defined by *SECTION 00705.09*, will be allowed on Saturdays, Sundays and/or state holidays unless specifically authorized by the Owner.

00703.03 OWNER'S RIGHT TO SUSPEND THE WORK FOR CONVENIENCE

- A. Owner may, at its sole discretion, order the Contractor in writing to suspend all or any part of the Work for up to 90 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 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 of *SECTION 00709.00*.
- C. If a written notice suspending the Work is canceled or the period of the notice or any extension thereof expires, Contractor shall resume the 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 *SECTION 00707.00*.

00703.04 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 the 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.

00703.05 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 conditions that could not have been reasonably anticipated
 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 00707.03*. 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 00707.02* and *00707.03*.
- 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 00707.03*, 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.

00703.06 NOTICE TO OWNER OF LABOR DISPUTES

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.

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.

00703.07 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.
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 - 00704.00 SPECIFICATIONS, DRAWINGS, AND OTHER DOCUMENTS

00704.01 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.

DIVISION 0 – GENERAL CONDITIONS

- 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 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 in 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.

00704.02 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. 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.

00704.03 SHOP DRAWINGS

- A. "Shop Drawings" 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 elements; and the installation (i.e. form, fit, and attachment details) of materials and equipment. Shop drawings 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.

DIVISION 0 – GENERAL CONDITIONS

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 shop drawings 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 that are not required by the Contract Documents may be returned without action.

- C. Approval or other appropriate action with regard to shop drawings by Owner or A/E shall not relieve Contractor of responsibility for any errors or omissions in such shop drawings, 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 on the Project Record.
- E. Unless otherwise provided in *DIVISION 1*, Contractor shall submit to A/E for approval one electronic or paper copy of all shop drawings and submittals, unless otherwise indicated.

00704.04 ORGANIZATION OF SPECIFICATIONS

Specifications are prepared in sections that 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.

DIVISION 0 – GENERAL CONDITIONS

00704.05 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS, AND OTHER DOCUMENTS

- A. 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 Subcontractor on other projects or for additions to this Project outside the scope of the Work without the specific written consent of Owner. 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 nonexclusive 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.
- D. Contractor agrees to defend and indemnify Owner pursuant to the indemnity provisions in *SECTION 00705.22* 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.
- E. The shop drawings and other submittals prepared by Contractor, Subcontractors, 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 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 - 00705.00 PERFORMANCE

00705.01 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.

DIVISION 0 – GENERAL CONDITIONS

- 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.
- 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 that 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 keep on the Project site a copy of the Drawings, Specifications, addenda, reviewed shop drawings, and permits and permit drawings.
- F. Contractor shall ensure that its owner(s) and employees, and those of its Subcontractors, comply with the *Executive Conflict of Interest Act, RCW 42.18*, 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.

00705.02 PERMITS, FEES, AND NOTICES

- A. Unless otherwise provided in the Contract Documents, Contractor shall pay for and obtain all permits, licenses, and inspections necessary for proper execution and completion of the Work. Prior to Final Acceptance, the approved, signed permits shall be delivered to Owner.
- B. If allowances for permits or utility fees are called for in the Contract Documents and set forth in Contractor's bid, and the actual costs of those permits or fees differ from the allowances in the Contract Documents, the difference shall be adjusted by Change Order.
- C. Contractor shall comply with and give notices required by all federal, state, and local laws, ordinances, rules, regulations, and lawful orders of public authorities applicable to performance of the Work.
- D. The Contractor shall conform to all local, state, and national codes in all phases of this project. Where conflicts arise between the code requirements and Drawings or Specifications requirements, the code shall govern and prevail unless the Drawings or Specifications impose requirements or limitations that are more stringent than the code requirements, in which case the more stringent requirements or limitations shall govern and prevail...

00705.03 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.

00705.04 PREVAILING WAGES

- A. 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 (L&I). The schedule of prevailing wage rates for the locality or localities of the Work, as determined by the Industrial Statistician of L&I, is by reference made a part of the Contract Documents as though fully set forth herein.
1. Before commencing the Work, Contractor shall file a statement under oath with Owner and with the Director of L&I 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.
 2. Disputes regarding prevailing wage rates shall be referred for arbitration to the Director of L&I. 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*.
 3. Each Application for Payment submitted by Contractor shall state that prevailing wages have been paid in accordance with the prefiled 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 L&I where a complaint or inquiry concerning prevailing wages may be made.
 4. In compliance with *CHAPTER 296-127 WAC*, Contractor shall pay to L&I the currently established fee for each statement of intent and/or affidavit of wages paid submitted to L&I for certification.
 5. Per EHB 2805, public works contracts estimated to cost over \$1 million requires the Contractor and Subcontractor to submit information regarding any off-site, pre-fabricated, non-standard, project-specific items produced under each contract and produced outside Washington.
 6. Contractor and Subcontractor must have the following information on their Affidavit of Wages Paid form:
 - a. The estimated cost of the public works project;
 - b. The name of the awarding agency and the title of the public works project;

DIVISION 0 – GENERAL CONDITIONS

- c. The contract value of the off-site, pre-fabricated, non-standard, project specific items produced outside Washington; and
 - d. The name, address, and federal employer identification number of the contractor that produced the off-site, pre-fabricated, non-standard, project specific items.
- B. Projects identified as having federal financing, excluding FEMA shall comply with *Federal Davis Bacon Act* requirements.
- 1. All laborers, mechanics, and other workers employed by the Contractor or Subcontractors to work on construction projects financed by federal assistance must be paid wages not less than those established for the locality of the project by the U.S. Secretary of Labor (40 Stat 1494, Mar, 3, 1921, Chap, 411, 40 USC276A 276A S).
 - 2. When the project is subject to both state and federal wage rates, and when the rates differ for similar kinds of labor, the Contractor shall not pay less than the higher rate. The area in which the worker is physically employed shall determine which federal wage and fringe benefit rate shall be used to compare against the state wage and fringe benefit rate.
 - 3. Washington State's prevailing wage rate for this project can be found at the Department of Labor and Industries' (L&I) website: <https://fortress.wa.gov/lni/wagelookup/prvwagelookup.aspx>.
- C. Projects identified as having FEMA funding shall comply with Stafford Act Requirements. Robert T. Stafford Disaster Relief and Emergency Assistance Act, Public Law 93-288, as amended, 42 U.S.C. 5121 et seq., and Related Authorities.
- 1. All laborers and mechanics employed by contractors or subcontractors in the performance of construction work financed with the assistance of any contribution of Federal funds made by the Administrator under this subsection shall be paid wages at rates not less than those prevailing on similar construction in the locality as determined by the Secretary of Labor in accordance with sections 3141-3144, 3146, and 3147 of title 40, and every such employee shall receive compensation at a rate not less than one and 1/2 times the basic rate of pay of the employee for all hours worked in any workweek in excess of 8-hours in any workday or 40 hours in the workweek, as the case may be. The Administrator shall make no contribution of Federal funds without first obtaining adequate assurance that these labor standards will be maintained upon the construction work. The Secretary of Labor shall have, with respect to the labor standards specified in this subsection, the authority and functions set forth in Reorganization Plan Numbered 14 of 1950 (5 U.S.C. App.) and section 3145 of title 40.
 - 2. When the project is subject to both state and federal wage rates, and when the rates differ for similar kinds of labor, the Contractor shall not pay less than the higher rate. The area in which the worker is physically employed shall determine which federal wage and fringe benefit rate shall be used to compare against the state wage and fringe benefit rate.

00705.05 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 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 8 hours of each calendar day shall be not less than 1½ times the rate allowed for this same amount of time during 8 hours of 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 10 hours in a calendar day. No such agreement may provide that the employees work 10 hour days for more than 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 40 hours per week, worked pursuant to any such agreement.

00705.06 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 1967*, the *Americans with Disabilities Act of 1990*, the *Civil Rights Act of 1991*, *Presidential Executive order 11246*, *Presidential Executive Order 11375*, *Presidential Executive Order 13672*, 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, sexual orientation, 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 all qualified applicants will be considered for employment without regard to race, creed, color, national origin, sex, sexual orientation, age, marital status, or the presence of any physical, sensory, or mental disability.
 - 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*.

DIVISION 0 – GENERAL CONDITIONS

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.

00705.07 SAFETY PRECAUTIONS

- A. Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Work.
- 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 onsite or stored offsite; 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
 - c. The location and availability of written hazard communication programs, including the required list(s) of hazardous chemicals and Safety Data Sheets (SDS) required by *CHAPTER 296-62 WAC*.
 2. Training: At a minimum, Contractor shall provide training for persons working on the project site, which includes:
 - 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.

DIVISION 0 – GENERAL CONDITIONS

- 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.
 - d. The details of the hazard communication program developed by Contractor or its Subcontractors, including an explanation of the labeling system and the SDS, 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 that 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.

00705.08 OPERATIONS, MATERIAL HANDLING, EASEMENTS AND STORAGE AREAS

- A. Contractor shall confine all operations, including storage of materials, to Owner-approved areas. The Owner has acquired ownership and/or easement of lands for the construction as indicated on the Drawings without cost to the Contractor. It is understood and agreed by the Contractor that if it should 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, its officers, and employees which the Contractor may sustain by reason of delay in the Work.
- 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 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.

00705.09 PRIOR NOTICE OF EXCAVATION

"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 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 and utilities through locator services.

00705.10 UNFORSEEN 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 before conditions are disturbed and in no event later than 7 days after the first observance of the conditions.
- 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 thereof as provided in *SECTION 00707.00 - CHANGES*.

00705.11 PROTECTION OF EXISTING STRUCTURES, EQUIPMENT, STOCK, 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. Damage to facility production resulting in death or sickness of stock shall result in claims against the Contractor for loss of production or costs incurred by any extraordinary measures required to save production.

00705.12 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.

DIVISION 0 – GENERAL CONDITIONS

- 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 reasonable 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 state of completion, may be rejected by Owner.

00705.13 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. It shall be the responsibility of the Contractor to furnish proof of equality in all respects to specified items when proposing alternate brands or items. Any significant deviations from Specifications, Drawings, or equality must be noted by the Contractor when submitting alternate materials for approval. The Owner 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, at their own expense, make any secondary changes required to incorporate an approved substitute or alternate into the project. No offers for substitution will be acknowledged from suppliers, distributors, manufacturers, or Subcontractors.
- C. 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.
- D. 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.

00705.14 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.

DIVISION 0 – GENERAL CONDITIONS

- 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 Final Completion, Contractor shall remove all temporary connections, distribution lines, meters, and associated equipment and materials.

00705.15 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 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
 - 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. In addition to any inspections required by local authorities or permitting agencies, the State will appoint its own inspector for the project. Construction inspectors employed by the State shall assist the Owner in making all necessary inspections and measurements and shall enforce a strict compliance with the terms of the Contract and the orders of the Owner. The Inspector will have the authority to reject materials or workmanship which do not fulfill the requirements of these Specifications. In case of dispute, the Contractor may appeal to the Owner 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 remedied by the Contractor, without additional cost to the Owner.

DIVISION 0 – GENERAL CONDITIONS

- D. 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.
- E. 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.

00705.16 CORRECTION OF NONCONFORMING WORK

- A. If a portion of the Work is covered contrary to the requirements of 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 any time prior to Final Completion Owner desires to examine the Work or any portion of it that 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 *SECTION 00707.00 - CHANGES*. 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.
- D. If, within 1 year after the date of Substantial Completion of the Work, or designated portion thereof, or within 1 year after the date for commencement of any system warranties established under *SECTION 00706.08*, 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 1 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 1 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 that are not in accordance with the requirements of the Contract Documents and are neither corrected by Contractor nor accepted by Owner.

DIVISION 0 – GENERAL CONDITIONS

- 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 that Contractor might have according to the Contract Documents. Establishment of the time period of 1 year, as described in *SECTION 00705.16D*, 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 that 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.

00705.17 CLEANUP

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.

00705.18 ACCESS TO WORK

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

00705.19 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 Owner's employees and shall carefully adapt scheduling and perform the Work in accordance with Contract Documents to reasonably accommodate the other work.

00705.20 SUBCONTRACTORS AND SUPPLIERS

- A. Before submitting its first Application for Payment, Contractor shall furnish in writing to Owner the names, addresses, and telephone numbers of all Subcontractors, as well as suppliers providing materials in excess of \$2,500. 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.

DIVISION 0 – GENERAL CONDITIONS

- B. 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.
- C. 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.
- D. 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 00709.01* 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 that 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.

00705.21 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.
 - 4. Be responsible to enforce any subcontractor's, manufacturers', 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.

00705.22 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
 - 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*.

00705.23 REQUIRED PAYROLL DOCUMENTS

- A. The Contractor shall submit to the Owner the following for itself and for each subcontractor and each agent to a Subcontractor that performed work on the Contract:
 - 1. *A Statement of Intent to Pay Prevailing Wages.* The Contracting Agency will make no payment under this Contract for the work performed until this statement has been completed and submitted.
 - 2. *An Affidavit of Wages Paid with the Final Contract Voucher Certification.* The Contracting Agency will not release to the Contractor any funds retained under *RCW 60.28.010* until all of the *Affidavit of Wages Paid* forms have been completed and submitted.

- B. In addition, the Prime Contractor shall submit a Request for Release to the Washington State Labor and Industries (L&I), (L&I provides the form).

- C. Certified payrolls are required to be submitted by the Contractor to the Owner for the Contractor and all Subcontractors or agents on all federally funded projects, and when requested in writing by the Owner, on projects funded with only Contracting Agency funds. If these payrolls are not supplied within 10 calendar days of the end of the proceeding weekly payroll period for federally funded projects, or within 10 calendar days from the date of the written request on projects with only Contracting Agency funds, any or all payments may be withheld until compliance is achieved. Also, failure to provide these payrolls could result in other sanctions as provided by state laws (*RCW 39.12.050*) and/or federal regulations (*29 CFR 5.12*). All certified payrolls shall be complete and explicit.

DIVISION 0 – GENERAL CONDITIONS

Employee work classification codes used on certified payrolls shall coincide exactly with the occupation codes listed on the minimum wage schedule, unless the Owner specifically approves an alternate method to identify the occupation coding used by the Contractor to compare with the codes listed. When an apprentice is shown on the certified payroll at a rate less than the minimum prevailing journey wage rate, the apprenticeship registration number for that employee from the State Apprenticeship and Training Council shall be shown, along with the correct employee classification code.

00705.24 STATEMENT OF APPRENTICE/JOURNEYMAN PARTICIPATION

In accordance with *RCW 39.04.320*, the State of Washington requires a mandatory 15 percent apprenticeship (labor hours) participation for projects estimated to cost \$1,000,000 or more. 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*).

- A. For each project that has apprentice requirements, the contractor shall submit a **“Statement of Apprentice/Journeyman Participation (See SECTION 00670)”** on forms provided by the Washington Department of Fish and Wildlife, 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 submitted data 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. Name and registration number of each apprentice;
 7. Total number of apprentices and labor hours worked by them, categorized by trade or craft;
 8. Total number of journeymen and labor hours worked by them, categorized by trade or craft;
 9. Cumulative combined total of apprentice and journeymen labor hours; and
 10. Total percentage of apprentice hours worked.
- B. 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.

DIVISION 0 – GENERAL CONDITIONS

- C. Any substantive violation of the mandatory requirements of this part of the contract may be a material breach of the contract by the Contractor.

00705.25 FEDERALLY FUNDED CONTRACT CONDITIONS

A. Equal Employment Opportunity :

1. The Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, national origin, sex, sexual orientation, religion, marital status, age, Vietnam era and disabled veteran's status, or other presence of any sensory, mental, or physical handicap. The Contractor will take affirmative action to ensure that applications are employed and that employees are treated during employment without regard to their race, creed, color, national origin, sex, sexual orientation, religion, marital status, age, Vietnam era and disabled veteran's status or the presence of any sensory, mental, or physical handicap.

Such action shall include, but not be limited to the following: Employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.

2. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, national origin, sex, sexual orientation, religion, marital status, age, Vietnam era and disabled veteran's status, or the presence of any sensory, mental, or physical handicap.
3. The Contractor will send to each labor union, or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided by the agency contracting officer advising the labor union or workers' representative of the Contractor's commitments under *Section 202 of Executive Order No. 11246 of September 24, 1965*, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
4. The Contractor will comply with all provisions of *Executive Order No. 11246 of September 24, 1965*, and the rules, regulations, and relevant orders of the Secretary of Labor.
5. The Contractor will furnish all information and reports required by *Executive Order No. 11246 of September 24, 1965*, and by the rules, regulations, and orders of the Secretary of Labor or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

DIVISION 0 – GENERAL CONDITIONS

6. In the event of the Contractor's noncompliance with the nondiscrimination clauses of this Contract or with any of the said rules, regulations, or orders, this Contract may be canceled, terminated, or suspended in whole or in part, and the Contractor may be declared ineligible for further government contracts in accordance with procedures authorized in *Executive Order No. 11246 of September 24, 1965*, and such other sanctions may be imposed and remedies invoked as provided in the said Executive Order, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
 7. The Contractor will include the provisions of *Paragraphs "1" through "7"* in every Subcontract or Purchase Order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to *Section 204 of Executive Order No. 11246 of September 24, 1965*, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions, including the sanctions for noncompliance, provided however that in the event the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.
- B. *Civil Rights Act of 1964 (P.L. 88-352, 78 STAT. 241)*:
1. *Section 601 (In General)*: No person in the United States shall, on the grounds of race, color, national origin, sex, religion, marital status, age, Vietnam era and disabled veteran status, or the presence of any sensory, mental, or physical handicap be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.
 2. *Section 602 (Effecting Compliance)*: Each federal department and agency which is empowered to extend federal financial assistance to any program or activity by way of grant, loan, or contract other than a contract of insurance or guaranty, is authorized and directed to effectuate the provisions of *Section 601* with respect to such program or activity by issuing rules, regulations, or orders of general applicability which shall be consistent with achievement of the objectives the statute authorizing the financial assistance in connection with which the action is taken. No such rule, regulation, or order shall become effective unless and until approved by the President. Compliance with any requirement adopted pursuant to this section may be effected by:
 - a.) The termination of or refusal to grant or to continue assistance under such programs or activity to any recipient as to whom there has been an express finding on the record, after opportunity for hearing, of a failure to comply with such requirement, but such termination or refusal shall be limited to the particular political entity, or part thereof, or other recipient as to whom such a finding has been made, and shall be limited in its effect to the particular program, or part thereof, in which such noncompliance has been so found, and;

DIVISION 0 – GENERAL CONDITIONS

- b.) By any other means authorized by law, provided, however, that no such action shall be taken until the department or agency concerned has advised the appropriate person or persons of the failure to comply with a requirement imposed pursuant to this section, the head of the federal department or agency shall file with the committees of the House and Senate having legislative jurisdiction over the program or activity involved a full written report of the circumstances and the grounds for such action. No such action shall become effective until 30 days have elapsed after the filing of such report.
3. **Section 603 (Judicial Review):** Any department or agency action taken pursuant to Section 602 shall be subject to such judicial review as may otherwise be provided by law for similar action taken by such department or agency on other grounds. In the case of action not otherwise subject to judicial review, terminating or refusing to grant or to continue financial assistance upon finding or failure to comply with any requirement imposed pursuant to Section 602, any assistance upon a finding or failure to comply with any requirement imposed pursuant to Section 602, any person aggrieved (including any State or political subdivision thereof or any agency of either) may obtain judicial review of such action in accordance with Section 10 of the Administrative Procedure Act, and such action shall not be deemed committed to unreviewable agency discretion within the meaning of that section.
4. **Section 604 (Restriction on Action):** Nothing contained in this title shall be construed to authorized action under this title by any department or agency with respect to any employment practice of any employer, employment agency, or labor organization except where a primary objective of the federal financial assistance is to provide employment.
5. **Section 605 (Existing Authority Not Impaired):** Nothing in this title shall add to or detract from any existing authority with respect to any program or activity under which federal financial assistance is extended by way of a contract of insurance or guaranty.
- C. Contracts in excess of \$10,000 shall comply with *Executive Order No. 11246*, entitled *Equal Employment Opportunity*, as amended by *Executive Order No. 11375*, *Executive Order No., 13672* and as supplemented in *Department of Labor Regulations (41 CFR, Part 60)*.
- D. This Contract shall comply with the *Copeland Anti-Kick Back Act (18 U.S.C. 874)* as supplemented in *Department of Labor Regulations (29 CFR, Part 3)*. The Contractor shall not induce by any means any person employed in the construction, completion, or repair of public work to give up any part of the compensation to which he is otherwise entitled.
- E. Contracts in excess of \$2,000 shall comply with the *Davis-Bacon Act (40 U.S.C. 276a to a-7)* and as supplemented by *Department of Labor Regulations (29 CFR, Part 5)*. Contractors shall pay wages to laborers and mechanics at a rate not less than the minimum wages specified in a wage determination made by the Secretary of Labor, and shall pay wages not less often than once a week.

DIVISION 0 – GENERAL CONDITIONS

- F. Contracts in excess of \$2,000 which involve the employment of mechanics or laborers shall comply with *Section 103 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 327-330)* as supplemented by *Department of Labor Regulations (29 CFR, Part 5)*. Each Contractor shall compute the wages of every mechanic and laborer on the basis of a standard workday of eight hours, and a standard workweek of 40 hours. Work in excess of the standard workday or workweek is permissible, provided that the worker is compensated at a rate of not less than 1½ times the basic rate of pay for all hours worked in excess of eight hours in any calendar day of 40 hours in the workweek. No laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety as determined under construction, safety, and health standards promulgated by the Secretary of Labor.
- G. Contracts in excess of \$100,000 require the recipient to agree to comply with applicable standards, orders, or regulations pursuant to the Clean Air Act of 1970 (42 U.S.C. 1857 et seq.) and the Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.), amended.
- H. Contractor shall submit Certified Payrolls as described in *Section 00705.23*.

PART 6 - 00706.00 PAYMENTS AND COMPLETION

00706.01 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.

00706.02 SCHEDULE OF VALUES

Prior to Notice to Proceed, 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, operation and maintenance 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.

00706.03 APPLICATION FOR PAYMENT

- 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 00701.03* are true and correct, to the best of Contractor's knowledge, as of the date of the Application for Payment.

DIVISION 0 – GENERAL CONDITIONS

- C. At the time the Contractor submits an Application for Payment, Contractor shall analyze and reconcile, to the satisfaction of Owner, the actual progress of the Work with the Construction 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 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. The Contractor and its surety assume total responsibility for the stored materials.
 - 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.

00706.04 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 percent of the amount of each progress payment until 30 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. For Base Bids of \$150,000 or less, Owner may at Contractor Request, retain 10% of the amount of each progress payment, in lieu of payment and performance bonds.

DIVISION 0 – GENERAL CONDITIONS

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

00706.05 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 00705.16*
 - 4. Failure to perform in accordance with the Contract Documents
 - 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*.

00706.06 RETAINAGE AND BOND CLAIM RIGHTS

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.

00706.07 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 have been 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.

0706.08 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 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 or damage to the Work resulting from its prior occupancy. Contractor's 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.

00706.09 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 *SECTION 00708.00*.

PART 7 - 00707.00 CHANGES

00707.01 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 00707.02* or *00707.03*, respectively, and such adjustment(s) shall be incorporated into a Change Order.

DIVISION 0 – GENERAL CONDITIONS

- B. If Owner desires to order a change in the Work, it may request a written Change Order proposal from Contractor. Contractor shall submit a Change Order proposal within 14 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 00707.02 and 00707.03*, 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.
- 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 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 *SECTION 00708.00*.

00707.02 CHANGE 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 that 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 00703.05*.

DIVISION 0 – GENERAL CONDITIONS

- a. A request for an equitable adjustment in the Contract Sum shall be based on written notice delivered to Owner within 7 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 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, 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 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 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 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 00707.03C*. 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.

DIVISION 0 – GENERAL CONDITIONS

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 *SECTION 00707.02B*.
 - b. By application of unit prices to the quantities of the items involved as determined *SECTION 00707.02C*.
 - c. On the basis of time and material as determined in *SECTION 00707.02D*.
 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 of 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 of 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, materials, 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 on 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

DIVISION 0 – GENERAL CONDITIONS

- b. Lump sum material
 - c. Lump sum equipment usage
 - d. Overhead and profit as set forth below
 - e. Insurance and bond costs as set forth below
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 L&I approved Statement of Intent to Pay Prevailing Wages. Direct supervision shall be a reasonable percentage not to exceed 15 percent of the cost of direct labor. No supervision markup shall be allowed if a working supervisor's hours are included in the breakdown.
 - 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 L&I.
 - a. Federal Insurance: Direct contributions required by the *Federal Insurance Compensation Act*, *Federal Unemployment Tax Act*, and the *State Unemployment Compensation Act*.
 - 4) Safety: Costs incurred due to the *Washington Industrial Safety and Health Act*, which shall be a reasonable percentage not to exceed 2 percent of the sum of the amounts calculated in SUBPARAGRAPHS (1), (2), and (3) above.
 - 5) 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.
 - 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 from actual known costs, supplier quotations or standard industry pricing guides. Material costs shall consider all available discounts. Freight costs, express charges, or special delivery charges shall be itemized.

DIVISION 0 – GENERAL CONDITIONS

- 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 developed from the current edition of one of the following sources:
- 1) *Associated General Contractors - Washington State Department of Transportation Equipment Rental Agreement; latest edition.*
 - 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.*
 - 5) *Equipment Watch Rental Rate (Blue Book) for Construction Equipment* 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 50 percent of the applicable rate.
- d. Allowance for Small Tools, Expendables, and Consumable Supplies: Small tools consist of tools that cost \$250 or less and are normally furnished by the performing Contractor. The maximum rate for small tools shall not exceed the following:
- 1) For Contractor, 3 percent of direct labor costs.
 - 2) For Subcontractors, 5 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.

DIVISION 0 – GENERAL CONDITIONS

- f. Allowance for Overhead and Profit: 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 Order, or any request for additional Work or extra payment of any kind on the Project. This allowance shall compensate Contractor for all non-craft labor, temporary construction facilities, field engineering, schedule updating, as-built drawings, home office cost, Business and Occupation 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 following:
- 1) For Contractor, for any Work actually performed by Contractor's own forces, 22 percent of the first \$50,000 of the cost and 10 percent of the remaining cost, if any.
 - 2) For each Subcontractor (including lower tier subcontractors), for any Work actually performed by its own forces, 22 percent of the first \$50,000 of the cost and 10 percent of the remaining cost, if any.
 - 3) For Contractor, for any Work performed by its Subcontractor(s), 8 percent of the first \$50,000 of the amount due each Subcontractor and 6 percent of the remaining amount, if any.
 - 4) For each Subcontractor, for any Work performed by its Subcontractor(s) of any lower tier, 8 percent of the first \$50,000 of the amount due the sub-Subcontractor and 6 percent of the remaining amount, if any.
 - 5) The cost to which overhead and profit is to be applied shall be determined in accordance with *SUBPARAGRAPHS a-e* above.
- g. 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(s): 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 profit are calculated in accordance with *SUBPARAGRAPH "f"* 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

DIVISION 0 – GENERAL CONDITIONS

- b. Type of reimbursement including pre-agreed rates for material quantities
 - 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.
 - c. Not exceed any cost limit(s) without Owner's prior written approval.
3. Contractor shall submit costs in accordance with *SECTION 00707.02B* 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.
 - 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
 - c. Cost limit of reimbursement
2. Contractor shall:
- 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 timesheets all labor performed in accordance with this authorization. Submit copies of daily timesheets 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.
 - e. Not exceed any cost limit(s) without Owner's prior written approval.

DIVISION 0 – GENERAL CONDITIONS

3. Contractor shall submit costs in accordance with *SECTION 00707.02B* and additional verification supported by:
 - a. Labor detailed on daily timesheets
 - b. Invoices for material

00707.03 CHANGE 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 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 records and, if requested, shall promptly furnish copies of such records to Owner.
 2. Contractor shall not be entitled to an adjustment in the Contract Time for any events that occurred more than 7 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 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 *SECTION 00707.03B.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.

DIVISION 0 – GENERAL CONDITIONS

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 Construction 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 re-sequencing 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 section, *00707.03D*, 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 00707.02*.
 3. Contractor shall follow the procedure set forth in *SECTION 00707.03B*.
 4. Contractor shall establish the extent of the change in Contract Time in accordance with *SECTION 00707.03C*.
 5. The daily cost of any change in Contract Time shall be limited to:
 - 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 percent of Contract Sum divided by the Contract Time for each day of the delay.

PART 8 - 00708.00 CLAIMS AND DISPUTE RESOLUTION

00708.01 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 00707.01*, or on the resolution of any request for an equitable adjustment in the Contract Sum as provided in *SECTION 00707.02* or the Contract Time as provided in *SECTION 00707.03*, 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 days from Owner's final offer in accordance with *SECTION 00707.01E*, 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 that 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 Contractor's analysis of its Construction 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 00707.02*.
 - 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.

DIVISION 0 – GENERAL CONDITIONS

- D. After Contractor has submitted a fully documented Claim that complies with all applicable provisions of *SECTIONS 00707.00* and *00708.00*, Owner shall respond, in writing, to Contractor as follows:
1. If the Claim amount is less than \$50,000, with a decision within 60 days from the date the Claim is received; or
 2. If the Claim amount is \$50,000 or more, with a decision within 60 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 00708.02*.
- 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.

00708.02 ARBITRATION

- A. If Contractor disagrees with Owner's decision rendered in accordance with *SECTION 00708.01D*, Contractor shall provide Owner with a written demand for arbitration. No demand for arbitration of any such Claim shall be made later than 30 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.

DIVISION 0 – GENERAL CONDITIONS

- 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.

00708.03 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's 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. Canceled checks (payroll and vendors)
 - 14. Job cost report, including monthly totals
 - 15. Job payroll ledger

DIVISION 0 – GENERAL CONDITIONS

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 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. Worksheets 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, all documents which establish the time periods, individuals involved, hours for the individuals, and rates for individuals.
 24. Worksheets, 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 - 00709.00 TERMINATION OF THE WORK

00709.01 TERMINATION BY OWNER FOR CAUSE

- A. Owner may, upon 7 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.

DIVISION 0 – GENERAL CONDITIONS

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.
 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 00705.21*.
 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 *SECTION 00709.02B* 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.
- G. If Owner terminates Contractor for cause and it is later determined that none of the circumstances set forth in *SECTION 00709.01A* exist, then such termination shall be deemed a termination for convenience pursuant to *SECTION 00709.02*.

00709.02 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.

DIVISION 0 – GENERAL CONDITIONS

- 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 rights, 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.
 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 and 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 *SECTION 00707.00*.
- D. If Owner terminates the Work or any portion thereof for convenience, the Contract Time shall be adjusted as determined by Owner.

PART 10 - 00710.00 MISCELLANEOUS PROVISIONS

00710.01 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 Thurston County unless otherwise specified by the Owner.

00710.02 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.

00710.03 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 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 are required to complete the installation.

00710.04 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.

00710.05 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*.

00710.06 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 days, intermediate Saturdays, Sundays, and legal holidays are excluded from the computation.

0710.07 RECORDS RETENTION

The wage, payroll, and cost records of Contractor and its Subcontractors, and all records subject to audit in accordance with *SECTION 00708.03*, shall be retained for a period of not less than 6 years after the date of Final Acceptance.

00710.08 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.

00710.09 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 that result from antitrust violations commencing after the Contract Sum is established and that 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.

00710.10 IDENTIFICATION OF SUBCONTRACTORS FOR PROJECTS GREATER THAN \$1,000,000

When an Owner's Estimate is in excess of \$1,000,000 for Public Works described in these documents, the bidder must as part of the bid, submit the names of the subcontractors with whom the bidder, if awarded the contract, will subcontract for performance of the work of the following:

- A. Heating, Ventilation, and Air Conditioning (HVAC);
- B. Plumbing, per RCW Chapter 18.106; and
- C. Electrical, per RCW Chapter 19.28 or to name itself for the work.

The Prime Contractor shall not list more than one subcontractor, or self, for each category of work identified.

Failure of the Prime Contractor to submit, as part of the bid names of such sub-contractors or itself to perform such work, or naming two (2) or more subcontractors to perform such work shall render the Contract bidder's bid as non-responsive and therefore void, in accordance with RCW 39.30.060.

END OF SECTION 00700

**SECTION 00800
TABLE OF CONTENTS**

00800 SUPPLEMENTAL CONDITIONS

In accordance with the *GENERAL CONDITIONS*, *SUPPLEMENTAL CONDITIONS* take precedence over *GENERAL CONDITIONS*.

00802.07	Builders Risk Insurance
00810.13	Abbreviations of Administrative Organizations

00802.07 BUILDERS RISK INSURANCE

This section supersedes Section 00702.07.
Builders Risk Insurance is not required.

00810.13 ABBREVIATIONS OF ADMINISTRATIVE ORGANIZATIONS

This section supplements SECTION 00710.03 of the GENERAL CONDITIONS.

TABLE 00810.13	
ABBREVIATIONS OF ADMINISTRATIVE ORGANIZATIONS	
<i>AASHTO</i>	<i>American Association of State Highway and Transportation Officials</i>
<i>ACI</i>	<i>American Concrete Institute</i>
<i>AF&PA</i>	<i>American Forest & Paper Association</i>
<i>AIA</i>	<i>American Institute of Architects</i>
<i>AISC</i>	<i>American Institute of Steel Construction</i>
<i>AISI</i>	<i>American Iron and Steel Institute</i>
<i>AITC</i>	<i>American Institute of Timber Construction</i>
<i>ANSI</i>	<i>American National Standards Institute</i>
<i>APA</i>	<i>APA – The Engineered Wood Association</i>
<i>APWA</i>	<i>American Public Works Association</i>
<i>AREMA</i>	<i>American Railway Engineering and Maintenance-of-Way Association</i>
<i>ASCE</i>	<i>American Society of Civil Engineers</i>
<i>ASME</i>	<i>American Society of Mechanical Engineers</i>
<i>ASTM</i>	<i>ASTM International (formerly American Society of Testing and Materials)</i>
<i>AWPA</i>	<i>American Wood Protection Association</i>
<i>AWPI</i>	<i>American Wood Preservers Institute</i>
<i>AWS</i>	<i>American Welding Society</i>
<i>AWWA</i>	<i>American Water Works Association</i>
<i>CSI</i>	<i>Construction Specifications Institute</i>
<i>NEC</i>	<i>National Electrical Code</i>
<i>IAPMO</i>	<i>International Association of Plumbing and Mechanical Officials</i>
<i>IBC</i>	<i>International Building Code</i>
<i>IEEE</i>	<i>Institute of Electrical and Electronics Engineers</i>
<i>NEMA</i>	<i>National Electrical Manufacturers Association</i>
<i>NFPA</i>	<i>National Fire Protection Association</i>
<i>OSHA</i>	<i>Occupational Safety and Health Administration</i>
<i>RCW</i>	<i>Revised Code of Washington</i>
<i>SAE</i>	<i>SAE International (formerly Society of Automotive Engineers)</i>
<i>SSPC</i>	<i>Society of Protective Coatings (formerly Steel Structures Painting Council)</i>
<i>TAA</i>	<i>The Aluminum Association</i>
<i>UL</i>	<i>Underwriters Laboratories, Inc.</i>
<i>UMC</i>	<i>Uniform Mechanical Code (developed by the IAPMO)</i>
<i>UPC</i>	<i>Uniform Plumbing Code (developed by the IAPMO)</i>
<i>WAC</i>	<i>Washington Administrative Code</i>
<i>WISHA</i>	<i>Washington Industrial Safety and Health Administration</i>
<i>WSDOT</i>	<i>Washington State Department of Transportation</i>
<i>WWPA</i>	<i>Western Wood Products Association</i>

Reference herein to specifications issued by the above named or other organization shall mean the latest edition of said specifications, unless otherwise noted.

**SECTION 01000
GENERAL REQUIREMENTS**

01010 SUMMARY OF WORK

The project encompasses work that will be performed at the WDFW Marine Mammal Lab located at 7801 Phillips Road SW, Lakewood, WA 98498-6345. Work items, as shown on the Drawings and described in the Specifications, include the following:

Bid Item No. 1: Install sanitary sewer line, cleanouts, owner provided sand/sediment interceptor, and shallow manhole behind the wet lab. Cap and seal existing sewer line at Unoccupied Office No. 2 and install polymer concrete manhole at force main gravity stub.

- A. Provide, install, and maintain erosion control BMPs during periods of construction.
- B. General contractor or subcontractor performing the sanitary sewer work must be listed on the Pierce County Planning and Public Works current Registered Sewer Contractor List.
- C. Install owner provided Wade sand/sediment interceptor (Model 5800-12-18-27) behind the lab.
- D. Prepare, verify elevations, excavate and install new six inch PVC SDR35 sanitary sewer line with all necessary materials, equipment, miscellaneous items, clean out connections, and shallow concrete manhole. The existing six inch sewer clean out located south of the Unoccupied Office No. 2 will be removed and replaced with a shallow concrete manhole. Install manhole per Pierce County Standard Detail. Connect the shallow concrete manhole to the new six inch line from the Lab and the existing six inch PVC gravity sewer line from the Wildlife Area Office No. 1 and six inch line to concrete sewer pump vault station.
- E. Field locate and verify end of existing six inch gravity stub. Prepare, excavate and install new polymer concrete manhole at the force main gravity stub with all necessary materials, equipment, miscellaneous items, and clean out connections. Install manhole per Pierce County Standard Detail.
- F. Cap and seal existing six inch sewer line at Unoccupied Office No. 2.
- G. Re-establish grass in disturbed areas.
- H. Replace concrete walkway removed when installing the new six inch sewer line. Match existing walkway concrete thickness.

Bid Item No. 2: Chlorine treatment and disinfection of the area and components and decommission existing septic system behind the wet lab in compliance with Tacoma-Pierce County Health Department requirements.

- A. Pump out the existing barrels and potential concrete vault, crush in place, move out of the direct path of the new six inch sewer line, backfill, compact, rake flat, and seed disturbed areas. Septage, if present in the barrels or concrete vault, must be removed prior to crushing in place by a Tacoma Pierce County Health Department approved O&M Firm.
- B. Disinfect the area and components with a chlorine treatment as permitted by the Tacoma Pierce County Health Department.

DIVISION 1 – GENERAL REQUIREMENTS

Bid Item No. 3: Install owner provided equipment to include solids interceptor, necropsy table, grossing table, and utility sink. Install plumbing and exhaust venting in the wet lab.

- A. Install plumbing to owner provided equipment and connect equipment drain lines to existing sewer drain in the wet lab. Owner provided equipment includes necropsy table, grossing table, utility sink, and solids interceptor.
- B. Install wall vent exhaust connects for the necropsy table and grossing table. Install roof venting for two inch schedule 40 sanitary sewer vent pipe including rubber boot and flashing.

Bid Item No. 4: Decommission existing 1000 gallon septic tank at public South Puget Sound WLA restroom in compliance with Tacoma-Pierce County Health Department requirements.

The above description is for reference. The work to be completed is as described in the entirety of the Contract Documents. This list does not relieve the contractor of the responsibility for reading, understanding, and performing the entirety of work described in the Contract Documents.

01011 OWNER FURNISHED ITEMS

- A. Wade Solids Interceptor (Model 5794-174).
- B. Wade Sand/Sediment Interceptor (Model 5800-12-18-27).
- C. Necropsy Table (Mopec OL200).
- D. Grossing Table (Mopec HL048).
- E. Utility Sink (24" W x 24" L x 34" H).

01012 CONTRACT TIME

The bidder agrees to achieve Substantial Completion within 60 calendar days after date of Notice to Proceed and achieve Final Completion within 15 calendar days of Substantial Completion.

01025 UNIT PRICE BASE BID MEASUREMENT AND PAYMENT

Not Used.

01030 SCHEDULE OF VALUES

Upon contract award, the Owner will provide an electronic copy of the Schedule of Values shown in Section 00650. Prior to the preconstruction meeting, complete and submit this form to the Owner for approval.

- A. Show in detail all items performed on this Project. For each major line item, list sub-values of material and installation.
- B. Include a line item identified as "Submittal of Signed Permits, Project Record, and Operation and Maintenance Manuals" with an assigned value of \$1,000. This amount will be withheld from the final payment until Project Engineer has received and approved the above-mentioned document(s).
- C. The sum of all values listed in the Schedule shall equal the total Base Bid.

DIVISION 1 – GENERAL REQUIREMENTS

01040 COORDINATION

- A. The Contractor shall, before preparing the construction schedule, consult with the Owner to determine any particular scheduling or operational coordination conditions that will arise during the course of construction and coordinate work accordingly to minimize disruption to Owner or to progress of the work.
- B. The Contractor shall coordinate all materials, supplies, subcontract work, and its own work to ensure conflict-free and uniform flow of construction activities to completion within time set forth in Paragraph 01012.

01060 REGULATORY REQUIREMENTS

- A. Washington Department of Fish and Wildlife has obtained the following conditional approval for the listed permits:
 - Pierce County Sewer Line Extension Permit #963258 (Conceptually Approved)
 - Pierce County Sewer Service Commercial Permit #963226 (Conceptually Approved)
 - Pierce County Sewer Service Commercial Permit #963228 (Conceptually Approved)
 - Pierce Sewer Development Permit #963277 (Conceptually Approved)
 - City of Lakewood Plumbing Permit #BP-21-00652 (Conceptually Approved)
 1. The conditionally approved permits with provisions affecting the construction methods or schedule of this project have been incorporated in Attachment 1 at the end of this division. When the contractor or subcontractor is selected, their business name and organization details will be sent to the Pierce County Sewer Division Representative. Permits will be prepared for the registered side sewer contractor and will be available to be picked up by the contractor at the Pierce County Development Center (Annex). The Contractor shall abide by all restrictions noted in these permits as the construction is in progress.
 2. All other permits or fees required by local, state, or federal governmental agencies necessary for the accomplishment of this project shall be obtained and paid for by the Contractor, except that any utility company costs for new permanent service shall be paid directly to the utility company by the State.
 3. All costs associated with obtaining the permits, including labor, materials, and equipment shall be included in the Base Bid, except for permit fees.
 4. The Contractor shall pay all permit fees. The Contractor shall not include any permit fees in the Base Bid. The State shall reimburse the Contractor by Change Order for the actual fees charged by city, state, or county authorities with no Contractor markup. The Contractor shall provide to the State documentation regarding costs for fees paid.
- B. The Contractor shall notify city, county, and state authorities of any inspections and/or approvals required.
- C. Contractor shall follow the Cultural Resource plan including Inadvertent Discovery Plan shown in Attachment 2. An on-call Archaeological Monitor, hired by WDFW, will be present during all onsite digging operations. Contractor must advise WDFW Engineer of groundwork schedule a minimum of 14 days before digging will take place so coordination can be made to ensure Archaeological Monitor is present on site. Digging will not occur unless Archaeological Monitor is on site.

01100 SPECIAL PROJECT PROCEDURES

- A. All WDFW Public Works contracts will adhere with the Governor's guidance for COVID-19 protocol on construction projects.

Additionally, the Contractor must be in compliance all COVID-19 protocol set forth by Washington L&I (<https://lni.wa.gov/safety-health/safety-topics/topics/coronavirus>). The Contractor must also be aware of the specific county COVID-19 procedures and ensure compliance is met with county requirements. The Department of Fish and Wildlife requires masks are worn by everyone on the job site, at all times, working around others.

No newly authorized projects are permitted to break social distancing standards. A written job site safety plan will be submitted, which must be approved by WDFW prior to construction and posted on the job sites during construction.

The written job site safety plan is a comprehensive COVID-19 exposure control, mitigation, and recovery plan. If the 6-foot rule cannot be followed at all times, a hazard assessment and control plan will also need to be submitted.

- B. To reduce wildfire risk, the following conditions apply on the project site, when Industrial Fire Precaution Levels (IFPL) are activated. If any conditions are lifted, it shall be done in writing by the Owner. If any additional conditions are required it shall be done in writing by the Owner.
1. No smoking except in an enclosed vehicle, per WAC 232-13-07000A.
 2. No fires or campfires, per WAC 232-1307000A.
 3. No open flame, welding, metal cutting, chainsaw operation, or any activity that may cause a spark or hot metal, per WAC 232-13-05000A.
 4. No operation or parking of a motor vehicle (road vehicles and off-road vehicles) off developed roadways. However, it is permissible to park in an area devoid of vegetation within 10 feet of a developed roadway. For purposes of this paragraph, a developed roadway is a roadway constructed for standard highway vehicles with an asphalt, gravel or dirt surface with no vegetation, 14 feet wide or more. Trails or tracks are not such roadways.
 5. A violation of these provisions is punishable under RCW 77.15.160(5)(b). A violation of these provisions may result in removal of offending personnel from the work, per General Conditions Section 00705.01 Contractor Control and Supervision.
 6. All vehicles shall be equipped with a fire extinguisher, 2 gallons of water, and a shovel. All worksites shall have a fire extinguisher and shovel present. The Contractor shall take all reasonable precautions to prevent fires.
 7. The Contractor shall have an employee remain at the worksite with sufficient firefighting capability, for at least one hour after work has ceased for the day, or if leaving for more than one hour, to ensure no fires have started.
 8. The Contractor shall contact the Site/Facility Manager at the beginning of each week; Monday mornings, for any special instructions.

DIVISION 1 – GENERAL REQUIREMENTS

- C. Contractor or subcontractor installing sewer systems must be listed on the Pierce County Planning and Public Works current Registered Sewer Contractor List and remain registered through the project duration. All permits have been conceptually approved by the Pierce County Sewer Department. Once the contractor or subcontractor has been selected, the registered sewer contractor shall obtain the necessary sewer service permits from the Sewer Division Representative at the Pierce County Development Center (Annex). The Pierce County Sewer Contractor List is located at the following website:
- <https://wa-piercecounty2.civicplus.com/DocumentCenter/View/64958/Registered-Sewer-Contractor-List?bidId=>
- D. Behind the Lab building, a preliminary investigation has shown there are a minimum of three barrels and three inch concrete slab potentially covering an old concrete vault. Soil samples were taken on March 24, 2021, and April 28, 2021. The soil sample analysis reports and photos showing site layout and sample locations are provided for your use in Attachment 3.
- E. Contractor or subcontractor decommissioning septic tank, sewage pit, cesspool or other container from service shall be an approved O&M firm approved for pumping. Contractor or subcontractor must follow decommissioning regulations outlined in the Washington State Department of Health Rules and Regulations WAC 246-272A and the Tacoma-Pierce County Board of Health Resolution 2014-4414. Submit the Decommissioning Certificate form to Tacoma-Pierce County Health Department with all required submittal documentation.

01200 PROJECT MEETINGS

Contractor shall attend a preconstruction meeting with the Owner's representative prior to receiving the Notice to Proceed, to discuss the work and contracting procedures.

01300 CONTRACTOR SUBMITTALS

A. Preliminary Submittals

Within 7 calendar days after the date of Notice to Proceed, the Contractor shall submit the following items to the Owner for review:

1. A preliminary schedule of Shop Drawings. The schedule of submittals shall be based on Contractor's priority, planned construction sequence and schedule, long lead items, and size of submittal package. Allow time for project resubmittals. The Owner is not responsible for any delay associated with project resubmittals. The schedule shall include at a minimum the submittal number, Specification section and description of the submittal contents.
2. A list of permits and licenses the Contractor shall obtain, indicating the agency required to grant the permit, such as building permits, equipment or clearance permits, etc. and the expected date of submittal for the permit and required date for receipt of the permit.

B. Preconstruction Conference Submittals

At the preconstruction conference of Paragraph 01010 - Summary of Work, the Contractor shall submit the following items to the Owner for review:

1. A preliminary Schedule of Values.
2. An Initial Schedule Submittal in accordance with Division 0 – General Conditions 00703.2.

DIVISION 1 – GENERAL REQUIREMENTS

C. Shop Drawings

1. Wherever called for in the Contract or where required by the Owner, the Contractor shall furnish 1 hardcopy (to be retained by the Owner) plus one complete electronic copy in Acrobat (pdf) format, of each Shop Drawing submittal unless otherwise indicated in the Contract. Shop Drawings may include, but not limited to detail design calculations, shop-prepared drawings, fabrication and installation drawings, erection drawings, lists, graphs, catalog sheets, data sheets, and similar items.
2. Whenever the Contractor is required to submit design calculations as part of a submittal, such calculations shall bear the signature and seal of an Engineer registered in the appropriate branch and in the state wherein the work is located, unless otherwise indicated.

3. Organization:

- a. A single submittal transmittal form shall be used for each technical Specification section or item or class of material or equipment for which a submittal is required. A single submittal covering multiple sections will not be acceptable unless the primary Specification references other sections for components.

Example: if a pump section references other sections for the motor, shop-applied protective coating, anchor bolts, local control panel, and variable frequency drive, a single submittal would be acceptable and should be submitted under the pump section. A single submittal covering vertical turbine pumps and horizontal split case pumps would not be acceptable.

- b. On the transmittal form, index the components of the submittal and insert tabs in the submittal to match the components. Relate the submittal components to Specification paragraph and subparagraph, Drawing number, detail number, schedule title, room number, or building name, as applicable.
- c. Terminology and equipment tag names and numbers used in submittals shall match those used in the Contract. Where a submittal includes multiple pieces covered under a section the submittal shall clearly indicated the tag name or number for each piece included on all pages related to that piece.
- d. Disorganized submittals that do not meet the requirements of the Contract will be returned without review.

4. Format:

- a. Minimum sheet size: 8 1/2 inches by 11 inches; maximum sheet size: 11 inches by 17 inches. Every page in a submittal shall be numbered in sequence. Each copy of a submittal shall be collated and stapled or bound, as appropriate. The Owner will not collate sheets or copies.
- b. Where product data from a manufacturer is submitted, clearly mark which model is proposed, along with all complete pertinent options, data, capacities, dimensions, clearances, diagrams, controls, connections, anchorage, and supports indicated. Sufficient level of detail shall be presented for assessment of compliance with the Contract. Indicating marks or methods shall be such that they are reproducible and remain legible when scanned or copied in black and white system. The Contractor shall clearly indicate what is to be provided, the Owner will make no assumptions from unmarked options lists.

DIVISION 1 – GENERAL REQUIREMENTS

- c. Each submittal shall be assigned a unique number. Submittals shall be numbered sequentially, and the submittal numbers shall be clearly noted on the transmittal and shall include the primary Specification number.

Original submittals shall be assigned a numeric submittal number followed by a numeric resubmittal number to distinguish between the original submittal (0) and each resubmittal (1, 2, etc.). In the name of the electronic file; number submittals sequentially using a set brief descriptor followed by the unique sequential submittal number, submittal content title and 6-digit primary specification section number.

Submittals Examples: “[Project Name] Rebuild Submittal 1.0-Schedule of Values-01300.pdf”; “[Project Name] Rebuild Submittal 2.0-Construction Schedule-01300.pdf”.

Resubmittals shall include only information directly related to the previous submittal. If portions of a submittal are changed and other portions remain the same upon resubmittal, the resubmittal shall include all changed and unchanged portions so that each resubmittal is a complete document.

Resubmittals Examples: “[Project Name] Rebuild Submittal 1.1-Schedule of Values-01300.pdf” for the first resubmittal and “[Project Name] Rebuild Submittal 1.2-Schedule of Values-01300.pdf” for the second resubmittal, and so on.

5. Review Process:

- a. Except as may otherwise be indicated, the Owner will return each submittal to the Contractor with comments noted thereon, within 14 calendar days following receipt by the Owner. It is considered reasonable that the Contractor will make a complete and acceptable submittal to the Owner by the first resubmittal on an item. For example, for a submittal that requires two resubmittals before it is complete, the accumulated review period could be 42 calendar days.
- b. If a submittal is returned to the Contractor marked “NO EXCEPTIONS TAKEN,” formal revision and resubmission of the submittal will not be required. If a component or section of the submittal is returned to the Contractor specifically marked “NO EXCEPTIONS TAKEN,” formal revision and resubmission of that component or section of the submittal will not be required.
- c. If a submittal is returned marked “Make Corrections Noted,” Contractor shall make the corrections on the submittal, but formal revision and resubmission will not be required. If a component or section of the submittal is returned to the Contractor specifically marked “Make Corrections Noted,” formal revision and resubmission of that component or section of the submittal will not be required.
- d. If a submittal, or portion of a submittal, is returned marked “AMEND-RESUBMIT,” the Contractor shall revise it and shall resubmit the required number of copies. If any portion of a submittal is returned marked “AMEND-RESUBMIT,” the status of the entire submittal shall be considered “AMEND-RESUBMIT,” however, only the portions indicated need to be updated in the resubmittal.
- e. If a submittal is returned marked “REJECTED-RESUBMIT.” it shall mean either that the proposed material or product does not satisfy the Specification, the submittal is so incomplete that it cannot be reviewed or is a substitution request that will not be reviewed because it is not submitted in accordance with the Contract. The Contractor shall prepare a new submittal and shall submit the required number of copies.

DIVISION 1 – GENERAL REQUIREMENTS

- f. Resubmittal of rejected portions of a previous submittal will not be allowed. Every change from a submittal to a resubmittal or from a resubmittal to a subsequent resubmittal shall include a summary page at the front of the submittal listing responses to previous review comments and a list of items that have changed from the previous submittal/resubmittal. Changed items shall be flagged where they occur in the resubmittal.
- g. Fabrication of an item may commence only after the Owner has reviewed the pertinent submittals and returned copies to the Contractor with the submittal marked either “NO EXCEPTIONS TAKEN” or “MAKE CORRECTIONS NOTED.” Corrections indicated on submittals shall be considered as changes necessary to meet the requirements of the work and shall not be taken as changes to the Contract.
- h. Submittals shall be carefully reviewed by an authorized representative of the Contractor prior to submission to the Owner. Each submittal shall be dated and signed by the Contractor as being correct and in strict conformance with the Contract. In the case of Shop Drawings, each sheet shall be so dated and signed. Any approved deviations from the Contract shall be noted on the transmittal sheet.
- i. The Owner will only review submittals that have been so verified by the Contractor. Non-verified submittals will be returned to the Contractor without action taken by the Owner, and any delays caused thereby shall be the total responsibility of the Contractor.
- j. Corrections or comments made on the Contractor's Shop Drawings during review do not relieve the Contractor from compliance with Contract Drawings and Specifications. Review is for conformance to the design concept and general compliance with the Contract only. The Contractor is responsible for confirming and correlating quantities and dimensions, fabrication processes and techniques, coordinating work with the trades, and satisfactory and safe performance of the work.

D. Samples

Not Used.

E. Record Drawings

1. The Contractor shall maintain one set of Drawings at the Project Site for the preparation and weekly update of Record Drawings.
2. The Record Drawings shall mark every project condition, location, configuration, and any other change or deviation which may differ from the Contract Drawings at the time of award, including buried or concealed construction and utility features that are revealed during the course of construction. Special attention shall be given to recording the horizontal and vertical location of buried utilities that differ from the locations indicated, or that were not indicated on the Contract Drawings.
3. Record drawings shall be supplemented by any detailed sketches as necessary or as Contractor is directed, to fully indicate the work as actually constructed. These record drawings are the Contractor's representation of as-built conditions, shall include revisions made by addenda and change orders, and shall be maintained up-to-date during the progress of the work.

DIVISION 1 – GENERAL REQUIREMENTS

F. Quality Control ("QC") Submittals

1. Quality control submittals are defined as those required by the Specifications to present documentary evidence to the Owner that the Contractor has satisfied certain requirements of the Contract.
2. Unless otherwise indicated, submit QC submittals before delivery and unloading, for the following types of submittals:
 - a. Manufacturers' installation instructions
 - b. Manufacturers' and Installers' experience qualifications
 - c. Ready mix concrete delivery tickets
 - d. Design calculations
 - e. Affidavits and manufacturers' certification of compliance with indicated product requirements
 - f. Laboratory analysis results
 - g. Factory test reports
 - h. Inspection results and reports of Contractor's testing firm for special inspections.
3. Unless otherwise indicated, submit QC submittals within 30 business days of the event documented for the following types of submittals:
 - a. Manufacturer's field representative certification of proper installation
 - b. Field measurement
 - c. Field test reports
 - d. Receipt of permit
 - e. Receipt of regulatory approval
4. The Owner will record the date that a QC submittal was received and review it for compliance with submittal requirements, but the review procedures and Owner time limits above for Shop Drawings and samples will not apply.

01510 TEMPORARY UTILITIES

- A. The State will pay the energy costs for construction power used from any of the existing state services, but the Contractor shall provide any required connections or extensions.
- B. The Contractor shall provide adequate temporary toilet facilities, where directed, when work is started for all those connected with the work. The Contractor shall keep the toilet facilities in a sanitary condition and remove the toilet facilities at the end of the project and disinfect the premises.
- C. Drinking water is not available at the site. Provide single-service containers or a sanitary drinking device from a proven safe source for all those connected with the work.
- D. Water for construction purposes is available at the site. The State does not guarantee quantity or quality of water sources.

01730 OPERATIONS AND MAINTENANCE (O&M) MANUALS

Not Used.

END OF SECTION 01000

ATTACHMENT 1 – PERMITS

**Pierce County Sewer Line Extension
Permit #963258 (Conceptually Approved)**

**Pierce County Sewer Service Commercial
Permit #963226 (Conceptually Approved)**

**Pierce County Sewer Service Commercial
Permit #963228 (Conceptually Approved)**

**Pierce Sewer Development
Permit #963277 (Conceptually Approved)**

**City of Lakewood Plumbing
Permit #BP-21-00652 (Conceptually Approved)**

MARINE MAMMAL LAB SEWER CONNECTION
 SEC. 27, T20N, R02E
 PRIVATE SANITARY SEWER SYSTEM

APPROVED *R.S.H.* SWLE# 963258
 12-23-2021
 WASTEWATER UTILITY MANAGER DATE
 "PLAN APPROVAL EXPIRES THREE (3) YEARS FROM THE DATE OF APPROVAL"



*WASHINGTON DEPARTMENT
 OF FISH AND WILDLIFE*
 SOUTH PUGET SOUND WLA
 MARINE MAMMAL LAB SEWER CONNECTION
 PE:R39:2021-1

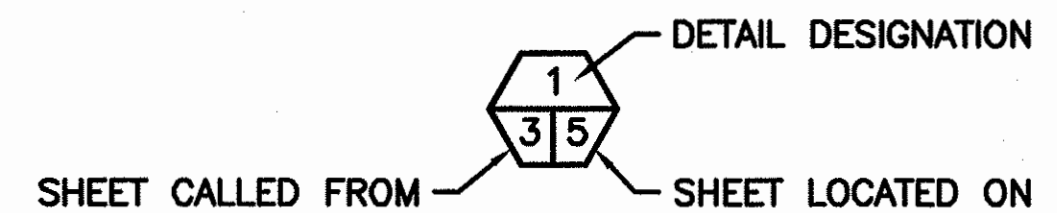
INDEX

- # SHEET TITLE
- 1 COVER SHEET & VICINITY MAP
- 2 SITE PLAN & PROFILES
- 3 STANDARD DETAILS
- 4 SEWER CONSTRUCTION NOTES

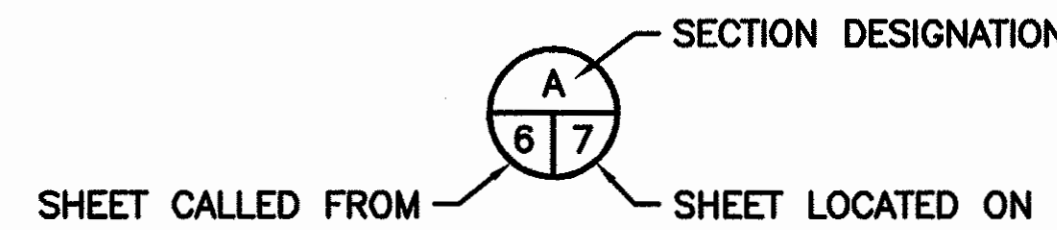
ABBREVIATIONS

- APPROX - APPROXIMATELY
- BM - BENCH MARK
- CL - CENTERLINE
- CMP - CORRUGATED METAL PIPE
- CLR - CLEARANCE
- GONC - CONCRETE
- CSBC - CRUSHED SURFACE BASE COURSE
- CSTC - CRUSHED SURFACE TOP COURSE
- CKTS - CIRCUITS
- DIA - DIAMETER
- DW - DOMESTIC WATER
- ELEV - ELEVATION
- GALV - GALVANIZED
- HW - HOT WATER
- ID - INSIDE DIAMETER
- IE - INVERT ELEVATION
- MFG - MANUFACTURER'S
- MISC - MISCELLANEOUS
- OC - ON CENTER
- OD - OUTSIDE DIAMETER
- REQ'D - REQUIRED
- SEC - SECTION
- SPEC'S - PROJECT SPECIFICATIONS
- SS - STAINLESS STEEL
- TYP - TYPICAL

SHEET SYMBOLS



DETAIL

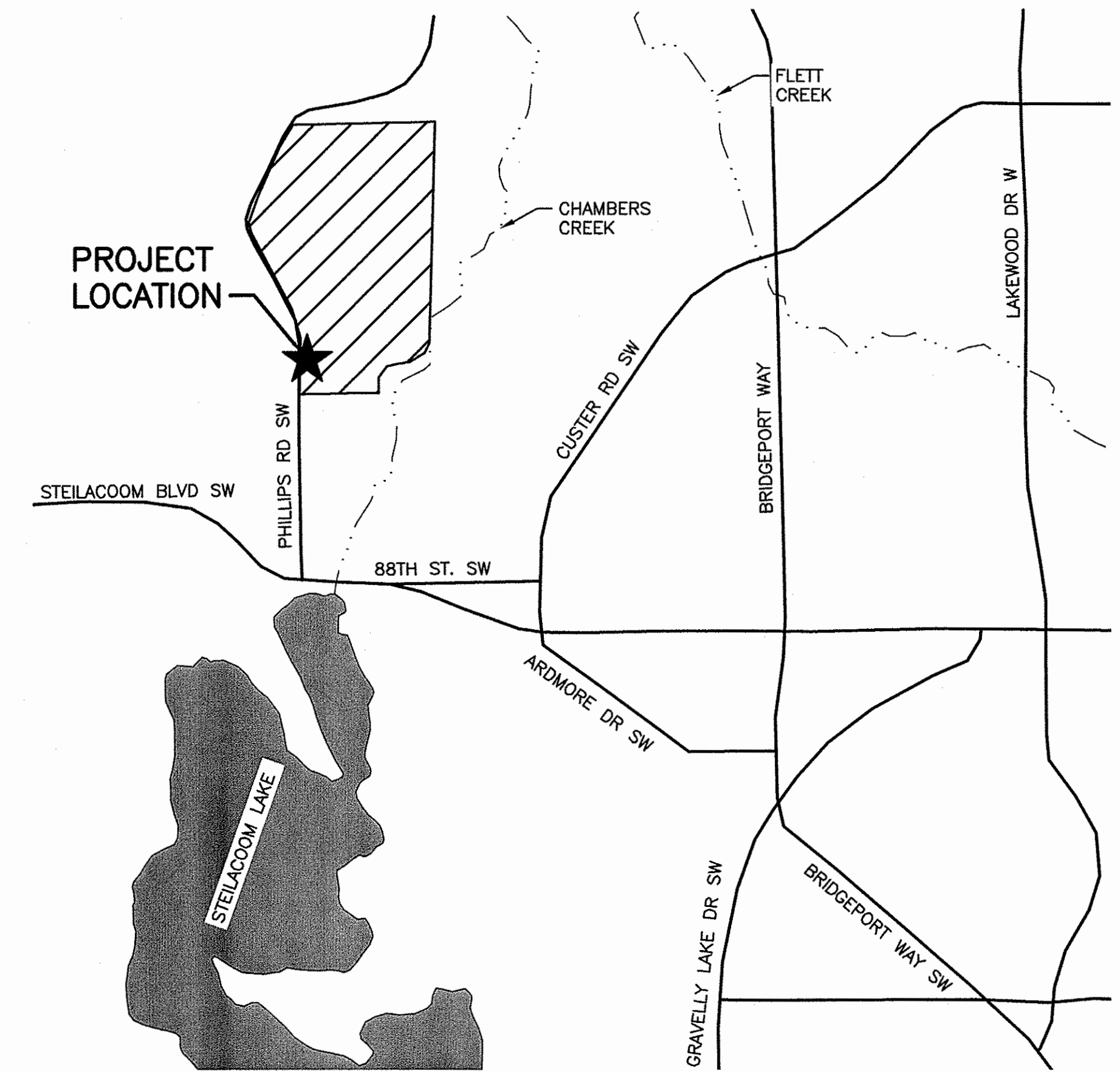


SECTION



NOTE REFERENCE

REFERENCE DESIGNATION TO A NOTE, A PART, OR MATERIAL IN A SCHEDULE/TABLE



VICINITY MAP
 NOT TO SCALE

SITE ADDRESS:
 7801 PHILLIPS RD SW
 LAKEWOOD, WA 98498-6345

DIRECTIONS:
 FROM OLYMPIA, TAKE I-5 NORTH TO EXIT 124. TURN RIGHT AND FOLLOW GRAVELLY LAKE DR TO BRIDGEPORT WAY SW. TURN RIGHT AND FOLLOW BRIDGEPORT WAY TO STEILACOOM BLVD SW. TURN RIGHT ONTO STEILACOOM BLVD AND FOLLOW IT TO PHILLIPS RD SW. TURN LEFT ONTO PHILLIPS RD SW AND DESTINATION WILL BE ON THE RIGHT.

PERMIT DRAWING SET

PROJECT NO. PE:R39:2021-1	
SHEET 1	OF 4

MARINE MAMMAL LAB SEWER CONNECTION

SEC. 27, T20N, R02E
PRIVATE SANITARY SEWER SYSTEM

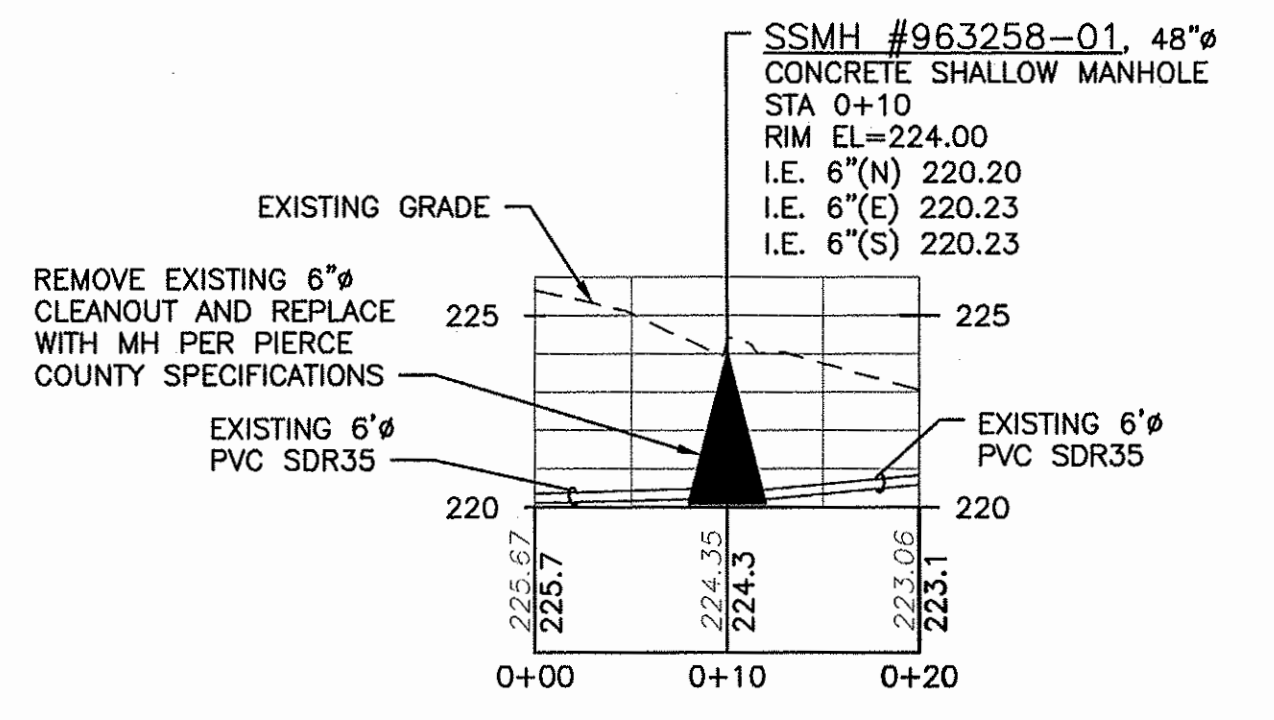
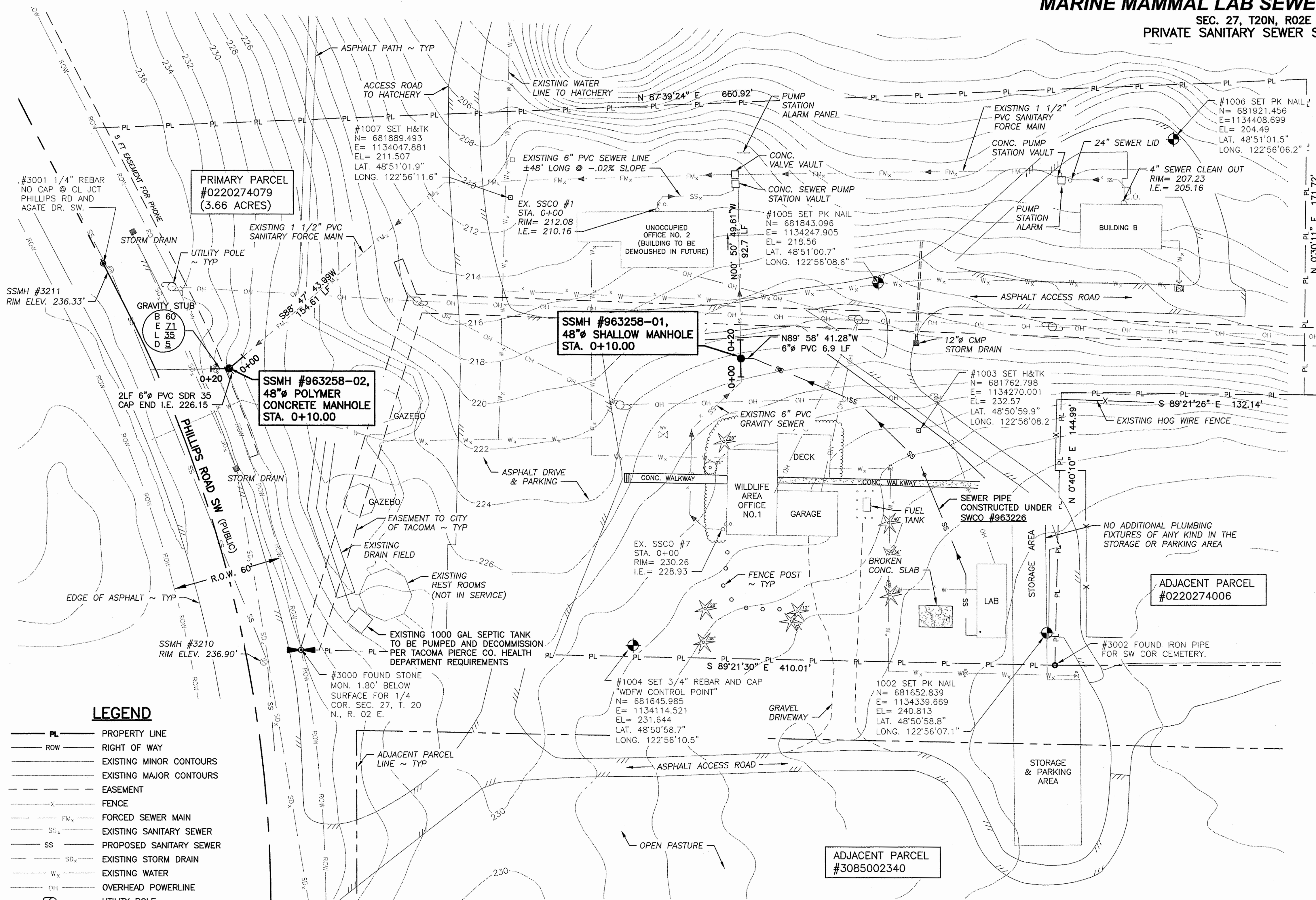
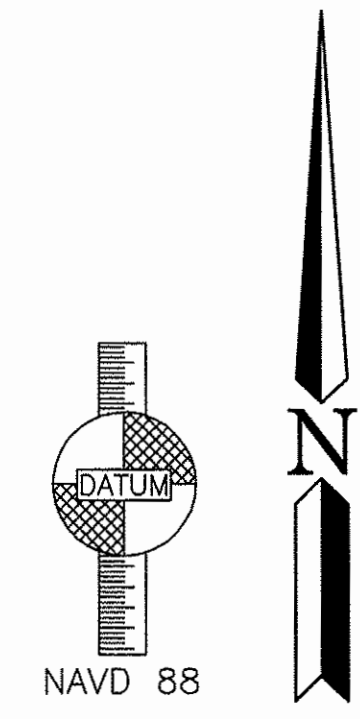
APPROVED *RS* SWLE# 963258

12-23-2021

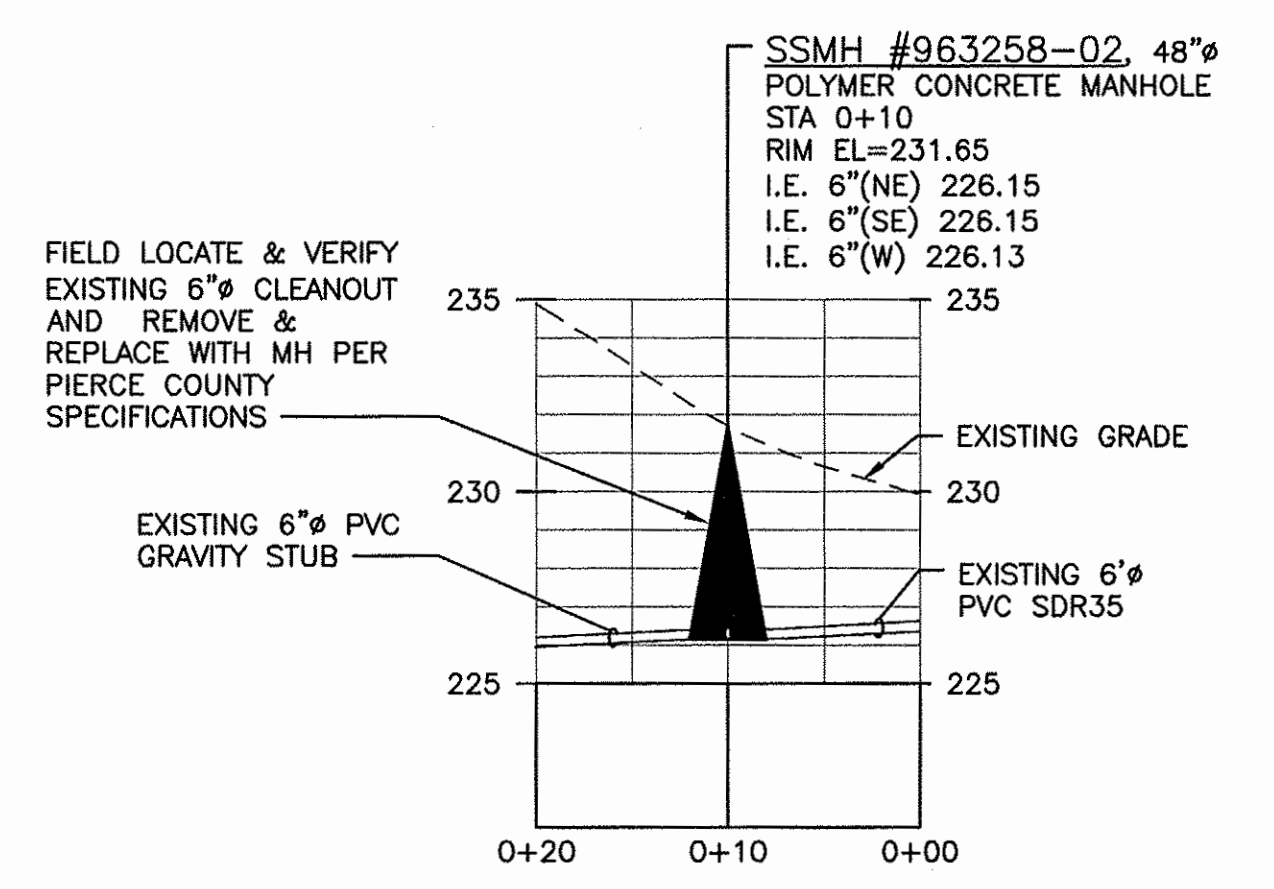
WASTEWATER UTILITY MANAGER DATE
"PLAN APPROVAL EXPIRES THREE (3) YEARS FROM THE DATE OF APPROVAL"

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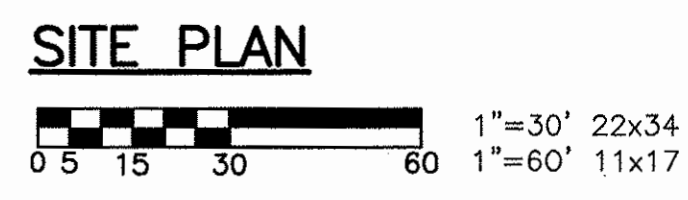
DATUM BASED ON NAVD 88
CONTOUR INTERVALS = 2 FT
SOURCE OF TOPOGRAPHY AND ON-SITE BENCHMARKS ACQUIRED FROM SURVEY (PE 03162021 2002E27 MARINE LAB TOPO) PERFORMED BY WDFW SURVEY CREW, DATED 03-22-2021, WFDW, ENGINEERING 600 CAPITAL WAY N. OLYMPIA, WA 98501 PHONE: (360-902-8300)
OWNER: STATE OF WASHINGTON - DEPT OF FISH & WILDLIFE 600 CAPITOL WAY N. OLYMPIA, WA 98501
PARCEL#: 0220274079 (3.66 ACRES)
ADDRESS: 7801 PHILLIPS ROAD SW LAKEWOOD, WA 98498
PROJECT IS NOT IN 100 YEAR FLOOD PLAN.



SSMH #963258-01



SSMH #963258-02



SITE PLAN

- LEGEND**
- PL PROPERTY LINE
 - ROW RIGHT OF WAY
 - EXISTING MINOR CONTOURS
 - EXISTING MAJOR CONTOURS
 - EASEMENT
 - X FENCE
 - FM_x FORCED SEWER MAIN
 - SS_x EXISTING SANITARY SEWER
 - SS PROPOSED SANITARY SEWER
 - SD_x EXISTING STORM DRAIN
 - W_x EXISTING WATER
 - OH OVERHEAD POWERLINE
 - UTILITY POLE
 - EXISTING SEWER MANHOLE
 - PROPOSED SEWER MANHOLE
 - WATER VALVE
 - UTILITY LIGHT
 - TREE CONIFER
 - EXISTING STORM CATCH BASIN
 - DIRECTION OF FLOW
 - EXISTING DIRECTION OF FLOW

WASHINGTON DEPARTMENT OF
FISH & WILDLIFE



SYM	DATE	REVISION DESCRIPTION	BY
		APPROVED AND RELEASED FOR CONSTRUCTION	
CHIEF ENGINEER			DATE:
PROGRAM			DATE:

DESIGNED BY K. SMITH
CHECKED BY K. SMITH
DRAWN BY J. LONG
DATE 10-26-2021

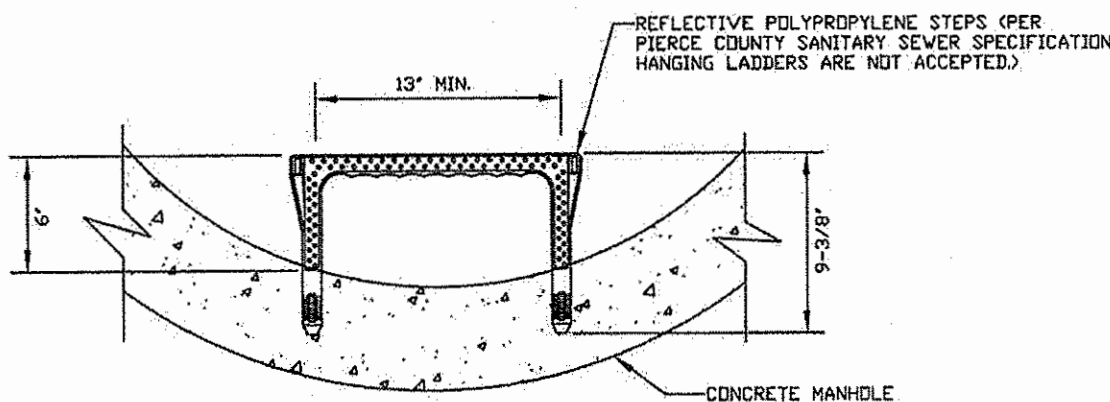
SOUTH PUGET SOUND WLA
MARINE MAMMAL LAB
SITE PLAN & PROFILES

PROJECT NO.
PE:R39:2021-1
SHEET 2 OF 4

PERMIT DRAWING SET

MARINE MAMMAL LAB SEWER CONNECTION
 SEC. 27, T20N, R02E
 PRIVATE SANITARY SEWER SYSTEM

APPROVED *RS* SWLE# 963258
 12-23-2021
 WASTEWATER UTILITY MANAGER DATE
 PLAN APPROVAL EXPIRES THREE (3) YEARS FROM THE DATE OF APPROVAL



NOTES:
 1. LEGS MAY BE PARALLEL OR APPROXIMATELY RADIAL AT OPTION OF MANUFACTURER EXCEPT THAT ALL STEPS IN ANY MANHOLE SHALL BE IDENTICAL.
 2. LAST STEP SHALL BE NO MORE THAN 18" FROM BOTTOM OF MANHOLE.
 3. FIRST STEP SHALL BE NO MORE THAN 24" FROM RIM/FINISH GRADE.
 4. STEPS SHALL NOT INTERFERE WITH CHIMNEY SEAL (SEE DETAIL 1002).

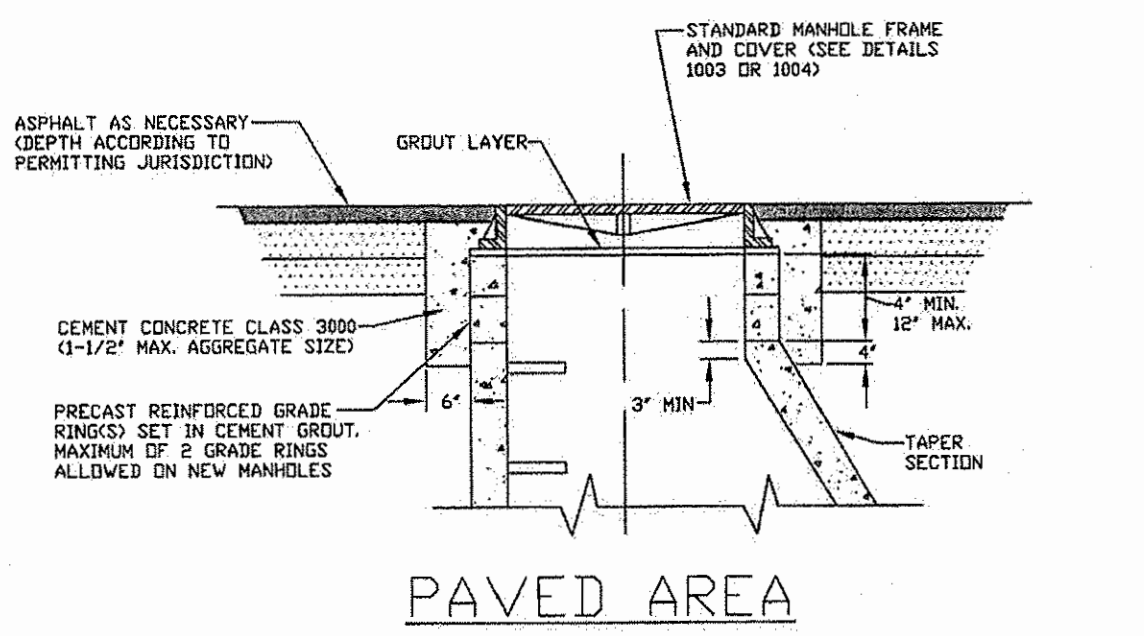
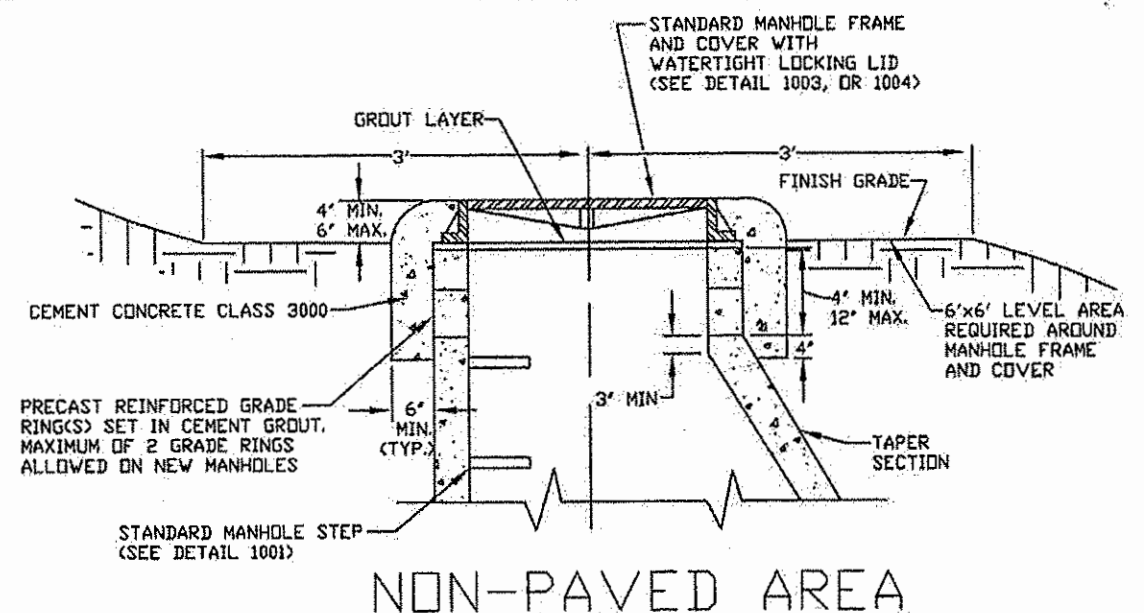


PIERCE COUNTY PUBLIC WORKS & UTILITIES DEPARTMENT
 SEWER UTILITY DIVISION
 9550 64TH STREET WEST
 UNIVERSITY PLACE, WASHINGTON 98447-1070
 (206) 798-4000

STANDARD DETAILS

DATE: 05/01/2011
 SCALE: NTS

STANDARD DETAIL NO. **1001**
 PAGE 1 OF 1

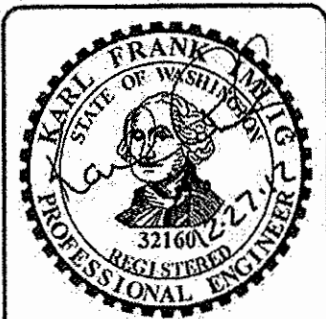
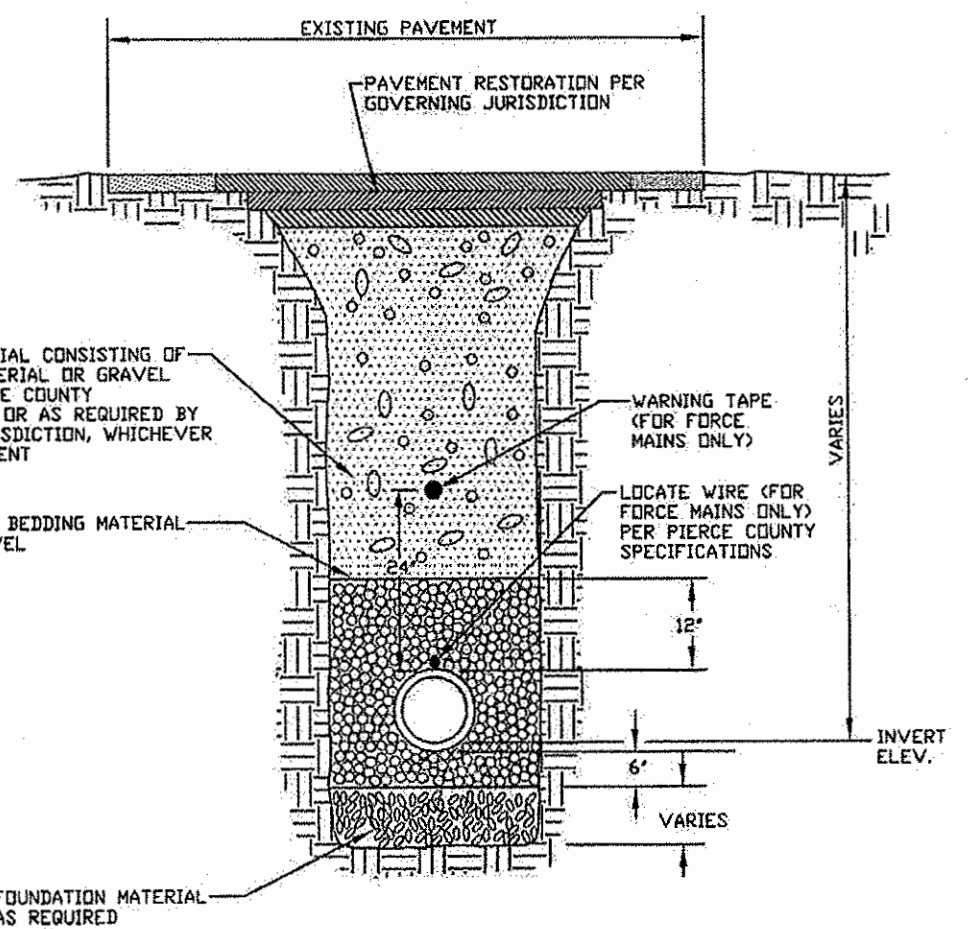


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 (206) 798-4000

STANDARD DETAILS

DATE: 12/26/2012
 SCALE: NTS

STANDARD DETAIL NO. **1002**
 PAGE 1 OF 1

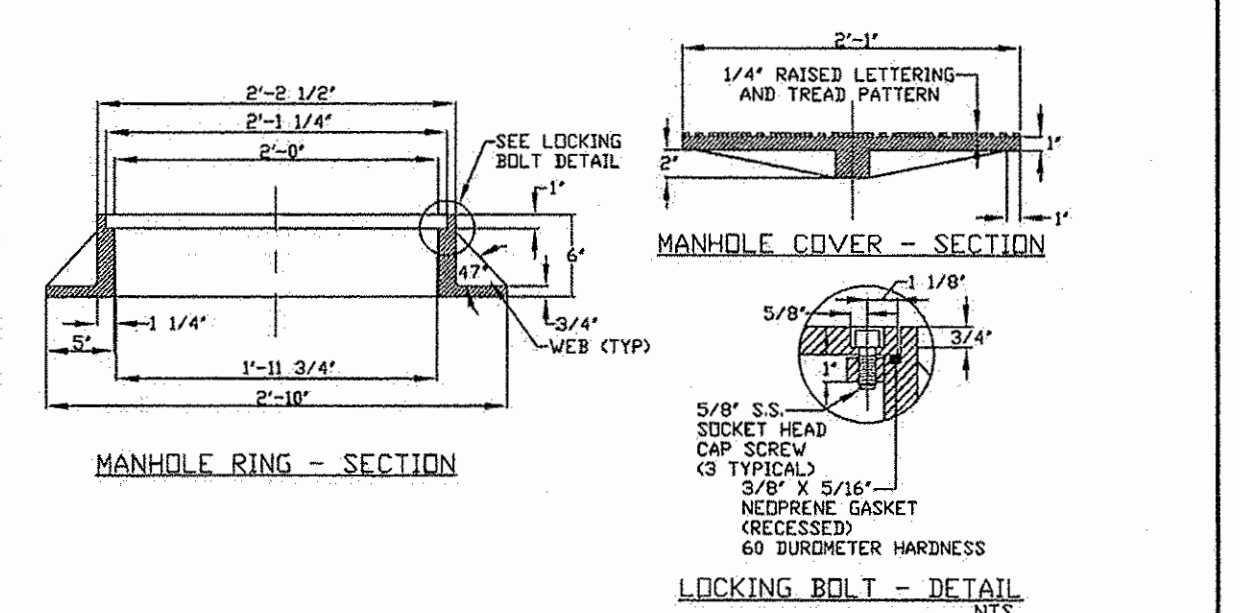
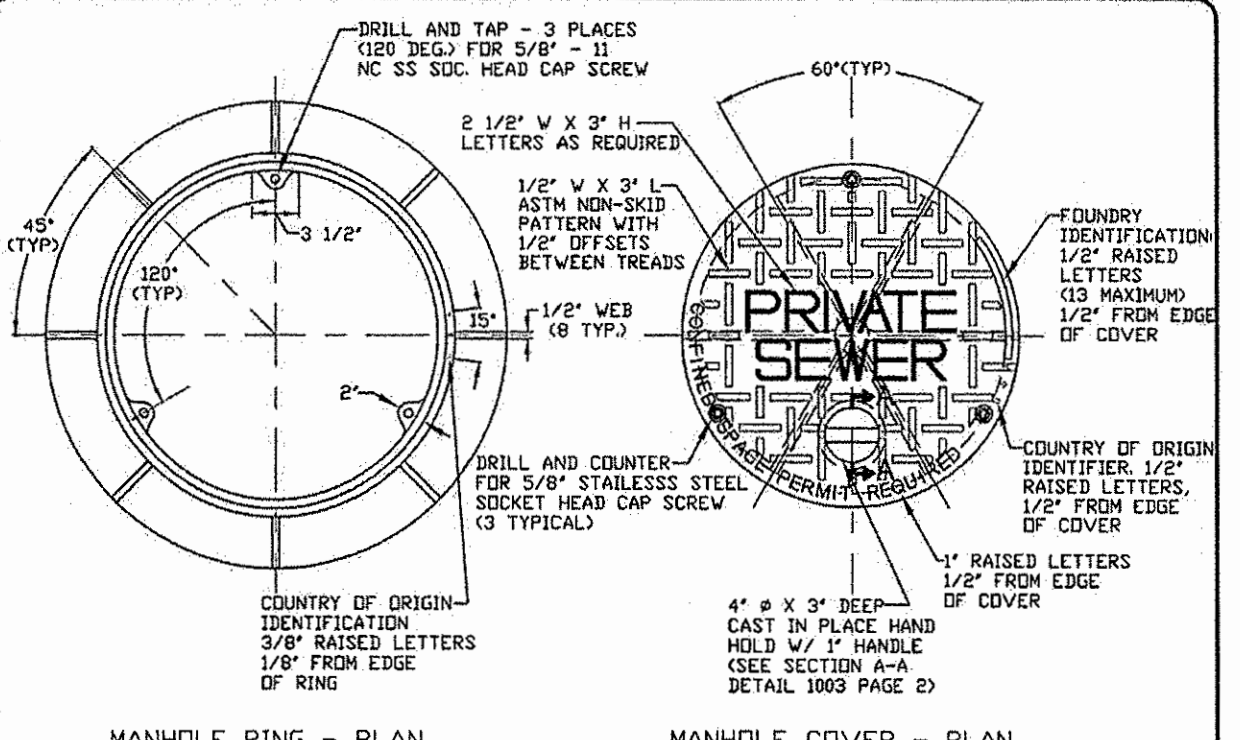


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STANDARD DETAILS

DATE: 05/01/2011
 SCALE: NTS

STANDARD DETAIL NO. **3001**
 PAGE 1 OF 1



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STANDARD DETAILS

DATE: 05/01/2011
 SCALE: NTS

STANDARD DETAIL NO. **1004**
 PAGE 1 OF 1

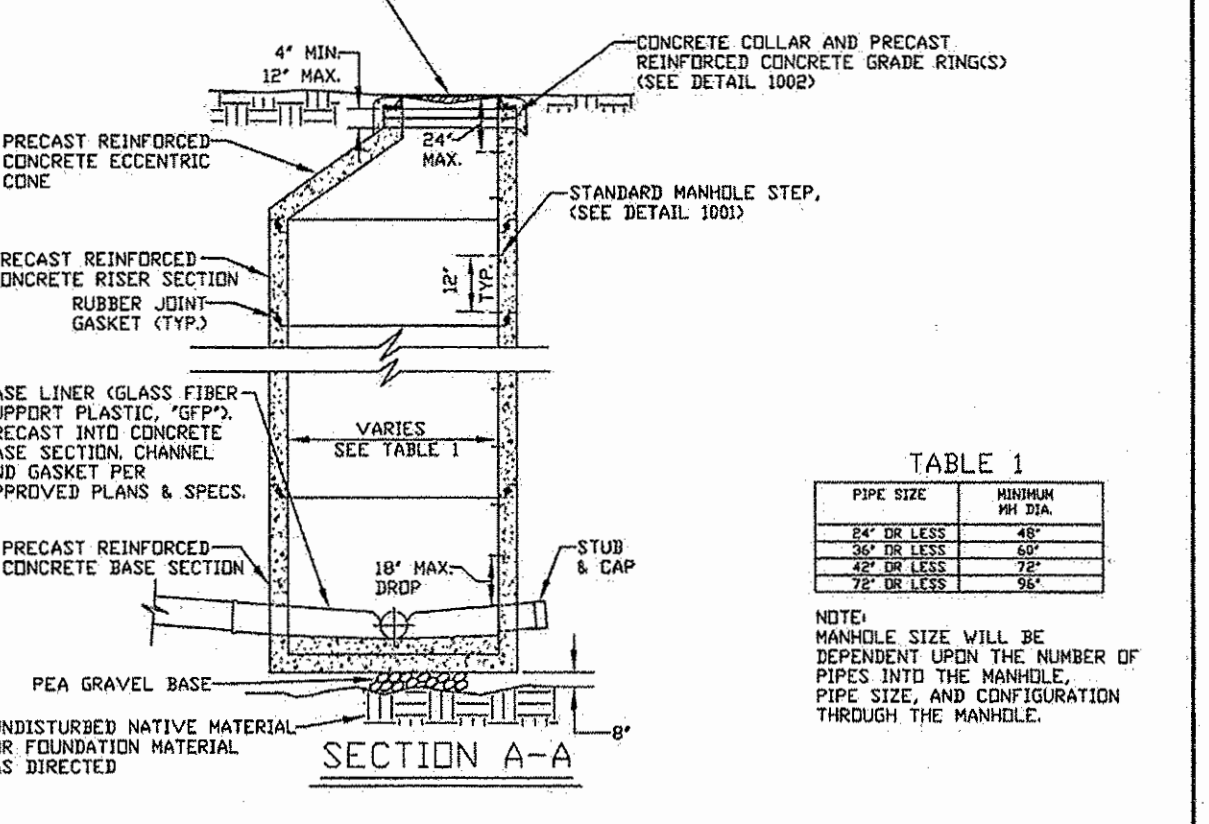
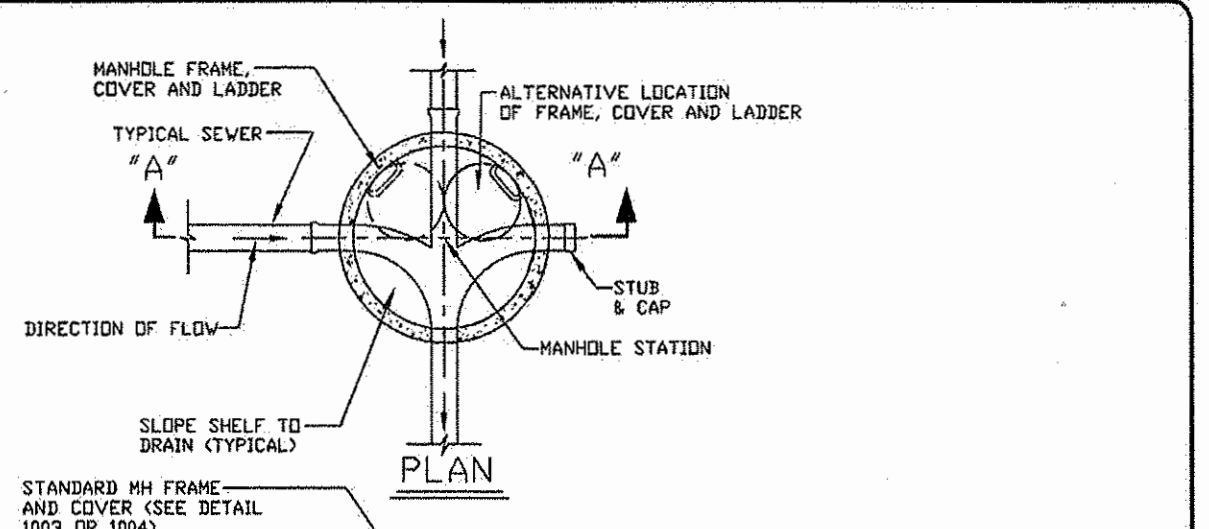
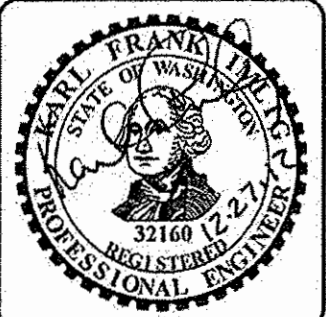


TABLE 1

PIPE SIZE	MINIMUM MH DIA.
24" OR LESS	48"
30" OR LESS	72"
36" OR LESS	96"
42" OR LESS	120"

NOTE: MANHOLE SIZE WILL BE DEPENDENT UPON THE NUMBER OF PIPES INTO THE MANHOLE, PIPE SIZE, AND CONFIGURATION THROUGH THE MANHOLE.



PIERCE COUNTY PUBLIC WORKS & UTILITIES DEPARTMENT
 SEWER UTILITY DIVISION
 9550 64TH STREET WEST
 UNIVERSITY PLACE, WASHINGTON 98447-1070
 (206) 798-4000

STANDARD DETAILS

DATE: 12/28/2012
 SCALE: NTS

STANDARD DETAIL NO. **2001**
 PAGE 1 OF 2

- ALL NEWLY CONSTRUCTED MANHOLES SHALL HAVE PREDI LINERS WITH GU-MANHOLE PIPE CONNECTORS. LINER SYSTEM SHALL BE MANUFACTURED BY PREDI. SYSTEMS NORTH AMERICA, INC.
- ALL MANHOLE RISER JOINTS SHALL HAVE BOTH BUTYL RUBBER GASKETS AND PREFORMED (RIPE TYPED) JOINT SEALANT, PER PIERCE COUNTY SPECIFICATIONS.
- THE INTERIOR WALLS OF ALL MANHOLES WITH PIPES 18" NOMINAL INSIDE DIAMETER OR LARGER AND/OR WITH FORCE MAIN CONNECTIONS SHALL BE COATED PER PIERCE COUNTY SANITARY SEWER SPECIFICATIONS.
- ALL MANHOLES LOCATED IN NON-PAVED AREAS SHALL HAVE WATERTIGHT LIDS AND CONCRETE COLLARS (SEE DETAILS 1002, 1003, AND 1004).
- NO MORE THAN 5 SIDE SEWERS CAN BE INSTALLED AT A TERMINAL MANHOLE. THE SIDE SEWERS MUST BE INSTALLED AT 90° OR GREATER FROM THE OUTLET MAIN.
- EXTERIOR OF ALL CONCRETE MANHOLES SHALL BE COATED WITH BITUMINOUS COAL TAR EPOXY AT A MIN. DRY THICKNESS OF 30 MILS.
- MANHOLES SHALL BE VACUUM TESTED PER PIERCE COUNTY SPECIFICATIONS.
- PRECAST MANHOLE SECTIONS SHALL BE CONSTRUCTED PER ASTM C478.
- MANHOLES WITH 72" OR GREATER DIAMETER MAY USE A REINFORCED CONCRETE TOP SLAB TO TRANSITION TO A 48" RISER. BASE SECTIONS MUST PROVIDE A MINIMUM OF 8 FEET FROM MANHOLE BENCH TO TOP SLAB.

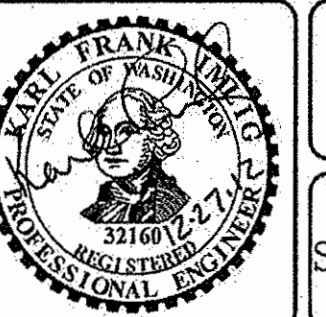
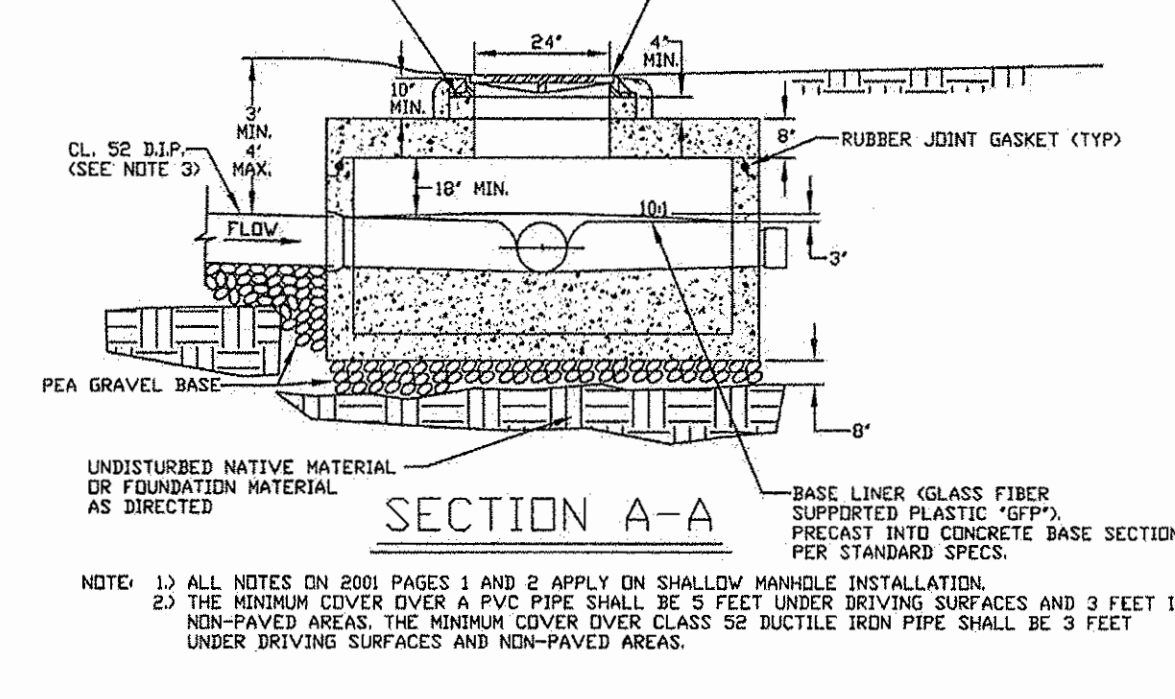
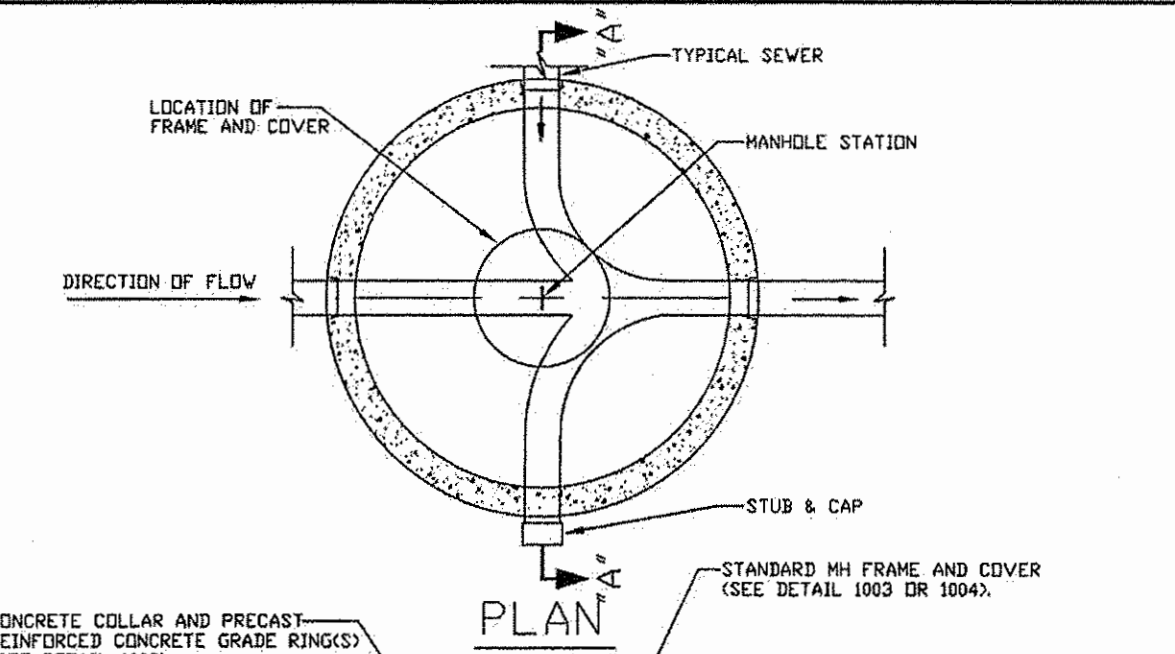


PIERCE COUNTY PUBLIC WORKS & UTILITIES DEPARTMENT
 SEWER UTILITY DIVISION
 9550 64TH STREET WEST
 UNIVERSITY PLACE, WASHINGTON 98447-1070
 (206) 798-4000

STANDARD DETAILS

DATE: 06/01/2011
 SCALE: NTS

STANDARD DETAIL NO. **2001**
 PAGE 2 OF 2



PIERCE COUNTY PUBLIC WORKS & UTILITIES DEPARTMENT
 SEWER UTILITY DIVISION
 9550 64TH STREET WEST
 UNIVERSITY PLACE, WASHINGTON 98447-1070
 (206) 798-4000

STANDARD DETAILS

DATE: 12/28/2012
 SCALE: NTS

STANDARD DETAIL NO. **2002**
 PAGE 1 OF 1

WASHINGTON DEPARTMENT OF
FISH & WILDLIFE



SYM	DATE	REVISION DESCRIPTION	BY
		APPROVED AND RELEASED FOR CONSTRUCTION	
CHIEF ENGINEER	DATE:		DESIGNED BY K. SMITH
PROGRAM	DATE:		CHECKED BY K. SMITH
			DRAWN BY J. LONG
			DATE 10-26-2021

SOUTH PUGET SOUND WLA
 MARINE MAMMAL LAB
 STANDARD DETAILS

PERMIT DRAWING SET

PROJECT NO.
 PE:R39:2021-1

SHEET **3** OF **4**

PIERCE COUNTY PLANNING AND PUBLIC WORKS SEWER CONSTRUCTION NOTES:

1. ALL MATERIALS, WORKMANSHIP, AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE LATEST EDITION OF THE PIERCE COUNTY SANITARY SEWER DEVELOPMENT SPECIFICATIONS, THE PIERCE COUNTY SANITARY SEWER STANDARD DETAILS MANUAL AND THE PIERCE COUNTY SEWER CODE.
2. THE CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER AND THE PIERCE COUNTY DEVELOPMENT ENGINEERING INSPECTOR IN THE EVENT OF DISCOVERY OF POOR SOILS, STANDING GROUND WATER OR DISCREPANCIES FROM THE PLANS IN GRADES, LOCATIONS AND CONSTRUCTION OF UTILITIES, STRUCTURES, AND OTHER EXISTING CONDITIONS.
3. THE CONTRACTOR SHALL FIELD VERIFY LOCATION AND ELEVATION OF THE POINT OF CONNECTION PRIOR TO CONSTRUCTION.
4. TESTING BY AIR OR WATER EXFILTRATION IS REQUIRED ON ALL SEWERS, INCLUDING DRY LINES, AND VACUUM TESTING IS REQUIRED ON ALL MANHOLES. PIERCE COUNTY REQUIRES A MINIMUM 24-HOUR ADVANCED NOTICE FOR SITE INSPECTION.
5. THE CONTRACTOR SHALL BE REGISTERED WITH PIERCE COUNTY PLANNING AND PUBLIC WORKS DEVELOPMENT ENGINEERING SECTION AND HAVE A VALID \$5,000.00 STREET OBSTRUCTION BOND.
6. PIERCE COUNTY REQUIRES THAT THE OWNER OR THE OWNER'S REPRESENTATIVE, THE ENGINEER AND THE CONTRACTOR ATTEND A PRE-CONSTRUCTION CONFERENCE WITH THE PIERCE COUNTY DEVELOPMENT ENGINEERING INSPECTOR FOR ALL WORK ON THESE PLANS. THE CONFERENCE SHOULD BE SCHEDULED BY CALLING (253) 798-4050 A MINIMUM OF TWO WEEKS PRIOR TO COMMENCEMENT OF WORK.
7. IT SHALL BE THE RESPONSIBILITY OF THE OWNER/DEVELOPER/CONTRACTOR TO OBTAIN NECESSARY PERMITS, CONSTRUCTION EASEMENTS AND RELEASES.
8. ANY REVISIONS TO THESE PLANS, ONCE APPROVED BY PIERCE COUNTY MUST BE REVIEWED AND RE APPROVED BY PIERCE COUNTY PLANNING AND PUBLIC WORKS DEVELOPMENT ENGINEERING SECTION PRIOR TO IMPLEMENTATION IN THE FIELD.
9. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE A SET OF THESE APPROVED PLANS ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
10. SIDE SEWER STUBS SHALL BE INSTALLED AT LEAST 10 FEET FROM PROPERTY LINES, UNLESS OTHERWISE APPROVED BY PIERCE COUNTY PLANNING AND PUBLIC WORKS DEVELOPMENT ENGINEERING SECTION.
11. ALL MANHOLES LOCATED IN LOW POINTS OF VERTICAL CURVES SHALL HAVE WATERTIGHT LIDS.
12. ALL NEW MANHOLES WILL BE PRE-CHANNELED WITH PIERCE COUNTY APPROVED MANHOLE INVERT LINERS AND HAVE LOCKING LIDS, UNLESS OTHERWISE NOTED.
13. SANITARY SEWER LINES AND WATER MAIN CROSSINGS:
 - A. THE STANDARD MINIMUM VERTICAL SEPARATION FOR WATER LINES IS 1.5 FEET ABOVE THE SANITARY SEWER LINE. SEPARATION SHALL BE MEASURED FROM THE OUTER WALLS OF THE PIPES.
 - B. CONTACT DEVELOPMENT ENGINEERING FOR UNUSUAL CIRCUMSTANCES FOR DEVELOPMENT ENGINEERING TO DETERMINE IF A REDUCED MINIMUM VERTICAL SEPARATION WILL BE ALLOWED FOR LESS THAN 1.5 FEET BUT NOT LESS THAN 0.75 FEET. ADDITIONAL PROVISIONS WILL BE REQUIRED.
14. SANITARY SEWER LINES AND UTILITY CROSSING OTHER THAN WATER LINES:
 - A. THE STANDARD MINIMUM VERTICAL SEPARATION FOR UTILITIES OTHER THAN WATER LINES IS 1.5 FEET FROM THE SANITARY SEWER. SEPARATION SHALL BE MEASURED FROM THE OUTER WALLS OF THE PIPES.
 - B. IF CONCRETE ENCASEMENT OF THE SANITARY SEWER IS PROVIDED, THEN A REDUCED MINIMUM VERTICAL SEPARATION OF 0.75 FEET WILL BE ALLOWED. THE CONCRETE ENCASEMENT SHALL EXTEND 10 FEET ON EACH SIDE OF THE CROSSING.
 - C. CLASS 52 DUCTILE IRON PIPE MAY BE USED FOR THE SANITARY SEWER IN LIEU OF CONCRETE ENCASEMENT PROVIDED THAT THERE IS NO TRANSITIONING TO OTHER PIPE MATERIALS BETWEEN MANHOLES.
15. TEES SHALL BE USED FOR ALL SIDE SEWER CONNECTIONS TO SEWER MAINLINES.
16. THE INTERIOR OF ALL DUCTILE IRON PIPE SHALL BE LINED PER PIERCE COUNTY SANITARY SEWER DEVELOPMENT SPECIFICATIONS.
17. THE INTERIOR WALLS OF ALL CONCRETE MANHOLES FOR INTERCEPTOR SEWERS (15" NOMINAL INSIDE DIAMETER AND LARGER) SHALL BE COATED PER PIERCE COUNTY SANITARY SEWER DEVELOPMENT SPECIFICATIONS.
18. THE EXTERIOR OF ALL MANHOLES SHALL BE COATED PER PIERCE COUNTY SANITARY SEWER DEVELOPMENT SPECIFICATIONS.
19. THE MINIMUM LENGTH OF CONCRETE ENCASEMENT SHALL BE 20 LINEAR FEET.
20. CONCRETE MANHOLES THAT ARE TAPPED FOR A FORCE MAIN CONNECTION SHALL HAVE THEIR INTERIORS RECEIVE PROTECTIVE COATINGS PER PIERCE COUNTY SANITARY SEWER DEVELOPMENT SPECIFICATIONS.
21. ALL TRENCH RESTORATION REQUIREMENTS, OTHER THAN PIPE BEDDING, SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON ACCOMMODATING UTILITIES IN PIERCE COUNTY RIGHT-OF-WAY. PEA GRAVEL, AS SPECIFIED IN THE PIERCE COUNTY SANITARY SEWER DEVELOPMENT SPECIFICATIONS, SHALL BE USED FOR ALL SANITARY SEWER PIPE BEDDING MATERIAL.
22. ALL PAVEMENT RESTORATION REQUIREMENTS IN THE PUBLIC RIGHT-OF-WAY SHALL BE DETERMINED BY THE PERMITTING JURISDICTION (I.E. - PIERCE COUNTY TRANSPORTATION SERVICES, CITY OF UNIVERSITY PLACE, CITY OF LAKEWOOD, TOWN OF MILTON, CITY OF TACOMA, CITY OF DUPONT, OR THE STATE OF WASHINGTON, ETC.) UPON APPLICATION AND ISSUANCE OF RIGHT-OF-WAY PERMIT OR EQUAL THEREOF. IN ADDITION, AT THE PERMITTING JURISDICTION'S DISCRETION, ALTERNATIVE CONSTRUCTION METHODS OTHER THAN STANDARD OPEN TRENCH CONSTRUCTION MAY BE REQUIRED FOR SANITARY SEWER CONSTRUCTION SHOWN ON THESE APPROVED CONSTRUCTION PLANS.

APPROVED	SWLE# 963258
<i>[Signature]</i>	12-23-2021
WASTEWATER UTILITY MANAGER	DATE
PLAN APPROVAL EXPIRES THREE (3) YEARS FROM THE DATE OF APPROVAL	

PERMIT DRAWING SET

**WASHINGTON DEPARTMENT OF
FISH & WILDLIFE**



SYM	DATE	REVISION DESCRIPTION	BY
APPROVED AND RELEASED FOR CONSTRUCTION			
CHIEF ENGINEER	DATE	DESIGNED BY K. SMITH	CHECKED BY K. SMITH
PROGRAM	DATE	DRAWN BY J. LONG	DATE 10-26-2021

**SOUTH PUGET SOUND WLA
MARINE MAMMAL LAB
SEWER CONSTRUCTION NOTES**

PROJECT NO.
PE:R39:2021-1

SHEET	OF
4	4

Smith, Kelly L (DFW)

From: pcppw_auto_notification@piercecountywa.gov
Sent: Thursday, December 23, 2021 4:32 PM
To: Smith, Kelly L (DFW)
Subject: Planning and Public Works eNotification

External Email



You're getting this message because you signed up on our eNotification to be notified if a Review was entered or modified on the following:

Application/Permit: [963258](#)

Site Address: 7801
Phillips RD

Work Description: 6" sewer line from the Marine Mammal Lab to the the existing gravity sewer system

Review Date: 12/24/2021 Reviewer: [Mauricio Brizuela](#)

Review Type: Request for
Information

Review Status: Request for
Information

Review Comment: Sewer Line Extension plans approved on 12/23/2021. Prior to issuance of SWLE #963258 the Sewer Division requires registered sewer contractor information. Approved plans are posted to the Documents tab. The letter associated with this review is not ready at this time. Once the letter is ready it will be sent to the engineer and applicant via email and posted to the Documents tab.

Use the Reviews tab when using the above link to see this change and the complete Review history.

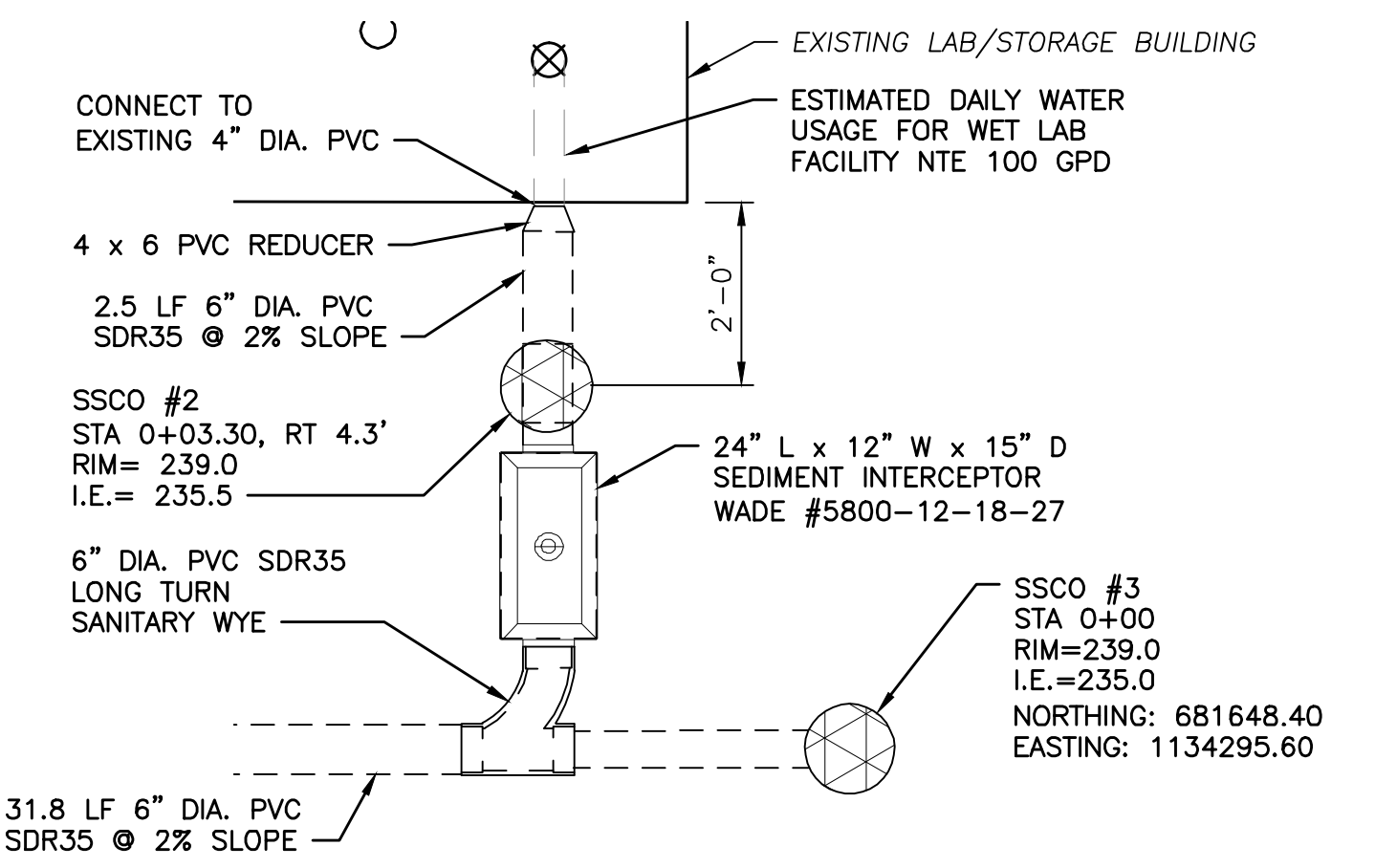
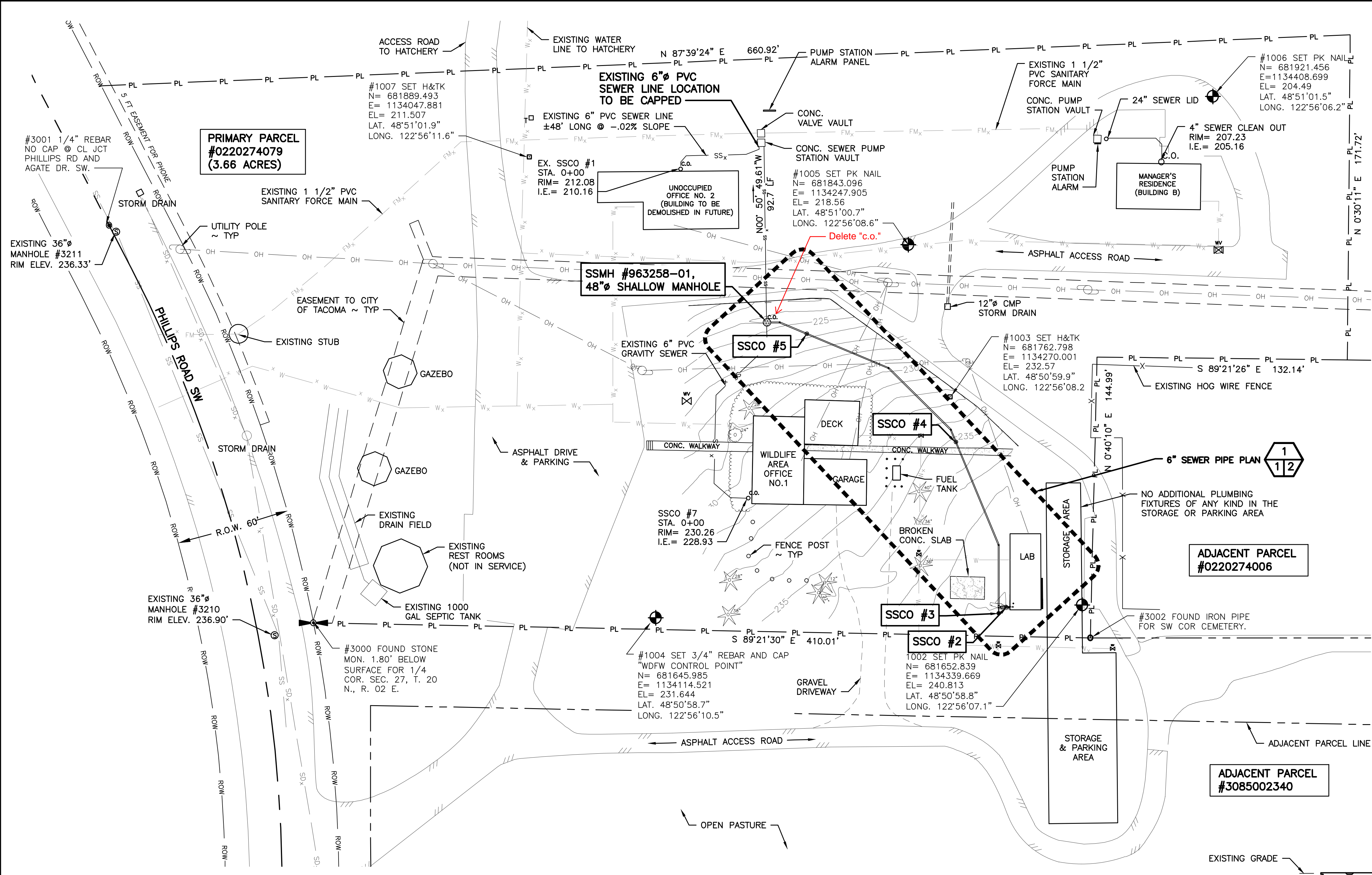
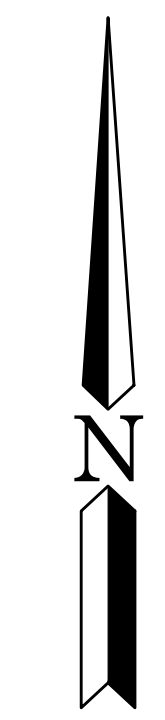
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SWCO #963226

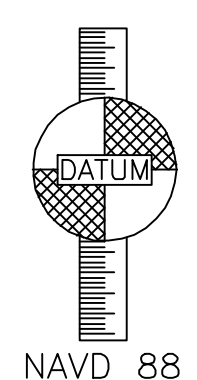
Pierce County Planning & Public Works
Sewer Division
Conceptually Approved for Sanitary Sewer
Date 9/13/2021

PROJECT DATA:
DATUM BASED ON NAVD 88
CONTOUR INTERVALS = 1 FT
SOURCE OF TOPOGRAPHY AND ON-SITE BENCHMARKS ACQUIRED FROM SURVEY (PE 03162021 2002E27 MARINE LAB TOPO) PERFORMED BY WDFW SURVEY CREW, DATED 03-22-2021, WFDW, ENGINEERING 600 CAPITAL WAY N. OLYMPIA, WA 98501 PHONE: (360-902-8300)
OWNER: STATE OF WASHINGTON - DEPT OF FISH & WILDLIFE 600 CAPITAL WAY N. OLYMPIA, WA 98501
PARCEL#: 0220274079 (3.66 ACRES)
ADDRESS: 7801 PHILLIPS ROAD SW LAKEWOOD, WA 98498
PROJECT IS NOT IN 100 YEAR FLOOD PLAIN.



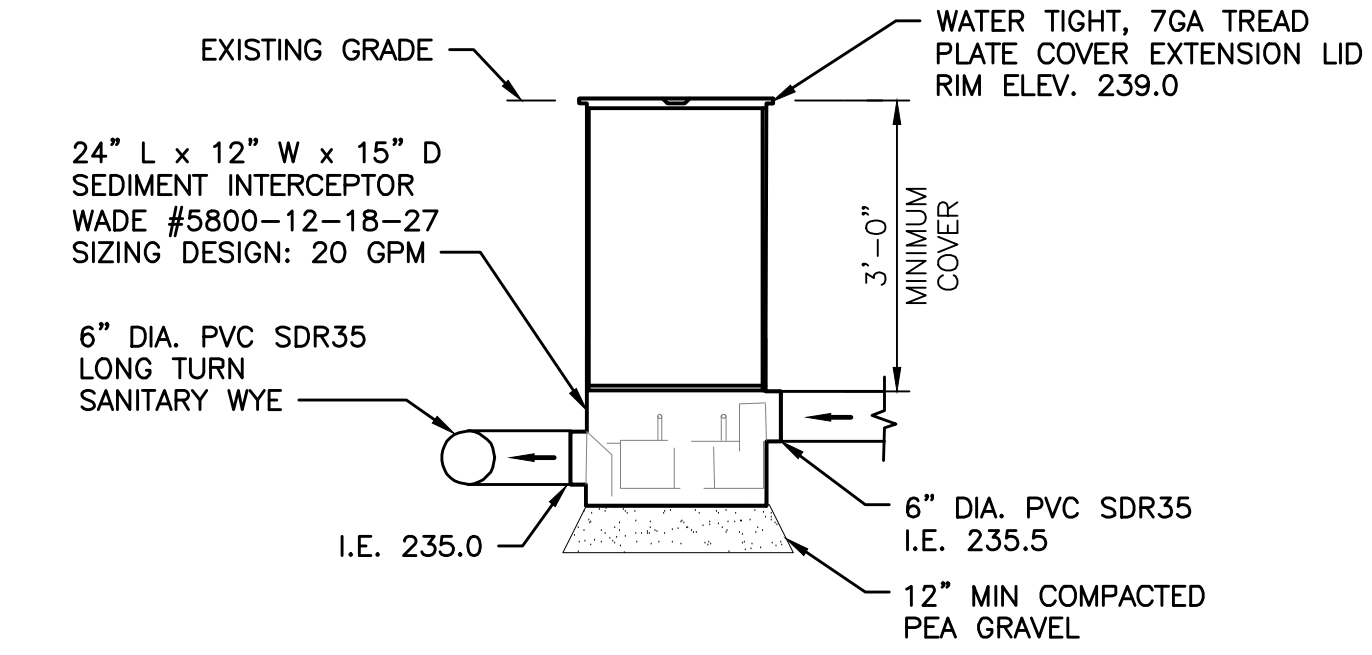
SEDIMENT INTERCEPTOR PLAN
SCALE: 1" = 2'-0"

- NOTE:**
- SEDIMENT INTERCEPTOR SOLID LID IS MADE OF 7GA TREAD PLATE COVER WITH LIFT HANDLE AND WATERTIGHT. INTERCEPTOR IS NOT LOCATED IN A DRIVING AREA.
 - SIDES OF SEDIMENT INTERCEPTOR ARE SOLID, STRUCTURALLY SOUND AND WATERTIGHT. MANUFACTURE RECOMMENDED MAXIMUM HEIGHT FOR LID EXTENSIONS IS 11 FT.



LEGEND

- PL PROPERTY LINE
- ROW RIGHT OF WAY
- EXISTING MINOR CONTOURS
- EXISTING MAJOR CONTOURS
- EASEMENT
- FENCE
- FMx FORCED SEWER MAIN
- SSx EXISTING SANITARY SEWER
- SDx EXISTING STORM DRAIN
- Wx EXISTING WATER
- OH OVERHEAD POWERLINE
- UTILITY POLE
- UTILITY SEWER
- WATER VALVE
- UTILITY LIGHT
- TREE CONIFER



SEDIMENT INTERCEPTOR DETAIL
SCALE: 1" = 2'-0"

**SOUTH PUGET SOUND WILDLIFE AREA
MARINE MAMMAL LAB SEWER CONNECTION**
SECTION 27, TOWNSHIP 20 N., RANGE 02 E W.M. PIERCE COUNTY
PRIVATE SANITARY SEWER CONNECTION SWCO #963226



**NOT APPROVED FOR
CONSTRUCTION. REVIEW ONLY**

WASHINGTON DEPARTMENT OF
FISH & WILDLIFE

SYM	DATE	REVISION DESCRIPTION	BY
APPROVED AND RELEASED FOR CONSTRUCTION			
CHIEF ENGINEER		DATE:	
PROGRAM		DATE:	

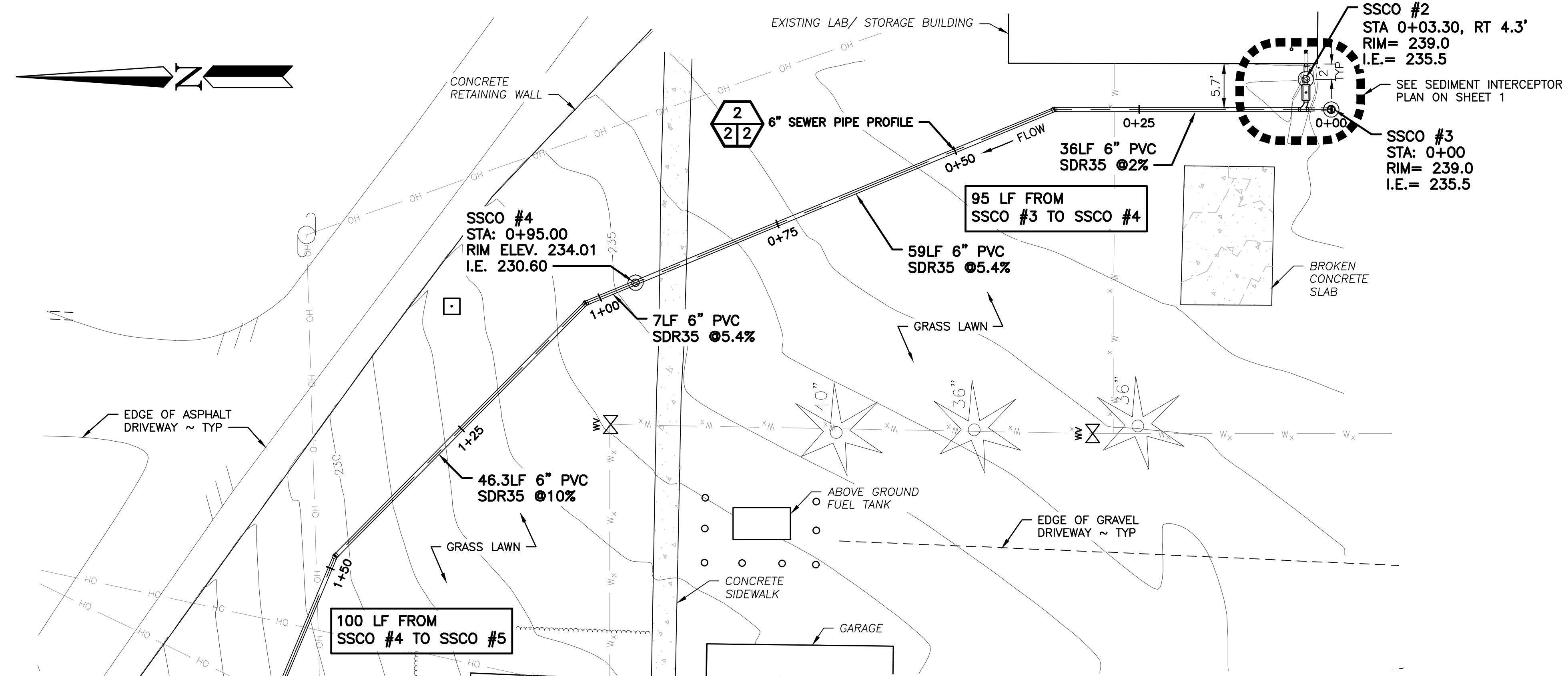
DESIGNED BY K. SMITH
CHECKED BY K. SMITH
DRAWN BY J. LONG
DATE 08-16-2021

**SOUTH PUGET SOUND WLA
MARINE MAMMAL LAB
SEWER SITE PLAN**

PROJECT NO. PE:R39:2021-1	
SHEET 1	OF 2

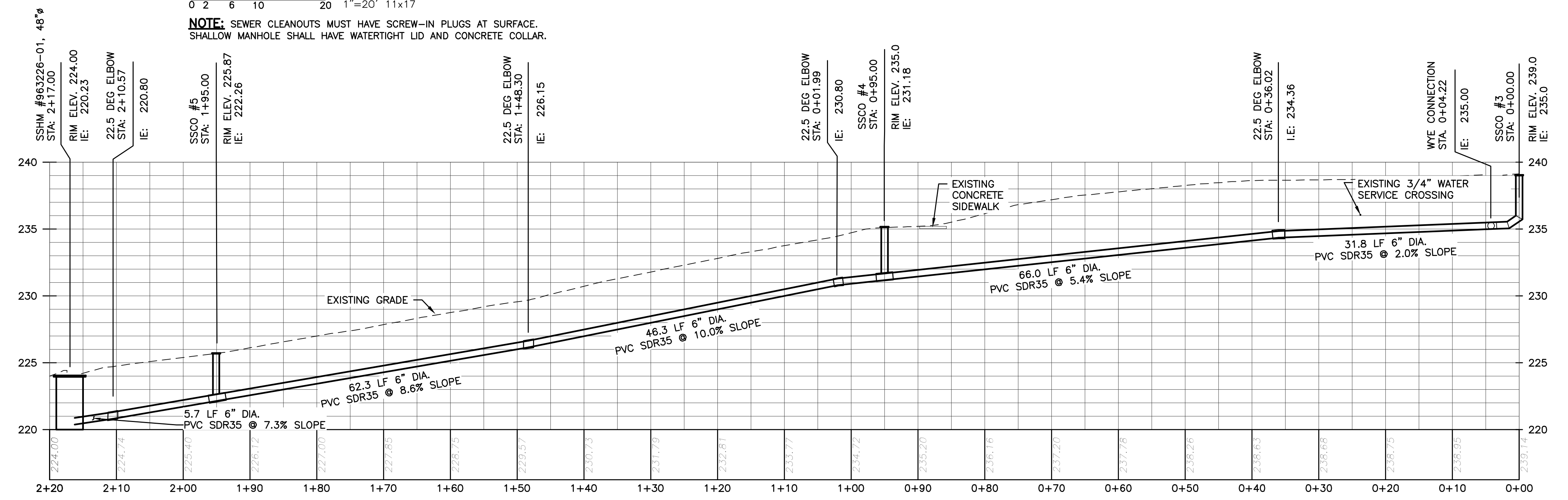
SWCO #963226

Pierce County Planning & Public Works
Sewer Division
Conceptually Approved for Sanitary Sewer
Date 9/13/2021



6" SEWER PIPE PLAN 1/12

NOTE: SEWER CLEANOUTS MUST HAVE SCREW-IN PLUGS AT SURFACE. SHALLOW MANHOLE SHALL HAVE WATERTIGHT LID AND CONCRETE COLLAR.



6" SEWER PIPE PROFILE 2/22

WASHINGTON DEPARTMENT OF
FISH & WILDLIFE

NOT APPROVED FOR CONSTRUCTION. REVIEW ONLY

SOUTH PUGET SOUND WLA
MARINE MAMMAL LAB
SEWER PIPE PLAN & PROFILE

PROJECT NO.
PE:R39:2021-1
SHEET 2 OF 2

SYM	DATE	REVISION DESCRIPTION	BY
APPROVED AND RELEASED FOR CONSTRUCTION			
DESIGNED BY	K. SMITH		
CHECKED BY	K. SMITH		
DRAWN BY	J. LONG		
DATE	08-16-2021		

Smith, Kelly L (DFW)

From: pcppw_auto_notification@piercecounitywa.gov
Sent: Tuesday, September 14, 2021 4:33 PM
To: Smith, Kelly L (DFW)
Subject: Planning and Public Works eNotification

External Email



You're getting this message because you signed up on our eNotification to be notified if a Review was entered or modified on the following:

Application/Permit: [963226](#)

Site Address: 7801
Phillips RD

Work Description: Connect a commercial 6" sewer line from the Marine Mammal Lab to the the existing gravity sewer system on the site and install a sediment interceptor outside the lab building.

Review Date: 09/14/2021 Reviewer: [Mauricio Brizuela](#)

Review Type: Request for Information

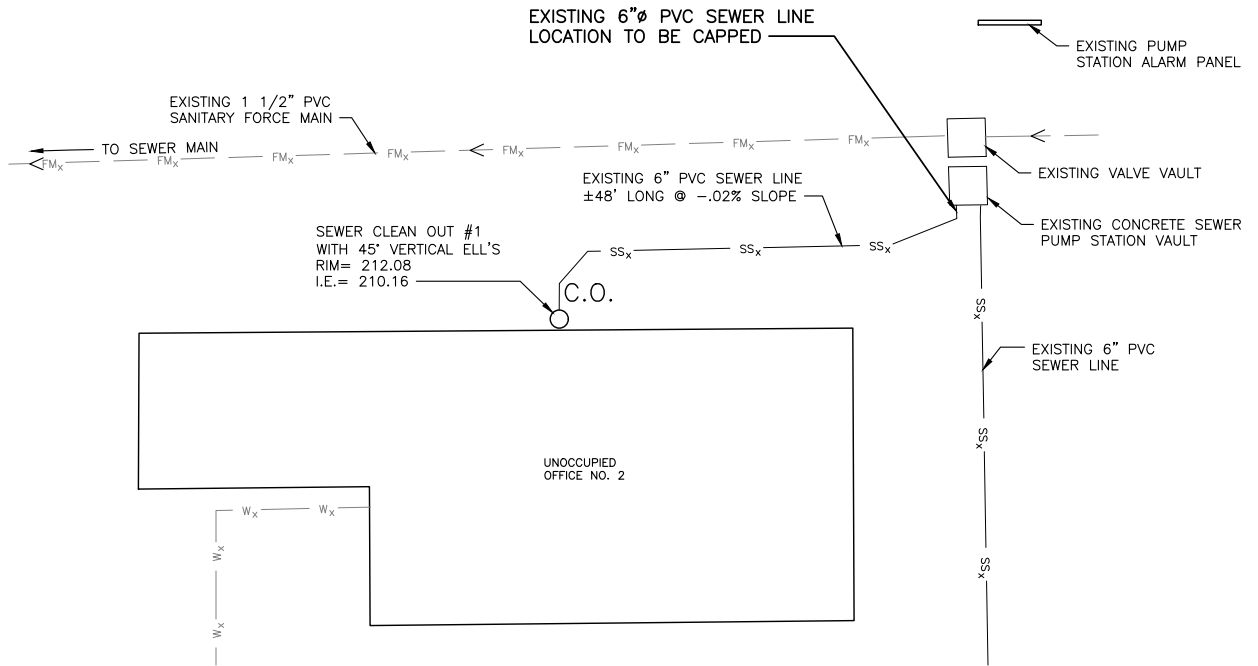
Review Status: Request for Information

Review Comment: Sewer Site Plan conceptually approved on 9/13/2021. Prior to issuance of SWCO #963226, the Sewer Division requires: 1. Issuance of SWLE #963258 2. The Pretreatment Review application (SWDR #963277) must be completed and ready for approval. 3. Payment of connection charge. 4. Registered Sewer Contractor information. The estimated connection charge can be re-calculated, and payment may be deferred for a set period of time, if the applicant applies for a Sub-Metering Program.

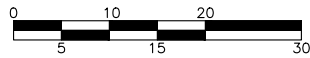
Use the Reviews tab when using the above link to see this change and the complete Review history.

Please Note:

This email was intended for kelly.smith2@dfw.wa.gov
You received this email because you are subscribed to Pierce County PPW



SEWER LINE CAPPING PLAN



SCALE: 1" = 20'

Pierce County Planning & Public Works
Sewer Division
Conceptually Approved for Sanitary Sewer

[Signature] Date 7/23/2021

PROJECT DATA:

OWNER: STATE OF WASHINGTON – DEPT OF FISH & WILDLIFE
600 CAPITOL WAY N. OLYMPIA, WA 98501

PARCEL#: 0220274079 (3.66 ACRES)

DIRECTIONS:

FROM OLYMPIA, TAKE I-5 NORTH TO EXIT 124. TURN RIGHT AND FOLLOW GRAVELLY LAKE DR TO BRIDGEPORT WAY SW. TURN RIGHT AND FOLLOW BRIDGEPORT WAY TO STEILACOOM BLVD SW. TURN RIGHT ONTO STEILACOOM BLVD AND FOLLOW IT TO PHILLIPS RD SW. TURN LEFT ONTO PHILLIPS RD SW AND DESTINATION WILL BE ON THE RIGHT.

ENG. PROJECT NO. _____ PORTION OF: T20N,R02E,S27 DRAWN BY: J. LONG

REFERENCE NUMBER:	PROJECT LOCATION (ADDRESS):	PROPOSED PROJECT: CAPPING OF EXISTING 6" SEWER LINE
APPLICANT: WASHINGTON DEPT. of FISH & WILDLIFE 600 CAPITOL WAY N. OLYMPIA, WA 98501-1091	SOUTH PUGET SOUND WILDLIFE AREA 7801 PHILLIPS RD SW LAKEWOOD, WA 98498-6345	
ADJACENT PROPERTY OWNER:	LAT/LONG: 48°51'00.7" – 122°56'08.6"	
1. –	DATUM: NAVD88	COUNTY: PIERCE COUNTY
2. –	SHEET 1 OF 1 DATE: 07-07-21	STATE: WA

Smith, Kelly L (DFW)

From: pcppw_auto_notification@piercecountywa.gov
Sent: Friday, July 23, 2021 4:56 PM
To: Smith, Kelly L (DFW)
Subject: Planning and Public Works eNotification

External Email



You're getting this message because you signed up on our eNotification to be notified if a Review was entered or modified on the following:

Application/Permit: [963228](#)

Site Address: 7801
Phillips RD

Work Description: Cap existing building sewer line at unoccupied Office No. 2. Work will be done at the same time the new commercial sewer line will be placed on the exterior of the Marine Mammal Lab behind BLDG 7801.

Review Date: 07/23/2021 Reviewer: [Mauricio Brizuela](#)

Review Type: Request for
Information

Review Status: Request for
Information

Review Comment: Sewer site plan conceptually approved on 7/23/2021. Prior to issuance of SWCO#963228, the Sewer Division requires registered sewer contractor information. Conceptually approved plan is found in the Documents tab.

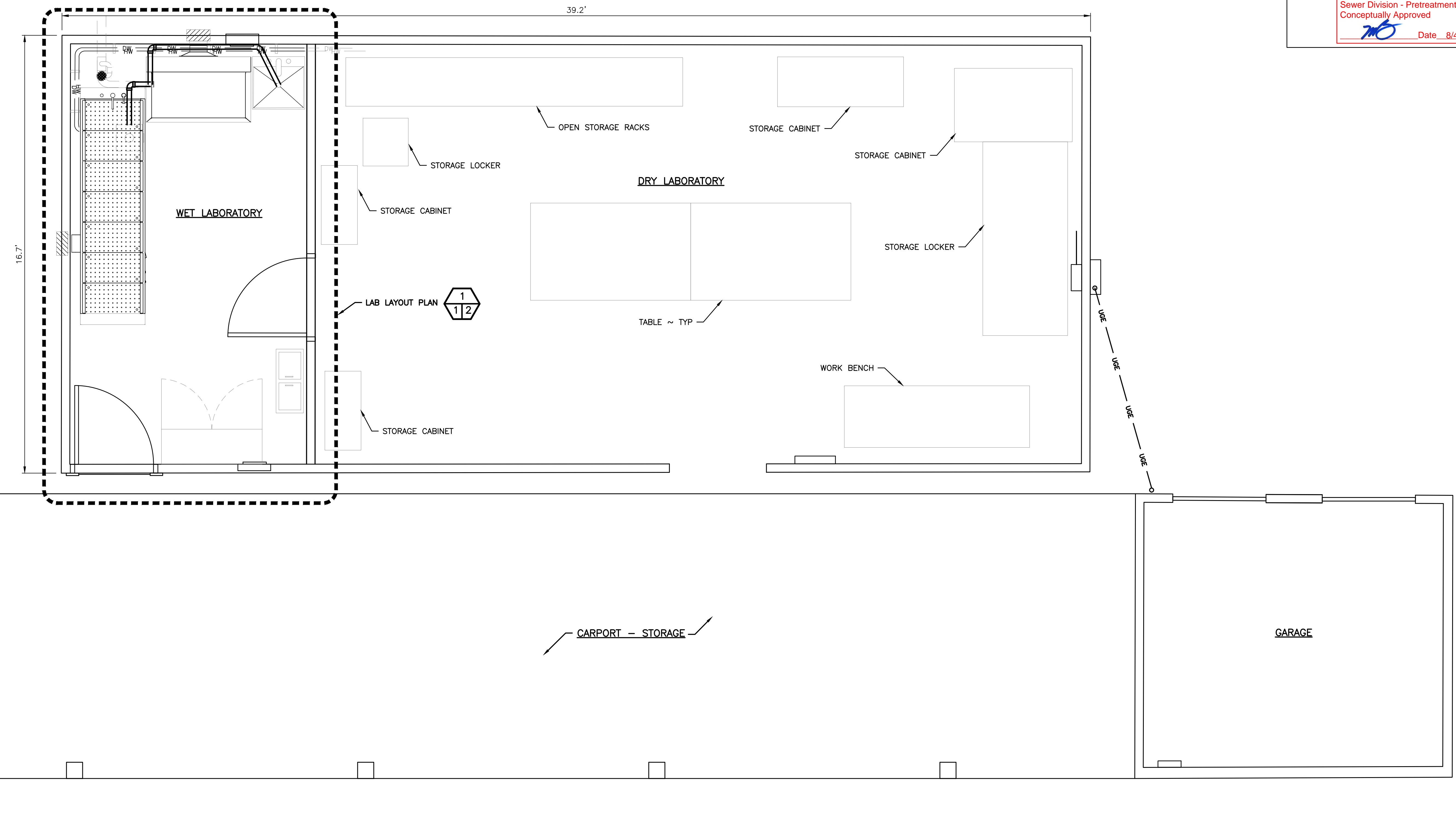
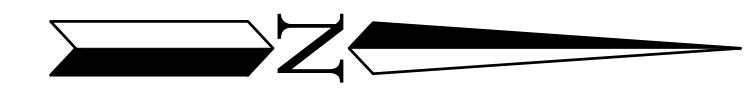
Use the Reviews tab when using the above link to see this change and the complete Review history.

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Please do not reply to this email, if you have questions please contact the Development Center at pccpermits@co.pierce.wa.us or

Pierce County Planning & Public Works
Sewer Division - Pretreatment Review
Conceptually Approved
ML
Date 8/4/2021



BUILDING PLAN
SCALE: 1" = 2'-0"

WASHINGTON DEPARTMENT OF
FISH & WILDLIFE

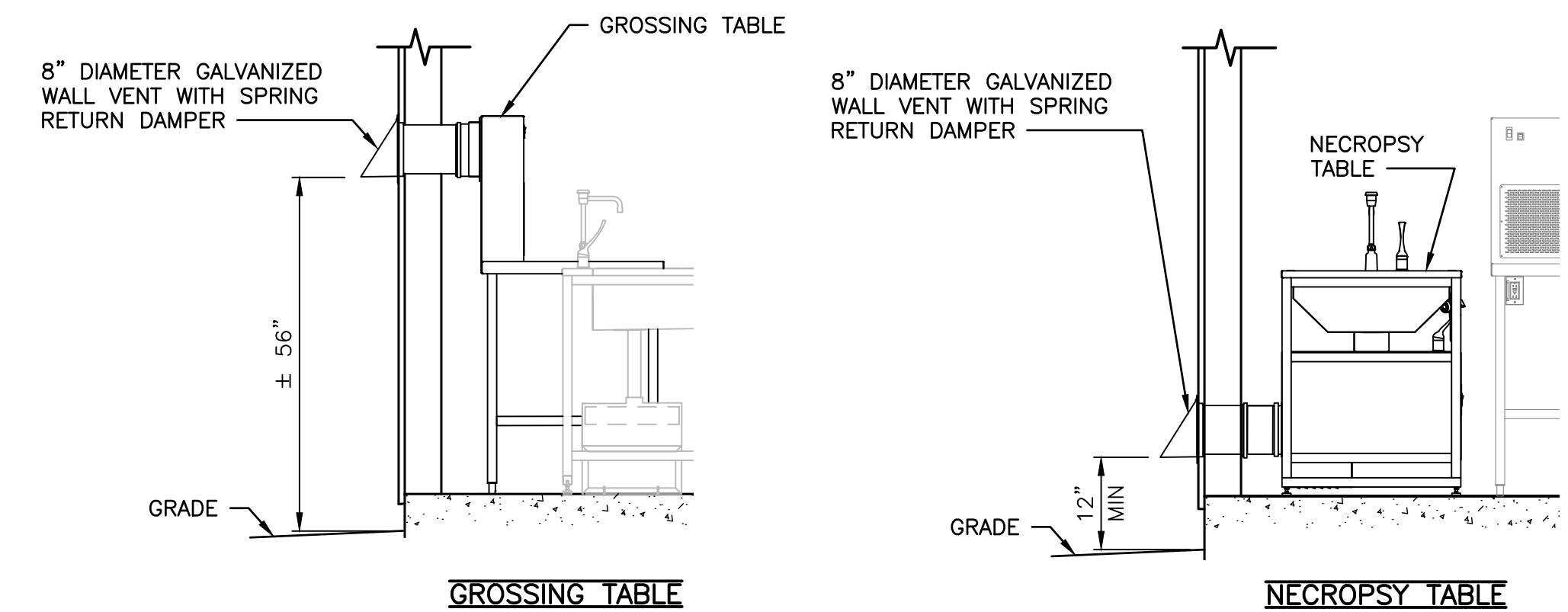
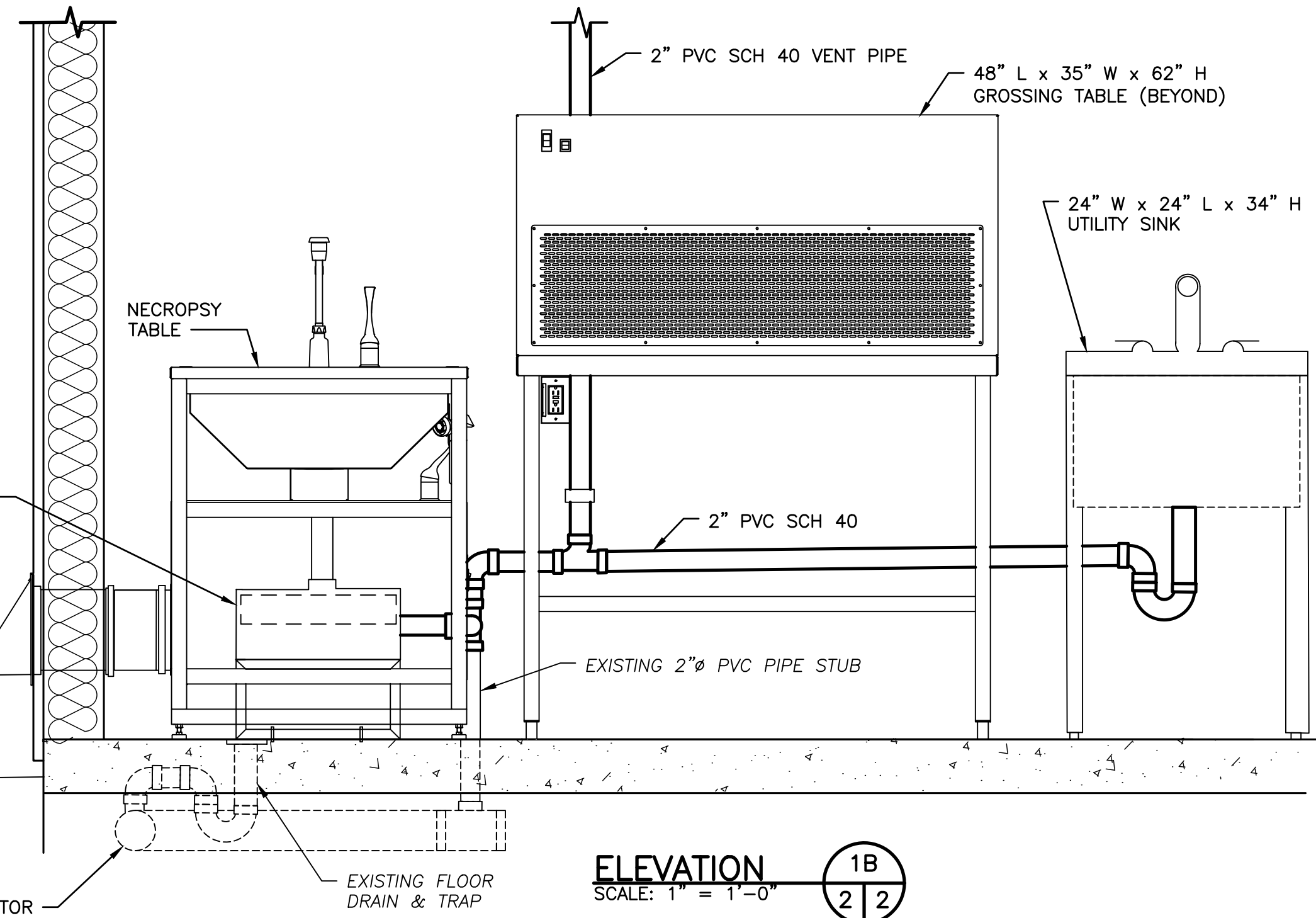
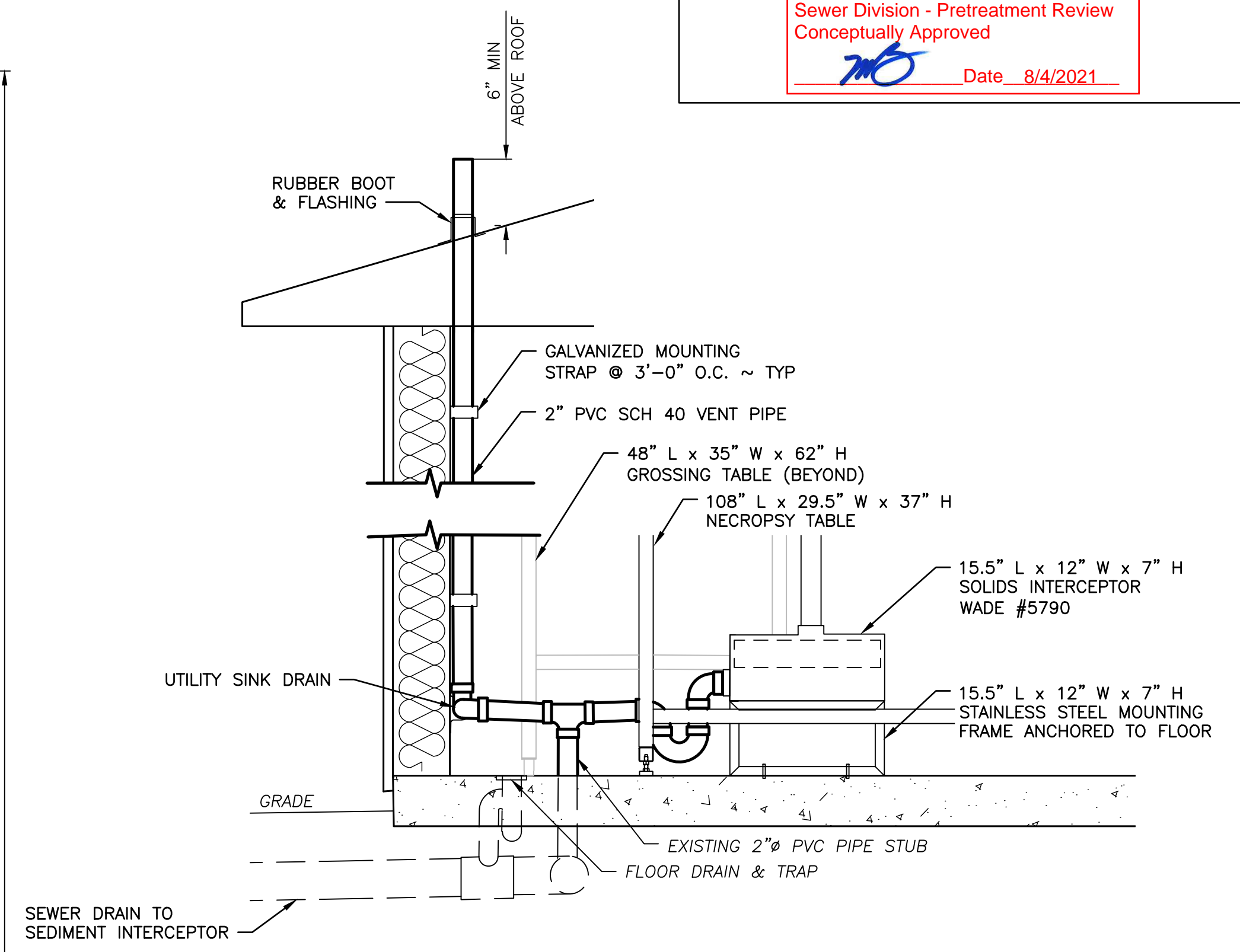
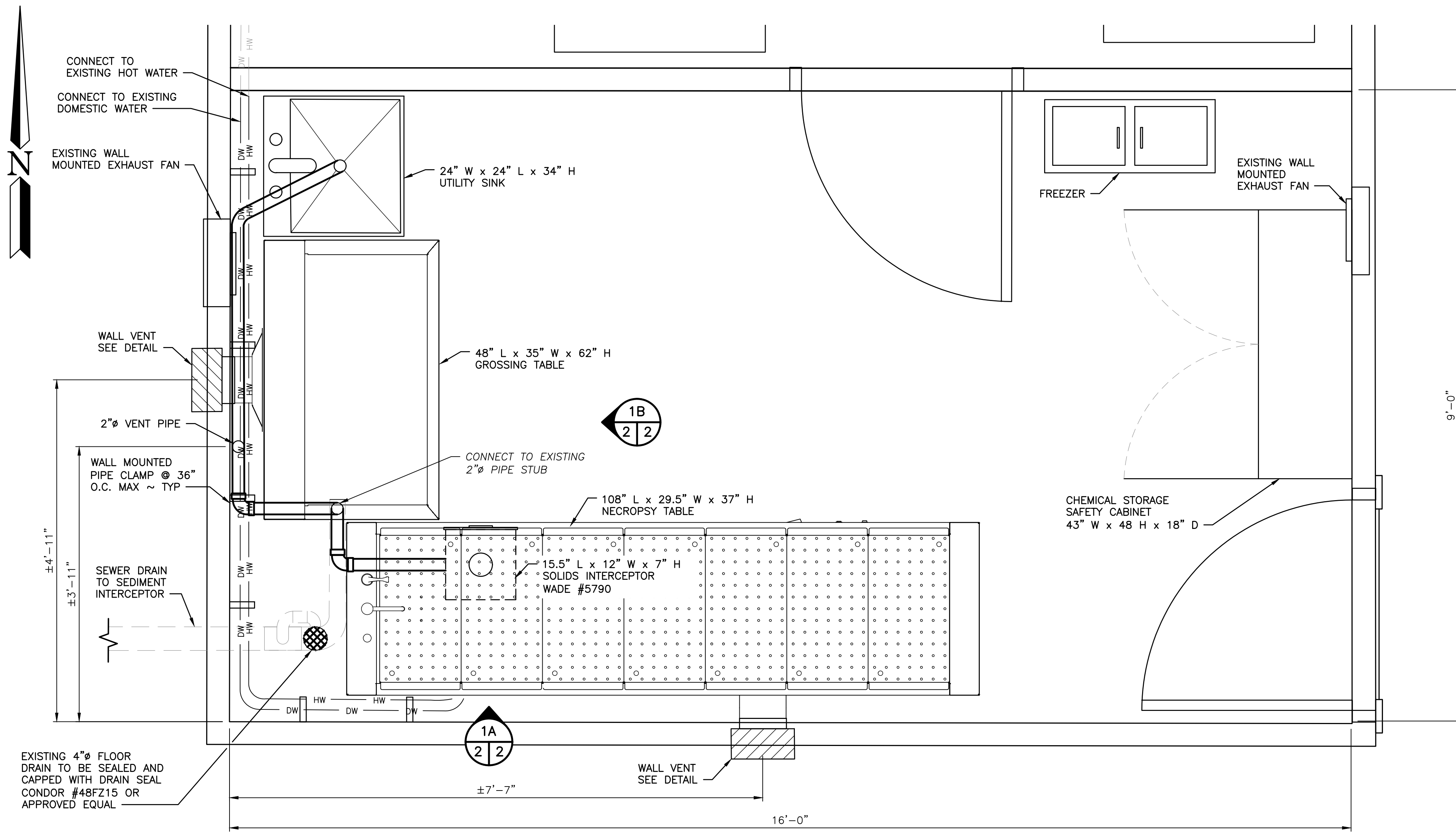
SYM	DATE	REVISION DESCRIPTION	BY
		APPROVED AND RELEASED FOR CONSTRUCTION	
CHIEF ENGINEER	DATE:	DESIGNED BY K. SMITH
PROGRAM	DATE:	CHECKED BY K. SMITH
			DRAWN BY J. LONG
			DATE 07-13-2021

SOUTH PUGET SOUND WLA
MARINE MAMMAL LAB
SEWER SITE PLAN
SWDR # 963277

PROJECT NO. PE:R39:2021-1	
SHEET 1	OF 2

Pierce County Planning & Public Works
Sewer Division - Pretreatment Review
Conceptually Approved

Date 8/4/2021



WASHINGTON DEPARTMENT OF
FISH & WILDLIFE

SYM	DATE	REVISION DESCRIPTION	BY
		APPROVED AND RELEASED FOR CONSTRUCTION	
CHIEF ENGINEER	DATE:	DESIGNED BY K. SMITH
PROGRAM	DATE:	CHECKED BY K. SMITH
			DRAWN BY J. LONG
			DATE 07-13-2021

SOUTH PUGET SOUND WLA
MARINE MAMMAL LAB
WET LAB LAYOUT PLAN
SWDR # 963277

PROJECT NO.
PE:R39:2021-1
SHEET 2 OF 2

Smith, Kelly L (DFW)

From: pcppw_auto_notification@piercecountywa.gov
Sent: Wednesday, August 4, 2021 3:45 PM
To: Smith, Kelly L (DFW)
Subject: Planning and Public Works eNotification

External Email



You're getting this message because you signed up on our eNotification to be notified if a Review was entered or modified on the following:

Application/Permit: [963277](#)

Site Address: 7801
PHILLIPS RD

Work Description: Minor pretreatment for Washington Department of Fish and Wildlife Marine Mammal Lab

Review Date: 08/04/2021 Reviewer: [Mauricio Brizuela](#)

Review Type: Request for Information

Review Status: Request for Information

Review Comment: Pretreatment review of SWDR #963277 completed 8/4/2021. Prior to approval of SWDR #963277 Development Engineering (Sewer Division) requires connection charges to be either paid in full, amortized or rented (alternative connection charge program) under SWCO #963226 prior to approval of the applications. The estimated connection charge will be calculated when the applicant ether submits corrected current water use data (the applicant has indicated that there have been sporadic water leaks on this property) or applies for a Sub-Metering Program. The letter associated with this review is not ready at this time. Once the letter is ready you will be notified. The letter will contain additional information regarding the review and items that need to be submitted.

Use the Reviews tab when using the above link to see this change and the complete Review history.



2401 South 35th Street, Room 2
Tacoma, Washington 98409-7460
piercecountywa.gov/ppw

August 5, 2021

Washington Department of Fish and Wildlife
Attn: Kelly Smith
P.O. Box 43158
Olympia, WA 98501

Subject: Minor Industrial User Pretreatment Review for Marine Mammal Lab
Application Number: SWDR #963277
Application Expiration Date: June 1, 2022
Associated Sewer Service Permit Application Number: SWCO #963226
Associated Sewer Line Extension Permit Application Number: SWLE #963258
Building Permit: City of Lakewood
Site Address: 7801 Phillips Road SW
Parcel Number: 0220274079 and 3085002340

Dear Ms. Smith:

The Sewer Division has completed its review of your Minor Industrial User pretreatment review application for the subject project and has the following comments. Note the pretreatment review cannot be approved until payment of the connection charge is received and a sewer permit is issued.

Submittals for new applications and resubmittals for existing applications must be made online at <http://piercecountywa.org/pals>.

Payment of permit fees and connection charges can also be made at the same website. For payment of permit fees by mail or in person, use the following address: Pierce County Development Center (Annex), 2401 South 35th Street, Room 150, Tacoma, WA 98409.

Sewer Division Standard Plans and Forms, including handouts, bulletins, applications, and checklists, can be downloaded in PDF format from the following webpage: www.piercecountywa.org/sewer.

1. Pierce County Planning and Public Works Sewer Division will not provide a commitment or guarantee of sewer availability for the subject proposal until payment of connection charges has been received by the Sewer Division. This letter shall be used for informational purposes only and shall not be misconstrued by the proponent or reviewing agency as a commitment on behalf of the Sewer Division.
2. Please note the Capacity Charges, Basin Area Charges, and future monthly Sewer Service fees for all commercial buildings are calculated based on actual water flows when available. Therefore, we strongly recommend the owner have a separate meter installed and a separate account initiated with the local water purveyor for irrigation water and any other water supply that will not be entering the sanitary sewer system. If a separate water meter and account is not feasible, the owner may enter into a Sub-metering Agreement with the County. Connection charge requirements will not be recalculated based on sub-metered usage until the sub-meter has been installed according to approved plans, the Sub-metering Agreement approved by the County, and at least 12 months of

sub-metered water readings submitted to our office for review. For further details regarding the ***Water Sub-metering Plan Review Application*** (A7), see Bulletin B21, ***Water Sub-metering Program***.

3. The Sewer Division approves the subject building's proposed discharge to the sanitary sewer system on condition all applicable conditions of the County's Pretreatment Ordinance No. 99-26, as amended from time to time, are followed including but not limited to:
 - a. Prior to approval of this Pretreatment Review Application, payment of the connection charge must be received by the County. Please see **PAYMENT OF CONNECTION CHARGES**, below, for more details.
 - b. A Sewer Service Permit Application (SWCO #963226) has been submitted to install the building sewer and sediment interceptor necessary to serve the subject lab. Comments regarding SWCO #963226 will be returned to the applicant/engineer under a separate review letter. The Sewer Service Permit plan review must be completed and the Sewer Service Permit issued prior to the approval of this Pretreatment Review Application.
 - c. The non-liquid wastes from the necropsy table are to be contained on site and removed from the site by a waste management company. These non-liquid wastes shall not be ground up and discharged into the sanitary sewer system.
 - d. Chemicals and cleaning supplies will not be stored above any of the sinks or floor drains. Any expired or unused chemicals, not stored in safety cabinets, shall be placed within secondary containment to eliminate spill potential.
 - e. VWR[®] Formalin Neutralizing Powder will be used to neutralize the spent formalin in the lab. The discharge to the sanitary sewers shall have a pH less than 11.0 and more than 5.5.
 - f. A Wade Drain Solids Interceptor Model 5794-174 shall be installed under the necropsy table per submittal. A mesh liner, with perforations no larger than 0.034 inches, shall be installed inside the sediment basket.
 - g. A Wade #5800-12-18-27 Sediment Interceptor shall be installed just downstream from the sewer cleanout located 2 ft. from the building.
 - h. Any user of the sewer system shall not discharge water or wastes containing fats, oils, or greases of animal or vegetable origin of any nature in excess of 100 milligrams per liter to the sanitary sewer system as per the Appendix to Chapter 13.06 of the County's Pretreatment Ordinance No. 99-26, as amended from time to time.
 - i. Any user of the sewer system shall not discharge water or wastes containing oils or greases of petroleum or mineral origin of any nature in excess of 50 milligrams per liter to the sanitary sewer system as per the Appendix to Chapter 13.06 of the County's Pretreatment Ordinance No. 99-26, as amended from time to time.
 - j. Any wastewater, which in the opinion of the Manager can cause harm either to the sewers, sewage treatment process, or equipment; have an adverse effect on the receiving stream; or can otherwise endanger life, limb, public property, or constitute a nuisance, unless allowed under special agreement by the Manager, shall not be discharged per Section 13.06.050 of the County's Pretreatment Ordinance No. 99-26, as amended from time to time.
 - k. Solids (greater than 1/4" in any dimension) or viscous substances which will or may cause obstruction to the flow in a sewer or other interference with the operation of the POTW shall not be discharged as per Section 13.06.050 of the County's Pretreatment Ordinance No. 99-26, as amended from time to time.
 - l. Grease, animal guts or tissues, paunch manure, bones, hair, hides or fleshings, entrails, whole blood, feathers, ashes, sand, spent lime, stone or marble dust, metal, glass, grass clippings, rags, spent grains, waste paper, wood, plastic, gases, tar, asphalt residues, residues from

refining or processing of fuel or lubricating oil, dental amalgams, clay materials, glass grinding and polishing wastes in amounts that would adversely affect the POTW or the treatment plant effluent, residues or biosolids shall not be discharged as per Section 13.06.050 of the County's Pretreatment Ordinance No. 99-26, as amended from time to time.

- m. If an accidental spill occurs on site, spill material shall not be discharged to the sanitary sewer system for clean-up.
- n. The Sewer Division shall be notified immediately at (253) 798-3013 (Monday through Friday 7:30 a.m. to 3:30 p.m.) or (253) 798-7000 (24-hours a day) if a spill or accidental discharge occurs.
- o. The property owner has acknowledged: a) Waste food will be disposed of into solid waste, not in the sanitary sewer; b) Garbage grinders/disposals are not present and will not be installed; and c) A dishwasher is not present and will not be installed; d) There will be no x-ray equipment installed; e) There will be no discharge of Wavicide or Glutaraldehyde-laden chemicals; f) Lab staff will transport expired chemicals off site and dispose of them through Clean Harbors Environmental Services Inc., the state-contracted hazardous waste remediation company (a state contract has been submitted).

PAYMENT OF CONNECTION CHARGES – When making your payment, please refer to the Sewer Service Permit application (SWCO #963226). The connection charge must be paid, in full, prior to issuance of the Sewer Service Permit.

1. This property has been credited with capacity rights equal to 3.8 residential equivalent (RE). Additional information regarding the water usage is needed. The documents and responses that are received from the applicant will be used in determining if any connection charges are owed. Currently the connection charge rates are as follows:

Parcel Numbers: Same as above.

Basin: Lakewood West (LK-W)

Basin Area Charge Rate: \$3,193.00/RE

Capacity Charge Rate: \$3,550.00/RE

Note that one residential equivalent (RE) is equal to 220 gpd.

2. The remaining capacity in the County's sewer system will be sold on a first-come, first-served basis at the time connection charges are paid in full. Because the remaining capacity is limited, the County cannot guarantee how long it will be available.
3. Please note any future Capital Improvement Projects, Reimbursement Agreements, or Latecomers Agreements between the County and other property owners to construct improvements downstream of the subject property can result in a significantly higher connection charge.
4. The total estimated connection charge will be recalculated at the time the owner purchases it based on the rates in effect at that time. On February 1 of each year, unless otherwise determined by ordinance of the Council, in accordance with Pierce County Ordinance 2019-28s, "the rates for the area charge and the treatment plant capacity charge shall be adjusted annually by the same amount as the percentage change in the Consumer Price Index for All Urban Consumers (CPI-U) for Seattle-Tacoma-Bremerton Metropolitan Statistical Area for the Preceding 12-month period." Once paid, connection charges are credited against the parcel and are only refundable to the person(s) or entity that is the property owner of record at the time of refund."

REGISTERED SIDE SEWER CONTRACTOR – After plan approval, the applicant's registered side sewer contractor shall obtain the necessary sewer service permit from the Sewer Division Representative at the Pierce County Development Center (Annex). Please note all building sewers shall be installed per the *Building Sewer Installation Guidelines* (Page 1 and Page 2) for a commercial site.

MISCELLANEOUS NOTES

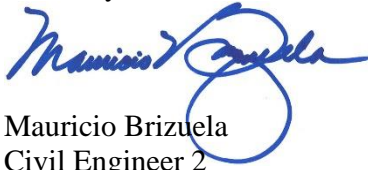
1. The County's costs incurred during the duration of the project from plan review through completion of construction will be based on the department's time and materials utilized for your project. When the total County costs exceed the amount of the non-refundable deposit, the owner/developer must pay the additional fees within thirty (30) days of invoice. Work may be suspended when the time and materials account is in a late status. Prior to the County granting final approval of the sewer system the payment of additional fees under the time and materials account must be current. If the additional fees are not paid, the County will place a lien against the subject parcel(s) per Pierce County Code 13.04.095.
2. Private sewer facilities (building sewers, private sewer mains, grinder pumps, grease interceptors, and oil-water separators, etc.) will remain under the ownership of the property owners, and the responsibility for operation and maintenance shall be theirs.
3. Note that each application and permit has a separate expiration date associated with it. The expiration date of this Pretreatment Review Application is shown in the subject of this letter. You must keep this Pretreatment Review application active during review of the Sewer Line Extension Permit Application and Sewer Service Permit Application. Failure to do so will result in the need to submit a new Pretreatment Review Application package and re-pay the application fees.
4. This application is valid for 12 months from the date of application. Applications and/or permits may be extended an additional 12 months from the original expiration date provided that:
 - a. The applicant submits to the Department a properly completed *Sewer Application/Permit Expiration Date Request* application for a 12-month expiration extension prior to the current date of expiration; and
 - b. The applicant pays an additional application/review/inspection fee in the amount of 25 percent of the application/review/inspection fees along with the submittal of the request.
5. Once issued, sewer service permits and sewer line extension permits are valid for 12 months. Permits may be extended an additional 12 months from the original expiration date using the procedures stated above.
6. The Sewer Division may test the characteristics of water and waste discharge to the County's system under the Pierce County Sewer Division Administrative Code, as amended from time to time, and if it is found illegal material is discharged into the sewer, the owner(s) may be charged for all costs related to testing the characteristics of wastewater, fined up to \$10,000.00 per day per violation, and held liable for any damages the discharge may cause.
7. The sewer construction for the subject building must have final inspection approval by the Sewer Division prior to granting commercial building occupancy approval.
8. The sewer service permit must be obtained prior to building permit issuance.

9. The Sewer Division cannot approve the subject pretreatment review application prior to issuance of a sewer service permit, payment of connection charges or pending any other Sewer Division requirements.

If you have any questions regarding the above, please contact me at (253) 798-4134, or mauricio.brizuela@piercescountywa.gov.

Note the fees and connection charges shown in this letter are subject to change without prior notification.

Sincerely,



Mauricio Brizuela
Civil Engineer 2

MB:bd

ec: Kelly L. Smith, Washington Department of Fish and Wildlife: Kelly.Smith2@dfw.wa.gov
Glenn F. Gerth, P.E., Washington Department of Fish and Wildlife: Glenn.Gerth@dfw.wa.gov
City of Lakewood: permits@cityoflakewood.us
Lauren E. Hines: lhines@cityoflakewood.us
Lab Supervisor, Wastewater Treatment Plant: river.wan@piercescountywa.gov

Smith, Kelly L (DFW)

From: Billie Stewart <bstewart@cityoflakewood.us> on behalf of Permits <permits@cityoflakewood.us>
Sent: Thursday, January 20, 2022 2:16 PM
To: Smith, Kelly L (DFW); Lauren Hines; Courtney Brunell
Cc: Permits; Polodna, Michael (DFW)
Subject: PAYMENT RECEIVED Marine Mammal Lab - Permitting BP-21-00652
Attachments: ~pm936.pdf

External Email

Hello,

Payment fee receipt for the above permit is attached; permit and approved documents/drawings will be forthcoming.

Best,



Billie Stewart | Permit Technician

[City of Lakewood](#)

6000 Main Street SW | Lakewood, WA 98499

BStewart@cityoflakewood.us

ATTENTION: The City of Lakewood has implemented a new software system. To make application, pay your fees and schedule inspections please visit our new online dashboard <https://pals.cityoflakewood.us/palsonline/#/dashboard>

From: Smith, Kelly L (DFW) <Kelly.Smith2@dfw.wa.gov>
Sent: Tuesday, January 18, 2022 3:59 PM
To: Lauren Hines <lhines@cityoflakewood.us>; Courtney Brunell <CBrunell@cityoflakewood.us>
Cc: Permits <permits@cityoflakewood.us>; Polodna, Michael (DFW) <Michael.Polodna@dfw.wa.gov>
Subject: RE: Marine Mammal Lab - Permitting BP-21-00652

This email originated outside the City of Lakewood.

Use caution when following links or opening attachments as they could lead to malicious code or infected web sites. When in doubt, please contact the HelpDesk.

- helpdesk@cityoflakewood.us ext. 4357

Thank you so much Lauren, I really appreciate your help. I will have our admin call to pay over the phone, thank you so much!

Respectfully,

Kelly L. Smith

From: Lauren Hines <lhines@cityoflakewood.us>
Sent: Tuesday, January 18, 2022 3:56 PM
To: Smith, Kelly L (DFW) <Kelly.Smith2@dfw.wa.gov>; Courtney Brunell <CBrunell@cityoflakewood.us>
Cc: Permits <permits@cityoflakewood.us>; Polodna, Michael (DFW) <Michael.Polodna@dfw.wa.gov>
Subject: RE: Marine Mammal Lab - Permitting BP-21-00652

External Email

Kelly~

Your permit review is complete and approved. The balance due is \$ 85.00. We can issue your permit once the sewer permit is issued. To make payment on our permit with VISA or MasterCard, you may call 253-512-2261 (option 1) and leave a message with your name & contact number. Someone will contact you back to accept your payment.

Let me know if I can assist you further.

Lauren Hines
Permit Coordinator
City of Lakewood
6000 Main ST SW
Lakewood WA 98499
253-983-7733
lhines@cityoflakewood.us
permits@cityoflakewood.us
www.cityoflakewood.us

From: Smith, Kelly L (DFW) <Kelly.Smith2@dfw.wa.gov>
Sent: Friday, January 7, 2022 10:22 AM
To: Courtney Brunell <CBrunell@cityoflakewood.us>; Lauren Hines <lhines@cityoflakewood.us>
Cc: Permits <permits@cityoflakewood.us>; Polodna, Michael (DFW) <Michael.Polodna@dfw.wa.gov>
Subject: RE: Marine Mammal Lab - Permitting

This email originated outside the City of Lakewood.

Use caution when following links or opening attachments as they could lead to malicious code or infected web sites. When in doubt, please contact the HelpDesk.

- helpdesk@cityoflakewood.us ext. 4357

Hi Courtney and Lauren,

I am following up to see if you require any additional information from WDFW for the plumbing permit.

I look forward to discussing.

Have a great Friday!

Respectfully,

ATTACHMENT 2 – MONITORING PLAN

Inadvertent Discovery Plan for Cultural Resources (IDP)

**WASHINGTON STATE DEPARTMENT OF FISH & WILDLIFE
INADVERTENT DISCOVERY PLAN FOR CULTURAL RESOURCES
FOR THE MARINE MAMMAL LAB REPAIR PROJECT IN
PIERCE COUNTY, WASHINGTON**

The Inadvertent Discovery Plan is intended to provide clear guidance related to the management of an unexpected discovery or unearthing of cultural artifacts, archaeological features or other evidence of cultural materials and/or of skeletal material of human or unknown origin during WDFW projects not governed by a DAHP-issued excavation permit, or by a Monitoring or Site Protection Plan for a specific area or activity.

This plan is to be implemented without exception whenever such discoveries occur, and applies to WDFW staff, contractors, subcontractors, volunteers, and others who may be involved with projects initiated by WDFW, or occurring on WDFW-managed land. This plan does not supersede or satisfy requirements for Monitoring, Site Protection, or other plans developed to address concerns at known archaeological and historic sites.

PRE-FIELD ACTIONS

Prior to ground disturbance, the WDFW project or program manager (PM) will notify work crews/machine operators that they are obligated to cease work in the immediate area and notify supervisory personnel upon discovery of any bones or objects of human manufacture, particularly suspected Native American artifacts. This action will be repeated prior to commencement of work in new locations, after significant changes in field staff, and if work is re-started after a hiatus. Field supervisors will be made aware of their responsibilities for interim protection and notification as detailed below.

FIELD ACTIONS

Specific Procedures for the Inadvertent Discovery of Archaeological Resources

In the event that cultural resources (not including human remains) are encountered during project implementation, the following actions will be taken:

1. All work within the discovery area and a surrounding buffer adequate and sufficient to prevent further disturbance will cease. The field supervisor will notify the PM immediately.
2. The PM will immediately contact WDFW archaeologist or archaeological monitor. If an archaeological monitor is present, he/she will notify the WDFW archaeologist.
3. If the WDFW archaeologist determines that potentially significant archaeological materials or historic sites are present, the PM will be advised of interim protective measures. Work may resume outside the buffer, unless the WDFW archaeologist directs otherwise.

4. The WDFW archaeologist will initiate Tribal and DAHP consultation regarding evaluation of the find's significance, potential for effects caused by the project, and subsequent treatment plans or Memoranda of Agreement (MOA).
5. Wherever possible, the preferred treatment of significant archaeological resources and historic sites will be in situ preservation. If a treatment plan requires that such resources be excavated or removed, an agreement must first be reached between WDFW and the consulting parties.

Specific Procedures for the Inadvertent Discovery of Human Remains

Inadvertent finds of what appear to be human remains introduce cultural concerns and legal requirements that initiate a different response than cultural resources. Human remains must be treated with utmost respect. The following language is to be followed to the letter:

Inadvertent Discovery of Human Skeletal Remains on Non-Federal and Non-Tribal Land in the State of Washington (RCWs 68.50.645, 27.44.055, and 68.60.055)

If ground disturbing activities encounter human skeletal remains during the course of construction, then all activity will cease that may cause further disturbance to those remains. The area of the find will be secured and protected from further disturbance until the State provides notice to proceed. The finding of human skeletal remains will be reported to the county medical examiner/coroner and local law enforcement in the most expeditious manner possible. The remains will not be touched, moved, or further disturbed. The county medical examiner/coroner will assume jurisdiction over the human skeletal remains and make a determination of whether those remains are forensic or non-forensic. If the county medical examiner/coroner determines the remains are non-forensic, then they will report that finding to the Department of Archaeology and Historic Preservation (DAHP) who will then take jurisdiction over the remains. The DAHP will notify any appropriate cemeteries and all affected tribes of the find. The State Physical Anthropologist will make a determination of whether the remains are Indian or Non-Indian and report that finding to any appropriate cemeteries and the affected tribes. The DAHP will then handle all consultation with the affected parties as to the future preservation, excavation, and disposition of the remains.

Under no conditions are WDFW staff or other project personnel to make the location or contents of inadvertent human remains finds public, unless specifically authorized to do so in the burial treatment plan.

CONTACTS

WASHINGTON STATE DEPARTMENT OF FISH & WILDLIFE

Department Archaeologist

Adam Rorabaugh, CAMP Archaeologist 360-789-3290
Katherine Kelly, WDFW Archaeologist 360-688-0676

Project Manager and Alternative Contact

Kelly Smith, WDFW Project Manager 360-789-2759

MUCKLESHOOT INDIAN TRIBE

Laura Murphy, Cultural Resources 253-876-3272

PUYALLUP TRIBE

Brandon Reynon, Cultural Resources 253-573-7986

WASHINGTON STATE DEPARTMENT OF ARCHAEOLOGY AND HISTORIC PRESERVATION

Allyson Brooks, State Historic Preservation Officer 360-586-3066
Rob Whitlam, State Archaeologist 360-586-3080
Guy Tasa, State Physical Anthropologist 360-586-3534

PIERCE COUNTY

Pierce County Sherriff's Office 360-798-7530
Pierce County Medical Examiner 253-798-6494

Definitions:

Archaeological Features are physical alterations in the natural environment such as pits or house foundations.

Archaeological materials are the physical remains of human cultural behavior, including artifacts and features left on the landscape.

Artifacts are the physical objects of a culture, including tools with evidence of intentional modification (such as flaked stone blades) as well as those objects such as fire-cracked rock that reflect human activity.

Burial statutes include the 2008 Washington State legislation that established current practices for inadvertent burial treatment through additions and amendments to the code, including 27.44 RCW (Indian Graves and Records, as amended), 27.53 (Archaeological Sites and Resources, as amended), as well as chapters 27.34, 43.334, 68.60, and 68.60 RCW.

Consulting parties are those which have a legal right to comment on determinations of significance and NRHP eligibility, project effects on cultural resources, and human remains. This may vary according to projects, but typically includes DAHP and Tribes whose Ceded Lands or Usual and Accustomed areas include the project area.

Coroner refers to the office of the local county coroner or medical examiner, and is responsible for confirming that the remains are human and determining whether they are forensic (dead less than 50 years, and therefore a law enforcement matter) or non-forensic (more than 50 years, and therefore subject to burial statutes).

Cultural Deposits are layers or features of sediment containing cultural materials.

Cultural Resources include archaeological resources and historic sites.

Historic sites are locations 50 years old or older, where native or non-native events and activities have taken place since the arrival of Euro-Americans, and which are considered by DAHP to be historic site types.

Human remains are any physical remains that are known to be human, or could be human but have not yet been positively identified.

Physical anthropologist in this case refers to the professional physical anthropologist employed at DAHP, who determines whether human remains are Native American (if possible), and is the individual responsible for handling human remains.

ATTACHMENT 3 – PHOTOS & SOIL SAMPLES

- **Site and Lab Photos**
- **Sample Locations_32421**
- **Sample Locations_42821**
- **Soil Sample Analysis_32421**
- **Soil Sample Analysis_42841**
- **Tacoma-Pierce County Health Department
Septic/Pump Tank Decommissioning Guide**

Marine Mammal Lab Photos



Fig. 1: Current condition of area behind lab.



Fig. 2: 4 inch sewer pipe exiting the rear of the lab.

Marine Mammal Lab Photos



Fig. 3: Location of existing 6 inch cleanout leading to the sewer pump vault station. The existing cleanout will be removed, and replaced with a shallow concrete manhole.



Fig. 4: Lab located at the top of the hill on the right. New sewer line will come out of the rear of the building, and will be placed in the grass and connect to the new shallow concrete manhole.

Marine Mammal Lab Photos



Fig. 5: Exposed barrel(s) located in the ground behind the lab.



Location of buried tarp.

Location of blue barrel.

Fig. 6: Location of buried tarp and barrel behind the lab.

Marine Mammal Lab Photos



Fig. 7: Location of buried tarp.
Approximately 9 inches below the ground surface.



Fig. 8: Location of blue barrel.
Approximately 9 inches below the ground surface.

Marine Mammal Lab Photos



Fig. 9: Orange spray paint denote approximate location of 3 inch concrete slab, which maybe covering a concrete vault.



Fig. 10: Visual of the 3 inch concrete slab.

Marine Mammal Lab Photos



Fig. 11: Unoccupied Office No. 2



Fig. 12: Unoccupied Office No. 2 cleanout location.

Soil Sample Locations_32421



Soil Sample Locations_42821

Blue barrel, no corrosion, approx. 10 ft from downspout, under 9 in of earth.

MML-003

17 FT

Buried blue tarp location (5 ft from downspout, under 9 in of earth)

Exposed barrel location. Potentially 3 corroded 55 gallon drums.

MML-001

3" Concrete Slab, approx. 7 ft wide x 11 ft long

MML-004

MML-006

MML-005

MML-002



Soil Sample Locations_42821

Pump Station Alarm

Unoccupied Office No. 2

Sewer Pump Station Vault

Existing 6" Clean out

MML-Base

MML-Base



Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664
www.amtestlab.com



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Services

ANALYSIS REPORT

WA DEPT OF FISH & WILDLIFE
600 CAPITOL WAY N
OLYMPIA, WA 98501
Attention: KELLY SMITH
Project Name: MARINE MAMMAL LAB
All results reported on an as received basis.

Date Received: 03/24/21
Date Reported: 4/ 9/21

AMTEST Identification Number 21-A003636
Client Identification MML (IN BARREL)
Sampling Date 03/24/21, 09:50

Microbiological

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE / TIME
E.coli	< 180	MPN/100g		1	SM 9221B12C&F	JM	03/24/21 12:45

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Formaldehyde	< 5	ug/g		0.25	NIOSH 3500	DM	03/31/21
Flash Point	> 212	degrees F			EPA 1020	SW	04/06/21

Miscellaneous

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANLST	DATE
Enterococcus	> 24000	MPN/gm		2	SM 9230B	JM	03/24/21

AMTEST Identification Number 21-A003637
Client Identification MML (UNDER BARREL)
Sampling Date 03/24/21, 09:50

Microbiological

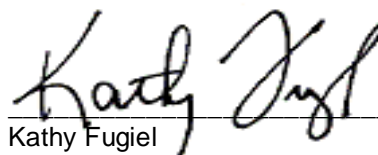
PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE / TIME
E.coli	< 180	MPN/100g		1	SM 9221B12C&F	JM	03/24/21 12:45

Conventional

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Formaldehyde	< 5	ug/g		0.25	NIOSH 3500	DM	03/31/21
Flash Point	> 212	degrees F			EPA 1020	SW	04/06/21

Miscellaneous

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANLST	DATE
Enterococcus	> 24000	MPN/gm		2	SM 9230B	JM	03/24/21



Kathy Fugiel
President

Am Test Inc.
13600 NE 126th PL
Suite C
Kirkland, WA, 98034
(425) 885-1664
www.amtestlab.com



*Professional
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Services*

QC Summary for sample numbers: 21-A003636 to 21-A003637

DUPLICATES

SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	DUP VALUE	RPD
21-A003637	Flash Point	degrees F	> 212	> 212	

STANDARD REFERENCE MATERIALS

ANALYTE	UNITS	TRUE VALUE	MEASURED VALUE	RECOVERY
Flash Point	degrees F	168.	164.	97.6 %

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664
www.amtestlab.com



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Services*

ANALYSIS REPORT

WA DEPT OF FISH & WILDLIFE
600 CAPITOL WAY N
OLYMPIA, WA 98501
Attention: KELLY SMITH
Project Name: MARINE MAMMAL LAB
All results reported on an as received basis.

Date Received: 04/28/21
Date Reported: 5/25/21

AMTEST Identification Number 21-A005666
Client Identification MML-BASE
Sampling Date 04/28/21, 10:00

Microbiological

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE / TIME
E. coli (Inc O157:H7)	< 180	MPN/g			SM 9221CF	JM	04/30/21 15:45
Enterococcus-Enterolert	17000	MPN/100ml		1	SM9230D3b Q-TRAY	JM	05/01/21 15:15

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Formaldehyde	< 0.5	ug/g		0.25	NIOSH 3500	DM	05/12/21
Flash Point	> 212	degrees F			EPA 1020	SW	05/11/21

WA DEPT OF FISH & WILDLIFE
Project Name: MARINE MAMMAL LAB
AmTest ID: 21-A005667

AMTEST Identification Number 21-A005667
Client Identification MML-001
Sampling Date 04/28/21, 10:51

Microbiological

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE / TIME
E. coli (Inc O157:H7)	< 180	MPN/g			SM 9221CF	JM	04/30/21 15:45
Enterococcus-Enterolert	> 240000	MPN/100ml		1	SM9230D3b Q-TRAY	JM	05/01/21 15:15

Conventional

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Formaldehyde	< 0.5	ug/g		0.25	NIOSH 3500	DM	05/12/21
Flash Point	> 212	degrees F			EPA 1020	SW	05/11/21

WA DEPT OF FISH & WILDLIFE
Project Name: MARINE MAMMAL LAB
AmTest ID: 21-A005668

AMTEST Identification Number 21-A005668
Client Identification MML-002
Sampling Date 04/28/21, 11:01

Microbiological

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE / TIME
E. coli (Inc O157:H7)	< 180	MPN/g			SM 9221CF	JM	04/30/21 15:45
Enterococcus-Enterolert	> 240000	MPN/100ml		1	SM9230D3b Q-TRAY	JM	05/01/21 15:15

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Formaldehyde	< 0.5	ug/g		0.25	NIOSH 3500	DM	05/12/21
Flash Point	> 212	degrees F			EPA 1020	SW	05/11/21

WA DEPT OF FISH & WILDLIFE
Project Name: MARINE MAMMAL LAB
AmTest ID: 21-A005669

AMTEST Identification Number 21-A005669
Client Identification MML-003
Sampling Date 04/28/21, 11:12

Microbiological

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE / TIME
E. coli (Inc O157:H7)	< 180	MPN/g			SM 9221CF	JM	04/30/21 15:45
Enterococcus-Enterolert	> 240000	MPN/100ml		1	SM9230D3b Q-TRAY	JM	05/01/21 15:15

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Formaldehyde	< 0.5	ug/g		0.25	NIOSH 3500	DM	05/12/21
Flash Point	> 212	degrees F			EPA 1020	SW	05/11/21

WA DEPT OF FISH & WILDLIFE
Project Name: MARINE MAMMAL LAB
AmTest ID: 21-A005670

AMTEST Identification Number 21-A005670
Client Identification MML-004
Sampling Date 04/28/21, 11:32

Microbiological

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE / TIME
E. coli (Inc O157:H7)	< 180	MPN/g			SM 9221CF	JM	04/30/21 15:45
Enterococcus-Enterolert	> 240000	MPN/100ml		1	SM9230D3b Q-TRAY	JM	05/01/21 15:15

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Formaldehyde	< 0.5	ug/g		0.25	NIOSH 3500	DM	05/12/21
Flash Point	> 212	degrees F			EPA 1020	SW	05/11/21

WA DEPT OF FISH & WILDLIFE
Project Name: MARINE MAMMAL LAB
AmTest ID: 21-A005671

AMTEST Identification Number 21-A005671
Client Identification MML-005
Sampling Date 04/28/21, 11:42

Microbiological

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE / TIME
E. coli (Inc O157:H7)	< 180	MPN/g			SM 9221CF	JM	04/30/21 15:45
Enterococcus-Enterolert	24000	MPN/100ml		1	SM9230D3b Q-TRAY	JM	05/01/21 15:15

Conventional

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Formaldehyde	< 0.5	ug/g		0.25	NIOSH 3500	DM	05/12/21
Flash Point	> 212	degrees F			EPA 1020	SW	05/11/21

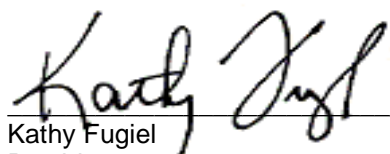
AMTEST Identification Number 21-A005672
Client Identification MML-006
Sampling Date 04/28/21, 12:02

Microbiological

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE / TIME
E. coli (Inc O157:H7)	< 180	MPN/g			SM 9221CF	JM	04/30/21 15:45
Enterococcus-Enterolert	100000	MPN/100ml		1	SM9230D3b Q-TRAY	JM	05/01/21 15:15

Conventional

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Formaldehyde	< 0.5	ug/g		0.25	NIOSH 3500	DM	05/12/21
Flash Point	> 212	degrees F			EPA 1020	SW	05/11/21



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www.amtestlab.com



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QC Summary for sample numbers: 21-A005666 to 21-A005672

DUPLICATES

SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	DUP VALUE	RPD
21-A005672	Formaldehyde	ug/g	< 0.5	< 0.5	
21-A005672	Flash Point	degrees F	> 212	> 212	

STANDARD REFERENCE MATERIALS

ANALYTE	UNITS	TRUE VALUE	MEASURED VALUE	RECOVERY
Formaldehyde	ug/g	2.00	1.96	98.0 %
Flash Point	degrees F	143.	141.	98.6 %

BLANKS

ANALYTE	UNITS	RESULT
Formaldehyde	ug/g	< 0.5

Septic/Pump Tank Decommissioning Guide



Decommissioning Purpose

To ensure on-site sewage systems are properly abandoned to minimize potential health and safety hazards.

Decommissioning Regulations

Washington State Department of Health Rules and Regulations WAC 246-272A and Tacoma-Pierce County Board of Health Resolution 2014-4414:

Persons permanently removing a septic tank, sewage pit, cesspool or other container from service shall:

1. Have the septage removed by an approved O&M Firm approved for pumping.
2. Remove or destroy the lid(s).
3. Remove the tank or fill the void space of the tank with soil or gravel.
4. Submit the Decommissioning Certificate form to Tacoma-Pierce County Health Department.

To connect to public sewer or demolish a structure:

1. Complete plan review application (if required) with appropriate sewer utility and obtain a sewer application number (if applicable).
2. Complete and submit the Health Department Septic/Pump Tank Decommissioning Certificate with appropriate fee.
3. Upon Health Department approval of decommissioning certificate, the Department will maintain a database record and provide electronic storage of the documents.

To abandon and replace a septic/pump tank:

1. Submit remodel/repair application for new system with appropriate fee.
2. Complete Septic/Pump Tank Decommissioning Certificate (fee will be waived). Attach certificate to parent OSS application.

Submittal package must include:

1. Completed Septic/Pump Tank Decommissioning Certificate form signed by a licensed contractor.
2. Application fee.
3. Site Plan indicating location(s) of the decommissioned tank(s). Basic Site Plan requirements (Chapter 2, Section 28) apply.
4. Pumping receipt from Certified Installation or Pumping Company.
5. Sewer application number or Remodel/Repair application information.

Contact us at (253) 649-1420 for more information.

Septic/Pump Tank Decommissioning Certificate



Submit the following information with this form to receive approval:

1. A site plan showing location of street, structures, and decommissioned septic/pump tank(s).
2. The current application fee (if applicable).
3. A signature by a licensed contractor certifying the tank(s) has been abandoned in accordance with Health Department On-Site Sewage Regulations and WAC 246-272A.
4. Pumping report submitted via Online RME.
 Septic Tank Empty – No pumping report filed via Online RME.

Validation

Property Owner _____

Site Address _____

City _____ State _____ Zip _____

Mailing Address (if different from site) _____

City _____ State _____ Zip _____ Email _____

Parcel Number _____ Sewer Application Number _____

Number of Septic/Pump Tank(s) Decommissioned on Site _____

Number of Septic Systems Still Operating on Site _____

Reason for Decommissioning:

Connected to public sewer: Connection Date _____ Sewer Utility Provider _____

System relocated (Attach this form to parent application. Fee will be waived)

Other _____

Company Performing Decommissioning _____

Contractor's License Number _____

Contractor's Mailing Address _____

City _____ State _____ Zip _____

Contractor's Email _____ Contractor's Phone Number _____

I am a licensed contractor in Washington State, and I certify the septic/pump tank(s) at the site address listed above has been abandoned in accordance with Tacoma-Pierce County Board of Health Resolution 2014-4414 and WAC 246-272A.

Signature of Contractor _____ **Date** _____

FOR HEALTH DEPARTMENT USE ONLY

Approved _____ Yes _____ No _____ Reviewed By _____

Comments _____

Information submitted is subject to Public Records Act, Chapter 42.56 RCW

**SECTION 02000
GENERAL SITE WORK PROVISIONS**

PART 1 - GENERAL

1.01 SECTION INCLUDES

This section specifies general requirements for all sections of Division 2 – Site Work.

1.02 RELATED WORK

Not Used.

1.03 REFERENCES

References listed in Division 2 are from the following organizations' publications and reference standards:

AASHTO – American Association of State Highway and Transportation Officials

ANSI – American National Standards Institute

ASTM – ASTM International (formerly American Society for Testing and Materials)

OSHA – Occupational Safety and Health Administration Construction Standards

RCW – Revised Code of Washington

IBC – International Building Code

WAC – Washington Administrative Code

WISHA – Washington Industrial Safety and Health Act

WSDOT – Washington State Department of Transportation Standard Specifications for Road, Bridge, and Municipal Construction, latest edition

1.04 SUBMITTALS

Make submittals for items in all sections of Division 2 in accordance with Sections 00704.03 Shop Drawings and 01300 Contractor Submittals.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Protect all materials from exposure to moisture, wind, sunlight, or other excessive weather conditions that will render them unsuitable for usage as intended and be cause for rejection.
- B. Stockpile or store in areas protected from contamination and physical damage.
- C. Contractor is responsible for all costs associated with replacement of all rejected items.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION 02000

02000 - 1

**SECTION 02010
SUBSURFACE INVESTIGATION**

PART 1 - GENERAL

1.01 SECTION INCLUDES

This section summarizes available soil investigations and requirements for additional subsurface investigation, at Contractor's option.

1.02 SOILS INVESTIGATIONS

- A. A geotechnical engineering report was not prepared for the design of this project.
Soil samples were taken on March 24, 2021, and April 28, 2021. The soil sample analysis reports and photos showing site layout and sample locations are provided for your use in Attachment 3.
- B. It is the responsibility of the Contractor to satisfy themselves as to actual field conditions.
- C. Subject to Owner's approval, Contractor may conduct their own independent subsurface investigation at Contractor's expense following the Notice to Proceed. Receive Owner's written approval prior to performing onsite investigation.
- D. Contractor is responsible for use or interpretations of subsurface information and recommendations.

1.03 SUBMITTALS

- A. Prior to any onsite soil investigation work, submit the following:
 - 1. Proposed test locations, depths, and equipment to be used;
 - 2. Work schedule;
 - 3. Proposed backfill placement techniques and levels of compaction equipment to be used.
- B. Submit copies of any reports, results, and findings to Owner.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION 02010

**SECTION 02050
DEMOLITION**

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Removing and disposing of or salvaging existing structures, utilities and materials. Underground structures and utilities may not be in the exact locations shown. The work includes the requirements for the removal, wholly or in part, and satisfactory disposal of utilities, pipelines, fences, structures, light fixtures, conduits, wires and other obstructions which are designated to be demolished on the drawings or within these Specifications.
- B. The Demolition work is included on the drawings for guidance only to indicate typical general construction features of the various types of structures and is not to be construed as definitive or adequate to supplant the actual on-site inspection by the Contractor.

1.02 RELATED SECTION

Placing and compacting of fill material in holes or pits created by the removals (see Section 02220).

1.03 JOB CONDITIONS

The Contractor represents that it has visited the site to become familiar with the quantity and character of all materials to be demolished. The Contractor agrees that the premises were made available prior to deadline for submission of bids for whatever inspection and tests the Contractor deemed appropriate. The Contractor assumes full responsibility for the proper disposal, reuse, recycling or salvage of all demolition materials.

1.04 SUBMITTALS

The Contractor shall submit a demolition plan that at a minimum, addresses the following:

- A. Worker safety.
- B. Protection of the public.
- C. Work sequence.
- D. Means and methods to minimize waste and maximize salvage.
- E. Disposal procedures.
- F. Protection of the environment.
- G. Disposal site(s) approved by all environmental agencies, including permits and permissions as necessary.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

3.01 DEMOLITION

- A. Prior to demolition, the method of demolition shall be determined by the Contractor and approved by the Engineer.
- B. Blasting is not permitted.

3.02 REMOVAL

- A. Remove all structures or designated portions thereof, and other materials without disturbing adjoining facilities.
- B. Where concrete or asphaltic concrete walks, roadways, or floors are to be removed, saw cutting or other approved method shall be performed. Saw cutting shall be to the full thickness of the structure and shall be straight and true.
- C. Contractor or subcontractor decommissioning septic tank, sewage pit, cesspool or other container from service shall be an approved O&M firm approved for pumping.

3.03 DISPOSAL

- A. All materials not designated to be salvaged shall become the property of the Contractor. Remove from the project site and dispose of legally. Prior to disposal, the Contractor shall provide the Owner with the locations of all disposal sites to be used and copies of applicable permits and approvals for each site.
- B. Burning shall not be allowed at the designated disposal site.
- C. Contractor or subcontractor must follow decommissioning regulations outlined in the Washington State Department of Health Rules and Regulations WAC 246-272A and the Tacoma-Pierce County Board of Health Resolution 2014-4414. The Contractor will submit to the Tacoma Pierce County Health Department a submittal package with the following information:
 - 1. Completed Septic/Pump Tank Decommissioning Certificate form signed by a licensed contractor.
 - 2. Application fee.
 - 3. Site Plan indicating location(s) of the decommissioned tank(s). Basic Site Plan requirements apply.
 - 4. Pumping receipt from Certified Installation or Pumping Company.
 - 5. Sewer application number or Remodel/Repair application information.

3.04 BACKFILLING

Holes and pits created by removing existing structures and materials shall be backfilled with structural fill material in accordance with Section 02220.

END OF SECTION 02050

**DIVISION 02060
STRUCTURE DEMOLITION**

PART 1 – GENERAL

1.01 SECTION INCLUDES

This Section includes the following:

- A. Demolition and removal of buildings and site improvements.
- B. Removing below-grade construction.
- C. Disconnecting, capping or sealing, and site utilities.
- D. Salvaging items for reuse by Owner.

1.02 REFERENCES

40 CFR 82 Code of Federal Regulations – Protection of Stratospheric Ozone

ANSI A10.6 American National Standard for Demolition Operations – Construction and Demolition Safety & Health Program Requirements

EPA Environmental Protection Agency

NFPA 241 National Fire Protection Association – Standard for Safeguarding Construction, Alteration, and Demolition Operations

Pierce County Public Works and Utilities Sanitary Sewer Development Specifications.

Pierce County Public Works and Utilities Sanitary Sewer Standard Details Manual.

1.03 DEFINITIONS

- A. Demolish: Completely remove and legally dispose of off-site.
- B. Recycle: Recovery of demolition waste for subsequent processing in preparation for reuse.
- C. Salvage: Carefully detach from existing construction, in a manner to prevent damage, and deliver to Owner ready for reuse. Include fasteners or brackets needed for reattachment elsewhere.

1.04 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.
- B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.05 SUBMITTALS

- A. Qualification Data: O&M Firm approved in Pierce County for removing septage.
- B. Proposed Protection Measures: Submit informational report, including drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control and for noise control. Indicate proposed locations and construction of barriers. Detail special measures proposed to protect adjacent buildings to remain.
- C. Schedule of Demolition Activities: Indicate the following:
 - 1. Detailed sequence of demolition work with starting and ending dates for each activity.
 - 2. Temporary interruption of utility services.
 - 3. Shutoff and capping of utility services.
- D. Building Demolition Plans: Drawings indicating the following:
- E. Inventory: Submit a list of items to be removed and salvaged and deliver to Owner prior to start of demolition.
- F. Pre-Demolition Photographs: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by building demolition operations. Submit digital photos of area prior to starting demolition work. Submit before the work begins.
- G. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes. Submit receipts showing load tickets for all other refuse removal.
- H. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

1.06 QUALITY ASSURANCE

- A. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.
- B. Regulatory Requirements: Comply with governing EPA notification regulations before beginning demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- C. Standards: Comply with ANSI A10.6 and NFPA 241.
- D. Pre-Demolition Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."

1.07 PROJECT CONDITIONS

- A. Buildings immediately adjacent to demolition area will be occupied. Conduct building demolition so operations of occupied buildings will not be disrupted.
 - 1. Provide not less than 72 hours' notice of activities that will affect operations of adjacent occupied buildings.
 - 2. Maintain access to existing walkways, exits, and other facilities used by occupants of adjacent buildings.
Do not close or obstruct walkways, exits, or other facilities used by occupants of adjacent buildings without written permission from authorities having jurisdiction.
- B. Owner assumes no responsibility for buildings and structures to be demolished.
 - 1. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- C. Hazardous Materials: Hazardous materials may be present in the buildings and structures to be demolished. A project specific hazardous materials report will be provided with the request for pricing on each work order. The responsibility for removal of identified hazardous materials will be established for each work order.
- D. On-site storage or sale of removed items or materials is not permitted.

1.08 COORDINATION

Arrange demolition schedule after consultation with Owner regarding use of adjacent buildings, and other campus activity.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting demolition operations.
- B. Review Project Record Documents of existing construction provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.
- C. Inventory and record the condition of items to be removed and salvaged.
- D. Engage a Professional Engineer to perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during building demolition operations.

3.02 PREPARATION

- A. Refrigerant: Remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction before starting demolition.
- B. Existing Utilities: Locate, identify, disconnect, and seal or cap off indicated utilities serving buildings and structures to be demolished.
 - 1. Owner will shut off all utilities. Contractor must provide the owner with minimum 96 hours notice.
 - 2. Cut off pipe or conduit a minimum of 24 inches below grade. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.
- C. Temporary Shoring: Provide and maintain interior and exterior shoring, bracing, or structural support to preserve stability and prevent unexpected movement or collapse of construction being demolished.
 - 1. Strengthen or add new supports when required during progress of demolition.
- D. Salvaged Items: Comply with the following:
 - 1. Clean salvaged items of dirt and demolition debris.
 - 2. Pack or crate items after cleaning. Identify contents of containers.
 - 3. Store items in a secure area until delivery to Owner.
 - 4. Transport items to storage area designated by Owner.
 - 5. Protect items from damage during transport and storage.

3.03 PROTECTION

- A. Existing Utilities: Maintain utility services to remain and protect from damage during demolition operations.
- B. Temporary Protection: Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction, and as indicated.
 - 1. Protect adjacent buildings and facilities from damage due to demolition activities.
 - 2. Protect existing site improvements, appurtenances, and landscaping to remain.
 - 3. Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
 - 4. Provide protection to ensure safe passage of people around building demolition area and to and from occupied portions of adjacent buildings and structures.
 - 5. Protect walls, windows, roofs, and other adjacent exterior construction that are to remain and that are exposed to building demolition operations.
- C. Remove temporary barriers and protections where hazards no longer exist. Where open excavations or other hazardous conditions remain, leave temporary barriers and protections in place.

3.04 DEMOLITION, GENERAL

- A. General: Demolish indicated existing buildings and site improvements to the extent shown on the Drawings. Use methods required to complete the work within limitations of governing regulations and as follows:
 - 1. Do not use cutting torches until work area is cleared of flammable materials. Maintain portable fire-suppression devices during flame-cutting operations.
 - 2. Maintain fire watch during and for at least 8 hours after flame cutting operations.
 - 3. Maintain adequate ventilation when using cutting torches.
 - 4. Locate building demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
- B. Engineering Surveys: Maintain ongoing observation during demolition.
- C. Temporary Controls: Conduct building demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 - 1. Use water mist and other suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations. Do not use water when it may damage adjacent construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.
- D. Explosives: Use of explosives is not permitted.

3.05 DEMOLITION BY MECHANICS

- A. Salvage: Items to be salvaged are indicated on Drawings.
- B. Below-Grade Construction: Demolish foundation walls and other below-grade construction that are within footprint of new construction and extending 5 feet outside footprint indicated for new construction. Abandoned below-grade construction outside this area.

Remove below-grade construction, including basements, foundation walls, and footings, completely.
- C. Existing Utilities: Demolish existing utilities back to nearest junction outside footprint indicated for new construction.

3.06 SITE RESTORATION

- A. Below-Grade Areas: Completely fill below-grade areas and voids resulting from building demolition operations with satisfactory soil materials according to backfill requirements in Division 2 Section 02220 – Excavating, Backfill and Compaction.
- B. Site Grading: Uniformly rough grade area of demolished construction to a smooth surface, free from irregular surface changes. Provide a smooth transition between adjacent existing grades and new grades.

3.07 REPAIRS

Promptly repair damage to adjacent buildings caused by demolition operations after consulting with Owner's representative.

3.08 DISPOSAL OF DEMOLISHED

A. Remove demolition waste materials from project site and legally dispose of them in an EPA-approved landfill acceptable to authorities having jurisdiction.

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Do not burn demolished materials.

3.09 CLEANING

Clean adjacent structures and improvements of dust, dirt, and debris caused by building demolition operations. Return adjacent areas to condition existing before building demolition operations began.

END OF SECTION 02060

**SECTION 02100
SITE PREPARATION****PART 1 - GENERAL**

1.01 SECTION INCLUDES

The work of this section consists of clearing, grubbing, stripping, and storage of topsoil and protection of vegetation to remain, including other related work.

1.02 JOB CONDITIONS

Bidders shall examine the work site to determine the character of materials to be encountered, trees to be removed or protected, and nature of the work in general. All required excavation is unclassified.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

3.01 SITE CLEARING

- A. Clearing: Clear all trees, stumps, brush, roots, rubbish and other objectionable matter within clearing limits shown on the Drawings, staked in the field, or as directed by the Owner. Do not disturb any vegetation or roots thereof designated to remain more than absolutely necessary to assure completion of new construction.
- B. Grubbing: Remove all stumps and roots within clearing limits to a depth of at least 12 inches below natural ground.
- C. Stripping: Remove all humus, vegetation, existing roadway aggregate or other objectionable material encountered within the top 6 inches of soil in areas of project construction, areas to be excavated, and areas where embankment or excess earth will be placed. Upon removal of objectionable material, the top 6 inches of soil shall be stripped and stockpiled as topsoil at a site designed by the Owner. This material is to be stockpiled separately and not mixed with any other material.

3.02 PROTECTION

Trees, shrubs, roots, and other landscape features designated on Drawings or in the field for preservation, or those located outside of the construction limits shall be carefully protected from marring or damage during construction operations. Continual parking and/or servicing of equipment within areas designated for preservation will not be permitted. Trees and shrubs designated for preservation and pruning shall be trimmed as directed. At no time shall excavation be within the drip line of trees designated to remain.

3.03 DISPOSAL

All debris resulting from clearing and grubbing shall be removed from the project site and disposed of properly. Prior to disposal, the Contractor shall provide the Owner with the locations of all disposal sites to be used.

END OF SECTION 02100

**SECTION 02150
SHORING AND UNDERPINNING**

PART 1 - GENERAL

1.01 SECTION INCLUDES

This section includes shores, needle beams, grillage, underpinning, and slabjacking as required for completion of the work specified.

1.02 REFERENCES

Chapter 49.17 RCW Washington State Industrial Safety and Health Act

WAC Chapter 296.155 Part N

WISHA Safety Standards for Construction Work – Excavation, Trenching, and Shoring

WSDOT 7-08.3(1) B-Shoring

1.03 SUBMITTALS

Where shoring and underpinning do not conform to prescriptive designs in referenced standards, and engineered design sealed by a Registered Professional Engineer shall be submitted to the Owner prior to their use.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

3.01 TRENCHING

Shoring of trenches and excavations shall comply with all the trench safety requirements of Chapter 49.17 RCW and referenced standards. Open trenches at and along roadways shall be cover-plated, barricaded and signed during periods of construction activity. Open excavations shall be completely and entirely fenced, barricaded, and signed at all times.

END OF SECTION 02150

**SECTION 02220
EXCAVATION, BACKFILL, AND COMPACTION**

PART 1 - GENERAL

1.01 SECTION INCLUDES

The work under this Section includes providing all labor, materials, tools, and equipment necessary for excavation, filling, compaction, grading, trenching, bedding and backfilling, and placement of excess earth, as shown on the Drawings and described in the Specifications.

1.02 RELATED SECTIONS

Section 02100 Site Preparation
Section 02150 Shoring and Underpinning
Section 02270 Slope Protection and Erosion Control

1.03 REFERENCES

ASTM C136 – Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates

ASTM D1557 – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort

ASTM D6938 – Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

RCW 49.17 – Washington State Industrial Safety and Health Act

WSDOT M 41-10 – Standard Specifications for Roads, Bridges, and Municipal Construction, latest edition

1.04 SUBMITTALS

- A. Safety plan
- B. Authorization for use of selected disposal areas
- C. Gradation analysis and certified test results for all imported fill material and onsite material to be incorporated into the work
- D. Compaction test results

1.05 JOB SITE CONDITIONS

- A. Do not perform earthwork operations if the weather conditions, in the opinion of the Owner, are inappropriate. Work in muddy or frozen ground will not be allowed.
- B. Maintain proper drainage, and stormwater and erosion controls at all times.

1.06 STOCKPILES

- A. Locate all stockpiles so as not to interfere with other work or disturb adjoining property owners. Obtain Owner's prior approval for stockpile locations.
- B. Maximum stockpile height is ten feet.

1.07 SAFETY AND PROTECTION

- A. Barricade open excavations occurring as part of this work and post warning lights. Operate warning lights during hours from dusk to dawn each day and as otherwise required by applicable safety regulations.
- B. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining washout, and other hazards created by all earthwork related operations.
- C. Contact utility companies to locate service lines prior to any excavation.
- D. Proceed with caution in the excavation so that damage to underground structures, both known and unknown, may be avoided.
- E. Take extreme precautions for the protection of utility lines and other subsurface improvements. Repair any improvements damaged by construction operations at the Contractor's expense in compliance with the requirements of the utility owner and to the Owner's satisfaction.
- F. Sheet, shore, and brace trenches and excavations where required in a manner consistent with established safe practices and in accordance with all applicable safety regulations.
- G. Comply with Chapter 49.17 RCW, the Washington State Industrial Safety and Health Act, if trench excavation exceeds four feet in depth. Include the cost of required safety systems in all bid schedules and list as a separate Bid Item on the Bid Proposal Form.
- H. Provide all materials, equipment, and labor necessary to provide support to manholes, footings, and foundation walls during excavation and backfilling at all locations.

PART 2 - PRODUCTS

2.01 EXCAVATION MATERIALS

- A. Common Excavation: Includes all material other than rock as described below required for the construction of this project. It includes, but is not restricted to earth, gravel, hardpan, cemented gravel, soft or disintegrated rock, and boulders or detached pieces of solid rock not exceeding one cubic yard in volume.
- B. Rock Excavation: consists of rock boulders greater than one cubic yard in volume and bedrock. Rock excavation shall be approved by the Owner and will be considered a change in the work.
- C. For bidding purposes, assume all excavated material meets the specifications for common borrow.

- D. Excavated materials may be used for fill and backfill applications required for construction of this project; provided the material meets the specifications for the intended use and has been properly protected from water conditions that would render it undesirable.

2.02 FILL MATERIALS

- A. Common Borrow: Fill required to raise existing grade or backfill excavations beyond five feet of a structure or as trench backfill above pipes or conduits. Common borrow shall be material from common excavation or from a borrow site which is free of deleterious materials. Deleterious material includes wood, organic waste, or any other objectionable material greater than three percent by weight.
- B. Sand: Clean, uniformly graded sand with the gradation of WSDOT 9-03.1(2)B, Class 1.
- C. Ballast Rock: Hard, sound, and durable rock with at least one face fractured. Rock shall be free of frozen material, debris, and organics, and meet the gradation of WSDOT 9-03.9(1).
- D. Crushed Surfacing Base Course (CSBC) and Top Course (CSTC): Manufactured from ledge rock, talus or gravel, uniform in quality, substantially free of wood and other extraneous material, meeting the requirements of WSDOT 9-03.9(3).
- E. Trench Backfill shall meet the requirements of WSDOT 9-03.10 with 100% of material passing through two 1/2-inch screens.
- F. Structural Fill shall meet the following requirements for Gravel Backfill:

TABLE 02220 - 2.02F	
Sieve Designation	Percent Passing by Weight
2 Inches	100
1/2 Inch	60-80
No. 4	30 Maximum
No. 200	0-5
Sand Equivalent	45 Minimum

- 1. Foundations: WSDOT 9-03.12(1) A or B
- 2. Walls: WSDOT 9-03.12(2)
- G. Pipe Bedding: Clean sand/gravel mixture free from wood waste or other extraneous materials and conforming to the gradation of WSDOT 9-03.12(3) when tested in accordance with ASTM C136.
- H. Drain Rock: Washed rock with the gradation of WSDOT 9-03.12(4).
- I. Gravel Borrow: Selected granular material, free-draining mineral soil, free from organic matter, frozen or lumpy material, meeting the requirements of WSDOT 9-03.14(1).
- J. Quarry Spalls: Meet the gradation of WSDOT 9-13.1(5).

PART 3 - EXECUTION

3.01 EXCAVATION

- A. Excavation consists of the removal of material required to establish the proposed subgrade surface elevations. Conduct excavations in such a manner as to avoid disturbance to all materials located outside the limits of the work area, unless specifically identified by the Owner as an acceptable borrow source. Methods of excavation will be the Contractor's option. Exercise care when approaching final grade. If final grade is disturbed, replace it with suitable materials and compact at Contractor's expense.
- B. Large rocks, which size qualifies them as common excavation, encountered during excavation or trenching may be partially removed as required to reach subgrade elevations. With Owner's approval, Contractor has the option to remove these rocks by excavation and subsequent backfilling the over excavated portions. No extras will be paid for such over excavations.
- C. Protect bottoms of all excavations from freestanding water and frost. Protect excavations from caving, flooding, or other source of damages. Damage to excavation shall be repaired at the Contractor's expense.
- D. Any excess excavation performed by the Contractor for his convenience shall be at the expense of the Contractor.
- E. Dispose of excavated materials at a permitted offsite location. Provide the Owner with a letter authorizing disposal at selected locations prior to disposal.
- F. Dispose of excavated materials of any nature if quantities exceed the fill or backfill needs of this project. This disposal will not be considered a change in work, and no extra payment will be made.
- G. Dispose of excavated materials determined by the Owner to be unsuitable for use as common borrow. This disposal shall be considered a change in work with extra payment determined per General Conditions Section 00707.00 Changes. The disposal quantity considered for extra payment will be limited to the amount of common borrow imported to replace the unsuitable material.
- H. Any excavation and replacement of unsuitable materials below final grade will be as directed by the Owner. "Unsuitable material" is any type of soil such as clays, silts, or organic materials that will not compact to specified compaction percentage or does not meet the specification for its intended use.

3.02 ROCK REMOVAL

- A. Large rocks greater than one cubic yard encountered within the excavation limits may be partially or entirely removed; however, the subsequent backfill for such over excavation shall be done at the Contractor's expense.
- B. Blasting is not allowed.

3.03 BACKFILL AND COMPACTION

- A. Dewater and prepare foundations prior to placing backfill materials.
- B. When backfilling, extra care must be taken so that no damage will occur to foundations or related structures.
 - 1. Where backfill is to be placed against both sides of concrete walls, bring the backfill up evenly on both sides of the wall.
 - 2. Where backfill is to be placed against one side of concrete walls, abutting concrete walls, or beams, do not place backfill until the concrete has developed sufficient strength to resist the loading imposed by the backfill. Unless high-early strength concrete has been approved for use, place backfill at least 72 hours after concrete placement and do not exceed the following schedule:

TABLE 02220 - 3.03B			
Backfill Depth:	1/2 wall height	2/3 wall height	Full wall height
Concrete Age:	72 hours	7 days	28 days

- C. Each lift of fill material shall be spread uniformly in horizontal layers and compacted in accordance with the following table:

TABLE 02220 - 3.03C			
Type of Material	Max. Loose Lift Placed (inches)	Percent Compaction*	Application
Common borrow	24	90	General fill**
Sand	6	95	Pipe and conduit bedding, fill under structures
Ballast rock	8	90	Fill under other materials, where noted
Crushed surfacing base course	<u>Total Depth</u> 2	95	Subgrade for crushed rock or asphalt pavement surface/finished crushed rock surface such as parking lots, driving areas
Trench backfill	6	95	Fill above pipe bedding to pipe centerline
Trench backfill	12	90	Pipe centerline to top of trench
Structural fill	6	95	Fill under structures and wall backfill***
Structural fill	12	90	Fill around structures**
Pipe bedding	6	95	Pipe and conduit bedding
Drain rock	6	95	Backfill in drain trenches
Gravel borrow	12	90	Select Fill****
Quarry spalls	12	90	Rock lining for outfall channel

* Percent compaction at maximum dry density as determined in accordance with ASTM D1557.
 ** All fill and backfill not under structures and beyond 5-feet concrete slabs, walls, and footings.
 *** All fill and backfill under concrete slabs and footings (interior and exterior) and all fill and backfill within 5 feet of concrete slabs, walls and footings.
 **** All fill under roadways and trench backfill under paving.

- D. Compact with power-operated tampers, rollers, idlers, or vibratory equipment. Water jetting for compaction purposes is not permitted.
- E. Any application of water or any working of fill material required to bring it within acceptable moisture content and density limits during compaction operations shall be done at the Contractor's expense.
- F. Do not place, spread, or compact backfill materials at an unsuitably high moisture content or during adverse weather conditions. When work is interrupted by heavy rain, do not resume backfill operations until field tests indicate the moisture content density of the backfill areas are within specified limits.

3.04 TRENCH EXCAVATION

- A. Do not excavate more than 200 feet of open trench in advance of laying pipe, unless approved by the Owner. All operations shall be carried out in an orderly fashion.
- B. Width of trenches for pipes shall not be less than outside pipe diameter plus 16 inches, nor greater than outside pipe diameter plus 36 inches of the pipe installed unless otherwise shown on the Drawings.
- C. Side walls of the trench shall be vertical from the trench bottom to at least the height of the top of the pipe.
- D. Where soil encountered in the bottom of the trench is unstable or unsuitable as a base, remove such soil to a depth specified by the Owner and replace with compacted common borrow or other material as directed by the Owner. This overexcavation and replacement shall only be done as directed by the Owner and will be paid for as an extra.
- E. Excavate bottom of trench to the lines and grades shown on the Drawings with proper allowance for thickness and type of pipe bedding specified.
- F. Excavation below designated lines shall be filled at the Contractor's expense. Replace excess excavation below pipes with gravel borrow or as directed by the Owner.
- G. Place excavated material a sufficient distance from the trench walls to avoid sliding of materials into the trench.
- H. Notify the Owner at least 48 hours in advance of excavating across existing roads.

3.05 PIPE BEDDING PLACEMENT

- A. After bottom of trench has been excavated to proper depth and grade, brought to a reasonably flat surface, and dewatered, place bedding material as shown on the Drawings.
- B. Place pipe bedding in trench without causing any excavated material to slide into trench or any cave in of trench walls. Place and compact pipe bedding into a six-inch minimum depth and provide a continuous, uniform bedding for the full length of the pipe.
- C. Backfill utility lines and flexible pipe, such as PVC, to six inches above the top of pipe or line using bedding material only. Rigid pipe, such as steel, may be backfilled using gravel material as specified.
- D. Remove and replace pipe bedding material required due to unauthorized overexcavation or made unsuitable due to mixture with trench side material or excavated material.

3.06 TRENCH BACKFILL.

- A. Test pipeline prior to backfilling trenches at pipe joints.
- B. Remove screeds, shoring, wood forms, debris, and other decomposable matter from areas to be filled.
- C. Pipe bedding shall contact entire periphery of pipe.
- D. Place material evenly on both sides of pipe and compact each subsequent lift so that pipe is not displaced. Repair misalignment of pipe or other damage.
- E. Neatly mound excess trench material no more than three inches high over trenches, except in roadways or parking areas, so that a depression will not be formed if backfill settles. The Contractor is responsible for filling settlement depressions formed within one year after final acceptance.

3.07 ROAD AND PARKING FILL

- A. Place base course and top course each in two lifts on top of a prepared and compacted subgrade.
- B. Provide the water and equipment necessary for adequately distributing moisture on the material. Apply water lightly and frequently to avoid having free water running out of the material and building up on the subgrade.
- C. Do not place materials when snow is falling or blowing or when the weather is such that, in the Owner's opinion, satisfactory results cannot be obtained.

3.08 FIELD QUALITY CONTROL

- A. Perform field observation and testing as required to control the work.
- B. Density and moisture-content testing of embankment fill and excess earth placements will be performed by the Owner's testing lab in accordance with ASTM D6938.
- C. Level surface check: Unless otherwise shown on the Drawings, the variation above or below a 10-foot straightedge placed between any two contacts with the finished surface shall not exceed one-tenth of a foot.
- D. Any area which has been tested and shown to not meet the requirements of these Specifications shall be reworked and retested at the Contractor's expense until it complies.

END OF SECTION 02220

**SECTION 02270
SLOPE PROTECTION AND EROSION CONTROL**

PART 1 – GENERAL

1.01 SECTION INCLUDES

This Section specifies riprap, sediment control, silt fences, and slope protection as required for completion of this project.

1.02 REFERENCES

AASHTO T-85 Standard method of test for specific gravity and absorption of coarse aggregate

WSDOT Standard Specification for Road, Bridge, and Municipal Construction

1.03 JOB SITE CONDITIONS

Work area shall be maintained to prevent stormwater or sediment runoff into the adjoining water body.

1.04 CONTRACTOR SUBMITTALS

Temporary Erosion and Sediment Control Site Plan (TESCP): Identify best management practices where soil is disturbed and where sediment can enter a waterway or storm drainage. Address erosion and sediment control during the entire construction process.

PART 2 - PRODUCTS

2.01 RIPRAP

- A. All rock shall be sound, free of cracks, seams, and objectionable quantities of dirt, sand, clay, frozen material, debris, and organics.
- B. Specific gravity of rock shall be not less than 2.55 and absorption not more than 3% when tested in accordance with AASHTO T-85.
- C. Heavy, loose riprap shall meet the requirements of WSDOT 9-13.1(2).
- D. Rock shall be angular to sub-angular and meet the gradation of WSDOT 9-13-4(2), Class A.
- E. Source of materials for backfill and riprap shall be the responsibility of the Contractor, subject to approval of the Owner.
- F. Measurement of riprap shall be by trip tickets supplied to the Owner using a factor of 1.33 tons per cubic yard.

2.02 RECLAIMED ARMOR STONE

Reclaimed armor stone shall be rock material removed during excavation, and conforming to the requirements for Riprap, Paragraph 2.01 of this Section.

2.03 SILT FENCE

Material shall meet the requirements WSDOT 9-33.2(1), Table 6.

2.04 POSTS

Silt fence support posts shall be steel or wood of sufficient length to support the fence without sagging, bending, or otherwise collapsing.

2.05 SUPPORT WIRE

Support filter fabric where shown on the Drawings or required for strength with 14 gauge woven wire mesh field fencing.

2.06 STRAW WATTLES

Straw wattles shall consist of straw wrapped in biodegradable tubular plastic or similar encasing material. Wattles shall be 8 to 10 inches in diameter.

PART 3 - EXECUTION

3.01 RIPRAP

- A. The limiting dimensions and slopes as shown on the Drawings shall be subject to such reasonable variations as may be necessary in placing the rock; however, rock shall be placed at least to the limits and cross sections shown.
- B. Each rock shall rest securely upon the underlying material and shall be in close contact with adjacent rock to produce a reasonably well-graded mass with a minimum practical percentage of voids.
- C. Riprap shall be placed to full depth in one operation and in a manner that will avoid displacement of underlying material. Placing riprap in layers will not be permitted.
- D. Larger stones shall be well distributed, and the entire mass of stones shall be roughly graded to conform to gradation specified herein. Finished riprap shall be free of objectionable pockets of small stones and clusters of large stones. Hand placing may be necessary, but only to the extent required to obtain the results specified above. The desired distribution of the various sizes of stones throughout the mass may be obtained by selective loading at the quarry, by controlled placing of successive loads during placing, or by a combination of these. Methods causing segregation of the various sizes will not be permitted.
- E. A tolerance of plus 6 inches and minus 1.0 inches from the thickness shown on the Drawings shall be allowed in the finished surface, except the maximum tolerance shall not be continuous over an area greater than 200 square feet.

3.02 TEMPORARY SILT FENCES

- A. The Contractor shall be fully responsible to install and maintain temporary silt fences at the locations and manner as identified on the Contractor's TESCP submittal.
- B. The silt fence shall prevent soil carried by runoff water from going beneath, through, or over the top of the silt fence, but shall allow the water without soil to pass through the fence.

DIVISION 2 - SITE WORK

- C. The minimum height of the top of the silt fence shall be 30 inches above the original ground surface, and fence shall follow the contours of the ground.
- D. Damaged and otherwise improperly functioning portions of silt fences shall be repaired or replaced to the Owner's satisfaction at the Contractor's expense.
- E. Sediment deposits shall either be removed when the deposit reaches approximately 1/2 the height of the silt fence, or a second silt fence shall be installed as determined by the Owner.
- F. At the completion of all earthwork, remove only those silt fences that are no longer necessary to control sediment. Review with Owner prior to removing silt fences. Remove and properly dispose of all accumulated deposits, silt fence, and associated components.
- G. Attach support wire and filter fabric with staples or wire rings.

END OF SECTION 02270

**SECTION 02401
SANITARY SEWER SERVICE**

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. The work under this Section includes providing all labor, materials, tools, and equipment necessary for furnishing and installing sanitary sewer side connection in accordance with these Specifications and in reasonably close conformity with the lines and grades shown on the Drawings or established by the Owner.
- B. This work includes furnishings and installing connecting bands, branch connections, or other fittings, and all appurtenances required to complete the sanitary sewer.
- C. Sewer services installation must be by Contractor certified and currently registered on the Pierce County Planning and Public Works Registered Sewer Contractor List.

1.02 REFERENCES

ASTM 48, Standard Specifications for Gray Iron Castings

ASTM C443, Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets

ASTM C478/ C478-20, Standard Specification for Circular Precast Reinforced Concrete Manhole Sections

ASTM C497, Standard Test Methods for Concrete Pipe, Concrete Box Sections, Manhole Sections or Tile

ASTM C579, Compressive Strength of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes

ASTM A615, Standard Specification for Deformed and Plain Carbon-Steel Bards for Concrete Reinforcement

ASTM C1244, Standard Test Method for Concrete Sewer Manholes by the Negative Air Pressure (Vacuum) Test Prior to Backfill

ASTM C923, Standard Specifications for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes, and Laterals

ASTM C990, Standard Specifications for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Performed Joint Sealants

ASTM D1784, Standard Classification System and Basis for Specification for Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds

ASTM D2241, Standard Specification for Poly(Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series)

ASTM D3034, Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings

ASTM D3212, Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals

ASTM D4101, Standard Classification System and Basis for Specification for Polypropylene Injection and Extrusion Materials

ASTM F477, Standard Specification for Elastomeric Seals (Gaskets for Joining Plastic Pipe)

ASTM F679, Standard Specification for Poly(Vinyl Chloride) (PVC) Large-Diameter Plastic Gravity Sewer Pipe and Fittings

ASTM F913, Standard Specification for Thermoplastic Elastomeric Seals (Gaskets) for Joining Plastic Pipe

ASTM F1336, Standard Specification for Poly(Vinyl Chloride) (PVC) Gasketed Sewer Fittings

AWWA, American Water Works Association. Current specifications in effect at the time of plan approval is to be used

AASHTO M-199, Standard Specification for Precast Reinforced Concrete Manhole Sections

Pierce County Public Works and Utilities Sanitary Sewer Development Specifications

Pierce County Public Works and Utilities Sanitary Sewer Standard Details Manual

1.03 SUBMITTALS

- A. Gravity Sewer Pipe and Fittings: Material certifications stating conformance with the requirements of this Section.
- B. Cleanout frame and lid.
- C. 48" Shallow concrete manhole.
- D. 48" Polymer concrete manhole.
 - 1. Complete shop drawings of each polymer concrete manhole (base, risers, cone, ladder/rungs and grade rings (including 2 spares)) to be installed shall be submitted to the County for review and approval prior to fabrication. Rated lifting inserts shall not fully penetrate the wall.
 - 2. Complete structural and buoyancy calculations for each manhole shall be submitted to the County for review prior to fabrication. Manholes shall be designed to withstand deadloads based on shown depth, hydrostatic pressures, and a H-20 wheel loading as live load. Factors of safety shall be, at least, 1.2 for dead load, 1.6 for live load, and 2.0 for hydrostatic loadings. Buoyancy calculations shall assume the manhole is fully submerged. If needed anti-flotation anchor shall be sized and the submittals shall show how anti-flotation anchors will be mechanically locked with the manhole structure. Structural and Buoyancy Calculations shall be stamped by a Professional Engineer licensed in the State of Washington.
 - 3. Third-party testing showing that the polymer concrete mix is inert to H₂S corrosion and common constituents in municipal wastewater shall be submitted for review prior to fabrication.

PART 2 – PRODUCTS

2.01 UNDERGROUND LOCATOR TAPE

Underground locator tape shall be green, at least 4 inches wide, 4 mil thick polyethylene tape, with a metallic backing capable of being traced with locators. The tape shall have black letters with the following wording: "Caution: Sewer Line Buried Below." The locator tape shall be installed 12 inches above the top of all sewer mains and services.

2.02 GRAVITY PVC SEWER PIPING

- A. Gravity PVC sewer piping shall be plasticized polyvinyl chloride pipe with integral wall bell and spigot joints, and shall be suitable for use as a gravity conduit for the conveyance of domestic sewage. The material used to produce the pipe and fittings shall be clean, virgin material conforming to the requirements of ASTM D1784, Class 12454.
- B. Pipe and fittings size 4 inch through 15 inch shall conform to the requirements of ASTM D3034, except as modified herein. Pipe and fittings size 16 inch and larger shall conform to the requirements of ASTM F679.
- C. All gravity PVC pipe shall be ASTM D3034, SDR 35 or better. SDR 21 pipe shall meet the requirements of ASTM D2241. Pipe meeting the requirements of AWWA C900 or AWWA C905, DR18 or better, is an acceptable alternative to SDR 21 pipe as approved by Pierce County.
- D. Joints for solid wall PVC pipe shall conform to the ASTM D3212 using elastomeric gaskets conforming to ASTM F477.
 - 1. Sewer Main and Side Sewer Stubs: The gaskets shall be the sole element depended upon to make the joint flexible and watertight. Provisions for expansion and contraction shall be made at each joint. The assembled joint shall withstand a pressure of 4 psi for a period of 1 hour without leakage in the concentric alignment and in the manufacturer's recommended maximum deflected position. The assembled joint shall be subject to air testing.
 - 2. Building Sewers: Joints for building sewers upstream of the side sewer stub may be either gasketed, meeting the requirements of Section 2.02.B.1 above, or solvent weld. When using solvent-welded joints, the Contractor shall ensure the joint is assembled in accordance with the manufacturer's written instructions; the use of a compatible primer is required. The assembled joint, whether gasketed or solvent-welded, shall be subject to exfiltration testing.
- E. Fittings for PVC shall be injection molded, factory welded, or factory solvent cemented.
- F. All gravity PVC pipe shall be placed within the installation areas at least 24 hours prior to installation to permit temperature equalization. Pipe manufactured greater than 10 months prior to actual installation will not be permitted. Pipe shall be protected from exposure to ultraviolet light according to manufacturer's recommendations.
- G. Pipe and fittings shall be manufactured by J-M Manufacturing Company, Inc., PW Pipe, or Approved Equal

2.03 COUPLINGS

- A. Flexible Couplings. Straight, transition, and long-barrel couplings shall be Romac Industries, Inc. Style 501. Flexible couplings do not provide protection against possible pullout of pipe ends in unrestrained conditions. When required by the Approved Drawings, restrained joints shall be provided in accordance with the manufacturer's recommendation. Restraints shall be designed for 150 percent of the maximum working pressure of the applicable service. No Fernco-type couplings shall be used.
- B. Flanged Coupling Adapters. Flanged coupling adapters shall be Romac Industries, Inc. Style FCA501. When required by the Approved Drawings, restrained joints shall be provided in accordance with the manufacturer's recommendation. Restraints shall be designed for 150 percent of the maximum working pressure of the applicable service.
- C. Couplings for threaded pipe shall be extra-heavy recessed, of the same material as the pipe to which attached. Bolted, compression-type couplings shall be provided where shown on the Approved Drawings, as manufactured by Romac Industries, Inc., or Approved Equal. Gaskets shall be suitable for the pressure, fluids, and temperature in the pipeline.
- D. Couplings for joining different pipe types shall be a gasket by gasket type. Couplings shall produce a smooth interior transition between upstream and downstream pipes. Fittings shall be one-piece injection molded or fabricated from a PVC compound meeting ASTM D1784. Solvent-weld bells shall be as defined in ASTM D3034 and ASTM F679. Gasket bells shall conform to ASTM D3212 and ASTM F477. Fittings shall also conform to ASTM F913 and ASTM F1336. Couplings shall be manufactured by Specified Fittings, Inc., or Approved Equal.
- E. Cast iron body coupling systems may be used for coupling pipes outside of vaults and pump stations. Cast iron body coupling systems shall consist of a sewage-resistant synthetic rubber or polyvinyl chloride sleeve, Type 301 or better stainless steel bands, and a tightening mechanism designed to compress the sleeve to form a watertight and airtight seal when the joint is assembled as approved by the County. The coupling shall produce a smooth interior transition between upstream and downstream pipes. Couplings shall be as manufactured by Romac Industries, Inc., or Approved Equal.
- F. Prior to coupling installation, the Contractor shall thoroughly clean oil, scale, rust, and dirt from the pipe to provide a clean seat for the gasket. Gaskets shall be wiped clean before they are installed. If necessary, flexible couplings and flanged coupling adaptor gaskets may be lubricated with soapy water or the manufacturer's standard lubricant before installation on the pipe ends. Couplings shall be installed in accordance with the manufacturer's recommendations. Bolts shall be tightened progressively, drawing up bolts on opposite sides a little at a time until all bolts have a uniform tightness. Workmen tightening bolts shall be equipped with torque-limiting wrenches. Joints made using couplings shall be subject to testing.

2.04 SEALS

Seals for pipe sleeves shall be bolt-up type consisting of interlocking synthetic rubber links shaped to continuously fill the annular space between the pipe and the sleeve. When bolts are tightened, the rubber sealing elements shall expand to result in a watertight seal. Bolts and pressure plate nuts shall be Type 316 stainless steel. Rubber links shall be suitable for use in water, moist environments, normal atmospheric conditions, and temperatures between -40° F and 250° F for standard service. Seals shall be Link-Seal® modular seals as manufactured by Pipeline Seal and Insulator, Inc., or Approved Equal.

2.05 UNIONS, PIPE SUPPORTS, AND PIPE SADDLES

- A. Unions for copper tube, where shown on the Approved Drawings, shall be wrought copper, with solder joints and copper-to-copper seats.
- B. Pipe supports and stands shall be Standon, Model S89, flange support constructed of Type 304 stainless steel or Approved Equal. Piping between the base plate and flange support shall be fabricated from Type 316 stainless steel. Pipe supports and stands shall be mounted to the floor of the cleanout/valve vaults with 1/2-inch diameter Type 316 stainless steel anchors and shall be made to fit exact dimensions between floor and base elbow.

Pipe saddles shall be installed wherever gauges are installed, as indicated on the Approved Drawings. Pipe saddles shall be Romac Industries, Inc. Style 202NS or 202NU, or Approved Equal. All pipe saddles shall be installed prior to testing main piping and shall be plugged before testing without gauges attached. All pipe saddles shall be centered on the top of pipe.

2.06 CONCRETE

Precast concrete manhole and pump vault stations shall be in conformance with current Pierce County Sanitary Sewer Development Specifications.

2.07 FRAMES AND GRATES

Castings are to be load rated as indicated on the drawings. If not indicated, loading ratings shall be HS-25.

2.08 WET TAP

Saddle type connection shall conform to Pierce County Sanitary Sewer Development Specifications and Standard Details Manual.

2.09 CLEAN-OUT FRAME AND COVER

Frame and cover shall be locking type, Olympic Foundary #M1025 or Sather 12 inch Lamphole.

2.10 MANHOLE FRAMES AND COVERS

- A. The covers shall be marked "Private Sewer" for private systems. The manufacturer's name shall be cast into, not stamped on, an exposed surface. All covers shall have the statement "Confined Space Permit Required" cast on the lid as identified in the Standard Details.
- B. Manhole frames and covers shall be made from superior quality gray iron meeting the requirements of ASTM A48, Class 30B. The castings shall be free of adhering sand, scale, cracks, and hot tears or other defects as determined by visual examination. They shall be smooth and well cleaned, and continuously machined to prevent rocking and rattling. No repairing by plugging or welding of any type shall be permitted. The frames shall weigh a minimum of 215 pounds and the covers shall weigh a minimum of 150 pounds. The covers shall be easily removed and shall be interchangeable.

- C. A bituminous coating shall be applied to all surfaces. The finished coating shall be continuous, smooth, neither brittle when cold nor sticky when exposed to the sun, and shall strongly adhere to the casting. The County shall have the right to require inspection and approval of all castings prior to coating.
- D. Watertight manhole frames and covers shall be provided on all manholes located in unpaved areas or as otherwise indicated on the Approved Drawings. The recessed gasket shall be 3/8 inch by 5/16 inch neoprene, 60-durometer hardness, or Approved Equal.

2.11 PRECAST CONCRETE MANHOLE MATERIALS

- A. Precast concrete manholes shall be constructed entirely of precast concrete sections conforming to ASTM C478 and shall be of watertight construction. The minimum inside diameter for manholes shall be as described below and in the Pierce County Sanitary Sewer Development Specifications and Standard Details Manual.
- B. Steel lifting loops or hooks for precast components shall be removed to a depth of 1 inch below the surface of the concrete and the concrete shall be patched. Lift holes shall be completely filled with dry pack grout.
- C. Precast concrete manhole bases with manhole invert liners as specified herein shall be used for manhole installation on sewer mains size 36-inch or less. For installation of manholes over mains larger than 36 inches, the manhole shall be constructed as shown on the Approved Drawings. Channeling shall be completed as specified in the Pierce County Sanitary Sewer Development Specifications and Standard Details Manual. Manhole benches shall be sloped to drain into the channels.
- D. Steps shall be installed in precast base sections, riser sections and taper sections of precast concrete manholes.
 - 1. Reflective steps shall be installed in base sections, riser sections and taper sections so that the completed manhole will have a continuous vertical ladder with equally spaced rungs as shown on the Approved Drawings, and as identified in the Standard Plans. Polypropylene manhole steps shall meet the requirements of ASTM C478 and AASHTO M-199.
 - 2. The polypropylene material shall be made of a copolymer polypropylene superior in its resistance to corrosiveness, meeting the requirements of ASTM D4101, and shall completely encapsulate a deformed 1/2 inch diameter steel reinforcing rod conforming to ASTM A615, Grade 60.
 - 3. Polypropylene steps shall be installed in complete accordance with the manufacturer's instructions. This shall be accomplished by pre-drilling two parallel 1 inch diameter holes, 3-3/4 inch deep and 13 inches on center in the cured concrete base, riser and taper sections of the manhole. In no case will the pre-drilled hole be allowed to penetrate through the wall of the manhole section. The insertion ends of the steps shall be fully coated with non-shrink grout, then driven into the holes to the prescribed depth. Infiltration from around steps will not be permitted.
 - 4. Steps shall be "Lane Poly Steps", Model P-14938, as manufactured by Lane International Corporation (Tualatin, Oregon), or an Approved Equal.

5. Ladders may be used in precast base sections in lieu of steps only as directed by the County. Ladders shall be manufactured by Lane International Corporation (Tualatin, Oregon), or an Approved Equal. The material shall conform to the requirements specified above for manhole steps. Mounting hardware shall be Type 316 stainless steel. The ladder shall be firmly anchored to the wall of the manhole base section, no less than 6 inches from the top of the base section. The bottom of the ladder shall not rest on the fiberglass manhole shelf.

E. Precast Riser Sections:

1. Riser sections shall consist of circular sections in standard nominal inside diameters of 48, 54, 60, 72, and 96 inches. Reinforcement shall be in accordance with ASTM C478. The minimum height of a riser section shall be 1 foot, and only one 1-foot high riser section will be allowed on each manhole. If used, the 1-foot high riser section shall be set in contact with the taper (cone) section when assembling the manhole.
2. Heights of riser and base sections shall be arranged so no pipes pass through the joining surfaces. The Kor-n-Seal ® Pipe to Manhole Connector as manufactured by NPC, Inc. shall be utilized for all pipe connections to precast riser sections at the locations shown on the Approved Drawings. The connector shall be installed in the riser wall to the correct line, grade, and size as indicated on the Approved Drawings. Connectors shall meet or exceed all material and performance requirements of ASTM C923, and shall produce a positive watertight connection
3. The taper (cone) section shall be eccentric, tapering from 48 or 54 inches inside diameter to 24 inches inside diameter, and shall be between 18 and 36 inches high. Joining to the riser sections shall be similar to joining between riser sections, but the top surface shall be flat and at least 5 inches wide, radially, to receive grade rings.
4. Reductions from 72 or 96 inches inside diameter to 48 inches inside diameter shall be made by means of a precast, reinforced concrete flat slab reducing section as shown on the Approved Drawings and the Standard Plans. The section shall be a minimum of 8 inches thick for 72-inch manholes and 12 inches thick for 96-inch manholes, and shall conform to the outer dimensions of the section on which it will be placed. The 48-inch opening shall be located as shown on the Approved Drawings or as directed by the County. Reinforcing shall be as shown on the Approved Drawings or in accordance with the manufacturer's requirements

F. Precast Base Sections

1. Precast base sections shall conform to the requirements for precast riser sections except that a reinforced base slab shall be cast monolithically with the walls or otherwise constructed to achieve a watertight structure. Base slab thickness shall be a minimum of 6 inches.
2. Base slabs shall be reinforced with No. 4 steel bars on 12-inch centers, placed in the middle third of the slab thickness and extending into the wall section of the base. The walls of the base section shall be reinforced in accordance with ASTM C478. Manhole base diameters shall be sized as shown on the Approved Drawings and the Standard Plans, unless otherwise directed or approved by the County.

DIVISION 2 – SITE WORK

3. All precast base sections shall be provided with a fiberglass reinforced polymer (FRP) or polypropylene (PP) liner. The base liner shall be utilized for all pipe connections, unless otherwise shown on the Approved Drawings or approved by the County, and shall be complete with: (1) full-flow channels with side walls extending to the crown of the pipe; and (2) gasketed, flexible, watertight bell-type connections to suit the pipe type(s), size(s), and grade alignment(s) shown on the Approved Drawings. Installation of the liner to the precast base section shall be in accordance with the liner manufacturer's requirements and these Specifications. Base liners shall be manufactured by Predl Systems North America Inc. (f.k.a. GU International; f.k.a. Sealcon Liner Systems, Ltd.).
 4. Stubs shall be provided in the locations shown on the Approved Drawings. Positioning of the stubs shall accommodate the pipe size, invert elevations, and alignment of future sewer extensions as indicated on the Approved Drawings.
- G. Grade Rings: Grade rings shall be precast, reinforced concrete meeting the requirements of ASTM C478. Individual grade rings above the taper sections shall be 24 inches inside diameter, and shall be between 4 and 6 inches high. The overall height of grade ring(s) shall be a minimum of 4 inches, and shall be no greater than 12 inches (two 6-inch rings). A maximum of two grade rings are allowed on new manholes.
- H. Precast concrete manholes shall have a manhole joint sealing system utilizing flexible sewage-resistant synthetic rubber gaskets conforming to the requirements of ASTM C443. Gasket joint details shall be subject to approval by the County. A pre-formed joint sealant shall also be used for all manhole section joints. This sealant shall be in rope form Pierce County Sanitary Sewer Development Specifications 49 conforming to the requirements of Federal Specification SS-S-210. Pre-formed joint sealant shall be Kent Seal™ as manufactured by Hamilton Kent, Ram-Nek XT as manufactured by the Henry Company, or Approved Equal.
- I. The exterior of all precast concrete manholes shall receive protective coatings. Bituminous coal tar epoxy, specially formulated for submerged service and exposure to raw sewage, shall be applied to the exterior of all concrete manholes, vaults, grease interceptors, oil-water separators, and commercial and residential grinder pump wet wells, to a minimum DFT of 25 mils. Coating shall be applied in accordance with the manufacturer's recommendations. Coal tar epoxy shall be Bitumastic No. 300M as manufactured by the Carboline Company, or similar coating by TNEMEC, Ameron, or Approved Equal.
- J. The interior of all concrete valve vaults, and existing or new concrete manholes with pipes 15 inch nominal inside diameter or greater and/or with pressure sewer connections, as shown on the Approved Drawings, identified in the Standard Plans, or as directed by the County, shall be coated with Raven 405 ultra-high-build 154 Pierce County Sanitary Sewer Development Specifications coating system as manufactured by Raven Lining Systems, Inc. (Tulsa, OK).

2.12 POLYMER CONCRETE MANHOLDES

- A. All polymer concrete manholes shall be manufactured by Armorock (Boulder City, NV) or US Composite Pipe (Alvarado, TX). Polymer concrete wet wells are not allowed.
- B. Polymer concrete manholes shall be made of polyester or vinyl ester resin, sand, and aggregate. All sand and aggregate shall be inert in an acidic environment. No Portland cement shall be allowed as part of the mix. Reinforcing shall be steel reinforcement or acid resistant reinforcement (FRP Bar) and meet the reinforcing requirements of ASTM C478.

DIVISION 2 – SITE WORK

- C. Manhole grade rings shall be concrete, polymer concrete or Cretex Pro-Ring. The overall height of grade ring(s) shall be a minimum of 4 inches, and no greater than 12 inches (two 6-inch rings). A maximum of two grade rings are allowed on new manholes.
- D. Manufacturing tolerances shall be per ASTM C478. Sections with damaged joint surfaces or with cracks or damage that would permit infiltration shall not be installed.
- E. Polymer concrete shall have a minimum unconfined compressive strength of 9,000 psi (ASTM C497). Manhole shall pass a vacuum test per paragraph 3.02 of these Specifications.
- F. All grouting, filling, and patching in polymer concrete manholes shall be done with polyester or vinyl ester mortar compound provided, Ennecon Durafill, Sauereisen SewerGard 210T, Sika Sikadur AnchorFix-2 or approved material by the structure manufacturer. Grouting, filling, and patching material shall not contain Portland Cement or other cementitious materials susceptible to H₂S corrosion
- G. Kor-n-Seal® Pipe to Manhole Connector as manufactured by Trelleborg Pipe Seals Inc. or PSX: Direct Drive as manufactured by Press-Seal Corporation shall be utilized for all pipe connections to polymer concrete manholes.
- H. Butyl mastic per ASTM C990 and rubber gaskets per ASTM C443 shall be utilized at each manhole riser section joint. Internal and External Joint seams shall be filled per paragraph 2.12.F.
- I. Anti-flotation anchors, when needed, shall be field cast out of commercial concrete and mechanically attached to structure as indicated in the approved structural and buoyancy calculations.
- J. External manhole wrap shall be irradiated and cross-linked polyethylene backing with an adhesive layer such that the sleeve will bond to primed concrete, metallic or fiberglass surfaces.

2.13 GROUT

- A. The use of prepackaged, cementitious, non-metallic, non-shrink grout to fill the annular space is acceptable where ductile iron pipe and fittings penetrate precast concrete manhole and vault walls, and for the installation of grade rings and manhole frames and covers. The Contractor shall submit manufacturer's catalog cuts and recommended application procedures for review and approval by the County prior to use.
- B. Grout shall be suitable for the intended purpose, and for bonding dissimilar materials (Ductile iron and concrete), either vertically or horizontally, at the temperature and surface moisture of the application.
- C. Surfaces to be grouted shall be prepared in accordance with the grout manufacturer's recommendations.
- D. Grout shall be proportioned, mixed, and applied in accordance with the manufacturer's recommendations. The Contractor shall pay particular attention to the manufacturer's safety recommendations, and temperature and surface moisture limitations.
- E. Grout shall be Speed Crete ® Red Line as manufactured by The Euclid Chemical Company, or Approved Equal

PART 3 – EXECUTION

3.01 CONSTRUCTION

- A. Excavation, bedding, and backfill shall conform to the requirements of **Section 02220** Excavation, Backfill and Compaction. Underground marking type shall be installed as shown on the Detail.

Sheeting and bracing required for trenches shall be removed to the elevation of the conduit, but no sheeting will be allowed to be pulled, removed, or disturbed below the conduit. Sheeting and bracing shall meeting OSHA requirements.

- B. Before lowering into the trench, the pipe shall be inspected for defects. All cracked, chipped, or broken pipe shall be discarded. The ends and interior of the pipe shall be clean. Balled ends shall be laid upgrade. Handling of the pipe shall be accomplished in a manner that will not damage the pipe. The joint shall be made in the manner recommended by the manufacturer. Care shall be taken not the buckle or disturb previously laid pip
- C. Pipe shall be laid accurately to the staked line and grade. Where existing services sewers are to be connected, suitable fittings and adapters shall be provided by the Contractor.
- D. Pipe shall be cleaned of all foreign matter, and water shall be kept out of trenches until joints have been completed. When work is not in progress, open ends of pipe and fittings shall be securely closed to keep foreign matter and animals from entering.
- E. Each joint shall be inspected to ensure that it is properly made before backfilling is done. Care shall be taken to prevent any dirt or foreign matter from entering the open end of the pipe. Where it is necessary to cut pipe, such cuts shall be neatly made in an approved manner. The laid pipe shall be true to line and grade and, when completed, the sewer shall have a smooth and uniform invert. No section of gravity sewer, including service connections shall have an adverse grade which would pond water in the invert of the sewer.
- F. Wet Tap Connections to existing concrete sewer mains, shall be made in such a manner so as to not damage the existing facility. Install saddle and core drill per Northshore Utility District Detail 7. Such connections shall be made so that no projections or rough surfaces occur within the pipe.

3.02 VACUUM TESTING OF MANHOLES AND VAULTS (Using Air)

- A. The method of testing will be in accordance with ASTM C1244 and Pierce County Sanitary Sewer Standard Specifications. All gauges, meters, boot clamps, and appurtenances shall be furnished by the contractor. Vacuum testing shall occur prior to the application of interior coatings on all concrete manholes.
- B. The Contractor shall furnish all facilities and personnel for conducting the test under the observation of the Owner. The equipment and personnel shall be subject to the approval of the Owner. Joints only may be tested in pipe 36 inches in diameter or larger.
- C. Immediately following the pipe cleaning, the pipe installation shall be tested with low pressure air. Air shall be slowly supplied to the plugged pipe installation until the internal air pressure reaches 5 pounds per square inch greater than the average back pressure of any ground water that may submerge the pipe. At least 2 minutes shall be allowed for temperature stabilization before proceeding further.

- D. The pipeline shall be considered acceptable when tested at an average pressure of four psi greater than the average pressure of any ground water that may submerge the pipe if the Section under test does not lose air at a rate greater than 0.0030 cubic feet per minute per square foot of internal surface.
- E. The requirements of this Specification shall be considered satisfied if the time required for the pressure to decrease from 4.5 psi to 3.5 psi above average ground water pressure is greater than that shown on the following table:

TIME FOR PRESSURE TO DROP FROM 4.5 TO 3.5 PSI ABOVE AVERAGE GROUND WATER PRESSURE		
Pipe Diameter	Minutes	Seconds
8"	3	57
10"	4	43
12"	5	40
15"	7	5
18"	8	30
24"	11	20
30"	14	
48"	22	

- F. For other sizes, determine test time using the following formula:
 $T = 28.33 D$
 Where T = time in seconds
 D = pipe diameter in inches
- G. For pipes 36 inches in diameter, or larger, if individual joints are tested, they shall hold six psi air pressure over the average back pressure of any ground water for a minimum time of 15 seconds.
- H. Pressure gauges should be incremented in not more than one-half pound increments for accurate tests.
- I. Braces shall be required to hold plugs in place and to prevent the sudden release of the compressed air. Due to the large forces that could be exerted by an escaping plug during the testing of the pipe, no one shall be allowed in the manholes in which plugs have been placed while tests are being conducted. The Contractor's testing equipment shall have a pressure relief device that will prohibit the pressure in the pipeline from exceeding ten pounds per square inch.

3.03 PRECAST CONCRETE MANHOLE AND TEMPORARY CLEANOUT INSTALLATION

- A. Precast concrete manhole and temporary cleanout installation shall be as shown on the Approved Drawings and as identified in the Standard Plans. Precast sections with damaged joint surfaces or with cracks or damage that would permit infiltration shall not be installed.
- B. Precast base sections shall be set level and perpendicular at the design elevation on a pre-leveled, 8-inch thick bed of pea gravel. The pea gravel shall provide full bearing for the entire base slab. Leveling the base section by wedging is not allowed.

- C. Precast riser and taper (cone) sections shall be set using the specified joint sealant and gasket. Priming and preparation of surfaces and installation of jointing material shall be in strict accordance with the jointing material manufacturer's instructions. Manhole grade rings shall be set in a full bed of cement grout. Precast concrete manholes shall have a manhole joint sealing system utilizing flexible sewage-resistant synthetic rubber gaskets conforming to the requirements of ASTM C443. Gasket joint details shall be subject to approval by the County. A pre-formed joint sealant shall also be used for all manhole section joints. This sealant shall be in rope form Pierce County Sanitary Sewer Development Specifications 49 conforming to the requirements of Federal Specification SS-S-210. Pre-formed joint sealant shall be Kent Seal™ as manufactured by Hamilton Kent, Ram-Nek XT as manufactured by the Henry Company, or Approved Equal.
- D. Manhole frames and covers shall meet the requirements of paragraph 2.10, and shall be set to the established surface grade in a full bed of cement grout meeting the requirements of paragraph 2.13. The manhole rim elevation shall be set flush with the existing pavement or grade in paved and improved areas. In unpaved areas, manhole rim elevations shall be set a minimum of 2 inches above grade. Concrete collars for manhole frames shall be constructed as shown on the Approved Drawings and the Standard Plans.
- E. Concrete channels, where approved by the County, shall conform accurately to the sewer grade and shall provide smooth, well-rounded intersections of flow lines. Concrete benches shall be given a light broom finish, or equivalent, and shall be sloped to drain into the channels. Terminal manholes shall be channeled straight through to the opposite side of the manhole or in the direction and elevation of designated stubs and/or knockouts.
- F. Manholes are subject to tests for water tightness as described in paragraph 3.02 of these Specifications. Testing shall occur prior to the application of interior protective coatings when such coatings are required.

3.04 POLYMER CONCRETE MANHOLE CONSTRUCTION REQUIREMENTS

- A. All precast base sections shall be cast monolithically. Polymer bench and channel are to be constructed with all polymer concrete material at the factory. Construct full pipe depth invert channels to provide smooth flow transition with minimal disruption of flow at pipe-manhole connections. When pipe sizes change at manholes, the channels shall be constructed to provide a smooth flow transition. Invert slope through manhole is as indicated on drawings.
- B. Precast base sections shall be set level and perpendicular at the design elevation on a pre-leveled, 8-inch thick bed bedding material. The bedding material shall provide full bearing for the entire base slab. Leveling the base section by wedging is not allowed.
- C. Manhole riser sections shall be joined with materials specified in paragraph 2.12.H so that on assembly, manhole base, riser and top section form a continuous and uniform manhole structure.
- D. All manholes, unless otherwise specified in the drawings, shall have eccentric cones.
- E. Ladders shall be installed in polymer concrete manholes with the exception that non-shrink grout will be replaced with Enecon Durafill, Sauereisen SewerGard 210T, and Sika Sikadur AnchorFix-2.

DIVISION 2 – SITE WORK

- F. Inside drops shall be installed with the exception that non-shrink grout will be replaced with Enecon Durafill, Sauereisen SewerGard 210T, or Sika Sikadur AnchorFix-2. Drop structure anchors shall not penetrate the wall of the manhole.
- G. Manhole connectors shall be installed in the riser wall to the correct line, grade, and size as indicated on the Drawings. Connectors shall meet or exceed all material and performance requirements of ASTM C923, and shall produce a positive watertight connection. Cold joint pipe stub grouting shall not be allowed. Void space between the bench and the pipe stub shall be filled with Enecon Durafill, Sauereisen SewerGard 210T, or Sika Sikadur AnchorFix-2.
- H. The outside of each manhole joint (between the base, barrel and the eccentric cone sections) shall be wrapped with a product that meets paragraph 2.12.J requirements. Each joint shall be primed, fully wrapped with a continuous piece of material (with overlap) and a closure piece. Once the wrap and closure are installed the wrap shall be heated using a moderate to high flame per manufactures recommendations until joint is fully sealed.
- I. External manhole wrap shall be least 12 inches wide. A separate closure seal of sufficient width shall be used to secure the sleeve in place during installation and seal the overlap area. Overlap area shall be at least 6 inches in length. Manhole wrap shall be WrapidSeal manufactured by CCI Piping Systems or approved equal.
- J. All lifting loops/rings shall be cut and holes to be filled with Enecon Durafill, Sauereisen SewerGard 210T, or Sika Sikadur AnchorFix-2

END OF SECTION 02401

**SECTION 02930
LAWNS AND GRASSES**

PART 1 - GENERAL

1.01 SECTION INCLUDES

This section specifies seed, fertilizer, and mulch to restore areas disturbed by excavations and construction equipment.

1.02 SEQUENCING

Seeding shall take place after ground disturbing activities have been completed. Notify Owner at least 72 hours prior for seeding.

PART 2 - PRODUCTS

2.01 SEED

Seed shall meet the following requirements:

Table 02930 - 2.01			
Kind/Variety Seed in Mixture	Percent by Weight	Percent Pure Seed	Minimum Percent Germination
Chewing Fescue	40	39.20 Minimum	90
Colonial Bentgrass var. Astoria	10	9.80 Minimum	85
Perennial Rye	40	39.20 Minimum	90
White Clover Pre-Inoculated	10	9.80 Minimum	90
Inert and Other Crops		1.0 Maximum	
Noxious Weed			None
"Ladino"		Not Acceptable	

2.02 FERTILIZER

Fertilizer shall consist of a commercial fertilizer with the following formulation:

- A. Nitrogen (inorganic as Ureaform) - 12.8 percent.
- B. Phosphoric Acid (P205) - 18.0 percent.
- C. Potash (K20) - 18.0 percent.

2.03 MULCH

Mulch shall consist of a straw mulch or wood cellulose fiber.

PART 3 - EXECUTION

3.01 PREPERATION

Ensure backfilled excavations have been compacted to match surrounding terrain and scarify disturbed areas to a minimum 2 inch depth.

3.02 SEEDING, FERTILIZING, AND MULCHING

A. The hydro-seeding operation shall include the installation of seed, fertilizer, mulch, and tackifier with a tracer to verify uniform application in accordance with WSDOT Spec. 8-01.3(4)A.

B. Seed shall be applied at a rate of 0.3 pounds per 100 square feet.

C. Mulch shall be applied at a rate of 4.6 pounds per 100 square feet

3.03 WATERING

Contractor shall be responsible for watering of seeded areas until final project completion.

END OF SECTION 02930

**SECTION 03000
GENERAL CONCRETE PROVISIONS**

PART 1 - GENERAL

1.01 SECTION INCLUDES

This section specifies general requirements for all sections of Division 3 - Concrete.

1.02 RELATED WORK

Provisions of the General Conditions, Supplemental Conditions, and Division 1 of the Contract are by this reference a part of this division and shall govern work under this division where applicable.

1.03 REFERENCES

References listed in Division 3 are from the following organizations' latest editions of their publications and reference standards (unless indicated otherwise):

- AASHTO American Association of State Highway and Transportation Officials
(Standard Specifications for Highway Bridges, 17th Edition)
- ACI American Concrete Institute (ACI 318-02-318-02)
- APA American Plywood Association
- ASTM ASTM International (formerly American Society for Testing and Materials)
- AWS American Welding Society
- CRSI Concrete Reinforcing Steel Institute
- IBC International Building Code, Latest Washington State Approved Edition
- WSDOT Washington State Department of Transportation (Standard Specification for Road, Bridge, and Municipal Construction)

1.04 SUBMITTALS

Submit shop drawings in all sections of Division 3 in accordance with the General Conditions.

- A. Product Data: Submit manufacturer's data for all items in Division 3 indicating shapes, sizes, and chemical, physical, and structural properties.
- B. Shop Drawings: Submit shop drawings including complete plan and profiles, size, details, spacings, splicing details, supporting and spacing devices, schedules for fabrication, and assembly of members, and other pertinent data. Indicate welds by AWS symbols and show size, length, and type of weld. Identify details by reference to sheet and detail number on the Drawings.

1.05 QUALITY ASSURANCE

All installation and product use shall be in accordance with the manufacturer's written instructions.

PART 2 - PRODUCTS

2.01 MATERIALS

See other sections of Division 3.

PART 3 - EXECUTION

3.01 See other sections of Division 3.

END OF SECTION 03000

**SECTION 03100
CONCRETE FORMWORK**

PART 1 - GENERAL

1.01 SECTION INCLUDES

This section specifies formwork for cast-in-place concrete, with shoring, bracing, and anchorage. Also included are openings, form accessories, and stripping of forms.

1.02 SYSTEM DESCRIPTION

Design, engineer, and construct formwork, shoring, and bracing to meet design and code requirements so that resultant concrete conforms to required shapes, lines, and dimensions.

1.03 QUALITY ASSURANCE

Construct and erect concrete formwork in accordance with ACI 301 and 347.

1.04 REGULATORY REQUIREMENTS

Conform to the IBC.

PART 2 - PRODUCTS

2.01 FORM MATERIALS

- A. All materials shall conform to ACI 301.
- B. Fillets for chamfered corners shall be of wood strips or rigid plastic in maximum lengths.
- C. Forms for all concrete exposed to view shall be APA PS-1 B-B Plyform Class I Exterior or as approved by the Owner.

2.02 FORM DESIGN

- A. As a minimum, all forms shall be 3/4 inch Plyform with all edges supported, except for special locations as approved by the Owner.
- B. As a minimum, forms shall have double 2 inch by 4 inch walers at 24 inches o.c. and a maximum snap tie spacing of 24 inches o.c., or single wale camlock-style forms where approved by the Owner. For exposed surfaces, deflection of plywood, studs, or walers shall be limited to L/400 of the span (or L/360 of the span for unexposed surfaces).
- C. For narrow walls, etc. where the bottom of the form is inaccessible, lower form boards shall be left loose so that they may be removed for cleaning out extraneous material immediately before placing the concrete.
- D. The Contractor shall be responsible for ensuring the adequacy of all formwork to produce in the finished structure the lines, grades, and tolerances indicated on the Contract Drawings.

2.03 FORMWORK ACCESSORIES

- A. Form-Release Agent: Nontoxic, colorless material compatible with concrete tints, non-residual, and which will not stain concrete, absorb moisture, or impair subsequent applications. L&M Construction Chemicals "Debond" or approved equal. Form-release agents for concrete in contact with process water shall be certified by the U.S. Department of Agriculture. The agent shall have VOC loss of 350 grams/liter or less.

- B. Form Ties: Bolts and rods may be used for internal ties.
 - 1. Form ties for water-holding structures and on walls exposed to weather or earth shall have conical or spherical-type inserts, and be so constructed that when the forms are removed, no metal shall be within 5/8 inch of any surface. Plastic or rubber inserts shall be used with flat bar ties for panel forms, be a minimum of 1 inch in depth, and of sufficient dimensions to permit proper grouting of the tie hole. All form ties shall provide adequate and positive spacing of the forms before and during the placing and processing of the concrete. Wire form ties will not be allowed.
 - 2. For non-water holding structures, form ties shall be metal, factory fabricated, removable or snap-off, that will leave holes no greater than 1/2 inch to 1 inch in diameter, not less than 1 1/2 inches deep in surfaces to be exposed or painted, and shall not project beyond the concrete elsewhere.

PART 3 - EXECUTION

3.01 INSPECTION

Verify lines, levels, and measurements before proceeding with formwork.

3.02 PREPARATION

- A. Hand trim sides and bottoms of earth forms, and remove any loose materials prior to placing concrete.
- B. Minimize form joints. Symmetrically align joints and make watertight to prevent leakage of mortar.
- C. Arrange and assemble formwork to permit stripping, so that concrete is not damaged during its removal.
- D. Arrange forms to allow stripping without removal of principal shores, where shores are required to remain in place.

3.03 ERECTION

- A. All forms shall be built mortar tight and of sufficient rigidity to prevent distortion due to pressure of the concrete and other incidental construction loads, including the effects of vibration of concrete.
- B. The Contractor shall provide bracing to ensure stability of formwork. Strengthen formwork liable to be overstressed by construction loads.
- C. The Contractor shall construct formwork to maintain tolerances in accordance with Section 03300.
- D. Provide 3/4 inch by 3/4 inch chamfer strips at all exposed edges or corners of concrete.

3.04 APPLICATION OF FORM-RELEASE AGENT

- A. The Contractor shall apply form-release agent on formwork in accordance with manufacturer's instructions. Apply prior to placing reinforcing steel, anchoring devices, and embedded items.
- B. Do not apply form-release agent where concrete surfaces are scheduled to receive applied coverings or special finishes which may be affected by agent. Soak contact surfaces of untreated forms with clean water and maintain in wet condition until concrete is placed.

3.05 INSERTS, EMBEDDED PARTS, AND OPENINGS

- A. The Contractor shall provide formed openings where required for work embedded in or passing through concrete.
- B. The Contractor shall coordinate work of other Specifications sections in forming and setting openings, slots, recesses, chases, sleeves, plates, bolts, anchors, and other inserts.
- C. The Contractor shall install accessories in accordance with manufacturer's instructions, level and plumb, and ensure items are not disturbed during concrete placement.

3.06 FORM REMOVAL

- A. The Contractor shall not remove forms and shoring until concrete has sufficient strength to support its own weight and construction and design loads which may be imposed upon it. Remove load-supporting forms when concrete has attained 75 percent of required 28-day compressive strength, provided construction is re-shored.
- B. The removal of forms as stipulated herein shall in no case relieve the Contractor of responsibility for the final acceptability or appearance of the work. In general, forms shall remain in place a minimum length of time as follows where average temperature is 40°F or higher:
 - 1. Columns, wall faces, footings, piers, and abutments where forms do not support the load of concrete: 72 hours (3 days).
 - 2. Crossbeams, caps, inclined walls, and columns where forms support the load of concrete: 120 hours (5 days).
 - 3. Side forms of footings may be removed 24 hours after concrete placement if a curing compound is applied immediately.
 - 4. Forms for walls not yet supporting loads may be removed 48 hours after concrete placement, immediately finished according to Section 03300 and cured as required in Section 03370.
- C. Where lower temperatures or other conditions warrant, the Owner shall decide, on the basis of post-placement conditions, the exact number of days that shall elapse before form removal.
- D. Remove formwork progressively so no unbalanced loads are imposed on structures.
- E. Any concrete surfaces damaged during form removal shall be repaired in accordance with Section 03300.
- F. All form tie holes shall be patched with a dry-pack cement mortar fill as specified in Section 03300.
- G. Forms shall not be stripped from concrete which has been placed at a temperature under 50°F without first determining if the concrete has properly set, regardless of the time element. If, in the opinion of the Owner, stripping of forms on the basis of the specified schedule results in damage to the concrete, the schedule shall be modified to prevent such damage.

END OF SECTION 03100

**SECTION 03210
REINFORCING STEEL**

PART 1 - GENERAL

1.01 SECTION INCLUDES

This section specifies reinforcing steel and accessories for concrete work.

1.02 QUALITY ASSURANCE

Contractor shall perform concrete reinforcement work in accordance with the current ACI 318.

1.03 SHOP DRAWINGS

- A. Contractor shall submit mill test certificates of supplied concrete reinforcing, indicating physical and chemical composition.
- B. Contractor shall indicate on the shop drawings sizes, spacings, locations, and quantities of reinforcing steel, bending and cutting schedules, splicing, stirrup spacing, and supporting and spacing devices.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Uncoated-finish steel reinforcing bars shall consist of Grade 60 (unless noted otherwise) round, deformed bars. Deformed reinforcing bars for concrete reinforcement shall conform to the requirements of ASTM A615. Reinforcing bars requiring welding as shown on the Drawings shall conform to ASTM A706.
- B. Epoxy-coated reinforcing bars, when specified by the Owner, shall be coated in accordance with ASTM A775. Epoxy-coated bar supports, form ties, and nylon, epoxy, or plastic-coated tie wire shall be used when epoxy-coated reinforcing bars are specified.
- C. Reinforcing steel shall be protected at all times from injury, and when placed in the formwork be free from dirt, loose mill scale, rust scale, paint, oil, or any other foreign substance.

2.02 ACCESSORY MATERIALS

- A. General: Chairs, bolsters, bar supports, and spacers shall be sized and shaped for strength and support of reinforcement during installation and placement of concrete. Materials shall be manufactured from standard bright basic wire.
- B. Bar Supports:
 - 1. Girder and slab reinforcement steel shall be supported on mortar blocks not more than 1 1/2 inches square. The blocks shall be constructed of mortar mixed in the same proportions of sand and cement as used in the concrete.
 - 2. Mortar blocks shall have a tie wire embedded, and the protruding ends shall be tied to the reinforcing steel to hold the mortar blocks in place. Mortar blocks with a grooved top may be used for supporting steel in slabs. If metal chair supports are used as steel supports for reinforcing bars, all surfaces of the chair supports not covered by at least 1/2 inch of concrete shall be treated by one of the following methods:

- a. Hot-dip galvanized after fabrication in accordance with ASTM A153 Class D.
 - b. Plastic coating, provided that the plastic is firmly bonded to the metal, has a minimum thickness of 3/32 inch at point of contact with the form and is not chemically reactive with the concrete. The plastic shall not shatter or crack at temperatures down to -5°F, nor will it deform sufficiently to expose the metal at a temperature of 200°F. Plastic coatings that have shattered, cracked, or deformed enough to expose the metal will be rejected.
 - c. Stainless steel conforming to the requirements of ASTM A493 Type 302.
- C. Tie Wire:
- 1. Ties shall be made with a minimum 16 gauge, annealed-type tie wire.
 - 2. Use epoxy-coated tie wire when using epoxy-coated reinforcement.

2.03 FABRICATION AND BENDING

- A. All bars shall be bent cold. If approved by the Owner, welding shall be performed by certified welders in accordance with AWS D1.4.
- B. Unless otherwise shown on the Drawings, the Contractor shall fabricate reinforcing to provide clearances as listed under Minimum Cover.
- C. Reinforcement partially embedded in concrete shall not be field bent, except as permitted by the Owner, or as shown on the Drawings.

2.04 HOOKS AND BENDS

Hooks and bends of steel reinforcing bars shall be bent to the inside diameters specified in ACI 318, as shown below.

TABLE 03210 - 2.04	
Stirrups and Ties:	
Sizes No. 5 and Smaller	4 Bar Diameters
Sizes No. 6 through No. 8	6 Bar Diameters
Sizes No. 9 through No. 11	8 Bar Diameters
Sizes No. 14 and No. 18	10 Bar Diameters
Other than for Stirrups and Ties:	
Sizes No. 3 through No. 8	6 Bar Diameters
Sizes No. 9 through No. 11	8 Bar Diameters
Sizes No. 14 and No. 18	10 Bar Diameters

2.05 SPLICING

- A. General: All steel bars used for concrete reinforcement shall be furnished in the full lengths where possible. Splices that are permitted or shown on the Drawings shall be well distributed or located at points of low tensile stress. Locate reinforcing lap splices not indicated on the Drawings at points of minimum stress. Indicate location of splices on shop drawings. No splices will be permitted at points where the section is not sufficient to provide a minimum distance of 2 inches between the splice and the nearest adjacent bar or the surface of the concrete. The bars shall be rigidly clamped or wired at all splices. Bars that are lapped for splicing shall be placed in contact for the length of the splice and tied together. Splices shall be staggered where possible.

- B. Seismic: (for regions of low, moderate or high seismic risk) see the Drawings for specific seismic detailing requirements.
- C. Unless otherwise detailed on the Drawings, the minimum splice lengths shall be as follows:

TABLE 03210 - 2.05C				
BAR#	GRADE 60 PLAIN		GRADE 60 EPOXY COATED	
	Concrete Compressive Strength		Concrete Compressive Strength	
	3000 psi	4500 psi	3000 psi	4500 psi
3 & under	2'	2'	2'-3"	2'-3"
4	2'	2'	2'-3"	2'-3"
5	2'-4"	2'-4"	2'-10"	2'-10"
6	3'	2'-9"	3'-7"	3'-4"
7	4'	3'-6"	4'-11"	4'-3"
8	5'-3"	4'-7"	6'-5"	5'-7"
9	6'-8"	5'-9"	8'-1"	7'

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Placing Reinforcing Steel:
 1. Reinforcing steel shall be accurately placed in the positions shown on the Drawings and held securely during the pouring of the concrete. In general, all reinforcement shall be put in proper position and securely wired and blocked before concrete is poured in any section. Stirrups and ties shall always pass around and be securely tied to the main flexural/tension steel members. Girder and slab reinforcing steel shall be supported on mortar blocks or other approved means of support. Tack welding of reinforcing bars shall not be allowed. If approved by the Owner, welding shall be performed by certified welders in accordance with AWS D1.4.
 2. Before placing concrete, clean reinforcement of foreign particles, loose scale, or coatings. The Contractor shall place, support, and secure reinforcement against displacement. Do not deviate from alignment or measurement.
 3. At all openings in structural slabs and walls, provide a minimum of 1 No. 4 bar at each of the top and bottom of slab or faces of wall or slab at 45 degrees on all 4 corners, in addition to a minimum of 1 No. 4 bar on all sides of square or rectangular openings, and hoops at each face for each round opening, unless otherwise shown on the Drawings.
 4. The Contractor shall notify the Owner when reinforcing is in place for inspection of reinforcement prior to placement of concrete. No concrete shall be placed until the Owner or his representative has inspected the placing of the reinforcing steel and has given permission to pour concrete. All concrete placed in violation of this provision may be rejected and removal required.

B. Minimum Cover:

1. The minimum clear space between reinforcing bars shall be as follows (unless otherwise shown on the Drawings):

TABLE 03210 - 3.01 - B1	
Between parallel bars in a layer	Bar Diameter (1 inch minimum)
Between adjacent layers	1 inch

2. Except as otherwise shown on the Drawings, the minimum thickness of concrete cover over reinforcing bars shall be as shown in the following tables:

TABLE 03210 - 3.01 - B2 CAST IN PLACE CONCRETE (NON-PRESTRESSED)	
Concrete cast against and permanently exposed to earth	3 inches
Concrete exposed to earth or weather: No. 6 through No. 18 bar No. 5 bar, W31 or D31 wire, and smaller	2 inches 1 1/2 inches
Concrete not exposed to weather or in contact with ground: Slabs, walls, joists: No. 11 bar and smaller Beams, columns: Primary reinforcement, ties, stirrups, spirals Shells, folded plate members: No. 6 bar and larger No. 5 bar, W31 or D31 wire, and smaller	3/4 inch 1 1/2 inches 3/4 inch 1/2 inch

TABLE 03210 - 3.01 - B3 CAST-IN-PLACE CONCRETE (PRESTRESSED CONCRETE) Minimum Cover 1"	
Concrete cast against and permanently exposed to earth	3 inches
Concrete exposed to earth or weather: Walls, panels, slabs, joists Other members	1 inch 1 1/2 inches
Concrete not exposed to weather or in contact with ground: Slabs, walls, joists Beams, columns: Primary reinforcement Ties, stirrups, spirals Shells, folded plate members: No. 5 bar, W31 or D31 wire, and smaller Other reinforcement	3/4 inch 1 1/2 inches 1 inch 3/8 inch d_b , but not less than 3/4 inch

TABLE 03210 - 3.01 – B4 PRECAST CONCRETE (Manufactured under plant control conditions)	
Concrete exposed to earth or weather: Wall panels: No. 14 and No. 18 bars, pre-stressing tendons larger than 1 1/2 inch diameter	1 1/2
No. 11 bar and smaller, pre-stressing tendons 1 1/2 inch diameter and smaller W31 and D31 wire and smaller	3/4
Other members: No. 14 and No. 18 bars, pre-stressing tendons larger than 1 1/2 inch diameter	2
No. 6 through No. 11 bars, pre-stressing tendons larger than 5/8 inch diameter through 1 1/2 inch diameter	1 1/2
No. 5 bar and smaller, pre-stressing tendons 5/8 inch diameter and smaller, W31 and D31 wire, and smaller	1 1/4
Concrete not exposed to weather or in contact with ground: Slabs, Walls, Joists: No. 14 and No. 18 bars, pre-stressing tendons larger than 1 1/2 inch diameter	1 1/4
Pre-stressing tendons 1 1/2 inch diameter and smaller	3/4
No. 11 bar and smaller, W31 or D31 wire, and smaller	5/8
Beams, columns: Primary reinforcement d_b but not less than 5/8 and need no exceed	1 1/2
Ties, stirrups, spirals	3/8
Shells, folded plate members: Pre-stressing tendons	3/4
No. 6 bar and larger	5/8
No. 5 bar and smaller, W31 or D31 wire, and smaller	3/8

C. Bar Placement Tolerances:

1. Between bars: 1/4 inch, plus or minus
2. Vertical position of bars in slabs and beams:
 - a. Members 8 inches deep or less: 3/8 inch, plus or minus
 - b. Members over 8 inches deep: 1/2 inch, plus or minus
3. Bars may be moved to avoid interference with other reinforcing steel, conduits, or embedded items. If moved more than 1 bar diameter or stipulated tolerances, consult with the Owner to determine final placement.

D. Tie Wire: At a minimum, 50 percent of reinforcing steel intersections shall be connected with tie wire.

E. Welding: Welding of reinforcing shall be prohibited unless explicitly allowed by the Owner in writing or as shown on the Drawings. If approved by the Owner, welding shall be performed by certified welders in accordance with AWS D1.4.

END OF SECTION 03210

**SECTION 03301
COMMERCIAL AND SMALL BATCH CAST-IN-PLACE CONCRETE**

PART 1 - GENERAL

1.01 SECTION INCLUDES

Commercial and small batch concrete for cast-in-place concrete slabs, footings, grade beams, sidewalks, sign posts, and other Owner approved items.

1.02 QUALITY ASSURANCE

- A. Perform work in accordance with ACI 301.
- B. Obtain materials from same source throughout the work.

1.03 REGULATORY REQUIREMENTS

Conform to the IBC, WSDOT Standard Specifications and ACI.

1.04 TESTING AND ACCEPTANCE

Testing is not required for Commercial and Jobsite Mixed concrete and will be accepted based on a Certificate of Compliance to be provided by the supplier.

1.05 SUBMITTALS

- A. Manufacturer's Data - Concrete Work: Submit manufacturer's data with application and installation instructions for proprietary materials and items, including admixtures, patching compounds, water stops, joint systems, dry-shake finish materials, grout, and others as requested by the Owner.
- B. Placement Schedule: Prepare a placement schedule and submit it for review prior to start of concrete placement operations.
- C. Delivery Tickets: Furnish copies of delivery tickets for each load of concrete delivered to the site. Provide items of information to the Owner as specified under ASTM C94 - Certification.
- D. Submit proposed mix design to the Owner for review and acceptance prior to commencement of work.
- E. Furnish Certificate of Compliance.

PART 2 - PRODUCTS

2.01 CONCRETE MATERIALS

- A. Cement:
 - 1. Cement shall be classified as Portland Cement or blended hydraulic cement.
 - 2. Portland cement shall conform to ASTM C150 Type I or II (low alkali), gray color.

3. Blended hydraulic cement shall conform to ASTM C595, Type IP(X) or Type IS(X):
 - a. For Type IP(X), X shall be a maximum 35% fly ash, or 50% ground granulated blast furnace slag.
 - b. For Type IS(X), X shall be a maximum of 50% ground granulated blast furnace slag.
 4. All cement used in this work shall be taken from stock bins at the place of manufacture.
 5. Cement delivered to the site of the work shall at all times be suitably stored or protected from exposure to the atmosphere. If the cement shows signs of deterioration, it shall be removed from the work site unless additional tests show that it conforms to the requirements stated above.
- B. Fine and Coarse Aggregates:
1. Fine Aggregate: Fine aggregate shall conform to WSDOT Standard Specifications 9-03.1(2)B and shall consist of sand or other inert materials or combinations thereof having hard, strong, durable particles free from adherent coating. Fine aggregate shall be washed thoroughly to remove clay, loam, alkali, organic matter, or other deleterious matter.
 2. Coarse Aggregate: Coarse aggregate shall conform to WSDOT Standard Specifications 9-03.1(4)C , AASHTO Grading No. 67 or 57 and shall consist of gravel, crushed stone, or other inert material or combinations thereof having hard, strong, durable pieces free from adherent coatings. It shall be washed thoroughly to remove clay, silt, bark, sticks, alkali, organic matter, or other deleterious material. Use of pit or bank-run gravel is not permitted.
 3. Combined Aggregate Gradation: As an option to using coarse and fine graded aggregates, aggregate gradation may consist of a combined gradation with a nominal maximum size of 1 inch or 3/4 inch per WSDOT Standard Specifications 9-03.1(5)B.
 4. Approved aggregates shall be so stored as to prevent deterioration, segregation, or intrusion of foreign matter. Improper storage will be considered a reason for rejection of affected aggregate.
- C. Water: Water shall be any potable water, clean and free of injurious amounts of oil, acid, alkali, and organic material. Water containing 2 percent or more common salt shall not be used.

2.02 ADMIXTURES

- A. Air Entrainment: An air-entraining admixture meeting ASTM C260 shall be used when specified in Paragraph 2.05 – Concrete Mix.
- B. Chemical Admixture: Water-reducing, retarding, and/or accelerating admixtures shall be used when specified in Paragraph 2.05 – Concrete Mix, meeting ASTM C494 or as approved by the Owner.
- C. Calcium chloride shall not be used.

2.03 GROUT

Not Used.

2.04 MORTAR

Mortar for build-up at various surfaces and hand-sack rubbing shall be composed of approximately 1 part Type II Portland Cement, 1 1/2 to 2 parts Silica Sand (for sack finishing) or sand passing No. 16 sieve (for build-up), an amount of air-entraining admixture per sack of cement to produce an air content of 9 percent by volume, and sufficient water to make a workable mix with consistency like thick cream. Masonry Sand shall not substitute for Silica Sand for sack finishing. Thicker mix is required for filling voids. Sand, cement, water, and air-entraining admixture shall be as specified for concrete.

2.05 CONCRETE MIX

A. Commercial Concrete:

Commercial concrete shall have a minimum compressive strength at 28 days of 3,000 psi in accordance with AASHTO T 22. Commercial concrete placed above the finished groundline shall be air entrained and have an air content from 4.5 percent to 7.5 percent in accordance with FOP for AASHTO T 152. Commercial concrete does not require mix design or source approvals for cement, aggregate, and other admixtures.

Where concrete Class 3000 is specified for items such as, culvert headwalls, plugging culverts, concrete pipe collars, pipe anchors, monument cases, Type PPB, PS, I, FB and RM signal standards, pedestals, cabinet bases, guardrail anchors, fence post footings, sidewalks, concrete curbs, curbs and gutters, and gutters, the Contractor may use commercial concrete. If commercial concrete is used for sidewalks, concrete curbs, curbs and gutters, and gutters, it shall have a minimum cementitious material content of 564 pounds per cubic yard of concrete, shall be air entrained.

A. Jobsite Mixing:

For small quantities of concrete, the Contractor may mix concrete on the job site provided the Contractor has requested in writing and received written permission from the Owner. The Contractor's written request shall include a mix design, batching and mixing procedures, and a list of the equipment performing the job-site mixing. All job site mixed concrete shall be mixed in a mechanical mixer.

If the Owner permits, hand mixing of concrete will be permitted for pipe collars, pipe plugs, fence posts, or other items receiving the concurrence of the Owner, provided the hand mixing is done on a watertight platform in a way that distributes materials evenly throughout the mass. Mixing shall continue long enough to produce a uniform mixture. No hand mixed batch shall exceed 1/2 cubic yard.

Concrete mixed at the jobsite is not permitted for placement in water.

2.06 BONDING AGENT

A. Bonding agent for bonding new concrete to hardened concrete shall conform to ASTM-C-881.

B. Bonding agent shall be Symons Rescon Epoxy Bonder MV, or Owner approved equal.

2.07 WATER STOP

Not Used.

2.08 EXPANSION JOINT MATERIAL

- A. Pre-formed expansion joint material shall be rubber compound, conforming to ASTM D1752, Type 1, and be full depth of the joint, less expansion joint sealant and backer rod, 1/2 inch thick. A.P.S., Rubber Expansion Joint Filler or Owner approved equal.
- B. Pre-formed expansion joint material for driveways, sidewalks, etc. shall be asphalt impregnated fiber, conforming to ASTM D994, full depth of joint, 1/2 inch thick. A.P.S. Fiber Board or Owner approved equal.

2.09 EXPANSION JOINT SEALANT

Not Used.

PART 3 - EXECUTION

3.01 INSPECTION

Not Used.

3.02 EMBEDMENTS

Not Used.

3.03 BATCHING AND MIXING

- A. Except for hand-mixed concrete, all concrete shall be batched in a prequalified manual, semi-automatic, or automatic plant. The prequalification shall consist of a current, annual certification inspection by WSDOT or as approved by the Owner. If the plant has not been prequalified, the Contractor shall provide written notification to the Owner 2 weeks prior to the anticipated use of the batch plant to allow for the necessary prequalification. The Owner is not responsible for any delays to the Contractor due to problems in getting the plant certified.
- B. The Contractor has the option to site mix, transit mix, or plant mix the concrete. In all cases, concrete shall be mixed until a uniform distribution of the materials produces a homogeneous batch.
- C. Site-mixed concrete operations larger than 5 cubic yards total shall be subject to the prior approval of the Owner.
- D. Transit-mixed concrete may be used provided it complies with these Specifications and ASTM C94 or WSDOT Standard Specifications. The concrete supplier shall have adequate equipment to ensure weight and quality control.
- E. Concrete shall only be mixed in the quantities required for immediate use. The concrete shall be used while fresh before initial set has taken place. Any concrete that has developed initial set shall not be used. Partially hardened concrete shall not be retempered or remixed. One batch of mixed concrete shall be entirely discharged before the following batch is charged.
- F. Temperature and Time for placement (WSDOT Standard Specification 6-02.3(4) D). Concrete temperature shall remain between 55 F and 90 F while it is being placed.

The batch of concrete shall be discharged:

- 1. Not later than 1 1/2 hour after the cement is added to the concrete.

2. Not later than 1 3/4 hour if the temperature of the concrete being placed is less than 75 F.
 3. Not later than 2 hours with the approval of the Owner if the concrete being placed is below 75 F.
 4. Dry batch mix procedures may be used, but only as approved by the Owner.
- G. The maximum slump for vibrated concrete shall be 4 1/2 inches. When a high range water reducer is used, the slump may be increased an additional 2 inches. Minimum slump is that required for proper placement and compaction. The maximum slump for non-vibrated concrete shall be 7 inches.
- H. Conformance to Mix Design:
- Weights of the mix components shall be within the following tolerances of the mix design:
- Cement: +5%, -1%
- Fly Ash, Ground Granulated Blast Furnace Slag: +5%, -5%
- Aggregates: +5%, -1% for batch volumes greater than 4 cubic yards
- Aggregates: +10%, -2% for batch volumes equal to or less than 4 cubic yards
- Water: +0%

3.04 CONCRETE JOINTS

- A. Expansion Joints:
1. Expansion (isolation) joints shall be placed and constructed as shown on the Drawings.
 2. The length of a joint material shall match the required length in the Drawings without splicing or stretching.
 3. Open joints shall be formed with a template made of wood, metal, or other suitable material. Insertion and removal of the template shall be done without chipping or breaking the edges, or otherwise injuring the concrete.
 4. Any part of an expansion joint running parallel to the direction of expansion shall provide a clearance of at least 1/2 inch (produced by inserting and removing a spacer strip) between the 2 surfaces. The Contractor shall ensure that the surfaces are precisely parallel to prevent any wedging from expansion and contraction.
- B. Crack-Control Joints:
1. Crack-control joints shall be installed as shown on the Drawings or where designated by the Owner. Crack control joints are intended to have cracking occur in the joints to prevent uncontrolled transverse cracks from occurring in walls and slabs.
 2. Crack-control joints shall be straight and true. Crack-control joints shall have a formed crack a minimum depth of 1/4 of the concrete thickness (for walls, half from each side of the section) and may be formed using a plastic strip anchored to the form or other method approved by the Owner. Slabs may be sawcut 1/4 of the concrete thickness before curing. Contractor shall inform Owner of his cutting schedule.
 3. The Contractor may use a construction (stop pour) joint in place of the crack-control joint when approved by the Owner.
- C. Construction Joints:
1. Construction joints are stopping places in the process of concrete placement and shall be made only where shown on the Drawings or as approved by the Owner.

2. All construction joints shall be neatly formed as shown on the Drawings. Irregular or undulating joint lines shall not be allowed. All construction joints shall be either horizontal or vertical, or if the main reinforcement is inclined, the joints shall be normal to the direction of the main reinforcement.
3. When the Drawings call for a construction joint with roughened surface, the surface shall be struck off to leave surface irregularities approximately 1/2 inch wide and 1/4 inch deep. Surface irregularities shall not exceed 1/2 inch in depth. If the desired roughness is not obtained by the initial strike-off, the surface shall be roughened prior to the concrete reaching its initial set in such a manner as to leave grooves approximately 1/4 inch deep at 1/2 to 1 inch centers in both transverse and longitudinal directions. The rough surface shall be clean and free of laitance and loose material. Shear keys are required where shown on the Drawings.

3.05 PLACING CONCRETE - GENERAL

- A. Notify the Owner a minimum of 48 hours prior to commencement of concreting operations. Placement of concrete shall occur only after the forms and reinforcing bar placement have been inspected and approved by the Owner or his representative. The Contractor shall place concrete only when the Owner or his representative is present.
- B. All building slabs, floor slabs, and pond floor slabs shall be placed over a 6-mil clear polyethylene vapor barrier (unless noted otherwise).
- C. Concrete shall be placed as soon as possible after mixing and shall be plastic and readily workable when placed in the forms.. The method and manner of placing concrete shall avoid segregation of the aggregates or displacement of reinforcement.
- D. Immediately before concrete placement against existing hardened concrete, bonding agent shall be applied to existing clean concrete surface. New concrete shall be placed while agent is still tacky.
- E. Concrete shall not be placed if other work in the area, such as driving piles or sheets, causes vibrations that adversely affect the initial set or strength of the concrete.
- F. Aluminum conduits shall not be used in the pumping or placing of concrete.
- G. Ensure reinforcement, inserts, embedded parts, and formed joints are not disturbed during concrete placement.
- H. Place crack-control joints prior to initial set.
- I. Excessive honeycomb or embedded debris in concrete is not acceptable.

3.06 PLACING CONCRETE INTO FORMS

- A. Before placement of concrete, forms shall be cleaned and free of all debris and ice. The foundations and forms shall be dampened prior to placing concrete. Care must be taken to see there is no standing water on the foundation or in the forms when the concrete is placed. Where possible, all foundation excavations shall be pumped dry and concrete deposited in the dry. If it is not possible to proceed in this manner, a seal of concrete of sufficient thickness to resist any possible uplift shall be deposited underwater in accordance with the requirements specified in Paragraph 3.08 – Placing Concrete in Water.

DIVISION 3 - CONCRETE

- B. Deposit concrete in forms in continuous horizontal layers not deeper than 24 inches and in a manner to avoid inclined construction joints. Where placement consists of several layers, place each layer while preceding layer is still plastic to avoid cold joints. Insert vibrator into previous layer to ensure homogeneous concrete placement.
- C. Remove temporary spreaders in forms when concrete being placed has reached the elevation of such spreaders.
- D. Concrete shall not be dropped more than 3 feet. This is to avoid material segregation. When placing operations would involve dropping the concrete more than 3 feet, it shall be deposited through sheet metal or other approved conduit. In sloping forms where concrete, if dropped, will tend to slide down one side of the form as it is placed, the concrete shall be placed through approved conduit without dropping. After initial set of the concrete, the forms shall not be jarred, and no strain shall be placed on the ends of the projecting reinforcement bars.
- E. The method of depositing and consolidating concrete shall be conducted so as to form a compact, dense, and impervious concrete that will show smooth faces on exposed surfaces. If any section of concrete is found to be defective, it shall be removed by the Contractor at no additional expense to the State. Plastering will not be permitted.

3.07 PLACING CONCRETE SLABS

- A. Deposit and consolidate concrete slabs in a continuous operation within the limits of construction joints until the placing of a panel or section is completed. When concrete is in place has sufficiently set up (at least 24 hours), an alternate section shall be placed. The edges of all sections shall be tooled with a minimum radius edging tool.
- B. Slope all exterior concrete slabs and interior slabs with floor drains in a manner to prevent the collection of water.
- C. Bring slab surfaces to the correct level with a straightedge and strike off. Use bullfloats or derbies to smooth the surface, leaving it free from humps or hollows. Do not sprinkle water on the plastic surface. Do not disturb the slab surfaces prior to beginning finishing operations.
- D. Maintain reinforcing steel in the proper position continuously during concrete placement operations.

3.08 PLACING CONCRETE IN WATER

In no case shall commercial or site-mixed concrete be placed in water.

3.09 PLACING CONCRETE IN HOT WEATHER

- A. Concrete shall be placed when anticipated 24 hour range will exceed 89°F and shall conform to ACI 305R. Contractor shall submit a hot weather plan to the Owner for review and approval prior to commencement of any work.
- B. The temperature of the concrete equipment and ingredients shall be maintained at such a level that the temperature of the concrete at the time it is placed shall not exceed 85°F.
- C. Water-reducing admixtures shall be used so that the maximum amount of water or slump shall not be exceeded. The mixing of the concrete and the time between mixing and placing shall be kept to a minimum. Mixer trucks shall not be exposed to the sun while waiting to be unloaded. Chutes, conveyors, and pump lines shall be shaded. To keep the forms and reinforcing steel cool prior to placing the concrete, the top layer of reinforcing steel shall be completely covered with clean, wet burlap and the forms and reinforcing steel shall be

sprinkled with cool water immediately prior to placing the concrete or as ordered by the Owner. The concrete shall be finished without delays. Equipment for applying a water-fog spray shall be available in case it is needed to prevent plastic cracks.

- D. When the combination of air temperature, humidity, temperature of the surface of the concrete, and the wind velocity produces an evaporation of 0.2 or more pounds per hour per square foot of surface as determined by the Owner, the Contractor shall provide a windbreaker enclosure to protect the concrete from winds blowing over the surface of the concrete until the curing compound is applied.

3.10 PLACING CONCRETE IN COLD WEATHER

- A. When air temperature is expected to fall below 37°F during placement or within 7 days thereafter, the Contractor shall place and cure concrete in accordance with ACI 306R. Contractor shall submit a cold weather concreting plan to the Owner for review and approval no less than 7 days prior to the proposed cold weather concreting.
- B. The following provisions shall govern cold weather concreting:
 - 1. Concrete shall not be mixed or placed while the atmospheric temperature is below 37°F.
 - 2. Concrete shall not be placed on frozen ground or against frozen forms.
- C. Frozen concrete shall be immediately removed when Contractor is directed to do so by the Owner and replaced with new work at no cost to the State.

3.11 VIBRATION OF CONCRETE

- A. The Contractor shall provide suitable internal vibrating tampers for use in placing and compacting all concrete, The vibrators shall be of the type designed to be placed directly in the concrete, and the vibrator's frequency of vibration shall be not less than 7,000 impulses per minute when in actual operation. The type of vibrator and its method of use shall be subject to the approval of the Owner.
- B. Insert and withdraw vibrators vertically at uniformly spaced locations not farther than the visible effectiveness of the machine (between 2 to 3 feet). Place vibrators to rapidly penetrate the layer of concrete and at least 6 inches into the preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion, limit the duration of vibration to the time necessary for consolidation around reinforcement and other embedded items without causing segregation of the mix. Generally, this will be from 5 to 15 seconds in accordance with ACI 301. Do not use vibrators to transport concrete inside of forms.
- C. Vibrators shall not be applied directly to steel that extends into partially hardened concrete.
- D. Vibration shall not continue in any one spot to the extent that pools of grout are formed. When vibrating and finishing top surfaces that are exposed to weather or wear, extreme care shall be exercised to avoid drawing water or laitance to the surface. For relatively high lifts, the top layer shall be comparatively shallow, and the concrete mix shall be as stiff as can be effectively vibrated into place and properly finished.
- E. The Contractor shall supply a sufficient number of vibrating tampers to effectively vibrate all of the concrete placed. Hand tamping shall be required wherever necessary to secure a smooth and dense concrete on the outside surfaces.
- F. Vibration of forms and reinforcing will not be allowed.

3.12 FINISHING CONCRETE SURFACES - GENERAL

- A. Forms on walls shall be removed not more than 72 hours after placing concrete.
- B. After removal of the forms, all concrete shall show a smooth, dense face. Any concrete that is porous shall be removed by the Contractor and replaced at no additional cost to the State.
- C. At the discretion of the Owner, cracks in concrete work not covered by Paragraph 3.16 – Defective Concrete and Repair of Concrete and 0.010 inch wide and wider shall be repaired at the Contractor's expense by an ACI-recommended method as approved by the Owner. Criteria for an acceptable method of repair will be based on the following elements:
 - 1. Structural or nonstructural crack.
 - 2. Exposure level/conditions of structures.
 - 3. Appearance.
 - 4. Cause of cracking.
- D. Unsightly stains and coloring caused by the Contractor's operations, equipment, or materials, or resulting because of unfinished construction either before or after a surface has been finished in accordance with this section shall be cleaned and refinished prior to final acceptance of the project and at no additional cost to the State.

3.13 FINISH OF SLABS

- A. Screed all slabs.
- B. Trowel by hand or machine to hard, dense, and mark-free surface. Do not absorb wet spots with neat cement or mixture of cement and sand. Wait until surfaces are dry enough for proper troweling. Chemical dryers not permitted.
- C. Interior concrete slabs to receive flooring materials or carpet shall be steel troweled. Slabs not receiving flooring materials shall also be light-broom finished across the direction of slope or flow to achieve a nonslip surface or as otherwise shown on the Drawings.
- D. Slabs in hatchery trough rooms shall be light-broom finished in the direction of floor slope.
- E. Exterior slabs and slabs in contact with fish rearing water, shall receive a light-broom finish.

3.14 FINISH OF FORMED SURFACES

- A. Surfaces Not Exposed to View, Not in Contact with Water:
 - 1. This includes formed concrete surfaces not exposed to view in the finish work or covered by other construction unless otherwise shown or specified.
 - 2. Provide as-cast rough form finish.
 - 3. Standard rough-form finish shall be the concrete surface having the texture imparted by the form-facing material used with tie holes and defective areas repaired and patched, and all fins and other projections exceeding 1/4 inch in height rubbed down or chipped off.
- B. Surfaces Exposed to View or in Contact with Fish-Bearing Water:
 - 1. This includes concrete surfaces that are visible but not in contact with water and all concrete water contacting surfaces that may come in contact with fish rearing water.
 - 2. Grind entire surface of all interior and exterior walls with a rotary grinder to expose all air pockets, voids, and other imperfections to create a smooth wall surface.

DIVISION 3 - CONCRETE

3. Immediately after all required patching, grinding, and correction of major imperfections have been completed, hand sack-rub all vertical surfaces. The sacking process and desired finish quality shall conform to WSDOT Class 1 Surface Finish (WSDOT 6-02.3 (14) (A)). The sack finish process shall be accomplished immediately after the 7 day cure period or as approved in writing by the Owner. No other methods/finishes will be accepted.
4. All pits, after being filled, that shows signs of air pockets or still show an indentation in the wall, shall be reopened (as necessary), refilled, and finished by repeating the hand-sacking process. The intent of the finish is to be very smooth and nonabrasive with no pinholes visible.
5. Top of walls in contact with fish bearing water shall be steel troweled, edged and light broom finished.

3.15 FINISHED CONCRETE TOLERANCES

A. Formed concrete tolerances shall conform to the following requirements:

TABLE 03300 - 3.15A	
1. Variation from the level or the grades: <ol style="list-style-type: none"> a. In slabs : b. In exposed lintels, sills, parapets, horizontal grooves, and other conspicuous lines: 	1/4 inch in any 10-foot length 3/8 inch in any bay or in any 20-foot length 3/4 inch maximum for the entire length 1/4 inch in any bay or in any 20-foot length 1/2 inch maximum for the entire length
2. Variation in the thickness of slabs and walls:	1/4 inch minus 1/2 inch plus
3. Footings: <ol style="list-style-type: none"> a. Variation in dimension in plan: b. Misplacement or eccentricity: c. Thickness: <ol style="list-style-type: none"> 1. Decrease in specified thickness: 2. Increase in specified thickness: 	1/2 inch minus 2 inches plus 2 percent of the footing width in the direction of misplacement, 2 inches maximum 5 percent No limit
4. Variation in steps: <ol style="list-style-type: none"> a. In a flight of stairs: <ol style="list-style-type: none"> 1. Rise: 2. Tread: b. In consecutive steps: <ol style="list-style-type: none"> 1. Rise: 2. Tread: 	1/8 inch plus or minus 1/4 inch plus or minus 1/16 inch plus or minus 1/8 inch plus or minus

B. Tolerances apply to concrete dimensions only, not to positioning of vertical reinforcing steel, dowels, or embedded items.

3.16 DEFECTIVE CONCRETE AND REPAIR OF CONCRETE

- A. Concrete that is not formed as shown on the Drawings, or for any reason is out of alignment, level, tolerances, or shows a defective surface shall be removed from the job at the Contractor's expense, unless the Owner grants permission to patch the defective area. Permission to patch in such an area shall not be considered a waiver of the Owner's right to require complete removal of defective work if patching does not, in his opinion, satisfactorily restore quality and appearance of the surface.
- B. Repair or replace concrete not properly placed or of the specified type.
- C. All concrete shall be inspected and all pour joints, rough sections, cracks, and honeycombed areas shall be repaired by cutting back to solid concrete. Apply cement mortar fill after coating surface with bonding agent.
- D. Fill all tie holes and small imperfections with cement mortar fill.

3.17 PLACING ANCHOR BOLTS AND EMBEDDED METALWORK

Not Used.

3.18 WATER-HOLDING STRUCTURE TEST

Not Used.

END OF SECTION 03301

**SECTION 03370
CONCRETE CURING**

PART 1 - GENERAL

1.01 SECTION INCLUDES

Concrete curing materials and methods.

1.02 ENVIRONMENTAL CONDITIONS

When the air temperature is expected to fall below 37°F during the 7 day initial cure period, the Contractor shall submit a written cold weather concreting plan conforming with ACI 306R to the Owner for approval prior to the commencement of any concrete work.

1.03 QUALITY ASSURANCE

Contractor shall conform to requirements of ACI 301.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Water shall be clean, potable and not detrimental to concrete.
- B. Absorptive mat shall be burlap-polyethylene, 8 ounces per square yard, bonded to prevent separation during use.
- C. Concrete curing compound shall be of a standard and uniform quality, ready for use as shipped by the manufacturer. Contractor shall verify curing compound compatibility with required concrete surface finishes as specified in Section 03300 – Cast in Place Concrete and as noted on the Drawings. The curing compound shall conform to ASTM C309, Type 1, Class A or B, and shall be clear with no discoloring. Curing compounds shall be certified nontoxic to fish, or approved by the Owner.
- D. Curing compound for interior slabs and interior walls shall be WR Meadows 1300 Clear or Owner approved equal.
- E. Polyethylene Film shall conform to ASTM D2103 and shall be 6 millimeter thick and white in color.

PART 3 - EXECUTION

3.01 CURING METHODS

- A. All concrete surfaces shall be cured by one of the following methods for not less than 7 days after the concrete is placed.
- B. Using one of the methods listed below, the Contractor shall determine the best method for the project, as approved by the Owner:

1. Walls:
 - a. General: Where walls are to receive coating, painting, cementitious material, or other similar finishes or where curing compound is not permitted, do not use curing compounds. Use only water-curing procedures.
 - b. Method 1: Leave concrete forms in place and keep entire exposed surfaces wet at all times.
 - c. Method 2: Apply curing compound as specified, where allowed, immediately after finishing of surfaces. Concrete shall be kept moist while finishing is accomplished.
 - d. Method 3: Continuously sprinkle 100 percent of all exposed surfaces.
 - e. Method 4: Leave concrete forms in place and apply curing compound to top of wall.
 2. Slabs and Curbs:
 - a. Method 1: Cover surface by water ponding.
 - b. Method 2: Cover with absorptive mats and keep continuously wet.
 - c. Method 3: Continuously sprinkle exposed surface.
 - d. Method 4: Apply specified curing compound to exposed surfaces.
 - e. Other agreed upon method that will provide moisture to be present and uniform at all times on all surface of slabs.
- C. Onset of Curing:
1. Slabs-on-Grade: Apply curing compound, if used, as soon as free water has disappeared from concrete surface after placing and finishing.
 2. Formed Concrete: Remove forms as specified in Section 03100, and patch and finish immediately. Apply curing method immediately to finished sections of the work.

3.02 MEMBRANE CURING COMPOUND

- A. Apply immediately after finishing of slabs and walls, etc. in accordance with manufacturer's instructions.
- B. Surfaces that have their forms removed after concrete has reached two-thirds of its design strength by test will not require curing compound applied.

3.03 ABSORPTIVE MAT

Contractor shall saturate burlap side of absorptive mat, place over slab areas burlap side down, lap edges and ends 12 inches, and maintain in place for duration of curing period.

3.04 POLYETHYLENE FILM

- A. Contractor shall spread polyethylene film over slab areas, lap edges and ends 3 inches, and seal with pressure-sensitive polyester tape.
- B. Contractor shall maintain polyethylene film in place with plywood sheets for duration of curing period.

END OF SECTION 03370

**SECTION 03400
PRECAST STRUCTURAL CONCRETE**

PART 1 - GENERAL

1.01 SECTION INCLUDES

The work includes furnishing of all necessary material, labor, and equipment for providing the precast concrete manholes shown on the Drawings, including design, manufacture, transportation, and other related work as required for a complete fabrication and delivery.

The manholes shall be constructed of a base section with segmented risers. manhole size, dimensions, minimum weight, attachments, and design loads are as indicated on the Drawings.

1.02 QUALITY ASSURANCE

- A. A company specializing in providing precast concrete products and services normally associated with the industry for at least 5 years. Written evidence shall be submitted to the State to show experience, qualifications, and adequacy of plant capability and facilities for performance of contract requirements, including proof of current plant certification by the Precast Concrete Institute (PCI). Upon request by the State, the manufacturing facility shall be made available for inspection.
- B. Testing: In general, comply with applicable provisions of Pre-stressed Concrete Institute MNL-116, Manual for Quality Control for Plants and Production of Precast Pre-stressed Concrete Products.
- C. Inspection: All precast units may be inspected by the Owner at the casting yard. All damaged and/or otherwise defective products shall be rejected.

1.03 REFERENCE STANDARDS

ACI 318, Building Code Requirements for Reinforced Concrete

ACI 301, Specifications for Structural Concrete for Buildings

MNL-116, Manual for Quality Control for Plans and Production of Precast Pre-stressed Concrete Products

Pierce County Public Works and Utilities Sanitary Sewer Development Specifications

Pierce County Public Works and Utilities Sanitary Sewer Standard Details Manual

WISHA, Washington Industrial Safety and Health Act

1.04 SUBMITTALS

- A. Submit complete plant quality control (QC) plan and proof of PCI Certification. The plan shall include the names and qualifications of individuals having responsibility for product quality control and shall include specific reference standards used for quality control.
- B. Submit complete design calculations and drawings for the manholes. Design shall be in accordance with ACI 318, Chapters 16 and 18 for the criteria and components shown on the Drawings. Design calculations shall be completed under the responsible charge of a licensed Structural Engineer in the State of Washington, and shall be stamped and sealed accordingly.

- C. Submit complete shop drawings indicating all shop and erection details, including position and quantities of reinforcing steel, anchors, inserts, etc. Design of all lifting loops or embedded hardware required for construction shall be the responsibility of the Contractor. All calculations shall be completed under the responsible charge of a licensed Structural Engineer in the State of Washington, and shall be stamped and sealed accordingly. Drawings shall also indicate the concrete compressive strength, and sequence at various stages of manufacture, handling, and erection.
- D. Submit mill certificates indicating specification compliance regarding strength and metallurgy of reinforcing steel to be furnished.
- E. Fabrication shall not be started until the shop drawings and other submitted data are reviewed by the State and returned to Contractor.
- F. Submit test reports indicating specification compliance for concrete materials and strengths.
- G. Submit test reports indicating specification compliance for concrete admixtures.
- H. Submit concrete curing methods and records of concrete curing temperatures for all accelerated curing.
- I. Repair procedures, including materials to be incorporated into the repairs, for minor repairs associated with normal construction practice.

PART 2 - PRODUCTS

2.01 CONCRETE REINFORCEMENT

See Section 03210 of these Specifications.

2.02 STEEL COMPONENTS

See Division 5 of these Specifications.

2.03 FLOOD HOLE SCREEN

Provide opening for screen. The screen will be provided and installed onsite by others.

2.04 CONCRETE MIXES AND STRENGTHS

A. Precast Concrete Manhole and Pump Vault:

Precast concrete manhole and pump vault stations shall be in conformance with current Pierce County Sanitary Sewer Development Specifications.

B. Polymer Concrete Manhole:

1. All polymer concrete manholes shall be manufactured by Armorock (Boulder City, NV) or US Composite Pipe (Alvarado, TX). Polymer concrete wet wells are not allowed.
2. Polymer concrete manholes shall be made of polyester or vinyl ester resin, sand, and aggregate. All sand and aggregate shall be inert in an acidic environment. No Portland cement shall be allowed as part of the mix. Reinforcing shall be steel reinforcement or acid resistant reinforcement (FRP Bar) and meet the reinforcing requirements of ASTM C478.

DIVISION 3 - CONCRETE

3. Manhole grade rings shall be concrete, polymer concrete or Cretex Pro-Ring. The overall height of grade ring(s) shall be a minimum of 4 inches, and no greater than 12 inches (two 6-inch rings). A maximum of two grade rings are allowed on new manholes.
4. Manufacturing tolerances shall be per ASTM C478. Sections with damaged joint surfaces or with cracks or damage that would permit infiltration shall not be installed.
5. Polymer concrete shall have a minimum unconfined compressive strength of 9,000 psi (ASTM C497). Manhole shall pass a vacuum test per paragraph 3.02 of these Specifications.
6. All grouting, filling, and patching in polymer concrete manholes shall be done with polyester or vinyl ester mortar compound provided, Ennecon Durafill, Sauereisen SewerGard 210T, Sika Sikadur AnchorFix-2 or approved material by the structure manufacturer. Grouting, filling, and patching material shall not contain Portland Cement or other cementitious materials susceptible to H₂S corrosion
7. Kor-n-Seal® Pipe to Manhole Connector as manufactured by Trelleborg Pipe Seals Inc. or PSX: Direct Drive as manufactured by Press-Seal Corporation shall be utilized for all pipe connections to polymer concrete manholes.
8. Anti-flotation anchors, when needed, shall be field cast out of commercial concrete and mechanically attached to structure as indicated in the approved structural and buoyancy calculations.
9. External manhole wrap shall be irradiated and cross-linked polyethylene backing with an adhesive layer such that the sleeve will bond to primed concrete, metallic or fiberglass surfaces.

2.05 MANHOLE STEPS

Provide corrosion-resistant manhole steps where shown on the Drawings. Steps shall be polypropylene-encased steel and shall comply with WISHA standards.

2.06 JOINT-SEALANT-STANDARD MANHOLE SEALANT

Joints shall be watertight. Provide rubber gaskets conforming to ASTM C443.

2.07 FABRICATION

General: Manufacturing procedures shall be in general compliance with PCI MNL-116.

PART 3 - EXECUTION

3.01 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Delivery and Handling:

1. Precast concrete members shall be lifted and supported during manufacturing, stockpiling, transporting, and erection operations only at the lifting or supporting points, or both, as shown on the shop drawings, and with approved lifting devices.
2. Transportation, site handling, and erection shall be performed by qualified personnel using equipment and methods capable of suspending and supporting precast structural concrete members without overstress.

DIVISION 3 - CONCRETE

3. Extreme care shall be exercised during all handling operations. The Contractor shall repair all damaged units at no cost to the State. Units damaged beyond repair shall be removed and replaced at no additional cost to the State.

B. Storage:

1. Support all units to prevent overstress.
2. Store all units off ground.
3. Place stored units so that identification marks are discernible.
4. Separate stacked members by battens across full width of each bearing area.
5. Stack so that lifting devices are accessible and undamaged.
6. Do not use upper member of stacked tier as storage area for shorter member or heavy equipment.

3.02 ERECTION BY OTHERS SHALL INCLUDE:

- A. Precast units shall not be erected until the concrete has attained the minimum specified design strength and only after a minimum of 14 days after pouring.
- B. Provide true, level bearing surfaces on all field-placed supporting members.
- C. Installation: Members shall be lifted by means of suitable lifting devices at points provided by the manufacturer. Set members as indicated on the Drawings. Provide necessary temporary shoring and bracing, where required, to keep members plumb and stable. Align and level members as required.
- D. Fastening: Fasten members only where indicated on the Drawings.
- E. Patching: Cut off lifting devices and fill voids with an approved epoxy grout.

END OF SECTION 03400

**SECTION 05000
GENERAL METAL PROVISIONS**

PART 1 - GENERAL

1.01 SECTION INCLUDES

This section specifies general requirements for all sections of Division 5 – Metals.

1.02 RELATED SECTIONS

Not Used.

1.03 REFERENCES

References listed in Division 5 are from the following organizations' latest editions of their publications and reference standards.

AISC – American Institute of Steel Construction: Steel Construction Manual, ASD

AISI – American Iron and Steel Institute

ASTM – ASTM International (formerly American Society of Testing and Materials)

AWCI – Association of the Wall and Ceiling Industry

AWS – American Welding Society: Structural Welding Code

IBC – International Building Code

MFMA – Metal Framing Manufacturers Association

TAA – The Aluminum Association: ADM – Aluminum Design Manual

1.04 SUBMITTALS

Provide submittals for items in all sections of Division 5 in accordance with Sections 00704.03 Shop Drawings and 01300 Contractor Submittals.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION 05000

**SECTION 05050
FASTENERS**

PART 1 - GENERAL

1.01 SECTION INCLUDES

The work under this Section includes providing all labor, materials, tools, and equipment necessary for connectors, fasteners, welded metal, and miscellaneous items required to complete the work, including but not limited to embedded and nonembedded metal work, fasteners for grating or aluminum fabricated items, anchor bolts, expansion anchors, bolts, nuts, washers, sheet metal screws, and steel epoxy-grouted anchors, as shown on the Drawings and described in the Specifications.

1.02 RELATED SECTIONS

02401 Sanitary Sewer Service
05000 General Metal Provisions

1.03 REFERENCES

ASTM A108 – Standard Specification for Steel Bar, Carbon and Alloy, Cold-Finished

ASTM A193 – Standard Specification for Alloy-Steel and Stainless Steel Bolting for High Temperature or High Pressure Service and Other Special Purpose Applications

ASTM A194 – Standard Specification for Carbon Steel, Alloy Steel, and Stainless Steel Nuts for Bolts for High Pressure or High Temperature Service, or Both

ASTM A307 – Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60,000 PSI Tensile Strength

ASTM A563 – Standard Specification for Carbon and Alloy Steel Nuts

ASTM F3125 – Standard Specification for High Strength Structural Bolts and Assemblies, Steel and Alloy Steel, Heat Treated

Pierce County Public Works and Utilities Sanitary Sewer Development Specifications

Pierce County Public Works and Utilities Sanitary Sewer Standard Details Manual

WSDOT - Standard Specifications for roads, bridges, and municipal construction (M41-10), latest edition

1.04 SUBMITTALS

Bolts, anchors, nuts, washers, and safety guards.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Unless otherwise indicated, use fasteners and connectors of the same material as the attached metal.
- B. Stainless steel fasteners are required:
 - 1. Where connecting aluminum components.
 - 2. For connections to be used in submerged or wet locations, where water or other liquids may drip, splash, or flow on or against the components.
- C. Unless otherwise indicated, hot-dip galvanize after fabrication.

2.02 FASTENERS FOR ALUMINUM FABRICATED ITEMS

- A. All bolts, nuts, washers, and screws used for assembly or mounting of aluminum fabricated items shall be stainless steel grade 304 or 316. Do not use plated or galvanized assembly hardware with aluminum-fabricated items.

2.03 ANCHOR BOLTS AND EXPANSION ANCHORS

- A. Anchor bolts embedded in concrete and subjected to intermittent or continuous submergence during hatchery operations shall be stainless steel.
- B. Other anchor bolts and studs shall be ASTM A307 carbon steel, 60,000 psi tensile strength. Anchor bolts, nuts, expansion anchors, bolts, and washers shall be hot-dip galvanized unless otherwise noted.
- C. Expansion anchors set in holes drilled in the concrete after the concrete is placed will not be permitted in substitution for anchor bolts except with the prior written acceptance of the Owner.

2.04 BOLTS, NUTS, WASHERS, AND SHEET METAL SCREWS

- A. All bolts and nuts that will be continuously or intermittently in contact with water during hatchery or other facility operations shall be stainless steel conforming to ASTM A193 and ASTM A194 for type 304 or 316 as approved.
- B. All other general use bolts, nuts, and washers shall be ASTM A307 and A563 respectively, hot-dip galvanized, unless noted otherwise.
- C. All assembly hardware for aluminum fabrication shall be stainless steel. No galvanized, plated, or anodized materials shall be used with aluminum.
- D. Fasten structural steel members with high strength bolts conforming to ASTM F3125 unless otherwise indicated.
- E. Furnish washers and lock washers for all bolted connections unless otherwise noted. This includes washers for flange bolts. Washers and lock washers shall be of the same material as fasteners and connectors.

2.05 HEADED CONCRETE ANCHORS

ASTM A108 or AISI Type 304.

PART 3 - EXECUTION

3.01 INSTALLATION

Install all fasteners and connectors in accordance with industry standards.

3.02 ANCHOR BOLTS

Protect the threads of embedded anchor bolts with fitted nuts or by other accepted means until the equipment or metalwork is installed.

END OF SECTION 05050

**SECTION 05091
WELDING****PART 1 - GENERAL**

1.01 SECTION INCLUDES

This work includes furnishing all necessary material, labor, and equipment for completing welding required for metal fabrications.

1.02 QUALITY ASSURANCE

A. Governing Specifications, Codes, and Standards:

1. American Welding Society, ANSI/AWS D1.1, Structural Welding Code – Steel, referred to hereafter as AWS D1.1
2. American Welding Society – ANSI/AWS A5.
3. American Welding Society – AWS D19.0, Welding Zinc-Coated Steel, referred to hereafter as AWS D19.0.
4. WABO Standard No. 27-13, WABO Welder and Welding Operator Performance Qualification Standard for Structural Steel, Sheet Steel, and Reinforcing Steel
5. American Welding Society – AWS D1.2, Structural Welding Code – Aluminum
6. American Welding Society – AWS D1.6, Structural Welding Code – Stainless Steel

B. Qualifications:

1. Welder Qualifications: all welders are required to be currently certified by AWS and WABO for structural welding. Contractor shall submit proof of certification. Welders shall be qualified in accordance with AWS D1.1 and WABO Standard 27-13 for the processes and positions to be performed for structural steel. Welders shall be qualified in accordance with AWS D1.2 for Aluminum Welding. Welders shall be qualified in accordance with AWS D1.6 for stainless steel.
2. The Contractor shall submit all Welding Procedure Specifications (WPSs) to be used by the Contractor on the project. For WPSs that are not prequalified per AWS D1.1, the supporting Procedure qualification Record (PQR) shall also be submitted with the WPS.

C. Certifications:

1. The Contractor supplying welding filler metal and shielding gas products shall submit copies of all Manufacturers' certifications for all electrodes, fluxes, and shielding gases to be used. Certifications shall satisfy the applicable AWS A5 requirements. The Contractor shall also submit the manufacturer's product data sheets for all welding material to be used. The data sheets shall describe the product, limitations of use, recommended welding parameters, and storage and exposure requirements, including baking and rebaking, if applicable.
2. Certificate of Compliance: For all welding electrodes used on the project the contractor shall submit a Certificate of Compliance. The certificate of compliance shall be a letter stating that the Contractor has reviewed the submitted manufacturer's certifications and test reports, and that the materials being furnished for the project are in conformance with the applicable standards, specifications, and project documents.

D. Testing and Inspection: NDT and inspection of welds will be performed by the State in accordance with this section.

1. Verification Inspection

- a. The State will engage an independent testing agency to perform verification inspection and testing on all field and shop welding. Field and shop welding will be considered all welding not performed at the manufacturing plant.
- b. The independent testing agency will perform testing and inspection of 100 percent of all (field and shop) butt splice welds and 10 percent of all (field and shop) PJP welds.
- c. The inspection procedures, techniques, and methods will be in accordance with AWS D1.1, Section 6.
- d. All (field and shop) butt splice welds will be 100 percent tested by the following methods:
 - 1) Full-time visual inspection.
 - 2) Ultrasonic Inspection: ASTM E164.
- e. All (field and shop) PJP welds will have a minimum of 10 percent of the total length tested by the following methods:
 - 1) Full-time visual inspection.
 - 2) Magnetic Particle Inspection: ASTM E709.
- f. All (field and shop) butt splice and PJP welds shall meet the acceptance criteria set forth in AWS D1.1, Section 6.
- g. The State's Welding Inspector shall have the authority to determine compliance with the above acceptance criteria and order repairs or replacements of unacceptable welds at no additional cost to the State. All welds whether made at the manufacturing plant, or in the shop or field shall be subject to the acceptance of the State's Welding Inspector.
- h. All welds will be visually inspected.

1.03 SUBMITTALS

Prior to commencement of other Work in this Section, the Contractor shall submit the following items to the Owner:

- A. Welder qualifications/certifications.
- B. Welding Procedure Specifications (WPSs) and Procedure Qualification Records (PQRs).
- C. Electrode manufacturer's certifications and data sheets.
- D. Certificates of Compliance.

1.04 PRODUCT HANDLING

Welding electrodes shall be packaged, stored, and used in a manner consistent with AWS standards and the electrode manufacturer's specifications.

PART 2 - PRODUCTS

2.01 ELECTRODES

- A. All electrodes, fluxes, and shielding gases shall meet the requirements of the applicable sections of ANSI/AWS A5.
- B. Welding electrode classification for carbon steel shall be E70XX and shall be “low hydrogen” electrodes.
- C. Welding electrode classification for stainless steel shall be E316L-XX.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Fabrication and joint preparation shall be in accordance with the applicable AWS standard.
- B. Hold back or remove all galvanizing a sufficient distance from the joint to prevent inclusion of the material into the weld. Galvanizing shall be removed from the joint in accordance with AWS D19.0.
- C. Protection:
 - 1. Work shall comply with all municipal, state, and federal regulations regarding safety, including all applicable portions of OSHA and State safety standards for construction work.
 - 2. Conform to ANSI Z49.1, "Safety in Welding, Cutting, and Allied Processes," published by the American Welding Society.
 - 3. Follow "Safe Practices" recommended in Annex R of AWS D1.1

3.02 WELDING PROCEDURES

- A. Perform all work in accordance with procedures written and qualified in accordance with AWS requirements.
- B. Use a prequalified welding process in accordance with AWS, whenever possible.
- C. Use prequalified partial and complete joint penetration details in accordance with AWS, wherever possible.
- D. Qualify non-prequalified welds in accordance with AWS. Prepare Procedure Qualification Records (PQR's) and Welding Procedure Specifications (WPS's) and complete all welding in conformance with the WPS's.
- E. Qualify WPSs in accordance with AWS D1.1, Section 4.

3.03 FIELD QUALITY CONTROL

- A. Field welding shall meet the requirements of AWS.
- B. Verification Inspection will be performed by an independent testing agency provided by the State.
- C. The Contractor shall provide access to the State's Welding Inspector at all times while the work is being performed.

3.04 SCHEDULING

The Contractor shall coordinate the work with the State's Welding Inspector. The Contractor shall provide the State with a proposed work schedule and shall coordinate the work to meet the contract delivery schedule.

3.05 CLEANING

Clean in accordance with AWS requirements.

3.06 REPAIR

- A. Making weld repairs or replacements shall be the responsibility of the Contractor, and shall be at no additional cost to the State.
- B. Weld repairs or replacements on PJP welds shall be performed in accordance with AWS D1.1, Section 6.
- C. Repair all galvanizing removed or damaged during welding in accordance with Section 05126, Galvanizing, of these Specifications and as directed by the Owner, or replace damaged items at no additional cost to State.

END OF SECTION 05091

**SECTION 05126
GALVANIZING**

PART 1 - GENERAL

1.01. SECTION INCLUDES

The Work includes the requirements to provide a galvanized coating as specified with all handling, prefinishing, cleaning, pickling, rinsing, dipping, cooling, draining, vibrating, centrifuging, inspection, and other processes or materials required.

1.02. QUALITY ASSURANCE

A. Governing Specifications, Codes, and Standards:

1. ASTM A123 Standard Specification for Zinc (Hot-Dipped Galvanized) Coatings on Iron and Steel Products.
2. ASTM A153 Standard Specification for Zinc (Hot –Dipped Galvanized) Coatings on Iron and Steel Products.
3. ASTM A143 Practice for Safeguarding Against Embrittlement of Hot-Dip Galvanized Structural Steel Products and Procedures for Detecting Embrittlement.
4. ASTM A384 Practice for Providing High Quality Zinc Coating (Hot Dipped)
5. ASTM A384 780 Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings

B. The Manufacturer shall be required to test the finished product for thickness, uniformity of the coating, and adhesion in accordance with the applicable ASTM standard.

C. Conform to manufacturers' specifications, directions, and recommendations for best results in the use of each of their products for each condition. If results are at variance with these specifications, report the discrepancy to the Owner for decision.

1.03 SUBMITTALS

Prior to commencement of other Work in this Section, the Contractor shall submit the following items:

Submit sample of galvanizing repair rod to be used, along with rod manufacturer's product data sheets.

1.04 PRODUCT HANDLING

Replacements: Repair or replace damaged work, if any, as necessary to the approval of the Owner and at no additional cost to the State.

PART 2 - PRODUCTS

2.01 GALVANIZING

- A. All carbon steel elements, including fasteners, shall be hot-dip galvanized after fabrication in conformance with ASTM A123, A143, A153, A384, and A385 to a thickness Grade 100.
- B. Galvanizing repair shall be performed with zinc-based alloy solder rods.

PART 3 - EXECUTION

3.01 FABRICATION

Any drain or vent holes required to produce a high quality galvanized coating with minimal warpage and distortion not indicated on the contract plans shall be identified by the coating manufacturer, clearly shown on the shop drawings, and shall be subject to approval by the Owner. Fabrication shall be in accordance with ASTM A384 and ASTM A385.

3.02 REPAIR OF GALVANIZED COATING

- A. Repair all galvanized surfaces removed or damaged during welding, shipping, or erection in accordance with ASTM A780, Annex A.1. The zinc-based solder repair rod shall be “Zaclon Repair Alloy” or approved equal. The minimum thickness of the coating shall be 4 mils.
- B. Galvanized coating damaged or removed during welding on items that will have the galvanizing embedded in concrete shall be repaired by the application of a cold galvanizing compound in accordance with ASTM A780, Annex A.2. The cold galvanizing compound shall be “ZRC Cold Galvanizing Compound” or approved equal. The final thickness of the coating shall be 3 mils.

END OF SECTION 05126

**SECTION 05500
METAL FABRICATION**

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Work consists of furnishing all labor, materials, and equipment for the fabrication and erection of all metal fabrications shown on the drawings.
- B. Work includes, but is not limited to embedded and nonembedded metal work and fabrication of the loading platform railing.

1.02 RELATED WORK

- A. Hot-Dip Galvanizing and Coatings: Unless otherwise specified, ferrous metals shall be hot-dip galvanized after fabrication. See Division 9 - Finishes for galvanizing requirements.
- B. For connectors, fasteners, bolts, nuts, washers, anchor bolts, embedded bolts, welded studs, etc. see Section 05050 - Fasteners.
- C. Provisions of the General Conditions, Supplemental Conditions, and Division 1 of the Contract are by this reference a part of this division and shall govern work under this division where applicable.

PART 2 - PRODUCTS

2.01 ALUMINUM

- A. Provide all aluminum fabricated items in the numbers, sizes, dimensions, and configuration as shown on the Drawings.
- B. Structural aluminum shapes and plates shall be fabricated from aluminum alloy *6061-T6* unless otherwise noted or approved by the Owner. Protect all surfaces from damage by weld splatter and accidental scratching. Grind and polish (120 grit, A203 abrasive) all exposed weld surfaces to provide a smooth, uniform polished surface. Welding shall conform to *WA-20*. Provide full-length or perimeter aluminum welding unless specifically directed not to on the Drawings. Protect items from heat warp and distortion. Maintain true and square metered joints for all frames and similar items. Test all waterproof welds and repair or replace any that leak.
- C. Coat only aluminum items to be embedded or in surface contact with concrete with coal tar epoxy paint system as identified in Division 9 - Finishes. Do not paint the exposed portion of these aluminum items.
- D. Aluminum, unless otherwise noted, shall have a smooth, polished finish and be cleaned of oils, chemicals, or other foreign matter using acid wash after fabrication. No rough grinding marks or welding splatters shall be permitted on aluminum items. In all cases, edges shall be radiused to remove sharp edges.

- E. All bolts, nuts, washers, and screws used for assembly or mounting of aluminum-fabricated items shall be stainless steel Type 304 or 316. Do not use plated or galvanized assembly hardware with aluminum-fabricated items.
- F. Supplier/Manufacturer: Structural aluminum shapes, plate, tubing, and perforated plate are available from Joseph T. Ryerson & Son, Inc., (206) 624-2300.

2.02 MISCELLANEOUS METALWORK

Material for miscellaneous metalwork shall be ASTM A36 steel, unless otherwise shown on the Drawings. This includes items such as angles, brackets, frames, light structural framing, and related miscellaneous fabricated items. Steel pipe shall conform to ASTM A53, Grade B, and structural tubing shall conform to A500, Grade B. All work shall be galvanized after fabrication in accordance with the requirements of Division 9. Work shall be completed in accordance with AWS D1.1 and AWS D1.0.72. Qualification for this work shall be in accordance with AWS B3.0-41.

PART 3 - EXECUTION

3.01 CONSTRUCTION GENERAL REQUIREMENTS

- A. Metalwork shall be carefully installed as shown on the Drawings or as directed by the Owner. Metalwork that is bent, broken, or otherwise damaged shall be repaired or replaced by the Contractor to the satisfaction of the Owner, at no additional cost to the State.
- B. Metalwork to be embedded in concrete is to be placed accurately and held in the correct position while the concrete is placed, or if shown or accepted, recesses or blockouts shall be formed in the concrete and the metalwork shall be grouted in place. The surfaces of all metalwork in contact with or embedded in concrete shall be thoroughly cleaned of all rust, dirt, grease, loose scale, grout, mortar, and other foreign matter and coated with a coal tar epoxy coat. All metalwork shall have proper fit-up and shall be job-measured where necessary.

3.02 INSTALLATION

- A. Bearing Plates, Guides, and Angles: Units shall be set so that edges are flush and square with the floor and/or wall. Use extreme care to ensure that embedded items are set at correct spacing and are perpendicular as shown. All metal shall be cut and/or ground to match chamfer of concrete.
- B. After fabrication, metal items that are removable shall be tested in their intended location. Operation shall be verified fit by approval of the Owner.

END OF SECTION 05500

**SECTION 05990
MISCELLANEOUS METALS**

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Work consists of furnishing all labor, materials and equipment for the fabrication and erection of all metal fabrications shown on the Drawings and as specified which are not part of structural steel or other metal systems specified in Division 5.
- B. Work includes, but is not limited to, embedded and non-embedded metal work and fabrication of the following:
 - 1. Aluminum angles, brackets, hangers, frames, channels, and assemblies
 - 2. Steel – angles, brackets, hanger, frame and channels, assemblies, and miscellaneous steel fabricated items
 - 3. Anchor bolts and expansion anchors
 - 4. Bolts, nuts and washers
 - 5. Ladders and steps (rungs)
 - 6. Guides and other embedded items

1.02 SUBMITTALS

- A. Product Data: Contractor shall submit manufacturer's descriptive literature and installation instructions.
- B. Shop Drawings: Contractor shall submit Shop Drawings that verify field dimensions for metal fabrications for the Owner's review and acceptance (in accordance with the General Conditions) of all fabricated items prior to shop fabrication. Contractor shall indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, welded connections (using standard AWS welding symbols), and weld lengths and shall included erection drawings, elevations, details and data for welding materials and methods to be used.

1.03 QUALITY ASSURANCE

- A. All welders shall be qualified in accordance with AWS 83.0-41 within the past 12 months. Written certifications for welders performing work shall be furnished to the Owner.
- B. Mill-spot markings of ally and temper shall be placed on aluminum products. If such markings are obliterated or eliminated in fabrication, the fabricator shall furnish a certificate verifying the information.
- C. Waterproof welds shall be tested to ensure proper function for intended applications.

1.04 REFERENCE STANDARDS

- A36 Structural Steel
- A53 Steel pipe, Grade B

A123	Zinc (Hot-dip Galvanized) Coatings on Products Fabricated from Rolled, Pressed and Forged Steel Shapes, Plates, Bars and Strip
A167	Stainless Steel Plate, Sheet and Strip, Type 302, 304 and 316
A193	Stainless Steel Bolts
A194	Stainless Steel Nuts
A307	Carbon Steel Externally Threaded Standard Fasteners
A386	Zinc Coating (Hot-dip) on Assembled Steel Products
A526	Steel Sheet, Zinc-coated (Galvanized) by the Hot-dip Process, Commercial Quality
AWS B3.0-41	Standard Qualification Procedure
AWS D1.0.72	Code for Welding in Building Construction
AWS D1.1.	Structural Welding Code – Steel
B308	Aluminum-alloy, 6061-t6, Standard Structural Shapes, Rolled or Extruded
F468	Nonferrous Bolts, Hexcap Screws and Studs for General Use
WA-20	Welding Aluminum (Aluminum Association) Specifications for Aluminum Structures, April 1982 (Section 1 of Aluminum Construction Manual)

PART 2 - PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Furnish all connectors, fasteners, welded metal and miscellaneous items required to complete and construct the items shown on the Drawings.
- B. Unless otherwise shown, the fasteners and connectors shall be of the same material as the attached metal, except for aluminum where fasteners and connectors shall be stainless steel. All fasteners used for submerged or “wet locations” shall be stainless steel.
- C. Furnish washers and lock washers for all bolted connections unless otherwise noted. Washers and lock washers shall be of the same material as fasteners and connectors.
- D. Anchor bolts embedded in concrete and subjected to intermittent or continuous submergence during hatchery operations shall be stainless steel. Other anchor bolts shall be hot-dip galvanized unless otherwise noted.
- E. Hot-Dip Galvanizing: Unless otherwise specified, shall be after fabrication.
- F. Welded Studs and Anchors: Provide anchor units or approved equivalent of diameter and length indicated on the Drawings. Install in accordance with manufacturer’s recommendations and as shown on the Drawings.

2.02 GRATING

Not Used.

2.03 ALUMINUM ANGLES, BRACKETS, FRAMES, LIGHT STRUCTURAL ALUMINUM FRAMING AND RELATED MISCELLANEOUS ALUMINUM FABRICATED ITEMS (NIC)

- A. General: Work consists of providing all aluminum fabricated items shown on the Drawings in the numbers, sizes, dimensions and configuration as indicated on the Drawings.

Structural aluminum shapes and plates shall be fabricated from aluminum alloy 6061-T6 unless otherwise noted or approved by the Owner. Protect all surfaces from damage by weld splatter and accidental scratching. Grind and polish (120 grit, A203 abrasive) all exposed weld surfaces to provide a smooth, uniform, polished surface. Welding shall conform to WA-20. Provide full length or perimeter aluminum welding unless specifically directed not to in the Drawings. Protect items from heat warp and distortion. Maintain true and square mitered joints for all frames and similar items. Test all waterproof welds and repair or replace any that leak.

- B. Coat only aluminum items to be embedded or in surface contact with concrete with coal tar epoxy paint system as identified in Division 9. Do not paint the exposed portion of these aluminum items.
- C. All bolts, nuts, washers, and screws used for assembly or mounting of aluminum-fabricated items shall be stainless steel Type 304 or 316. Do not use plated or galvanized assembly hardware with aluminum-fabricated items.

2.04 STEEL ANGLES, BRACKETS, HANGERS, FRAMES, CHANNELS, ASSEMBLIES AND MISCELLANEOUS STEEL FABRICATED ITEMS

- A. General: Work consists of providing all steel fabricated items shown on the Drawings in the numbers, sizes, dimensions, and configuration as indicated on the Drawings.
- B. Structural steel shapes and plates shall be fabricated from A36 steel unless otherwise noted or approved by the Owner.

2.05 ANCHOR BOLTS, EXPANSION ANCHORS & ADHESIVE ANCHORS

- A. Anchor bolts, nuts, expansion anchors, bolts and washers shall be hot-dip galvanized coated except where noted on the Drawings or when the application results in the bolts being continuously, or intermittently submerged in water or in contact with aluminum fabricated items. In such cases, the anchor assembly shall be stainless steel.
- D. Structural steel shapes and plates shall be fabricated from A36 steel unless otherwise noted or approved by the Owner.

2.06 BOLTS, NUTS, WASHERS, AND SHEET METAL SCREWS

All bolts and nuts that will be continuously or intermittently in contact with water during hatchery operations shall be stainless steel conforming to ASTM A193 and ASTM A194 for the type approved. Type shall be 304-316. All other bolts, nuts and washers shall be hot-dip galvanized unless specifically identified as other materials, with the exception that all assembly hardware for aluminum fabrication shall be stainless steel. No galvanized, plated or anodized material shall be used with aluminum as specified in Paragraph 2.03.

2.07 LADDERS AND STEPS

Ladders and steps may be fabricated from properly designed structural pieces to the dimensions and elevations shown on the Drawings, or they may be furnished by an industrial ladder/step manufacturer. Ladders and steps shall be designed and installed to meet or exceed all applicable OSHA and/or ANSI standards for industrial ladders.

2.08 HANDRAIL AND GUARDRAIL

Not Used.

2.09 METAL TRASH RACK

Not Used.

PART 3 – EXECUTION

3.01 CONSTRUCTION – GENERAL REQUIREMENTS

- A. Metalwork shall be carefully installed as shown on the Drawings or as directed by the Owner. Metalwork that is bent, broken, or otherwise damaged shall be repaired or replaced by the Contractor, to the satisfaction of the Owner, at no additional cost to the State.
- B. Metalwork to be embedded in concrete is to be placed accurately and held in the correct position while the concrete is placed, or if shown or accepted, recesses or blockouts shall be formed in the concrete and the metalwork shall be grouted in place. The surfaces of all metalwork in contact with or embedded in concrete shall be thoroughly cleaned of all rust, dirt, grease, loose scale, grout, mortar and other foreign matter and coated with a coal tar epoxy coat. All metalwork shall have proper fit-up and shall be a job-measured where necessary.

3.02 SURFACE TREATMENT, SHOP APPLIED

- A. Steel Galvanized Surfaces: Unless otherwise specified, all elements shall be hot-dip galvanized conforming to the applicable requirements of ASTM A123, A153, A385 and A525. Provide minimum of 2.3 ounces per square foot galvanizing on all surfaces (reference Division 9).
- B. Aluminum: Unless otherwise specified, aluminum shall have a smooth, polished finish and be cleaned of oils, chemical or other foreign matter using acid wash after fabrication. No rough grinding marks or welding splatters shall be permitted on aluminum items. In all cases, edges shall be radiused to remove sharp edges.
- C. Stainless Steel: Stainless steel shall have the standard mill finished and be cleaned of all foreign matter before delivery to the job. Stainless steel shall have smooth polished surfaces and edges.

3.03 INSTALLATION

- A. Bearing Plates, Guides, and Angles: Units shall be set so that edges are flush and square with the floor and/or wall. Use extreme care to ensure the embedded items are set at correct spacing and are perpendicular as shown. All metal shall be cut and/or ground to match chamfer of concrete.

B. Anchor bolts:

1. Unless noted on the Drawings, expansion anchors set in holes drilled in the concrete after the concrete is placed will not be permitted in substitution for anchor bolts except with the prior written acceptance of the Owner.
2. After anchor bolts have been embedded, their threads shall be protected by having the nuts screwed on or by other accepted means until the time of installation of the equipment or metal work.

C. After fabrication, each screen, baffle and other miscellaneous metal items that are removable shall be tested in their intended location. Operation shall be verified fit by approval of the Owner.

END OF SECTION 05990

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

SECTION 07100 MOISTURE PROTECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES

Work included in this section includes supply and installation of waterproofing, vapor barriers, caulking, and sealant for the project as called for on the Drawings.

PART 2 - PRODUCTS

2.01 CONCRETE/MASONRY WATERPROOFING

Exterior concrete and masonry wall surfaces shall be sealed with a waterproofing coating. The coating shall extend from the foundation footing to final grade. Coatings shall be a penetrating sealer applied in accordance with manufacturer's recommendation. Sealant shall be silicate or similar based sealant.

2.02 VAPOR BARRIER

All building slabs, floor slabs, and pond floor slabs shall be placed over a polyethylene vapor barrier. The vapor barrier shall be 6-mil minimum polyethylene.

2.03 CAULKING AND SEALANT

All interior work shall be sealed with caulking compound or sealant as noted on the Drawings. All exterior work and wet interior work shall be sealed with a sealant. Caulking shall be acrylic latex caulk. Sealant shall be a paintable siliconized formula. Colors shall match surrounding finish.

PART 3 - EXECUTIVE

3.01 INSTALLATION

- A. Waterproofing shall be installed only on cleaned and properly prepared surfaces. Manufacturer's instructions shall be followed for all applications.
- B. Vapor barrier shall be installed without tears or punctures. Damaged areas shall be repaired as directed by the Owner. All joints shall overlap a minimum of 4 feet in all directions.
- C. Caulking and sealant shall be installed after all cleaning and preparation has been completed. Install per manufacturer's instructions.

END OF SECTION 07100

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

SECTION 07200 THERMAL PROTECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES

This section includes insulation for thermal protection as shown on the Drawings. Contractor shall supply and install all insulation as shown.

PART 2 - PRODUCTS

2.01 FIBERGLASS INSULATION

Fiberglass Insulation shall fit snugly into all framing spaces of walls and ceilings, over heated spaces, and as otherwise called for on the Drawings. Insulation shall be roll or batt form fiberglass with foil back and an R-value as shown on the Drawings. Insulation products such as Owens-Corning or Johns-Mannville may be used.

2.02 MASONRY UNIT INSULATION

Not Used.

PART 3 - INSTALLATION

3.01 EXECUTION

- A. Install insulation only after areas are protected from moisture damage. Any insulation damaged from moisture shall be completely dried or replaced as directed by the Owner prior to covering.
- B. Support insulation and fasten securely in place as codes and best practice require. No stretching or bunching shall be allowed where such action shall greatly impair the intended function.
- C. All masonry walls shall be free of foreign objects prior to placing insulation and protected from being saturated with moisture before final cover can be achieved.

END OF SECTION 07200

**SECTION 07310
FIBERGLASS SHINGLE ROOFING**

PART 1 - GENERAL

1.01 SECTION INCLUDES

This section describes the installation of architectural asphalt-fiberglass shingles. All materials shall be delivered in their original unbroken packages and stored in a dry protected area, according to the manufacturer's instructions.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Shingles: Shall be not less than 240 pounds-per-square, self-sealing, fiberglass-based, asphalt shingles with a minimum 40 year limited lifetime warranty and a UL Class "A" fire-resistance rating and VL "wind resistant" label. Design shall be architectural relief finish. Color will be selected by the Owner from Contractor supplied color sample swatches.
- B. Underlayment: Shall be #15 asphalt impregnated paper roofing felt meeting ASTM D4869 Type I or as required by shingle manufacturer.
 - 1. Ice and water shield membrane shall be not less than 57-mil rubberized modified bitumen roll roofing membrane with self-adhering backer. Ice and water shield product shall meet and comply with ASTM D1970 standards for ice dam underlayment.
- C. Nails: Shall be large galvanized or aluminum roofing nails not less than 12 gauge, 3/8 inch head, with sufficient length to penetrate through the plywood roof sheathing. Staples will not be allowed.
- D. Flashing: Shall be aluminum sheets at least 0.05 inch thick, 3003 alloy H14 temper. Roofing cement shall be asphaltic type meeting ASTM D2822.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Only first-class workmanship will be acceptable. Installation will comply with the recommended practices of the Asphalt Roofing Manufacturers Association, except as modified herein.
- B. Clean surfaces of all dust, construction scrap, etc. and check all roof penetrations for size, location, and readiness.
- C. Provide and install metal-edge flashing strips at eaves and gable ends. Provide a double underlayment of No. 15 asphalt felt by applying a 19 inch wide sheet. Continue with full 36 inch wide sheets, lapping each 19 inches over the preceding course.

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

- D. Ice and water membrane shall be installed per respective manufacturer's specifications. Ice and water membrane shall be installed along all outboard roof perimeters, including rake edges, valleys and roof pitch transitions. Additionally, ice and water membrane shall also be installed on the valley directly above chimney penetrations.
- E. As a minimum, 4 nails per shingle are required. Shingles shall be nailed according to manufacturer's specifications. On decks less than 3/4 inch thickness (plywood), the nails should penetrate the underside of the deck. Drive nails straight down with nail heads flush with shingle surface. Each course is applied so that the preceding course is exposed according to manufacturer's specified dimensions and all nails are covered. Projecting parts of shingles at ridges should be trimmed flush and capped with a course of individual shingles, laid by the Boston Hip and Ridge method, with no more than manufacturers specified dimensions exposed to the weather and with all nails covered.
- F. Remove all debris resulting from this work.

END OF SECTION 07310

**SECTION 09000
GENERAL FINISHES PROVISIONS**

PART 1 - GENERAL

1.01 SECTION INCLUDES

This section specifies general requirements for all sections of Division 9 - Finishes.

1.02 RELATED SECTIONS

Not Used.

1.03 REFERENCES

References listed in Division 9 are from the following organizations' publications and reference standards:

ANSI – American National Standards Institute

ASTM – ASTM International (formerly American Society for Testing and Materials)

AWWA – American Waterworks Association

FS – Federal Specification

GA – Gypsum Association

NSF – National Sanitation Foundation

SSPC – Steel Structures Painting Council

TCA – Tile Council of America

IBC – International Building Code

1.04 QUALITY ASSURANCE

A. Protect adjoining surfaces before work begins

B. Install all finishes according to the manufacturer's written instructions.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in unopened packages. Store materials flat, on edge, or rolled, as recommended by the manufacturer.

B. Protect all materials from exposure to moisture, sunlight, and other excessive weather conditions.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION 09000

**SECTION 09800
PROTECTIVE COATING****PART 1 - GENERAL**

1.01 SECTION INCLUDES

- A. The Contractor shall provide protective coatings, complete and in place, in accordance with the Contract Documents.
- B. Definitions:
 - 1. The term "paint," "coatings," or "finishes" as used herein, shall include surface treatments, emulsions, enamels, paints, epoxy resins, and other protective coatings, excepting galvanizing or anodizing, whether used as a pretreatment, primer, intermediate coat, or finish coat.
 - 2. The term "DFT" means minimum dry film thickness, without any negative tolerance.
- C. The following surfaces shall not be coated:
 - 1. Concrete, unless required by items on the concrete coating schedule below or the Drawings.
 - 2. Stainless steel
 - 3. Electrical conduit
 - 4. Machined surfaces
 - 5. Grease fittings
 - 6. Glass
 - 7. Equipment nameplates
 - 8. Platform gratings, stair treads, door thresholds, and other walk surfaces, unless specifically indicated to be coated.
 - 9. PVC piping indoors not subject to UV exposure.
- D. The coating system schedules summarize the surfaces to be coated, the required surface preparation, and the coating systems to be applied. Coating notes on the Drawings are used to show or extend the limits of coating schedules, to show exceptions to the schedules, or to clarify or show details for application of the coating systems.

1.02 CONTRACTOR SUBMITTALS

- A. Furnish submittals in accordance with Section 01300 Contractor Submittals.
- B. Submittals shall include the following information and be submitted at least 30 days prior to commencing any protective coating work:
 - 1. Materials List: Eight copies of a coating materials list showing the manufacturer and the product number, keyed to the coating systems herein. The list shall be submitted prior to or at the time of submitting samples.
 - 2. Manufacturer's Information: For each coating system to be used, the following data:
 - a. Manufacturer's data sheet for each product proposed, including statements on the suitability of the material for the intended use.

- b. Technical and performance information that demonstrates compliance with the system performance and material requirements.
- c. Paint manufacturer's instructions and recommendations on surface preparation and application.
- d. Colors available for each product (where applicable).
- e. Compatibility of shop and field applied coatings (where applicable).
- f. Non-slip additives including specific manufacturer's application instructions, application rates, repair procedures.
- g. Material Safety Data Sheet for each product proposed.

1.03 SPECIAL CORRECTION OF DEFECTS REQUIREMENTS

Inspection: An inspection may be conducted during the eleventh month following completion of coating work. The Contractor and a representative of the coating material manufacturer shall attend this inspection. Defective work shall be repaired in accordance with these specifications and to the satisfaction of the Owner. The Owner may, by written notice to the Contractor, reschedule the inspection to another date within the one year correction period or may cancel the inspection altogether. The Contractor is not relieved of its responsibilities to correct defects, whether or not the inspection is conducted.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Suitability: The Contractor shall use suitable coating materials as recommended by the manufacturer. Materials shall comply with Volatile Organic Compound (VOC) limits applicable at the site.
- B. Material Sources: Where manufacturers and product numbers are listed, it is to show the type and quality of coatings that are required. If a named product does not comply with VOC limits in effect at the time of Bid opening, that product will not be accepted, and the Contractor shall propose a substitution product of equal quality that does comply. Proposed substitute materials will be considered as indicated below. Coating materials shall be materials that have a record of satisfactory performance in industrial plants, manufacturing facilities, and water and wastewater treatment plants.
- C. Compatibility: In any coating system only compatible materials from a single manufacturer shall be used in the work. Particular attention shall be directed to compatibility of primers and finish coats. If necessary, a barrier coat shall be applied between existing prime coat and subsequent field coats to ensure compatibility.
- D. Containers: Coating materials shall be sealed in containers that plainly show the designated name, formula or specification number, batch number, color, date of manufacture, and name of manufacturer, all of which shall be plainly legible at the time of use.
- E. Colors: Colors and shades of colors of coatings shall be as indicated or selected by the Owner. Each coat shall be of a slightly different shade to facilitate inspection of surface coverage of each coat. Finish colors shall be as selected from the manufacturer's standard color samples by the Owner.
- F. Substitute or "Or-Equal" Products:
 - 1. To establish equality under Section 01600 Products, Materials, Equipment and Substitutions, the Contractor shall furnish satisfactory documentation from the

manufacturer of the proposed substitute or "or-equal" product that the material meets the indicated requirements and is equivalent or better in the following properties:

- a. Quality
 - b. Durability
 - c. Resistance to abrasion and physical damage
 - d. Life expectancy
 - e. Ability to recoat in future
 - f. Solids content by volume
 - g. Dry film thickness per coat
 - h. Compatibility with other coatings
 - i. Suitability for the intended service
 - j. Resistance to chemical attack
 - k. Temperature limitations during application and in service
 - l. Type and quality of recommended undercoats and topcoats
 - m. Ease of application
 - n. Ease of repairing damaged areas
 - o. Stability of colors
2. Protective coating materials shall be standard products produced by recognized manufacturers who are regularly engaged in production of such materials for essentially identical service conditions. When requested, the Contractor shall provide the Owner with the names of not less than 10 successful applications of the proposed manufacturer's products that comply with these requirements.
 3. If a proposed substitution requires changes in the work, the Contractor shall bear such costs involved as part of the work.

2.02 INDUSTRIAL COATING SYSTEMS

A. System 4 - Epoxy/Polyurethane

1. Materials:

Primer type	Rust-Inhibitive, 2 Component Epoxy
VOC Content, max	285 g/L
Finish type	2 component aliphatic polyurethane
VOC Content, max	300 g/L
Demonstrated suitable for	ferrous surfaces, superior color and gloss retention, exceptional resistance to weathering, chemical fumes, and splash

2. Application and Manufacturers:

Surface Preparation	Prime Coat (DFT = 3 - 5 mils)	Finish Coat (DFT = 3 - 4 mils)	Total System DFT
SSPC SP6	Ameron Amerlock 400/2	Ameron Amershield	6 - 9 mils
	Carboline Carboguard 893	Carboline Carbothane 134 HG (2 coats)	
	Tnemec Hi-Build Epoxoline II Series N69	Tnemec Endura-Shield Series 1075	

B. System 5 – Inorganic Zinc/Epoxy/Polyurethane

1. Material:

Prime Coat	Inorganic Zinc Silicate, Water or Solvent Based, 2 Component
zinc content in dry film	83 percent, minimum
VOC Content, max	325 grams per liter
Demonstrated suitable for	ferrous metal, providing superior corrosion, chemical, and abrasion resistance, recommended for use as primer under epoxy
Intermediate Coat	2 component epoxy, high build, recommended by manufacturer for application over inorganic zinc primer
VOC Content, max	276 grams per liter
Demonstrated suitable for	outstanding chemical, corrosion, and abrasion resistance
Finish Coat	2 component aliphatic or acrylic polyurethane
VOC Content, max	315 grams per liter
Demonstrated suitable for	superior color and gloss retention, resistance to chemical fumes and severe weathering, abrasion resistance

2. Application and Manufacturers:

Surface preparation for primer	SSPC SP 6
Anchor profile for primer	per manufacturer

Prime Coat (DFT = 2 - 4 mils)	Intermediate Coat (DFT = 3 - 5 mils)	Finish Coat (DFT = 2 - 4 mils)	Total System DFT
Ameron Dimetcote 9HS or Dimetcote 21-5	Amercoat 385	Amercoat 450H	7 - 13 mils
Carboline Carbozinc 11HS or 11WB	Carboguard 890	Carbothane 134HG	
Devco Cathacote 302H	Devran 224HS	Devthane 379UVA	

C. System 7 - Acrylic Latex

1. Material:

Primer	Product, surface preparation, and DFT as recommended by manufacturer for the surface
Finish Type	Single component, water based acrylic latex, with fungicide
VOC Content, max	180 grams per gallon
Demonstrated suitable for	PVC piping, weather and mild chemical resistance, excellent color and gloss retention

2. Application and Manufacturers:

Surface Preparation	Primer (DFT per manufacturer)	Finish (at least 2 coat required)	Total System DFT
SSPC SP1, min	Per PPG/Ameron recommendation	Ameron Amercoat 220	primer plus 6 mils
	Sherwin Williams DTM Bonding Primer	Sherwin Williams Metalatex	
	Carboline Sanitile 120	Carboline Carbocrylic 3359	
	Per Tnemec recommendation	Tnemec Tneme-Cryl 6	

D. System 8 - Epoxy, Equipment

1. Materials:

Primer Type	2 component epoxy, recoatable up to one year
Demonstrated suitable for	Rust inhibitive, outstanding chemical, abrasion, and weathering resistance, resistance to splash, washdown, and condensation. Immersion capability is not required
VOC content, max	330
Finish Type	2 component epoxy, available in many colors
Demonstrated suitable for	Outstanding chemical, abrasion, and weathering resistance, resistance to splash, washdown, and condensation. Immersion capability is not required
VOC content, max	330

2. Application and Manufacturers:

Surface Preparation	Prime Coat (DFT = 4 to 6 mils)	Finish Coat (DFT = 3 to 4 mils)	Total System DFT
SSPC SP6	Ameron 400	Ameron 400	7 to 10 mils
	Tnemec N69	Tnemec N69	
	Devoe Devran 224HS	Devran 224HS	
	Carboline Carboguard 888	Carboguard 888	

2.03 SUBMERGED AND SEVERE SERVICE COATING SYSTEMS

A. System 100 - Amine Cure Epoxy

1. Material:

Type	High Build, Amine Cure Epoxy
VOC content, g/L max	220
Demonstrated suitable for	steel, long term immersion in water and wastewater, resistant to corrosion, chemical fumes, good color retention
Certification	NSF 61 if in contact with potable water

2. Application and Manufacturers:

Surface Preparation	Products (3 coats or more)	Total System DFT
SSPC SP10	Ameron Amercoat 395 FD	15 to 17 mils
	Carboline Carboguard 891	For non-submerged valves and other equipment, DFT = 10 to 12 mils
	Devoe Bar-Rust 233H	

3. Non-skid surfaces of steel or galvanized steel: Where non-skid surface is required, add grit or silica sand to the protective coating for slip protection. Texture shall be 30-50mesh grit or silica sand incorporated into the coating system. The CONTRACTOR shall submit and follow the manufacturer's recommended materials, number and thickness of coats, and methods.

B. System 102 - Polyamide Epoxy

1. Materials:

Type	High Build Polyamide Cure Epoxy
VOC content, max, g/L	366
Demonstrated suitable for	long term immersion in water and wastewater, resistant to corrosion and chemical fumes, good color retention
Certification	NSF 61 if in contact with potable water

2. Application and Manufacturers:

Surface Preparation	Products (3 coats or more)	Total System DFT
SSPC SP10	Ameron Amercoat 370	11 - 13 mils
	Tnemec Pota-Pox Series 20	
	Carboline Carboguard 561	

A. System 106 - Fusion Bond Epoxy

1. Material:

Type	100 Percent Solids Fusion Bond Epoxy
Demonstrated suitable for	fluidized bed or electrostatic spray application, recommended for pumps, valves, pipe appurtenances, tanks, pipe hangers, flow meters, and hydrants
Certification requirement	NSF 61

2. Application in accordance with AWWA C213 and the following:

Surface Preparation	Product	Surface and DFT
SSPC SP10	3M Scotchkote 134 or 206N	Valves 12-mils
		All others 16-mils

2.04 SPECIAL COATING SYSTEMS

- A. System 200 - PVC Tape: Prior to wrapping the pipe with PVC tape, the pipe and fittings first shall be primed using a primer recommended by the PVC tape manufacturer. After being primed, the pipe shall be wrapped with a 20-mil adhesive PVC tape, half-lapped, to a total thickness of 40 mils.
- B. System 201 - Rich Portland Cement Mortar: Rich Portland cement mortar coating shall have a minimum thickness of 1/8 inch, followed by enclosure in an 8-mil thick polyethylene sheet with all joints and edges lapped and sealed with tape.
- C. System 205 - Polyethylene Encasement: Application of polyethylene encasement shall be in accordance with ANSI/AWWA C105 using Method C.
- D. System 206 - Cement Mortar Coating: A 1 1/2 inch minimum thickness mortar coating reinforced with 3/4 inch galvanized welded wire fabric shall be provided. The cement mortar shall contain no less than one part Type V cement to 3 parts sand. The cement mortar shall be cured by a curing compound meeting the requirements of Liquid Membrane Forming Compounds for Curing Concrete, ASTM C 309, Type II, white pigmented, or by enclosure in an 8-mil thick polyethylene sheet with all edges and joints lapped by at least 6 inches.
- E. System 208 - Aluminum Metal Isolation

1. Material:

Type	High Build Polyamide Epoxy With Chemical And Abrasion Resistance
Demonstrated suitable for	Concrete and aluminum substrates, to isolate aluminum from contact with concrete and the resulting chemical degradation
VOC content, max	250

2. Application and Manufacturers:

Surface Preparation	Coating (DFT = 16 - 20 mils)
SSPC SP1	Ameron Amercoat 351
	Sherwin Williams Macropoxy 646
	Tnemec Epoxoline 80

F. System 210 - Acrylic, Wood and Gypsum Board

1. Materials:

Primer type	As Recommended By Manufacturer
Finish type	single component, water based, acrylic, fungicide added
VOC content, max, g/L	250
Demonstrated suitable for	wood, mild to moderate exposure inside and outside building, and gypsum board, inside

2. Application:

Surface Preparation	Prime Coat (1.5 to 2.5 mils)	Finish Coat (4 to 6 mils) (2 coats)	Total System DFT
Clean, dry, smooth	Ameron Amercoat 148	Amercoat 220	5.5 to 8.5 mils
	Tnemec Elasto-Grip 151-1051 (2 coats)	Tneme Cryl 6	

PART 3 – EXECUTION

3.01 MANUFACTURER'S SERVICES

- A. The Contractor shall require the protective coating manufacturer to furnish a qualified technical representative to visit the site for technical support as may be necessary to resolve field problems.
- B. For submerged and severe service coating systems, the Contractor shall require the paint manufacturer to furnish the following services:
- C. The manufacturer's representative shall provide at least 6 hours of on-site instruction in the proper surface preparation, use, mixing, application, and curing of the coating systems.
- D. The manufacturer's representative shall observe the start of surface preparation, mixing, and application of the coating materials for each coating system.

3.02 WORKMANSHIP

- A. Skilled craftsmen and experienced supervision shall be used on coating work.
- B. Coating shall be done in a workmanlike manner so as to produce an even film of uniform thickness. Edges, corners, crevices, and joints shall receive special attention to insure thorough surface preparation. The finished surfaces shall be free from runs, drops, ridges, waves, laps, brush marks, and variations in color, texture, and finish. The hiding shall be so complete that the addition of another coat would not increase the hiding. Special attention shall be given so that edges, corners, crevices, welds, and similar areas receive a film thickness equivalent to adjacent areas, and installations shall be protected by the use of drop cloths or other precautionary measures.
- C. Damage to other surfaces resulting from the work shall be cleaned, repaired, and refinished to original condition.

3.03 STORAGE, MIXING, AND THINNING OF MATERIALS

- A. Manufacturer's Recommendations: Unless otherwise indicated, the coating manufacturer's printed recommendations and instructions for thinning, mixing, handling, applying, and protecting its coating materials, for preparation of surfaces for coating, and for other procedures relative to coating shall be strictly observed.

- B. Coating materials shall be used within the manufacturer's recommended shelf life.
- C. Storage and Mixing: Coating materials shall be stored under the conditions recommended by the Product Data Sheets, and shall be thoroughly stirred, strained, and kept at a uniform consistency during application. Coatings from different manufacturers shall not be mixed together.

3.04 PREPARATION FOR COATING

- A. General: Surfaces to receive protective coatings shall be prepared as indicated prior to application of coatings. The Contractor shall examine surfaces to be coated and shall correct surface defects before application of any coating material.

Marred or abraded spots on shop-primed and on factory-finished surfaces shall receive touch-up restoration prior to any field coating application. Surfaces to be coated shall be dry and free of visible dust.

- B. Protection of Surfaces Not to be Coated: Surfaces that are not to receive protective coatings shall be protected during surface preparation, cleaning, and coating operations.
- C. Hardware, lighting fixtures, switch plates, machined surfaces, couplings, shafts, bearings, nameplates on machinery, and other surfaces not to be painted shall be removed, masked, or otherwise protected. Drop cloths shall be provided to prevent coating materials from falling on or marring adjacent surfaces. The working parts of mechanical and electrical equipment shall be protected from damage during surface preparation and coating operations. Openings in motors shall be masked to prevent entry of coating or other materials.
- D. Care shall be exercised not to damage adjacent work during blasting operations. Spraying shall be conducted under carefully controlled conditions. The Contractor shall be fully responsible for and shall promptly repair any and all damage to adjacent work or adjoining property occurring from blasting or coating operations.
- E. Protection of Painted Surfaces: Cleaning and coating shall be coordinated so that dust and other contaminants from the preparation process will not fall on wet, newly-coated surfaces.

3.05 SURFACE PREPARATION STANDARDS

The following referenced surface preparation specifications of the Steel Structures Painting Council shall form a part of this specification:

- A. Solvent Cleaning (SSPC SP1): Removal of oil, grease, soil, salts, and other soluble contaminants by cleaning with solvent, vapor, alkali, emulsion, or steam.
- B. Hand Tool Cleaning (SSPC SP2): Removal of loose rust, loose mill scale, loose paint, and other loose detrimental foreign matter, by hand chipping, scraping, sanding, and wire brushing.
- C. Power Tool Cleaning (SSPC SP3): Removal of loose rust, loose mill scale, loose paint, and other loose detrimental foreign matter, by power tool chipping, descaling, sanding, wire brushing, and grinding.
- D. White Metal Blast Cleaning (SSPC SP5): Removal of all visible rust, oil, grease, soil, dust, mill scale, paint, oxides, corrosion products and foreign matter by blast cleaning.
- E. Commercial Blast Cleaning (SSPC SP6): Removal of all visible oil, grease, soil, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter, except that staining shall be limited to no more than 33 percent of each square inch of surface area.

- F. Brush-Off Blast Cleaning (SSPC SP7): Removal of all visible oil, grease, soil, dust, loose mill scale, loose rust, and loose paint.
- G. Near-White Blast Cleaning (SSPC SP10): Removal of all visible oil, grease, soil, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter, except that staining shall be limited to no more than 5 percent of each square inch of surface area.
- H. Surface Preparation of Concrete (SSPC-SP13): Removal of protrusions, laitance and efflorescence, existing coatings, form-release agents, and surface contamination by detergent or steam cleaning, abrasive blasting, water jetting, or impact or power tool methods as appropriate for the condition of the surface and the requirements of the coating system.

3.06 FERROUS METAL SURFACE PREPARATION (UNGALVANIZED)

- A. The minimum abrasive blasting surface preparation shall be as indicated in the coating system schedules included at the end of this Section. Where there is a conflict between these requirements and the coating manufacturer's printed recommendations for the intended service, the higher degree of cleaning shall apply.
- B. Workmanship for metal surface preparation shall be in conformance with the current SSPC Standards and this Section. Blast-cleaned surfaces shall match the standard samples available from the National Association of Corrosion Engineers, NACE Standard TM-01-70 - Visual Standard for Surfaces of New Steel Airblast Cleaned with Sand Abrasive and TM-01-75 - Visual Standard for Surfaces of New Steel Centrifugally Blast Cleaned with Steel Grit.
- C. Oil, grease, welding fluxes, and other surface contaminants shall be removed by solvent cleaning per SSPC SP1 - Solvent Cleaning prior to blast cleaning.
- D. Sharp edges shall be rounded or chamfered, and burrs and surface defects and weld splatter shall be ground smooth prior to blast cleaning.
- E. The type and size of abrasive shall be selected to produce a surface profile that meets the coating manufacturer's recommendation for the particular product and service conditions. Abrasives for submerged and severe service coating systems shall be clean, hard, sharp cutting crushed slag. Automated blasting systems shall not be used for surfaces that will be in submerged service. Metal shot or grit shall not be used for surfaces that will be in submerged service, even if subsequent abrasive blasting will use hard, sharp cutting crushed slag.
- F. Abrasive shall not be reused unless an automated blasting system is used for surfaces that will be in non-submerged service. For automated blasting systems, clean oil-free abrasives shall be maintained. The abrasive mix shall include at least 50 percent grit.
- G. The Contractor shall comply with the applicable federal, state, and local air pollution control regulations for blast cleaning.
- H. Compressed air for air blast cleaning shall be supplied at adequate pressure from well-maintained compressors equipped with oil and moisture separators that remove at least 95 percent of the contaminants.
- I. Surfaces shall be cleaned of dust and residual particles of the cleaning operation by dry air blast cleaning, vacuuming, or another approved method prior to painting.
- J. Enclosed areas and other areas where dust settling is a problem shall be vacuum-cleaned and wiped with a tack cloth.
- K. Damaged or defective coating shall be removed by the blast cleaning to meet the clean surface requirements before recoating.

- L. If the required abrasive blast cleaning will damage adjacent work, the area to be cleaned is less than 100 square feet, and the coated surface will not be submerged in service, then SSPC SP2 or SSPC SP3 may be used.
- M. Shop-applied coatings of unknown composition shall be completely removed before the indicated coatings are applied. Valves, castings, ductile or cast iron pipe, and fabricated pipe or equipment shall be examined for the presence of shop-applied temporary coatings. Temporary coatings shall be completely removed by solvent cleaning per SSPC SP1 before the abrasive blast cleaning has been started.
- N. Shop primed equipment shall be solvent-cleaned in the field before finish coats are applied.

3.07 FERROUS METAL SURFACE PREPARATION (GALVANIZED)

- A. Galvanized ferrous metal shall be alkaline cleaned per SSPC SP1 to remove oil, grease, and other contaminants detrimental to adhesion of the protective coating system, followed by brush off blast cleaning per SSPC SP7.
- B. Pretreatment coatings of surfaces shall be in accordance with the printed recommendations of the coating manufacturer.

3.08 SURFACE PREPARATION OF FERROUS SURFACES WITH EXISTING COATINGS

- A. General: Grease, oil, heavy chalk, dirt, or other contaminants shall be removed by solvent or detergent cleaning prior to abrasive blast cleaning. The generic type of the existing coatings shall be determined by laboratory testing.
- B. Abrasive Blast Cleaning: The Contractor shall provide the degree of cleaning indicated in the coating system schedule for the entire surface to be coated. If the degree of cleaning is not indicated in the schedule, deteriorated coatings shall be removed by abrasive blast cleaning to SSPC SP6. Areas of tightly adhering coatings shall be cleaned to SSPC SP7, with the remaining thickness of existing coating not to exceed 3-mils.
- C. Incompatible Coatings: If coatings to be applied are not compatible with existing coatings the Contractor shall apply intermediate coatings per the manufacturer's recommendation for the indicated coating system or shall completely remove the existing coating prior to abrasive blast cleaning. A small trial application shall be conducted for compatibility prior to painting large areas.
- D. Unknown Coatings: Coatings of unknown composition shall be completely removed prior to application of new coatings.
- E. Water Abrasive or Wet Abrasive Blast Cleaning: Where indicated or where site conditions do not permit dry abrasive blasting for industrial coating systems due to dust or air pollution considerations, water abrasive blasting or wet abrasive blasting may be used. In both methods, paint-compatible corrosion inhibitors shall be used, and coating application shall begin as soon as the surfaces are dry. Water abrasive blasting shall be done using high pressure water with sand injection. In both methods, the equipment used shall be commercially produced equipment with a successful service record. Wet blasting methods shall not be used for submerged or severe service coating systems unless indicated.

3.09 CONCRETE AND CONCRETE BLOCK MASONRY SURFACE PREPARATION

- A. Surface preparation shall not begin until at least 30 days after the concrete or masonry has been placed.

- B. Oil, grease, and form release and curing compounds shall be removed by detergent cleaning per SSPC SP1 before abrasive blast cleaning.
- C. Concrete, concrete block masonry surfaces, and deteriorated concrete surfaces to be coated shall be abrasive blast cleaned to remove existing coatings, laitance, deteriorated concrete, and to roughen the surface equivalent to the surface of the No. 80 grit flint sandpaper.
- D. If acid etching is required by the coating application instructions, the treatment shall be made after abrasive blasting. After etching, rinse surfaces with water and test the pH. The pH shall be between neutral and 8.
- E. Surfaces shall be clean and as recommended by the coating manufacturer before coating is started.
- F. Unless required for proper adhesion, surfaces shall be dry prior to coating. The presence of moisture shall be determined with a moisture detection device such as Delmhorst Model DB, or equal.

3.10 CONCRETE SURFACE PREPARATION FOR WATERPROOFING

- A. Concrete deck shall be dry, clean, and free of contaminants that may interfere with proper adhesion or curing. The concrete shall be water cured for a minimum of 28 days, or be at 80 percent of design strength.
- B. Verify that the concrete deck is finished by a power or hand steel trowel followed by a soft hair broom, or equivalent.
- C. Before starting application, conduct a Mat Test as follows: place a 2-foot by 2-foot non-breathing rubber mat onto the concrete deck not in sunlight; tape the edges of the mat to the concrete. If no condensation is seen under the mat at 16 hours, the concrete is dry enough that application may begin.
- D. Visible hairline cracks and cold joints in the concrete shall be treated with a liquid flashing a minimum of 2 inches on each side of the crack or joint. Liquid flashing shall have a minimum dry thickness of 30-mils.

3.11 PLASTIC, FIBER GLASS AND NONFERROUS METALS SURFACE PREPARATION

- A. 100% of plastic and fiber glass surfaces to be coated shall first be solvent cleaned with a chemical compatible with the coating system primer, and then sanded with 120 grit sand paper (unless another grit size is recommended by the paint manufacturer) and/or brush off blast cleaned.
- B. Non-ferrous metal surfaces shall be solvent-cleaned in accordance with SSPC SP1, rinsed with clean water, and allowed to dry. Surfaces shall then be sanded using medium grit sanding media, by hand or with low RPM D/A power sanders, as described in SSPC-SP2 and/or SSPC-SP3 to impart a tooth or anchor profile without gouging the substrate. A 2-3 mil profile shall be attained or other profile per the coating manufacturer's recommendations. Remove residual debris using compressed air or whisk broom.
- C. Surfaces shall be clean and dry prior to coating application.
- D. Surface preparation requirements shall be verified with the coating manufacturer prior to preparation, and shall conform to the coating manufacturer's requirements. The coating manufacturer's recommendations shall govern if there are any discrepancies with the Specifications.

3.12 SHOP COATING REQUIREMENTS

- A. Unless otherwise indicated, items of equipment or parts of equipment which are not submerged in service shall be shop-primed and then finish-coated in the field after installation with the indicated or selected color. The methods, materials, application equipment, and other details of shop painting shall comply with this section. If the shop primer requires top coating within a specific period of time, the equipment shall be finish-coated in the shop and then be touched up after installation.
- B. Items of equipment or parts and surfaces of equipment which are submerged or inside an enclosed hydraulic structure when in service, with the exception of pumps and valves, shall have surface preparation and coating performed in the field.
- C. The interior surfaces of steel water reservoirs, except for Part A surfaces, shall have surface preparation and coating work performed in the field.
- D. For certain pieces of equipment it may be undesirable or impractical to apply finish coatings in the field. Such equipment may include engine generator sets, equipment such as electrical control panels, switchgear or main control boards, submerged parts of pumps, ferrous metal passages in valves, or other items where it is not possible to obtain the indicated quality in the field. Such equipment shall be primed and finish-coated in the shop and touched up in the field with the identical material after installation.

The Contractor shall require the manufacturer of each such piece of equipment to certify as part of its Shop Drawings that the surface preparation is in accordance with these specifications. The coating material data sheet shall be submitted with the Shop Drawings for the equipment.

- E. For certain small pieces of equipment the manufacturer may have a standard coating system that is suitable for the intended service conditions. In such cases, the final determination of suitability will be made during review of the Shop Drawing submittals. Equipment of this type generally includes only indoor equipment such as instruments, small compressors, and chemical metering pumps.
- F. Shop-painted surfaces shall be protected during shipment and handling by suitable provisions including padding, blocking, and the use of canvas or nylon slings. Primed surfaces shall not be exposed to the weather for more than 2 months before being top coated, or less time if recommended by the coating manufacturer.
- G. Damage to shop-applied coatings shall be repaired in accordance with this section and the coating manufacturer's printed instructions.
- H. The Contractor shall make certain that the shop primers and field topcoats are compatible and meet the requirements of this section. Copies of applicable coating manufacturer's data sheets shall be submitted with equipment Shop Drawings.

3.13 APPLICATION OF COATINGS

- A. The application of protective coatings to steel substrates shall be in accordance with SSPC PA1 - Paint Application Specification No. 1.
- B. Cleaned surfaces and each coat shall be inspected prior to applying each succeeding coat. The Contractor shall schedule such inspection with the Owner in advance.
- C. Blast cleaned ferrous metal surfaces shall be painted before any rusting or other deterioration of the surface occurs. Blast cleaning shall be limited to only those surfaces that can be coated in the same day.

- D. Coatings shall be applied in accordance with the manufacturer's instructions and recommendations and this Section, whichever has the most stringent requirements.
- E. Special attention shall be given to edges, angles, weld seams, flanges, nuts and bolts, and other places where insufficient film thicknesses are likely to occur. Use stripe painting with a brush in these areas.
- F. Special attention shall be given to materials that will be joined so closely that proper surface preparation and application are not possible. Such contact surfaces shall be coated prior to assembly or installation.
- G. Finish coats, including touch-up and damage repair coats shall be applied in a manner that will present a uniform texture and color matched appearance.
- H. Coatings shall not be applied under the following conditions:
 - 1. Temperatures exceeding the manufacturer's recommended maximum and minimum allowable.
 - 2. Dust or smoke laden atmosphere.
 - 3. Damp or humid weather
 - 4. Substrate or air temperature is less than 5 degrees F above the dewpoint.
 - 5. Air temperature is expected to drop below 40 degrees F or less than 5 degrees F above the dewpoint within 8 hours after application of coating.
 - 6. Wind conditions are not calm.
- I. Dewpoint shall be determined by use of a sling psychrometer in conjunction with U.S. Dept. of Commerce, Weather Bureau psychrometric tables.
- J. Unburied steel piping shall be abrasive blast cleaned and primed before installation.
- K. Finish coats shall be applied after concrete, masonry, and equipment installation is complete, and the working areas are clean and dust free.

3.14 CURING OF COATINGS

- A. The Contractor shall maintain curing conditions in accordance with the conditions recommended by the coating material manufacturer or by this section, whichever is the most stringent, prior to placing the completed coating system into service.
- B. In the case of enclosed areas, forced air ventilation, using heated air if necessary, may be required until the coatings have fully cured.
- C. Forced Air Ventilation of Steel Pipeline and Enclosed Hydraulic Structures: Forced air ventilation is required for the application and curing of coatings on the interior surfaces of steel reservoirs and enclosed hydraulic structures. During application and curing periods, continuously exhaust air from a manhole in the lowest shell ring, or in the case of an enclosed hydraulic structure, from the lowest level of the structure using portable ducting. After interior coating operations have been completed, provide a final curing period for a minimum of 10 days, during which the forced ventilation system shall operate continuously. For additional requirements, refer to the specific coating system requirements in Part 2 above.

3.15 IDENTIFICATION OF PIPING

- A. Identification of piping shall be in accordance with SECTION 15005 Piping Identification.
- B. Unburied pipes in structures and in chemical pipe trenches shall be color-code painted. Colors shall be as selected by the Owner or as indicated.

3.16 SHOP AND FIELD INSPECTION AND TESTING

- A. General: The Contractor shall give the Owner a minimum of 3 days advance notice of the start of any field surface preparation or coating application, and a minimum of 7 days advance notice of the start of any surface preparation activity in the shop.
- B. Such work shall be performed only in the presence of the Owner, unless the Owner has granted prior approval to perform such work in its absence.
- C. Inspection by the Owner, or the waiver of inspection of any particular portion of the work, shall not relieve the Contractor of its responsibility to perform the work in accordance with these Specifications.
- D. Scaffolding shall be erected and moved to locations where requested by the Owner to facilitate inspection. Additional illumination shall be furnished on areas to be inspected.
- E. Inspection Devices: The Contractor shall furnish inspection devices in good working condition for the detection of holidays and measurement of dry film thicknesses of coatings. Dry-film thickness gauges shall be made available for the Owner's use while coating is being done, until final acceptance of such coatings. The Contractor shall furnish the services of a trained operator of the holiday detection devices until the final acceptance of such coatings. Holiday detection devices shall be operated only in the presence of the Owner.
- F. Holiday Testing: The Contractor shall test for continuity all coated ferrous surfaces inside a steel reservoir, other surfaces that will be submerged in water or other liquids, surfaces that are enclosed in a vapor space in such structures, and surfaces coated with any of the submerged and severe service coating systems. Areas that contain discontinuities shall be marked and repaired or recoated in accordance with the coating manufacturer's printed instructions and then be retested.
- G. Coatings with thickness exceeding 20-mils total DFT: Pulse-type holiday detector such as Tinker & Razor Model AP-W, D.E. Stearns Co. Model 14/20, or equal shall be used. The unit shall be adjusted to operate at the voltage required to cause a spark jump across an air gap equal to twice the required coating thickness.
- H. Coatings with thickness of 20-mils or less total DFT: Tinker & Razor Model M1 non-destructive type holiday detector, K-D Bird Dog, or equal shall be used. The unit shall operate at less than 75 volts. For thicknesses between 10- and 20-mils, a non-sudsing type wetting agent, such as Kodak Photo-Flo or equal, shall be added to the water prior to wetting the detector sponge.
- I. Film Thickness Testing: On ferrous metals, the dry film coating thickness shall be measured in accordance with the SSPC Paint Application Specification No. 2 using a magnetic type dry film thickness gauge such as Mikrotest Model FM, Elcometer Model 111/1EZ, or equal. Each coat shall be tested for the correct thickness. No measurements shall be made until at least 8 hours after application of the coating. On non-ferrous metals and other substrates, the coating thicknesses shall be measured at the time of application using a wet film gauge.
- J. Surface Preparation: Evaluation of blast cleaned surface preparation will be based upon comparison of the blasted surfaces with the standard samples available from NACE, using NACE standards TM-01-70 and TM-01-75.

3.17 COATING SYSTEM SCHEDULE, FERROUS METAL - NOT GALVANIZED

	Item	Surface Prep.	System No.
FM-1	All surfaces indoors and outdoors, exposed or covered, except those included below.	Near white metal blast cleaning SSPC SP10	(5) inorganic zinc/epoxy/polyurethane
FM-3	Surfaces of equipment and ferrous surfaces submerged or intermittently submerged in water including all surfaces lower than 2 feet above high water level in hydraulic structures, and all surfaces inside enclosed hydraulic structures and vents (excluding shop-coated valves, couplings, pumps).	White metal blast cleaning SSPC SP5	(100) amine cure epoxy
FM-6	Buried small steel pipe.	Removal of dirt, grease, oil	Section 09870
FM-7	Where indicated, ferrous surfaces in water passages of all valves 2 inch size and larger, exterior surfaces of submerged valves.	White metal blast cleaning SSPC SP5	(102) polyamide epoxy
FM-8	Where indicated, ferrous surfaces in water passages and submerged surfaces of all pumps which have discharge size of 4 inches or larger.	White metal blast cleaning SSPC SP5	(100) amine cure epoxy
FM-9	Ferrous surfaces of sleeve couplings.	Solvent cleaning SSPC SP1, followed by white metal blast cleaning SSPC-SP10	(106) fusion bond epoxy
FM-10	All ferrous surfaces of sluice gates, flap gates, and shear gates, including wall thimbles.	White metal blast cleaning SSPC SP5	(102) polyamide epoxy
FM-11	Buried surfaces that are not indicated to be coated elsewhere.	Near white metal blast cleaning SSPC SP10	(100) amine cure epoxy
FM-16	Surfaces of indoor equipment, not submerged	Commercial blast cleaning SSPC SP6	(8) epoxy, equipment
FM-18	Buried pipe couplings, valves, fittings, and flanged joints (where piping is plastic).	Removal of dirt, grease, oil	(201) rich Portland cement mortar
FM-19	Buried pipe couplings, valves, and flanged joints (where piping is ductile or cast iron, not tape-coated), including factory-coated surfaces.	As specified by reference specification	(205) polyethylene encasement
FM-20	Buried pipe couplings, valves, and flanged joints (where piping is mortar-coated steel or reinforced concrete), including factory-coated surfaces.	Removal of dirt, grease, oil	(206) cement mortar coating

3.18 COATING SYSTEM SCHEDULE, FERROUS METAL GALVANIZED

Galvanized surfaces shall not be coated except where indicated on the Drawings. Pretreatment coatings, barrier coatings, or washes shall be applied as recommended by the coating manufacturer.

	Item	Surface Prep.	System No.
FMG-4	Galvanized surfaces where indicated.	Solvent cleaning SSPC SP1 followed by brush-off grade blast cleaning SSPC SP7	(100) amine cure epoxy (with grit when non-slip surface is specified)

3.19 COATING SYSTEM SCHEDULE, NON-FERROUS METAL, PLASTIC, FIBER GLASS

Where isolated non-ferrous parts are associated with equipment or piping, the Contractor shall use the coating system for the adjacent connected surfaces. Do not coat handrails, gratings, frames or hatches. Only primers recommended by the coating manufacturer shall be used.

	Item	Surface Prep.	System No.
NFS-1	All exposed surfaces, indoors and outdoors, except those included below.	Solvent cleaned SSPC SP1	(4) epoxy/polyurethane
NFS-3	Aluminum surfaces in contact with concrete, or with any other metal except galvanized ferrous metal.	Solvent cleaned SSPC SP1	(208) aluminum metal isolation
NFS-4	Polyvinyl chloride plastic piping, outdoors, or in structures, not submerged.	Solvent cleaned SSPC SP1, sanded to 2-3 mil profile per SSPC SP-2/SP-3	(7) acrylic latex

3.20 COATING SYSTEM SCHEDULE - MISCELLANEOUS SURFACES

	Item	Surface Prep.	System No.
MS-1	Wood, indoors and outdoors, and gypsum board indoors.	Per manufacturer's printed instructions	(210) acrylic

END OF SECTION 09800