THIS DOCUMENT AND ATTACHMENT(S) ARE AVAILABLE FOR DOWNLOAD AT
https://mrscrosters.bonfirehub.com/opportunities/187425
AN EMAIL NOTIFICATION WAS SENT TO REGISTERED DOCUMENT TAKERS. FAILURE TO ACKNOWLEDGE RECEIPT ON THE BID FORM DOES NOT AFFECT THE BIDDER'S OBLIGATION FOR COMPLIANCE.

ADDENDUM NO. 1

WASHINGTON STATE PARKS AND RECREATION COMMISSION
NISQUALLY STATE PARK
WASTEWATER TREATMENT FACILITY AND MAINTENANCE BUILDING
NW-C1218B

DATE: June 17, 2025

ATTENTION TO PLANHOLDERS OF RECORD. The following revisions are hereby made a part of the Contract Documents. Please be sure to acknowledge all Addenda on the Bid Form.

Virtual Public Bid Opening Notice

A virtual public bid opening for this project will be held via Microsoft Teams at 1:30 PM on the bid due date. During the session, bids will be unsealed and read aloud, after which they will be tabulated and evaluated.

This public works bid opening will be live-streamed, and a link to the meeting is provided below. We plan to begin the session within 30 minutes of the bid deadline and appreciate your patience as we implement this process for select projects. Please keep your video off and microphone muted unless speaking.

Bid results will be posted on the project page of the State Parks Public Opportunities-Bonfire Procurement Portal: https://mrscrosters.bonfirehub.com/opportunities/187425

For questions, contact the Procurement Coordinator at: contracts@parks.wa.gov

Join the Microsoft Teams meeting on your computer, mobile app or room device:

Join the meeting now
Meeting ID: 236 402 190 188 8
Passcode: 3nP3YN6Q

Dial in by phone
+1 360-726-3322,,333052574# United States, Vancouver
Find a local number
Phone conference ID: 333 052 574#
For organizers: Meeting options | Reset dial-in PIN

PROJECT MANUAL

I.CHANGES TO THE SPECIFICATIONS

1. Delete Section 033543 - Polished Concrete
2. Delete Section 078100 – Applied Fire Proofing
3. Add Section 086270 – Tubular Unit Skylights
4. Delete Section 102623 – Protective Wall Covering
5. Delete Section 210500 – Fire Suppression
6. Delete Section 211000 – Fire Sprinklers
7. Delete Section 331300 – WATER DISTRIBUTION PIPING and replace with the attached Section 331416 – WATER DISTRIBUTION PIPING.
8. Delete Section 432520 – MBR Feed Pump Station and replace with new section 432520 – MBR Feed Pump Station.

DRAWINGS

The Following plan and specification changes shall be incorporated into the bid proposal and subsequent construction:

1. Delete Sheet G1.2 and replace with new Sheet G1.2
2. Delete Sheet A-C1.2 and replace with new Sheet A-C1.2
3. Delete Sheet C3.12 and replace with new Sheet C3.12
4. Delete Sheet C3.13 and replace with new Sheet C3.13
5. Delete Sheet C3.14 and replace with new Sheet C3.14
6. Delete Sheet C3.19 and replace with new Sheet C3.19
7. Delete Sheet A-C8.0 and replace with new Sheet A-C8.0.
8. Delete Sheet A-L1.1 and replace with new Sheet A-L1.1
9. Delete Sheet E102 and replace with new sheet E102
10. Add new Sheet E104 to the overall drawing package
11. Delete Sheet E401 and replace with new sheet E401
12. Delete Sheet E403 and replace with new sheet E403

13. Delete Sheet E501 and replace with new sheet E501

14. Add new Sheet E502

15. Delete Sheet B-C5.0 and replace with Sheet B-C5.0.

Attachments:

- Section 086270 - TUBULAR UNIT SKYLIGHTS (6 pages)
- Section 331416 – WATER DISTRIBUTION PIPING (5 pages)
- Section 432520 – MBR FEED PUMP STATION (9 pages)
- NW-C1218B Nisqually-Improvements-Drawing Sheet G1.2
- NW-C1218B Nisqually-Improvements-Drawing Sheet A-C1.2
- NW-C1219 WHT-Menlo Trailhead-Drawing Sheet 8 of 15
- NW-C1219 WHT-Menlo Trailhead-Drawing Sheet 9 of 15
- NW-C1219 WHT-Menlo Trailhead-Drawing Sheet 10 of 15
- NW-C1219 WHT-Menlo Trailhead-Drawing Sheet 11 of 15
- NW-C1219 WHT-Menlo Trailhead-Drawing Sheet 12 of 15
- Nisqually State Park Phase 3A Bid Clarifications (4 pages)
- Phase 1 Existing Switchboard Information (1 page)

Brett Taylor

Brett Taylor, Procurement Coordinator
Contracts and Grants Program

06/17/25
Date

END OF ADDENDUM NO. 1

SECTION 086270 – TUBULAR UNIT SKYLIGHTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Tubular unit skylight daylighting systems.

1.2 REFERENCE STANDARDS

A. General: Applicable edition of references cited in this Section is current edition published on date of issue of Project specifications, unless otherwise required by building code in force.

B. American Architectural Manufacturers Association/Window & Door Manufacturers Association/Canadian Standards Association:
   1. AAMA/WDMA/CSA 101/I.S.2/A440 - North American Fenestration Standard/ Specification for Windows, Doors, and Skylights (NAFS)
   2. AAMA 501.2 - Quality Assurance and Diagnostic Water Leakage Field Check of Installed Storefronts, Curtain Walls, and Sloped Glazing Systems
   3. AAMA 2603 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels
   4. ASTM E 1996 - Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Windborne Debris in Hurricanes

C. Code of Federal Regulations:
   1. 29 CFR 1910.29 (e) (1) - Occupational Safety and Health Standards for Walking-Working Surfaces to Guard Floor and Wall Openings and Holes

1.3 COORDINATION

A. Coordinate dimensions, locations, and details of skylight roof openings [specified in Section 061000 - Rough Carpentry with selected tubular unit skylight flashings. Verify requirements for roofing system terminations.

B. Coordinate tubular unit skylight interior termination locations with structural layout, ceiling layouts, and other ceiling-mounted items.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site prior to delivery of tubular unit skylight and installation of roof deck.

1.5 ACTION SUBMITTALS

A. Product Data: For tubular unit skylights. Include standard construction details, product performance characteristics, and material descriptions, dimensions of individual components and profiles, and finishes.
   1. Include test reports of qualified independent testing agency or third party certificates verifying compliance with performance requirements.

B. Shop Drawings: For tubular unit skylight work. Include plans, elevations, sections, details, and connections to supporting structure and other adjoining work.

1.6 INFORMATIONAL SUBMITTALS

A. Warranty: Sample of special warranty.

1.7 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data.

1.8 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer listed in this Section with minimum five years' experience in the US manufacturing similar products in successful use on similar projects and able to provide tubular unit skylights meeting requirements.

1.9 WARRANTY

A. Manufacturer's Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of tubular unit skylights that fail in materials or workmanship under normal use within specified warranty period.
   1. Failures include, but are not limited to, the following:
      a. Deterioration of metals, metal finishes, dome, and other materials beyond normal weathering.
      b. Breakage of glazing.
   2. Warranty Period:
      a. Tubular Unit Skylight Assembly: 10 years from date of purchase.
      b. Tunnel Reflective Coating: 20 years from date of purchase.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design Products: Subject to compliance with requirements, provide products by:
   1. VELUX America LLC, Greenwood, SC 29648; www.VELUXusa.com; 800-888-3589
   2. Solatube International, Inc., 2210 Oak Ridge Way, Vista, CA 92081; solatube.com; 888-766-7066
   3. Natural Light Energy Systems, 10821 North 23rd Avenue, Phoenix, AZ 85029; nltubular.com

B. Substitutions: Refer to Section 016001 - Product Substitution Request.

C. Source Limitations: Obtain tubular unit skylights through single source from single manufacturer.

2.2 TUBULAR DAYLIGHTING SYSTEMS

A. System Description, General: Tubular unit skylight daylighting kits with exterior glazed opening, glazing retainers and gaskets, exterior flashing assembly with integral adjustable pivot device, reflective tunnel, interior diffuser assemblies, and accessories, as required to meet installation and performance requirements indicated.
   1. Pitched flashing dome kit with rigid tunnel.
      a. Basis of Design: VELUX SUN TUNNEL Skylight Kit Model TMR

B. Glazing: Transparent, UV-resistant plastic dome
   1. Sizes: 14 inch diameter
   2. Glazing:

a. Dome: 0.125 inch minimum thickness injection molded transparent polycarbonate material; with UV-absorbing additive.

3. Dome Seal: Adhesive-backed foam weatherstrip.

C. Flashing Assembly:
1. Self-flashed Configuration: One-piece formed, 14 to 60 deg. roof pitch.
2. Unit Sizes: As required to fit skylight sizes specified or indicated on Drawings.
3. Material: Galvanized steel sheet, 0.023-inch/24-ga.- thick.
a. Finish: Powder coat, gray.
4. Intermediate Ring: High-impact plastic reflective tunnel receiver attached to top of roof flashing serving as mounting base for dome assembly and providing a thermal break between flashing and reflective tunnel, configured to channel condensed moisture out of assembly.
a. Intermediate Ring Seal: Santoprene O-ring providing weather tight seal with roof flashing.
b. Pivot Ring and Reflective Tunnel Collar: High-impact polymer pivoting socket mounted in intermediate ring and secured to factory-installed reflective tunnel collar 3.625 inch in height; adjustable for tunnel section alignment.

D. Flashing Accessories:
1. Fire Band: Dome edge protection band, as required for installation in fire-resistance-rated roof assemblies; matching flashing metal and finish.

E. Reflective Tunnels
1. Rigid Reflective Tunnel: Skylight light shaft formed from anodized aluminum sheet, 0.016-inch/26-ga.- thick, with silver specular interior finish surface coated with vacuum-evaporated silicone oxide and titanium oxide protective surface.
a. Length: 24 inch .
b. Diameter: As required for indicated flashing assembly sizes.
c. Reflectance: 99 percent reflectance when measured in accordance with ASTM E 1651 at 30 degrees from vertical. Total reflectance greater than 98 percent when measured in accordance with ASTM E 1651.
d. Color Rendition, ASTM E 408: As defined by CIE L*a*b* color model, L equal to 99-100, values a* and b* shall not exceed +1 or be less than -1.
e. Rigid Tunnel Components:
1) Rigid Tunnel Extension: One reflective tunnel, 24 inch length.
2) Universal Reflective Elbows: Two reflective angle adaptors adjustable to 45 degrees, 11.5 inch length, 0.02 inch/24 ga. thick, and mounted at the top, middle, or bottom of reflective tunnel assemblies as required for application.
f. Rigid Tunnel Fastening System: Manufacturer's recommended fastening devices consisting of spring tempered stainless steel pull clip mechanical fasteners allowing tunnel vertical and horizontal joints to be secured without the use of screws or tools, used in conjunction with pre-located punched holes in tunnel sections, that allow for a tight naturally-occurring tapered mating of interconnecting tunnel sections and elbows.
1) Basis of Design: VELUX Flexi-Loc Fasteners.

F. Reflective Tunnel Accessories: Provide accessories indicated and as required for installation based upon roof, ceiling, and structural member configuration, skylight and diffuser locations indicated on Drawings, and manufacturer's recommendations, selected from the following:

1. Rigid Tunnel Extensions: Reflective rigid extension tunnel, 24 inch lengths fastened as required for application length.
a. Basis of Design: VELUX Model ZTR Rigid Reflective Tunnel.

2. Rotating Couplers: Rotating adaptors allowing coupling of two elbows to create 90 deg. transition of tunnels using fastening system connections with rotating joint enabling alignment of tunnel sections.

2.3 DIFFUSERS

A. Round ceiling diffuser assembly attached directly to bottom of reflective tunnel, with screw-in clear high visible light transmittance primary diffuser, frosted secondary diffuser separated by airtight seals providing insulating airspace.
   1. Size: As required for flashing assembly indicated.
   2. Lens Type: frosted lens above clear lens, minimum 92 percent visible light transmittance.

B. Residential Energy Kit: Energy-Star-compliant diffuser consisting of a crackle diffuser disk mounted in screw-in primary diffuser and a prismatic diffuser disk mounted on the pivot ring.
   1. Include semi-transparent heat shield configured to reduce solar heat gain.
   2. Basis of Design: **VELUX Residential Energy Kit Model ZTC**.

2.4 PERFORMANCE REQUIREMENTS

A. Water Penetration under Static Pressure: No evidence of water penetration through complete unit when tested according to ASTM E 331 at a static-air-pressure differential of 15 lbf/sq. ft. (720 Pa).

B. Thermal Performance Standards: NFRC 100 and 200:
   a. Rigid tunnel standard tubular unit skylights:
      1) U-Factor: 0.53 Btu/hr*ft.*deg. F (3.01 W/m2*deg K).
      2) Solar Heat Gain Coefficient (SHGC): 0.46.

C. Unit Skylight Performance Grade Standards: AAMA/WDMA/CSA 101/I.S.2/A440 (NAFS-11 or previous):
   a. Pitched and low-profile dome tubular unit skylights:
      1) Performance Grade (Primary Designator): TDDCC PG125.
      2) Design Pressure (DP): +300/-125 psf (+14.4/-5.98 kPa).

D. Surface-Burning Characteristics of Plastic Glazing and other plastic components: Provide plastic glazing meeting NAFS and identical to specimens tested for fire-exposure behavior in accordance with test method indicated below by a testing and inspecting agency acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency.
   1. Self-Ignition Temperature: 650 deg F (345 deg. C) or more for plastic glazing in thickness indicated when tested per ASTM D 1929.
   2. Smoke-Production Characteristics: Comply with either requirement below:
      a. Smoke-Developed Index: 450 or less when tested per ASTM E 84 on plastic glazing in manner indicated for application.
      b. Smoke Density: 75 or less when tested per ASTM D 2843 on plastic glazing in thickness indicated for application.
   3. Burning Characteristics: Tested and labeled in accordance with ASTM D 635.
      a. Plastic Glazing for Domes: Polycarbonate Class CC1.

E. Fire Ratings for Roof Assemblies with Fire Classifications: Tubular unit skylight with dome edge protection band, and pass testing in accordance with the Class B Burn Brand portion of ASTM E 108 for use on roofs with Class A, B or C roof assemblies.

F. Fall Protection Standard Compliance: 29 CFR 1910.23: Passed.

2.5 MATERIALS

A. Galvanized-Steel Sheet: ASTM A 653/A 653M, G90 (Z275) coating, either commercial steel or forming steel.

B. Aluminum Sheet: Flat sheet complying with ASTM B 209 (ASTM B 209M).

C. Bituminous Coating: SSPC-Paint 12, solvent-type, bituminous mastic, nominally free of sulfur and containing no asbestos fibers.

D. Joint Sealants: As specified in Section 079200 "Joint Sealants."

E. Mastic Sealants: Polyisobutylene; nonhardening, nonskinning, nondrying, nonmigrating sealant.

F. Roofing Cement: ASTM D 4586, asbestos free, designed for trowel application or other adhesive compatible with roofing system.

2.6 FINISHES

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

C. Galvanized Steel Sheet:
   1. Baked-Enamel or Powder-Coat Finish: AAMA 2603 except with a minimum dry film thickness of 1.5 mils. Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.
      a. Color: Neutral gray.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Proceed with tubular unit skylight installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install tubular unit skylights in accordance with manufacturer's written instructions and approved shop drawings. Coordinate installation of units with installation of substrates, air and vapor retarders, roof insulation, roofing membrane, and flashing as required to ensure that each element of the Work performs properly and that finished installation is weathertight.
   1. Anchor tubular unit skylights securely to supporting substrates.
   2. For horizontal installation, install tubular unit skylights true to line and without distortion.
   3. For sloped roof installation, install tubular unit skylights on curbs specified in another section with tops of curbs parallel to finished roof slope.

B. Where metal surfaces of tubular unit skylights will contact incompatible metal or corrosive substrates, including preservative-treated wood, apply bituminous coating on concealed metal surfaces, or provide other permanent separation recommended in writing by tubular unit skylight manufacturer.

C. Install tubular unit skylight curb counter flashing to produce weatherproof seal with curb and overlap with roofing system termination at top of curb.

3.3 CLEANING AND PROTECTION

A. Clean exposed tubular unit skylight surfaces according to manufacturer's written instructions. Touch up damaged metal coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.

B. Replace glazing that has been damaged during construction period.

C. Dimmer Assemblies: Test and adjust dimmer assemblies for proper operation.

D. Protect tubular unit skylight surfaces from contact with contaminating substances resulting from construction operations.

END OF SECTION 086270

SECTION 33 14 16 – WATER DISTRIBUTION PIPING

PART 1 - GENERAL

1.1 SUMMARY

A. Work includes the procurement and installation of water lines, valve, and appurtenances.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplemental Conditions and Division 01 Specification Sections apply to this Section.

1.3 STANDARD SPECIFICATIONS

A. All work to be performed and materials to be used shall be in accordance with the current edition of the Standard Specifications and Standard Plans for Road, Bridge, and Municipal Construction, as published by the Washington State Department of Transportation (WSDOT), unless otherwise indicated herein.

B. Contractor shall have one copy of the Standard Specifications and all amendments therein, and applicable WSDOT Standard Plans at job site.

C. Standard Specifications apply only to performance and materials and how they are to be incorporated into the work. Legal/contractual relationship sections and the measurement and payment sections do not apply to this document.

D. All work shall conform to the specifications listed in WAC 246-290 (Group A Public Water Supplies) and the latest editions of the following references: The Washing State Department of Health Water System Design Manual, Washington State Department of Transportation (WSDOT) standard specifications, APWA standard specifications, AWWA standards, UPC, and the applicable county rules, regulations, and ordinances. The standards are listed in order of preference in the event that a conflict in standard arises.

1.4 QUALITY ASSURANCE

A. Contractor is responsible for all effort necessary to complete work in accordance with drawings and standards, until certified by the engineer and state and local agencies for correct installation and satisfactory operation of all equipment.

1.5 SUBMITTALS

A. Product Data: Submit manufacturer's product data, standard drawings, and catalog cuts for the following:

1. Pipe and pipe fittings

2. Valves

3. Connections, bends, and saddles

4. All miscellaneous components and appurtenances

1.6 STORAGE, AND HANDLING

A. Contractor shall practice the preventive and corrective measures during construction specified in Section 4 of AWWA Standard C651 which covers requirements for protecting the pipe and fittings from contamination and describes disinfection procedures to be followed during pipe installation.

PART 2 - PRODUCTS

2.1 PIPE AND FITTINGS

A. Pipe size and material is specified on construction documents. Water mains equal to or over 4" diameter shall be Polyvinyl Chloride (PVC) pipe Class 150 DR 18 pressure rated pipe per AWWA C900 or Class 350 Ductile Iron unless otherwise specified.

B. Water main running to and from reservoir shall be Class 350 Ductile Iron.

C. Water main running to and from pumphouse shall be Class 350 Ductile Iron.

D. Water service lines shall be NSF approved blue polyethylene pipe, meeting the requirements of AWWA C901, sized per the Plans.

E. Pipe joints shall use elastomeric-gasket couplings and fittings. Gaskets shall be by the same manufacturer as the pipe and intended for use with the exact pipe installed herein.

F. All fittings for ductile iron mains equal to or over 4" diameter shall be Class D, Cast Iron, short body type according to AWWA Standard C110. Fittings shall be either Cast Iron Fittings, Flange End, with flange adapters suitable for joining PVC pipe for Ductile Iron Fittings, or Mechanical Joint End.

G. Backwash shall be 3" Sch 80 Polyvinyl Chloride (PVC) pipe, or approved equivalent.

1. Air gap shall be provided at backwash disposal outflow.

2.2 VALVES

A. All gate valves shall conform to ANSI/AWWA Standard C509 or latest revision, Gate Valves for Ordinary Water Service, as manufactured by Mueller or AVK only with the following modifications:

1. All gate valves shall be Mueller or AVK resilient wedge gate valves unless otherwise noted on the plans.

2. All gate valves shall be non-rising stems, furnished with O-Ring stem seals. Number, size and design shall conform to Section 3.12 of the AWWA Standards for gate valves.

3. All gates shall have square operating nut which operates left (counterclockwise) to open.

B. Corporation stops for service connections shall conform to Section 9-30.6(2) of the WSDOT Standard Specifications. Valve boxes shall be installed on all corporation stops.

C. Traffic-rated valve boxes and lids shall be as indicated in the plans. All buried valves shall be provided with a traffic-rated valve box and lid.

2.3 DETECTABLE MARKING TAPE

A. Detectable marking tape shall meet the requirements of Section 9-15.18 of the WSDOT Standard Specifications.

2.4 BLOW-OFF ASSEMBLY

A. Blow-off assemblies shall be in conformance with the Plans.

2.5 WATER METERS

A. Service meters shall be consistent for all services for the development, submitted to Engineer for approval, sized per Plans.

2.6 CONCRETE (THRUST BLOCKING)

A. Unreinforced concrete shall be commercial class conforming to Section 6-02.3(2)B of the current Standard Specifications and Standard Plans for Road, Bridge and Municipal Construction, as published by the Washington State Department of Transportation and as shown in the plans.

2.7 HYDROPNEUMATIC TANKS

A. Bladder Tanks:

1. Basis of Design Product: Elbi America WTL-300. Subject to compliance with requirements, provide the products indicated on Drawings or an engineer approved equivalent.

    a. Pressure Rating: 150 psi minimum
    b. Tank Volume: 80 gallons Total acceptance volume
    c. Minimum Drawdown Volume: 17 gallons available between cut-in pressure of 60 psi and cut-out pressure of 40 psi.

B. Tanks must comply with chapter 70.79 of the Revised Code of Washington (RCW) and the Department of Labor and Industries (L&I) regulation.

1. These regulations require all pressure tanks more than 5 cubic feet (37.5 gallons) to be constructed according to the latest edition of ASME specifications code (RCW 70.79.080)
2. Must meet the construction requirements of chapter 296-104 WAC.

PART 3 - EXECUTION

3.1 PIPE AND FITTINGS

A. Pipes shall be installed in conformance with Section 7-09.3 of the WSDOT Standard Specifications.

B. Detectable Marking tape shall be installed over all water lines including service lines. The tape shall be placed approximately 1-1.5 feet below the ground surface and shall extend the full pipe length. Detectable marking tape shall meet the requirements of Section 9-15.18 of the WSDOT Standard Specifications.

3.2 VALVES

A. Valves shall be installed in conformance with Section 7-12.3 of the WSDOT Standard Specifications.

B. The Contractor shall maintain the location and provide access to all valves within the project. No valve shall remain buried during construction.

3.3 SERVICE CONNECTIONS

A. Service connections shall be installed in conformance with Section 7-15.3 of the WSDOT Standard Specifications.

3.4 TESTING AND STERILIZATION

A. Testing and sterilization of the water mains shall be in conformance with Section 7-09.3 of the WSDOT Standard Specifications.

B. Testing and sterilization of the service connections shall be in conformance with Section 7-15.3(1) of the WSDOT Standard Specifications.

END OF SECTION

SECTION 432520 – MBR FEED PUMP STATION

PART 1 – GENERAL

1.01 SECTION INCLUDES:

A. This section covers pumps, motors, sump, and appurtenances for the MBR Feed Pump Station. The duplex submersible pumping station shall be designed for handling screened and equalized sewage. Pumps shall be designed for heavy-duty service.

B. Furnish each Pump complete with base elbow, submersible motor, power cable, guide rails, and accessories.

C. The pump manufacturer shall warrant all equipment provided under this section, whether or not it is manufactured by the pump manufacturer, so that there is one source for warranty and product service. Technicians specifically trained and certified by the manufacturer to support the product and employed by the pump supplier shall service the pumps and motors.

1.02 REFERENCES

A. ANSI/ASME B16.3, “Malleable Iron Threaded Fittings.”

B. ASME/ANSI B16.39, “Malleable Iron Threaded Pipe Unions Classes 150, 250, and 300.”

C. ASTM A153, “Zinc Coated (Hot-Dip) on Iron and Steel Hardware.”

D. ASTM A283/A283M, “Low and Intermediate Tensile Strength Carbon Steel Plates.”

E. ASTM C443, “Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets.”

F. ASTM D4101, “Propylene Plastic Injection and Extrusion Materials.”

G. HI SCRRP, “Centrifugal, Rotary, and Reciprocating Pumps.”

H. NEMA ICS 1, “Industrial Control and Systems.”

I. NEMA ICS 2, “Industrial Control Devices, Controllers, and Assemblies.”

J. NEMA ICS 6, “Enclosures for Industrial Control and Systems.”

K. NEMA MG 1, “Motors and Generators.”

L. NFPA 70, National Electrical Code.

M. NFPA 820, “Standard for Fire Protection in Wastewater Treatment and Collection Facilities.”

N. UL 508, “Standard for Industrial Control Equipment.”

1.03 SUBMITTALS

A. In accordance with Section 013300 – Submittal Procedures.

B. Submit manufacturer's literature and specifications for package lift station, including literature describing pumps, motors, equipment chamber, control panel, and level control. Provide the following specific data:

1. Manufacturer, model, weight, and horsepower.
2. Catalog information, descriptive literature, specifications, and identification of materials of construction.
3. Manufacturer's published warranty documents.
4. Pump performance curves demonstrating compliance with performance requirements. Indicate all specified duty points and recommended limits of operation graphically on pump performance curve. Include curves for efficiency, brake horsepower, and net positive suction head required, each plotted against flow in gallons per minute (gpm).
5. Impeller type, size, and identification.
6. Motor Submittal Data:
7. Completed Motor Data Form.
8. Guaranteed minimum efficiency at rated load at rated voltage.
9. Guaranteed minimum power factor at rated load at rated voltage.
10. Expected efficiency at 1/2, 3/4, and full load at rated voltage.
11. Expected power factor at 1/2, 3/4, and full load at rated voltage.
12. Motor no-load current at rated voltage.
13. Full-load current at rated voltage.
14. Full-load current at 110% voltage.
15. Starting current at rated voltage.
16. Full-load speed.
17. Certified copy of test report for identical motor tested in accordance with NEMA and IEEE 841.
18. Cable Assembly Data:
19. Insulation and conductor materials of each cable assembly.
20. Outer diameter dimensions of each cable assembly.
21. Complete dimensional drawings of equipment, including pumps, motors, piping connections, details of construction, and weights.
22. Guide system and discharge elbow base dimensions and materials.
23. Copies of drawings with requested wet well dimensions to be specified by the pump manufacturer.
24. Factory finishing system.
25. Mechanical seal information.
26. Weight of each pump.
27. Size and template for anchor bolts for discharge elbows.
28. Bearing life calculations.
29. Seismic anchorage and bolting calculations.
30. Certificate of compliance with ISO 9001 Quality System.

C. Drawings on lift station, including outline dimensions, support details, cross sections, and control wire diagram.

D. Junction box data, including wiring diagrams, elementary diagrams, internal layout, material list, and descriptions of components.

E. Prior to factory testing:

1. Complete installation instructions.
2. Procedure for factory testing.

F. Prior to shipment to jobsite:

1. Operations and Maintenance Manuals.
2. Field testing procedure.
3. Certified factory test results.

G. Closeout Submittals:

1. Manufacturer's Certificate of Proper Installation.
2. Certified field test results.

1.04 QUALITY ASSURANCE

A. Excavating, backfilling, and compacting around lift stations shall comply with Section 311200 – Earth Moving.

B. Pump station wet well is classified as Class I, Division 1, Group D Environment as defined in NFPA 70. Pumps float switches, and other equipment in this environment shall comply with NFPA requirements for this classification, unless otherwise noted in this technical specification.

C. The pumps shall be submersible, centrifugal, explosion-proof sewage pumps meeting classification for NEC Class I, Division 1, Group C, D Hazardous locations.

D. Package sewage pump station assembled by vendor with minimum 3 years of company experience with similar installations.

E. Unit Responsibility: In order to ensure coordination, all pumps, motors, power cable, base elbows, and accessories shall be supplied by one pump manufacturer.

F. All pumping equipment furnished under this section shall be of a design and manufacture that has been used in similar applications and it shall be demonstrated as such to the satisfaction of the Owner.

G. To ensure a consistent high standard of quality, the manufacturer of this pumping equipment shall comply with the requirements of the ISO 9001 Quality System, and such compliance shall be verified by an independent certification agency approved by the International Organization for Standardization. Documentation shall be submitted for approval showing compliance with this requirement, and the equipment will not be released for shipment until approved.

1.05 SPARE PARTS

A. The following spare parts shall be provided for each size of pump:

1. One complete set of O-rings and gaskets.
2. One upper and one lower mechanical seal for each pump supplied.
3. One set of special tools.

B. Package to prevent damage during handling and storage.

C. Label with project number, equipment number, part name and number, and description.

1.06 WARRANTY

A. The submersible sewage pumps and associated equipment shall be warranted for a period of not less than 3 years from the date of commissioning against defects in materials and workmanship.

B. The warranty shall be comprehensive. No deductibles shall be allowed for travel time, service hours, repair parts cost, etc.

1.07 PROTECTION

A. Box, crate, or otherwise completely enclose and protect all equipment during shipment, handling, and storage.

B. Protect equipment from exposure to elements and keep all items thoroughly dry at all times.

C. Store motors, electrical equipment, and other equipment with moving parts in weathertight warehouses at a maintained temperature of 60 degrees F minimum.

D. Painted Surfaces: Protect against impact, abrasion, discoloration, and other damage.

E. Protect electrical equipment, controls, and insulation against moisture or water damage.

1.08 CRITICAL SPEED AND VIBRATION

A. Each complete pump assembly shall have no critical or resonant frequencies or multiples of resonant frequencies within 30% above and 30% below the range of pump speeds and blade pass frequencies required to meet the Performance Requirements. Complete assemblies shall be free of objectionable or destructive vibration throughout the specified operating range.

B. Vibration levels shall comply with the most recent edition of the Hydraulic Institute Standards.

C. Verify that equipment is mutually compatible and free of resonance over the complete operating range.

PART 2 – PRODUCTS

2.01 MBR FEED PUMP STATION CRITERIA

A. Contractor shall furnish all labor, materials, equipment, and incidentals required to provide pumping systems as specified herein. One manufacturer shall supply the pump to ensure suitability and assurance of experience in matching equipment together and to ensure single-source responsibility for equipment.

B. System shall consist of submersible sewage pump(s) or submersible pumps where noted and motor(s), electrical and controls junction box, basin assembly, internal discharge piping, check valve, shut-off valve, quick-disconnect slide rail system, lift chain, level control switches, stainless steel level-control bracket, discharge plumbing with hydraulically-sealed discharge flange, pump mounting plates with bottom rail supports, pedestal mount and cord sealing plate for panel, or NEMA 4 junction box. System shall be installed in factory-fabricated fiberglass wet well with cover and valve vault where noted on the Drawings.

2.02 MANUFACTURES AND PRODUCTS

A. MBR Feed Pump Station Pumps:

1. Grundfos Model SLV.30.A30.20.EX.4.60J.C or approved equal.

2.03 PERFORMANCE REQUIREMENTS

A. MBR Feed Pump Station Pumps Guaranteed Performance:

1. Pumping Capacity at Full Speed:

a. Capacity: 25 gpm.
b. Total Head: 30 feet.
c. Approximate Pump Speed: 1,760 rpm.

2. Minimum Shut-Off Head: 32 feet.
3. Maximum Particle Size: 3.15 inches.

B. Minimum Motor Horsepower: 1.3
C. Pumps shall operate without cavitation or undue vibration under all conditions.

D. Provide pump and motor units which are listed for explosion proof Class I, Division 1, Group D hazardous location in air and submersible in water and sewage.

2.04 MOTORS

A. Motors shall be of the submersible type. Motors shall be for three-phase, 120 Vac operation, UL listed for explosion-proof NEC Class I, Division 1, Group D.

B. Wiring from the motor shall be terminated in an NEC Class I, Division 1, Group D explosion-proof junction box that can be reached for maintenance and inspection without entering the wet well or concrete basin.

C. Motors shall include seal leak-detection probe, which shall be wired to the motor junction box.

D. Motor shall have an internal thermal overload switch, which shall be wired to the motor junction box. The temperature shall be wired to stop the pump on high temperature and reset automatically when the motor cools to a safe operating temperature.

E. Motor bearings shall be designed for a minimum of 50,000 hours B-10 life.

F. Motor stator windings shall be minimum Class F insulation.

2.05 BEARINGS AND SHAFT

A. Upper radial bearing and lower thrust bearing shall be required. Both shall be lubricated permanently by dielectric oil that fills motor housing.

B. Machine shaft from solid series 300 stainless steel. Design shall be of large diameter with minimum overhang to reduce shaft deflection and prolong bearing life.

2.06 SEALS AND SENSORS

A. Separate rotor and stator in motor housing and protect from pumped liquid by an oil-filled seal housing incorporating two Type 21 carbon-ceramic mechanical seals mounted in tandem. Seal housing shall be equipped with two moisture-sensing probes installed between the seals. The sensing of moisture in the seal chamber shall be automatic, continuous, and not require pump to be stopped or removed from wet well. Sensor probes shall be isolated electrically with a resistor between each probe to eliminate grounding to casing.

2.07 IMPELLERS

A. Impeller shall be bronze multi-vane, semi-open, nonoverloading design. May be either factory or field trimmed to meet specific performance conditions. Impellers shall be hydraulically and statically balanced at factory and machined for threading onto pump shaft. Wear or field trimming shall not deter factory balance.

2.08 ELECTRICAL POWER CORD

A. Electrical power cord shall be water resistant 600 V, 60 degrees C, UL listed.

2.09 SUMP LEVEL CONTROLS

A. Provide floats and pressure transducer as indicated on the Drawings, for the operation of the systems. Floats shall be suitable for NEC Class I, Division 1, Group D hazardous location. Operation point shall be adjustable.

B. Wiring from the floats shall be terminated to an NEC Class I, Division 1, Group D explosion-proof junction box that can be reached without entering the concrete basin or wet well. May be combined with motor junction box.

C. Supply float switches to control sump level and alarm signal. Seal switches in a solid polypropylene float for corrosion and shock resistance. Support wire shall have a heavy Neoprene jacket and shall be of sufficient length to reach the junction box with no splices. Attach a weight to cord above float to hold switch in place in sump and efficiently prevent sharp bends in cord when float operates. Quantity of floats and pressure transducers to provide control level is as shown on Drawings.

2.10 ELECTRICAL AND CONTROLS JUNCTION BOX

A. All internal pump electrical and controls wiring shall be terminated into an integral junction box incorporated with the wet well.

2.11 PIPING, CHECK VALVE AND VALVE VAULT

A. Discharge piping shall include a spring-loaded Buna N rubber flapper type check valve with hydraulically sealed discharge flange and a full port ball type shut-off valve upstream of the pressure gauge and a second ball valve of same make and model downstream of the check valve for each pump.

B. Discharge from station shall be fitted with either National Pipe Thread (NPT) coupling(s) or schedule 80 PVC solvent weld socket type hub for attaching external piping. Contractor shall furnish and install all external piping.

C. All valves, elbows, crosses and other piping appurtenances shall be a minimum of 2 inches in diameter.

2.12 PUMP STATION WET WELL

A. Refer to Division 3 for concrete manhole specifications.

2.13 RAIL ASSEMBLY

A. The lift-out rail system assembly shall permit easy removal and installation of the pump and lower check valve without the necessity of personnel entering the wet well.

B. Guide rails shall be stainless steel pipe, unless otherwise approved by the Engineer.

C. Pump to be supplied with grip eye retrieval system.

2.14 MISCELLANEOUS REQUIREMENTS

A. Nameplates: Provide pumps and motors with a nameplate of noncorrodible material, fastened securely in place and inscribed clearly and permanently with manufacturer's name, model or type designation, serial number, rated capacity, and other appropriate data.

B. Operating Manuals and Parts List: Furnish four complete bound sets of literature containing the following:

1. Instructions for operation adjustment, lubrication, and other equipment maintenance.
2. A complete parts list for each item of equipment, with catalog numbers.
3. Other data necessary for ordering replacement parts. Parts list shall contain sufficient information so repair parts can be ordered when local pumping station representative is not available. Such instructions and lists shall have been prepared specifically for model and type of equipment furnished.

C. Guarantee: Manufacturer of pump station shall guarantee for 1-year structure and all internal parts to be free from defects in design workmanship and material. Manufacturer shall supply replacement parts at no cost for any component proven defective during guarantee period. Normal items of wear and maintenance are excluded.

PART 3 – EXECUTION

3.01 EXAMINATION

A. Verify all pumps, motors, and materials are present and meet requirements of these specifications.

3.02 PUMP INSTALLATION

A. Install pumps in accordance with shop drawings and manufacturer's specifications.

B. Provide start-up checklist and certification of readiness for start-up by authorized manufacturer's representative. Manufacturer's representative shall participate in equipment start up.

3.03 TESTS

A. All items shall have a running test to ensure against leakage and vibration. Adjust level controls at this time.

B. Contractor shall provide water and staff for conducting pump station flow test, rotation check, amps and test of motor insulation, controls, and alarms.

C. Test the control systems and demonstrate satisfactory operation of all control panel operations and indications.

D. Simulate each remote indication and alarm condition and demonstrate proper display or indication on the remote monitoring display panel and call out using the autodialer.

END OF SECTION 432520

Nisqually State Park Full Service Park - Phase 3A
Washington State Parks and Recreation Commission
Bid Clarifications

1. Question: Maintenance building footings F3, Dwg. S1.1 - there is no section shown for these F3 footings. We assume these footings are installed by thickening the slab on grade. Please advise if this assumption is incorrect.
   Answer: Footing F3 should be thickened slab sections similar to 7/S5.1 with a total "footing" thickenss of 10" which would match up with the bottom of the tension tie strip shown in 7/S5.1. With the 6" slab the contractor would need to bump down 4" and provide the reinforcing listed in the Footing Schedule in the bottom of these thickened footings.

2. Question: Maintenance building mezzanine guardrail - the structural drawings show top mounted 2-rail steel handrails, while the architectural drawings show side mounted 7- rail aluminum handrails. We will assume the least expensive option unless clarified otherwise. I'm good either way.
   Answer: Structural detailing should be used, Architectural sheets shall be updated in Addenda #1.

3. Question: Maintenance building floor plan 1/A-101 calls out 48" plywood wainscot, while elevations and sections call out 8' plywood wainscot. We will assume 8' high unless clarified otherwise.
   Answer: 8' is desired, drawings will be adjusted in Addenda #1

4. Question: Sign notes to the right of detail 7/A-C3.1 - we assume this note applies to all signs - please clarify if it does not.
   Answer: All exterior signs shown on sheet A-C3.1 are to be owner furnished contractor installed.

5. Question: Detail 7/C3.1 - we assume this sign is not required. Please clarify if it is required somewhere.
   Answer: "No Parking Any Time" sign is required at head of accessible isle between accessible parking spaces.

6. Question: Existing water line connection to Pump House on C3.12 - ductile iron pipes are not made in 2" diameter; spec section 331300 calls for blue poly pipe. What shall we use?

Answer: All pipes running to and from the pump house shall be class 350 ductile iron. Please use 4" ductile iron. Will update plans and specifications to reflect change in Addenda #1.

7. Question: Reservoir inlet and outlet piping - please define what you mean by a "mud ring". We will assume you are referring to a weep ring on the vertical spools unless clarified otherwise.
   Answer: Per Spec Section 33 16 00: Connections to exterior piping stubbed through reservoir base shall be galvanized coupling.

8. Question: Treated water line from Pump House - C3.12 shows 6" piping for the first 4' of piping. C3.13 shows this as 4" piping. We will assume 4" unless clarified otherwise.
   Answer: Please use 4" ductile iron. Will update plans to reflect change.

9. Question: Chlorine room exhaust fan C3.13 - please clarify location (ceiling, wall, etc.) of this fan, We find no electricity, nor programmable controller, nor intake and exhaust locations for this fan.
   Answer: Exhaust fan electrical connection added to sheet E102 as part of addendum #1

10. Question: Pump House water treatment tanks Dwg E102 - we find no power adjacent to the water treatment tanks.
    Answer: Electrical connection (120V) to controller for each water treatment tank being added to sheet E102 as part of Addendum #1

11. Question: Skylights on Pump House Dwg A-151 - we cannot find a specification for the "recessed skylite tube w/ tamper proof". Spec 086200 does not seem to apply.
    Answer: Specification for tamper resistant tubular skylight will be provided in Addenda #1

12. Question: The following specifications appear to be not applicable to this project: 033543 - Polished Concrete; 078100 - Applied Fire Proofing; 102623 - Protective Wall Covering; 210500 - Fire Suppression; and 211000 Fire Sprinklers. Please advise if this is incorrect, and if it is, please clarify where these items are required.
    Answer: The unnecessary sections will be removed in addenda #1

13. Question: Please reference sheet A-C7.0 (pumphouse), which calls for manual sliding gate. Please reference sheet A-C8.0 (pumphouse), which on the right side of the drawing is calling for “manual sliding gate” but note #2 calls for “HySecurity Operator”. Please clarify if this gate is manual or automated.

Answer: Slide gate at pumphouse shall be a manual slide gate per plans. Notes will be adjusted in Addenda #1

14. Question: Please reference sheet B-C4.0 (wastewater), which calls for manual sliding gate. Please reference sheet B-C5.0 (wastewater), which on the right side of the drawing is calling for “manual sliding gate” but note #8 mentions “electrically operated gates” Please clarify if this gate is manual or automated.
    Answer: Slide gate at wastewater treatment facility shall be manual slide gate per plans. Notes will be adjusted in Addenda #1.

15. Question: Multiple questions received about if the owner or consultants would consider substitutions.
    Answer: Per the specifications Instructions to Bidders Paragraph 2.1.E Substitutions "No substitutions will be considered unless a written request for approval is submitted by the **Contractor, after Award**..."

16. Question: We are working on material quoting for this project. Is there any domestic requirements for this project like “Buy America” or others?
    Answer: Sections 220500, 230500 and 233100 all have requirements for domestic materials. See Spec Section 331443 Performance requirements for fire flow and duty pump performance requirements to accommodate both domestic and fire demands.

17. Question: What size of pressure tanks do we want for this skid?
    Answer: A new 80-gallon bladder pressure tank will be needed for 3A pump house. Plans will be updated in Addenda #1.

18. Question: The 1.8HP pumps specified do not meet the design conditions however the equivalent pump with 2HP motor do. I know you said that substitutions will be considered after award of contract, however I thought this may affect controls (which we will not be bidding on these pumps) so thought it would be good to let you know.
    Answer: See revised specifications in Addenda 1

19. Question: Please confirm that even though section 09 96 00 3.9 describes coatings for interior concrete, that there are no concrete coatings inside the underground structures, including the wet well, the pump station, the tanks, and the structures.
    Answer: This will be addressed in Addenda #1

20. Question: Also section 09 96 00 3.8 B. states that there are rusted / light rusted steel areas to be coated. Please provide descriptions and/or pictures of these areas.
Answer: This specification outlines coating of steel substrates for the project. And includes direction to coat previously coated steel, with or without light rusting.

21. Question: *Plan sheet L1.1 that shows a small area (100 sqft) that appears to be the symbol from the previous plan sheet, L1.0. Either way the area is to be planted with Plugs and need clarification if bark mulch or wood chips goes into this area. This area could also change Plug qty's if it was not included in the Planting Schedule. Please clarify.*
Answer: This will be addressed in Addenda #1

22. Question: Can we please confirm if electrical contractor is responsible for furnishing and installing the concrete pad for the new generator?
Answer: Contractor is responsible for concrete pad for generator.

23. Question: Can we please confirm if electrical contractor is responsible for furnishing and installing new concrete pad for the new OHOP Mutual Utility Transformer?
Answer: No, OHOP is responsible for this concrete pad, contractor is responsible for excavation and site preparation.

24. Question: Can we please be provided the manufacturer and model of existing switchgear?
Answer: See attached exhibit for existing switchgear.

25. Question: Can we please confirm if the utility coordination and final connections at the OHOP Mutual transformer are by the electrical contractor or utility provider?
Answer: Final connections at the OHOP Mutual Transformer are by utility provider, contractor to pull conductors into transformer.

Switchboard General Information

Pow-R-Line Xpert - Specifications
Quantity: 1
Alignment: Front Access/ Front and Rear Align
Service: 208Y/120V 3-Phase 4-Wire
Minimum Interrupt Rating: 65 kA

Bus Specifications
Bus Amps: 1200
Bus Bracing Rating: 65kA
Neutral Amps: 1200
Bus Material: Aluminum
Heat Test
Ground Bus Material: Aluminum Ground Bus Bolted To Frame, (1) #6-350 kcmil Ground Lug

Incoming Information
Incoming Entry: Bottom
Incoming Location: Left
Incoming Qty & Size: Terminals, Mechanical, Bottom, See Utility Specifications

Structure Specifications
Service Entrance
Enclosure Type: Type 3R (nonwalk-in) Flat Roof
Enclosure: Outdoor Enlosure Configuration Per Euserc Dwg 354
Seismic Label (IBC/CBC Seismic Qualified) - Freestanding
Refer to seismic installation data sheet TD01508002E and drawing 1A32497 for details.

Special Notes

Qty	Description	Catalog Number

Utility Specfications
Struct # 2

Ohop Power

1200 Amps Util. Mtr. Compt. - ~~PUGET SOUND ENERGY~~
Utility Service Requirements Page References:
Lug Drillings Per Dwg. : 347
CT Compartment Per Dwg. 322/330
UGPS Per Dwg. 345
Meter Door per Dwg. 332
13J Meter Socket(s)
LUGS
Doors - (2)-15" with Meter at the Bottom
(3) 300-800 kcmil

Enclosure properties

Struct #	Description/Modifications
1	**Bussed pulled Structure (Incoming Utility Structures)** **Vertical isolating barrier**
2	**Incoming Utility Structures (Incoming Utility Section)** **Vertical isolating barrier** **Horizontal isolating barrier**
3	**50x chassis mounted feeders (Feeder Structure)**

PREPARED BY: WES ROBERTS	DATE: 10/28/2021	Eaton	SumterSC		
APPROVED BY	DATE	JOB NAME: Nisqually Parks			
		DESIGNATION: Switchboard			
VERSION: 9.0.30.1		TYPE: Switchboards		DRAWING TYPE: CustAppr	
NEG-ALT Number: N9461028X1K5-0000	REVISION: 0	DWG SIZE: DwgA	G.O.	ITEM	SHEET: 1 of 4