P700-6702-2024
August 7, 2024

EW-C6702

PROJECT MANUAL

FOR

SEWER LIFT STATION REPLACEMENT

AT

SUN LAKES STATE PARK

IN

GRANT COUNTY

BID OPENING: 1:00 P.M., THURSDAY, OCTOBER 31, 2024

ELECTRONIC BID RESPONSES ONLY: Bid responses will only be accepted electronically via Email/Email Attachment to BidBox@parks.wa.gov. (PDF scan encouraged).

****BIDS WILL BE OPENED WITHIN TWO BUSINESS DAYS****

WASHINGTON STATE PARKS & RECREATION COMMISSION
1111 ISRAEL ROAD SW
TUMWATER, WA 98501-6512
POST OFFICE BOX 42650
OLYMPIA, WASHINGTON 98504-2650

PROJECT MANUAL

FOR

SEWER LIFT STATION REPLACEMENT

AT

SUN LAKES STATE PARK

IN

GRANT COUNTY

06/27/2024

PROJECT ENGINEER

Approved for Construction _____
Heather Saunders, Parks Development Director

WASHINGTON STATE PARKS AND RECREATION COMMISSION
1111 ISRAEL ROAD SW
TUMWATER, WASHINGTON 9501-6512
P.O. BOX 42650
OLYMPIA, WASHINGTON 98504-2650

Diana Dupuis,
Director

STATE OF WASHINGTON
WASHINGTON STATE PARKS AND RECREATION COMMISSION
1111 Israel Road SW • PO Box 42650 • Olympia, WA 98504-2650 • (360) 902-8500
Internet Address: http://www.parks.wa.gov

September 17, 2024

Re: Letter of Advertisement – EW-C6702 – Sun Lakes State Park – Sewer Lift Station Replacement

To whom it may concern:

Please publish the following legal advertisement under your "Advertisement for Bid" section for two (2) consecutive days beginning on **Tuesday, September 17, 2024**, *or at your earliest possible convenience*. An Affidavit of Publication will be required by this office. A voucher form is enclosed for your convenience in billing.

ADVERTISEMENT FOR BID

Sealed bids will be received for the following project:

PROJECT NUMBER:	EW-C6702
PROJECT TITTLE:	Sun Lakes State Park – Sewer Lift Station Replacement
PROJECT DESCRIPTION:	This project includes constructing a complete, new sewer lift station with submersible pumps including dewatering systems for excavation; installing an engine generator and propane storage tank; demolishing the existing below-grade sewer lift station; modifications to the existing buried wetwell structure; and site restoration.
PROJECT LOCATION:	The project is located at 34875 Park Lake Road NE, Coulee City, WA 99115. Sun Lakes State Park is located near Coulee City at the foot of Dry Falls.
ESTIMATED BID RANGE:	$599,000.00 - $677,000.00
PROCUREMENT COORDINATOR	Manuel Iglesias
BID OPENING TIME:	**1:00 PM on Thursday, October 31, 2024**
PREBID WALKTHROUGH:	**10:00 AM on Tuesday, October 15, 2024.** Meet at the project location.

PLANS, SPECIFICATIONS, ADDENDA, AND PLAN HOLDERS LIST: Are available on-line through Builders Exchange of Washington, Inc. at http://www.bxwa.com. Click on: "bxwa.com"; "Posted Projects"; "Public Works", "Washington State Parks & Recreation", and "**10/31/24**". (Note: Bidders are encouraged to "Register as a Bidder", in order to receive automatic email notification of future addenda and to be placed on the "Bidders List". This service is provided free of charge to Prime Bidders, Subcontractors, and Vendors bidding this project.)

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

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

TECHNICAL QUESTIONS regarding this project shall be directed to: RH2 Engineering, Paul Young, P.E., *Project Representative at telephone: (509) 886-6763, email:* pyoung@rh2.com, 300 Simon Street, SE, Ste. 5, East Wenatchee, WA 98802, fax (509) 886-2313.

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

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

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

MANDATORY 15% APPRENTICE LABOR HOURS of the total labor hours are a requirement of this construction contract. Voluntary workforce diversity goals for this apprentice

participation are identified in the Instructions to Bidders. Bidders may contact the Department of Labor & Industries, Apprenticeship Section, to obtain information on available apprenticeship programs.

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

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

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

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

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

Sincerely,

Manuel Iglesias, Procurement Coordinator

STATE OF WASHIGTON
PARKS AND RECREATION COMMISSION
CONTRACTS AND GRANTS

SUN LAKES STATE PARK
SEWER LIFT STATION REPLACEMENT

END OF SECTION

INVITATION TO BID

1.1 SPECIAL NOTICE(S)

A. For this project, the existing sewer lift station shall remain online during the duration of the project until the new lift station has passed all tests and is deemed fully operational by the Owner. After the Owner provides written approval to connect the force main to new lift station, then the Contractor may begin work on the existing wetwell demolition. The Contractor shall make provisions to temporarily pump (by high-capacity pumper truck(s)), haul, and dispose of existing effluent while the existing lift station is shutdown. Disposal is allowed into the Owner's system at the lagoons in the park. Flows into the existing wetwell are highly variable and the Contractor shall plan on having two pumper trucks on site during any lift station shutdowns.

B. If the new engine generator is not available, due to procurement lead times, when the Contractor is ready to connect the new lift station to the forcemain then the contractor will keep the existing diesel generator in place and connect the new lift station temporarily to the existing diesel generator. The startup and final connection of the new lift station will not wait for the arrival of the new electric generator. The removal of the existing diesel generator and installation of the new engine generator, propane tank, and concrete pad will occur once the new electric generator is on site. Working days wil be adjusted by the Owner as needed to accommodate the delivery of the new engine generator. All other work that can be completed, per the contract, including but not limited to: existing lift station demolition, cleanup, site restoration, and fencing will be completed in a timely manner after the new lift station is connected to the forcemain. The contractor will bid the project assuming the work associated with the installation of the new engine generator will be completed separately from the installation, startup and final connection of the new lift station.

1.2 DESCRIPTION OF WORK

A. This project includes: constructing a complete, new sewer lift station with submersible pumps including dewatering systems for excavation; installing an engine generator and propane storage tank; demolishing the existing below-grade sewer lift station; modifications to the existing buried wetwell structure; and site restoration.

1.3 LOCATION OF PROJECT

A. The project is located at 34875 Park Lake Road NE, Coulee City, WA 99115. Sun Lakes State Park is located near Coulee City at the foot of Dry Falls.

1.4 TECHNICAL QUESTIONS

A. Direct project questions to Project Representative: RH2 Engineering, Paul Young, P.E., (509) 886-6763, email address pyoung@rh2.com, 300 Simon Street, SE, Ste. 5, East Wenatchee, WA 98802, fax (509) 886-2313.

1.5 PRE-BID PROJECT SITE TOUR

DATE:	Tuesday, October 15, 2024
TIME:	10 AM
LOCATION:	Meet at the project location

1.6 BID OPENING

A. Bid responses will only be accepted electronically via email/email attachment BidBox@parks.wa.gov. See Section 7.1 of the Instructions to Bidders for expanded details. Subject line shall read, EW-C6702 [YOUR COMPANY NAME], Bids are due at 1:00 p.m., Thursday, October 31, 2024.

B. Bid result notification is made by e-mail within three (3) business days of the bids due date. Bid results can be obtained on the State Parks webpage at www.parks.wa.gov/contracts or through Builders Exchange of Washington at www.bxwa.com

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

1.7 COVID 19

A. COVID-19 Refer to the Department of Labor & Industries website for requirements regarding any safety plans needed. Novel Coronavirus Outbreak (COVID-19) Resources (wa.gov)

1.8 FOR INFORMATION ON:

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

B. Reciprocal Preference: See Instructions to Bidders 2.1 Reciprocal Preference for Resident Contractors.

C. Apprenticeship Requirements: For projects estimated at or over $1,000,000, Apprenticeship Participation, Mandatory 15 percent apprentice labor, see Instructions to Bidders 4.1B Apprenticeship Participation.

D. Subcontractor Listings: When the base bid combined with any alternates totals $1,000,000 or more, the Bidder must list the Subcontractors they intend to use for structural steel, rebar installation, heating, ventilation, and air conditioning (HVAC), plumbing, and electrical work on the Subcontractor Utilization List form for this project, see Instructions to Bidders 4.1A Subcontractor Listing.

E. MWBE goals: See Instructions To Bidders 3.1 Minority And Women's Business Enterprise (MWBE) Utilization. For Veteran-Owned and Small Business utilization, see Instruction to Bidders 3.2.

F. Modification of Bid: See Instructions to Bidders 8.1 Modification of Bid.

G. Withdrawal of Bid: See Instructions to Bidders 9.1 Withdrawal of Bid.

H. Bid Security: See Instructions to Bidders 11.1 Bid Bond. No particular bid bond form is required.

I. Bid Tabulation and Bid Record: See Instructions to Bidders 12.1B for Bid Tabulation, Bid Record, and Announcement of Apparent Low Bid.

J. Records Request: All submitted bids are subject to public records request once the lowest bidder has been determined and officially announced. See Instructions to Bidders 12.1D Records Request.

1.9 ACCESSIBILITY

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

Your interest in Washington State Parks projects and your willingness to provide service through MRSC Statewide Small Works Roster is greatly appreciated.

END OF SECTION

WASHINGTON STATE PARK AND RECREATION COMMISSION
PUBLIC WORKS PROJECT

1.1 BIDDER DEFINED

A. A "*Bidder*" is an entity or person who submits a bid proposal for the work described in the contract documents.

B. The Bidder must be registered by the Washington State Department of Labor and Industries in accordance with RCW 18.27.020. Insert the contractor registration number, expiration date, Uniform Business Identifier (UBI) number, and federal tax identification number on the Bid Proposal Form in the applicable spaces.

2.1 RECIPROCAL PREFERENCE FOR RESIDENT CONTRACTORS

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

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

a) is from a state that provides a percentage bid preference to its resident contractors bidding on public works contracts.

b) at the time of bidding on a public works project, does not have a physical office located in Washington.

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

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

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

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

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

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

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

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

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

A. VOLUNTARY MWBE GOALS

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

   MBE 10% WBE 6%

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

B. REPORTING REQUIREMENTS

1. If any part of the contract, (including the supply of materials and equipment) is subcontracted using certified MWBE firms during completion of the work, then prior to final acceptance or completion of the contract or as otherwise indicated in the contract documents the Bidder shall submit a statement of participation indicating that MWBEs were used and the dollar value of their subcontracts.

2. The provisions of this section are not intended to replace or otherwise change the requirements of RCW 39.30.060. If said statute is applicable to this contract then the failure to comply with RCW 39.30.060 will still render a bid non-responsive.

C. RECORD KEEPING

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

D. SUGGESTED EFFORTS TO INCREASE PARTICIPATION BY MWBEs

1. Bidders are encouraged to advertise opportunities for subcontractors or suppliers in a manner reasonably designed to provide MWBEs capable of performing the work with timely notice of such opportunities, and all advertisements shall include a provision encouraging participation by MWBE firms. Advertising may be done through general advertisement (e.g., newspapers, journals, etc.) or by soliciting bids directly from MWBEs.

2. Additional Voluntary Efforts. Bidders are encouraged to:

   (a) Break down total requirements into smaller tasks or quantities, where economically feasible, in order to permit maximum participation by MWBEs and other small businesses.

   (b) Provide interested MWBEs with adequate and timely information about plans, specifications, and requirements of the Contract.

   (c) Establish delivery schedules, where the requirements of this contract permit, that encourage participation by MWBEs and other small businesses.

   (d) Reduce bonding requirements where practicable.

   (e) Utilize the services of available minority community organizations, minority contractor groups, local minority assistance offices, and organizations that provide assistance in the recruitment and placement of MWBEs and other small businesses.

3. The actions described in this section should supplement efforts to provide information to all qualified firms, and nothing in this section is intended to prevent or discourage the Bidders from inviting proposals for participation from non-MWBE firms as well as MWBE firms.

E. NON-DISCRIMINATION

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

F. SANCTIONS

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

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

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

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

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

   WDVA 5% Small Business 5%

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

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

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

A. SUBCONTRACTOR LISTING

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

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

B. APPRENTICESHIP PARTICIPATION

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

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

1. **Incentives** - The Contractor who meets or exceeds this utilization requirement on eligible contracts, will be awarded a monetary incentive described in the Apprentice Utilization Requirements section of the Bid Form.

2. **Penalties** - The Contractor who fails to meet the utilization requirement and fails to demonstrate a Good Faith Effort, as outlined below, is subject to penalties described in

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

3. **Cost Value** - The expected cost value associated with meeting the goal is included in the Base Bid as described on the Bid Form.

4. **Utilization Plan** - The Contractor shall provide an Apprentice Utilization Plan (Plan) demonstrating how and when they intend to achieve the Apprenticeship Utilization Requirement. The Plan shall have enough information to track the Contractor's progress in meeting the utilization requirement. The Contractor shall submit the Plan on the Apprentice Utilization Plan template within 10 business days of Notice to Proceed of the contract and prior to submitting the first invoice. The Contractor shall provide an updated Plan during the course of construction when there are significant changes to the Plan which may affect their ability to meet the requirement.

   a) The Plan shall be uploaded to the Department of Labor & Industries' (L&I): ***Prevailing Wage Intents and Affidavit (PWIA) system on L&I's website.***

   b) The Plan is not submitted for approval.

   c) It is expected that the Contractor will actively seek out opportunities to meet the Apprentice Utilization Requirement during construction even if the Plan indicates a shortfall in meeting the requirement.

   d) If the Plan indicates that the Contractor will not attain the Apprentice Utilization Requirement, then Contractor must submit "Good Faith Effort" (GFE) documentation with their Plan to L&I's PWIA system.

C. APPRENTICESHIP - GOOD FAITH EFFORT (GFE)

1. **Good Faith Effort (GFE)** documentation shall describe in detail why the Contractor is not or was not able to attain the Apprentice Utilization Requirement.

   a) Contractors may submit Good Faith Effort (GFE) documentation at any time during the construction.

   b) All GFE documentation must be submitted no later than 30 days before substantial completion.

   c) Good Faith Effort (GFE) documentation must be in signed letter format uploaded to the PWIA system and include:

      1. The contract number, title and the apprentice utilization requirements,

      2. The amount of apprentice labor hours the contract can or did attain along with the percentage of labor hours,

      3. Contractors may receive a GFE credit for graduated Apprentice hours through the end of the calendar year for all projects worked on as long as the Apprentice remains continuously employed with the same Contractor they were working for when they graduated. If an Apprentice graduates during employment on a project of significant duration, they may be counted towards a GFE credit for up to one year after their graduation or until the end of the project (whichever

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

4. Anticipated or actual shortfall (in apprentice labor hours and percentage) and the reason(s) for not attaining the required apprentice labor hours,

5. Information from one or more of the following areas:

   (a) Names of any State-Approved Apprentice Training Programs contacted with the name(s) of person(s) contacted and dates of contacts, and a copy of each response from the Training Program(s),

   (b) Reference Contract Specifications or documents that affected the Contractor's ability to attain apprentice utilization,

   (c) Discuss efforts the Contractor has taken to require Subcontractors to solicit and employ apprentices,

6. Backup documentation to the letter consisting of the following:

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

Additional Resource Information

(a) For questions regarding how to complete the Apprentice Utilization Plan template or Good Faith Effort documentation, please contact the Project Manager listed in the Bid Advertisement.

(b) Step-by-step instructions on how to access and navigate the L&I's PWIA system, including uploading required documents can be found on the L&I website.

(c) Additional information about apprentice utilization on Public Works Project can be found on the L&I website.

5.1 EXAMINATION OF THE WORK SITE AND BIDDING DOCUMENTS

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

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

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

B. No statement by any officer, agent, or employee of the Agency pertaining to the physical conditions of the site of the work will be binding on the Agency other than those statements issued in the contract documents.

C. Bidders shall promptly notify the Agency of ambiguities, inconsistencies, or errors, if any, which they may discover upon examination of the Bidding Documents or of the site and local conditions.

D. Interpretations and Clarifications

1) Every request for interpretation or clarification should be submitted to the project representative as listed in the Invitation to Bid. If a Bidder does not have on-line capability, then submit in writing, addressed to the project representative at the address as listed in the Invitation to Bid. To be given consideration the request must be received seven (7) working days prior to the date fixed for the opening of the bids.

2) The Agency's responses, if there are any, which do not change the Scope of Work described in the contract documents may be mailed, delivered, faxed, or by other electronic means, to all planholders of record, at the respective address furnished for such purposes, prior to the date fixed for the receipt of bids. Such letters of clarification shall not be considered part of the contract documents and therefore need not be acknowledged by the Bidders as part of the Bid Form. The Agency will determine at its sole discretion whether or not any clarification or interpretation changes the Scope of Work and should be included in the Contract Documents.

3) Clarifications, interpretations, or supplemental instructions which do change the Scope of Work and or schedule described in the contract documents, will be issued only in the form of written ADDENDA.

4) Oral interpretations or clarifications will be without legal effect.

E. Substitutions

1) The product, equipment, materials, or methods described or noted within the Bidding Documents, whether currently available or not, are to establish a standard of quality, function, appearance and dimension. A proposed substitution shall have equal attributes in all respects.

2) No substitution will be considered unless a written request for approval is submitted by the Contractor, after Award, in accordance with the applicable provisions of Section 012500 of the specifications. If no Section 012500 is available, then see section 016000 Product Requirements, sub-section 1.5. Each such request shall describe the proposed substitution in its entirety including name of the material or equipment, drawings, catalog cuts, performance or test data and all other information required for an evaluation. The submittal shall also include a statement noting all changes required in adjoining, dependent or other interrelated work necessitated by the incorporation of the proposed substitute. The Bidder shall bear the burden of proof of merit of the proposed substitution. The Project Representative's decision of approval or disapproval of a proposed substitution shall be final.

6.1 BID PROPOSAL

A. The Bidder shall submit its bid on the forms included with these instructions. All blank spaces in the Bid Proposal Form must be properly filled in. If the bid is made by a partnership or co-partnership, it must be so stated and it must be signed in the firm's name, followed by the written signature of the signing partner. If the bid is made by a corporation, it must be signed in the name of the corporation, followed by the written signature of the officer signing, and the printed or typewritten designation of their office within the corporation. The full and complete address of the Bidder must be typed or printed on the bid in the spaces provided. The bid must be a scan of the original bid, complete with an original signature (pen to paper).

B. Except as otherwise provided in these instructions, bid proposals that are incomplete, or that are conditioned in any way, or that contain erasures, alterations, or items not called for in the contract documents, or that do not conform to the call for bids, may be rejected as non-responsive at the discretion of the Agency unless the law requires that the omission be deemed non-responsive, in which case the bid will be rejected as non-responsive. Only the amounts and information asked for on the Bid Proposal Form and the plans and specifications furnished will be considered as the bid. Bid amounts include all taxes imposed by law, **except** for Washington Sales Tax unless noted otherwise.

C. Each Bidder shall bid upon the work exactly as specified and as provided in the Bid Proposal Form. The Bidder shall bid upon all alternates if alternates are indicated on the Bid Proposal Form. When bidding on alternates for which there is no charge, the Bidder shall write the words "no charge" in the space provided on the Bid Proposal Form.

D. Bidders shall acknowledge receipt of any ADDENDA to the solicitation for bids on the Bid form. Failure to do so may result in the bid being declared non-responsive.

7.1 SUBMISSION OF BID

A. Bid responses will only be accepted electronically via email/email attachment BidBox@parks.wa.gov.

B. Marking of The Bid Response (Email Subject Line):

Subject line should include the bid's identification number, "Bid" and Company name.

- Example email subject line: NW-C9999 Bid John Smith Construction LLC
- Example email subject line: EW-C9999 Bid Sunshine Construction Corp.

C. People with disabilities who wish to request special accommodation, (e.g., sign language interpreters, braille, etc.) need to contact the Agency ten (10) working days prior to the scheduled bid opening.

D. Signature (what is acceptable):

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

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

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

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

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

7.2 BID CLOCK:

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

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

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

8.1 MODIFICATION OF BID

A. Modifying And Supplementing Prior To Bid Opening:

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

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

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

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

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

9.1 WITHDRAWAL OF BID

A. Withdrawal refers to a bid that has already been submitted to the Agency. A bid response may be withdrawn by a Bidder before the Bid Opening (due date deadline) for the bid. The FAILURE TO WITHDRAW a bid prior to the bid due date deadline exposes the Bidder to the possibility that the Agency will make a demand against the Bidders bid bond.

B. Procedure for Withdrawing a Bid Before Bid Due Date: Bidder may withdraw its bid prior to the bid due date by sending an email to: BidBox@parks.wa.gov. In the body of the email clearly explains that the earlier bid submission is being withdrawn. Follow the example subject line. Example email subject line: SW-C9999 Withdraw Bid ACME Construction Inc.

C. Procedure for Withdrawing a Bid After Bid Opening Due to Error: If a Bidder discovers an error in its bid following the bid opening, the Bidder must submit written notification of the withdrawal to contracts@parks.wa.gov within 24 hours following the bid opening. Follow the example subject line. Example email subject line: SW-C9999 Withdraw Bid ACME Construction Inc.

- The Bidder must provide written documentation of the claimed error to the satisfaction of the Agency within 72 hours following the bid opening.

- The Agency will approve or disapprove the request for withdrawal of the bid in writing. If the Bidder's request for withdrawal of its bid is approved, the Bidder will be released from further obligation to the Agency without penalty. If it is disapproved, the Agency may retain the Bidder's bid bond.

10.1 REJECTION OF BID

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

11.1 BID BOND

A. When the total bid amount is $35,000 or less, a bid bond is not required. When the sum of the base bid plus all additive bid alternates is $35,000.00 or less, bid security is not required.

B. When the sum of the base bid plus all additive alternates is greater than $35,000.00, a bid guarantee in the amount of 5% of the base bid amount is required. Failure of the Bidder to provide bid guarantee when required shall render the bid non-responsive.

C. Acceptable forms of bid guarantee are: A bid bond. A copy of the bid bond must be included along with your bid response to the Agency. See also, Section 7.1 SUBMISSION OF BIDS – SECTION A.

D. The Bidder will allow 60 days from bid opening date for acceptance of its bid by the Agency.

E. Should the successful Bidder fail to enter into a contract and furnish a satisfactory performance bond within 15 days after receiving properly prepared contract forms from the Agency, the bid bond may be forfeited as liquidated damages for advertisements and administration of bid procedures.

F. Bid bonds must be held for the three low bids for 30 days or until a contract is executed with the successful Bidder. All other bid bonds will be released or returned to the Bidders within 15 days of the bid opening.

12.1 BID EVALUATION AND AWARD OF CONTRACT

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

B. BID TABULATION, BID RECORD AND ANNOUNCEMENT OF APPARENT LOW BID:

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

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

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

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

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

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

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

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

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

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

1. At the time of bid submittal, have a certificate of registration in compliance with RCW 18.27, a plumbing contractor license in compliance with RCW 18.106, an elevator contractor license in compliance with RCW 70.87, or an electrical contractor license in compliance with RCW 19.28 as required under the provisions of those chapters;

2. Have a current state Unified Business Identifier (UBI) number;

3. If applicable, have industrial insurance coverage for the Bidder's employees working in Washington as required in RCW 51; an employment security department number as required in RCW 50; and a state excise tax registration number as required in RCW 82;

4. Not be disqualified from bidding on any public works contract under RCW 39.06.010 or 39.12.065(3);

5. If bidding on a public works project subject to the apprenticeship utilization requirements in RCW 39.04.320, not have been found out of compliance by the Washington State Apprenticeship and Training Council for working apprentices out of ratio, without appropriate supervision, or outside their approved work processes as outlined in their standards of apprenticeship under Chapter 49.04 RCW for the one-year period immediately preceding the date of the bid solicitation; and

6. Public Works and Prevailing Wage Training/Exemption. Bidders shall have received training on the requirements related to public works and prevailing wage under this chapter and chapter 39.12 RCW. The bidder must designate a person or persons to be trained on these requirements. The training must be provided by the department of labor and industries or by a training provider whose curriculum is approved by the department. The department, in consultation with the prevailing wage advisory committee, must determine the length of the training. Bidders that have completed three or more public works projects and have had a valid business license in Washington for three or more years are exempt from this subsection. The department of labor and industries must keep records of entities that have satisfied the training requirement or are exempt and make the records available on its website. Responsible parties may rely on the records made available by the department regarding satisfaction of the training requirement or exemption. https://lni.wa.gov/licensing-permits/public-works-projects/contractors-employers/contractor-training

7. Within the three-year period immediately preceding the bid solicitation, not have been determined by a final a binding citation and notice of assessment issued by the department

of labor and industries or through a civil judgment entered by a court of limited or general jurisdiction to have willfully violated, as defined in RCW 49.48.082, any provision of Chapters 49.46, 49.48, or 49.52 RCW. By signing the Bid Proposal Form, the bidder verifies under penalty of perjury, pursuant to RCW 9A.72.085. that the bidder is in compliance with this subsection

8. Supplemental Responsibility Criteria: In addition to the mandatory Bidder responsibility, the Agency may adopt relevant supplemental criteria for determining Bidder responsibility applicable to a particular project which the Bidder must meet (RCW 39.04.350 (3)).

    a. If applicable, the Agency shall consider an overall accounting of the attached supplemental criteria for determining Bidder responsibility "DIVISION 00 SUPPLEMENTAL RESPONSIBILITY CRITERIA".

    b. At least seven (7) days prior to the bid submittal deadline, a potential Bidder may request that the Agency modify the supplemental responsibility criteria. The Agency will evaluate the information submitted by the potential Bidder and respond before the bid submittal deadline. If the evaluation results in a change of the criteria, the Agency will issue an ADDENDA to the bidding documents identifying the new criteria.

    c. Upon the Agency's request, the apparent low Bidder must supply the requested responsibility information within two (2) business days of request by the Agency. Withholding information or failure to submit all the information requested within the time provided may render the bid non-responsive and the bid/Bidder may be rejected by Rejection Letter.

    d. The Agency will not execute a contract with any other Bidder until two (2) business days after the Bidder determined to be not responsible has received the rejection letter.

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

1. It is received at the proper time and place.

2. It meets the stated requirements of the Bid Proposal Form.

3. It meets the requirements as stated in section 6.1.A of the Instructions To Bidders.

4. It is submitted by a licensed/registered contractor within the state of Washington at the time of bid opening and is not banned from bidding by the Department of Labor and Industries.

5. It is accompanied by a bid guarantee, if required.

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

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

13.1 PROTEST PROCEDURES

A. GENERAL:

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

Only a Bidder may file a protest regarding this competition.

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

B. FORM AND CONTENT:

All protests must:

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

C. CONTENT LIMITATIONS:

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

The Agency will reject protests that:

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

D. SUBMISSION OF PROTEST:

- All protests must be submitted within two (2) business days following the day of the release of the Bid Tabulation/Announcement of the Apparent Low bid or after the formal Rejection Letter is sent. For purposes of timing the day of the release of the Bid Tabulation or the day of the Rejection Letter is sent to the Bidder shall not count.

- Bidders must send all protests to: contracts@parks.wa.gov. See also Subject Line.

- SUBJECT LINE: Must include the bid's identification number, and "PROTEST" in the subject line. Failure by the Bidder to include this information in the subject line may result in Bidder's protest not being timely recognized.

E. GROUNDS WHICH MAY BE PROTESTED:

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

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

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

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

F. MANAGER ASSIGNMENT AND REVIEW:

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

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

G. PROTEST DETERMINATION AND FINDINGS AND DISSEMINATION:

The Manager's protest determination may:

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

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

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

H. AGENCY DECISION IS FINAL:

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

I. STRICT COMPLIANCE

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

J. REPRESENTATION

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

K. COMPUTATION OF TIME

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

L. ACKNOWLEDGEMENT

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

14.1 EXECUTION OF CONTRACT

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

15.1 SUBCONTRACTOR PARTICIPATION MONITORING AND REPORTING

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

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

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

END OF INSTRUCTIONS TO BIDDERS

/ / / / /

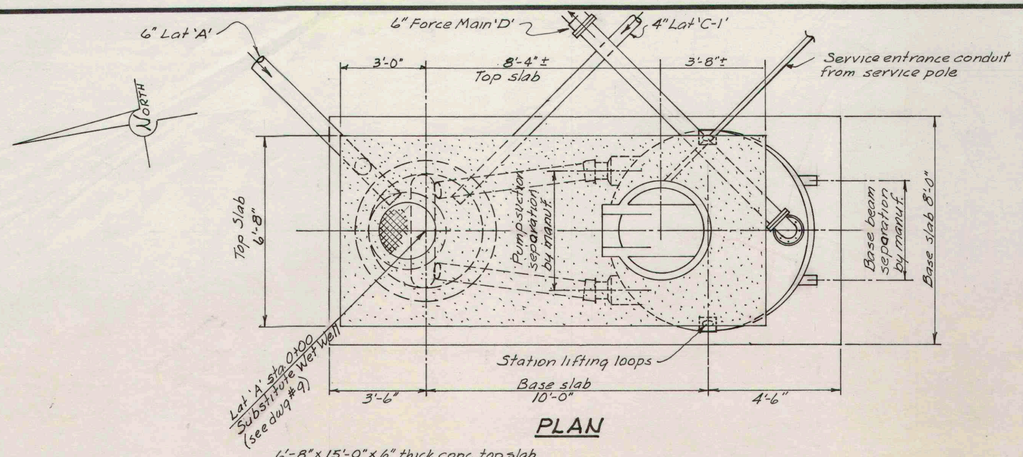
APPENDIX 1

1975 Sun Lakes Sewer Plans

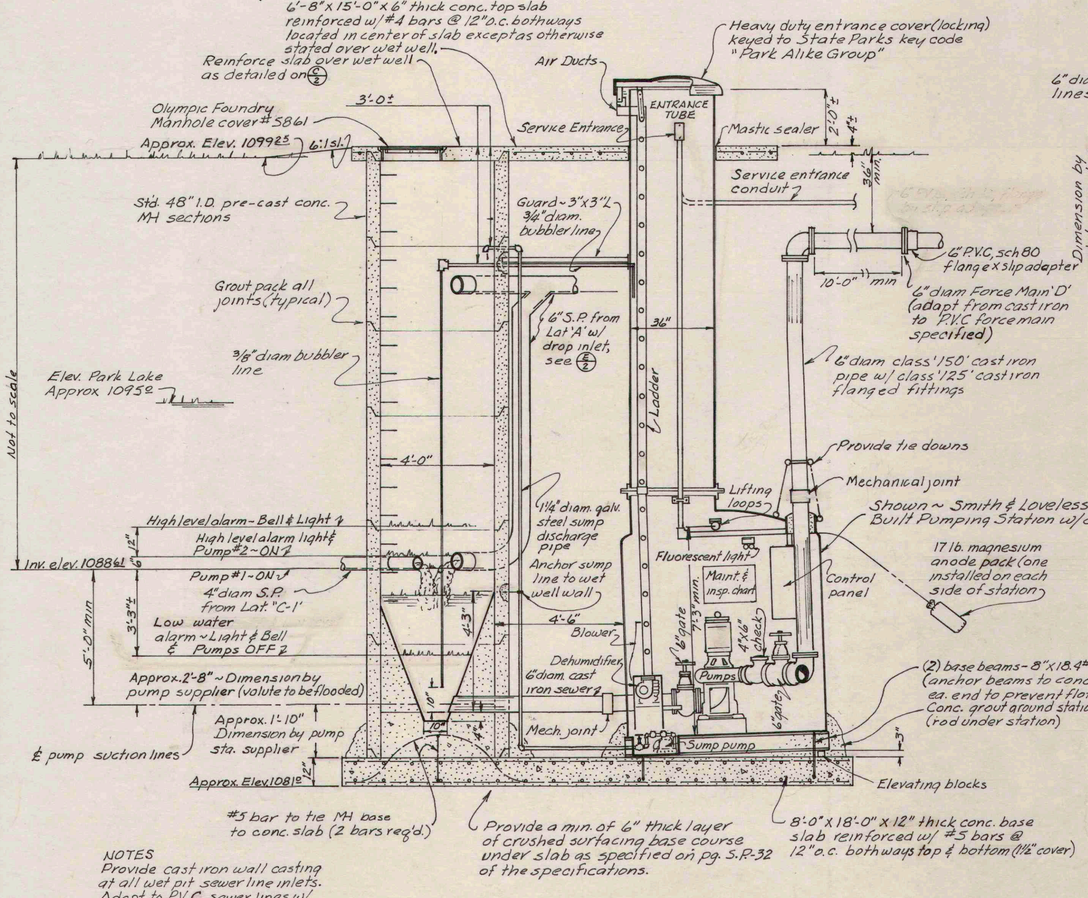
Plans are provided for what benefit the bidder may find, but are not guaranteed to be a full and accurate representation of the existing lift station.

GOLF COURSE
DETAIL
Air Relief Valves at Stations 0+00 & 16+02 - Force Main B-1
SCALE-1"=1'-0"
24" MANHOLE RIM & COVER
FINISH GRADE
3/4" GATE VALVE
ONE COURSE GRADE ADJUSTMENT BLOCKS
3/4" G.I. NIPPLE x 6" LONG
3/4" G.I.-45° ELL
3/4" G.I. NIPPLE x 2" LONG (TAP BLIND FLANGE)
24" CONCRETE CULVERT PIPE
BREAK OUT CULVERT PIPE AND HOLD 2" MIN ABOVE FORCE MAIN & C.O. FITTING
CLEANOUT FITTINGS & RISER AS SHOWN ON SHT. 2
COMPACTED BEDDING
PARK LAKE
MAIN ACCESS ROAD TO S.R. 17
GUARD RAILING
GRAVEL PARKING
CAMPING AREA
GRAVEL ROAD
6" FORCE MAIN 'D'
6" S.P. LAT. 'A'
AT CO. ROAD CROSSING LAT 'A' & F. MAIN 'D' WILL BE IN CMP CONDUIT IN A COMMON TRENCH APPROX. 50 L.F. CLEAN OUTS WILL BE OUTSIDE ROAD AREAS
CONSTRUCT LIFT STA. No 2 - SEE SHT. 4
STA. 11+95 LAT. C-1 INV. ELEV.-1088.68
TYPE 2 CLEANOUT STA. 1+32.30 6" FORCE MAIN 'D'
BY-PASS EXIST. SEPTIC TANK & CONNECT NEW 4" S.P. TO EXISTING BUILDING DRAIN. PUMP OUT SEPTIC TANK CONTENTS & FILL W/ SAND
CONNECT NEW 4" S.P. TO EXIST. BUILDING DRAIN. BY-PASS EXIST. SEPTIC TANK. PUMP OUT SEPTIC TANK CONTENTS & FILL W/ SAND
TYPE '2' C.O. STA. 3+10 INV. ELEV.-1121.45
SEE SHT. 16 FOR CONTINUATION OF FORCE MAIN 'D'
TYPE C M.H. STA. 13+30 INV. ELEV.=1123.50
TYPE 'A' DROP M.H. STA. 8+37
TYPE '3' C.O. STA. 1+60 INV. ELEV.-1105.50
BY-PASS EXIST. SEPTIC TANK & CONNECT NEW 6" S.P. TO EXIST. BUILDING DRAIN - PUMP OUT SEPTIC TANK CONTENTS & FILL W/ SAND.
REMOVE EXIST. PLYW'D M.H. COVER & PROVIDE C.I.M.H. RIM & COVER CAST IN 6" THICK CONC. SLAB OVER EXIST. M.H. REINFORCE CONC. SLAB AS SHOWN IN
NOTE:
For PROFILES see:
sht. 12 for Force Main B-1
sht. 15 for Lateral C-1
sht. 19 & 20 for Force Main 'D'
sht. 13 for Lateral 'A'
sht. 13 for Laterals A-1 thru A-3
sht. 14 for Laterals A-4 thru A-9
NOTE:
MAINTAIN 3'-0" O.C. HORIZONTAL SEPARATION BETWEEN LATERAL 'A' & FORCE MAIN 'D'
NO ATTEMPT IS MADE TO SHOW ALL EXISTING UTILITIES.
SUN LAKES
WASTEWATER COLLECTION and DISPOSAL FACILITIES
PARK LAKE
PLAN - F.M. B-1, F.M. D, LATERAL C-1, LATERALS A THRU A-9
WASHINGTON STATE
PARKS AND RECREATION COMMISSION
DRAWN BY H.L.R. & J.H.H.
SCALE 1" = 50'
DATE SEPT. 1975
DRAWING NO. 9 OF 33
3 | Replaced 4" C.S.3-4-48 | C.N.
2 | "AS BUILT" | JG
1 | DELETED FORCE MAIN B-1 | J.H.H. | JWD
NO. | REVISION | BY | DATE | APPD

S-900-84-9



PLAN

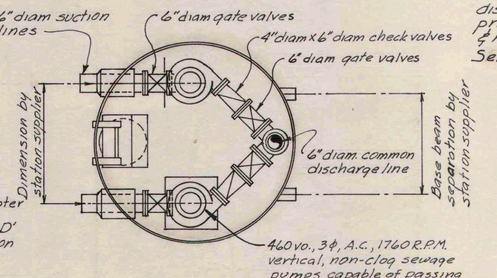


NOTES
Provide cast iron wall casting at all wet pit sewer line inlets. Adapt to P.V.C. sewer lines w/ flex. couplings.
The completed wet pit & pumping station shall be watertight.

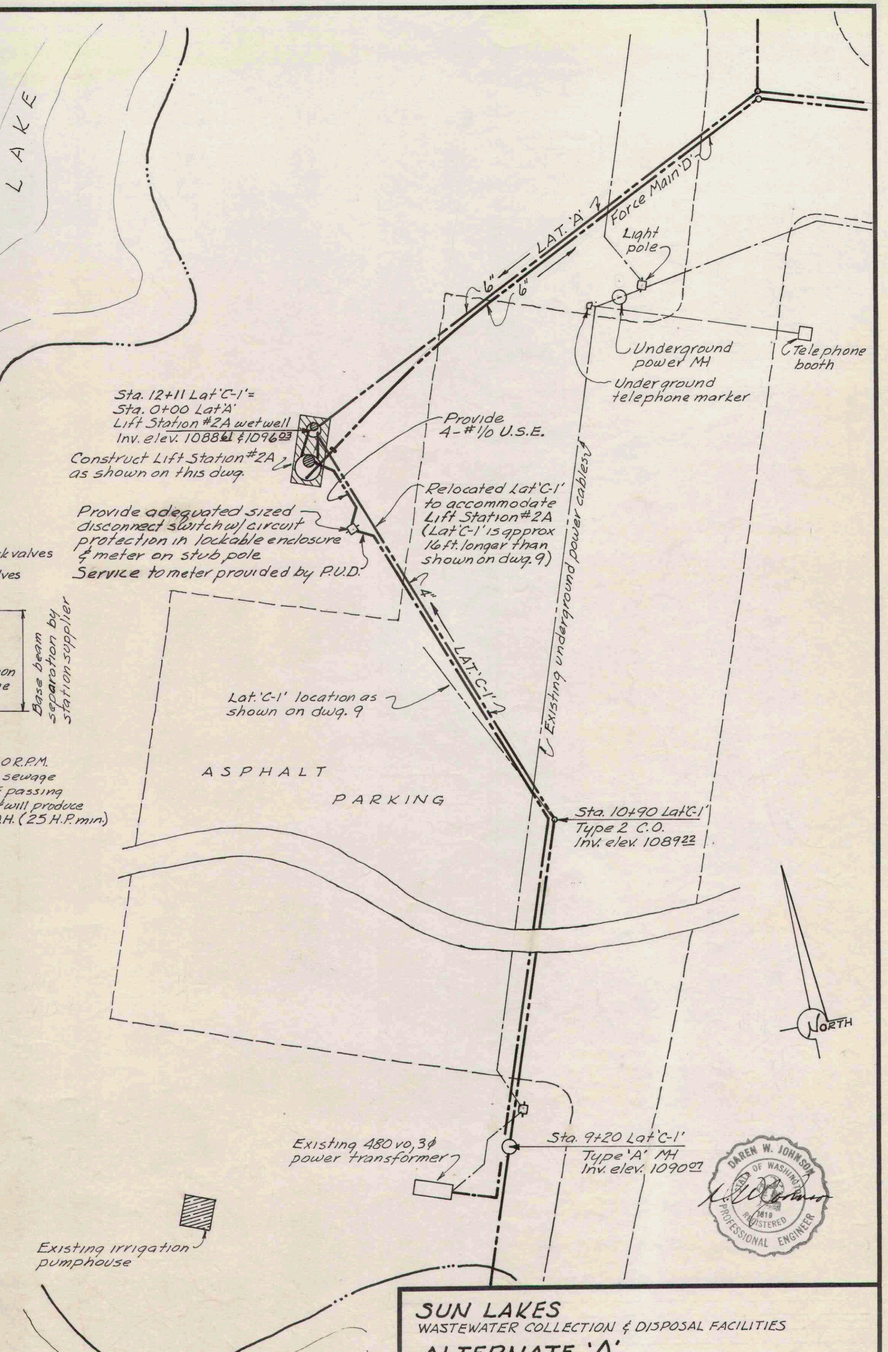
SECTION

ALTERNATE LIFT STATION #2A

Scale : 3/8" = 1'-0"



TYPICAL FLOOR PLAN
for 7 ft diam. steel pumping station



LIFT STATION #2A ~ SITE PLAN

Scale: 1" = 20 ft.

(Alternate Lift Station #2A to be bid as an alternate to Lift Station #2 shown on dwg # 4 & 9 on these plans)

REVISION	DECRIPTION	BY	DATE

SUN LAKES
WASTEWATER COLLECTION & DISPOSAL FACILITIES

ALTERNATE 'A'
LIFT STATION #2A ~ PLANS & DETAILS

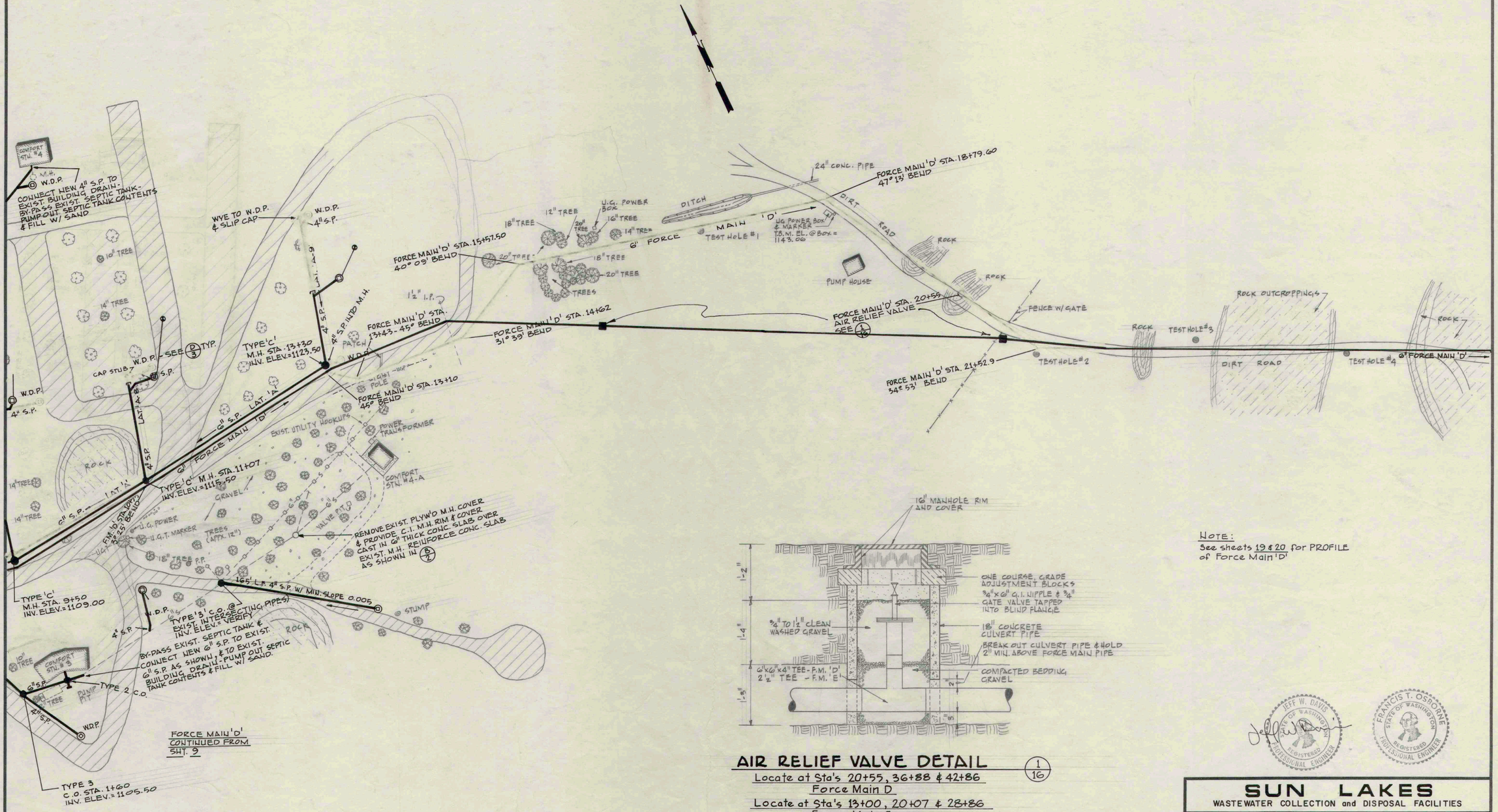
WASHINGTON STATE
PARKS AND RECREATION COMMISSION

DRAWN BY D. OLSON — SCALE AS NOTED

DATE MARCH 1976 — DRAWING NO. 33B

DAREN W. JOHNSON — STATE OF WASHINGTON — 13819 — REGISTERED PROFESSIONAL ENGINEER

5900-84-33B



AIR RELIEF VALVE DETAIL (1/16)

Locate at Sta's 20+55, 36+88 & 42+86
Force Main D
Locate at Sta's 13+00, 20+07 & 28+86
Force Main E
SCALE - 1" = 1'-0"

NOTE:
See sheets 19 & 20 for PROFILE of Force Main 'D'

JEFF W. DAVIS STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER

FRANCIS T. OSBORNE STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER

NO.	REVISION	BY	DATE	APP'D
1	"AS BUILT"	JG	9-23-75	

SUN LAKES
WASTEWATER COLLECTION and DISPOSAL FACILITIES

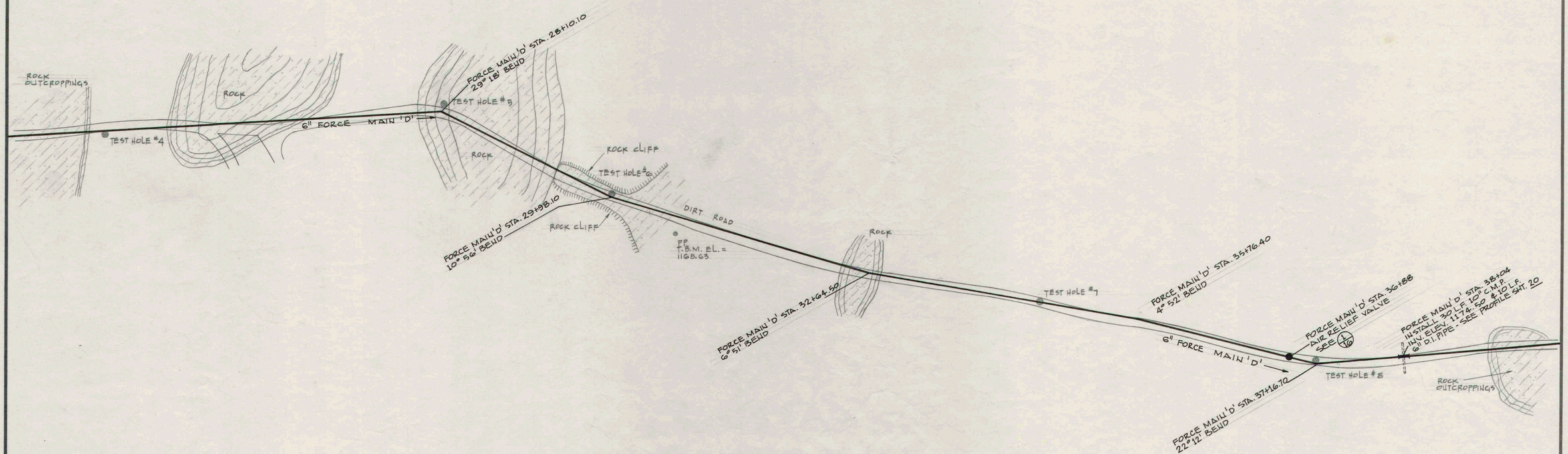
PARK LAKE
PLAN - 6" FORCE MAIN D

WASHINGTON STATE
PARKS AND RECREATION COMMISSION

DRAWN BY H.L.R. SCALE 1" = 50'

DATE SEPT. 1975 DRAWING NO. 16 OF 33

S-900-84-16



NOTE:
See sheets 19 & 20 for PROFILE of Force Main 'D'

JEFF W. DAVIS — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

FRANCIS T. OSBORNE — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

SUN LAKES
WASTEWATER COLLECTION and DISPOSAL FACILITIES

PARK LAKE
PLAN- 6" FORCE MAIN D

WASHINGTON STATE
PARKS AND RECREATION COMMISSION

DRAWN BY H.L.R. — SCALE 1" = 50'

DATE SEPT. 1975 — DRAWING NO. 17 OF 33

NO.	REVISION	BY	DATE	APP'D
1	"AS BUILT"	JG	9-21-77	

S-900-84-17

To Camp Delany
DIRT ROAD
FORCE MAIN 'D' STA. 36+88
AIR RELIEF VALVE
FORCE MAIN 'D' STA. 37+16.70
22° 12' BEND
6" FORCE MAIN 'D'
TEST HOLE #8
DIRT ROAD
ROCK OUTCROPPINGS
FORCE MAIN 'D' STA. 38+04
INSTALL 30 L.F. 10" C.M.P.
INV. ELEV. 1174.50 & 10 L.F.
6" D.I. PIPE - SEE PROFILE SHT. 20
TEST HOLE #9
FORCE MAIN 'D' STA. 42+48.50
38° 53' BEND
FORCE MAIN 'D' STA. 42+86
AIR RELIEF VALVE
P.P.
SAGE BRUSH
TEST HOLE #10
BLADE NEW ACCESS ROAD TO LAGOON SITE & APPLY 4" CRUSHED SURFACING BASE COURSE
TEST HOLE #11
FORCE MAIN 'D' STA.
45° BEND
FORCE MAIN 'E' STA. 32+35
39° 00' BEND
FORCE MAIN 'E' STA. 28+86
AIR RELIEF VALVE
2½" FORCE MAIN 'E'
ROCK OUTCROPPINGS
SEE SHEET 21 FOR ENLARGED LAGOON
CELL #2
CELL #3
Note:
See sheets 19 & 20 for PROFILE of Force Main 'D'

NO.	REVISION	BY	DATE	APPD
2	"AS BUILT"	JG	9-21-77	
1	DELETED CELL NO. 1	JHH	9.20.76	JWD

SUN LAKES
WASTEWATER COLLECTION and DISPOSAL FACILITIES

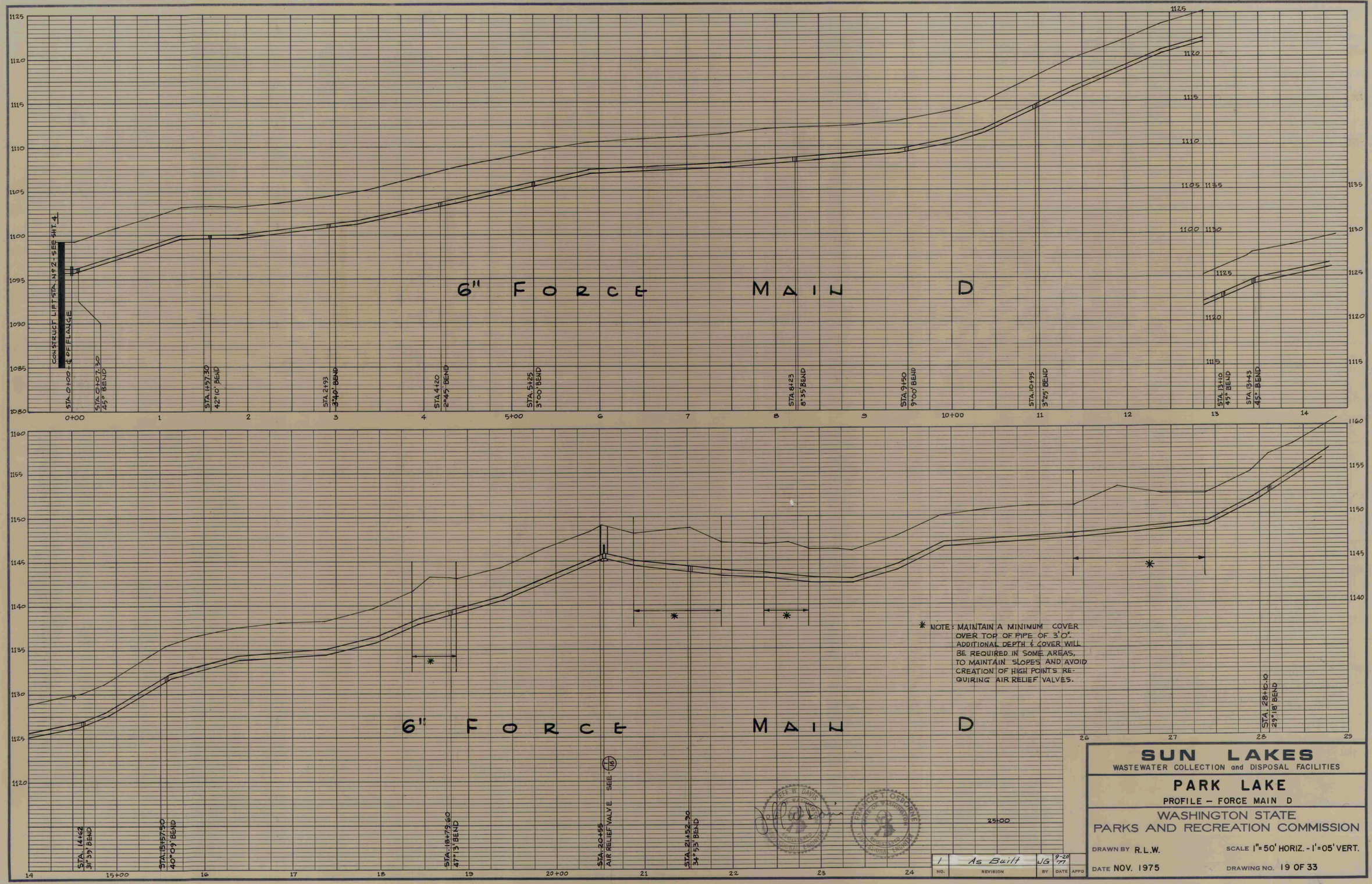
PARK LAKE
PLAN- 6" FORCE MAIN D

WASHINGTON STATE
PARKS AND RECREATION COMMISSION

DRAWN BY H.L.R. SCALE 1" = 50'

DATE SEPT. 1975 DRAWING NO. 18 OF 33

S-900-84-18



NO.	REVISION	BY	DATE	APPD
1	As Built	JG	9-20-77	

SUN LAKES

WASTEWATER COLLECTION and DISPOSAL FACILITIES

PARK LAKE

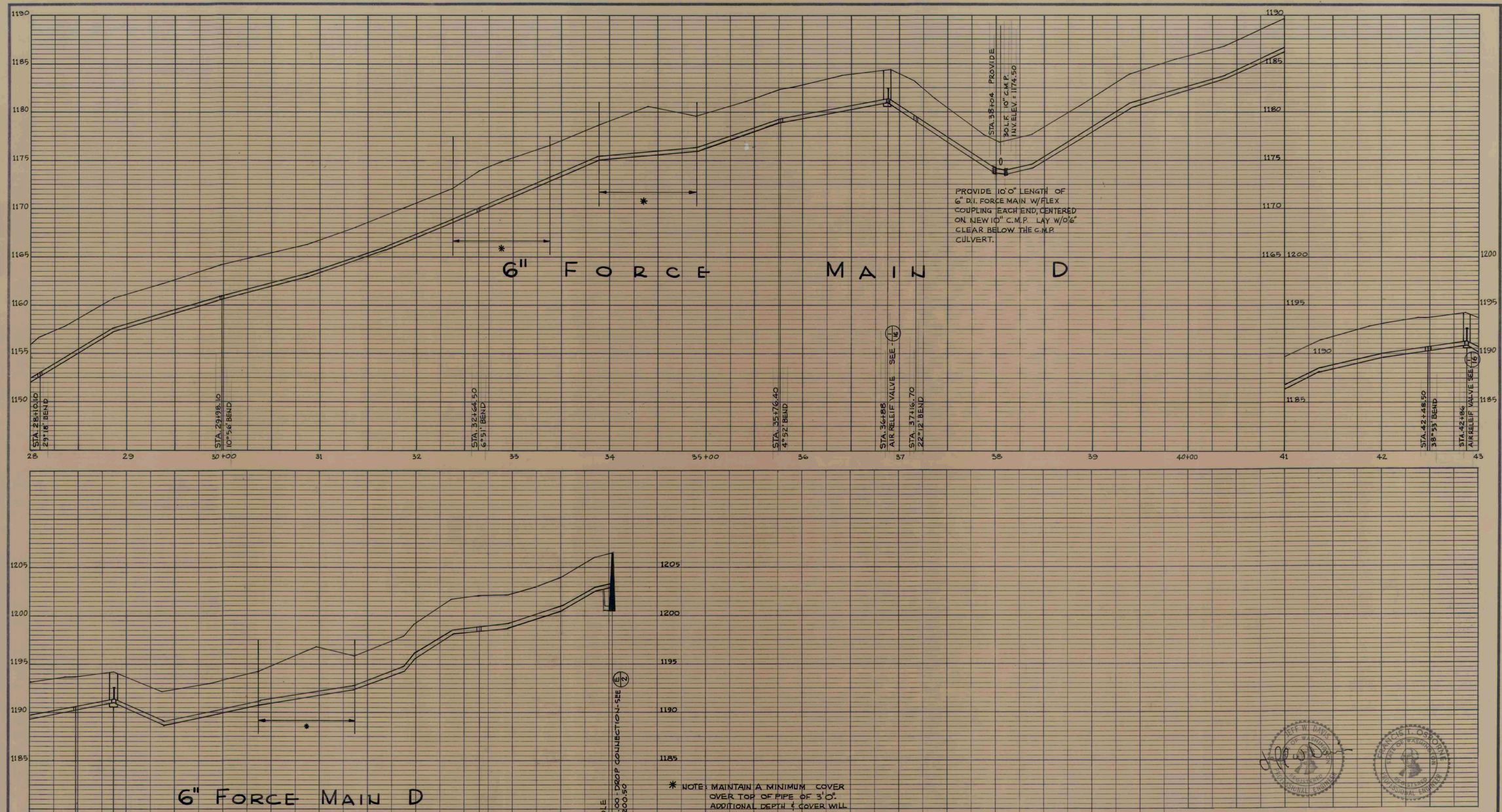
PROFILE – FORCE MAIN D

WASHINGTON STATE
PARKS AND RECREATION COMMISSION

DRAWN BY R.L.W. SCALE 1"=50' HORIZ. - 1'=05' VERT.

DATE NOV. 1975 DRAWING NO. 19 OF 33

S-900-84-19



* NOTE: MAINTAIN A MINIMUM COVER OVER TOP OF PIPE OF 3'0". ADDITIONAL DEPTH & COVER WILL BE REQUIRED IN SOME AREAS, TO MAINTAIN SLOPES AND AVOID CREATION OF HIGH POINTS REQUIRING AIR RELIEF VALVES.

NO.	REVISION	BY	DATE	APPD
1	As Built	JG	9-20-77	

SUN LAKES
WASTEWATER COLLECTION and DISPOSAL FACILITIES

PARK LAKE
PROFILE - FORCE MAIN D

WASHINGTON STATE
PARKS AND RECREATION COMMISSION

DRAWN BY H.L.R. SCALE 1"=50' HORIZ. - 1"=05' VERT.

DATE NOV. 1975 DRAWING NO. 20 OF 33

S-900-84-20

SUMMARY OF DESIGN FEATURES

NORMAL DEPTH = 4'-0"
FREEBOARD = 2'-6"

CELL No. 2 = 0.85 ACRES, 0.77 M.G. } SURFACE AREA & VOLUMES WHEN FULL
CELL No. 3 = 0.62 ACRES, 0.68 M.G. }

TOTAL 1.47 ACRES 1.65 M.G.

LEGEND

- 1190 — EXIST. CONTOUR
- ROADWAY W/ CRUSHED SURFACING
- PIPE & PLUG VALVE
- BURIED PIPE
- FENCE W/ LINE POSTS
- FENCE W/ G.I. POSTS & GATE
- FENCE W/ CORNER POSTS

TRAVERSE
DIKE CENTER LINE

No.	BACK SIGHT	POINT OCCUPIED	POINT SET	ANGLE	TANGENT DISTANCE
P.O.B.	F.M. 'D' 421485	F.M. 'D' 461667	Δ-A	L-173°-45'	101.5'
1	F.M. 'D' 461667	Δ-A	Δ-B	L-104°-25'	135.0'
2	Δ-A	Δ-B	Δ-C	R- 73°-45'	50.0'
3	Δ-B	Δ-C	Δ-D	L-142°-05'	240.0'
4	Δ-C	Δ-D	Δ-E	L- 56°-30'	331.0'
5	Δ-D	Δ-E	Δ-F	L-144°-40'	226.0'
6	Δ-E	Δ-F	Δ-G	L- 90°-45'	137.0'
7	Δ-F	Δ-G	Δ-H	L-130°-30'	135.0'
8	Δ-G	Δ-H	Δ-B	L-155°-05'	132.0'

NOTE:
ALL RADII ARE TO CENTERLINE OF TOP OF DIKES.

TYPE A MANHOLE
FORCE MAIN 'D' STA. 4+04.70
FORCE MAIN 'E' STA. 3+44.5
FORCE MAIN 'D' INV. EL. 6" P.V.C. = 1203.00 - DROP CONNECTION
FORCE MAIN 'E' INV. EL. 2½" P.V.C. = 1203.00 - DROP CONNECTION
CELL #1 INV. EL. 6" D.I. = 1200.50 SEE (E 2)
CELL #2 INV. EL. 6" D.I. = 1200.50

6" FORCE MAIN 'D'
2½" FORCE MAIN 'E'
6" D.I. W/ CAP - EXTEND OUT, 1'-0"
FORCE MAIN 'D' STA. 46+66.7 45° BEND
6" D.I. INLET PIPE
90' R.
50' R.
14' GATE SEE (1/22)
40' R.
RIP-RAP
TOP OF DIKE ELEV. 1197.50
30' R.
75' R.
6" PLUG VALVE
EMERGENCY OVERFLOW SET FOR MAX. W.S. ELEV. 1196.00 SEE (C/22)
CRUSHED SURFACING BASE COURSE
FENCE, SEE (1/22)
INFLUENT SPLASH PAD - SEE (1/30)
CELL #2
W.S. ELEV. - 1195.00
BOT. ELEV. - 1191.00
OVERFLOW STRUCTURE SEE (C/22)
TRANSFER PIPE & PADS - SEE (B/22)
CELL #3
W.S. ELEV. - 1195.00
BOT. ELEV. - 1191.00
45' R.
DRAIN DITCH SEE (A/22)
CORNER BRACE SEE (2/22)

BORROW AREA
5:1 MAX. SLOPES
1196.00 MIN. ELEV. AFTER CUT.
SLOPE TO PROVIDE DRAINAGE.

BORROW AREA SHALL BE SMOOTHED AFTER USE TO ENSURE DRAINAGE & TO PROVIDE SMOOTH CONTOURS & TO MINIMIZE VISUAL IMPACT.

NOTES:
1. CONTOURS INDICATE EXISTING GROUND ONLY.
2. FINISHED LAGOON CELL FLOORS TO BE FLAT
3. INCORPORATE ANY EXCESS EXCAVATED MATERIAL IN THE SOUTHERN EMBANKMENT BY USING IT TO DECREASE EXTERIOR SLOPES.
4. ALL LAGOON PIPING BEYOND MANHOLE TO BE 6" D.I.
5. CORNER BRACE REQ'D & ALL CHANGES IN DIRECTION OF FENCING. SEE (1/22)
6. SEE THE FOLLOWING SECTIONS FOR TYPICAL DIKE, SURFACING, & LINER DETAILS - (A/32) (2/32) (3/32) & (4/32)

2	"AS BUILT"	JG	9-21-77
1	DELETED CELL NO. 1 - REVISED TOP OF DIKE ELEV. 1197.50 RELOCATED ACCESS ROAD	JHH	9-20-76 JWD

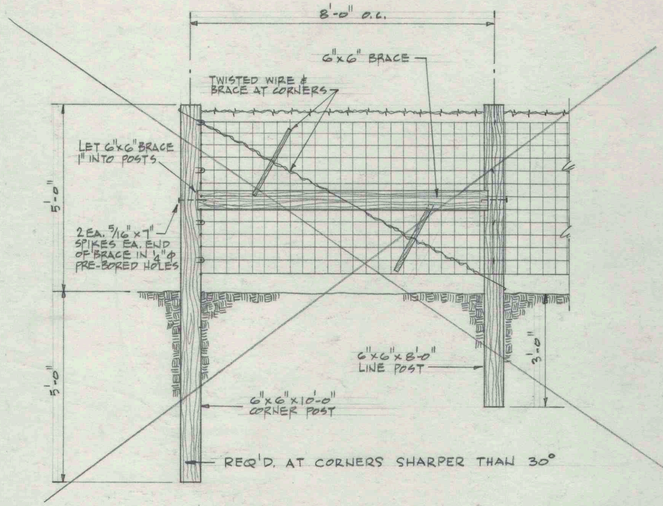
SUN LAKES
WASTEWATER COLLECTION and DISPOSAL FACILITIES

PARK LAKE
PLAN - LAGOON

WASHINGTON STATE
PARKS AND RECREATION COMMISSION

DRAWN BY H.W.M. SCALE 1" = 30'
DATE DEC. 1975 DRAWING NO. 21 OF 33

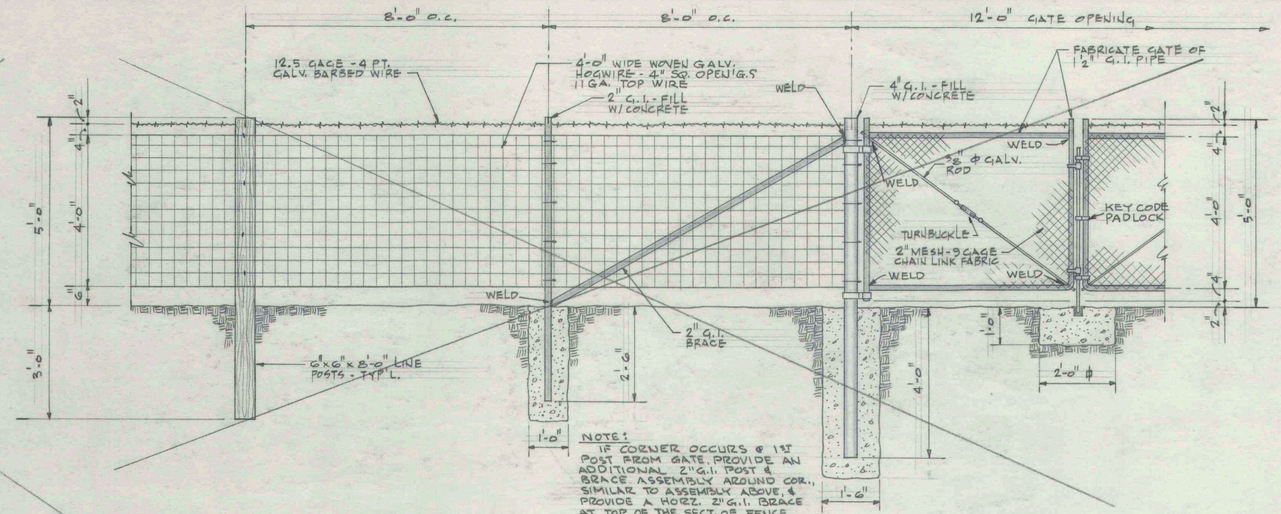
S-900-84-21



FENCE CORNER BRACE DETAIL

SCALE - 1/2" = 1'-0"

(2/22)



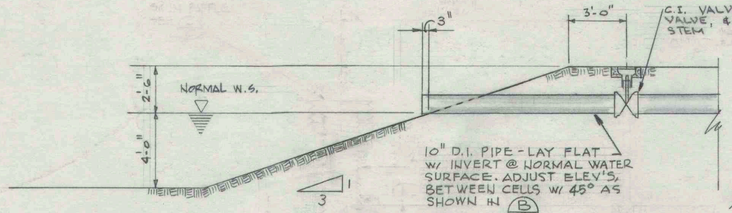
FENCE AND GATE DETAIL

SCALE - 1/2" = 1'-0"

(1/22)

1 GATE REQUIRED EACH LAGOON

CHAIN LINK FENCE INSTALLED



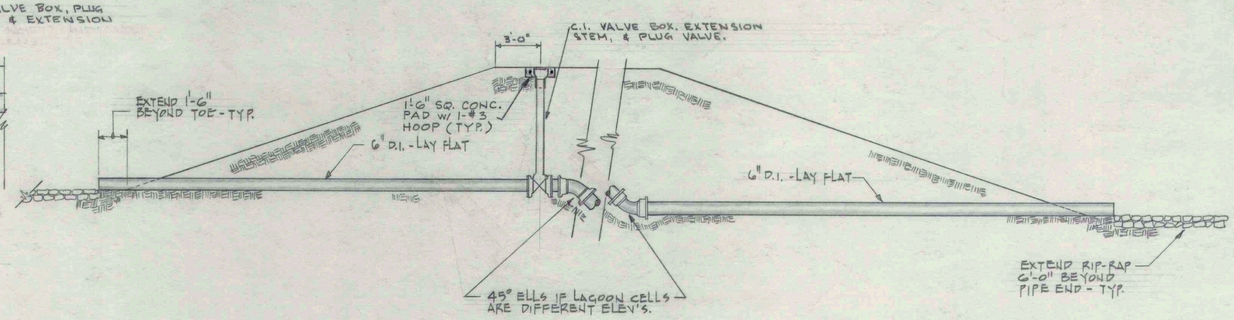
THIS DETAIL VOID

TWO REQ'D. { CELL 1 → CELL 2
CELL 1 → CELL 3

OVERFLOW DETAIL

REQUIRED AT PARK LAKE LAGOONS

SCALE - 1/4" = 1'-0"

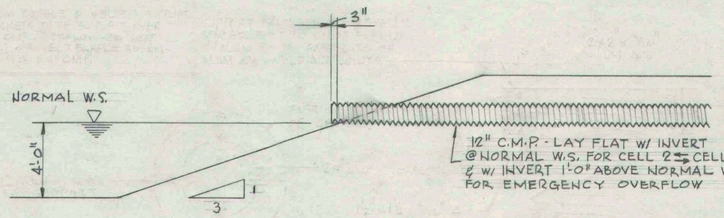


TRANSFER DETAIL

(B/22)

1 REQUIRED AT PARK LAKE LAGOONS

SCALE - 1/4" = 1'-0"

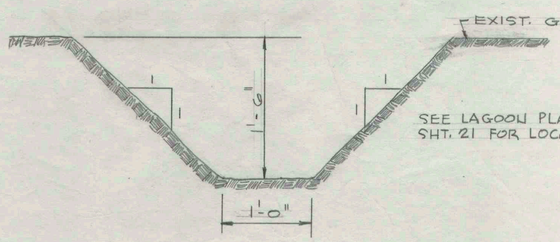


TWO REQ'D. { CELL 2 ↔ CELL 3
EMERGENCY OVERFLOW

OVERFLOW DETAIL

SCALE - 1/4" = 1'-0"

(C/22)



DRAINAGE DITCH @ LAGOON

NO SCALE

(A/22)

NO.	REVISION	BY	DATE	APPD
2	As Built	JG	9-20-77	
1	DELETED OVERFLOW & ADDED DRAINAGE DITCH	JHH	9-20-77	JWD

JEFF W. DAVIS — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

FRANCIS T. OSBORNE — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

SUN LAKES

WASTEWATER COLLECTION and DISPOSAL FACILITIES

PARK LAKE

LAGOON DETAILS

WASHINGTON STATE PARKS AND RECREATION COMMISSION

DRAWN BY H.L.R. SCALE AS NOTED

DATE SEPT. 1975 DRAWING NO. 22 OF 33

S-900-84-22

CELL #1 DIKE CENTER LINE TRAVERSE

NO.	BACK SIGHT	POINT OCCUPIED	POINT SET	DEFL. ANGLE	TANGENT DISTANCE
P.O.B.	B (4+62.17)	A (0+50.00)	C (0+69.00)	0°00'	19.00
1	B (4+62.17)	C (0+69.00)	D	90°00'L	174.00
2	C (0+69.00)	D	E	90°30'L	206.00
3	D	E	F	38°20'R	66.00
4	E	F	G	37°10'L	150.00
5	F	G	H	53°40'L	141.20
6	G	H	I (5+63.00)	36°20'L	98.00
7	H	I (5+63.00)	C (0+69.00)	90°00L	494.00

NOTE: ALL RADII SHOWN ARE TO DIKE CENTER LINE

T24 N, R 27E, W.M.
SECTION 12
GRANT COUNTY

SEWAGE DIVERSION FACILITY

EXISTING PVC FORCE MAINS

PROVIDE NEW INTERCEPT MANHOLE SEE DETAIL SHEET 9.

PROVIDE 8" PVC CONNECTING PIPE

INSTALLED NEW MODIFY EXISTING MANHOLE. PROVIDE SEWAGE DIVERTER. SEE DETAIL SHEET 9.

EXISTING 6" D.I. PIPE

PROVIDE TWO 6" PLUG VALVES WITH CMP MANHOLES. SEE SPECS. SEE DETAIL SHEET 8. . ONE IS IN NEW 6" D.I. PIPE LINE AND ONE IS IN EXISTING 6" D.I. PIPE.

PROVIDE NEW ENTRANCE ROADWAY - MATCH TO EXISTING AS DIRECTED

REINSTALL SALVAGED GATES SEE DETAILS SHEET 10.

DRAINAGE DITCH - 2:1 SLOPES, ±1' DEEP

PROVIDE 6" DUCTILE IRON PIPE INLET. FOLLOW EXISTING D.I. PIPE ROUTE UNTIL CLEAR OF ROCK (RE-EXCAVATE OLD TRENCH). MAKE GRADE AND DIRECTION CHANGES AS DIRECTED. SEE SPECS. SEE DETAIL SHEET 6.

PROVIDE CHAIN LINK FENCE SEE DETAILS SHEET 10.

CONSTRUCT SEWAGE LAGOON CELL #1. SEE SPECS. SEE DETAILS SHEETS 8 & 9.

EXTERIOR FILL SLOPES 5:1 MIN. COVER WITH 3" SALVAGED TOPSOIL. SEE SPECS.

Vents

TOP DIKE ELEV 1202.00

Varible Bends (Typ)

PIPE SUPPORTS (Typ)

PROVIDE INFLUENT SPLASH PAD SEE DETAIL SHEET 9

PROVIDE NEW CHAIN LINK FENCING - SEE DETAILS SHEET 10. USE SALVAGED FENCING WHERE TIED INTO EXISTING FENCE. CONTINUE UNTIL SALVAGED SUPPLY DEPLETED.

SALVAGE EXISTING FENCE MATERIALS LOCATED INSIDE NEW FENCING PERIMETER. REUSE AS PRACTICABLE - SEE SPECS

NEW FENCING TIE IN POINT

PROVIDE ACCESS ROADWAY RAMP AS DIRECTED BY THE ENGINEER SURFACING MATCHES DIKES

GRADE MATCH POINT TO EXISTING DIKE ROAD

ROADWAY ALIGNMENT MATCH

EXIST. SPLASH BASIN/SUMP

EXISTING EMERGENCY OVERFLOW - MAX W.S. ELEV 1193.00

EXISTING CHAIN LINK FENCING - TO REMAIN

PROVIDE CONTROLLED OVERFLOW & CROSSOVER STRUCTURES SEE DETAILS SHEET 8 2 LOCATIONS

PROVIDE CMP MANHOLES FOR 3 EXISTING 6" PLUG VALVES SEE SPECS. SEE DETAIL SHT 8.

3:1 SLOPE, COVER W/ 3" TOPSOIL - SEE DETAIL SHEET 8

INLET

CROSSOVER

EXISTING CELL #2
W.S. ELEV 1192.00
BOT. ELEV 1188.00

EXISTING CELL #3
W.S. ELEV 1192.00
BOT. ELEV 1188.00

CELL #1
W.S. ELEV 1200.00
BOT. ELEV 1196.00

PROVIDE OVERFLOW SUMP - APPROX 200 SQ FT × 18" DEEP. CONSTRUCT OF ARMOR ROCK. MATCH TOP TO EXIST. GRADE.

PROVIDE EMERGENCY OVERFLOW MAX W.S. ELEV. 1201.00 SEE DETAIL SHEET 8

DRESS CUT SLOPES 2:1 MIN PROVIDE 1' DEEP DITCH WHERE CUT SLOPE MEETS DIKE.

PROVIDE CHAIN LINK FENCE. SEE DETAILS SHEET 10. USE SALVAGED FENCING WHERE TIED INTO EXISTING FENCE. CONTINUE UNTIL SALVAGED SUPPLY DEPLETED.

SALVAGE EXISTING FENCE MATERIALS LOCATED INSIDE NEW FENCING PERIMETER. REUSE AS PRACTICABLE. SEE SPECS.

PROVIDE ACCESS ROADWAY RAMP AS DIRECTED BY THE ENGINEER. SURFACING MATCHES DIKES.

GRADE MATCH POINT TO EXISTING DIKE ROAD

ROADWAY ALIGNMENT MATCH

NEW FENCING TIE-IN POINT

EXISTING FENCING - TO REMAIN

TOP DIKE ELEV 1195.00

TOP DIKE ELEV 1195.00

TOP DIKE ELEV 1202.00

SUMMARY OF DESIGN FEATURES

NORMAL DEPTH = 4'-0"
FREEBOARD = 2'-6"

CELL #1 =	1.65 ACRES	1.96 M.G.	SURFACE AREA & VOLUMES WHEN FULL
CELL #2 =	0.85 ACRES	0.97 M.G.	
CELL #3 =	0.62 ACRES	0.68 M.G.	
TOTAL =	3.12 ACRES	3.61 M.G.	

SCALE: 0 25 50 75

NOTE: FINISHED LAGOON CELL FLOOR TO BE FLAT
TH - INDICATES TEST HOLE

FOR OFFICE USE ONLY, REFERENCE:
S 900-84-18
S 900-84-21

REVISION	DESCRIPTION	BY	DATE
1	As built	CLN	3-1-85

SUN LAKES STATE PARK
RENOVATE SEWER SYSTEM
MAIN SEWAGE LAGOON - CELL #1 ADDITION SITE PLAN

WASHINGTON STATE PARKS AND RECREATION COMMISSION

DRAWN BY: J. GIUSTINO DATE: JAN 26, 1984
REGION CHECK BY: H.D CREGER DATE: JAN 27, 1984
HEADQUARTERS CHECK BY: KJR DATE: Feb. 21, 1984
SCALE: As shown DRAWING NO. 7 OF 12

S 900-89-7

SUN LAKES STATE PARK
SEWER LIFT STATION REPLACEMENT

The following list of major items of construction has been included for Bidder's convenience in preparing a bid proposal. Exclusion of items from this summary does not indicate exclusion from project. For lump sum items, the bidder is cautioned that the drawings are the only source for measurement of project quantities, and drawings have been detailed for this purpose. In preparing a bid proposal, Bidder should note apparent discrepancies between the list below and the drawings and consult with Engineer for verification.

BASE BID ITEMS

BID ITEM	DESCRIPTION	ESTIMATED QUANTITY	PAYMENT
1.	**TRENCH EXCAVATION SAFETY PROVISIONS**	**L.S.**	**PER LUMP SUM**

See instructions on Bid Proposal Form.
See Division 314100 Shoring, and excavation limits shown on the plans.
Bid item to includes both wetwell and pipeline shoring.

2. MOBILIZATION/DEMOBILIZATION **L.S.** **PER LUMP SUM**

This item shall consist of preparatory work and operations including, but not limited to those necessary for the movement of equipment, supplies and incidentals to the project site; and bonding, insurance, etc.

A. Payment shall be based on a percentage of actual construction completed at time of payment estimate.

B. Bonding/insurance and equipment hauling costs will be paid for up front upon receipt of cost verification.

3. DEWATERING **L.S.** **PER LUMP SUM**

All work required for the preparatory work, operation, and restoration of the dewatering system including, but not limited to:

A. Dewatering plan

B. Dewatering pumps and necessary machinery, appurtenances and equipment

C. Drill and construct temporary dewatering wells

D. Power system to run pumps

E. Sediment settling method

F. Removal of wells

G. Site Restoration

BID ITEM	DESCRIPTION	ESTIMATED QUANTITY	PAYMENT
4.	**LIFT STATION REPLACEMENT**	**L.S.**	**PER LUMP SUM**

All work required for construction of the facility and restoration of the site; including but not limited to:

A. Preparation
   a. Construction fencing
   b. Surveying and staking
   c. TESC facilities

B. Earthwork
   a. Excavation and backfill including haul and disposal
   b. Import aggregates and fill
   c. Final surface restoration

C. Structures, installed and complete.
   a. Wetwell and meter vault
   b. Concrete slabs and supports
   c. Coatings
   d. Hatches
   e. Ladder

D. Piping systems, installed and complete.
   a. Force main within structures and buried systems
   b. Connections to existing gravity and force main piping
      i. Temporary pumping and hauling of wetwell contents from draining forcemain to make connection and preventing an overflow of the existing wetwell while the lift staiton is off during the connection.
   c. Flow meter
   d. Isolation and check valves
   e. Gauges
   f. Drains
   g. Pipe supports
   h. Coatings
   i. Pressure testing

E. Pump systems and related equipment, installed and complete.
   a. Pumps and motors
   b. Pump removal rails
   c. Power cables and removal cables
   d. Testing and startup

F. Electrical and control systems, installed and complete.
   a. Pump control panel and disconnect switch
   b. Wetwell disconnect junction box
   c. Conduit and wiring
   d. Underground trenching

BID ITEM	DESCRIPTION	ESTIMATED QUANTITY	PAYMENT

e. Transfer switch
f. Floats and level transmitter
g. Connection to existing power supply
h. Permits
i. Testing, startup and training

G. Existing lift station conversion
   a. Mechanical and electrical removal
   b. Cleaning and concrete filling of wetwell and pumping station
   c. Pumping station and concrete pad demolition
   d. Haul and disposal of mechanical and electrical

H. Surface Restoration
   a. Fencing
   b. Gravel
   c. Sod

I. Other miscellaneous items of construction

J. Cleanup

5. TEMPORARY EXISTING GENERATOR CONNECTION L.S. PER LUMP SUM

This bid item shall include all work required to connect and utilize the existing generator to the new lift station if the engine geneator is not going to be completed on-time when the lift station is ready to be tested and commissioned. Work to include but not limited to:

A. Any additional mobilzation/demobilization due to delayed propane generator delivery

B. All materials and labor required for connecting existing generator conductors and conduits to the new “ATS”

C. Removal of all temporary conductors and conduits connected to existing generator

6. GENERATOR REPLACEMENT L.S. PER LUMP SUM

Complete in place, including all materials, equipment and labor to provide a propane generator.

A. Slab and fence modifications

B. Generator, propane tank, conduit, wiring, and propane piping

C. Startup and testing

D. Other miscellaneous items of construction

E. Cleanup

END OF SECTION

SUN LAKES STATE PARK
SEWER LIFT STATION REPLACEMENT

BIDS DUE:
1:00PM, THURSDAY,
OCTOBER 31, 2024

BID DELIVERY LOCATION:

DELIVER BIDS ELECTRONICALLY TO BIDBOX@PARKS.WA.GOV

Subject line to read: "EW-C6702 [YOUR COMPANY NAME]."

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

BIDS SUBMITTED IN COMPLIANCE WITH THE CONTRACT DOCUMENTS

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

TOTAL BASE BID

(NOT INCLUDING SALES TAX)

⇩ PRICE WRITTEN-OUT COMPLETELY IN WORDS ⇩	⇩ PRICE IN NUMBERS ONLY ⇩
_____ (U.S.) DOLLARS	$_____

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

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

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

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

BASE BID ITEMS

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

ITEM NO.	DESCRIPTION	EST QTY	UNIT PRICE	TOTAL AMOUNT
1.	Trench Excavation Safety Provisions	LS.		
2.	Mobilization/Demobilization	LS.		
3.	Dewatering	LS.		
4.	Lift Station Replacement	LS.		
5.	Temporary Existing Generator Connection	LS.		
6.	Generator Replacement	LS.		
ITEM TOTAL MUST AGREE WITH PAGE 1 BID AMOUNT ➔				$

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

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

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

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

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

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

It is agreed that liquidated damages, in the amount of **$700.00**, shall be levied for each and every calendar day by which the completion of the work is delayed beyond the time fixed for completion or extension of the contract.

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

Signature of Authorized Official

SUN LAKES STATE PARK
SEWER LIFT STATION REPLACEMENT

SUBCONTRACTORS UTILIZATION LIST
(If Applicable)

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

SUBCONTRACTOR LISTING – RCW 39.30.060

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

A. Submission Deadline: The completed and signed Subcontractors List must be submitted with bid.

B. List Subcontractors: The Bidder shall indicate on the Subcontractors List the names of the subcontractors with whom the Bidder, if awarded the contract, will directly subcontract for performance of the work of heating, ventilation, and air conditioning, plumbing as described in Chapter 18.106 RCW, electrical as described in Chapter 19.28 RCW, structural steel installation, and rebar installation.

C. List Bidder if Bidder Performing Work: If the Bidder will self-perform the work in any of the five areas required, the Bidder shall name itself for the work on the Subcontractors List.

D. Name Only One Firm for Each Category of Work: The Bidder shall not list more than one firm (subcontractor or Bidder) for each category of work identified, unless subcontractors vary with bid Alternatives or Additives, in which case the Bidder must indicate which firm will be used for which Alternate or Additive.

E. Substitution of Subcontractors: Substitution of any listed subcontractor may only be according to the procedure and parameters set forth in RCW 39.30.060.

F. Factors Relating to Non-Responsiveness: **Failure of the Bidder to submit the names of such subcontractors or to name itself to perform such work or the naming of two or more firms (subcontractors or Bidder) to perform the same work shall render the Bidder's bid nonresponsive and, therefore, VOID**.

G. The Subcontractor Utilization List is intended to discourage bid shopping, not to verify subcontractor qualifications. The Agency does not use the Subcontractor Utilization List as a tool to disqualify or qualify bidders.

H. Applicable to Direct Subcontractors: The requirement of this section to name the Bidders' proposed heating, ventilation and air conditioning, plumbing, electrical, structural steel installation, and rebar installation subcontractors applies only to proposed heating, ventilation and air conditioning, plumbing, electrical, structural steel installation, and rebar installation subcontractors who will contract directly with the Bidder.

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

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

Bidder may attach a separate sheet for additional alternate bid subcontractors

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

Category of Work	**Bidder MUST check one box for each Category of Work.** If subcontracting the work, bidder must name the subcontractor.
Structural Steel Installation	☐ Name of Subcontractor: _____ ☐ Bidder will self-perform this work, or the project does not include this work.
Rebar Installation	☐ Name of Subcontractor: _____ ☐ Bidder will self-perform this work, or the project does not include this work.

Bidder may attach a separate sheet for additional alternate bid subcontractors

Signature of Authorized Official

GENERAL CONDITIONS FOR CONSTRUCTION AT WASHINGTON STATE PARKS

PART 1 - GENERAL PROVISIONS

1.01 DEFINITIONS

A. "Application for Payment" means a written request submitted by Contractor to A/E for payment of Work completed in accordance with the Contract Documents and approved Schedule of Values, supported by such substantiating data as Owner or A/E may require.

B. “Architect,” “Engineer,” or “A/E" shall mean that person designated by the State Parks and Recreation Commission to be in charge of the work covered by this contract.

C. "Change Order" means a written instrument signed by Owner and Contractor stating their agreement upon all of the following: (1) a change in the Work; (2) the amount of the adjustment in the Contract Sum, if any, and (3) the extent of the adjustment in the Contract Time, if any.

D. "Claim" means Contractor's exclusive remedy for resolving disputes with Owner regarding the terms of a Change Order or a request for equitable adjustment, as more fully set forth in part 8.

E. “Contract Award Amount” is the sum of the Base Bid and any accepted Alternates.

F. "Contract Documents" means the Advertisement for Bids, Instructions for Bidders, completed Form of Proposal, General Conditions, Modifications to the General Conditions, Supplemental Conditions, Public Works Contract, other Special Forms, Drawings and Specifications, and all addenda and modifications thereof.

G. "Contract Sum" is the total amount payable by Owner to Contractor for performance of the Work in accordance with the Contract Documents, including all taxes imposed by law and properly chargeable to the Work, except Washington State sales tax.

H. "Contract Time" is the number of calendar days allotted in the Contract Documents for achieving Substantial Completion of the Work.

I. "Contractor" means the person or entity who has agreed with Owner to perform the Work in accordance with the Contract Documents.

J. "Drawings" are the graphic and pictorial portions of the Contract Documents showing the design, location, and dimensions of the Work, and may include plans, elevations, sections, details, schedules, and diagrams.

K. "Final Acceptance" means the written acceptance issued to Contractor by Owner after Contractor has completed the requirements of the Contract Documents, as more fully set forth in Section 6.09 B.

L. "Final Completion" means that the Work is fully and finally completed in accordance with the Contract Documents, as more fully set forth in Section 6.09 A.

M. "Force Majeure" means those acts entitling Contractor to request an equitable adjustment in the Contract Time, as more fully set forth in paragraph 3.05 A.

N. "Notice" means a written notice which has been delivered in person to the individual or a member of the firm or entity or to an officer of the corporation for which it was intended or, if delivered or sent by registered or certified mail, to the last business address known to the party giving notice.

O. "Notice to Proceed" means a notice from Owner to Contractor that defines the date on which the Contract Time begins to run.

P. "Owner" shall mean the Washington State Parks and Recreation Commission and its authorized representative with the authority to enter into, administer and/or terminate contracts and make related determinations and findings.

Q. "Person" means a corporation, partnership, business association of any kind, trust, company, or individual.

R. "Prior Occupancy" means Owner's use of all or parts of the Project before Substantial Completion, as more fully set forth in Section 6.08 A.

S. "Progress Schedule" means a schedule of the Work, in a form satisfactory to Owner, as further set forth in section 3.02.

T. "Project" means the total construction of which the Work performed in accordance with the Contract Documents may be the whole or a part and which may include construction by Owner or by separate contractors.

U. "Project Manual" means the volume usually assembled for the Work which may include the bidding requirements, sample forms, and other Contract Documents.

V. "Project Record" means the separate set of Drawings and Specifications as further set forth in paragraph 4.02A.

W. "Schedule of Values" means a written breakdown allocating the total Contract Sum to each principle category of Work, in such detail as requested by Owner.

X. "Specifications" are that portion of the Contract Documents consisting of the written requirements for materials, equipment, construction systems, standards, and workmanship for the Work, and performance of related services.

Y. "Subcontract" means a contract entered into by Subcontractor for the purpose of obtaining supplies, materials, equipment, or services of any kind for or in connection with the Work.

Z. "Subcontractor" means any person, other than Contractor, who agrees to furnish or furnishes any supplies, materials, equipment, or services of any kind in connection with the Work.

AA. "Substantial Completion" means that stage in the progress of the Work where Owner has full and unrestricted use and benefit of the facilities for the purposes intended, as more fully set forth in section 6.07.

AB. "Work" means the construction and services required by the Contract Documents, and includes, but is not limited to, labor, materials, supplies, equipment, services, permits, and the manufacture and fabrication of components, performed, furnished, or provided in accordance with the Contract Documents.

1.02 ORDER OF PRECEDENCE

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

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

1.03 EXECUTION AND INTENT

Contractor makes the following representations to Owner:

1. The Contract Sum is reasonable compensation for the Work and the Contract Time is adequate for the performance of the Work, as represented by the Contract Documents;

2. Contractor has carefully reviewed the Contract Documents, visited and examined the Project site, become familiar with the local conditions in which the Work is to be performed, and satisfied itself as to the nature, location, character, quality and quantity of the Work, the labor, materials, equipment, goods, supplies, work, services and other items to be furnished and all other requirements of the Contract Documents, as well as the surface and subsurface conditions and other matters that may be encountered at the Project site or affect performance of the Work or the cost or difficulty thereof;

3. Contractor is financially solvent, able to pay its debts as they mature, and possesses sufficient working capital to complete the Work and perform Contractor's obligations required by the Contract Documents; and

4. Contractor is able to furnish the plant, tools, materials, supplies, equipment and labor required to complete the Work and perform the obligations required by the Contract Documents and has sufficient experience and competence to do so.

PART 2 - INSURANCE AND BONDS

2.01 CONTRACTOR'S LIABILITY INSURANCE

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

A. Contractor shall maintain the following insurance coverage during the Work and for one year after Final Acceptance. Contractor shall also maintain the following insurance coverage during the performance of any corrective Work required by section 5.16.

    1. Commercial General Liability (CGL) on an Occurrence Form:

        a. Completed operations/products liability;

        b. Explosion, collapse, and underground; and

        c. Employer's liability coverage.

    2. Automobile liability

B. Contractor shall comply with the Washington State Industrial Insurance Act and, if applicable, the Federal Longshoremen's and Harbor Workers' Act and the Jones Act.

C. All insurance coverages shall protect against claims for damages for personal and bodily injury or death, as well as claims for property damage, which may arise from operations in connection with the Work whether such operations are by Contractor or any Subcontractor.

D. All insurance coverages shall be endorsed to include Owner as an additional named insured for Work performed in accordance with the Contract Documents, and all insurance certificates shall evidence the Owner as an additional insured.

2.02 COVERAGE LIMITS INSURANCE COVERAGE CERTIFICATES

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

B. Required Coverages
1. For a contract less than $100,000.00, the coverage required is:
   a. Public Liability Insurance – The Contractor shall at all times during the term of this contract, at its cost and expense, carry and maintain general public liability insurance, including contractual liability, against claims for bodily injury, personal injury, death or property damage occurring or arising out of services provided under this contract. This insurance shall cover claims caused by any act, omission, or negligence of the Contractor or its officers, agents, representatives, assigns or servants. The limits of liability insurance, which may be increased as deemed necessary by the contracting parties, shall be:

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

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

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

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

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

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

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

5. For Contracts for Hazardous Substance Removal (Asbestos Abatement, PCB Abatement, etc.)
   a. In addition to providing insurance coverage for the project as outlined above, the Contractor shall provide Environmental Impairment Liability insurance for the hazardous substance removal as follows:

EACH OCCURRENCE	AGGREGATE
$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 one year following the project’s “final completion” through official completion of the project, plus one year following.

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

2.03 INSURANCE COVERAGE CERTIFICATES

A. Prior to commencement of the Work, Contractor shall furnish to Owner a completed certificate of insurance coverage.

B. All insurance certificates shall name Owner's Project number and Project title.

C. All insurance certificates shall specifically require 45 (forty-five) days prior notice to Owner of cancellation or any material change, except 30 (thirty) days for surplus line insurance.

2.04 PAYMENT AND PERFORMANCE BONDS

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

2.05 ALTERNATIVE SURETY

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

A. Owner has a reasonable objection to the surety; or

B. Any surety fails to furnish reports on its financial condition if requested by Owner.

2.06 BUILDER'S RISK

A. Contractor shall purchase and maintain property insurance in the amount of the Contract Sum including all Change Orders for the Work on a replacement cost basis until Substantial Completion. The insurance shall cover the interest of Owner, Contractor, and any Subcontractors, as their interests may appear. For projects not involving New Building Construction, ‘Installation Floater’ is an acceptable substitute for the Builder’s Risk Insurance.

B. Contractor property insurance shall be placed on an "all risk" basis and insure against the perils of fire and extended coverage and physical loss or damage including theft, vandalism, malicious mischief, collapse, false work, temporary buildings, debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for A/E's services and expenses required as a result of an insured loss.

C. Owner and Contractor waive all subrogation rights against each other, any Subcontractors, A/E, A/E's subconsultants, separate contractors described in section 5.20, if any, and any of their subcontractors, for damages caused by fire or other perils to the extent covered by property insurance obtained pursuant to this section or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by Owner as fiduciary. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

PART 3 - TIME AND SCHEDULE

3.01 PROGRESS AND COMPLETION

A. Contractor shall diligently prosecute the Work, with adequate forces, achieve Substantial Completion within the Contract Time, and achieve Final Completion within 30 (thirty) calendar days thereafter, unless otherwise noted in Division 1 of the specifications.

B. The Contractor shall notify the Engineer at least two (2) weekdays in advance if work is to be performed on a Saturday, Sunday, or legal holiday. No excavation work will be allowed on Saturdays, Sundays, or legal holidays unless specifically authorized by the Engineer.

3.02 CONSTRUCTION SCHEDULE

A. Unless otherwise provided in Division 1, Contractor shall, within 14 (fourteen) calendar days after issuance of the Notice to Proceed, submit a preliminary Progress Schedule. The Progress Schedule shall show the sequence in which Contractor proposes to perform the Work, and the dates on which Contractor plans to start and finish major portions of the Work, including dates for shop drawings and other submittals, and for acquiring materials and equipment.

B. The Progress Schedule shall be in the form of a Critical Path Method (CPM) logic network or, with the approval of the Owner, a bar chart schedule may be submitted. The scheduling of construction is the responsibility of the Contractor and is included in the contract to assure adequate planning and execution of the work. The schedule will be used to evaluate progress of the work for payment based on the Schedule of Values. The schedule shall show the Contractor's planned order and interdependence of activities, and sequence of work. As a minimum the schedule shall include:

1. Date of Notice to Proceed;
2. Activities (resources, durations, individual responsible for activity, early starts, late starts, early finishes, late finishes, etc.);
3. Utility Shutdowns;
4. Interrelationships and dependence of activities;
5. Planned vs. actual status for each activity;
6. Substantial completion;
7. Punch list;
8. Final inspection;
9. Final completion, and
10. Float time

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

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

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

C. Owner shall return comments on the preliminary Progress Schedule to Contractor within 14 (fourteen) days of receipt. Review by Owner of Contractor's schedule does not constitute an approval or acceptance of Contractor's construction means, methods, or sequencing, or its ability to complete the Work within the Contract Time. Contractor shall revise and resubmit its schedule, as necessary. Owner may withhold a portion of progress payments until a Progress Schedule has been submitted which meets the requirements of this section.

D. Contractor shall utilize and comply with the Progress Schedule. On a monthly basis, or as otherwise directed by Owner, Contractor shall submit an updated Progress Schedule at its own expense to Owner indicating actual progress. If, in the opinion of Owner, Contractor is not in conformance with the Progress Schedule for reasons other than acts of Force Majeure as identified in section 3.05, Contractor shall take

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

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

3.03 OWNER'S RIGHT TO SUSPEND THE WORK FOR CONVENIENCE

A. Owner may, at its sole discretion, order Contractor, in writing, to suspend all or any part of the Work for up to 90 (ninety) days, or for such longer period as mutually agreed.

B. Upon receipt of a written notice suspending the Work, Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of cost of performance directly attributable to such suspension. Within a period up to 90 (ninety) days after the notice is delivered to Contractor, or within any extension of that period to which the parties shall have agreed, Owner shall either:

1. Cancel the written notice suspending the Work; or

2. Terminate the Work covered by the notice as provided in the termination provisions as more fully set forth in Part 9.

C. If a written notice suspending the Work is cancelled or the period of the notice or any extension thereof expires, Contractor shall resume Work.

D. Contractor shall be entitled to an equitable adjustment in the Contract Time, or Contract Sum, or both, for increases in the time or cost of performance directly attributable to such suspension, provided Contractor complies with all requirements set forth in Part 7.

3.04 OWNER'S RIGHT TO STOP THE WORK FOR CAUSE

A. If Contractor fails or refuses to perform its obligations in accordance with the Contract Documents, Owner may order Contractor, in writing, to stop the Work, or any portion thereof, until satisfactory corrective action has been taken.

B. Contractor shall not be entitled to an equitable adjustment in the Contract Time or Contract Sum for any increased cost or time of performance attributable to Contractor's failure or refusal to perform or from any reasonable remedial action taken by Owner based upon such failure.

3.05 DELAY

A. Any delay in or failure of performance by Owner or Contractor, other than the payment of money, shall not constitute a default hereunder if and to the extent the cause for such delay or failure of performance was unforeseeable and beyond the control of the party ("Force Majeure"). Acts of Force Majeure include, but are not limited to:

1. Acts of God or the public enemy;

2. Acts or omissions of any government entity;

3. Fire or other casualty for which Contractor is not responsible;

4. Quarantine or epidemic;

5. Strike or defensive lockout;

6. Unusually severe weather, in excess of weather conditions which could not have been reasonably anticipated; and

7. Unusual delay in receipt of supplies or products which were ordered and expedited and for which no substitute reasonably acceptable to Owner was available.

B. Contractor shall be entitled to an equitable adjustment in the Contract Time for changes in the time of performance directly attributable to an act of Force Majeure, provided it makes a request for equitable adjustment according to section 7.03. Contractor shall not be entitled to an adjustment in the Contract Sum resulting from an act of Force Majeure.

C. Contractor shall be entitled to an equitable adjustment in Contract Time, and may be entitled to an equitable adjustment in Contract Sum, if the cost or time of Contractor's performance is changed due to the fault or negligence of Owner, provided the Contractor makes a request according to sections 7.02 and 7.03.

D. Contractor shall not be entitled to an adjustment in Contract Time or in the Contract Sum for any delay or failure of performance to the extent such delay or failure was caused by Contractor or anyone for whose acts Contractor is responsible.

E. To the extent any delay or failure of performance was concurrently caused by the Owner and Contractor, Contractor shall be entitled to an adjustment in the Contract Time for that portion of the delay or failure of performance that was concurrently caused, provided it makes a request for equitable adjustment according to section 7.03, but shall not be entitled to an adjustment in Contract Sum.

F. Contractor shall make all reasonable efforts to prevent and mitigate the effects of any delay, whether occasioned by an act of Force Majeure or otherwise.

G. The Owner has acquired ownership and/or easement of lands for the construction, as indicated on the drawings, without cost to the Contractor. The Contractor understands and agrees that, should it appear at any time that the Owner has not acquired title to all of the right-of-ways and lands necessary for the performance of the work under the provisions of this contract, and that if any delay in the performance of said work occasioned by the failure of the Owner, its officers, or employees to acquire a title of any of said lands or right-of-way, such failure shall extend the contract completion date the number of days equal to the period of such delay. The Contractor waives any and all claims for damages against the Owner which the Contractor may sustain by reason of this delay in the work.

3.06 NOTICE TO OWNER OF LABOR DISPUTES

A. If Contractor has knowledge that any actual or potential labor dispute is delaying or threatens to delay timely performance in accordance with the Contract Documents, Contractor shall immediately give notice, including all relevant information, to Owner.

B. Contractor agrees to insert a provision in its Subcontracts and to require insertion in all sub-subcontracts, that in the event timely performance of any such contract is delayed or threatened by delay by any actual or potential labor dispute, the Subcontractor or Sub-subcontractor shall immediately notify the next higher tier Subcontractor or Contractor, as the case may be, of all relevant information concerning the dispute.

3.07 DAMAGES FOR FAILURE TO ACHIEVE TIMELY COMPLETION

A. Liquidated Damages

1. Timely performance and completion of the Work is essential to Owner and time limits stated in the Contract Documents are of the essence. Owner will incur serious and substantial damages if Substantial Completion of the Work does not occur within the Contract Time. However, it would be difficult if not impossible to determine the exact amount of such damages. Consequently, provisions for liquidated damages are included in the Contract Documents.

2. The liquidated damage amounts set forth in the Contract Documents will be assessed not as a penalty, but as liquidated damages for breach of the Contract Documents. This amount is fixed and agreed upon by and between the Contractor and Owner because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the Owner would in such event sustain. This amount shall be construed as the actual amount of damages sustained by the Owner, and may be retained by the Owner and deducted from periodic payments to the Contractor.

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

B. Actual Damages

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

PART 4 - SPECIFICATIONS, DRAWINGS, AND OTHER DOCUMENTS

4.01 DISCREPANCIES AND CONTRACT DOCUMENT REVIEW

A. The intent of the Specifications and Drawings is to describe a complete Project to be constructed in accordance with the Contract Documents. Contractor shall furnish all labor, materials, equipment, tools, transportation, permits, and supplies, and perform the Work required in accordance with the Drawings, Specifications, and other provisions of the Contract Documents.

B. The Contract Documents are complementary. What is required by one part of the Contract Documents shall be binding as if required by all. Anything mentioned in the Specifications and not shown on the Drawings, or shown on the Drawings and not mentioned in the Specifications, shall be of like effect as if shown or mentioned in both.

C. Contractor shall carefully study and compare the Contract Documents with each other and with information furnished by Owner. If, during the performance of the Work, Contractor finds a conflict, error, inconsistency, or omission in the Contract Documents, it shall promptly and before proceeding with the Work affected thereby, report such conflict, error, inconsistency, or omission to A/E in writing.

D. Contractor shall do no Work without applicable Drawings, Specifications, or written modifications, or Shop Drawings where required, unless instructed to do so in writing by Owner. If Contractor performs any construction activity, and it knows or reasonably should have known that any of the Contract Documents contain a conflict, error, inconsistency, or omission, Contractor shall be responsible for the performance and shall bear the cost for its correction.

E. Contractor shall provide any work or materials the provision of which is clearly implied and is within the scope of the Contract Documents even if the Contract Documents do not mention them specifically.

F. Questions regarding interpretation of the requirements of the Contract Documents shall be referred to the A/E.

4.02 PROJECT RECORD

A. Contractor shall legibly mark in ink on a separate set of the Drawings and Specifications all actual construction, including depths of foundations, horizontal and vertical locations of internal and underground utilities and appurtenances referenced to permanent visible and accessible surface improvements, field changes of dimensions and details, actual suppliers, manufacturers and trade names, models of installed equipment, and Change Order Proposals (COP). This separate set of Drawings and Specifications shall be the "Project Record."

B. The Project Record shall be maintained on the project site throughout the construction and shall be clearly labeled "PROJECT RECORD". The Project Record shall be updated at least weekly noting all changes and shall be available to Owner at all times.

C. Contractor shall submit the completed and finalized Project Record to A/E prior to Final Acceptance.

4.03 SUBMITTALS

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

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

B. Contractor shall coordinate all Shop Drawings, and review them for accuracy, completeness, and compliance with the Contract Documents and shall indicate its approval thereon as evidence of such coordination and review. Where required by law, Shop Drawings shall be stamped by an appropriate professional licensed by the state of Washington. Shop Drawings submitted to A/E without evidence of Contractor's approval shall be returned for resubmission. Contractor shall review, approve, and submit Shop Drawings with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of Owner or separate contractors. Contractor's submittal schedule shall allow a reasonable time for A/E review. A/E will review, approve, or take other appropriate action on the Shop Drawings. Contractor shall perform no portion of the Work requiring submittal and review of Shop Drawings until the respective submittal has been reviewed and the A/E has approved or taken other appropriate action. Owner and A/E shall respond to Shop Drawing submittals with reasonable promptness. Any Work by Contractor shall be in accordance with reviewed Shop Drawings. Submittals made by Contractor which are not required by the Contract Documents may be returned without action.

C. Approval, or other appropriate action with regard to Submittals, by Owner or A/E shall not relieve Contractor of responsibility for any errors or omissions in such Submittals, nor from responsibility for compliance with the requirements of the Contract Documents. Unless specified in the Contract Documents, review by Owner or A/E shall not constitute an approval of the safety precautions employed by Contractor during construction, or constitute an approval of Contractor's means or methods of construction. If Contractor fails to obtain approval before installation and the item or work is subsequently rejected, Contractor shall be responsible for all costs of correction.

D. If Shop Drawings show variations from the requirements of the Contract Documents, Contractor shall describe such variations in writing, separate from the Shop Drawings, at the time it submits the Shop Drawings containing such variations. If A/E approves any such variation, an appropriate Change Order will be issued. If the variation is minor and does not involve an adjustment in the Contract Sum or Contract Time, a Change Order need not be issued; however, the modification shall be recorded upon the Project Record.

E. Unless otherwise provided in Division I, Contractor shall submit to A/E for approval 5 (five) copies of all Submittals. Unless otherwise indicated, 3 (three) sets of all Submittals shall be retained by A/E and 2 (two) sets shall be returned to Contractor.

4.04 ORGANIZATION OF SPECIFICATIONS

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

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

A. The Drawings, Specifications, and other documents prepared by A/E are instruments of A/E's service through which the Work to be executed by Contractor is described. Neither Contractor nor any Subcontractor shall own or claim a copyright in the Drawings, Specifications, and other documents prepared by A/E, and A/E shall be deemed the author of them and will, along with any rights of Owner, retain all common law, statutory, and other reserved rights, in addition to the copyright. All copies of these documents, except Contractor's set, shall be returned or suitably accounted for to A/E, on request, upon completion of the Work.

B. The Drawings, Specifications, and other documents prepared by the A/E, and copies thereof furnished to Contractor, are for use solely with respect to this Project. They are not to be used by Contractor or any

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

C. Contractor and all Subcontractors grant a non-exclusive license to Owner, without additional cost or royalty, to use for its own purposes (including reproduction) all Shop Drawings, together with the information and diagrams contained therein, prepared by Contractor or any Subcontractor. In providing Shop Drawings, Contractor and all Subcontractors warrant that they have authority to grant to Owner a license to use the Shop Drawings, and that such license is not in violation of any copyright or other intellectual property right. Contractor agrees to defend and indemnify Owner pursuant to the indemnity provisions in section 5.03 and 5.23 from any violations of copyright or other intellectual property rights arising out of Owner's use of the Shop Drawings hereunder, or to secure for Owner, at Contractor's own cost, licenses in conformity with this section.

D. The Shop Drawings and other submittals prepared by Contractor, Subcontractors of any tier, or its or their equipment or material suppliers, and copies thereof furnished to Contractor, are for use solely with respect to this Project. They are not to be used by Contractor or any Subcontractor of any tier, or material or equipment supplier, on other projects or for additions to this Project outside the scope of the Work without the specific written consent of Owner. The Contractor, Subcontractors of any tier, and material or equipment suppliers are granted a limited license to use and reproduce applicable portions of the Shop Drawings and other submittals appropriate to and for use in the execution of their Work under the Contract Documents.

PART 5 - PERFORMANCE

5.01 CONTRACTOR CONTROL AND SUPERVISION

A. Contractor shall supervise and direct the Work, using its best skill and attention, and shall perform the Work in a skillful manner. Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences, and procedures and for coordinating all portions of the Work, unless the Contract Documents give other specific instructions concerning these matters. Contractor shall disclose its means and methods of construction when requested by Owner.

B. Performance of the Work shall be directly supervised by a competent superintendent who is satisfactory to Owner and has authority to act for Contractor. The superintendent shall not be changed without the prior written consent of Owner. Owner may require Contractor to remove the superintendent from the Work or Project site, if Owner reasonably deems the superintendent incompetent, careless, or otherwise objectionable, provided Owner has first notified Contractor in writing and allowed a reasonable period for transition. The superintendent shall be on-site at all times while the Work is being performed, unless approved in writing by owner, in advance.

C. Contractor shall be responsible to Owner for acts and omissions of Contractor, Subcontractors, and their employees and agents.

D. Contractor shall enforce strict discipline and good order among Contractor's employees and other persons performing the Work. Contractor shall not permit employment of persons not skilled in tasks assigned to them. Contractor's employees shall at all times conduct business in a manner which assures fair, equal, and nondiscriminatory treatment of all persons. Owner may, by written notice, request Contractor to remove from the Work or Project site any employee Owner reasonably deems incompetent, careless, or otherwise objectionable.

E. Contractor shall, at all times, keep on the Project site a copy of the Drawings, Specifications, addenda, reviewed Shop Drawings, permits, and permit drawings.

F. Contractor shall ensure that its owner(s) and employees, and those of its Subcontractors, comply with the Ethics in Public Service Act RCW 42.52, which, among other things, prohibits state employees from having an economic interest in any public works contract that was made by, or supervised by, that employee. Contractor shall remove, at its sole cost and expense, any of its, or its Subcontractors', employees, if they are in violation of this act.

5.02 PERMITS, FEES, AND NOTICES

A. The Owner has obtained a Shorelines Substantial Development Permit and/or other environmental permits as required for this project. The permits with provisions which affect the construction methods or schedule have been incorporated into these specifications. The Contractor shall abide by all restrictions noted in these permits as the construction is in progress.

B. All other permits or fees required by local, state or federal governmental agencies necessary for the construction of this project shall be obtained and paid by the Contractor. Only the cost for the building permit will be reimbursed by the Owner.

C. The Contractor shall conform to all local, State and National Codes in all phases of this project. Where conflicts arise between plans, specifications and code requirements, the code shall prevail unless the plans or specifications are more stringent.

5.03 PATENTS AND ROYALTIES

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

5.04 PREVAILING WAGES

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

B. Before payment is made by the Owner to the Contractor for any work performed by the Contractor and subcontractors whose work is included in the application for payment, the Contractor shall submit, or shall have previously submitted to the Owner for the Project, a Statement of Intent to Pay Prevailing Wages, approved by the Department of Labor and Industries, certifying the rate of hourly wage paid and to be paid each classification of laborers, workers, or mechanics employed upon the Work by Contractor and Subcontractors. Such rates of hourly wage shall not be less than the prevailing wage rate.

C. Prior to release of retainage, the Contractor shall submit to the Owner an Affidavit of Wages Paid, approved by the Department of Labor and Industries, for the Contractor and every subcontractor, of any tier, that performed work on the Project.

D. Disputes regarding prevailing wage rates shall be referred for arbitration to the Director of the Department of Labor and Industries. The arbitration decision shall be final and conclusive and binding on all parties involved in the dispute as provided for by RCW 39.12.060.

E. Each Application for Payment submitted by Contractor shall state that prevailing wages have been paid in accordance with the 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 the Department of Labor and Industries where a complaint or inquiry concerning prevailing wages may be made.

F. In compliance with chapter 296-127 WAC, Contractor shall pay to the Department of Labor and Industries the currently established fee(s) for each statement of intent and/or affidavit of wages paid submitted to the Department of Labor and Industries for certification.

G. Copies of approved Intents to Pay Prevailing Wages for the Contractor and all subcontractors shall be submitted with the Contractor's first application for payment. As additional subcontractors perform work on

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

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

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

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

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

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

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

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

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

5.05 HOURS OF LABOR

A. Contractor shall comply with all applicable provisions of RCW 49.28 and they are incorporated herein by reference. Pursuant to that statute, no laborer, worker, or mechanic employed by Contractor, any Subcontractor, or any other person performing or contracting to do the whole or any part of the Work, shall be permitted or required to work more than eight (8) hours in any one calendar day, provided, that in cases of extraordinary emergency, such as danger to life or property, the hours of work may be extended, but in such cases the rate of pay for time employed in excess of eight (8) hours of each calendar day shall be not less than one and one-half times (x1.5) the rate allowed for this same amount of time during eight (8) hours service.

B. Notwithstanding the preceding paragraph, RCW 49.28 permits a contractor or subcontractor in any public works contract subject to those provisions, to enter into an agreement with its employees in which the employees work up to ten (10) hours in a calendar day. No such agreement may provide that the employees work ten-hour days for more than four (4) calendar days a week. Any such agreement is subject to approval by the employees. The overtime provisions of RCW 49.28 shall not apply to the hours, up to forty (40) hours per week, worked pursuant to any such agreement.

5.06 NONDISCRIMINATION

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

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

B. During performance of the Work:

1. Contractor shall not discriminate against any employee or applicant for employment because of race, creed, color, national origin, sex, age, marital status, or the presence of any physical, sensory, or mental disability, Vietnam era veteran status, or disabled veteran status, nor commit any other unfair practices as defined in RCW 49.60.

2. Contractor shall, in all solicitations or advertisements for employees placed by or for it, state that the contractor is an “equal opportunity employer”.

3. Contractor shall send to each labor union, employment agency, or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice advising the labor union, employment agency, or workers' representative of Contractor's obligations according to the Contract Documents and RCW 49.60.

4. Contractor shall permit access to its books, records, and accounts, and to its premises by Owner, and by the Washington State Human Rights Commission, for the purpose of investigation to ascertain compliance with this section of the Contract Documents.

5. Contractor shall include the provisions of this section in every Subcontract.

C. Nondiscrimination Requirement. During the term of this Contract, Contractor, including any subcontractor, shall not discriminate on the bases enumerated at RCW 49.60.530(3). In addition, Contractor, including any subcontractor, shall give written notice of this nondiscrimination requirement to any labor organizations with which Contractor, or subcontractor, has a collective bargaining or other agreement.

D. Obligation to Cooperate. Contractor, including any subcontractor, shall cooperate and comply with any Washington state agency investigation regarding any allegation that Contractor, including any subcontractor, has engaged in discrimination prohibited by this Contract pursuant to RCW 49.60.530(3).

E. Default. Notwithstanding any provision to the contrary, Owner may suspend Contractor, including any subcontractor, upon notice of a failure to participate and cooperate with any state agency investigation into alleged discrimination prohibited by this Contract, pursuant to RCW 49.60.530(3). Any such suspension will remain in place until Owner receives notification that Contractor, including any subcontractor, is cooperating with the investigating state agency. In the event Contractor, or subcontractor, is determined to have engaged in discrimination identified at RCW 49.60.530(3), Owner may terminate this Contract in whole or in part, and Contractor, subcontractor, or both, may be referred for debarment as provided in RCW 39.26.200. Contractor or subcontractor may be given a reasonable time in which to cure this noncompliance, including implementing conditions consistent with any court-ordered injunctive relief or settlement agreement.

F. Remedies for Breach. Notwithstanding any provision to the contrary, in the event of Contract termination or suspension for engaging in discrimination, Contractor, subcontractor, or both, shall be liable for contract damages as authorized by law including, but not limited to, any cost difference between the original contract and the replacement or cover contract and all administrative costs directly related to the replacement contract, which damages are distinct from any penalties imposed under Chapter 49.60, RCW. Owner shall have the right to deduct from any monies due to Contractor or subcontractor, or that thereafter become due, an amount for damages Contractor or subcontractor will owe Owner for default under this provision.

5.07 SAFETY PRECAUTIONS

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

1. Follow Washington Industrial Safety and Health Act (WISHA) regional directives and provide a site-specific safety program that will require an accident prevention and hazard analysis plan for the contractor and each subcontractor on the work site. The Contractor shall submit a site-specific safety plan to the Owner's representative prior to the initial scheduled construction meeting.

2. Provide adequate safety devices and measures including, but not limited to, the appropriate safety literature, notice, training, permits, placement and use of barricades, signs, signal lights, ladders, scaffolding, staging, runways, hoist, construction elevators, shoring, temporary lighting, grounded outlets, wiring, hazardous materials, vehicles, construction processes, and equipment required by Chapter 19.27 RCW, State Building Code (International Building, Electrical, Mechanical, Fire, and Uniform Plumbing Codes); Chapter 212-12 WAC, Fire Marshal Standards, Chapter 49.17 RCW, WISHA; Chapter 296-155 WAC, Safety Standards for Construction Work; Chapter 296-65 WAC; WISHA Asbestos Standard; WAC 296-62-071, Respirator Standard; WAC 296-62, General Occupation Health Standards, WAC 296-24, General Safety and Health Standards, WAC 296-24, General Safety and Health Standards, Chapter 49.70 RCW, and Right to Know Act.

3. Comply with the State Environmental Policy Act (SEPA), Clean Air Act, Shoreline Management Act, and other applicable federal, state, and local statutes and regulations dealing with the prevention of environmental pollution and the preservation of public natural resources.

4. Post all permits, notices, and/or approvals in a conspicuous location at the construction site.

5. Provide any additional measures that the Owner determines to be reasonable and necessary for ensuring a safe environment in areas open to the public. Nothing in this part shall be construed as imposing a duty upon the Owner or A/E to prescribe safety conditions relating to employees, public, or agents of the Contractors.

6. The Contractor shall make available a list of hazardous products being used on the project, and their respective Material Safety Data Sheets (MSDS) to the Engineer. This information will be required at the pre-construction conference.

B. In carrying out its responsibilities according to the Contract Documents, Contractor shall protect the lives and health of employees performing the Work and other persons who may be affected by the Work; prevent damage to materials, supplies, and equipment whether on site or stored off-site; and prevent damage to other property at the site or adjacent thereto. Contractor shall comply with all applicable laws, ordinances, rules, regulations, and orders of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury, or loss; shall erect and maintain all necessary safeguards for such safety and protection; and shall notify owners of adjacent property and utilities when prosecution of the Work may affect them.

C. Contractor shall maintain an accurate record of exposure data on all incidents relating to the Work resulting in death, traumatic injury, occupational disease, or damage to property, materials, supplies, or equipment. Contractor shall immediately report any such incident to Owner. Owner shall, at all times, have a right of access to all records of exposure.

D. Contractor shall provide all persons working on the Project site with information and training on hazardous chemicals in their work at the time of their initial assignment, and whenever a new hazard is introduced into their work area.

1. Information. At a minimum, Contractor shall inform persons working on the Project site of:

   a. The requirements of chapter 296-62 WAC, General Occupational Health Standards;
   b. Any operations in their work area where hazardous chemicals are present; and
   c. The location and availability of written hazard communication programs, including the required list(s) of hazardous chemicals and material safety data sheets required by chapter 296-62 WAC.

2. Training. At a minimum, Contractor shall provide training for persons working on the Project site which includes:

a. Methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area (such as monitoring conducted by the employer, continuous monitoring devices, visual appearance or odor of hazardous chemicals when being released, etc.);
b. The physical and health hazards of the chemicals in the work area;
c. The measures such persons can take to protect themselves from these hazards, including specific procedures Contractor, or its Subcontractors, or others have implemented to protect those on the Project site from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures, and personal protective equipment to be used; and
d. The details of the hazard communications program developed by Contractor, or its Subcontractors, including an explanation of the labeling system and the material safety data sheet, and how employees can obtain and use the appropriate hazard information.

E. Contractor's responsibility for hazardous, toxic, or harmful substances shall include the following duties:

1. Contractor shall not keep, use, dispose, transport, generate, or sell on or about the Project site, any substances now or hereafter designated as, or which are subject to regulation as, hazardous, toxic, dangerous, or harmful by any federal, state or local law, regulation, statute or ordinance (hereinafter collectively referred to as "hazardous substances", in violation of any such law, regulation, statute, or ordinance, but in no case shall any such hazardous substance be stored more than 90 days on the Project site.

2. Contractor shall promptly notify Owner of all spills or releases of any hazardous substances which are otherwise required to be reported to any regulatory agency and pay the cost of cleanup. Contractor shall promptly notify Owner of all failures to comply with any federal, state, or local law, regulation, or ordinance; all inspections of the Project site by any regulatory entity concerning the same; all regulatory orders or fines; and all responses or interim cleanup actions taken by or proposed to be taken by any government entity or private party on the Project site.

F. All Work shall be performed with due regard for the safety of the public. Contractor shall perform the Work so as to cause a minimum of interruption of vehicular traffic or inconvenience to pedestrians. All arrangements to care for such traffic shall be Contractor's responsibilities. All expenses involved in the maintenance of traffic by way of detours shall be borne by Contractor.

G. In an emergency affecting the safety of life or the Work or of adjoining property, Contractor is permitted to act, at its discretion, to prevent such threatened loss or injury, and Contractor shall so act if so authorized or instructed.

H. Nothing provided in this section shall be construed as imposing any duty upon Owner or A/E with regard to, or as constituting any express or implied assumption of control or responsibility over, Project site safety, or over any other safety conditions relating to employees or agents of Contractor or any of its Subcontractors, or the public.

5.08 OPERATIONS, MATERIAL HANDLING, AND STORAGE AREAS

A. Contractor shall confine all operations, including storage of materials, to Owner-approved areas.

B. Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be provided by Contractor only with the consent of Owner and without expense to Owner. The temporary buildings and utilities shall remain the property of Contractor and shall be removed by Contractor at its expense upon completion of the Work.

C. Contractor shall use only established roadways or temporary roadways authorized by Owner. When materials are transported in prosecuting the Work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by federal, state, or local law or regulation.

D. Ownership and control of all materials or facility components to be demolished or removed from the Project site by Contractor shall immediately vest in Contractor upon severance of the component from the facility or severance of the material from the Project site. Contractor shall be responsible for compliance with all

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

E. Contractor shall be responsible for the proper care and protection of its materials and equipment delivered to the Project site. Materials and equipment may be stored on the premises subject to approval of Owner. When Contractor uses any portion of the Project site as a shop, Contractor shall be responsible for any repairs, patching, or cleaning arising from such use.

F. Contractor shall protect and be responsible for any damage or loss to the Work, or to the materials or equipment until the date of Substantial Completion, and shall repair or replace without cost to Owner any damage or loss that may occur, except damages or loss caused by the acts or omissions of Owner. Contractor shall also protect and be responsible for any damage or loss to the Work, or to the materials or equipment, after the date of Substantial Completion, and shall repair or replace without cost to Owner any such damage or loss that might occur, to the extent such damages or loss are caused by the acts or omissions of Contractor, or any Subcontractor.

G. Any removed item shall be salvaged without undue damage and stockpiled in a neat and orderly fashion in an area designated by the Engineer. All removed items shall remain the property of the Owner, unless, due to their condition, they are rejected by the Engineer. All materials of whatever nature that are rejected shall be properly disposed by the Contractor in compliance with all laws and regulations.

H. If designated campsites or emergency overflow areas are approved for use, the Contractor shall comply with all campground rules and regulations of the Washington State Parks and Recreation Commission and the park manager.

5.09 PRIOR NOTICE OF EXCAVATION

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

5.10 UNFORESEEN PHYSICAL CONDITIONS

A. If Contractor encounters conditions at the site which are subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Contract Documents, or unknown physical conditions of an unusual nature which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, then Contractor shall give written notice to Owner promptly and in no event later than 7 (seven) days after the first observance of the conditions. Conditions shall not be disturbed prior to such notice.

B. If such conditions differ materially and cause a change in Contractor's cost of, or time required for, performance of any part of the Work, the Contractor may be entitled to an equitable adjustment in the Contract Time or Contract Sum, or both, provided it makes a request therefore as provided in part 7.

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

A. Contractor shall protect from damage all existing structures, equipment, improvements, utilities, and vegetation: at or near the Project site; and on adjacent property of a third party, the locations of which are made known to or should be known by Contractor. Contractor shall repair any damage, including that to the property of a third party, resulting from failure to comply with the requirements of the Contract Documents or failure to exercise reasonable care in performing the Work. If Contractor fails or refuses to repair the damage promptly, Owner may have the necessary work performed and charge the cost to Contractor.

B. Contractor shall only remove trees when specifically authorized to do so, and shall protect vegetation that will remain in place.

C. In general, the locations of existing major utilities and equipment, whether above ground or underground, are indicated on the drawings. This information has been obtained from utility maps and verbal

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

D. Existing above ground and underground facilities and appurtenant structures, which includes but is not limited to, power transmission and distribution, telephone, alarm systems, sanitary sewers, gas services, water service and house or yard drains and fences, shall be located, protected, maintained, relocated, rerouted, removed and restored as may be necessary by the Contractor for completion of the work, but in a manner satisfactory to their respective owners and operators of the services and to the Engineer with the least possible interruption to existing services.

E. The Contractor shall be responsible for location and maintenance of existing utilities and improvements. Under no circumstances will errors or omissions in location of utilities or improvements, whether they be visible from the surface, buried, or otherwise obscured, be considered as a basis for a claim for additional compensation by the Contractor.

F. All utilities shall be protected and maintained in continuous operation except where special arrangements have been made with the appropriate utility owner. All damaged utilities shall be restored to original condition, subject to the approval of its owner and at the Contractor's own expense.

G. If requested, the Contractor shall provide record information about locations, depths, and dimensions of lines, appurtenances, and structures, and any other relevant information about electrical power, water, sewer, and other utilities.

H. The Contractor shall provide the Engineer with the data required to make a detailed set of record plans. This data will be obtained and recorded by the Contractor during construction on plans supplied by the Engineer. The Contractor shall ensure that the data is obtained. Typical information to be gathered includes the locations of:

1. Buried utilities
2. Junctions of sewer wyes
3. Junctions of electrical taps
4. Clean-outs
5. Deflection points of utilities
6. Valves

I. Procedure for obtaining this information will be developed by the Engineer working with the Contractor.

J. Contractor shall protect all existing facilities using whatever methods are necessary, subject to the Engineer's approval. Trees, shrubs, vegetation, or lawn shall not be damaged, scarred, or destroyed unless deemed necessary for work on this contract. All trees damaged during construction shall be immediately repaired using SEAL AND HEAL or other materials as directed by the Engineer. Any damage to the above-mentioned items shall be repaired at the Contractor's expense and to the Engineer's satisfaction.

K. In the event that archaeological resources are found or unearthed on public land during the performance of this contract, the Contractor shall be required to comply with RCW 27.44 and RCW 27.53 and the rules and regulations of the office of Archaeology and Historic Preservation, including compliance with all archaeological excavation permit requirements.

5.12 LAYOUT OF WORK

A. Contractor shall plan and lay out the Work in advance of operations so as to coordinate all work without delay or revision.

B. Contractor shall lay out the Work from Owner-established baselines and bench marks indicated on the Drawings, and shall be responsible for all field measurements in connection with the layout. Contractor shall furnish, at its own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the Work. Contractor shall be responsible for executing the Work to the lines

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

C. The indicated limits of work shall be the controlling factor in the Contractor's scope of operation and no payment shall be due for work done out of the limits. Damage to areas not in the Contractor's work area shall be repaired at the Contractor's expense. Questions of what constitutes the work area shall be determined by the Engineer. Only the best methods of construction will be allowed.

D. The Engineer may adjust or relocate any portion of the system to meet site requirements or to improve the system without additional compensation to the Contractor, provided such adjustments do not represent appreciable costs for additional labor and materials.

5.13 MATERIAL AND EQUIPMENT

A. All equipment, material, and articles incorporated into the Work shall be new and of the most suitable grade for the purpose intended, unless otherwise specifically provided in the Contract Documents. References in the Specifications to equipment, material, articles, or patented processes by trade name, make, or catalog number, shall be regarded as establishing a standard quality and shall not be construed as limiting competition. Contractor may, at its option, use any equipment, material, article, or process that, in the judgment of A/E, is equal to that named in the specifications, unless otherwise specifically provided in the Contract Documents.

B. Contractor shall do all cutting, fitting, or patching that may be required to make its several parts fit together properly, or receive or be received by work of others set forth in, or reasonably implied by, the Contract Documents. Contractor shall not endanger any work by cutting, excavating, or otherwise altering the Work and shall not cut or alter the work of any other contractor unless approved in advance by Owner.

C. Should any of the Work be found defective, or in any way not in accordance with the Contract Documents, this work, in whatever stage of completion, may be rejected by Owner.

D. The Contractor shall furnish proof of equality in all respects to the specified items when proposing alternate brands or materials. Any significant deviations from specifications, drawings, or equality must be noted by the Contractor when submitting alternate products or materials for approval. The Engineer shall be the sole judge of the equality and suitability of any products, materials, or components proposed by the Contractor as alternates to specified items. The Contractor shall bear all costs and make all secondary changes required to incorporate an approved substitute or alternate into the work. No offers for substitution will be acknowledged from suppliers, distributors, manufacturers, or subcontractors.

5.14 AVAILABILITY AND USE OF UTILITY SERVICES

A. Owner shall make all reasonable utilities available to Contractor from existing outlets and supplies, as specified in the Contract Documents. Unless otherwise provided in the Contract Documents, the utility service consumed shall be charged to or paid for by Contractor at prevailing rates charged to Owner or, where the utility is produced by Owner, at reasonable rates determined by Owner. Contractor will carefully conserve any utilities furnished.

B. Contractor shall, at its expense and in a skillful manner satisfactory to Owner, install and maintain all necessary temporary connections and distribution lines, together with appropriate protective devices, and all meters required to measure the amount of each utility used for the purpose of determining charges. Prior to the date of Final Acceptance, Contractor shall remove all temporary connections, distribution lines, meters, and associated equipment and materials.

5.15 TESTS AND INSPECTION

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

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

B. Owner may, at any reasonable time, conduct such inspections and tests as it deems necessary to ensure that the Work is in accordance with the Contract Documents. Owner shall promptly notify Contractor if an inspection or test reveals that the Work is not in accordance with the Contract Documents. Unless the subject items are expressly accepted by Owner, such Owner inspection and tests are for the sole benefit of Owner and do not:

1. Constitute or imply acceptance;
2. Relieve Contractor of responsibility for providing adequate quality control measures;
3. Relieve Contractor of responsibility for risk of loss or damage to the Work, materials, or equipment;
4. Relieve Contractor of its responsibility to comply with the requirements of the Contract Documents; or
5. Impair Owner's right to reject defective or nonconforming items, or to avail itself of any other remedy to which it may be entitled.

C. Neither observations by an inspector retained by Owner, the presence or absence of such inspector on the site, nor inspections, tests, or approvals by others, shall relieve Contractor from any requirement of the Contract Documents, nor is any such inspector authorized to change any term or condition of the Contract Documents.

D. Contractor shall promptly furnish, without additional charge, all facilities, labor, material and equipment reasonably needed for performing such safe and convenient inspections and tests as may be required by Owner. Owner may charge Contractor any additional cost of inspection or testing when Work is not ready at the time specified by Contractor for inspection or testing, or when prior rejection makes re-inspection or retest necessary. Owner shall perform its inspections and tests in a manner that will cause no undue delay in the Work.

E. The Owner shall have the right to appoint an Inspector who will have the authority to reject materials or workmanship which does not fulfill the requirements of these specifications. In case of dispute, the Contractor may appeal to the Engineer whose decision shall be final. The acceptance of any material by the Inspector shall not hinder its subsequent rejection if found defective. Rejected materials and workmanship shall be replaced promptly or be made good by the Contractor without additional cost to the Owner.

F. Contractor shall deliver one (1) key for each type of lock installed on the project to the Engineer to enable the Engineer to enter all facilities under construction for the purpose of inspection. This includes temporary as well as State Parks' key-coded locks. All keys for key-coded locks shall be delivered to the Engineer as they are made available to the Contractor. These coded keys shall then be signed out to the Contractor on an accountable basis for security purposes.

5.16 CORRECTION OF NONCONFORMING WORK

A. If a portion of the Work is covered contrary to the requirements in the Contract Documents, it must, if required in writing by Owner, be uncovered for Owner's observation and be replaced at the Contractor's expense and without change in the Contract Time.

B. If, at any time prior to Final Completion, Owner desires to examine the Work, or any portion of it, which has been covered, Owner may request to see such Work and it shall be uncovered by Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an adjustment in the Contract Sum for the costs of uncovering and replacement, and, if completion of the Work is thereby delayed, an adjustment in the Contract Time, provided it makes a request therefore as provided in part 7. If such Work is not in accordance with the Contract Documents, the Contractor shall pay the costs of examination and reconstruction.

C. Contractor shall promptly correct Work found by Owner not to conform to the requirements of the Contract Documents, whether observed before or after Substantial Completion and whether or not fabricated, installed, or completed. Contractor shall bear all costs of correcting such nonconforming Work, including additional testing and inspections.

D. If, within one year after the date of Substantial Completion of the Work or designated portion thereof, or within one year after the date for commencement of any system warranties established under section 6.08, or within the terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, Contractor shall correct it promptly after receipt of written notice from Owner to do so. Owner shall give such notice promptly after discovery of the condition. This period of one year shall be extended, with respect to portions of Work first performed after Substantial Completion, by the period of time between Substantial Completion and the actual performance of the Work. Contractor's duty to correct with respect to Work repaired or replaced shall run for one year from the date of repair or replacement. Obligations under this paragraph shall survive Final Acceptance.

E. Contractor shall remove from the Project site portions of the Work which are not in accordance with the requirements of the Contract Documents and are neither corrected by Contractor nor accepted by Owner.

F. If Contractor fails to correct nonconforming Work within a reasonable time after written notice to do so, Owner may replace, correct, or remove the nonconforming Work and charge the cost thereof to the Contractor.

G. Contractor shall bear the cost of correcting destroyed or damaged Work, whether completed or partially completed, caused by Contractor's correction or removal of Work which is not in accordance with the requirements of the Contract Documents.

H. Nothing contained in this section shall be construed to establish a period of limitation with respect to other obligations which Contractor might have according to the Contract Documents. Establishment of the time period of one (1) year as described in paragraph 5.16D relates only to the specific obligation of Contractor to correct the Work, and has no relationship to the time within which the Contractor's obligation to comply with the Contract Documents may be sought to be enforced, including the time within which such proceedings may be commenced.

I. If Owner prefers to accept Work which is not in accordance with the requirements of the Contract Documents, Owner may do so instead of requiring its removal and correction, in which case the Contract Sum may be reduced as appropriate and equitable.

5.17 CLEAN UP

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

5.18 ACCESS TO WORK

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

5.19 OTHER CONTRACTS

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

5.20 SUBCONTRACTORS AND SUPPLIERS

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

1. Have a current certificate of registration as a contractor in compliance with chapter 18.27 RCW, which must have been in effect at the time of subcontract bid submittal;
2. Have a current Washington Unified Business Identifier (UBI) number;
3. If applicable, have:

    a. Industrial Insurance (workers' compensation) coverage for the subcontractor's employees working in Washington, as required in Title 51 RCW;
    b. A Washington Employment Security Department number, as required in Title 50 RCW;
    c. A Washington Department of Revenue state excise tax registration number, as required in Title 82 RCW;
    d. An electrical contractor license, if required by Chapter 19.28 RCW;
    e. An elevator contractor license, if required by Chapter 70.87 RCW.

4. Not be disqualified from bidding on any public works contract under RCW 39.06.010 or 39.12.065 (3).
5. On a project subject to the apprenticeship utilization requirements in RCW 39.04.320, not have been found out of compliance by the Washington state apprenticeship and training council for working apprentices out of ratio, without appropriate supervision, or outside their approved work processes as outlined in their standards of apprenticeship under chapter 49.04 RCW for the one-year period immediately preceding the date of the Owner's first advertisement of the project.

B. Prior to submitting the first Application for Payment, Contractor shall furnish in writing to Owner, on Owner provided form(s), the names, addresses, telephone numbers, and Tax Identification Numbers (TIN) of all subcontractors, as well as suppliers providing materials in excess of $2,500.00 which Contractor believes to be MBE or WBE owned businesses, or have identified themselves to the Contractor as MBE or WBE, or are Washington State OMWBE certified. The Contractor shall indicate the anticipated dollar value of each MWBE subcontract. Contractor shall utilize subcontractors and suppliers, which are experienced and qualified, and meet the requirements of the Contract Documents, if any. Contractor shall not utilize any subcontractor or supplier to whom the Owner has a reasonable objection, and shall obtain Owner's written consent before making any substitutions or additions. The Owner may direct the Contractor, at no additional cost to the Owner, to remove and substitute any subcontractor(s) found to be out of compliance with the "Off-Site Prefabricated Non-Standard Project Specific Items" reporting requirements more than one time as determined by the Department of Labor and Industries and as defined in EHB 2805 that amends RCW 39.04.

C. All Subcontracts must be in writing. By appropriate written agreement, Contractor shall require each Subcontractor, so far as applicable to the Work to be performed by the Subcontractor, to be bound to Contractor by terms of the Contract Documents, and to assume toward Contractor all the obligations and responsibilities which Contractor assumes toward Owner in accordance with the Contract Documents. Each Subcontract shall preserve and protect the rights of Owner in accordance with the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights. Where appropriate, Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. However, nothing in this paragraph shall be construed to alter the contractual relations between Contractor and its Subcontractors with respect to insurance or bonds.

D. Contractor shall schedule, supervise, and coordinate the operations of all Subcontractors. No Subcontracting of any of the Work shall relieve Contractor from its responsibility for the performance of the Work in accordance with the Contract Documents or any other obligations of the Contract Documents.

E. Each subcontract agreement for a portion of the Work is hereby assigned by Contractor to Owner provided that:

1. The assignment is effective only after termination by Owner for cause pursuant to section 9.01 and only for those Subcontracts which Owner accepts by notifying the Subcontractor in writing; and

2. After the assignment is effective, Owner will assume all future duties and obligations toward the Subcontractor which Contractor assumed in the Subcontract.

3. The assignment is subject to the prior rights of the surety, if any, obligated under any bond provided in accordance with the Contract Documents.

5.21 WARRANTY OF CONSTRUCTION

A. In addition to any special warranties provided elsewhere in the Contract Documents, Contractor warrants that all Work conforms to the requirements of the Contract Documents and is free of any defect in equipment, material, or design furnished, or workmanship performed, by Contractor.

B. With respect to all warranties, express or implied, for Work performed or materials furnished according to the Contract Documents, Contractor shall:

1. Obtain all warranties that would be given in normal commercial practice;

2. Require all warranties to be executed, in writing, for the benefit of Owner;

3. Enforce all warranties for the benefit of Owner, if directed by Owner; and

4. Be responsible to enforce any subcontractor's, manufacturer's, or supplier's warranty should they extend beyond the period specified in the Contract Documents.

C. The obligations under this section shall survive Final Acceptance.

5.22 INDEMNIFICATION

A. Contractor shall defend, indemnify, and hold Owner and A/E harmless from and against all claims, demands, losses, damages, or costs, including but not limited to damages arising out of bodily injury or death to persons and damage to property, caused by or resulting from:

1. The sole negligence of Contractor or any of its Subcontractors;

2. The concurrent negligence of Contractor, or any Subcontractor, but only to the extent of the negligence of Contractor or such Subcontractor; and

3. The use of any design, process, or equipment which constitutes an infringement of any United States patent presently issued, or violates any other proprietary interest, including copyright, trademark, and trade secret.

B. In any action against Owner and any other entity indemnified in accordance with this section, by any employee of Contractor, its Subcontractors, Sub-subcontractors, agents, or anyone directly or indirectly employed by any of them, the indemnification obligation of this section shall not be limited by a limit on the amount or type of damages, compensation, or benefits payable by or for Contractor or any Subcontractor under RCW Title 51, the Industrial Insurance Act, or any other employee benefit acts. In addition, Contractor waives immunity as to Owner and A/E only, in accordance with RCW Title 51.

PART 6 - PAYMENTS AND COMPLETION

6.01 CONTRACT SUM

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

6.02 SCHEDULE OF VALUES

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

6.03 APPLICATION FOR PAYMENT

A. At monthly intervals, unless determined otherwise by Owner, Contractor shall submit to Owner an itemized Application for Payment for Work completed in accordance with the Contract Documents and the approved Schedule of Values. Each application shall be supported by such substantiating data as Owner may require.

B. By submitting an Application for Payment, Contractor is certifying that all Subcontractors have been paid, less earned retainage in accordance with RCW 60.28.010, as their interests appeared in the last preceding certificate of payment. By submitting an Application for Payment, Contractor is recertifying that the representations set forth in section 1.03 are true and correct, to the best of Contractor's knowledge, as of the date of the Application for Payment.

C. At the time it submits an Application for Payment, Contractor shall analyze and reconcile, to the satisfaction of Owner, the actual progress of the Work with the Progress Schedule.

D. If authorized by Owner, the Application for Payment may include request for payment for material delivered to the Project site and suitably stored, or for completed preparatory work. Payment may similarly be requested for material stored off the Project site, provided Contractor complies with or furnishes satisfactory evidence of the following:

1. The material will be placed in a warehouse that is structurally sound, dry, lighted, and suitable for the materials to be stored;

2. The warehouse is located within a 10-mile radius of the Project. Other locations may be utilized, if approved in writing, by Owner;

3. Only materials for the Project are stored within the warehouse (or a secure portion of a warehouse set aside for the Project);

4. Contractor furnishes Owner a certificate of insurance extending Contractor's insurance coverage for damage, fire, and theft to cover the full value of all materials stored, or in transit;

5. The warehouse (or secure portion thereof) is continuously under lock and key, and only Contractor's authorized personnel shall have access;

6. Owner shall at all times have the right of access in company of Contractor;

7. Contractor and its surety assume total responsibility for the stored materials; and

8. Contractor furnishes to Owner certified lists of materials stored, bills of lading, invoices, and other information as may be required, and shall also furnish notice to Owner when materials are moved from storage to the Project site.

6.04 PROGRESS PAYMENTS

A. Owner shall make progress payments, in such amounts as Owner determines are properly due, within 30 days after receipt of a properly executed Application for Payment. Owner shall notify Contractor in accordance with RCW 39.76 if the Application for Payment does not comply with the requirements of the Contract Documents.

B. Owner shall retain 5% (five percent) of the amount of each progress payment until forty-five (45) days after Final Acceptance and receipt of all documents required by law or the Contract Documents, including, at Owner's request, consent of surety to release of the retainage. In accordance with RCW 60.28, Contractor may request that monies reserved be retained in a fund by Owner, deposited by Owner in a bank or savings and loan, or placed in escrow with a bank or trust company to be converted into bonds and securities to be held in escrow with interest to be paid to Contractor. Owner may permit Contractor to provide an appropriate bond in lieu of the retained funds.

C. Title to all Work and materials covered by a progress payment shall pass to Owner at the time of such payment free and clear of all liens, claims, security interests, and encumbrances. Passage of title shall not, however, relieve Contractor from any of its duties and responsibilities for the Work or materials, or waive any rights of Owner to insist on full compliance by Contractor with the Contract Documents.

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

6.05 PAYMENTS WITHHELD

A. Owner may withhold or, on account of subsequently discovered evidence, nullify the whole or part of any payment to such extent as may be necessary to protect Owner from loss or damage for reasons including but not limited to:

1. Work not in accordance with the Contract Documents;
2. Reasonable evidence that the Work required by the Contract Documents cannot be completed for the unpaid balance of the Contract Sum;
3. Work by Owner to correct defective Work or complete the Work in accordance with section 5.17;
4. Failure to perform in accordance with the Contract Documents; or
5. Cost or liability that may occur to Owner as the result of Contractor's fault or negligent acts or omissions.

B. In any case where part or all of a payment is going to be withheld for unsatisfactory performance, Owner shall notify Contractor in accordance with RCW 39.76.

6.06 RETAINAGE AND BOND CLAIM RIGHTS

A. Prior to release of the contract retainage, an "Affidavit of Wages Paid", approved by the Washington State Department of Labor and Industries, must be on file in the Owner's office. Contracts over $20,000, including tax, necessitate a clearance from the Washington State Department of Revenue and the Washington State Department of Employment Security. The Owner shall initiate action for the releases from the Departments of Revenue and Employment Security.

B. RCW chapters 39.08 and 60.28, concerning the rights and responsibilities of Contractor and Owner with regard to the performance and payment bonds and retainage, are made a part of the Contract Documents by reference as though fully set forth herein.

C. In accordance with RCW 60.28, the lien period for filing liens against the contract retainage shall be forty-five (45) days. Persons performing labor or furnishing supplies toward the completion of the contract who intend to file a lien against the contract retainage must do so within forty-five (45) days from the date of Final Acceptance of the contract by the Owner and in the manner as described in RCW 39.08.030.

6.07 SUBSTANTIAL COMPLETION

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

6.08 PRIOR OCCUPANCY

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

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

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

6.09 FINAL COMPLETION, ACCEPTANCE, AND PAYMENT

A. Final Completion shall be achieved when the Work is fully and finally complete in accordance with the Contract Documents. The date Final Completion is achieved shall be established by Owner in writing.

B. Final Acceptance is the formal action of Owner acknowledging Final Completion. Prior to Final Acceptance, Contractor shall, in addition to all other requirements in the Contract Documents, submit to Owner a written notice of any outstanding disputes or claims between Contractor and any of its Subcontractors, including the amounts and other details thereof. Neither Final Acceptance, nor final payment, shall release Contractor or its sureties from any obligations of these Contract Documents or the Public Works Bond, or constitute a waiver of any claims by Owner arising from Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Acceptance of final payment by Contractor, or any Subcontractor, shall constitute a waiver and release to Owner of all claims by Contractor, or any such Subcontractor, for an increase in the Contract Sum or the Contract Time, and for every act or omission of Owner relating to or arising out of the Work, except for those Claims made in accordance with the procedures, including the time limits, set forth in part 8.

PART 7 - CHANGES

7.01 CHANGES IN THE WORK

A. Owner may, at any time and without notice to Contractor's surety, order additions, deletions, revisions, or other changes in the Work. These changes in the Work shall be incorporated into the Contract Documents through the execution of Change Orders. If any change in the Work ordered by Owner causes an increase or decrease in the Contract Sum or the Contract Time, an equitable adjustment shall be made as provided in section 7.02 or 7.03, respectively, and such adjustment(s) shall be incorporated into a Change Order.

B. If Owner desires to order a change in the Work, it may request a written Change Order Proposal (COP) from Contractor. Contractor shall submit a Change Order Proposal within 14 (fourteen) days of the request from Owner, or within such other period as mutually agreed. Contractor's Change Order Proposal shall be full compensation for implementing the proposed change in the Work, including any adjustment in the Contract Sum or Contract Time, and including compensation for all delays in connection with such change in the Work and for any expense or inconvenience, disruption of schedule, or loss of efficiency or productivity occasioned by the change in the Work.

C. Upon receipt of the Change Order proposal, or a request for equitable adjustment in the Contract Sum or Contract Time, or both, as provided in sections 7.02 and 7.03, Owner may accept or reject the proposal, request further documentation, or negotiate acceptable terms with Contractor. Pending agreement on the terms of the Change Order, Owner may direct Contractor to proceed immediately with the Change Order Work. Contractor shall not proceed with any change in the Work until it has obtained Owner's approval. All Work done pursuant to any Owner-directed change in the Work shall be executed in accordance with the Contract Documents.

D. If Owner and Contractor reach agreement on the terms of any change in the Work, including any adjustment in the Contract Sum or Contract Time, such agreement shall be incorporated in a Change Order. The Change Order shall constitute full payment and final settlement of all claims for time and for direct, indirect, and consequential costs, including costs of delays, inconvenience, disruption of schedule, or loss of efficiency or productivity, related to any Work either covered or affected by the Change Order, or related to the events giving rise to the request for equitable adjustment.

E. If Owner and Contractor are unable to reach agreement on the terms of any change in the Work, including any adjustment in the Contract Sum or Contract Time, Contractor may at any time in writing, request a final offer from Owner. Owner shall provide Contractor with its written response within 30 (thirty) days of Contractor's request. Owner may also provide Contractor with a final offer at any time. If Contractor rejects Owner's final offer, or the parties are otherwise unable to reach agreement, Contractor's only remedy shall be to file a Claim as provided in part 8.

F. Field Authorization

1. The Field Authorization (FA) is executed as a directive to proceed with work when the processing time for an approved change order would impact the project.

2. A scope of work must be defined, a maximum not to exceed cost agreed upon, and any estimated modification to the contract completion time determined. The method of final cost verification must be noted and supporting cost data must be submitted in accordance with the requirements of Part 7 of the General Conditions. Upon satisfactory submittal and approval of supporting cost data, the completed FA will be processed into a change order. No payment will be made to the Contractor for FA work until that FA is converted to a Change Order.

7.02 CHANGES IN THE CONTRACT SUM

A. General Application

1. The Contract Sum shall only be changed by a Change Order. Contractor shall include any request for a change in the Contract Sum in its Change Order Proposal.

2. If the cost of Contractor's performance is changed due to the fault or negligence of Owner, or anyone for whose acts Owner is responsible, Contractor shall be entitled to make a request for an equitable adjustment in the Contract Sum in accordance with the following procedure. No change in the Contract Sum shall be allowed to the extent: Contractor's changed cost of performance is due to the fault or negligence of Contractor, or anyone for whose acts Contractor is responsible; the change is concurrently caused by Contractor and Owner; or the change is caused by an act of Force Majeure as defined in Section 3.05.

   a. A request for an equitable adjustment in the Contract Sum shall be based on written notice delivered to Owner within 7 (seven) days of the occurrence of the event giving rise to the request. For purposes of this part, "occurrence" means when Contractor knew, or in its diligent prosecution of the Work should have known, of the event giving rise to the request. If Contractor believes it is entitled to an adjustment in the Contract Sum, Contractor shall immediately notify Owner and begin to keep and maintain complete, accurate, and specific daily records. Contractor shall give Owner access to any such records and, if requested shall promptly furnish copies of such records to Owner.

   b. Contractor shall not be entitled to any adjustment in the Contract Sum for any occurrence of events or costs that occurred more than 7 (seven) days before Contractor's written notice to Owner. The written notice shall set forth, at a minimum, a description of: the event giving rise to the request for an equitable adjustment in the Contract Sum; the nature of the impacts to Contractor and its Subcontractors of any tier, if any; and to the extent possible the amount of the adjustment in Contract Sum requested. Failure to properly give such written notice shall, to the extent Owner’s interests are prejudiced, constitute a waiver of Contractor's right to an equitable adjustment.

   c. Within 30 (thirty) days of the occurrence of the event giving rise to the request, unless Owner agrees in writing to allow an additional period of time to ascertain more accurate data, Contractor shall supplement the written notice provided in accordance with subparagraph a. above with additional supporting data. Such additional data shall include, at a minimum: the amount of compensation requested, itemized in accordance with the procedure set forth herein; specific facts, circumstances, and analysis that confirms not only that Contractor suffered the damages claimed, but that the damages claimed were actually a result of the act, event, or condition complained of and that the Contract Documents provide entitlement to an equitable adjustment to Contractor for such act, event, or condition; and documentation sufficiently detailed to permit an informed analysis

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

d. Pending final resolution of any request made in accordance with this paragraph, unless otherwise agreed in writing, Contractor shall proceed diligently with performance of the Work.

e. Any requests by Contractor for an equitable adjustment in the Contract Sum and in the Contract Time that arise out of the same event(s) shall be submitted together.

3. The value of any Work covered by a Change Order, or of any request for an equitable adjustment in the Contract Sum, shall be determined by one of the following methods:

   a. On the basis of a fixed price as determined in paragraph 7.02B.
   b. By application of unit prices to the quantities of the items involved as determined in paragraph 7.02C.
   c. On the basis of time and material as determined in paragraph 7.02D.

4. When Owner has requested Contractor to submit a Change Order proposal, Owner may direct Contractor as to which method in subparagraph 3 above to use when submitting its proposal. Otherwise, Contractor shall determine the value of the Work, or a request for an equitable adjustment, on the basis of the fixed price method.

B. Change Order Pricing -- Fixed Price

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

1. Contractor's Change Order Proposal, or request for adjustment in the Contract Sum, shall be accompanied by a complete itemization of the costs, including labor, material, subcontractor costs, and overhead and profit. The costs shall be itemized in the manner set forth below, and shall be submitted on breakdown sheets in a form approved by Owner.

2. All costs shall be calculated based upon appropriate industry standard methods of calculating labor, material quantities, and equipment costs.

3. If any of Contractor's pricing assumptions are contingent upon anticipated actions of Owner, Contractor shall clearly state them in the proposal or request for an equitable adjustment.

4. The cost of any additive or deductive changes in the Work shall be calculated as set forth below, except that overhead and profit shall not be included on deductive changes in the Work. Where a change in the Work involves additive and deductive work by the same Contractor or Subcontractor, small tools, overhead, profit, bond, and insurance markups will apply to the net difference.

5. If the total cost of the change in the Work or request for equitable adjustment does not exceed $1,000, Contractor shall not be required to submit a breakdown if the description of the change in the Work or request for equitable adjustment is sufficiently definitive for Owner to determine fair value.

6. If the total cost of the change in the Work or request for equitable adjustment is between $1,000 and $2,500, Contractor may submit a breakdown in the following level of detail if the description of the change in the Work or if the request for equitable adjustment is sufficiently definitive to permit the Owner to determine fair value:

   a. lump sum labor;
   b. lump sum material;
   c. lump sum equipment usage;
   d. overhead and profit as set forth below; and
   e. insurance and bond costs as set forth below.

7. Any request for adjustment of Contract Sum based upon the fixed price method shall include only the following items:

   a. Craft labor costs: These are the labor costs determined by multiplying the estimated or actual additional number of craft hours needed to perform the change in the Work by the hourly labor costs. Craft hours should cover direct labor, as well as indirect labor due to trade inefficiencies. The hourly costs shall be based on the following:

      1) Basic wages and benefits: Hourly rates and benefits as stated on the Department of Labor and Industries approved "statement of intent to pay prevailing wages." Direct supervision shall be a reasonable percentage not to exceed 15% (fifteen percent) of the cost of direct labor. No supervision markup shall be allowed for a working supervisor's hours.

      2) Worker's insurance: Direct contributions to the state of Washington for industrial insurance; medical aid; and supplemental pension, by the class and rates established by the Department of Labor and Industries.

      3) Federal insurance: Direct contributions required by the Federal Insurance Compensation Act; Federal Unemployment Tax Act; and the State Unemployment Compensation Act.

      4) Travel allowance: Travel allowance and/or subsistence, if applicable, not exceeding those allowances established by regional labor union agreements, which are itemized and identified separately.

      5) Safety: Cost incurred due to the Washington Industrial Safety and Health Act, which shall be a reasonable percentage not to exceed 2% (two percent) of the sum of the amounts calculated in (1), (2), and (3) above.

   b. Material costs: This is an itemization of the quantity and cost of materials needed to perform the change in the Work. Material costs shall be developed first from actual known costs, second from supplier quotations or if these are not available, from standard industry pricing guides. Material costs shall consider all available discounts. Freight costs, express charges, or special delivery charges, shall be itemized.

   c. Equipment costs: This is an itemization of the type of equipment and the estimated or actual length of time the construction equipment appropriate for the Work is or will be used on the change in the Work. Costs will be allowed for construction equipment only if used solely for the changed Work, or for additional rental costs actually incurred by the Contractor. Equipment charges shall be computed on the basis of actual invoice costs or if owned, from the current edition of one of the following sources:

      1) Associated General Contractors - Washington State Department of Transportation (AGC-WSDOT) Equipment Rental Agreement; current edition, on the Contract execution date.

      2) The state of Washington Utilities and Transportation Commission for trucks used on highways.

      3) The National Electrical Contractors Association for equipment used on electrical work.

      4) The Mechanical Contractors Association of America for equipment used on mechanical work.

      The Data Quest Rental Rate (Blue Book) shall be used as a basis for establishing rental rates of equipment not listed in the above sources. The maximum rate for standby equipment shall not exceed that shown in the AGC WSDOT Equipment Rental Agreement, current edition, on the Contract execution date.

   d. Allowance for small tools, expendables, and consumable supplies: Small tools consist of tools which cost $250 or less and are normally furnished by the performing contractor. The maximum rate for small tools shall not exceed the following:

1) For Contractor, 3% (three percent) of direct labor costs.

2) For Subcontractors, 5% (five percent) of direct labor costs.

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

e. Subcontractor costs: This is defined as payments Contractor makes to Subcontractors for changed Work performed by Subcontractors of any tier. The Subcontractors' cost of Work shall be calculated and itemized in the same manner as prescribed herein for Contractor.

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

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

a) For Contractor, for any Work actually performed by Contractor's own forces, 16% (sixteen percent) of the first $50,000 of the cost, and 4% (four percent) of the remaining cost, if any.

b) For each Subcontractor (including lower tier subcontractors), for any Work actually performed by its own forces, 16% (sixteen percent) of the first $50,000 of the cost, and 4% (four percent) of the remaining cost, if any.

c) For Contractor, for any work performed by its Subcontractor(s), 6% (six percent) of the first $50,000 of the amount due each Subcontractor, and 4% (four percent) of the remaining amount if any.

d) For each Subcontractor, for any Work performed by its Subcontractor(s) of any lower tier, 4% (four percent) of the first $50,000 of the amount due the sub-Subcontractor, and 2% (two percent) of the remaining amount if any.

e) The cost to which overhead is to be applied shall be determined in accordance with subparagraphs a.-e. above.

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

a) For Contractor, for any Work actually performed by Contractor's own forces, 12% (twelve percent) of the first $50,000 of the cost, and 4% (four percent) of the remaining cost, if any.

b) For each Subcontractor (including lower tier subcontractors), for any Work actually performed by its own forces, 12% (twelve percent) of the first $50,000 of the cost, and 4% (four percent) of the remaining cost, if any.

c) For Contractor, for any Work performed by its Subcontractor(s), 4% (four percent) of the first $50,000 of the amount due each Subcontractor, and 2% (two percent) of the remaining amount if any.

d) For each Subcontractor, for any Work performed by its Subcontractor(s) of any lower tier, 4% (four percent) of the first $50,000 of the amount due the sub-Subcontractor, and 2% (two percent) of the remaining amount if any.

e) The cost to which overhead is to be applied shall be determined in accordance with subparagraphs a.- e. above.

g. Allowance for profit: This is an amount to be added to the cost of any change in contract sum, but not to the cost of change in Contract Time for which contractor has been compensated pursuant to the conditions set forth in section 7.03. It shall be limited to a reasonable amount, mutually acceptable, or if none can be agreed upon, to an amount not to exceed the rates below:

1) For Contractor or Subcontractor of any tier for work performed by their forces, 6% (six percent) of the cost developed in accordance with Section 7.02 b. 7a.- e.

2) For Contractor or Subcontractor of any tier for work performed by a subcontractor of a lower tier, 4% (four percent) of the Subcontractor cost developed in accordance with Section 7.02 b. 7a. - h.

h. Cost of change in insurance or bond premium: This is defined as:

1) Contractor's liability insurance: The cost of any changes in Contractor's liability insurance arising directly from execution of the Change Order; and

2) Public works bond: The cost of the additional premium for Contractor's bond arising directly from the changed Work.

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

C. Change Order Pricing -- Unit Prices

1. Whenever Owner authorizes Contractor to perform Work on a unit-price basis, Owner's authorization shall clearly state:

a. Scope of work to be performed;
b. Type of reimbursement including pre-agreed rates for material quantities; and
c. Cost limit of reimbursement.

2. Contractor shall:

a. Cooperate with Owner and assist in monitoring the Work being performed. As requested by Owner, Contractor shall identify workers assigned to the Change Order Work and areas in which they are working;
b. Leave access as appropriate for quantity measurement; and
c. Not exceed any cost limit(s) without Owner's prior written approval.

3. Contractor shall submit costs in accordance with paragraph 7.02B. and satisfy the following requirements:

a. Unit prices shall include reimbursement for all direct and indirect costs of the Work, including overhead and profit, and bond and insurance costs; and
b. Quantities must be supported by field measurement statements signed by Owner.

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

1. Whenever Owner authorizes Contractor to perform Work on a time-and-material basis, Owner's authorization shall clearly state:

a. Scope of Work to be performed;
b. Type of reimbursement including pre-agreed rates, if any, for material quantities or labor; and
c. Cost limit of reimbursement.

2. Contractor shall:

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

3. Contractor shall submit costs in accordance with paragraph 7.02B and additional verification supported by:

a. Labor detailed on daily time sheets; and
b. Invoices for material.

7.03 CHANGES IN THE CONTRACT TIME

A. The Contract Time shall only be changed by a Change Order. Contractor shall include any request for a change in the Contract Time in its Change Order Proposal.

B. If the time of Contractor's performance is changed due to an act of Force Majeure, or due to the fault or negligence of Owner or anyone for whose acts Owner is responsible, Contractor shall be entitled to make a request for an equitable adjustment in the Contract Time in accordance with the following procedure. No adjustment in the Contract Time shall be allowed to the extent Contractor's changed time of performance is due to the fault or negligence of Contractor, or anyone for whose acts Contractor is responsible.

1. A request for an equitable adjustment in the Contract Time shall be based on written notice delivered within 7 (seven) days of the occurrence of the event giving rise to the request. If Contractor believes it is entitled to adjustment of Contract Time, Contractor shall immediately notify Owner and begin to keep and maintain complete, accurate, and specific daily records. Contractor shall give Owner access to any such record and if requested, shall promptly furnish copies of such record to Owner.

2. Contractor shall not be entitled to an adjustment in the Contract Time for any events that occurred more than 7 (seven) days before Contractor's written notice to Owner. The written notice shall set forth, at a minimum, a description of: the event giving rise to the request for an equitable adjustment in the Contract Time; the nature of the impacts to Contractor and its Subcontractors of any tier, if any; and to the extent possible the amount of the adjustment in Contract Time requested. Failure to properly give such written notice shall, to the extent Owner's interests are prejudiced, constitute a waiver of Contractor's right to an equitable adjustment.

3. Within 30 (thirty) days of the occurrence of the event giving rise to the request, unless Owner agrees in writing to allow an additional period of time to ascertain more accurate data, Contractor shall supplement the written notice provided in accordance with subparagraph 7.03B.2 with additional supporting data. Such additional data shall include, at a minimum: the amount of delay claimed, itemized in accordance with the procedure set forth herein; specific facts, circumstances, and analysis that confirms not only that Contractor suffered the delay claimed, but that the delay claimed was actually a result of the act, event, or condition complained of, and that the Contract Documents provide entitlement to an equitable adjustment in Contract Time for such act, event, or condition; and supporting documentation sufficiently detailed to permit an informed analysis of the request by Owner. Failure to provide such additional information and documentation within the time allowed or within the format required shall, to the extent Owner's interests are prejudiced, constitute a waiver of Contractor's right to an equitable adjustment.

4. Pending final resolution of any request in accordance with this paragraph, unless otherwise agreed in writing, Contractor shall proceed diligently with performance of the Work.

C. Any change in the Contract Time covered by a Change Order, or based on a request for an equitable adjustment in the Contract Time, shall be limited to the change in the critical path of Contractor's schedule attributable to the change of Work or event(s) giving rise to the request for equitable adjustment. Any Change Order proposal or request for an adjustment in the Contract Time shall demonstrate the impact on the critical path of the schedule. Contractor shall be responsible for showing clearly on the Progress

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

D. Contractor may request compensation for the cost of a change in Contract Time in accordance with this paragraph, 7.03D, subject to the following conditions:

1. The change in Contract Time shall solely be caused by the fault or negligence of Owner or A/E;

2. Compensation under this paragraph is limited to changes in Contract Time for which Contractor is not entitled to be compensated under section 7.02;

3. Contractor shall follow the procedure set forth in paragraph 7.03B;

4. Contractor shall establish the extent of the change in Contract Time in accordance with paragraph 7.03C; and

5. The daily cost of any change in Contract Time shall be limited to the items below, less funds that may have been paid pursuant to a change in the Contract Sum that contributed to this change in Contract Time:

   a. cost of nonproductive field supervision or labor extended because of the delay;
   b. cost of weekly meetings or similar indirect activities extended because of the delay;
   c. cost of temporary facilities or equipment rental extended because of the delay;
   d. cost of insurance extended because of the delay;
   e. general and administrative overhead in an amount to be agreed upon, but not to exceed 3% (three percent) of Contract Sum divided by the Contract Time for each day of the delay.

PART 8 - CLAIMS AND DISPUTE RESOLUTION

8.01 CLAIMS PROCEDURE

A. If the parties fail to reach agreement on the terms of any Change Order for Owner-directed Work as provided in section 7.01, or on the resolution of any request for an equitable adjustment in the Contract Sum as provided in section 7.02 or the Contract Time as provided in section 7.03, Contractor's only remedy shall be to file a Claim with Owner as provided in this section.

B. Contractor shall file its Claim within the earlier of: 120 (one hundred twenty) days from Owner's final offer in accordance with either paragraph 7.01E or the date of Final Acceptance.

C. The Claim shall be deemed to cover all changes in cost and time (including direct, indirect, impact, and consequential) to which Contractor may be entitled. It shall be fully substantiated and documented. At a minimum, the Claim shall contain the following information:

1. A detailed factual statement of the Claim for additional compensation and time, if any, providing all necessary dates, locations, and items of Work affected by the Claim;

2. The date on which facts arose which gave rise to the Claim

3. The name of each employee of Owner or A/E knowledgeable about the Claim;

4. The specific provisions of the Contract Documents which support the Claim;

5. The identification of any documents and the substance of any oral communications that support the Claim;

6. Copies of any identified documents, other than the Contract Documents, that support the Claim;

7. If an adjustment in the Contract Time is sought: the specific days and dates for which it is sought; the specific reasons Contractor believes an extension in the Contract Time should be granted; and

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

8. If an adjustment in the Contract Sum is sought, the exact amount sought and a breakdown of that amount into the categories set forth in, and in the detail required by, section 7.02; and

9. A statement certifying, under penalty of perjury, that the Claim is made in good faith, that the supporting cost and pricing data are true and accurate to the best of Contractor's knowledge and belief, that the Claim is fully supported by the accompanying data, and that the amount requested accurately reflects the adjustment in the Contract Sum or Contract Time for which Contractor believes Owner is liable.

D. After Contractor has submitted a fully documented Claim that complies with all applicable provisions of parts 7 and 8, Owner shall respond, in writing, to Contractor as follows:

1. If the Claim amount is less than $50,000, with a decision within 60 (sixty) days from the date the Claim is received; or

2. If the Claim amount is $50,000 or more, with a decision within 60 (sixty) days from the date the Claim is received, or with notice to Contractor of the date by which it will render its decision. Owner will then respond with a written decision in such additional time.

E. To assist in the review of Contractor's Claim, Owner may visit the Project site, or request additional information, in order to fully evaluate the issues raised by the Claim. Contractor shall proceed with performance of the Work pending final resolution of any Claim. Owner's written decision as set forth above shall be final and conclusive as to all matters set forth in the Claim, unless Contractor follows the procedure set forth in section 8.02.

F. Any Claim of the Contractor against the Owner for damages, additional compensation, or additional time, shall be conclusively deemed to have been waived by the Contractor unless timely made in accordance with the requirements of this section.

8.02 ARBITRATION

A. If Contractor disagrees with Owner's decision rendered in accordance with paragraph 8.01D, Contractor shall provide Owner with a written demand for arbitration. No demand for arbitration of any such Claim shall be made later than 30 (thirty) days after the date of Owner's decision on such Claim; failure to demand arbitration within said 30-day period shall result in Owner's decision being final and binding upon Contractor and its Subcontractors.

B. Notice of the demand for arbitration shall be filed with the American Arbitration Association (AAA), with a copy provided to Owner. The parties shall negotiate or mediate under the Voluntary Construction Mediation Rules of the AAA, or mutually acceptable service, before seeking arbitration in accordance with the Construction Industry Arbitration Rules of AAA as follows:

1. Disputes involving $30,000 or less shall be conducted in accordance with the Northwest Region Expedited Commercial Arbitration Rules; or

2. Disputes over $30,000 shall be conducted in accordance with the Construction Industry Arbitration Rules of the AAA, unless the parties agree to use the expedited rules.

C. All Claims arising out of the Work shall be resolved by arbitration. The judgment upon the arbitration award may be entered, or review of the award may occur, in the superior court having jurisdiction thereof. No independent legal action relating to or arising from the Work shall be maintained.

D. Claims between Owner and Contractor, Contractor and its Subcontractors, Contractor and A/E, and Owner and A/E shall, upon demand by Owner, be submitted in the same arbitration or mediation.

E. If the parties resolve the Claim prior to arbitration judgment, the terms of the resolution shall be incorporated in a Change Order. The Change Order shall constitute full payment and final settlement of the Claim, including all claims for time and for direct, indirect, or consequential costs, including costs of delays, inconvenience, disruption of schedule, or loss of efficiency or productivity.

8.03 CLAIMS AUDITS

A. All Claims filed against Owner shall be subject to audit at any time following the filing of the Claim. Failure of Contractor, or Subcontractors of any tier, to maintain and retain sufficient records to allow Owner to verify all or a portion of the Claim or to permit Owner access to the books and records of Contractor, or Subcontractors of any tier, shall constitute a waiver of the Claim and shall bar any recovery.

B. In support of Owner audit of any Claim, Contractor shall, upon request, promptly make available to Owner the following documents:

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

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

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

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

PART 9 - TERMINATION OF THE WORK

9.01 TERMINATION BY OWNER FOR CAUSE

A. Owner may, upon 7 (seven) days written notice to Contractor and to its surety, terminate (without prejudice to any right or remedy of Owner) the Work, or any part of it, for cause upon the occurrence of any one or more of the following events:

1. Contractor fails to prosecute the Work or any portion thereof with sufficient diligence to ensure Substantial Completion of the Work within the Contract Time;
2. Contractor is adjudged bankrupt, makes a general assignment for the benefit of its creditors or a receiver is appointed on account of its insolvency;
3. Contractor fails in a material way to replace or correct Work not in conformance with the Contract Documents;
4. Contractor repeatedly fails to supply skilled workers or proper materials or equipment;
5. Contractor repeatedly fails to make prompt payment due to Subcontractors or for labor;
6. Contractor materially disregards or fails to comply with laws, ordinances, rules, regulations, or orders of any public authority having jurisdiction; or
7. Contractor is otherwise in material breach of any provision of the Contract Documents.

B. Upon termination, Owner may at its option:

1. Take possession of the Project site and take possession of or use all materials, equipment, tools, and construction equipment and machinery thereon owned by Contractor to maintain the orderly progress of, and to finish, the Work;
2. Accept assignment of subcontracts pursuant to section 5.20; and
3. Finish the Work by whatever other reasonable method it deems expedient.

C. Owner's rights and duties upon termination are subject to the prior rights and duties of the surety, if any, obligated under any bond provided in accordance with the Contract Documents.

D. When Owner terminates the Work in accordance with this section, Contractor shall take the actions set forth in paragraph 9.02B, and shall not be entitled to receive further payment until the Work is accepted.

E. If the unpaid balance of the Contract Sum exceeds the cost of finishing the Work, including compensation for A/E's services and expenses made necessary thereby and any other extra costs or damages incurred by Owner in completing the Work, or as a result of Contractor's actions, such excess shall be paid to Contractor. If such costs exceed the unpaid balance, Contractor shall pay the difference to Owner. These obligations for payment shall survive termination.

F. Termination of the Work in accordance with this section shall not relieve Contractor or its surety of any responsibilities for Work performed.

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

9.02 TERMINATION BY OWNER FOR CONVENIENCE

A. Owner may, upon written notice, terminate (without prejudice to any right or remedy of Owner) the Work, or any part of it, for the convenience of Owner.

B. Unless Owner directs otherwise, after receipt of a written notice of termination for either cause or convenience, Contractor shall promptly:

1. Stop performing Work on the date and as specified in the notice of termination;

2. Place no further orders or subcontracts for materials, equipment, services or facilities, except as may be necessary for completion of such portion of the Work as is not terminated;

3. Cancel all orders and subcontracts, upon terms acceptable to Owner, to the extent that they relate to the performance of Work terminated;

4. Assign to Owner all of the right, title, and interest of Contractor in all orders and subcontracts;

5. Take such action as may be necessary or as directed by Owner to preserve and protect the Work, Project site, and any other property related to this Project in the possession of Contractor in which Owner has an interest; and

6. Continue performance only to the extent not terminated.

C. If Owner terminates the Work or any portion thereof for convenience, Contractor shall be entitled to make a request for an equitable adjustment for its reasonable direct costs incurred prior to the effective date of the termination, plus a reasonable allowance for overhead and profit on Work performed prior to termination, plus the reasonable administrative costs of the termination, but shall not be entitled to any other costs or damages, whatsoever, provided however, the total sum payable upon termination shall not exceed the Contract Sum reduced by prior payments. Contractor shall be required to make its request in accordance with the provisions of part 7.

D. If Owner terminates the Work or any portion thereof for convenience, the Contract Time shall be adjusted as determined by Owner.

PART 10 - MISCELLANEOUS PROVISIONS

10.01 GOVERNING LAW

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

10.02 SUCCESSORS AND ASSIGNS

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

10.03 MEANING OF WORDS

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

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

10.04 RIGHTS AND REMEDIES

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

10.05 CONTRACTOR REGISTRATION

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

10.06 TIME COMPUTATIONS

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

10.07 RECORDS RETENTION

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

10.08 THIRD-PARTY AGREEMENTS

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

10.09 ANTITRUST ASSIGNMENT

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

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

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

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

B. The OMWBE has compiled a directory of certified firms. Copies of this directory may be obtained through the OMWBE. For information regarding the certification process or the certification status of a particular firm, contact:

OMWBE, 406 South Water Street, PO Box 41160, Olympia, WA 98504-1160, telephone (360) 753-9693.

C. Eligible MWBEs or M/W firms

MWBE firms utilized for this project for voluntary MWBE goals may be certified by Washington State OMWBE or self identified as minority or women owned (M/W firm).

D. MWBE Voluntary Goals

The Owner has established voluntary goals for MWBE participation for this project. The voluntary goals are set forth in the Advertisement for Bids.

E. If any part of the contract, including the supply of materials and equipment, is anticipated to be subcontracted, then prior to receipt of the first payment, Contractor shall submit, pursuant to Section 5.20 A, a list of all subcontractors/suppliers it intends to use, designate whether any of the subcontractors/suppliers are MWBE firms, indicate the anticipated dollar value of each MWBE subcontract, and provide Tax Identification Number (TIN).

F. If any part of the contract, including the supply of materials and equipment is actually subcontracted during completion of the work, then prior to final acceptance or completion of the contract or as otherwise indicated in the contract documents, the Contractor shall submit a statement of participation indicating what MWBEs were used and the dollar value of their subcontracts.

G. The provisions of this section are not intended to replace or otherwise change the requirements of RCW 39.30.060. If said statute is applicable to this contract then the failure to comply with RCW 39.30.060 will still render a bid non-responsive.

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

I. Bidders should advertise opportunities for subcontractors or suppliers in a manner reasonably designed to provide MWBEs capable of performing the work with timely notice of such opportunities, and all advertisements shall include a provision encouraging participation by MWBE firms. Advertising may be done through general advertisements (e.g. newspapers, journals, etc.) or by soliciting bids directly from MWBEs. Bidders shall provide MWBEs that express interest with adequate and timely information about plans, specifications, and requirements of the contract.

J. Contractors shall not create barriers to open and fair opportunities for all businesses including MWBEs to participate in all State contracts and to obtain or compete for contracts and subcontracts as sources of supplies, equipment, construction and services.

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

10.11 MINIMUM LEVELS OF APPRENTICESHIP PARTICIPATION

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

A. Voluntary workforce diversity goals have been established for the apprentice hours. These goals are that one-fifth (1/5) of the apprentice hours be performed by minorities, and one-sixth (1/6) of the apprentice hours be performed by women.

B. Apprentice participation, under this contract, may be counted towards the required percentage (%) only if the apprentices are from an apprenticeship program registered and approved by the Washington State Apprenticeship and Training Council (RCW 49.04 and WAC 296-04).

C. Bidders may contact the Department of Labor and Industries, Specialty Compliance Services Division, Apprenticeship Section, P.O. Box 44530, Olympia, WA 98504-4530 by phone at (360) 902-5320, and e-mail at thum235@lni.wa.gov, to obtain information on available apprenticeship programs.

D. For each project that has apprentice requirements, the contractor shall submit a "Statement of Apprentice/Journeyman Participation" on forms provided by the Department of General Administration, with every request for progress payment. The Contractor shall submit consolidated and cumulative data collected by the Contractor and collected from all subcontractors by the Contractor. The data to be collected and submitted includes the following:

1. Contractor name and address
2. Contract number
3. Project name
4. Contract value
5. Reporting period "Notice to Proceed" through "Invoicing Date"
6. Craft/trade/occupation of all (contractor and subcontractor trades working on the project) apprentices and journeymen
7. Total number of apprentices and total number of hours worked by apprentices, both categorized by gender and ethnicity
8. Total number of journeymen and total number of hours worked by journeymen, both categorized by gender and ethnicity
9. Cumulative combined total of apprentice and journeymen labor hours.
10. Total percentage of apprentice hours worked
11. No changes to the required percentage (%) of apprentice participation shall be allowed without written approval of the Owner. In any request for the change the Contractor shall clearly demonstrate a good faith effort to comply with the requirements for apprentice participation.
12. Any substantive violation of the mandatory requirements of this part of the contract may be a material breach of the contract by the Contractor. The Owner may withhold payment pursuant to Part 6.05, stop the work for cause pursuant to Part 3.04, and terminate the contract for cause pursuant to Part 9.01.

10.12 HEADINGS AND CAPTIONS

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

10.13 SUBCONTRACTOR PAYMENTS REPORTING REQUIREMENTS

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

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

a. Register and enter all required Subcontractor information into Access Equity no later than 15 days after the Public Owner creates the Contract Record.

b. Complete the required user training (two (2) one-hour online sessions) no later than 20 days after the Public Owner creates the Contract Record.

c. Report the amount and date of all payments (i) received from the Public Owner, and (ii) paid to Subcontractors, no later than 30 days, issuance of each payment made by the Public Owner to the Contractor, unless otherwise specified in writing by the Public Owner, except that the Contractor shall mark as "Final" and report the final Subcontractor payments) into Access Equity no later than thirty (30) days after the final payment is due the Subcontractor(s) under the Contract, with all payment information entered no later than sixty (60) days after end of fiscal year.

d. Monitor contract payments and respond promptly to any requests or instructions from the Public Owner or system-generated messages to check or provide information in Access Equity.

e. Coordinate with Subcontractors, or Public Owner when necessary, to resolve promptly any discrepancies between reported and received payments.

f. Require each Subcontractor to: (i) register in Access Equity and complete the required user training; (ii) verify the amount and date of receipt of each payment from the Contractor or a higher tier Subcontractor, if applicable, through Access Equity; (iii) report payments made to any lower tier Subcontractors, if any, in the same manner as specified herein; (iv) respond promptly to any requests or instructions from the Contractor or system-generated messages to check or provide information in Access Equity; and (v) coordinate with Contractor, or Public Owner when necessary, to resolve promptly any discrepancies between reported and received payments.

END OF CONDITIONS

/ / / / /

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

PREVAILING WAGES

Instruction for Prevailing Wage Rates

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

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

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

Contractor to Pay Prevailing Wages

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

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

SECTION 010000 – GENERAL REQUIREMENTS

PART 1 - GENERAL

1.1 SPECIAL NOTICE

A. For this project, the existing sewer lift station shall remain online during the duration of the project until the new lift station has passed all tests and is deemed fully operational by the Owner. After the Owner provides written approval to connect the force main to new lift station, then the Contractor may begin work on the existing wetwell demolition. The Contractor shall make provisions to temporarily pump (by high-capacity pumper truck(s)), haul, and dispose of existing effluent while the existing lift station is shutdown. Disposal is allowed into the Owner's system at the lagoons in the park. Flows into the existing wetwell are highly variable and the Contractor shall plan on having two pumper trucks on site during any lift station shutdowns.

B. If the new engine generator is not available, due to procurement lead times, when the Contractor is ready to connect the new lift station to the forcemain then the contractor will keep the existing diesel generator in place and connect the new lift station temporarily to the existing diesel generator. The startup and final connection of the new lift station will not wait for the arrival of the new electric generator. The removal of the existing diesel generator and installation of the new engine generator, propane tank, and concrete pad will occur once the new electric generator is on site. Working days will be adjusted by the Owner as needed to accommodate the delivery of the new engine generator. All other work that can be completed, per the contract, including but not limited to: existing lift station demolition, cleanup, site restoration, and fencing will be completed in a timely manner after the new lift station is connected to the forcemain. The contractor will bid the project assuming the work associated with the installation of the new engine generator will be completed separately from the installation, startup and final connection of the new lift station.

1.2 DESCRIPTION OF WORK

A. This project includes: constructing a complete, new sewer lift station with submersible pumps including dewatering systems for excavation; installing an engine generator and propane storage tank; demolishing the existing below-grade sewer lift station; modifications to the existing buried wetwell structure; and site restoration.

1.3 TIME FOR COMPLETION OF PROJECT

A. Substantially complete project in accordance with the drawings and specifications within 90 calendar days from date on Notice to Proceed letter. Final completion in accordance with Contract Documents within 15 calendar days from substantial completion date.

1.4 HOURS OF WORK

A. Work hours are between 7:00 a.m. and & 7:00 p.m. Monday through Friday, excluding national holidays.

1.5 LIQUIDATED DAMAGES

A. If Contractor fails to complete Contract within stipulated time, an assessment of $700.00 per day will be made against Contractor for each additional day required to complete contract, unless an extension of time was granted through Change Order. This assessment is to cover Commission's liquidated damages and is not to be construed as a penalty.

B. Contract authorizes the Washington State Parks and Recreation Commission to deduct liquidated damages from money due at completion of contract.

1.6 PRE-CONSTRUCTION CONFERENCE

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

B. Furnish Project Representative with following:

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

C. Project Representative will supply a list of hazardous products that could be encountered on Project. Appropriate Safety Data Sheet (SDS) will be on file at park.

1.7 PROGRESS CLEANING

A. Remove rubbish and debris from park property daily unless otherwise directed do not allow accumulation. Store materials that cannot be removed daily only in areas specified by the Project Representative.

B. Maintain worksites in a neat and orderly condition.

C. Cleanup operations are incidental to the Contract and no extra compensation will be made.

1.8 WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT).

A. None of WSDOT General Requirements, measurement or payment provisions apply.

1.9 UTILITY MONUMENTS

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

1.10 AS-BUILT DRAWINGS

A. Keep a clean set of full sized drawings at job site to use to identify changes.

1.11 PROJECT CONDITIONS

A. Hazardous Materials: It is unknown whether hazardous materials will be encountered in the Work.

1. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Project Representative and Owner. Owner will remove hazardous materials under a separate contract.

1.12 PROJECT SIGN

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

1.13 PROJECT SIGN LETTERING

TITLE OF PROJECT:	SEWER LIFT STATION REPLACEMENT
NAME OF FACILITY:	SUN LAKES STATE PARK
NAME OF CONTRACTOR:	(Place Contractor’s Name here)
ADDRESS OF CONTRACTOR:	(Place Contractor’s Address here)
FUNDING TITLE NUMBER 1:	STATE BUILDING CONSTRUCTION ACCOUNT
FUNDING TITLE NUMBER 2:	LEAVE BLANK FOR THIS PROJECT

1.14 PARTNERSHIP IN THE CONTRACT

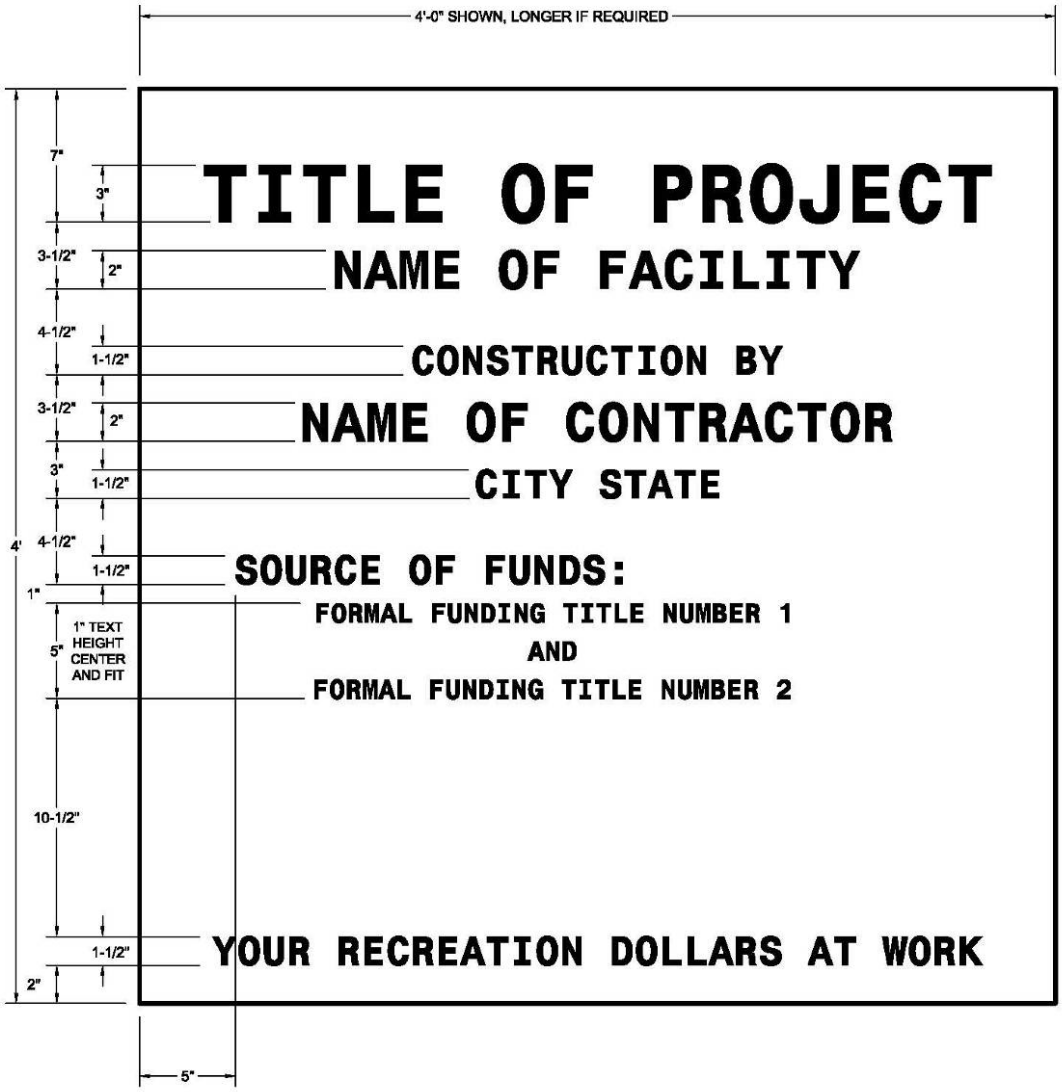
A. As partners in this contract, both Contractor and Commission recognize the value of a successful Project. Both parties recognize, besides the tangible benefits to Contractor and the

Commission, the citizens of Washington State and visitors to Washington State Parks will benefit immensely from the successful completion of a quality Project.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

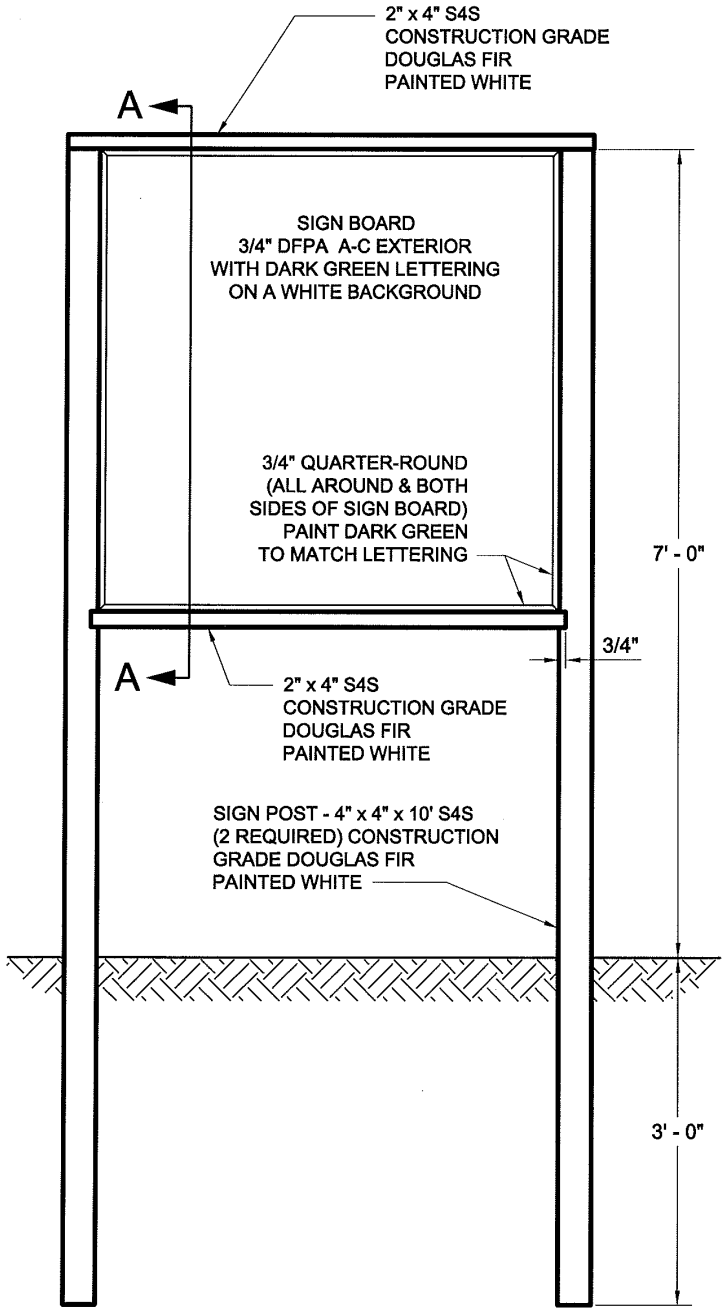
PROJECT SIGN DETAIL



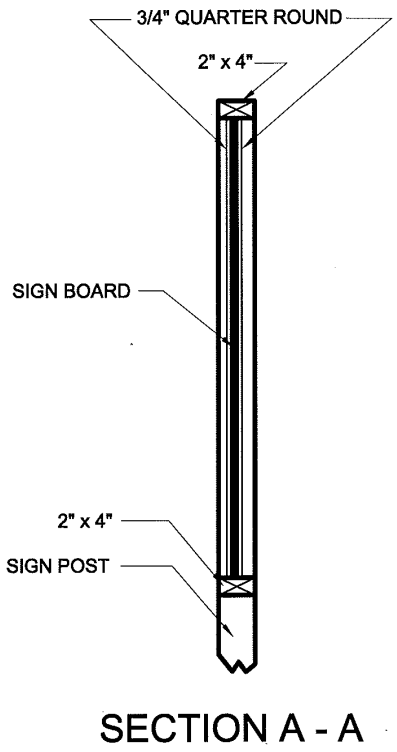
LAY OUT SIGN TO FIT ON A PORTION OF ONE (1) SHEET OF PLYWOOD. IF PLYWOOD IS THE FINAL SURFACE, PAINT IT WITH TWO (2) OR MORE COATS OF WHITE PAINT TO FORM A SMOOTH, NONABSORBENT SURFACE. PROVIDE DARK GREEN WELL FORMED LETTERS, EVENLY SPACED, NEAT IN APPEARANCE, AND ALIGNED AS SHOWN ABOVE.

WASHINGTON STATE PARKS
PROJECT SIGN DETAIL

PROJECT SIGN DETAIL



PLAN



SECTION A - A

END OF SECTION

SECTION 010099 – SURVEYING

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

A. Set and maintain alignment and grades necessary for construction; including clearing limits, grading, utilities, roads, trails, and structures. Except for the data specified to be furnished by the Owner, the Contractor is responsible for calculations, surveying materials and measuring required for setting and maintaining the necessary lines and grades. Furnish copies of calculations and staking data, when requested by Project Representative. Autocad design data will not be supplied by the State.

B. Staking requirements that do not fit field conditions will be reviewed and, if necessary, adjusted by the Engineer. Revisions to the staking information will be provided for completing the work.

1.2 SURVEY CONTROL AND DATA

A. To facilitate establishment of lines and elevations, Owner will furnish the following survey control and data:

1. Elevation benchmarks, and horizontal control points, for one time only.
2. Provide technical advice, if requested.

B. Give three weeks' notice to allow adequate time to provide data.

1.3 TOLERANCES

A. Ensure accuracy of line and elevations within a tolerance of 0.01 foot.

B. In disputes concerning line and elevation accuracy, resolve dispute to Project Representative's satisfaction. Correct discrepancies before proceeding. No additional time or compensation will be provided for corrective work.

1.4 PAYMENT

A. Work price for "Surveying" includes full pay costs for labor, tools, survey instruments, materials, other equipment, and traffic control necessary for the setting and maintaining horizontal locations and grades as specified. Cost is incidental to other pay items; no separate payment.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 013300 – SUBMITTAL PROCEDURES

PART 1 – GENERAL

1.1 WORK IN THIS SECTION

A. General: The types of submittal requirements specified in this Section include Shop Drawings, product data, Samples and miscellaneous Work-related submittals. Specialized submittal requirements are specified in applicable Sections for each unit of Work. Refer to other Division 01 Sections and other Contract documents for requirements of administrative submittals.

B. Definitions: Work-related submittals of this Section are categorized for convenience as follows:

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

1.2 RELATED REQUIREMENTS

A. General Conditions 4.03

B. Section 014000 - Quality Requirements

C. Section 017700 – Closeout Procedures

1.3 GENERAL SUBMITTAL REQUIREMENTS

A. Coordination and Sequencing: Coordinate preparation and processing of submittals with performance of the Work so that Work will not be delayed by submittals. Coordinate and sequence different categories of submittals for same Work, and for interfacing units of Work, so that one will not be delayed for coordination with another.

B. Preparation of Submittals: Provide permanent marking on, or with, each submittal to identify Project, date, Contractor, sub-contractor, submittal name and similar information to distinguish it from other submittals.

1.4 SPECIFIC SUBMITTAL REQUIREMENTS

A. General:

1. Except as otherwise indicated in individual Work Sections, comply with requirements specified herein for each indicated category of submittal.
2. Provide and process intermediate submittals, where required between initial and final, similar to initial submittals.
3. Include a transmittal with all submittals.

B. Shop Drawings:

1. General: No claims for extras may be initiated, based on Work shown on Shop Drawings.
2. Where Work of more than one sub-contractor is involved, submit composite Drawings, clearly defining the Work of each separate sub-contractor.
3. No extension of time in respect to the final completion date of building will be granted to Contractor because of failure to have any Shop Drawings submitted in ample time to allow for checking.
4. Verify all dimensions by taking field measurements. Do not begin Work until required submittals have been returned by the Engineer with stamp and initials indicating review. If Work has been done which is contrary to the approved Drawings, it will be corrected at no additional cost to the Commission. Maintain one complete set of shop drawings at the site for use by the Engineer.
5. Submit four (4) copies. Engineer will retain two (2) copies and return two (2) copies.

C. Product Data:

1. General:

a. Collect required data into one submittal for each unit of Work or system; and mark each copy to show which choices and options are applicable to Project. Include manufacturer's standard printed recommendations for application and use, compliance with standards, application of labels and seals, notation of field measurements which have been checked, and modify details as required for application into the Work. Include color selection information where necessary.

b. Do not proceed with installation of materials, products or systems until final copy of applicable product data is in possession of Installer. Maintain one complete set of product data at the site for use by Project Representative.

2. Preparation and Processing: Do not submit product data, or allow its use on the Project, until compliance with requirements of Contract documents has been confirmed by Contractor. Submittal is for information and record, unless otherwise indicated. Initial submittal is final submittal unless returned by Engineer, marked with an "Action" which indicates an observed noncompliance.
3. Submit four (4) copies. Engineer will retain two (2) copies and return two (2) copies to the Contractor.

D. Samples:

1. General: Provide units identical with final condition of proposed materials or products for the Work. Include "range" Samples (not less than three (3) units) where there are unavoidable variations between units of each set. Provide full set of optional Samples where Engineer's selection is required. Prepare Samples to match Engineer's sample where indicated. Include information with each sample to show generic description, source or product name and manufacturer, limitations, and compliance with standards. Samples are submitted for review and confirmation of color, pattern, texture and "kind" by Engineer. Engineer will not "test" Samples (except as otherwise indicated) for compliance with other requirements, which are, therefore, for exclusive responsibility of the Contractor.
2. Processing: Submit two (2) sets of Samples for Engineer's review and "Action"; one (1) set will be returned. Large Samples, which may be incorporated into the Work, may be submitted singly.
3. Reusable Samples: Returned Samples which are intended or permitted to be incorporated in the Work are so indicated in the individual Work sections, and must be in undamaged condition at time of use.

E. Warranties and Guarantees: In addition to copies desired for Contractor's use, furnish three (3) executed copies, except furnish additional copies where required for maintenance manuals.

F. Survey Data: Refer to other Sections for specific general requirements on property surveys, field measurements, quantitative records of actual Work, damage surveys, photographs and similar data required by individual Work Sections of these specifications. None of specified copies will be returned.

1.5 ACTION ON SUBMITTALS

A. Engineer's Action: Engineer will review each submittal, mark with "Action", and where possible return within two (2) weeks of receipt. Where submittal must be held for coordination, they will be returned to the Contractor within two (2) weeks of receipt for the Contractor to resubmit when it is appropriate.

1. Final Unrestricted Release: Work may proceed, provided it complies with Contract documents, when submittal is returned with marking: "Approved as Submitted".

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

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

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

PART 1 - GENERAL

1.1 PROJECT SPECIFIC REQUIREMENTS

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

1.2 EMERGENCY CONTACTS

WSPRC Archaeologists

Jennifer Wilson, Archaeology Program Manager	(360) 787-6511 (cell)
Email: jennifer.wilson@parks.wa.gov	(360) 902-8637 (office)
Shari Silverman, Archaeologist SW Region	(435) 260-9894 (cell)
Email: shari.silverman@parks.wa.gov	(360) 902- 8640 (office)
Kayley Bass, Archaeologist SW Region	(360) 701-1277 (cell)
Emails: kayley.bass@parks.wa.gov	
Sarah DuBois, Archaeologist Eastern Region	(360) 972-5884 (cell)
Email: sarah.dubois@parks.wa.gov	(509) 665-4336 (office)
Ayla Aymond, Archaeologist Eastern Region	(509) 743-8251 (cell)
Email: ayla.aymond@parks.wa.gov	
Sean Stcherbinine, Archaeologist NW Region	(360) 770-1419 (cell)
Email: sean.stcherbinine@parks.wa.gov	
Laura Syvertson, Archaeologist NW Region	(360) 770-0444 (cell)
Email: laura.syvertson@parks.wa.gov	
Maurice Major, Stewardship Archaeologist	(360) 701-6218 (cell)
Email: maurice.major@parks.wa.gov	(360) 902-8503 (office)

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

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

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

County Coroner/Examiner
Craig Morrison, Coroner; (509) 765-7601

Area Manager
Denis Felton (509) 683-3381

Region Manager
Jason Both (509) 665-4317

Local Law Enforcement (if can't get ahold of any park staff)
Joe Kriete, Sheriff; (509) 754-2011. Ext. 2001

1.3 INADVERTENT DISCOVERIES OF CULTURAL RESOURCES AND HUMAN SKELETAL REMAINS

A. Many of Washington's most important heritage sites reside on lands owned or managed by the Washington State Parks and Recreation Commission (WSPRC). Nearly all Washington State Parks contain one or more important historic buildings, structures, or archaeological sites. For this reason, archaeological surveys and historic building inventories are ordinarily commissioned as a part of background analysis and information gathering for park developments and undertakings. Results of these surveys are used during project planning to ensure every effort is made to avoid impacts to cultural resources. Yet, despite these efforts, there **always** remains some potential for unanticipated discoveries while working in Washington State Parks.

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

1.4 INADVERTENT DISCOVERY PLAN FOR CULTURAL RESOURCES

A. If cultural resources are found during a project, activity in the immediate area of the find should be discontinued (**stop**), the area secured (**protect**), and the WSPRC archaeologists notified to assess the find (**notify**). ***When in doubt, assume the material is a cultural resource and implement the IDP outlined below.***

B. **Recognizing Cultural Resources-***Types of Historic/Prehistoric Artifacts and/or Activity Areas That May Be Found*

1. Artifacts- Both historic and prehistoric artifacts may be found exposed in backhoe trenches or back dirt piles.

   a) Prehistoric artifacts may range from finished tools such as stone pestles, arrowheads/projectile points, shell beads, or polished bone tools to small pieces or "flakes" or "chips" of exotic stone such as chert, jasper, or obsidian.
   b) Historic artifacts may include older (more than 50 years) nails, plates/ceramics, bottles, cans, coins, glass insulators, or bricks.
   c) Old abandoned industrial materials from farming, logging, railways, lighthouses, and military installations.

2. Activity Area/Cultural Features- While excavating trench lines look for evidence of buried activity areas/cultural features such as old campfire hearths or buried artifacts.

    a) An area of charcoal or very dark stained soil with artifacts or burned rocks may be a fire hearth.
    b) A concentration of shell with or without artifacts may be shell midden deposits.
    c) Modified or stripped trees, often cedar or aspen, or other modified natural features, such as rock drawings or carvings

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

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

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

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

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

E. WHAT HAPPENS NEXT?

1. The find will be assessed by a professional archaeologist (may be a WSPRC archaeologist or an archaeology consultant).

    a) If the find is not a cultural resource, construction work may resume.
    b) If the find is a cultural resource, the WSPRC archaeologist will contact the DAHP and affected Tribes, as appropriate, to develop a suitable treatment plan for the resource.

2. Construction work may resume in the protected area after the WSPRC archaeologist assigned to the undertaking has determined that the find has been adequately investigated

and, if necessary, a treatment plan and monitor are in place to protect any remaining archaeological deposits.

1.5 INADVERTENT DISCOVERY PLAN FOR HUMAN SKELETAL REMAINS

A. Native American burials and historic grave sites are uncommon features on Washington State Park lands. These remains, as well as any associated artifacts or funerary objects, are protected under state law and, if the park is a federal lease, applicable federal law. If you discover human remains (or bones that you believe may be human remains) during construction, please follow these important instructions. It is imperative that reporting and treatment of any human remains found during construction or any ground-disturbing activities are treated with utmost dignity and respect.

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

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

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

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

D. What Happens Next?

1. The county medical examiner/coroner will assume jurisdiction over the human skeletal remains and decide whether those remains are forensic (crime-related) or non-forensic.

a) If forensic, the county medical examiner/coroner will retain jurisdiction over the remains.

b) If non-forensic, the county medical examiner/coroner will report that finding to the DAHP who will then take jurisdiction over the remains. The DAHP will notify any appropriate cemeteries and all affected Tribes of the remains. The State Physical Anthropologist will decide whether the remains are Indian or Non-Indian and report that finding to any appropriate cemeteries and the affected Tribes. The DAHP will then handle all consultation with the affected parties as to the future preservation, excavation, and disposition of the remains.

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

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

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

1. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
2. Requirements for Contractor to provide quality-assurance and -control services required by Project Representative, Owner, or Authorities Having Jurisdiction are not limited by provisions of this Section.

C. Related Requirements:

1. Section 014500 – Quality Control and Divisions 02 through 49 Sections for specific test and inspection requirements.

1.2 DEFINITIONS

A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Project Representative.

C. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.

D. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to Authorities Having Jurisdiction, to establish product performance and compliance with specified requirements.

E. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.

F. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

G. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

H. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.

1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).

I. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.3 CONFLICTING REQUIREMENTS

A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Project Representative for a decision before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Project Representative for a decision before proceeding.

1.4 QUANTITY SHEETS/WEIGHT TICKETS

A. For bulk items, supply quantity sheets (load receipts) to account for each load delivered to the jobsite. Deliver quantity sheets to Inspector on job at delivery time. If Inspector is not on job, deliver quantity sheets on a daily basis to place designated by Project Representative.

B. No payment shall be made for materials delivered for which quantity tickets have not been turned into Inspector or delivered to designated place at end of working day. Backdated tickets are not acceptable as a basis for payment, except at Project Representative's discretion.

C. If bid item for material to be delivered to jobsite is stated in TONS, only weight slips from approved scale are acceptable for payment purposes, unless approved in advance by Project Representative.

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

1.5 INFORMATIONAL SUBMITTALS

A. Contractor's Statement of Responsibility: When required by Authorities Having Jurisdiction, submit copy of written statement of responsibility sent to Authorities Having Jurisdiction before starting work on the following systems:

1. Seismic-force-resisting system, designated seismic system, or component listed in the designated seismic system quality-assurance plan prepared by Engineer.
2. Main wind-force-resisting system or a wind-resisting component listed in the wind-force-resisting system quality-assurance plan prepared by Engineer.

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

1.6 REPORTS AND DOCUMENTS

A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

B. Manufacturer's Field Reports: Prepare written information documenting tests and inspections specified in other Sections. Include the following:

1. Name, address, and telephone number of representative making report.
2. Statement on condition of substrates and their acceptability for installation of product.
3. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
4. Results of operational and other tests and a statement of whether observed performance complies with requirements.

5. Other required items indicated in individual Specification Sections.

C. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.7 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.

F. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and, where required by Authorities Having Jurisdiction, that is acceptable to authorities.

1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

G. Manufacturer's Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

1.8 QUALITY CONTROL

A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.

1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor**,** and the Contract Sum will be adjusted by Change Order.

B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.

1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.

    a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.

2. Notify testing agencies at least 48 hours in advance of time when Work that requires testing or inspecting will be performed.
3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

C. Manufacturer's Field Services: Where indicated, engage a manufacturer's representative to observe and inspect the Work. Manufacturer's representative's services include examination of substrates and conditions, verification of materials, inspection of completed portions of the Work, and submittal of written reports.

D. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

E. Testing Agency Responsibilities: Cooperate with Project Representative, Construction Manager, and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify Project Representative, Construction Manager, and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
6. Do not perform any duties of Contractor.

F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspecting equipment at Project site.

G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.
2. Description of the Work tested or inspected.
3. Date test or inspection results were transmitted to Project Representative.
4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Project Representative's and, Construction Manager's reference during normal working hours.

3.2 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION

SECTION 014100 - REGULATORY REQUIREMENTS

PART 1 - GENERAL

1.1 PERMITS, CODES AND REGULATIONS

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

1. State Environmental Policy Act - DNS
2. Shoreline Substantial Development - Exemption
3. Archaeology and Historic Preservation Review and Clearance

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

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

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

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

1.2 VARIATIONS WITH CODES, REGULATIONS AND STANDARDS

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

B. Appropriate modifications to the Contract documents will be made by Change Order to incorporate changes to Work resulting from code and/or regulatory requirements. Contractor assumes responsibility for Work contrary to such requirements if Work proceeds without notice.

C. Contractor is not relieved from complying with requirements of Contract documents which may exceed, but not conflict with requirements of governing codes.

1.3 COORDINATION WITH REGULATORY AGENCIES

A. Coordinate Work with appropriate governing or regulating authorities and agencies.

B. Provide advance notification to proper officials of Project schedule and schedule revisions throughout Project duration, in order to allow proper scheduling of inspection visits at proper stages of Work completion.

C. Regulation coordination is in addition to inspections conducted by Project Representative. Notify Project Representative of scheduled inspections involving outside regulating officials, to allow Project Representative to be present for inspections.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 014200 – REFERENCES

PART 1 - GENERAL

1.1 DEFINITIONS

A. General: Basic Contract definitions are included in the General Conditions of the Contract.

B. "Approved": When used to convey Project Representative's action on Contractor's submittals, applications, and requests, "approved" is limited to Project Representative's duties and responsibilities as stated in the General Conditions of the Contract.

C. "Directed": A command or instruction by Project Representative. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."

D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."

E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.

F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

G. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

H. "Provide": Furnish and install, complete and ready for the intended use.

I. “Project Engineer”, “Project Architect”, “Engineer”, and “Architect” are interchangeable terms.

J. Project Representative and Owners Representative are interchangeable terms.

K. “As-built Drawings”: Drawings done by the Contractor in the field showing changes to the Work.

L. “Record Drawings”: Drawings prepared based on the information on the As-built Drawings.

M. “Wet Locations”: All locations exposed to the weather, whether under a roof or not, or within channels, basins or tanks.

N. “Damp Locations”: Process areas; areas containing valves, and major piping; all spaces wholly or partially underground, or having a wall or ceiling forming part of a channel or tank, unless otherwise designated on the Plans. Any areas which do not fall within the definitions for dry, wet, or corrosive shall be considered damp.

O. "Corrosive Locations": Sewer wetwells and sewer manholes.

1.2 GENERAL

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

1.3 PUBLICATION DATES

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

1.4 ABBREVIATIONS AND NAMES

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

1.	AASHTO	American Association of State Highway & Transportation Officials
2.	ACI	American Concrete Institute
3.	AGA	American Gas Association
4.	AI	Asphalt Institute
5.	AIA	American Institute of Architects (The)
6.	AISC	American Institute of Steel Construction, Inc.
7.	AISI	American Iron and Steel Institute
8.	AITC	American Institute of Timber Construction
9.	ANSI	American National Standards Institute
10.	APA	Engineered Wood Association (The)
11.	APWA	American Public Works Association
12.	ASME	American Society of Mechanical Engineers
13.	ASTM	American Society for Testing and Materials International
14.	AWPA	American Wood Protection Association
15.	AWS	American Welding Society
16.	AWWA	American Water Works Association
17.	CRSI	Concrete Reinforcing Steel Institute
18.	EPA	Environmental Protection Agency
19.	HPVA	Hardwood Plywood and Veneer Association
20.	IBC	International Building Code
21.	IEEE	Institute of Electrical & Electronics Engineers, Inc. (The)
22.	IES	Illuminating Engineering Society of North America
23.	LPI	Lighting Protection Institute
24.	MCAA	Mechanical Contractors Association of America, Inc.
25.	NIST	National Institute of Standards and Technology
26.	NCMA	National Concrete Masonry Association
27.	NEC	National Electrical Code
28.	NECA	National Electrical Contractors Association, Inc.
29.	NFPA	National Fire Protection Association
30.	NHLA	National Hardwood Lumber Association
31.	NSF	National Sanitation Foundation International

32. OSHA Occupational Safety & Health Administration
33. PCA Portland Cement Association, (The)
34. SEPA State Environmental Policy Act
35. UL Underwriters Laboratories, Inc.
36. UPC Uniform Plumbing Code
37. WCLIB West Coast Lumber Inspection Bureau (Grading Rules)
38. WRI Wire Reinforcement Institute
39. WSDOE or ECY Washington State Department of Ecology
40. WSDOH or DOH Washington State Department of Health
41. WSDOT Washington State Department of Transportation
42. WSPRC Washington State Parks and Recreation Commission
43. WWPA Western Wood Products Association (Grading Rules)

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 014500 – QUALITY CONTROL

PART 1 - GENERAL

1.1 QUALITY ASSURANCE

A. The Owner may elect to have an inspector on site to monitor, observe and record construction progress. The Contractor maintains complete responsibility to verify construction is meeting the design intent and is being constructed in accordance with the plans and specifications. It is not the responsibility of the Owner's inspector to address neither means and methods issues on site nor direct safety issues on site. The Owner's inspector does not have the authority to stop work if unsafe conditions are observed.

B. SITE CONDITIONS

1. Winter work is expected and the construction duration incorporates this time. Cast-in-place Concrete placement will not be permitted when temperature is below 40 degrees F and falling unless the Contractor can provide a cold weather placement plan acceptable to the Owner. Load limits on public roads may be established by various Counties during cold weather. No additional working days nor monetary compensation will be provided.
2. Historical average of daily maximum temperature below 40 degrees F is between November 5 and March 1. If said cold weather conditions extend beyond these dates, the Owner may, at its discretion, provide additional working days, but will not provide additional monetary compensation.
3. If the Contractor wishes to work during weather where the maximum daily temperature does not exceed 40 degrees F, the Contractor must submit a cold weather work plan and obtain permission from the Owner. Owner permission is not guaranteed and refusal will not be cause for claim. Any costs associated with cold weather work which may include but not be limited to: tenting; heating of workspace or materials; wind protection; snow/ice removal; testing; and removal/replacement of frozen work will be borne by the Contractor with no additional cost to the Owner.
4. If temperature at any time drops below freezing, the Contractor must provide freeze protection for temperature sensitive work. All costs are incidental.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 PREPARATION

A. The Contractor is responsible for surveying and staking and will stake out the locations all major facilities shown on the Plans and establish bench marks at locations designated by the Owner. The Contractor shall protect all stakes and marks in their original conditions. If stakes and markings are destroyed or defaced before their use is ended, the cost of replacing them will be at the Contractor's expense. Provide surveyed control points and structure locations to the Owner for as-built purposes.

B. The Contractor shall locate a temporary benchmark within an area that will not be disturbed during construction. Benchmark shall be horizontal and elevation controlled to the existing Parks control points.

C. Provide notification to the Owner when structure subgrade is prepared and ready for crushed surfacing. Owner will inspect subgrade and may elect to provide their own survey of the subgrade to check elevation. The Owner will have 24 hours, scheduled for a standard working day, to perform their inspections.

D. Prior to placement of any foundation form work, the subgrade elevation shall be surveyed by the Contractor to confirm the subgrade is at the proposed elevation as shown on the plans. The subgrade shall be within a tolerance of plus or minus one inch (+/- 1 inch). Provide written results of the elevation confirmation to the Owner prior to placing structures. If tolerance exceeds the limits specified, the Contractor shall regrade the subgrade to within these limits at their expense.

3.2 FIELD QUALITY CONTROL

A. Contractor shall schedule and arrange for the following inspections and tests with the appropriate reviewing agency and testing company.

1. Special Inspections as required per IBC Division 17 and as noted on the drawings
2. Any additional inspections required by the Building Department, or other approval agency
3. Concrete compressive strength and air content

B. Owner will schedule and arrange for the following inspections and tests.

1. Soils and crushed rock compaction

C. Startup

1. Startup shall consist of a simulated operation of all equipment and controls. The purpose of startup shall be to check that all equipment will function under operating conditions, that all interlocking controls and sequences are properly set, and that the facility will function as an operating unit.
2. Technically qualified factory representatives shall be present for the startup phase. All Representatives shall be trained, qualified, and have experience in troubleshooting and fixing field issues. The startup shall continue until it is demonstrated that all functions, controls, and machinery are functioning correctly.
3. Authorized factory representatives shall be provided for the following items:

    a. Pumps and motors
    b. Motor control centers (electrician may qualify if approved by manufacturer)
    c. Level and flow sensors (electrician may qualify if approved by manufacturer)

D. Training

1. At the time that the facility is ready to be put into operation, the Contractor is to conduct an operation and maintenance training meeting with the owner to explain in detail the

operation and maintenance requirements of each of the facility's components. The training meeting shall not occur on the same date(s) as a startup.

2. Operation of the facility shall commence immediately after completion of testing, startup, and Owner training and after satisfactory repairs and adjustments have been made.

3.3 SITE TESTS

A. Not less than 21 calendar days before the anticipated time for beginning testing at each facility, the Contractor shall notify and submit to the Owner for approval, a complete plan for the following:

1. Schedules for tests:
2. Pumps and motors
3. Control system
4. Meter calibration

B. Product Representatives to be on site:

1. Pump representative
2. Control panel representative

C. Detail schedule of procedures for startup.

D. Complete schedule of events to be accomplished during testing.

E. An outline of work remaining under the contract that will be carried out concurrently with the operation phases.

F. Failure to provide proper notification to the Owner may lead to liquidated damages if schedule cannot be maintained. If rescheduling is required because components are not ready for testing, the notification requirements are reset and shall provide for 10 calendars days advance notice in order to reserve Engineer's and/or Owner Representatives' time.

G. Not less than 5 working days before the anticipated time for beginning the testing, the Contractor shall provide a list of representatives that will be attending the testing. The Owner may request additional representatives if necessary at no additional cost.

H. The Contractor shall conduct all testing and startup. Testing and startup shall not be a cause for claims for delay by the Contractor and all expenses for testing and startup shall be incidental to this contract. The Contractor shall make arrangements for all materials, supplies, and labor necessary to efficiently complete the testing, startup, and operation. At a minimum, the Contractor shall provide:

1. Calibrated pressure gauge
2. Voltmeter
3. Amp meter
4. Water truck for refilling wetwell between tests. Minimum size 2,000 gallons. There is a water source available at the park shop with a 2-inch fire hydrant connection with an estimated flow of 25 gpm. If the Owner determines the Contractor is wasting water the Owner reserves the right to revoke permission to use this source and the Contractor will find a new water source at no additional cost to the project.

I. The Contractor may periodically request preliminary testing for items that must be covered or tested before other work can proceed. In these cases, the work shall not be tested or covered up without timely notice to the Owner of its readiness for testing. Should any work be covered up without notice, approval, or consent, it must, if required by the Owner, be uncovered for examination at the Contractor's expense. Where work is to be tested, all necessary equipment shall be set up and the work given a preliminary test so that any and all defects may be discovered and repaired prior to calling out the Owner for the test.

J. Final testing shall consist of individual tests and checks made on equipment intended to provide proof of performance of unit and proper operation of unit control together with necessary tests to show system operation in the presence of the Owner. Assure proper alignment, size, condition, capability, strength, proper adjustment, lubrication, pressure, hydraulic test, leakage test, and all other tests deemed necessary by the Owner to determine that all materials and equipment are of specified quality, properly situated, anchored, and in all respects, ready for use. Any certificates required by these specifications by the manufacturer's representatives shall be supplied to the Owner prior to startup.

K. All piping shall be tested as required by specifications and applicable codes. Tests on individual items of equipment, such as pipelines, structures, controls, and other items shall be as necessary to show proper system operation. During testing, the Contractor shall correct any defective work discovered. Startup shall not begin until all tests required by these specifications have been completed and approved by the Owner.

L. A detailed testing schedule shall be provided by the Contractor and updated as needed to be at least 48 hours (not counting weekends and holidays) ahead of actual testing at the project site. If testing requires downtime in order to perform repairs due to failed test, the Contractor shall pay the Owner in the amount of $200 per hour per Owner Representative on site (minimum of $400 per scheduled visit) for downtime lasting longer than 1 hour required to complete repairs to verify the complete construction is ready for startup and operation. This amount will be deducted from the appropriate bid item that relates to the finished construction and documented by the Owner at their discretion. The Contractor is required to have all systems pre-tested to their satisfaction prior to calling the Owner for formal testing.

M. Wetwell leakage test

1. A leakage test of the completed wetwell shall be performed by the Contractor. On completion of the structure, and prior to any specified backfill placement at the footing or wall, the following test shall be applied to determine water tightness.
2. The wetwell shall be filled with water to the lowest inlet pipe elevation.
3. The water level shall be marked and measured inside the structure at the beginning of the test. There shall be no visible leakage nor drop in water level over a 24 hour period.
4. If the level drops the leakage shall be considered excessive and the structure shall be repaired using a method acceptable to the Owner and retested until the leakage falls within the appropriate limit.
5. Surfaces shall not be backfilled, covered or otherwise obscured until the Owner determines that the structure has passed the leak test.

END OF SECTION

SECTION 015000 – TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 PROTECTION OF PROPERTY AND EXISTING FACILITIES

A. Provide protections necessary to prevent damage to park property and facilities.

B. Only rubber-tired equipment are permitted to operate on paved park roads.

C. Protect existing trees and other vegetation indicated to remain in place against cutting, breaking or skinning of roots, skinning and bruising of bark, or smothering of trees by stockpiling materials within dripline. Provide necessary temporary guards to protect trees and vegetation to remain in place.

D. Make every effort to minimize damage and cutting major tree roots during excavation operations. Provide protection for larger tree roots exposed or cut during excavation operations.

1.2 ENVIRONMENTAL PROTECTIONS

A. Scope:

1. Provide labor, materials, equipment and perform Work required for protection of environment during and as a result of construction operations under contract.

B. Applicable Regulations:

1. Comply with applicable federal, state and local laws and regulations concerning environmental pollution control and abatement, and specific requirements elsewhere in specifications and drawings to prevent and provide for control of environmental pollution.

C. Protection of Land Resources:

1. Give special attention to the effect of Contractor’s operations upon surroundings. Take special care to maintain natural surroundings undamaged and conduct Work in compliance with following requirements:

    a. When Work is completed, remove storage and other Contractor buildings and facilities, and sites restored to a neat and presentable condition appropriate to surrounding landscape, unless otherwise specified. Remove debris resulting from Contractor's operation.
    b. Store petroleum products, industrial chemicals and similar toxic or volatile materials in durable containers approved by the Authority Having Jurisdiction and located in areas where accidental spillage will not enter water. Store substantial quantities of materials in an area surrounded by containment dikes of sufficient capacity to contain an aggregate capacity of tanks.

D. Protection and Restoration of Property:

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

E. Protection of Water Resources:

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

F. Dust Control:

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

G. Temporary Water Pollution/Erosion Controls:

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

3. Develop a written spill prevention and response plan for construction activities adjacent to/and over any surface waters and/or wetlands. "Adjacent" means within 150' as measured on a horizontal plane. Plan addresses:

    a. Narrative description of the proposed construction methods, materials, and equipment to be used for Work
    b. Assessment and listing of hazardous materials and/or potential contaminants that could be released during execution of Work
    c. SDS sheets with cleanup instructions for potential contaminants
    d. Spill response/cleanup materials and instructions for use
    e. Procedures and precautions to prevent spills
    f. Spill response training for on-site personnel, including the location of the containment and cleanup materials at site
    g. Emergency notification in case of a spill or release. Park Manager and Project Representative must be included on the list of notified.

4. Comply with applicable codes and ordinances for spill prevention and response plan and submit a copy to Project Representative before commencing Work adjacent to or over any waters and/or wetlands.

I. EMERGENCY SPILL RESPONSE NOTIFICATION

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

    a. Central Regional Office: (509) 575-2490 (Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, and Yakima counties)
    b. Eastern Regional Office: (509) 329-3400 (Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, and Whitman counties)
    TDD: Washington Relay Service 711 or (800) 833-6388.

1.3 PARK TRAFFIC/PEDESTRIAN CONTROLS

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

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

1.4 PROTECTION OF WORK

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

1.5 REMOVAL AND REPLACEMENT OF STATE-OWNED ITEMS

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

1.6 USE OF PARK SPACE

A. Only in areas of park that Contract covers and only during active inclusive dates of Contract.

B. Contractor vehicle and equipment parking only as designated by Project Representative.

C. Contractor will be issued temporary parking passes for construction crew, vehicles and equipment, valid for the duration of the contract only.

1.7 ROADWAY CLOSURE

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

1.8 UTILITIES

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

1.9 SERVICE OUTAGES

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

1.10 SANITARY FACILITIES

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

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 016000 – PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 COMMISSION FURNISHED ITEMS

A. The Commission furnishes no items. Make all arrangements for and provide all materials required to accomplish the Work.

1.2 IMPLIED/INCIDENTAL MATERIALS

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

1.3 QUALITY OF MATERIALS

A. Materials are to be new, free from defects, and of quality specified in the drawings and specifications.

B. Select and provide materials to ensure satisfactory operation and rated life in prevailing environmental conditions were installed.

C. Same make and quality throughout the entire job, for each type. Furnish materials of latest standard design products of manufacturers regularly engaged in their production.

1.4 SPECIFIED MATERIALS

A. Drawings and specifications generally reference only one make and model for each item of material or equipment required. This is not intended to be restrictive but indicates the standard of quality, design, and features required.

B. Specified product is the basis of design regarding physical size, strength, and performance. Products named indicate minimum acceptable product and are "or equal" unless noted otherwise.

1.5 SUBSTITUTIONS

A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.

1. Conditions: Project Representative will consider Contractor's request for substitution when the following conditions are satisfied:

a. Requested substitution is consistent with Contract Documents and will produce indicated results.
b. Requested substitution provides sustainable design characteristics that specified product provided.
c. Requested substitution will not adversely affect Contractor's construction schedule.
d. Requested substitution has received necessary approvals of Authorities Having Jurisdiction.
e. Requested substitution is compatible with other portions of Work.
f. Requested substitution has been coordinated with other portions of Work.
g. Requested substitution provides specified warranty.
h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

B. Substitutions for Convenience: Project Representative will consider requests for substitution if received within 60 days after the Notice of Award.

1. Conditions: Project Representative will consider Contractor's request for substitution when the following conditions are satisfied:

a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Engineer for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
b. Requested substitution does not require extensive revisions to Contract Documents.
c. Requested substitution is consistent with Contract Documents and will produce indicated results.
d. Requested substitution provides sustainable design characteristics that specified product provided.
e. Requested substitution will not adversely affect Contractor's construction schedule.
f. Requested substitution has received necessary approvals of Authorities Having Jurisdiction.
g. Requested substitution is compatible with other portions of Work.
h. Requested substitution has been coordinated with other portions of Work.
i. Requested substitution provides specified warranty.
j. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

1.6 SUBSTITUTION OF MATERIALS ("OR EQUAL")

A. Proposed equipment to be considered "or equal" will necessitate written approval by the Project Representative prior to substitution.

B. On requests for substitution of materials clearly define and describe proposed substitute.

C. Accompany requests by complete specifications, samples, records of performance, certified test reports, and such other information as the Engineer may request to evaluate the substitute product.

D. Contractor is responsible for a substitute item suiting the installation requirements and for additional costs incurred as a result of substitution.

E. Final decisions regarding quality and suitability of proposed substitutions rests solely with Project Representative and will be based on information submitted.

1.7 TECHNICAL DATA

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

1.8 DELIVERY, STORAGE AND HANDLING

A. Transport products by methods to avoid product damage. Only deliver products to the site that are undamaged and free from defects.

B. Provide proper equipment and personnel to handle and transport materials/products to the Project sites safely and undamaged.

C. Promptly inspect material to assure that products comply with Contract requirements, quantities are correct, and products are undamaged.

D. Store and/or stockpile materials and products only in areas of park designated and approved by Project Representative prior to delivery.

E. Arrange storage to provide easy access for inspections. Original product labels, certifications, stamps, etc. to be intact and readily visible for inspection purposes.

1.9 DESIGN REQUIREMENTS

A. Fittings, valves, pipe and fluid systems shall have pressure ratings equal to or greater than the pressures identified below, unless specifically called out otherwise in the plans or specifications:

1. Pump discharge, valve vault and forcemain.
2. Function pressure: 65 psi

3. Working pressure: 150 psi
4. Test pressure: 150 psi

B. Function pressure: Typical maximum pressure anticipated during normal operation.

C. Working pressure: Manufacturer's rating of the equipment for extended operation.

D. Test pressure: Maximum pressure during project specific testing.

1.10 PADLOCK HASP REQUIREMENTS

A. Provide all exposed enclosures, access hatches, panels and doors with tamperproof padlock hasps.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL (NOT USED)

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to Authorities Having Jurisdiction.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Waste and debris removed from the worksite and not specified for reuse becomes the responsibility of the Contractor and disposed of off park property in areas authorized by the applicable county and/or state agencies and in accordance with current rules and regulations governing the disposal of solid waste. Disposal fees and sundry charges are paid by the Contractor and are incidental to the contract.

C. Burning: Do not burn waste materials.

D. Disposal: Remove waste materials from Owner's property and legally dispose of them.

END OF SECTION

SECTION 017700 – CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 OPERATING AND MAINTENANCE (O&M) INSTRUCTION MANUAL

A. Final payment will be held to no more than 95 percent completion percentage until receipt of the O & M Instruction Manuals. Payment for Contract closeout item will be made after receipt and approval of the manuals by the Project Representative. Have O & M Instruction Manuals prepared before final payment. Lack of O & M Instruction Manuals will not be a cause for Contract extensions.

B. Furnish three (3) complete sets of binders and one (1) Electronic PDF copy on a storage device containing the following data for each mechanical, pumping, electrical equipment, major hardware, and plumbing installation or provided on this Project:

1. Installation instructions
2. Operating instructions (start-up and shut-down)
3. Maintenance instructions, including trouble shooting guide
4. Electrical schematics
5. Illustrated parts breakdown and code (if available)
6. Parts list (complete)
7. Technical manuals
8. Provide a complete list of manufacturer's representatives sales offices, or suppliers of major parts used on this Project, including their business address and telephone number, for the Park Manager's use when maintaining/repairing the system. Major parts are defined as other than miscellaneous plumbing, wire, piping fittings, etc.
9. List of subcontractors contact information, and specific items of work performed by them.
10. Tab binders and clearly mark all information contained.

C. Affix to walls, panels, boxes or at other locations, the following data sealed in heavy plastic:

1. Operating instructions (start-up and shut-down)
2. Electrical schematics

D. Operating instructions refer to designated parts of each particular installation as necessary and tag such parts with permanent markers as directed by Project Representative. This includes operational equipment.

1.2 AS-BUILTS

A. Before final acceptance of Project, furnish Project Representative "As-Builts" which shows as-built locations and dimensions of major items constructed. Include locations and elevations of existing utilities encountered during excavation. Show location of pipes, manholes, buildings, structures, etc. by field measurements consisting of at least two (2) ties to permanent surface objects such as hydrants, buildings, etc.

B. Final payment: No more than 95 percent until As-Built Drawings received. Payment made after receipt and acceptance of drawings by Project Representative. Lack of As-Built Drawings will not be a cause for contract extensions.

1.3 SPECIAL TOOLS

A. Deliver special tools required for maintenance and adjustment of equipment to Project Representative upon completion and before final acceptance of Project.

1.4 SPARE MATERIALS AND PARTS

A. Before final acceptance, deliver spare materials, parts and other similar items to storage locations specified by Project Representative.

1.5 CERTIFICATES AND PERMITS

A. Submit signed original certificates of compliance and final approval from Authorities Having Jurisdiction.

1.6 OUTSTANDING DOCUMENTS

A. Expedite and submit outstanding administrative documents including outstanding cost proposals, Change Orders, etc.

1.7 PRIOR OCCUPANCY

A. Reference General Conditions.

B. Commission has the right to occupy completed portions of Project prior to final acceptance, and such occupation is not an acceptance of Project. Prior to occupancy, Project Representative and Contractor mutually agree to a date for prior occupancy; the area to be occupied; that occupancy is commencing within the requirements of applicable codes and ordinances; that endorsements from insurance companies, as necessary to maintain full insurance of Project regardless of prior occupancy, have been obtained; and that other necessary provisions are completed.

C. The Project Representative will inspect areas designated for prior occupancy and issue a letter of acceptance, or provide a list of deficiencies to be corrected to Contractor. Correct deficiencies prior to date of occupancy.

1.8 SUBSTANTIAL COMPLETION

A. Reference General Conditions.

B. Notify Project Representative in writing a minimum of seven (7) days in advance of the scheduled date of completion. Project Representative will conduct a "pre-final" inspection and formulate a final punchlist of Work items to be completed prior to final inspection. Project Representative will establish the date of substantial completion based on pre-final inspection findings. Following this inspection, Project Representative will either issue notice of substantial completion or advise the Contractor of deficient items which must be corrected prior to issuance of substantial completion.

1.9 DAMAGE TO FACILITIES, ROADS, VEGETATION OR PROPERTY

A. During the course of construction, should any park facility be damaged by the Contractor's actions, operations or neglect, repair any such damages to their original condition, as acceptable to the Project Representative, at no cost to the Commission.

B. Repair, restore or replace any park roads, vegetation or property damaged by the Contractor to the original condition at the time construction began. Repair or replace trees and vegetation indicated to remain, which has been damaged by construction operations, in a manner acceptable to the Project Representative.

1.10 FINAL CLEAN-UP

A. Clean up the entire construction site and all grounds occupied by the Contractor in connection with the Work. Upon completion of the Work and prior to final inspection and acceptance,

B. Fine graded, rake clean and smooth all worksites and disturbed areas. Remove from the park rubbish, surplus, and discarded materials, falsework, temporary structures, equipment and debris.

C. Leave all phases of the Project clean and ready for public use prior to final acceptance.

D. Inspect all materials and surfaces for damage, scratches, marring, untreated ends of sawcuts, etc. and repair to original or intended condition.

1.11 FINAL INSPECTION AND ACCEPTANCE

A. Reference General Conditions.

B. Notify Project Representative in writing when Work, including punchlist items, has been completed.

C. Project Representative will schedule and conduct a final inspection to verify that outstanding Work items are complete.

D. Owner will establish the date of final acceptance based on the results of final inspection. Complete/correct any items identified as outstanding during final inspection prior to final acceptance of Project.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 024113 – SELECTIVE SITE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. The Contractor shall modify the existing lift station and electrical systems as shown on the plans, including demolishing, removal and disposal of all materials that will not be salvaged or retained and incorporated into the finished product. In addition;

1. Plug cut pipes with grout or cap ends.
2. Remove abandoned conduits where practical, or cut flush with, or below finished surfaces. Cap or fill ends with expansion foam.

B. The existing station is configured roughly as shown in Appendix 1. The Contractor shall also make investigations as necessary to confirm the existing conditions. No additional payment will be allowed for work that can be visually identified or reasonably inferred.

C. No asbestos or lead containing materials are known. The Contractor shall bring any questionable materials to the attention of the Owner. Hazardous material shall be removed and disposed of in accordance with regulatory requirements.

1.2 SUBMITTALS

A. Provide to the Engineer the location of all disposal sites to be used and also provide copies of the permits and approvals for demolition and for disposal sites before any waste is hauled off the project site.

1.3 REGULATORY REQUIREMENTS

A. The contractor shall obtain all special permits and licenses and give all notices required for performance and completion of the demolition and removal work, hauling and disposal of debris. The Contractor shall acquire all permits and approvals required for the use of the disposal site(s). The cost of any such permits and approvals shall be included in the Bid Price.

1.4 SCHEDULES

A. The Contractor shall coordinate his operations with utilities likely to be impacted by construction. No additional costs or contract time are allowed for delays resulting from a lack of such coordination by the Contractor.

B. The existing lift station shall remain in operation during construction. Any work that requires shut down of the existing lift station shall require the Contractor to pump and continuously transport all sewage from the existing lift station to the Park lagoons or install a temporary pumping system.

C. Contractor shall coordinate temporary termination of existing electrical utility to the site.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 PREPARATION

A. All structures, utilities, and properties not specifically targeted for demolition as shown on the Contract Plans, shall be protected from damage or interruption by the Contractor's activities. Responsibility for safety and protection of buildings near or in the project limits are the Contractor's. The Contractor shall repair or replace damaged structures, utilities, and/or properties to the satisfaction of the Owner.

B. The location of underground utilities shown on the Contract Drawings were obtained from prior construction plans. The actual locations may vary from those shown. The Contractor is responsible for verifying all utility locations. No extra costs are allowed for delays resulting from utility conflicts for which the Contractor is responsible. On questions regarding the disposition of existing utilities, the Contractor shall contact the Owner or Engineer for advisement.

C. Conduct demolition and removal work in a manner that will minimize the spread of dust and flying particles.

3.2 CONSTRUCTION

A. All material shall be hauled from the site and properly disposed of.

B. Blasting will not be permitted.

C. The Contractor shall pump out the existing wetwell prior to placement of concrete, and dispose of the pumped sewage off site or to the Park sewer lagoons, in accordance with State Health rules, as required to modify the existing wetwell.

3.3 FIELD QUALITY CONTROL

A. Burying of trash and debris on the site will not be permitted. Burning of trash and debris at the site will not be permitted.

B. Removed materials, trash, and debris shall become the property of the Contractor and shall be removed from the Owner's property and disposed of in a legal manner. Location of disposal site and length of haul shall be the Contractor's responsibility.

END OF SECTION

SECTION 030500 – COMMON WORK RESULTS FOR CONCRETE

PART 1 - GENERAL

1.1 REFERENCES

A. Materials shall conform to the following standards:

1. Cement - ASTM C-150
2. Coarse aggregate - ASTM C-33
3. Fine aggregate - ASTM C-33
4. Admixtures - ASTM C-494
5. Air-entraining admixtures - ASTM C-260
6. Fly Ash - ASTM C-618

1.2 SUBMITTALS

A. Submittal information shall be provided to the Owner for the following items:

1. Concrete mix design including aggregate gradation and substantiating strength data.
2. Admixture Data
3. Special placement procedures for hot or cold weather
4. Schedule of surface finishes
5. Rebar mill certifications
6. Rebar placement shop drawings
7. Precast concrete items
8. Grouts
9. Embedded items
10. Concrete anchors

B. Concrete mix designs shall be submitted to the engineer for approval a minimum of two weeks prior to placing any concrete. The mix design shall include the amounts of cement, fine and coarse aggregate, water and admixtures, as well as the water cement ratio, slump, concrete yield, aggregate gradation, and substantiating strength data in accordance with ACI 318, Chapter 5. Review of mix submittals by the engineer of record indicates only that information presented conforms generally with contract documents. Contractor or supplier maintains full responsibility for specified performance.

PART 2 - PRODUCTS

2.1 COMPONENTS

A. Nominal maximum size for aggregates is the smallest standard sieve opening through which the entire amount of aggregate is permitted to pass. Provide intermediate aggregate grades as required to achieve a well-graded mix.

B. All concrete surfaces exposed to weather or standing water shall be air entrained. Total air content shall be in accordance with IBC requirements unless specified otherwise herein. Air shall be measured at the truck, unless otherwise agreed to.

C. Water used in concrete shall be potable.

D. Fly ash may be substituted for up to 15 percent of the required cement, except where noted.

2.2 MIXES

A. Concrete shall be mixed, conveyed, and proportioned in accordance with IBC section 1905.

B. The concrete mix shall include the amount of cement, fine and coarse aggregate, including aggregate gradations, water, and admixtures as well as water cement ratio, slump, concrete yield, and sustaining strength data in accordance with these specifications, the requirements of the International Building Code Section 1905, and the requirements of ACI 318.

PART 3 - EXECUTION

3.1 INSPECTION

A. Provide 48-hour notice to Owner prior to needing inspections.

B. Also comply with local building department and permit requirements for inspection and notification.

C. The Contractor shall repair, replace or modify, as appropriate, any items noted in the Special Inspector's inspection or the building department inspection.

3.2 TESTING

A. Concrete strength tests shall be performed per section 1905.6 of the IBC and per the requirements noted herein. The Contractor will provide and pay all costs of concrete testing. The Owner shall be furnished with copies of all inspection reports and test results.

B. Cylinders used for concrete strength tests shall be 6 x 12. 4 x 8 cylinders may be used for mixes with maximum aggregates less than 1-inch, however the testing lab must apply a 0.94 multiplier to the compressive strength test results unless data acceptable to the Owner is presented that would justify a higher multiplier. All mixes utilizing aggregates over 1 inch shall be tested using 6 x 12 cylinders.

C. When 4 x 8 cylinders are utilized AASHTO T23 requirements shall be followed, and the retainer used with neoprene pads when testing for compressive strength shall be constructed according to ASTM C 1231.

D. Give the Owner and testing agency 48 hour notice prior to concrete placement. If Contractor fails to provide the required notice, the Owner may elect to cancel the affected concrete placement. Contractor shall be responsible for costs and delays due to improper notification.

E. If the Contractor schedules a concrete placement and does not notify the Owner and testing agency of a cancellation within 24 hours of the scheduled placement, the Contractor shall pay the testing agency costs for an unnecessary trip. If the Contractor fails to provide the testing agency with adequate notification and testing agency cannot attend concrete placement, Contractor shall reschedule placement. Contractor shall be responsible for all associated delays.

F. The Contractor shall provide all assistance and cooperation necessary to testing personnel to obtain the required concrete tests. Contractor and Owner will have access to testing results as soon as they are available.

G. The testing agency shall take a minimum of four samples for every 50 yards of concrete placed (and a minimum of four per pour); one for a 7 day test, two for 28 day tests, and one for backup testing in case the other two samples do not meet design strength. Additional samples may be taken to verify strength prior to form removal at the Contractor's expense.

END OF SECTION

SECTION 031113 – STRUCTURAL CAST-IN-PLACE CONCRETE FORMING

PART 1 - GENERAL (NOT USED)

PART 2 - PRODUCTS

2.1 MATERIALS

A. Unless otherwise directed, coat contact surface of forms with colorless, non-staining, mineral oil that is free from kerosene, or other approved suitable material, to permit satisfactory removal of forms without concrete damage.

B. Form construction for surfaces covered with backfill shall be made of steel, plywood, or dressed, matched lumber. Form construction for exposed surfaces shall be made of new plywood or steel without surface markings.

C. Form ties for use in liquid containment structures shall be standard plastic cone snap-ties with 3/4-inch diameter neoprene waterstop washer or removable taper ties. Use Greenstreak X-plugs with removable taper ties or equal. Contractor shall submit to the Engineer form ties to be used for review prior to installation.

PART 3 - EXECUTION

3.1 CONSTRUCTION

A. Concrete forms shall be sufficiently tight to prevent leakage of concrete or mortar and shall be properly braced or tied together to maintain desired position and shape until removed.

B. Conduits, pipes and sleeves of any material not harmful to concrete and within the limitations of ACI 318, Section 6.3 are permitted to be embedded in concrete with approval of the Engineer. Provide a 3/4-inch chamfer or radius at all exposed corners and edges, unless specifically stated otherwise on the Plans.

C. Forms shall remain in place until the concrete has developed sufficient strength to withstand imposed loads without damage or deflection. Wall and slab forms shall remain in place for a minimum of 24 hours after completion of the pour. Forms for beams and suspended slabs shall remain in place for a minimum of 14 days AND until concrete has developed 28-day design strength, unless approved by the Engineer. The Contractor shall coordinate with the testing lab to verify concrete strength prior to form removal.

D. Do not allow water to flow through areas where forms are to be placed. During form construction and prior to placement of concrete, keep footings and floor slab areas free of standing water.

3.2 FIELD QUALITY CONTROL

A. Variations from plumb, specified grade, conspicuous lines, and walls shall not exceed plus or minus 1/4- inch in any 10-foot length, and shall not exceed one inch over the entire length. Variations from dimensions shall not exceed plus or minus 1/2-inch. Closer tolerances shall be achieved by the Contractor as necessary to accommodate equipment and other permanent materials.

END OF SECTION

SECTION 031500 – CONCRETE ACCESSORIES

PART 1 - GENERAL (NOT USED)

PART 2 - PRODUCTS

2.1 MATERIALS

A. Concrete Anchors.

1. Concrete Anchors shall be Simpson SET-XP Adhesive Anchors.
2. Threaded rod shall be stainless steel except in dry locations.

PART 3 - EXECUTION

3.1 PREPARATION

A. Fill voids in sleeves, insets, anchor slots, etc., temporarily with readily removable materials to prevent entry of concrete into voids.

3.2 INSTALLATION

A. Position embedded items accurately, and support against displacement or movement during placement.

B. Coat all aluminum embedded items as specified in 099115 – Coating Metals in Contact with Concrete or Dissimilar Metals.

C. Concrete Anchors

1. Use threaded rod or reinforcing bar as shown on the drawing, and meeting Manufacturer’s recommendations. Provide minimum embedment as shown. Holes shall be drilled with carbide-tipped drill bit. Holes shall be cleaned of dust and debris. Adhesive shall be inserted with a mixing nozzle.

END OF SECTION

SECTION 032100 – REINFORCEMENT BARS

PART 1 - GENERAL

1.1 REFERENCES

A. ACI – American Concrete Institute- latest edition

B. CRSI Manual of Standard Practice – latest edition.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Grade – ASTM A706, Grade 60

B. ACI A615, Grade 60 shall be permitted if:

1. The actual yield strength based on mill tests does not exceed fy by more than 18,000 psi; and,
2. The ratio of actual tensile strength to the actual yield strength is not less than 1.25.

C. Detailing - ACI 318 and ACI 315

D. Lap requirements - See schedule on Plans or as required by ACI 318

E. Tie wire - 16 gauge minimum

F. Bar supports shall conform to “Bar Support Specification” CRSI Manual of Standard Practice, MSP-1-80. Provide Class 1, plastic protected bar supports. Use pre-cast concrete blocks to support bars off ground. Bar supports in water holding and buried structures shall be non-metallic.

G. Bar supports for the bottom rebar mat of suspended slabs or beams in water holding structures must be point supports (chairs or dobbies), not continuous..

H. Welded wire reinforcement (WWR) shall conform to the latest edition of ASTM A185 or A497.Galvanizing shall conform with ASTM A 641/A 641M, for cold-worked wire, or ASTM A123, for hot-dipped galvanizing of welded wire sheets/mats.

I. Plastic or wire bar supports for WWR, such as chairs and bolsters, shall conform to industry practice as described in the WRI “WWR-500, Manual of Standard Practice” or “TF 702 – Supporting WWR”.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Reinforcing steel shall be detailed in accordance with ACI 315 and 318 and as shown on the Plans. Lap all reinforcements in accordance with "the reinforcing splice and development length schedule". Provide corner bars at all wall and footing intersections. Bend wire bar ties away from formwork to provide the same concrete clearance as shown on the Plans to the bars.

B. Welded wire reinforcement:

1. Steel reinforcement shall be accurately placed as shown on the Plans and firmly held in positions during the placing and finishing of concrete. Reinforcement shall be lapped and tied around the perimeter of each sheet in order to maintain the proper positioning of the reinforcement. Lap splices shall have a minimum of two ties per spliced length. For galvanized reinforcing tie wires and metal clips shall be plastic coated or galvanized. With the exception of tie down bars, welding (tack welding) will not be permitted. Wire reinforcement shipped in rolls shall be straightened into flat sheets before being placed.
2. Reinforcement shall be supported in its specified and proper position by use of precast blocks, plastic or wire/ bar supports, supplementary bars, side form spacers or other approved devices. Such devices shall be sufficiently strong and properly placed at frequent intervals so as to maintain the cover between the reinforcing and the surface of the concrete during concrete placement.

C. Welding of reinforcing steel shall not be performed unless specifically approved by the Engineer. If approved, Contractor will arrange and pay for all required Special Inspections associated with welding of reinforcing steel.

3.2 FIELD QUALITY CONTROL

A. Reinforcing steel shall be free of rust and loose scale at time of concrete placement. Bars with kinks, improper bends, or reduced cross-section due to any cause will not be used. Bars shall not be field bent. Bars may not be tack-welded or otherwise heated.

B. If, within the project warranty period, rust spots appear on the concrete due to failure to achieve proper clearance on the rebar or wire ties, the Contractor shall grind out and patch the areas using a method satisfactory to the engineer.

END OF SECTION

SECTION 033100 – CAST IN PLACE STRUCTURAL CONCRETE

PART 1 - GENERAL

1.1 DELIVERY

A. Concrete shall be transported in a truck mixer to the jobsite and discharged within 1.5 hours after cement has been added to water or aggregates. Rejected concrete will be at Contractor's expense.

PART 2 - PRODUCTS

2.1 COMPONENTS

A. If allowed, curing materials shall conform to ASTM C-171 and liquid membrane-forming compounds shall conform to ASTM C-309. When concrete is to be coated or stained, use UV-dissipating form release and curing compounds.

B. Concrete for slabs, curbs and thrust blocks:

1. Exposed Slabs/Pads: Include polypropylene fiber reinforcement at 1.5 lb/cy added at the batch plant.
2. All concrete for non-structural applications including thrust blocks and slabs. Structural Concrete may be substituted.
3. 28 day compressive strength – 4500 psi minimum
4. Water/cement ratio - .45 maximum
5. Nominal maximum aggregate size – 3/4 inch
6. Entrained air ratio – 3.5 percent minimum to 6.5 percent maximum

C. Concrete for valve vault and wetwell:

1. Use water reducers for all concrete. Use super-plasticizers to achieve required slump.
2. 28 day compressive strength – 4500 psi minimum
3. Slump – Without plasticizers; 4 inches for floor and roof slabs, 7 inches for walls. With plasticizers, maximum 9 inches and as desired for placement.
4. Water/cement ratio - .38 maximum
5. Nominal maximum aggregate size – 1 1/2 inch
6. Entrained air ratio – 3.0 percent minimum to 6.0 percent maximum

7. Combined Grading Limits: Limits shown are for all course and all sand mixed together, (combined).

Sieve Sizes	Combined Grading Limits
	1-1/2″ Max.
2″	-100
1-1/2″	95 - 100
1″	65 - 85
3/4″	55 -75
1/2″	-
3/8″	40 - 55
No. 4	30 - 45
No. 8	23 - 38
No. 16	16 - 30
No. 30	10 - 20
No. 50	4 - 10
No. 100	0 - 3
No. 200	0 - 2

PART 3 - EXECUTION

3.1 PREPARATION

A. Do not place concrete during rain, sleet, or snow until water and freezing protection is provided.

B. Before beginning placement of concrete, remove hardened concrete and foreign materials from inner surface of mixing and conveying equipment. Before depositing concrete, remove debris from space to be occupied by the concrete. Secure reinforcement in position to prevent movement during concrete placement.

C. At construction joints, thoroughly clean surface of existing concrete to remove laitance. Roughen existing concrete surface to expose aggregate uniformly and apply approved bonding agent to existing concrete per manufacturer's recommendations. Prior to placing fresh concrete, dampen joint and coat with grout mixture in accordance with ACI 301 Section 8.5.

3.2 INSTALLATION

A. Placement shall be in accordance with IBC, Section 1905.

B. Place no concrete when air temperature is below or expected to be below 40 degrees during the 28-day curing period unless a low temperature concrete mix has been approved by the Owner. Provide adequate equipment for heating materials and protecting concrete during freezing or near freezing weather. Keep materials, reinforcement, forms, and ground in contact with concrete free from frost at time of placement. Heat mixing water as required. Use no materials containing ice.

C. Place no concrete when air temperature exceeds or is expected to exceed 85 degrees during the 28-day curing period unless a high temperature placement plan has been approved, and unless adequate precautions are taken to protect work. Cool ingredients prior to mixing. Flake ice or crushed ice of a size that will melt completely during mixing may be substituted for all or part of water. Cool forms and reinforcing prior to placing concrete.

D. Handle concrete from mixer, ready-mixed truck, or from transporting vehicle to place of final deposit by methods which prevent separation or loss of ingredients. Under no circumstances shall concrete that has partially hardened be deposited.

E. Place concrete in maximum lifts of 3 feet. Deposit concrete continuously so that no concrete will be deposited on concrete which has hardened sufficiently to cause formation of seams and planes of weakness within the section. If a section cannot be placed continuously, locate and reinforce construction joints at points as provided for in the Plans or as approved by the Owner. Maximum concrete drop shall be 5 feet.

F. Consolidate concrete by vibration, supplemented by hand spading, rodding, forking, or tamping. Thoroughly work concrete around reinforcement, around embedded items, and into corners of forms to eliminate air or rock pockets which may cause honeycombing, pitting, or planes of weakness. Insert and withdraw internal vibrators at points approximately 18 inches in each direction and extend into the lower concrete lifts. At each insertion, the duration shall be sufficient to consolidate the concrete; but not sufficient to cause segregation. Do not use vibrators to transport concrete within forms. Consolidate slabs by utilizing vibrating screeds, roller pipe screeds, internal vibrators, or other approved methods. Have a spare vibrator available at jobsite during concrete placing operations.

G. After removal of forms, cut out and patch defects in concrete surfaces. Remove form tie cones. Cut or snap off form ties to a depth of 3/4-inch. Chip out rock pockets, holes from form tie removal, and other defects to solid concrete. Repair defects in accordance with 3.01.30.71.

H. Curing:

1. All concrete shall be water-cured in accordance with ACI 308.1 unless approved in advance by the Owner. If allowed, curing compound shall be applied immediately after finishing or form removal. When plastic or burlap covers are used to augment or protect curing, extend sheeting beyond the edges of the concrete and secure against wind lift. Inspect and adjust curing systems daily, including over weekends and holidays.
2. Curing compounds are not permitted on surfaces that will receive coatings.
3. Concrete structures that require differential backfill as shown on the Plans or as required for construction shall cure for a minimum of the following prior to placing backfill:

    a. Backfill equal or greater than 24 inches: 7 days AND 28 day strength requirements.
    b. Backfill between 6 and 24 inches: 3 days AND 80-percent of the 28 day strength requirements.

END OF SECTION

SECTION 033500 – CONCRETE FINISHING

PART 1 - GENERAL (NOT USED)

PART 2 - PRODUCTS

2.1 FINISHES

A. Each concrete area that requires finishing shall conform to one of the following requirements:

1. Valve Vault Interior Floors – Floated Finish
2. Interior walls – Sacked Wall
3. Interior Ceilings - Sacked Wall
4. Concrete slab/Structure roofs – Light Brushed.

PART 3 - EXECUTION

3.1 PREPARATION

A. Do not place concrete which requires finishing until the materials, tools, and labor necessary for finishing the wet concrete are on the job and acceptable to the Owner. If rainfall is possible, tent the work area prior to the pour and maintain protection until the concrete is cured sufficiently to resist damage.

B. Floated Finish:

1. Consolidate, strike off, and level concrete; but do not work further until ready for floating. Begin floating when water sheen has disappeared and surface has stiffened sufficiently to permit floating operations. Consolidate surface with power-driven floats. Hand floating may be used if area is small or inaccessible to power units.
2. Check surface planeness during or after first floating. Cut down high spots and fill low spots to produce surface with tolerance of 1/4 inch in 10 feet in any direction. Refloat to a uniform, smooth, sandy texture immediately after leveling.

C. Light Brush Finish:

1. When concrete has appropriately set, finish with light soft broom finish. Brush perpendicular to slab slope.
2. Consolidate, strike off, and level concrete; but do not work further until ready for floating. Begin floating when water sheen has disappeared and surface has stiffened sufficiently to permit floating operations. Consolidate surface with power-driven floats. Hand floating may be used if area is small or inaccessible to power units.
3. Check surface planeness during or after first floating. Cut down high spots and fill low spots to produce surface with tolerance of 1/4 inch in 10 feet in any direction. Re-float to a uniform, smooth, sweat finish concrete.

D. Sacked Wall Finish:

1. Provide sacked finish in accordance with Section 6-02.3(14)A of the Standard Specifications.

END OF SECTION

SECTION 034100 – PRECAST STRUCTURAL CONCRETE

PART 1 - GENERAL

1.1 RELATED SECTIONS

A. The requirements of Section 033100 – Cast-in-Place Structural Concrete apply also to precast work.

1.2 PERFORMANCE REQUIREMENTS

A. Pre-cast structures shall be constructed to withstand anticipated construction loads that occur during transport, handling, and placement as well as the anticipated design loads. Design loads shall include the anticipated soil pressures, hydrostatic loads, and HS-20 or HL-93 traffic loading.

PART 2 - PRODUCTS

2.1 MATERIALS

A. All concrete structures identified on the Plans as being pre-cast, prefabricated, or not specifically detailed with reinforcing steel shall be pre-cast concrete.

B. Additional reinforcement shall be provided within the pre-cast concrete structure at all penetrations, openings, joints, and connections. The additional reinforcement shall be provided to prevent damage during shipping, handling and installation. All damaged units shall be rejected.

C. Pre-cast vaults shall conform to ACI 318 and be constructed to the equivalent dimensions and functional characteristics of the specific product identified on the Plans.

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 036200 – NON-SHRINK GROUTING

PART 1 - GENERAL

1.1 SUMMARY

A. Use Precision Non-Shrink Grout for grouting all equipment base plates, pipe supports, and base plates for metalwork. Precision Non-Shrink grout may also be used for all other non-shrink grouting operations. General Purpose Non-Shrink grout may be used for any applications other than those noted for Precision Non-shrink Grout. Non-shrink grout shall be used to seal all new pipe and conduit penetrations (watertight) into and out of all concrete structures.

1.2 STORAGE AND HANDLING

A. Stockpile grout to prevent contamination from foreign materials and store admixtures to prevent contamination or damage from excess temperature change

PART 2 - PRODUCTS

2.1 MATERIALS

A. Precision Non Shrink Grout:

1. Provide a high-precision, fluid, non-shrink, quartz or non-catalyzed metallic aggregate grouting material. Provide a ready-to-use grout that hardens free from bleeding, settlement, or drying shrinkage when mixed, placed and cured at any consistency - fluid, flowable, plastic or damp-pack.
2. Provide precision, non-shrink natural aggregate grout that when cured produces the following properties:

    a. Compressive Strength at fluid consistency (ASTM C 109-90-Modified): 3500 psi (24 MPa) at 1 day, 7500 psi (52 MPa) at 28 days.
    b. Passes ASTM C 1107 as a grade B grout when tested as temperature minimum and maximums of 45 F to 90 F (8 C to 32 C) at a working time of 30 minutes. Grout must be tested at a fluid consistency per ASTM C 939 and remain fluid at temperature range minimum and maximums for the 30 minute working time. All materials including water must be mixed and tested at temperature minimum/maximums.
    c. Modulus of Elasticity at 28 days at fluid consistency (ASTM C 469): 3.00 x 106 psi (27.0 GPa) minimum, 3.9 x 106 (27.0 GPa maximum.
    d. Coefficient of Thermal Expansion for fluid consistency (ASTM C 531): 7.5 x 10-6/ o F maximum (13.5 x 10-6/ o C).
    e. Flexural strength at 28 days for fluid consistency (ASTM C 78): 1300 psi (7.9 MPa).

f. Resistance to rapid freezing - thawing (ASTM C 666, Procedure A): 300 cycles-min RDF 90 percent.
g. Split tensile strength at 28 days at fluid consistency (ASTM C 496): 450 psi (3.1 MPa).
h. Pass 24 hour grout test under stated temperature, time and fluidity constraints. See MBT Protection and Repair 24 hour Grout Form.

3. Precision non-shrink grout shall be Masterbuilders 928 or Embeco 885 Grout or approved equal.

B. General Purpose Non Shrink Grout

1. General Purpose Non-shrink grout shall meet the compressive strength and nonshrink requirements of CRD-C 621, Grades B and C; Corp or Engineers Specification for Non-shrink grout; and ASTM C 1107, Grades B and C. General Purpose Non-shrink grout shall be Masterflow 713 Plus or Embeco 636 Plus or approved equal.
2. Provide curing compounds as recommended by the grout manufacturer.
3. Water to be used in mixing the grout shall be potable.

2.2 MIXES

A. Comply with grout manufacturer's recommendations for mixing procedures.

B. Adjust water temperature to keep mixed grout temperature in the range of 45° F (7° C) and 90° F (32° C) minimum/maximum.

C. Use cold or iced water to extend working time in hot weather or in large placements.

D. Use warm water in cold conditions to achieve minimum as mixed temperatures.

PART 3 - EXECUTION

3.1 PREPARATION

A. Mechanically remove unsound concrete within the limits of the grout placement.

B. Remove at least 1/4 inch (6mm) of existing concrete facing and continue removal as required to expose sound aggregate.

C. Thoroughly clean the roughened surface of dirt, loose chips, and dust. Maintain substrate in a saturated condition for 24 hours prior to grouting. Surface should be saturated surface dry at time of grouting.

D. Clean baseplates and other metal surfaces to be grouted to obtain maximum adhesion. Remove loose rust and scale by grinding or sanding.

E. Comply with grout manufacturer's recommendations for form construction. Construct forms to be liquid tight.

3.2 INSTALLATION

A. Place grout mixture into prepared areas from one side to the other. Avoid placing grout from opposite sides in order to prevent voids. Work material firmly into the bottom and sides to assure good bond and to eliminate voids.

B. Ensure that foundation and baseplate are within maximum/minimum placement temperatures. Shade foundation from summer sunlight under hot conditions. Warm foundation when foundation temperature is below 45° F (7° C).

C. Wet cure exposed shoulders for 48 hours followed by two coats of curing compound for best results. The minimal requirement is to wet cure until grout has reached final set, followed by two coats of curing compounds.

END OF SECTION

SECTION 036400 – INJECTION GROUTING

PART 1 - GENERAL

1.1 SUMMARY

A. This section is for the repair of cracks at least 0.005 inches wide in water holding structures or that result in leakage.

B. All requirements shall be in accordance with ACI 503-7 and as specified herein.

1.2 QUALITY ASSURANCE

A. A meeting with the Contractor, Owner and Engineer is required to review the procedures at least 5 working days in advance of the work.

B. Core holes as required per ACI 503.7 shall be repaired per Section 3.01.30.71.

1.3 SUBMITTALS

A. Submittals shall be in accordance with ACI 503.7-07, Specification for Crack Repair by Epoxy Injection.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Materials shall be in accordance with ACI 503.7-07, Specification for Crack Repair by Epoxy Injection.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Execution shall be in accordance with ACI 503.7, Specification for Crack Repair by Epoxy Injection.

END OF SECTION

SECTION 050500 – COMMON WORK FOR METALS

PART 1 - GENERAL (NOT USED)

PART 2 - PRODUCTS

2.1 MATERIALS

A. Structural Steel

1. Structural steel shall conform to the following requirements:
2. Plates, shapes, angles, rods - ASTM A36, Fy 36 ksi
3. Special Shapes, Plates - ASTM A572, Fy 50 ksi
4. Pipe Columns - ASTM A53, Grade B Type E or S, Fy 35 ksi (see Division 15.22 for steel pipe carrying fluids).
5. Structural Tubing - ASTM A500, Grade B, Fy 46 ksi

B. Stainless Steel

1. Stainless steel shall be type 304 (non-welded) or type 304L (welded) or as called out.
2. Plates - ASTM A240
3. Fasteners - ASTM F593
4. Extruded Structural Shapes - ASTM A276
5. Pipe - ASTM A240 or higher grade or as called out.
6. See Section 15.22.4 for information on pipe used for mechanical applications.
7. All stainless steel shall have a standard mill finish where concealed or No. 4 finish where exposed and shall be cleaned of all foreign matter before delivery to the job site.

C. Aluminum

1. Plates - ASTM B209, Type 6061-T6
2. Extruded Shapes - ASTM B308, Type 6061-T6
3. Pipe - ASTM B210 Type 6061
4. Architectural Applications - ASTM B210, Type 6063
5. Aluminum materials in contact with concrete or other metals or other masonry materials shall have surfaces coated per Division 9.

D. Galvanized Steel

1. Base metal shall be as specified for Mild Steel.
2. Hot-dip galvanized after fabrication in accordance with ASTM A 924/A 924M.
3. Finishes: For pieces that will NOT be painted, galvanize with zinc coating in accordance with ASTM A 653/A 653M For pieces that WILL be painted, galvanneal with zinc/10 percent iron coating in accordance with ASTM A 653/A 653M.

2.2 FINISHES

A. All steel fabrications shall be surface prepped, shop primed and field coated in accordance with the schedule in Section 090690 – Paint Schedule. Shop priming shall be protected as required to prevent damage to the coating during shipping. Hold back shop priming from areas to be field welded.

B. Isolate and coat dissimilar metals to prevent galvanic corrosion.

C. Non-exposed structural steel: Mill finish or as shown on plans

PART 3 - EXECUTION

3.1 FABRICATION

A. All shop welds shall be ground smooth.

B. Any shop paint on metal surfaces adjacent to joints to be field welded shall be wire brushed to remove the paint film prior to welding.

C. Where steel items to be welded are galvanized, galvanizing must first be removed by grinding with a silicon carbide wheel, by grit blasting or by sand blasting.

D. Any cutting or grinding equipment used on stainless steel must be new or only previously used on other stainless steel material.

3.2 INSTALLATION

A. Fabrications shall be installed as shown on the approved shop drawings. All members shall be accurately located and erected plumb and level.

B. No permanent bolting or welding shall be performed until the structure has been properly aligned.

C. Metals inside the wetwell to be stainless steel unless specifically called out otherwise.

END OF SECTION

SECTION 055133 – METAL LADDERS

PART 1 - GENERAL

1.1 DESIGN REQUIREMENTS

A. Ladders shall meet the requirements set forth in the IBC, ASCE 7, OSHA 1910.27 and WAC (Washington Administrative Code) 296-24-735 through 296-24-81011.

B. Ladders shall extend the full distance from floor to ceiling. Ladders that are short shall be field extended by method approved by the Engineer or replaced with proper length ladder.

PART 2 - PRODUCTS

2.1 MATERIALS

A. All ladders and ladder accessories shall be stainless steel, hot-dipped galvanized steel, or aluminum.

2.2 FABRICATION

A. Ladders shall be shop assembled, pre-drilled and prepared for field attachment of standoff clips, or as otherwise shown.

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 058000 – BOLTS AND OTHER FASTENERS

PART 1 - GENERAL (NOT USED)

PART 2 - PRODUCTS

2.1 MATERIALS

A. Bolts and other connectors not specifically called out otherwise shall be in accordance with the following:

B. Under no circumstances shall the fasteners be of lesser strength or higher corrosion potential than the materials being connected.

C. Connection bolts, nuts and washers for all materials shall be Stainless Steel, alloy 304 or 316 in valve vault, alloy 316 in the wetwell. Bolts and nuts shall meet ASTM F593B (bolts 1/4-inch to 1- 1/2-inch in diameter with 30 ksi yield) and F594B (nuts).

D. Steel Fabrications: Connection bolts for dry locations shall be ASTM A307 galvanized bolts.

E. Structural Plastic Fabrications: Connection bolts shall be ASTM A307 galvanized in dry applications and Stainless Steel in wet, damp or corrosive locations.

F. Aluminum Fabrications: Connection bolts shall be ASTM A307 galvanized.

G. Bolts installed into hardened concrete and CMU shall be Concrete Anchors as specified herein.

H. Bolts and studs shall be long enough that at least two threads extend beyond the face of the tightened nut.

I. For mechanical pipe (non-structural) connections; see Section 333211 – Waste Water Pumping Station.

PART 3 - EXECUTION

3.1 INSTALLATION

A. All materials to be joined together shall be connected as shown on the plans, specifications, as recommended by the manufacturer, or as required by standard industry practices if not otherwise specified.

B. Dissimilar metals:

1. In damp locations, isolate dissimilar metals using nylon isolation sleeves and washers, Cooper B-Line Nylon Headed Sleeve Kit or equal.

2. For wet locations: avoid dissimilar metals unless specifically approved or shown. Use similar metals with welded connections. If approved or shown, use galvanized mild steel bolts installed into prepped and coated holes with additional field coating over the top of bolt.

END OF SECTION

SECTION 083100 – ACCESS DOORS AND PANELS (VAULT HATCHES)

PART 1 - GENERAL

1.1 PERFORMANCE REQUIREMENTS

A. Door leaf (or leaves) shall be able to withstand a live load of 300 lb/ft2 with a maximum deflection of 1/150th of the span.

B. Access openings shall not have any obstructions such as intermediate hatch support beams.

1.2 WARRANTY

A. Manufacturer shall guarantee against defects in material or workmanship for a period of five years.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Hatches shall be equal to LW Products, Bilco, or Halliday.

2.2 COMPONENTS

A. Access hatches shall have aluminum diamond plate door leaf (or leaves), stainless steel spring lift, neoprene weather seal, stainless steel hardware, self-latching stainless steel slam lock, and recessed padlock hasp with cover. An unkeyed internal lever shall open the latch to prevent accidental entrapment. Frame drainage provision shall be routed to the vault drain system using Sch 40 PVC anchored to the walls and ceiling unless shown otherwise on the plans.

B. Frame shall be channel style with a full anchor flange around the perimeter and shall allow for controlled water drainage away from the opening.

C. Door shall include spring assist opening for smooth, easy and controlled door operation throughout the entire arc of opening and closing. Operation shall not be affected by temperature. The door shall automatically lock in the vertical position by means of a heavy steel hold-open arm with release handle.

D. Wetwell hatch shall have a continuous EPDM gasket affixed to the frame to form an odor-resistant barrier around the entire perimeter of the cover. The door frame shall also incorporate a ⅛-inch Neoprene bumper for a double-seal system.

E. Wetwell hatch to include integral aluminum or fiberglass fall-protection grating. Grating to be hinged and removable. Size grating to not interfere with control systems and pump guide rails. Grating equal to Halliday Products or Bilco fall protection grating.

F. Valve vault hatch: Insulate interior side of leaf(s) with 2-inch thickness of closed cell insulation foam. Attach with construction adhesive.

2.3 FINISHES

A. Aluminum hatch frames shall be protectively coated prior to casting in concrete to prevent the accelerated corrosion that occurs when aluminum is in contact with concrete.

PART 3 - EXECUTION

3.1 FIELD QUALITY CONTROL

A. Installation shall be in accordance with manufacturer's instructions.

B. Frame shall be installed square and true without binding of door throughout the full arc of travel. Mis-operation of door shall be corrected by the Contractor.

END OF SECTION

SECTION 090690 – PAINT SCHEDULE

PART 1 - GENERAL

1.1 SUMMARY

A. Colors used for finish coatings on process equipment, piping, and building surfaces shall conform to the following schedule. All finishes shall be glossy unless otherwise specified. Finish coatings, which are applied in the shop by the manufacturer, shall conform to this section. Factory coatings which are damaged during shipment or installation shall be recoated in the field in accordance with these specifications.

B. Items of similar purpose shall be painted the same color. If items come from the factory with a shop applied coating that does not match said color, they shall be field coated to match.

C. The contractor shall allow no less than 15 working days from the time the Owner is provided with color selections for the Owner to make color choices.

D. The Owner will finalize the color schedule for painted items after award of the contract. The schedule outlined below shall be used for bidding purposes. Contractor shall provide a pallet of colors from the manufacturer of not less than 30 color choices.

E.

Description	Coating System or Specification section	Color
Concrete Slabs, Sidewalks and Vault tops	099725	Clear
Concrete Exterior Walls - Below Grade	099726	Black
Concrete Floors and Slabs	Not Coated	N/A
Concrete Interior Walls – Valve Vault	Not Coated	N/A
Concrete Interior – Wetwell	099724	Grey
Piping - Stainless Steel, Copper, or PVC	Not Coated	N/A
Piping – Ductile Iron – Valve Vault	099116	Safety green
Piping – metal pipe in wetwell other than stainless steel	099125	Gray or Safety green
Pipe Supports	099114	Gray or match pipe
Iron/steel exterior and inside valve vault	099114	Gray or match pipe
Pumps	Factory epoxy	N/A
Aluminum and Stainless Steel Items	Not Coated, U.N.O.	N/A
Aluminum - In Contact w/ Concrete or Other Metals	099115	N/A

F. Do not coat aluminum or stainless steel items unless specifically directed otherwise or as shown on the plans. Field painting is not required for factory coated pumps and motors. Over-coat shop epoxied meters and valves to match adjacent piping. Do not coat small diameter pilot systems such as galvanized iron, copper or brass pipe and fittings associated with control valves unless noted otherwise on the plans or herein.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 099105 – COMMON WORK FOR PAINTING AND COATING

PART 1 - GENERAL

1.1 SUMMARY

A. The work specified in this Section covers the furnishing and installation of protective coating, complete in place. Shop coating and/or factory applied finishes on manufactured or fabricated items may be specified elsewhere. Regardless of the number of coats previously applied, at least two coats of paint shall be applied in the field to all coated surfaces unless otherwise specified herein.

1.2 SUBMITTALS

A. Before beginning any painting or coating, submit a list of coatings and manufacturers intended for use for review by the Owner. Include the application each coating is intended for, any surface preparation, number of coats, method of application, and coating thickness.

B. Provide Material Safety Data Sheets for all materials to be used including solvents. Submit this information in accordance with the requirements regarding shop drawings included herein.

C. Provide owner with schedule of coating operations and inspection timing. Coating inspections will be scheduled based upon Contractor-provided schedule, update schedule weekly or as necessary.

D. If products being used are manufactured by a company other than the specified reference standard, provide complete comparison of proposed products with specified projects including application procedures, coverage rates, and verification that product is designed for intended use. Information must also be provided that demonstrates that the manufacturer’s products are equal to the performance standards of products manufactured by Tnemec Corporation, which is the reference standard.

1.3 PERFORMANCE REQUIREMENTS

A. The completed coating shall produce a minimum dry film thickness in accordance with the specifications as determined by the microtest thickness gauge or comparable instrument. In areas where this thickness is not developed, sufficient additional coats shall be applied to produce it.

1.4 QUALITY ASSURANCE

A. The Contractor shall be responsible for compatibility of all shop and field applied paint products including the use of primer, intermediate and top coats by different manufacturers if applicable. For any Contractor initiated substitutions, the Contractor shall verify complete compatibility between coatings provided for the project. If coatings are not compatible per manufacturer's review it shall be the Contractor's responsibility to remove incompatible coatings fully and replace with compatible coating systems.

B. Paint used in the first field coat over shop painted or previously painted surfaces shall cause no wrinkling, lifting, or other damage to the underlying paint.

C. The Contractor shall be responsible for obtaining written documentation from equipment/material manufacturers regarding the date at which shop prime coatings are applied and shall strictly adhere to the coating manufacturer's recommendations for recoat time intervals. The Contractor shall submit to the Engineer such documentation upon request.

1.5 STORAGE AND HANDLING

A. Bring all materials to the job site in the original sealed and labeled containers of the paint manufacturer. Materials shall be subject to inspection by the Owner. Store paint supplies as recommended by the manufacturer and as approved by the Owner.

1.6 WASTE PRODUCTS

A. The Contractor shall be responsible for the collection, containment, transportation, and disposal of all waste products generated for this project. Cleaning and disposal shall comply with all federal, state, and local pollution control laws. Provide acceptable containers for collection and disposal of waste materials, debris, and rubbish.

B. Cleaning and disposal shall comply with all federal, state, and local pollution control laws. Provide acceptable containers for collection and disposal of waste materials, debris, and rubbish.

1.7 SITE CONDITIONS

A. Contractor shall take any and all measures necessary to prevent over-spray of structures and/or components in the field from both preparation and coating work. Should over-spray occur, the Contractor is responsible for all costs associated with any damage that occurs as a result of over-spray.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. The following coating system manufacturers are approved subject to compliance with the Specifications contained herein:
   1. Tnemec Company
   2. Sherwin Williams
   3. Or approved equal,

B. The specified coating shall be understood as establishing the type and quality of the coating desired. Other manufacturers' products will be accepted provided sufficient information is submitted to allow the Engineer to determine that the coatings proposed are equivalent to those named. Proposed coating shall be submitted for review in accordance with Division 1. Requests for review of equivalency will not be accepted from anyone except the Contractor, and such requests shall not be considered until after the Contract has been awarded.

C. Substitutions of the coatings of other manufacturers shall be considered only if equivalent systems of coatings can be provided and only if a record of satisfactory experience with the system in equivalent applications is available. Offers for substitutions will not be considered which decrease film thickness, solids by volume or the number of coats to be applied or which propose a change from the generic type of coating specified herein. All substitutions shall include complete test reports to prove compliance with specified performance criteria.

PART 3 - EXECUTION

3.1 INSTALLERS

A. Coatings Contractor shall be in the business of an applying Protective Coatings for a minimum of three (3) Years. Contractor's applicators must be in the Industry of applying Protective Coatings for a minimum of three (3) Years. Contractor shall provide proof of both.

B. Coatings Contractor must provide a minimum of three (3) case histories of similar projects that have been applied within the past five (5) years. Contractor must provide current contact names, phone numbers, and email addresses on past projects for confirmation of successful installations.

3.2 EXAMINATION

A. The Owner shall inspect and approve all surface preparations prior to application of any coating. Provide 24-hour notice prior to surface inspection needs.

3.3 PREPARATION

A. Prepare surfaces in accordance with the recommendations of the manufacturer of the coating to be applied to the surface, or the surface preparation requirements of these specifications,

whichever are stricter. In general, all surface preparation shall meet Structural Steel Painting Council (SSPC) Surfacing Preparation (SP) guidelines, the National Association of Pipe Fitters (NAPF), American Water Works Association (AWWA) and/or the National Association of Corrosion Engineers (NACE) as noted herein unless more strictly described by coating manufacturer.

B. Coatings shall only be applied during weather meeting the recommendations of the coating manufacturer. Air and surface temperatures, humidity and all other environmental conditions shall be within limits prescribed by the manufacturer for the coating being applied, and work areas shall be reasonably free of airborne dust at the time of application and while coating is drying.

C. Materials shall be mixed, thinned and applied according to the manufacturer's printed instructions. Dry Film Thickness (DFT) shall be as stated here in or applied based on coverage rates of square feet per gallon (sq. ft./gal).

3.4 CONSTRUCTION

A. Paint application shall be in strict accordance with manufacturer's printed instructions except that coating thickness specified herein shall govern. Finished coating on all items shall be clean, undamaged and of uniform thickness and color.

B. Coating shall be done in a manner satisfactory to the Owner. The dry film thickness listed in the “Materials” section of this Division must be met, regardless of the applied film thickness or number of coats.

C. Carefully observe all safety precautions stated in the manufacturer's printed instructions. Provide adequate ventilation and lighting.

D. The manufacturer’s recommended drying time shall be construed to mean “under normal conditions.” Where conditions are other than normal because of weather, confined spaces, or other reason, longer drying times may be necessary. The manufacturer’s recommendation for recoating time intervals shall be strictly adhered to.

E. Pipe shall be emptied of water for a minimum of 24 hours prior to surface preparation and painting. Pipe shall not be filled with water until coating is dry.

3.5 FIELD QUALITY CONTROL

A. The prime Contractor shall be completely responsible for coating quality. The Contractor shall provide both wet and dry film gauges, and make such available to the Engineer when requested.

B. If Owner’s inspector finds anomalies and/or defects, the Contractor shall re-prep and recoat those areas per the coating manufacturer’s instructions.

C. Acceptance of the completed coatings shall be based on the proper application and proper preparation of the coated surfaces, and a finished product that does not contain runs, drips, surface irregularities, overspray, color variations, scratches, pinholes, holidays, and other

surface signs that detract from the overall performance and/or appearance of the finished project.

3.6 INSPECTION

A. For metals exposed to exterior atmospheric conditions, first coat of paint or primer must be placed within four hours of passing inspection. Bare steel must be reblasted and reinspected if not successfully coated within this four hour time frame, at the Contractor's expense.

B. Use the Pictorial Surface Preparation Standards for Painting Steel Surfaces (VIS-1) by the Steel Structures Painting Council (SSPC) as a visual standard for inspection of surface preparation of metal surfaces. Test-Tex Tape may also be used to verify surface profile.

C. Each coat shall be inspected prior to application of the next coat. Areas found to contain runs, overspray, roughness, streaks, laps, sags, or other signs of improper application shall be repaired or recoated in accordance with the manufacturer's recommendations. Finish coats shall be uniform in color and sheen. Surface preparations and coatings not inspected and approved by owner will be uncovered for inspection and approval at no additional cost to the owner.

3.7 REPAIR

A. The Contractor is responsible for all costs associated with any damage that occurs as a result of over-spray.

B. Scratched, chipped or otherwise damaged coatings, including factory coatings, shall be repaired before final acceptance will be given.

3.8 CLEANING

A. If any cleaning of equipment at the site is performed with solvents, such work shall be done over leak-proof linings. Preparation or coating materials may not be disposed of on site.

END OF SECTION

SECTION 099114 – EXTERIOR METALS COATING

PART 1 - GENERAL (NOT USED)

PART 2 - PRODUCTS

2.1 MATERIALS

A. Tnemec

1. Prime Coat: Series 161 Fast Cure Epoxy (3 to 5 Mil DFT)
2. Finish Coat: Series 73 EnduraShield (3 to 5 mils DFT)

B. Sherwin Williams

1. For products that are supplied in bare (unprimed) metal:

    a. Primer: Corothane 1 Galvapac Zinc Primer B65G11 (2.5 to 3.5 Mil DFT)
    b. Finish Coat: Acrolon 218HS B65-650 Series (3 to 5 Mil DFT)

2. For products that are supplied with a shop prime coat:

    a. Primer: Shop
    b. Intermediate: Macropoxy 646FC B58-600 Series (5 to 8 Mil DFT)
    c. Finish Coat: Acrolon 218HS B65-650 Series (3 to 5 Mil DFT)

PART 3 - EXECUTION

3.1 SURFACE PREPARATION

A. Clean, dry, and free of all dirt, oil, grease and other contaminants.

B. For new work: SSPC-SP1 Solvent cleaned

C. For coating over existing painted surfaces: Remove all loose and damaged coatings. Prepare with SSPC-SP2 hand tool or SP3 power tool cleaning.

END OF SECTION

SECTION 099115 – COATING METALS IN CONTACT WITH CONCRETE OR DISSIMILAR METALS

PART 1 - GENERAL

1.1 SUMMARY

A. This section applies to all non-submerged metal surfaces including aluminum, hot-dipped galvanized steel, or other metals, which are conducive to corrosion due to interaction of dissimilar metals or to chemical reaction due to embedment in concrete or grout, and which are not covered as part of another coating system. Does not include stainless steel.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Tnemec

1. First Coat: Series N69 Hi-Build Epoxoline II (4 to 6 mils DFT)

B. Sherwin Williams

1. First Coat: 464 FC B58-600 Macropoxy (4 to 6 mils DFT)

PART 3 - EXECUTION

3.1 PREPARATION

A. SSPC-SP1 Solvent Cleaning

B. Lightly sand to degloss and provide a surface profile.

END OF SECTION

SECTION 099116 – DUCTILE IRON PIPE COATING –VALVE VAULT

PART 1 - GENERAL

1.1 SUMMARY

A. This Section applies to all ductile iron and fasteners within the valve vault unless specified otherwise. Do not coat stainless steel materials unless specified otherwise. This Section applies to all pipe materials and equipment, including manufacturer applied coating systems.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Tnemec

1. Primer option 1: Series 1 Omnithane (2.5 to 3.5 Mil DFT).
2. Primer option 2: Series N69 or N140 (2.5 to 3.5 Mil DFT) may be used if the time between prime coat and intermediate coat is less than 60 days. If more than 60 days occurs, surface will need re-preparation per the manufacturer's instructions.
3. Intermediate Coat: Series N69 Hi-Build Epoxoline II (6 to 8 mils DFT)
4. Finish Coat: Series 73 Endura-Shield (3 to 5 mils DFT)

B. Sherwin Williams

1. Primer: Corothane 1 Mio-Zinc Primer (2.5 to 3.5 Mil DFT)
2. Intermediate: Macropoxy 646FC B58-600 Series (6 to 8 Mil DFT)
3. Finish: Macropoxy 646FC B58-600 Series (6 to 8 Mil DFT)

PART 3 - EXECUTION

3.1 PREPARATION

A. Ferrous Metals

1. SSPC-SP10 Near white blast cleaning

B. Ductile and Cast Iron Materials

1. It is strongly recommended that any ductile iron pipe or materials to have a special exterior coating should be purchased factory primed without the standard asphalt coating. Field removal of asphalt coatings is extremely difficult and overly aggressive preparation can create a damaged surface unsuitable for coating.
2. All oils, grease and other contaminants shall be removed using solvent cleaning prior to abrasive blasting or power tool cleaning: Blemishes or staining on the prepared surface

are acceptable if such items cannot be removed by light scraping with a knife. SSPC-SP10 blue-gray with surface profile of 2.0 mils, minimum. Do not burnish the surface. Clean all surfaces of dust and loose residue immediately prior to coating. See NAPF 500-03-04/05

END OF SECTION

SECTION 099124 – GALVANIZED METAL SURFACE REPAIR

PART 1 - GENERAL

1.1 SUMMARY

A. This Section applies to all galvanized surfaces which have received minor damage to the galvanized surface during construction and which require repair.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Tnemec

1. First Coat: Series 90-97 Tneme-Zinc (2.5 to 3.5 Mils DFT)

B. Sherwin-Williams

1. First Coat: Corotahne 1 Galvapac B65G11 (2.5 to 3.5 Mils)

PART 3 - EXECUTION

3.1 PREPARATION

A. SSPC-SP3 Power tool cleaning

END OF SECTION

SECTION 099125 – SUBMERGED AND BURIED METALS COATING

PART 1 - GENERAL

1.1 SUMMARY

A. This section applies to all metals in the wetwell, including ductile iron pipe. Stainless steel excluded.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Tnemec
   1. Series 435 Perma-Glaze (40 Mil DFT)

B. Sherwin Williams
   1. Duraplate 6100 (40 Mil DFT)

2.2 PREPARATION

A. Surface preparation: SSPC SP1 followed by SP10 Near White Blast. Surface profile shall be 2.0 mils, minimum.

END OF SECTION

SECTION 099724 – WETWELL INTERIOR COATING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section applies to all concrete surfaces in the new wetwell except the ceiling. Includes exposed concrete within pipe core holes.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Use only clean, potable water for mixes.

B. Xypex Concentrate, or approved equal.

1. Brush application: 1.5 lbs/sq yd; 5 parts powder to 2 parts water.
2. Spray application: 1.5 lbs/sq yd; 5 parts powder to 3 parts water.

PART 3 - EXECUTION

3.1 PREPARATION

A. Concrete surfaces shall be clean and free from scale, excess form oil, laitance, curing compounds and foreign matter. Smooth surfaces caused by steel forms and surfaces covered with excess form oil or other contaminants shall be washed, lightly sandblasted, water-blasted, or acid-etched with muriatic acid as necessary to provide a clean, absorbent surface.

B. Repair substrate defects. After the concrete is clean and dried, all surface irregularities are to be repaired per Section 033500 – Concrete Finishing (interior walls). This includes form voids, honeycombs, fins, cracks, spalled areas and control joints. Any and all metallic protrusions shall be ground below the surface and then patched or filled with an approved material.

C. Concrete surfaces must be thoroughly saturated with clean water prior to the application so as to aid the proper diffusion of the Xypex chemistry and to ensure the growth of the crystalline formation deep within the pores of the concrete. Remove excess water before the application such that there is no glistening water on the surface. If concrete dries out before application, it must be re-wetted.

3.2 INSTALLATION

A. Apply to concrete surfaces with semi-stiff bristle brush, or suitable spray equipment. The coating must be uniformly applied and should be just under 1/16” (1.25 mm) thick.

B. Application rates and locations shall be as indicated in the drawings and in accordance with manufacturer's product data. When brushing, work slurry well into surface of the concrete, filling surface pores and hairline cracks. When spraying, hold nozzle close enough to ensure that slurry is forced into pores and hairline cracks.

3.3 CURING

A. Begin curing as soon as coating has hardened sufficiently so as not to be damaged by a fine spray. Cure with a mist fog spray of clean water three times a day for 2 to 3 days. Wet burlap and specialty curing blankets are acceptable if kept moist.

B. Do not lay plastic sheeting directly on the waterproofing coating as air contact is required for proper curing. If poor air circulation exists in treated areas, it may be necessary to provide fans or blown air to aid in curing of waterproofing treatment.

C. Cure for three days and then allow treatment to set for 12 days before filling the wetwell.

END OF SECTION

SECTION 099725 – METER VAULT AND WETWELL EXPOSED CONCRETE COATING

PART 1 - GENERAL

1.1 SUMMARY

A. This section is for coating the exterior exposed surfaces of the valve vault and wetwell top slab.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Tnemec

1. Chemprobe Dur A Pell 40 (100 square feet/gallon coverage based on smooth precast concrete. See product data sheet for coverage on other concrete surfaces.)

B. Sherwin Williams

1. Loxon 40 percent Silane Water Repellant (125 -175 square feet/gallon coverage based on smooth precast concrete. See product data sheet for coverage on other concrete surfaces.)

PART 3 - EXECUTION

3.1 PREPARATION

A. Prepare surface to clean, bare concrete free of contaminants including dust, oil and water. Apply sealer to concrete until it has moist appearance using a garden sprayer. Clean the surface to remove purged matter and allow it to dry a minimum of 24 hours. Repeat process to apply 2 coats.

END OF SECTION

SECTION 099726 – BURIED CONCRETE COATING

PART 1 - GENERAL

1.1 SUMMARY

A. This section is for coating the exterior buried surfaces of the valve vault and wetwell.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Tnemec

1. One coat: Series 46-465. (8 to 10 Mil DFT)

B. Sherwin Williams

1. One coat: Hi-Mil Sher-Tar Epoxy. (8 to 10 Mil DFT)

PART 3 - EXECUTION

3.1 PREPARATION

A. Clean and dry. Rock pockets 1/4-inch and larger filled.

END OF SECTION

SECTION 101400 – SIGNAGE

PART 1 - GENERAL (NOT USED)

PART 2 - PRODUCTS

2.1 MATERIALS

A. Unless otherwise specified, text shall be white on a background color shown below.

Purpose	Plate Color
General	Black
Warning	Red
Electrical	Black
Potable Water	Blue
Nonpotable Water	Purple
Waste water	Green

B. Equipment signs shall be plastic-laminated 1-inch high, by required length, by 1/8-inch thick, with 1/2-inch high letters in N-2 Standard Gothic characters.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install signs/markers directly on the devices in a location that does not interfere with the device operation or maintenance. If the device is too small or otherwise impractical to mount marker, locate marker as close as possible to the device on an adjacent surface.

Purpose	Location	Text
Electrical panels, switches, readouts, indicating lights, and disconnects	All	Per purpose

B. Electrical Nameplates:

1. Provide engraved nameplates indicating load served, voltage, and phase for every circuit breaker, panel board, switchboard, motor control center, motor starter, disconnect switch, and fused switch.

2. All components provided under this specification, both field- and panel-mounted, shall be provided with permanently-mounted nametags. The Engineer shall have complete control over the hardware to be labeled and the labeling provided. Provide labels as directed.
3. Provide a name tag for each piece of equipment and for each circuit and/or control device associated with the equipment.
4. Provide a nameplate for each panel door.
5. Warning nameplates shall be provided on all panels and equipment which contain multiple power sources which may have energized circuits with the main disconnecting means in the off position. Lettering shall be white on red background.

END OF SECTION

SECTION 238333 – ELECTRIC RADIANT HEATERS

PART 1 - GENERAL (NOT USED)

PART 2 - PRODUCTS

2.1 MANUFACTURED UNITS

A. Heaters shall be as specified on the Plans. Equals will be accepted.

B. Space heaters shall be electric air element type of the size and location shown on the Plans. Provide with a universal mounting bracket, a disconnect switch and mounting hardware. Provide contactors in heater to interface with control relays and power supply.

C. Heater shall be provided with built in thermostat. Thermostat shall have an adjustable range from 40 – 90 degrees Fahrenheit. Set thermostat at 50 degrees Fahrenheit unless specified otherwise on the plans. .

PART 3 - EXECUTION

3.1 INSTALLATION

A. Provide clearance from walls, ceiling and obstacles as recommended by the manufacturer.

END OF SECTION

SECTION 260500 – COMMON WORK FOR ELECTRICAL

PART 1 - GENERAL

1.1 SUMMARY

A. The Contractor shall provide all labor, material, tools, equipment and services required to complete the furnishing, installation, wiring, connection, calibration, adjustment, testing and operation of all electrical equipment, devices and components as indicated and implied by the plans and specifications.

B. Plans are diagrammatic and indicate general arrangements of systems and equipment, except when specifically dimensioned or detailed. The intention of the plans is to show size, capacity, approximated location, direction and general relationship of one work phase to another, but not exact detail or arrangement.

C. The Contractor shall coordinate and provide all permits, licenses, approvals, inspections by the authority having jurisdiction and other arrangements for work on this project and all fees shall be paid for by the Contractor. The Contractor shall include these fees in the bid price.

1.2 REFERENCES

A. Provide all electrical work in accordance with latest edition of National Electrical Code, National Electrical Safety Code, Washington State Electrical Code, and local ordinances. If any conflict occurs between government adopted code rules and these specifications, the codes are to govern. All electrical products shall bear a label from a certified testing laboratory recognized by the State of Washington. Recognized labels in the State of Washington are UL, ETL, and CSA-US.

1.3 DEFINITIONS

A. Dry Locations: All those indoor areas which do not fall within the definitions below for wet, damp, or corrosive locations and which are not otherwise designated on the Plans.

B. Wet Locations: All locations exposed to the weather, whether under a roof or not, unless otherwise designated on the Plans.

C. Damp Locations: All spaces wholly or partially underground, or having a wall or ceiling forming part of a channel or tank unless otherwise designated on the Plans.

D. Corrosive Locations: Areas where chlorine gas under pressure, sulfuric acid, or liquid polymer are stored or processed. These areas are identified on the Plans.

E. The words "plans" and "drawings" are used interchangeably in this specification and in all cases shall be interpreted to mean "Plans".

F. The work "provide" shall be interpreted to mean furnish and install.

1.4 DESIGN REQUIREMENTS

A. Unless otherwise noted, provide enclosures as follows:

1. Class 1, Division 1 &2 Locations: NEMA Type 7
2. Corrosive Locations: NEMA Type 4X
3. Outdoors and/or Wet Locations: NEMA Type 4X

1.5 SUBMITTALS

A. Provide submittals of each item specified in this division to engineer for approval in accordance with the submittals' sections of these specifications. Submittals for motor control centers, motor control panels, control panels, instrumentation panels, and pump control panels shall include as a minimum a wiring diagram or connection schematic and an interconnection diagram.

B. Wiring Diagram or Connection Schematic: This plan or plans shall include all of the devices in a system and show their physical relationship to each other including terminals and interconnecting wiring in assembly. This diagram shall be in a form showing interconnecting wiring only by terminal designations (wireless diagram).

C. Interconnection Diagram: This diagram shall show all external connections between terminals of equipment and outside points, such as motors and auxiliary devices. References shall be shown to all connection diagrams which interface to the interconnection diagrams. Interconnection diagrams shall be of the continuous line type. Bundled wires shall be shown on a single line with the direction of entry/exit of the individual wires clearly shown. All devices and equipment shall be identified. Terminal blocks shall be shown as actually installed and identified in the equipment complete with individual terminal identification. All jumpers, shielding and grounding termination details not shown on the equipment connection diagrams shall be shown on the interconnection diagrams. Spare wires and cables shall be shown. Submittal information shall be provided to the Owner for the following items:

1. Underground Marking Tape
2. Service Disconnect
3. Surge Protection Device (SPD)
4. Pump Control Panel
5. Circuit Breakers
6. Conduit and Fittings
7. Outlet and Junction Boxes
8. Electrical Handholes and Vaults
9. Wire and Cables
10. Switches and Receptacles
11. Grounding Equipment
12. Other Electrical Components listed in this division and/or required by the Engineer.

1.6 PROJECT CONDITIONS

A. Contractor shall keep all power shutdown periods to a minimum. Carry out shutdowns only after a shutdown schedule has been submitted and approved by both the Owner and the Engineer.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Use equipment, materials and wiring methods suitable for the types of locations in which they will be located, as defined in Definitions above.

B. All materials and equipment specified herein shall, within the scope of UL Examination Services, be approved by the Underwriter's Laboratories for the purpose for which they are used and shall bear the UL label.

2.2 ACCESSORIES

A. Fasteners for securing equipment to walls, floors and the like shall be either hot-dip galvanized after fabrication or stainless steel. Provide stainless steel fasteners in Corrosive locations. When fastening to existing walls, floors, and the like, provide capsule anchors, not expansion shields. Size capsule anchors to meet load requirements. Minimum size capsule anchor bolt is 3/8-inch.

B. Identify each wire or cable at each termination and in each pull box using numbered and lettered wire markers. All electrically common conductors shall have the same number. Each electrically different conductor shall be uniquely numbered. Identify panelboard circuits using the panelboard identification and circuit number. Identify motor control circuits using the equipment identification number assigned to the control unit by the motor control center manufacturer and the motor control unit terminal number. Identify other circuits as approved by the Engineer. Identify each wire or cable in each pull box with plastic sleeves having permanent markings. Conductors between terminals of different numbers shall have both terminal numbers shown at each conductor end. The terminal number closest to the end of the wire shall be the same as the terminal number.

2.3 SOURCE QUALITY CONTROL

A. Provide adequate space and fit for the electrical installation, including, but not limited to, determination of access-ways and doorways, shipping sections, wall and floor space, and space occupied by mechanical equipment. Provide electrical equipment that fits in the areas shown on the plans. All equipment shall be readily accessible for maintenance, shall have electrical clearances in accordance with NEC and shall be installed in locations which will provide adequate cooling.

B. Do not use equipment exceeding dimensions indicated or equipment or arrangements that reduce required clearances or exceed specified maximum dimensions unless approved by the Engineer.

C. Identification of Listed Products: Electrical equipment and materials shall be listed for the purpose for which they are to be used, by an independent testing laboratory. When a product is not available with a testing laboratory listing for the purpose for which it is to serve, the inspection authority may require the product to undergo a special inspection at the manufacturer's place of assembly. All costs and expenses incurred for such inspections shall be included in the original contract price.

PART 3 - EXECUTION

3.1 INSTALLERS

A. Assign a qualified representative who shall supervise the electrical construction work from beginning to completion and final acceptance.

B. Provide all labor using qualified craftsmen, who have had experience on similar projects.

C. Ensure that all equipment and materials fit properly in their installations.

D. Provide field services of qualified technicians to supervise and check out the installation of the equipment, to supervise and check out interconnecting wiring, to conduct start-up and operation of the equipment, and to correct any problems which occur during testing and start-up.

3.2 INSTALLATION

A. General

1. Complete the wiring, connection, adjustment, calibration, testing and operation of mechanical equipment having electrical motors and/or built-in or furnished electrical components in accordance with electrical code, UL listing requirements and manufacturer's instructions. Install electrical components that are furnished with mechanical equipment.
2. Provide the size, type and rating of motor control devices, equipment and wiring necessary to match the ratings of motors furnished with mechanical equipment.
3. Complete the procurement, installation, wiring, connection, calibration, adjustment, testing and operation of all electrical devices, components accessories and equipment which is not shown or specified but which is nonetheless required to make the systems shown and specified properly functional.

B. Installing Equipment

1. Provide the required inserts, bolts and anchors, and securely attach all equipment and materials to their supports.
2. Install all equipment and junction boxes to permit easy access for normal maintenance.

C. Cutting, Drilling and Welding

1. Provide any cutting, drilling, and welding that is required for the electrical construction work.

2. Structural members shall not be cut or drilled, except when approved by the Engineer. Use a core drill wherever it is necessary to drill through concrete or masonry. Perform patch work with the same materials as the surrounding area and finish to match.

D. Metal Panels

1. Mount all metal panels, which are mounted on, or abutting concrete walls in damp locations or any outside walls ¼-inch from the wall, and paint the back side of the panels with a high build epoxy primer with the exception of stainless steel panels. Film thickness shall be 10 mils minimum.

E. Load Balance

1. Balance electrical load between phases as nearly as possible on panelboards, motor control centers, and other equipment where balancing is required.
2. When loads must be reconnected to different circuits to balance phase loads, maintain accurate record of changes made, and provide circuit directory that lists final circuit arrangement.

3.3 FIELD QUALITY CONTROL

A. Minor Deviations

1. The electrical plans are diagrammatic in nature and the location of devices, fixtures and equipment is approximate unless dimensioned. On the basis of this, the right is reserved by the owner to provide for minor adjustments and deviations from the locations shown on the Plans without any extra cost. Deviations from the Plans and/or specifications required by code shall also be done, subsequent to Owner's approval, without extra cost.
2. Plans indicate the general location and number of the electrical equipment items. When raceway, boxes, and ground connections are shown, they are shown diagrammatically only and indicate the general character and approximate location. Layout does not necessarily show the total number of raceways or boxes for the circuits required. Furnish, install, and place in satisfactory condition all raceways, boxes, conductors and connections, and all of the materials required for the electrical systems shown or noted in the contract documents complete, fully operational, and fully tested upon the completion of the project.

B. Project Record Plans

1. A set of Plans shall be maintained at the job site showing any deviations in the electrical systems from the original design. A set of electrical Plans, marked in red to indicate the routing of concealed conduit runs and any deviations from the original design, shall be submitted to the Engineer for review at the completion of the project prior to final acceptance.
2. After testing and acceptance of the project the Contractor shall furnish in the O&M manuals an accurate connection schematic and interconnection diagram for every service entrance panel, pump control panel, motor control center, and instrumentation panel provided this project.

3.4 CLEANING

A. Exercise care at all times after installation of equipment, motor control centers, control panels, etc., to keep out foreign matter, dust debris, and moisture. Use protective sheet metal covers, canvas, heat lamps, etc., as needed to ensure equipment protection.

B. Thoroughly clean all soiled surfaces of installed equipment and materials upon completion of the project. Clean out and vacuum all construction debris from the bottom of all equipment enclosures.

C. Repaint any electrical equipment or materials scratched or marred in shipment or installation, using paint furnished by the equipment manufacturer.

D. Upon completion of the electrical work, remove all surplus materials, rubbish, and debris that accumulated during the construction work. Leave the entire area neat, clean and acceptable to the Owner.

E. Lamps and tubes shall be cleaned and defective units replaced at the time of final acceptance.

END OF SECTION

SECTION 260512 – ELECTRIC UTILITY SERVICE

PART 1 - GENERAL

1.1 SUMMARY

A. Work consists of connecting new feed to existing utility enclosure.

1.2 SCHEDULING AND COORDINATION

A. Scheduling Work with the Utility Company

1. The Contractor shall be fully and completely responsible for all scheduling and coordination with the utility company. The Contractor shall coordinate and schedule power outages, power service for operation and construction, and power service as may be required prior to Certification of Occupancy.
2. The Contractor shall make all necessary applications for service with the utility, and shall notify the Owner in writing of any obligations that the Owner must fulfill for service to be started, installed, or modified.

B. Contractor/Utility Interface Responsibilities

1. The electrical utility providing service to these facilities is Grant PUD.
2. During design, contact was made with Grant PUD Customer Service Representatives, who can be contacted by telephoning 509-766-2505. The division of responsibilities stated below has been determined by coordination with the serving utility. The Contractor shall comply with all utility company standards and requirements.
3. All utility charges for and related to the final permanent service to the facility will be paid by the Contractor, directly to the utility company and shall be included in the Contractors bid price.
4. Contractor shall notify the Engineer/Owner of any changes to the responsibilities between the electrical utility and the Contractor as outlined in these specifications prior to submitting a bid. Any change(s) in responsibilities not brought to the attention of the Engineer prior to bidding will not be cause for additional payment.
5. The Contractor shall notify the Owner (in writing) of any obligations or forms that the Owner is responsible to provide for service.

1.3 PROJECT CONDITIONS

A. Before submitting a bid, the Contractor shall become familiar with all the electrical service requirements that may affect the execution of their work.

1.4 REFERENCES

A. Work involving service installation shall be done in accordance with the service utilities standards and the National Electric Code.

B. Service equipment shall be listed and labeled by UL as "suitable for use as service equipment".

PART 2 - PRODUCTS

2.1 MATERIALS

A. Meter enclosure shall be a Circle AW or equal and as required to meet the requirement of the serving utility. Installation shall be in vandal proof NEMA 3R enclosure with a lockable hinged door. Meter shall include a metal vandal screen that can be purchased from serving utility.

B. Contractor shall coordinate with the Utility Company on the type of metering required and shall provide all labor and material necessary to meet the Utility Company requirements.

PART 3 - EXECUTION

3.1 CONSTRUCTION

A. The Contractor shall:
   1. Install the Service Entrance Automatic Transfer switch as shown on the Plans.
   2. Install raceway and conductors from existing utility enclosure to service entrance automatic transfer switch including trenching, backfill, and restoration as shown on the Plans.
   3. The Contractor shall meet all the standard requirements for working in the right-of-way which includes a utility representative on site during work within the right-of-way. The Contractor shall be responsible for paying all cost for the representative to be on site.

B. The Utility Company will:

   1. Disconnect the existing secondary conductors to the existing utility enclosure.
   2. Connect the proposed secondary conductors after a successful L&I inspection of the proposed system.

END OF SECTION

SECTION 260519 – LOW VOLTAGE ELECTRICAL CONDUCTORS

PART 1 - GENERAL

1.1 DESIGN REQUIREMENTS

A. This section is for power and control conductors for 600 volts or less.

B. All conductors shall be copper. Wire or cable not shown on the Plans or specified, but required, shall be of the type and size required for the application and in conformance with the applicable code.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Provide the following conductors for the following applications

1. Use stranded copper conductors for all power and control circuits unless noted otherwise on plans or below. Size as noted on the plans.
2. Contractor may use solid copper conductors for lighting and receptacle circuits using screw-type terminals. Size as noted on the plans.
3. Size #14 AWG wire or smaller shall not be allowed on power circuits.

B. Conductors

1. Solid and stranded copper wire shall be 600 volt Type THW, THWN, or THHW, Class B stranding, sizes #14 AWG, #12 AWG, and #10 AWG only. Use of THHN insulation shall not be allowed. Aluminum conductors shall not be allowed.
2. Stranded copper wire shall be 600 volt Type XHHW, Class B stranding, sizes #8 AWG and larger. Aluminum conductors are not allowed.

C. Splices

1. For Lighting Systems and Power Outlets: Wire nuts shall be twist-on type insulated connectors utilizing an outer insulating cover and a means for connecting and holding the conductors firmly.
2. All Equipment: Crimp type connectors shall be insulated type, suitable for the size and material of the wires and the number of wires to be spliced and for use with either solid or stranded conductors.
3. Equipment and Power Conductors: Bolted pressure connectors shall be suitable for the size and material of the conductors to be spliced.
4. All Equipment: Epoxy splice kits shall include epoxy resin, hardener, mold, and shall be suitable for use in wet and hazardous locations.

D. Terminations

1. Crimp type terminals shall be self-insulating sleeve type, with ring or rectangular type tongue, suitable for the size and material of the wire to be terminated, and for use with either solid or stranded conductors.
2. Terminal lugs shall be split bolt or bolted split sleeve type in which the bolt or set screw does not bear directly on the conductor.
3. Wire Markers shall be plastic sleeve type. Wire numbers shall be permanently imprinted on the markers.

2.2 FINISHES

A. Color Coding: Provide color coding for all circuit conductors. Insulation color shall be white for neutrals and green for grounding conductors. An isolated ground conductor shall be identified with an orange tracer in the green body. Ungrounded conductor colors shall be as follows:

1. 120/208 Volt, 3 Phase: Red, black and blue.
2. 277/480 Volt, 3 Phase: Yellow, brown and orange.
3. 120/240 Volt, 1 Phase: Red and black.

PART 3 - EXECUTION

3.1 CONSTRUCTION

A. Conductor Splices

1. Splices: Install all conductors without splices unless necessary for installation, as determined by the Engineer. Splices when permitted shall be completed using an approved splice kit intended for the type of conductor and the application. The splice shall be in accordance with the splice kit manufacturer's instructions.
2. Underground Splices: All underground outdoor splices when approved by Engineer shall be completed in an accessible pull-box or handhole using an approved watertight epoxy resin splice kit rated for the application up to 600 volts. Splices will not be allowed to be direct buried.

B. Conductor Identification

1. Except for interior lighting and receptacle circuits, identify each wire or cable at each termination and in each pull-box, junction box, handhole, and manhole using numbered and lettered wire markers. All electrically common conductors shall have the same number. Each electrically different conductor shall be uniquely numbered. Identify panelboard circuits using the panelboard identification and circuit number. Identify motor control circuits using the equipment identification number assigned to the control unit by the motor control center manufacturer and the motor control unit terminal number. Identify other circuits as shown in the circuit schedule as favorably by the Engineer.
2. Conductors between terminals of different numbers shall have both terminal numbers shown at each conductor end. The terminal number closest to the end of the wire shall be the same as the terminal number.

3.2 FIELD QUALITY CONTROL

A. Insulation Resistance Tests: For all circuits 150 volts to ground or more and for all motors circuits over 1/2 horsepower, test cables per NETA Paragraph 7.3.1. The insulation resistance shall be 20 megohms or more. Submit results to Engineer for review.

END OF SECTION

SECTION 260523 – CONTROL VOLTAGE CONDUCTORS

PART 1 - GENERAL (NOT USED)

PART 2 - PRODUCTS

2.1 MATERIALS

A. Twisted Shielded Pairs (TSP)

1. Cable shall conform to IEEE 383, UL 13, and UL 83 and shall be type PLTC cable suitable for direct burial. Each TSP shall consist of two #16 AWG, 7-strand copper conductors per ASTM B8 with 15 mils PVC insulation and individual conductor jacket of nylon. Conductors shall be twisted with 2-inch or shorter lay, with 100 percent foil shielding and tinned copper drain wires. The cable shall have an overall PVC jacket with a thickness of 35 mils. The insulation system shall be rated at 90 C and for operation at 600 volts.

B. Multiple (Twisted) Shielded Pair (MSP) Cables

1. Each MSP cable shall conform to IEEE 383, UL 13, and UL 83 and shall consist of the number of pairs shown on the Plans of #20 AWG, 7-strand copper conductors per ASTM B8 with 15 mils PVC insulation and individual conductor jacket of nylon. Conductors shall be twisted with 2-inch or shorter lay, with 100 percent foil shielding and tinned copper drain wires. The MSP cable itself shall have, in addition, an overall foil shield, tinned copper drain wire, and an outer PVC jacket. Thickness of the jacket shall be 50 mils for 8 or fewer pairs, 60 mils for 10 to 16 pairs, and 70 mils for 18 or more pairs. The insulation system shall be rated at 90 C and for operation at 600 volts.

PART 3 - EXECUTION

3.1 CONSTRUCTION

A. Cable Installation

1. Cables shall be continuous from initiation to termination without splices.
2. Cable shielding shall be grounded at one end of the cable only. Bonding shall be to a single ground point only. Bonding from cable to cable in multiple run installations shall not be permitted.
3. Install instrumentation cables in separate raceway systems with voltages not to exceed 30 volts DC.

B. Conductor Identification

1. Except for interior lighting and receptacle circuits, identify each wire or cable at each termination and in each pull-box, junction box, handhole, and manhole using numbered and lettered wire markers. All electrically common conductors shall have the same number. Each electrically different conductor shall be uniquely numbered. Identify panelboard circuits using the panelboard identification and circuit number. Identify motor control circuits using the equipment identification number assigned to the control unit by the motor control center manufacturer and the motor control unit terminal number. Identify other circuits as shown in the circuit schedule as determined by the Engineer.
2. Conductors between terminals of different numbers shall have both terminal numbers shown at each conductor end. The terminal number closest to the end of the wire shall be the same as the terminal number.

3.2 FIELD QUALITY CONTROL

A. Insulation Resistance Tests: Perform insulation resistance on all circuits. Make these tests before any equipment has been connected. Test the insulation with a 500 Vdc insulation resistance tester with a scale reading 100 mega ohms. The insulation resistance shall be 20 mega ohms or more. Submit results to Engineer for review.

END OF SECTION

SECTION 260526 – GROUNDING FOR ELECTRICAL

PART 1 - GENERAL

1.1 REFERENCES

A. Service and equipment grounding shall be per Article 250 of the National Electrical Code (NEC).

1.2 PERFORMANCE REQUIREMENTS

A. Verify that a low-resistance ground path is provided for all circuits so an accidental contact to ground of any live conductor will instantly trip the circuit.

PART 2 - PRODUCTS

2.1 MATERIALS

A. The grounding systems shall consist of the ground rods, grounding conductors, ground bus, ground fittings and clamps, and bonding conductors to water piping and structural steel as shown on the Plans.

B. System components shall be as allowed in the N.E.C. unless specified otherwise below.

1. Ground Rods: Ground rods shall be cone pointed copper clad Grade 40 HS steel rods conforming to ASTM B228. The welded copper encased steel rod shall have a conductivity of not less than 27% of pure copper.
2. Ground Conductors: Buried conductors shall be medium-hard drawn bare copper; other conductors shall be soft drawn copper. Sizes over No. 6 AWG shall be stranded. Coat all ground connections except the exothermic welds with electrical joint compound, non-petroleum type, UL listed for copper and aluminum applications.
3. Ground Rod Boxes: Boxes shall be a 9-inch diameter precast concrete unit with hot-dip galvanized traffic cover. Boxes shall be 12-inches deep minimum. Covers shall be embossed with the wording "Ground Rod".

C. Ground Connections

1. Above grade ground connections shall be exothermic weld, mechanical, or compression-type connectors; or brazing.
2. Below grade ground connections shall be exothermic weld.

PART 3 - EXECUTION

3.1 CONSTRUCTION

A. Install all ground connections is strict accordance with connector manufacturer's recommendations and methods.

B. General Grounding

1. When available a UFER ground per latest edition of NEC shall be provided as the primary means to ground the electrical system.
2. Ground electrical service neutral at service entrance equipment to supplementary grounding electrodes.
3. Ground each separately derived system neutral to nearest effectively grounded building structural steel member or separate grounding electrode.
4. Provide a ground rod box for each ground rod to permit ready access to facilitate testing.
5. Provide a ground wire in every conduit carrying a circuit of over 110 volts to ground.
6. Make embedded or buried ground connections, taps and splices with exothermic welds. Coat ground connections.
7. Bond metallic water piping at its entrance into each building.

C. Motor Grounding

1. Extend equipment ground bus via grounding conductor installed in motor feeder raceway. Connect to motor frame.
2. When using nonmetallic flexible tubing install an equipment grounding conductor connected at both ends to noncurrent-carrying grounding bus.

D. Vault and Handhole Grounding

1. Exposed noncurrent-carrying metal parts of equipment, conductor supports or racks, conduits and other metal appurtenances, including any metal cover and its supporting ring, shall be bonded together and connected to a common ground. The size of the grounding means shall be as prescribed in the National Electric Code. Where the grounding means is exposed, the grounding conductor shall be not smaller than #8 AWG copper.

3.2 FIELD QUALITY CONTROL

A. Following completion of the grounding electrode system, if installed, measure ground resistance at each ground rod using the three rod method. Submit results to engineer prior to final acceptance by the Owner.

B. Perform testing per NETA Standard ATS paragraph 7.13. Testing methods shall conform to NETA Standard ATS using the three electrode method for large systems. Conduct tests only after a period of not less than 48 hours of dry weather.

C. Furnish to the Engineer a test report with recorded data of each ground rod per Section 260900 – Electrical Testing.

END OF SECTION

SECTION 260533 – CONDUIT, RACEWAYS AND BOXES FOR ELECTRICAL

PART 1 - GENERAL

1.1 DESIGN REQUIREMENTS

A. Conduit sizes not noted on Plans shall be in accordance with N.E.C. requirements for the quantities and sizes of wire installed therein.

B. In corrosive areas, all junction boxes shall be NEMA 4X.

C. Outlet boxes and switch boxes shall be designed for mounting flush wiring devices.

D. Outlet boxes shall not be less than 4" square and 1 1/2" deep. Ceiling boxes shall withstand a vertical force of 200 pounds for 5 minutes. Wall boxes shall withstand a vertical downward force of 50 pounds for 5 minutes.

E. Watertight enclosures shall be NEMA rated and installed per all applicable codes.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Handholes and Pull boxes shall be Utility Vault Co. or approved equal unless specified otherwise on the Plans.

B. Watertight enclosures shall be equal to Hoffman.

2.2 MATERIALS

A. Handholes

1. Provide handholes of reinforced precast concrete, or injection molded composite plastic material. Handholes shall include a base, a body, extensions and a cover. Handholes with a perimeter of 10 feet or more (e.g., 3 feet by 2 feet) shall have both pulling irons and cable racks. All hardware shall be stainless steel, or hot-dip galvanized after fabrication; cable racking and hardware, however, shall be non-metallic and corrosion resistant. If no handhole size is shown on the Plans, size units per NEC or provide 12 inches by 24 inches by 18 inches deep, whichever is larger.
2. All handholes located in areas subject to vehicular traffic or where identified on Plans shall be ASSHTO, H-20 rated in accordance with ASTM C857.
3. The lids to all pull boxes and vaults shall be permanently marked for its intended use, "signal" for all signal and instrumentation handholes and "electrical" for all power handholes. Letter shall be a minimum of 3-inches high.

B. Outlet and Junction Boxes

1. Use cast boxes with threaded hubs for all rigid and intermediate conduits. Steel boxes may be used with rigid and intermediate conduits where cast boxes are not allowed by the N.E.C. All boxes shall be of proper size to accommodate devices, connectors, and number of wires present in the box. Boxes shall be readily accessible.
2. Cast box bodies and cover shall be cast or malleable iron with a minimum wall thickness of 1/8" at every point, and not less than 1/4" at tapped holes for rigid conduit. Bosses are not acceptable. Mounting lugs shall be provided at the back or bottom corners of the body. Covers shall be secured to the box body with No. 6 or larger brass or bronze flathead screws. Boxes shall be provided with neoprene cover gaskets. Outlet boxes shall be of the FS types. Boxes shall conform to FS W-C-586C and UL 514.
3. Sheet metal boxes shall conform to UL 50, with a hot-dipped galvanized finish conforming to ASTM A123. Boxes and box extension rings shall be provided with knockouts. Boxes shall be formed in one piece from carbon-steel sheets.
4. Non-metallic boxes shall be hot-compressed fiberglass, one-piece, molded with reinforcing of polyester material, with a minimum wall thickness of 1/8".
5. Where only cast aluminum is available for certain types of fixture boxes, an epoxy finish shall be provided.

C. Conduit and Fittings

1. Galvanized Rigid Steel (GRS): Rigid conduit shall be steel, hot dipped galvanized inside and out. The GRS must meet USA Standards Institute C80-1 Underwriters Laboratories Standard UL6, and carry a UL label. Use cast threaded hub fittings and junction boxes for all rigid conduit except in locations not permitted by the N.E.C.
2. PVC Coated Rigid Steel Conduit (PVC-GRS): PVC coated conduit shall meet the GRS standard above plus have a 40 mil PVC factory applied PVC coating.
3. Nonmetallic Conduit: Nonmetallic Conduit shall be rigid PVC, Schedule 40 (PVC-40) or 80(PVC-80). PVC conduit installed above grade shall be Schedule 80 extra heavy wall 90 degree C. UL listed for aboveground use and UV resistant. Conduit shall be gray in color. Fittings shall be of the same material as the raceway and installed with solvent per the Manufacturer's instructions. Conduit, fittings and solvent shall all be manufactured by the same Manufacturer.
4. Flexible Metal Conduit (Flex-LT): Flexible conduit shall be interlocking single strip, hot dipped galvanized and shall have a polyvinyl chloride jacket extruded over the outside to form a flexible watertight raceway. Flexible conduit shall be American Brass Company Sealtite Type VA, General Electric Type UA or equal.

D. Galvanized Rigid Steel (GRS) conduit shall be used in all locations unless noted otherwise below or on the Plans.

E. Above grade conduits (non-corrosive areas) shall be:

1. GRS for power and control wiring.
2. GRS for instrumentation and telecommunications wiring.
3. GRS for motor leads from VFD's.
4. EMT for above-grade lighting circuits.

F. Above grade conduits (wet or corrosive areas, NFPA 70 hazardous areas) shall be:

1. PVC-GRS for power and control wiring.
2. PVC-GRS for instrumentation and telecommunications wiring.
3. PVC-GRS for motor leads from VFD's.

G. Concealed above grade conduits shall be:

1. GRS for all wire and cable types in wood stud frame walls.
2. PVC-40 for power and control wiring in concrete block or brick walls.
3. PVC-40 for instrumentation and telecommunications wiring in CMU or brick walls.
4. GRS for motor leads from VFD's in CMU or brick walls.

H. Below grade conduits in direct earth (not under slabs-on-grade) shall be:

1. PVC-40 for power and control wiring.
2. Sweeps and risers for transition of PVC from below grade to above grade shall be PVC-GRS.
3. PVC-GRS for instrumentation and telecommunications wiring.
4. PVC-GRS for motor leads from VFD's.

I. Under slabs-on-grade conduit shall be:

1. PVC-40 for power and control wiring
2. Sweeps and risers for transition of PVC from below grade to above grade shall be PVC-GRS.
3. PVC-GRS for instrumentation and telecommunications wiring.
4. PVC-GRS for motor leads from VFD's.

J. Concrete-encased conduits shall be:

1. PVC-40 for power and control wiring
2. Sweeps and risers for transition of PVC from below grade to above grade shall be PVC-GRS.
3. PVC-40 for instrumentation and telecommunications wiring.
4. Sweeps and risers for transition of PVC from concrete-encasement to above grade shall be PVC-GRS.
5. PVC-GRS for motor leads from VFD's.

K. All connections to vibrating equipment or motors shall be:

1. Liquidtight flexible metallic conduit for indoor, non-corrosive areas and all motor leads from VFD's.
2. Connection to equipment outdoors or in corrosive areas shall be with non-metallic liquidtight flexible conduit (except for motor leads from VFD's shall be flexible metallic.)

L. Conduit & Cable Supports

1. Conduit Supports: Hot dipped galvanized framing channel shall be used to support groups of conduit. Individual conduit supports shall be one-hole galvanized malleable iron pipe straps used with galvanized clamp backs and nesting backs where required. Conduit support for PVC or PVC coated rigid steel shall be one-hole PVC or epoxy coated clamps or PVC conduit wall hangers.
2. Ceiling Hangers: Ceiling hangers shall be adjustable galvanized carbon steel rod hangers. Unless otherwise specified, hanger rods shall be ½-inch all-thread rod and shall meet ASTM A193. Hanger rods in corrosive areas and those exposed to weather or moisture shall be stainless steel.

M. Conduit Sealants

1. Moisture Barrier Types: Sealant shall be a non-toxic, non-shrink, non-hardening, putty type hand applied material providing an effective barrier under submerged conditions.
2. Fire Retardant Types: Fire stop material shall be a reusable, non-toxic, asbestos-free, expanding, putty type material with a 3-hour rating in accordance with UL 1479. Provide products indicated by the manufacturer to be suitable for the type and size of penetration.

PART 3 - EXECUTION

3.1 CONSTRUCTION

A. Use no splices or junction boxes within the wetwell.

B. Handholes

1. Conduits entering handholes shall have grounding bushings installed and the conduit ends shall be sealed with Permagum sealing compound. Where conduits enter through sides of handholes, the penetration shall be made watertight. Use a core drill wherever it is necessary to drill through concrete. Perform patch work with the same materials as the surrounding area and finish to match.
2. Pull boxes shall be provided at least every 150 feet on long straight runs. Spacing shall be reduced by 50 feet for each 90 degree bend.
3. Install handholes flush with finished grade in all paved areas, roadways and walkways. All handhole edges shall be flush with final surface.

C. Conduit

1. All conduits shall be concealed unless noted otherwise on the construction plans.
2. Size of Raceways:

    a. Raceway sizes as shown on the Plans, if not shown on the Plans, then size in accordance with NFPA 70.
    b. Unless specifically indicated otherwise, the minimum raceway size shall be:
    c. Conduit: 3/4 inch

3. All raceways shall contain a separate grounding conductor.

4. Spare conduits shall contain one 3/16 inch diameter nylon pull rope.
5. Conduit routing is shown diagrammatic on the Plans. Contractor is responsible for routing the conduits in a neat manner, parallel and perpendicular to walls and ceilings.
6. Location of conduit ends are shown approximately. Contractor is responsible for ending conduits in location that will not conflict with electrical equipment. Route conduit ends to facilitate ease of equipment maintenance. Conduits extending from the floor to a device shall be located as close as possible to avoid creating a hazard.
7. Conduit shall not be routed on exterior of structures except as specifically indicated on the plans.
8. Where water cannot drain to openings, provide drain fittings in the low spots of the conduit run.
9. Securely fasten raceways at intervals and locations required by N.E.C., or the type of raceway employed.
10. Provide all required openings in walls, floors and ceilings for conduit penetration.

    a. Do not install one (1) inch and larger raceways in or through structural members (beams, slabs, etc.) unless approved by Engineer.
    b. New Construction: Avoid cutting openings, where possible, by setting sleeves or frames in masonry and concrete, and by requesting openings in advance.
    c. Existing Construction: Core drill openings in masonry and concrete. Avoid structural members and rebar.

11. Conduit Encasement or Embedment in the earth shall be separated from the earth by at least 3-inches of concrete unless otherwise shown on the Plans. Plastic conduit spacers shall be located 5 feet on centers. The spacers shall be secured to the conduits by wire ties. The conduits shall be watertight.
12. Analog signal conduits shall be separated from power or control conduits. The separation shall be a minimum of 12-inches for metallic conduits and 24-inches for nonmetallic conduits.
13. Install explosion-proof seal-offs in hazardous areas shown on the Plans and as required by the N.E.C.
14. Plastic raceway joints shall be solvent cemented in accordance with recommendations of raceway manufacturer.
15. All conduit openings not encased in a panel shall be sealed with duct seal.

END OF SECTION

SECTION 260540 – SITE ELECTRICAL

PART 1 - GENERAL

1.1 SUMMARY

A. The work included in this section consists of furnishing and installing conduit, fittings, handholes, pull vaults, warning tape, cables, wires, and related items, complete as specified herein and as indicated on the plans for a complete and functional underground electrical system. Special vaults, grounding, trench backfill requirements may be specified with the particular equipment or electrical system involved.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Materials and equipment shall conform to the respective specifications and standards; and to be the specifications herein. Electrical rating shall be as indicated on plans.

B. Backfill around raceways shall be 3-inches of pea gravel or sand for systems of 600 volt or less. Provide red marker tape over raceways below grade. Place backfill material to obtain a minimum degree of compaction of 95 percent of maximum density at optimum moisture content. Moisten backfill material as required to obtain proper compaction. Do not use broken pavement, concrete, sod, roots or debris for backfill.

C. Underground marking tape; Brady “Detectable Identoline – Buried Underground Tape” or equal. Tape shall be for location and early warning protection of buried power and communication lines. Tape shall be detectable by a pipe/cable locator or metal detector from above the undisturbed ground. Tape shall be nominally 2 inches wide with a type B721 aluminum foil core laminated between two layers of 5 mil thickness polyester plastic. The plastic color shall be red for electrical lines and orange for telephone lines.

PART 3 - EXECUTION

3.1 CONSTRUCTION

A. Provide all excavation, trenching, backfill and surface restoration required for the electrical work.

B. Trenching shall be to depths as required by Code, particular installation, or as shown on the Plans. Trench width and length as required by the installation or as shown. Trench bottom shall be free of debris and graded smooth. Where trench bottom is rock or rocky, or contains debris larger than 1 inch or material with sharp edges, over excavate 3 inches and fill with 3 inches of sand. Separation between new electrical utilities and other utilities shall be 12 inches minimum. Perform crossing of concrete or asphalt only after surface material has been saw cut to required width and removed.

C. Unless noted otherwise on plans, approved underground marking tape shall be installed in the trench twelve inches above and directly over the conduit or raceway.

END OF SECTION

SECTION 260620 – PUMP CONTROL PANEL

PART 1 - GENERAL

1.1 SUMMARY

A. The intent of this specification is to provide a complete, integrated Pump Control System as described herein. It shall be factory assembled, wired and tested.

1.2 REFERENCES

A. All devices within the panel shall be UL listed and/or recognized where applicable and shall be mounted and wired in accordance with the most current edition of UL508 and NFPA.

1.3 QUALITY ASSURANCE

A. The panel manufacturer shall have a minimum of 5 years experience manufacturing systems specifically for submersible pump applications.

B. The panel manufacturer shall be CM (California Motor) Controls or equal.

PART 2 - PRODUCTS

2.1 MANUFACTURED UNITS

A. Pump Control Panels should be completely fabricated, and components installed and wired in the manufacturer's factory (where possible).

B. All external connections shall be by way of numbered terminal blocks.

C. An equipment data tag shall be permanently affixed on the inside of the exterior door with the station designation, power source, pump horsepower, and pump full load amps. In addition to the label requirements of UL 508A, an engraved legend plate shall be permanently affixed on the inside of the exterior door with the name, address and telephone number of the service representative for the pump control panel.

D. Basic Operation

1. The pump shall be operated automatically or manually as a pump down, lead/lag, common off system or by an operator at the site. The pump shall be controlled through the "Hand-Off-Auto" selection switch.

    a. OFF - In this position the applicable pump shall not run under any circumstance.
    b. HAND - In this position the applicable pump shall run without regard for the level sensing and/or control and will rely on operator discipline to run and stop.

c. AUTO - In this position the pump will be controlled by the level transmitter. The level transmitter will call the pump to operate. If the level transmitter fails, the emergency backup floats shall call the pumps to start and stop.

2. The pump control panel for the constant speed system shall be specifically designed to provide automatic liquid level sensing for pump control using a combination of float switches and an Ultrasonic Level Transmitter. The pump control panel shall use a PUMP Vision PV controller, control relays and operator interface devices to accomplish the pump control shown on the Plans. The pump controller programming shall be provided by the Contractor. The pump controller shall be located in the pump control panel.
3. The primary level control shall be a level transducer. The ultrasonic level sensor assembly shall be a Siemens EchoMax XPS-10, Endress-Hauser FDU91, Pulsar dB10 series, or equal mounted as shown on the Plans. The ultrasonic sensor shall be connected to a compatible transmitter which shall be a Siemens Sitrans LUT 420 Level Controller, Endress-Hauser FMU90 Transmitter, Pulsar Blackbox 130, or equal. The transmitter shall output a 4-20mA signal to the Pump Controller for automatic control. The level sensor shall be equipped with a submergence shield. Integral level sensor cables shall be long enough to reach the termination locations as shown on the plans. All metal components of the sensor mounting kit will consist of type 316 stainless steel.
4. The secondary level control shall be non-mercury mechanical type float switches enclosed in a sealed polyurethane float as shown on the Plans. A weight shall be on the cord near each float switch. Switches shall be SJE Rhombus, SJE MilliAmpMaster or approved equal. 2/C #18 flexible type SJOW water-proof, 250-volt cord shall be integral with the float switch and shall be of sufficient length to reach the splice in the junction box with an additional four feet of slack. All float switches shall be normally open-type.
5. Emergency backup float switches shall operate independently of the automatic control system.

E. Control Panel Enclosure

1. Provide a UL listed and NEMA Type 4X fully gasketed enclosure properly sized to contain the required components in the space provided. Panel cutouts for instruments and devices shall be cut, punched or drilled and smoothly finished with rounded edges.
2. In addition to applicable NEMA standards, the panels shall conform to the following requirements:

   a. Minimal metal thickness shall be 14-gauge.
   b. Wherever practical, enclosures shall be a manufactured item.
   c. All doors shall be rubber gasketed with continuous hinge. Doors shall be provided with quick-release latches to secure cover unless not allowed by NEMA classifications.
   d. Enclosure shall be provided with an interior swing door.
   e. Enclosure shall include a back-pan.
   f. Outdoor enclosures shall be provided with stainless steel pad-lockable system.
   g. Outdoor enclosures shall be provided with two screened and gasketed louver vents with stainless steel rainproof covers. One vent shall be equipped with a cooling fan and thermostat to maintain the environmental conditions required for the equipment to be installed.
   h. Outdoor Enclosures shall be provided with a control panel heater with built-in thermostat to provide adequate climate control to prevent condensation from forming inside the enclosure.

i. Outdoor Enclosures shall have a drip shield mounted on the front of the panel that conveys water away from the front of the panel to the sides.
j. Enclosures constructed of materials other than stainless steel and cast aluminum shall be finished in ANSI 61 gray polyester powder coating inside and out over phosphatized surfaces.
k. Voltage identification labels and comprehensive warning labels shall be provided.

F. High Voltage Section

1. Main Circuit Breaker

a. A power distribution block sized for the incoming power conductors shall be provided for the main power connection. Adequate conduit space shall be provided to meet the N.E.C. requirements.

2. Motor Short Circuit Protection

a. The pump motor(s) shall be provided with a motor circuit protector (MCP) breaker disconnect switch with magnetic trip only. The motor circuit protector shall be UL listed and be rated 600 volts with an interrupting rating of not less than 22,000 RMS unless noted otherwise on the Plans. The disconnect switch shall have padlock provisions.

3. Motor Starter Units

a. Motor starter units shall be of the combination type with components and wiring readily accessible. The motor starter units shall contain the magnetic starters and control components as indicated on the plans and specified herein. Magnetic contactors shall be heavy duty NEMA rated with observable and replaceable contacts on all sizes. IEC rated contactors will not be allowed.

4. Motor Overload Protection

a. Overload protection is to be provided by a solid state overload relay that shall be self-powered. Each overload shall be adjustable over a full 2:1 FLA adjustment range. A tamper proof cover must be provided. The standard overload shall provide Class 10 protection. The overload must provide phase loss protection and be ambient insensitive. The overload relay must have a trip free normally closed contact with a visible trip indication and N.O. isolated alarm contact. The overload shall have a method of being manually tripped for test purposes. Size the overload heaters to protect the motor actually installed with allowance for power factor correction, if applicable.

5. GFCI Receptacle

a. A 20A GFCI duplex outlet receptacle shall be provided. It shall be mounted on the back pan. A dedicated 20 Amp circuit breaker shall be provided for this receptacle.

6. 120 VAC Control Power

    a. The 120 VAC, single-phase power shall be derived from a properly sized transformer. The control power shall have an over current protection device with suitable interrupting requirements for the system. Fused disconnects shall be provided in accordance with N.E.C and the system requirements. Provide a fused disconnect for the flow meter power.

7. Ground Lugs

    a. Ground Lugs shall be provided for both incoming power and the motor.

8. Surge Protection Device

    a. Provide a surge protection device (SPD) as shown on the plans.

9. Other Equipment

    a. Run Time Meters Division SECTION 260621
    b. Operational Counters SECTION 260621
    c. Selector Switches SECTION 260621
    d. Pushbuttons SECTION 260621
    e. Indicating Pilot Lights SECTION 260621
    f. Terminal Blocks SECTION 260621
    g. Relays SECTION 260621
    h. Phase Sequence and Loss Monitor Relay (PFR) SECTION 260621

G. Control Section

1. Control Wiring

    a. All control wiring shall be minimum 16 AWG, MTW and shall be color-coded in accordance with all applicable codes and laws. Spiral wrap, tie wrap, fasteners and wire duct shall be provided as required for aesthetics and safety.

2. Control Components

    a. All components mounted on the door shall be wired with insulated connectors (where "finger proof" terminals are not provided) to prevent accidental shock hazards. All components on the back pan shall be mounted on DIN rail or fastened via drilled and tapped screws to facilitate easy component replacement. Pop rivets shall not be allowed.

3. Over Temperature Detection

    a. A temperature monitoring relay shall be supplied for the pump and located in the control panel. The relay shall monitor the stator temperature of each pump motor. Over temperature shall be detected by three (3) low resistant bi-metallic, thermal switches embedded in the stator windings. The thermal switches shall monitor for high temperature and upon detection, shall actuate, alarm and shutdown the pump and motor for protection. An over temperature function shall remain locked out until manually reset. The over temperature function shall incorporate a bi-stable

relay that retains its position during power failures. LED's located on the relay shall indicate a thermal trip.

4. Seal Fail Detection

   a. Seal leakage detection shall be provided for each pump. Seal leakage shall be detected by a motor moisture sensor mounted in the dry sump reservoir of the motor stator housing. The sensor shall monitor the motor housing for moisture and upon detection, shall actuate an alarm to the telemetry. Detection of a seal leak occurring within the motor chamber shall not shutdown or lockout the pump. The sensor shall be monitored by a sensing relay remotely mounted in the control panel. LED's located on the relay shall indicate a seal leak condition.

5. Pilot Lights

   a. An over temperature pilot light and a seal failure pilot light shall be provided on the enclosure door.

6. Intrinsically Safe Relay(s)

   a. ISR relays shall be provided per Article 504 of the N.E.C. and ANSI/ISA-RP 12.6. Intrinsically safe relays shall be UL 913 listed and shall be 8-pin socket mount style.

H. Alarms

1. A weatherproof red flashing incandescent alarm light, and separate alarm horn shall be provided to indicate alarms. Provide switch to manually disable horn without disabling light.
2. Alarm power shall be derived from the 120V control power. The light shall be mounted on the exterior of the pump control panel and shall be UL recognized for NEMA 4 to maintain the environmental rating of the enclosure.
3. Alarms include:

   a. High level
   b. Pump failure
   c. Seal fail
   d. Over-temperature
   e. Emergency backup float call
   f. Power fail

      1) For power fail, the light shall have an internal backup power source and relay to allow for such an alarm.

2.2 SOURCE QUALITY CONTROL

A. The supplier of the pump control panel shall be responsible for coordinating with the manufacturer of the pump to verify compatibility and assure matching controls to the pump.

B. The pump control system(s) shall be fully tested by the factory prior to shipment. It shall include testing of both power and control devices as well as all control functions. A final inspection shall be performed prior to shipment and a copy of this form shall be provided with the panel.

PART 3 - EXECUTION

3.1 INSTALLATION

A. The pump control panel shall be securely mounted as shown on the plans.

END OF SECTION

SECTION 260621 – ELECTRICAL DEVICES

PART 1 - GENERAL

1.1 REFERENCES

A. Operating and indicating devices minimum rating shall be NEMA 13. Operator devices mounted in outdoor panels, corrosive areas or where exposed to moisture shall be NEMA 4X.

1.2 PERFORMANCE REQUIREMENTS

A. Panel Relays

1. Relays shall be provided as necessary to perform switching functions required of control panels and other control circuits as shown on the Plans and described in the technical specifications. Appropriate relay type and associated contacts shall be selected based on the application from the control wiring diagrams or the functional description. Where timing relays and control relays require additional contacts, provide auxiliary control relays properly sized for the application.
2. All contacts and relays shall be NEMA rated and UL recognized.
3. The electrical life expectancy for the relay shall be over 500,000 operations at 120V AC, 10 amp; (over 200,000 operations at 120V AC, 10 amp for SPDT, 3PDT, and 4PDT). The mechanical life expectancy for the relay shall be over 50,000,000 operations.

B. Phase Fail Relay

1. Pump Control Panels shall be provided with phase fail relays wired as indicated on the Plans for shutdown of three-phase motors and/or remote indication of incorrect voltage conditions.

C. Surge Protection Device (SPD)

1. The SPD shall be compatible with the electrical system voltage, current, system configuration and intended applications.

D. Overcurrent Devices

1. Overcurrent devices shall be NEMA rated.

E. Fuses

1. Fuses shall be of the type and amperage indicated on the Plans. The voltage rating shall be appropriate for the application indicated. The fuse types indicated on the Plans imply a certain set of fuse characteristics. No substitutions of fuse types will be allowed without Engineer approval.

F. Molded Case Circuit Breakers

1. Breakers shall have the interrupting rating and trip rating indicated on the Plans. All breakers shall be calibrated for operation in an ambient temperature of 40° C.

G. Instantaneous magnetic trip breakers

1. The magnetic trips shall be adjustable and accessible from the front of all these breakers.

H. Receptacles

1. Receptacles shall be heavy duty, high abuse, grounding type conforming to NEMA configurations, NEMA WD1 and UL 514 Standards.

I. Surface Plates (receptacles)

1. Plates shall be of the style and color to match the wiring devices, and of the required number of gangs. Plates shall conform to NEMA WD1, UL 514, and ANSI C73. In noncorrosive indoor areas, device plates shall be made of sheet steel, zinc electroplated with chrome finish.
2. Device plates in corrosive or outdoor areas shall be corrosion-resistant/marine-duty type with weather protective double doors. Device plates for explosion-proof equipment shall be factory provided with the equipment.

1.3 EXTRA MATERIALS

A. Provide one fuse for each ungrounded conductor and a minimum of one spare fuse per phase of each ampacity and voltage used on the project. Deliver fuses to Owner at the completion of the project.

PART 2 - PRODUCTS

2.1 COMPONENTS

A. Run Time Meters

1. HECON GO series or equal.
2. Hour meter (elapsed time meters) shall be 2 inch x 1 inch nominal size, rectangular case type for flush panel mounting. The meter face shall be of the style that most closely resembles the panel indicating instruments if provided and shall have black trim with white or aluminized face. The meters shall have a 6-digit non-resettable register with the last digit indicating tenths of an hour.

B. Start Count Meters

1. HECON GO series, Redington Model 3400-2010 or equal.
2. Start counters shall be 2 inch x 1 inch nominal size, rectangular case type for flush panel mounting. The meter face shall be of the style that most closely resembles the panel indicating instruments if provided and shall have black trim with white or aluminized face. The meters shall have a 6-digit resettable register.

C. Indicating Lights

1. Heavy-Duty, Oil-Tight Type: Eaton/Cutler-Hammer, Type 12350T; Square D Co., Type K; Allen Bradley, Type 800T; General Electric Co., Type CR 104P.
2. Heavy-Duty, Watertight, and Corrosion-Resistant Type: Eaton/Cutler-Hammer, Type E34; Square D Co., Type SK; Allen Bradley, Type 800H; General Electric Co., Type CR 104P.
3. Indicating lights shall be NEMA type 4/4X/13, corrosion resistant, water-tight, oil-tight, full voltage, push-to-test, high visibility 28 chips LED type. Pilot lights shall be rated for the proper operating voltage. Appropriate lens caps shall be provided as shown on plans. Size of indicating lights shall be 30.5mm.

D. Selector Switch

1. Heavy-Duty, Oil-Tight Type: Eaton/Cutler-Hammer, Type 12350T; Square D Co., Type K; Allen Bradley, Type 800T; General Electric Co., Type CR 104P.
2. Heavy-Duty, Watertight, and Corrosion-Resistant Type: Eaton/Cutler-Hammer, Type E34; Square D Co., Type SK; Allen Bradley, Type 800H; General Electric Co., Type CR 104P.
3. Selector switches shall be NEMA type 4/4X/13, corrosion-resistant/watertight/oil-tight, type selector switches with contacts rated for 10 amperes continuous at proper operating voltage. Operators shall be black knob type. Units shall have the number of positions and contact arrangements and spring return function (if any) as shown on Plans. Units shall be single-hole mounting, accommodating panel thicknesses from 1/16-inch minimum to 1/4-inch maximum. Size of selector switch shall be 30.5mm.

E. Pushbuttons

1. Heavy-Duty, Oil-Tight Type: Eaton/Cutler-Hammer, Type 12350T; Square D Co., Type K; Allen Bradley, Type 800T; General Electric Co., Type CR 104P.
2. Heavy-Duty, Watertight, and Corrosion-Resistant Type: Eaton/Cutler-Hammer, Type E34; Square D Co., Type SK; Allen Bradley, Type 800H; General Electric Co., Type CR 104P.
3. Pushbuttons shall be NEMA type 4/4X/13, corrosion-resistant/watertight/oil-tight, type push buttons with momentary contacts rated for 10-ampere continuous at proper operating voltage. Button color shall be as specified in control panels and shall have a full guard. Pushbutton contact arrangements shall be as shown on Plans. Size of pushbuttons as indicated on the Plans.

F. Control Relays

1. Approved products

   a. Square D Class 8501, Type K or R;
   b. Allen Bradley 700 Type HA or HB;
   c. IDEC RH Series; or equal.

2. Relays for general purpose use shall be DPDT or 3PDT, 10 amp contacts with the appropriate coil voltage for the application. Relays shall be plug-in type with matching socket. All relays shall have LED indicators to signal when the coil is energized. Relay coils shall be rated for continuous duty.

G. Time Delay Relays

1. Approved products

   a. Allen Bradley 700 Type HR;
   b. IDEC GE1, RTE or GT3 Series; or equal

2. Time delay relays shall be multi-function, multi-range with plug-in base, pin style terminations timing and timed out LED indicators, and calibrated scales. Relays shall have minimum 0.5 seconds to 60 minutes, 8 selectable timing ranges, 5 amp contacts. Select coil voltage for the application. Units shall be sealed to prevent entry of contamination in the form of dust, dirt or moisture.
3. Appropriate relay shall be selected based on application from the control wiring diagrams.
4. Minimum accuracy (plus or minus) shall be as follows:

   a. Repeat accuracy – 1/2 percent.
   b. Timing change over full voltage range – 1/2 percent change over full temperature range.
   c. Scale tolerance - 5-percent.

H. Phase Fail Relay (PFR)

1. Units shall be Square D 8501 or Allen Bradley 700-N or equal.
2. A UL listed 3-phase power fail relay shall interrupt the control power in the event of phase loss, phase reversal, undervoltage and phase unbalance. It shall have primary fuse protection. Contacts shall be rated for 15A resistive at 120 VAC. The 3-phase power fail relay shall automatically reset when proper power is re-applied. Phase Fail Relays shall be Square D Class 8430 type MPD or equal.
3. Provide an interposing relay to provide a N.O. contact for each motor control circuit to serve as a shutdown contact, one (1) spare N.O. contact, and one (1) spare N.C. contact. Control relays for use with phase fail relays shall be heavy duty, industrial type with field convertible contacts. Unit shall be able to operate up to eight (8) contacts per relay.

I. Terminal Blocks

1. Terminal blocks shall be one-piece, molded, plastic blocks with screw-type terminals and barriers rated for 600 volts. Terminals shall be double-sided and supplied with removable covers to prevent accidental contact with live circuits. Terminals shall have permanent, legible identification, clearly visible with the protection cover removed.

J. Nameplates

1. Standard nameplates shall be made of 1/16-inch thick machine engraved laminated phenolic having black letters not less than 3/16-inch high on white background. 1-inch high lettering shall be used for the large nameplates required for the control panels and motor control centers.

K. Surge Protection Device

1. The Service Track series SPD shall be manufactured by Joslyn or a pre-approved equal. Approved manufacturers are as follows:

    a. Joslyn Service Track series
    b. Innovative Technology Protector series

2. Protect the electrical service with a SPD device as shown on the Plans. The SPD shall be mounted in the pump control panel and connected with the shortest conductors possible. The SPD shall meet the following:

    a. Provide surge current withstand up to 160 kA per phase.
    b. Short circuit current rating of 200 kAIC.
    c. A ten-year free replacement warranty.
    d. Enhanced UL 1283 Transient Tracking Filter.
    e. NEMA 4 - weatherproof steel enclosure
    f. Status indicator lights for each phase and one service LED.

L. Fuses

1. Fuses shall be Bussman, Gould Shawmut, Littlefuse, Reliance, or equal.
2. Fuses in motor circuits which are indicated but not sized, shall be provided with Manufacturer's recommended size based on the actual motor installed. In-line or integrally-mounted fuse clips shall be provided on all control power or low-voltage transformers.

M. Molded Case Circuit Breakers

1. Molded case circuit breakers shall be quick-make and quick-break type with wiping type contacts. Each breaker shall be provided with arc chutes and individual trip mechanisms on each pole consisting of both thermal and magnetic trip elements. Two and three pole breakers shall be common trip. Molded case circuit breakers shall be trip-free. Each breaker shall have trip indication independent of the ON or OFF positions.

N. Instantaneous magnetic trip breakers

1. Breakers in motor circuits which are indicated but not sized, shall be provided with Manufacturer's recommended size based on the actual motor installed. Where indicated on the Plans and in the combination motor starter/motor control center schedule, furnish instantaneous magnetic trip only circuit breakers for motor short circuit protection.

O. Receptacles

1. Single and Duplex Receptacles:

   a. Indoor Clean Areas: Receptacles shall be duplex, 20 amp, NEMA 5-20R, and shall accept NEMA 5-15P and 5-15P plug caps. Receptacles shall be Hubbel 5362, General Electric 4108-2, or equal. Color shall be brown in industrial areas and ivory or white in office and laboratory areas.
   b. Outdoor, Process or Corrosive Areas: Receptacles shall be duplex, 20 amp, NEMA 5-20R, and shall accept NEMA 5-15P and 5-20P plug caps. Receptacle and plug caps shall be corrosion resistant, marine duty with yellow polycarbonate weatherproof lift covers. Receptacles shall be Hubbell 53CM62/53CM21 or equal.

2. GFI Receptacles:

   a. Device shall be rated 20 amp, 2-pole, 3-wire, 120 volt, conforming to NEMA WD1.10 configuration. Device shall have a test and reset push buttons. GFI device shall be Hubbell 5362 or equal.

3. Surface Multiple Outlet Assemblies:

   a. Units shall have outlets on center-to-center spacing as shown on the Plans. Assembly shall conform to Article 353 of the N.E.C.

4. Surface Plates as manufactured by Crouse-Hinds, Appleton, or equal.

   a. Device plates shall be provided with engraved laminated phenolic nameplates with 1/8-inch white characters on black background. Nameplates for switches shall identify panel and circuit number and area served. Nameplates for receptacles shall identify circuit and voltage if other than 120 volts, single phase.

PART 3 - EXECUTION

3.1 CONSTRUCTION

A. Phase Fail Relays

1. Provide adjustable time relays on all alarm and shut down circuits to prevent nuisance tripping of other alarm points. Time delay relays for these functions may not be shown on the plans; however, provide as required on all circuits.
2. Provide additional form C contacts over and above the number indicated on the Plans for all relays provided.

3. 120 VAC relays shall not be interchangeable with other voltages to prevent a hazardous interchange of relay voltages.
4. Provide DIN mounted or panel mounted type depending on application.

B. Terminal Blocks

1. All wires between panel-mounted equipment and other equipment shall be terminated at terminal blocks. Switches shall be terminated at the terminal blocks with crimp-type, pre-insulated, ring-tongue lugs. Lugs shall be of the appropriate size for their terminal block screws and for the number and size of the wires terminated. All wires shall be labeled with the circuit number and common function.

C. Nameplates

1. Nameplates shall be provided on all electrical devices including but not limited to motor control equipment, MCC cubicles, control stations, junction boxes, panels, motors, instruments, switches, indicating lights, meters, and all electrical equipment enclosures. Each motor control center compartment and control panel shall have a nameplate designated the equipment and its identifying number and size or rating. Data shall be as shown on the Plans and reviewed via the submittal process. Nameplates shall have name, number and/or function as is applicable for clear identification.
2. Provide one large nameplate for each motor control center and/or control panel identifying the equipment as indicated on the Plans.
3. Nameplates on steel panels shall be secured with stainless steel drive screws. Where it is proposed that nameplates will be secured with pressure sensitive tape or bonding cement, the process and samples shall be submitted to the Engineer for acceptance.
4. Nameplates shall be provided for identifying all operator interface (lights, switches, etc.) and other devices that are located outside or inside the panels.
5. Nameplates shall be provided for identifying all relays and devices that are located inside the panels.
6. Provide warning nameplates on all panels and equipment, which contain multiple power sources. Lettering shall be white on red background.

D. Overcurrent Devices

1. Overcurrent protection devices and safety switches shall be centered 60 inches above the finished floor unless noted otherwise on the Plans.

E. Receptacles

1. Position of Outlets: All outlets shall be centered with regard to building lines, furring and trim, symmetrically arranged in the room or outside the structure. Device outlets shall be set plumb and shall extend flush to the finished surface of the wall, ceiling or floor without projecting beyond the same.
2. Unless otherwise noted, wall mounted outlet devices shall generally be 24-inches above the floor, 18 inches in architecturally treated areas, above process piping near process valve boards. Switches shall be 48 inches above the finished floor unless otherwise noted.

3. Installation of Wall Plates

   a. Interior Dry Locations: Install plates so that all four edges are in continuous contact with the finished wall surfaces. Plaster filled will not be permitted. Do not use oversize plates or sectional plates.
   b. Exterior and/or Wet Locations: Install plates with gaskets on wiring devices in such a manner as to provide a rain tight weatherproof installation. For receptacle devices, these plates shall maintain the weatherproof rating with an attachment plug inserted and be rated extra-duty. Cover type shall match box type.

3.2 FIELD QUALITY CONTROL

A. After installation of receptacles, circuits shall be energized and each receptacle tested for proper ground continuity, reversed polarity, and/or open neutral condition.

B. GFI receptacles shall be tested with the circuits energized. Devices shall be tested with a portable GFI receptacle tester capable of circulating 7.5 milliamperes of current, when plugged in, between the "hot" line and "ground" to produce tripping of the receptacle. Resetting and tripping shall be checked at least twice at each GFI receptacle.

C. Submit results of all field testing to the Engineer for review.

END OF SECTION

SECTION 260900 – ELECTRICAL TESTING

PART 1 - GENERAL

1.1 SUBMITTALS

A. Test reports shall be submitted to the Engineer prior to final acceptance in accordance with Section 013300 – Submittal Procedures of these specifications.

1.2 SCHEDULING AND COORDINATION

A. The Contractor shall inform the Engineer in advance of testing in accordance with the requirements listed in Division 1 of these specifications.

B. Prior to scheduling the testing, the Contractor shall have satisfied himself that the project area is properly cleaned up; all patching and painting deemed necessary properly completed; and all systems, equipment and controls are functioning as intended.

PART 2 - PRODUCTS

2.1 SOURCE QUALITY CONTROL

A. Submit reports of factory tests and adjustments performed by equipment manufacturers to the Engineer prior to field testing and adjustment of equipment. These reports shall identify the equipment and show dates, results of test, measured values and final adjustment settings. Provide factory tests and adjustments for equipment where factory tests are specified in the equipment specifications. The Engineer may inspect the fabricated equipment at the factory before shipment to job site. Provide the Engineer with sufficient prior notice so that an inspection can be arranged at the factory.

PART 3 - EXECUTION

3.1 SITE TESTS

A. Test all circuits for continuity, freedom from ground, and proper operation during progress of the work.

B. Insulation Resistance, Continuity, and Rotation: Perform routine insulation resistance, continuity and rotation tests for all distribution and utilization equipment prior and in addition to tests performed by the testing laboratory specified herein.

C. Electric Motors: Perform voltage, current and resistance tests on all motors 1/2 horsepower and larger installed this project. Insulation resistance readings shall be taken with a 500 volt megger for 30 seconds with the circuit conductors connected to the motor. Verify that an overload condition does not exist.

D. Conduct special test as required for service and/or system ground.

3.2 FIELD QUALITY CONTROL

A. General: Conduct final test in the presence of Owner and/or their authorized representative. Contractor shall provide all testing instrumentation and labor required to demonstrate satisfactory operation of systems, equipment and controls.

B. Operational Tests: Operational test all circuits to demonstrate that the circuits and equipment have been properly installed, adjusted and are ready for full-time service. Demonstrate the proper functioning of circuits in all modes of operation, and including alarm conditions, and demonstrate satisfactory interfacing with the data acquisition and alarm systems.

END OF SECTION

Conductor Test Report Page 1 of 1														
PROJECT:								OWNER:						
Contractor Co. Name: Tested by:								Phone Number: Test Date:						
Race-way Label (1)	V (2)	C (3)	Operating Load Voltage						Insulation Resistance - OHMS					
			VAB	VCB	VCA	VAN	VBN	VCN	A-B	B-C	C-A	A-G	B-G	C-G
A														
B														
C														
D														
E														
F														
G														

1. Refer to raceway and wire schedule and one-line diagram for description of feeder identified by label shown on this report
2. Visual Inspection – Check when completed
3. Continuity Test – Check when completed

Ground Electrode Resistance Test Report

PROJECT:	OWNER:
Contractor Co. Name: **Tested by**:	Phone Number: Test Date:

Test Meter Type:

Test Distance-D:

Soil Conditions:

Measured Resistance:

DESCRIPTION OF TEST PROCEDURE, CONDITIONS, RESULTS:

SECTION 263213 – ENGINE GENERATOR

PART 1 - GENERAL

1.1 SUMMARY

A. Work consists of procurement and installation of a dual fuel (natural gas, liquid petroleum) engine generator and transfer switch.

1.2 RELATED SECTIONS

A. 263623 - Automatic Transfer Switch

1.3 DEFINITIONS

A. Operational Bandwidth: The total variation from the lowest to highest value of a parameter over a range of conditions indicated, expressed as a percentage of the nominal value of the parameter.

B. LP: Liquid Petroleum

C. NG: Natural Gas

D. Standby Rating: Power output rating equal to the power the generator set delivers continuously under normally varying load factors for the duration of the power outage.

E. Local Availability: A manufacturer's authorized dealer with a service department that is within 300 miles of the project installation site.

1.4 DESIGN CRITERIA

A. Provide one self-contained, exterior rated standby engine generator system to automatically operate the load criteria listed in the rating section of these specifications during prime power failure conditions.

B. Insulate, enclose, or guard exposed parts subject to high-operating temperatures or energized electrically, and moving parts which are of such nature or so located as to be a hazard to operating personnel. Safety devices and safety measures shall not impair the proper functioning of any part of the set.

C. Parts which require adjustment or servicing (not repair or replacement) to permit operation of the sets shall be arranged to provide optimum ease of servicing. Adjustment, repair, and replacement of parts, assemblies, and accessories shall be possible with minimum drainage and minimum disturbance of set. Maintenance shall be possible by use of common tools.

D. Design, construct, and install complete engine generator set to be free from objectionable vibration in any mode. Freedom from torsional vibration shall be demonstrated during factory test performed on the set provided, and proof of torsional acceptability shall be provided by the manufacturer.

1.5 PERFORMANCE CRITERIA

A. The engine generator set provided shall have a standby rating not less than 125kW at 0.8 PF with fan. Rating of engine-generator set shall be based on operation of set when equipped with all necessary operating accessories such as radiator, fan, air cleaners, lubricating oil pump, fuel injection pump, jacket water pump, and governor charging generator.

B. Generator shall meet the following requirements:

1. Standby rating – 125 Kilowatt
2. Voltage – 480 volts
3. Phase – 3 phase
4. Frequency – 60 Hertz
5. Insulation – Class H
6. Wiring – 12 lead reconnectable
7. Ambient Temperature – 115 degrees Fahrenheit (max), -20 degrees Fahrenheit (min)

C. Allowable temperature rise in the generator shall not exceed 257 degrees Fahrenheit over 115 degrees Fahrenheit ambient temperature.

D. The alternator shall produce a clean AC voltage waveform, with not more than 5 percent total harmonic distortion at full linear load, when measured from line to neutral, and with not more than three percent in any single harmonic, and no 3rd order harmonics or their multiples. Telephone influence factor shall be less than 40.

E. The generator set shall accept a single step load of 100 percent of rated load at 0.8 power factor and recover to rated speed and voltage as required in NFPA 110.

F. Voltage regulation shall be plus or minus 0.5 percent for any constant load between no load and rated load. Random voltage variation with any steady load from no load to full load shall not exceed plus or minus 0.5 percent.

G. Frequency regulation shall be isochronous from steady state no load to steady state rated load. Random frequency variation with any steady load from no load to full load shall not exceed plus or minus 0.5 percent.

H. The generator set shall be certified by the engine manufacturer to be suitable for use at the installed location and rating, and shall meet all applicable exhaust emission requirements at the time of commissioning.

I. The generator specified for this project was sized using Cummins generator sizing software. Due to variations by generator manufacturers and the software used by manufacturers for determining the size of a generator, it is the Contractor's and generator supplier's responsibility to verify the size of the generator to ensure that the generator will perform as specified. All sizing reports shall be submitted by the Contractor and approved by the Owner prior to equipment order. If the supplier/Contractor prepared sizing report requires a larger generator than was is specified, the larger generator shall be provided at no additional cost to the Owner. Refer to the list below for load step information and the Plans for electrical load details.

1. Load step 1: 2.5 KVA Transformer
2. Load step 2: 1 kW heater
3. Load step 3: 23 hp pump
4. Load step 4: 23 hp pump

1.6 SUBMITTALS

A. The following information shall be furnished:

1. Evaluation of engine generator size based in starting requirements. Provide calculations verifying transient voltage dip will not exceed 15 percent with sudden application of rated load.
2. Plan of generator set offered showing interconnecting wiring diagrams; all wiring in unit and on Plans shall be number coded.
3. Literature describing the engine generator set.
4. Literature describing auxiliary equipment to be furnished.

B. The following shall be furnished in tabular form:

1. Engine make
2. Number of cylinders
3. Bore (in inches)
4. Stroke (in inches)
5. Generator make and type
6. Generator electrical rating, kVA
7. Cubic inch displacement Fuel oil consumption
8. Exciter and type
9. Horsepower at rated load
10. Enclosure size, exterior dimensions

C. Provide factory test results. See Source Quality Control below.

1. Provide field test results. See Site Test requirements under Part 3 of this specification.
2. Provide five (5) copies of manufacturer's operating and maintenance instructions for each piece of equipment. Information shall be complete and in suitable form for ready use by Owner's operations staff. Catalog cuts and information regarding spare parts shall be included. Operating manuals and instructions shall be assembled in hardback binders.

1.7 PROJECT CONDITIONS

A. Interruption of existing electrical service: Do not interrupt electrical service to facilities occupied by the Owner or others unless permitted under the following conditions, and then only after arranging to provide temporary electrical service according to requirements indicated:

1. Notify Owner no fewer than two working days in advance of proposed interruption of electrical service.
2. Do not proceed with interruption of electrical service without Owner's written permission.
3. Engine generator system shall withstand the following environmental conditions without mechanical or electrical damage or degradation of performance capability:

a. Minimum Temperature: 0 degrees Fahrenheit
b. Maximum Temperature: 115 degrees Fahrenheit.
c. Relative Humidity: 0-95 percent
d. Altitude: Sea level to 1100 feet

B. Coordinate size and location of concrete bases for package engine generator set and propane tank. Cast anchor-bolt inserts into concrete bases. Concrete, reinforcement and formwork requirements are specified with concrete.

1.8 WARRANTY

A. The electrical standby system, including the engine generator set, exerciser and transfer switch, shall be guaranteed for two years or 1,500 hours operation from date of start-up service and acceptance, whichever occurs first.

1.9 EXTRA MATERIALS

A. A set of specialty tools necessary for routine maintenance of the equipment shall be furnished.

B. The following spare parts shall be furnished:

1. 3 - Sets of fuel filter elements and gaskets
2. 3 - Lubricating oil filter elements and gaskets
3. 3 - Air cleaner filter elements
4. 2 - Complete sets of V-belts including fan and alternator drive belts

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Cummins was used as the basis of product sizing and selection for this project. Other manufacturers will be allowed subject to compliance with these specifications.

B. Ensure engine generator and accessories are provided by the above named manufacturer and its authorized dealer. Ensure local availability of service and replacement parts.

2.2 MANUFACTURED UNITS

A. The general design of the engine generator furnished shall be manufacturer's standard, except where it differs from the requirements of these specifications. Engine shall, as a minimum, be in accordance with requirements of this specification and may be manufacturer's standard commercial product with added features needed to comply with these requirements. Additional or better features which are not specifically prohibited by this specification, but which are a part of the manufacturer's standard commercial products, shall be included in the engine generator being furnished. A standard commercial product is a product which has been or will be sold on the commercial market through advertisements or manufacturer's catalogs, or brochures, and represents the latest production model.

2.3 COMPONENTS

A. Generator shall be a revolving field, 4-pole brushless connection to the alternator. Generator rotor shall have been dynamically balanced and aligned with the engine, and connected to the engine using a flexible disc coupling.

B. Voltage Regulator

1. Engine-generator unit shall have a steady state voltage regulator. Generator set shall be capable of recovering to a minimum of 90 percent of rated no load voltage following the application of the specified kVA load at near zero power factor applied to the generator set. Maximum voltage dip on application of this load, considering both alternator performance and engine speed changes shall not exceed 15 percent.
2. Supply generator with a voltage level control to provide an adjustable output voltage of plus/minus five percent. Mount voltage control device on engine control panel.

C. Electric Starting System

1. Engine shall be equipped with electric starting system of sufficient capacity to crank engine at a speed which will allow for full start of the engine. Arrange starting pinion to disengage automatically when engine starts.
2. Furnish storage batteries with rack having sufficient capacity for cranking engine for at least 30 seconds at firing speed in ambient temperatures specified and with capacity for starting the engine a minimum of three times in immediate succession. Batteries and rack shall be easily removable without disassembly of engine components.

D. Cooling System

1. Cooling system shall consist of frame-mounted radiator with engine water pump fan assembly and fan guard. Radiator capacity shall be adequate using engine fan cooling to maintain safe operation at 115 degree Fahrenheit ambient temperature.
2. Provide an engine thermostat to regulate engine water temperature as recommended by the manufacturer. Included in the cooling loop shall be a high-coolant temperature device

to shut down engine through the engine control panel when engine temperature is excessive.

3. Fill engine cooling system with a mixture of water, anti-freeze, and corrosion inhibitor to provide freezing protection at an ambient temperature of -20 degrees F.

E. Air Cleaners

1. Engine shall be provided with one or more dry-type air cleaners of sufficient capacity to effectively protect working parts of the engine from dust, grit, and ash.

F. Governor System

1. An electronic governor system shall provide automatic isochronous frequency regulation. The control system shall actively control the fuel rate and excitation as appropriate to the state of the generator set. Fuel rate shall be regulated as a function of starting, accelerating to start disconnect speed, accelerating to rated speed. The governing system shall include a programmable warm up at idle and cool down at idle function.

G. Lubrication

1. Engine shall have gear-type lubricating oil pump for supplying oil under pressure to main bearings, crank pin bearings, pistons, piston pins, timing gears, camshaft bearings, and valve rocker mechanism.
2. Provide effective lubricating oil filter, and locate and connect it so that lubricating oil is continuously filtered and cleaned. Filters shall be accessible, easily removed and cleaned, and equipped with spring-loaded bypass valve as insurance against stoppage of lubricating oil circulation in event the filters become clogged.
3. Engine shall have suitable lubricating oil cooler, either air-cooled or water-cooled, and provisions for draining oil by piping or other means to the outside of engine housing.

H. Frame

1. Engine shall be factory-assembled and aligned on a heavy-duty steel base. Batteries shall be housed in an acid-resistant box, which shall be mounted on engine frame and adjacent to the engine. Location of battery housing shall not interfere with maintenance and inspection of the engine. Construct the frame to insure proper alignment of all rotating parts and to prevent vibration build-up. Base shall permit skidding in any direction during installation and shall be provided with suitable holes for foundation bolts and vibration isolators. Provide vibration isolators, spring/pad type, quantity as recommended by the generator set manufacturer. Isolators shall include seismic restraints if required by the site location.
2. Set shall have provision for conveniently attaching hoisting slings as well as for fork lift pick-up.

I. Sound-Attenuated Enclosure

1. The engine/generator system shall be provided with an exterior rated, sound-attenuated enclosure to reduce noise emissions, protect the system from excessive dirt, dust, ash, weather and vandalism. All access doors shall be lockable. The housing shall be factory installed and allow easy access to the engine-generator and the control panel. The control panel shall be mounted on the end of the enclosure, opposite the radiator end. Enclosure

doors shall not be wider than 36-inch each to allow for convenient access to the enclosure interior.

2. The enclosure shall provide a sound level at full load no greater than 75 dB(A). This sound level shall represent the average measurement taken at eight points located equidistant, 23 feet from the center of the engine generator at full load.
3. The enclosure shall comply with the requirements of the National Electrical Code for all wiring materials and component spacing. The total assembly of generator set, enclosure, and sub-base fuel tank (when used) shall be designed to be lifted into place using spreader bars. Housing shall provide ample airflow for generator set operation at rated load in an ambient temperature of 100º F. The housing shall have hinged access doors as required to maintain easy access for all operating and service functions. Enclosure roof shall be cambered to prevent rainwater accumulation. Openings shall be screened to limit access of rodents into the enclosure. All electrical power and control interconnections shall be made within the perimeter of the enclosure.
4. Enclosure shall be constructed of minimum 12 gauge steel for framework and 14 gauge steel for panels. All hardware and hinges shall be stainless steel.
5. A factory-mounted exhaust silencer shall be installed inside the enclosure. The exhaust shall exit the enclosure through a rain collar and terminate with a rain cap. Exhaust connections to the generator set shall be through seamless flexible connections.
6. The enclosure shall include the following maintenance provisions:

    a. Flexible coolant and lubricating oil drain lines, that extend to the exterior of the enclosure, with internal drain valves
    b. External radiator fill provision.

J. Exhaust System

1. The muffler and engine combination shall be sized to meet the power supply rating.
2. All exhaust piping and fittings shall be stainless steel. Provide stainless steel supports as necessary for a secure rigid pipe system.
3. Exhaust system for the engine shall comply with recommendations for exhaust systems as specified by the engine manufacturer.
4. Provide a condensate drain for the muffler through a petcock.
5. The entire exhaust system shall be wrapped in an insulation blanket rated to withstand a minimum temperature of 1200°F. The exterior blanket shall be protected with a 0.016 aluminum jacket with weatherproof end cap.

K. Fuel System

1. Engine shall operate on NG or LP fuel.
2. 500 Gallon Liquid propane fuel tank shall be provided and mounted on pad per manufacturer recommendation.
3. All piping, tank, regulators, and accessories needed for a complete installation shall be provided by the contractor and generator manufacturer.
4. All fuel line sizing shall be confirmed by the generator manufacturer in the equipment submittal.

L. Control Panel and Alarm System

1. The Engine control panel shall be integrally mounted to the engine generator assembly on the generator at the opposite end of the radiator. It shall be enclosed in a NEMA 3R enclosure.
2. The control shall have automatic remote start capability from a panel-mounted three-position (Stop, Run and Remote) switch.
3. The generator set shall be provided with alarm and status indicating lamps to indicate non-automatic generator status, and existing alarm and shutdown conditions. The lamps shall be high-intensity LED type.
4. Alarm panel shall have a reset push button for acknowledging alarm conditions and latching indicating lights for each alarm point to display to operation personnel the reason for engine shutdown. Label lights as shown below.
5. The generator set control shall indicate the existence of the following alarm and shutdown conditions on a digital display panel:
   a. Alarms

      1) Low oil pressure warning
      2) Oil pressure sender failure
      3) Low coolant temperature
      4) High coolant temperature warning
      5) Low coolant level
      6) Engine temperature sender failure
      7) Low DC voltage
      8) High DC voltage
      9) Weak battery
      10) Low fuel warning
      11) Overload
      12) Battery Charger Malfunction
      13) Overcurrent
      14) Under Frequency

   b. Shutdown Alarms

      1) Low oil pressure
      2) Low-Low Fuel
      3) High coolant temperature
      4) Fail to crank
      5) Overcrank
      6) Overspeed
      7) High AC voltage
      8) Low AC voltage
      9) Under frequency
      10) Over current
      11) Short circuit
      12) Emergency stop

   c. Engine control panel shall include the following:

      1) Oil pressure gauge (psi)
      2) Emergency Stop Pushbutton
      3) Coolant temperature gauge (□F)
      4) Operating hour meter (hrs)

5) Hand-off Auto Selector switch (H-O-A)
6) AC Frequency meter (hertz)
7) AC Volt meter (0-600v)
8) AC Current Meter (Amps)
9) Load Meter (kW)

Switch Gear

6. Provide generator switch gear with exciter circuit breaker with manual reset and a line circuit breaker with manual reset. Circuit breaker shall be set mounted and wired, UL listed, molded case thermal-magnetic type, rated as shown on plans. Mount breakers in engine control panel. Field circuit breakers shall not be acceptable for generator overcurrent protection. Generator instrumentation shall include a panel-type ammeter with phase selector switch, a panel-type voltmeter with selector switch, and frequency meter mounted on engine control panel.

2.4 FINISHES

A. Prime and paint engine set and accessories in conformity with manufacturer's standard practice.

B. Color of engine set enclosure shall be of manufacturer’s standard color, unless noted otherwise on Plans.

C. Manufacturer shall ship with the unit a quart of touch-up paint for each of the finishes.

D. All sheet metal exposed to the exterior (generator enclosure) shall be primed for corrosion protection and finish painted with the manufacturer’s standard color using a two-step electrocoating paint process, or equal meeting the performance requirements specified below. All surfaces of all metal parts shall be primed and painted. The painting process shall result in a coating that meets the following requirements:

1. Primer thickness, 0.5-2.0 mils. Top coat thickness, 0.8-1.2 mils.
2. Gloss, per ASTM D523-89, 80-percent plus or minus 5-percent. Gloss retention after one year shall exceed 50 percent.
3. Crosshatch adhesion, per ASTM D3359-93, 4B-5B.
4. Impact resistance, per ASTM D2794-93, 120-160 inch-pounds.
5. Salt Spray, per ASTM B117-90, 1000+ hours.
6. Humidity, per ASTM D2247-92, 1000+ hours.
7. Water Soak, per ASTM D2247-92, 1000+ hours.

E. Painting of hoses, clamps, wiring harnesses, and other non-metallic service parts shall not be acceptable. Fasteners used shall be corrosion resistant, and designed to minimize marring of the painted surface when removed for normal installation or service work.

2.5 SOURCE QUALITY CONTROL

A. The engine generator set shall be supplied by a manufacturer who has been regularly engaged in the production of engine-generators sets and associated controls for a minimum of twenty years,

thereby identifying one source of supply and responsibility. The packaged engine generator set and auxiliary components shall be provided through one source from a single manufacturer.

B. The manufacturer shall provide factory-trained service and parts support through a factory authorized dealer/supplier that is regularly doing business in the area of installation. The factory authorized dealer/supplier shall maintain a service center capable of providing training, parts, and emergency services within 50 miles of the project site.

C. Engine generator unit shall be tested at manufacturer's plant at full load before shipment. Test shall consist of a steady load run of at least 4 hours duration at 100 percent full rated load. Complete test reports shall be made which show the engine fuel consumption, kilowatt output, voltage, frequency, amperage, engine temperature, lube oil pressure, and load transfer results. A digital copy of the certified test reports shall be supplied to Owner prior to shipment.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install engine in conformity with the plans and manufacturer's instructions and under manufacturer's direct supervision.

B. Install ancillary circuits for battery charger, etc. in conformance with the plans.

C. Install all propane piping per the 2021 International Fuel Gas Code.

3.2 SITE TESTS

A. Contractor shall provide sufficient LP for engine generator on-site testing; following completion of testing, Contractor shall fill the propane tank full prior to project acceptance. Supplier shall be responsible for calibration, startup, and initial performance to meet the specifications herein. Supplier shall provide a trained, qualified representative to check installation and connection, perform field tests as indicated, and certify to Owner its performance does meet the specifications.

B. Upon completion of unit installation, carry out running tests.

1. Operate engine for a period of not less than 2 hours at full rated load. A load bank shall be provided by the Contractor for performing the 2 hour load test.
2. Following load testing, five loss-of-power tests must be performed to verify proper operation of ATS and generator with power being supplied to motor(s) and pump(s).
3. Engine generator shall be tested to verify that the transient voltage dip will not exceed 15 percent of rated voltage when the largest single step of the rated load is applied.
4. Test shall demonstrate the ability of the engine generator to carry the specified loads.
5. Upon completion of the tests, final adjustments shall be made to equipment by a qualified representative of the engine manufacturer. Fuel and oil filters shall be replaced, belt drive tensions checked, and the proper operation of all equipment demonstrated to Owner's representative.

6. Owner's representative shall be instructed in the maintenance and operation of equipment. A digital copy of these test results shall be provided to Owner and included with the operation and instruction manual.

END OF SECTION

SECTION 263623 – AUTOMATIC TRANSFER SWITCH

PART 1 - GENERAL

1.1 DESIGN CRITERIA

A. The transfer switch shall be Service Entrance Rated, NEMA 3R rated and equipped with three poles for normal and emergency service of 480 volts, 60 hertz, 3-phase.

B. The transfer switch shall be mechanically and electrically held and rated to 480 volts for all classes of load and continuous inductive duty.

C. The transfer switch shall conform to UL 1008 provisions for Withstand Current Ratings and Closing Ratings. The transfer switch shall be rated at a minimum Withstand Rating of 42,000 Amps.

D. The switch shall be capable of enduring 6000 cycles of complete opening and closing at rated current and voltage at a rate of 6 cycles per minute without failure.

E. The switch shall be double throw inherently interlocked mechanically and electrically to prevent supplying the load from both sources simultaneously. The operating current shall be obtained from the source to which the load is to be transferred. The transfer mechanism shall be of the double break design with solid silver cadmium surface contacts and individual heat resistant arc chambers.

F. Arc barriers and magnetic blowout coils will also be acceptable if single break contacts are used. The contacts shall be capable of carrying 20 times the continuous rating for interrupting current.

G. All contacts, coils, etc. shall be readily accessible for replacement from front of panel without major disassembly of associated parts.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. The automatic transfer switch shall be supplied by the Manufacturer of Engine generator system.

2.2 COMPONENTS

A. The transfer switch shall include the following accessories:

1. Undervoltage Sensor: Adjustable solid state low voltage sensing relays (pick up 85 to 98 percent of normal voltage set at 98 percent; drop out 75 to 100 percent set of 90 percent of pickup setting). Provide for each phase on both utility and backup power sources.

2. Time Delay Start and Stop on Drop Out: Solid state adjustable time delay on start (0 to 15 seconds). Set start delay for 15 seconds. Timer will send start signal to gen set CP, where louver timer will allow 15 second delay for louvers to open prior to starting gen set.
3. Time Delay Stop: Solid state adjustable time delay (0 to 10 minutes) to allow generator cooldown after normal power is restored and retransfer occurs. Set at five minutes.
4. Time Delay Transfer and Retransfer: Solid state time delay relay adjustable 2 to 120 seconds for transfer to emergency and 0 to 30 minutes for retransfer to normal. Set at five minutes for retransfer to normal. Set at three seconds for transfer to emergency.
5. With or Without Load Selector Switch: Switch to select exercise with or without station load.
6. Normal-Test Switch: Switch such that in the "Normal" mode the transfer switch will operate automatically and in the "Test" mode the generator will start for test purposes. This switch shall work in conjunction with the "With" or "Without" load switch.
7. Exerciser Clock: Provide solid state exerciser clock to set the day, time, and duration of generator set exercise/test period. Provide with/without load selector switch for the exercise period. The exerciser clock shall have the capability to program two separate exercises. The Contractor shall program the exerciser clock with the following two programs:

    a. Exercise the generator every Wednesday for 30 minutes starting at noon and ending at 12:30 P.M. with the exception of every fourth Wednesday.
    b. Exercise the generator every fourth Wednesday for 60 minutes starting at noon and ending at 1:00 P.M.

8. Programmed Transition: The load transfer control shall be capable of remaining in the neutral position for an adjustable time of 0.5 to 60 seconds when transferring from on-line power source to the other to allow residual voltages to decay before application of the source. Set at 60 seconds.
9. Position lights for normal and emergency potions indication and for normal and emergency power available.
10. Switch position indication limit switches for normal and generator positions.
11. Provide dry contacts wired to terminal strip for 1) ATS in emergency position, 2) ATS common trouble alarm, 3) Normal Position.
12. Power Meters: Provide an AC Voltmeter, an Ammeter, and a Frequency meter; 2.5 inch, analog, 2-percent accuracy. Provide a phase selector switch to read L-L voltage and current of both power sources.
13. Operator Interface Display: Provide operator interface display that allows operators to adjust all settings and see all values.
14. Control Board: Provide current generation hardware and firmware for the control board.

B. Provide manual override switch to bypass the control system and transfer load from source to source when control is disabled.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install per the manufacturer's instructions.

3.2 SITE TESTS

A. Coordinate with the Owner for field testing. Verify proper operation by cutting primary power.

END OF SECTION

SECTION 310500 – COMMON WORK FOR EARTHWORK

PART 1 - GENERAL

1.1 ACCEPTANCE AT SITE

A. Owner shall review the site near the end of each pay period to determine the equivalent percentage of earthwork completed compared to the total earthwork lump sum price. Contractor shall be paid based on the percentage completed based on Owner's judgment of percent complete.

PART 2 - PRODUCTS

2.1 SOURCE QUALITY CONTROL

A. All imported fill material shall be free of hydrocarbons (e.g. gasoline, diesel, oil, etc.), pesticides, herbicides and other hazardous volatile organic compounds (VOCs) and synthetic organic chemicals (SOCs). The Contractor shall provide certification to the owner that the fill is free of these chemicals.

PART 3 - EXECUTION

3.1 CLEANING

A. Wherever construction vehicle access routes intersect paved roads, provisions must be made by the Contractor to minimize the transport of sediment onto the paved road. The Contractor shall remove all dirt, mud, rocks, vegetation, or other deleterious material from all construction equipment prior to leaving the site. This may include spray washing, sweeping, or other physical methods as necessary to remove materials.

B. If sediment or other debris is transported onto a paved road surface, the road shall be cleaned thoroughly by the end of the work day. Debris shall be removed from roads by shoveling or sweeping. Street washing shall be allowed only after debris has been removed in this manner.

END OF SECTION

SECTION 310900 – MONITORING OF EARTHWORK

PART 1 - GENERAL (NOT USED)

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 FIELD QUALITY CONTROL

A. Special inspections including visual, probing of subgrade and compaction effort (nuclear densometer) are required for the following locations:

1. Trench backfill crossing roads and parking areas (visual, probe and nuclear densometer testing)
2. Native (and fill if any) subgrade of structures (visual and probe) and concrete pads/aprons.
3. Backfill of structures.

B. Areas where fill (either native or non-native) is being placed shall be tested for compaction compliance by a special inspector. The Contractor will pay for all testing. If tests indicate failure of compaction requirements, the Contractor shall pay for subsequent tests until tests indicate compliance with the specifications. Areas of native undisturbed subgrade shall be visually inspected by the Owner prior to placement of any material overtop. Contractor shall coordinate with the Owner a minimum of 48 hours prior to inspection being needed.

C. The Contractor shall fully cooperate with the special inspector, including providing safe access to the testing areas. No extra compensation will be provided for cooperation with and facilitation of inspections.

D. The Contractor shall schedule with Owner for visual and probe review of earthwork activity. Contractor shall schedule with Owner and special inspection agency for nuclear densometer testing. Results of the tests shall be delivered to the Owner.

END OF SECTION

SECTION 311100 – CLEARING AND GRUBBING

PART 1 - GENERAL

1.1 SITE CONDITIONS

A. There are existing lawn irrigation and domestic water systems at and near the surface within the construction areas. The exact layout of these systems are not known.

1.2 WARRANTY

A. Trees which are within 20 feet of the construction disturbance area that become damaged or die within one year of acceptance shall be repaired or replaced by the Contractor at the discretion of the Owner with trees of the same species and size as approved by the Owner.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 CONSTRUCTION

A. Clearing and grubbing shall be performed by the Contractor to remove and dispose of unwanted debris, vegetative matter, and other items noted on the Plans within the construction limits and shall conform to Section 2-01 of the Standard Specifications.

B. Surround all excavated areas with high visibility plastic construction fencing.

C. Remove and relocate permanent improvements that are within the construction limits unless directed otherwise by the Owner. Existing trees are not to be disturbed unless specifically shown otherwise on the plans.

D. Remove grasses and native topsoil as needed for excavation. Keep grasses in place in all other areas as much as possible to promote dust control. In instances where the Contractor is allowed to clear areas to facilitate construction but is not required to, any areas disturbed by construction shall be surface restored to existing or better condition including matching surface restoration with sod as shown in adjacent areas required to be modified by the Plans. Where the Contractor clears areas to facilitate construction, surface restoration shall be completed at no additional cost to the owner.

E. Work around existing trees:

1. Individual trees and areas shown to remain shall be protected by plastic construction fence. Install fencing before site preparation, grading and clearing and grubbing operations. Under no circumstances shall the Contractor, for convenience or ease of construction, remove or prune existing trees.

2. Protect tree root systems from smothering. Restrict vehicular traffic to prevent any compaction of soil over root systems. Construction access, vehicle or equipment parking, material storage or material disposal will not be allowed within drip lines of existing trees.
3. Excavate within drip line of trees only where shown. Where trenching for utilities is required within drip line, tunnel under or around roots by methods that do not tear or compromise the health of the roots. Do not cut main lateral roots or tap roots.
4. The Contractor shall notify the Owner prior to cutting roots over 3 inches in diameter. Treat cut roots over 1-inch in diameter with asphaltic pruning paint.

3.2 REPAIRS

A. If existing irrigation or domestic water systems are damaged during construction, the Contractor shall provide temporary repairs and bypasses as necessary to maintain irrigation coverage of areas outside the construction disturbance area. Damage to irrigation systems between April 1 and October 1 shall be repaired within 24 hours. All repaired lines shall be thoroughly flushed prior to installation of heads. Prove entire irrigation system functional prior to installation of sod. Repair materials for the irrigation system to be schedule 40 PVC for pipe/fittings and Rainbird 5000 spray heads. Confirm model of spray head with Owner prior to purchase. Repair materials for the domestic water system will match the damaged materials.

END OF SECTION

SECTION 312300 – EXCAVATION AND FILL

PART 1 - GENERAL

1.1 SUMMARY

A. The Contractor shall excavate as necessary to construct the improvements shown.

1.2 SITE CONDITIONS

A. Existing soils are unclassified except where specifically identified on the plans or specifications.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Excavated material below the organic layer can be re-used as backfill as long as it is properly protected from water saturation, meets the specification for the backfill purpose, and is approved by the Owner. Approval of material as backfill will be made the moment before placement of the material as backfill. Weather conditions may make previously approved material unsuitable for backfill requiring the material to be removed from the project site.

B. Excavated material that is not used as backfill shall be disposed off-site. All permits for the disposal of excavated material shall be obtained by the Contractor. A copy of all permits and the locations of each disposal site shall be submitted to the Owner.

PART 3 - EXECUTION

3.1 CONSTRUCTION

A. Excavation shall include the digging, scraping, and removing existing native material, abandoned or interfering utilities, abandoned or interfering structures and any other obstacles necessary for the construction of the improvements shown on the Plans. Excavation includes utility excavation, structural excavation, and grading excavation.

B. Utility excavation shall be performed to the depths necessary to complete the utility construction work shown.

C. Structural excavation shall be performed to the limits shown and established by the Owner. The base of the excavation shall extend laterally a minimum of 2 feet beyond the structure unless specified otherwise on Plans.

3.2 EXAMINATION

A. The base of the excavation shall be evaluated by the Owner to determine if it is suitable for backfilling. The Owner will evaluate the stability of the base of excavation by determining if all significant organic soils or other unsuitable materials have been removed.

END OF SECTION

SECTION 312319 - DEWATERING

PART 1 - GENERAL

1.1 SUMMARY

A. The water elevation of Park Lake was measured in November 2017 at 1,094.6 feet. Lake level fluctuates and may raise one to two feet during construction. Excavation for the wetwell is expected to extend to approximately elevation 1,080 feet. Excavation to tie into the force main is estimated to reach 1,095 feet. Groundwater is expected to exist within the excavation area. Contractor shall provide dewatering work for installing the wetwell.

1.2 REFERENCES

A. Chapter 173-160 WAC: Minimum Standards for Construction and Maintenance of Wells.

B. Chapter 173-162 WAC: Regulation And Licensing Of Well Contractors And Operators

C. Chapter 173-200 WAC: Water Quality Standards for Ground Waters of the State of Washington

1.3 SYSTEM DESCRIPTION

A. The dewatering system is anticipated to include at least two wells with pumps, installed between the excavation and the lake. Contractor may propose other methods for review, but the Owner makes no guarantee that alternate methods will be approved. Once well development has eliminated suspended solids, water may be discharged back to the lake.

1.4 REGULATORY REQUIREMENTS

A. The Contractor shall include in the bid the cost to obtain all permits and approvals, and pay all fees needed for the dewatering system.

1.5 SITE CONDITIONS

A. Soils are unclassified. No recent exploration has been performed

B. Installation of a wetwell in 2018 that is approximately 1,600 feet to the northwest of this project site required an 8-inch and 12-inch submersible pump. A large diesel generator was used to power the pumps.

C. Installation of a wetwell in 1984 that is approximately 1,600 feet to the northwest of this site encountered soil conditions described as silty loams, and silty clays, although some layers of more permeable sand and gravel are likely present (see also Section 312300). Excavation for the new wetwell may or may not encounter similar conditions. Notes from the 1984 work indicated groundwater began to enter the pit when excavation reached elevation 1,089 feet. The water

level of the lake at that time was not noted. The contractor reportedly used two 2-inch submersible pumps but the location of these pumps was not noted. The 1984 excavation and backfill may have changed the character of groundwater flow and volume from what was previously experienced.

1.6 SUBMITTALS

A. Groundwater Control Plan

1. The Contractor shall submit a Groundwater Control Plan to the Engineer for review. The Groundwater Control Plan shall include:

    a. A narrative of the Contractor's proposed dewatering system methodology,
    b. Dewatering schedule, including mobilization, installation, development, testing, water quality analysis, start-up, monitoring, operation, shutdown, decommissioning, cleanup and removal,
    c. Number and location of temporary monitoring wells to be installed,
    d. Working drawings showing system layout and components including number and location of wellpoints and/or dewatering wells and discharge outfall(s)
    e. Pumps and sumps for removal of incidental seepage, perched groundwater, etc.
    f. Provision for the removal of sediments in groundwater prior to discharge (settling tanks),
    g. Provision for the treatment of any contaminated water prior to discharge, should contaminated water be encountered. A description of what would be considered extra work should contaminated groundwater be encountered shall be included. This provision will be reviewed and agreed upon prior to construction and will be the basis for payment under force account should contaminated groundwater be encountered,

2. Specifications of proposed materials and equipment, including pump curves.
3. The Engineer's review of the Groundwater Control Plan shall not constitute approval of method nor relieve the Contractor from full responsibility for errors or emissions therein nor from the entire responsibility for complete and adequate groundwater level control and volume removal in the excavated areas to the extent specified herein. The Contractor shall be solely responsible for control of the groundwater levels and hydrostatic pressures to the depths herein specified and for avoiding settlement outside the excavation as herein specified. The Contractor shall bear sole responsibility for proper design, installation, operation, maintenance and any failure of any component of the temporary dewatering system for the duration of the Contract.

1.7 SCHEDULING

A. Dewatering shall be scheduled around the planned excavation schedule. Dewatering systems shall be installed in advance of the planned excavation to allow sufficient time to establish the required drawdown in.

PART 2 - PRODUCTS

2.1 Filter Materials:

A. The Contractor shall furnish sand and gravel filter material for creating filter packs in the monitoring wells, dewatering wells, and wellpoints, with the following requirements for each well:
   1. The filter material for dewatering wells shall consist of clean, well-rounded, washed select sand or gravel that is free from silt, clay or other deleterious material, with an appropriate grain-size distribution that is designed to be sufficiently permeable to act as a hydraulically efficient well filter pack that does not impair the hydraulic performance of the wells at operational flow rates, while preventing the migration of surrounding native soils or aquifer materials into the well.
   2. Design and selection of the appropriate filter pack gradation shall be included in the Groundwater Control Plan, consistent with the design, screen selection, slot size, pumping capacity and hydraulic performance of the dewatering wells.
   3. The Contractor shall install sufficient filter material for initial filter packing of the well to completely fill the annulus from the bottom of the well screen to 5 feet above the top of the well screen. In addition, the Contractor shall furnish and place such additional filter material as the wells may require during well development.

PART 3 - EXECUTION

3.1 INSTALLERS

A. The Contractor shall employ the services of a specialty dewatering subcontractor who has at least five years of experience in the field of dewatering system installation, operation, and maintenance, and can document successful completion of similar projects conditions.

3.2 CONSTRUCTION

A. The Contractor shall meet the requirements of WAC 173-160 for all well construction, development and decommissioning.

B. The Contractor is to determine the scope, type, size, quantity, method of installation, operation, and removal of the dewatering system necessary to keep all excavations de-watered to an elevation below the base of the excavation sufficient to stabilize the soils in the excavation and the surrounding areas to a dry-to-moist condition (preventing “pumping” or quick conditions), and to prevent flotation of partially completed structures. Any dewatering systems must be positioned so as to not become a part of the permanent facility.

C. The Contractor shall furnish, install, and operate all necessary machinery, appliances, and equipment to meet these water control requirements, and shall dewater and dispose of the water so as not to cause injury to public or private property or to cause a nuisance to the public. The Contractor shall maintain sufficient pumping equipment and machinery in good working condition for all ordinary emergencies, including power outages, and shall have available at all

times competent workmen for the operation of the pump equipment. The dewatering system shall not be shut down between shifts, on holidays or weekends, or during work stoppages.

D. The Contractor shall provide power systems to run pumps. The Owner makes no claim that existing park power systems are available or of sufficient size to run the dewatering system.

E. The Contractor shall bear full responsibility for acquiring a water supply with which to install any dewatering system components necessary to achieve proper completion of all work performed under this Contract. No additives other than clean water shall be allowed during well drilling. The Contractor shall remove fines and drilling debris from dewatering wells to enhance the hydraulic connection between the screened interval and the surrounding formation.

F. Wells shall be developed to reduce sand content and turbidity by appropriate means that do not cause formation or well damage. Initial well development water shall be stored and allowed to settle before discharge. Contractor may propose other methods for removal of suspended solids for review. At least 16 hours of well development should be anticipated.

3.3 FIELD QUALITY CONTROL

A. The Contractor shall control groundwater and surface water to prevent the softening of the bottom of excavations, or formation of quick conditions or boils during excavation. Ground water shall be lowered to below the base of the excavation during excavation, installation of the wetwell, and backfill of the excavation. Dewatering may also be required during work for connecting to the existing forcemain. Determination of unsuitable soil conditions for supporting the improvements shall be determined by the Owner. Determination of unsuitable soil conditions for performing work, placing materials, and proceeding with construction activities shall be determined by The Contractor. When the dewatering system does not meet the specified requirements, and as a consequence there is a loosening or disturbance of the foundation soils, instability for the slopes, or damage to the foundation or structures occur, the Contractor shall at its own expense, supply all materials, labor, and equipment, and perform all work required for the restoration of foundation soil, slopes, or structure to the satisfaction of the Owner.

B. Dewatering water shall not be discharged to surface water until free of suspended solids to less than 300 NTU. Contractor shall provide all monitoring equipment for measuring suspended solids, and provide results of monitoring to confirm the suspended solids concentration.

C. The quality of all surface and ground water discharged from the site shall meet all State and local requirements. The Contractor shall employ all means necessary to remove suspended solids, oils, trash, and other deleterious materials from surface and ground water prior to discharging.

3.4 RESTORATION

A. Any dewatering facilities installed by the Contractor shall be removed and backfilled in accordance with applicable Federal and State regulations.

END OF SECTION

SECTION 312323 – FILL

PART 1 - GENERAL (NOT USED)

PART 2 - PRODUCTS

2.1 COMPONENTS

A. General Fill:

1. General Fill shall be soil free of organics, debris, and other deleterious materials with no individual particles having a maximum dimension larger than 5 inches. The moisture content of the material and weather conditions at the time of placement will be used to determine the suitability of native materials for backfill as general fill.

B. Foundation Ballast

1. Material placed under structures in the bottom of the excavation to permit groundwater flow.
2. Material shall be fractured rock with gradation between 2-inch and 8-inch sizes. No less than 50-percent must be 4-inch and larger.

C. Structural Fill:

1. All fill placed directly below structures, vaults, manholes, handholes, slabs, sidewalks and drives shall be “Crushed Surfacing Base Course”.
2. All fill placed beside and against (not below) structures, vaults, manholes, handholes, slabs, sidewalks, and drives shall conform with 9-03.9(1) “Ballast” of the Standard Specifications unless other fill materials are specifically shown on the Plans.

    a. Material shall be free of organics, debris, and other deleterious materials. The Owner shall determine if native on-site materials are suitable for use as structural fill.

D. Pipe Bedding:

1. All fill placed below and around buried utilities shall be “Gravel Backfill for Pipe Bedding”. The pipe bedding material has been selected to support the weight of the utility by distributing the load so that the completed utility and backfill system does not weigh more than the native material. In addition, the grain size has been selected so that the bedding will not migrate into the bottom of the trench. The Contractor must take care to maintain the integrity of the utility design by using the appropriate pipe bedding material where shown.
2. Bedding shall conform with Section 9-03.13 “Backfill for Sand Drains” or as approved by the Inspector.

E. Trench Backfill:

1. All fill placed above the pipe bedding in a trench shall be “Trench Backfill”. The trench backfill material has been selected to distribute surface loads over the utility. In addition, the grain size has been selected so that the trench backfill will not migrate into the pipe bedding or trench walls. The Contractor must take care to maintain the integrity of the utility design by using the appropriate trench backfill material where shown.
2. Trench backfill shall consist of materials conforming to Section 9-03.19 “Bank Run Gravel for Trench Backfill" of the Standard Specifications. Native materials may be reused for trench backfill if approved by the Owner.

F. Gravel Backfill for Drywells:

1. All fill for infiltration sumps shall be “Gravel Backfill for Drywells”.
2. Gravel backfill for drains shall conform to Section 9-03.12(5) of the Standard Specifications.

G. Crushed Surfacing Base Course:

1. All fill placed under paving, foundations or structures and next to native material shall be “Crushed Surfacing Base Course” unless otherwise called out on the Plans.
2. Aggregate shall conform to Section 9-03.9(3) Crushed Surfacing of the Standard Specifications.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General Fill:

1. All general fill in untraveled areas and areas not below utility work shall be compacted in uniform layers not exceeding 12 inches in loose thickness and compacted to at least 90 percent maximum dry density based on the ASTM D-698 (standard) test procedure.

B. Foundation Ballast

1. Place in the base of excavation of the wetwell. Compact lightly to level off the top layer. Do not drive into the native material more than 4-inches.

C. Structural Fill:

1. The moisture content of the material and weather conditions at the time of placement will be used to determine the suitability of native materials for backfill as structural fill. Structural fill shall bear on firm base and be placed in uniform layers not exceeding 12 inches in loose thickness. The backfill area must be free of standing water and the subgrade soils must be stable. Each layer of structural fill shall be compacted to at least 97 percent of its maximum dry density based on the ASTM D-698 (standard) test procedure.

D. Pipe Bedding:

1. Bedding material shall surround the pipe and conduits to the limits shown on the Plans and provide uniform support along the entire length without allowing concentrated loading at joints or bells or that results in any bridging of the pipe. All bedding material shall bear on firm subgrade and be compacted to firm and unyielding condition.

E. Trench Backfill:

1. Trench backfill shall be placed and compacted above the pipe bedding to finished grade elevations in unrestored areas or to subgrade elevations in restored areas.
2. In unimproved or landscaped areas trench backfill shall be placed in uniform layers not to exceed 12 inches in loose thickness. Each lift is to be compacted to at least 90 percent of its maximum dry density based on the ASTM D-698 (standard) test procedure.
3. In areas where the trench will support roadways or vehicle access areas, trench backfill shall be placed in uniform layers not to exceed 12 inches in loose thickness. Each lift is to be compacted to at least 95 percent of its maximum dry density based on the ASTM D-698 test procedure (standard).

END OF SECTION

SECTION 312500 – EROSION AND SEDIMENTATION CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

A. The Contractor shall provide a Certified Erosion and Sedimentation Control Lead (CESCL) as part of their regular work force for the project. This person shall be a site superintendent, project manager or site laborer regularly on the project site during earthwork operations.

1.2 SUBMITTALS

A. Documentation of the Certification shall be provided to the Owner and reviewing authority if applicable with a copy of such certification always available in the job shack. Washington State Department of Ecology Certification shall be valid and up to date for this person throughout the duration of the earthwork operations of the project.

1.3 QUALITY ASSURANCE

A. The Temporary Erosion and Sedimentation Control (TESC) measures shown on the construction Plans are the minimum requirements for the anticipated site conditions. The Contractor shall add additional TESC facilities or processes as necessary to ensure that erosion and sedimentation problems do not occur. The Contractor shall inspect the TESC facilities daily and maintain the systems as necessary to prevent off-site damage.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Straw or mulch shall be applied to any exposed surfaces to minimize erosion and filter surface water runoff. Where straw or mulch is required for erosion control, it shall be applied to a minimum thickness of 2-inches. Straw shall not include Reed Canary grass.

PART 3 - EXECUTION

3.1 CONSTRUCTION

A. All erosion/sedimentation control systems including; fencing, earth berms, grasses, straw, mulch, culverts, drain pipe, outfalls and other items required by for this project, must be installed prior to any clearing, grubbing, excavation, or grading work or other work that could result in off-site stormwater or material flows. Erosion/sedimentation controls systems must remain in place throughout the duration of the construction activities. The systems may be relocated to complete utility, excavation, grading, and landscaping activities if their location impedes the associated work. If the systems are relocated to complete any work they must be reinstalled to protect the construction and surrounding areas prior to commencing work on other portions of the project.

B. Systems such as mulch, plastic sheeting and dust control shall be installed as soon as clearing, grading and excavation are complete. The Contractor shall take care and diligence to minimize erosion exposure and provide erosion and sedimentation control measures as shown on the Plans and required by construction practice.

C. Stabilized construction entrances and wash pads shall be installed at the beginning of construction activities and shall be maintained for the duration of the project. Wash pads shall be kept clean to prevent the transport of sediment onto adjoining roads.

D. Earth berms shall be installed as necessary to prevent the migration of surface water into excavations or off of the project site. Surface water that is intercepted by earth berms shall be routed to an approved stormwater conveyance system. The Contractor shall ensure that the concentration of surface water at the earth berm does not erode the adjoining or downstream properties. Sediment deposited against the earth berm shall be removed to ensure that surface water can flow freely. The earth berm shall not be removed before the stabilization of the surface downhill from the berm.

3.2 FIELD QUALITY CONTROL

A. The Contractor shall be responsible for meeting all construction stormwater discharge water quality requirements including State of Washington (WAC 173-220-020), Construction Stormwater Permit requirements and local requirements regardless of weather conditions.

B. If the project is fined by the permitting authority, that stormwater fine shall be paid for by the Contractor at no additional cost to the Owner.

C. Erosion control facilities shall be inspected by the Contractor immediately after each rainfall and at least once daily during periods of prolonged rainfall. The Contractor shall repair or replace facilities that are not functioning properly.

END OF SECTION

SECTION 314100 – SHORING

PART 1 - GENERAL

1.1 SUMMARY

A. Where shoring, sheet piling, sheeting, bracing, lagging, or other supports are necessary to prevent cave-ins or damage to existing structures, it shall be the responsibility of the Contractor to design, furnish, place, maintain, and remove supports in accordance with applicable laws, codes, and safety requirements.

1.2 REFERENCES

A. Chapter 296-155 of WAC, “Safety Standards for Construction Work, Part N, Excavation, Trenching, and Shoring”.

B. OSHA

1.3 QUALITY ASSURANCE

A. The shoring design shall be prepared by a competent person as defined by WAC 296-155-650.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 CONSTRUCTION

A. Design, planning, installation, and removal of sheeting, shoring, sheet piling, lagging, and bracing shall be accomplished in such a manner as to maintain the undisturbed state of soil below and adjacent to excavation.

END OF SECTION

SECTION 323113 – CHAINLINK FENCE

PART 1 - GENERAL

1.1 SUMMARY

A. This section describes the requirements for the chainlink fence located as shown and detailed on the Plans and these specifications.

1.2 REFERENCES

A. Chainlink Fence Manufacturers Institute Product Manual Specifications

B. DOT Standard Specifications Section 8-12

C. ASTM F626, A392, A817, F668, F1043, F1083, A121, F567

1.3 SUBMITTALS

A. Galvanzing information, steel quality standards, hardware quality standards.

B. Dimensional drawings including details, finishes, accessories, and foundations.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Fence Fabric: Galvanized wire: ASTM A392 - 1.2 oz./sf. Wire Spec-A817, Type and class per use and location of the project.

B. Size: Helically wound and woven to height of as indicated on drawings with 2-inch diamond mesh and core wire gauge of 9.

C. Selvage of fabric: twisted and barbed at top and twisted at bottom unless noted otherwise on the Plans.

D. Steel Fence Framing: Steel pipe - Type I: ASTM F1083, standard weight schedule 40; minimum yield strength of 30,000 psi. Outside diameter (OD) sizes as shown on the Plans. Hot-dipped galvanized with minimum average 1.8 oz./ft² of coated surface area.

2.2 ACCESSORIES

A. Chain link fence accessories per ASTM F626 Provide items required to complete fence system. Galvanize each ferrous metal item and finish to match framing.

B. Post caps: Formed steel weather tight closure cap for pipe posts. Provide one cap for each post. Cap to have provision for barbed wire when necessary.

C. Top rail and rail ends: Pressed steel per ASTM F626, for connection of rail and brace to terminal posts.

D. Top rail sleeves: 6-inch (178 mm) expansion sleeve with a minimum 0.137 inch wire diameter and 1.80 inch length spring, allowing for expansion and contraction of top rail.

E. Wire ties: 9 gauge galvanized steel wire for attachment of fabric to line posts. Thirteen gauge for rails and braces.

F. Brace and tension (stretcher bar) bands: Pressed steel, minimum 300 degree profile curvature for secure fence post attachment.

G. Tension (stretcher) bars: One piece lengths equal to 2 inches less than full height of fabric with a minimum cross-section of 3/l6 inch by 3/4 inch. Provide tension (stretcher) bars where chain link fabric meets terminal posts.

H. Tension wire (used when top rails are not required): Galvanized coated steel wire, 6 gauge, with tensile strength of 75,000 psi. Hog ties are permissible.

I. Tie rod, truss rods, and tightener: Steel rods with minimum diameter of ⅜-inch. Capable of withstanding a tension of minimum 2,000 lbs.

J. Nuts and bolts are galvanized.

K. Tube slats: High Density Polyethylene (HDPE) double-wall flat tubular privacy slats. Color to match PVC coating of fence.

2.3 FABRICATION

A. Fence frames that require welding shall be hot dipped galvanized in the shop unless approved otherwise by the owner.

2.4 FINISHES

A. PVC coating per Chainlink Fence Manufacturers Product Manual class 2A. Colors shall be available for owner selection including green, olive green, brown, and black. All fence components shall be coated including mesh, posts, caps, clips, and rails. Color of tube slats to match fence PVC coating.

PART 3 - EXECUTION

3.1 INSTALLERS

A. Installers shall have a minimum of two years of experience. References from three previous projects shall be submitted for review during shop drawing submittal.

3.2 EXAMINATION

A. Verify areas to receive fencing are completed to final grades and elevations.

B. Ensure property lines and legal boundaries of work are clearly established.

C. Perform complete utility locates within the areas of fencing to verify conflicting utilities. Fence posts may require adjustment to avoid utilities by a minimum of 2-feet.

3.3 INSTALLATION/CONSTRUCTION

A. Chainlink Fence Framing Installation:
1. Install chain link fence in accordance with ASTM F567 and manufacturer's instructions.
2. Locate terminal post at each fence termination and change in horizontal or vertical direction of 30 degrees or more.
3. Space line posts uniformly at 10-feet on center maximum and to avoid utilities by 2-feet minimum.
4. Concrete set terminal and gate posts: Drill holes in firm, undisturbed or compacted soil. Trowel finish around post. Slope to direct water away from posts. Footings shall be sized per schedule on the Plans.
5. Check each post for vertical and top alignment, and maintain in position during placement and finishing operations.
6. Bracing: Install horizontal pipe brace at mid-height for fences 8-feet tall and over, on each side of terminal posts. Firmly attach with fittings. Install diagonal truss rods at these points. Adjust truss rod, ensuring posts remain plumb.
7. Top rail: If shown on the Plans, install lengths, 21-feet. Connect joints with sleeves for rigid connections for expansion/contraction.
8. Brace Rails for fabric height 8-feet and over. Install brace rails between terminal posts and adjacent line posts with fittings and accessories. Install brace rails at each gate post and each corner post with angle change exceeding 30 degrees.
9. Bottom Rails: If shown on the Plans install bottom rails between posts with fittings and accessories.

B. Accessories
1. Tie wires: Bend ends of wire to minimize hazard to persons and clothing.
2. Fasteners: Install nuts on side of fence opposite fabric side for added security.

END OF SECTION

SECTION 329223 – SODDING

PART 1 - GENERAL

1.1 DELIVERY, STORAGE AND HANDLING

A. Deliver fertilizers in original, unopened and undamaged containers that list weight, analysis and name of manufacturer. Store in such a manner as to prevent wetting and deterioration.

1.2 SITE CONDITIONS

A. Minimize damage to existing lawns. Contractor shall restore all disturbed areas with sod.

1.3 WARRANTY

A. Warrant ground cover for the period as stated in the Warranty Section of the General Conditions (though no less than through September 2025) against defects including death and unsatisfactory growth, except for defects resulting from negligence by Owner, abuse or damage by others or unusual phenomena or incidents beyond the Contractor's control.

B. Warranty shall not include damage or loss caused by fires, unusual floods, freezing rains, lightning storms, or other catastrophic "Acts of God". Winter kill caused by extreme cold and severe winter conditions not typical of planting area, unanticipated acts of vandalism or negligence on the part of the Owner and damage caused by wildlife, shall not be covered under this warranty.

1.4 MAINTENANCE

A. Water groundcover within the first 24 hours of initial planting, and in sufficient amounts thereafter to keep plant materials in a healthy growing condition. Contractor is responsible for maintenance until project closeout.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Topsoil shall be naturally occurring surface soil with a minimum sand content of 60 percent. Topsoil shall have no evident rocks or debris over 1/2 inch Acidity pH range shall be between 5.0 and 6.5. Organic matter content shall be 10 to 20 percent by dry weight. Add dolomite limestone, if required, to obtain pH. Limestone, if used, shall be finely ground, passing a minimum of 90 percent through the U.S. Standard No. 8 sieve and 20 percent through the U.S. Standard No. 100 sieve. Add approved nutrients, if required, to bring nutrients to a satisfactory level for planting as recommended by a qualified testing laboratory (exclude nitrogen, potassium and phosphorus).

B. Sod shall be a blend of 70 percent bluegrass and 30 percent red fescue (or rye) and contain no more than 1 percent of other grasses, none of which shall be of a coarse undesirable variety. Sod shall not be less than 10 months old nor more than 30 months old and shall be healthy and have a dense, vigorous, well-developed root structure. Sod shall be delivered to the job site within 24 hours of being harvested and installed before roots dry.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine proposed planting areas and conditions of installation. Do not start planting work until unsatisfactory conditions are corrected and approved by the Owner's Authorized Representative.

B. Notify Owner's Authorized Representative at least 7 working days prior to installation of plant material.

3.2 PREPARATION

A. For sod areas, spread 200 lbs. of lime per 1,000 sq. foot, thoroughly incorporate and bring to grades indicated. Rake entire surface to a smooth and even grade; remove all rocks over 1/2 inch in diameter, grass roots, and debris, and roll.

3.3 REPAIR

A. All dead materials shall be replaced within thirty (30) days of discovery.

3.4 CONSTRUCTION

A. Perform fine grading within disturbed areas, including adjacent transition areas, to new elevations, levels, profiles and contours indicated. Provide subgrade surfaces parallel to finished surface grades, unless specified otherwise. Provide uniform levels and slopes between new elevations and existing grades. All fills required to achieve subgrades shall be compacted per requirements of the fill type as noted above. Perform grading, within branch spread of existing trees scheduled to remain, by hand methods to elevations indicated.

B. Install sod with tight, staggered joints.

END OF SECTION

SECTION 333211 – WASTEWATER PUMPING STATION

PART 1 - GENERAL

1.1 SUMMARY

A. Provide the necessary piping, plumbing, fittings and appurtenances to make all piping systems complete, tested and ready for operation as specified herein and as shown on the Plans. Some fittings that are necessary for the complete piping system installation and operation may not have been shown. Provide fittings, pipe and appurtenances necessary, whether shown on the Plans or not, to make all piping systems complete, tested and ready for operation.

B. Some pipe supports, thrust blocking and tie rods are not shown on the Plans. Provide pipe supports, thrust blocking and tie rods for pipes as required by accepted design criteria to support and restrain the loads encountered.

1.2 SUBMITTALS

A. Provide submittals for all pipe, valves, meters, supports, sensors and gauges.

1.3 DESIGN REQUIREMENTS

A. Ductile iron pipe:

1. Thickness designed in accordance with ANSI/AWWA C150/A21.50 and shall be based on laying conditions and internal pressures to meet the requirements of Section 016000 – Product Requirements unless listed as more stringent below.
2. The pipe thickness shall not be less than that of Class 52 pipe. Threaded, flanged and grooved pipe no less than Class 53.

B. Stainless Steel pipe:

1. The pipe wall thickness shall be no less than Schedule 40S.

C. PVC Pipe and Fittings – Solvent Weld

1. Polyvinyl chloride (PVC) material for pipe fittings and couplings shall conform to ASTM D 1784, Type 1, Grade 1, with 2,000 psi design stress. Pipe shall be Schedule 40 or 80 in accordance with ASTM D-1785, as shown on the Plans.

D. PVC Gravity Pipe and Fittings – Push on joint

1. Pipe and fittings shall meet the requirements of ASTM Specification D3034 for 4-inch to 15-inch Standard Dimension Ratio (SDR) 26. Pipe shall be suitable for use as a gravity sewer conduit.

PART 2 - PRODUCTS

2.1 COMPONENTS

A. Fasteners:

1. Under no circumstance shall the fasteners be of lesser strength or higher corrosive potential than the materials being connected. In the event that dissimilar metals are adjacent (for example: stainless steel flange connecting to ductile iron flange) a dielectric insulation kit shall be used.
2. Fasteners for pipe and fittings: Per AWWA standards unless otherwise specified. All relevant subsections of AWWA C100, C200 and C500. All bolts and studs shall be long enough so that no less than 2 threads extend beyond the face of the nut. Non-submerged flange bolts to be ASTM A307 Grade A or B, zinc plated.
3. For submerged conditions (all fasteners within the wetwell), connection bolts shall be Nitronic 60 steel. Nuts and washers shall be Stainless Steel, minimum grade 316 in sewage applications. Bolts and nuts shall meet ASTM F593 and F594. Stainless steel bolts may be used in lieu of Nitronic but must be assembled using appropriate lubricant (molybdenum disulfide) or stainless steel thread tape (Cobas brand or approved equal).
4. All shackled thrust restraint systems shall be of stainless steel construction. All components of any stainless steel system shall include all stainless steel. Bolts, nuts, washers, tie rods, and other components shall be one material and not intermixed.

2.2 MATERIALS

A. All mechanical and plumbing components that are of similar purpose shall be of a single manufacturer and model line. Do not “mix and match” unless specifically stated otherwise or allowed by the Engineer. The intention of this requirement is to maintain consistency across all components installed on the project for function, maintenance, aesthetics and details of installation. For example: All check valves are to be the same brand/model.

B. Pre-cast concrete manhole sections shall conform to ASTM C-478. All joints shall be gasketed and the rubber gasket joint shall conform to ASTM C-443.

C. Manhole Pipe Connectors

1. Pipe to wetwell connections to be flexible. Kor-n-Seal boot or approved equal.

D. Ductile Iron Pipe and Fittings

1. Pipe shall be cement-lined in accordance with ANSI Standard A21.4 (AWWA C104) unless otherwise specified, and shall conform to ANSI Standard A21.51 (AWWA C151).
2. Flanged joints shall conform to ANSI Standard B16.1.
3. All fittings 3-inch diameter and larger shall be ductile iron unless shown otherwise. Ductile iron fittings shall be short body and for the pressure rating noted.
4. Ductile iron flange (FL) fittings shall be in accordance with AWWA C110 and fabricated from ductile iron with a bolt pattern to match adjacent pipe. Gasket material for flanges shall be neoprene or buna-n. Gaskets shall be ring type. Gaskets shall be a minimum 1/8” thick.

E. Stainless Steel Pipe and Fittings

1. All stainless steel pipe and fittings shall meet ASTM A312, Type 304 (type 304L welded).
2. All heat tints and chromium depleted layers caused by welding shall be removed prior to on-site delivery. Welding of pipe shall be per ASME Welding Code. Welding shall be capable of withstanding the hydrostatic testing pressure without leakage.

F. Resilient Wedge Gate Valves

1. All valves 2 inches and larger shall be of the resilient, wedge-type, non-rising stem and shall meet or exceed the performance requirements of AWWA C509 or AWWA C515-Reduced-Wall, Resilient-Seated Gate Valves for Water Supply Service, unless shown otherwise. Valves shall be suitable for installation with the type and class of pipe being installed. The wedge shall be fully encapsulated with vulcanized SBR rubber. Ends to be as specified. Valve opening direction shall be counter-clockwise. Exposed valves to include handwheels. Buried valves to include 2-inch AWWA nut and valve box.
2. Interior and exterior to be coated with fusion bonded epoxy.

G. Check Valves

1. M&H Model 159 Swing Check Valve or approved equal.
2. Swing check valves shall function to permit flow in only one direction. The valve shall close tightly, without slamming, when the pressure on the discharge side exceeds the pressure on the inlet side. All swing check valves shall conform with AWWA C508 and the following specifications.
3. The valve shall be constructed to withstand 150 psi test pressure. Flanges shall be drilled to ANSI B16.1, Class 125#.
4. Operating pressure range is 5 psi (low) to 70 psi (high). The manufacturer shall certify that the check valve will seal completely within the operational range.
5. The swing check valve body shall be constructed with heavy cast iron or cast steel and have a bronze or stainless steel seat ring, rubber clapper facing, a non-corrosive shaft and external counterweight attachment. See plans for which side of the valve to locate the counterweight.
6. A limit switch shall be included and mounted to the valve body for remote indication of valve position.
7. The valve disc shall be constructed of cast iron or cast steel and shall be suspended from a non-corrosive shaft. The valve shall allow the equivalent flow area of the adjoining pipe. The shaft shall pass through a stiffing box and be connected to the swing arm in the outside of the valve.
8. The interior and exterior of the valve body, bonnet and seal plate shall be coated with fusion-bonded epoxy meeting AWWA C-550 (latest revision). Interior coating shall be a minimum dry film thickness of 7 mils, not including primer. Exterior coating shall be a minimum dry film thickness of 5 mils, not including primer.

H. Dismantling Joint

1. Dismantling joint shall be accessible and capable of repeated installations and removals and capable of the testing and working pressures as specified. Joint adjustment range of no less than 2-inches for 12-inch diameter and smaller pipe. Joint assembly to include limiting rods to prevent pull-out.

2. Dismantling joint shall be Romac DJ400 with limit rods or equal.
3. Install per the manufacturer's instructions. Set the assembly at the midpoint of the adjustment range unless specifically called out otherwise on the plans.

I. Pipe and Valve Supports

1. Pipe supports, hangers, guides and anchors shall be Anvil, Unistrut, Tolco, Standon or equal.
2. Pipe supports shall be equal to Standon Adjustable Model S92 Pipe Support. Equal to those manufactured by Material Resources, Hillsboro, Oregon.
3. Provide and install all equipment necessary for compete support systems including, but not limited to, base, riser pipe, anchor bolts, hanger rod, support cradle or clamp, and fasteners.
4. In Wetwell: All supports, rods, clips, etc. shall be 316 L stainless steel. Bolts shall be in accordance with 05.05.23.
5. Point Loads: Any meters, valves, heavy equipment and other point loads on PVC, fiberglass and other plastic pipes shall be supported on both sides according to the manufacturer's recommendations to avoid pipe stresses. Supports on plastic piping shall be equipped with extra wide pipe saddles or stainless steel shields. No support shall have metal pieces in contact with plastic process piping.
6. Unless otherwise noted, all fabricated pipe supports, other than stainless steel or non-ferrous supports, shall be blast-cleaned after fabrication and hot-dip galvanized in accordance with ASTM 123. Other than stainless steel and non-ferrous supports, supports shall be coated in accordance with Division 9.

J. Dielectric Fittings and Adapters

1. Provide dielectric adapters between dissimilar types of metal pipes, valves and fittings (e.g. copper to stainless steel, brass to ductile iron). Flange isolating kits shall be used when dissimilar metal flanged pipe is connected.

K. Pressure Gauges

1. Gauge accuracy shall be ± 0.5 percent of full scale.
2. Gauges shall be analog, stem mount type with 3 1/2-inch or 4 1/2-inch scale face, glycerin filled and completely suitable for measuring sanitary sewage. Connection shall be 1/2-inch threaded. Wetted parts shall be stainless steel. The full scale pressure range for each gauge location shall be as follows.

    a. 0-100 psi full scale (0-65 psi is normal operating range).

3. Provide a diaphragm protector suitable for sewage contact. Diaphragm equal to Marsh 13040-24-24-1-2-G, stainless steel with flushing port.

2.3 FINISHES

A. See Section 090690 – Paint Schedule.

B. For conditions other than submerged, all nuts and bolts shall be zinc plated, and suitable for above and below grade locations as required. Where exposed piping is specially coated, the connecting nuts and bolts shall be coated using the same system.

PART 3 - EXECUTION

3.1 PREPARATION

A. The Contractor shall provide all required personnel and equipment and complete all tests required to demonstrate the integrity of the finished installation for the approval of the Owner.

B. The equipment shall be secured to prevent movement under pressure. The Contractor shall furnish and install temporary caps and blocking where permanent blocking is not required and remove it after testing.

C. All pumps, gauges, plugs, saddles, corporation stops, miscellaneous hose and piping, and other equipment necessary for performing the test shall be furnished and operated by the Contractor. Gauges used in the test may be required by the Owner to be certified for accuracy.

3.2 INSTALLATION

A. Keep openings in pipe closed during the progress of work. Install plugs to prevent water and debris from entering pipe. No payment will be made to clean pipes.

B. Form thrust blocking so that bolts, joints, gaskets and flanges of adjacent joints are clear of concrete allowing bolts and joints to be dismantled without removing concrete.

C. Steel and stainless steel threads shall be protected against galling using steel thread sealing tape equal to Cobas steel thread sealing tape. Tape shall be specific to the steel type used.

D. PVC solvent weld pipe and fittings: Primer and glue must be applied carefully and not allowed to run. Areas where primer/glue has run more than ¼” past the joint shall be cleaned or replaced by the Contractor at the discretion of the Owner.

E. Pipe Supports

1. Piping shall be rigidly anchored by means of suitable pipe supports.
2. Pipe supports, hangers, brackets, anchors, guides and inserts shall be installed in accordance with the manufacturer’s installation instructions and ANSI/ASME B31.1.
3. Stand-on Pipe Support: Adjust support, secure to pipe and secure to floor as recommended by the manufacturer.
4. Riser Supports: Risers shall be supported on each floor with riser clamps and lugs, independent of the connected horizontal piping.
5. Support Anchorage: Concrete anchors shall be as specified in Division 3, Concrete Anchors. All channel strut type supports shall have a minimum of 2 anchors per support.
6. Securely anchor plastic pipe, valves and headers to prevent movement during operation of valves.

7. Do not use chains, plumbers' straps, wire or similar devices for suspending, supporting or restraining pipes.
8. Pipe supports and hangers shall be positioned in such a way as to produce an orderly, neat piping system.
9. Properly support, suspend or anchor exposed pipe, fittings, valves and appurtenances to prevent sagging, overstressing or movement of piping and to prevent thrusts or loads on or against connected equipment.

3.3 TESTING

A. All pump discharge piping and appurtenances shall be tested under a hydrostatic test pressure of 150 psi. The Owner has the right to require more stringent test criteria the Owner determines that field conditions warrant such measures.

B. The Contractor is responsible for supply of testing water and the proper disposal of any waste, including water.

C. Visible leakage is unacceptable and shall be corrected. Should the test section fail to meet the specified pressure test successfully, the Contractor shall locate and repair the defects and then retest the pipeline at his own expense.

D. Prior to calling out the Owner or Engineer to witness the pressure test, the Contractor shall have all equipment completely set up and ready for operation, and shall have successfully performed the test to assure that the pipe is in a satisfactory condition. The Owner shall witness the test; if the test does not pass inspection for any reason, additional trips required to witness another test shall be done at the Contractor's expense.

E. Before applying the specified test pressure, air shall be expelled completely from the system.

F. The test shall be accomplished by pumping the systems up to the required pressure; stop the pump for a minimum of 15 minutes up to a maximum of 60 minutes as directed by the engineer, and then pump the main up to the test pressure again. During the test, the section being tested shall be observed to detect any visible leakage or pressure drop.

G. If test results show drop of pressure, Contractor shall repair leaks and retest until testing is passed in presence of Engineer. Engineer shall bleed off pressure from test pump to piping connection once test is passed to verify system piping was tested.

H. Test all valve bonnets for tightness. Test operation of all valves at least once from closed-to-open-to-closed positions while valve is under pressure.

I. Test all valves for water tightness under differential working pressure. To perform this test, pressurize pipe section with valve in place, close valve and relieve pressure on seat side of the valve. The valve shall not pass water during a 5 minute test period.

J. The Contractor shall verify that the pressure differential across the valve during operation does not exceed the rated working pressure of the valve.

END OF SECTION

SECTION 407113 – MAGNETIC FLOW METER

PART 1 - GENERAL

1.1 DESIGN CRITERIA

A. Meter body and register shall have a pressure rating for 100 psi working pressure. Materials, coatings and components shall be appropriate for sanitary sewer. Meters will be installed inside a meter vault with an anticipated ambient temperature range between 30 and 100 degrees Fahrenheit.

PART 2 - PRODUCTS

2.1 COMPONENTS

A. Electromagnetic Flow Meter

1. The flow meter shall be Siemens Sitrans F M MAG 5100W or approved equal.
2. The flow meter system shall be microprocessor based, utilizing a DC bipolar pulsed coil that automatically rezeroes after each pulse cycle. System accuracy shall be plus/minus 1 percent of actual flow rate over a fluid velocity range of 1 to 30 feet per second (fps), and within 0.01 fps for velocities less than 1 fps. Repeatability shall be 0.1 percent of full scale or better. System accuracy shall be traceable to NIST using prototype meters of the same configuration.
3. The meter tube and coil shall be mounted on the pipe between ANSI B16 pipe flanges and rated for 100 psi working and 150 psi test pressures. The meter tube shall be 304 or 316 stainless steel. The meter and cable connection(s) shall be capable of complete submergence without damage. The meter shall include integral grounding electrodes or 316 stainless steel grounding rings for installation at the inlet. The manufacturer shall verify that the grounding system is appropriate for the proposed use. All wetted parts shall be 316 stainless steel.
4. The meter liner shall completely encapsulate all wetted areas except for electrodes. The liner shall be certified by the manufacturer as appropriate for the proposed use. The liner shall be NBR or Ebonite.

B. Digital Read Head with Electronic Output.

1. Readout head mounted remotely from the flow meter.
2. The readout head shall be Siemens Sitrans FM Mag 5000 or approved equal.
3. Power supply 120VAC.
4. The totalizer shall read in units of hundreds of gallons.
5. Readout shall register in gallons per minute (gpm) for instantaneous flow.

6. The transmitter shall provide a contact closure (digital pulse) switch and a loop-powered current output (analog) for connection to the instrumentation system. The pulse output shall be plus or minus 2 percent of actual flow with the range specified for each meter. One pulse shall represent 100 gallons of flow but be user adjustable to no less than 10x higher and lower.
7. The current output shall be a 4-20 mA signal that represents the rate of flow through the meter. Scale the transmitter as follows: 0 gpm minimum and 400 gpm maximum. The current output shall be plus or minus 0.5 percent of full scale of the instrument the transmitter is controlling.
8. Provide an enclosure with window, that does not negate the enclosure NEMA rating, for viewing the flow rate and totalizing counter on a LCD readout. The transmitter shall display flow rate in gallons per minute, totalized gallons and an empty pipe indicator.
9. The electronics shall be NEMA 4X rated. Output shall be 4-20 mA into 800 Ohms with an isolated ground and non-interacting zero and span adjustments. The display and output shall be user scalable for GPM, CFS or MGD, and shall be password protected.
10. The meter, electronics and transmitter shall be RFI shielded to prevent interference from adjacent high noise electrical equipment such as variable frequency drives, electromagnetic starters, transformers or transfer switches.
11. Provide the necessary interface between remote instrumentation and the transmitter. Provide a meter with power and signal wiring as recommended by the manufacturer. Ground instrumentation shall be as recommended by the manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install the readout head remotely from the flow meter where shown on the plans.

B. Connect readout head digital (totalization) and analog (instantaneous) outputs to readout screens in pump control panel.

C. Install flow meter clear of disruptions to the flow path per the manufacturer’s recommendations.

3.2 TESTING

A. The Contractor shall prove correct meter and transmitter performance to the Engineer. Should performance not be acceptable, adjust or replace the unit at the Contractor’s expense.

END OF SECTION

SECTION 412223 – HOISTS

PART 1 - GENERAL

1.1 PERFORMANCE REQUIREMENTS

A. Minimum crane system rating of 600 lbs at 78-inch reach.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Provide one davit crane and winch system, complete, to the Owner.

B. Crane: Thern Commander 2000 5PT20-M1, or approved equal.

C. Winch: Thern M4022PB-K or approved equal. Minimum 45-foot length of 3/16” diameter stainless steel wire rope.

D. Provide and install one pedestal mount. Provide and install one pedestal weather cap as shown on the plans.

E. Mount: Flush mount base Thern 5BF20S with stainless steel mounting anchors (Thern AN62A-6S). Mount shall be cast into pre-cast concrete slab at the same time as the access hatch.

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 432613 – SUBMERSIBLE PUMPS

PART 1 - GENERAL

1.1 PERFORMANCE REQUIREMENTS

A. Power required to operate the pump(s) shall not exceed the motor nameplate horsepower regardless of any flow and head tolerances listed in this specification.

B. The design and performance requirements listed for each pump must be met, with no exceptions. Pumps that do not meet all conditions will be rejected.

1. Fluid – sewage including fish skins and fats
2. Design flow - 185 gallons per minute per pump
3. Maximum speed – 3510 rpm
4. Design head – 143 feet
5. Operational point must fall within the manufacturer's recommended operating range.

1.2 SUBMITTALS

A. Specifications and data describing all pump and motor parts, pieces, and components. Include information on materials of construction and proposed coating systems.

B. Performance curves showing total dynamic head (TDH) in feet, efficiency and net-positive-suction head required (NPSHR) vs. output in gallons per minute (GPM). All losses from the drive shaft, seal, coupling and other mechanical losses shall be included in the pump efficiency data presented. Catalog or software generated curves may be submitted for preliminary approval and ordering.

C. Complete list of all pump system and motor components and accessories to be provided. All motor system components are to come from the pump manufacturer.

D. Provide detailed dimensional drawings showing outline dimensions, lengths, overall sizes, materials and weights for each pump unit and associated accessories.

E. Motor data including type, torque, RPM, no-load current, full-load amps, service and power factors, and motor efficiency at full-load.

F. Provide catalog data for each motor showing the following information

1. Horsepower vs. Load
2. Power factor vs. Load
3. Full Load Efficiency

G. Delivery time from approval of shop drawings.

H. Closeout Submittals: Provide the following submittals prior to project closeout:

1. Operations and Maintenance Manual
2. Manufacturer Signed Warranties with pump and motor serial numbers.

1.3 QUALITY ASSURANCE

A. The pump manufacturer shall accept unit responsibility for the motor/pump assembly.

B. Ensure that pumps selected are locally serviceable and replacement parts are readily available.

1.4 DELIVERY, STORAGE AND HANDLING

A. Pumps shall be delivered, stored, and handled in accordance with manufacturer recommendations.

1.5 WARRANTY

A. All pumping equipment described in this section and provided under this contract shall be warranted against defects in materials and workmanship for a period of two years after date of project acceptance.

1.6 EXTRA MATERIALS

A. Provide two spare pump impellers.

B. Provide any special tools required for pump or motor maintenance.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Flygt N Series 3153 SH-275 is preapproved for use on this project. The Owner reserves the right to reject any proposed substitution.

B. The bid documents are based on the Flygt pumps. Other pumps will require modifications to the facility. The Contractor must include all required modifications in their bid, at no additional cost, if another pump brand is proposed. No reduction in functionality or elimination of equipment will be allowed.

2.2 COMPONENTS

A. All pump system components are to come from the pump manufacturer and shall include:

1. Motor
2. Casing
3. Impeller
4. Discharge elbow
5. Couplings
6. Rail removal system
7. Power cable
8. All other necessary appurtenances for complete unit assembly.

B. Casing:

1. Provide high-strength, heavy ductile or cast iron pump casing material.

C. Impeller

1. Impeller: One-piece, cast iron. Dynamically balance impeller.

D. Shaft and Sleeve

1. Provide a stainless steel shaft.

E. Motor shall be U/L listed explosion proof for Class 1 Division 1 hazardous locations.

F. Motors shall operate on a 3 phase, 480 or 240 volt (see plans), 60-cycle power supply at a maximum speed of 3600 revolutions per minute (rpm).

G. Motors shall be sized such that power draw in the normal operating range of the pump shall not exceed the nameplate size within the full range of pump operation. Power draw shall not encroach into the service factor. Motor size selection shall include all losses, including motor and pump bearings.

H. Motors to include integral thermal switches per phase, and fluid leakage sensor, separate from the overload protection systems.

2.3 ACCESSORIES

A. Stainless steel lifting chains rated for 150 percent of pump assembly weight.

B. All pumps and motors are to include an engraved non-corrosive metal nameplate on the exterior of the pump head or body, readily accessible without requiring any disassembly. The nameplate shall include, at a minimum, the following information:

1. Manufacturer
2. Model Number
3. Serial Number
4. Impeller Trim
5. Design TDH (feet)

6. Design Flow (gpm)
7. Nominal Power (hp)
8. Voltage
9. Phase
10. Cycles (Hz)
11. Full load amps
12. Speed (rpm)
13. Efficiency
14. Special ratings (Class 1 Div 1, etc)
15. Supplier Name and Phone Number
16. Date of Manufacture

2.4 FINISHES

A. Pumps and motors shall be furnished with a prime coat and finished epoxy or polyester coat of the manufacturer's standard finish. Stainless steel casings need not be coated.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Contractor shall determine if special lifting equipment is necessary for installation of the motors.

B. Install pump units in accordance with manufacturer’s specifications and direction. Installation shall be approved by manufacturer’s representative prior to operating or field testing units.

3.2 FIELD QUALITY CONTROL

A. Contractor shall be responsible for calibration, startup, and initial performance to meet specifications herein. A field test shall be made to give an indication of the performance of the new pump when it is operating under actual field conditions and to establish the acceptance of the pump furnished and installed. The field test shall be conducted and/or supervised by the pump manufacturer's authorized representative, and observed by the Engineer after the piping and controls have been installed. Upon completion of pump installation and testing, manufacturer shall provide written certification that equipment is installed correctly and fully warranted.

B. A performance test similar to those described in the latest edition of Hydraulic Institute's (HI) Pump Tests (ANSI/HI 11.6 Submersible) shall be performed, submitted to the Engineer and approved for each pump.

C. The field test shall be performed to the accuracy obtainable with the testing equipment installed as a part of the piping and instrumentation. If sufficient field devices are not available, the Contractor shall provide testing gauges and meters as needed. At a minimum, the following are needed:

1. Water level probe.
2. Discharge pressure gauge
3. Flow meter
4. Electric current (Amp) meter(s), per phase.

D. Submersible pump field tests shall adhere to the tolerances of HI 14.6.3.4 Grade 2B.

E. Tests shall adhere to the following tolerances. If results are excessive, pump shall be corrected and retested until the performance criteria are met.

1. TDH at design flow shall be +5 percent, -5 percent of design TDH
2. Efficiency at design flow shall be no less than 2 percent below design efficiency.
3. Flow at design TDH shall be +8 percent, -8 percent of design flow.

F. Prior to acceptance of installed pumps, manufacturer's representative shall demonstrate proper operation of pumps at capacities stated. Testing shall be completed under the observation of the Owner and Engineer. At that time, the following data shall be collected for each pump:

1. TDH vs. Flow at a minimum of three points which include: Shutoff head, Open to system, and approx. 50 percent design flow with throttled discharge valve. Additional points may be required by Engineer.
2. Overall Efficiency

G. Upon completion of pump installation and testing, manufacturer shall provide written certification that equipment is fully warranted installed. Certification shall be provided that pumps meet all requirements set forth in these specifications and submittal literature. The pump installer shall also provide a written report of all test conditions and results.

3.3 REPAIR

A. Repair and retest units failing any field test. If unit fails second field test, unit will be rejected and supplier shall furnish a unit that will perform as specified.

END OF SECTION