

Public Utility District No. 1
of Thurston County

**Public Utility District #1 of Thurston County
Tanglewilde-Thompson Place Generator Installation
Bid Packet
CI-85-004-2015**

Site Address: 414 Wildcat Rd, Olympia WA 98503

**Prepared By:
Kim Gubbe, Operation Manager
Doug Eklund, Engineer, JWM&A**

**921 Lakeridge Way SW, Suite 301
Olympia, WA 98502
Phone: (360) 357-8783
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Public Utility District No. 1 of Thurston County

Tanglewilde –Thompson Place Generator Installation Project

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CALL FOR BIDS

PUBLIC UTILITY DISTRICT No. 1 OF THURSTON COUNTY TANGLEWILDE –THOMPSON PLACE WATER SYSTEM STANDBY GENERATOR INSTALLATION

Notice is hereby given that the Board of Commissioners for Public Utility District No. 1 of Thurston County (PUD) does hereby invite sealed proposals for the **Tanglewilde –Thompson Place Water System Standby Generator Installation** project as described and in accordance the Contract Documents.

Copies of the bid document are available at the PUD office at 921 Lakeridge Drive SW, Suite 301, Olympia, WA. Please call (360) 357-8783 in advance to insure availability of copies.

The scope of work consists of the installation of a PUD purchased Standby Generator to include: new building, automatic transfer switch, natural gas line, furnishings, two (2) 2,000 gallon underground propane tanks and appurtenances, removal and re-installation of existing electrical improvements for the existing Gaudio well, furnishing and installing underground water line for the Gaudio well, valves and check valves, trenching electrical lines, water lines, and utility lines and related work as shown on the plans and as described in the specifications.

This project includes a non-mandatory **pre-bid walkthrough**. The pre-bid walkthrough will be at the existing well site located at 414 Wildcat St SE, Lacey, WA 98503 on Monday, December 14, 2015 at 1 p.m.

Proposals for this work must be sealed and marked: "TANGLEWILDE-THOMPSON PLACE WATER SYSTEM STANDBY GENERATOR INSTALLATION" and the name of the bidder and filed to the attention of the General Manager of the PUD no later than Wednesday, January 6, 2016 at 2 p.m., at which time they will be publicly opened and read aloud. Bids received after 2 pm will not be opened or considered. The mailing and physical address for bids and the bid opening is:

Public Utility District No. 1 of Thurston
921 Lakeridge Drive SW, Suite 301
Olympia, WA 98502

Technical questions: Contact Doug Eklund, P.E. (email: doug@jwmorrisette.com) by email or by US mail at Jerome W. Morrisette & Associates, 1700 Cooper Point Rd SW, B-2 Olympia, WA 98502.

The PUD is an Equal Opportunity and Affirmative Action Employer. Disadvantaged Business Enterprises (Small, Minority- and Women-Owned Businesses) are encouraged to submit bids. All work performed on the project will be subject to Washington State prevailing wage.

A certified or bank cashiers check in the amount of five percent (5%) of the bid amount, payable to Public Utility District No. 1 of Thurston County, or a bid bond executed by a licensed bonding company is required with each bid. The PUD shall have the right to reject all bids or any bids not accompanied by bid security or data required by the bidding documents or a bid that is incomplete or irregular in any way. At the time and place named, such bids will be opened and read, and the Commissioners will proceed to canvas the bids. The Commissioners reserve the unqualified right in their sole and absolute discretion to reject any or all bids, and to accept the bid that, in their sole and absolute judgment will, under all circumstances, best serve the interest of the PUD.

PUBLIC UTILITY DISTRICT NO. 1 of THURSTON COUNTY
Kim Gubbe, Operations Manager

INSTRUCTIONS TO BIDDERS

1. Proposal

Proposals for this work must be sealed and marked: “TANGLEWILDE-THOMPSON PLACE WATER SYSTEM STANDBY GENERATOR INSTALLATION” and the name of the bidder and filed to the attention of the General Manager of the PUD no later than Wednesday, January 6, 2016 at 2 p.m., at which time they will be publicly opened and read aloud. Bids received after 2 p.m. will not be opened or considered. The mailing and physical address for bids and the bid opening is:

Public Utility District No. 1 of Thurston County
921 Lakeridge Drive SW, Suite 301
Olympia, WA 98502

2. Basis Of Award

The estimated cost of the Work, including taxes, is less than \$300,000 and, therefore, solicitations for bids have been requested from contractors registered on District’s Small Works Contractor Roster. The Contract shall be awarded to the qualified bidder submitting the lowest and the most responsive bid, but the District shall determine, at its own discretion, whether a bidder is qualified to perform the Contract, what bid is the lowest and best, and whether it is to the interest of the District to accept the bid. The District reserves the right to reject all bids and not award a Contract.

3. Local Conditions

Bidders are notified that they must carefully examine the plans, specifications, instructions to bidders, special provisions and Standard Specifications, and familiarize themselves with all federal, state, local and other laws pertaining to this work. They must also examine and judge for themselves as to the locations and character of the proposed work, the amounts and quality of the materials required, and the work to be done. If there is any doubt or obscurity as to the meaning of any part of the Contract Documents, it shall be brought to the attention of the District in order that the necessary explanations or corrections may be made before submitting the bid.

4. State Sales Tax

The payment of State sales tax, where applicable, shall be made by the District to the Contractor in compliance with current applicable law and rules.

5. Payments and Retainage

The District will withhold five percent (5%) of the Contract Price as a retainage fund pursuant to RCW 60.28.011. The District shall release the retainage, less any amounts the District is entitled to withhold, to Contractor not later than sixty (60) days after the latest of the following dates: (a) acceptance of the Work by District; (b) the receipt of all necessary releases from the Departments of Revenue, Labor and Industries and Employment Security; or (c) the settlement of any liens.

6. **Contract**

The bidder will allow thirty (30) days from bid opening for acceptance of its bid by the District.

The bidder will return to the District a signed contract, a form of which is included in the Bid Documents, insurance certificate and bond or bond waiver within fourteen (14) days of being notified of the acceptance of its proposal. Prospective bidders are advised to acquaint themselves fully with the provisions of all Contract Documents before submitting their bids.

7. **Notice to Proceed.**

The Work shall not commence until the District has given notice to proceed.

8. **Time of Completion**

Project shall be completed within 60 working days of the date of Notice to Proceed.

9. **Utility Location**

The Contractor shall be responsible for coordinating the location of existing underground utilities. The Contractor shall arrange for location through any affected utility, the Utilities Underground Location Center or with a private utility location service.

10. **Permits**

All permits, plan review or inspection fees shall be the responsibility of the Contractor. The cost of said fees shall be the responsibility of the Contractor and shall be included in the Contract Price.

11. **Bonding**

The District shall require a performance and payment bond unless the Contract Price is less than \$25,000. The successful bidder will be required to provide a payment and performance bond with a surety approved to do business in the state of Washington, in an amount not less than 100% of the contract price.

12. **Prevailing Wage Rates to be Paid**

The wage rates to be paid all laborers, workers, and mechanics who perform any part of this Contract shall be not less than the prevailing wage rate as required by the Revised Code of Washington (RCW) chapter 39.12. This requirement applies to laborers, workers and mechanics whether they are employed by the Contractor, Subcontractors, Sub-subcontractors, or any other person who performs a portion of the Work contemplated in the Contract Documents.

The Contractor shall, pursuant to RCW 39.12.040, file with the District, a "Statement of Intent to Pay Prevailing Wages" and an "Affidavit of Wages Paid" for itself and all Subcontractors and Sub-subcontractors in performance of the Work. Such Statements require the approval of, and the Affidavits of Certification of, the Industrial Statistician of the Department of Labor and Industries before such Statements or Affidavits are

submitted to the District. The Department of Labor and Industries charges a fee for such approval and certification, which fee shall be paid by the Contractor. Any change in the fee will not be grounds for the revision in Contract Sum.

13. Lump Sum And Unit Prices

Lump sum prices shall include all materials, labor, services, equipment, tools, fuel, supervision, shoring, pumping, overhead, profit, bonding, insurance and all other costs to complete the project in accordance with the plans and specifications which are not included in unit price items. If an increase is required in the work covered by a lump sum price, it shall be computed on the basis of "extra work" for which an increase in payment will have been earned, and if there should be a decrease in the lump sum payment, it shall be only as a result of negotiation between the undersigned and the District.

Unit prices, if applicable, shall include all labor, materials, services, equipment, tools, fuel, supervision, shoring, pumping, overhead, profit, bonding and insurance and all other costs to complete the work in accordance with the Contract Documents.

It is understood that any estimate with respect to time, materials, equipment, or services which may appear on the Contract Drawings or in the Specifications is for the sole purpose of assisting the Contractor in checking his own independent calculations, and at no time shall the undersigned attempt to hold the District, the Engineer or any other person, firm or corporation responsible for any errors or omissions that may appear in any estimate.

14. Subcontractors

All bidders are required to list the names of all subcontractors whose subcontract amount is more than ten percent (10%) of the Contract price (not including sales tax) on the Proposal Signature form. If the Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, other person or organization, either may before giving the Notice to Award request the apparent Successful Bidder to submit an acceptable substitute without an increase in Bid price. If the apparent Successful Bidder declines to make any substitution, the Contract shall not be awarded to such Bidder. Any Subcontractor, other person or organization so listed and to whom the Owner or Engineer does not make written objection prior to the giving of the Notice to Award will be deemed acceptable to Owner and Engineer.

BID PROPOSAL

Scope of Work: The scope of work consists of the installation of a PUD purchased Standby Generator to include: new building, automatic transfer switch, natural gas line, furnishings, two (2) 2,000 gallon underground propane tanks and appurtenances, removal and re-installation of existing electrical improvements for the existing Gaudio well, furnishing and installing underground water line for the Gaudio well, valves and check valves, trenching electrical lines, water lines, and utility lines and related work as shown on the plans and as described in the specifications.

In compliance with the contract documents, the following bid proposal is submitted:

BASE BID ITEMS:

Bid Item	Item	Approximate Quantity	Unit	Unit Price	Total Price
1.	Mobilization	Lump Sum	LS		
2.	Clearing and Grubbing	Lump Sum	LS		
3.	Utility Coordination	Lump Sum	LS		
4.	Facility Investigation / Potholing	4 per each	EA		
5.	Trench Excavation Safety Systems	Lump Sum	LS		
6.	Erosion Control	Lump Sum	LS		
7.	Surface Restoration	Lump Sum	LS		
8.	Trimming and Clean up	Lump Sum	LS		
9.	Landscaping at Propane Tanks	Lump Sum	LS		
10.	Gaudio Well Underground Waterlines	Lump Sum	LS		
11.	Wood Frame Standby Generator Building	Lump Sum	LS		
12.	Underground Propane Tanks	Lump Sum	LS		
13.	Propane Lines	Lump Sum	LS		
14.	Natural Gas Piping	Lump Sum	LS		
15.	Standby Generator Installation and Testing	Lump Sum	LS		
16.	Electrical Work Exterior	Lump Sum	LS		
17.	Standby Generator Building Lighting	Lump Sum	LS		
18.	Gaudio Well Electrical Improvements	Lump Sum	LS		
19.	Automatic Transfer Switch	Lump Sum	LS		

BASE BID SUBTOTAL \$ _____

SALES TAX @ 8.7 % \$ _____

BASE BID TOTAL (INCLUDING SALES TAX) \$ _____

All work under the contract shall be fully completed within 60 working days of the Notice to Proceed

Receipt of Addenda

Receipt of the following addenda is acknowledged:

Addendum No. _____ Addendum No. _____ Addendum No. _____
Addendum No. _____ Addendum No. _____ Addendum No. _____

Subcontractors List

Bidders must fill out the following section for all firms that bid or quote on subcontracts with the bid proposal.

	Type of Work	Point of Contact	Telephone	MBE/WBE Firm (y/n)
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____

Bidder may attach a separate sheet for additional subcontractors

Proposal Signature

Name of Firm _____

NOTE: *If bidder is a corporation, write State of Incorporation; if a partnership, give full names and addresses of all parties below.*

Signature _____

Official Capacity _____

Print Name _____

Address _____

City _____ State _____

Zip Code _____

Date _____ Telephone _____

FAX _____

State of Washington Contractor's License No. _____

Federal Tax ID # _____ UBI # _____

NON-COLLUSION AFFIDAVIT

**PUBLIC UTILITY DISTRICT #1 OF THURSTON COUNTY
TANGLEWILDE-THOMPSON PLACE WATER SYSTEM
STANDBY GENERATOR INSTALLATION**

STATE OF WASHINGTON }
 }
COUNTY OF _____ }

The undersigned, being duly sworn, deposes and says that the person, firm, association, co-partnership or corporation herein named, has not either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in the preparation and submission of a proposal to the Public Utility District No. 1 of Thurston County for consideration in the award of a contract on the improvement described as follows:

**TANGLEWILDE-THOMPSON PLACE WATER SYSTEM STANDBY GENERATOR
INSTALLATION**

Name of Firm

Signature of Authorized Member

Subscribed and sworn to before me this _____ day of _____, 2015.

NOTARY PUBLIC, in and for the State of
Washington, residing at _____
My commission expires: _____

CONTRACT

PUBLIC UTILITY DISTRICT NO. 1 OF THURSTON COUNTY

THIS AGREEMENT is made and entered into this _____ day of _____, 2015 by and between PUBLIC UTILITY DISTRICT NO. 1 OF THURSTON COUNTY, a Washington public utility corporation, hereinafter identified as the Owner, and _____ of the State of Washington, hereinafter identified as the Contractor.

WHEREAS, the Owner has caused to be prepared Contract Documents for the work herein described, and has approved and adopted these Contract Documents and invited quotations for the following construction: **Tanglewilde-Thompson Place Water System Standby Generator Installation** (hereafter the "Project");

WHEREAS, the Contractor, in response, submitted to the Owner a quotation in accordance with the terms of this Contract and these Contract Documents, and

WHEREAS, the Owner, in the manner prescribed by law has publicly opened, examined and canvassed the quotation submitted, and as a result of such examination and canvas, has duly awarded to the said Contractor a Contract for the furnishing of labor, materials, equipment, and supervision required to construct the work described above.

NOW, THEREFORE, THIS AGREEMENT WITNESSETH: That the parties to these presents, in consideration of the payments to be made to the Contractor and of the mutual agreements herein contained, have agreed and hereby agree, the Owner for itself and its successors, and the Contractor for itself, himself, or themselves, its,

ARTICLE I WORK TO BE DONE

In accordance with the Bid Proposal and all other Contract Documents for the Project, construct all work required by the Contract Documents.

ARTICLE II CONTRACT DOCUMENTS

The Bid Proposal, Standard Specifications (as modified herein), Engineering Specifications, Description of assembly units, Contract Drawings, Addendums, Special Conditions, General Conditions, The Plans, and all other Contract Documents, as prepared by the Owner, are included in this Contract and made a part hereof by reference as if fully restated herein:

ARTICLE III CONTRACT DOCUMENTS TO GOVERN WORK

The work shall be done fully in accordance with the Contract Documents.

ARTICLE IV ORAL STATEMENTS NOT BINDING

The Parties understand and agree that the written terms and provisions of this agreement shall supersede all prior oral statements of the Owner, or other representatives of the Owner, and such prior statements shall not be effective or be construed as entering into, or forming a part of, or altering in any wise whatsoever, this Contract.

ARTICLE V DEFINITIONS

Whenever any work or expression defined in this article, or pronoun used in its stead, occurs in these Contract Documents, it shall have and is mutually understood and agreed to have the following meaning:

1. "Contract" or "Contract Documents" shall include this Contract, and all the documents, plans and construction drawings enumerated in Article II.
2. "Contractor" shall mean the party or parties entering into Contract for the performance of the work covered by this Contract and his/her/their duly authorized agents or legal representatives.
3. "Date of signing the Contract" or words equivalent thereto, shall mean the date upon which this Contract is completely executed by the Contractor and the Owner.
4. "Day" or "Days", unless herein otherwise expressly defined, shall mean a Working Day or Days, as defined by the Standard Specifications.
5. "Inspector" shall mean the engineering or technical inspector or inspectors duly authorized by the Owner, limited to the particular duties entrusted to him or them.
6. "Owner" or "District" shall mean: Public Utility District No. 1 of Thurston County.
7. The "Standard Specifications" shall refer the 2010 Edition of The Standard Specifications for Road, Bridge, and Municipal Construction, as published by the Washington State Department of Transportation.
8. "The Project" shall mean the work to be done and the materials, equipment, apparatus and supplies to be furnished and installed under this Contract, unless some other meaning is indicated by the context.
9. "The Plans" shall mean and include all plans and Contract Drawings which have been prepared by the Owner as a basis for bids, and such plans and drawings as may hereafter be prepared by the Owner in connection with the work to be done.
10. The term "completion" shall mean full performance by the Contractor of the Contractor's obligations under the Contract and all amendments and revisions thereof. A Certificate of Completion stating the date of completion and approved in writing by the Owner, shall be the sole and conclusive evidence as to the fact of completion and the date thereof.
11. Whenever in these Documents the words "as directed", "as required", "as allowed", or words or phrases of like import are used, it shall be understood that the order, direction, requirement or allowance of the Owner is intended.

12. Similarly the words “approved”, “reasonable”, “suitable”, “acceptable”, “proper”, “satisfactory”, or words of like effect and import, unless otherwise particularly specified herein, shall mean approved, reasonable, suitable, acceptable, proper or satisfactory in the judgment of the Owner.

13. The pronouns “it” or “its” used in this Contract in referring to the Contractor shall mean the Contractor whether the Contractor be a corporation or one or more individuals, regardless of gender

ARTICLE VI COPIES OF CONTRACT

The Contractor will be furnished, free of charge, three (3) digital copies of all Contract Documents. Additional copies of the Contract Documents and/or Drawings may be obtained on request by paying the actual cost of the reproducing of Contract Documents or Drawings.

ARTICLE VII SUPERVISION

The Contractor shall provide sufficient supervision of the work using its best skill and attention. It shall carefully study and compare all drawings, specifications and other instructions, and will immediately report to the Owner any error, inconsistency or omission which it may discover. The Contractor shall maintain a competent superintendent onsite at all times while work is in progress.

ARTICLE VIII PROTECTION TO PERSONS AND PROPERTY

The Contractor shall at all times exercise reasonable precautions for the safety of employees on the work and of the public, and shall comply with all applicable provisions of the Standard Specifications and all Federal, State and Municipal safety laws and building and construction codes.

ARTICLE IX INSPECTION

The Engineer, inspectors and other representatives employed by the Owner who are to observe the work to be done shall have unrestricted access to all parts of the work and to all other places at which the materials and equipment are prepared, assembled, or processed. The Owner will maintain a representative at the work site(s) during various phases of construction, and said representative will be limited to the duties and powers entrusted to them. It will be the representative's duty to create documentation, including photographic documentation, inspect the Contractor's materials and workmanship, and report deviations from Contract Documents which may come to their notice. The representative may stop work in progress if, in their sole discretion, the Contract Documents are not being adhered to until the Owner is notified and it is determined an order that the work shall proceed.

ARTICLE X CHANGES IN CONSTRUCTION

Changes or additions to the work shall be subject to the provisions of the Standard Specifications including but not limited to Sections 1-04 and 1-09.

**ARTICLE XI
ASSIGNMENT AND SUBLETTING OF CONTRACT**

Contractor shall not assign or sublet the work or any part thereof, excepting such subcontracting and subcontractors as are specifically listed in the approved bid proposal, without the previous written consent of the Owner, and shall not assign, by power of attorney or otherwise, any of the moneys payable under this Contract unless by and with the like consent of the Owner; that no right under this Contract, nor to any money due or to become due hereunder, shall be asserted in any manner against party to persons acting under it, by reason of any so-called assignment of this Contract, or any part thereof, unless such assignment shall have been authorized by the written consent of the Owner. Should any subcontractor fail to perform in a satisfactory manner the work undertaken by him, such subcontractor shall be immediately terminated by the Contractor upon notice from the Owner.

**ARTICLE XII
LAWS AND ORDINANCES**

The Contractor shall keep fully informed of all existing and current ordinances, laws and regulations of the County, State, and Federal governments in any limiting or controlling the actions or operations of those engaged upon the work or affecting the materials supplied to or by it and shall at all times observe and comply with, and cause all its agents, employees, and subcontractors to observe and comply with all such ordinances laws and regulations, and shall protect and Indemnify the Owner and its officers and agents against all claims of liability arising from or based on, any violations of same.

**ARTICLE XIII
LABOR**

The Contractor and subcontractors furnishing work under this Contract shall comply with the terms of the Contract Documents, all applicable federal, state, and local laws and regulations, including but not limited to Prevailing Wage Act (chapter 39.12 RCW) and the Certification Regarding Debarment, Suspension, and Other Responsibility Matters. The minimum wage rates and fringe benefits for this Contract are subject to change, and the Contractor accepts all risk of increased labor costs caused by the payment of higher rates than those referenced in the Project Manual.

**ARTICLE XIV
BEGINNING OF WORK, PROGRESS, AND TIME OF COMPLETION**

The Contractor shall, within ten (10) days after having been instructed to do so in a written notice from the Owner, commence the work to be done under this Contract, and the rate of progress shall be such that the work shall have been completed in accordance with the terms of the Contract within or earlier than the number of days named in the proposal from the date of such notice, barring time lost which is provided for in Article XV hereof.

**ARTICLE XV
EXTENSIONS OF TIME**

Time for completing the work is described in the Contract documents and any claims for additional time or additional compensation related to time allowed shall be in compliance with the claim provisions of the Standard Specifications.

ARTICLE XVI SUSPENSION AND TERMINATION OF CONTRACT

Suspension and termination of the contract shall be subject to the terms and conditions contained in Sections 1-08.6 and 1-08.10 the Standard Specifications.

ARTICLE XVII COMPENSATION, PUBLIC LIABILITY, AND PROPERTY DAMAGE INSURANCE

Indemnification/Hold Harmless. The Contractor shall defend, indemnify and hold the Owner, its officers, officials, employees and volunteers harmless from any and all claims, injuries, damages, losses or suits including attorney fees, arising out of or in connection with the performance of this Agreement, except for injuries and damages caused by the sole negligence of the Owner.

Should a court of competent jurisdiction determine that this Agreement is subject to RCW 4.24.115, then, in the event of liability for damages arising out of bodily injury to persons or damages to property caused by or resulting from the concurrent negligence of the Contractor and the Owner, its officers, officials, employees, and volunteers, the Contractor's liability hereunder shall be only to the extent of the Contractor's negligence. It is further specifically and expressly understood that the indemnification provided herein constitutes the Contractor's waiver of immunity under Industrial Insurance, Title 51 RCW, solely for the purposes of this indemnification. This waiver has been mutually negotiated by the parties. The provisions of this section shall survive the expiration or termination of this Agreement.

Insurance. The Contractor shall procure and maintain for the duration of the Agreement, insurance against claims for injuries to persons or damage to property which may arise from or in connection with the performance of the work hereunder by the Contractor, their agents, representatives, employees or subcontractors.

No Limitation. Contractor's maintenance of insurance as required by the agreement shall not be construed to limit the liability of the Contractor to the coverage provided by such insurance, or otherwise limit the Owner's recourse to any remedy available at law or in equity.

A. Minimum Scope of Insurance. Contractor shall obtain insurance of the types described below:

1. Automobile Liability insurance covering all owned, non-owned, hired and leased vehicles. Coverage shall be written on Insurance Services Office (ISO) form CA 00 01 or a substitute form, providing equivalent liability coverage. If necessary, the policy shall be endorsed to provide contractual liability coverage.

2. Commercial General Liability insurance shall be written on ISO occurrence form CG 00 01 and shall cover liability arising from premises, operations, stop gap liability, independent contractors, products-completed operations, personal injury and advertising injury, and liability assumed under an insured contract. The Commercial General Liability insurance shall be endorsed to provide the Aggregate Per Project Endorsement ISO form CG 25 03 11 85. There shall be no endorsement or modification of the Commercial General Liability insurance for liability arising from explosion, collapse or underground property damage. The Owner and the Engineer, shall be named as an insured under the Contractor's Commercial General Liability insurance policy with respect to the work performed for the Owner using ISO Additional Insured

endorsement CG 20 10 10 01 and Additional Insured-Completed Operations endorsement CG 20 37 10 01 or substitute endorsements providing equivalent coverage.

3. Workers' Compensation coverage as required by Industrial Insurance laws of the State of Washington.

4. Builders Risk insurance covering interests of the Owner, the Contractor, Subcontractors, and Sub-subcontractors in the work. Builders Risk insurance shall be on a all-risk policy form and shall insure against the perils of fire and extended coverage and physical loss or damage including flood and earthquake, theft, vandalism, malicious mischief, collapse, temporary buildings and debris removal.

This Builders Risk insurance covering the work will have a deductible of \$5,000 for each occurrence, which will be the responsibility of the Contractor. Higher deductibles for flood and earthquake perils may be accepted by upon written request by the Contractor and written acceptance by the Owner. Any increased deductibles accepted by the Owner will remain the responsibility of the Contractor. The Builders Risk insurance shall be maintained until final acceptance of the work by the Owner.

B. Minimum Amounts of Insurance. Contractor shall maintain the following insurance limits:

1. Automobile Liability insurance with a minimum combined single limit for bodily injury and property damage of \$1,000,000 per accident.

2. Commercial General Liability insurance shall be written with limits no less than \$1,000,000 each occurrence, \$2,000,000 general aggregate and a \$2,000,000 products-completed operations aggregate limit.

3. Builders Risk Insurance shall be written in the amount of the completed value of the project with no coinsurance provisions.

C. Other Insurance Provisions. The insurance policies are to contain, or be endorsed to contain, the following provisions for Automobile Liability, Commercial General Liability, and Builders Risk insurance:

1. The Contractor's insurance coverage shall be primary insurance as respect the Owner. Any insurance, self-insurance, or insurance pool coverage maintained by the Owner shall be excess of the Contractor's insurance and shall not contribute with it.

2. The Contractor shall provide the Contracting Agency and all Additional Insureds with written notice of any policy cancellation, within two business days of their receipt of such notice.

Failure on the part of the Contractor to maintain the insurance as required shall constitute a material breach of contract, upon which the Contracting Agency may, after giving five business days' notice to the Contractor to correct the breach, immediately terminate the contract or, at its discretion, procure or renew such insurance and pay any and all premiums in connection therewith, with any sums so expended to be repaid to the Contracting Agency on demand, or at the sole discretion of the Contracting Agency, offset against funds due the Contractor from the Contracting Agency.

All costs for insurance shall be incidental to and included in the unit or lump sum prices of the contract and no additional payment will be made.

D. Contractor's Insurance for Other Losses. The Contractor shall assume full responsibility for all loss or damage from any cause whatsoever to any tools, Contractor's employee owned tools, machinery, equipment, or motor vehicles owned or rented by the Contractor, or the Contractor's agents, suppliers or contractors as well as to any temporary structures, scaffolding and protective fences.

E. Waiver of Subrogation. The Contractor and the Owner waive all rights against each other, any of their subcontractors, sub-subcontractors, agents and employees, each of the other, for damages caused by fire or other perils to the extent covered by Builders Risk insurance or other property insurance obtained pursuant to the Insurance Requirements Section of this Contract or other property insurance applicable to the work. The policies shall provide such waivers by endorsement or otherwise.

F. Acceptability of Insurers. Insurance is to be placed with insurers with a current A.M. Best rating of not less than A:VII.

G. Verification of Coverage. Contractor shall furnish the Owner with original certificates and a copy of the amendatory endorsements, including but not necessarily limited to the additional insured endorsement, including by not necessarily limited to the additional insured endorsement, evidencing the Automobile Liability and Commercial General Liability insurance of the Contractor before commencement of the work. Before any exposure to loss may occur, the Contractor shall file with the Owner a copy of the Builders Risk insurance policy that includes all applicable conditions, exclusions, definitions, terms and endorsements related to this project.

H. Subcontractors. Contractor shall ensure that each subcontractor of every tier obtain at a minimum the same insurance coverage and limits as stated herein for the Contractor (with the exception of Builders Risk insurance). Upon request, the Owner, the Contractor shall provide evidence of such insurance.

ARTICLE XVIII ASSIGNMENT OF GUARANTEES

That all guarantees of materials and workmanship running in favor of the Contractor shall be transferred and assigned to the Owner on completion of the work and at such time as the Contractor receives final payment.

ARTICLE IX TAXES

The bid prices set forth in the proposal include all amounts payable by the Contractor or the Owner on account of taxes imposed by any taxing authority upon the sale, purchase or use of materials, supplies or equipment to be incorporated in the project.

ARTICLE XX DEFECTIVE WORKMANSHIP AND MATERIALS

Notwithstanding the acceptance of workmanship or equipment, or the giving of any certificate with respect to the completion of the work, if during the construction or within one (1) year after completion of the project, the workmanship shall be found to be defective or not in conformity with the

requirements of the specifications, the Contractor shall remedy or replace such workmanship at Contractor's sole expense within thirty (30) days after notice of the existence thereof shall have been given to the Contractor by the Owner. The warranty and obligations provided under this Article shall be supplemental to shall not limit any other remedy or right available to the Owner under applicable law.

At or prior to the commencement of construction, the Owner will make available to the Contractor all materials which the Owner has for the project and from time to time as additional deliveries of materials, if any, are received by the Owner, the Owner shall make such materials available to the Contractor; provided, however, that the Contractor or their authorized representative will give to the Owner a receipt in such form as the Owner shall approve for all materials furnished by the Owner to the Contractor for the project. Upon completion of construction of the project, the Contractor will return to the Owner materials furnished by the Owner in excess of those required for the construction of the project as determined from the final inventory certified and approved by the Owner. The Contractor will reimburse the Owner, at the invoice cost to the Owner, for all loss or breakage of materials furnished by the Owner to the Contractor.

ARTICLE XXI PAYMENTS

1. Partial payments for work performed will be made during the course of construction on the following basis:

Payments will be made each month in the amount of ninety-five percent (95%) of Contract price value of the work completed at the time the estimate is submitted. Partial payment estimates shall be prepared by the Contractor and submitted to the Owner for approval and certification, on or about the 1st of each month. Payment will be made to the Contractor on such partial payment estimates upon verification of compliance with Chapter 39.12, and after approval by the Owner.

2. Upon completion of the project, the Owner will inspect the work performed hereunder, and if the work shall be found acceptable and all provisions hereunder fully performed, the Owner will certify as to that fact. After such certification of completion has been made, and upon submission by the Contractor of the waivers and releases of lien and affidavit, and certification by the Department of Labor and Industries of correct wages paid, the Owner shall pay to the Contractor all unpaid amounts to which the Contractor shall be entitled hereunder; however, in order for the Owner to comply with Washington State law RCW 60.28, the retained five percent (5%) shall be paid in accord with the provisions of that statute.

ARTICLE XXII RELEASE OF LIENS

Upon request of the Owner and in accordance with the terms noted in Article XXI, Section 2 of this Contract, the Contractor agrees to provide releases from subcontractors and suppliers.

ARTICLE XXIII FINAL PAYMENT RELEASE OF LIABILITY

The acceptance by the Contractor of the last payment shall operate as, and shall be and constitute, a full and final release to the Owner and every officer and agent thereof from all claims and liability to the Contractor for anything done, or furnished for or relating to or affecting the work.

**ARTICLE XXIV
EMPLOYEES**

The Owner shall have the right to require the removal from the work of any employee of the Contractor if in the judgment of the Owner such removal shall be necessary in order to protect the interests of the Owner.

**ARTICLE XXV
DISPUTE RESOLUTION AND ATTORNEY'S FEES**

Unless otherwise required by applicable statute or Court Rule, each party to this Contract shall bear their own attorney fees and costs concerning any and all legal proceedings related to this Contract. Any arbitration provisions contained in the Standard Specifications are hereby deleted and replaced with the requirement that any unresolved claims, disputes, or other legal actions of any kind between the parties to this Contract shall be resolved by filing a lawsuit in Thurston County Superior Court.

**ARTICLE XXVI
VENUE**

Venue for any cause of actions based upon this Contract shall be in Thurston County, Washington.

**ARTICLE XXVII
TITLE 51 WAIVER**

The Contractor specifically waives its immunity under applicable worker's compensation statutes, including, but not limited to, Title 51 RCW. This waiver includes (but is not limited to) any otherwise applicable immunity to indemnity and defense of claims as required by the Standard Specifications. By its signature executed below, the Contractor specifically acknowledges that this provision of the Contract has been negotiated and agreed between the parties. Contractor further agrees to require a similar waiver in all subcontractor contracts.

IN WITNESS WHEREOF, the parties hereto have executed the foregoing agreement as of the day and year first above written.

PUBLIC UTILITY DISTRICT NO. 1 OF
THURSTON COUNTY

CONTRACTOR

By:

By:

Its: _____

Its: _____

Date: _____

Date: _____

PERFORMANCE BOND

KNOW ALL PERSONS BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter called Principal,
(Corporation, Partnership, or Individual)

(Name of Surety)

(Address of Surety)

and hereinafter called Surety, are held and firmly bound unto:

**Public Utility District No. 1 of Thurston County
921 Lakeridge Drive SW, Suite 301
Olympia, WA 98502**

hereinafter called OWNER in the total aggregate penal sum of _____

_____ Dollars (\$_____)

in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER, dated the _____ day of _____, 2015, a copy of which is hereto attached and made a part hereof for the construction of:

TANGLEWILDE-THOMPSON PLACE WATER SYSTEM STANDBY GENERATOR INSTALLATION

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the OWNER, or GOVERNMENT, with or without notice to the SURETY and during the one year guaranty period and if the PRINCIPAL shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the OWNER and GOVERNMENT from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER and GOVERNMENT all outlay and expense which the OWNER and GOVERNMENT may incur in making good any default, then this obligation shall be void, otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said SURETY, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to WORK to be performed thereunder or the SPECIFICATIONS accompanying same shall in any way affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that it is expressly agreed that the BOND shall be deemed amended automatically and immediately, without formal and separate amendments hereto, upon amendment to the Contract not increasing the contract price more than 20 percent, so as to bind the PRINCIPAL and the SURETY to the full and faithful performance of the CONTRACT so amended. The term "Amendment", wherever used in this BOND, and whether referring to this BOND, the Contract or the Loan Documents shall include any alteration, addition, extension, or modification of any character whatsoever.

PROVIDED, FURTHER, that no final settlement between the OWNER and the PRINCIPAL shall abridge the right of the other beneficiary hereunder, whose claim may be unsatisfied. The OWNER and GOVERNMENT are the only beneficiaries hereunder.

IN WITNESS WHEREOF, this instrument is executed in _____(number) of counterparts, each one of which shall be deemed an original, this ____ day of _____, 2015.

ATTEST:

Principal

(Principal) Secretary
(SEAL)

By _____(s)

(Address)

Witness as to Principal

(Address)

Surety
ATTEST: By _____
Attorney-in-Fact

Witness as to Surety (Address)

(Address)

NOTES: Date of BOND must not be prior to date of Contract.
 If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the PROJECT is located.

PAYMENT BOND

KNOW ALL PERSONS BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter called Principal,
(Corporation, Partnership, or Individual)

(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto:

**Public Utility District No. 1 of Thurston County
921 Lakeridge Drive SW, Suite 301
Olympia, WA 98502**

hereinafter called OWNER in the penal sum of _____
_____ Dollars (\$_____)

in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns. Jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER, dated the _____ day of _____, 2015, a copy of which is hereto attached and made a part hereof for the construction of:

TANGLEWILDE-THOMPSON PLACE WATER SYSTEM STANDBY GENERATOR INSTALLATION

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms, SUBCONTRACTORS, and corporations furnishing materials for or performing labor in the prosecution of the WORK provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, fuel, oil, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such WORK, and all insurance premiums on said WORK, and for all labor, performed in such WORK whether by SUBCONTRACTOR or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the WORK to be

performed thereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts, each one of which shall be deemed an original, this the ____ day of _____, 2015.

ATTEST:

Principal

(Principal) Secretary
(SEAL)

By _____(s)

(Address)

Witness as to Principal

(Address)

ATTEST: By _____
Surety
Attorney-in-Fact

Witness as to Surety (Address)

(Address)

NOTES: Date of BOND must not be prior to date of Contract.
If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the PROJECT is located.

GENERAL REQUIREMENTS

INTRODUCTION

The various parts of the Contract Documents are all essential to the Contract and are intended to be complementary and prescribe and provide for a complete project. Any work or material that has been omitted from the description of the work but is clearly implied shall be furnished by the Contractor as though it had been specifically stated.

If any terms within the Contract Documents are in conflict or inconsistent with the terms in other Contract Documents, the parties duties and obligations shall be defined by the terms first in the Signed Contract (including any change orders, and any special forms), then the Addenda, and then the remaining documents in the following order: Bid Proposal Forms, Technical Specifications, Contract Drawings, Special Provisions, General Requirements, Standard Specifications, Standard Plans, Call for Bids.

On federal aid construction contracts, however, federal aid provisions contained therein shall supersede any other requirements of the Contract Documents in case of conflict.

Failure or neglect to receive or examine the Contract Documents shall in no way relieve the Bidder from any obligations regarding his proposal or to this Contract. No claim for additional compensation will be allowed for lack of knowledge of the Contract Documents and the Owner will in no case be responsible for any loss suffered by the Contractor.

DEFINITIONS

Whenever used in the Contract documents, the following terms have the meanings indicated which are applicable to both the singular and plural thereof:

CONSTRUCTOR – The firm which furnishes and erects components of structures to be provided under this Contract as a subcontractor to the Contractor.

CONTRACTOR – The party or parties entering into Contract for the performance of the work covered by this Contract and his/their duly authorized agents or legal representatives.

COUNTY - Refers to Thurston County.

ENGINEER - Jerome W. Morrisette & Associates Inc., P.S. or its designee.

INSPECTOR - The authorized representative of the Engineer who is assigned to the project site or any part thereof.

OWNER - Public Utility District No.1 of Thurston County, Olympia, Washington, for whom the work is to be performed, acting through its legally constituted officials, officers, or employees.

PURCHASER – Same as Owner.

STATE - Wherever the Standard Specifications uses the term "state" to define "owner", the term "state" shall be construed to mean Public Utility District No.1 of Thurston County. In all other instances the term state shall refer to the state of Washington.

SUBCONTRACTOR - A person, firm, or corporation having a direct Contract with the Contractor or with any other subcontractor for the performance of a part of the work at the site.

1.0 STANDARD SPECIFICATIONS

This project shall be constructed in accordance with the "Standard Specifications for Road, Bridge and Municipal Construction" as published by the Washington State Department of Transportation, 2010 Edition, referred to herein as the "Standard Specifications".

The Standard Plans as published by WSDOT, where applicable to the scope of work for this project, shall govern the work, except as specifically modified by the Engineer's Drawings or in this Project Manual. Supplemental Specifications published by WSDOT are not made a part of the Contract documents, and shall not apply to this project.

2.0 USE OF EXPLOSIVES

Blasting will not be permitted in any case.

3.0 SALVAGE

Unless otherwise indicated on the plans or in the specifications, all castings, pipe and any of the discarded facilities shall be carefully salvaged and stockpiled as directed by the Owner. The Owner shall have salvage rights to all equipment and materials. If Owner elects to dispose of any equipment or material, it shall be disposed of by the Contractor and at no cost to the Owner.

4.0 PROGRESS PAYMENTS AND RETAINED PERCENTAGE

Payments will be made for work and labor performed and materials furnished under the Contract according to the schedule of rates and prices and the Specifications attached and made a part thereof. Payments for materials on hand will not be allowed. Partial payments under the Agreement will be made at the request of the Contractor once each month upon partial estimates by the Engineer. The amount of retainage shall be in accordance with Standard Specifications.

5.0 EXISTING IMPROVEMENTS

Removing and replacing fences, mailboxes, or similar improvements that interfere with the construction shall be done by the Contractor and shall be considered incidental to the construction, and the cost thereof shall be included in the unit contract prices in the Proposal. Said improvements shall be removed and replaced to the satisfaction of the Engineer and the Contractor shall, at his or her own expense, completely repair any damage thereto caused by his operations.

The Contractor will make his own arrangements for disposing all materials subject to shrinkage or decay. Burning will not be allowed.

The Contractor shall take adequate precautions to protect existing lawns, trees, shrubs outside rights-of-way, sidewalk, curbs, pavements, utilities, adjoining property, and structures and to avoid damage thereto. The Contractor shall, at his or her own expense, completely repair any damage thereto.

6.0 CONTRACTOR'S RESPONSIBILITY FOR UTILITIES

Known utilities and structures expected to be adjacent to, or encountered in the work, are shown on the Contract Drawings. It is expected that there may be some discrepancies and omissions in the locations and quantities of utilities and structures shown. Those shown are for the convenience of the Contractor only and no responsibility is assumed by either the Owner or the Engineer for their accuracy or completeness.

The Contractor shall note the specific utilities identified on the Contract Drawings that will be affected by construction of this project. The Contractor shall support and protect by timbers or otherwise, all pipes, conduits, poles, wires or other apparatus which may be in any way affected by the work, and do everything to support, sustain and protect the same under, over, along or across said work. In case any of said pipes, conduits, poles, wires or apparatus should be damaged they shall be repaired by the authorities having control of same, and the expense of such repairs shall be charged to the Contractor.

The Contractor shall further be responsible for any damage done to any street or public property, or to any private property by reason of the breaking of any water pipe, sewer or gas pipe, electric conduit, or other utility by or through his or her negligence.

The Contractor shall notify all utilities' offices which are affected by the construction operation at least 48 hours in advance. This may be accomplished by notifying the "one-call" system and by notifying any utilities that are not covered under the "one-call" system. Under no circumstances shall the Contractor expose any utility without first requesting permission and being granted permission to do so from the affected agency. The Contractor shall comply with all the requirements of the affected utility. All costs of utility inspections and construction monitoring is to be included in the various bid items and no separate compensation will be allowed.

Should it be necessary for any utility to be moved or replaced as it relates to pipe placement, grading and paving operations on this project, it will be the Contractor's responsibility to coordinate his or her operation with the affected utility. The utility will perform the relocation unless otherwise described in these specifications. Any delays relating to this matter will not be subject to claim for additional compensation by the Contractor.

No utility, private or public, shall be moved to accommodate the Contractor's equipment or his method of operation when such utility does not interfere with the improvement under construction.

7.0 CONSTRUCTION STAKING

Construction Staking shall be provided as described by the Special Provisions.

8.0 FIELD RELOCATION

During the progress of construction, it is expected that minor re-locations in line and grade may be necessary. Such re-locations shall be made only at the direction of the Engineer. Unforeseen obstructions encountered as the result of such re-locations will not be subject to claim for additional compensation by the Contractor to any greater extent than would have been the case had the obstruction been encountered along the original location.

9.0 CONTRACTOR'S INSURANCE

The Contractor shall not commence work under the Contract until obtaining all necessary insurance and until such insurance has been approved by the Owner, nor shall the Contractor allow any subcontractor to commence work on his subcontract until all similar insurance required of the subcontractors has been obtained and approved.

The minimum policy limits of the Contractor's liability and property damage insurance shall be in conformance with the Contract, Article XVII. COMPENSATION, PUBLIC LIABILITY AND PROPERTY DAMAGE INSURANCE.

The Contractor shall include in all insurance policies as additional named insured:

The Owner, the Engineer (Jerome W. Morrisette & Associates Inc., P.S.) and each of their officers, agents and employees.

10.0 STORAGE AREAS AND WASTE SITE

In all cases storage area for construction materials or temporary storage for excavated materials are to be provided by the Contractor at no expense to the Owner. The

Contractor shall provide an offsite waste site at which all unsuitable excavated material shall be disposed of with no separate compensation by the Owner.

All waste or storage sites shall be maintained by the Contractor in such a manner as to meet safety, health and other requirements of all State and local laws. No runoff which will cause pollution of any State waters will be allowed. The storage or disposal of waste materials shall not damage any abutting properties or improvements thereon.

When the Contractor uses private lands provided by any party for storage, he or she shall supply the Owner with a release signed by the property owner prior to final payment.

11.0 SUBMITTAL OF INFORMATION

The apparent successful bidder shall within three (3) days after the day of the bid opening submit the following information concerning its qualifications:

1. A list of job experiences similar to this project, with a contact person and phone number noted for each.
2. A list of major equipment anticipated to be used on this project.

12.0 DUST CONTROL

It shall be the Contractor's responsibility to control dust by water or dust palliative, as ordered by the Engineer, for the alleviation or prevention of dust nuisance. All costs incurred as a result of controlling dust as specified herein shall be considered as incidental to the contract and included in the unit prices. No additional compensation will be paid.

13.0 OPENING OF COMPLETED WORK TO THE PUBLIC

Completed work shall be opened to the public when and where directed by the Engineer, but such opening shall not constitute final acceptance of the work. Maintenance shall be at the Contractor's expense until final acceptance.

14.0 ENGINEER'S STATUS DURING CONSTRUCTION

Owner's Representative

Engineer will be Owner's representative. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract Documents and shall not be extended without written consent of Owner and Engineer.

Visits to Site

Engineer will make visits to the site at intervals appropriate to the various stages of construction to observe the progress and quality of the executed work and to determine, in general, if the work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed work will conform to the Contract Documents. On the basis of such visits and onsite observations as an experienced and qualified design professional, Engineer will keep Owner informed of the progress of the work and will endeavor to guard Owner against defects and deficiencies in the work.

Clarifications and Interpretations

Engineer will issue with reasonable promptness such written clarifications or interpretations of the Contract Documents (in the form of Drawings or otherwise) as Engineer may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents. If Contractor believes that a written clarification or interpretation justifies an increase in the Contract Price or Contract Time, Contractor may make a claim therefore as provided in the Standard Specifications.

Rejecting Defective Work

Engineer will have authority to disapprove or reject work which is defective, and will also have authority to require special inspection or testing of the work as provided in the Standard Specifications.

Project Representative

If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in observing the performance of the work. The duties, responsibilities and limitations of authority of any such Resident Project Representative and assistants will be as provided in the General Requirements.

Decisions on Disagreements

Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the work thereunder. Claims, disputes and other matters relating to the acceptability of the work or the interpretation of the requirements of the Contract Documents pertaining to the execution and progress of the work shall be referred initially to Engineer in writing with a request for a formal decision in accordance with this paragraph, which Engineer will render in writing within a reasonable time. Written notice of each such claim, dispute and other matter shall be delivered by the claimant to the Engineer and the other party to the Agreement within fifteen days of the

occurrence of the event giving rise thereto, and written supporting data will be submitted to Engineer and the other party within forty-five days of such occurrence unless Engineer allows an additional period of time to ascertain more accurate data. In his capacity as interpreter and judge, the Engineer will not show partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

The rendering of a decision by Engineer pursuant to the above paragraph with respect to any such claim, dispute or other matter will be a condition precedent to any exercise by Owner or Contractor of such rights or remedies as either may otherwise have under the Contract Documents or at law in respect to any such claim, dispute or other matter.

Limitations on Engineer's Responsibilities

Neither Engineer's authority to act under this Section or elsewhere in the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of Engineer to Contractor, any subcontractor, any manufacturer, fabricator, supplier or distributor, or any of their agents or employees or any other person performing any of the work.

Whenever in the Contract Documents the terms "as ordered", "as directed", "as required", "as allowed" or terms of like effect or import are used, or the adjectives "reasonable", "suitable", "acceptable", "proper", or "satisfactory" or adjectives of like effect or import are used, to describe requirements, direction, review or judgment of Engineer as to the work, it is intended that such requirements, direction, review or judgment will be solely to evaluate the work for compliance with the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective never indicates that Engineer shall have authority to supervise or direct performance of the work or authority to undertake responsibility contrary to the provisions of paragraphs "A" and "B" below.

- A. Engineer will not be responsible for Contractor's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, and Engineer will not be responsible for Contractor's failure to perform the work in accordance with the Contract Documents.
- B. Engineer will not be responsible for the acts or omissions of Contractor or of any subcontractors, or of the agents or employees of any Contractor or subcontractor, or of any other persons at the site or otherwise performing any of the work.

Engineer's Review of Application for Progress Payment

The Engineer will, within ten (10) days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application. Owner will, within thirty (30) days of presentation of the Application for Payment with Engineer's recommendation pay Contractor the amount recommended.

The Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's on-site observations of the work in progress as an experienced and qualified design professional and on Engineer's review of the Application for Payment and the accompanying data and schedules that the Work has progressed to the point indicated; that to the best of Engineer's knowledge, information and belief, the quality of the work is in accordance with the Contract Documents (subject to an evaluation of the work as a functioning Project upon Substantial Completion), to the results of any subsequent tests called for in the Contract Documents and any qualifications stated in the recommendation; and that Contractor is entitled to payment of the amount recommended. However, by recommending any such payment Engineer will not thereby be deemed to have represented that exhaustive or continuous on-site inspections have been made to check the quality or the quantity of the work, or that the means, methods, techniques, sequences, and procedures of construction have been reviewed or that any examination has been made to ascertain how or for what purpose Contractor has used the moneys paid or to be paid to Contractor on account of the Contract Price, or that title to any work, materials or equipment has passed to Owner free and clear of any liens.

Engineer may refuse to recommend the whole or any part of any payment if, in his opinion, it would be incorrect to make such representations to Owner. He or she may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously recommended to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:

1. The work is defective, or completed work has been damaged requiring correction or replacement
2. Written claims have been made against Owner or liens have been filed in conjunction with the work
3. The contract price has been reduced because of modifications

4. Owner has been required to correct defective work or complete the work
5. Of Contractor's unsatisfactory prosecution of the work in accordance with the Contract Documents.
6. Of Contractor's failure to make payment to subcontractors, or for labor, materials or equipment.

15.0 SUBSTANTIAL COMPLETION

When Contractor considers the entire work ready for its intended use Contractor shall, in writing to Owner and Engineer, certify that the entire work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Within a reasonable time thereafter, Owner, Contractor and Engineer will make an inspection of the work to determine the status of completion. If Engineer does not consider the work substantially complete, Engineer will notify Contractor in writing giving his or her reasons therefore. If Engineer considers the work substantially complete, Engineer will prepare and deliver to Owner a tentative certificate of Substantial Completion which will fix the date of Substantial Completion. There will be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner will have seven days after receipt of the tentative certificate during which he may make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the work is not substantially complete, Engineer will within fourteen days after submission of the tentative certificate to Owner notify Contractor in writing, stating his or her reasons therefore. If, after consideration of Owner's objections, Engineer considers the work substantially complete, Engineer will within said fourteen days execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as he believes justified after consideration of any objections from Owner. At the time of delivery of the tentative certificate of Substantial Completion Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, maintenance, heat, utilities and insurance. Unless Owner and Contractor agree otherwise in writing and so inform Engineer prior to his or her issuing the definitive certificate of Substantial Completion Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.

Owner will have the right to exclude Contractor from the work after the date of Substantial Completion, but Owner will allow Contractor reasonable access to complete or correct items on the tentative list.

Substantial Completion for this project will not be granted until all Surface Restoration work is completed in accordance with the Contract Documents.

16.0 PARTIAL UTILIZATION

Use by Owner of completed portions of the work may be accomplished prior to Substantial Completion of all work subject to the following:

Owner at any time may request Contractor in writing to permit Owner to use any part of the work which Owner believes to be substantially complete and which may be so used without significant interference with construction of the other parts of the work. If Contractor agrees, Contractor shall certify to Owner and Engineer that said part of the work is substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the work. Within a reasonable time thereafter Owner, Contractor and Engineer will make an inspection of that part of the work to determine its status of completion. If Engineer does not consider that part of the work to be substantially complete, Engineer will notify Owner and Contractor in writing giving his reasons therefore. If Engineer considers that part of the work to be substantially complete, engineer will execute and deliver to Owner and Contractor a certificate to that effect, fixing the date of Substantial Completion as to that part of the work, attaching thereto a tentative list of items to be completed or corrected before final payment. Prior to issuing a certificate of Substantial Completion as to part of the work Engineer will deliver to Owner and Contractor a written recommendation as to the division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, maintenance, utilities and insurance for that part of the work which will become binding upon Owner and Contractor at the time of issuing the definitive certificate of Substantial Completion as to that part of the work unless Owner and Contractor will have otherwise agreed in writing and so informed Engineer. Owner will have the right to exclude Contractor from any part of the work which Engineer has so certified to be substantially complete, but Owner will allow Contractor reasonable access to complete or correct items on the tentative list.

In lieu of the issuance of a certificate of Substantial Completion as to part of the work, Owner may take over operation of a facility constituting part of the work whether or not it is substantially complete if such facility is functionally or separately usable; provided that prior to any such takeover, Owner and Contractor have agreed as to the division of responsibilities between Owner and Contractor for security, operation, safety, maintenance, correction period, heat, utilities and insurance with respect to such facility.

No occupancy of part of the work or taking over of operations of a facility will be accomplished before the insurers providing the property insurance have acknowledged notice thereof and in writing effected the changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or lapse on account of any such partial use or occupancy.

17.0 FINAL INSPECTION

Upon written notice from Contractor that the work is complete, Engineer will make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the work is incomplete or defective. Contractor shall immediately take such measures as are necessary to remedy such deficiencies.

18.0 FINAL APPLICATION FOR PAYMENT

After Contractor has completed all such corrections to the satisfaction of Engineer and delivered all maintenance and operating instruction, schedules, guarantees, Bonds, certificates of inspection, marked-up record documents and other documents -- all as required by the Contract Documents, and after Engineer has indicated that the work is acceptable, Contractor may make application for final payment following the procedure for progress payments. The final Application for Payment shall be accompanied by all documentation called for in the Contract Documents and such other data and schedules as Engineer may reasonably require, together with complete and legally effective releases or waivers (satisfactory to Owner) of all liens arising out of or filed in connection with the work. In lieu thereof and as approved by Owner, Contractor may furnish receipts or releases in full; an affidavit by the Contractor that the releases and receipts include all labor, services, material and equipment for which a lien could be filed, and that all payrolls, material and equipment bills, and other indebtedness connected with the work have been paid or otherwise satisfied; and consent of the Surety, if any, to final payment. If any subcontractor, manufacturer, fabricator, supplier or distributor fails to furnish a release or receipt in full, Contractor may furnish a Bond or other collateral satisfactory to Owner to indemnify Owner against any lien.

19.0 FINAL PAYMENT AND ACCEPTANCE

If, on the basis of Engineer's observation of the work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation -- all as required by the Contract Documents, Engineer is satisfied that the work has been completed and Contractor has fulfilled all of his obligations under the Contract Documents, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing his recommendation of payment and present the Application to Owner for payment. Thereupon Engineer will give written notice to Owner and Contractor that the work is acceptable subject to the provisions of the Standard Specifications. Otherwise, Engineer will return the Application to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application. If the Application and accompanying documentation are appropriate as to form and substance, Owner will within thirty days after receipt thereof pay Contractor the amount recommended by Engineer.

20.0 CONTRACTOR'S CONTINUING OBLIGATION

Contractor's obligation to perform and complete the work in accordance with the Contract Documents shall be absolute. Neither recommendation of any progress or final payment by Engineer, nor the issuance of a certificate of Substantial Completion, nor any payment by Owner to Contractor under the Contract Documents, nor any use or occupancy of the work or any part thereof by Owner, nor any act of acceptance by Owner nor any failure to do so, nor the issuance of a notice of acceptability by the Engineer, nor any correction of defective work by Owner shall constitute an acceptance of work not in accordance with the Contract Documents or a release of Contractor's obligation to perform the work in accordance with the Contract Documents.

21.0 COMPUTATION OF TIME

When any period of time is referred to in the Contract Documents by days, it shall be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day shall be omitted from the computation.

22.0 SCHEDULE FOR COMPLETION OF WORK

Within ten (10) days after the effective date of the Agreement, Contractor shall submit to Engineer for review and acceptance an estimated progress schedule indicating the starting and completion dates of the various stages of the work, a preliminary schedule of Shop Drawing submissions, and a preliminary schedule of values of the work.

23.0 PRECONSTRUCTION CONFERENCE

Within ten days after the effective date of the Agreement, but before Contractor starts the work at the site, a conference will be held for review and acceptance of the Schedules, to establish procedures of handling Shop Drawings and other submittals and for processing Applications for Payment, and to establish a working understanding among the parties as to the work.

24.0 PERMITS

The Contractor shall secure all necessary permits from Thurston County for all work on this project. The cost of securing permits shall be incidental to the various bid items listed, and no additional compensation will be allowed therefore.

25.0 USE OF PREMISES

Contractor shall confine construction equipment, the storage of materials and equipment and the operations of workmen to areas permitted by law, ordinances, permits or the

requirements of the Contract Documents, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment.

During the progress of the work, Contractor shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from the work. At the completion of the work Contractor shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, appliances, construction equipment and machinery, and surplus materials, and shall leave the site clean and ready for occupancy by Owner. Contractor shall restore to their original condition those portions of the site not designated for alteration by the Contract Documents.

Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the work or adjacent property to stresses or pressures that will endanger it.

26.0 RECORD DOCUMENTS AND AS-BUILTS

The Contractor shall keep one record copy of all Specifications, Contract Drawings, Addenda, modifications, shop drawings and samples at the site, in good order and annotated to show all changes made during the construction process. The Contract Drawings shall be annotated on a daily basis to show all utilities encountered during construction. The horizontal location, alignment, depth, and dimensions of all utilities encountered shall be marked up on the Contractor's record copy at the time such existing utilities are encountered. These record copies shall be available to Engineer for examination at all times during construction. These record copies shall be delivered to Engineer or Owner upon completion of the work.

27.0 ABBREVIATIONS

Any material specified by reference to the number, symbol or title of a specific standard such as a commercial standard, federal specification, a trade association standard, or other similar standard, shall comply with the requirements in the latest revision thereof and of any amendment or supplement thereto, in effect on the date of the Call for Bids, except as limited to type, class or grade or modified in the specifications, shall have full force and effect as though printed in the specifications.

When references are made to the following capitalized abbreviations, the reference shall be made to the specifications, standards or methods of the respective nationally recognized association, organization or resource.

AAN	American Association of Nurserymen
AAR	Association of American Railroads
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AGA	American Gas Association

AGC	Associated General Contractors of America
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ANSI	American National Standards Institute
APA	American Plywood Association
APWA	American Public Works Association
ARA	American Railway Association
AREA	American Railway Engineering Association
ASCE	American Society of Civil Engineers
ASLA	American Society of Landscape Architects
ASME	American Society of Mechanical Engineers
ASNT	American Society for Nondestructive Testing
ASTM	American Society for Testing and Materials
AWPA	American Wood Preservers' Association
AWS	American Welding Society
AWWA	American Water Works Association
CRSI	Concrete Reinforcing Steel Institute
DIPRA	Ductile Iron Pipe Research Association
EEI	Edison Electric Institute
FHWA	Federal Highway Administration
FSS	Federal Specifications and Standards, General Services Administration
ICEA	Insulated Cable Engineers Association
IEEE	Institute of Electrical and Electronics Engineers
ITE	Institute of Transportation Engineers
MSHA	Mine Safety and Health Act
MUTCD	Manual on Uniform Traffic Control Devices
NEC	National Electrical Code
NEMA	National Building Code of Manufacturers Association
NEPA	National Environmental Policy Act
NFPA	National Fire Protection Association
OSHA	Occupational Safety and Health Administration
RCW	Revised Code of Washington (Laws of the State)
SAE	Society of Automotive Engineers
SEPA	State Environmental Policy Act
SSPC	Steel Structures Painting Council
UL	Underwriters' Laboratories, Inc.
WAC	Washington Administration Code
WISHA	Washington Industrial Safety and Health Administration
WSDOT	Washington State Department of Transportation
WWPA	Western Wood Products Association

28.0 CONTRACTOR'S SETS OF CONTRACT DOCUMENTS

The Contractor will be furnished, free of charge, three (3) copies of all Contract Documents, plus electronic version on request. Additional copies of the Contract Documents and/or Drawings may be obtained on request by paying the actual cost of the reproducing of Contract Documents or Drawings.

29.0 INTENT OF PLANS AND SPECIFICATIONS

The intent of the Plans and Specifications is to describe a complete and operable system. Any materials not identified in the Plans and Specifications including any pipe fittings required to complete all systems shall meet the approval of the Engineer and shall be furnished and installed at no additional cost.

Any reference included in the contract documents that purport to address the responsibilities of work by crafts and specialty or trade contractors or subcontractors, are included only for the convenience in preparing and reading the contract documents, and do not in any way limit the full responsibility of the contractor to provide a complete installation and be responsible for all of the work under the contract.

END OF SECTION

SPECIAL PROVISIONS

1. EXAMINATION OF SITE

- A. The Contractor or bidder shall examine the site of work to ascertain all the physical conditions in relation thereto.
- B. All interested bidders should call Jerome W. Morrisette & Associates in Olympia at (360) 352-9456 for any questions concerning the bid documents. This project includes a non-mandatory pre-bid walk-through. Date and time for the non-mandatory pre-bid walk-through are shown on the Call for Bids.
- C. All working measurements shall be taken at the site.

2. SCOPE OF WORK

All work will be performed under one Contract and consists of all work indicated on the Contract Plans and Specifications and as described herein:

In accordance with these specifications for the **Tanglewilde-Thompson Place Water System Standby Generator Installation**, see Bid Proposal and all other related work required by the Contract Documents.

3. SCHEDULING OF WORK

Before any work is done, the Contractor shall confer with the Owner at a pre-construction conference. At the pre-construction conference the Contractor shall submit to the Owner a work schedule for the Owner's approval and shall make such arrangements as may be necessary for the completion of the Contract.

The Contractor shall schedule all phases of work under this Contract such that the existing Taylor and Coker Wells operation will be provided with a minimum of interruption. Well disruption that will exceed a duration of four (4) hours will require a forty-eight (48) hour advance written notice from the Contractor.

In addition, should the Coker Well operation be interrupted for a period of more than four (4) hours, the Contractor shall immediately provide temporary generator to operate the Coker Well, at no additional cost to the project.

4. APPLICABLE LEGAL REQUIREMENTS

The Contractor will be required to comply with all federal, state and local laws and regulations, which are binding upon the Owner, without additional expense to the Owner.

5. PROTECTION OF STRUCTURES AND PROPERTY

- A. The Contractor shall: provide, erect, and maintain barricades, warning signs, and guards as necessary for the protection of the public during construction including 6 ft high cyclone construction fence enclosing the construction area for the duration of construction. The construction fence shall be locked except during construction times. Construction fence alignment/work area shall be subject to approval of the Owner and Engineer at the preconstruction conference.
- B. Provide protection for all shrubs, trees, lawns, landscape work, walls, roads, drives, adjacent buildings, fences, mailboxes, pedestrians, vehicles, and equipment.
- C. Remove all protections when the work is complete, and accepted by the Owner.
- D. Repair damage to Owner's property, or any other person's property on or off premises caused by reason of required work.

6. SITE SAFETY

The Contractor shall at all times take extra care in protecting his work, and the Owner's facilities. The Contractor shall keep to a minimum any noise, dust, pollution, etc., and shall daily coordinate his activities with the designated owner's representative. The Contractor shall also follow all the requirements of the Section 1-07.1 of the Standard Specifications.

7. OWNER'S AUTHORIZED AGENT

The word "Owner/District", as used herein shall mean the **Public Utility District No.1 of Thurston County**. The word "Engineer", as used herein shall mean Jerome W. Morrisette & Associates Inc., P.S.

"As directed" means "as directed by the Engineer". Where the words "or approved" are used the Engineer is the sole judge of the quality and suitability of the proposed substitutions, and the Contractor shall retain the burden of proving that the materials proposed to be substituted are equal to or better than those named in the specifications.

8. START AND TIME OF COMPLETION

The improvements under this Contract shall begin within ten (10) calendar days after the date of the Notice to Proceed. All work shall be completed within the time stated on the Bid Proposal form. Working days shall be in compliance with Section 1-08.5 of the Standard Specifications.

Within fourteen (14) calendar days after receiving notification of award of the Contract, the Contractor shall execute and return to the Engineer any and all contractual documents necessary to begin work.

9. OVERTIME AND HOLIDAY WORK

The number of days provided in the Contract is intended to be sufficient time to complete the project. Inspection time required before 8:00 A.M., after 4:30 P.M., on Saturdays, Sundays, or holidays, will be considered as overtime for the Engineer, and the costs thereof will be charged to the Contractor.

10. INCOMPETENT EMPLOYEES

Incompetent, careless, or negligent employees shall be discharged forthwith by the Contractor upon written request of the Owner.

11. LIQUIDATED DAMAGES

In case the contract is not completed within the fixed time specified under "Time of Completion" or prior to a date which the period of completion may have been extended in writing, the Owner will deduct from the amounts due the Contractor the sums specified in Section 1-08.9 of the Standard Specifications. By submittal of the proposal the Contractor agrees to the payment deduction for liquidated damages for each consecutive working day that Contractor shall be in default after the time for physical completion specified herein.

12. BID ITEMS/ESTIMATED QUANTITIES

The following text shall modify Section 1-04 of the Standard Specifications:

The quantities shown in the Proposal and Contract forms are estimates only, being given only as a basis for the comparison of bids. The Owner does not warrant, expressly or by implication, that the actual amount of work will correspond thereto. The Contractor shall field-confirm actual quantities. The Engineer and Owner accept no responsibility for any variance between the actual quantities and the quantities provided for the Contractor's information. The right to increase or decrease the amount of any class or portion of the work, without a change order, or to make changes in the work required as may be deemed necessary by the Engineer, is reserved by the Owner. When such increases or decreases become necessary, the Engineer or Owner shall issue written instructions to the Contractor, and the Contractor shall adjust the quantities installed as directed.

No unit pricing shall be adjusted as a result of decreasing quantities unless the total value of the Contract decreases by at least 25 percent.

The Owner will not pay restocking fees or any other costs for the return or disposal of unused materials ordered by the Contractor.

The basis of payment will be for the items of work furnished, installed, measured, and accepted by the Engineer in accordance with the Contract requirements.

13. SITE ACCESS

The Contractor shall be responsible for confining operations to those areas that are within the available rights-of-way and property or easements owned by the **Public Utility District No.1 of Thurston County**. The Contractor may negotiate with various property owners to use area outside of the subject property. If areas outside of the subject property are used, the Contractor must restore all surfaces and improvements to a condition equal to or better than original condition. Where water service lines are shown on private property on the Contract Drawings, the Contractor shall obtain the tenants permission to construct the private service line prior to construction.

14. WASTE SITE

All excess excavation shall be deposited in a waste site provided by the Contractor.

15. CONSTRUCTION STAKING

The Owner will provide the Contractor one (1) set of construction stakes to use in establishing the horizontal and vertical alignment for the items of work on this project. The Owner will provide primary construction control such that all construction will be accomplished in conformance with the Contract Drawings and Specifications. Should construction staking be lost as a result of the Contractor's operations or as a result of vandalism, the Owner will provide duplicate stakes at Contractor's sole expense. The cost of duplicate stakes will be deducted from payments to the Contractor.

Primary construction control provided by the Owner will consist of one set of stakes for each of the following purposes:

1. Building Corners.

All other required construction control is considered to be secondary control and shall be provided by the Contractor.

The Contractor shall construct watermain on a straight grade between high points and low points identified on the Contract Drawings, and shall not add high points or low points in addition to those shown on the Contract Drawings.

The Contractor shall provide a minimum of three (3) working days advance written notice for staking requests prior to the time when staking will be required. All staking requests shall identify which stakes are to be provided by identifying the specific sheet number of the Contract Drawings and referencing street names, or pipe stations, or building numbers, or addresses if the staking request covers less than the entire sheet.

16. CONSTRUCTION WATER

The Owner will provide construction water at no cost to the Contractor. However, the availability of water will be subject to the following restrictions:

- a. Where the Contractor requires water for the purposes of adjusting the water content of onsite soils to obtain proper compaction, the Contractor may haul such water from the Owner's Water System, where such water may be obtained at no cost to the Contractor. Alternatively, the Contractor may obtain clean water from another source provided by the Contractor at no additional cost to the Owner.
- b. The Owner will provide water from the Water System for the purposes of filling, disinfecting, and flushing water mains.
- c. Construction water for such purposes will only be made available from the hydrants selected by the Owner for such purposes.

17. PROJECT MEETINGS

A. Pre-construction Conference

The Engineer will schedule and conduct a pre-construction meeting after awarding the Contract, and prior to start of construction, to discuss Contract Administration procedures. Representatives of Owner, Contractor and any Sub-Contractors shall attend.

Agenda:

1. Contractor information to be presented:
 - a) List of Sub-Contractors
 - b) Construction Schedule
 - c) Sequencing of Work
 - d) Designation of construction Superintendent and
 - e) Contact phone number
 - f) Schedule of Values for Payment Requests
2. Project Manager information to be discussed:
 - a) Communication procedures
 - b) Distribution of Contract Documents
 - c) Submittal requirements and procedures
 - d) Project record documents
 - e) Payment requests
 - f) Material storage on-site
 - g) Parking
 - h) Change order procedures

18. SUBMITTALS

A. Product Submittals

See Section 01300 and individual technical contract sections for additional requirements relative to submittals and approvals.

19. PROGRESS PAYMENTS

- A. The Contractor shall prepare all invoices for progress payments in Bid Schedule format.
- B. Owner will 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 will notify Contractor in accordance with chapter 39.76 RCW if the Application for Payment does not comply with the requirements of the Contract Documents.
- C. Owner will retain 5% of the amount of each progress payment until 30 days after Final Acceptance and receipt of all documents required by law or the Contract Documents including, at Owner's request, consent of surety to release of the Retainage. In accordance with RCW 60.28, Contractor may request that moneys 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.

20. STORAGE AND USE OF PREMISES AND SITE

Contractor shall confine operations to work areas as directed. Secure storage is not available at the work site. Keep all work areas clean and orderly every day.

21. TEMPORARY SANITARY FACILITIES

Contractor shall be responsible conforming to Thurston County Health Department requirements for providing temporary sanitary facilities on site.

22. PROJECT CLOSEOUT

Comply with requirements stated in Conditions of the Contract.

The Contractor shall notify the Engineer in writing when all work is completed and ready for pre-final inspection. The Engineer will make an inspection, forwarding a "Punch List" of deficiencies to the Contractor, who shall promptly correct all items noted.

The Contractor shall notify the Engineer in writing when all "Punch List" deficiencies from the pre-final inspection have been completed. The Engineer will set a time for a Final

Inspection, at which time the Contractor and the Engineer will jointly inspect the work. The Contractor shall promptly correct any further deficiencies noted.

When the Engineer finds that all work is acceptable under Contract Documents, the Contractor may proceed with closeout submittals. When Contractor considers the work complete he or she shall submit written verification, closeout submittals, to the Engineer that:

1. Contract Documents have been reviewed.
2. Work has been completed and inspected for compliance with Contract Documents.
3. Evidence of compliance with the requirements of all governing authorities.
4. Warranties and bonds have been submitted to the Owner.

After the work has been accepted by the Owner, the Contractor shall submit the final application for payment in accordance with procedures and requirements stated in the conditions of the Contract.

23. ORDER OF PRECEDENCE

Any conflict or inconsistency in the Contract Documents shall be resolved by giving the documents precedence in the following order, where the first (lower numbered) documents shall prevail over the later (higher numbered) documents:

1. Signed Contract (including fully-executed change orders).
2. Addenda
3. Bid Proposal
4. Technical Specifications
5. Contract Drawings
6. Special Provisions
7. General Requirements
8. Standard Specifications
9. Standard Plans
10. Call for Bids

24. MOBILIZATION

The Contractor shall complete Mobilization in accordance with Section 1-09.7 of the Standard Specifications, except as noted otherwise.

Mobilization will include the requirement to comply with Section 8-01.3(1)B of the Standard Specifications for an Erosion and Sediment Control (ESC) Lead person to observe

construction activities. The ESC Lead will make non-binding recommendations for the installation of erosion-control devices during construction of the project. The installation of such erosion control devices will only be done at the direction of the Owner's onsite Representative. Such ESC Lead persons shall be certified by training from an approved Department of Transportation or Department of Ecology training program which meets the requirements of the **Thurston County** Public Works Department. The ESC lead shall prepare all required documentation to meet the requirements of the Standard Specifications and the requirements of **Thurston County**, and shall submit such documentation to the Engineer prior to obtaining Substantial Completion.

Measurement and Payment for Mobilization shall be by the lump sum and shall include all labor, materials, tools, fuel, equipment, and supervision required to complete Mobilization as specified herein.

25. PUBLIC CONVENIENCE AND SAFETY/CONTRACTOR USE OF PREMISES

A. General

It shall be the Contractor's responsibility to notify in advance fire and police departments when Contractor's operations will hinder in any manner normal access by emergency vehicles. The Contractor shall leave their night emergency telephone number(s) with the police department so that contact may be made at all times in case of emergencies involving the project.

B. Public Convenience and Safety

The Contractor shall conduct all operations with the least possible obstruction and inconvenience to the public. The Contractor shall have under construction no greater length or amount of work than can be prosecuted properly with due regards to the right of the public. To the extent possible, the Contractor shall finish each section before beginning work on the next.

C. Contractor Use of Premises – The job site is a public park, owned and operated by the Tanglewilde Recreation Center. The Park will remain open to the public during construction. Contractor shall cooperate with the Tanglewilde Recreation Center to avoid conflict and to facilitate use of the Park. Contractor shall provide construction fencing for the duration of the project to keep the public isolated from the work and materials lay-down area. The fence will be locked to limit access to the site to authorized personnel only. Construction fencing shall be temporary cyclone fencing at least six feet in height. The area to be fenced shall be agreed upon prior to site mobilization. Contractor shall not permit any attractive or other nuisances to be maintained at the site as part of the work.

Time of Construction – The hours of construction work shall be confined to the period of 8:00 am to 5:00 pm, Monday through Friday. Obtain owner's approval prior to working overtime. No construction equipment shall be started, warmed-up or tested prior to 8:00 am, and all construction equipment shall be promptly shut down at 5:00 pm.

26. TERMINATION

This Agreement may be terminated by the District. The Contractor, upon written notice of termination by the District, shall immediately stop work. If this Agreement is terminated, the Contractor agrees that the District will only be liable for labor, material, equipment and costs, including reasonable profit, provided pursuant to this Agreement to the date of work stoppage.

27. TRAFFIC

Barricades, signs, warning devices and/or flaggers required to maintain traffic control shall be the responsibility of the Contractor, shall be utilized in accordance with the applicable law including the Manual on Uniform Traffic Control Devices, and shall be considered as incidental to other items of the contract.

END OF SECTION

Thurston County Resource Stewardship Department

Nonresidential Permit # 15116391

Property Tax #: 78801400000
Site Address: 414 WILDCAT DR SE
City: OLYMPIA
Subdivision: Lot #: Plans Approved By:
Sub Type: Misc Construction Activity Issued Date: 11/13/15
Work Proposed: New Construction Issued By: Jim Jones
Permit Description: Adding new well house for generator natural gas or propane Expire Date: 11/13/16

Applicant: TANGLEWILDE REC CENTER INC
Address: 414 WILDCAT ST SE OLYMPIA, WA 98503
Owner: TANGLEWILDE REC CENTER INC
Address: 414 WILDCAT ST SE OLYMPIA, WA 98503
Receipt: THURSTON CO P U D #1
Address: 921 LAKERIDGE WAY SW STE 301 OLYMPIA, WA 98502-6081
Co-applicant: Doug Eklund/Morrisette, Jerome W. & Associates Inc Phone: (360) 352-9456
Address: 1700 Cooper Point Road RD SW # B-2 Olympia, WA 98502 / EKLUNDH5140C
Point of Contact: Doug Eklund/Morrisette, Jerome W. & Associates Inc Phone: (360) 352-9456
Address: 1700 Cooper Point Road RD SW # B-2 Olympia, WA 98502 / EKLUNDH5140C
Payor: TANGLEWILDE REC CENTER INC
Address: 414 WILDCAT ST SE OLYMPIA, WA 98503

Info

Zoning: OS-I - Open Space/Institutional Jurisdiction: LACUGA Square Footage Floor 1: 306
PSF Floor 1: 100 Occupant Load Floor 1: 0 Occupancy Classification (Dominant): U

Mechanical

Gas Wall Heater: 1

Plumbing

Other: 1

Project Conditions

- Development Coverage: The maximum development coverage is 70% - Development coverage means the amount or percentage of ground area covered by impervious surfaces (i.e., surfaces which do not absorb moisture, specifically rainwater). Therefore, impervious surfaces include rooftops and all paved surfaces such as parking areas, roads, driveways, walkways and the like.

Building Coverage: The maximum building area coverage is 35% - Building coverage means the amount or percentage of ground area covered or occupied by a building or buildings; usually expressed in square feet or percentage of land on the lot, and measured horizontally at the foundation.

Setbacks: A minimum 25 setback from right-of-way. The setback shall be measured from the property line to the nearest portion of the outside wall of livable space or the support column of a structure over thirty inches above finished grade. Cornices, eaves and other similar architectural features may project from the foundation wall into any minimum yard setback requirement a maximum distance of two feet.

- It is the responsibility of the landowner to comply with applicable federal regulations. Approval of this and other County permits may be superseded by federal law. Endangered species cannot be harmed at any time, even after permit issuance. If any are found during construction, the applicant must contact the U. S. Fish and Wildlife Services.
- On April 8, 2014, the U.S. Fish and Wildlife Service listed the Mazama Pocket Gopher under the Endangered Species Act. The subject parcel contains potential pocket gopher habitat. It is the responsibility of the landowner to comply with applicable federal regulations. Approval of this and other County permits may be superseded by federal law. Endangered species cannot be harmed at any time, even after permit issuance. If any are found during construction, the applicant must contact the U. S. Fish and Wildlife Service (USFWS).

REQUIRED INSPECTIONS

Permit # 15116391

Listed below are the required inspections for your project. To schedule, cancel or obtain results for an inspection, call the automated inspection line at (360) 786-5489. Use the corresponding code listed below to the left of the inspection when using the automated inspection line. Inspections requested by 4pm can be scheduled for the following day. Same day inspections will **not** be accepted and particular inspection times are **not** guaranteed. Please make sure you are ready **before** you schedule the inspection.

Code Inspection Type

111	FOOTING / POST HOLE / SETBACK - All property corners must be clearly marked. Inspection to be made after excavation for footings or post holes are complete and all required reinforcing steel is in place. Any required forms shall be in place prior to inspections.
112	FOUNDATION WALL - To be made after all forms and required reinforcement, foundation vents and access openings are properly installed but before concrete placement.
118	GROUND WORK PLUMBING - To be made after all in-slab building service equipment, conduit, piping, accessories, slab perimeter insulation and other equipment items are in place but before concrete is placed.
122	SEWER - After piping is installed and prior to cover.
130	ROOF SHEATHING - Unless roof is engineered, builder is to furnish Roof Nailing Verification card.
132	ROUGH IN PLUMBING - To be made after all drain, waste, vent, and water supply piping is installed and under water or air test. This inspection shall be approved before or at the same time as the framing inspection.
136	ROUGH IN MECHANICAL - To be made after all mechanical equipment and ducting are installed. This includes bath fans, range hood(if ducted), gas piping under test, wood stove chimneys. This inspection shall be approved before or at the same time as the Framing inspection
146	FRAMING - To be made after the roof, all framing fire blocking windows, chimneys, exterior siding, and bracing are in place and all plumbing, mechanical and electrical are approved for cover and interior energy seal package is complete.
148	INSULATION - To be made after all concealed areas are insulated (walls, cathedral ceilings, etc.) but prior to cover. Accessible attics and under floor areas will be inspected on the final inspection.
152	BRACED WALL / DRYWALL - Residential - To be made after braced walls are done. Non Residential - To be made after all drywall, interior and exterior, is in place but before any mudding is applied or before drywall joints and fasteners are taped and finished.
160	FINAL - To be made after all finished grading and the building is completed and ready for occupancy. Address must be posted on the structure to be visible from the road, if not then also placed at the road.

Thurston County Resource Stewardship Department

Nonresidential Permit # 15116391

Project Conditions

- This property is mapped within a soil type that often contains the presence of gopher species (Mazama Pocket Gopher). This is a critical areas protected under the Thurston County Critical Area Ordinance, Title 24 and listed under the federal Endangered Species Act. Cindy Wilson, Interim Director of the Resource Stewardship Department, determined the proposal would not result in take, or is very unlikely to result in take, of federally listed Mazama pocket gophers. This Staff determined the property did not meet the criteria for prairie habitat.
-

Access Issues: none

Directions: SE corner of Intersection of Wildcat St SE & Husky Way SE

PROPERTY OWNERS ARE RESPONSIBLE FOR DETERMINING AND MARKING ALL PROPERTY LINE LOCATIONS AND RELATED EASEMENTS.

_____ I certify that I am exempt from the requirements of state contractor's registration under RCW 18.27.090

The information furnished by me is true and correct to the best of my knowledge and all work will conform to applicable Thurston County Code. I grant employees of Thurston County access to the above property and structures for review and inspection. I will call 786-5489 for applicable inspections listed on the reverse side of this form. I will read all comments on the approved Plans. I will refer to the checklist for all numbers noted on the approved plans. Failure to note any code requirements is not a waiver of that requirement.

Owner/Agent/Builder: _____ Date: _____

Thurston County Resource Stewardship Department

Nonresidential Permit # 15116396

Property Tax #: 78801400000
Site Address: 414 WILDCAT DR SE
City: OLYMPIA
Subdivision:
Sub Type: Fire
Work Proposed: New Construction
Permit Description: propane tanks

Plans Approved By:
Issued Date: 11/13/15
Issued By: Jim Jones
Expire Date: 11/13/16

Applicant: TANGLEWILDE REC CENTER INC
Address: 414 WILDCAT ST SE OLYMPIA, WA 98503
Owner: TANGLEWILDE REC CENTER INC
Address: 414 WILDCAT ST SE OLYMPIA, WA 98503
Receipt: THURSTON CO P U D #1
Address: 921 LAKERIDGE WAY SW STE 301 OLYMPIA, WA 98502-6081
Co-applicant: Doug Eklund/Morrisette, Jerome W. & Associates Inc Phone: (360) 352-9456
Address: 1700 Cooper Point Road RD SW # B-2 Olympia, WA 98502 / EKLUNDH5140C
Point of Contact: Doug Eklund/Morrisette, Jerome W. & Associates Inc Phone: (360) 352-9456
Address: 1700 Cooper Point Road RD SW # B-2 Olympia, WA 98502 / EKLUNDH5140C
Payor: TANGLEWILDE REC CENTER INC
Address: 414 WILDCAT ST SE OLYMPIA, WA 98503

Info

Zoning: OS-I - Open Space/Institutional Jurisdiction: LACUGA Square Footage Floor 1: 306
PSF Floor 1: 100 Occupant Load Floor 1: 0 Occupancy Classification (Dominant): U

Fire

Propane Tank Placement: 1

Plumbing

Other: 1

Project Conditions

- On April 8, 2014, the U.S. Fish and Wildlife Service listed the Mazama Pocket Gopher under the Endangered Species Act. The subject parcel contains potential pocket gopher habitat. It is the responsibility of the landowner to comply with applicable federal regulations. Approval of this and other County permits may be superseded by federal law. Endangered species cannot be harmed at any time, even after permit issuance. If any are found during construction, the applicant must contact the U. S. Fish and Wildlife Service (USFWS).

Access Issues: none

Directions: SE corner of intersection of Wildcat St SE & Husky Way SE

PROPERTY OWNERS ARE RESPONSIBLE FOR DETERMINING AND MARKING ALL PROPERTY LINE LOCATIONS AND RELATED EASEMENTS.

_____ I certify that I am exempt from the requirements of state contractor's registration under RCW 18.27.090

The information furnished by me is true and correct to the best of my knowledge and all work will conform to applicable Thurston County Code. I grant employees of Thurston County access to the above property and structures for review and inspection. I will call 786-5489 for applicable inspections listed on the reverse side of this form. I will read all comments on the approved Plans. I will refer to the checklist for all numbers noted on the approved plans. Failure to note any code requirements is not a waiver of that requirement.

Owner/Agent/Builder: _____ Date: _____

REQUIRED INSPECTIONS

Permit # 15116396

Listed below are the required inspections for your project. To schedule, cancel or obtain results for an inspection, call the automated inspection line at (360) 786-5489. Use the corresponding code listed below to the left of the inspection when using the automated inspection line. Inspections requested by 4pm can be scheduled for the following day. Same day inspections will **not** be accepted and particular inspection times are **not** guaranteed. Please make sure you are ready **before** you schedule the inspection.

Code Inspection Type

0	FIRE INSPECTION - Please call 786-5466 to schedule inspection for fire extinguishers, safety and exiting prior to calling for final inspection. Please allow 7 days for scheduling.
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Thurston County Resource Stewardship Department

Nonresidential Permit # 15116397

Property Tax #: 78801400000
Site Address: 414 WILDCAT DR SE
City: OLYMPIA
Subdivision: Lot #: Plans Approved By:
Sub Type: Fire Issued Date: 11/13/15
Work Proposed: New Construction Issued By: Jim Jones
Permit Description: propane tanks Expire Date: 11/13/16

Applicant: TANGLEWILDE REC CENTER INC
Address: 414 WILDCAT ST SE OLYMPIA, WA 98503
Owner: TANGLEWILDE REC CENTER INC
Address: 414 WILDCAT ST SE OLYMPIA, WA 98503
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Info

Zoning: OS-I - Open Space/Institutional Jurisdiction: LACUGA Square Footage Floor 1: 306
PSF Floor 1: 100 Occupant Load Floor 1: 0 Occupancy Classification (Dominant): U

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Propane Tank Placement: 1

Plumbing

Other: 1

Project Conditions

- On April 8, 2014, the U.S. Fish and Wildlife Service listed the Mazama Pocket Gopher under the Endangered Species Act. The subject parcel contains potential pocket gopher habitat. It is the responsibility of the landowner to comply with applicable federal regulations. Approval of this and other County permits may be superseded by federal law. Endangered species cannot be harmed at any time, even after permit issuance. If any are found during construction, the applicant must contact the U. S. Fish and Wildlife Service (USFWS).

Access Issues: none

Directions: SE corner of Intersection of Wildcat St SE & Husky Way SE

PROPERTY OWNERS ARE RESPONSIBLE FOR DETERMINING AND MARKING ALL PROPERTY LINE LOCATIONS AND RELATED EASEMENTS.

_____ I certify that I am exempt from the requirements of state contractor's registration under RCW 18.27.090

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Owner/Agent/Builder: _____ Date: _____

REQUIRED INSPECTIONS

Permit # 15116397

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Code Inspection Type

0	FIRE INSPECTION - Please call 786-5466 to schedule inspection for fire extinguishers, safety and exiting prior to calling for final inspection. Please allow 7 days for scheduling.
---	---



Jerome W. Morrisette & Associates Inc., P.S.

1700 Cooper Point Road SW, #B-2, Olympia, WA 98502-1110
(360)352-9456 / FAX (360)352-9990

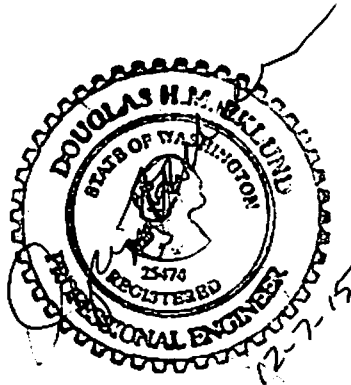
Tanglewilde Water System Standby Generator Installation

Soil Log Investigation

December 7, 2015 3:15 pm, A soil log pit was excavated approximately 35 feet north of the Well Control Building. The following soils were noted:

0 to 7 inches	dark brown sandy gravelly loam
7 to 27 inches	light brown sandy gravelly loam
27 to 67 inches	gray gravelly sand
67 to 70 inches	gray very gravelly coarse sand (on north side of soil pit)
70 to 102 inches	gray gravelly sand

Doug Eklund, PE



This Soil Log Investigation should be provided to prospective contractors for their bidding and estimating purposes, but the interpretations provided should not be construed as a warranty of subsurface conditions.

See photos and aerial photo on following sheets



Thurston County Map



Disclaimer: Thurston County makes every effort to ensure that this map is a true and accurate representation of the work of County government. However, the County and all related personnel make no warranty, expressed or implied, regarding the accuracy, completeness or convenience of any information disclosed on this map. Nor does the County accept liability for any damage or injury caused by the use of this map.

To the fullest extent permissible pursuant to applicable law, Thurston County disclaims all warranties, express or implied, including, but not limited to, implied warranties of merchant ability, data fitness for a particular purpose, and non-infringements of proprietary rights. Under no circumstances, including, but not limited to, negligence, shall Thurston County be liable for any direct, indirect, incidental, special or consequential damages that result from the use of, or the inability to use, Thurston County materials.



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929 Lakeridge Drive SW, Suite 216, 2nd Floor
Olympia, WA 98502-6031

LEGEND

	Major Roads		Flood Zones
	Roads		Water Bodies
	Streams		Zoning
	Contours		Cities
	Wetlands		Parcels
	Wetland Buffers		

**SECTION 01065
CODE AND PERMIT REQUIREMENTS**

PART 1 - GENERAL

1.1 STANDARD SPECIFICATIONS

- A. All work under this section shall be governed by the General Requirements, the Special Provisions, and the Standard Specifications of the Contract, except as modified herein.
- B. All references in the Standard Specifications to measurement and payment shall be deleted from consideration and the terms agreed to in the Contract substituted therefore.

1.2 APPLICABLE CODES AND ORDINANCES

- A. International Building Code.
- B. Uniform Plumbing Code.
- C. Washington State Energy Code.
- D. Thurston County Ordinances.
- E. L&I Electrical Installation and Energy Standards.
- F. International Electrical Code.
- G. Chapter 19.28 RCW Electricians and Electrical Installation.
- H. WAC 296-46B Electrical Safety Standards, Administration, and Installation.

1.3 MEASUREMENT AND PAYMENT

- A. Payment for Code and Permit Requirements shall be included in the Contract and no additional payments will be allowed.

PART 2 - CODE REQUIREMENTS

2.1 CONSTRUCTION DRAWINGS AND REVISIONS

- A. The Contractor shall provide any additional information which is required by reviewing agencies to prove that code requirements have been met.

2.2 CONFLICTS WITH BUILDING OR ELECTRICAL CODES

- A. Wherever the requirements of the Contract Documents are in conflict with applicable building codes, electrical codes, or other codes listed above, the requirements of the codes shall govern. The Contractor shall provide written notice of such conflicts prior to ordering materials, based on the Contractor's electrical design. Electrical design information contained on the Contract Drawings is schematic only. The Contractor shall revise the design to account for such conflicts and shall furnish and install all electrical materials required to resolve such conflicts, and no additional payment will be allowed therefore.

PART 3 - EXECUTION

3.1 GENERAL

- A. Contractor shall obtain and pay for all permits, approvals, licenses, fees, bonds, and inspections necessary for the proper execution and completion of the work, and no additional compensation will be allowed therefore. Any drawings or correspondence received from governing agencies which are obtained by the Contractor and have corrective notes on or attached shall be reviewed by the Contractor prior to construction. Notify Engineer prior to doing the work.
- B. The project will be required to pass electrical inspections by the Washington State Department of Labor and Industries. The Contractor shall obtain the written approval of the Electrical Inspection Division prior to substantial completion of the project, and no additional compensation will be allowed therefore.

END OF SECTION

**SECTION 01300
SUBMITTALS**

PART 1 - GENERAL

1.1 DESCRIPTION

- A. All work under this Section is bound by the General Requirements, Special Provisions, and Standard Specifications of the Contract, except as modified herein.
- B. All references to the Standard Specifications to measurement and payment shall be deleted from consideration and the terms agreed to in the Contract substituted therefore.
- C. General: Prepare and process submittals as required by this section.
- D. Required Submittals
 - 1. Construction progress schedule.
 - 2. Schedule of Values.
 - 3. Material and product data for all materials used.
 - 4. Shop drawings and samples.
 - 5. Warranty manual.
 - 6. Miscellaneous submittals.
 - 7. Means and Methods.

1.2 SUBMITTAL PROCEDURE

- A. The technical Provisions generally do not list submittal requirements specific to that section (i.e., shop drawings, samples, product data, etc.). Instead, the Contractor shall make complete submittals for all methods and all materials and all products to be incorporated into the project. This requirement shall apply even when the Contractor proposes to use the same materials, methods, and products which are specifically identified in the Contract. The submittal requirements listed in this section will apply to all Technical Specifications sections whether specific requirements are listed in other sections or not.

- B. Each copy of each submittal shall have the following information on the cover, on the first page of the submittal, or on a permanent label attached to the submittal, as applicable:
 - 1. Project name.
 - 2. Submittal number correlated with previous submittals.
 - 3. Date of submittal.
 - 4. Name of the Contractor.
 - 5. Name and phone number of subcontractor, supplier, and installer.
 - 6. Name of manufacturer.
 - 7. Number and title of applicable specification section.
 - 8. Drawing number and detail references, when applicable.
 - 9. Other necessary identifying information, such as stating the different parts of the submittal (i.e., product data, samples, etc.) and how many of each item are provided.
- C. Contractor shall sign or initial each copy of each submittal to certify compliance with requirements of the contract documents or shall notify the Engineer, in writing at time of submittal, of all deviations from requirements of the contract documents.
- D. Address to Engineer. Copy and distribute as specified for each type of submittal (below).
- E. Submittals to receive Engineer's review should have blank space provided on cover, first page, or label for marking.
- F. Package submittals required for each particular specification section together. Incomplete submittals will generally be returned to the Contractor without review.
- G. Engineer to receive submittals no less than 15 working days in advance of required approval time to allow proper review by Engineer. Submittals requiring action in less than 15 working days are not timely submittals.
- H. Submittals will be accepted from the Contractor only. Submittals received from other entities will be returned without action.

1.3 FORMAT

- A. Unless otherwise specified or impractical, use paper no larger than 8 ½ by 11 inches, except drawings to be size required, but folded to 8 ½ by 11 inches where possible.

1.4 TIMING OF SUBMITTALS

- A. The Contractor's first payment request will not be processed prior to receipt of:
 - 1. Construction Progress Schedule.
 - 2. All other required submittals.
- B. Prepare and transmit each submittal requiring approval sufficiently in advance of scheduled performance of the work to which it relates to allow for adequate review and processing time, including time for resubmittal if necessary.
- C. Prepare and transmit each informational submittal prior to start of the work involved, unless the submittal is of a type which cannot be prepared until after completion of work. Submit promptly.
- D. If processing time for a particular submittal will be critical to progress of the work, so advise the Engineer on the submittal.
- E. The Engineer will notify the Contractor when a submittal is being delayed for review.
- F. No extension of time will be authorized because of the Contractor's failure to transmit submittals sufficiently in advance of the work.

1.5 COORDINATION

- A. Coordinate preparation and processing of submittals with performance of the work. Coordinate each separate submittal with other submittals and related activities that require sequential performance.
- B. Coordinate submittal of different units of interrelated work so that no submittal will be delayed by the Engineer's need to review a related submittal. The Engineer reserves the right to withhold action on any such submittal until the related submittals are received.

1.6 REVIEW AND RETURN OF SUBMITTALS

- A. Engineer will review and may mark with appropriate action as follows:
 - 1. No Exception Taken: Work covered by the submittal may proceed provided it complies with requirements of the contract documents. "No exception taken" shall also mean "subject to plans and specifications, dimensions and quantities not guaranteed."
 - 2. Note Marking, Confirm: Work covered by the submittal may proceed provided it complies both with notations and corrections on the submittal and with the requirements of the contract documents.
 - 3. Not Accepted, Resubmit: Do not proceed with work covered by the submittal. Revise the submittal or prepare a new submittal in accordance with notations made. Resubmit the submittal without delay.
- B. Submittals will be returned to the Contractor by the most economical mode.
- C. Contractor shall perform re-submittals in the same manner as original submittals. Indicate all changes other than those requested by the Engineer.

1.7 SUBMITTAL OF ITEMS FOR SUBSTITUTION

- A. Submittals for alternate materials or substitutions shall contain sufficient information to prove that the alternate materials are in fact equivalent to the materials identified by the Contract Documents. The Contractor shall retain the burden of proving that alternate materials, methods, products, and systems are in fact equivalent to those specified with regard to the salient characteristics.

1.8 REQUIREMENT FOR ENGINEER'S APPROVAL

- A. The Contractor shall obtain the Engineer's written approval for all materials installed on this project. Such approval may take the form of a notation such as: "no exceptions taken" or "approved". The Contractor shall immediately remove all unapproved materials from the project site, and shall make submittals to the Engineer for the replacement materials to be installed, and shall install only

materials which have been approved by the Engineer, and no additional compensation will be allowed therefore.

1.9 MEASUREMENT AND PAYMENT FOR SUBMITTALS

- A. The Contractor shall be compensated for work performed on this project based on the units of work identified on the Bid Form. All submittals required to complete the project and not specifically identified in a Bid Form item shall be deemed incidental to the item(s) of work on the Bid Form and no separate compensation shall be made.

PART 2 - PRODUCTS (not used)

PART 3 - EXECUTION

3.1 MATERIAL AND PRODUCT DATA

- A. General:
 - 1. Purpose of these submittals is to establish the materials, products, and methods to be used in the work.
 - 2. Submit to the Engineer shop drawings and samples.
- B. Format:
 - 1. Provide with "cover sheet" information per Part 1.2 B.
 - 2. Bind to allow removal or insertion of pages. Provide suitable protective cover.
 - 3. Present items in order they occur in specification sections.
- C. Required Information:
 - 1. Contractor's statement of approval and identification of any deviations from contract documents. Place on face or "cover sheet" of submittals.
 - 2. Description of materials, products, systems, and methods required for all Technical Specifications sections. Provide sufficient technical information to establish conformance with specification via:

- a. Manufacturer's literature or other necessary descriptive materials, including application data, installation instructions, technical performance data, certified test data, and all other information which the manufacturer has available for technical review purposes.
 - b. Contractor's letter that minor, miscellaneous items (nails, bolts, etc.) shall conform to specified standards.
3. Where possible, submittal should include rough-in and dimensional information to preclude need for further submittal per below.
 4. Indicate clearly for each item the need for selection by Engineer of color, style, mounting, etc. Selections will be returned with approval.
 5. Include recommendations for application and use.
 6. Show special coordination requirements for the product.

D. Distribution

1. Submit five (5) copies to Engineer for all architectural, structural, civil, mechanical, and electrical submittals.
2. Engineer will forward approved copy of submittal to Contractor.

3.2 SHOP DRAWINGS AND SAMPLES

A. General

1. Purpose of these submittals is to determine installation and assembly requirements for components of the work.
2. Submit with product data, samples, test data, and installation or application procedures and other submittals as delineated for each section of the specifications.
3. Show all conditions and connections to other work on shop drawings.
4. Submittals under this part are not intended to duplicate those specified under Part 3.01 above.

B. Format

1. Provide with "cover sheet" information per Part 1.2 B.
2. Submit one set of blueline or blackline prints of appropriate size or two 8 ½ by 11 inch or 11 by 17 inch copies,

whichever applies. Provide one additional copy of all civil, structural, mechanical, and electrical shop drawings.

3. Sample size (2 inches minimum) to be as necessary to display requested color, texture, pattern, or construction. Provide four samples total; one sample will be retained by the Engineer and one sample is to be kept at the jobsite at all times.

C. Required Information

1. Submittal information required per specification for subject work.
2. Samples to include accurate samples of all substrates and coverings, by same or other trades, as required to produce example of final result.

D. Distribution

1. Submit one copy to Engineer for each review.
2. For work concerning Engineer's consultant, submit all copies to Engineer for distribution.
3. Engineer will forward approved submittal to Contractor.
4. Engineer may return one copy of approved submittal requesting return of corrected copy. Contractor will return one corrected copy each directly to Engineer, Consultant, and Owner's representative.
5. Engineer will return all copies of disapproved submittals for resubmittal.

3.3 MISCELLANEOUS SUBMITTALS

A. Maintenance Instruction

1. Completely describe manufacturer's recommended maintenance methods, procedures, and materials.
2. Submit one copy to Owner in advance of Owner's use or maintenance of product or material to preclude incorrect action by Owner.

B. Materials for Maintenance

1. Provide quantities specified in the technical provisions.
2. Deliver to Owner as directed.

3. Colors, patterns, and textures shall match installed and shall be taken from same run of stock.

END OF SECTION

**SECTION 01745
WARRANTY PROCEDURES**

PART 1 - GENERAL

1.1 STANDARD SPECIFICATIONS

- A. All work under this section shall be governed by the General Requirements, the Special Provisions, and the Standard Specifications of the Contract, except as modified herein.
- B. All references in the Standard Specifications to measurement and payment shall be deleted from consideration and the terms agreed to in the Contract substituted therefore.

1.2 DESCRIPTION

- A. Requirements:
 - 1. Specific requirements for warranties for the work and products and installations that are specified to be warranted are included in the individual sections of the technical provisions.
- B. Definitions:
 - 1. "Guarantee" and "warranty" are used interchangeably and are understood to mean the same thing.
 - 2. "Standard product warranties" are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the Owner.
 - 3. "Special warranties" are written warranties required by or incorporated in the contract documents, either to extend time limits provided by standard warranties or to provide greater rights for the Owner.
- C. Types:

Categories of warranties required for work include:

1. Special product warranty issued by Contractor and, where required, countersigned by installer or other recognized entity involved in performance of the work.
2. Specified product warranty issued by a manufacturer or fabricator for compliance with requirements in contract documents.
3. Coincidental product warranty, available on a product incorporated into the work, by virtue of manufacturer's publication of warranty without regard for application requirements (nonspecified warranty).
4. Refer to sections of the technical provisions for requirements of specified warranties.

D. Disclaimers and Limitations:

1. Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the work that incorporates the products nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

1.3 SUBMITTALS

A. General:

1. Prepare per section 01300, Submittals, and as follows.
2. The Contractor's written warranty shall be submitted to the Engineer on the "Contractor's Warranty" form attached to this section or in a similar format.
3. For subcontractor warranties as specified, a warranty by each such subcontractor, countersigned by the General Contractor, shall be submitted to the Engineer on the "Subcontractor's Warranty" form attached to this section or in a similar format.

B. Format:

1. Bind each manual with hardboard covers, three-hole punched and secured with aluminum screw posts.
2. On cover, imprint title "Warranty Manual"; name of project, Owner, Engineer; and date of substantial completion.
3. On bound edge, imprint name of project and owner and date of substantial completion.

4. Pages to be neat, clean sheets, 8 ½ by 11 inch maximum size or accordion foldouts to same size.
5. Items to be identified with tabbed dividers showing name and number of appropriate specification sections.
6. Arrange dividers and items in order they occur in specifications.

C. Information Required:

1. Table of contents identifying separate warranties by specification section number and name.
2. Contractor's warranty of the work per contract documents.
3. Guarantees, warranties, certificates, and bonds for all portions of the work per specifications.

D. Distribution:

1. Submit one preliminary copy to the Engineer for approval.
2. Upon approval of preliminary copy, prepare and submit two final copies to Engineer (one for Engineer, and one for Owner).

1.4 WARRANTY OBLIGATIONS

- A. Restore or remove and replace warranted work to its originally specified condition at such time during warranty as it does not comply with or fulfill terms of warranty. Restore or remove and replace other work which has been damaged by failure of warranted work or which must be removed and replaced to gain access to warranted work.
- B. Except as otherwise indicated or required by governing regulations, warranties do not cover damage to building contents (other than work of contract) which results from failure of warranted work.
- C. Cost of restoration or removal and replacement is Contractor's obligation without regard to whether Owner has already benefited from use of failing work.

1.5 REINSTATEMENT OF WARRANTY

- A. Upon restoration or removal and replacement of warranted work which has failed, reinstate the warranty by issuing newly executed form, for at least the remaining period of time of the original warranty, but for not less than half of the original warranty period.

1.6 OWNER'S RECOURSE

- A. Warranties and warranty periods do not diminish implied warranties and do not deprive Owner of actions, rights, and remedies otherwise available for Contractor's failure to fulfill requirements of the contract documents. Owner reserves right to reject coincidental product warranties considered to be conflicting with or detracting from requirements of the contract documents.

1.7 MEASUREMENT AND PAYMENT FOR WARRANTY PROCEDURES

- A. The Contractor shall be compensated for work performed on this project based on the units of work identified in the proposal. All warranty procedures required to complete the project and not specifically identified in a proposal item shall be deemed incidental to the Contract and no additional payments will be allowed therefore.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

**SECTION 02221
TRENCHING, BACKFILLING, AND COMPACTION FOR UTILITIES**

PART 1 - GENERAL

1.1 CONTRACT CONDITIONS

- A. Work of this Section is bound by the General Requirements, Special Provisions, and Standard Specifications of the Contract, except as modified herein.

1.2 QUALITY ASSURANCE

- A. All work under this Section shall be governed by the *Standard Specifications for Road, Bridge and Municipal Construction*, by the Washington State Department of Transportation (WSDOT) dated 2015, herein referred to as the Standard Specifications, except as modified by these Contract Documents. The Contractor shall comply with all requirements of the Thurston County Road Standards.

1.3 REFERENCE BENCH MARKS, MONUMENTS & PROPERTY CORNERS

- A. Maintain bench marks, monuments, property corners, and all other reference points. If they are to be disturbed or destroyed, bench marks, monuments and property corners shall be replaced by a registered Land Surveyor, in accordance with WAC 332-120, at the Contractor's sole expense.

1.4 WATER AVAILABILITY

- A. The Owner will provide construction water at no cost to the Contractor. The Contractor shall not waste construction water provided by the Owner. Construction water will be made available only from the fire hydrant selected by the Owner for such purpose.

1.5 ARCHAEOLOGICAL AND HISTORICAL OBJECTS

- A. In accordance with Section 1-07.16(4) of the Standard Specifications, archaeological or historical objects if encountered shall not be further disturbed. The contractor shall immediately notify the Engineer of any such finds and shall continue work in other areas of the project.

1.6 GEOTECHNICAL CONDITIONS

- A. The Contractor shall assume that a portion of the native soils will not provide sufficient stability to stand up in vertical trench walls, and that a portion of native soils may include boulders which will slow down the Contractor's progress.

1.7 UNIT PRICES BASIS OF PAYMENT/INCIDENTAL WORK

- A. The Contractor shall be compensated for work performed on this project based on the units of work identified on the Bid Form. All work required to complete the project and not specifically identified by a Bid Form item shall be deemed incidental to the items of work on the Bid Form and no separate compensation shall be made.
- B. All references in the Standard Specifications to measurement and payment shall be deleted from consideration; and the terms agreed to in the Contract substituted therefore.
- C. CLEARING AND GRUBBING
 - 1. Basis of Measurement: per lump sum.
 - 2. Basis of Payment: Includes all labor, equipment, tools, materials, fuel, and supervision required to complete Clearing and Grubbing as specified herein.
- D. TRENCHING, BACKFILLING, AND COMPACTION FOR WATERMAINS, PROPANE, AND ELECTRICAL LINES
 - 1. Basis of Measurement: Incidental to the other various items of work on the Bid Form.
 - 2. Basis of Payment: Includes all labor, equipment, tools, materials, fuel, and supervision required to complete trenching, backfilling, and compaction as specified herein.
- E. UTILITY COORDINATION
 - 1. Basis of Measurement: per lump sum.
 - 2. Basis of Payment: Includes all labor, equipment, materials, and supervision required to coordinate with utility companies as required herein.
- F. FACILITY INVESTIGATION / POTHOLING
 - 1. Basis of Measurement: per each pothole excavated.

2. Basis of Payment: Includes all labor, equipment, tools, materials, fuel, and supervision required to expose existing utilities at all locations directed by the Engineer.

G. TRENCH EXCAVATION SAFETY SYSTEMS

1. Basis of Measurement: per lump sum
2. Basis of Payment: Includes all labor, equipment, tools, materials, fuel, and supervision required to provide adequate safety systems for the trench excavation that meet the requirements of the Washington Industrial Safety and Health Act.

H. BEDDING MATERIAL

1. Basis of Measurement: Incidental to the other various items of work on the Bid Form.
2. Basis of Payment: Includes all labor, equipment, tools, materials, fuel, and supervision required to provide imported bedding material, and dispose of soils thereby displaced.

PART 2 - PRODUCTS

2.1. BEDDING MATERIAL FOR WATER PIPING

- A. Imported Bedding Material shall be Backfill for Sand Drains in conformance with Section 9-03.13 of the Standard Specifications.

2.2. MATERIAL FOR TRENCH BACKFILL

- A. General Backfill Material – Select Native Material:

1. Shall be unclassified native material obtained from excavation onsite.
2. The material shall be substantially free from peat, wood, roots, bark or other extraneous material.
3. Implement all required methods to adjust the moisture content of native soils if required to obtain the required level of compaction.

- B. Bank Run Gravel for Trench Backfill:

1. Bank Run Gravel for Trench Backfill shall meet the requirements of Section 9-03.19 of the Standard Specifications.

2. Bank run Gravel shall only be installed where directed by the Engineer in writing, and in the amount specified in writing.

2.3 MISCELLANEOUS MATERIALS

- A. Provide all other materials as indicated on the Plans.

PART 3 - EXECUTION

3.1 TRENCHING, BACKFILLING & COMPACTION FOR WATERMAINS AND ELECTRICAL LINES

A. STOCKPILING & DISPOSAL

1. All excavated material shall be piled beside the trench as it is removed, unless otherwise directed, and shall be backfilled from that position. The material shall be piled and maintained so that the toe of the slope of the material is at least 2 feet from the edge of the trench. It shall be piled in such a manner to prevent surface water from flowing into the excavation and in a manner that will cause a minimum of inconvenience to travel. Free access shall be provided to all fire hydrants, water valves and meters; and clearance shall be left to enable the free flow of stormwater in all gutters, conduits, and natural watercourses.
2. The haul and disposal of excess material at a Contractor-provided waste site shall be considered as incidental to the various bid items which require such disposal.

B. EXCAVATION

1. Existing Utilities
Existing utilities of record are shown on the Contract Drawings. These are shown for convenience only, and the Engineer assumes no responsibility for improper locations or failure to show utility locations on the Plans. The Contractor shall be responsible for protecting all existing public and private utilities including but not limited to telephone, power, gas, sewer, and water lines. Call 1-800-424-5555 for utility location. Any utility owner may enter the job site to repair, rearrange, alter or connect their equipment. The Contractor shall cooperate with such efforts and shall avoid creating delays or hindrances to those doing the work. As needed, the Contractor shall arrange to coordinate work schedules. To ease or streamline the work, the Contractor may ask utility owners to move,

remove, or alter their equipment in ways other than those listed in the Plans. The Contractor shall make the arrangements and pay all costs that arise from the temporary and permanent relocation of existing utilities where such utilities are shown on the Contract Drawings. All costs that this section makes the Contractor's obligation shall be incidental to the Contract Bid Items and no separate compensation will be allowed.

2. Trench Excavation

Trench excavation shall be provided in accordance with Sections 7-08.3(1)A, 7-08.3(1)B, and Section 7-09.3(7) of the Standard Specifications, except as modified herein, and as directed by the Engineer. The length of trench excavated in advance of pipe laying shall at all times be maintained between thirty (30) feet and fifty (50) feet unless specifically authorized by the Engineer. All trenches shall be closed up at the end of the day or covered by steel plating. The maximum permissible trench width to 1 foot above the top of the pipe shall not exceed 30 inches or 1-1/2 times the outside diameter of the pipe plus 18 inches whichever is greater. In all cases, the trench must be of sufficient width to permit proper jointing of the pipe and backfilling of material along the sides of the pipe. Trench width at the surface of the ground shall be kept to the minimum necessary to safely install the pipe.

3. Shoring

Shoring of trenches shall comply with Section 7-08.3(1)B of the Standard Specifications.

C. BEDDING & BACKFILLING

1. Pipe shall be bedded in conformance with Section 7-08.3(1)C and Section 7-09.3(9) of the Standard Specifications, except as modified herein.

Bedding material shall be placed in more than one lift. The first lift is to provide at least six (6) inches of bedding material under the pipe except where otherwise shown on the Contract Drawings, and shall be placed before the pipe is installed, and shall be spread smoothly so that the pipe is uniformly supported along the barrel. Subsequent lifts of not more than six (6) inches thickness shall be installed to a depth of six (6) inches over the crown of the pipe, except where otherwise shown on the Contract Drawings. Each lift of pipe bedding material shall be compacted to 90 percent of the maximum density as determined by methods outlined in Section 2-03.3(14)D of the Standard Specifications.

2. Trenches shall be backfilled in conformance with Section 7-08.3(3) and Section 7-09.3(10) of the Standard Specifications using General Backfill Material specified above, except at locations where the Engineer or

Contract Drawings require trenches to be backfilled using a different backfill material.

3. Prior to backfilling, all debris shall be removed from the trench. Sheet piling used by the Contractor shall be removed just ahead of backfilling. Backfill up to 12 inches over the top of the pipe shall be evenly and carefully placed. Materials capable of damaging the pipe or its coating shall be removed from the backfill material. The remainder of the material shall be placed by dumping into the trench by any method at the option of the contractor and shall be compacted as specified herein after. A minimum 3 inch sand cushion shall be placed between the water main and existing pipelines or other conduits when encountered during construction, unless shown otherwise on the Contract Drawings, and as directed by the Engineer.

D. COMPACTION

1. Backfill shall be compacted in accordance with Section 7-09.3(11) of the Standard Specifications, except where shown otherwise on the contract drawings.

E. THURSTON COUNTY ROAD STANDARDS

The Contractor shall comply with all requirements of Chapter 6 of the Thurston County Road Standards.

F. PROTECT TREES

It is the Contractor's responsibility to ensure that all existing on-site trees are not damaged during construction. In the event that the Contractor encounters a tree root greater than three (3) inch caliper, the Contractor shall hand excavate around the root system and hand tamp trench backfill material in such a way as to protect the tree's root system and structural integrity.

3.2 TRAFFIC CONTROL AND PUBLIC SAFETY

- A. Maintain appropriate barricades and signing to protect public safety.

3.3 CLEARING AND GRUBBING

- A. The Contractor shall complete Clearing and Grubbing in conformance with Section 2-01 of the Standard Specifications in those areas where new materials are to be placed, except as modified herein, or as directed by the Engineer.

- B. Clearing shall include removing and disposing of unwanted natural and unnatural materials from the surface which conflict with the proposed improvements. The Contractor shall complete the clearing work required to complete the specified construction, regardless of whether or not such Clearing is specifically identified by the Contract Documents.
- C. Grubbing shall also include removing and disposing of unwanted natural and unnatural materials from underground, which conflict with the proposed improvements, except for public utilities. Wherever the term "Clearing" is used in the Contract Documents, it shall also be interpreted to include Grubbing as required to complete the specified construction.
- D. The disposal of unusable materials resulting from Clearing and Grubbing shall be the Contractor's responsibility. Burning of refuse is prohibited. The Owner has not provided a waste disposal site.
- E. Existing landscaping to remain shall be protected from damage. Vegetation which will require restoration after construction shall be carefully removed from the ground and handled carefully to avoid distress to the roots. The Contractor shall take all necessary steps to preserve such vegetation, including wrapping the root balls in burlap, and keeping the roots wet while the roots are exposed above ground.

3.4 TRENCHING, BACKFILLING, AND COMPACTION FOR PSE Electrical Service

- A. Provide trenching, backfilling and compaction for PSE trench in accordance with PSE requirements. Contractor shall coordinate with Puget Sound Energy.

3.5 UTILITY COORDINATION

- A. The Contractor shall perform coordination with the owners of gas, telephone, water, power, and cable TV utilities as required to protect all utilities and to provide temporary support for all utilities in the vicinity of proposed watermain trenches during construction.
- B. The Contractor shall Contact the owners of all adjacent utilities prior to, and during construction and shall determine a plan for maintaining continuous service for all utilities, and shall implement the plan as required to maintain uninterrupted service at all times during the Contract, and no additional payment will be allowed therefore.
- C. Where the Contract Drawings show the support of utility poles, the Contractor shall coordinate with the utility owner for the temporary support of poles in accordance with utility company requirements. The cost of such coordination

and the cost to support poles shall be included in the bid and no additional compensation will be allowed therefore.

- D. A portion of the watermains are to be constructed under parallel communication lines, such as telephone lines. The Contractor shall carefully excavate communication lines by hand and shall support communication lines off to the side of the trench during watermain construction, and shall re-bury communication lines at their original location during backfilling operations, and no additional compensation will be allowed therefore.

END OF SECTION

**SECTION 02508
EROSION CONTROL AND SURFACE RESTORATION**

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. Work of this Section is bound by the General Requirements, Special Provisions, and Standard Specifications of the Contract, except as modified herein.
- B. Work under this Section includes all labor, supervision, equipment, tools, fuel, materials, services and incidentals necessary for the following:
 - 1. Furnish and install erosion and sedimentation control as required by Tanglewilde Park and Recreation Center.
 - 2. Provide protection for all items identified by the word "protect" on the Contract Drawings.
 - 3. If items identified by the word "protect" on the Contract Drawings are damaged by construction operations, then the Contractor shall furnish and install new materials to complete repairs of damaged items, and no additional payment will be allowed therefore.
 - 4. Conform to Tanglewilde Park and Recreation Center requirements for surface restoration for all work within the park site.
 - 5. Restore original ground contours after all improvements are constructed and restore topsoil.
 - 6. Seeding and fertilizing.
 - 7. Restore existing fences, shrubs and plantings, lawns, and all other improvements encountered during construction.
 - 8. All other surface restoration as specified herein.

1.02 FIELD APPROVAL OF WORK

- A. All construction shall be field approved by the Engineer, Jerome W. Morrisette & Associates Inc., P.S., except those items inspected by the Tanglewilde Park and Recreation Center.

1.03 SUBMITTALS

- A. Make required submittals for all materials to be installed.

1.04 QUALITY ASSURANCE

- A. Install all materials in accordance with the manufacturer's written installation instructions. The manufacturer's written recommendations shall become mandatory requirements under this Contract.

1.05 MEASUREMENT AND BASIS OF PAYMENT

- A. The Contractor shall be compensated for work performed on this project based on the units of work identified on the Bid Form. All work required to complete the project and not specifically identified by a Bid Form item shall be deemed incidental to the item(s) of work on the Bid Form and no separate compensation shall be made.
- B. All references in the Standard Specifications to measurement and payment are deleted from consideration, and the terms agreed to in the Contract are substituted therefore.

C. EROSION CONTROL

- 1. Basis of Measurement: per lump sum.
- 2. Basis of Payment: Includes all labor, equipment, tools, materials, fuel, and supervision required to install erosion and sedimentation control where shown on the plans, as required by the Tanglewilde Park and Recreation Center or as directed by the Owner's Representative in the field at the time of construction.

D. SURFACE RESTORATION

- 1. Basis of Measurement: per lump sum.
- 2. Includes all labor, equipment, tools, materials, fuel, and supervision required to complete the surface restoration as specified herein.

E. TRIMMING AND CLEANUP

- 1. Basis of Measurement: per lump sum.
- 2. Includes all labor, equipment, tools, materials, fuel, and supervision required to complete the Trimming and Cleanup specified herein.

F. LANDSCAPING AT PROPANE TANKS

1. Basis of Measurement: per lump sum.
2. Includes all labor, equipment, tools, materials, fuel, and supervision required to complete Landscaping at Propane Tanks as specified herein.

PART 2 - PRODUCTS

2.01 SEED

- A. Hydroseed; seed mix shall match the existing grass.

2.02 TOPSOIL

- A. Topsoil Type A shall be soils imported from outside the project limits and shall meet the requirements of ASTM D5268. The Owner will not provide a source for Topsoil Type A.

2.03 LANDSCAPE BOULDERS

- A. Landscape boulders shall be Kennedy Creek Quarry 1 ton (min.) Landscape Boulders or approved equal.

2.04 MISCELLANEOUS MATERIALS

- A. Provide all other materials as indicated on the Contract Drawings or in the Specifications.

PART 3 - EXECUTION

3.01 INSPECTION OF PRIOR WORK

- A. Prior to all work in this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point this installation may properly commence. In the event of discrepancy, immediately notify the Engineer. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

3.02 EROSION CONTROL

- A. The Contractor shall install Erosion and Sedimentation Control in accordance with all requirements of the Tanglewilde Park and Recreation Center.

3.03 SURFACE RESTORATION

- A. The Contractor shall furnish and install any and all materials required to return all disturbed areas outside of existing pavement to a condition which is equal to or better than their pre-construction appearance and function, in accordance with these specifications, and as directed by the Engineer.
- B. The Contractor shall also provide final grading as required to smooth out rough areas and return disturbed areas outside of existing pavement to the lines and grades which existed in the pre-construction condition, except where the Contract Documents specifically show revised lines and grades.
- C. In cases where these Contract Documents show or otherwise require restoration to a condition which is better than the pre-construction condition, the Contractor shall install new materials to result in a better condition, and no additional payment will be allowed therefore.
- D. In areas where an existing shrub needs to be removed for construction, carefully dig up existing shrub, wrap root ball and keep moist, carefully replant and fertilize existing shrub after water line and meter installation. If replanted shrub dies or significantly deteriorates within two (2) months from the date of the Notice of Substantial Completion for the project, Contractor shall replace existing shrub in kind, and no additional payment will be allowed therefore.
- E. In areas where existing lawn needs to be removed for construction, restore areas to match existing condition prior to construction, or better, and no additional payment will be allowed therefore.
- F. The required materials for surface restoration shall be new materials and shall include, but will not be limited to the various surface materials such as rock, concrete, vegetative, and miscellaneous materials as required to restore the subject areas, regardless of whether such materials are shown on the Contract Drawings or not.

- G. The required new vegetative materials will include, but will not be limited to: any and all types of vegetation and components of vegetative materials, whether living or not, such as trees, shrubs, bushes, flowers, seeding, fertilizing, and plant establishment period, all as required to replace existing materials which have been damaged by construction activities regardless of whether such materials are shown on the Contract Drawings.
- H. The required new miscellaneous materials will include, but will not be limited to: decorative timber materials, timber wheel stops, decorative bark, topsoil, private light posts, mow strips, bender board, plastic sheeting, mail boxes, trellises, as required to replace the existing materials which have been damaged by construction activities regardless of whether such materials are shown on the Contract Drawings.
- K. Surface Restoration shall include all areas disturbed by construction.
- L. Surface Restoration includes the requirement to install 4 inches of topsoil at all locations disturbed by construction activities, including the trenches for Puget Sound Energy.
- M. The Contractor shall guarantee all existing vegetative materials disturbed by the Contractor for a period of two (2) months from the date of the Notice of Substantial Completion for the project, hereby called the Existing Vegetation Guarantee Period. These requirements are in addition to other guarantees, warranties, and maintenance periods contained in these Contract Documents. The guarantee shall insure that all living plants which are disturbed by construction activities will retain their original levels of health and appearance during the Existing Vegetation Guarantee Period. Exceptions will be made only for "annuals" which may not survive the establishment period. The Contractor shall provide thorough weekly watering during the Existing Vegetation Guarantee Period as required to insure the original levels of health and appearance.
- N. Surface Restoration includes the requirement to Hydroseed all locations disturbed by construction activities except where otherwise specified.
- O. This project will not attain Substantial Completion until all Surface Restoration has been completed in accordance with the Contract Documents.

3.04 HYDROSEEDING

- A. Wherever the hydroseeding operation results in bare areas due to the failure of the seed to germinate, lack of adequate watering, or other reasons, the Contractor shall re-hydroseed and water such areas until an acceptable ground cover is established, and no additional compensation will be allowed therefore.

3.06 TRIMMING AND CLEANUP

- A. Dispose of all excess materials at the waste site provided by Contractor, as directed by the Engineer, trim all affected areas of the site to produce smooth, uniform surfaces.

3.07 LANDSCAPING AT PROPANE TANKS.

- A. Furnish and place compact ASTM C-33 sand, compact select native backfill, and top soil to produce smooth even finish grades as shown on the plans and details, furnish and place landscape boulders, drain rock, landscape cloth, and bender board as shown on the plans and detail. Shield Landscape boulders, drainrock, and propane tank risers from hydro-seed and remove shielding after placing hydroseed.

END OF SECTION

**SECTION 02600
WATER SYSTEM IMPROVEMENTS**

PART 1 - GENERAL

1.01 STANDARD SPECIFICATIONS

- A. All work under this section shall be governed by the referenced sections of the 2015 Standard Specifications for Road Bridge, and Municipal Construction, by the Washington State Department of Transportation hereafter referred to as The Standard Specifications, except as herein modified.
- B. All references in the Standard Specifications to measurement and payment shall be deleted from consideration and the terms agreed to in the Contract substituted therefore.

1.02 WORK INCLUDED

- A. Contractor's scope of work under this Section includes but is not limited to all labor, materials, supervision, equipment, tools, fuel, services, and incidentals necessary for the following:
 - 1. Provide watermain construction consisting of trenching, pipe laying, backfilling, compacting, flushing, disinfecting, bacteria testing, and pressure testing, for all watermains, and all other items of work required for completed and fully functional water system improvements. Furnish and install and remove all temporary piping, valves, flanges, taps, and any other fittings required to complete the required testing and disinfection.
 - 2. Furnish and install pipe bedding material, ductile iron pipe watermain, gaskets, flanges, flange bolts, pipe marking tape, ductile iron fittings, restrained flange adapters, thrust blocks, mechanical joint restraints, mechanical seals, sample taps, double strap service saddles, gate valves, ball valves, check valves, pressure gauges, pressure relief valves, air-release valves, water meters, pipe support, blowoff system, other appurtenances as shown on the Contract Drawings, and all other materials required for completed and fully functional water system improvements. Note that the piping drawings do not show all required electrical components but that such components shall be furnished and installed in accordance with all applicable industry standards and codes.

- B. For Submersible Vertical Turbine requirements, refer to Specifications Section 11215.

1.03 PERMITS AND REGULATORY REQUIREMENTS

- A. Obtain permits and inspections required by State and local authorities. During progress, the work will be observed by the Engineer or authorized representative and by State and local inspectors and the Contractor shall furnish their certificates to the Owner. Notify the Engineer in writing when certificates have been delivered. The cost of obtaining the permits shall be included in the bid items and no separate compensation shall be allowed.
- B. All modifications to existing wells shall be performed in strict accordance with WAC 173-160 and WAC 246-290 by a Water Well Contractor licensed in accordance with WAC 173-162-010 and 18.104 RCW.
- C. All surfaces of all equipment, materials, and structures which are in contact with potable water shall be NSF 61 approved for contact with potable water.

1.04 FIELD APPROVAL OF WORK

- A. All construction shall be field-approved by the Engineer.

1.05 REFERENCE BENCH MARKS, MONUMENTS & PROPERTY CORNERS

- A. Maintain bench marks, monuments, property corners, and all other reference points. If disturbed or destroyed, bench marks, monuments and property corners shall be replaced by a registered Land Surveyor, in accordance with WAC 332-120, at the Contractor's sole expense.

1.06 GUARANTEES AND WARRANTIES

- A. The Contractor shall guarantee all equipment in accordance with the Conditions of the Contract. In addition to the general guarantee requirements, equipment guarantee shall cover:
 - 1. Faulty or inadequate equipment design.
 - 2. Improper assembly or erection.
 - 3. Defective workmanship or materials.
 - 4. Leakage, breakage or other failure.

- B. For equipment bearing a manufacturer's warranty in excess of one (1) year, furnish a copy of the warranty to Engineer with Owner named as beneficiary. The period of all guarantees shall be initiated from the date of the Owner's written acceptance of the work.

1.07 SUBMITTALS

- A. These submittal requirements shall be in addition to the requirements of other sections.
- B. Shop drawings: Shop drawings shall be submitted to the Engineer in complete sets indexed by Specification paragraph and drawing number describing the various equipment items or systems. Unless otherwise specified or directed, submit shop drawings for all mechanical equipment and all piping connections specified herein. Additional shop drawing submittals will be required in cases where the Contract allows for construction using more than one configuration. Where the installation is adjacent to existing equipment or structures, shop drawings shall show the dimensions of the existing items and proposed clearance based on the Contractor's field measurements.
- C. Manufacturer's certified reports: When requested by the Engineer, each equipment manufacturer, or the Authorized Manufacturer's Representative, shall submit a written report with respect to the manufacturer's equipment certifying that:
 - 1. The equipment has been properly installed and lubricated under the supervision of the authorized representative.
 - 2. The equipment is in accurate alignment.
 - 3. The authorized representative was present when the equipment was placed in operation.
 - 4. The Authorized Representative has checked, inspected and adjusted the equipment as necessary.
 - 5. The equipment is free from any undue stress imposed by connecting piping or anchor bolts.
 - 6. The equipment has been satisfactorily operated under full load conditions.
 - 7. The Authorized Representative has inspected the equipment during operational demonstrations and system validation tests to the extent specified.
 - 8. The equipment is fully covered under the terms of the guarantee.
- D. Submittals for operational demonstration and system validation tests:

1. Operation demonstration: When the Contractor's application for a progress payment equals or exceeds 75% of the contract value for the first time, submit a detailed and comprehensive procedure plan for performance of each operation demonstration required. Identical equipment items may be covered under one plan. Include an estimated date and duration for each procedure and personnel required.
2. System Validation tests: When the Contractor's application for a progress payment equals or exceeds 75% of the contract value for the first time, submit a detailed and comprehensive procedure plan for performance of each separate validation test and for each validation test that covers two or more systems. Each procedure plan shall describe and itemize the involved system, including associated electrical equipment and instrumentation and control systems, and shall include evidence of an organized step-by-step procedure properly coordinating the efforts of various trades and manufacturers' representatives involved and of the operation of the facilities. Procedures shall include an estimated duration and date for each procedure and personnel required.
3. Procedure plan information; In addition to the information specified above, each procedure plan shall include the following information as applicable:
 - a. Description of temporary procedure facilities, including drawings and sketches as required to fully illustrate the facilities.
 - b. List of test materials and the estimated quantities.
 - c. List of instruments, measuring and recording devices and other test equipment, whether a part of the plant or furnished separately for temporary use.
 - d. Names of supervising and inspecting manufacturers.
 - e. Complete listing of all functional parameters to be observed and recorded.
 - f. Recording intervals.
4. Records materials; Submit samples of the forms, charts, and other materials to be used in recording demonstration and validation test results.
5. Results: Within 10 days after completion of each procedure plan submit 3 copies of all recordings and results of all operational demonstrations and system validation tests.

1.08 JOB CONDITIONS

- A. Drawings are diagrammatic only, and show the intended arrangement of principle apparatus, piping, and appurtenances. Conform to drawings as closely as possible and exercise care to

secure approved headroom and space conditions, neat arrangement of piping, valves, and like items, and to overcome physical interferences. Verify dimensions and conditions at the place of installation, and install materials and equipment in the available spaces. Submit written details and reasons for proposed deviations from drawings and specifications, and do not deviate therefrom unless authorized by field order or change order. If approved changes require alteration of structures or related work, make such alterations as approved in advance by the Engineer at no additional cost to the Owner.

1.09 MEASUREMENT FOR PAYMENT AND UNIT PRICE BASIS OF PAYMENT

- A. The Contractor shall be compensated for work performed on this project based on the units of work identified in the Proposal. All work required to complete the project and not specifically identified in a Proposal item, shall be deemed incidental to the items of work in the Proposal and no additional compensation shall be allowed.
- B. All references in the Standard Specifications to Measurement and Payment shall be deleted from consideration; and terms agreed to in the Contract substituted therefore
- C. Gaudio Well Water Line Improvements
 - 1. Basis of measurement: per Lump SUM.
 - 2. Basis of Payment: Includes furnishing and installing waterlines, valves, fittings, adapters, connection to existing waterline, testing , disinfecting and flushing, trenching, pipe bedding, backfilling, and compaction all other items required for complete and functional Gaudio Well Water Line Improvements both underground and in interior spaces. Where the Contract Drawings show restrained joints, the cost of such joint restraints shall be included in the Lump Sum bid item.

PART 2 - PRODUCTS

2.01 PIPE BEDDING MATERIAL FOR WATERMAINS

- A. See Section 02221.

2.02 TRENCH BACKFILL MATERIAL FOR WATERMAINS

A. General Backfill Material

1. Shall be unclassified native material obtained from excavation.
2. The material shall be substantially free from peat, wood, roots, bark or other extraneous material.
3. The material size of stones within this material shall not exceed 4 inches in the largest dimension or as approved by the Engineer.

2.03 PIPE & FITTINGS

A. ABOVE GROUND WATERMAIN PIPE

1. All watermain pipe shall be ductile iron pipe except where specifically identified otherwise. Ductile iron pipe shall be class 50 ductile iron, except flanged, threaded or grooved pipe shall be class 53 ductile iron, conforming to the requirements of Sections 9-30.1 and 9-30.1(1) of the Standard Specifications. Steel pipe 3 inch diameter and smaller shall be hot-dip galvanized inside and outside and meet the requirements of ASTM A53. 2. All ductile iron watermain pipe shall utilize flanged and bolted joints except as otherwise noted.
3. Ductile iron pipe fittings shall conform to the requirements of Sections 9-30.2 and 9-30.2(1) of the Standard Specifications. Fittings for steel pipe 3 inch diameter and smaller shall be malleable iron threaded type with a pressure rating of 150 psi.. Dimensions shall meet the requirements of ASNI B16.3 Threading shall meet the requirements of ASNI B2.1. Material shall meet the requirement of ASTM A47M, Grade 32510. Fitting shall be banded and hot-dip galvanized inside and out.

B. UNDERGROUND WATERMAIN PIPE

1. All watermain pipe shall be ductile iron pipe except where specifically identified otherwise. Ductile iron pipe shall be class 50 ductile iron, except flanged, threaded or grooved pipe shall be class 53 ductile iron, conforming to the requirements of Sections 9-30.1 and 9-30.1(1) of the Standard Specifications.
2. Non-restrained joints shall be rubber gasket, push on type, or mechanical type meeting the requirements of AWWA C111.

3. Restraint of ductile iron pipe, fittings, and valves shall be accomplished by the use of either a bolted or bolt-less system. Any device utilizing round point set screws shall not be permitted.
4. Ductile iron pipe fittings shall conform to the requirements of Sections 9-30.2 and 9-30.2(1) of the Standard Specifications.
5. All buried ductile iron pipe shall be encased in 8-mil polyethylene sheeting in accordance with AWWA C105.

C. DUCTILE IRON SPOOL

1. Where shown on the plans and details vertical or horizontal underground ductile iron spools shall be Class 50 ductile iron. Where flanged spools are shown spools shall be Class 53 ductile iron. Ductile iron spools shall be up to 8 feet long with no joints.

2.05 COUPLINGS

- A. Couplings shall be Romac Style 501 Long Barrel Couplings, or equal. Furnish with the longest barrel available from the manufacturer for the specific intended application. Furnish with the transition gaskets recommended by the manufacturer's written application guidelines for the specification application encountered.

2.06 MECHANICAL JOINT RESTRAINT

- A. EBAA Iron Series 1100 for ductile iron pipe or approved equal.

2.07 WATERMAIN JOINT RESTRAINT

- A. Watermain joint restraint shall be EBAA Iron Series 1700 for ductile iron pipe or approved equal.

2.08 THRUST BLOCKS

- A. Cast-in-place concrete thrust blocks shall be provided where shown on the Contract Drawings. Thrust blocks shall be constructed using 3000 PSI concrete and shall contain the minimum volume of concrete shown on the Contract Drawings.

2.10 SAMPLE TAPS

- A. Sample Tap shall be 1/2 -inch MIP x plain snout, chromed brass, USA Bluebook ME45327 or approved equal.

2.13 GATE VALVES

- A. All 4-inch through 12-inch gate valves shall be resilient wedge gate valves of the non-rising stem (NRS) type, rated for 250 PSI working pressure, opening counterclockwise, and equipped with O-ring stuffing box, in accordance with AWWA C509. All valves shall be equipped with a 2-inch square operating nut or hand wheel as noted. All ferrous parts shall be ductile iron. The wedge shall be ductile iron encapsulated with nitrile rubber. Valves shall be NSF standard 61 certified. All internal and external surfaces of the valve body and bonnet shall have a fusion-bonded epoxy coating complying with ANSI/AWWA C550. Valves shall be UL listed and FM approved. Valves shall be furnished with flanged ends suitable for a working pressure of 250 PSI or mechanical joint as noted. Valves shall be Mueller, M&H, Clow, or Waterous. Valves shall be equipped with a 10-inch diameter handwheel. For vertical pipe applications, handwheel shall be tack-welded onto the operating nut.
- B. All gate valves 3 inch diameter and smaller shall be no-lead bronze, threaded.

2.16 PRESSURE RELIEF VALVES

- A. Pressure relief valves shall be Kunkle Series 918 BDDDB17-JE0125 or approved equal, rated for liquid service with bronze body with resilient seats and bronze/brass trim.
- B. Pressure relief valves may be shown on the Contract Drawings using text only, or may be shown schematically only.

2.19 MARKER TAPE

- A. Marker tape for water line shall be Allen Systems Markline or approved equal, 2" wide, blue, continuously marked with "Caution Waterline Buried Below." Wherever water lines and electrical lines are buried in the same trench, furnish and install both tapes above their respective conduits.

2.20 TONING WIRE

- A. Toning wire shall be 14 gauge THWN, Blue.

PART 3 - EXECUTION

3.01 TRENCHING, BACKFILLING AND COMPACTION

A. Stockpiling and disposal

All excavated material shall be piled beside trench as it is removed, unless otherwise directed, and shall be backfilled from that position. The material shall be piled and maintained so that the toe of the slope of the material is at least 2 feet from the edge of the trench. It shall be piled in such a manner as to prevent surface water from flowing into the excavation and in such a manner that it will cause a minimum of inconvenience to travel. Free access shall be provided to all fire hydrants, water valves and meters; and clearance shall be left to enable the free flow of stormwater in all gutters, conduits, and natural watercourses.

B. Excavation

1. Clearing and grubbing

The area to be excavated shall be cleared and grubbed by the Contractor. This work shall consist of the removal and disposal of all logs, stumps, roots, brush and all other refuse within the area to be excavated. All such material shall be disposed of offsite at a Contractor provided waste site unless otherwise directed by the Engineer.

2. Trench excavation

Trench excavation shall be performed in accordance with section 7-09.3(7) of the Standard Specifications, except as modified herein. The length of the trench excavated in advance of pipe laying shall be kept to a minimum and in no instance shall it exceed three hundred (300) feet unless specifically authorized by the Engineer. All trenches shall be closed up at the end of each day. The maximum permissible trench width to 1 foot above the top of the pipe shall not exceed 30 inches or 1 ½ times the outside diameter of the pipe plus 18 inches whichever is greater. In all cases, the trench must be sufficient width to permit proper jointing of the pipe and backfilling of material along the sides of the pipe. Trench width at the surface of the ground shall be kept to the minimum necessary to safely install the pipe.

3. Shoring and cribbing

Shoring and cribbing shall comply with Section 7-08.3(1)B of the Standard Specifications.

3.02 BEDDING AND BACKFILLING

- A. Pipe shall be bedded in conformance with Section 7-09.3(9) of the Standard Specifications. Bedding shall be placed in more than one lift.

The first lift is to provide at least 4 inches of bedding under any portion of the pipe and shall be placed before the pipe is installed, and shall be spread smoothly so that the pipe is uniformly supported along the barrel. Subsequent lifts of not more than 6 inches thickness shall be installed to a depth of 6 inches over the crown of the pipe. Each lift shall be compacted to 95 percent of the maximum density as determined by methods outlined in Section 2-03.3(14)D of the Standard Specifications.

- B. Trenches shall be backfilled in conformance with section 7-09.3(10) of the Standard Specifications. Prior to backfilling, all debris shall be removed from the trench. Sheeting used by the Contractor shall be removed just ahead of backfilling. Backfill up to 12 inches over the top of the pipe shall be evenly and carefully placed. Materials capable of damaging the pipe or its coating shall be removed from the backfill material. The remainder of the material shall be placed by dumping into the trench by any method at the option of the Contractor and shall be compacted as specified herein after. A minimum 2 inch sand cushion shall be placed between the watermain and existing pipelines or other conduits when encountered during construction and as directed by the Engineer.

3.03 COMPACTION

- A. Backfill shall be compacted to at least 95% of the maximum density as determined by ASTM D-1557 except as noted. At locations where paved streets, roadway shoulders, driveways, or sidewalks will be constructed or reconstructed over the trench, the backfill shall be spread in layers and be compacted by mechanical tampers. In such cases, the backfill material shall be placed in successive layers not exceeding 6 inches in loose thickness, and each layer shall be compacted with mechanical tampers to the density specified herein. Mechanical tampers shall be of the impact type as approved by the Engineer.

3.04 PIPE INSTALLATION FOR WATER MAINS

- A. Pipe shall be installed in accordance with Section 7-09 of WSDOT Standard specifications. Minimum cover for waterlines shall be 36 inches measured from the top of the pipe to finished grade except as otherwise shown on the Contract Drawings or as required to maintain separation from existing utilities. The Contractor shall not operate existing water valves but shall coordinate with the Owner for the operation of such valves as specified elsewhere.

3.05 WATERMAIN AT FITTINGS WITH MECHANICAL JOINT RESTRAINT

- A. Furnish and install one full 20 ft joint of watermain at each side of all fittings with mechanical joint restraints or watermain with no joints if distance along the watermain is less than one full joint length to the next fitting with mechanical joint restraint joint or flanged joint. If the distance between fittings with mechanical joint restraints is greater than can be spanned with 1 full joint length furnish and install 2 joints of pipe with 1 watermain joint restraint along the run.

3.06 MARKER TAPE

- A. The Contractor shall furnish and install marker tape for all buried watermain pipe.

3.07 THRUST BLOCKING

- A. Where shown on the Plans underground fittings and valves shall be installed with the proper thrust blocking in conformance with the details shown on the plans and with the Waterworks Manual - Basic by the Coordinating Council for Occupational Education.

3.08 TONING WIRE

- A. To be laid continuous over all water mains and services. The wire shall be brought up into the valve boxes with sufficient length to be laid out 2 feet on surface grade.

3.09 WATER FACILITIES DISINFECTION AND TESTING

- A. Upon completion of the construction of the Water system, the Contractor shall test each component and the entire system to confirm the operational adequacy of the system and potability of the water provided.
- B. Bacteriological Disinfection
 - 1. The Contractor shall chlorinate, flush and obtain satisfactory samples from the locations designated by the Engineer. All waterlines shall be disinfected and flushed in conformance with Section 7-09.3(24) of the WSDOT Standard Specifications. Water wells shall be disinfected using sodium hypochlorite.

2. Sections of pipe to be disinfected shall first be flushed to remove any solids or contaminated material that may have become lodged in the pipe. If no hydrant is installed at the end of the main, then a tap shall be provided large enough to develop a velocity of at least 2.5 fps in the main.
3. Taps required by the Contractor for temporary or permanent release of air, chlorination or flushing purposes shall be provided by the Contractor as a part of the construction of water mains.
4. Where dry calcium hypochlorite is used for disinfection of the piping, flushing shall be done after disinfection.
5. The Contractor shall be responsible for disposal of treated water flushed from mains and shall neutralize the wastewater for protection of aquatic life in the receiving water before disposal into any natural drainage channel. The Contractor shall be responsible for disposing of infecting solution to the satisfaction of State and local authorities. If there is no acceptable area for disposal of water flushed from mains, the Contractor shall haul the water to a site approved by the Engineer and shall dispose of the water at the site per the Engineer's requirements.

C. Hydrostatic Pressure Testing for Pipe

All pipe including all watermains and all well riser pipe shall be tested with hydrostatic pressure in accordance with Section 7-09.3(23) of the WSDOT Standard Specifications. The test pressure for all piping shall be 250 PSI. The final coupling will not be pressure tested and shall not be backfilled until the Engineer's inspection, but shall be covered with a steel plate for up to 14 days until the Engineer responds to the site to verify the integrity of the connection.

D. Incidentals

All service taps, temporary connections, chemicals, wastewater disposal requirements, and appurtenances required for pressure and potability testing shall be deemed incidental to the installation of the watermain and no separate compensation shall be made.

END OF SECTION

**SECTION 06112
ADDENDUM 1
STANDBY GENERATOR BUILDING**

PART 1 - GENERAL

1.01 CONTRACT CONDITIONS

- A. Work in this Section is bound by the Conditions of the Contract and Division 1 Specifications sections, bound herein, in addition to this Specifications and accompanying Contract Drawings.

1.02 QUALITY ASSURANCE

- A. All work under this Section shall be governed by the "Standard Specifications for Road, Bridge and Municipal Construction," published by the Washington State Department of Transportation (WSDOT), dated 2015, hereby referred to as the Standard Specifications, except as modified by these Technical Provisions.
- B. For hardware, fasteners, and connectors not shown on the Contract Drawings, the Contractor shall furnish and install industry-standard hardware, fasteners, and connectors, and no additional compensation will be allowed therefore.
- C. For items where the installation procedure has not been fully specified, such items shall be installed in strict accordance with the manufacturer's written product installation guidelines, and no additional compensation will be allowed therefore.

1.03 UNIT PRICES/INCIDENTAL WORK

- A. The Contractor shall be compensated for work performed on this project based on the units of work identified in the proposal. All work required to complete the enclosure and not specifically identified in a proposal item, shall be deemed incidental to the items of work in the proposal and no separate compensation shall be made.
- B. All references in the Standard Specifications to Measurement and Payment shall be deleted from consideration; and terms agreed to in the Contract substituted therefore.

C. WOOD FRAME STANDBY GENERATOR BUILDING

1. Basis of Measurement: Lump Sum
2. Basis of Payment: Includes construction , coordination with Thurston County Building Department, payment of building permit fees, obtaining required building permit, construction of wood frame enclosure including: construction of concrete footing, concrete stem wall, concrete slab, concrete generator plinth, framing, sheathing, roofing, doors and hardware, and all other items required for a complete and functional Wood Frame Standby Generator Building all as shown on the Contract Drawings and as described herein.

1.04 REFERENCE BENCH MARKS, MONUMENTS & PROPERTY CORNERS

- A. Maintain bench marks, monuments, property corners, and all other reference points. If disturbed or destroyed, bench marks, monuments and property corners shall be replaced by a registered Land Surveyor at the Contractor's sole expense.

1.05 PERMITS

- A. The Owner has obtained a building permit for the wood frame pump control building. Comply with building permit requirements and construct building in accord with building permit requirements, these plans and specifications and the manufacturer's recommendations. In case of conflict with the building permit plan set, these plan sheets 1 through 11 shall prevail. Obtain Thurston County building inspections as required for building occupancy. Costs of coordinating, paying fees, and obtaining the permits and approvals shall be included in the bid items and no separate compensation shall be allowed. During progress, the work will be observed by the Engineer or authorized representative and by state and local inspectors. All certificates or approval notes from the State and County inspectors shall be forwarded to the Engineer.

PART 2 – PRODUCTS

2.01 GENERAL

- A. Materials necessary to complete the work shall be in conformance with the requirements noted on the plans and as noted herein.

2.02 CONCRETE

- A. Furnish commercial Class 3000 concrete for foundations and floors in accordance with Sections 6-02.2, 6-02.3(2)B, and 6-02.3(4)C of the Standard Specifications.

2.03 REINFORCING STEEL

- A. Furnish deformed steel reinforcing bars conforming to ASTM A615 Grade 60 type S.

2.04 BUILDING FRAMING

- A. Furnish standard grade and better hem-fir, 2x6. All wall plates in contact with concrete shall be pressure treated.

2.05 BUILDING TRUSSES

- A. Furnish 6/12 pitch manufactured raised heel wood trusses. Chord members shall be Douglas Fir # 2 stress grade. Furnish on maximum 24-inch center.

2.06 BUILDING INSULATION

- A. Walls R- 21 fiberglass foil faced batts, ceiling R-38 fiberglass.

2.07 BUILDING ROOF AND EXTERIOR WALL SHEATHING

- A. 5/8-inch ACX plywood.

2.08 BUILDING SKYLIGHT

- A. Furnish 22 ½ in. x 36 in. self-flashing skylight with insulated curb and sealed acrylic double dome (clear over clear), mill finish frame color, AIA Industries or approved equal.

2.09 STANDBY GENERATOR VENTILATION

- A. Exhaust louver shall be Greenheck ESD 635, 6 inch depth, with drainable louvers and internal aluminum insect screen, 46 inches wide x 67 inches high, with 59% free area, or approved equal

- B. Intake louvers shall be Greenheck ESD 635, 6 inch depth, with drainable louvers and internal aluminum insect screen, 21 inches wide x 54 inches high, with 59% free area, or approved equal. Intake louvers shall each be equipped with Greenheck WD-400 21 inch wide x 54 inch high vertical mount intake damper, non-motorized, flangeless, or approved equal.

2.10 BUILDING ROOFING

- A. Complete with all flashing, edge and roof peak parts. Felt paper underlayment, 15 lb.

2.11 BUILDING ROOFING, SIDING & TRIM

- A. James Hardie Select Cedarmill 9.25 in. 8 inch exposure lap siding or approved equal. Corner and door Trim, 5/4 x 4 cedar trim – standard and better, rough sawn, pre-primed. Barge Board, 5/4 x 4 cedar trim, - standard and better, rough sawn, pre-primed. Fascia, 5/4 x 6 cedar trim – standard and better, rough sawn, pre-primed

2.12 BUILDING ROOFING ARCHITECTURAL COMPOSITION SHINGLES

- A. PABCO Premier Elite laminated fiberglass shingles or approved equal. Color and style to be coordinated with owner. Install per manufacture's recommendations.

2.13 BUILDING ROOFING SIDING & TRIM INTERIOR AND WALL SHEATHING

- A. Furnish ½-inch OSB or ½ -inch ACX. Paint interior with two coats of latex paint. Color: white.

2.14 DOORS

- A. Ceco double hung 18 gauge Legion/Ultrador Model 1 flush steel panel door with polystyrene core or approved equal. Door to be galvanized and prime base coated. Active door to have 2 3/4" Backset for cylindrical lockset.

2.15 DOOR FRAMES

- A. Ceko double hung 14 gauge welded Standard Steel Frame with double rabbet or approved equal. Doorframe to be galvanized and prime base coat. Width per manufacture's recommendation based on wall framing. Install per manufacturer's recommendations
- 2.16 DOOR HINGES
- A. Deltana SS45NBU Solid Stainless Steel 4 1/2" x 4 1/2" Hinge with square corners, out swing or approved equal. Hinge to have non removable pins. Three hinges per door. Install per manufacturer's recommendations.
- 2.17 DOOR ASTRAGALS
- A. Pemko 357SP overlapping astragal or approved equal, flat welded on active door.
- 2.18 DOOR THERSHOLD
- A. Pemko 171A saddle threshold or approved equal. Width per manufacture's recommendation based on wall framing. Install per manufacturer's recommendations.
- 2.19 EXTENSION FLUSH BOLT
- A. Rockwood 555-626 extension flush bolt or approved equal. Install on top and bottom of inactive door. Install per manufacturer's recommendations.
- 2.20 DOOR BOTTOM SWEEP
- A. Pemko 315NC door bottom sweep or approved equal. Install per manufacture's recommendation.
- 2.21 CYLINDRICAL LOCKSET
- A. Kwikset 740KNL 26D SMT with smart key cylinder with bump guard, satin chrome, including matching strike plate compatible with inactive door, ANSI A115.2, or approved equal.

PART 3 – EXECUTION

3.01 CONSTRUCTION

- A. The Contractor shall construct the enclosures in accordance with the Contract Plans and the Thurston County approved design submittal. Hardware, roofing, fasteners and all other parts shall be installed in accordance with the manufacturer's written recommendations. All work shall be done in a neat and workman like manner and shall be subject to the Engineer's approval.
- B. Forms for cast-in-place concrete foundations shall be installed to result in no visible deflection from the forces imposed by the concrete. Visible deflection shall be cause for rejection of the finished concrete foundation.

3.02 CONCRETE PLACEMENT

- A. Place and cure all concrete foundations and floors in conformance with Sections 6-02.3 (6), 6-02.3(9), 6-02.3(11), and 6-02.3(14) of the Standard Specifications.

3.03 FOUNDATION PENETRATIONS

- A. Wherever the construction requires pipes or conduits to pass through cast-in-place concrete footings, the Contractor shall furnish and install steel sleeves to result in a minimum 2-inch annular space between the pipe or conduit and the building foundation. Annular space shall be filled with packed sand to eliminate all voids. Bend any conflicting steel reinforcing bars around the penetration to maintain continuous reinforcing as required.

3.04 CONCRETE FLOOR FINISH

- A. Finish all concrete floors as required to obtain smooth trowel finish and slope to eliminate any standing water.

3.05 PAINTING

- A. All exterior wood surfaces shall be painted with two coats of exterior latex enamel. Color shall be as selected by PUD #1 authorized representative. Interior wood surfaces below the elevation of the rafters shall be painted with 2 coats interior gloss enamel, color: white. Surface preparation and application shall be in accordance with the manufacturer's recommendations.
- B. Work of this Section is bound by the General Requirements, Special Provisions, and Standard Specifications of the Contract, except as modified herein.

END OF SECTION

SECTION 15496
ADDENDUM 1
UNDERGROUND PROPANE TANKS AND PIPING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Furnish and install two (2) underground propane tanks and accessories.
- B. Furnish and install underground, above ground propane lines, and propane lines in interior spaces and accessories from the underground propane tanks to the Standby Generator.

1.02 MEASUREMENT AND PAYMENT

- A. The Contractor shall be compensated for work performed on this project based on the units of work identified on the Bid Form. All work required to complete the project and not specifically identified by a Bid Form item shall be deemed incidental to the items of work on the Bid Form and no separate compensation shall be made.
- B. All references in the Standard Specifications to measurement and payment shall be deleted from consideration; and the terms agreed to in the Contract substituted therefore.
- C. UNDERGROUND PROPANE TANKS
 - 1. Basis of Measurement: per lump sum.
 - 2. Basis of Payment: Includes all labor, equipment, tools, materials, fuel, and supervision and testing required to furnish and install underground propane tanks and all items required for complete and functional underground propane tanks.
- D. PROPANE LINES
 - 1. Basis of Measurement: per lump sum.
 - 2. Basis of Payment: Includes all labor, equipment, tools, materials, fuel, and supervision and testing required to furnish and install underground, above ground, and propane lines in interior spaces and all items required for complete and functional underground, above ground, and

propane lines in interior spaces and all items required for complete and functional propane lines,

1.03 DELIVERY, STORAGE, AND HANDLING

- A. Inspect and report concealed damage to carrier within their required time period.
- B. Handle carefully to avoid damage to panelboard internal components, enclosure, and finish.
- C. Store in a clean, dry environment. Maintain factory packaging and, if required, provide an additional heavy canvas or heavy plastic cover to protect enclosure(s) from dirt, water, construction debris, and traffic.

1.04 WARRANTY

- A. Manufacturer shall warrant specified equipment free from defects in materials and workmanship for one (1) year from the date of substantial completion.

PART 2 PRODUCTS

2.01 UNDERGROUND PROPANE TANKS

- A. Underground propane tanks shall be Trinity Containers LLC 2000 gallon (water capacity) conforming to ASME code for pressure vessels and Section VII Division 1 NFPA, or approved equal subject to the Engineer's review and approval prior to installation. Tanks shall be factory equipped with riser and multivalve, including float gauge, pressure gauge, vapor, filler, liquid level indicator, and relief valve, ready for installation. Underground propane tanks shall be equipped with steel reinforced portland cement concrete anti-flotation anchors and anchor straps as shown and noted. Underground propane tanks shall each be equipped with anodes as shown and noted, or approved equal. Underground propane tanks shall each be equipped with high pressure first stage regulators, 10 psi, as shown and noted.

2.02 PROPANE LINES

- A. Underground Propane Lines underground propane lines shall conform to ASTM D2513 for thermoplastic gas pressure pipe tubing and fittings. underground propane line shall be high density polyethylene, 1 inch iron pipe size, DR 9.3, 100 psi minimum working pressure. Pipe shall be recommended by the manufacturer for use with LP gas and shall be marked in compliance with the product marking requirements of ASTM

D2513. Polyethylene pipe fittings shall be as follows: socket fittings per ASTM D2683, butt fusion fittings per ASTM D2513, molded.

- B. Aboveground propane lines and propane lines in interior spaces shall be steel pipe per ASTM A53. Fitting shall be ASNI B16.11, forged steel in accordance with NFPA 58 requirements. Pipe and fitting shall have minimum pressure rating in accordance with NFPA 58 requirements.
- C. Ball valves shall be American Valve M100, CSA and UL listed, size as noted, or approved equal.
- D. Flexible connector for propane service shall be Metraflex GASCT0200. 2 inch threaded or approved equal.

PART 3 EXECUTION

3.01 UNDERGROUND PROPANE TANK INSTALLATION

- A. Excavate for propane tanks, piping and ancillary equipment and concrete slabs as shown on the plans and details and as required herein. Provide special attention to sloping or shoring the sides of the excavations to make them stable. Excavation shall be performed in accordance with Section 02221 Trenching, Backfilling, and Compaction for utilities.
- B. Construct concrete slab foundation and anti-flotation galvanized J bolt anchors as shown and noted on the plans and details. Provide anchorage for tie down straps in accord with the manufacturer's recommendations. After placing ASTM C-33 sand cushion level and compact. Do not install tank resting directly on concrete slab. Set tanks on sand cushion to provide uniform support under the tanks. Install hold down straps with drainage pipe hose cushion to prevent damage to tank coating. Tighten hold down straps in accord with the manufacturer's recommendations. Prevent tank from impact and damage to tank coating at all times. Furnish and install MESA Cathodic Protection anodes and 12 gage wire as shown and noted and in accordance with the manufacturer's recommendations. Install underground propane tanks in accord with the manufacturer's recommendations and in accords with NFPA and Thurston County requirements. Backfill excavation with compact ASTM C-33 and select native backfill. Provide 12 inch minimum sand cushion around all portions of the underground propane tank and underground propane tank riser and underground propane line and underground wires for anodes. mechanically compact all backfill in 12 inch maximum un-compacted depth, lifts.

3.02 UNDERGROUND PROPANE LINES

- A. Install underground propane lines as shown and noted on the plans and details and in accord with Thurston County and NFPA requirements and as noted herein. Install underground propane lines with continuous (no splices) toning wire coiled at all terminal ends for ready access for locating underground lines and with warning tape as noted. Install toning with in accord with Section 02221. Provide 6 inch minimum ASTM C-33 sand cushion between underground propane lines and all other underground utilities and hard obstructions. Install piping to avoid excessive stresses due to thermal contraction.

3.03 ABOVEGROUND PROPANE LINES AND PROPANE LINES IN INTERIOR SPACES

- A. Run above ground piping as straight as practical along the alignment and elevation indicated, with a minimum of joints, and separately supported from other piping systems and equipment. Support and brace piping to building structural members. Conform spacing of supports to NFPA 54 and NFPA 58 requirements. Use pipe hooks, meal pipe straps, Furnish and install galvanized metallic struts and pipe clamps where required for vertical piping. Do not conceal piping in interior spaces. Do not weaken any building structure by installation of any gas piping. Do not notch or cut beams, joists or columns. Penetrations through walls shall be made with drilled holes, diameter of hole shall not be more than 1/4 inch greater than the outside diameter of the pipe. Penetrations shall be caulked with acrylic latex caulking compound. All work shall be done in a neat and workmanlike manner.

3.04 PRESSURE TESTING PROPANE LINES

- A. Pressure test all above ground propane lines and propane lines in interior spaces with air. Pressure test against closed equipment valves or plugs or caps, do not pressure test against equipment control valves or pressure regulators. Pressure test lines downstream from building secondary pressure regulator at 10 psi using a 0-30 psi 2 inch diameter gage. Passing pressure test shall be conducted for 10 minutes with no perceptible pressure drop and shall be witnessed by Thurston County inspector. Fully purge gas lines after passing pressure test, before connection to equipment. Purge only to open spaces, not into confined spaces or areas where there are ignition sources. Purge gas lines in accord with NFPA 54 and NFPA 58.
- B. Soap test low pressure lines with propane between shut-off valve and equipment. No detectable leaks are allowed.
- C. Pressure test underground propane lines and above ground lines between tank first stage regulator and building second stage regulator, using closed valve, plugs or caps, do not pressure test against pressure regulators. Air

test lines at 60 psi. Measure test pressure with a 0-100 psi 2 inch diameter gage. Allow time for polyethylene lines to relax and cool under test pressure and re-pressure the line to 60 psi at the beginning of the test period. Test period shall be 30 minutes, minimum, with no perceptible pressure drop during the test period. Test shall be witnessed by Thurston County Inspector. Purge gas lines in accord with NFPA 54 and NFPA 58.

END OF SECTION

**SECTION 15550
ADDENDUM 1
STANDBY GENERATOR**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Install Standby Generator, Cummins Power Generation Model 125 GGHJ, Vendor Cummins Northwest, Renton, Quotation: 3645000000081988.
- B. Furnish and install Standby Generator engine exhaust piping, connectors, roof thimble, engine cooling system ductwork and all other parts and materials not otherwise specified or furnished as required for complete functional Standby Generator.
- C. Testing installed Standby Generator in coordination with Standby Generator vendor.

1.02 MEASUREMENT AND PAYMENT

- A. The Contractor shall be compensated for work performed on this project based on the units of work identified on the Bid Form. All work required to complete the project and not specifically identified by a Bid Form item shall be deemed incidental to the items of work on the Bid Form and no separate compensation shall be made.
- B. All references in the Standard Specifications to measurement and payment shall be deleted from consideration; and the terms agreed to in the Contract substituted therefore.
- C. STANDBY GENERATOR INSTALLATION AND TESTING
 - 1. Basis of Measurement: per lump sum.
 - 2. Basis of Payment: Includes all labor, equipment, tools, materials, fuel, and supervision and testing required to install the Owner furnished Standby Generator all items required for complete and functional Standby Generator.

1.03 DELIVERY, STORAGE, AND HANDLING

- A. Coordinate delivery of Standby Generator to the Project Site with the Standby Generator vendor. Inspect and report concealed damage to

- Standby Generator vendor within their required time period.
- B. Offload and store the Standby Generator at the project site.
- C. Handle carefully to avoid damage to the Standby Generator, its enclosure, parts, and finish.
- D. Store in a clean, dry environment. Maintain factory packaging and, if required, provide an additional heavy canvas or heavy plastic cover to protect enclosure(s) from dirt, water, construction debris, traffic, and vandalism.

1.04 WARRANTY

- A. Manufacturer shall warrant the installation of the Standby Generator free from defects in materials and workmanship for one (1) year from the date of substantial completion.

PART 2 PRODUCTS

2.01 EXHAUST SYSTEM

- A. Harco Manufacturing Company WALL/ROOF THIMBLE 3 CAD No. #470300-75-6-12, Stainless Steel, 12 inch OD thimble, triple wall construction, zero clearance, with solid mounting plate (roof) for 54 inch thick roof with 6/12 pitch, and loose flat ceiling plate, and with Harco Manufacturing 3 inch exhaust weather shield CAD No. #4900300 or approved equal.
- B. Schedule 40 black steel exhaust pipe.
- C. Anthes heavy duty weighted exhaust rain cap for 3 inch exhaust pipe (3.5 inch OD or approved equal.
- D. Harco Manufacturing Company Part Number HSMPTXSF, 3 inch MPT x Slip Fit, Single-ply T821 Stainless Steel Flex with clamps, or approved equal.
- E. Galvanized steel u strut, threaded rod and miscellaneous parts as noted and required for building interior support.

2.02 GENERATOR SET SPRING MOUNTS

- A. Spring Mounts shall be Korfund LK vibration isolator sized for the Standby Generator or shall be approved equal.

2.03 GENERATOR SET ENGINE COOLING DUCTWORK AND DRIP PAN

- A. Generator set engine cooling duct work shall be shop fabricated 24 gauge galvanized steel as shown and noted. Duct work shall be equipped with flanges to mate with the exhaust air louver and with the rubber bellows, all fabrication shall be clean, neat, true to line, and in a workmanlike

- manner.
- B. Generator set cooling ductwork rubber bellows shall be as furnished by the ductwork shop fabricator. Flexible bellows shall provide gasketed flanged connections between the generator set radiator exhaust flange and the ductwork flange. Flexible bellows shall be rated for 200 Deg F. minimum and shall accommodate 24 inch water column pressure.
 - C. Galvanized steel drip pan shall be shop fabricated liquid tight 24 gauge galvanized steel, as shown as noted on the plans and details. All fabrication shall be clean, neat, true to line, and in a workmanlike manner.

PART 3 EXECUTION

3.01 STANDBY GENERATOR INSTALLATION

- A. Install standby generator in accordance with the manufacturer's recommendations and as shown on the plans and details. All connections for ductwork, exhaust, fuel lines, and electrical lines shall be made without warp or deflect.
- B. Construct concrete slab foundation and anti-flotation galvanized J anchors as shown and noted on the plans and details. UNDERGROUND PROPANE LINES

3.02 TESTING

- A. Coordinate standby generator testing with the standby generator vendor. Testing shall conform to the vendor specifications and shall be performed with the vendor staff present during the test. Contractor representatives shall be present during the entire generator test.

END OF SECTION

SECTION 16010
GENERAL ELECTRICAL PROVISIONS

PART 1 GENERAL

1.01 GENERAL

- A. Conform to General Conditions, Supplementary Conditions and Division 1.

1.02 WORK INCLUDES

- A. Description Of Work: Provide supervision, labor, materials, tools, equipment/machinery, temporary power and lighting and other services necessary to complete the work for complete operations described herein and shown on the Drawings.
- B. Related Work Specified Elsewhere: The provisions and intent of the General Conditions, Special Conditions, and General Requirements apply to the work as if specified in this section and other sections of the Specifications. Provide the electrical work as indicated or specified in other sections of the Specifications and Drawings of the Contract Documents.
- C. Mounting details of equipment, devices, light fixtures, raceways, junction boxes and the like are not usually shown or specified. Provide per industry standard practice and code requirements as necessary for proper installation and operation the same as if herein specified or shown.
- D. Where items of the General Conditions or of the Special Conditions are repeated in this section or other sections of the Specifications, it is intended to call particular attention to or qualify them; it is not intended that any other parts of the General Conditions or Special Conditions shall be assumed to be omitted if not repeated herein.

1.03 FEES

- A. Purchase permits, licenses, and approvals required for execution of work.
- B. Pay utility charges.

1.04 CODES AND STANDARDS

- A. Execute electrical work in strict accordance with the latest edition of the National Electric Code and governing local ordinances, codes, and regulations. Assure the strict conformity of Electrical equipment, materials, construction methods, tests, and definitions with the established standards of the following in their latest adopted revision: Underwriter's Laboratories, Inc., and the National Electrical Manufacturers Association.

1.05 REFERENCE DOCUMENTS

- A. These Specifications and Drawings are intended to cover a completed installation of systems. The omission of expressed reference to any item of labor or material for the proper execution of the work in accordance with present practice of the trade shall not relieve the Contractor from providing such labor and materials. Refer to the Drawings and Shop Drawings or other trades for additional details, which affect the proper installation of this work.

1.06 SUBSTITUTIONS

- A. The naming of a certain brand or make or manufacturer in the Specifications is to establish a quality standard for the article desired. No substitute material or equipment shall be purchased, ordered, fabricated shipped or processed in any manner prior to the approval of the Engineer. The Contractor shall assume responsibility for additional expenses as required in any way to meet changes from the original material or equipment specified.
- B. The equipment specification may also show on the Drawings the type, appearance, rating, and basic quality desired.

1.07 DEFINITIONS

- A. The term "approved equal" means final approval by the Engineer of a material or piece of equipment substituted for that which is shown in the Specifications or Plans.
- B. The word "provide" as used in these Specifications and on the Drawings shall mean, "furnish and install and complete connection per factory instructions".
- C. The term Mechanical Contractor (M.C.) and Electrical Contractor (E.C.) as used in these Specifications or on the Contract Drawings, refer to those subcontractors working under the direction of the General Contractor (G.C.).

1.08 WORKMANSHIP

- A. Furnish and install all equipment included in the Contract in harmony with other trades to provide completed systems with neat, finished appearance, using approved methods of the trade. Only good workmanship will be accepted. If, in the judgment of the Owner's Representative, any portion of work has not been installed in a workmanlike manner or left in a rough, unfinished condition, remove the equipment, reinstall same, patch and paint surrounding surfaces

satisfactory to the Owner's Representative, with no increase in cost to the Owner.

1.09 SUBMITTALS

- A. Submit four (4) copies of completed list of materials to the Owner's Representative within 7 days after signing the Contract. Each of the submitted copies must be provided in a standard size, 3-ring binder in an organized manner. Shop Drawings or catalog cuts of panelboards, switchboards, power systems, and basic materials must be included. On all substituted material items not approved, the Contractor shall provide material item as specified. Two (2) copies showing any changes or comments will be returned to the Contractor.

1.10 POST-BID DOCUMENTS

- A. The Electrical Contractor shall submit directly to the Electrical Engineer within ten days of receiving a contract a complete list of all major sub-contractors and suppliers used in this project. The list shall include, but not be limited to, the following:

- Service and Distribution
- Devices, Wires, Feeders, Lug, Connectors, and Starters
- Wiring Devices

1.11 WARRANTY

- A. Warranty workmanship and components of the work excluding incandescent and fluorescent lamps for a period of one (1) year from the date of final acceptance. Remedy any defects in workmanship and repair or replace any faulty equipment that fails within the warranty period without additional cost to the Owner. Assure cleanliness of lamps and fluorescent tubes and replacement of defective unit at the time of final acceptance.

1.12 FINAL DOCUMENTS

- A. As-Built Drawings: This Contractor shall maintain a set of Contract Plans at the site on which current changes and the actual location of conduits, devices, equipment, etc., as installed, shall be marked in red pencil in a legible, neat manner. This set of Plans shall show actual dimensions, including depth of underground conduits and feeders from construction lines so they can be readily found after covering. Owner's Representative will review this set of Plans monthly prior to approvals of pay request. Submit a set of Electrical Drawings marked in red to indicate the routing of conduit runs to the Engineer for review at the completion of conduit rough-in and prior to cover. Upon completion of the project, the Contractor shall submit the as-built information on a set of reproducible

sepias made from the original Contract Document tracings and presented to the Owner's Representative and Engineer for approvals.

- B. Documents: The following documents shall be presented to the Owner's Representative prior to final acceptance of the project. Bind three (3) complete sets of the following in a hard-backed three-ring binder:
- Letter from the Electrical Sub-Contractor stating that the Electrical portion of the project is complete and that all punch list items have been completed.
 - Guarantee letter.
 - State Electrical Inspection Certificate.
 - Copies of all permits.
 - Receipt for delivery of spare lenses of lighting fixtures.
 - Operating and Maintenance Manuals, operating instructions.
 - Guarantees (other than one year).

1.13 MAINTENANCE AND OPERATIONS MANUALS:

- A. General: Provide one (1) preliminary bound set of Operation and Maintenance Manuals including maintenance information and parts list furnished by the manufacturer with the equipment, together with supplementary drawings where necessary to itemize serving and maintenance points. Include periodic maintenance, methods of operation, seasonal requirements, manufacturer's data and warranty forms. Provide address and 24-hour phone number of firm responsible under warranty. Items requiring service or correction during the warranty period shall be serviced within 24 hours of notification by Owner. Data in manuals shall be neat, clean copies and posted on 8-1/2" x 11" sheets, typed, operation and maintenance instructions for each item of equipment installed. Drawings shall be accordion folded. An index shall be provided with all contents listed in an orderly presentation according to Specification section.
- B. Number Of Copies: The preliminary set of the O&M Manual shall be presented to the Owner's Representative for approval by the Engineer. After this set has been approved, two (2) additional sets shall be prepared and the three (3) sets shall be transmitted to the Owner's Representative.
- C. Binding: Copies shall be bound with three ring binders and three-hole punched. Binder covers shall be clear plastic and shall list the name of the job, Owner, Engineer, Contractor, and the year of completion inside the front cover. The back edge shall list the name of the job, the Owner, and the year of completion. Each copy shall have typewritten index and tabbed dividers between equipment categories. The preliminary copy

shall comply with all requirements except the hardboard covers (although the intended layout for the same shall be provided).

1.14 SCHEDULING, DELIVERY AND STORING

- A. Schedule materials, equipment and light fixture deliveries and make all arrangements as necessary to complete all work in accordance with the project construction schedules. Provide schedules of work to Owner's Representative as directed during construction.
- B. Schedule deliveries and unloading to prevent traffic congestion, blocking of access, and interference with work. Arrange deliveries to avoid larger accumulations than can be suitably stored at site. Provide for continuity of supply to avoid change of supplier or change in brand of materials during any phase of work.
- C. Deliver packaged materials to site in manufacturer's original, unopened, labeled containers. Do not open containers until approximate time for use. Store materials at locations that will not interfere with progress of work. Arrange locations of storage areas in approximately order of intended use.
- D. Store materials in a manner that will prevent damage to materials or structure, and that will prevent injury to persons. Store cementitious materials in dry, weathertight, ventilated spaces. Store ferrous materials to prevent contact with ground and to avoid rusting and damage from weather.
- E. Provide documents to Owner's Representative for any claim of material, equipment and light fixture deliveries not able to meet construction schedules.

1.15 SITE EXAMINATION

- A. Before submitting bid, Contractor shall visit the site and examine adjoining existing buildings, temporary power and communication service, equipment and space conditions on which the work is in any way dependent for the best workmanship and operation according to the intent of Specifications and Drawings. Report to the Owner's Representative any condition that might prevent the installation of equipment in the manner intended.

PART 2 PRODUCTS

2.01 GENERAL

- A. Notify Engineer for an on-site visit to inspect material and equipment prior to installation.
- B. Materials and equipment shall be new, undamaged, and shall be UL listed for its use.
- C. Defects and damages of material shall be replaced, furnish any new material as necessary and install the system at the Contractor's expense.
- D. Non-approved material and equipment must be removed from the jobsite.
- E. Furnish approved, UL listed, parts and materials as required to complete all work in accord with the Plans and Details, as required in the specifications and in accord with the manufacturers' recommendations and as required for compliance with NEC and Washington State Electrical Code. Parts and Materials shall include, but shall not be limited to conduits, conduit fittings, junction boxes, connectors, cables and conductors, lugs and connectors for cables and conductors, supports and fasteners.

PART 3 EXECUTION

3.01 GENERAL

- A. Device or equipment mounting height given herein the Specifications, Contract Drawing, and/or documents are intended to provide general guidelines pursuant to industry standards. Such guidelines may not be exact or accurate and may or may not conflict with other trade's installation without verification. Provide field coordination and verification with other contractors, trades, or any shop drawings, and ensure that such mounting heights if indeed are practical and feasible as not to conflict with other installation and construction. If conflicts are discovered at any time during the construction, report to Engineer or Owner's Representative immediately for resolution. Before any installation, devices or equipment can be directed or located by Engineer or Owner's Representative within 20' of the designed contract location without extra cost.

- B. If the contractor fails to provide such coordination and field verification and results of erroneous installation, the contractor shall remedy such installation per Owner's Representative's direction, at contractors cost.

3.02 MANUFACTURER'S DIRECTIONS

- A. Apply, install, connect, and erect manufactured items or materials according to the recommendations, wiring diagrams, instructions of the manufacturer when such recommendations are not illustrated or in conflict with the Contract Documents.
- B. Furnish to the Owner's Representative, on request, copies of manufacturer's recommendations. Secure approval of recommendations before proceeding with work.
- C. Keep at the site not less than one copy, in good condition, of manufacturer's recommendations, wiring diagrams, instructions, or directions, pertaining to work at the site. Inform involved personnel of requirements and availability of manufacturer's recommendations.

3.03 UTILITY COORDINATION

- A. All work associated with electrical power and telecommunications utilities shall be installed in accordance with the standards and specifications established by the serving utility.
- B. Contact electrical power and telecommunications utilities. Verify and coordinate work scope prior to commencement of installation.

3.04 PREPARATORY WORK

- A. Inspection: Prior to all work of this Section, carefully inspect the work of other trades and verify the completeness of such work to the point where this work may properly commence.
- B. Discrepancies: Do not proceed with the work in the event of a discrepancy until resolved by the Owner's Representative.
- C. Change Orders: Where changes of work require additional cost, prepare complete cost/credit breakdown herein specified and comply with change order requirements as specified in Division 1, Contract Documents. No cost will be allowed for as-built drawings on any change order unless otherwise instructed.

3.05 COORDINATION

- A. The drawings are diagrammatic and indicate generally the locations of materials and equipment. These drawings shall be followed as closely as possible. Coordinate the work under this section with the architectural,

structure, plumbing, heating and air conditioning, and the drawings of other trades for exact dimensions, clearances, and roughing-in locations. Cooperate with other trades in order to make minor field adjustments to accommodate the work of others.

- B. Coordinate electrical work with mechanical installations. Verify with Mechanical Contractor for final mechanical equipment locations prior to work. Connect power wiring to mechanical equipment through starters, contactors as required. Maintain clearances around mechanical equipment to allow access for maintenance per NEC codes and local codes.
- C. Refer to project construction schedules. Schedule each specific area so that the delivery of materials and equipment are such as to cause no delay in construction schedule. Include the premium cost of delivery of equipment and overtime work in order to comply with the construction schedules if necessary.
- D. Coordinate and verify exact locations of wiring devices, communication devices, and equipment prior to beginning of rough-in.
- E. If directed by the Owner's Representative, the Contractor shall, without extra charge, verify with local inspectors or authorities having jurisdiction and make reasonable modifications in the layout as needed to prevent conflict with work of other trades or for proper execution of the work.
- F. If directed by the Owner's Representative, the Contractor shall, without extra charge, provide layouts of equipment and details of mounting method for Engineer's approval prior to installation to ensure proper execution of the work.
- G. All devices, outlets, cabinets, equipment, panels, light fixtures, switches can be field located by Owner's Representative within 20' of the designed locations prior to rough-in work without extra compensation.

3.06 RACEWAYS

- A. One-line diagrams, risers, and conduit routing are schematic and are not showing exact physical arrangement of equipment. Where indicated on Drawings, junction boxes and pull boxes are minimum requirements. Provide other fittings and pull boxes of adequate size in the raceway system wherever necessary or required by National Electrical Code. Allow a maximum of four quarter bends between pull boxes in each run of conduits. Provide expansion joint fittings for conduits passing through new or existing expansion joints installed between buildings. Verify exact locations and details of expansion joints prior to work. Coordinate conduit routing, pull box and equipment locations with other trades to avoid conflicts of equipment installations. Empty conduits shall have pull wires. Provide unistrut mounting channels, hanger rods, anchor bolts and fittings to support conduits and pull boxes. Work shall comply with National Electrical Code requirements.
- B. Support all conduits in accordance with the National Electrical Code and the Uniform Building Code.

3.07 MISCELLANEOUS

- A. Cutting And Patching: Perform cutting and patching as may be necessary for the proper installation of the electrical work. Grout around raceway penetrations and fill anchor bolt holes or spalled areas. Core drill new penetrations through existing structural walls, ceilings and floor slabs.
- B. Cleanup: The premises must be kept free of accumulated materials, rubbish, and debris at all times. Surplus material, tools, and equipment must not be stored at the building. At the completion of the job, equipment and fixtures shall be left clean and in proper condition for their intended use.
- C. Trenching: Perform excavation and backfill as may be necessary for the proper installation of the Electrical work, unless noted otherwise on the Drawings.
- D. Equipment Identification: Provide nameplates for electrical equipment identification. A partial list includes, but is not limited to the following: All controls, wall switch for fans, disconnect switches, switchboard devices, transformers, lighting control center (LCC), all panelboards, and all cabinets. Remove temporary markings, and the like from devices when installing nameplates. Nameplates shall be engraved phenolic, white

letters on black background, letter height 1/4" unless a lack of space requires smaller nameplate. Minimum overall height 1/2", length as required. Install with screws or pop rivets; adhesive is NOT approved.

- E. Demolition: Electrical demolition shall be performed by the Electrical Contractor as indicated on Plans.
- F. Tests: Test wiring and electrical equipment to verify absence of grounds and short circuits and verify proper operation, rotation, and phase relationship. Demonstrate operation of all equipment in accordance with the requirements of this specification and the manufacturer's recommendations. Perform tests in the presence of the Owner's Representative. Provide instruments and personnel required to conduct these tests.

3.08 ON-SITE OBSERVATIONS AND SAFETY MEASURES

- A. During its progress, work shall be subject to observation by the Owner's Representative, Engineer, and/or their representatives, and of the National Board of Fire Underwriters, State and Local Electrical Inspectors. The Engineer has not been retained or compensated to provide design and construction review services relating to the Contractor's safety precautions or to means, methods, techniques, sequences or procedures required for the Contractor to perform the work. The Contractor will be totally responsible for conditions of the job site, including safety of all persons and property during performance of the work. This requirement will apply continuously and not be limited to normal working hours. The duty of the Owner's Representative and Engineer to conduct construction observations of the Contractor's performance is not intended to include review of the adequacy of the Contractors' safety measures -- in, on, or near the construction site. It is the Contractor's responsibility to comply with "Safety and Health Regulations for Construction" in the Federal Register by the U.S. Department of Labor. Contractor shall be responsible for providing such safety measures and consult with the State or Federal Safety Inspector for interpretation whenever in doubt as to whether safe conditions do or do not exist or whether the Contractor is or is not in compliance with state or federal regulations. Furthermore, the Contractor distinctly assumes all risk of damages or injury to any persons or property wherever located, resulting from any action or operation under this contract or in connection with the work.

3.09 DRAFT STOPS

- A. It shall be the responsibility of each Contractor to verify with Architectural Plans and to maintain the integrity of the draft stops whenever work

requires penetration of these areas. Patch as required to maintain integrity of stops.

3.10 FIRE STOPS AND ENCLOSURES

- A. Maintain fire-resistance ratings of walls, partitions, floors ceiling, or other fire separation barriers whenever work requires penetrations or openings for equipment. Provide and use approved methods and fire seal material and fitting to maintain the fire resistance rating Provide approved fire rated enclosures of double gypsum wall board for electrical panels installed in fire rated walls to maintain the wall fire resistance rating. Where panels are semi-flush mounted, provide painted oak wood trim.
- B. Locate devices horizontally a minimum of 2' apart on opposing sides of a fire separation wall to maintain fire rating of wall.

3.11 CONTINUITY OF BUILDING AND UTILITY SERVICES AND SHUTDOWNS

- A. Continuity of utilities services in the building shall be maintained at all times as required to provide heat, water, lighting, and power to all portions of the building. Utility systems shutdowns required for extensions, alterations or connections of new services shall be accomplished in accordance with the following requirements:
- B. Shutdowns: Utilities shutdowns shall be scheduled for week-ends, holidays, or at night if the shutdown affects the use of the building or surrounding buildings. The actual time and date will be coordinated with, and approved by the Owner at least 72 hours in advance.
- C. Costs: Pay all costs associated with utilities shutdowns. No extra payment will be made for overtime work, schedule changes, or failure to complete utilities connections within authorized shutdown periods.
- D. Liquidated Damages: The Contractor shall reconnect utilities at the end of utilities shutdown period. If the Contractor neglects, fails, or refuses to complete the work and returns the utilities service within the time limits herein specified, or any extension thereof granted by the Owner, then the Contractor does hereby agree, as part of this contract, to pay the Owner the liquidated damages commensurate to the loss of building usage with the amount as specified hereinafter. The liquidated damages shall be ascertained with a generally accepted accounting principal recognized by American Institute of Certified Public Accountants.

3.12 INSTRUCTION PERIODS FOR OWNER'S PERSONNEL

- A. Scope: Following installation of work, have representatives of installation tradesmen conduct demonstrations and instruction periods to point out locations of servicing points and required points of maintenance to Owner's representatives.

- B. General Description Of Instruction Periods: Each period shall include preliminary discussion, and presentation of information from maintenance manuals with appropriate references to Drawings; followed by tours of building areas explaining maintenance requirements, access methods, servicing and maintenance procedures, and equipment cleaning procedures, control settings and available adjustments.
- C. Scheduling Of Instruction Periods: Notice of Contractor's readiness to conduct such instruction and demonstration shall be given to Owner's Representative at least two (2) weeks prior to the instruction periods, and agreement reached as to the date at which the instruction periods are to be performed. Advise Owner's Representative two (2) weeks prior to date when ready to conduct instructions and demonstrations; receive approvals of proposed date prior to making final arrangements.

END OF SECTION

**SECTION 16030
ELECTRICAL TESTING**

PART 1 GENERAL

1.01 SCOPE

- A. Test the entire electrical installation to assure compliance with code and proper system operation.

1.02 CIRCUIT TESTS

- A. The Contractor shall test all wiring and connections for continuity and ground before any fixtures or other loads are connected. Tests shall be made with a 500V. DC "Megger" type tester. If tests indicate faulty insulation (less than 2 megohms) such defects shall be corrected and tested again. Contractor shall provide all apparatus and material required to make tests and shall bear all expense of required testing.

1.03 LOAD BALANCE

- A. Checks shall be made for proper load balance between phase conductors and make adjustments as necessary to bring unbalanced phases to within 15% of average load.

1.04 GROUNDING TEST

- A. Measure the OHMIC value of the Electric Service Entrance metallic "System Ground" with reference to "Earth Ground" using the "Multiple Ground Rod" method and suitable instruments. Maximum resistance to ground shall be less than 10 ohms. If this resistance cannot be obtained with the ground system shown, notify the Engineer immediately for further instruction. Certify in writing to the Engineer that the grounding test has been made and that the requirements of this portion have been met for the "System Ground".

1.05 MEASUREMENT AND PAYMENT

- A. The Contractor shall be compensated for work performed on this project based on the units of work identified on the Bid Form. All work required to complete the project and not specifically identified by a Bid Form item, such as electrical testing, shall be deemed incidental to the items of work on the Bid Form and no separate compensation shall be made.

PART 2 PRODUCTS

2.01 MATERIALS AND INSTRUMENTATION

- A. All shall be provided by and remain the property of the contractor.

PART 3 EXECUTION

3.01 SCHEDULE

- A. Notify Engineer 10 working days prior to performance of any test.

END OF SECTION

SECTION 16100
BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 GENERAL

1.01 GENERAL

- A. Conform to General Conditions, Supplementary Conditions and Division 1.

1.02 SCOPE

- A. General: Make necessary provisions for storing materials and equipment at the site to ensure the quality and condition of the material to be installed. Utilize only new materials which are free of defects and which arrive at the jobsite unopened in the original container.
- B. Devices, equipment, enclosures and material shall be UL listed, approved, and suitable for its environment where used.
- C. Wiring In Raceway: Unless noted otherwise, wiring systems shall be installed in a complete raceway system.
- D. Coordination: Determine the exact electrical requirements of equipment from the equipment suppliers prior to rough-in wiring. Refer any discrepancy between the Plans and equipment requirements to the Owner's Representative for resolution prior to installation.
- E. Construction Observation: Advise the Owner's Representative at least two (2) full working days prior to the covering of concealed electrical work.

1.03 EQUIPMENT FINISH

- A. Electrical equipment, control panels, and cabinets, shall be furnished factory painted in the manufacturer's standard colors unless otherwise specified.
- B. Unpainted equipment and materials, except conduit, shall be cleaned, primed and painted by the Electrical Contractor as directed by the Owner's Representative in accordance with the Painting Section of the Specifications.
- C. The colors of exposed electrical material and apparatus shall be as selected by the Owner's Representative.

PART 2 PRODUCTS

2.01 RACEWAYS

- A. Rigid Conduit: Hot-dipped galvanized. Threaded hubs or double locknuts and insulating or grounding type bushings.
- B. Intermediate Metal Conduit (IMC): Hot-dipped galvanized. Fittings are compression type or threaded.
- C. Electrical Metallic Tubing (EMT): Hot-dipped galvanized or sherardized steel. New-line couplings and connectors compression type by Steel City or approved equal. Indenter or setscrew type fittings are not permitted.
- D. Flexible Steel Conduit: Interlocking single strip, hot-dipped galvanized or sherardized, liquid-tight when used in wet or damp locations. Fittings shall be screw wedge type or liquid-tight type depending on conduit type used. Provide grounding fittings 3/4" and larger for ground wire installation outside conduit.
- E. Non-Metallic Conduit: Rigid PVC, Schedule 40. Fittings shall be same material as the raceway. Use permitted for raceway installed underground and in contact with earth only if allowed by local codes or as indicated.
- F. Surface Raceway: Factory painted steel or as indicated on drawings. Provide barrier for wiring system separation, where required.
- G. Pull Cords: Pull cords shall have easy to read distance markings in 1-foot increments and have a 140 Lb minimum tensile strength. Cords shall be manufactured by Ideal Industries, Inc.

2.02 WIRE AND CABLE

- A. Branch Circuit Conductors: Branch circuit wiring shall be #12 AWG copper minimum unless indicated otherwise. Conductors #10 AWG and smaller shall be solid or stranded copper with Code grade insulation and a minimum temperature rating of 75 deg. C.
- B. Branch circuit ground wire, isolated ground wire, equipment grounding conductor and grounding electrode conductors shall be insulated the same as the circuit or feeder conductors.
- C. Feeder Conductors: Conductors #8 AWG and larger shall be stranded copper with Code grade insulation and a minimum insulation temperature rating of 75 deg. C. (Type THW). Wire and conduit sizes shown on the

Drawings are based on copper. Feeders and subfeeders shall be installed in a conduit raceway system.

- D. Conductor Terminations: Conductors #8 and larger shall be connected to equipment by means of compression type terminal lugs. Provide two-hole lugs to restrain lugs from turning. Setscrew terminals not permitted. Approved manufacturer: Anderson and Burndy.
- E. Level Sensor Cable (from existing Telemetry-Control Panel to Gaudio Wellhead for level sensor): West Penn Wire AQC359, 4 conductor (2 shielded) 20 AWG.
- F. Gaudio Well Panel Feeder from Mini-Power Center: As shown on Plans and Details and as noted in the specifications.

2.03 BOXES

- A. Unless otherwise noted junction boxes, pull boxes, and outlet boxes shall be pressed steel with knockouts and matching cover as required with size, depth and shape best suited to the location and intended service. Cover on finish area shall be provided with specification grade quantity type to match finish surface. Include plaster or tile rings as required. Manufacturer: Bower, Raco, Steel City. Boxes exposed to weather shall be Crouse-Hinds or equal cast aluminum type.

2.04 WIRING DEVICES

- A. General: Wiring devices shall be ivory colored for general use and brown when installed in service areas or on dark finished walls.
- B. Approved devices as manufactured by Leviton or equal by Cooper, Hubbell or Pass & Seymour.

DEVICES	LEVITON CATALOG NUMBER
Switch	1221-2I
Duplex Receptacle	5362-I
I.G. Duplex Receptacle	5362-IGI
GFI Duplex Receptacle	6899-I
Tamper-Resistant Duplex Receptacles	5262-SGI
Surge Suppressor Duplex Receptacles	5380-I
I.G. Surge Suppressor Duplex Receptacles	8380-IGI

- C. Switches And Receptacles:
 - 1. Standard Wall Switches: Shall be AC quiet-type rated 20A, 125/277V and comply with Federal Specification WS-896-E, back-

and side-wired, single-pole, double-pole, three-way, four-way, or locking as shown on the Drawings. Install switch with ON terminal up.

2. Duplex Receptacles: Shall be Federal Specification grade WC-596, side- and back-wired only, 20-amp, 125V, NEMA 5-20 configuration installed with ground terminal up.
3. Finish Plates: Consult with Owner's Representative for choice of device plate material and type. Provide #302 brushed-satin stainless steel if not otherwise specified. Equipment switches and receptacles exposed to outdoor temperature or indicated "WP" with gasketed weatherproof covers with hinged covers.

2.05 MOLDED CASE CIRCUIT BREAKERS

- A. Provide molded case circuit breakers of the quick-make and quick-break variety equipped with wiping type contacts and with interrupting rating and trip rating indicated on the Drawings. Provide arc chutes and individual trip mechanisms on each pole. Equipment multiple pole breakers with both a common trip and trip free feature. Trip indication to be independent of breaker On or Off positions. Breaker is to be fully operable in an ambient temperature of 40 degrees C.

2.06 SUPPORTING DEVICES

- A. Support raceway by straps, suitable clamps or hangers to provide a rigid installation. Perforated strap hangers and twisted wire attachments will not be acceptable. Do not support or fasten raceways to other pipe or in a manner to prevent the ready removal of other pipe.

2.07 GROUNDING

- A. Ground Wire: Color coded green, copper conductor, with insulation same as circuit or feeder conductors.

2.10 MARKER TAPE

- A. Marker tape for electrical line shall be Allen Systems Markline or approved equal, 2" wide, red, continuously marked with "Caution Electric Line Buried Below." Wherever water lines and electrical lines are buried in the same trench, furnish and install both tapes above their respective conduits.

PART 3 EXECUTION

3.01 RACEWAY TYPES

- A. Rigid Steel Conduit: Use for raceways installed underground, in concrete, in wet locations, raceways 2-1/2" and larger, and raceway stub-up from ground to 12" above grade.

- B. Conduit Elbows And Sweeps: Use rigid steel conduit type.
- C. PVC Conduit: If permitted by local codes, PVC conduit can be used under floor slab when installed in contact with earth. Provide code size ground wire for PVC raceways for appropriate circuits. Increased conduit size per NEC Table 1, 3A, 4, 5, as applicable as necessary to accommodate the added ground wire. Install conduits 30" below grade.
- D. EMT: Interior areas up to 2" diameter.
- E. Flexible Conduit: Flexible metal conduit located in wet locations, wellhead, shall be liquid-tight type. A short piece of flexible metal conduit shall be used for the connection to motors and vibrating equipment, connection between lay-in light fixtures, and as otherwise noted, provided the use meets the requirements of the NEC and local codes. The flexible metal conduit shall be the type approved for continuous grounding. No flexible conduit allowed for any concealed installation or in wall, or over 6' in length.
- F. Minimum Sizes: 3/4" for home runs, under-floor and underground. 1/2" conduit trade size minimum. Conduit sizes not indicated on plans shall be sized for conductor types and sizes per NEC.
- G. Indicate the final actual conduit size and homerun locations on the as-built drawings.
- H. Conduit termination shall have code-sized junction box for flush or surface installation. Conduit stubs shall have nylon insulated type bushing.
- I. Pull Cords: Provide pull cords in empty raceways. Cords shall be continuous in each raceway run and extend a minimum distance of 12" from the junction box or terminal at the end of the raceway.
- J. Unless noted, install underground conduits 30" below grade minimum, with warning tape over feeder conduits.

3.02 INSTALLATION

- A. Conceal raceways serving lighting systems, HVAC equipment, system, and controls and general-purpose outlets in new construction areas.

- B. Install exposed raceway parallel or at right angles to members of building. Run raceways as high as possible unless noted otherwise. Raceways are to follow ceiling contour rather than being suspended at a uniform height below beams.
- C. Carefully form bends to avoid injuring or flattening raceway.
- D. Support raceways with heavy-duty, one-hole, pressed steel straps on interior surfaces. Support pendant mounted raceways on 1/4" rod with pear-shaped hanger (up to 2" pipe size) or trapeze type hanger with 3/8" rod, 1-5/8" square preformed channel, and suspended ceilings from ceiling grid support system. Comply with general requirements.
- E. Anchor to frame structure by means of sheet metal screws. Fasten to structural walls with lead anchors or steel expansion shells and threaded bolts or screws with slotted heads. Fasten to structural or masonry walls with toggle bolts or molley screws. Deviation from these methods must be approved prior to installation.
- F. Do not hang, suspend, or attach raceways, raceway supports or boxes from any superstructure or earthquake bracing.
- G. Support hardware types to be the same throughout the project. Do not mix manufacturers or types.
- H. Hot dip galvanized exterior support hardware after fabrication.
- I. Conduits shall be run parallel or perpendicular to building lines.
- J. Protect equipment, panelboards, cabinets and Switchboard at times from weather, physical damages, rusting, and any foreign debris and oversprayed paint during construction.

3.03 WIRE AND CABLE

- A. Branch Circuit Installation: Branch circuits wire size shall be #12 AWG minimum, with continuous color code identification per standard listed below. Use no mechanical means for pulling wires, and no lubricant except powdered soapstone or approved substitute. Branch circuit splices may be made with Scotch-Lok type connectors up to #8 AWG size, except motor connections. Utilize crimp-type pressure connectors insulated with tape or pre-fabricated covers on motor connections and splices of wiring #6 AWG and larger. Make no splices in home runs. Do not intermix wiring from separate raceway systems unless specifically permitted by the Owner's Representative.

- B. Feeders: Size feeders as shown on drawings. Identify according to color code standards. Make no splices unless shown on the Plans or specifically approved by the Owner's Representative. Splices shall be compression-sleeve type.
- C. Color Coding Standards:
3 phase, 4-Wire System:
- | | 240/120V | 480Y/277V |
|---------|----------|-----------|
| Phase A | Black | Brown |
| Phase B | Red | Orange |
| Phase C | | Yellow |
| Neutral | White | Gray |
1. Equipment ground wire -- green.
 2. Control wiring shall be black with identifying wire numbers at each termination.
 3. Color-coded tape may be used in lieu of color-coded insulation for conductors #8 AWG and larger. However, when color coded tape is used, the conductor insulation shall be black only and shall be tape-identified with color scheme shown above at splices, terminations and junction boxes.
- D. Water Meter Transmitter Cable: Signal wire from telemetry and control panel to water meter shall be installed in underground conduit as noted on the Plans and Details and in accordance with the manufacturers' recommendations and specifications.

3.04 BOXES

- A. Support boxes securely and independently. Mount boxes on building surfaces or support with trapeze hanger. Do not use junction boxes unless the number of bends, pulling length or circuit requirement necessitates their installation. Junction or pull box openings must be accessible. Do not use extension rings to provide Code size space within a new junction box. Provide larger junction boxes as required in lieu of extension rings. Do not intermix raceways and wiring at common junction boxes except at terminal equipment connections.

3.05 WIRING DEVICES

- A. Installation: Install two or more wiring devices shown in one location under a common plate. Install plates with edges in continuous contact with finished wall surfaces. Do not install more than one device in single-gang position.

- B. Device Locations: Device or equipment mounting height given herein the Specifications, Contract Drawing, and/or documents are intended to provide general guidelines pursuant to industry standards. Such guidelines may not be exact or accurate and may or may not conflict with other trade's installation without verification. Provide field coordination and verification with other divisions. Examine other trades shop drawings to ensure that such mounting heights are appropriate for the intended device use, and the device location do not conflict with other components. Immediately report impaired device use and conflict/location to the Owner's Representative for resolution.
- C. Before installation, devices and equipment locations may be revised by the Owner's Representative within 20' of the designed contract location, at no cost.
- D. If the contractor fails to provide such coordination and field verification and results of erroneous installation, the contractor shall remedy such installation per Owner's Representative's direction, at contractors cost.
- E. Mount wiring devices above finished floor to center line of device as follows, unless otherwise noted or as directed by Owner's Representative. Coordinate with Owner's Representative for possible interference with decorative features, art displays, etc.

DEVICE	MOUNTING HEIGHT
Switch (normal conditions)	42"
Switch (handicapped conditions)	36"
Receptacles	18"
Panelboards	72" to top
Disconnect Switches	72" to top
Contactors	72" to top

3.06 MOTOR CONTROLS AND EQUIPMENT CONNECTIONS

- A. General: Provide motor starting equipment and motor connections. Interlock wiring to other equipment as shown. Provide line voltage wiring and connections to equipment shown on plans and/or diagrams. Connect rotating and air handling equipment with flexible conduit to provide sound vibration isolation. Refer to Section 16170.
- B. Disconnect Switches: Provide NEMA Type HD fusible safety switches shown on the electrical drawings and equipment schedules. Switches shall be equipped with the number of poles, voltage rating and ampacity required for the equipment being served.

- C. Temperature Control: Coordinate with Temperature Control Contractor regarding necessary interconnections to starting equipment.

3.07 DISCONNECT SWITCHES

- A. General: Provide disconnect switches as indicated on the drawings, schedules, at motors, motor driven equipment, motor controllers, electric heating equipment, appliances and other equipment items unless the equipment has a self-contained, Code approved disconnecting method.
- B. Mounting: Coordinate mounting location with Equipment Installation Contractor. In general, mounting height shall be 72" (maximum to top of switch).

3.08 FUSES

- A. Provide fuses for equipment containing fuse-holders including equipment furnished by division 15 and other divisions. Size motor branch circuit fuses in accordance with the rating of the motor served. Size fuses for equipment circuits in accordance with the branch circuit rating.

3.09 GROUNDING

- A. General: Provide system and equipment grounding in accordance with the applicable codes and ordinances and as further amplified on the Plans.
- B. Ground service equipment, separately derived systems, conduits, devices and equipment in accordance with NEC, article 250.
- C. Grounding Conductor: Provide green insulated equipment grounding conductor in conduits containing wiring systems above 50 volts. Insulation and conductor type shall be the same for circuit or feeder conductors. Size conductors in accordance with NEC article 250.
- D. Inspection: Place no backfill around made electrode earth grounding systems until the installation is inspected and approved by the Owner's Representative.
- E. Bonding: Conduit systems shall be effectively grounded and bonded together by approved bonding means in accordance with the NEC. Verify ground continuity between conduits, boxes, receptacles and equipment.

END OF SECTION

**SECTION 16420
BUILDING LIGHTING**

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. Conform to General Conditions, Supplementary Conditions, and Division 1.

1.02 GROUND SYSTEM

- A. Ground all electrical work per NEC, State of Washington, and any local rules and regulations.

1.03 MEASUREMENT AND PAYMENT

- A. The Contractor shall be compensated for work performed on this project based on the units of work identified on the Bid Form. All work required to complete the project and not specifically identified by a Bid Form item shall be deemed incidental to the items of work on the Bid Form and no separate compensation shall be made.
- B. All references in the Standard Specifications to measurement and payment shall be deleted from consideration; and the terms agreed to in the Contract substituted therefore.
- C. STANDBY GENERATOR BUILDING LIGHTING
 - 1. Basis of Measurement: Lump Sum.
 - 2. Basis of Payment: Includes all labor, equipment, tools, materials, fuel, and supervision required to:
 - a. furnish and install fixtures, conduits, wires, connectors and fittings, for:
 - i. Interior Lighting.
 - ii. Exterior Lighting with Motion Sensor.
 - iii. Interior Switches.
 - iv. Exterior Alarm Light

PART 2 - PRODUCTS

2.01 GENERAL

- A. All materials and equipment shall be new, undamaged, and shall be UL listed for its use.
- B. All defects and damaged material shall be replaced with new material as necessary and installed at the Contractor's expense.

2.02 INTERIOR LIGHTING FIXTURE

- A. Lithonia C 296T8 MVOLT 120 GEB10IS, Strip Type, Surface Mount 96" long fluorescent fixture with two (2) T8 (48") lamps

2.03 EXTERIOR LIGHTING WITH MOTION SENSOR

- A. RAB Lighting VAN6F26/MS Bronze with factory installed motion sensor.

2.04 INTERIOR SWITCHES

- A. All interior switches shall be in accordance with the NEC, State of Washington, and any local rules and regulations.

PART 3 - EXECUTION

3.01 GROUNDING

- A. The following shall be securely grounded in accordance with the drawings and specifications:
 - Metallic conduits
- B. In addition, any other exposed non-energized metallic parts and/or equipment shall be grounded.

END OF SECTION

SECTION 16430
GAUDIO WELL ELECTRICAL IMPROVEMENTS

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. Conform to General Conditions, Supplementary Conditions, and Division 1.

1.02 GROUND SYSTEM

- A. Ground all electrical work per NEC, State of Washington, and any local rules and regulations.

1.03 MEASUREMENT AND PAYMENT

- A. The Contractor shall be compensated for work performed on this project based on the units of work identified on the Bid Form. All work required to complete the project and not specifically identified by a Bid Form item shall be deemed incidental to the items of work on the Bid Form and no separate compensation shall be made.
- B. All references in the Standard Specifications to measurement and payment shall be deleted from consideration; and the terms agreed to in the Contract substituted therefore.

C. GAUDIO WELL ELECTRICAL IMPROVEMENTS

1. Basis of Measurement: Lump Sum

2. Basis of Payment: Includes all labor, equipment, tools, materials, fuel, and supervision required to:

- a. furnish and install fixtures, conduits, wires, connectors and fittings, for:
 - i. Existing 480V/240V-120V Transformer.
 - ii. Existing Circuit Breaker Panel.
 - iii. Existing Disconnect Switch
 - iv. Existing Motor Starter for Well Pump.
 - v. Existing Hand, Off, Auto Switch
 - vi. Existing Gaudio Well water Level Monitoring System
 - vii. Thermostat and Electric Heater

PART 2 - PRODUCTS

2.01 GENERAL

- A. All materials and equipment shall be new except as noted, undamaged, and shall be UL listed for its use.
- B. All defects and damaged material shall be replaced with new material as necessary and installed at the Contractor's expense.
- C. Where existing equipment to be reinstalled proves to be unsuitable for re-installation, furnish new equipment to replace the existing equipment at no additional cost.

PART 3 - EXECUTION

3.01 Existing Equipment

- A. Remove existing equipment from existing building carefully and store dry and without damage for reinstallation.
- B. Reinstall existing equipment in the Standby Generator Building as shown and noted on the Plans and Details and as described herein.
- C. Connect to existing cables and conductors from the Well Pump Control Building and extend conduits and conductors to equipment in the Standby Generator Building in order that the equipment functions as follows:
 - 1. Existing 480V/240V-120v Transformer primary circuit is energized by the existing circuit breakers in the Well Pump Control Building.
 - 2. Existing Circuit Breaker Panel main busses are energized by the Existing 480V/240v-120V transformer
 - 3. Existing Gaudio Well Pump and existing Motor Starter are energized by circuit breakers in the existing Circuit Breaker Panel and are controlled by the circuits in and through the existing Hand, Off, Auto switch.
 - 4. Existing Hand, Off, Auto Switch and existing Gaudio Well pump operate from existing control cables from the Well Pump Control Building.
 - 5. Existing Gaudio Well level transducer completes existing level sensor loop from the Well Pump Control Building.
 - 6. Extend Conductors and approved flexible, water proof conduit between the exiting motor starter and the existing junction box at the Gaudio Well wellhead.

3.02 New Equipment

- A. Furnish and install circuit breakers in the existing circuit breaker panel for the Standby Generator Battery charger and for all other circuits required for operation of any auxiliary or control circuits for the Standby Generator and for the Auto Transfer Switch.
- B. Furnish and install circuit breakers in the existing circuit breaker panel for the Standby Generator Building interior and exterior lighting and heater.

END OF SECTION

SECTION 16440
ADDENDUM 1
AUTOMATIC TRANSFER SWITCH

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Automatic Transfer Switch - Furnish and install automatic transfer switch as specified herein and where shown on the associated drawings.
- B. Modify existing Main Panel and existing Puget Sound Electric service components and all necessary appurtenances in the Well Pump Control Building to accommodate Conduits and Conductors for the Automatic Transfer Switch as specified herein and where shown on the associated drawing.

1.02 MEASUREMENT AND PAYMENT

- A. The Contractor shall be compensated for work performed on this project based on the units of work identified on the Bid Form. All work required to Complete the project and not specifically identified by a Bid Form item shall be deemed incidental to the items of work on the Bid Form and no separate compensation shall be made.
- B. All references in the Standard Specifications to measurement and payment shall be deleted from consideration; and the terms agreed to in the Contract substituted therefore.

C. AUTOMATIC TRANSFER SWITCH

- 1. Basis of Measurement: per lump sum.
- 2. Basis of Payment: Includes all labor, equipment, tools, materials, fuel, and supervision required to furnish and install automatic transfer switch including software, startup, and technical assistance, furnishing and installing conduit connections, and all items required for complete and functional Automatic Transfer Switch.

1.03 DELIVERY, STORAGE, AND HANDLING

- A. Inspect and report concealed damage to carrier within their required time period.
- B. Handle carefully to avoid damage to panelboard internal components,

enclosure, and finish.

- C. Store in a clean, dry environment. Maintain factory packaging and, if required, provide an additional heavy canvas or heavy plastic cover to protect enclosure(s) from dirt, water, construction debris, and traffic.

1.04 OPERATIONS AND MAINTENANCE MATERIALS

- A. Manufacturer shall provide installation instructions and NEMA Standards Publication PB 1.1 - Instructions for Safe Installation, Operation and Maintenance of Panelboards Rated 600 Volts or less.

1.05 WARRANTY

- A. Manufacturer shall warrant specified equipment free from defects in materials and workmanship for one (1) year from the date of substantial completion.

PART 2 PRODUCTS

2.01 AUTOMATIC TRANSFER SWITCH

- A. Automatic Transfer Switch shall be ASCO Series 7000, service entrance power transfer switch, with 400 amp RMS switch rating, 480 volt 3 phase, NEMA 4 enclosure (key padlockable) model 7-A-US-A-3-400-N-5X-C with ASCO 7000 Series Microprocessor Controller with 2C Time Delay and 14A auxiliary contacts to indicate switch position or approved equal.

PART 3 EXECUTION

3.01 AUTOMATIC TRANSFER SWITCH INSTALLATION

- A. Install Automatic Transfer Switch in accordance with the manufacturer's recommendations and as shown on the Plans and Details.
- B. Cleanup: After construction is complete panel to remove dust, rust, and debris.
- C. Extend conduits and conductors in interior and exterior spaces and underground cables as required between the existing Puget Sound Energy electric service and the automatic transfer switch and the standby generator and the main circuit breaker panel in the Well Pump Control Building and as required between the Automatic Transfer Switch and the Standby Generator. Size conductors for loads encountered in accordance with NEC and Washington Safety Code. Cables and conductors for between the standby generator and the automatic transfer switch shall be

- sized for 200 amp load.
- D. Program automatic transfer switch controller for protection of the Standby Generator and for exercising the Standby Generator and other controller features as directed by the Engineer.

3.02 FIELD QUALITY CONTROL

- A. Inspect complete installation for physical damage, proper alignment, anchorage and grounding.
- B. Maintain phasing between service entrance and Well Pump Control Building Main Panel busses.
- C. Check tightness of bolted conductor connections with calibrated torque wrench per manufacturer's recommendations.
- D. Test operation of installed automatic transfer switch with simulated electrical service outage while under load, followed by operation of well pump load, followed, after sufficient time for Standby Generator engine warmup, by simulated restoration of electrical service.

END OF SECTION

SECTION 16403

ADDENDUM 1

ELECTRICAL WORK - EXTERIOR

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. Conform to General Conditions, Supplementary Conditions, and Division 1.

1.02 GROUND SYSTEM

- A. Ground all electrical work per NEC, State of Washington, and any local rules and regulations.

1.03 MEASUREMENT AND PAYMENT

- A. The Contractor shall be compensated for work performed on this project based on the units of work identified on the Bid Form. All work required to complete the project and not specifically identified by a Bid Form item shall be deemed incidental to the items of work on the Bid Form and no separate compensation shall be made.

- B. All references in the Standard Specifications to measurement and payment shall be deleted from consideration; and the terms agreed to in the Contract substituted therefore.

C. ELECTRICAL WORK - EXTERIOR

- 1. Basis of Measurement: per lump sum.

- 2. Basis of Payment: Includes all labor, equipment, tools, materials, fuel, and supervision required to:

- a. furnish and install conduits, cables, connectors and fittings, between:
 - i. Well Pump Control building and well level sensor J-boxes for the Gaudio Well.
 - ii. Well Pump Control Building and Standby Generator Building for automatic transfer switch feeder from the Standby Generator.
 - iii. Well Pump Control Building and Standby Generator Building for Gaudio well pump control.

- iv. Automatic Transfer Switch and Puget Sound Energy Electrical service facilities for Puget Sound Energy feeder for the Automatic Transfer Switch
 - v. Automatic Transfer Switch and Main Circuit Breaker Panel Main Circuit Breaker for main circuit breaker panel feeder.
- b. locate and mark all electrical lines between the well pump control building and the existing Gaudio Well building prior to construction and all Puget Sound Energy electrical lines within the project limits prior to construction.

PART 2 - PRODUCTS

2.01 GENERAL

- A. All materials and equipment shall be new, undamaged, and shall be UL listed for its use.
- B. All defects and damaged material shall be replaced with new material as necessary and installed at the Contractor's expense.

2.02 RACEWAYS

- A. PVC Conduit and conduit fittings: Schedule 40
- B. Elbows 45° and 90° Sweeps: Shall be schedule 40 PVC

2.03 GROUND CONDUCTORS

- A. Ground grid and grounding electrode conductors shall be soft drawn, minimum 95% conductivity, copper, bare, stranded in accordance with UL standards.

PART 3 - EXECUTION

3.01 EXCAVATION

- A. Excavation of every description and of whatever substances encountered shall be performed to the lines and grades indicated. During excavation, material satisfactory for backfilling shall be stockpiled in an orderly manner at a distance from the banks of the trench sufficient to avoid overloading and to prevent slides or cave-ins. Adequate drainage shall be provided for the stockpiles and surrounding areas by means of ditches, dikes, or other

approved methods. The stockpiles shall also be protected from contamination with unsatisfactory excavated material or other material that may destroy the quality and fitness of the suitable stockpiled material. If the Contractor fails to protect the stockpiles and any material becomes unsatisfactory as a result, such material, if directed, shall be removed and replaced with satisfactory on-site or imported material from approved sources at no additional cost to the Owner. Excavated material not required or not satisfactory for backfill shall be removed from the site and shall be disposed outside the limits of Owner controlled land and is the Contractor's responsibility. Any excess satisfactory excavated materials shall not be mixed with unsatisfactory materials or be disposed of in such a manner as to interfere with subsequent borrow operations. Grading shall be done as may be necessary to prevent surface water from flowing into the excavation and any water accumulating therein shall be removed so that the stability of the bottom and sides of the excavation is maintained. Unauthorized over-excavation shall be backfilled in accordance with paragraph BACKFILLING at no additional cost to the Owner.

1. Trench Excavation: The trench shall be excavated as recommended by the manufacturer of the conduit to be installed. Trench walls below and above the top of the conduit shall be sloped.
 - a). Bottom Preparation: The bottoms of trenches shall be accurately graded to provide uniform bearing and support for the bottom quadrant of each section of the pipe. Bell holes shall be excavated to the necessary size at each joint or coupling to eliminate point bearing. Stones of 2" or greater in any dimension, or as recommended by the pipe manufacturer, whichever is smaller, shall be removed to avoid point bearing.
 - b). Removal of Unyielding Material: Where unyielding material is encountered in the bottom of the trench, such material shall be removed 6" below the required grade and replaced with suitable materials as provided in paragraph BACKFILLING.
 - c). Removal of Unstable Material: Where unstable material is encountered in the bottom of the trench, such material shall be removed to the depth directed and replaced to the proper grade with select granular material as provided in paragraph BACKFILLING. When removal of unstable material is required due to the fault or neglect of the Contractor in his performance of the work, the resulting material shall be excavated and replaced by the Contractor without additional cost to the Owner.
2. Excavation For Appurtenances: Excavation for manholes, handholes/vaults, or similar structure shall be of sufficient size to permit the placement and removal forms for the full length and width of structure

footings and foundations as shown. Removal of unstable material shall be as specified above. When concrete or masonry is to be placed in an excavated area, special care shall be taken not to disturb the bottom of the excavation. Excavation to the final grade level shall not be made until just before the concrete or masonry is to be placed.

- B. Jacking, Boring And Tunneling: Unless otherwise indicated, excavation shall be by open cut except that sections of a trench may be jacked, bored, or tunneled if, in the opinion of the Engineer, the conduit, cable, or duct can be safely and properly installed and backfill can be properly tamped in such sections.

3.02 BACKFILLING

- A. Backfill material shall consist of satisfactory material. Backfill shall be placed in layers not exceeding 6" loose thickness for compaction by hand-operated machine compactors, and 9" loose thickness for other than hand-operated machines, unless otherwise specified. Each layer shall be compacted to at least 95% maximum density for cohesionless soils and 90% maximum density for cohesive soils, unless otherwise specified.
 - 1. Trench Backfill: Trenches shall be backfilled to the grade shown.
 - a). Replacement of Unyielding Material: Unyielding material removed from the bottom of the trench shall be replaced with satisfactory material.
 - b). Replacement of Unstable Material: Unstable material removed from the bottom of the trench or excavation shall be replaced with select granular material placed in layers not exceeding 6" loose thickness.
 - 2. Bedding And Initial Backfill: Bedding shall be of the type and thickness shown. Bedding shall be clean, sand-gravel mixture free from organic matter and conforming to the following gradation when tested in accordance with ASTM D-422.

U.S. Standard	% Passing Sieve Size
1"	100
#4	25-80
#200	0-10

- 3. Initial backfill material shall be placed in layers of a maximum of 6" loose thickness and compacted with approved tampers to 95% maximum density and to a height of at least 1' above the utility conduit. The backfill shall be brought up evenly on both sides of conduit for the full length of the conduit. Backfill material in this portion of the trench shall consist of satisfactory material at a moisture content that will facilitate compaction,

free from stones of such size as recommended by the conduit manufacturer, or larger than 2" in any dimension, whichever is smaller, except that where the conduit is coated or wrapped for protection against corrosion the backfill material shall be free of stones larger than 1" in any dimension or as recommended by the conduit manufacturer, whichever is smaller.

4. Final Backfill: The remainder of the trench, except for special materials for roadways, shall be backfilled with satisfactory material. Backfill material shall be deposited and compacted as follows:
 - a). Seeded Areas and Miscellaneous Areas: Backfill shall be deposited in layers of a maximum of 12" loose thickness and compacted to 85% 5 maximum density for cohesive soils and 90% maximum density for cohesionless soils. Compaction by water flooding or jetting will not be permitted. This requirement shall also apply to all other areas not specifically designated above.
 - b). Backfill for Appurtenances: After the manhole, vault, handhole, or similar structure has been constructed, backfill shall be placed in such a manner that the structure will not be damaged by the shock of falling earth. The backfill material shall be deposited and compacted as specified for final backfill and shall be placed in such a manner as to prevent eccentric loading and excessive stress on the structure.

3.03 PLASTIC MARKING TAPE

- A. Red warning tape shall be installed directly above pipe, at a depth of 12" below finished grade unless otherwise shown. The tape shall be acid and alkali-resistant polyethylene film, 6" wide with minimum thickness of 0.004". Tape shall have a minimum strength of 1,750 psi lengthwise and 1,500 psi crosswise with an elongation factory of 350%.

3.04 PERMANENT MARKERS

- A. Where pipes are stubbed below grade for future services, provide graystone Index PC 3.06 Surveyor's Monument located directly over end of stubbed pipe with top at finished grade, with marking indicating system piping serves.

3.05 GROUNDING

- A. The following shall be securely grounded in accordance with the drawings and specifications:
 - Metallic conduits
- B. In addition, any other exposed non-energized metallic parts and/or equipment shall be grounded.

- C. Unless otherwise indicated, all grounding conductors shall be AWG #2 copper stranded. Ground conductors shall be attached to all metallic items with hydraulically applied compression fittings designed to be bolted in place. Termination at ground rods shall be attached with appropriately configured hydraulically applied compression fittings.
- D. Maximum ground resistance of 10 ohms shall be provided by supplementing the grounding methods specified herein as required. Ground resistance shall be measured in normally dry conditions at least 48 hours after rainfall.
- E. Fusion welding shall not be used on this project. Ground system connections/terminations shall be hydraulically applied compression fittings only.
- F. Metallic conduits shall be grounded using metallic grounding bushings or universal ground clamps. Grounding conductor shall be #2 copper and shall extend to the nearest ground point.
- G. All ground connections shall be compression type and shall be accessible.

3.06 CONDUIT PENETRATIONS AT STANDBY GENERATOR BUILDING

- A. Conduit penetrations shall be through concrete floor with PVC conduit. Penetrations at shall be adjacent to exterior walls of building, except as shown or noted.

END OF SECTION