



WILSON
ENGINEERING

City of Ferndale
Ferndale, Washington

Contract Documents
for the Construction of

SHOP WELL #2 PERMANENT PUMP

- PART 1 – BIDDING REQUIREMENTS**
- PART 2 – CONTRACTING REQUIREMENTS**
- PART 3 – TECHNICAL SPECIFICATIONS**
- PART 4 – REFERENCE DOCUMENTS**
- PART 5 – DRAWINGS**

Wilson Project 2020-022

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July 2, 2020

ENGINEER'S STATEMENT

THE CONTRACT DOCUMENTS HAVE BEEN PREPARED UNDER THE DIRECTION OF THE PROFESSIONAL, REGISTERED IN THE STATE OF WASHINGTON, WHOSE SEALS AND SIGNATURES APPEAR BELOW.



JEFF CHRISTNER, PE
PROJECT PRINCIPAL
WILSON ENGINEERING, LLC

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PART 1 - BIDDING REQUIREMENTS

SECTION 00 11 16 – INVITATION TO BID

ADVERTISEMENT FOR BIDS

Project Name: Ferndale Shop Well #2 Permanent Pump Project
Bid Date: July 27, 2020 - 11:00 AM

Engineer: Wilson Engineering LLC, Bellingham, WA
Engineer's Estimate: \$300,000 to \$400,000 (including sales tax)

NOTICE IS HEREBY GIVEN by CITY OF FERNDALE that electronic .pdf copies of bid proposals will be received by the City of Ferndale via email to Public-Works@cityofferndale.org until July 27, 2020 at 11:00am. The opening and reading of the bids will then be live-streamed via Microsoft Teams for the Ferndale Shop Well #2 Permanent Pump Project. Live stream information can be found on the City of Ferndale's project website at <https://www.cityofferndale.org/public-works-department/capital-projects/shop-well-2-permanent-pump-project/>. Hard copies matching the electronically delivered bid proposals must be received via US mail Attn: Ferndale Public Works Department, Shop Well #2 Permanent Pump Project Bid, PO Box 936, Ferndale, Washington, 98248, (360) 384-4006, no later than August 3, 2020 at 5:00 pm.

Please contact either Jeff Christner or Brian Smith, Wilson Engineering, (360) 733-6100, for project information. Only bids from bidders who have obtained the Contract Documents and have requested to be listed on the Planholders' List, will be accepted. Copies of plans and specifications are on file for review at Wilson Engineering LLC, 805 Dupont Street, Bellingham, WA 98225. Hard copies are available for purchase (\$100 non-refundable fee), or may be downloaded from the Wilson Engineering project website at <https://wilsonengineering.com/bidding-documents/>

A deposit in the form of a postal money order, cashier's check, or bond in the amount of 5% of the greatest amount bid must be submitted with each bid proposal. Should the successful bidder fail to enter into a contract or furnish a satisfactory contract bond within the time stated in the specifications, the deposit shall be forfeited to the City.

The City shall reject any bid not accompanied by bid security. The City reserves the right to reject any or all bids if such action is in the best interest of the City. The City of Ferndale is an equal opportunity and affirmative action employer. Small, Minority and Women-owned businesses are encouraged to submit bids.

All bidders must be licensed contractors registered in the State of Washington. All work performed on this project will be subject to prevailing state wage rates. Contractor will be required to obtain a City of Ferndale business license prior to mobilization.

END OF SECTION

SECTION 00 21 13 – INSTRUCTIONS TO BIDDERS

INSTRUCTIONS TO BIDDERS

Neither the State of Washington nor any of its departments or employees are, or shall be, a party to this contract or any subcontract.

1. Bidder Qualifications

- A. Prospective Bidders shall be registered by the Washington State Department of Labor and Industries in accordance with state law.
- B. Corporations shall be registered with the State of Washington, Office of the Secretary of State.
- C. Bidders shall be regularly employed in the type of work contemplated herein.

2. Bidder's Representations

Submittal of a bid shall be deemed conclusive evidence that the bidder has:

- A. Carefully examined the proposed work site, become familiar with conditions impacting the work, and incorporated such observations into the bid.
- B. Read and understands the bidding and contract documents.
- C. Produced a bid that is without exception based on the materials, equipment and systems required by the bidding documents.
- D. Produced a bid that is made based on a complete set of Bidding Documents. The Owner is not responsible for any bidding errors resulting from the use of incomplete documents.

3. Document Interpretation

- A. The bidder shall carefully study and review the Bid Documents and promptly report any errors or omissions to the Engineer.
- B. Bidders or sub-bidders shall make any requests for clarification to the Engineer. If so directed, the Engineer may require the Bidder to submit requests in writing.
- C. Interpretations, corrections and changes to the Bidding Documents shall be made by Addendum. Interpretations, corrections and changes to the Bidding Documents made in any other manner will not be binding, and Bidders shall not rely on them.
- D. Substitutions shall not be considered prior to the receipt of bids. The Owner is not responsible for any bidding errors resulting from the use of substitutions.

4. Addenda

- A. Addenda will be mailed, emailed, delivered or faxed to all who are known by the Engineer to have received a complete set of Bidding Documents. Copies will also be provided to the locations where plans are available for review.
- B. The Bidder shall acknowledge receipt of addenda in their bid.

5. Bidding Procedures

- A. To be considered responsive, bids shall be submitted on the enclosed form and shall be filled in by typewriter or manually in ink.
- B. The Bid form shall include the Bidder's legal name exactly as it appears on his/her registration. Form shall be signed by the individual authorized to represent the Bidder.
- C. A list of subcontractors individually accounting for more than 10-percent of the Contract Sum and the work said subcontractor will perform shall be submitted with the bid or within one hour of the published bid time.

6. Pre-Bid Meeting

- A. There will not be a pre-bid meeting for this project. If bidder wishes to see the site, bidder may request a site visit by contacting the Engineer.

7. Bid Security

- A. Each Bid shall be accompanied by a Bid Security in the form of a cashier's check, certified check or surety bond equal to 5-percent of the total Bid amount. Security shall pledge that the Bidder shall enter into a contract with the Owner in accordance with the terms of the Bid Documents including furnishing payment and performance bonds.
- B. In the event a Bidder refuses to enter into such contract or fail to furnish such bonds as required, the bid security shall be forfeited to the Owner as liquidated damages.
- C. The Owner may retain bid securities submitted with the bid until such time as; (1) the contract has been executed and bonds received, (2) 30-days have elapsed, (3) all Bids have been rejected.

8. Submission of Bids

- A. Bids shall be submitted as described in Section 00 11 16 – Invitation to Bid. The opening and reading of electronic .pdf copies of Bids will be live streamed via Microsoft Teams.
- B. Electronic .pdf copies of Bids received after the published Bid time and date will not be considered.
- C. Hard copy Bids (matching the electronically delivered Bids) submitted by mail shall conform with the above requirements and be sent to Ferndale Public Works Department, Shop Well #2 Permanent Pump Project Bid, P.O. Box 936, Ferndale, WA 98248, All bids shall be received in sealed envelopes with "FERNDALE SW #2 PERMANENT PUMP" marked plainly thereon. Bidder shall assume full responsibility for timely delivery of bid documents and the Owner is not responsible for bids received late. See submittal deadline information in Section 00 11 16 – Invitation to Bid.
- D. Oral and/or facsimile bids, modifications, or adjustments are not valid and will not receive consideration.

9. Modification or Withdrawal of Bid

- A. After the bid opening, bids shall not be withdrawn, modified or canceled by the Bidder during the stipulated time period.
- B. Bids submitted by mail prior to the bid opening may be modified or withdrawn by notice to the Owner. Such notice shall be in writing and signed by the same authorized individual signing the bid form. If such modifications or withdrawals are transmitted electronically, the original document shall be mailed and postmarked on or before the date and time of the bid opening.
- C. Withdrawn bids may be resubmitted up until the date and time of the bid opening and in accordance with these Instructions to Bidders.
- D. Bid security shall be in an amount sufficient for the bid as modified or resubmitted.

10. Opening of Bids

- A. Bids (electronic .pdf copies) received on time will be opened and read aloud at the time and place stipulated in the Bid Solicitation. An abstract or tabulation will be made available to Bidders.
- B. Should a Bidder discover an error in his/her bid after submittal, the Bidder may request withdrawal of the bid with the following conditions:
- C. The Bidder must document the error(s) for the Owner. The Owner will review documentation and determine if the bid withdrawal and release of the Bid Security will be allowed.
- D. The Owner must receive the Bidder's intent to withdraw his/her bid submittal in writing no more than 30-hours after the bid opening (faxed notice is acceptable).
- E. The Owner alone will approve or disapprove the request for withdrawal. If approved, the Bidder will no longer be considered for Contract award and the Bid Security will be returned.
- F. If the Bidder fails to notify the Owner in accordance of an error as set forth above, and the Owner awards the Bidder the Contract, the Bidder shall either execute the Contract for the bid amount or withdraw the bid and forfeit the Bid Security.

11. Rejection of Bids

- A. The Owner reserves the right to reject any or all bids, reject a bid not accompanied by a proper bid security or other material required by the Bidding Documents, or reject a bid which is in anyway irregular or incomplete.

12. Acceptance of Bids

- A. The Owner intends to award the Contract to the lowest responsible responsive bidder whose bid submittal does not exceed available funds and conforms with the requirements described herein. The Owner shall have the right to waive informalities or irregularities in a bid submittal and to accept the bid that, in the opinion of the Owner, is in the Owner's best interest.
- B. After determination of the successful bidder based on the lowest responsible responsive bidder and other factors set forth in these instructions, the award may be made to said successful bidder on its base Bid and any combination of its additive bid items for which Owner determines funds will be available at the time of award.

- C. In evaluating whether a bidder is responsible, Owner will consider the qualifications of the bidder and many consider the qualifications and experience of subcontractors and suppliers purposed for those portions of the work for which the identity of subcontractors and suppliers must be submitted as provided in the bidding documents.

13. Contract Bond

- A. Bidders shall provide a contract bond as attached. Contract bond shall be signed by an approved surety or sureties, be in the full contract amount, and cover the faithful performance of the work described in the Contract Documents. The Contract Bond shall be in full effect until one year after Substantial Completion.

14. Contract Agreement and Award

- A. Owner's execution of the contract is contingent on the timely receipt of the Contract Bond and other submittals required by the Contract Documents.
- B. The award of the Contract, if it be awarded, shall be made within 45-days of the bid opening to the Bidder deemed by the Owner to be the lowest responsible responsive bidder.
- C. The 45-day period may be extended by mutual consent of the bidder and the Owner. If, after the 45-day period and no agreement to time extension has been made, the Contractor may withdraw his bid.
- D. The Owner reserves the right to award the bid schedules and bid alternates in any combination.

15. Execution of Contract

- A. The Bidder to whom the contract has been awarded shall sign the contract and return it and other submittals within 10 working days of the award.
- B. The Owner shall have the right to reject a contract submitted by a bidder if it is qualified by reservations or conditions stipulated by the bidder or its surety.
- C. No bid is binding on the Owner until executed by the City of Ferndale. No work shall be performed within the project site prior to the Notice to Proceed. Material or equipment orders or work undertaken away from the project site prior to contract execution shall be at the sole risk of the bidder.

16. Failure to Execute Contract

- A. If the bidder to whom award has been made fails to sign the contract and furnish satisfactory bonds within 10 calendar days of the award, or declares in writing its intent not to execute the contract, the bid security will be forfeited to the Owner and the second lowest responsible bidder will be notified of its receipt of award.
- B. If the second lowest responsible responsive bidder fails to execute the contract and furnish bonds within 20 calendar days after such notification, forfeiture of its bid security shall also be made and the third lowest responsible responsive bidder will be notified of its receipt of award, and in like manner until either (1) the contract and bond are executed by a responsible responsive bidder, (2) or further bid submittals are rejected, or (3) the number of bids submitted is exhausted.

- C. If the contract is not executed by the Contractor and Owner within the stipulated time, and it is evident that circumstances warrant an extension of time, the Owner may extend the time for executing the contract and/or bond for a period not to exceed 10 additional calendar days.

17. Return of Bid Security

- A. When bid submittals have been examined, bid securities and deposits accompanying submittals ineligible from further consideration will be returned.
- B. All other bid securities and deposits will be held until the contract has been properly executed, after which bid securities and deposits except those subject to forfeiture will be returned.

*****END OF SECTION*****

SECTION 00 24 13 – SCOPE OF BID

BID SCHEDULE –

CITY OF FERNDALE – FERNDALE SW#2 PERMANENT PUMP

SCOPES OF BID

This section outlines the bid items listed on the Bid Schedule in Section 00 41 00 - Bid Form. The description is not all-inclusive, but generally indicates the scopes of the work. Descriptions represent work that shall be complete, in-place, tested, and in full operation prior to Owner's acceptance.

Each item is to be paid on a lump sum or unit price basis and shall include furnishing all necessary planning, labor, equipment, materials, and supplies required to furnish, install and test the improvements covered under the item. Each item shall include, as applicable, work shown on the plans including all disposal of waste material at contractor's site, protecting existing equipment and utilities and services, cleaning, testing, and start-up. The scope of each bid item is outlined below. It is not intended to include all of the appurtenances of an item in the description. See appropriate Specification or WSDOT Standard Specifications and as shown on the Drawings for a more complete representation of the work. It is the responsibility of the Bidders to include all costs for the completed project in the bid items listed.

BASE BID ITEM

1. Permanent Well Pump, Lump Sum

- A. Measurement for payment for individual items of SW #2 Permanent Pump Project will be based upon the unit values listed in the Schedule of Values submitted by the CONTRACTOR and reviewed and approved by the Engineer.
- B. Payment for the SW #2 Permanent Pump Project will be made at the Lump Sum Price shown on PROPOSAL for Bid Item 1, which will constitute full compensation for all WORK as described in the Contract Documents.

UNIT QUANTITY BID ITEMS

2. City SCADA/PLC Programmer Services, Force Account (FA)

- A. Measurement for payment for City SCADA/PLC Programmer Services by TSI (contact: Mitch Stewart, phone: 425-320-7632) will be based on the actual force account total of finished City SCADA/PLC Programmer Services work for Bid Items for startup and testing of the complete system (including all PLC, Operator Interface, and SCADA System programming) as directed by City Staff and per Contract Documents. Force account work to be per WSDOT Standard Specifications, Section 1-09.6. An outline of the anticipated services is provided in PART 4 - Reference Documents.
- B. Payment for Programming will be made at the total sum of the actual force account, said payment will constitute full compensation for all WORK which shall be in accordance with the applicable specifications, including 2020 WSDOT requirements.

*****END OF SECTION*****

SECTION 00 31 13 – PRELIMINARY PROJECT SCHEDULE

The following Preliminary Project Phasing Plan is provided for planning purposes. This phasing plan is not meant to dictate means and methods to perspective Bidders or take the place any required planning on the part of the Bidder to provide a responsive Bid. This phasing plan is simply an outline of the work to be performed that takes into the account the lead-time and critical path nature of the submittals, ordering, and delivery of the project equipment.

Preliminary Project Schedule

1. Open Bids: July 27, 2020
2. Notice of Award: August 2020
3. Construction Submittals: August/September 2020
4. Anticipated arrival of well pump and motor (7 month lead time): April 2021
5. Removal of existing well pump and motor: April 2021
6. Installation of permanent well pump and motor: April 2021
7. Start-up of permanent well pump and motor: April 2021
8. Substantial Completion Deadline: April 30, 2021

*****END OF SECTION*****

SECTION 00 41 00 – BID PROPOSAL

Name of Bidder: _____

To: City of Ferndale
2095 Main Street
P.O. Box 936
Ferndale, WA 98248

Project: Ferndale SW #2 Permanent Pump Project

BASE BID – Shop Well #2 Permanent Pump Project

ITEM		APPROX. QTY	UNIT	UNIT PRICE	AMOUNT
1	Well Pump	1	LS		
	BASE BID ITEM 1				

UNIT QUANTITY BID ITEMS

ITEM		APPROX. QTY	UNIT	UNIT PRICE	AMOUNT
2	City SCADA/PLC Programmer Services	1	FA	\$8,512.00	\$8,512.00
	SUBTOTAL UNIT QUANTITY BID ITEM 2				

	SUBTOTAL ITEMS 1-2		\$
	8.7% SALES TAX (City of Ferndale)		\$
	TOTAL BID		\$

LIST OF MANUFACTURERS

The named manufacturers for some equipment items are listed below. Contractor is to circle their selected manufacturer, when a choice is available. Contractor's Base Bid Item #1 – Wellhouse Project is to be based on the following:

Equipment

Base Bid Manufacturer

A. Permanent Well Pump

Peerless

EQUIPMENT ALTERNATES:

Contractors may submit an approval package for equipment of alternate manufacturers to the base bid manufacturer for review with their bid and included as an Equipment Alternate on this Bid Proposal. A pre-approval review prior to bid will not be done. Contractors proposing alternate manufacturers will be responsible for all costs associated with system evaluation and redesign including all electrical, mechanical, and civil aspects of the installation.

A. Furnish Permanent Well Pump Equipment other than specified.

Lump Sum Deduction \$ - Deduction _____

Amount in Words: _____

Manufacturer & Model No. _____

Note 1: Mobilization items and partial payments for Mobilization shall be in accordance with WSDOT Standard Specifications Section 1-09.7.

Note 2: See Section 00 24 13 –Scopes of Bids for more description of each bid item.

The Owner reserves the right to accept or reject any or all bid prices within sixty (60) days of the bid date.

Time for Completion

See Supplementary Condition 15 - Completion Date for completion time requirements.

Liquidated Damages

The undersigned agrees to pay the Owner as liquidated damages the sum as specified in the General Conditions for each consecutive calendar day that is in default after the Contract Time. Liquidated damages shall be deducted from the contract by change order or from the Contractor's application for payment as determined by Owner in its sole discretion.

Contractor is required to pay Washington State Prevailing Wages. All work performed on this project will be subject to the prevailing state wage rates.

Receipt of Addenda

Receipt of the following addenda is acknowledged:

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

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.*

Non-Collusion Declaration: By signing below, I hereby declare that I, firm, association or corporation has (have) not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action restraining free competitive bidding for this project.

Signed by _____, Official Capacity _____

Print Name _____

Address _____

City _____ State _____ Zip Code _____

Date _____ Telephone _____ FAX _____

State of Washington Contractor's License No. _____

Federal Tax ID # _____ e-mail address: _____

Employment Security Department No. _____

***** END OF SECTION *****

SECTION 00 43 13 – BID BOND FORM

Deposit Statement

Herewith find a deposit in the form of certified check, or cashier's check, in the amount of
Five percent (5%) of maximum amount bid (Total for all Bid Items + sales tax) in the attached Proposal.

Bid Bond

KNOW ALL PEOPLE BY THESE PRESENTS, that _____ the
CONTRACTOR, hereinafter known as PRINCIPAL, and _____ hereinafter
known as SURETY, are held and firmly bound to the City of Ferndale hereinafter known as
OWNER, in the penal sum of _____

_____ dollars (not less than 5% of Base Bid plus Additive Alternates including Washington State Sales Tax) for the
payment of which sum well and truly to be made, we do jointly and severally bind ourselves, our heirs, executors,
administrators, successors and assigns firmly by these presents.

WHEREAS, the PRINCIPAL has submitted a bid for

(Project Title): _____

NOW, THEREFORE, the condition of this obligation is such that if the OWNER accepts the bid of the
PRINCIPAL, and

- a. the PRINCIPAL executes such contract documents required by the terms of the bid and provides required
Bonds for the performance of the contract and for the prompt payment of labor and material furnished for
the project as may be specified in the bid then this obligation is satisfied, or
- b. in the event of the failure of the PRINCIPAL to execute such contract documents and provide such Bonds
required by the terms of the bid, the PRINCIPAL shall pay and forfeit to the OWNER the full penal sum
hereof, then this obligation shall be null and void; otherwise this obligation remains in full force and effect
and the SURETY shall forthwith pay and forfeit to the OWNER, as a penalty and liquidated damages, the
amount of this bond.

SIGNED, SEALED AND DATED THIS _____ day of _____, 20_____.

PRINCIPAL

SURETY

By

By

Title

Title

Address of PRINCIPAL

Address of SURETY

Note: If PRINCIPAL is Partnership, all Partners should execute bond. 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 of Washington. A power of attorney must be provided which appoints the
SURETY's true and lawful attorney-in-fact to make, execute, seal and deliver this bond.

*** END OF SECTION ***

SECTION 00 43 93 – BID SUBMITTAL CHECKLIST

The bidder is advised to use the following list to assemble all forms required to be submitted with their bids. In accordance with RCW 39.30.060, bidders shall submit the required documentation listed below.

Bid must be received prior to **11:00 A.M. PST, Wednesday, July 22, 2020.**

Bid Submittal Checklist

Part 1 – (to be submitted with the bid)

- _____ Bid Proposal (Section 00 41 00 BID PROPOSAL)
- _____ Bid Guarantee (Section 00 43 13 BID BOND or other type of Bid Guarantee)
- _____ Contractors Qualifications (Section 00 45 13)
- _____ Non-Collusion Affidavit (Section 00 45 19)
- _____ Certification of Compliance with Wage Payment Statues (Section 00 45 29)

Part 2 – (to be submitted either with the bid or within 1-hour of the bid)

- _____ List of Subcontractors (Section 00 45 33)
- _____ Subcontractors Qualifications (Section 00 45 43)

***** END OF SECTION *****

SECTION 00 45 13 - CONTRACTORS QUALIFICATIONS

CONTRACTORS QUALIFICATIONS

The below listed reference information shall be submitted with the Bid.

Bidder to list three previous drinking water well pump projects and/or drinking water facility projects with similar value (\$200,000+) completed by Bidder as prime contractor. Bidder shall have successfully completed with their own equipment and personnel a minimum of three similar projects in the last seven years to be considered qualified.

1. Project: _____
(Name and Location)
Contract Amount: _____

Reference: _____
(Company Name, Contact & Telephone)
2. Project: _____
(Name and Location)
Contract Amount: _____

Reference: _____
(Company Name, Contact & Telephone)
3. Project: _____
(Name and Location)
Contract Amount: _____

Reference: _____
(Company Name, Contact & Telephone)

Bidder shall provide the following information.

1. Resume of superintendent proposed for project.
2. List and provide references (Owner and Engineer) for any project within the last three years which have involved disputes for which the Contractor filed a claim resulting in formal dispute resolution, third-party mediation or arbitration, or a lawsuit.
3. List and provide references (Owner and Engineer) for all public works contracts in which the Contractor was sued by the Owner.

*** END OF SECTION ***

SECTION 00 45 19 – NON-COLLUSION AFFIDAVIT

NON-COLLUSION AFFIDAVIT

STATE OF WASHINGTON)
) ss.
COUNTY OF WHATCOM)

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 the restraining of free competitive bidding in the preparation and submission of a proposal to the City of Ferndale for consideration in the award of a contract on the improvement named above.

Contractor

Subscribed and sworn to before me this ____ day of _____, 20__.

Notary Public in and for the
State of Washington, residing at

*****END OF SECTION*****

SECTION 00 45 29 – CERTIFICATION OF COMPLIANCE WITH WAGE PAYMENT STATUTES

The bidder hereby certifies that, within the three-year period immediately preceding the bid solicitation date (July 1, 2020), the bidder is not a “willful” violator, as defined in RCW 49.48.082, of any provision of chapters 49.46, 49.48, or 49.52 RCW, as determined by a final and binding citation and notice of assessment issued by the Department of Labor and Industries or through a civil judgment entered by a court of limited or general jurisdiction.

I declare under penalty of perjury under the laws of the State of Washington that the foregoing is true and correct.

Bidder’s Business Name

Signature of Authorized Official*

Printed Name

Title

Date

City

State or country

Check One:

Sole Proprietorship ☐ Partnership ☐ Joint Venture ☐ Corporation ☐

State of Incorporation, or if not a corporation, State where business entity was formed:

If a co-partnership, give firm name under which business is transacted:

** If a corporation, proposal must be executed in the corporate name by the president or vice-president (or any other corporate officer accompanied by evidence of authority to sign). If a co-partnership, proposal must be executed by a partner.*

*****END OF SECTION*****

SECTION 00 45 33 – LIST OF SUBCONTRACTORS - BIDS ON PUBLIC WORKS - IDENTIFICATION, SUBSTITUTION OF SUBCONTRACTORS

The prime contractor shall submit as part of the bid, or within one hour after the published bid submittal time, the names of the subcontractors with whom the bidder, if awarded the contract, will subcontract for performance of the work of: pump installation and start-up; and electrical, or to name itself for the work. The prime contract bidder shall not list more than one subcontractor for each category of work identified, unless subcontractors vary with bid alternates, in which case the prime contract bidder must indicate which subcontractor will be used for which alternate. Failure of the prime contract bidder to submit as part of the bid the names of such subcontractors or to name itself to perform such work or the naming of two or more subcontractors to perform the same work shall render the prime contract bidder's bid nonresponsive and, therefore, void.

Pump Subcontractor: _____

Address: _____ **Phone:** _____

Electrical Subcontractor: _____

Address: _____ **Phone:** _____

Contractor shall also provide a list of all subcontractors whose work exceeds ten (10) percent of the bid and the name of the Control System Integrator. Additional sheets may be used if necessary. This combined subcontractor list must be submitted with the bid OR within one-hour of the bid as described in Section 00 43 93 – BID SUBMITTAL CHECKLIST.

City SCADA/PLC Programmer:

Name: Technical Systems Incorporated (TSI)

Address: 2303 196th Street SW, Lynnwood, WA 98036

Telephone Number: 425-320-7632, contact: Mitch Stewart

Portion of Work: Services as defined in Part 4 – Appendix B

Subcontractors performing more than 10% of the bid price:

Name: _____

Address: _____

Telephone Number: _____

Portion of Work: _____

Name: _____

Address: _____

Telephone Number: _____

Portion of Work: _____

Name: _____

Address: _____

Telephone Number: _____

Portion of Work: _____

Name: _____

Address: _____

Telephone Number: _____

Portion of Work: _____

***** END OF SECTION *****

SECTION 00 45 43 – SUBCONTRACTOR QUALIFICATIONS

The below listed reference information will be required 1 hour after the bid opening for all listed subcontractors of the apparent low bidder. The information may also be asked of the subcontractors of the next two low bidders at that time.

Bidder to list the following information for **three** projects for **each** of the subcontractors listed in Section 00 45 33 LIST OF SUBCONTRACTORS (except for the City PLC/SCADA Programmer). The selected projects must be of equivalent size and scope to the portion of work the subcontractor will complete on the **Ferndale SW #2 Permanent Pump Project**, and the subcontractor must have completed the work using his/her own personnel and equipment.

(This sheet shall be duplicated for each Subcontractor)

Name of Subcontractor: _____

1. Project: _____
(Name and Location)

Contract Amount: _____

Reference: _____
(Company Name, Contact & Telephone)

2. Project: _____
(Name and Location)

Contract Amount: _____

Reference: _____
(Company Name, Contact & Telephone)

3. Project: _____
(Name and Location)

Contract Amount: _____

Reference: _____
(Company Name, Contact & Telephone)

*** END OF SECTION ***

PART 2

CONTRACTING REQUIREMENTS

SECTION 00 51 00 – NOTICE OF AWARD

NOTICE OF AWARD

To: _____

For: City of Ferndale
SW #2 Permanent Pump

The Owner has considered the BID submitted by you for the above described WORK in response to its Advertisement for Bids and Information for Bidders.

You are hereby notified that your BID has been ACCEPTED in accordance with your proposal for the amount of \$_____.

You are required by the Information for Bidders to execute the Contract and furnish the required Bond(s) and certificates of insurance within ten (10) calendar days from the date of this Notice of Award.

If you fail to execute said Contract and furnish said Bond(s) within ten (10) working days from the date of this Notice, the City will be entitled to consider all your rights arising out of the City's acceptance of your BID as abandoned and as a forfeiture of your BID BOND. The Owner will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this NOTICE OF AWARD to the City within 3 days of its receipt.

Dated this _____ day of _____ 20__

City of Ferndale
Owner

By _____
Title _____

=====

ACCEPTANCE OF NOTICE:

Receipt of this NOTICE OF AWARD is hereby acknowledged:

By _____.

Dated this _____ day of _____, 20__

By _____

Printed Name: _____

END OF SECTION

SECTION 00 52 00 – AGREEMENT FORM

THIS AGREEMENT is made and entered into at Ferndale, Washington, this _____ day of _____, 2019, by and between City of Ferndale, hereinafter designated as the OWNER, and _____ hereinafter designated as the CONTRACTOR.

It is made with reference to the following facts:

1. OWNER has heretofore caused to be prepared certain Contract Documents including Bidding Requirements, Contracting Requirements, Technical Specifications, Miscellaneous Documents and Plans for the construction of the **Ferndale SW #2 Permanent Pump Project**.
2. CONTRACTOR filed with the OWNER on _____, 20__, a proposal to complete said work.
3. Contractor agreed to accept as payment therefor the sum fully stated and set forth in the Proposal.
4. The Contract Documents fully and accurately describe the terms and conditions upon which the CONTRACTOR proposed to furnish said equipment, labor, material and appurtenances and perform said work, together with the manner and time of furnishing same.
5. Third-Party Beneficiary: The State of Washington shall be, and is hereby, named as an express third-party beneficiary of this contract, with full rights as such.

IT IS THEREFORE AGREED, first, that a copy of said Contract Documents as aforesaid, does in all particulars become a part of the Agreement by and between the parties hereto in all matters and things therein set forth and described; and further, that the OWNER and CONTRACTOR hereby accept and agree to the terms and conditions of said Contract Documents as filed completely as if said terms and conditions and plans were herein set out in full.

This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators and assigns.

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement in triplicate each of which shall be deemed an original on the day first above written.

OWNER: CITY OF FERNDALE

By: _____

Name: _____

Title: _____

(SEAL)

ATTEST:

Name: _____

TITLE: _____

APPROVED AS TO FORM:

By: _____

Name: _____

Dated: _____

CONTRACTOR _____

By: _____

Name: _____

Title: _____

(SEAL)

ATTEST:

Name: _____

Title: _____

***** END OF SECTION *****

SECTION 00 55 00 – NOTICE TO PROCEED

NOTICE TO PROCEED

DATE _____
CONTACT _____
CONTRACTOR _____
ADDRESS _____
ADDRESS _____

RE: Notice to Proceed
Ferndale SW #2 Permanent Pump Project
City Project No.

Dear CONTACT:

The City of Ferndale has reviewed and approved the contract bond and evidence of insurance for the aforementioned Project. Therefore, the contract has been executed.

This notice shall constitute the Notice to Proceed on the above referenced project. Contract time (___ working days) will begin on _____. The date of completion of all work is May 14, 2021.

If you have comments, questions, or require further information, please do not hesitate to contact me at (360) 384-4607.

Sincerely,

CITY OF FERNDALE

Mike Olinger
Project Manager

CC. file

END OF SECTION

SECTION 00 61 13 – PERFORMANCE AND PAYMENT BOND FORMS

PERFORMANCE BOND to the City of Ferndale

KNOW ALL PEOPLE BY THESE PRESENTS, That we _____
_____ the Contractor named in the Contract hereinafter referred
to as PRINCIPAL, and _____ as SURETY, are jointly and severally held
and firmly bound to the City of Ferndale, hereinafter referred to as OWNER named in said Contract SW #2
Permanent Pump Project, Ferndale, Washington, for the penal sum of,

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

THE CONDITION OF THIS OBLIGATION IS SUCH, that Whereas, the Principal entered into a contract with
the Owner, dated the _____ day of _____, 20____, for such construction work with the City of Ferndale,
Washington.

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform all of the provisions and fulfill all of
the undertakings, covenants, terms, conditions and agreements of said contract during the period of the original
contract and any extensions thereof that may be granted by the Owner, with or without notices to the surety; and
during the life of any guaranty required under the contract; and shall also well and truly perform and fulfill all of the
undertakings, covenants, terms, conditions and agreements of any and all duly authorized modifications of said
contract that may hereafter be made; notice of which modifications to the surety being hereby waived, shall
indemnify and save harmless owner from all cost and damage by reason of the principal's default of failure to do so,
and shall pay the State of Washington sales and use taxes, and amounts due said state pursuant to Titles 50 and 51 of
the Revised Code of Washington then this obligation to be void, otherwise to remain in full force and effect.

IN WITNESS WHEREOF, the above bonded parties have executed this instrument under their separate seals this
_____ day of _____, 20____, the name and corporate seal of each corporate party hereto affixed, and these
presents duly signed by its undersigned representatives pursuant to authority of its governing body.

Corporate Seal:

PRINCIPAL

ATTEST: (If Corporation)

By: _____

Title: _____

Corporate Seal:

SURETY

By: _____

Title: _____

PAYMENT BOND
to the City of Ferndale

KNOW ALL PEOPLE BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

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

and _____
(Name of Surety)

(Address of surety)

hereinafter called **SURETY**, are held and firmly bound unto _____

(Name of Owner)

(Address of Owner)

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 _____ 20____, a copy of which is hereto attached and made a part hereof for the construction of:

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, oil, gasoline, coal, and coke, 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.

PAYMENT BOND (cont.)

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
(number)

shall be deemed an original, this the _____ day of _____

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)

NOTE: 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.

***** END OF SECTION *****

SECTION 00 61 23 – RETAINAGE BOND FORM

CITY OF FERNDALE RETAINAGE INVESTMENT OPTION

CONTRACTOR: _____

PROJECT NAME: _____

DATE: _____

Pursuant to Chapter 60.28 RCW, you may choose how your retainage under this contract will be held and invested. Please complete and sign this form indicating your preference. If you fail to do so, the City of Ferndale (City) will hold your retainage as described in "Current Expense", option 1 below.

- _____ 1. Current Expense: The City will retain your money in its Current Expense Fund Account until thirty days following final acceptance of the improvement or work as completed. You will not receive interest earned on this money.
- _____ 2. Interest Bearing Account: The City will deposit retainage checks in an interest-bearing account in a bank, mutual savings bank, or savings and loan association, not subject to withdrawal until after the final acceptance of the improvement or work as completed or until agreed to by both parties. Interest on the account will be paid to you.

BONDS AND SECURITIES ACCEPTABLE BY THE CITY OF FERNDALE:

1. Bills, certificates, notes or bonds of the United States.
2. Other obligations of the United States or its agencies.
3. Indebtedness of the Federal national Mortgage Association.
4. Time Deposits in commercial banks.

Designate below the type of investment selected:

- _____ 3. Bond-in-Lieu: With the consent of the City, the contractor may submit a bond for all or any portion of the amount of funds retained by the City in a form acceptable to the City and from a bonding company meeting standards established by the City, if any. Unless otherwise indicated, the contractor elects to submit a bond for the entire 5% retainage amount. Such bond and any proceeds there from shall be made subject to all claims and liens and in the same manner and priority as set forth for retained percentages in Chapter 60.28 RCW. Whenever the City accepts a bond-in-lieu of retained funds from a contractor, the contractor shall accept like bonds from any subcontractors or suppliers from which the contractor has retained funds. The contractor shall then release the funds retained from the subcontractor or supplier, to the subcontractor or supplier, within thirty days of the contractor's receipt of the retained funds from the City.

Retainage is normally released 30 - 45 days after final acceptance of work by the City, or following receipt Employment Security / Department of Revenue clearance, whichever takes longer.

(Contractor's Signature) Date

Title: _____

*** END OF SECTION ***

SECTION 00 73 00 – SUPPLEMENTARY CONDITIONS

SUPPLEMENTAL CONDITIONS

The following supplementary conditions modify WSDOT Standard Specifications. If there are any conflicts between these Supplemental Conditions and the Standard Specifications, these Supplemental Conditions shall take precedence.

1. **DOCUMENTS INCORPORATED BY REFERENCE**

The following documents are incorporated by reference, to include, but not be limited to:

- Specifications
- Proposal
- Drawings
- Contract
- WSDOT Standard Specifications Plans for Road, Bridge and Municipal Construction, 2020 Edition and Standard Plans for Road, Bridge and Municipal Construction, 2020 Edition

2. **CONFLICT AND PRECEDENCE**

In the event of any conflicting provisions or requirements between the component parts of the Contract Documents, the component parts shall take precedence in the following order:

1. Change Orders
2. Contract Form
3. Addenda
4. Permits and requirements from governmental agencies
5. Drawings
6. Supplemental Conditions
7. Technical Specifications
8. Ferndale City Standards
9. WSDOT Standard Drawings & Details
10. WSDOT Standard Specifications

3. **CONTRACT PLANS AND SPECIFICATIONS**

Two (2) sets of Contract Documents, two (2) sets of 11"x 17" plans, one (1) set of 24"x 36" plans, and a CD with Contract Documents and plans in PDF will be furnished to the Contractor free of charge. Additional sets may be purchased at the advertised price per set.

4. **EXAMINATION OF PLANS, SPECIFICATIONS AND SITE OF WORK**

The bidder shall carefully examine the proposed work site (including material sites), and the contract documents. Submittal of a bid shall be conclusive evidence that the bidder has made these examinations and understands all requirements for the performance of the completed work.

The Contractor shall make deductions and conclusions as to the nature of the materials to be excavated, the difficulties which may arise from subsurface conditions, and of doing any other work affected by the subsurface conditions and shall accept full responsibility. The accuracy of information furnished by the Owner and/or Engineer and/or the plans and specifications as to underground structures, foundation conditions, character of soil, position and quantity of surface and ground water, etc., is not guaranteed. Bidders must satisfy themselves by personal examination and by such other means as they desire with respect to actual conditions in regard to existing groundwater or surface structures. Unforeseen conditions shall not constitute a claim for additional payment under the terms of the contract or constitute a basis for cancellation thereof.

The Specifications do not necessarily discuss complete details of construction, work or materials, performance or installation, and do not necessarily cover construction details or other items of work or fixtures of equipment may affect any installation. These details must be ascertained by the Contractor and correlated to bring the parts together to a completed whole.

Where alternate methods have not been brought to the Owner's attention, it is assumed that the Contractor has figured the costlier method or methods.

5. WORK AND MATERIALS

In addition to the requirements stated in this contract document, the following shall apply:

All work and materials under this contract shall conform to the 2020 Edition of *Standard Specifications for Road, Bridge and Municipal Construction* as prepared by Washington State Department of Transportation (WSDOT) and Washington State Chapter of American Public Works Association (APWA), and according to the instructions and recommendations of the manufacturer of the material concerned. In case of a conflict between any of the above referenced Standards, the more stringent shall apply.

References throughout the above-mentioned Standard Specifications to "State" or "Owner" shall refer to the City of Ferndale.

6. OMISSIONS AND DISCREPANCIES

Upon receipt of Award of Contract, the Contractor shall carefully study and compare all drawings, specifications and other instructions and shall, prior to ordering material or performing work, report in writing to the Owner any error, inconsistency or omission not discovered at the pre-bid meeting. If during the accomplishment of the work, a discrepancy is found between the drawings and the physical condition of the locality, it shall be the Contractor's duty to inform the Owner in writing, and the Owner shall promptly verify the same. Any work done after such discovery, until authorized, will be done at the Contractor's risk.

Minor items of work or material omitted from the original plans or specifications, but clearly inferable from the information presented and which are called for by accepted good practice, shall be provided and/or performed by the Contractor as part of the original bid.

7. SURVEYS, PERMITS, REGULATIONS

The bidder shall be familiar with all Federal, State, and local requirements that affect the completion of work in any way (such as laws, ordinances, or rules affecting employees, subcontractors, materials, equipment or procedures). In addition, the Contractor must comply with the following Washington State Laws, including without limitation: Chapter 60.28 RCW (retainage); 39.08 RCW (bond requirements); 18.27 RCW (contractor registration); 35.22.650 RCW (equal opportunity); and 70.92 RCW (handicapped). The Owner will not consider any plea of misunderstanding or ignorance of such requirements.

The Owner will assist with coordinating City permit applications, if needed. Temporary permits, easements, and other Non-City permits shall be acquired by the Contractor (if needed).

8. EXISTING UTILITIES

The location of all existing utilities shown on the plans is per the best available information, and is therefore approximate only. The Owner/Engineer does not guarantee the accuracy of this information. The contractor shall take whatever measures deemed necessary to verify the accuracy of this information and the cost of such shall be incidental to the bid.

Forty-eight (48) hours prior to starting construction, the Contractor shall contact the City of Ferndale and Underground Utility Locate (if needed). All costs incurred by the Contractor in complying with the requirements of this Section shall be incidental to the entire project and shall be included in the contract price.

9. CONNECTIONS TO EXISTING MAINS (WATER TRANSMISSION MAIN)

Connection to existing mains is the full responsibility of the Contractor. Temporary routing of existing pipelines or services, shoring, temporary thrust blocks, extra fittings required to route the pipe over or under existing or new pipe or other utilities and all other work and materials required for making complete, permanent and workable connections are incidental to other items of work.

The City of Ferndale shall be notified not less than two (2) working days prior to connection to existing mains.

10. Not used.

11. Not used.

12. SUBCONTRACTING

The Contractor shall perform work amounting to a minimum of 50% percent of the Awarded Contract Price using his own personnel and equipment. All subcontracting shall be in conformance with WSDOT Section 1-08.1 of the WSDOT Standard Specifications.

13. PRE-CONSTRUCTION CONFERENCE

A Pre-Construction conference shall be held at a time and place fixed by the Owner which will be within two weeks from the date of notification of award of contract. At a minimum, the Contractor's project manager and field superintendent are required to attend. Sub-contractors, suppliers and others interested are encouraged to attend.

14. HOURS OF WORK

The Contractor shall schedule operations so that the work will be performed during the hours of 7AM to 5PM Monday through Friday, excluding holidays. A normal 40-hour Monday through Friday work week (4 – 10hr or 5 – 8hr days) is intended. The Contractor shall compensate the City \$140 per hour for each hour over 40 hours per week worked to pay for additional inspection time. The Contractor shall obtain prior approval from the City for overtime hours and schedules.

15. COMPLETION DATE

The contracted work is to be completed by no later than as shown in Section 00 31 13. The Contractor will be limited to **15 working days (3 weeks)** on-site work. The Contractor shall plan accordingly to meet this completion requirement.

16. SCHEDULE OF CONSTRUCTION & VALUES

Within 10 working days of receiving the notice to proceed, the contractor shall furnish to the City a Schedule of Values. In addition, the Contractor shall furnish a Schedule of Construction at the Pre-Construction Meeting. The Schedule shall identify the project start and finish dates with a detailed breakdown of the proposed order of work and completion dates for major phases of the work. The

schedule shall be developed by a critical path method. Time required for testing, backfiring, inspections, ordering, punch lists, etc. shall be incorporated into the schedule (although they do not necessarily need to be specifically identified).

17. RETAINAGE

The owner will deduct from the partial pay estimate a retainage of five percent (5%). Upon completion of all work, specified training, final inspection, and acceptance by Owner, the amount retained under the Contract will be paid within thirty (30) days following final acceptance by Owner and receipt by the Owner of the following:

- State Department of Labor and Industries Release
- Washington State Department of Revenue Release
- Washington State Employment Security Department Release
- Contractor and Subcontractors Affidavit of Wages Paid

The retainage will not be released if any claim has been filed on the project.

18. LIQUIDATED DAMAGES

Liquidated damages will be assessed in accordance with WSDOT 1-08.9 for each working day beyond the Contracted completion dates listed above.

19. PHYSICAL COMPLETION FOR PERMANENT PUMP PROJECT

Completion of the Shop Well #2 Permanent Pump Project shall be defined as follows, with no exceptions:

The new permanent well pump shall be able to be put to beneficial use. This shall include construction of the piping inside the well building, electrical, instruments, and controls.

20. PAYMENT TO CONTRACTOR

At least five (5) working days before the end of the month, the Contractor shall submit to the Engineer an itemized application for payment, supported by receipt or other vouchers, showing payments for materials and labor, payments to sub-contractors, and such other evidence of the Contractor's right to payment as the Engineer may direct. The Owner's progress payment shall be made approximately 30 days after the date of submittal.

The owner will deduct from the partial pay estimate a retainage as defined above. Upon completion of all work, final inspection, and acceptance by Owner, the amount retained under the Contract will be paid at the expiration of the thirty (30) day period following final acceptance by owner provided the following conditions are met:

- A. Releases have been obtained from the State Department of Labor and Industries, the State of Washington Employment Security Department, the Washington State Department of Revenue, and all other departments and agencies having jurisdiction over the activities of the Contractor.
- B. No claims, as provided by law, have been filed against the retained percentage.
- C. Affidavit of Wages Paid is on file with the Owner for the Contractor and all Subcontractors.
- D. All contract work is complete in every respect, including operations and maintenance manuals, as-built drawings, etc.

21. INDEMNIFICATION

The Contractor agrees to protect, indemnify, and hold harmless the Owner, Engineer and their employees, agents, and staff, from all claims, liabilities, damages, expenses, or rights of action, directly or indirectly attributable to the Contractor's activities in connection with this contract, except for the sole negligence of the Owner or Engineer as outlined in Section WSDOT 1-07.14.

22. RECORD DRAWINGS

Before receiving payment for more than 90% of the work or declaring physical completion of the work, the Contractor will provide the Owner with accurate record information of all construction activity for the entire project (red line drawing on a full-size print). This red line drawing shall include, but not be limited to, any changes to the project and the exact location of all constructed utilities and any other existing utilities discovered during construction that are not identified on existing record information. The red line drawing shall be based on accurate field measurements tied to project benchmarks. The Owner will use this information to prepare Record Drawings. The cost for furnishing this record information shall be considered incidental to the entire project and shall be included in the contract price.

23. BARRIER REQUIREMENTS

During construction, the Contractor shall always maintain satisfactory and substantial temporary fencing, railing, barricades or steel plates at all openings, obstructions or other hazards. All such barriers shall have warning signs or lights as necessary for safety. Safe access to and protection of the construction site and the Contractor's records shall be maintained always.

24. CONTROL OF WORK

The presence or absence of an Inspector at the job site will be at the sole discretion of the Owner and such presence, or absence, of an Inspector will not relieve the Contractor of his responsibility to obtain the construction results specified in the Contract Documents. The Owner, Inspector and Engineer do not purport to be Safety Engineers and are not engaged in that capacity and shall have neither authority nor responsibility to enforce construction safety laws, rules, regulations, procedures or the safety of persons on and about the construction site. Any personal assistance which an Inspector may give the Contractor will not be construed as the basis of any assumption of responsibility in any manner, financial or otherwise, by the Owner, Inspector, or the Engineer. The Inspector is on site to ensure the project is completed in accordance with all plans and specifications, to ensure the Owner is getting what is required. They are not there to do the Contractor's scheduling or contact his subs or deliver messages.

25. Not used.

26. INSURANCE

The Contractor shall take out and maintain during the life of this contract Public Liability Insurance for bodily injury and property damage liability and contingent liability, including products and completed operations and blanket contractual liability, as shall protect the Contractor, the Owner and the Engineer. The Contractor shall have the Owner and the Engineer specifically added as additional named insured in said policies (on Form B), all at no cost to the Owner or the Engineer. The above insurance shall cover the Owner, the Engineer, Contractor and Subcontractors for claims or damages for bodily injury, including wrongful death, as well as other claims for property damage which may arise from operations under this contract whether such operations be by themselves or by any subcontractor or anyone directly or indirectly employed by either of them. The Contractor agrees, in addition, to indemnify and save harmless the Owner and Engineer, either or both, from all suits, claims, demands, judgements, and attorney's fees, expenses or losses occasioned by the performance of this Contract by the Contractor or Subcontractor or persons working directly or indirectly for the

Contractor or Subcontractor, or on account of or in consequence of any act or omission of any such person, including but not limited to neglect in safeguarding the work, or failure to conform with the safety standards for construction work adopted by the Safety Division of the Department of Labor and Industry of the State of Washington.

The amount of such insurance shall be as follows:

Bodily injury liability insurance in an amount not less than \$1,000,000.00 for injuries, including wrongful death, to any one person and subject to the same limit for each person, in an amount not less than \$2,000,000.00 on account of any one occurrence, and property damage liability insurance in an amount not less than \$1,000,000.00 for each occurrence. Builders Risk (All Risk Insurance) coverage equal to project bid amount.

The Contractor shall not cause any policy to be canceled or permit it to lapse, and all policies shall include a clause to the effect that the policy or certificate shall not be subject to cancellation or to a reduction in the required limits of liability or amounts of insurance or any other material change until notice has been mailed to the Engineer and Owner stating when, not less than thirty (30) days thereafter, such cancellation or reduction or change shall be effective. In the event notice of cancellation is received by the Owner, the Contractor shall immediately obtain other comparable insurance acceptable to the Owner and provide proof thereof to the Owner. In the event the Contractor is unable to obtain and provide such insurance, the Contractor shall immediately cease all work on the project, save and except that which is necessary to secure the site and prevent injury.

All certificates of insurance, authenticated by the proper officer of the insurer, shall state in particular those insured, the extent of the insurance, the location and operations to which the insurance applies, the expiration date, and the above-mentioned notice of cancellation clause.

Provided, however, the Owner may accept insurance covering a Subcontractor in character and amounts less than the standard requirements set forth under this subsection where such standard requirements appear excessive because of the character or extent of the work to be performed by such subcontractor.

A Certificate of Insurance evidencing coverage and a copy of the endorsement naming the Owner and Engineer as additional insured must be submitted to the Engineer prior to the commencement of the Contract in accordance with WSDOT Section 1-03.3.

The following endorsement for additional insured shall be included in all applicable policies and on the Certificate of Insurance:

The Owner and Engineer are additional named insured for all coverages provided by the policy of insurance and shall be fully and completely protected from all claims and risks by this policy and for any and every injury, death, damage, and/or loss of any sort whatsoever, including consequential damages, sustained by any person, organization or corporation in connection with any activity performed by the Contractor or any subcontractors or by anyone directly or indirectly by virtue of the provisions of that contract between the (Owner name), as Owner and (Contractor's name), entitled (Project Title), dated (date).

The coverages provided by this policy to the Owner or any other named insured shall not be terminated, reduced, or otherwise modified in any respect without providing at least 30 days prior written notice by certified mail to the Owner and other additional named insured. The coverages provided by this policy are primary to any insurance maintained by the Owner.

Third-Party Beneficiary: All parties agree that the State of Washington shall be, and is hereby, named as an express third-party beneficiary of this contract, with full rights as such.

27. CHANGES

The Owner reserves the right to make changes in the work within the general scope of the Contract Documents at any time during the progress of the work. The Contractor shall perform all work in accordance with the changes specified by the Owner.

Changes required by the Owner may include but are not limited to:

- (a) Deletion of any portion of the work.
- (b) Increases or decreases in quantities.
- (c) Changes in specifications and/or designs.
- (d) Method or manner of performance of the work.
- (e) Addition of any new work.
- (f) Acceleration or delay in the performance of the work.

The Owner shall have the option of paying for such changes by one or more of the following methods:

- (1) by the lump sum or unit contract prices set forth in the Proposal;
- (2) by equitable adjustment mutually agreed upon by the Contractor and the Owner; or
- (3) by Force Account in accordance with WSDOT Section 1-09.6

In the case that the Contractor and the Owner are unable to agree on the amount of equitable adjustment, the Owner will unilaterally determine the amount to be paid for the change in accordance with WSDOT Section 1-09.4. The Owner's decision concerning such amount to be paid shall be final as provided in WSDOT Section 1-05.1.

All administrative costs associated with change orders shall be considered to be part of the Contractor's overhead for the work as bid and not a direct cost of the change. Such administrative costs shall include, but not be limited to, costs of defining changed work, determining estimated cost of changed work, preparing proposals for change orders and negotiation of the method and amount of compensation for changed work.

The compensation for each change shall include all direct and indirect costs including, but not limited to, costs of impacts on related and indirect operations and of delay or acceleration of other work resulting from the change. Failure of the Contractor to identify all direct and indirect costs at the time of negotiation of compensation for each changed shall preclude subsequent claim, after formal execution of a change order, by the Contractor for any additional costs associated with the change.

No payment for extra work or any other change in the contract will be made unless the extra work or change has been authorized by the Owner prior to start of the extra work by the Contractor.

For (a) Deletion of any portion of the work, above, the following requirements shall apply:

No payment will be made for items which are deleted from the contract and not performed. No payment will be made for any anticipated profits which would have been earned on work deleted. Payment for costs incurred by the Contractor prior to the deletion of the work shall include and be limited to actual documented costs of field labor, equipment and materials and shall not cover and include overhead as defined in WSDOT Section 1-09.6.

Acceptable materials ordered by the Contractor or delivered on the work prior to the date of cancellation of the work will be either purchased from the Contractor by the Owner at the actual cost and shall become property of the Owner or the Owner will reimburse the Contractor for his actual costs connected with returning these materials to the suppliers.

For (b) Increases or decreases in quantities, above, the following requirements apply:

Payment for all bid items shall be at the unit prices bid, regardless of the actual final quantities of the bid items incorporated into the work and regardless of any increase or decrease from the quantities designated in the Schedule of Contract Prices.

No extra or additional payment will be made for any increase in quantity of any bid item. No extra or additional payment will be made for any decrease in quantity of any bid item. No payment will be made for any anticipated profits which would have been earned on deleted quantities.

For (c) Changes in specifications and/or designs; (d) Addition of any new work; and (e) Acceleration or delay in the performance of the work above, the following requirements shall apply:

If the Engineer determines that the above changes cause an increase or decrease in the Contractor's cost of performance of that portion of the work associated with the change and/or an increase or decrease in the contract time required for performance of the work, the increase or decrease in compensation and/or contract time will be determined by agreement of the parties.

28. INCREASED OR DECREASED QUANTITIES

The Contractor shall not purchase or place orders for full quantities of materials until the work has advanced to a state permitting the determination of the exact quantities required. The original bid item quantities designated on the Proposal and other estimates of quantities of materials furnished by the Engineer shall be considered as approximate and not indicative of the actual quantities required. The Owner will not be responsible for any materials purchased in excess of actual requirements and will not be responsible for any increased costs or extra expense that the Contractor may have on account of materials or work not being ordered at some earlier date.

29. SALES TAX

The work is within the City of Ferndale. The Contractor shall correctly reference on payments of sales tax to the Washington Department of Revenue Ferndale's tax code.

30. GUARANTEES

Except where special longer warranties are required, the Contractor shall guarantee all materials and workmanship for a period of one year from the date of Substantial Completion of the project.

Neither final acceptance by the Owner nor partial and final payment nor any provision in the Contract Documents shall relieve the Contractor of responsibility for faulty materials or workmanship.

If, prior to the expiration of one year after the date of Substantial Completion or such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the Contract Documents, any work is found to be defective or not in compliance with the Contract Documents, the Contractor shall promptly, without cost to Owner, either correct such work, or, if it has been rejected by Owner, remove and replace it with acceptable work. If the Contractor does not promptly comply with the notification issued by the Owner for correction of defective and/or non-complying work and have the defect completely repaired within 30 calendar

days, the Owner may have the work corrected or removed and replaced and all direct and indirect costs of such removal and replacement, including costs of all professional services, shall be paid by Contractor.

The guarantee shall apply to all elements and parts of the work, regardless of knowledge by the Owner, engineer and inspector(s) of defects or deficiencies and regardless of failure of the Owner, Engineer and/or inspector(s) to inform the Contractor of known or suspected defects or deficiencies prior to Substantial Completion of the work by the Owner.

All subcontractors', manufacturers', and suppliers' warranties and guarantees, express or implied, for any part of the work, materials and equipment shall be deemed obtained and shall be enforced by the Contractor for the benefit of the Owner without the necessity of formal transfer or assignment thereof. Warranties and guarantees by subcontractors, manufacturers, and suppliers shall begin on and extend for one year after the date of Substantial Completion of all work.

All work (including materials and equipment) repaired or replaced in accordance with this Section shall be guaranteed for a period of one year after the date of City's acceptance of the repair/replacement work.

***** END OF SECTION *****

PART 3 - TECHNICAL SPECIFICATIONS

SECTION 01 11 10 – SUMMARY OF WORK

PART 1. GENERAL

1.01 WORK COVERED BY CONTRACT DOCUMENTS

- A. The work covered by the Contract Documents consists of furnishing all labor, equipment and materials necessary for the construction of the Shop Well #2 Permanent Pump as shown on the plans and specified herein.
- B. Contractor shall furnish all labor, tools, equipment and materials. In addition, the Contractor shall provide demolition, and all material as required or necessary to demolish, construct, lay, erect, install, test, and clean-up site. The work shall consist of, in general, the removal of the existing temporary well pump and installation, testing, and start-up of the new permanent well pump and motor and associated work.

A more detailed summary of the work is included in Section 00 24 13 SCOPES OF BID.

1.02 WORK AND RESPONSIBILITIES

- A. Unless otherwise indicated, work and responsibilities include, but are not limited to the following:
 - 1. Providing and paying for labor, materials, equipment, tools, machines, facilities, and services necessary for execution and completion of work.
 - 2. Paying required taxes.
 - 3. Giving required notices.
 - 4. Enforcing strict discipline and good order among employees.
 - 5. Using new materials, except as noted.
 - 6. Maintaining required egress and other requirements in accordance with governing Codes and Ordinances throughout the work.
 - 7. Obtaining and paying for required permits, fees and notices, see General Conditions.

1.03 SEQUENCE/PHASING

- A. These documents are not to be interpreted implicitly or explicitly as definition of procedure and sequence of operations. Order as to procedure and sequence of operations are Contractor options, consistent with contract documents and as approved by Owner. A preliminary construction phasing plan is included in Section 00 31 13 PRELIMINARY PROJECT PHASING.

1.04 COOPERATION AND COORDINATION

- A. Contractor is responsible for coordinating and scheduling work of subcontractors to expedite progress of the Project.
- B. Subcontractor Instructions: Subcontractors to become familiar with Conditions of the Contract and the work of other Sections related to their own work.
- C. Project Coordination and Scheduling Control: Responsibility for coordination and close adherence to time schedules rests solely with the General Contractor who shall maintain coordination and scheduling control at all times.

- D. Each separate contractor and each subcontractor responsible to the General Contractor shall cooperate diligently with the General Contractor in the execution of their work so as to cause no delay in the completion of the Project. This responsibility includes the completion of all work in a timely manner and all items of equipment connected and fully operating at the time of Substantial Completion. Each separate contractor and each subcontractor shall diligently comply with the following requirements:
1. Inform other trades of requirements at proper time to prevent delay or revisions.
 2. Be informed on the requirements of other trades and check own work for conflicts with the work of other trades.
 3. Insure delivery of materials and performance of work on coordinated schedule with other trades.
 4. Contractor is to ensure the subcontractors and equipment suppliers are responsible for compatibility and completeness of the installation and operation of the equipment in their respective Specification Sections including conformance with code requirements. If power, piping, conduit, or other work required for complete installation is not provided by others to equipment location or is not adequate for complete installation, the subcontractor or equipment supplier shall be responsible for providing the necessary connections.
- E. Notification and Correction of Defective Work: Before starting a section of work, each contractor and subcontractor shall carefully examine all preparatory work that has been executed to receive his work. Check carefully, by whatever means required, to ensure that the work and adjacent, related work will finish to proper contours, planes, and levels. Promptly notify the Contractor of any defects or imperfections in preparatory work which will in any way affect satisfactory completion of the work. Under no condition shall a section of work proceed prior to preparatory work having been completed, cured, dried, or otherwise made satisfactory to receive such related work. Correction of defective work shall be the responsibility of the contractor or subcontractor providing the defective work. Correction of work due to underlying defects shall be the responsibility of the contractor or subcontractor providing work.
- F. Intent of Drawings: The work of each contractor and subcontractor shall conform to the intent of the contract drawings. Drawings showing work of other trades are partly diagrammatic and do not intend to show in details all features of work. Each contractor shall carefully review and compare related drawings and shall thoroughly understand the building conditions affecting their work. All changes required in the work caused by failure to do so shall be at no expense to the Owner. The design is based upon dimensions and requirements for the equipment of the "first-named" manufacturer. All changes required in the work caused by the use of an approved "substitute" to the first-named manufacturer shall be at no expense to the Owner.
- G. Interferences and Right-Of-Way: Make proper provisions to minimize interferences. Where conflicts occur, gravity drainage improvements have right-of-way over mechanical and electrical work; electrical work has right-of-way over landscaping work. Submit conflicts which cannot be resolved by right-of-way to Engineer for instructions.
- H. Cooperate and coordinate with any other separate Contractors under Contract with the Owner.

1.05 CONSTRUCTION STAGING AREA

- A. Coordinate staging areas with the City.

1.06 EXISTING UTILITIES

A. Field Protection Requirements

1. Utilities of record are shown on the Drawings insofar as possible to do so. These, however are shown for convenience only and the Owner and his representatives assume no responsibility for improper locations or failure to show utility locations on the Drawings. At Contractor's expense, immediately repair utilities damaged during construction.

1.07 MISCELLANEOUS

A. Additional work items include, but are not limited to:

1. Maintaining a pedestrian and vehicular access to and around existing projects.
2. Not unreasonably encumbering site with materials or equipment.
3. Assuming full responsibility for protection and safekeeping of products stored on premises.
4. Moving any stored products interfering with any other Contractors.
5. Obtaining and paying for use of additional storage or work areas needed for operations.
6. Restoration of any damage to existing improvements adjacent to work site.
7. Moving and replacing items incidental to completion of the work including mailboxes, fences, small shrubs and trees, street signs, yard decorations, etc.

*****END OF SECTION*****

SECTION 01 31 00 – PROJECT COORDINATION

PART 1. GENERAL

1.01 DESCRIPTION OF WORK

- A. Project meetings will be held to accomplish the following:
 - 1. Coordinate the work of the project and resolve any conflicts or construction problems.
 - 2. Establish a sound working relationship between the Contractor, Owner, and Engineer.
 - 3. Establish sound working procedures.
 - 4. Review job progress and quality of work.
 - 5. Expedite the work to completion within the scheduled time limit.
- B. Representatives of Contractors, subcontractors, and suppliers attending the meetings shall be qualified and authorized to act on behalf of the entity each represents.

1.02 RELATED SECTIONS:

- A. Related work specified elsewhere:
 - 1. Section 00 31 13 - Preliminary Project Schedule
 - 2. Section 01 11 00 - Summary of Work
 - 3. Section 01 33 00 - Submittal Procedures

1.03 PRECONSTRUCTION MEETING

- A. The pre-construction meeting will be scheduled within the time frame identified in the General Conditions after the Notice to Proceed has been issued. The Owner will notify the Contractor as to the time and place of the meeting.
- B. Present at the meeting shall be a representative of the Owner, the Engineer, the Contractor, Project Superintendent, and major subcontractors.
- C. The Contractor must be prepared for a thorough discussion and review, as well as revisions which may be deemed necessary in the opinion of the Owner, of the following:
 - 1. General project information
 - 2. Responsibilities of all involved parties
 - 3. Content of the contract
 - 4. Contractor's schedule
 - 5. Schedule of construction
 - 6. Penalties and Liquidated Damages
 - 7. Subcontracts
 - 8. Change order procedures
 - 9. Project inspection
 - 10. Acceptance of work
 - 11. Labor standards requirements

12. Placement of project signs and posters
13. Handling of disputes
14. Additional issues as required.

1.04 PROGRESS MEETINGS

- A. Unless otherwise required, progress meetings will be held by the Owner on a weekly basis (while site work is underway) at a location near the site. Present at these meetings shall be the Contractor, subcontractors and suppliers as required, the Owner and other interested parties, i.e., material suppliers, public utility, etc.
- B. The Contractor must be prepared for a thorough discussion and review, as well as revisions which may be deemed necessary in the opinion of the Owner, of the following:
 1. Review work since previous meeting.
 2. Make field observations and address any conflicts or problems.
 3. Review material delivery schedules
 4. Review work progress including any issues that may impact project schedule.
 5. Review submittal schedule.
 6. Maintenance, testing and quality standards.
 7. Review any proposed changes.
 8. Review pay requests and procedures.
- C. The Owner shall preside over progress meetings. The Engineer shall be responsible for taking minutes, recording all significant proceedings and decisions. Copies of minutes shall be distributed within one week after the meeting.

1.05 SCHEDULE

- A. The Contractor shall develop and submit a preliminary construction progress schedule for the contracted work. This schedule shall be submitted to the Owner within 10 days of Contract Award.
- B. Schedule shall be a critical path diagram depicting the first day of each week and sized to be legible and permit notations and future revisions.
- C. Schedule shall be arranged chronologically by the start date of each item, and consider the following:
 1. The estimated construction progress schedule shall:
 - a. Show complete sequence of construction by activity.
 - b. Show start and stop dates of each major construction element.
 - c. Show projected percent completion for each major construction element at the first of each month.
 2. Through construction, the Contractor shall record progress of each major construction element.
 3. Revisions shall show changes relative to previously submitted schedules and updated projections of progress and completion.
 4. The schedule shall be updated on a monthly basis and submitted with the pay estimate.

- D. The schedule and all subsequent revisions shall be kept at the Contractor's field office with copies available for the Engineer and Owner.

*****END OF SECTION*****

SECTION 01 33 00 – SUBMITTAL PROCEDURES

PART 1. GENERAL

1.01 DESCRIPTION OF WORK

- A. Summary, but not necessarily a complete listing, of submittals required of the Conditions of the Contract and the General Requirements.
- B. General procedures for specification submittals. Specific requirements for submittals are included in the individual sections.

1.02 RELATED SECTIONS

- A. Related work specified elsewhere:
 - 1. Section 00 73 00 – Supplementary Conditions
 - 2. Section 01 70 00 - Contract Closeout

1.03 SUBMITTAL SCHEDULE

This listing of submittals is a checklist for the Contractor's convenience and is not an exhaustive listing of provisions of any law or the requirements of these Contract Documents. The Owner reserves the right to amend this list.

- A. With his bid, the Contractor shall furnish the following:
 - 1. Bid Proposal (Section 00 41 00 BID PROPOSAL)
 - 2. Bid Guarantee (Section 00 43 13 BID BOND or other type of Bid Guarantee),
 - 3. Contractor Qualification (Section 00 45 13)
 - 4. Non-Collusion Affidavit (Section 00 45 13)
 - 5. Certificate of Completion and Wage Payment Statutes (Section 00 45 29)
- B. Within 1-hour of the bid, the Contractor shall furnish the following:
 - 1. List of Subcontractors (Section 00 45 33)
 - 2. Subcontractors Qualification (Section 00 45 43)
- C. Prior to executing the Contract Agreement, (Section 00 52 00 AGREEMENT FORM), the Contractor shall furnish the following:
 - 1. Payment and Performance Bonds, (Section 00 61 13 PERFORMANCE AND PAYMENT BONDS FORMS).
 - 2. Insurance Certificates. (Section 00 73 00, 26. Insurance)
 - 3. Prevailing wage rate requirements.
- D. 10 days after execution of the Agreement, the Contractor shall furnish the following:
 - 1. Construction schedule.
 - 2. Requests for material substitutions.
 - 3. Schedule of Values for the work.

- E. After starting construction, each month the Contractor shall furnish the following:
 - 1. Application for Payment on Owner approved form with breakdown of work performed organized in accordance with the Schedule of Values.
 - 2. Updated construction schedule (submitted with each monthly pay request)
- F. With the final application for payment, the Contractor shall furnish the following:
 - 1. Contractor's affidavit stating payment of subcontractors
 - 2. Subcontractors' statements of being paid
- G. Before releasing retained funds, the Contractor shall furnish the following:
 - 1. Record drawings and related contract closeout documents
 - 2. Affidavits of Payment (See 00 73 00, 17. Retainage.)

1.04 GENERAL SUBMITTAL REQUIREMENTS

- A. Identification of Submittals
 - 1. Identify each submittal with Project title and number; clearly define location of submittal in the project and/or its location in the Contract Documents.
 - 2. It is the responsibility of the Contractor to coordinate the work of the various trades involved with the work under this agreement. Contractor shall check all submittals by his subcontractors and mark them with his approval prior to submittal.

1.05 SUBMITTAL OF SHOP DRAWINGS & SAMPLES

- A. General
 - 1. Provide submittals in PDF format.
 - 2. Submittal of shop drawings and samples shall be accompanied by a transmittal letter containing project name, Contractor's name, number of drawings and samples, titles and other pertinent data.
 - 3. Shop drawings shall be at a convenient size. A space shall be provided in the lower right-hand corner for the review stamp.
 - 4. The Contractor is responsible for obtaining and distributing required prints of shop drawings to his subcontractors and suppliers.
 - 5. Contractor shall maintain a complete material list and file of approved submittals at the project site for use as reference by interested parties.
- B. Samples
 - 1. Form of Submittal: When samples are specified to be submitted, furnish two samples, except as noted herein, of sufficient size to indicate general visual effect or as otherwise specified in the specifications, and in as nearly the form in which the material will appear on the project as practicable; i.e., submit paint on samples of actual material for which they are specified as a finish; one set of reviewed and selected samples will be retained by the owner.
 - 2. Review:
 - a. The Owner will check submitted samples against file samples and project requirements, will make final selection of colors and finishes from samples, and will approve sample for application on the project in conformance with the Specifications.

- b. Should a submitted sample not be in conformance with the specifications, resubmit sample which conforms with the requirements of Contract Documents.
- C. Catalog Cuts, Data & Brochures
 - 1. Where indicated in the Specifications, catalog cuts and similar data will be accepted in lieu of shop drawings, provided they contain required information and are clearly printed. Submit manufacturer's descriptive data including catalog sheets for materials, equipment and fixtures, showing dimension, performance characteristics and capacities, wiring diagrams and controls, schedules, and other pertinent information as required.
- D. Submittal of Product Certificates
 - 1. Where manufacturer certificates are specified to be furnished attesting to conformance with specification requirements, submit certificates in triplicate prior to acceptance of the Work.
- E. Test Reports
 - 1. Submittal is classified either as "shop drawing" or "product data", depending upon whether the report is uniquely prepared for the project or a standard publication of regular product or workmanship control testing at the point of production (respectively).
 - 2. Refer to individual sections of the Specifications for specific requirements; furnish three (3) copies when required.
- F. Warranties
 - 1. Provide warranties, guarantees and/or maintenance agreements where the Specifications require a period longer than the Contractor warranty period.
- G. Operation & Maintenance Data

Furnish instructions and data on materials and equipment installed in the work in accordance with requirements of the technical provisions of the specifications and assemble as specified below. These manuals shall be submitted prior to application for payment exceeding 90% of the total contract amount.

 - 1. Provide four (4) hard copy sets and two (2) electronic copy sets of Operation and Maintenance Data. Each hard copy set shall be bound in separate commercial quality three-ring binders with durable and cleanable plastic covers. The words "Operation and Maintenance Manual (or Instruction)" along with the type of equipment covered shall be typed or neatly printed on the cover. The electronic copy sets shall be in PDF format and stored on either CD or flash drive units.
 - 2. Each set shall be complete with an index and, as a minimum, cover the following items:
 - a. Name, location and telephone number of manufacturer and product's model number.
 - b. Name, location and telephone number of nearest supplier and spare parts warehouse.
 - c. Start-up procedures and normal operating characteristics and instruction.
 - d. Regulation, control, shut-down and emergency instructions.

- e. Recommended preventative maintenance procedures including a lubrication schedule with recommended lubricants.
 - f. Trouble-shooting guide.
 - g. Complete nomenclature and commercial number of all parts including exploded views of each assembly.
 - h. List of recommended spare parts.
 - i. Complete as-built elementary wiring and outline diagrams.
 - j. Statements of warranty or guarantee.
3. Operation and Maintenance Manuals shall be submitted in at least draft form for Engineer's review with Shop Drawings, Catalog Cuts and other material submittal data. Final drafts, incorporating Engineer's comments, shall be submitted prior to Contractor's application of payment for 75 percent or more of the work.
4. Contractor shall maintain a complete file of all Engineer reviewed Operation and Maintenance Manuals at the project site for use as a reference by interested parties.

*****END OF SECTION*****

SECTION 01 41 00 – REGULATORY REQUIREMENTS

PART 1. GENERAL

1.01 SECTION INCLUDES

As required by General Conditions: "Contractor shall comply with and give notices required by all federal, state, and local laws, ordinances, rules, regulations and lawful orders of public authorities applicable to performance of the Work." Except where otherwise expressly required by applicable Laws and Regulations, neither OWNER nor ENGINEER will be responsible for monitoring CONTRACTOR'S compliance with any Laws and Regulations. Contractor is responsible for keeping the District, Labor & Industries and other authorities completely informed of any changes in the work in a timely manner, and is responsible for informing them of any changes in the work which may affect codes and laws. This includes contract modifications, amendments, additions, shop drawings, and the like, current as of Project Manual date.

- A. Make any and all adjustments and modifications as required to conform to ordinances, and regulations.
- B. Referenced codes establish minimum requirement levels. Where provisions of various codes or standards conflict, the more stringent provisions govern. Promptly submit to Engineer written notice of observed contract document variations from legal requirements.
- C. Compliance requirements include, but are not limited to following:
 - 1. International Building Code and Related Standards, most recent edition, published by the International Conference of Building Officials.
 - 2. State Rules and Regulations for Barrier Free Design/WAC 51-10.
 - 3. The Americans with Disabilities Act (ADA) "Accessibility Guidelines for Buildings and Facilities."
 - 4. Washington State Department of Labor and Industries Regulations.
 - 5. Electrical Work:
 - a. Underwriters' Laboratories (UL).
 - b. National Electrical Manufacturers' Association (NEMA).
 - c. NFPA, National Electric Code (NEC), National Electric Safety Code, and above electrical listings, as applicable.
 - d. State Electrical Construction Code.
 - 6. Environmental Requirements: All work to be performed in compliance with relevant statutes and regulations dealing with prevention of environmental pollution and preservation of public natural resources.
 - 7. Standard Specifications for Road and Bridge Construction, Washington State Department of Transportation, (WSDOT) latest edition.
 - 8. Standard Specifications for Municipal Public Works Construction, Washington State Chapter, American Public Works Association, latest edition.
 - 9. Whatcom County Standards, latest editions.
 - 10. City of Ferndale Standards, latest edition.

1.02 MISCELLANEOUS EXPLANATIONS/INTENT

- A. Number of Specified Items Required: Wherever in these Specifications an article, device, or piece of equipment is referred to in the singular number, the reference applies to as many such articles as are shown on the Drawings or required to complete the installation.
- B. Drawings/Diagrammatic:
 - 1. Drawings are in part diagrammatic and do not necessarily show complete details of construction, work or materials, performance or installation. And they do not necessarily show how construction details, other items or work, fixtures, and equipment may affect any particular installation. Contractor is required to ascertain and correlate the work to bring the parts together into a satisfactory and completed whole.
 - 2. Furnish and install work not covered under any heading, Section, branch, class or trade of the project manual, but shown on or reasonably inferable from the Drawings. This includes all work necessary to produce the intended results. Install similarly for items more positively indicated.
- C. Wording of these Specifications: These Specifications are of the abbreviated or streamlined type and may include incomplete sentences.
 - 1. Words such as "shall", "the Contractor shall", "shall be", and similar mandatory phrases, are required to be supplied by inference in the same manner as they are in a note on the Drawings.
 - 2. Provide all items, articles, materials, and operations listed, including all labor, materials, equipment and incidentals, required for their completion.
- D. Tense, Gender, Singular, Plural: Present tense words include future tense. Words in masculine gender include feminine and neutral genders. Words in the singular include plural. Plural words include singular.
- E. All, Entire, and the Like: For brevity throughout the documents, these words may be omitted. Read their implications into all work.
- F. Specifications by Reference: Any material specified by reference or number, symbol or title of a specified standard, such as commercial standard, ANSI and ASTM documents, Federal Specifications, trade association standard, or the like, shall comply with the following:
 - 1. The latest revision requirements thereof, and any amendment or supplement thereto, in effect on Bid date or date of Owner-Contractor Agreement when there are no bids.
- G. Dimensions and Measurements on Drawings: Dimensions govern. Do not scale. Contractor is to check all dimensions in the field and verify them with respect to adjacent or incorporated work. Large scale drawings take precedence over plans, elevations, and cross sections.
- H. First Class Workmanship: First Class Workmanship is expected.
 - 1. Prior to installing any item or material, verify that receiving surfaces are plumb, level, true to line, and straight to the degree necessary to achieve tolerances specified or required. Perform without extra cost all shimmering, blocking, grinding, or patching required to make such surfaces plumb, level, true to line, and straight.

2. Take care in attention to details and fitting at intersections and junctures of materials. All joints are to be tight, straight, even, and smooth.
- I. Presence of Engineer/Owner: Do not misconstrue presence of this person or any of his representatives at the site as assuring compliance with Contract Documents.

PART 2. MATERIALS (NOT USED)

PART 3. EXECUTION (NOT USED)

*****END OF SECTION*****

SECTION 01 45 00 – QUALITY CONTROL

PART 1. GENERAL

1.01 DESCRIPTION OF WORK

- A. Inspection and testing laboratory qualifications, duties and responsibilities.
- B. Contractor's quality control requirements.

1.02 RELATED SECTIONS

- A. Related Requirements Specified Elsewhere:
 - 1. Section 01 33 00 – Submittal Procedures
 - 2. Section 01 60 00 – Product Requirements
 - 3. Section 01 70 00 – Execution and Closeout Requirements
 - 4. Technical Specifications include quality control requirements for certain portions of the work.

1.03 APPLICABLE PUBLICATIONS AND REGULATORY REQUIREMENTS

- A. ASTM E329: Inspection and Testing Agencies for Concrete, Steel, and Bituminous Materials as used in Construction.
- B. Washington State Building Code and International Building Code Standards.
- C. Nothing in the Drawings or Specifications shall be construed to permit Work not conforming to applicable laws, ordinances, rules or regulations.
- D. When Drawings or Specifications exceed requirements of applicable laws, ordinances, rules, or regulations, comply with documents establishing the more stringent requirements.

1.04 DEFINITIONS

- A. Factory Tests: Tests made on various products and component parts prior to shipment to the job site, including but not limited to such items as pumps, valves, miscellaneous piping equipment, electrical equipment, and precast concrete.
- B. Field Tests: Tests or analyses made at, or in the vicinity of the job site in connection with the actual construction.
- C. Product: The term "product" includes the plural thereof, and means a type or a category of manufactured goods, constructions, installations and natural and processed materials or those associated services whose characterizations, classification or functional performances determination is specified by standards.
- D. Person: The term "person" means associations, companies, corporations, educational institutions, firms, government agencies, at the Federal, State and Local level, partnerships, and societies, as well as divisions thereof, and individuals.
- E. Testing Laboratory: The term "testing laboratory" means and "person", as defined above, whose functions include testing, analyzing, or inspecting "products" as defined above, and/or evaluating the designs or specifications of such "products" according to the requirements of applicable standards.

- F. Certified Test Reports: Certified test reports are reports of tests signed by a qualified professional attesting that tests were performed in accordance with the test method specified, that the test results reported are accurate, and that items tested either meet or fail to meet the stated minimum requirements. These test reports include those performed by Factory Mutual, Underwriter's Laboratories, Inc., and others.
- G. Certified Inspection Reports: Certified inspection reports are those signed by approved inspectors attesting that the items inspected meet the specification requirements other than any exceptions included in the report.
- H. Manufacturer's Certificate of Conformance or Compliance: A certificate signed by an authorized manufacturer's official attesting that the material or equipment delivered meets the specification requirements.

1.05 QUALITY CONTROL REQUIREMENTS

- A. All work under the contract shall be inspected and tested as specified herein. The Contractor shall maintain records of all inspections and tests. Approvals shall be obtained before delivery of materials to the project site.
- B. The Contractor is responsible for all field testing. The Contractor is responsible for the costs of any repeat tests required where failed tests were obtained.
- C. If required, contractor responsibility for quality control testing shall be as follows:
 - 1. Factory Tests: Unless otherwise specified, the Contractor will arrange and pay for factory tests when required by the contract documents.
 - 2. Factory Inspection: Unless otherwise specified, the Contractor will arrange and pay for factory inspection when required by the contract documents.
 - 3. Field Inspection and Tests by the Contractor: Unless otherwise specified, the Contractor shall furnish all equipment, instruments, qualified personnel, and facilities necessary to inspect all work and perform all tests when required by the contract documents. All inspections and tests performed and test results shall be promptly submitted to the Owner.
 - 4. Approval of Testing Laboratories: All laboratory work under this contract shall be performed by a laboratory approved by the Owner.
- D. Laboratory Reports: Reports shall cite the contract requirements, the test or analysis procedures used, the actual test results, and include a statement that the item tested or analyzed conforms or fails to conform to the specifications requirements. All test reports shall be signed by a representative of the testing laboratory authorized to sign certified test reports. The Contractor shall arrange for immediate and direct delivery of the signed original of all reports, certifications, and other documentation to the Owner.
- E. Repeated Tests and Inspections: The Contractor shall repeat tests and inspections after each failed test until passing test results are obtained. The retesting and reinspection shall be performed at no additional cost to the Owner and the Contractor shall reimburse the Owner for their, or their representative's, time and expenses due to the failed test results.

1.06 CONTRACTOR'S RESPONSIBILITY

- A. Access. Furnish free access to various parts of the work and assist testing inspection personnel in performance of their duties at no additional cost to the Owner.
- B. Concealed Work. When directed by the Owner, the Contractor shall open for inspection any part of the work which has been concealed. Should the Contractor refuse or neglect such a request, the Owner may employ any other person to open up the same or do so himself. If any part of the work has been concealed in violation of the Owner's instruction or, if on being opened, it is found not to be in accordance with the terms of the Contract Documents the expense of opening and recovering, whether done by the Contractor or not, shall be charged to the Contractor. If the work has been concealed but not in violation of the Owner's instructions and is found to be in accordance with the terms of the Contract Documents the actual necessary expense of opening and recovering is done by the Contractor it shall be considered as extra work and paid for accordingly.
- C. Notices. The Contractor shall notify the Owner not less than 48 hours, unless otherwise noted, before work requiring inspection is started. The Contractor shall schedule portions of the work requiring inspection and testing, so that the agency's time on the project is continuous and as brief as possible.

1.07 CONSTRUCTION SURVEILLANCE BY OWNER

- A. Appointment. The Owner may appoint an on-site representative for surveillance of any and all portions of the work. Such surveillance may extend to any or all parts of the work, and to the preparation or manufacture of materials to be used.
- B. Authority of On-Site Representative.
 - 1. On-site representative is not authorized to revoke, alter, enlarge or relax the provisions of the Contract Documents, and is placed on the work site to keep the Owner informed as to the progress of the work and the manner in which it is being done.
 - 2. On-site representative may also call the attention of the Contractor to any deviations from the plans or specifications. Failure of the Owner or his representative to call the attention of the Contractor to faulty work or deviation from the Contract Documents shall not constitute acceptance of said work.
 - 3. The representative is not authorized to approve or accept any portions of the work or to issue instructions contrary to the Contract Documents.
 - 4. The representative will exercise only such additional authority as may be specially delegated to him by the Owner, notice of which will be given in writing to the Contractor.

1.08 DEFECTIVE WORK

- A. Remove and replace any work found defective or not complying with requirements of Contract Documents, at no additional cost to Owner. Work will be checked as it progresses, but failure to detect any defective work or materials shall not in any way prevent later rejection when such defect is discovered, nor shall it obligate the Owner for final acceptance.

PART 2. MATERIAL (NOT USED)

PART 3. EXECUTION (NOT USED)

(Summary of Quality Control Testing Services Follows)

Quality Control Testing Services to be provided by the Contractor include:

- Pipe Pressure Testing
- Potable Water Pipe Disinfection Testing
- Equipment Testing: See Division 43 for equipment specifications

*****END OF SECTION*****

SECTION 01 50 00 – TEMPORARY FACILITIES

PART 1. GENERAL

1.01 DESCRIPTION OF SECTION

- A. The Contractor shall provide all arrangements, material and labor needed for obtaining temporary utility services.
- B. Water and sanitation facilities must be provided for the Contractor's employees and subcontractors.
- C. Make all connections to the utility purveyor's requirements and in accordance with code requirements; remove from site upon completion of all work or when directed.
- D. Providing Temporary Facilities:
 - 1. Provide temporary construction, devices, equipment, power and convenience utilities for use, convenience and safety of personnel engaged in the work of the contract.

1.02 RELATED SECTIONS

- A. Related Requirements Specified Elsewhere:
 - 1. Section 01 11 00 – Summary of Work
 - 2. Section 01 70 00 - Execution and Closeout Requirements

1.03 REGULATIONS

- A. Health and Safety: Conform with "Safety Standards for Construction Work, Chapter 296-155 WAC" by State of Washington Department of Labor and Industries.
- B. Construction Codes: Comply with regulatory construction codes as applicable.
- C. Washington State Department of Health: Comply with all applicable codes for temporary sewer and water service.

1.04 TEMPORARY FACILITIES

- A. Temporary Electrical Light & Power:
 - 1. Provide all temporary lighting and power, including pole or poles, transformer if required, for construction purposes.
 - 2. Provide temporary connections to closest utility source.
 - 3. Provide all required extension cords, lighting outlets and power outlets (grounding type), lamps, and other required equipment and accessories necessary only for adequate temporary lighting and power for construction purposes.
 - 4. Remove temporary lighting and power equipment and their connections at completion of the work or sooner if approved or directed.

B. Water for Construction Purposes:

1. The Contractor is responsible for obtaining and providing water as required for the work and for testing.
2. If agreed, Contractor to make temporary connections with metered connection with backflow preventers to utility piping as required for the work and provide meter, piping, hoses, nozzles and other accessories required.
3. At completion, or before as directed, disconnect temporary connections and piping and remove from site.
4. Provide secure system to prevent unauthorized use during Contractor's absence.

C. Sanitary Facilities:

1. The Contractor shall provide temporary restroom services at the field office location, or other centrally located site. Service may be provided by contract service. Facilities shall be regularly serviced and maintained, and kept reasonably clean. Facilities shall be promptly removed at the conclusion of the work.

D. Drinking water:

1. Provide from proven safe source, for all those connected with the work in accordance with WISHA and Health Department requirements.
2. Pipe and transport in such manner as to keep it clean and fresh; serve in single containers or provide sanitary drinking fountains.

E. Residential and Commercial Access:

1. Provide access to residential homes and commercial facilities (City Shop and Police Station) at all times.
2. Provide access to the area at all times for emergency and service vehicles.

F. Equipment Storage

1. Contractor is fully responsible for safe storage of all materials and equipment.
2. Provide all fences, gates, locks, covers, weather protection, surveillance, etc. to assure safe storage.
3. Protect all materials and equipment from the weather.

G. First Aid

1. In accordance with requirements of 296-24 WAC, furnish personnel trained in first aid and certified as approved by Washington Department of Labor and Industries.

1.05 MISCELLANEOUS PROVISIONS

- A. Cleaning Up:
 - 1. General: The Contractor and each subcontractor at all times shall keep the premises free from accumulation of waste materials or rubbish caused by his operations. Clean up work areas as required at the end of each day's work.
 - 2. Trash removal: Remove all trash and debris from site and dispose of at Contractor's expense. Allow no debris, broken or open cartons, or other refuse to collect in the project or around it; allow no inflammable or hazardous materials to be stored on the site without approved protection precautions and procedures.
 - 3. Street and parking area cleaning: Immediately clean all spilled material which results from the work of this contract and waste hauling operations; use motorized equipment and hand labor as required. Remove from streets, driveways or parking areas in time to prevent such materials from affecting traffic or clogging street drainage system; clean any drains contaminated.
- B. Noise Control: During the period of construction, provide satisfactory means, as approved by the Owner, of controlling noise originating from construction work and equipment.
- C. Dust Control: During the period of construction, provide satisfactory means of controlling dust and dirt, including application of water to control dust but not cause erosion.

1.06 DEBRIS CONTROL

- A. Cleaning during construction: Maintain all areas free of extraneous debris.
- B. Prevent accumulation of debris at construction site, storage and parking areas, and along access roads and haul routes.
- C. Keep storm sewers free of debris or extraneous materials.
- D. Offsite Cleanup: Prevent any leaking of materials from the vehicle used to haul offsite and clean haul routes daily.

1.07 POLLUTION CONTROL

- A. Provide all methods, means and facilities required to prevent any contamination of the project site and areas adjacent to project site. Contractor will be expected to respond immediately to any spills and to take whatever measures are necessary to prevent further contamination and clean up accidental contamination. Contractor will be solely responsible for any and all costs of clean up in the event of discharge (of any kind). In the event that the Contractor is slow in responding, the Owner may elect to pay for clean-up costs directly, and all costs incurred from this, including labor, overhead, materials, management, etc., will be deducted from the next pay request.
- B. Provide methods, means, and facilities required to prevent contamination of soil, water, or atmosphere. Allow no discharge of noxious substances from construction operations.
- C. Provide systems for control of atmospheric pollutants in accordance with Federal/State/Local published rules and regulations.

1.08 BARRIER REQUIREMENTS

- A. During construction, the Contractor shall at all times maintain satisfactory and substantial temporary fencing, railing, barricades or steel plates at all excavations, obstructions or other hazards. All such barriers shall have warning signs or lights as necessary for safety.

PART 2. PRODUCTS (NOT USED)

PART 3. EXECUTION (NOT USED)

*****END OF SECTION*****

SECTION 01 60 00 – PRODUCT REQUIREMENTS

PART 1. GENERAL

1.01 DESCRIPTION OF SECTION

- A. General requirements for providing transportation, handling, storage, and protection of materials and equipment.
- B. Contractor's options in selection of products and manufacturers, and procedures for consideration of proposed substitutions.
- C. All material and equipment incorporated into the work:
 - 1. Shall be new, free from defects and of equal or superior quality as specified herein and on the drawings.
 - 2. Shall be the products of established manufacturers regularly engaged in the fabrication of such equipment.
 - 3. Shall comply with the size, type and quality specified and shall be designed for use in the particular application.
 - 4. Shall be designed, fabricated and assembled in accordance with standard engineering and shop practice.
 - 5. Shall be complete with accessories, trim, finish, safety guards, and other devices and details needed for a complete installation and for intended use and effect.

1.02 RELATED SECTIONS

- A. Related Requirements Specified Elsewhere:
 - 1. Section 01 30 00 - Submittals
 - 2. Section 01 45 00 - Quality Control

1.03 MANUFACTURER'S INSTRUCTIONS

- A. Installation of all materials and equipment shall comply with manufacturer's printed instructions. The Contractor shall have the responsibility to distribute copies of such instructions to all parties involved in the installation, including the Owner. One complete set of instructions shall be maintained on the job site during installation and until completion.
- B. All materials and equipment shall be handled, installed, connected, cleaned, conditioned and adjusted in strict accordance with such instructions and in conformance with the specified requirements. The Owner should be immediately notified should job conditions or specified requirements conflict with the manufacturer's instructions.

1.04 TRANSPORTATION AND HANDLING

- A. All materials and equipment shall be transported and handled in such a manner as to prevent any damage.
- B. Deliveries of products shall be in accordance with construction schedules as to cause no delay in the work or to conflict with work and conditions at the site.

- C. Products shall be delivered in the manufacturer's original containers with identifying labels intact and legible. Where materials are specified to conform to ASTM, Federal or other reference specifications, the materials shall be delivered to the site bearing the manufacturer's label stating that the materials meet the requirement of such referenced specifications.
- D. Products shall be inspected immediately upon delivery to assure compliance with specified requirements and approved submittals and that products are properly protected and undamaged.
- E. The Contractor shall provide personnel and equipment to receive and unload products delivered to the site. No products shall be delivered to the site unless such forces are available.

1.05 STORAGE AND PROTECTION

- A. Contractor is fully responsible for safe storage of all materials and equipment.
- B. All products shall be stored in strict accordance with the manufacturer's instructions, with seals and labels intact and legible.
- C. All products shall be arranged in a neat order and protected from damage from the weather, traffic and construction operations. Easy access for periodic inspection shall be provided.

1.06 PRODUCTS AND SUBSTITUTIONS

- A. Products:
 - 1. Where available, provide standard products of types which have been produced and used previously and successfully on other projects and in similar application.
 - 2. Where additional amounts of a product, by nature of its application, are likely to be needed by Owner at a later date for maintenance and repair or replacement work, provide a standard, domestically produced product which is likely to be available to Owner at such later date.
 - 3. For Products specified only by a reference standard, the Contractor may select any product meeting that standard.
 - 4. Where the make or name of a material is specified in the written documents or on the drawings, it is to establish a quality standard in that particular field of manufacture. Requests for substitutions of materials of other makes or names must be submitted to the Owner and must receive favorable written response from the Owner prior to ordering, furnishing or installing the proposed substitution item.
- B. Requests for Substitutions:
 - 1. For a period of thirty (30) days after the Contract Date, the Owner will consider written requests from the Contractor for substitution of Products.
 - 2. Requests for each Product substitution shall be submitted separately. Requests for substitutions will be received and considered when revisions to contract documents are not required, and the product or material is in keeping with the general intent of the Contract Documents.

3. A request for substitution by the Contractor constitutes a representation that the Contractor:
 - a. Will provide the same warranties or bonds for the substituted item as for the Product specified.
 - b. Will coordinate the installation of an accepted substitution into the work and make all other changes as required to make the work complete in all respects.
 4. Submit six (6) copies of requests for substitutions, fully identified for Product or method being replaced by substitution, including related specification section and drawing number(s), and fully documented to show compliance with requirements for substitutions.
 5. Include product data/drawings, description of methods, samples where applicable, Contractor's detailed comparison of significant qualities between specified item and proposed substitution, statement of effect on construction time and coordination with other affected work, cost information or proposal, and Contractor's statement to the effect that proposed substitution will result in overall work equal-to-or-better-than work originally indicated.
 6. The contractor agrees to pay all Engineering costs accruing as a result of checking and/or redesign due to substitutions. These costs will be charged to the Contractor and will be considered incidental to the contract price.
- C. Owner's Review
1. Within two weeks of receipt of request, or within one week of receipt of requested additional information or documentation (whichever is later), the Owner will notify the Contractor of either his acceptance or his rejection of the proposed substitution. Rejection will include statement of the reasons for rejection (non-compliance with the requirements for requested substitutions, or other reasons as detailed.)

PART 2. MATERIALS (NOT USED)

PART 3. EXECUTION (NOT USED)

*****END OF SECTION*****

SECTION 01 70 00 – EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1. GENERAL

1.01 DESCRIPTION OF SECTION

- A. Specific administrative procedures, and closeout submittals at substantial completion and at final acceptance of the work.
- B. Requirements for record documents and start-up procedures.
- C. The listing of procedures and submittals is given generally as a checklist for the Contractor's convenience. The Owner reserves the right to add to this list. This list is not an exhaustive listing of either all applicable laws or of the provisions of any law.

The Contractor shall comply with all contract requirements prior to contract closeout. Specific administrative procedures, and closeout submittals at substantial completion and at final acceptance of the work.

1.02 RELATED SECTIONS

- A. Related Requirements Specified Elsewhere:
 - 1. Section 01 33 00 – Submittal Procedures

1.03 SUBSTANTIAL COMPLETION

- A. Prior to submitting for substantial completion, the Contractor shall have:
 - 1. Delivered tools, spare parts, extra stocks of materials, and similar physical items to Owner.
 - 2. Transmit keys to Owner.
 - 3. Completed start-up testing of systems, and performed instructions for Owner's operating/maintenance personnel. Discontinued (or change over) and removed from project site temporary facilities and services.
 - 4. Provided record information to the owner of the as-constructed facilities.
 - 5. Completed final cleaning up requirements, including but not limited to, touch-up of marred surfaces, grading, installation of handrails, etc.
 - 6. Provided O&M Manuals for all equipment, controls, telemetry and SCADA.
- B. When the Contractor considers the work to be substantially complete, he shall submit to the Owner:
 - 1. Written notice that the work, or designated portion thereof, is substantially complete. (The term "substantially complete" shall be defined as in accordance with the WSDOT General Specifications and Section 00 73 00 of these documents).
 - 2. List of items to be completed or corrected and reasons for being incomplete. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all work in accordance with the Contract Documents.
 - 3. Progress payment request coincident with or first following date claimed, show either 100% completion for portion of work claimed as "substantially complete", or list incomplete items and the value of the incomplete work.
 - 4. Submit statement showing accounting of changes to the Contract Sum.

5. Specific warranties, workmanship/maintenance bonds, maintenance agreements, final certification and similar documents.
 6. Obtain and submit releases enabling Owner's full and unrestricted use of the work and access to services and utilities, including (where required) certificate of occupancy permits, operating certificates, and similar releases.
 7. Record (as-built) drawings, project manual, manual of materials, operation and maintenance manuals, and similar final record information.
- C. Upon receipt of Contractor's request, the Owner will either proceed with inspection or advise Contractor of prerequisites not fulfilled. Following initial inspection, Owner will either prepare certificate of Substantial Completion, or advise Contractor of work which must be performed prior to issuance of certificate; and repeat inspection when requested and assured that work has been substantially completed. Results of completed inspection will form the initial "punch list" for final acceptance.
- D. When the Engineer, on the basis of an inspection, concurs that the work is substantially complete, he will:
1. Prepare and deliver to the Contractor a certificate of Substantial Completion accompanied by the Contractor's list of items to be completed or corrected. The Certificate of Substantial Completion shall state the responsibilities of the Contractor for security, maintenance, heat, damages to the work and insurance and shall fix the time within which the Contractor shall complete the items listed therein. Warranties and guarantees required by the Contract Documents shall commence on the Date of Substantial Completion.
 2. The Certificate of Substantial Completion is submitted to the Contractor for their written acceptance of their responsibilities as stated therein.

1.04 FINAL INSPECTION

- A. When the Contractor considers the work to be complete, he shall submit written notice to the Owner that the work has been completed and inspected in compliance with the Contract Documents including punchlist items, and equipment and systems have been tested and are operational; and requesting a contract completion inspection.
- B. When the Engineer, on the basis of an inspection, concurs that the work is acceptable under the Contract Documents, he will notify the Contractor in writing and request the Contractor to provide remaining submittals.
- C. Should the Engineer determine that the work is not acceptable under the Contract Documents:
1. The Engineer will promptly notify the Contractor in writing giving the reasons therefor.
 2. The Contractor shall remedy the deficiencies in the work and submit a new written notice for final inspection to the Owner.

1.05 FINAL PAYMENT

- A. When the Contractor has satisfied all requirements of this section and all other conditions of the Contract Documents, the Contractor may submit a final Application for Payment. Should the Owner determine the Work acceptable under the Contract Documents and the Agreement fully performed, he will promptly issue a final Certificate for Payment stating that to the best of his knowledge, the Work has been completed in accordance with the terms and conditions of the Contract Documents and that the entire balance due the Contractor, and as noted in the final certificate, is due and payable.
 - B. The accumulated retainage shall not be paid until the Contractor submits to the Owner:
 - 1. Affidavit that all payrolls, bills for materials and equipment, and other indebtedness connected with the work for which the Owner might in any way be responsible, have been paid or otherwise settled.
 - 2. Release of Lien. One will be required from each lien holder who has duly filed a notice of claim with the Owner. If any liens remain unsatisfied after the expiration of the statutory lien period, the Contractor shall refund the Owner all amounts that the Owner may be compelled to pay in discharging such lien including all costs and reasonable attorney's fees.
 - 3. State Department of Revenue form that all taxes have been paid.
 - 4. State Department of Labor and Industry affidavit of wages paid.
 - 5. State Department of Employment Security Contractor release.
 - C. The making of final payment shall constitute a waiver of all claims by the Owner except those arising from:
 - 1. Unsettled liens or disputes.
 - 2. Faulty or defective work appearing after Substantial Completion under the project guarantee and equipment warranty period.
 - 3. Failure of the work to comply with the requirements of the Contract Documents.
 - 4. Terms of any special warranties required by the Contract Documents.
- The acceptance of final payment shall constitute a waiver of all claims by the Contractor except those previously made in writing and identified by the Contractor as unsettled at the time of the final Application for Payment.

1.06 FIELD TESTS AND ADJUSTMENTS

- A. All mechanical and electrical equipment, as required under the separate section headings, shall be tested by the Contractor to the satisfaction of the Engineer before any facility is put into operation. Tests shall be as specified herein and shall be made to determine whether the equipment has been properly assembled, aligned and connected. Any changes, adjustments or replacements required to make the equipment operate as specified shall be performed by the Contractor as part of the Work.
- B. At least 14 days before the time allowed in the construction schedule for commencing testing and start-up procedures, the Contractor shall submit to the Engineer details of the procedure proposed for testing and start-up of all mechanical and electrical equipment, except when such procedures have been covered in the specifications.

- C. The Contractor's testing and start-up procedures shall include detailed descriptions of all preoperational electrical, mechanical and instrumentation testing work. Each control device, item of mechanical, electrical and instrumentation equipment, and all control circuits shall be considered in the testing procedures, which shall be designed, in a stepwise, logical sequence to ensure that all equipment has been properly serviced, aligned, connected, calibrated and adjusted prior to operation. The Contractor is advised that failure to observe these precautions may place the acceptability of the subject equipment in question, and he may either be required to demonstrate that the equipment has not been damaged, or replace it as determined by the Engineer. Testing procedures shall be designed to duplicate as nearly as possible all conditions of operations, and shall be carefully selected to ensure that the equipment is not damaged. Once the testing procedures have been accepted by the Engineer, the Contractor shall produce checkout, alignment and adjustment, and calibration sign-off forms for each item of equipment, which shall be used in the field by the Contractor and the Engineer jointly, to ensure that each item has been properly installed and tested. All testing must be performed in the presence of the Engineer.
- D. During the testing of the mechanical, instrumentation and electrical equipment, the Contractor shall make available, as necessary, representatives of the manufacturers of all the various pieces of equipment, or other qualified persons, who shall instruct the Owner's personnel in the operation and care thereof. Instructions shall include written step-by-step operation and trouble-shooting procedures with a complete description of all necessary test equipment and all protective device settings. Upon completion of testing, the manufacturer's representative shall provide the Engineer with a letter stating that the specific piece of equipment has been properly installed and tested and will satisfy the requirements of the Contract Documents.

1.07 RECORD (AS-BUILT) DRAWING INFORMATION

- A. During the construction period, the Contractor shall maintain a complete set of prints for the sole purpose of maintaining a day-by-day record of installed information. This information shall include, but not limited to: the size and location of all concealed or underground piping, conduit, and ductwork; all approved deviations from the specifications and drawings; the location of any visible objects relocated due to interferences or requested relocations submitted and approved on shop drawings. Such relocations shall be dimensioned.
- B. Addenda, bulletins, field orders, and change orders shall be posted and referenced in the record set of prints.

1.08 RECORD PROJECT MANUALS

- A. Maintain one copy of the Contract Documents, including addenda, change orders and similar modifications issued in printed form during construction, and mark-up variations (of substance) in actual work in comparison with text of the Project Manual and modifications as issued.
- B. Give particular attention to substitutions, selection of options, and similar information on work where it is concealed or cannot otherwise be readily discerned at a later date by direct observation. Note related record drawing information and product data, where applicable.

1.09 MISCELLANEOUS RECORD SUBMITTALS

- A. Refer to other sections of these specifications for requirements of miscellaneous record-keeping and submittals in connection with actual performance of the work. Immediately prior to date(s) of substantial completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to Engineer for Owner's records.

1.010 FINAL CLEAN-UP

- A. At the completion of the work, the Contractor shall leave the premises in a neat and unobstructed condition, ready for Owner occupancy. The buildings shall be left in a dust free condition and all equipment and materials in perfect repair and adjustment.
- B. After all trades have completed their work and just before final acceptance and occupancy by owner, thoroughly clean all surfaces of project. Clean lighting fixtures and electrical equipment, including washing and polishing lenses inside and out. Wash and polish all exposed metal surfaces. Broom clean exterior paved areas and rake clear other surfaces of the grounds. All waste building materials, pipe, etc. shall be removed from the site and disposed of.

*****END OF SECTION*****

SECTION 01 91 00 – COMMISSIONING

PART 1. GENERAL

1.01 GENERAL

- A. Related Requirements Specified Elsewhere:
 - 1. Section 01 33 00 – Submittal Procedures
 - 2. Section 01 70 00 – Execution and Closeout Requirements
- B. Description of Section:
 - 1. Specific commissioning procedures and start-up requirements.
 - 2. Requirements for equipment settings and field verification.
 - 3. The listing of procedures and field tests is given generally as a checklist for the Contractor's convenience. The Owner reserves the right to add to this list. This list is not an exhaustive listing of all applicable settings and requirements to achieve specified results.
 - 4. The Contractor shall comply with all contract requirements prior to contract closeout. Specific administrative procedures, and closeout submittals at substantial completion and at final acceptance of the work.

1.02 COMMISSIONING PERMANENT WELL PUMP EQUIPMENT:

- A. The well pump equipment supplier is to provide start-up supervision and operator training per Division 43 of the specifications. Supervision and training duties to include the following:
 - 1. Inspect installation for concurrence to design
 - 2. Check the amperage draw from the pump
 - 3. Make sure equipment is installed to allow easy access.
 - 4. Verify flow and control set points match design.
 - 5. Make sure all operations of the controls, including submersible transducer, pressure transducers, and pressure switch are working properly.
 - 6. Review Operation and Maintenance Manual with personnel
 - 7. Demonstration and Training on controls

*****END OF SECTION*****

SECTION 02 41 00 - DEMOLITION

PART 1. GENERAL

1.01 DESCRIPTION

- A. Related Work Specified Elsewhere
 - 1. Scope of Bid: Section 00 24 13
 - 2. Summary of Work: Section 01 11 00
- B. Description of System: The work covered by this section includes the furnishing of all labor, equipment, and materials necessary for the demolition, removal, rehabilitation and equipment salvage of all construction as specified herein and as shown on the drawings.

1.02 JOB CONDITIONS

- A. All removed equipment, materials, and debris, unless otherwise noted or requested by the Owner, shall become the property of the Contractor. The Contractor shall deliver all items to be salvaged (as directed by the Owner), to the storage area designated by the Owner. Items to be salvaged and returned to Owner as Owner's property include:
 - 1. Temporary well pump
 - 2. Drop pipe for temporary well pump
- B. Protection: Ensure the safe passage of persons around the area of demolition. Conduct operations to prevent injury to adjacent buildings, structures, other facilities, and people.

PART 2. PRODUCTS

Not Used.

PART 3. EXECUTION

3.01 DEMOLITION

- A. Pollution Controls:
 - 1. Use water sprinkling, temporary enclosures, and other suitable methods to limit the amount of dust and dirt rising and scattering in the air to the lowest practical level.
 - 2. Comply with governing regulations pertaining to environmental protection.
- B. Removal Requirements:
 - 1. Provide complete removal and disposal of all structures identified for demolition. All pipes connected to abandoned structures are to be plugged/grouted in an approved manner, preventing any potential water and/or sewer leaks. Salvage items as directed by the Owner.
 - 2. Proposed equipment is to be purchased and on-hand, prior to removal of specified structures. Contractor is to coordinate removal/demolition with Owner's staff (a minimum of 2 week) prior to all removal/demolition work.

C. Structures to be Removed (Demolished):

1. Existing temporary well pump and motor and associated components.

3.02 DISPOSAL OF DEMOLISHED MATERIALS

- A. General. Remove from the site debris, rubbish, and other materials resulting from demolition operations. Burning of removed materials from demolished structures will not be permitted on the site. Comply with all federal, state and local regulations regarding hauling and disposal.
- B. Removal. Transport materials removed from demolished structures and dispose of at a legal disposal site.
- C. Provide items to Owner, that Owner chooses to keep.

*****END OF SECTION*****

SECTION 33 30 00 – PIPING SYSTEMS

PART 1. GENERAL

1.01 SCOPE OF WORK

- A. This section covers the work necessary to furnish and install the piping systems. The pipe system to be used for each process system is shown on the plans.
- B. See Division 1 GENERAL, which contains information and requirements that apply to the work specified herein and are mandatory for this project.
- C. The Contractor shall furnish and install pipe and fittings as shown on the Drawings and as specified in these Specifications. The pipe shall be new, manufactured in accordance with these Specifications and Drawings.
- D. Piping systems, including pipe, fittings, anchors, and all other elements, shall be detailed, fabricated, and installed to resist all internal and external loads which will be imposed upon them. Pressure ratings and materials stated in these Piping Specification sections are minimum acceptable standards. Systems shall be suitable for the service intended.
- E. The pipe diameters shown on the Drawings and used in these Specifications are inside diameters unless specific reference is made to outside diameter of the pipe or the pipe is a standardized product normally designated by a nominal size, e.g., ductile iron pipe.

1.02 SUBMITTALS DURING CONSTRUCTION

Submittals during construction shall be made in accordance with Section 01 30 00. In addition, the following specific information shall be provided.

- A. FIELD FABRICATION
 - 1. For pipelines which are assembled in the field from standard fittings, submit complete data on pipe, fittings, linings, coatings, any manufacturer's installation instructions, and any required installer certifications.
- B. FABRICATION AND LAYING DRAWINGS
 - 1. For shop fabricated piping, the Contractor shall furnish the Engineer with pipe design calculations, the required test data, and shop drawings which shall include a laying plan and details of pipe sections, special fittings, and bends. Dimensions, coatings, and other pertinent information shall be shown. The laying plan shall show the location of each pipe section and each special length, with each piece numbered or otherwise designated in sequence. All outlets and bends shall be made up into special lengths so that, when installed, they will be located as indicated. Each pipe and fitting shall be marked on the outside to indicated the class of pipe, location number on the laying plan, size or diameter, manufacturer's identification, and date of manufacture. Pipe shall be furnished and installed in accordance with the reviewed laying plan.
- C. MATERIAL CERTIFICATION
 - 1. Certification of all materials, and manufacturing properly executed by the manufacturer, shall be available to show compliance with the Specification of materials being furnished. Test data on tests performed shall be provided as requested by the Engineer.

D. FIELD WELDING PROCEDURE

1. Details of welding procedures for each type of field weld, including base metal, welding method, electrodes, preheating requirements, and other data.

1.03 QUALITY ASSURANCE

- A. Installer shall be a Specialist.

1.04 PROJECT SITE CONDITIONS

- A. Locate and provide protection of existing utilities affected by the work. Minimize disruptions to access existing facilities.

PART 2. PRODUCTS

2.01 MATERIALS

A. DROP PIPE AND FITTINGS

1. Shall be as specified in Section 43 25 00.

B. BOLTS AND NUTS

1. Bolts and nuts shall be Type 316 stainless steel.

C. GALVANIZING

1. Where galvanizing is specified it shall be hot-dip applied only. Electroplated zinc or cadmium plating is unacceptable.

D. PAINTING

1. All exposed piping, and except copper, stainless steel, and galvanized piping, shall be painted as specified in Section 09 90 00 PAINTING.

E. PIPE PENETRATIONS

1. Penetrations shall be constructed per specifications and as detailed on drawings.
2. Penetration reinforcing shall be construction as detailed on structural drawings.

F. RUBBER GASKET STORAGE

1. Store all rubber gaskets in a cool, well-ventilated place, and do not expose to the direct rays of the sun. Do not allow contact with oils, fuels, or petroleum solvents.

PART 3. EXECUTION

3.01 SHIPPING AND HANDLING MATERIALS

- A. During transportation, unloading, and storage, pipe and materials shall be protected, supported, and handled in a manner to prevent damage to the materials, especially linings and coatings. Only implements and equipment suitable for proper and safe handling of the materials shall be used. Fabric slings shall be used to lift pipe and fittings, not chains or cables.

3.02 INSTALLATION

A. PIPE PREPARATION AND HANDLING

1. Each pipe and fitting shall be carefully inspected before the exposed pipe or fitting is installed or the buried pipe or fitting is lowered into the trench. The interior and exterior protective coating shall be inspected, and all damaged areas replaced with undamaged pipe. Clean ends of pipe thoroughly. Remove foreign matter and dirt from inside of pipe and keep clean during and after installation.
2. Use proper implements, tools, and facilities for the safe and proper protection of the pipe. Carefully handle pipe in such a manner as to avoid any physical damage to the pipe. Do not drop or dump pipe from trucks or into trenches under any circumstances. All pipe fittings and appurtenances shall be installed in accordance with the manufacturer's instructions and these Specifications.

B. CUTTING AND FABRICATING

1. Cut pipe with approved cutters, do not flame cut except for mild steel pipe. Cut perpendicular to axis of pipe. Dress ends to suit type of joint being made, removing burrs, mill scale, and debris before making up. Repair damaged linings and coatings.

C. EXPANSION PROVISIONS

1. Provisions shall be made for the expansion and contraction which may occur in pipe due to temperature change. Pipe expansion provisions are not completely detailed on the Drawings. The absence of these details on any Drawing shall not relieve the Contractor of the responsibility for providing them where required, and at his sole expense.

D. INSTALLATION OF EXPOSED PIPING (Not Used)

1. Unless shown otherwise, piping shall be parallel to building lines. Hangers on adjacent piping shall be aligned where possible on common size ranges.
2. All pipe flanges shall be set level, plumb, and aligned. All flanged fittings shall be true and perpendicular to the axis of the pipe. All bolt holes in flanges shall straddle vertical centerline of pipes.
3. Unions shall be installed where required for piping or equipment installation, even though they are not shown on the Drawings.
4. Piping shall be installed without springing or forcing the pipe in a manner which would set up stresses in the pipe, valves, or connected equipment.
5. Required straight runs of piping upstream and downstream of flow measuring devices shall be smooth.

E. ANCHORAGE AND EXPANSION PROVISIONS

1. All piping shall be anchored against thrust developed by internal pressures. In addition, provisions shall be made for the expansion and contraction which may occur in pipe due to temperature change. Pipe anchorage and expansion provisions are not completely detailed on the Drawings. The absence of these details on any Drawings shall not relieve the Contractor of the responsibility for providing them where required.

F. CORROSION PROTECTION OF PIPE AND ACCESSORIES

1. Not all corrosion protection details are included, either on the Drawings or in the Specifications. The absence of specific details on corrosion and environmental protection measures shall not relieve the Contractor of the responsibility of providing them, all as part of the Contract price.

3.03 TESTING

1. All tests shall be conducted in the presence of the Owner or their appointed designee. The Contractor shall provide the Owner 48 hours notice prior to conducting any tests.
2. Isolate new sections of line to be tested by providing temporary valves, caps, plugs and/or by closing permanently installed valves. Test sections shall normally be limited to 1,500 feet in length or as defined below. Plugs or temporary valves used to close the pipe for the hydrostatic test must be securely braced to prevent the unintentional release of a plug or valve which can become a high velocity projectile. Gauges, air piping manifolds, and valves shall be at the top of the ground. No one is permitted to enter an excavation or structure where a plugged pipe is under test pressure.
3. All leaks shall be repaired and remedied, with tests and repairs repeated until the system meets testing requirements to the satisfaction of the Engineer.
4. All water necessary for testing shall be provided by the Contractor.
5. Upon completion of each portion of the system and prior to connecting to any facility impacted by solids, the system shall be thoroughly flushed to remove and catch all foreign matter such as rocks, misplaced tools, and debris.
6. Valves:
 - a. Valves shall be tested at the same time that the adjacent pipeline is pressure tested. Joints and valve mechanism shall show no visible leakage under test or normal operating conditions. The Contractor shall repair joints that show signs of leakage prior to final acceptance. If there are any special parts of control systems or operators that might be damaged by the pipeline test, they shall be properly protected. The Contractor will be responsible for repairing any damage caused by the testing.
 - b. If requested by the Engineer, the valve manufacturer shall furnish an affidavit stating the material options furnished and/or that he has complied with these and other referenced specifications.
 - c. Valves shall be flushed and disinfected at the same time as adjacent water main, in accordance with WSDOT Section 7-09.3(24).

7. WATER LINE TESTING AND DISINFECTION

- a. The Contractor shall disinfect, flush and provide a satisfactory bacteriological report to the Owner or their appointed representative in accordance with WSDOT/APWA Section 7-09.3(24) – Disinfection of Water Mains. The Contractor shall also provide two chlorine concentration test reports to show the initial chlorine concentration is at least 50 mg/L, and to show the 24-hour residual chlorine concentration is at least 25 mg/L. All tests must be performed by a DOH-certified testing laboratory and sample-taking shall be witnessed by the Owner or their appointed representative. Chlorinated flush water will need to be directed into the adjacent 4” sanitary sewer clean out. Throttle flow down, so as not to exceed 150 gpm during flush. Liquid sodium hypochlorite solution (per WSDOT

7-09.3(24)G) is to be used for disinfection. Contractor is to ensure that everything placed in contact with the well (drop pipe, transducers, pump, motor, etc.) is carefully cleaned, swabbed with liquid chlorine solution, fully disinfected, and to ensure that no contamination is introduced into City's new well. Coordinate all activities with Owner.

- b. The Contractor shall arrange for water sampling and pay for all chlorine concentration and bacteriological tests associated with water main disinfection and chlorine neutralization.

*****END OF SECTION*****

SECTION 43 25 00 – WELL PUMP

1.0 GENERAL

This section covers work by the Pump Supplier to furnish, install, and make ready for operation one (1) Submersible Deep Well Turbine Water Pump for Ferndale Shop Well No. 2 for potable water applications as shown on the plans and described herein.

1.1 Submittals

Submittals shall be made in accordance with WSDOT Division 1, GENERAL REQUIREMENTS and Section 01 33 00 Submittal Procedures. In addition, the following specific information shall be provided:

Pump:

- a. Descriptive literature and catalog cuts.
- b. Certified performance curves with pump and system operating points plotted. Pump input horsepower and pump field efficiency over the full capacity range of the pump. This needs to include VFD curves (30 Hz to 60 Hz).
- c. Certified drawings of proposed equipment including elevation drawings showing pump, driving equipment and couplings, frame, pump sectional drawing with list of parts and materials, and separate driver drawings and data.
- d. Minimum submergence required over suction inlet, total pump downthrust, bowl, impeller, and motor dimensions, weight of pump and motor assembly with threaded column.

Motor:

- a. Descriptive literature and catalog cuts.
- b. Documentation that motor is 480-volt, 3 phase, 60 Hz, and rated for use with variable frequency drive (VFD). In addition, seal fail contacts and high temp contacts within the motor are to be included and wired from motor throughout pump cable, so that these contacts can be connected to the control panel (to monitor and alarm these conditions).

Operation and Maintenance Data:

- a. Provide per Section 01 33 00, 1.05 G.

1.2 Manufacturer's Services

A qualified representative of the manufacturer shall be present at the jobsite for the minimum man-days listed for the service hereinunder, travel time excluded:

- a. 2 full working days for startup, checkout, testing, and on-site training of the water pump and motor.

SECTION 43 25 00 – WELL PUMP

2.0 MATERIALS

2.1 Shop Well #2 Water Pump Assembly

Furnish and deliver surface discharge, submersible deep well turbine pump, Peerless model VT 8HXB 10 stages, or approved equal, for installation in a municipal drinking water well. All wetted parts for pump, motor, drop pipe, and check valve assemblies are to be 316L stainless steel.

Operating Conditions

The Submersible Deep Well Turbine Water Pump must be able to meet the following operating points considering a pressure sustaining valve to provide additional head, if needed:

	Design Capacity (USGPM)	Design Total Dynamic Head (ft)
Start-Up Conditions		
Low Design Point	400 USGPM	100 ft TDH*
High Design Point	800 USGPM	210 ft TDH
Future Conditions		
Low Design Point	400 USGPM	450 ft TDH
High Design Point	800 USGPM	560 ft TDH

*Note that this is the system curve TDH without applying backpressure from the existing pressure sustaining valve. Existing pressure sustaining valve setpoint can be manually adjusted to achieve sufficient head on the pump to target the head needed to provide 400 gpm at the minimum motor frequency.

In addition, the Submersible Deep Well Turbine Water Pump must be able to operate with pump efficiency values of 66% to 75% (or greater) throughout a 400 gpm to 1,000 gpm operation range at full speed (60Hz).

Size of Well (inside diameter):	10 inches
Depth of Well:	1,000 ft
Pump Bowl Setting (below ground surface):	600 ft
Water Temperature:	16°C
Water Chemistry – Manganese Concentration:	0.089 mg/L
Water Chemistry – Chloride Concentration:	1002 mg/L
Water Chemistry – Conductivity:	3710 µS/cm
Water Chemistry – TDS Concentration:	1962 mg/L
Maximum Rated Speed:	3450 RPM
Minimum Acceptance Best Efficiency:	76%

Unless otherwise stated herein, the pump shall in all respects conform to the American National Standard ANSI/AWWA-E101 for “Vertical Turbine Pumps, Submersible Type” and shall comply with all local and state sanitary and safety regulations. Materials in contact with water are to be suitable for potable water applications, corrosion resistant, and NSF 61 certified.

SECTION 43 25 00 – WELL PUMP

Pump Bowl Assembly

The pump bowl assembly shall include bowls made of 316 stainless steel, free from blow holes, sand holes, or other detrimental defects, with a tensile strength of 30,000 psi. Each intermediate bowl shall be constructed with a Vesconite bearing and a neoprene bearing to support the impeller shaft. These “dual bearings” shall provide the longest possible shaft life, based on the widest range of pumping conditions. The bowl unit shall be capable of withstanding a hydrostatic pressure equal to twice the pressure at the rated capacity of 1.5 times the shutoff head, whichever is greater.

Impellers shall be the enclosed types with sufficient skirt materials thickness to enable repair and restoration of proper running clearances by installation of wear rings. The impeller shaft shall be made of 316 stainless steel. Each impeller shall be made of 316 stainless steel, accurately machined and finished, and suitably balanced. Each impeller shall be securely fastened to the shaft with a taper lock bushing as standard.

The bowl shall include a side seal at the impeller skirt and, in addition, a resilient neoprene ring reinforced with an embedded steel core installed directly below the impeller skirt. This durable, resilient “lateral bowl wear ring” shall protect the end of the impeller skirt against wear from entrained abrasives. The close running clearance between the impeller skirt and the “lateral bowl wear ring” shall provide sustained protection against bowl recirculation and consequent reductions in efficiency. The bowl unit shall include a metal guard to protect the motor cable from abrasion during installation.

Surface Plate

The surface plate shall be made of stainless steel. It shall rigidly support the total weight of the motor, bowl assembly, column pipe, cable and column of water. The cable outlet shall be designed to prevent entry of foreign matter into the well and shall be equipped with a cable seal.

Drop Pipe

The drop pipe, threaded and coupled, shall conform to American Standard tapered pipe thread specifications. The pipe shall have an inside diameter of 6 inches, outside diameter of 6.625 inches, and shall be 316 stainless steel. Coupled pipe ends are to have an outside diameter of 7.39 inches (max). Pipe is to be rated for a working pressure condition of 300 psi (minimum).

Submersible Cable

The submersible cable shall be sized to limit the voltage drop to 5% at the motor’s terminals. Each conductor shall be jacketed or the conductors may be included in a single jacketed assembly. The conductor insulation shall be water and oil resistant, suitable for continuous immersion.

The length of the cable to be furnished shall be the sum of total pump setting, including bowl unit, plus one foot for each 50 feet of setting to compensate for possible twist or sag during installation, plus additional length, as needed, to extend from the surface plate to the pump starter

SECTION 43 25 00 – WELL PUMP

panel. The cable will be suitably supported from the column. All cable fittings and terminals shall be water tight at the pressure encountered in the application.

Motor

The electric motor shall be a 9.2” asynchronous two-poles submersible motor, rewindable type, with external shell and supports made in AISI 316 stainless steel. Cooling and lubrication of the thrust bearing assembly and carbon bushes shall be provided by a mixture of water and glycol. Squirrel-cage rotor mounted on Michell self-centering thrust bearing. The motor shall be inverter rated and suitable for use with a variable frequency drive (30 Hz – 60 Hz). The motor shall be equipped with an adequate length of variable frequency drive (VFD) cable.

Motor shall meet the following:

Flange:	9.2 inches OD (max)
Degree of Protection:	IP68
Cooling Flow:	0.5 m/s (1.64 ft/s)
Voltage Tolerance:	+6% / -10%
Max Starts:	8/hour
Max Operating Depth:	300 m (984 ft)
Max Operating Pressure:	60 bar (870 psi)
Motor HP Rating:	200 HP

The stator shall be rewindable type and shall be inserted in an AISI 316 stainless steel outer shell.

Mitchell type thrust bearing unit shall consist of tilting pads in graphite and ceramic disc. From 100 HP to 260 HP: 60,000 N (13,500 lbf). Upthrust: 12,500 N (2850 lbf).

Shafts shall be made of stainless steel with end part with key coupling. Squirrel-cage rotor shall be made of copper. The motor shall be equipped with a silicon carbide (SiC/SiC) mechanical seal.

Water Level Indicator Assembly

A 1” tube for a submersible level transducer, and a 1” tube for a portable sounding tube shall be furnished of sufficient length to extend from the surface to the top of the bowl assembly. Bottom end of each tube is to have cap and be located 6-inches above the top of the bowl assembly. The lowest 100-foot section of tube is to be perforated PVC to allow water to enter and exit tube. Both tubes shall be plastic tubing (schedule 40 PVC), and will penetrate the well head plate above the top of the well casing, as shown in the Drawings. Each section of tubing is to be securely attached to the drop pipe with ties compliant with NSF 61.

Check Valves

Type 316 stainless steel check valves, 6-inch, shall be furnished to prevent backflow of water within the threaded column drop pipe. Check valves shall be NSF 61 certified. Check valves shall be Flomatic model 8056VFD or approved equal.

SECTION 43 25 00 – WELL PUMP

3.0 EXECUTION

3.1 Installation

The installation of the Shop Well #2 pump will include removal of existing 30 HP pump/motor/drop pipe and handing removed equipment over to the City for storage, installation of new 200 HP Submersible Deep Well Turbine Water Pump Assembly, 6-inch drop pipe with check valves every 150-foot, two 1-inch PVC conduits, new surface plate, and other miscellaneous work items shown on the plans.

Installation requirements are listed below.

- a. Coordinate schedule with Owner and Engineer.
- b. Confirm date, time requirements, and work plan with team prior to mobilizing on-site.
- c. Removal of existing 30 HP pump assembly, including motor, drop pipe, and valving.
- d. Handing all removed equipment over to the City for storage. Coordinate hand off location with City.
- e. Installation of new 200 HP Submersible Deep Well Turbine Water Pump Assembly with Motor and new 6-inch drop pipe with check valves every 150-foot and two 1-inch PVC conduits
- f. Check alignment of pump and motors after installation.
- g. Installation of new surface plate and connections needed to surface seal plate.
- h. Installation shall be by qualified personnel.
- i. Level and shim surface plate in place before final sealing.
- j. Factory representative to check entire pump assembly for satisfactory operation, including confirmation that no vibration issues are detected.

3.2 Factory Testing

Fully test all pumps with water using AWWA Specifications for Factory Inspection and Tests and submit a written report to the Engineer prior to shipment. Tests shall be conducted per ANSI/HI 14.6 standards to 1U tolerances, and factory vibration testing shall be conducted in accordance with Hydraulic Institute standard 9.6.4. The tests required include both running (performance) and hydrostatic tests, and shall demonstrate that the pump can meet the specified high and low operating flows at start-up and future conditions. Notify the Engineer a minimum of 10 days prior to testing so that the Engineer may witness the tests.

3.3 Field Testing

After installation, all pumps shall be subjected to a field running test under normal operating conditions. Field vibration testing shall be performed in accordance with Hydraulic Institute standard 9.6.4 and shall include, but not be limited to, taking vibration readings perpendicular to the discharge, in-line with the discharge, and vertically above or below the discharge. The field tests

SECTION 43 25 00 – WELL PUMP

shall be conducted in the presence of and as directed by the Owner and Engineer. The field tests shall demonstrate that each pumping unit:

- a. Has not been damaged during transportation or installation.
- b. Has been properly installed, has no mechanical defects, is in proper alignment, and has been properly connected.
- c. Is free of overheating, objectionable vibration, and excessive noise as defined by the Hydraulic Institute Standards.

Any defects in the equipment or failure to meet requirements of the Specification shall be promptly corrected by the Contractor and the field test rerun to demonstrate the adequacy of the adjustments.

3.4 Disinfection

Disinfection of Shop Well #2 shall be in accordance with AWWA C654-13.

3.5 Painting

All painting shall be in accordance with the Manufacturer's standards.

3.6 Electrical

Coordinate all electrical work with on-site Contractor, City, and Engineer. Provide access for electrical contractor so that new electrical components for pump equipment can be connected, tested, and inspected.

3.7 Warranty

Provide one-year non-prorated warranty for entire pump assembly and motor. Products are to be warranted to be free from defects in material and workmanship. Warranty period is to begin after new pump assembly is installed, satisfactorily tested, training is complete, O&M data transferred to Owner, and all other work items are complete and accepted by Owner (Substantial Completion).

END OF SECTION

PART 4 - REFERENCE DOCUMENTS

APPENDIX A – WASHINGTON STATE PREVAILING WAGE RATES

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

<https://fortress.wa.gov/lni/wagelookup/prvwagelookup.aspx>

Based on the bid submittal deadline for this project, the applicable effective date for prevailing wages for this project is July 27, 2020. A copy of the applicable prevailing wage rates are also available for viewing at the office of the Owner, located at:

City of Ferndale 2095 Main Street, Ferndale, WA 98248

Upon request, the Owner will mail a hard copy of the applicable prevailing wages for this project.

APPENDIX B – CITY SCADA/PLC PROGRAMMER SERVICES

Note: Services to be performed as force account work per WSOT 1-09.6 Force Account, 6. For Contractor Markup on Subcontractor's Work. Subcontractor's anticipated total = \$7,600. Calculated markup:

- \$0 to \$25,000 (at 12% markup): \$912.00
- Total anticipated markup: \$912.00

Bid Item Total = \$7,600.00 (City SCAD/PLC Prog. Services) + \$912.00 (markup) = **\$8,512.00**

June 22nd, 2020

Mike Olinger
City of Ferndale
2095 Main Street
Ferndale, WA 98248

City of Ferndale, Shop Well #2 – Permanent Pump

RE: Supply HMI, SCADA, Network, and PLC Programming Services

Below is our proposed scope and pricing for supplying the work products associated with the City of Ferndale Shop Well #2 – Permanent Pump.

TOTAL BUDGETARY COST: \$7,600.00 (Tax is not included)

Scope of Supply:

- Shop Well #2 – Permanent Pump, SCADA Systems Work.
 - Supply modifications to HMI, SCADA, OIP and Communications.
 - Supply Project Support and Management.
 - Project meetings
 - Attend pre-construction meeting.
 - Attend weekly or bi-weekly project meeting as necessary.
 - Submittal and document review.
 - Review Shop Well #2 system pre-construction submittal data.
 - Review and Shop Well #2 system O&M documentation.
 - Administrative tasks
 - Document hours worked for force account billing.
 - File intent to pay prevailing wage documentation.
 - Startup Support.
 - Onsite assistance with testing of PLC program logic and for new equipment operation.
 - Onsite installation support for programming and configuration of all VFD parameters and integrate into the PLC logic for operation as required.

Sincerely,



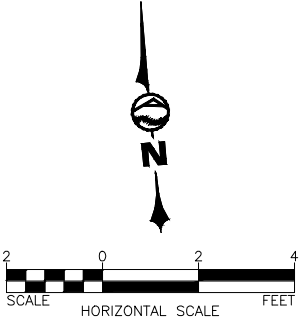
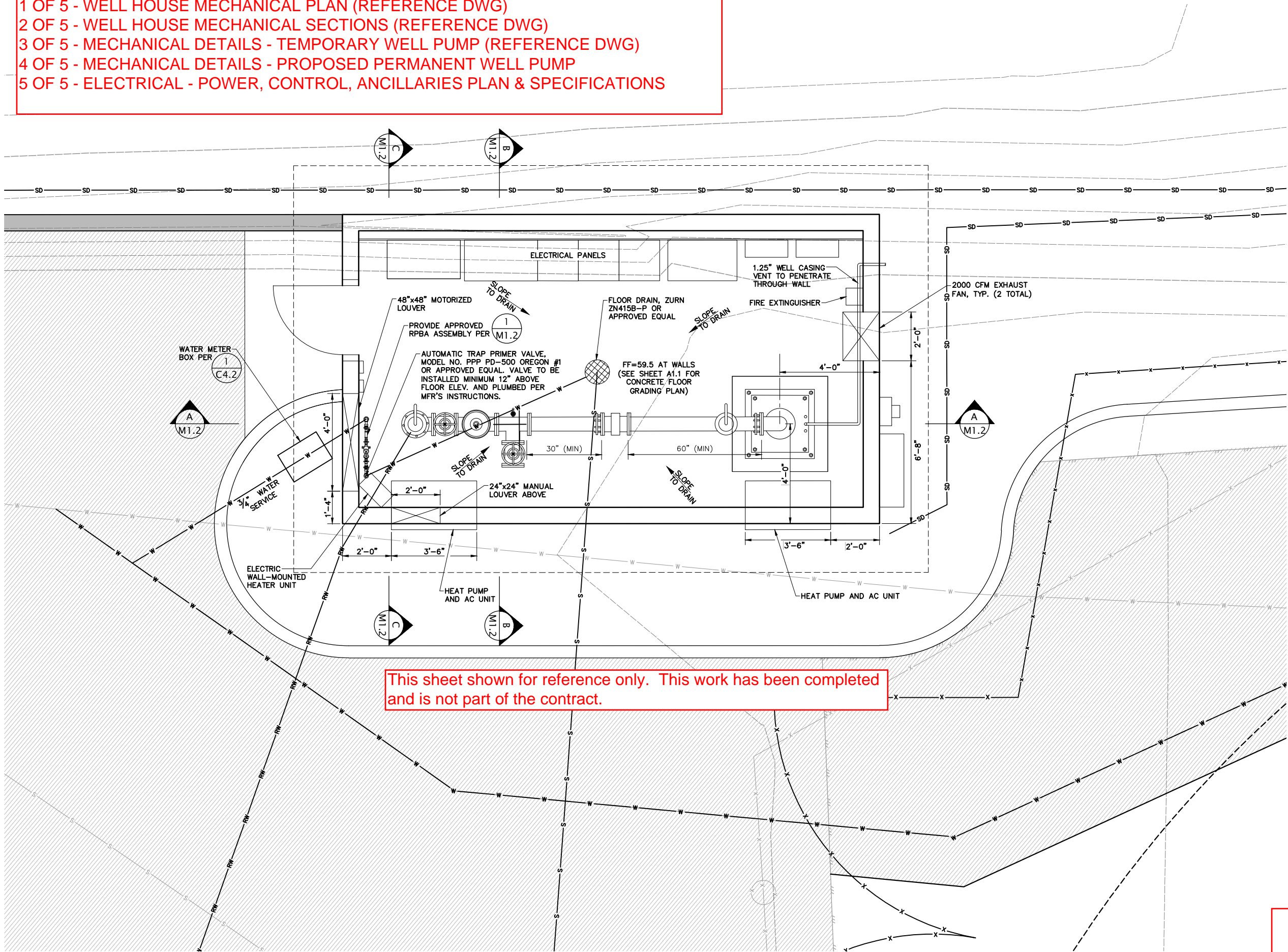
Mitch Stewart
Technical Systems, Inc. | 2303 196th St SW | Lynnwood, WA 98036
Direct: 425-678-4134 | Mobile: 425-320-7632

PART 5 – DRAWINGS

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FERNDAL SHOP WELL #2 PERMANENT PUMP PROJECT - DRAWING INDEX

- 1 OF 5 - WELL HOUSE MECHANICAL PLAN (REFERENCE DWG)
- 2 OF 5 - WELL HOUSE MECHANICAL SECTIONS (REFERENCE DWG)
- 3 OF 5 - MECHANICAL DETAILS - TEMPORARY WELL PUMP (REFERENCE DWG)
- 4 OF 5 - MECHANICAL DETAILS - PROPOSED PERMANENT WELL PUMP
- 5 OF 5 - ELECTRICAL - POWER, CONTROL, ANCILLARIES PLAN & SPECIFICATIONS



This sheet shown for reference only. This work has been completed and is not part of the contract.

NO.	REVISIONS	BY	DATE

CIVIL
STRUCTURAL
SURVEY

WILSON
ENGINEERING

WILSONENGINEERING.COM

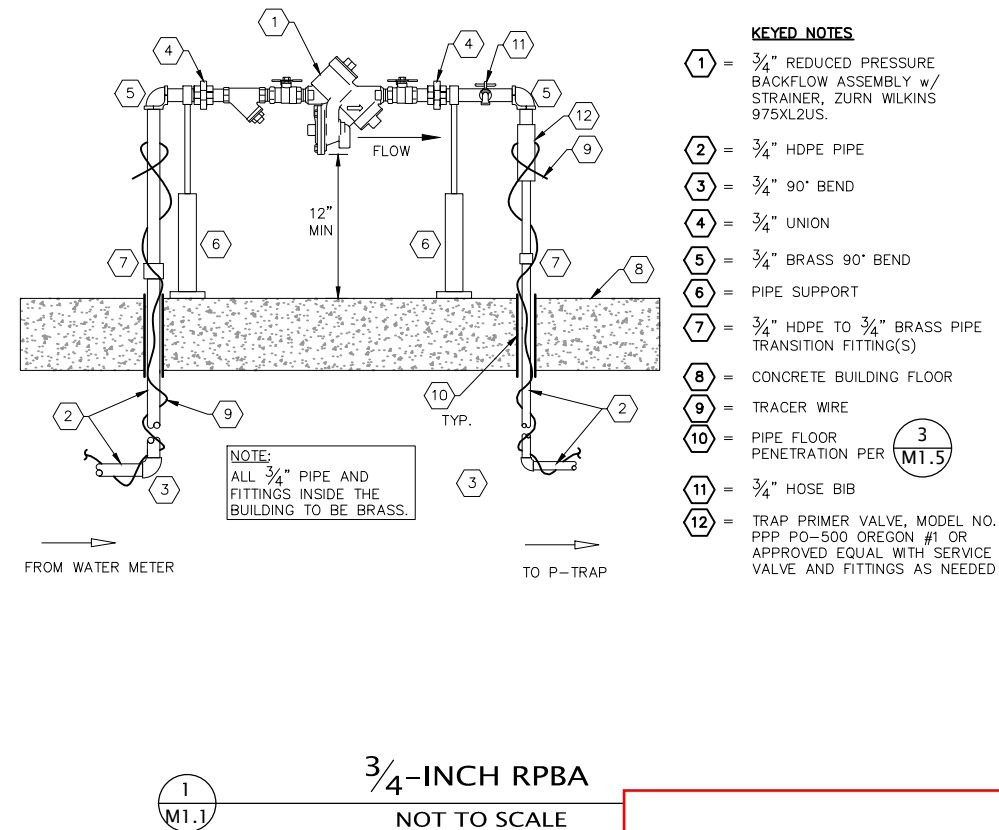
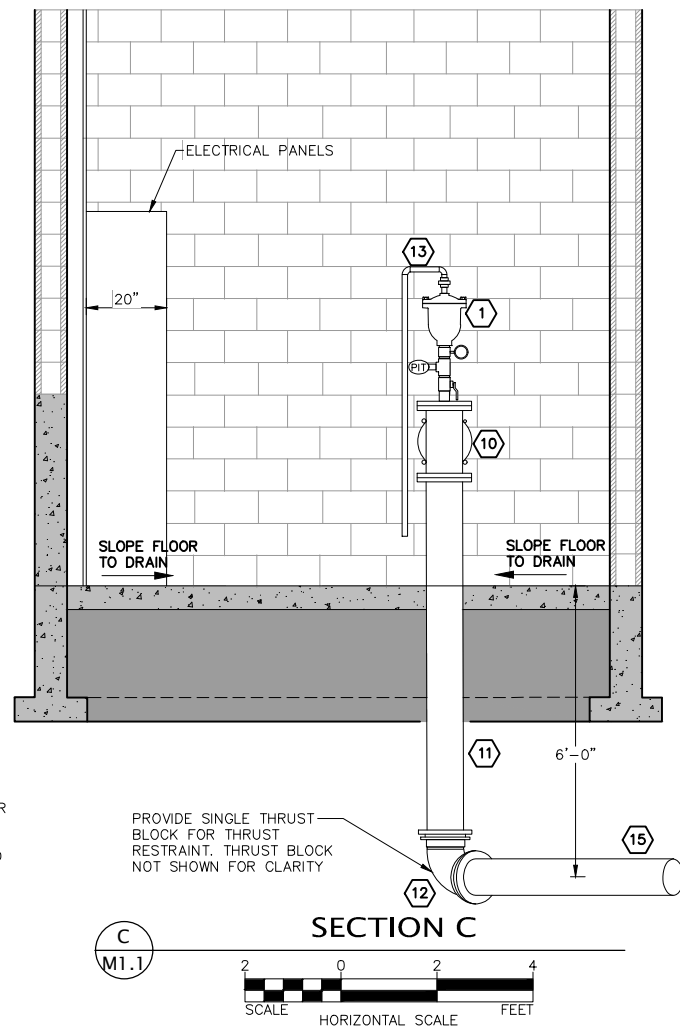
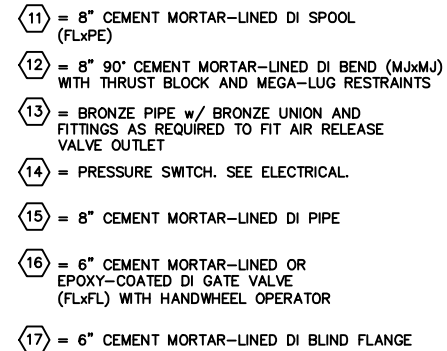
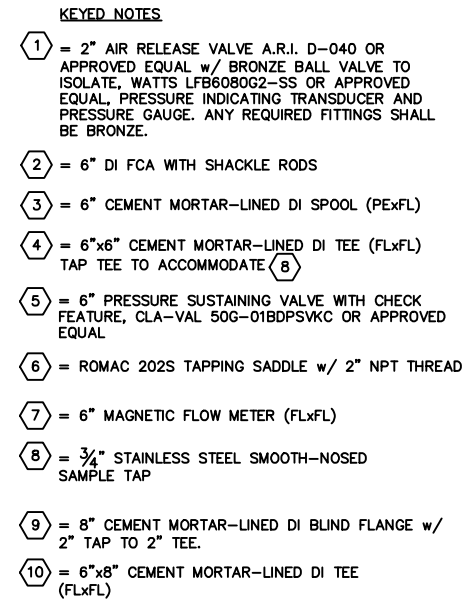
DESIGNED BY	KWF
DRAWN BY	JRF
CHECKED BY	AWL

DATE	1-08-2020
SCALE	AS SHOWN
JOB NUMBER	2018-141

CITY OF FERNDAL, WA	WASHINGTON
FERNDAL	SHOP WELL #2 - WELLHOUSE PROJECT
	WELL HOUSE MECHANICAL PLAN

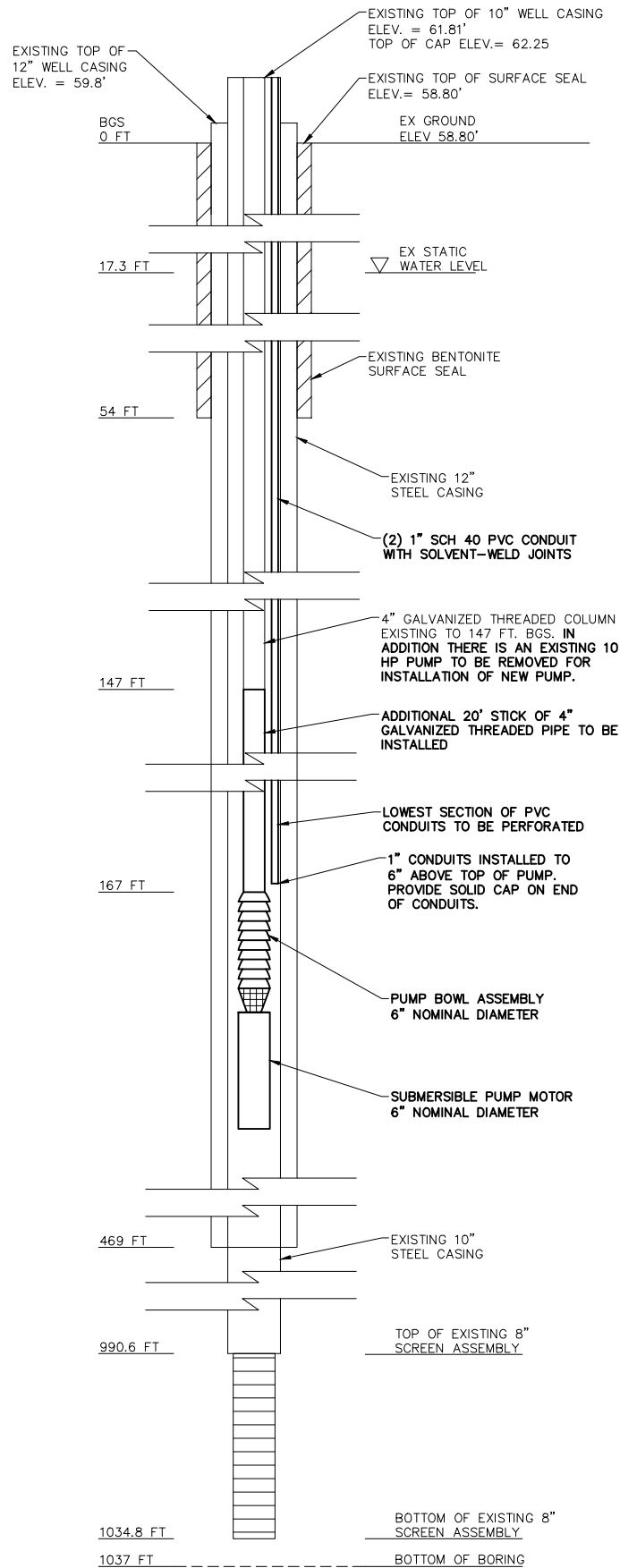
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STAMPED BY
JEFFREY G. CHRISTNER
1-8-2020 **

NO.	REVISIONS	BY	DATE



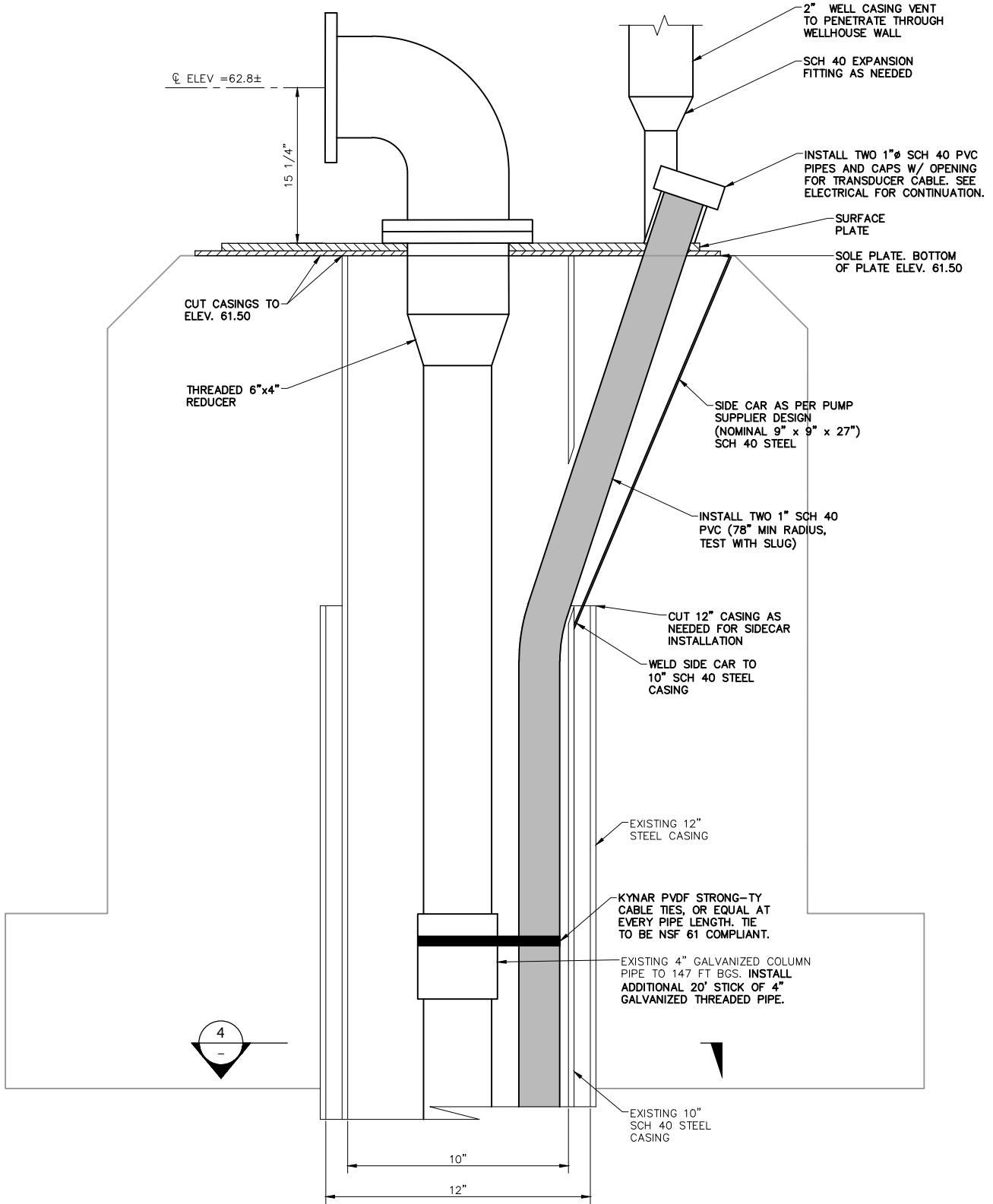
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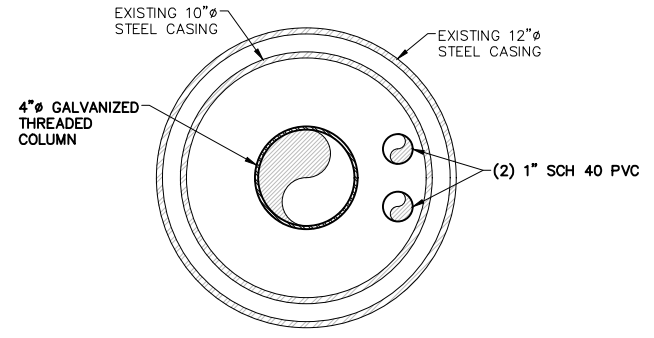


1 EXISTING SHOP WELL #2
PROFILE & PROPOSED WELL PUMP SETTINGS
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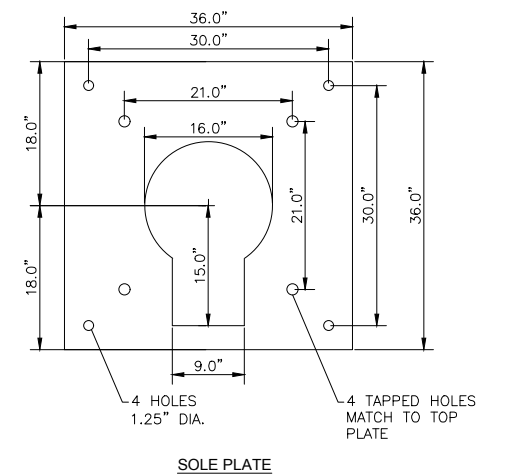
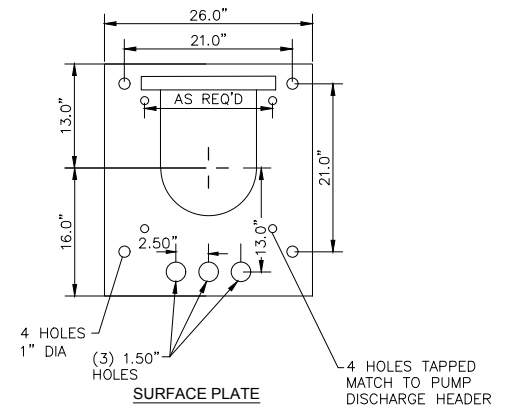
This sheet depicts the temporary pump that is currently in place.
This temporary pump is to be removed as part of the contract, and
the permanent pump shown on the next page installed in its place.



2 MONITORING PORT DETAIL
NOT TO SCALE



4 WELL CASING SECTION
NOT TO SCALE



3 SHOP WELL #2 MOUNTING PLATES DETAIL
NOT TO SCALE

NO.	REVISIONS	BY	DATE

CIVIL STRUCTURAL SURVEY

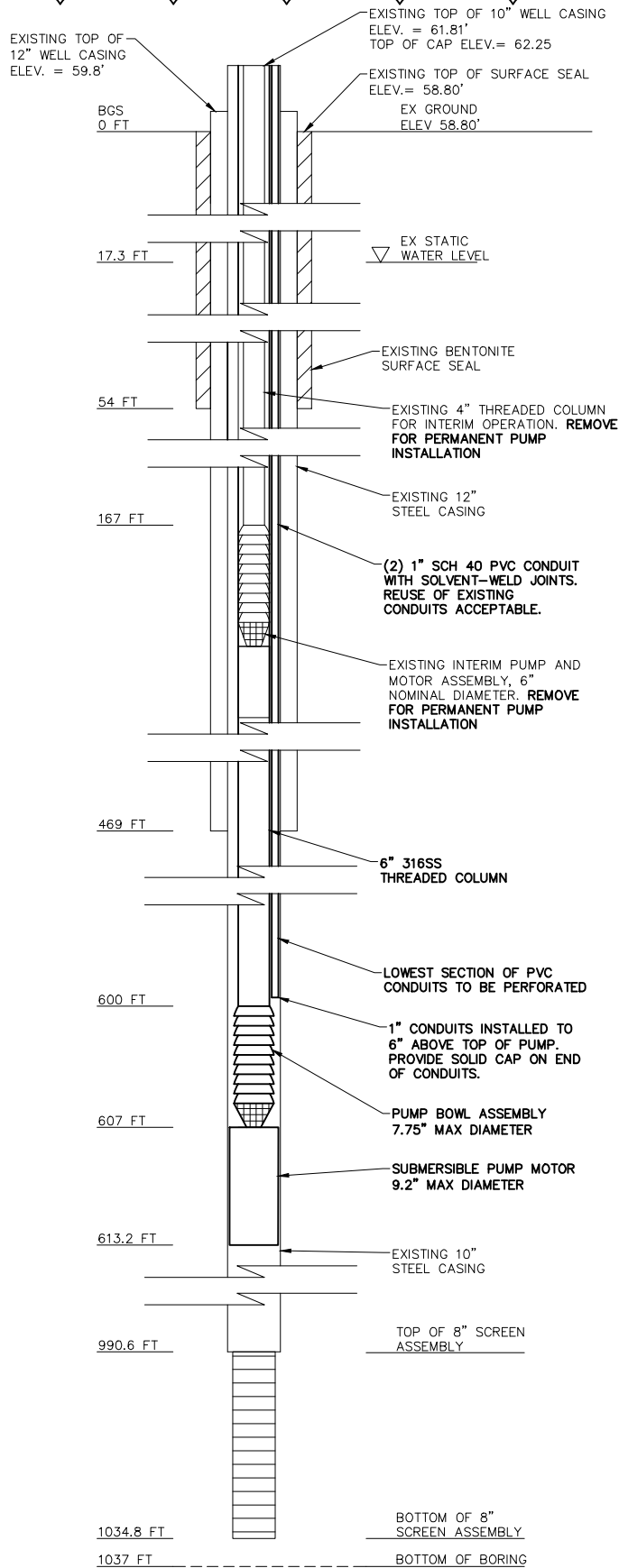
WILSON ENGINEERING

WILSONENGINEERING.COM

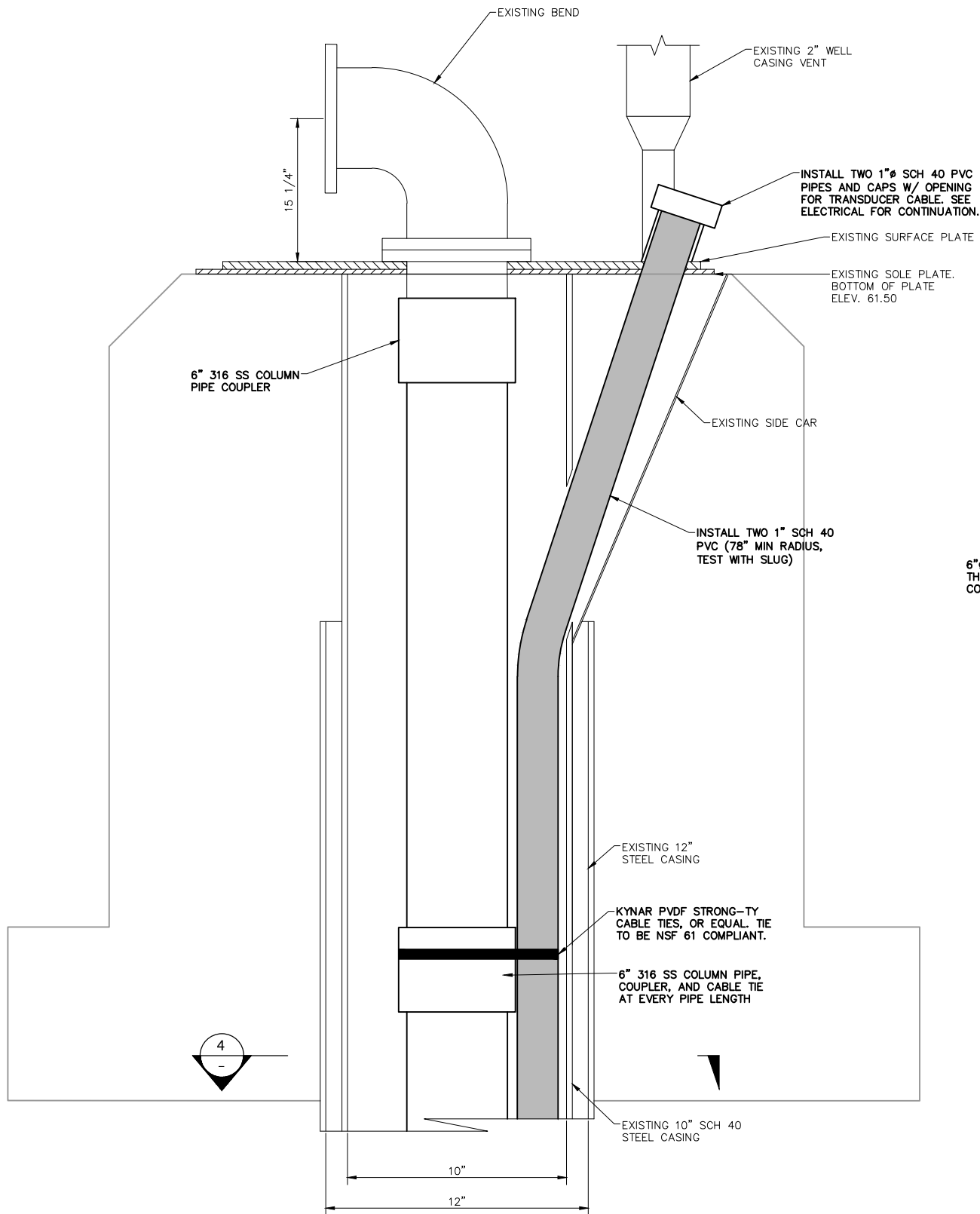
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JOB NUMBER 2018-141	SCALE AS SHOWN	FERNDALE	DRAWN BY JRF		CHECKED BY AWL
	WASHINGTON				
	SHOP WELL #2 – WELLHOUSE PROJECT				
MECHANICAL DETAILS – TEMPORARY WELL PUMP INFO					

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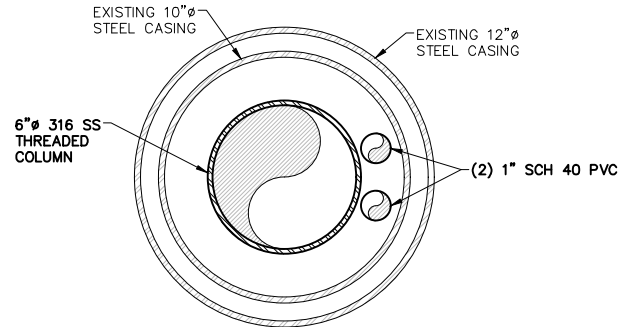
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1 EXISTING SHOP WELL #2
PROFILE & PROPOSED WELL PUMP SETTINGS
NOT TO SCALE




2 MONITORING PORT DETAIL
NOT TO SCALE



4 WELL CASING SECTION
NOT TO SCALE

This sheet depicts the permanent well pump and motor to be installed as part of this contract.

CITY OF FERNDAL, WA		DESIGNED BY KWF		ORIGINAL STAMPED BY JEFFREY G. CHRISTNER 1-8-2020		 WILSON ENGINEERING WILSONENGINEERING.COM	CIVIL STRUCTURAL SURVEY
DATE 1-08-2020	SCALE AS SHOWN	DRAWN BY JRF		WASHINGTON SHOP WELL #2 – WELLHOUSE PROJECT MECHANICAL DETAILS – PERMANENT PUMP INFO			
	JOB NUMBER 2018-141	CHECKED BY AWL					

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SPECIFICATIONS:

1. THE GENERAL, SUPPLEMENTARY AND OTHER CONDITIONS OF THE CONTRACT, MODIFICATIONS TO THE GENERAL CONDITIONS, THE DRAWINGS, AND THE APPLICABLE PROVISIONS OF THE OTHER DIVISIONS ARE HEREBY MADE A PART OF THIS DIVISION AND ALL ITS SECTIONS.
2. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL ELECTRICAL WORK.
3. COORDINATE ELECTRICAL WORK WITH RELATED WORK SHOWN AND SPECIFIED ELSEWHERE.
4. WORK INCLUDED: THE CONTRACTOR SHALL PERFORM ALL THE WORK REQUIRED (INCLUDING THE FURNISHING OF ALL SUPERVISION, LABOR, SERVICES, TOOLS, MATERIALS AND EQUIPMENT AND THE PERFORMANCE OF ALL OPERATIONS AND INCIDENTALS NECESSARY) FOR A COMPLETE, SAFE AND RELIABLE ELECTRICAL INSTALLATION, ADJUSTED, TESTED AND READY FOR OPERATION. THE ELECTRICAL WORK (NEW AND MODIFICATION OF EXISTING) IS GENERALLY DESCRIBED AS FOLLOWS:

A. DEMOLITION.

B. DISCONNECTION AND RECONNECTION OF POWER AND CONTROLS FOR PUMP REPLACEMENT.

C. PROGRAMMING, VFD RECONFIGURATION, ETC. FOR PUMP REPLACEMENT.

D. GROUNDING.

E. SUPPORTS.

F. MOISTURE, FIRE AND DUST STOPPING AND SEALING.

G. TEMPORARY CONSTRUCTION POWER AND LIGHTING.

H. TESTING AND COMPLETING.

I. OBTAINING AND PAYING FOR ALL REQUIRED LICENSES, PERMITS, INSPECTIONS AND FEES.
5. WORK NOT INCLUDED: THE FOLLOWING ELECTRICAL SYSTEM RELATED WORK WILL BE PROVIDED BY THE OWNER, GENERAL CONTRACTOR, OR OTHER SUBCONTRACTORS WORKING DIRECTLY WITH THE OWNER:

A. PUMP CONTRACTOR: SUBMERSIBLE PUMP
6. EXISTING CONDITIONS: BEFORE SUBMITTING BID, EXAMINE EXISTING SITE AND EQUIPMENT CONDITIONS TO DETERMINE EFFECT ON EXECUTION OF THE ELECTRICAL WORK AND INCLUDE COSTS IN BID.
7. THE CONTRACTOR SHALL COORDINATE THE WORK AND COOPERATE WITH THE OWNER, OTHER TRADES, AND SYSTEM CONTRACTORS TO HAVE THE WORK COMPLETED TO THE BEST ADVANTAGE, INSURE THERE ARE NO INTERFERENCES, PROVIDE REASONABLE OPPORTUNITY FOR THE OTHER TRADES AND CONTRACTORS TO COMPLETE THEIR WORK AND TO NOT DELAY THE WORK.
8. WORK UNDER THIS PROJECT WILL BE UNDERTAKEN WITH THE FACILITY IN FULL OPERATION.
9. CONTRACTOR SHALL COORDINATE WORK TO AVOID DISTURBANCE TO BUILDING OPERATIONS AND PERSONNEL, AND TO ALLOW ACCESS FOR BOTH PERSON TO AND WITHIN ALL PORTIONS OF THE FACILITY AND VEHICLES TO THE FACILITY. ANY AND ALL COSTS INCURRED FOR NON-STANDARD HOURS, DOUBLE SHIFTS, OVERTIME, ETC. OR ANY OTHER COSTS ASSOCIATED WITH COMPLETING THE PROJECT WITHIN THE COMPLETION TIMES REQUIRED SHALL BE INCLUDED WITHOUT INCREASE IN CONTRACT SUM.
10. THE COMPLETED INSTALLATION SHALL BE DONE IN A NEAT & WORKMANLIKE MANNER, SHALL BE SUITABLE FOR THE LOCATION, AND SHALL BE IN ACCORDANCE ALL LAWS, RULES & REGULATIONS IN EFFECT AT THE SITE (INCLUDING THE LATEST EDITIONS OF THE NATIONAL ELECTRICAL CODE (NEC), THE WASHINGTON STATE ELECTRICAL SAFETY STANDARDS, ADMINISTRATION AND INSTALLATION CODE (WAC 296-46B)
11. ALL SYSTEMS, EQUIPMENT, DEVICES, RACEWAYS, CABLES, ETC. INDICATED ARE NEW UNLESS NOTED OTHERWISE.
12. ALL ELECTRICAL MATERIALS SHALL BE "UL" (UNDERWRITER'S LABORATORIES, INC.) LISTED, LABELED AND APPROVED FOR THE SERVICE INTENDED WHERE UL STANDARDS HAVE BEEN ESTABLISHED. ALL ELECTRICAL MATERIAL SHALL BE NEW UNLESS SPECIFICALLY NOTED OTHERWISE.
13. ALL OPERATIONS SHALL BE CONDUCTED IN A MANNER TO AVOID THE RISK OF HARM TO PERSONS OR DAMAGE TO PROPERTY. DAMAGE SHALL IMMEDIATELY BE REPAIRED. CONSTRUCTION EQUIPMENT & TOOLS SHALL BE IN GOOD OPERATING CONDITION, AND BE DESIGNED FOR THE WORK REQUIRED.
14. POWER INTERRUPTIONS (WHETHER TO THE ENTIRE SYSTEM OR TO INDIVIDUAL BUILDINGS, PANELS, EQUIPMENT, DEVICES, ETC.) SHALL BE KEPT TO AN ABSOLUTE MINIMUM, AND SHALL NOT BE DONE WITHOUT PRIOR APPROVAL, 2 WEEKS ADVANCED SCHEDULING & COORDINATION MEETING WITH THE OWNER. SECONDARY VERIFICATION THAT POWER INTERRUPTION WILL OCCUR IS ALSO REQUIRED 48 HOURS PRIOR TO THE DATE OF OCCURRENCE. THIS ALSO APPLIES TO TESTING.
15. EQUIPMENT, BOXES, ETC. SHALL BE INSTALLED PLUMB & TRUE, AND BE FIRMLY SUPPORTED EITHER DIRECTLY OR INDIRECTLY BY A SOUND & SAFE STRUCTURAL MEMBER.
16. ROUTING OF EXISTING CONDUITS INDICATED IS APPROXIMATE ONLY.
17. DEFINITIONS

A. THE TERM "CONTRACTOR" USED THROUGHOUT THESE SPECIFICATIONS AND ON THE ELECTRICAL DRAWINGS SHALL BE UNDERSTOOD TO MEAN THE ELECTRICAL CONTRACTOR. ALL OTHER WORK SHALL BE CALLED OUT BY NAME.

B. "FURNISH" MEANS TO SUPPLY AND DELIVER TO THE PROJECT, READY FOR INSTALLATION AND IN OPERABLE CONDITION.

C. "INSTALL" MEANS TO INCORPORATE IN THE WORK FINAL POSITION, COMPLETE, ANCHORED, CONNECTED, AND IN OPERABLE CONDITION.

D. "PROVIDE" MEANS FURNISH AND INSTALL.

E. F.O.I.C. - FURNISHED BY OTHERS, INSTALLED BY CONTRACTOR.
18. WIRING METHODS

A. BRANCH CIRCUITS - PVC CONDUIT BELOW GRADE (WITH GRS CONDUIT RISERS AND ELBOWS) AND EMT ABOVE GRADE.

B. CONTROLS, FIRE ALARM, ETC. - PVC CONDUIT BELOW GRADE (WITH GRS CONDUIT RISERS AND ELBOWS) AND EMT ABOVE GRADE.

C. FLEX - SHALL BE USED FOR FINAL CONNECTIONS TO VIBRATING EQUIPMENT & MAY BE SUBSTITUTED FOR EMT WHEN RUN CONCEALED WITHIN WALLS & CEILINGS. FLEX SHALL NOT BE USED FOR HOME RUNS.
19. RACEWAYS

A. EXPOSED RACEWAYS SHALL BE RUN AS NEATLY & UNOBTUSIVELY AS POSSIBLE, SUPPORTED AS REQUIRED, PARALLEL OR AT RIGHT ANGLES TO CEILINGS, WALLS & STRUCTURAL MEMBERS.

B. RACEWAYS SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE:

1. INTERIOR, EXPOSED IN PUMP ROOM - ELECTRICAL METALLIC TUBING (EMT).

2. EXTERIOR ABOVE GRADE - GALVANIZED RIGID STEEL CONDUIT (GRS).

3. EXTERIOR BELOW GRADE - POLYVINYL CHLORIDE CONDUIT (PVC), EXCEPT CONDUIT BENDS & RISERS SHALL BE GALVANIZED RIGID STEEL (GRS).

C. RACEWAYS SHALL BE SIZED SO THAT THE CABLE FILL DOES NOT EXCEED 40%.

D. RIGID STEEL CONDUIT SHALL BE HOT-DIPPED GALVANIZED WITH THREADED COUPLINGS AND CONNECTORS.
20. RACEWAY FITTINGS

A. CONNECTORS, COUPLINGS, ETC. FOR EMT SHALL BE STEEL RAINTIGHT COMPRESSION TYPE.
21. BOXES

A. BOXES SHALL ACCOMMODATE ANY DEVICE TO BE INSTALLED AND SHALL BE SIZED AS REQUIRED BY THE APPLICABLE CODES FOR NUMBER AND SIZE OF CONDUITS AND CABLES ENTERING AND LEAVING; EXCEPT MINIMUM AS NOTED BELOW.

B. INDOOR BOXES ABOVE GRADE IN DRY LOCATIONS SHALL BE STANDARD STAMPED GALVANIZED STEEL TYPE, SUITABLE FOR EMBEDMENT IN CONCRETE AND/OR MASONRY WHERE REQUIRED.

C. UNLESS NOTED OTHERWISE, LARGER SIZE PULL AND JUNCTION BOXES SHALL BE FABRICATED FROM CODE GAUGE GALVANIZED STEEL.
22. WIRING

A. ALL WIRING SHALL BE ENCLOSED WITHIN THE RACEWAY SYSTEM.

B. FEEDER, BRANCH CIRCUIT & EQUIPMENT GROUND CABLES SHALL BE 1/C COPPER, STRANDED, #12 AWG UNLESS NOTED OTHERWISE, WITH 600V TYPE XHHW OR THHN/THWN INSULATION.

C. BRANCH CIRCUIT & EQUIPMENT GROUND CABLES WITHIN A CONDUIT SYSTEM SHALL BE 1/C COPPER STRANDED, #12 AWG (UNLESS NOTED OTHERWISE), WITH 600V TYPE XHHW OR THHN/THWN INSULATION.

D. LOW VOLTAGE (CLASS 2) CONTROL CABLE SHALL BE SINGLE CONDUCTOR COPPER WITH 600 VOLT TYPE XHHW OR THWN/THHN INSULATION IF INSTALLED IN CONDUIT. THE MINIMUM CONDUCTOR SIZE SHALL BE #12 AWG UNLESS NOTED OTHERWISE.

E. INSTRUMENT CABLE, UNLESS OTHERWISE REQUIRED BY THE PARTICULAR INSTRUMENT, SHALL BE 2 CONDUCTOR (TWISTED PAIR) SOLID COPPER WITH 300 VOLT PVC INSULATION, 100% ALUMINUM POLYESTER SHIELD, STRANDED COPPER DRAIN WIRE, WITH AN OVERALL PVC JACKET. THE MINIMUM CONDUCTOR SIZE SHALL BE #18 AWG.

F. BEFORE SPICES AND CONNECTIONS ARE MADE, CONTACT SURFACES SHALL BE THOROUGHLY CLEANED. CONNECTIONS SHALL BE BOTH MECHANICALLY & ELECTRICALLY SECURE. TAKE CARE NOT TO NICK CONDUCTORS DURING INSULATION REMOVAL.

G. WIRE AND CABLE SHALL NOT BE EXPOSED TO WEATHER OR MECHANICAL DAMAGE LONGER THAN NECESSARY. CUT ENDS OF CABLE SHALL IMMEDIATELY BE SEALED.

H. CABLE SHALL BE UNROLLED FROM REELS, OR REMOVED FROM CARTONS, AND INSTALLED IN A MANNER WHICH WILL PREVENT KINKING, CRUSHING OR EXCESSIVE TENSION ON CONDUCTORS AND INSULATION. CABLE PULLING LUBRICANTS OF A TYPE HAVING NO DAMAGING EFFECT ON THE INSULATION, SHALL BE USED TO MINIMIZE PULLING STRESSES ON THE CABLE.

I. CABLE SHALL BE INSTALLED OR DRAWN INTO THE CONDUIT SYSTEM ONLY AFTER ALL WORK OF ANY NATURE THAT COULD CAUSE INJURY TO THE CABLE IS COMPLETED. THE CONDUIT SYSTEM SHALL BE COMPLETE, SNAKED AND CLEANED BEFORE PULLING ANY CABLE.
23. GROUNDING

A. ALL ELECTRICAL EQUIPMENT, BOXES, DEVICES, SHALL BE PROVIDED WITH A GROUND FAULT RETURN PATH BY MEANS OF THE INTEGRITY OF THE METALLIC CONDUIT SYSTEM (WHERE APPLICABLE) & AN INSULATED GROUNDING CONDUCTOR INSTALLED WITH THE CIRCUIT CONDUCTORS. CONDUIT SHALL BE CLOSELY & TIGHTLY FITTED IN COUPLINGS, CONNECTORS, ETC. AND BE PROPERLY BONDED TO PROVIDE AN ELECTRICALLY CONTINUOUS LOW RESISTANT GROUND PATH. CONTINUITY TESTS SHALL BE MADE TO VERIFY THE CONTINUITY OF THE GROUNDING SYSTEM & ALL GROUND FAULT RETURN PATHS.

B. EQUIPMENT GROUND CABLES SHALL BE 1/C COPPER, WITH 600V TYPE XHHW OR THHN/THWN INSULATION.

- E. ELECTRICAL METALLIC TUBING SHALL BE ELECTRO-GALVANIZED STEEL.
- F. LIQUID TIGHT FLEXIBLE CONDUIT SHALL BE PVC COATED GALVANIZED STEEL.
- G. NO CONDUIT SHALL BEND MORE THAN 360 DEGREES BEFORE THE END OF ITS RUN. BENDS IN CONDUITS SHALL BE MADE WITHOUT FLATTENING, KINKING OR REDUCING THE CROSS-SECTIONAL AREA OF THE CONDUIT. CONDUIT CUTS SHALL BE MADE SQUARE WITH A PROPER CUTTING TOOL. THE INSIDE AND OUTSIDE OF ALL CONDUIT ENDS SHALL BE REAMED TO ELIMINATE BURRS AND ROUGH EDGES, THEN WIPED CLEAN.
- H. SUITABLE BUSHINGS SHALL BE USED ON ALL CONDUIT TERMINATIONS.
- I. CONDUIT SYSTEMS SHALL BE COMPLETE, SNAKED AND CLEANED BEFORE PULLING ANY CABLE.

20. RACEWAY FITTINGS

- A. CONNECTORS, COUPLINGS, ETC. FOR EMT SHALL BE STEEL RAINTIGHT COMPRESSION TYPE.

21. BOXES

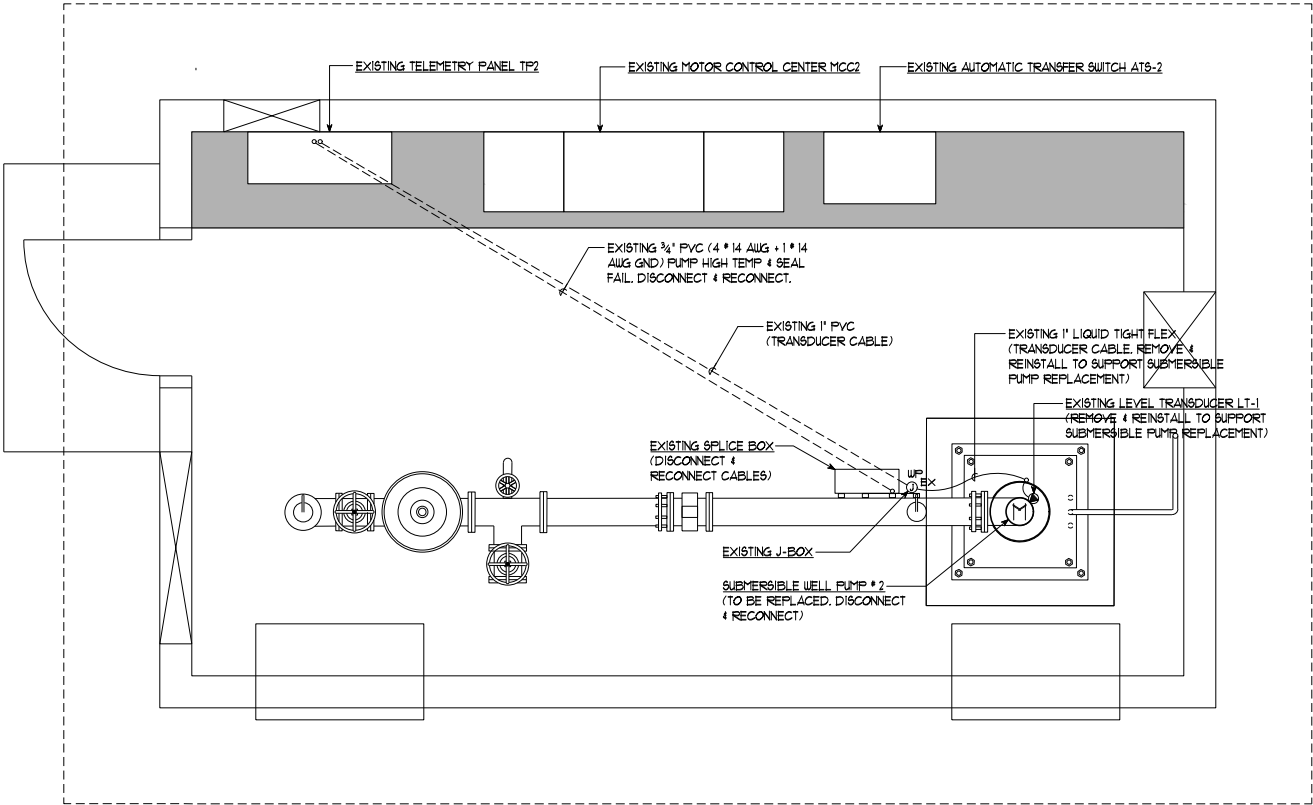
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- B. INDOOR BOXES ABOVE GRADE IN DRY LOCATIONS SHALL BE STANDARD STAMPED GALVANIZED STEEL TYPE, SUITABLE FOR EMBEDMENT IN CONCRETE AND/OR MASONRY WHERE REQUIRED.
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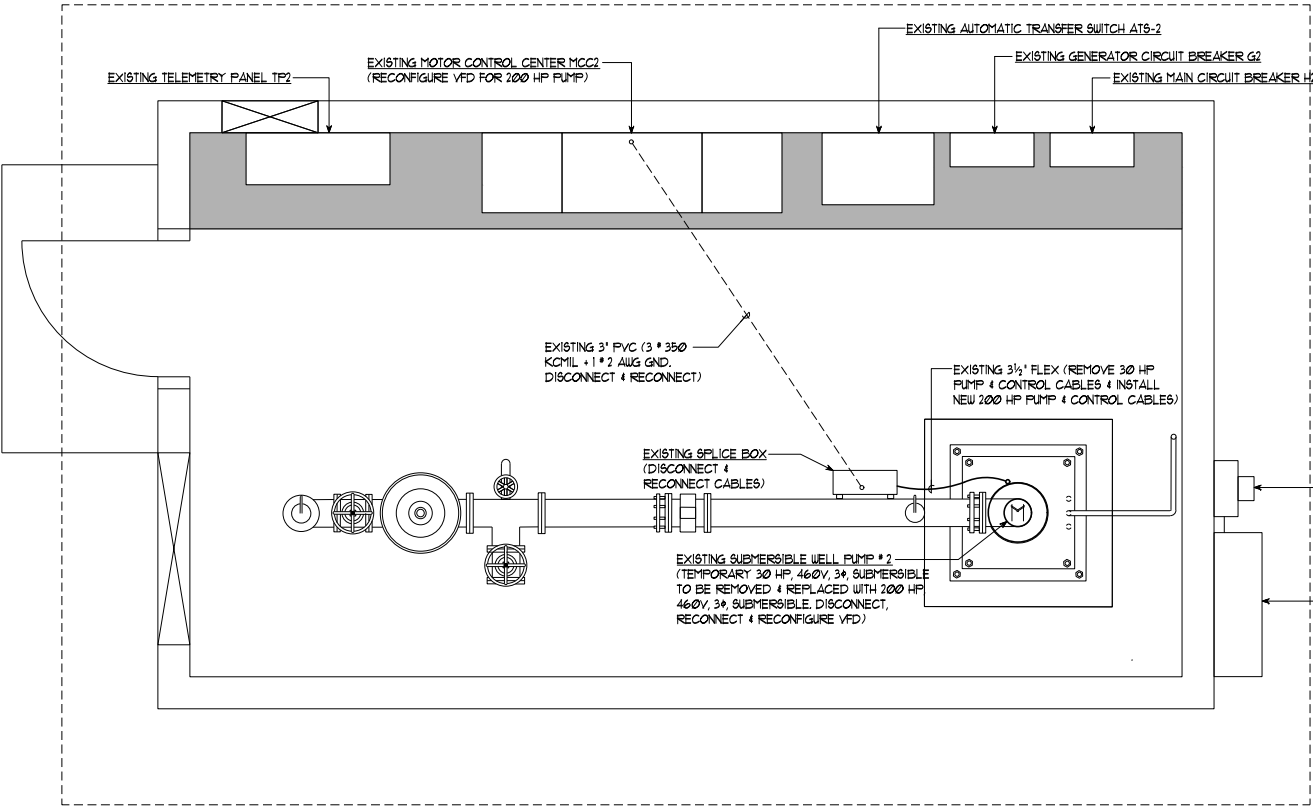
DEMOLITION NOTES:

1. CONTRACTOR SHALL REMOVE EXISTING EQUIPMENT, DEVICES, ETC. AS INDICATED IN THE WORK AREA AND ALL ASSOCIATED CONDUIT, BOXES, CABLES, ETC. SHALL BE REMOVED TO THEIR POINT OF ORIGIN &/OR DESTINATION, EXCEPT:
2. UNLESS NOTED OTHERWISE, CONCEALED RACEWAYS ARE ALLOWED TO REMAIN, EXCEPT, WIRING SHALL BE REMOVED. EXISTING CONCEALED RACEWAYS ARE ALLOWED TO BE RE-USED IF IN GOOD CONDITION & SUITABLE FOR THE NEW INSTALLATION.
3. EXISTING FEEDERS, CIRCUITS, CONDUITS, CABLES, ETC. INTERRUPTED DUE TO THE SYSTEM UPGRADE SHALL BE RE-CONNECTED AS REQUIRED TO MAINTAIN THE ORIGINAL FUNCTION.
4. ALL SURPLUS MATERIAL REMOVED DURING THE DEMOLITION SHALL BE INSPECTED BY THE OWNER, AND THOSE ITEMS SELECTED SHALL REMAIN THE PROPERTY OF THE OWNER. ALL REMAINING SURPLUS MATERIALS SHALL BE REMOVED FROM THE SITE & DISPOSED OF BY THE CONTRACTOR ACCORDING TO ALL APPLICABLE REGULATIONS.



ELECTRICAL - SHOP WELL # 2 CONTROL & ANCILLARIES PLAN

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

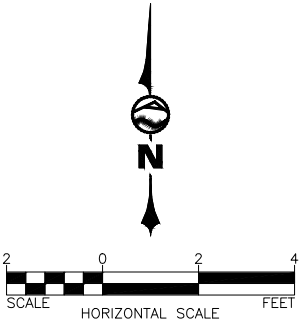


ELECTRICAL - SHOP WELL # 2 POWER PLAN

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

NO.	REVISIONS	BY	DATE

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DESIGNED BY	STV	DRAWN BY	KL	CHECKED BY	
CITY OF FERNDALE		WASHINGTON SHOP WELL #2 – PERMANENT PUMP PROJECT		BELLINGHAM ELECTRICAL – POWER, CONTROL, ANCILLARIES PLANS & SPECIFICATIONS	
DATE	6-30-2020	SCALE	1/2" = 1'-0"	JOB NUMBER	1941
SHEET	E2.1	PAGE	5	OF	5

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