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DIVISION 01 – GENERAL REQUIREMENTS

SECTION 011000 – SUMMARY OF WORK

PART 1 – GENERAL

1.01 BACKGROUND

The District owns and operates the Chelan Hatchery Wellfield, which includes (9) nine active production wells and has a permitted water right of 7,200 gallons per minute ("gpm"). The Wellfield supplies sustainable water flow to the Chelan Fish Hatchery. The Wellfield is located on the Chelan County side of the Columbia River, just south of the Beebe Bridge and north of the City of Chelan Falls, Washington.

1.02 RELATED DOCUMENTS

Contract Documents, including but not limited to General Conditions (GC-) and Specific Requirements (SR-) apply to all sections. Additional Information from the original Well H pump and motor installation that occurred in 2009 is included in Exhibit V, Additional Information.

1.03 SUMMARY OF WORK

These Specifications cover the requirements for supply, installation, testing, and training of a new Well H pump, motor, and 10” check valve complete with new electrical cabling; reinstallation of monitoring and control devices, steel column assembly, and fittings and appurtenances as required to produce a fully operational and functioning Well H. Exhibit V, Additional Information, includes the original bid document drawing for Well H, original pump and motor submittal document, and photos from the 2009 Well H pump and motor installation.

1.04 SCOPE

A. The Contractor shall furnish all labor, materials, and equipment required for the supply, installation, testing, and training of the equipment detailed in the Contract Documents.

B. Shop Drawings and data submitted by the Contractor and reviewed by the District supplement the Contract Documents, but do not become part of the Contract Documents.

C. A descriptive summary of Work is provided below. It is not intended that this summary description be all-inclusive, but rather a general overview:

1. Provide all submittals as described in Section 013300, Submittal Procedures.

2. Contractor shall execute and be responsible for the handling, transporting, inspection, shipment, and delivery, of all materials and equipment specified.

3. Contractor shall supply, install, and test a new Well H pump, motor, 10-inch check valve, and electrical cabling; including reinstallation of monitoring and control devices, steel column assembly, and fittings and appurtenances as required to produce a fully operational and functioning Well H.
4. Provide final As-built Drawings.

1.05 WORK SCHEDULE
Mandatory dates for Completion of the Work are outlined in Specific Requirements, SR-2, Completion Schedule/Contract Time. These dates shall be incorporated into the Contractor's plan for Completion of the Work.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION
DIVISION 11 – GENERAL REQUIREMENTS

SECTION 013300 – SUBMITTAL PROCEDURES

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PART 2 – PRODUCTS (NOT USED)

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DIVISION 01 - GENERAL REQUIREMENTS

SECTION 013300 – SUBMITTAL PROCEDURES

PART 1 – GENERAL

1.01 SUMMARY

This section describes the requirements and procedures for all correspondence, documents and equipment submittals required by the District for this Contract. The District reserves the right to revise or modify these procedures and/or implement a different software communication system as necessary to facilitate proper and consistent communication between related parties at no additional cost to the District.

1.02 RELATED DOCUMENTS

Contract Documents, including but not limited to, General Conditions (GC-) and Specific Requirements (SR-) apply to all sections. Additional Information from the original Well H pump and motor installation that occurred in 2009 is included in Exhibit V, Additional Information.

1.03 ADDRESS INFORMATION

All mailed or hand-delivered Project documentation, samples, etc. shall be addressed as follows:

US Mail:
PUD #1 of Chelan County
Project Name: Chelan Hatchery Wellfield – Well H Pump and Motor
Project Manager: Gary Rice
Project Engineer: Travis Tucker
P.O. Box 1231
Wenatchee, WA 98807-1231

Physical Address, (Fed Ex, UPS, oversized mail):
Chelan County PUD
Project Name: Chelan Hatchery Wellfield – Well H Pump and Motor
Project Manager: Gary Rice
Project Engineer: Travis Tucker
327 North Wenatchee Avenue
Wenatchee, WA 98801

1.04 PROJECT CORRESPONDENCE

A. The following Project correspondence will be utilized for the duration of the Contract:
   1. Requests for Information (RFI);
   2. Serialized Letters;
   3. Speedy Memos;
   4. Emails;
   5. Contractor Submittals;
6. District Submittal Responses.

B. Request for Information: RFI’s are for the Contractor to use when inquiring the District for additional information on the various aspects of the project.

C. Serial Letters:
   1. Serial letters shall be used for all correspondence from any Project entity that addresses **Contract scope, budget, schedule or other contractual issues.**
   2. If the District determines that there is any change to the Contract scope, budget, or schedule, then the District will issue a FWO/CO.
   3. All Serial Letters shall be on Contractor’s letterhead and include (on the first page):
      a. Contract Number and Title;
      b. Sender’s Name;
      c. Sender’s Company Name;
      d. Date: MM/DD/YYYY;
      e. Serial Letter Number.
   4. Additionally, each page shall indicate page number and total number of pages, formatted as “Page X of Y”, and Serial Letter Number.

D. Speedy Memos: Speedy Memos shall be used by the District for requesting information from the Contractor.

E. Email Communications:
   1. Parties to the Project may use email for items other than those identified in the list of Project correspondence.
   2. Email shall not be used for official correspondence as direction to proceed or to alter terms of the Contract.
   3. Email may be used as a mechanism to transmit courtesy copies of other documents. Each email shall contain a single subject. In rare cases similar subjects may be combined in a single email if necessary for understanding. The subject line shall reference the following:
      a. Contract Number;
      b. Project Name;
      c. The email contents, clearly described.

**1.05 SUBMITTALS DEFINED**

A. The term ‘submittals’ as used herein includes all Shop Drawings, field layouts, samples, color or model selections, material and equipment data and descriptions, certifications, schedules, warranties and other items as called for in the various sections of the Contract Documents.
B. Requirements for Record Documents and Operation and Maintenance (O&M) Manuals shall be submitted at the end of the Project and in accordance with the Contract Documents.

1.06 SUBMITTAL PROCEDURE

Submittals not strictly conforming to the requirements of this section will be returned for proper re-submittal, resultant delay in approval or any costs associated with the proper re-submittal shall be the responsibility of the Contractor.

A. Identification: Completely identify each submittal and re-submittal by showing at least the following information:

1. Date, name and address of submitter, plus name and telephone number of the individual who may be contacted for further information.
2. Name and address of supplier and manufacturer.
3. Name of Project and Contract number as it appears on the Contract Documents.
4. Contract Drawing number and Specification section number to which the submittal applies.
5. Whether the submittal is an original submittal or re-submittal.

B. Coordination: Prior to submitting for District review, Contractor shall use all means necessary to fully coordinate the preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Determine and verify all field dimensions and conditions, materials, catalog numbers, and similar data.
3. Clearly indicate all deviations from the Contract Documents.
4. Unless otherwise specifically permitted by the Project Manager or its designee, make all submittals in groups containing all associated items; i.e., all earthworks submittals together, all storm drainage submittals together; etc. The District may reject partial submittals as not complying with the provisions of the Contract Documents.
5. Upon completion of sub-paragraphs 1 through 4 above, the Contractor shall transmit submittals to the Project Manager, using the attached Example Contractor Submittal & District Submittal Reply form (Appendix 013300-1) unless otherwise directed.

C. Timing of Submittals: Allow enough time for submittal review, including time for re-submittals. Time for review shall commence upon the District receipt of submittal. No extension of the Contract time will be authorized because of failure to transmit submittals in advance of the Work to permit processing, including re-submittals.

1. Contractor shall provide all product data and Contract Drawing submittals to the Project Manager at time intervals stated in specification sections.
2. Contractor shall provide all submittals to Project Manager far enough in advance of scheduled Work dates to allow required time for review and approval, for possible revision and re-submittal, and for placing orders and securing deliveries in time to maintain Project schedule.

3. In scheduling, allow at least five (5) business days for the District's review following receipt of the submittals. Allow additional time if coordination with subsequent submittals is required.

4. Allow five (5) business days for review of each re-submittal. Continue to resubmit submittals until the Project Manager/Engineer has marked the submittal as “Approved (APP)” or “Approved As Noted (AAN)”.

5. Costs of delays occasioned by tardiness of Contractor’s or Subcontractors’ submittals shall not be borne by the District.

1.07 DISTRICT’S REVIEW/RESPONSE

A. The purpose for requiring Contractor submittals is to permit the District to monitor the Contractor’s progress and to determine conformance with the intent of these Specifications.

B. Contractors and Subcontractors who use unapproved documents do so at its own risk and may be required to repeat activities that were performed if the document used is subsequently rejected by Project Manager.

C. Submittals reviewed by the District do not become Contract Documents and are not FWO/CO’s.

D. District review, acceptance, or approval of schedules, Shop Drawings, lists of materials, and procedures submitted or requested by the Contractor shall not add to the Contract amount and additional costs shall be solely the obligation of the Contractor.

E. The District will not be precluded, by virtue of review, acceptance, or approval, from obtaining a credit for fabrication and/or construction savings resulting from allowed concessions in the Work or materials provided. Any savings shall be mutually agreed upon by the District and the Contractor.

F. The Project Manager’s review of Contractor submittals is not intended to be a rigorous engineering analysis of the Contractor’s design or proposal. Project Manager reserves the right to require the Contractor to make changes to Contractor’s submittals, which may be necessary, in their opinion, to make the Work conform to the provisions and intent of these Specifications. Any additional cost to correct a submittal, including work to maintain the schedule that may result from any delay to review a re-submittal, shall be solely the obligation of the Contractor.

G. The District will not be responsible for furnishing engineering or other services to protect the Contractor from additional costs accruing from submittals.

H. District will review and mark submittal status with one of the following:

- **APP** Approved
- **AAN** Approved as Noted
- **AAN-SR** Approved as Noted; Re-submit for Record
1.08 LOG OF SUBMITTALS
A. The Contractor shall furnish a list of all submittals required to the District within three (3) business days after the Notice of Award. The list shall include headings for the specific item, the date the submittal will be/was provided to the District, the date received back from the District and the status of the review.

B. The Contractor shall provide an updated log at each scheduled progress meeting.

1.09 SHOP DRAWINGS
A. Defined Inclusions: The term "Shop Drawings" as used herein shall also include job layout and installation drawings as may be required for the Work by certain trades, as well as shop fabrication drawings.

B. Format and Content: Make all drawings accurately to a scale sufficiently large to clearly show all pertinent features, method of fabrication, installation, and/or connection to the Work. Indicate size, type, dimension and location of all components, jointing, connections, etc.

1.10 CERTIFICATIONS AND WARRANTIES
A. In addition to the contractual guarantees required by the Contract Documents, submit to the Project Manager all certifications and warranties specifically called for in the Contract Documents, or ordinarily provided by manufacturers or suppliers of various portions of the Work.

B. Time of Submittal: Certifications, warranties, etc., or copies thereof of materials or equipment to be incorporated into the Work shall be furnished to the Project Manager upon delivery to site, and Approved before installation. Certifications, warranties, etc., or copies thereof, of installations, applications or assemblies shall be furnished upon Completion of that portion of the Work and before payment for that portion of the Work.

1.11 PROJECT SCHEDULES
A. General:
1. The Contractor shall prepare and maintain its Project Schedules in Microsoft Project, or other District Approved software format. Schedule logic shall be included and the critical path calculated and indicated.

2. Schedules shall be updated to reflect all changes and to show progress, and submitted at least two (2) business-days prior to each scheduled Progress Meeting. Updates shall indicate actual progress against a baseline schedule established at the beginning of the Project. Additionally, the Schedule shall be updated and re-submitted within five (5) business days of any change known by the Contractor that could cause actual Completion date to exceed the Contract Time specified in the Contract Documents.
B. Overall Project Schedule:

1. The Contractor shall prepare and maintain a time scaled Critical Path Method (CPM) Schedule showing all significant activities from Contract award to final closeout. This schedule shall show all major events, activities, milestones, and completion dates required for Completion of the Work.

2. The Overall Project Schedule shall include, as a minimum, the start date, duration time in days and the completion date for the following work items:
   a. Planning and Design;
   b. Submittal preparation;
   c. District response to Submittals;
   d. Re-submittals (preparation and review) as applicable;
   e. Procurement and/or Fabrication;
   f. Shipment & Delivery of material to Project site;

3. The Contractor shall assign such forces and perform the Work in such a manner as to assure compliance with the Contract Time. The Contractor shall inform the Project Manager of any schedule changes.

1.12 CONTRACT CLOSE-OUT SUBMITTALS (RECORD DOCUMENTS)

After District’s final approval, submit the following as part of the final As-Built Record Drawings Submittal, which will include all Shop Drawings including any changes made up to the time that the Work is completed and accepted, and all As-Built and field changes, in accordance with this section:

A. One (1) complete, hard copy set of full-size, reproducible, final drawings (Shop and Reference);

B. One (1) electronic media copy (soft copy) set of all drawings (Shop and Reference as required) on media (jump drive or CD), including an enclosed master drawing list (with all reference files included);

C. QA/QC Documentation.

D. Operation and Maintenance Manuals

E. Certificates of Compliance and Proper Installation.

F. Warranty Documentation.

   1. Furnish duplicate copies of warranty documents that are executed and transferable from Subcontractors, suppliers, and manufacturers as applicable.

   2. Final Documentation Submittal shall be a compilation of documents described above, in order shown, into a 3-ring binder. Provide four (4) copies. Cover sheet for this binder shall include similar formatting and the following:
Chelan Hatchery Wellfield – Well H Pump and Motor

NAME OF DOCUMENT
(i.e., OPERATIONS AND MAINTENANCE MANUAL, QA/QC, etc)

(NAME OF CONTRACTOR)

CONTRACT NO. 19-SW11

(Date)

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

APPENDIX
Appendix 013300-1, Contractor Submittal & District Submittal Reply

END OF SECTION
## CONTRACTOR SUBMITTAL & DISTRICT SUBMITTAL REPLY

### Submittal No.: Appendix 013300-1 Submittal Coversheet

| TO: | Gary Rice, Project Manager  
P.U.D. No. 1 of Chelan County  
P.O. Box 1231  
Wenatchee, WA 98807-1231  
(509) 661-4441 |
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☐ Administrative  
☐ Sample |
| No. of Copies: | ☐ Quality Control  
☐ Contract Closeout  
☐ “Or-Equal”/Substitute |

### CONTRACTOR SUBMITTAL

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### Contractor Comments:

Contractor hereby certifies that (i) contractor has complied with the requirements of Contract Documents in preparation, review, and submission of designated Submittal and (ii) the Submittal is complete and in accordance with the Contract Documents and requirements of laws and regulations and governing agencies.

By CONTRACTOR: ____________, Project Manager  
(Date)

### District Comments:

Review is for general conformance with the design concept and contract documents. Markings or comments shall not be construed as relieving the Contractor from compliance with the contract documents. The Contractor remains responsible for details and accuracy, for confirming and correlating all quantities and dimensions for fabrication processes; for techniques of assembly; and performing the work safely.

By DISTRICT: ____________, Project Manager  
(Date)
DIVISION 01 – GENERAL REQUIREMENTS

SECTION 014517 – CONTRACTOR QUALITY CONTROL

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APPENDIX

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DIVISION 01 – GENERAL REQUIREMENTS

SECTION 014517 – CONTRACTOR QUALITY CONTROL

PART 1 - GENERAL

1.01 SUMMARY

A. The Contractor is responsible for quality control and shall establish and maintain an effective quality control system for the work. The quality control system shall consist of plans, procedures, and organization necessary to produce an end product which complies with the Contract requirements.

B. The Contractor shall develop a Contractor Quality Control (CQC) Plan for all phases of the Work. The requirements of this section apply to the Contractor and all Subcontractors.

C. The CQC Plan shall clearly establish the authority and responsibility of those responsible for the administration, inspections, tests and plan execution. Organizational charts showing the relationship(s) among the Contractor’s and Subcontractor’s management, engineering, purchasing and quality assurance/quality control shall be submitted to the District.

D. Persons performing quality functions shall be qualified (e.g., by training, education, or experience) and have sufficient and well defined authority to enforce quality requirements, to identify, initiate, recommend and provide solutions to quality problems and to verify the effectiveness of the solutions.

E. The Contractor shall monitor quality control of suppliers, manufacturers, material, equipment, services, site conditions and workmanship to produce Work of specified quality.

F. The Contractor shall comply with specified standards as a minimum quality for the Work except when more stringent tolerances or specific requirements in these Contract documents indicate higher quality or more precise workmanship.

G. The Contractor shall comply with manufacturer’s instructions and procedures, where applicable.

H. The Contractor shall submit the CQC Plan for review and Approval by the District prior to starting any shop, manufacturing or fabrication activities. The CQC Plan shall be available for review by the District at any time.

I. District reserves right to audit Contractor facilities for purpose of verifying compliance with District approved CQC Plan.

J. Rework caused by failure to follow approved CQC Plan shall be at Contractor’s expense.

1.02 RELATED DOCUMENTS

Contract Documents, including but not limited to General Conditions (GC-) and Specific Requirements (SR-) apply to all sections. Additional Information from the original Well H
pump and motor installation that occurred in 2009 is included in Exhibit V, Additional Information.

1.03 SUBMITTALS

The Contractor shall submit to the Engineer for review and approval ten (10) calendar days before beginning any shop, manufacturing, or fabrication activities the following:

A. CQC Plan.
B. Inspection and Test Plan.
C. Sample Non-Conformance Report Form.

PART 2 - PRODUCTS

2.01 GENERAL REQUIREMENTS

A. All materials, products and components used by the Contractor as part of the Work shall be subjected to such tests and inspections as may be necessary to verify compliance with the requirements of the Contract Documents. The District may, at the District’s option, provide material testing for verification of quality control. All other required testing shall be the responsibility of the Contractor.

B. All expenses for the Contractor required tests shall be fully borne by Contractor. Contractor shall prepare and provide all labor, material and equipment necessary for performing specified or required tests. Contractor shall submit the test results to Engineer for approval.

C. Inspections shall be performed in accordance with the Approved Contractor Quality Control Plan. Inspection results shall be part of the quality documentation. Follow up inspections shall be conducted after correction of all deficiencies. Satisfactory follow up inspections shall be completed and documented prior to beginning subsequent Work that may be affected by the unsatisfactory Work. Contractor shall not build upon or conceal non-conforming Work.

D. Contractor shall perform tests as specified or required to verify that the control measures are adequate and the Work meets the requirements of the Contract and applicable standards and codes.

E. Approval of assemblies, tests and test procedures, etc., and acceptance of pertinent test certificates, inspection or waiving of inspections and tests shall in no way relieve Contractor of its contractual obligations for furnishing the Work in accordance with the provisions of these Contract Documents.

2.02 TESTS

A. The Contractor shall perform tests specified or required to verify that control measures are adequate to provide a product which conforms to Contract requirements. A list of tests to be performed shall be furnished as a part of the CQC plan. The Contractor shall perform the following activities and record and provide the following data:

1. Verify that testing procedures comply with Contract requirements.
2. Verify that facilities and testing equipment are available and comply with testing standards.
3. Check test instrument calibration data against certified standards.

4. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.

B. Results of all tests taken, both passing and failing tests, shall be recorded on Quality Control Record Sheets for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test shall be recorded.

C. Contractor shall perform checks and tests in accordance with the following:
   1. Manufacturer’s and/or Contractor’s standard practices and recommendations
   2. Reference and applicable testing standards
   3. Mutual agreement of Contractor and Engineer based upon conditions or circumstances that may arise during the Work.

D. Contractor shall evaluate test results and advise Engineer immediately of any discrepancy between test results and test limits or the failure of any item to meet the test criteria.

E. Contractor at its expense shall furnish, set up and operate test equipment and facilities in Contractor’s shops or on site. If facilities for conducting required tests are unavailable, Contractor may conduct tests elsewhere or have them performed by an independent agency subject to approval by Engineer.

F. Contractor shall protect all material and equipment during and after testing and checking to provide that subsequent testing of other equipment or systems does not disturb, damage, or otherwise interfere with functional capability of material and equipment.

G. In the event that test results do not fulfill the requirements specified in these Specifications or that any defects attributable to Contractor are found in test results, Contractor shall repair, adjust or correct and retest at its own expense to the satisfaction of Engineer. Repairs shall be subject to the approval of Engineer. Even in such an event, Contractor shall be responsible for maintaining the Contract Time.

2.03 INSPECTION AND TEST PLANS

Contractor shall submit for review and Approval by the District prior to starting any shop activities, an Inspection and Test Plan (ITP). The ITP shall list all required Inspections and Tests, references to test methods, applicable standards and procedures, acceptance criteria, and results. The District will review the ITP and establish Witness Points for those tests, inspections, and operations to be witnessed by District. The Contractor shall incorporate the Witness Points into the ITP and resubmit to Engineer. The ITP shall be revised as necessary if the planned tests change. Any changes to the ITP shall be resubmitted for approval. Any work done by the Contractor prior to Approval of the ITP shall be repeated at Contractor’s cost at the discretion of the Engineer.
2.04 MEASUREMENT AND TEST EQUIPMENT

Measurement and test equipment (meters, gauges, torque wrenches, sensors, etc.) supplied or used by Contractor for taking or recording of data shall:

A. Have accuracy equal to or greater than stated acceptance criteria tolerances for test or work being performed.

B. Have current calibration with traceability to National Institute of Standards and Technology (NIST).

C. Have traceability to national standards in the country of use, subject to approval by Engineer, where such equipment is supplied and used in facilities outside the United States.

PART 3 - EXECUTION

3.01 SOURCE QUALITY CONTROL - GENERAL

A. All materials, and components shall be tested by the Contractor’s suppliers in accordance with the CQC Plan, Inspection and Test Plan (ITP), and these Specifications. Contractor shall provide all procedures, equipment, materials, and labor for source quality control testing.

B. Testing shall be performed by personnel experienced in the type of test being performed under the direct supervision of Contractor’s test engineers.

3.02 CONTROL OF NON-CONFORMANCE

As a part of its Quality Control Plan, the Contractor shall:

A. Define a procedure for preventing nonconforming materials and equipment that do not meet standards, criteria or Specifications from being inadvertently used for this Project.

B. Nonconforming materials and equipment that do not meet Contract standards, criteria or Specifications inadvertently used for this Project shall be resolved as a price deduction, repair, return to source, scrap, or rework at the discretion of the District.

C. Any request for approval for deviations or nonconformance to the Contract documents or Quality Control Plan shall be made to the Engineer in writing.

D. A Non-conformance Report (NCR) shall be written and submitted to the District for each nonconforming item. As a minimum, the NCR shall 1) describe the system or part in nonconformance, 2) make reference to the controlling plan, specification, or procedure in violation, 3) include the Contractor’s recommended disposition, and 4) include signatures of the Contractor’s Quality and Engineering personnel. An NCR Form shall be submitted to the District for approval prior to first use.

3.03 QUALITY RECORDS

A. Contractor shall maintain written quality records for the quality checks and verifications for the Work. The records shall be controlled by the Contractor to provide easy access for record retrieval and maintenance. All records shall be
made available to the District for inspection or the District’s use and shall be submitted upon request.

B. Contractor shall establish and maintain a record system that provides for the identification of materials and correlation to manufacturing, testing, and inspection.

C. Reports of tests and inspections shall be written for each test/inspection. All reports shall show the approved procedure, latest revision, the results, the date, the identification of the inspector or tester and the item examined.

3.04 WITNESS POINTS

Witness points require receipt in writing of notification to the Engineer at least five (5) working days in advance of the scheduled time of performance. The District or designee may witness the event; however, the Contractor may proceed without their presence. The District may require activities performed without proper notification to be repeated for the District’s observation at the Contractor’s expense.

3.05 CERTIFICATE OF COMPLIANCE

A. Contractor shall submit a Certificate of Compliance prior to shipment. Use the form included at the end of this section (Appendix A). Contractor’s representative officially responsible for assuring that all requirements of these Contract Documents are met shall sign the Certificate of Compliance. Receipt of the signed Certificate of Compliance is required for shipping release by the District.

B. Certificate shall be signed by Contractor certifying that material or equipment provided conforms to or exceeds the requirements of the Specifications. Attach supporting reference data, affidavits and certifications as appropriate.
APPENDIX A - CERTIFICATE OF COMPLIANCE

Contract No.: 19-SW11, Chelan Hatchery Wellfield – Well H Pump and Motor
Contractor:
Equipment/Material/System:

The Contractor hereby certifies that:

1. All materials and products incorporated into the Work provided by manufacturers and fabricators are as specified in the Contract Documents.

2. All materials and products incorporated into the Work provided by manufacturers and fabricators are in accordance with all codes, and standards as specified in the Contract Documents.

3. All materials and products incorporated into the Work provided by manufacturers and fabricators have been subjected to all material and/or factory tests specified in the Contract Documents, and that the results of those tests are within all limits and acceptance criteria as specified.

4. Copies of material certification and factory test results are attached.

<table>
<thead>
<tr>
<th>Manufacturer/Supplier/Fabricator Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of Manufacturer, Supplier, or Fabricator:</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Street Address:</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>City/State/Zip:</td>
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<tr>
<td></td>
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<tr>
<td>Phone Number:</td>
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<td></td>
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<tr>
<td>Contractor’s Representative:</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Name and Title:</td>
</tr>
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<tr>
<td>Signature/Date:</td>
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</tbody>
</table>

Comments:

END OF SECTION
DIVISION 01 – GENERAL REQUIREMENTS

SECTION 016600 - PACKAGING, SHIPPING, DELIVERY, AND STORAGE

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PART 3 – EXECUTION
DIVISION 01 – GENERAL REQUIREMENTS

SECTION 016600 - PACKAGING, SHIPPING, DELIVERY, AND STORAGE

PART 1 - GENERAL

1.01 REFERENCES, SPECIFICATIONS, CODES AND STANDARDS

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

D 3951 Standard Practice for Commercial Packaging

1.02 RELATED DOCUMENTS

Contract Documents, including but not limited to General Conditions (GC-) and Specific Requirements (SR-) apply to all sections. Additional Information from the original Well H pump and motor installation that occurred in 2009 is included in Exhibit V.

1.03 PACKAGING, SHIPPING AND DELIVERY

A. Packaging

1. Equipment shall not be prepared for shipment until it has been inspected and accepted for shipment at origin by the Engineer, or the District’s agents or designees, unless inspection has been waived in writing. Structures shall be shipped in a way so as to be delivered as a single unit.

2. Materials and equipment provided shall be suitably packed for shipment and storage including protection from dirt, moisture, weather, and damage. Due to site storage limitations materials will be stored outdoors. All threaded attachments, studs, bolt holes etc., shall be protected from dirt, moisture, weather, and damage utilizing protective caps and plugs as necessary. Contractor shall provide all protective covers, housings, and materials for storage.

3. Packaging shall have points of lift identified with “Lift Here” marked in appropriate locations. Packages with a total weight greater than 75-pounds shall be marked with the package weight. Packages containing hazardous materials shall have “hazardous” marked on the package and shall have the proper Safety Data Sheets (SDS), and instructions for safe handling and storage.

4. Subassemblies shall be provided with adequate protective pads, supports, and blocking and shall be securely restrained to prevent distortion or damage in transit.

5. Components such as fasteners, bolts, covers, and miscellaneous assembly hardware that are not shop attached shall be packaged separately with identification.

B. Packing List

1. Contractor shall provide a complete bill of materials, packing list, and schedule of shipment and delivery for all shipments. The lists shall be...
provided no later than 10 calendar days prior to the shipments. The lists shall be updated as necessary prior to each shipment. The final list shall include identification of items packed in each crate or container, storage requirements (if any), and individual and total container weight.

2. A packing list shall be:
   1. Attached to each shipment listing the contents of each container.
   2. Placed in a moisture-proof envelope.
   3. Securely fastened to the outside of the container.

   **Due to security restrictions on site, crates, or containers without complete packing lists, sufficient to identify all material shipped, will not be permitted on site.**

1.04 TRANSPORTATION

A. Contractor shall bear all costs of loading, transporting, duties, fees, taxes, unloading and handling for all required materials from Contractor’s shipping point or points, to the Project site.

B. Contractor shall prepare all shipping documentation and pay all shipping charges. Contractor shall accept responsibility, for all loss or damage incurred during shipment, unloading, and storage regardless of nature or cause (including damage to the painted surfaces).

C. Engineer shall be notified a minimum of 48-hours prior to actual shipping dates of any equipment, the equipment to be shipped, the method of transport, the carriers and routing, the shipping and delivery dates, and the approximate shipping weights.

1.05 SHIPPING RELEASE

A. No shipments shall be made without inspection and/or written release from District. Contractor shall request release for shipment with submittal of all required shipping and inspection documentation. When shipment is actually made, transmit shipping notices to the Engineer on each shipment, including a description of the equipment being shipped.

B. For each shipment, submit “Shipping Release” form, Appendix A at the end of this section. Accompany each shipment with a packing list of all equipment included in the shipment, including weights.

C. Materials manufactured to documents that:
   1. Have not been submitted for review by Engineer;
   2. Have been returned marked “Not Approved”; or
   3. Have been marked “Approved as Revised” without resolution of comments; shall not be shipped without prior approval, as specified.

D. These requirements also apply to shipments from Contractor’s Subcontractors, when item(s) are to be shipped directly to the Project site.
1.06 FINAL INSPECTION AND CHECK OF RECORDS

Contractor shall be responsible for inspecting the item(s) and checking the applicable records prior to shipment, to verify that all items comply with the Specification requirements.

1.07 SHIPPING AND HANDLING

A. Deliveries

1. All freight deliveries directly to the Project site shall be made between the hours of 8:00 am and 3:00 pm PST/PDT Monday through Friday. Contractor shall notify the Project Manager two business days in advance of freight deliveries for security inspection and coordination purposes. In addition, the transport driver shall notify the Project Manager one business day in advance of freight deliveries for security inspection and coordination purposes.

2. Specific delivery instructions shall be provided by District to Contractor no later than 10 calendar days prior to shipment. Delivery is anticipated to be in the vicinity of Chelan Falls, Washington.

1.08 ON-SITE MATERIAL HANDLING

The Contractor shall inspect all deliveries.
**APPENDIX A – SHIPPING RELEASE**

<table>
<thead>
<tr>
<th>Contractor:</th>
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<tbody>
<tr>
<td>Supplier:</td>
<td></td>
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<tr>
<td>Supplier’s Location:</td>
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<tr>
<td>Item Released:</td>
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</table>

<table>
<thead>
<tr>
<th>Drawing No:</th>
<th></th>
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<tr>
<td>Mark No:</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>All QA/QC Documentation Complete:</th>
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<th>No</th>
<th>Reason:</th>
</tr>
</thead>
<tbody>
<tr>
<td>District Notified:</td>
<td>Yes</td>
<td>No</td>
<td>Reason:</td>
</tr>
<tr>
<td>Copy of Packing List Attached</td>
<td>Yes</td>
<td>No</td>
<td>Reason:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Carrier:</th>
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<tbody>
<tr>
<td>Way Bill No:</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Anticipated Ship Date:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticipated Arrival Date:</td>
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</tbody>
</table>

Remarks:

The undersigned certify that the above parts and materials meet all applicable parts of the Specifications, Drawings, and Contract.

<table>
<thead>
<tr>
<th>Supplier:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractor:</td>
<td>Date:</td>
</tr>
</tbody>
</table>

Released for shipping:

| District (or designee): | Date: |

This shipping release does not constitute acceptance by District and does not release Contractor or the supplier from their obligations under the Contract.

**END OF SECTION**
DIVISION 1 – GENERAL REQUIREMENTS

SECTION 018000 – TESTING, COMMISSIONING AND TRAINING

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DIVISION 1 – GENERAL REQUIREMENTS

SECTION 018000 - TESTING, COMMISSIONING AND TRAINING

PART 1 - GENERAL

1.01 SCOPE

This section specifies the installation, testing, commissioning and training for all mechanical, electrical and instrumentation systems and completed portions of the Work, functioning as completed facilities and as the completed Project.

1.02 QUALITY ASSURANCE

A. INSTALLATION

All mechanical, electrical, and instrumentation equipment provided under this Contract shall be installed in conformity with the details shown, specified, and including the manufacturer's requirements. Should a manufacturer's installation recommendations conflict with specific requirements of the Contract Documents, the Contractor shall bring the matter to the attention of the Engineer. Any costs incurred by the Contractor through failure to timely notify the Engineer of a difference between Contract Document and manufacturer's installation requirements shall be borne by the Contractor.

B. TESTING

General Requirements

1. All equipment and partially complete or fully completed portions of the Work included in this Contract shall be tested and inspected to prove compliance with the Contract requirements. Unless otherwise specified, all costs of testing, including temporary facilities and connections, shall be borne by the Contractor. For the purpose of this Section, equipment shall mean any mechanical, electrical, instrumentation, or other device with one or more moving parts or devices requiring an electrical, pneumatic or hydraulic connection.

2. No tests specified herein shall be applied until the item to be tested has been inspected and Approval given for the application of such test.

3. Tests and inspection shall include:

   a. The delivery acceptance test and inspections.

   b. The installed tests and inspections.
c. The operational testing of completed sections of the well.

4. Tests and inspections, unless otherwise specified or Approved, shall be in accordance with the recognized standards of the industry. The Contractor shall see that scheduling and performance of all tests are coordinated with involved Subcontractors and suppliers. The Contractor shall allow for up to two additional setpoint changes during testing. No extra costs or time allowances shall be provided as long as this setpoint allowance is not exceeded.

5. The form of evidence of satisfactory fulfillment of delivery acceptance test and inspection requirements shall be, at the discretion of the Engineer, either by tests and inspections carried out in his presence or by certificates or reports of tests and inspections carried out by approved persons or organizations. The Contractor shall provide and use forms that include all test information, including specified operational parameters. The content of the forms used shall be acceptable to the Engineer.

6. A master test log book shall be maintained by the Contractor which shall cover all tests including piping, equipment, electrical, and instrumentation. The master test log book shall be provided with loose-leaf pages that shall be copied weekly after updating for transmittal to the Engineer. The master test log book shall be transmitted to the Engineer upon Completion of the Project.

Delivery Acceptance Tests and Inspections

1. The delivery acceptance tests and inspections shall be at the Contractor's expense for any equipment specified herein and shall include the following:

   a. Inspection of all items delivered at the site or to any authorized place of storage so that the Engineer may be satisfied that such items are of the specified quality and workmanship and are in good order and condition at the time of delivery. The Contractor shall be prepared to remove all coverings, containers or crates to permit the Engineer to conduct his inspection. Should the Engineer find, in his opinion, indication of damage or deficient quality of workmanship, the Contractor shall provide the necessary documentation or conduct such tests deemed necessary by the Engineer to demonstrate compliance.

   b. Contractor shall verify proper pump rotation, per plan Approved by the District.

Operational Testing

1. The Contractor shall startup all equipment per the manufacturer’s procedures.
2. Contractor shall pump test the complete system for at least four hours to the hatchery. During the pump test the Contractor shall measure flow, pressure and pump amperage. Contractor shall partially close the outlet valve and measure flow, pressure and pump amperage for at least three points.

C. TRAINING

After the equipment is operational, the Contractor shall make available experienced factory-trained representatives of the manufacturers of all the various pieces of equipment, to train the District's personnel on site in the operation and maintenance thereof. The time required for this training shall be as covered in the Specifications for the specific piece of equipment. The Contractor shall notify the Engineer of the time of the training. The Contractor shall submit a detailed outline of training activities to be performed by each manufacturer’s representative prior to the start time of the training. This outline shall indicate how the manufacturer’s representative is going to allocate the required specified number of training hours to fulfill these contractual obligations.

PART 2 - PRODUCTS

2.01 INSTALLATION

Materials employed in the installation shall conform to the requirements of this Contract Document and the recommendations of the equipment manufacturers.

2.02 TESTING

A. GAUGES, METERS, RecorderS, AND MONITORS

Gauges, meters, recorders, and monitors shall be provided by the Contractor as required by the Engineer to supplement or augment the instrumentation system provided under this Contract to properly demonstrate that all equipment fully satisfies the requirements of the Specifications. All devices employed for the purpose of measuring the performance of the facility’s equipment and systems shall be specifically selected to be consistent with the variables to be monitored. All instruments shall be recently calibrated, and the Contractor shall be prepared at all times to demonstrate, through recalibration, the accuracy of all instruments employed for testing purposes. Calibration procedures shall be in accordance with applicable standards of ASTM, ISA, and IEEE. The adequacy of all gauges, meters, recorders and monitors shall be subject to review by the Engineer.

B. RECORDS

The Contractor shall provide sign-off forms for all installed and operational testing to be accomplished under this Contract. Sign-off forms shall be provided for each item of mechanical, electrical and instrumentation equipment provided or installed.
under this Contract and shall contain provisions for recording relevant performance data for original testing and not less than three retests. Separate sections shall be provided to record values for the preoperational checkout, as well as signatures of representatives of the equipment manufacturers, the Contractor, and the Engineer.

PART 3 - EXECUTION

3.01 INSTALLATION

All equipment and apparatus used in testing shall be installed by specialists properly skilled in the trades and professions required to assure first-class workmanship. Where required by detailed Specifications, the Contractor shall cause the installation of specific equipment testing items to be accomplished under the supervision of factory-trained installation specialists furnished by the equipment manufacturers. The Contractor shall be prepared to document the skills and training of all workmen engaged in the installation of all testing equipment furnished either by the Contractor or the District.

3.02 TESTING

A. Testing shall proceed on a step-by-step basis in accordance with the Contractor's Approved written testing procedures. The Contractor's testing Work shall be accomplished by a skilled team of specialists under the direction of a coordinator whose sole responsibility shall be the orderly, systematic testing of all equipment, systems, structures, and the complete facility as a unit. Each individual step in the procedures shall be witnessed by a representative of the Engineer.

B. During the well operational testing period, all equipment and systems in operation shall be operated to the greatest extent practicable, at conditions which represent the full range of operating parameters as defined by the Contract Documents.

3.03 TRAINING

Training of the District’s personnel shall be done by experienced technical manufacturers’ representatives. These representatives shall follow the outline presented here:

3.04 GENERAL OUTLINE FOR MANUFACTURER PRESENTATIONS

A. FAMILIARIZATION

1. Overview explaining theory of operation.
2. Show catalog, parts lists, drawings, etc., in the plant files and O&M manuals.
3. Check out the installation of the specific equipment items.
4. Demonstrate the unit and show that all parts of the Specifications are met.
5. Answer questions.

B. SAFETY

1. Point out safety references.
2. Discuss proper precautions around equipment.

C. OPERATION

1. Point out reference literature.
2. Explain all modes of operation (including emergency).
3. Check out District’s personnel on proper use of the equipment. (Let them do it).

D. PREVENTIVE MAINTENANCE (PM)

1. Pass out PM list including:
   a. Reference material.
   b. Daily, weekly, monthly, quarterly, semi-annual and annual jobs.
2. Show how to perform PM jobs.
3. Show District personnel what to look for as indicators of equipment problems.

E. CORRECTIVE MAINTENANCE

1. List possible problems.
2. Discuss repairs - point out special problems.
3. Open up equipment and demonstrate procedures, where practical.

F. PARTS

1. Show how to use parts list and order parts.
2. Check over spare parts on hand. Make recommendations.

G. LOCAL REPRESENTATIVES

1. Where to order parts: Name, address, telephone, fax.
2. Service problems:
   a. Who to call.
   b. How to get emergency help.
END OF SECTION
DIVISION 11 – EQUIPMENT

SECTION 113180 – WELL PUMP AND ACCESSORIES

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DIVISION 11 – EQUIPMENT

SECTION 113180 - WELL PUMP AND ACCESSORIES

PART 1 - GENERAL

1.01 SCOPE

The Contractor shall provide a submersible turbine pump for Well H, as specified herein. The pumping unit shall be complete with pump, submersible electric motor, submersible power cables, column check valve, and all other appurtenances specified or otherwise required for proper installation. Pump, motor, power cables, column check valve, and all other appurtenances shall be new, and shall be installed in an existing 20” steel well casing using the existing column assembly with existing pitless adaptor, to the specifications and dimension shown on the Exhibit 1 Drawing provided in Exhibit V, Additional Information.

1.02 PUMP WARRANTY

The pump manufacturer shall warrant the unit being supplied against defects in workmanship and material. The warranty shall be in printed form.

1.03 PERFORMANCE REQUIREMENTS

The pump being furnished shall be capable of meeting the following performance requirements:

<table>
<thead>
<tr>
<th>Performance Requirement</th>
<th>Well H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Flow Rate</td>
<td>1,500 gpm</td>
</tr>
<tr>
<td>Design Head (TDH)</td>
<td>100 feet</td>
</tr>
<tr>
<td>Minimum Pump Efficiency @ Design Condition</td>
<td>80 %</td>
</tr>
<tr>
<td>Maximum Allowable Speed</td>
<td>1,760 rpm</td>
</tr>
<tr>
<td>Well Diameter</td>
<td>20 inch</td>
</tr>
<tr>
<td>Pump Column Diameter</td>
<td>10 inch</td>
</tr>
<tr>
<td>Shutoff Head</td>
<td>&gt;195 feet</td>
</tr>
<tr>
<td>Pump Bowl Setting</td>
<td>670 feet</td>
</tr>
</tbody>
</table>

1.04 SUBMITTALS

Submit the following in accordance with Section 013300 within ten (10) days following Notice of Award:

1. Well pump and accessory product data
2. Factory certified pump test data
1.05 CONTRACTOR MINIMUM QUALIFICATIONS

The well installation Contractor shall have a minimum of five (5) years’ experience with having performed similar construction installation projects; and comply with WAC 173-160 (licensed well driller in the State of Washington).

PART 2 - PRODUCTS

2.01 PUMP

A. The pump furnished shall be a submersible turbine type, multi-stage in series design, with closed impellers. Pump shall be as manufactured by Goulds Pumps, ITT Industries, Or Equal. Factory pump performance curves for alternate pumps/motors shall be submitted with bid. Pump information for the submersible turbine pump follows:

Well   Goulds Pump
H   Model No. 10LHC, 4 stage w/10” NPT discharge

B. Pump Bowl Assembly: The bowls shall be flanged type constructed of close grained cast iron conforming to ASTM A48, class 30. They shall be free from sand holes, blowholes, or other faults and must be accurately machined and fitted to close tolerances. They shall be capable of withstanding a hydrostatic pressure equal to twice the pressure at rated flow or 1.5 times shut-off head, whichever is greater. The intermediate bowls shall have enamel or epoxy lined waterways for maximum efficiency and wear protection. All intermediate bowls shall be of identical design for interchangeability. All the bowls shall be fitted with sleeve type bearings of bronze alloy C89835. A discharge bowl shall be used to connect bowl assembly to the discharge pipe. An extra long bronze bearing packed with non-soluble grease shall be provided in the top bowl and extended into the discharge bowl. The bearing shall have a threaded cast iron cap or plug at the top to protect the bearing from abrasives. The hub of the discharge bowl should be such that the bearing can be easily removed through the top of the hub. A thrust ring shall be above the top impeller to prevent excessive vertical upthrust.

C. Impellers: The impellers shall be constructed from ASTM B584 Silicon Bronze and shall be the enclosed type. They shall be free from defects and must be accurately cast, machined, balanced, and filed for optimum performance and minimum vibration. Impellers shall be balanced to grade G6.3 of ISO 1940 as minimum. They shall be securely fastened to the bowl shaft with taper locks of C1 018.

D. Motor Adapter: The inlet motor adapter shall be of ASTM A536 Gr. 60-40-18 ductile iron and shall contain an extra long bronze bearing. The inlet area shall have a net open area of at least four times the eye of the impeller and shall be protected with a 304 stainless steel screen. The openings on the screen shall not be more than 75% of the minimum opening of the water passage through the bowl or the impeller.
Bearings: Each pump bowl shall be fitted with sleeve type bearings of either bronze ASTM B505-C84400 or bronze alloy C89835.

E. Pump shaft: The pump shaft shall be of ASTM 582 type 416 stainless steel. It shall be precision ground and polished with surface finish better than 40 RMS.

F. Coupling: The shaft coupling shall be of stainless steel and be capable of transmitting the total torque and total thrust of the bowl assembly in either direction of rotation.

2.02 SUBMERSIBLE MOTOR

A. The motor furnished shall be of the canned submersible type, inverter duty rated, and be of the proper rating to drive the specified pump continuously over the complete operating range of head/capacity without the pump load exceeding the motor nameplate rating. Submersible motors shall have a 1.15 service factor, and be suitable for use on 480 V, 3 phase, 60 Hz electric service. The submersible motor shall be CentriPro as manufactured by ITT Industries, Or Equal. Factory pump performance curves for alternate pumps/motors shall be submitted with bid. Motor information for the submersible motor follows:

<table>
<thead>
<tr>
<th>Well</th>
<th>CentriPro Motor No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>Model No. 86M504, 50 hp</td>
</tr>
</tbody>
</table>

B. The motor leads shall be stranded copper of sufficient length so that they may be spliced above the bowl assembly and the leads shall be protected by a type 304 stainless steel cable guard held in place with stainless steel banding. As the motor lead exit the top of the cable guard it shall be properly protected to prevent damaging or cutting the lead by the cable guard material.

C. The canned motor's stator coil shall be mounted in a stainless steel frame and be completely sealed in a stainless steel cylinder. The coil wire shall be moisture resistant insulated. The space between the stator's stainless steel protective can and its frame shall be filled with a resin which protects the motor against thermal fluctuation and internal stress.

D. The motor design shall include the capability to carry continuously the total sum of the weight of the rotating components of the pump and motor and the hydraulic thrust that the pump may develop regardless of direction of rotation.

2.03 SUBMERSIBLE POWER CABLE

A. Submersible power cable furnished shall be supplied as flat configuration. Insulation will be either PVC or EPR with an overall jacket over the conductors.
Cable supplied for the pump shall be 3 conductors plus a ground and be rated in excess of the nameplate voltage.

B. The submersible power cable, of the size specified herein, shall be provided in sufficient lengths to connect the submersible pump motor to its applicable valve vault junction box. The power cables shall be connected to the submersible motor at time of shipment. The point of connection shall be sealed and watertight.

<table>
<thead>
<tr>
<th>Well</th>
<th>Submersible Power Cable Wire Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>#3 AWG</td>
</tr>
</tbody>
</table>

2.04 COLUMN ASSEMBLY

The column assembly is existing and is Schedule 40 threaded black steel pipe. Verify and assure that the column assembly has an Approved locking mechanism to prevent unscrewing. Confirm that the friction loss in the column shall not exceed 5 feet per 100 feet of column, based on the rated capacity of the pump. The length of the column assembly is as shown on the Plans. Column assembly diameter is as shown on the plans in Exhibit V, Additional Information.

2.05 COLUMN CHECK VALVE

Column check valve shall be Danfoss Flowmatic Model BODI or BODIX with male threaded ends, Or Equal. Column check valve size shall be as shown on the Exhibit 1 Drawing provided in Exhibit V, Additional Information.

2.06 EQUIPMENT MANUAL

Provide equipment manual per Section 013300 Submittal Procedures.

PART 3 - EXECUTION

3.01 CERTIFIED PUMP TEST

A. A certified factory test of the pump furnished is not required.

B. In lieu of the certified factory test of the pump furnished, the Contractor shall submit for Approval manufacturer data to include:

1. Head capacity curve
2. Shaft brake horsepower curve
3. Pump bowl efficiency
3.02 INSTALLATION

Pumps, motors, check valves and column assemblies shall be installed as shown on the plans in Exhibit V, Additional Information, and in strict accordance with the manufacturer’s recommendations.

3.03 STARTUP, TESTING AND TRAINING

A. Startup and test the pump per Section 018000 Testing, Commissioning, and Training.

B. After installation of the pump and motor, the manufacturer’s representative shall provide four (4) hours to startup and test the pumps and provide training to District personnel. Equipment startup shall be per the manufacturer’s procedures.

END OF SECTION