



**INDUSTRIAL/COMMERCIAL FACILITIES • AIRPORT • INTERSTATE BRIDGE • MARINA**

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**ADDENDUM #2**

**RE: Stadleman Waterline**  
**Date: April 24, 2018**

This Solicitation Addendum modifies the Bid Document(s) for Work only to the extent indicated herein. All other areas not specifically mentioned or affected by this Solicitation Addendum shall remain in full force. This Solicitation Addendum shall be added as a part of the Original Bidding Document.

This Solicitation Addendum must be acknowledged by inserting its number on the appropriate blank lines in the CONTRACTOR REGISTRATION FORM, in Part 4 of the Invitation to Bid, and by providing all required signatures prior to Bid Closing. Failure to do so may result in rejection of Bid.

All revised documents are included in the contract package online as REVISED.

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Requests for clarification, requests for change, and protests of Solicitation Addendum provisions addressed in this Solicitation Addendum must be received by the Port by 5:00 P.M. (Pacific time) on April 27, 2018, or they will not be considered. The Port will not consider requests or protests of matters not added to or modified by this Solicitation Addendum.  
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**1. Specifications:**

The Specifications have been removed from the contract and replaced with the Addendum #2 Specifications. Section 01015 was taken out of the index as it was moved into section 01025 as part of Measurement and Payment.  
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TECHNICAL SPECIFICATIONS  
STADELMAN DRIVE WATER LINE EXTENSION  
ODELL, OR

APRIL 2018

(REVISION 3)

PREPARED FOR



Port of Hood River  
1000 E. PORT MARINA DRIVE  
HOOD RIVER, OR 97031

AN INTER-GOVERNMENT AGREEMENT WITH



CRYSTAL SPRINGS WATER DISTRICT

PREPARED BY



489 N. 8TH STREET, SUITE 201  
HOOD RIVER, OREGON 97031

**CERTIFICATION PAGE**

The engineering material and data contained in these Special Provisions Technical Specifications were prepared under the supervision and direction of the undersigned, whose seal as a registered Professional Engineer in the State of Oregon is affixed below.

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Roger B. North, P.E.  
Design Engineer of Record

## TECHNICAL SPECIFICATIONS

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**DIVISION 1**

**GENERAL REQUIREMENTS**

**SECTION 01010**  
**SUMMARY OF WORK**

**PART 1 GENERAL**

1.1 DEFINITION OF TERMS

- A. Whenever used, the following terms shall have the meanings indicated which shall be applicable to both the singular and plural thereof.
1. Contract Documents – All of the documents and information set forth in the Contract including the General Conditions, Technical Specifications, and Plans.
  2. Plans – The part of the Contract Documents which shows the characteristics and Scope of the Work to be performed and which have been prepared or reviewed by the Engineer.
  3. CONTRACTOR – The persons, firm or corporation to whom this Contract is awarded by the PORT and who is party thereto.
  4. DISTRICT or CRYSTAL SPRINGS WATER DISTRICT – the entity that will own and operate the completed Project after the PORT is complete.
  5. ENGINEER –The Engineer of Record responsible for the Contract Documents, which bears his or her stamp. Any changes to the Contract Documents shall be coordinated with the ENGINEER or performed in accordance with OAR rules as clarified by Oregon State Board of Examiners for Engineering and Land Surveying.
  6. PORT - The Port of Hood River, the entity that is a party to this Contract, or its authorized representative.
  7. Utility - Utility companies that may be involved in, or affected by the Work
  8. Work – Refers the Scope of Work to be performed by CONTRACTOR.

1.2 DESCRIPTION OF WORK

A. General

1. The Project is described in general and provides an overview of the extent of the Work to be performed by CONTRACTOR.
2. Detailed requirements and extent of Work is stated in the applicable specification sections and shown on the Plans.
3. Work for PORT shall be performed under an inter-governmental agreement with DISTRICT.
4. CONTRACTOR shall be required to complete the Work as indicated in the Contract Documents within the Contract terms.
5. PORT or other contractors may perform other work not covered under the Contract Documents.

6. CONTRACTOR shall coordinate its operations with those of PORT and DISTRICT, Utilities, and other contractors.
7. Other work will be identified during Project meetings.
8. CONTRACTOR shall take the necessary precautions for working with high pressure water line.
9. CONTRACTOR shall sequence the Work accordingly.

#### B. Scope

1. Install approximately 1,350 linear feet of a 10-inch diameter main water line along Stadelman Drive that will connect two DISTRICT lines including, but not limited to, the following components:
  - a. Installing one end connection, Connection "B", a pressure reducing valve (PRV) and vault, and a relief valve and vault located within two separate pressure zones of the DISTRICT water system;
  - b. Removing pavement;
  - c. Trenching and temporary trench repair;
  - d. Providing temporary access, traffic control, and erosion control;
  - e. Restoring pavement either with temporary cold patch or asphalt pavement within the paved travel lanes by the end of each day, for all trenching and underground Work performed within the travel lanes. No segments within the travel lanes can be temporary surfaced with gravel or steel plating;
  - f. Restoring native ground surface; and
  - g. Restoring pavement restoration for half-street width along the alignment of the water line.
2. Install pipe under DISTRICT supervision and inspection.
3. Install pipe to DISTRICT specifications and standards that includes, but is not limited to flushing, pressure testing, chlorinating, and bacteria testing in conjunction with the Work.
4. Responsible for all testing and inspections associated with the water line construction and installation described in the Plans, Technical Specifications, DISTRICT Design Standards, and Contract as construction quality control (CQC) or Manufacturer's quality control (MQC) testing, unless PORT or DISTRICT furnishes products.
5. Retain an independent testing company to perform density testing for soils and disinfecting and bacteriological testing for all new water lines and valves.
6. Coordinate with the DISTRICT and Utilities in the performance of the Contract.

#### C. Submittals

1. All submittals shall be submitted to PORT for approval within five days of Contract Award. These include the following:



2. Submittal Register.
3. Project Schedule
4. Work Sequencing Plan.
5. Work Area and Staging Plan.
6. Traffic Control Plan.
7. Erosion and Sediment Control Plan.
8. Inspection and Testing Schedule.
9. Quality Control Independent Testing Firm.
10. Pipe and Fittings List.

### 1.3 CODES AND REGULATIONS

#### A. General

1. CONTRACTOR shall meet requirements of applicable laws, statutes, regulations, ordinances, safety regulations of federal, state, county, and city jurisdictions and as may be further referenced in the Contract Documents.
2. CONTRACTOR shall comply with provisions of federal, state, and local statutes, ordinances, and regulations dealing with the prevention of environmental pollution of natural resources that affect the Project.

#### B. Changes or Modifications

1. If CONTRACTOR must undertake additional Work due to the enactment of new, or the amendment of, existing statutes, ordinances, and regulations dealing with the Project, PORT will issue a Change Order setting forth the additional Work that must be undertaken.
2. The Change Order will not invalidate the Contract and there will be, in addition to a reasonable extension of Contract Time, if necessary, a reasonable adjustment in the Contract Price to compensate CONTRACTOR for all costs and expenses incurred, including overhead and profit as a result of the additional Work.

### 1.4 INSPECTION AND TESTING

- A. CONTRACTOR shall be responsible for all testing and inspections associated with the Contract Documents unless specifically stated otherwise.
- B. CONTRACTOR shall retain an independent testing company to perform density testing on soils and disinfecting and bacteriological testing for the water line construction.

## 1.5 EASEMENTS AND RIGHTS-OF-WAY

### A. Work Conditions

1. CONTRACTOR shall confine his construction operations within the limits indicated on the Plans, and shall use due care in placing construction tools, equipment, excavated materials, and pipeline materials and supplies so as to cause the least possible damage to property and interference with traffic.
2. CONTRACTOR shall set stakes to mark the boundaries of construction easements across private property. The stakes shall be protected and maintained until completion of construction and cleanup.
3. CONTRACTOR shall be solely responsible for the acquisition and maintenance of additional easement for its operations. No additional compensation will be provided by the PORT.

### B. Permits

1. CONTRACTOR shall obtain permits for Work in any right-of-way.

## PART 2 PRODUCTS

Not used.

## PART 3 EXECUTION

Not used.

**END OF SECTION**

**SECTION 01025**  
**MEASUREMENT AND PAYMENT**

**PART 1 GENERAL**

1.1 MEASUREMENT

- A. Performed according to United States Standard Measure.
- B. Based on actual units installed or neat line dimensions of Work completed.

1.2 CALCULATION OF QUANTITIES

A. Progress Payment Quantities

- 1. CONTRACTOR shall compute all quantities of Work performed and identify materials and equipment delivered to the Site for progress payment purposes.
- 2. PORT may at any time verify quantities determined by CONTRACTOR.

B. Final Payment Quantities

- 1. CONTRACTOR shall compute all quantities of Work performed and identify materials and equipment delivered to the Site for final payment purposes.
- 2. The calculation of final quantities will be as described in General Conditions Section E.
- 3. CONTRACTOR shall submit calculations and other documentation of final installed quantities with application for final payment.

1.3 PAYMENT

- A. In accordance with lump sum, unit price, or force account rates provided on the Bid Form.
- B. Includes all costs for overhead and profit and for supplying materials, labor, equipment, and tools, necessary to complete the Work in accordance with the Technical Specifications, Plans, and the Contract.

1.4 CHANGES AND EXTRA WORK

- A. Changes and extra work will be in accordance with General Conditions Section D.

1.5 REJECTED MATERIALS

A. Definition

- 1. Rejected materials includes, but is not limited to the following:
  - a. Quantities of material wasted or disposed in a manner not called for in the Technical Specifications;
  - b. Rejected loads of material, including material rejected after it has been placed for CONTRACTOR's failure to conform to the Technical Specifications;

- c. Material not unloaded from the transporting vehicle;
- d. Material placed outside the limits indicated by the Plans or established by PORT; and
- e. Material remaining on hand after completion of the Work.

B. Non-Payment

1. Rejected materials will not be paid for, and such quantities will not be included in the final total quantities.
2. No compensation will be permitted for loading, hauling, and disposing of rejected material.

1.6 MEASUREMENT & PAYMENT – CONTRACT BID ITEMS

A. General

1. The number of units and quantities contained in the Bid Schedule are approximate only; final payment will be based on the actual number of units and quantities incorporated in the Work or made necessary to complete the Project.
2. In the event that work and materials or equipment are required to be furnished to a greater or lesser extent than is indicated by the Contract Documents, such work and materials or equipment will be furnished in greater or lesser quantities.
3. CONTRACTOR shall, except as otherwise specifically stated herein or in any applicable part of the Contract Documents, provide and pay for all labor, materials, equipment, tools, construction equipment, and other facilities and services necessary for proper execution, testing, and completion of the Work.
4. Any part or item of the Work which is reasonably implied or normally required to make the installation satisfactorily operable shall be performed by CONTRACTOR and the expense thereof shall be included in the applicable unit prices or lump sum prices bid for the Work.
5. The intent of the Technical Specifications is to provide the PORT with a complete system.
6. All miscellaneous appurtenances and other items of Work that are incidental to meeting the intent of the Technical Specifications shall be considered as having been included in the applicable unit prices or lump sum prices bid for the Work even though these appurtenances and items may not be specifically called for in the Bid Documents.

B. Bid Items

1. Mobilization & Demobilization
  - a. **Basis of Measurement:** Lump Sum (LS). The various items comprising Mobilization and Demobilization shall be included in the LS price.
  - b. **Basis for Payment:** Mobilization and demobilization includes:
    - 1) Moving personnel, equipment, supplies, and incidentals to the Project site.

- 2) Establishing offices, buildings, and other facilities necessary for Work;
  - 3) Performing other work and operations or incurring costs as necessary before beginning the Work; Furnishing and maintaining a Work Sequencing Plan;
  - 4) Developing and maintaining Project Schedules;
  - 5) Providing and maintaining a Submittal Register;
  - 6) Providing a Work Area and Staging Plan;
  - 7) Mobilizing and demobilizing equipment;
  - 8) Attending weekly progress meetings;
  - 9) Preparing and restoring staging area;
  - 10) Living expenses;
  - 11) Bonds;
  - 12) Insurance;
  - 13) Office and field overhead;
  - 14) Health & safety;
  - 15) Cleaning materials and equipment associated with the Project prior to demobilization;
  - 16) Any other administrative cost necessary to complete the Work, including work described in Division 1 of the Technical Specifications;
  - 17) Completing clean-up; and
  - 18) Completing Project closeout.
- c. Based upon the Contract LS price for "Mobilization & Demobilization", partial payments will be allowed as follows:
- 1) With the first pay request, 25 percent.
  - 2) When 25 percent or more of the original Contract is earned, an additional 25 percent.
  - 3) When 50 percent or more of the original contract is earned, an additional 40 percent.
  - 4) After Final Inspection, staging area clean-up, and delivery of all project closeout materials, the final 10 percent.
2. Quality Control: Inspections & Testing
- a. **Basis of Measurement:** Lump Sum (LS). Measurement shall be based on satisfactory completion of the inspections and testing work in accordance with the Plans and Technical Specifications, and all applicable City, County, State, and Federal specifications.
  - b. **Basis for Payment:** Quality control inspections and testing includes all testing and inspection requirements under Division 2 Technical Specifications.
3. Surveying

- a. **Basis of Measurement:** Lump Sum (LS). Measurement shall be based on satisfactory completion of survey work in accordance with the Plans and Technical Specifications including Section 01052 Layout of Work and Survey, and all applicable City, County, State, and Federal specifications.
  - b. **Basis for Payment:** Survey includes:
    - 1) Performing surveys to layout;
    - 2) Providing control for all required elements of the Work;
    - 3) Measuring installed quantities; and
    - 4) Preparing record documents to document as-built conditions as described in Sections 01052 and 01700 in pdf and AutoCAD formats.
4. Erosion Control Measures
- a. **Basis of Measurement:** Lump Sum (LS). Measurement shall be based on satisfactory erosion and sediment control in accordance with the Plans and Technical Specifications including Section 01560 Temporary Controls and all applicable erosion control regulations including City, County, State, and Federal specifications.
  - b. **Basis for Payment:** Payment in full for satisfactorily furnishing all materials, labor, and incidentals to control and prevent sediment transportation from the Work area to adjacent properties and as specified in the Plans, Technical Specifications, and the CONTRACTOR's Erosion and Sediment Control Plan. The unit price bid shall include the submittal of an Erosion and Sediment Control Plan and the installation, maintenance, and removal of temporary erosion and sediment controls including providing, installation, maintenance, of an erosion control fence as indicated on the Plans, the Technical Specifications, or Erosion and Sediment Control Plan, including the stockpile at the Lower Hanel Mill property.
5. Traffic Control Measures
- a. **Basis of Measurement:** Lump Sum (LS). Measurement shall be based on satisfactory traffic control in accordance with the Plans and Technical Specifications, including Section 01560 Temporary Controls and all applicable erosion control regulations including City, County, State, and Federal specifications.
  - b. **Basis for Payment:** Payment in full for satisfactorily furnishing all labor, materials, and equipment necessary to maintain public roadway and pedestrian traffic including flagging, barricades, warning signs. Also included is furnishing, installing and maintaining a Traffic Control Plan, control and safety devices, control of dust, temporary crossing structures over trenches, any necessary detour facilities, and other special requirements for the safe and expeditious movements of traffic and access to the adjacent properties.
6. Cold Plane Pavement Removal, 2-Inch Depth

- a. **Basis of Measurement:** Square Foot (SF). Cold plane pavement removal completed and accepted will be measured in place by the square foot to the depth as indicated. Temporary wedges constructed, maintained, and removed to provide access will be at CONTRACTOR's expense.
  - b. **Basis for Payment:** Payment will be made in full for furnishing all equipment, labor, and incidentals necessary to complete the Work and dispose of the material as specified.
7. Hot Mix AC Pavement, Level 3
- a. **Basis of Measurement:** Ton (Ton). Hot mix asphalt cement pavement completed and accepted shall be measured by paving for the areas indicated on the Plans and as specified, and shall be measured by the Ton. The areas include the 2-inch lift for the trench repair and the half street 2-inch lift (for 4-inch total).
  - b. **Basis for Payment:** The accepted quantities of hot mix asphalt pavement wearing course will be paid for at the Contract price per Ton. The Work shall include installing prime coat, tack coat, and asphalt, compaction, and temporary striping and markings in accordance with the Plans and Technical Specifications. Existing pavement removal and proper disposal shall be paid for by other bid items.
8. Trench Excavation
- a. **Basis of Measurement:** Lineal Foot (LF).
  - b. **Basis of Payment:** Includes all costs to excavate the trench for the water line to the design elevations shown on the Plans and to haul excavated material to the PORT's Lower Hanel Mill site, stockpile the material and maintain the stockpile.
9. Trench Backfill Without Controlled Density Fill (CDF)
- a. **Basis of Measurement:** Lineal Foot (LF).
  - b. **Basis of Payment:** Includes all costs to supply, install, compact and test material below, around and above the water line pipe and fittings as described in Section 02223 and referenced as Pipe Bedding, Pipe Zone Material and Trench Backfill. Section of trench to be backfilled without CDF is shown on the Plans.
10. Trench Backfill With Controlled Density Fill (CDF)
- a. **Basis of Measurement:** Lineal Foot (LF).
  - b. **Basis of Payment:** Includes all costs to supply, install, compact and test material below, around and above the water line pipe and fittings as described in Section 02223 and referenced as Pipe Bedding and Controlled Density Fill (CDF). Section of trench to be backfilled with CDF is shown on the Plans.
11. 10-Inch Water Line, DI Thickness Class 52

- a. **Basis of Measurement:** Lineal Foot (LF). The water line installation shall be measured in lineal feet satisfactorily furnished and laid, as measured along the length of the centerline of the completed pipeline, regardless of the type of joint required, without deduction for the length of valves and fittings. Pipe included within the limits of LS pay items will not be measured for payment under this item.
- b. **Basis for Payment:** The accepted quantities will be paid for at the Contract unit price per LF. Payment will be paid in full for furnishing and placing the materials, including all equipment, labor, and incidentals necessary to complete the work as specified. There will be no separate payment for trench excavation, bedding, pipe zone material, and backfill work. Items considered incidental to the work shall include protection of existing utilities, concrete thrust blocks, sheeting, shoring and bracing, dewatering, and flushing, hydrostatic testing, and disinfection, and water testing.

12. Pressure Reducing Valve and Vault

- a. **Basis of Measurement:** Lump Sum (LS). Measurement for Pressure Reducing Valve and Vault shall be LS, based on satisfactory furnished and installed completion of functional unit as indicated in the Plans and Technical Specifications.
- b. **Basis for Payment:** Payment in full for furnishing and installing the pressure reducing valve and vault assembly complete in place, including all earthwork not covered under other pay items, jointing, and hydrostatic testing.

13. Relief Valve and Vault

- a. **Basis of Measurement:** Lump Sum (LS). Measurement for Relief Valve and Vault shall be LS, based on satisfactory completion of furnished and installed functional unit as indicated in the Plans and Technical Specifications.
- b. **Basis for Payment:** Payment in full for furnishing and installing the relief valve and vault assembly complete in place, including all earthwork, piping, and hydrostatic testing not included in other bid items.

12/13 Alternate – Pressure Reducing Valve and Relief Valve in Single Vault

- a. **Basis of Measurement:** Lump Sum (LS). Measurement for pressure reducing valve and relief valve in a single vault shall be LS, based on satisfactory completion of furnished and installed functional unit as indicated in the Plans and Technical Specifications.



- b. **Basis for Payment:** Payment in full for furnishing and installing a pressure reducing valve and relief valve in a single vault assembly complete in place, including all earthwork, piping, and hydrostatic testing not included in other bid items. The required materials and installation are shown on a cut sheet provided by Northwest Hydro Tech and reviewed by Pace Engineering on April 20, 2018 and attached with the bid documents. Additionally, work will include providing and installing fittings to effect 6-inch to 10-inch pipe diameter transition outside the vault.

14. Water Line Connection "B"

- a. **Basis of Measurement:** Lump Sum (LS). Measurement for Water Line Connection "B" to the existing main shall be LS, based on satisfactory completion of furnished and installed connection per the Contract Plans as described in "Connection Detail 'B'".
- b. **Basis for Payment:** Payment in full for furnishing and installing the cut-in connection from the constructed water main to the existing water main, including coordination with DISTRICT and existing utilities, protection of existing utilities and services, excavation, sheeting, shoring and bracing, dewatering, cutting pipe, completely drain and properly dispose of existing pipe contents, connection to the existing main, restraint of existing main in accordance with the Plans and Technical Specifications, backfill, compaction, grading, disinfection, potable water protection, restoration, and cleanup. This item includes all necessary fittings.

**PART 2 PRODUCTS**

Not used.

**PART 3 EXECUTION**

Not used.

**END OF SECTION**

**SECTION 01027**  
**APPLICATIONS FOR PAYMENT**

**PART 1 GENERAL**

1.1 DESCRIPTION

- A. This section describes the procedures for the preparation and submittal of applications for payment.

1.2 RELATED SECTIONS

- A. Section 01035 - Modification Procedures  
B. Section 01300 - Submittals  
C. Section 01700 - Contract Closeout

1.3 FORMAT

- A. Computer Generated Spreadsheet. For each Bid item and Change Order item, provide a column listing each of the following:
1. Item number.
  2. Description of Work.
  3. Unit.
  4. Contract quantity.
  5. Contract unit price.
  6. Contract amount.
  7. Previous quantity.
  8. Previous amount.
  9. Quantity for current period.
  10. Amount for current period.
  11. Quantity to date.
  12. Amount to date.
  13. Percent completion for each item.
  14. Summary of quantities and values of materials on hand.
- B. Summary. Provide a summary that includes the following:
1. Total earned in current month.
  2. Total previously earned.
  3. Total earned to date.
  4. Total value of materials on hand.
  5. Subtotal for items 3 and 4.

6. Amount retained.
7. Summary of previous payment.
8. Amount due for current period.

#### 1.4 PREPARATION AND SUBMITTAL OF APPLICATIONS

##### A. Elements and Format

1. Present required information on electronic media printout.
2. Provide dollar value in each column for each line item for portion of Work performed.
3. Signed certification that prior payments have been fully applied to outstanding uncontested corresponding subcontractor/supplier invoices.
4. Execute certification by signature of authorized officer.
5. Prepare Application for Final Payment as specified in Section 01700.

##### B. Submittal

1. Submit three copies of each Application for Payment.
2. Payment Period: Submit at intervals stipulated in the Contract.

#### 1.5 SUBSTANTIATING DATA

##### A. Protocol

1. When PORT requires substantiating information, submit data justifying quantities or dollar amounts in question.
2. Provide one copy of data with cover letter for each copy of submittal, showing application number and date, and line item by number and description.

#### **PART 2 PRODUCTS**

Not used.

#### **PART 3 EXECUTION**

Not used.

**END OF SECTION**

## SECTION 01032

### INTENT OF PLANS AND TECHNICAL SPECIFICATIONS

#### PART 1 GENERAL

##### 1.1 PLANS AND TECHNICAL SPECIFICATIONS

###### A. General.

1. The intent of the Plans and Technical Specifications is to describe work that CONTRACTOR shall perform in a manner acceptable to the PORT and in full compliance with the terms of the Contract.
2. The Plans show general arrangements for the Work that shall be used by CONTRACTOR in the preparation of Shop and As-Built Drawings.
3. CONTRACTOR shall examine all layouts to ensure equipment is accessible for operation.
4. CONTRACTOR shall provide the PORT with a complete and operable system; the Plans and Technical Specifications may not specifically call out all items of Work required of CONTRACTOR to complete tasks, install incidental appurtenances, materials, and the like. and perform contract period maintenance.
5. CONTRACTOR shall perform the Work in accordance with the lines, grades, cross sections, and dimensions shown on the Plans. Any deviations must be submitted to and approved by the PORT prior to making the deviation.
6. The dimensions on the Plans are presumed to be correct, but CONTRACTOR shall be required to check carefully all dimensions prior to beginning the Work.
7. CONTRACTOR shall immediately notify the PORT in writing when CONTRACTOR discovers errors or omissions.

##### 1.2 CHANGES TO PLANS

###### A. General

1. It is inherent in the nature of construction that some changes to the Plans and Technical Specifications may be necessary during construction to adjust them to field conditions.
2. It is the essence of the Contract to recognize a normal and expected margin of change.
3. PORT shall have the right to make such changes, from time to time, to the Plans and Technical Specifications in the character of the Work as may be necessary or desirable to ensure the completion of the Work in the most satisfactory manner without invalidating the Contract.

### 1.3 COORDINATION AND INTERPRETATION OF PLANS AND TECHNICAL SPECIFICATIONS

#### A. General.

1. The Plans, Technical Specifications, General Conditions, Supplementary Conditions, Contract Change Orders, and all supplementary documents are essential parts of the Contract, and a requirement occurring in one is as binding as though occurring in all; they are intended to be coordinated and complementary, and to describe and provide for a complete Work.

#### B. Clarifications

1. Should it appear that the Work or other matters relative thereto are not sufficiently detailed or explained in the Contract Documents, CONTRACTOR shall apply to PORT for such further explanations in the form of a Request for Information (RFI) as may be necessary and shall conform to PORT's response as part of the Contract.
2. In the event of a doubt or question arising regarding the true meaning of the Contract Documents, deference shall be made to the PORT, whose decision thereon shall be final.
3. In the event of a discrepancy between a Drawing and the figures and or dimensions written thereon, the figures and or dimensions shall be taken as correct.
4. Figured dimensions shall govern over scaled dimensions.
5. Scaled dimensions shall not be used in the performance of the Work.
6. Cross sections and details take precedent over general plan views.

### PART 2 PRODUCTS

Not used.

### PART 3 EXECUTION

Not used.

**END OF SECTION**

**SECTION 01035**  
**MODIFICATION PROCEDURES**

**PART 1 GENERAL**

**4.1 GENERAL**

**A. Definition**

1. Any change, deviation, or modification to the original Scope of Work that materially changes the established Contract terms, including additional Out-of-Scope Work.

**4.2 CHANGE PROCEDURES**

**A. Field Change Orders.**

1. PORT will issue Field Orders for minor changes in the Work not involving an adjustment to Contract Price or Contract Time.

**B. Change Orders.**

1. CONTRACTOR as originator.

- a. CONTRACTOR may request a change by submitting a change order to PORT, describing the proposed change and its full effect on the Work and including a statement describing the reason for the change, the effect on the Contract Price and Contract Time, and a statement describing the effect on Work by separate or other contractors.
- b. PORT may accept, modify, or reject portions of a change order request.
- c. PORT may request additional information or back-up documentation from CONTRACTOR to justify or clarify its change order request; CONTRACTOR shall provide this information within 5 days.

2. PORT as originator.

- a. PORT may provide CONTRACTOR with a Proposal Request that includes a detailed description of a proposed change, with or to supplementary or revised Plans and Technical Specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required, and the period of time during which the requested price will be considered valid.
- b. CONTRACTOR must prepare and submit a Proposal with estimate within 5 days.
- c. If the terms of the Proposal are acceptable to both PORT and CONTRACTOR, PORT will process a change order.

**C. Work Change Directive.**

1. PORT may issue a Work Change Directive for any change that, if not processed expeditiously, might delay the Project.
2. This is not a Change Order, but only a directive to proceed with Work that may be included in a subsequent Change Order.

**PART 2 PRODUCTS**

Not used.

**PART 3 EXECUTION**

Not used.

**END OF SECTION**

**SECTION 01042**  
**RESTORATION OF SURFACES**

**PART 1 GENERAL**

1.1 SECTION INCLUDES:

- A. Roads and streets.
- B. Curbs, Driveways and Sidewalks.
- C. Material Storage and Processing Areas.
- D. Measurement and Payment.

1.2 RELATED SECTIONS

- A. Section 01400 - Quality Control
- B. Section 01560 – Temporary Controls
- C. Section 01700 - Contract Closeout

1.3 ROADS AND STREETS

- A. Requirements.
  - 1. CONTRACTOR shall restore by the end of each day, all roads and streets in which the surface is removed, broken or damaged in conjunction with all trenching and underground work within the travel lanes due to the performance of Work covered by the Contract.
  - 2. CONTRACTOR shall restore by the end of each day, the surface within the paved travel lanes, including water line trenching and underground work, either by temporary cold patch or asphalt pavement.
  - 3. CONTRACTOR shall not have any segments within the travel lanes surfaced with gravel or steel plating.
  - 4. CONTRACTOR shall sequence the Work accordingly.
  - 5. CONTRACTOR shall match the existing surfacing for depth, materials, and surface finish, including striping and pavement markings, except as otherwise specified.

1.4 CURBS, DRIVEWAYS AND SIDEWALKS

- A. Requirements.
  - 1. CONTRACTOR shall reconstruct to the same specifications to the original curbs, driveways, sidewalks, and similar structures which are broken or damaged during construction.
  - 2. CONTRACTOR shall remove and replace the entire damaged portions between joints or scores.



3. CONTRACTOR shall match the appearance of the existing improvements as nearly as possible, except as otherwise required.

#### 1.5 MATERIAL STORAGE AND PROCESSING AREAS

##### A. Requirements.

1. CONTRACTOR shall repair its staging area to be in the same condition or better prior to construction.

#### 1.6 MEASUREMENT AND PAYMENT

##### A. Requirement

1. No separate or additional payment will be made for restoration of surfaces.
2. The costs for surface restoration shall be considered incidental to the Work and shall be included in various unit or lump sum Bid items.

### PART 2 PRODUCTS

Not used.

### PART 3 EXECUTION

Not used.

**END OF SECTION**

**SECTION 01052**  
**LAYOUT OF WORK AND SURVEYS**

**PART 1 GENERAL**

1.1 SECTION INCLUDES:

- A. Work to be performed under this section shall include all labor, equipment, materials, tools, and incidentals necessary to cover the following:
1. Layout of Work, including staking of water line alignment, staking of vault locations, and staking of valve locations.
  2. Field measurements of work quantities.
  3. Determination of as-built locations, lines, and grades at completion of the Work for preparation of As-Built Drawings.

1.2 DESCRIPTION

- A. Reference Points.
1. ENGINEER will provide horizontal and vertical survey control data for control points in the field necessary for CONTRACTOR to proceed with construction staking for the Work.
  2. CONTRACTOR shall be responsible for locating, marking, and protecting all field control points, including, but not limited to monuments, benchmarks, and property corners.
  3. CONTRACTOR shall be responsible for replacement of the control points which have been damaged or destroyed by a professional land surveyor at CONTRACTOR at its own expense.
- B. Equipment and Personnel.
1. CONTRACTOR shall provide instruments and other survey equipment that is accurate, suitable for the surveys required in accordance with recognized professional standards, and in proper condition and calibrated at all times.
  2. CONTRACTOR shall perform surveys under the direct supervision of a professional licensed surveyor.
- C. Field Notes and Records.
1. CONTRACTOR shall record surveys in field notebooks and retain copies.
  2. Electronic notes may be used if printouts are retained.
- D. Use by PORT.
1. PORT may at any time use line and grade points and markers that have been established by CONTRACTOR.
  2. PORT may verify any information.

3. CONTRACTOR's surveys are a part of the Work and may be checked by PORT or PORT representatives at any time.
- E. CONTRACTOR Responsibilities.
1. CONTRACTOR shall furnish all necessary detail surveys including all lines, grades, and appropriate surveys.
  2. CONTRACTOR shall be responsible for
    - a. any lines, grades, or measurements that do not comply with specified or proper tolerances, or which are otherwise defective, and
    - b. any resultant defects in the Work.
  3. CONTRACTOR shall conduct re-surveys or check surveys to correct errors indicated by review of the field notebooks or otherwise detected.
  4. ENGINEER reserves the right to perform any desired checking or correction of CONTRACTOR's surveys, but this shall not relieve CONTRACTOR of responsibility for the adequate performance of the Work.

### 1.3 SURVEYS FOR LAYOUT AND PERFORMANCE OF WORK

- A. Perform surveys for layout and performance of the Work, reduce the field notes, make necessary calculations, and prepare drawings necessary to carry out such Work.

### 1.4 SURVEYS FOR AS-BUILT DRAWINGS

- A. General.
  1. CONTRACTOR shall provide as-built conditions of items of Work to be documented by surveying methods.
  2. PORT may perform independent checks.

### 1.5 SURVEYS FOR MEASUREMENT FOR PAYMENT

- A. When the Technical Specifications require quantities of Work to be measured by surveying methods, CONTRACTOR shall perform the surveys. PORT may perform independent checks.
- B. Provide surveys to measure final quantities of items listed in Section 01025.

### 1.6 SURVEYING ACCURACY AND TOLERANCES IN SETTING OF SURVEY STAKES

- A. Perform control traverse field surveys and computations to an accuracy of at least 1:10,000.
- B. The tolerances applicable in setting survey stakes are set forth below. Such tolerances do not supersede stricter tolerances required by the Plans or Technical Specifications, and do not otherwise relieve PORT of responsibility for measurements in compliance therewith.

Type of Mark

Horizontal Position

Elevation

Permanent reference points	1 in 10,000	±0.01 ft.
General excavation and earthwork	1 in 2,000	±0.10 ft.

C. Tolerances for design thickness indicated on Plans; elevations indicated on the Plans are ±0.10 foot unless otherwise specified.

**PART 2 PRODUCTS**

Not used.

**PART 3 EXECUTION**

Not used.

**END OF SECTION**

## SECTION 01070 SAFETY PROVISIONS

### PART 1 GENERAL

#### 1.1 RELATED SECTIONS

- A. Section 01400 - Quality Control
- B. Section 01700 - Contract Closeout

#### 1.2 CONTRACTOR RESPONSIBILITIES

- A. CONTRACTOR shall assume full and sole responsibility for, and shall comply all health and safety rules, regulations, and ordinances promulgated by the federal, state, and local governments, the various construction permits, and the Contract Documents in its performance of the Work.
- B. CONTRACTOR shall conduct operations under the Contract Documents to offer the least possible obstruction and inconvenience to the PORT, DISTRICT, the public, and abutting property owners.
- C. CONTRACTOR shall be responsible for employing adequate safety measures and taking all other actions reasonably necessary to protect life, health, and safety of its employees, PORT, DISTRICT, Utilities, and the public.
- D. CONTRACTOR shall determine the specific requirements for safety provisions and shall cause inspections and reports by the appropriate safety authorities to be conducted to ensure compliance with the intent of the regulations.
- E. CONTRACTOR shall inform employees and Subcontractors and their employees of the potential danger of working on and near roadways, trenches, existing utilities, and high pressure water line.
- F. CONTRACTOR shall perform whatever work is necessary for safety and be completely responsible for the conditions of the Site, including the safety of all persons and property during the Contract period. This requirement applies continuously and is not limited to normal working hours.
- G. CONTRACTOR shall provide for the protection of employees and others from fire, explosion, or asphyxiation caused by any gases encountered during construction.
- H. CONTRACTOR shall provide at all times proper facilities for safe access to the Work by authorized government officials.
- I. CONTRACTOR shall immediately report accidents causing death, injuries, or damage to PORT.

- J. CONTRACTOR shall promptly (within 3 days) report in writing all accidents arising out of, or in connection with, the performance of the Work, whether on, or adjacent to the Site, giving full details and statements of witness to the PORT.

### 1.3 CONTRACTOR SAFETY EQUIPMENT

- A. CONTRACTOR shall maintain at the Site safety equipment applicable to the Work as prescribed by the governing safety authorities and all articles necessary for giving first aid to the injured.
- B. CONTRACTOR shall train all personnel in use of the appropriate safety equipment that would be utilized during the course of their Work.
- C. CONTRACTOR shall be responsible for ascertaining that all safety equipment is properly maintained and being properly used when appropriate.

### 1.4 PAYMENT

- A. No separate or additional payment will be made for safety provisions, but shall be considered incidental to the Work and shall be included in various unit or lump sum Bid items.

## **PART 2 PRODUCTS**

Not used.

## **PART 3 EXECUTION**

Not used.

**END OF SECTION**

## SECTION 01090 REFERENCES

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES:

- A. References and abbreviations of various industry associations, trade associations, societies, organizations, and regulatory agencies, as referenced in the Contract Documents.

#### 1.2 DESCRIPTIONS

- A. The Plans and Technical Specifications contain references to various standard specifications, codes, practices, and requirements for materials, workmanship, installation inspections, and tests, which references are published and issued by the organizations, societies, and associations listed below by abbreviation and name.
- B. Any material, method, or procedure specified by reference to the number, symbol, or title of a specific Technical Specification or standard, such as a Commercial Standard, American National Standard, Federal or State specification, Industry, or Government Code, a trade association code or standard, or other similar standard, must comply with the requirements of the edition in effect on the date of Bid Opening or the date the Contract Documents are signed.
- C. The code, specification, or standard referred to, except as modified in the Technical Specifications, will have full force and effect as though printed in the Technical Specifications.
- D. The specifications and standards are not furnished to BIDDERS since Manufacturers and trades involved are assumed to be familiar with their requirements.
- E. PORT will furnish, upon request; information as to how copies of the Technical Specifications and standards referred to may be obtained.

#### 1.3 ABBREVIATIONS

- A. Whenever in the Contract the following abbreviations are used, their meanings shall be as follows:

AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
ANSI	American National Standards Institute
APWA	American Public Works Association
ASCE	American Society of Civil Engineers
ASTM	ASTM International

AWWA	American Water Works Association
CRSI	Concrete Reinforcing Steel Institute
FHWA	Federal Highway Administration
FS	Federal Specifications
OAR	Oregon Administrative Rules
ODOT	Oregon Department of Transportation
OSHA	Occupational Safety and Health Administration

**PART 2 PRODUCTS**

Not used.

**PART 3 EXECUTION**

Not used.

**END OF SECTION**



**SECTION 01170**  
**COORDINATION OF WORK**

**PART 1 GENERAL**

1.1 RESPONSIBILITIES - GENERAL

- A. Coordinate all Work of this Contract with PORT.
- B. Coordinate all Work of this Contract with the other contractors.
- C. Coordinate all Work of this Contract with Utilities.

1.2 RELATED SECTIONS

- A. Section 01300 – Submittals.
- B. Section 01310 – Project Schedule.
- C. Section 01560 – Temporary Controls.
- D. Section 01700 - Project Closeout.

1.3 PORT

- A. CONTRACTOR shall coordinate all Work and participate in progress meetings and reporting to the PORT as part of the Contract Documents to assure Completion Dates defined in the Contract. This includes: Pre-Construction Meeting, Daily Progress updates, and Weekly Progress Meetings with Project Schedule updates.
- B. Conditions of liquidated damages (if any) set forth in the Contract apply to substantial Completion Dates.
- C. PRE-CONSTRUCTION MEETING
  - 1. Meeting will be held at a location selected by PORT.
  - 2. Attendance:
    - a. CONTRACTOR's Representative.
    - b. CONTRACTOR's Field Superintendent.
    - c. Any Subcontractors or Supplier's representatives that CONTRACTOR may desire to invite or PORT may request.
    - d. ENGINEER.
    - e. PORT's authorized representatives.'
    - f. UTILITIES.
  - 3. Agenda. A suggested format would include, but not be limited to, the following subjects:
    - a. Review responsibilities for each Party.
    - b. Define lines of communication and authority.

- c. Direction of correspondence, and coordinating responsibility between CONTRACTOR, PORT, DISTRICT, ENGINEER, and UTILITIES.
  - d. Establish reporting and documenting procedures.
  - e. Procedures for handling submittals.
  - f. Field inspections and testing.
  - g. Establish CQC testing protocols and procedures for correcting and documenting construction or non-conformance.
  - h. Change Order procedures.
  - i. Applications for payment, and progress payment procedures, including payments to subcontractors and suppliers.
  - j. Health and Safety.
  - k. Provide all Parties with relevant documents.
  - l. Presentation of a proposed Project Schedule and submittals as required by the Contract Documents.
  - m. Review the Plans, Technical Specifications, safety procedures, and related issues.
  - n. Review submittals.
  - o. Request for weekly progress meetings.
  - p. Conduct a Site inspection to discuss Work area.
4. Minutes. PORT shall document the meeting. Copies of the minutes and relevant documents will be provided to all Parties.

#### D. DAILY PROGRESS

1. An informal daily progress meeting is suggested before the start of Work. This can be conducted over the phone with the purpose of:
  - a. Reviewing scheduled Work activities.
  - b. Discussing problems and their resolutions.
  - c. Reviewing CQC and CQA test data.
  - d. Discussing CONTRACTOR's personnel and equipment assignments for the day.
  - e. Reviewing the previous day's activities and accomplishments.

#### E. WEEKLY PROGRESS MEETINGS

1. PORT will schedule and administer weekly progress meetings.
2. Attendance:
  - a. PORT's representative.
  - b. CONTRACTOR's Field Superintendent.
  - c. Subcontractors as appropriate to agenda.
  - d. Suppliers as appropriate to agenda.
3. Meeting requirements:

- a. PORT will administer the progress meetings.
  - b. Prepare agenda for meetings.
  - c. Make physical arrangements for meetings.
  - d. Preside at meetings.
  - e. Record significant proceedings and decisions of meeting.
  - f. Reproduce and distribute copies of meeting record to meeting participants and to Parties affected by decisions made at the meeting, within seven days after each meeting.
4. Suggested agenda:
- a. Review and approval of previous meeting record.
  - b. Review health and safety issues.
  - c. Review of Work progress since previous meeting.
  - d. Field observations, problems, and conflicts.
  - e. Contaminated soil.
  - f. Problems that impede Work schedule.
  - g. Review off-site delivery schedules.
  - h. Corrective measures and procedures to regain Project Schedule.
  - i. Revisions to Project Schedule.
  - j. Planned progress during Work period.
  - k. Coordination of schedules.
  - l. Review submittal schedules; expedite as required.
  - m. Maintenance of quality and safety standards.
  - n. Pending changes and substitutions.
  - o. Review proposed changes for effect on Project Schedule and Completion Date, and on other Project contracts.
  - p. Application for payment, and payments to Subcontractors and Suppliers.
  - q. Other business.

#### 1.4 DISTRICT

##### A. General

- 1. This Work is part of an Intergovernmental

#### 1.5 UTILITY

##### A. Notification Requirements

- 1. CONTRACTOR shall be responsible for notifying and coordinating with all utility companies (Utility) that may be involved in, or affected by the Work.

2. CONTRACTOR shall follow applicable rules adopted by the Oregon Utility Notification Center, a Utilities notification system for notifying Utility owners about Work being performed in the vicinity of their facilities by calling 811 or 1-800-332-2344.
3. CONTRACTOR shall notify the PORT and the Utility as soon as CONTRACTOR discovers any previously unknown Utility conflicts or issues [in addition to the notification required in OAR 952-001-0090(5)], cease all excavating activities until directed by PORT and Utility, and allow the Utility a minimum of two weeks to relocate or resolve the previously unknown utility issues.
4. CONTRACTOR shall report to the PORT any Utility that fails to cooperate or fails to follow the planned Utility adjustment.
5. The following Utilities have notification requirements for excavation or other road construction Work activity:

UTILITY	CONTACT INFORMATION
Century Link	<b>72+ hours written notice</b> prior to excavation or other road construction activity within 10 feet of the underground lines marked on the Plans.
Crystal Springs Water District	<b>72+ hours written notice</b> prior to excavation or other road construction activity within 10 feet of the high pressure water line.
Odell Sanitary District	<b>72+ hours written notice</b> prior to excavation or other road construction activity within 10 feet of the sanitary sewer.

B. Contact Information

There are no anticipated conflicts with the Utilities listed below.

UTILITY	CONTACT INFORMATION
Century Link	Dryk Pritchett@541-387-9255 <a href="mailto:dyrk.a.pritchett@centurylink.com">dyrk.a.pritchett@centurylink.com</a>
Crystal Springs Water District	Fred Schatz @541-354-1818 <a href="mailto:fred@cswdhr.com">fred@cswdhr.com</a> [Note: The water company is represented by Tom Ferrell, PACE Engineers

	@503-597-3222 ext. 313 <a href="mailto:tomf@paceengrs.com">tomf@paceengrs.com</a> ]
East Fork Irrigation	John Buckley @ 541-354-1185 <a href="mailto:johnefid@hoodriverelectric.net">johnefid@hoodriverelectric.net</a>
Hood River Electric	Clinton Curtis @541-354-1233 <a href="mailto:hrec@hrec.coop">hrec@hrec.coop</a>
NW Natural Gas	Sheri Clark @ 541-226-4211 ext. 2045 <a href="mailto:s6c@nwnatural.com">s6c@nwnatural.com</a>
Odell Sanitary District	Ralph Lane @ 541-806-2585 <a href="mailto:rlane@odellsanitarydistrict.com">rlane@odellsanitarydistrict.com</a>
Odell Water Company	Phil Davis @ 541-354-1393 <a href="mailto:pkdavis@hoodriverelectric.net">pkdavis@hoodriverelectric.net</a>

C. Work Coordination - Pre-Bid & Contract Award

1. Pre-Bid: CONTRACTOR shall contact Utility during Bid preparation.
2. Contract Award: CONTRACTOR shall contact Utility after the Contract award to verify Utilities' involvement on the Project.

D. Work Coordination – Pre-Construction

1. Pre-Construction Meeting: CONTRACTOR shall include Utilities in the pre-construction meeting to identify construction issues and develop a coordinated strategy including construction sequencing, potential conflicts, special requirements, etc.
2. Pre-Construction: CONTRACTOR shall contact Utilities having buried facilities for their location and identification prior to construction.

E. Work Coordination - Construction

1. CONTRACTOR shall coordinate Project construction with the Utilities' planned adjustments.
2. CONTRACTOR shall take all precautions necessary to prevent disruption of Utility's service.
3. CONTRACTOR shall perform Work in the manner that results in the least inconvenience to the Utility.
4. CONTRACTOR shall include all Utility adjustment work, whether to be performed by CONTRACTOR or the Utility, on CONTRACTOR's Project Schedule.
5. CONTRACTOR shall protect Utility from damage or disturbance within the area in which Work is being performed.

6. CONTRACTOR shall maintain and coordinate with the Utility the re-establishment of location marks according to OAR 952-001-0090(2)(a).
7. CONTRACTOR shall protect any existing Utility from damage or disturbance; if there is an unanticipated adjustment, CONTRACTOR shall promptly notify PORT and Utility.
8. CONTRACTOR shall determine the exact location of Utility before excavating within a reasonable accuracy according to OAR 952-001-0090(2)(c).
9. CONTRACTOR shall backfill any exposed Utilities as recommended and approved by the Utility representative.
10. CONTRACTOR shall obtain Utility locate warning tape to replace damaged, removed, or missing warning tape.
11. CONTRACTOR shall stake, place warning tape, and maintain No Work Zones around critical Utility facilities as shown in the Plans, or directed and verified by the Utility.
12. CONTRACTOR shall notify the PORT and the Utility as soon as CONTRACTOR discovers any previously unknown Utility conflicts or issues [in addition to the notification required in OAR 952-001-0090(5)], cease all excavating activities until directed by PORT and Utility, and allow the Utility a minimum of two weeks to relocate or resolve the previously unknown utility issues.

F. Adjustments and Alterations

1. Subject to PORT's approval, CONTRACTOR may adjust utilities by asking the Utility to move, remove, or alter their facilities other than as shown on the Plans, in the Technical Specifications, or in the Special Provisions.
2. CONTRACTOR shall conduct all negotiations, make all arrangements, and assume all costs that arise from such changes.

**PART 2 PRODUCTS**

Not used.

**PART 3 EXECUTION**

Not used.

**END OF SECTION**

## SECTION 01300

### SUBMITTALS

#### PART 1 GENERAL

##### 1.1 DESCRIPTION:

- A. This section describes administrative and procedural requirements for all types of submittals including: Plans, CQC and CQA data, Proposed Products list, Shop Drawings, Product data, Samples, Manufacturers' installation instructions, and Manufacturers' certificates.

##### 1.2 SUBMITTAL PROCEDURES

###### A. General

1. Maintain Submittal Register.
2. Transmit each submittal with a transmittal form.
3. Sequentially number the transmittal form.
4. For revised submittals, add an alphabetic suffix to the original number.
5. Identify Project, CONTRACTOR, Subcontractor or Supplier; pertinent Drawing and detail number, and Technical Specification Section number, as appropriate.
6. Apply CONTRACTOR's stamp, signed or initialed certifying that review; verification of products required; field dimensions; adjacent construction work; and coordination of information; is in accordance with the requirements of the Work and Contract Documents.
7. Schedule submittals to expedite review by PORT and deliver in the time frame specified.
8. Coordinate submission of related items.
9. Allow seven calendar days to review for each submittal excluding delivery time.
10. Identify variations from Contract Documents and product or system limitations that may be detrimental to successful performance of the completed Work.
11. Provide space for CONTRACTOR and ENGINEER, if applicable, review stamps.
12. When revising and resubmitting, identify all changes made since previous submission.
13. Distribute copies of reviewed submittals as appropriate.
14. Instruct parties to promptly report any inability to comply with provisions.
15. Submittals not requested will not be recognized or processed.

##### 1.3 SHOP DRAWINGS

- A. Submit the number of opaque reproductions that CONTRACTOR requires, plus two copies that will be retained by PORT.

- B. Shop Drawings: Submit for review. After review, produce copies and distribute in accordance with the Contract Documents.

#### 1.4 PRODUCT DATA

- A. Submit the number of copies that CONTRACTOR requires, plus two copies that will be retained by PORT.
- B. Mark each copy to identify applicable products, models, options, and other data. Supplement Manufacturers' standard data to provide information unique to this Project.

#### 1.5 MANUFACTURER INSTALLATION INSTRUCTIONS

- A. When specified in individual specification sections; submit printed instructions for delivery; storage; assembly; installation; start-up; adjusting; and finishing to PORT in quantities specified for product data.
- B. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

#### 1.6 MANUFACTURER CERTIFICATE

- A. When specified in individual specification sections, submit certification by Manufacturer to PORT in quantities specified for product data.
- B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, certifications, and quality control testing.
- C. Certificates may be recent or previous test results on material or product, but must be acceptable to PORT.

### **PART 2 PRODUCTS**

Not used.

### **PART 3 EXECUTION**

Not used.

**END OF SECTION**



**SECTION 01310**  
**PROJECT SCHEDULE**

**PART 1 GENERAL**

**1.1 CONTRACTOR'S PROJECT SCHEDULE**

**A. General**

1. The Project schedule requirement is established to ensure adequate planning, scheduling, management, and execution of the Work by the Contractor, and to enable the Port to evaluate work progress and make contract time adjustments.
2. The Work specified in this section consists of submitting a contract schedule, weekly schedules for progress meetings, and a final as-built schedule.
3. The planning, scheduling, management, and execution of the Work in accordance with the contract is the responsibility of the Contractor.
4. Develop a critical path methods (CPM) computer generated schedule showing a complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities.
5. Indicate submittal dates and review periods required for Shop Drawings, product data, samples, and product delivery date.
6. Identify milestones.

**B. Revisions**

1. Revise and re-submit schedule weekly to reflect changes in Scope of Work, but no less than once per month.
2. Show changes occurring since previous submittal.
  - a. Major changes in scope.
  - b. Activities modified since previous submittal.
  - c. Other identifiable changes.

**C. Submittals**

1. Submit three copies of initial schedule within five days after date of Contract award to PORT.
2. Submit three copies of revised scheduled weekly to PORT during weekly progress meeting.
3. Failure to submit Project Schedule and revisions on a timely basis may be considered cause for withholding any progress payments otherwise due under this Contract.

## 1.2 DELAYS AND RECOVERY

### A. General.

1. If, at any time during Project, CONTRACTOR fails to complete an activity by its latest scheduled Completion Date, CONTRACTOR must, submit within two working days a written statement as to how and when CONTRACTOR will reorganize the work force to return to the current Project Schedule.
2. Whenever it becomes apparent from progress evaluation and updated schedules that milestone Completion Dates and/or Contract Completion Dates will not be met, some or all of the following actions will be taken:
  - a. Increase construction staffing in such quantities and crafts to substantially eliminate backlog of Work.
  - b. Increase number of working hours per shift, shifts per workday, work days per week, or amount of construction equipment, or combination thereof, to substantially eliminate backlog of Work.
  - c. Reschedule Work items to achieve concurrence of accomplishment.

### B. Contract.

1. Under no circumstances will adding equipment, construction forces, or increasing working hours or any other method, manner or procedure to return to current Project Schedule be considered justification for Contract modification or for Contract acceleration.

## PART 2 PRODUCTS

Not used.

## PART 3 EXECUTION

Not used.

END OF SECTION

**SECTION 01400**  
**QUALITY ASSURANCE AND CONTROL**

**PART 1 GENERAL**

1.1 RELATED SECTIONS

- A. Section 01090 - References
- B. Section 01300 – Submittals
- C. Section 01600 - Materials and Equipment

1.2 DEFINITIONS

- A. Quality assurance testing is the testing of materials prior to their use in the Work and also any testing deemed necessary by PORT for acceptance of the installed Work.
- B. Quality control testing is the testing of materials prior to their delivery from a Manufacturer, or during construction, such as geomembrane liner seam testing, and such other tests specified in the various sections of the Technical Specifications to ensure compliance with the Contract Documents.

1.3 INSPECTION AND LABORATORY TESTING SERVICES

A. General Requirements.

- 1. Unless otherwise specified, CONTRACTOR is responsible for all required and necessary inspections and testing (surveys, measurements, or evaluations called for in the specifications or deemed necessary by PORT).
- 2. Quality control testing is at the expense of CONTRACTOR and where specifically required, performed by an independent testing firm. CONTRACTOR shall submit the name, address, and qualifications, along with the scope of proposed services of the proposed testing firm(s), to PORT within five days of Contract Award.
- 3. CONTRACTOR shall submit quality control test results within five days after completion of testing performed to PORT. CONTRACTOR shall provide the information specified for samples in Section 01300 on the submittal and include the name and address of the organization performing the test, and the date of the tests.
- 4. No work shall commence or be covered until approved by PORT.
- 5. CONTRACTOR shall notify PORT and DISTRICT in writing of the sources from which it proposes to obtain material requiring approval, certification, or testing. Such notification must be made as soon as possible, but no later than five days after Contract Award.
- 6. CONTRACTOR shall allow sufficient time in its schedule to accommodate PORT acceptance testing or approval of tests. No separate payment will be made for delays or standby during this time.

7. Results of the PORT's acceptance tests will be made known to CONTRACTOR as soon as practical; however, it remains the CONTRACTOR's responsibility to obtain the specified requirements at all times. Any delay in advising CONTRACTOR of test results shall not act as a waiver of this responsibility.
  8. Furnish, for approval or evaluation by PORT whenever requested, samples of materials as directed. These samples shall be completely representative of the materials or products proposed to be used in the work. The results will be used as a basis for acceptance or rejection in accordance with the specifications for the particular material(s).
  9. Pressure tests and hydrostatic testing called for in the Plans, Technical Specifications, or deemed necessary by PORT or DISTRICT shall be performed by CONTRACTOR and witnessed by DISTRICT.
  10. Specific testing tasks are specified in individual sections as required.
- B. Independent Testing Companies.
1. CONTRACTOR shall retain an approved independent testing company to perform density testing for soils.
  2. CONTRACTOR shall retain an approved independent testing company to perform disinfecting and bacteriological testing as specified by DISTRICT specifications and standards for all new water lines and valves.
- C. PORT
1. PORT will have the right to perform various types of tests at any time, including evaluation of line, elevation, grade, depth, thickness, compaction, density, material, composition, pressure, or other analyses deemed necessary by the Port.
  2. PORT reserves the right to perform additional testing at any time to determine conformance with the requirements of the Contract Documents.
  3. Acceptance tests which fail to meet the specified requirements may be re-checked by PORT after the CONTRACTOR takes remedial action. The cost of re-checking shall be borne by CONTRACTOR.
- D. DISTRICT
1. DISTRICT shall supervise and inspect all pipe installation.
  2. CONTRACTOR shall submit an itemized list of all pipes and fittings to be used in conformance to DISTRICT's specifications and standards.
  3. All new water systems (lines, valves, hydrants, and services) shall be individually pressure tested, chlorinated, and tested for bacteria in accordance with APWA, Oregon Chapter standard specifications and OAR's, and in the presence of a DISTRICT representative.
  4. CONTRACTOR shall retain an approved independent testing company to perform disinfecting and bacteriological testing as specified by DISTRICT specifications and standards for all new water lines and valves.

## 1.1 SUBMITTALS

- A. CONTRACTOR must notify PORT in writing of the sources from which it proposes to obtain material requiring approval, certification, or testing. Such notification must be made as soon as possible after award of Contract, but no later than five days after receipt of the Notice to Proceed.
- B. CONTRACTOR shall submit for approval the proposed independent testing companies to perform density testing and bacteriological testing.
- C. CONTRACTOR shall submit an itemized list of all pipes and fittings to be used in conformance to DISTRICT's specifications and standards.

## 1.2 QUALITY ASSURANCE - CONTROL OF INSTALLATION

### A. DISTRICT

- 1. Monitor quality control over Suppliers, Manufacturers, products, services, Site conditions, and workmanship, to produce Work of specified quality.
- 2. Comply with Manufacturers' instructions, including each step in sequence.
- 3. Should Manufacturers' instructions conflict with Contract Documents, request clarification from PORT before proceeding.
- 4. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- 5. Perform Work by persons qualified to produce workmanship of specified quality.

## 1.3 TOLERANCES

- A. Monitor tolerance control of installed products to produce acceptable Work.
- B. Do not permit tolerances to accumulate.
- C. Comply with Manufacturers' tolerances. Should Manufacturers' tolerances conflict with Contract Documents, request clarification from PORT before proceeding with Work.
- D. Adjust products to appropriate dimensions; position before securing products in place.

## 1.4 REFERENCES

- A. For products or workmanship specified by association, trade, or other consensus standard, comply with requirements of the standard except when more rigid requirements are specified, or are required by applicable codes.
- B. Conform to reference standard by date of issue current on date for receiving Bids, except where a specific date is established by code.
- C. Obtain copies of standards where required by product specification sections.

- D. Do not alter the contractual relationship, duties, and responsibilities of the parties in Contract nor those of PORT from the Contract Documents by mention or inference otherwise in any reference document.

#### 1.5 INSPECTION AND LABORATORY TESTING SERVICES

- A. CONTRACTOR shall perform all quality control inspections, tests, and other services specified in individual specification sections.
- B. Inspecting, testing, and source quality control may occur on or off the Site.
- C. CONTRACTOR shall submit reports to PORT indicating whether inspections and test results are in compliance or non-compliance with Contract Documents.
- D. Notify PORT or Utility 72 hours prior to expected time for operations requiring inspection, oversight, or testing services.

#### 1.6 MANUFACTURERS' FIELD SERVICES AND REPORTS

- A. Field Services.
  - 1. When specified in individual specification sections, require material or Product Suppliers or Manufacturers to provide qualified staff personnel to observe Site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment, and as applicable, to initiate instructions when necessary.
  - 2. Report observations and Site decisions or instructions given to applicators or Installers that are supplemental or contrary to Manufacturers' written instructions.
- B. Submittals.
  - 1. Submit report within 30 days of observation to PORT for information.

### **PART 2 PRODUCTS**

Not used.

### **PART 3 EXECUTION**

Not used.

**END OF SECTION**

**SECTION 01560**  
**TEMPORARY FACILITIES AND CONTROLS**

**PART 1 GENERAL**

**1.1 SUMMARY**

- A. Section includes temporary facilities and controls required during the term of the Contract for the protection of the environment and the health and safety of workers and general public.
- B. Construct/install, maintain and operate construction facilities in accordance with the applicable federal, state, and local laws, rules, and regulations. Notwithstanding contrary provisions of General Conditions and Special Conditions, nothing in the Plans and Technical Specifications shall be construed to permit Work not conforming to such laws, rules, and regulations.
- C. Temporary facilities and controls shall include furnishing all equipment, materials, tools, accessories, incidentals, and labor, and performing all Work for the installation of equipment and construction of facilities, including their maintenance and operation during the term of the Contract.
- D. Temporary controls shall include, but not limited to, the following:
  - 1. Temporary Facilities
  - 2. Disposal
  - 3. Dust control
  - 4. Noise control
  - 5. Erosion, sediment, and pollution control
  - 6. Traffic and safety controls
  - 7. Protection of existing infrastructure, fencing, roads, and trees.
- E. Perform Work as specified in this Technical Specification and as required by PORT.
- F. Maintain equipment and accessories in clean, safe, and sanitary condition at all times until completion of the Contract.
- G. Minimize land disturbances related to the construction facilities to the greatest extent possible and restore land to the extent reasonable and practical, to its original contours by grading to provide positive drainage and by seeding the area to match with existing vegetation or as specified elsewhere.

## 1.2 SUBMITTALS

### A. Work Plans

1. Work Area and Staging Plan: CONTRACTOR shall submit to PORT, for approval, a designated work area and equipment staging plan. This plan will consider areas within the project area right-of-way.
2. Traffic Control Plan: CONTRACTOR shall submit to the Engineer, for approval, the following submittals: Traffic Control Plan: Traffic flow map, including CONTRACTOR's equipment and traffic flow; location of signs and traffic control devices and their types.
3. EROSION AND SEDIMENT CONTROL PLAN (ESCP): Use either the Agency's ESCP, a CONTRACTOR modify version of the Agency's ESCP, or a CONTRACTOR developed ESCP. Submit the following for approval ten calendar days before the preconstruction conference:
  - a. When using the Agency's ESCP without modification, a written notification indicating the Agency's ESCP will be used without modification.
  - b. When using a CONTRACTOR modified version of the Agency's ESCP or when using a CONTRACTOR developed ESCP, include the following:
    - c. Proposed ESCP showing all erosion BMP and quantities of all BMP.
    - d. Implementation schedule for all BMP.
    - e. Do not begin any site activities that have potential to cause erosion or sediment movement until the ESCP and implementation schedules are approved by the Engineer.
    - f. Update the ESCP and schedule as needed for unexpected storm or other events to ensure that sediment-laden water does not leave the construction site.

## 1.3 TEMPORARY FACILITIES

- A. PORT shall designate an area on the PORT-owned property located at 3350 Neal Creek Mill Road in Hood River that will serve as a CONTRACTOR work area, storage area, and parking for employees. CONTRACTOR shall use measures for protection of materials and equipment temporarily stored in this area from damage or theft and fully relieve the PORT from this responsibility. CONTRACTOR shall make arrangements for and provide all necessary temporary facilities associated with the Work, including, but not limited to:
1. Storage of Materials and Equipment.
  2. Construction Equipment.
  3. Temporary Sanitary Facilities.
  4. Temporary Electric Power.
  5. Temporary Water, including water for performing hydrostatic testing.
  6. First Aid Facilities.
  7. Security.



#### B. STORAGE OF MATERIALS AND EQUIPMENT

1. PORT has room for work storage and staging area at PORT-owned property located at 3305 Neal Creek Mill Rd in Hood River. The location will be coordinated with PORT on the exact area.
2. Confine all operations, including storage of materials, to approved areas.
3. CONTRACTOR is liable for any and all damage caused during such use of PORT's or others' property.
4. Store materials in accordance with Manufacturer's instructions when applicable.

#### C. CONSTRUCTION EQUIPMENT

1. Erect, equip, and maintain all construction equipment in accordance with all applicable statutes, laws, ordinances, rules, and regulations of authority having jurisdiction.
2. Provide, maintain, and remove upon completion of the Work, all temporary rigging, scaffolding, hoisting equipment, debris boxes, barricades around openings and excavations, fences, ladders, and all other temporary work, as required for all Work hereunder.
3. Construction equipment and temporary work shall conform to all the requirements of state, county, and local authorities, OSHA, and underwriters that pertain to operation, safety, and fire hazard.
4. Furnish and install all items necessary for conformity with such requirements, whether or not called for under separate sections of these Technical Specifications.

#### D. TEMPORARY SANITARY FACILITIES

1. Provide temporary sanitary facilities for use by all employees and persons engaged in the Work, including Subcontractors, their employees and authorized visitors.
2. Sanitary facilities include enclosed chemical toilets and washing facilities, meeting the requirements of local public health standards.
3. Locate sanitary facilities and maintain in a sanitary condition during the entire course of the Work.

#### E. TEMPORARY ELECTRIC POWER

1. Provide and maintain during the course and progress of the Work, all electrical power and wiring requirements to facilitate the Work of all trades and services associated with the Work.
2. Make arrangements with the applicable serving Utility company or provide generators and pay all charges for providing and maintaining electrical service including usage costs at the Site.
3. Furnish all temporary wiring, feeders, and connections.
4. Routing of temporary conductors, including welding leads must not create a safety hazard nor interfere with operation and maintenance of existing facilities.

5. Install all temporary wiring in accordance with the applicable requirements of the local electrical code.

F. TEMPORARY WATER

1. CONTRACTOR shall be responsible for securing water supply for construction water and dust control.

G. FIRST AID FACILITIES

1. CONTRACTOR shall provide first aid equipment and supplies to serve all CONTRACTOR personnel at the Site.

H. SECURITY

1. Make all necessary provisions and be responsible for the security of the Work and the Site until final inspection and acceptance of the Work unless otherwise approved by PORT.

1.4 DISPOSAL

A. Disposal of waste material off the Site and Staging area in accordance with applicable state, federal, and local regulations.

1.5 DUST CONTROL

A. CONTRACTOR shall be responsible for providing adequate dust control measures during the term of the Contract.

B. Dust control consists of furnishing water supply, required equipment, additives, accessories, and incidentals, and carrying out proper and efficient measures wherever as often as necessary to reduce dust nuisance, and to prevent dust originating from construction operations throughout the duration of the Contract, as required by PORT.

C. Apply water by means of pressure-type distributors or pipelines equipped with a spray system or hoses with nozzles that will ensure a uniform application of water.

D. Equip all equipment used for the application of water with a positive means of shut-off.

E. Unless otherwise permitted by PORT or unless all the water is applied by means of pipelines, provide at least one mobile unit with a minimum capacity of 3,500 gallons at the Site in operating condition for applying water at the Site during construction.

1.6 NOISE CONTROL

A. Comply with the requirements of OAR 437, Division 2/G, 1910.95, Occupational Noise Exposure.

B. Where the public and nearby properties are exposed to construction noise that is harmful or disruptive, take steps to mitigate the noise level.

## 1.7 TRAFFIC AND SAFETY CONTROLS

- A. Post traffic control signs or devices in construction areas and road to protect workers, the public, and equipment. The signs or devices must conform to the American National Standards Institute, Manual on Uniform Traffic Control Devices for Streets and Highways.
- B. Remove signs or traffic control devices as soon as they have served their purpose. It is particularly important to remove any markings on road surfaces that under conditions of poor visibility could cause a driver to turn off the road or into traffic moving in the opposite direction.
- C. Barricades for protection of employees must conform to the portions of the American National Standards Institute, Manual on Uniform Traffic Control Devices for Streets and Highways, relating to barricades.
- D. Material Haul on Public Roads: Follow all requirements stated in the permits for using public roads for hauling materials to the Site.
- E. Provide flag persons with properly equipped International Orange protective clothing and flags, as necessary to direct or divert pedestrian or vehicular traffic.
- F. Construct and maintain fences, planking, barricades, lights, shoring, and warning signs as required by local authorities and federal and state safety ordinances, and as required, to protect PORT's property from injury or loss and as necessary for the protection of the public, and provide walks around any obstructions made in a public place for carrying on the Work covered in this Contract. Leave all such protection in place and maintained until removal is authorized.
- G. Guard and protect all workers, pedestrians, and the public from excavations, blasting operations, construction equipment, all obstructions, and other dangerous items or areas by means of adequate railings, guard rails, temporary walks, barricades, warning signs, sirens, directional signs, overhead protection, planking, decking, danger lights, etc.

## 1.8 EROSION AND SEDIMENT AND POLLUTION CONTROL

### A. COMPLIANCE

- 1. CONTRACTOR shall comply with all local, state, and federal regulations for the protection of state waters and restriction of sediments and pollution from the project area.
- 2. All Work shall be in accordance with these specifications and with ODOT Standard Specification 0280 Erosion and Sediment Control.

### B. PRACTICES

- 1. Measures shall include all erosion control best management practices as shown on the Plans and any other measure necessary to manage the Work.

C. MANAGEMENT

1. Erosion and Sediment Erosion Control Manager: Designate and provide an ESCM that possesses a valid ODOT ESCM certification.

D. DEWATERING

1. CONTRACTOR shall comply with all local, state, and federal regulations for the dewatering activities of the Work area.
2. CONTRACTOR shall anticipate water within the trench zone and be prepared to manage the water levels through temporary dewatering activities.

1.9 MAINTENANCE

- A. Maintain all temporary controls in good working conditions during the term of the Contract for the safe and efficient transport of equipment and supplies, and for construction of permanent works, as required by PORT.

1.10 STATUS AT COMPLETION

- A. Upon completion of the Work, or prior thereto, when so required by P:
  1. Remove all temporary controls, equipment, and other stored materials, and restore disturbed areas utilized for temporary facilities to near original, natural state, or as otherwise indicated or directed

Repair damage to roads caused by, or resulting from CONTRACTOR's Work.

**PART 2 PRODUCTS**

Not used.

**PART 3 EXECUTION**

Not used.

**END OF SECTION**

**SECTION 01600**  
**MATERIALS AND EQUIPMENT**

**PART 1 GENERAL**

1.1 SECTION INCLUDES:

- A. General requirements for material and equipment including handling, transportation, and storage thereof.

1.2 RELATED SECTIONS:

- A. General Conditions.
- B. Section 01300 - Submittals

1.3 QUALITY OF MATERIALS

- A. Provide new materials and equipment, except as may be indicated in the Technical Specifications or on Plans.
- B. Materials and equipment must be manufactured, handled, transported, stored, and used in accordance with the requirements of the Manufacturer and to ensure completed Work meets the requirements of the Contract Documents.

1.4 HANDLING AND TRANSPORTATION

A. Handling:

- 1. Avoid bending, scraping, or overstressing materials and equipment. Protect projecting parts by blocking with wood, by providing bracing, or by other approved methods.
- 2. Protect materials and equipment from soiling and moisture by wrapping or by other approved means.
- 3. Protect small parts of equipment and accessories in containers such as boxes, crates, or barrels to avoid dispersal and loss. Firmly secure an itemized list and description of contents to each such container.

- B. Transportation: Load, transport, unload, and store all materials and equipment such that they are kept clean and free from damage.

1.5 STORAGE AND PROTECTION

- A. Provide sheltered, weather-tight, or heated weather-tight storage as required for materials and equipment subject to weather damage.
- B. Provide blocking, platforms, or skids for materials and equipment subject to damage by contact with ground.
- C. Store packaged materials in their original unbroken package or container.

D. Protect materials and equipment from damage during warehousing operations.

**PART 2 PRODUCTS**

Not used.

**PART 3 EXECUTION**

Not used.

**END OF SECTION**

**SECTION 01630**  
**PRODUCT OPTIONS AND SUBSTITUTIONS**

**PART 1 GENERAL**

1.1 SUMMARY

- A. This Section describes product options available to BIDDERS and CONTRACTOR, plus procedures for securing approval of proposed substitutions.
- B. Related Work:
  - 1. Make submittals in accordance with pertinent provisions of Section 01300.

1.2 PRODUCT OPTIONS

- A. Contract is based on standards of quality established in the Contract Documents.
  - 1. In agreeing to the terms and conditions of the Contract, CONTRACTOR accepts responsibility to verify that the specified products will be available and to place orders for all required materials in such a timely manner as is needed to meet its agreed Project Schedule.
  - 2. Neither PORT nor ENGINEER has agreed to the substitution of materials or methods called for in the Plans and Technical Specifications, except as they may specifically otherwise state in writing.
- B. Materials and/or methods specified by name:
  - 1. Where materials and/or methods are specified by naming one single Manufacturer and/or model number, without stating that equal products will be considered, only the material and/or method named is approved for incorporation into the Work.
  - 2. Should CONTRACTOR demonstrate to the approval of PORT that a specified material or method was ordered in a timely manner and will not be available in time for incorporation into this Work, CONTRACTOR must submit to PORT such data on proposed substitute materials and/or methods as are needed to help PORT determine suitability of the proposed substitution.
- C. Where materials and/or methods are specified by name and/or model number, followed by the words "*or an equal approved in advance by PORT*" or similar wording:
  - 1. The material and/or method specified by name establishes the required standard of quality;
  - 2. Materials and/or methods proposed by CONTRACTOR to be used in lieu of materials and/or methods so specified by name must in all ways equal or exceed the qualities of the named materials and/or methods;
  - 3. Proposed substitutions must be described in CONTRACTOR's General Contract Bid.
- D. The following products do not require further approval except for interface within the Work:

1. Products specified by reference to standard specifications such as ASTM and similar standards;
  2. Products specified by Manufacturer's name and catalog model number.
- E. Where the phrase "*or equal*," or "*or equal as approved by PORT*," occurs in the Contract Documents, do not assume that the materials, equipment, or methods will be accepted as equal unless the item has been specifically so approved for this Work by PORT.
- F. The decision of PORT is final.

### 1.3 DELAYS

- A. Delays in construction arising by virtue of the non-availability of a specified material and/or method will not be considered by PORT as justifying an extension of the agreed Time of Completion.

### PART 2 PRODUCTS

Not used.

### PART 3 EXECUTION

Not used.

**END OF SECTION**



**SECTION 01700**  
**CONTRACT CLOSE-OUT**

**PART 1 GENERAL**

1.1 SECTION INCLUDES:

- A. Closeout procedures.
- B. Substantial Completion.
- C. Final cleaning.
- D. Final Inspection.
- E. Re-inspection Costs.
- F. Closeout Submittals.
- G. Release of Liens or Claims.
- H. Final Acceptance.
- I. Final Adjustment of Accounts.
- J. Project Record Documents.
- K. Payment.
- L. Post-Construction Inspection.
- M. As-built Drawings
- N. Cleanup
- O. Certificates of Final Approval
- P. Certificates of Completion

1.2 RELATED SECTIONS

- A. Section 01027 – Application for Payment
- B. Section 01300 – Submittals
- C. Section 01560 – Temporary Facilities and Controls

1.3 CLOSEOUT PROCEDURES

- A. It is the intent of these Contract Documents that CONTRACTOR shall deliver a complete and useable facility capable of performing its intended functions and ready for use.
- B. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for PORT's inspection.

- C. PORT will make an inspection after receipt of CONTRACTOR's certification.
- D. Submit a list of items to be completed or corrected.
- E. Provide required submittals by governing or other authorities to PORT.
- F. Submit final Application for Payment identifying total adjusted Contract sum, previous payments, and sum remaining due. Use format described in Section 01027.
- G. DISTRICT will occupy all portions of the Site.

#### 1.4 SUBSTANTIAL COMPLETION

- A. If it appears to PORT that Work is substantially complete:
  - 1. PORT may request and CONTRACTOR shall prepare and submit a list of items to be completed or corrected as determined by the inspection.
  - 2. PORT will issue a Certification of Substantial Completion, with appropriate conditions, accompanied by a list of the items to be completed and corrected, as verified and amended by PORT or DISTRICT. Omission of any item from the list shall not relieve CONTRACTOR from responsibility to complete all the Work in accordance with the Contract.
  - 3. DISTRICT may commence with occupancy of the Project or designated portion of the Project.
  - 4. CONTRACTOR shall complete all the Work within the time designated in the Certificate of Substantial Completion, or if not so designated within a reasonable time.
- B. Should PORT consider that Work is not substantially complete:
  - 1. PORT shall notify CONTRACTOR stating the reasons in writing.
  - 2. CONTRACTOR shall complete Work and send second written notice to PORT certifying that Project or designated portion of the Project is substantially complete.
  - 3. PORT shall confirm that the Work has been completed and either issue another Punchlist or Certification of Substantial Completion to CONTRACTOR.

#### 1.5 FINAL CLEANING

- A. Execute final cleaning prior to final inspection.
- B. Remove waste and surplus materials, rubbish, and construction facilities from the Site. Dispose of materials as directed by the PORT.
- C. CONTRACTOR shall touch-up or repair finished surfaces on structures, equipment, fixtures, or installations that have been damaged prior to final acceptance.

#### 1.6 FINAL INSPECTION

- A. CONTRACTOR shall submit written certification that:
  - 1. Work has been completed in accordance with Contract Documents.

2. Equipment and systems have been tested in the presence of the PORT and are operational.
  3. The Project is completed, and ready for final inspection.
- B. PORT will make a final inspection within a reasonable time after receipt of certification.
- C. Should PORT consider that Work is complete in accordance with requirements of Contract Documents, PORT shall request CONTRACTOR to make Project closeout submittals.
- D. Should PORT consider that Work is not complete:
1. CQA Engineer of Record shall notify CONTRACTOR in writing stating the reasons.
  2. CONTRACTOR shall take immediate steps to remedy the stated deficiencies and upon completion send a second written notice to PORT certifying that Work is complete.
  3. PORT will re-inspect Work.

#### 1.7 RE-INSPECTION COSTS

- A. If PORT is required to perform additional inspections because of inaccuracies in CONTRACTOR's original certification(s), PORT will charge CONTRACTOR for the resulting costs incurred by PORT including Engineering fees.

#### 1.8 CLOSEOUT SUBMITTALS

- A. Project Record Documents.
- B. Guarantees, Bonds, and Letters of Credit required by these Technical Specifications.
- C. Easement Release(s) if applicable.
- D. At the close of the Contract CONTRACTOR shall:
1. Pay all utility bills.
  2. Remove all temporary service equipment that may remain.

#### 1.9 RELEASE OF LIENS OR CLAIMS

- A. Final acceptance will not be given until satisfactory evidence of release of liens has been submitted to PORT.

#### 1.10 FINAL ACCEPTANCE

- A. PORT will provide CONTRACTOR with Final Acceptance which will begin the warranty periods. Date of Final Acceptance from PORT sets the Completion Date of the Contract.

#### 1.11 FINAL ADJUSTMENT OF ACCOUNTS

- A. Submit final statement of accounting to PORT.
- B. Statement shall reflect all uncompleted adjustments:

1. Additions and deductions resulting from:
  - a. Previous Change Orders.
  - b. Cash allowances.
  - c. Unit prices.
  - d. Other adjustments.
  - e. Deductions for uncorrected Work.
  - f. Penalties and bonuses.
  - g. Deductions for liquidated damages.
2. Unadjusted sum remaining due.

#### 1.12 PROJECT RECORD DOCUMENTS

- A. Maintain one set of the following record documents; record actual revisions to the Work.
  1. Construction Drawings.
  2. Technical Specifications.
  3. Addenda.
  4. Change Orders and other Modifications to the Contract.
  5. Reviewed Shop Drawings, product data, and samples.
- B. Ensure entries are complete and accurate, enabling future reference by PORT.
- C. Store Record Documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. Technical Specifications: Legibly mark and record at each product section description of actual products installed, included the following:
  1. Manufacturer's name, product model, and number.
  2. Product substitutions or alternates utilized.
  3. Changes made by Addenda and Modifications.
- F. Record Documents and Shop Drawings: Legibly mark each item to record actual construction including:
  1. Measured horizontal and vertical location of items listed in Article 1.04 of Section 01052.
  2. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
  3. Field changes of dimension and detail.
  4. Details not indicated on original Construction Drawings.
- G. Submit documents to PORT with claim for final Application for Payment.
- H. FINAL PAYMENT WILL NOT BE MADE BY OWNER UNTIL RECORD DOCUMENTS ARE SUBMITTED AND APPROVED.

- I. RETAINAGE WILL NOT BE PAID BY PORT UNTIL CONTRACTOR HAS SUBMITTED EVIDENCE THAT ALL UNCONTESTED INVOICES FROM SUBCONTRACTORS AND SUPPLIERS HAVE BEEN PAID IN FULL.

#### 1.13 POST-CONSTRUCTION INSPECTION

- A. Prior to expiration of one year from date of final acceptance, PORT may make visual inspection of the Project with CONTRACTOR to determine whether correction of Work is required, in accordance with provisions of the General Conditions.
- B. For guarantees beyond one year, PORT will make inspections after notification to CONTRACTOR.
- C. PORT will promptly notify CONTRACTOR, in writing, of any observed deficiencies.

#### 1.14 PAYMENT

- A. CONTRACTOR shall submit a Final Application for Payment.
- B. Work performed under this Section shall be considered incidental to the construction Bid items, and no separate or additional payment will be made.
- C. Should Final Completion be materially delayed through no fault of CONTRACTOR, PORT may issue a Final Certificate for Payment, in accordance with the Technical Specifications and existing laws.

### **PART 2 PRODUCTS**

Not used.

### **PART 3 EXECUTION**

Not used.

**END OF SECTION**

**DIVISION 2**

**SITE WORK**

**SECTION 02223**  
**TRENCHING, BACKFILLING, AND COMPACTING**

**PART 1 GENERAL**

1.1 DESCRIPTION:

- A. Bottom of water line trench elevation is 6-inches below bottom of pipe elevation shown on the Plans.
- B. This section describes excavating, backfilling, and compacting for underground utilities and structures.
- C. Contaminated Soil. Contaminated soil is soil that produces fuel or chemical odors, produces an oil sheen on the surface of water, has staining, contains debris or other visible indicators, or soil designated by the Engineer as contaminated.
  - 1. If CONTRACTOR encounters suspected contaminated soil in the Work area beyond that mentioned in the Contract Documents, CONTRACTOR shall immediately stop all Work in the area of the suspected contamination and notify the PORT.
  - 2. PORT will characterize contaminated soil, obtain profile for disposal, and determine the location of disposal.
- D. Unsuitable Material
  - 1. Material present at the design bottom of trench elevation designated by PORT or DISTRICT as unsuitable as a foundation material and which must be over-excavated.
- E. Paved Right-of Way Requirements.
  - 1. By the end of each day after Work in the right-of-way, CONTRACTOR shall restore all trenching within the paved right-of-way with Asphalt Concrete Pavement (ACP) or Cold Patch.
  - 2. No exposed trench backfill or steel plating shall be permitted.
  - 3. All temporary surfacing (cold patch) shall be considered incidental to the Work.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 01560, Temporary Control
- B. Section 02660, Water Lines

1.3 REFERENCES

- A. AASHTO: American Association of State Highway and Transportation Officials.
  - 1. AASHTO T027: Standard Method of Test for Sieve Analysis of Fine and Coarse Aggregates.

2. AASHTO T099: Standard Method of Test for Moisture-Density Relations of Soils Using a 2.5-kg (5.5-lb) Rammer and a 305-mm (12-in.) Drop.
  3. AASHTO T180: Standard Method of Test for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.
- B. ASTM: American Society for Testing and Materials.
1. ASTM D698: Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12 400 ft-lbf/ft<sup>3</sup> (600 kN-m/m<sup>3</sup>)).
  2. ASTM D1556: Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method.
  3. ASTM D1557: Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft<sup>3</sup> (2,700 kN-m/m<sup>3</sup>)).
  4. ASTM D6938 - Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).
  5. ASTM D422 - Standard Test Method for Particle-Size Analysis of Soils.
- C. ODOT: Oregon Department of Transportation – Standard Specifications.
1. ODOT Section 00400 – Drainage and Sewers.
  2. ODOT Section 00442 – Controlled Low Strength Materials
  3. ODOT Section 02630 - Base Aggregate.
- D. OSHA: Occupational Safety and Health Administration.

#### 1.4 SUBMITTALS

- A. Submit Manufacturer's product data for utility warning tape, utility locate wire, and electrical splices.
- B. Submit standard Proctor test results (ASTM D 698) for aggregate to be used of Pipe Bedding, Pipe Zone Material and Trench Backfill before any material is placed in the trench.
- C. Submit written certification of proposed CDF materials proportions and compressive strength before any material is placed in the trench.
- D. Submit plan for disposal of water removed during dewatering.

## PART 2 PRODUCTS

### 2.1 TRENCH EXCAVATION MATERIAL

- A. Bottom of trench shall be 6-inches below the bottom of water line pipe elevation shown on the Plans.
- B. Soil material, regardless of condition, excavated from subgrade to the bottom of the trench.
- C. Trench excavation material may not be used as backfill unless specifically approved for reuse by the PORT.



## 2.2 PIPE BEDDING

- A. Material placed from 0.5-foot below bottom of utility pipe to the spring-line of the utility pipe.
- B. Crushed dense graded aggregate: ODOT Section 02630.10,  $\frac{3}{4}$ "-0".

## 2.3 PIPE ZONE MATERIAL

- A. Material placed from spring-line of utility pipe to 1-foot above the top of the utility pipe.
- B. Crushed dense graded aggregate: ODOT Section 02630.10,  $\frac{3}{4}$ "-0".

## 2.4 TRENCH BACKFILL

- A. Material placed in trench above Pipe Zone Material.
- B. Crushed dense graded aggregate: ODOT Section 02630.10,  $\frac{3}{4}$ "-0", or Trench Excavation Material with a maximum particle size of  $\frac{3}{4}$ " that has been specifically approved by the PORT for use as Trench Backfill.

## 2.5 CONTROLLED DENSITY FILL (CDF)

- A. Material placed where less than 30-inches of cover exists over water line and where water line is in the alignment of the road.
- B. CDF replaces Pipe Zone Material and Trench Backfill.
- C. Material meeting requirements of Controlled Low Strength Materials: ODOT Section 00442.
- D. Self-leveling and self-compacting, lean cementitious material consisting of fly ash, cement, fine aggregates, water and admixtures if necessary.
- E. Material having a 28-day compressive strength of 100 psi to 200 psi.

## 2.6 UTILITY WARNING TAPE

- A. Use 3-inch wide, 3.5-mil thick non-metallic plastic tape for all utilities 4-feet deep or less. For utilities, more than 4-feet deep, use 6-inch wide, 3.5-mil thick non-metallic plastic tape. Tape should be imprinted continuously along its length with "CAUTION – STOP DIGGING – BURIED WATER LINE BELOW", or similar. Tape shall be Blue for Water.

# PART 3 EXECUTION

## 3.1 TRENCH EXCAVATION

- A. Excavate and haul all Trench Excavation Material, not consisting of contaminated soil and specifically approved by the PORT for reuse as Trench Backfill, to the PORT's Lower Hanel Mill site. Stockpile in PORT designated location. Track walk stockpile at the end of each work day to minimize erosion potential. Establish and maintain erosion and sediment control measures around the stockpile.

- B. Dig trench to lines and grades established on the Plans or as directed.
- C. Examine the trench bottom with PORT and DISTRICT for the presence of unsuitable material.
- D. Trench width shall be as shown on the Plans. If not shown on the Plans, trench width shall be as follows:
  - 1. Not less than the outside diameter of the pipe plus 12 inches.
  - 2. Not more than the inside diameter of the pipe plus 30 inches, to a point 12 inches (minimum) above the top of the pipe, unless otherwise approved.
  - 3. Minimum of 12 inches between structures and sides of excavation.
- E. Trench length shall be sufficient to allow for satisfactory construction and inspection of the project, without endangering other construction work or adjacent facilities.
- F. Slope trench walls to OSHA standards or shore trench walls.
- G. Use hand methods for excavation that cannot be accomplished without endangering existing or new structures or other facilities.

### 3.2 TRENCH PROTECTION

- A. Provide materials, labor, and equipment necessary to protect trenches at all times.

### 3.3 DEWATERING

- A. Temporary removal and disposal of all water entering the trench during the time the trench is being prepared for pipe laying, during the laying of the pipe and until backfill of the pipe zone material or CDF has been completed. Dispose of water in an approved manner without damaging adjacent property.
- B. Dewatering is considered incidental to the Work.
- C. CONTRACTOR shall temporarily control water in trench through dewatering activities including providing all necessary materials, labor, and equipment as necessary to ensure the integrity of the trench excavation and pipe installation.
- D. Do not place any fill materials under water.

### 3.4 SHEETING AND BRACING

- A. Furnish and install sheeting and bracing as required to prevent caving or sloughing of trench walls in according to OSHA.
- B. Solid sheet trench, if necessary, to preserve a suitable grade for the pipe. Drive far enough below grade to prevent inflow of material from outside of trench lines.
- C. Remove sheeting and bracing from trench before or during backfilling operations unless otherwise directed.

### 3.5 TRENCH STABILIZATION MATERIAL

- A. Place to uniform grade in loose-lift thickness not exceeding 9 inches.
- B. Compact to a minimum of 95 percent of maximum dry density as measured by the standard proctor ASTM D698.

### 3.6 PIPE BEDDING

- A. Pipe Bedding shall be as shown on the Plans.
- B. Place in loose lift thickness not exceeding 9 inches.
- C. Place Pipe Bedding material to a uniform grade. Compact to a minimum of 95 percent of maximum dry density as measured by the standard Proctor ASTM D698 so the bedding provides firm, unyielding support along the entire length of the water line.
- D. Shape Pipe Bedding so that the barrel of the water line pipe is uniformly supported, to the springline, and is in continuous contact with the Pipe Bedding.

### 3.7 PIPE ZONE MATERIAL

- A. Pipe Zone Material shall be as shown on the Plans.
- B. Place Pipe Zone Material uniformly on both sides of the pipe in maximum 6-inch thick uncompacted lifts until 12 inches over the pipe.
- C. Solidly ram and tamp backfill into spaces around pipe and related structures.
- D. Compact to a minimum of 95 percent of maximum dry density as measured by the standard Proctor ASTM D698.
- E. Shape Pipe Bedding so that the lower quarter of the pipe circumference, to the springline, is in continuous contact with the Pipe Bedding.

### 3.8 TRENCH BACKFILL

- A. Conduct utility check tests before backfilling. Backfill and compact trench before acceptance testing.
- B. Place Trench Backfill in maximum 12-inch thick uncompacted lifts.
- C. Compact Trench Backfill to a minimum of 95 percent of maximum density as measured by Standard Proctor ASTM D698, unless otherwise directed.
- D. Protect utilities and structures from lateral movement, damage from impact, or unbalanced loading to avoid displacement of utilities and structures.
- E. Do not place Trench Backfill against concrete structures until the concrete has cured for at least 14 days or has reached 90 percent of its designed strength.
- F. Maintain backfilled trench surface between any two successive manholes until the following operations have been completed and approved.

1. Service connections installed, backfilled, and compacted, including water settling when required.
  2. Construction of manholes and appurtenances.
  3. Hydrostatic or air testing.
  4. Cleanup and restoration of all physical features.
  5. Utilities restored to their original condition or better.
  6. All work required between the two manholes accomplished.
- G. Maintain backfilled trench surface between any two successive valves until the following operations have been completed and approved.
1. Service connections installed and backfilled.
  2. Valves, valve boxes, and hydrants installed.
  3. Hydrostatic testing.
  4. Flushing and sterilization.
  5. Cleanup and restoration of all physical features.
  6. Utilities restored to their original condition or better.
  7. All work required between the two valves accomplished, including restoration of surface to specified condition.

### 3.9 CONTROLLED DENSITY FILL (CDF)

- A. Place CDF in place of Pipe Zone Material and Trench Backfill where indicated on the Plans or as directed by the PORT.

### 3.10 TESTING

- A. Backfill references in this section include Trench Stabilization Material, Pipe Bedding, Pipe Zone Material and Trench Backfill.
- B. CONTRACTOR shall retain an approved independent testing company to conduct in-place density tests in accordance with ASTM D6938 or D1556 requirements.
- C. At a minimum, 1 density test shall be performed in each lift of backfill every 200 feet.
- D. The PORT or DISTRICT may require additional tests at lateral crossings.
- E. If required compaction density is not achieved, re-compact and/or replace and re-compact the backfill.
- F. Should routine field densities taken during construction show the specified compaction is not being obtained because of changes in soil types or for any other reason, the compacting procedure will be modified.
1. In no case will excavation, pipe-laying, or other operation be allowed to proceed until the specified compaction is attained.

2. Changes in methods may be required to accommodate changes in soil conditions.

G. Settlement.

1. Any subsequent settlement of trench or structure backfill during the maintenance period shall be considered to be the result of improper compaction and shall be promptly corrected.

3.11 REMOVAL AND PLUGGING OF ABANDONED PIPES, CONDUITS, CULVERTS, AND MISCELLANEOUS STRUCTURES

A. Removal of Abandoned Pipes, Conduits, and Other Items:

1. Trenching: Abandoned pipes and conduits encountered during trench excavation shall be removed the full width of the trench. If a pipe is encountered by multiple trenches, remove pipe the full width of affected area.
2. Excavation: Abandoned pipes or portions of other items exposed during excavation shall be removed a minimum of 2 feet back of face of slope or 2 feet below subgrade.
3. Cap or plug the ends of partially removed pipes, culverts, conduits, and miscellaneous structures with concrete to produce a watertight seal.
4. Contact PORT for direction if unidentified utilities are uncovered during the work.
5. Dispose of removed pipes, conduits, culverts, and miscellaneous structures, at no additional cost to the PORT.

**END OF SECTION**

**SECTION 02660**  
**WATER LINES**

**PART 1 GENERAL**

1.1 DESCRIPTION

- A. This Section describes the construction of the water line including materials, installation, and testing. This section includes the pipe, fittings, pressure reducing valve vault, and the relief valve.
- B. All Work shall be performed under DISTRICT supervision and inspection.

1.2 RELATED SECTIONS

- A. Section 02223, Trenching, Backfilling, and Compacting

1.3 QUALITY ASSURANCE

- A. Testing Before Acceptance
  - 1. DISTRICT shall provide its testing and inspection criteria; CONTRACTOR may be required to hydrostatically test the first section of pipe, not less than 100 feet in length, installed by each of CONTRACTOR's crews, in order to qualify the crew and installation.
  - 2. DISTRICT requires all installed pipe to be flushed, pressure tested, chlorinated, and tested for bacteria.
  - 3. CONTRACTOR shall pay for all testing and inspections under this Technical Specification.
- B. Final Acceptance:
  - 1. Prior to final inspection, all pipelines shall be flushed and cleaned of all debris, disinfected, and hydrostatically tested.
  - 2. Any corrections required shall be made at the expense of CONTRACTOR and the line shall be retested.

1.4 SUBMITTALS

- A. Itemized list of pipe and fittings to be used that conforms to DISTRICT specifications and standards.
- B. All Manufacturer's Pipe Installation Instructions.

## **PART 2 PRODUCTS**

### **2.1 DISTRICT SPECIFICATIONS AND STANDARDS**

- A. DISTRICT requires all installed pipe to be in accordance with DISTRICT specifications and standards.

### **2.2 BEDDING AND PIPE ZONE MATERIALS**

- A. Conform to Section 02223.

### **2.3 ALTERNATE PIPE MATERIALS**

- A. When ductile iron pipe is specified, no substitute is permitted.

### **2.4 VAULT MATERIALS**

- A. The vaults shall be precast concrete vaults with a minimum compressive strength of 4,000 psi and be in accordance with ASTM C858.

## **PART 3 EXECUTION**

### **3.1 BEDDING AND PIPE ZONE MATERIAL**

- A. Conform to Section 02223.
- B. Care shall be taken to prevent any damage to the pipe and its protective coating.

### **3.2 PIPE LAYING**

- A. Lay pipe in accordance with the specifications and instructions of the Manufacturer for the kind of pipe used.
- B. Tools designed especially for installing each particular type and kind of pipe shall be used.
- C. Short Lengths and Field Cut Joints:
  - 1. Short lengths of pipe supplied by the Manufacturer shall be used to provide the proper spacing of valves, tees or special fittings.
  - 2. Whenever it becomes necessary to cut a length of pipe, the cut shall be made by abrasive saw or by a special pipe cutter. Pipe ends shall be square with the longitudinal axis of the pipe.

### **3.3 LAYING OF PIPE ON CURVES:**

- A. Long radius curves, either horizontal or vertical, may be laid with standard pipe by deflections at the joints not to exceed the maximum deflection as indicated on the Plans and pipe Manufacturer specifications, whichever is less.

- B. Where field conditions require deflection or curves not anticipated by the Plans, CONTRACTOR shall use deflected joints, short lengths, or special fittings as required. No additional payment will be made for laying pipe on curves as shown on the Plans or for field changes involving pipe deflected at the joints. When special fittings not shown on the plans are required to meet field conditions, additional payment will be made for fittings.

#### 3.4 CONTAMINATION PREVENTION:

- A. Pipe, fittings, and valves shall be carefully cleaned of all dirt and foreign material as they are placed.
- B. Open ends of pipe and fittings shall be plugged with a temporary watertight plug whenever Work is stopped and/or when water in the trench threatens to enter the pipe.
- C. Groundwater shall be excluded from the pipe at all times.

#### 3.5 CONDITION OF PIPE AND FITTINGS:

- A. The interior of all pipe, fittings, and other accessories stockpiled on the project shall be kept free of dirt and other foreign matter at all times
- B. Each pipe, fitting, or other accessory shall be carefully inspected and thoroughly cleaned of any dirt or foreign matter that might be present on the inside that might be present on the inside.

#### 3.6 CONNECTION TO EXISTING WATER MAINS

- A. Type and location of connections shall be as shown on the Plans.
- B. DISTRICT is required to be notified for all Work related to the existing water main; any connections to the existing water main shall not be made without first making the necessary arrangements with the DISTRICT and PORT in advance and in accordance with the Contract Documents.
- C. Work shall not be started until all of the materials, equipment, and labor necessary to properly complete the Work are assembled on the site.
- D. After Work starts on the connection to an existing main, it shall proceed continuously without interruption and as rapidly as possible until complete.
- E. If the connection to the system involves turning off the water, CONTRACTOR shall be responsible for coordinating with the DISTRICT in notifying the properties affected by the shut-off.
- F. CONTRACTOR shall not operate any valves on the existing system without explicit permission from DISTRICT.

#### 3.7 TESTING, DISINFECTION, AND FLUSHING

- A. All Work shall be performed under the DISTRICT supervision.



- B. Testing, disinfection, and flushing procedures shall be in accordance with ODOT Specification Section 01140.51, Section 01140.52, and Section 01140.50.
- C. Testing and disinfection performed by an approved independent testing company.

**END OF SECTION**

**SECTION 02740**  
**ASPHALT CONCRETE PAVEMENT**

**PART 1 GENERAL**

1.1 DESCRIPTION:

- A. This section describes the construction of one or more courses of constructing hot mixed asphalt concrete (HMAC) pavement, to the lines, grades, thicknesses, and cross sections shown or established.

1.2 RELATED SECTIONS

- A. Section 02223, TRENCHING, BACKFILLING, AND COMPACTING
- B. Section 02790, COLD PLANE PAVEMENT REMOVAL

1.3 DEFINITIONS

- A. Asphalt concrete pavement (ACP): uniformly coated mixture of asphalt cement, graded aggregate, and additives as required.
- B. HMAC: A hot plant-mixed, uniformly coated mixture of asphalt cement, graded aggregate, and additives as required.
- C. Level 3 ACP: HMAC for use in applications exposed to moderate truck traffic.
- D. Lot Size: A lot is the total quantity of material or work produced per Job Mix Formula (JMF) per project. The following circumstances will require a different lot:
  - 1. A new JMF is used.
  - 2. The method for measuring compaction is changed.
  - 3. A change from one test procedure for measuring asphalt content to another test procedure for measuring asphalt content occurs.
  - 4. PORT may allow material for irregular areas not completed during the main paving operations, such as driveways or guardrail flares, to be evaluated as a separate lot.
- E. Reclaimed Asphalt Pavement (RAP): Reclaimed ACP material used in the production of new ACP.

**PART 2 PRODUCTS**

2.1 RECLAIMED ASPHALT PAVEMENT (RAP) MATERIAL

- A. RAP material used in the production of new ACP is optional. No more than 30 percent RAP will be allowed in Level 1, Level 2, and Level 3 ACP. No more than 30 percent RAP will be allowed in Level 4 Base Courses. No more than 20 percent RAP will be allowed in Level 4 Wearing Courses.

## 2.2 HMAC

A. Aggregate: Provide and stockpile new aggregates according to the following requirements:

1. Testing of aggregates for soundness, durability, and harmful substances will be at the discretion of the PORT.
2. Soundness: Provide coarse and fine aggregate for HMAC for soundness testing using sodium sulfate salt according to AASHTO T104. The weighted average percentage of loss shall not exceed 12% by mass (weight).
3. Durability – Provide aggregate not exceeding the following maximum values:

Test	Test Method		Aggregates
	ODOT	AASHTO	Coarse
Abrasion		T 96	30.0%
Degradation			
Passing No. 20 sieve	TM 208		30.0%
Sediment height	TM 208		3.0"

4. Harmful Substances: Do not exceed the following values:

Test	Test Method		Aggregates	
	ODOT	AASHTO	Coarse	Fine
Lightweight Pieces		T 113	1.0%	na
Wood Particles	TM 225		0.10%	na
Elongated Pieces (at a ratio of 5:1)	TM 229		8.0%	na
Plasticity Index		T 90		0 or NP
Sand Equivalent		T 176		45 min *
* 50 min. for Level 4 HMAC				

B. Asphalt Cement - Use PG 64-28 or PG 70-28 asphalt grade of asphalt cement for this Project. Provide asphalt cement conforming to the requirements of ODOT's publication, "Standard Specifications for Asphalt Materials."

C. Asphalt Cement Additives: Use standard recognized asphalt cement additive products of known value for the intended purpose and approved for use on the basis of laboratory tests. Asphalt cement additives shall have no deleterious effect on the asphalt material and be completely miscible. Do not use silicones as an additive.

D. Mix Type and Broadband Limits: Mix type and broadband limits shall meet the following:

1. Mix Type: Furnish the type(s) of HMAC shown or as directed. The broadband limits for each of the mix types are specified below. When the Plans allow an option of two types for a course of pavement, use only one type throughout the course.
2. Broadband Limits: Provide a JMF for the specified mix type within the control points listed below:

Dense-Graded Mixes								
Sieve Size	1" Dense		3/4" Dense		1/2" Dense		3/8" Dense	
	Control Points (% Passing by Weight)		Control Points (% Passing by Weight)		Control Points (% Passing by Weight)		Control Points (% Passing by Weight)	
	Min	Max	Min	Max	Min	Max	Min	Max
1-1/2"	100							
1"	90	100	100					
3/4"	--	90	90	100	100			
1/2"	--	--	--	90	90	100	100	
3/8"	--	--	--	--	--	90	90	100
No. 4	--	--	--	--	--	--	--	90
No. 8	19	45	23	49	28	58	32	67
No. 200	1.0	7.0	2.0	8.0	2.0	10.0	2.0	10.0

- E. Job Mix Formula (JMF) Requirements: Provide a JMF for the mixture to be used on the Project meeting the criteria set forth in this specification and the ODOT CONTRACTOR Mix Design Guidelines for Asphalt Concrete. Perform a new JMF with an updated tensile strength ratio when the source of the asphalt cement changes. Refer to ODOT Section 00744.13 for the mixture requirements and ODOT Section 0744.14 for acceptable tolerances.

### 2.3 COLD MIX (TEMPORARY AC PATCH)

- A. Patches constructed of cold mix AC will be acceptable during times when hot mix plants are not operating or to meet temporary trench surface requirements. Cold Mix AC shall meet the requirements of ODOT Section 00735. All cold mix patches shall be dug out and replaced with Hot Mix Asphalt Concrete Pavement at no additional cost to the PORT. The placement and removal of cold mix asphalt shall be considered incidental to the Work.

### 2.4 TACK COAT

- A. Tack coat shall be in accordance with ODOT Section 00730.11, CSS 1 or CSS 1h.

## PART 3 EXECUTION

### 3.1 GENERAL

- A. For all Work that will involve the disturbance of soil or could result in the production of sediments, debris, pollutants, or other matter that may contact stormwater, comply with Section 01560, Temporary Controls.

### 3.2 PLACEMENT

- A. Season and Temperature Limitations: Place HMA during the dates indicated below, and when the temperature of the surface that is to be paved is not less than the temperature indicated:

Nominal Compacted Thickness of Individual Lifts and Courses as Shown on the Typical Section of the Plans	All Levels	Level 1 and Level 2	Level 3 and Level 4	
		All Courses	Travel Lane Wearing Course	All Other Courses
	Surface Temperature*	From To Inclusive	From To Inclusive	From To Inclusive
Less than 2 inches	60°F and rising	All Year**	3/15 9/30	All Year**
2 inches and Greater	40°F and rising	All Year**	3/15 9/30	All Year**
Temporary	40°F	All Year**	3/15 9/30	All Year**
<p>* Do not use field burners or other devices to heat the pavement surface to the specified minimum temperature.</p> <p>** If placing HMA between March 15 and September 30, temperature requirement may be lowered 5°F.</p>				

B. Pre-Paving Conference shall be performed prior to start of paving.

### 3.3 COMPACTION

- A. Obtain the Port's acceptance of the base course prior to beginning construction of the asphalt concrete wearing course.
- B. Compact the mixture thoroughly and uniformly to a minimum density of 91 percent for the base course and 92 percent for the wearing course of the Maximum Density Test (MDT). Each MDT will be determined using the Gmm (Maximum specific gravity of mixture) determined in accordance with AASHTO T 209, for the particular mix being used.

### 3.4 ACCEPTANCE OF LINE AND GRADE

- A. The finished top of any base course when tested with a CONTRACTOR-furnished 16-foot straightedge shall not vary from the testing edge by more than 3/8 inch at any point, and shall be within 1/2 inch of specified finished grade.
- B. The finished top of the surface course when tested with a CONTRACTOR-furnished 16-foot straightedge shall not vary from the testing edge by more than 1/4 inch at any point, and shall be within 1/2 inch of specified finished grade.
- C. Asphalt and sand seal edges where new asphalt concrete meets existing pavement.
- D. Correction of Pavement Roughness: Immediately correct equipment or paving operation procedures when tests show the pavement smoothness does not comply with these specifications. In addition, do the following:
  - 1. Correct surface roughness to the required tolerances, using one of the following methods as approved:
    - a. Base Course:
      - 1) Profile to a maximum depth of 0.4 inch with abrasive grinder(s) equipped with a cutting head comprised of multiple diamond blades.
      - 2) Remove and replace the base lift.

b. Wearing Course:

- 1) Remove and replace the wearing surface lift.
- 2) Profile to a maximum depth of 0.3 inch with abrasive grinder(s) equipped with a cutting head comprised of multiple diamond blades and apply an emulsified asphalt fog coat as directed.

3.5 TRAFFIC

- A. Vehicular traffic, including heavy equipment, is not allowed on newly paved areas until surface temperatures have cooled to at least 120°F. Measure surface temperatures by approved surface thermometers.

**END OF SECTION**

**SECTION 02790**  
**COLD PLANE PAVEMENT REMOVAL**

**PART 1 GENERAL**

1.1 DESCRIPTION:

- A. This section describes the removal of pavement in preparation for the placement of new pavement along half the roadway following the water line alignment.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 02740 ASPHALT CONCRETE PAVEMENT

1.3 EQUIPMENT

1.4 EQUIPMENT

- A. Provide self-propelled planing machines or grinders:
  1. Capable of loosening Pavement material.
  2. Capable of accurately establishing profile grades within a tolerance of 0.02 foot by reference from either the existing Pavement or from independent grade control.
  3. With a positive means for controlling cross-slope elevations.
  4. With a totally enclosed cutting drum with replaceable cutting teeth.
  5. With an effective means of removing loosened material from the surface and preventing dust from escaping into the air.
  6. Capable of providing a true cross-slope grade that will allow placement of overlay Pavement to a uniform thickness.

**PART 2 PRODUCTS**

**NOT USED.**

**PART 3 EXECUTION**

3.1 PAVEMENT REMOVAL

- A. General – Remove the existing pavement to the depth, width, grade, and cross section shown or as directed. The use of a heating device to soften the pavement is not allowed.
- B. Access for Traffic – If the depth of the existing pavement to be removed is 2 inches or less, but more than 1 inch and the section will be under traffic, schedule the Work so the full width and length of travel lanes pavement can be removed during the same shift. If the depth exceeds 2 inches and the section will be under traffic, schedule the Work so the full width and length of the travel lanes can be removed leaving no longitudinal or transverse drop-offs.

- C. Temporary Pavement Transition – If unable to complete the pavement removal according to the above paragraph 3.1 B, then within the same day construct a wedge of asphalt concrete, at a slope of 1V:10H or flatter along each exposed longitudinal drop-off, and 1V:50H or flatter along each exposed transverse drop-off. Place wedges completely across the milled area at intersections, points of beginning and ending of the milling operation, and around manholes, valve boxes and other Structures. Longitudinal drop-offs of 1 inch or less do not require a wedge. Maintain wedges as long as the area remains under traffic or until Pavement is replaced. Remove and dispose of wedges before placing new Pavement.
- D. Warning Signs – Provide warning signs as required where abrupt or sloped drop-offs occur at the edge of the existing or new surface.

### 3.2 DISPOSAL OF MATERIALS

- A. Dispose of all materials at the Lower Hanel Mill site at no cost to the PORT.

### 3.3 MAINTENANCE UNDER TRAFFIC

- A. Traffic will be allowed on the cold planed surface up to 7 calendar days after removing the existing surface.
- B. Sweep and clean the cold planed surface before opening to traffic.
- C. Before beginning paving operations, make repairs to the existing cold planed surface as required.

**END OF SECTION**



**PLANS**  
**STADELMAN DRIVE WATER LINE EXTENSION**