

# Reynolds School District Transportation Yard Improvements

20311 NE Glisan Street  
Fairview, OR 97230

December 7, 2016  
BID SET

Owner's Project Manager  
Robert Collins  
Day CPM  
(503) 434-3650

PART 1 GENERAL

1.1 IDENTIFICATION

- A. Reynolds School District  
Transportation Yard Improvements
- B. Project Number: 00000-10001

1.2 PROJECT ADDRESS

- A. Reynolds Bus Transportation Yard  
20311 NE Glisan Street  
Fairview, Oregon 97203

1.3 PROJECT DESCRIPTION

- A. In General, the Work consists of grading, paving, stormwater facilities and bus wash station as shown and identified on the contract documents.
- B. Refer to Section 01 11 00 for a more complete project description.

1.4 OWNER

- A. Reynolds School District No.7  
1204 NE 201<sup>ST</sup> Avenue  
Fairview, Oregon 97024

PART 2 THE DOCUMENTS

2.1 DATE

- A. The documents are dated: December 2016.

2.2 TITLE

- A. Reynolds School District  
Transportation Yard Improvements

PART 3 THE DESIGN TEAM

3.1 CONSULTANTS

- A. The Civil Engineer:  
**Harper Houf Peterson Righellis, Inc.**
  - 1. Address: 205 SE Spokane Street, Suite 200
  - 2. City, State, Zip: Portland, OR 97202
  - 3. Phone: Ben Austin, PE, 503-221-1131
- B. The Geotechnical Consultant:  
**GeoDesign**
  - 1. Address: 15575 SW Sequoia Pkwy., Suite 100
  - 2. City, State, Zip: Portland, OR 97224

3. Phone: George Sunders, P.E., G.E. 503- 968-8787

END OF SECTION

**DESCRIPTION OF CONTENTS**

The complete Contract Documents contain the following:

**VOLUME 1—PROJECT MANUAL**

Division 0 Contracting Requirements  
Division 1 General Requirements  
Divisions 31 - 33 Site Technical Specification

**VOLUME 2—PROJECT DRAWINGS**

**VOLUME 1 PROJECT MANUAL**

<b>Unit</b>	<b>Number</b>	<b>Description</b>
<b>DIVISION</b>	<b>0</b>	<b>BIDDING AND CONTRACTING REQUIREMENTS</b>
Section	00 01 01	Introduction
	00 01 10	Table of Contents
	00 11 16	Invitation to Bidders
	00 21 13	Instructions to the Bidders
		Substitution Request Form
	00 41 00	Bid Form
		First-Tier Subcontractor Disclosure Form
	00 50 00	Agreement Forms
		State of Oregon Public Improvement Agreement
	00 61 00	Bond Forms
		Bid Bond Form
		Performance and Payment Bond Forms
	00 72 00	General Conditions
		State of Oregon General Conditions for Public Improvement Contracts
	00 73 43	Prevailing Wage Rates
	00 91 13	Addendum
<b>DIVISION</b>	<b>1</b>	<b>GENERAL REQUIREMENTS</b>
Section	01 11 00	Summary of Work
	00 29 00	Payment Procedures
	01 31 00	Coordination
	01 33 00	Submittals
	01 50 00	Temporary Facilities and Controls
	01 60 00	Product Requirements
	01 70 00	Execution requirements
	01 77 00	Closeout Procedures

**DIVISION 31 - EARTHWORK**

**SECTION 00 01 10**  
**TABLE OF CONTENTS**

Section	31 10 00	Site Clearing
	31 20 00	Earth Moving
	31 23 17	Trenching
	31 25 00	Erosion and Sediment Control

**DIVISION 32 – EXTERIOR IMPROVEMENTS**

Section	32 11 32	Aggregate Base Courses
	32 12 16	Asphalt Paving
	32 13 13	Concrete Paving
	32 91 13	Soil Preparation
	32 93 00	Plants
	32 94 45	Landscape Maintenance

**DIVISION 33 - UTILITIES**

Section	33 11 00	Water Distribution Piping
	33 12 00	Water Appurtenances
	33 31 00	Sanitary Sewer
	33 39 00	Sanitary Sewer Structures
	33 41 00	Storm Drainage
	33 49 00	Storm Drainage Structures

**VOLUME 2     PROJECT DRAWINGS**

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A list of drawings is included on Project Drawings.

Sheet.....	Title
1 .....	Cover
2 .....	Notes
3 .....	Utility Plan
4 .....	Grading Plan
5 .....	Striping Plan
6 .....	Details
7 .....	Details

**VOLUME 3     GEOTECHNICAL REPORT**

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Report of Geotechnical Engineering Services prepared by GeoDesign Inc. dated October 30, 2015

END OF SECTION

December 7, 2016

Reynolds School District  
2 Transportation Yard Improvements

00 01 01-

**PART 1 - GENERAL**

**1.1 BID PACKAGE**

- A. Bids will be received Reynolds School District Transportation Yard Improvements on or before: **January 24, 2017 @ 2:00 PM**

**1.2 BID INVITATION**

- A. Bids for the Reynolds School District Transportation Yard Improvements will be received by Rachel Hopper of the Reynolds School District No. 7 at the District Offices at 1204 NE 201<sup>ST</sup> Avenue, Fairview, Oregon until 2:00 PM, on the specific dates listed above. Bids received after the time fixed for the opening will not be considered.
- B. All Construction identified in the Transportation Yard Improvements: In General the Work consists of grading, paving, stormwater facilities and bus wash station as shown and identified on the contract documents.
- C. Construction will include all project planning and staking, coordination, demolition, grading, and finishing and installation of fill material and asphaltic paving.

**1.3 PROJECT SCHEDULE**

- A. Schedule for this bid process will be as follows:

Advertise Invitation to Bid	December 14, 2016
Non-mandatory Pre-bid Meeting	January 4, 2017
Last day for Substitution Request	January 11, 2017
Last day for Addendum Issuance	January 18, 2017
<b>Bid Opening</b>	<b>January 24, 2017</b>
Notice of Intent to Award	January 30, 2017
Contract Execution	February 8, 2017
Construction	June 15 – August 31, 2017

**1.4 CONTRACT DOCUMENT SOURCES**

- A. Contract Documents have been prepared by Harper Houf Peterson Righellis, Inc., 205 Spokane Street, Suite 200, Portland, Oregon 97202 (Phone: 503-221-1131).
- B. Documents may be examined at the following locations:
1. Harper Houf Peterson Righellis, Inc., 205 Spokane Street, Suite 200, Portland, Oregon 97202
  2. Daily Journal of Commerce Plan Center, 2840 NW 35<sup>TH</sup> Avenue, Portland, OR 97210. Phone: 503-274-0624, Fax: 503-274-2616

**1.6 CONTRACT DOCUMENT AVAILABILITY**

- A. Documents will be available immediately can be obtained via the Reynolds School District Web site: <http://www.reynolds.k12.or.us/rfps>.
- B. Bidders are to submit bids on bid forms provide in the specifications.

**1.5 STATE OF OREGON BIDDING REQUIREMENTS**

- A. The provisions of the Oregon Revised statutes 279.348 through 279.380, relating to prevailing wage rates, are applicable to the work under this contract. The contractor, its subcontractors, if any, and all employers working under the contract will be subject employers under the Oregon Workers' Compensation Law, and shall comply with ORS 656.017, which requires them to provide workers' compensation coverage for all their subject workers.
- B. The bid must contain a statement as to whether the bidder is a "Resident Bidder" as defined in ORS 279.029. The Contractor must be registered with the Oregon Construction Contractors Board prior to the bid opening in accordance with ORS 701.055.

**1.6 RIGHTS RESERVED**

- A. The right is reserved
  - 1. To reject any or all bids;
  - 2. To not consider a bid unless the bidder is registered with the Construction Contractors Board as required by ORS 279.025.
  - 3. To reject any bid that takes exception to specifications or to contract terms unless the right to take exceptions is specifically granted in the Invitation to Bid.
  - 4. To postpone award of the contract for a period not to exceed 30 days from the date of the bid opening.
  - 5. To add to the price by non-resident bidders, an increase equal to the percent preference that the non-resident bidder's home state would give its in-state bidders.
  - 6. To reject for good cause any or all bids upon a finding by the Owner that it is in the public interest to do so.
  - 7. To waive, at the Owner's sole discretion, minor irregularities or discrepancies in any or all bids.

**1.7 ADDENDA**

- A. If required, an addendum will be issued no later than four (4) days prior to bid due date.

**1.8 ANNOUNCEMENT PUBLISHED**

- A. Daily Journal of Commerce (DJC): December 14, 2016

**PART 2 - PRODUCTS (NOT USED)**

**PART 3 – EXECUTION (NOT USED)**

END OF SECTION

**PART 1 - GENERAL**

**1.5 GENERAL**

- A. The work contemplated under this contract with the Reynolds School District, hereinafter referred to as the Owner or the District, includes all labor, materials, transportation, equipment and services necessary for, and reasonably incidental to, the completion of all work in connection with the project described in the bidding documents.

**1.6 RELATED DOCUMENTS**

- A. General provisions of Contract, including General apply to this Section.
- B. Instructions to Bidders, contains bidding requirements.

**1.7 SUMMARY**

- A. This Section specifies administrative and procedural requirements for product substitution requests during bidding period.
- B. Refer to Section 01 60 00 for definitions related to this Section.

**1.4 EXAMINATION OF SITE AND CONDITIONS**

- A. Prior to submitting a bid, the bidder shall examine the site of the work and ascertain all of the physical conditions in relation thereto. He shall also make a careful examination of the Drawings, Specifications and other Contract Documents and shall fully inform himself as to the quantity of materials and sources of supply of the materials. Failure to make these precautions will not release the successful bidder from entering into a contract, or excuse him from performing the work in strict accordance with the terms of the contract.
- B. The Owner will not be responsible for any loss or any unanticipated costs which may be suffered by the successful bidder as a result of such bidder's failure to fully inform himself in advance with regard to all conditions pertaining to the work and the character of the work required. No statement made by any officer, agent or employee of the Owner in relation to the physical conditions pertaining to the site of the work will be binding on the Owner.

**1.5 INTERPRETATION OF CONTRACT DOCUMENTS**

- A. If any person contemplating submitting a bid for the proposed contract finds discrepancies in, or omission from, or is in doubt as to the true meaning of any part of the Drawings, Specifications or form of Contract Documents, he shall submit to the Engineer a typed request for an interpretation thereof to be received in the office of the Engineer no later than seven days prior to bid opening local time. The person submitting the request will be responsible for its delivery prior to the time of the closing.
- B. Any official interpretation of the Drawings, Specifications, and conditions of the contract or forms of Contract Documents will be made only by subsequent addenda issued by the Engineer. The Owner will not be responsible for any other explanation or interpretation of the proposed documents.



**1.6 PRODUCT SUBSTITUTION PROCEDURES**

- A. Request Form: Substitution requests will be considered only if they are prepared on a Form 1063 Substitution Request Form, included at the end of this Section.
- B. Each substitution request shall include a complete description of the proposed substitute, the name of the material, service, or equipment for which it is to be substituted, drawings, cuts, performance and test data, samples illustrating color, texture and pattern, and any other data or information required to make a valid comparison. Product catalogs containing multiple products shall be marked to indicate which products and product options are being submitted for substitution. Substitution requests submitted with unmarked catalogs will not be reviewed. To have the results of a substitution request mailed to the author, include two copies of the substitution request form and a stamped, self-addressed envelope.
- C. Submit Substitution Requests to Engineer. Requests must be received by Engineer no later than **four (4)** days before date bids are due.
- D. Engineer's Action: If the proposed product is acceptable in opinion of Engineer, Engineer will include it in Addendum which will be issued to bidders.
  - 1. Acceptance of a Substitution Request does not relieve the requestor from meeting the requirements, procedures, and warranties as set forth in this Specification.
  - 2. Only those manufacturers, materials, services, and equipment approved in these Specifications or by Addendum will be acceptable for use in this Project.
- E. The Owner reserves the right to withhold their approval of any or all substitutions proposed by Bidders and to deny any or all requests for such approvals.

**1.7 SECURITY VERIFICATION "SECURITY AND BACKGROUND CHECK REQUIREMENTS"**

All Reynolds School District sites will be considered an open site for the purposes of this project. This means that a fingerprint based criminal history verification will be conducted on all personnel employed by the successful GENERAL CONTRACTOR and subcontractors on the project. This means that unsupervised contact between project personnel and students may occur. "Unsupervised contact" with students means contact that provides the person opportunity and probability for personal communication or touch with students when not under direct District supervision. As required by ORS 326.603, GENERAL CONTRACTOR shall ensure that GENERAL CONTRACTOR, any subcontractors, and their officers, employees, and agents will have no direct, unsupervised contact with students while on District property. Consultant shall work with District to ensure compliance with this requirement.

Successful GENERAL CONTRACTOR, (contractor), authorizes District to obtain information about personnel and subcontractor's and its history and to conduct a criminal background check, including analysis of fingerprints of any GENERAL CONTRACTOR's or subcontractor's officers, employees, or agents. GENERAL CONTRACTOR shall cause its employees and/or subcontractors, to authorize District to conduct these background checks. GENERAL CONTRACTOR shall pay \$59.00 for processing the background check in addition to required fingerprinting and notary services. GENERAL CONTRACTOR and its subcontractors must supply fingerprint cards for each employee proposed to work on the project to the District when applying

**SECTION 00 21 13**  
**INSTRUCTIONS TO BIDDERS**

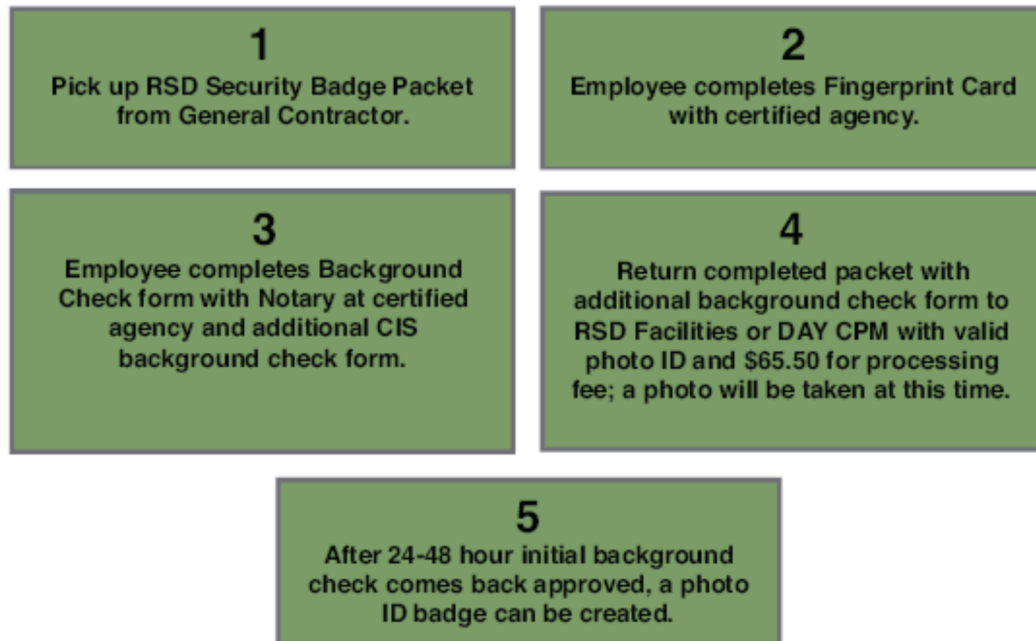
for the security check. District may deduct the cost of such fees from a progress or final payment to GENERAL CONTRACTOR under their Contract, unless GENERAL CONTRACTOR elects to pay such fees directly at the time of application for the security check.

All contractors, subcontractors, and their employees whether full time or part time working at District sites must undergo a criminal history verification for disqualifying convictions per ORS 342.143 as mentioned criminal history verification checks will be conducted at the contractor's expense, by RSD. Prior to entry of a GENERAL CONTRACTOR's or subcontractor's employees onto a jobsite, the GENERAL CONTRACTOR and the subcontractor shall provide a list of its employees who have successfully undergone the criminal history verification check. Upon Contract execution, the GENERAL CONTRACTOR will supply a list of projected GENERAL CONTRACTOR personnel as well as subcontractor personnel during the Construction Phase. These people will be expected to attend a meeting as a group to complete paperwork and undergo mobile fingerprinting services. This District in an effort to expedite the review process will engage a third party company to do a preliminary background checks, while the background and fingerprinting verification is being process through the State of Oregon Department of Education. The cost of this additional background check is \$6.50 per person. There will be a short form to be filled out by the prospective contractor employee with personal identification information checked by District representative on site. The GENERAL CONTRACTOR will issue a check that the covers the cost for groups of workers. Once the background check comes back without any issue the employee will then receive a temporary badge. This process should be expected to take between 24 – 48 hours. With the final approval there will be the issuance of final badge. All badges will be expected to be turned into the District by any of the badge owners at the conclusion of their participation on the Project.

Refer to the Reynolds School District Background & Security Verification Process flow chart.



## District Security Badging Process



- ◆ \$250 fine for lost badge
- ◆ \$25 fee for reprinting badge if left at home - original badge **MUST** be returned the next day
- ◆ Badge must be in possession of employee at all times while on RSD property - All fines and enforcement of security badges are responsibility of the General Contractor
- ◆ The badging packet must be presented in person with valid form of picture ID to RSD Facilities or DAY CPM representative
- Security Badging Packet will be distributed by the General Contractor.
- General Contractor can set up a group badging meeting to complete steps 1-4 as a group to expedite the process, a DAY CPM or RSD representative must attend to receive and process background check paperwork.
- Completed packets will not be accepted without the employee appearing in person with valid photo ID.
- The processing fee is \$65.50 per packet, checks can be made out to Reynolds School District #7.
- If employee has had an ODE approved background check within the past 3 years, a letter is required from the previous school district to be sent to RSD to waive ODE background check.

**1.8 GENERAL STATUTORY PROVISIONS CONCERNING PUBLIC CONTACTS**

- A. In accordance with the provisions of Oregon Revised Statutes (ORS) 279.312, it is agreed that the contractor shall make prompt payment, as due, to all persons supplying to the contractor labor or materials for the prosecution of the work provided for herein, pay all contributions or amounts due the State Industrial Accident Fund from the Contractor incurred in the performance of the contract herein, not permit any lien or claims to be filed or prosecuted against the District on account of any labor or material furnished, and to pay the State Tax Commission all sums withheld from employees pursuant to ORS 315.575, ORS 316.711, ORS 316.714, and ORS 316.167.
- B. Pursuant to ORS 279.314, it is agreed that if the Contractor fails, neglects or refuses to make prompt payment on any claim for labor or services furnished to the Contractor by any persons in connection with this agreement as such claim becomes due, the proper officer or officers representing the District may pay such claim to the person furnishing the labor or services and charge<sup>4</sup> the amount of the payment against the Contractor. The payment of a claim in the manner authorized in this paragraph shall not relieve the contractor or his surety from obligation with respect to any unpaid claims.
- C. Pursuant to ORS 279.316, it is a condition of this agreement that no person shall be employed by the Contractor for more than eight hours in any day, or forty hours in any one week except in cases of necessity, emergency or where the public policy absolutely requires it, and in such cases, the person shall be paid at least time and a half pay for all overtime in excess of eight hours a day and for work performed on Saturdays and legal holidays.
- D. Pursuant to ORS 279.36 (2) the Contractor shall comply with the provisions of all federal, state and local statutes, ordinances, and regulations dealing with the prevention of environmental pollution and preservation of natural resources that affect the project.
- E. Pursuant to ORS 279.320, it is an express condition of this agreement that the Contractor shall, promptly, as due, make payment to any person, co-partnership, association or corporation furnishing medical, surgical and hospital care or other needed care and attention, incident to sickness or injury to the employees of such Contractor, or all sums which the Contractor may or shall have deducted from their wages of his employees for such services pursuant to the terms of ORS 655.160, and any contract entered into pursuant thereto, or collected or deducted from the wages of its employees pursuant to any law, contract or agreement for the purposes of providing or paying for such service.
- F. The hourly rate of wage to be paid by the Contractor (and incorporated in his subcontracts) shall not be less than provided in ORS 279.348 to ORS 279.356, and as hereinafter included in Section 00 73 43 – Prevailing Wage Rates.
- G. Pursuant to ORS 645.001 et seq. ORA Chapter 437, Div. 155, the Contractor shall comply with the following conditions under any contract to provide the District with goods or services.
  - 1. Contractors and their employees shall comply with the requirements of the above cited Laws, Rules, Policies and Regulations.
  - 2. The Contractor shall review the Material Safety Data Sheets filed by the District to determine if there are any chemicals stored at the site of the work which the Contractor, or any subcontractors will use, or could be exposed to in any emergency.

**SECTION 00 21 13**  
**INSTRUCTIONS TO BIDDERS**

3. Contractors shall inform the executive officer at the location where services are being performed of all hazardous chemicals which they or their sub-contractors bring upon school property, and upon request, provide the District with Material Safety Data Sheets for such chemicals.

**1.9 EXECUTION OF THE BID FORM**

- A. All blank spaces in the official bid form shall be filled and numbers shall be stated both in writing and in figures. If the bid is made by a partnership, it shall contain the names of each partner and shall be signed in the firm name, followed by the signature of the partner signing for the firm. If the bid is made by a corporation, it shall be signed in the name of the corporation and the printed or typewritten designation of the office he holds in the corporation; and the signature shall be properly attested to by the secretary of the corporation. The address of the bidder shall be typed or printed on the bid form.
- B. The bid form invites bids on definite Drawings and Specifications. Only the amounts and information asked for on the bid form furnished will be considered as the bid. Each bidder shall bid upon the work exactly as specified and provided in the bid form. The bidder shall include in a sum to cover the cost of all items contemplated by the bidding documents.
- C. The actual bid form is included in the project manual as Document 00 41 00 - Bid Forms. Bidders are to use the actual bid forms bound in the specifications.
- D. Any Bids received which are incomplete, or which are conditioned in any way, or which contain erasures or alterations may be rejected.

**1.10 SUBMISSION OF BID**

- A. Each bid proposal to be submitted as directed in Section 00 11 16 – INVITATION TO BID.

**1.11 OPENING OF BIDS**

- A. **BIDS ARE DUE: 2:00 PM PST, Thursday, January 24, 2016**

**1.12 DURATION OF THE BID PROPOSALS**

- A. Each base bid shall be irrevocable for a period of thirty (30) days from the date and time for bid opening.

**1.13 DISTRICT PERSONNEL EXCLUDED FROM THE CONTRACT**

- A. No officer, agent or employee of the District shall be permitted any interest in the contract.

**1.14 RESERVATIONS**

- A. The Board of Directors of the Reynolds School District expressly reserves the following rights:
  1. To reject any and all bids.
  2. To waive any or all irregularities in bids submitted.
  3. To consider the competency and responsibility of bidders in making any award.

4. In the event two or more bids shall be for the same amount for the same work, to award the contract buy lot or otherwise as it deems appropriate.
5. To reject any bid or bids not in compliance with prescribed bidding procedures and requirements.
6. To reject any bid or bids not meeting the Specifications set forth herein.
7. In the event any bidder to whom a contract is awarded shall default in executing said formal contract or in furnishing a satisfactory performance and payment bond within the time and in the manner herein before specified, to re-award the contract to another bidder.

**1.15 ACCEPTANCE OF CONDITIONS**

- A. Each bidder by submission of a bid assents to each and every term and condition set forth anywhere in these Contract Documents and agrees to be bound thereby.

**1.16 INTERPRETATION UPON CONTRACT DOCUMENTS**

- A. Only the Board of Directors of Reynolds School District as represented by the Engineer has authority to place any interpretation upon the foregoing or annexed Contract Documents. Any interpretation, either verbal or written, attempted to be placed thereon by any other person will not be binding upon the District.

**1.17 EQUAL EMPLOYMENT**

- A. All bidders shall comply with the Provision of Executive Order 1246 (30 F.R. 12319-25) regarding Equal Employment Opportunity.

**1.18 INSURANCE DEDUCTIBLES**

- A. Each bidder to be responsible for costs not covered because of insurance deductibles.

**1.19 IMMIGRATION REFORM AND CONTROL ACT**

- A. All bidders shall comply with the provisions of the Immigration Reform and Control Act of 1986 regarding the verification of employment eligibility.

**1.20 CONSTRUCTION SCHEDULE**

- A. Construction to begin July 15, 2017 with:

Substantial Completion  
August 15, 2017

Punch List & Final Completion  
August 31, 2017

**1.21 PREVAILING WAGE**

- A. Prevailing Wage Rate for Public Works contracts in Oregon effective July 1, 2016. (See Section 00 73 43 – PREVAILING WAGE RATES)

**1.22 PERFORMANCE AND MATERIAL AND PAYMENT BOND**

- A. (See Section 00 61 00 – Bond Forms)

**1.23 DISCLOSURE AND SUBSTITUTION OF FIRST-TIER SUBCONTRACTORS**

- A. Bidders are required to disclose information about certain first-tier Subcontractors when the contract value for a Public Improvement is greater than \$100,000; ORS 279C.370. Specifically, when the contract amount of a first-tier Subcontractor is greater than or equal to (i) 5 percent of the project bid, but at least \$15,000, or (ii) \$350,000 regardless of percentage, the following information about that subcontractor must be disclosed within 2 working hours of bid closing using the contracting agencies statutory form, (attached to this Section), listing the following:
1. The Subcontractor's name and address.
  2. The Subcontractor's Construction Contractor Board registration number, if one is required.
  3. The category of work to be performed.
  4. The Subcontractor dollar value.
- B. If no Subcontractors are being used that are subject to the disclosure requirements, indicate "NONE" on the disclosure form.
- C. A Bid will be considered not responsive, and rejected, if a bidder fails to submit the disclosure form by the stated deadline; ORS 279C.370.
- D. Substitutions of affected first-tier subcontractors shall be made only in accordance with ORS 279C.585.

**PART 2 – PRODUCTS (NOT USED)**

**PART 3 – EXECUTION (NOT USED)**

END OF SECTION



Form 1063

**Substitution Request Form**

PROJECT: Transportation Yard Improvements

PROJECT NO: 00000-10001

DATE:

SPEC SECTION:

PARAGRAPH:

TO: Reynolds School District

FROM (BIDDER/SUB):

PROPOSED SUBSTITUTION:

MANUFACTURER:

MODEL NO:

- Attached data includes product description, specifications, drawings, photographs, performance, and test data adequate for evaluation of the request (applicable portions of the data are clearly identified).
- Attached data also includes description of changes to contract documents which proposed substitution will require for its proper installation.
- The following paragraphs, unless modified on attachments are correct:
  - √ The proposed substitution does not affect dimensions shown on drawings.
  - √ I/We will pay for changes to the building design, including engineering design, detailing, and construction costs caused by the requested substitution.
  - √ The proposed substitution will have no adverse affect on other trades, the construction schedule, or specified warranty requirements.
  - √ Maintenance and service parts will be locally available for the proposed solution.
- I/We state that the function, appearance, and quality of the proposed substitution are equivalent or superior to the specified item.

SIGNATURE:

FIRM:

ADDRESS:

PHONE:

☐ Accepted ☐ Accepted as Noted ☐ Not Accepted ☐ Received Too Late

BY

DATE:

:

ARCHITECT'S OR ENGINEERS AGREEMENT:

BY

DATE:

:

December 7, 2016

Reynolds School District 7  
Transportation Yard Improvements



**BID FORM**

TO: Mr. Rachel Hopper  
Reynolds School District 7  
1204 NE 201<sup>st</sup> Avenue  
Fairview, Oregon 97024

PROJECT: Transportation Yard Improvements

FROM:

\_\_\_\_\_  
Name (only) of Company submitting Bid

Operating as (strike out conditions that do not apply) an individual, a Company,  
a Corporation, organized and existing under the law of the State of  
\_\_\_\_\_, Proprietorship, a Partnership, or Joint Venture consisting of  
\_\_\_\_\_.

**ARTICLE ONE**

- 1.1 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with the Owner in the form indicated in the Contract Documents.
- 1.2 The Bidder further agrees:
- a. To complete the Work in strict conformance with the Contract Documents, for the Contract Price;
  - b. To complete the Work within the time period indicated in this Bid;
  - c. To Execute the Agreement within seven (7) days of receipt of Owner's notice of award; and to submit Performance, and Labor and Material Payment Bond within the same seven (7) days after the date of the Owner's notice of award.
  - d. To provide Bid security bond in the amount of ten (10) percent of the value of the Bid.
  - e. To abide by the provisions of ORS 279C.800 TO 279C.870 pertaining to the Prevailing Rate of Wages, and comply with ORS 279C.838 to 279C.840.

Signature of Bidder: \_\_\_\_\_

**ARTICLE TWO**

- 2.1 The Bidder accepts all of the terms and conditions of the Instruction to Bidders and Supplemental Instructions, including without limitation those dealing with the disposition of the Bid Security.
- 2.2 It is agreed that this Bid may not be withdrawn for a period of thirty (30) days from the date/ time of the Bid opening.
- 2.3 In submitting this Bid, it is understood that the right is reserved by the Owner to reject any and all Bids and to waive all informalities in connection therewith.
- 2.4 The undersigned certifies that the Bidder has, or has available, the equipment, personnel, materials, facilities and technical and financial ability necessary to complete the Work in accordance with the contract Documents and within the time specified therein. The Bidder certifies that allowances have been made for normal inclement weather.

**ARTICLE THREE**

- 3.1 In submitting this Bid, the Bidder represents, as more fully set forth in the agreement, that:
- a. The Bidder has examined complete copies of the Project Manual, Drawings, and each of the following addenda, and included their costs in this Bid (here specify the number and date of each, receipt of which is hereby acknowledged):
- Addendum No. \_\_\_\_ Date \_\_\_\_\_ Addendum No. \_\_\_\_ Date: \_\_\_\_\_
- Addendum No. \_\_\_\_ Date \_\_\_\_\_ Addendum No. \_\_\_\_ Date: \_\_\_\_\_
- Addendum No. \_\_\_\_ Date \_\_\_\_\_ Addendum No. \_\_\_\_ Date: \_\_\_\_\_
- b. The Bidder has examined the site and locality where the Work is to be performed, the legal requirements (Federal, State, and local laws, Ordinances, Rules and Regulations), and the conditions affecting the cost, progress or performance of the Work, and has made sure independent investigations were performed as the Bidder deems necessary;
- c. The Bidder has attended the non-mandatory pre-bid conference;
- d. The Bid is genuine, and not made in the interest of, or on behalf of, any undisclosed person, firm, or corporation, and is not submitted in conformity with any agreement or rules of any group, association, organization, or a corporation. Furthermore, the Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham bid, nor has the Bidder solicited or induced any person, firm, or a corporation to refrain from Bidding, and Bidder has not sought by collusion or obtain or Bidder any advantage over any other Bidder, or over the Owner.

- e. The certificate of Insurance is to be supplied by the Bidder at the time of the Agreement execution.

#### ARTICLE FOUR

- 4.1 Bidder will complete the Work for the following price:

##### **BASE BIDS**

The Bidder will furnish all labor and materials required to complete the Work as described in the Bidding Documents, and all associated conditions, for the sum of

Work Package 1: \_\_\_\_\_  
\_\_\_\_\_ Dollars (\$ \_\_\_\_\_)

- 4.2 Bidder agrees that the Work will be substantially complete by:

August 15, 2017

- 4.3 Bidder agrees that the Work will be Finally Complete, (Punch List & Final Completion) by:

August 31, 2017

#### ARTICLE FIVE

- 5.1 Communications concerning this Bid shall be addressed to:

\_\_\_\_\_

- 5.2 The meaning of the terms used in this Bid form shall be the same as they are used and defined in the General Conditions of the Contract for Construction, which are included as part of the Contract Documents.

- 5.3 Submitted on: \_\_\_\_\_, 2017.

- 5.4 State contractor's License No.

\_\_\_\_\_

- 5.5 Pursuant to ORS 279C.365, bidder (check one) is \_\_\_\_\_ is not \_\_\_\_\_ a resident Bidder.

If not, State of residency is

\_\_\_\_\_

- 5.6 Official signature: (Select only one of the three groups listed below based on the Bidder's type of Organization)

#### **AN INDIVIDUAL PROPRIETORSHIP**

By (Owner's Name): \_\_\_\_\_

Signature: \_\_\_\_\_

Doing Business As: \_\_\_\_\_  
(Company Name)

Business Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Telephone Number: \_\_\_\_\_

Fax Number: \_\_\_\_\_

**A PARTNERSHIP**

By (General Partner's Name): \_\_\_\_\_

Signature: \_\_\_\_\_

Doing Business As: \_\_\_\_\_  
(Company Name)

Business Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Telephone Number: \_\_\_\_\_

Fax Number: \_\_\_\_\_

**A CORPORATION**

**SECTION 00 41 00**  
**BID FORM**

By (Authorized Person): \_\_\_\_\_

Title: \_\_\_\_\_

Signature: \_\_\_\_\_

ATTEST

Secretary's Name: \_\_\_\_\_

Corporation Name: \_\_\_\_\_

State of Incorporation: \_\_\_\_\_

Business Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Telephone Number: \_\_\_\_\_

Fax Number: \_\_\_\_\_

Affix Corporate Seal

END OF BID FORM

**PART 1 - GENERAL**

**1.1 INCORPORATION**

- A. State of Oregon Public Improvement Agreement Between Owner and contractor where the basis of payment is a *STIPULATED SUM*, is incorporated into the contract documents as if bound herein.
- B. The successful Bidder will enter into a contract with the District substantially in the form attached hereto (Sample State of Oregon Public Improvement Agreement. The successful Bidder agreement and exhibits, as modified in the contract negotiations, shall apply to the services and work of all subcontractors and to the work of the Contractor.

The successful Bidder shall comply with the January 2016 Oregon prevailing wage rates asset forth in the Prevailing Wage Rates for Public Works Contracts in Oregon.

Prior to entering into a resulting contract, the successful Bidder will be required to submit to District any and all information reasonably requested by District to verify that the selected Contractor is licensed, insurable, bondable and financially sound to a level that satisfies District.

During contract negotiations following selection of the successful Bidder, the District will entertain suggestions on refinement of the Agreement only when:

- 1. The general work scope remains the same; and
- 2. The field of competition does not change as a result of material changes to the requirements stated in the Bid Document.

The intent of these provisions is to avoid any unfair competitive advantage or disadvantage in the procurement process. Alternative approaches to structuring the Agreement may be contemplated and allowable under these negotiations. The District intends to complete negotiations and enter into a contract within five (5) days of the Notice of Intent to Award issuance, in accordance with OAR 125-249-0450, the right to extend that time at its sole discretion.

END OF SECTION

## Public Improvement Agreement Form

*COPIES OF THIS PUBLIC IMPROVEMENT AGREEMENT FORM, WITH BLANKS FILLED IN, WILL BE SENT TO THE INTENDED AWARDEE (CONTRACTOR) AT THE TIME OF THE OWNER'S INTENT TO AWARD NOTICE. THE INTENDED AWARDEE WILL THEN COMPLETE AND SIGN THE AGREEMENT. AFTER ALL REQUIREMENTS ARE MET, THE OWNER WILL THEN SIGN THE PUBLIC IMPROVEMENT AGREEMENT FORM AND SEND AN ORIGINAL SIGNED FULLY EXECUTED PUBLIC IMPROVEMENT AGREEMENT FORM TO THE CONTRACTOR ALONG WITH THE NOTICE TO PROCEED.*

**PUBLIC IMPROVEMENT AGREEMENT**  
**for**  
**Transportation Yard Improvements**  
**(Insert Contract Number)**

This Agreement for the **Transportation Yard Improvements** (the "Agreement"), made by and between the **Reynolds School District No. 7**, hereinafter called OWNER, and **(Insert Contractor's Name)** hereinafter called the CONTRACTOR (collectively the "Parties"), shall become effective the date this Agreement has been signed by all the Parties. Unless otherwise defined in the Invitation to Bid or in this Agreement, the capitalized terms used herein are defined in Section A.1 of the State of Oregon General Conditions for Public Improvement Contracts (as modified for use by an Oregon local governmental entity),.

**WITNESSETH:**

**1. Contract Price, Contract Documents and Work.**

The CONTRACTOR, in consideration of the sum of \_\_\_\_\_ (the Contract Price), to be paid to the CONTRACTOR by OWNER in the manner and at the time hereinafter provided, and subject to the terms and conditions provided for in the Invitation to Bid, this Public Improvement Agreement Form and other Contract Documents, all of which are incorporated herein by reference, hereby agrees to perform all Work described and reasonably inferred from the Contract Documents.

The Contract Price includes the following items: **(Insert Items)**

**2. Representatives.**

Unless otherwise specified in the Contract Documents, the OWNER designates **Ms. Rachel Hopper**, as its Authorized Representative in the administration of this Contract. The above-named individual shall be the initial point of contact for matters related to performance, payment, authorization, and to carry out the responsibilities of the OWNER. CONTRACTOR has named **(Insert Name)** its Authorized Representative to act on its behalf.

**3. Contract Dates.**

PROJECT START DATE: **(Insert #)** calendar days from issuance of Notice to Proceed.

SUBSTANTIAL COMPLETION: **(Insert #)** calendar days from issuance of Notice to Proceed or **[Enter date]**

FINAL COMPLETION: **(Insert #)** calendar days from issuance of Notice to Proceed or **[Enter a date]**

**4. Liquidated Damages.**

The parties agree that it would be difficult and impracticable under the presently known and anticipated facts and circumstances to ascertain and fix with precision the actual damages the Owner would incur should the Contractor delay in achieving Substantial Completion by the scheduled date of Substantial Completion, and accordingly the parties hereby agree that if the Contractor fails to achieve Substantial Completion by the scheduled date of Substantial Completion, then the Owner shall be entitled to recover

**SECTION 00 50 00**

**SAMPLE PUBLIC IMPROVEMENT AGREEMENT FORM**

from the Contractor as liquidated damages for such delay, and not as a penalty, a sum for each day Substantial Completion of the Work is so delayed by the Contractor the sum of \$ \_\_\_\_\_ (the Liquidated Damages); it being acknowledged and agreed by the parties hereto that the Liquidated Damages relate solely to Contractor's failure to achieve Substantial Completion by the scheduled date of Substantial Completion and to no other duty or obligation of the Contractor. The Owner and the Contractor agree that the Liquidated Damages are not a penalty, but instead are a good faith and reasonable estimate of the damages and loss the Owner would suffer in the event the Contractor fails to achieve Substantial Completion by the scheduled date of Substantial Completion. The Liquidated Damages shall be provided as a credit in the final Application for Payment. The Liquidated Damages shall be the Owner's exclusive remedy for failure by the Contractor to achieve Substantial Completion by the scheduled date of Substantial Completion (and the resulting inability to use the Project).

**5. Integration**

THE CONTRACT DOCUMENTS CONSTITUTE THE ENTIRE AGREEMENT BETWEEN THE PARTIES. NO WAIVER, CONSENT, MODIFICATION OR CHANGE OF TERMS OF THIS CONTRACT SHALL BIND EITHER PARTY UNLESS IN WRITING AND SIGNED BY BOTH PARTIES. SUCH WAIVER, CONSENT, MODIFICATION OR CHANGE, IF MADE, SHALL BE EFFECTIVE ONLY IN THE SPECIFIC INSTANCE AND FOR THE SPECIFIC PURPOSE GIVEN. THERE ARE NO OTHER UNDERSTANDINGS, AGREEMENTS, OR REPRESENTATIONS, ORAL OR WRITTEN, NOT SPECIFIED HEREIN REGARDING THIS CONTRACT. CONTRACTOR, BY THE SIGNATURE BELOW OF ITS AUTHORIZED REPRESENTATIVE, HEREBY ACKNOWLEDGES THAT IT HAS READ THIS CONTRACT, UNDERSTANDS IT, AND AGREES TO BE BOUND BY ITS TERMS AND CONDITIONS.

In witness whereof, the Reynolds School District No. 7 executes this Agreement and the CONTRACTOR executes the same as of the day and year of this Agreement, which is the later of the dates below written.

**CONTRACTOR:**

Name of Firm: \_\_\_\_\_

Address: \_\_\_\_\_

Contractor's Federal Tax I.D. #: \_\_\_\_\_

Construction Contractor's Board Registration No.: \_\_\_\_\_

\_\_\_\_\_  
Signature of Authorized Representative of Contractor

Title \_\_\_\_\_

Date \_\_\_\_\_



**SECTION 00 50 00**  
**SAMPLE PUBLIC IMPROVEMENT AGREEMENT FORM**

**OWNER:**

Reynolds School District No. 7

\_\_\_\_\_  
Signature of Owner's Authorized Representative

Title\_\_\_\_\_

Date\_\_\_\_\_

**PART 1 - GENERAL**

**1.1 INCORPORATION**

- A. **BID BOND:** On the form attached here to must be fully executed for an amount of 10% of the bid, and submitted with at and at the time of stipulated for the bid opening. See attachment to this section.
  
- B. **PERFORMANCE AND PAYMENT BONDS:** When the Contract Price is \$100,000 or more (or \$50,000 or more in the case of Contracts for highways, bridges and other transportation projects) the Contractor shall furnish and maintain in effect at all times during the Contract Period, a performance bond in a sum equal to the Contract Price, and a separate payment bond also in a sum equal to the Contract Price.

Bond forms attached to this section are to be notarized by awarded Contractor's surety company authorized to do business in Oregon are the only acceptable forms of performance and payment security, unless otherwise specified in the Contract Documents.

Before starting Work the Contractor shall file with the Construction Contractors Board, and maintain in full force and effect, the separate public works bond required by Oregon Laws 2005, Chapter 360, and OAR 839-025-0015, unless otherwise exempt under those provisions. The Contractor shall also include in every subcontract a provision requiring the Subcontractor to have a public works bond filed with the Construction Contractors Board before starting Work, unless otherwise exempt, and shall verify that the Subcontractor has filed a public works bond before permitting the Subcontractor to start Work.

**END OF SECTION**

**REYNOLDS SCHOOL DISTRICT  
TRANSPORTATION YARD IMPROVEMENTS**

**BID BOND\***

Know all persons by these presents, that \_\_\_\_\_  
Hereinafter called the PRINCIPAL, and \_\_\_\_\_  
a corporation duly organized under the laws of the State of \_\_\_\_\_  
having its principal place of business at \_\_\_\_\_  
in the State of \_\_\_\_\_, and authorized to do business in the State of Oregon, as  
SURETY, are held and firmly bound unto the Reynolds School District, a Municipal  
Corporation of the State of Oregon, acting by and through its Board of Directors, hereinafter  
called the OBLIGEE, in the penal sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_),  
for the payment of which we bind ourselves, our heirs, executors, administrators,  
successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS BOND IS SUCH THAT:

NOW, THEREFORE, if the Bid submitted by the PRINCIPAL is accepted, and the Contract awarded to the PRINCIPAL, and the PRINCIPAL shall execute the proposed Contract and shall furnish such Performance Bond as required by the Contract Documents within the time fixed by the Documents, then this obligation shall be void; if the PRINCIPAL shall fail to execute the proposed Contract and furnish the bonds, the SURETY hereby agrees to pay to the OBLIGEE the penal sum as liquidated damages, within ten (10) days of such failure.

Signed and seated this day of \_\_\_\_\_, 2016.

\_\_\_\_\_  
Principal

Counter Signed

\_\_\_\_\_  
Address / Phone No.

\_\_\_\_\_  
Surety

\_\_\_\_\_  
Attorney-in-Fact

*\* Surety companies executing bid bond must be currently authorized to transact business in the State of Oregon.*

## PERFORMANCE AND PAYMENT BOND FORM

### PAYMENT AND PERFORMANCE BONDS

---

#### REYNOLDS SCHOOL DISTRICT PAYMENT BOND FORM

Bond No.: \_\_\_\_\_

Project Name: **Transportation Yard Improvements**      Key No.: \_\_\_\_\_

\_\_\_\_\_ (Surety No. 1)      Bond Amount: \$ \_\_\_\_\_

\_\_\_\_\_ (Surety No. 2)      \* Bond Amount: \$ \_\_\_\_\_  
\*If using multiple Sureties

Total Penal Sum of Bond:      \$ \_\_\_\_\_

We, \_\_\_\_\_ as Principal, and the above-identified Surety(ies), authorized to transact surety business in Oregon, as Surety, hereby jointly and severally bind ourselves, our respective heirs, executors, administrators, successors and assigns firmly by these presents to pay unto the Reynolds School District the sum of \_\_\_\_\_ (Total Penal Sum of Bond) (provided, that we the Sureties bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety); and

**WHEREAS**, the Principal has entered into a contract with the Reynolds School District for the provision of Construction Services of certain public improvements, comprised of the Contract Documents, as defined in Section A of the State of Oregon General Conditions for Public Improvement Contracts and Article 2.1 of the Contract (collectively referred to hereafter as the "Contract"); and

**WHEREAS**, the terms and conditions of the Contract are incorporated herein and made a part of this Payment Bond by reference as if fully set forth herein; and

**WHEREAS**, the Principal has agreed to perform the Contract in accordance with the Plans, Specifications, and conditions of the Contract as it may be modified from time to time by Change Order or otherwise to add or modify the Work to be performed, the conditions of Work, payment terms, the Contract Amount, or Contract Time, notice of any such additions or modifications hereby being waived by the Surety (ies):

**NOW, THEREFORE, THE CONDITION OF THIS BOND IS SUCH** that if the Principal herein shall faithfully and truly observe and comply with the terms, conditions and provisions of the Contract, in all respects, and shall well and truly and fully do and perform all matters and things undertaken by the General Contractor to be performed under the Contract, upon the terms set forth therein, and within the time prescribed therein, or as extended as provided in the Contract, with or without notice to the Surety(ies), and shall indemnify and save harmless the Reynolds School District, and members thereof, their officers, employees and agents, against any direct or indirect damages and claims of every kind and description that shall be suffered or claimed to be suffered in connection with or arising out of the performance of the Contract by the Principal, and shall in all respects perform said Contract according to Law, and shall promptly pay all persons supplying labor, Materials or both to the Principal or its Subcontractors for prosecution of the Work provided in the Contract; and shall promptly pay all contributions due the State Industrial Accident Fund and the State Unemployment Compensation Fund from the Principal or its Subcontractors in connection with the performance of the Contract; and shall pay over to the Oregon Department of Revenue all sums required to be deducted and retained from the wages of employees of the Principal and its Subcontractors pursuant to ORS 316.167, and shall permit no lien nor claim to be filed or prosecuted against the State on account of any labor or Materials furnished; and shall do all things required of the Principal by the Laws of this State, then this obligation shall be void; otherwise, it shall remain in full force and effect.

Nonpayment of the bond premium will not invalidate this bond, nor shall the Reynolds School District be obligated for the payment of any premiums.

This bond is given and received under authority of ORS 279C.380, the provisions of which are hereby incorporated into this bond and made a part hereof.

**IN WITNESS WHEREOF, WE HAVE CAUSED THIS INSTRUMENT TO BE EXECUTED AND SEALED BY OUR DULY-AUTHORIZED LEGAL REPRESENTATIVES.**

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_

**NAME OF PRINCIPAL:** \_\_\_\_\_

By: \_\_\_\_\_  
Signature of Authorized Representative

\_\_\_\_\_  
Printed Name of Authorized Representative

\_\_\_\_\_  
Title

**NAME OF SURETY No. 1:** \_\_\_\_\_

BY ATTORNEY-IN-FACT:  
[Power-of-Attorney must accompany each surety bond]

\_\_\_\_\_

Name

Signature

Address

City

State

Zip

Telephone Number

Fax Number

**\* NAME OF SURETY No. 2:** \_\_\_\_\_

BY ATTORNEY-IN-FACT:

[Power-of-Attorney must accompany each surety bond]

Name

Signature

Address

City

State

Zip

Telephone Number

Fax Number

**REYNOLDS SCHOOL DISTRICT  
PERFORMANCE BOND FORM**

Bond No.: \_\_\_\_\_

Project Name: **Transportation Yard Improvements**      Key No.: \_\_\_\_\_

\_\_\_\_\_ (Surety No. 1)      Bond Amount: \_\_\_\_\_

\_\_\_\_\_ (Surety No. 2)      \* Bond Amount: \_\_\_\_\_

\*If using multiple Sureties

Total Penal Sum of Bond: \$ \_\_\_\_\_

We, \_\_\_\_\_ as Principal, and the above-identified Surety(ies), authorized to transact surety business in Oregon, as Surety, hereby jointly and severally bind ourselves, our respective heirs, executors, administrators, successors and assigns firmly by these presents to pay unto the Reynolds School District the sum of \_\_\_\_\_ (Total Penal Sum of Bond) (provided, that we the Sureties bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety); and

**WHEREAS**, the Principal has entered into a Contract with the Reynolds School District for the provision of Construction Services of certain public improvements, comprised of the Contract Documents, as those terms are defined in Section A of the State of Oregon General Conditions for Public Improvement Contracts and Article 2.1 of the Contract (collectively referred to hereafter as the "Contract"); and

**WHEREAS**, the terms and conditions of the Contract are incorporated herein and made a part of this Performance Bond by reference; and

**WHEREAS**, the Principal has agreed to faithfully perform the Contract in accordance with the Plans, Specifications, and conditions of the Contract, as it may be modified from time to time by Change Order or otherwise to add or modify the Work to be performed, the conditions of Work, payment terms, the Contract Amount, or Contract Time, notice of any such additions or modifications hereby being waived by the Surety(ies):

**NOW, THEREFORE, THE CONDITION OF THIS BOND IS SUCH** that if the Principal herein shall faithfully and truly observe and comply with the terms, conditions and provisions of the Contract, in all respects, and shall well and truly and fully do and perform all matters and things undertaken by the Contractor to be performed under the Contract, upon the terms set forth therein, and within the time prescribed therein, or as extended as provided in the Contract, with or without notice to the Surety(ies), and shall indemnify and save harmless the Reynolds School District, and members thereof, their officers, employees and agents, against any direct or indirect damages and claims of every kind and description that shall be suffered or claimed to be suffered in connection with or arising out of the performance of the Contract by the Principal, and shall in all respects perform said Contract according to Law, then this obligation is to be void; otherwise, it shall remain in full force and effect.

Nonpayment of the bond premium will not invalidate this bond, nor shall the Reynolds School District be obligated for the payment of any premiums.

This bond is given and received under authority of ORS 279C.380, the provisions of which are hereby incorporated into this bond and made a part hereof.

**IN WITNESS WHEREOF, WE HAVE CAUSED THIS INSTRUMENT TO BE EXECUTED AND SEALED BY OUR DULY-AUTHORIZED LEGAL REPRESENTATIVES.**

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_

**NAME OF PRINCIPAL:** \_\_\_\_\_

By: \_\_\_\_\_  
Signature of Authorized Representative

\_\_\_\_\_  
Printed Name of Authorized Representative

\_\_\_\_\_  
Title

**NAME OF SURETY No. 1:** \_\_\_\_\_

BY ATTORNEY-IN-FACT:  
[Power-of-Attorney must accompany each surety bond]

\_\_\_\_\_  
Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Address

\_\_\_\_\_  
City State Zip

\_\_\_\_\_  
Telephone Number

\_\_\_\_\_  
Fax Number



**\*NAME OF SURETY No. 2:** \_\_\_\_\_

BY ATTORNEY-IN-FACT:

[Power-of-Attorney must accompany each surety bond]

\_\_\_\_\_  
Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Address

\_\_\_\_\_  
City State Zip

\_\_\_\_\_  
Telephone Number

\_\_\_\_\_

**PART 1 - GENERAL**

**1.1 INCORPORATION**

- A. State of Oregon General Construction Public Improvement Contracts, January 1, 2012 Edition modified by the Reynold School District on June 15, 2016, is incorporated into the contract documents as if bound herein.

END OF SECTION

**REYNOLDS SCHOOL  
DISTRICT**

**GENERAL CONDITIONS**

**FOR  
PUBLIC IMPROVEMENT  
CONTRACTS**



Adopted by Reynolds School District from the  
State of Oregon for use on the Transportation Yard Improvements

**NOTICE TO STATE AGENCIES AND PUBLIC IMPROVEMENT CONTRACTORS**

**January 1, 2012 Edition – Modified by RSD June 15, 2016**

Changes to the General Conditions (including any additions, deletions or substitutions) should only be made by Supplemental General Conditions, unless the General Conditions are specifically modified in the Public Improvement Agreement (which has a higher order of precedence under Section A.3 of the General Conditions). The text of these General Conditions should not otherwise be altered.

**NOTE: THE FOLLOWING GENERAL CONDITIONS HAVE BEEN REVIEWED AS TO FORM BY THE OREGON DEPARTMENT OF JUSTICE. THE LEGAL SUFFICIENCY AND APPROVAL REQUIREMENTS OF ORS 291.047 ARE STILL APPLICABLE FOR INDIVIDUAL PROCUREMENTS OF STATE AGENCIES, UNLESS AN EXEMPTION HAS BEEN GRANTED PURSUANT TO THAT STATUTE AND ADMINISTRATIVE RULES AT OAR CHAPTER 137, DIVISION 45.**

**STATE OF OREGON**  
**GENERAL CONDITIONS FOR PUBLIC IMPROVEMENT CONTRACTS**  
**JANUARY 1, 2012, modified by Reynold School District June 15, 2016**

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**STATE OF OREGON  
GENERAL CONDITIONS FOR PUBLIC IMPROVEMENT CONTRACTS  
("General  
Conditions")**

**SECTION A  
GENERAL PROVISIONS**

**A.1 DEFINITION OF TERMS**

In the Contract Documents the following terms shall be as defined below:

**ARCHITECT/ENGINEER**, means the Person appointed by the Owner to make drawings and specifications and, to provide contract administration of the Work contemplated by the Contract to the extent provided herein or by supplemental instruction of Owner (under which Owner may delegate responsibilities of the Owner's Authorized Representative to the Architect/Engineer), in accordance with ORS Chapter 671 (Architects) or ORS Chapter 672 (Engineers) and administrative rules adopted thereunder.

**CHANGE ORDER**, means a written order issued by the Owner's Authorized Representative to the Contractor requiring a change in the Work within the general scope of the Contract Documents, issued under the changes provisions of Section D.1 including Owner's written change directives as well as changes reflected in a writing executed by the parties to this Contract and, if applicable, establishing a Contract Price or Contract Time adjustment for the changed Work.

**CLAIM**, means a demand by Contractor pursuant to Section D.3 for review of the denial of Contractor's initial request for an adjustment of Contract terms, payment of money, extension of Contract Time or other relief, submitted in accordance with the requirements and within the time limits established for review of Claims in these General Conditions.

**CONTRACT**, means the written agreement between the Owner and the Contractor comprised of the Contract Documents which describe the Work to be done and the obligations between the parties.

**CONTRACT DOCUMENTS**, means the Solicitation Document and addenda thereto, the State of Oregon Public Improvement Agreement Form, General Conditions, Supplemental General Conditions, if any, the accepted Offer, Plans, Specifications, amendments and Change Orders.

**CONTRACT PERIOD**, as set forth in the Contract Documents, means the total period of time beginning with the issuance of the Notice to Proceed and concluding upon Final Completion.

**CONTRACT PRICE**, means the total of the awarded Offer amount, as increased or decreased by the price of approved alternates and Change Orders.

**CONTRACT TIME**, means any incremental period of time allowed under the Contract to complete any portion of the Work as reflected in the project schedule.

**CONTRACTOR**, means the Person awarded the Contract for the Work contemplated.

**DAYS**, are calendar days, including weekdays, weekends and holidays, unless otherwise specified.

**DIRECT COSTS**, means, unless otherwise provided in the Contract Documents, the cost of materials, including sales tax, cost of delivery; cost of labor, including social security, old age and unemployment insurance, and fringe benefits required by agreement or custom; worker's compensation insurance; project specific insurance (including, without limitation, Builder's Risk Insurance and Builder's Risk Installation Floater); bond premiums, rental cost of equipment, and machinery required for execution of the work; and the additional costs of field personnel directly attributable to the Work.

**FINAL COMPLETION**, means the final completion of all requirements under the Contract, including Contract Closeout as described in Section K but excluding Warranty Work as described in Section I.2, and the final payment and release of all retainage, if any, released.

**FORCE MAJEURE**, means an act, event or occurrence caused by fire, riot, war, acts of God, nature, sovereign, or public enemy, strikes, freight embargoes or any other act, event or occurrence that is beyond the control of the party to this Contract who is asserting Force Majeure.

**NOTICE TO PROCEED**, means the official written notice from the Owner stating that the Contractor is to proceed with the Work defined in the Contract Documents. Notwithstanding the Notice to Proceed, Contractor shall not be authorized to proceed with the Work until all initial Contract requirements, including the Contract, performance bond and payment bond, and certificates of insurance, have been fully executed and submitted to Owner in a suitable form.

**OFFER**, means a bid in connection with an invitation to bid and a proposal in connection with a request for proposals.

**OFFEROR**, means a bidder in connection with an invitation to bid and a proposer in connection with a request for proposals.

**OVERHEAD**, means those items which may be included in the Contractor's markup (general and administrative expense and

profit) and that shall not be charged as Direct Cost of the Work, including without limitation such Overhead expenses as wages or salary of personnel above the level of foreman (i.e., superintendents and project managers), expenses of Contractor's offices at the job site (e.g. job trailer) including expenses of personnel staffing the job site office, and Commercial General Liability Insurance and Automobile Liability Insurance.

**OWNER**, means the State of Oregon acting by and through the governmental entity identified in the Solicitation Document.

**OWNER'S AUTHORIZED REPRESENTATIVE**, means those individuals identified in writing by the Owner to act on behalf of the Owner for this project. Owner may elect, by written notice to Contractor, to delegate certain duties of the Owner's Authorized Representative to more than one party, including without limitation, to an Architect/Engineer. However, nothing in these General Conditions is intended to abrogate the separate design professional responsibilities of Architects under ORS Chapter 671 or of Engineers under ORS Chapter 672.

**PERSON**, means an entity doing business as a sole proprietorship, a partnership, a joint venture, a corporation, a limited liability company or partnership, or any other entity possessing the legal capacity to contract.

**PLANS**, means the drawings which show the location, type, dimensions, and details of the Work to be done under the Contract.

**PUNCHLIST**, means the list of Work yet to be completed or deficiencies which need to be corrected in order to achieve Final Completion of the Contract.

**RECORD DOCUMENT**, means the as-built Plans, Specifications, testing and inspection records, product data, samples, manufacturer and distributor/supplier warranties evidencing transfer to Owner, operational and maintenance manuals, shop drawings, Change Orders, correspondence, certificate(s) of occupancy, and other documents listed in Subsection B.9.1 of these General Conditions, recording all Services performed.

**SOLICITATION DOCUMENT**, means an invitation to bid or request for proposal or request for quotes.

**SPECIFICATION**, means any description of the physical or functional characteristics of the Work, or of the nature of a supply, service or construction item. Specifications may include a description of any requirement for inspecting, testing or preparing a supply, service or construction item for delivery and the quantities or qualities of materials to be furnished under the Contract. Specifications generally will state the results or products to be obtained and may, on occasion, describe the method and manner of doing the work to be performed. Specifications may be incorporated by reference and/or may be attached to the Contract.

**SUBCONTRACTOR**, means a Person having a direct contract with the Contractor, or another Subcontractor, to perform one or more items of the Work.

**SUBSTANTIAL COMPLETION**, means the date when the Owner accepts in writing the construction, alteration or repair of the improvement to real property or any designated portion thereof as having reached that state of completion when it may be used or occupied for its intended purpose. Substantial Completion of facilities with operating systems occurs only after thirty (30) continuous Days of successful, trouble-free operation of the operating systems as provided in Section K.4.2.

**SUBSTITUTIONS**, means items that in function, performance, reliability, quality, and general configuration are the same or better than the product(s) specified. Approval of any substitute item shall be solely determined by the Owner's Authorized Representative. The decision of the Owner's Authorized Representative is final.

**SUPPLEMENTAL GENERAL CONDITIONS**, means those conditions that remove from, add to, or modify these General Conditions. Supplemental General Conditions may be included in the Solicitation Document or may be a separate attachment to the Contract.

**WORK**, means the furnishing of all materials, equipment, labor, transportation, services and incidentals necessary to successfully complete any individual item or the entire Contract and the carrying out of duties and obligations imposed by the Contract Documents.

## **A.2 SCOPE OF WORK**

The Work contemplated under this Contract includes all labor, materials, transportation, equipment and services for, and incidental to, the completion of all construction work in connection with the project described in the Contract Documents. The Contractor shall perform all Work necessary so that the project can be legally occupied and fully used for the intended use as set forth in the Contract Documents.

## **A.3 INTERPRETATION OF CONTRACT DOCUMENTS**

A.3.1 Unless otherwise specifically defined in the Contract Documents, words which have well-known technical meanings or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings. Contract Documents are intended to be complementary. Whatever is called for in one, is interpreted to be called for in all. However, in the event of conflicts or discrepancies among the Contract Documents, interpretations will be based on the following descending order of precedence:

1. Contract amendments and Change Orders, with those of later date having precedence over those of an earlier

date;

2. The Supplemental General Conditions;
3. The State of Oregon Public Improvement Agreement Form;
4. The General Conditions
5. The Plans and Specifications
6. The Solicitation Document and any addenda thereto;
7. The accepted Offer.

A.3.2 In the case of an inconsistency between Plans and Specifications or within either document not clarified by addendum, the better quality or greater quantity of Work shall be provided in accordance with the Owner or Owner's Authorized Representative's interpretation in writing.

A.3.3 If the Contractor finds discrepancies in, or omissions from the Contract Documents, or if the Contractor is in doubt as to their meaning, the Contractor shall at once notify the Owner or Owner's Authorized Representative. Matters concerning performance under, and interpretation of requirements of, the Contract Documents will be decided by the Owner's Authorized Representative, who may delegate that duty in some instances to the Architect/Engineer. Responses to Contractor's requests for interpretation of Contract Documents will be made in writing by Owner's Authorized Representative (or the Architect/Engineer) within any time limits agreed upon or otherwise with reasonable promptness. Interpretations and decisions of the Owner's Authorized Representative (or Architect/Engineer) will be consistent with the intent of and reasonably inferable from the Contract Documents. Contractor shall not proceed without direction in writing from the Owner's Authorized Representative (or Architect/Engineer).

A.3.4 References to standard specifications, manuals, codes of any technical society, organization or association, to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code, laws or regulations in effect in the jurisdiction where the project is occurring on the first published date of the Solicitation Document, except as may be otherwise specifically stated.

#### **A.4 EXAMINATION OF PLANS, SPECIFICATIONS, AND SITE**

A.4.1 It is understood that the Contractor, before submitting an Offer, has made a careful examination of the Contract Documents; has become fully informed as to the quality and quantity of materials and the character of the Work required; and has made a careful examination of the location and conditions of the Work and the sources of supply for materials. The Owner will in no case be responsible for any loss or for any unanticipated costs that may be suffered by the Contractor as a result of the Contractor's failure to acquire full information in advance in regard to all conditions pertaining to the Work. No oral agreement or conversation with any officer, agent, or personnel of the Owner, or with the Architect/Engineer either before or after the execution of this Contract, shall affect or modify any of the terms or obligations herein contained.

A.4.2 Should the Plans or Specifications fail to particularly describe the materials, kind of goods, or details of construction of any aspect of the Work, Contractor shall have the duty to make inquiry of the Owner and Architect/Engineer as to what is required prior to performance of the Work. Absent Specifications to the contrary, the materials or processes that would normally be used to produce first quality finished Work shall be considered a part of the Contract requirements.

A.4.3 Any design errors or omissions noted by the Contractor shall be reported promptly to the Owner's Authorized Representative, including without limitation, any nonconformity with applicable laws, statutes, ordinances, building codes, rules and regulations.

A.4.4 If the Contractor believes that additional cost or Contract Time is involved because of clarifications or instructions issued by the Owner's Authorized Representative (or Architect/Engineer) in response to the Contractor's notices or requests for information, the Contractor must submit a written request to the Owner's Authorized Representative, setting forth the nature and specific extent of the request, including all time and cost impacts against the Contract as soon as possible, but no later than thirty (30) Days after receipt by Contractor of the clarifications or instructions issued. If the Owner's Authorized Representative denies Contractor's request for additional compensation, additional Contract Time, or other relief that Contractor believes results from the clarifications or instructions, the Contractor may proceed to file a Claim under Section D.3, Claims Review Process. If the Contractor fails to perform the obligations of Sections A.4.1 to A.4.3, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations.

#### **A.5 INDEPENDENT CONTRACTOR STATUS**

The service or services to be performed under this Contract are those of an independent contractor as defined in ORS 670.600. Contractor represents and warrants that it is not an officer, employee or agent of the Owner.

#### **A.6 RETIREMENT SYSTEM STATUS AND TAXES**

Contractor represents and warrants that it is not a contributing member of the Public Employees' Retirement System



and will be responsible for any federal or state taxes applicable to payment received under this Contract. Contractor will not be eligible for any benefits from these Contract payments of federal Social Security, employment insurance, workers' compensation or the Public Employees' Retirement System, except as a self-employed individual. Unless the Contractor is subject to backup withholding, Owner will not withhold from such payments any amount(s) to cover Contractor's federal or state tax obligations.

#### **A.7 GOVERNMENT EMPLOYMENT STATUS**

- A.7.1 If this payment is to be charged against federal funds, Contractor represents and warrants that it is not currently employed by the Federal Government. This does not preclude the Contractor from holding another contract with the Federal Government.
- A.7.2 Contractor represents and warrants that Contractor is not an employee of the State of Oregon for purposes of performing Work under this Contract.

### **SECTION B ADMINISTRATION OF THE CONTRACT**

#### **B.1 OWNER'S ADMINISTRATION OF THE CONTRACT**

- B.1.1 The Owner's Authorized Representative will provide administration of the Contract as described in the Contract Documents (1) during construction (2) until final payment is due and (3) during the one-year period for correction of Work. The Owner's Authorized Representative will act on behalf of the Owner to the extent provided in the Contract Documents, unless modified in writing in accordance with other provisions of the Contract. In performing these tasks, the Owner's Authorized Representative may rely on the Architect/Engineer or other consultants to perform some or all of these tasks.
- B.1.2 The Owner's Authorized Representative will visit the site at intervals appropriate to the stage of the Contractor's operations (1) to become generally familiar with and to keep the Owner informed about the progress and quality of the portion of the Work completed, (2) to endeavor to guard the Owner against defects and deficiencies in the Work, and (3) to determine in general if Work is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. The Owner's Authorized Representative will not make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Owner's Authorized Representative will neither have control over or charge of, nor be responsible for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work.
- B.1.3 Except as otherwise provided in the Contract Documents or when direct communications have been specifically authorized, the Owner and Contractor shall endeavor to communicate with each other through the Owner's Authorized Representative or designee about matters arising out of or relating to the Contract. Communications by and with the Architect/Engineer's consultants shall be through the Architect/Engineer. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner's Authorized Representative.
- B.1.4 Based upon the Architect/Engineer's evaluations of the Contractor's Application for Payment, or unless otherwise stipulated by the Owner's Authorized Representative, the Architect/Engineer will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

#### **B.2 CONTRACTOR'S MEANS AND METHODS; MITIGATION OF IMPACTS**

- B.2.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures.
- B.2.2 The Contractor is responsible to protect and maintain the Work during the course of construction and to mitigate any adverse impacts to the project, including those caused by authorized changes, which may affect cost, schedule, or quality.
- B.2.3 The Contractor is responsible for the actions of all its personnel, laborers, suppliers, and Subcontractors on the project. The Contractor shall enforce strict discipline and good order among Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of persons who are unfit or unskilled for the tasks assigned to them.

#### **B.3 MATERIALS AND WORKMANSHIP**

- B.3.1 The intent of the Contract Documents is to provide for the construction and completion in every detail of the Work described. All Work shall be performed in a professional manner and unless the means or methods of performing a task are specified elsewhere in the Contract Documents, Contractor shall employ methods that are generally accepted

and used by the industry, in accordance with industry standards.

- B.3.2 The Contractor is responsible to perform the Work as required by the Contract Documents. Defective Work shall be corrected at the Contractor's expense.
- B.3.3 Work done and materials furnished shall be subject to inspection and/or observation and testing by the Owner's Authorized Representative to determine if they conform to the Contract Documents. Inspection of the Work by the Owner's Authorized Representative does not relieve the Contractor of responsibility for the Work in accordance with the Contract Documents.
- B.3.4 Contractor shall furnish adequate facilities, as required, for the Owner's Authorized Representative to have safe access to the Work including without limitation walkways, railings, ladders, tunnels, and platforms. Producers, suppliers, and fabricators shall also provide proper facilities and access to their facilities.
- B.3.5 The Contractor shall furnish Samples of materials for testing by the Owner's Authorized Representative and include the cost of the Samples in the Contract Price.

#### **B.4 PERMITS**

Contractor shall obtain and pay for all necessary permits and licenses, except for those specifically excluded in the Supplemental General Conditions, for the construction of the Work, for temporary obstructions, enclosures, opening of streets for pipes, walls, utilities, environmental Work, etc., as required for the project. Contractor shall be responsible for all violations of the law, in connection with the construction or caused by obstructing streets, sidewalks or otherwise.

Contractor shall give all requisite notices to public authorities. The Contractor shall pay all royalties and license fees. The Contractor shall defend all suits or claims for infringement of any patent or other proprietary rights and save harmless and blameless from loss, on account thereof, the State of Oregon, and its departments, divisions, members and employees.

#### **B.5 COMPLIANCE WITH GOVERNMENT LAWS AND REGULATIONS**

- B.5.1 Contractor shall comply with all federal, state and local laws, codes, regulations and ordinances applicable to the Work and the Contract. Failure to comply with such requirements shall constitute a breach of Contract and shall be grounds for Contract termination. Without limiting the generality of the foregoing, Contractor expressly agrees to comply with the following as applicable: i) Title VI and VII of Civil Rights Act of 1964, as amended; (ii) Section 503 and 504 of the Rehabilitation Act of 1973, as amended; (iii) the Health Insurance Portability and Accountability Act of 1996; (iv) the Americans with Disabilities Act of 1990, as amended; (v) ORS Chapter 659A; as amended (vi) all regulations and administrative rules established pursuant to the foregoing laws; and (vii) all other applicable requirements of federal and state civil rights and rehabilitation statutes, rules and regulations. Owner's performance under the Contract is conditioned upon Contractor's compliance with the provisions of ORS 279C.505, 279C.510, 279C.515, 279C.520, and 279C.530, which are incorporated by reference herein.
- B.5.2 Contractor shall comply with all applicable requirements of federal and state civil rights and rehabilitation statutes, rules and regulations; and
  - (a) Contractor shall not discriminate against Disadvantaged, Minority, Women or Emerging Small Business enterprises, as those terms are defined in ORS 200.005, or a business enterprise that is owned or controlled by or that employs a disabled veteran, as that term is defined in ORS 408.225, in the awarding of subcontracts.
  - (b) Contractor shall maintain, in current and valid form, all licenses and certificates required by law, regulation, or this Contract when performing the Work.
- B.5.3 Unless contrary to federal law, Contractor shall certify that it shall not accept a bid from Subcontractors to perform Work as described in ORS 701.005 under this Contract unless such Subcontractors are registered with the Construction Contractors Board in accordance with ORS 701.035 to 701.055 at the time they submit their bids to the Contractor.
- B.5.4 Unless contrary to federal law, Contractor shall certify that each landscape contractor, as defined in ORS 671.520(2), performing Work under this Contract holds a valid landscape contractor's license issued pursuant to ORS 671.560.
- B.5.5 The following notice is applicable to Contractors who perform excavation Work. ATTENTION: Oregon law requires you to follow rules adopted by the Oregon Utility Notification Center. Those rules are set forth in OAR 952-001-0010 through OAR 952-001-0090. You may obtain copies of the rules by calling the center at (503)232-1987.
- B.5.6 Failure to comply with any or all of the requirements of B.5.1 through B.5.5 shall be a breach of Contract and constitute grounds for Contract termination. Damages or costs resulting from such noncompliance shall be the responsibility of Contractor.

#### **B.6 SUPERINTENDENCE**

Contractor shall keep on the site, during the progress of the Work, a competent superintendent and any necessary assistants who shall be satisfactory to the Owner and who shall represent the Contractor on the site. Directions given to the superintendent by the Owner's Authorized Representative shall be confirmed in writing to the Contractor.

## **B.7 INSPECTION**

- B.7.1 Owner's Authorized Representative shall have access to the Work at all times.
- B.7.2 Inspection of the Work will be made by the Owner's Authorized Representative at its discretion. The Owner's Authorized Representative will have authority to reject Work that does not conform to the Contract Documents. Any Work found to be not in conformance with the Contract Documents, in the discretion of the Owner's Authorized Representative, shall be removed and replaced at the Contractor's expense. Contractor shall make or obtain at the appropriate time all tests, inspections and approvals of portions of the Work required by the Contract Documents or by laws, ordinances, rules, regulations or orders of public authorities having jurisdiction. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work. The Contractor shall give the Owner's Authorized Representative timely notice of when and where tests and inspections are to be made so that the Owner's Authorized Representative may be present for such procedures. Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Owner's Authorized Representative.
- B.7.3 As required by the Contract Documents, Work done or material used without inspection or testing by the Owner's Authorized Representative may be ordered removed at the Contractor's expense.
- B.7.4 If directed to do so any time before the Work is accepted, the Contractor shall uncover portions of the completed Work for inspection. After inspection, the Contractor shall restore such portions of Work to the standard required by the Contract. If the Work uncovered is unacceptable or was done without sufficient notice to the Owner's Authorized Representative, the uncovering and restoration shall be done at the Contractor's expense. If the Work uncovered is acceptable and was done with sufficient notice to the Owner's Authorized Representative, the uncovering and restoration will be paid for as a Change Order.
- B.7.5 If any testing or inspection reveals failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Owner's Authorized Representative's and Architect/Engineer's services and expenses, shall be at the Contractor's expense.
- B.7.6 When the United States government participates in the cost of the Work, or the Owner has an agreement with other public or private organizations, or if any portion of the Work is being performed for a third party or in close proximity to third party facilities, representatives of these organizations have the right to inspect the Work affecting their interests or property. Their right to inspect shall not make them a party to the Contract and shall not interfere with the rights of the parties of the Contract. Instructions or orders of such parties shall be transmitted to the Contractor, through the Owner's Authorized Representative.

## **B.8 SEVERABILITY**

If any provision of this Contract is declared by a court to be illegal or in conflict with any law, the validity of the remaining terms and provisions shall not be affected and the rights and obligations of the parties shall be construed and enforced as if the Contract did not contain the particular provision held to be invalid.

## **B.9 ACCESS TO RECORDS**

- B.9.1 Contractor shall keep, at all times on the Work site, one record copy of the complete Contract Documents, including the Plans, Specifications, Change Orders and addenda, in good order and marked currently to record field changes and selections made during construction, and one record copy of Shop Drawings, Product Data, Samples and similar submittals, and shall at all times give the Owner's Authorized Representative access thereto.
- B.9.2 Contractor shall retain and the Owner and its duly authorized representatives shall have access to, for a period not less than ten (10) years, all Record Documents, financial and accounting records, and other books, documents, papers and records of Contractor which are pertinent to the Contract including records pertaining to Overhead and indirect costs, for the purpose of making audit, examination, excerpts and transcripts. If for any reason, any part of the Contract is involved in litigation, Contractor shall retain all such records until all litigation is resolved. The Owner and/or its agents shall continue to be provided full access to the records during litigation.

## **B.10 WAIVER**

Failure of the Owner to enforce any provision of this Contract shall not constitute a waiver or relinquishment by the Owner of the right to such performance in the future nor of the right to enforce any other provision of this Contract.

## **B.11 SUBCONTRACTS AND ASSIGNMENT**

- B.11.1 Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound by the terms and conditions of these General Conditions, and to assume toward the Contractor all of the obligations and responsibilities which the Contractor assumes toward the Owner thereunder, unless (1) the same are clearly inapplicable to the subcontract at issue because of legal requirements or industry practices, or (2) specific exceptions are

requested by Contractor and approved in writing by Owner. Where appropriate, Contractor shall require each Subcontractor to enter into similar agreements with sub-subcontractors at any level.

B.11.2 At Owner's request, Contractor shall submit to Owner prior to their execution either Contractor's form of subcontract, or the subcontract to be executed with any particular Subcontractor. If Owner disapproves such form, Contractor shall not execute the form until the matters disapproved are resolved to Owner's satisfaction. Owner's review, comment upon or approval of any such form shall not relieve Contractor of its obligations under this Agreement or be deemed a waiver of such obligations of Contractor.

B.11.3 Contractor shall not assign, sell, or transfer its rights, or delegate its responsibilities under this Contract, in whole or in part, without the prior written approval of the Owner. No such written approval shall relieve Contractor of any obligations of this Contract, and any transferee shall be considered the agent of the Contractor and bound to perform in accordance with the Contract Documents. Contractor shall remain liable as between the original parties to the Contract as if no assignment had occurred.

## **B.12 SUCCESSORS IN INTEREST**

The provisions of this Contract shall be binding upon and shall accrue to the benefit of the parties to the Contract and their respective permitted successors and assigns.

## **B.13 OWNER'S RIGHT TO DO WORK**

Owner reserves the right to perform other or additional work at or near the project site with other forces than those of the Contractor. If such work takes place within or next to the project site, Contractor will coordinate work with the other contractors or forces, cooperate with all other contractors or forces, carry out the Work in a way that will minimize interference and delay for all forces involved, place and dispose of materials being used so as not to interfere with the operations of another, and join the Work with the work of the others in an acceptable manner and perform it in proper sequence to that of the others. The Owner's Authorized Representative will resolve any disagreements that may arise between or among Contractor and the other contractors over the method or order of doing all work (including the Work). In case of unavoidable interference, the Owner's Authorized Representative will establish work priority (including the Work) which generally will be in the sequence that the contracts were awarded.

## **B.14 OTHER CONTRACTS**

In all cases and at any time, the Owner has the right to execute other contracts related to or unrelated to the Work of this Contract. The Contractor of this Contract will fully cooperate with any and all other contractors without additional cost to the Owner in the manner described in section B.13.

## **B.15 GOVERNING LAW**

This Contract shall be governed by and construed in accordance with the laws of the State of Oregon without regard to principles of conflict of laws.

## **B.16 LITIGATION**

Any Claim between Owner and Contractor that arises from or relates to this Contract and that is not resolved through the Claims Review Process in Section D.3 shall be brought and conducted solely and exclusively within the Circuit Court of Clackamas County for the State of Oregon; provided, however, if a Claim must be brought in a federal forum, then it shall be brought and conducted solely and exclusively within the United States District Court for the District of Oregon. In no event shall this section be construed as a waiver by the State of Oregon on any form of defense or immunity, whether sovereign immunity, governmental immunity, immunity based on the Eleventh Amendment to the Constitution of the United States or otherwise, from any claim or from the jurisdiction of any court. CONTRACTOR BY EXECUTION OF THIS CONTRACT HEREBY CONSENTS TO THE IN PERSONAM JURISDICTION OF THE COURTS REFERENCED IN THIS SECTION B.16.

## **B.17 ALLOWANCES**

B.17.1 The Contractor shall include in the Contract Price all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct.

B.17.2 Unless otherwise provided in the Contract Documents:

- (a) when finally reconciled, allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- (b) Contractor's costs for unloading and handling at the site, labor, installation costs, Overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Price but not in the allowances;
- (c) Whenever costs are more than or less than allowances, the Contract Price shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (i) the difference between actual costs and the allowances under Section B.17.2(a) and (2) changes in Contractor's costs under Section B.17.2(b).

- (d) Unless Owner requests otherwise, Contractor shall provide to Owner a proposed fixed price for any allowance work prior to its performance.

#### **B.18 SUBMITTALS, SHOP DRAWINGS, PRODUCT DATA AND SAMPLES**

B.18.1 The Contractor shall prepare and keep current, for the Architect's/Engineer's approval (or for the approval of Owner's Authorized Representative if approval authority has not been delegated to the Architect/Engineer), a schedule and list of submittals which is coordinated with the Contractor's construction schedule and allows the Architect/Engineer reasonable time to review submittals. Owner reserves the right to finally approve the schedule and list of submittals. Submittals include, without limitation, Shop Drawings, Product Data, and Samples which are described below:

- (a) Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor (including any sub-subcontractor), manufacturer, supplier or distributor to illustrate some portion of the Work.
- (b) Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.
- (c) Samples are physical examples which illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

B.18.2 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. The purpose of their submittal is to demonstrate for those portions of the Work for which submittals are required by the Contract Documents the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents. Review of submittals by the Architect/Engineer is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, or for approval of safety precautions or, unless otherwise specifically stated by the Architect/Engineer, of any construction means, methods, techniques, sequences or procedures, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect/Engineer's review of the Contractor's submittals shall not relieve the Contractor of its obligations under the Contract Documents. The Architect/Engineer's approval of a specific item shall not indicate approval of an assembly of which the item is a component. Informational submittals upon which the Architect/Engineer is not expected to take responsive action may be so identified in the Contract Documents. Submittals which are not required by the Contract Documents may be returned by the Architect/Engineer without action.

B.18.3 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Architect/Engineer Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors. Submittals which are not marked as reviewed for compliance with the Contract Documents and approved by the Contractor may be returned by the Architect/Engineer without action.

B.18.4 By approving and submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents that the Contractor has determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

B.18.5 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect/Engineer.

B.18.6 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect/Engineer's review or approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect/Engineer in writing of such deviation at the time of submittal and (i) the Architect/Engineer has given written approval to the specific deviation as a minor change in the Work, or (ii) a Change Order has been executed by Owner authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect/Engineer's review or approval thereof.

B.18.7 In the event that Owner elects not to have the obligations and duties described under this Section B.18 performed by the Architect/Engineer, or in the event no Architect/Engineer is employed by Owner on the project, all obligations and duties assigned to the Architect/Engineer hereunder shall be performed by the Owner's Authorized Representative.

#### **B.20 SUBSTITUTIONS**

The Contractor may make Substitutions only with the consent of the Owner, after evaluation by the Owner's Authorized Representative and only in accordance with a Change Order. Substitutions shall be subject to the requirements of the bid documents. By making requests for Substitutions, the Contractor represents that the Contractor has personally investigated the proposed substitute product; represents that the Contractor will provide the same warranty for the Substitution that the Contractor would for the product originally specified unless approved otherwise; certifies that the cost data presented is complete and includes all related costs under this Contract including redesign costs, and waives all claims for additional costs related to the Substitution which subsequently become apparent; and will coordinate the installation of the accepted Substitution, making such changes as may be required for the Work to be completed in all respects.

#### **B.21 USE OF PLANS AND SPECIFICATIONS**

Plans, Specifications and related Contract Documents furnished to Contractor by Owner or Owner's Architect/Engineer shall be used solely for the performance of the Work under this Contract. Contractor and its Subcontractors and suppliers are authorized to use and reproduce applicable portions of such documents appropriate to the execution of the Work, but shall not claim any ownership or other interest in them beyond the scope of this Contract, and no such interest shall attach. Unless otherwise indicated, all common law, statutory and other reserved rights, in addition to copyrights, are retained by Owner.

#### **B.22 FUNDS AVAILABLE AND AUTHORIZED**

Owner reasonably believes at the time of entering into this Contract that sufficient funds are available and authorized for expenditure to finance the cost of this Contract within the Owner's appropriation or limitation. Contractor understands and agrees that, to the extent that sufficient funds are not available and authorized for expenditure to finance the cost of this Contract, Owner's payment of amounts under this Contract attributable to Services performed after the last day of the current biennium is contingent on Owner receiving from the Oregon Legislative Assembly appropriations, limitations or other expenditure authority sufficient to allow Owner, in the exercise of its reasonable administrative discretion, to continue to make payments under this Contract.

#### **B.23 NO THIRD PARTY BENEFICIARIES**

Owner and Contractor are the only parties to this Contract and are the only parties entitled to enforce its terms. Nothing in this Contract gives, is intended to give, or shall be construed to give or provide any benefit or right, whether directly, indirectly, or otherwise, to third persons unless such third persons are individually identified by name herein and expressly described as intended beneficiaries of the terms of this Contract.

### **SECTION C WAGES AND LABOR**

#### **C.1 MINIMUM WAGE RATES ON PUBLIC WORKS**

Contractor shall comply fully with the provisions of ORS 279C.800 through 279C.870. Documents establishing those conditions, as determined by the Commissioner of the Bureau of Labor and Industries (BOLI), are included as attachments to or are incorporated by reference in the Contract Documents. Contractor shall pay workers at not less than the specified minimum hourly rate of wage, and shall include that requirement in all subcontracts.

#### **C.2 PAYROLL CERTIFICATION; ADDITIONAL RETAINAGE; FEE REQUIREMENTS**

C.2.1 In accordance with ORS 279C.845, the Contractor and every Subcontractor shall submit written certified statements to the Owner's Authorized Representative, on the form prescribed by the Commissioner of the Bureau of Labor and Industries, certifying the hourly rate of wage paid each worker which the Contractor or the Subcontractor has employed on the project and further certifying that no worker employed on the project has been paid less than the prevailing rate of wage or less than the minimum hourly rate of wage specified in the Contract, which certificate and statement shall be verified by the oath of the Contractor or the Subcontractor that the Contractor or Subcontractor has read the certified statement, that the Contractor or Subcontractor knows the contents of the certified statement and that to the Contractor's or Subcontractor's best knowledge and belief the certified statement is true. The certified statements shall set out accurately and completely the payroll records for the prior week including the name and address of each worker, the worker's correct classification, rate of pay, daily and weekly number of hours worked, deductions made and actual wages paid. Certified statements for each week during which the Contractor or Subcontractor has employed a worker on the project shall be submitted once a month, by the fifth business day of the following month.

The Contractor and Subcontractors shall preserve the certified statements for a period of ten (10) years from the date of completion of the Contract.

C.2.2 Pursuant to ORS 279C.845(7), the Owner shall retain 25 percent of any amount earned by the Contractor on this public works project until the Contractor has filed the certified statements required by section C.2.1. The Owner shall pay to the Contractor the amount retained under this subsection within 14 days after the Contractor files the required certified statements, regardless of whether a Subcontractor has failed to file certified statements.

C.2.2 Pursuant to ORS 279C.845(8), the Contractor shall retain 25 percent of any amount earned by a first-tier Subcontractor on this public works project until the first-tier Subcontractor has filed with the Owner the certified statements required by C.2.1. Before paying any amount retained under this subsection, the Contractor shall verify that the first-tier Subcontractor has filed the certified statement. Within 14 days after the first-tier Subcontractor files the required certified statement the Contractor shall pay the first-tier Subcontractor any amount retained under this subsection.

C.2.3 In accordance with statutory requirements, and administrative rules promulgated by the Commissioner of the Bureau of Labor and Industries, the fee required by ORS 279C.825(1) will be paid by Owner to the Commissioner.

### **C.3 PROMPT PAYMENT AND CONTRACT CONDITIONS**

C.3.1 Pursuant to ORS 279C.505 and as a condition to Owner's performance hereunder, the Contractor shall:

C.3.1.1 Make payment promptly, as due, to all persons supplying to Contractor labor or materials for the prosecution of the Work provided for in this Contract.

C.3.1.2 Pay all contributions or amounts due the State Industrial Accident Fund from such Contractor or Subcontractor incurred in the performance of the Contract.

C.3.1.3 Not permit any lien or claim to be filed or prosecuted against the Owner on account of any labor or material furnished. Contractor will not assign any claims that Contractor has against Owner, or assign any sums due by Owner, to Subcontractors, suppliers, or manufacturers, and will not make any agreement or act in any way to give Subcontractors a claim or standing to make a claim against the Owner.

C.3.1.4 Pay to the Department of Revenue all sums withheld from employees pursuant to ORS 316.167.

C.3.1.5 Demonstrate that an employee drug testing program is in place as follows:

(a) Contractor represents and warrants that Contractor has in place at the time of the execution of this Contract, and shall maintain during the term of this Contract, a Qualifying Employee Drug Testing Program for its employees that includes, at a minimum, the following:

(1) A written employee drug testing policy,

(2) Required drug testing for all new Subject

Employees or, alternatively, required testing of all Subject Employees every 12 months on a random selection basis, and

(3) Required testing of a Subject Employee when the Contractor has reasonable cause to believe the Subject Employee is under the influence of drugs.

A drug testing program that meets the above requirements will be deemed a "Qualifying Employee Drug Testing Program." For the purposes of this section, an employee is a "Subject Employee" only if that employee will be working on the project job site.

(b) Contractor shall require each Subcontractor providing labor for the project to:

(1) Demonstrate to the Contractor that it has a Qualifying Employee Drug Testing Program for the Subcontractor's Subject Employees, and represent and warrant to the Contractor that the Qualifying Employee Drug Testing Program is in place at the time of subcontract execution and will continue in full force and effect for the duration of the subcontract, or

(2) Require that the Subcontractor's Subject Employees participate in the Contractor's Qualifying Employee Drug Testing Program for the duration of the subcontract.

C.3.2 Pursuant to ORS 279C.515, and as a condition to Owner's performance hereunder, Contractor agrees:

C.3.2.1 If Contractor fails, neglects or refuses to pay promptly a person's claim for labor or services that the person provides to the Contractor or a Subcontractor in connection with the project as such claim becomes due, the proper officer that represents the Owner may pay the amount of the claim and charge the amount of the payment against funds due or to become due Contractor under this Contract. Paying a claim in this manner shall not relieve the Contractor or the Contractor's surety from obligation with respect to an unpaid claim.

C.3.2.2 If the Contractor or a first-tier Subcontractor fails, neglects or refuses to pay a person that provides labor or materials in connection with the public contract for a public improvement within thirty (30) Days after receiving payment from Owner or a contractor, the contractor or first-tier Subcontractor owes the person the amount due plus interest charges that begin at the end of the 10-Day period within which payment is due under ORS 279C.580(3) and that end upon final payment, unless payment is subject to a good faith dispute as defined in ORS 279C.580. The rate of interest on the amount due is nine percent per annum. The amount of interest may not be waived.

C.3.2.3 If the Contractor or a Subcontractor fails, neglects or refuses to pay a person that provides labor or materials in connection with the Contract, the person may file a complaint with the Construction Contractors Board, unless payment is subject to a good faith dispute as defined in ORS 279C.580. Every contract related to this Contract must contain a similar clause.

C.3.2.4 Pursuant to ORS 279C.580, Contractor shall include in each subcontract for property or services the Contractor enters into with a first-tier Subcontractor, including a material supplier, for the purpose of performing a construction contract:

- (a) A payment clause that obligates the Contractor to pay the first-tier Subcontractor for satisfactory performance under the subcontract within ten (10) Days out of amounts the Owner pays to the Contractor under the Contract;
- (b) A clause that requires the Contractor to provide the first-tier Subcontractor with a standard form that the first-tier Subcontractor may use as an application for payment or as another method by which the Subcontractor may claim a payment due from the Contractor;
- (c) A clause that requires the Contractor, except as otherwise provided in this paragraph, to use the same form and regular administrative procedures for processing payments during the entire term of the subcontract. The Contractor may change the form or the regular administrative procedures the Contractor uses for processing payments if the Contractor:
  - (1) Notifies the Subcontractor in writing at least 45 days before the date on which the Contractor makes the change; and
  - (2) Includes with the written notice a copy of the new or changed form or a description of the new or changed procedure.
- (d) An interest penalty clause that obligates the Contractor, if the Contractor does not pay the first-tier Subcontractor within thirty (30) Days after receiving payment from Owner, to pay the first-tier Subcontractor an interest penalty on amounts due in each payment the Contractor does not make in accordance with the payment clause included in the subcontract under paragraph (a) of this subsection. Contractor or first-tier Subcontractor is not obligated to pay an interest penalty if the only reason that the Contractor or first-tier Subcontractor did not make payment when payment was due is that the Contractor or first-tier Subcontractor did not receive payment from Owner or Contractor when payment was due. The interest penalty applies to the period that begins on the day after the required payment date and that ends on the date on which the amount due is paid; and is computed at the rate specified in ORS 279C.515(2).
- (e) A clause which requires each of Contractor's Subcontractors to include, in each of their contracts with lower-tier Subcontractors or suppliers, provisions to the effect that the first-tier Subcontractor shall pay its lower-tier Subcontractors and suppliers in accordance with the provisions of paragraphs (a) through (d) above and requiring each of their Subcontractors and suppliers to include such clauses in their subcontracts and supply contracts.

C.3.3 All employers, including Contractor, that employ subject workers who work under this contract in the State of Oregon shall comply with ORS 656.017 and provide the required Workers' Compensation coverage, unless such employers are exempt under ORS 656.126. Contractor shall ensure that each of its Subcontractors complies with these requirements.

#### **C.4 PAYMENT FOR MEDICAL CARE**

Pursuant to ORS 279C.530, and as a condition to Owner's performance hereunder, Contractor shall promptly, as due, make payment to any person, partnership, association or corporation furnishing medical, surgical, and hospital care or other needed care and attention, incident to sickness or injury, to the employees of such Contractor, all sums of which the Contractor agrees to pay for such services and all moneys and sums which the Contractor has collected or deducted from the wages of personnel pursuant to any law, contract or agreement for the purpose of providing or paying for such services.

#### **C.5 HOURS OF LABOR**

As a condition to Owner's performance hereunder, Contractor shall comply with ORS 279C.520, as amended from time to time and incorporated herein by this reference:

Pursuant to ORS 279C.520 and as a condition to Owner's performance hereunder, no person shall be employed to perform Work under this Contract for more than ten (10) hours in any one day or forty (40) hours in any one week, except in cases of necessity, emergency or where public policy absolutely requires it. In such instances, Contractor shall pay the employee at least time and a half pay:

- (a) For all overtime in excess of eight (8) hours a day or forty (40) hours in any one week when the work week is five consecutive Days, Monday through Friday; or
- (b) For all overtime in excess of ten (10) hours a day or forty (40) hours in any one week when the work week is four consecutive Days,



Monday through Friday; and

- (c) For all Work performed on Saturday and on any legal holiday specified in ORS 279C.540.

This section C.5 will not apply to Contractor's Work under this Contract if Contractor is currently a party to a collective bargaining agreement with any labor organization.

This Section C.5 shall not excuse Contractor from completion of the Work within the time required under this Contract.

## **SECTION D CHANGES IN THE WORK**

### **D.1 CHANGES IN WORK**

D.1.1 Contractor shall utilize owner provided Construction Change Issues Log (CCI Log) via smartsheet.com to manage all changes to the GMP contingency with owner authorization. The terms of this Contract shall not be waived, altered, modified, supplemented or amended in any manner whatsoever without prior written approval of the Owner's Authorized Representative, and then only in a manner consistent with the Change Order provisions of this Section D.1 and after any necessary approvals required by public contracting laws have been obtained. Otherwise, a formal contract amendment is required, which shall not be effective until its execution by the parties to this Contract and all approvals required by public contracting laws have been obtained.

D.1.2 It is mutually agreed that changes in Plans, quantities, or details of construction are inherent in the nature of construction and may be necessary or desirable during the course of construction. Within the general scope of this Contract, the Owner's Authorized Representative may at any time, without notice to the sureties and without impairing the Contract, require changes consistent with this Section D.1. All Change Order Work shall be executed under the conditions of the Contract Documents. Such changes may include, but are not limited to:

- (a) Modification of specifications and design.
- (b) Increases or decreases in quantities.
- (c) Increases or decreases to the amount of Work.
- (d) Addition or elimination of any Work item.
- (e) Change in the duration of the project.
- (f) Acceleration or delay in performance of Work.
- (g) Deductive changes.

Deductive changes are those that reduce the scope of the Work, and shall be made by mutual agreement whenever feasible, as determined by Owner. In cases of suspension or partial termination under Section J, Owner reserves the right to unilaterally impose a deductive change to self-perform such Work, for which the provisions of B.13. (Owner's Right to Do Work) shall then apply.

Adjustments in compensation shall be made under the provisions of D.1.3, in which costs for deductive changes shall be based upon a Direct Costs adjustment together with the related percentage markup specified for profit, Overhead and other indirect costs, unless otherwise agreed to by Owner.

D.1.3. The Owner and Contractor agree that Change Order Work shall be administered and compensated accordingly to the following:

- a). Unit pricing may be utilized at the Owner's option when unit prices or solicitation alternates were provided that established the cost for additional Work, and a binding obligation exists under the Contract on the parties covering the terms and conditions of the additional Work.
- b). If the Owner elects not to utilize unit pricing, or in the event that unit pricing is not available or appropriate, *fixed pricing* may be used for Change Order Work. In fixed pricing the basis of payments or total price shall be agreed upon in writing between the parties to the Contract, and shall be established before the Work is done whenever feasible. The mark-ups set forth in D.1.3(c) shall be utilized by the parties as a guide in establishing fixed pricing, and will not be exceeded by Owner without adequate justification. Cost and price data relating to Change Orders shall be supplied by Contractor to Owner upon request, but Owner shall be under no obligation to make such requests.
- c). In the event that unit pricing and fixed pricing are not utilized, then Change Order Work shall be performed on a *cost reimbursement* basis for Direct Costs. Such Work shall be compensated on the basis of the actual, reasonable and allowable cost of labor, equipment, and material furnished on the Work performed. In addition, the following markups shall be added to the Contractor's or Subcontractor's Direct Costs as full compensation for profit, Overhead and other indirect costs for Work directly performed with the Contractor's or Subcontractor's own forces:

On Labor..... 10%

On Equipment.....	5%
On Materials.....	5%

When Change Order Work under D.1.3(c) is invoiced by an authorized Subcontractor at any level, each ascending tier Subcontractor or Contractor will be allowed a 5% supplemental mark-up on each piece of subcontract Work covered by such Change Order.

Payments made to the Contractor shall be complete compensation for Overhead, profit, and all costs that were incurred by the Contractor or by other forces furnished by the Contractor, including Subcontractors for Change Order Work. Owner may establish a maximum cost for Change Order Work under this Section D.1.3(c), which shall not be exceeded or reimbursement without additional written authorization from Owner, Contractor shall not be required to complete such Change Order Work without additional authorization.

D.1.4 Any necessary adjustment of Contract Time that may be required as a result of a Change Order must be agreed upon by the parties before the start of the Change Order Work unless Owner's Authorized Representative authorizes Contractor to start the Work before agreement on Contract Time adjustment. Contractor shall submit any request for additional compensation (and additional Contract Time if Contractor was authorized to start Work before an adjustment of Contract Time was approved) as soon as possible but no later than thirty (30) Days after receipt of the Change Order. If Contractor's request for additional compensation or adjustment of Contract Time is not made within the thirty (30) day time limit, Contractor's requests pertaining to that Change Order are barred. The thirty (30) day time limit for making requests shall not be extended for any reason, including without limitation Contractor's claimed inability to determine the amount of additional compensation or adjustment of Contract Time, unless an extension is granted in writing by Owner. If the Owner's Authorized Representative denies Contractor's request for additional compensation or adjustment of Contract Time, Contractor may proceed to file a Claim under Section D.3. Claims Review Process. No other reimbursement, compensation, or payment will be made, except as provided in Section D.1.5 for impact claims.

D.1.5 If any Change Order Work under Section D.1.3 causes an increase or decrease in the Contractor's cost of, or the Contract Time required for the performance of any other part of the Work under this Contract, the Contractor must submit a written request to the Owner's Authorized Representative, setting forth the nature and specific extent of the request, including all time and cost impacts against the Contract as soon as possible, but no later than thirty (30) Days after receipt of the Change Order by Contractor.

The thirty (30) day time limit applies to claims of Subcontractors, suppliers, or manufacturers that may be affected by the Change Order and that request additional compensation or an extension of Contract Time to perform; Contractor has responsibility for contacting its Subcontractors, suppliers, or manufacturers within the thirty (30) day time limit, and including their requests with Contractor's requests. If the request involves Work to be completed by Subcontractors, or materials to be furnished by suppliers or manufacturers, such requests shall be submitted to the Contractor in writing with full analysis and justification for the compensation and additional Contract Time requested. The Contractor will analyze and evaluate the merits of the requests submitted by Subcontractors, suppliers, and manufacturers to Contractor prior to including those requests and Contractor's analysis and evaluation of those requests with Contractor's requests for additional compensation or Contract Time that Contractor submits to the Owner's Authorized Representative. Failure of Subcontractors, suppliers, manufacturers or others to submit their requests to Contractor for inclusion with Contractor's requests submitted to Owner's Authorized Representative within the time period and by the means described in this section shall constitute a waiver of these Subcontractor claims. The Owner's Authorized Representative and the Owner will not consider direct requests or claims from Subcontractors, suppliers, manufacturers or others not a party to this Contract. The consideration of such requests and claims under this section does not give any person, not a party to the Contract the right to bring a claim against the State of Oregon, whether in this claims process, in litigation, or in any dispute resolution process.

If the Owner's Authorized Representative denies the Contractor's request for additional compensation or an extension of Contract Time, the Contractor may proceed to file a Claim under Section D.3, Claims Review Process.

D.1.6 No request or Claim by the Contractor for additional costs or an extension of Contract Time shall be allowed if made after receipt of final payment application under this Contract. Contractor agrees to submit its final payment application within ninety (90) days after Substantial Completion, unless written extension is granted by Owner. Contractor shall not delay final payment application for any reason, including without limitation nonpayment of Subcontractors, suppliers, manufacturers or others not a party to this Contract, or lack of resolution of a dispute with Owner or any other person of matters arising out of or relating to the Contract. If Contractor fails to submit its final payment application within ninety (90) days after Substantial Completion, and Contractor has not obtained written extension by Owner, all requests or Claims for additional costs or an extension of Contract Time shall be waived.

D.1.7 It is understood that changes in the Work are inherent in construction of this type. The number of changes, the scope of those changes, and the effect they have on the progress of the original Work cannot be defined at this time. The Contractor is notified that numerous changes may be required and that there will be no compensation made to the contractor directly related to the number of changes. Each change will be evaluated for extension of contract time and increase or decrease in compensation based on its own merit.

## **D.2. DELAYS**

D.2.1 Delays in construction include "Avoidable Delays", which are defined in Section D.2.1.1, and "Unavoidable Delays", which are defined in Section D.2.1.2. The effect of Avoidable Delays is described in Section D.2.2 and the effect of Unavoidable Delays is described in Section D.2.3.

D.2.1.1 Avoidable Delays include any delays other than unavoidable Delays, and include delays that otherwise would be considered Unavoidable Delays but that:

- (a) Could have been avoided by the exercise of care, prudence, foresight, and diligence on the part of the Contractor or its Subcontractors.
- (b) Affect only a portion of the Work and do not necessarily prevent or delay the prosecution of other parts of the Work nor the completion of the whole Work within the Contract Time.
- (c) Do not impact activities on the accepted critical path schedule.
- (d) Are associated with the reasonable interference of other contractors employed by the Owner that do not necessarily prevent the completion of the whole Work within the Contract Time.

D.2.1.2 Unavoidable Delays include delays other than Avoidable Delays that are:

- (a) Caused by any actions of the Owner, Owner's Authorized Representative, or any other employee or agent of the Owner, or by separate contractor employed by the Owner.
- (b) Caused by any site conditions which differ materially from what was represented in the Contract Documents or from conditions that would normally be expected to exist and be inherent to the construction activities defined in the Contract Documents. The Contractor shall notify the Owner's Authorized Representative immediately of differing site conditions before the area has been disturbed. The Owner's Authorized Representative will investigate the area and make a determination as to whether or not the conditions differ materially from either the conditions stated in the Contract Documents or those which could reasonably be expected in execution of this particular Contract. If Contractor and the Owner's Authorized Representative agree that a differing site condition exists, any additional compensation or additional Contract Time will be determined based on the process set forth in Section D.1.5 for Change Order Work. If the Owner's Authorized Representative disagrees that a differing site condition exists and denies Contractor's request for additional compensation or Contract Time, Contractor may proceed to file a Claim under Section D.3, Claims Review Process Caused by Force Majeure acts, events or occurrences that could not have been avoided by the exercise of care, prudence, foresight, and diligence on the part of the Contractor or its Subcontractors.
- (c) Caused by adverse weather conditions. Any adverse weather conditions must be substantiated by documentary evidence that weather conditions were abnormal for the specific time period claimed, could not have been anticipated by the Contractor, and adversely impacted the project in a manner that could not be avoided by rescheduling the Work or by implementing measures to protect against the weather so that the Work could proceed. A rain, windstorm, high water, or other natural phenomenon for the specific locality of the Work, which might reasonably have been anticipated from the previous 10- year historical records of the general locality of the Work, shall not be construed as abnormal. The parties agree that rainfall greater than the following levels cannot be reasonably anticipated:
  - (i) Daily rainfall equal to, or greater than, 0.50 inch during a month when the monthly rainfall exceeds the normal monthly average by twenty-five percent (25 %) or more.
  - (ii) daily rainfall equal to, or greater than, 0.75 inch at any time.

The Office of the Environmental Data Service of the National Oceanic and Atmospheric Administration of the U.S. Department of Commerce nearest the project site shall be considered the official agency of record for weather information.

D.2.2 Except as otherwise provided in ORS 279C.315, Contractor shall not be entitled to additional compensation or additional Contract Time for Avoidable Delays.

D.2.3 In the event of Unavoidable Delays, based on principles of equitable adjustment, Contractor may be entitled to the following:

- (a) Contractor may be entitled to additional compensation or additional Contract Time, or both, for Unavoidable Delays described in Section D.2.1.2 (a) and (b).
- (b) Contractor may be entitled to additional Contract Time for Unavoidable Delays described in Section D.2.1.2(c) and (d).

In the event of any requests for additional compensation or additional Contract Time, or both, as applicable, arising under this Section D.2.3 for Unavoidable Delays, other than requests for additional compensation or additional Contract Time for differing site conditions for which a review process is established under Section D.2.1.2 (b), Contractor shall submit a written notification of the delay to the Owner's Authorized Representative within two (2) Days of the occurrence of the cause of the delay. This written notification shall state the cause of the potential delay, the project components impacted by the delay, and the anticipated additional Contract Time or the additional compensation, or both, as applicable, resulting from the delay. Within seven (7) Days after the cause of the delay has been mitigated, or in no case more than thirty (30) Days

after the initial written notification, the Contractor shall submit to the Owner's Authorized Representative, a complete and detailed request for additional compensation or additional Contract Time, or both, as applicable, resulting from the delay.

If the Owner's Authorized Representative denies Contractor's request for additional compensation or adjustment of Contract Time, the Contractor may proceed to file a Claim under Section D.3, Claims Review Process.

If Contractor does not timely submit the notices required under this Section D.2., then unless otherwise prohibited by law, Contractor's Claim shall be barred.

### **D.3 CLAIMS REVIEW PROCESS**

D.3.1 All Contractor Claims shall be referred to the Owner's Authorized Representative for review. Contractor's Claims, including Claims for additional compensation or additional Contract Time, shall be submitted in writing by Contractor to the Owner's Authorized Representative within five (5) Days after a denial of Contractor's initial request for an adjustment of Contract terms, payment of money, extension of Contract Time or other relief, provided that such initial request has been submitted in accordance with the requirements and within the time limits established in these General Conditions. Within twenty one (21) Days after the initial Claim, Contractor shall submit to the Owner's Authorized Representative, a complete and detailed description of the Claim (the "Detailed Notice") that includes all information required by Section D.3.2. Unless the Claim is made in accordance with these time requirements, it shall be waived.

D.3.2 The Detailed Notice of the Claim shall be submitted in writing by Contractor and shall include a detailed, factual statement of the basis of the Claim, pertinent dates, Contract provisions which support or allow the Claim, reference to or copies of any documents which support the Claim, the dollar value of the Claim, and the Contract Time extension requested for the Claim. If the Claim involves Work to be completed by Subcontractors, the Contractor will analyze and evaluate the merits of the Subcontractor claim prior to forwarding it and that analysis and evaluation to the Owner's Authorized Representative. The Owner's Authorized Representative and the Owner will not consider direct claims from Subcontractors, suppliers, manufacturers, or others not a party to this Contract. Contractor agrees that it will make no agreement, covenant, or assignment, nor will it commit any other act that will permit or assist any Subcontractor, supplier, manufacturer, or other to directly or indirectly make a claim against Owner.

D.3.3 The Owner's Authorized Representative will review all Claims and take one or more of the following preliminary actions within ten (10) Days of receipt of the Detailed Notice of a Claim: (1) request additional supporting information from the Contractor; (2) inform the Contractor and Owner in writing of the time required for adequate review and response; (3) reject the Claim in whole or in part and identify the reasons for rejection; (4) based on principles of equitable adjustment, recommend approval of all or part of the Claim; or (5) propose an alternate resolution.

D.3.4 The Owner's Authorized Representative's decision shall be final and binding on the Contractor unless appealed by written notice to the Owner within fifteen (15) Days of receipt of the decision. The Contractor must present written documentation supporting the Claim within fifteen (15) Days of the notice of appeal. After receiving the appeal documentation, the Owner shall review the materials and render a decision within thirty (30) Days after receiving the appeal documents.

D.3.5 The decision of the Owner shall be final and binding unless the Contractor delivers to the Owner its requests for mediation, which shall be a non-binding process, within fifteen (15) Days of the date of the Owner's decision. The mediation process will be considered to have commenced as of the date the Contractor delivers the request. Both parties acknowledge and agree that participation in mediation is a prerequisite to commencement of litigation of any disputes relating to the Contract. Both parties further agree to exercise their best efforts in good faith to resolve all disputes within sixty (60) Days of the commencement of the mediation through the mediation process set forth herein.

In the event that a lawsuit must be filed within this sixty (60) day period in order to preserve a cause of action, the parties agree that notwithstanding the filing, they shall proceed diligently with the mediation to its conclusion prior to actively prosecuting the lawsuit, and shall seek from the Court in which the lawsuit is pending such stays or extensions, including the filing of an answer, as may be necessary to facilitate the mediation process. Further, in the event settlements are reached on any issues through mediation, the parties agree to promptly submit the appropriate motions and orders documenting the settlement to the Court for its signature and filing.

D.3.6 The mediator shall be an individual mutually acceptable to both parties, but in the absence of agreement each party shall select a temporary mediator and the temporary mediators shall jointly select the permanent mediator. Each party shall pay its own costs for the time and effort involved in mediation. The cost of the mediator shall be split equally between the two parties. Both parties agree to exercise their best effort in good faith to resolve all disputes in mediation.

Participation in mediation is a mandatory requirement of both the Owner and the Contractor. The schedule, time and place for mediation will be mutually acceptable, or, failing mutual agreement, shall be as established by the mediator. The parties agree to comply with Owner's administrative rules governing the confidentiality of mediation, if any, and shall execute all necessary documents to give effect to such confidentiality rules. In any event, the parties shall not subpoena the mediator or otherwise require the mediator to produce records, notes or work product, or to testify in any future proceedings as to information disclosed or representations made in the course of mediation, except to the extent disclosure is required by law.

- D.3.7 Owner may at any time and at its discretion issue a construction change directive adding to, modifying or reducing the scope of Work. Contractor and Owner shall negotiate the need for any additional compensation or additional Contract Time related to the change, subject to the procedures for submitting requests or Claims for additional compensation or additional Contract Time established in this Section

D. Unless otherwise directed by Owner's Authorized Representative, Contractor shall proceed with the Work while any request or Claim is pending, including but not limited to, a request or Claim for additional compensation or additional Contract Time resulting from Work under a Change Order or construction change directive. Regardless of the review period or the final decision of the Owner's Authorized Representative, the Contractor shall continue to diligently pursue the Work as identified in the Contract Documents. In no case is the Contractor justified or allowed to cease Work without a written stop work order from the Owner or Owner's Authorized Representative.

## **SECTION E**

### **PAYMENTS**

#### **E.1 SCHEDULE OF VALUES**

The Contractor shall submit, at least ten (10) Days prior to submission of its first application for progress payment, a schedule of values ("Schedule of Values") for the contracted Work. This schedule will provide a breakdown of values for the contracted Work and will be the basis for progress payments. The breakdown will demonstrate reasonable, identifiable, and measurable components of the Work. Unless objected to by the Owner's Authorized Representative, this schedule shall be used as the basis for reviewing Contractor's applications for payment. If objected to by Owner's Authorized Representative, Contractor shall revise the schedule of values and resubmit the same for approval of Owner's Authorized Representative.

#### **E.2 APPLICATIONS FOR PAYMENT**

- E.2.1 Owner shall make progress payments on the Contract monthly as Work progresses. Payments shall be based upon estimates of Work completed and the Schedule of Values. All payments shall be approved by the Owner's Authorized Representative. A progress payment shall not be considered acceptance or approval of any Work or waiver of any defects therein. Owner shall pay to Contractor interest on the progress payment, not including retainage, due the Contractor. The interest shall commence thirty (30) Days after the receipt of invoice ("application for payment") from the Contractor or fifteen (15) Days after the payment is approved by the Owner's Authorized Representative, whichever is the earlier date. The rate of interest shall equal three times the discount rate on 90-day commercial paper in effect at the Federal Reserve Bank in the Federal Reserve district that includes Oregon on the date that is thirty (30) Days after receipt of the application for payment from the Contractor or fifteen (15) Days after the payment is approved by the Owner, whichever is the earlier date, but the rate of interest shall not exceed thirty (30) percent. Notwithstanding the foregoing, in instances when an application for payment is filled out incorrectly, or when there is any defect or impropriety in any submitted application or when there is a good faith dispute, Owner shall so notify the Contractor within fifteen (15) Days stating the reason or reasons the application for payment is defective or improper or the reasons for the dispute. A defective or improper application for payment, if corrected by the Contractor within seven (7) Days of being notified by the Owner, shall not cause a payment to be made later than specified in this section unless interest is also paid. Accrual of interest will be postponed when payment on the principal is delayed because of disagreement between the Owner and the Contractor.

Owner reserves the right, instead of requiring the Contractor to correct or resubmit a defective or improper application for payment, to reject the defective or improper portion of the application for payment and pay the remainder of the application for payment that is correct and proper.

Owner, upon written notice to the Contractor, may elect to make payments to the Contractor only by means of Electronic Funds Transfers (EFT) through Automated Clearing House (ACH) payments. If Owner makes this election, the Contractor will be required to arrange to receive EFT/ACH payments.

- E.2.2 Contractor shall submit to the Owner's Authorized Representative, an application for each payment and, if required, receipts or other vouchers showing payments for materials and labor, including payments to Subcontractors. Contractor shall include, in its application for payment, a schedule of the percentages of the various parts of the Work completed, based on the Schedule of Values which shall aggregate to the payment application total, and shall include, on the face of each copy thereof, a certificate in substantially the following form:

"I, the undersigned, hereby certify that the above bill is true and correct, and the payment therefore, has not been received.

Signed:

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E.2.3 Generally, applications for payment will be accepted only for materials that have been installed. Under special conditions, applications for payment for stored materials will be accepted at Owner's sole discretion. Such a payment, if made, will be subject to the following conditions:

- (a) The request for stored material shall be submitted at least thirty (30) Days in advance of the application for payment on which it appears. Applications for payment shall be entertained for major equipment, components or expenditures only.
- (b) The Contractor shall submit applications for payment showing the quantity and cost of the material stored.
- (c) The material shall be stored in a bonded warehouse and Owner's Authorized Representative shall be granted the right to access the material for the purpose of removal or inspection at any time during the Contract Period.
- (d) The Contractor shall name the Owner as co- insured on the insurance policy covering the full value of the property while in the care and custody of the Contractor until it is installed. A certificate noting this coverage shall be issued to the Owner.
- (e) Payments shall be made for materials only. The submitted amount of the application for payment shall be reduced by the cost of transportation and for the cost of an inspector to check the delivery at out of town storage sites. The cost of said inspection shall be borne solely by the Contractor.
- (f) Within sixty (60) Days of the application for payment, the Contractor shall submit evidence of payment covering the material stored.
- (g) Payment for stored materials shall in no way indicate acceptance of the materials or waive any rights under this Contract for the rejection of the Work or materials not in conformance with the Contract Documents.
- (h) All required documentation must be submitted with the respective application for payment.

E.2.4 The Owner reserves the right to withhold all or part of a payment, or may nullify in whole or part any payment previously made, to such extent as may be necessary in the Owner's opinion to protect the Owner from loss because of:

- (a) Work that is defective and not remedied, or that has been demonstrated or identified as failing to conform with the Contract Documents,
- (b) third party claims filed or evidence reasonably indicating that such claims will likely be filed unless security acceptable to the Owner is provided by the Contractor;
- (c) failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment (in which case Owner may issue checks made payable jointly to Owner and such unpaid persons under this provision, or directly to Subcontractors and suppliers at any level under Section C.3.2.1);
- (d) reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Price;
- (e) damage to the Owner or another contractor;
- (f) reasonable evidence that the Work will not be completed within the Contract Time required by the Contract, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;
- (g) failure to carry out the Work in accordance with the Contract Documents; or
- (h) assessment of liquidated damages, when withholding is made for offset purposes.

E.2.5 Subject to the provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

- (a) Take that portion of the Contract Price properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the total Contract Price allocated to that portion of the Work in the Schedule of Values, less retainage as provided in Section E.5. Pending final determination of cost to the Owner of changes in the Work, no amounts for changes in the Work can be included in application for payment until the Contract Price has been adjusted by Change Order;
- (b) Add that portion of the Contract Price properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner pursuant to Section E.2.3, suitably stored off the site at a location agreed upon in writing), less retainage as provided in Section E.5;
- (c) Subtract the aggregate of previous payments made by the Owner; and

- (d) Subtract any amounts for which the Owner's Authorized Representative has withheld or nullified payment as provided in the Contract Documents.
- E.2.6 Contractor's applications for payment may not include requests for payment for portions of the Work for which the Contractor does not intend to pay to a Subcontractor or material supplier.
- E.2.7 The Contractor warrants to Owner that title to all Work covered by an application for payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an application for payment all Work for which payments are received from the Owner shall be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.
- E.2.8 If Contractor disputes any determination by Owner's Authorized Representative with regard to any application for payment, Contractor nevertheless shall continue to prosecute expeditiously the Work. No payment made hereunder shall be or be construed to be final acceptance or approval of that portion of the Work to which such partial payment relates or shall relieve Contractor of any of its obligations hereunder.

### **E.3 PAYROLL CERTIFICATION REQUIREMENT**

Payroll certification is required before payments are made on the Contract. Refer to Section C.2 for this information.

### **E.4 DUAL PAYMENT SOURCES**

Contractor shall not be compensated for Work performed under this Contract from any state agency other than the agency that is a party to this Contract.

### **E.5 RETAINAGE**

E.5.1 Retainage shall be withheld and released in accordance with ORS 279C.550 to 279C.580:

E.5.1.1 Owner may reserve as retainage from any progress payment an amount not to exceed five percent of the payment. As Work progresses, Owner may reduce the amount of the retainage and may eliminate retainage on any remaining monthly Contract payments after 50 percent of the Work under the Contract is completed if, in the Owner's opinion, such Work is progressing satisfactorily. Elimination or reduction of retainage shall be allowed only upon written application by the Contractor, which application shall include written approval of Contractor's surety; except that when the Work is 97-1/2 percent completed the Owner may, at its discretion and without application by the Contractor, reduce the retained amount to 100 percent of the value of the Work remaining to be done. Upon receipt of written application by the Contractor, Owner shall respond in writing within a reasonable time.

E.5.1.2 In accordance with the provisions of ORS 279C.560 and any applicable administrative rules, unless the Owner finds in writing that accepting a bond, security or other instrument described in options (a) or (c) below poses an extraordinary risk that is not typically associated with the bond, security or instrument, the Owner will approve the Contractor's written request:

- (a) to be paid amounts which would otherwise have been retained from progress payments where Contractor has deposited acceptable bonds, securities or other instruments of equal value with Owner or in a custodial account or other mutually-agreed account satisfactory to Owner, with an approved bank or trust company to be held in lieu of the cash retainage for the benefit of Owner. Interest or earnings on the bonds, securities or other instruments shall accrue to the Contractor. The Contractor shall execute and provide such documentation and instructions respecting the bonds, securities and other instruments as the Owner may require to protect its interests. To be permissible the bonds, securities and other instruments must be of a character approved by the Director of the Oregon Department of Administrative Services, including but not limited to:
  - (i) Bills, certificates, notes or bonds of the United States.
  - (ii) Other obligations of the United States or agencies of the United States.
  - (iii) Obligations of a corporation wholly owned by the federal government.
  - (iv) Indebtedness of the Federal National Mortgage Association.
  - (v) General obligation bonds of the State of Oregon or a political subdivision of the State of Oregon.
  - (vi) Irrevocable letters of credit issued by an insured institution, as defined in ORS 706.008.
- (b) that retainage be deposited in an interest bearing account, established through the State Treasurer for state agencies, in a bank, savings bank, trust company or savings association for the benefit of Owner, with interest from such account accruing to the Contractor; or
- (c) that the Contractor be allowed, with the approval of the Owner, to deposit a surety bond for the benefit of Owner, in a form acceptable to Owner, in lieu of all or a portion of funds retained, or to be retained. Such bond and any proceeds therefrom shall be made subject to all claims and liens in the manner and priority as set forth for retainage under ORS 279C.550 to ORS 279C.625.

Where the Owner has accepted the Contractor's election of any of the options above, Owner may recover from Contractor any additional costs incurred through such election by reducing Contractor's final payment. Where the Owner has agreed to Contractor's request to deposit a surety bond under option (c), Contractor shall accept like bonds from Subcontractors and suppliers on the project from which Contractor has required retainage.

- E.5.1.3 The retainage held by Owner shall be included in and paid to the Contractor as part of the final payment of the Contract Price. The Owner shall pay to Contractor interest at the rate of one and one-half percent per month on the final payment due contractor, interest to commence thirty (30) Days after the Work under the Contract has been completed and accepted and to run until the date Contractor shall notify Owner in writing when the Contractor considers the Work complete and Owner shall, within fifteen (15) Days after receiving the written notice, either accept the Work or notify the Contractor of Work yet to be performed on the Contract. If Owner does not within the time allowed notify the contractor of Work yet to be performed to fulfill contractual obligations, the interest provided by this subsection shall commence to run thirty (30) Days after the end of the 15-Day period.
- E.5.1.4 In accordance with the provisions of ORS 279C.560, if the Owner accepts bonds, securities or other instruments deposited as provided in paragraphs (a) and (c) of subsection E.5.1.2., the Owner shall reduce the moneys held as retainage in an amount equal to the value of the bonds, securities and other instruments and pay the amount of the reduction to the Contractor in accordance with ORS 279C.570.
- E.5.1.5 Contractor agrees that if Contractor elects to reserve a retainage from any progress payment due to any Subcontractor or supplier, such retainage shall not exceed five percent of the payment, and such retainage withheld from Subcontractors and suppliers shall be subject to the same terms and conditions stated in Subsection E.5 as apply to Owner's retainage from any progress payment due to Contractor. Provided, however, if in accordance with the provisions of ORS 279C.560 the Contractor has deposited bonds, securities or other instruments or has elected to have the Owner deposit accumulated retainage in an interest-bearing account, the Contractor shall comply with the provisions of ORS 701.435 respecting the deposit of bonds, securities or other instruments by Subcontractors and the sharing of interest earnings with Subcontractors and suppliers.
- E.5.2 As provided subsections C.2.2 and C.2.3, additional retainage in the amount of 25% of amounts earned shall be withheld and released in accordance with ORS 279C.845(7) when the Contractor fails to file certified statements as required by section C.2.1.

## **E.6. FINAL PAYMENT**

- E.6.1 Upon completion of all the Work under this Contract, the Contractor shall notify the Owner's Authorized Representative, in writing, that Contractor has completed Contractor's part of the Contract and shall request final payment. Upon receipt of such notice the Owner's Authorized Representative will submit to the Owner a recommendation as to acceptance of the completed Work and the final estimate of the amount due the Contractor. If the Work is not acceptable, Owner will notify Contractor within fifteen (15) Days of Contractor's request for final payment. Upon approval of this final estimate by the Owner and compliance by the Contractor with provisions in Section K. 3 AFFIDAVIT/RELEASE OF LIENS AND CLAIMS and other provisions as may be applicable, the Owner shall pay to the Contractor all monies due under the provisions of these Contract Documents.
- E.6.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Owner's Authorized Representative (1) a notarized affidavit/release of liens and claims in a form satisfactory to Owner that states that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner\_ have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least thirty (30) Days prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.
- E.6.3 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final application for payment

## **SECTION F JOB SITE CONDITIONS**

### **F.1 USE OF PREMISES**

Contractor shall confine equipment, storage of materials and operation of Work to the limits indicated by Contract Documents, law, ordinances, permits or directions of the Owner's Authorized Representative. Contractor



shall follow the Owner's Authorized Representative's instructions regarding use of premises, if any.

## **F.2 PROTECTION OF WORKERS, PROPERTY, AND THE PUBLIC**

- F.2.1 Contractor shall maintain continuous and adequate protection of all of the Work from damage, and shall protect the Owner's Authorized Representative, workers and property from injury or loss arising in connection with this Contract. Contractor shall remedy acceptably to the Owner, any damage, injury, or loss, except such as may be directly due to errors in the Contract Documents or caused by authorized representatives or personnel of the Owner. Contractor shall adequately protect adjacent property as provided by law and the Contract Documents.
- F.2.2 Contractor shall take all necessary precautions for the safety of all personnel on the job site, and shall comply with the Contract Documents and all applicable provisions of federal, state and municipal safety laws and building codes to prevent accidents or injury to persons on, about or adjacent to the premises where the Work is being performed. Contractor shall erect and properly maintain at all times, as required by the conditions and progress of the Work, all necessary safeguards for protection of workers and the public against any hazards created by construction. Contractor shall designate a responsible employee or associate on the Work site, whose duty shall be the prevention of accidents. The name and position of the person designated shall be reported to the Owner's Authorized Representative. The Owner's Authorized Representative has no responsibility for Work site safety. Work site safety is the responsibility of the Contractor.
- F.2.3 Contractor shall not enter upon private property without first obtaining permission from the property owner or its duly authorized representative. Contractor shall be responsible for the preservation of all public and private property along and adjacent to the Work contemplated under the Contract and shall use every precaution necessary to prevent damage thereto. In the event the Contractor damages any property, the Contractor shall at once notify the property owner and make, or arrange to make, full restitution. Contractor shall immediately and in writing, report to the Owner's Authorized Representative, all pertinent facts relating to such property damage and the ultimate disposition of the claim for damage.
- F.2.4 Contractor is responsible for protection of adjacent work areas including impacts brought about by activities, equipment, labor, utilities, and materials on the site.
- F.2.5 Contractor shall at all times direct its activities in such a manner as to minimize adverse effects on the environment. Handling of all materials will be conducted so no release will occur that may pollute or become hazardous.
- F.2.6 In an emergency affecting the safety of life or of the Work or of adjoining property, the Contractor, without special instruction or authorization from the Owner's Authorized Representative, shall act reasonably to prevent threatened loss or injury, and shall so act, without appeal, if instructed by the Owner's Authorized Representative. Any compensation claimed by the Contractor on account of emergency work shall be determined in accordance with Section D.

## **F.3 CUTTING AND PATCHING**

- F.3.1 Contractor shall be responsible for coordinating all cutting, fitting, or patching of the Work to make its several parts come together properly and fit to receive or be received by work of other contractors or Subcontractors shown upon, or reasonably implied by, the Contract Documents.
- F.3.2 Contractor shall be responsible for restoring all cut, fitted, or patched surfaces to an original condition; provided, however, that if a different condition is specified in the Contract Documents, then Contractor shall be responsible for restoring such surfaces to the condition specified in the Contract Documents.

## **F.4 CLEANING UP**

From time to time as may be ordered by the Owner the Contractor shall, at its own expense, clean up and remove all refuse and used materials of any kind resulting from the Work. If Contractor fails to do so within twenty-four hours after notification by the Owner the work may be done by others and the cost charged to the Contractor and deducted from payment due the Contractor.

## **F.5 ENVIRONMENTAL CONTAMINATION**

- F.5.1 Contractor will be held responsible for and shall indemnify, defend (with counsel of Owner's choice) and hold harmless Owner from and against any costs, expenses, damages, claims, and causes of action, (including attorney fees), or any of them, resulting from all spills, releases, discharges, leaks and disposal of environmental pollution, including storage, transportation, and handling during the performance of the Contract which occur as a result of, or are contributed by, the negligence or actions of Contractor or its personnel, agents, or Subcontractors or any failure to perform in accordance with the Contract Documents (except to the extent otherwise void under ORS 30.140). Nothing in this section F.5.1 shall limit Contractor's responsibility for obtaining insurance coverages required under Section G.3 of these General Conditions, and Contractor shall take no action that would void or impair such coverages
- F.5.1.1 Contractor agrees to promptly dispose of such spills, releases, discharge or leaks to the satisfaction of Owner and proper regulatory agencies in a manner that complies with applicable federal, state, and local laws and regulations. Cleanup shall be at no cost to the Owner and be performed by properly qualified personnel.
- F.5.1.2 Contractor shall obtain the Owner's written consent prior to bringing onto the Work site any  
(i) environmental pollutants or (ii) hazardous substances or materials, as the same or reasonably similar terms are

used in any applicable federal, state, or local statutes, rules or ordinances. Notwithstanding such written consent from the Owner, the Contractor, at all times, shall:

- (a) properly handle, use and dispose of all environmental pollutants and hazardous substances or materials brought onto the Work site, in accordance with all applicable federal, state, or local statutes, rules, or ordinances;
- (b) be responsible for any and all spills, releases, discharges, or leaks of (or from) environmental pollutants or hazardous substances or materials which Contractor has brought onto the Work site; and
- (c) promptly clean up, without cost to the Owner, such spills, releases, discharges, or leaks to the Owner's satisfaction and in compliance with applicable federal, state, or local statutes, rules or ordinances.

F.5.2 Contractor shall report all reportable quantity releases to applicable federal, state, and local regulatory and emergency response agencies. Reportable quantities are found in 40 CFR Part 302, Table 302.4 for hazardous substances and in OAR 340-142-0050 for all products addressed therein. Upon discovery, regardless of quantity, Contractor must telephonically report all releases to the Owner. A written follow-up report shall be submitted to Owner within 48 hours of the telephonic report. Such written report shall contain, as a minimum:

- (a) Description of items released (identity, quantity, manifest no., and all other documentation required by law.)
- (b) Whether amount of items released is EPA/DEQ reportable, and, if so, when it was reported.
- (c) Exact time and location of release, including a description of the area involved.
- (d) Containment procedures initiated.
- (e) Summary of communications about the release Contractor has had with members of the press or State officials other than Owner.
- (f) Description of cleanup procedures employed or to be employed at the site, including disposal location of spill residue.
- (g) Personnel injuries, if any, resulting from, or aggravated by, the release.

#### **F.6 ENVIRONMENTAL CLEAN-UP**

F.6.1 Unless disposition of environmental pollution is specifically a part of this Contract, or was caused by the Contractor (reference F.5 Environmental Contamination), Contractor shall immediately notify Owner of any hazardous substance(s) which Contractor discovers or encounters during performance of the Work required by this Contract. "Hazardous substance(s)" means any hazardous, toxic and radioactive materials and those substances defined as "hazardous substances," "hazardous materials," "hazardous wastes," "toxic substances," or other similar designations in any federal, state, or local law, regulation, or ordinance, including without limitation asbestos, polychlorinated biphenyl (PCB), or petroleum, and any substances, materials or wastes regulated in 40 CFR, Part 261 and defined as hazardous in 40 CFR S 261.3. In addition to notifying Owner of any hazardous substance(s) discovered or encountered, Contractor shall immediately cease working in any particular area of the project where a hazardous substance(s) has been discovered or encountered if continued work in such area would present a risk or danger to the health or wellbeing of Contractor's or any Subcontractor's work force.

F.6.2 Upon being notified by Contractor of the presence of hazardous substance(s) on the project site, Owner shall arrange for the proper disposition of such hazardous substance(s).

#### **F.7 FORCE MAJEURE**

A party to this Contract shall not be held responsible for delay or default due to Force Majeure acts, events or occurrences unless they could have been avoided by the exercise of reasonable care, prudence, foresight, and diligence by that party. The Owner may terminate this Contract upon written notice after determining that delay or default caused by Force Majeure acts, events or occurrences will reasonably prevent successful performance of the Contract.

### **SECTION G INDEMNITY, BONDING, AND INSURANCE**

#### **G.1 RESPONSIBILITY FOR DAMAGES / INDEMNITY**

G.1.1 Contractor shall be responsible for all damage to property, injury to persons, and loss, expense, inconvenience, and delay that may be caused by, or result from, the carrying out of the Work to be done under this Contract, or from any act, omission or neglect of the Contractor, its Subcontractors, personnel, or agents.

G.1.2 To the fullest extent permitted by law, Contractor shall indemnify, defend (with counsel approved by Owner) and hold harmless the Owner, Owner's Authorized Representative, Architect/Engineer, Architect/Engineer's consultants, and their respective officers, directors, agents, employees, partners, members, stockholders and affiliated companies (collectively "Indemnitees") from and against all liabilities, damages, losses, claims, expenses (including reasonable attorney fees), demands and actions of any nature whatsoever which arise out of, result from or are related to, (a) any damage, injury, loss, expense,

inconvenience or delay described in this Section G.1.2, (b) any accident or occurrence which happens or is alleged to have happened in or about the project site or any place where the Work is being performed, or in the vicinity of either, at any time prior to the time the Work is fully completed in all respects,

(c) any failure of the Contractor to observe or perform any duty or obligation under the Contract Documents which is to be observed or performed by the Contractor, or any breach of any agreement, representation or warranty of the Contractor contained in the Contract Documents or in any subcontract,

(d) the negligent acts or omissions of the Contractor, a Subcontractor or anyone directly or indirectly employed by them or any one of them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder (except to the extent otherwise void under ORS 30.140), and (e) any lien filed upon the project or bond claim in connection with the Work. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Section G.1.2.

- G.1.3 In claims against any person or entity indemnified under this Section G.1.2 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section G.1.2 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

## **G.2 PERFORMANCE AND PAYMENT SECURITY; PUBLIC WORKS BOND**

- G.2.1 When the Contract Price is \$100,000 or more (or \$50,000 or more in the case of Contracts for highways, bridges and other transportation projects) the Contractor shall furnish and maintain, a performance bond in a sum equal to the Contract Price, and a separate payment bond also in a sum equal to the Contract Price. The bonds may be required if the Contract Price is less than the above thresholds, if required by the Contract Documents. This obligation must be in effect at all times during the Contract Period and shall remain in full force and effect until the expiration of any statutes of limitation or repose applicable to claims against contractor arising out of this Contract.

- G.2.2 Bond forms furnished by the Owner and notarized by awarded Contractor's surety company authorized to do business in Oregon are the only acceptable forms of performance and payment security, unless otherwise specified in the Contract Documents.

- G.2.3 Before execution of the Contract Contractor shall file with the Construction Contractors Board, and maintain in full force and effect, the separate public works bond required by Oregon Laws 2005, Chapter 360, and OAR 839-025-0015, unless otherwise exempt under those provisions. The Contractor shall also include in every subcontract a provision requiring the Subcontractor to have a public works bond filed with the Construction Contractors Board before starting Work, unless otherwise exempt, and shall verify that the Subcontractor has filed a public works bond before permitting the Subcontractor to start Work.

## **G.3 INSURANCE**

- G.3.1 Primary Coverage: Insurance carried by Contractor under this Contract shall be the primary coverage and non-contributory with any other insurance and self- insurance, and the Owner's insurance is excess and solely for damages or losses for which the Owner is responsible. The coverages indicated are minimums unless otherwise specified in the Contract Documents.

- G.3.2 Workers' Compensation: All employers, including Contractor, that employ subject workers who work under this contract in the State of Oregon shall comply with ORS 656.017 and provide the required Workers' Compensation coverage, unless such employers are exempt under ORS 656.126. This shall include Employer's Liability Insurance with coverage limits of not less than \$100,000 for each accident. Contractors who perform the Work without the assistance or labor of any employee need not obtain such coverage if the Contractor certifies so in writing. Contractor shall ensure that each of its Subcontractors complies with these requirements. The Contractor shall require proof of such Workers' Compensation by receiving and keeping on file a certificate of insurance from each Subcontractor or anyone else directly employed by either the Contractor or its Subcontractors.

- G.3.3 Builder's Risk Insurance:

- G.3.3.1 Builder's Risk: During the term of this Contract, for new construction the Contractor shall obtain and keep in effect Builder's Risk insurance on an all risk form, including earthquake and flood, for an amount equal to the full amount of the Contract. Any deductible shall not exceed \$50,000 for each loss, except the earthquake and flood deductible shall not exceed 2 percent of each loss or \$50,000, whichever is more. The policy will include as loss payees the Owner, the Contractor and its Subcontractors as their interests may appear.

- G.3.3.2 Builder's Risk Installation Floater: For other than new construction the Contractor shall obtain and keep in effect during the term of this Contract, a Builder's Risk Installation Floater for coverage of the Contractor's labor, materials and equipment to be used for completion of the Work performed under this Contract. The minimum amount of coverage to be carried shall be equal to the full amount of the Contract. This insurance shall include as loss payees the State of Oregon, the Owner, the Contractor and its Subcontractors as their interests may appear.

- G.3.3.3 Such insurance shall be maintained until Owner has occupied the facility.

- G.3.3.4 A loss insured under the Builder's Risk insurance shall be adjusted by the Owner and made payable to the Owner for the insureds, as their interests may appear. The Contractor shall pay Subcontractors their just shares of insurance

proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner. The Owner shall have power to adjust and settle a loss with insurers.

#### G.3.4 Liability Insurance:

G.3.4.1 Commercial General Liability: Contractor shall obtain, at Contractor's expense, and keep in effect during the term of this Contract, Commercial General Liability Insurance covering bodily injury and property damage in a form and with coverages that are satisfactory to owner. This insurance shall include personal injury liability, products and completed operations, and contractual liability coverage for the indemnity provided under this Contract (to the extent contractual liability coverage for the indemnity is available in the marketplace), and shall be issued on an occurrence basis. Contractor shall provide proof of insurance of not less than the amounts listed in the following schedules:

Per Occurrence Limit for any single claimant:

From commencement of the Contract term to June 30,

2011: \$1,600,000

July 1, 2011 to June 30, 2012: \$1,700,000

July 1, 2012 to June 30, 2013: \$1,800,000

July 1, 2013 to June 30, 2014: \$1,900,000

July 1, 2014 to June 30, 2015: \$2,000,000

July 1, 2015 and thereafter the adjusted limitation as determined by the State Court Administrator pursuant to Oregon Laws 2009, chapter 67, section 3 (Senate Bill 311).

Per Occurrence Limit for multiple claimants:

From commencement of the Contract term to June 30, 2011: \$3,200,000

July 1, 2011 to June 30, 2012: \$3,400,000

July 1, 2012 to June 30, 2013: \$3,600,000

July 1, 2013 to June 30, 2014: \$3,800,000

July 1, 2014 to June 30, 2015: \$4,000,000

July 1, 2015 and thereafter the adjusted limitation as determined by the State Court Administrator pursuant to Oregon Laws 2009, chapter 67, section 3 (Senate Bill 311).

#### Property Damage:

Per Occurrence Limit for any single claimant: From commencement of the Contract term to January 1, 2011: \$100,100.  
From January 1, 2010, and every year thereafter the adjusted limitation as determined by the State Court Administrator pursuant to Oregon Laws 2009, chapter 67, section 5 (Senate Bill 311).

Per Occurrence Limit for multiple claimants:

From commencement of the Contract term to January 1, 2011: \$500,600.

From January 1, 2010, and every year thereafter the adjusted limitation as determined by the State Court Administrator pursuant to Oregon Laws 2009, chapter 67, section 5 (Senate Bill 311).

G.3.4.2 Automobile Liability: Contractor shall obtain, at Contractor's expense, and keep in effect during the term of this Contract, Automobile Liability Insurance covering owned, non-owned and/or hired vehicles, as applicable. The coverage may be written in combination with the Commercial General Liability Insurance. Contractor shall provide proof of insurance of not less than the amounts listed in the following schedules:

#### Bodily Injury/Death:

Per Occurrence Limit for any single claimant:

From commencement of the Contract term June 30, 2011: \$1,600,000

July 1, 2011 to June 30, 2012: \$1,700,000

July 1, 2012 to June 30, 2013: \$1,800,000

July 1, 2013 to June 30, 2014: \$1,900,000

July 1, 2014 to June 30, 2015: \$2,000,000

July 1, 2015 and thereafter the adjusted limitation as determined by the State Court Administrator pursuant to Oregon Laws 2009, chapter 67, section 3 (Senate Bill 311).

Per Occurrence Limit for multiple claimants:

From commencement of the Contract term to June 30, 2011: \$3,200,000

July 1, 2011 to June 30, 2012: \$3,400,000

July 1, 2012 to June 30, 2013: \$3,600,000

July 1, 2013 to June 30, 2014: \$3,800,000

July 1, 2014 to June 30, 2015: \$4,000,000

July 1, 2015 and thereafter the adjusted limitation as determined by the State Court Administrator pursuant to Oregon Laws 2009, chapter 67, section 3 (Senate Bill 311).

Property Damage:

Per Occurrence Limit for any single claimant: From commencement of the Contract term to January 1, 2011: \$100,100  
From January 1, 2010, and every year thereafter the adjusted limitation as determined by the State Court Administrator pursuant to Oregon Laws 2009, chapter 67, section 5 (Senate Bill 311).

Per Occurrence Limit for multiple claimants:

From commencement of the Contract term to January 1, 2011: \$500,600  
From January 1, 2010, and every year thereafter the adjusted limitation as determined by the State Court Administrator pursuant to Oregon Laws 2009, chapter 67, section 5 (Senate Bill 311).

G.3.4.3 "Tail" Coverage: If any of the required liability insurance is arranged on a "claims made" basis, "tail" coverage will be required at the completion of this Contract for a duration of 24 months or the maximum time period available in the marketplace if less than 24 months. Contractor will be responsible for furnishing certification of "tail" coverage as described or continuous "claims made" liability coverage for 24 months following Final Completion. Continuous "claims made" coverage will be acceptable in lieu of "tail" coverage, provided its retroactive date is on or before the effective date of this Contract. This will be a condition of the final acceptance of Work or services and related warranty (if any).

G.3.5 Excess/Umbrella Insurance: Contractor shall obtain, at contractor's expense, excess/umbrella liability coverage in the amount of \$5,000,000 per occurrence and \$5,000,000 aggregate. Coverage shall be carried for the duration of the 10 year statute of repose in the State of Oregon.

G.3.6 Additional Insured: The liability insurance coverage, except Professional Liability if included, required for performance of this Contract shall include Owner, its departments, divisions, officers, and employees, as Additional Insureds but only with respect to the Contractor's activities to be performed under this Contract.

If Contractor cannot obtain an insurer to name the State of Oregon, its departments, divisions, officers and employees as Additional Insureds, Contractor shall obtain at Contractor's expense, and keep in effect during the term of this Contract, Owners and Contractors Protective Liability Insurance, naming the State of Oregon, its departments, divisions, officers and employees as Named Insureds with not less than a \$1,500,000.00 limit per occurrence. This policy must be kept in effect for 12 months following Final Completion. As evidence of coverage, Contractor shall furnish the actual policy to Owner prior to execution of the Contract.

G.3.7 Certificate(s) of Insurance: As evidence of the insurance coverage required by this Contract, the Contractor shall furnish certificate(s) of insurance to the Owner prior to execution of the Contract. The certificate(s) will specify all of the parties who are Additional Insureds or Loss Payees. Insurance coverage required under this Contract shall be obtained from insurance companies or entities acceptable to the Owner that are allowed to provide such insurance under Oregon law. Eligible insurers include admitted insurers that have been issued a certificate of authority from the Oregon Department of Consumer and Business Services authorizing them to do an insurance business in the state of Oregon, and certain non-admitted surplus lines insurers that satisfy the requirements of applicable Oregon law and are approved by the Owner. The Contractor shall be financially responsible for all deductibles, self-insured retentions and/or self-insurance included hereunder. Any deductible, self-insured retention and/or self-insurance in excess of \$50,000 shall be approved by the Owner in writing prior to execution of the Contract and is subject to Owner's approval. The Contractor shall immediately notify the Owner's Authorized Representative in writing of any change in insurance coverage.

G.3.8 Waiver of Subrogation. All of Contractor's and subcontractors' liability insurance policies, with the exception of workers' compensation, shall contain a waiver of subrogation against Owner.

G.3.8 Additional Requirements for General Liability Policy. The policy shall be endorsed to be primary and non-contributory with any insurance maintained by Owner, its directors, officers, employees and agents. Products and Completed Operations Insurance shall be carried for the duration applicable for the 10 year statute of repose in the State of Oregon. There can be no exclusions for subsidence, collapse, explosion, underground property damage, mold, fungus, water intrusion or water damage. There can be no cross-suite exclusion, Montrose language or exclusion limiting coverage to damages which first begin to occur within the policy period. The limits of coverage shall not be eroded or wasted by defense costs.

G.3.9

## SECTION H SCHEDULE OF WORK

### H.1 CONTRACT PERIOD

H.1.1 **Time is of the essence on this Contract.** The Contractor shall at all times carry on the Work diligently, without delay and punctually fulfill all requirements herein. Contractor shall commence Work on the site within fifteen (15) Days of Notice to Proceed, unless directed otherwise.

H.1.2 Unless specifically extended by Change Order, all Work shall be complete by the date contained in the Contract Documents. The Owner shall have the right to accelerate the completion date of the Work, which may require the use of overtime. Such accelerated Work schedule shall be an acceleration in performance of Work under Section D.1.2 (f) and shall be subject to the Change Order process of Section D.1.

H.1.3 The Owner shall not waive any rights under the Contract by permitting the Contractor to continue or complete in whole or in part the Work after the date described in Section H.1.2 above.

## **H.2 SCHEDULE**

H.2.1 Contractor shall provide, by or before the pre- construction conference, a detailed schedule for review and acceptance by the Owner. The submitted schedule must illustrate Work by significant project components, significant labor trades, long lead items, broken down by building and/or floor where applicable. Each schedule item shall account for no greater than 5 % of the monetary value of the project or 5 % of the available Contract Time. Schedules with activities of less than one day or valued at less than 1% of the Contract will be considered too detailed and will not be accepted. Schedules lacking adequate detail, or unreasonably detailed, will be rejected. Included within the schedule are the following: Notice to Proceed, Substantial Completion, and Final Completion. Schedules will be updated monthly and submitted with the monthly payment application. Acceptance of the Schedule by the Owner does not constitute agreement by the Owner, as to the Contractor's sequencing, means, methods, or allocated Contract Time. Any positive difference between the Contractor's scheduled completion and the Contract completion date is float owned by the Owner. Owner reserves the right to negotiate the float if it is deemed to be in Owner's best interest to do so. In no case shall the Contractor make a request for additional compensation for delays if the Work is completed within the Contract Time but after Contractor's scheduled completion.

## **H.3 PARTIAL OCCUPANCY OR USE**

H.3.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage, provided such occupancy or use is consented to by public authorities having jurisdiction over the Work. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have reasonably accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, insurance or self-insurance, maintenance, heat, utilities, and damage to the Work, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents with respect to such portion of the Work. Approval by the Contractor to partial occupancy or use shall not be unreasonably withheld. Immediately prior to such partial occupancy or use, the Owner and Contractor shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work. Partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

# **SECTION I CORRECTION OF WORK**

## **I.1 CORRECTION OF WORK BEFORE FINAL PAYMENT**

I.1.1 The Contractor warrants to the Owner that materials and equipment furnished under the Contract will be of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects, and that the Work will conform to the requirements of the Contract Documents. Work failing to conform to these requirements shall be deemed defective. Contractor shall promptly remove from the premises and replace all defective materials and equipment as determined by the Owner's Authorized Representative, whether incorporated in the Work or not. Removal and replacement shall be without loss or expense to the Owner, and Contractor shall bear the cost of repairing all Work destroyed or damaged by such removal or replacement. Contractor shall be allowed a period of no longer than thirty (30) Days after Substantial Completion for completion of defective (punch list) work, unless otherwise agreed. At the end of that period, or earlier if requested by the Contractor, Owner shall arrange for inspection of the Work by the Architect/Engineer. Should the Work not be complete, and all corrections made, the costs for all subsequent re-inspections shall be borne by the Contractor. If Contractor fails to complete the punch list work within the above time period, Owner may perform such work and Contractor shall reimburse Owner all costs of the same within ten (10) days after demand without affecting Contractor's obligations.

## **I.2 WARRANTY WORK**

I.2.1 Neither the final certificate of payment nor any provision of the Contract Documents shall relieve the Contractor from responsibility for defective Work and, unless a longer period is specified, Contractor shall correct all defects that appear in the Work within a period of one year from the date of issuance of the written notice of Substantial Completion by the Owner except for latent defects which will be remedied by the Contractor at any time they become apparent.

The Owner shall give Contractor notice of defects with reasonable promptness. Contractor shall perform such warranty work within a reasonable time after Owner's demand. If Contractor fails to complete the warranty work within such period as Owner determines reasonable, or at any time in the event of warranty work consisting of emergency repairs, Owner may perform such work and Contractor shall reimburse Owner all costs of the same within ten (10) Days after demand without affecting Contractor's obligations.

I.2.2 This provision does not negate guarantees or warranties for periods longer than one year including without limitation such guarantees or warranties required by other sections of the Contract

Documents for specific installations, materials, processes, equipment or fixtures.

- I.2.3 In addition to Contractor's warranty, manufacturer's warranties shall pass to the Owner and shall not take effect until affected Work has been accepted in writing by the Owner's Authorized Representative.
- I.2.4 The one-year period for correction of Work shall be extended with respect to portions of Work performed after Substantial Completion by the period of time between Substantial Completion and the actual performance of the Work, and shall be extended by corrective Work performed by the Contractor pursuant to this Section, as to the Work corrected. The Contractor shall remove from the site portions of the Work which are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.
- I.2.5 Nothing contained in this Section I.2 shall be construed to establish a period of limitation with respect to other obligations which the Contractor might have under the Contract Documents. Establishment of the period for correction of Work as described in this Section I.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.
- I.2.6 If the Owner prefers to accept Work which is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Price will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

## **SECTION J**

### ***SUSPENSION AND/OR TERMINATION OF THE WORK***

#### **J.1 OWNER'S RIGHT TO SUSPEND THE WORK**

- J.1.1 The Owner and/or the Owner's Authorized Representative has the authority to suspend portions or all of the Work due to the following causes:
  - (a) Failure of the Contractor to correct unsafe conditions;
  - (b) Failure of the Contractor to carry out any provision of the Contract;
  - (c) Failure of the Contractor to carry out orders;
  - (d) Conditions, in the opinion of the Owner's Authorized Representative, which are unsuitable for performing the Work;
  - (e) Time required to investigate differing site conditions;
  - (f) Any reason considered to be in the public interest.
- J.1.2 The Owner shall notify Contractor and the Contractor's Surety in writing of the effective date and time of the suspension and Owner shall notify Contractor and Contractor's surety in writing to resume Work.

#### **J.2 CONTRACTOR'S RESPONSIBILITIES**

- J.2.1 During the period of the suspension, Contractor is responsible to continue maintenance at the project just as if the Work were in progress. This includes, but is not limited to, protection of completed Work, maintenance of access, protection of stored materials, temporary facilities, and clean-up.
- J.2.2 When the Work is recommenced after the suspension, the Contractor shall replace or renew any Work damaged during the suspension, remove any materials or facilities used as part of temporary maintenance, and complete the project in every respect as though its prosecution had been continuous and without suspension.

#### **J.3 COMPENSATION FOR SUSPENSION**

- J.3.1 Depending on the reason for suspension of the Work, the Contractor or the Owner may be due compensation by the other party. If the suspension was required due to acts or omissions of Contractor, the Owner may assess the Contractor actual costs of the suspension in terms of administration, remedial work by the Owner's forces or another contractor to correct the problem associated with the suspension, rent of temporary facilities, and other actual costs related to the suspension. If the suspension was caused by acts or omissions of the Owner, the Contractor shall be due compensation which shall be defined using Section D, Changes in Work. If the suspension was required through no fault of the Contractor or the Owner, neither party owes the other for the impact.

#### **J.4 OWNER'S RIGHT TO TERMINATE CONTRACT**

- J.4.1 The Owner may, without prejudice to any other right or remedy, and after giving Contractor seven (7) Days' written notice and an opportunity to cure, terminate the Contract in whole or in part under the following conditions:
  - (a) If Contractor should voluntarily or involuntarily, seek protection under the United States Bankruptcy Code and Contractor as debtor-in- possession or the Trustee for the estate fails to assume the Contract within a reasonable time;

- (b) If Contractor should make a general assignment for the benefit of Contractor's creditors;
- (c) If a receiver should be appointed on account of Contractor's insolvency;
- (d) If Contractor should repeatedly refuse or fail to supply an adequate number of skilled workers or proper materials to carry on the Work as required by the Contract Documents, or otherwise fail to perform the Work in a timely manner;
- (e) If Contractor should repeatedly fail to make prompt payment to Subcontractors or for material or labor, or should disregard laws, ordinances or the instructions of the Owner or its Authorized Representative; or
- (f) If Contractor is otherwise in material breach of any part of the Contract.

J.4.2 At any time that any of the above occurs, Owner may exercise all rights and remedies available to Owner at law or in equity, and in addition, Owner may take possession of the premises and of all materials and appliances and finish the Work by whatever method it may deem expedient. In such case, the Contractor shall not be entitled to receive further payment until the Work is completed. If the Owner's cost of finishing the Work exceeds the unpaid balance of the Contract Price, Contractor shall pay the difference to the Owner.

#### **J.5 TERMINATION FOR CONVENIENCE**

- J.5.1 Owner may terminate the Contract in whole or in part whenever Owner determines that termination of the Contract is in the best interest of the public.
- J.5.2 The Owner will provide the Contractor with seven (7) Days' prior written notice of a termination for public convenience. After such notice, the Contractor shall provide the Owner with immediate and peaceful possession of the premises and materials located on and off the premises for which the Contractor received progress payment under Section E. Compensation for Work terminated by the Owner under this provision will be according to Section E. In no circumstance shall Contractor be entitled to lost profits for Work not performed due to termination.

#### **J.6 ACTION UPON TERMINATION**

- J.6.1 Upon receiving a notice of termination, and except as directed otherwise by the Owner, Contractor shall immediately cease placing further subcontracts or orders for materials, services, or facilities. In addition, Contractor shall terminate all subcontracts or orders to the extent they relate to the Work terminated and, with the prior written approval of the Owner, settle all outstanding liabilities and termination settlement proposals arising from the termination of subcontracts and orders.
- J.6.2 As directed by the Owner, Contractor shall upon termination transfer title and deliver to the Owner all Record Documents, information, and other property that, if the Contract had been completed, would have been required to be furnished to the Owner.

### **SECTION K CONTRACT CLOSE OUT**

#### **K.1 RECORD DOCUMENTS**

As a condition of final payment (refer also to section E.6), Contractor shall comply with the following: Contractor shall provide to Owner's Authorized Representative, Record Documents of the entire project. Record Documents shall depict the project as constructed and shall reflect each and every change, modification, and deletion made during the construction. Record Documents are part of the Work and shall be provided prior to the Owner's issuance of final payment. Record Documents include all modifications to the Contract Documents unless otherwise directed. Media shall be electronic in addition to a cloud based storage for Owner future use and access on SmartSheet.

#### **K.2 OPERATION AND MAINTENANCE MANUALS**

As part of the Work, Contractor shall submit two completed operation and maintenance manuals ("O & M Manuals") for review by the Owner's Authorized Representative prior to submission of any pay request for more than 75% of the Work. No payments beyond 75% will be made by the Owner until the O & M Manuals have been received. All O & M and closeout duties shall be via cloud based media such as smartsheet.com or other web based media acceptable to Owner in electronic formatting, in addition to hard copies. The O & M Manuals shall contain a complete set of all submittals, all product data as required by the specifications, training information, phone list of consultants, manufacturers, installer and suppliers, manufacturer's printed data, record and shop drawings, schematic diagrams of systems, appropriate equipment indices, warranties and bonds. The Owner's Authorized Representative shall review and return one O & M Manual for any modifications or additions required. Prior to submission of its final pay request, Contractor shall deliver three (3) complete and approved sets of O & M Manuals to the Owner's Authorized Representative.

#### **K.3 AFFIDAVIT/RELEASE OF LIENS AND CLAIMS**

As a condition of final payment, the Contractor shall submit to the Owner's Authorized Representative a notarized affidavit/release of liens and claims form, in a form satisfactory to Owner, which states that all Subcontractors and suppliers have been paid in full, all disputes with property owners have been resolved, all obligations on the project have been satisfied, all monetary claims and indebtedness have been paid, and that, to the best of the Contractor's knowledge, there are no



claims of any kind outstanding against the project. The Contractor shall indemnify, defend (with counsel of Owner's choice) and hold harmless the Owner from all claims for labor and materials furnished under this Contract. The Contractor shall furnish complete and valid releases or waivers, satisfactory to the Owner, of all liens arising out of or filed in connection with the Work.

#### **K.4 COMPLETION NOTICES**

- K.4.1 Contractor shall provide Owner notice of both Substantial and Final Completion. The Certificate of Substantial Completion shall state the date of Substantial Completion, the responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and the time within which the Contractor shall finish all items on the punchlist accompanying the Certificate. Both completion notices must be signed by the Contractor and the Owner to be valid. The Owner shall provide the final signature on the notices. The notices shall take effect on the date they are signed by the Owner.
- K.4.2 Substantial Completion of a facility with operating systems (e.g., mechanical, electrical, HVAC) shall be that degree of completion that has provided a minimum of thirty (30) continuous Days of successful, trouble-free operation, which period shall begin after all performance and acceptance testing has been successfully demonstrated to the Owner's Authorized Representative. All equipment contained in the Work, plus all other components necessary to enable the Owner to operate the facility in the manner that was intended, shall be complete on the Substantial Completion date. The Contractor may request that a punch list be prepared by the Owner's Authorized Representative with submission of the request for the Substantial Completion notice.

#### **K.5 TRAINING**

As part of the Work, and prior to submission of the request for final payment, the Contractor shall schedule with the Owner's Authorized Representative, training sessions for all equipment and systems, as required in the individual specifications sections. Contractor shall schedule training sessions at least two weeks in advance of the date of training to allow Owner personnel adequate notice. Training by video shall be conducted by contractor at owner's request as part of contract duties. The O & M Manual shall be used as a basis for training. Training shall be a formal session, held after the equipment and/or system is completely installed and operational in its normal operating environment. All training shall be videotaped and recorded and provided by cloud based accessible electronic means acceptable to the owner.

#### **K.6 EXTRAMATERIALS**

As part of the Work, Contractor shall provide spare parts, extra maintenance materials, and other materials or products in the quantities specified in the specifications, prior to final payment. Delivery point for extra materials shall be designated by the Owner's Authorized Representative.

#### **K.7 ENVIRONMENTAL CLEAN-UP**

As part of the Final Completion notice, or as a separate written notice submitted with or before the notice of Final Completion, the Contractor shall notify the Owner that all environmental pollution clean-up performed as a part of this Contract has been disposed of in accordance with all applicable rules, regulations, laws, and statutes of all agencies having jurisdiction over such environmental pollution. The notice shall reaffirm the indemnification given under Section F.5.1 above.

#### **K.8 CERTIFICATE OF OCCUPANCY**

The Contractor shall not be granted Final Completion or receive final payment if the Owner has not received an unconditioned certificate of occupancy from the appropriate state and/or local building officials, unless failure to obtain an unconditional certificate of occupancy is due to the fault or neglect of Owner.

#### **K.9 OTHER CONTRACTOR RESPONSIBILITIES**

The Contractor shall be responsible for returning to the Owner all items issued during construction such as keys, security passes, site admittance badges, and all other pertinent items. The Contractor shall be responsible for notifying the appropriate utility companies to transfer utility charges from the Contractor to the Owner. The utility transfer date shall not be before Substantial Completion and may not be until Final Completion, if the Owner does not take beneficial use of the facility and the Contractor's forces continue with the Work.

#### **K.10 SURVIVAL**

All warranty and indemnification provisions of this Contract, and all of Contractor's other obligations under this Contract that are not fully performed by the time of Final Completion or termination, shall survive Final Completion or any termination of the Contract

### **SECTION L**

#### **LEGAL RELATIONS & RESPONSIBILITIES**

##### **L.1 LAWS TO BE OBSERVED**

In compliance with ORS 279C.525, Sections L.2 through L.4 contain lists of federal, state and local agencies of which the Owner has knowledge that have enacted ordinances or regulations relating to environmental pollution and the preservation of natural resources that may affect the performance of the Contract:

##### **L.2 FEDERAL AGENCIES**

Agriculture, Department of Forest Service

Soil Conservation Service

Coast Guard

Defense, Department of Army Corps of Engineers Energy, Department of

Federal Energy Regulatory Commission Environmental Protection Agency

Health and Human Services, Department of Housing and Urban Development, Department of Solar Energy and Energy

Conservation Bank Interior, Department of

Bureau of Land Management Bureau of Indian Affairs Bureau of Mines

Bureau of Reclamation Geological Survey

Minerals Management Service

U.S. Fish and Wildlife

Service Labor,

Department of

Mine Safety and Health Administration

Occupation Safety and Health

Administration Transportation,

Department of

Federal Highway

Administration Water

Resources Council

### **L.3 STATE AGENCIES**

Administrative Services, Department of

Agriculture, Department of Soil and Water

Conservation Commission

Columbia River Gorge Commission

Energy, Department of Environmental

Quality, Department of Fish and Wildlife,

Department of Forestry, Department of

Geology and Mineral Industries,

Department of Human Resources,

Department of

Consumer and Business Services, Department of Land

Conservation and Development Commission Parks and

Recreation, Department of State Lands, Division of

Water Resources

### **L.4 LOCAL AGENCIES**

City Councils

County Courts

County Commissioner, Board of

Design Commissions Historical

Preservation Commission Planning

Commissions

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. This project is subject to the prevailing rate requirements of ORS 279.800 to 279.820. Additional provisions include ORS 279C.515 to 279C.545 and BOLI [Bureau of labor & Industry] Prevailing Wage Rates manual. The current wage rates applicable to this project are available on the internet at [www.boli.state.or.us](http://www.boli.state.or.us).

END OF SECTION

**PART 1 GENERAL**

**1.1 ADDENDA TO BE ISSUED**

- A. Addenda will be considered a part of the Contract Documents.
- B. Insert Addenda into the Contract Documents and make notations on this page as indicated below:

Addendum: 1	Date Received:	_____
Next Add'm 2		_____
3		_____
4		_____
5		_____
6		_____

**1.2 ADDENDA FORMAT**

- A. Addenda will be issued at the following website:

<http://www.reynolds.k12.or.us/rfps>

Date: \_\_\_\_\_

**NOTICE TO ALL CONTRACTORS, SUBCONTRACTORS, AND SUPPLIERS:**

This Addendum is considered a part of the Contract Documents. Make modifications to the Contract Documents as described herein. Insert this Addendum into Volume 1 after Section 00 91 13.

Section	Description
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END OF SECTION

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

**1.2 SUMMARY OF WORK**

- A. Project Manager: Day CPM Services, contact Bob Collins.
- A. The Work consists of grading, paving, stormwater facilities and bus wash station as shown and identified on the contract documents.

Construction will include all project planning and staking, coordination, demolition, grading, and finishing and installation of fill material and asphaltic paving.

**1.3 CONTRACT TIME AND SEQUENCE**

- A. The Work shall be conducted in a single phase.
- B. The date of commencement of the Work shall be the date of the Form of Agreement unless stated otherwise.

**1.4 USE OF PREMISES**

- A. During the construction period Contractor shall have full use of the Site for execution of the Work.
- B. Maintain driveways and entrances serving the site clear and available to the Owner and other contractors.
  - 1. Coordinate operation of security gates and fences with Project Manager.
- C. Burial and Burning of Waste Materials or excess material on site is not permitted.

**1.5 OWNER OCCUPANCY**

- A. The Owner will have few if any summer time activities at project site, and these activities can be reviewed on the District website, <http://www.reynolds.k12.or.us/rfps>, the school, and calendar. The Owner will occupy the project the day after Date of Substantial Completion.

**1.6 WORK UNDER OTHER CONTRACTS**

- A. Separate Contract: The Owner intends to award a separate contract for performance of certain construction operations at Project site. Those operations may be scheduled to be substantially complete on the same date as work under this Contract.
  - 1. Modular building construction
- B. Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work in entire Project.

**1.7 SPECIFICATION FORMATS AND CONVENTIONS**

- A. Specification Format: The Specifications are organized into Divisions and Sections using the 33-division format and CSI/CSC's "MasterFormat" numbering system.
  - 1. Section Identification: The Specifications use section numbers and titles to help cross-referencing in the Contract Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete. Consult the table of contents at the beginning of the Project Manual to determine numbers and names of sections in the Contract Documents.
- B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
  - 1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred, as the sense requires. Singular words shall be interpreted as plural and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.
  - 2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.
    - a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

END OF SECTION

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.

**1.3 SCHEDULE OF VALUES**

- A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's Construction Schedule.
  - 1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including the following:
    - a. Application for Payment forms with Continuation Sheets.
    - b. Submittals Schedule.
  - 2. Submit the Schedule of Values to Engineer at earliest possible date but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
- B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section.
  - 1. Identification: Include the following Project identification on the Schedule of Values:
    - a. Project name and location.
    - b. Name of Engineer.
    - c. Engineers project number.
    - d. Contractor's name and address.
    - e. Date of submittal.
  - 2. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
    - a. Related Specification Section or Division.
    - b. Description of the Work.
    - c. Name of subcontractor.
    - d. Name of manufacturer or fabricator.
    - e. Name of supplier.



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- f. Change Orders (numbers) that affect value.
- g. Dollar value.
  - 1) Percentage of the Contract Sum to nearest one-tenth percent, adjusted to total 100 percent.
- 3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate.
- 4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
- 5. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
  - a. Differentiate between items stored on-site and items stored off-site. Include evidence of insurance or bonded warehousing if required.
- 6. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
- 7. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
  - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at Contractor's option.
- 8. Schedule Updating: Update and resubmit the Schedule of Values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

**1.4 APPLICATIONS FOR PAYMENT**

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by Engineer and paid for by Owner.
  - 1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involves additional requirements.
- B. Payment Application Times: The date for each progress payment is a day of the month and is established in the Owner-Contractor Agreement. The period covered by each Application for Payment starts on the day after the preceding progress payment and ends on the date of the progress payment.
- C. Payment Application Forms: Use AIA Document G702 and AIA Document G703 Continuation Sheets as form for Applications for Payment or notarized equal.

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- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Engineer will return incomplete applications without action.
  - 1. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions were made.
  - 2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
- E. Transmittal: Submit 4 signed and notarized original copies of each Application for Payment to Engineer. One copy shall include waivers of lien and similar attachments if required.
  - 1. Transmit each application with a transmittal form listing attachments and recording appropriate information about application.
- F. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
  - 1. List of subcontractors.
  - 2. Schedule of Values.
  - 3. Contractor's Construction Schedule (preliminary if not final).
  - 4. Products list, if required
  - 5. Submittals Schedule (preliminary if not final).
  - 6. List of Contractor's staff assignments.
  - 7. List of Contractor's principal consultants.
  - 8. Copies of permits.
  - 9. Certificates of insurance and insurance policies.
- G. Application for Payment at 50% Completion: Include Draft Operation and Maintenance Manual, described in Section 01 77 00.
  - 1. 50% Completion occurs when "total percent completed and stored to date" first totals 50% or greater, including general requirements.
  - 2. Application for Payment at 50% Completion will not be processed by Engineer until Draft O & M Manual is accepted as complete for review.
- H. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
  - 1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
  - 2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- I. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

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1. Evidence of completion of Project closeout requirements.
2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
3. Updated final statement, accounting for final changes to the Contract Sum.
4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
5. AIA Document G706A, "Contractor's Affidavit of Release of Liens" or notarized equal.
6. Evidence that claims have been settled.
7. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.

END OF SECTION

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
  - 1. General project coordination procedures.
  - 2. Conservation.
  - 3. Coordination Drawings.
  - 4. Administrative and supervisory personnel.
  - 5. Project meetings.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
  - 1. Division 1 Section "Closeout Procedures" for coordinating Contract closeout.

**1.3 COORDINATION**

- A. Coordination: Coordinate construction operations included in various Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, that depend on each other for proper installation, connection, and operation.
  - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
  - 2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
  - 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. If necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
  - 1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
  - 1. Preparation of Contractor's Construction Schedule.
  - 2. Preparation of the Schedule of Values.
  - 3. Installation and removal of temporary facilities and controls.
  - 4. Delivery and processing of submittals.

**SECTION 01 31 00**  
**COORDINATION**

5. Progress meetings.
  6. Preinstallation conferences.
  7. Project closeout activities.
- D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.
1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work.
  2. Recycle non-salvaged construction waste to the greatest extent feasible.

**1.4 SUBMITTALS**

- A. Coordination Drawings: Prepare Coordination Drawings if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.
1. Indicate relationship of components shown on separate Shop Drawings.
  2. Indicate required installation sequences.
  3. Refer to Division 23 Section "Basic Mechanical Materials and Methods" and Division 26 Section "Basic Electrical Materials and Methods" for specific Coordination Drawing requirements for mechanical and electrical installations.
- B. Staff Names: On the first day of starting construction operations, submit a list of principal staff assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.
1. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone.
  2. Maintain list current and distribute revised copies.

**1.5 ADMINISTRATIVE AND SUPERVISORY PERSONNEL**

- A. General: In addition to Project superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work.
1. Include special personnel required for coordination of electrical, mechanical, and plumbing systems.

**1.6 PROJECT MEETINGS**

- A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Engineer of scheduled meeting dates and times.
  2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.

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**COORDINATION**

3. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Engineer, within 3 days of the meeting.
- B. Preconstruction Conference: Schedule a preconstruction conference before starting construction, at a time convenient to Owner and Engineer, but no later than 15 days after execution of the Agreement. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.
1. Attendees: Authorized representatives of Owner, Engineer, and their consultants; Contractor and its superintendent; major subcontractors; manufacturers; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
  2. Agenda: Discuss items of significance that could affect progress, including the following:
    - a. Tentative construction schedule.
    - b. Phasing.
    - c. Critical work sequencing.
    - d. Designation of responsible personnel.
    - e. Procedures for processing field decisions and Change Orders.
    - f. Procedures for processing Applications for Payment.
    - g. Distribution of the Contract Documents.
    - h. Submittal procedures.
    - i. Draft Operation and Maintenance Manuals to be submitted at 50% completion
    - j. Preparation of Record Documents.
    - k. Use of the premises.
    - l. Coordination with Owners current site activities
    - m. Responsibility for temporary facilities and controls.
    - n. Parking availability.
    - o. Office, work, and storage areas.
    - p. Equipment deliveries and priorities.
    - q. First aid.
    - r. Security.
    - s. Progress cleaning.
    - t. Working hours.
- C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.
1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Engineer of scheduled meeting dates.

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2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
    - a. Contract Documents.
    - b. Options.
    - c. Related Change Orders.
    - d. Purchases.
    - e. Deliveries.
    - f. Submittals.
    - g. Review of mockups.
    - h. Possible conflicts.
    - i. Compatibility problems.
    - j. Time schedules.
    - k. Weather limitations.
    - l. Manufacturer's written recommendations.
    - m. Warranty requirements.
    - n. Compatibility of materials.
    - o. Acceptability of substrates.
    - p. Temporary facilities and controls.
    - q. Space and access limitations.
    - r. Regulations of authorities having jurisdiction.
    - s. Testing and inspecting requirements.
    - t. Required performance results.
    - u. Protection of construction and personnel.
  3. Record significant conference discussions, agreements, and disagreements.
  4. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Progress Meetings: Conduct progress meetings at weekly intervals. Coordinate dates of meetings with preparation of payment requests.
1. Attendees: In addition to representatives of Owner and Engineer, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
  2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
    - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule.

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**COORDINATION**

Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

- b. Review present and future needs of each entity present, including the following:
  - 1) Interface requirements.
  - 2) Sequence of operations.
  - 3) Status of submittals.
  - 4) Deliveries.
  - 5) Off-site fabrication.
  - 6) Access.
  - 7) Site utilization.
  - 8) Temporary facilities and controls.
  - 9) Work hours.
  - 10) Hazards and risks.
  - 11) Progress cleaning.
  - 12) Quality and work standards.
  - 13) Change Orders.
  - 14) Documentation of information for payment requests.
- 3. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present. Include a brief summary, in narrative form, of progress since the previous meeting and report.
  - a. Distribute minutes within three days of meeting date.
  - b. At a minimum, distribute minutes to Owner, Project Manager, Engineer or Engineer and Project team members identified in Section 00 01 01, Introduction.
  - c. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

**END OF SECTION**



**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other miscellaneous submittals.
- B. Related Sections include the following:
  - 1. Division 1 Section "Coordination" for submitting Coordination Drawings.
  - 2. Division 1 Section "Closeout Procedures" for submitting warranties Project Record Documents and operation and maintenance manuals.
  - 3. Divisions 2 through 33 Sections for specific requirements for each product
- C. Conservation: Employ submittal techniques that reduce consumable and waste materials while complying with requirements for submittal information

**1.3 DEFINITIONS**

- A. Action Submittals: Written and graphic information that requires Engineer's responsive action.
- B. Informational Submittals: Written information that does not require Engineer's approval. Submittals may be rejected for not complying with requirements.
- C. Fax: Facsimile device connected to telephone or computer communications system. Fax is not a submittal. Fax shall not be substituted for a submittal at any level of submittal process.

**1.4 SUBMITTAL PROCEDURES**

- A. General: Electronic copies of CAD Drawings of the Contract Drawings will not be provided by Engineers for Contractor's use in preparing submittals.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
  - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
  - 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
    - a. Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
  - 3. Compile information required in one Section into one submittal. Consolidate the following Sections into one submittal:
    - a. Site Work: Divisions 3, 32, and 33

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- b. Additional costs for multiple reviews of the above will be charged to Contractor by Change Order.
- C. Submittals Schedule: Submit two copies of schedule. Arrange the following information in a tabular format:
  - 1. Scheduled date for first submittal.
  - 2. Specification Section number and title.
  - 3. Submittal category (action or informational).
  - 4. Name of subcontractor.
  - 5. Description of the Work covered.
  - 6. Scheduled date for Engineer's final release or approval.
- D. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Engineer's receipt of submittal.
  - 1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. Engineer will advise Contractor when a submittal being processed must be delayed for coordination.
  - 2. Concurrent Review: Where concurrent review of submittals by Engineer's consultants, Owner, or other parties is required, allow 21 days for initial review of each submittal.
    - a. Mechanical work
    - b. Electrical work
    - c. Other
  - 3. Direct Transmittal to Consultant: Where the Contract Documents indicate that submittals may be transmitted directly to Engineer's consultants, provide duplicate copy of transmittal to Engineer. Submittal will be returned to Engineer before being returned to Contractor.
    - a. None identified at this time.
  - 4. If intermediate submittal is necessary, process it in same manner as initial submittal.
  - 5. Allow 15 days for processing each resubmittal.
  - 6. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing.
- E. Fax is not a submittal. Faxes will be discarded.
  - 1. Engineer may accept or reject "pre-submittal" faxed information. Faxed information is not a substitute for submittal.
  - 2. Faxed information will be discarded by Engineer when submittal is received.
  - 3. Submittal review period begins when submittal is received in Engineer's office, not when fax is received.
- F. Identification: Place a permanent label or title block on each submittal for identification.
  - 1. Indicate name of firm or entity that prepared each submittal on label or title block.

2. Provide a space approximately 4 by 5 inches on label or beside title block to record Contractor's review and approval markings (above) and action taken by Engineer (below).
3. Include the following information on label for processing and recording action taken:
  - a. Project name.
  - b. Date.
  - c. Name and address of Engineer.
  - d. Name and address of Contractor.
  - e. Name and address of subcontractor.
  - f. Name and address of supplier.
  - g. Name of manufacturer.
  - h. Unique identifier, including revision number.
  - i. Number and title of appropriate Specification Section.
  - j. Drawing number and detail references, as appropriate.
  - k. Other necessary identification.
- G. Deviations: Highlight, encircle, or otherwise identify deviations from the Contract Documents on submittals.
- H. Number of Copies are indicated in Part 2 for each type of submittal. If not indicated otherwise, submit two. Engineer will retain one and return remainder.
  1. Submit one additional copy for each concurrent reviewer. Concurrent reviewer will retain one copy.
  2. Additional copies required by each entity shall be made from "wet-stamped" copies. Engineer, concurrent reviewer(s), and Contractor shall maintain "wet-stamp" copies.
  3. Additional copies will not be marked with action taken and may be discarded by Engineer.
- I. Initial/Final Submittals: Unless additional copies are required for final submittal, and unless Engineer observes noncompliance with provisions of the Contract Documents, initial submittal may serve as final submittal.
- J. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Engineer will discard submittals received from sources other than Contractor.
  1. Transmittal Form: Use Form 1046. A copy is included at the end of this Section.
- K. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities.
  1. Retain "wet-stamped" copy. Make xerographic copies for distribution.
- L. Use for Construction: Use only final submittals with mark indicating action taken by Engineer.

**PART 2 - PRODUCTS**

**2.1 ACTION SUBMITTALS**

- A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment. Submit original copies of manufacturer's published data.
  - 1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
  - 2. Mark each copy of each submittal to show which products and options are applicable.
  - 3. Include the following information, as applicable:
    - a. Manufacturer's written recommendations.
    - b. Manufacturer's product specifications.
    - c. Manufacturer's installation instructions.
    - d. Standard color charts.
    - e. Manufacturer's catalog cuts.
    - f. Wiring diagrams showing factory-installed wiring.
    - g. Printed performance curves.
    - h. Operational range diagrams.
    - i. Mill reports.
    - j. Standard product operating and maintenance manuals.
    - k. Compliance with recognized trade association standards.
    - l. Compliance with recognized testing agency standards.
    - m. Application of testing agency labels and seals.
    - n. Notation of coordination requirements.
  - 4. Number of Copies: Three, Engineer will return two. Others will be discarded
- B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
  - 1. Preparation: Include the following information, as applicable:
    - a. Dimensions.
    - b. Identification of products.
    - c. Fabrication and installation drawings.
    - d. Roughing-in and setting diagrams.
    - e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
    - f. Shopwork manufacturing instructions.
    - g. Templates and patterns.
    - h. Schedules.
    - i. Design calculations.

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- j. Compliance with specified standards.
  - k. Notation of coordination requirements.
  - l. Notation of dimensions established by field measurement.
2. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.
3. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 42 inches.
4. Number of Copies: Submit black-line xerographic prints on white bond paper:
- a. Initial Submittal: Two copies, Engineer will return one.
  - b. Final Submittal: Two copies, Engineer will return one.
- C. Coordination Drawings: Comply with requirements in Division 1 Section "Project Management and Coordination."
- D. Samples: Prepare physical units of materials or products, including the following:
- 1. Comply with requirements in Division 1 Section "Quality Requirements" for mockups.
  - 2. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
  - 3. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from the same material to be used for the Work, cured and finished in manner specified, and physically identical with the product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
  - 4. Preparation: Mount, display, or package Samples in manner specified to facilitate review of qualities indicated. Prepare Samples to match Engineer's sample where so indicated. Attach label on unexposed side that includes the following:
    - a. Generic description of Sample.
    - b. Product name or name of manufacturer.
    - c. Sample source.
  - 5. Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, provide the following:
    - a. Size limitations.
    - b. Compliance with recognized standards.
    - c. Availability.
    - d. Delivery time.
  - 6. Submit Samples for review of kind, color, pattern, and texture for a final check of these characteristics with other elements and for a comparison of these

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characteristics between final submittal and actual component as delivered and installed.

- a. If variation in color, pattern, texture, or other characteristic is inherent in the product represented by a Sample, submit at least three sets of paired units that show approximate limits of the variations.
  - b. Refer to individual Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation, and similar construction characteristics.
7. Number of Samples for Initial Selection: Submit one full set of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Engineer will return submittal with options selected.
8. Number of Samples for Verification: Submit three sets of Samples. Engineer will retain one Sample sets; remainder will be returned.
- a. Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
9. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
- a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
  - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
- E. Application for Payment: Comply with requirements in Division 1 Section "Payment Procedures."
- F. Delegated-Design Submittal: Comply with requirements in Section 01 33 10.
- G. Schedule of Values: Comply with requirements in General Conditions.

**2.2 INFORMATIONAL SUBMITTALS**

- A. General: Prepare and submit Informational Submittals required by other Specification Sections.
1. Number of Copies: Submit **one** copy of each submittal, unless otherwise indicated. Engineer will not return copies.
  2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
  3. Test and Inspection Reports: Comply with requirements in Division 1 Section "Quality Requirements."

- B. Contractor's Construction Schedule: Comply with requirements in General Conditions.
- C. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
  - 1. Name, address, and telephone number of entity performing subcontract or supplying products.
  - 2. Number and title of related Specification Section(s) covered by subcontract.
- D. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of Engineers and owners, and other information specified.
- E. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements.
- F. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.
- G. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements and, where required, is authorized for this specific Project.
- H. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements. Include evidence of manufacturing experience where required.
- I. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements.
- J. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements.
- K. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements.
- L. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- M. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements.
- N. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

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- O. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
1. Name of evaluation organization.
  2. Date of evaluation.
  3. Time period when report is in effect.
  4. Product and manufacturers' names.
  5. Description of product.
  6. Test procedures and results.
  7. Limitations of use.
- P. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements in Division 1 Section "Closeout Procedures."
- Q. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
1. Name, address, and telephone number of factory-authorized service representative making report.
  2. Statement on condition of substrates and their acceptability for installation of product.
  3. Statement that products at Project site comply with requirements.
  4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
  5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
  6. Statement whether conditions, products, and installation will affect warranty.
  7. Other required items indicated in individual Specification Sections.
- R. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.
- S. Construction Photographs: Comply with requirements in General Conditions and Section 01 32 00.

**PART 3 - EXECUTION**

**3.1 CONTRACTOR'S REVIEW**

- A. Review each submittal and check for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Engineer.
- B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.



**3.2 ENGINEER'S ACTION**

- A. Engineer's review is for general conformance with the design content and Contract Documents. Markings or comments shall not be construed as relieving the Contractor from compliance with the project plans and specifications, nor departures there from. The Contractor remains responsible for details and accuracy, for confirming and correlating all quantities and dimensions, for selecting fabrication processes, for techniques of assembly, and for performing the Work in a safe manner
- B. Engineer will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- C. Action Submittals: Engineer will review each submittal, make marks to indicate corrections or modifications required, and return it. Engineer will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:
  - 1. "No Exceptions Taken": Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents. Accepted shall also mean "subject to plans and specifications, dimensions and quantities not guaranteed."
  - 2. "Note Markings": Work covered by the submittal may proceed provided it complies both with notations and corrections in the submittal and with requirements of the Contract Documents.
    - a. "Confirm" will normally be marked. Prior to proceeding with work in submittal, Contractor shall confirm agreement with Engineer's notes and markings.
  - 3. "Rejected": Do not proceed with work covered by the submittal. Revise the submittal or prepare a new submittal in accordance with notations made. Resubmit either without delay.
    - a. "Resubmit" will normally be marked.
- D. Informational Submittals: Engineer will review each submittal and will not return it, or will reject and return it if it does not comply with requirements. Engineer will forward each submittal to appropriate party.
- E. Submittals not required by the Contract Documents will not be reviewed and may be discarded.

END OF SECTION

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. This Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
  - 1. Specific quality-control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
  - 2. Specified tests, inspections, and related actions do not limit Contractor's quality-control procedures that facilitate compliance with the Contract Document requirements.
  - 3. Requirements for Contractor to provide quality-control services required by Engineer, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
- C. Related Sections include the following:
  - 1. Division 1 Section "Cutting and Patching" for repair and restoration of construction disturbed by testing and inspecting activities.
  - 2. Divisions 2 through 33 Sections for specific test and inspection requirements.

**1.3 DEFINITIONS**

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and ensure that proposed construction complies with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that completed construction complies with requirements. Services do not include contract enforcement activities performed by.
- C. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

**1.4 DELEGATED DESIGN**

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
  - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Engineer.

**1.5 REGULATORY REQUIREMENTS**

- A. Copies of Regulations: Obtain copies of the following regulations and retain at Project site to be available for reference by parties who have a reasonable need:
  - 1. Current version of the Uniform Building Code, Volume 1, with current amendments.

**1.6 SUBMITTALS**

- A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- B. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional, indicating that the products and systems are in compliance with performance and design criteria indicated. Include list of codes, loads, and other factors used in performing these services.
- C. Reports: Prepare and submit certified written reports that include the following:
  - 1. Date of issue.
  - 2. Project title and number.
  - 3. Name, address, and telephone number of testing agency.
  - 4. Dates and locations of samples and tests or inspections.
  - 5. Names of individuals making tests and inspections.
  - 6. Description of the Work and test and inspection method.
  - 7. Identification of product and Specification Section.
  - 8. Complete test or inspection data.
  - 9. Test and inspection results and an interpretation of test results.
  - 10. Ambient conditions at time of sample taking and testing and inspecting.
  - 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
  - 12. Name and signature of laboratory inspector.
  - 13. Recommendations on retesting and reinspecting.
- D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

**1.7 QUALITY ASSURANCE**

- A. No firm or individual who has been deemed ineligible to receive public works contracts by the state of Oregon will be considered qualified for this work. Refer to the State of Oregon Bureau of Labor and Industries.

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**QUALITY REQUIREMENTS**

- B. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- C. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance.
- F. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.
- H. Testing Agency Qualifications: An agency with the experience and capability to conduct testing and inspecting indicated, as documented by ASTM E 548, and that specializes in types of tests and inspections to be performed.
  - 1. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Engineer with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

**1.8 QUALITY CONTROL**

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
  - 1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of the types of testing and inspecting they are engaged to perform.
  - 2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.
- B. Contractor Responsibilities: Unless otherwise indicated, provide quality-control services specified and required by authorities having jurisdiction.
  - 1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
    - a. Contractor shall not employ the same entity engaged by Owner, unless agreed to in writing by Owner.

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2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
  3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
  4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
  5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. Special Tests and Inspections: Owner will engage a testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner.
1. Testing agency will notify Engineer and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
  2. Testing agency will submit a certified written report of each test, inspection, and similar quality-control service to Engineer with copy to Contractor and to authorities having jurisdiction.
  3. Testing agency will submit a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
  4. Testing agency will interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
  5. Testing agency will retest and reinspect corrected work.
- D. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing.
- E. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that revised or replaced Work that failed to comply with requirements established by the Contract Documents.
- F. Contractor's Testing Agency Responsibilities: Cooperate with Engineer and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Engineer and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
  2. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
  3. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
  4. Do not release, revoke, alter, or increase requirements of the Contract Documents or approve or accept any portion of the Work.
  5. Do not perform any duties of Contractor.
- G. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

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1. Access to the Work.
  2. Incidental labor and facilities necessary to facilitate tests and inspections.
  3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
  4. Facilities for storage and field-curing of test samples.
  5. Delivery of samples to testing agencies.
  6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
  7. Security and protection for samples and for testing and inspecting equipment at Project site.
- H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.

**PART 2 - PRODUCTS (NOT USED)**

**PART 3 - EXECUTION**

**3.1 REPAIR AND PROTECTION**

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
1. Provide materials and comply with installation requirements specified in other Sections of these Specifications. Restore patched areas and extend restoration into adjoining areas in a manner that eliminates evidence of patching.
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. This Section includes requirements for temporary facilities and controls, including temporary utilities, support facilities, and security and protection facilities.
- B. Temporary utilities include, but are not limited to, the following:
  - 1. Drainage.
  - 2. Water service and distribution.
  - 3. Sanitary facilities, including toilets, wash facilities, and drinking-water facilities.
  - 4. Heating facilities.
  - 5. Ventilation.
  - 6. Electric power service.
  - 7. Lighting.
  - 8. Telephone service.
- C. Support facilities include, but are not limited to, the following:
  - 1. Temporary roads and paving.
  - 2. Project identification and temporary signs.
  - 3. Waste disposal facilities.
  - 4. Field offices.
  - 5. Construction aids and miscellaneous services and facilities.
- D. Security and protection facilities include, but are not limited to, the following:
  - 1. Environmental protection.
  - 2. Stormwater control.
  - 3. Tree and plant protection.
  - 4. Pest control.
  - 5. Site enclosure fence.
  - 6. Security enclosure and lockup.
  - 7. Barricades, warning signs, and lights.
  - 8. Fire protection.
- E. Related Sections include the following:
  - 1. Division 1 Section "Submittal Procedures" for procedures for submitting copies of implementation and termination schedule and utility reports.
  - 2. Division 1 Section "Execution Requirements" for progress cleaning requirements.

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3. Divisions 2 through 33 for temporary heat, ventilation, and humidity requirements for products in those Sections.

**1.3 DEFINITIONS**

- A. Permanent Enclosure: As determined by Engineer, permanent or temporary roofing is complete, insulated, and weathertight; exterior walls are insulated and weathertight; and all openings are closed with permanent construction or substantial temporary closures.

**1.4 USE CHARGES**

- A. General: Cost or use charges for temporary facilities are not chargeable to Owner or Engineer and shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, the following:
  1. Owner's construction forces.
  2. Engineer.
  3. Testing agencies.
  4. Personnel of authorities having jurisdiction.
- B. Sewer Service: Pay sewer service use charges for sewer usage, by all parties engaged in construction, at Project site.
- C. Electric Power Service: Pay electric power service use charges, whether metered or otherwise, for electricity used by all entities engaged in construction activities at Project site.

**1.5 QUALITY ASSURANCE**

- A. Standards: Comply with ANSI A10.6, NECA's "Temporary Electrical Facilities," and NFPA 241.
  1. Trade Jurisdictions: Assigned responsibilities for installation and operation of temporary utilities are not intended to interfere with trade regulations and union jurisdictions.
  2. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

**1.6 PROJECT CONDITIONS**

- A. Temporary Utilities: At earliest feasible time, when acceptable to Owner, change over from use of temporary service to use of permanent service.
  1. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.
- B. Conditions of Use: The following conditions apply to use of temporary services and facilities by all parties engaged in the Work:
  1. Keep temporary services and facilities clean and neat.
  2. Relocate temporary services and facilities as required by progress of the Work.



**PART 2 - PRODUCTS**

**2.1 MATERIALS**

- A. General: Provide new materials. Undamaged, previously used materials in serviceable condition may be used if approved by Engineer. Provide materials suitable for use intended.
- B. Portable Chain-Link Fencing: Minimum 2-inch (50-mm) 9-gage, galvanized steel, chain-link fabric fencing; minimum 6 feet (1.8 m) high with galvanized steel pipe posts; minimum 2-3/8-inch- (60-mm-) OD line posts and 2-7/8-inch- (73-mm-) OD corner and pull posts, with 1-5/8-inch- (42-mm-) OD top and bottom rails. Provide concrete bases for supporting posts.

**2.2 EQUIPMENT**

- A. General: Provide equipment suitable for use intended.
- B. Field Offices: Prefabricated Mobile units with lockable entrances, operable windows, and serviceable finishes; heated and air conditioned; on foundations adequate for normal loading. Provide the following for job-built construction:
- C. Fire Extinguishers: Hand carried, portable, UL rated. Provide class and extinguishing agent as indicated or a combination of extinguishers of NFPA-recommended classes for exposures.
  - 1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.
- D. Self-Contained Toilet Units: Single-occupant units of chemical, aerated recirculation, or combustion type; vented; fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.
- E. Drinking-Water Fixtures: Containerized, tap-dispenser, bottled-water drinking-water units, including paper cup supply.
- F. Heating Equipment: Unless Owner authorizes use of permanent heating system, provide vented, self-contained, space heaters, electric unit heaters or fuel-oil heaters with individual space thermostatic control.
  - 1. Use of gasoline-burning or propane-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
  - 2. Heating Units: Listed and labeled, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use for type of fuel being consumed.
- G. Electrical Outlets: Properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-V plugs into higher-voltage outlets; equipped with ground-fault circuit interrupters, reset button, and pilot light.
- H. Power Distribution System Circuits: Where permitted and overhead and exposed for surveillance, wiring circuits, not exceeding 125-V ac, 20-A rating, and lighting circuits may be nonmetallic sheathed cable.

**SECTION 01 50 00**  
**TEMPORARY FACILITIES AND CONTROLS**

**PART 3 - EXECUTION**

**3.1 INSTALLATION, GENERAL**

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
- B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

**3.2 TEMPORARY UTILITY INSTALLATION**

- A. General: Engage appropriate local utility company to install temporary service or connect to existing service. Where utility company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with utility company recommendations.
  - 1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
  - 2. Provide adequate capacity at each stage of construction. Before temporary utility is available, provide trucked-in services.
  - 3. Obtain easements to bring temporary utilities to Project site where Owner's easements cannot be used for that purpose.
  - 4. Filter out excessive soil, construction debris, chemicals, oils, and similar contaminants that might clog sewers or pollute waterways before discharge.
  - 5. Connect temporary sewers to municipal system [private system indicated] as directed by sewer department officials.
  - 6. Maintain temporary sewers and drainage facilities in a clean, sanitary condition. After heavy use, restore normal conditions promptly.
- B. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction until permanent water service is in use. Sterilize temporary water piping before use.
  - 1. Provide hoses as necessary to serve Project site.
  - 2. As soon as water is required at each level, extend service to form a temporary water- and fire-protection standpipe. Provide distribution piping. Space outlets so water can be reached with a 100-foot (30-m) hose. Provide one hose at each outlet.
- C. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking-water fixtures. Comply with regulations and health codes for type, number, location, operation, and maintenance of fixtures and facilities.
  - 1. Disposable Supplies: Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Maintain adequate supply. Provide covered waste containers for disposal of used material.
  - 2. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy. [Provide separate facilities for male and female personnel.]
  - 3. Drinking-Water Facilities: Provide bottled-water, drinking-water units.
- D. Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment

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from that specified that will not have a harmful effect on completed installations or elements being installed.

1. Maintain a minimum temperature of 50 deg F (10 deg C) in permanently enclosed portions of building for normal construction activities, and 65 deg F (18.3 deg C) for finishing activities and areas where finished Work has been installed.
- E. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment from that specified that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.
- F. Electric Power Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, overload-protected disconnecting means, automatic ground-fault interrupters, and main distribution switchgear.
1. Install electric power service underground, unless overhead service must be used.
  2. Install power distribution wiring overhead and rise vertically where least exposed to damage.
- G. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations and traffic conditions.
1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
  2. Provide one 100-W incandescent lamp per 500 sq. ft. (45 sq. m), uniformly distributed, for general lighting, or equivalent illumination.
  3. Provide one 100-W incandescent lamp every 50 feet (15 m) in traffic areas.
  4. Provide one 100-W incandescent lamp per story in stairways and ladder runs, located to illuminate each landing and flight.
  5. Install exterior-yard site lighting that will provide adequate illumination for construction operations, traffic conditions, and signage visibility when the Work is being performed.
  6. Install lighting for Project identification sign.
- H. Telephone Service: Provide temporary telephone service throughout construction period for common-use facilities used by all personnel engaged in construction activities. Install separate telephone line for each field office and first-aid station.
1. Provide additional telephone lines for the following:
    - a. In field office with more than two occupants, install a telephone for each additional occupant or pair of occupants.
    - b. Provide a dedicated telephone line for each facsimile machine and computer with modem in each field office.
  2. At each telephone, post a list of important telephone numbers.
    - a. Police and fire departments.
    - b. Ambulance service.
    - c. Contractor's home office.
    - d. Engineer's office.
    - e. Engineers' offices.

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- f. Owner's office.
- g. Principal subcontractors' field and home offices.
- h. Developer's office.
- 3. Provide an answering machine or voice-mail on superintendent's telephone.
- 4. Furnish superintendent with electronic paging device for use when away from field office.
- 5. Provide a portable cellular telephone for superintendent's use in making and receiving telephone calls when away from field office.
- 6. Provide a high speed, bond paper fax machine on dedicated line.

**3.3 SUPPORT FACILITIES INSTALLATION**

- A. General: Comply with the following:
  - 1. Provide incombustible construction for offices, shops, and sheds located within construction area or within 30 feet (9 m) of building lines. Comply with NFPA 241.
  - 2. Maintain support facilities until near Substantial Completion. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
- B. Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate to support loads and to withstand exposure to traffic during construction period. Locate temporary roads and paved areas in same location as permanent roads and paved areas. Extend temporary roads and paved areas, within construction limits indicated, as necessary for construction operations.
  - 1. Coordinate elevations of temporary roads and paved areas with permanent roads and paved areas.
  - 2. Prepare subgrade and install subbase and base for temporary roads and paved areas according to Division 31 and 32.
  - 3. Recondition base after temporary use, including removing contaminated material, regrading, proofrolling, compacting, and testing.
  - 4. Refer to Geotechnical Report for additional information and recommendations.
- C. Traffic Controls: Provide temporary traffic controls at junction of temporary roads with public roads. Include warning signs for public traffic and "STOP" signs for entrance onto public roads. Comply with requirements of authorities having jurisdiction.
- D. Dewatering Facilities and Drains: Comply with requirements in applicable Division 31 Sections for temporary drainage and dewatering facilities and operations not directly associated with construction activities included in individual Sections. Where feasible, use same facilities. Maintain Project site, excavations, and construction free of water.
  - 1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining property nor endanger permanent Work or temporary facilities.
  - 2. Before connection and operation of permanent drainage piping system, provide temporary drainage where roofing or similar waterproof deck construction is completed.
  - 3. Remove snow and ice as required to minimize accumulations.
- E. Project Identification and Temporary Signs: Prepare Project identification and other signs in sizes indicated. Install signs where indicated to inform public and persons seeking entrance to Project. Do not permit installation of unauthorized signs.

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1. Engage an experienced sign painter to apply graphics for Project identification signs. Comply with details indicated.
  2. Prepare temporary signs to provide directional information to construction personnel and visitors.
  3. Construct signs of exterior-type Grade B-B high-density concrete form overlay plywood in sizes and thicknesses indicated. Support on posts or framing of preservative-treated wood or steel.
  4. Paint sign panel and applied graphics with exterior-grade alkyd gloss enamel over exterior primer.
- F. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Containerize and clearly label hazardous, dangerous, or unsanitary waste materials separately from other waste. Comply with Division 1 Section "Execution Requirements" for progress cleaning requirements.
1. If required by authorities having jurisdiction, provide separate containers, clearly labeled, for each type of waste material to be deposited.
  2. Develop a waste management plan for Work performed on Project. Indicate types of waste materials Project will produce and estimate quantities of each type. Provide detailed information for on-site waste storage and separation of recyclable materials. Provide information on destination of each type of waste material and means to be used to dispose of all waste materials.
- G. Common-Use Field Office: Provide an insulated, weathertight, air-conditioned field office for use as a common facility by all personnel engaged in construction activities; of sufficient size to accommodate required office personnel and meetings of 10 persons at Project site. Keep office clean and orderly.
1. Furnish and equip offices as required for field administration and meetings.
  2. Provide an electric heater with thermostat capable of maintaining a uniform indoor temperature of 68 deg F (20 deg C). Provide an air-conditioning unit capable of maintaining an indoor temperature of 72 deg F (23 deg C).
  3. Provide fluorescent light fixtures capable of maintaining average illumination of 20 fc (215 lx) at desk height. Provide 110- to 120-V duplex outlets spaced at not more than 12-foot (4-m) intervals, 1 per wall in each room.
- H. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment involved, including temporary utility services. Sheds may be open shelters or fully enclosed spaces within building or elsewhere on-site.
- I. Temporary Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate. Cover finished, permanent stairs with protective covering of plywood or similar material so finishes will be undamaged at time of acceptance.
1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If, despite such protection, stairs become damaged, restore damaged areas so no evidence remains of correction work.

**3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION**

- A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects. Avoid using tools and equipment that produce harmful noise.

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Restrict use of noisemaking tools and equipment to hours that will minimize complaints from persons or firms near Project site.

- B. Stormwater Control: Provide earthen embankments and similar barriers in and around excavations and subgrade construction, sufficient to prevent flooding by runoff of stormwater from heavy rains.
- C. Site Enclosure Fence: When excavation begins, install portable chain-link enclosure fence with lockable entrance gates. Locate where indicated, or enclose entire Project site or portion determined sufficient to accommodate construction operations. Install in a manner that will prevent people, dogs, and other animals from easily entering site except by entrance gates.
  - 1. Set fence posts in concrete bases.
  - 2. Provide gates in sizes and at locations necessary to accommodate delivery vehicles and other construction operations.
- D. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.
- E. Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erecting structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and public of possible hazard. Where appropriate and needed, provide lighting, including flashing red or amber lights.
- F. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
  - 1. Where heating or cooling is needed and permanent enclosure is not complete, provide insulated temporary enclosures. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.
  - 2. Vertical Openings: Close openings of 25 sq. ft. (2.3 sq. m) or less with plywood or similar materials.
  - 3. Horizontal Openings: Close openings in floor or roof decks and horizontal surfaces with load-bearing, wood-framed construction.
  - 4. Install tarpaulins securely using fire-retardant-treated wood framing and other materials.
- G. Temporary Fire Protection: Until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of types needed to protect against reasonable predictable and controllable fire losses. Comply with NFPA 241.
  - 1. Provide fire extinguishers, installed on walls on mounting brackets, visible and accessible from space being served, with sign mounted above.
    - a. Field Offices: Class A stored-pressure water-type extinguishers.
    - b. Other Locations: Class ABC dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for exposures.
    - c. Locate fire extinguishers where convenient and effective for their intended purpose; provide not less than one extinguisher on each floor at or near each usable stairwell.
  - 2. Store combustible materials in containers in fire-safe locations.

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**TEMPORARY FACILITIES AND CONTROLS**

3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairways, and other access routes for firefighting. Prohibit smoking in hazardous fire-exposure areas.
4. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition.
5. Permanent Fire Protection: At earliest feasible date in each area of Project, complete installation of permanent fire-protection facility, including connected services, and place into operation and use. Instruct key personnel on use of facilities.
6. Develop and supervise an overall fire-prevention and first-aid fire-protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
7. Provide hoses for fire protection of sufficient length to reach construction areas. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

**3.5 OPERATION, TERMINATION, AND REMOVAL**

- A. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage caused by freezing temperatures and similar elements.
  1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
  2. Prevent water-filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.
- B. Temporary Facility Changeover: Except for using permanent fire protection as soon as available, do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- C. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
  1. Materials and facilities that constitute temporary facilities are the property of Contractor. Owner reserves right to take possession of Project identification signs.
  2. Remove temporary paving or rock not intended for or acceptable for integration into permanent paving. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
  3. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements in Division 1 Section "Closeout Procedures."

**SECTION 01 50 00**  
**TEMPORARY FACILITIES AND CONTROLS**

END OF SECTION



**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. This Section includes the following administrative and procedural requirements: selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.
- B. Related Sections include the following:
  - 1. Section 00 21 13, Instructions to Bidders for substitutions during Bidding.
  - 2. Division 1 Section "Alternates" for products selected under an alternate.
  - 3. Division 1 Section "Closeout Procedures" for submitting warranties for contract closeout.
  - 4. Divisions 2 through 33 Sections for specific requirements for warranties on products and installations specified to be warranted.

**1.3 DEFINITIONS**

- A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
  - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation, shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
  - 2. New Products: Items that have not previously been incorporated into another project or facility, except products consisting of recycled-content materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.
  - 3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents.
- C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.

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- D. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
- E. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.

**1.4 SUBMITTALS**

- A. Product List: Submit a list, in tabular form, showing specified products, for each Section identified below. Include generic names of products required. Include manufacturer's name and proprietary product names for each product.
  - 1. Submit product list for the following Sections: as directed.
  - 2. Coordinate product list with Contractor's Construction Schedule and the Submittals Schedule.
  - 3. Form: Tabulate information for each product under the following column headings:
    - a. Specification Section number and title.
    - b. Generic name used in the Contract Documents.
    - c. Proprietary name, model number, and similar designations.
    - d. Manufacturer's name and address.
    - e. Supplier's name and address.
    - f. Installer's name and address.
    - g. Projected delivery date or time span of delivery period.
    - h. Identification of items that require early submittal approval for scheduled delivery date.
  - 4. Completed List: Within 30 days after date of commencement of the Work, submit 3 copies of completed product list. Include a written explanation for omissions of data and for variations from Contract requirements.
  - 5. Engineer's Action: Engineer will respond in writing to Contractor within 15 days of receipt of completed product list. Engineer's response, or lack of response, does not constitute a waiver of requirement that products comply with the Contract Documents.
- B. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
  - 1. Substitution Request Form: Use Form 1063 provided at end of Section 00 21 13.
  - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
    - a. Statement indicating why specified material or product cannot be provided.
    - b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner

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and separate contractors that will be necessary to accommodate proposed substitution.

- c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
  - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
  - e. Samples, where applicable or requested.
  - f. List of similar installations for completed projects with project names and addresses and names and addresses of Engineers and owners.
  - g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
  - h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
  - i. Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.
  - j. Cost information, including a proposal of change, if any, in the Contract Sum.
  - k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
  - l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
3. Engineer's Action: If necessary, Engineer will request additional information or documentation for evaluation within one week of receipt of a request for substitution. Engineer will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.
- a. Form of Acceptance: Change Order.
  - b. Use product specified if Engineer cannot make a decision on use of a proposed substitution within time allocated.
- C. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 1 Section "Submittal Procedures." Show compliance with requirements.

**1.5 QUALITY ASSURANCE**

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.
- 1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.

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**PRODUCT REQUIREMENTS**

2. If a dispute arises between contractors over concurrently selectable but incompatible products, Engineer will determine which products shall be used.

**1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING**

- A. Deliver, store, and handle products using means and methods that will prevent damage deterioration, and loss, including theft. Comply with manufacturers written instructions.
  1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
  2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
  3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
  4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
  5. Store products to allow for inspection and measurement of quantity or counting of units.
  6. Store materials in a manner that will not endanger Project structure.
  7. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
  8. Comply with product manufacturers written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
  9. Protect stored products from damage.
- B. Storage: Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

**1.7 PRODUCT WARRANTIES**

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.
  1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
  2. Specified Form: Forms are included with the Specifications. Prepare a written document using appropriate form properly executed.
  3. Refer to Divisions 2 through 33 Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Division 1 Section "Closeout Procedures."

**PART 2 - PRODUCTS**

**2.1 PRODUCT OPTIONS**

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged, and unless otherwise indicated, that are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
  2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
  3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
  4. Where products are accompanied by the term "as selected," Engineer will make selection.
  5. Where products are accompanied by the term "match sample," sample to be matched is Engineer's.
  6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.
  7. Or Equal: Where products are specified by name and accompanied by the term "or equal" or "or approved equal" or "or approved," comply with provisions in "Comparable Products" Article to obtain approval for use of an unnamed product.
- B. Product Selection Procedures: Procedures for product selection include the following:
1. "Others Approved in Addenda" when included in a list of product or manufacturer names, this phrase means substitutions will be considered within time limits for substitutions during Bidding.
  2. Product: Where Specification paragraphs or subparagraphs titled "Product" name a single product and manufacturer, provide the product named.
    - a. Substitutions will not be considered, unless otherwise indicated.
  3. Manufacturer/Source: Where Specification paragraphs or subparagraphs titled "Manufacturer" or "Source" name single manufacturers or sources, provide a product by the manufacturer or from the source named that complies with requirements.
    - a. Substitutions will not be considered, unless otherwise indicated.
  4. Products: Where Specification paragraphs or subparagraphs titled "Products" introduce a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
    - a. Substitutions will not be considered, unless otherwise indicated.
  5. Available Products: Where Specification paragraphs or subparagraphs titled "Available Products" introduce a list of names of both products and manufacturers, provide one of the products listed or another product that complies with

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requirements. Comply with provisions in "Comparable Products" Article to obtain approval for use of an unnamed product.

6. Available Manufacturers: Where Specification paragraphs or subparagraphs titled "Available Manufacturers" introduce a list of manufacturers' names, provide a product by one of the manufacturers listed or another manufacturer that complies with requirements. Comply with provisions in "Comparable Products" Article to obtain approval for use of an unnamed product.
7. Product Options: Where Specification paragraphs titled "Product Options" indicate that size, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide either the specific product or system indicated or a comparable product or system by another manufacturer. Comply with provisions in "Product Substitutions" Article.
8. Basis-of-Design Products: Where Specification paragraphs or subparagraphs titled "Basis-of-Design Products" are included and also introduce or refer to a list of manufacturers' names, provide either the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in "Comparable Products" Article to obtain approval for use of an unnamed product.
  - a. Substitutions will not be considered, unless otherwise indicated.
9. Visual Matching Specification: Where Specifications require matching an established Sample, select a product (and manufacturer) that complies with requirements and matches Engineer's sample. Engineer's decision will be final on whether a proposed product matches satisfactorily.
  - a. If no product available within specified category matches satisfactorily and complies with other specified requirements, comply with provisions of the Contract Documents on "substitutions" for selection of a matching product.
10. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product (and manufacturer) that complies with other specified requirements.
  - a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Engineer will select color, pattern, or texture from manufacturer's product line that does not include premium items.
  - b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Engineer will select color, pattern, or texture from manufacturer's product line that includes both standard and premium items.

**2.2 PRODUCT SUBSTITUTIONS**

- A. Timing: Engineer and CM/GC will consider requests for substitution during Bidding per Section 00 02 10. Requests received after that time may be considered or rejected at discretion of Engineer or Engineer.
- B. Conditions: Engineer or Engineer will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied,

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Engineer or Engineer will return requests without action, except to record noncompliance with these requirements:

1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Engineer for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
2. Requested substitution does not require extensive revisions to the Contract Documents.
3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
4. Substitution request is fully documented and properly submitted.
5. Requested substitution will not adversely affect Contractor's Construction Schedule.
6. Requested substitution has received necessary approvals of authorities having jurisdiction.
7. Requested substitution is compatible with other portions of the Work.
8. Requested substitution has been coordinated with other portions of the Work.
9. Requested substitution provides specified warranty or same warranty as specified product.
10. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

**2.3 COMPARABLE PRODUCTS**

- A. Where products or manufacturers are specified by name, submit the following, in addition to other required submittals, to obtain approval of an unnamed product:
1. Evidence that the proposed product does not require extensive revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
  2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
  3. Evidence that proposed product provides specified warranty.
  4. List of similar installations for completed projects with project names and addresses and names and addresses of Engineers and owners, if requested.
  5. Samples, if requested.

END OF SECTION

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:
  - 1. Construction layout.
  - 2. Field engineering and surveying.
  - 3. General installation of products.
  - 4. Coordination of Owner-installed products.
  - 5. Progress cleaning.
  - 6. Starting and adjusting.
  - 7. Protection of installed construction.
  - 8. Correction of the Work.
- B. Related Sections include the following:
  - 1. Division 1 Section "Coordination" for procedures for coordinating field engineering with other construction activities.
  - 2. Division 1 Section "Submittal Procedures" for submitting surveys.
  - 3. Division 1 Section "Closeout Procedures" for recording Owner-accepted deviations from indicated lines and levels, and final cleaning.

**1.3 SUBMITTALS**

- A. Certificates: Submit certificate signed by land surveyor or professional engineer certifying that location and elevation of improvements comply with requirements.
- B. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

**1.4 QUALITY ASSURANCE**

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.



**PART 2 - PRODUCTS (NOT USED)**

**PART 3 - EXECUTION**

**3.1 EXAMINATION**

- A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.
  - 1. Before construction, verify the location and points of connection of utility services.
- B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities and other construction affecting the Work.
  - 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.
  - 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- C. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
  - 1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
  - 2. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

**3.2 PREPARATION**

- A. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
  - 1. Notify Owner not less than three days in advance of proposed utility interruptions.
  - 2. Do not proceed with utility interruptions without Owner's written permission.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Engineer. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

**3.3 CONSTRUCTION LAYOUT**

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Engineer promptly.
- B. General: Engage a qualified professional to lay out the Work using accepted surveying practices.
  - 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
  - 2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
  - 3. Inform installers of lines and levels to which they must comply.
  - 4. Check the location, level and plumb, of every major element as the Work progresses.
  - 5. Notify Engineer when deviations from required lines and levels exceed allowable tolerances.
  - 6. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.

**3.4 FIELD ENGINEERING**

- A. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
  - 1. Do not change or relocate existing benchmarks or control points without prior written approval of Engineer or Construction Manager. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Engineer and Construction Manager before proceeding.
  - 2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
- B. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
  - 1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
  - 2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.

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3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.
- C. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.
- D. Final Property Survey: Prepare a final property survey showing significant features (real property) for Project. Include on the survey a certification, signed by land surveyor, that principal metes, bounds, lines, and levels of Project are accurately positioned as shown on the survey.
  1. Show boundary lines, monuments, streets, site improvements and utilities, existing improvements and significant vegetation, adjoining properties, acreage, grade contours, and the distance and bearing from a site corner to a legal point.
  2. Recording: At Substantial Completion, have the final property survey recorded by or with authorities having jurisdiction as the official "property survey."

**3.5 INSTALLATION**

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
  1. Make vertical work plumb and make horizontal work level.
  2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
  3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
  4. Maintain minimum headroom clearance of 8 feet in spaces without a suspended ceiling.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- F. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
  1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Engineer.
  2. Allow for building movement, including thermal expansion and contraction.
- G. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

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- H. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.
  - 1. Provide products certified asbestos free.
  - 2. Where applicable, select products with lowest level of VOC.
  - 3. Provide products with no formaldehyde.

**3.6 OWNER-INSTALLED PRODUCTS**

- A. Site Access: Provide access to Project site for Owner's construction forces.
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction forces.
  - 1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
  - 2. Preinstallation Conferences: Include Owner's construction forces at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend preinstallation conferences conducted by Owner's construction forces if portions of the Work depend on Owner's construction.

**3.7 PROGRESS CLEANING**

- A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.
  - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
  - 2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F.
  - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
  - 1. Remove liquid spills promptly.
  - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

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- F. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Cutting and Patching: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.
  - 1. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.
- H. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.
- I. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- J. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- K. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

**3.8 STARTING AND ADJUSTING**

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Division 1 Section "Quality Requirements."

**3.9 PROTECTION OF INSTALLED CONSTRUCTION**

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.
  - 1. Comply with specified requirements when they are more restrictive.

**3.10 CORRECTION OF THE WORK**

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 1 Section "Cutting and Patching."
  - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.

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- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
  - 1. Inspection procedures.
  - 2. Project Record Documents.
  - 3. Operation and maintenance manuals, including draft version.
  - 4. Warranties.
  - 5. Instruction of Owner's personnel.
  - 6. Final cleaning.
- B. Related Sections include the following:
  - 1. Division 1 Section "Payment Procedures" for requirements for Applications for Payment for Substantial and Final Completion.
  - 2. Division 1 Section "Execution Requirements" for progress cleaning of Project site.
  - 3. Divisions 2 through 33 Sections for specific closeout and special cleaning requirements for products of those Sections.

**1.3 SUBSTANTIAL COMPLETION**

- A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.
  - 1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
  - 2. Advise Owner of pending insurance changeover requirements.
  - 3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
  - 4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
  - 5. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs and photographic negatives, damage or settlement surveys, property surveys, and similar final record information.
  - 6. Deliver tools, spare parts, extra materials, similar items, and all other deliverables to location designated by Owner. Label with manufacturer's name and model number where applicable.
  - 7. Make final changeover of permanent locks and deliver keys to Owner. Keys to be tagged with site, room number and door number. Numbering to match

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architectural drawings. Advise Owner's personnel of changeover in security provisions.

8. Complete startup testing of systems.
9. Submit test/adjust/balance records.
10. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
11. Advise Owner of changeover in heat and other utilities.
12. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
13. Complete final cleaning requirements, including touchup painting.
14. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

- B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Engineer, that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for Final Completion.

**1.4 FINAL COMPLETION**

- A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:

1. Submit a final Application for Payment according to Division 1 Section "Payment Procedures."
2. Submit certified copy of Engineer's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Engineer. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Submit pest-control final inspection report and warranty.
5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.

- B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.



**1.5 LIST OF INCOMPLETE ITEMS (PUNCH LIST)**

- A. Preparation: Submit one copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction. Use CSI Form 14.1A.
  - 1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor, listing rooms in numerical order according to the Room Finish Schedule.
  - 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
  - 3. Include the following information at the top of each page:
    - a. Project name.
    - b. Date.
    - c. Name of Architect or Engineer
    - d. Name of Contractor.
    - e. Page number.

**1.6 PROJECT RECORD DOCUMENTS**

- A. General: Do not use Project Record Documents for construction purposes. Protect Project Record Documents from deterioration and loss. Provide access to Project Record Documents for Engineer's reference during normal working hours.
- B. Record Drawings: Maintain and submit one set of xerographic black-line white prints of Contract Drawings and Shop Drawings.
  - 1. Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
    - a. Give particular attention to information on concealed elements that cannot be readily identified and recorded later.
    - b. Accurately record information in an understandable drawing technique.
    - c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
    - d. Mark Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. Where Shop Drawings are marked, show cross-reference on Contract Drawings.
  - 2. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
  - 3. Mark important additional information that was either shown schematically or omitted from original Drawings.
  - 4. Note Construction Change Directive numbers, Change Order numbers, alternate numbers, and similar identification where applicable.

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5. Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location. Organize into manageable sets; bind each set with durable paper cover sheets. Include identification on cover sheets.
- C. Record Specifications: Submit one copy of Project's Specifications, including addenda and contract modifications. Mark copy to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
  1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
  3. Note related Change Orders, Record Drawings where applicable.
- D. Record Product Data: Submit one copy of each Product Data submittal. Mark one set to indicate the actual product installation where installation varies substantially from that indicated in Product Data.
  1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
  3. Note related Change Orders, Record Drawings where applicable.

**1.7 OPERATION AND MAINTENANCE MANUALS**

- A. Assemble a complete set of operation and maintenance data indicating the operation and maintenance of each system, subsystem, and piece of equipment not part of a system. Include operation and maintenance data required in individual Specification Sections and as follows:
  1. Operation Data:
    - a. Emergency instructions and procedures.
    - b. System, subsystem, and equipment descriptions, including operating standards.
    - c. Operating procedures, including startup, shutdown, seasonal, and weekend operations.
    - d. Description of controls and sequence of operations.
    - e. Piping diagrams.
  2. Maintenance Data:
    - a. Manufacturer's information, including list of spare parts.
    - b. Name, address, and telephone number of Installer or supplier.
    - c. Maintenance procedures.
    - d. Maintenance and service schedules for preventive and routine maintenance.
    - e. Maintenance record forms.
    - f. Sources of spare parts and maintenance materials.

- g. Copies of maintenance service agreements.
  - h. Copies of warranties and bonds.
- B. Organize operation and maintenance manuals into suitable sets of manageable size. Bind and index data in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, with pocket inside the covers to receive folded oversized sheets. Identify each binder on front and spine with the printed title "OPERATION AND MAINTENANCE MANUAL," Project name, and subject matter of contents. Two hard copies of the Operations and Maintenance Manuals are required; one to the District Maintenance Office, and one to be kept on site. One electronic version of all contents of the Operations and Maintenance Manuals to be turned over on a flash drive.

#### **1.8 DRAFT OF OPERATION AND MAINTENANCE MANUAL**

- A. Assemble one initial version of Operation and Maintenance Manual(s) complying with requirements for final manuals except:
  - 1. Work involving submittals that have not been returned "accepted" or "accepted as noted" may be excluded.
  - 2. Diagrams and schematics that require "as-built" documentation may be replaced with a page holding their location.
  - 3. At least 80% of expected final documentation shall be submitted.
  - 4. Tabs, dividers, and notebook labels may be temporary.
- B. Refer to Section 01 29 00 for timing of submittal.

#### **1.9 WARRANTIES**

- A. Submittal Time: Submit written warranties on request of Engineer for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.
- B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- C. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
  - 1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
  - 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
  - 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
- D. Provide additional copies of each warranty to include in operation and maintenance manuals.

**PART 2 - PRODUCTS**

**2.1 MATERIALS**

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

**PART 3 - EXECUTION**

**3.1 DEMONSTRATION AND TRAINING**

- A. Instruction: Instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
  - 1. Provide instructors experienced in operation and maintenance procedures.
  - 2. Provide instruction at mutually agreed-on times. For equipment that requires seasonal operation, provide similar instruction at the start of each season.
  - 3. Schedule training with Owner, through Engineer, with at least seven days' advance notice.
  - 4. Coordinate instructors, including providing notification of dates, times, length of instruction, and course content.
- B. Program Structure: Develop an instruction program that includes individual training modules for each system and equipment not part of a system, as required by individual Specification Sections. For each training module, develop a learning objective and teaching outline. Include instruction for the following:
  - 1. System design and operational philosophy.
  - 2. Review of documentation.
  - 3. Operations.
  - 4. Adjustments.
  - 5. Troubleshooting.
  - 6. Maintenance.
  - 7. Repair.

**3.2 FINAL CLEANING**

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
- C. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
  - 1. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.

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2. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
  3. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
  4. Remove tools, construction equipment, machinery, and surplus material from Project site.
  5. Remove snow and ice to provide safe access to building.
  6. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
  7. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
  8. Sweep concrete floors broom clean in unoccupied spaces.
  9. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
  10. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
  11. Remove labels that are not permanent.
  12. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
  13. Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
  14. Wipe surfaces of mechanical and electrical equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
  15. Replace parts subject to unusual operating conditions.
  16. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
  17. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
  18. Clean ducts, blowers, and coils if units were operated without filters during construction.
  19. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
  20. Leave Project clean and ready for occupancy.
- D. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION

**SECTION 01 77 00**  
**CLOSEOUT PROCEDURES**

**SECTION 31 10 00**

**SITE CLEARING**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. Section Includes:
  - 1. Protecting existing vegetation
  - 2. Removing existing vegetation.
  - 3. Clearing and grubbing.
  - 4. Stripping and stockpiling topsoil.
  - 5. Stripping and stockpiling rock.
  - 6. Removing above and below grade site improvements.
  - 7. Disconnecting, capping or sealing, removing site utilities, and abandoning site utilities in place.

**1.02 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Geotechnical Report dated April 29, 2016
- C. Related Sections
  - 1. Section 015000 "Temporary Facilities and Controls" for temporary erosion and sedimentation control measures.

**1.03 DEFINITIONS**

- A. Subsoil: Soil beneath the level of subgrade; soil beneath the topsoil layers of a naturally occurring soil profile, typified by less than 1 percent organic matter and few soil organisms.
- B. Surface Soil: Soil that is present at the top layer of the existing soil profile. In undisturbed areas, surface soil is typically called "topsoil," but in disturbed areas such as urban environments, the surface soil can be subsoil.
- C. Topsoil: Top layer of the soil profile consisting of existing native surface topsoil or existing in-place surface soil; the zone where plant roots grow.
- D. Topsoil: Top layer of the soil profile consisting of existing native surface topsoil or existing in-place surface soil; the zone where plant roots grow. Its appearance is generally friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects larger than 2 inches in diameter; and free of weeds, roots, toxic materials, or other nonsoil materials.
- E. Plant Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction and indicated on Drawings.
- F. Tree Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction and indicated on Drawings.
- G. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

**1.04 PREINSTALLATION MEETINGS**

- A. Preinstallation Conference: Conduct conference at Project Site.

**1.05 MATERIAL OWNERSHIP**

- A. Except for materials indicated to be stockpiled or otherwise remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

**1.06 INFORMATION SUBMITTALS**

- A. Existing Conditions: Documentation of existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by site clearing.
  - 1. Use sufficiently detailed photographs or video recordings.
  - 2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plant designated to remain.
- B. Topsoil stripping and stockpiling program.
- C. Rock stockpiling program.
- D. Record Drawings: Identifying and accurately showing locations of capped utilities and other subsurface structural, electrical, and mechanical conditions.

**1.07 QUALITY ASSURANCE**

- A. Topsoil Stripping and Stockpiling Program: Prepare a written program to systematically demonstrate the ability of personnel to properly follow procedures and handle materials and equipment during the Work. Include dimensioned diagrams for placement and protection of stockpiles.
- B. Rock Stockpiling Program: Prepare a written program to systematically demonstrate the ability of personnel to properly follow procedures and handle materials and equipment during the work. Include dimensioned diagrams for placement and protection of stockpiles.

**1.08 FIELD CONDITIONS**

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
  - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
  - 2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.
- B. Improvements on Adjoining Property: Authority for performing site clearing indicated on property adjoining Owner's property will be obtained by Owner before award of Contract.
  - 1. Do not proceed with work on adjoining property until directed by Architect.
- C. Salvageable Improvements: Carefully remove items indicated to be salvaged and store on site.
- D. Utility Locator Service: Notify One Call for area where Project is located before site clearing.
- E. Do not commence site clearing operations until temporary erosion- and sedimentation-control and tree protection measures are in place.
- F. Tree- and Plant-Protection Zones: Protect according to City of Fairview requirements and as noted on the drawings.
- G. Soil Stripping, Handling, and Stockpiling: Perform only when the soil is dry or slightly moist.

**PART 2 - PRODUCTS****2.01 MATERIALS**

- A. Satisfactory Soil Material: Requirements for satisfactory soil material are specified in Section 312000 "Earth Moving."



1. Obtain approved borrow soil material off-site when satisfactory soil material is not available on-site.

### **PART 3 - EXECUTION**

#### **3.01 PREPARATION**

- A. Protect and maintain benchmarks and survey control points from disturbance during construction.
- B. Verify that trees, shrubs, and other vegetation to remain or to be relocated have been flagged and that protection zones have been identified and enclosed.
- C. Protect existing site improvements to remain from damage during construction.
  1. Restore damaged improvements to their original condition, as acceptable to Owner.

#### **3.02 TEMPORARY EROSION AND SEDIMENTATION CONTROL**

- A. Provide temporary erosion and sediment control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to erosion and sediment control 1200C Drawings and requirements of authorities having jurisdiction.
- B. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.
- C. Inspect, maintain, and repair erosion and sediment control measures during construction until permanent vegetation has been established.
- D. Remove erosion and sediment controls, and restore and stabilize areas disturbed during removal.

#### **3.03 TREE AND PLANT PROTECTION**

- A. Protect trees and plants remaining on-site according to the drawings.
- B. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations.

#### **3.04 EXISTING UTILITIES**

- A. Owner will arrange for disconnecting and sealing indicated utilities that serve existing structures before site clearing, when requested by Contractor.
  1. Verify that utilities have been disconnected and capped before proceeding with site clearing.
- B. Locate, identify, disconnect, and seal or cap utilities indicated to be removed or abandoned in place.
  1. Arrange with utility companies to shut off indicated utilities.
- C. Locate, identify, and disconnect utilities indicated to be abandoned in place.
- D. Interrupting Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others, unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
  1. Notify Architect not less than two days in advance of proposed utility interruptions.
  2. Do not proceed with utility interruptions without Architect's written permission.
- E. Excavate for and remove underground utilities indicated to be removed.

#### **3.05 CLEARING AND GRUBBING**

- A. Clear and grub per the Geotechnical Report dated April 29, 2016

#### **3.06 TOPSOIL STRIPPING**

- A. Strip topsoil per the Geotechnical Report dated April 29, 2016

**3.07 STOCKPILING ROCK**

- A. Remove naturally formed rocks that measure more than 1 foot across in least dimension. Do not include excavated or crushed rock.
  - 1. Separate or wash off non-rock materials from rocks, including soil, clay lumps, gravel, and other objects larger than 2 inches in diameter; trash, debris, weeds, roots, and other waste materials.
- B. Stockpile rock without intermixing with other materials. Cover to prevent windblown debris from accumulating among rocks.
  - 1. Do not stockpile rock within protection zones.
  - 2. Dispose of surplus rock. Surplus rock is that which exceeds quantity indicated to be stockpiled or reused.
  - 3. Stockpile surplus rock to allow later use by the Owner.

**3.08 SITE IMPROVEMENTS**

- A. Remove existing above and below grade improvements as indicated and necessary to facilitate new construction.
- B. Remove slabs, paving, curbs, gutters, and aggregate base as indicated.
  - 1. Unless existing full-depth joints coincide with line of demolition, neatly sawcut along line of existing pavement to remain before removing adjacent existing pavement. Sawcut faces vertically.
  - 2. Paint cut ends of steel reinforcement in concrete to remain with two coats of antirust coating, following coating manufacturer's written instructions. Keep paint off surfaces that will remain exposed.

**3.09 DISPOSAL OF SURPLUS AND WASTE MATERIALS**

- A. Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.
- B. Separate recyclable materials produced during site clearing from other nonrecyclable materials. Store or stockpile without intermixing with other materials, and transport them to recycling facilities. Do not interfere with other Project work.

**END OF SECTION**

**SECTION 31 20 00**

**EARTH MOVING**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. Section Includes:
  - 1. Excavating and filling for rough grading the Site.
  - 2. Preparing subgrades for slabs on grade, walks, pavements, turf and grasses and landscape areas.
  - 3. Excavating and backfilling for buildings and structures.
  - 4. Drainage course for concrete slabs on grade.
  - 5. Subbase course for concrete walks and pavements.
  - 6. Subbase course for asphalt paving.
  - 7. Subsurface drainage backfill for walls and trenches.
  - 8. Excavating and backfilling trenches for utilities and pits for buried utility structures.
  - 9. Excavating well hole to accommodate elevator cylinder assembly.

**1.02 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Geotechnical Report dated April 29, 2016
- C. Related Sections
  - 1. Section 311000 "Site Clearing" for site stripping, grubbing, stripping and stockpiling topsoil, and removal of above and below grade improvements and utilities.
  - 2. Section 329300 "Plants" for finish grading in planting areas and tree and shrub pit excavation and planting.

**1.03 DEFINITIONS**

- A. Backfill: Soil material or controlled low strength material used to fill an excavation.
  - 1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
  - 2. Final Backfill: Backfill placed over initial backfill to fill a trench.
- B. Base Course: Aggregate layer placed between the subbase course and hot-mix asphalt paving.
- C. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.
- D. Borrow Soil: Satisfactory soil imported from off site for use as fill or backfill.
- E. Drainage Course: Aggregate layer supporting the slab on grade that also minimizes upward capillary flow of pore water.
- F. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.
  - 1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Architect. Authorized

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additional excavation and replacement material will be paid for according to Contract.

2. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Architect. Unauthorized excavation, as well as remedial work directed by Architect, shall be without additional compensation.
- G. Fill: Soil materials used to raise existing grades.
- H. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material that exceed 1 cu. yd. for bulk excavation or 1 cu. yd. for footing, trench, and pit excavation that cannot be removed by rock excavating equipment equivalent to the following in size and performance ratings, without systematic drilling, ram hammering or ripping.
- I. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material 1 cu. yd. or more in volume that exceed a standard penetration resistance of 100 blows/2 inches when tested by a geotechnical testing agency, according to ASTM D 1586.
- J. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man made stationary features constructed above or below the ground surface.
- K. Subbase Course: Aggregate layer placed between the subgrade and base course for hot-mix asphalt pavement, or aggregate layer placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.
- L. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.
- M. Utilities: On-site underground pipes, conduits, ducts, and cables as well as underground services within buildings.

#### **1.04 PREINSTALLATION MEETINGS**

- A. Preinstallation Conference: Conduct preexcavation conference at Project site.
  1. Review methods and procedures related to earthmoving, including, but not limited to, the following:
    - a. Personnel and equipment needed to make progress and avoid delays.
    - b. Coordination of Work with utility locator service.
    - c. Coordination of Work and equipment movement with the locations of tree and plant protection zones.
    - d. Extent of trenching by hand or with air spade.
    - e. Field quality control.

#### **1.05 INFORMATIONAL SUBMITTALS**

- A. Qualification Data: For qualified testing agency.
- B. Material Test Reports: For each soil material proposed for fill and backfill as follows:
  1. Classification according to ASTM D 2487.
  2. Laboratory compaction curve according to ASTM D 698 or ASTM D 1557.
  3. Any additional submittals required by the Geotechnical Report dated April 29, 2016.

#### **1.06 QUALITY ASSURANCE**

- A. Blasting is not allowed.

- B. Geotechnical Testing Agency Qualifications: Qualified according to ASTM E 329 and ASTM D 3740 for testing indicated.

#### **1.07 FIELD CONDITIONS**

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth moving operations.
  - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
  - 2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.
- B. Improvements on Adjoining Property: Authority for performing earth moving indicated on property adjoining Owner's property will be obtained by Owner before award of Contract.
  - 1. Do not proceed with work on adjoining property until directed by Architect.
- C. Utility Locator Service: Notify One Call for area where Project is located before beginning earth moving operations.
- D. Do not commence earth moving operations until temporary site fencing and erosion and sediment control measures specified in Section 015000 "Temporary Facilities and Controls", Section 311000 "Site Clearing" and tree protection are in place are in place.
- E. Do not commence earth moving operations until plant protection measures specified in Section 015639 "Temporary Tree and Plant Protection" are in place.
- F. The following practices are prohibited within protection zones:
  - 1. Storage of construction materials, debris, or excavated material.
  - 2. Parking vehicles or equipment.
  - 3. Foot traffic.
  - 4. Erection of sheds or structures.
  - 5. Impoundment of water.
  - 6. Excavation or other digging unless otherwise indicated.
  - 7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.
- G. Do not direct vehicle or equipment exhaust towards protection zones.
- H. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.

### **PART 2 - PRODUCTS**

#### **2.01 SOIL MATERIALS**

- A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.
- B. Satisfactory materials per recommendations of the Geotechnical Report dated April 29, 2016.

#### **2.02 GEOTEXTILES**

- A. Subgrade Geotextile
  - 1. Subgrade geotextile should conform to OSSC Table 02320-1 (Geotextile Property Values for Drainage Geotextile) and OSSC 00350 (Geosynthetic Installation). The geotextile should have a Level "B" certification. A minimum initial aggregate base lift of 6 inches is required over geotextiles.
- B. Drainage Geotextile

1. Drainage geotextile should conform to Type 2 material of OSSC Table 02320-1 (Geotextile Property Values for Drainage Geotextile) and OSSC 00350 (Geosynthetic Installation). The geotextile should have a Level "B" certification. A minimum initial aggregate base lift of 6 inches is required over geotextiles.

### **2.03 CEMENT TREATED BASE**

- A. Provide materials and equipment necessary for cement treatment. See the Geotechnical Report for additional guidance.

## **PART 3 - EXECUTION**

### **3.01 PREPARATION**

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth moving operations.
- B. Protect and maintain erosion and sedimentation controls during earth moving operations.
- C. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

### **3.02 DEWATERING**

- A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.
- B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.
  1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.

### **3.03 EXPLOSIVES**

- A. Explosives: Do not use explosives.

### **3.04 EXCAVATION, GENERAL**

- A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.
  1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.
  2. Remove rock to lines and grades indicated to permit installation of permanent construction without exceeding the following dimensions:
    - a. Measurements in subparagraphs below are examples only; revise to suit Project conditions and office standards.
    - b. 24 inches outside of concrete forms other than at footings.
    - c. 12 inches outside of concrete forms at footings.
    - d. 6 inches outside of minimum required dimensions of concrete cast against grade.
    - e. Outside dimensions of concrete walls indicated to be cast against rock without forms or exterior waterproofing treatments.
    - f. 6 inches beneath bottom of concrete slabs on grade.
    - g. 6 inches beneath pipe in trenches and the greater of 24 inches wider than pipe or trench.

- B. Classified Excavation: Excavate to subgrade elevations. Material to be excavated will be classified as earth and rock. Do not excavate rock until it has been classified and cross sectioned by Architect.
  - 1. Earth excavation includes excavating pavements and obstructions visible on surface; underground structures, utilities, and other items indicated to be removed; and soil, boulders, and other materials not classified as rock or unauthorized excavation.
    - a. Intermittent drilling; blasting, if permitted; ram hammering; or ripping of material not classified as rock excavation is earth excavation.
  - 2. Rock excavation includes removal and disposal of rock. Remove rock to lines and subgrade elevations indicated to permit installation of permanent construction without exceeding the following dimensions:
    - a. 24 inches outside of concrete forms other than at footings.
    - b. 12 inches outside of concrete forms at footings.
    - c. 6 inches outside of minimum required dimensions of concrete cast against grade.
    - d. Outside dimensions of concrete walls indicated to be cast against rock without forms or exterior waterproofing treatments.
    - e. 6 inches beneath bottom of concrete slabs on grade.
    - f. 6 inches beneath pipe in trenches and the greater of 24 inches wider than pipe or trench.

### **3.05 EXCAVATION FOR STRUCTURES:**

- A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.
  - 1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.
- B. Excavations at Edges of Tree and Plant Protection Zones:
  - 1. Excavate by hand or with an air spade to indicated lines, cross sections, elevations, and subgrades. If excavating by hand, use narrow tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.

### **3.06 EXCAVATION FOR WALKS AND PAVEMENTS:**

- A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.

### **3.07 EXCAVATION FOR UTILITY TRENCHES:**

- A. Excavate trenches to indicated gradients, lines, depths, and elevations.
  - 1. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.
- B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit unless otherwise indicated.
- C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells,

joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.

1. For pipes and conduit less than 6 inches in nominal diameter, hand excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.
  2. For pipes and conduit 6 inches or larger in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe or conduit circumference. Fill depressions with tamped sand backfill.
  3. For flat bottomed, multiple duct conduit units, hand excavate trench bottoms and support conduit on an undisturbed subgrade.
  4. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.
- D. Trenches in Tree and Plant Protection Zones:
1. Hand excavate to indicated lines, cross sections, elevations, and subgrades. Use narrow tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.
  2. Do not cut main lateral roots or taproots; cut only smaller roots that interfere with installation of utilities.

### **3.08 SUBGRADE INSPECTION:**

- A. Notify Architect when excavations have reached required subgrade.
- B. If Architect determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.
- C. Proof roll subgrade to identify soft pockets and areas of excess yielding. Do not proof roll wet or saturated subgrades.
  1. Completely proof roll subgrade in one direction. Limit vehicle speed to 3 mph.
  2. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Architect, and replace with compacted backfill or fill as directed.
- D. Authorized additional excavation and replacement material will be paid for according to Contract provisions.
- E. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Architect, without additional compensation.

### **3.09 UNAUTHORIZED EXCAVATION:**

- A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28 day compressive strength of 2500 psi, may be used when approved by Architect.
  1. Fill unauthorized excavations under other construction, pipe, or conduit as directed by Architect.

### **3.10 STORAGE OF SOIL MATERIALS:**

- A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.



1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

### 3.11 BACKFILL:

- A. Place and compact backfill in excavations promptly, but not before completing the following:
  1. Construction below finish grade including, where applicable, subdrainage, dampproofing, waterproofing, and perimeter insulation.
  2. Surveying locations of underground utilities for Record Documents.
  3. Testing and inspecting underground utilities.
  4. Removing concrete formwork.
  5. Removing trash and debris.
  6. Removing temporary shoring, bracing, and sheeting.
  7. Installing permanent or temporary horizontal bracing on horizontally supported walls.
- B. Place backfill on subgrades free of mud, frost, snow, or ice.

### 3.12 CEMENT TREATMENT

- A. Cement treat the subgrade as shown on the plans and detailed in the geotechnical report.

### 3.13 UTILITY TRENCH BACKFILL:

- A. Place backfill on subgrades free of mud, frost, snow, or ice.
- B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.
- C. Backfill voids with satisfactory soil while removing shoring and bracing.
- D. Initial Backfill:
  1. Soil Backfill: Place and compact initial backfill of trench backfill, to a height of 12 inches over the pipe.
    - a. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing
- E. Final Backfill:
  1. Soil Backfill: Place and compact final backfill of satisfactory soil to final subgrade elevation.

### 3.14 SOIL FILL:

- A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.
- B. Place and compact fill material in layers to required elevations as follows:
  1. Under grass and planted areas, use satisfactory soil material.
  2. Under walks and pavements, use satisfactory soil material.
  3. Under steps and ramps, use engineered fill.
  4. Under building slabs, use engineered fill.

- 5. Under footings and foundations, use engineered fill.
- C. Place soil fill on subgrades free of mud, frost, snow, or ice.

**3.15 SOIL MOISTURE CONTROL:**

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.
  - 1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
  - 2. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

**3.16 COMPACTION OF SOIL BACKFILLS AND FILLS:**

- A. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment and not more than 4 inches in loose depth for material compacted by hand operated tampers.
- B. Place backfill and fill soil materials evenly on all sides of structures to required elevations and uniformly along the full length of each structure.
- C. Compact soil materials per the recommendations of the Geotechnical Report dated April 29, 2016.

**3.17 GRADING:**

- A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
  - 1. Provide a smooth transition between adjacent existing grades and new grades.
  - 2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.
- B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to elevations required to achieve indicated finish elevations, within the following subgrade tolerances:
  - 1. Turf or Unpaved Areas: Plus or minus 1 inch.
  - 2. Walks: Plus or minus 1/2 inch.
  - 3. Pavements: Plus or minus 1/2 inch.
- C. Grading inside Building Lines: Finish subgrade to a tolerance of 1/2 inch when tested with a 10 foot straightedge.

**3.18 BASE COURSES UNDER PAVEMENTS AND WALKS:**

- A. Place base course on subgrades free of mud, frost, snow, or ice.
- B. On prepared subgrade, place base course under pavements and walks as follows:
  - 1. Install separation geotextile, where noted on drawings, on prepared subgrade according to manufacturer's written instructions, overlapping sides and ends.
  - 2. Place base course material over subbase course under hot-mix asphalt pavement.
  - 3. Shape base course to required crown elevations and cross slope grades.
  - 4. Place base course 6 inches or less in compacted thickness in a single layer.
  - 5. Place base course that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.

6. Compact base course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D 1557.

### 3.19 DRAINAGE COURSE UNDER CONCRETE SLABS-ON-GRADE:

- A. Place drainage course on subgrades free of mud, frost, snow, or ice.
- B. On prepared subgrade, place and compact drainage course under cast-in-place concrete slabs-on-grade as follows:
  1. Install subdrainage geotextile, where shown on drawings, on prepared subgrade according to manufacturer's written instructions, overlapping sides and ends.
  2. Place drainage course 6 inches or less in compacted thickness in a single layer.
  3. Place drainage course that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.
  4. Compact each layer of drainage course to required cross sections and thicknesses to not less than 95 percent of maximum dry unit weight according to ASTM D 698.

### 3.20 FIELD QUALITY CONTROL:

- A. Special Inspections: Owner will engage a qualified special inspector to perform the following special inspections:
  1. Determine prior to placement of fill that site has been prepared in compliance with requirements.
  2. Determine that fill material classification and maximum lift thickness comply with requirements.
  3. Determine, during placement and compaction, that in place density of compacted fill complies with requirements.
- B. Testing Agency: Owner will engage a qualified geotechnical engineering testing agency to perform tests and inspections.
- C. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.
- D. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by Architect.
- E. Testing agency will test compaction of soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2937, and ASTM D 6938, as applicable. Tests will be performed at the following locations and frequencies:
  1. Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, at least one test for every 2000 sq. ft. or less of paved area or building slab but in no case fewer than three tests.
  2. Foundation Wall Backfill: At each compacted backfill layer, at least one test for every 100 feet or less of wall length but no fewer than two tests.
  3. Trench Backfill: At each compacted initial and final backfill layer, at least one test for every 150 feet or less of trench length but no fewer than two tests.
- F. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

**3.21 PROTECTION:**

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
  - 1. Scarify or remove and replace soil material to depth as directed by Architect; reshape and recompact.
- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
  - 1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

**3.22 DISPOSAL OF SURPLUS AND WASTE MATERIALS:**

- A. Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.
- B. Transport surplus satisfactory soil to designated storage areas on Owner's property. Stockpile or spread soil as directed by Architect.
  - 1. Remove waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

**END OF SECTION**

**SECTION 31 23 17****TRENCHING****PART 1 - GENERAL****1.01 SUMMARY**

- A. Trench excavation consists of excavation, bedding, backfill and removal or disposal of material as necessary in the installation of water lines and, sanitary and storm sewer lines and appurtenances, conduits, conductors, culverts and any other installation requiring trenching.
  - 1. This work includes, but is not limited to, sheeting, bracing, dewatering, disposal of unsuitable materials, and importing approved bedding or backfill material.
  - 2. All work shall be done in accordance with these Specifications and shown on the Drawings in conformity with the lines, grades, and dimensions.
  - 3. Public Right of Way or Easements: All public work construction in the public right of way or easements shall be in accordance with the applicable requirements of the latest edition of the City of Fairview and Multnomah County Design and Construction Standards.
- B. Unless otherwise provided in the Contract, other work required under this item shall include the removal of structures or portions thereof, grubbing of structure sites which otherwise would not be grubbed, the construction of subsequent removal of shoring or cofferdams, the dewatering of excavated areas, the protection of excavated materials from weather and the placement and compaction of excavated or imported material. Work done under this item shall conform to all federal, state and local safety regulations.

**1.02 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Geotechnical Report dated April 29, 2016
- C. Related Sections
  - 1. Section 31 20 00 – Earth Moving
  - 2. Section 31 25 00 - Erosion/Sedimentation Control
  - 3. Section 33 41 00 – Storm Drainage Piping

**1.03 SITE CONDITIONS**

- A. Existing Utility Systems: The existing utility systems shown are based on record drawings supplied by the Owner, and “surface” field survey. Prior to constructing any of the utility systems, the Contractor shall “pot-hole” all connection points and utility crossings to verify inverts, sizes, locations, and potential conflicts. Any discrepancies shall be reported to the engineer Architect for resolution or redesign.

**PART 2 - PRODUCTS****2.01 MATERIALS**

- A. Bedding: The bedding of pipes, conduits, cables and structures shall be as shown on the Plans or as directed by the Architect. The bedding material shall be placed and thoroughly compacted over the full width of the trench. Samples of the proposed materials shall be submitted to the Architect for approval.
- B. Backfill: The backfill for pipes, conduits, cables and structures shall be as shown on the Drawings or as directed by the Architect. The backfill material shall be placed in maximum eight-inch lifts and thoroughly compacted over the full width of the trench. Samples of the proposed materials shall be submitted to the Architect for approval.

1. Granular backfill shall be used in all other locations where native backfill is not designated. Unclassified excavated material used as native backfill shall be earth, sand, gravel, rock or combinations thereof, free of humus, organic matter, vegetable matter, frozen material, clods, sticks, and debris and containing no stones having a dimension greater than three inches. The materials shall predominate in the finer sizes and, in place, shall present no voids and no isolated points or areas of larger stones which would cause fracture or denting of the utility or structure or subject it to undue stress. Use of the native backfill shall be approved by the Architect.
2. Granular backfill shall be used under paved areas, in trenches in streets, in trenches in public right-of-ways and easements, and other areas subject to wheel traffic, and at structures or as designated on the plans. Granular backfill material shall be 3/4 inch minus crushed aggregate. Top of rock elevation shall be held down at the specified depth in areas designated to receive asphalt paving. All granular backfill shall be placed in maximum eight-inch lifts and compacted to 95% (top 2 feet) and 90% (below 2 feet) maximum dry density per ASTM D 1557

### **PART 3 - EXECUTION**

#### **3.01 CONTRACTOR'S RESPONSIBILITY FOR UTILITY PROPERTIES AND SERVICES**

- A. The Contractor shall comply with ORS 757.541 through 757.571 and shall notify all utility companies for line locations 72 hours (minimum) prior to start of work.
- B. At points where the Contractor's operation could cause damage or interference to railway, telegraph, telephone, television, power, oil, gas, water, irrigation, or other private, public or municipal utilities, the Contractor shall suspend work until all arrangements necessary for the protection thereof have been made by the Contractor.
- C. The Contractor shall notify all utility offices which are affected by the construction operation at least 72 hours in advance of excavation. Under no circumstances shall the Contractor expose or interrupt any utility without first requesting permission and being granted to do so from the affected agency.
  1. It shall be the Contractor's responsibility, once permission from the utility has been granted, to locate, if necessary, and expose all of the existing underground utilities in advance of the trenching operation.
- D. The Contractor shall be solely and directly responsible to the Owner and utility companies for any damage, expense, or claims of any kind brought because of injuries, damages or delay which may result from the carrying out of the work to be done under the Contract.
- E. In the event of interruption to domestic water or to other utility services as a result of accidental breakage, or as a result of being exposed, unsupported, or a lack of coordination, the Contractor shall promptly notify the Architect and the agency involved. The Contractor shall cooperate with the said authority in restoration of service as promptly as possible and shall bear any and all costs of repair.
  1. In no case shall interruption of any water or utility service be allowed to exist outside working hours unless prior approval of the Architect or agency involved is granted.
- F. Neither the Owner nor its officers or agents shall be responsible to the Contractor for damages as a result of the location of the underground utilities being other than that shown on the plans or for the existence of underground utilities not shown the plans.

#### **3.02 FIELD RELOCATION**

- A. During construction, minor relocations of the line may be necessary. Such relocations shall be made only with approval from the Architect. Unforeseen obstructions encountered as a result of such relocations will not become subject to claims for additional compensation by the Contractor to any greater extent than the original lump sum of the contract or unit price of the utility being installed.

**3.03 OPENING TRENCHES**

- A. The Contractor shall not begin the trench excavation until the necessary material is on hand to complete the work involved.
  - 1. The trenches shall be opened in accordance with the lines and grades given for the work, at such times and as far in advance of the work as may be required by the Architect.
  - 2. Not more than a total of 100 feet of trench shall be opened in advance of the completed utility unless authorized by the Architect. Related structures must be completed and backfilled at the time of line installation.

**3.04 BARRICADES, GUARDS AND SAFETY PROVISIONS**

- A. To protect persons from injury and to avoid property damage, adequate barricades, construction signs, warning lights, and guards as required shall be placed and maintained during the progress of the work and until it is safe for public use.
  - 1. Watchmen or flag personnel shall be provided as necessary.
  - 2. Rules and regulations of all local and Federal authorities regarding safety provisions shall be observed. The Contractor will be solely responsible for accidents caused by inadequate or insufficient safety provisions

**3.05 PAVEMENT REMOVAL**

- A. All bituminous and concrete pavements, regardless of the thickness shall be sawcut prior to excavation. Width of the pavement cut shall be equal to the prescribed width of the trench at the ground surface or as shown on the plans.
  - 1. Pavement removed during excavation shall be piled separately from other excavation materials and removed from the site. Pavement shall not be used as backfill material. Uneven pavement edges shall be sawcut before patching the pavement.

**3.06 OBSTRUCTIONS**

- A. This item refers to obstructions which may be encountered and do not require replacement.
  - 1. Obstructions to the construction of the trench such as tree roots, stumps, abandoned piling, buildings and concrete structures, logs, rubbish, and debris of all types shall be removed without additional compensation from the Owner.
  - 2. The Architect may, if requested, make changes in the trench alignment to avoid major obstructions, if such alignment changes can be made within the perpetual easement and right-of-way and without adversely affecting the intended function of the facility or increase costs to the Owner. Sewer and water trenches must be maintained at a minimum specified separation, however.

**3.07 INTERFERING STRUCTURES OR ROADWAYS**

- A. The Contractor shall remove, replace and/or repair any damage done by the Contractor during construction to fences, buildings, cultivated fields, drainage crossings, and any other properties at his own expense without additional compensation from the Owner.
  - 1. The Contractor shall replace or repair these structures to a condition as good as or better than their original condition prior to commencing work in the area.
- B. Where paved roadways are cut, granular backfill shall be used as defined above. New pavement shall as specified on the plans and shall not deviate by more than one-quarter inch from the existing finish elevation.
- C. If the Contractor encounters existing structures which will prevent construction and are not adequately shown on the plans, he shall notify the Architect before continuing with the work in order that the Architect may make such field revisions as necessary to avoid conflict with the existing conditions.

1. The cost of waiting or "downtime" during such field revisions shall be borne by the Contractor without additional cost to the Owner or liability to the Architect.
2. If the Contractor fails to so notify the Architect when a conflict of this nature is encountered, but proceed with construction despite this interference, he shall do so at his own risk with no additional payment.

### **3.08 EASEMENTS**

- A. Any damage to private property, either inside or outside the limits of the easements provided by the Owner, shall be the responsibility of the Contractor.
  1. Before final payment will be authorized by the Architect, the Contractor will be required to furnish the Owner with written releases from property owners where special agreements or easements have been obtained by the Contractor or where the Contractor's operations for any reason, have not been kept within the construction right of way obtained by the Owner.
  2. Any such special agreements must be in written form and shall not involve the Owner or Architect as to liabilities in any way.

### **3.09 GRADES**

- A. The bottom of the trench shall be excavated to the lines and grades shown on the plans or established by the Architect with proper allowance for pipe thickness and required bedding. Any trench excavated below grade shall be returned to grade at the Contractor's expense, with fine bedding material.
  1. The bedding shall be placed over the full width of the trench in thoroughly compacted layers as previously specified herein. Grades shall be smooth without humps or sags.
- B. The Architect shall be notified with reasonable notice in advance when a section has been excavated and is ready for installation of the utility line or structure. The Architect at that time will make a determination as to the suitability of the excavation foundation and will give notice to the Contractor to proceed or remove unstable material as covered in "Foundation Stabilization".

### **3.10 WIDTH OF TRENCH**

- A. Trenches shall be excavated to a sufficient width to permit proper installation of piping, conduits or related improvements as shown on the plans or required by local standards and specifications.
  1. For the installation of utilities or conduits, the minimum width of trenches shall be 18 inches plus the inside diameter of the pipe.
- B. In cases where excessive width of excavation would cause damage to adjacent structure, the trench shall not be excavated in excess of the minimum width as specified herein or detailed on the drawings.

### **3.11 BORING**

- A. Boring may be used as an approved method in lieu of open trench excavation if approved by the Architect. The Contractor shall first show just cause and furnish the Architect with a detailed construction schedule outlining methods, time schedule and proposed safety measures to be incorporated in construction.
  1. Upon receiving approval, the Contractor will not deviate from his proposed schedule without first obtaining approval of the Architect and other respective agencies involved in that portion of the work.

### **3.12 DE-WATERING**

- A. Whenever water is encountered in the trench or excavation area, the Contractor shall pump or otherwise dry the bottom of the trench or excavated area before the pipe or conduit



installation is commenced. Complete de-watering per City of Fairview and Geotechnical Report dated April 29, 2016.

1. The Contractor shall not allow water encountered in the trench or excavated area to escape down any pipe or conduit in place unless he first obtains written approval from the Architect for this method of de-watering.
2. The Contractor will be responsible for cleaning and/or flushing as required, the complete pipe, conduit, or structure. Any soil, aggregate or other foreign matter in the utility prior to acceptance must be removed at the Contractor's expense prior to final acceptance of the work.

**3.13 Shoring and Sheathing:**

- A. The Contractor shall use whatever means necessary to maintain safe working conditions and protect adjacent property and structures from damage due to excavation. The Contractor shall conform to all federal, state and local regulations governing shoring, sheathing and excavation.
  1. When shoring or sheathing is installed, the trench width shall be increased accordingly. The shoring or sheathing shall remain in place until the utility or structure is backfilled to a point where caving could not damage the installation.
  2. No payment will be made for shoring or sheathing. All costs involved in placement and removal of shoring and sheathing shall be considered incidental to the work.

**3.14 Location of Excavated Materials:**

- A. During excavation the Contractor shall locate excavated material so as not to block any public right of way, traveled roadways, public or private; and unless otherwise approved by the Architect, roadways shall be kept open to at least one lane of traffic.
  1. The Contractor shall store or waste excavated materials only in designated areas unless otherwise approved by the Architect. Utmost care shall be taken to prevent spillage or damage to property adjacent to the project.
- B. Excavated materials unsuitable for backfill as described herein or not required to meet original or specified grades shall be removed as soon as possible or at least by completion of backfill.
  1. No utilities will be considered for payment until these surplus materials have been removed and backfill completed as specified above or as otherwise directed by the Architect. No additional payment will be made to the contractor for disposal of excess materials.

**3.15 Foundation Stabilization:**

- A. When in the opinion of the Geotechnical Engineer, the existing material in the bottom of the trench or excavated area is unsuitable for supporting the pipe, conduit or structure or related appurtenances, excavation below the flowline of the pipe or base of other structure shall be executed to a suitable depth as directed by the Architect.

**3.16 Maintenance of Backfill:**

- A. Notwithstanding the type of backfill placement, the backfilled trench or excavation surface shall be maintained until all construction has been completed and accepted by the Owner and Architect. This maintenance shall include but not be limited to the addition of backfill in settled areas and surface rock or pavement in roadways to keep the trench reasonably smooth and free from excessive ruts and potholes.

**END OF SECTION**

**SECTION 31 25 00**

**EROSION AND SEDIMENT CONTROL**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. Erosion/Sedimentation Control (ESC) is required on this project. Construction of all erosion control measures shall be in accordance with the City of Fairview and per DEQ 1200-C permit requirements. Compost based BMP's shall be constructed in accordance with Oregon Department of Transportation Section 00280 – Erosion and Sediment Control specifications and details. All work shall comply with US Army Corps of Engineers and Oregon Department of State Lands Joint Permit and Sections 404 and 401 permit conditions and requirements.
- B. The implementation of the ESC and the construction, maintenance, replacement, and upgrading of these ESC facilities is the responsibility of the Contractor until all construction is completed and approved and the final vegetation/landscaping is established.
- C. This section describes temporary measures and monitoring to control water pollution, soil erosion, and siltation. Erosion, sediment, and pollutant control (EPSC) devices or methods include the use of construction entrances, tree protection fences, diversion dikes, check dams, sediment basins and traps, compost filter sock sediment barriers, compost blanket mulch, gravel, mulches, sediment barriers, grasses, slope drains, and other techniques.
- D. The boundaries of the clearing limits and limits of grading shown on this plan shall be clearly flagged in the field prior to construction. During the construction period, no disturbance beyond the flagged clearing area shall be permitted. The flagging shall be maintained by the Contractor for the duration of the construction.
- E. The ESC facilities shown on this plan and/or details must be constructed in conjunction with all mass grading and site utility construction, in such a manner as to ensure that sediment and sediment laden water does not enter the drainage system, roadways, or violate applicable water standards.
- F. The ESC facilities shown on the plan and/or details are the minimum requirements for anticipated site conditions. During the construction period, these ESC facilities shall be upgraded as needed for unexpected storm events or site conditions to ensure that sediment and sediment-laden water do not leave the site.

**1.02 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Related Sections
  - 1. Section 31 10 00 - Site Clearing
  - 2. Section 31 20 00 – Earth Moving
  - 3. Section 31 23 17 – Trenching

**1.03 SUBMITTALS**

- A. At the pre-construction meeting, submit the following supplemental EPSC information:
  - 1. Construction start and completion dates.
  - 2. Dates when EPSC measures will be in place.
  - 3. Projected date of removal of erosion control structures (after soil is stabilized by vegetation or pavement).

4. Description of control procedures to prevent the discharge of all wash water from concrete trucks into the storm sewer system.
5. Description of procedures for prompt maintenance or repair of EPSC measures utilized on-site.
6. Description of best management practices that will be used to prevent or minimize storm water from being exposed to pollutants from spills, cleaning and maintenance activities, and waste handling activities. These pollutants include fuel, hydraulic fluid, and other oils from vehicles and machinery as well as debris, leftover paints, solvents, and glues from construction operations.

**1.04 QUALITY ASSURANCE**

- A. The Contractor is to comply with all applicable local, State, and Federal ordinances, rules, and regulations concerning erosion and sedimentation control and stormwater runoff.
- B. In case of conflict between the above codes, regulations, references, and standards and these specifications, the more stringent requirements shall govern.
- C. Conduct a Preconstruction Meeting onsite as directed by the Owner or Owner's Representative prior to the start of construction.

**1.05 PROJECT SITE CONDITIONS**

- A. The Contractor to visit the site and verify all existing conditions affecting the work of this section prior to submitting bids or proposals. Additional compensation will not be allowed for revisions or modification of work resulting from failure to verify existing conditions.

**PART 2 - PRODUCTS**

**2.01 GENERAL**

- A. All products shall conform to the applicable requirements of City of Fairview and per DEQ 1200-C permit requirements and Oregon Department of Transportation specifications Section 00280 – Erosion and Sediment Control.
  1. Construction Entrance
  2. Tree Protection Fence
  3. Inlet Protection
  4. Compost Filter Sock Sediment Barriers
  5. Compost Filter Blanker
  6. Tire Washes
  7. Concrete Washouts
  8. Outlet Protection
  9. Plastic Sheeting
  10. Diversion Dikes
  11. Temporary Seeding
  12. Soil Tackifier
  13. Erosion Control Blankets
  14. Dust Control
  15. Temporary Pipe Slope Drains

**PART 3 - EXECUTION**

**3.01 GENERAL**

- A. The implementation of the EPSC measures and the construction, performance monitoring, maintenance, replacement, and upgrading of the EPSC measures are the responsibility of

the Contractor until all construction is completed and accepted and vegetation/landscaping and paving is established.

- B. The EPSC measures shown on the drawings shall be constructed in conjunction with all clearing, grading, trenching, and earthwork activities and in a manner that ensures that sediment and sediment-laden water do not enter the drainage system, roadways, or violate applicable water quality standards.
- C. The EPSC measures shown on the drawings are the minimum requirements for anticipated site conditions and Contractor methods and sequences. During the construction period, the EPSC measures shall be upgraded as needed for unexpected conditions, storm events, or Contractor methods or sequences and to ensure that sediment and sediment-laden water do not leave the site.
- D. The Contractor shall be responsible for implementing temporary erosion control measures during construction to correct unforeseen conditions. The Contractor shall be responsible for additional erosion control due to the Contractor's negligence, carelessness, or failure to install planned controls as a part of the work.
- E. Implementation, construction, and maintenance of EPSC measures shall be in accordance with the City of Fairview requirements.
- F. Do not begin soil disturbance activities until perimeter EPSC measures are in place.
- G. The erosion control drawings together with the specifications and 1200-C documents constitute the EPSC plan. A copy of the EPSC plan shall be retained on site and made available to the City of Fairview staff upon request.

### **3.02 CONSTRUCTION DETAILS**

- A. Install and maintain all site public notification signs as shown on the drawings and keep signs easily readable from the public right-of-way throughout the duration of the ground-disturbing activities. Remove and dispose of signs upon completion of work.
- B. No visible or measurable erosion material or pollutant shall exit the construction site. Visible or measurable is defined as:
  - 1. Deposits of mud, dirt, sediment or similar material exceeding 1/2 cubic foot in volume in any area of 100 square feet or less on public or private streets, adjacent property, or into the storm and surface water system, either by direct deposit, dripping, discharge, or as a result of the action of erosion.
  - 2. Evidence of concentrated flows of water over bare soils; turbid or sediment laden flows; or evidence of on-site erosion such as rivulets on bare soil slopes, where the flow of water is not filtered or captured on the site.
  - 3. Earth slides, mud flows, earth sloughing, or other earth movement which leaves the property.
- C. Employ all reasonable means and methods to control or divert upslope stormwater runoff away from cleared and grubbed areas, stockpiled materials, and other disturbed areas that will be open or stockpiled for periods longer than two-weeks.
- D. Construction entrances, exits, and parking areas shall be graveled or paved to reduce the tracking of sediment onto public or private roads. Maintain for the duration of the project.
- E. Unpaved roads on the site shall be graveled or under other effective erosion and sediment control measures, either on the road or down gradient, to prevent sediment and sediment-laden water from leaving the site.
- F. Preserve existing vegetation where practicable and revegetate open areas after grading or construction.
- G. Continuously secure or protect soil stockpiles from runoff and erosion throughout the project with temporary soil stabilization measures or protective cover.

- H. Provide ongoing maintenance, repair, and restoration of EPSC measures to keep them continually functional.
  - 1. The following maintenance activities shall be included:
    - a. Visual or measurable amounts of sediment and pollutants that leave the site shall be cleaned up immediately and placed back on the site or properly disposed. Under no conditions shall sediment be intentionally washed into storm sewers or drainage ways.
    - b. Clean catch basin protection when design capacity has been reduced by 50 percent.
    - c. Remove sediment trapped by sediment barriers before it reaches one third of the above-ground barrier height.
    - d. Remove trapped sediments from sediment basins and traps when design capacity has been reduced by 50 percent.
- I. If fertilizers are used to establish vegetation, the application rates shall follow manufacturer's guidelines and the application shall be done in a way that minimizes nutrient-laden runoff to receiving waters.
- J. If construction activities cease for 30 days or more, the entire site shall be stabilized using vegetation or a heavy mulch layer, temporary seeding, or another method that does not require germination to control erosion.
- K. Any use of toxic or other hazardous materials shall include proper storage, application, and disposal.
- L. When trucking saturated soils from the site, either watertight trucks shall be used or loads shall be drained on-site until dripping has been reduced to minimize spillage on roads and streets.
- M. Clean all catch basins and inlets protected from sediment prior to paving and final acceptance. The cleaning operation shall not flush sediment laden water into the downstream system.
- N. EPSC measures installed during construction shall be removed when construction and site disturbance activity are complete and permanent soil stabilization is in place.
- O. Remove and dispose of waste and unused building material.

**3.03 WET WEATHER CONSTRUCTION**

- A. The Contractor is responsible for all additional measures required during wet weather construction between October 1<sup>st</sup> and May 30<sup>th</sup>.

**3.04 PROTECTION OF ADJACENT PROPERTY**

- A. Protect adjacent properties from land disturbance, erosion, and sedimentation.

**3.05 PROTECTION OF JURISDICTIONAL WETLANDS**

- A. No work or land disturbance shall occur in jurisdictional wetlands and vegetated corridors prior to issuance of US Army Corps of Engineers and Oregon Department of State Lands Joint Permit.
- B. Work shall be completed in compliance with US Army Corps of Engineers and Oregon Department of State Lands Joint Permit and conditions.

**3.06 DISPOSITION OF TEMPORARY MEASURES**

- A. All temporary erosion and sediment control measures shall be disposed of within thirty (30) days after final site stabilization and the establishment of paving and final landscaping.
- B. Trapped sediment and other disturbed soil areas resulting from the disposition of temporary measures shall be permanently stabilized to prevent further erosion.

**END OF SECTION**

**SECTION 32 11 32**

**AGGREGATE BASE COURSES**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. This section specifies requirements for furnishing and placing base course material composed of crushed aggregate.

**1.02 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Geotechnical Report dated April 29, 2016
- C. Related Sections
  - 1. Section 31 10 00 Site Clearing
  - 2. Section 31 25 00 Erosion and Sediment Control
- D. The referenced specification for this Section is the "Oregon Standard Specifications for Construction" latest edition as prepared by the Oregon Department of Transportation and the Oregon Chapter of the American Public Works Association, and its revisions and supplements.
- E. Public Right-of-Way: All public work construction in the public right-of-way shall be in accordance with the applicable requirements of the City of Fairview and Multnomah County Design and Construction Standards.

**1.03 SUBMITTALS**

- A. See section 01 33000 – Submittals, for submittal procedures.
- B. Materials Sources: Submit name of imported materials source.
- C. Aggregate Composition Test Reports: Results of laboratory test on proposed and actual materials used.
- D. Compaction Density Test Reports.

**PART 2 - PRODUCTS**

**2.01 MATERIALS**

- A. Aggregate Base Rock:
  - 1. Aggregate base rock below asphalt concrete pavements should be clean, crushed rock or crushed gravel. The base aggregate should contain no deleterious materials, meet specifications provided in ODOT SS 02630.10 – Dense-Graded Aggregate, and have less than 5 percent by weight passing the U.S. Standard No. 200 Sieve.
  - 2. Base aggregate material shall conform to the requirements of the Standard Specification in areas outside of the public right of way, and City of Fairview and Multnomah County Standards for work in the public right-of-way. Refer to the Structural Contract Drawings for additional requirements for aggregate bases under the building.
- B. Certification of Aggregate: Prior to the placing of the aggregate base course material, the Contractor shall produce test results from a certified testing laboratory indicating the suitability of the material.

**PART 3 - EXECUTION**

**3.01 CONSTRUCTION REQUIREMENTS**

- A. Aggregate bases shall be placed per the requirements of the City of Fairview and Multnomah County Design and Construction Standards.
- B. Compact aggregate base course thoroughly and uniformly to at least 95% of the maximum density as determined by ASTM D1557.

**3.02 EQUIPMENT**

- A. All equipment necessary for the proper construction of this work shall be in first-class working condition before construction is permitted to start, and all other equipment must be able to produce a product meeting the specifications.

**3.03 MAINTENANCE**

- A. Following the completion of the base course, the Contractor shall perform all maintenance work necessary to keep the base course in a condition satisfactory for paving.

**END OF SECTION**



**SECTION 32 12 16**

**ASPHALT PAVING**

**PART 1 GENERAL**

**1.1 SUMMARY**

- A. Work of this Section consists of furnishing and applying asphalt mixes, tack coats, and placing asphalt concrete pavement in accordance with the applicable requirements of the standards listed below.
  - 1. The asphalt concrete shall be constructed on a prepared underlying course in accordance with these specifications and shall conform to the dimensions and typical cross and with the lines and grades section shown on the plans.
  - 2. The referenced specification for this Section is the "Oregon Standard Specifications for Construction" latest edition as prepared by the Oregon Department of Transportation and the Oregon Chapter of the American Public Works Association, and its revisions and supplements.

**1.2 RELATED SECTIONS:**

- A. Section 31 20 00 – Earth Moving

**PART 2 PRODUCTS**

**2.1 MATERIALS:**

- A. Asphalt Mix Design
  - 1. Provide mix design for ½" Dense, Level 3 HMAC as specified on the plans in accordance with the Standard Specifications.
- B. Tack Coat
  - 1. Tack coat material shall be CSS-1 or CSS1h in accordance with the Standard Specifications.

**PART 3 EXECUTION**

**3.1 PLACEMENT:**

- A. Tack Coat: Per the Standard Specifications
  - 1. All curbs, longitudinal and transverse joints shall be coated with a sufficient amount of tack coat material prior to placing the adjacent panel. This may be accomplished with hand distribution equipment.
  - 2. Contractor shall be responsible for removing any tack applied to exposed curb faces or other finish surfaces. Tack all surfaces between layers.
- B. Asphalt Concrete Paving Surface Course
  - 1. Meet requirements of the Standard Specifications.
  - 2. Obtain approval for aggregate base course before placing paving surface course.

3. Place asphalt surface course when temperature shall be 40 degrees F. and rising, and when base is dry and free of frost.
4. Place asphalt materials at temperatures between 200 and 250 degrees F.
5. Compact asphalt surface course thoroughly and uniformly to at least 92% of maximum density as determined in conformance with ASTM D 2041.

**END OF SECTION**

**SECTION 32 13 13**

**CONCRETE PAVING**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. This Work consists of the construction of Portland cement concrete sidewalks, curbs, and site retaining walls.
  - 1. The Portland cement concrete shall be constructed on a prepared underlying course in accordance with these Specifications and shall conform to the dimensions and typical cross section and with the lines and grades shown on the plans.
  - 2. The referenced specification for this Section is the "Oregon Standard Specifications for Construction" latest edition as prepared by the Oregon Department of Transportation and the Oregon Chapter of the American Public Works Association, and its revisions and supplements.
  - 3. Public Right-of-Way: All public work construction in the public right-of-way shall be in accordance with the applicable requirements of the City of Fairview and Multnomah County Design and Construction Standards.
  - 4. All sidewalks and ramps shall be constructed to American's with Disabilities Act (ADA) standards.
- B. Roadways, sidewalks, curbs, and driveways shall be constructed in accordance with this Specification and related Sections, at the respective locations shown on the plans to the lines, grades, dimensions and designs shown on the plans or established by the Architect.

**1.02 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Related Sections
  - 1. Section 31 20 00 – Earth Moving
  - 2. Section 31 23 17 - Trenching
  - 3. Section 31 25 00 - Erosion/Sedimentation Control
  - 4. Section 32 11 32 - Aggregate Base Courses

**PART 2 - PRODUCTS**

**2.01 CONCRETE**

- A. Concrete Mix Design Constituents shall be per the City of Fairview and Multnomah County Design and Construction Standards.
- B. Concrete used under this Section shall be Class 4000 per the City of Fairview and Multnomah County Design and Construction Standards.

**2.02 REINFORCEMENT**

- A. Reinforcement shall be per the details shown on the plans.

**2.03 WHEEL STOPS**

- A. Wheel Stops: Precast, air-entrained concrete, 2500-psi minimum compressive strength, 4-1/2 inches high by 9 inches wide by 72 inches long. Provide chamfered corners and drainage slots on underside and holes for anchoring to substrate.
  - 1. Dowels: Galvanized steel, 3/4-inch diameter, 10-inch minimum length.

**2.04 TRUNCATED DOMES**

- A. Place pre-cast truncated dome detectable warning tile in the lower 2 feet of all pedestrian ramp throats per plans and details. The truncated dome detectable warning surface must be installed during the concrete pouring. Once the concrete is graded, smoothed and finished, place the detectable warning tile in the lower 2 feet of the pedestrian ramp, per manufactures recommendations.
  - 1. Color shall be Federal Yellow per Federal Standard 595b Table IV, color no. 33538.
  - 2. Detectable warning tile shall be compliant with ADA Standards for Accessible Design, City of Portland Standards, and Oregon Transportation Commission Standards for Accessible Parking Places.

**PART 3 - EXECUTION**

**3.01 GENERAL**

- A. All Work shall comply with Section 00759 of the Standard Specification, and the requirements of the City of Fairview and Multnomah County.

**3.02 PREPARATION FOR HANDLING AND PLACEMENT OF CONCRETE**

- A. In preparation for placing of concrete, all sawdust, chips and other construction debris or extraneous matter shall be removed from the interior of the forms or base. Any standing water shall be removed and a firm, stable base verified.
- B. Struts, stays and braces serving temporarily to hold the forms in the correct shape and alignment prior to the placing of concrete shall be removed when the concrete placing has reached the elevation rendering their service unnecessary. These temporary members shall be entirely removed from the forms and not buried in the concrete.

**3.03 PREPARATION OF BASE**

- A. Areas on which sidewalks, curbs, and driveways are to be constructed shall be brought to proper lines and grade and compaction specified on the Drawings. The base shall be moistened before Portland cement is placed thereon and shall also be moist and firm at the time the concrete is placed.

**3.04 TESTING AND INSPECTION**

- A. Slump tests, air entrainment, and cylinder tests may be conducted on poured in place concrete at the frequency determined by the Owner. All tests, initiated by the Owner, will be at the Owner's expense. The Owner will designate an independent testing laboratory and the contractor shall notify the laboratory 48 hours prior to all pours so that tests can be scheduled and performed.

**3.05 CONCRETE CONSOLIDATION**

- A. Concrete, during and immediately after depositing, shall be thoroughly consolidated. The consolidation shall be done by mechanical means, such as spading, or high frequency vibrators, and shall ensure smooth surfaces and dense concrete along form surfaces or in corners, etc.

**3.06 PROTECTION**

- A. The completed concrete surface shall be protected from damage until the project is accepted. The contractor shall be responsible to protect concrete from damage and/or vandalism for the first 24 hours following a pour. The Contractor shall repair damaged concrete and clean concrete discolored during construction. Surfaces that are damaged shall be removed and reconstructed for the entire length between regularly scheduled joints. Refinishing the damaged portion will not be acceptable. Removed portions shall be disposed of off the project site by the Contractor at no additional cost to the Owner.

**END OF SECTION**

## SECTION 32 91 13

### SOIL PREPARATION

#### PART 1 GENERAL

##### 1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

##### 1.02 SUMMARY

- A. This Section includes the following:
  - 1. The work covered in this section consists of furnishing all labor, materials and equipment for testing, preparation, and placement of topsoil, water quality media and compost as indicated by the drawings and as specified.
  - 2. Coordinate placement of topsoil or water quality media and required soil amendments with the establishment of rough grades.
  - 3. Coordinate depths of soil amendments and topsoil with grading specifications for rough and finish grades.
  - 4. All rough grading operations shall be completed as required by these specifications. Topsoil placement or backfilling in areas to be landscaped shall not occur until the **Owner's Representative** has issued written approval of the rough grade and topsoil.
- B. Related Sections include the following:
  - 1. Section 312000; Earth Moving.
  - 2. Section 329300; Plants.

##### 1.03 DEFINITIONS

- A. Soil classifications standards used herein for existing and imported soils include but are not limited to the following.
  - 1. ASTM Soil Quality Standards.
  - 2. Classification: ASTM D 2487-00.
  - 3. Gradation of Soils: ASTM D 422-63 (1998).
  - 4. Liquid Limit and Plasticity Index: ASTM D 4318-94(2001)e1.
  - 5. Moisture-Density Relations: ASTM D 1557-00.
  - 6. Permeability of Soils: ASTM D 2434-68(2000).
- B. Finish Grade: Elevation of finished surface of planting soil.
- C. Manufactured Soil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.
- D. Planting Soil: Native or imported topsoil, manufactured topsoil, or surface soil modified to become topsoil; mixed with soil amendments.
- E. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill immediately beneath planting soil.
- F. Subgrade Soil: Friable soil, free from contaminants and materials deleterious to plant growth to depth as specified.

- G. Water Quality Media: A highly permeable soil mix to facilitate infiltration and pollutant attenuation in water quality facilities.

#### **1.04 SUBMITTALS**

- A. At least 14 working days prior to use on site or the start of work, the Contractor shall submit the following information to the Owner's Representative. All product samples must include sufficient volume for the Owner's Representative to make a reasonable analysis.
1. Certified Analysis:
    - a. All compost mixture components required by these specifications or as required by testing laboratories to bring soil into compliance with these specifications. All samples must be tested within six months of anticipated use.
    - b. All fertilizer mixes required by the specifications or as required by testing laboratories to bring soil into compliance with these specifications.
    - c. All on-site or imported topsoil or water quality soil media required by these specifications. All samples must be tested within six months of anticipated use.
  2. Where any tests show results failing to conform to the required standards the Contractor shall include with the testing report a recommended treatment plan to bring the material into conformance.
  3. Available Testing Laboratories:
    - a. Soil and Plant Laboratory, Inc. – 503-557-4959.
    - b. Western Agricultural Laboratories – 503-968-9225.
  4. Product Samples:
    - a. Backfill Soil Mixture.
    - b. Stormwater Facility Topsoil.

#### **1.05 QUALITY ASSURANCE**

- A. Soil Preparation - All soil preparation work shall be done under the supervision of a Contractor having experience in landscape construction. All work shall be done in accordance with proper horticultural practices.
- B. Herbicide Application - Applications of herbicide for weed control, as required, shall be made only by an applicator currently licensed under State and Federal law.
- C. The Contractor shall store fertilizer and other required materials in a dry place and free from the intrusion of moisture.
- D. All topsoil and compost must be tested by an independent testing laboratory and certified that it is in conformance with the requirements of these specifications.
- E. Soil/Compost Testing Laboratory Qualifications: An independent laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.
- F. Topsoil Analysis: Furnish soil analysis by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; deleterious material; pH; and mineral and plant-nutrient content of topsoil.
1. Topsoil Analysis Report must include analysis of suitability of topsoil for plant growth. State recommended quantities of nitrogen, phosphorus, and potash nutrient, soil conditioners and soil amendments to be added to produce satisfactory topsoil.

- G. Compost Analysis: Furnish compost analysis by a qualified testing laboratory stating the volumes, quantities, and ratios of component parts specified.
1. Compost Analysis Report must include analysis of suitability of compost for plant growth. State volumes and quantities of recommended amendments necessary to produce satisfactory compost.

#### 1.06 PROJECT CONDITIONS

- A. Prior to the work of this section all rough graded surfaces shall be free of:
1. Concrete, asphalt, and other construction debris;
  2. Limbs, twigs, cones, seed-pods and other woody material; and
  3. Rock, gravel or other material not suitable for plant growth.
- B. In all plant bed areas the sub-grade shall be free of unsuitable material such as stumps, roots, rocks, concrete, asphalt, or metals, for a minimum depth of 24 inches and in all lawn or seeded areas the sub-grade shall be free of unsuitable material for a minimum depth of 12 inches.
- C. The Contractor shall provide protective covers and barriers as necessary to prevent damage and staining to all site improvements.
- D. The Contractor shall prepare topsoil only when weather and soil conditions allow. Do not attempt soil preparation work when weather or soil conditions would contribute to poor or improper mixing, voids, or other adverse conditions/
- E. The Contractor shall take all reasonable precautions to prevent runoff of topsoil and fertilizers from leaving site or entering storm systems, or any waterway.

#### 1.07 SEQUENCING AND SCHEDULE

- A. Coordinate soil preparation work with installation of other site improvements and planting of trees, shrubs, ground covers and lawns.

### PART 2 PRODUCTS

#### 2.01 PLANTING SOILS

- A. Planting Soil:
1. ASTM D 5268.
  2. Acidity range (pH) of 5.5 to 7.
  3. A minimum of 4 percent, and a maximum of 20 percent organic material content by volume.
  4. A maximum of 25 percent decaying content by volume.
  5. Free of stones 1 inch or larger in any dimension and other extraneous materials harmful to plant growth.
  6. Textural Class Requirements: Topsoil textural analysis shall fall within the following gradations.

Textural Class	% of Total Weight	Average %
Sand (0.05-2.0mm dia.)	45 – 75	60%
Silt (0.002-0.05mm dia.)	15 – 35	25%
Clay (less than 0.002mm dia.)	05 – 20	15%

- B. Subgrade Soil: Friable soil, free from contaminants and materials deleterious to plant growth to depth as specified in Part 1 – General, Project Conditions.

#### 2.02 STORMWATER FACILITY TOPSOIL

Furnish imported topsoil for vegetated stormwater facilities conforming to the following:

A. Standard Blend for public and private facilities – Use this blend for all vegetated stormwater management facilities, except those in the right-of-way.

1. General Composition - The material shall be any blend of loamy soil, sand, and compost that is 30-40% compost (by volume) and meets the other criteria in this specification.

a. Analysis Requirements for the Blended Material:

1) Particle Gradation - A particle gradation analysis of the blended material, including compost, shall be conducted in conformance with ASTM C117/C136 (AASHTO T11/T27). The analysis shall include the following sieve sizes: 1 inch, 3/8 inch, #4, #10, #20, #40, #60, #100, #200. The gradation of the blend shall meet the following gradation criteria.

Sieve Size	Percent Passing
1 inch	100
#4	75-100
#10	40-100
#40	15-50
#100	5-25
#200	5-15

The blend shall have a Coefficient of Uniformity (D60/D10) equal to or greater than 6 to ensure it is well graded (has a broad range of particle sizes). The coefficient is the ratio of two particle diameters on a grain-size distribution curve; it is the particle diameter at 60% passing divided by the particle diameter at 10% passing.

2) Acidity - The pH (Power of Hydrogen) of the blended material shall be tested and be between 6 to 8.

b. General Requirements for the Blended Material:

- 1) The material shall be loose and friable.
- 2) It shall be well mixed and homogenous.
- 3) It shall be free of wood pieces, plastic, and other foreign matter.
- 4) It shall have no visible free water.

B. Infiltration Blend for the Right-of-Way - Use this blend for facilities in the right-of-way.

1. General Composition - The material shall be a mix of sand and compost, blended by volume consisting of 60-70% sand and 30-40% compost (by volume).

a. Analysis Requirements for the Blended Material:

1) The requirements are the same as those specified in section 2.02 A.1.a.1 for the "Standard Blend for Public and Private Facilities." The single difference is the particle gradation criteria, which are as follows:

Sieve Size	Percent Passing
Reynolds School District	



1 inch	100
#4	60-100
#10	40-100
#40	15-50
#100	5-20
#200	1-5

### 2.03 INORGANIC SOIL CONDITIONERS

- A. Lime: ASTM C 602, agricultural limestone containing a minimum 80 percent calcium carbonate equivalent and as follows:
- B. Class: Class T, with a minimum 99 percent passing through No. 8 sieve and a minimum 75 percent passing through No. 60 sieve.
- C. Class: Class O, with a minimum 95 percent passing through No. 8 sieve and a minimum 55 percent passing through No. 60 sieve.
- D. Provide lime in form of dolomitic limestone.
- E. Sulfur: Granular, biodegradable, containing a minimum of 90 percent sulfur, with a minimum 99 percent passing through No. 6 sieve and a maximum 10 percent passing through No. 40 sieve.
- F. Iron Sulfate: Granulated ferrous sulfate containing a minimum of 20 percent iron and 10 percent sulfur.
- G. Aluminum Sulfate: Commercial grade, unadulterated.
- H. Agricultural Gypsum: Finely ground, containing a minimum of 90 percent calcium sulfate.
- I. Sand: Clean, washed, natural or manufactured, free of toxic materials.
- J. Diatomaceous Earth: Calcined, diatomaceous earth, 90 percent silica, with approximately 140 percent water absorption capacity by weight.
- K. Calcined Clay: An inorganic soil amendment formed by expanding clay at high temperatures (calcining), and used to alter soil strength by affecting its ability to retain moisture.
- L. EarthLite Fiter Media, as manufactured by Sunmark Seeds; 1.888.214.7333; Contact – Robin Cook.
- M. Zeolites: Mineral clinoptilolite with at least 60 percent water absorption by weight.
- N. For bidding assume placement and incorporation of 35 lbs. of dolomitic lime per 1,000 square feet.

### 2.04 SOIL AMENDMENTS

- A. Compost - The compost shall be derived from plant material and provided by a member of the US Composting Council Seal of Testing Assurance (STA) program. See [www.compostingcouncil.org](http://www.compostingcouncil.org) for a list of local providers.  
  
The compost shall be the result of the biological degradation and transformation of plant-derived materials under conditions designed to promote aerobic decomposition. The material shall be well composted, free of viable weed seeds, and stable with regard to oxygen consumption and carbon dioxide generation. The compost shall have no visible free water and produce no dust when handled. It shall meet the following criteria, as reported by the US Composting Council STA Compost Technical Data Sheet provided by the vendor.

1. 100% of the material must pass through a 1/2 inch screen
  2. The pH of the material shall be between 6 and 8.
  3. Manufactured inert material (plastic, concrete, ceramics, metal, etc.) shall be less than 1.0% by weight.
  4. The organic matter content shall be between 30 and 70% (dry weight basis).
  5. Soluble salt content shall be less than 6.0 mmhos/cm.
  6. Maturity Indicator shall be greater than 80% for Germination and Vigor.
  7. Stability shall be 'Stable' to 'Very Stable'.
  8. Carbon/Nitrogen (C/N) ratio shall be less than 25:1.
  9. Trace metals test result = "Pass."
- B. Sphagnum Peat: Partially decomposed sphagnum peat moss, finely divided or of granular texture, with a pH range of 3.4 to 4.8.
- C. Muck Peat: Partially decomposed moss peat, native peat, or reed-sedge peat, finely divided or of granular texture, with a pH range of 6 to 7.5, and having a water-absorbing capacity of 1100 to 2000 percent.
- D. Wood Derivatives: Decomposed, nitrogen-treated sawdust, ground bark, or wood waste; of uniform texture, free of chips, stones, sticks, soil, or toxic materials.
1. In lieu of decomposed wood derivatives, mix partially decomposed wood derivatives with at least 0.15 lb of ammonium nitrate or 0.25 lb of ammonium sulfate per cubic foot of loose sawdust or ground bark.
- E. Manure: Well-rotted, unleached, stable or cattle manure containing not more than 25 percent by volume of straw, sawdust, or other bedding materials; free of toxic substances, stones, sticks, soil, weed seed, and material harmful to plant growth.
- F. For bidding assume planting and seeding beds and areas be amended with 2" of compost tilled into the top 6" of finished grade.

## **2.05 FERTILIZERS**

- A. Bonemeal: Commercial, raw or steamed, finely ground; a minimum of 4 percent nitrogen and 20 percent phosphoric acid.
- B. Superphosphate: Commercial, phosphate mixture, soluble; a minimum of 20 percent available phosphoric acid.
- C. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:
1. Composition: 1 lb/1000 sq. ft. of actual nitrogen, 4 percent phosphorous, and 2 percent potassium, by weight.
  2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing agency.
- D. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:
1. Composition: 20 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.
  2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing agency.

- E. For bidding assume 10 percent nitrogen, 6 percent phosphorus, and 4 percent potash by weight. At least 50 percent of total nitrogen shall contain no less than 3 percent water-insoluble nitrogen. At least 60 percent of nitrogen content shall be derived from super-phosphate containing not less than 18 percent phosphoric acid or bone meal containing 25 percent – 30 percent phosphoric acid and 2 – 3 percent nitrogen. Potash shall be derived from muriate of potash containing 55 – 60 percent potash.

## **2.06 PRE-EMERGENT HERBICIDE**

- A. Pre-emergent herbicide shall be as directed for condition by currently licensed herbicide applicator.

## **2.07 POST-EMERGENT HERBICIDE**

- A. Post-emergent herbicide shall be as directed for condition by currently licensed herbicide applicator.

## **2.08 WATER**

- A. Water shall be suitable for irrigation, free from oil, acid, alkali, salt or other substances harmful to plant life.

# **PART 3 EXECUTION**

## **3.01 EXAMINATION**

- A. The Contractor shall examine the entire site for conditions that will adversely affect execution, permanence and quality of work, and survival of plant materials. Proceed with installation only after unsatisfactory conditions have been corrected.
- B. Rough Grading Inspection - Contractor shall notify Owner's Representative a minimum of 72 hours in advance for inspection of rough grades.
- C. The Contractor shall verify that rough grades and slopes of areas to be planted areas are set at sufficient depth to allow for placement of specified materials. If the site is not suitable for landscaping operations, the Contractor shall perform necessary corrective work.

## **3.02 GENERAL PREPARATION OF GROUND SURFACES – ALL PLANTING OR SEEDING AREAS**

- A. The Contractor shall eliminate uneven areas and low spots, remove lumber, stones, sticks, mortar, concrete, rubbish, debris, contaminated soil and any other material harmful to plant life, in shrub and ground cover beds.
- B. The Contractor shall verify that invasive species and weeds have been eliminated prior to the placement of topsoil. The Contractor must not place topsoil until all living weed matter has been eliminated.
- C. Weed eradication shall include herbicide and non-herbicide methods. Eradication shall include and is not limited to elimination of the following invasive species and weeds:

Cirsium arvense (Canadian Thistle).  
Convolvulus spp. (Morning Glory).  
Cytisus scoparius (Scotch Broom).  
Dipsacus sylvestris (Common Teasel).  
Equisetum spp. (Horsetail).  
Festuca arundinaceae (Tall Fescue).  
Hedera helix (English Ivy).  
Holcus canatus (Velvet Grass).  
Lolium spp. (Rye Grasses).

Lotus corniculatus (Bird's Foot Trefoil).  
Lythrium salicaria (Purple Loose Strife).  
Melilotus spp. (Sweet Clover).  
Myriophyllum spicatum (Eurasian Milfoil).  
Phalaris arundinaceae (Reed Canary Grass).  
Rubus discolor (Himalayan Blackberry).  
Solanum spp. (Nightshade).  
Trifolium spp. (Clovers).

1. Herbicide application shall be by manual 'spot spraying', wicking, or backpack methods per manufacturer's specifications.
2. Herbicide application shall be as directed by a currently licensed applicator and shall be strictly applied by manufacturer's specifications, and applicable codes and regulations.
3. Remove invasive plant material after herbicide application has effectively stopped plant growth. Dispose legally off-site.
4. After initial spraying and removal of weeds, and prior to placing topsoil, the contractor shall water the subgrade sufficiently to germinate dormant weed seeds.
  - a. Prior to this weed crop producing seeds, the contractor shall spray these weeds with herbicide and remove them from the site.
  - b. Before continuing with topsoil placement the contractor shall verify with the **Owner's Representative** whether or not to repeat this treatment.
5. Selective hand removal by non-herbicide methods shall be utilized if herbicide application threatens existing plantings.
6. Existing or new plantings damaged or killed by herbicide application shall be replaced immediately at no additional cost to the Owner.

### 3.03 PLACING PLANTING SOILS

- A. Verify that planting soil is stockpiled in sufficient quantities to be placed at depths specified. The Contractor shall notify the Owner's Representative immediately if supplies are inadequate or do not meet specifications for topsoil. The Contractor shall provide imported topsoil meeting the requirements of this section if the supply of existing on-site topsoil is insufficient.
- B. Planting soil shall be placed at specified grades between any existing or constructed points on the site, such as curbs, walls, walks and paving.

### 3.04 SOIL PREPARATION IN PLANTING BEDS

- A. Prepare subgrade to depth as specified in Part 1 – General, Project Conditions.
- B. Loosen subgrade of planting beds to a minimum depth of **4 inches**. Remove stones larger than **1 inch** in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
  1. Apply 16-16-16 fertilizer at a rate of 6 lbs. per 1000 s.f. directly to subgrade before loosening.
  2. Thoroughly blend planting soil mix off-site before spreading.
    - a. Delay mixing fertilizer with planting soil if planting will not proceed within a few days.
    - b. Mix lime with dry soil before mixing fertilizer.

3. Spread planting soil mix to a depth of **12 inches** but not less than required to meet finish grades after natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.
  - a. Spread approximately **4 inches** of planting soil mix over loosened subgrade. Mix thoroughly into top **2 inches** of subgrade. Spread remainder of planting soil in **4 inch** lifts.
  - b. Allow sufficient depth of topsoil placement to allow for finish grade to be one **1" below** any paved surface after placement of bark mulch.
- C. Finish Grading: Grade planting beds to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.
- D. Restore planting beds if eroded or otherwise disturbed after finish grading and before planting.

### 3.05 SOIL PREPARATION IN SOD AND SEEDED AREAS

- A. Limit lawn subgrade preparation to areas to be planted.
- B. Newly Graded Subgrades: Loosen subgrade to a minimum depth of **4 inches**. Remove stones larger than **1 inch** in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
  1. Apply **16-16-16** fertilizer at a rate of 6 lbs. per 1000 s.f. directly to subgrade before loosening.
  2. Thoroughly blend planting soil mix off-site before spreading or spread topsoil, apply soil amendments and fertilizer on surface, and thoroughly blend planting soil mix.
    - a. Delay mixing fertilizer with planting soil if planting will not proceed within a few days.
    - b. Mix lime with dry soil before mixing fertilizer.
  3. Spread planting soil mix to a depth of **6 inches** but not less than required to meet finish grades after light rolling and natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.
    - a. Spread approximately **4 inches** of planting soil mix over loosened subgrade. Mix thoroughly into top **2 inches** of subgrade. Spread remainder of planting soil in **4 inch** lifts,
    - b. Reduce elevation of planting soil to allow for soil thickness of sod.
- C. Unchanged Subgrades: If lawns are to be planted in areas unaltered or undisturbed by excavating, grading, or surface soil stripping operations, prepare surface soil as follows:
  1. Remove existing grass, vegetation, and turf. Do not mix into surface soil.
  2. Loosen surface soil to a depth of at least of **6 inches**. Apply soil amendments and fertilizers according to planting soil mix proportions and mix thoroughly into top **4 inches** of soil. Till soil to a homogeneous mixture of fine texture.
    - a. Apply **16-16-16** fertilizer at a rate of 6 lbs. per 1000 s.f. directly to subgrade before loosening.
  3. Remove stones larger than **1 inch** in any dimension and sticks, roots, trash, and other extraneous matter.
  4. Legally dispose of waste material, including grass, vegetation, and turf, off Owner's property.
- D. Seeded Field grass:
  1. Rototill surface of seedbed to a minimum depth of 6 inches.
  2. Regrade and float to final finish grade, adding topsoil where required, with final grade to match existing or revised slopes, banks, etc. Grade to eliminate washing and puddling. Slope to drain water away from all buildings or structures.

- E. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit fine grading to areas that can be planted in the immediate future.
- F. Moisten prepared lawn areas before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
- G. Restore areas if eroded or otherwise disturbed after finish grading and before planting.

### 3.06 SOIL PREPARATION IN NATIVE PLANTING AREAS

- A. Examine the entire site for conditions that will adversely affect execution, permanence and quality of work, and survival of plant materials.
- B. Prepare subgrade as directed in the specification for removal of unwanted material and weed eradication..
- C. Verify that finish grades and slopes of seeded and planting areas are correct prior to commencing work of this section. If the site is not suitable for planting and seeding operations, the Contractor shall perform necessary corrective work, for the review and approval of the **Owner's Representative**.
- D. Monitor effectiveness of herbicide methods, and protect existing plantings and seeded areas.
- E. Existing Vegetation Demolition And Removal:
  - 1. Field verify existing vegetation designated on the plan or flagged to be removed, prior to commencement of demolition and removal operations. Integrate demolition with specified herbicide program for vegetation designated for removal before instigating removal operations. Remove only on approval of **Owner's Representative**.
  - 2. Remove designated existing vegetation to ground surface and dispose legally off-site. No on-site fires are allowed.
  - 3. Stumps and subsurface root systems shall not be removed unless specifically designated by **Owner's Representative**. Obtain approval from **Owner's Representative** prior to removal of fallen timber resulting from removal operations.
  - 4. The Contractor is responsible to reimburse the Owner for the certified appraised value of any designated plant material damaged or removed without the approval of the **Owner's Representative**.
- F. General Preparation and Grading Of Soil Surfaces in Native Planting Areas.
  - 1. Remove extraneous material within the limits of the grading operations. Eliminate uneven areas and low spots. Protect from damage, areas, which are designated on the plan, or as directed by the **Owner's Representative**, to remain.
  - 2. At elevations designated on the plan, all areas shall be ripped, and harrowed and floated to an even surface following the specified contours. Do not disturb existing vegetation [**or habitat snags designated to remain**]. Cross track slope areas with tracked equipment parallel with slope to mitigate surface runoff.
  - 3. Eliminate apparent invasive weeds per specifications, using approved herbicides and approved methods of removal.
  - 4. Rip harrow, and float soil surface at areas to be planted and seeded to a friable, even surface. Rip and harrow any surfaces compacted by vehicles or equipment.
  - 5. Final grading shall not exhibit hardened 'scraped' surfaces or vehicular circulation evidence. Any such surface shall be floated or 'softened' for acceptance of seed.

6. The Contractor shall be responsible for providing control of airborne dust and particulates from the work areas. Visible dust shall be limited by water, dust palliative or other methods approved by the **Owner's Representative**.
  7. Protect adjacent grading and site work. Protect existing utilities, construction and paved surfaces throughout construction. Any disturbance of existing features outside of designated limits shall be restored to pre-construction condition at Contractor's expense. Cover exposed slopes by specified means if erosion threatens. Monitor runoff conditions and notify **Owner's Representative** of detrimental conditions.
  8. Refuse and equipment from the clearing operations shall be removed from the site within 10 days of the clearing operations, or as directed by the **Owner's Representative**. Disposal shall be the responsibility of the Contractor and shall be in accordance with applicable ordinances and environmental requirements. Waste material shall be reduced in size to less than 1 cubic foot and legally removed off-site.
- G. Backfill Soil for Native Planting Areas:
1. Backfill soil required in grading operations shall be the native soil indigenous to the site that is clean, and clear of material deleterious to native plant growth.

### 3.07 SOIL PREPARATION IN WATER QUALITY FACILITIES

- A. Prepare subgrade to a depth of 18 inches below finished grade as shown on the Civil Plans. Loosen subgrade of water quality facilities to a minimum depth of 4 inches. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
- B. Loosen subgrade of planting beds to a minimum depth of 4 inches. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
  1. Thoroughly blend water quality media mix off-site before spreading.
  2. Spread water quality media mix to a depth of 12 inches but not less than required to meet finish grades after natural settlement. Do not spread if water quality media or subgrade is frozen, muddy, or excessively wet.
    - a. Spread approximately 4 inches of water quality media mix over loosened subgrade. Mix thoroughly into top 2 inches of subgrade. Spread remainder of water quality media in 4 inch lifts.
- C. Finish Grading: Grade water quality media to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.
- D. Restore water quality media if eroded or otherwise disturbed after finish grading and before planting.

### 3.08 CLEANUP

- A. Keep project site free from accumulation of debris, topsoil, and other material.
- B. At completion of each area of work, completely remove debris, equipment and surplus materials.
- C. Any paved area or surfaces stained or soiled from landscaping materials shall be cleaned with a power sweeper using water under pressure. Building surfaces shall be washed with proper equipment and materials as approved by the **Owner's Representative**.

END OF SECTION

**SECTION 32 93 00**

**PLANTS**

**PART 1 - GENERAL**

**1.01 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

**1.02 SUMMARY**

- A. This Section includes the following:
  - 1. Furnishing all labor, materials and equipment for installation of landscape planting as shown on the drawings and as specified.
- B. Related Sections include the following:
  - 1. Section 312500, Erosion Control
  - 2. Section 329113, Soil Preparation
  - 3. Section 329445, Landscape Maintenance

**1.03 DEFINITIONS**

- A. The following publications, referred to thereafter by basic designation only, form a part of this specification to the extent indicated by references:
  - 1. AMERICAN STANDARD FOR NURSERY STOCK, 2004 (ANSI Z60.1-2004), published by American Nursery & Landscape Association (ANLA)
  - 2. STANDARDIZED PLANT NAMES, 1942 Edition, published by J. Horace McFarland Company.
  - 3. FLORA OF THE PACIFIC NORTHWEST; by Hitchcock and Cronquist, latest edition,
  - 4. Federal Standard for Fertilizers - Mixed, Commercial: FS0-F-241D
- B. Balled and Burlapped Stock: Exterior plants dug with firm, natural balls of earth in which they are grown, with ball size not less than sizes indicated; wrapped, tied, rigidly supported, and drum-laced as recommended by ANSI Z60.1-2004.
- C. Balled and Potted Stock: Exterior plants dug with firm, natural balls of earth in which they are grown and placed, unbroken, in a container. Ball size is not less than sizes indicated.
- D. Bare-Root Stock: Exterior plants with a well-branched, fibrous-root system developed by transplanting or root pruning, with soil or growing medium removed, and with not less than minimum root spread according to ANSI Z60.1-2004 for kind and size of exterior plant required.
- E. Container-Grown Stock: Healthy, vigorous, well-rooted exterior plants grown in a container with well-established root system reaching sides of container and maintaining a firm ball when removed from container. Container shall be rigid enough to hold ball shape and protect root mass during shipping and be sized according to ANSI Z60.1-2004 for kind, type, and size of exterior plant required.
- F. Fabric Bag-Grown Stock: Healthy, vigorous, well-rooted exterior plants established and grown in-ground in a porous fabric bag with well-established root system reaching sides of fabric bag. Fabric bag size is not less than diameter, depth, and volume required by ANSI Z60.1-2004 for type and size of exterior plant.
- G. Finish Grade: Elevation of finished surface of planting soil.
- H. Planting Soil: Native or imported topsoil, manufactured topsoil, or surface soil modified to become topsoil; mixed with soil amendments.



- I. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill, before placing planting soil.

#### **1.04 SUBMITTALS**

- A. Substitutions Requests: Submit certifications, or samples of material requested for substitution.
- B. Nursery Invoices: A minimum of 1 week prior to purchase, the Contractor shall submit to the Owner's Representative, copies of all invoices for plant materials to be used on site. The copies must indicate source of supply by name, address and phone number, order invoice number, and size and quantity for each species or variety ordered.
- C. Inspection certificates:
  - 1. All plant material shall meet requirements of State and Federal laws with respect to inspection for plant diseases and infestation.
  - 2. Inspection certificates required by law shall accompany each shipment of plant materials and be submitted to the Owner's Representative.

#### **1.05 QUALITY ASSURANCE**

- A. Work and material supplied shall comply with applicable requirements of the United States Department of Agriculture (USDA).
- B. The Contractor shall protect all materials, at all times during handling, shipping and storage, from extreme weather conditions, wind, drying of roots or root ball injury.
- C. Plant materials showing damage from handling, shipping or during planting shall be rejected by the Owner's Representative and shall be replaced by the Contractor at their expense.
- D. Provide quality, size, genus, species, and variety of exterior plants indicated, complying with applicable requirements in ANSI Z60.1-2004, "American Standard for Nursery Stock."
  - 1. Selection of exterior plants purchased under allowances will be made by Owner's Representative., who will tag plants at their place of growth before they are prepared for transplanting.
- E. Tree and Shrub Measurements: Measure according to ANSI Z60.1-2004 with branches and trunks or canes in their normal position. Do not prune to obtain required sizes. Take caliper measurements 6-inches above ground for trees up to 4-inch caliper size, and 12-inches above ground for larger sizes. Measure main body of tree or shrub for height and spread; do not measure branches or roots tip-to-tip.
- F. Construction Observation: Owner's Representative may observe trees and shrubs either at place of growth or at site before planting for compliance with requirements for genus, species, variety, size, and quality. Owner's Representative retains right to observe trees and shrubs further for size and condition of balls and root systems, insects, injuries, and latent defects and to reject unsatisfactory or defective material at any time during progress of work. Remove rejected trees or shrubs immediately from Project site.
- G. Store fertilizers in a dry place and protect from intrusion of moisture.
- H. Planting
  - 1. All landscaping work shall be done under the supervision of a Contractor currently licensed in landscape construction, under respective jurisdictions, and having a minimum of two years experience in landscape construction. All work shall be done in accordance with proper horticultural practices and hereinafter described.
  - 2. Installer's Personnel Certifications: Certified Landscape Technician, CLT-Exterior; Certified Ornamental Landscape Professional, COLP.
- I. Herbicide Application
  - 1. Application of herbicides for weed control as may be required shall be made only by an applicator currently licensed under state law.

## **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver exterior plants freshly dug.
  - 1. Immediately after digging up bare-root stock, pack root system in wet straw, hay, or other suitable material to keep root system moist until planting.
- B. Do not prune trees and shrubs before delivery, except as approved by Architect. Protect bark, branches, and root systems from sun scald, drying, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees or shrubs in such a manner as to destroy their natural shape. Provide protective covering of exterior plants during delivery. Do not drop exterior plants during delivery.
- C. Handle planting stock by root ball.
- D. Deliver exterior plants after preparations for planting have been completed and install immediately. If planting is delayed more than six hours after delivery, set exterior plants trees in shade, protect from weather and mechanical damage, and keep roots moist.
  - 1. Heel-in bare-root stock. Soak roots in water for two hours if dried out.
  - 2. Set balled stock on ground and cover ball with soil, peat moss, sawdust, or other acceptable material.
  - 3. Do not remove container-grown stock from containers before time of planting.
  - 4. Water root systems of exterior plants stored on-site with a fine-mist spray. Water as often as necessary to maintain root systems in a moist condition.

## **1.07 PROJECT CONDITIONS AND COORDINATION**

- A. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit.
- B. Coordination with Lawns: Plant trees and shrubs after finish grades are established and before planting lawns, unless otherwise acceptable to Architect.
  - 1. When planting trees and shrubs after lawns, protect lawn areas and promptly repair damage caused by planting operations.
- C. The Contractor shall coordinate planting work with soil preparation.

## **1.08 PLANT MATERIALS SUBSTITUTION**

- A. Plants, not specifically named in the plant list, will not be accepted unless specifically accepted in writing by the Owner's Representative.
- B. Substitutes proposed for approval, in each case shall possess the same essential characteristics as the kind of plant actually specified in regard to appearance, ultimate height, shape, and habit of growth, general soil, and other requirements.

## **1.09 SUBSTANTIAL COMPLETION**

- A. Substantial completion is achieved after the Contractor has installed all plants, seeding and associated materials, and provides Owner's Representative with a written request to inspect said work. Plant and seed areas will be considered substantially complete when in compliance with the following conditions as directed by the Owner's representative and documented by written acknowledgement of Owner's Representative.
  - 1. Plant Conditions: Healthy, free of pests and disease, and in vigorous condition.
  - 2. Branches: Free of dead and dying branches and branch tips.
  - 3. Foliage: Plants shall bear foliage of normal density, size, and color.

4. Turf: Healthy, free of pests and disease, and with 90 percent cover and no bare areas greater than six square inches
5. Roots: Seedling roots thoroughly knitted to the soil.

#### 1.10 WARRANTY

- A. Trees, Shrubs, Vines, and Ornamental Grasses: 12 months.
- B. Ground Covers, Biennials, Perennials, and Other Plants: 12 months.
- C. Annuals: Three months.
- D. At the end of the warranty period, the Owner's Representative will make an inspection to determine the condition of plants. All plants not in a healthy growing condition, as determined by the Owner's Representative, will be marked and noted for replacement. As soon as seasonal conditions permit, contractor shall removed the indicated plants from the site and replaced them with plants of the same species and size as originally specified. Such replacement shall be made in the same manner as specified for the original plantings, and at no extra cost to the Owner. The guarantee on plants shall be limited to one full replacement cycle.
- E. Warranty For Forb Plantings in Water Quality Facility
  1. Forb plantings shall be omitted from required warranty for plantings. Replacement forbs shall be provided only upon request of Owner's Representative, based on the following conditions:
    - a. Contractor to obtain written approval of completion of initial forb planting as specified.
    - b. At the time of bid, Contractor shall submit unit costs for replacement of each species. After approval of initial planting, replacement plantings shall be requested by the Owner through a change order to original contract using the unit costs provided at time of bid.

### PART 2 PRODUCTS

#### 2.01 TREES, SHRUBS AND GROUNDCOVER

- A. Species, variety, quantity, size and condition of plant will be provided as indicated on the drawings.

Plant material shall be supplied, but not limited to form and conditions defined as follows:

Rhizome:	Rhiz:	Section of root or stolon
Propagules:	Prop:	Section of stem
Bulb:	Bulb:	Single bulb mass
Plug:	Plug:	Rooted Cutting
Aquatic container:	AqCont;	Water filled container for floating plants
Seedling:	Sdlg:	Rooted tree or shrub
Tubeling:	Tblg:	Rooted tree or shrub in single tube
Bare Root:	BR;	Shrub or tree with soil removed from root mass
Cutting:	Ctnng;	Stem cut from parent stock
Ball and Burlap:	B&B;	Tree or shrub with excavated root ball wrapped and tied per ANSI Z60.1-2004 standard.
Container:	Cont.;	Standard pot or bag, per ANSI Z60.1-2004 standard sizing.

- B. Nomenclature shall conform to "Standardized Plant Names."
- C. Quality definitions, grading tolerances, and caliper to height ratios no less than minimum specified in ANSI Z60.1-2004.

- D. Plant material shall be healthy nursery stock, well branched, full foliated when in leaf, free from disease, injury, insects, all weeds and weed roots.
- E. Cold storage plants shall not be permitted.
- F. Plant materials shall be nursery-grown unless otherwise specified. Nursery-grown plants shall have been growing continuously in licensed nurseries for the following minimum number of growing seasons:

<b>Plant Materials</b>	<b>Time in Nursery</b>
Evergreens and conifers	Two growing seasons
Deciduous	One growing season
Groundcover and Vines	One growing season

- G. Balled and burlapped (B&B) stock shall be furnished with natural ball.
- H. Potted and container stock shall be well rooted, vigorous enough to ensure survival and exhibit healthy growth.
- I. Container stock shall have been growing in its container for a minimum of six (6) months and a maximum of two (2) years, with roots filling the containers but not showing evidence of being or having been root bound.
- J. Trees: Provide untapped, straight, single-leader trees. The Owner's Representative may reject any split-leader trees at any time prior to end of warranty period. Contractor shall replace any rejected, split-leader trees at their own expense.
- K. Plant materials shall be free from disease, insects, disfiguring knots, sun scale, injuries, bark abrasion, evidence of improper pruning and other objectionable disfigurements.
- L. Trees and shrubs shall have all developed branching system; shrubs shall have full foliage and shall not be leggy.
- M. Thin, weak, leggy, or misshapen plants will be rejected by the Owner's Representative.
- N. Labels: The correct horticultural name, size and caliper and/or other data, as specified in the Plant Material List, written on durable labels in weather-resistant ink, shall be securely attached to all individually shipped plants and to each box, bundle, bale and container of plant materials. Labels shall remain on representative plant materials until final acceptance of planting. Labels shall be affixed in such a manner that will not girdle the plant materials.
- O. The species (botanical and common names), size, manner in which the plants are furnished, and spacing of the required plant materials, are noted on the planting plan.
- P. The quantities of plant materials shall be as determined by the Contractor in accordance with the specified spacing, or location on plan. Material quantities shown on plan are for Contractor convenience only and shall be verified by the Contractor prior to installation. Surplus or shortages of plant quantities shall be the responsibility of the Contractor.

## **2.02 TREE STAKING AND TYING MATERIALS**

- A. Wood tree stakes: Stakes for tree support shall be straight, sound, roughhewn, Douglas fir, construction grade not less than 2-inches square or 2-inches in diameter if round, and 8 feet long. Stakes shall be stained dark brown, for their entirety.

## **2.03 WATER**

- A. Water shall be suitable for irrigation, free from oil, acid, alkali, salt or other substances harmful to plant life.

## **2.04 FERTILIZER**

- B. Commercial fertilizer shall be any standard brand, uniform in composition, dry and delivered to the site in unopened original moisture proof containers. Each container shall be fully labeled, conforming to the applicable State fertilizer laws, bearing the manufacturer's trade name or trademark, warranty of the producer and the guaranteed analysis. Duplicate copies of invoices shall be furnished to the Owner's Representative. Fertilizers shall be supplied in the following forms:
  - 1. Granular-form fertilizer: Top-dressing fertilizers shall be:
    - a. Slow-release, 16-20-10 formula.
    - b. Ammonium nitrate.
- C. Base percentages of nitrogen, phosphorus, and potash on laboratory test recommendations as approved by Owner. For bidding assume 10 percent nitrogen, 6 percent phosphorus, and 4 percent potash by weight. At least 50 percent of total nitrogen shall contain no less than 3 percent water insoluble nitrogen. At least 60 percent of nitrogen content shall be derived from super-phosphate containing not less than 18 percent phosphoric acid or bone meal containing 25 - 30 percent phosphoric acid and 2 - 3 percent nitrogen. Potash shall be derived from muriate of potash containing 55 - 60 percent potash.

## **2.05 TREE AND SHRUB MATS**

- A. Tree and Shrub Mats shall be "Vispore" Tree Mat available from 'Treesentials', 1-800-248-8239, <http://www.treesentials.com/forestry-products-vispore-tree-mats.html> or approved equal.

## **2.06 MULCHES**

- A. Straw Mulch: Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats, or barley.
- B. Fir and/or hemlock bark, 1-inch minus size with less than 30% bark finer than 1/4-inch size. Sawdust and wood shavings will not be acceptable.
- C. Compost Mulch: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 1-inch sieve; soluble salt content of 5 to 10 deciSiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:
  - 1. Organic Matter Content: 50 to 60 percent of dry weight.
  - 2. Feedstock: Agricultural, food, or industrial residuals; biosolids; yard trimmings; or source-separated or compostable mixed solid waste.
- D. Mineral Mulch: Hard, durable stone, washed free of loam, sand, clay, and other foreign substances, of following type, size range, and color:
  - 1. Type: Rounded riverbed gravel or smooth-faced stone.
  - 2. Size Range: 1-1/2-inches maximum, 3/4-inch minimum.
  - 3. Color: Readily available natural gravel color range.

## **PART 3 EXECUTION**

### **3.01 INITIAL INSPECTION OF PLANT MATERIAL**

- A. All plant materials must be inspected by the Owner's Representative before planting. All plant material shall be free from insects, diseases, and injuries and sizing shall be equal to or exceeding measurements specified. Transport and handle all materials in strict accordance with proper horticultural standards. The Contractor shall provide plants with habit and growth that is normal, sound, healthy and vigorous.
- B. All plant materials not meeting specification requirements shall be rejected.

- C. All native plants shall be nursery stock except hardwood cuttings. Nursery stock shall be grown from propagules or seed collected from western Oregon or western Washington sources only. Plants from off-site collection sources shall not be allowed, unless otherwise approved by the Owner's Representative.
- D. Hardwood cuttings, as identified on the plant list, shall be taken from healthy, vigorous, one to three-year old, plants grown in species specific lighting conditions and obtained from the respective watershed identified by the Owner's Representative. Cuttings shall be from 1 to 2 feet in length and between 1/4 and 3/4-inches in diameter, as shown on plans. Each piece shall contain a minimum of two dormant buds per foot of length. Period of collection shall be at dormancy and at the optimum time per proper horticultural standards for cutting establishment.

### 3.02 PLANT BED PREPARATION

- A. Prepare plant beds as directed in Division 32, Soil Preparation.

### 3.03 PLANT LAYOUT AND INSPECTION

- A. Layout of major planting areas as indicated on the plans are approximate only, and the locations and identity of all trees, shrubs and ground covers shall be outlined in the field by the Contractor, subject to review and approval.
- B. Inspection: The Contractor shall notify the Owner's Representative forty-eight (48) hours prior to beginning any planting. The Owner's Representative may adjust plant material location to meet field conditions. Planting shall not occur until the Owner's Representative has approved the location and layout of all plant beds.

### 3.04 TREES, SHRUBS AND GROUNDCOVER PLANTING

- A. Plant trees and shrubs upright and adjust to set best appearance or relationship to adjacent plants and structures. Shrubs and groundcovers shall be planted one half the distance from curbs, sidewalks, buildings and other objects, as specified in the spacing requirements.

Native Plant material shall be planted with regard to condition specified on plan, per, but not limited to the following:

Rhizome:	Cut into soil surface within 2-inches of surface
Propagule:	Cut into soil surface within 2-inches of surface
Bulb:	Set into soil 4-inches – 6-inches deep. point up
Plug:	Placed into soil at size of root mass
Aquatic container:	Dispersed into open water surface
Seedling:	Cut into soil as deep as root mass, compacted
Tubeling:	Cut into soil as deep as root mass, compacted
Bare Root:	Placed into plant pit sufficient for root mass, compacted
Cutting:	Dibble into soil per cutting installation detail on plan
Ball and Burlap:	Placed into plant pit twice the size of root ball, compacted
Container:	Placed into plant pit twice the size of container

- B. Planting dates:

1. Critical dates for planting operations include the following; subject to revision by Owner's Representative:
  - a. Collection of hardwood cuttings: Nov. 15-Jan. 15
  - b. Planting of cuttings, or bare root material: Jan. 15 - Feb .15 (weather dependent)

c. Planting of container stock: Feb.15 - June 15, Aug. 30-Oct.30.

C. Excavation for planting

1. Stockpile all excavated topsoil for planting operations.
2. In digging pits for trees, the contractor shall separate sod, topsoil suitable for backfill, and subsoil, and shall dispose of the sod, rocks and unsuitable material off-site.
3. Diameter or minimum width of planting pit or trenches shall be as shown on the drawings.
4. If standing water is encountered during excavation of the planting pits, the Contractor shall notify the Owner's Representative who will determine the corrective drainage measures required.
5. If underground obstructions or rocks are encountered in excavation of planting areas making it impossible to plant materials as shown on the contract documents, an alternate location for the planting shall be selected by the Owner's Representative.
6. Excess excavated topsoil shall be used to form saucers around plants as detailed. Soil not required or suitable for the above usage shall be properly disposed of off the project site.

D. Cutting: Cut off cleanly all broken or frayed roots, smaller than 1/2-inch caliper.

E. Prior to completing backfilling, the upper two-thirds of the plant pit shall be flooded with the plant starter solution. Allow solution to soak away. Finish filling holes to finish grade and lightly compact soil around root ball.

F. Placement and compaction: Place and compact backfill soil mixture carefully to avoid injury to roots; fill all voids.

**3.05 FORB PLANTING**

A. Forbs shall be planted as show on the drawings.

**3.06 SHRUBS AND GROUNDCOVER PLANTING BED GRADES**

A. Establish finish grades and slopes in accordance with finish grades as specified.

**3.07 MULCHING**

A. Mulch all shrubs and ground cover planting beds with a 2-inch layer of mulch material within two (2) days after planting. Cover entire bed areas; apply evenly. A 2-inch layer of mulch material shall be applied to saucer areas of trees and shrubs located outside of planting beds, or as indicated on drawings. Do not use bark mulch in stormwater planters.

**3.08 STAKING TREES**

A. Stake and tie trees immediately after planting as indicated on the detail drawings.

B. Drive stakes vertically into the ground as shown on the drawings. Do not injure root or ball.

**3.09 PRUNING**

A. Pruning shall be done at or after the time of planting in accordance with proper horticultural practice.

B. Pruning shall be limited to the minimum necessary to remove injured twigs and branches and to compensate for the loss of roots during transplanting, but shall never exceed one-half of the branching structure.

1. Crossed or rubbing branches shall be removed providing the natural shape of the tree is preserved.
2. All cuts shall be made flush with the parent stem leaving no stubs. Pruning cuts shall be made in a manner to favor the earliest possible covering of the wound by callus growth. Cuts that produce large wounds and weaken the tree will not be acceptable. Evergreens shall not be pruned except to remove injured branches and/or double leaders. The use of pole shears and/or hedge shears for pruning deciduous and evergreen trees will not be permitted. All trimmings and other debris left over from the planting operations shall be collected and disposed of legally off the site.

- C. With the permission of the Owner's Representative, pruning may be done before delivery of plants, but not before plants have been inspected and accepted.

**3.10 CLEANUP**

- A. Keep premises free from accumulation of debris.
- B. At completion of each area of work, remove all debris, equipment and surplus materials

END OF SECTION



**SECTION 32 94 45**

**LANDSCAPE MAINTENANCE**

**PART 1 GENERAL**

**1.01 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, Division 1 Specification Sections, and environmental permit conditions apply to this Section.

**1.02 SUMMARY**

- A. This Section includes the following:
  - 1. Furnish labor, material, and equipment required to maintain landscaped areas for one year after date of Substantial Completion. Term of maintenance shall commence only after date of final written approval.
  - 2. Supply landscape maintenance quote as separate line item in construction proposal.
- B. Related Sections include the following:
  - 1. Section 329300; Plants.

**1.03 SUBMITTALS**

- A. Maintenance Schedule: Upon beginning of maintenance contract, submit a proposed schedule of visit dates and services as outlined herein.
- B. Maintenance Schedule Updated (Yearly): At the beginning of each year, by January 15th, the Contractor shall submit a complete revised yearly schedule of maintenance operations indicating timing of scheduled visits, method of weed control, access and mobility issues. At the end of each year, by December 1st, the Contractor shall submit a written summary of the year's activities, including: the record of irrigation winterization and start-up; irrigation schedule, repairs and adjustments; herbicide types and applications; water level conditions; repair, replacement, or restoration activities; and any conditions addressed outside of the scheduled tasks specified herein.

**1.04 HERBICIDE PROGRAM**

- A. Prior to starting herbicide and chemical control programs, submit a monthly herbicide application schedule and application specification as written by manufacturer of herbicide, and a currently licensed herbicide applicator. Notify Owner's Representative of herbicide application type and schedule prior to seasonal application. Submit rates, quantities, and types per Federal, State and Local jurisdictions, per code and submit copies to Owner.

**PART 2 PRODUCTS**

**2.01 GENERAL**

- A. Fertilizer shall be Webfoot Organic Deluxe 10-10-5 or Webfoot 5-15-10 cottonseed meal based fertilizer.
- B. Staking and Guying Materials: Provide staking and guying materials in accordance with project specifications, details and drawings.
- C. Browse Protection: .Repair and/or reinstall rigid seedling protector tubes and/or wire mesh cages in accordance with project specifications, details and drawings.
- D. Mulch; .Provide mulch to match planting beds and individual plant locations in accordance with project specifications, details and drawings.

**PART 3 EXECUTION**

**3.01 GENERAL**

- A. Debris and Trash Removal: Remove all trash and debris from site.
- B. Leaf Raking and Removal: Remove all leaves from site.

### **3.02 PLANTING BED MAINTENANCE**

- A. Replace all damaged, dead, or dying plants covered by warranty within 30 days of initial identification of condition.
- B. Fertilizing at planting beds: Apply 20 lb. per 1,000 square feet of specified organic base commercial fertilizer two times per growing season. First application on March 15 and the final application on June 15. All fertilizer shall be washed off foliage and watered in thoroughly if not watered by normal rainfall. Use cottonseed meal base Rhododendron fertilizer such as Webfoot 5-15-10 for all acid-loving (ericaceous) plants instead of 10-10-5 organic base fertilizers.
- C. Weeding: Maintain clean planting beds by pulling and removing all weeds. Check weekly during the growing season and at least bi-weekly at other times.
- D. Pruning: Prune to shape plantings as needed or directed to conform to the natural growth patterns. Remove all dead or diseased wood from the plantings.
- E. Mulching: Keep a two-inch mulch of medium coarse bark mulch on the planting beds at all times. Rake mulch in early spring before applying new cover to break "crust" of old mulch.
- F. Spraying: Spraying shall occur only by a currently licensed applicator.
- G. Watering: Shall be by specified irrigation program, excepting new plantings or replacement plantings that shall be watered in as planted. Verify balance of watering on new or replacement planting with Owner. One-inch per week is sufficient during growing season on established plantings. Increase watering to one-and-a-half inches per week during warm season. Adjust watering schedule or frequency, if evidence of excess puddling or runoff is encountered.
- H. Remove all debris from site after each visit, and dispose legally offsite.

### **3.03 WATER QUALITY FACILITY AREA**

- A. Do not mow Water Quality Facility areas.
- B. Do not apply weed control measures in water quality facility areas.
- C. Monitor run-off conditions in water quality facility; notify Owner of drainage or erosion problems.

### **3.04 NON-IRRIGATED SEEDED AREAS**

- A. Mow or flail mow areas once monthly.
- B. Until seeded areas are accepted start water application as soon as season requires. Apply water in sufficient quantities and at sufficient intervals to maintain seeded areas in good color and health. Do not allow surface run-off. Cease watering operations when seasonal rains provide ample water to maintain seeded areas.
- C. Do not apply weed control measures in seeded areas.
- D. Re-Seed per original specifications in areas not showing acceptable germination.

### **3.05 PEDESTRIAN AREAS**

- A. Police and sweep pedestrian walkways to maintain clean, safe surfaces, remove accumulated clippings and plant debris from walkways and entrances. Clean all paved surfaces soiled by landscape maintenance operations.

### **3.06 NATIVE PLANTING MAINTENANCE**

- A. Maintain native plantings and seeded areas on an 'as-needed basis' for a period of three years after written approval, per the unit cost bid and included in the contract documents, and per the following task schedule:

1. First Year:

- a. After the site is planted and written approval(s) for plantings has been issued, the Owner's Representative shall conduct weekly visits for the two months after planting, to monitor conditions. The Owner's Representative shall identify detrimental site conditions and notify the Contractor of such conditions. The contractor shall respond immediately to correct such conditions on a 'time and material' basis.
- b. Each month thereafter, the Contractor shall visit the site once monthly to monitor plantings for the balance of the first year.
- c. Maintenance tasks shall consider, but not be limited to the repair and/or improvement of the following concerns and conditions:
  - 1) Foliage condition.
  - 2) Irrigation applications: per specifications.
  - 3) Survivability of plants and seeding.
  - 4) Animal and fowl.
  - 5) Water levels effects: sufficiency, period of inundation, erosion or washing.
  - 6) Germination of seeded areas.
  - 7) Weed control of invasive plant species. Removal of weed debris and seed sources.
  - 8) Detrimental surface conditions: erosion, slumping, etc.
  - 9) Vandalism.
  - 10) Litter and extraneous debris removal.

2. Second Year:

- a. Continue monthly maintenance tasks outlined in first year. Analysis of site and reports shall be consistent with first year methodology.

3. Third Year:

- a. Continue monthly maintenance tasks outlined in first year. Analysis of site and reports shall be consistent with first year methodology.

**3.07 WEED ERADICATION**

- A. Weed Eradication: Shall include eradication by herbicide and non-herbicide methods. Eradication program shall include and is not limited to control of the following noxious species:

Cirsium arvense (Canadian Thistle)  
Convolvulus spp. (Morning Glory)  
Cytisus scoparius (Scotch Broom)  
Dipsacus sylvestris (Common Teasel)  
Eichornia crassipes (Water Hyacinth)  
Festuca arundinaceae (Tall Fescue)  
Hedera helix (English Ivy)  
Holcus lanatus (Velvet Grass)  
Lolium spp. (Rye Grasses)  
Lotus corniculatus (Bird's Foot Trefoil)  
Lythrium salicaria (Purple Loose Strife)

Melilotus spp. (Sweet Clover)  
 Myriophyllum spicatum (Eurasian Milfoil)  
 Phalaris arundinaceae (Reed Canary Grass)  
 Rubus discolor (Himalayan Blackberry)  
 Solanum spp. (Nightshade)  
 Trifolium spp. (Clovers)  
 Vicia spp. (Vetches)

Herbicide application shall be by manual 'spot spraying', wicking, or backpack methods per manufacturer's specifications. Herbicide in watershed or waterway areas shall be subject to approval and be strictly applied by manufacturer's specifications.

- B. Selective hand removal by non-herbicide methods shall be utilized if herbicide application threatens native plantings. All native plantings indicating damage by herbicide application shall be replaced immediately at no additional cost to the Owner.
- C. Protect the site and watershed at all times from erosion and siltation. Utilize all approved erosion control methods to contain and mitigate erosion. The Contractor shall inspect the site at sufficient intervals throughout the maintenance monitoring program, during wet periods of weather to identify potential erosion problems which shall be brought to the attention of the Owner's Representative immediately. Replace plant and seeding material per directives of the Owner's Representative, damaged by erosion per the original planting and seeded specifications.

### 3.08 MAINTENANCE SCHEDULE

PLANT MAINTENANCE SCHEDULE												
Tasks (frequency of tasks per month)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Tree & Shrub Care			x									
(pruning, mulching, fertilizing)												
Replace Plants			x									
Weed Management prior to Monitoring									x			
Non-chemical Weeding		x	x	x	x	x	x	x	x	x	x	x
Trash Removal		x	x	x	x	x	x	x	x	x	x	x
Insect, Disease, Rodent Control			x									
Hand Watering (2 year establishment period)					x	x	x	x	x			

END OF SECTION

**SECTION 33 11 00**

**WATER DISTRIBUTION PIPING**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. This section specifies requirements for water line distribution piping.
  - 1. Pipe and fittings for potable water line and fire water line.
  - 2. Valves and Valve Boxes.

**1.02 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Related Sections
  - 1. Section 312317 Trenching
  - 2. Section 331200 Water Appurtenances
- C. City of Fairview Design and Construction Standards.
- D. AWWA – American Water Works Association.

**1.03 SUBMITTALS**

- A. Section 013300 – Submittal Procedures: Requirements for submittals.
- B. Product Data: Submit data on pipe materials, pipe fittings, valves and accessories.
- C. Manufacturer's Certificate: Certify products meet or exceed specified requirements.
- D. Project Record Documents: Record as-constructed locations of piping mains, valves, connections, thrust restraints, and invert elevations.
- E. Identify and describe unexpected variations to subsoil conditions or discovers of uncharted utilities.

**1.04 QUALITY ASSURANCE**

- A. Perform Work in accordance with City of Fairview Design and Construction Standards.

**1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver and store valves in shipping containers with manufacturer's name and pressure rating labeling in place.
- B. Store pipe and pipe materials in designated areas on-site.
- C. Store polyethylene materials out of sunlight.

**PART 2 - PRODUCTS**

**2.01 WATER PIPING**

- A. Public Water mains 6" and larger.
  - 1. Push-on joint Ductile Iron Pipe, Class 52, cement-mortar lined conforming to ANSI/AWWA C151/A 21.51 and ANSI A21.11. Rubber ring gaskets shall conform to ANSI A21.11, suitable for the specified pipe sizes and pressures. Fitting joints shall be mechanical joint ends.
- B. Private water lines 4" and larger
  - 1. Push-on joint Ductile Iron Pipe, Class 52, cement-mortar lined conforming to ANSI/AWWA C151/A 21.51 and ANSI A21.11. Rubber ring gaskets shall conform to ANSI A21.11, suitable for the specified pipe sizes and pressures. Fitting joints shall be mechanical joint ends.

2. PVC AWWA C-900 and AWWA C905, designated for potable water use. Class DR 18, 150 psi, and DR 14, 200 psi.
- C. Private water lines 2" and smaller
  1. PVC Schedule 40 designated for potable water use.
  2. Copper pipe type K

**2.02 FITTINGS:**

- A. Ductile Iron Fittings shall conform to ANSI / AWWA C110 / A21.10 and/or ANSI / AWWA C153/ A 21.53. Fitting joints shall have mechanical joint (MJ) ends.
- B. Mechanical Joint Fittings and Restraints
  1. Mechanical joint fittings shall be ductile iron short pattern.
  2. Fittings shall conform to ANSI / AWWA C110 / A21.10 and shall be of a class at least equal to that of the adjacent pipe.
  3. Bolts shall be domestic Cor-Ten or ductile iron tee-head bolts.
  4. Mechanical Joint Restraints.
    - a. The restraint shall be MEGALUG Series 1100 restraint device as manufactured by EBAA Iron, Inc. or equal.
- C. Flanged Fittings
  1. Flanged fittings shall conform to ANSI / AWWA C110/A21.10 and shall be faces and drilled Class 124 flanges that match ANSI B16.1 fittings.
  2. Flanged fittings shall be ductile iron
  3. Flange bolts and nuts shall be Grade 304 or 316 stainless steel with standard course threads. Threads on bolts and nuts shall be coated with a food grade anti-seize material to prevent thread galling.
- D. Gaskets
  1. Gasket material for flanged joints in ductile iron pipe shall consist of 1/8-inch thick, full-face one-piece, cloth inserted, rubber gaskets conforming to section 4 of ANSI/ AWWA C207 and ANSI B16.21.
- E. Joints
  1. Joints shall be restrained where called for in City of Fairview Design and Construction Standards using either mechanical joint restraints, Field Lok™ (Tyton), or approved equal
  2. Where restrained joints are not required by the City of Fairview Design and Construction Standard Details Fastite™ (American) gaskets, or approved equal.
- F. Thrust Blocks and Straddle Blocks
  1. Use thrust block and straddle block materials shall be 3,500 psi minimum compressive strength concrete where called for in City of Salem Specifications and Standard Details.

**PART 3 - EXECUTION**

**3.01 PREPARATION**

- A. Verify existing utility water main size, location and inverts are as indicated on the Drawings.

**3.02 EXCAVATION**

- A. Excavate pipe trench in accordance with Section 312317 Trenching. Hand trim excavation for accurate placement of pipe to elevations indicated on Drawings.

**3.03 INSTALLATION**

- A. Install ductile iron pipe and fittings in accordance with AWWA C600 and manufactures' instructions.

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- B. Install PVC pipe in accordance with AWWA C605 and manufactures' instructions.
- C. Install water pipe in conformance with City of Fairview Design and Construction Standards.

**3.04 DISINFECTION AND TESTING**

- A. Disinfection and testing shall be in conformance with City of Fairview Design and Construction Standards.

**B. END OF SECTION**



**SECTION 33 12 00**

**WATER APPURTENANCES**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. This sections specifies requirements for water appurtenances.
  - 1. Appurtenances commonly used for potable water line and fire water line.
  - 2. Valves and Valve Boxes, Fire Hydrants

**1.02 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Related Sections
  - 1. Section 312317 Trenching
  - 2. Section 331100 Water Distribution Piping
- C. City of Fairview Design and Construction Standards.
- D. AWWA – American Water Works Association.

**1.03 SUBMITTALS**

- A. Section 013300 – Submittal Procedures: Requirements for submittals.
- B. Product Data: Submit data on pipe materials, pipe fittings, valves and accessories.
- C. Manufacturer's Certificate: Certify products meet or exceed specified requirements.
- D. Project Record Documents: Record as-constructed locations of piping mains, valves, connections, thrust restraints, and invert elevations.
- E. Identify and describe unexpected variations to subsoil conditions or discovers of uncharted utilities.

**1.04 QUALITY ASSURANCE**

- A. Perform Work in accordance with City of Fairview Design and Construction Standards.

**1.05 DELIVERY, STORAGE AND HANDLING**

- A. Deliver and store valves in shipping containers with manufacturer's name and pressure rating labeling in place.
- B. Store pipe and pipe materials in designated areas on-site.
- C. Store polyethylene materials out of sunlight.

**PART 2 - PRODUCTS**

**2.01 FIRE HYDRANTS**

- A. Fire Hydrants shall conform to the City of Fairview Design and Construction Standards.

**2.02 GATE VALVES, BOX AND COVER**

- A. Gate valves, boxes and covers shall conform to the City of Fairview Design and Construction Standards.
- B. Valves twelve (12) inches and smaller shall be gate valves. Only resilient wedge gate valves shall be installed.
- C. Valves must meet AWWA C509 Standard for Resilient Seated Gate Valves.
- D. Valve body and bonnet shall be epoxy coated inside and out with fusion bonded epoxy. Coating shall conform to AWWA C550 Standard Protective Coatings for Valves and Hydrants.

- E. Unless otherwise shown, valves shall have 2-inch square operating nut.
- F. Tapping Valves
  - 1. Tapping gate valves shall be flange by mechanical joint, shall conform to the above specifications unless stated otherwise, and as recommended by the manufacturer for use with the tapping sleeve supplied.
  - 2. Valves shall be cast ductile iron body, resilient seated NRS tapping valves with 2-inch square operating nut, fusion epoxy coated inside and outside, meeting the requirements of AWWA C509.
  - 3. Valves for O.D. Steel weld-on taps will be installed with insulation kits for flanged (or other) connections between dissimilar metals. Install tracer wire to either side of transition, and bring up both ends of tracer wire in a valve box for continuity purposes. (Follow basic valve box installation.)
- G. Valve box and cover conforming to City of Fairview Design and Construction Standards.

**2.03 BUTTERFLY VALVES, BOX AND COVER**

- A. Butterfly valves, boxes and covers shall conform to the City of Fairview Design and Construction Standards.
- B. Valves greater than twelve (12) inches shall be butterfly valves.
- C. All butterfly valves installed shall conform to AWWA C504 Standard for Rubber Seated Butterfly Valves.

**2.04 BLOWOFF ASSEMBLY**

- A. Blowoff size must be in accordance with AWWA flushing flow rates, but not less than 2 inches for 8 inch lines and smaller, and 4 inches for lines larger than 8 inches. Blowoffs shall conform to the City of Fairview Design and Construction Standards.

**2.05 COMBINATION AND VACUUM RELEASE VALVE**

- A. Combination Air and Vacuum Release Valve shall be installed at dead ends where there is a risk of a vacuum being created due to water shut down.
- B. Combination Air and Vacuum Release Valve shall be installed at high points in the water system.

**2.06 WATER METER, BOXES, AND VAULTS**

- A. Water meter and Water meter boxes/vaults shall conform to the City of Fairview Design and Construction Standards.

**2.07 BACKFLOW DEVICES AND VAULTS**

- A. Backflow prevention assemblies shall conform to City of Fairview Design and Construction Standards.
- B. Backflow prevention assemblies shall be installed on the Domestic water service, Fire water service and the irrigation service.
- C. Fire service backflow prevention assemblies shall be installed at the edge of the public water line easement.
- D. Only approved Double Detector Check Valve Assemblies are to be used for system containment on fire line services.

**2.08 TAPPING VALVES AND SLEEVES**

- A. All tapping sleeve and valve assemblies shall meet the requirements of AWWA Standard C500, latest revision. Cast iron tapping sleeves or stainless steel wrap-around sleeves, and cast iron valves shall be used to make live taps into the existing water mains where shown on the drawings. Sleeve bodies must be of stainless steel. The flanges must conform to AWWA C207 Class D ANSI 150# drilling. All bolts and nuts shall be as specified.
- B. Contractor shall verify type of existing main prior to ordering. The tapping valve shall have an inlet flange to match the sleeve and a mechanical joint outlet for connection to water

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main pipe. Tapping valve shall meet the requirements for gate valves specified herein. The sleeve shall have provisions for a tap and shall be pressure tested at 150 psi for a minimum of 60 minutes prior to tapping.

**2.09 RESTRAINED JOINT SYSTEMS**

- A. Restrained joints shall be EBBA Iron, Inc. MegaLug Series 1100, or approved equal.

**PART 3 - EXECUTION****3.01 INSTALLATION**

- A. General:
1. Install water appurtenances as shown, specified, as recommended by the manufacturer, and as required by City of Fairview Design and Construction Standards.
  2. In the event of conflict between manufacturer's recommendations and the Contract Documents, request interpretation from Engineer before proceeding.
  3. Install service connections and valves where indicated on the plans.

**3.02 DISINFECTION AND TESTING**

- A. Disinfection and testing shall be in conformance with City of Fairview Design and Construction Standards.

**END OF SECTION**

**SECTION 33 31 00**

**SANITARY SEWER PIPING**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. This section specifies requirements for sanitary sewer pipe for a gravity flow sewerage system.

**1.02 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specifications Sections, apply to this Section.
- B. Applicable sections of the current Oregon Plumbing Specialty Code and City of Fairview Design and Construction Standards.
- C. All work shall be done in accordance with these specifications and in conformity with the plans.
- D. Related Sections
  - 1. Section 31 23 17 Trenching
  - 2. Section 33 39 00 Sanitary Sewer Structures

**1.03 SUBMITTALS**

- A. Product Data.

**1.04 DELIVERY, STORAGE AND HANDLING**

- A. Do not store plastic pipe and fittings in direct sunlight
- B. Protect pipe, pipe fittings and seals from dirt and damage.
- C. Handle manholes according to manufacturer's written rigging instructions.

**1.05 QUALITY ASSURANCE**

- A. Piping materials shall bear label, stamp, or other marking or specified testing agency.
- B. Comply with NSF/ANSI 14, "Plastic Piping System Components and Related Materials," for plastic piping components. Include marking with "NSF-drain" for plastic drain piping and "NSF-sewer" for plastic sewer piping.

**1.06 PROJECT CONDITIONS**

- A. Interruption of Existing Sanitary Sewer Service: Do not interrupt service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary service according to requirements indicated:
  - 1. Notify Owner no fewer than two days in advance of proposed interruption of sanitary sewer service.
  - 2. Do not proceed with interruption of sanitary sewer service Owner's written permission

**PART 2 - PRODUCTS**

**2.01 PUBLIC SANITARY SEWER PIPE**

- A. Public Sanitary Sewer Pipe shall conform to City of Fairview Design and Construction Standards.

**2.02 SANITARY SEWER PIPING 4 INCH AND LARGER WITH GREATER THAN 3 FEET OF COVER, BEYOND 5 FEET OF THE BUILDING**

- A. PVC Pipe and Fittings
  - 1. Shall be American Manufactured

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- 2. Pipe: Shall conform to the requirements of ASTM D3034, SDR 35
    - 3. Fittings: All fitting shall be of the same materials as the pipe unless otherwise approved. Conform to the requirements of ASTM D3034, PVC
    - 4. Gaskets: Shall conform to the requirements of ASTM F 477, elastomeric seals and ASTM 3212
  - B. ABS (Acrylonitrile Butadiene Styrene) Pipe and Fittings
    - 1. Shall be American Manufactured
  - C. Cast Iron Pipe and Fittings
    - 1. Shall be American Manufactured
- 2.03 SANITARY SEWER PIPING 4 INCH AND LARGER WITH 3 FEET OR LESS OF COVER, BEYOND 5 FEET OF THE BUILDING**
- A. Cast Iron Pipe and Fittings
    - 1. Shall be American Manufactured
  - B. C900 Pipe and Fittings
    - 1. All C900 Pipe and Fittings shall conform to the requirements of ASTM C-900 D-1784
    - 2. Shall be American Manufactured
- 2.04 SANITARY SEWER PIPING WITHIN 5 FEET OF THE BUILDING**
- A. PVC DWV, Solid-Wall PVC Pipe shall conform to the requirements of ASTM D 2665, and plumbing code requirements

**PART 3 - EXECUTION**

**3.01 EARTHWORK**

- A. Excavation, trenching, and backfilling are specified in section 31 23 17 Trenching.

**3.02 PIPING INSTALLATION**

- A. General location and arrangements: Drawing plans and details indicate general location and arrangement of underground sanitary sewer piping. Location and arrangement of piping layout tack into account design considerations. Install pipe as indicated, to extent practical. Where specific installation is not indicated, follow piping manufacturer's written instructions.
- B. Install piping beginning at low point, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream, Install gaskets, seals, sleeves and couplings according to manufacturer's written instruction for using lubricants, cements, and other installation requirements.
- C. Clear interior of piping and manholes of dirt and superfluous material as work progresses. Maintain swab or drag in piping and pull past each joint as it is complete. Place plug in end of incomplete piping at end of day and when work stops.

**3.03 CONNECTIONS**

- A. Pothole prior to construction to verify location, size and depth of existing piping. Notify Engineer if location, size or depth of existing pipe is different than shown on the plans.

**3.04 FIELD QUALITY CONTROL**

- A. Inspection and testing shall be per City of Fairview requirements.

**3.05 CLEANING**

- A. Clean dirt and superfluous material from interior of piping prior to testing.

**3.06 TESTING AND ACCEPTANCE**

- A. Testing shall be in conformance with City of Fairview and Oregon Plumbing Specialty Code.

**END OF SECTION**

**SECTION 33 39 00**

**SANITARY SEWER STRUCTURES**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. This section specifies requirements for sanitary sewer structures for a gravity flow sewerage system.

**1.02 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specifications Sections, apply to this Section.
- B. Applicable sections of the current Oregon Plumbing Specialty Code, City of Fairview Design Manual and Standard Drawings, and Water Environment Services (WES) Sanitary Sewer Standards.
- C. Related Sections
  - 1. Section 31 23 17 Trenching
  - 2. Section 33 31 00 Sanitary Sewer Piping

**1.03 SUBMITTALS**

- A. Product Data.
- B. Shop Drawings for Manholes

**1.04 DELIVERY, STORAGE AND HANDLING**

- A. Do not store plastic pipe and fittings in direct sunlight
- B. Protect pipe, pipe fittings and seals from dirt and damage.
- C. Handle manholes according to manufacturer's written rigging instructions.

**1.05 QUALITY ASSURANCE**

- A. Piping materials shall bear label, stamp, or other marking or specified testing agency.
- B. Comply with NSF/ANSI 14, "Plastic Piping System Components and Related Materials," for plastic piping components. Include marking with "NSF-drain" for plastic drain piping and "NSF-sewer" for plastic sewer piping.

**1.06 PROJECT CONDITIONS**

- A. Interruption of Existing Sanitary Sewer Service: Do not interrupt service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary service according to requirements indicated:
  - 1. Notify Owner no fewer than two days in advance of proposed interruption of sanitary sewer service.
  - 2. Do not proceed with interruption of sanitary sewer service Owner's written permission

**PART 2 - PRODUCTS**

**2.01 POLYVINYL CHLORIDE PIPE (PVC)**

- A. Pipe and Fittings 4 inches to 15 inches shall be PVC SDR 35, conforming to ASTM D3034.
- B. Joints: PVC pipe shall have integral wall bell and spigot push-on joint with elastomeric gaskets secured in place in the bell of the pipe. Elastomeric gaskets shall conform to ASTM D3212.

**2.02 MANHOLES**

- A. Manhole components shall conform to City of Fairview Design and Construction Standards.

## SANITARY SEWER STRUCTURES

- B. All steps within structures must comply with OSHA standards for fixed metal, individual rung ladders (OAR 437), and CWS, except that there shall be no more than 24 inches between the top of the casting and the rung of the top step.
- C. All precast manhole riser sections shall conform to the requirements of ASTM C478.
- D. All poured in place concrete shall have a 28 day strength of 3000 psi, and a slump of 2 inches to 2 inches.
- E. All joints shall be sealed with preformed gaskets such as Kent-Deal #2, Ram-Neck, or an approved equal conforming to federal specifications SS-S00210.
- F. All pipe connections to manhole shall be water tight.
- G. Watertight / tamper proof manhole frame and cover shall be used in all easement and off street areas.

**2.03 CLEANOUTS**

- A. Cleanout components shall conform to City of Fairview standards.
- B. Cleanout stand pipe shall be the same material and size as the mainline up to and including 8 inch pipe. Mainline greater than 8 inches shall have an 8 inch standpipe.
- C. Cleanout frame and cover shall have a concrete collar.

**PART 3 - EXECUTION****3.01 EARTHWORK**

- A. Excavation, trenching, and backfilling are specified in section 31 23 17 Trenching.

**3.02 MANHOLE INSTALLATION**

- A. General: install manholes complete with appurtenances and accessories indicated.
- B. Install precast concrete manhole sections with sealants according to ASTM C891, City of Fairview Standards.

**3.03 CLEANOUT INSTALLATION**

- A. General: install cleanout complete with appurtenances and accessories indicated, and in conformance with City of Fairview.
- B. Install cleanouts where indicated on the drawings and per Oregon Plumbing Specialty Code.

**3.04 CONNECTIONS**

- A. Pothole prior to construction to verify location, size and depth of existing piping. Notify Engineer if location, size or depth of existing pipe is different than shown on the plans.

**3.05 FIELD QUALITY CONTROL**

- A. Inspection shall be per City of Fairview requirements.

**3.06 CLEANING**

- A. Clean dirt and superfluous material from interior of piping prior to testing.

**3.07 TESTING AND ACCEPTANCE**

- A. Testing shall be in conformance with City of Fairview and Oregon Plumbing Specialty Code.

**END OF SECTION**



**SECTION 33 41 00**

**STORM DRAINAGE PIPING**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. This section specifies requirements for storm drainage pipe for a gravity flow storm drainage system.

**1.02 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specifications Sections, apply to this Section.
- B. Applicable sections of the current Oregon Plumbing Specialty Code, City of Fairview Design and Construction Standards.
- C. Related Sections
  - 1. Section 31 23 17 Trenching
  - 2. Section 33 49 00 Storm Drainage Structures

**1.03 SUBMITTALS**

- A. Product Data.

**1.04 DELIVERY, STORAGE AND HANDLING**

- A. Do not store plastic pipe and fittings in direct sunlight
- B. Protect pipe, pipe fittings and seals from dirt and damage.
- C. Handle manholes according to manufacturer's written rigging instructions.

**1.05 QUALITY ASSURANCE**

- A. Piping materials shall bear label, stamp, or other marking or specified testing agency.
- B. Comply with NSF/ANSI 14, "Plastic Piping System Components and Related Materials," for plastic piping components. Include marking with "NSF-drain" for plastic drain piping and "NSF-sewer for plastic sewer piping.

**1.06 PROJECT CONDITIONS**

- A. Interruption of Existing Storm-Drainage Service: Do not interrupt service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary service according to requirements indicated:
  - 1. Notify Owner no fewer than two days in advance of proposed interruption of storm-drainage service.
  - 2. Do not proceed with interruption of storm-drainage service Owner's written permission.

**PART 2 - PRODUCTS**

**2.01 STORM DRAINAGE PIPING 4 INCH AND LARGER WITH GREATER THAN 3 FEET OF COVER, BEYOND 5 FEET OF THE BUILDING**

- A. PVC Pipe and Fittings
  - 1. Pipe: Shall conform to the requirements of ASTM D3034, SDR 35
  - 2. Fittings: All fitting shall be of the same materials as the pipe unless otherwise approved. Conform to the requirements of ASTM D3034, PVC
  - 3. Gaskets: Shall conform to the requirements of ASTM F 477, elastomeric seals and ASTM 3212
  - 4. Shall be American Manufactured
- B. ABS (Acrylonitrile Butadiene Styrene) Pipe and Fittings

- 1. Shall be American Manufactured
- C. Cast Iron Pipe and Fittings
  - 1. Shall be American Manufactured
- 2.02 STORM DRAINAGE PIPING 4 INCH AND LARGER WITH 3 FEET OR LESS OF COVER, BEYOND 5 FEET OF THE BUILDING**
  - A. Cast Iron Pipe and Fittings
    - 1. Shall be American Manufactured
  - B. ABS (Acrylonitrile Butadiene Styrene) Pipe and Fittings
    - 1. Shall be American Manufactured
  - C. C900 Pipe and Fittings
    - 1. All C900 Pipe and Fittings shall conform to the requirements of ASTM C-900 D-1784
    - 2. Shall be American Manufactured
- 2.03 STORM DRAINAGE PIPING WITHIN 5 FEET OF THE BUILDING**
  - A. PVC Pipe and Fittings
    - 1. PVC DWV, Solid-Wall PVC Pipe shall conform to the requirements of ASTM D 2665, and plumbing code requirements
- 2.04 PERFORATED PIPE**
  - A. Rigid round perforated PVC pipe shall conform to the requirements of ASTM D3034, SDR 35.

### **PART 3 - EXECUTION**

#### **3.01 EARTHWORK**

- A. Excavation, trenching, and backfilling are specified in section 31 23 17 Trenching.

#### **3.02 PIPING INSTALLATION**

- A. General location and arrangements: Drawing plans and details indicate general location and arrangement of underground storm sewer piping. Location and arrangement of piping layout tack into account design considerations. Install pipe as indicated, to extent practical. Where specific installation is not indicated, follow piping manufacturer's written instructions.
- B. Install piping beginning at low point, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream, Install gaskets, seals, sleeves and couplings according to manufacturer's written instruction for using lubricants, cements, and other installation requirements.
- C. Clear interior of piping and manholes of dirt and superfluous material as work progresses. Maintain swab or drag in piping and pull past each joint as it is complete. Place plug in end of incomplete piping at end of day and when work stops.

#### **3.03 BACKWATER VALVES**

- A. Install backwater valves where indicated on the plans and in an accessible location.

#### **3.04 CLEANOUT**

- A. Install cleanout where indicated on the plans. Set rim to finish grade.

#### **3.05 CONNECTIONS**

- A. Pothole prior to construction to verify location, size and depth of existing piping. Notify Engineer if location, size or depth of existing pipe is different than shown on the plans.

#### **3.06 FIELD QUALITY CONTROL**

- A. Inspection and testing shall be per City of Fairview requirements.

**3.07 CLEANING**

- A. Clean dirt and superfluous material from interior of piping prior to testing.

**END OF SECTION**

**SECTION 33 49 00**

**STORM DRAINAGE STRUCTURES**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. This section specifies requirements for storm drainage structures for a gravity flow drainage system.

**1.02 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specifications Sections, apply to this Section.
- B. Applicable sections of the current Oregon Plumbing Specialty Code and City of Fairview Design and Construction Standards.
- C. Related Sections
  - 1. Section 33 41 00 Storm Drainage Piping.

**1.03 SUBMITTALS**

- A. Product Data.
- B. Shop Drawings for Manholes

**1.04 DELIVERY, STORAGE AND HANDLING**

- A. Do not store plastic pipe and fittings in direct sunlight
- B. Protect pipe, pipe fittings and seals from dirt and damage.
- C. Handle manholes according to manufacturer's written rigging instructions.

**1.05 QUALITY ASSURANCE**

- A. Piping materials shall bear label, stamp, or other marking or specified testing agency.
- B. Comply with NSF/ANSI 14, "Plastic Piping System Components and Related Materials," for plastic piping components. Include marking with "NSF-drain" for plastic drain piping and "NSF-sewer" for plastic sewer piping.

**1.06 PROJECT CONDITIONS**

- A. Interruption of Utility Service: Do not interrupt service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary service according to requirements indicated:
  - 1. Notify Owner no fewer than two days in advance of proposed interruption of sanitary sewer service.

**PART 2 - PRODUCTS**

**2.01 MANHOLES**

- A. Manhole components shall conform to City of Fairview Design and Construction Standards.
- B. All steps within structures must comply with OSHA standards for fixed metal, individual rung ladders (OAR 437), and there shall be no more than 24 inches between the top of the casting and the rung of the top step.
- C. All precast manhole riser sections shall conform to the requirements of ASTM C478.
- D. All poured in place concrete shall have a 28 day strength of 3000 psi, and a slump of 2 inches to 2 inches.
- E. All joints shall be sealed with preformed gaskets such as Kent-Deal #2, Ram-Neck, or an approved equal conforming to federal specifications SS-S00210.
- F. All pipe connections to manhole shall be water tight.

## STORM DRAINAGE STRUCTURES

- G. Watertight / tamper proof manhole frame and cover shall be used in all easement and off street areas.

**2.02 CLEANOUTS**

- A. Cleanout components shall conform to City of Fairview Design and Construction Standards.
- B. Cleanout stand pipe shall be the same material and size as the mainline up to and including 8 inch pipe. Mainline greater than 8 inches shall have an 8 inch standpipe.
- C. Cleanout frame and cover shall have a concrete collar.

**PART 3 - EXECUTION****3.01 EARTHWORK**

- A. Excavation, trenching, and backfilling are specified in section 31 23 17 Trenching.

**3.02 MANHOLE INSTALLATION**

- A. General: install manholes complete with appurtenances and accessories indicated.
- B. Install precast concrete manhole sections with sealants according to ASTM C891, City of Fairview Design and Construction Standards.

**3.03 CLEANOUT INSTALLATION**

- A. General: install cleanout complete with appurtenances and accessories indicated, and in conformance with City of Fairview Design and Construction Standards.
- B. Install cleanouts where indicated on the drawings and per Oregon Plumbing Specialty Code.

**3.04 CONNECTIONS**

- A. Pothole prior to construction to verify location, size and depth of existing piping. Notify Engineer if location, size or depth of existing pipe is different than shown on the plans.

**3.05 FIELD QUALITY CONTROL**

- A. Inspection shall be per City of Fairview requirements.

**3.06 CLEANING**

- A. Clean dirt and superfluous material from interior of piping prior to testing.

**3.07 TESTING AND ACCEPTANCE**

- A. Testing shall be in conformance with City of Fairview, and Oregon Plumbing Specialty Code.

**END OF SECTION**