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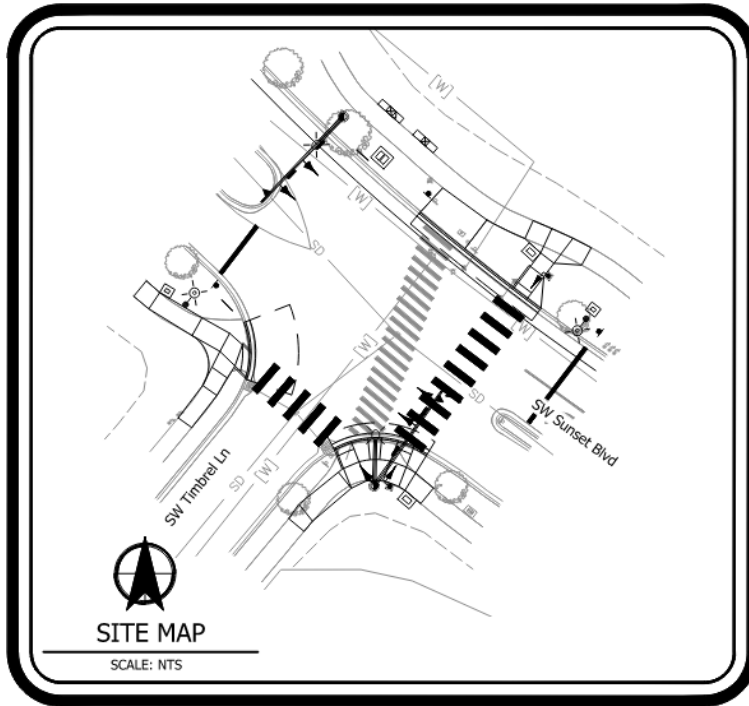


BOOK 2 OF 2

OF THE BID DOCUMENTS

FOR:

SUNSET-TIMBREL INTERSECTION IMPROVEMENTS



Grading, Paving, Sidewalk, Landscape, Illumination, Signal Improvements
PROJECT NUMBER: 729ST
A CITY OF SHERWOOD
PUBLIC WORKS, ENGINEERING DIVISION
PUBLIC IMPROVEMENT PROJECT

BOOK 2 OF 2
OF THE BID DOCUMENTS
FOR:
SUNSET-TIMBREL
INTERSECTION IMPROVEMENTS

PREPARED BY

**CITY OF SHERWOOD
PUBLIC WORKS, ENGINEERING DIVISION
4415 NE 30TH AVE
SHERWOOD, OR 97124**

PROJECT NUMBER: 729ST

DATE ISSUED: May 19, 2025

BOOK 2
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CHAPTER 4 – PROJECT INFORMATION

WORK TO BE DONE

This project is called the SUNSET-TIMBREL Intersection Improvements Project and is located in the City of Sherwood, Washington County, Oregon. The Work to be done under this Contract consists of the following:

Project Description

The Work to be done under this Contract consists of the following:

1. Grading & excavation for multi-modal public transportation facilities
2. Clearing, grubbing & tree removal
3. Pavement restoration & resurfacing
4. Concrete (PCC) flatwork
5. Installation of a Pedestrian Hybrid Beacon and equipment (pre-ordered by City)
6. Installation of minor landscaping
7. Coordination w/ franchise utilities
8. Minor adjustment of existing infrastructure as noted
9. Minor underground utility work for transportation purposes
10. Traffic control & flagging
11. Engineer's Opinion-of-Probable-Cost (range of \$300,000-\$375,000)

APPLICABLE SPECIFICATIONS

The Specification that is applicable to the Work on this Project is the 2024 edition of the "Oregon Standard Specifications for Construction". All number references in these Special Provisions shall be understood to refer to the Sections and subsections of the Standard Specifications and Supplemental Specifications bearing like numbers and to Sections and subsections contained in these Special Provisions in their entirety.

CLASS OF PROJECT

This is a City of Sherwood Project. The construction of this project is not federally funded.

PROJECT CONTACTS

Submit written questions to the City Project Manager via e-mail, fax, or letter.

Answers to these questions may be distributed via faxed addendum.

Project Management:

Jason Waters, PE, City Engineer
Watersj@sherwoodoregon.gov
City of Sherwood Public Works, Engineering
Department

22560 SW Pine Street
Sherwood, OR 97140
(503)925-2304
Consultant

Tony Roos PE,
troos@kittelton.com
Kittelton & Associates

851 SW 6th Ave, Suite 600
Portland, OR 97204
(503)535-7444

CHAPTER 5 – PREVAILING WAGE RATES

The Oregon Prevailing Wage Rate publications are incorporated by reference and available on BOLI's website at:

<https://www.oregon.gov/boli/employers/Pages/prevailing-wage-rates.aspx>


A copy of these rules may be requested by calling the Bureau of Labor and Industries directly.

Bureau of Labor and Industries – (971) 673-0838

CHAPTER 6 – SPECIAL PROVISIONS

CITY OF SHERWOOD, OREGON
SPECIAL PROVISIONS
FOR
SUNSET-TIMBREL INTERSECTION IMPROVEMENTS
PROJECT 729ST

PROFESSIONAL OF RECORD CERTIFICATION(S):

<p>Seal w/signature</p> <div style="text-align: center;">  <p>REGISTERED PROFESSIONAL ENGINEER 60404PE</p> <p>OREGON JUL. 15, 2003 ANTHONY M. ROOS</p> <p>EXPIRES: 12/31/2026</p> </div>	<p>I certify the Special Provision Sections listed below are applicable to the design for the subject project. Modified Special Provisions were prepared by me or under my supervision.</p> <p>All Sections</p>
<p>Date Signed: _____</p>	

SECTION 00110 - ORGANIZATION, CONVENTIONS, ABBREVIATIONS AND DEFINITIONS

Comply with Section 00110 of the Standard Specifications modified as follows:

Remove the following definitions and replace as noted:

00110.20 Definitions –

Bid Booklet – The bidding documents bound with the Solicitation Documents that contain the information identified in 00120.10.

Bid Proposal – The bidding forms included in Division One - Bidding Requirements of the Solicitation Documents as identified in 00120.10.

Bid Section – The portion of the Solicitation Documents labeled, Division One - Bidding Requirements.

SECTION 00120 - BIDDING REQUIREMENTS AND PROCEDURES

Comply with Section 00120 of the Standard Specifications modified as follows:

Remove the text of the following subsection and replace with the following:

00120.00 Prequalification of Bidders - Bidders must be **pre-qualified** in accordance with the laws of the State of Oregon. Letters of pre-qualification (approval letter only) by either the Oregon Department of Transportation (ODOT), Washington County Department of Transportation, or any local municipality with a population equal to or greater than 18,000 persons is acceptable to the City. Proof of valid pre-qualification must be submitted to the City **by Monday, June 2, 2025 at 5:00 PM (PST)** for the Bidder's Bid to be deemed responsive and to retain appeal rights. Only bids from pre-qualified Bidders will be opened.

All companies working on the project must possess either a Metro license or a City of Sherwood business license in accordance with the Sherwood Municipal Code at the time of construction.

Remove the text of the following subsection and replace with the following:

00120.05 Requests for Solicitation Documents –

Solicitation documents may be obtained as specified in the Invitation To Bid.

Remove the text of the following subsection and replace with the following:

00120.10 Bid Booklet –

The Bidding Documents are bound with the Solicitation Documents, and labeled as Division One – Bidding Requirements. The bidding Documents may include, but are not limited to:

- Invitation to Bid
- Bidder's Checklist
- Bid Statement
- Bid Schedule
- First Tier Subcontractor Disclosure Form
- Bid Bond
- Certificate of Non-Collusion
- Compliance with ORS 279C.840
- Certification of Asbestos Abatement
- Certificate of Non-Discrimination
- Customer Service Acknowledgment
- Prequalification Acknowledgement
- Bidder Responsibility Form
- Addendum Acknowledgment (Example)

Modify the third paragraph of the following subsection as noted:

00120.15 Examination of Work Site and Solicitation Documents; Consideration of Conditions to be Encountered –

Any clarification of Plans and Specifications needed by the Bidder shall be requested in writing through the Engineer. Requests shall be made at least six (6) days prior to bid opening for the Agency's reply to reach all Bidders before Bid Closing. Oral explanations or interpretations given before receiving Bids for a Project will not be binding. To be binding, interpretation of the Plans and Specifications by the Agency must be made by written Addendum furnished to all Holders of Bidding Plans according to 00120.30. Notification of erroneous or incomplete Plans or Specifications shall also be submitted to the Engineer. Such notification shall also be made at least six (6) days prior to bid opening for the Agency to make any necessary modifications and issue Addenda to Bidders prior to Bid Closing.

Revise the first paragraph in the following subsection as noted:

00120.30 Changes to Plans, Specifications, or Quantities before Opening of Bids –

The Agency reserves the right to issue Addenda making changes or corrections to the Plans, Specifications, or quantities. The Agency will provide Addenda only by publishing them on the Agency's web site (www.sherwoodoregon.gov). It is the Bidders responsibility to check the website to receive and review Addenda.

Modify the text of the following subsection as follows:

00120.40 Preparation of Bids

(a)(1) Paper Bids

Signatures and initials shall be in ink

No changes shall be submitted by facsimile.

Remove the text of the following subsection and replace with the following:

00120.40 Preparation of Bids

(a)(2) Electronic Bids –

Electronic Bids will not be accepted for this project.

Remove the text of the following subsection and replace with the following:

00120.40 Preparation of Bids

(c)(2) Electronic Bids Schedule Entries –

Electronic Bids will not be accepted for this project.

Remove the following text of the following subsection as noted:

00120.40(d) Bidder's Address and Signature Pages -

Bidders shall include in the Bid the address to which all communications concerning the Bid and Contract should be sent. The Bid must be signed by a duly authorized representative of the Bidder.

Remove the text of the following subsection and replace with the following:

00120.40 Preparation of Bids

(e)(2) Bid Guaranty with Electronic Bids –

Electronic Bids will not be accepted for this project.

Modify the following text of the following subsection as noted:

00120.40 Preparation of Bids

(f) Disclosure of First Tier Subcontractors –

The Subcontractor Disclosure Form may be submitted for a paper Bid (see 00120.05(b)(1)) by:

- Filling out the Subcontractor Disclosure Form printed from the Bid Booklet on the City of Sherwood website (see 00110.05(e)) and submitting it together with the Bid at the time and place designated for receipt of Bids;

- Printing it from the Bid Booklet on the City of Sherwood website, filling it out and submitting it separately to the address given in the Bid Booklet; or

Subcontractor Disclosure Forms submitted will be considered late if not received by the City of Sherwood within 2 working hours of the time designated for receiving Bids.

In the event that multiple Subcontractor Disclosure Forms are submitted, the last version received prior to the deadline will be considered to be the intended version.

Bids not in compliance with the requirements of this Subsection will be considered non-responsive.

Delete the text of the following subsection and replace as noted:

00120.45 Submittal of Bids:

(b) Electronic Bids -

No Electronic Bids will be accepted for this project.

Modify the text of the following subsection as noted:

00120.60 Revision or Withdrawal of Bids:

(a) Paper Bids - Information entered into the paper Bid Booklet by the Bidder may be changed after the paper Bid has been delivered to the appropriate location, provided that:

- Changes are prepared according to the instructions identified in the Bid Booklet; and
- Changes are received at the same offices, addresses, and times identified in the paper Bid Booklet for submitting Bids; and
- The changes are submitted in writing and signed by an individual authorized to sign the Bid.

A Bidder may withdraw its paper Bid after it has been delivered to the appropriate location, provided that:

- The written withdrawal request is submitted on the Bidder's letterhead by hand delivery and
- The request is signed by an individual who is authorized to sign the Bid, and proof of authorization to sign the Bid accompanies the withdrawal request; and
- The request is received at the same offices, addresses, and times identified in the paper Bid Booklet for submitting Bids.
- No Bid may be withdrawn after the deadline for submitting Bids has passed.

Delete the text of the following subsection and replace as noted:

00120.60 Revision or Withdrawal of Bids:

(b) Electronic Bids -

No Electronic Bids will be accepted for this project.

Modify the text of the following subsection as noted:

00120.70 Rejection of Nonresponsive Bids - A Bid will be considered irregular and will be rejected if the irregularity is deemed by the Agency to render the Bid non-responsive.

Examples of irregularities include, without limitation:

- The Bid has entries not typed or in ink, or has signatures or initials not in ink
- The Bid is submitted on documents not obtained directly from the City of Sherwood or from the City of Sherwood website or a plan holder center
- The agency determines that any Pay Item is significantly unbalanced to the potential detriment of the agency.

The Agency may reject any or all Bids due to irregularities or may waive irregularities not affecting substantial rights in accordance with OAR 137-049-0350 upon a finding of the Agency that it is in the public interest to do so.

Delete the following subsection in its entirety:

SECTION 00130 - AWARD AND EXECUTION OF CONTRACT

Comply with Section 00130 of the Standard Specifications modified as follows:

Delete the text of the following subsection and replace with the following:

00130.15 Right to Protest Award:

Adversely affected or aggrieved Bidders, limited to the three apparent lowest Bidder, may submit to the City of Sherwood a written protest of the City's Intent to Award within seven (7) calendar days following the date of the Notice of Intent to Award. The protest shall specify the grounds upon which it is based.

An aggrieved Bidder may protest an award only if the Bidder alleges, in its written protest, that it should have received the award because:

- All lower Bids are non-responsive;
- The Agency failed to conduct the Bid process as described in the Bid document;
- The Agency has abused its discretion in rejecting the protestor's Bid as non-responsive or non-responsible; or
- The Agency's evaluation of Bids or subsequent determination of award is otherwise in violation of ORS Chapter 279C or the Agency's public contracting rules.

The written protest must describe the facts that support the protest. The Agency may not consider late protests or protests that do not describe facts that would support a finding that the Bidder is aggrieved for one of the reasons cited above.

Delete the second paragraph of the following subsection and replace with the following:

00130.40 Contract Bonds, Certificates, and Registrations –

(b) Certificates of Insurance

For this Contract, the Agency may request at any time a certified copy of any insurance policy that this Contract requires and Contractor will provide same at its sole cost within ten (10) days of Agency's request.

Add the following Subsection:

00130.40 Contract Bonds, Certificates, and Registrations -

(f) State of Oregon Statutory Public Works Bond

As particularly described in 00170.20, when awarded the contract, the successful Bidder shall furnish a State of Oregon Statutory Public Works Bond.

SECTION 00140 - SCOPE OF WORK

Comply with Section 00140 of the Standard Specifications supplemented and/or modified as follows:

Add the following Subsection:

00140.31 As-Built Records – Contractor shall maintain a current and accurate record of the work completed during the course of this contract. This may be in the form of “as-built” drawings kept by accurately marking a designated set of the contract plans with the specified information as the Work proceeds.

Accurate, complete and current “as-built” drawings are a specified requirement for full payment of the work completed. At project completion and as a condition of final payment, the Contractor shall deliver to the Project Manager a complete and legible set of “as-built” drawings.

The “as-built” drawings must show the information listed below. Where the term “locate” or “location” is used, it shall mean record of position with respect to both the construction vertical datum and either construction horizontal datum or a nearby permanent improvement.

1. Record location of underground services and utilities as installed.
2. Record location of existing underground utilities and services that are to remain and that are encountered during the course of the work.
3. Record changes in dimension, location, grade or detail to that shown on the plans.
4. Record changes made by change order
5. Record details not in the original plans
6. Provide fully completed shop drawings reflecting all revisions

Add the following text to the following subsection:

00140.70 Cost Reduction Proposals –

Unless otherwise agreed to in writing by the Agency, a proposal that is solely or primarily a proposal to reduce estimated quantities or delete Work, as determined by the Engineer, is not eligible for consideration as a cost reduction proposal and will instead be addressed under 00140.30, whether proposed or suggested by the Agency or the Contractor.

Proposed changes by the Agency are not eligible for consideration as a cost reduction proposal and will instead be addressed under 00140.30.

Add the following bulleted item to the following subsection:

00140.90 Final Trimming and Cleanup

- Removal and clean-up of erosion and sediment controls facilities, once vegetation is established on disturbed areas of Project Site and the Project Site has been stabilized.

SECTION 00150 - CONTROL OF WORK

Comply with Section 00150 of the Standard Specifications supplemented and/or modified as follows:

Delete the text of the following subsection and replace with the following:

00150.10 Coordination of Specifications and Plans –

(a) Order of Precedence - The Engineer will resolve any discrepancies between these documents in the following order of precedence:

- Contract Change Orders;
- Permits from governmental agencies;
- Addenda
- Special Provisions;
- Contract Agreement
- Agency-prepared drawings specifically applicable to the Project and bearing the Project title;
- Reviewed and accepted, stamped Working Drawings;
- Standard Drawings;
- Approved Unstamped Working Drawings;
- Supplemental Specifications/Special Provisions;
- Standard Specifications; and
- All other contract documents not listed above.

Notes on a drawing shall take precedence over drawing details.

Dimensions shown on the drawings, or that can be computed, shall take precedence over scaled dimensions.

Delete the text of the following subsection and replace with the following:

00150.15 Construction Stakes, Lines and Grades

The Contractor shall establish all field controls for the project and furnish all principal lines, grades, and measurements necessary for the completion of the Work by hiring a licensed professional surveyor in the State of Oregon at his/her expense. An electronic copy of the base drawing will be available for the construction staking of this project. All necessary calculations for staking shall be provided by the Contractor's surveyor. All stakes damaged or removed shall be replaced, as needed, at no cost to the City.

The Contractor shall inform the Engineer of any property corners, monuments and/or survey markers found during construction activities that are not shown on the plans. The Contractor shall not bury or disturb any property corners, monuments and/or survey markers.

Add the following text to the following subsection as noted:

00150.35 Plans and Working Drawings:

(d)(1) Stamped Working Drawings –

Stamped Working Drawings will be designated as "reviewed and accepted" or "reviewed with comments" by the Engineer.

Delete the text of the following subsection and replace with the following:

00150.40 Cooperation and Superintendence by the Contractor –

The Contractor is responsible for full management of all aspects of the Work, including superintendence of all Work by Subcontractors, Suppliers, and other providers. The Contractor shall appoint a single Superintendent and may also appoint alternate Superintendents as necessary to control the Work. The form of appointment of the alternate

shall state, in writing, the alternate's name, duration of appointment in the absence of the Superintendent, and scope of authority. The Contractor shall:

- (a) Provide for the cooperation and superintendence on the Project by:
- (1) Furnishing the Engineer all data necessary to determine the actual cost of all or any part of the Work, added Work, or changed Work.
 - (2) Allowing the Engineer reasonable access to the Contractor's books and records at all times. To the extent permitted by public records laws, the Engineer will make reasonable efforts to honor the Contractor's request for protection of confidential information.
 - (3) Keeping one complete set of Contract Documents on the Project Site at all times, available for use by all the Contractor's own organization, and by the Engineer if necessary.
 - (4) Appoint a single Superintendent and any alternate Superintendent who shall meet the following qualifications:
 - a. Appointees shall be competent to manage all aspects of the Work.
 - b. Appointees shall be from the Contractor's own organization.
 - c. Appointees shall have performed similar duties on at least one previous project of the size, scope and complexity as the current Contract.
 - d. Appointees shall be experienced in the types of Work being performed.
 - e. Appointees shall be capable of reading and thoroughly understanding the Plans and Specifications.
 - f. The appointed single Superintendent, or any alternate Superintendent shall:
 1. Be present for all On-Site Work, regardless of the amount to be performed by the Contractor, Subcontractors, Suppliers, or other providers, unless the Engineer provides prior approval of the Superintendent's or alternate Superintendent's absence.
 2. Be equipped with a two way radio or cell phone capable of communicating throughout the project during all the hours of Work on the Project Site and be available for communication with the Engineer.
 3. Have full authority and responsibility to promptly execute orders or directions of the Engineer.
 4. Have full authority and responsibility to promptly supply the Materials, Equipment, labor, and Incidentals required for performance of the Work.
 5. Coordinate and control all Work performed under the Contract, including without limitation the Work performed by Subcontractors, Suppliers, and Owner Operators.
 6. Diligently pursue progress of the Work according to the schedule requirements of Section 00180.
 7. Cooperate in good faith with the Engineer, Inspectors, and other contractors in performance of the Work.
 8. Provide all assistance reasonably required by the Engineer to obtain information regarding the nature, quantity, and quality of any part of the Work.
 9. Provide access, facilities and assistance to the Engineer in establishing such lines, grades and points as the Engineer requires.
 10. Carefully protect and preserve the Engineer's marks and stakes.

Any Superintendent or alternate Superintendent who repeatedly fails to follow the Engineer’s written or oral orders, directions, instructions, or determinations, shall be subject to removal from the project.

If the Contractor fails or neglects to provide a Superintendent, or an alternate Superintendent, and no prior approval has been granted, the Engineer has the authority to suspend the Work according to 00180.70. Any continued Work by the Contractor, Subcontractors, Suppliers, or other providers may be subject to rejection and removal. The Contractor’s repeated failure or neglect to provide the superintendence required by these provisions constitutes a material breach of the Contract, and the Engineer may impose any remedies available under the Contract, including but not limited to Contract termination.

Delete the text of the following subsection and replace with the following:

00150.50 Cooperation with Utilities:

(b) Agency Responsibilities –

The contractor shall coordinate with franchise utility companies for any installation of new franchise utility facilities and any connection to existing franchise utility facilities.

The appropriate franchise utility company shall be contacted if any conflicts occur with the franchise utility during construction.

Utility Information - Contact those utilities having buried facilities and request that they locate and mark them for their protection prior to construction. The Utilities notification system telephone number is 811 or (800) 332-2344.

The following organizations may be adjusting utilities within the limits of this project during the period of the Contract:

Utility Representatives			
	Utility	Representative	Telephone
1.	PGE	Colby Hollingsworth	(503)963-6928
2.	NW Natural	Ryan Winfree	(503)226-4211
3	Sherwood Broadband	Brad Crawford	(503)625-4203
4.	Comcast	Mitch Burghlea	(503)798-5785
6.	City of Sherwood	Rich Sattler	(503)925-2319
7.	Zipty Fiber	Scott Binney	(503)643-0371

Add the following text to the following subsection as noted:

00150.95 Final Acceptance

Once the construction work is complete, all systems are operable, and final inspection discloses no deficiencies or inconsistencies with the Work as provided in the Contract Documents, the following documentation shall be delivered to the Engineer prior to issuing of Third Notification:

- Special guarantees and bonds;
- Separate waivers of liens for subcontractor, supplies, and other with lien rights against property of owner;
- Final pay estimate;
- Releases from BOLI;

- Evidence that the Maintenance Bond will remain in effect for two years following the date of Final Acceptance;
- Red-lined as-built drawings showing locations of all improvements constructed as part of this project.

Add the following text to the following subsection as noted:

00150.96 Maintenance Warranties and Guarantees

The Contractor shall provide a 10% Maintenance Bond for a period of two (2) years from the date of final acceptance by the Agency. A surety licensed to do business as a surety in the state of Oregon shall provide the Maintenance Bond.

The acceptance by the Contractor of final payment shall be and shall operate as a release to the Agency of all claims and all liability to the Contract other than claims in stated amounts as may be specifically excepted by the Contractor in writing prior to the request for final payment for all things done or furnished in connection with this work and for every act and neglect of the Agency and its agents and others relating to or arising out of this work. However, any payment, final or otherwise, or any acceptance, shall not release the Contractor or its sureties from any obligations under the Contract Documents or the Performance and Payment Bonds or diminish the Agency's rights under the guaranty provisions.

In addition to and not in lieu of any other warranties required under the Contract make all necessary repairs and replacements to remedy, in a manner satisfactory to the Engineer and at no cost to the Agency, any and all defects, breaks, or failures of the Work occurring during the specified warranty period due to faulty or inadequate materials or workmanship. Repair damage or disturbance to other improvements under, within, or adjacent to the Work, whether or not caused by settling, washing, or slipping, when such damage or disturbance is caused, in whole or in part, from activities of the Contractor in performing his duties and obligations under this Contract when such defects or damage occur within the warranty period. The required two-year maintenance period shall, with relation to such required repair, be extended one year from the date of completion of such repair when the repair occurs after the first year of the warranty period.

If Contractor, after written notice, fails within ten days to proceed to comply with the terms of this section, Agency may have the defects corrected, and Contractor and Contractor's Surety shall be liable for all expense incurred. In case of an emergency where, in the opinion of the Engineer, delay would cause serious loss or damage, repairs may be made without notice being given to Contractor and Contractor or Surety shall pay the cost of repairs. Failure of the Engineer to act in case of an emergency shall not relieve Contractor or Surety from liability and payment of all such costs.

SECTION 00160 - SOURCE OF MATERIALS

Comply with Section 00160 of the Standard Specifications modified as follows:

00160.01(a) All Materials - Delete the paragraph that begins "The Contractor shall identify if the material source..."

Delete the paragraph that begins "For this purpose..."

00160.07 Electrical Equipment and Materials - Add the following to the end of the paragraph that begins "When the contract specifies the use of the Blue Sheets and Green Sheets...":

Use of products listed on the Blue Sheets and Green Sheets is limited to those products that also meet any specified requirements shown on the Plans or listed in the Special Provisions.

00160.20(a) Buy America - Delete this subsection.

00160.30 Agency-Furnished Material - Add the following to the end of this subsection:

The Agency will furnish the listed items at the Sherwood Public Works 15527 SW Willamette St, Sherwood, Oregon:

<u>QTY</u>	<u>Equipment</u>
1	Model 2070 Intelight LDX ATC controller
1	Model 332S cabinet with riser frame
1	Base Mounted Service Cabinet 120/240 Service with Illumination
2	Traffic Signal Pole & Mast Arm WCSM3L
2	Pedestrian Signal Pedestal with Frangible Base
2	Illumination Westbrooke Pole
2	Illumination Arm
2	Speed Feedback Pole and Sign Assembly
6	Type 10 Vehicle Signal Head Assemblies (3 flashers each)
2	Pedestrian Signal
2	Cobra Head LED Luminaire
2	Hadco Westbrooke LED Luminaire
1	Photoelectric Control Relay
2	Fire Preemption Detector Unit
1	Conflict Monitor
1	Load Switch
1	Flasher
1	Isolator

Add the following to the end of this subsection:

The Contractor shall return the Agency-furnished items to the Sherwood Public Works Yard:

- Illumination pole and globe

SECTION 00165 - QUALITY OF MATERIALS

Comply with Section 00165 of the Standard Specifications.

SECTION 00170 - LEGAL RELATIONS AND RESPONSIBILITIES

Comply with Section 00170 of the Standard Specifications modified as follows:

Add the following text to the following subsection as noted:

00170.70(a) Insurance Coverages –

The following insurance coverages and dollar amounts are required pursuant to this subsection:

Insurance Coverages	Combined Single Limit per Occurrence	Annual Aggregate Limit
Commercial General Liability	\$2,000,000.00	\$2,000,000.00
Commercial Automobile Liability	\$2,000,000.00	\$2,000,000.00

Add the following text to the following subsection as noted:

00170.70(c) Additional Insured –

Add the following as Additional Insureds under the Contract:

- The City of Sherwood and its officers, agents, and employees.
- Sherwood City Council.
- Kittelson & Associates

Add the following text to the following subsection as noted:

00170.72 Indemnity/Hold Harmless –

Extend indemnity and hold harmless to the Agency and the following:

- The City of Sherwood and its officers, agents, and employees.
- Sherwood City Council.
- Kittelson & Associates, Inc.

SECTION 00180 - PROSECUTION AND PROGRESS

Comply with Section 00180 of the Standard Specifications modified as follows:

Delete the following subsection:

00180.20(a) – Subcontracting Limitations, General

Delete the following text in the following subsection:

00180.21 Subcontracting:

- (a) **General** - The Contractor shall not subcontract or perform any portion of the Contract by other than the Contractor's own organization without the Agency's prior written consent. A request for consent to subcontract, at any tier, solely for the furnishing of a labor force will not be considered.

A written request for consent to subcontract any portion of the Contract at any tier shall be submitted to the Engineer, and when required by the Engineer, shall be accompanied by background information showing that the organization proposed to perform the Work is experienced and equipped for such Work. The Agency will review the Contractor's submission to verify compliance with Contract requirements, confirm the percentage of Work subcontracted, and evaluate the proposed Subcontractor's ability to perform the Work.

Add the following bulleted items to the following subsection:

00180.40 Limitation of Operations:

(a) **In General –**

- Limited hours of construction between 8:00 AM until 6:00 PM, Monday through Friday. Except as otherwise noted in the Bid Drawings.
- Construction is prohibited on Saturdays and Sundays without prior written approval from the Engineer.
- Construction activities include all field maintenance of equipment, refueling, and pick-up and delivery of equipment, as well as actual construction activities.
- Construction vehicles shall park on the construction site at location(s) approved by the Agency. Contractor parking shall not interfere with the everyday operations of the surrounding area.
- Provide the Agency Project Manager with a 24-hour emergency contact person's name and telephone number.

Add the following subsection:

00180.40(c) Specific Limitations –

Limitations of operations specified in these Special Provisions include, but are not limited to, the following:

Limitations	Subsection
Cooperation with Utilities.....	00150.50
Contract Completion Time.....	00180.50(h)
Traffic Lane Restrictions.....	00220.40(e)

Add the following text to the following subsection:

00180.41 Project Work Schedules:

The Contractor shall submit a supplemental "look ahead" Project Work schedule each week to the Engineer. The "look ahead" Project Work schedule is supplemental to the Type A, B, or C schedule specified below. The supplemental "look ahead" Project Work schedule shall:

- Identify the sequencing of activities and time required for prosecution of the Work.
- Provide for orderly, timely, and efficient prosecution of the Work.
- Contain sufficient detail to enable both the Contractor and the Engineer to plan, coordinate, analyze, document, and control their respective Contract responsibilities.

The supplemental "look ahead" Project Work schedule shall be written in common terminology and show the planned Work activities broken down into logical, separate activities by area, stage, and size and include the following information:

- The resources the Contractor, subcontractors, or services will use.
- The locations of each activity that will be done including the limits of the work by mile posts, stations, or other indicators.
- The time frames of each activity by Calendar Days, shifts, and hours.
- All anticipated shoulder, lane, and road closures.

At a minimum, the Contractor shall prepare a bar chart that:

- Shows at least three weeks of activity including the week the bar chart is issued.
- Uses a largest time scale unit of one Calendar Day. Smaller time scale units may be used if needed.
- Is appropriate to the activities.
- Identifies each Calendar Day by month and day.

Include the Contract name, Contract number, Contractor's name, and date of issue on each page of the bar chart.

The Contractor shall submit the supplemental "look ahead" Project Work schedule starting at First Notification and continuing each week until Second Notification has been issued and all punch list items and final trimming and clean up has been completed. The Contractor shall meet with the Engineer each week to review the supplemental "look ahead" Project Work schedule. If the Engineer or the Contractor determines that the current supplemental "look ahead" Project Work schedule requires changes or additions, either notations can be made on the current schedule or the Engineer may require the submittal of a revised supplemental "look ahead"

Project Work schedule. Review of the current and subsequent supplemental "look ahead" Project Work schedules does not relieve the Contractor of responsibility for timely and efficient execution of the Contract.

A Type "B" schedule as detailed in the Standard Specifications is required on this Contract.

Add the following text to the following subsection:

180.41(b)(2) Detailed Schedule -

The Contractor shall submit an updated project work schedule with all pay requests unless approved otherwise in writing by the Engineer. Payments to the Contractor may be held or delayed until an updated schedule has been received.

The Project Work schedule shall also address the sequencing of critical activities and shall identify the critical path for the project, critical milestones in accomplishing the work and fixed completion dates for those milestones.

Add the following subsection:

00180.41(b)(4) Weekly Schedule – Submit a weekly progress schedule to Engineer at each weekly meeting. At a minimum, the schedule shall include the following:

- Actual work completed during the previous week alongside the previously submitted weekly schedule;
- Any lane closures or access restrictions expected within the next two weeks;
- Work to be completed during the current week;
- Tentative work to be completed during the second week;
- Summary of any work elements shown on the schedule which fall behind the current overall project schedule and a summary of corrective actions that the Contractor will utilize to regain the overall project schedule.

Add the following subsection:

00180.41(b)(5) Customer Service Element to Construction Schedule – Construction will be executed with the highest level of customer service. Critical to that effort is planning of work sequence to minimize disruption and inconvenience to residents and commuter traffic. As a supplement document to the Contractor's construction schedule, the contractor shall submit, prior to the pre-construction conference, a plan to the Engineer that identifies: construction sequencing and timing, expected disruptions to residents, and a public safety plan that explains procedures on how the Contractor will maintain safe continuous ingress and egress for pedestrians and vehicular traffic including personal use by residents, mail and newspaper delivery, garbage collection and other daily deliveries, as applicable.

Delete the text of the following subsection and replace as follows:

00180.42 Preconstruction Conference:

Within three (3) working days of the Notice to Proceed, the Contractor is required to contact the Agency to schedule the preconstruction conference.

In addition to the Contractor, the intended project superintendents, subcontractor foremen and major suppliers – those who will actually be involved in construction activities – should attend the preconstruction conference. The Contractor must be prepared for a thorough discussion and review, as well as revision, which may be deemed necessary in the opinion of the Engineer, of the following:

(Note: These materials SHALL be brought to the preconstruction conference for discussion followed by Engineer review. Some items may also require submittal in advance of the preconstruction meeting per the specifications.)

- Contractor's plan of operation and progress schedule (3+ copies)
- List of 24 hour emergency phone numbers for the project manager, site foreman, and traffic control supervisor
- List of subcontractors, names, addresses and phone numbers
- List of quality control subcontractor(s), name(s), address(s) and phone number(s)
- List of materials fabricated or manufactured off the project
- Material sources for the project
- Names of principal suppliers
- Detailed equipment list
- "Project Labor List" for all employee classifications anticipated to be used on project
- Cost percentage breakdown for lump sum bid item(s)
- Shop drawings (bring preliminary list)
- Traffic Control Plans (3+ copies)
- Erosion and Sediment Control Plan (3+ copies)
- Pollution Control Plan (3+ copies)
- Proposed site for waste material disposal and any necessary permits required for placing this material
- Proposed truck haul route

During the preconstruction conference, be prepared to discuss the following items:

- Bonds and Insurance
- Weekly project meetings – schedule and responsibilities
- Provision for inspection for materials from outside sources
- Responsibility for locating utilities
- Responsibility for damage
- Time schedule for relocations, if by other than Contractor (coordinate with utilities)
- Compliance with Contract Documents
- Hours of work
- Acceptance and approval of work
- Labor compliance, payrolls, and certifications
- Safety regulations for Contractor's and Owner's employees and representatives
- Suspension of work, time extensions
- Change order procedures
- Progress estimates – procedures for payment
- Special requirements of funding agencies
- Construction engineering, advance notice of special work
- Any interpretation of the Contract Documents requested by the Contractor
- Any conflicts or omissions in the Contract Documents
- Any other problems or questions concerning the work
- Processing and administration of public complaints
- Right-of-way, Easements and Temporary Construction Easements

In addition to the preconstruction conference, the City reserves the right to require the Contractor to attend a construction kick-off public open house/presentation wherein the Contractor shall be prepared to present and discuss all elements of the project's construction with the general public.

Add the following Subsection:

00180.50(h) Contract Time –

All Work under the contract, except landscape planting and vegetation establishment, must be completed by August 28, 2025. All work under the contract must be complete by October 31, 2025.

Work on this project may not commence until after the contract is signed by both the contractor and the City. City Council approval is required prior to the City Manager signing the contract. City Council approval of the resolution for the City Manager to sign the contract is anticipated to occur at the June 3, 2025 City Council Meeting. Since this project is being bid on the same day as the City Council Meeting, the one week protest period will need to be complete in order to sign contracts.

Add the following text to the following subsection:

00180.85(b) Liquidated Damages –

The liquidated damages for failure to complete the Work on time required by 00180.50(h) will be \$800 per Calendar Day.

Delete the following subsection:

00180.85(b)(1) Single Contract Time

Delete the following subsection:

00180.85(b)(2) Multiple Contract Times

SECTION 00190 - MEASUREMENT OF PAY QUANTITIES

Comply with Section 00190 of the Standard Specifications modified as follows:

Delete the text of the following subsection and replace with the following:

00190.20(g) Agency-Provided Weigh Technician –

The Agency will not provide for a weigh technician. The Contractor shall provide, and pay for, a weigh technician for a vehicle weigh scale. The Contractor's weigh technician will:

- Determine tare weights;
- Prepare weigh memos for each load;
- Compile the weigh records; and
- Not participate in the production of Materials or the loading of haul vehicles.

SECTION 00195 - PAYMENT

Comply with Section 00195 of the Standard Specifications modified as follows:

Delete the text from the following subsection and replace with the following:

00195.12 Steel Materials Price Escalation/De-Escalation Cause - No Pay Items under this Contract qualify for the steel escalation/de-escalation program for this Project.

Delete text from the following subsection as noted:

00195.50(c) Forms of Retainage

- (1) **Cash, Alternate A** - Retainage will be deducted from progress payments and held by the Agency until final payment is made according to 00195.90, unless otherwise

specified in the Contract.

The Agency will deposit the cash retainage withheld in an interest-bearing account in a bank, savings bank, trust company, or savings association for the benefit of the Agency, as provided by ORS 279C.560(5). Amounts retained will be included in the final payment made according to 00195.90.

Any retainage withheld on Work performed by a Subcontractor will be released to the Contractor according to 00195.50(d).

Modify the third paragraph from the following subsection as noted:

Add the following subsections as follows:

00195.90 Final Payment

(d) The Contractor shall maintain a current and accurate record of the work completed during the course of this contract. These “as-built” drawings shall be kept by accurately marking a designated set of the contract Plans with the specified information as work proceeds. Accurate, complete and current “as-built” drawings are a specified requirement for full or partial payment of the work completed. At project completion and as a condition of final payment, the Contractor shall deliver an acceptably complete and legible full-size set of “as-built” drawings to Agency.

The “as-built” drawings must show the information listed below. Where the term “locate” or “location” is used, it means a record of position with respect to both the construction vertical datum and either horizontal datum or a nearby permanent improvement.

- Record location of underground services and utilities as installed.
- Record location of existing underground utilities and services that are to remain and that are encountered during the course of the work.
- Record changes in dimensions, location, grade or detail to that shown on the Plans.
- Record changes made by change order.
- Record details not in the original Plans.
- Provide fully completed shop drawings reflecting all revisions.

(e) Notwithstanding any contrary language in the Contract Documents, Contractor’s acceptance of the final payment will release Agency and the Engineer from all claims and all liability to the Contractor for all things done or furnished in connection with the Work, and every act of the Agency and others relating to or arising out of the Work. The Contractor’s acceptance of final payment is conclusive proof of Agency’s full performance under the Contract. If Agency requests, Contractor will sign a release stating Contractor has been paid in full prior to the final payment. No payment, final or otherwise, will operate to release the Contractor or the Contractor’s sureties from obligations under the Contract and will not affect the continuing validity and enforceability of the performance, payment and other bonds and warranties provided pursuant to the Contract.

SECTION 00196 - PAYMENT FOR EXTRA WORK

Comply with Section 00196 of the Standard Specifications.

SECTION 00197 - PAYMENT FOR FORCE ACCOUNT WORK

Comply with Section 00197 of the Standard Specifications.

SECTION 00199 - DISAGREEMENTS, PROTESTS, AND CLAIMS

Comply with Section 00199 of the Standard Specifications modified as follows:

Add the following text to the following subsection:

00199.20 Protest Procedure –

Written Notice – The Engineer has no responsibility to evaluate the protest unless the Contractor has timely filed a proper notice submitting all of the above information. Failure to comply with this notice requirement renders the notice improper and shall constitute a waiver of any claim for additional compensation for any part of the protested work.

00199.20 Protest Procedure –

Add the following subsection:

00199.30 Claims Procedure –

(e) Payment of Costs, Expenses and Attorney’s Fees –

Each party is responsible for its own costs, expenses and attorney’s fees in the event of litigation.

Add the following text to the following subsection:

00199.40(b) Step 1: Region Level Review

For the purposes of this Contract, the “Region-level reviewer” is Agency’s Public Works Director.

Modify the text of the following subsection as noted:

00199.40(c) Step 2: Agency Level Review

For the purposes of this Contract, the “Contract Administration Engineer” is the Agency’s City Manager.

If the Contractor does not accept the Step 2 decision, the Contractor may, within 10 Calendar Days of receipt of the written decision, request in writing through the Engineer that the claim be advanced to Step 3

Delete the following subsection and replace with the following:

00199.40(d) Step 3: Litigation – This step applies to any claim that is not resolved under Steps 1 or 2.

The Contractor must follow Steps 1 and 2 in order, and exhaust all available administrative remedies, before resorting to litigation. The Contractor must properly file a lawsuit in a court of competent jurisdiction within six months from the date of the final decision that exhausted the Contractor’s administrative remedies under this Contract.

In any litigation, the entire text of any order or permit issued by a governmental or regulatory body, as well as any documents referenced or incorporated by reference therein, will be admissible for the purpose of Contract interpretation.

The Contract or any of its provisions will not be construed against either party regardless of who drafted it. Other than as may be modified by the Contract, the applicable rules of contract construction and evidence will apply. The Contract will be governed by and construed in accordance with Oregon law without regard to conflict of laws principles.

Any dispute between the Agency and the Contractor that arises from or relates to the Contract and that is not resolved under Section 00199 may only be brought and must be conducted solely and exclusively in the Circuit Court for the State of Oregon, Washington County. If a dispute must be brought in a federal forum, then it may only be brought and conducted solely and exclusively in the United States District Court for the State of Oregon. To the maximum extent permitted by law, the dispute will be tried to a court without a jury and will not be subject to mandatory arbitration. In no event will this Subsection be construed as a waiver by the Agency of any form of defense or immunity, whether sovereign immunity, governmental immunity, immunity based on the Eleventh Amendment to the United States Constitution, from any claim or from the jurisdiction of any court. Contractor consents to the personal jurisdiction of the courts referenced herein.

In any dispute between the Agency and the Contractor that arises from or relates to the Contract, each party is solely responsible for its own costs and fees, including attorney fees.

Delete the following subsection in its entirety.

Add the following subsection:

00199.55 Expenses, Costs and Attorney Fees – Notwithstanding any contrary language in the Contract Documents, each party will solely bear its own expenses, costs and fees, including attorney fees, throughout prosecution of the Work and including any disagreements, protests or claims, including all trials and appeals.

SECTION 00220 - ACCOMMODATIONS FOR PUBLIC TRAFFIC

Comply with Section 00220 of the Standard Specifications modified as follows:

00220.02(a) General Requirements - Replace the bullet that begins, "Do not stop or hold vehicles..." with the following bullet:

- Maintain at least one lane of traffic at all times. Do not stop or hold traffic in any one direction more than 5 minutes. Do not block driveways, intersections, or approaches. Provide reasonable access to driveways, intersections and approaches at no additional cost to the Agency.

Replace the bullet that begins, "Do not block driveways..." with the following bullet:

- Maintain safe and temporary access to driveways at all times unless otherwise authorized in writing.

Add the following bullets to the end of the bullet list:

- Do not reduce roadway width until approved according to 00220.03(c) and signed according to the approved TCP and the requirements of Section 00221 and Section 00222.
- Protect pedestrians in pole base excavation areas by placing approved covers over all pole base excavations. Place a minimum of two B(II)LR barricades adjacent to and on either side of the excavated area, facing pedestrian traffic, or place covers and barricades as directed.
- Contractor to keep one sidewalk open along SW Sunset Boulevard at all times. Pedestrian detour routing signage is to be provided by the contractor at no cost to the City. Removed sidewalk ramps shall be replaced within one work week. When sidewalk ramp at south corner of SW Sunset Boulevard and SW Timbrel Drive is under construction, contractor will need to provide pedestrian detour signage to get pedestrians to the cul-de-sacs at SW Colfelt Lane and SW Voss Place.

00220.40(e)(1) Closed Lanes - Replace the bulleted list with the following:

- Arterial Roadways:
 - Monday through Thursday
 - Before 6:30 a.m. (upon City approval)
 - Between 9:00 a.m. and 3:30 p.m.
 - After 6:00 p.m. (upon City approval)
 - Friday before 6:30 a.m.(upon City approval), and between 9:00 a.m. and 3:00 p.m.
 - The following are arterial Roadways:
 - Sunset Blvd
- Collector Roadways:
 - Monday through Thursday
 - Before 7:00 a.m. (upon City approval)
 - Between 8:30 a.m. and 4:00 p.m.
 - After 6:00 p.m. (upon City approval)
 - Friday before 7:00 a.m. (upon City approval), and between 9:00 a.m. and 3:00 p.m.
 - The following are collector Roadways:
 - Timbrel Street

One Traffic Lane may be closed on all other adjacent Roadways within the Project Site not listed above, when allowed, shown, or directed during the following periods of time except as specified in 00220.40(e)(2):

- Daily, Monday through Thursday, between 9:00 a.m. and 4:00 p.m.
- Friday, between 9:00 a.m. and 3:00 p.m.
- Nightly, Sunday night through Friday morning, between 6:00 p.m. and 7:00 a.m. (upon City approval)

Add the following subsection:

00220.40(i) Illumination Restrictions - Protect existing illumination systems such that they continue to operate until a replacement illumination system is operational. Do not remove existing illumination systems or equipment until a replacement illumination system is installed

and approved by the Engineer. Contractor may elect to use temporary illumination as a replacement illumination system, at no additional cost to the Agency.

SECTION 00221 - COMMON PROVISIONS FOR WORK ZONE TRAFFIC CONTROL

Comply with Section 00221 of the Standard Specifications modified as follows:

00221.06 Traffic Control Plan - Replace this subsection with the following subsection:

00221.06 Traffic Control Plan and Tourist-Oriented Directional and Business Logo Signs – :

(a) Traffic Control Plan - Submit one of the following, 5 Calendar Days before the preconstruction conference:

(1) Agency Traffic Control Plan - If the Contractor intends to use the Agency TCP without modification, a written notification indicating that the Agency TCP will be used without modification.

(2) Contractor-Modified Traffic Control Plan - The Contractor may request to use a Contractor-modified Agency TCP, or a TCP developed by the Contractor. Do not use a modified TCP, or a TCP developed by the Contractor, unless approved by the Engineer. Use the Agency TCP unless a modified TCP, or a TCP developed by the Contractor is accepted.

The Engineer is not obligated to consider any modified Agency TCP or a TCP developed by the Contractor. The Agency will not be liable to the Contractor for failure to accept or act upon any request for a modified Agency TCP or a TCP developed by the Contractor.

To conserve time and funds, the Contractor may first submit a written request for a preliminary review by the Engineer. The request should contain a description of the proposal together with a rough estimate of anticipated dollar and time impacts. The Engineer will, within a reasonable time, respond to the Contractor in writing whether or not the request would be considered by the Agency.

If requesting a Contractor-modified Agency TCP, or a TCP developed by the Contractor, at a minimum the request shall meet all requirements of the Contract documents and comply with the Project transportation management plan (TMP). The Contractor Modified Traffic Control Plan shall maintain the minimum number of Travel Lanes shown in the Agency's TCP. Provide the following information:

- Working Drawings according to 00150.35 that include the proposed TCP showing all TCM and quantities of TCD.
- A TPAR plan that includes:
 - Details and features used to provide pedestrian accessibility.
 - Pedestrian staging Plans at a scale no smaller than 1 inch = 50 feet.
 - Temporary alternate facilities or detour routes for pedestrian traffic.
- Staging sequences and details for Work affecting vehicular, pedestrian, and bicycle traffic.
- Proposed order and duration of the TCM.
- A detailed temporary striping plan.

If the Contractor's request to use a Contractor-modified Agency TCP, or a TCP developed by the Contractor is approved in whole or in part, acceptance will be made by a Change Order.

The Engineer will establish prices that represent a fair measure of the value of Work to be added, changed, or deleted as a result of any accepted modifications to the Agency TCP or an accepted TCP developed by the Contractor.

Once a TCP has been accepted by the Engineer, any additional modifications must be submitted by the Contractor for Agency review following the procedure described above. The Engineer is not obligated to consider additional modifications to a previously approved TCP.

00221.90(b) Temporary Protection and Direction of Traffic - Replace the bullet that begins "Providing, Surfacing, maintain..." with the following bullet:

- Providing, surfacing, maintaining, removing, and restoring the TPAR.

Add the following bullets to the end of the bullet list:

- Furnishing, placing, maintaining, and moving the initial sets of portable signs for flagging operations required by 00222.40(g).
- Furnishing, installing, and removing Temporary Removable Tape, Temporary Non-Removable Tape, and Temporary Non-Reflective Tape, as applicable.
- Furnishing, placing, maintaining, moving, and removing pole base excavation covers.
- Placing, maintaining, moving and removing temporary TriMet bus shelters at designated TriMet bus stops and temporary pedestrian shuttle stops.

SECTION 00222 – TEMPORARY TRAFFIC CONTROL SIGNS

Comply with Section 00222 of the Standard Specifications modified as follows:

00222.40(a)(2) Regulatory Speed Zone Signs - Delete the words "State Traffic" from the first paragraph.

00222.40(e) Temporary Sign Placement - Add the following to the end of the bullet list:

- At least ten Calendar Days before closing the sidewalk, place a "SIDEWALK CLOSED, Full Time" (CW11-4) sign in advance of each future closure point. Locate the sign so it is legible from the nearest alternate pedestrian pathway facing incoming pedestrian traffic. The sign may be mounted between the panels of a Type II barricade or on a single-post TSS. Do not place the sign or sign support such that it narrows the pedestrian pathway to a width of less than 4 feet.
- Before opening the TPAR, place TPAR signing and other TCM as shown, or as directed. Maintain the "SIDEWALK CLOSED, Full Time" (CW11-4) signs while the TPAR is open to pedestrian traffic.
- Install "ROAD WORK AHEAD" (W20-1-48) post-mounted signs with "FINES DOUBLE" (R2 6 36) rider on _____, according to the "TCD Spacing Table" shown on the Standard Drawings or as modified by the supplemental drawings.
- Install beyond each end of the Project, facing outgoing traffic, an "END ROAD WORK" (CG20 2A 24) sign a distance of $(A \div 2)$ according to the "TCD Spacing Table" shown on the Standard Drawings or as modified by the Supplemental Drawings.

- For each leg of the intersection affected by the new traffic signal, install the following warning signs:
 - A "Signal Ahead" (W3-3) symbol sign approximately 500 feet in advance of the intersection, shown on the Standard Drawings or as modified by the Plans.
 - A "NEW TRAFFIC PATTERN AHEAD" (W23-2) sign approximately 200 feet in advance of the "Signal Ahead" sign. Keep the "NEW TRAFFIC PATTERN AHEAD" signs in place 30 Calendar Days after installing the "Signal Ahead" sign.

00222.80(a) Area Basis -

00222.80 Measurement - Add the following to the end of this subsection:

No measurement of quantities will be made for the initial sets of portable signs for flagging operations required by 00222.40(g). Additional signs will be measured according to 00222.80(a).

The quantities for work zone traffic control measures (TCM) will be limited to the following, unless otherwise specified:

- The initial installation of quantities necessary to complete the Project based on the Contract Schedule of Items.
- The initial installation of additional TCD and TCM that the Engineer and Contractor agree are necessary to ensure a safe work zone.
- The replacement of TCD and TCM damaged by Public Traffic and replaced by the Contractor.
- The quantities approved in Contract Change Orders.

00222.80(b) Unit Basis - Delete the paragraph and bulleted list that begin "The quantities for work...".

00222.90 Payment -

Add the following to the end of this subsection:

Payment will be made for not more than 3 sets of Work Area signs. All additional sets of Work Area signs will be at no additional cost to the Agency.

No separate payment will be made for removal of temporary signs.

SECTION 00280 - EROSION AND SEDIMENT CONTROL

Comply with Section 00280 of the Standard Specifications modified as follows:

00280.00 Scope - Replace the paragraph that begins "This Work also consists of providing temporary ..." with the following paragraph:

This Work also consists of providing temporary erosion and sediment control (ESC) measures and furnishing, installing, moving, operating, maintaining, inspecting, and removing ESC throughout the Project area according to the Standard Drawings, the erosion and sediment control plan (ESCP), the Specifications, or as directed, until the site is permanently stabilized. Included also is the monitoring of weather, of stormwater and receiving waters, the reporting of monitoring observations, the reporting of corrective actions (when necessary) and the updates and revisions of the ESCP, including ESCP cover sheet, necessary to keep it representative of current site conditions.

Delete the paragraph that begins "When contaminants, pollutants or hazardous materials...".

Add the following to the end of this subsection:

The ESCP shown on the plans was developed for anticipated staging and site conditions. Prepare and submit a revised ESCP when staging or site conditions differ from that shown in the plans. Submit a revised ESCP for each proposed modification to the most current Engineer approved ESCP, and obtain Engineer approval prior to beginning Work. Engineer may require additional erosion and sediment control measures at no additional cost to the Agency in order to approve submitted methods of operations and scheduling.

The contractor is responsible for monitoring, maintenance and replacement of BMP's installed during previous construction stages for the duration of construction activities.

00280.03 Standards - Replace "ODOT Erosion and Sediment Control manual" with "Clean Water Services Design and Construction Standards".

00280.04 Erosion and Sediment Control Plan on Agency Controlled Lands - Replace the bullet that begins "Information required under 1200-CA..." with the following bullet:

- Information required, if applicable.

00280.06 Erosion and Sediment Control Manager - Delete this subsection.

Add the following to the first paragraph:

Furnish matting that does not include any plastic components.

00280.15(a) Check Dams - Replace the "Type 1: Aggregate" bulleted item with the following:

- **Type 1: Rock** - Furnish aggregate of the size shown and meeting the requirements of 00330.16. If the size is not shown, furnish aggregate sized between 4 inches maximum and 1 inch minimum.

Add the following to the bullet list:

- **Stakes** - Untreated wooden stakes with the minimum dimensions shown, or approved equal.

00280.16(a) Construction Entrances - Replace the "Aggregate" bulleted item with the following:

- **Aggregate** - Clean, durable, open graded angular aggregate sized between 6 inch maximum and 3 inch minimum with less than 5 percent of the material, by weight, passing the No. 4 sieve.

00280.16(b) Tire Wash Facility - Add the following bulleted item:

- **Concrete** - Commercial Grade Concrete meeting the requirements of Section 00440.

00280.16(c) Sediment Fence - Replace the "Posts" bulleted item with the following:

- **Posts** - Steel or untreated wood posts (stain is acceptable). Wood posts shall be from fir or pine.

00280.16(d) Inlet Protection - Add the following bulleted items:

- **CWS Type I** - Furnish wire mesh and aggregate that meet the requirements for inlet protection "Type 2".
- **CWS Type 3** - Furnish sediment fence materials in accordance with 00280.16(c).
- **CWS Type 4** - Furnish biofilter bags and stakes that meet the requirements of 00280.15(a).
- **CWS Type 5** - Furnish prefabricated filter inserts that meet the requirements for inlet protection "Type 3".
- **CWS Curb and Gutter** - Furnish fiber rolls or wattles in the materials shown that also meet the requirements of 00280.15(a). Furnish sand bags that meet the requirements of 00280.15(a). Furnish removable zip ties suitable for intended use.

00280.16(e) Sediment Barriers - Add the following:

- **Stakes** - Untreated wooden stakes with the minimum dimensions shown, or approved equal.

00280.16(k) Active Treatment System – - Add the following sentence to the end of this subsection:

Obtain approval of the active treatment system from DEQ prior to use.

Add the following subsection:

00280.16(m) Sediment Bag - Provide durable, weather resistant, non woven filter bags as shown for dewatering activities. Furnish sufficient size to filter pumped sediment laden storm water, construction runoff, and groundwater. Size and operate as recommended by the manufacturer.

00280.30 Erosion and Sediment Control Manager - Replace the paragraph that begins "If the Agency's NPDES 1200 CA Permit is applicable..." with the following paragraph and bulleted list:

Designate and provide an ESCM with the following minimum qualifications:

- Experience in all major disciplines of highway construction.
- Knowledgeable in principles of and practice of erosion and sediment controls.
- Skilled in assessing site conditions and effectiveness of erosion control ESC used.
- Successful completion of erosion control formal training sponsored by the Agency or acceptable to the Engineer.
- Responsible participation in construction of at least one Agency project with erosion control.
- Authority to immediately mobilize necessary personnel to correct and modify erosion control ESC as required.

Replace the paragraph that begins "If the Agency's NPDES 1200-CA Permit is not applicable..." with the following:

Comply with all requirements of the applicable permits.

00280.41(f) Hauling Material – - Replace this subsection, except for the subsection number and title, with the following:

Cover loads carrying soil or sediment which may generate dust. Haul saturated loads in water tight beds or drain saturated loads prior to leaving the Project Site.

00280.41(g) Underground Injection Controls (UIC) – Replace this subsection, except for the subsection number and title, with the following:

Do not allow storm water from work area to enter Underground Injection Control (UIC) inlets, UIC catch basins or UIC wells.

00280.42(a) Soil Exposure Limitations - Replace this subsection, except for the subsection number and title, with the following:

- Within Washington County (October 1 through May 31) On sites where vegetation and ground cover are removed, plant and establish vegetative ground cover by October 1 such that it will function through May 31 the following year. If ground cover is not established by

October 1, protect exposed areas through May 31 of the following year with straw mulch, erosion blankets, or other approved methods. Stabilize all areas immediately, but no later than the end of the each working shift of exposure.

- Within Washington County (June 1 through September 30) Stabilize all areas as soon as practicable. Stabilize construction areas in stages based on site conditions, weather, and as directed.

00280.42(b) Temporary Stabilization - Replace the bulleted list with the following:

- At the end of each shift during the wet season
- At the completion of each ground disturbing stage of construction when permanent erosion control BMP are not practicable to construct.
- A minimum of one Day before expected rain events.
- As an emergency measure when rain is falling on unprotected areas.
- When wind or vehicle traffic is visibly causing more than minor dust.
- At finish grade when working outside the permanent seeding dates.

Add the following subsection:

00280.46(I) Sediment Bag - Install prefabricated filter bag systems according to manufacturer's recommendations and as shown. Locate system to prevent erosion. Install system in areas which provide additional filtration. Combine with other ESC as required or directed.

00280.62 Inspecting and Monitoring – - Delete the paragraph that begins “Inspect the Project Site...”.

00280.62(a) Inspection - Replace the paragraph that begins "Perform site inspection, complete..." with the following paragraph:

Inspect the Project Site and all ESC devices for Effective Function and potential erosion or sediment movement and complete all applicable parts of the ODOT Erosion Control Monitoring Form, and submit the form to the Agency as follows:

00280.64(a) Corrective Action Timelines – - Delete the bullet that begins “If completion of corrective action is not feasible...”

Delete the bullet that begins “Provide a schedule for clean-up and corrective actions...”

Delete the bullet that begins “Provide all corrective action documentation and photographs...”

Add the following paragraph:

When only Item (a) is listed in the Contract Schedule of Items, all materials, labor and equipment required to provide and maintain erosion control is incidental to the bid item.

In the paragraph that begins "Partial payments for item (a)..." replace the last bullet that begins "At completion of the Work..." with the following bulleted item:

- At completion of the Contract and all erosion control devices are either removed from the Project site or are fully functioning as permanent ESC.....25%

Delete the paragraph that begins "In item (f)..."

In the paragraph that begins "No separate or additional payment..." add the following bulleted items:

- Providing, Installing, and maintaining all ESC materials necessary to provide Erosion control protection, including but not limited to inlet protection, silt fence, tree protection, wattles, etc.
- Removing and disposing of sediment build-up behind sediment fences and sediment barriers
- Applying dust control
- Removing and reinstalling required appurtenances to modify temporary slope drains as the embankment slopes are changed
- Removing and disposing of sediment build-up inside sediment bag
- Removing and disposing of sediment bag at project completion or when directed

SECTION 00290 - ENVIRONMENTAL PROTECTION

Comply with Section 00290 of the Standard Specifications modified as follows:

00290.20(c)(3)(f) Off-Site Disposal - Add the following to the end of this subsection:

All mixed waste generated inside the Metro region must be delivered to a Metro-authorized facility whether it is intended to be recycled or disposed. This requirement applies to all haulers and generators in the Metro region regardless of whether they use disposal facilities inside or outside of the Metro boundary. Those who generate waste and haul waste are responsible for knowing where the waste originated.

A Metro non-system license is required for delivery of construction and demolition waste to a facility not licensed, franchised, or designated by Metro.

Submit the following items at least 10 Calendar Days prior to the preconstruction conference:

- List of anticipated disposal sites
- Projected haul routes
- Anticipated quantities

- Copy of Metro non-system license, if required.

Add the following subsections:

00290.31 Clean Air Construction Standard:

(a) Scope Beginning January 1st, 2022, the Clean Air Construction Standard is mandatory for all equipment and vehicles used on County Projects. All diesel non-road equipment over 25hp, diesel concrete mixers, and dump trucks used on Washington County projects of \$500,000 or above will need to meet the Clean Air Construction requirements. The full Clean Air Construction policy is located here:

<https://www.portland.gov/omf/brfs/procurement/clean-air-construction/overview-and-requirements>

(b) Diesel Engine Requirements for Reducing Diesel Particulate Matter - For this section, Best Available Control Technology (BACT) approach means for that specific vehicle or piece of equipment, among all potential options, the emission control device that maximizes diesel particulate matter reductions was installed. A “Diesel Particulate Filter (DPF) or equivalent” emission control device is defined as capturing diesel particulate matter at a level of 85 percent or greater. For all effective dates below, an exemption may be granted prior to the Notice to Proceed or during the project, in accordance with the process outlined in 00290.31(d).

(1) Effective January 1, 2024, for all nonroad diesel engines over 25hp, no Tier 0, Tier 1, Tier 2, or Tier 3 engines are allowed on the construction site unless:

a) The Tier 0, Tier 1, Tier 2, or Tier 3 engine is retrofitted with a CARB or EPA verified DPF or equivalent. An engine with a non-DPF or equivalent emissions control device is only allowed if it was previously approved by the CAC Program prior to 2024.

(2) Effective January 1, 2024, no on-road diesel concrete mixers or dump trucks older than 2007 are allowed on the construction site unless:

a) The engine is retrofitted with a CARB or EPA verified DPF or equivalent; or

b) The equipment owner is a COBID Certified Firm, and the engine was retrofitted with a non-DPF emissions control device to reduce diesel particulate matter following a BACT approach prior to 2024.

(3) Effective January 1, 2025, for all nonroad diesel engines over 25hp, only Tier 4 engines will be allowed on the construction site unless:

a) A Tier 0, 1, 2, or 3 engines is retrofitted with a CARB or EPA verified DPF or equivalent emissions control device. An engine with a non-DPF or equivalent emissions control device is only allowed if it was previously approved by the CAC Program prior to 2024 and the owner of the equipment is DMWESB/SDVB firm as certified by the State of Oregon Certification Office for Business Inclusion and Diversity.

(c) Exemptions to Diesel Engine Requirements for Reducing Diesel Particulate Matter

(1) Contractors or Subcontractors may apply for exemptions to the diesel engine requirements on a per equipment/vehicle basis, for their own fleet or that of a supplier in circumstances where:

a) The equipment/vehicle is required for an emergency (including underground equipment operators); or

b) After following a BACT approach, the required emission control device would obscure operator lines of sight or otherwise impact worker safety, or the equipment is not able to be retrofit with a verified emission control device; or

c) No compliant rental equipment is available within 100 miles of the job site; or

d) After following a BACT approach, the Contractor or Subcontractors can demonstrate that due to the uniqueness of the equipment/vehicle or similar special circumstances, it is not reasonable to comply with the diesel engine requirement for a specific piece of equipment/vehicle.

(2) Contractors or Subcontractors shall apply for an exemption:

a) When registering their equipment or vehicles via the CAC Compliance Portal, “The Yard” (portland.gov/cac/TheYard). Non-emergency exemption requests to the diesel engine requirements shall be submitted to the CAC Program via the CAC Compliance Portal, “The Yard,” for approval at this time. Approved exemptions shall be valid for a specified timeframe, after which the exemption shall be reviewed by the CAC Program and either retired or renewed. Non-emergency exemption validity timeframes will vary by type of exemption but will be valid for a minimum of one-year.

b) During the project, when a noncompliant piece of equipment/vehicle is required to respond to an emergency, as a substitute for another piece of equipment/vehicle in need of repair/maintenance, or other unforeseen circumstance. In such cases, the Contractor shall notify the Owner’s Representative in writing and request approval for an exemption via the online CAC Compliance Portal, “The Yard.” Such exemptions

shall be valid only for the duration of the emergency, repair timeframe, or similar temporary timeframe as applicable.

(d) Noncompliance with Diesel Engine Requirements for Reducing Diesel Particulate Matter - Should the Agency or authorized third-party discover, during the project, that the Contractor, Subcontractor, or Supplier is violating the diesel engine requirements, the Agency may issue a Notice to Cure to the Contractor. The Notice to Cure will state the specifics of the violation and the timeframe within which the Contractor must remedy the violation. The remedy timeframe shall not exceed seven (7) calendar days. If the Contractor fails to remedy the violation per the Notice to Cure, the Agency may issue a Stop Work notice, authorizing the stoppage of work until the violation is remedied.

00290.32 Noise Control - Replace the first bulleted item with the following:

- Do not perform construction activity or servicing of Equipment within 1,000 feet of an occupied dwelling unit on Sundays, legal holidays, or between the hours of 7:00 p.m. and 7:00 a.m. on other days, without the approval of the Engineer.
- Comply with Washington County Noise Ordinance, Chapter 8.24.

Obtain a copy of the ordinance from the office of the Project Manager.

Add the following subsection:

00290.36(a) Migratory Birds - Add the following to the end of this subsection:

Do not disturb migratory bird nesting habitat (shrubs, trees, and structures), or clear vegetation from March 1 to September 1 of each year without prior written approval from the Engineer. Notify the Engineer, in writing, a minimum of 10 Calendar Days prior to starting activities that could harm nesting birds.

(1) Bird Management - Bird management activities to comply with the Migratory Bird Treaty Act (16 U.S.C. 703 712) will be performed by the Agency. Ensure that the Agency and its permitted agents have access to the project area, as needed to prevent migratory bird nesting. Nesting prevention may include daily bird harassment and the installation and maintenance of devices that exclude birds.

Do not disturb migratory bird nesting habitats (shrubs, trees, and structures), or clear vegetation from March 1 to September 1 of each calendar year without prior written approval from the Engineer. Notify the Engineer, in writing, a minimum of 10 Calendar Days prior to starting activities that could harm nesting birds.

SECTION 00305 - CONSTRUCTION SURVEY WORK

Delete Section 00305 in the Standard Specifications, except for the number and title, and replace with the following:

Description

00305.00 Scope - This Work consists of all surveying activities necessary to control the many phases of Work required to construct the Project to the lines and grades as shown, specified, or established. The Work includes surveying activities for the following:

- Bases
- Paving and surfacings
- Traffic signals
- Signing and Striping
- Illumination

Make all supporting computations and field notes required for control of the Work and as necessary to establish the exact position, orientation, and elevation of the Work from control stations, including furnishing and setting construction stakes and marks, reference marks, and additional control stations.

Plans, specifications and other data necessary to lay out the Work will be available for inspection at the Project Manager's office.

00305.01 Definitions:

Control Network - An array of control stations either established by the Contractor or provided by the Agency.

Control Station - Any item identified in the Project records as having a position and/or elevation on the Project datum and intended to be used to control the many phases of the construction Work.

Digital Terrain Model (DTM) - An electronic computer model of the shape of the ground.

Reference Stakes - Stakes set away from but with information relating back to the intended location and/or grade.

Slope Catch - The location where a design slope intersects the existing ground and where excavation or embankment Work should begin to provide the intended earthwork.

Slope Staking - The process of using measurements and calculations in the field to determine the slope catch. Slope staking shall normally include setting stakes to mark the slope catch and setting a reference stake for every catch stake.

Stakes - Stakes, nails, marks, string lines, or other devices or mechanisms set or established for the purpose of indicating or controlling the location, orientation, or grade of any feature intended for construction, or for the purpose of limiting or influencing the construction Work.

Staking - The act of placing stakes.

Survey Marker - Any survey monument, control station, or stake.

Survey Monument - Any natural or man-made item specified or identified in a property deed, boundary survey, government document, or other instrument of public record, when the purpose of said item is to mark or reference a property boundary, geographical location, elevation, or other position.

Surveyor - The individual designated by the Contractor and licensed in the state of Oregon as a Professional Land Surveyor and placed in "responsible charge" of the survey work as defined in ORS 672.002(6)(b).

Temporary Bench Mark (TBM) - A control station established for the purpose of providing vertical control for the Project. A TBM may or may not have an established horizontal position.

00305.02 Mandatory Pre-Survey Conference - The prime Contractor, subcontractors, surveyor, survey crew leader, and all surveying personnel who are to be involved in the survey work shall meet with the Project Manager two weeks prior to beginning survey work. The purpose of this meeting will be to discuss methods and practices of accomplishing required survey work.

00305.03 Review by the Engineer - The Engineer may periodically review the notes, calculations and layout Work, including field locations, for compliance with these specifications. Survey work that does not meet the tolerances in 00305.40 may be rejected, and the Work redone at the Contractors expense to meet the tolerances.

Review by the Engineer does not constitute approval or acceptance of the Work, nor does it relieve the Contractor of responsibility for performing Work in conformance with the plans and specifications.

00305.04 Agency Responsibilities:

- Provide copies of plans and specifications.
- Establish initial horizontal and vertical control stations in the proximity of the Project.
- Provide horizontal and vertical alignment data.

- Provide cross section finish grade elevations.
- Perform measurements and calculations for pay quantities.
- Perform final "as constructed" measurements.

00305.05 Contractor Responsibilities - Perform or provide the following items of Work:

- Make calculations, field notes and survey drawings for the layout and control of the Work as are necessary to construct the Project as specified.
- Provide original or copies of notes, calculations and drawings as requested.
- Preserve survey monuments and control stations according to 00305.70 and as governed by applicable law.
- Replace and augment control stations as necessary to control the Project.
- Establish additional control stations as necessary to control the Project.
- Set stakes defining limits for clearing. Set stakes defining approximate right-of-way and easements.
- Set stakes to define construction centerline, centerline offsets, detour lines, or other lines necessary for control of the bridge and retaining walls Work.
- Set stakes to define the Work, that may include but is not limited to the following:
 - Roadway location and grade between station _____.
 - Poles and footings, cabinets, junction boxes, sensors, and other features associated with illumination facilities *
 - Curbs, walks, walls, and other miscellaneous structures *
 - * Including field verification of fit and functionality or as instructed by the Engineer.
 - Remove and dispose of all flagging, lath, stakes, and other temporary staking material after the Project is completed.
 - For bridge Work, supply survey drawings depicting the location and elevations of the elements of substructure and superstructure and place stakes for features including but not limited to the following:

Substructure:

- Piling and pile sleeves
- Footings
- Columns, walls, and abutments
- Pile caps and cross beams
- Bearing pads or devices

Superstructure:

- Horizontal alignment and deck edges
- Soffit grades
- Seismic restraints
- Wing walls and retaining walls
- Bridge end panels
- Deck elevations
- Railings

- Deck drains and other bridge drainage facilities
- Set reference stakes and elevations in the vicinity of the structure Work, as are necessary for the Engineer to check the layout. This may include establishment of a control network.

00305.06 Survey Methods - Survey procedures shall be appropriate for the Equipment being used and be according to current Agency practices.

New survey procedures that are not according to current Agency practices shall be submitted to the Engineer for review 21 days prior to conducting the Work. The surveyor may be required to demonstrate the capabilities, accuracy, and reliability of the intended procedure. The Engineer will evaluate the procedure and intended application and provide approval or rejection within 21 days. Work may proceed immediately upon approval of procedures by the Engineer.

Test and adjust survey equipment according to Agency's procedures and maintain records of test results and submit copies to the Engineer upon request. Information on Agency test procedures may be obtained from the Engineer.

00305.07 Survey Work Records - Contractor's survey personnel shall maintain a Project daily record of Work performed by the survey crew. The daily record shall contain the date, crew names, type and location of Work, and Work accomplished. Upon request, furnish a copy of diary entries to the Engineer. Furnish a final copy of the diary when the Project is complete.

Contractor's survey personnel shall make all field notes and calculations in a manner consistent with current Agency practices and on forms provided or approved by the Engineer. Computations, survey notes and other records necessary to accomplish the Work shall be neat, legible and complete. Furnish copies of computations, notes and other records when requested by the Engineer.

For bridges, furnish computations, layout notes, and drawings of the structure to the Engineer for review 7 days before beginning construction.

Upon completion of construction staking and prior to final acceptance of the Contract, furnish to the Engineer, computations, survey notes, Project records and other data used to accomplish the Work. Include an itemized list of the data.

All data and original documentation associated with this Project will become the property of the Agency.

00305.08 Communication With the Surveyor - The Engineer has the right to communicate directly with the surveyor.

00305.09 Electronic Data - The Engineer will not be responsible for any data translations. The method of exchange of electronic data will be mutually agreed upon at the pre-survey conference.

(a) Data Formats Provided by the Engineer:

- **CAD (graphics) Files** - AUTOCAD Design File (.DWG) format.
- **Horizontal Control Coordinates** - ASCII Coordinate File format.
- **Elevations** - ASCII Elevation File format.
- **Horizontal Alignments** - Intergraph Inroads ASCII Horizontal Alignment format.
- **Vertical Alignments** - Intergraph Inroads ASCII Vertical Alignment format.
- **DTM Data** - Intergraph DTM or AUTOCAD Design File (.DWG) format.
- **Cross Section Data** - Cross Section or Station, Offset and Elevation (SOE) File Format.

(b) Data Formats Provided by the Contractor:

- **DTM Data** - Intergraph DTM or AUTOCAD Design File (.DWG) format.
- **CAD (graphics) Files** - AUTOCAD Design File (.DWG) format.
- **"As Staked" Coordinate Data** - ASCII Coordinate File format.
- **Vertical Control Point Elevations** - ASCII Elevation File format.
- **Coordinates of Miscellaneous Survey Points Set** - ASCII Coordinate File format.

(c) Data Format Details - Data exchanged between the Agency and the Contractor will be in the following formats as referred to in this subsection:

(1) ASCII Coordinate File Format:

Point ID	Northing	Easting	Elevation	Description
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- Point IDs are numeric up to 8 characters long.
- Coordinates/Elevations are decimal numbers in the units required by the Project.
- Descriptions may be up to 27 characters and may contain any combination of printable ASCII characters.
- Columns shall be separated by commas.
- Name all ASCII coordinate files with an extension of .TXT.

Example: 105 216473.675 576231.905 102.562 1/2 inch iron rod

(2) ASCII Elevation File Format:

Point ID	Elevation	Description
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- Point IDs are numeric up to 8 characters long.
- Elevations are decimal numbers in the units required by the Project.

- Descriptions may be up to 27 characters and may contain any combination of printable ASCII characters.
- Columns may be separated by spaces or commas.
- Name all ASCII elevation files with an extension of .TXT.

Example: 425 542.768 TBM12, n.w. bolt on lum.

(3) Cross Section or Station File Format:

Station Offset Elevation Pen Up (Pen Down)

(4) Intergraph Inroads Horizontal Geometry Format:

Inroads *.ALG File

(5) Intergraph Inroads Vertical Geometry Format:

Inroads *.ALG File

(6) AUTOCAD Drawing File Format:

AutoDesk, Inc.

Materials

00305.10 Materials - Furnish all Materials including supplies, clothing, and incidentals required to accomplish the Work. Use Materials of good quality and suitable for the purpose intended. Stakes, hubs, and guinnies are to be of sufficient length to provide a solid set in the ground. Mark the stakes in such a way as to remain legible for the intended duration. Provide and use safety equipment required by State and federal regulations.

Equipment

00305.20 Survey Equipment - Furnish survey equipment required to accomplish the Work that meets the following requirements:

- Components designed to work together.
- Suitable for the purpose intended.
- Capable of achieving specified tolerances.
- In good operating condition.
- Maintained to meet manufacturers specifications.
- Kept in proper adjustment throughout the duration of the Project.

Submit documentation on survey equipment that is new to the industry, to the Engineer for review 21 days prior to its use. The Engineer will evaluate the Equipment and intended application and provide approval or rejection within 21 days. Equipment may be used immediately upon approval by the Engineer.

Labor

00305.30 Personnel - Provide technically qualified personnel capable of performing required tasks in a timely and accurate manner. Perform Work under the direction and review of the Surveyor.

The Surveyor is responsible for:

- Maintaining registration as a Professional Land Surveyor in the State of Oregon.
- Performing or validating requirements for procedures and testing of Equipment.
- Maintaining familiarity with the site conditions and progress of the Project.
- Becoming familiar with the plans and specifications.
- Determining notes and documentation required for types of survey work.
- Determining the accuracy required for each survey stake.
- Using appropriate Equipment and methods.
- Keeping close communication with the Project inspector(s), Project Manager, and Agency survey crews working on the Project.
- Being familiar with the varying construction survey requirements of each aspect of the Project, including the various bridge construction techniques when applicable.
- Notifying the Project inspector of conflicts and changes necessary due to utilities, match point variations, design revisions, or other variables.

The survey crew leader is responsible for:

- becoming familiar with the plans and specifications.
- keeping close communication with the Project inspector(s), Project Manager, and Agency survey crews working on the Project.
- Notifying the Project inspector of conflicts and changes necessary due to utilities, match point variations, design revisions, or other variables.

Construction

00305.40 Construction Staking Tolerances - Set stakes or other devices at an adequate frequency and within the following tolerances:

Item	Horizontal	Vertical
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Box Culverts	± 0.10 ft.....	± 0.05 ft.
Bridge Substructures	± 0.03 ft.....	± 0.03 ft.
Bridge Superstructures.....	± 0.02 ft.....	± 0.02 ft.
Clearing and Grubbing Stakes	± 1.00 ft.....	n/a
Construction Centerline Control Points	± 0.05 ft.....	n/a
Construction Centerline Station Points.....	± 0.10 ft.....	n/a
Curbs, Walks, and Bikepaths	± 0.03 ft.....	± 0.02 ft.
Grade Stakes - Roadway Subgrade.....	± 0.20 ft.....	± 0.05 ft.
Grade Stakes - Top of Rock.....	± 0.20 ft.....	± 0.03 ft.
Grade Stakes - Roadway Finish.....	± 0.10 ft.....	± 0.02 ft.
Manholes, Inlets, and Culverts	± 0.10 ft.....	± 0.03 ft.
PCC Pavement.....	± 0.10 ft.....	± 0.02 ft.
Slope Stakes and References.....	± 0.30 ft.....	± 0.10 ft.
Traffic Markings.....	± 0.20 ft.....	n/a
Walls - Retaining, MSE, Sound, etc.	± 0.10 ft.....	± 0.05 ft.
Wetland Mitigation Control Stakes	± 0.20 ft.....	± 0.20 ft.
Luminaire and Signal Poles (incl. ftgs.)	± 0.20 ft.....	± 0.03 ft.

Miscellaneous items not listed above will have a horizontal and vertical tolerance of 0.20 foot, unless otherwise directed. Features that are to be constructed flush to another surface should take on the same tolerance as that surface.

Tolerances for special circumstances will be discussed at the pre-survey meeting.

00305.43 Grade Stakes - Set grade stakes or other control for grade elevation and horizontal alignment. Set grade stakes at each grade break line. Set additional points at intervals, as necessary, not to exceed the width of the grading Equipment, or as approved by the Engineer. Set these rows at 50 foot stations or as required in special situations, as in road connections and other areas where conditions require tighter spacing of grade stakes to assure grade and alignment.

Measure and record confidence points upon completion of each course and prior to the placement of the next course. Location and spacing of these confidence points shall be such that they provide a reasonable record of the grade as constructed and placed at a nominal rate of one confidence point for every 2,000 square feet of grade.

Provide confidence point data in the form of an ASCII Coordinate File Format to the Engineer for analysis. The Engineer may request additional confidence points if quantity, distribution, or placement does not meet the stated criteria in this subsection and in the confidence point location guidelines in 00305.01. The Engineer may choose to collect additional confidence points using Agency personnel.

The Engineer will evaluate the grade using any combination of industry-standard techniques and the standard Agency confidence point analysis procedure. The confidence point analysis will use the tolerance value defined in 00305.40 for the particular course, and will be deemed unacceptable if less than two-thirds of all confidence points meet the tolerance or if any confidence points exceed the tolerance by a factor of three or more.

The Engineer will evaluate the grade and provide acceptance or rejection before the end of the first business day following receipt of the confidence point data. Do not begin placement of the next course until the Engineer has accepted the grade and approval is given to proceed. Set all stakes within the right of way.

00305.44 Walls - Set stakes or other devices to control the location and elevation of walls, including retaining walls, geotextile walls, wing walls, sound walls and other walls as specified. Provide horizontal and vertical control for elements of wall(s) including but not limited to footings, leveling pads, batter slope and direction, and top elevation. Stake drainage facilities, electrical conduits, water pipes and other items shown or identified that are to be integrated into the construction of the wall(s). Set all stakes within the right of way.

00305.49 Horizontal Control - Establish horizontal control stations using Theodolite/EDM network or static GPS techniques. Least squares adjustments shall be applied to either method. The use of traverses will be permitted only if approved by the Engineer.

Preserve all Agency provided and Contractor established horizontal control stations for the life of the Project. If the horizontal control network cannot be preserved in its original position during construction or if the Agency provided control stations are not of adequate quantity or location, establish a secondary horizontal control network using the original control as a basis. This secondary control network may then be used by the Contractor to layout all construction items and may be used by the Agency for right-of-way monumentation and for other purposes.

(a) General Specifications - Horizontal control networks shall conform to these general requirements in addition to Theodolite/EDM or GPS specifications to follow.

(1) Equipment:

- Use tripods for all occupations with theodolite, target, or GPS antenna.
- Test all components and adjust according to manufacturer specifications.

(2) Procedures:

- Include in field notes a detailed point description and vicinity sketch for each control station and survey monument established or used.
- Perform a minimally and fully constrained Least Squares adjustment.
- The line used for the basis of bearing shall be greater than 1,000 feet unless approved by the Engineer.

- Prior to using 2 points for the basis of bearing, perform an analysis to verify that the points are actually those indicated in the record.
- Control station monuments shall conform to the requirements of the Agency "Right-of-Way Monumentation Policy" available from the Engineer.
- If available, include at least three existing control stations in establishing any control network.
- Establish a point identifier for each control point within the range of 1 399. Alphanumeric point identifiers up to eight characters may be used. Inscribe the point identifier on the monument.

(3) Acceptance Standards - A least squares adjustment shall be accepted base on the following criteria for all specified tolerances.

- Two-thirds of all values shall be within the total tolerance.
- 100% of all values shall be within 3 times the total tolerance.
- Tolerance for confidence regions at the 95% level is 0.05 feet + 50 ppm based on the shortest distance to the nearest unadjusted control station.

(4) Data Requirements:

- Field notes containing a detailed point description and vicinity sketch for each control station and survey monument established or used.
- Minimally and fully constrained least squares adjustment reports.

(b) Theodolite/EDM Networks:

(1) Equipment:

- Use Theodolites with a maximum angular standard of error no greater than ± 6 seconds.
- Use EDMs with a maximum distance standard error no greater than ± 0.02 feet ± 5 ppm.
- All components shall be of compatible accuracy and designed to be used together.

(2) Field Procedures:

- Include distance measurements with all observations unless impractical.
- Have at least one redundant observation for every point in the network.
- Triangulation, trilateration, and resection methods are acceptable.

(3) Acceptance Tolerances:

- • Tolerance for angle residuals is ± 3 seconds.
- • Tolerance for distance residuals is ± 0.02 feet ± 2 ppm.

(4) Data Requirements - Provide the following to the Engineer for each network or circuit established:

- Raw Data Files - These are electronic data files containing original measurements produced by the Theodolite (total station). The file shall contain:
 - Observation data for each measurement, including:
 - point identifier
 - direction, plate reading, or horizontal angle
 - vertical or zenith angle
 - slope distance
 - Supplemental measurement data, including:
 - distance units recorded
 - angular units recorded
 - curvature and refraction correction applied
 - atmospheric correction applied
 - prism correction applied
- Codes or instructions to the processing software on how to process the data.
- Atmospheric conditions at the time of the survey.
- Angular and distance units recorded, and whether the distance has been corrected for curvature and refraction and/or atmospheric conditions.
- **Set Reduction Report** - This report summarizes the reduction of the angle sets and mean distances.
- **Least Squares Adjustment Reports** - These reports contain details of the least squares adjustment, including a list of all angular and distance residuals, confidence region values at a 95% confidence level, and final adjusted coordinates.

(c) GPS Networks:

(1) Equipment:

- GPS receivers shall be dual frequency geodetic receivers with a manufacturer-specified accuracy of ± 0.02 feet ± 1 ppm or better.
- All components shall be of compatible accuracy and designed to be used together.

(2) Field Procedures:

- Ensure that satellite geometry during the field observation phase is sufficient to produce accurate results. The geometric dilution of precision (GDOP) shall not be greater than 8.
- The number of healthy satellites being observed at any time shall be four or more.
- The elevation mask shall be not less than 15 degrees.
- Horizontal survey measurements, once completed, shall form a closed figure, and shall be connected to at least two existing horizontal control stations.

- Network shall be comprised entirely of independent baselines.
- Adjacent stations shall have direct connections.
- Every station shall be connected to two or more stations.
- Receiver documentation shall be followed for observation times and epoch intervals.
- Each control station shall be occupied no less than twice, of which two occupations shall be separated from each other by time. Separation shall be measured start-time to start-time. Separation shall be 90 minutes or more from initial occupation and 90 minutes or more from any 12 hour multiple thereafter for 30 days. Additional occupations beyond two are not subject to time restrictions.
- Back-to-back occupations of 90 minutes or more shall be separated by off leveling and re-setting the tripod and rotation of the tribrach or leveling Equipment by 120 degrees or more.
- Stations closer together than 1,500 feet shall be connected with terrestrial observations.
- Inter-visible stations closer together than 3,000 feet shall be connected with terrestrial observations.

(3) Acceptance Tolerances:

- Tolerance for linear residuals in latitude, longitude, and elevation is ± 0.05 feet.

(4) Data Requirements - Provide the following to the Engineer for each network established:

- **Receiver Independent Exchange (RINEX) Data Files** - These are industry standard non-proprietary electronic data files containing original data collected by the receiver. The provided files shall contain all data supported by both the RINEX file format and the Equipment and software employed in the survey. Files provided shall include as a minimum:
 - GPS observation data file
 - GPS navigation message file
- **Observation Log Sheet** - This log includes, for each observation, start and stop times, and antenna height including measurement procedure.
- **Least Squares Adjustment Reports** - These reports contain details of the least squares adjustment, including a list of all latitude, longitude, and height residuals, confidence region values at a 95% confidence level, and final adjusted coordinates.

(d) Traverses:

(1) Equipment:

- Identical to requirements for Theodolite / EDM networks.

(2) Field Procedures:

- Include distance measurements with all observations unless impractical.

- Close both traverse for angle and distance.

(3) Acceptance Standards:

Closure shall be a minimum of 1:20,000 after angular adjustment and prior to coordinate adjustment.

(4) Data Requirements - Provide the following to the Engineer for each traverse established:

- **Adjustment Report** - This report contains details of the traverse adjustment, including adjusted coordinates.
- **Other Reports** - All data required for Theodolite/EDM networks except least squares adjustment report.

00305.50 Vertical Control - Establish vertical control stations using differential leveling and third order or better Equipment and techniques. The development of vertical control by techniques other than differential leveling must be approved by the Engineer. A least squares adjustment shall be applied to each network of acceptable level circuits.

The Agency provided and Contractor established vertical control stations shall be preserved for the life of the Project. If the vertical control network cannot be preserved in its original position during construction or if the Agency provided control stations are not of adequate quantity or location, establish a secondary vertical control network using the original control as a basis. This secondary control network would then be used to layout all construction items and may be used by the Agency for other purposes.

(a) Field Procedures:

- Use a compensated (or "automatic") optical level or compensated digital level.
- Use precise non-adjustable rod(s) unless otherwise directed. Do not use "Lenker" or self-computing rods.
- Use a rod level with each rod.
- Include a minimum of two published bench marks in each circuit unless otherwise directed.
- If the circuit between benches does not close within the tolerance stated below, close circuit back to the starting point.
- If the use of one benchmark is approved, close circuit back to the starting point.
- Select turning points that are firm, solid objects with a defined high point. Set a nail, spike, or stake if no existing items are acceptable. Turning plates with a weight of not less than 4.5 pounds may be used.
- Balance backsight and foresight distances to within 30 feet on each setup and to within 30 feet on the entire circuit.
- Make a record of the rod reading(s) and the observation distance on each sighting

- Set TBMs near significant construction items (bridges, intersections, and other locations where elevations will be needed) and not more than 1,000 feet apart throughout the Project.
- Select TBM monuments that are firm, solid objects with a defined high point, not likely to be moved by human or natural influences, readily identifiable, and out of the path of construction. Do not use fire hydrants, guardrails, highway signs, or nails or spikes in utility poles or fence posts.
- Include detailed point descriptions and vicinity sketch in field notes.
- Take field notes when recording measurements electronically. Include data and information not electronically measured and recorded.
- Apply a vertical least squares adjustment to allowable errors. The use of proportional distribution of error may be used if approved by the Engineer.

(b) Acceptance Standards - Each leveling circuit shall be accepted based on the "point-to-point" or "closed-loop" limits described below. A single least squares adjustment shall be applied to the observations in the leveling circuits meeting the acceptance standards

- Accept point to point circuit based on the following. Error of closure shall be no greater than:
 - Allowable Error = $0.05 \text{ ft. } \sqrt{D}$
 - D = Shortest level line distance in miles
- If a closed loop, the error of closure shall be no greater than:
 - Allowable Error = $0.035 \text{ ft. } \sqrt{E}$
 - E = Perimeter of level loop in miles

(c) Data Requirements - Provide the following to the Engineer for each network or circuit established:

- **Raw Data** - These are hand written field notes or hand written field notes accompanied by electronic data files containing original measurements produced by the level. The file shall contain:
 - Data for each measurement, including a:
 - point identifier (within a range of 400 - 499 and also inscribed on the monument)
 - rod reading
 - observation distance
 - Supplemental measurement data, including:
 - distance units recorded
 - curvature and refraction correction applied

- **Level Computation Report** - This report contains the computation of unadjusted elevations, observation distance imbalances, computer allowable error, and closure error.
- **Level Adjustment Report** - This report contains the adjustment details, including residual values, adjusted elevations and standard errors.
- **ASCII Elevation Data File**

00305.51 Bridges - Set stakes, nails, or other devices to control the location and elevation of the various parts of bridges and progressive phases of construction. Provide horizontal and vertical control for all elements of bridge construction. Stake drainage facilities, electrical conduits, water and sewer pipes, pedestrian and bicycle facilities, traffic signal and sign supports, illumination devices, and other items shown or identified that are to be integrated into the construction of the bridge.

Identify marks or provide field notes or reports to the Engineer. Such provision of information shall be adequate for the Engineer to review the location and elevation of the mark for the intended purpose prior to incorporating material that is based on the mark.

(a) Bridge Survey Control Stations - Use the smallest number of original Project control stations as is practical for establishing positions and reference points for bridge construction on one bridge. Use of multiple control stations will increase the probability of incorporating error into the construction. Use control stations that are as closely related mathematically as practical. The Contractor may establish additional control stations as necessary to complete the survey work. Additional control stations shall be established in such a manner as to provide the accuracy needed to meet the tolerances in 00305.40.

Original Project control stations shall be used only after the following evaluation is completed for each bridge:

- Supply a list of original Project horizontal and vertical control stations intended by the Contractor to be used in establishing positions on a given bridge.
- Measure relative positions of original Project horizontal control stations intended to be used.
- Measure elevation differences between original Project vertical control stations intended to be used.
- Supply horizontal and vertical measurement data to the Engineer.
- Compare measured values with those computed from original horizontal network coordinates and vertical network elevations.
- Any discrepancy of concern to either the Contractor or the Engineer will be resolved before that combination of control stations is used.

(b) Layout Marks and Reference Points:

(1) Substructure - Stake, reference, or otherwise identify locations, orientations, and elevations necessary for placement of substructure components, including but not limited to cofferdams, pilings (including batter), footings, columns, abutments, caps, cross beams, bearing devices, temporary supports or falsework, and excavations and embankments associated with any of the above.

Verify and document the locations, elevations and spatial relationships with adjacent substructure components. On bridges where prefabricated beams will be used, measure and document span lengths between bearing devices at each beam location as soon as practical. Supply a copy of such documentation to the Engineer for review before the next stage of construction.

Compute the final elevations after studying the plans, specifications, and shop drawings. Adjust the grades as needed to compensate for camber of prefabricated beams, chording of beams across the low side of superelevations, width of flat beams on superelevated surfaces, and any other factor resulting from design or construction methods.

(2) Superstructure - Stake, reference or otherwise identify locations, orientations, and elevations necessary for placement of superstructure components including but not limited to beams, girders, diaphragms, earthquake restraints, deck, rails, structure mounted traffic control and illumination devices, and concrete forms, temporary supports and falsework associated with any of the above.

Stake alignment of structure as needed at each stage of construction. Stake alignment of poured-in-place items at 10 foot stations or as established by the Engineer. Stake alignment for the following items as needed to maintain the horizontal tolerance defined in 00305.40:

- Outside edge of girder(s).
- Face(s) or centerline(s) of internal girders or stem walls.
- Edge of deck.
- Alignment of grade breaks.
- Pedestrian and bicycle facilities.
- Rails and railings.
- All electrical and utility apparatuses.

Stake grades at each stage of construction. Stake grade of poured-in-place items at 10 foot stations, or as established by the Engineer. Apply corrections to design grades based on the dynamics of the evolving structure. Corrections that may be required depend upon the design of the bridge and the construction methods employed. Provide correction values to the Engineer at least 15 working days prior to incorporating into the structure. The following list is examples of possible corrections:

- Design camber (upward adjustment to compensate for anticipated deflection).
- Structural deflection (deflection of the bridge under its own increasing weight).

- Post tensioning lift (upward movement of the bridge under post tensioning forces).
- Structural shifting (dynamics of the bridge under eccentric loading).
- Falsework deflection (deflection of falsework beams under increasing weight).
- Falsework crush (compression of falsework supports under increasing weight).
- Form crush (compression of forms under increasing weight).
- Equipment deflection (deflection of deck finishing machine or deck rails).
- Other adjustments to staked value to achieve the design grade.

(c) Bridge Deck Grades - Set stakes or other devices to control the deck grade elevations. The exact process will depend upon the type of deck and the Equipment being used. Stake and construct finished deck grades within the tolerances of 00305.40.

(1) Portland Cement Concrete Deck - The surveyor and survey crew leader shall attend the first of the two deck pre-placement conferences, described in 00540.02(a), required for each deck placement.

Control of a PCC deck may involve significant Work with the deck placement crew to establish control for a deck finishing machine. Rails for supporting the deck finishing machine are generally set up on either side of the deck. Each rail is held up by adjustable supports every 5 feet. Adjust the rail at each support to the desired grade while the rail is supporting the weight of the finishing machine. Corrections may need to be applied as listed in 00305.51(b-2).

(2) Asphaltic Concrete Deck - Control of an AC deck will not generally involve as many variables as PCC. An AC deck serves as a wearing surface, but not a structural component. Asphaltic concrete will frequently be used as filler to create the desired superelevations when flat beams form the superstructure. Stake control of the finish grade like any asphalt finish grade. Under some circumstances, design camber and structural deflection may need to be considered.

00305.52 Pavements - Set stakes or other control devices to control the location and elevation of asphalt and PCC pavement as shown. Provide surveying or survey-related activity necessary to control grade, thickness, and smoothness as required.

00305.53 Signs, Signals, Illumination and Fabricated Items - Determine the exact location and their relative location to roadway and bridge features as appropriate such as edge of pavement, curbs, islands, sidewalks, sidewalk ramps, lane lines, bridge columns, bridge decks, and other features for the following items:

- Posts and poles including foundations.
- Cabinets.
- Junction boxes.
- Detectors.
- Other similar sign, signal, and illumination appurtenances.

- Bollards.

Provide the following documentation to the Engineer before submitting working drawings:

- Field verified length of poles, posts, mast arms, and tenon locations.
- Field verified orientation of triangular bases for poles.
- Field verified measurements of all existing features including orientation and relationship to all other new appurtenances and new fabricated items.
- Plan, elevation, and side views.
- Identification of all obstacles.

Field adjustment to the planned location may be required in order to avoid obstacles and to ensure its placement in a functional location. Do not submit working drawings until the Engineer returns the field verified documents. The Engineer will return field verified documents within 21 Calendar Days after receipt of the documents.

Set a stake referencing the center of the item. Set a guard stake with the following information written on it:

- Description of item (by plan number if applicable).
- Centerline station.
- Centerline offset distance.
- Cut or fill from reference point (and what point the cut or fill is to).
- Intended elevation.

If the orientation of the item is significant and is not clear, establish a reference line for the skew of the item.

Have bridge layout and roadway layout features staked, including referencing, no more than 7 Calendar Days before submitting field verification documents.

Maintenance and Monumentation

00305.70 Preservation of Survey Markers:

(a) Project Control Points Established by the Engineer - Maintain, relocate or replace existing survey monuments, control points, and stakes, as determined by the Engineer. Perform the Work to produce the same level of accuracy as the original monument(s) in a timely manner, and at no additional cost to the Agency.

(b) Monuments of Record - Preserve survey monuments according to 00170.82(c), and ORS 209.140 and ORS 209.150. If such monuments are to be disturbed or destroyed, comply with requirements of these ORS at no additional cost to the Agency.

00305.71 Project Monumentation - The Contractor will not be responsible for performing right-of-way Monumentation.

Measurement

00305.80 Measurement - No measurement of quantities will be made for construction survey work.

Payment

00305.90 Payment - The accepted quantities of performing construction survey work will be paid for at the Contract lump sum amount for the item "Construction Survey Work".

Payment will be payment in full for furnishing all Materials, Equipment, labor, and Incidentals necessary to complete the Work as specified.

No separate or additional payment will be made for all temporary protection and direction of traffic measures including flaggers and signing necessary for the performance of the construction survey work.

No separate or additional payment will be made for preparing surveying documents including but not limited to office time, preparing and checking survey notes, and all other related preparation Work.

Progress payments will not be in excess of the reasonable value of the surveying Work estimated by the Engineer.

Costs incurred as a result of survey errors will be borne by the Contractor. Such costs include price adjustments for failure to meet requirements of the construction specifications, repair or removal and replacement of deficient product, and over-run of material.

SECTION 00310 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS

Comply with Section 00310 of the Standard Specifications modified as follows:

00310.43 Disposal of Material - Replace this subsection, except for the subsection number and title, with the following:

Dispose of Materials according to 00290.20.

00310.44 Earthwork in Connection with Removal - Replace the second paragraph with the following:

Backfill holes according to 00330.45. No separate or additional payment will be made for this Work.

SECTION 00320 - CLEARING AND GRUBBING

Comply with Section 00320 of the Standard Specifications modified as follows:

00320.40(a) Clearing Trees and Other Vegetation - Add the following:

Meet the requirements of 00290.36(c).

00320.40(c) Tree and Vegetation Trimming - Replace the bullet that begins "Trim branches obstructing sight..." with the following bullet:

- Trim and remove branches, vegetation, or other materials obstructing sight distance at intersections or impairing visibility of signs, signals, illumination, and other TCD.

SECTION 00330 - EARTHWORK

Comply with Section 00330 of the Standard Specifications modified as follows:

00330.03 Basis of Performance - Add the following paragraph to the end of this subsection:

Perform all earthwork under this Section on both the embankment and excavation basis.

00330.03 Basis of Performance - Add the following paragraph to the end of this subsection:

Perform all earthwork under this Section on the excavation basis.

00330.41(a)(5) Waste Materials - Replace this subsection, except for the subsection number and title, with the following:

Dispose of waste materials according to Section 00236.

00330.41(a)(7) Abandoned Pipes and Miscellaneous Matter - Replace this subsection, except for the subsection number and title, with the following:

Remove and dispose of all abandoned pipe, Structures, and miscellaneous matter:

- Encountered in the work
- Located within 2 feet below subgrade
- Located within 2 feet of finished slope

Remove remaining abandoned pipes and structures, or completely fill abandoned pipes and structures with CLSM that meets the requirements of Section 00442.

Perform removal Work as part of the earthwork. Dispose of waste materials according to 00290.20.

00330.42(c)(3) Embankment Slope Protection - Add the following paragraph to the end of this subsection:

Construct the outer 6 inches of embankments with suitable materials to establish slope stabilization through permanent seeding. If suitable material is not available, provide suitable materials from a Contractor-provided source which conforms to the requirements of 00330.11 or 00330.13 and provides favorable conditions for germination of seed and growth of grass.

00330.43(b-1) Moisture-Density Testable Materials - Replace with the following:

Determine the maximum density according to AASHTO T99

00330.45 Filling of Holes - Replace the last two sentences of this subsection with the following:

No separate or additional payment will be made for this Work.

00330.80 Measurement - Add the following after the bulleted list:

No field measurement of earthwork items will be performed. The quantity will be the theoretical neat line volume constructed and accepted for each item. If changes are ordered, only the quantity included in the ordered changes will be measured.

00330.91(d) General Excavation - Replace the last sentence of the fourth bulleted item with the following:

When such excavation is not part of a continuous operation, the roadway excavation is complete, and the Contractor is required to move Equipment in to perform the excavation, the excavation will be paid according to 00331.90.

SECTION 00440 - COMMERCIAL GRADE CONCRETE

Comply with Section 00440 of the Standard Specifications modified as follows:

00440.40(b) Placing - Add the following bulleted item:

Place concrete according to 00540.48(a) through 00540.48(c) for sign supports, signal supports, and luminaire supports.

00440.40(c) Forms - Add the following paragraph:

For sign supports, signal supports, and luminaire supports, remove forms, and perform subsequent loading according to Table 00540-1.

SECTION 00640 - AGGREGATE BASE AND SHOULDERS

Comply with Section 00640 of the Standard Specifications modified as follows:

00640.10 Materials - Replace this subsection, except for the subsection number and title, with the following:

Furnish either 1 1/2" 0 or 3/4" 0 for Base and Shoulder Aggregate. Furnish 3/4" 0 for Leveling Course Aggregate. Use clean, hard, durable Aggregates, reasonably well graded from maximum size to dust.

00640.80 Measurement - Replace this subsection, except for the subsection number and title, with the following:

The quantities of Aggregate will be measured on the volume basis. Quantities will be the theoretical Neat Line quantity constructed and accepted, plus the field measured quantity constructed and accepted, as identified below.

Except for approved Subgrade stabilization, backfill below elevations shown, and ordered changes, field measurement of the quantity will not be performed. A quantity allowance is included in the Contract Schedule of Items for field measurement of Subgrade stabilization, backfill below elevations shown, and ordered changes.

00640.90 Payment -

Add the following to the end of this subsection:

No separate or additional payment will be made for Aggregate Base shown but not included in the theoretical Neat Line quantities listed in 00640.80.

SECTION 00744 - ASPHALT CONCRETE PAVEMENT

Comply with Section 00744 of the Standard Specifications modified as follows:

00744.02 Definitions - Add the following definition:

Sublot Size - A sublot is 1,000 tons of ACP, or the amount of ACP placed in a Day if less than 1,000 tons is placed.

00744.10(c) Recycled Asphalt Shingles - Delete this subsection; Recycled Asphalt Shingles are not allowed on this Project.

00744.11 Asphalt Cement and Additives - Replace the paragraph beginning with "When WMAC is used..." with the following paragraph and Table 00744-1:

When WMAC is used, select the additives or processes identified in Table 00744-1 for WMAC. Submit equivalent alternates for review and approval.

Table 00744-1

WMAC Additives and Processes		
WMAC Technology	Process Type	Supplier
Advera (Synthetic Zeolite)	Foaming Process	PQ Corporation
Aspha-Min (Synthetic Zeolite)	Foaming Process	Aspha Min
Evotherm	Chemical Additive	MeadWestvaco Asphalt Innovations
Redi Set WMX	Chemical Additive	Akzo Nobel Surfactants, Inc.
Sasobit	Organic Additive	Sasol Wax Americas, Inc.
Plant Foaming Equipment	Foaming Process	Various Suppliers

00744.11(a) Asphalt Cement - Add the following to the end of this subsection:

Use asphalt grade PG 64 22 for ACP.

00744.16 Sampling and Testing - Replace this subsection, except for the subsection number and title, with the following:

A CAT-1 shall perform a minimum of one asphalt content, gradation, mix moisture, and Maximum Specific Gravity (AASHTO T 209) test per Day and provide results to the Engineer by the middle of the following work shift. Provide split samples to the Engineer when requested. Upon written notice, the Engineer may waive testing and visually accept the mix according to Section 4(b) of the MFTP.

When three or more tests are performed on a Project, a price adjustment will be calculated according to 00744.95.

00744.17 Acceptance - Replace this subsection, except for the subsection number and title, with the following:

When less than three test results are obtained on a Project, and testing has not been waived by the Engineer, the ACP will be accepted according to the following:

(a) Within Specification Limits - If all subplot sample test results are within specification limits for all constituents (including compaction) the Material will be accepted and the full bid price will be paid for the material represented by that test.

(b) Outside Specification Limits - If a subplot sample test result for any constituent is outside the specification limit the Engineer will have the backup sample tested.

(1) Backup Within Specifications - If the backup sample test results for all constituents are within specification, the Material will be accepted and the full bid price will be paid for the Material represented by that test.

(2) Backup Out of Specifications - If the backup sample test results are out of specification, the Contractor may choose to accept the price adjustment calculated according to 00744.95 or may choose to sample the in-place material for further testing. The price adjustments will be computed using all original test results as well as all backup test results. (If there are less than three tests, average the two tests you have and use the average as the third test result). In no case will the composite pay factor (CPF) be greater than 1.0.

(3) In-Place Samples - If the in-place material is sampled, the Engineer will select and sample from three random locations from the area represented by the lot in question. Those samples will be tested and if found to be within specification the material will be accepted and paid for at the full bid price. If the material proves to be outside of the specification limits, the material will be accepted and paid for at an adjusted price according to 00744.95. In no case will the CPF be above 1.0.

Add the following subsection:

00744.24(a) Steel Wheeled Rollers - Provide 3-foot wide steel-wheeled roller.

00744.43(c) Placing - Add the following:

Do not intermingle ACP produced from more than one JMF. Each Base Course Panel placed during a working shift shall conform to a single JMF. The wearing Course shall conform to a single JMF.

00744.49 Compaction - In the paragraph that begins "Determine compliance with...", replace the sentence that begins "The Engineer may waive compaction..." with the following sentence:

The Engineer may waive compaction testing requirements when less than 500 tons of ACP is placed in a single work shift. In the same paragraph, replace “each 100 tons” with “each 200 tons” and replace “less than 10 tests” with “less than 5 tests”

00744.51 Opening Sections to Traffic - Schedule work so that, during the same shift, the surfaces being paved are paved full width and length through the wearing Course before opening to traffic.

Add the following subsection:

00744.71 Joints - Seal joints between existing and new Pavement surfaces as directed. Seal joints with a mixture of tack and asphalt sand. Provide a liberal application to the joint with a maximum width of 6 inches either side of the joint.

SECTION 00759 - MISCELLANEOUS PORTLAND CEMENT CONCRETE STRUCTURES

Comply with Section 00759 of the Standard Specifications modified as follows:

00759.03(b) Curb Ramp Work Plan - Replace the bullet that begins “Compliance with Working Drawings and details...” with the following bullet:

- Comply with Working Drawings and details submitted under 00759.03(a)

00759.04 Preplacement Conference - Add the following paragraph after the first paragraph:

Topics covered at the Preplacement Conference will include:

- Ramp Styles / Configurations
- Slope and Width Requirements
- Turning Space
- Push Button Requirements
- Construction Tolerances
- Temporary Pedestrian Accessible Route (TPAR)
- Temporary Curb Ramps
- Ramp Inspection
- Other Project-Specific Issues / Requirements

Each ramp within the project shall be discussed in detail at the preplacement conference, it may be necessary to have multiple preplacement conferences to cover all ramps on the project.

Add the following subsection:

00759.05 Preplacement Inspection – Notify Engineer 48-hours prior to concrete pour to inspect the installation of ramp formwork. Inspections of formwork is intended to confirm ramp type and grades are achievable. Final approval of ramps will be provided post-pour.

00759.12 Curb Ramp Treatment - Replace this subsection, except for the subsection number and title, with the following:

Furnish "Safety Yellow" colored, cast-in-place, truncated dome detectable warning Surfaces for sidewalk ramps and accessible route islands. Use any listed on the ODOT QPL.

Unless otherwise noted on the Plans, use cast-in-place installation of truncated dome panel(s) at all ramp locations. When the curb is installed separately from the ramp, the back of the curb shall be formed to provide a straight edge for the truncated dome panel(s) to fit snugly against the back of the curb, eliminating the need for any concrete to be placed between the truncated dome panel(s) and the back of the curb during installation of the truncated dome panel(s).

00759.44 Joining New to Existing Concrete - Replace the sentence that begins "Unless shown or ..." with the following:

Unless shown or directed otherwise, furnish and place minimum 3/8 inch thick preformed expansion joint filler between new and existing concrete.

00759.48 Expansion Joints - replace the first bulleted item with the following:

- To be 3/8 inch wide.

00759.48(b) Driveways, Walks, Monolithic Curbs and Sidewalks, and Surfacing - Replace the second and third bulleted items with the following:

- Place on both sides of driveways, sidewalk ramps, at the PC and PT of curves, around utility vaults, drainage inlets, opposite expansion joints in curbs, and at a spacing not to exceed 200 feet.

Add the following paragraph:

The contractor may pour curb monolithically with an ADA ramp, if approved by the Engineer. If an ADA ramp is poured monolithically with the curb, the contractor shall provide a separation between the curb structure and the sidewalk structure by either tooling through the full depth of the sidewalk at the back of the curb while the concrete is wet, or sawcut through the full depth of sidewalk at the back of curb after the concrete is set.

00759.49(a) Locations - Replace the third bulleted item with the following:

- At 5 feet spacing for sidewalks.
- At 10 feet maximum spacing for driveway approaches.

00759.50(c) Driveways, Walks, and Surfacing - Add the following after the first paragraph:

Provide sidewalk panel dimensions of 5 feet nominal or as directed. Broom finish sidewalks and driveway approaches. Trowel finish (shine) the perimeter of each panel.

00759.80 Measurement -

Replace the paragraph that begins " Item (k) includes the additional Work required ..." with the following paragraph:

Item (k) includes the additional Work required to construct a curb ramp or replace an existing curb ramp. Payment for the area of the curb ramp will be made under the concrete walks Pay Item.

SECTION 00850 - COMMON PROVISIONS FOR PAVEMENT MARKINGS

Comply with Section 00850 of the Standard Specifications modified as follows:

00850.30 Manufacturer's Representative - Replace this subsection, except for the subsection number and title, with the following:

For Sections referencing 00850.30, the services of a manufacturer's representative are not required. Place Pavement markings only when the Pavement is ready for the Pavement marking material according to the manufacturer's installation instructions.

00850.47(b) Curing of Materials - Replace the sentence that begins "At the time of installation..." with the following sentence:

Rate the line, markings, and pavement marker adhesive at the time of installation to determine if the material has properly cured.

00850.47(c) Retroreflectivity - Replace this subsection, except for the subsection number and title, with the following:

Use a 30 meter geometry retroreflectometer to measure the retroreflectivity within 48 hours of curing, except for paint applications and colored lane marking applications.

- At 300 foot intervals for longitudinal lines.
- At each pavement legend/bar. Take 10 individual readings per pavement legend/bar. If the project has more than 10 pavement legend/bars, measure a minimum of 10 legends/bars or 10 percent of the total number of legends/bars, whichever is greater. The legends to be measured will be selected by the Engineer.
- Estimate the bead embedment depth for longitudinal lines and pavement legends/bars at the same location as the retroreflectivity reading.

SECTION 00865 - LONGITUDINAL PAVEMENT MARKINGS - DURABLE

Comply with Section 00865 of the Standard Specifications modified as follows:

Add the following subsection:

00865.10 Longitudinal Pavement Markings - Use the following marking materials with a thickness of 120 mils:

- Thermoplastic, Extruded or Sprayed, Surface, Non-Profiled for yellow lines
- Thermoplastic, Extruded or Sprayed, Surface, Non-Profiled for white lines
- Thermoplastic, Extruded, Surface, Profiled for white lines where shown
- Thermoplastic, Extruded or Sprayed, Surface, Non-Profiled for yellow broken lines
- Thermoplastic, Extruded or Sprayed, Surface, Non-Profiled for white broken lines
- Thermoplastic, Extruded or Sprayed, Surface, Non-Profiled for yellow dotted lines
- Thermoplastic, Extruded or Sprayed, Surface, Non-Profiled for white dotted lines

00865.75 Manufacturer Warranty - In the first paragraph, delete the sentence that begins "Use Agency-supplied warranty forms...".

SECTION 00867 - TRANSVERSE PAVEMENT MARKINGS - LEGENDS AND BARS

Comply with Section 00867 of the Standard Specifications modified as follows.

00867.45 Installation - Add the following to the end of this subsection:

Type A marking materials are not allowed for any pavement legend, including those pavement legends identified as Type AB. Pavement legends identified as Type AB in the Pay Item list may be Type B or Type B-HS as the Contractor elects. Type A marking materials errantly installed for a Type AB pavement legend shall be removed and Type B or Type B-HS marking materials installed at no additional cost to the Agency.

Type A marking materials are only allowed for pavement bars identified as Type A or Type AB in the Pay Item list. Materials installed by a Type A process must result in a consistent thickness within the specified limits, and have a professional look. Type A marking materials not meeting these Specifications shall be removed and reinstalled at no additional cost to the Agency.

00867.75 Manufacturer Warranty - In the first paragraph, delete the sentence that begins "Use Agency-supplied warranty forms...".

SECTION 00902 - CROSSWALK CLOSURE SUPPORTS

Section 00902, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00902.00 Scope - This Work consists of constructing crosswalk closure supports and associated signs as shown.

Materials

00902.10 Materials - Furnish Materials meeting the following requirements:

- Commercial Grade Concrete 00440
- Steel 01070.10 and 01070.12
- Signs 00940

Construction

00902.40 General - Install crosswalk closure supports and associated signs as shown or directed.

Measurement

00902.80 Measurement - The quantities of crosswalk closure supports will be measured on the unit basis. No separate measurement will be made for signs attached to crosswalk closure supports.

Payment

00902.90 Payment - The accepted quantities of Work done under this Section will be paid for at the Contract unit price, per each, for the item "Crosswalk Closure Supports".

Payment will be payment in full for furnishing and placing all Materials, including signs, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

SECTION 00905 - REMOVAL AND REINSTALLATION OF EXISTING SIGNS

Comply with Section 00905 of the Standard Specifications modified as follows:

00905.40 General - Add the following:

Protect existing signs and posts that are designated for "removal only". Deliver removed signs and posts to City of Sherwood Public Works, 15527 SW Willamette Street, Sherwood. Contact Konrad Dimmit (503) 925-2334 to arrange drop off.

SECTION 00930 - METAL SIGN SUPPORTS

Comply with Section 00930 of the Standard Specifications modified as follows:

00930.01 Definitions and Terms - In the "Triangular Base Breakaway Sign Supports, Pipe Breakaway Sign Supports, and Perforated Steel Square Tube Slip Base Sign Supports" definition, replace the words "Slip Base" with the words "Breakaway".

In the "Pipe Sign Supports and Perforated Steel Square Tube Anchor Sign Supports" definition, delete the word "Anchor".

In the "Minor Sign Supports" definition, replace the words "Perforates Steel Square Tube Slip Base Sign Supports" with the words "Perforated Steel Square Tube Breakaway Sign Supports" and replace the words "Perforated Steel Square Tube Anchor Sign Supports" with the words "Perforated Steel Square Tube Sign Supports".

00930.10 Materials - Replace the paragraph that begins "Except for perforated..." with the following:

Except for perforated steel square tube breakaway sign supports and for perforated steel square tub sign supports, galvanizing shall conform to the requirements of Section 02530. Galvanize perforated steel square tub breakaway sign supports and perforated steel square tube sign supports according to ASTM A653 G140.

00930.90 Payment - Replace Pay Items (n) and (q) with the following pay items:

(n) Perforated Steel Square Tube Breakaway Sign Supports .Lump Sum

(q) Perforated Steel Square Tube Sign SupportsLump Sum

SECTION 00940 - SIGNS

Comply with Section 00940 of the Standard Specifications modified as follows:

00940.03 Drawings - Replace this subsection, except for the subsection number and title, with the following:

Submit Working Drawings for non-standard signs based on the guidelines furnished in Washington County's Permanent Signing Legend detail. Standard signs called for in the Contract Documents shall be constructed using drawings available in FHWA's "Standard Highway Signs" (FHWA English Version) or ODOT's "Sign Policy and Guidelines for the State Highway System".

Add the following subsection:

00940.04 Construction - Fabricate each individual sign on a separate sign blank. Fabricate all components of each individual sign with sheeting from the same supplier to ensure that all components are compatible, and are warrantable by the manufacturer. Removable legend sheeting is not required to be from the same supplier as the background sheeting for sign panels.

Add the following subsection:

00940.49 Installation of Solar Powered School Flasher Assemblies:

(a) Dual Head Flashers - Furnish dual head flasher assemblies and communication systems that meet the requirements of 00940.01 with two 12 inch LED modules for the Flasher Heads.

Furnish and install post, as applicable.

Mount:

- The solar panel to the top of the post with approved mounting hardware.
- The flasher assembly, SCHOOL, SPEED LIMIT 20, and WHEN FLASHING sign assembly at 7 feet above the roadway surface as measured at the edge of pavement, or at 7 feet above the sidewalk surface, whichever is greater.
- A confirmation light (tattletale) for each individual pole location. Mount the confirmation light in one of the section heads, facing the interior of the school zone (opposite direction of the flasher lamp orientation). Wire the confirmation lamp to the host section such that it flashes a small amber advisory signal toward the interior of the school zone. For dual-head installations, install the confirmation light for the top head only.

(b) Single Head Flashers - Furnish dual head flasher assemblies and communication systems that meet the requirements of 00940.01 with one 12 inch LED module for the Flasher Heads.

Furnish and install post, as applicable.

Mount:

- The solar panel to the top of the post with approved mounting hardware.
- The flasher assembly, SCHOOL, SPEED LIMIT 20, and WHEN FLASHING sign assembly at 7 feet above the roadway surface as measured at the edge of pavement, or at 7 feet above the sidewalk surface, whichever is greater.
- A confirmation light (tattletale) for each individual pole location. Mount the confirmation light in one of the section heads, facing the interior of the school zone (opposite direction of the flasher lamp orientation). Wire the confirmation lamp to the host section such that it flashes a small amber advisory signal toward the interior of the school zone.

(c) Timing, Testing, and Activation - Cover systems until they have been tested, approved, and activated.

Agency will provide the Speed 20 Flasher Timing. One week prior to the planned installation, contact Kevin Ellington, Washington County Traffic Signal Supervisor at 503 846 7959 to obtain the flasher timing.

Perform preliminary test of Equipment after installation.

Perform final testing and activation in the presence of the Engineer. All School Speed flasher units in an area surrounding a school must be turned on within the same day. Activation will not be allowed during school arrival or dismissal times.

On the day of activation, remove existing school signs as shown or specified. Coordinate timing of sign removal with activation.

00940.90 Payment -

Add the following paragraphs to the end of this subsection:

Trimming and removal of branches, vegetation, or other materials will be paid for according to 00320.90.

SECTION 00950 - REMOVAL OF ELECTRICAL SYSTEMS

Replace the Section heading and number with the following:

SECTION 00950 REMOVAL AND REINSTALLATION OF ELECTRICAL SYSTEMS

Comply with Section 00950 of the Standard Specifications modified as follows:

00950.00 Scope - Replace this subsection, except for the subsection number and title, with the following:

This Work consists of removing, abandoning, and salvaging existing electrical systems as shown, specified, or directed.

00950.02 Definitions - Replace this subsection, except the subsection number and title, with the following:

Qualified Worker - A qualified worker means one who is knowledgeable about the construction and operation of the electrical power generation, transmission, and distribution equipment as it relates to his or her work, along with the associated hazards, as demonstrated by satisfying the qualifying requirements for a "qualified person" or "qualified employee" with regard to the work in questions as described in 29 CFR 1910.269 effective January 31, 1994, as it may be amended from time to time. In this case, a Qualified Worker is a journeyman lineman, or someone who has the equivalent training, expertise, and experience to perform journeyman lineman work.

00950.40 General - Add the following at the end of this subsection:

Unless otherwise approved by the Engineer, illumination systems to be removed and not reinstalled shall remain in place until the new illumination system is energized.

Contractor shall coordinate de-energizing and energizing of temporary illumination with PGE. Temporary illumination system shall be de-energized and removed within 30 days of energizing and acceptance of the new illumination system.

00950.42 Salvaging and Stockpiling Materials - Add the following to the end of the subsection:

Salvaged materials will remain the property of the Agency.

Salvage the following materials for delivery to Agency:

- Street lights
- Additional materials as shown or directed.

Deliver and stockpile salvaged materials to the following location:

Sherwood Public Works

00950.90 Payment - Add the following to the end of this subsection:

No separate or additional payment will be made for replacement of equipment damaged during salvaging, delivery, and stockpiling.

When the Contract Schedule of Items does not indicate payment for removal Work, no separate or additional payment will be made. Payment will be included in payment made for the appropriate Pay Items under which this Work is required.

Payment for removing illumination items would be included in payment made for the appropriate Pay Items listed in 00970.90.

Payment for removing traffic signal items would be included in payment made for the appropriate Pay Items listed in 00990.90.

SECTION 00960 - COMMON PROVISIONS FOR ELECTRICAL SYSTEMS

Comply with Section 00960 of the Standard Specifications modified as follows:

00960.10 Materials - Add the following:

Use an approved sand blanket, granular backfill meeting the requirements of 00330.14, or controlled low-strength material (CLSM) meeting the requirements of Section 00442 for backfill.

00960.30 Licensed Electricians — Replace this subsection, except for the subsection number and title, with the following:

According to the Oregon Administrative Rule 918-282-0120(1), no person or Entity shall allow any individual to perform electrical work for which the individual is not properly registered or licensed. Every person who installs electrical systems on the Project shall submit a copy of their electrical license or apprentice registration to the Engineer prior to performing any Work. They must be licensed as an S or a J under Oregon Administrative Rule 918-282-0140 or 918-282-0170.

00960.40 Excavation - Add the following:

The following minimum covers apply for excavation of conduit:

Minimum Cover from Finished Surface¹

Type of Conduit	Roadway and Shoulders	Other Areas
Metal	30 inches	30 inches
Rigid Nonmetallic	30 inches	30 inches

¹Use permit depths if greater than these.

00960.41 Horizontal Direction Drilling - Add the following:

Backfill all utility potholes resulting from the horizontal directional drilling with controlled low-strength material (CLSM) meeting the requirement of 00442 up to top of base rock elevation. Then, place full depth HMAC meeting the requirements of 00744.

00960.42 Conduit - Add the following:

Install muletape with 1250 min pull strength with 40 inches of slack tied off at each end of every conduit run.

00960.46 Service Cabinet and Electrical Energy -

Furnish and install a meter base approved by the serving Utility (with cover by the Utility), where shown.

SECTION 00962 - METAL ILLUMINATION AND TRAFFIC SIGNAL SUPPORTS

Comply with Section 00962 of the Standard Specifications modified as follows:

00962.05 Design - Delete the first sentence and replace with the following:

Design all traffic signals according to the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals.

Design all illumination poles according to the AASHTO LRFD Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals and the Oregon Structural Specialty Code.

00962.05(a) Traffic Signal Mast Arm Supports - Replace this subsection, except for the subsection number and title, with the following:

Design non-standard poles and foundations according to the AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals 5th Edition". Design factors include:

Basic Wind Speed (3 second gust)	95 mph
Gust Factor (G)	1.14
Importance Factor (Ir)	1.0 (50 year recurrence interval)
Fatigue Category	II (natural wind gusts and truck-induced gust only, no galloping required)

00962.05(c) Illumination Supports - Replace this subsection, except for the subsection number and title, with the following: :

Design non-standard poles and foundations according to the following:

- AASHTO LRFD Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals 1st Edition (2015) with 2018 interim revisions
- 2019 Oregon Structural Specialty Code version effective October 1, 2019

Design factors include:

Basic wind speed for extreme limit state 103 mph

00962.10 Materials - Add the following to the list after High-Strength Fasteners:

CLSM.....	00442
Keyway Grout.....	02080.30

Replace the bullet list with the following:

- Provide steel sheet for pole and arms meeting the requirements of ASTM A595 Grade A, or ASTM A572 Gr 50.
- Provide all other steel and plate meeting the requirements of ASTM A572 Gr 50.
- Supplementary Requirements S18 (ASTM A6), maximum tensile strength is required.
- Galvanized base plates and small and hidden pieces do not require controlled silicon content.

Add the following to the end of this subsection:

Furnish aluminum pole and other aluminum items for use in luminaire installations meeting the requirements of the following:

- Provide aluminum tube for poles and davit arms meeting the requirement of ASTM B210, B221, B241, or B429 (6063-T6)
- Provide aluminum plate meeting the requirements of ASTM B209 (6061-T6)
- Provide aluminum pipe meeting the requirements of ASTM B241 (6061-T6)
- Provide aluminum shoe base and handhole frame meeting the requirements of ASTM B108 (356-T6)
- Provide aluminum bolt covers meeting the requirements of ASTM B26 (319F or 356F)

00962.43 Foundations - Add the following to the end of this subsection:

Foundations shall be in conformance with Washington County's standard drawings.

Add the following subsection:

00962.43(d) Pre-cast Foundations for Luminaire Poles - Supply the anchor bolts and bolt circle requirements to the manufacturer for incorporation into the pre-cast foundation.

Pre-cast foundations for luminaire poles shall obtain a 28-day compressive strength of 5,500 psi. Reinforcement shall be per ASTM A615 or ASTM A706, Grade 60 (yield strength of 60,000 psi). Anchor bolts shall be ASTM F 554, Grade 55, and shall be hot-dip galvanized (per ASTM A153) after fabrication.

Installation and backfill of pre-cast concrete luminaire pole foundations shall be done only with the inspector present. Any pre-cast concrete pole bases that are installed without the inspector present shall be removed by the Contractor and reinstalled and backfilled with the inspector present at no additional cost to the Agency. Excavation for pre-cast foundations for luminaire poles shall be completed by auguring a hole with the minimum diameter equal to 1 foot greater than the maximum pre-cast foundation dimension (diagonal for square foundations). The disturbed material shall be removed from the excavation of the pole base, the pre-cast foundation shall be carefully placed on a base of well compacted granular material at the bottom of the excavation to be fully and uniformly supported at true grade and alignment and

the over-excavation shall be replaced by CLSM backfill in accordance with Section 00442 at no additional cost to the Agency.

The following pre-cast concrete foundation for the prequalified luminaire poles in 00962.05(c) is prequalified for use on the Project:

Utility Vault

7-LB

00962.46 Steel Illumination and Signal Poles - Add the following at the end of the first paragraph:

Metal poles shall be placed on the job site in a manner which allows the Engineer to inspect luminaire arm connections, recessed terminal compartments, base plates, and tenons without moving the poles. The Contractor shall notify the Engineer when the poles are ready for inspection. If any shafts, arms, or luminaire arms do not meet Washington County specifications, they will be rejected.

00962.46(a) Design - Replace this subsection, except the subsection number and title, with the following:

All poles shall be either round or 8 sided in Cross Section unless otherwise specified by the Engineer. Alternative Cross Section shapes shall be considered special design poles and require submission of pole design calculations per the above criteria.

Submit detail drawings of poles for approval prior to fabrication. Dual mast arm poles and mast arm poles with an arm greater the 60 feet long shall be considered special design and require drawings and calculations approved by the Engineer prior to fabrication. Calculations shall conform to the latest Washington County design criteria.

00962.46(c) Mast Arm - Replace this subsection, except for the subsection number and title, with the following:

Install mast arms for traffic signals and signs according to details provided by the manufacturer. Use proper type and size of mounting appurtenances that correctly fit the pole furnished, or as shown. Provide self-supporting mast arms without tie rods or braces. Provide tapered mast arms that are either round or 8-sided in cross-section.

All mast arms shall allow wiring entrances directly into the pole from inside the mast arm.

00962.46(e) Deflection - Replace this subsection, except for the subsection number and title, with the following:

Deflection shall be in accordance with Section 10.4 of AASHTO's "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals 5th Edition".

00962.46(i) Identifying Tags - Replace this subsection, except the subsection number and title, with the following:

Attach a stainless steel identifying tag to all poles and mast arms. Provide tags that are at least 1/16 inch thick. Tag lettering shall be at least 3/16 inch in height, and be stamped or engraved on the tag. Attach tags with stainless steel #6 U-drive screws. Locate the pole tag approximately 12 inches up from the bottom of the base plate. Locate mast arm tag approximately 12 inches from mast arm plate, on underneath side of the arm.

Include the following information on the tags:

- Manufacturer
- Month and year of fabrication
- Pole designation
- Mast arm length

00962.46(j)(2)(a) Anchor Rods for Signal Supports and Fixed Base Luminaire Supports - Replace the paragraph that begins "Mark the position of each turned element..." with the following paragraph:

Mark position of each anchor rod and an outside ridge of each first nut above the base plate with a felt tip pen or similar marker to verify subsequent nut rotation. Rotate all first nuts above the base plate past snug tight an additional amount shown in 00962.46(j)(2)(d) in two passes. "Cheater" bars or slugging wrenches are allowed if required for large diameter anchor rods. After final tightening of the first nut above the base plate, tighten the second nut to a snug tight condition for assemblies with two nuts above the base plate.

00962.46(j)(4) Erecting Metal Poles - Add the following subsection after subsection 00962.46(j)(3) Bolt Inspection:

(4) Grout - After testing and approval, install grout pad between the foundation and pole base for each traffic signal pole and each fixed base illumination pole as shown on Washington County's standard drawings. Grout pads shall be installed prior to final acceptance of the installation.

SECTION 00970 - HIGHWAY ILLUMINATION

Comply with Section 00970 of the Standard Specifications modified as follows:

(Use the following subsection .00 for County projects. Use only one of the two options.)

00970.00 Scope - Add the following:

This Work includes furnishing and installing City approved materials, providing a roadway illumination system on signal poles and separate illumination poles, and meeting the requirements and standards of Portland General Electric (PGE) Schedule 32 or Schedule 95 Option C as shown on the plans. If there is a conflict between PGE standards and these specifications, the more stringent standard shall control.

Provide lighting equipment as specified in the Specifications or from the PGE Approved Street Lighting Equipment List in effect on the date the Project is advertised.

Add the following subsection:

00970.02 Definitions:

Qualified Worker - A qualified worker means one who is knowledgeable about the construction and operation of the electrical power generation, transmission, and distribution equipment as it relates to his or her work, along with the associated hazards, as demonstrated by satisfying the qualifying requirements for a "qualified person" or "qualified employee" with regard to the work in questions as described in 29 CFR 1910.269 effective January 31, 1994, as it may be amended from time to time. In this case, a Qualified Worker is a journeyman lineman, or someone who has the equivalent training, expertise, and experience to perform journeyman lineman work.

Add the following subsection:

00970.04 Required Submittals - In addition to the requirements of Section 00960, submit installation details for the following equipment:

- Light fixture including LED board and driver
- Photoelectric control

(Use the following lead in and subsection .11 for County projects with LED street lighting.)

Add the following subsection:

00970.11 LED Street Lighting - For Projects with LED street lighting, provide the following pre approved Equipment from the PGE Approved Street Lighting Equipment List:

- **Fixture** - LED fixtures shall be dimmable, four-bolt mounting bracket, gray finish, field adjustable drive current, ANSI 7-wire photocontrol receptacle and utility wattage label. Fixture voltage, color temperature, distribution and drive current as shown on the Plans. Where a single photocell is used for the lighting system, shorting caps shall be provided for each fixture.

Approved fixtures are:

- LEOTEK Green Cobra GC1 or GC2 series.
- **Photoelectric Control** - Photoelectric controls shall be long life with a minimum 10 year guarantee and a 25 year rated life.
Approved photoelectric controls are:
 - WESTIRE brand, 8483 series
 - Ripley model number RD8645
 - DTL model number DLL 1271.5

When higher light output is desired, higher wattage luminaires up to 170 watt within the same brand/model listed above, may be furnished.

When furnishing an LED luminaire model that is not specified as approved, the luminaire shall meet the requirements of 02926.54.

00970.30 Qualified Worker - In addition to the requirements of 00960.30, provide a Qualified Worker meeting the requirements of 00970.02 for performing work under this Section.

00970.43 Photocontrol Electronic Relay - Replace this subsection, except the subsection number and title, with the following:

Install photoelectronic control relay as shown on the plans.

00970.50 Grounding and Bonding - Delete the paragraph beginning with "On the inside of...".

Add the following paragraph:

Ground the LED fixture to the pole per the street light manufacturer's instructions. Bonding of street lights on distribution poles shall meet utility requirements.

00970.80 Measurement - Replace this subsection, except for the subsection number and title, with the following:

No measurement of quantities will be made for Work performed under this Section.

The quantities of lighting poles and arms are listed on the Project Plans. Any adjustment to the contract lump sum amount will be made according to 00190.10(h).

SECTION 00990 - TRAFFIC SIGNALS

Comply with Section 00990 of the Standard Specifications modified as follows:

Add the following subsection:

00990.10 Materials - Furnish Materials meeting the following requirements:

Crosswalk Closure Support.....00902.10
 Backer Rod02440.14

Furnish hot-melt loop sealant from the QPL.

Add the following subsection:

00990.13 Traffic Signal Circuits - Replace this subsection, except for the subsection number and title, with the following:

The #14 AWG, multi-conductor cables ran for traffic signal circuits shall meet the requirements of IMSA Specification 20-1. Provide color coding of the conductors as shown in Table 0990.13.

Table 00990.13

Traffic Signal Color Code #14 AWG IMSA 20-1 Traffic Signal Cable						
	Function (Phase)	20 Conductor [Feed]	10 Conductor [Branch]	7 Conductor [Branch]	5 Conductor [Branch]	4 Conductor [Branch]
Main	Phase Red	Red	Red	Red	Red	Red
	Phase Yellow	Orange	Orange	Orange	Orange	Orange
	Phase Green	Green	Green	Green	Green	Green
Side	Phase Red	Red/Black	Red/Black	Red	Red	Red
	Phase Yellow	Orange/Black	Orange	Orange	Orange	Black
	Phase Green	Green/Black	Green/Black	Green	Green	Green
Left	Phase Red	Black/Red	White/Black	White/Black	Red	Red
	Phase Yellow	White/Red	Black	Black	Orange	Black
	Phase Green	Black/White	Blue	Green	Green	Green
Overlap	Phase Red	Red/Green	White/Black	White/Black	Red	Red
	Yellow/Flashing Yellow Arrow	Orange/Red	Black	Black	Orange	Black
	Phase Green	Blue/Red	Blue	Blue	Green	Green
Main	Phase Don't Walk	Red/White	Red	Red	Red	-
	Phase Walk	Green/White	Green	Green	Green	-
Sid	Phase Don't Walk	Black	Red/Black	Red	Red	-

Traffic Signal Color Code #14 AWG IMSA 20-1 Traffic Signal Cable						
	Function (Phase)	20 Conductor [Feed]	10 Conductor [Branch]	7 Conductor [Branch]	5 Conductor [Branch]	4 Conductor [Branch]
	Phase Walk	Blue/White	Green/Black	Green	Green	-
Push-Button	Common	White/Black	White/Black	White/Black	Orange	-
	Main Street Phase	Blue	Blue	Blue	Black	-
	Side Street Phase	Blue/Black	Black	Black	Black	-
	Spare	White	White	-	-	-
	AC Common (Branch Only)	-	-	White	-	-

Label the loop feeders with indelible ink unless otherwise approved.

Add the following subsection:

00990.45 Repair Open Holes In Metal Poles, Pedestals, and Mast Arms – - Repair holes in metal poles, pedestals, and mast arms caused by removal of equipment using pipe plugs. For holes larger than 1 inch in diameter or of irregular shape, submit method and materials to be used.

00990.70(b) Control Equipment Testing - Replace this subsection, except for the subsection number and title, with the following:

Testing and retesting of all Equipment required to pass the Oregon Department of Transportation testing procedures at the Signal Lab in Salem, Oregon shall be performed at no additional cost to the Agency.

00990.70(g) Field Testing - Replace this subsection, except for the subsection number and title, with the following:

Perform the inductance and resistance testing on all inductive loops and loop feeder circuits. Obtain procedures for megohm meter tests and reporting forms from the Project Manager. Perform testing in the presence of the Engineer. Document the test results. Furnish the test data and test results to the Engineer.

00990.70(h) Traffic Signal Turn-On - Replace the first paragraph with the following:

The Agency will establish the date and time the installation is to be turned on. No turn-on's will be allowed Mondays, Fridays, or on days preceding a holiday. Notify the Engineer when Work is complete and ready for testing. Allow two weeks from the time of notification for installation testing and turn-on.

00990.80 Measurement — Add the following paragraph to the end of this subsection:

Unintegrated speed feedback assemblies will be measured according to 00991.80.

00990.90 Payment - Replace this subsection, except for the subsection number and title, with the following:

The accepted quantities will be made at the contract lump sum amount for the following items:

Pay Item	Unit of Measurement
(a) Sunset/Timbrel PHB Installation Complete,.....	Lump Sum

In the Schedule of Items, the location of the installation will be inserted in the pay item blanks, when applicable.

Item (a) includes furnishing (except City furnished materials) and installing all items necessary for the complete installation of the traffic signal system, including fire preemption system, the controller, controller cabinet, controller cabinet Equipment, remote service, detection system, poles, pole arms, bases, foundations, illumination and associated equipment, and street name signs with mounting hardware.

Item (a) includes furnishing (except City furnished materials) and installing all items of the speed feedback assembly, including reinstallation of the school zone sign and flashers.

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as shown and specified with the exception of the materials being supplied by the City.

No separate or additional payment will be made for:

- Items shown but not listed separately in the Schedule of Items.
- Salvaging and stockpiling traffic signal Equipment.
- Replacement of disturbed earthwork, Base, Surfacing, and landscaping, as applicable.
- Providing Railroad company personnel to supervise interconnection with railroad cabinets, when applicable.
- Providing conduit on structures, when applicable.

Add the following paragraph to the end of this subsection:

Crosswalk closure supports will be paid for according to 00902.90.

SECTION 01030 - SEEDING

Comply with Section 01030 of the Standard Specifications modified as follows:

01030.13(f) Types of Seed Mixes - Add the following to the end of this subsection:

Provide the following seed mix formulas:

- Grass Seeding: Prottime 710 or approved equal

01030.42 Weed Control - Add the following to end of the third paragraph:

The use of glyphosate herbicide is not allowed.

01030.48 Application - Replace this subsection, except for the subsection number and title, with the following:

Use the following application method for permanent and temporary seeding:

- **Step 1** - Apply fine compost to a uniform depth of 2 inches with a pneumatic blower or other Equipment that propels the Material directly at the Soil surface and achieves direct contact with the Soil. Apply at least 3 feet over the top of the slope or overlap the Material into existing vegetation.
- **Step 2** - Seed the disturbed area with the seed mix at the rate specified in 1030.13(f). Seed may be spread by mechanical spreader according to 01030.48(b)(1)(c).
- **Step 3** - Cover seeded areas with fine compost uniformly at an approximate depth of 1/4 inch.
- **Step 4** - Fertilize according to 01030.44.

01030.90 Payment - Replace the paragraph beginning "Items (c) through (k)..." with the following:

Items (c) through (k) include preparing the seed bed, Soil preparation, seeding, fertilizing, mulching, composting, applying tacking agent, and all establishment Work.

Add the following bullet after the paragraph that begins "No separate or additional...":

- All Work associated with the WCWP if weed control is not included in the Contract Schedule of Items