

MULTNOMAH COUNTY

**CM/GC SPECIAL PROVISIONS
FOR HIGHWAY CONSTRUCTION**

MAIN SPAN, EAST APPROACH & FOUNDATIONS

WILLAMETTE RIVER (SELLWOOD BRIDGE)

SELLWOOD BRIDGE PROJECT

OSWEGO HIGHWAY AND TACOMA ST.

MULTNOMAH COUNTY

Main Bridge Package (Design Package 3)

xxx, xx 2012

(Draft 1/6/12)

DESCRIPTION OF WORK

Grading, Structure, and Paving
Willamette River (Sellwood Bridge)
Sellwood Bridge Project
Oswego Highway and Tacoma St.
Detour Structure Package (Design Package 1)
Multnomah County

The Specifications applicable to General Conditions ("Part 100") for this Project are the "CM/GC General Provisions" of the "Sellwood Bridge (Multnomah County), CM/GC Project" Contract.

The Standard Specification applicable to Part 200 through Part 3000 of the Work on this Project is the 2008 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 CM/GC General Provisions and the Standard Specifications bearing like numbers and to Sections and subsections contained in these Special Provisions in their entirety.

CLASS OF PROJECT

This is a Federal-Aid Project.

Sellwood Bridge (Amendment # xx, Early Work Amendment To CM/GC Contract For Construction of Main Bridge)

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SP RRS (03-31-08)

(Use this specification for Railroad involvement and Railroad Insurance and Liability Coverage is NOT required. Fill in the blank below with the appropriate railroad company. Obtain all the "fill in the blanks" identified as " " from ODOT's Railroad Engineer Liaison. Do not make any other changes.)

_____ **COMPANY**

CONTRACTOR REQUIREMENTS

1.01 General

1.01.01 The Contractor shall cooperate with enter Railroad Company name here hereinafter referred to as "Railway" where work is over, under, on, or adjacent to Railway property and/or right-of-way, hereafter referred to as "Railway Property", during the construction of enter project name here.

1.01.02 The Contractor shall plan, schedule and conduct all work activities so as not to interfere with the movement of any trains on Railway Property.

1.01.03 The Contractor is subject to the absolute right of Railway to cause the Contractor's work above Railway Property to cease if, in the opinion of Railway, the Contractor's activities create a hazard to Railway Property, employees, and/or operations.

1.01.04 The Contractor shall notify the Agency Project Manager and notify the Railway's enter Title and name of RR representative here at enter RR phone No. here, at least 30 working days before commencing any work on Railway Property. The Contractor's notification to Railway, shall refer to enter project name here.

1.01.05 Subject to the movement of Railway's trains, Railway will cooperate with the Contractor such that the work may be handled and performed in an efficient manner. The Contractor shall have no claim whatsoever for any type of damages or for extra or additional compensation in the event his work is delayed by the Railway.

1.02 Railway Requirements

1.02.01 The Contractor shall take protective measures as necessary to keep Railway facilities, including track ballast, free of sand, debris, and other foreign objects and materials resulting from his operations. Any damage to Railway facilities resulting from the Contractor's operations will be repaired or replaced by Railway and the cost of such repairs or replacement shall be paid for by the Contractor.

(Use the following subsection 1.02.02 when blasting operations may be required.)

1.02.02 The Contractor shall notify the Railway's enter Title and name of RR representative here at enter RR phone No. here and provide blasting plans to the Railway for review seven calendar days prior to conducting any blasting operations adjacent to or on Railway Property.

Use the following subsection 1.03 and corresponding subsections when flagging services are required.)

1.03 Protection of Railway Facilities and Railway Flagger Services

1.03.01 The Contractor shall give a minimum of enter days here working days notice to the enter Title and name of RR representative here at enter RR phone No. here, in advance of when flagging services will be required.

1.03.02 Railway flagger services will be required insert appropriate information here such as " during the installation of the traffic signal poles...", but not limited thereto for the following conditions:

1.03.02a When in the opinion of the Railway representative it is necessary to safeguard Railway Property, employees, trains, engines and facilities.

1.03.02b When any excavation is performed below the bottom of tie elevation, if, in the opinion of Railway representative, track or other Railway facilities may be subject to movement or settlement.

1.03.02c When work in any way interferes with the safe operation of trains at timetable speeds.

1.03.02d When any hazard is presented to Railway track, communications, signal, electrical, or other facilities either due to persons, material, equipment or blasting in the vicinity.

1.03.02e Special permission shall be obtained from the Railway before moving heavy or cumbersome objects or equipment which might result in making the track impassable.

1.03.03 Flagging services shall be performed by qualified Railway flaggers.

1.03.03a Flagging crew generally consists of one employee. However, additional personnel may be required to protect Railway Property and operations, if deemed necessary by the Railway representative.

1.03.03b Each time a flagger is called, the minimum period for billing shall be the eight hour basic day.

1.03.03c The cost of flagger services provided by the Railway, when deemed necessary by the Railway representative, will be borne by ODOT according to ODOT's special provision subsection 00170.01(e).

OREGON DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISIONS

FOR

Grading, Structure, and Paving
Sellwood Bridge
Oswego Highway (OR43) and Tacoma Street
Multnomah County

PROFESSIONAL OF RECORD CERTIFICATION(s):

Seal w/signature	I certify the Special Provision Section(s) listed below are applicable to the design for the subject project for <u>temporary river traffic control</u>. Modified Special Provisions were prepared by me or under my supervision. Sections 00220 and 00225
Date Signed: _____	

OREGON DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISIONS

FOR

Grading, Structure, and Paving
Sellwood Bridge
Oswego Highway (OR43) and Tacoma Street
Multnomah County

PROFESSIONAL OF RECORD CERTIFICATION(s):

Seal w/signature	I certify the Special Provision Section(s) listed below are applicable to the design for the subject project for <u>erosion control and environmental protection</u>. Modified Special Provisions were prepared by me or under my supervision. Sections 00245 and 00290
Date Signed: _____	

OREGON DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISIONS

FOR

Grading, Structure, and Paving
Sellwood Bridge
Oswego Highway (OR43) and Tacoma Street
Multnomah County

PROFESSIONAL OF RECORD CERTIFICATION(s):

Seal w/signature	I certify the Special Provision Section(s) listed below are applicable to the design for the subject project for <u>construction surveying</u> . Modified Special Provisions were prepared by me or under my supervision. Sections 00305
Date Signed: _____	

OREGON DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISIONS

FOR

Grading, Structure, and Paving
Sellwood Bridge
Oswego Highway (OR43) and Tacoma Street
Multnomah County

PROFESSIONAL OF RECORD CERTIFICATION(s):

Seal w/signature	I certify the Special Provision Section(s) listed below are applicable to the design for the subject project for <u>Main bridge construction</u>. Modified Special Provisions were prepared by me or under my supervision. Sections 00252, 00510, 00512, 00530, 00540, 00541, 00545 and 00550
Date Signed: _____	

OREGON DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISIONS

FOR

Grading, Structure, and Paving
Sellwood Bridge
Oswego Highway (OR43) and Tacoma Street
Multnomah County

PROFESSIONAL OF RECORD CERTIFICATION(s):

Seal w/signature	I certify the Special Provision Section(s) listed below are applicable to the design for the subject project for <u>Main bridge construction</u>. Modified Special Provisions were prepared by me or under my supervision. Sections 00501, 00560, 00581, 00582, 00583, 00585, 00587, 00589 and 00594.
Date Signed: _____	

OREGON DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISIONS

FOR

Grading, Structure, and Paving
Sellwood Bridge
Oswego Highway (OR43) and Tacoma Street
Multnomah County

PROFESSIONAL OF RECORD CERTIFICATION(s):

Seal w/signature	I certify the Special Provision Section(s) listed below are applicable to the design for the subject project for <u>timber structures and 3-sided arch culvert</u>. Modified Special Provisions were prepared by me or under my supervision. Sections 00520, 00570 and 00598
Date Signed: _____	

Sellwood Bridge (Amendment # xx, Early Work Amendment To CM/GC Contract For Construction of Main Bridge)

SPECIAL PROVISIONS

WORK TO BE DONE

The Work to be done under this Contract consists of the following on the Willamette River (Sellwood) Bridge, Main Structure Package (Design Package 3) Section of the Oswego Highway and Tacoma St. in Multnomah County:

1. Construct main span bridges, east approach and foundations.
2. Remove in-water obstructions.
3. Install _____. (Coordinate with Amendment to match language)
4. Perform additional and incidental Work as called for by the Specifications and Plans.

APPLICABLE SPECIFICATIONS

The Specification that is applicable to the Work on this Project is the 2008 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 Federal-Aid Project.

Sellwood Bridge (Amendment # xx, Early Work Amendment To CM/GC Contract For Construction of Main Bridge)

**SECTION 00110 - ORGANIZATION, CONVENTIONS,
ABBREVIATIONS AND DEFINITIONS**

Comply with Section 00110 of the CM/GC General Provisions modified as follows:

0110.10 Abbreviations: In the list of abbreviations replace the abbreviation "ACI – Asphalt Concrete Institute" with "ACI – American Concrete Institute".

00110.20 Definitions - Add the following to the list of definitions:

Design Engineer of Record (DEOR) – The Engineer who seals a work product for the cumulative portion of a design element through construction.

SECTION 00150 - CONTROL OF WORK DURING CONSTRUCTION PHASE SERVICES

Comply with Section 00150 of the CM/GC General Provisions modified as follows:

00150.15(b) Agency Responsibilities - Replace this subsection, except for the subsection number and title, with the following:

The Engineer will perform the Agency responsibilities described in the Construction Surveying Manual for Contractors, Chapter 1.5 (see Section 00305).

00150.15(c) Contractor Responsibilities - Replace this subsection, except for the subsection number and title, with the following:

The Contractor shall perform the Contractor responsibilities described in the Construction Surveying Manual for Contractors, Chapter 1.6 (see Section 00305) and the following:

Perform earthwork slope staking including intersections and matchlines and set stakes defining limits for clearing which approximate right-of-way and easements.

00150.35(c) Number and Size of Drawings - Replace this subsection, except for the subsection number and title, with the following:

The Contractor shall submit Working Drawings according to the following method:

Electronic Submittal - For electronic submissions, submit Working Drawings according to the "Guide to Electronic Shop Drawing Submittal" which is available from the Engineer.

00150.35(d-1) Stamped Working Drawings - Replace the sentence with the following sentence:

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

Sellwood Bridge (Amendment # xx, Early Work Amendment To CM/GC Contract For Construction of Main Bridge)

00150.35(d-2) Unstamped Working Drawings - Replace the sentence with the following sentence:

Unstamped Working Drawings will be designated on the face of the Drawing, as "approved", "approved as noted", or "returned for correction" by the Engineer.

00150.50 Cooperation with Utilities - Add the following subsection:

(f) Utility Information:

There are no anticipated conflicts with the Utilities listed below. Contact those Utilities having buried facilities and request that they locate and mark them for their protection prior to construction.

Utility	Contact Person's Name and Phone Number
1. City of Portland Water Bureau (PWB)	Cherri Warnke (503) 823-6036
2. Portland Bureau of Environmental Services (BES)	Dave Nunamaker (503) 823-7266
3. Portland General Electric (PGE)	Jamie Starkovich (503) 425-1625
4. Integra Telecom	Robert Davidson (503) 453-8247
5. Pacific Fiber Line	Mr. Corrie Lucas (541) 998-1290
6. Century Link	Scott Miller (503) 242-4144
7. Northwest Natural Gas	Bob Keller (503) 816-0299
8. Comcast Cable-West Side River	Leroy Soumokil (503) 596-3770
9. Comcast Cable-East Side River	Chad Vaughn (503) 813-30481

The following organizations may be adjusting Utilities within the limits of the Project during the period of the Contract with relocation Work estimated to be completed by the following dates (times):

Utility	Estimated Completion Date (Time)
1. Portland General Electric (PGE) Jamie Starkovich (503) 425-1625 Power pole, transmission tower and electrical cable relocations	March 31, 2012
2. Comcast Cable Chad Vaughn (503) 813-0481 Coax cable relocations	March 31, 2012

Sellwood Bridge (Amendment # xx, Early Work Amendment To CM/GC Contract For Construction of Main Bridge)

- | | |
|---|----------------|
| 3. Integra Telecom
Robert Davidson (503) 453-8247
Fiber optic cable relocations | March 31, 2012 |
| 4. Century Link
Scott Miller (503) 242-4144
Buried fiber optic cables | June 30, 2012 |

Energized power lines overhang portions of the Work with a minimum vertical clearance of 18 feet. Contractor shall maintain at least 10 feet of safety clearance. Contact PGE to coordinate and schedule any de-energization that is possible.

This Project is located within the Oregon Utility Notification Center area which is a Utilities notification system for notifying owners of Utilities about Work being performed in the vicinity of their facilities. The Utilities notification system telephone number is 811 (or use the old number which is 1-800-332-2344).

00150.60(a) Load and Speed Restrictions for Construction Vehicles and Equipment - Add the following bullet to the end of the bullet list:

- The Contractor shall restrict the combined weights of construction vehicles, Equipment, and Materials on Bridges according to 00220.45.

SECTION 00170 - LEGAL RELATIONS AND RESPONSIBILITIES

Comply with Section 00170 of the CM/GC General Provisions modified as follows:

(Use the following lead-in paragraph and subsection .01(e) on projects with railroad involvement. Obtain information from ODOT's Railroad Engineer Liaison. Use of this subsection requires SP_RR_BNSF, SP_RR_INPR, SP_RR_NECR, SP_RR_PNWR, or SP_RR_UPRR.)

Add the following subsection:

00170.01(e) Railways - An agreement between the Contractor and the railway to work on and within railway property is required for this Project. A copy of the railway agreement and corresponding requirements is included near the front of this Special Provision booklet. The railway agreement and requirements are subject to change by the railway. The railway will provide the actual agreement and requirements for execution. The Contractor shall obtain all necessary permits and licenses and pay all fees (see 00170.02). The Contractor shall obtain a fully executed copy of the agreement and requirements between the Contractor and the railway and provide a copy of it to the Engineer before beginning work on or within the railway property or right-of-way.

The Railway contact person for this Project is:

(enter name)

(enter address)

Sellwood Bridge (Amendment # xx, Early Work Amendment To CM/GC Contract For Construction of Main Bridge)

_____(enter city, state and zip)_____
_____(enter phone number)_____

(Use the following paragraph when railway flagger services are required. Obtain the information from ODOT's Railroad Engineer Liaison.)

When railway flagger services are required, the Agency will pay the flagger services costs up to a total of _____(enter number of hours or days)_____. If this value is exceeded and additional flagging services are needed, the Contractor shall pay the Agency an amount of _____(enter dollar amount)_____ per _____(enter "hour" or "day")_____ for each _____(enter "hour" or "day")_____ in excess of the total value identified above.

SECTION 00180 - PROSECUTION AND PROGRESS

Comply with Section 00180 of the CM/GC General Provisions modified as follows:

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
Railway Work	00170.01(e)
Right-of-Way and Access Delays	00180.65
In-water Work Restrictions	00290.34(a)
Noise Control	00290.32

00180.65 Right-of-Way and Access Delays - Add the following paragraph:

It is anticipated that the ending date of an anticipated delay for the following properties will be as shown:

Right-of-Way:

- File #T1015D-021 not later than February 15, 2012.
- File #T1015D-022 not later than February 15, 2012.
- File #T1015D-023 not later than February 15, 2012.
- File #T1015D-024 not later than February 15, 2012.
- File #T1015D-034 not later than May 15, 2012.
- File #T1015D-035 not later than May 15, 2012.
- File #T1015D-043 not later than February 15, 2012.

Access:

- File #T1015D-030 not later than February 15, 2012.
- File #T1015D-033 not later than February 15, 2012.
- Non-Park Use Permit #2 not later than February 15, 2012.

Sellwood Bridge (Amendment # xx, Early Work Amendment To CM/GC Contract For Construction of Main Bridge)

SECTION 00190 - MEASUREMENT OF PAY QUANTITIES

Comply with Section 00190 of the CM/GC General Provisions modified as follows:

00190.20(f-2) Scale Without Automatic Printer - Add the following sentence after the first paragraph:

Pay costs for the weigh witness at \$35.00 per hour.

00190.20(g) Agency-Provided Weigh Technician - Add the following paragraph after the bullet list:

Pay costs for the weigh technician at \$35.00 per hour.

SECTION 00195 – PAYMENT FOR CONSTRUCTION PHASE SERVICES

(Fuel, Asphalt & Steel Escalation Specs will be developed with Interchange Package)

00195.50(c-3) Bonds and Securities - Replace this subsection with the following subsection:

00195.50(c-3) Bonds, Securities, and Other Instruments - In accordance with ORS 279C.560, unless the Agency finds in writing that accepting a bond, security or other instrument poses an extraordinary risk that is not typically associated with the bond, security or other instrument, the Agency will approve the Contractor's written request to deposit bonds, securities or other instruments with the Agency or in a custodial account or other account satisfactory to the Agency with an approved bank or trust company, to be held instead of cash retainage for the benefit of the Agency. In such event, the Agency will reduce the cash retainage by an amount equal to the value of the bonds, securities and other instruments. Interest or earnings on the bonds, securities and other instruments shall accrue to the Contractor.

Bonds, securities and other instruments deposited instead of cash retainage shall be assigned to or made payable to the Agency and shall be of a kind approved by the Director of the Oregon Department of Administrative Services, including but not limited to:

- Bills, certificates, notes or bonds of the United States;
- Other obligations of the United States or agencies of the United States;
- Obligations of a corporation wholly owned by the federal government;
- Indebtedness of the Federal National Mortgage Association;
- General obligation bonds of the State of Oregon or a political subdivision of the State of Oregon;
- Irrevocable letters of credit issued by an insured institution, as defined in ORS 706.008.

The Contractor shall execute and provide such documentation and instructions respecting the bonds, securities and other instruments as the Agency may require to protect its

Sellwood Bridge (Amendment # xx, Early Work Amendment To CM/GC Contract For Construction of Main Bridge)

interests. When the Engineer determines that all requirements for the protection of the Agency's interest have been fulfilled, the bonds and securities deposited instead of cash retainage will be released to the Contractor.

**SECTION 00210 – MOBILIZATION
(Developed with Interchange Package)**

**SECTION 00220 - ACCOMMODATIONS FOR PUBLIC TRAFFIC
(Roadway Public Traffic Developed with Interchange Package)
(River Public Traffic Developed with Main Bridge Package)**

Add the following subsection:

00220.43 Navigable Channel Changes and River Closure Notifications -

Submit to the Engineer in writing for approval any:

- Proposed full closures of the Willamette River at the Sellwood Bridge site
- Proposed river closures that prevent the passage for any currently permitted craft to travel under the Sellwood Bridge
- Proposed "No Wake" zone

The Agency has submitted the initial closure and passage restriction request, for December 2011 and January 2012 pile driving work. Submit additional requests for river closures a minimum of 75 calendar days before full closures or passage restrictions are to begin. The Agency has submitted the initial "No Wake" zone request. Submit additional "No Wake" zone requests to the Engineer and Oregon State Marine Board four months minimum prior to date that a "No Wake" zone is desired.

The Agency has submitted the initial navigable channel change request. Submit to the Engineer in writing for approval any proposed additional changes to the Willamette River navigable channel width or location marked by the red and green navigation lights (as defined by 33 CFR 118.65 of the Coast Guard Regulations). Submit this request a minimum of 75 calendar days before such changes are implemented.

Submit to the Engineer in writing for approval any limitation to river usage or traffic patterns for either recreational or commercial craft that does not prevent the through passage of any currently permitted craft. Such changes include but are not limited to partial river closures such as a closure under a bridge span not in the navigable channel, installation of work bridges, debris booms, pile groupings, cofferdams, warning signs and buoys. Notify the Engineer a minimum of 30 days before making any changes that affect such river usage.

The Contractor shall be limited to 6 full closure events on the Willamette River at the Sellwood Bridge site for the completion of all construction phases of this project. No single closure event shall last more than 96 hours without special approval from the Engineer and the total number of hours of full closure is limited to 480 hours for all phases of the project. Contractor is advised to begin coordination of river closures with Engineer as soon as practical.

Sellwood Bridge (Amendment # xx, Early Work Amendment To CM/GC Contract For Construction of Main Bridge)

SECTION 00225 - WORK ZONE TRAFFIC CONTROL
(Roadway Traffic Control Developed with Interchange Package
(River Traffic Control Developed with Main Bridge Package

Comply with Section 00225 of the Standard Specifications modified as follows:

00225.00 Scope – Add the following to the end of this subsection:

This work consists of river navigation temporary traffic control measures.

00225.32 Traffic Control Supervisor - Replace the bullet that begins "Prepare and sign a daily..." with the following bullet:

- Prepare and sign a "TP & DT Daily Report" form (Form No. 734-2474). Submit the report to the Engineer no later than the end of the next working day. As a minimum, include the following items in the report:

00225.81(a) Signs – Replace the first sentence of the first paragraph with the following:

Temporary signs will be measured on the area basis, after installation and approval by the Engineer.

00225.91 Temporary Signing – Add the following to the sentence that begins: "Item (a) includes..."

This item includes temporary river navigation signing.

Add the following pay items:

00225.93 Temporary Traffic Delineation

- (o) Temporary River Buoys, 9" Dia. Regulatory..... Each
- (p) Temporary River Buoys, 13" Dia. Channel Marker Each
- (r) Temporary River Buoy Solar Lights (Color)..... Each

Item (o) and (p) includes furnishing and installing each device, complete, of the type, style, color, shape, material, etc. as shown in the plans. Payment for this item also includes replacing damaged or missing devices with new devices.

In item (r), the color of temporary river buoy solar light will be inserted in the blank. Item (r) includes furnishing and installing each device, complete, as shown in the plans. Payment for this item also includes replacing damaged or missing devices with new devices.

SECTION 00240 - TEMPORARY DRAINAGE FACILITIES
(Developed with Interchange Package

Sellwood Bridge (Amendment # xx, Early Work Amendment To CM/GC Contract For Construction of Main Bridge)

SECTION 00245 - TEMPORARY WATER MANAGEMENT

Section 00245, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00245.00 Scope - This work consists of furnishing, installing, operating, maintaining, and removing temporary water management facilities in regulated work areas.

00245.02 Definitions:

Temporary Water Management Facility - A facility that conveys water around work areas, removes water from work areas, and treats and discharges water at locations outside work areas.

00245.03 Temporary Water Management Plan - The Agency Temporary Water Management Plan (TWMP) is a concept plan. 28 Calendar Days before beginning work in regulated work areas, submit stamped working drawings of a Contractor-developed TWMP, according to 00150.35, based on either the Agency's concept plan or an independent plan that meets water quality and environmental guideline requirements and does not affect neighboring properties or water rights.

Include at least the following information:

- The sequence and schedule for dewatering and re-watering.
- How the work area will be isolated from the active stream flow upstream, through, and downstream.
- How the stream flow will be routed and conveyed around or through the isolated work area.
- How the isolated area will be de-watered.
- How the pumped water will be treated before it is discharged downstream.
- Discuss all construction stages.
- A list of on-site backup materials and equipment
- Calculations of water withdraw pumps capacity.

Obtain the Engineer's written approval before beginning work in in-water work areas.

Materials

00245.10 Materials - Furnish materials meeting the following requirements:

Pipe.....	00445.11
Plastic Sheeting	00280.14(a)
Riprap	00390.11
Sandbags	00280.15(a)
Water Intake Screening	00290.34(c)
Riprap Geotextile.....	0290.34(c)

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Furnish pumps that are:

- Self priming.
- Equipped with a variable speed governor.
- Equipped with a power source.
- Able to pump water that contains soft and hard solid.

Construction

00245.40 Fish Removal - The Agency, ODFW biologists, or ODOT consultant personnel will remove fish and aquatic life from the isolation work areas. Allow them access into the isolation work areas before and after installation of the temporary water management facilities as follows:

- **Before Installation of Facilities** - Before installing temporary water management facilities they will remove fish and aquatic life within the proposed isolated work area.
- **After Installation of Facilities** - After installing temporary water management facilities begin reducing the water level through the isolated work area. They will remove all fish and aquatic life as the water level is reduced. Do not de-water the isolation area until all fish and aquatic life have been removed.

00245.41 Installation - During installation of the temporary water management facility, maintain a downstream water flow rate of at least 50 percent of the upstream water flow rate.

00245.42 Operation - Operate temporary water management as follows:

- Provide safe passage around or through the isolated work area for adult and juvenile migratory fish unless passage did not previously exist.
- Maintain and control water flow downstream of the isolated work area for the duration of the diversion to prevent downstream de-watering.
- Clean and repair water intake screening to maintain adequate flow and protection of aquatic life.

00245.43 Maintenance - Monitor water turbidity according to 00290.30(a-8).

00245.44 Removal - Remove the temporary water management facility and rewater and restore the stream flow when approved by the Engineer. Maintain downstream water flow during removal of the facility.

Measurement

00245.80 Measurement - No measurement of quantities will be made for temporary water management facilities.

The estimated quantities of materials required for the temporary water management facility are:

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Temporary Water Management Facility at Landslide Stabilization area:

Pipe.....	140 Feet
Plastic Sheetting	50 Square Yard
Riprap	2 Cubic Yard
Sandbags.....	1200 Each
Riprap Geotextile.....	4 Square Yard

Turbidity monitoring will be measured according to 00290.80.

Payment

00245.90 Payment - The accepted quantities of temporary water management facilities will be paid for at the Contract lump sum amount for the item "Temporary Water Management Facility at Landslide Stabilization area ".

The location of the facility will be inserted in the blank.

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 specified.

Turbidity monitoring will be paid according to 00290.90.

No separate or additional payment will be made for designing, maintaining, operating, moving, and removing the facility.

SECTION 00252 - TEMPORARY WORK BRIDGES

Section 00252, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00252.00 Scope - This work consists of designing (if applicable), constructing, maintaining, and removing temporary work bridges or trestles necessary to construct the new structure.

Materials

00252.10 Material - Provide materials for temporary work bridges or trestles meeting the requirements of the applicable Sections of Part 00500.

Construction

00252.40 Construction - Provide stamped working drawings and calculations of the work bridges or trestles according to 00150.35.

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Design work bridges or trestles according to AASHTO "Guide Design Specifications for Bridge Temporary Works".

Construct work bridges or trestles at the locations shown and according to AASHTO "Construction Hand Book for Bridge Temporary Works".

Construct the work bridges or trestles so they satisfy all the requirements of applicable permitting agencies.

Maintenance

00252.60 Maintenance - Maintain work bridges or trestles in a safe and functional condition.

Provide and place suitable approved barriers on or near the work bridges or trestles to prevent public access.

Finishing and Cleaning Up

00252.70 Structure Removal - When the temporary work bridges or trestles are no longer needed, remove them according to Section 00310.

Satisfy all requirements of applicable permitting agencies during work bridge or trestle removal.

Restore all areas occupied by the work bridges or trestles to original condition.

Measurement

00252.80 Measurement - No measurement of quantities will be made for work performed under this Section.

Payment

00252.90 Payment - The accepted quantities of work performed under this Section will be paid for at the Contract lump sum amount for the item "Temporary Work Bridges".

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 specified.

Progress payments and retained amounts will be made according to 00195.50 except for the following:

- No payment will be made for materials on hand.
- 20 percent of the bid amount will be retained until satisfactory removal of the work bridges is done.

No separate or additional payment will be made for designing, constructing, maintaining, and removing work bridges or trestles.

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SECTION 00280 - EROSION AND SEDIMENT CONTROL
(Developed with Interchange Package)

SECTION 00290 - ENVIRONMENTAL PROTECTION

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

00290.00 Scope - Add the following to this subsection:

The following permits have been obtained for this project:

- U.S. Army Corps of Engineers Section 404 Dredge Permit #NWP-2011-208
- Oregon Department of State Lands Removal-Fill Permit #47057-RF
- National Marine Fisheries Service Biological Opinion #2010/00230, and the December 7, 2011 clarifying email from Marc Liverman/NMFS
- Hydroacoustical Monitoring Plan
- Oregon Department of Fish and Wildlife Fish Passage Approval #PA-02-0050
- Oregon Department of Fish and Wildlife Fish Passage Approval #PA-02-0044
- Oregon Department of Fish and Wildlife In-Water Work Extension (December 07, 2011)
- U.S. Coast Guard Bridge Permit #3-11-13
- Federal Highway Administration and Oregon Department of Transportation NEPA ROD #FHW A-OR-EIS-10-01-F
- City of Portland Land Use Permit #LU 11-152470 GW
- City of Portland Land Use Permit #LU 11-173927 EN GW
- Portland Parks and Recreation Permit of Entry for Park Property – Permit #2011-48
- Portland Parks and Recreation Permit of Entry for Park Property – To Be Determined
- Department of Environmental Quality (DEQ) 1200C (PENDING)

Provide a Pollution Control Plan Update to the approved Sellwood Bridge Landslide Package “Pollution Control Plan Update” (PCP Update). Replace all reference to “PCP” in this Section with “PCP Update.”

Provide an In-Water Work Containment Plan and Work Containment System Update to the approved Sellwood Bridge Landslide Package In-Water Work Containment Plan (WCP) and Work Containment System (WCS).

This Section also applies to the excavation, onsite management, loading, hauling, and offsite disposal of known contaminated media in the project area and monitoring for contaminated media during all excavation activities for the work of this Contract. This Section also includes procedures for responding to unanticipated and unknown contaminated media that may be encountered in the project area.

00290.00(a) Additional Requirements

Comply with the requirements of the Oregon Department of Environmental Quality (DEQ) Oregon Administrative Rules (OAR) 340-122-010 to 140, and 205-360.

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Provide personnel health and safety training and medical examinations, and maintain medical records of personnel in accordance with all applicable Federal, State and local regulations.

Comply with all applicable Occupational Safety and Health Administration (OSHA) health and safety requirements, including, but not limited to 29CFR 1910.120 and OAR 340-248-0110. Review all information regarding the nature and extent of the contaminated media anticipated in the project area presented in Subsection 2.02. Determine what, if any, OSHA regulations are applicable to contaminated media excavation, management, and hauling activities. Employ a Certified Industrial Hygienist (CIH) to make this determination. Identify in the Health and Safety Plan (HASP) the specific activities determined to be subject to the requirements of 29CFR 1910.120 and OAR 340-248-0110.

00290.00(b) Record Keeping - Provide the following:

- **Daily Reports:** Prepare daily reports on the same day in which activity has occurred and submit to the County on a weekly basis. Document all monitoring of excavation and management of contaminated media. Include locations and depth where contaminated media was excavated and estimated in-place volumes that were excavated. Describe the locations of any temporary contaminated media stockpiles (See 00290.63) and the volume of contaminated media placed in, or removed from, the stockpiles. Describe the location, depth, and nature of any unanticipated contaminated media encountered or observed and the response taken.
- **Contaminated Media Bills of Lading and Weigh Slips:** Use a bill of lading for each offsite shipment of contaminated media. Include the date and time of shipment, the name of the hauling company, the name of the truck driver, the disposal site, and a brief description of the contaminated media (i.e., soil, water, debris). Provide a copy of the bill of lading and the associated weigh slip showing the weight/volume of the contaminated media to the County within 8 days of shipment of the contaminated media.
- If RCRA or Oregon State only hazardous waste is encountered, follow all applicable local, state, and Federal regulations for the handling and disposal of hazardous waste.

Add the following subsection:

00290.01 Definitions

- Hazardous Substances are defined by Oregon Department of Environmental Quality (DEQ) rules (OAR Chapter 340, Division 122) as:
 - Substances defined as hazardous substances in Section 101 (14) of the Federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).
 - Oil, including gasoline, fuel oil, diesel, lubricating oil, or other petroleum products.
 - The background concentrations of inorganic substances (i.e., metals) are site specific.

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- RCRA Hazardous Waste is defined as all waste material, including excavation soils, which requires management, handling, transport, treatment, storage or disposal according to the requirements of the Federal Resource, Conservation and Recovery Act ("RCRA") and associated regulations (42 U.S.C. § 6901 et seq. and 40 CFR Parts 260 and 261 et seq.).
- Asbestos: includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, actinolite asbestos and any of these minerals that have been chemically treated and/or altered. This includes suspect and/or presumed ACM.
- Asbestos Containing Material (ACM) and Asbestos Containing Soil (ACS): means any material containing more than one percent asbestos.
- Solid Waste Disposal or Treatment Facility is defined as a solid waste landfill or other facilities permitted by federal, state, and local agencies to receive and dispose or treat contaminated media.
- As noted in the plans, disposal procedures for contaminated materials are defined as follows:
 - Subtitle D – Remove and dispose of contaminated material in a Subtitle D landfill or other approved treatment facility after it is excavated.
 - Backfill On Site – Excavated contaminated material may be used as backfill within the same tax lot it is excavated from. The material must remain on the same tax lot as it is excavated from. If it cannot remain within the same tax lot, it must be disposed of in a Subtitle D landfill or other treatment facility. It cannot be disposed of on a different tax lot. If material is to be temporarily stockpiled within the same tax lot for use later as backfill within the same tax lot, protect stockpile by covering with secured plastic sheeting and install perimeter control around the base to control runoff.
 - Clean Backfill – Excavated material can be used as backfill on any tax lot or be hauled off site as clean fill.

00290.02 Submittals - Complete and submit the following information for all excavation areas:

- Health and Safety Plan (HASP) describing the specific equipment and procedures to be performed to ensure that the Federal and State Occupational Health and Safety Administration (OSHA) health and safety requirements are satisfied. Include certification of all trained personnel and reference the Site Layout Plan. Identify the specific activities determined to be subject to the requirements of Title 29 of the Code of Federal Regulations (CFR) 1910.120.
- Provide the name and qualifications of the Certified Industrial Hygienist (CIH), the Safety Representative(s) and a qualified analytical laboratory. At a minimum, provide evidence of at least 3 years of demonstrated experience on projects of similar nature by these service providers.
- Site Layout Plan showing the exclusion zones, stockpile areas (See 00290.63), roll-off box storage areas, loading areas, and on-site hauling routes.

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- Waste Disposal Plan describing the Solid Waste Disposal or Treatment Facilities where contaminated media will be treated and/or disposed of off the site and the offsite haul routes that will be used to transport the contaminated media to the facility. Include documentation of the Solid Waste Disposal or Treatment Facility waste acceptance in the Waste Disposal Plan. Include all completed forms, applications, and analytical data submitted to the Solid Waste Disposal or Treatment Facility.
- Spill Prevention and Cleanup Plan describing the equipment and procedures to be used to prevent releases of hazardous substances to the soil and water from the construction equipment and materials. Describe the equipment and procedures to be used to immediately cleanup any such releases, if they occur.
- Unanticipated and Unknown Contaminated Media Handling Plan describing proposed methods for responding to unanticipated contaminated media, source and availability of drop box containers, location of temporary storage area(s) for filled drop box containers, onsite hauling routes to container storage area(s).

00290.10 Staging and Disposal Sites - Add the following to the end of this subsection:

Until the Phase 2 land use permit is obtained from the City of Portland (this permit is expected to be obtained about March 1, 2012), perform staging offsite or on barges. Temporary storage of non-hazardous materials, storage containers, and office trailer without utility hookups is allowed under the west end of the existing Sellwood Bridge or on Sellwood Ferry Road. Store hazardous materials and fuel offsite or on barges in full containment.

After the Phase 2 land use permit is obtained from the City of Portland (about March 1, 2012), perform staging offsite, on barges, on the former Staff Jennings property, on the former Mela property, and/or on the Richardson property. Staging shall be at least 150 feet landward of the ordinary high water elevation of waterways, or within full containment for potential spills of hazardous materials.

No other staging areas may be used on this Project, including non-Agency sites. Delineate the limits of the staging areas as required by the City of Portland, or minimally with orange plastic mesh fencing from the QPL for the duration of the Project. Remove the fencing when the Project is complete and the staging areas have been restored with permanent landscaping.

Restore staging areas by removing construction debris.

00290.20(c)(3) Reuse, Recycle, and Dispose of Materials – Add the following bullets to the beginning of the list of existing bullets:

- Until Phase 2 land use permit is obtained from the City of Portland (about March 1, 2012), dispose materials at an approved off site disposal facility.
- After the Phase 2 land use permit is obtained from the City of Portland (about March 1, 2012), dispose of materials in constructed embankment, if suitable, or at an approved offsite disposal facility. Disposal of materials below the ordinary high water elevation of waterways is not permitted.

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Replace the bullet that begins "Reuse demolition..." with the following bullet:

- Reuse demolition debris.

00290.20(c-3-d) Concrete and Masonry - Replace the paragraph that begins "Concrete and masonry..." with the following paragraph:

Concrete and masonry, that is not recycled and does not contain hazardous substances, may be reused to fill basements or be buried in embankments on-site, provided that the materials are broken into pieces not exceeding 15 inches in any dimension, and placed so that:

00290.20(d) Hazardous Waste Management - In the paragraph that begins "In addition to current Laws...", replace the two bullets that begin "If the quantity of hazardous waste projected to be..." with the following three bullets:

- If the quantity of hazardous waste projected to be generated meets the requirements for a LQG, prepare a full Hazardous Waste Contingency Plan according to 40 CFR 265 Subpart D. Maintain a copy of the Contingency Plan on-site at all times during construction activities, readily available to employees and inspectors.
- If the quantity of hazardous waste projected to be generated meets the requirements for a SQG, prepare a modified Hazardous Waste Contingency Plan according to 40 CFR 262.34(d)(5) and 40 CFR 265 Subpart C. Maintain a copy of the modified Contingency Plan on-site at all times during construction activities, readily available to employees and inspectors.
- If the quantity of hazardous waste projected to be generated meets the requirements for a CEG, follow the contingency planning and storage requirements of the SQG unless the only potentially hazardous waste is aerosol cans smaller than 20 ounces. Limit storage to 180 days and 2,200 pounds. Prepare a modified Hazardous Waste Contingency Plan and keep a copy on-site with emergency response procedures and contact information.

00290.20(g) Spills and Releases - In the paragraph that begins "Obtain a response agreement...", replace the term "29 CFR 1920.120" with the term "29 CFR 1910.120".

Replace the lead-in paragraph that begins "In the event...", with the following lead-in paragraph:

In the event of a spill or release of a hazardous substance or hazardous waste or the release of any other material that has the potential to harm human health or the environment, do the following:

Add the following bullets to the beginning of the list of existing bullets:

- Inform the Engineer.
- Call the Oregon Emergency Response System (OERS): 1-800-452-0311.
- Call the National Response Center: 1-800-424-8802.

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00290.20(h) Contaminated Materials

Contaminated materials are present in the project area and will be encountered in specific areas during construction excavation. All known occurrences of ACM were removed under a previous project phase.

If unanticipated or unknown contaminated materials are encountered in the project area outside the areas described above do the following:

- Upon discovery of suspected unanticipated and unknown contaminated media or a potential indicator of such, immediately suspend all activities in the vicinity and notify the Engineer.
- Upon notification the Engineer will determine whether unanticipated and unknown contaminated media has been encountered within 4 hours. The Engineer may collect and analyze samples or may direct the collection and analysis of samples to make this determination. The Engineer may direct the continued excavation and placement of excavated soil in secured covered dump trucks or roll-off boxes.

If the Engineer determines unanticipated and unknown contaminated media have been encountered, comply with the following:

- Secure the area as necessary to restrict and protect workers and the public from exposure to contaminated media.
- Modify the HASP, the Site Layout Plan, Waste Disposal Plan, and Spill Prevention and Cleanup Plan as necessary, to address new contaminants, hazards, and other contaminated material concerns associated with the unanticipated and unknown contamination. The Engineer will provide unanticipated and unknown contaminated material sampling and analysis results to assist in making appropriate document modifications.
- Do not excavate, temporarily store, manage, load, haul, or dispose unanticipated and unknown contaminated media until authorized by the Engineer. Once authorized, perform all excavation, temporary storage, management, loading, hauling, and disposal of unanticipated and unknown contaminated media in accordance with these specifications.
- Do not place excavated unanticipated and unknown contaminated materials in stockpiles unless authorized by the Engineer.
- Until authorized by the Engineer, do not transport containers with unanticipated and unknown contaminated materials over public roads. Only crossing at right angles is allowed. Once soil is placed in the containers, retain on the project site until authorized by the Engineer.
- The Engineer will direct the disposal of the unanticipated and unknown contaminated materials. If the contaminated media is a RCRA or State-only hazardous waste, remove and dispose of the soil within 30 days of being authorized by the Engineer.
- If underground storage tanks are encountered, manage according to Oregon Administrative Rules (OAR) 340-122.
- Submit excavation reports that include the location, volume, unanticipated contamination, disposal location, and manifests for all excavated material.

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- RCRA and Oregon-only hazardous waste as defined in this Section are not expected to be encountered in the project areas and are considered unanticipated and unknown. The Contractor must retain a properly licensed, trained, and equipped hazardous waste hauler to immediately manage such material if such materials are encountered in the project area.

00290.20(i) Groundwater Contamination

Groundwater contamination could be present in the project area. If groundwater is encountered, furnish the services of a qualified environmental consultant to sample and test for potential contaminants of concern. Handle and dispose of this groundwater in a manner consistent with Federal, State, and local regulations.

00290.30(a) Pollution Control Measures - Add the following subsections and bullets:

(7) Water Quality:

- Comply with conditions of the project's NPDES (1200-C) Construction Stormwater Discharge Permit(s).
- Do not discharge contaminated or sediment-laden water, including drilling fluids and waste, or water contained within a work area isolation, directly into any waters of the State or U.S. until it has been satisfactorily treated (for example: bioswale, filter, settlement pond, pumping to vegetated upland location, bio-bags, dirt-bags). Treatment shall meet the turbidity requirements below.
- During construction, monitor in-stream turbidity and inspect all erosion controls daily during the rainy season and weekly during the dry season, or more often as necessary, to ensure the erosion controls are working adequately meeting treatment requirements.
- If construction discharge water is released using an outfall or diffuser port, do not exceed velocities more than 4 feet per second, and do not exceed an aperture size of 1 inch.
- Underwater blasting is not allowed.
- Implement containment measures adequate to prevent pollutants or construction and demolition materials, such as waste spoils, fuel or petroleum products, concrete cured less than 24 hours, concrete cure water, silt, welding slag and grindings, concrete saw cutting by-products and sandblasting abrasives, from entering waters of the state or U.S.
- Placement of riprap within the waters of the state or U.S. is not allowed.
- Cease project operations under high flow conditions that may result in inundation of the project area, except for efforts to avoid or minimize resource damage.
- The Engineer retains the authority to temporarily halt or modify the Project in case of excessive turbidity or damage to natural resources.
- Return Wastewaters Prohibited: Do not allow untreated construction discharge waters from the project to re-enter the Regulated Work Area unless they meet state water quality standards.

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- Do not allow the return of wastewaters from any operation employed to wash or process materials removed from the Regulated Work Area.
- Prohibit the washing of construction equipment in watercourses.

(8) Meter Turbidity Monitoring - Perform meter turbidity monitoring each day when working in regulated work areas according to the following:

- Use a turbidity meter that has been calibrated to meet manufacturer requirements.
- Before beginning work, take in stream turbidity readings approximately 100 feet upstream and approximately 100 feet downstream of the in-water work area.
- Take additional in stream turbidity readings upstream and downstream at four hour intervals or more frequently and perform in-water work based on turbidity measurements according to the following:
 - If the downstream reading is 0 to 4 nephelometric turbidity units (NTU) above upstream levels, continue to work and take readings every four hours.
 - If the downstream reading is 5 to 29 NTU above upstream levels, modify work procedures and best management practices (BMP) and take a subsequent downstream reading four hours later. If at the subsequent four hour reading, the downstream reading is still 5 to 29 NTU above upstream levels, stop all in-water work and implement additional BMP. Resume in-water work activities when the turbidity readings return to upstream levels.
 - If the downstream reading is 30 to 49 NTU above upstream levels, modify work procedures and BMP and take a subsequent downstream reading two hours later. If, at the subsequent two hour reading, the downstream reading is still 30 to 49 NTU above upstream levels, stop all in-water work and implement additional BMP. Resume in-water work activities when the turbidity readings return to upstream levels.
 - If the downstream reading is 50 NTU or more above upstream levels, stop all in-water work and implement BMP. Resume in-water work activities when turbidity readings return to upstream levels.

Document all turbidity monitoring results including date, time, and location on the Agency provided form or another form approved by the Agency. Submit reports to the Engineer weekly when working in regulated work areas and keep copies of the reports at the project site.

If work activities violate permit conditions or cause water quality violations which may endanger the health of aquatic life or environment, stop all in-water work activities and notify the Engineer. Submit a written report of violations to the Engineer within 5 Calendar Days of violation.

00290.30(b) Pollution Control Plan (PCP) - Replace all reference to "PCP" in this Section with "PCP Update."

00290.30(c-3) Burn Restrictions - Replace the paragraph that begins "Buildings intended for demolition..." with the following paragraph:

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Buildings intended for demolition may be burned by the local fire department for training purposes provided that all hazardous substances have been removed from the building before burning.

00290.30(c)(4) Control Air Pollution

Employ environmentally-friendly techniques to control emissions from vehicles and machines used in construction. Such practices might include, but are not limited to, the following:

- Using low-sulfur diesel fuel on all diesel equipment.
- When available, using construction equipment with new generation diesel engines or tailpipe diesel particulate removal.
- Using environmentally-friendly lubricants, solvents, and chemicals to the greatest extent practicable

00290.32 Noise Control - Add the following paragraphs to the end of this subsection:

The Contractor's attention is directed to City of Portland Ordinance No. 159276 which describes noise control regulations. Comply with the applicable noise control requirements of the ordinance for project work.

Copies of the ordinance and noise control code are available at the office of the Engineer.

Contractor is responsible for obtaining a noise variance from the City of Portland if applicable noise control requirements cannot be met.

Comply with all pertinent equipment noise standards of the U.S. Environmental Protection Agency (40 CFR 204).

Mitigate possible noise impacts to River View Cemetery during construction and, where possible, restrict the hours of noisier operation.

Strategically place material stockpiles between the operation and the affected dwelling or by other approved measures to mitigate noise.

Inform the Engineer 14 days in advance of construction activities that may generate particularly high noise levels, including blasting operations. Provide 14 days notice before beginning any night construction work to allow the Engineer to inform noise receptors of upcoming night work.

Have portable noise meters on the job at all times for noise level spot checks on specific operations. Employ an individual trained in the use of noise meters, with working knowledge of sound measurements and their meaning and use as applied to these mitigation/abatement measures.

00290.34 Protection of Fish and Fish Habitat - Add the following paragraph:

Meet with the Agency Biologist, Resource Representative, Engineer, and inspector on site, before moving equipment on-site or beginning any work, to ensure that all parties

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understand the locations of sensitive biological sites and the measures that are required to be taken to protect them.

00290.34(a) Regulated Work Areas - Add the following to the end of this subsection:

The regulated work area is the area within the ordinary high water (OHW) elevation that is shown on the plans.

- For this Project, the regulated work area is the area at or below 20.55 feet elevation (NAVD88). The allowable work area within the regulated work area is described in the Project wetland removal-fill permits.
- Perform work within the regulated work area only during in-water work periods, unless work is contained within approved in-water work isolation measures.
- The in-water work periods are as follows:
 - Willamette River - July 1 to October 31.
 - Stephens Creek - July 15 to September 30, or July 1- October 31.
 - Project Streams #1-4 - July 15- September 30.

Submit a schedule to complete all work within the regulated work area within the in-water work period at least 10 days prior to the preconstruction conference.

Add the following subsection:

00290.34(c) Fish Protection Measures Required by Environmental Permits:

Comply with terms and conditions set forth in the National Marine Fisheries Service Biological Opinion #2010/00230.

For all pile driving, comply with the specifications of the project's Hydroacoustical Monitoring Plan for Pile Capacity Testing (dated September 21, 2011), adapting to remaining pile installations and substituting "CM/GC" for "County." If there is a conflict between the Hydroacoustical Monitoring Plan and NMFS Biological Opinion #2010/00230, the Hydroacoustical Monitoring Plan shall have precedence.

Reporting. Within 90 days following the completion of the project, prepare a Hydroacoustical Monitoring Plan Report suitable for submission to NMFS that includes, at a minimum, the following information:

- **Pollution control.** Give a summary of pollution control practices, including a description of any contaminant release, and efforts to correct such incidences.
- **Pilings.** Number, size and type of piles installed.
- **Piling installation.** Report the number of strikes per day, number of hours of impact pile driving and per pile and type of hammer used.
- **Pile Driving Monitoring.** Submit results from the Hydroacoustical Monitoring Plan.

Post the following notice prominently at the work site:

"NOTICE: If a sick, injured or dead specimen of a threatened or endangered species is found in the project area, the finder must notify NMFS through the contact person identified in the transmittal letter for this Opinion, or through the NMFS Office of Law

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Enforcement at 1-800-853-1964, and follow any instructions. If the proposed action may worsen the fish's condition before NMFS can be contacted, the finder should attempt to move the fish to a suitable location near the capture site while keeping the fish in the water and reducing its stress as much as possible. Do not disturb the fish after it has been moved. If the fish is dead, or dies while being captured or moved, report the following information: (1) NMFS consultation number; (2) the date, time, and location of discovery; (3) a brief description of circumstances and any information that may show the cause of death; and (4) photographs of the fish and where it was found. The NMFS also suggests that the finder coordinate with local biologists to recover any tags or other relevant research information. If the specimen is not needed by local biologists for tag recovery or by NMFS for analysis, the specimen should be returned to the water in which it was found, or otherwise discarded."

(1) General Equipment Requirements - Use heavy equipment as follows:

- Choice of equipment must have the least adverse effects on the environment (for example: minimally sized, low ground pressure).
- Before operations begin and as often as necessary during operation, steam clean all equipment that will be used below the regulated work area until all visible oil, grease, mud, and other visible contaminants are removed. Complete all cleaning in approved staging areas.
- Secure absorbent material around all stationary power equipment (for example: generators, cranes, drilling equipment) operated within 150 feet of wetlands, waters of the State and U. S., drainage ditches, or water quality facilities to prevent leaks, unless suitable containment is provided to prevent spills from entering waters of the state and U.S.
- Do not cross directly through a stream for construction access, unless shown or approved.
- The volume of material filled or discharged into waters of the state or U.S. plus the volume excavated shall not exceed quantities specified in permits.

(2) Water Intake Screening - Install, operate, and maintain fish screens on each water intake used for project construction, including pumps used to isolate an in-water work area. When drawing or pumping water from any stream, protect fish by equipping intakes with screens having a minimum 27% open area and meeting the following requirements:

- Perforated plate openings shall be 3/32 inch or smaller.
- Mesh or woven wire screen openings shall be 3/32 inch or smaller in the narrowest direction.
- Profile bar screen or wedge wire openings shall be 1/16 inch or smaller in the narrow direction.

Choose size and position of screens to meet the following criteria:

Type	Approach Velocity ¹ (Ft./Sec.)	Sweeping Velocity ² (Ft./Sec.)	Wetted Area of Screen (Sq. Ft.)	Comments
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Ditch Screen	≤ 0.4	Shall exceed approach velocity	Divide max. water flow rate (cfs) by 0.4 fps	If screen is longer than 4 feet, angle 45° or less to stream flow
Screen with proven self-cleaning system	≤ 0.4	–	Divide max. water flow rate (cfs) by 0.4 fps	–
Screen with no cleaning system other than manual	≤ 0.2	–	Divide max. water flow rate (cfs) by 0.2 fps	Pump rate 1 cfs or less
¹ Velocity perpendicular to screen face at a distance of approximately 3 inches ² Velocity parallel to screen				

Provide ditch screens with a bypass system to transport fish safely and rapidly back to the stream.

(3) Special Aquatic Habitats - The following construction activities are not allowed in special aquatic habitats:

- In-water installation of driven hollow steel piling greater than 24 inches in diameter, or use of H-pile larger than designation HP24.

(4) Site Restoration - Restore damaged streambanks to a natural slope, pattern, and profile suitable for establishment of permanent woody vegetation unless precluded by pre-project conditions (for example: natural rock substrate):

- If use of large wood, native topsoil, or native channel material is required for the site restoration according to the roadside development (landscape) plans, stockpile all large wood, weed-free topsoil, and native channel material displaced by construction.
- All wood removed from trees located in either public rights-of-way (OR-43, SE Spokane Street, and SE Tacoma Street) or park land shall be disposed of at the discretion of the City Forester who has complete authority for the disposal of said wood and debris, per Portland City Code 20.40.160 (Disposition of Wood from Trees).
- Stockpile 6 pieces of large woody material, salvaged from tree removal at the project site. Cut trees or large wood into pieces of no less than 20 feet in length with at least 18 inches diameter at the small end, or as shown on the roadside development plans or as directed.
- At the Powers Marine Park stream restoration area, place the 6 pieces of large woody material to add habitat structure and complexity by following ODFW's Guide to Placement of Wood, Boulders and Gravel for Habitat Restoration (2009).
- Stabilize all disturbed soils, including obliteration of temporary access roads, following any break in work unless construction will resume in 4 Calendar Days.
- At the Stephens Creek culvert replacement area, adequately wash fine sediment into the stream bed materials to prevent subsurface flow.

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- At the Stephens Creek culvert replacement area, construct a low flow thalweg into the stream bed throughout the project reach to maximize depth at low flows and facilitate low flow fish passage.
- At the Stephens Creek culvert replacement area, stream bed material shall be:
 - % FINES (dirt, silt, sand) = 10
 - % SMALL ROCK ($\frac{1}{2}$ -6" diameter) = 40
 - % LARGE ROCK (6"-D₁₀₀) = 30
 - % OVER-SIZED ROCK (D₁₅₀-D₂₀₀) = 20(D₁₀₀ is the average diameter of the 10 largest, naturally-occurring rocks in the stream reach; D₁₅₀ = D₁₀₀ X 1.5; D₂₀₀ = D₁₀₀ X 2.)
- At the Stephens Creek culvert replacement area, add 6 bankline boulders along the stream margins within the arch culvert to promote bed retention and roughness.

(5) Hydro-Acoustic - Hollow steel piling 24 inches in diameter or smaller and H-pile designated as HP24 or smaller shall be installed below the ordinary high water elevation in compliance with project permits.

(6) Drilling, Boring, or Jacking - If drilling, boring, or jacking is used, the following conditions apply:

- Design, build, and maintain facilities to collect and treat all construction and drilling discharge water using the best available technology applicable to site conditions. Provide treatment to remove debris, nutrients, sediment, petroleum hydrocarbons, metals, and other pollutants likely to be present. An alternate to treatment is collection and proper disposal offsite.
- Isolate drilling operations from wetted stream to prevent drilling fluids from contacting waters of the state and U.S.
- Prevent loss of drilling fluid to the subsurface formation. If necessary use drill casing. If drilling fluid or waste is released to surface water, wetland or other sensitive environment, cease all drilling pending written approval from appropriate regulatory agencies through the Engineer to resume drilling. (See Sections 00512 and 00504 for additional provisions to contain and dispose of drill fluids, and not allow sediment laden fluids from entering the river.)
- Recover all waste and spoils if precipitation is falling or imminent. Recover, recycle, or dispose of all drilling fluids and waste to prevent entry into flowing water.
 - Recycle drilling fluids using a tank instead of drill recovery/recycling pits, whenever feasible.
 - When drilling is completed, make attempts to remove the remaining drilling fluid from the sleeve (for example: by pumping) to reduce turbidity when the sleeve is removed.

(7) Treated Wood - Do not use lumber, pilings, or other wood products that are treated or preserved with pesticidal compounds below the ordinary high water elevation (OHWE) or as part of an in-water or over-water structure, except as described below:

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- Store treated wood shipped to the Project out of contact with standing water and wet soil, and protected from precipitation.
- Visually inspect each load and piece of treated wood. Reject for use in or above aquatic environments if visible residues, bleeding of preservative, preservative-saturated sawdust, contaminated soil, or other matter is present.
- Use pre-fabrication to the extent feasible. When field fabrication is necessary, all cutting and drilling of treated wood, and field preservative treatment of wood exposed by cutting and drilling, shall occur above the OHWE. Use tarps, plastic tubs, or similar devices to contain the bulk of any fabrication debris, and wipe off any excess field preservative.
- All treated wood structures shall have design features to avoid or minimize impacts and abrasion by livestock, pedestrians, vehicles, vessels, and floats.
- Treated wood may be used to construct a bridge, over-water structure or an in-water structure, provided that all surfaces exposed to leaching by precipitation, overtopping waves, or submersion are coated with a water-proof seal or barrier are maintained. Apply and contain coatings and paint-on field treatment to prevent contamination. Surfaces that are not exposed to precipitation or wave attack, such as parts of a timber bridge completely covered by the bridge deck, are exempt from this requirement.
- During demolition of treated wood, ensure that no treated wood debris falls into the water. If treated wood debris does fall into the water, remove it immediately.
- Store removed treated wood debris in appropriate dry storage areas, at least 150 feet away from the regulated work area.

(8) Piling Removal - If a temporary or permanent piling will be removed, the following conditions apply:

- Dislodge the piling with a vibratory hammer, whenever feasible.
- If the entire piling cannot be extracted, cut off or drive the pile below the river bed line.
- Once loose, place the piling onto the construction barge or other appropriate dry storage site.
- Fill holes left by each piling with clean, native sediments whenever feasible.
- Upon pile removal at detour bridge Bents #17 and #21, remove all non-native materials, such as casing and CLSM, to a depth of 2 feet below surface. At Bent #17, backfill the holes with clean fill and cover the hole surface with riprap to match adjacent cover. At Bent #21, backfill the top 2 feet of the holes with grouted native basalt rock. Ensure that no fish traps are created after backfilling.

(9) Floating Structures - The following types of over-water or in-water structures are not allowed:

- Buoy or float in an active anchorage or fleeting area.

(10) Concrete Pier Removal - Remove existing in-water structures from the deconstructed bridge to the fullest extent practicable. Sawcut Piers 17 and 21 at

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approximately ground level. Sawcut Piers 18 and 20 above the concrete footings, approximately 0-4 feet above the riverbed. Isolate Pier 19 with sheet pile and remove to approximately ground level.

Add the following subsections:

00290.36(c) Migratory Birds (Agency Cooperation)

Attend an on-site pre-construction meeting with Agency environmental staff to review activities that could harm nesting birds. Notify the Engineer, in writing, a minimum of 10 calendar days prior to starting activities that could harm nesting birds during the March 1 through September 1 nesting season.

Ensure that 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.

00290.36(d) Noise Impacts on Wildlife

Implement appropriate ODOT BMPs to minimize or alleviate noise impacts on wildlife. Refer to 00290.32 for noise abatement measures

Add the following subsection:

00290.41(b) Disturbing Wetlands - Add the following to the end of this subsection:

Permits have been obtained for this project from the [US Army Corps of Engineers (Corps)] and the [Department of State Lands (DSL)]. Keep a copy of Corps and DSL permits at the project site during construction. These permits do not authorize the placement or removal of fill within wetlands. Changes to the project that may increase the amount of fill placed in wetlands or the acreage of wetlands impacted are not authorized.

Add the following subsection:

00290.42 Work Containment Plan and System - Replace all reference to "WCP" in this Section with "WCP Update."

Replace all reference to "WCS" in this Section with "WCS Update."

Add the following to the end of this subsection:

Notify ODFW (Tom Murtagh, 971-673-6044 or Elizabeth Ruther, 503-621-3488 x228) immediately if the containment structure is overtopped.

Immediately report any fish observed that are impinged or entrained by operations to the Oregon Department of Fish and Wildlife (phone: 503-657-2000).

Notify ODFW (Tom Murtagh, 971-673-6044 or Elizabeth Ruther, 503-621-3488 x228) one week prior to the expected time when the containment structure will be removed to discuss dismantling strategies and other fish protection issues.

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For work containment structures surrounding detour bridge end Bents #17 and #21 (that will be installed by January 31, 2012), entirely remove the structures on or before March 15, 2012.

Include the following subsections in the WCP Update and WCS update:

(c) Fish Removal - The Agency, ODFW biologists, or Engineer will remove fish and aquatic life from the isolation work areas. Provide access into the isolation work areas before and after installation of the temporary water management facilities as follows:

- Before Installation of WCS - For removal of fish and aquatic life within the proposed isolated work area.
- After Installation of WCS - Begin reducing the water level through the isolated work area. All fish and aquatic life will be removed as the water level is reduced. Do not de-water the isolation area until all fish and aquatic life have been removed.

(d) Operation - Operate temporary water management as follows:

- Provide safe passage around the isolated work area for adult and juvenile migratory fish.
- Clean and repair water intake screening to maintain adequate flow and protection of aquatic life.
- Removal - Remove the temporary water management facility and rewater and restore the stream flow when approved by the Engineer.

Add the following subsection:

00290.43 Barge Operations

Barge Grounding Prohibited: Barges shall not at any time be grounded on the bed or banks of the waterway.

Barge anchoring is prohibited within 50 feet of the Portland Water Bureau's 30-inch water line, unless approved by the Harbor Master and Portland Water Bureau.

Barge use is prohibited within 200 feet of the Portland Water Bureau's 30-inch water line, unless notification is provided to the Harbor Master. Submit notification 7 days prior to planned barge anchoring or use. Submit anchor plans drawings and a list of planned anchor move activities with notification.

00290.50 Protection of Cultural Resources - Add the following bullet to the list in this subsection that begins with: "The Engineer will do the following":

- Contact the State Historic Preservation Office (phone: 503-986-0674).

Add the following to the end of this subsection:

Assess existing bridge materials to determine what materials, if any, might be salvageable, and make those available to interested parties.

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Relocate the River View Cemetery gates to the new location within the cemetery property, as shown in the plans. Relocation shall be done by individuals or companies with experience in historic masonry. All persons working on the relocation of the gates shall be familiar with and follow the Secretary of the Interior's Standards for Rehabilitation and the Secretary of the Interior's Guidelines for Rehabilitating Historic Properties. Provide the names and qualifications of the individuals or companies involved in the relocation of the gates.

Add the following subsection:

00290.60 Soil Excavation, Observation and Monitoring - Monitor all excavations performed for this work of this Contract for the possible presence of contaminated media using the following procedures:

- Observe for visual, olfactory, or texture indications of contamination. These indications may include, but are not limited to: petroleum, oil, fuel, or gasoline odor, other unusual odors, mottled or gray appearance, unusual color, sheen, staining, debris, or other non-native material. Record observations in daily reports to the County or their Representative. If these observations suggest the presence of contaminated media, immediately notify the Engineer.

Add the following subsection:

00290.61 Contaminated Material Excavation and Loading Procedures - Excavate and load all soil identified as contaminated media using the following procedures:

- Notify the Engineer no less than 24 hours prior to beginning excavation of contaminated soil.
- ACS and ACM will be managed by licensed asbestos abatement contractor using appropriately trained and certified asbestos abatement workers and asbestos abatement supervisors in accordance with OAR 340-248-0110. Excavate soil in a manner that prevents commingling of contaminated and uncontaminated soil. Minimize movement of excavation equipment over or through contaminated soil to prevent movement of contaminated soil into areas where no contaminated soil exists.
- Prevent spillage of oil, fuel, or hazardous substances from equipment. Promptly repair oil leaks from equipment and remove any contaminated soil.
- Locate loading areas for contaminated soil in the exclusion zone.
- Load trucks in a manner that prevents the spilling or tracking of contaminated media into areas of the site with uncontaminated soil. Remove loose material falling onto the exterior of the truck during loading before the truck leaves the loading area. Place any material collected in the loading area back into the truck. All trucks are to be lined and covered as required by OAR 340-248.
- The Contractor shall dispose of the contaminated media in a solid waste disposal or treatment facility or a RCRA or Oregon State-only hazardous waste facility in accordance with these specifications.

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- Until characterization of the contaminated media is done to meet the requirements of these specifications and authorized by the Engineer, containers with contaminated media shall remain on the project site until such time as they are disposed.
- Establish specific truck haul routes before beginning offsite contaminated media transport. Use onsite truck routes that minimize or prevent movement of trucks over contaminated areas. Reduce the risk of releases of contaminated media and impact on local traffic. Ensure that loaded truck weights are within acceptable limits. Cover all trucks before they leave the loading area

Add the following subsection:

00290.62 Exclusion Zone and Decontamination

Before beginning excavation of contaminated material, establish an exclusion zone around the excavation area where contaminated material is located. Establish entrance/exit locations to the exclusion zone and describe in the Site Layout and Health and Safety Plans.

Equipment may move freely within the exclusion zone. Use brooming of loose soil and removal of significant quantities of adhered soil with hand tools for decontamination between specific excavation areas. Washing of equipment is not required for movement of equipment within the exclusion zone.

If practicable, locate truck loading areas at the boundary of the exclusion zone so that trucks will not enter the exclusion zone and require decontamination. Broom-clean trucks before leaving the loading area.

Decontaminate personnel exiting the exclusion zone according to the procedures specified in HASP.

Add the following subsection:

00290.63 Temporary Storage of Contaminated Material

Contaminated material identified as backfill on site may be temporarily stored or stockpiled on the same tax lot from which it was excavated. If the contaminated material disposal is identified as Subtitle D, then the material cannot be temporarily stored on site but must be directly loaded and hauled off site to an appropriate disposal facility.

Temporary storage of unanticipated and unknown contaminated media described in these specifications may only be accomplished by secured covered dump trucks or roll-off boxes until proper disposal methods have been secured.

If the Agency has provided written authorization, surround stockpiles by a fence to limit access. Cover the stockpiles at all times and provide perimeter runoff control around the stockpiles during periods of rainfall to prevent run on and run off. Cover the stockpiles with a minimum of 10 mil thick high density polyethylene (HDPE) plastic.

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Remove all stockpiled contaminated media from the stockpile area at the conclusion of the Contract Work. The County or their Representative may collect samples in the stockpile area before placement of the stockpile and after removal of the stockpile to confirm complete removal of contaminated media.

Add the following subsection:

00290.64 Hauling of Contaminated Material

Comply with all applicable Federal, State, or local laws, codes, and ordinances that govern or regulate contaminated media transportation. Prior to transportation, obtain all required permits and furnish all labor, materials, equipment, and incidentals required for disposal.

Ensure that all drivers hauling contaminated media have in their possession during hauling all applicable Oregon State and local vehicle insurance requirements, valid driver's license, and vehicle registration and license.

Inform all drivers of haul vehicles of:

- The nature of the material hauled.
- The required routes to and from the disposal site and/or disposal staging area.
- The applicable City street regulations and requirements, and State of Oregon Department of Transportation codes, regulations and requirements.
- The legal maximum load limits per vehicle.

Do not allow contaminated media to be spilled or tracked off site.

Use trucks for the transportation of contaminated media that are substance compatible, licensed, insured, and permitted pursuant to federal, state, and local statutes, rules, regulations and ordinances.

Add the following subsection:

00290.65 Disposal of Contaminated Material

Prior to excavation, transportation, and disposal of contaminated media, obtain acceptance from the Solid Waste Disposal or Treatment Facility for disposal of contaminated media.

Determine what analytical data and other site information is necessary to obtain contaminated media acceptance from the Solid Waste Disposal or Treatment Facility.

Know the analytical requirements and contaminant concentrations acceptable to the Solid Waste Disposal or Treatment Facility.

Prior to starting excavation, transportation, and disposal of contaminated media, provide documentation of the Solid Waste Disposal or Treatment Facility contaminated media acceptance to the County or their Representative for review and approval.

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Properly prepare bills of lading, or other related documents required by the Solid Waste Disposal or Treatment Facility.

Obtain receipts of disposal or treatment and present to the Engineer within 10 days of receipt of the contaminated media at the Solid Waste Disposal or Treatment Facility.

Add the following subsection:

00290.70 Land Use Regulations

Comply with the following land use permits obtained from the City of Portland for the project:

- City of Portland Land Use Permit #LU 11-152470 GW
- City of Portland Land Use Permit #LU 11-173927 EN GW

Add the following subsection:

00290.71 Non-Park Use of Parks

Comply with the following Non-Park Use of Parks permits obtained from Portland Parks and Recreation for the project:

- Permit of Entry for Park Property – Permit #2011-48
- Permit of Entry for Park Property – To Be Determined

00290.90 Payment - Replace the sentence that begins: "The accepted quantities for work performed under this Section..." with the following sentence:

The accepted quantities for work performed under this Section will be paid for at the Contract lump sum amount for the item "Pollution Control Plan Update."

Add the following paragraphs to the end of this subsection:

The In-Water Work Containment Plan and Work Containment System Update will be paid for at the Contract lump sum amount for the item "Work Containment Plan and System Update." Payment will be payment in full for furnishing all materials, equipment, labor, and incidentals necessary to complete the work as specified. Payment includes providing and updating the work containment plan and for designing, constructing, maintaining, and removing the containment system.

The accepted quantities of turbidity monitoring will be paid for at the Contract lump sum amount for the item "Turbidity Monitoring System." Payment for turbidity monitoring 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 specified.

The accepted quantities of migratory bird protection will be paid for at the Contract lump sum amount for the item "Migratory Bird Protection Plan Update." Payment for Migratory Bird Protection Plan Update will be payment in full for furnishing and placing all materials

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and for furnishing all equipment, labor, and incidentals necessary to complete the work as specified.

The accepted quantities for relocation of River Park Cemetery gates will be paid for at the Contract lump sum amount for the item "Relocate Cemetery Gates". Payment will be payment in full for removing, transporting, and reinstalling the two River Park Cemetery gates including furnishing all materials, equipment, labor, and incidentals necessary to complete the work as specified.

Add the following items to the bulleted list under the paragraph: "Payment includes, but is not limited to, the following:"

- Re-Use and Recycling Plan Update
- Noise Attenuation System
- Noise Monitoring
- Noise Mitigation Plan for Noise Variance
- Hydroacoustical Mitigation System
- Hydroacoustical Monitoring
- Hydroacoustical Monitoring Plan Report
- Orange Plastic Mesh Fencing

Payment for contaminated material monitoring, removal and disposal is paid for under the following items:

- a) Contaminated Material Monitoring, Removal and Disposal – Willamette Shoreline Trolley Railroad...Ton
- b) Contaminated Material Monitoring, Removal and Disposal – OR43...Ton
- c) Contaminated Material Monitoring, Removal and Disposal – Willamette Shoreline Trolley Railroad at Stephens Creek...Ton
- d) Contaminated Material Monitoring, Removal and Disposal – Richardson Property...Ton

Payment for these items includes monitoring, removal and disposal of identified and unidentified contaminated materials as specified or as directed.

Payment for these items also includes payment for development and implementation of the following:

- Health and Safety Plan
- Site Layout Plan
- Waste Disposal Plan
- Spill Prevention and Clean-up Plan
- Unanticipated and Unknown Contaminated Media Handling Plan

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SECTION 00305 - CONSTRUCTION SURVEY WORK

Section 00305, which is not a Standard Specification, is included for this Project by Special Provision.

Description

00305.00 Scope - Provide construction survey work according to the current edition on the date of Advertisement, of the ODOT "Construction Surveying Manual for Contractors". This manual is available on the web at:

<http://www.oregon.gov/ODOT/HWY/GEOMETRONICS/documents.shtml>

Measurement

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

Payment

00305.90 Payment - The accepted quantities of 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 material, 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 caused by survey errors will be at the Contractor's expense. These costs include price adjustments for failure to meet requirements of the "Construction Surveying Manual for Contractors", repair or removal and replacement of deficient product, and over-run of material.

SECTION 00310 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS
(Developed with Interchange Package)

**SECTION 00440 - COMMERCIAL GRADE CONCRETE
(Developed with Interchange Package)**

**SECTION 00442 - CONTROLLED LOW STRENGTH MATERIALS
(Developed with Interchange Package)**

**SECTION 00470 - MANHOLES, CATCH BASINS, AND INLETS
(Developed with Interchange Package)**

SECTION 00501 - BRIDGE REMOVAL

Comply with Section 00501 of the Standard Specifications modified as follows:

00501.00 Scope - Add the following paragraph to the end of this subsection:

Remove existing Bridge No. 21493 in detour alignment and all associated detour works.

Remove existing footings and substructure elements to the elevations shown on the plans.

Add the following subsection:

00501.03 Submittals - Provide unstamped bridge removal plans, according to 00150.35, 60 calendar days before beginning removal work.

Include the following information in the submittal:

- Removal sequence, including contractor staging and traffic staging.
- Detailed schedule of bridge removal work.
- Type of equipment that will be used, including size and capacity.
- Equipment location during removal operations.

Do not begin bridge removal work until the bridge removal plans have been approved.

SECTION 00510 - STRUCTURE EXCAVATION AND BACKFILL

Comply with Section 00510 of the Standard Specifications modified as follows:

00510.00 Scope – Add the following to the end of this subsection:

This work includes excavation and shoring as required at Bents 1, 4, 5, 6, 7, 8, and 9. This work includes cofferdam excavation and construction at Bents 2 and 3.

00510.44 Cofferdams and Cribbs – Add the following items to the list of bulleted items in this subsection:

- Stockpile native materials from cofferdam excavation for future backfill at Bents 2 and 3. Backfill complete footprints of cofferdam excavations such that footings are buried a minimum of two feet upon completion of construction.
- The limits of the cofferdams shown in the Contract Drawings are schematic only. Contractor is responsible for the size, design, construction, maintenance, and removal of all cofferdams. Cofferdam bracing shall not be abandoned within permanent structure concrete without prior approval of Engineer. Protect all permanent structure elements from damage during cofferdam removal.

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- The cofferdam design shall consider and specify the sequence of shaft installation, seal concrete placement, cofferdam dewatering, and hydrostatic head anticipated at the time of construction. This information shall be provided in the cofferdam plan, calculation, and checklist submittal prior to construction.
- If drilled shafts are used to provide hydrostatic uplift resistance, provide uplift loads to the Engineer for approval prior to completion of cofferdam design.
- Cofferdam installation and removal within the regulated work area shall be done within the regulated in-water work window identified in 00290.34(a).
- Dewater cofferdams in accordance with 00290.
- Provide cofferdams with removable fish protection screens that completely cover the tops of the cofferdams, as well as pump intake locations, to prevent fish entry into the isolated work areas. The screens provided shall comply with the requirements of 00290.34(c)(2) of these Special Provisions.
- If cofferdam overtopping is imminent, immediately cease activities within the cofferdam, evacuate the cofferdam, and install fish protection screens. Remove all potential pollutants from the work isolation areas prior to cofferdam overtopping. Do not resume work within cofferdams until approved by the Engineer.
- Contractor shall be responsible for all necessary fish capture and release activities according to 00290.42 prior to commencing work within the cofferdam, or prior to resuming work within the cofferdam in the case of an overtopping event.

00510.48 Backfill – Add the following to this subsection:

Use native material stockpiled from cofferdam excavations for backfill at Bents 2 and 3.

00510.80(b-1) Structure Excavation (Lump Sum) - Add the following to the end of this subsection:

The estimated quantity of structure excavation is:

Location	Structure Excavation (Cubic Yard)
Bridge No. 21493	10,716

00510.80(c-1) Structure Excavation Below Elevations Shown (Lump Sum) - In the first bullet, replace "00190.10(f)" with "00190.10(h)".

00510.80(d) Granular Wall/Structure Backfill - Replace this subsection, except for the subsection number and title, with the following:

No measurement of quantities will be made for granular wall backfill or granular structure backfill. The estimated quantity of granular wall backfill or granular structure backfill is:

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Location	Granular Wall/Structure Backfill (Cubic Yard)
Bridge No. 21493	491

00510.90(a) Shoring, Cribbing and Cofferdams - Add the following paragraph to the end of this subsection:

No separate measurement or payment will be made for stockpiling or placement of native cofferdam excavation materials used for backfill at Bents 2 and 3. Payment for this item is included in the Lump Sum "Shoring Cribbing and Cofferdam" pay item.

No separate measurement or payment will be made for seal concrete. Payment for this item is included in the Lump Sum "Shoring, Cribbing, and Cofferdams" pay item.

00510.90(c-1) Structure Excavation Below Elevations Shown (Lump Sum) - In the sentence that begins "For excavation 0 to 3 feet...", replace "00190.10(f)" with "00190.10(h)".

00510.90(d) Granular Wall/Structure Backfill - Replace this subsection, except for the subsection number and title, with the following:

Granular wall backfill and granular structure backfill will be paid for at the Contract lump sum amount for the items "Granular Wall Backfill" or "Granular Structure Backfill", as applicable.

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COFFERDAM DESIGN CHECKLIST

Instructions - This cofferdam design checklist was developed to facilitate the design, review, and erection of cofferdams to be used for ODOT bridge construction projects. This checklist is intended to act as a reminder to design or check for specific important aspects of this construction. It is not a substitute for plan and/or design criteria or specification requirements.

The Checklist is to be completed and signed by the cofferdam design engineer. Answer every question. Attach to the Checklist an explanation of any negative responses.

Submit the Checklist according to 00510.03.

	YES	NO	N/A
A. Contract Plans, Specifications, Permits, etc.			
1. Are the cofferdam plans prepared, stamped and signed by an engineer registered to practice in Oregon?	_____	_____	_____
2. Have three copies (five copies if railroad approval is required) of the complete design calculations accompanied the cofferdam drawings submittal?	_____	_____	_____
3. Are cofferdam plans in compliance with the requirements of the construction plans general notes?	_____	_____	_____
4. Are cofferdam plans in compliance with contract plan structural details?	_____	_____	_____
5. Are cofferdam plans in compliance with the requirements of the Oregon Standard Specifications for Construction, subsection 00150.35?	_____	_____	_____
6. Are all existing, adjusted or new utilities in proximity with the proposed cofferdam shown on the cofferdam plans and is projection of these utilities addressed?	_____	_____	_____
7. Are clearance requirements satisfied and shown on the cofferdam plans?	_____	_____	_____
B. Loads			
1. Are the magnitude and location of all loads, equipment and personnel that will be supported by the cofferdam shown noted on the cofferdam plans?	_____	_____	_____
2. Are design loads and material properties used to determine design stresses shown for each different cofferdam member shown on the cofferdam plans?	_____	_____	_____
3. Is the assumed water elevation for seal design shown on	_____	_____	_____

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the plans?

4. Does the cofferdam design assume water pressure acts on the full height of the cofferdam (from the vent to the bottom of the excavation?)

5. Has percolation into the excavation been addressed?

C. Allowable Stresses

1. Have the design loads used for cofferdam design of all members been noted in the design calculations?

2. Are the allowable stress and the calculated stress listed in the summary for each different cofferdam member?

D. Timber Construction

1. Are timber grades consistent with material to be delivered to the construction site, noted on the cofferdam drawings, and in accompanying calculations for all timber cofferdam material?

2. If "rough" lumber is specified for the cofferdam, are the actual lumber dimensions used in the calculations shown?

E. Steel Construction

1. Are steel structural shapes and plates identified by ASTM number on the cofferdam plans and in the calculations?

2. Have steel beams been checked for bending, shear, web crippling and buckling of the compression flange?

F. Compression Members, Bracing Members and Connections

1. Has general buckling been evaluated for all compression members?

2. Has bracing been provided at all points of assumed support for compression members?

3. Is bracing strength and stiffness sufficient for the intended purpose?

4. Have all connections been designed and detailed?

Designer's Signature

Date

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SHORING DESIGN CHECKLIST

Instructions - This shoring design checklist was developed to facilitate the design, review, and erection of shoring to be used for ODOT bridge construction projects. This checklist is intended to act as a reminder to design or check for specific important aspects of this construction. It is not a substitute for plan and/or design criteria or specification requirements.

The Checklist is to be completed and signed by the shoring design engineer. Answer every question. Attach to the Checklist an explanation of any negative responses.

Submit the Checklist according to 00510.04.

	YES	NO	N/A
A. Contract Plans, Specifications, Permits, etc.			
1. Are the shoring plans prepared, stamped, and signed by an engineer registered to practice in Oregon?	_____	_____	_____
2. Have three copies (five copies if railroad approval is required) of the complete design calculations accompanied the shoring drawings submittal?	_____	_____	_____
3. Are shoring plans in compliance with the requirements of the construction plans general notes?	_____	_____	_____
4. Are shoring plans in compliance with contract plan structural details?	_____	_____	_____
5. Are shoring plans in compliance with the requirements of the Oregon Standard Specifications for Construction, subsection 00150.35?	_____	_____	_____
6. Are all existing, adjusted or new utilities in proximity with the proposed shoring shown on the shoring plans and is protection of these utilities addressed?	_____	_____	_____
7. Are clearance requirements satisfied and shown on the shoring plans?	_____	_____	_____
B. Loads			
1. Are the magnitude and location of all loads, equipment and personnel that will be supported by the shoring shown or noted on the shoring plans?	_____	_____	_____
2. Are design loads and material properties used to determine design stresses shown for each different shoring member shown on the shoring plans?	_____	_____	_____
3. Does the shoring design assume water saturated soil	_____	_____	_____

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pressure acts on the full height of the shoring?

4. Has percolation into the excavation been addressed? _____

C. Allowable Stresses

1. Have the design loads used for shoring design of all members been noted in the design calculations? _____
2. Are the allowable stress and the calculated stress listed in the summary for each different shoring member? _____

D. Timber Construction

1. Are timber grades consistent with material to be delivered to the construction site and noted on shoring drawings and in accompanying calculations for all timber shoring material? _____
2. If "rough" lumber is specified for shoring by the shoring designer are the actual lumber dimensions used in calculations shown? _____

E. Steel Construction

1. Are steel structural shapes and plates identified by ASTM number on the shoring plans and in the calculations? _____
2. Have steel beams been checked for bending, shear, web crippling and buckling of the compression flange? _____

F. Compression Members, Bracing, Members and Connections

1. Has general buckling been evaluated for all compression members? _____
2. Has bracing been provided at all points of assumed support for compression members? _____
3. Is bracing strength and stiffness sufficient for the intended purpose? _____
4. Have all connections been designed and detailed? _____

Designer's Signature

Date

SECTION 00512 - DRILLED SHAFTS

Comply with Section 00512 of the Standard Specifications modified as follows:

00512.00 Scope - Add the following paragraph to this subsection:

Furnish and install slope inclinometer casings protected with flush-mount surface monument protection at 2 drilled shafts as indicated in the plans. This work includes installation within drilled shafts and footings.

00512.01 Definitions - Add the following to the list of definitions:

Slope Inclinometers – Slope monitoring casing consisting of machined pipe with aligned orthogonal grooves for repeatable monitoring of slope deformation.

Add the following subsection:

00512.11 Slope Inclinometer Casing – Furnish ABS inclinometer casing meeting the following requirements:

- Inclinometer casing to be 2.75-inch OD (2.32-inch ID) ABS pipe with four, equally-spaced, internal, machined orthogonal grooves continuous over the length of the casing.
- Ensure inclinometer casings are water tight. Fit the inclinometer casing with water tight bottom cap, and removable, water tight top cap.
- Groove spiral tolerance to be equal to or less than 0.33 degrees per 10 feet of casing.

00512.11(a) Flush Mount Monuments – For slope inclinometer work furnish 12-inch diameter, traffic rated flush mount cast or forged metal monuments, with adequate clear space within the monument for instrumentation dataloggers and appropriate waterproofing. Provide a locking lid for the monument. Complete monument at ground surface encased in commercial grade concrete according to 00440.

00512.11(b) Instrument Protection – For slope inclinometer work furnish and install surface protection at all existing and new instrument locations exposed at the ground surface. Instrument protection to consist of 3 bollards installed around each instrument for permanent protection and interim measures as necessary during construction to ensure no damage to the instruments.

00512.13 Steel Casing - Delete the sentence that begins "Use casing with an outside diameter...".

00512.14(a) Mineral Slurry - Delete this subsection, the use of mineral slurry is not permitted.

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Add the following subsection:

00512.16 PVC Pipe – Furnish 6-inch diameter, Schedule 80 PVC pipe with watertight caps and watertight connections in accordance with this Section and 02410.70.

00512.18 Grout - Replace this subsection with the following subsection:

00512.18 CSL Cement Grout - Furnish non-epoxy grout or tendon grout from the QPL or furnish a pumpable CSL cement grout consisting of neat cement and water that has a water cement ratio between 0.38 and 0.45. The portland cement for the pumpable CSL cement grout shall meet the requirements of Section 02010.

Add the following subsection:

00512.40(e) Schedule of Instrument Installation - Install slope inclinometers in drilled shafts within 15 days after completion of each instrumented drilled shafts. Extend the slope inclinometer through the footing at the time of footing construction; length of casing installed at this time should be the length that will remain in the final configuration. Following completion of each footing construction, provide access to the Engineer for reading of slope inclinometer casings.

Add the following subsection:

00512.42(a) Slope Inclinometers in Drilled Shafts – Install slope inclinometers in drilled shaft locations indicated on plans. Slope inclinometers to extend from the bottom of the 6-inch diameter PVC pipe attached to reinforcement cage, through the footing to within 6 inches of the proposed finished ground. Inclinometer casing to be in accordance with 00505.11, align inclinometer groves to within 5 degrees bearing of the Sellwood Bridge centerline. Backfill the annular space between the inclinometer casing and 6-inch PVC pipe with Cement Grout according to 00505.14. Support inclinometer casing at the bottom and/or fill with water to resist buoyancy while grout sets. Do not apply pressure to the top of the inclinometer casing during grouting. Inclinometer splices if necessary to be performed in accordance with manufacturer recommendations. If splicing or cutting occurs after initial installation, provide measurement to the nearest 0.01-foot of spliced or cut length of inclinometer casing. Splicing and cutting of the inclinometer casing should be avoided when practical. Complete inclinometer casings at the ground surface during final grading with flush mount monuments.

00512.42(b) Instrument Protection – Protect slope inclinometers instruments before any work starts. Provide temporary and permanent instrumentation protection for all existing and new instruments. Protect instruments from damage due to construction activities. Install 3 bollards around each instrument location for permanent protection. Provide interim protection at all times during construction. Replace damaged instrumentation at no cost to the Agency.

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00512.43(a) Drilled Shaft Excavation, General - Add the following paragraph after the last paragraph:

Variations in soil layering and in the bearing layer elevations from those shown are anticipated. Provide equipment on-site capable of excavating an additional 20 feet of depth below those shown.

Do not begin drilled shaft excavation until concrete in adjacent drilled shaft(s) has been in place for a minimum of 24 hours.

00512.43(c) Temporary Casing – Delete the first paragraph of this subsection and replace with the following:

Temporary casing is required for Bents 1, 2, 3 and 4. Install temporary casing with either a casing oscillator or casing rotator. Casing shall be adequate to support the boring from ground surface to top of rock bearing layer.

In the paragraph that begins "Where the acceleration coefficient...", replace the words "acceleration coefficient" with the words "peak horizontal ground acceleration coefficient for the 1,000 year return period" and replace the value "0.10" with "0.16 g (acceleration due to gravity)".

00512.43(h) Clean Out- Add the following paragraph to the end of this subsection::

Provide downhole camera equipment capable of viewing and filming the rock socket after cleanout and prior to placing rebar cage. Provide Engineer with copies of final tapes of rock socket. Do not proceed with shaft construction until the bottom inspection has been approved.

00512.44 Permanent Casing - Furnish and install permanent casing as follows:

Bridge Number	Bent Number	Casing Size	Elevation for Top of Casing (Feet)	Elevation for Bottom of Casing (Feet)
21493	7	9'-0"	64.50	55.00
21493	8	9'-0"	64.50	57.00

Perform welding of all permanent casing according to AWS D1.1. Test all full penetration welds using nondestructive methods by either radiograph or ultrasonic methods. Base nondestructive testing acceptance criteria on cyclic tension loading.

After concrete placement, fill all void space between the casing and the shaft excavation with a material that approximates the geotechnical properties of the in-situ materials.

Add the following subsection:

00512.44(a) Drilled Shaft Instrumentation – Install a nominal 6-inch diameter Schedule 80 PVC pipe inside the drilled shaft reinforcement cage. Inclinator casings will be

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installed in the 6-inch PVC pipes after concrete has sufficiently cured in accordance with 00505. Locations and details of instrumented drilled shafts are shown on the plans. Extend the PVC pipe from the bottom of the reinforcement cage to at least 24 inches above the top of the shaft. Joints required to achieve full-length pipe to be watertight. Ensure that the PVC pipe is watertight with an affixed watertight bottom cap and a watertight removable top cap.

Secure the PVC pipe to the bottom interior of the reinforcement cage. Provide lateral non-binding guide rings at intervals not exceeding 15 feet along the shaft (guides should not restrict vertical movement to prevent overstressing the pipe during transport and lifting), so that it will not be displaced laterally during reinforcement transport and placement or during concrete placement. After the reinforcement cage and pipe have been lowered inside the shaft, fill the PVC pipe with potable water according to 02020.10(b), prior to placing shaft concrete.

00512.45(d) Concrete Cover - Replace this subsection, except for the subsection number and title, with the following:

Maintain the required concrete cover shown by placing concentric spacer bars or other approved devices around the reinforcing cage. Place spacing devices on minimum 10 foot vertical spacings the full length of the shaft. At each 10 foot level, place spacers on a minimum 30 inch circumferential spacing with at least three spaces per level. Do not use wood spacers or concrete dobies. Provide details of the proposed centering method on the shop drawings submitted according to 00512.40.

00512.48(a) Crosshole Sonic Log Testing - Add the following to the end of this subsection:

For drilled shafts constructed using non-contact splice methods, perform CSL testing after the initial pour to the bottom of the splice region and prior to placement of the column reinforcement and pouring of the splice region.

00512.80(d) Drilled Shaft Concrete - Add the following at the end of the paragraph:

The estimated quantity of drilled shaft concrete is:

Structure	Class	Quantity (Cubic Yard)
Bridge NO. 21493	4000	6,586

00512.80(e) Drilled Shaft Reinforcement - Add the following at the end of the paragraph:

The estimated quantity of drilled shaft reinforcement is:

Structure	Uncoated(Pound)
Bridge No. 21493	2,018,500 (Grade 80)
Bridge No. 21493	37,200 (Grade 60)

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00512.80(f) Crosshole Sonic Log Equipment Mobilization - Delete this subsection.

00512.80(h) Crosshole Sonic Log Tests - Replace the sentence that begins "No separate measurement..." with the following sentence:

No separate measurement will be made for CSL equipment and operating personnel or for CSL tests performed at the Contractor's option.

00512.80(i) Slope Inclinometer in Drilled Shafts - Inclinometers installed within drilled shafts will be measured on the length basis from the bottom of the 6" PVC casing within the drilled shaft to the finished ground surface.

00512.80(j) Instrument Protection - Protection of all existing and new instruments will be measured on a lump sum basis for furnishing and installing all required temporary and permanent instrumentation protection measures.

No separate measurement will be made for temporary and permanent protection of geotechnical instrument locations. Bollards and similar protection methods are incidental to instrument protection.

00512.90 Payment - Delete the paragraph that begins "Item (f) includes...".

Replace the paragraph that begins "Item (h) includes..." with the following paragraph:

Item (h) includes mobilization of all CSL testing equipment and personnel to and from the site, all CSL testing, interpretation, analysis, electronic data, and final report for each tested and accepted shaft.

Add the following pay items:

Pay Item	Unit of Measurement
(i) Slope Inclinometer in Drilled Shaft	Foot
(j) Instrument Protection	Lump Sum

Payment for these items will be payment in full for furnishing and placing all materials, and for furnishing all equipment, labor, technical representatives, and incidentals necessary to complete the work as specified.

No separate payment will be made for inclinometer casing, cement grout, 6-inch diameter PVC pipe or flush mount monuments. Payment for these items are included in payment for item (i).

SECTION 00520 - DRIVEN PILES

Comply with Section 00520 of the Standard Specifications modified as follows:

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00520.11 Engineer's Estimated Length List - Add the following to the end of this subsection:

The Engineer's estimated lengths of steel piling are:

Location	No.	Length (Feet)	Kind
Bent 1	15	74-77	HP14X117
Bent 2	15	74-77	HP14X117
Ped Bent 1	1	74	HP 14X117
Ped Bent 2	1	74	HP 14X117

Notes:

1. Bent cap slopes from east to west. Longer piles on east end.
2. Minimum tip elevation for all piles is Elevation -17.0

00520.20(c-4) Followers - Add the following to the end of this subsection:

Followers shall not be permitted.

00520.20(d-3) Wave Equation Method - Add the following paragraph and table(s) at the end of this subsection:

The input values for the wave equation analyses are:

Bent	Pile Type	Pile Length * (Feet)	Quake (Inches)		Damping (sec./ft.)		% skin (ITYS)	Rn (kips)
			Skin	Toe	Skin	Toe		
1-2	HP14X117	74-77	0.10	0.12	0.05	0.15	50	670
Ped 1-2	HP14X117	74	0.10	0.12	0.05	0.15	50	670

* These pile lengths are based on the top of the pile being at the finished cutoff elevation. All additional pile length above the cutoff elevation, that may be required to accommodate the Contractors pile installation method or site conditions, shall be added to the lengths listed above and appropriate changes made to the skin friction distribution input listed below.

Use triangular (rectangular) skin friction distribution.

00520.41(d) Preboring - Add the following sentence to the end of this subsection:

Use augering, wet-rotary drilling or other approved methods of preboring. As a minimum, pre-bore the upper 20 feet for each pile. If minimum tip elevation cannot be achieved, pre bore deeper as necessary to achieve minimum tip elevation.

Backfill or pressure grout all pre-drilled holes with CLSM in accordance with Section 00442- Controlled Low Strength Material. If pressure grouting is performed, pressure grout in accordance with Section 00406 Tunneling, Boring and Jacking, except that grout nipples

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will not be required. Pressure grouting shall be performed by drilling adjacent to the pile and pressure grouting the space. Minimum grout strength shall be 1000 psi.

00520.41(e) Jetting - Add the following sentence to the end of this subsection:

Jetting shall not be permitted.

00520.42(d) Set Period and Redriving - Add the following sentence to the end of this subsection:

Piles may be redriven after being allowed to set.

00520.43(c) End Treatment - Add the following sentence to the end of this subsection:

Drive all steel H piles with approved reinforced pile tips from the QPL,

00520.43(d) Reinforced Pile Tips - Add the following sentence to the end of this subsection:

For steel pipe piling, provide (inside) (outside) fit, open end cutting shoes meeting the requirements of 02520.10(e).

00520.44(c) Strength Before Driving - Replace "00550.12(d)" with "00550.12(c)".

SECTION 00530 - STEEL REINFORCEMENT FOR CONCRETE

Comply with Section 00530 of the Standard Specifications modified as follows:

00530.30 Mechanical Splice Installers - Replace the bullet that begins "Construct each splice sample with two..." with the following bullet:

- Construct each splice sample with two equal lengths of straight reinforcing bar so the total length of the assembled splice sample is at least 96 inches.

00530.42(c-2-c) Testing - Replace the sentence that begins "Construct test splices with two..." with the following sentence:

Construct test splices with two equal lengths of straight reinforcing bar so that the total length of the assembled splice is not less than 96 inches.

00530.80(a) Lump Sum - Add the following to the end of this subsection:

The estimated quantity of reinforcement is:

Structure	Uncoated (Pound)
Bridge No. 21493	514,000 (Grade 80)
Bridge No. 21493	4,595,000 (Grade 60)

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The weight of miscellaneous metal, based on weights listed in 00530.80(b) and Project quantities, is included in the estimated quantity of uncoated reinforcement.

SECTION 00540 - STRUCTURAL CONCRETE

Comply with Section 00540 of the Standard Specifications modified as follows:

00540.10 General - Add the following sentence to the end of this subsection:

Furnish a concrete surface retarder from the QPL.

00540.15 Form Materials - Replace this subsection, except for the subsection number and title, with the following:

Furnish wood, minimum nominal 5/8 inch thick APA exterior grade plywood, minimum nominal 5/8 inch thick APA plyform, metal, or other suitable form material. For round concrete columns, provide either metal or other approved form material that produces a smooth and true surface free from fins, joints and other irregularities. Use APA plyform for all decks and slabs.

00540.17(a) Aggregate - Delete the sentence that reads "Blend aggregates only as allowed in 02001.20."

00540.17(c) Hardened Concrete - In the paragraph that begins "Cast and cure test...", replace "14 inch x 8 inch" with "4 inch x 8 inch".

00540.17(c-3) Acceptance - Replace the paragraph that begins "If an ASTV falls..." with the following paragraph:

If an ASTV falls below f'_c , the Contractor may submit a written plan outlining a proposed alternate method of evaluating compressive strength. Submit the plan for review by the Engineer within three days of the test. Provide evidence that a reasonable f'_c (over-design) was maintained and that there is credible evidence (besides low strength) which warrants consideration of this option. The Engineer may allow an alternate method of acceptance if the compressive strength test results are determined to be suspect from definable external factors.

00540.43(a) Construction Joints - Replace the paragraph that begins "Within 24 hours after..." with the following paragraphs:

Apply a concrete surface retarder according to the manufacturer's recommendations. Remove surface mortar within the time period recommended by the manufacturer and clean the joint surface and reinforcing steel by removing loosened particles of aggregate, damaged concrete, unconsolidated concrete and surface laitance with a high pressure washer conforming to 00540.28 to the extent that clean aggregate (free of surface mortar) is exposed on 50% of the surface. Clean the joint surface again immediately prior to the concrete placement to remove any subsequent deposits of dirt, debris or other foreign

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materials. Saturate the joint surface with potable water immediately before resuming concrete placement. Remove standing water in depressions or hollows of the joint surface.

Saw cut the top 1 inch of the deck joints with a straight vertical cut before subsequent concrete placement and before saturating the surface with water. Where joints are straight and without spalls, the Engineer may waive this saw cut requirement.

Hand rub or brush fresh concrete paste onto the existing surface of vertical deck joints down to the top mat of reinforcing steel at the beginning of subsequent concrete placement.

Stay in place joint forms are not allowed in bridge deck construction joints.

00540.43(c) Joint with Fillers - Add the following sentence to the end of the paragraph:

Provide a 3/4 inch chamfer on each edge of the joint unless otherwise noted.

00540.48(a) General – Add the following sentence to the end of this subsection:

See 00541 of these Special Provisions for additional requirements for Mass Concrete.

00540.48(g) Bridge Decks - Add the following bullet to the bullet list:

- Has saturated the tops of precast prestressed concrete members and formwork by applying continuous water for a minimum of 2 hours immediately prior to beginning deck placement.

00540.49(a-2-a) General - Replace the paragraph that begins "Do not place ..." with the following two paragraphs:

Do not place concrete if the air temperature is, or is forecast to be, below 40 °F the day of placement or is forecast to be below 40 °F on any of the next seven calendar days (14 calendar days for decks) after placement unless a Cold Weather Plan has been approved by the Engineer.

To place concrete when the temperature is below 40 °F, submit a Cold Weather Plan that identifies the methods that will be used to prevent the concrete temperature from falling below 50 °F. Methods include heated enclosures and insulated forms. Also include in the plan measures that will be taken if the concrete temperature falls below 50 °F. Provide a 24 hour continuous recording thermometer to verify the concrete temperature.

00540.49(b) Bridge Deck Placement - Add the following bullet before the first bullet:

- Only if precipitation is not forecast between 2 hours before and 2 hours after the scheduled placement duration. An acceptable forecast will have less than 30% chance of precipitation for the entire placement window. Provide a forecast to the Engineer 1 hour before placement.

00540.50(c) Deck Roadway Texturing - In the bullet that begins "Unequally space...", replace "Unequally space grooves from" with "Space grooves randomly from".

Add the following bullet after the bullet that begins "Orient the grooves...":

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- Do not groove within 6 inches of joint blockouts and bridge ends. For skewed bridges, additional ungrooved portions at joint blockouts and bridge ends are allowed to accommodate the width of the gang saw.

00540.51(b) Curing Concrete Bridge Decks - In the bullet that begins "Provide wind breaks...", replace "0.20 pounds per square foot" with "0.10 pounds per square foot".

00540.53(a-1) On All Surfaces - In the bullet that begins "Fill holes and...", replace "1/2 inch" with "1/4 inch".

00540.53(b) Class 1 Surface Finish (Ground and Coated) – Replace the second sentence that begins: "Apply coating according to...." with the following:

Concrete Coating shall consist of a penetrating concrete stain.

Coating stain shall be applied in the following groups and to the limits defined in the plans.

- Color 1:
- Color 2:
- Color 3:
- Color 4:

Specific Manufacture products are included to demonstrate color intent. Contractor shall select stain meeting color intent from QPL to engineer for approval.

Contractor to construct and provide (3) 18-in x 18-in x 2-in concrete Test Panels for each surface treatment. Test Panels shall be constructed as according to these specifications and submitted to the engineer for approval prior to construction.

Concrete shall be sufficiently cured and cleaned to remove laitance, surface film, dirt and other foreign particles as approved by the engineer.

Stain shall be applied according to the manufactures specifications as approved by the engineer.

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00540.54 Crack Inspection and Deck Sealing - Replace the paragraph that begins "Immediately after the cure..." with the following paragraph:

Before opening the bridge deck to traffic, the Engineer will inspect the deck for cracks.

00540.80(a-1) Lump Sum - Add the following to the end of this subsection:

The estimated quantity of concrete is:

Bridge No. 21493

Type and Class	Quantity (Cu. Yd.)
Foundation Concrete, Class 4000	7,843

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Deck Concrete, Class HPC 4000	5,761
General Structural Concrete, Class 3300	2,265
General Structural Concrete, Class 4000	1,377
General Structural Concrete, Class 5000	2,325
General Structural Concrete, Class 6000	1,820

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FALSEWORK DESIGN CHECKLIST

Instructions - This checklist was developed to facilitate the design, review, and erection of falsework to be used for Oregon Department of Transportation bridge construction projects. This checklist is intended to act as a reminder to design or check for specific important aspects of this construction. It is not a substitute for plan and/or design criteria or specification requirements.

The Checklist is to be completed and signed by the Falsework Design Engineer. Answer every question. Attach to the Checklist an explanation of any negative responses.

Submit the Checklist according to 00540.41(a).

	YES	NO	N/A
A. Contract Plans, Specifications, Permits, Etc.			
1. Are the falsework plans prepared, stamped and signed by an engineer registered to practice in Oregon?	_____	_____	_____
2. Have three complete sets (five if railroad approval is required) of the design calculations been included with the falsework drawings submittal?	_____	_____	_____
3. Are falsework plans in compliance with the requirements of the construction plans general notes?	_____	_____	_____
4. Are falsework plans in compliance with contract plan structural details?	_____	_____	_____
5. Are falsework plans in compliance with the requirements of the Oregon Standard Specifications for Construction, subsection 00150.35?	_____	_____	_____
6. Are all existing, adjusted or new utilities in proximity with the proposed falsework shown on the falsework plans and is protection of these utilities addressed?	_____	_____	_____
7. Are clearance requirements satisfied and shown on the falsework plans?	_____	_____	_____
8. For construction in or over navigable waters have all requirements for construction of falsework that are called for in the Coast Guard Permit been incorporated in the falsework design?	_____	_____	_____
9. Has possible damage from traffic been considered in the falsework design?	_____	_____	_____

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|--|-------|-------|-------|
| 10. Has damage from stream drift been considered in the falsework design? | _____ | _____ | _____ |
| 11. Is the concrete placing sequence shown and is it consistent with the contract plans? | _____ | _____ | _____ |

B. Foundation Requirements

- | | | | |
|---|-------|-------|-------|
| 1. Are driven falsework piling provided as called for on the contract plans? | _____ | _____ | _____ |
| a. Is a minimum pile tip elevation or penetration indicated on the drawings? | _____ | _____ | _____ |
| b. If timber falsework piles are specified, are the recommended order lengths sufficient to virtually eliminate the possibility of pile splices? | _____ | _____ | _____ |
| c. Is a detailed static pile capacity analysis included in the calculations? | _____ | _____ | _____ |
| d. If lateral loads are applied to the piling by equipment, dead loads, flowing water, or drift, is a detailed lateral load analysis included in the calculations? | _____ | _____ | _____ |
| e. When piling are in an active waterway, have the potential effects of scour on axial and lateral pile support been addressed in the calculations? | _____ | _____ | _____ |
| f. Does the proposed falsework pile hammer meet the minimum field energy requirements as listed in 00520.20(d-2)? | _____ | _____ | _____ |
| g. Will a driving criteria graph [FHWA Gates Equation, in 00520.42(b)] plotting blow count versus stroke for an acceptable pile hammer be provided for the project inspector? | _____ | _____ | _____ |
| 2. Is falsework supported on spread footings or mud sills? | _____ | _____ | _____ |
| a. Are the spread footing elevations shown on the drawings? | _____ | _____ | _____ |
| b. Has a rational method for determining the ultimate bearing capacity of the foundation materials been presented and described in the calculations? | _____ | _____ | _____ |

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|---|-------|-------|-------|
| c. Have the soil parameters used in calculating the ultimate bearing capacity been listed and confirmed by the designer? | _____ | _____ | _____ |
| d. Has an appropriate Factor of Safety been used for calculating the allowable bearing capacity of the foundation materials? | _____ | _____ | _____ |
| e. Are spread footing settlement estimates included in the calculations? | _____ | _____ | _____ |
| f. Have effective stresses been used in the calculations, when applicable? | _____ | _____ | _____ |
| g. When spread footings are founded near the top of a slope or in a slope, have the ultimate bearing capacity calculations been modified accordingly? | _____ | _____ | _____ |
| h. When spread footings may be subjected to flowing water, have the potential effects of scour on ultimate bearing capacity been addressed in the calculations? | _____ | _____ | _____ |

C. Loads

- | | | | |
|---|-------|-------|-------|
| 1. Are the magnitude and location of all loads, equipment and personnel that will be supported by the falsework shown and noted on the falsework plans? | _____ | _____ | _____ |
| 2. Has the mass of specific equipment units to be supported by the falsework been included in the calculations or on the falsework plans? | _____ | _____ | _____ |
| 3. Is the deck finishing machine supported in a manner that will not impose load on concrete forms except deck overhang brackets? | _____ | _____ | _____ |
| 4. Are design loads and material properties used to determine design stresses for each different falsework member shown on the falsework plans? | _____ | _____ | _____ |
| 5. Is the worst loading and member property condition, rather than the average condition, used to obtain design loads? | _____ | _____ | _____ |
| 6. Are deck forms for concrete box girders supported from the girder stem and not from the bottom slab? | _____ | _____ | _____ |
| 7. Are diaphragm loads or other concentrated loads included in the analysis of supporting beams? | _____ | _____ | _____ |

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8. If sloping structural members exert horizontal forces on the falsework, is bracing or ties used to resist these loads?

D. Allowable Stresses

1. Has the method used for falsework design of all members except for manufactured assemblies been noted in the design calculations?
2. Are manufactured assemblies identified as to manufacturer, model, rated working capacity and ultimate capacity?
3. Is the allowable stress and the calculated stress listed in the summary for each different falsework member, except for manufactured assemblies?

E. Timber Falsework Construction

1. Are timber grades consistent with material to be delivered to the construction site, and noted on falsework drawings, and in accompanying calculations for all timber falsework material?
2. If "rough" lumber is specified for falsework by the falsework designer are the actual lumber dimensions used in calculations shown?
3. If plywood spans are governed by the strength of the plywood, are the allowable stress and the calculated stress shown on the submitted calculations?
4. If plywood spans are governed by the allowable spacing of supporting joists, are the allowable and the proposed spacing shown on the falsework plans?
5. Have timber stringers been checked for bending, shear, bearing stresses, and 1/240 of the span length deflection?
6. Are joists identified as being continuous over 3 or more spans when they are not analyzed as simple spans?
7. Have stringers and cap beams been checked for bearing stresses perpendicular to the grain as well as for bending and shear stresses?
8. Have posts been checked as columns as well as for compression parallel to the grain?

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F. Steel Falsework Construction

- | | | | | |
|----|--|-------|-------|-------|
| 1. | Are steel structural shapes and plates identified by ASTM number on the falsework plans and in the calculations? | _____ | _____ | _____ |
| 2. | Have steel beams been checked for bending, shear, web crippling and buckling of the compression flange? | _____ | _____ | _____ |
| 3. | Has horizontal plane bracing been shown where required to limit compression flange buckling? | _____ | _____ | _____ |

G. Deflections and Settlement

- | | | | | |
|----|---|-------|-------|-------|
| 1. | Is falsework deflection for concrete dead load shown on the plans for all falsework spans? | _____ | _____ | _____ |
| 2. | Is falsework deflection from concrete dead load limited to 1/240 of the span length for all falsework spans? | _____ | _____ | _____ |
| 3. | Do stringers supporting cast-in-place concrete compensate for estimated camber? | _____ | _____ | _____ |
| 4. | For beam spans with cantilevers, has the upward deflection of the cantilevers due to load placed on the main spans been investigated? | _____ | _____ | _____ |
| 5. | Are provisions shown for taking up falsework settlement? | _____ | _____ | _____ |

H. Compression Members, Connections and Bracing

- | | | | | |
|----|--|-------|-------|-------|
| 1. | Has general buckling been evaluated for all compression members? | _____ | _____ | _____ |
| 2. | Has bracing been provided at all points of assumed support for compression members? | _____ | _____ | _____ |
| 3. | Was bracing in each direction considered in establishing the effective length used to check post capacity? | _____ | _____ | _____ |
| 4. | Is bracing strength and stiffness sufficient for the intended purpose? | _____ | _____ | _____ |
| 5. | If temporary bracing is required during intermediate stages of falsework erection, is it shown on the falsework plans? | _____ | _____ | _____ |
| 6. | Have all connections been designed and detailed? | _____ | _____ | _____ |
| 7. | Are web stiffeners required on steel cap beams to resist eccentric loads? | _____ | _____ | _____ |

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- | | | | | |
|---|--|-------|-------|-------|
| 8. | Are wedges required between longitudinal beams and cap beams to accommodate longitudinal slope or to reduce eccentric loading? | _____ | _____ | _____ |
| 9. | Has the width to height ratio of wedge packs been verified to fall within the limits given in the special provisions? | _____ | _____ | _____ |
| 10. | If overhang brackets are attached to unstiffened girder webs, has the need for temporary bracing to prevent longitudinal girder distortion been investigated? | _____ | _____ | _____ |
| 11. | Have beams and stringers with height/width ratios greater than 2.5:1 been checked for stability? | _____ | _____ | _____ |
| 12. | Have sloping falsework members that exert horizontal forces on the falsework been braced or tied to resist these loads? | _____ | _____ | _____ |
| 13. | If beams supporting cast-in-place concrete have cantilever spans, have the falsework plans been noted to require the main spans be loaded before loading the cantilever spans? | _____ | _____ | _____ |
| 14. | Have timber headers set on shoring towers been checked for eccentric loads, and for shear and bending stresses produced by the eccentricity? | _____ | _____ | _____ |
|
I. Highway and Railroad Traffic Openings (For falsework over or adjacent to highway or railroad traffic openings.) | | | | |
| 1. | Do falsework plans satisfy construction clearances shown on the contract plans? | _____ | _____ | _____ |
| 2. | Are posts designed for 150% of the calculated vertical loading and increased or readjusted for loads caused by prestressing forces? | _____ | _____ | _____ |
| 3. | Are mechanical connections 2,000 pounds minimum capacity shown at the bottom of posts to footing connections? | _____ | _____ | _____ |
| 4. | Are mechanical connections 1,000 pounds minimum capacity shown at the top of the post to cap connections? | _____ | _____ | _____ |
| 5. | Are beam tie downs 500 pounds minimum capacity shown for all beams? | _____ | _____ | _____ |
| 6. | Are 5/8 inch or larger diameter bolts used at connections for timber bracing? | _____ | _____ | _____ |
| 7. | Are temporary erection and removal bracing shown? | _____ | _____ | _____ |

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J. Additional Requirements for Railroad Traffic Openings

1.

Do falsework plans show collision posts as shown on the contract plans?

2.

Do posts adjacent to the openings have a minimum section modulus of?

a.

steel

-

9.5

cubic inches

b.

timber

-

250

cubic inches

3.

Are soffit and deck overhang forming details shown?

4.

Are falsework bents within 20 feet of centerline of the track sheathed solid between 3 feet and 17 feet above top of rail with 5/8 inch thick minimum plywood and properly blocked at the edges?

5.

Is bracing on the bents within 20 feet of the centerline of the track adequate to resist the required assumed horizontal load or minimum 5,000 pounds, whichever is greater?

Designer's Signature

Date

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SECTION 00541 - MASS CONCRETE

Section 00541, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00541.00 Scope: This work consists of additional requirements specific to mass concrete as defined herein.

Furnish, place and finish mass concrete according to the requirements of 00540 and the latest edition of ACI 207. In the event of a conflict the requirements of ACI 207 prevail.

Mass concrete in drilled shafts, as defined in 00512, is exempt from the requirements of this section.

00541.01 Abbreviations and Definitions:

Mass Concrete - Elements of a structure to be reviewed as mass concrete (ref ACI 207), include pile caps, pier caps, and portions of lower pylons and piers with least dimension greater than 3 feet. Evaluate identified elements for thermal control requirements in accordance with ACI 207. All concrete sections evaluated to have potential for maximum curing temperatures in excess of 155° F are subject to this specification.

00541.03 Mass Concrete Plan Submittal: Submit a Mass Concrete Plan stamped by a professional engineer licensed in the State of Oregon, according to the requirements of 00150.35.

Include the following in the Mass Concrete Plan:

- **Mix Design:** For Mass Concrete placements, use concrete conforming to 02001 as supplemented below:

For Mass Concrete placements, pozzolanic additives may be a combination of the following additives at the substitution rate shown in Table A.

Table A

Cementitious Materials	Maximum percent of total cementitious materials by mass**
Class F Fly Ash	40
Ground Granulated Furnace Slag	50
Total of Fly Ash and Slag	50*

** Total cementitious materials include the summation of Portland Cement, fly ash and slag.

* Fly Ash shall not constitute more than 40-percent of cementitious materials.

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Ground granulated blast furnace slag (GGBFS) or fly ash may be used in the mix to reduce the heat of hydration. Provide GGBFS according to 02030.40 and Fly Ash according to 02030.10.

Other actions for reducing the heat of hydration may be required, such as the addition of controlled quantities of ice in lieu of equal quantities of mixing water, precooling of the concrete with liquid nitrogen or the use of cooling tubes. However, no frozen pieces of ice are allowed in the concrete mix after blending and mixing components. The use of liquid nitrogen to cool the concrete is permitted if included in the accepted Mass Concrete Plan.

- **Monitoring Devices:** Provide temperature monitoring devices to record temperature development between interior and exterior mass concrete elements. Devices must be capable of monitoring the peak internal and peak gradient temperatures at required points throughout the mass concrete element. Monitor a minimum of two independent sets of interior and exterior points for each mass concrete element.
- **Thermal Control:** For each mass concrete structure component, submit a Thermal Control Plan as a subsection to the Mass Concrete Plan. Include the length and method of curing, procedures to control maximum concrete temperature at time of placement, report of thermal modeling, temperature sensor types and locations, data acquisition method, proposed method of controlling temperature differentials, and provisions for field measures to ensure meeting the maximum concrete temperature and temperature differentials requirements. Submit supporting computations to demonstrate compliance with the maximum curing temperature requirements for concrete sections that are evaluated for thermal control, as described in 00541.01, and for those sections that do not require a thermal control plan,

Perform a two-dimensional finite-difference analysis in accordance with ACI 207.1R-96 or finite element analysis for temperature modeling of mass concrete placements. Perform analysis for estimating crack widths in accordance with the requirements in ACI 207.2R-95 or demonstrate a plan to preclude thermally induced cracking. Calculated thermally induced crack widths shall not exceed .008 inches for caps and diaphragm elements and .010 inches for pier caps. The analysis shall be performed based on the actual mix designs and materials planned for use in the structure. Test the coefficient of thermal expansion of the concrete with the aggregate to be used in the proposed mixes in accordance with US Army Corps of Engineers Method CRD-C39-81, "Test Method for Coefficient of Linear Thermal Expansion of Concrete." Test the heat of hydration of the cementitious materials including mineral admixtures to be used in the mixes at 1, 3, 7, and 28 days in accordance with ASTM C186-98, "Heat of Hydration of Hydraulic Cement"; or equivalent testing as approved by the Engineer. Present all assumptions for the modeling including use of cooling and insulation.

- **Demonstration Placement:** Perform a demonstration mass concrete placement to verify accuracy of the predicted temperature and methods of controlling temperature, and to test the automatic and manual thermal sensing and recording equipment. Provide demonstration placement monitoring results in the Mass Concrete Plan. If predictions of temperature gradient and maximum

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temperature vary by more than 10 degrees from those measured in the demonstration placement, then provide an evaluation and reanalysis of the thermal projection methods to correlate with the demonstration placement. Submit an updated Mass Concrete Plan for approval.

Materials

00541.10 General: Conform to 00540 and 00541.03.

Construction

00541.40 Mass Concrete Tolerances – Place and monitor mass concrete according to the following:

Conform to Mass Concrete Plan requirements for maximum concrete temperature at the point of discharge into the forms. The maximum allowable temperature at the point of discharge is 80° F. When ice is used, verify that all the ice is melted before discharging concrete from the mixer.

Control the maximum temperature differential between the surface of the mass concrete and the hottest portion in accordance with the cracking criteria established in the Mass Concrete Plan. Design and operate a thermal control system to limit thermally induced crack widths. The maximum allowable concrete temperature in any portion of the concrete is 160° F.

Monitor concrete temperatures in accordance with the approved plan. Place sensors per 00541.03. Discontinue temperature monitoring as established in the accepted Mass Concrete Plan or when the maximum recorded temperature difference is less than the difference between the interior concrete temperature and the coldest nighttime temperature for three consecutive days.

Provide approved temperature monitoring and data storage equipment capable of automatically and continuously recording a minimum of one reading per hour for the duration of the mass concrete temperature monitoring period. Provide sensors and recorder that are accurate to within +/- 2°F (1.1°C) in the temperature range of 32°F (0°C) to 212°F (100°C). Provide a backup temperature sensing system, which includes both backup temperature sensors and backup temperature readout device. The back-up system is intended to be used to complete the monitoring of a placement should the primary system fail. Repair or replace the primary system before beginning the next mass concrete placement.

Upload data in a format for review by the Engineer using Excel (Microsoft). Store data in both live data and in pdf formats. Document each mass concrete pour in a summary report that compares predictions against actual temperature readings, and summarizes compliance for mass concrete placement.

If the temperature differential within any structural mass concrete placement exceeds required limits take immediate corrective action as outlined in the approved Mass Concrete Plan. Suspend future placement of structural mass concrete and submit a revised Mass Concrete Plan to the Engineer for approval. Do not resume placement of mass concrete

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without written approval from the Engineer. When mass concrete temperature differentials are exceeded, submit analyses and test results for determining the structural integrity and durability of the mass concrete element. Based on the analyses and test results, a determination of corrective action will be made by the Engineer which may include, but not be limited to, price adjustment, repair of thermal cracks, a combination of both, or removal of the non-complying concrete.

For the first placement of each size and type of mass concrete component provide a qualified technician to inspect and approve the installation of monitoring devices and verify the process for recording temperature data. Submit qualifications of all technicians responsible to inspect or monitor mass concrete placements to the Engineer for approval. For placements other than the first, provide a qualified inspector to monitor device installation and temperature data.

Repair or replace concrete for any cracking or damage due to exceeding maximum temperature and/or temperature differential, as determined by the Engineer, at no additional cost. Submit a detailed repair plan and narrative describing the intended actions to the Engineer for review and approval prior to beginning any remedial actions or repairs.

Measurement

00541.80 Measurement: - No measurement will be made for compliance with the additional requirements for mass concrete work performed under this section. Concrete will be measured according to Section 00540.80.

Payment

00541.90 Payment: - No additional payment will be made for compliance with the additional requirements for mass concrete. Work performed under this section will be paid for according to Section 00540.90.

SECTION 00545 - REINFORCED CONCRETE BRIDGE END PANELS

Comply with Section 00545 of the Standard Specifications.

SECTION 00550 - PRECAST PRESTRESSED CONCRETE MEMBERS

Comply with Section 00550 of the Standard Specifications modified as follows:

00550.47 Surface Finish - In the paragraph that begins "Provide a roadway finish...", replace the sentence that begins " Provide a roadway finish ..." with the following two sentences:

Provide a roadway finish on the tops of members that do not have an asphalt concrete wearing surface. Provide a light broom finish on the tops of members that have an asphalt concrete wearing surface.

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Replace the paragraph that begins "Where no finish..." with the following sentence:

Provide a Class 1 surface finish (ground and coated) in accordance with Section 00542.

00550.50 Tie Rods - In the third bullet, replace the sentence that begins "Install compressible washer..." with the following sentence:

Install compressible washer type direct tension indicators under the turned nuts and tighten the nuts as recommended by the manufacturer until the gaps in the indicators are nil or as shown.

SECTION 00560 - STRUCTURAL STEEL BRIDGES

Comply with Section 00560 of the Standard Specifications modified as follows:

00560.29(c-5) Turn-of-Nut Tightening - In Table 00560-3 replace the "Bolt Length" column with the following column:

Bolt Length (underside of head to end of bolt)

Up to and including 4 diameters

Over 4 diameters but not exceeding 8 diameters

Over 8 diameters but not exceeding 12 diameters ²

00560.80 Measurement - Add the following to the end of this subsection:

The estimated quantity of structural steel is:

Structure	Steel Type	Quantity (Pound)
Bridge No.21493	AASHTO M270, Grade 50W	11,100,000

00560.90 Payment - Replace the paragraph that begins "The accepted quantities..." with the following:

The accepted quantities of work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following items:

Pay Item	Unit of Measurement
(a) Steel Arch Bridge	Lump Sum

SECTION 00570 - TIMBER STRUCTURES

Comply with Section 00570 of the Standard Specifications modified as follows:

00570.10 Materials - Add the following to the end of this subsection:

Furnish timber and lumber meeting the following grading requirements:

- Douglas Fir non-laminated timber and lumber conforming to No. 1 or better grade
- Douglas Fir glued laminated timber stringers according to combination symbol 24F-V4

00570.11 Metal Parts - Add the following to the end of this subsection:

Galvanized connectors are allowed on ACZA treated timber only when the timbers are kiln dried to 19% after treatment. If ACZA treated timber is not kiln dried, use stainless steel connectors only.

SECTION 00581 - BRIDGE DRAINAGE SYSTEMS

Comply with Section 00581 of the Standard Specifications.

SECTION 00582 - BRIDGE BEARINGS

Comply with Section 00582 of the Standard Specifications modified as follows:

00582.00 Scope - Replace this subsection, except for the subsection number and title, with the following:

This work consists of furnishing and installing composite bridge bearings, elastomeric bridge bearings as shown, specified, or directed.

Add the following subsection:

00582.03 Design - Design and fabricate composite bridge bearings according to the latest edition of the AASHTO LRFD Design Specifications.

00582.10 Materials - Replace this subsection, except for the subsection number and title, with the following:

Furnish composite bridge bearing materials meeting the requirements of Section 02570. Furnish elastomeric bridge bearings from the QPL and meeting the requirements of Section 02571.

SECTION 00583 - ELECTRICAL CONDUIT IN STRUCTURES

Comply with Section 00583 of the Standard Specifications.

SECTION 00585 - EXPANSION JOINTS

Comply with Section 00585 of the Standard Specifications modified as follows:

00585.01 Definitions - In the definition of "Modular Expansion Joint System", add the word "Seal" between the words "Joint" and "System".

Add the following item to the list of definitions:

Finger Plate Joint – A joint in which two loosely interlocking pieces of steel plates cantilever across an open joint.

00585.41(e) Leakage Check - Replace the sentence that begins "Check joints for leakage..." with the following sentence:

Check joints for leakage by flooding the joint with water.

00585.43(b) Installation Procedures - Delete the paragraph that reads "Place poured joint sealant in curbs and sidewalks."

00585.46(a) General - In the paragraph that begins "Use steel retainers...", replace "3/8 inch" with "5/8 inch".

00585.47 Modular Expansion Joint Systems - In the subsection title and in the paragraph that begins "Design, fabricate, install..." add the word "seal" between the words "joint" and "systems".

00585.47(d) Design Requirements - Add the following paragraph to the end of subsection (1):

Design modular expansion joint seal systems according to the current edition of the AASHTO LRFD Bridge Design Specifications with interim revisions.

Delete subsections (2), (3), and (4).

00585.75 Manufacturer's Warranty - Delete this subsection.

00585.80 Measurement - Delete the paragraph that begins "The estimated quantities of..." and delete the paragraph that begins "The quantities of...".

Add the following to the end of this subsection:

The estimated quantities of closed expansion joints are:

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Structure	Joint Type	Quantity (Foot)
Bridge No. 21493	Finger Plate Joint	154
Bridge No. 21493	Modular Bridge Joint System	51

00585.90 Payment - Delete pay item (b). Delete the paragraph that begins "Item (b) includes...".

Delete the paragraph that begins "Payment for work under this Section will be limited to...".

Replace the bullet that begins "providing the manufacturer's..." with the following bullet:

- providing the manufacturer's representative

SECTION 00587 - BRIDGE RAILS

Comply with Section 00587 of the Standard Specifications modified as follows:

00587.80 Measurement - Add the following to the end of this subsection:

The estimated quantity of bridge rail is:

Structure	Rail Type	Quantity (Foot)
Bridge No. 21493	Concrete Parapet with Steel Post	3,579
Bridge No. 21493	Architectural Protective Fencing	146

SECTION 00589 - UTILITY ATTACHMENTS ON STRUCTURES

Section 00589, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00589.00 Scope - This work consists of providing for attachment or installation of utilities on new and existing structures as shown or as directed.

Materials

00589.10 General - Furnish utility attachment systems using materials from the QPL and meeting the following requirements:

Structural Steel 02530

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Forgings, Shafting, Castings, and Nonferrous Materials ..	02540
Fasteners	02560
Reflective Sheeting	02910.20(a)
Resin Bonded Anchor System	00535.10

Furnish brackets constructed of stainless steel or hot-dip galvanized structural steel.

Construction

00589.40 General - Provide sufficient space around utilities for maintenance activities.

Avoid drilling through reinforcing steel. If reinforcing steel is hit, move the anchor location and patch the hole with an approved patching material from the QPL.

Attach conduits or brackets to concrete structures with resin bonded concrete anchors, unless otherwise shown or approved.

00589.41 Natural Gas Lines - Conform to CFR 49 Part 192 in all aspects applicable to the work. Provide isolation valving 200 feet from each end of the bridge.

00589.48 Labeling - Clearly label all piping or conduit systems according to the following APWA color code:

Table 00589-1

Material	Marker Background Color
Electrical Power Lines, Cables, Conduits, Lighting Cables	Red
Gas, Oil, Steam, Petroleum, Gaseous Materials	Yellow
Communications, Alarm, Signal Lines, Cables, or Conduits	Orange
Potable Water	Blue
Reclaimed Water, Irrigation, Slurry Lines	Purple
Sewers, and Drain Lines	Green

Generate purple by placing purple transparent film over white reflective sheeting. The purple tint of the transparent film shall match Federal Standard Color 595B No. 37100.

Minimum length of label shall be as shown in Table 00589-2.

Table 00589-2

Pipe O.D. Min.	Pipe O.D. Max.	Length of Label	Width of Label
3/4"	1 1/4"	8"	3/4"
1 1/2"	2"	8"	1"
2 1/2"	6"	12"	2"

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8"	10"	12"	2"
10"	—	12"	2"

Place labels on each pipe or conduit, on each side of every bent, and at each entrance to a box girder.

Where piping is above or below normal line of sight, place pipe labels so that label may be seen from normal eye height.

Measurement

00589.80 Measurement - No measurement of quantities will be made for work performed under this Section.

Payment

00589.90 Payment - Payment for work under this Section is incidental and included in the payment for items listed in Section 00583.90.

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 specified.

SECTION 00594 - PREPARING AND COATING METAL STRUCTURES

Comply with Section 00594 of the Standard Specifications modified as follows:

00594.11(b) Manufacturing – Replace the sixth item in the bulleted list of items with the following:

- Conform to the following colors:
 - Federal Standard 595B color #30045 for weathering steel top coat. Submit color samples to the Engineer for approval prior to application.

SECTION 00598 - 3 SIDED PRECAST ARCH CULVERT

Section 00598, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00598.00 Scope - The work shall consist of furnishing and installing a three sided precast arch culvert (3SPAC) and precast headwalls. Three sided precast arch culvert together with precast headwalls in this specification will be referred to as members. Contractor shall be responsible for the installation of members to meet the requirements set forth by 3SPAC manufacturer and this specification. This includes precast headwalls, critical backfill

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boundary (CBB) and watertight seal. Select a proprietary structure from the following providers:

Contech Bridge Structures, provided by Contech Construction Products, Inc.,
Telephone: 800-338-1122

TechSpan™, provided by The Reinforced Earth Company,
Telephone: 800-446-5700

Con/Span^R, provided by Con/Span^R Bridge Systems, Telephone: 800-526-3999

Materials

00598.10 Structural Design Engineer - The Structural Design Engineer of record for the design & construction of 3SPAC employed by the manufacturer shall be a licensed professional engineer in the State of Oregon.

00598.11 3SPAC Design Requirements:

- All loading shall be in accordance to the reference standards listed in 00598.12.
 - AASHTO Live Loads (HL-93) and ODOT permit truck
 - Uniform pedestrian live load of 90 psf
 - Future City of Portland streetcar live load as shown.
 - Overburden earth loading maintaining minimum clearance between the top of the structure and finished grade at centerline.
 - Unbalanced thrust force as applicable.
 - Earth pressure and seismic loads as appropriate according to AASHTO.

00598.12 Reference Standards:

- AASHTO LRFD Bridge Design Specifications, 5th edition 2009 including 2010 interims.
- AASHTO Guide Specifications for LRFD Seismic Bridge Design, 1st edition.
- ODOT Bridge Office Practice Manual 2004,

00598.13 3SPAC Required Submittals - The following items shall be submitted for approval according to Section 00150.35 and as described or modified below:

- 3SPAC Design Summary - Submit three copies of the Design Summary. The Design Summary shall be a summary sheet identifying the most important features of design including but not limited to the following:
 - References used
 - Design assumptions
 - Material Specifications (i.e., f'c and fy)
 - Design Loads
 - Special staging, handling and/or installation requirements.

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- 3SPAC Design Checklist - Submit three sets of the Checklist found at the end of Section 00598. The checklist is to be completed and signed by a Professional Engineer registered to practice in the State of Oregon. Answer every question and attach an explanation for any negative response.
- 3SPAC Design Calculations and Detail Plans - Submit three sets of the Design Calculations and Detail Plans. Both the Design Calculations and Detail Plans shall be signed (with the PE seal) by a Professional Engineer registered to practice in the state of Oregon. Design and detail plans shall include but not limited to the following:
 - Type of structure proposed with typical cross section and minimum clearance diagram that complies with the minimum requirements shown on plans.
 - Supplier of materials (for example concrete, reinforcement, structural plate etc.).
 - Provide material cut sheets as appropriate for review.
 - Quality Control and Assurance Plan. - Plan must address the testing requirements, frequency, tolerances, acceptance criteria and verification measurements Plan and Profile at a scale of 1:100 with details
 - Reinforcement details
 - Foundation keyway details.
 - Headwall attachment details.
 - Specifications for all materials and critical backfill requirements which state the type of materials and compaction.
 - Construction considerations.
 - Installation Procedures.
- Shop Drawings - Prepare and submit shop drawings if required.

Construction

00598.40 Proprietary 3 Sided Precast Arch Culvert - Provide for a field representative from the selected proprietary 3 Sided Precast Arch Culvert (3SPAC) Company to be present at the start of undercrossing construction. Supervisory personnel of the Contractor, the company field representative, and any subcontractors who are to be involved in the construction of the proprietary undercrossing structure shall meet with the Engineer for an undercrossing preconstruction conference. At this conference, discuss methods of accomplishing all phases of the work required to construct the proprietary 3SPAC undercrossing. If all representatives are not in attendance, the undercrossing preconstruction conference and start of undercrossing construction shall be rescheduled.

In addition to the undercrossing preconstruction conference, the company field representative shall be available as needed during the erection of the proprietary members to provide instructions and recommendations, and to assist the Contractor or Engineer. Follow instructions and recommendations of the representative if approved by the Engineer.

00598.41 Precast - Construct members according to AASHTO M259 except as shown. A production run will be considered continuous if it is not interrupted for more than three calendar days.

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00598.42 Surface Finish - All exposed surfaces shall be Class 2 finish in accordance to section 00540.53 of the Oregon Standard Specification for Construction. Exposed faces include but not limited to headwalls and undercrossing interior.

00598.43 Concrete Sealer - After members are installed and secured, apply 100% silane sealer from the QPL category 2060 "Concrete Sealer, Chloride" to the exterior side of members as per manufacturer's recommendation.

00598.44 Watertight Seal - After concrete sealer is fully dried, place a continuous flexible watertight seal in the joint, on the sides and top, between each member. Water leaks shall not be allowed within the 3SPAC structure.

Measurement

00598.80 General - 3 Sided Precast Arch Culvert will be measured on the length basis to the nearest foot from end to end along the centerline of the structure. Precast headwalls, Critical Backfill Boundary (CBB), Concrete Sealer, and Watertight Seal will not be measured separately.

Payment

00598.90 General - The accepted 3SPAC undercrossing will be paid for at the contract unit price per foot for the item "3 Sided Precast Arch Culvert".

Precast headwalls, Critical Backfill Boundary (CBB), Concrete Sealer, and Watertight Seal will be considered incidental with payment included in payment made for the "3 Sided Precast Arch Culvert " item.

No separate or additional payment will be made for surface finish, curing, joint filler, and other similar items, and for all other items required to complete the concrete work.

Payment will be payment in full for furnishing and placing all materials and furnishing all equipment, tools, labor and incidentals necessary to complete the work described.

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PRECAST MEMBER DESIGN CHECKLIST

Instructions - This Checklist was developed to facilitate the design review of the precast member to be used for bridge construction projects. This checklist is intended to act as a reminder to design or check for specific important aspects of this construction. It is not a substitute for plan and/or design criteria or specification requirements.

The Checklist is to be completed and signed by the Precast Member Structural Design Engineer. Answer every question. Attach to the Checklist an explanation of any negative responses.

Submit the Checklist according to 00598.13(b).

• Contract Plans, Specifications, Permits, Etc.	• Yes	• No	• N/A
• 1. Are the precast members plans prepared, stamped and signed by an engineer registered to practice in Oregon?	•	•	•
• 2. Have three complete sets of the design calculations been included with the drawing submittals?	•	•	•
• 3. Are the detail plans in compliance with the contract construction plans?	•	•	•
• 4. Has the following criteria been investigated?	•	•	•
• a. Flexure?	•	•	•
• b. Compression in walls?	•	•	•
• c. Shear?	•	•	•
• d. Bearing strength on the footings?	•	•	•
• e. Handling stresses?	•	•	•
• 5. Has the following serviceability criteria been investigated?	•	•	•
• a. Deflection?	•	•	•
• b. Max/min steel ratios?	•	•	•
• c. Fatigue?	•	•	•
• d. Distribution of flexural reinforcement?	•	•	•
• 6. Has the following detailing criteria been investigated?	•	•	•
• a. Reinforcing spacing limits?	•	•	•
• b. Protection against corrosion?	•	•	•
• c. Reinforcement development?	•	•	•
• d. Distribution of flexural reinforcement?	•	•	•
• 7. Has the following construction criteria been investigated?	•	•	•
• a. Construction staging?	•	•	•
• b. Utility requirements?	•	•	•
• 8. Has the following Foundation and Hydraulic requirements been investigated?	•	•	•

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• a. Have the requirements and lor recommendations of the Foundation and Hydraulic Reports been met?	•	•	•
• b. Are the footing pressures less than the allowable soil bearing capacity?	•	•	•
• c. Impacts of footing settlement?	•	•	•
• d. Minimum waterway area?	•	•	•
• c. Scour?	•	•	•
• d. Riprap Protection?	•	•	•
•			

Designer's Signature

Date

**SECTION 00850 - COMMON PROVISIONS FOR PAVEMENT MARKINGS
(Developed with Interchange Package)**

**SECTION 00855 - PAVEMENT MARKERS
(Developed with Interchange Package)**

**SECTION 00865 - LONGITUDINAL PAVEMENT MARKINGS - DURABLE
(Developed with Interchange Package)**

**SECTION 00867 - TRANSVERSE PAVEMENT MARKINGS - LEGENDS AND BARS
(Developed with Interchange Package)**

**SECTION 00905 - REMOVAL AND REINSTALLATION OF EXISTING SIGNS
(Developed with Interchange Package)**

**SECTION 00950 - REMOVAL OF ELECTRICAL SYSTEMS
(Developed with Interchange Package)**

**SECTION 00960 - COMMON PROVISIONS FOR ELECTRICAL SYSTEMS
(Developed with Interchange Package)**

**SECTION 00970 - HIGHWAY ILLUMINATION
(Developed with Interchange Package)**

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SECTION 02030 - MODIFIERS

Comply with Section 02030 of the Standard Specifications modified as follows:

02030.10 Fly Ash - Replace this subsection with the following subsection:

02030.10 Fly Ash - Furnish Class C, Class F, or Class N fly ash from the QPL and meeting the requirements of AASHTO M 295 (ASTM C 618).

SECTION 02050 - CURING MATERIALS

Comply with Section 02050 of the Standard Specifications modified as follows:

02050.10 Liquid Compounds - In the paragraph that begins "Furnish liquid...", replace "AASHTO M 148" with "ASTM C 309".

Add the following to the end of this subsection:

Before using liquid compounds, submit one quart samples of each lot for testing except samples are not required for commercial grade concrete applications unless the liquid compound is a conditionally approved product.

SECTION 02110 - POSTS, BLOCKS, AND BRACES

Comply with Section 02110 of the Standard Specifications modified as follows:

02110.40 Wood Sign Posts - Replace the sentence that begins "Fabricate wood sign posts..." with the following sentence:

Fabricate wood sign posts from Douglas fir, surfaced four sides (S4S) and free of heart center (FOHC).

02110.40(a) Grading - Replace the Douglas Fir and Hem-Fir grading requirements with the following grading requirements:

Species	4" x 4"	4" x 6"	6" x 6" and Larger
Douglas Fir	No. 1 124-b WCLIB 42.11 WWPA	No. 1 123-b WCLIB 62.11 WWPA	No. 1 131-b WCLIB 80.11 WWPA

SECTION 02440 - JOINT MATERIALS

Comply with Section 02440 of the Standard Specifications modified as follows:

02440.10 Preformed Joint Fillers for Concrete - Replace this subsection, except for the subsection number and title with the following:

Furnish preformed joint fillers for concrete from the QPL conforming to the requirements of AASHTO M 153 or AASHTO M 213.

SECTION 02510 - REINFORCEMENT

Comply with Section 02510 of the Standard Specifications modified as follows:

02510.10 Deformed Bar Reinforcement - Replace the sentence that begins "Unless otherwise specified..." with the following sentence:

Unless otherwise specified or shown, all reinforcing bars shall be Grade 60.

SECTION 02560 - FASTENERS

Comply with Section 02560 of the Standard Specifications modified as follows:

2560.20 (a) Bolts – Replace this subsection with the following:

2560.20 (a) Bolts - High-strength bolts shall conform to AASHTO M 164 (ASTM A325) or AASHTO M 253 (ASTM A 490) as shown. High strength bolts used in noncoated weathering steel connections shall be Type 3.

2560.30(b) High Strength Tie Rods and Anchor Bolts – Replace this subsection with the following:

2560.30(b) High Strength Tie Rods and Anchor Bolts – High strength tie rods and anchor bolts shall conform to: AASHTO M 314, Grade 105; ASTM F 1554, Grade 105; ASTM A 449, Type 1; or ASTM A 354 DB as shown.

02560.70 Lubricating Fasteners - Replace this subsection, except for the subsection number and title, with the following:

Furnish all galvanized and coated fasteners with a factory applied commercial water-soluble wax that contains a visible dye of a color that contrasts with the color of galvanizing or coating. Black fasteners shall be "oily" to the touch when installed.

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Field lubricate galvanized bolts in tapped holes, galvanized anchor rods, and galvanized tie rods with a lubricant from the QPL. Apply lubricant to threads and to bearing surfaces that will turn during installation.

Protect fasteners from dirt and moisture at the job site. Clean, relubricate with a lubricant from the QPL, and retest fasteners that do not pass the field rotational capacity test. Obtain the Manufacturer's approval before relubricating tension control fasteners that are designed to automatically provide the tension.

Coat the outer surface of the collar in lock-pin and collar fasteners with an approved Manufacturer lubricant.

SECTION 02570 - COMPOSITE BEARINGS

Comply with Section 02570 of the Standard Specifications modified as follows:

02570.10 Materials - In the Polyether Urethane properties list, replace the "Hardness, Durometer D" line with the following line:

Hardness, Durometer D	ASTM D 2240	65 ± 5
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In the Fabric Pads paragraph, in the bullet that begins "Cotton duck reinforcement...", replace the word "weighing" with the word "with".

02570.20 Testing - Replace this subsection, except for the subsection number and title, with the following:

Test all bearings except where lot testing is permitted. A lot is defined as 25 bearings per type and size. Where lot testing is required, previous test results on a typical bearing of equal or greater capacity is acceptable provided the data is no more than 2 years old. Test typical bearings either by an independent testing laboratory, or have the testing witnessed and attested to by an independent testing laboratory, for compliance with specified performance requirements as listed below. Provide a test results certificate according to 00165.35 with the submittal of shop drawings. Perform the following tests:

(a) Clearance Test - Move the components of the bearing through their design displacements or rotations to verify that the required clearances exist. If the test is conducted on a rotational component which is not under simultaneous full vertical load, make allowance for the displacements which would be caused by that load.

(b) Long-Term Deterioration Test - Conduct test on one full scale bearing per lot. Load the bearing in compression to a stress corresponding to 100% of the maximum dead plus live service load while subjected to plus and minus the design rotational displacement amplitude for 5,000 cycles. Flat sliding systems shall be displaced through at least 1,000 cycles with an amplitude of at least ± 1.0 inch (2.0 inch peak to peak). The sliding may take place at up to 10.0 inch per minute, except when readings of the coefficient of friction are taken, at which time the sliding speed shall be 2.5 inches per minute.

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Bearings will be rejected when:

- There are visible cracks, splits, or excessive wear on disassembly of the bearing.
- The coefficient of friction exceeds two-thirds the value used in design.

(c) Friction Test - Conduct test on one full scale bearing per lot. The coefficient of friction between the sliding surfaces shall not be greater than 0.06 when the maximum working stress for the polytetrafluoroethylene (PTFE) surface is 2,000 psi. It shall not be greater than 0.045 when the maximum working stress for the PTFE surface is above 3,000 psi. Determine the coefficient of friction at 68° F according to the requirements of section 18.3.4.3.2 of the AASHTO LRFD Bridge Construction Specifications.

(d) Proof Load Test:

(1) Vertical Proof Load Test - Apply a vertical load equal to 150% of the vertical design capacity of the tested bearing for 5 minutes, unload, then reapply for an additional 5 minutes. Place the bearing in a rotated position during the test. Rotation shall be 0.015 radians or the design rotation, whichever is greater. The test bearing shall show no indication of failure or other defects such as weld cracking, plate distortion, extrusion of the elastomer or bearing material, or displacement of the elastomer seal while under load or subsequently upon disassembly and inspection.

The successful test of a bearing with a vertical design capacity of 50 tons or less will be accepted as qualification for all bearings of a similar design with a lesser design capacity.

(2) Horizontal Proof Load Test - A horizontal proof load test is required when the design horizontal capacity exceeds 10% of the design vertical capacity and no engineer's calculations are submitted. Apply a horizontal load equal to 100% of the horizontal design capacity while also applying a vertical load equal to 100% of the dead load for a period of two minutes. The bearing does not need to be in the rotated position. The bearing shall show no indication of failure or other defects such as weld cracking, plate distortion, extrusion of the elastomer or bearing material, or displacement of the elastomer seal while under load or subsequently upon disassembly and inspection.

The bearing tested for horizontal proof load may be either a bearing specified for use on the Project or a similar type bearing with both a vertical design capacity and a horizontal design capacity within 10% of the design capacities of bearings specified for use on the Project.

Add the following subsection:

002570.30 Acceptance - For each composite bearing used in the structure, provide the manufacturer's quality compliance certificate according to 00165.35 that verifies the bearing has been manufactured according to the design of the tested bearing.

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SECTION 02630 - BASE AGGREGATE

Comply with Section 02630 of the Standard Specifications modified as follows:

02630.10(a) Grading - In Table 02630-01, add the following sieve size line before the No. 10 sieve size line and add the following footnote at the end to the table:

No. 4 *	—	—	—	—	—
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* Report percent passing sieve when no grading requirements are listed

02630.10(b) Fracture of Rounded Rock - In the sentence that begins "Fracture of rounded rock...", replace "AASHTO TP 61" with "AASHTO T 335".

02630.11(b) Fracture of Rounded Rock - In the sentence that begins "Fracture of rounded rock...", replace "AASHTO TP 61" with "AASHTO T 335".

SECTION 02690 - PCC AGGREGATE

Comply with Section 02690 of the Standard Specifications modified as follows:

02690.20(e-1) Fracture - In the sentence that begins "Provide aggregate...", replace "AASHTO TP 61" with "AASHTO T 335".

SECTION 02910 - SIGN MATERIALS

Comply with Section 02910 of the Standard Specifications modified as follows:

02910.02 Types of Signs - Add "O6" and "O8" sign types and replace the "B2", "B3", "C1", "C2", "F1", "G1", "G2", "G3", "G4", "O3", "O4", "O5", "R1", "W9", and "Y7" sign types with the following:

"B2" Blue Type III or Type IV sheeting background with white Type IX permanent removable legend.

"B3" Blue Type IX sheeting background with white Type IX permanent or removable legend or white Type IX sheeting overlaid with blue transparent paste background, with retroreflective silver-white screened legend.

"C1" Brown Type III or Type IV sheeting background with white Type IX permanent or removable legend.

"C2" Brown Type IX sheeting background with white Type IX permanent or removable legend or white Type IX sheeting overlaid with brown transparent paste background, with retroreflective silver-white screened legend.

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- "F1"** White Type IX sheeting background overlaid with red and blue transparent paste background with white Type IX permanent legend.
- "G1"** Green Type III or Type IV sheeting background with white Type IX removable legend.
- "G2"** Green Type III or Type IV sheeting background with white Type IX permanent legend.
- "G3"** Green Type IX sheeting background with white Type IX permanent legend, or white Type IX sheeting background overlaid with green transparent paste background with retroreflective silver-white screened legend.
- "G4"** Green Type IX sheeting background with white Type IX removable legend.
- "O3"** Fluorescent orange Type VIII, or Type IX sheeting background with black nonreflective permanent legend and red retroreflective symbol (Stop or Yield Ahead Symbol Sign).
- "O4"** Fluorescent orange Type VIII or Type IX sheeting background with black nonreflective permanent legend.
- "O5"** Fluorescent orange Type VIII or Type IX sheeting background with black nonreflective removable legend.
- "O6"** Fluorescent orange Type VIII or Type IX sheeting background with black nonreflective permanent legend and red, yellow, and green Type VIII and Type IX circles. (Signal Ahead Symbol Sign)
- "O8"** Fluorescent orange Type VIII or Type IX sheeting background with black nonreflective screened or cut-out permanent legend and silver-white Type VIII or Type IX symbol. (Speed Reduction Symbol Sign)
- "R1"** White Type IX sheeting background overlaid with red transparent paste background with white Type IX permanent legend.
- "W9"** Silver-white Type III or Type IV sheeting background with blue nonreflective screened or cut-out permanent legend.
- "Y7"** Fluorescent yellow Type IX sheeting background with black nonreflective screened or cut-out permanent legend and red Type IX symbol. (Stop or Yield Ahead Symbol Sign)

02910.20(a) General - Replace the sentence that begins "Use reflective sheeting..." with the following sentence:

Use reflective sheeting Type I and retroreflective sheeting Type III, Type IV, Type VIII, and Type IX from the QPL and the following:

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02910.32(b) Retroreflective Sheeting Legend - In the paragraph that begins "The silver-white or...", replace the sentence that begins "The white retroreflective sheeting..." with the following sentence:

The white retroreflective sheeting shall consist of Type IX sheeting conforming to 02910.20.

02910.75 Manufacturer's Warranty - Replace the paragraph that begins "For retroreflective Type III..." with the following paragraph:

For retroreflective Type III and Type IV sheeting used for permanent signs, provide a Warranty, for a Warranty period of 10 years, for restoring sign panels and replacing sheeting if the sheeting has failed as defined below.

In the paragraph that begins "For purposed of the Warranty...", replace the bullet that begins "70% of minimum coefficient...", with the following bullet:

- 70% of minimum coefficient of retroreflection for designated sheeting or cuttable film according to ASTM D 4956 for the remaining 3 years of the Warranty period for Type III and Type IV sheeting and remaining 5 years of the Warranty period for Type IX sheeting.

SECTION 03020 - EROSION MATERIALS

Section 03020, which is not a Standard Specification, is included in this Project by Special Provision.

Description

03020.00 Scope - This Section includes the requirements for erosion control materials.

Materials

03020.10 Commercially Manufactured Compost - Furnish commercially manufactured compost that:

- Is processed through thermophilic composting meeting the EPA's definition of "Process to Further Reduce Pathogens".
- Is from a commercial compost facility that holds a current DEQ composting permit or is registered with DEQ as a composting facility.
- Meets the requirements of the US Composting Council (USCC) and it's Seal of Testing Assurance (STA) program.
- Contains a minimum 65% by volume of the following recycled plant waste:
 - Source-separated yard and garden wastes
 - Wood wastes
 - Agricultural crop residues

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- Wax-coated cardboard
- Preconsumer vegetative food wastes
- Other similar source-separated materials that the DEQ has determined to have a comparable low level of risk in hazardous substances, human pathogens, and physical contaminants.
- Manure or biosolids based composts when approved.
- Meets the following compost particle size and media parameters:

Compost Particle Size

	Compost Type		
Sieve Size	Fine*	Medium*	Coarse**
	Minimum Percent Passing (By Dry Weight)		
3"	100	100	100
1"	–	90	90
3/4"	–	65	70
5/8"	95	–	–
	Maximum Percent Passing (By Dry Weight)		
1/4"	–	50	30
* maximum 3 inch particle length			
** maximum 6 inch particle length			

Media Parameters

Test	Test Method	Requirements	
Physical Contaminants*	TMECC** 03.08-A	Less than 1.0%	
Organic Matter	TMECC** 05.07-A	35% (Minimum)	
pH	TMECC** 04.11-A	6.0 to 8.5	
Soluble Concentration Salt	TMECC** 04.10-A	5 dS/m (Maximum)	
Total Carbon Total Nitrogen	TMECC** 04.02-D TMECC** 04.02-D	Carbon/Nitrogen Ratio	
		Fine	Medium & Coarse
		<25:1	n/a
Stability	TMECC** 05.08-B	8 or below	
Maturity	TMECC** 05.05-A	80% or Greater	
Moisture Content	TMECC** 03.09-A	35-60% (Wet Weight)	
* Man-made Inert			
** Test Methods for Evaluation of Compost and Composting			

03020.90 Acceptance - Acceptance of commercially manufactured compost material will be the following:

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- Quality compliance certification according to 00165.35.
- Copies of STA lab analysis.
- Copy of DEQ permit or registration of the compost producer.
