**SP00290 (01-01-21) *Satellite team, 2/18/2020, Chris Lastomirsky, Melissa Brown, Lisa Huntington, Nick Naval, Colleen Harold***

### Section 00290 - Environmental Protection

Comply with section 00290 of the Standard Construction Specifications modified as follows:

***(Use the following subsection .05 when either subsections (a) or (b) are required)***

***(Use this subsection .05(a) when visual turbidity monitoring is required. Check against any permits Delete the ones that do not apply.)***

***(Begin visual turbidity monitoring)***

**00290.05 Pollution Control Measures** - Prevent, control and abate pollution of the environment. Comply with new or amended environmental pollution Laws, not contemplated at the time of bid preparation according to section 00140.50 and ORS 279C.525. Provide visual or meter turbidity monitoring as required by applicable permits.

1. **Visual Turbidity Monitoring** - Perform visual turbidity monitoring each day when working in regulated in-water work areas according to the following:

Document all turbidity monitoring results including date, time, and location on the Owner provided form or another form approved by the Owner. Submit reports to the Owner weekly when working in regulated in-water 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 Owner. Submit a written report of violations to the Owner within five (5) calendar days of violation.

Before beginning work, make in stream turbidity observation approximately 100 feet upstream and approximately 100 feet downstream of the in‑water work area.

Make additional in stream turbidity observations upstream and downstream at four-hour intervals. If a turbidity plume is observed downstream at any four-hour observation, implement in‑water best management practices (BMP). If a turbidity plume is still observed at the next four-hour observation, stop all in‑water work and implement additional BMP. Resume in‑water work activity when the turbidity plume dissipates and returns to upstream levels.

***(End visual turbidity monitoring.)***

***(Use this subsection (b) when meter turbidity monitoring is required.)***

***(Begin meter turbidity monitoring.)***

1. **Meter Turbidity Monitoring** - Perform meter turbidity monitoring each day when working in regulated in-water work areas according to the following:

* Document all turbidity monitoring results including date, time, and location on the Owner provided form or another form approved by the Owner. Submit reports to the Owner weekly when working in regulated in-water 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 Owner. Submit a written report of violations to the Owner within 5 calendar days of violation.
* 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 zero (0) to four (4) nephelometric turbidity units (NTU) above upstream levels, continue to work and take readings every four hours.
* If the downstream reading is five (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 five (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.

***(End meter turbidity monitoring.)***

***(Use this subsection (c) when individual permit conditions apply.)***

***(Begin permit turbidity monitoring.)***

1. **Turbidity Monitoring** – Provide visual or meter turbidity monitoring as required by the applicable permits.

***(End subsection (c).)***

***(If any of the above monitoring sections are used on this project, add the following paragraphs to the end of 290.05)***

Document all turbidity monitoring results including date, time, and location on the Owner provided form or another form approved by the Owner. Submit reports to the Owner weekly when working in regulated in-water 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 Owner. Submit a written report of violations to the Owner within five (5) calendar days of violation.

***(Use the following subsection .10 when specific staging areas have been approved. Delete what does not apply.)***

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

Use the following staging and disposal site(s):

* **Site Type** - \_\_\_\_\_\_\_\_\_\_staging, disposal\_\_\_\_\_\_\_\_\_\_
* **Location** - \_\_\_\_\_\_\_\_\_\_right-of-way, tax lot, property address etc.\_\_\_\_\_\_\_
* **Access** - \_\_\_\_\_\_\_\_\_\_\_\_\_ingress/egress\_\_\_\_\_\_\_\_\_\_\_

No other sites may be used on this project, including non-City sites. Delineate the limits of the site with orange plastic mesh fencing from the CPL for the duration of the project. Remove the fencing when the project is completed, and the site has been restored to preconstruction conditions.

***(Designer note: use only if cured in place construction methods are being used. Please be aware that all bureaus need an MOU)***

**00290.20 Waste**, Hazardous Waste, and Hazardous Substances - Add the following to the end of the subsection:

Cured in place piping contains volatile organic compounds released during the process of installing the liner. Follow all NASSCO and other regulatory requirements to protect human health and safety. If residents have health concerns associated with air quality, contact the Owner if they can be resolved on site. Contractor shall notify residents or building occupants in advance of construction and provide information on potential odors and exposure.

***(Use the following on all BES Projects. SSC 02/2022)***

**00290.29 Health and Safety modify 00290.29(a) to read as follows:** .

1. **Pollution Control Measures –** Prevent, control,and abate pollution of the environment. Comply with new or amended environmental pollution laws, City of Portland Environmental Resolutions, Clean Air Construction requirements, and City of Portland’s “Erosion Control Manual” according to section 00140.50 and ORS 279C.525. Comply with the following requirements

**To the end of the section 00290.29(a)(1) add the following:**

e. When leaf blowers are used electric or battery-powered leaf blowers are required by the Project.

**00290.29(5)(a) Off-On-Site Tracking** – Replace with the following:

No discharges from saturated soils are allowed in the right-of-way.

***(Designer note: Use on all BES PBOT and PWB projects. This was two specs 290 and 293 8/19/2022 became one special 290.31. IBT)***

Add the following subsection:

**00290.31 Air Pollution Control Measures**

**(c) Clean Air Construction** - Beginning January 1st, 2022, the Clean Air Construction Standard will be mandatory for all equipment and vehicles used on a City of Portland project according to section 00290.31(c)(2), (c)(3), and (c)(4). All diesel non-road equipment over 25hp, diesel concrete mixers, and dump trucks used on a City of Portland project shall meet the CAC requirements. The full Clean Air Construction policy is located here: <https://www.portland.gov/omf/brfs/procurement/clean-air-construction/overview-and-requirements>

**1. General -** After thenotice of intent to award is posted, the Contractor shall assign all applicable subcontractors and suppliers, including equipment rental firms, to the project through the CAC Compliance Portal. Subcontractors and suppliers shall register the equipment and vehicles from their fleets in the CAC Compliance Portal. Through this process, the Contractor shall certify that all applicable equipment and vehicles used on the project are registered and are in compliance with the Clean Air Construction requirements or have a valid exemption. The award will not be given to the Contractor if the equipment being used on the project is not registered in the program.

**2.** **Diesel Engine Requirements for Reducing Diesel Particulate Matter -** For this section, Best Available Control Technology (BACT) approach means for that specific vehicle or piece of equipment, among all potential options, the emission control device that maximizes diesel particulate matter reductions was installed.  A “Diesel Particulate Filter (DPF) or equivalent” emission control device is defined as capturing diesel particulate matter at a level of 85 percent or greater. For all effective dates below, an exemption will be granted prior to the Notice to Proceed or during the project, in accordance with the process outlined in 00290.31(c)(3).

**a.** Effective January 1, 2022, for all nonroad diesel engines over 25hp, no Tier 0 engines will be allowed on the project site unless:

1. The Tier 0 engine is retrofitted with a California Air Resources Board (CARB) or [Environmental Protection Agency (EPA)](https://www.epa.gov/emission-standards-reference-guide/all-epa-emission-standards) verified DPF or equivalent; or
2. If the Tier 0 engine cannot accept a DPF or equivalent device, the engine is retrofitted with the next best emissions control device to reduce diesel particulate matter following a BACT approach.

**b.** Effective January 1, 2023, for all nonroad diesel engines over 25hp, no Tier 0 or Tier 1 engines will be allowed on the project site unless:

**1.** The Tier 0 or Tier 1 engine is retrofitted with a CARB or EPA verified DPF or equivalent; or

**2.** If the Tier 0 or Tier 1 engine cannot accept a DPF or equivalent device, the engine is retrofitted with the next best emissions control device to reduce diesel particulate matter following a BACT approach.

**c.** Effective January 1, 2024, for all nonroad diesel engines over 25hp, no Tier 0, Tier 1, Tier 2, or Tier 3 engines will be allowed on the construction site unless:

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

**d.** Effective January 1, 2024, no on-road diesel concrete mixers or dump trucks older than 2007 will be allowed on the construction site unless:

**1.** The engine is retrofitted with a CARB or EPA verified DPF or equivalent; or

**2.** The equipment owner is a COBID certified firm, and the engine was retrofitted with a non-DPF emissions control device to reduce diesel particulate matter following a BACT approach prior to 2024.

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

**1.** A Tier 0, 1, 2, or 3 engines is retrofitted with a CARB or EPA verified DPF or equivalent emissions control device.  An engine with a non-DPF or equivalent emissions control device is only allowed if it was previously approved by the CAC Program prior to 2024 and the owner of the equipment is a COBID certified firm.

**(3)** **Exemptions to Diesel Engine Requirements for Reducing Diesel Particulate Matter**

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

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

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

**3.** No compliant rental equipment is available within 100 miles of the job site; or

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

**b.** Contractors or subcontractors shall apply for an exemption:

**1.** When registering their equipment or vehicles via the CAC Compliance Portal, “The Yard” [portland.gov/cac/TheYard](file:///\\pdotnt\GRP$CDS\_VI_CDCM%20Mgmt\Standard%20Specifications\PBOT%20New%202020%20Boilerplate\portland.gov\cac\TheYard). Non-emergency exemption requests to the diesel engine requirements shall be submitted to the CAC Program via the CAC Compliance Portal, “The Yard,” for approval at this time.  Approved exemptions shall be valid for a specified timeframe, after which the exemption shall be reviewed by the CAC Program and either retired or renewed.  Non-emergency exemption validity timeframes will vary by type of exemption but will be valid for a minimum of one ~~-~~year.

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

**(4) Noncompliance with Diesel Engine Requirements for Reducing Diesel Particulate Matter -** Should the Owner’s Representative or authorized third-party discover, during the project, that the Contractor, subcontractor, or supplier is violating the diesel engine requirements, the Owner’s Representative may issue a Notice to the Contractor. The Notice will state the specifics of the violation and the timeframe within which the Contractor must remedy the violation. The remedy timeframe shall not exceed seven (7) calendar days. If the Contractor fails to remedy the violation, the Owner’s Representative may issue a Notice, authorizing the stoppage of work until the violation is remedied.

***(Use on all BES Projects when the Contractor is required to apply for the Noise Variance. Designer to coordinate with CM and Public outreach, BES SSC 8/15/2022)***

Add the following subsection:

**00290.32(o) Noise Variance Application** – Work occurring during night hours Monday through Saturday (between 6:00 p.m. and 7:00 a.m.) and on Sundays as required in the Contract Documents. The Contractor is responsible for applying for any Noise Variances required for work during these hours. Applications for Noise Variances must be submitted to the Office of Community and Civic Life, a minimum of 45 business days prior to the Noise Review Board meeting (second Wednesday of each month). Contact the Office of at 503-823-7350 for more information.

***Designer Note: Use the following subsections .34(a) and .34(b) when regulated in-water work areas are required. Fill in the blanks as necessary. Delete what does not apply. Obtain information from the appropriate project professional.)***

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

Perform work within the regulated in-water work area only during the in-water work period. The in-water work period is from \_\_\_(date)\_\_\_ to \_\_\_(date)\_\_\_.

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

***(Designer Note: Use the following lead-in paragraph and subsection .34(c) to list required environmental permits. Obtain information from the appropriate project professional. Include paragraphs (1) through (12) as necessary. When paragraphs are NOT included, re-number the remaining paragraphs beginning with the appropriate number.)***

Add the following subsection:

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

**(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 in-water 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.
* Do not install fish ladders (for example: pool and weirs, vertical slots, fishways) or fish trapping systems.
* The volume of material filled or discharged into waters of the state or U.S. plus the volume excavated shall not exceed \_\_\_\_ cubic yards.
* Do not apply surface fertilizer within 50 feet of any stream channel.

***(Use this subsection (2) when a work area isolation plan is required. Obtain information from the appropriate project professional.)***

**(2) Work Area Isolation** - At least 28 calendar days before beginning in-water work, submit a work area isolation plan for review and approval. The plan is required for all work within the regulated in-water work area showing how the work area will be isolated from the active stream flow, both upstream and downstream of the work area using temporary water management facilities (for example: inflatable bags, sandbags, sheet pilings, or similar materials), unless otherwise approved in writing by appropriate regulatory agencies through the Project Manager. Piling may be installed without work area isolation provided all other relevant conditions are met.

* The plan shall be stamped by a Professional Engineer licensed in the State of Oregon.
* Include measures to comply with these specifications, the sequencing and schedule of dewatering and re-watering activities, plan view of all isolation elements, as well as a list of materials to adequately provide appropriate redundancy of key plan functions (for example: an operational, properly sized backup generator).
* If a water withdraw pump is used, a sizing submittal is required.
* Installation and removal of work area isolation equipment, and work within the isolated work area, is allowed only during the in-water work period.
* Notify the Owner at least 14 calendar days prior to beginning of work area isolation construction. Do not begin in-stream work or work within regulated in-water work area prior to receiving approval.
* Safe passage around or through the in-water work area must be provided for adult and juvenile native migratory fish, unless passage did not previously exist, or as otherwise approved in writing by appropriate regulatory agencies through the Owner.
* Coordinate fish removal by Owner or ODFW biologists prior to installing work area isolation or conducting work within the regulated in-water work area. Provide Owner, ODFW and qualified and permitted consultant personnel access to the regulated in-water work area to remove fish trapped within the isolated work areas, as directed.
* Maintain water flow downstream of the isolated work area at a rate of at least 50 percent of upstream flow conditions for the duration of the diversion. Control water flow as necessary to prevent de-watering downstream of the diversion.
* If pumps are used, operate the pumps as needed up to 24-hours a day during the diversion to prevent de-watering the stream downstream of the diversion. Keep a back up pump available in the event of failure of the primary pump.

**(3) 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 percent 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** |
| 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.

***(Use the following subsection (4) when special aquatic habitats are required. Obtain information from the appropriate project professional.)***

**(4) Special Aquatic Habitats** - The following exploration or construction activities are not allowed in special aquatic habitats:

* Use of pesticides and herbicides.
* Use of short pieces of plastic ribbon to determine flow patterns.
* Temporary roads or drilling pads built on steep slopes, where grade, soil type, or other features suggest a likelihood of excessive erosion or slope failure.
* Exploratory drilling in estuaries that cannot be conducted from a work barge, or an existing bridge, dock, or wharf.
* Installation of a fish screen on any permanent water diversion or intake that is not already screened.
* Projects that require in-water installation of hollow steel piling greater than 24 inches in diameter, or use of H-pile larger than designation HP24.
* Drilling or sampling in an EPA-designated Superfund Site, a state-designated clean-up area, or the likely impact zone of a significant contaminant source, as identified by preliminary environmental investigations.

**(5) 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):

* Replant all damaged streambanks before the first April 15 following construction.
* If use of large wood, native topsoil, or native channel material is required for the site restoration according to the construction/development plans, stockpile all large wood, native vegetation, weed-free topsoil, and native channel material displaced by construction. Cut trees or large wood and trees into pieces of no less than 20 feet in length, or as shown on the construction/development plans or as directed. Stockpiled native wood and vegetation remain the property of the Owner.
* Stabilize all disturbed soils, including obliteration of temporary access roads, following any break in work unless construction will resume in 4 calendar days.

**(6) Surface Water Diversions** - Surface water may be diverted to meet construction needs other than work area isolation, consistent with Oregon law, only if water from sources that are already developed, such as municipal supplies, small ponds, reservoirs, or tank trucks, is unavailable or inadequate, and meeting the following conditions:

* When alternative surface sources are available, divert from the stream with the greatest flow.
* Install, operate, and maintain a temporary fish screen.
* Do not exceed a pumping rate and volume of 10 percent of the available flow. For streams with less than five (5) cubic feet per second, do not exceed drafting of 18,000 gallons per day. Do not use more than one pump for each site.

1. **Hydro-Acoustic** - Hollow steel piling 24 inches in diameter or smaller and H‑pile designated as HP24 or smaller may be installed below the ordinary high water as follows:

* Minimize the number and diameter of pilings, as feasible.
* Repairs, upgrades, and replacement of existing pilings consistent with these conditions are allowed. In addition, up to five single pilings or one dolphin consisting of three to five pilings may be added to an existing facility.
* Whenever feasible, use vibratory hammer for piling installation. Otherwise, use the smallest drop or hydraulic impact hammer necessary to complete the job, and set the drop height to the minimum necessary to drive the piling.
* When using an impact hammer to drive or proof steel pile, one of the following sound attenuation devices must be used to reduce sound pressure levels by 20 dB.
* Place a block of wood or other sound dampening material between the hammer and the piling being driven.
* If water velocity is 1.7 miles per hour or less, surround the piling being driven by an unconfined bubble curtain that will distribute small air bubbles around 100% of the piling perimeter for the full depth of the water column. Contract the project manager for guidance on how to deploy an effective, economical bubble curtain.
* If water velocity is greater than 1.7 miles per hour, surround the piling being driven by a confined bubble curtain (for example: a bubble ring surrounded by a fabric or metal sleeve) that will distribute air bubbles around 100 percent of the piling perimeter for the full depth of the water column.
* Written approval of an alternative sound attenuation plan may be requested to the U. S. Army Corps of Engineers through the Owner, provided the plan will maintain sound pressure levels below 150dB rms [one (1) micro Pascal] for a minimum of 50 percent of the driver strikes, and peak sound pressure levels below 180 dB rms [one(1) micro Pascal] for all strikes.

**(8) 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.
* Use casing to prevent loss of drilling fluid to the subsurface formation. Do not drill open hole.
* If it is necessary to drill through an over-water bridge deck, use containment measures to prevent drilling debris from entering the stream channel.
* 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 project manager to resume drilling.
* 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.

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

* 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.
* Pilings treated with ammoniacal copper zinc arsenate, chromated copper arsenate, or creosote may be installed below OHW. No other use for treated wood or preservative type is allowed below or over the OHW.
* 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 OHW. 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, including pilings, 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 in-water work area.

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

* Dislodge the piling with a vibratory hammer, whenever feasible.
* Once loose, place the piling onto the construction barge or other appropriate dry storage site.
* Ensure remaining treated wood piling is broken, cut, or pushed at least 3 feet below the sediment surface and covered with a cap of clean, native substrates that match surrounding streambed materials.
* Fill holes left by each piling with clean, native sediments whenever feasible.

**(11) Ditch and Culvert Cleaning** - Complete ditch cleaning, culvert and trash rack cleaning by working from the top of bank, unless work area isolation would result in less habitat disturbance.

* Do not work more than 20 feet upstream or downstream the culvert or trash rack.
* Remove only the minimum amount of wood, sediment, or other natural debris necessary to maintain the facility’s function, without disturbing spawning gravel or changing the configuration of the original ditch, unless the new configuration is part of the project design.
* Place all large wood, cobbles, and gravels recovered from during culvert and trash rack cleaning downstream from the structure.
* Complete drift removal in the following priority, as directed:
* Pull and release whole logs or trees downstream.
* Pull whole logs and trees and place in the riparian area, as directed.
* Remove whole logs or trees only if construction/development plans have been developed for replacement in-kind.
* Pull, cut only as necessary, and release logs and trees downstream.

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

* Boat house
* Boat ramp made of asphalt
* Buoy or float in an active anchorage or fleeting area
* Covered moorage
* Floating storage unit
* Houseboat
* Marine
* Pier
* Non-water related facilities (including staging areas) inside riparian management areas
* Any other over-water structure more than six (6)-feet wide unless otherwise approved in writing by appropriate regulatory agencies through the Owner

The following conditions apply to floatation structures:

* Concrete boat ramps that consist of pre-cast concrete slabs below the ordinary high water elevation, and higher elevation portions that are completed in the dry so that no wet concrete that has cured less than 24 hours is allowed to contact any wetland or waters of the state and U.S.
* Rock may be used to construct a boat ramp footing, or other protection necessary to prevent scouring, down-cutting, or failure of the boat ramp, provided that the rock does not extend further than four (4) feet from the edge of the ramp in any direction.
* Any replacement roof, wall, or garage door for covered moorages and boat houses must be made of translucent materials or skylights. In addition, each side, except the door, of the boat house shall have windows at least four (4) feet wide installed the length of the boat house, subject to breaks only for structural support.
* An existing marina may be modified within the existing footprint of the moorage, or in the water more than 50 feet from the shoreline and more than 20 feet deep, except that structures may not be placed in areas that support aquatic vegetation or areas where boat operations may damage aquatic vegetation.
* Fit all pilings, mooring buoys, and navigational aides with devices to prevent perching by piscivorous birds.
* Permanently encapsulate all synthetic flotation material to prevent breakup into small pieces and dispersal in water.
* Install small temporary floats less than seven (7) calendar days before a scheduled event, remove them five days after a scheduled event is concluded, and do not leave them in place longer than 21 calendar days.
* Install mooring buoys and temporary floats (for example: shellfish traps) more than 300 feet from native submerged aquatic vegetation, more than 50 feet from the shoreline, and in water deeper than 20 feet deep at all times, or as necessary to ensure that gear does not ground out unnecessarily, and boats do not prop wash the bottom.

***(Use the following subsection .36(b) when there is potential disturbance to bat colonies. Delete what does not apply. Obtain information from appropriate project professional.)***

**00290.36(b) Bats** - Add the following to the end of this subsection:

Protect bats by doing the following:

* Schedule bridge demolition outside of the bat breeding season (\_\_\_(date)\_\_\_ to \_\_\_(date)\_\_\_).
* If this is not feasible and if approved by the Owner, apply exclusionary methods prior to this date to exclude bats from accessing suitable habitat. An exclusionary device is any method that denies birds physical access to the nest site area (for example: nets and hole blockers).
* Exclusionary devices must be installed a minimum of 15 days prior to this period.
* Inspect, maintain, and repair exclusionary devices to prevent active occupancy by bats during period listed above.

***(Use the following lead-in paragraph and subsection .36(c) when there is high noise production work near listed birds. Obtain information from appropriate project professional.)***

Add the following subsection:

**00290.36(c) Wildlife Avoidance/Harassment (High Noise)** -  For purposes of this project, "high noise" is defined as sound pressure levels greater than 10 dBA above the ambient as measured by the LAFmax and LAFeq at sensitive habitat as shown in the Contract Documents.

***(Use the following bullet when nesting or communal roosting sites for bald eagles are within one mile of blasting activities, 0.5 mile line of sight of construction activities, or 0.25 mile of construction activities.)***

* High-noise producing activities, including blasting, are allowed only between November 1 and August 31.

***(Use the following subsection .41(b) when required by permits. Obtain information from the appropriate project professional.)***

**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 authorize the placement of \_\_\_\_\_ cubic yards of fill within wetlands located at Station(s)\_\_\_\_\_. A total of \_\_\_\_ acres of wetlands will be permanently filled and \_\_\_\_\_ acres will be temporarily impacted. Changes to the project that may increase the amount of fill placed in wetlands or the acreage of wetlands impacted are not authorized.

***(Use the following lead-in paragraph and subsection .42 when a work containment plan and a work containment system are required, such as for bridge demolition or paint removal. Coordinate with spec section 00291 Contaminated Media. For in-stream work, consider using Unique 01091 Stream Diversion and Dewatering. Delete items that do not apply. Fill in the blanks as needed. Obtain information from appropriate project professional.)***

Add the following subsection:

**00290.42 Work Containment Plan and System** - A work containment plan (WCP) and a work containment system (WCS) are required on this project for \_\_\_\_\_ activity(ies).

Develop and submit a WCP for approval at least 28 calendar days prior to mobilization for \_\_\_\_ activity(ies). Maintain a copy of the WCP on the project site at all times during construction, readily available to employees and inspectors. Ensure that all employees comply with the provisions of the WCP. Design the WCP to avoid or minimize disturbance to protected features (property, sensitive cultural or natural resources, the regulated in-water work area, or other features identified by Owner) related to Contractor operations.

Before developing the WCP, meet with Owner to review the Contractor’s activities that require a WCP and WCS and to ensure that all parties understand the locations of protected features to be avoided and the measures needed to avoid and protect them.

Notify the Owner at least 10 calendar days before beginning WCS construction activities.

The Owner reserves the right to stop work and require the Contractor to change the WCP methods and equipment before any additional Contract work, at no additional cost to the Owner, if and when, in the opinion of the Owner, that such methods jeopardize the safety of traffic, the integrity of the new structure, damage protected features, or destroy aquatic life or habitat in the regulated in-water work area.

Provide a WCP and a WCS according to the following:

**(a)  Work Containment Plan (WCP)** - The WCP shall identify the prevention of delivery of construction debris, material or other contaminants to protected features, caused by the Contractor's construction operations including but not limited to mobilization, construction, maintenance, and demolition. Implement the WCP as approved. The WCP shall:

* Include relevant construction, operation, or demolition activities.
* Include a work area isolation plan and a work containment system to provide complete containment measures that prevent construction waste, debris, rubble (for example: dust, concrete debris and saw cutting by-products, welding slag, and grindings) and work materials from damaging protected features.
* Not require any tree removal, clearing, or grubbing, unless approved by the Owner.
* Prohibit the use of treated timber.
* Prohibit the use of concrete form release agents within waters of the State and U.S., wetlands, drainage ditches, water quality facilities, or other water conveyances.
* Include full containment of fueling procedures.
* Require the WCS to be fire retardant or resistant to fire from welding slag, torch operation or any sparks from the work.
* Require the WCS to be weather resistant.

***(Use one of following bullets depending on permit conditions. Delete what does not apply. Fill in the blank with stream or bridge name.)***

* Prohibit barge use at \_\_\_\_\_\_\_\_ .
* Barge use is allowed only at \_\_\_\_\_\_ .

***(In (b) below, select either "repair" or "removal" as appropriate. Delete the one that does not apply. Remove the parentheses around the word that remains.)***

**(b)  Work Containment System (WCS)** - The WCS shall consist of a containment system that is rigid and in place before (repair) (removal) work begins, as described in the WCP. Design the containment system for not less than the system self-weight plus 25 psf live loading, or system self-weight plus debris weight plus removal equipment weight, or load combinations. Debris weight includes the possibility of a concrete form failure, concrete spills, and any other construction material load imposed on the containment system.

The WCS shall show specific attention to the need for special care in demolition work. Provide all required shoring, bracing, barricades, fencing, and other devices that may be required, and exercise all necessary precautions to fully protect pedestrian, vehicular, and navigation traffic, and to minimize disturbance to protected features and to prevent damage to the new bridge or other structures.

The WCS shall be designed and stamped by a Professional Engineer licensed in the state of Oregon. Include all load assumptions and calculations and submit stamped working drawings to the Owner according to section 00150.35.

***(Use the following subsection .50 when there are known sensitive cultural sites on the project. Fill in the blanks.)***

***(Designer’s Note: there is a higher probability for cultural sites along shoreline and immediate upland areas. Activities in these areas are frequently under an Army Corps permit.)***

**00290.50 Protection of Cultural Resources and Sensitive Cultural Sites** - Add the following to the end of this subsection:

There are sensitive cultural sites on this Project. At the time of preparation of the Contract Documents, there were \_\_\_\_\_\_\_ sites identified.

***(List Tribal Representative and City Archaeologist below. Do not include phone numbers. Delete if not applicable.)***

The Tribal Representative for this Project is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

The City Archaeologist for this Project is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

All contact with the Tribe or the City Archaeologist shall be through the Project Manager's office.

Contractor, Inspector, and City Archaeologist will discuss location of archaeological sites and high probability areas, prior to construction. Identify all No Work Zones with orange plastic mesh fencing from the CPL or lath and flagging, as shown.

An Archaeological/Tribal Monitor has been selected for this project.

***(The template Inadvertent Discovery Plan (IDP) recommended by CSA is the SHPO. Ask CSA reviewer for this template.)***

An Inadvertent Discovery Plan (IDP) has been developed for this project. The IDP is available from the Owner.

**00290.90 Payment** – Remove the following bullets from the end of this subsection:

* Hazardous waste contingency plan
* Hazardous waste determination
* Determination of generator category
* The certified hazardous materials manager

***(Use the following subsection .90 when a work containment plan and a work containment system are required, when staging areas are required, when there are known sensitive cultural sites on the project, or when turbidity monitoring is required. Remove the parentheses in "paragraph(s)" when more than one paragraph below is used. Remove "(s)" when only the plastic mesh fencing paragraph is used.)***

Add the following paragraph(s) to the end of this subsection:

***(Use the following paragraphs when a work containment plan and a work containment system are required.)***

The work containment plan and the work containment system will be paid for at the Contract lump sum amount for the item "Work Containment Plan and System".

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.

***(Use the following paragraph when staging areas are required or when there are known sensitive cultural sites on the project.)***

No separate or additional payment will be made for orange plastic mesh fencing.

***(Use the following paragraphs when turbidity monitoring is required.)***

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

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.

***(Use the following items if required.)***

Payment includes, but is not limited to, the following:

* Inadvertent Discovery Plan (IDP) for unknown and known cultural resources and sensitive cultural sites