

PART 00200 - TEMPORARY FEATURES AND APPURTENANCES

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Section 00205 - Field Laboratory, Weighhouse, Etc.**Description**

00205.00 Scope - This work consists of providing facilities for Agency use to perform testing, weighing and other necessary functions during the course of the Project.

Materials and Equipment

00205.10 Contractor-Furnished Field Laboratory - Provide a leveled field laboratory for Agency use in close proximity to the Contractor's plant at least 5 calendar days before aggregate production, paving, or processing work begins under the Contract, meeting the safety and health requirements of the Oregon Department of Consumer and Business Services, the Oregon Health Division, the State Fire Marshall, and the following minimum requirements:

- Length - 16 feet
- Width - 8 feet
- Ceiling Height - 7 feet
- Floor
- Insulation - Walls and ceiling - R-11
- Doors - At least one, 3 feet wide, all with locks
- Windows:
 - Four
 - Adequate for good lighting
 - Capable of being opened for adequate ventilation
 - One providing a view of the crushing or processing plant
- Interior Walls and Ceiling - White
- Counter - 20 feet long, 30 inches wide, 36 inches high, with a durable, smooth surface
- Sink - One deep double with adequate supply of cold potable, clear, running water
- Electrical Power System:
 - 120/240 V, single phase, 60 A service
 - Wired according to the National Electrical Code
- Electrical Service:
 - Continuous, 24 hours per day during crushing and aggregate mixing operations
 - For 24 hours following termination or interruption of operations
- Electrical Outlets - six duplex
- Electrical Light Fixtures - Enough to provide good overall lighting
- Heating and Air Conditioning - Adequate to provide suitable heating and cooling
- Exhaust Ventilation System - Adequate for all activities performed in the laboratory, including aggregate drying and vacuum extractions of AC
- Toilet - One, portable, for use by Agency employees

The site will be approved by the Engineer before work is to begin.

Remove the field laboratory when the Project is complete.

00205.11 Agency-Furnished Field Laboratory - Provide a level site for an Agency-furnished laboratory trailer at least 5 calendar days before aggregate production, paving, or processing work begins under the Contract, at a location in close proximity to the Contractor's plant. The site will be approved by the Engineer before work is to begin.

Employ a commercial hauler to bring the trailer to the Project, relocate at the site if necessary, and to return the trailer to its storage area. Employ a licensed electrician to connect and disconnect the power source. Provide an adequate supply of potable water, electricity, and a portable toilet for use by Agency employees, according to 00205.10.

00205.12 Weighhouse - When materials are weighed on platform-type scales or by other means and the Contractor chooses to have the Agency provide a weigher, provide a weatherproof weighhouse or other approved shelter for the weighperson. The weighhouse shall meet the safety and health requirements of the Oregon Department of Consumer and Business Services, the Oregon Health Division, the State Fire Marshall and the following minimum requirements:

- Length - 9 feet
- Width - 6 feet
- Ceiling Height - 7 feet
- Floor
- Protect Scale Recording Device and Agency's weigher from weather
- Provide space to store scale testing equipment
- Provide adequate shelf space
- Provide artificial lighting and good visibility throughout
- Provide adequate heat, as required
- Provide stool and other facilities for keeping records and performing other duties of the weigher
- Doors - At least one, all with locks
- Windows:
 - Capable of being opened for adequate ventilation, unless air conditioning is provided
 - One, facing the scale
 - One, at each end
 - Adequate size and position to permit view of loading operations and movements of hauling vehicles
- Toilet - One, portable, for use by Agency employees

Remove the weighhouse when the Project is complete.

Measurement

00205.80 Contractor-Furnished Field Laboratory - Contractor-furnished field laboratories will be measured on the unit basis.

00205.81 Agency-Furnished Field Laboratory - Agency-furnished field laboratory work described in 00205.11 will be measured on a unit basis for each Agency-furnished field laboratory required to be located at the Contractor's site of operations.

00205.82 Weighhouse - No measurement will be made for providing weighhouses.

Payment

00205.90 Contractor-Furnished Field Laboratory - The accepted quantities of Contractor furnished field laboratories will be paid for at the Contract unit price, per each, for the item "Furnishing Field Laboratory".

Payment will be payment in full for furnishing the specified laboratory, and for furnishing all equipment, labor, and incidentals necessary to complete the work as specified.

00205.91 Agency-Furnished Field Laboratory - The accepted quantities of performing the work described in 00205.11 will be made at the Contract unit price, per each, for the item "Agency-Furnished Field Laboratory".

Payment will be payment in full for furnishing all equipment, labor, and incidentals necessary to complete the work as specified.

00205.92 Weighhouse - No separate or additional payment will be made for providing weighhouses. Payment will be included in payment made for the appropriate items under which this item is required.

Section 00210 - Mobilization

Description

00210.00 Scope - This work consists of operations and preparatory work necessary to become ready to perform the work or an item of work.

Construction

00210.40 Mobilization - Mobilization includes, but is not limited to, the following:

- Move personnel, equipment, supplies, and incidentals to the Project site.
- Establish offices, buildings, and other facilities necessary for work on the Project.
- Perform other work and operations or incur costs as necessary before beginning work on the Project.

Measurement

00210.80 Measurement - No measurement of quantities will be made for work performed under this Section.

Payment

00210.90 Payment - Payment for mobilization will be made at the Contract lump sum amount for the item "Mobilization".

The amounts paid for mobilization in the Contract progress payment will be based on the percent of the original Contract amount that is earned from other Contract items, not including advances on materials, and as follows:

- When 5 percent is earned, either 50 percent of the amount for mobilization or 5 percent of the original Contract amount, whichever is the least.
- When 10 percent is earned, either 100 percent of mobilization or 10 percent of the original Contract amount, whichever is the least.
- When all work is completed, amount of mobilization exceeding 10 percent of the original Contract amount.

This schedule of mobilization progress payments will not limit or preclude progress payments otherwise provided by the Contract.

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

Section 00220 - Accommodations for Public Traffic

Description

00220.00 Scope - This work consists of maintaining facilities to accommodate public traffic through and within the Project for the life of the Contract. Public traffic includes motor vehicles, bicycles, and pedestrians.

00220.01 Beginning of Contractor's Responsibility - The Contractor's responsibilities for accommodating public traffic begin on the day any on-site work begins within the Project limits.

00220.02 Public Safety and Mobility - Provide for the safety and mobility of the public and:

- Be responsible for damages according to 00170.80.
- Conduct work at all times so that there is the least possible interference with or hazard to the traveling public and the affected community.
- Locate stockpile materials and park construction equipment and vehicles that are not in active use a minimum of 30 feet from the traveled way. If this is not possible, protect the stockpile materials, equipment, and vehicles, with barrier or as directed.
- Provide and maintain safe temporary access to business and residence driveways, temporary intersections, and temporary connections with roads, streets, and bicycle and pedestrian facilities.
- Provide approved protection and delineation between each work area and public traffic.
- Allow emergency vehicles immediate passage at all times.
- Use portable changeable message signs (PCMS) according to Section 00225.
- For all sidewalk or sidewalk ramp closures, install signs and other TCD as shown on the plans. Mount signs between the panels of a Type II barricade and place barricades facing pedestrian traffic.
 - Close the sidewalk at a point where there is an alternate way to proceed, or provide signing and other TCD to indicate an alternate pedestrian route. Place closure signing at the closure point in the middle of the existing pedestrian facility facing pedestrian traffic.
 - Provide additional TCM and an alternate pedestrian route that, as nearly as is practical, matches existing facility features and meets the accessibility requirements in Part 6 of the MUTCD and the requirements of the Americans with Disabilities Act (ADA).
 - Pave the alternate pedestrian route surface or provide an approved, non-slip 60 inch minimum wide surface meeting the requirements of the ADA.
 - Where a 60 inch minimum width along the entire alternate pedestrian route is not possible, provide 60 by 60 inch passing spaces every 200 feet along the route.
 - Protect pedestrians and delineate the alternate pedestrian route by placing pedestrian channelizing devices (PCD), or other approved devices, between the alternate pedestrian route and the work area. Keep PCD in place, except as required for actual work, until the existing pedestrian facility is reopened.
 - Reopen the existing pedestrian facility during non-work hours or continue to provide an alternate pedestrian route.
- Do not impede the flow of traffic or close any lanes of traffic except as listed in 00220.40(e).
- Do not stop or hold vehicles on a highway within the Project Site for more than 20 minutes.
- Do not block driveways for more than 2 hours unless otherwise authorized in writing.
- Do not close any lanes until the area is signed according to the plans and the requirements of this Section and Section 00225.

- Do not perform work that restricts traffic access to and from both sides of the traveled way at the same time.
- Do not use temporary steel plating within the roadway or shoulder having a pre-construction posted speed zone greater than 35 mph.
- Do not place work zone signs or sign supports that will block existing walkways or existing bikeways, except at the closure point of a walkway or bikeway.

00220.03 Work Zone Notifications - Provide the following work zone notifications:

(a) Over-Dimensional Vehicle Restrictions - When a project restricts the width, length, height, or weight of vehicles through a work zone or detours trucks around a work zone, fill out and submit a completed copy of the "Highway Restriction Notice-Size and/or Weight" form (Form No. 734-2357), available from the ODOT Motor Carrier Transportation web site, at least 35 calendar days before the restriction or detour takes effect.

(b) Closures - Submit to the Engineer, in writing, for approval, all proposed closure schedules, as follows:

- **Lanes** - A minimum of 7 calendar days before a lane closures begin.
- **Roads** - A minimum of 14 calendar days before closure. Also, notify in writing, all affected emergency services, school districts, and US Postal Service a minimum of 14 days before the any closure.
- **Interchange Ramps** - A minimum of 14 calendar days before closure or starting work that limits access to the interchange ramp.
- **Bicycle and Pedestrian Facilities** - A minimum of 14 calendar days before a bike lane, sidewalk, and multi-use path closure. After receiving written approval, provide 48 hour public notification before the closure.

Construction

00220.40 General Requirements - Provide the following for public traffic in all construction areas:

(a) Traffic Nuisance Abatement - If loose rock or dust exists on roadway surfaces and shoulders, the Engineer may direct one or more of the following:

- Use flaggers or pilot cars and flaggers.
- Apply a fine spray of water to the surface as directed.
- Sweep paved surfaces with power brooms.

(b) Detours and Stage Construction - Construct and remove, if required, detours, stage construction roadways, shoulders, and temporary bridges, including accessory features shown or ordered.

(c) Driveways - Provide reasonable access as follows:

- Replace and maintain business accesses, driveways, approaches, crossings, and intersections as directed.
- Use reasonably well-graded aggregate material.

- Before placing the permanent base, do one of the following:
 - Uniformly spread the temporary aggregate material over the subgrade.
 - Remove and place the temporary aggregate material in the shoulder slope area if it meets quality requirements.
 - Dispose of the temporary aggregate material in a manner satisfactory to the Engineer.

(d) Adjacent to Excavations - Where paved shoulders adjacent to excavations are less than 4 feet wide, protect the traffic as follows:

- At the end of each working day, backfill pavement edge excavations to the elevation of the existing pavement with permanent base material or with a temporary wedge of aggregate as shown on the standard drawings.
- Do not excavate along both edges of the pavement adjacent to traffic at the same time. Before excavating at the edge of the pavement on the opposite side of the roadway, complete the construction to existing pavement elevation on the side which was excavated first.
- Remove the temporary wedge of aggregate material, if used, before placing permanent base material, and place it in the shoulder slope area or spread it uniformly over the subgrade.

(e) Lane Restrictions:

(1) Closed Lanes - One or more traffic lanes may be closed when allowed, shown, or directed during the following periods of time except as indicated in 00220.40(e-2):

- Monday between 12:01 a.m. and 7:00 a.m.
- Daily, Monday through Thursday between 9:00 a.m. and 4:00 p.m.
- Friday between 9:00 a.m. and 3:00 p.m.
- Daily, Monday through Friday between 6:00 p.m. and 7:00 a.m.

(2) Opened Lanes - Keep all traffic lanes open during the following periods:

a. Holidays - Between noon on the day preceding a legal holiday or holiday weekend and midnight on a legal holiday or the last day of holiday weekend, except for Thanksgiving, when no lanes may be closed between noon on Wednesday and midnight on the following Sunday.

For the purposes of this Section, legal holidays are as follows:

- New Year's Day on January 1
- Memorial Day on the last Monday in May
- Independence Day on July 4
- Labor Day on the first Monday in September
- Thanksgiving Day on the fourth Thursday in November
- Christmas Day on December 25

When a holiday falls on Sunday, the following Monday shall be recognized as a legal holiday. When a holiday falls on Saturday, the preceding Friday shall be recognized as a legal holiday.

b. Special Events - Between noon on the day preceding and midnight on the final day of the special event.

Remove all barricades and objects from the roadway during the periods in which traffic lanes are to remain open.

Maintenance

00220.60 Surface Maintenance Responsibilities - Provide adequately maintained accommodations at all times for public traffic through and within the Project according to this Section and Section 00225.

(a) During Construction - The responsibility for maintaining all surface during construction is as follows:

(1) Contractor Responsibility - Do the following at Contractor's expense:

- Keep surfaces being used by public traffic, free of all dirt, mud, gravel, materials, or other debris.
- Repair damage to surfaces caused by the Contractor's operations.
- Maintain all detour and stage construction surfacing as specified or directed.

Before winter shutdown begins, do the following:

- Provide paved traffic lanes at least 12 feet wide with 2 feet wide paved shoulders for each direction of traffic.
- Do not leave abrupt edges.
- Remove or cover temporary construction signs unless otherwise directed.
- Clean, install, and reinstall all necessary channelization and pavement markings, as directed.

If this winter shutdown work is not completed and in place, the Agency may do the work according to 00220.60(d).

(2) Agency Responsibility - The Agency will be responsible to do the following at Agency expense:

- Maintain existing surfacings and shoulders that are being used by public traffic at the start of the Project which have not been damaged by Contractor operations.
- Maintain surfaces of detours and intermediate stage construction during the time they are being used by public traffic, but only if constructed according to the plans or as directed.
- Maintain existing surfaces and shoulders of detours located outside the Project limits during the time they are being used by public traffic.
- Sand icy pavements and remove the sand residue.
- Remove snow from traveled ways as required to accommodate public traffic.

(b) During Suspensions - Maintain surfacings for which the Contractor is responsible according to 00220.60(a-1), the work according to 00170.80, and work zone traffic control according to Section 00225 during suspensions of the work as follows:

(1) Suspensions Due To Contractor Fault or Neglect - If the suspension is due to any cause within the control or responsibility of the Contractor, including failure to do the following:

- Perform any provisions of the Contract.
- Correct conditions unsafe for the general public, workers or Agency employees.
- Carry out orders given by the Engineer.

Then assume sole responsibility for making provisions for traffic acceptable to the Engineer, and be responsible for the costs of maintaining surfaces under traffic, the work, and work zone traffic control during the suspension.

(2) Suspensions Due To Other Causes - If the suspension is due to unforeseen circumstances, or causes not included in 00220.60(b-1), and if the suspension occurs within the Contract time or adjusted Contract time:

- Place uncompleted traveled ways, shoulders, driveways, approaches, connections, and detours necessary for traffic in a maintainable, acceptable condition. Be responsible for the work
- Be responsible for work zone traffic control.

The Agency will then assume responsibility for maintenance of the roadway surfaces during the suspension.

(c) Resuming Contract Work after Suspension - After any suspension do not resume Contract work until approved.

(d) Right of Agency To Perform Work At Contractor Expense - If the Contractor fails to provide adequate accommodations for traffic and to maintain the traveled ways and connections as provided in the Contract, the Engineer may proceed immediately to provide adequate accommodations and maintenance. The cost of this work will be deducted from monies due, or that become due, to the Contractor.

00220.70 Opening Sections To Traffic - When it is in the public interest the Engineer may order any portion of the work opened to traffic. If the portion opened to traffic has been finished in an acceptable manner, it will be designated as "accepted for traffic", and the Contractor will be relieved of maintaining it for legal, public traffic. If the portion of the work to be opened to traffic has not been finished in an acceptable manner, it shall be maintained under traffic by the Contractor in a condition serviceable and adequate for traffic until it is finished in an acceptable manner, except as provided in 00220.60(b).

Maintain portions of the work designated "accepted for traffic" if so ordered. Maintain portions of the work opened to traffic but not "accepted for traffic" at no additional compensation, except watering ordered to protect the work or to alleviate dust will be paid for as provided in Section 00340.

The "accepted for traffic" portions of the work will:

- Be accepted only to the extent the Contractor is relieved of maintaining these portions for legal, public traffic after acceptance.
- Not entitle the Contractor to reduction of retainage.

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- Not relieve the Contractor's responsibility for defective materials or work.
- Not relieve the Contractor's responsibility for damages to the work from causes other than legal, public traffic except as provided in 00170.80.
- Not constitute a waiver of any provision of the Contract.

If the Contractor delays the completion of shoulders, drainage structures, or other feature of the work, the Engineer may order all or any portion of the work to be opened to traffic. In this case, the Contractor shall be responsible for maintenance as described in 00220.60(a-1), during the period the work is opened to traffic until final acceptance. Conduct the remaining operations to cause the least obstruction to traffic, and pay all additional costs caused by the presence of traffic.

Measurement

00220.80 Measurement - No measurement of quantities will be made for work performed under this Section.

Payment

00220.90 Payment - No separate or additional payment will be made for work performed under this Section, unless otherwise provided or pay items are provided under other Sections.

In addition, no payment will be made for costs incurred by the Contractor because of:

- Inconvenience, additional length of travel to conform to established traffic patterns and planned access features.
- Compliance with laws governing traffic regulations and load limitations.

Costs anticipated because traffic will be using portions of the work will be included in the Contract prices for the various items of work involved.

Section 00225 - Work Zone Traffic Control

Description

00225.00 Scope - This work consists of providing temporary traffic control measures (TCM) and furnishing, installing, moving, operating, maintaining, inspecting, and removing traffic control devices (TCD) throughout the Project area according to the standard drawings, the traffic control plan (TCP) for the Project, these Specifications, or as directed.

00225.01 Abbreviations, Definitions, and Standards:

(a) Abbreviations:

ADT	- Average Daily Traffic
PCD	- Pedestrian Channelizing Devices
PCMS	- Portable Changeable Message Sign
TCD	- Traffic Control Devices
TCM	- Traffic Control Measures
TCP	- Traffic Control Plan
TCS	- Traffic Control Supervisor
TSS	- Temporary Sign Support

(b) Definitions:

Traffic Control Devices - Signs, signals, markings, and other devices placed on, over, or adjacent to a roadway used to regulate, warn, or guide public traffic by authority of a public body or official having jurisdiction.

Traffic Control Measures - Elements of the TCP including, but not limited to, TCD, personnel, materials and equipment used to control public traffic through a work zone.

Traffic Control Plan - A written and drawn plan for providing the safe and efficient movement of public traffic through or around a work zone while protecting workers, incident responders, and equipment.

Work Area - The portion of the highway closed to public traffic and set aside for workers, construction equipment, and construction materials. The work area is typically delineated by channelizing devices or separated from traffic using temporary barriers.

Work Zone - An area within highway construction, maintenance, or utility work activities which extends from the first road work, bridge work, or utility work warning sign to the last sign or the last TCD.

(c) Standards - When designing, applying, installing, maintaining, inspecting, and removing traffic control devices, use and follow the most current versions in effect of the following:

- Oregon Department of Transportation's "Sign Policy and Guidelines for the State Highway System"
- The Manual on Uniform Traffic Control Devices (MUTCD)
- FHWA "Standard Highway Signs" manual

- ODOT "Oregon Temporary Traffic Control Handbook for Operations of 3 Days or Less" when directed by the Engineer only for mobile pavement marking operations or surveying work
- ODOT "Oregon Portable Changeable Message Sign Handbook", available on the ODOT Traffic Control Plans Unit website

00225.02 General Requirements - Provide and maintain all TCM. The Engineer may verbally or in writing require immediate changes to the TCM being used on the Project. Immediately make these changes, as directed. Submit all proposed TCM revisions to the Engineer for approval.

Do not start work on any stage of construction until the TCP has been reviewed and accepted and all TCM are in place and the TCP is operating satisfactorily. During construction, determine if TCM, in addition to those in place, are required and immediately notify the Engineer. Immediately make changes as approved or directed, but do not place or remove devices without prior approval.

Work may be suspended as specified in 00180.70 or the TCM may be performed by the Agency if the Contractor fails to correct an unsafe condition. Costs for work performed by the Agency will be deducted from monies due the Contractor.

Install a 48 inch "TRUCKS" sign with an 18 inch "500 FEET" rider, approximately 500 feet before each point of access of all noncommercial stockpile sites, work zone staging area, material sources, waste areas, and plant set-up areas to a public roadway.

Do not use an open traffic lane on a freeway or multi-lane facility as an acceleration or deceleration lane for construction vehicles. Provide additional surfacing or width within the work area or, if allowed, close a traffic lane for construction vehicle acceleration or deceleration. Do not use a flagger to allow construction vehicles to access an open traffic lane on a freeway or a multi-lane facility.

When a through road intersects the work zone, place a "ROAD WORK AHEAD" (W20-1-48) sign in advance of the intersection at sign spacing "A" from the "TCD Spacing Table" shown on the standard drawings, or as shown in the TCP. These signs do not require sign flag boards, unless otherwise directed.

When paving operations create an abrupt edge, protect traffic by installing signing according to the "2-Lane, 2-Way Roadway Overlay Area" detail shown on the standard drawings. Protect longitudinal and transverse pavement joints by placing and maintaining an asphalt concrete wedge according to 00225.06(c-1).

When a cold planed pavement surface is used by traffic, install a Type "O4" "BUMP" (W8-1-48) sign approximately 100 feet in advance of the transverse paving edge. Install a "GROOVED PAVEMENT" (W8-15-48) sign with a "Motorcycle" (W8-15P-24) rider in advance of the "Bump" sign at sign spacing "A" from the "TCD Spacing Table" shown on the standard drawings. Face signs toward incoming traffic and install them before opening the cold planed surface area to public traffic. Protect exposed transverse and longitudinal cold planed pavement edges according to 00225.06(c-2).

During flagging operations, monitor the length of traffic queues and when extended traffic queues develop, protect traffic by providing advance flaggers and additional signing according to the "Extended Traffic Queues for Advance Flagging" detail shown on the standard drawings.

00225.03 Traffic Control Outside Project Site - Provide TCM outside the Project Site when required.

00225.04 Regulations and Codes - All electrical equipment, materials, and work shall conform to NEC requirements and all other laws that apply.

00225.05 Contractor Traffic Control Plan - The Contractor will be allowed to use the Agency's TCP, modify the Agency's TCP, or use a different TCP. Submit the following, for approval, 5 calendar days before the preconstruction conference:

(a) Agency or Contractor Traffic Control Plan - If the Agency's TCP is used without modification, a written notification indicating that the Agency's TCP will be used without modification.

If the Contractor will be using a modified Agency TCP, or if the Contractor will not be using the Agency's TCP, provide stamped working drawings according to 00150.35 which include the following:

- Proposed TCP showing all TCM and quantities of all TCD.
- Proposed order and duration of the TCM.
- A detailed temporary striping plan.

(b) Tourist-Oriented Directional and Business Logo Signs - One copy of a sketch map of the Project showing all existing tourist-oriented directional (TOD) and business logo signs and a written narrative describing how these signs will be kept in service and protected throughout all the construction stages.

If there are no TOD or business logo signs on the project, a written notification that no TOD or business logo signs exist within the project limits.

If additional modifications are made to the Contractor modified Agency TCP or the Contractor's TCP, submit stamped working drawings, according to 00225.05(a), at least 14 calendar days before beginning the construction activities that require the TCP changes.

00225.06 Routing Traffic Over Surfacing - Control traffic being routed over surfaces as follows:

(a) Aggregates - When directed, control traffic over aggregate with flaggers or flaggers and pilot cars.

(b) Asphalt Treated Permeable Base - When directed, control traffic over asphalt treated permeable base (ATPB) with flaggers or flaggers and pilot cars.

(c) Asphalt Concrete - Control traffic over asphalt concrete as follows:

(1) Paving - When the longitudinal joint is greater than 1 inch in height, install additional TCD according to 00225.02. Complete the placing of ACP and construction of paving joints according to 00744.44, 00744.45, 00745.47, and 00745.48, as applicable.

(2) Cold Plane Pavement Removal - Complete the pavement removal according to 00620.40. When the area cannot be paved back during the same shift and the depth of pavement removal is greater than 1 inch, install additional TCD according to 00225.02.

(d) Oil Mats or Chip Seals - Control traffic over asphalt oil mats or chip seals with flaggers and pilot cars, unless otherwise directed, until the entire surface has been swept or bladed after the aggregate was placed as tabulated below:

ADT	Minimum Pilot Cars
Over 1500	2
1500 and Less	1

(e) Sand Seals - Control traffic with flaggers and pilot cars during application of asphalt and until it is covered with aggregate, unless otherwise directed.

Materials

00225.10 General - Evaluate the condition of TCD using the criteria shown in the most current version in effect of the American Traffic Safety Services Association (ATSSA) publication titled "Quality Guidelines for Temporary Traffic Control Devices and Features". Use new TCD or TCD meeting the "Acceptable" quality category of the ATSSA publication for all installations unless otherwise specified. Provide test results, quality compliance certificates, equipment lists, and drawings when specified. Acceptance will be by the QPL, test results, quality compliance certificates, equipment lists, drawings, and testing as necessary to assure compliance with the Specifications. After TCD have been installed and accepted on the Project, inspect and maintain the condition of the devices.

All work zone TCD shall comply with the crashworthy requirements of the National Cooperative Highway Research Program (NCHRP) Report 350 or with the American Association of State Highway and Transportation Officials (AASHTO) Manual for Assessing Safety Hardware (MASH).

00225.11 Temporary Signing - Furnish temporary signs meeting the requirements of the "Acceptable" category shown in the ATSSA "Quality Guidelines for Temporary Traffic Control Devices and Features" handbook, available from the ATSSA website, and the following:

(a) Signs - Use materials and fabricate signs conforming to Sections 00940 and 02910 and the following:

(1) Size and Shape - Use standard size and shape signs meeting the requirements of 00225.01(c) unless otherwise specified or ordered. Double-face signs will not be allowed except for the flagger "STOP/SLOW" paddle.

(2) Type - Use Type "O3", "O4" or "O5" signs, unless otherwise indicated in this Section or in the TCP. Fabricate these signs on one of the following materials:

- New sheet aluminum sign blanks.
- New extruded aluminum panels.
- Used sheet aluminum sign blanks that are without bends, tears, holes, or dents and that have been cleaned to bare metal.
- 3/4 inch high-density overlay plywood.
- 3/4 inch medium-density overlay plywood.

(3) Folding or Turning Signs - Temporary signs on posts may be the folding or turning type as long as they can be locked when not in use so the sign message is not visible to any traffic.

(4) Roll-up Signs - Use roll-up signs with retroreflective roll-up sign sheeting from the QPL.

(b) Sign Supports:

(1) Wood Sign Posts - Use wood sign posts in the sizes and quantities as shown on the standard drawings and according to 02110.40, except posts may be untreated.

(2) Portable Sign Supports - Use portable sign supports from the QPL and conforming to the following:

- Free standing.
- Capable of supporting signs in vehicle-caused turbulence and in winds common to the area where they are used. If additional ballast is required to maintain the signs in an upright position, use sandbags to anchor the sign support legs. Place a sandbag filled with loose sand (approximately 25 pounds) across the bottom of each leg as needed.

(3) Concrete Barrier Sign Supports - Use concrete barrier sign supports that meet the following:

- Conform to the standard drawings.
- Attach securely to the top of the concrete barrier.
- Support a maximum 12 square feet of total sign area.

(4) Temporary Sign Supports - Fabricate and use TSS as shown on the standard drawings and according to 02110.40, except posts may be untreated.

(5) Perforated Steel Square Tube Sign Supports - Use perforated steel square tube sign supports from the QPL and as shown on the standard drawings.

(c) Sign Covers:

(1) Temporary Signs - Use sign covers for temporary signs that meet the following requirements:

- From the QPL or made from one of the following materials:
 - One-piece plywood.
 - Type 2 riprap geotextile fabric.
- Large enough to completely cover the sign and attached rider signs.
- Easy to attach to and remove from the sign without damaging the sign face.
- Black and non-reflective.
- Opaque to prevent message visibility under day and nighttime conditions.

(2) Permanent Signs - Sign covers for permanent signs shall conform to Section 00941.

(d) Sign Flags - Sign flags shall be:

- Fluorescent red-orange.
- Square 16 by 16 inches or larger.
- Made from an acceptable tightly woven fabric or plastic sheeting.

(e) **Sign Flag Boards** - Use sign flag boards as shown on the standard drawings.

(f) **Flagger Stop/Slow Paddles** - Use flagger "STOP/SLOW" paddles from the QPL.

00225.12 Temporary Barricades, Guardrail, Barrier, Attenuators, and Channelizing Devices - Furnish temporary barricades, guardrail, barrier, attenuators, work zone fencing, pedestrian channelizing devices, and accessories meeting the following requirements:

(a) **Barricades** - Use barricades from the QPL and as shown on the standard drawings.

(b) **Guardrail** - Use guardrail meeting the requirements of Section 00810 except posts may be untreated. Use guardrail terminals from the QPL and as shown on the standard drawings.

Reuse salvaged guardrail materials that comply with the requirements of 00810.15.

(c) **Concrete Barrier** - Use concrete barrier meeting the requirements of Section 00820, and have the same cross section, height, and loop configuration within individual runs and the following:

- Pin-and-loop concrete barrier as shown on the standard drawings (three ASTM A 36 loops, 32 inch height).
- Tall concrete barrier as shown on the standard drawings (two ASTM A 36 perforated C-shapes, 42 inch height).

Provide concrete barrier for temporary applications that are in acceptable condition, without cracks, chips, spalls, or corroded loops or C-shape connectors.

The concrete barrier shall have functioning scuppers, unless otherwise approved.

(d) **Impact Attenuators** - Furnish impact attenuators from the QPL and as shown on the standard drawings.

(e) **Glare Shields** - Use glare shields from the QPL that are a minimum 24 inches in height.

(f) **Work Zone Fencing** - Use work zone fencing from the QPL.

(g) **Reflective Barrier Panels** - Use reflective barrier panels from the QPL.

(h) **Pedestrian Channelizing Devices** - Use PCD from the QPL and as shown on the standard drawings or in the TCP.

00225.13 Temporary Traffic Delineation - Furnish temporary traffic delineation items and accessories meeting the following requirements:

(a) **Tubular Markers** - Use tubular markers from the QPL.

(b) **Conical Markers** - Use conical markers from the QPL.

(c) **Surface Mounted Tubular Markers** - Use surface mounted tubular markers from the QPL.

(d) **Plastic Drums** - Use plastic drums from the QPL. Use retroreflective drum sheeting meeting the requirements of ASTM D 4956 Type III or Type IV.

(e) Delineators - Use new delineators from the QPL or salvaged reflectorized delineators (W-1) or (Y-1), as appropriate, and conforming to the requirements of Section 00840 and the following:

(1) Guardrail - At guardrail locations, use Type 4 delineators.

(2) Concrete Barrier - At concrete barrier locations, use Type 5 delineators.

(f) Pavement Markers:

(1) Reflective Pavement Markers - Use new Type "1" reflective pavement markers from the QPL.

(2) Flexible Oiling Pavement Markers - Use new flexible oiling pavement markers from the QPL.

(3) Flexible Overlay Pavement Markers - Use new flexible overlay pavement markers from the QPL.

(g) Temporary Tape - Use temporary removable, temporary non-removable, and temporary non-reflective tape from the QPL.

(h) Painted Striping:

(1) Paint - Use striping paint from the QPL.

(2) Beads - Use glass beads from the QPL.

00225.14 Temporary Illumination - Furnish materials for temporary illumination meeting the requirements of Sections 00960, 00970, 02920, 02926, and the temporary illumination plans.

00225.15 Traffic Signals - Furnish cable, guy wires, hardware, wood poles, wood pole foundations, and guy anchors that are able to support the dead load of the equipment shown and withstand a 100 mph, 3-second gust wind speed with an Importance factor (Ir) equal to 0.71 according to the 4th Edition AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals.

(a) Temporary Traffic Signals - Use materials for temporary traffic signals that conform to Sections 00960, 00990, 02120, 02920, 02925, and the following:

(1) General - Used materials are allowed if restored to new condition or have very minor wear that is undetectable without close inspection. Do not use permanent signal equipment as part of the temporary signal installation.

(2) Cable and Wire - Use all new cable and wire.

(3) Wood Poles - Use poles that are of acceptable condition without visible signs of deterioration or significant longitudinal splits. Poles shall have no more than 8 drilled holes for messenger and tether cable eyebolt attachments. Holes shall not be closer than 6 inches.

(4) Concrete - Use commercial grade concrete according to Section 00440.

(5) Traffic Signal Control Devices - The controller program and monitor programming will be furnished by the Agency.

(b) Portable Traffic Signals - Use new or like-new portable traffic signals from the QPL.

00225.16 Temporary Electrical Signs - Furnish electrical signs meeting the following requirements:

(a) Sequential Arrow Signs - Use Type "C" sequential arrow signs from the QPL.

(b) Portable Changeable Message Signs - Use PCMS from the QPL.

00225.17 Flagger Station Lighting - Furnish flagger station lighting from the QPL and meeting the following requirements:

- Illuminates the flagger so that the flagger is visible, and is discernable as a flagger, from a distance of 1,000 feet.
- Illuminates the flagger from above at a height of 18 feet \pm 3 feet.
- The light is shielded from approaching traffic.

Equipment

00225.20 General - Equipment will be accepted based on compliance with the Specifications and the Engineer.

00225.23 Temporary Traffic Delineation - Provide pavement marking equipment according to 00850.20.

00225.25 Safety Apparel - Workers, except flaggers, working within highway right-of-way and exposed to traffic or construction equipment shall wear high-visibility safety apparel that meets the Performance Class requirements of the most current version of ANSI/ISEA 107, "American National Standard for High Visibility Safety Apparel and Headwear Devices". Wear safety apparel that at least meets the following minimum requirements:

- Daytime - Class 2 upper body garment.
- Nighttime - One of the following:
 - Class 3 upper body garment.
 - Class 2 upper body garment and Class E trousers or gaiters.
- ANSI Class 2 or Class 3 fluorescent orange-red, fluorescent yellow-green or a combination of the two of these colors for the apparel background material color.
- Fluorescent yellow-green, orange, yellow, or bright white hardhat or baseball-style cap. Wear hardhats when there is danger of falling or flying objects or electrical shock or burns.

Wearing high visibility safety apparel that exceeds the minimum class requirements is allowed.

00225.27 Flaggers - Provide flaggers with the following:

(a) Flagger Equipment - Equip flaggers as follows:

- For daytime and nighttime flagging operations, wear high-visibility safety apparel that meets the Performance Class requirements of the most current version of ANSI/ISEA 107, "American National Standard for High Visibility Safety Apparel and Headwear Devices". Wear safety apparel that at least meets one of the following minimum requirements:
 - Class 3 upper body garment.
 - Class 2 upper body garment and Class E trouser or gaiters.

- Safety apparel with background material colors according to 00225.25.
- A hardhat or baseball-style cap according to 00225.25.
- A minimum 18 by 18 inch "STOP/SLOW" paddle made of rigid substrate and fabricated using type "R1"/"O4" sheeting, or a flagger STOP/SLOW paddle from the QPL. A 24 by 24 inch STOP/SLOW paddle is recommended for higher speed situations or where more visibility is desired.
- Portable, self-contained two-way radio and repeaters, as required, with a range suitable for communications throughout the Project Site.

(b) Flagger Station Lighting - Use flagger station lighting from the QPL and conforming to the following:

- Provide sufficient flagger illumination to completely illuminate the flagger during flagging operations.
- Provide shielding to prevent light beams from being directed toward traffic.

00225.28 Traffic Control Supervisor - Equip Traffic Control Supervisor (TCS) as follows:

- Safety apparel according to 00225.25.
- Portable, self-contained two-way radio with a range suitable for the Project Site, when necessary.
- Cellular telephone active at all times.
- A vehicle that is equipped with a roof or post mounted rotating amber light or strobe light that is visible for 360 degrees.

00225.29 Pilot Cars - Provide pilot cars with the following features:

- No smaller than a compact pickup truck or a midsize car.
- Four wheels.
- A "PILOT CAR FOLLOW ME" (G20-4-18) sign mounted in a conspicuous location on the rear of the vehicle.
- A roof or post mounted rotating amber light or strobe light that is visible for 360°.
- A two-way radio with a range suitable for the Project Site.

Labor

00225.30 General - Observe all laws concerning safety, health, and sanitation standards according to 00170.60. Provide flaggers, TCS, and pilot car operators, to stop, direct, and maintain traffic control through the work zone.

00225.31 Qualifications - Use flaggers, TCS, and pilot car operators that meet the following requirements:

- Have a valid drivers license.
- Are at least 18 years old.
- Have the mental and physical ability to provide timely, clear, and positive guidance to the traveling public.
- Have a sense of responsibility for public and work crew safety.
- Have a professional appearance.

- Have a courteous but firm manner.
- Have completed an approved work zone traffic control flagging course within the past 3 years and have in their possession a current, official state Flagger Certification card from Oregon, Washington, Idaho, or Montana.

00225.32 Traffic Control Supervisor - When the bid schedule does not include an item for a TCS, appoint a trained person on the Project Site during working hours and on call at all other times who:

- Meets the requirements of 00225.31.
- Inspects and maintains TCD location, operation, quality, cleanliness, and effectiveness.
- Is equipped with a cellular telephone.
- Is equipped with a two-way radio, when necessary.
- Has the authority to assign and control flagging operations.
- Has filed their name and phone number with the Engineer and local police.
- Notifies the Engineer of any corrective measures made to the TCP if the TCP is not functioning as required, or to accommodate site conditions. Maintain the original intent of the TCP and do not implement changes to the TCP before revisions are approved by the Engineer.

When the bid schedule includes an item for a TCS, provide a TCS who meets the requirements of 00225.31. The TCS shall possess a current ODOT "Oregon Certified Traffic Control Supervisor" card. A TCS with a current card from another State Department of Transportation or from the American Traffic Safety Services Association may obtain an Oregon Certified TCS card upon successful completion of ODOT's Recertification Class.

Before beginning work on the Project, the TCS shall:

- File with the Engineer and local police, their name and a telephone number at which the TCS can be contacted at all times.
- Have the documents listed in 00225.01 and applicable standards and specifications available at all times.

The TCS duties include the following:

- Supervise work zone traffic control measures, operations, activities, and conditions, including lane closures, lane or traffic shifts, detours, flagging operations, rolling slowdowns, and temporary traffic signal work.
- Oversee all applicable requirements of the Contract to ensure the convenience, safety and orderly movement of motor vehicle, bicycle, and pedestrian traffic.
- Attend meetings specifically scheduled to discuss the TCP and TCM.
- Discuss proposed TCM and coordinate implementation of the TCP with the Contractor and the Engineer.
- Make revisions to the TCP according to the following:
 - Make temporary revisions to the TCP in the event of an emergency and immediately follow-up with and report any changes to the Engineer.
 - Notify the Engineer before making any revisions to the TCP and indicate why revisions are necessary.
 - The TCS may make minor revisions to the TCP to accommodate site conditions if the original intent of the TCP is maintained and revisions have been approved by the Engineer.

- Submit stamped working drawings that include the revisions according to 00225.05 and 00150.35 if the Contractor is using a modified Agency TCP or not using the Agency TCP.
- Coordinate the implementation and operation of all TCM, including those of subcontractors, suppliers, and any adjacent construction or maintenance operation.
- Provide supervision and oversight to maintain all TCM when in operation.
- Coordinate the Project's activities (such as ramp, road, or lane closures) with appropriate police, fire control agencies, city or county agencies, medical emergency responders, school districts, Postmaster, and public transit agencies.
- At least once per TCS construction work shift, conduct a TCD inspection according to the following:
 - Inspect following initial placement or installation of TCD.
 - Inspect devices in place for proper location, installation, operation, quality, cleanliness, and effectiveness on public traffic.
 - Inspect TCD effectiveness in daylight and at night.
 - Inspect post-mounted signs.
 - Inspect temporary illumination and flagger station lighting at night, when in place.
 - Conduct additional TCD inspections for extended periods, as requested.
 - Prepare and sign a "Traffic Control Inspection Report" form (Form No. 734-2474). Submit the report to the Engineer no later than the end of the next TCS construction work shift.

Do not designate the Project superintendent as the TCS.

The TCS shall not act as a flagger or pilot car operator, except in an emergency or to relieve the flagger or pilot car operator for a period of less than 15 minutes.

Make arrangements so that the TCS will be available every day, on call at all times, and available upon the Engineer's request at other than normal working hours.

In the event of a work zone incident during non-work periods, the TCS shall be capable of reporting to the Project site within 1 hour after being notified. The TCS shall have appropriate personnel, equipment, and material available at all times to expeditiously correct any deficiency in the TCM for the Project.

Notify the Engineer of an alternate TCS who can assume the duties of the assigned TCS in the event of that person's inability to perform. Alternate TCS shall be adequately trained and certified according to 00225.31 and 00225.32. Notify the Engineer at least 12 hours before designating the TCS for the following 12-hour period. Make succeeding notifications within 24 hours every time a subsequent TCS is appointed to the Project.

Construction

00225.40 General - Install, inspect, move, operate, maintain, and remove temporary TCD according to the plans, these Specifications, and the following:

- Install, maintain, and move all TCD by working with the direction of traffic.
- Provide additional TCM, according to 00225.02, when necessary or directed.

- Turn, cover, or remove the existing TCD as directed when they are not necessary or conflict with temporary devices. Remove and obliterate, without damaging the wearing surface, all evidence of all temporary TCD when the Contract is completed.
- Remove TCD in a sequence reverse to installation.

Temporary TCD are to remain the property of the Contractor.

Existing TCD shall remain in operation throughout the Contract or until replaced by new, permanent TCD as appropriate.

00225.41 Temporary Signing - Once temporary signs have been accepted and paid for on the Project, do not remove them from the Project, until directed by the Engineer.

Install all temporary signing according to the plans, Section 00940, the MUTCD, the "Sign Policy and Guidelines for the State Highway System", FHWA "Standard Highway Sign" manual and the following:

(a) Speed Signs - Use speed signs as follows:

(1) Advisory Speed Signs - Install Type "O4" advisory speed warning signs or riders as shown or directed.

(2) Regulatory Speed Zone Signs - Install and maintain regulatory speed zone signs as directed and according to the "Temporary Speed Zone Order" signed by the State Traffic Engineer.

When regulatory Type "W1" speed zone signs are used, cover conflicting existing Type "W1" speed zone signs with sign covers according to Section 00941. Cover or remove temporary regulatory Type "W1" speed zone signs and restore the original speed zone signs according to the "Temporary Speed Zone Order" and when directed.

If an existing regulatory Type "W1" speed zone sign displaying the original speed is 1,000 feet or less beyond the limits of the temporary speed zone, additional temporary regulatory Type "W1" speed zone signs displaying the original speed are not required.

(b) Sign Supports:

(1) Wood Sign Posts - Except as provided in the following (2) through (5), mount all temporary signs on wood sign posts as shown and as shown on the standard drawings.

When sign posts are installed in rock, a shorter post may be used if the post is installed in a buried concrete footing at least 12 inches in diameter and 2 feet deep.

(2) Portable Sign Supports - Use portable sign supports as follows:

- When signs are needed at a single location for no more than 48 consecutive hours.
- Position the support so the lowest point of the sign is at least 1 foot above the roadway surface.
- Turn, cover, or remove signs at the end of each work shift when the condition is no longer in effect.
- Use with roll-up signs.
- Use ballast to prevent tipping of the signs in high wind.

(3) Concrete Barrier Sign Supports - Mount signs on concrete barrier so the:

- Lowest point of the sign is at least 7 feet above the roadway surface.
- Sign and post are held securely to concrete barrier by an approved device.
- Sign can be turned and locked in a position parallel to the flow of traffic when not in use.

(4) Temporary Sign Supports - Use TSS as follows:

- When signs are needed at a single location for more than 48 consecutive hours.
- When not practical to post mount due to location or when utility conflicts exists.
- Do not tip over TSS at any time.
- Position double post TSS behind 8 foot type III barricade, as shown on the standard drawing or in the TCP. Where horizontal width prevents an 8 foot barricade, provide a 4 foot type III barricade, as shown or as directed.
- When not in use, locate TSS as far from public traffic as practical and turn away from traffic, or cover the sign. Retain the type III barricade for delineation.

(5) Perforated Steel Square Tube Sign Supports - Perforated steel square tube sign supports may be used as a substitute for wood sign posts. Install perforated steel square tube sign supports as shown on the standard drawings.

(c) Sign Flag Boards and Sign Flags - Use two sign flag boards and flags as follows:

(1) Sign Flag Boards - Install two sign flag boards, as shown or specified.

(2) Sign Flags - Sign flags may be installed above signs mounted on portable sign supports. Mount flags so the entire sign is visible.

(d) Roll-up Signs - Roll-up signs may be used at a single location for no more than 48 consecutive hours.

(e) Inconsistent Temporary Signs - Ensure that all temporary signs are properly used and consistent with the work zone. When signage is no longer required for staging or shift work, remove all temporary signs, sign flag boards, supports, sign covers, and ballast.

When temporary sign messages conflict with work zone conditions, traffic patterns, or other staging configurations, but signs are needed later in Project, do the following:

- Turn or cover the signs so the message is not visible to any traffic.
- Remove or cover sign flag boards.
- When covering signs and sign flag boards, use covers meeting the requirements of 00225.11(c-1).

When it is determined that only minor work remains on the Project and the work area does not encroach on traffic lanes or shoulders, do the following:

- Remove all temporary signs, including the advance construction and Project identification signs.
- Remove all sign flag boards and ballasts.
- Use roll-up signs on portable sign supports for minor or short duration work.

(f) Permanent Signing - When permanent sign messages conflict with adjacent temporary signing, work zone conditions, traffic patterns or other staging configurations, do the following:

- Turn or cover the signs so the message is not visible to any traffic.
- When covering signs, use sign covers meeting the requirements of 00225.11(c-1).

When work zone conditions change and permanent sign messages no longer conflict with temporary signing, uncover permanent signs. Install or uncover appropriate permanent signing as required, before changing traffic control staging.

00225.42 Temporary Barricades, Guardrail, Barrier, Attenuators, and Channelizing Devices - Install temporary barricades, guardrail, barrier, attenuators, pedestrian fencing, and accessories as follows:

(a) Barricades - Use and place barricades as shown or as directed.

(b) Guardrail - Construct temporary guardrail as shown and according to Section 00810.

(c) Concrete Barrier - When placing concrete barrier on pavement surfaces, connect all the barrier sections together with standard barrier pins.

When placing barrier adjacent to a traffic lane, maintain a minimum of 24 inches from face of barrier to the edge of the traffic lane, or as shown or directed. Flare the leading end as shown in the table below and treat ends as shown on the plans.

Speed (mph)	Flare Rate
65	19:1
55	16:1
50	14:1
45	12:1
40	10:1

Secure temporary concrete barrier to AC or Portland cement concrete pavement surfaces by pinning when the distance behind the barrier is limited to less than 3 feet. When pinning the barrier, maintain a minimum of 1 foot between the back face of barrier and a drop-off or obstruction. Use the appropriate pinning detail shown on the standard drawings.

When securing temporary concrete barrier to bridge decks by restraining the barrier, use temporary concrete barrier, deck anchors, and anchor layouts as shown.

(d) Impact Attenuators - Assemble and install impact attenuators according to the manufacturer's recommendations and as follows:

- May be placed on pallets, which are no more than 4 inches high, as approved.
- Place and fill the modules with the weight of dry sand as shown on the standard drawings.
- Mix salt with the sand to the proportions recommended by the manufacturer or at least 5 percent by volume when no manufacturer recommendations are given.
- Attach an object marker to the lead module as shown on the standard drawings.
- Use attenuators designed for the pre-construction posted speed.
- For narrow site systems, secure the first two barrier sections by pinning or restraining as shown on the standard drawings.

(e) Glare Shields - Install glare shields as shown or as directed and according to the following:

- Install at spacing recommended by the manufacturer.
- Install all glare shield blades vertical and true to line.
- Firmly attach the base plate anchor bolts to the concrete barrier to withstand a 1,000 pound vertical pull and to prevent horizontal and rotational displacement. Maximum spacing between anchor bolts on modular units shall be 30 inches.
- Repair any damage to the concrete barrier caused by the Contractor's operations at no additional cost to the Agency.
- Modular or single element glare shields that are installed in a continuous run shall be of the same manufacture and of like appearance throughout the entire installation.

(f) Work Zone Fencing - Install work zone fencing as shown or as directed.

(g) Reflective Barrier Panels - Install reflective barrier panels on temporary concrete barrier as shown or directed and as follows:

- Install two panels on each barrier section.
- Maintain a 4 foot gap between panels on each barrier section.
- Alternate silver-white and fluorescent orange color panels.
- Attach the panels to the face of the concrete barrier with a minimum of four anchors.
- Install the bottom edge of panels 20 inches above the bottom of the concrete barrier.

(h) Pedestrian Channelizing Devices - Install PCD as shown on the standard drawings or in the TCP. Provide a continuous route by interconnecting all adjacent PCD. Provide a clean unobstructed path for pedestrians according to 00220.02 and ADA requirements.

00225.43 Temporary Traffic Delineation - Install and remove traffic delineation items and accessories as follows:

(a) Tubular and Conical Markers - Install tubular or conical markers as shown or directed.

Place tubular or conical markers no more than 10 feet apart along both sides of driveways, streets, and road connections within work areas.

Within individual runs of tubular or conical markers, use one shape for the entire run. Conical markers may substitute for tubular markers.

(b) Surface Mounted Tubular Markers - Install surface mounted tubular markers as shown or directed.

Remove surface mounted tubular marker bases in a manner that leaves any remaining adhesive material with a textured surface condition similar to the texture of the surrounding top lift wearing course pavement surface. Make the surface dull and non-reflective. Remove adhesive from the pavement surface using a method that will not damage the pavement surface.

(c) Plastic Drums - Install plastic drums as shown or as directed.

(d) Delineators - Install traffic delineators as shown on the standard drawings or as directed. Install delineators on temporary concrete barrier and temporary guardrail as follows:

- Space on 50 foot centers. Closer spacing may be required as directed.
- Use yellow when installed on the left side of traffic.
- Use white when installed on the right side of traffic.
- Use bi-directional markers for median applications.
- Position to face oncoming traffic.

(e) Pavement Markers - Unless otherwise shown, install pavement markers as follows:

- Three single markers spaced 5 feet apart to simulate a 10 foot skip line with a gap of 30 feet to the next skip line.
- Single markers spaced 10 feet apart for solid no passing lines.
- Double markers spaced 10 feet apart for double solid no passing lines.

Use yellow markers for highway centerline. Use white markers for lines between adjacent lanes in the same direction of traffic.

Temporary pavement markers shall remain in place until the permanent markings are complete. Replace missing markers at no additional cost to the Agency. On the final pavement wearing course, place permanent markings a maximum of 28 calendar days after placing temporary pavement markers, or as directed.

Remove temporary markers from the pavement wearing course within 5 calendar days after the placement of permanent markings. Remove temporary pavement markers without damaging the roadway surface. Flexible pavement markers may be cut off within 1/8 inch of the roadway surface.

Use flexible oiling pavement markers approved for mixes with temperatures greater than 325 °F.

(1) Reflective Pavement Markers - Use reflective pavement markers when shown according to Section 00855. Establish alignment with control points at 200 foot intervals on tangents and at 50 foot intervals on curves.

(2) Flexible Oiling Pavement Markers - Use flexible oiling pavement markers just before applying asphalt for chip seals, sand seals, and oil mats. Remove marker covers before reopening the roadway to traffic.

If a segment of roadway is not completed when the roadway is reopened to traffic, install another set of markers just before the next application of asphalt.

(3) Flexible Overlay Pavement Markers - Use flexible overlay pavement markers as follows:

- On surfaces that do not require chip seals, sand seals, and oil mats.
- On underlying surfaces that temporarily carry traffic.
- When temporary striping is determined as not practical by the Engineer.

Install the pavement markers before reopening the roadway to traffic. Remove the markers on pavement base courses before placing the next surface layer.

(4) Existing Pavement Marker Removal - Remove and dispose of existing raised or recessed pavement markers as needed for Stage Construction or as directed. Remove pavement markers from permanent pavement wearing courses without damaging the roadway surface and ensure the surface texture remains similar to that of the surrounding area. Make the surface dull and non-reflective. Remove adhesive from the pavement surface using a method that will not damage the pavement surface.

(f) Temporary Tape - Replace damaged or missing tape at no additional cost to the Agency. Remove temporary tape without damaging the roadway surface.

Install temporary tape as shown and as follows:

(1) Temporary Removable Tape - Install temporary removable tape on existing surfaces or pavement wearing courses as shown, or as directed. When staging across new bridge deck surfaces, use temporary removable tape. Remove the temporary removable tape before placing subsequent surfaces and after installing permanent pavement markings.

(2) Temporary Non-Removable Tape - Install non-removable tape on base courses as shown or as directed.

(3) Temporary Non-Reflective Tape - Install non-reflective tape over durable pavement markings to be retained as shown or directed.

(g) Temporary Pavement Markings - Before opening roadways to traffic, unless otherwise specified in 00225.43(h), apply temporary pavement markings on pavement base courses, wearing courses, and new bridge deck surfaces at locations shown, or as directed. Immediately remove all unacceptable pavement markings and replace with acceptable markings at no additional cost to the Agency.

Temporary pavement markings may be placed using paint, temporary tape, or pavement markers as follows:

(1) Base Courses - On pavement base courses, use paint, temporary tape, or pavement markers for temporary pavement markings, as shown in the standard drawings or in the TCP.

For painted striping, apply 4 inch wide by 10 foot long stripes with 30 foot gaps for skip line striping. Apply 4 inch wide, continuous stripes for solid line striping. Apply bead binder at a thickness of 15 mils wet, equivalent to 17 gallons/mile for a 4 inch wide solid line. Apply glass beads at a rate of 5 pounds per gallon of paint.

Before opening a traffic lane on a base course adjacent to temporary concrete barrier that is located on the right-hand side of the traffic lane, place right-hand edge line markings using paint or a continuous removable tape, or as directed.

Before opening a traffic lane adjacent to temporary concrete barrier that is located on the left-hand side of the traffic lane, place left-hand edge line markings using paint, a continuous strip of temporary removable tape, with pavement markers spaced 10 feet apart, or as directed.

(2) Wearing Course - On the pavement wearing course, use paint, temporary removable tape, or pavement markers for skip line or solid line markings, as follows:

- For left-hand solid lines and slip lines striping, use temporary removable tape or pavement markers.
- For right-hand solid edge line markings, use paint or a continuous strip of temporary removable tape.
- Where inlaid permanent pavement markings are to be placed, use paint for temporary pavement markings.
- Where durable permanent pavement markings are to be placed, apply temporary line markings using painted striping until durable permanent pavement markings can be applied according to 00225.43(g-4).

Before opening a traffic lane on a wearing course adjacent to temporary concrete barrier that is located on the right-hand side of the traffic lane, place right-hand solid edge line markings using a continuous strip of temporary removable tape, or as directed.

Before opening a traffic lane on a wearing course adjacent to temporary concrete barrier that is located on the left-hand side of the traffic lane, place left-hand solid edge line markings using a continuous strip of temporary removable tape, with pavement markers spaced 10 feet apart, or as directed.

(3) New Bridge Deck Surfaces - On new bridge deck surfaces use temporary removable tape for temporary pavement markings for skip line or solid line striping, as shown or as directed.

(4) Durable Permanent Pavement Markings - On pavement wearing courses where durable permanent pavement markings are to be placed, apply temporary painted striping until durable permanent pavement markings can be applied, unless otherwise directed. Reduce the application rate of the paint to a thickness of 10 mils wet, equivalent to 12 gallons per mile for a 4 inch wide solid stripe. Apply reflective elements at a rate of 5 pounds per gallon of paint. Only one application is required.

Place temporary painted striping directly adjacent to the final location of the durable permanent pavement markings. Place the temporary painted striping so the durable permanent pavement markings can be aligned with existing striping at the end of the project limits. Removal of the temporary painted striping is not required, if aligned as described in this subsection.

When scheduled installation of durable permanent pavement markings will exceed, or will likely exceed, 28 calendar days after placement of the wearing surface, furnish and place temporary painted striping at the standard rate stated in 00225.43(g-1). Removal of this striping is not required if aligned as described in this subsection.

(h) Pavement Edge Delineation - Place tubular or conical markers to delineate the edge of pavement immediately after construction work removes or obscures painted edge stripes (shoulder or fog lines). If the left shoulder is less than 8 feet wide, tubular or conical markers may be substituted by installing Type 5 delineators on the concrete barrier at 25 foot spacing before left-hand edge line markings are removed or obscured.

Place tubular or conical markers to delineate the edge of pavement immediately after construction work or paving operations create an abrupt or sloped edge drop-off 1 inch or more in height along the right-hand or left-hand shoulder.

Maintain pavement edge delineation until temporary pavement markings can be applied according to 00225.43(g). Temporary pavement markings must be applied within 14 calendar days after the painted edge stripe has been removed or obscured. Locate and maintain the tubular and conical markers as follows:

- Between traffic and the abrupt edge.
- Space markers as shown for traffic delineators on the standard drawings at a maximum spacing of 200 feet.
- Patrol daily and restore them to their proper position at least once at the start of each work shift and once at the end of each work shift until the tubular or conical markers are no longer required.
- Remove after a new edge stripe has been painted and new delineators are in place.

(i) Stripe and Legend Removal - When removing striping and legends for stage construction, remove them by sandblasting, hydro-blasting, steel shot blasting, or grinding so the pavement surface is not damaged below a depth of 1/8 inch. Remove durable markings and durable legends by steel shot blasting or grinding the pavement surface to a depth no greater than 1/8 inch, or other approved method so the pavement surface is not damaged. Do not use paint or asphalt to cover existing stripes. Repair any damaged surfaces to the Engineer's satisfaction at no additional compensation.

Do not use grinding to remove stripes from the wearing course or existing surfaces, unless the area is to be paved over during the Project.

Use vacuum shrouded equipment or other equally effective containment procedures.

Contain and collect all removed paint, durable markings, and spent abrasive and dispose of according to 00290.20.

Remove striping on pavement base courses when a change in striping is necessary and when the pavement will not be covered with an additional base course. Remove striping and pavement markers on the wearing course so that the permanent markings can be applied. Remove all remaining striping and pavement markers from the wearing course after the permanent markings have been applied, as directed.

Remove legends so that the legend outline is not recognizable on the pavement surface.

Coordinate all removal work with the construction activity. Remove striping, legends, and pavement markers during the same days the traffic shift is accomplished unless otherwise approved.

(j) Pavement Legends and Bars - Before opening roadways to traffic, unless otherwise allowed, apply temporary pavement legends and bars on pavement base courses at locations designated. Apply bead binder at a thickness of 15 mils wet and glass beads at a rate of 5 pounds per gallon of paint.

00225.44 Temporary Illumination - Construct and remove temporary illumination according to the plans and Sections 00950, 00960, 00970, 02920, and 02926.

00225.45 Traffic Signals - Provide traffic signals according to the following:

(a) Temporary Traffic Signals - Construct, adjust, and remove temporary traffic signals according to the plans, Sections 00950, 00960, 00990, 02920, 02925, and the following:

(1) Removal - Remove the temporary traffic signal when directed. Remove all wood poles and guy anchors in their entirety. Abandon vehicle detector loops in place. Contractor furnished equipment remains the property of the Contractor.

(2) Power Service - Be responsible for utility coordination, hook-up, and power consumption.

(3) Wood Poles - Backguy wood poles so that they are vertical with all dead loads applied.

(4) Suspension of Heads - Adapt signal mounting hardware as needed for mounting on wood poles.

(5) Testing and Turn-on - Certify that all traffic signal controllers and related control equipment for temporary signals have passed the Oregon Department of Transportation laboratory tests. Successfully tested controllers and related control equipment will be assigned permanent certification tags and will not require further environmental testing. Deliver controllers to the Traffic System Services Unit for functional testing.

(b) Portable Traffic Signals - Unless otherwise indicated in the TCP, provide and install portable temporary traffic signals as shown on the standard drawings and the following:

(1) Location and Set-up - Locate and set up portable temporary traffic signals according to the following:

- Locate the portable temporary traffic signal so that one vehicle signal head is directly over the traveled way with minimum vertical clearances of 17 feet.
- Provide conflict monitoring of green and yellow field indications.
- If there are indications in conflict or if there is operational failure, set the default to red flash.
- Hardwire interconnect the units for timing and conflict monitoring.
- Provide cellular or other immediate methods of failure notification.

Do not install portable temporary traffic signals if driveways or road approaches are between the portable temporary traffic signals.

(2) Vehicle Detection - Provide vehicle detection at the stop line for each direction of traffic.

(3) Testing and Turn-on - Notify the Engineer 14 calendar days before turning on the portable temporary traffic signal. The Engineer will do the following:

- Inspect the installation and confirm the date and time the portable traffic signal is to be turned on.
- Notify the Contractor, in writing, with a list of deficiencies that need correction.
- Provide timing parameters to the Contractor for input into the portable temporary traffic signal.

Correct all deficiencies identified by the Engineer before turning on the portable temporary traffic signal. Do not change the timing parameters without the approval of the Engineer. Use flaggers to control traffic during initial turn on of the signal. The flaggers shall remain on standby for 2 hours after the signal is turned on and operating properly.

Correct deficiencies at no additional cost to the Agency.

(c) Existing Traffic Signals - Adjust existing traffic signals according to the plans and Sections 00950, 00960, 00990, 02920, and 02925.

00225.46 Temporary Electrical Items - Provide and install electrical resources as follows:

(a) Sequential Arrow Signs - Use the sequential arrow signs as follows:

- To indicate a lane closure only. Use one sequential arrow sign for each lane being closed.
- Install where the sign is visible from 1/2 mile minimum.
- Mount at a height of 7 feet from bottom of sign to ground.
- Do not use on 2-Lane, 2-Way roadway.
- For shoulder work use caution mode only.
- Provide a solar/battery power source.

(b) Portable Changeable Message Signs - Use PCMS according to the "Oregon Portable Changeable Message Sign Handbook" and as follows:

- Program concise accurate messages according to the "Oregon Portable Changeable Message Sign Handbook".
- Install beyond the outside shoulder, behind existing barrier or guardrail, as shown in the TCP, or as directed when conditions do not allow the PCMS to be located beyond the traffic lane.
- Install the PCMS device where it can be seen from 1/2 mile minimum. The PCMS message should be legible from 800 feet in the daytime and 600 feet at night.
- Mount so that the bottom of the sign is 7 feet above the ground.
- Program so that the entire message is displayed within 8 seconds.
- Use a maximum of two panels to display an entire message.
- Separate two PCMS used in sequence by 1,000 feet minimum.
- Messages shall not scroll horizontally or vertically across the face of the sign.
- When the PCMS is not being used to display any messages for more than 5 consecutive calendar days, remove the PCMS from the roadway and locate the device at least 30 feet from the edge of the nearest traffic lane, place behind a barrier system, or as directed.
- Provide a solar/battery power source.
- Obtain approval from the Engineer before displaying or altering messages.

(c) Temporary Power Source - Arrange for, provide, and pay for all electrical power.

00225.47 Flaggers and Flagger Station Lighting - Use flaggers and flagger station lighting as follows:

(a) Flaggers - Locate flaggers far enough in advance of the work area to permit adequate time for the motorist to respond to the flagger's instructions. All flaggers, including advance flaggers, shall use a STOP/SLOW paddle. Do not use the roll-up STOP/SLOW paddle for non-emergency flagging operations.

During advance flagging operations, the advance flagger shall only display the "SLOW" face of the paddle by covering the "STOP" face of the paddle with a sign cover according to 00225.11(c-1).

Position flaggers, as directed, at locations where traffic can enter the highway within the limits of the work zone. Flaggers shall direct vehicles entering the highway to follow the pilot car line.

Flagging stations shall be staffed continuously or until the Engineer determines flagging is no longer required.

(b) Flagger Station Lighting - Provide continuous flagger station lighting for nighttime flagging as follows:

- Locate the light equipment on the same side of the roadway as the flagger between 5 to 10 feet from the edge of the traffic lane, on or beyond the roadway shoulder, or as directed.
- Position and orient the flagger station lighting to direct the maximum amount of light toward the flagger and away from the approaching traffic in the near lane.
- Aim all of the luminaires directly at the flagger.
- Increase the output wattage or number of luminaires as the luminance from, and number of, surrounding and background lights increases. Do not provide a total output more than 2,500 watts, unless otherwise directed.

00225.48 Traffic Control Supervisor - Supervise the safe operation of traffic control within the construction work zone.

00225.49 Pilot Cars - Safely operate pilot cars at a prudent speed, and at a speed that does not exceed that posted on the temporary advisory speed signing.

Maintenance

00225.60 Temporary Traffic Control Devices - Evaluate the condition of TCD and maintain them using the criteria shown in the most current version of the ATSSA publication titled "Quality Guidelines for Temporary Traffic Control Devices and Features". Except for electrical devices, replace all TCD that, according to the ATSSA publication, are in "Marginal" or "Unacceptable" condition with equal devices that are in new or "Acceptable" condition, within a time period agreed upon by the Engineer.

Electrical devices that are in "Marginal" or "Unacceptable" condition may be repaired instead of being replaced, as long as the repairs are satisfactorily completed within a time period agreed upon by the Engineer.

The replacement or repair of TCD, found to be in "Marginal" or "Unacceptable" condition, shall be made at no additional cost to the Agency except as in 00225.90(a-1).

Evaluate, maintain, repair or replace TCD, and perform other duties including the following:

- Keep the devices in proper position, clean, and legible at all times.
- Keep lights, reflectors, and flashers clean, visible, and operable during both daylight and darkness.
- Trim or remove vegetative growth or other materials so the devices can be seen.
- Verify, by inspection, the effectiveness of the installations at frequent intervals, both in daylight and darkness, at actual travel speeds.
- Repair, replace, or restore damaged or destroyed devices to maintain continuity and effectiveness.
- Maintain temporary TCD during suspensions of work the same as if work were in progress.

When the bid schedule does not include an item for a TCS, the Contractor's Superintendent or designee shall prepare and sign a daily "Traffic Control Inspection Report" (Form No. 734-2474) each working day. Submit the report to the Engineer no later than the end of the next working day.

00225.61 Signs and Other Existing Traffic Control Devices - Maintain existing guide signs, warning signs, regulatory signs, specific service signs (business logos), tourist-oriented directional signs (TODS), and other existing TCD, in the same manner as temporary signs and devices associated with the Project.

00225.62 Temporary Barrier, Guardrail, and Attenuators - Maintain or replace materials and equipment as follows:

(a) Temporary Concrete Barrier and Guardrail - Immediately repair any concrete barrier segment or guardrail element that is damaged by the Contractor during or after placement. Repair it to the Engineer's satisfaction or replace it with an undamaged section at no additional cost to the Agency.

(b) Temporary Impact Attenuators - Complete repair of damaged impact attenuators, except for narrow site systems, within 24 hours of being notified of the damage. Complete repair of damaged narrow site systems within 4 hours of discovery of or of being notified of the damage.

When impact attenuator, truck mounted attenuator, or narrow site attenuator systems are used, have enough modules, cartridges, components, and replacement parts on-site to replace one complete installation or have on-site a complete replacement attenuator. Re-stock replacement items or complete replacement attenuators within 24 hours of use. All modules, cartridges, components, replacement parts, and replacement attenuators not used remain the property of the Contractor.

Replace damaged modules, cartridges, components, and replacement parts with modules, cartridges, components, and replacement parts of the same manufacturer and type, and with attenuation capabilities equal to the original, installed system.

00225.63 Temporary Traffic Delineation - At no additional cost to the Agency, evaluate and maintain or immediately replace all unacceptable temporary traffic delineation with acceptable materials as follows:

(a) Pavement Markers - Damaged or missing markers. Maintain proper alignment and spacing of markers.

(b) Temporary Tape - Damaged or missing temporary tape. Maintain proper alignment and placement of temporary tape.

When removing damaged delineation from the pavement surface, remove adhesives, hardware, damaged delineation fragments or other materials using a method that will not damage the pavement surface. Repair any damaged surfaces to the Engineer's satisfaction at no additional cost to the Agency.

00225.64 Illumination and Sign Illumination - Maintain existing illumination and sign illumination after adjusting or working on them until accepted.

Routine maintenance of existing illumination and sign illumination will be performed by the Agency at the Agency's expense before the Contractor works on them and after work on them is completed and accepted.

00225.65 Traffic Signals - Maintain or replace materials and equipment as follows:

(a) Temporary Traffic Signals - After successful turn-on of the temporary signal, except for equipment inside the controller cabinet, assume operation and maintenance of the temporary traffic signal until it is removed.

The operation and maintenance of the equipment inside the controller cabinet will be the responsibility of the Agency, except the Contractor shall furnish replacement parts that fail within the controller cabinet while the temporary traffic signal is in use.

After notification by the Agency, if the Contractor is not able to respond to a maintenance request for the temporary traffic signal or a request for replacement parts for the inside of the controller cabinet, Agency electricians will make repairs at the Contractor's expense.

If the temporary traffic signal fails during operation for any reason, immediately provide flaggers to control traffic until the temporary traffic signal is operational. No additional payment will be made for flagging as a result of a temporary traffic signal failure.

(b) Portable Traffic Signals - After successful turn-on, perform all required maintenance during operation of the portable traffic signal. Maintain a log for each portable traffic signal that contains at least the following information:

- Dates and times when service and maintenance is performed.
- A description of equipment that was serviced and a brief description of why the service was performed.
- All operational and equipment failures of the unit.
- Repairs made to the unit.
- Past operational history of the unit.
- All timing parameters input into the controller.

The log shall remain with the corresponding portable traffic signal at all times.

The Agency will not replace or repair any part of portable traffic signals.

If the portable traffic signal fails during operation for any reason, immediately provide flaggers to control traffic until the portable traffic signal is operational. If the portable traffic signal fails a second time within 30 calendar days of the first failure, remove it from the Project and control traffic with flaggers until a replacement portable traffic signal is installed, activated, and working properly. No additional payment will be made for flagging as a result of a portable traffic signal failure.

(c) Existing Traffic Signals - Maintain existing signals after adjusting or working on them until accepted.

Routine maintenance of existing signals will be performed by the Agency at the Agency's expense before the Contractor works on them and after work on them is completed and accepted.

00225.66 Portable Electrical Signs - Maintain and use the required PCMS and sequential arrow signs according to the manufacturer's recommendations, TCP, and as directed.

While portable changeable message signs and sequential arrow signs are in use, have repair equipment and parts on the Project site, as recommended by the manufacturer.

When directed, repair or replace sequential arrow signs and portable changeable message signs that are damaged or destroyed before continuing work that requires use of the signs.

00225.67 Flagger Station Lighting - Maintain and use the required flagger station lighting according to the manufacturer's recommendation and as required.

When flagger station lighting is in use, have on the Project site, the following:

- Repair equipment and electronic components recommended by the manufacturer.
- At the beginning of each shift, have approved backup flagger station lighting available for immediate use in event of failure.
- Sufficient fuel to maintain continuous operation of the generator.

Measurement

00225.80 Measurement - Work covered under this Section will be measured by one of the following methods:

- **Method "A" - Unit Basis** - Under this method, work zone traffic control measures will be measured according to 00225.80(a) through 00225.89.
- **Method "B" - Lump Sum Basis** - Under this method, no measurement of quantities will be made.
- **Method "C" - Incidental Basis** - Under this method, no measurement of quantities will be made.

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

- The initial installation of quantities necessary to complete the Project based on the Contract Schedule of Items.
- The initial installation of additional TCD and TCM that the Engineer and Contractor agree are necessary to ensure a safe work zone.
- The replacement of TCD and TCM, except temporary signing, temporary electrical signs, and portable temporary traffic signals, damaged by public traffic and replaced by the Contractor.

Temporary signing, temporary electrical signs, and portable temporary traffic signals damaged by public traffic and replaced or repaired by the Contractor will not be measured.

(b) Temporary Protection and Direction of Traffic - No measurement of quantities will be made for this work.

00225.81 Temporary Signing - The quantities of temporary signs will be measured on the area basis, upon delivery to the Project. The quantities will be limited to those in the approved TCP including speed zone signage. The sign area will be the nominal area determined by multiplying the width times the length. No deductions will be made for corners or irregular shapes.

Route markers on separate substrate riders and other signs fastened to the face of larger signs will be measured as separate signs.

Sign covers will not be measured.

00225.82 Temporary Barricades, Guardrail, Barrier, Attenuators, and Channelizing Devices - The quantities of barricades, attenuators, guardrail, and concrete barrier will be determined as follows:

(a) Barricades and Attenuators - Barricades, temporary impact attenuators, and moving temporary impact attenuators will be measured on the unit basis.

(b) Guardrail and Concrete Barrier:

(1) Guardrail - Temporary guardrail will be measured on the length basis, of each type complete and in place, determined by one of the following methods:

a. Count Method - The number of standard sections will be counted and multiplied by 12 1/2 feet. For purposes of this subsection, a "standard section" is defined as 12 1/2 feet of complete guardrail, without regard to the number of posts or rail elements used. Non-standard sections will be measured from center of post to center of post and added to the total calculated length of the standard sections for each run.

b. Length Method - Measurement will be from center to center of end posts, along the line and grade of each run of each type.

(2) Guardrail Terminals, Transitions, and Bridge Connections - Temporary guardrail terminals, temporary guardrail transitions, and temporary bridge connections will be measured on the unit basis.

(3) Concrete Barrier - Temporary concrete barrier, moving temporary concrete barrier, and pinning or restraining temporary concrete barrier will be measured on the length basis, determined by one of the following methods:

a. Count Method - The laying length of a standard section, as shown on the applicable Standard Drawing, multiplied by the number of standard sections installed in each separate run. Non-standard sections, terminal sections, and transition sections will be measured and added to the total length of standard sections.

b. Length Method - Measurement will be from end to end of the barrier along the line and grade of each run.

(c) Glare Shields - Glare shields and moving glare shields will be measured on the length basis, from center to center of the glare shield blades, as installed on concrete barrier for each run.

(d) Reflective Barrier Panels - Reflective barrier panels will be measured on the unit basis.

(e) Temporary Impact Attenuator Repair - Temporary impact attenuator repair will be measured on the unit basis as follows:

- Sand barrel systems will be the replacement of damaged sand modules.
- All other systems will be the repair or complete replacement of the attenuator system.

(f) Pedestrian Channelizing Devices - The quantities of pedestrian channelizing devices will be measured on the length basis, determined by measuring from end to end of the devices along the line and grade of each run.

00225.83 Temporary Traffic Delineation - The quantities of temporary traffic delineation will be determined as follows:

(a) Surface Mounted Tubular Markers, Plastic Drums, Delineators, and Pavement Markers - Surface mounted tubular markers, replacing surface mounted tubular markers, plastic drums, temporary delineators, reflective pavement markers, and flexible pavement markers will be measured on the unit basis.

Flexible pavement markers include flexible oiling markers and flexible overlay markers.

(b) Temporary Tape - Temporary tape will be measured on the length basis, as follows:

(1) Removable Tape - Removable tape will be determined by measuring the actual length of the 4 inch wide tape complete and in place.

(2) Non-Removable Tape - Non-Removable tape will be determined by measuring the actual length of the 4 inch wide tape complete and in place.

(3) Non-Reflective Tape - Non-Reflective tape will be determined by measuring the actual length of the 6 inch wide tape complete and in place.

(c) Striping, Legends, and Pavement Bars - Temporary striping, legends, and pavement bars will be measured as follows:

(1) Striping - Painted temporary striping will be measured on the length basis determined by one of the following methods:

a. Count Method - The number of 4 inch wide skip stripes will be counted and multiplied by the "standard length". For purposes of this subsection a "standard length" for a skip stripe (10.0 feet) is defined in 00225.43(g-1).

b. Length Method - Measurement will be the actual length of 4 inch wide stripe complete and in place. When measuring the actual length of 4 inch wide skip stripe, the skip interval will not be included in the measurement. The length of skip stripe may be determined by dividing the total length by 4.0.

Temporary striping required for durable permanent pavement marking installation will be included in the measurement.

Temporary striping will be measured on the length basis, of lines based on a nominal width of 4 inches. If the plans call for, or the Engineer requires, stripes other than nominal 4 inch width, the measurement will be adjusted by converting to an equivalent length of a nominal 4 inch wide stripe.

(2) Legends - Temporary pavement legends will be measured on the unit basis, by actual count.

(3) Pavement Bars - Temporary pavement bars will be measured on the area basis, for each stop bar and crosswalk bar.

(d) Stripe Removal, Legend Removal, and Bar Removal - Stripe removal, legend removal, and bar removal will be measured as follows:

(1) Stripe Removal - Stripe removal for stage construction will be measured on the length basis, determined by measuring the overall length of 4 inch line removed. The quantity of

stripe removal will be the computed length of lines removed based on a nominal width of 4 inches. For computation purposes, the following apply:

- The width of a line is the normal standard line width applied during original placement of solid no-passing lines, broken (skip) lines, edge lines, and any other lines normally 4 inches wide.
- The length of continuous lines is length of the line.
- The length of broken (skip) stripes is the standard length of a skip line normally painted during original placement of the lines 10.0 feet of paint per 40 feet of roadway length. Skip stripes may be counted.

The length of standard 8 inch or 12 inch wide stripes will be adjusted by converting to equivalent length of 4 inch width line. No conversion or adjustment will be allowed for lines that are wider or longer due to improper placement or retracing deviations.

(2) Legend and Bar Removal - Pavement legend removal and bar removal for stage construction will be measured on the area basis, of each legend and bar removed and will be the nominal area determined by multiplying the width times the length of the legend or bar. No deductions will be made for corners or irregular shapes.

00225.84 Temporary Illumination - No measurement of quantities will be made for temporary illumination.

00225.85 Traffic Signals - The quantities of traffic signals will be measured as follows:

(a) Temporary Traffic Signals - No measurement of quantities will be made for temporary traffic signals.

(b) Portable Traffic Signals - Portable traffic signals will be measured on the unit basis, for each complete system. A complete system consists of two portable temporary traffic signals and hardware interconnect between them.

00225.86 Temporary Electrical Signs - The quantities of temporary electrical signs will be measured as follows:

(a) Sequential Arrow Signs - Sequential arrow signs will be measured on the unit basis, where the devices are initially installed on the Project.

(b) Portable Changeable Message Signs - Portable changeable message signs will be measured on the unit basis, where the devices are initially installed on the Project.

00225.87 Flaggers and Flagger Station Lighting - The quantities of flaggers and flagger station lighting will be measured as follows:

(a) Flaggers - Flaggers will be measured on the time basis, of the actual number of hours flagging stations are staffed.

Flagging performed by a TCS will not be measured, except as specified in 00225.32.

(b) Flagger Station Lighting - Flagger station lighting will be measured on the unit basis, where the devices are initially installed on the Project or on the time basis, of the actual number of hours the flagger stations are staffed and flagger station lighting is required.

No additional measurement will be made for the backup unit in event it is used or not.

00225.88 Traffic Control Supervisor - The quantities of the TCS will be measured on the unit basis, and will be determined by a TCS construction work shift.

For the purpose of determining a TCS construction shift, a TCS construction work shift will be any work shift or portion of a work shift where any of the following operations occur:

- Full lane closures or lane shifts implemented on a daily basis on a freeway or highway with an ADT greater than 10,000.
- When TCS is called to respond to a traffic-related issue during non-work hours.
- Other construction operations as requested by the Engineer.

A maximum quantity of two TCS construction work shifts will be allowed for each 24 hour period. One TCS will be allowed for a construction work shift unless otherwise approved.

00225.89 Pilot Cars - The quantity for pilot cars will be measured on the time basis, of the actual number of hours pilot cars are operated.

Payment

00225.90 Payment - Work covered under this Section will be paid for by one of the following methods:

(a) Method "A" - Unit Basis:

(1) Pay Quantities - The accepted quantities, measured according to 00225.80(a) through 00225.89, will be paid for at the Contract lump sum amount or Contract unit price, per unit of measurement, for each of the pay quantities listed in the Contract Schedule of Items and in approved change orders.

Payment will be payment in full for furnishing, installing, moving, operating, maintaining, inspecting, and removing the materials and TCD, and for furnishing all equipment, labor, and incidentals necessary to complete the work as specified, except as covered in 00225.90(a-2).

All TCD damaged by public traffic and replaced by the Contractor, except temporary signing, temporary electrical signs, and portable temporary traffic signals, will be paid for at the Contract price for the pay items listed in the Contract Schedule of Items or in approved Contract change orders, unless otherwise specified. Payment for replacing damaged TCD will only be made when:

- The Engineer orders it.
- The replacement devices are used on the Project.
- The damaged devices are disposed of to the Engineer's satisfaction.

No separate or additional payment will be made for:

- Moving and reinstalling signs, barricades, PCD, plastic drums, delineators, sequential arrow signs, and portable changeable message signs required by stage construction.
- Providing TCM, including flaggers, used at material sources and disposal sites that are outside the Contract limits unless specifically called for on the plans or in the Special Provisions.
- Providing portable signs, unless shown or specified or when used for minor work as indicated in 00225.41(e).
- TCD damaged or destroyed by Contractor's equipment or operations.

(2) Temporary Protection and Direction of Traffic - Temporary protection and direction of traffic will be paid for at the Contract lump sum amount for the item "Temporary Protection and Direction of Traffic" and will be for:

- Positioning all traffic control devices in proper locations at all times.
- Providing and furnishing electrical power.
- Cleaning up and removing devices destroyed or damaged by public traffic.
- Furnishing, placing, maintaining and removing temporary sign covers.
- Moving temporary concrete barrier to and from Contractor's stockpile areas.
- Moving temporary impact attenuators of any type to and from Contractor's stockpile areas.
- Furnishing, placing, replacing, maintaining, moving and removing tubular and conical markers.
- Removing existing raised and recessed pavement markers.
- Furnishing, placing, replacing, maintaining, moving and removing tubular and conical markers used to delineate the pavement edge because of edge line obliteration.
- Furnishing, installing, maintaining, moving, and removing work zone fencing.
- Moving and removing existing signs, specific service signs (business logos) and tourist-oriented directional signs (TODS) from their existing locations and reinstalling them on any type of support at new locations required by stage construction, as shown or directed.
- Moving, reinstalling, and removing existing post-mounted signs required by stage construction.
- Providing, surfacing, maintaining, removing, and restoring the alternate pedestrian route.
- Providing, moving, reinstalling, and removing guardrail end pieces and guardrail anchors as required by stage construction.
- Performing routine inspections of the TCD.
- When the bid schedule does not include an item for a TCS, preparing and signing the daily "Traffic Control Inspection Report".

(b) Method "B" - Lump Sum Basis - Work zone traffic control will be paid for at the Contract lump sum amount for the item "Temporary Work Zone Traffic Control, Complete".

Payment will be payment in full for furnishing, installing, moving, operating, maintaining, inspecting, and removing materials and TCD, and for furnishing all equipment, labor, and incidentals necessary to complete the work as specified.

(c) Method "C" - Incidental Basis - When the Contract Schedule of Items does not indicate payment for work zone traffic control, all work zone traffic control will be considered Incidental and no separate payment will be made.

00225.91 Temporary Signing - The accepted quantities of temporary signs, regardless of type, will be paid for at the Contract unit price, per square foot, for the item "Temporary Signs".

No separate or additional payment will be made for sign flags, sign flag boards, posts and other supports, or sign covers.

00225.92 Temporary Barricades, Guardrail, Barrier, Attenuators, and Channelizing Devices - The accepted quantities of temporary barricades, guardrail, barrier, attenuators, and appurtenances will be paid for at the Contract unit price, per unit of measurement, for the following items:

Pay Item	Unit of Measurement
(a) Temporary Barricades, Type ____	Each
(b) Temporary Guardrail, Type ____ Reflectorized	Foot
(c) Temporary Guardrail Terminals, _____	Each
(d) Temporary Guardrail Transition	Each
(e) Temporary Bridge Connections	Each
(f) Temporary Concrete Barrier, Reflectorized.....	Foot
(g) Temporary Concrete Barrier, Tall, Reflectorized.....	Foot
(h) Moving Temporary Concrete Barrier.....	Foot
(i) Securing Temporary Concrete Barrier	Foot
(j) Temporary Impact Attenuator, _____	Each
(k) Moving Temporary Impact Attenuators, _____	Each
(l) Repair Temporary Impact Attenuator, _____	Each
(m) Temporary Glare Shields	Foot
(n) Moving Temporary Glare Shields.....	Foot
(o) Reflective Barrier Panels	Each
(p) Pedestrian Channelizing Devices	Foot

In item (a), the type of barricade will be inserted in the blank.

In items (b) and (c), the type of guardrail or terminal will be inserted in the blank.

Items (d) and (e) include each device, regardless of size or type.

Items (f) and (g) include Type 5 delineators.

Item (h) includes moving temporary concrete barriers, regardless of size or type, from one location of actual use to another, and for removing and replacing Type 5 delineators on the barriers, as necessary.

Item (i) includes pinning temporary concrete barrier by securing it to the pavement surface or restraining temporary concrete barrier by securing it to the bridge deck.

In items (j) and (k), the type of attenuator, if applicable, will be inserted in the blank.

Item (k) includes each move of the device from one location of actual use to another.

In item (l), the words "Sand Module" or the type of attenuator, if applicable, will be inserted in the blank.

Item (l) includes replacement of sand modules damaged by public traffic or includes repair or complete replacement of impact attenuators damaged by public traffic.

Item (n) includes moving the devices from one location on the concrete barrier to another.

Item (o) includes panels installed on the concrete barrier and replacing damaged panels.

No separate or additional payment will be made for temporary impact attenuator replacements, replacement modules, cartridges, components, or replacement parts that are required to be on-site according to 00225.62(b) or for cleaning and removing debris from impacts.

00225.93 Temporary Traffic Delineation - The accepted quantities of temporary traffic delineation will be paid for at the Contract unit price, per unit of measurement, for the following items:

Pay Item	Unit of Measurement
(a) Surface Mounted Tubular Markers.....	Each
(b) Replace Surface Mounted Tubular Markers.....	Each
(c) Temporary Plastic Drums.....	Each
(d) Temporary Delineators	Each
(e) Temporary Reflective Pavement Markers	Each
(f) Temporary Flexible Pavement Markers	Each
(g) Temporary Removable Tape	Foot
(h) Temporary Non-Removable Tape.....	Foot
(i) Temporary Non-Reflective Tape	Foot
(j) Temporary Striping	Foot
(k) Temporary Pavement Legends.....	Each
(l) Temporary Pavement Bars	Square Foot
(m) Stripe Removal	Foot
(n) Legend Removal.....	Square Foot
(o) Bar Removal	Square Foot

Item (a) includes furnishing and installing the complete assembly of each device in its initial location and for removing the device from the surface.

Item (b) includes furnishing new or refurbished devices to replace damaged or missing devices.

Item (e) includes temporary pavement markers having either one or two reflective faces.

Item (f) includes removing flexible pavement marker covers.

Item (m) includes removal of painted and durable stripes required for stage construction.

Item (n) includes removal of durable and non-durable legends required for stage construction.

Item (o) includes removal of durable and non-durable bars required for stage construction.

Payment for items (g), (h), (i), (j), (l), and (o) performed beyond the quantity shown in the Contract Schedule of Items will be made at the Contract unit price if the Engineer determines that the Contract unit price does not exceed the value of the work as determined according to Section 00197. If the Engineer determines that the Contract unit price exceeds the value of the work, payment for the additional work will be made according to 00195.20.

No separate or additional payment will be made for mobilization to perform striping, stripe removal, legend removal, or for mobilization to place or remove temporary flexible pavement markers.

00225.94 Temporary Illumination - The accepted quantities of temporary illumination will be paid for at the Contract lump sum amount for the item "Temporary Illumination".

00225.95 Traffic Signals - The accepted quantities of traffic signals will be paid for at the Contract unit price, per unit of measurement, for the following items:

Pay Item	Unit of Measurement
(a) Temporary Traffic Signal.....	Lump Sum
(b) Portable Traffic Signal.....	Each

Item (a) includes all required materials called for by the plans and Specifications.

Item (b) includes furnishing, operating, moving, and removing the signals and all required earthwork, bases, surfacings, and hardware interconnects.

No separate or additional payment will be made for removing and replacing damaged portable traffic signals.

Flagging for initial turn-on and 2 hour standby time will be paid for under the flagger pay item.

00225.96 Temporary Electrical Signs - The accepted quantities of temporary electrical signs will be paid for at the Contract unit price, per unit of measurement, for the following items:

Pay Item	Unit of Measurement
(a) Sequential Arrow Signs.....	Each
(b) Portable Changeable Message Signs.....	Each

Items (a) and (b) includes furnishing, operating, moving, and removing the signs and supports.

No separate or additional payment will be made for removing and replacing damaged signs.

00225.97 Flaggers and Flagger Station Lighting - The accepted quantities of flaggers and flagger station lighting will be paid for at the Contract unit price, per unit of measurement, for the following items:

Pay Item	Unit of Measurement
(a) Flaggers	Hour
(b) Flagger Station Lighting	Each or Hour

Item (a) includes all necessary equipment, special apparel, flagging equipment, and two-way radios.

Workers performing flagging duties who are not properly equipped or attired will not be considered to be flaggers and will not be eligible for payment under this item.

Flaggers performing work other than flagging will not be considered flaggers and will not be eligible for payment under this item.

Payment for item (a) performed beyond the quantity shown in the Contract Schedule of Items will be made at the Contract unit price if the Engineer determines that the Contract unit price does not exceed the value of the work as determined according to Section 00197. If the Engineer determines that the Contract unit price exceeds the value of the work, payment for the additional work will be made according to 00195.20.

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Item (b) includes furnishing, operating, moving, and removing the flagger station lighting.

No separate or additional payment will be made for back-up unit in event it is used or not.

00225.98 Traffic Control Supervisor - The accepted quantities of traffic control supervisor will be paid for at the Contract unit price, per each for the item "Traffic Control Supervisor".

Payment includes vehicle and equipment.

Payment for item "Traffic Control Supervisor" performed beyond the quantity shown in the Contract Schedule of Items will be made at the Contract unit price if the Engineer determines that the Contract unit price does not exceed the value of the work as determined according to Section 00197. If the Engineer determines that the Contract unit price exceeds the value of the work, payment for the additional work will be made according to 00195.20.

00225.99 Pilot Cars - The accepted quantities of pilot cars will be paid for at the Contract unit price, per hour for the item "Pilot Cars".

Payment will be payment in full for fully operated pilot cars, two-way radios, the "PILOT CAR FOLLOW ME" sign, and the rotating amber light or strobe light mounted on the pilot car.

Payment for item "Pilot Cars" performed beyond the quantity shown in the Contract Schedule of Items will be made at the Contract unit price if the Engineer determines that the Contract unit price does not exceed the value of the work as determined according to Section 00197. If the Engineer determines that the Contract unit price exceeds the value of the work, payment for the additional work will be made according to 00195.20.

Section 00240 - Temporary Drainage Facilities**Description**

00240.00 Scope - This work consists of furnishing, installing, and removing temporary drainage facilities.

Construction

00240.40 Construction - Furnish and install temporary drainage facilities of sufficient capacity and strength to carry traffic over the facility, and water flow in or under the facility. Determine the actual size, strength and type of facility needed. The sizes of facilities shown on the plans are minimum only. Submit this determination and its basis to the Engineer for review. Do not install until approved.

Remove temporary drainage facilities when they are no longer needed. The facilities remain the property of the Contractor.

Measurement

00240.80 Measurement - No measurement of quantities will be made for work performed under this Section.

Payment

00240.90 Payment - The accepted quantities of work performed under this Section will be paid for at the Contract lump sum amount for the item "Temporary Drainage Facilities".

Payment will be payment in full for furnishing, placing, maintaining, and removing temporary drainage facilities, and for furnishing all equipment, labor, and incidentals necessary to complete the work as specified.

Section 00270 - Temporary Fences

Description

00270.00 Scope - This work consists of constructing, maintaining, and removing temporary fences, gates, and gateways as shown or directed.

Materials

00270.10 Material - Provide new material meeting the requirements of 01050.10.

Provide concrete barrier meeting the requirements of 00225.12(c).

Construction

00270.40 Construction - Construct temporary fences, gates, and gateways according to the applicable parts of Section 01050.

00270.42 Rock Protection Fence - Construct concrete barrier according to Section 00820. Attach fence to barrier as shown.

Maintenance

00270.60 Maintenance - Maintain temporary fences and appurtenances in good condition. Keep the fences in place until they are no longer needed.

Finishing and Cleaning Up

00270.70 General - When temporary fences and appurtenances are no longer needed remove and dispose of them according to the applicable parts of Section 00310 except fence fabric, fence wire, posts, and braces may be used in permanent fence installations if the following conditions are met:

- The material was new when installed for temporary purposes.
- The material has not been used on previous projects.
- The material meets the requirements of 01050.10.
- The material is undamaged.
- The material is acceptable to the Engineer.

Measurement

00270.80 Measurement - The quantities of temporary fence will be measured on the length basis of each type of temporary fence. Gateways will be considered as fence of the type which adjoins them and will be measured as a continuing part of that type of fence. Measurement will be from center to center of posts, measured along the line and grade of each separate continuous run of fence as constructed exclusive of gates.

The quantities of temporary gates will be measured on a unit basis regardless of size or type.

The quantities of barrier mounted rock protection fence will be measured on the length basis. Measurement will be from center to center of posts, measured along the line and grade of each separate continuous run.

Payment

00270.90 Payment - The accepted quantities of work performed under this Section will be paid for at the Contract price, per unit of measurement, for the following items:

Pay Item	Unit of Measurement
(a) Temporary Type ____ Fence.....	Foot
(b) Temporary Gates	Each
(c) Temporary Rock Protection Fence, Barrier Mounted.....	Foot

In item (a) the type of fence will be inserted in the blank.

Payment will be payment in full for furnishing, placing, maintaining, and removing all materials, including the concrete barrier, and for furnishing all equipment, labor, and incidentals necessary to complete the work as specified.

Section 00280 - Erosion and Sediment Control

Description

00280.00 Scope - This work consists of controlling soil erosion by wind, water, or other means and preventing eroded sediments and other construction-generated pollutants from moving off the project, Agency controlled material sources, disposal sites, and off-site mitigation areas in order to comply with Federal, State, and local laws, rules and regulations, and the Agency's National Pollutant Discharge Elimination System (NPDES) 1200 Permit or Permits applicable to the Project.

This work also consists of providing temporary erosion and sediment control (ESC) measures and furnishing, installing, moving, operating, maintaining, inspecting, and removing ESC throughout the Project area according to the standard drawings, the erosion and sediment control plan (ESCP) for the Project, these Specifications, or as directed, until the site is permanently stabilized.

The work described in these Specifications and shown on the plans are part of the project ESCP and represent the minimum requirements for all project construction sites and conditions.

00280.01 Abbreviations:

ESC - Erosion and Sediment Controls

ESCP - Erosion and Sediment Control Plan

ESCM - Erosion and Sediment Control Manager

00280.02 Definitions:

Effective Functioning - Preventing erosion, controlling runoff, or controlling sediment in each location where a ESC is needed so erosion-related impacts of site construction are mitigated as required.

Erosion - The wearing away of the land surface by water, wind, ice, gravity or other geological agents.

Perimeter Controls - Perimeter controls include sediment fences, ditches, filter berms in flatter areas, and other methods for preventing sediment and other construction-generated pollutants from leaving the construction site.

Permanent Stabilization - Maintenance free measures or methods necessary to prevent erosion or sediments from leaving the project site.

Runoff - That portion of precipitation that flows from drainage area on the land surface, in open channels or in storm water conveyance systems.

Sediment - Fragmented material originated from weathering and erosion of rock and unconsolidated deposits. Sediment also includes fragmented materials from man-made materials. The material is transported by, suspended in, or deposited by water.

Temporary Stabilization - Measures or methods necessary to prevent erosion or sediments from leaving the project site until permanent stabilization measures are in place and established.

Wet Season Work - Wet season work is defined as work between October 1 and May 31.

00280.03 Standards - When designing, applying, installing maintaining, inspecting, and removing erosion and sediment control devices, use and follow the version in effect on the date the project is advertised, of the ODOT "Erosion and Sediment Control" manual.

00280.04 Erosion and Sediment Control Plan on Agency Controlled Lands - For work on Agency-controlled lands use either the Agency's ESCP, a Contractor modified version of the Agency's ESCP, or a Contractor developed ESCP. Submit the following for approval 10 calendar days before the preconstruction conference:

- When using the Agency's ESCP without modification, a written notification indicating the Agency's ESCP will be used without modification.
- When using a Contractor modified version of the Agency's ESCP or when using a Contractor developed ESCP, include the following:
 - Proposed ESCP showing all ESC work and quantities of all work.
 - Implementation schedules for the ESCP based on each phase of the contractor's work.

Do not begin any site activities that have potential to cause erosion or sediment movement until the ESCP and implementation schedules are approved by the Engineer.

Update the ESCP and schedule as needed to ensure that sediment does not leave the construction site.

Additional or revised erosion and sediment control features, not shown on the initial ESCP, may be required depending on the Contractor's methods of operation and schedule to provide effective functioning of ESC.

Ensure that the Contractor's construction ESCP and implementation schedules are prepared by an individual who meets qualifications of 00280.30. Furnish a signed copy of the ESCP with individual's name, title, state certifications, and employing firm if different than Contractor's firm.

Keep a copy of the approved ESCP with updated changes on-site during all construction activities. If there are approved changes, add them to the ESCP no later than 24 hours after implementation.

During inactive periods longer than 7 calendar days, keep the ESCP on-site or provide a copy to the Engineer to retain.

00280.05 Erosion and Sediment Control Plan on Non-Agency Controlled Lands - For work on non-Agency controlled lands, in addition to the requirements of 00280.04, submit the following for review 10 days before the preconstruction conference:

- A Contractor-developed ESCP for each unique site covered under a Non-Agency NPDES 1200 Permit.
- A description of how the ESCP will be implemented and monitored on these sites.
- A complete list of other applicable permits controlling work on these lands, whether the Agency is one of the permittees or not, and copies of the applicable permits or proof that permits are not required from all pertinent federal, State, county, city, and local agencies.
- Signed letter from the property owner that allows the Contractor access to the property. Include a statement in the letter that holds the Agency harmless for all consequences related to the Contractor's use of the property.
- Signed agreement with the property owner detailing the Contractor's operation, use of the property, and stating that Contractor will abide by permits, if any.

If the Contractor's operations require work on non-Agency controlled lands not presented 10 days before the preconstruction conference, or if changes to the Contractor's submitted ESCP are necessary, obtain approval of a new or revised ESCP from the Engineer before beginning work.

00280.06 Erosion and Sediment Control Manager - Designate and provide a representative as the Erosion and Sediment Control Manager (ESCM) who meets the qualifications of 00280.30.

Materials

00280.14 Erosion Prevention Materials:

(a) Plastic Sheeting - Furnish plastic sheeting slope protection, anchoring system, and toe protection meeting the following requirements:

- **Plastic Sheeting** - Minimum 6 mil thick polyethylene plastic sheeting.
- **Rock** - Class 50 riprap conforming to Section 00390.
- **Sand Bags** - Sand bags meeting the requirements of 00280.15(a). Sand bags may also be filled with sand.
- **Sediment Barrier** - Fiber rolls and compost filter sock meeting the requirements of 00280.15(a).
- **Staples** - 1/8 inch diameter steel wire staples. 2 inch "U" width with a length of 6 inches minimum.

(b) Chemical Controls:

(1) Chemical Soil Binder - Furnish a liquid stabilizer emulsion meeting the requirements of 01030.16.

(2) Chemical Dust Control - Furnish tackifier meeting the requirements of 01030.16.

(c) Non-Chemical Control - Furnish water meeting the requirements of Section 00340.

(d) Mulching and Seeding - Furnish temporary and permanent seeding, fertilizing, and mulching meeting the requirements of Section 01030.

(e) Slope and Channel Liner Matting - Furnish matting from the QPL that meets the following performance criteria categories:

- **Type A** - Slope protection mat for clay soil slopes 1V:3H or flatter.
- **Type B** - Slope protection mat for sandy soil slopes 1V:3H or flatter.
- **Type C** - Slope protection mat for clay soil slopes steeper than 1V:3H.
- **Type D** - Slope protection mat for sandy soil slopes steeper than 1V:3H.
- **Type E** - Flexible channel liner for shear stress from 0 to 2 pounds per square foot.
- **Type F** - Flexible channel liner for shear stress from 0 to 4 pounds per square foot.
- **Type G** - Flexible channel liner for shear stress from 0 to 6 pounds per square foot.

- **Type H** - Flexible channel liner for shear stress from 0 to 8 pounds per square foot.

Where shown, furnish rolled slope protection matting or hydraulically applied bonded fiber matrix slope protection matting that consists of fully biodegradable long fiber strands held together by a water resistant bonding agent.

Furnish check slot and anchor trench material and fasteners for matting meeting the following requirements:

(1) Check Slot and Anchor Trench:

- **Class 50 Riprap** - Class 50 riprap meeting the requirements of Section 00390.
- **Soil** - Soil meeting the requirements of 00330.13.

(2) Fasteners - U-shaped wire staples or pins as follows:

- **Staples** - 1/8 inch diameter steel wire staples. 1 inch "U" width with a length of 9 inches minimum for cohesive soils, and 1/2 inch "U" width with a length of 12 inches minimum for non-cohesive soils.
- **Pins** - 3/16 inch diameter steel pin with a 2 inch diameter steel washer secured at the head of the pin with a length of 18 inches minimum for cohesive soils and 24 inches minimum for non-cohesive soils.

(f) Compost Erosion Blanket - Furnish commercially manufactured medium compost material meeting the requirements of Section 03020.

When shown, add tackifier. Apply tackifier at the rates shown or as recommended by the manufacturer.

00280.15 Runoff Control Materials:

(a) Check Dams - Furnish check dam material meeting the following requirements:

- **Type 1: Aggregate** - Aggregate sized between 4 inches maximum and 1 inch minimum meeting the requirements of 00330.16.
- **Type 2: Fiber Rolls** - Fiber rolls or wattles made of straw meeting the requirements of 01030.15(b). Wrap the straw to a minimum density of 2.75 pounds per cubic foot in tubular plastic netting meeting the following requirements:
 - 8 inch to 10 inch diameter size
 - Minimum strand thickness of 0.003 inch
 - Knot thickness of 1/16 inch
 - Weight of 0.35 ounces per foot \pm 10 percent
 - Made from 85 percent high density polyethylene, 14 percent ethyl vinyl acetate, and 1 percent color for UV inhibition
- **Type 3: Biofilter Bags** - Minimum size 18 inch x 6 inch x 30 inch plastic mesh bags with 1/2 inch openings filled with approximately 45 pounds of clean, non-toxic 100 percent recycled wood product waste containing no fine materials or sediments, or as shown on the standard drawings for this device.

- **Type 4: Sand Bags** - Durable, weather-resistant bags woven tightly enough to prevent leakage of filler material. Fill bags with at least 75 pounds of firmly-packed fine PCC 3/8" - 0 aggregate, or round 3/8" - 3/16" pea gravel.
- **Type 5: Prefabricated System** - Prefabricated check dam system conforming to the manufacturer's recommendations and on the QPL. Field fabricated systems are not acceptable.
- **Type 6: Compost Filter Sock** - Sock material, compost, and stakes meeting the following requirements:
 - **Filter Sock Material** - 5 mil thick woven tubular mesh netting consisting of continuous HDPE filament or polypropylene material with 3/8 inch openings or 100 percent biodegradable burlap or coir as shown.
 - **Compost** - Commercially manufactured coarse compost material meeting the requirements of Section 03020.

(b) Interceptor Dikes and Swales - Furnish interceptor dike and swale materials meeting the following requirements:

- **Seeding, Fertilizing and Mulching** - Permanent or temporary seeding, fertilizing and mulching meeting the requirements of Section 01030.
- **Dike material** - Soil meeting the requirements of 00330.13.

(c) Temporary Drainage Curbs - Furnish temporary drainage curb material meeting the following requirements:

- **Type 1** - Concrete drainage curb meeting the requirements of 00480.10.
- **Type 2** - Asphalt concrete drainage curb meeting the requirements of 00480.10.
- **Type 3** - Sand bags meeting the requirements of 00280.15(a).

(d) Temporary Slope Drains - Furnish either plastic pipe and flared end sections meeting the requirements of Section 02410 or metal pipe and flared end sections meeting the requirements of Section 02420.

(e) Flow Spreader - Furnish aggregate for flow spreaders with a maximum size between 6 inches and 3 inches meeting the requirements of 00330.16.

(f) Compost Filter Sock - Furnish filter sock material and compost meeting the following requirements:

- **Filter Sock Material** - Provide material meeting the requirements of 00280.15(a).
- **Compost** - Commercially manufactured coarse compost material meeting the requirements of Section 03020.

(g) Compost Filter Berm - Furnish commercially manufactured coarse compost material meeting the requirements of Section 03020.

00280.16 Sediment Control Materials:

(a) Construction Entrances - Furnish materials meeting the following requirements:

- **Aggregate** - Clean, durable, open graded angular aggregate sized between 4 inches maximum and 1 inch minimum with less than 5 percent of the material, by weight, passing the No. 4 sieve.
- **Geotextile** - Subgrade geotextile meeting the requirements of Section 02320. Provide "Level B" documentation according to 02320.10(c).

(b) Tire Wash Facility - Furnish tire wash facility materials meeting the following requirements:

- **Aggregate** - Aggregate meeting the requirements of 00280.16(a).
- **Geotextile** - Subgrade geotextile meeting the requirements of Section 02320. Provide "Level B" documentation according to 02320.10(c).
- **Corrugated Steel Panels** - Corrugated steel panels with flexural strength adequate to bear the weight of the vehicles accessing the construction site without deformation.

(c) Sediment Fence - Furnish sediment fence materials meeting the following requirements:

- **Geotextile** - Geotextile meeting requirements of Section 02320. Provide "Level B" documentation according to 02320.10(c).
- **Posts** - Untreated wood posts (wood stain is acceptable).

(d) Inlet Protection - Furnish inlet protection materials meeting the following requirements:

- **Type 2:**
 - **Wire Mesh** - 19 gauge steel-wire mesh with 3/8 x 3/8 inch openings.
 - **Geotextile** - Type 1 geotextile meeting the requirements of Section 02320. Provide "Level B" documentation according to 02320.10(c).
 - **Aggregate** - Open-graded aggregate meeting the requirements of 02630.11.
- **Type 3: Prefabricated Filter Inserts** - Prefabricated filter inserts manufactured specifically for collecting sediment in drainage inlets and listed on the QPL. Include handles and fasteners sufficient to keep the insert from falling into the inlet during maintenance and removal of the insert from the inlet. .
- **Type 4:**
 - **Biofilter Bags** - Biofilter bags meeting the requirements of 00280.15(a).
 - **Reinforcing Steel** - Commercial grade reinforcing steel meeting the requirement of 02510.
- **Type 6: Sod** - Grass sod meeting the requirements of 01040.19(h).
- **Type 7:**

- **Filter Sock Material** - Provide material meeting the requirements of 00280.15(a).
- **Compost** - Commercially manufactured coarse compost material meeting the requirements of Section 03020.

(e) Sediment Barriers - Furnish sediment barriers and sediment barrier stakes meeting the following requirements:

- **Type 2: Biofilter Bags** - Biofilter bags meeting the requirements of 00280.15(a).
- **Type 3: Fiber Rolls** - Fiber rolls or wattles meeting the requirements of 00280.15(a).
- **Type 4: Sand Bags** - Sand bags meeting the requirements of 00280.15(a).
- **Type 5: Brush Barrier** - Maximum 6 inch diameter woody debris brush or topsoil strippings for brush barriers. Provide Type 1 sediment fence geotextile meeting the requirements of Section 02320. Provide "Level B" documentation according to 02320.10(c).
- **Type 6: Aggregate Barrier** – Clean well graded angular aggregate with maximum size between 4 inches and 1 inch meeting the requirements of 00330.16, except no more than 5 percent of the material by weight shall pass the No. 40 sieve.
- **Type 7: Prefabricated Barrier System** - Prefabricated barriers manufactured specifically for temporarily obstructing the flow of sediment-laden water and listed on the QPL.
- **Type 8: Compost Filter Sock** - Sock material and compost meeting the following requirements:
 - **Filter Sock Material** - Provide material meeting the requirements of 00280.15(a).
 - **Compost** - Commercially manufactured coarse compost material meeting the requirements of Section 03020.
- **Type 9: Compost Filter Berm** - Commercially manufactured coarse compost material meeting the requirements of Section 03020.

(f) Sediment Mat - Furnish sediment mat from the QPL.

(g) Temporary Energy Dissipater - Furnish temporary energy dissipater material meeting the following requirements:

- **Geotextile** - Type 1 riprap geotextile meeting the requirements of Section 02320. Provide "Level B" documentation according to 02320.10(c).
- **Class 100 Riprap** - Class 100 riprap meeting the requirements of Section 00390.

(h) Temporary Sediment Trap - Furnish sediment trap materials meeting the following requirements:

- **Geotextile** - Type 2 drainage geotextile meeting the requirements of Section 02320. Provide "Level B" documentation according to 02320.10(c).
- **Aggregate Base** - Aggregate base meeting the requirements of Section 00640.

- **Aggregate** - Aggregate meeting the requirements of 00280.16(a).
- (i) **Concrete Washout** - Furnish concrete washout materials meeting the following requirements:
- **Geotextile** - Type 2 drainage geotextile and subgrade geotextile meeting the requirements of Section 02320. Provide "Level B" documentation according to 02320.10(c).
 - **Straw Bales** - Standard rectangular straw bales, with straw material meeting the requirements of 01030.15, except no certification is required.
 - **Plastic Sheeting** - Minimum 10 mil thick polyethylene plastic sheeting.
 - **Staples** - 1/8 inch diameter steel wire staples. 2 inch "U" width with a length of 6 inches minimum.
- (j) **Floating Turbidity Barrier** - Furnish floating turbidity barriers shown and as directed.

Labor

00280.30 Erosion and Sediment Control Manager - Designate and provide an ESCM that possesses a valid ODOT ESCM certificate.

The ESCM duties include:

- Manage and ensure proper implementation of the ESCP.
- Accompany the Engineer during field review of the ESCP prior to construction activities.
- Monitor rainfall on and in the vicinity of the Project site.
- Monitor water quality in receiving streams in the vicinity of the Project site.
- Inspect ESC on active construction sites weekly for effective functioning.
- Inspect ESC on inactive sites every 2 weeks for effective functioning.
- Inspect ESC on all active and inactive sites at least daily during rainy periods when 1/2 inch or more of rain has fallen within a 24 hour period for effective functioning.
- Ensure that ESC are regularly cleaned and maintained.
- Mobilize crews to make immediate repairs to ESC or install additional ESC during working and non-working hours when ESC is not effectively functioning.
- Record actions taken to clean up significant amounts of sediment.
- Report potential permit violations to the Agency in a timely manner.
- Regularly update the approved ESC Monitoring form.
- Update the ESCP monthly and within 24 hours after changes or major ESC modifications are implemented.
- Prepare a contingency plan in preparation for emergencies and the rainy season.
- Accompany the Engineer on inspections and, if required, on inspections by representatives of regulating agencies.

Provide the ESCM name, qualifying certifications, and 24 hour contact phone number 10 days before the preconstruction conference. If changes in the appointment of the ESCM occur during the term of the Contract, provide written notice to the Engineer within 5 calendar days.

Construction

00280.40 Installation - Install ESC as shown and according to the ESCP. Install these ESC before performing clearing, grading, or other land-altering activities. Ensure effective functioning of ESC such that sediment does not leave the Project boundaries, enter drainage systems or waterways, or violate applicable water quality standards.

Coordinate temporary ESC with permanent ESC and all related project work.

If ESC are not effective, modify or change ESC so they become effective.

00280.41 Work Restrictions - The following work restrictions apply:

(a) Disturbance Limits - Delineate all construction site-clearing limits with high visibility markings and do not disturb areas outside the clearing limits. Maintain the markings during Project construction.

(b) Perimeter Controls - Install all appropriate perimeter controls before beginning any ground disturbing activities.

(c) Wet Season Work and Temporary Work Suspension - Update the ESCP and schedule for work proposed during the wet season to ensure that all appropriate controls, including ESC during work suspensions, are implemented and maintained. Submit the updated ESCP and schedule to the Agency and receive approval before beginning any work during the wet season.

During the wet season, limit excavation and bare ground activities to only that required for immediate operations. Stabilize stockpiles at the end of each workday by diverting flows, placing covers, or installing sediment barriers.

(d) Disturbance Restrictions - Limit the amount of disturbed areas to that which can be effectively controlled.

00280.42 Stabilization - Stabilize soil areas as follows:

(a) Soil Exposure Limitations:

- **Statewide (Entire Year)** - Within 7 days of exposure, stabilize all areas within 100 feet of waterways, wetlands, or other sensitive areas using methods that do not rely solely upon germination to control erosion.
- **West of the Cascades (Entire Year)** - Stabilize all other areas within 14 days of exposure.
- **East of the Cascades (October 1 through April 30)** - Stabilize all other areas within 14 days of exposure.
- **East of the Cascades (May 1 through September 30)** - Stabilize construction areas in stages based on site conditions, weather, and as determined by the Engineer.

(b) Temporary Stabilization - Temporarily stabilize exposed soils:

- Every 14 days or more frequently as needed or directed.
- Upon approval, active work areas scheduled for re-disturbance may be left unstabilized for 14 day periods if erosion is not occurring or imminent.
- A minimum of 1 day before expected rain events.
- At the end of each day during wet periods.
- As an emergency measure when rain is falling on unprotected areas.

- When wind or vehicle traffic is visibly causing more than minor dust.
- At finish grade when working outside the permanent seeding dates.

Document all implemented ESC on the ESCP. Ensure that permanent slope stabilization is achieved before removing temporary ESC.

(c) Permanent Stabilization - Permanently stabilize exposed soil surfaces at finished grade. Perform permanent stabilization at each completed excavation and embankment area except for areas that are scheduled to be redisturbed.

If seeded areas are not sufficiently stabilized by an established stand of vegetation according to 01030.60, or if the soil surface is not sufficiently protected with temporary stabilization ESC by October 1 of each year, do the following:

- Use ESC necessary to redirect water flows away from disturbed areas.
- Re-grade disturbed areas to finish grade.
- Apply permanent seeding at the original specified rate.
- Apply temporary mulching or matting.

If areas for temporary stabilization are too steep or lack access for effective straw mulch application, apply, upon approval, another effective measure.

Incorporate permanent erosion control features into the Project at the earliest practicable time.

00280.43 Area Preparation - Prepare areas according to 01040.48(d) and track walk all fill slopes at finished grade steeper than 1V:3H and flatter than 1V:1.5H so that track impressions run parallel to slope contours. Maintain at least 1 3/8 inch tall track grousers.

00280.44 Erosion Prevention - Perform erosion prevention work as shown and according to the following:

(a) Plastic Sheeting - Place plastic sheeting on disturbed, temporary slopes or stockpiles where immediate protection is required and mulching or other methods of soil stabilization are not feasible.

Cover exposed soil with plastic sheeting as shown. Keep sheeting in place during rain events. Direct runoff away from areas above plastic sheeting to prevent undermining. Control runoff from plastic sheeting so water discharges without causing further pollution.

(b) Erosion and Sediment Control by Chemical Methods:

(1) Chemical Soil Binder - Hydraulically apply a liquid stabilization emulsion at the following rates unless the manufacturer recommends a different rate of application:

- **Long Term Control of Exposed Soil Surfaces** - Apply 35 gallons per acre of emulsion. Dilute with water at the rate of one part emulsion to 20 parts water.
- **Steep Slopes with Raveling Small Rock** - Apply 45 gallons per acre of emulsion. Dilute with water at the rate of one part emulsion to 10 parts water.

(2) Chemical Dust Control - Apply tackifier for dust control for wind or equipment-caused erosion according to the following:

- **Liquid Stabilizer Emulsions** - Dilute the emulsion with water at a rate of one part emulsion to 30 parts water. Apply the diluted mixture at the rate of 865 gallons per acre unless the manufacturer recommends a different rate of application.
- **Dry Powder Tackifier** - Apply at a rate of 140 pounds per acre unless the manufacturer recommends a greater rate of application.

(c) Erosion and Sediment Control by Non-Chemical Methods - Apply water according to Section 00340.

(d) Temporary and Permanent Mulching and Seeding:

- **Mulching** - Evenly apply dry mulch and tackifier material according to Section 01030.. In areas not accessible to heavy equipment, mulch by hand or by other approved methods. Areas not prepared according to 01040.48(d) will require greater rate of application to obtain complete coverage at no additional cost to the Agency.
- **Seeding** - Seed according to Section 01030.

(e) Slope and Channel Liner Matting - Install matting according to the ESCP or the manufacturer's recommendations, whichever is more stringent. Install fully biodegradable matting within 25 feet of water resources.

(1) Area Preparation - Remove all materials larger than 2 inches in size. Smooth the surface and remove undulations sufficient to allow the matting to be placed in complete contact with the soil.

(2) Seeding - Apply seeding according to the following:

a. Seed Before Matting Installation - Apply at the application rate for seed specified in Section 01030.

b. Seeding After Matting Installation - Apply at double the application rate for seed specified in Section 01030.

c. Single Application: Matting and Seed:

- **Hydraulically Applied Matting** - Apply seed at double the rate specified in Section 01030.
- **Manually Applied (Pre-seeded) Rolled Matting** - Pre-seed the matting at double the rate specified with the seed mix specified in Section 01030.

(3) Matting Placement - Apply matting loosely so it is in complete contact with the soil.

(4) Bonded Fiber Matrix Matting Placement - Follow the manufacturer's recommended practices to hydraulically apply bonded fiber matrix at the rates shown on the ESCP or as recommended by the manufacturer, whichever is more stringent.

(f) Compost Erosion Blanket - Apply compost with equipment that propels the material directly at the soil surface and achieves direct contact with the soil. Apply compost at a uniform depth of 2 inches to all exposed soil surfaces.

00280.45 Runoff Controls - Install runoff controls according to the following:

- (a) **Check Dams** - Construct check dams as shown or directed.
- (b) **Interceptor Dikes and Swales** - Construct interceptor dikes and swales as shown or directed. After construction of interceptor dikes and swales, construct temporary stabilization according to 00280.42(b).
- (c) **Temporary Drainage Curbs** - Construct temporary drainage curbs as shown or directed.
- (d) **Temporary Slope Drains** - Construct temporary slope drains as shown or directed.
- (e) **Flow Spreader** - Construct flow spreaders as shown or directed.
- (f) **Compost Filter Socks** - Construct compost filter socks as shown or directed.
- (g) **Compost Filter Berm** - Construct compost filter berms as shown or directed.

00280.46 Sediment Controls - Install sediment controls as shown and according to the following:

- (a) **Construction Entrances** - Install construction entrances at every point of access onto paved surfaces.
- (b) **Tire Wash Facility** - Construct tire wash facility as shown or directed.
- (c) **Sediment Fence** - Construct sediment fence as shown or directed.
- (d) **Inlet Protection** - Construct inlet protection as shown or directed.
- (e) **Sediment Barriers** - Construct sediment barriers as shown or directed.
- (f) **Sediment Mat** - Construct sediment matting as shown or directed. Remove the mats not later than 48 hours after stream activities are complete.
- (g) **Temporary Energy Dissipater** - Construct temporary energy dissipaters as shown or directed.
- (h) **Temporary Sediment Trap** - Construct temporary sediment traps as shown or directed.
- (i) **Concrete Washout** - Construct concrete washouts as shown or directed.

00280.47 Work Quality - Comply with 01030.49.

00280.48 Emergency Materials - Provide, stockpile, and protect emergency materials on-site for unknown weather or erosion conditions. A list of emergency materials will be listed in the Special Provisions. Replenish emergency materials as they are used.

The emergency materials are in addition to the other erosion control materials required to implement and maintain the ESCP.

Remove all unused emergency materials from the Project site at the completion of the Project.

Maintenance

00280.60 General - Maintain installed ESC devices in good working order and effective functioning at all times. Keep the devices in place until the Agency issues notification of acceptance of stabilization. All maintenance and repairs are at no additional cost to the Agency.

00280.61 Ineffective Controls - If a ESC device does not meet effective functioning, repair, replace, or provide additional devices. Devices repaired, replaced, or added due to improper installation, insufficient maintenance, or damage from Contractor operations will be made at no additional cost to the Agency.

00280.62 Inspection and Monitoring - Ensure that regular site inspection and monitoring is performed according to the schedule and record keeping requirements of the NPDES permit.

(a) Inspection - Perform general site inspection, complete all applicable parts of the ODOT Erosion Control Monitoring Form, and submit the Form to the Agency as follows:

- Weekly for active sites.
- Every 2 weeks for inactive sites.
- Within 24 hours after 1/2 inch or more rainfall occurs including weekends and holidays.
- When directed by the Engineer.

(b) Rainfall - Furnish and install a rain gauge at the Project site. Notify the Agency if 1/2 inch or more of rainfall occurs at the Project site within a 24 hour period.

(c) Monitoring Receiving Stream - Observe and record color and turbidity or clarity within 30 feet upstream and downstream of locations where surface waters from the construction site enter the receiving stream. Describe in the report any apparent differences in color and the clarity of the discharge, and any observable difference in comparison with the receiving stream. Note whether sheen and floating matter are present or absent.

If a permit noncompliance or serious water quality issues occur verbally report to the Engineer within 24 hours and submit a written report within 5 calendar days.

00280.63 Sediment Removal - Remove sediment and upgrade or repair the devices as needed as soon as practicable, but not later than 2 days after the surrounding exposed ground has dried sufficiently to prevent further damage from equipment needed for repair operations.

If rainfall continues over a 24 hour period, or other circumstances that preclude equipment operation in the area, hand carry and install additional ESC devices.

(a) Catch Basins - Maintain inlet protection by removing trapped sediment when storage capacity has been reduced by 50 percent. Prevent release of sediments during maintenance or removal work.

(b) Sediment Controls - Remove sediment from sediment fences, sediment barriers, check dams, and sediment traps once it has reached one third of the exposed height of the device or storage depth.

(c) Paved Areas - Keep all paved areas clean for the duration of the Project. Use cleaning methods that do not transport sediment-laden water to receiving streams. Adjust the frequency of cleaning to ensure compliance with the ESCP.

(d) Permanent Stabilization – Maintain permanent stabilization work by restabilizing areas disturbed by the Contractor's operations or other causes within 2 calendar days.

Finishing and Cleaning Up

00280.70 Removal - All temporary erosion and sediment control features that are not incorporated into the permanent work remain the property of the Contractor. Within 30 days of the notification of acceptance of permanent stabilization, remove temporary erosion and sediment control devices and materials from the area. Dispose of accumulated sediment before removing the devices and materials according to 00280.71. Shape and permanently stabilize areas affected by the removal process. Do not remove temporary erosion and sediment control devices before permanent stabilization is accepted.

If shown or if directed, compost filter material may be dispersed in place. Cut open compost filter socks and dispose of sock material according to 00290.20

00280.71 Sediment Disposal - Regrade removed sediment into slopes or remove and dispose off-site according to 00290.20.

Measurement

00280.80 Measurement - Quantities of work performed under this Section will be measured according to the following:

- (a) **Lump Sum Basis** - No measurement of quantities will be made for lump sum items.
- (b) **Unit Basis** - Unit basis items will be measured on the unit basis, of each device or location where the device is constructed or placed.
- (c) **Length Basis** - Length basis items will be measured on the length basis along the line and grade of the item or device constructed or placed.
 - Flow spreaders and diversion dikes and swales will be measured along the long axis.
 - Sediment barrier, when measured on the length basis, will be measured along the long axis of the barrier regardless of type.
 - Temporary slope drains will be measured from the beginning of the metal end pieces to the end of the drain. Measurement will be made when each installation is at its maximum length.
- (d) **Area Basis** - Area basis items will be measured on the area basis along the ground surface, and computed to the square yard or acre as applicable.
- (e) **Limitations** - The quantities of emergency materials listed in 00280.48 of the Special Provisions are included in the items listed in the Contract Schedule of Items.

Payment

00280.90 Payment - 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) Erosion Control	Lump Sum

Erosion Prevention

(b)	Plastic Sheetting	Square Yard
(c)	Chemical Soil Binder.....	Acre
(d)	Chemical Dust Control	Acre
(e)	Temporary Mulching	Acre
(f)	Matting	Square Yard
(g)	Compost Erosion Blanket	Square Yard

Runoff Control

(h)	Check Dam	Each
(i)	Temporary Interceptor Dike/Swale	Foot
(j)	Temporary Slope Drain.....	Each or Foot
(k)	Flow Spreader.....	Foot
(l)	Compost Filter Sock	Foot
(m)	Compost Filter Berm	Foot

Sediment Control

(n)	Construction Entrance	Each
(o)	Tire Wash Facility	Each
(p)	Concrete Washout Facility	Each
(q)	Sediment Fence.....	Foot
(r)	Inlet Protection.....	Each
(s)	Sediment Barrier	Each or Foot
(t)	Sediment Mat.....	Square Yard
(u)	Temporary Energy Dissipater	Each
(v)	Temporary Sediment Trap	Each

Item (a) includes:

- providing the Erosion and Sediment Control Manager
- developing, revising, and documenting the ESCP
- mobilization
- monitoring activities to maintain effective functioning
- furnishing, stockpiling, protecting, restocking, and removing emergency materials
- preparing Project for a period of extended non-activity
- inspecting, maintaining, and removing erosion control devices
- restoring, mulching, tacking, and seeding all disturbed ground, work, and storage areas not otherwise covered

When only item (a) is listed in the Contract Schedule of Items, no separate or additional payment will be made for modifications or additions to the ESCP that become necessary for permit compliance during construction.

Partial payments for item (a) will be made as follows:

- When the initial Contractor developed ESCP, narrative, and schedule are complete and accepted, and the initial erosion control devices are installed..... 25%
- When 50 percent of the Contract is complete, excluding advances on materials 25%
- When 75 percent of the Contract is complete, excluding advances on materials 25%
- At completion of the work covered by this section 25%

Item (b) includes protecting exposed slopes with plastic sheets, anchoring devices, and providing toe protection.

Item (f) includes preparing the slope surface and stabilizing exposed soil with erosion matting material and bonded fiber matrix matting application.

Items (h), (r), and (s) includes the biofilter bags, sand bags, and sediment fence as applicable.

Emergency materials that are incorporated into the Project will be paid for under the appropriate items listed in the Contract Schedule of Items.

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.

No separate or additional payment will be made for:

- constructing and removing temporary slope berms
- erosion control for work outside the construction limits including but not limited to borrow pits, haul roads, disposal sites, and equipment storage sites

Water used for non-chemical dust control will be paid according to Section 00340.

Section 00290 - Environmental Protection

Description

00290.00 Scope - This Section describes the Contractor's duties and obligations with respect to protection of the land, waters, air, wildlife, and other environmental resources of the State.

Comply with all applicable federal, State, and local environmental, health, safety, and other laws, acts, statutes, regulations, administrative rules, ordinances, orders, and permits, as they may be amended from time to time (referred to in this Section as "Laws"). Comply with all applicable Laws, whether or not specifically referenced in this Section or elsewhere in the Contract.

Federal, State, and local agencies known to have enacted ordinances and regulations relating to environmental pollution and the preservation of natural resources that may affect the performance of the Contract are listed in 00170.01.

If any provision of these Specifications appears to conflict with one or more Laws, the more stringent requirement shall apply, unless the Engineer directs otherwise in situations where these Specifications are more stringent.

Comply with all additional requirements or Laws imposed by any agency or governmental unit having authority to enforce the Endangered Species Act (ESA) and other Laws.

All penalties assessed against the Agency because of the Contractor's violation of Laws referenced above, or permits applicable to the Project, will be withheld from the progress or final payments according to 00195.50(e).

No condition of the Contract releases the Contractor from any responsibility or requirement under any environmental or other Law.

00290.10 Staging and Disposal Sites - Locate staging areas and disposal sites in previously improved or disturbed sites, including existing roadways, pullouts, turnouts, parking lots, and storage yards that have been compacted, graveled and paved, unless otherwise approved, in writing, by the Engineer.

00290.11 Water Conservation - Minimize use of water by maintaining equipment, immediately fixing water line and container leaks, ensuring water valves are turned off promptly, and using recycled water when feasible.

00290.20 Waste, Hazardous Waste, and Hazardous Substances - Comply with all applicable federal, State, and local Laws as they pertain to the storage, handling, management, transportation, disposal, and documentation of waste, hazardous waste, and hazardous substances.

(a) Hazard Communication - Ensure the following documents are readily available on-site to employees, subcontractors and inspectors:

- Material Safety Data Sheets (MSDS) for all hazardous substances stored or used on-site.
- Written hazard communication program, including employee training documentation.

The Oregon Occupational Safety and Health Division (OR-OSHA) provides guidance to meet these requirements in their publication "Hazard Communication: A Safe-Work-Practice Guide".

(b) Fuel Storage - Store fuel according to the current edition of the International Fire Code and all applicable federal, State, and local Laws.

If total fuel and petroleum storage, in containers 55 gallons or larger, exceeds 1,320 gallons, comply with the applicable spill prevention control and countermeasures (SPCC) requirements of 40 CFR 112. If applicable, submit the professional engineer stamped SPCC plan, 10 days before the preconstruction conference. Comply with the plan and keep a copy on-site and readily available. The SPCC plan may be combined with the Pollution Control Plan required under 00290.30(b).

(c) Waste Management:

(1) General - Prepare a hazardous waste determination for all waste generated on-site to determine whether the waste is classified as hazardous waste, universal waste, excluded waste, waste water, or solid waste. The Agency may provide initial analytical results for some wastes such as lead-based paint and asbestos containing material. Conduct additional testing necessary for waste characterization and disposal using an Oregon Environmental Laboratory Accreditation Program (ORELAP) accredited laboratory, under chain of custody procedures.

Segregate all demolition debris according to its intended end use (reuse, recycle, or dispose). If required, store in designated areas in a manner that prevents contamination to soil and water and prevents fugitive dust emissions. Remove all waste materials recovered from the site unless otherwise approved, in writing. Retain disposal and recycling facility receipts for wastes generated on-site for at least 1 year after completion of the Project. Provide copies of the receipts to the Engineer within 7 calendar days of the disposal or recycling.

Dispose of noxious weeds and Specified Weeds according to Section 01030.

Do not reuse demolition material, coated or treated materials, or concrete and masonry materials in waters of the State or U.S.

(2) Clean Fill - Clean fill, as defined by OAR 340-093-0030, becomes the property of the Contractor at the place of origin.

(3) Reuse, Recycle, and Dispose of Materials - Waste materials become the property of the Contractor at the place of origin. Unless prohibited by Law, treat waste materials according to the following priority:

- Reuse demolition debris.
- Recycle demolition debris.
- If it is not feasible to reuse or recycle, ("feasible" is defined as a facility that is capable of handling the material, will take the material and the cost of transportation plus the cost to reuse or recycle the material is equal to or less than the costs of disposal) dispose of waste material according to the following:

a. Burnable Materials - Dispose of burnable material, that cannot be reused or recycled, according to 00290.30(c-3).

b. Woody Matter - Woody matter may be burned according to 00290.30(c-3) or may be chipped to a size of no more than 3 inches in any direction then uniformly spread over selected landscape areas, as directed, in loose layers not more than 3 inches thick. Burying wood, stumps, or other woody material is not allowed.

c. Preserved and Coated Wood - Dispose of chemically preserved wood, pressure treated wood, and wood coated with latex paint that does not contain lead according to the following:

- Reused whole.
- Provided to others to reuse.
- Burned as fuel at an energy recovery facility with a DEQ or LRAPA stationary source permit.
- Delivered to a DEQ permitted municipal solid waste landfill or a DEQ permitted construction and demolition landfill.

Dispose of wood coated with lead-containing paint at a DEQ permitted municipal solid waste landfill or a DEQ permitted construction and demolition landfill.

Test wood as required by the receiving facility.

d. Concrete and Masonry - 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:

- No part of any piece is within 2 feet of the top, side or end surface of the basement, embankment, or other structures.
- The fill or embankment is constructed and compacted according to 00330.42 and 00330.43.

If the Engineer provides written approval, concrete may be reused as aggregate if it meets the requirements of Section 02610 through Section 02690.

e. Disposal on Agency-Owned Lands - Do not dispose of waste materials on Agency-owned or Agency-controlled lands, except when shown, specified, or allowed in writing to be used as fill. If allowed, place waste materials only at specified locations, as directed.

f. Off-Site Disposal - Dispose of waste at an energy recovery facility with a DEQ or LRAPA Stationary Source Permit, at a permitted landfill, or at other waste disposal facilities as required depending on that type of waste.

Subject to local zoning codes and the requirements of 00280.05, materials that meet the definition of clean fill may be placed on other properties in a manner consistent with environmental requirements, and with written permission of the property owner. Furnish the Engineer a copy of the signed agreement with the owner before placement of the clean fill material. Do not place the clean fill material at locations that are visible from a public highway, road, or street unless the site is zoned and licensed for landfill.

(d) Hazardous Waste Management - Determine the generator category for the Project, based on the amount and type of hazardous waste generated. Use the following definitions. If they differ from current Laws, use the current Laws.

- **Conditionally Exempt Generator** - A conditionally exempt generator (CEG) generates 220 pounds or less of hazardous waste per month or 2.2 pounds or less of acutely hazardous waste per month and accumulates up to 2,200 pounds hazardous waste or 2.2 pounds acutely hazardous waste on-site.

- **Small Quantity Generator** - A small quantity generator (SQG) generates 220 pounds to 2,200 pounds hazardous waste per month, can accumulate up to 13,200 pounds hazardous waste on-site (or more with a permit), and ship hazardous waste off-site within 180 days of generation.
- **Large Quantity Generator** - A large quantity generator (LQG) generates more than 2,200 pounds hazardous waste per month or more than 2.2 pounds acutely hazardous waste per month, has no accumulation limit, but ship all hazardous waste off-site within 90 days of generation.

In addition to current Laws, comply with the following:

- If the Project generator category is SQG or LQG, or if it requires a hazardous waste identification number, obtain a Resource Conservation and Recovery Act (RCRA) site identification number from the DEQ. Pay all fees and complete the RCRA application form as follows:
 - List the Contractor as the Site Contact, the Site Operator, the Hazardous Waste Form Contact, and the Hazardous Waste Fee Contact.
 - List ODOT as the Site Location, the Land Owner, and the Legal Owner.
 - Fill in the Comments section with the following statement:

"[Contractor name] is responsible for the following: All hazardous waste management on site for the duration of this construction project, for delivery of the waste to a permitted recycling or disposal facility, and for all forms and fees associated with the hazardous waste management including cancellation of the RCRA site identification number at the end of the Project. ODOT is the owner of the waste and maintains long term responsibility for the waste as required by RCRA, excluding all wastes generated solely from materials brought to the site by the Contractor, which remain the property of the Contractor."
 - The Contractor may sign hazardous waste manifests for the off-site shipment of hazardous wastes as the "offeror" rather than as the "generator".
- Maintain all required waste management records, including monthly hazardous waste generation records, manifests, recycling and disposal receipts, test results, and annual DEQ reports. Submit monthly records to the Engineer by the fifteenth day of the following month and submit DEQ reports to the Engineer concurrently with DEQ. Keep copies for at least 3 years following completion of the Project and resolution of any regulatory violations or citations.
- 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.

- If the project is SQG or LQG, retain a Certified Hazardous Materials Manager (CHMM) in good standing and with experience managing the hazardous wastes associated with the Project to oversee waste management at the site.
- All employees involved in the handling and management of CEG hazardous waste shall comply with the federal and State Laws for hazardous waste management. All employees involved in the handling of SQG and LQG hazardous waste shall be trained according to federal and State Laws. For LQC hazardous waste projects, keep employee training records on-site and readily available.
- If the quantity of hazardous waste generated in a month changes the generator category, immediately implement the requirements for the new category and comply with them for the remainder of the year. Complete the new documentation and training requirements within 30 calendar days of the change.
- Ensure hazardous waste containers are clearly and visibly labeled with the contents and accumulation start date, compatible with the contents and in good condition. Store them in a designated weather-protected area that is secured from public access, has secondary containment adequate to contain a release, and has sufficient aisle space to safely maneuver containers and respond to spills (minimum 30 inches).
- If hazardous waste will be treated on-site, obtain approval from DEQ and the Engineer for each specific treatment or recycling process, treat wastes within accumulation tanks or closed containers that meet RCRA requirements, conduct treatment within the storage time for the applicable generator category, maintain current copies of all required notifications and waste analysis plans readily available on-site and request DEQ technical assistance prior to starting any on-site recycling or treatment.

(e) Hazardous Substance Transportation - Comply with the following requirements for transportation of hazardous substances and hazardous waste:

- Train all employees involved in transportation and shipping as required by US DOT.
- Use drivers who have a commercial driver's license with a hazardous materials endorsement when required.
- Ship hazardous wastes from SQG and LQG projects using a DEQ registered hazardous waste transporter under a hazardous waste manifest.
- Ensure shipments are appropriately packaged and labeled, and vehicles are appropriately placarded.
- Submit copies of the completed manifests and documentation to the Engineer and retain copies for at least 1 year.

(f) Unexpected Contamination - If, during construction, unanticipated hazardous substances are discovered that threaten the health and safety of workers, the public, or the environment, do the following:

- Immediately remove all affected employees and secure the area to prevent access.
- Notify the Engineer immediately and provide written notification within 24 hours, setting forth a description of the hazardous substances encountered.

The Engineer will attempt to resolve the unanticipated situation expeditiously according to 00140.40. Delays to work due to the discovery of unexpected contamination shall be considered for exclusion from Contract time according to 00180.50(e).

(g) Spills and Releases - Obtain a response agreement with a professional on-call spill response team. The professional on-call spill response team, identified in the pollution control plan (PCP), agrees to be available and respond to spills that cannot be cleaned up with on-site

resources. A professional spill response team is a company or section of a company specifically dedicated to hazardous materials emergency spill response, insured, and bonded for hazardous materials cleanup, and employing experienced personnel certified according to 29 CFR 1910.120.

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:

- Immediately commence response actions to protect human health and the environment. Follow the PCP, SPCC and Contingency Plan, as appropriate. If any of the provisions in these plans conflict, implement the actions providing the greatest protection of public health and safety and the environment.
- If the spill cannot be safely contained and cleaned up with on-site resources, activate the professional on-call spill response team.
- Immediately notify the Engineer.
- If the quantity released exceeds the State or Federal reportable quantities, or if the release impacts or threatens to impact any surface water body, immediately notify DEQ by the Oregon Emergency Response System (OERS) at 1-800-452-0311 and the EPA and USCG through the National Response Center (NRC) at 1-800-424-8802 (Federal reportable quantities or spills impacting or potentially impacting water only). If the quantity released is unknown, proceed with OERS and NRC notifications. Reportable quantities are listed at 40 CFR 302.4 and OAR 340-142-0040 to OAR 340-142-0050.
- Conduct cleanup of the released material according to all applicable Laws and DEQ requirements. Cleanup to background levels unless otherwise agreed to by the Agency in writing.
- Provide a written report to the Engineer, using the DEQ Spill/Release Report form, within 10 calendar days of completing spill response, but no more than 30 calendar days after the initial event. If the spill was reported to DEQ, submit the report to DEQ concurrently. Include a description of how future releases will be prevented.

00290.29 Health and Safety - Comply with all applicable health and safety Laws as they pertain to the hazardous substances and wastes used, stored and generated on-site. If any of these requirements are in conflict, the more stringent requirements apply.

00290.30 Pollution Control - 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 00140.50 and ORS 279C.525.

(a) Pollution Control Measures - Comply with the following requirements:

(1) General:

- Allow no pollutant of any kind (e.g., petroleum products or fresh "green" concrete) to come in contact with an active flowing stream or waters of the State and U.S.
- Comply with the erosion prevention and sediment control requirements of Section 00280 and all applicable DEQ NPDES 1200 Permit requirements.
- Do not cause turbidity to waters of the State and U.S. outside of regulated levels.

(2) Materials and Waste Management:

- Store construction equipment, materials and debris in a manner that prevents contamination of water and soil and prevents fugitive dust.
- Store hazardous substances in the original containers or labeled compatible containers according to State Fire Marshal's regulations, International Fire Code and product MSDS.
- Locate areas for storing fuels and other potentially hazardous materials at least 150 feet away from any waters of the State and U.S. or storm inlet, unless otherwise approved by the Engineer.
- Dispose of material waste according to 00290.20.
- Do not use treated timbers within any waters of the State and U.S.

(3) Equipment Fueling, Repair and Maintenance:

- Promptly correct or repair operational procedures, leaks, or equipment problems that may cause pollution at the Project Site. If soils or other media become contaminated as a result of operational procedures or equipment problems, remove and dispose of them according to applicable Laws and 00290.20(g).
- Locate areas for parking, refueling and servicing mobile equipment and vehicles at least 150 feet away from any waters of the State and U.S. or storm inlet, unless otherwise approved by the Engineer.
- For large equipment that is not easily moved, prevent fuel and operating fluids from reaching any waters of the State and U.S. or storm inlet by, at a minimum, using spill containment systems designed to completely contain potential spills during all refueling and equipment repair operations.

(4) Equipment Cleaning and Washouts:

- Inspect and clean all equipment prior to operating it within 150 feet of any waters of the State and U.S. or storm inlet. Check for fluid leaks and remove all external oil, grease, weed seed, and dirt.
- Do not discharge untreated wash and rinse water into the any waters of the State and U.S. or storm inlet.
- Establish wash areas that contain all fluids and debris, at least 150 feet from any waters of the State and U.S. or storm inlet, such that untreated waste water does not impact those systems.
- Clean concrete equipment in washout areas that contain all fluids and debris. Recycle washout materials into fresh mixes or dispose of according to applicable permits.

(5) Off Site Tracking:

- Limit water leakage from trucks carrying saturated soils to less than 1 gallon per hour before allowing them to leave the Project Site.
- Remove all loose dirt and debris from trucks prior to leaving the Project Site.

(6) Other Spill Prevention and Response Measures:

- Inspect heavy equipment, storage containers, staging areas and other potential sources of hazardous substances daily to identify and prevent potential releases.
- If flooding of the Project site is expected to occur within 24 hours, evacuate areas used for staging, access roads, or storage and remove materials, equipment, and fuel.

- Immediately contain and repair leaking equipment or containers and cleanup any releases according to 00290.20(g).
- Maintain hazardous material containment kits and spill containment kits on-site to facilitate the cleanup of hazardous material spills on dry-land and/or waters of the State and U.S.

(b) Pollution Control Plan - Develop and submit a pollution control plan to prevent pollution related to Contractor operations for approval 10 calendar days before the preconstruction conference. Maintain a copy of the PCP on-site at all times during construction activities, readily available to employees and inspectors. Ensure that all employees comply with the provisions of the PCP.

Include the following information in the PCP:

- Identify a professional on-call spill response team.
- Identify all contractor activities, hazardous substances used and wastes generated.
- Describe how hazardous substances and wastes will be stored, used, contained, monitored, disposed of and documented. Include pollution prevention, spill response, waste reduction, dust prevention, off site tracking prevention, washout facility design, vehicle and equipment fueling and maintenance procedures, employee training and emergency contact information.
- Include the waste determination results from 00290.20(c-1). Provide reuse, recycle, and disposal options, the reason for selecting that alternative, and estimated quantities for each reuse, recycle, and disposal option.
- Include or refer to the SPCC plan and the hazardous waste contingency plan, if required.
- Include scaled site plans showing locations for hazardous substance storage, spill response equipment, communications equipment and fire suppression equipment.

A "Pollution Control Plan Contractor Packet" is available from the Agency.

(c) Air Pollution Control Measures - Comply with ORS 468, ORS 468A, OAR 340-014, OAR 340-200 through OAR 340-268, and all other applicable Laws.

(1) Vehicle and Equipment Idling - Establish truck staging areas for diesel-powered vehicles located where truck emissions have a minimum impact on sensitive populations, such as residences, schools, hospitals and nursing homes.

Limit idling of trucks and other diesel powered equipment to 5 minutes, when the equipment is not in use or in motion, except as follows:

- When traffic conditions or mechanical difficulties, over which the operator has no control, force the equipment to remain motionless.
- When operating the equipment's heating, cooling or auxiliary systems is necessary to accomplish the equipment's intended use.
- To bring the equipment to the manufacturer's recommended operating temperature.
- When the outdoor temperature is below 20 °F.
- When needed to repair equipment.
- Under other circumstances specifically authorized by the Engineer.

(2) Dust Control and Permitting - Prevent airborne dust and fugitive dust emissions from construction activities including rock, concrete, and asphalt crushing operations and obtain

permits according to 00160.70. Do not use oil, waste, waste water, or other illegal materials as dust suppressants.

(3) Burn Restrictions - Burn wastes only if open burning is allowed by State, LRAPA, and local burning Laws. Obtain and comply with all required permits including DEQ permits required by OAR 340-264-0010 through OAR 340-264-0020, LRAPA permits, and local fire district permits. Provide copies of all permits to the Engineer prior to burning. Do not conduct burning within riparian areas. Conduct burning at locations where existing structures will not be damaged and where smoke will not impact traffic. Do not burn the following materials on-site:

- Rubber products
- Tires
- Plastic
- Wet garbage
- Petroleum and petroleum treated materials
- Asphalt or industrial waste
- Any material that creates dense or noxious odors
- Painted materials
- Asbestos, mercury or PCB containing materials or equipment
- Hazardous wastes
- Scrap wiring or electrical equipment
- Painted or treated wood

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. Contact the local fire department for applicable restrictions.

00290.32 Noise Control - Comply with ORS 467, OAR 340-035, all other applicable Laws, and the following construction noise abatement measures:

- Do not perform construction within 1,000 feet of an occupied dwelling on Sundays, legal holidays, or between the hours of 10:00 p.m. and 6:00 a.m. on other days, without the approval of the Engineer.
- Use equipment with sound control devices no less effective than those provided on the original equipment. Equipment with un-muffled exhausts is prohibited.
- Use equipment complying with pertinent equipment noise standards of the EPA.
- Do not drive piling or perform blasting operations within 3,000 feet of an occupied dwelling on Sundays, legal holidays, or between the hours of 8:00 p.m. and 8:00 a.m. on other days, without the approval of the Engineer.
- Mitigate the noise from rock crushing or screening operations performed within 3,000 feet of all occupied dwellings by placing material stockpiles between the operation and the affected dwellings, or by other means approved by the Engineer.

If a specific noise impact complaint occurs during the construction of the Project, one or more of the following noise mitigation measures may be required, at no additional cost to the Agency, as directed by the Engineer:

- Locate stationary construction equipment as far from nearby noise sensitive properties as feasible.
- Shut off idling equipment.
- Reschedule construction operations to avoid periods of noise annoyance identified in the complaint.
- Notify nearby residents whenever extremely noisy work will be occurring.
- Install temporary or portable acoustic barriers around stationary construction noise sources.
- Operate electric-powered equipment using line voltage power or solar power.

00290.34 Protection of Fish and Fish Habitat - Comply with the Laws of the Oregon Department of Fish and Wildlife, National Marine Fisheries Service, and U.S. Fish and Wildlife Service, and the rules and practices developed through the Oregon Plan for Salmon and Watersheds. Conduct operations to avoid any hazards to the safety and propagation of fish and shellfish in waters of the State and U.S.

(a) Regulated Work Areas - Perform work within regulated work areas only within the regulated in-water work periods. Do not allow equipment to enter any waters of the State or U.S. or the regulated work area except as allowed in permits issued for the Project.

The regulated work area, if any, will be identified in the Special Provisions.

(b) Prohibited Operations - Except where allowed by the Contract or by permit, do not:

- Blast underwater
- Use water jetting
- Release petroleum products or chemicals in the water
- Disturb spawning beds
- Obstruct stream channels
- Cause silting or sedimentation of waters of the State and U.S.
- Use treated timbers within the regulated work area
- Impede adult and juvenile fish passage, including intermittent streams

00290.36 Protection of Wildlife and Wildlife Habitat - Comply with the Laws of the Oregon Department of Fish and Wildlife and U.S. Fish and Wildlife Service. Conduct operations to avoid any hazards to the safety and propagation of wildlife.

(a) Migratory Birds - Comply with the Migratory Bird Treaty Act (16 U.S.C. 703-712) which protects most species of birds in Oregon and prohibits the removal of nests containing eggs and dependent young. Migratory birds include most birds in Oregon, except pigeons, house sparrows, and starlings. Except where allowed by the Contract and by permit, do not disturb a migratory bird nest containing eggs or dependent young, or the surface the nest is built on.

If migratory bird nests are encountered that contain eggs or dependent young, stop all actions that may disrupt the nest and contact the Engineer. Do not resume work, that may disrupt nesting, until approved by the Engineer.

(b) Bats - Avoid destruction of bat colonies as shown.

00290.38 Protection of Plants - Plant habitats to be protected will be shown with the plant habitat boundaries flagged by the Engineer. Avoid destruction of plant habitats by ensuring construction

personnel, equipment, and associated pollutants, including sediment, chemical contaminants, discharge water, non-native grass and weed seed, do not enter the habitat.

00290.40 Protection of Forests - - Obtain necessary permits according to ORS 477.625 and ORS 527.670, and comply with the Laws of any authority having jurisdiction for protection of forests.

00290.41 Protection of Wetlands - Comply with and require that all the Contractor's employees, agents, and subcontractors on the Project Site comply with the following:

- Clean Water Act Section 404 (33 U.S.C. 1344); Federal Rivers and Harbors Act of 1899, Section 10 (33 U.S.C. 403 et seq.).
- ORS 196.800 to ORS 196.990 (Oregon Removal-Fill law).
- ORS 390.805 to ORS 390.925 (Oregon Removal and Filling in Scenic Waterways law).
- All other applicable Laws governing preservation of wetland resources.

For the purposes of this Section, "wetland" or "wetlands" shall be understood to include wetlands as defined in 00110.20, as well as other jurisdictional waters of the State and U.S.

Willful violation of permit conditions and applicable laws exposes the offending Contractor and other violators to criminal and civil sanctions. Civil sanctions include, but are not limited to, the offender's sole liability for all costs associated with site restoration, maintenance and additional mitigation work required by federal or State authorities.

(a) Identifying Wetlands - Wetlands known to be on the Project Site will be shown and identified either as "permanently filled or excavated" or as "temporarily impacted". Wetlands to be protected will be shown as "no work zones".

(b) Disturbing Wetlands - If wetlands are shown, meet with the Agency Wetland Specialist, the Engineer, and inspector on-site prior to moving equipment onto the site or beginning any work, to ensure that all parties understand the locations of wetlands and the measures that shall be taken to protect them.

Ensure protection of no work zones as follows:

- Fence off no work zones using pedestrian safety fence or approved equivalent.
- Except as authorized by the Engineer for the purpose of installing or maintaining approved wetland protective measures, keep all persons, equipment and materials off no work zones.
- The Engineer has the authority to bar from the Project any person entering a protected site other than for the purpose of installing or maintaining protective measures.

Install all site protection for wetlands required by the Plans and Special Provisions prior to staging equipment or starting work near the sites.

The Engineer may suspend work until the Contractor, Engineer, Agency Wetland Specialist, and other required federal and State personnel, if any, meet to determine damage to the site and the nature and scope of necessary site restoration and maintenance. The Engineer may require the Contractor to submit a written plan for protection of other sites for the duration of the Project before work resumes.

00290.50 Protection of Cultural Resources - Comply with all Laws governing preservation of cultural resources. Cultural resources may include, but are not limited to, dwellings, bridges, trails, fossils, and artifacts.

If cultural resources are encountered on the Project area or in material sources, and their disposition is not addressed in the Special Provisions, do the following:

- Immediately discontinue operations or move to another area of the Project Site or material source.
- Protect the cultural resource from disturbance or damage.
- Notify the Engineer.

The Engineer will do the following:

- Arrange immediate investigations.
- Arrange for disposition of the cultural resources. The Engineer may direct the Contractor to perform salvage operations according to 00140.30 or 00140.60.
- Notify the Contractor when to begin or resume construction operations in the affected area.

00290.51 Protection of Sensitive Cultural Sites - Comply with and require that all the Contractor's employees, agents, and subcontractors on the Project Site comply with all Laws applicable to the preservation and protection of sensitive cultural sites. The existence of any sensitive cultural sites affecting the Project, and the mandatory preservation and protection measures applicable to the sites, are determined according to the Laws including, but not limited to the following:

- National Historic Preservation Act (NHPA) of 1966, Section 106, codified in 36 CFR Part 800 (Protection of Historic Properties).
- ORS 97.740 to ORS 97.760, ORS 97.990(5), and ORS 97.990(6) (Indian Graves and Protected Objects).
- ORS 358.905 to ORS 358.955 (Archaeological Objects and Sites).
- ORS 390.235 to ORS 390.240 (Archaeological Sites and Historical Material).

Ensure protection for sensitive cultural sites according to the following:

- Except as authorized by the Engineer for the purpose of installing or maintaining approved sensitive cultural site protective measures, keep all persons, equipment, and materials off known sensitive cultural sites.
- Install all sensitive cultural site protection required by the plans and Special Provisions prior to staging equipment or starting work near the sites.
- Instruct all Contractor and subcontractor personnel to regard the locations of these sites and their contents as confidential.

The Engineer has the authority to bar from the Project any person entering a protected site other than for the purpose of installing or maintaining protective measures.

If sensitive cultural sites are known to be on the Project, additional information will be provided in the Special Provisions.

(a) Disturbing Known Sensitive Cultural Sites - Willful violation of Laws exposes the offending Contractor and other violators to criminal and civil sanctions. Civil sanctions include, but are not limited to the offender's sole liability for all costs associated with monitoring, recovery, site restoration or other archaeological work required by Tribal, federal, and State authorities. Costs can exceed \$100,000.

The Engineer may suspend work until the Contractor and the Engineer meet to determine damage to the site and the nature and scope of necessary site restoration and maintenance. The Engineer may require the Contractor to submit a written plan for protection of other sites for the duration of the Project before work resumes.

(b) Disturbing Unknown Sensitive Cultural Sites - If the Contractor finds a previously undiscovered sensitive cultural site, immediately cease all activities at that site, follow procedures listed in 00290.50, and notify the Engineer. If the Contractor inadvertently disturbs unknown sensitive cultural sites, but immediately ceases all activities and follows the procedures listed in 00290.50, the Agency, to the extent permitted by Article XI, section 7 of the Oregon Constitution and by the Oregon Tort Claims Act, will indemnify, within the limits of the Tort Claims Act, the Contractor for costs associated with monitoring, recovery, site restoration or other required archaeological work, provided neither the Agency nor the State shall be required to indemnify the Contractor for such costs resulting from, arising out of or relating to the willful misconduct, negligence or other wrongful acts attributable to the Contractor or other persons on the Project site.

Delays to work due to new cultural resource finds will be considered for exclusion from Contract time according to 00180.50(e).

Work required for monitoring and site restoration for newly discovered sensitive cultural sites encountered by the Contractor will be paid according to 00195.20.

Measurement

00290.80 Measurement - No measurement of quantities will be made for work performed under this Section.

Payment

00290.90 Payment - 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".

Partial payments will be made as follows:

- When the initial PCP is approved 20%
- When 30 percent of the Contract is complete, excluding advances on materials 20%
- When 60 percent of the Contract is complete, excluding advances on materials 20%
- When 90 percent of the Contract is complete, excluding advances on materials 20%
- At completion of the Contract and all waste is removed from the Project site and all reports, receipts, and documents have been submitted 20%

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.

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

- Contractor's Pollution Control plan
- Spill Prevention Control and Countermeasures plan
- Hazardous Waste Contingency plan
- hazardous waste determination
- determination of generator category
- the Certified Hazardous Materials Manager
- the Professional on-call Spill Response Team