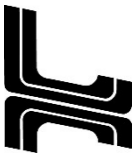
Oregon Department of Transportation

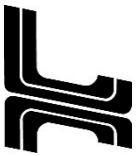
Environmental Construction Inspector Training Manual

2025-2026



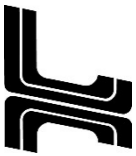
Environmental Construction Inspector

2025-26



Environmental Construction Inspector

2025-26



Environmental Construction Inspector

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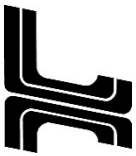

Environmental Construction Inspector

2025-26

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Welcome

Welcome to the Environmental Construction Inspector Training 2025-2026 Training Season

1

Housekeeping Items

- Restrooms
- Breaks often
- Lunch on your own
- Turn cell phone ringers off
- Construction Training Team
  odotconstructiontraining@odot.oregon.gov
  503-437-4523

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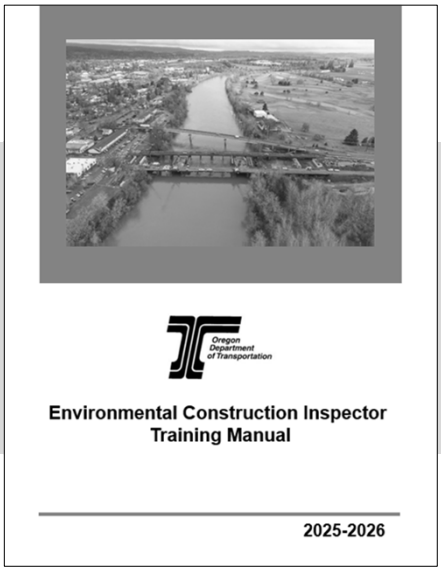
2

Training Manual



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Resources Used during Training

- General Construction Inspector Training Manual (provided)
- 2024 Standard Specifications (Student)
- Calculator (Student)

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Inspection Certification Program

Who is required to be certified?

- All inspectors
- Program makes allowances for non-certified personnel
- This certification covers Erosion and Sediment Control requirements on the Agency side

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Inspection Certification Program continued

Certification Process

- Pass an examination
- Training available, but not required
- Challenge any exam without taking the class

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Certification Exam

- Exam tomorrow after lunch
- Open book
- Maximum 3 hours
- 80% passing
- Results in ~2 weeks
- Certification is good for 5 years

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Training Objectives

- Define inspectors' roles, responsibilities and authority.
- Identify contract documents, permits and resources and how to use them.
- Provide an overview of key inspection elements and materials.
- Provide individuals with the basic tools and knowledge to become productive and successful Certified Environmental Inspectors.

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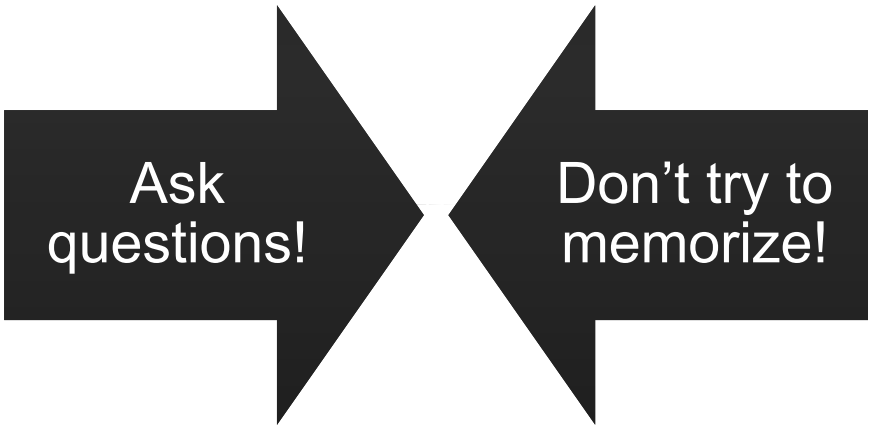
Be Present



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Training Presenters

Today

Magnus Bernhardt
- 00280's / Permits
- Roadside Development

Cory Engel
- Turbidity Monitoring

Shawn Rapp
- Hazardous Materials

Peter Morrow
- Protection of Aquatic Wildlife

Tomorrow

Paul Benton
- Protection of Terrestrial Wildlife

Jessica Curteman
- Protection of Cultural Resources

Christian T. Jilek
- Region Environmental Coordinator

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Introductions

- Name
- Organization
- Years of experience as an inspector

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AASHTOWare Project

AWPAdmin@odot.oregon.gov

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What type of data will Inspectors input?

Civil Rights and Labor

- Field Interviews
  - Employee Interviews

Construction Materials

- Daily Work Report (DWR)
  - Formerly General Daily Progress Reports
  - Weigh memos attachments
- Pay notes generated from DWR
- Sample Tests

13

What type of data will Externals input?

Civil Rights Labor

- Certified Payrolls

Primes have ability to review data submitted by subs and technicians in AWP prior to ODOT's review.

Construction Materials

- Subcontracts
- Daily Source Reports (DSR)
  - Updating production quantity
  - Identify how much material has been produced
- Submit mix designs
- Managing testing labs testers
- Sample Records - access to create records and enter test data
- View Sources and source material

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AASHTOWare Project

Visit the APOST Website:

https://www.oregon.gov/odot/Business/AWP/Pages/Home.aspx

Subscribe to The AWP Front Page:

https://public.govdelivery.com/accounts/ORDOT/subscriber/new?category_id=ORDOT_C55

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INSERT TAB

Unit 1
280s / Permit

Erosion and Sediment Control: Specifications, Contract Compliance and Permit Requirements

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1

Topics of Discussion

- Erosion Control is important. It is environmental protection and a Contract Requirement.
- Regulations, Regulatory Agencies and Permits – the 1200-CA is updated and eagerly enforced.
- Specifications:
  - Section 00280 – Erosion and Sediment Control
  - Section 01030 – Seeding
- Erosion and Sediment Control BMPs and Standard Drawings
  - The what and how of erosion and sediment control.

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Summary of Terms

- **BMP** – Best Management Practice
- **ESCP** –Erosion and Sediment Control Plan
- **ESCM** – Erosion and Sediment Control Manager
- **ESC** – Erosion and Sediment Control
- **EMP** – Environmental Management Plan
- **NPDES** – National Pollution Discharge Elimination System
- **PCP** – Pollution Control Plan
- **DEQ** – Department of Environmental Quality
- **USACE** – US Army Corps of Engineers

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00280.00 Scope – Specs are Contract Conditions

- This work consists of providing effective functioning erosion and sediment control until the site is permanently stabilized.
- This work consists of…compliance with NPDES 1200-CA Permit when the permit is applicable.
- Contractor is responsible to comply with all specification conditions.

ESCM directs Contractor in ESC work.

Inspector verifies Contractor performs work.

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4

Regulations and Regulatory Agencies

- National Pollutant Discharge Elimination System (NPDES) is a stormwater discharge permit for construction activities.
- **1200-CA** is ODOT's NPDES permit, covers multiple projects of similar type – Having this permit in-hand eliminates months of onerous work during Project development.
- Oregon **DEQ** administers 1200-CA permit.
- **FAHP – Federal Aid Highway Program**
  - Ties Federal funding to compliance with Endangered Species Act (ESA).
  - Sedimentation can damage critical habitat of Endangered Species.
  - FAHP compliance is monitored by ODOT Environmental.

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Good Permit Compliance Benefits ODOT

- ODOT is a trusted partner, with the native Tribes and multiple regulatory agencies. These agencies regulate impacts to fish, wildlife, natural landscapes, clean water and clean air.
- ODOT's reputation as a trusted partner is reinforced by our compliance with permit requirements.
- Each of ODOT's 5 Regions hold a1200-CA Permit. Federal Funding is enabled by the FAHP. These established permits are enabled by our trusted-partner relationship with other agencies.

This is a sweet deal. Let's not mess this up.

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ALL projects must comply with the 00280 Section

Projects with areas of disturbance one acre or more must comply with the 1200-CA permit.

Areas of disturbance in staging areas are added to Project areas of disturbance in determining 1200-CA coverage.

7

On Projects covered by the 1200-CA permit: Contractor Must Revise ESCP Prior to Beginning Construction to Provide the following:

- ESCP is posted as Bid Reference Document.
- List Sub-Contractors working on Project site.
- List of potential polluting activities/materials.
- Provide name and position for all personnel involved with every aspect of ESC during construction, including **ESCM** with name, title, contact information and certification.
- Show staging area, stockpile area, materials processing area with appropriate ESC BMPs.
- EMP if applicable.

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1200-CA Stormwater Discharge Permit and 00280 Section: In place to prevent…

Sediment leaving the site

Exceedance of water quality standards

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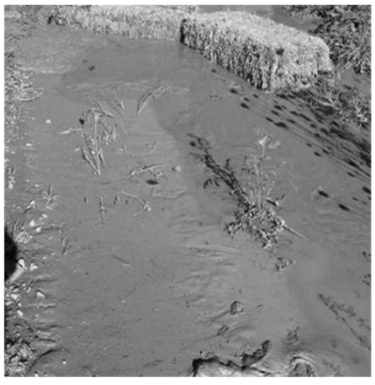
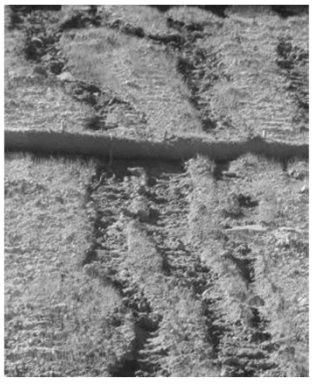
1200-CA Stormwater Discharge Permit and 00280 Section: In place to prevent…

Evidence of Erosion





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Evidence indicates there was turbid discharge

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1200-CA Stormwater Discharge Permit

In place to prevent from leaving site, or entering water…

- **Visually turbid discharge** or sediment or discharge that result in exceedances of water quality standards (10% above background
- Fuels, oils or solvents used with vehicles or equipment
- Wastewater from washing construction materials from tools or equipment, or wastewater containing soaps or solvents used in washing equipment or vehicles.
- Wheel wash wastewater
- Saw cut slurry and toxic or hazardous substances

Specifications support these permit requirements

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ODOT 1200-CA Permit

- Contractor is provided a copy of the permit to the at the pre-con meeting.
- A copy of the permit must be kept on an active site.
- Local permits may also be required. (Local regulations may be more stringent.)

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Recent 1200-CA Update fully in Effect

The 1200-CA Permit and the suite of related documents are located in the ODOT Erosion and Sediment Control web page under **Guidance Materials.**

Read the 1200-CA permit and Appendices A and B. They are written in plain language, and it defines requirements.

00280.00 requires compliance with NPDES 1200-CA Permit.

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Erosion and Sediment Control Plan (ESCP) consists of:

- The Contract Erosion and Sediment Control Plan.
- Implementation of the ESCP.
- Monitoring (ESC) features and filling out monitoring report.
- Monitoring receiving waters **With submittals to DEQ.**
- Maintenance and repair of ESC features **With submittals to DEQ.**
- Environmental Management Plan (EMP) attachment (When required).
- Updates to ESCP to keep document representative of current Project status **With submittals to DEQ.**
- **Submittals to DEQ** reporting updates, maintenance and repair actions, non-compliance and violations and clean-ups and BMP repair.

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Contractor Shall Revise BMPs to address and ESCP to Reflect Current Site Conditions

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00280.30 - ESCM Must Revise ESCP Within 7 Days of:

- Changes in Construction Plans that impact ESC
- Changes in BMPs including type, design, locations or additions
- Expansion of Construction area
- Changes resulting from Corrective Actions
- Changes required by DEQ or Agency
- Changes of contractors or ESC subcontractors
- Changes in personnel involved in any aspect of ESC
- Change of ESCM

ESCM provides ESCP updates to Agency for submittal to DEQ W/in 30 days.

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Required to have available on site:

- Monitoring reports – in chronological order
- ESCP – **current revision** – electronic access is OK (some locations may not have internet access!).
- Names and contact information of all personnel involved in all aspects of ESC and complying with the 1200-CA permit.
- All updates, revisions, corrective actions, monitoring and reporting is the responsibility of ESCM.

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1200-CA (Appendix A)
Include with ESCP – EMP when applicable

- ESC POR, with Region HazMat, identifies contamination type and location on ESC Plans and develops EMP.
- Contractor owns Means and Methods and may develop own EMP for submittal and approved by DEQ prior to beginning work on areas of contamination.
- When contamination is found during construction, stop work in area of contamination. Contractor develops EMP and gets DEQ approval for EMP prior to resuming work in that area.
- Agency Responsible Official (RO) submits EMP to DEQ and pays EMP review fee.
- On Projects **NOT** covered by 1200-CA, comply with **00290.30-Pollution Control.**

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Natural and undisturbed 50’ Buffer Zones required between work and waters of the State

(Appendix B provides guidance)

- Protect and preserve riparian vegetation and Buffer Zone.
- When conditions do not provide 50′ natural buffer, POR will design erosion and sediment controls to protect inadequate buffer and provide the protection equivalent to a 50′ buffer.
- Respect Buffer Zones the same as any no-work-area.

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Monitoring – 00280.62: ESCM fills out form 734-2361

- Confirm all BMPs are installed correctly and are providing effective function.
- Confirm conditions that could release pollutants (leaks, spills etc.) are addressed.
- Identify areas where new BMPs or maintenance of BMPs are needed.
- Identify areas of visible erosion or sedimentation.
- Document all findings and provide photos.

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00280.62 - Monitoring is required within 24 hours after all storms that generate runoff.

Discharge shown is **not** cause by storm.
Paying attention to what occurs on project site is required.

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10/11/16 (note the date)

00280.30 – ESCM must report permit violations to Agency.
Self reporting is foundation with ODOT's trusted reputation.

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Inspection report after storm: 10-9-16.

Falsification of reports is a Class C felony.

EROSION AND SEDIMENT CONTROL MONITORING

PROJECT NAME: FFO-US20 PME: UPRR - EDDYVILLE (PHASE 4) SECTION | INSPECTION DATE: 10/09/2016 | KEY NUMBER: 18323 | CONTRACT NUMBER: 14890

1. Identify the erosion control measures from ESCP:

EROSION CONTROL MEASURES	FUNCTION AS DESIGNED?	DESCRIBE WHAT IS NOT FUNCTIONING	LOCATION OF DEFICIENCY	CORRECTIVE ACTION	DATE COMPLETE	IS THERE VISIBLE OR MEASURABLE SEDIMENT LEAVING THE SITE?	HAS SEDIMENT ENTERED A BODY OF WATER?
Sediment Fence	YES				06/08/2016	NO	NO
Sediment Fence	YES				06/23/2016	NO	NO
Sediment Fence	YES				07/06/2016	NO	NO
Check Dam	YES				08/17/2016	NO	NO
Sediment Fence	YES				08/31/2016	NO	NO
Sediment Barrier	YES				08/31/2016	NO	NO
Matting	YES				09/30/2016	NO	NO
Sediment Fence	YES				10/01/2016	NO	NO
Construction Entrance	YES				10/05/2016		

DESCRIBE ANY EROSION CONTROL MEASURES NOT LISTED ABOVE

2. Add or attach any additional information as needed:

ADDITIONAL INFORMATION MAY BE INCLUDED IN THIS FIELD OR ATTACHED AND SUBMITTED WITH THIS FORM

Rain again today. No work on the site at all. Everything is running clear.

3. Weekly rainfall amounts:

RAINFALL REPORTING STATION	MONITORING PERIOD		24-HOUR RAINFALL AMOUNT						
PME Office	10/9/16	☒ ACTIVE ☐ INACTIVE	ENDING DATES	1.04 10/9					

4. Signature

ESCM PRINTED NAME	ESCM SIGNATURE	DATE	CERT NO.	PHONE
		10/09/2016	80486PE	541-974-4094

Minimum Monitoring Requirements: Inspect all erosion control facilities at least every 7 calendar days on active sites and two weeks on inactive sites. Inspect daily during storm water or snowmelt runoff and within 24 hours after more than ½ inch of rain per 24 hour period. See Section 00280 for additional information.

Environmental impacts, criminal liability and damage to reputation, are risks to the Agency.

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Install <u>all</u> BMPs shown on ESCP!
Here perimeter control Was Specified:

00280.40
"...Install these ESC before performing clearing, grading, or other land altering activities.**"**

ESCM leads on erosion and sediment control. ODOT verifies risk is addressed and contracted work is done.

ODOT IS RISK ADVERSE

ODOT MATERIALS & INSPECTION Erosion and Sediment Control addresses **risk.**

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Non-Compliance Requires Self Reporting by Permittee and Corrective Actions by Contractor

- Mistakes happen. Self-Reporting sediment discharge to DEQ builds trust.
- DEQ would be suspicious if conditions were always perfect.
- **00280.64(a) and (b)** - Within 24 hours ODOT does the following:
  - Provide narrative of non-compliance
  - Provide photos of discharge
  - Clean up sediment or discharge
  - Provide plans for correcting ESC failure
- Follow non-compliance report with corrective action.

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Non-Compliance Require Immediate Corrective Actions by Contractor

- Address conditions that caused discharge
- Clean up sediment contamination left by discharge
- Complete minor corrective actions by close of next business day
- Install new or replacement BMPs, required by Corrective actions, within 24 hours
- If completion of corrective actions within 24 hours is not feasible, document the schedule for implementing the corrective action
- Revise ESCP to reflect corrective action repairs within 7 days

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Corrective Action Report Include

- Site name and Project's Permit ID number
- Description and cause of non-compliance
- Photos of discharge and [NTU] of receiving water
- Period of non-compliance
- Names of person(s) conducting monitoring
- Corrective steps taken and timeline of the corrective action
- Note of weather that may have contributed to the discharge
- Revisions of ESCP to show corrective action BMPs

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Prompt Corrective Action Result

When non-compliance is promptly self reported, the discharge cleaned up, the cause of the discharge repaired and a Corrective Action Report submitted, the event will **not** result in penalties.

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1200-CA Conditions

- Active Treatment (flocculants, electro-coagulation, etc.) require an EMP and must be stamped by engineer – Baker Tank providers can provide acceptable engineering.
- Permittee must obtain approval for EMP prior to using Active Treatments (other than C02 sparging).
- Concrete wash out only in designated and protected areas.
- Concrete wash water shall not adversely affect groundwater.
- Concrete wash out area and concrete waste management must be maintained as functional at all times.
- Concrete spillage or discharge to surface waters is prohibited.

Concrete wash water is a pollutant - 00290.30

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Submissions to DEQ

- Provide ESCP revisions, and corrective action submittals as required by 1200-CA.
- Submissions to DEQ are our communication with them about the project.
- Missing submissions are communication breakdowns.
- Missing, late, inaccurate or incomplete submissions tell DEQ that Project team does not take erosion and sediment control seriously.
- Use “Your DEQ Online” (YDO) electronic portal for submissions
  - Monitoring reports are not a required submittal.

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Consultant Inspected Project

Consultant inspectors represent ODOT.

All inspectors must use their authority and verify that contractors satisfy contract conditions.

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0280.04 – Erosion and Sediment Control Plan on Agency Controlled Lands

- **ESCP** –Required to cover all construction phases! Address temporary soil cover? Storm water runoff? Perimeter sediment control? Effective functioning? **Look at the ESCP critically.**
- Using Agency ESCP is not an excuse to overlook issues on a job site. Agency ESCPs **will** require updates and revision during construction.
- DEQ may request modifications to the ESCP at any time. ODOT may require ESCP modifications at any time.
- ODOT's 1200-CA permit does not cover non-Agency controlled land **(00280.05).** (Contractor's 3rd party staging areas likely to require individual 1200-C)

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BREAK

Wayfinding overlook at Battle Rock

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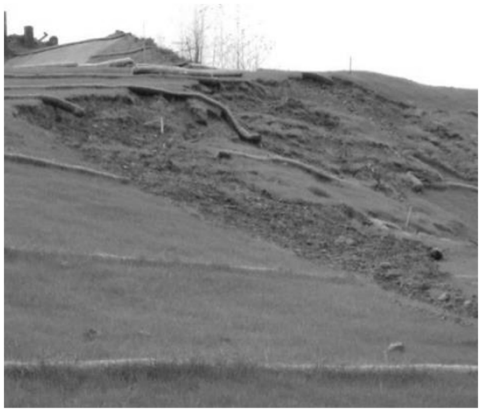
What Are Erosion and Sedimentation?

Erosion



Sedimentation

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Types of Erosion

Rain Splash

Gully Erosion

Rill Erosion

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Types of Erosion
Pop-Outs or Shallow Planar Slides

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What is problem sedimentation?

Sediment leaving site

Turbid water leaving site

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Inspector Responsibilities

- Have thorough understanding of the project, the ESCP, the natures of erosion and sedimentation and knowledge of BMPs.
- Ensure that the Contractor installs ESCP identified BMPs and updates the ESCP as construction progresses.
- Ensure that the Contractor maintains the erosion control facilities as to provide effective functioning.
- Ensure the Contractor keeps the project in administrative Permit compliance, including keeping ESCP updated and Monitoring Reports accurate and current.
- Sign monitoring forms verifying honest monitoring and submit to DEQ through YDO.

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00280.06 and 00280.30 Erosion and Sediment Control Manager (ESCM) as required by 1200-CA

Contractor shall provide a person experienced in all disciplines of highway construction and certified as qualified, as the Erosion and Sediment Control Manager (ESCM).

- **00280.30**, Special Provisions list **30** duties of ESCM.
- Contractor and ESCM are the erosion and sediment control lead.
- ODOT owns the risk and enforces the contract so to provide effective functioning ESC.

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Duties of ESCM

- Read and be familiar with 1200-CA permit.
- Inspect ESC and monitor receiving waters on active construction site on initial date and every 14 Days for effective functioning.
- Inspect ESC on inactive areas every 14 Days for effective functioning.
- Inspect ESC for effective functioning and monitor receiving waters, on all active and inactive sites at least within 24 hours of rainfall events sufficient to result in runoff.
- Ensure that ESC are regularly cleaned and maintained.

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Duties of ESCM continued

- Mobilize crews to make immediate repairs to ESC during working and non-working hours.
- Record actions taken to clean up discharged of sediment.
- Report potential permit violations to the Agency immediately upon discovery.
- Revise the ESCP within 7 days after ESC modifications are implemented in the field and provide to Agency.
- Agency submits ESCP revisions to DEQ within 30 days after making revisions.
- Prepare submittals for corrective actions for Agency review and submittal to regulatory agencies.

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Revise ESCP When:

- Changes to the construction plans that impact erosion and sediment control measures.
- Changes to the stormwater control BMPs, their location, maintenance required, and any other revisions necessary to prevent and control erosion and sediment runoff.
- Other activities at the site that are no longer accurately reflected in the ESCP. This includes changes to personnel involved in ESC made in response to corrective actions triggered.
- **Any** change to active treatment system.
- When requested by Agency or DEQ.

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Erosion Prevention: Protect Soil and Control Runoff

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Sediment: Ensure it does not leave project site

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00280.14 – 00280.16 Materials

- **00280.14** – Erosion Prevention – This Section lists materials that cover soil and prevent erosion.
- **00280.15** – Runoff Control – This Section lists BMPs and materials to control stormwater runoff.
- **00280.16** – Sediment Control – This Section lists BMPS and materials that prevent untreated sediment from leaving the project site.
- Find approved products on Qualified Products List.

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Erosion Prevention

A good place to start is…

00280.41(d)

"Limit the amount of disturbed area to that which can be effectively controlled."

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00280.44 – Erosion Prevention BMPs

Vegetation – 01030.13

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00280.14(a) – Erosion Prevention BMPs

Plastic sheeting

280.44(a) and Standard Detail 6001

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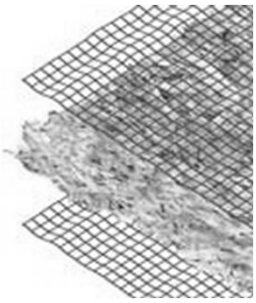
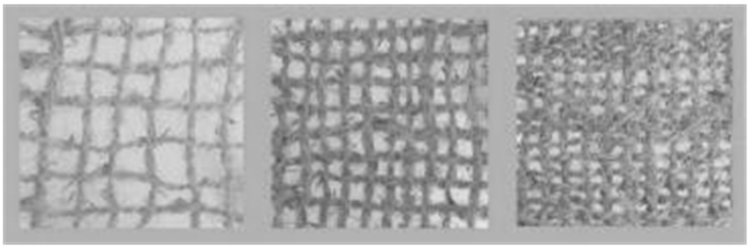
Erosion Prevention continued
Matting Types

Erosion Prevention – 00280.14(e)
Matting – Standard Drawing RD1055

Sandwich Type



Woven



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Biodegradable?

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Check dam spacing way too long.
We control runoff velocity.

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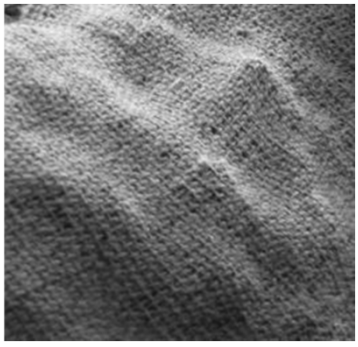
Matting for runoff control



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Erosion Prevention – Channel Liner Matting

Concave surface indicates erosion is occurring underneath matting.

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Matting correctly installed with top-of-slope anchor trench

See RD1055

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Erosion Prevention – Slope Matting

Absorbs rain splash energy, retains moisture and covers soil, provides runoff control (depending on matting type).

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Erosion Prevention 00280.14(d) – Straw Mulch

Straw mulch

- Covers soil
- Absorbs rain splash
- Retains moisture
- Slows runoff

No control for concentrated flow

Straw mulch is good temporary cover

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Erosion Prevention 00280.14(d) – Hydraulically applied Type A Matting

Hydromulch

- Covers soil
- Absorbs rain splash
- Retains moisture
- Slows runoff
- Not for concentrated flow
- Usually used with seeding

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Erosion Prevention continued

Bonded Fiber Matrix (BFM) Mulch

- Should be about 3/16″ thickness
- Inadequate coverage (00280.44(e)4)

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Erosion Prevention Compost Blanket, 00280.14(f) – DETAIL 6017

- Use medium compost
- Absorbs rain splash
- Retains moisture reducing runoff
- Slows runoff
- Good seed bed
- Introduces soil biology
- Dark color captures heat which aids germination
- Not for concentrated flows
- Install at spec'd thickness

59

Erosion Prevention
Compost Blanket

Can stick to 1:1 slopes and it helps plant growth.

Problems obtaining compost products? Report to Program Coordinators.

Compost suppliers can and will screen coarse compost meeting ODOT spec, on request, if given advanced notice.

ODOT MATERIALS & INSPECTION

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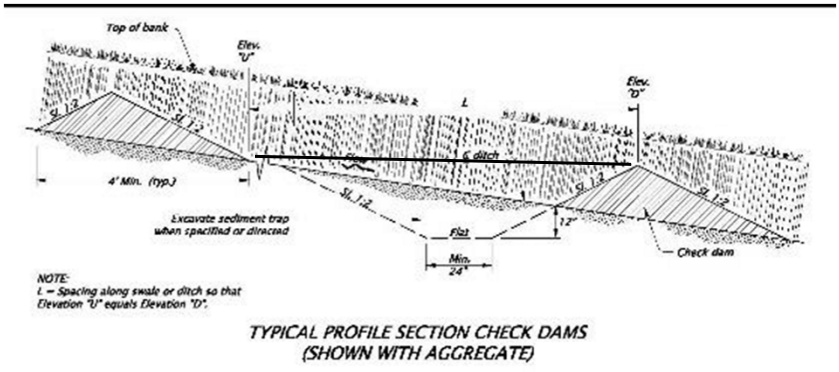
Erosion Prevention – Runoff Control
00280.15 Runoff Control BMPs (also sediment control)

Check Dams: Allow runoff velocity and allow sediment to fall out of suspension.

61

Runoff Control – Check Dams
RD1005 and RD1006 – 00280~~9~~.15(a)



TYPICAL PROFILE SECTION CHECK DAMS
(SHOWN WITH AGGREGATE)

Standard Drawings, when included in Bid Set, are contract documents defining correct installation and use of BMPs.

62

Check Dam Type 6 – Compost Filter Sock

ODOT MATERIALS & INSPECTION

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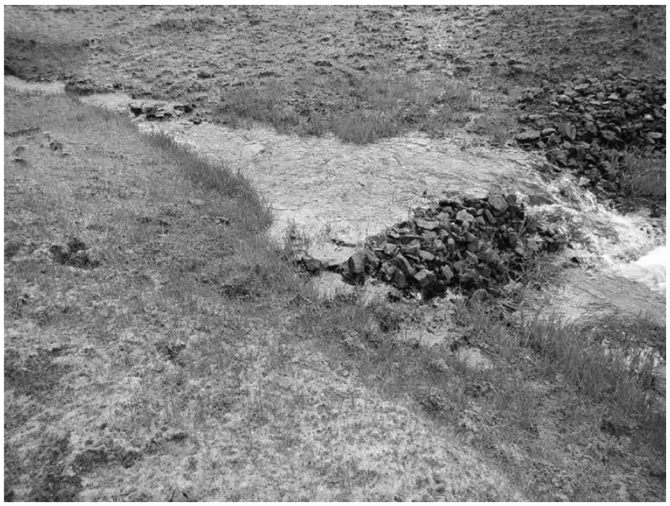
Runoff Control/Check Dam Fail

64

Runoff Control
Ineffective Check Dam Spacing

65

Runoff Control
No Adequate Low Point – Side Cutting



66

Runoff Control

Check Dams require maintenance when 1/3 full

ODOT MATERIALS & INSPECTION

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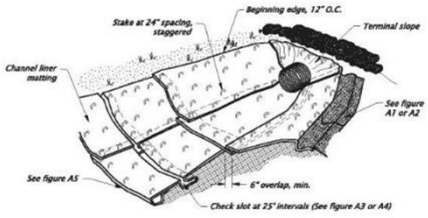
Runoff Control

Lined Channel – 280.14(e)

Construct per
Standard Drawing RD1055



CHANNEL ISOMETRIC VIEW

ODOT MATERIALS & INSPECTION

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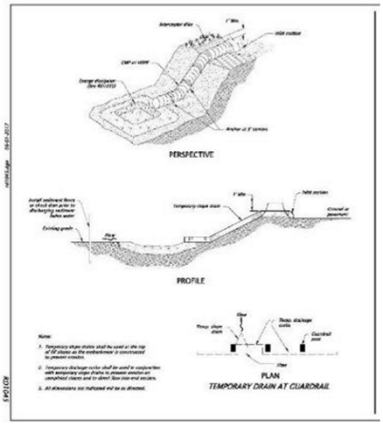
Runoff Control

69

Runoff Control – Temporary Slope Drain – 00280.15(c)
Standard Drawing – RD1045



ODOT MATERIALS & INSPECTION

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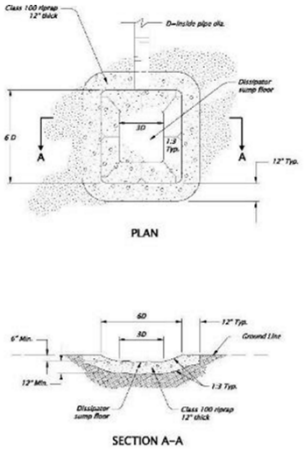
Predictable Runoff Control Fail

71

Runoff Control – 00280.16(g)

Provide outfall protection, scour basin or energy dissipater



Outfall protection addresses risk

72

Runoff Control

Divert Runoff off Access Roads – build water bars

ODOT MATERIALS & INSPECTION

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Sediment Control BMPs – 00280.16(a)

Construction Entrance – ANY Track Out is Non-Compliance

Construction – Standard Drawing RD1000
Tire Wash – Standard Drawing RD1060

ODOT MATERIALS & INSPECTION

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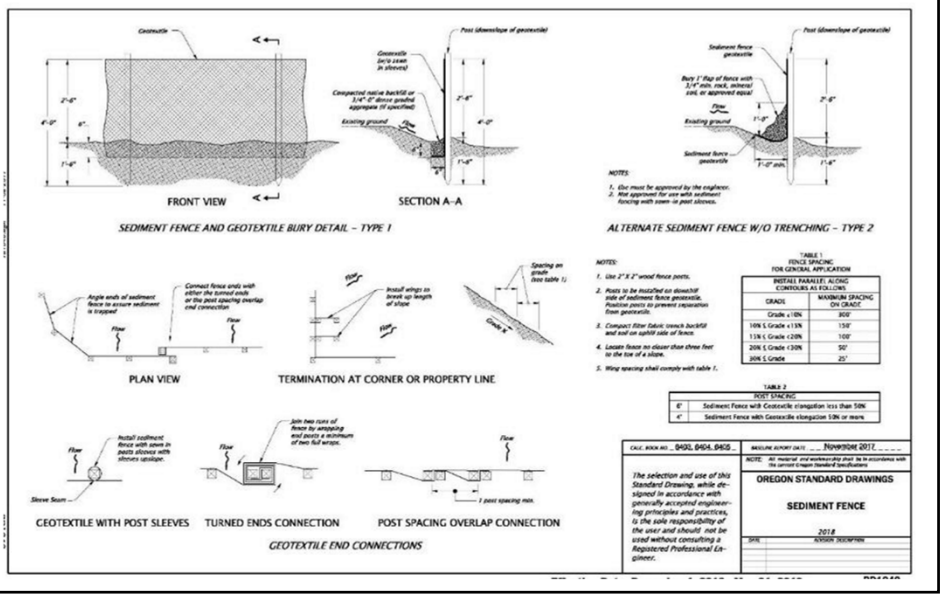
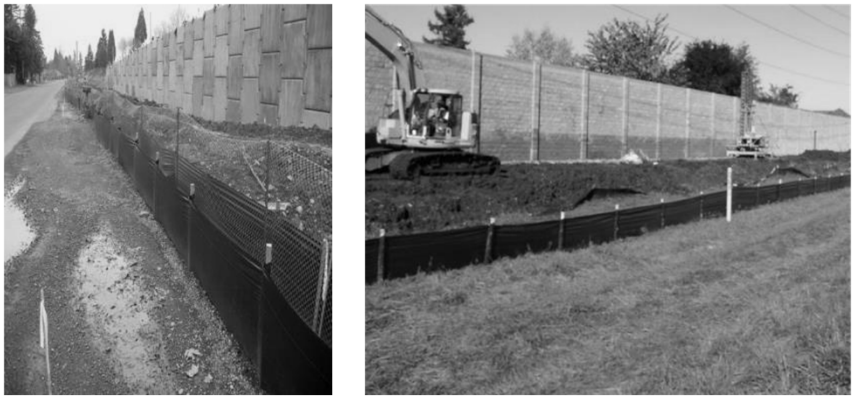
Sediment Control - Sediment Fence
Standard Drawing RD1040 – 00280.16(c)



75

Sediment Control – Sediment Fence
Section (280.46(c)), Standard Drawing RD1040



Install plumb and on-contour
Embed bottom 6″

ODOT MATERIALS & INSPECTION

76

Sediment Control
Sediment Fence – Required embedment

77

Sediment Control – Sediment Fence
Robust and effective sediment control

Requires maintenance when at 1/3 capacity.

78

Sediment Control – Sediment Fence

Requires maintenance/ replacement if damaged by rollers.

(And, the ESC contractor saw this then seeded right over it!)

ODOT MATERIALS & INSPECTION

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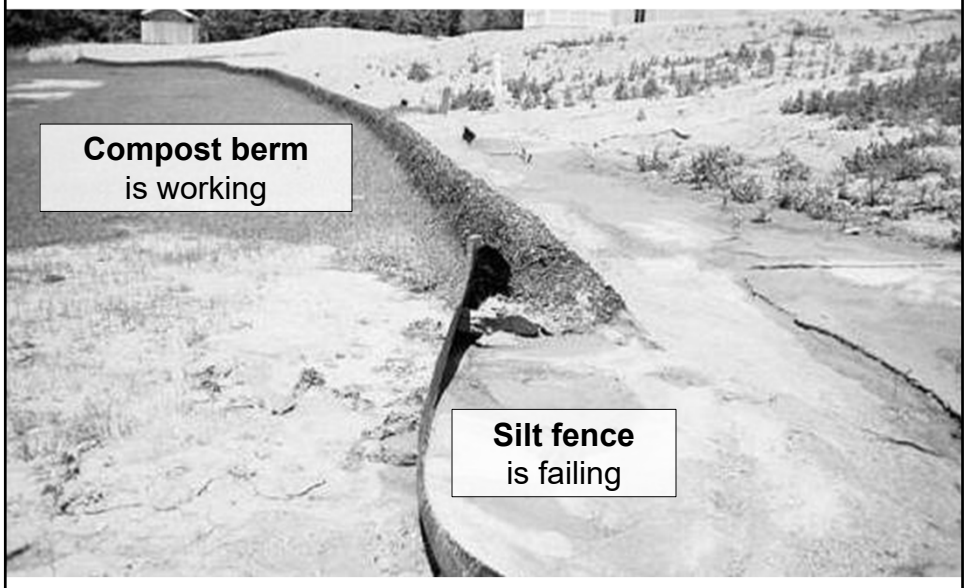

Source: Filtrexx International, LLC

80

Sediment Fence

Requires removal.

Removal will disturb soil and established vegetation.

ODOT MATERIALS & INSPECTION

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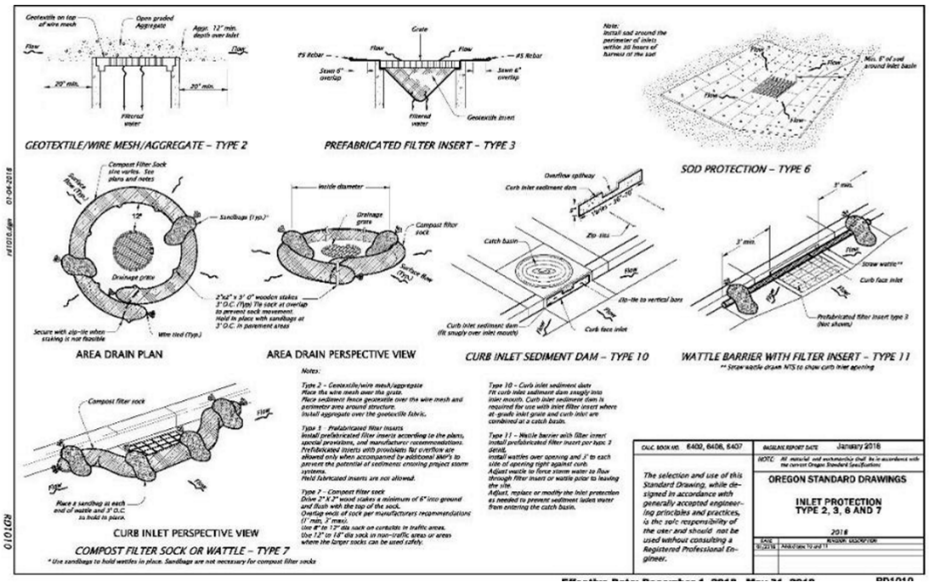
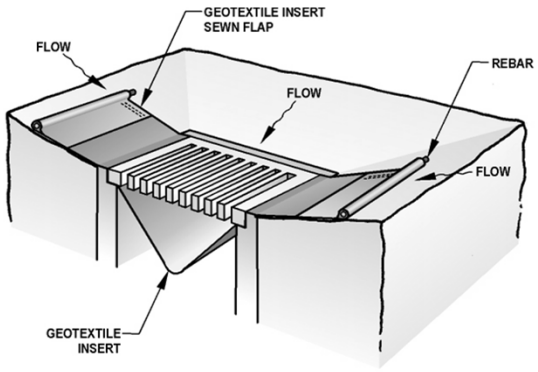
Standard Drawing RD1010 and RD1015
Inlet Protection



82

Sediment Control
00280.16(d) – Inlet Protection



ODOT MATERIALS & INSPECTION

83

Unusual issues require creative solutions

Sediment fence fabric in a field fabricated inlet insert

ODOT MATERIALS & INSPECTION

84

Sediment Control – Sediment Barriers
Fiber Rolls – 00280.15(a) and RD1030

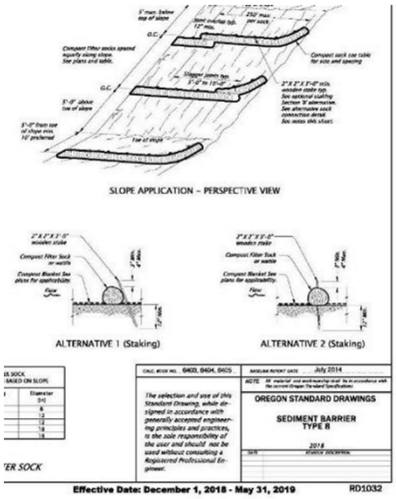
Correct embedment,
but no overlap at ends

Plumb and on contour,
but no embedment

ODOT MATERIALS & INSPECTION

85

Sediment Control - Compost Sock
00280.15(a) Type 6 - Standard Drawing RD1032



ODOT MATERIALS & INSPECTION

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00280.16(h) - Sediment Trap - RD1065

Sediment Trap design must be stamped by a qualified engineer or landscape architect

- 2 year, 24 hour storm is model for sed. trap design or 3,600 Cu. Ft. per acre.
- Sediment Trap outlet structure must draw from surface water.
- Sediment Trap discharge point(s) must use energy dissipater.
- Where sediment trap site will become WQ facility after construction, remove top 18″ of material and replace with material which can infiltrate and treat stormwater.

ODOT MATERIALS & INSPECTION

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Sediment Control – Flocculent – 00280.16(k)

Flocculent use is active treatment and requires EMP and DEQ approval

ODOT MATERIALS & INSPECTION

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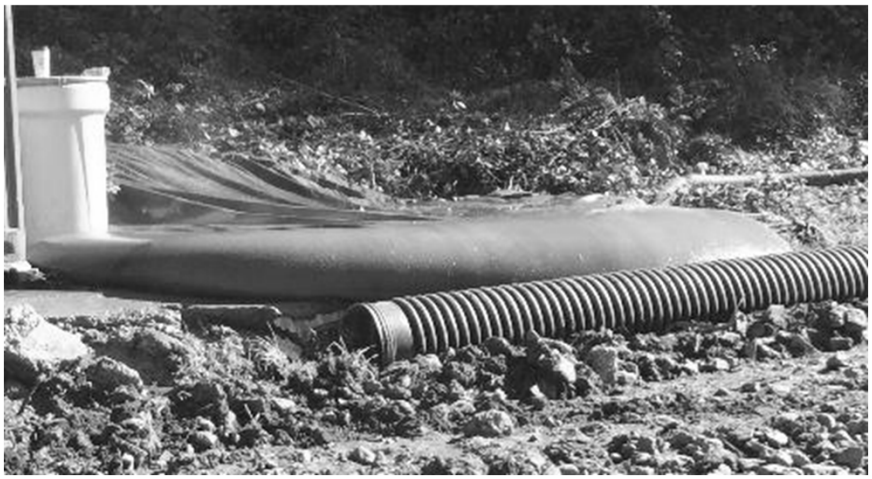
Sediment Control
"Dirt Bag" Sediment Filter Bag



89

Haul Routes

- Make mud slurry
- Generate thick turbid runoff
- Can track offsite

1200-CA –

"All unpaved roads located on-site
shall be graveled"
(exemptions apply)

90

00280.41 Construction – Work Restrictions
(Required Actions)

- Delineate clearing limits and No Work Areas, including **Buffer Zones** with high visibility markings such as orange plastic mesh fence. Respect those No Work Areas.
- Update the ESCP and schedule for **wet season** to ensure appropriate controls are implemented and maintained.
  Wet Season Work: Oct. 1 – May 31 (00280.02)
- Temporary work suspension during wet season is an appropriate BMP. (It is not a suspension of monitoring.)

ODOT MATERIALS & INSPECTION

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Construction – Stabilization – 00280.42

Stabilization – Measures to prevent erosion and keep sediments from leaving the project site. Stabilization means **covering soil** using mulch (compost, straw, rock, wood chip or hydromulch), plastic sheeting, matting or vegetation.

00280.42 (a) Soil Exposure Limitations

- Statewide (Entire Year) – Stabilize within seven days of exposure, all areas within 100 ft. of waterways, wetlands or other sensitive areas using methods that do not rely solely upon germination to control erosion.

ODOT MATERIALS & INSPECTION

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Construction – Stabilization – 00280.42 continued

1200-CA Soil Exposure Limitations (continued)

- Stabilize soil within 14 days of suspension of work in areas of exposed soil.
- ESCM documents the beginning of work suspension in areas of exposed soil on monitoring form.
- Complete stabilization of exposed soil as soon as practicable and within 7 days of initiation of stabilization work.

93

Construction – Stabilization continued

00280.42 Soil Exposure Limitations (continued)

- **00280.42 (b) Temporary Stabilization**
  - Every 14 days or more frequently as needed
  - 1 day **prior** to anticipated rain events
  - When sediments leave site
  - At the end of each day during wet periods
  - As emergency measure when rain is falling
  - When actions or weather cause dust

94

Construction

00280.43 Area Preparation

- Prepare areas as per 01040.48(d)
- Track walk all fill slopes
  - Steeper than 1V:3H
  - Flatter than 1V:1.5H
  - Parallel to slope contours

Site preparation is vital for Successful seeding or Planting.

ODOT MATERIALS & INSPECTION

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01030, Seeding = Permanent Stabilization

ODOT MATERIALS & INSPECTION

01030.13 lists seed mix

96

Good
Penetrating
root form

Decompaction per
01040.48(d) not done.
Roots unable to penetrate
compacted soil – plant died

97

01040.19 – Quality of Plants
Circling roots are bad

98

01040.19 Quality of Plants
Roots hold soil in place

99

Plant Establishment

01040.72 Periodic Inspections

- Typically 3 inspections: Spring, Summer and Fall. Inspectors go with Contractor on inspections.
- Inspector will provide Contractor with list of corrective work.

01040.73 Corrective Work

- Contractor is required to replace dead plants 15 days after receiving list of corrective work.

100

Floodplain Planting using contract grown native wetland sod

Much of ODOT's plantings are required as permit conditions. If success is not achieved during the Project, ODOT pays until success is achieved – Failure is not an option.

ODOT MATERIALS & INSPECTION

101

Construction continued

SP00280.48 Emergency Materials

- Should/will be listed in the **Special Provisions.**
- Deploy Emergency Materials quickly without waiting to mobilize ESC subcontractors.
- Replenish emergency materials to be prepared for unanticipated erosion/sedimentation conditions.

00280.48 Emergency Materials - Add the following paragraphs after the paragraph that begins "Provide, stockpile, and protect...":

Provide and stockpile the following emergency Materials on the Project site:

Item	Quantity
Matting, Type B	75 Sq Yd *
Check Dam, Type 6	5 Each
Sediment Fence	250 Foot
Inlet Protection, Type 3	5 Each
Sediment Barrier, Type 3	250 Foot
Plastic Sheeting	100 Sq Yd

When emergency materials are used, restock emergency materials within 48 hours of use.

ODOT MATERIALS & INSPECTION

102

Maintenance

00280.63 Sediment Removal

- Catch Basins-storage capacity <50%
- Sediment Controls-filtering capacity <33%
- Construction Entrances – Maintain proper function of entrances – **any** track out is non-compliance.
- Paved Areas – keep them clean
  - Vacuum sweeper and dirt removal is best
  - Never intentionally wash untreated sediment be into storm sewers or drainage ways

ODOT MATERIALS & INSPECTION

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Construction – Stabilization

00280.42 (c) Permanent Stabilization

- Provide permanent stabilization when earthwork to establish finish grades is complete. – …"at the earliest practicable time".
- Apply mulch or matting with seeding to provide stabilization during seed germination and establishment.
- If seed is not established, or soil not protected, provide additional BMP's that do not rely on germination to provide stabilization.

ODOT MATERIALS & INSPECTION

104

Finishing and Clean-up

00280.70 Removal of temporary ESC devices

- No later than 30 days from acceptance of stabilization
- Permanently stabilize areas affected by removal process (within 2 days)

00280.71 Sediment Disposal

- Regrade removed sediment into slopes
- Dispose according to **00290.20**
- Do not flush sediments into drainage systems – This requirement supports **1200-CA, A.4.b.**

ODOT MATERIALS & INSPECTION

105

00280.80 – Measurement
Multiple methods for calculation

- Lump Sum Basis (no measurement)
- Unit Basis
- Length Basis
- Area Basis
- Limitations

ODOT MATERIALS & INSPECTION

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INSERT TAB

1200-CA

Permit Number: 1200-CA
Effective Date: September 15, 2022
Expiration Date: September 14, 2027

State of Oregon
Department of
Environmental
Quality

GENERAL PERMIT

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

STORMWATER DISCHARGE PERMIT

Oregon Department of Environmental Quality
700 NE Multnomah St. Suite 600, Portland, OR 97232
Telephone: (503) 229-5279 or 1-800-452-4011 (toll free in Oregon)

Issued pursuant to ORS 468B.050 and The Federal Clean Water Act

ISSUED TO:

All public agencies responsible for construction activities with stormwater discharges that are covered by this permit. The submittal of an approved application and payment of applicable fees are required.

PERMIT AREA

This 1200-CA Stormwater General Discharge Permit authorizes discharges in Oregon excluding tribal trust and reservation lands.

SOURCES COVERED BY THIS PERMIT

Permit coverage is required under this General Permit if the following activities under the authority or jurisdiction of a public entity have the potential to discharge to surface waters or to a conveyance system that leads to surface waters of the state in Oregon and do not have coverage under another NPDES permit:

a) Any construction activity, materials or equipment staging and stockpiling that will disturb one or more acres of land; or

b) Any construction activity, materials or equipment staging and stockpiling that will disturb less than one acre of land but is part of a common plan of development or sale that will ultimately disturb one or more acres of land; or

c) Any construction activity that results in the disturbance of less than one acre of land that is a necessary and required component (e.g., utilities, structure or infrastructure) of a final project that will ultimately disturb one or more acres of land; or

d) Any construction activity that may discharge stormwater to surface waters of the state that may be a significant contributor of pollutants to waters of the state or may cause an exceedance of a water quality standard.

Jennifer Wigal
Water Quality Administrator

Aug. 11, 2022
Issuance Date: August 11, 2022
Expiration Date: September 14, 2027

LIMITATIONS OF COVERAGE

This permit does not authorize:

a. In-water work or projects that may result in the discharge of fill or dredged material into waters of the U.S. and the state.

   i. DEQ recommends permit registrants identify, apply for and resolve any state (Department of State Lands) or federal (US Army Corps of Engineers) and DEQ 401 water quality certification requirements before obtaining 1200-CA NPDES permit coverage to prevent unintended non-compliance situations with other regulatory programs. If additional regulatory requirements, such as those listed in above, are deemed necessary by other regulatory jurisdictions for the construction activity identified in the erosion and sediment control plan, the permit registrants may be required to significantly alter the project and erosion and sediment controls to accommodate other regulatory jurisdiction requirements.

b. Stormwater discharges associated with industrial activities [as defined in 40 CFR §122.26(b)(14)] or stormwater associated with municipal separate storm sewer systems [as defined in 40 CFR §122.26(b)(8) and (b)(16)]. Such discharges are regulated through DEQ's NPDES Industrial Stormwater General Permits (1200-A/Z) or DEQ's NPDES MS4 Stormwater Permits; or another appropriate NPDES permit.

c. Post-construction stormwater discharges that originate from the site after completion of construction activities and the site is stabilized.

d. Stormwater discharges to underground injection control (UIC) systems.

Unless specifically authorized by this permit, by another NPDES or WPCF permit, or by Oregon Administrative Rule, any other direct or indirect discharge to waters of the state is prohibited.

Permitted Activities

Until this permit expires or is modified or revoked, the permit registrant is authorized to construct, install, modify, and operate erosion and sediment control measures and storm water treatment and control facilities, and to discharge storm water to public waters in conformance with all the requirements, limitations and conditions set forth in the attached schedules as follows:

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SCHEDULE A

CONTROLS AND EFFLUENT LIMITATIONS

1. Application requirements for obtaining permit coverage

A complete and accurate application from a public entity must be submitted to DEQ at least sixty (60) days prior to any planned land disturbing construction activities. Construction activities are not authorized until DEQ issues discharge authorization.

The application must include the items below and be submitted to DEQ on Your DEQ Online:

a. A complete and accurate DEQ approved application form; and

b. The application fee and annual fee for the first year of permit coverage according to OAR 340-045-0075, Table 70G.

2. Discharge authorization

Permit coverage for permit registrants that were issued permit coverage prior to August 11, 2022, the issuance date of this permit, begins on September 15, 2022, the effective date of this permit.

Permit registrants issued permit coverage before August 11, 2022, must comply with all conditions in Section 16 by September 15, 2022, the effective date. Permit registrants issued permit coverage before August 11, 2022, must comply with the remainder of the permit conditions by April 1, 2023.

Permit coverage for new applicants begins when the registrant receives documented notice from DEQ that registration is approved. Permit registrants issued permit coverage after September 15, 2022, must comply with all permit conditions the date permit coverage is issued by DEQ.

3. Annual fee

Registrants must pay the annual fee until DEQ approves termination of permit coverage.

4. Multiphase development

A map and description of each phase of the multiphase development for which land use approvals are approved with the intent of development or maintenance that requires the performing of construction activities must be included in the Erosion and Sediment Control Plan (ESCP). Construction activities, including stockpiling and staging, cannot commence within a phase unless that phase has a developed ESCP that has been submitted to DEQ.

5. Construction projects that disturb five or more acres

Permit registrants that conduct any project under this permit that includes construction activities that disturb or are likely to disturb five or more acres are subject to a 14-calendar day public review period of the Erosion and Sediment Control Plan (ESCP) that meets all permit requirements before any construction activities begin. The permit registrant will post all required and necessary project documents (i.e., site map and ESCP) for the mandatory 14-day public comment period or send to DEQ for posting.

If construction activities expand beyond five acres after construction activities are initiated, a 14-calendar day public review period will be required. During the 14-calendar day public review period, registrants are not authorized to

conduct construction activities in the area expanded beyond the boundaries of the originally submitted ESCP in accordance with 340-045-0033(6)(b). After the public comment period is over, the finalized ESCP must be submitted to DEQ.

6. Environmental Management Plan

The permit registrant must complete an Environmental Management Plan (EMP, see Appendix A), pay the review fee, and submit the required DEQ documents for projects when the following conditions exist or are anticipated. The EMP must be submitted to and approved by DEQ before work may commence on the project site. If these conditions are discovered after registering for permit coverage, the EMP must be approved by DEQ before work is initiated in the area of contamination. The approved EMP becomes a component of the erosion and sediment control plan. An EMP must be submitted for the following:

a. Contaminated soils, contaminated groundwater or hazardous materials that will or have the potential to be encountered during construction activities. Provide detailed information with the Contaminated Media Management Plan (CMMP) on the nature and extent of the contamination (concentration, location, and depth) as well as pollution prevention and/or treatment BMPs proposed to control the discharge of impacted soil, groundwater or hazardous building materials debris in stormwater. In the event that undocumented contamination, underground storage tanks, or other potentially hazardous conditions are encountered that are not addressed in the Environmental Management Plan, discharges exposed to the contaminated media must cease and DEQ must be notified within 48 hours. The discharges exposed to the contaminated media may not occur until DEQ approves the CMMP.

b. Construction dewatering for the purpose of lowering non-contaminated groundwater will be or is performed, and an Active Chemical Treatment System is to be utilized before discharge. An EMP is not required for dewatering accumulated water due to shallow excavation activities, except for when an Active Chemical Treatment System is utilized before discharge from the permitted site (See Section 13.4).

c. An Active Chemical Treatment System (e.g., cationic treatment chemicals, electro-coagulation, flocculants, filtration, anionic polyacrylamide, polymers, hydrochloric or sulfuric acid) for sediment, pH neutralization, or other pollutant removal is planned or implemented at the project site. When "treatment chemicals" are proposed, the permit registrants must demonstrate to DEQ that appropriate controls and implementation procedures are used to ensure that the use of treatment chemicals will not lead to discharges that cause an exceedance of water quality standards or harm aquatic life.

DEQ will determine if the project can have coverage under this permit after the permit registrant has included appropriate controls and implementation procedures designed to ensure that the above activities will not lead to discharges that cause an exceedance of water quality standards. In the absence of authorization, the registrant must apply for and receive coverage under the 1200-C construction stormwater general permit or an individual permit prior to discharging from the site.

An EMP is not required on 1200-CA permit covered projects that began construction activities prior to the effective date of this permit, except for when unknown contaminants are discovered during construction activities performed after the effective date of this permit.

7. Procedures for denial or revocation of coverage

DEQ may refuse to authorize or revoke coverage under this general permit and require the responsible public entity to apply for an individual NPDES permit in accordance with the procedures in OAR 340-045-0033(10). If that occurs, DEQ will notify the registrant in writing that an individual permit is required.

8. Renewal application for permit coverage

If a registrant intends to continue coverage under this permit after the permit expiration date, a complete renewal application must be submitted to DEQ along with any other required documents at least 180 days prior to permit expiration to ensure uninterrupted permit coverage unless DEQ grants permission to submit an application less than 180 days in advance.

9. Electronic system use requirement

Permit registrants must submit all required documents and payments using DEQ's electronic reporting system, Your DEQ Online (YDO).

10. Authorized discharges under this permit

The following is a list of stormwater discharges that are authorized under this permit provided that all stormwater controls are designed, installed, and maintained as required by this permit:

10.1 Stormwater discharge including stormwater runoff, snowmelt runoff, and surface water.

These stormwater discharges also include drainage associated with construction activity described in the Sources Covered section of this permit.

10.2. Stormwater discharge from construction support activities at the construction site when:

a. The support activity is directly related to the construction site covered by this NPDES permit;

b. The support activity is not a commercial operation, nor does it serve multiple unrelated construction projects;

c. The support activity does not operate beyond the completion of the construction activity at the last construction project it supports; and

d. The appropriate control measures are implemented to ensure compliance with the discharge and water quality requirements of this permit.

11. Authorized non-stormwater discharges

The following non-stormwater discharges from construction sites are authorized if the terms and conditions of this permit are met, all necessary controls are implemented to minimize sediment transport, the discharge is not a significant source of pollutants and not contaminated and the discharge is not prohibited by local ordinance:

a. Water and associated discharges from emergency firefighting activities;

b. Fire hydrant flushing;

c. Properly managed landscape irrigation;

d. Water used to wash equipment and vehicles (excluding the engine, undercarriage, and wheels/tires) provided there is no discharge of soaps, solvents or detergents used;

e. Water used to control dust;

f. Potable water including uncontaminated water line flushing as approved;

g. External building washdown, provided soaps, solvents, and detergents are not used, and external surfaces do not contain hazardous substances;

h. Pavement wash waters, provided spills or leaks of toxic or hazardous substances have not occurred (unless all spill material has been removed) and where soaps, solvents, and detergents are not used. Directing pavement wash waters into any surface water, storm drain inlet, or stormwater conveyance is prohibited, unless the conveyance is connected to a sediment basin, sediment trap, or similarly effective control for the pollutants present. The hosing of accumulated sediments on pavement into any stormwater conveyance is prohibited;

i. Uncontaminated air conditioning or compressor condensate;

j. Uncontaminated, non-turbid discharges of groundwater or spring water;

k. Foundation or footing drains where flows are not contaminated with process materials such as solvents or contaminated groundwater; and

l. Construction dewatering activities (including non-contaminated groundwater dewatering and well drilling discharge associated with the registered construction activity), provided that:

   i. The water is land applied in a way that results in complete infiltration with no potential to discharge to a surface water of the state, or the use of a sanitary or combined sewer discharge is authorized with local sewer district approval; or

   ii. Best Management Practices and a treatment system approved by DEQ (see Section 6) are used to ensure compliance with discharge and water quality requirements.

11.1. Combined discharges

Discharges of stormwater listed in Sections 10.1 and 10.2 combined with authorized non-stormwater discharges in Section 11 into a common conveyance system are allowed.

12. Prohibited discharges

The following discharges are not authorized by this permit:

a. Visually turbid discharge or discharge of sediment (see Section 13.2.11) from the construction site to surface waters or a conveyance system that leads to waters of the state;

b. A discharge that causes or contributes to an exceedance of any applicable water quality standard;

c. Concrete wastewater from washing tools and vehicles after pouring, prepping or finishing concrete;

d. Wastewater from washing and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;

e. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance;

f. Soaps, solvents, or detergents used in vehicle and equipment washing or external building washdown;

g. Wheel/tire wash wastewater, unless the discharge of wheel wash or tire bath wastewater is to a separate treatment system that prevents discharge to surface water, such as closed-loop recirculation or upland land application or to the sanitary sewer with approval from the local jurisdiction;

h. Hydro-demolition water and saw-cutting slurry; and

i. Toxics or hazardous substances from a spill or other release.

13. Technology based effluent limitations/control measures

The control measures in this section are technology-based effluent limitations (TBELs).

13.1. General stormwater control design installation, and maintenance requirements.

The permit registrant must implement erosion and sediment control measures at all times to prevent any visibly turbid discharges or sediment from leaving the project site from initial soil disturbance until project completion. Failure to implement any of the required erosion and sediment control measures or practices, or the discharge of visibly turbid water and/or sediment from the project site is prohibited. The permit registrant must ensure that the erosion and sediment control plan is revised as necessary to reflect site conditions in accordance with the requirements of this permit.

Prior to and during the discharge of stormwater and authorized non-stormwater discharges to surface waters of the state, the registrant must design, install, and maintain effective stormwater control and treatment methods required in this section to prevent the discharge of pollutants in stormwater from construction activities that may cause or contribute to a violation of water quality standards. To meet this requirement, the registrant must perform the following:

13.1.1. Factors to consider when designing stormwater controls

Consider the following factors when designing stormwater controls:

a. The expected amount, frequency, intensity, and duration of precipitation;

b. The nature of stormwater runoff and run-on (See Schedule D.4 Permit Specific Definitions) at the site, including factors such as expected flow from impervious surfaces, slopes and site drainage features; and

c. The soil type and range of soil particle sizes expected to be present on the site.

13.1.2. Design and install all stormwater controls in accordance with engineering and professional practices

Design and install all stormwater controls in accordance with appropriate, recognized and generally accepted engineering and professional practices, including applicable design specifications and manufacturer's instructions.

13.1.3. Installation of stormwater controls

Permit registrant must complete the installation of stormwater controls before each phase of construction activities begin as follows:

a. Install and implement any downgradient sediment controls (e.g., buffers, perimeter controls, discharge point controls, storm drain inlet protection) before construction activity in any portion of the site begins;

b. Install erosion prevention measures (e.g., matting, straw mulch, compost blankets) on areas with exposed soil that will not be worked for 14 days; and

c. Following the installation of stormwater controls for initial construction activities the registrant must adjust stormwater controls and management strategies throughout the project site to meet and match the needs of each phase of construction as the project is implemented.

13.1.4. Ensure that all stormwater controls are maintained and remain effective

Permit registrant must ensure that all stormwater controls are maintained and remain effective during construction activities until project completion and are protected from activities that would reduce their effectiveness including:

a. Follow maintenance recommendations from the manufacturer and utilize appropriate recognized and generally accepted engineering and professional based on-site conditions. The

registrant must document deviations from manufacturer recommendations in the inspection report;

b. Comply with any specific maintenance requirements for the stormwater controls implemented as required in this permit and in the ESCP. Regular maintenance is required and is not limited to response actions that result from inspections or identified problems;

c. Initiate repairs and replacements of stormwater controls when maintenance issues are discovered; and

d. Record any stormwater controls installed (where none had previously been), repaired, replaced or removed as required in Sections 16.2 and 17.5.

13.1.5. Maintaining erosion and sediment controls

Maintain specific erosion and sediment controls as follows:

a. Inspect and maintain erosion control measures (e.g., reseed, apply additional mulch, address blanket malformation and soil sloughing underneath);

b. Remove trapped sediment from sediment fence before it reaches one third of the above ground fence height;

c. Remove sediment before it reaches one third of the above ground height of sediment barriers such as straw wattles and biobags;

d. Clean catch basins and inserts before sediment retention capacity is reduced by 50 percent; and

e. Remove sediments from sediment basins before design capacity is reduced by 50 percent.

13.2. Erosion prevention and sediment control and treatment requirements

The registrant must implement erosion prevention and sediment control and treatment methods in accordance with the following requirements to prevent the discharge of pollutants in stormwater from construction activities. Registrant must ensure that soils are stable during all rain events throughout the year.

13.2.1. Activities before construction commences

Before construction activities commence, the permit registrant must identify and protect any:

a. Riparian areas and vegetation including trees and associated root zones, and vegetation areas to be preserved;

b. Vegetated buffer zones between the site and sensitive areas (e.g., wetlands, springs, groundwater seeps, etc.) and other areas required to be preserved, especially in perimeter areas; and

c. Existing and post-construction stormwater facilities constructed during 1200-CA permit coverage that are designed and engineered to infiltrate or filter stormwater. In addition to physical protection, stormwater runoff discharge from areas where construction activities are performed may not be conveyed to existing or post-construction facilities during construction. The following exceptions are allowed:

   i. Existing post-construction stormwater facilities may receive stormwater runoff from construction activities performed on site if the ESCP states that upon project completion and final stabilization, the top 18" of soil is excavated from the entire surface of the facility and replaced with suitable growth media capable of infiltrating the runoff

volume from the drainage area of a 2-year 24-hour storm event or satisfying the hydraulic conductivity criteria specified in the stormwater management requirements of the local regulatory agency.

ii. Post-construction stormwater facilities constructed during 1200-CA permit coverage may receive stormwater runoff from construction activities on site if upon project completion and final stabilization, accumulated sediment and temporary control measures, such as rip rap, velocity dissipating pads or impermeable liners are removed before the facility is constructed to design specifications.

13.2.2. Sequence clearing, grading, and other land disturbing activities

Permit registrant must sequence clearing, grading and other land disturbing actives to the maximum extent practicable to prevent exposed inactive areas from causing erosion as per Section 13.2.20.

13.2.3. Prevent bypass and ponding

Create smooth surfaces between the soil surface and erosion and sediment controls, when possible, to prevent stormwater from bypassing erosion and sediment controls or ponding.

13.2.4. Establish and maintain natural buffer zones and/or equivalent erosion and sediment controls.

When a surface water of the state is located within 50 feet of the projected site's land disturbance:

a. The permit registrant must comply with local natural buffer zone requirements before proposing the following compliance alternatives. For any discharges to surface waters of the state located within 50 feet of the site's land disturbances, the permit registrant must comply with one of the following alternatives:

   i. Maintain a 50-foot undisturbed natural buffer zone (See Section 13.2.4.b to determine natural buffer zone encroachment authorization on 401 Water Quality Certification projects); or

   ii. Maintain an undisturbed natural buffer that is less than 50 feet and is supplemented by erosion and sediment controls that achieve, in combination, the sediment load reduction equivalent to a 50-foot undisturbed natural buffer (See Appendix B); or

   iii. If infeasible to provide and maintain an undisturbed natural buffer zone of any size, implement erosion and sediment controls to achieve the sediment load reduction equivalent to a 50-foot undisturbed natural buffer zone.

b. If DEQ determines that the project requires a 401 Water Quality Certification, construction activities, including stockpiling and staging of materials, are authorized to encroach into the existing 50-foot natural buffer zone of any water of the state as conditioned in the 401Water Quality Certification. Projects with 1200-CA permit authorization and a 401 Water Quality Certification are not required to comply with the natural buffer zone requirements of Appendix B.

c. If a registrant's project has the potential to discharge to a waterbody that is listed as impaired and requiring a Total Daily Maximum Load (TMDL) for turbidity or sedimentation on the most recently approved Oregon 303(d) list (found on the "Water Quality Assessment" page of DEQ's website), or has an established TMDL for turbidity or sedimentation, the permit registrant must maintain established vegetated buffers sized at 50 feet (horizontally) plus an

additional 25 feet (horizontally) per five degrees of slope or propose control measures of equal effectiveness to DEQ for approval.

d. Sediment and erosion control measures installed for any natural buffer zone requirement must be maintained and disposed of appropriately before project completion.

See Appendix B for natural buffer zone guidance, additional conditions applicable to each compliance alternative, and for exceptions to the compliance alternatives.

For permit registrants that began construction activities prior to the effective date of this permit, the approved natural buffer zone width and approved erosion and sediment controls are deemed appropriate.

13.2.5. Utilize existing vegetation as control and stabilization measures as follows:

a. When possible, preserve existing vegetation;

b. Direct stormwater to vegetated areas to maximize stormwater infiltration and filtering to reduce pollutant discharges where feasible;

c. Re-vegetate open areas as soon as the site is no longer active; and

d. Identify the composition of seed mix (percentage of annuals, perennials and clover) and other plantings used to establish temporary cover in the ESCP.

13.2.6. Install sediment controls along all perimeter areas of the site that may potentially discharge stormwater runoff from disturbed areas identified in the ESCP

For areas at "linear construction sites" (See Schedule D.4 Permit Specific Definitions) where perimeter controls are infeasible (e.g., due to a limited or restricted right-of-way), implement other practices to prevent pollutant discharges from perimeter areas of the site.

13.2.7. Prevent sediment track-out

To prevent sediment track-out onto public or private roads do the following:

a. Establish graveled or paved exits and parking areas prior to any land disturbance;

b. Restrict vehicle use to properly designated entry and exit points. Use appropriate stabilization techniques at all points that exit onto paved roads (e.g., aggregate stone with an underlying geotextile or non-woven filter fabric and turf mats);

   i. Exception: Stabilization is not required for exit points at linear utility construction sites that are used only episodically and for very short durations over the life of the project, provided other exit point controls are implemented to prevent sediment track-out.

c. Implement additional track-out controls as necessary to ensure that sediment removal occurs prior to vehicle exit (e.g., wheel and tire washing, rumble strips and rattle plates);

d. Gravel all unpaved roads located onsite unless temporary or permanent stabilization measures are not required (see Section 13.2.20);

e. Cover all sediment loads leaving the site;

f. When trucking saturated soils from the site, use water-tight trucks or drain loads on site;

g. Where sediment has been tracked-out from the site onto paved roads, sidewalks, or other paved areas outside of the site, remove the sediment by the end of the same business day that the track-out occurs or by the end of the next business day if track-out occurs on a non-

business day. Track-out must be removed by sweeping, shoveling, or vacuuming these surfaces or by using other similarly effective means of sediment removal; and

h. Hosing or sweeping tracked-out sediment into any stormwater conveyance, storm drain inlet or water of the state is prohibited.

13.2.8. Manage stockpiles or land clearing debris piles composed, in whole or in part, of sediment and/or soil as follows:

a. Locate the piles outside of any natural buffers established under Section 13.2.1 and away from any stormwater conveyances, drain inlets and areas where stormwater flow is concentrated;

b. Install a sediment barrier (e.g., berms, dikes, fiber rolls, silt fences, sandbags, gravel bags or straw bale) along all downgradient perimeter areas;

c. Soil stockpiles must be stabilized or covered at the end of each workday and before weekends, holidays or extended breaks of construction activities if a storm event is forecast that may result in any discharge from the project site or wind speeds (typically 10 mph or greater) capable of soil erosion that may result in fugitive dust;

d. Provide cover (e.g., tarps, blown straw or hydroseed) or appropriate temporary stabilization consistent with Section 13.2.20) for any piles not in use; and

e. Hosing down or sweeping soil or sediment accumulated on pavement or other impervious surfaces into any stormwater conveyance, storm drain inlet or water of the state is prohibited.

13.2.9. Prevent wind erosion and control dust

Prevent wind-blown soil and dust from areas with exposed soil through the appropriate application of water or other dust suppression techniques to control the generation of pollutants that could be discharged in stormwater from the site. Federal regulation 40 CFR Part 279 prohibits the use of used oil as a dust suppressant.

13.2.10. Steep slope (See Schedule D.4 Permit Specific Definitions) disturbances in areas where construction activities are not occurring or projected are prohibited

13.2.11. Prevent the discharge of sediment to surface waters or conveyance systems leading to surface waters of the state

The following conditions indicate that sediment has left or is likely to leave the site and are prohibited:

a. Required stabilization has not been initiated or completed.

b. Earth slides or mud flows.

c. Concentrated flows of stormwater such as rills, rivulets, gullies or channels that cause erosion when such flows are not filtered, settled or otherwise treated to remove sediment.

d. Sediment laden or turbid flows of stormwater that are not filtered or settled to remove sediment and turbidity.

e. Deposits of sediment at the construction site in areas that drain to unprotected stormwater inlets or to catch basins that discharge to surface waters. Inlets and catch basins with failing sediment controls due to a lack of maintenance or inadequate design are considered unprotected.

f. Sediment basins or traps without adequate wet or dry storage volume or sediment basins or traps that allow discharge of stormwater from below the surface of the wet storage portion of the basin or trap.

g. Deposits of sediment from the project site on any property (including public and private streets) outside of the construction activity covered by this general permit.

h. Deposits of sediment from the project site at discharge locations or the banks of any waters flowing within or immediately adjacent to the site.

13.2.12. Prevent soil compaction

In areas of the site where final vegetative stabilization will occur or where post-construction infiltration practices will be installed (See Section 13.2.1.c) the registrant must:

a. Preserve suitable native topsoil by stockpiling for reuse or transferring to other locations, unless infeasible;

b. Restrict vehicle and equipment use in designated areas (e.g., haul roads, staging and stockpiling or laydown) to their stated purpose to avoid soil compaction; and

c. Before seeding or planting areas of exposed soil that have been compacted, use techniques that rehabilitate and condition the soils as necessary to support vegetative growth.

13.2.13. Protect storm drain inlets

The following storm drain inlet protection measures are required:

a. Install inlet protection measures that remove sediment from discharges prior to entry into any storm drain inlet that conveys stormwater flow, provided the registrant has authority to access the storm drain inlet; and

b. Clean, or remove and replace, the protection measures as sediment accumulates, the filter becomes clogged and/or performance is compromised. Where there is evidence of sediment accumulation adjacent to the inlet protection measure, remove the deposited sediment by the end of the same business day in which it is found or by the end of the following business day if removal by the same business day is not feasible.

13.2.14. For projects involving concrete, establish concrete truck and other concrete equipment washout area before beginning concrete work

When performing construction activities involving concrete, the following control measures are required:

a. Wash concrete trucks and equipment in an appropriately protected area or in designated concrete washout areas only;

b. Direct all concrete wash water into an impermeable-lined pit or leak-proof container designed so that overflows will not occur due to inadequate sizing or precipitation;

c. Locate activities away from waters of the state and stormwater inlets or conveyances so that stormwater coming into contact with areas where these activities are performed cannot reach waters of the state;

d. Concrete wash may not adversely affect groundwater;

e. Concrete washout and waste concrete management areas must be maintained and functional;

f. Handle (e.g., through disposal, reuse or recycle) wash water as waste. Do not dispose of concrete wash water or wash out concrete trucks onto the ground, or into storm drains, open ditches, streets or streams;

g. Do not dump excess concrete on site, except in designated concrete washout areas;

h. Handle (e.g., through disposal, reuse or recycle) hardened concrete waste consistent with handling of other construction wastes; and

i. Concrete spillage or concrete discharge to surface waters of the state is prohibited.

13.2.15. Establish material and waste storage areas, and other non-stormwater controls before construction activities commence

13.2.16. Control stormwater discharges

Control all stormwater discharges, including both peak flowrates and total stormwater volume, to prevent channel and streambank erosion and scour in the immediate vicinity of discharge points as follows:

a. Use erosion controls and velocity dissipation devices within and along the length of any stormwater conveyance channel and at any outlet to slow down runoff to prevent erosion; and

b. Protect stream banks from concentrated flows by constructing runoff control measures (e.g., check dams, outlet protection (riprap), pipe slope drains, swales/dikes, surface roughening).

13.2.17. Engineer sediment basin or similar impoundment installed

If an engineered sediment basin or similar impoundment is installed the following must take place:

a. The design must be prepared and stamped by an Oregon Registered Professional Engineer or an Oregon Registered Landscape Architect per Section 15.1.b;

b. The basin or impoundment must be situated outside of any water of the state, any natural water quality buffers, and any post-construction stormwater facility designed and engineered to infiltrate established under Section 13.2.1;

c. The basin or impoundment must be designed to avoid collecting water from wetlands;

d. The basin or impoundment must be designed to provide storage for either of the following:

   i. Find the site's estimated 2-year, 24-hour precipitation. The 2-year, 24-hour precipitation can be found using the Precipitation Frequency Data Server (PFDS) developed by the National Oceanic and Atmospheric Administration's (NOAA) National Weather Service (NWS) or the Oregon Department of Transportation (ODOT) Precipitation Data Viewer;

   ii. 3,600 cubic feet per acre drained; or

   iii. A site-specific alternative capable of ensuring that water quality violations do not occur through a combination of storage (e.g., Baker tanks), retention, infiltration or other means of stormwater runoff control;

e. The design must utilize outlet structures that withdraw water from the surface of the sediment basin or similar impoundment, unless infeasible;

f. The design must use erosion controls and velocity dissipation devices to prevent erosion at inlets and outlets; and

g. Follow maintenance requirements per Sections 13.1.4 and 13.1.5.

The approved sediment basin is deemed appropriate on 1200-CA permit covered projects that began construction activities prior to the effective date of this permit.

13.2.18. Engineered sediment basin or similar impoundment must be installed when engineered soils used on site

An engineered sediment basin or similar impoundment must be installed on sites with engineered soils as follows:

a. For construction activity involving the use of engineered soils (soil amendments including, but not limited to Portland cement-treated base [CTB], cement kiln dust [CKD], or fly ash), the registrant must install an engineered sediment basin or similar impoundment in accordance with Section 13.2.17 (e.g., trap, pond) to treat high pH runoff (i.e., above 8.5 standard units) before discharge. The registrant is required to determine the acceptable pH water quality criteria range of site discharge based on criteria of the receiving waterbody according to OAR 340-041-0021. If necessary, the registrant must adjust or neutralize the high pH water until it is in the range of pH Standard Units (SU) using an appropriate treatment BMP such as carbon dioxide (CO2) sparging or dry ice.

b. The permittee must obtain written approval from DEQ or Agent before using any form of chemical treatment other than CO2 sparging or dry ice (see Section 6). See Section 17.6.1 for pH monitoring requirements.

13.2.19. The registrant must maintain site as follows:

a. Clean up sediment that leaves the site and place sediment back on the site and stabilize or dispose of sediment properly within 24 hours. In addition, the source(s) of the sediment must be controlled to prevent continued or additional discharge within 24 hours of being identified, and a corrective action report submitted to DEQ per Section 16.3. Until the sediment or turbidity are no longer visually detectable, immediate corrective actions or the implementation of additional and appropriate BMPs is required to ensure the registrant is not causing or contributing to a violation of water quality standards. Any instream cleanup of sediment may require authorization from the Oregon Department of State Lands; and

b. Do not intentionally wash sediment into storm sewers or drainage ways. Methods such as vacuuming, dry mechanical sweeping, or manual sweeping must be used to cleanup released sediments.

13.2.20. The registrant must stabilize exposed portions of the site as follows:

a. Implement and maintain the stabilization measures (e.g., seeding protected by erosion controls until vegetation is established, sodding, mulching, erosion control blankets, hydro-mulch, gravel) that prevent erosion from exposed portions of the site;

b. Document the day that construction activities cease in an area and the location on site in the visual monitoring report (see Section 17.5.e);

c. Initiate the installation of temporary stabilization measures (e.g., blown straw and a tackifier, loose straw, compost mulch, temporary vegetative cover, crushed rock or gravel base), final vegetation cover or permanent stabilization measures immediately whenever any land

disturbing activities have permanently ceased or will be temporarily inactive on any portion of the site for 14 or more calendar days; and

d. Complete the installation of stabilization measures as soon as practicable, but no later than seven calendar days after stabilization has been initiated.

13.2.21. Final Stabilization Criteria (for any areas not covered by permanent structures). To achieve project completion, registrants must:

a. Establish uniform (i.e., evenly distributed, without large bare areas) perennial vegetation that provides 70 percent or more cover on all exposed areas. Limited allowable exceptions include:

   i. For sites where it is difficult to establish 70 percent coverage (e.g., arid, semiarid or drought-stricken areas), the registrant must cover exposed soil between planted or seeded areas with bio or photo degradable controls designed to prevent erosion without active maintenance or propose a site-specific plan to DEQ for approval.

   ii. Disturbed areas on farm use land as defined in ORS 308A.056 (e.g., pipelines across crop or range land, or staging areas for highway construction) that are restored to their preconstruction farm use are not subject to final vegetative stabilization criteria.

   iii. Stabilization may not be required if the intended function of a specific area of the site necessitates that it remains disturbed, and only the minimum area needed remains disturbed (e.g., dirt access roads, utility pole pads, areas being used for storage of vehicles, equipment, materials);

b. Implement temporary bio or photo-degradable non-vegetative stabilization measures (e.g., mulch or rolled erosion control products) to provide effective cover while vegetation is being established to prevent erosion of the seeded or planted area;

c. Ensure that final vegetative cover or permanent stabilization is established before temporary sediment controls are removed unless doing so conflicts with local requirements;

d. Ensure there is no discharge from the site of construction-related sediment or turbidity to surface waters;

e. Remove and properly dispose of all construction materials, waste and waste handling devices, and remove all equipment and vehicles that were used during construction, unless intended for long-term use;

f. Remove all temporary stormwater controls that were installed and maintained during construction, except those that are intended for long-term use;

g. Remove sediment from permanent (post-construction) structural stormwater facilities by over excavating and replacing with growth media before vegetating; and

h. Remove all potential pollutants, including any sediment being retained by temporary erosion and sediment controls, and discontinued pollutant-generating activities associated with construction, unless needed for long-term use.

13.3. Pollution prevention controls

The registrant must implement pollution prevention controls in accordance with the following requirements to prevent the discharge of pollutants to stormwater and to prevent the discharge of pollutants from spilled or leaked materials from construction activities, such as building materials, building products, construction

wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, fuels, lubricants and other material present.

The registrant must provide written spill prevention and response procedures, employee training on spill prevention and proper disposal procedures, spill kits available on site, regularly maintained vehicles and machinery, material delivery and storage controls, signage and covered storage areas for waste and supplies.

13.3.1. General conditions

Provide an effective means of eliminating the discharge of any waste from any activities performed on site by implementing the following:

a. Locate activities away from waters of the state and stormwater inlets or conveyances so that stormwater coming into contact with areas where waste generating activities are performed cannot reach waters of the state;

b. Ensure adequate supplies are available at all times to handle spills, leaks and disposal of liquids, and provide secondary containment (e.g., spill berms, decks, spill containment pallets);

c. Have a spill kit available on site and ensure personnel are available to respond expeditiously in the event of a leak or spill;

d. Clean up spills or contaminated surfaces immediately using dry clean up measures (do not clean contaminated surfaces by hosing the area down) and eliminate the source of the spill to prevent a discharge or a continuation of an ongoing discharge; and

e. Store materials in a covered area (e.g., plastic sheeting, temporary roofs), or in secondary containment to prevent the exposure of these containers to precipitation or stormwater runoff, or a similarly effective means designed to prevent the discharge of pollutants from these areas.

13.3.2. Equipment and vehicle fueling and maintenance

a. Use drip pans and absorbents under or around vehicles;

b. Dispose of or recycle oil and oily wastes in accordance with other federal, state, tribal, or local requirements;

c. To the extent possible perform equipment fueling and maintenance off-site at authorized facilities; and

d. If allowed by the local fire department, fit fuel dispensing nozzles with "hold-open latches" with an automatic shutoff.

13.3.3. Equipment and vehicle washing

a. Ensure there is no discharge of soaps, solvents, or detergents in equipment and vehicle wash water; and

b. Prevent the discharge of turbid vehicle wash water to waters of the state or conveyances that lead to waters of the state.

13.3.4. Building materials and building products

Minimize material exposure in cases where the exposure to precipitation or to stormwater will result in a discharge of pollutants (e.g., elevate materials from soil to prevent leaching of pollutants).

13.3.5. Pesticides, herbicides, insecticides, and fertilizer

Comply with all application and disposal requirements included on the registered pesticide, herbicide, insecticide, and fertilizer label (see also Section 13.3.6). When applying fertilizers, registrants must:

a. Apply at a rate and in amounts consistent with manufacturer's specifications;

b. Apply at the appropriate time of year for the location, and preferably timed to coincide as closely as possible to the period of maximum vegetation uptake and growth;

c. Avoid applying before heavy rains that could cause excess nutrients to be discharged;

d. Never apply to frozen ground;

e. Never apply to stormwater conveyance channels; and

f. Follow all other federal, state and local requirements regarding fertilizer application.

13.3.6. Hazardous or toxic waste

a. Separate hazardous or toxic waste from construction and domestic waste;

b. Store waste in sealed containers, which are constructed of suitable materials to prevent leakage and corrosion, and which are clearly labeled with their contents in accordance with all applicable federal, state, tribal or local requirements;

c. Store all outside containers within appropriately sized secondary containment (e.g., spill berms, decks, spill containment pallets) to prevent spills from being discharged or provide a similarly effective means designed to prevent the discharge of pollutants from these areas (e.g., storing chemicals in a covered area, having a spill kit available on site); and

d. Dispose of hazardous or toxic waste in accordance with the manufacturer's recommended method of disposal and in compliance with federal, state, tribal, and local requirements.

13.3.7. Construction and domestic wastes

a. Provide waste containers (e.g., dumpster, trash receptacle) that provide ground separation and are of sufficient size and number to contain construction and domestic wastes;

b. Keep waste container lids closed when not in use and close lids at the end of the business day for those containers that are actively used throughout the day. For waste containers that do not have lids, provide either (1) cover (e.g., a tarp, plastic sheeting, temporary roof) to prevent exposure of wastes to precipitation, or (2) a similarly effective means designed to prevent the discharge of pollutants (e.g., secondary containment);

c. Clean up and dispose of waste in designated waste containers; and

d. Clean up immediately if containers overflow.

13.3.8. Sanitary waste

Position portable toilets so that they are secure and will not be tipped or knocked over and located away from waters of the state and stormwater inlets or conveyances.

13.3.9. Washing applicators and containers

When construction activities involve washing applicators and containers used for stucco, paint, concrete, form release oils, curing compounds, or other materials, the following measures are required:

a. No discharge of these liquid wastes is allowed in storm sewers or waters of the state;

b. Dispose of liquid wastes in accordance with applicable requirements;

c. Remove and dispose of hardened concrete waste consistent with the handling of other construction wastes in Section 13.3.7; and

d. Locate any washout or cleanout activities as far away as possible from waters of the state and stormwater inlets or conveyances, and, to the extent feasible, designate areas to be used for these activities with signs and in the ESCP and conduct such activities only in these areas.

13.3.10. Emergency spill notification requirements

Discharges of toxic or hazardous substances from a spill or other release are prohibited, consistent with Section 12. Where a leak, spill, or other release containing a hazardous substance or oil occurs during a 24-hour period, the registrant must notify the Oregon Emergency Response System at (800) 452-0311 as soon as the registrant has knowledge of the release. Contact information must be in locations that are readily accessible and available to all employees.

13.4. Construction dewatering requirements

This section pertains to accumulated water from precipitation and uncontaminated groundwater seepage due to shallow excavation activities, not for the lowering of contaminated groundwater (see Section 6). Registrant must comply with the following requirements to prevent the discharge of pollutants in groundwater or accumulated stormwater that is removed from excavations, trenches, foundations, vaults, or other similar points of accumulation, in accordance with Section 12-Prohibited Discharges:

a. To the extent feasible, use vegetated, upland areas of the site to infiltrate dewatering water before discharge. The registrant is prohibited from using waters of the state as part of the treatment area;

b. Implement the appropriate control measures for dewatering discharges to prevent the discharge of pollutants;

c. Do not discharge visible floating solids or foam;

d. Use an oil-water separator or suitable filtration device (such as a cartridge filter) that is designed to remove oil, grease or other products if dewatering water is found to contain these materials;

e. At all points where dewatering water is discharged, comply with the velocity dissipation requirements of Section 13.2.16;

f. With backwash water, either haul it away for disposal or return it to the beginning of the treatment process;

g. Replace and clean the filter media used in dewatering devices when the pressure differential equals or exceeds the manufacturer's specifications;

h. If there is no alternative option, the use of a sanitary or combined sewer discharge is authorized with local sewer district approval; and

i. Active chemical treatment systems for turbidity or any other pollutants must be designed and stamped by an Oregon Registered Professional Engineer and be approved by DEQ.

14. Water quality based effluent limitations and associated requirements for stormwater discharges

Discharges must be controlled to meet all applicable water quality standards. In addition, DEQ expects compliance with the permit conditions is compliance with applicable water quality standards. As soon as the registrant becomes aware or DEQ determines that discharges do not meet applicable water quality standards, corrective actions must be undertaken as required in Section 16.1.

14.1. General effluent limitations to meet applicable instream water quality standards

Discharges must be controlled and may not cause or contribute to an exceedance of the applicable water quality standards as established in OAR 340-041; specifically, OAR 340-041-0036: Turbidity (Nephelometric Turbidity Units, NTU); No more than a 10% (ten percent) cumulative increase in natural stream turbidities may be allowed, as measured relative to a control point immediately upstream of the turbidity causing activity.

14.2. Water quality limited streams

DEQ may establish additional controls on construction activities that discharge stormwater runoff to water quality limited streams if Total Maximum Daily Loads are established and construction activities are determined to be a significant contributor to these loads. DEQ may also require application for individual permit or develop a watershed-based general permit for the activity.

15. Erosion and Sediment Control Plan (ESCP)

Before any project under this permit begins, the ESCP must be submitted to DEQ. The registrant must implement the ESCP at all times, from initial soil disturbance until project completion. Failure to implement any of the control measures or practices described in the ESCP is a permit violation. The ESCP must be kept up to date throughout the term of coverage under this permit. The registrant must ensure that an ESCP is revised as necessary to reflect site conditions and submit revisions to DEQ in accordance with the requirements of this permit.

Permit registrants of projects covered under the 1200-CA permit prior to the effective date of this permit must revise and update the ESCP content and site map to ensure that the ESCP is compliant with the requirements of this permit and must submit the revised ESCP to DEQ in YDO by April 1, 2023.

15.1. Qualifications to develop ESCP

a. For construction activities disturbing twenty or more acres, the ESCP must be developed and stamped by a professional with one of the following credentials, and their name and credentials must be included in the ESCP as a preparer:
   i. Certified Professional in Erosion and Sediment Control.
   ii. Certified Professional in Stormwater Quality.
   iii. Oregon Registered Professional Engineer.
   iv. Oregon Registered Landscape Architect.
   v. Oregon Certified Engineering Geologist.

b. If engineered facilities such as sedimentation basins or diversion structures for erosion and sediment control are required, these portions of the ESCP must be designed and stamped by an Oregon Registered Professional Engineer or an Oregon Registered Landscape Architect (see Section 13.2.17).

15.2. Design the ESCP to meet the objectives

The ESCP must be designed to meet the following objectives:

a. To implement best management practices (BMPs) in accordance with appropriate, recognized and generally accepted engineering practices to prevent erosion and sedimentation, and to identify, reduce, eliminate or prevent contamination of stormwater and water pollution from construction activities;

b. To prevent violations of water quality standards, erosion and sediment transport from the project site and meet 1200-CA permit technology-based effluent limitations and treatment requirements; and

c. To control peak volumetric flow rates and velocities of stormwater discharges to prevent scouring by means such as diverting, collecting, conveying and/or controlling flows.

15.3. ESCP for each phase of construction activity

Sediment and erosion controls must be clearly depicted for each of the following four distinct phases of construction activities within the ESCP. In addition, a site description and site map must be developed for the following construction phases:

a. Demolition, clearing, grading, excavating and land development;

b. Street and utilities;

c. Vertical construction; and

d. Final landscaping and site stabilization.

Linear construction projects must have an ESCP that clearly defines and addresses each distinct phase of construction. An ESCP including the site description and site map for each construction phase must be submitted to DEQ before construction activities may be initiated on the subsequent construction phase.

15.4. ESCP contents

At a minimum the ESCP must include the applicable information specified below:

a. Clearly identify the ESCP preparer and their credentials or stamp within the ESCP per Section 15.1;

b. Name and location of the site;

c. All contractors to perform work on site as follows:

   i. Once known, include a list of all contractors that will engage in construction activities on site, and the areas of the site where the contractor(s) will engage in construction activities. Revise the list as appropriate until project completion.

   ii. Include a list of all personnel (by name and position) that are responsible for the design, installation and maintenance of stormwater control measures (e.g., ESCP developer, BMP installer (see Section 15.10), as well as their individual responsibilities.

   iii. Personnel conducting visual monitoring must be identified in the ESCP. Provide the following for all personnel conducting visual monitoring of the project site:

      1. Name and title
      2. Contact information
      3. A description of certification per Section 17.1, along with any certification numbers and expiration date;

d. Environmental Management Plan per Section 6 if applicable;

e. Site description must include the following:

i. A description of the construction activities, including structures that are planned for demolition.

ii. The size of the property (in acres and length in miles if a linear construction site).

iii. A statement that clearly identifies the 303 (d) category 4 and 5 impairments status of each receiving water body (when the discharge enters an impaired watershed unit the listing will only be applied if there is a hydrologic connection between the receiving water and assessment water body causing the impairment);

iv. Any waterbody to be impacted by the construction activities and reference in 401 water quality certifications, USACE permit, DSL permit, and/or any other applicable agency authorization;

v. The total area expected to be disturbed by the construction activities (to the nearest quarter acre or quarter mile if a linear construction site);

vi. A description of any on-site and off-site construction support activity areas covered by this permit (see Section 10.2) such as staging areas;

vii. The maximum area expected to be disturbed at any one time, including on-site and offsite construction support activity areas;

viii. A description and projected schedule for the following:

1. Start dates of construction activities in each portion of the site, site preparation (i.e., excavating, cutting and filling), final grading, and creation of soil vegetation stockpiles requiring stabilization.

2. Temporary or permanent stop dates of construction activities in each portion of the site.

3. Dates of temporary or final stabilization of exposed area for each portion of site.

4. Dates of removal of temporary stormwater controls and construction equipment or vehicles, and the final end date of construction related pollutant generating activities;

ix. Type of fill material to be used, and of soils prior to disturbance;

x. Composition of seed mix and other planting used to establish temporary cover;

xi. A statement indicating engineered soil will be used per Section 17.6, and pH monitoring is required of sedimentation basins;

xii. Identify all authorized non-stormwater discharges in section 11 that will or may occur;

xiii. A list and description of all pollutant-generating activities on the site. For each pollutant generating activity include an inventory of pollutants or pollutant constituents (e.g., sediment, fertilizers, pesticides, paints, caulks, sealants, fluorescent light ballasts, contaminated substrates, solvents, fuels, associated with that activity, which could be discharged in stormwater from the construction site. The registrant must consider where potential spills and leaks could occur that contribute pollutants to stormwater discharges, and nay known hazardous or toxic substances, such as PCBs and asbestos, that will be disturbed, removed, or used on site during construction;

xiv. Description of stormwater controls. For each of the Section 13.2 Erosion Prevention and Sediment Control and Treatment Requirements, Section 13.3 Pollution Prevention Controls, and Section 13.4 Construction Dewatering Requirements, as applicable to the site, registrant must include the following in detail design sheet of the ESCP:

1. A description of the specific controls(s) to be implemented to comply with the requirements of this permit.

2. Any applicable stormwater control design specifications (including references to any manufacturer specifications and/or erosion and sediment control manuals/ordinances relied upon).
3. Routine stormwater control maintenance specifications.
4. Proposed timetable indicating when each sediment and control BMP is to be installed/implemented and duration that it is to remain in place;

xv. Natural buffer zone and/or equivalent sediment controls (see Section 13.2.4, and Appendix B). The registrant must include the following in the narrative site description:

1. The compliance alternative to be implemented.
2. If complying with alternative 1, the width of natural buffer retained.
3. If complying with alternative 2 or 3, the erosion and sediment control(s) the registrant will use to achieve an equivalent sediment reduction, and any information the registrant relied upon to demonstrate the equivalency.
4. If complying with alternative 3, a description of why it is infeasible for the registrant to provide and maintain an undisturbed natural buffer of any size.
5. For "linear construction sites" where it is infeasible to implement compliance alternative 1, 2, or 3, a rationale for this determination, and a description of any buffer width retained and/or supplemental erosion and sediment controls installed.
6. A description of any disturbances that are exempt under Section 13.2.1 that occur within 50 feet of a water of the state.
7. A description of the vegetated buffers, sized at 50 feet (horizontally) plus an additional 25 feet (horizontally) per five degrees of slope or DEQ approved control measures of equal effectiveness for any waterbody that is listed as impaired and requiring a TMDL for turbidity or sedimentation on the most recently approved Oregon 303(d) list, or has an established TMDL for turbidity or sedimentation;

xvi. Perimeter controls for a "linear construction site" (see Section 13.2.6). For areas where perimeter controls are not feasible, include documentation to support this determination and a description of the other practices that will be implemented to prevent discharges of pollutants in stormwater associated with construction activities;

1. Note: Routine maintenance specifications for perimeter controls documented in the ESCP must include Sections 13.1.5.a, and 13.2.6 requirement that sediment be removed before it has accumulated to one-third of the above-ground height of any perimeter control.

xvii. Sediment track-out controls (see Section 13.2.7). Document the specific stabilization techniques and/or controls that will be implemented to remove sediment prior to vehicle exit;

xviii. Sediment basins (see Section 13.2.17). The registrant must include the design storm method and calculations, and other design details in the ESCP. In circumstances where it is infeasible to utilize outlet structures that withdraw water from the surface of the sediment basin, include documentation to support this determination, including the specific conditions or time periods when this exception will apply;

xix. Treatment chemicals (see Section 6). The registrant must include the specific controls and implementation procedures designed to ensure that the use of cationic treatment chemicals will not lead to an exceedance of water quality standards;

xx. Stabilization measures (see Sections 13.2.20 and 13.2.21). The registrant must include the specific vegetative and/or non-vegetative practices that will be used;

xxi. Spill Prevention Procedures (see Section 13.3.10). The following must be included:

1. Procedures for expeditiously stopping, containing, and cleaning up spills, leaks, and other releases.
2. The ESCP may also reference the existence of oil Spill Prevention Control and Countermeasure (SPCC) plans developed for the construction activity (see Section 13.3.2.a), provided that the registrant keeps a copy of the SPCC on site or electronically available.
3. Waste management procedures (see Sections 13.3.1 and 13.3.4).
4. The location of fertilizers applied on site (see Section 13.3.5);

xxii. Staff Training. Include documentation that the required personnel are trained in accordance with section 17.1; and

xxiii. Planned business days and hours for the project known at the time.

f. Site Map. Include a legible map, or series of maps, showing the following features of the site if applicable:

i. Roads and features for DEQ to locate and access the site;

ii. Boundaries of the property;

iii. Depict the drainage patterns of stormwater and authorized non-stormwater before and after major grading activities;

iv. Locations where land disturbing activities will occur including:

1. Locations where land disturbing activities will occur (note any phasing), including any demolition activities
2. Approximate slopes before and after major grading activities (pre- and post-elevation contours).
3. For steep slopes (see Schedule D.4 Permit Specific Definitions), clearly label with the words "Steep Slope" and include the percentage grade.
4. Locations where sediment, soil, or other construction materials will be stockpiled
5. Clearly label any water of the state crossings with words "water crossing".
6. Designated points where vehicles will exit onto paved roads.
7. Locations of structures and other impervious surfaces upon completion of construction.
8. Locations of on-site and off-site construction support activity areas covered by this permit (see Section 10.2);

v. Locations of springs, wetlands, surface waters, and all waters of Oregon within and one mile downstream of the site's discharge point. Also identify if any surface waters are 303(d) Category 4 and 5 listed as impaired (when the discharge enters an impaired watershed unit, the listing will only be applied if there is a hydrologic connection between the receiving water and assessment water body causing the impairment);

vi. Riparian areas and vegetation including trees and associated rooting zones, and vegetation areas to be preserved;

vii. Vegetated buffer zones and/or equivalent sediment controls (see Section 13.2.4 and Appendix B) between the site and sensitive areas (e.g., wetlands), and other areas to be preserved, clearly label with the words "Natural Buffer Zone";

viii. Clearly label the type and extent of pre-construction cover on the site (e.g., vegetative cover, forest, pasture, pavement, structures);

ix. Temporary and permanent stormwater conveyance systems;

x. Location of concrete wash out;

xi. Location of sanitary facilities;

xii. Location of nearest official rain gauge, or if used, location of the registrant's onsite rain gauge;

xiii. Onsite water disposal locations (e.g., for dewatering);

xiv. Onsite drain catch basin depicting inlet protections, and a description of the type of catch basins used (e.g., field inlet, curb inlet, grated drain, and combination);

xv. Septic drain field;

xvi. Existing or proposed drywells or other UICs;

xvii. Drinking water wells on site or adjacent to the site;

xviii. Stormwater planters;

xix. Detention ponds, storm drain piping, and inflow and outflow details (e.g., bottom elevations and inverts);

xx. Post-construction stormwater facilities designed and engineered to infiltrate or filter stormwater and associated access restriction control measures (Section 13.2.12);

xxi. Locations of all potential pollutant-generating activities identified in Section 15.4.e. xiii;

xxii. Locations of stormwater controls, including any shared controls utilized to comply with this permit;

xxiii. Any other applicable features or controls that are associated with pollution prevention in stormwater discharges;

xxiv. Locations where polymers, flocculants, or other treatment chemicals will be used and stored;

xxv. Locations of engineered soils (see Section 13.2.18);

xxvi. Locations of engineered sediment basins (see Section 13.2.17);

xxvii. Receiving water(s). Stormwater and authorized non-stormwater discharge point locations, including:

1. Locations where stormwater and/or authorized non-stormwater will be discharged to storm drain inlets; and
2. Locations where stormwater or authorized non-stormwater will be discharged directly to surface waters of the state;

xxviii. Perimeter controls for a "linear construction site" (see Section 13.2.6);

xxix. Sediment track-out controls (see Section 13.2.7); and

xxx. Stabilization measures (see Sections 13.2.20 and 13.2.21). The registrant must include the specific vegetative and/or non-vegetative practices that will be used.

15.5. ESCP certification

The ESCP must be signed and dated by the preparer and in accordance with Section 15.1 if applicable.

15.6. ESCP attachments

The registrant must include a copy of the DEQ approved Environmental Management Plan if applicable (see Section 6).

15.7. On-site availability of the ESCP

The registrant must keep a current copy of the ESCP at the site and be available for inspections or upon request by DEQ. The ESCP can be stored electronically as long as the personnel on-site can access it and make it available for inspector review.

15.8. ESCP revisions

The ESCP and the site maps must be revised, within seven days of any of the following to accurately reflect site conditions and BMPs used onsite, if any of the following occurs:

a. Changes to the construction plans that impact erosion and sediment control measures.

b. Changes to the stormwater control BMPs, their location, maintenance required, and any other revisions necessary to prevent and control erosion and sediment runoff.

c. An increase in construction activities to adjacent lots.

d. Other activities at the site that are no longer accurately reflected in the ESCP. This includes changes made in response to corrective actions triggered under Section 16. The ESCP does not need to be modified if the estimated dates in Section 15.4.e.viii change during the course of construction.

e. To reflect areas on the site map where operational control has been transferred (and the date of transfer) since initiating permit coverage.

f. If inspections by DEQ determine that ESCP revisions are necessary for compliance with this permit.

g. Where DEQ determines it is necessary to install and/or implement additional controls at the site in order to meet the requirements of this permit, the following must be included in the ESCP:

   i. A copy of any correspondence describing such measures and requirements; and

   ii. A description of the controls that will be used to meet such requirements.

h. Change of contractors that will engage in construction activities on site, and the areas of the site where the contractor(s) will engage in construction activities.

i. Change of any personnel (by name and position) that are responsible for the design, installation and maintenance of stormwater control measures (see Section 15.10).

j. Change of the Certified Erosion and Sediment Control Inspector, or of their contact information and any applicable certification and training experience.

k. To reflect any revisions to applicable federal, state, tribal or local requirements that affect the stormwater controls implemented at the site.

l. If a change in chemical treatment systems or chemically enhanced stormwater control is made, including use of a different treatment chemical, different dosage rate or different area of application as applicable.

15.9. Submission of ESCP revision to DEQ

Revisions to the ESCP that require submission are a reporting requirement. The registrant must submit a revised version of the complete ESCP to DEQ within 30 calendar days of the revision. If the registrant does

not receive a response to the revisions from DEQ within ten calendar days of receipt, the proposed revisions are deemed accepted.

a. ESCP revisions must be submitted if they are made for the following reasons:
   i. Part of a corrective action requirement in Section 16.
   ii. An increase or decrease of the project size.
   iii. An increase or decrease of the size or location of disturbed areas.
   iv. Change to BMPs (e.g., type, design, or location).
   v. Change of the certified visual monitoring inspector.

b. The registrant must maintain records showing the dates of all ESCP revisions. The records must include the name of the person authorizing each change (see Section 15.8 above) and a brief summary of all changes.

c. All revisions made to the ESCP consistent with Section 15.8 must be authorized by a person identified in Section 15.1 if applicable.

d. Approval of the revisions by DEQ prior to implementation is not required, however the addition of an Active Chemical Treatment System must be approved by DEQ before operating and requires submission of an Environmental Management Plan (see Section 6.c).

15.10. Prior to commencement of construction activities.

The registrant must document the names and contact information of personnel that have responsibilities for implementing stormwater control measures and complying with the permit and ESCP requirements at the project site. The list of personnel should be kept with the ESCP.

If new or additional contractors are hired to implement control measures identified in the ESCP after construction has commenced, the contact information must be updated. The registrant must ensure that the following personnel are informed of the permit and ESCP requirements and their specific responsibilities:

a. Personnel who are responsible for the installation, maintenance, and/or repair of stormwater controls (including pollution prevention controls);

b. Personnel responsible for the application and storage of treatment chemicals (if applicable);

c. Personnel who are responsible for conducting inspections as required in Section 17.1; and

d. Personnel who are responsible for taking corrective actions as required in Section 16.

15.11. Permit Registrant is responsible for ensuring that all activities on the site comply with the requirements of the permit

The registrant must make subcontractors and outside service providers aware of any permit requirements that apply to the work they are subcontracted to perform. The permit registrant must provide subcontractors and outside service providers easy access to an electronic or paper copy of applicable portions of this permit, the most updated copy of the ESCP and other relevant documents or information that must be kept with the ESCP.

16. Corrective Actions

Permit registrants issued permit coverage prior to August 11, 2022, the issuance date of this permit, must comply with all conditions of Section 16-Corrective Actions as of September 15, 2022, the permit effective date.

The registrant must take corrective action(s) to comply with permit conditions, and must take immediate corrective action if any of the following conditions exist:

a. The discharges are causing an exceedance of applicable water quality standards.

b. Sediment or turbidity (as described in Section 13.2.11) are visible in discharge from the permitted site within:

   i. A conveyance system leading to surface waters.

   ii. Surface waters from the discharge point.

c. If DEQ requires the registrant to take corrective actions to prevent or control the discharge of significant amounts of sediment or turbidity to surface waters or to conveyance systems that discharge to surface waters, or as the result of a permit violations found during an inspection.

d. A stormwater control needs repair or replacement (beyond routine maintenance required under Section 13.1.4).

e. A stormwater control necessary to comply with the requirements of this permit was never installed or was installed incorrectly.

f. A prohibited discharge has occurred (see Section 12), including visibly turbid discharge.

16.1. Corrective action timelines

If any corrective action is required per Section 16 above, the registrant must immediately implement that action according to the following:

a. Take all necessary steps to address the condition, including cleaning up any contaminated surfaces so the material will not discharge in subsequent storm events;

b. Complete the corrective action by the close of the next business day when the problem does not require a new or replacement control or significant repair; and

c. When the problem requires a new or replacement control or significant repair, install the new or modified control and make it operational, or complete the repair, by no later than 24 hours from the time of discovery to ensure that the requirements of Section 14.1 are met. If it is infeasible to complete the installation or repair within 24 hours, the registrant must document in the records why it is infeasible to complete the installation or repair within the 24-hour timeframe and document the schedule for installing the stormwater control(s) and making it operational as soon as feasible after the 24-hour timeframe. Where these actions result in changes to any of the stormwater controls or procedures documented in the ESCP, the registrant must revise the ESCP in accordance with Section 15.8.

16.2. Corrective action documents

Within 24 hours of each corrective action implemented, the registrant must document the corrective actions in a report that includes:

a. The site common name;

b. Identification of discharge locations that were out of compliance;

c. The period of noncompliance;

d. Names, titles and contact information of personnel conducting inspections;

e. The specific condition and the date and time it was identified;

f. Describe the noncompliance and evaluate the stormwater control measures and practices to determine the cause of noncompliance;

g. Within 24 hours of completing the corrective action (in accordance with the timelines of Section 16.1), document the actions taken to address the condition, and steps taken to prevent the reoccurrence of the noncompliance including whether any ESCP revisions are required. Where these actions result in changes to any of the stormwater controls or procedures documented in the ESCP, the registrant must revise the ESCP in accordance with Section 15.8;

h. Each corrective action report must be signed by the permit registrant;

i. The corrective action reports must be kept at the site or at an easily accessible location and made available to DEQ upon request; and

j. The corrective action reports must be retained for three years after project completion.

16.3. Submit a corrective action report to DEQ

Within 48 hours of taking Corrective Action(s) that prevent an exceedance of water quality standards, sediment from leaving the site or visibly turbid discharge as required in Sections 16.a, 16.b or 16.c above the registrant must submit a corrective action report to DEQ. This report must include:

a. The site common name and permit identification number;

b. A description of the noncompliance and its cause;

c. Identification of outfalls that were out of compliance;

d. The NTU of the turbid discharge before and after corrective actions or photo of discharge before and after corrective action(s) implementation;

e. The period of noncompliance;

f. Names of personnel conducting visual monitoring;

g. Steps taken or planned to reduce, eliminate and prevent recurrence of the noncompliance (such as specific BMPs that will be implemented or increased inspection frequency);

h. A timeline of corrective action events: From identifying the need to take corrective action to submission of a corrective action report showing that the required steps were taken in the time allotted per Sections 16.1, 16.2 and 16.3. If allotted time is exceeded, state the cause for the delay;

i. Weather conditions that varied from predicted storm events and may have contributed to prohibited discharge occurrence; and

j. ESCP revisions if revisions were required to prevent and control erosion and sediment discharges.

If the registrant performs appropriate corrective actions and reporting in accordance with Sections 16, 16.1, 16.2 and 16.3, DEQ will consider these efforts to correct and/or mitigate the violation in deciding whether to initiate an enforcement action.

SCHEDULE B

MINIMUM MONITORING AND RECORDKEEPING REQIREMENTS

17. Visual monitoring of site and reporting requirements

17.1. Person(s) responsible for visually monitoring the project site

All sites one or more acres in size must be visually monitored by a Certified Erosion and Sediment Control or Storm Water Quality Visual Monitoring Inspector (Inspector). The Visual Monitoring Inspector must be certified in one of the following sediment and erosion control programs, or any other course approved at a future date by DEQ. DEQ has approved the following programs:

a. Certified Professional in Erosion and Sediment Control,

b. Certified Professional in Storm Water Quality,

c. Certified Inspector of Sediment and Erosion Control,

d. Washington State Certified Erosion and Sediment Control Lead,

e. Rogue Valley Sewer Services Erosion and Sediment Control Certification, or

f. Oregon Department of Transportation Erosion and Sediment Control Manager Certification (ODOT projects only).

17.2. Frequency of visual monitoring inspections

At a minimum, the Inspector must document the initial date of any construction staging, construction activities or land clearing, and conduct and document a visual monitoring inspection of the project site per the following frequency:

a. On the initial date;

b. Once every 14 calendar days; and

c. Daily within 24 hours of any storm event, including snowmelt that results in discharge from the site.

Storm event information can be derived from weather stations that are representative of the site location, rain gauges and other appropriate documentation can be used in the inspection reports. Note, in many parts of Western Oregon, a storm event of 0.10 inches will result in a discharge from construction sites.

17.3 Reductions in visual monitoring frequency

The Inspector must inspect stabilized areas no more than 14 days prior to a site becoming inactive to ensure that erosion and sediment control measures are in working order. For the following scenarios, the Inspector must clearly document the following conditions have begun in the written visual monitoring reports:

a. The Inspector may reduce the frequency of inspections in any area of the site where the temporary stabilization steps in accordance with Section 13.2.20 have been completed to twice per month for the first month, no less than 14 calendar days apart, then once per month. If construction activity resumes on a stabilized area of the site at a later date, the inspection frequency must immediately increase to that required in Section 17.2, as applicable. The Inspector must document the beginning and ending dates of site inactivity in the visual monitoring reports.

b. For "linear construction sites" where disturbed portions have achieved final stabilization criteria at the same time active construction continues on others, the inspection frequency may be reduced to twice

per month for the first month, no less than 14 calendar days apart, in any area of the site where the temporary stabilization steps have been completed. After the first month, inspect once more within 24 hours of any storm event leading to discharge from the site. If there are no issues or evidence of stabilization problems (e.g., failure to establish 70% vegetative cover), inspections may be discontinued. If "wash-out" of stabilization materials and/or sediment is observed, following re-stabilization, inspections must resume at the inspection frequency required in Section 17.2. Inspections must continue until final stabilization is visually confirmed following a storm event leading to discharge from the site.

Frozen conditions:

a. If construction activities are suspended due to frozen conditions, visual monitoring inspections may be temporarily suspended on the site until thawing conditions (See Schedule D.4 Permit Specific Definitions) exist if:
   i. Runoff is unlikely due to continuous frozen conditions. If unexpected weather conditions (such as above freezing temperatures or rain events) make discharges likely, the Inspector must immediately resume the regular inspection frequency as described in Section 17.2, as applicable;
   ii. Land disturbances have been suspended; and
   iii. All disturbed areas of the site have been temporarily stabilized in accordance with Section 13.2.20.

b. If construction activities are conducted during frozen conditions, the visual monitoring inspection frequency may be reduced to once per month if:
   i. Runoff is unlikely due to continuous frozen conditions. If unexpected weather conditions (such as above freezing temperatures or rain events) results in likely discharges, the Inspector must immediately resume the regular inspection frequency as described in Section 17.2, as applicable; and
   ii. Disturbed areas of the site have been temporarily stabilized in accordance with Section 13.2.20.

17.4. Requirements for visual monitoring

Visual Monitoring should be conducted during safe conditions and evaluate all elements of the ESCP including:

a. Confirmation that all stormwater controls are properly installed and are working as intended to prevent pollutant discharges;
b. Confirmation that the presence of conditions that could lead to spills, leaks, or other accumulations of pollutants on the site are addressed;
c. Identify any locations where new or modified stormwater controls are necessary to meet the erosion and sediment control requirements of Sections 13, 14 and 15;
d. Check for the presence of visible erosion and sedimentation as outlined in Section 13.2.11 and document any indication of sediment that has left or is likely to leave the project site;
e. If a discharge is occurring during the inspection:
   i. Identify all stormwater discharge locations at the site; and
   ii. Document the visual quality of the discharge and take note of the characteristics of the stormwater discharge, including color, odor, suspended solids, foam, oil sheen and any other indicators of stormwater pollutants;

f. If no discharge occurred from site within 24 hours of a storm event, the inspector must document (e.g., date stamped photos of all points of discharge from the site) that no discharge from the site occurred;

g. Identify any portion of the project site where land disturbing activities have permanently ceased or will be temporarily inactive for 14 or more calendar days and note the initial date of cessation; and

h. Complete any necessary maintenance, corrective actions or stabilization measures.

The Inspector is not required to visually monitor areas that, at the time of the inspection, are considered unsafe. Nearby downstream locations of any receiving waterbodies must be inspected to the extent that such inspections are safe, accessible and practical.

17.5. Visual monitoring inspection report

The inspection report must be completed within 48 hours of all site inspections. Inspection reports must include the following as applicable to the site:

a. The inspection date;

b. The name of the site and the identification number provided by the permit registrant;

c. Names, titles and contact information of the inspector;

d. A summary of the inspection, including the observations of the elements made in Section 17.4, the location of BMPs in need of any necessary maintenance or corrective actions, the location of any BMPs that failed to operate as designed or proved inadequate for a particular application, the location of where additional BMPs are needed that did not exist at the time of inspection, visual observations of the stormwater discharges from the site, or if a discharge from the site did not occur within 24 hours of a storm event (attach date stamped photos to report);

e. Any unauthorized discharges from the site;

f. Any portion(s) of the site where land disturbing activities have permanently ceased or will be temporarily inactive for 14 or more calendar days;

g. If complying with stabilization schedules for sites affected by unforeseen circumstances that delay the initiation and/or completion of vegetative stabilization, document the circumstances and the schedule for initiating and completing stabilization;

h. If complying with the stabilization schedules in arid, and semi-arid sites typical of Eastern Oregon (climate determination of the project site can be found on the National Climatic Data Center website), or drought-stricken areas, the beginning and ending dates of the seasonally dry period and the schedule the permit registrant will follow for initiating and completing vegetative stabilization;

i. All pH sampling results conducted per Section 17.6.1;

j. The alternative erosion and sediment control measures and the inspection frequency (see Section 17.3.b) for linear construction projects;

k. Reasons for changes or modifications to the ESCP;

l. Start and end dates subject to alternative inspection frequencies listed in Section 17.3

m. If the Inspector is inspecting the site at the frequency specified in Section 17.2 or Section 17.3, the applicable rain gauge, weather station readings or other source of information that triggered the inspection (e.g., weather conditions during the inspection, the approximate amount of precipitation since the last inspection, and approximate amount of precipitation during the last 24 hours);

n. If the Inspector determines that it is unsafe to inspect a portion of the site or the inclement weather makes the site, or portions of the site inaccessible, the reasoning and the locations to which this condition applies must be documented;

o. Each inspection report must be signed by the Inspector with the following statement: "I certify that this report is true, accurate, and complete to the best of my knowledge, abilities, and belief";

p. All inspection reports should be kept in chronological order at the site or at an easily accessible location (electronically is acceptable), and made available at the time of inspection or within three days upon request by DEQ; and

q. All visual monitoring notes, sampling records and inspection reports must be kept for three years from project completion.

17.6. Monitoring requirements

17.6.1. Monitoring pH of stormwater captured in sediment basins/impoundments when engineered soils are used

If construction activity involves the use of engineered soils (soil amendments including, but not limited to Portland cement-treated base, cement kiln dust, or fly ash), the permit registrant must conduct, and document pH monitoring of stormwater captured in the sediment impoundment as described below:

a. The permit registrant must begin the pH monitoring period when the engineered soils are first exposed to precipitation and must continue every 7 calendar days and within 24 hours of the occurrence of discharge from the site, or the occurrence of a storm event of 0.10 inches or greater until final stabilization of the area of engineered soils is established;

b. Document date soil amendments are added, and final stabilization achieved in the Inspection Report per Section 17.5;

c. The permit registrant must monitor the pH of stormwater in the sediment basins/impoundments immediately before the stormwater discharge to surface waters and at discharge point locations that receive stormwater runoff from the area of engineered soils;

d. The benchmark value for pH is defined in Standard Units (SU) and determined by the river basin containing the receiving waterbody according to OAR 340-041-0021. Anytime monitoring indicates that the pH is the maximum allowed SU or greater, the permit registrant must either:

   i. Prevent the high pH water from entering storm sewer systems or surface waters; or

   ii. If necessary, adjust or neutralize the high pH water until it is in the range of pH SU acceptable for discharge to the river basin containing the receiving waterbody by using an appropriate treatment BMP such as carbon dioxide (CO2) sparging or dry ice. The permit registrant must obtain written permission from DEQ before using any form of chemical treatment other than CO2 sparging or dry ice per Section 6; and

e. The permit registrant must perform pH monitoring on site within 15 minutes of sample collection with an accurately calibrated pH meter. The permit registrant must record the pH monitoring results and any pH adjustment treatments in the inspection report.

17.7. Inspections by DEQ

The permit registrant must allow and make arrangements for DEQ to have access to the site at all reasonable times.

SCHEDULE D

SPECIAL CONDTIONS

1. Issuance of this permit coverage does not relieve the permit registrant from all other permitting and licensing requirements. Prior to beginning construction activities, all other necessary approvals must be obtained.
2. Permit coverage will remain in effect after the expiration date or until another permit is issued if the permittee has paid all fees and has filed a renewal application.
3. Any permit registrant that does not want to be covered or limited by this general permit may make application for an individual NPDES permit in accordance with the procedures in OAR 340-45-030.

4. Permit Specific Definitions:

a. Active Chemical Treatment System-the use of chemicals (e.g., cationic treatment chemicals, electro-coagulation, flocculants, filtration, anionic polyacrylamide, polymers, hydrochloric or sulfuric acid) to remove pollutants from water (stormwater runoff or from dewatering) before discharge from a permitted site.

b. Active Treatment System-the use of pumps or other non-passive means to facilitate the removal of pollutants from water (stormwater runoff or from dewatering) before discharge from a permitted site.

c. Backwash Water (per Section 13.4.f)-refers to pumping water backwards through the filter media, sometimes including intermittent use of compressed air during the process. Backwashing is a form of preventive maintenance so that the filter media can be reused.

d. Best Management Practices or BMPs-schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural or managerial practices to prevent or reduce the pollution of waters of the state. BMPs include treatment systems, erosion and sediment control, source control, and operating procedures and practices to control site runoff, spillage or leaks, and waste disposal.

e. Clean Water Act or CWA-the Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, and 97-117; USC 1251 et seq.

f. Common Plan of Development or Sale-is a plan to subdivide a parcel of land into separate parts for separate sale. This can be for residential, commercial, or industrial development. A construction activity is part of a larger common plan of development if it is completed in one or more of the following ways: in separate stages, in separate phases, and/or in combination with other construction activities.

g. Construction Activities-including but not limited to, clearing, grading, excavating, grubbing, stumping, demolition, and land disturbing activities. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the facility as defined in 40 CFR 122.26(b)(15).

h. Construction Support Activity-a construction-related activity that specifically supports the construction activity and involves earth disturbance or pollutant-generating activities of its own and can include activities associated with concrete or asphalt batch plants, equipment staging yards, materials storage areas, excavated material disposal areas, and borrow areas.

i. Contamination-for the purposes of this permit, are generally understood to be caused by a known or unknown "Release", as defined by ORS 465.200 (22), from a known or suspected source.

j. Conveyance System-for the purposes of this permit, a sewer, ditch, pipe, channel, swale or similar component that is designed to carry water or any combination of such components.

k. CO_2 Sparging (per Sections 13.2.18 and 17.6.1)-is a technique in which carbon dioxide gas, sometimes introduced by dry ice, is bubbled through a liquid in order to lower the pH of the liquid.

l. DEQ-the Oregon Department of Environmental Quality.

m. Detention-the temporary storage of stormwater to improve quality or reduce the volumetric flow rate of discharge or both.

n. Dewatering-the removal and disposal of surface water or groundwater during site construction.

o. Discharge Point-the location where stormwater leaves the site. It includes the location where stormwater is discharged to surface water or a stormwater conveyance system.

p. Earth Disturbance-actions taken to alter the existing vegetation and/or underlying soil of a site, such as clearing, grading, site preparation (e.g., excavating, cutting, and filling), soil compaction, and movement and stockpiling of topsoil.

q. Encroach(ing)-to intrude beyond a specified boundary without right or permission.

r. Engineered Soils (per Section 17.6.1)-soils on site amended with cementitious compounds.

s. Erosion-the movement of soil particles or rock fragments by water or wind.

t. Erosion and Sediment Control BMPs-BMPs that are intended to prevent erosion and sedimentation, such as preserving natural vegetation, seeding, mulching and matting, plastic covering, sediment fences, and sediment traps and ponds. Erosion and sediment control BMPs are synonymous with stabilization and structural BMPs.

u. Farm Use Land-cropland, grassland, rangeland, pasture, and other land on which agricultural or forest-related products or livestock are produced. Agricultural lands include cropped woodland, marshes, incidental areas included in the agricultural operation, and other types of land used for the production of livestock.

v. Hazardous Materials-the materials defined in 40 CFR part 302 Designation, Reportable Quantities, and Notification.

w. Linear Construction Site-examples of linear construction projects include, but are not limited to, pipeline projects, highway construction, highway resurfacing and maintenance, airport runway construction and resurfacing tunnels, mass transit systems, and railroads.

x. Local Government-any county, city, town, or service district.

y. National Pollutant Discharge Elimination System or NPDES-the national program under Section 402 of the Clean Water Act for regulation of point source discharges of pollutants to waters of the United States.

z. Native Topsoil (per Section 13.2.12)-top layer of soil on site.

aa. Natural Buffer Zone-for the purposes of this permit, an area of undisturbed natural cover surrounding surface waters within which construction activities are restricted. Natural cover includes the natural vegetation, exposed rock, and barren ground that existed prior to commencement of land disturbing activities.

bb. Natural Vegetation-vegetation that occurs spontaneously without regular management, maintenance, or species introductions or removals. For purposes of this permit, this includes invasive species.

cc. Non-Stormwater Pollution Controls-general site and materials management measures that directly or indirectly aid in minimizing the discharge of sediment and other construction related pollutants from the construction site.

dd. Owner-for the purposes of this permit, any person with a legal interest in the permitted activities or the property on which the permitted activities occur.

ee. Permit Registrant-for the purposes of this permit, the public entity performing the construction activity regulated by this permit that has submitted an application and received notice of registration under this general permit by DEQ.

ff. Person-not only individuals, but also includes corporations, associations, firms, partnerships, joint stock companies, public and municipal corporations, political subdivisions, the state and any agencies thereof and the federal government and any agencies thereof.

gg. pH Neutralization (per Section 17.6)-to bring the pH between 6.5 and 8.5 standard units.

hh. Pollutant as defined in 40 CFR §122.2-dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, domestic sewage sludge (biosolids), munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, soil, cellar dirt and industrial, municipal, and agricultural waste discharge into water. It does not mean sewage from vessels within the meaning of section 312 of the FWPCA, nor does it include dredge or fill material discharged in accordance with a permit issued under section 404 of the FWPCA.

ii. Pollution or Water Pollution as defined by ORS 468B.005(3)-such alteration of the physical, chemical or biological properties of any waters of the state, including change in temperature, taste, color, turbidity, silt or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the state, which will or tends to, either by itself or in connection with any other substance, create a public nuisance or which will or tends to render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational or other legitimate beneficial uses or to livestock, wildlife, fish or other aquatic life or the habitat thereof.

jj. Project Completion-for the purposes of this permit, it means that construction activities are completed on the 1200-CA permit covered project site and that final stabilization criteria listed in the permit conditions are met.

kk. Runoff Controls-BMPs that are designed to control the peak volume and flow rate or to prevent scour due to concentrated flows.

ll. Sediment-mineral or organic matter, typically deposited by water, air or ice.

mm. Sediment Basin/Impoundment (also includes traps/ponds)-a sediment basin is a temporary pond built on a construction site to capture eroded or disturbed soil that is washed off during storm events, and protect the water quality of a nearby stream, river, lake or bay. The sediment-laden soil settles in the pond before the runoff is discharged.

nn. Sequence-the phased order that land disturbing activities are performed.

oo. Shared Control-a stormwater control, such as a sediment basin or pond, used by two or more operators that is installed and maintained for the purpose of minimizing and controlling pollutant discharges from a construction site with multiple registrants associated with a common plan of development or sale.

pp. Steep Slope-defined as those that are 70 percent or greater in grade.

qq. Site-the area where the construction activity is physically located or conducted.

rr. Storm Event-EPA defines a storm event at 40 CFR 122.21(g)(7)(ii) as a rainfall event with greater than 0.1 inch of rainfall.

ss. Stormwater as defined by 40 CFR §122.26(b)(13)-stormwater runoff, snow melt runoff and surface runoff and drainage.

tt. Stormwater Conveyance-a sewer, ditch, or swale that is designed to carry stormwater; a stormwater conveyance may also be referred to as a storm drain or storm sewer.

uu. Stumping-For the purposes of this permit, "stumping" is defined as "to clear the land of stumps."

vv. Surface Runoff-that portion of stormwater that does not infiltrate into the ground or evaporate, but instead flows onto adjacent land or watercourses or is routed to stormwater conveyance systems.

ww. Surface Water-all water naturally open to the atmosphere; for example, rivers, lakes, reservoirs, ponds, streams, impoundments, oceans, estuaries, springs, etc.

xx. Thawing Conditions-when frozen water onsite melts and creates runoff that may possibly discharge.

yy. Total Maximum Daily Load or TMDL-a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet state water quality standards. It is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. Percentages of the TMDL are allocated by DEQ to the various pollutant sources.

zz. Toxic Substances-are materials that are poisonous to living organisms.

aaa. Treatment Chemicals-polymers, flocculants or other chemicals that, among other things, are used to reduce turbidity in stormwater discharges by chemically bonding to the suspended silts and other soil materials and causing them to bind together and settle out. Common examples of treatment chemicals are chitosan, cationic PAM and anionic polyacrylamide.

bbb. Turbidity-the optical condition of waters caused by suspended or dissolved particles or colloids that scatter and absorb light rays instead of transmitting light in straight lines through the water column. Turbidity may be expressed as nephelometric turbidity units (NTUs) measured with a calibrated turbidity meter.

ccc. Underground Injection Control-any system, structure, or activity that is created to place fluid below the ground or sub-surface (e.g., sumps, infiltration galleries, drywells, trench drains, drill holes, etc.).

ddd. Visibly Turbid Discharge-refers to the cloudiness in the water discharged caused by sediment and other matter in the water column.

eee. Water or Waters of the State as defined by ORS 468B.005(10)-lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, wetlands, estuaries, marshes, inlets, canals, the Pacific Ocean within the territorial limits of the State of Oregon and all other bodies of surface or underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters which do not combine or effect a junction with natural surface or underground waters), which are wholly or partially within or bordering the state or within its jurisdiction.

SCHEDULE F

NPDES GENERAL CONDITIONS

Section A. Standard Conditions

1. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes aviolation of Oregon Revised Statutes (ORS) 468B.025 and is grounds for enforcement action; for permit termination, suspension, or modification; or for denial of a permit renewal application.

2. Penalties for Water Pollution and Permit Condition Violations

Oregon Law (ORS 468.140) allows the Director to impose civil penalties up to $10,000 per day for violationof a term, condition, or requirement of a permit.

Under ORS 468.943, unlawful water pollution, if committed by a person with criminal negligence, is punishable by a fine of up to $25,000 or by imprisonment for not more than one year, or by both. Each day on which a violation occurs or continues is a separately punishable offense.

Under ORS 468.946, a person who knowingly discharges, places or causes to be placed any waste into the waters of the state or in a location where the waste is likely to escape into the waters of the state, is subject to a Class B felony punishable by a fine not to exceed $200,000 and up to 10 years in prison.

3. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment. In addition, upon request of the Department, the permittee shall correct any adverse impact onthe environment or human health resulting from noncompliance with this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

4. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit,the permittee must apply for and have the permit renewed. The application shall be submitted at least 180 days before the expiration date of this permit.

The Director may grant permission to submit an application less than 180 days in advance but no later than the permit expiration date.

5. Permit Actions

This permit may be modified, suspended, revoked and reissued, or terminated for cause including, but not limited to, the following:

a. Violation of any term, condition, or requirement of this permit, a rule, or a statute;

b. Obtaining this permit by misrepresentation or failure to disclose fully all material facts; or

c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

The filing of a request by the permittee for a permit modification or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

6. Toxic Pollutants

The permittee shall comply with any applicable effluent standards or prohibitions established under Section307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

7. Property Rights

The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege.

8. Permit References

Except for effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants and standards for sewage sludge use or disposal established under Section 405(d) of the Clean Water Act, all rules and statutes referred to in this permit are those in effect on the date this permit is issued.

SECTION C. MONITORING AND RECORDS

1. Inspection and Entry

The permittee shall allow the Director, or an authorized representative upon the presentation of credentials to:

a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit, and

d. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by state law, any substances or parameters at any location.

SECTION D. REPORTING REQUIREMENTS

1. Planned Changes

The permittee shall comply with Oregon Administrative Rules (OAR) 340, Division 52, "Review of Plans and Specifications". Except where exempted under OAR 340-52, no construction, installation, or modification involving disposal systems, treatment works, sewerage systems, or common sewers shall be commenced untilthe plans and specifications are submitted to and approved by the Department. The permittee shall give noticeto the Department as soon as possible of any planned physical alternations or additions to the permitted facility.

2. Anticipated Noncompliance

The permittee shall give advance notice to the Director of any planned changes in the permitted facility oractivity which may result in noncompliance with permit requirements.

3. Transfers

This permit may be transferred to a new permittee provided the transferee acquires a property interest in the permitted activity and agrees in writing to fully comply with all the terms and conditions of the permit and therules of the Commission. No permit shall be transferred to a third party without prior written approval fromthe Director. The permittee shall notify the Department when a transfer of property interest takes place.

4. Compliance Schedule

Reports of compliance or noncompliance with, or any progress reports on interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date. Any reports of noncompliance shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirements.

5. Twenty-Four Hour Reporting

The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally (by telephone) within 24 hours, unless otherwise specified in this permit,from the time the permittee becomes aware of the circumstances. During normal business hours, the Department's Regional office shall be called. Outside of normal business hours, the Department shall be contacted at 1-800-452-0311 (Oregon Emergency Response System).

A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. If the permittee is establishing an affirmative defense of upset or bypass to any offense underORS 468.922 to 468.946, and in which case if the original reporting notice was oral, delivered written notice must be made to the Department or other agency with regulatory jurisdiction within 4 (four) calendar days. The written submission shall contain:

a. A description of the noncompliance and its cause;

b. The period of noncompliance, including exact dates and times;

c. The estimated time noncompliance is expected to continue if it has not been corrected;

d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance; and

e. Public notification steps taken, pursuant to General Condition B.7.

The following shall be included as information which must be reported within 24 hours under this paragraph:

a. Any unanticipated bypass which exceeds any effluent limitation in this permit.

b. Any upset which exceeds any effluent limitation in this permit.

c. Violation of maximum daily discharge limitation for any of the pollutants listed by the Director in this permit.

The Department may waive the written report on a case-by-case basis if the oral report has been receivedwithin 24 hours.

6. Other Noncompliance

The permittee shall report all instances of noncompliance not reported under General Condition D.4 or D.5, atthe time monitoring reports are submitted. The reports shall contain:

a. A description of the noncompliance and its cause;

b. The period of noncompliance, including exact dates and times;

c. The estimated time noncompliance is expected to continue if it has not been corrected; and

d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

7. Duty to Provide Information

The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine compliance with this permit. The permittee shall also furnish to theDepartment, upon request, copies of records required to be kept by this permit.

Other Information: When the permittee becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in a permit application or any report to the Department, it shall promptly submit such facts or information.

8. Signatory Requirements

All applications, reports or information submitted to the Department shall be signed and certified inaccordance with 40 CFR 122.22.

9. Falsification of Reports

Under ORS 468.953, any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, is subject to a Class C felony punishable by a fine not to exceed $100,000 per violation and up to 5 years in prison.

INSERT TAB

Unit 2
Turbidity Monitoring

Turbidity Monitoring During Construction

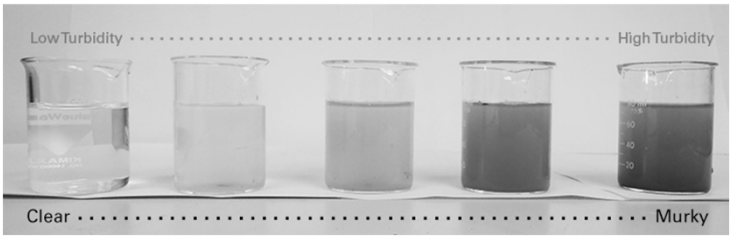
Cory Engel
Water Resources Program Coordinator
503-508-0764
Cory.C.Engel@odot.oregon.gov

ODOT MATERIALS & INSPECTION

1

What is turbidity?

Turbidity is a calibrated measurement of the degree to which a material suspended in water scatters and absorbs light.



ODOT MATERIALS & INSPECTION

2

Why does turbidity matter?

- Warms water
- Reduces oxygen
- Impedes photosynthesis
- Clogs fish gills
- Affects fish reproduction and growth
- Interferes with predation
- Affects recreation & drinking

ODOT MATERIALS & INSPECTION

3

The contractor's ESCM is required to monitor turbidity:

As part of Erosion & Sediment Control

Standard 280.62(c)

(NPDES 1200-CA)

During work in water

Special 290.30(a)(8)

(Clean Water Act Section 401 Water Quality Certifications)

ODOT MATERIALS & INSPECTION

4

Turbidity Monitoring Contract Specifications

As part of Erosion & Sediment Control

(NPDES 1200-CA)

00280.62
Inspection and Monitoring

(c) Monitor 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….

During work in water

(Clean Water Act Section 401 Water Quality Certifications)

SP00290.30(a)(8)
Turbidity Monitoring

During Work in waters, implement BMPs to minimize turbidity and monitor turbidity…

ODOT MATERIALS & INSPECTION

5

Turbidity Monitoring as part of Erosion and Sediment Control Monitoring

ODOT MATERIALS & INSPECTION

6

Turbidity Monitoring for ESC
WHEN DO WE DO IT?

- When site's runoff drains to a stream (most sites)
- On active sites:
  - On the initial date of staging or clearing
  - At least once every 14 days
  - Within 24 hours after any storm event or snowmelt that results in discharge from the site.
- On sites that are inactive, stabilized, or continuously frozen, twice per month for the first month, then once per month.

ODOT MATERIALS & INSPECTION

7

Turbidity Monitoring for ESC
HOW DO WE DO IT?

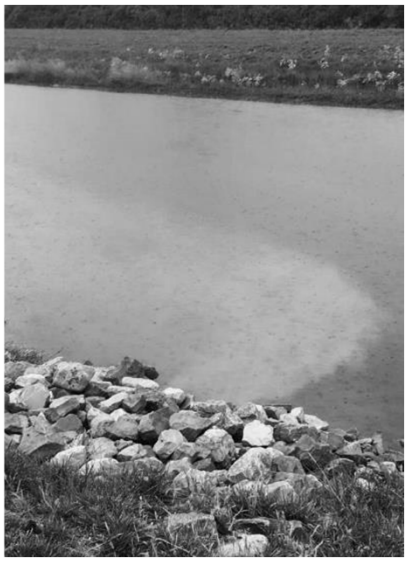
Although a turbidity meter can be used to measure turbidity, **visual monitoring** for erosion and sediment control is generally more convenient and appropriate because other pollutants like color, sheen, and litter are being visually monitored at the same time.

ODOT MATERIALS & INSPECTION

8

Turbidity Monitoring for ESC
WHERE DO WE DO IT?

- **At the point of discharge**



ODOT MATERIALS & INSPECTION

9

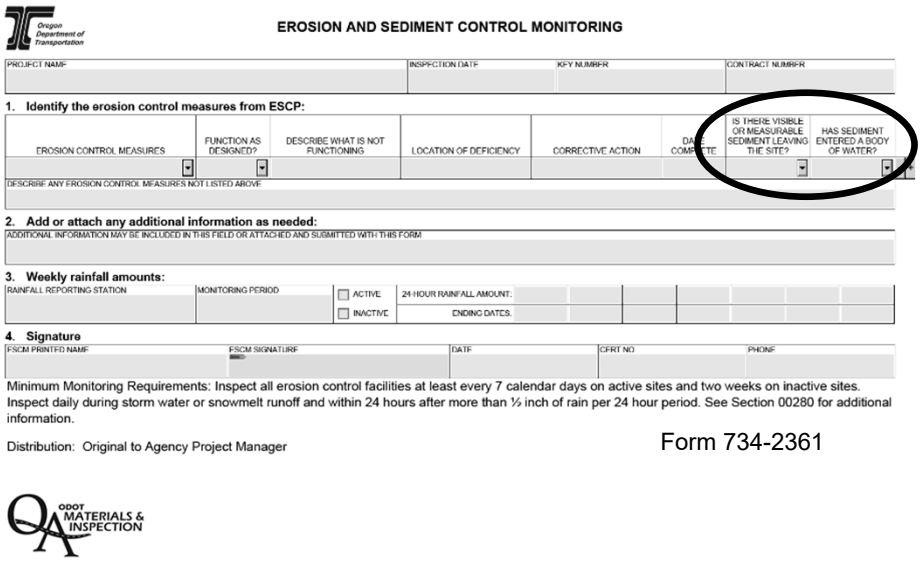
Turbidity Monitoring for ESC
WHAT IS THE COMPLIANCE STANDARD?

- **10% increase over background.** When monitoring visually, any noticeable increase in turbidity above background (regardless of severity) should be presumed to exceed the standard.

ODOT MATERIALS & INSPECTION

10

Turbidity Monitoring for ESC
WHERE ARE OBSERVATIONS RECORDED?



Oregon Department of Transportation

EROSION AND SEDIMENT CONTROL MONITORING

PROJECT NAME	INSPECTION DATE	KEY NUMBER	CONTRACT NUMBER

1. Identify the erosion control measures from ESCP:

EROSION CONTROL MEASURES	FUNCTION AS DESIGNED?	DESCRIBE WHAT IS NOT FUNCTIONING	LOCATION OF DEFICIENCY	CORRECTIVE ACTION	DATE COMPLETE	IS THERE VISIBLE OR MEASURABLE SEDIMENT LEAVING THE SITE?	HAS SEDIMENT ENTERED A BODY OF WATER?

DESCRIBE ANY EROSION CONTROL MEASURES NOT LISTED ABOVE

2. Add or attach any additional information as needed:

ADDITIONAL INFORMATION MAY BE INCLUDED IN THIS FIELD OR ATTACHED AND SUBMITTED WITH THIS FORM

3. Weekly rainfall amounts:

RAINFALL REPORTING STATION	MONITORING PERIOD	☐ ACTIVE ☐ INACTIVE	24-HOUR RAINFALL AMOUNT: ENDING DATES:

4. Signature

FSCM PRINTED NAME	FSCM SIGNATURE	DATE	CERT NO	PHONE

Minimum Monitoring Requirements: Inspect all erosion control facilities at least every 7 calendar days on active sites and two weeks on inactive sites. Inspect daily during storm water or snowmelt runoff and within 24 hours after more than ½ inch of rain per 24 hour period. See Section 00280 for additional information.

Distribution: Original to Agency Project Manager

Form 734-2361

ODOT MATERIALS & INSPECTION

11

Turbidity Monitoring During Work In Water

ODOT MATERIALS & INSPECTION

12

Turbidity Monitoring During Work In Water
WHEN DO WE DO IT?

Per SP00290.30(a)(8) – Meter: 2-hr / Visual: 4-hr intervals

13

Turbidity Monitoring During Work In Water

"Work In Water" means:

- Work within actual water
- Work that *would be* within actual water were it not for artificial dewatering.

14

Turbidity Monitoring During Work In Water
HOW DO WE DO IT?

- **We do it in the manner SP00290.30(a)(8) directs.**
- Metered measurements of water samples are usually required during work in water.
- On some projects, SP00290.30(a)(8) will allow the contractor to decide whether they want to use visual or meter monitoring.

ODOT MATERIALS & INSPECTION

15

Turbidity Monitoring During Work In Water
WHERE DO WE DO IT?

- **Meter required:** Upcurrent approx. 100′ from the work; downcurrent approx. 100′ from the work, mid-depth of the stream, and within any plume.
- **Meter not required:** Upcurrent outside the influence of the project, and downcurrent within any plume.

ODOT MATERIALS & INSPECTION

16

Turbidity Monitoring During Work In Water
WHAT IS THE VISUAL COMPLIANCE STANDARD?

- A visible plume is an indicator that the 10% threshold has been exceeded.
  - Repair or upgrade in-water BMPs.
  - If a plume is still present at the next 4-hour observation interval, repair or upgrade in-water BMPs and stop work until there is no longer a visible plume or metered samples indicate turbidity is no longer more than 10% above the background level.

ODOT MATERIALS & INSPECTION

17

Turbidity Monitoring During Work In Water
WHAT IS THE METER COMPLIANCE STANDARD?

Turbidity Level	Restrictions to Duration of Activity
< 5 NTU above background	No restrictions. Continue to monitor every 2 hours.
≥ 5 & < 30 NTU above background	Modify BMPs & continue for **4** hours. If turbidity is still ≥ 5 above background, stop. Modify BMPs. Resume when NTU is < 5 above background.
≥ 30 & < 50 NTU above background	Modify BMPs & continue for **2** hours. If turbidity is still ≥ 5 above background, stop. Modify BMPs. Resume when NTU is < 5 above background.
50 NTU or more above background	**Stop turbidity-causing work immediately.** Contractor notifies the ODOT inspector, and ODOT notifies DEQ.

ODOT MATERIALS & INSPECTION

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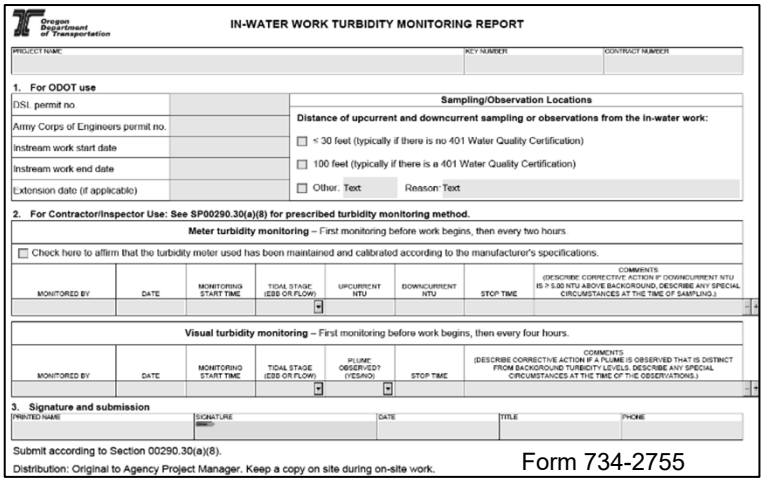
Turbidity Monitoring During Work In Water
WHERE ARE OBSERVATIONS RECORDED?



IN-WATER WORK TURBIDITY MONITORING REPORT

PROJECT NAME | KEY NUMBER | CONTRACT NUMBER

1. For ODOT use

DSL permit no.	
Army Corps of Engineers permit no.	
Instream work start date	
Instream work end date	
Extension date (if applicable)	

Sampling/Observation Locations

Distance of upcurrent and downcurrent sampling or observations from the in-water work:

- ☐ < 30 feet (typically if there is no 401 Water Quality Certification)
- ☐ 100 feet (typically if there is a 401 Water Quality Certification)
- ☐ Other. Text Reason: Text

2. For Contractor/Inspector Use: See SP00290.30(a)(8) for prescribed turbidity monitoring method.

Meter turbidity monitoring – First monitoring before work begins, then every two hours.

☐ Check here to affirm that the turbidity meter used has been maintained and calibrated according to the manufacturer's specifications.

MONITORED BY	DATE	MONITORING START TIME	TIDAL STAGE (EBB OR FLOW)	UPCURRENT NTU	DOWNCURRENT NTU	STOP TIME	COMMENTS (DESCRIBE CORRECTIVE ACTION IF DOWNCURRENT NTU IS > 5.00 NTU ABOVE BACKGROUND. DESCRIBE ANY SPECIAL CIRCUMSTANCES AT THE TIME OF SAMPLING.)

Visual turbidity monitoring – First monitoring before work begins, then every four hours.

MONITORED BY	DATE	MONITORING START TIME	TIDAL STAGE (EBB OR FLOW)	PLUME OBSERVED? (YES/NO)	STOP TIME	COMMENTS (DESCRIBE CORRECTIVE ACTION IF A PLUME IS OBSERVED THAT IS DISTINCT FROM BACKGROUND TURBIDITY LEVELS. DESCRIBE ANY SPECIAL CIRCUMSTANCES AT THE TIME OF THE OBSERVATIONS.)

3. Signature and submission

PRINTED NAME	SIGNATURE	DATE	TITLE	PHONE

Submit according to Section 00290.30(a)(8).

Distribution: Original to Agency Project Manager. Keep a copy on site during on-site work.

Form 734-2755

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Turbidity Monitoring
General Considerations

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General Considerations: Safety First!

Move the monitoring site or revert to visual monitoring if conditions are sketchy.

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General Considerations: Non-Project Turbidity

- Try to choose a monitoring location that excludes the non-project turbidity source.
- Record on the monitoring form and take a photograph.

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General Considerations: Sampling Point

- In a well-mixed stream, take sample away from the shore line.
- Mid-depth of the stream
- If there's a visible plume resulting from project work, take sample from within it.
- If in the stream, take sample upstream from your feet (avoid sample contamination by stirring up bed sediment).

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General Considerations: Sample Handling

- Take upstream and downstream samples as close to the same time as possible.
- Rinse sample container thoroughly with sample water before filling with the sample to be tested.
- Invert the container when submerging and turn it upright in the mid-point of the water column.
- Follow meter's maintenance and calibration instructions.
- Average multiple readings for each sample.
- Avoid pouring from one container to another.
- Before metering, gently agitate to resuspend sediments.

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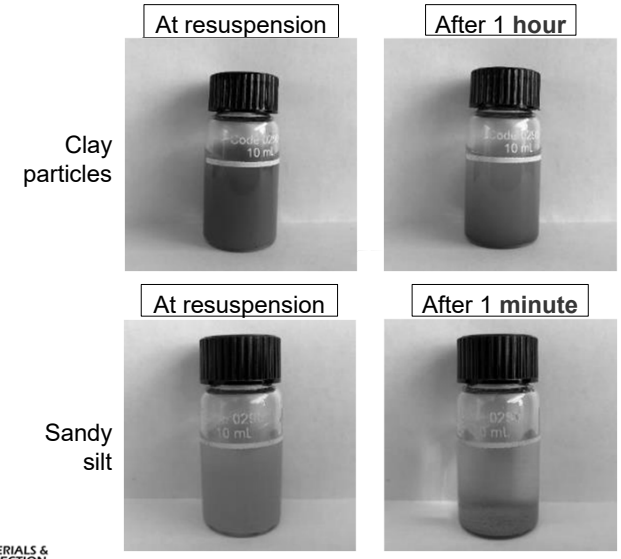
General Considerations: Suspension & Settling



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General Considerations: Regulator Reporting

Self-reporting exceedances

- Things go better with regulators when they trust us.
- Trust is built by transparency.
- Consistently perfect reports are unrealistic and suspicious.

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Post-Construction Stormwater Management
Best Management Practices (BMPs)

BMPs are constructed facilities or features of the roadside area used to:

- Remove pollutants from storm water
- Prevent damage to stream beds and banks

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Why We Manage Post-Construction Stormwater

- **Clean Water Act**
  - NPDES MS4 Permit
  - 401 Certifications
- **Endangered Species Act**
  - Federal Aid Highway Project Biological Opinion
  - Individual Biological Opinions

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Stormwater Facilities Specifications

- 00842 – Drainage Facility Markers
- 01010 – Stormwater Control, Water Quality Structures
- 01011 – Stormwater Control, Ponds (includes detention and bioretention ponds)
- 01012 – Stormwater Control, Water Quality Biofiltration Swale
- 01013 – Stormwater Control, Water Quality Bioslope (aka Media Filter Drain)
- 01014 – Stormwater Control, Water Quality Filter Strip
- 01030.13(f) – Types of Seed Mixes
- 03020 – Compost

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Stormwater BMPs include:

- Filter strips
- Media filter drains
- Bioswales
- Detention & retention ponds
- Rain gardens
- Proprietary devices

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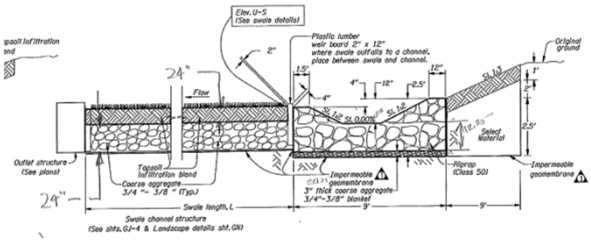
Things to Watch For:

- Grading, size, slope and elevation
- Correct placement and elevation of inlets, outlets, orifices
- Correct materials and plants: amended soil mixes, seed mixes, etc.
- Erosion control during plant establishment



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Avoiding Problems

- Make sure permanent erosion control is installed correctly.
- Do not open a facility for stormwater until construction and erosion control is completed.
- Do not route construction site runoff into a permanent stormwater BMPs, unless specifically called for by the ESCP (SP00290.30(a)(7)).

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Modification to BMP Designs

Always get approval from the hydraulic engineer for changes to size, location, configuration, materials, etc.

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Making Sure It Gets Done Right

- Be familiar with the plans and specs
- Talk to the designer – understand the purpose of the whole and the parts
- Talk to the contractor and construction crew
- Provide feedback to the design team

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Turbidity and Environmental Permits

Below are the key turbidity-related texts copied from the most relevant permits. Note that these approvals have several turbidity-related provisions regarding prevention and corrective actions that are not listed here, and this summary is not a substitute for familiarity with the permits in their entirety.

1. NPDES 1200-CA permit:

14.1. General effluent limitations to meet applicable instream water quality standards

a. Discharges must be controlled and may not cause or contribute to an exceedance of the applicable water quality standards as established in OAR 340-041; specifically, OAR 340-041-0036: Turbidity (Nephelometric Turbidity Units, NTU); No more than a 10% (ten percent) cumulative increase in natural stream turbidities may be allowed, as measured relative to a control point immediately upstream of the turbidity causing activity.

16. Corrective Actions

The registrant must take corrective action(s) to comply with permit conditions, and must take immediate corrective action if any of the following conditions exist:

b. Sediment or turbidity (as described in Section 13 .2.11) are visible in discharge from the permitted site within:

1. A conveyance system leading to surface waters.

11. Surface waters from the discharge point.

2. Clean Water Act Section 401 Water Quality Certifications:

19) Turbidity: The Applicant must implement BMPs to minimize turbidity during in-water work. Any activity that causes turbidity to exceed 10% above natural stream turbidities is prohibited except as specifically provided below:

a. Monitoring: Turbidity monitoring must be conducted and recorded as described below. Monitoring must occur at two-hour intervals each day when in-water work is being conducted. A properly calibrated turbidimeter is required unless another monitoring method is proposed and authorized by DEQ.

i. Representative Background Point: The Applicant must take and record a turbidity measurement every two hours during in-water work at an undisturbed area. A background location shall be established at a representative location approximately 100 feet up-current of the in water activity unless otherwise authorized by DEQ. The background turbidity, location, date, tidal stage (if applicable) and time must be recorded immediately prior to monitoring down-current at the compliance point described below.

ii. Compliance Point: The Applicant must monitor every two hours. A compliance location shall be established at a representative location approximately 100 feet down-current from the disturbance at approximately mid-depth of the waterbody and within any visible plume. The turbidity, location, date, tidal stage (if applicable) and time must be recorded for each measurement.

b. Compliance: The Applicant must compare turbidity monitoring results from the compliance points to the representative background levels taken during each two – hour

monitoring interval. Pursuant to OAR 340-041-0036, short term exceedances are allowed as followed:

c. Reporting:

   i. Record all turbidity monitoring required by subsections (a) and (b) above in daily logs which must include: calibration documentation; background NTUs; compliance point NTUs; comparison of the points in NTUs; and location; date; time; and tidal stage (if applicable) for each reading.

   ii. A narrative must be prepared discussing all exceedances with subsequent monitoring, actions taken, and the effectiveness of the actions. Applicant must make available copies of daily logs for turbidity monitoring to regulatory agencies including DEQ, USACE, NMFS, USFWS, and ODFW upon request.

   iii. Keep records on file for the duration of the permit cycle.

d. BMPs to Minimize In-stream Turbidity: The Applicant must implement the following BMPs, unless accepted in writing by DEQ:

   i. Sequence/Phasing of work – The Applicant must schedule work activities so as to minimize in-water disturbance and duration of in-water disturbances.

   ii. Bucket control - All in-stream digging passes by excavation machinery and placement of fill in-stream using a bucket must be completed so as to minimize turbidity. All practicable techniques such as employing an experienced equipment operator, not dumping partial or full buckets of material back into the wetted stream, adjusting the volume, speed, or both of the load, or using a closed-lipped environmental bucket must be implemented;

   iii. The Applicant must limit the number and location of stream-crossing events. Establish temporary crossing sites as necessary at the least sensitive areas and amend these crossing sites with clean gravel or other temporary methods as appropriate;

   iv. Machinery may not be driven into the flowing channel, unless authorized in writing by DEQ; and

   v. Excavated material must be placed so that it is isolated from the water edge or wetlands, and not placed where it could re-enter waters of the state uncontrolled.

   vi. Containment measures such as silt curtains, geotextile fabric, and silt fences must be in place and properly maintained in order to minimize in-stream sediment suspension and resulting turbidity.

3. Endangered Species Act – Biological Opinion for Federal Aid Highway Program projects:

Construction runoff turbidity may not exceed 10% increase in natural stream turbidity, as demonstrated by a turbidity monitoring protocol that is sufficient to meet Clean Water Act section 401 certification requirements, except for limited duration activities necessary to address an emergency or accommodate essential construction activities (e.g., channel reconstruction, removal of work area containment), provided that all practicable turbidity control techniques have been applied. [*Note that this BO covers most federally-funded projects. Other projects may be covered by other BOs with a substantially similar or identical requirement.*]

INSERT TAB

401 Water Quality Certification

Oregon
Kate Brown, Governor

Department of Environmental Quality
Northwest Region
700 NE Multnomah Street, Suite 600
Portland, OR 97232
(503) 229-5263
FAX (503) 229-6945
TTY 711

Month XX, 2021

APPLICANT NAME
COMPANY/ORG NAME
STREET ADDRESS
CITY, STATE ZIP

RE: 401 Water Quality Certification Approval for Project Number, Project Name

The US Army Corps of Engineers (USACE) has determined that your project will be authorized under Nationwide Permit (NWP) category #XX. As described in the application package received and reviewed by the Oregon Department of Environmental Quality (DEQ), the project qualifies for the expedited 401 Water Quality Certification (WQC), subject to the conditions outlined below. If you cannot meet all conditions of this 401 WQC, you may apply for a standard individual certification. A standard individual certification will require additional information, a public notice, and a higher review fee.

Certification Decision: Based on information provided by the USACE and the Applicant, DEQ has determined that implementation eligible activities under the proposed NWP will be consistent with water quality requirements including applicable provisions of Sections 301, 302, 303, 306, and 307 of the federal Clean Water Act, state water quality standards set forth in Oregon Administrative Rules Chapter 340 Division 41, and other appropriate requirements of state law, provided the following conditions are incorporated into the federal permit and strictly adhered to by the Applicant.

Duration of Certificate: This 401 WQC for impacts to waters, including dredge and fill activities, is valid for the duration of the USACE Section 404 permit. A new 401 WQC must be requested with any modification of the USACE 404 permit.

In addition to all USACE national and regional permit conditions, the following 401 WQC conditions apply to all NWP categories that qualify for the Nationwide 401 WQC.

401 GENERAL CERTIFICATION CONDITIONS

1) **Responsible parties:** This 401 WQC applies to the Applicant. The Applicant is responsible for the work of its contractors and sub-contractors, as well as any other entity that performs work related to this WQC.
Rule: *40 CFR 121, OAR 340-048-0015*
Justification: *DEQ must be aware of responsible parties to ensure compliance.*

2) **Work Authorized:** Work authorized by this 401 WQC is limited to the work described in the Permit Application and additional application materials (hereafter “the permit application

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materials"), unless otherwise authorized by DEQ. If the project is operated in a manner not consistent with the project description contained in the permit application materials, the Applicant is not in compliance with this 401 WQC and may be subject to enforcement.
Rule: *OAR 340-048-0015*
Justification: *To ensure the project will comply with water quality standards, DEQ must understand all work involved in the construction and operation of the project.*

3) **401 WQC on Site:** A copy of this 401 WQC must be kept on the job site and readily available for reference by the Applicant and its contractors and subcontractors, as well as by DEQ, USACE, National Marine Fisheries Service (NMFS), Oregon Department of Fish and Wildlife (ODFW), and other state and local government inspectors.
Rule: *OAR 340-012*
Justification: *All parties must be aware of and comply with the 401 WQC, including on-site contractors.*

4) **Project Changes:** DEQ may modify or revoke this 401 WQC, in accordance with OAR 340-048-0050, if the project changes or project activities are having an adverse impact on state water quality or beneficial uses, or if the Applicant is otherwise in violation of the conditions of this certification.
Rule: *OAR 340-048-0050*
Justification: *To ensure the project will comply with water quality standards, DEQ must understand all work involved in the construction and operation of the project.*

5) **Land Use Compatibility Statement:** In accordance with OAR 340-048-0020(2) (i), each Applicant must submit findings prepared by the local land use jurisdiction that demonstrates the activity's compliance with the local comprehensive plan. Such findings can be submitted using Section 11 of the Joint Permit Application, signed by the appropriate local official and indicating:

   a. "This project is consistent with the comprehensive plan and land use regulations;" or,

   b. "This project will be consistent with the comprehensive plan and land use regulations when the following local approvals are obtained," accompanied by the obtained local approvals.

   c. Rarely, such as for federal projects on federal land, "this project is not regulated by the comprehensive plan" will be acceptable.

In lieu of submitting the appropriate section of the USACE & Department of State Lands (DSL) Joint Permit Application, the Applicant may use DEQ's Land Use Compatibility Statement form found at: http://www.oregon.gov/deq/FilterDocs/lucs.pdf
Rule: *OAR 340-048-0020(2) (i), OAR 340-018*
Justification: *DEQ must ensure compliance with water quality land use laws at the local level.*

6) **Access:** The Applicant and its contractors must allow DEQ access to the project site with or without prior notice, including staging areas, and mitigation sites to monitor compliance with these 401 WQC conditions, including:

   a. Access to any records, logs, and reports that must be kept under the conditions of this 401 WQC;

   b. To inspect best management practices (BMPs), monitoring or equipment or methods; and

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c. To collect samples or monitor any discharge of pollutants.

Rule: *OAR 340-012*
Justification: *DEQ must inspect facilities for compliance with all state rules and laws.*

7) Failure of any person or entity to comply with this Order may result in the issuance of civil penalties or other actions, whether administrative or judicial, to enforce its terms.
Rule: *OAR 340-012*
Justification: *If the project is not being constructed or operated as proposed, it may not be consistent with water quality requirements.*

FOR PROJECTS THAT PROPOSE CONSTRUCTION, THE FOLLOWING GENERAL CONDITIONS APPLY

8) **Erosion and Sediment Control**: During construction, erosion control measures must be implemented to prevent or control movement of soil into waters of the state. The Applicant is required to develop and implement an effective erosion and sediment control plan. **Any project that disturbs more than one acre is required to obtain a National Pollutant Discharge Elimination System (NPDES) 1200-C construction stormwater permit from DEQ.** Contact DEQ for more information. Contact information can be found at:
https://www.oregon.gov/deq/wq/wqpermits/Pages/Stormwater-Construction.aspx

In addition, the Applicant (or responsible party) must:

a. Maintain an adequate supply of materials necessary to control erosion at the project construction site.

b. Prohibit erosion of stockpiles. Deploy compost berms, impervious materials, or other effective methods during rain events or when stockpiles are not moved or reshaped for more than 48 hours.

c. Inspect erosion control measures daily and maintain erosion control measures as often necessary to ensure the continued effectiveness of measures. Erosion control measures must remain in place until all exposed soil is stabilized;

i. If monitoring or inspection shows that the erosion and sediment controls are ineffective, Applicant must mobilize immediately to make repairs, install replacements, or install additional controls as necessary.

ii. If sediment has reached 1/3 of the exposed height of a sediment or erosion control, Applicant must remove the sediment to its original contour.

d. Use removable pads or mats to prevent soil compaction at all construction access points through, and staging areas in, riparian or wetland areas to prevent soil compaction, unless otherwise authorized by DEQ.

e. Flag or fence off wetlands not specifically authorized to be impacted to protect from disturbance and/or erosion.

f. Place dredged or other excavated material on upland areas with stable slopes to prevent materials from eroding back into waterways or wetlands.

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g. Place clean aggregate at all construction entrances, and utilize other BMPs, including, but not limited to as truck or wheel washes, when earth moving equipment is leaving the site and traveling on paved surfaces. The tracking of sediment off site by vehicles is prohibited.

Rule: *OAR 340-041-0007(8), ORS 468B.050, CWA Section 402, OAR 340-045*
Justification: *DEQ must ensure that pollution does not enter waterways.*

9) **Deleterious Waste Materials:** The Applicant is prohibited from placing biologically harmful materials and construction debris where they could enter waters of the state, including wetlands (wetlands are waters of the state). This includes, but is not limited to: petroleum products; chemicals; cement cured less than 24 hours; welding slag and grindings; concrete saw cutting by-products; sandblasted materials; chipped paint; tires; wire; steel posts; asphalt; and waste concrete.

The following specific requirements apply:

a. Cure concrete, cement, or grout for at least 24 hours before any contact with flowing waters;

b. Use only clean fill, free of waste and polluted substances;

c. Employ all practicable controls to prevent discharges of spills of harmful materials to surface or groundwater;

d. Maintain at the project construction site, and deploy as necessary, an adequate supply of materials needed to contain deleterious materials during a weather event;

e. Remove all foreign materials, refuse, and waste from the project area

Rule: *OAR 340-041-0007(8), ORS 468B.050, CWA Section 402*
Justification: *DEQ must ensure that pollution does not enter waterways.*

10) **Spill Prevention:** The Applicant must fuel, operate, maintain and store vehicles, and must store construction materials, in areas that will not disturb habitat directly or result in potential discharges.

Rule: *ORS 468B.025(1)(a)*
Justification: *DEQ must ensure that pollution does not enter waterways.*

11) **Spill & Incident Reporting:**

a. In the event that deleterious materials are discharged into state waters, or onto land with a potential to enter state waters, the discharge must be promptly reported to the Oregon Emergency Response Service (OERS, 1-800-452-0311). Containment and cleanup must begin immediately and be completed as soon as possible.

b. If the project operations cause a water quality problem that results in distressed or dying fish, the operator must immediately: cease operations; take appropriate corrective measures to prevent further environmental damage; collect fish specimens and water samples; and notify DEQ, ODFW, NMFS, and US Fish and Wildlife Service (USFW).

Rule: *ORS 466.645(1); OAR 340-142-0030(1)(b)(B), OAR 340-041*
Justification: *DEQ must ensure that pollution does not enter waterways and must be protective of beneficial uses, including fish.*

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12) **Vegetation Protection and Site Restoration:**

a. The Applicant must protect riparian, wetland, and shoreline vegetation in the authorized project area from disturbance through one or more of the following:

i. Minimization of project and impact footprint;

ii. Designation of staging areas and access points in open, upland areas;

iii. Fencing and other barriers demarking construction areas; and

iv. Use of alternative equipment (e.g., spider hoe or crane).

b. If authorized work results in vegetative disturbance and the disturbance has not been accounted for in planned mitigation actions, the Applicant must successfully reestablish vegetation to a degree of function equivalent or better than before the disturbance.

c. Pesticides (including herbicides) and fertilizers must be applied per manufacturer's instructions by a professionally licensed applicator. If chemical treatment is necessary, the Applicant is responsible for ensuring that pesticide application laws, including with the NPDES System 2300-A general permit, are met. Please review the information on the following website for more information: https://www.oregon.gov/deq/wq/wqpermits/Pages/Pesticide.aspx

i. For pesticide application within stormwater treatment facilities or within 150 feet of waters of the state, the Applicant must adopt an Integrated Pest Management (IPM) plan that describes pest prevention, monitoring and control techniques with a focus on prevention of inputs to waters of the state, or coverage under an NPDES permit, if required.

ii. Pesticide application should be applied during the dry season and avoid direct water application;

iii. Unless otherwise approved in writing by DEQ, applying surface fertilizer within stormwater treatment facilities or within 50 feet of any stream channel is prohibited.

Rule: *OAR 340-041, OAR 340-012, OAR 340-041-0033*
Justification: *Riparian, wetland, and shoreline vegetation help ensure excess sediment does not enter a waterway, and helps offset potential temperature impacts. DEQ must ensure that pollution does not enter waterways.*

13) **Buffers:** The Applicant shall avoid and protect from harm, all wetlands and provide a 50 foot buffer to waters of the state, unless proposed, necessary, and approved as part of the project. If a local jurisdiction has a more stringent buffer requirement, that requirement will take the place of this certification requirement.
Rule: *OAR 340-041, OAR 340-012*
Justification: *Riparian, wetland, and shoreline buffers help ensure excess sediment does not enter a waterway, and helps offset potential temperature impacts. DEQ must ensure that pollution does not enter waterways.*

14) **Previously Contaminated Soil and Groundwater:** If any contaminated soil or groundwater is encountered, it must be handled and disposed of in accordance with the soil and groundwater management plan for the site, as well as local, state and federal regulations. The Applicant must notify the Environmental Cleanup Section of DEQ at 1-800-452-4011 Ex.6258.
Rule: *OAR 340-041, OAR 340-012, OAR 340-122, OAR 340-040*
Justification: *DEQ must ensure that pollution does not enter waterways. As sediments are disturbed, pollutants could become redistributed.*

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FOR PROJECTS THAT PROPOSE IN-STREAM WORK IN JURISDICTIONAL WATERS

15) **Fish protection/ Oregon Department of Fish and Wildlife timing:** The Applicant must perform in-water work only within the ODFW preferred time window as specified in the *Oregon Guidelines for Timing of In-Water Work to Protect Fish and Wildlife Resources*, or as authorized otherwise under a USACE permit and/or DSL removal/fill permit. Exceptions to the timing window must be recommended by ODFW, NMFS and/or the USFW as appropriate, and approved by DSL when applicable.
Rule: *OAR 340-041-0011*
Justification: *DEQ must be protective of all water quality standards, including beneficial uses such as fish.*

16) **Aquatic life movements:** Any activity that may disrupt the movement of aquatic life living in the water body, including those species that normally migrate through the area, is prohibited. The Applicant must provide unobstructed fish passage at all times during any authorized activity, unless otherwise approved in the approved application.
Rule: *OAR 340-041-0016; OAR 340-041-0028*
Justification: *DEQ must be protective of all water quality standards, including beneficial uses such as fish.*

17) **Isolation of in-water work areas:** The Applicant must isolate in-water work areas from the active flowing stream, unless otherwise authorized as part of the approved application, or authorized by DEQ.
Rule: *OAR 340-041, OAR 340-012, OAR 340-045*
Justification: *DEQ must ensure that pollution does not enter waterways.*

18) **Cessation of Work:** The Applicant must cease project operations under high-flow conditions that will result in inundation of the project area. Only efforts to avoid or minimize turbidity or other resource damage as a result of inundation of the exposed project area are allowed during high-flow conditions.
Rule: *OAR 340-041, OAR 340-012*
Justification: *DEQ must ensure that pollution does not enter waterways*.

19) **Turbidity**: The Applicant must implement BMPs to minimize turbidity during in-water work. Any activity that causes turbidity to exceed 10% above natural stream turbidities is prohibited except as specifically provided below:

a. **Monitoring**: Turbidity monitoring must be conducted and recorded as described below. Monitoring must occur at two-hour intervals each day when in-water work is being conducted. A properly calibrated turbidimeter is required **unless another monitoring method is proposed and authorized by DEQ**.

i. Representative Background Point: The Applicant must take and record a turbidity measurement every two hours during in-water work at an undisturbed area. A background location shall be established at a representative location approximately 100 feet up-current of the in water activity unless otherwise authorized by DEQ. The background turbidity, location, date, tidal stage (if applicable) and time must be recorded immediately prior to monitoring down-current at the compliance point described below.

ii. Compliance Point: The Applicant must monitor every two hours. A compliance location shall be established at a representative location approximately 100 feet down-current from the disturbance at approximately mid-depth of the waterbody

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and within any visible plume. The turbidity, location, date, tidal stage (if applicable) and time must be recorded for each measurement.

b. **Compliance**: The Applicant must compare turbidity monitoring results from the compliance points to the representative background levels taken during each two – hour monitoring interval. Pursuant to OAR 340-041-0036, short term exceedances are allowed as followed:

MONITORING WITH A TURBIDIMETER *EVERY 2 HOURS*	
TURBIDITY LEVEL	***Restrictions to Duration of Activity***
0 to 4 NTU above background	No Restrictions
5 to 29 NTU above background	Work may continue maximum of 4 hours. If turbidity remains 5-29 NTU above background, stop work and modify BMPs. Work may resume when NTU is 0-4 above background.
30 to 49 NTU above background	Work may continue maximum of 2 hours. If turbidity remains 30-49 NTU above background, stop work and modify BMPs. Work may resume when NTU is 0-4 above background.
50 NTU or more above background	Stop work immediately and inform DEQ

c. **Reporting**:
   i. Record all turbidity monitoring required by subsections (a) and (b) above in daily logs which must include: calibration documentation; background NTUs; compliance point NTUs; comparison of the points in NTUs; and location; date; time; and tidal stage (if applicable) for each reading.

   ii. A narrative must be prepared discussing all exceedances with subsequent monitoring, actions taken, and the effectiveness of the actions. Applicant must make available copies of daily logs for turbidity monitoring to regulatory agencies including DEQ, USACE, NMFS, USFWS, and ODFW upon request.

   iii. Keep records on file for the duration of the permit cycle.

d. **BMPs to Minimize In-stream Turbidity:** The Applicant must implement the following BMPs, unless accepted in writing by DEQ:

   i. Sequence/Phasing of work – The Applicant must schedule work activities so as to minimize in-water disturbance and duration of in-water disturbances.

   ii. Bucket control - All in-stream digging passes by excavation machinery and placement of fill in-stream using a bucket must be completed so as to minimize turbidity. All practicable techniques such as employing an experienced equipment operator, not dumping partial or full buckets of material back into the wetted stream, adjusting the volume, speed, or both of the load, or using a closed-lipped environmental bucket must be implemented;

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iii. The Applicant must limit the number and location of stream-crossing events. Establish temporary crossing sites as necessary at the least sensitive areas and amend these crossing sites with clean gravel or other temporary methods as appropriate;

iv. Machinery may not be driven into the flowing channel, unless authorized in writing by DEQ; and

v. Excavated material must be placed so that it is isolated from the water edge or wetlands, and not placed where it could re-enter waters of the state uncontrolled.

vi. Containment measures such as silt curtains, geotextile fabric, and silt fences must be in place and properly maintained in order to minimize in-stream sediment suspension and resulting turbidity.

Rule: *OAR 340-041-0036, OAR 340-041*
Justification: *DEQ must ensure that pollution does not enter waterways.*

SPECIFIC CONDITIONS FOR POST-CONSTRUCTION STORMWATER MANAGEMENT

20) **Post Construction Stormwater Management:** For projects which propose new impervious surfaces or the redevelopment of existing surfaces, the Applicant must submit a post-construction stormwater management plan to DEQ. The plan must be reviewed and approved prior to construction to ensure compliance with water quality standards. The Applicant must implement BMPs as proposed in the stormwater management plan, including operation and maintenance. If proposed stormwater facilities change due to site conditions, the Applicant must notify DEQ in writing.

In lieu of a complete stormwater management plan, the Applicant may submit documentation of acceptance of the stormwater into a DEQ permitted NPDES Phase I Municipal Separate Storm Sewer System (MS4).
Rule: *ORS 468B.050, OAR 340-045, OAR 340-041*
Justification: *DEQ must ensure that pollution does not enter waterways.*

21) **Stormwater Management & System Maintenance:** The Applicant is required to implement effective operation and maintenance practices for the lifetime of the proposed facility. Long-term operation and maintenance of stormwater treatment facilities will be the responsibility of the applicant or the entity listed in the approved post-construction stormwater management plan.

Maintenance of stormwater treatment facilities subject to an MS4 permit is regulated by the permit.
Rule: *OAR 340-041, OAR 340-012, OAR 340-045*
Justification: *DEQ must ensure that pollution does not enter waterways.*

22) **Corrective Action May Be Required:** DEQ retains the authority to require corrective action in the event the stormwater management facilities are not built or performing as described in the plan.
Rule: *OAR 340-041, OAR 340-012*
Justification: *DEQ must ensure that pollution does not enter waterways.*

DRAFT

CATEGORY SPECIFIC CONDITIONS

In addition to all national and regional conditions of the USACE permit and the 401 Water Quality Certification general conditions above, the following conditions apply to the noted specific categories of authorized activities.

NWP 42 – Recreational Facilities:

42.1) For facilities that include turf maintenance actions, the permittee must develop and implement an Integrated Pest Management Plan (IPM) that describes pest prevention, monitoring and control techniques with a focus on prevention of chemical and nutrient inputs to waters of the state, including maintenance of adequate buffers for pesticide application near salmonid streams, or coverage under an NPDES permit, if required (information is available at: http://www.oregon.gov/deq/wq/wqpermits/Pages/Pesticide.aspx).
Rule: *OAR 340-041-0033, OAR 340-041*
Justification: *DEQ must ensure that pollution does not enter waterways, including excess pesticides and fertilizers.*

NWP 43 – Stormwater Management Facilities:

43.1) Projects that propose the following elements are denied expedited certification:
a. In-stream stormwater facilities;
b. Discharge outfalls not subject to an MS4 NPDES permit; and,
c. Proposals that do not demonstrate pollutant removal to meet water quality standards prior to discharge to waters of the state.
Rule: *OAR 340-041, OAR 340-012, OAR 340-048*
Justification: *DEQ must ensure that pollution does not enter waterways; stormwater is considered a pollutant.*

43.2) To apply for certification for a project with in-stream stormwater facilities, without an NPDES permit, or without submittal of an approvable stormwater management plan per DEQ's Guidelines (at: http://www.oregon.gov/deq/FilterDocs/401wqcertPostCon.pdf), the Applicant must submit complete project information and water quality impacts analysis directly to DEQ in order to undergo individual 401 WQC evaluation and fulfill public participation requirements.
Rule: *OAR 340-041-0059*
Justification: *DEQ must ensure that pollution does not enter waterways; stormwater is considered a pollutant.*

NWP 44 – Mining Activities:

44.1) Projects that do not obtain an NPDES 700-PM or Individual permit are denied expedited certification.
Rule: *OAR 340-045-0033, OAR 340-041*
Justification: *DEQ must ensure that pollution does not enter waterways. Excess turbidity can be considered pollution.*

44.2) To apply for certification for a project without an NPDES permit, the Applicant must submit complete project information and water quality impacts analysis directly to DEQ in order to undergo individual 401 WQC evaluation and fulfill public participation requirements.
Rule: *OAR 340-041-0059*
Justification: *DEQ must ensure that pollution does not enter waterways.*

DRAFT

44.3) The State of Oregon requires an In-Water Blasting Permit be obtained per OAR, 635-425-0000. Permittee is advised to contact the nearest ODFW office for further information at: https://www.dfw.state.or.us/lands/inwater/
Rule: *OAR 340-041-0011*
Justification: *DEQ must be protective of all water quality standards, including beneficial uses such as fish.*

NWP 51 – Land-Based Renewable Energy Generation Facilities:

51.1) For associated utility lines with directionally-bored stream or wetland crossings proposed, condition D.1 must be applied.
Rule: *OAR 340-041, OAR 340-012, OAR 340-048*
Justification: *DEQ must ensure that pollution does not enter waterways.*

NWP 58 – Utility Lines:

58.1) For proposals that include directionally-bored stream or wetland crossings:

a. All drilling equipment, drill recovery and recycling pits, and any waste or spoil produced, must be completely isolated, recovered, then recycled or disposed of to prevent entry into waters of the state. Recycling using a tank instead of drill recovery/recycling pits is preferable;

b. In the event that drilling fluids enter a water of the state, the equipment operator must stop work, immediately initiate containment measures and report the spill to the Oregon Emergency Response System (OERS) at 1-800-452-0311.

c. An adequate supply of materials needed to control erosion and to contain drilling fluids must be maintained at the project construction site and deployed as necessary.

d. The Applicant must have a contingency plan in place prior to construction for the inadvertent return of drilling lubricant.

Rule: *OAR 340-142-0030, OAR 340-142-0040(1)*
Justification: *Drilling equipment and fluids that enter a waterbody would likely cause contamination of that waterbody.*

58.2) For proposals that include utility lines through wetlands, include anti-seep collars or equivalent technology to prevent draining the wetlands.
Rule: *OAR 340-041, OAR 340-012, OAR 340-048*
Justification: *DEQ must ensure that pollution does not enter waterways.*

If the Applicant is dissatisfied with the conditions contained in this certification, a hearing may be requested. Such request must be made in writing to DEQ's Office of Compliance and Enforcement at 700 NE Multnomah St, Suite 600, Portland Oregon 97232, within 20 days of the mailing of this certification.

The DEQ hereby certifies that this project complies with the Clean Water Act and state rules, with the above conditions. If you have any questions, please contact Haley Teach at 503-229-5051, by email at Haley.Teach@deq.state.or.us, or at the address on this letterhead.

DRAFT

Project Name: *Project name*
Project Number: *20XX-XXX*

Sincerely,

Steve Mrazik,
Water Quality Manager
Northwest Region

ec: , USACE
, DSL
, NOAA
Deanna Caracciolo, DLCD (If project is in coastal zone)

DRAFT

INSERT TAB

Unit 3
Roadside Development

Right of Way Development and Control

Environmental Inspector

© ODOT Flickr image

1

Right of Way Development is unlike Construction

- Materials are perishable, living things.
- Site preparation – healthy soil
- Healthy seeds
- Mulch
- Seed establishment

2

Section 01000 –
Right of Way Development and Control

- **01030.00 Scope**
  This work consists of **seeding and associated tasks** to develop plant growth for **erosion control**, environmental mitigation and Roadside Development.
- **01040.00 Scope**
  This work consists of planting but has sections that pertain to seeding too (i.e., soil conditioners, amendments, bio-amendments, soil testing, topsoil and Wetland soil).

3

Section 01030 – Seeding

01030.02 Definitions

- Certified Seed – commercially available, named varieties of seeds; certified by OSU Seed Certification Service, will have a blue tag. Native plants are not usually certified.
- Pure Live Seed (PLS) – The amount of viable seed in the total quantity of seed.

4

Section 01030 – Seeding

01030.02 Definitions

Noxious Weed – identified by ODA as harmful or a threat to economy and ecology of the state

- Type A – Of economic importance, with infestations small enough to eradicate or contain
- Type B – Of economic importance, with regional abundance but may have limited distribution

Weed Management Area – identified on Plans, usually noxious weeds present

5

Noxious Weeds

Type A: Giant Hogweed /
Heracleum mantagazzianum
(Sap can cause burning, blisters and long lasting scars)

Type B: Butterfly Bush /
Buddleia davidii
(Flowers attract butterflies and have sweet fragrance)

6

Soil

Soil quality affects both seeding (01030) and planting (01040).

Specifications discuss soil in one location – Section 01040

- **01030.11 Topsoil** – Refer to 01040.14
- **01030.12 Soil Modifiers** – Refer to 01040.16, 01040.17 and 01040.18
- **01030.45 Soil Testing** – Refer to 01040.13

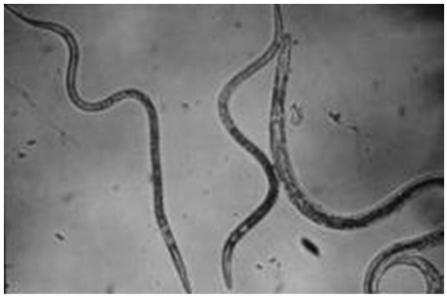
7

Soil continued

- Soils defined in Section **01040.14**
- Healthy soil includes mineral material, organic matter including soil biology and pore space.

8

Soil Biology



Many varieties of Nematodes exist

Bacteria, Fungi, Protozoa, Nematodes, Arthropods and Earthworms decompose organic materials, sequester carbon, take nitrogen from the air and fix it to the soil. These micro-critters, enhance soil aggregation and porosity, prey on crop pests and are food for above-ground animals.

ODOT MATERIALS & INSPECTION

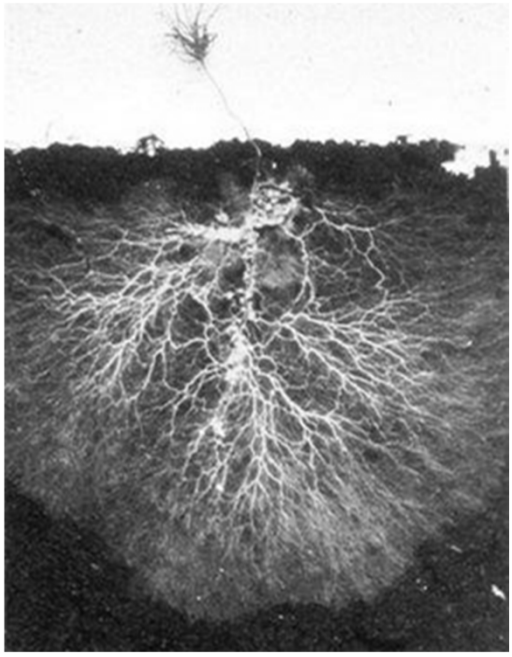
9

01040.17 Soil Biology – Mycorrhizal Fungi

- Symbiotic relationship: Mycorrhizae take inexpensive sugars from host plant and help uptake water and nutrients from soil that would otherwise be unavailable.
- Mycorrhizae release chemicals into the soil that unbind nutrients from soil.
- Microscopic filaments of Mycorrhizal hyphae (roots) may comprise several miles per cubic inch.
- Soil Bio-Amendments discussed in **Section 01040.17**

ODOT MATERIALS & INSPECTION

10



Mycorrhizal fungi on roots

11

01040: Materials – Soil

- **01040.13 Soil Testing and Amendment Report**
  For soil fertility by a qualified testing lab. Should identify amendments, bio-amendments and fertilizer needed in a report.
- **01040.14 Topsoil**
  3 types (plus water quality mixture identified in Sections 01012, 01011 and 01014).
- **01040.15-.17 Soil Conditioners, Amendments and Bio-Amendment**
  Conditioners modify soil structure; amendments improve soil nutrition; fertilizers increase availability of specific elements necessary for plant growth, Bio-Amendments introduce soil biology into the soil.

ODOT MATERIALS & INSPECTION

12

Roadside soils are frequently poor quality:

Stripped of topsoil layer or compacted mineral soil with little pore space or soil biology.

Retain existing vegetation wherever possible!

Section **01040.48** describes site preparation required for seeding.

13

Section 01030 - Seeding

01030.13 Seed – Labels, Quality, Pure Live Seed, Inspection, Mixes

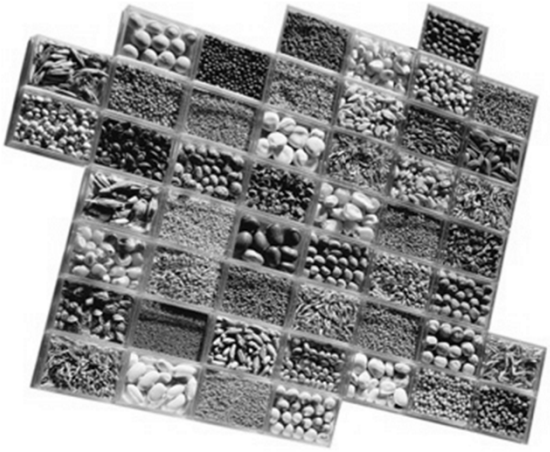
Look for:

- Compliance with Oregon and Federal Seed Regs
- Testing date – Within 18 months of planting
- Not sprouted, moldy, wet or damaged

14

Seed Sizes Vary – From fewer than 100 per Lb. to more than 2.5 million per pound!

Weight per acre of seed is derived by calculating the number of seeds per pound against the # of seeds per SF.



15

Nursery Label / Sample

SUNMARK SEEDS INTERNATIONAL, INC. Bag: 1 of 1
18032 NE Airport Way • Portland, OR 97230

OR138 WATER QUALITY MIX
Lot No: CUS-OR138WATER-FOX
Test Date: 12-19-16 *AMS 3724* Weight: 8 Pounds

Seed%	Variety	Origin	PLS%	Purity%	Germ%	Hard%
10.88	Northwestern Mannagrass	OR	9.47	98.95	87.00	
16.31	Tufted Hairgrass	OR	13.86	95.94	85.00	
16.92	American Sloughgrass	OR	15.40	99.54	91.00	
13.99	Slender Rush	OR	12.80	99.90	91.50	
13.30	Slough Sedge	WA	2.93	95.03	22.00	
7.66	Showy Milkweed	OR	4.52	95.75	53.00	6.00
8.00	Camas	WA	8.00	100.00	100.00	
0.75	Yellow Monkey Flower	CA	0.30	6.82	40.00	
0.05	WEED		63.67	87.82	72.02	0.48
0.02	OTHER					
12.11	INERT					
	Noxious Weed: None Found					
100.00						

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Calculation of Amount of Seed (lbs / ac)

Specified Seeding Rate = _10_ PLS / Ac_

Actual Seeding Rate = 10 PLS / AC
Seed Purity **80%** x Germination **90%**
(0.80 x 0.90 = **0.72**)

Actual Seeding Rate = $\frac{\mathbf{10}}{\mathbf{0.72}}$

Actual Seeding Rate = **13.88** pounds per acre

ODOT MATERIALS & INSPECTION

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Verify seed sack contains project specified seeds (01030.13)

ODOT MATERIALS & INSPECTION

18

Fertilizer 01030.14

- Type and quantity based upon Soil Testing and Amendment Report.
- Not typically used on Wetland Mitigation sites or water quality plantings.
- Use slow-release types when fertilizers are used.
- Use low phosphorus types near water bodies when used.
- Stockpiled (select) topsoil, compost and/or mycorrhizae can reduce the need for fertilizer and improve overall soil quality.

ODOT MATERIALS & INSPECTION

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Fertilizer

- Labeled to document content of Nitrogen (N), Phosphorus (P) and Potassium (K)
- Always listed in order (N-P-K)

Example: a 5-10-5 fertilizer =

5% by weight nitrogen

10% by weight phosphorus

5% by weight potassium

ODOT MATERIALS & INSPECTION

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FERTILIZER GRADE

5-10-5

MEANS

5%	-	10%	-	5%
NITROGEN	-	PHOSPHORUS	-	POTASH
(N)	-	(P_2O_5)	-	(K_2O)

OR

2 lbs.	-	4 lbs.	-	2 lbs.
N/40 lb. bag	-	P_2O_5/40 lb. bag	-	K_2O/40 lb. bag

Reading Fertilizer Labels

8 lbs. out of 40 is fertilizer

21

01030.15 – Mulch for seeding

- Hydro-mulch – Wood pulp, BFM or High Performance Growth Media (usually include tackifier and color tracer).
- Straw – Use only certified weed free straw.
- Compost – See Erosion Control **00280.14(f)** for Compost Blanket. Provide additional tackifier with compost blanket.

ODOT MATERIALS & INSPECTION

22

Mulch Types

Compost Mulch

Straw Mulch

Hydromulch

23

Materials Specifications

- **01030.16 Tackifier**
  Liquid or dry powder. Plant based (Guar or Plantain) or chemical (Polyacrylamide).
- **01030.17 Pesticides**
  Contractor must get approval for use of pesticides before using.

24

Construction

- **01030.40 General**
  Retain all existing desirable vegetation!
  - Notify Agency 24 hours prior to seeding
  - No seeding in adverse weather

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Site Preparation

01030.41 – References **01040.48**

- 5 site prep methods for 8 seeding types.
- Seeding areas are made weed free.
- Stockpile selected topsoils as briefly as possible.
- Loosen subsoils, roughen cut slopes, texture fill slopes.
- Haul and spread selected topsoils without compacting.

01030.42 – Weed Control Plan (WCP)

- Where specified WCP can be part of Planting Work Plan (PWP).
- Weed control inspections: Frequencies listed
- Weed Removal: Work and required documentation
- Applicable when included in Schedule list of items.

26

01030.43 – Seeding

a) **Temporary** (used for erosion control 00280)

b) **Permanent Seeding** (defined in Specials)
(permanent seeding can be used for erosion control)

- **West of the Cascades**
(March 1 - May 15 and September 1 - October 31)
Extra time for irrigated areas
- **East of the Cascades**
(October 1 - February 1) Unless in irrigated areas
- **Wetland** (East and West)
(September 1 - October 31 and March 1 - April 30)

ODOT MATERIALS & INSPECTION

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Seeding Timing – 01030.43

- Apply temporary seeding to stabilize disturbed soils and slopes that will be exposed for 2 months or longer. Do not count solely on temporary seeding for immediate erosion control!
- Apply permanent seeding on areas to be left dormant for 1 year or more.
- 3 weeks to achieve required coverage.

ODOT MATERIALS & INSPECTION

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30

Plan for access

31

Establishment

01030.60 General, 01030.61 Establishment

- Temporary Seeding: min 70% cover – no timeframe
- Permanent Seeding: min 90% cover – either 45 days after seeding, or no timeframe for erosion control.
- East of the Cascades 30% cover
- Water Quality Seeding – 100% cover

32

Construction
01040.43 and 01040.44 – Soils

01040.43 Topsoil

- Excavate and install or stockpile < 28 days.
- Prepare subsoil – eliminate compaction
- Haul, spread and finish grade and cleanup.

01040.44 Select Wetland Topsoil

- Excavate first, then place selected wetland topsoils directly to site. Or stockpile < 28 days.
- Sub-excavate to grade, seek Agency approval.
- Haul, spread carefully, seek Agency approval.

ODOT MATERIALS & INSPECTION

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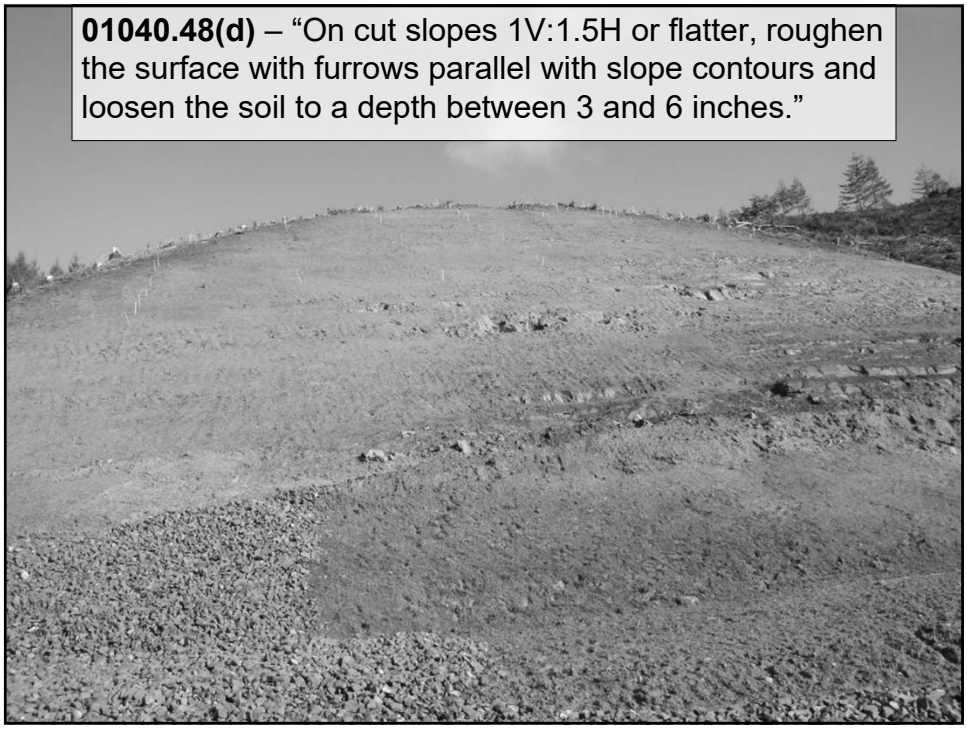
01040.48 Area Preparation

Incorporate soil amendments **(01040.45),** soil bio-amendments **(01040.46)**, fertilizers **(01040.47)** as recommended by soil test results.

ODOT MATERIALS & INSPECTION

34



35

Measurement and Payment

01030.80, .90 Seeding

- Unit, Area Basis (mulch is measured by area basis)
- Partial Payments: 70% at seeding, 30% at completion

Your roadsides are now seeded!

ODOT MATERIALS & INSPECTION

36

03020 Compost

- Many applications in Erosion Control, Soil Conditioning, and Mulching.
- Watch for appropriate particle sizes, debris bits and state of decomposition of organics.
- Certified at the source, not by the load.
- Check Lab results for analysis.

37

Communication

- Pre-Construction Conference – the best opportunity to answer questions before they become issues. Bring forward Roadside priorities.
- Professional of Record (POR) on-call to Resident Engineer / Inspector if issues arise. Must be kept apprised of contract change orders.
- Regular Inspections and Enforcement of Contract Documents are Key to Success!
- Post-Construction Conference / Resident Engineer narrative – the best opportunity for learning how to improve next time. Include POR.

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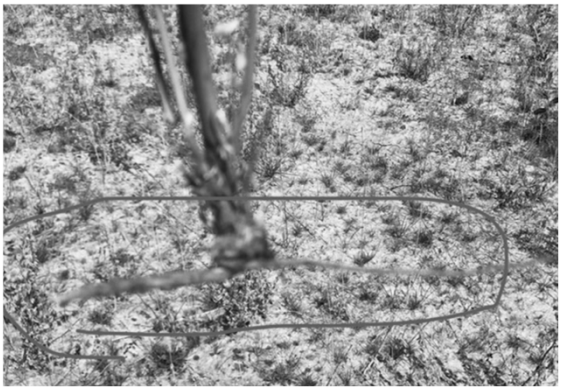
Seeding

Due	Section	What
precon	01030.30(a)	Certification that weed control coordinator meets requirements of 01030.30(a)
precon	01030.42(a)	Weed control work plan
within 60 days of execution of contract	01030.13(g)	List of seed sources for all specified seeds. Verify that all specified seed has been located and will be available.
before using	01030.17	Submit proposed pesticides and receive approval. Submit a copy of manufacturers federal registered label. If requested, submit MSDS sheet.
before using	01030.30(b)	Certification that pesticide applicator possesses an Oregon Commercial Pesticide Applicators License (each individual applicator who will be performing work)

ODOT MATERIALS & INSPECTION

39

Good Penetrating root form



Decompaction per 01040.48(d) not done. Roots unable to penetrate compacted soil – plant died

ODOT MATERIALS & INSPECTION

40

01040.19 – Quality of Plants
Circling roots are bad

41

01040.19 Quality of Plants
Roots hold soil in place

42

Plant Establishment

01040.72 Periodic Inspections

- Typically 3 inspections: Spring, Summer and Fall. Inspectors go with Contractor on inspections.
- Inspector will provide Contractor with list of corrective work.

01040.73 Corrective Work

- Contractor is required to replace dead plants 15 days after receiving list of corrective work.

43

Floodplain Planting using contract grown native wetland sod

Much of ODOT's plantings are required as permit conditions. If success is not achieved during the Project, ODOT pays until success is achieved – Failure is not an option.

44

Presenter Information

Magnus Bernhardt
ODOT Region 1 – Natural Resource Specialist
Landscape Architect

(503) 731-8283

Magnus.U.Bernhardt@odot.Oregon.gov

45

Premixed Seed Blends
Adjusted Rates of Application

Form Example	C#####
Project Name (Section)	Contract No.

Enter Contractor or Subcontractor Name	Permanent Seeding	L03/SL1
(Sub)Contractor	Seed Mix Type	Lot/Batch No.

	COLUMN						
I	II	III	IV	V	VI	VII	VIII
Seed	**Specified (lb./acre)**	**Purity %**	**Germ. %**	**Adjusted PLS (lb. per acre)**	**% of Seed (this lot#/mix)**	**lb. of Seed per 1 lb (this lot#/mix)**	**lb. of this Seed Blend Needed per Acre (this lot#/mix)**
Spike Bentgrass	0.5	99.66%	90.00%	0.6	1.50%	0.015	40.0
California Brome	24.5	98.83%	88.00%	28.2	27.00%	0.270	104.4
Camas Grass	3.5	97.75%	88.00%	4.1	3.50%	0.035	117.1
Slough Sledge	3.5	99.69%	91.00%	3.9	3.50%	0.035	111.4
Tufted Hairgrass	1.8	99.07%	91.00%	1.9	5.00%	0.050	38.0
Meadow Barley	37.0	95.18%	93.00%	41.8	38.00%	0.380	110.0
Path Rush	0.1	97.32%	98.00%	0.1	0.50%	0.005	20.0
Sickle Keeled Lupine	17.5	99.95%	90.00%	19.5	19.00%	0.190	102.6

RESULTS	
Greatest Amount Calc. (from column VIII) =	117.1
Premeasured Acre =	1.9
Greatest Amount Calc. x Premeasured Acre =	**222.6**

Seed %	98.00%
Other Crop Seed %	1.40%
Weed Seed %	0.55%
Inert Material %	0.05%
Total %*	100.00%

*should be close to 100%

CHAPTER 39
LANDSCAPE ESTABLISHMENT PERIOD

When landscaping or other plantings are installed as part of a Project, the Contract normally requires that the Contractor perform Work, for a specified period, to establish those plantings. The normal establishment period is one (1) year from the date when all the original planting is complete and accepted. However, the Contract may specify a different establishment period. This plant establishment Work is typically part of the planting Work.

The purpose of the establishment Work and period is to assure satisfactory growth of the planted Materials. It is the intent of an establishment period that all of the original planting or replacement plants will be in place and showing satisfactory growth at the end of the establishment period.

39-1 Seeding Establishment

The quantities of the following Contract Pay Items are limited to 70% at the completion of seeding and the remaining 30% at the completion of the seeding establishment period:

- Temporary Seeding, 01030.90(c)
- Permanent Seeding, 01030.90(d)
- Wetland Seeding, 01030.90(e)

- Water Quality Seeding, 01030.90(f)
- Plant Seeding, 01030.90(g)
- Native Plant Seeding 01030.90(h)
- Wildflower Seeding, 01030.90(i)
- Lawn Seeding, 01030.90(k)

39-2 Planting Establishment

The Agency may determine that specific plantings should not be replaced because:

- Location, soil, drainage, etc. of particular plantings is not acceptable for plantings;
- Wildlife has damaged or destroyed plantings;
- Agency forces or public traffic has damaged or destroyed the plantings, and the Agency does not wish to replace them; or
- Other reasons as determined by the Engineer.

Establishment includes the items specified in the Contract, including but not limited to:

- Watering plants or assuring that irrigation provides adequate watering.
- Removing weeds and other unwanted vegetation.
- Fertilizing as specified.
- Removing and replacing dead, diseased, or missing plantings.
- Spraying for or otherwise controlling pests.
- Accomplishing other changes, ordered by the Resident Engineer (RE), to assure that the planting will achieve the desired intent.

The Contractor must accomplish the specified Work no less frequently than the intervals specified in the Contract. It may have to perform some of the Work at more frequent intervals to assure the establishment of the plantings and minimize the growth of unwanted plants.

The RE shall make an adjustment to the Contract unit price per each for the items listed in the Schedule of Items, if specified in the Contract.

If the RE modifies any of the Contract requirements for the establishment period, including modifying the final number of plants to be established or remain in place, the RE must issue a Contract Change Order (CCO) to document the changes. If the changes affect the bid price for the affected items, the RE must modify the bid price as well. [Refer to Chapter 15 – Change Orders/Force Account/Work by Public Forces]]

The RE must:

- Assure that the Contractor is performing the establishment work no less frequently than required by Contract, including replacing dead plants and removing unwanted vegetation. Since establishment Work includes watering, plants may be replaced outside the planting seasons;
- Inspect the Project at the times specified in the Contract;
- Adjust the Contract unit price per each for the items listed in the Schedule of Items as described in the Contract; and
- Make other changes in payment or the plantings to correct site issues and issue a CCO to document those changes.

Contact the Geo-Environmental Section for technical questions. Contact the Contract Administration Unit (CAU) regarding questions on Contract administration, payment, or documentation.

Issue Third Notification when appropriate. [Refer to Chapter 13 – Contract Time and Chapter 40 - Third Notification.]

INSERT TAB

Unit 4
Hazardous Materials

HazMat for Inspectors

Shawn Rapp
ODOT State HazMat Program Lead

1

What is HazMat?

- Underground tanks
- Contaminated media
- Asbestos
- Lead-based paint
- Solid/Haz waste
- Fueling/oils
- Spills
- Standard Specifications: 290.20 (Waste/Haz Subs), 290.29 (H&S), 290.30 (Poll. Control), 290.80-.90 (M&P)
- Specials: 293 (USTs), 294 (Media), 295 (Asb.), 296 (Paint), 297 (PCB/Hg), 299/A (UICs and Septic)

2

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) – Haz Comm
- (b) – Fuel Storage ("SPCC Plan")
- (c) – Waste Management
- (d) – Hazardous Waste Management
- (e) – Hazardous Substance Transportation
- (f) – Unexpected Contamination
- (g) – Spills and Releases

ODOT MATERIALS & INSPECTION

3

Fuel Storage: 290.20(b)

- **Hazards:** Toxic vapors, explosion, fire, spills
- **Common violations/enforcement**
  - Small fuel container storage
  - Refueling near water
- **Documentation:**
  - Pollution Control Plan
  - Spill Prevention Control and Countermeasures (SPCC) Plan (>1,320 gallons in 55-gal or more containers, near water) (290.20(b))

ODOT MATERIALS & INSPECTION

4

00290.20(g): Spills and Releases

Response Agreement required with "professional" on-call spill response team – identified in Pollution Control Plan, with training per 29 CFR 1910.120 ("HazWOPER").

In the event of a spill:

- Refer to PCP, cleanup to background, notify On-Call ER.
- Notify Engineer of release.
- Lists contractor reporting requirements.
- Report to engineer – within 10 days after cleanup but no more than 30 days after initiation.

ODOT MATERIALS & INSPECTION

5

Spills

6

Spills

- #1 – SAFETY
- ***IR HazMat Training and Booklet***
- Contractor to notify Engineer
- Contractor to notify OERS
- Cleanup to “background”
- **Key references:**
  - **290.20(g)** – Spills and Releases
  - **290.30(a)** – Pollution Control Measures
  - **290.30(b)** – Pollution Control Plan
  - Regional HazMat Coordinators

ODOT MATERIALS & INSPECTION

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00290.29: Health and Safety

Comply with all applicable health and safety Laws as they pertain to 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 (“Environmental Pollution Changes”) *and ORS 279C.525* (“Provisions concerning environmental and natural resources laws”).

- (a) – Pollution Control Measures
- (b) – Pollution Control Plan
- (c) – Air Pollution Control Measures

ODOT MATERIALS & INSPECTION

8

Concrete Washouts (290.30(a)(4))

9

HazMat material and spill containment kits

290.30(a)(6) – *"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 the U.S."*

4 Considerations:
Size, materials, PPE, Portability/location

ODOT MATERIALS & INSPECTION

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00290.30(6)(b): Pollution Control Plan

POLLUTION CONTROL PLAN

PROJECT NAME	HIGHWAY	MILEPOST – TO	MILEPOST – FROM	CONTRACT NUMBER

1. On-call spill response team:

COMPANY	CALL NUMBER	TRIGGERS FOR CALLING

2. Emergency contacts:

AGENCY PROJECT MANAGER	OFFICE PHONE NUMBER	MOBILE PHONE NUMBER	PROJECT MANAGER'S SECONDARY CONTACT	OFFICE PHONE NUMBER	MOBILE PHONE NUMBER
CONTRACTOR	OFFICE PHONE NUMBER	MOBILE PHONE NUMBER	CONTRACTOR'S SECONDARY CONTACT	OFFICE PHONE NUMBER	MOBILE PHONE NUMBER

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.

3. Identify contractor activities:

ACTIVITY	DESCRIBE THE POLLUTANT PREVENTION MEASURES*

* Include any information about soil disturbance in the Erosion and Sediment Control Plan.

4. Hazardous substances inventory (Provide information as specified in 00290.30(c)):

SUBSTANCE	STORAGE/CONTAINMENT	USE	MONITORING

5. Project waste inventory (Identify any waste that will be generated):

PROJECT WASTE	HAZARDOUS?	REDUCTION	STORAGE/CONTAINMENT	RECYCLE, RE-USE OR DISPOSE, EXPLAIN WHY	DISPOSAL DOCUMENTATION

6. How will the contractor ensure all employees on the job site comply with the pollution control plan?

7. Per 00290.30(b), attach scaled site plans showing locations for hazardous substance storage, spill response equipment, communications equipment and fire suppression equipment.

NOTE FILE NAMES OF PLAN DOCUMENTS IN THIS FIELD

ODOT MATERIALS & INSPECTION

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POLLUTION CONTROL PLAN

Mile posts need to be added

PROJECT NAME	HIGHWAY	MILEPOST – TO	MILEPOST – FROM	CONTRACT NUMBER
US101: URBAN UPGRADE (GARIBALDI) SEC.	US101			15521

1. On-call spill response team:

COMPANY	CALL NUMBER	TRIGGERS FOR CALLING
NWFF	800-986-2698	Smell, Spill, Known Contaminates ← Please provide more information. Specify any known locations where contaminates are expected?

2. Emergency contacts:

AGENCY PROJECT MANAGER	OFFICE PHONE NUMBER	MOBILE PHONE NUMBER	PROJECT MANAGER'S SECONDARY CONTACT	OFFICE PHONE NUMBER	MOBILE PHONE NUMBER
JAYSON BUCHHOLZ	503-325-7222	(503) 298-9180	BILL O'CONNELL		(503) 338-0604
CONTRACTOR	OFFICE PHONE NUMBER	MOBILE PHONE NUMBER	CONTRACTOR'S SECONDARY CONTACT	OFFICE PHONE NUMBER	MOBILE PHONE NUMBER
MIKE ZOLLNER		(503) 932-0521	ZACH TONEY		(503) 507-4546

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.

3. Identify contractor activities; Add demolition, AC grinding, and saw cutting with descriptions of pollutant prevention measures for each

ACTIVITY	DESCRIBE THE POLLUTANT PREVENTION MEASURES*
Coating, painting and removal	N/A
Concrete work	Washout in tubs or plastic lined earth/straw berms or go back to concrete plant dirty what is being done and where per
Dewatering	Dewater into silt sacks or vegetated areas with appropriate erosion control measures which one and where spec
Disturbance of roadside soils	Erosion control installed prior to disturbance, material used on site or delivered to approved dump sites all soils and where?
Excavation and trenching	Erosion control installed prior to disturbance, material used on site or delivered to approved dump sites all soils and where?
Landscaping	Erosion control installed prior to disturbance
Lighting and electrical	Ensure equipment is in good and clean working order, maintain all surrounding erosion control measures, fueling will take place on level surfaces, monitored automatic shut-off valves
Paving	Ensure equipment is in good and clean working order, maintain all surrounding erosion control measures, fueling will take place on level surfaces, monitored automatic shut-off valves Where and need a map
Striping and removal	Haul stripe removal offsite ← How will striping be removed? stripe grindings? cold plane removal?
Vehicle and equipment maintenance, fueling	All maintenance at shop in Salem, Fueling will take place on level surfaces, monitored automatic shut-off valves 150 feet from
Working on contaminated sites	Follow contaminated media plan do we have a plan to review creek
Other (describe in field at right)	Once a staging yard is established the area will be maintained with rock and proper construction entrances will be installed to minimize any tracking.

* Include any information about soil disturbance in the Erosion and Sediment Control Plan.

734-2445 (6/15) Need required map Page 1 of 3

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Pollution Control Plan Form (continued)

Add solvents (machinery/equipment), treated wood (sign posts), and luminaries/electronics (flashing beacons)

Please include personnel responsible for monitoring

4. Hazardous substances inventory (Provide information as specified in 00290.30(c)):

SUBSTANCE	STORAGE/CONTAINMENT	USE	MONITORING
Pesticides/Herbicides	Subcontractor Vehicle	Landscape	These items will be brought on-site on a limited basis and used as needed. Will not be stored on-site, will remain in transport vehicle and used as needed.
Fertilizers	Subcontractor Vehicle	Landscape	These items will be brought on-site on a limited basis and used as needed. Will not be stored on-site, will remain in transport vehicle and used as needed.
Petroleum based products	Stagining Area	what are the containment measures Re-fueling So there will be no small gas cans on the project?	K&E will fuel with mobile fuel truck, fuel will not be stored on-site. Fueling will not take place in sensitive areas or close to any waterways. Fuel truck has fuel containment measures/spill kit on-board should an unlikely event that there is spill. Any other oils will be stored in a weather tight connex.
Concrete	Concrete Truck	ADA ramps/Sidewalk/Curb	K&E is self performing concrete work. We will have movable concrete washout containers that will be placed in pour locations for extra concrete to be contained in. No cleanup will take place near sensitive areas or waterways.
Fuel	Staging Area	Re-fueling	K&E will fuel with mobile fuel truck, fuel will not be stored on-site. Fueling will not take place in sensitive areas or close to any waterways. Fuel truck has fuel containment measures/spill kit on-board should an unlikely event that there is spill. Any other oils will be stored in a weather tight connex.
Thermoplastics	Subcontractor Vehicle	Striping	Minimal risk associated with this item. Any equipment cleanup will take place in a contained non-sensitive area.

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Pollution Control Plan Form continued 2

Curing compounds	Subcontractor Vehicel	Misc.	Curing compound will be stored in 5 gallon buckets in connex and transported in foreman vehicle. They will not be left loose on the ground and will be properly stored.
Other (describe in field at right)			

Add concrete/AC demo debris, clearing and grubbing debris, signs/posts, and concrete washout.

5. Project waste inventory (Identify any waste that will be generated):

PROJECT WASTE	HAZARDOUS?	REDUCTION	STORAGE/CONTAINMENT	RECYCLE, RE-USE OR DISPOSE, EXPLAIN WHY	DISPOSAL DOCUMENTATION
Excavation Spoils	No	N/A	Offsite Dumpsite	Dispose- Export Project	Dumpsite Agreement

6. How will the contractor ensure all employees on the job site comply with the pollution control plan?

The pollution control plan will be discussed at a mandatory subcontractor safety meeting prior to start of work on the project. All employees are required to attend weekly on-site meetings where all aspects of the project are discussed. Will also be discussed during weekly scheduling meetings as well as coordination meetings with sub-contractors

7. Per 00290.30(b), attach scaled site plans showing locations for hazardous substance storage, spill response equipment, communications equipment and fire suppression equipment.

NOTE FILE NAMES OF PLAN DOCUMENTS IN THIS FIELD

K&E is working on identifying a laydown yard. All of our Foreman/Superintendent vehicles & heavy equipment will have spill response and fire suppression equipment.

Attach scaled site plans showing locations for hazardous substance storage, spill response equipment, communications equipment and fire suppression equipment.

ODOT MATERIALS & INSPECTION

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HazMat Special Provisions

- **293 –** USTs
- **294** – Contaminated Media
- **295** – Asbestos Materials
- **296** – Paint and Painted Materials
- **297** – PCB and Mercury Containing Equipment
- **299** - Decommission Underground Injection Control Systems
- **299A** - Decommission Septic Systems

- **.00 Scope –** Project Data, Report reference, definitions, submittals
- **.30 Labor/Quals –** Training, qualifications (RG, PE, CHMM)
- **.40 Construction –** Permitting, reg. fees, handling requirements, reg. and Spec references, disposal
- **.80/.90 M&P –** Lump sum (reports and docs), sampling and analysis, disposal measures and payments

ODOT MATERIALS & INSPECTION

15

Underground Storage Tanks – SP 293

ODOT MATERIALS & INSPECTION

16

Underground Storage Tanks – SP 293 continued

- **Hazards:** Vapors, explosion, excavation, heavy equipment
- **Regulated by:** DEQ (UST Program)
- **Documentation:**
  - Contractor qualifications (DEQ Licenses, HazWoper, etc.)
  - Health and safety plan
  - DEQ reports
    30-day notice of intent (before)
    30-day checklist and report (after)

ODOT MATERIALS & INSPECTION

17

Contaminated Media – SP 294

ODOT MATERIALS & INSPECTION

18

Contaminated Media – SP 294 continued

- **Hazards:** chemicals, locations, and concentrations summarized
- **Regulated by:** DEQ (LUST, Cleanup, Materials Management Programs)
- **Documentation:**
  - HazMat Report(s)
  - Contractor qualifications (HazWoper and Supervisor)
  - Health and Safety Plan
  - Lab results
  - Disposal receipts

ODOT MATERIALS & INSPECTION

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Contaminated Media – SP 294 continued 2

- SECTION 00294 - CONTAMINATED MEDIA

Section 00294, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00294.00 Scope - In addition to the requirements of Section 00290 and these specifications, this work consists of the following:

- Excavate, characterize for disposal, transport, and dispose of contaminated soil, sediments and water decanted from excavated sediments from the following locations:

Location/ Station	Depth below grade (feet)	Approximate Quantity (tons)	Known Contaminants
Pier 1	N/A	290	No testing of sediments was completed. Sediments surrounding Pier 1 are assumed to be contaminated. Assumed contaminants of concern include total petroleum hydrocarbons (TPH) and

ODOT MATERIALS & INSPECTION

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Asbestos – SP 295

Dept. Environmental Health, Safety and Risk Management

21

Asbestos – SP 295 continued

- **Hazards**: Inhalation of asbestos fibers – “friable”
- **Regulated by:** DEQ (Air and Mat. Mgmt. Programs)
- **Documentation**:
  - HazMat Report
  - Contractor Qualifications (Asbestos worker and supervisor)
  - DEQ forms (DEQ notification)
    - ASN-1/6 – Waste shipment report
    - ASN-4 – Air clearance report
    - ASN-5 – Disposal receipts

ODOT MATERIALS & INSPECTION

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Paint and Painted Materials – SP 296

23

Paint and Painted Materials – SP 296 continued

- **Hazards:** Toxic dust (Lead, Cadmium, Chromium)
- **Regulated by:** DEQ (Mat. Mgmt. Program – Solid and Haz Wastes)
- **Documentation:**
  - Worker qualifications (lead awareness training, etc.)
  - Lead work safety plan
  - Containment plan (blasting)
  - Waste characterization and lab results (HazMat report)
  - Disposal receipts and shipping papers, waste determination
  - Hazardous waste Gen. ID# and Contingency Plan (if applicable)

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Other Hazardous Construction Materials (Hazardous Substances 290.20)

- **Examples:** Paint, solvents, spray cans, oils, pesticides and herbicides, etc.
- **Documentation:** Pollution Control Plan

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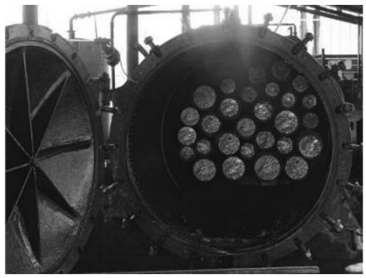
Other Construction Wastes

- Treated/Coated Timbers (290.20 (c)(3)(c) or SP 296 if lead paint coated)
- Mercury vapor lamps (SP 297)
- PCB in electrical equipment (SP 297)



26

Abandoned HazMat

- Labeled sealed containers
- Unidentifiable containers
- Drug lab wastes
- Trash

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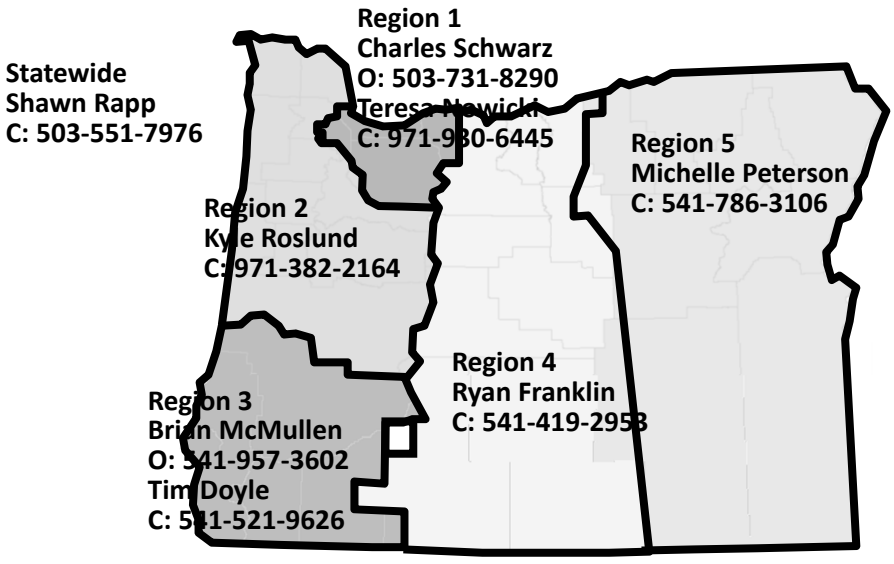
ODOT HazMat Coordinators



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- SECTION 00294 - CONTAMINATED MEDIA

Section 00294, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00294.00 Scope - In addition to the requirements of Section 00290 and these specifications, this work consists of the following:

- Excavate, characterize for disposal, transport, and dispose of contaminated soil, sediments and water decanted from excavated sediments from the following locations:

Location/ Station	Depth below grade (feet)	Approximate Quantity (tons)	Known Contaminants
Pier 1	N/A	290	No testing of sediments was completed. Sediments surrounding Pier 1 are assumed to be contaminated. Assumed contaminants of concern include total petroleum hydrocarbons (TPH) and polychlorinated biphenyls (PCBs).

- Prepare a Health and Safety Plan (HASP) for work within the contaminated areas of the Project.

The 2016 report, titled Level 1 Hazardous Material Corridor Study and Hazardous Building Materials Paper Survey, completed by HDR Engineering, Inc., documenting the contaminated media identified within the Project is available from the Engineer.

When additional testing of contaminated soil or sediments, groundwater is required to characterize the material for reuse, recycle, or disposal, conduct the tests according to 00290.20(c).

00294.03 Submittals - Submit the following documents:

- A site specific HASP, approved and signed by a Certified Industrial Hygienist (CIH), at least 10 Calendar Days before the pre-construction conference.
- The name and qualifications of the CIH.
- Modifications to the HASP that are requested by the Engineer or the CIH within seven Calendar Days of the request.
- Current employee training certificates and medical surveillance information before beginning work within the contaminated areas.
- Within 48 hours of receipt:
- Permits, permit applications, and documentation of compliance.

- All reuse, recycled, and disposal receipts.
- Final quantities of soil and groundwater reused, recycled, and disposed and their final location.
- All analytical test results.

Labor

00294.30 Personnel Qualifications - Provide employees meeting the following requirements:

- A contractor with at least 2 years experience cleaning up and managing petroleum contaminated soil, groundwater, or sediment in Oregon under DEQ rules.

- A Certified Industrial Hygienist (CIH) that:
- Has at least three years experience in hazardous waste site work.
- Meets the HAZWOPER training requirements.

- An Oregon Registered Geologist or Professional Engineer who has experience handling contaminated media.

Construction

00294.40 Sediment Excavation around Pier 1- Excavate and handle contaminated sediments according to the following:

- Notify the Engineer 5 Calendar Days before beginning excavation activities within Pier 1.
- Allow the Agency to collect soil, sediment and groundwater samples during excavation activities.
- Excavate and temporarily stockpile sediments in a secure location using covered water tight containers or a covered, polyethylene-lined and impermeable bermed area using a minimum 6 mil thick polyethylene sheeting.
- Cover all sediment stockpiles and protect from contact with rainwater.
- Contain and collect all water which decants from the stockpiled soils. Dispose of all decanted water in a manner that protects human health and the environment and is consistent with all permits and regulations.
- Complete waste characterization sampling and testing of excavated materials. At a minimum, complete waste characterization testing at the minimum frequency required by the disposal facility and include all analytical tests required by the disposal facility plus:
    - Gasoline and diesel range petroleum hydrocarbons by test methods NWTPH-Gx and NWTPH-Dx with acid/silica gel cleanup prior to analysis.
    - Total antimony, arsenic, lead, cadmium, chromium, copper, selenium, silver, zinc and mercury with follow on Toxic Characteristic Leaching Procedure (TCLP) pending total results. TCLP analyses will be run only if soil samples exceed 20 times the TCLP regulatory standard.

    - Polycyclic aromatic hydrocarbons (PAHs) by Environmental Protection Agency (EPA) Test Method 8270B.
    - If gasoline-range hydrocarbons are detected, then volatile organic compounds (VOCs) by EPA Test Method 8260B.
    - PCBs by EPA Test Method 8081.
- Label all stored material with the type of material, the contaminants, and the dates of accumulation.
- Remove contaminated media from the exterior of all vehicles and equipment before they leave the Project Site.
- Dispose or recycle of excavated sediments according to 00294.41.
- Where over excavation is required, backfill the excavation according to 00510.

00294.41 Contaminated Soil and Sediment Management - Reuse, recycle, or dispose of contaminated soil or sediment according to any of the following:

- **Landfill Disposal:**
    - Obtain the Engineer's approval of the disposal facility before disposing of the contaminated soil or sediment.
    - Transport the contaminated soil or sediment to a DEQ permitted municipal solid waste landfill or a permitted construction and demolition landfill for disposal. Dispose of temporarily stored contaminated soils or sediments within 30 days of beginning excavation work or before Second Notification, whichever occurs first.
    - Complete and sign all manifests and bill-of-lading forms for handling, loading, transporting, and disposing of the contaminated soil or sediment.
    - Pay all filing and permit fees.
- **Recycling:**
    - Obtain the Engineer's approval of the recycling facility before disposing of the contaminated soil or sediment.
    - Transport contaminated soil or sediment to a DEQ permitted recycling facility or asphalt batch plant. Recycle temporarily stored contaminated soils or sediments within 30 days of beginning excavation or before Second Notification, whichever occurs first.
    - Complete and sign all manifests and bill-of-Lading forms for handling, loading, transporting, and recycling the contaminated soil or sediment.

00294.43 Contaminated Water - Remove and handle contaminated water (i.e., groundwater or water decanted from excavated contaminated media) as follows:

- Allow water to decant from excavated contaminated sediment and contain prior to offsite disposal of excavated sediments.
- Complete cofferdam dewatering and temporary water management according to Section 00245.

- Complete waste characterization sampling and testing of decanted, contaminated water. At a minimum, complete waste characterization testing at the minimum frequency required by the disposal facility and include all analytical tests required by the disposal facility plus:
    - Gasoline and diesel range petroleum hydrocarbons by test methods NWTPH-Gx and NWTPH-Dx with acid/silica gel cleanup prior to analysis.
    - Total antimony, arsenic, lead, cadmium, chromium, copper, selenium, silver, zinc and mercury with follow on Toxic Characteristic Leaching Procedure (TCLP) pending total results. TCLP analyses will be run only if soil samples exceed 20 times the TCLP regulatory standard.
    - Polycyclic aromatic hydrocarbons (PAHs) by Environmental Protection Agency (EPA) Test Method 8270B.
    - If gasoline-range hydrocarbons are detected, then volatile organic compounds (VOCs) by EPA Test Method 8260B.
    - PCBs by EPA Test Method 8081

- Remove contaminated, decanted water from the Project Site or, when approved, temporarily store, on-site, contaminated water in water tight containers, compatible with the contaminants. Label each container with the contents and dates of accumulation.
- Dispose of stored contaminated, decanted water within 30 days from the date of beginning generation of it or before Second Notification, whichever occurs first.

00294.44 Contaminated Water Management - Recycle or dispose of contaminated water (i.e., groundwater or water decanted from excavated contaminated media) according any of the following:

- **Discharge to a Permitted Sanitary Sewer Facility:**
    - Submit all contaminated water analytical data, and proposed treatment information to the local sewer authority and obtain written permission or a permit to discharge the contaminated groundwater to the sanitary sewer system.
    - Complete and sign the sewer permit application as the applicant and pay all associated fees.
    - Comply with all permit requirements, and all other local sewer authority requirements.

- **Discharge to Surface Water or Storm Sewer:**
    - Register for a general National Pollution Discharge Elimination System (NPDES) permit 1500A.
    - Complete and sign the NPDES permit application as the applicant and pay all associated fees.
    - Comply with all permit requirements.

- **Discharge to ground surface for Infiltration:**

- Register for a Water Pollution Control Facility (WPCF) permit 1500B.
- Complete and sign the WPCF permit application as the applicant and pay all associated fees.
- Comply with all permit requirements.

- **Transport to an Off-Site Recycling or Disposal Facility:**

  - Submit all contaminated water analytical data to the receiving facility and obtain written acceptance from that entity.
  - Complete and sign bill-of-lading forms, and all other documentation required by the receiving facility.
  - Pay all permit fees.

Measurement

00294.80 Measurement - No measurement of quantities will be made for health and safety plan.

No measurement of quantities will be made for contaminated water mobilization.

The quantities of contaminated soil and sediment removed will be measured on the weight basis, based on the recycling or disposal facility weigh tickets.

The quantities of contaminated groundwater removed will be measured on the volume basis, per gallon, based on the receiving facility approved meter tickets or approved on-site meters.

Payment

00294.90 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) Health and Safety Plan	Lump Sum
(b) Contaminated Soil Removal	Ton
(c) Contaminated Water Mobilization	Lump Sum
(d) Contaminated Water Removal	Gallon

Item (c) includes all mobilization costs for decanted water removal work.

Item (d) includes obtaining all permits and furnishing all equipment and labor necessary to treat and store contaminated decanted water.

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.

INSERT TAB

Unit 5
Aquatic Biology

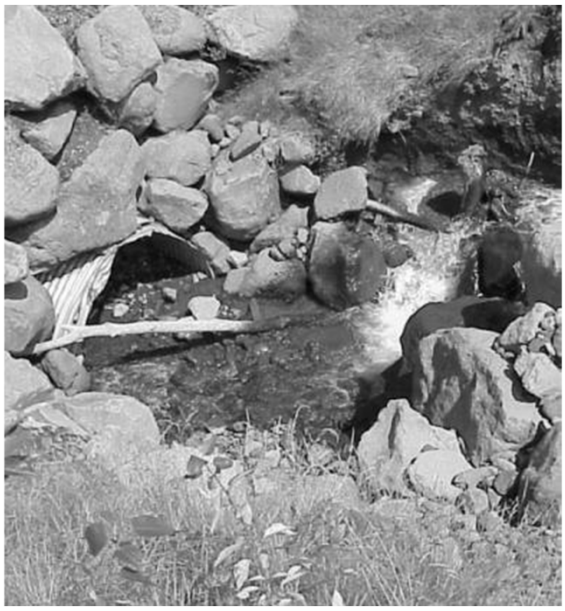
Aquatic Biology

Peter Morrow
ODOT/NOAA Fisheries Liaison
(503) 930-5487
Peter.morrow@odot.oregon.gov

ODOT MATERIALS & INSPECTION

1

Tumult Creek



ODOT MATERIALS & INSPECTION

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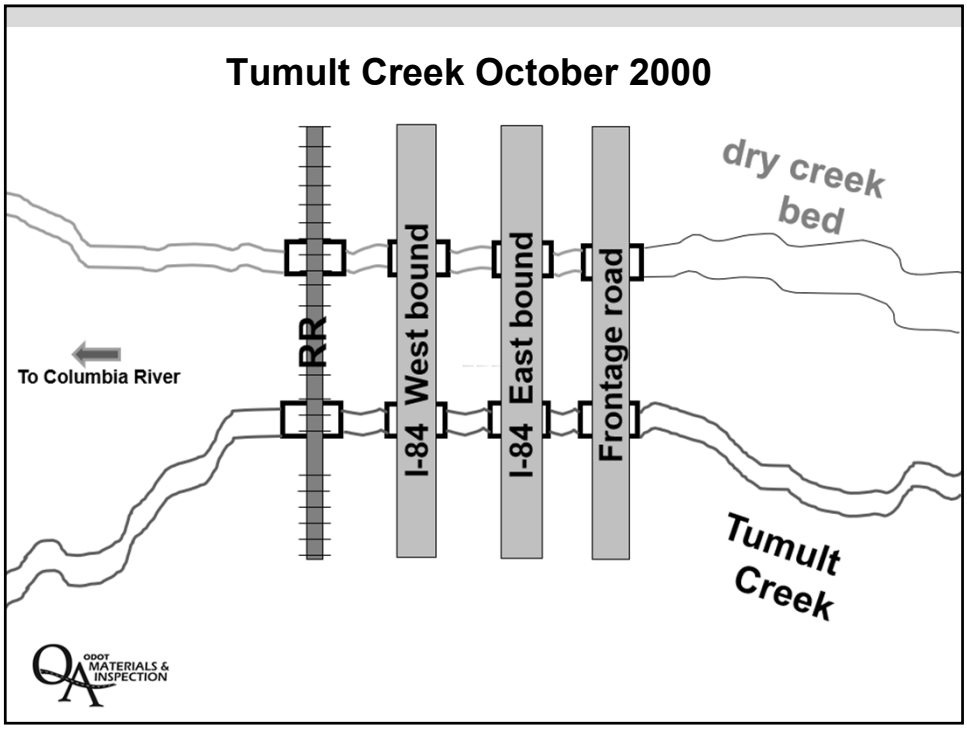
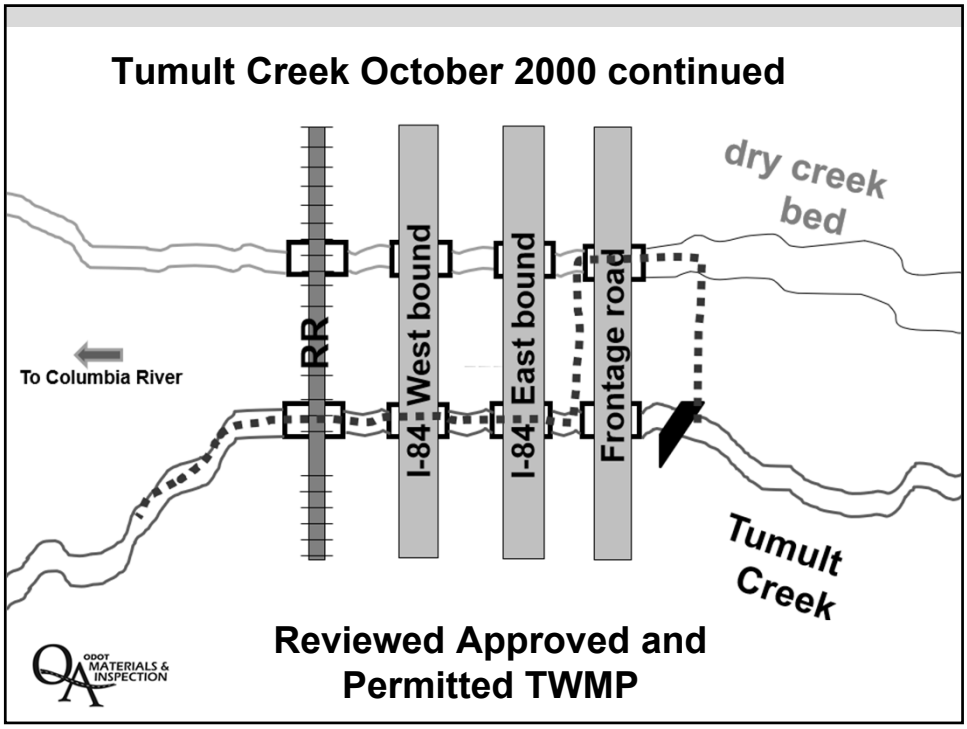
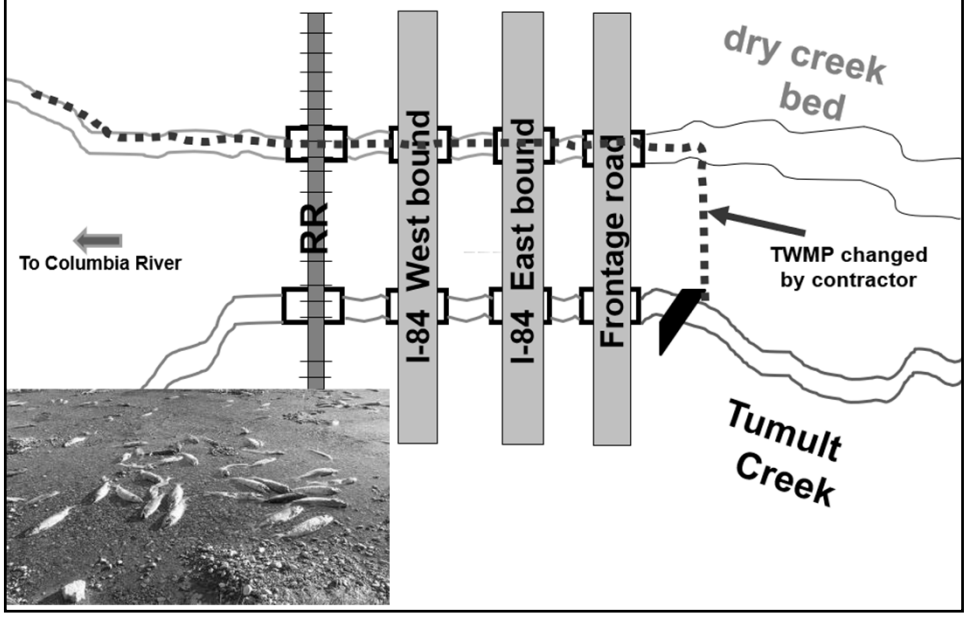

Tumult Creek October 2000
dry creek bed
RR
I-84 West bound
I-84 East bound
Frontage road
To Columbia River
Tumult Creek
ODOT MATERIALS & INSPECTION

3


Tumult Creek October 2000 continued
dry creek bed
RR
I-84 West bound
I-84 East bound
Frontage road
To Columbia River
Tumult Creek
Reviewed Approved and Permitted TWMP
ODOT MATERIALS & INSPECTION

4

Tumult Creek October 2000 continued 2



5

Outcomes

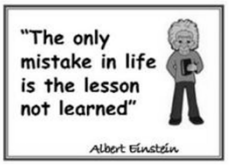
- Communication and coordination deficiencies identified.
- Mandatory Statewide Maintenance training implemented.
- 15 new ODOT environmental staff added.
- Off-site mitigation required.

ODOT MATERIALS & INSPECTION

6

Lessons learned…

- **Ask for the biologist or REC** to be on-site during in-water work or other critical times.
- **Follow the plan**, unless changes are reviewed by the biologist or REC.
- **Water diversions are not a secondary part of the job!**
- Violations can lead to fines, civil or criminal action
- Need for training



ODOT MATERIALS & INSPECTION

7

FAHP Construction Monitoring Inspections

Silt fence, and other erosion control installation	**69%**
Fuel storage and oil leak protection	44%
Soil erosion issues visible	31%
Environmental permits on-site	25%
Construction debris management	9%
Turbidity issues	3%
Work containment system	5%

ODOT MATERIALS & INSPECTION

8

Silt Fence and Erosion Control

9

Silt Fence and Erosion Control continued

10

Silt Fence and Erosion Control continued 2

11

Silt Fence and Erosion Control continued 3

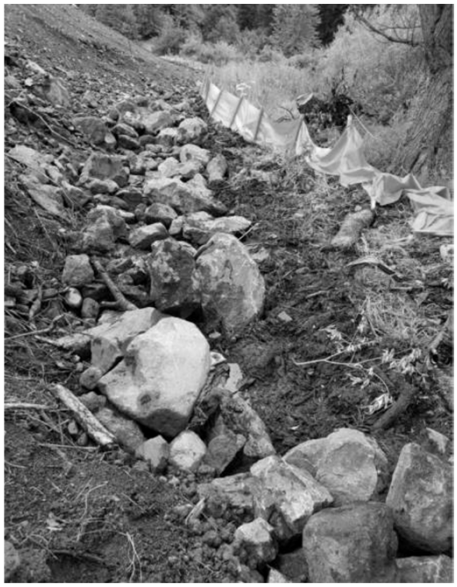
12

Silt Fence and Erosion Control continued 4

ODOT MATERIALS & INSPECTION

13

Silt Fence and Erosion Control continued 5

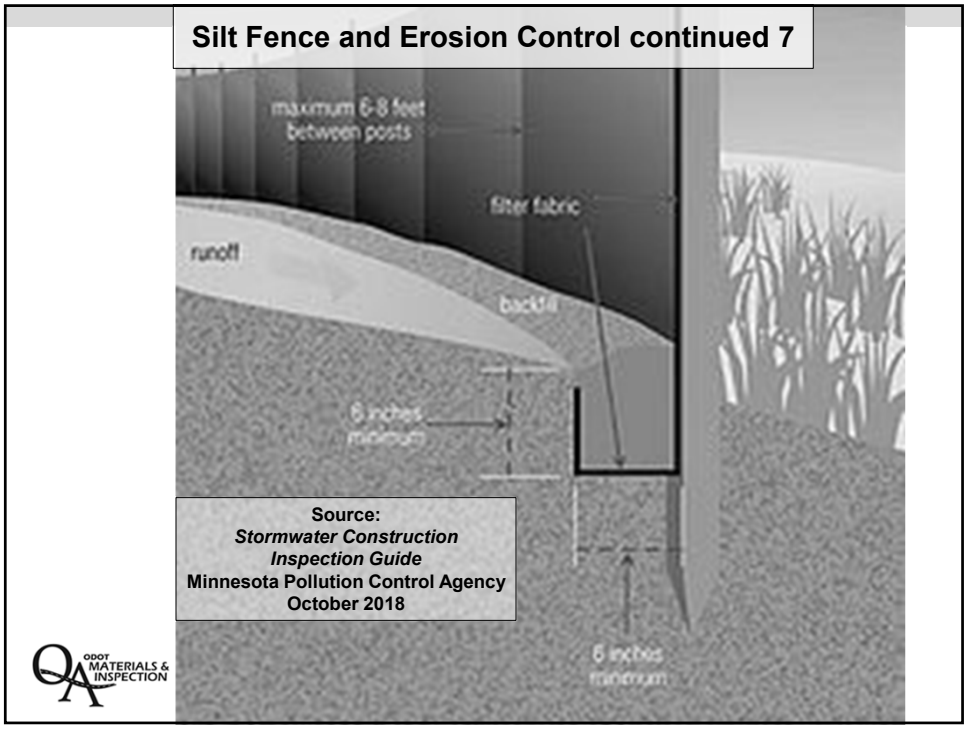


ODOT MATERIALS & INSPECTION

14

Silt Fence and Erosion Control continued 6

15


Silt Fence and Erosion Control continued 7
maximum 6-8 feet between posts
filter fabric
runoff
backfill
8 inches minimum
6 inches minimum
Source:
Stormwater Construction Inspection Guide
Minnesota Pollution Control Agency
October 2018
ODOT MATERIALS & INSPECTION

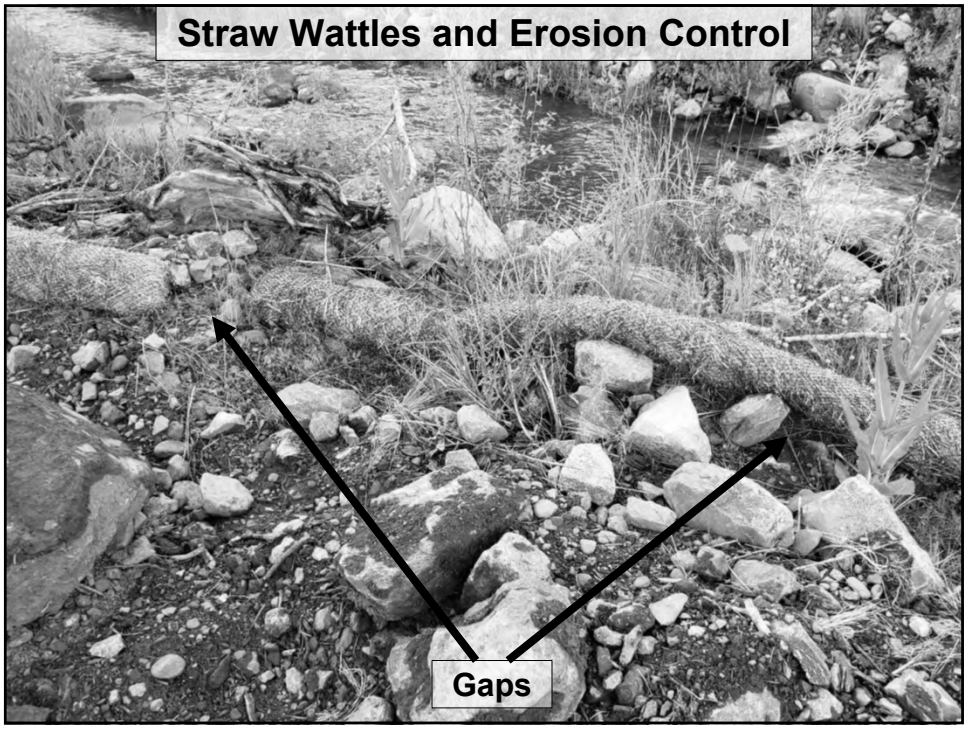
16

Silt Fence and Erosion Control continued 8

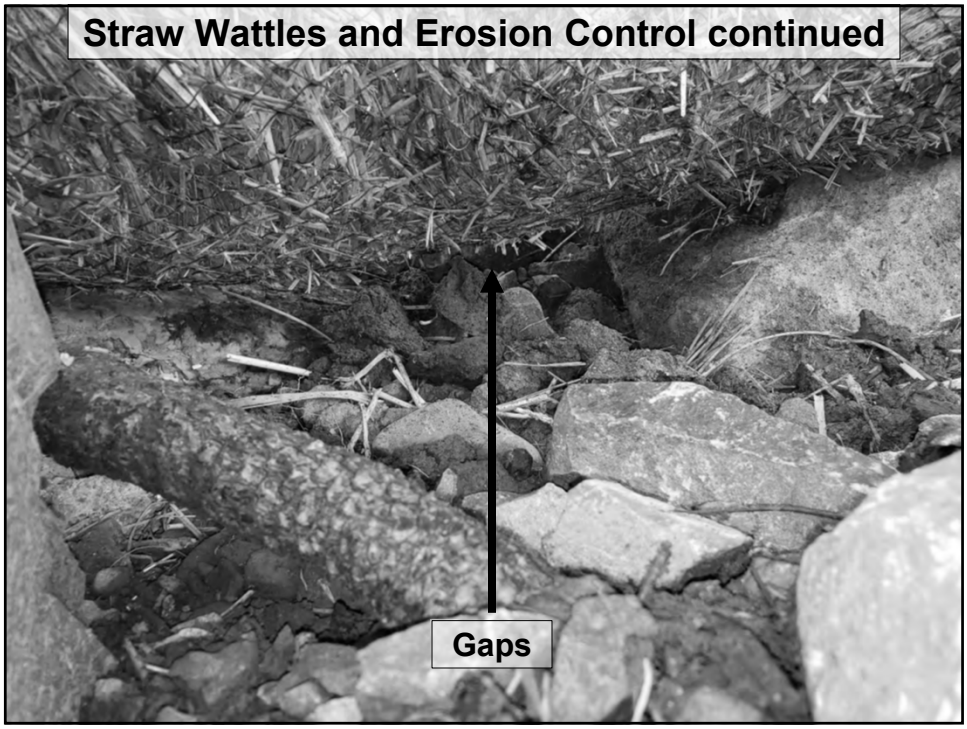
Properly installed

ODOT MATERIALS & INSPECTION

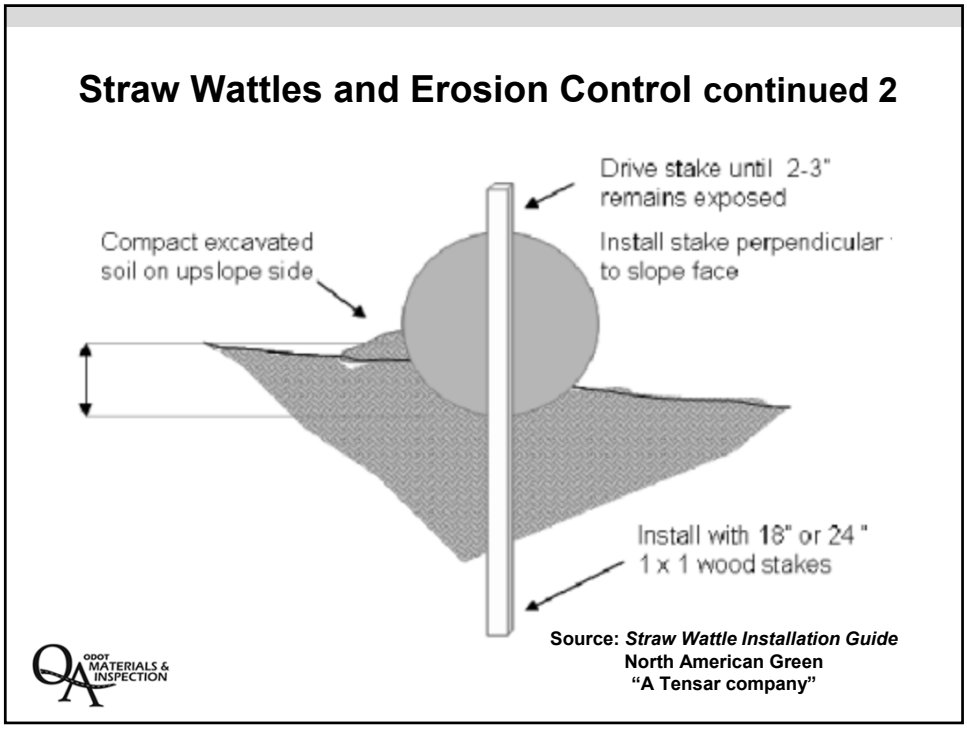
17



18

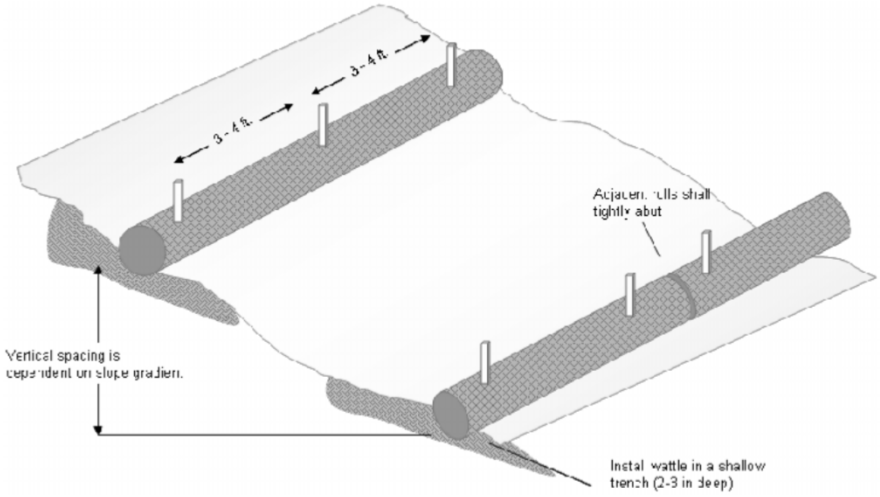

Straw Wattles and Erosion Control continued
Gaps

19


Straw Wattles and Erosion Control continued 2
Drive stake until 2-3" remains exposed
Install stake perpendicular to slope face
Compact excavated soil on upslope side
Install with 18" or 24" 1 x 1 wood stakes
Source: Straw Wattle Installation Guide
North American Green
"A Tensar company"
ODOT MATERIALS & INSPECTION

20

Straw Wattles and Erosion Control continued 3



Source: ***Straw Wattle Installation Guide***
North American Green
"A Tensar company"

ODOT MATERIALS & INSPECTION

21

Straw Wattles and Erosion Control continued 4

22

Straw Wattles and Erosion Control continued 5

ODOT MATERIALS & INSPECTION

23

Storage Piles and Erosion Control

24

Storage Piles and Erosion Control continued

25

Silt Fence and Erosion Control continued 9

26

Silt Fence and Erosion Control continued 10

27

Fuel Storage and Leak Protection

28

Fuel Storage and Leak Protection continued

ODOT MATERIALS & INSPECTION

29

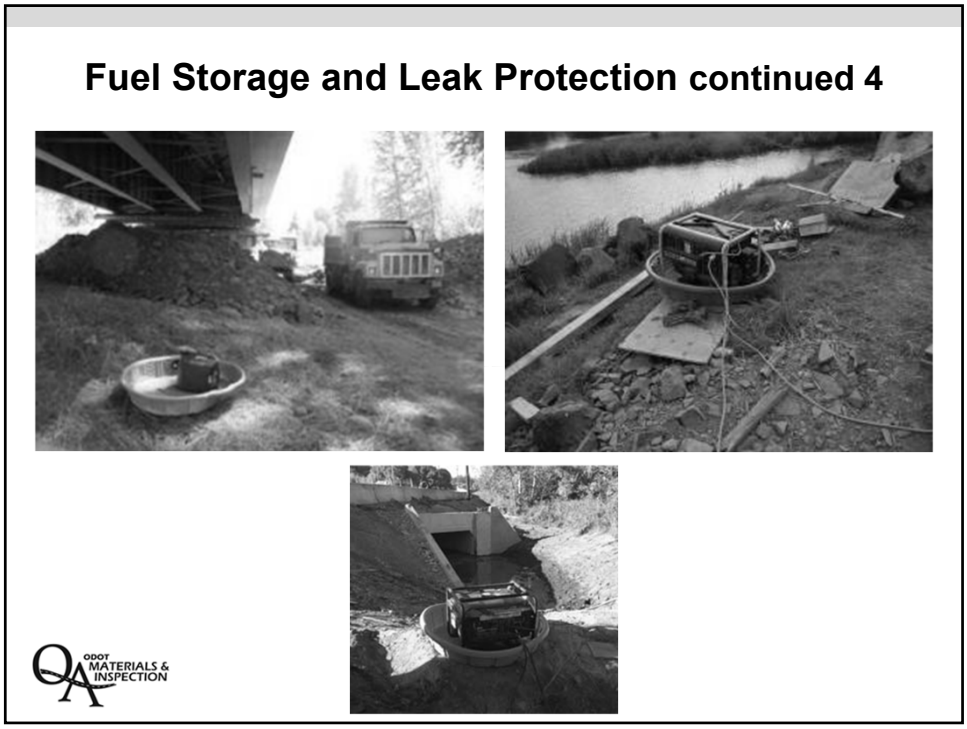
Fuel Storage and Leak Protection continued 2

ODOT MATERIALS & INSPECTION

30

Fuel Storage and Leak Protection continued 3
HONDA

31


Fuel Storage and Leak Protection continued 4
ODOT MATERIALS & INSPECTION

32

Fuel Storage and Leak Protection continued 5

ODOT MATERIALS & INSPECTION

33

Fuel Storage and Leak Protection continued 6

ODOT MATERIALS & INSPECTION

34

Fuel Storage and Leak Protection continued 7

35

Fuel Storage and Leak Protection continued 8

36

Construction Debris Management

ODOT MATERIALS & INSPECTION

37

Construction Debris Management continued 2

ODOT MATERIALS & INSPECTION

38

Turbidity

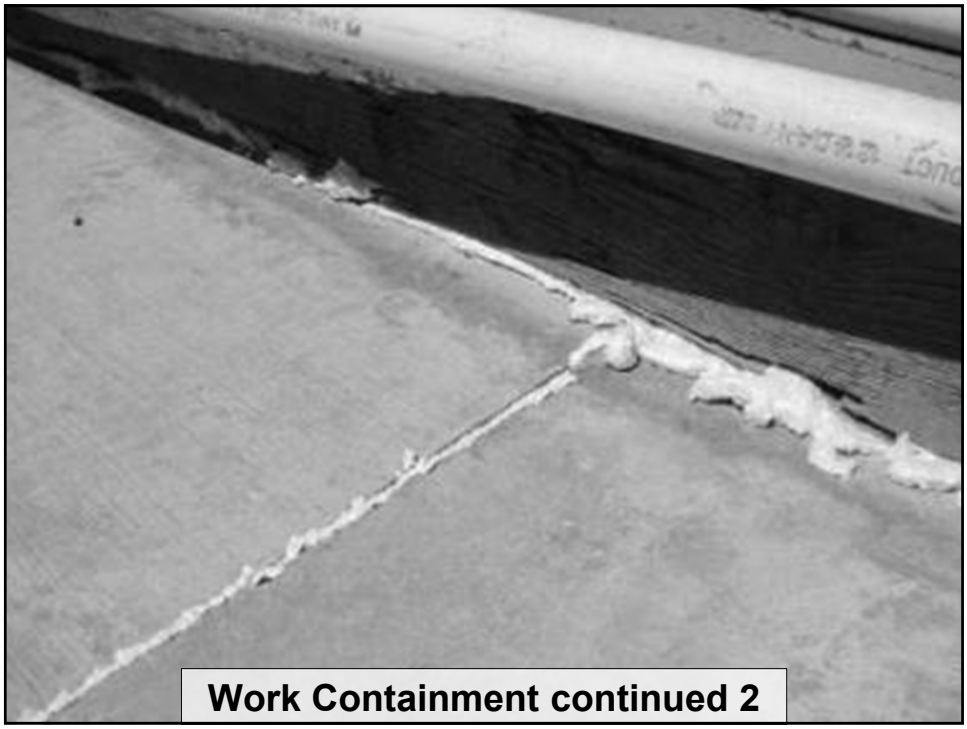
39

Turbidity continued

40

41

42



Work Containment continued 2

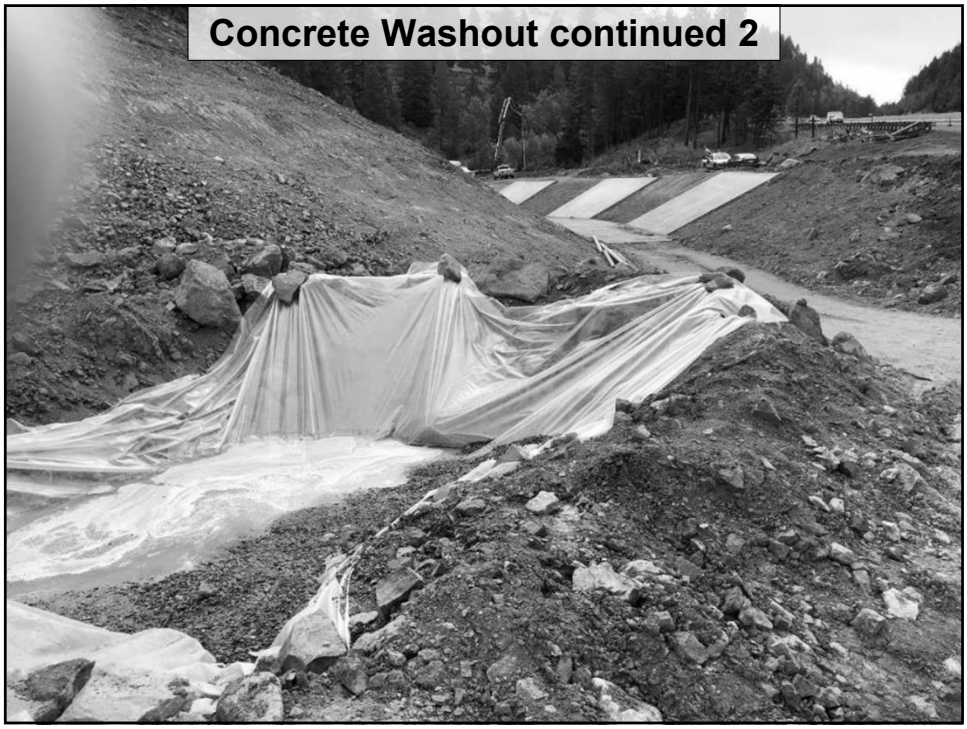
43

Concrete Washout

44

Concrete Washout continued
CONCRETE
WASHOUT
07 29 2015

45


Concrete Washout continued 2

46

Summer 2023

Timber Piles – Old protective coatings leaching out due to exposure to air and sunlight.

ODOT MATERIALS & INSPECTION

47

Summer 2023 continued

ODOT MATERIALS & INSPECTION

48

Summer 2023 continued 2

ODOT MATERIALS & INSPECTION

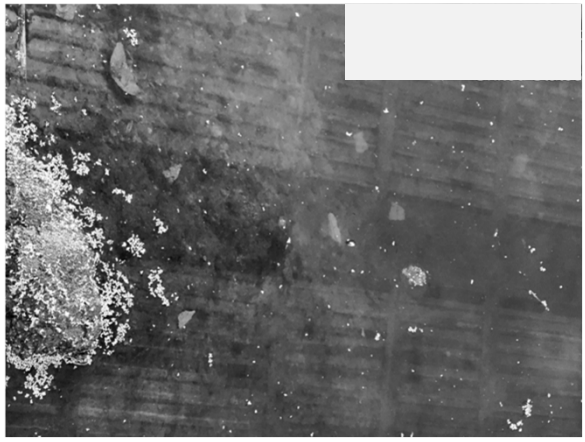
49

Summer 2023 continued 3

ODOT MATERIALS & INSPECTION

50

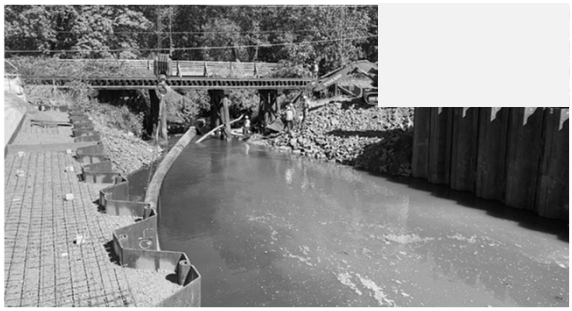
Summer 2023 continued 4



ODOT MATERIALS & INSPECTION

51

Summer 2023 continue 5



ODOT MATERIALS & INSPECTION

52

53

54

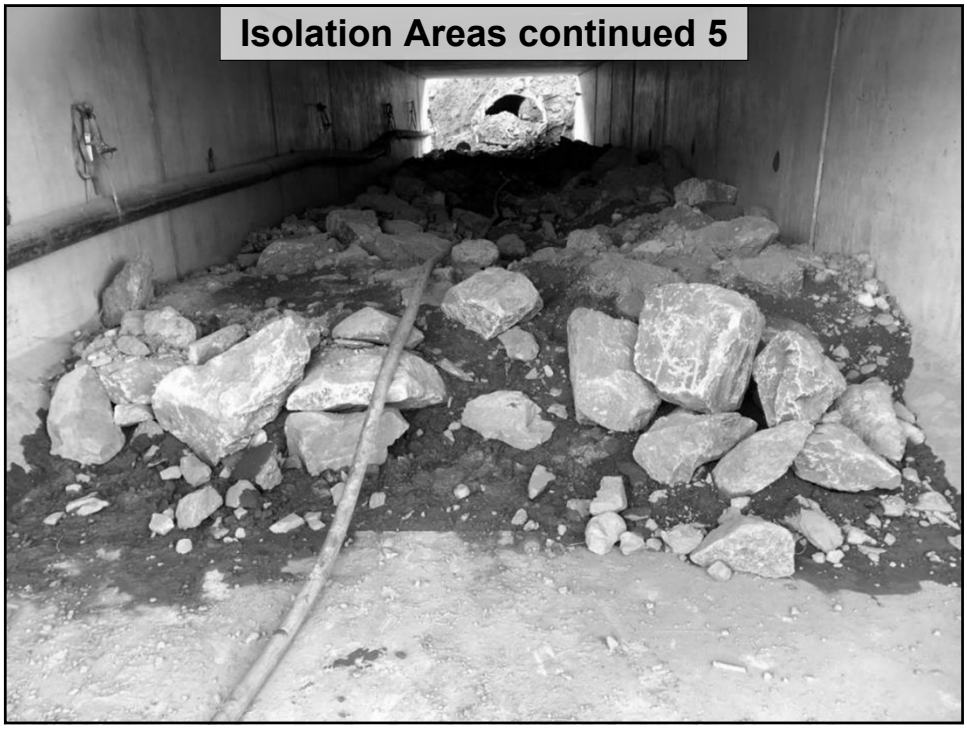
Isolation Areas continued 2

55

Isolation Areas continued 3

56

57



58

Diversion Pipe

Should be the same size with no gaps.

ODOT MATERIALS & INSPECTION

59

Diversion Pipe

Contractor decided to cut inlet of pipe at angle in the stream w/chainsaw with no containment.

ODOT MATERIALS & INSPECTION

60

Pipe Shavings

ODOT MATERIALS & INSPECTION

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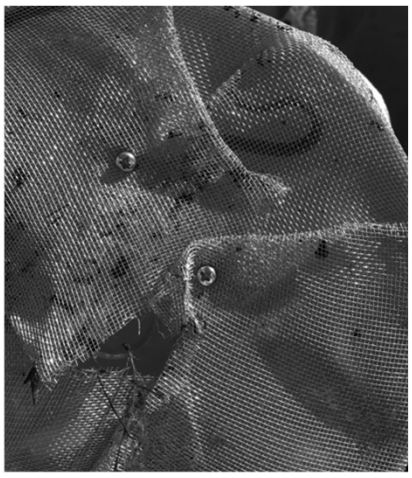
Fish Screens



Fish screens need to meet criteria that is clearly stated in the specs. Screens need to be present at the temporary water management meeting to ensure they are sufficient.

ODOT MATERIALS & INSPECTION

62

Fish Screens – Fish screens need to be cleaned often in heavy debris areas.

63

High Water

64

The 00290's are not optional …. They are requirements.

The 00290's are specific to the conditions in our DSL, Corps, ODEQ permits and our FAHP ESA permit.

We are subject to federal law If we ignore the 00290's on our project and we end up with a dead ESA-listed fish.

65

Section 00290.34
Protection of Fish and Fish Habitat

- **00290.34(a)**
  Regulated Work Area
- **00290.34(b)**
  Prohibited Operations
- **00290.34(c)**
  Fish Protection Measures Required by Environmental permits

1. General Requirements
2. Work area Isolation
3. Intake Screening
4. Special Habitats
5. Site Restoration
6. Water Diversion
7. Hydro-Acoustic
8. Drilling
9. Treated Wood
10. Piling Removal
11. Ditch Cleaning
12. Floating Structures
13. Temporary Utility Lines

ODOT MATERIALS & INSPECTION

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00290.34 Hot Topics

- Regulated work area
- Containment
- In-water work window and variances.
- Work area isolation, temporary water management.
- Pile installation and removal.
- Deep Soil Mixing
- Barge use

ODOT MATERIALS & INSPECTION

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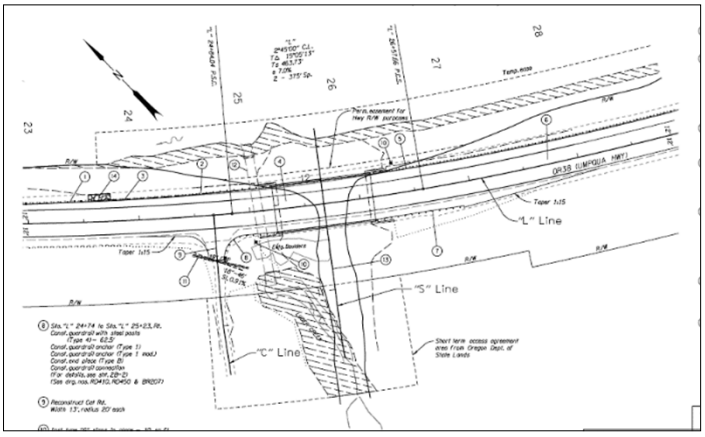
00290.34(a) Regulated Work Areas

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

For this Project, the regulated work area is the area at or below _____ feet elevation and between stations _____ and _____.



68

Blocking offside channels or small braided channels – NEVER!

Channel will dry up as water recedes – fish will become entrapped – the fish will die or be eaten by predators.

ODOT MATERIALS & INSPECTION

69

Regulated Areas and Regulated Work Areas

70

Regulated Areas and Regulated Work Areas continued

ODOT MATERIALS & INSPECTION

71

Regulated Areas and Regulated Work Areas continued 2

72

Regulated Areas and Regulated Work Areas
continued 3

73

Containment

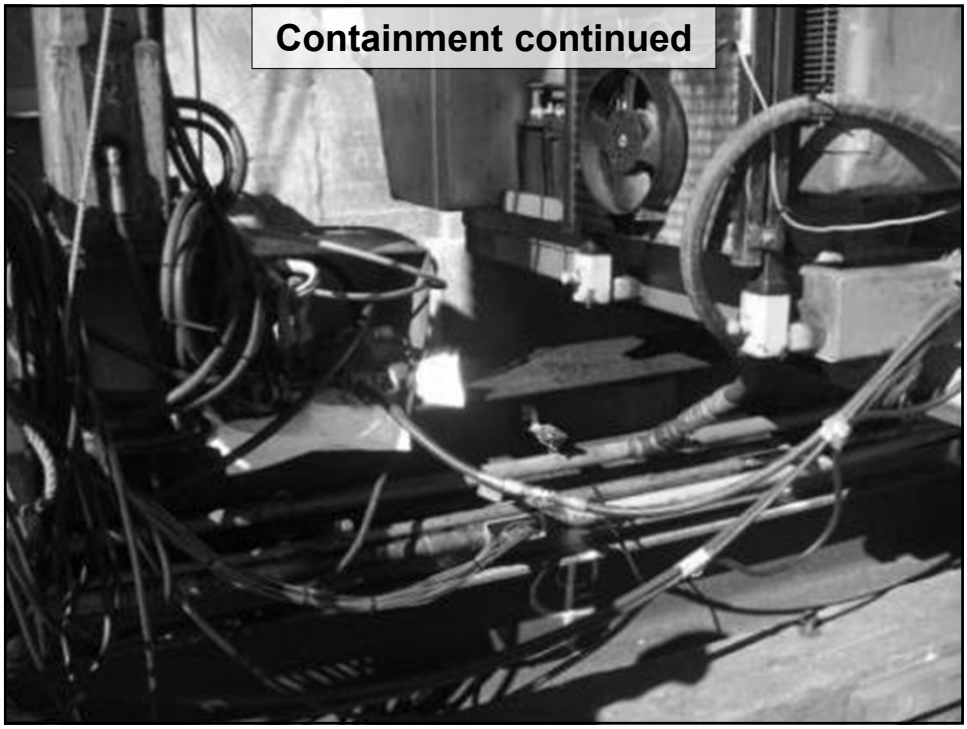
Several Special Provisions related to containment:

- Pollution Control and Water Quality (00290.34(a))
- Aquatic Species Protection (00290.34(c))
- Work Containment Plan and System (00290.42)

Basically, keep construction-related "stuff" out of the water!

ODOT MATERIALS & INSPECTION

74



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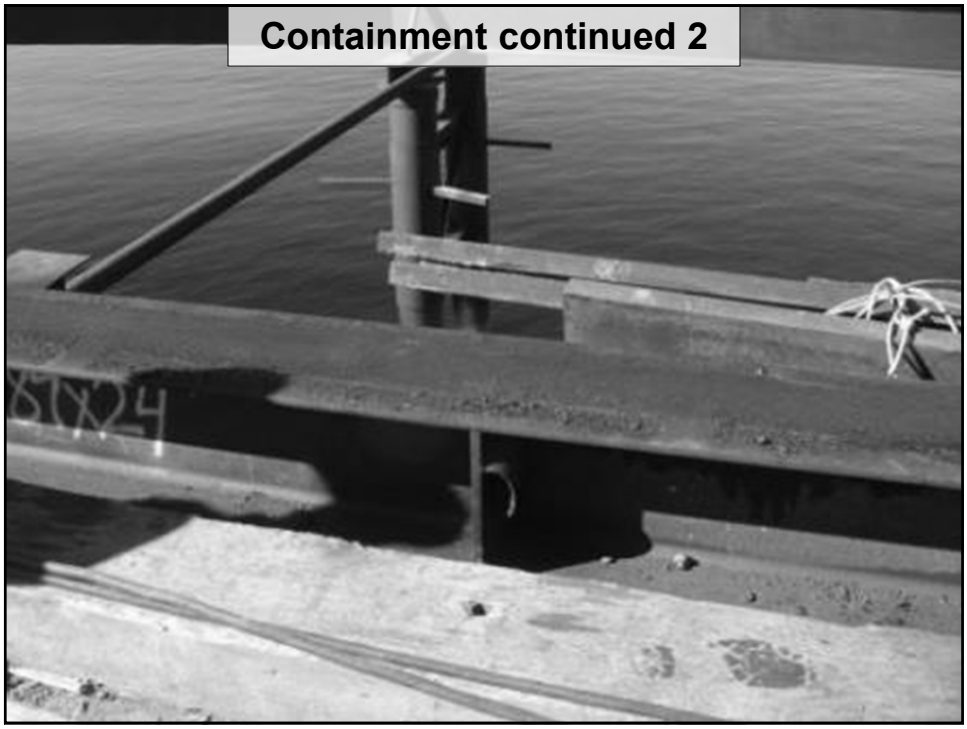
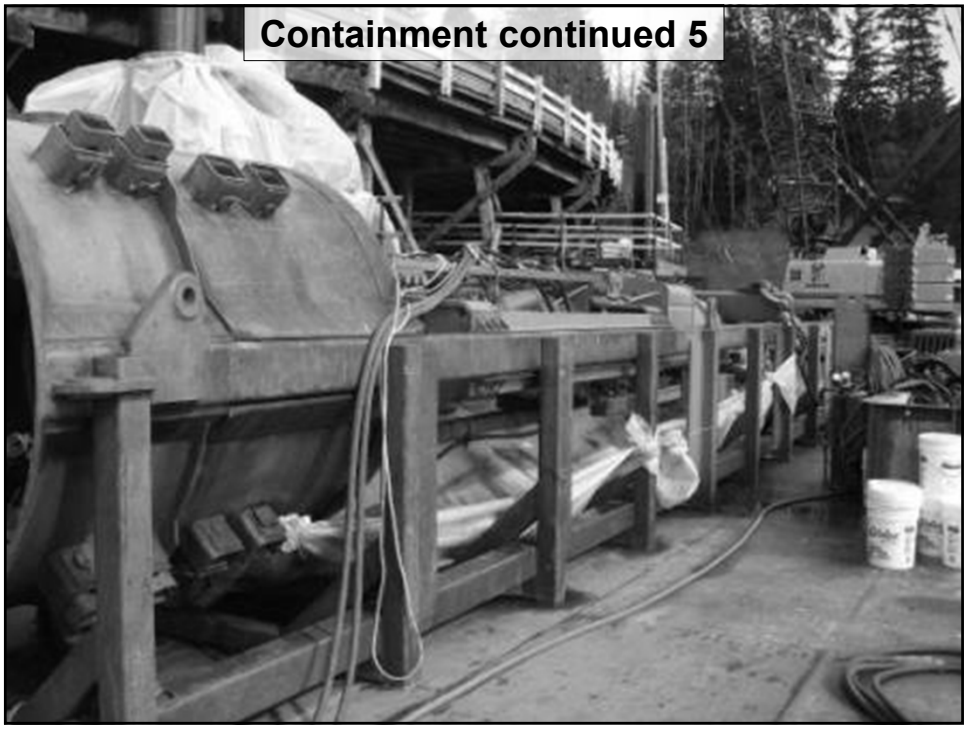


76

77

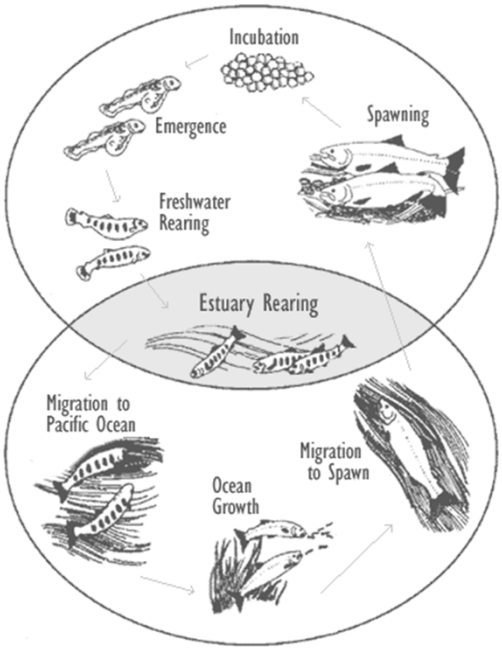
78



79

In-Water Work Window

- Why? When?
- Need for isolation even when work is completed during in-water work window.
- When is a variance appropriate?
- Variance process
- Work in cofferdams outside in-water work window.



ODOT MATERIALS & INSPECTION

80

Who should be contacted to request an in-water work variance?

The Region Environmental Coordinator (REC)

- **The ODOT biologist**
- The region permit coordinator
- The ODFW biologist
- The US Army Corps of Engineers
- The Department of State Lands
- National Marine Fisheries Service/USFWS

ODOT MATERIALS & INSPECTION

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In-Water Extension Scenarios

- **Scenario 1** – Pile removal in the **wet** within the regulated work area, proposed work **not isolated** by a cofferdam.
- **Scenario 2** – Work in the dry – Riprap installation, pile driving.
- **Scenario 3** – Work in a cofferdam – Concrete pour, pile driving, bent removal.

ODOT MATERIALS & INSPECTION

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Scenario 1: Pile removal in the **wet** within the regulated work area. Proposed **work not isolated**.

83

Scenario 2: Work in the dry – riprap installation, pile driving.

ODOT MATERIALS & INSPECTION

84

Scenario 3: Work in a cofferdam – concrete pour, pile driving, bent removal.

ODOT MATERIALS & INSPECTION

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00290.34(c)2
Work Area Isolation and Containment

Design requirements in 00245: Temporary Water Management

- Required by Environmental Permits
- Submit plan for approval
- Maintain flow downstream
- Maintain fish passage*
- Fish salvage required
- TWM pre-con meeting on-site.

ODOT MATERIALS & INSPECTION

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SP00245 Temporary Water Management

- Isolate work area, remove fish, de-water work area, contain turbidity.
- Screen pumps according to specs.
- Maintaining fish passage may be required.
- Timing and sequencing is critical.
- On-site presence of biologist or REC is important for success.
- Complex TWMs plans need flexibility in the schedule to handle surprises.

****** NEW ******
As a condition of the FAHP programmatic, a separate TWM Pre-con meeting will be required prior to implementation of any TWM. This is also being currently drafted into Spec SP00245.

87

SP00245 Temporary Water Management continued

88

SP00245 Temporary Water Management
continued 2

89

SP00245 Temporary Water Management
continued 3

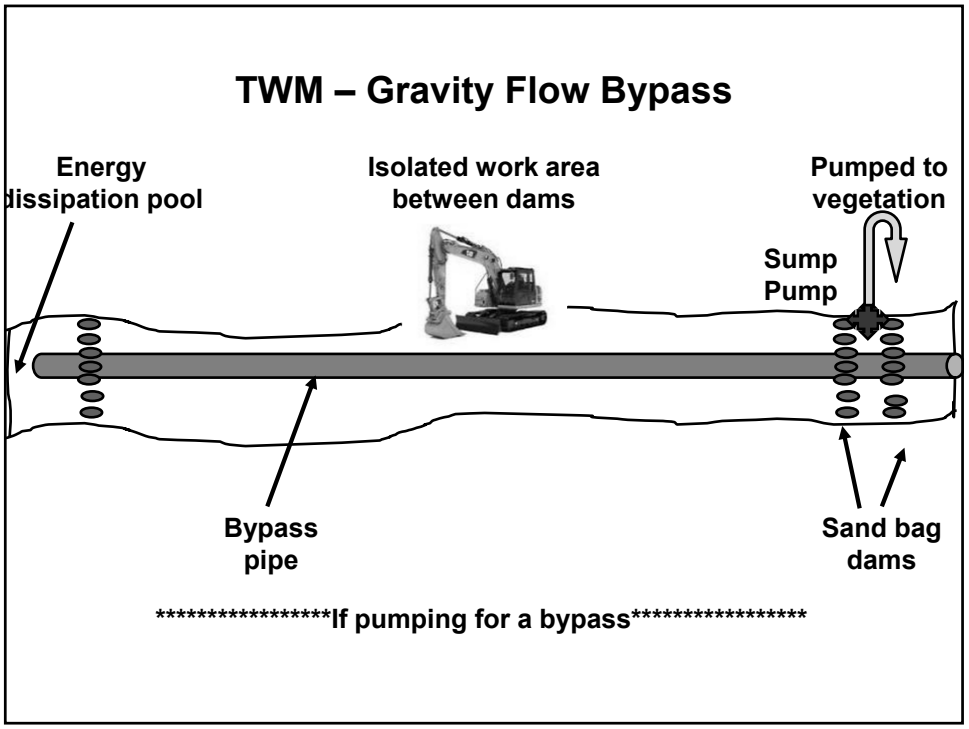
90

SP00245 Temporary Water Management
continued 4

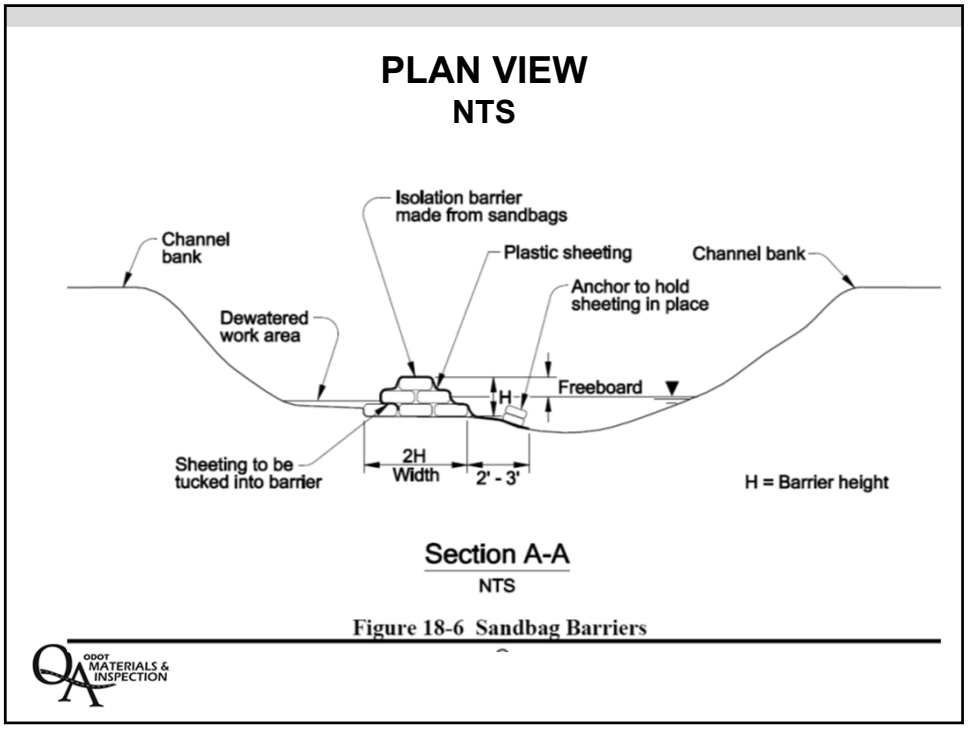
91

SP00245 Temporary Water Management
continued 5

92


TWM – Gravity Flow Bypass
Energy dissipation pool
Isolated work area between dams
Pumped to vegetation
Sump Pump
Bypass pipe
Sand bag dams
**********If pumping for a bypass**********

93


PLAN VIEW
NTS
Isolation barrier made from sandbags
Channel bank
Plastic sheeting
Channel bank
Anchor to hold sheeting in place
Dewatered work area
Freeboard
H
Sheeting to be tucked into barrier
2H Width
2' - 3'
H = Barrier height
Section A-A
NTS
Figure 18-6 Sandbag Barriers
ODOT MATERIALS & INSPECTION

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River Isolation
Mega Sacks

95

Diversion Channel

96

Project overview

97

Submersion Pump before and after

98

Submersion Pump before and after continued

99

100

101

102

SP00245 Temporary Water Management continued 6

103

Fish Salvage

- Work Area Isolation plan implemented.
- Notify REC/Biologist when salvage is needed. Give plenty of advance notice.
- Allow float time in the schedule. Depending on conditions, a fish salvage operation can take several days.

104

00290.34(c)(7) Pile Installation and Removal

- Goal to minimize hydro– acoustic impacts to fish.
- Vibratory vs. impact hammer
- Attenuation: bubble curtains
- Monitoring, reporting
- Pile driving in-water work window may be different than published window.

ODOT MATERIALS & INSPECTION

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Hydro-acoustic Impacts

ODOT MATERIALS & INSPECTION

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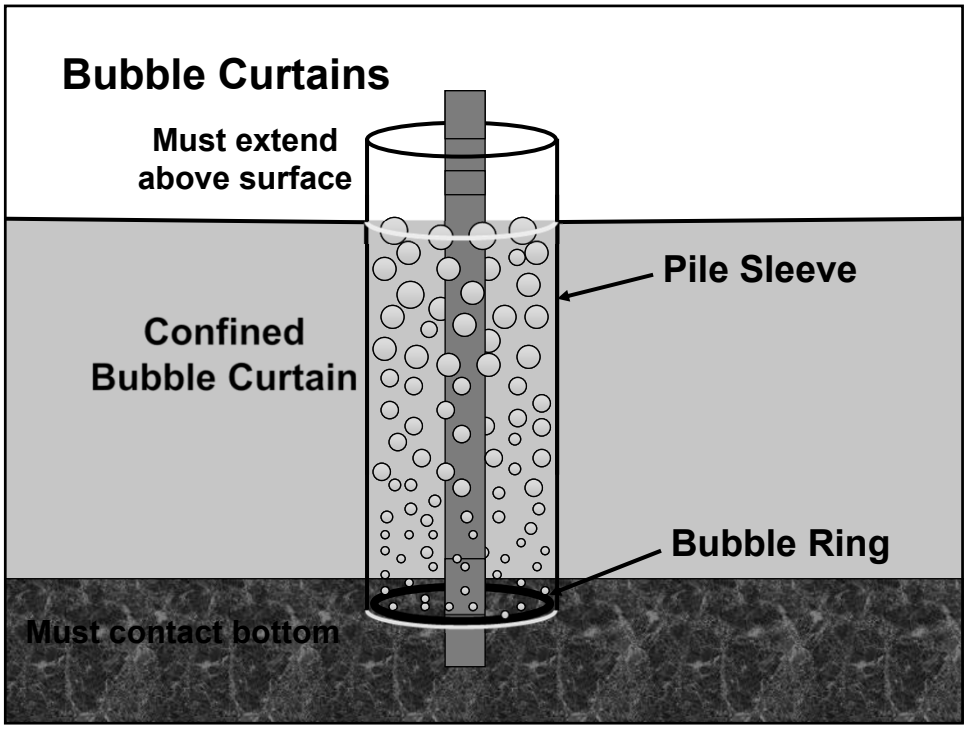
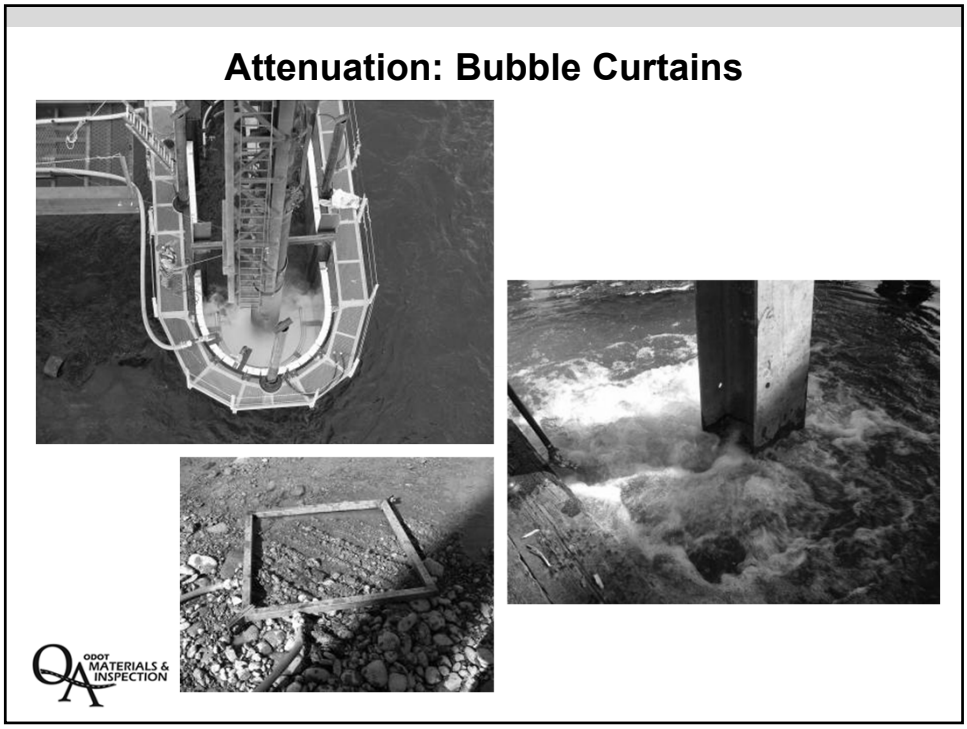
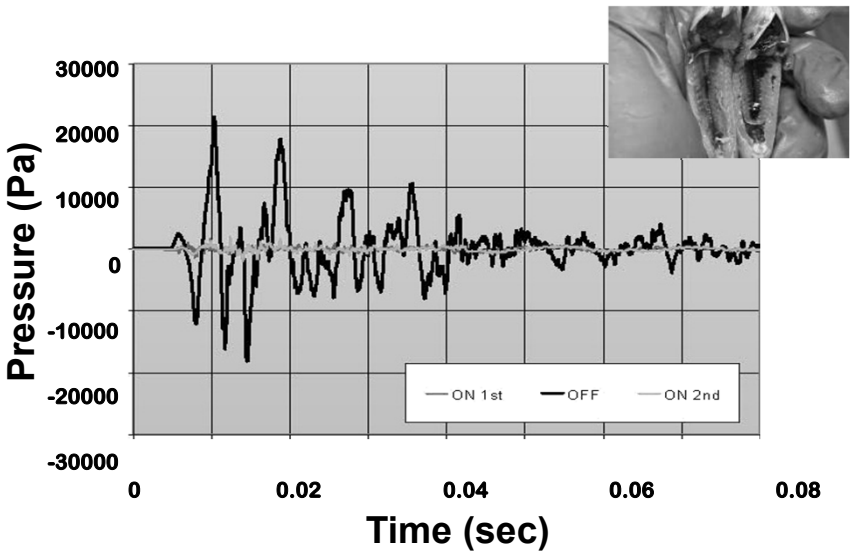

Bubble Curtains
Must extend above surface
Pile Sleeve
Confined Bubble Curtain
Bubble Ring
Must contact bottom

107


Attenuation: Bubble Curtains
ODOT MATERIALS & INSPECTION

108

Effect of Bubble Curtain on Pressure



109

Deep Soil Mixing on Projects

- Deep soil mixing has shown up recently on projects as a construction element.
- The effects and take associated with deep soil mixing were not analyzed in the FAHP.
- We need to discuss these construction techniques early in the process when other alternatives exist.
- Currently, this issue has come up in multiple Regions. So far, we have found out about these late in the process. Some during review of a FAHP and some that already have their FAHP.

ODOT MATERIALS & INSPECTION

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Soil Mixing and the FAHP

- Could be referred to as:
  - Mass mixing
  - Column mixing
  - Deep soil mixing
  - Shallow soil mixing
  - Insitu soil mixing
  - Ground improvement

geo-solutions.com

Keller Poland

Key issue:
Green concrete and containment

111

pH Effects

Researchgate.net

MCSWCD

The Daily Standard

- At a pH greater than 9, most ammonium in the water is converted to toxic ammonia (NH3), which can be fatal to fish.
- When the pH is highly basic or alkaline, it can chap or chemically burn a fish's skin.
- Silt associated with green concrete attaches to the gills of fish and suffocates them.

ODOT MATERIALS & INSPECTION

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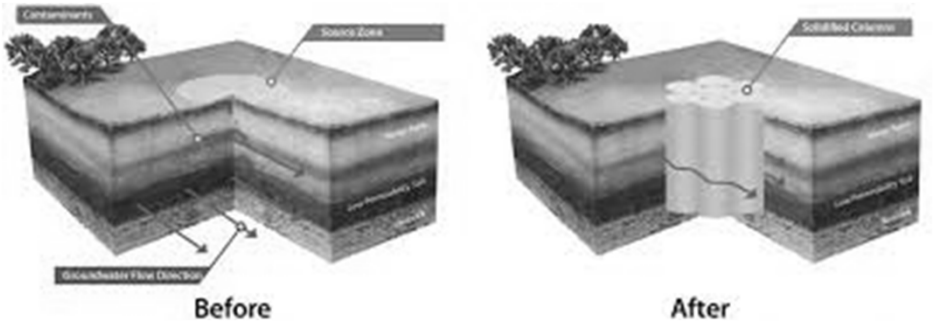
Deep Soil Mixing

Geodrillinginternational.com



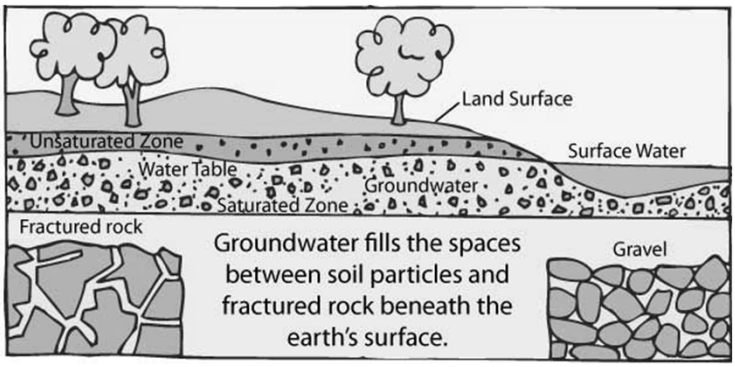
113

Deep Soil Mixing continued

Raito, Inc

Raito, Inc

114



www.groundwater.org

- Adjacency to waterbodies and containment are the primary issues and risks and are dependent on soil types and groundwater.
- The containment issue is both above ground and below ground.
- If this is introduced on a project, we need to be having discussions early. Containment. Other alternatives.

115

Potential Method of Containment

Digitalpumpsandsystems.com

Digitalpumpsandsystems.com

Potential method of containment: Trenched barrier walls

Alamy

Potential method of containment: Groundwater wells - pumping

116

Deep Soil Mixing on Projects continued

- Adjacency to waterbodies and containment are the primary issues and risks and are dependent on soil types and groundwater.
- The containment issue is both above ground and below ground.
- If this is introduced on a project, we need to be having discussions early. Containment. Other alternatives.

ODOT MATERIALS & INSPECTION

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When this is brought to us as a potential construction technique, we need to ask a series of questions.

- How close are we to a water body?
- What are the soil types?
- Is there groundwater flow and how much?
- How are we going to contain this work?
- What if the containment doesn't work? What is our safety net or back-up plan?
- What kind of monitoring will be necessary?
- Is the risk of containment failure so great that we should use another (maybe more costly) method?
- What data is needed for the regulatory agencies to be comfortable?

ODOT MATERIALS & INSPECTION

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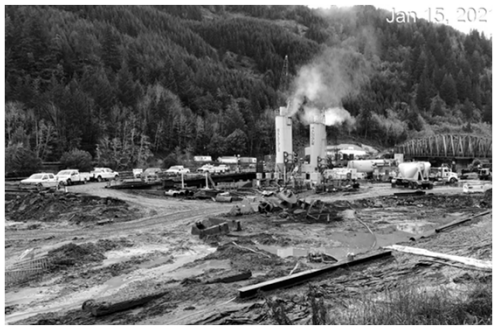

Site Contaminates

ODOT MATERIALS & INSPECTION

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00290.34(c)12 Barge Use

ODOT MATERIALS & INSPECTION

120

00290.34 Protection of Fish and Fish Habitat: Wrap-up

- Maintaining fish passage is required.
- Work area isolation is required for in-water work.
- In-water work must be completed within ODFW window, unless a variance is approved.
- Minimizing hydroacoustic impacts from pile driving with attenuation and/or shifting in-water work window for pile driving.

ODOT MATERIALS & INSPECTION

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INSERT TAB

Unit 6
Wildlife

00290.36 Wildlife and Wildlife Habitat

cliff swallow

Paul Benton
Terrestrial Biology Program Coordinator
541-315-5801
Paul.d.benton@odot.oregon.gov

1

Training Topics – Wildlife

- **Specs**
- **Laws** that protect birds
- ODOT Highway Directive
- ODOT's legal **responsibilities**
- **Laws and Specs** that protect bats
- Other Protected **Wildlife Species**
- Wildlife **passage** considerations

Double-crested cormorants

grey wolf

2

Specs - Project Controls in Order of Precedence (00150.10 Coordination of Contract Documents)

(a) Contract change orders
(b) Special Provisions (Boilerplate Language)
(c) Plans
(d) Standard Specifications
(e) All other contract documents

- The contract change orders, special provisions, plans, and standard specifications are intended to collectively describe all the kind of work necessary to complete the projects.
- The contract includes separate specs and special provisions. The specials add or replace language in the standard specs by order of precedence but are not combined into a single document. You have to have the standard specs and the special provisions in hand.

ODOT MATERIALS & INSPECTION

3

Standard Specifications
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

- 00290.36(a) Migratory Birds – Migratory Bird Treaty Act
- 00290.36(b) Bats – ODFW Protected Wildlife OARs
- 00290.36(c) Wildlife Avoidance/Harassment (High Noise) (Boilerplate only) – Endangered Species Acts, Bald and Golden Eagle Protection Act

UPDATED 07-31-24		TECHNICAL RESOURCES			
Section	Section Title	Primary Responsible Unit	Resource Position	Resource Name	Phone Number
00290.36(a) and (b)	Protection of Wildlife and Wildlife Habitat	Environmental	Terrestrial Biology Program Coordinator	Paul Benton	(541) 315-5801
00290.36(c)	Protection of Wildlife and Wildlife Habitat	Environmental	ESA Program Coordinator	Cash Chesselet	(503) 986-3707

4

Standard Specifications
SP290.36 Protection of Wildlife and Wildlife Habitat

(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 or dependent young (i.e., **active nest**) without a **permit**. Migratory birds include most birds in Oregon; the few exceptions include **rock pigeons, house sparrows, and European starlings.**

Except where allowed by the Contract and by permit, do not disturb an active migratory bird nest, do not inhibit the ability of adult birds to care for eggs or dependent young, and do not impact the supporting structure on which an active nest is built.

If active migratory bird nests are encountered stop all actions that may disrupt the nest and its occupants (including visual and auditory impacts) and contact the Engineer. Do not resume Work that may disrupt nesting until approved by the Engineer.

ODOT MATERIALS & INSPECTION

5

Standard Specifications
SP290.36 Protection of Wildlife and Wildlife Habitat

a) Migratory Birds – Explanation of terms

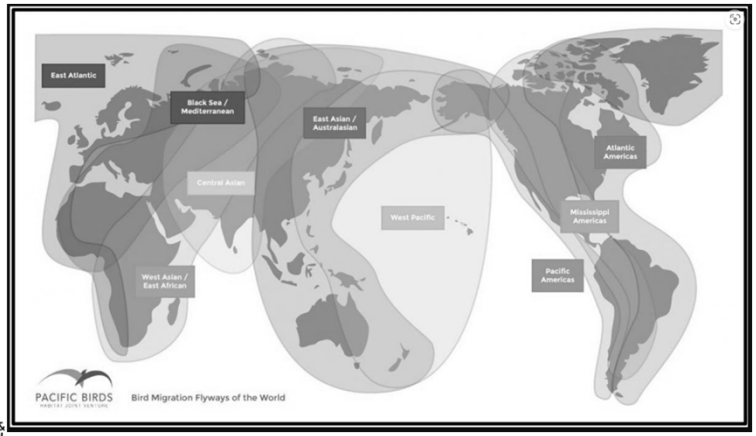
- **Migratory Bird Treaty Act (16 U.S.C. 703-712)**
- **Active Nest**
- **Permit**

ODOT MATERIALS & INSPECTION

6

Migratory Bird Treaty Act (MBTA) of 1918

Collection of four international conservation treaties that the US entered with Canada (1916), Mexico (1936), Japan (1972), and Russia (1976).



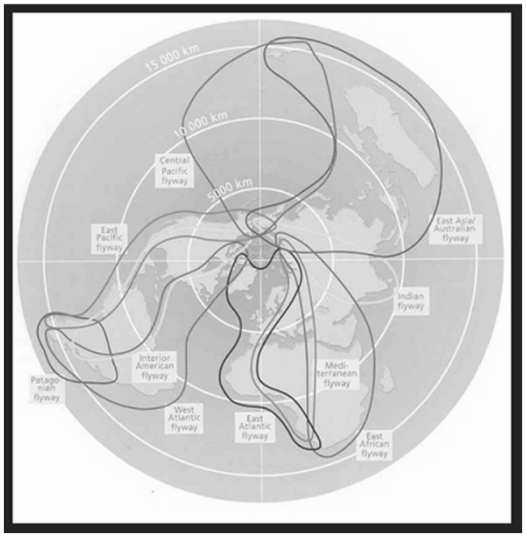
ODOT MATERIALS & INSPECTION

https://pacificbirds.org/birds-flyways/the-flyways/

7

Migratory Bird Treaty Act (MBTA) of 1918 continued

Flyways “mixing” at the poles

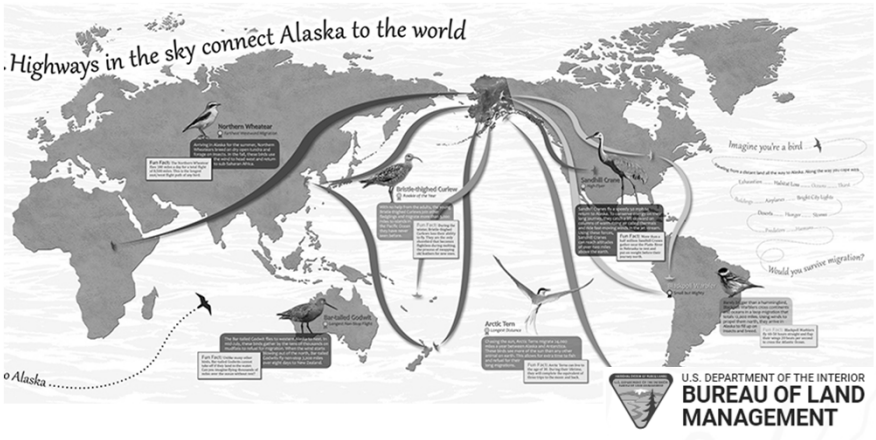


ODOT MATERIALS & INSPECTION

8

Migratory Bird Treaty Act (MBTA) of 1918 continued 2

Each summer nearly 5 billion birds migrate to Alaska, traveling from around the world via highways in the sky called flyways. The infographic below highlights the journey of six migrants who fly from six different continents each summer.



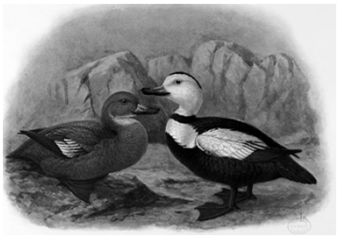
ODOT MATERIALS & INSPECTION

https://www.blm.gov/learn/interpretive-centers/campbell-creek-science-center/exhibits/ak-flyway

9

Migratory Bird Treaty Act (MBTA) History

In the 1800's, hunters and specifically market hunters harvesting ornamental feathers for hats are thought to be one of the main factors driving Labrador Ducks, Great Auks, Passenger Pigeons, Carolina Parakeets, and Heath Hens to extinction.



ODOT MATERIALS & INSPECTION

10

MBTA Prohibits the harming of just about all native birds, along with their nests and eggs

- Unlawful to **take** (pursue, hunt, shoot, wound, kill, trap, capture, collect), possess, offer for sale, transport, or ship, or attempt to carry out these activities on native birds.
- **Prohibitions apply to** any migratory bird, any part, nest, or eggs of any such bird, or any bird product.

ODOT MATERIALS & INSPECTION

11

Not Prohibited under the MBTA

- **Habitat destruction** or alteration, as long as there is not direct taking of birds, nests, eggs, or parts is allowed.
- **Destruction** of an **inactive** migratory bird **nest** (does not contain eggs or dependent young) provided that no possession occurs.
- **Harassment** or hazing provided **no** physical **harm** occurs nor abandonment of an **active nest** (contains eggs or dependent young).

ODOT MATERIALS & INSPECTION

12

Non-native birds are not protected under MBTA

Compete with native birds

Damage crops

Damage structures and spread disease

Invasive Pests

13

Standard Specifications SP290.36 Protection of Wildlife and Wildlife Habitat continued

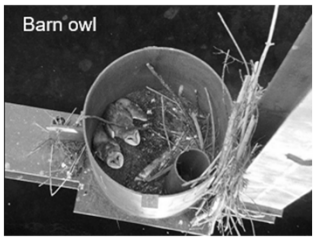
a) **Migratory Birds – Explanation of terms**

- **Migratory Bird Treaty Act** (16 U.S.C. 703-712)
- **Active Nest**
- **Permit**

14

Active Nest – any nest that contains eggs, hatchlings, nestlings/chicks, or birds actively using the nest for breeding purposes

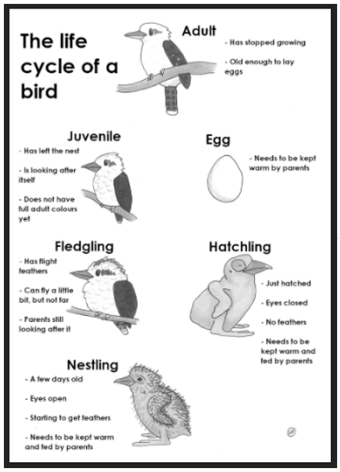
- Eggs are present in the nest, indicating that birds are incubating.
- Hatchlings or chicks are in the nest, being cared for by the adult birds.
- Adult birds are actively tending the nest, even if eggs or chicks are not yet visible, indicating the nest is in the active breeding process.
- Nest remains active until the young birds have fledged and left the nest.



ODOT MATERIALS & INSPECTION

15

Active Nest – The life cycle of a bird



- Active Nest has eggs, hatchlings, and nestlings that are dependent on parents and non-mobile.
- Fledglings, Juveniles or Sub-adults, and adults are mobile and can move away from the nest and/or work area

ODOT MATERIALS & INSPECTION

16

Standard Specifications
SP290.36 Protection of Wildlife and Wildlife Habitat continued 2

a) Migratory Birds – Explanation of terms

- **Migratory Bird Treaty Act** (16 U.S.C. 703-712)
- **Active Nest**
- **Permit**

17

What does it take to have a permit?

- The Creation of a Bird Management Program
  - 8,953 files in 822 folders!
- ODOT MBTA Highway Division Directive
- ODOT MBTA Permit
- Implementation – Specs, Bird Management, and Reporting

18

ODOT MBTA Highway Division Directive

- Provides agency personnel with **guidelines and strategies** to ensure that appropriate and reasonable measures are taken to prevent injury to and death of migratory birds
- **All** employees must practice **due diligence** to safeguard migratory birds
- Turned the Directive into ODOT's **Bird Conservation Strategy** to obtain or take permit.

Western Meadowlark

19

ODOT MBTA Highway Division Directive – Guidelines and Strategies

- Focus For Construction (Page 8-9) – Put migratory bird conservation principles into practice during construction activities
  - Directive contains goals for vegetation clearing, tree/snag removal and bridge demolition or repairs
  - A few of the activities to meet these goals include:
    - Remove the minimum amount of nesting habitat necessary for project implementation and do so outside of the nesting season.
    - Prevent migratory birds from nesting in habitat slated for removal/demolition during nesting season (e.g. exclusion).
    - Inspect habitat for nest prior to clearing, avoid disturbing active nest until the young have fledged.
    - Consult project Biologist or REC on issues that arise during the project implementation.

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ODOT MBTA Permit

*(based on Hwy Directive and **due diligence** to protect)*

- **3 year Statewide Permit** issued by the USFWS Migratory Bird Office; current permit expires in March of 2025, permit renewal in process.
- **ODOT must submit** an Annual Report by January 31.
- **ODOT environmental staff** are authorized to take birds.
- If **APHIS-Wildlife Services** is contracted for bird management, APHIS is authorized to take birds.
- Typically, **private contractors** and **Local Agencies are NOT authorized** to take birds under the ODOT MBTA permit*.

ODOT MATERIALS & INSPECTION

21

ODOT MBTA Permit – Authorizations and Conditions – Active Nest Relocation

- Authorized to relocate active bird nest, including eggs or nestlings for 4 Peregrine Falcon Nests (for 4 specific bridges) and 10 Migratory Bird Nests per Year.
- Need written authorization prior to relocation of any Raptor species or Bird of Conservation Concern.
- Must monitor relocated nest to determine if parents return.
- Must report all relocations to USFWS within 72 hours after the emergency take action that includes a complete description of the circumstances warranting the action.
  - **Must show USFWS we did our due diligence prior to relocation.**

ODOT MATERIALS & INSPECTION

22

ODOT MBTA Permit – Authorizations and Conditions – Active Nest Destruction

- Authorized to destroy active migratory bird nests if nesting persists despite implementing all reasonable avoidance and minimization measures and provided we followed our Bird Conservation Strategy (Hwy Directive).
- Need written authorization prior to relocation of any Raptor species or Bird of Conservation Concern not identified in the permit, additional permitting is required for Bald and Golden Eagles and ESA species.
- Active Nest Take Limits set for 4 Swallow species (140), 4 Cormorant species (1650), American Robin (40), American Dipper (15), Killdeer (15), Canada Goose (20), and 50 Other migratory bird nests.

ODOT MATERIALS & INSPECTION

23

ODOT MBTA Permit – Authorizations and Conditions – Lethal Take

- Lethal take is restricted to circumstances when birds are unable to be dissuaded through exclusions, hazing, and other reasonable non-lethal methods.
- Authorized to lethally take 2 Migratory Birds per species EXCEPT raptors, Birds of Conservation Concern, Bald and Golden Eagles, or ESA species, not to exceed 5 birds per year.
- Must follow the American Veterinary Medical Association Guidelines on Euthanasia when lethal take is necessary.

ODOT MATERIALS & INSPECTION

24

ODOT MBTA Permit – Authorizations and Conditions – authorized users (subpermittees)

- Subpermittees are designated employees of ODOT (Biologists), USDA-Wildlife Services, and Bob Sallinger (or his designee) from Portland Audubon.
- Any other person (i.e. other ODOT employees or contractors), may exercise the authority of this permit provided they have a copy of this permit and a letter from the Principal Officer (John Raasch) stating they are acting as a subpermittee
  - ODOT is legally responsible for ensuring all subpermittees are adequately trained and adhere to the terms of the permit.

ODOT MATERIALS & INSPECTION

25

Standard Specifications
SP290.36 Protection of Wildlife and Wildlife Habitat
continued

(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 or dependent young (i.e., **active nest**) without a **permit**. Migratory birds include most birds in Oregon; the few exceptions include **rock pigeons, house sparrows, and European starlings**.

Except where allowed by the Contract and by permit, do not disturb an active migratory bird nest, do not inhibit the ability of adult birds to care for eggs or dependent young, and do not impact the supporting structure on which an active nest is built.

If active migratory bird nests are encountered stop all actions that may disrupt the nest and its occupants (including visual and auditory impacts) and contact the Engineer. Do not resume Work that may disrupt nesting until approved by the Engineer.

ODOT MATERIALS & INSPECTION

26

SP00290.36(a) Migratory Birds – Special Provisions

Do not disturb migratory bird nesting habitat (shrubs, trees, and structures), or clear vegetation from March 1 to September 1 of each year without prior written approval from the Engineer.

Notify the Engineer, in writing, a minimum of 10 Calendar Days prior to starting activities that could harm nesting birds.

ODOT MATERIALS & INSPECTION

27

Remember – the nesting window is just a guideline!

28

SP00290.36(a) Migratory Birds – Special Provisions – Bird Management

- 3 Options for Bird Management based on who is performing the bird management
  - Option 1 – Under ODOT's Permit, 100% Performed by Agency, most commonly used option.
  - Option 2 – Under ODOT's Permit, Assistance from Contractor.
  - Option 3 – Local Agency performing bird management under their own permit.

29

SP00290.36(a) Migratory Birds – ODOT Permit, performed by ODOT

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

30

SP00290.36(a) Migratory Birds – ODOT Permit, assistance from contractor

(1) Bird Management - Submit a migratory bird protection plan and implementation schedule for review and approval at least 10 Calendar Days before the pre-construction conference. Do not begin Work until the migratory bird protection plan and implementation schedule are approved.

The migratory bird protection plan shall include the following elements:

(a) The name of the individual who will oversee bird management activities* for the project and a summary of their qualifications. This individual must have a biology or related natural resources degree and a minimum of 2 years of work experience identifying nesting birds, preferably in the Pacific Northwest.

*Individual needs to be added to ODOT's permit prior to implementation

ODOT MATERIALS & INSPECTION

31

SP00290.36(a) Migratory Birds – ODOT Permit, assistance from contractor continued

(b) A description of measures to prevent birds from nesting on structures or vegetation at the project site, from March 1 to September 1 of each calendar year, that could result in project conflicts; include the timing, intensity and location of the activities. If exclusionary devices will be used (e.g., netting), install them prior to March 1 and remove them at the completion of the project or by September 1 each calendar year, whichever comes first. Include how exclusionary devices will be installed and document their inspection schedule. Exclusionary devices must be inspected daily to ensure their functionality. Repair damaged exclusionary devices as soon as the damage is discovered. Document inspections and maintain documentation on site.

(c) A description of measures to avoid disturbing active migratory bird nests if they are encountered. The typical avoidance measure is to move project activities away from the active nest until the young have left the nest.

ODOT MATERIALS & INSPECTION

32

SP00290.36(a) Migratory Birds – Local Agency performing bird management under their own permit.

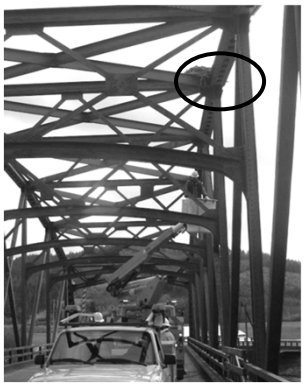
(1) Bird Management - Bird management activities to comply with the Migratory Bird Treaty Act will be performed by *(* name of the permit holder *)* and its permitted agents, as documented in the *(* name of the permit holder *)* MBTA permit*. Ensure that *(* name of the permit holder *)* and its permitted agents have access to the project area as needed to prevent migratory bird nesting. Nesting prevention may include daily bird harassment and the installation and maintenance of devices that exclude birds.

*Conditions of Local Agency permit may differ from ODOT's.

33

Prior to project mobilization

- Contractor should **meet on site** with the Biologist, Resource Representative, Project Manager, and Inspector.
- Ensure that all parties know the **whereabouts o**f sensitive wildlife and measures necessary to protect them.



34

Sometimes species move!

- **Scoping** may not reveal all mobile protected wildlife (be aware ☺).
- **Specs** may not equal **compliance** if regulated wildlife unexpectedly appear on a project (call the REC).

35

SP00290.36(c) Wildlife Avoidance/Harassment

(High Noise) – For purposes of this project, "high noise" is defined as sound pressure levels greater than 10 dBA above the ambient as measured by the L_{AFmax} and L_{AFeq} at sensitive habitat as shown:

- High Noise Restrictions have been developed as standardized minimization measures for Marble Murrelet, Bald and Golden Eagles, and Northern Spotted Owls (restrictions vary by species).
- Other species may trigger the need for High Noise restrictions but those would result from individual consultations and may result different seasonal restrictions.

ODOT MATERIALS & INSPECTION

36

SP00290.36(c) Wildlife Avoidance/Harassment

(High Noise) – Based on 3 primary laws in Oregon

1. Endangered Species Acts (State and Federal)
2. Bald and Golden Eagle Protection Act

ODOT MATERIALS & INSPECTION

37

Endangered Species Act Prohibitions

- **Take** (*direct, indirect*) – harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct
- Possess, sell, deliver, carry, transport, or ship
- Destruct or adversely modify **critical habitat**

ODOT MATERIALS & INSPECTION

38

Bald and Golden Eagle Protection Act of 1940 (BGEPA)

Criminal penalties for persons who “take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part (including feathers), nest, or egg thereof”.

ODOT MATERIALS & INSPECTION

Similarity of appearance

39

Bald and Golden Eagle Protection Act of 1940 (BGEPA) continued

The Act defines “take” as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.” Regulations further define “disturb” as “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.” Includes alterations of previously used nest site even when eagles are not present if alterations agitate or bother eagle upon their return.

ODOT MATERIALS & INSPECTION

Similarity of appearance

40

Actions Prohibited by Law

P = Prohibited
A = Allowed

Action	ESA	MBTA	BGEPA
Birds (move, harm, kill)	P	P	**P**
Birds (harass, disturb)	P	Perhaps	**P**
Eggs (move, harm, kill)	P	P	**P**
Active* nests (move, destroy)	P	P	**P**
Inactive nests (move, destroy)	P	A	**P**
Habitat (alter, destroy)	Perhaps	A	**Perhaps**

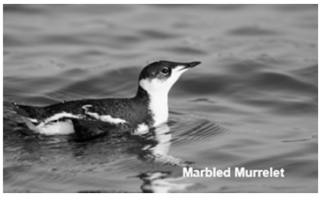
***Active Nest** = has eggs or flightless young

41

Marble Murrelet
SP00290.36(c) Wildlife Avoidance/Harassment

(High Noise) – For purposes of this project, "high noise" is defined as sound pressure levels greater than 10 dBA above the ambient as measured by the L_{AFmax} and L_{AFeq} at sensitive habitat as shown:

- Non-blasting high-noise producing construction activities are not allowed between April 1 and August 5. Blasting activities within one mile of sensitive habitat shall be conducted only between September 15 and March 31.
- Non-blasting high noise producing construction activities conducted from August 6 to September 15 shall implement a daily limited operating period of daytime work being conducted from two hours after sunrise to two hours before sunset. If night construction is needed, then activity shall be conducted one hour after sunset to one hour before sunrise.



ODOT MATERIALS & INSPECTION

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Bald and/or Golden Eagles
SP00290.36(c) Wildlife Avoidance/Harassment

(High Noise) – For purposes of this project, "high noise" is defined as sound pressure levels greater than 10 dBA above the ambient as measured by the L_{AFmax} and L_{AFeq} at sensitive habitat as shown:

- Blasting and high-noise producing activities are allowed only between September 1 and October 31.

ODOT MATERIALS & INSPECTION

43

Northern Spotted Owl
SP00290.36(c) Wildlife Avoidance/Harassment (High Noise) –

For purposes of this project, "high noise" is defined as sound pressure levels greater than 10 dBA above the ambient as measured by the L_{AFmax} and L_{AFeq} at sensitive habitat as shown:

Blasting and high-noise producing activities shall be prohibited during the following critical nesting period:

- March 1 to July 7 for the North Coast Province.
- March 1 to June 30 for the Rogue/Siskiyou National Forest (NF) and Medford District of U.S. Bureau of Land Management (BLM) in the Southwest Province.
- March 1 to July 15 for the Umpqua NF in the Southwest Province.
- March 1 to July 15 for the Willamette Province.
- March 1 to September 30 for the Deschutes NF, Fremont, and Winema NF and unlisted areas.

ODOT MATERIALS & INSPECTION

44

Bats

- 15 species of bats in Oregon – 8 are Oregon Conservation Strategy Species.
- Biggest threats: human activities (habitat loss, pesticides) and disease (white nose syndrome).
- ODOT protects bats and enhances their habitats to help prevent them from being listed under the Federal ESA and comply with ODFW Wildlife Protection Rules.

ODOT MATERIALS & INSPECTION

45

Standard Specifications 00290.36 – Protection of Wildlife and Wildlife Habitat continued

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

(b) Bats – If bats are encountered, stop all actions in the area and contact the Engineer. Do not disturb bat colonies. In the event that a bat colony is encountered during construction, the Engineer may suspend Work according to 00180.70. Do not resume Work until approved by the Engineer.

Protect bats by doing the following:

- Prevent destruction of bat colonies as shown.
- If bats gain access to excluded areas, stop actions in the area and contact the Engineer. Do not resume Work until approved by the Engineer

ODOT MATERIALS & INSPECTION

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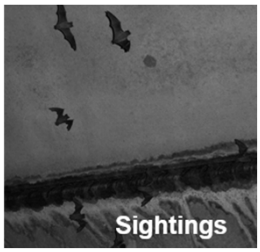
00290.36(b) Bats

Prevent destruction of bat colonies as shown [on plans].

(If known…)



APHIS is usually contracted to deal with bats.

47

00290.36(b) Bats

- **Do not disturb bat colonies**
- If bats are encountered, stop all actions in the area and contact the Engineer
- Do not resume work until approved by the Engineer

✓ REC will assess bat status
✓ USDA APHIS Wildlife Services may assist

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Special Provisions
SP00290.36(b) Bats – ODOT Permit, performed by ODOT

Schedule Bridge Work that may disturb resident bats, including demolition activities, between (__Insert dates outside of maternity roosting/ hibernation _(date)___ to ___(date)___).

Bat Management - Option 1, management performed by Agency

Ensure that the Agency and its agents have access to the project area, as needed, to perform bat management activities to prevent bat conflicts.

ODOT MATERIALS & INSPECTION

49

SP00290.36(b) Bats – ODOT Permit, performed by ODOT

Schedule Bridge Work that may disturb resident bats, including demolition activities, between (__Insert dates outside of maternity roosting/ hibernation ___(date)___ to ___(date)___).

Bat Management - Option 2, management performed by contractor

Install exclusionary devices to prevent bats from accessing suitable Bridge habitat. An exclusionary device is any item that denies bats physical access to an area (e.g., netting, hole blockers, one-way valves). Exclusionary devices must be approved by the Engineer prior to installation.

Install exclusionary devices a minimum of 15 Days prior to (___(Insert the date of the beginning of maternity roosting/hibernation___). Do not remove exclusionary devices until approved by the Engineer.

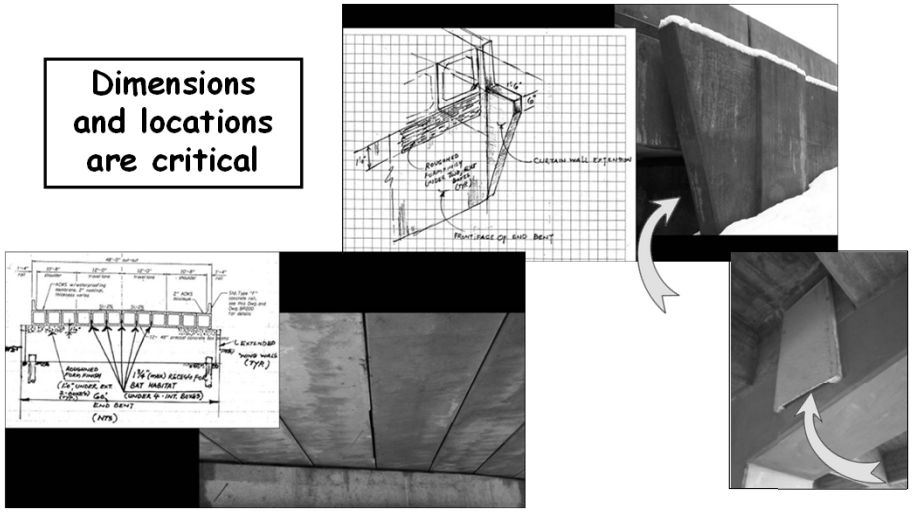
Regularly inspect, maintain, and repair or replace exclusionary devices to prevent bridge occupancy by bats during the period listed above.

ODOT MATERIALS & INSPECTION

50

Bat Habitat Plans – Crevices

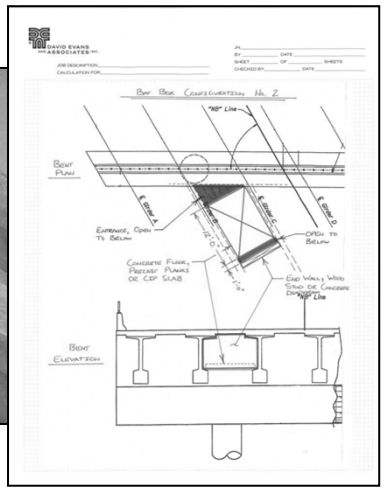
Dimensions and locations are critical



ODOT MATERIALS & INSPECTION

51

Bat Habitat Plans – "Caves"



ODOT MATERIALS & INSPECTION

52

00290.35 Marine Mammals

(seals, whales, dolphins, otters, walruses)

- **Marine Mammal Protection Act** (MMPA)
  - All marine mammals are protected
  - Take = harass, hunt, kill, capture
- **Endangered Species Act** (ESA)

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ODOT MATERIALS & INSPECTION

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00290.35 Marine Mammal Issues

- ODOT projects can be impacted by **haul out sites** for reproduction (i.e., rookeries) or resting.
- The steller sea lion is in the Columbia River below Bonneville Dam (**145 miles upstream**).

ODOT MATERIALS & INSPECTION

54

00290.35 Marine Mammals

(Coordinate with the ODOT National Marine Fisheries Liaison to develop appropriate specification language.)

55

Other Protected Mammals (Terrestrial)

- **Federal ESA** – Columbia white-tailed deer (lower Columbia River Population), gray wolf, coastal marten
- **State ESA** – gray wolf, kit fox, Washington ground squirrel, wolverine

If these species will be impacted, work restrictions will be project specific.

56

Protected Frog

- **Federal ESA** – Oregon spotted frog
- Highly aquatic species; prefers shallow warm water (emergent **wetlands** in forested habitats)
- County Possibilities: Benton, Clackamas, Deschutes, Jackson, Klamath, Lane, Linn, Marion, Multnomah, Wasco

ODOT MATERIALS & INSPECTION

57

Invertebrates and the Federal ESA

Oregon silverspot butterfly

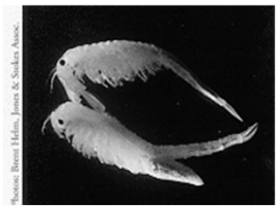
Coastal

Taylors checkerspot butterfly

Grassland habitat (Westside)

Fender's blue butterfly

Willamette Valley



Vernal pool fairy shrimp

SW Oregon vernal pools

ODOT MATERIALS & INSPECTION

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Future Potential Federal ESA Listings

Little Brown Bats
State Wide

Western Ridged Mussel
State Wide

Western Bumble Bee
State Wide

Northwest Pond Turtles
West of Cascades, Klamath and Bend

Monarch Butterfly
State Wide Except US 101

ODOT MATERIALS & INSPECTION

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Wildlife-Vehicle Collision Density Map

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Project Specific

Wildlife Passage

ODOT MATERIALS & INSPECTION

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Wildlife Passage continued

ODOT MATERIALS & INSPECTION

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Oregon Wildlife
ODOT
MATERIALS &
INSPECTION

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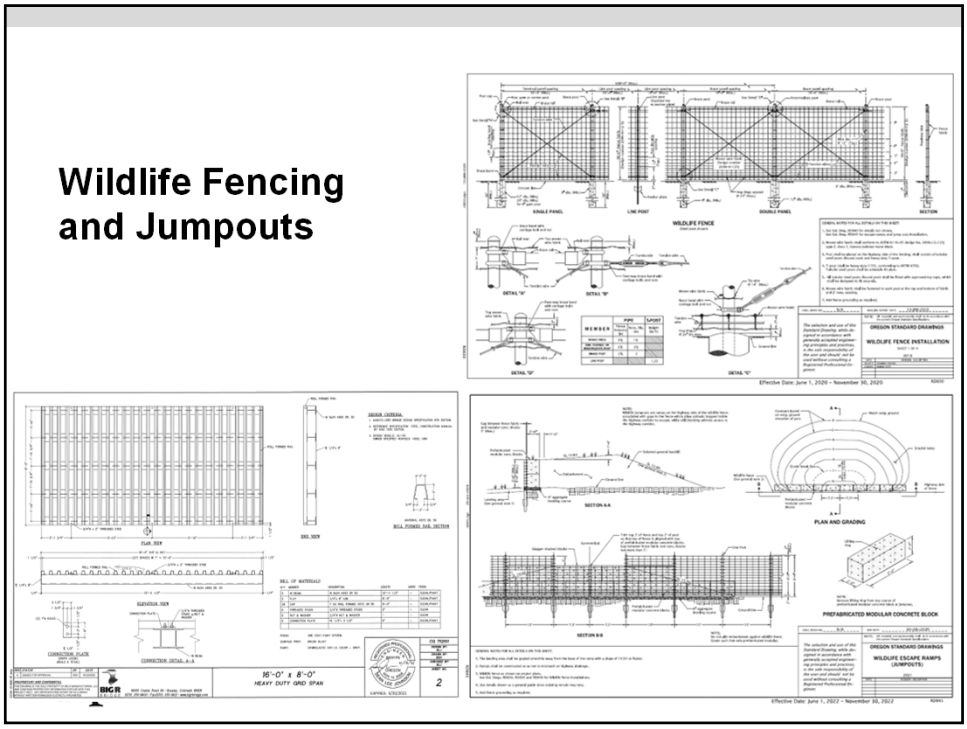
Wildlife Fencing
and Jumpouts
16'-0" x 8'-0"
HEAVY DUTY GRD SPAN

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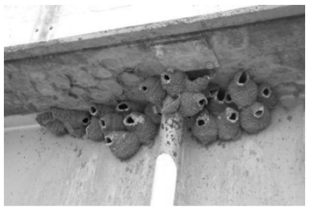
Take Home Messages

- **Call the REC** for wildlife assistance.
- Be on the lookout for signs of wildlife.
- Nearly all birds are protected.
- It is not always easy to determine if a nest is active or inactive.



ODOT MATERIALS & INSPECTION

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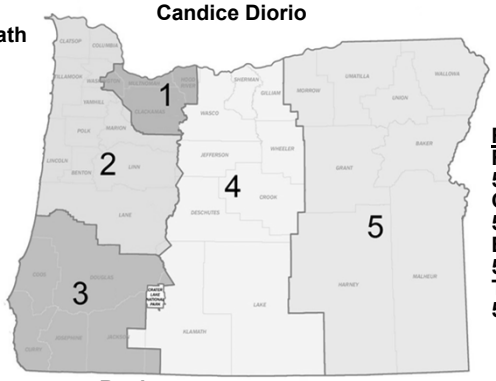
Region Environmental Coordinators

Statewide ADA REC
Doug Sharp 541-817-5435

Region 1
Carol Snead 503-731-4804
Mary Young 503-731-8436
Paul Langdale 503-731-8240
Tom McConnell 503-731-8535
Devin Simmons 503-731-8266
Candice Diorio

Region 2
Corissa Anderson-Horvath
971-707-1629
Donna Hinze
503-302-5748
Adam Roberts
541-912-2162
Sarah Flores Eastman
971-209-8213

Region 3
Sam Dunnavant
541-957-3519
Julie Worsley
541-957-3592
Terry Luecker
541-315-5486



Region 5
Rick Jerofke
541-786-2788
Christian Jilek
541-963-1957
Brian Laughlin
541-805-9345
Tayton Duby
541-786-3134

Region 4
Teresa Brasfield 541-410-7683
Kevin Halesworth 541-280-4306

ODOT MATERIALS & INSPECTION

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Oregon Department of Transportation

Highway Division DIRECTIVE

NUMBER	SUPERSEDES
ENV 01-01	New
EFFECTIVE DATE: January 17, 2006	PAGE NUMBER: 1 of 13
REFERENCE	

SUBJECT	APPROVED SIGNATURE
Migratory Bird Treaty Act (16 U.S.C. 703-712)	/s/ Douglas Tindall, Highway Division Deputy Director

PURPOSE:

To provide agency personnel involved in project delivery, construction, and maintenance with guidelines and strategies to ensure that appropriate and reasonable measures are taken to prevent injury to and death of migratory birds.

DEFINITIONS:

- **Active nest** – a nest containing eggs or young.
- **Appropriate** – suitable for a particular condition, occasion, or place.
- **Conservation** – the protection, preservation, management, or restoration of wildlife and natural resources.
- **Context Sensitive and Sustainable Solutions (CS^3)** – an operational approach that addresses the preservation of scenic, aesthetic, historical, environmental, economic, and community values while building safe and enduring transportation projects.
- **Due diligence** – use of reasonable but not necessarily exhaustive efforts.
- **Environmental stewardship** – the careful and responsible management of natural resources.
- **Fledged** – young that are capable of flight and can successfully leave the nest.
- **Indiscriminate** – non-selective, wanton.
- **Migratory bird** – the vast majority of wild bird species encountered in Oregon; notable exceptions include European starling, house sparrow, and rock dove (feral pigeon).
- **Migratory Bird Treaty Act (MBTA)** – implements four bilateral treaties (between the U.S. and Canada, Japan, Mexico, and the former Soviet Union) making it illegal to pursue, possess, injure, or kill migratory birds without a permit.
- **Reasonably expect** – to presume that one has acted sensibly under the circumstances.
- **Safeguard** – strive to protect against potential harm.
- **USFWS** – United States Fish and Wildlife Service, regulatory agency enforcing the MBTA.

BACKGROUND:

The MBTA was developed in 1918 to stop the indiscriminate killing and market hunting of migratory birds. This act applies to activities conducted within the United States by any person, business, organization, institution, and any local, state, or federal agency.

GUIDELINES:

ODOT is committed to environmental stewardship and supporting the conservation intent of the MBTA while designing, constructing, operating, and maintaining the state highway system through Context Sensitive and Sustainable Solutions (CS^3); therefore, ODOT employees must practice due diligence to safeguard migratory birds while carrying out their daily activities. ODOT Highway Division employees are to incorporate the attached MBTA Guidelines and Strategies into their work responsibilities as can reasonably be expected when implementing the agency mission to provide a safe and efficient transportation system in ways that protect and enhance the environment.

RESPONSIBILITIES:

Highway Division Deputy Director:

- Provide guidance and direction on the MBTA to Highway Division personnel.

Technical Services Manager:

- Ensure that the MBTA Guidelines and Strategies associated with this Highway Division Directive are adaptive.

Natural Resources Unit:

- Lead efforts to revise the MBTA Guidelines and Strategies as needed.
- Include internal and external stakeholders in the periodic review and revision of the MBTA Guidelines and Strategies.
- Provide training and updates on the MBTA Guidelines and Strategies.
- Work with the Specifications, Estimating, and Office of Pre-Letting Unit, Project Managers, and other pertinent parties to develop standard specifications language for activities relevant to migratory bird protection.
- Work with the ODOT Bridge Engineering Section to foster bridge designs that dissuade birds from building nests on bridge sections *that are difficult to access*.
- Pursue MBTA permit options and an ODOT Avian Protection Plan with USFWS.

Environmental Leadership Team:

- Provide input on revisions to the MBTA Guidelines and Strategies.
- Incorporate MBTA Guidelines and Strategies into ODOT activities, projects, and contracts.
- Include migratory bird conservation practices into ODOT activities, projects, and contracts when relevant and reasonable.
- Disseminate MBTA information on the MBTA Guidelines and Strategies to appropriate ODOT personnel and contractors.

Project Delivery Leadership Team:

- Ensure that the protection of migratory birds is given due consideration in the entire project delivery system from inception through final project acceptance.
- Bring project MBTA compliance issues to the attention of the Natural Resources Unit.

Project Team Leaders:

- Ensure that migratory bird conservation principles and practices are implemented as stipulated during project design.
- Work with Biologists and Regional Environmental Coordinators to resolve MBTA compliance issues.

Construction Project Managers:

- Assist with developing contract language for implementation of the MBTA.
- Verify that construction contractors understand how to implement MBTA Guidelines and Strategies within projects.
- Ensure that the agreed upon MBTA Guidelines and Strategies are adhered to during construction activities.
- Report to the Project Delivery Leadership Team any MBTA compliance issues that occur on projects.

Maintenance Leadership Team:

- Incorporate changes in MBTA Guidelines and Strategies as needed into the Routine Road Maintenance Guide for Water Quality and Habitat Best Management Practices (2004 Blue Book).
- Disseminate information on the MBTA Guidelines and Strategies to appropriate maintenance personnel.
- Apprise the Natural Resources Unit of maintenance issues that should be considered in future revisions of the MBTA Guidelines and Strategies.

Maintenance District Managers:

- Integrate appropriate MBTA Guidelines and Strategies into maintenance activities.
- Provide training and disseminate information on the MBTA Guidelines and Strategies to maintenance personnel.

Facilities (Maintenance) Managers:

- Incorporate migratory bird conservation practices into facilities management.
- Report MBTA compliance issues at maintenance facilities to the region Biologist.

Biologists and Regional Environmental Coordinators:

- Recommend and support measures to protect migratory birds during project development and maintenance.
- Help identify active bird nests and/or habitat.
- Involve appropriate federal, state, and non-governmental agencies regarding migratory bird issues that arise during project development and implementation.
- Help resolve MBTA compliance issues during project and maintenance implementation.
- Work with the Natural Resource Unit to ensure that the MBTA Guidelines and Strategies document is current and inclusive.

Individual Employees:

- Practice due diligence to safeguard migratory birds while carrying out employment duties.
- Inform managers of activities that should be considered for inclusion in future revisions of the MBTA Guidelines and Strategies.
- Contact the region Biologist or Regional Environmental Coordinator when issues pertaining to the MBTA arise.

ACTION REQUIRED:

MBTA Guidelines and Strategies are to be incorporated into project delivery, construction, and maintenance activities to ensure that appropriate and reasonable measures are taken to prevent injury to and death of migratory birds.

SPECIAL INSTRUCTIONS:

Implementation of MBTA Guidelines and Strategies is to begin immediately.

MBTA Guidelines and Strategies

Statement of Intent: This document provides strategies to guide project decision-making regarding compliance with the Migratory Bird Treaty Act (MBTA). Because each project provides its own set of MBTA challenges, this document recognizes the need for flexibility in selecting compliance strategies by providing a suite of **possible** options for consideration on a project by project basis.

Compliance Summary: Unless and except as permitted by regulation, it shall be unlawful to possess, pursue, hunt, take, capture, kill, or attempt to take, capture, or kill any migratory bird, any part, nest, or eggs of any such bird, or any product of any such bird or any part, nest, or egg thereof (16 U.S.C. 703).

I. Project Delivery

MBTA Focus for Project Delivery – Identify and incorporate migratory bird conservation principles and practices into ODOT projects and contracts through collaboration with appropriate federal, state, and non-governmental groups during planning efforts.

1) Vegetation/Habitat Preservation

Goal – Ensure that project activities are designed such that migratory bird habitat is not unnecessarily disturbed during project implementation and that nesting habitat is not disturbed during the nesting season.

Possible *habitat preservation activities to require in projects to meet this goal:*

- Avoid disturbing nesting habitat (i.e., vegetation or structures) during the nesting season.
- Identify valuable bird nesting habitat within the project area and retain it if possible within project limits.
- Prevent migratory birds from nesting on structures that will be repaired or demolished prior to when young birds will fledge (e.g., employ exclusionary devices or dispersal methods)
- Within the work area, avoid disturbing vegetation designated to remain following project completion; preservation of this vegetation includes keeping equipment and materials off of the critical root zone.
- Avoid directly or indirectly damaging vegetation outside the work area.
- Following consultation with the project Biologist or Regional Environmental Coordinator (REC), undertake other actions not listed above that meet the MBTA goal for preservation of bird habitat (see Construction section for additional possibilities).

2) Vegetation/Habitat Restoration

Goal – Ensure that migratory bird habitat that is negatively impacted during project implementation is restored where feasible.

Possible *habitat restoration activities to require in projects to meet this goal:*

- Prevent fouling topsoil with subsoil or other detrimental matter; consult Oregon Standard Specifications for Construction (2002).
- Following construction, bring the surface area to a condition ready for planting operations; consult Oregon Standard Specifications for Construction (2002).
- Seed/plant using practices outlined in Sections 01030 and 01040 of Oregon Standard Specifications for Construction (2002).
- Plant in riparian areas following practices outlined in the Vegetation Management Program section of the ODOT Routine Road Maintenance Water Quality and Habitat Guide (2004 Blue Book).
- Consult with ODOT Foresters regarding best practices for planting trees.
- Following consultation with the project Biologist or REC, undertake other actions not listed above that meet the MBTA goal for restoration of bird habitat.

3) Vegetation/Habitat Enhancement

Goal – Improve migratory bird habitat within project areas if feasible and reasonable.

Possible *habitat enhancement activities to incorporate into projects to meet this goal:*

- Eliminate weeds (consult Oregon Standard Specifications for Construction, 2002) before beginning planting or seeding operations.
- Identify suitable native plants to utilize in habitat enhancement activities.
- Foster multi-layered vegetative communities in restoration activities when they do not interfere with the safe operation of the highway.
- Provide structural elements for nest sites *on suitable areas* of transportation structures (e.g., bridges).
- In consultation with the project Biologist, REC, or ODOT Foresters, identify other opportunities to improve bird habitat within the project scope.

4) Vegetation/Habitat Mitigation

Goal – Enhance bird habitat off-site when on-site vegetation preservation, restoration, and enhancement opportunities are limited. Off-site areas include mitigation banks and ODOT properties not associated with the right-of-way.

Possible *habitat mitigation activities to incorporate into projects to meet this goal:*

- Create snags in snag deficient areas.
- Provide nest boxes and nesting structures.
- Encourage multi-layered vegetation communities when practical.
- Enhance habitat requirements for bird species in decline.
- In consultation with the project Biologist or REC, identify other opportunities that meet the MBTA goal for bird habitat mitigation.

II. Construction

MBTA Focus for Construction – Put migratory bird conservation principles into practice during construction activities.

1) Vegetation Clearing

Goal – Avoid clearing live or dead vegetation containing active nests of migratory birds.

Possible *activities to meet this goal:*

- Do not damage vegetation by mechanical or chemical means unless it is necessary for project implementation.
- Clear vegetation outside the nesting season; contact the project Biologist for USFWS-provided information on when migratory birds nest in the project area.
- Prevent migratory birds from nesting in vegetation scheduled for clearing (e.g., employ exclusionary devices or dispersal methods).
- Inspect vegetation for active nests prior to clearing.
- If an active nest is encountered, avoid disturbing the nest or associated vegetation until the young have fledged.
- Consult with the project Biologist or Regional Environmental Coordinator (REC) on vegetation issues that arise during a project regarding compliance with the MBTA; seek additional advice from the Terrestrial Biology Team Leader in ODOT Central Services if warranted.
- Undertake other actions not listed above that meet the MBTA goal for vegetation clearing within the context of the particular project.

NOTE: In the event that eggs or birds are injured or killed, contact the REC for advice on how to proceed.

2) Tree/Snag Removal

Goal – Avoid felling trees or snags containing active nests of migratory birds.

Possible *activities to meet this goal:*

- Do not remove trees and snags unless it is necessary for project implementation or there is a safety issue.
- Remove trees and snags outside the nesting period; contact the project Biologist for USFWS-provided information on when migratory birds nest in the project area.
- Inspect trees and snags for active nests prior to their removal (e.g., observation methods or tree rapping).
- If an active nest is encountered, avoid removing the tree/snag until the young have fledged.

- Consult with the project Biologist or REC on tree/snag removal issues that arise during a project regarding compliance with the MBTA; seek additional advice from the Terrestrial Biology Team Leader in ODOT Central Services if warranted.
- Undertake other actions not listed above that meet the MBTA goal for tree/snag removal within the context of the particular project.

NOTE: In the event that eggs or birds are injured or killed, contact the REC for advice on how to proceed.

3) Bridge Demolition or Repair

Goal – Avoid destroying active nests and injuring birds protected by the MBTA during bridge demolition or repair.

Possible *activities to meet this goal:*

- Prevent migratory birds from nesting on bridges that will be demolished or repaired prior to when young birds will fledge (e.g., employ exclusionary devices or dispersal methods).
- Physically remove nests that do not contain eggs to prevent active nests.
- Inspect bridges for active nests prior to demolition or repair.
- Delay demolition or repair if active nests are located.
- Screen active nests from bridge repair activities.
- Demolish or repair bridges outside the nesting season.
- If occupied nests are encountered, continue work if the nests will not be destroyed and their inhabitants will not be injured, and if parent birds will not be precluded from tending their nests to the extent that the eggs or young are negatively impacted.
- Consult with the project Biologist or REC on bridge demolition/repair issues that arise during a project regarding compliance with the MBTA; seek additional advice from the Terrestrial Biology Team Leader in ODOT Central Service if warranted.
- Undertake other actions not listed above that meet the MBTA goal for bridge demolition or repair within the context of the particular project.

NOTE: In the event that eggs or birds are injured or killed, contact the REC for advice on how to proceed.

III. Maintenance

MBTA Focus for Maintenance – Integrate migratory bird conservation principles and practices into routine and extraordinary ODOT maintenance activities through existing programs and practices.

1) Tree Pruning and Tree/Snag Removal

Goal – Avoid pruning trees or removing trees/snags containing active nests of migratory birds.

- Follow appropriate Best Management Practices (BMPs) as described in the ODOT Routine Road Maintenance Water Quality and Habitat Guide (2004 Blue Book).
- In the unlikely event that state or federal endangered migratory birds are encountered during routine maintenance of trees or snags, stop work immediately and contact the Regional Environmental Coordinator (REC) for advice on how to proceed.

Possible *activities to meet this goal, in addition to those outlined in the Blue Book and other management plans:*

- Where feasible, trees/snags along the right-of-way should not be removed unless they pose safety concerns to the highway or motoring public and/or removing trees/snags is required to comply with state and local laws. Hazard trees are to be removed according to the Blue Book.
- As appropriate, prune or remove trees/snags outside the nesting season (as identified by ODFW), particularly the peak nesting period, unless the tree, limb, or snag is an imminent hazard.
- As outlined in the Blue Book, where appropriate, develop and implement highway corridor plans to minimize the removal of hazard trees/snags during the peak nesting season.
- When feasible, inspect trees/snags prior to removal for active nests (e.g., observation methods or tree rapping).
- If an active nest is encountered, when feasible, avoid pruning or removing the tree/snag until the young have fledged.

2) Vegetation Management

Goal – Minimize impacts to migratory birds that may be nesting in vegetation along right-of-ways through implementation of District Integrated Vegetation Management (IVM) plans that include considerations for migratory birds.

- Follow BMPs for vegetation management as described in the Blue Book.
- In the unlikely event that state or federal endangered migratory birds are encountered in vegetation during routine maintenance, stop work immediately and contact the REC for advice on how to proceed.

Possible *actions to include in District IVM plans that meet this goal:*

- When and where feasible, vegetation will be cleared only if it is necessary for the safe operation of the transportation system, to comply with state and local laws, or to control noxious weeds.
- As appropriate, low-growing plants will be planted that do not require maintenance during the nesting season (as identified by ODFW) of migratory birds; preference may be given to native plant species.
- When feasible, vegetation maintenance activities will occur outside the nesting season, especially during the peak nesting season, unless safety, fire, weed control, incident response, or state and local laws dictate otherwise.
- When feasible, the timing and width of required mowing will be adjusted to minimize impacts to nesting birds.
- When feasible, brush removal will be limited to no more than 20 feet from either end and under all maintained bridges unless necessary for sight distance and the structural integrity of the bridge.
- If possible, inspect vegetation for active nests prior to clearing.
- If an active nest is encountered, if possible, avoid disturbing the nest or surrounding vegetation until the young have fledged.

3) Culvert/Bridge Maintenance and Repair

Goal – Avoid destroying active nests and injuring migratory birds while cleaning or repairing culverts and bridges.

- Follow the Bridge Washing Guidelines found in the Blue Book.
- For state and federal endangered migratory birds known to occur on identified ODOT structures, follow BMPs for maintenance activities described in relevant ODOT management plans (e.g., Peregrine Falcon Management Plan 2002-2007).
- If state or federal endangered migratory birds are unexpectedly encountered during maintenance/repair activities, stop work immediately and contact the REC for advice on how to proceed.

Possible *activities to meet this goal, in addition to those identified in the Blue Book and other management plans:*

- When feasible for scheduled work, prevent migratory birds from nesting on sections of transportation structures that will be cleaned or repaired prior to when young birds will fledge (e.g., employ exclusionary devices or dispersal methods); bridges used for nesting by migratory birds are often noted in the bridge inspectors' database.
- For sections of structures that will undergo maintenance/repair, physically remove nests prior to egg laying (to prevent active nests) or after birds have fledged, when feasible.

- If migratory birds are nesting in or on a structure, delay or avoid maintenance/repair work in the vicinity of the nest, when feasible.
- If active nests are present and work can occur around them, when feasible shield the nests from maintenance/repair activities so nest inhabitants are disturbed as little as possible; reasonable attempts should be made to protect active nests and their inhabitants, and to allow parent birds to tend their nests so that eggs and young are not negatively impacted.
- Undertake other actions not listed above that meet the MBTA goal for the maintenance and repair of culverts and bridges.

4) Maintenance Facilities Management

Goal – Avoid destroying active nests and injuring migratory birds while managing facilities and yards utilized by maintenance.

- Follow rest area vegetation management practices identified in District IVM plans.
- In the unlikely event that state or federal endangered migratory birds are encountered during activities associated with the management of maintenance facilities, stop work immediately and contact the REC for advice on how to proceed.

Possible *activities to meet this goal, in addition to those identified in District IVM plans:*

- When feasible, pressure wash facilities outside the migratory bird nesting season (as identified by ODFW) or when active nests are not present.
- If migratory birds normally nest on facilities that must be maintained/repaired during the nesting season, when feasible prevent nesting on affected sections of the structures by employing exclusionary devices or dispersal methods.
- If active nests are present on facilities that must be maintained/repaired, when feasible shield the nests from disruptive activities so that nests are not destroyed and their inhabitants are not injured, and parent birds are not precluded from tending their nests to the extent that the eggs or young are negatively impacted.
- When feasible, physically remove nests that do not contain eggs to prevent active nests on facilities that will require maintenance/repair.
- When feasible, inspect facilities for active nests prior to undertaking repair/maintenance activities that may be disruptive to nesting birds.
- When feasible, delay repair/maintenance activities on facilities if active nests are located and the activities will be disruptive to nesting birds.
- Prior to building new facilities, evaluate designs that will limit or prevent birds from nesting on problematic areas of the structures.
- When active nests of ground-nesting migratory birds are encountered in maintenance yards, when feasible, flag the nests to minimize disturbing activities around the nests.
- When feasible, undertake other actions not listed above that meet the MBTA goal for maintenance facilities management.

DEFINITIONS:

- **Active nest** – a nest containing eggs or young.
- **Best Management Practices (BMPs)** – the performance of activities in a manner that minimizes impacts to protected species and their habitat.
- **Conservation** – the protection, preservation, management, or restoration of wildlife and natural resources.
- **Enhancement** – an improvement.
- **Goal** – an idealistic or long-term purpose.
- **Integrated Vegetation Management (IVM)** – a decision-making and management process that uses knowledge from a broad base of expertise, a combination of treatment methods, and a monitoring and evaluation system to achieve vegetation management goals.
- **Migratory Bird Treaty Act (MBTA)** – implements four bilateral treaties (between the U.S. and Canada, Japan, Mexico, and the former Soviet Union) making it illegal to possess, pursue, wound, or kill migratory birds without a permit.
- **Mitigation** – an action taken to eliminate or reduce long-term damage to a system.
- **ODFW** – Oregon Department of Fish and Wildlife.
- **Preservation** – the activity of protecting something from loss.
- **REC** – Regional Environmental Coordinator
- **Restoration** – returning to a normal or healthy condition.
- **Strategy** – a plan of action intended to accomplish a specific goal.
- **Tree** – vegetation with a stem diameter greater than 6 inches.

METHODS TO PREVENT SUCCESSFUL NESTING BY MIGRATORY BIRDS:

Exclusionary Devices – any method that denies birds physical access to a nest site.

- Nets
- Curtains of vinyl plastic strips
- Smooth, concave, fiberglass panels (for placement between an eave and wall)
- Slick surface coatings (e.g., slick paint)
- Ledge protectors (e.g., coils, pin and wire, points, shock wire, sticky repellents)
- Hole blockers (e.g., foam, steel wool)

Dispersal Methods – any method that deters birds from producing active nests but does not exclude them from nesting areas.

- Visual deterrents (e.g., mobiles, predator models, scare balloons, tapes)
- Auditory deterrents (e.g., sonic devices)
- Sensory deterrents (e.g., chemical repellents)
- Nest removal prior to egg laying (e.g., knock down with a pole, wash down with water). NOTE: swallows are strongly attracted to old nests or to the remnants of deteriorated nests, so all traces of mud should be removed.

U.S. Department of Agriculture – Animal and Plant Health Inspection Service – Wildlife Services (USDA-APHIS-WS) – has the authority to manage wildlife conflicts with humans (including government agencies).

11-8 *MIGRATORY BIRD TREATY ACT

The Migratory Bird Treaty Act compliance is discussed in 00290.36(a).

If required by Special Provision, the Contractor must prepare and submit a migratory bird protection plan for review and Agency approval 10 Calendar Days before the Pre-Con. The Contractor may prepare the migratory bird protection plan in its own format, as long as all required information in Special Provision 00290.36(c) is included.

The PM should contact the Project Biologist or Regional Environmental Coordinator if they have any questions.

The PM must review and approve the migratory bird protection plan before the Contractor may commence Work.

* **All marked text updated October 2013**

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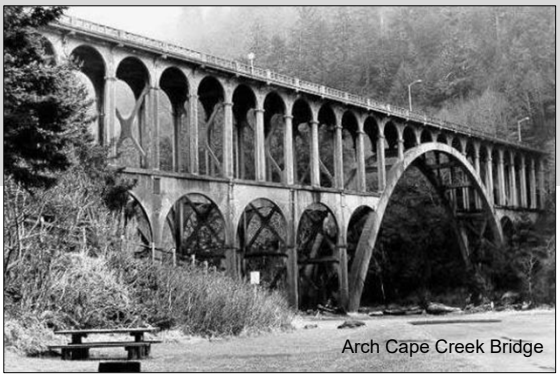
Unit 7
Cultural Resources

ODOT Cultural Resources



Arch Cape Creek Bridge

ODOT MATERIALS & INSPECTION

1

Why it matters:

Helps preserve a sense of place and ties us to the past.

ODOT MATERIALS & INSPECTION

2

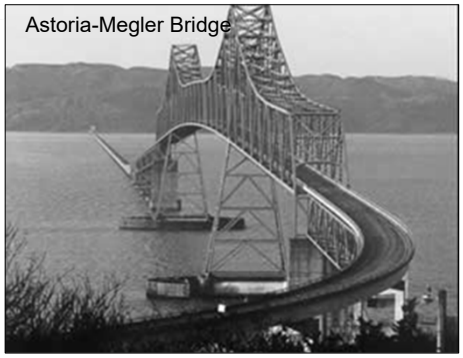
Why it matters:

Protected under **Federal and State Laws.**

3

Federal Laws

- National Historic Preservation Act – Section 106
- Department of Transportation Act – Section 4(f)
- Native American Graves and Repatriation Act (NAGRPA)
- Archaeological Resources Protection Act
- Antiquities Act of 1906


Astoria-Megler Bridge

4

Oregon Laws

- ORS 358.905-961 – Archaeological Sites and Objects
- ORS 97.740 – Indian Graves and Protected Objects
- ORS 358.653 – Protection of Publicly Owned Historic Properties
- ORS 192.345(11) – Protection of Sensitive Cultural Information

ODOT MATERIALS & INSPECTION

5

Tribal Relationships

Tribal coordination may include tribal governments outside Oregon

ODOT MATERIALS & INSPECTION

6

What is an Archaeological Site?

2 or more artifacts and/or a feature
50 (federal) or **75** (state) years of age

ODOT MATERIALS & INSPECTION

7

What an archaeological site looks like…

- Precontact (Native American)
- Post-contact/Historic
  (after settler contact, all groups)
- Vary in size and significance

8

Archaeological Sites and Confidentiality

- Archaeological site locations are confidential
- Exempt from federal and state Freedom of Information Act
- Site information is collected and stored at Oregon's State Historic Preservation Office
- Only qualified archaeologists and Tribal cultural staff can access information
- Qualifications are defined in state law

ODOT MATERIALS & INSPECTION

9

Precontact Site Types:
Long Term Habitation Sites

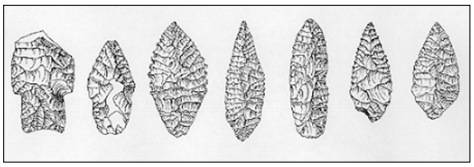
What it was…

What remains today…

ODOT MATERIALS & INSPECTION

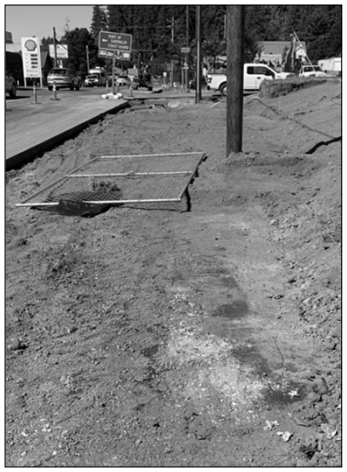
10

Precontact Site Types: Lithic Scatters



11

Precontact Site Types: Shell Middens



US101 Garibaldi
Urban Upgrades

ODOT MATERIALS & INSPECTION

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Precontact Site Types: More on Shell Middens

US 101 Sidewalk Improvement

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Precontact Site Types:
Rock Art and Culturally Modified Trees

"1889
ROAD
SURVEYORS
CAMPED
FEB 28 TO M"

CMTs

Arbor- or Dendroglyph

14

Precontact Site Types:
Placed Rock Features

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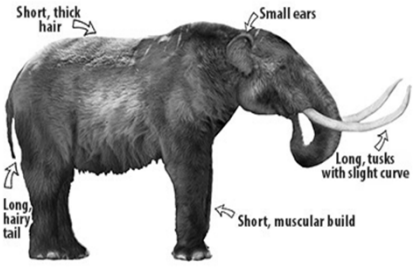
Paleontological Remains:
Fossils

- Oregon is known for paleontological finds
- North central Oregon and the Willamette Valley
- Call your REC

Mastodon remains found in Corvallis during construction



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Archaeological Site Types:
Post-Contact/Historic

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Post-contact Site Types:
Historic Debris Scatters

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Post-contact Site Types:
Historic Privies and Wells

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Underwater Archaeology

Buena Vista Ferry

US30 Graham Creek

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Historic Built Environment Resources

- Buildings
- Objects
- Districts
- Sites
- Structures

21

Linear Features

- Railroad grades
- Trolley tracks
- Historic roads
- Canals and ditches
- Telegraph and telephone lines

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Prior to Construction

- ODOT cultural staff and our consultants work hard to identify cultural resources during project development.
- By construction, relatively low risk of encountering cultural resources.

BUT remember, we don't have superpowers

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So, what is your role as inspector?

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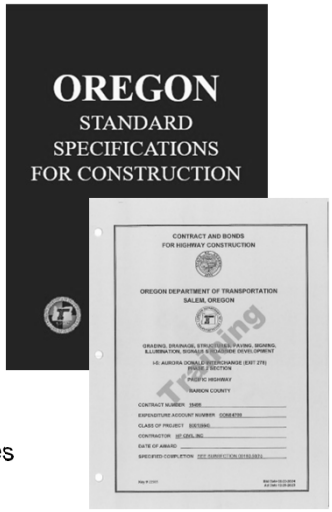
Incorporated into Construction

- **Standard Specifications**
  290.50 Protection of Cultural Resources - Contractors must comply w/cultural resources laws and establishes procedures for inadvertent discovery
- **Special Provisions**
  Identifies cultural resource concerns, monitoring areas, no work zones, material specifications
- **Design Plans**
  Monitoring areas, no work zones
- **Inadvertent Discovery Plans**
  Protection of Sensitive Cultural Sites - Contractors must comply with cultural resources laws and ensure protection of sites



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Inadvertent Discovery

ARCHAEOLOGICAL INADVERTENT DISCOVERY PLAN (IDP)

PROJECT NAME
ODOT Key Number XXXXX

HOW TO USE THIS DOCUMENT

Archaeology consists of the physical remains of the activities of people in the past. This IDP should be followed should any archaeological sites, objects, or human remains are found. These are protected under Federal and State laws and their disturbance can result in criminal penalties.

This document pertains to the work of the Contractor, including any and all individuals, organizations, or companies associated with the Union St NE: Commercial St NE to 12th St NE (Salem) Project.

WHAT MAY BE ENCOUNTERED

Archaeology can be found during any ground-disturbing activity. If encountered all excavation and work in the area MUST STOP. Archaeological objects vary and can include evidence or remnants of historic-era and precontact activities by humans. Archaeological objects can include but are not limited to:

- **Stone flakes**, **arrowheads**, **stone tools**, **bone or wooden tools**, **baskets**, **beads**.
- Historic building materials such as **nails**, **glass**, **metal** such as cans, barrel rings, farm implements, **ceramics**, **bottles**, **marbles**, beads.
- Layers of **discolored earth** resulting from hearth fire
- Structural remains such as **foundations**
- **Shell** Middens
- **Human skeletal remains** and/or **bone fragments** which may be whole or fragmented.

For photographic examples of artifacts, please see Appendix A. (Human remains not included)

If there is an inadvertent discovery of any archaeological objects see procedures below.

When in doubt, call it in!

DISCOVERY PROCEDURES: WHAT TO DO IF YOU FIND SOMETHING

1. Stop ALL work in the vicinity of the find
2. Secure and protect area of inadvertent discovery with 30 meter/100 foot buffer—work may continue outside of this buffer
3. Notify Project Manager/Inspector and ODOT Archaeologist
4. Project Manager/Inspector will need to contact a professional archaeologist to assess the find.
5. If archaeologist determines the find is an archaeological site or object, contact SHPO. If it is determined to *not* be archaeological, you may continue work.

HUMAN REMAINS PROCEDURES

1. If it is believed the find may be human remains, stop ALL work.
2. Secure and protect area of inadvertent discovery with 30 meter/100 foot buffer, then work may continue outside of this buffer with caution.
3. Cover remains from view and protect them from damage or exposure, restrict access, and leave in place until directed otherwise. **Do not take photographs. Do not speak to the media.**
4. Notify:
   - Project Manager/Inspector
   - ODOT REC/Archaeologist
   - Oregon State Police **DO NOT CALL 911**
   - SHPO
   - LCIS
   - Appropriate Native American Tribes
5. If the site is determined not to be a crime scene by the Oregon State Police, do not move anything! The remains will continue to be *secured in place* along with any associated funerary objects, and protected from weather, water runoff, and shielded from view.
6. Do not resume any work in the buffered area until a plan is developed and carried out between the State Police, SHPO, LCIS, and appropriate Native American Tribes and you are directed that work may proceed.

CONTACT INFORMATION

- ODOT REC, Adam Roberts: 503-302-5748
- ODOT Archaeologist, Jessica Curteman: 503-949-0842
- Oregon State Police, Lt. Craig Heuberger: 503-508-0779 cheuber@osp.oregon.gov
- Oregon State Historic Preservation Office (SHPO),
  - ODOT/SHPO Liaison, Kurt Roedel: 971-273-8073
  - State Archaeologist, John Pouley: 503-480-9164
  - Asst. State Archaeologist, Jamie French: 503-979-7580
- LCIS, Patrick Flanagan: 503-986-1087
- Appropriate Tribes
  - ODOT will contact the Tribes

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Inadvertent Discovery Continued

Figure 5: Historic glass artifacts

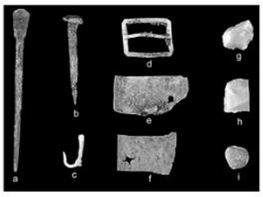

Figure 6: Historic metal artifacts

Figure 7: Historic building foundations

Figure 8: Wood stave pipe

Figure 9: Hearth or other cultural staining

Figure 10: Historic trolley tracks

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Material Specifications

Used for special project types such as covered bridges or building rehabilitations

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No Work Zones

- Help protect sites during construction
- Marked with orange mesh fencing and/or lath and flagging
- Inspector and Project Archaeologist meet on site to establish No Work Zones

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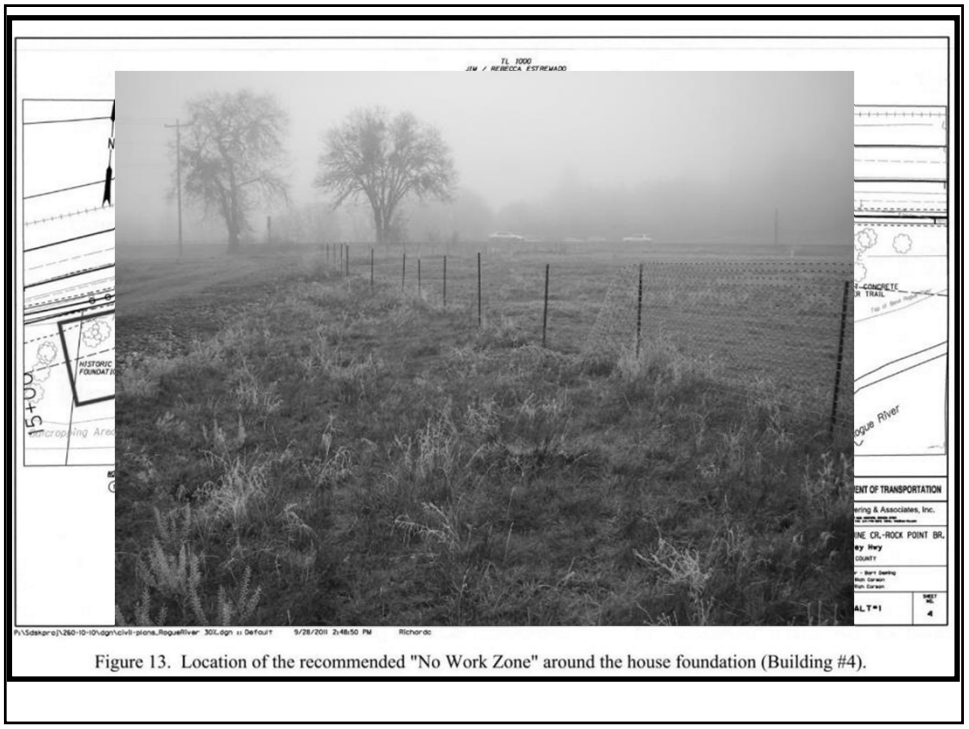

Figure 13. Location of the recommended "No Work Zone" around the house foundation (Building #4).

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Continued

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Monitors During Construction

- Ensure protection of known sites.
- Identify and evaluate sites encountered during construction (can keep work moving along).
- Monitors work directly with Inspectors on site.
- **Inspectors:**
  - Check Special Provisions for notification requirements.
  - Ensure Engineer is aware of timelines to facilitate proper coordination with monitors.

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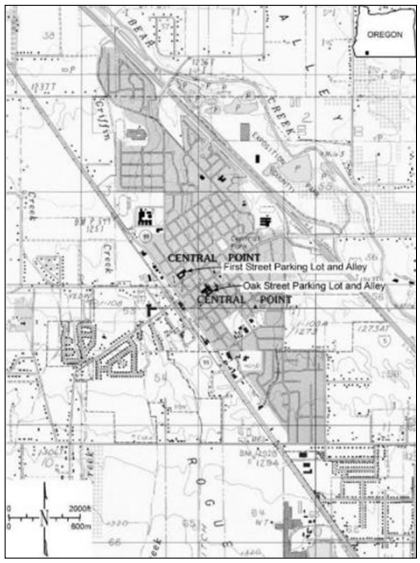
Urban Environments
What lies beneath!



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Example of downtown Central Point:
Historic maps indicated a possible feature

34

Artifact Collection

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290.50-Inadvertent Discovery: Step by Step

- Stop work immediately
- Protect the site
- Contact REC and Engineer
- Move work to another location
- **Human remains**
  #1 call: State Police
  Also call: REC and Engineer
  See IDP for more

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Encountering Human Remains

- Must be treated with **respect**
- Do not move material
- Contact State Police, REC and Engineer immediately
- REC will contact ODOT Archaeologist
- Wait for police and medical examiner
- No photographs should be released or shared
- Do not allow press near remains
- Do not disclose information

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What does an inadvertent discovery look like?

Brick Feature vs. Loose Bricks

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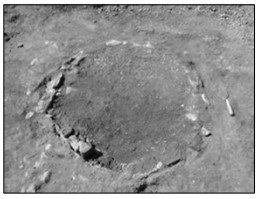
Well, well, well…



Ye olde septic tanks!

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Recent Inadvertent Discovery

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Joe Creek Inadvertent Discovery

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Joe Creek Inadvertent Discovery continued

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290.51-Disturbing Known Cultural Sites

- ODOT and the Contractor will be held responsible
- Expensive mitigation $$$
- Erodes our credibility

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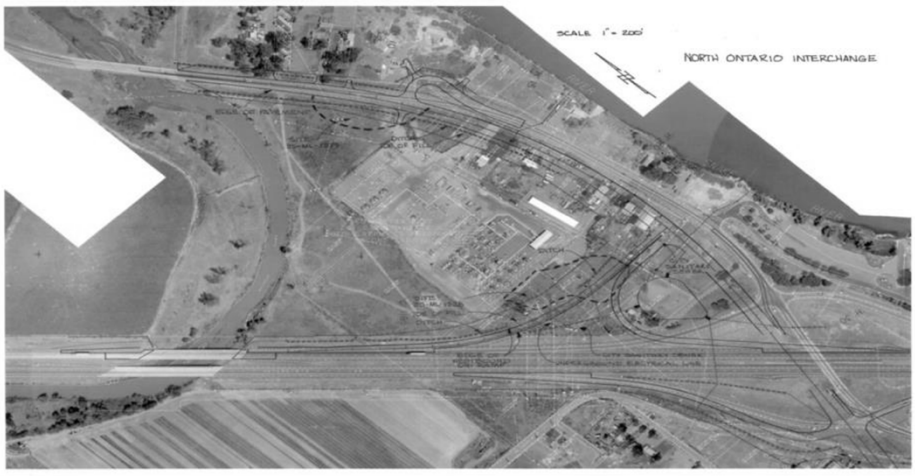
Tribal Perspectives on Construction Activities: A Video Clip



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ODOT ARCHAEOLOGY FOR INSPECTORS

Inspectors Training Handout

Inspectors play an important role in protecting and identifying archaeological resources during project construction. Training and good communication is vital to ensure we continue to protect and identify these valuable resources. The following information provides a basic foundation for understanding archaeology, ODOT's role in resource identification and what to do if an archaeological site is uncovered during project construction.

What is it??:

Archaeology: the study of human behavior and culture through the analysis of material remains.

Archaeological Site: a place with evidence of human activity. Material evidence can be on or below the ground surface. Federal Law defines an archaeological site as 50 years or older, while the state of Oregon defines an archaeological is at least 75 years or older. In Oregon, an archaeological site is "10 or more artifacts in a given geographical area".

Precontact Archaeology: the study of human culture through material remains and oral information dating before Euro-American contact. Sites might include lithic scatters, shell middens, rock cairns, etc.

Historical Archaeology: the study of human culture through material remains, written documentation and oral information. Within Oregon, historic sites (rural and urban) date between ~1805 and 1962 and can be characterized as homesteads, logging camps, mining camps, fur trade posts, etc.

- *Rural Sites:* include farmsteads, extraction and processing sites such as mines and logging operations, CCC camps and project sites such as spring developments, etc.
- *Urban Sites:* include homes, public works, and community stores, hotels, brothels, etc.
- *Submerged Sites:* underwater sites such as sunken boats, ships, dam and bridge features.

Site Types:

- *Rock Features (Rock Cairns or Rock Wall):* Often found on steep slopes, along talus fields, and on mesa tops, etc. Sometimes heavy lichen can suggest age. Ceremonial or possibly used for hunting or herding activities.
- *Can and Bottle Dumps:* Sometimes along abandoned roads, ditches, or flat open areas which may have held a structure. Can tell us about everyday life, human consumption and domestic tasks.
- *Lithic Scatters:* Can be found along flood plains, benches and bars, or along mesas and slopes. Associated with temporary hunting and food processing activities and may indicate a larger buried site like a camp or village.

- *Culturally Modified Trees (i.e. Peeled Trees or Dendroglyphs):* In the forest, along old roads, near berry patches. Bark was used for baskets, canoes, clothing, food, medicine.

- *Shell Middens:* Found along the coast, along bluffs and benches and near fresh water streams. May or may not be readily visible on the surface. Associated with possible camp or occupation site.

- *Privy:* Historic feature, remains of outhouses. Usually contain numerous artifacts including bottles, ceramic, personal items, etc. Can tell us a lot about everyday life and human behavior.

High Probability Area: an area likely to contain archaeological material. Areas will vary based on location, landscape, etc.

Why we do it??

Federal and state cultural resource laws help identify and protect archaeological resources for future generations.

Section 106 of National Historic Preservation Act (1966): Any agency funded in full or in part with federal dollars will take into account the effects of an undertaking on "any district, site, building, structure or object that is included in or eligible for inclusion on the National Register of Historic Places."

Department of Transportation Act Section 4(f): An agency will make every effort to avoid, minimize, or mitigate impacts to significant archaeological sites that are worthy of preservation in place.

Archaeological Resources Protection Act: No one can excavate, injure or destroy an archaeological site on federal lands without a permit.

Oregon State Law
ORS 358.910: "Archaeological sites are acknowledged to be a finite, irreplaceable and non-renewable cultural resource, and are an intrinsic part of the cultural heritage of the people of Oregon."

ORS 390.235: References permit conditions for "excavation or removal of archaeological or historical materials." A person may not excavate, injure, destroy, or alter an archaeological site or object or remove an archaeological object located on public or private lands in Oregon" unless….authorized by a permit.

ORS 97.745: Protects Indian Graves and Objects and says that no one shall damage or destroy a burial, cairn, funerary objects or human remains.

Where and How projects affect a site??

Many ODOT projects which entail "ground disturbance" can and will affect an archaeological site. Pavement preservation projects which entail deep excavation, sidewalk installation in urban areas, guardrail and utility installation, culvert replacement, bridge replacement, road widening and new highway projects require archaeological review before the start of construction.

Ground Disturbance: can include, but is not limited to, excavating a new road, culvert replacement, tree planting, bridge building, staging areas, depositing fill, borrow pits, plowing and re-seeding, extracting rock, etc.

Consultation: When ODOT archaeologists become aware that a project is planned we ***consult*** with Native American tribes that have concerns in those project areas. This is dictated by federal law. This is ODOT's opportunity to inform those tribes and allow them to comment and raise concerns, if any.

Evaluation: ODOT's archaeological staff makes every effort to identify and assess archaeological resources during project development. We work with contractors to perform ***survey and excavation*** to identify potentially significant archaeological sites in our project limits. If sites are identified, we perform additional work if necessary to determine the actual site boundaries and make every effort to avoid those sites by delineating no work zones on the design plans and in the field. If we are unable to avoid those sites, then additional archaeological work is necessary.

Site Protection during Construction: If **No Work Zones** are needed ODOT archaeology staff works with the Regional Environmental Coordinator, Project lead and designer to include no work zones in project design. Archaeologists attend pre-construction meetings to discuss no work zones and will establish no work zones in the field with the ODOT Inspector. No work zones are typically deliniated using lath and flagging or orange mesh fencing.

Monitoring: It is quite common for ***archaeological monitors*** to be present during project construction. Monitors might include contract archaeologists or tribal members. Monitors are extremely valuable because they can identify archaeological material immediately. Monitors are usually on-site for project that have a high probability for encountering buried archaeological resources or projects that have archaeological sites within close proximity to the project.

When do you call for HELP (Inadvertent Discovery)???

While ODOT's archaeological staff take every precaution to ensure that archaeological sites are identified prior to project construction, it is not uncommon for construction activities to uncover unidentified archaeological sites. Inadvertent discovery protocols are in place to assist when this situation occurs. **You must follow SPEC 290.50 and 290.51.**

If sites are encountered during construction:

1. EXPECT PROJECT DELAYS.
2. All work must stop immediately if human remains are uncovered.
3. If an archaeological site is encountered, work must stop in that location, but may continue in another area with the permission of an archaeologist.
4. The Regional Environmental Coordinator and ODOT archaeologist should be contacted immediately. If human remains area encountered the Oregon State Police should be contacted. The ODOT archaeologist will contact the State Historic Preservation Office, Legislative Commission on Indian Services and the affected tribes.
5. Work must cease until the archaeological site can be evaluated.

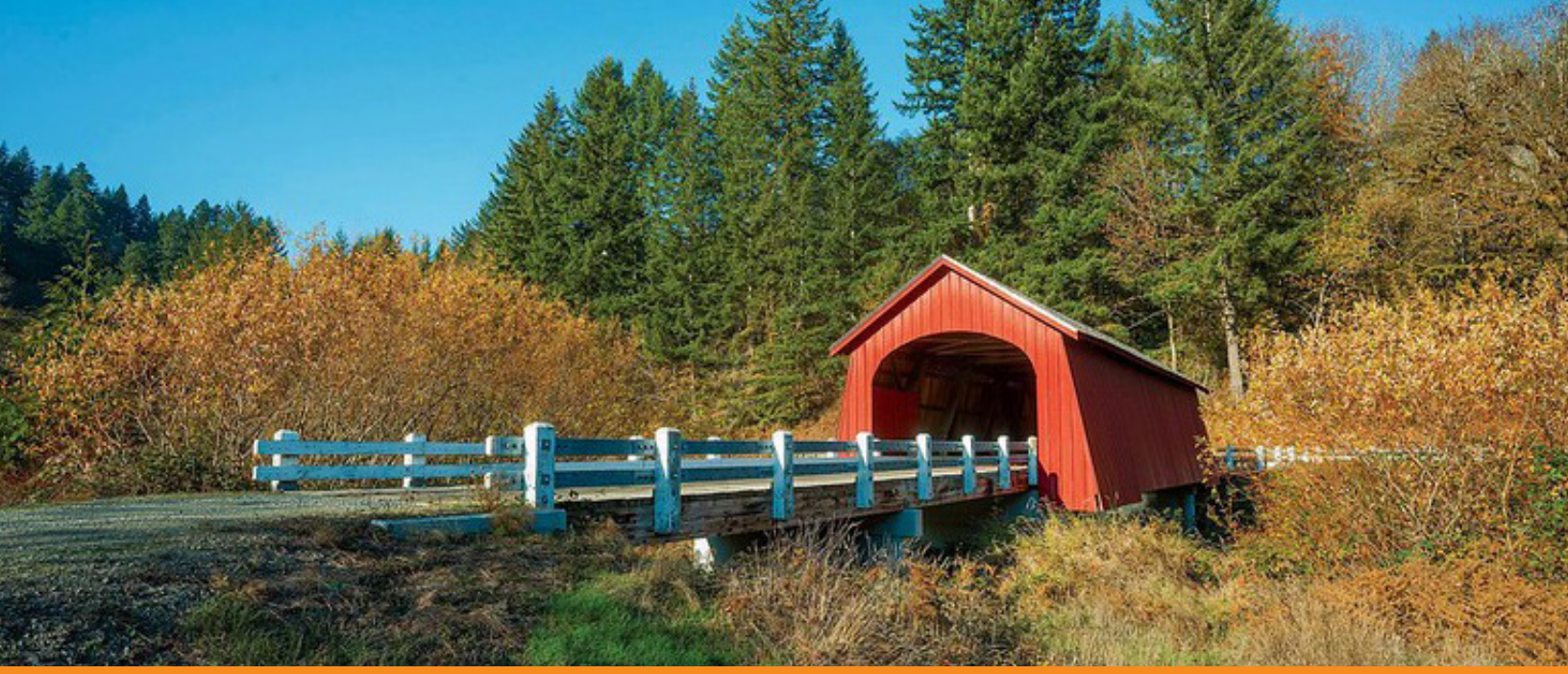
Failure to Stop Work….

Remember you ***MUST STOP*** work immediately if an archaeological site is encountered. If construction proceeds without an archaeologist being contacted to perform the necessary evaluation, there may be consequences.

1. There are heavy penalties for destruction of archaeological sites.
2. In addition, Regions will be confronted with expensive mitigation costs.
3. We risk jeopardizing ODOT's relationship with regulatory agencies and tribes, which can make it difficult in the future to proceed with construction projects.

Who do you call??

ODOT archaeologists are here to assist you. Each region has a designated archaeologist.



CHAPTER 32
PROTECTION OF CULTURAL RESOURCES

Cultural resources can be defined as any archaeological, paleontological, historical sites and/or traditional cultural properties. The necessary identification and examination of those sites normally occurs prior to the construction phase of a Project. NEPA documentation and special provisions for a Project will generally address anticipated cultural resources within the Project limits.

No-work zone areas are used to delineate archaeological resources on Project sites. Disturbing known cultural resources is considered a willful violation of state law; such sites are protected under ORS 97.740, ORS 358.905 and ORS 390.235. If no-work zones are disturbed all Work must cease in the vicinity of the no-work zone and the Resident Engineer (RE) will Contact the Region Environmental Coordinator (REC) to help determine a corrective action.

If a no-work zone is disturbed a damage assessment to evaluate the level of disturbance to the cultural site may be required. The REC will work with the RE and Agency expert to determine if a damage assessment is warranted.

For more information related to cultural resources, refer to the ODOT Cultural Resource Program webpage.

32-1 Archaeological Monitoring

If an archaeological monitor is needed during construction this will be called out in the Special Provisions and addressed during the pre-construction meeting. [Refer to Chapter 11 - Before Onsite Work Can Begin.]

Monitors may include consultant archaeologists or Tribal members. Archaeological monitors will identify and evaluate archaeological material immediately at the Project site. Archaeological monitoring is usually done on Projects that have a high potential to encounter buried material and Projects that are planned in or near recorded archaeological sites.

Submit an Order for Force Work, form 734-1105, to establish a budget and track the cost of the archaeology monitoring. [Refer to Chapter 15 - Change Orders/Force Account/Work by Public Forces.]

32-2 Inadvertent Discovery of Cultural Sites

If unidentified cultural sites are discovered during Work, immediately stop work in the area. Contact the REC and refer to Specifications 00290. The RE may need to suspend all or part of the Contractor's operations. If necessary, suspend Contract Work as provided in Specifications 00180.70 and 00290. [Refer to Chapter 13 - Contract Time.]

If an Inadvertent Discovery Plan (IDP) is in place for the Project, then follow IDP Guidance. If an IDP is not in place for the Project, work with the REC and Agency experts to determine the appropriate action.

If human remains are encountered, contact the State Police and the REC. Do not call 911.

If a previously unknown site is encountered, an archaeological monitor may be required as a condition to resume the work.

INSERT TAB

Unit 8
REC

ODOT
Environmental Inspector Training
Region Environmental Coordinator

Christian Jilek
Environmental Program Coordinator
(541) 963-1597
Christian.Jilek@odot.oregon.gov

1

What is a Region Environmental Coordinator (REC)?

Jack of all trades, master of…some.

- Primary point of contact on all environmental issues.
- Involved throughout project design/development/ permitting.
- Responsible for permit compliance during construction.
- Provides review on ESCP/PCP.
- Conducts ESC inspections.
- Provides recommendations.
- Coordinates with specialists.

2

Project Examples

3

Pollution Control

00290.30(a)(3) Equipment Fueling, Repair, and Maintenance

4

Pollution Control continued

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Better example

5

Pollution Control continued 2

6

Pollution Control continued 3

7

Pollution Control continued 4
2016/07/26 10:15

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00290.30(a) Pollution Control

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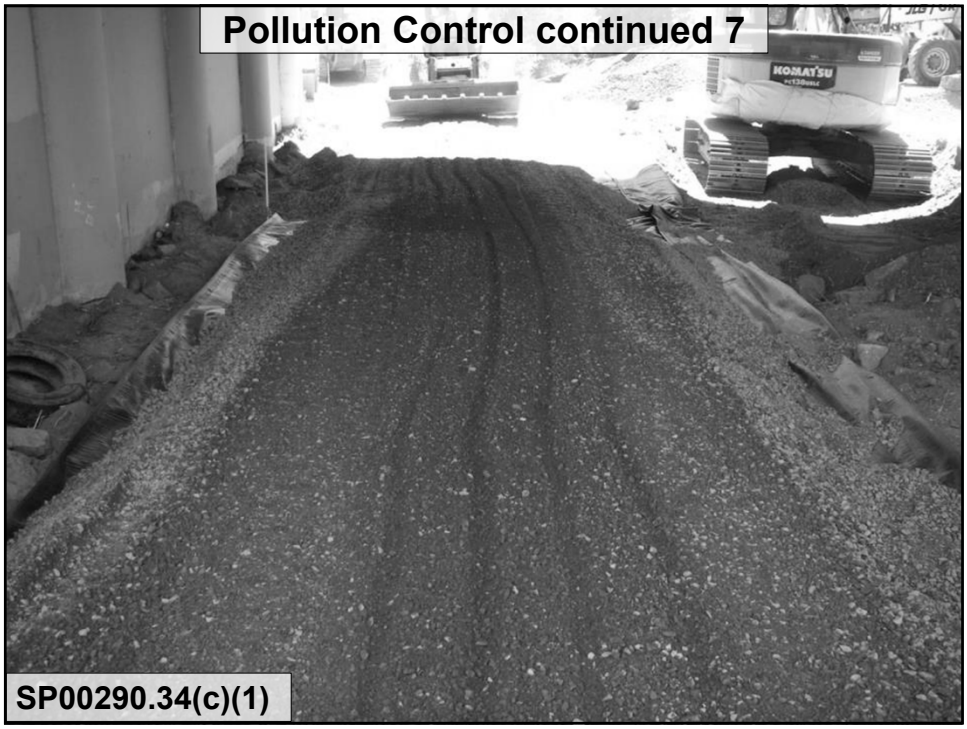
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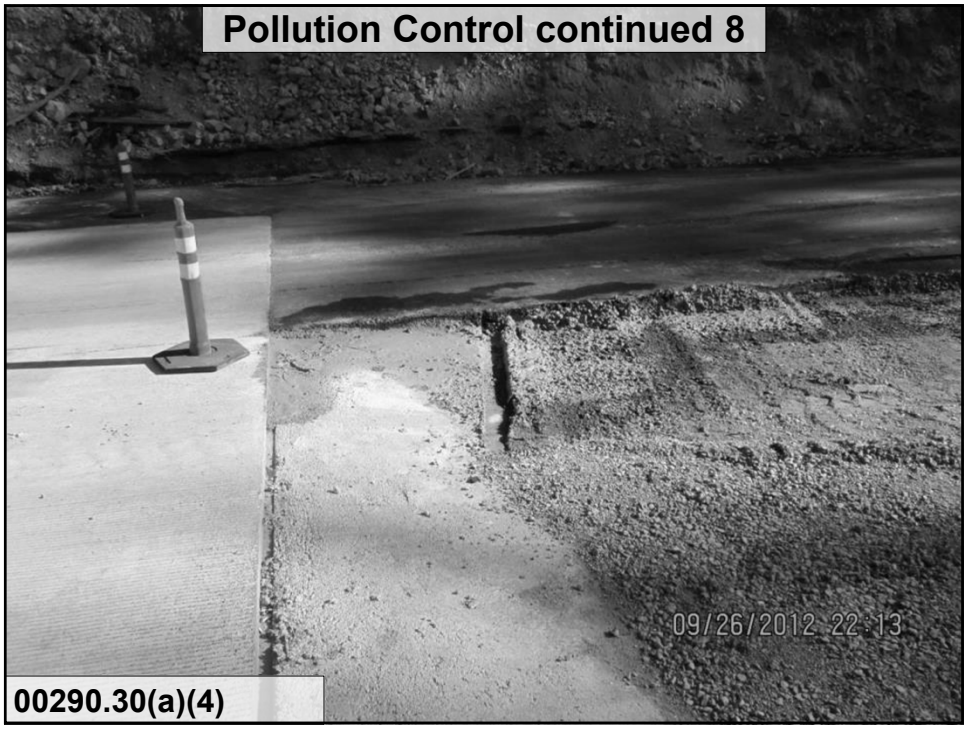
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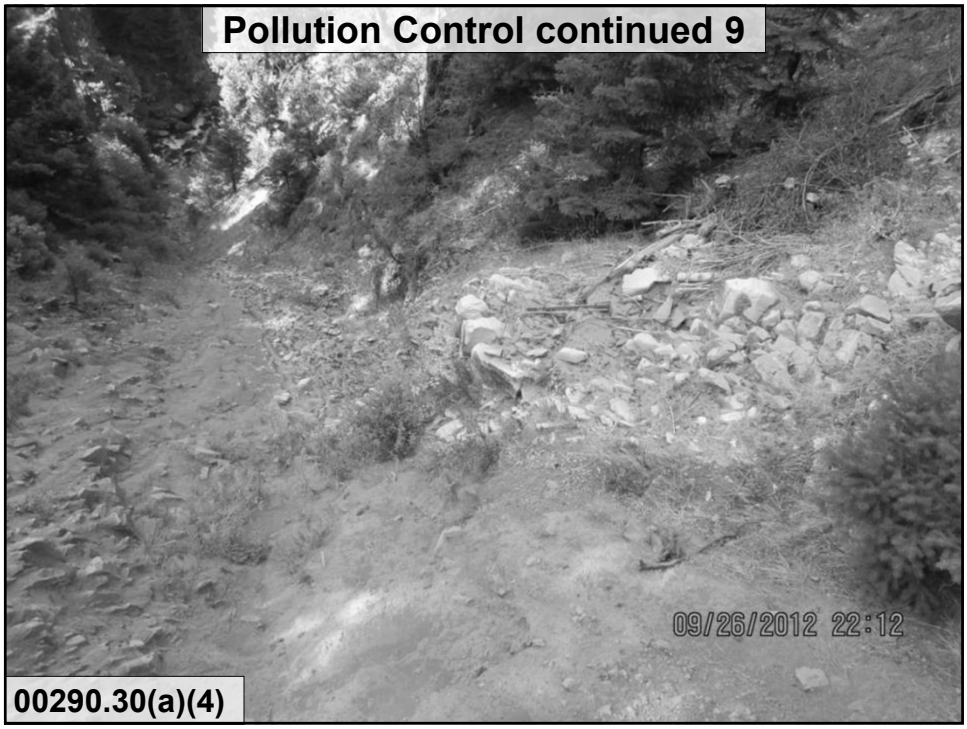
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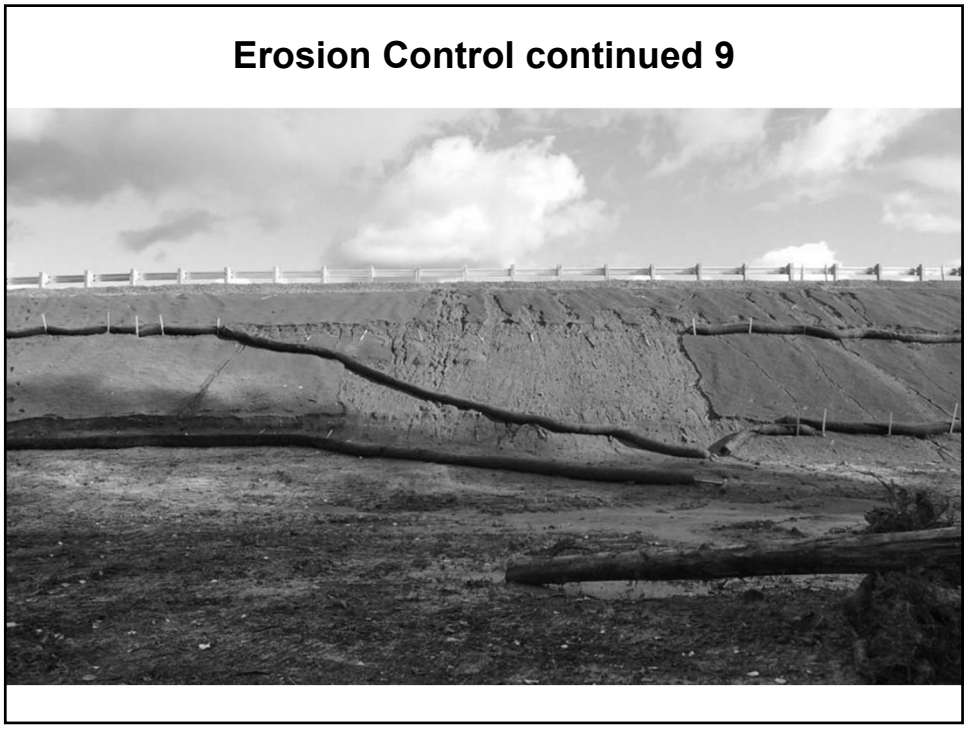
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Erosion Control continued 11

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Erosion Control continued 12

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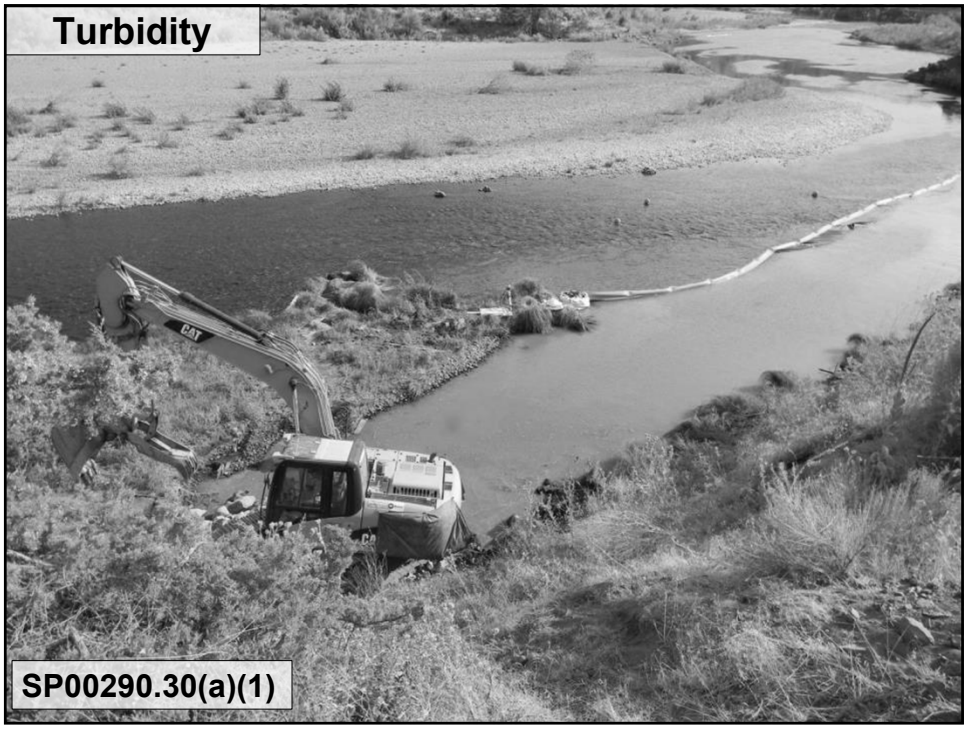
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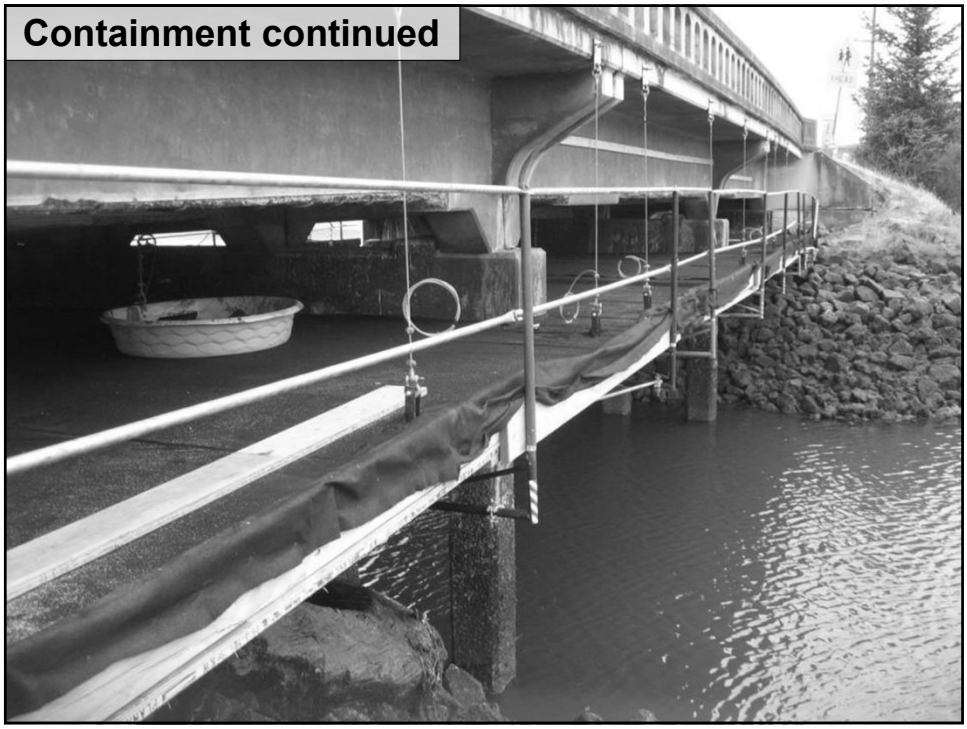

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Containment continued 2

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Containment continued 3

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Containment continued 4

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Containment continued 5

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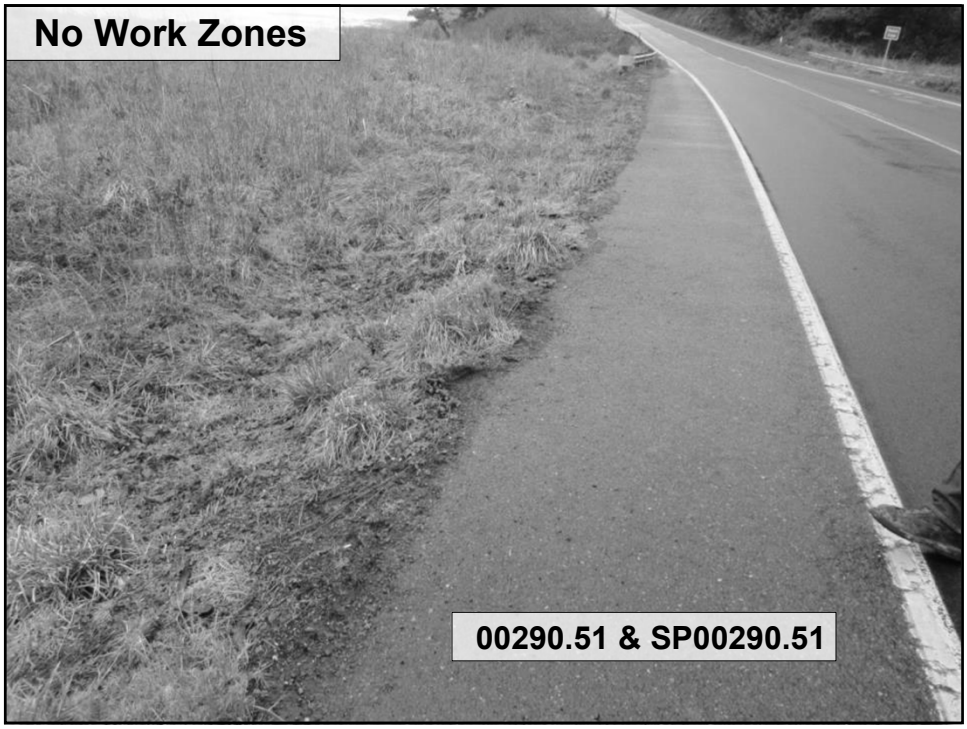

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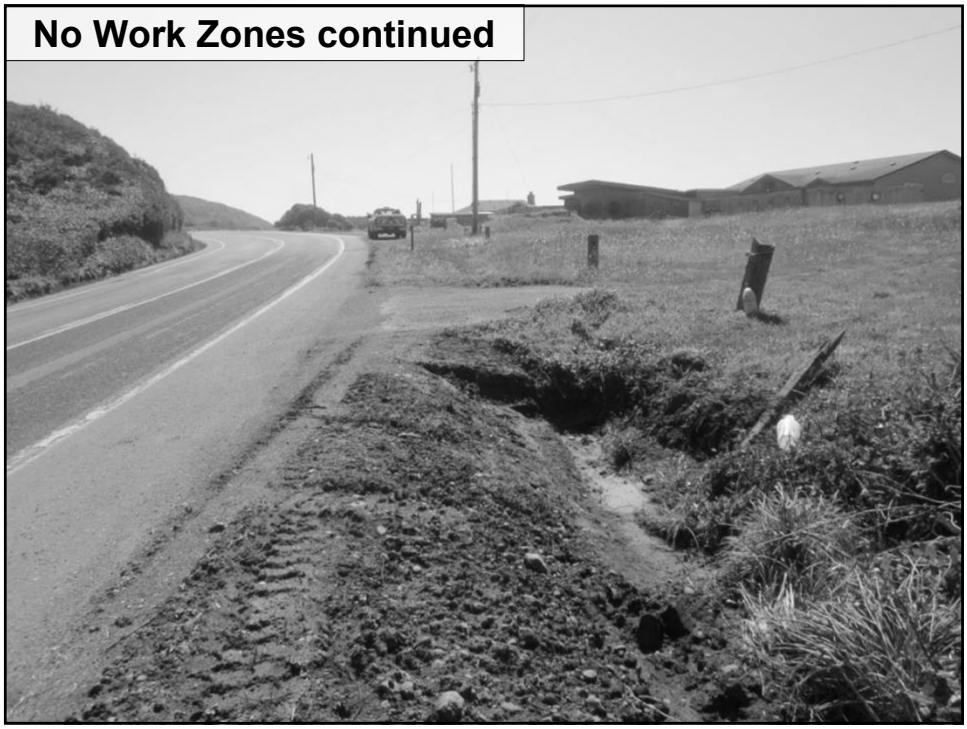

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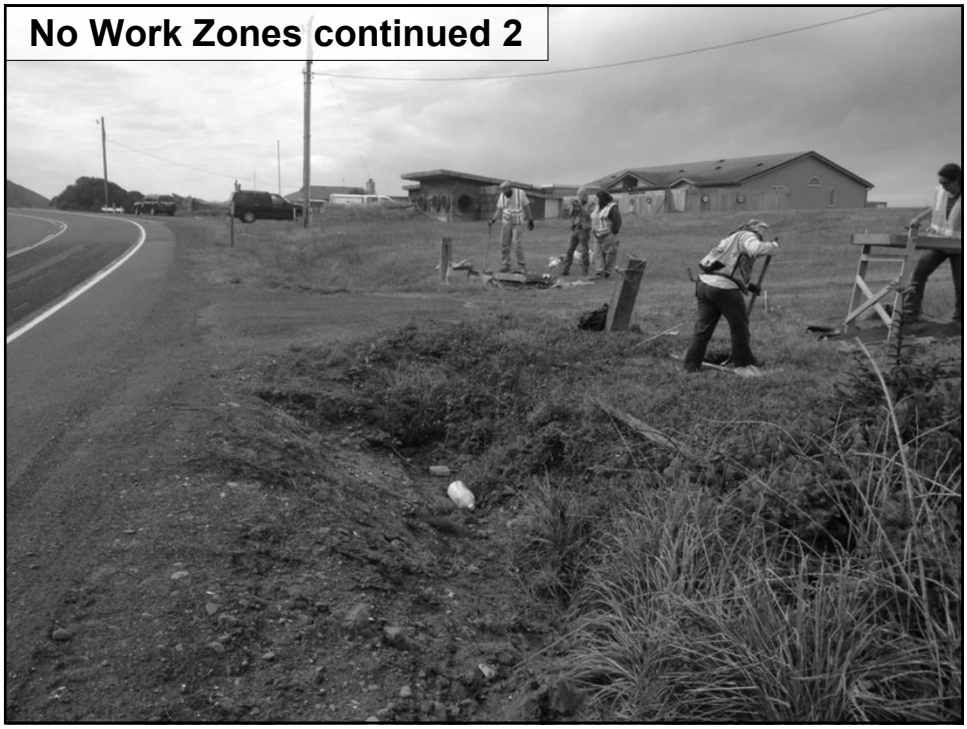


44

No Work Zones continued 3

45

No Work Zones/Staging
00290.10 & 00290.51

46

No Work Zones/Staging continued
SP00290.10

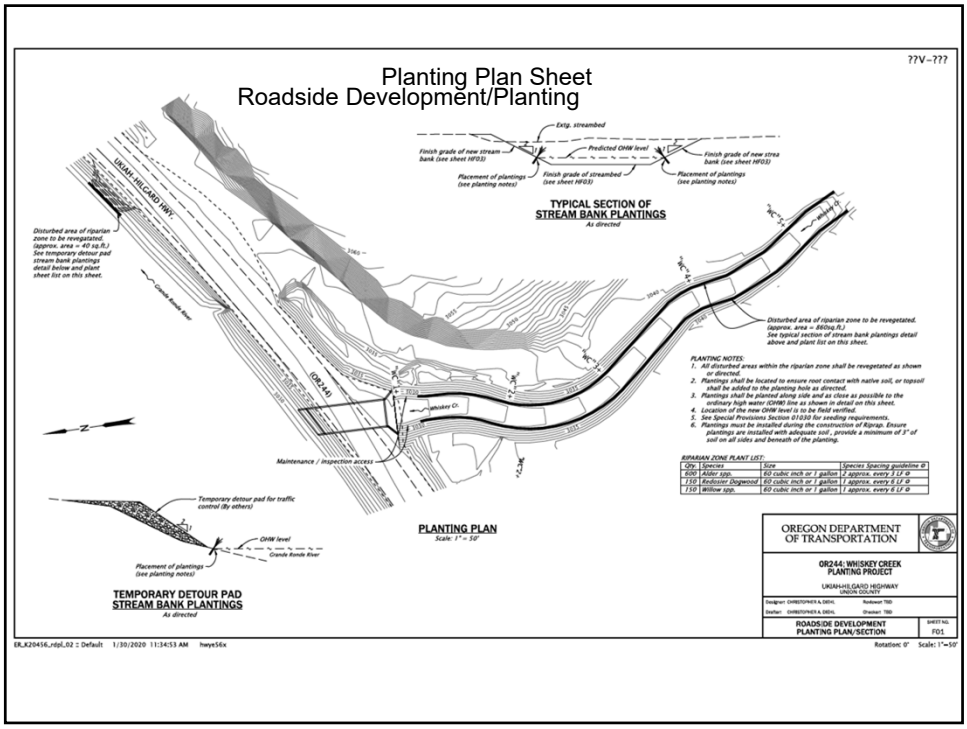
47

Roadside Development/Planting
001040

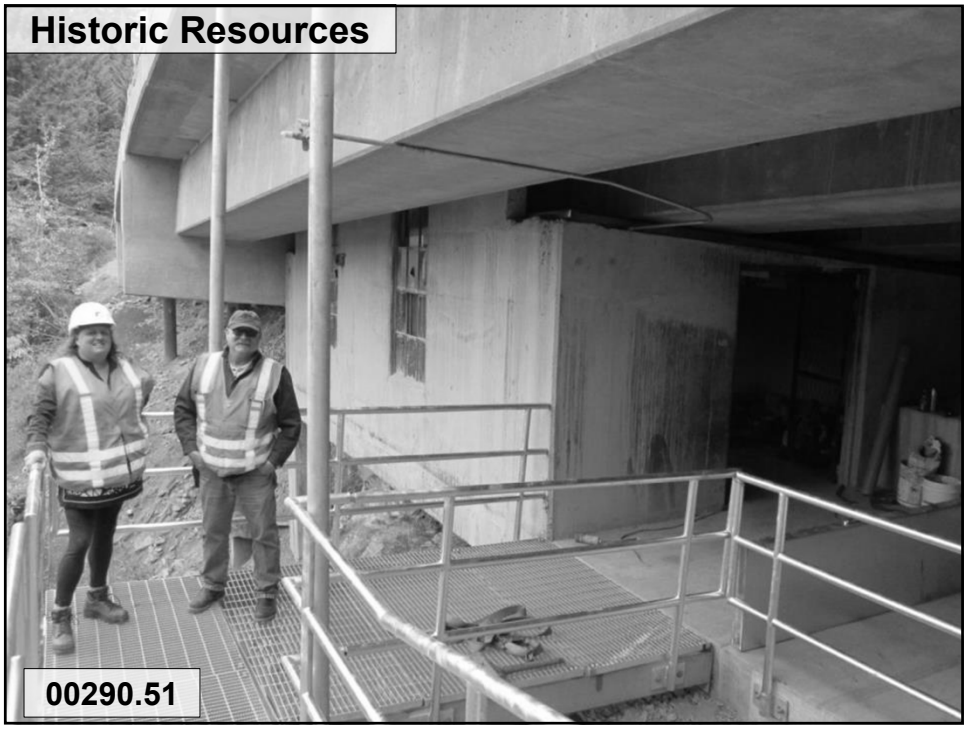
48

Roadside Development/Planting continued
01040.49

49


Planting Plan Sheet
Roadside Development/Planting
??V-???
TYPICAL SECTION OF
STREAM BANK PLANTINGS
As directed
PLANTING PLAN
Scale: 1" = 50'
TEMPORARY DETOUR PAD
STREAM BANK PLANTINGS
As directed
PLANTING NOTES:
RIPARIAN ZONE PLANT LIST:
OREGON DEPARTMENT
OF TRANSPORTATION
OR244: WHISKEY CREEK
PLANTING PROJECT
UKIAH-HILGARD HIGHWAY
UNION COUNTY
ROADSIDE DEVELOPMENT
PLANTING PLAN/SECTION
F01

50


Historic Resources
00290.51

51

Historic Resources continued

52

Historic Resources continued 2

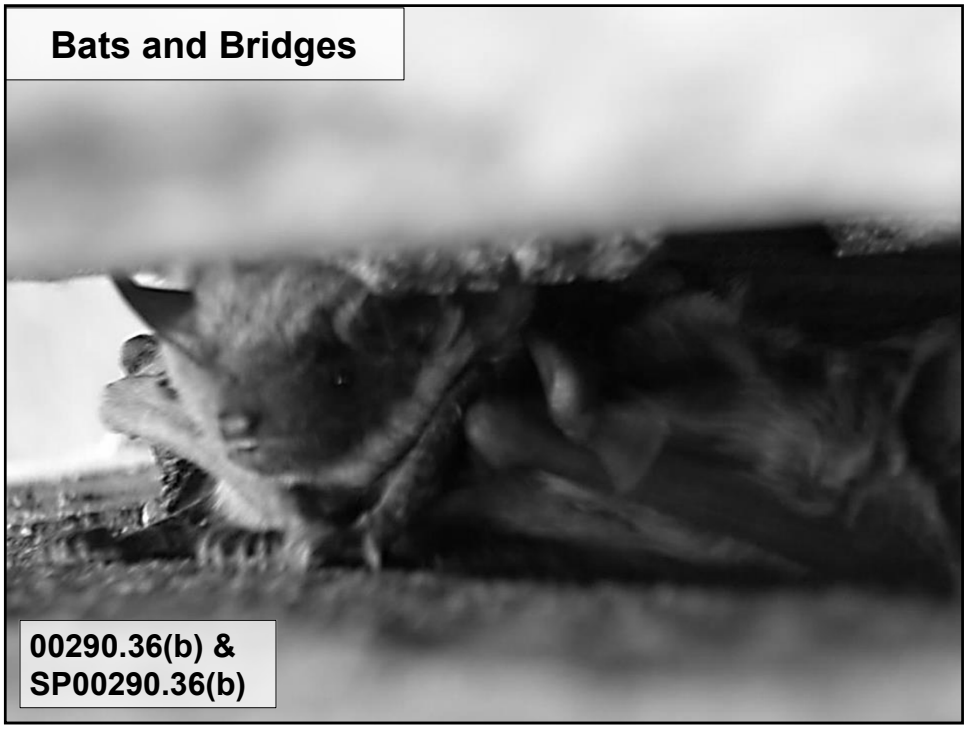
53

Migratory Bird Treaty Act
00290.36(a) &
SP00290.36(a) & (c)

54

Migratory Bird Treaty Act continued

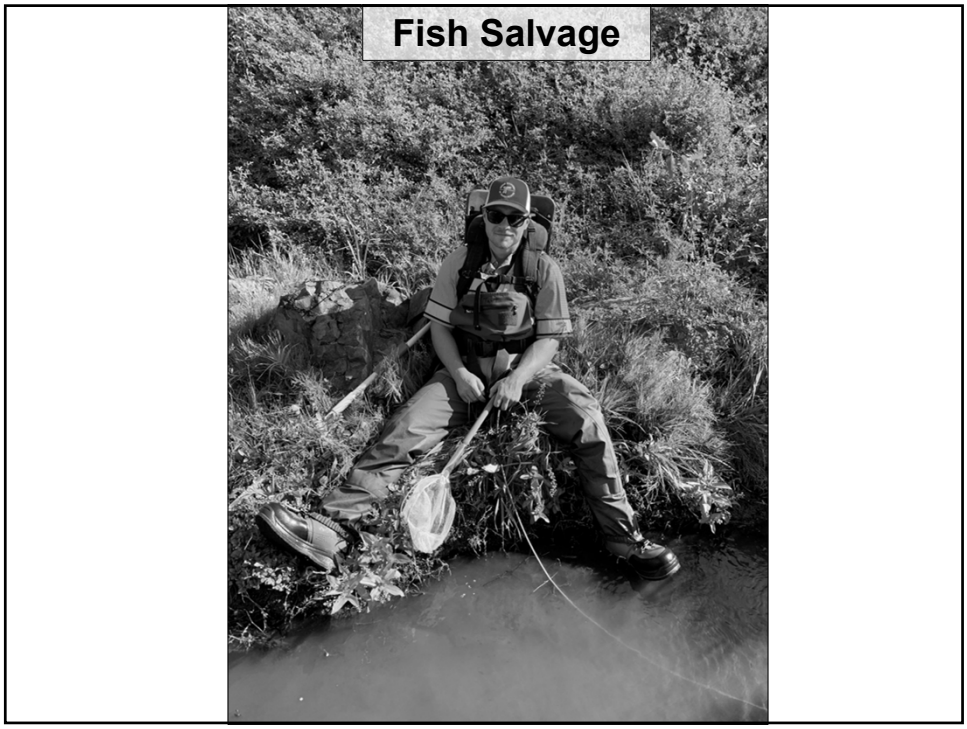
55


Bats and Bridges
00290.36(b) &
SP00290.36(b)

56

Temporary water management & Fish Salvage
SP00245.03 &
SP00245.40

57


Fish Salvage

58

Fish Salvage continued

59

Temporary Water Management

Why?

- So construction can occur in the dry
- Stay within turbidity limits
- Allow waters to pass through the work area
- Isolate dirty water
- Safety
- Project ESA-listed fish
- Provide fish passage during construction

ODOT MATERIALS & INSPECTION

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Inlet

ODOT MATERIALS & INSPECTION 00290.34 Protection of Fish and Fish Habitat

61

Isolation Considerations

- Seal
- Dam capacity
- Backup
- Visquine
- Gradient
- Fish salvage
- Trash rack

ODOT MATERIALS & INSPECTION

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Pipe styles

ODOT MATERIALS & INSPECTION

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More pipe styles

ODOT MATERIALS & INSPECTION

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Alternatives

ODOT MATERIALS & INSPECTION

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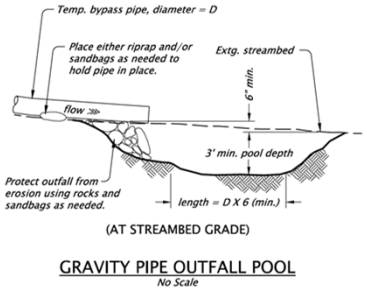
Outlet



GRAVITY PIPE OUTFALL POOL
No Scale

ODOT MATERIALS & INSPECTION

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Containment and outlet example

ODOT MATERIALS & INSPECTION

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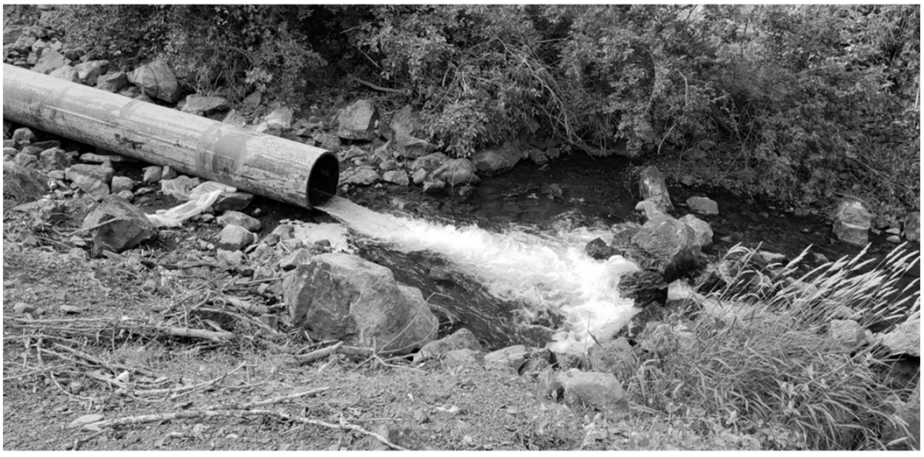
Bypass Outlet Example



ODOT MATERIALS & INSPECTION

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Net management

69

Temporary water management removal

- Environmental must be notified.
- Fish salvage?
- De-water channel/fish stranding concerns.
- Sediment plume?
- Remove all TWM elements from the site.

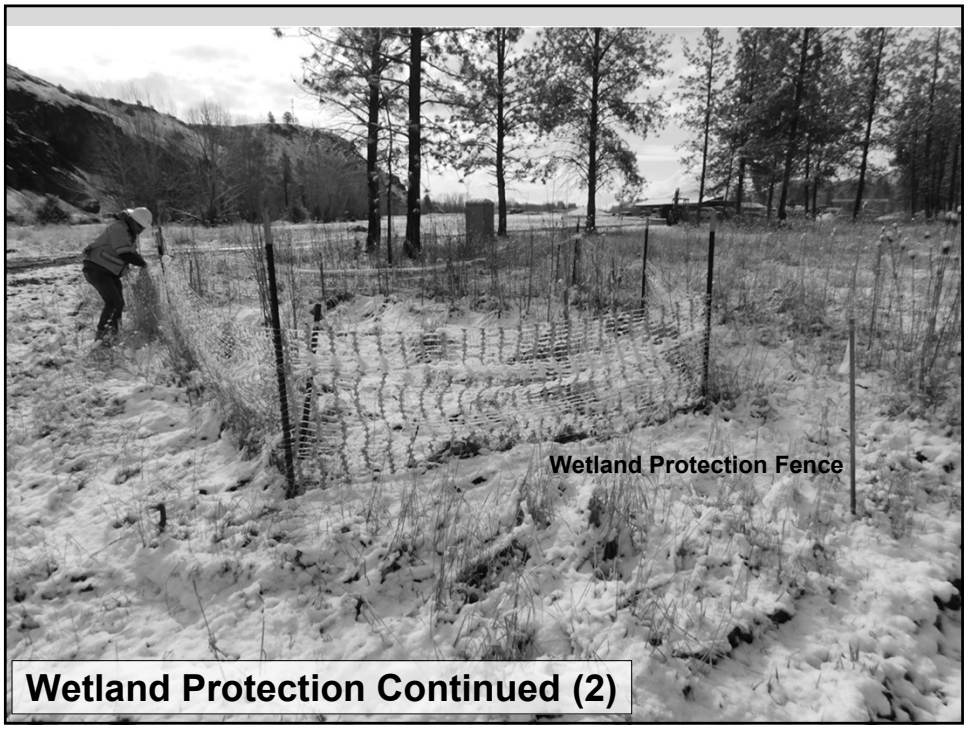
70

Wetland Protection
00290.41 &
SP00290.41(b)

71

Wetland Protection continued

72



73

Environmental Pre-con (Pre-pre-con)

- What is the problem?
- Environmental commitments?
- Project schedule? (Fish salvage)
- Permit handoff.
- Planned funding for 'by others' work & equipment.
- Environmental & maintenance present for final inspection.

ODOT MATERIALS & INSPECTION

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Summary

Follow the plans	Adhere to permits	Avoid Non-compliance	Questions? Ask.
This is what was approved.	Read & become familiar with all permits.	Ensure that the contractor does the best they can.	Early and frequent communication is key to success.

ODOT MATERIALS & INSPECTION

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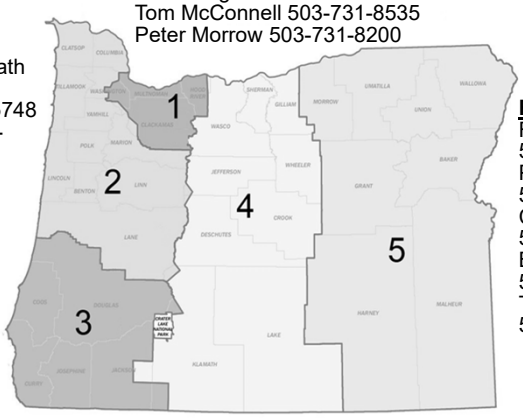
Region Environmental Coordinators

Region 1
Carol Snead 503-731-4804
Mary Young 503-731-8436
Paul Langdale 503-731-8240
Tom McConnell 503-731-8535
Peter Morrow 503-731-8200

Region 2
Corissa Anderson-Horvath
971-707-1629
Donna Hinze 503-302-5748
Adam Roberts 541-912-2162
Sarah Flores Eastman
971-209-8213



Region 3
Sam Dunnavant
541-957-3519
Doug Sharp
541-864-8814
Jessica Bochart
541-864-8820

Region 4
Teresa Brasfield
541-410-7683
Kevin Halesworth
541-280-4306

Region 5
Rick Jerofke
541-786-2788
Paul Kennington
541-786-3178
Christian Jilek
541-963-1957
Brian Laughlin
541-805-9345
Tayton Duby
541-786-3134

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INSERT TAB

Unit 9
Construction

Construction Resources

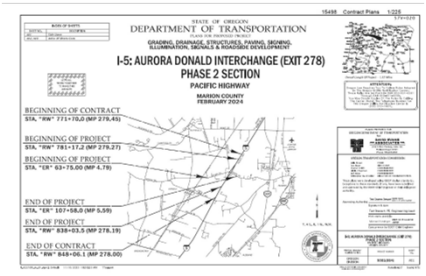
ODOT MATERIALS & INSPECTION

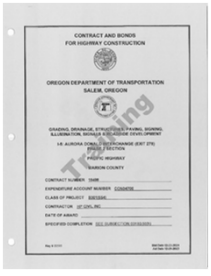
1

Before Notice to Proceed

Get familiar with the:

- Standard Specifications
- Special Provisions
- Contract Plans





ODOT MATERIALS & INSPECTION

2

Standard Specifications

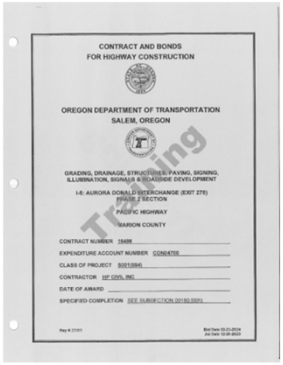
- 00150.02
  Know your authority
- 00280s
  Erosion Control
- 290s
  Environmental Protection
- 01030s
  Seeding
- 01040s
  Planting

ODOT MATERIALS & INSPECTION

3

Special Provisions

Check for language that replaces, adds, and/or eliminates Standard Specification language.



Example of added language:

00280.48 Emergency Materials - Add the following paragraphs after the paragraph that begins "Provide, stockpile, and protect...":

Provide and stockpile the following emergency Materials on the Project site:

Item	Quantity
Matting, Type B	75 Sq Yd
Check Dam, Type 6	5 Each
Sediment Fence	250 Foot
Inlet Protection, Type 3	5 Each
Sediment Barrier, Type 3	250 Foot
Plastic Sheeting	100 Sq Yd

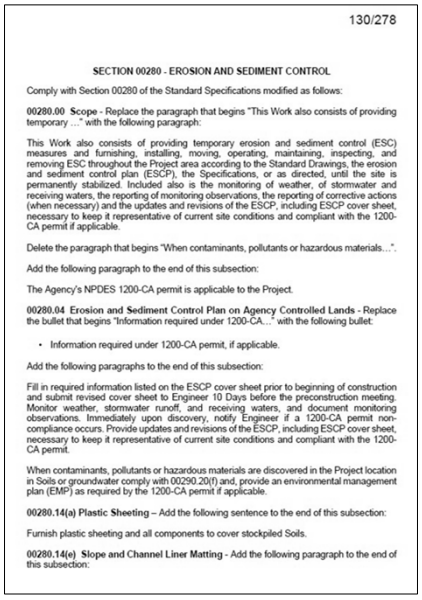
ODOT MATERIALS & INSPECTION

4

Special Provisions continued

Verify that the 1200-CA permit applies to your project.

This can be found in Section 00280.00 Scope.



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SECTION 00280 - EROSION AND SEDIMENT CONTROL

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

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

This Work also consists of providing temporary erosion and sediment control (ESC) measures and furnishing, installing, moving, operating, maintaining, inspecting, and removing ESC throughout the Project area according to the Standard Drawings, the erosion and sediment control plan (ESCP), the Specifications, or as directed, until the site is permanently stabilized. Included also is the monitoring of weather, of stormwater and receiving waters, the reporting of monitoring observations, the reporting of corrective actions (when necessary) and the updates and revisions of the ESCP, including ESCP cover sheet, necessary to keep it representative of current site conditions and compliant with the 1200-CA permit if applicable.

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

Add the following paragraph to the end of this subsection:

The Agency's NPDES 1200-CA permit is applicable to the Project.

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

- Information required under 1200-CA permit, if applicable.

Add the following paragraphs to the end of this subsection:

Fill in required information listed on the ESCP cover sheet prior to beginning of construction and submit revised cover sheet to Engineer 10 Days before the preconstruction meeting. Monitor weather, stormwater runoff, and receiving waters, and document monitoring observations. Immediately upon discovery, notify Engineer if a 1200-CA permit non-compliance occurs. Provide updates and revisions of the ESCP, including ESCP cover sheet, necessary to keep it representative of current site conditions and compliant with the 1200-CA permit.

When contaminants, pollutants or hazardous materials are discovered in the Project location in Soils or groundwater comply with 00290.20(f) and, provide an environmental management plan (EMP) as required by the 1200-CA permit if applicable.

00280.14(a) Plastic Sheeting – Add the following sentence to the end of this subsection:

Furnish plastic sheeting and all components to cover stockpiled Soils.

00280.14(e) Slope and Channel Liner Matting - Add the following paragraph to the end of this subsection:

ODOT MATERIALS & INSPECTION

5

Special Provisions continued 2

- Example of added language:

00280.16(a) Construction Entrances - Add the following paragraphs to the beginning of this subsection:

Provide construction entrances, Type 1.

With prior approval from the Engineer, the Contractor may use prefabricated construction entrances.

- Example of added non-standard specification:

SECTION 00294 - CONTAMINATED MEDIA

Section 00294, which is not a Standard Specification, is included in this Project by Special Provision.

ODOT MATERIALS & INSPECTION

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Special Provisions continued 3
Contaminated Media Locations

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Contaminated Soil Location Table 00294-1

From Location/Station to Location/Station	Depth below grade (feet)	Approximate Quantity (cy)	Known Contaminants
"DW" 7+50 to "DW" 10+85 Lt/Rt (Taxlot 1700)	0-2'	2,516	Suspected Pesticides, Herbicides, Heavy Metals
"ER" 72+40 to "ER" 81+55 Lt/Rt (Taxlot 0901)	0-2'	3,929	4,4 DDE, 4,4 DDT
"ER" 64+60 to "ER" 72+40 Lt/Rt (Taxlot 0800)	0-1'	1,725	Dieldrin
"ER" 81+55 to "ER" 84+40 Lt/Rt (Taxlot 1200)	0-1'	2,627	Lead
Approximate Total Quantity		10,793 cy	
Quantity to be reused on Project		0 cy	
Quantity to be disposed at landfill		12,952 tons	

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Special Provisions continued 4

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OR140: Brett Way Extension (K Falls) Project

SECTION 01030 - SEEDING

Comply with Section 01030 of the Standard Specifications modified as follows:
01030.13(c) Pure Live Seed - Replace this subsection, except subsection number and title, with the following subsection:

Use the PLS specified rate listed in 01030.13(f) for determining PLS application rates. Ensure the PLS application rate meets the PLS specified rate. Apply pre blended seed mixes, with multiple species, at a PLS application rate ensuring all species meet or exceed the PLS specified rate for each species in the seed mix.

PLS application rate for an individual seed species is determined as follows:

- PLS specified rate is listed in 01030.13(f)
- PLS factor is obtained by multiplying the seed label germination percentage times the seed label purity percentage. Use the purity and germination percentages from the label on actual bags of seed to be used on the Project.
- PLS application rate is obtained by dividing the PLS specified rate by the PLS factor.

For a seed mix, make this calculation for each seed species in the mix and then adjust as follows:

- Using the seed tag, determine the weight of each seed species in the bag and use this information to find the percentage, by weight, of each seed species is in 1 pound for the pre-blended mix.
- Divide the percentage by weight of each seed species, per pound, for the pre-blended mix, by the PLS application rate for that specific seed species.

Determine the highest application rate in the seed mix and apply the seed mix at that application rate.

ODOT MATERIALS & INSPECTION

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Special Provisions continued 5

The Standard Specifications might refer to the Special Provisions for project specific information:

- Standard Specification 01030.13(f)

(f) Types of Seed Mixes - Seed mixes, quantities, standards, seeding rates, and other information will be included in the Special Provisions for each type of seed mix.

- Special Provisions 01030.13(f) **page 212/278**

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

Provide the following seed mix formulas:

- **Temporary Seeding:**

Botanical Name (Common Name)	PLS Specified Rate (lb/acre)
Triticum aestivum x elytrigia elongata (Sterile wheat nurse crop)	36.0
Poa secunda (Sandberg Bluegrass)	3.0
Hordeum brachyantherum (Meadow Barley)	26.0
Bromus Carinatus (California Brome)	24.0
Festuca roemeri var. roemeri (Roemer's Fescue)	5.0
Trifolium repens (White Clover)	3.0

ODOT MATERIALS & INSPECTION

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Seed Application Rate Form

Premixed Seed Blends
Adjusted Rates of Application

Form Example (Project Name (Section)) — C##### (Contract No.)

Enter Contractor or Subcontractor Name ((Sub)Contractor) — Permanent Seeding (Seed Mix Type) — L03/SL1 (Lot/Batch No.)

COLUMN

I Seed	II Specified (lb./acre)	III Purity %	IV Germ. %	V Adjusted PLS (lb. per acre)	VI % of Seed (this lot#/mix)	VII lb. of Seed per 1 lb (this lot#/mix)	VIII lb. of this Seed Blend Needed per Acre (this lot#/mix)
Spike Bentgrass	0.5	99.66%	90.00%	0.6	1.50%	0.015	40.0
California Brome	24.5	98.83%	88.00%	28.2	27.00%	0.270	104.4
Camas Grass	3.5	97.75%	88.00%	4.1	3.50%	0.035	117.1
Slough Sledge	3.5	99.69%	91.00%	3.9	3.50%	0.035	111.4
Tufted Hairgrass	1.8	99.07%	91.00%	1.9	5.00%	0.050	38.0
Meadow Barley	37.0	95.18%	93.00%	41.8	38.00%	0.380	110.0
Path Rush	0.1	97.32%	98.00%	0.1	0.50%	0.005	20.0
Sickle Keeled Lupine	17.5	99.95%	90.00%	19.5	19.00%	0.190	102.6

RESULTS	
Greatest Amount Calc. (from column VIII) =	117.1
Premeasured Acre =	1.9
Greatest Amount Calc. x Premeasured Acre =	**222.6**

Seed %	98.00%
Other Crop Seed %	1.40%
Weed Seed %	0.55%
Inert Material %	0.05%
Total %*	100.00%

*should be close to 100%

734-5180 (08-10-2016)

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Special Provisions continued
Get familiar with the Bid Items

SCHEDULE OF ITEMS

I-5: AURORA DONALD INTERCHANGE (EXIT 278) PHASE 2 (C15498)
HP CIVIL INC

ITEM NO	ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE (IN FIGURES)	TOTAL (IN FIGURES)
0600	0290-0102000A WORK CONTAINMENT PLAN	LUMP SUM	ALL	500.00	500.00
0610	0290-0200000A TURBIDITY MONITORING	LUMP SUM	ALL	2,500.00	2,500.00
0620	0294-0100000A HEALTH AND SAFETY PLAN	LUMP SUM	ALL	1,500.00	1,500.00
0630	0294-0200010M CONTAMINATED SOIL DISPOSAL	TON	12,952.00	40.00	518,080.00
0640	0294-0700000E SOIL SAMPLE COLLECTION AND ANALYTICAL TESTING	EACH	3.00	4,500.00	13,500.00
0650	1999-9Z90000J CONSTRUCTION MATS	SQFT	4,500.00	10.00	45,000.00
SECTION 0002 ROADWORK					
0660	0305-0100000A CONSTRUCTION SURVEY WORK	LUMP SUM	ALL	500,000.00	500,000.00
0670	0310-0106000A REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LUMP SUM	ALL	375,000.00	375,000.00

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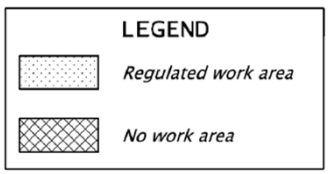
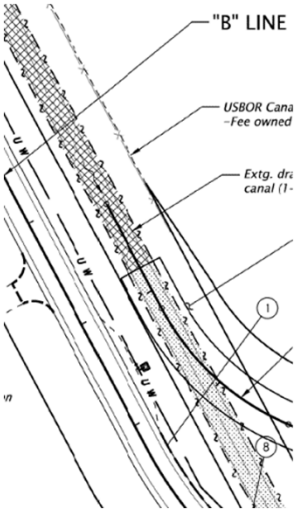
Project Specific Plans
General Construction Sheets

Look for No Work Zones and Regulated work areas.





ODOT MATERIALS & INSPECTION

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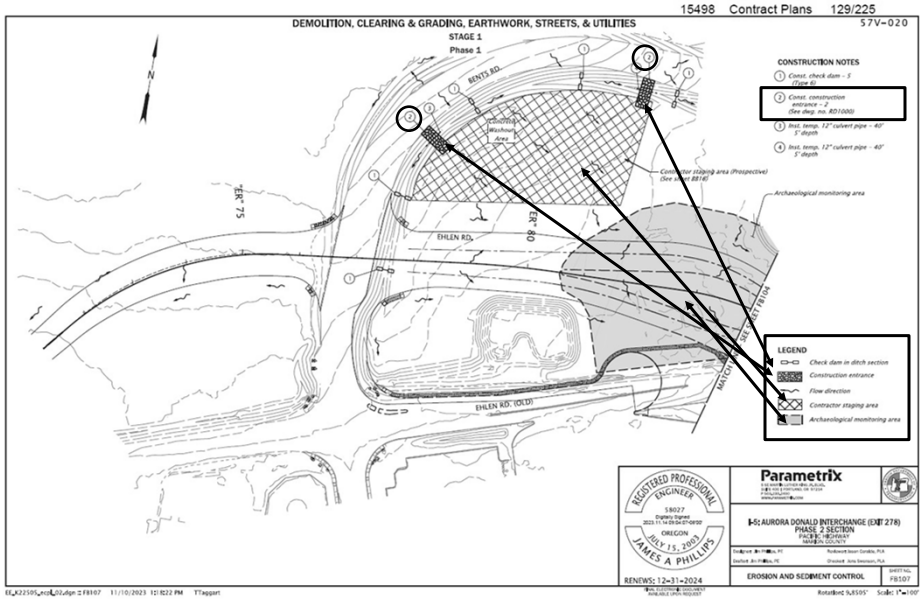
Project Specific Plans continued
Erosion and Sediment Control Plans



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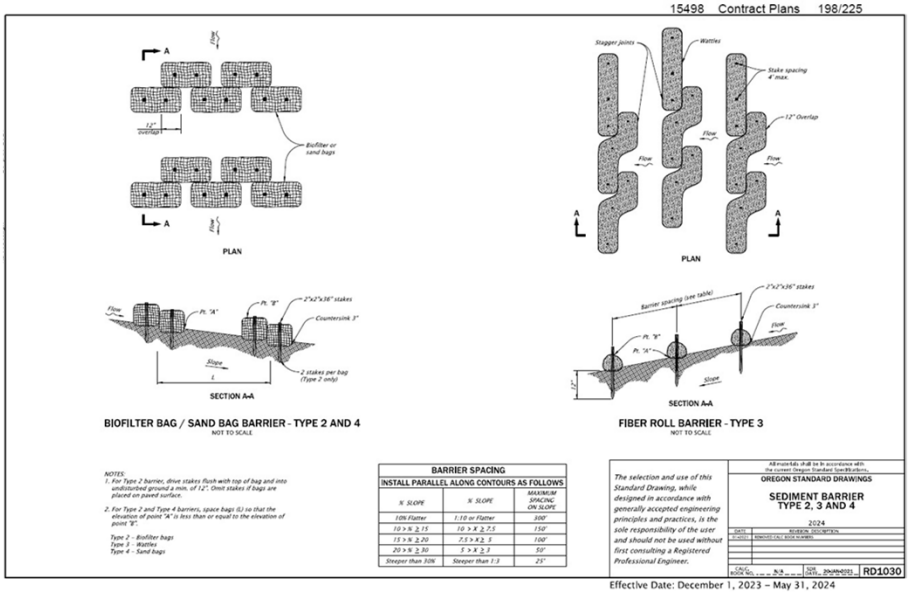
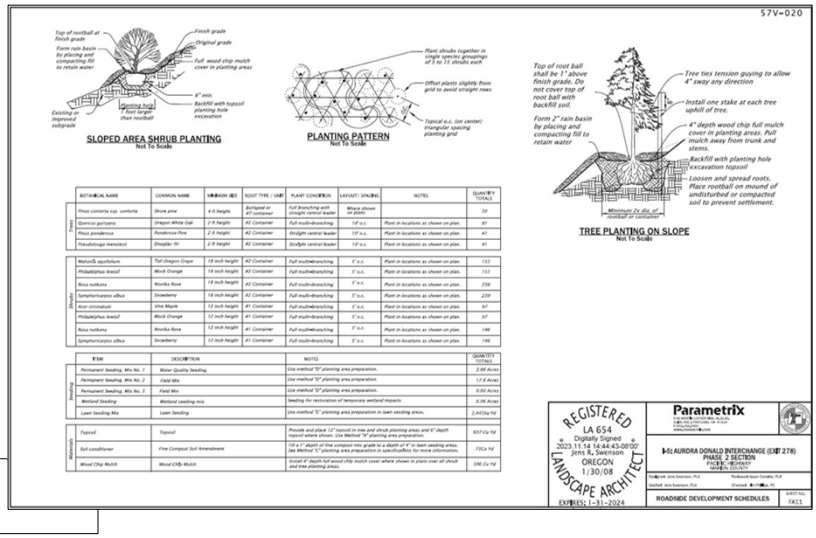
Project Specific Plans continued
Standard Drawings



14

Project Specific Plans continued

Roadside Development Schedule



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Other Resources you will use during construction

QPL

OREGON DEPARTMENT OF TRANSPORTATION
CONSTRUCTION SECTION

QUALIFIED PRODUCTS LIST

PUBLISHING DATE:
JANUARY 2024

The Qualified Products List is updated every six months or amended as needed.

NFTMG

OREGON DEPARTMENT OF TRANSPORTATION
CONSTRUCTION SECTION

NONFIELD-TESTED MATERIALS ACCEPTANCE GUIDE

2024 STANDARD SPECIFICATIONS

January 2024 UPDATE

Updated versions of this guide are available by printing from the web address listed below. This document is to be used as a guide for documentation required for acceptance of Materials on ODOT Construction projects and does not relieve the user of requirements specified in the Construction Project Documents. Please notify the Contract Administration Unit, in the Construction Section at the ODOT Materials Laboratory, of any changes in Standard Drawings, Special Provisions, or Standard Specifications, etc., which would require additions to, deletions from, or changes to this listing.

Internet Address: https://www.oregon.gov/ODOT/Construction/Pages/Structure-Services.aspx

Contact 541-794-7721 to have correction made to this guide. A summary of changes since last publication is found at the end of this document.

*Special Provisions, Contract Plans, and Standard Specifications take precedence over this guide per 00150.10(a). Refer to the Contract for documentation requirements.

ODOT MATERIALS & INSPECTION

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QPL

QUALIFIED PRODUCTS LIST
OREGON DEPARTMENT OF TRANSPORTATION

The **"QUALIFIED PRODUCTS LIST"** (QPL) is a comprehensive list of all finished products which have been evaluated and/or used by the Oregon DOT.

The "QUALIFIED PRODUCTS LIST" is made up of two types of lists:

1. The **QUALIFIED LIST - "Q"** is for products that have been reviewed and found to be suitable for use in a specific category. Job control testing may still be necessary. Consult the ODOT Nonfield-Tested Materials Acceptance Guide", the "ODOT Field-Tested Materials Acceptance Guide", and the Project Specifications. Certificate of materials origin might be required.

2. The **APPROVED LIST - "A"** is for commercially available products having a low consequence of failure. These products are only usable for appropriate applications. May Require a Field Inspection Report. State existence on the Approved List and recognition of the product. No additional sampling or testing is needed.

Specific questions regarding products on the un-published **CONDITIONAL LIST** can be answered by calling **503/986-3059.**

"Conditionally Approved" products need specific, prior approval for each project. Approval is given for one project at a time.

The use of all products is restricted to the category in which they are listed. Products should be used and installed as the manufacturer recommends. The QPL does not distinguish between domestic and foreign steel. Use of this list by **ODOT Maintenance** Personnel as an *information resource* is encouraged not required.

Note: *Any change to a product on the QPL, without prior approval, will be cause for rejection of the product.*

Description	Page #
Index by Category, for Spec #	I-III
Traffic Control Devices	IV
Erosion Control Devices	V - VI
Pavement Markings	VII - VIII
Qualified & Approved List by Spec Number	1 – 228
Reinforcing Steel	A1-A15

The "QPL" and submittal forms are accessible from the Internet:

Qualified Products Web Page

Although the products listed are approved for use, they are not exempt from State Purchasing Rules, practices and guidelines, or manufacturer's warrantees or guarantees.

If you have questions, contact:

Oregon Department of Transportation
800 Airport Rd SE, Salem, OR 97301-4798
Dean Chess, Phone: 503/986-3059
E-Mail: dean.m.chess@odot.oregon.gov

Oregon Department of Transportation

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QPL continued

Erosion Control Page V

Category	Sub Category	Section
Erosion Prevention Materials		
	Matting – Slope	00280.14e
	Type A - Slopes 1V:3H or flatter - Clay Soil	
	Type B - Slopes 1V:3H or flatter - Sandy Soil	
	Type C - Slopes steeper than 1V:3H - Clay Soil	
	Type D - Slopes steeper than 1V:3H - Sandy Soil	
	Matting – Flexible Channel Liner	
	Type E-Shear Stress Range 2 lbs/ft^2	
	Type F-Shear Stress Range 4 lbs/ft^2	
	Type G-Shear Stress Range 6 lbs/ft^2	
	Type H-Shear Stress Range 8 lbs/ft^2	
Runoff Control Materials		
	Check Dam	
	Type 5 – Prefabricated System	00280.15a
	Compost Filter Sock	
	Filter Sock Material	00280.15f (1)
Sediment Control Materials		
	Inlet Protection	
	Type 3 – Prefabricated Filter Inserts	00280.16d
	Sediment Barrier	
	Type 7 – Prefabricated Barrier System	00280.16e
	Sediment Mat	00280.16f

Rev 1-2022

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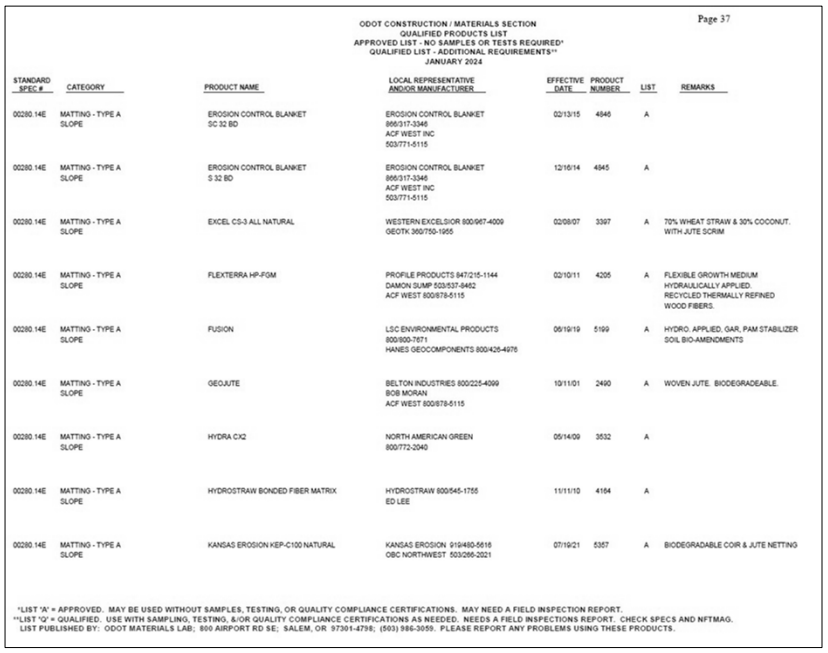
QPL continued 2



ODOT CONSTRUCTION / MATERIALS SECTION
QUALIFIED PRODUCTS LIST
APPROVED LIST - NO SAMPLES OR TESTS REQUIRED*
QUALIFIED LIST - ADDITIONAL REQUIREMENTS**
JANUARY 2024

Page 37

STANDARD SPEC #	CATEGORY	PRODUCT NAME	LOCAL REPRESENTATIVE AND/OR MANUFACTURER	EFFECTIVE DATE	PRODUCT NUMBER	LIST	REMARKS
00280.14E	MATTING - TYPE A SLOPE	EROSION CONTROL BLANKET SC 32 BD	EROSION CONTROL BLANKET 866/317-3346 ACF WEST INC 503/771-5115	02/13/15	4846	A	
00280.14E	MATTING - TYPE A SLOPE	EROSION CONTROL BLANKET S 32 BD	EROSION CONTROL BLANKET 866/317-3346 ACF WEST INC 503/771-5115	12/16/14	4845	A	
00280.14E	MATTING - TYPE A SLOPE	EXCEL CS-3 ALL NATURAL	WESTERN EXCELSIOR 800/967-4009 GEOTK 360/750-1955	02/08/07	3397	A	70% WHEAT STRAW & 30% COCONUT. WITH JUTE SCRIM
00280.14E	MATTING - TYPE A SLOPE	FLEXTERRA HP-FGM	PROFILE PRODUCTS 847/215-1144 DAMON SUMP 503/537-8462 ACF WEST 800/878-5115	02/10/11	4205	A	FLEXIBLE GROWTH MEDIUM HYDRAULICALLY APPLIED. RECYCLED THERMALLY REFINED WOOD FIBERS.
00280.14E	MATTING - TYPE A SLOPE	FUSION	LSC ENVIRONMENTAL PRODUCTS 800/800-7671 HANES GEOCOMPONENTS 800/426-4976	06/19/19	5199	A	HYDRO. APPLIED, GAR, PAM STABILIZER SOIL BIO-AMENDMENTS
00280.14E	MATTING - TYPE A SLOPE	GEOJUTE	BELTON INDUSTRIES 800/225-4099 BOB MORAN ACF WEST 800/878-5115	10/11/01	2490	A	WOVEN JUTE. BIODEGRADEABLE.
00280.14E	MATTING - TYPE A SLOPE	HYDRA CX2	NORTH AMERICAN GREEN 800/772-2040	05/14/09	3532	A	
00280.14E	MATTING - TYPE A SLOPE	HYDROSTRAW BONDED FIBER MATRIX	HYDROSTRAW 800/545-1755 ED LEE	11/11/10	4164	A	
00280.14E	MATTING - TYPE A SLOPE	KANSAS EROSION KEP-C100 NATURAL	KANSAS EROSION 919/480-5616 OBC NORTHWEST 503/266-2021	07/19/21	5357	A	BIODEGRADABLE COIR & JUTE NETTING

*LIST 'A' = APPROVED. MAY BE USED WITHOUT SAMPLES, TESTING, OR QUALITY COMPLIANCE CERTIFICATIONS. MAY NEED A FIELD INSPECTION REPORT.
**LIST 'Q' = QUALIFIED. USE WITH SAMPLING, TESTING, &/OR QUALITY COMPLIANCE CERTIFICATIONS AS NEEDED. NEEDS A FIELD INSPECTIONS REPORT. CHECK SPECS AND NFTMG.
LIST PUBLISHED BY: ODOT MATERIALS LAB; 800 AIRPORT RD SE; SALEM, OR 97301-4798; (503) 986-3059. PLEASE REPORT ANY PROBLEMS USING THESE PRODUCTS.

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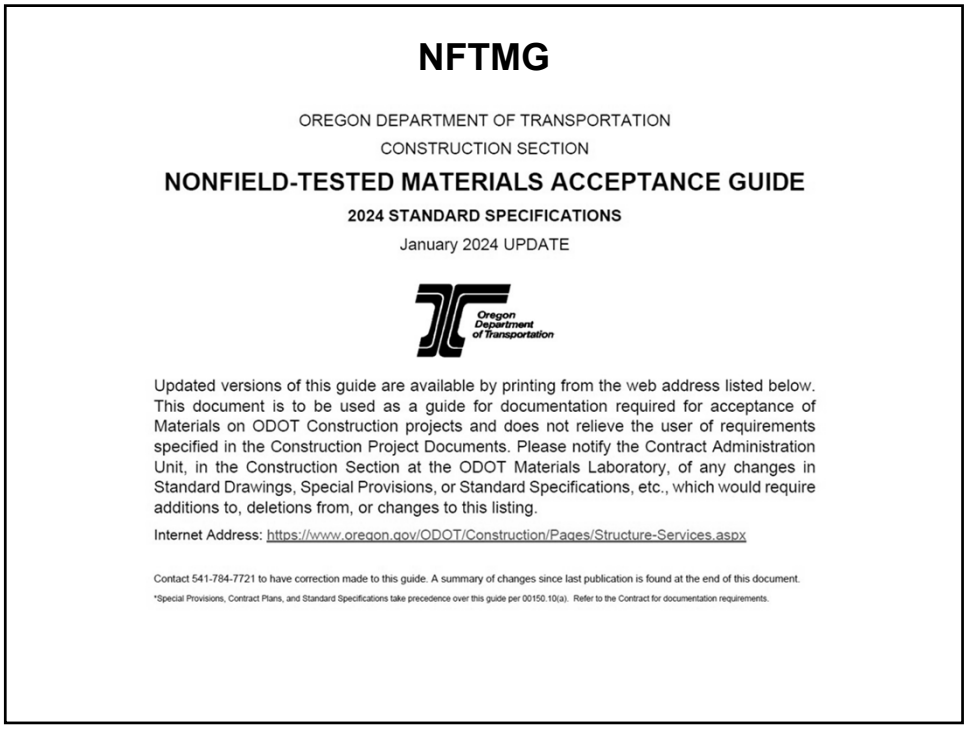
NFTMG



OREGON DEPARTMENT OF TRANSPORTATION

CONSTRUCTION SECTION

NONFIELD-TESTED MATERIALS ACCEPTANCE GUIDE

2024 STANDARD SPECIFICATIONS

January 2024 UPDATE

Oregon Department of Transportation

Updated versions of this guide are available by printing from the web address listed below. This document is to be used as a guide for documentation required for acceptance of Materials on ODOT Construction projects and does not relieve the user of requirements specified in the Construction Project Documents. Please notify the Contract Administration Unit, in the Construction Section at the ODOT Materials Laboratory, of any changes in Standard Drawings, Special Provisions, or Standard Specifications, etc., which would require additions to, deletions from, or changes to this listing.

Internet Address: https://www.oregon.gov/ODOT/Construction/Pages/Structure-Services.aspx

Contact 541-784-7721 to have correction made to this guide. A summary of changes since last publication is found at the end of this document.

*Special Provisions, Contract Plans, and Standard Specifications take precedence over this guide per 00150.10(a). Refer to the Contract for documentation requirements.

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NFTMG continued

OREGON DEPARTMENT OF TRANSPORTATION — NONFIELD-TESTED MATERIALS ACCEPTANCE GUIDE LEGEND

January 2024 Update — **2024 STANDARD SPECIFICATIONS**

This guide provides a summary of acceptance documents for frequently used items. New Materials or Materials which are infrequently used may not be listed in this guide. Consult the Contract Documents for acceptance documentation for these items.
This guide does not have precedence over the Special Provisions, Contract Plans, or Standard Specifications. Refer to 00150.10(a)*

E – Equipment Lists and Drawings / Procedures
L – ODOT Central Materials Laboratory Report
I – ODOT Structure Services Inspection Report
W – Warranty (Manufacture or Workmanship)
P – Proof of License/Certification or Apprentice Application
M – Manufacturer's Field Representative Report
F – Field Inspection Report (FIR)
➢ *More information in form 734-2605 processing instructions.*
O – Certificate of Materials Origin (CMO for Iron or Steel - refer to 00160.20(a))
BG – Blue and Green Sheets (see Sec. 00960, 00970 or 00990)
R – Field Report
P/R – DEQ Permit or Compost Producer Registration

C – Construction Materials Certificate of Materials Origin (C-CMO) Form 734-5378b - Build America Buy America (BABA) – Refer to 00165.35(e). Specification Sections that have been identified as containing Construction Materials that may require a C-CMO have been added throughout this guide. Refer to the following for additional resources pertaining to BABA Materials:

- Qualified Products List (QPL) - https://www.oregon.gov/odot/Construction/Pages/Qualified-Products.aspx
- BABA Material Classification Guide - https://www.oregon.gov/odot/Construction/Pages/Contract-Administration-Services.aspx
- BABA Blue Sheet List - https://www.oregon.gov/odot/Construction/Pages/Contract-Administration-Services.aspx

Q - Quality Compliance Certificate – The certificate or equivalent document meeting specification shall be from the manufacturer and shall:

- Verify the Material meets the Specifications, and identify by number any applicable specified test methods used, (ODOT, AASHTO, ASTM, UL, others)
- Permit positive determination that Material delivered to the Project is the same Material covered by the certificate:
  - Be delivered to the Engineer with the shipment of the Material,
  - Or be an identification plate or mark, decal, sticker, label, or tag attached to the container or Material.

T – Test Results Certificate – The certificate shall:

- Be from the manufacturer, verifying the Material furnished has been sampled and tested and the test results meet the Specifications.
- Include, or be accompanied by, a copy of the specified test results (ODOT, AASHTO, ASTM, UL or other)
- Identify the testing agency and the representative responsible for the test results.
- Permit positive determination that Material delivered to the Project is the same Material covered by the test results.
- Be delivered to the Engineer with the shipment of the Material.

Small Quantity - A method for accepting relatively small quantities of Materials as noted in this guide without normal sampling and testing. Normal acceptance of Materials may be waived by the Engineer when requested in writing by the Contractor. **Small quantity acceptance requirements are listed in this guide along with the maximum amount of Material that can be accepted as small quantity.**

QPL – For some Materials, this guide will refer to the Qualified Products List (QPL). For QPL Materials, the QPL number must be entered into the Contractor Payment System regardless of the method of documentation.

- When using an "A" listed product, document with an FIR/Pay Note citing the QPL product number.
- When using a "Q" listed product, document with an FIR/Pay Note citing the QPL product number, and attach additional documentation required by this guide.
- When using a product approved after the QPL in effect for the Project, document with an FIR/Pay Note and attach a copy of the product approval letter or page from the later edition of the QPL.

For products submitted by the Contractor that are not listed on the QPL, follow section 00160.05 of the Standard Specifications or Special Provisions.

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NFTMG continued 2

Oregon Department of Transportation
Nonfield-Tested Materials Acceptance Guide
2024 Standard Specifications

SECTION	TYPE OF CONSTRUCTION	MATERIALS	SUBSECTION	ACCEPTANCE DOCUMENTS				REMARKS
				FURNISHED BY CONTRACTOR TO		FURNISHED BY AGENCY		
				LAB	ENGR.	MATERIALS LAB	FIELD PERSONNEL	
00280 *(con't)*	Erosion and Sediment Control (ESC) *(continued)*	Seed (Temporary)	01030.13		T		F	"T" is germination and purity information from tag on seed bag.
		Fertilizer	01030.14		Q		F	"Q" is from manufacturer.
	For temporary items under 00280, Engineer must verify items are as required by Contract Documents and functioning as intended.	Mulch, Hydromulch (temporary or permanent)	00280.14(d) 01030.15(a)		Q		F, QPL	"QPL" is for hydromulch fiber.
		Mulch, Straw (temporary or permanent)	00280.14(d) 01030.15(b)		T or Q		F	"T" is seed lab test results for weed seed content. "Q" is "Oregon Certified Seed" field source, or Department of Agriculture certified weed free.
	For permanent items under 00280, Engineer must acquire and retain the required documentation.	Slope and Channel Liner Matting – Bonded Fiber Matrix, Polypropylene or Polymer	00280.14(e)		C		F, QPL	"C" is for Construction Material CMO according to 00160.20(d) for Channel Liner Matting Type F, G, and H installed as permanent features.
		Check Dams - Cereal Straw Based Products	00280.15(a) 01030.15(b)		T or Q		F	"T" is seed lab test results for weed seed content. "Q" is "Oregon Certified Seed" field source, or Department of Agriculture certified weed free.
		Check Dams, Type 5 - Prefabricated System	00280.15(a)				F, QPL	Field fabricated systems are not acceptable.
		Compost	00280.14(f) 00280.15(a) Type 6 00280.15(f) 00280.15(g) 00280.16(d) Type 7 00280.16(e) Type 8&9 03020.00		T, Q, P/R		F	"T" is STA lab analysis of compost. "Q" is from Supplier according to 03020.10 and 00165.35. "P/R" is copy of the DEQ permit or registration of compost Supplier. **Note:** Tackifier required according to 00280.14(b)(2) for Compost Erosion Blanket and/or Compost Berm.
		Inlet Protection, Type 3 - Prefabricated Filter Inserts	00280.16(d)				F, QPL	
		Sediment Barrier – Cereal Straw Based Products	00280.16(e) 01030.15(b)		T or Q		F	"T" is seed lab test results for weed seed content. "Q" is "Oregon Certified Seed" field source, or Department of Agriculture certified weed free.
		Sediment Barriers, Type 7 - Prefabricated Barrier System	00280.16(e)				F, QPL	
		Sediment Barriers, Sediment Mat	00280.16(f)				F, QPL	
		Straw Bales	00280.14(g) 01030.15(b)		Q		F	"Q" is "Oregon Certified Seed" field source, or Department of Agriculture certified weed free.
		Sediment Control - Geotextile	Refer to 00350 in this guide.					
		Prefabricated Construction Entrance	00280.16(a)				F	"F" must document visual verification.

*Special Provisions, Contract Plans and Standard Specifications take precedence over the information in this guide. Refer to your Contract for documentation requirements.

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00180.40 Limitation of Operations
(b) On-Site work:

The contractor shall not begin On-Site work until the Contractor has:

- Received a Notice to Proceed
- An accepted Project Work schedule
- An approved Pollution Control Plan
- An approved Erosion and Sediment Control Plan
- Met with the Agency at the required preconstruction conference

ODOT MATERIALS & INSPECTION

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Oregon
John Kitzhaber, MD, Governor

Department of Transportation
Construction Section
800 Airport Road, SE
Salem, OR, 97301-4792
Phone: (503) 986-3000
Fax: (503) 986-3096

December 12, 2014 CM003

To: ODOT Project Managers and Local Agency Liaisons
From: Joe Squire, PE, State Construction and Materials Engineer

Subject: Erosion and Sediment Control and Monitoring Form

The Construction Leadership Team (CLT) has coordinated with TSB Environmental Section to complete review and comment with respect to proposed changes to and or uses of ODOT's Erosion and Sediment Control and Monitoring Form 734-2361 and its use.

Agency staff and contractors use the erosion and sediment control inspection Form 734-2361 as required to comply with ODOT's National Pollutant Discharge Elimination System (NPDES) Construction 1200-CA permit requirements and Oregon Standard Specifications for Construction on ODOT projects.

A review of selected completed project inspection forms gathered from across the Regions has indicated that some inspections lacked level of detail required by the permit. In order to rectify this deficiency in detail, the Agency will direct the Contractor through the Project Managers office to complete Form 734-2361 with detail as shown in the attached incomplete and complete examples.

Action Requested:

1. Please discuss this memo and its attachments with your project teams.
2. Project Managers and Local Agency Liaisons:
    a. Designate knowledgeable inspectors to review the contractors work to monitor and report effectiveness of BMP's and permit compliance.
    b. ODOT-Inspector must receive and review Form 734-2361 for completeness and compliance.
    c. ODOT-Inspector must communicate with PM and ESCM in a timely manner, when work performed does not meet contract and permit requirements.
3. Project Manager or designee and Local Agency Liaisons:
    a. Insure the Contractor Erosion and Sediment Control Manager (ESCM) has a clear understanding of responsibilities for completing Form 734-2361 as required by the Contract and Contract referenced permits.
    b. Insure the ESCM monitors all BMPs installed at the required intervals.
    c. Insure the ESCM reports general site conditions section of the required Form 734-2361 to document condition, effectiveness and to indicate actions, including but not limited to maintenance, repair, and or replacement performed for compliance. Photos are a useful addition to visually demonstrate compliance, maintenance, and or repair work performed, among other actions.
4. TSB Construction Section or Environmental Section is available to assist, if needed.

INSERT TAB

QPL

OREGON DEPARTMENT OF TRANSPORTATION
CONSTRUCTION SECTION

QUALIFIED PRODUCTS LIST

PUBLISHING DATE:
JANUARY 2024

The Qualified Products List is updated every six months or amended as needed.

QUALIFIED PRODUCTS LIST
OREGON DEPARTMENT OF TRANSPORTATION

The **"QUALIFIED PRODUCTS LIST"** (QPL) is a comprehensive list of all finished products which have been evaluated and/or used by the Oregon DOT.

The "QUALIFIED PRODUCTS LIST" is made up of two types of lists:

1. The **QUALIFIED LIST - "Q"** is for products that have been reviewed and found to be suitable for use in a specific category. Job control testing may still be necessary. Consult the ODOT Nonfield-Tested Materials Acceptance Guide", the "ODOT Field-Tested Materials Acceptance Guide", and the Project Specifications. Certificate of materials origin might be required.

2. The **APPROVED LIST - "A"** is for commercially available products having a low consequence of failure. These products are only usable for appropriate applications. May Require a Field Inspection Report. State existence on the Approved List and recognition of the product. No additional sampling or testing is needed.

Specific questions regarding products on the un-published **CONDITIONAL LIST** can be answered by calling **503/986-3059.**

"Conditionally Approved" products need specific, prior approval for each project. Approval is given for one project at a time.

The use of all products is restricted to the category in which they are listed. Products should be used and installed as the manufacturer recommends. The QPL does not distinguish between domestic and foreign steel. Use of this list by **ODOT Maintenance** Personnel as an *information resource* is encouraged not required.

Note: *Any change to a product on the QPL, without prior approval, will be cause for rejection of the product.*

Description	Page #
Index by Category, for Spec #	I-III
Traffic Control Devices	IV
Erosion Control Devices	V - VI
Pavement Markings	VII - VIII
Qualified & Approved List by Spec Number	1 – 228
Reinforcing Steel	A1-A15

The "QPL" and submittal forms are accessible from the Internet:

Qualified Products Web Page

Although the products listed are approved for use, they are not exempt from State Purchasing Rules, practices and guidelines, or manufacturer's warrantees or guarantees.

If you have questions, contact:

Oregon Department of Transportation
800 Airport Rd SE, Salem, OR 97301-4798
Dean Chess, Phone: 503/986-3059
E-Mail: dean.m.chess@odot.oregon.gov

Oregon Department of Transportation

OREGON DEPARTMENT OF TRANSPORTATION

"QPL" INDEX BY CATEGORY TO GET SPECIFICATION NUMBERS

CATEGORY	SPEC #
ANTI-GRAFFITI COATING - SIGNS	02910.70
ASPHALT COLD PATCH - HI PERF	00745.00
ASPHALT RELEASE AGENT	00745.22
AUTOMATED FLAGGER ASSIST. DEVICE	00223.23
BACKER ROD	02440.14
BARRICADE, TEMPORARY	00224.15
BARRIER PANELS, REFLECTIVE	00226.11B
BARRIER, CABLE	00811.00
BEARINGS, BRIDGE	00582.10
BICYCLE CHANNELIZING DEVICES	00228.12
BIRD SPIKES	00907.10
BOLT GRADE ADJUSTMENT SYSTEM	00470.42
BONDING AGENT, EPOXY	02070.10
BONDING AGENT, NON-EPOXY	02070.20
CEMENT, BLENDED	02010.20
CEMENT, PORTLAND	02010.10
CEMENTITIOUS PIPE LINER	00414.10
CFRP STRENGTHENING WET LAY UP	00565.00
CHEMICAL ADMIXTURES	02040.10
CHLORIDE REMOVER	00594.13
CONCRETE & CRACK SEALER HIGH MOD.	02060.20
CONCRETE & CRACK SEALER LOW MOD.	02060.10

CATEGORY	SPEC #
CONCRETE BARRIER GATE	00820.00
CONCRETE MODIFIER - LATEX	02035.00
CONCRETE SCM - BLENDED	02030.60
CONCRETE SCM - FLY ASH	02030.10
CONCRETE SCM - GGBF SLAG	02030.40
CONCRETE SCM - METAKAOLIN	02030.50
CONCRETE SCM - SILICA FUME	02030.20
CONCRETE SEALER - WATER REPELLENT	02060.30
CONCRETE SURFACE RETARDER	02055.10
CRACK INJECTION, EPOXY	00538.10
CURING BLANKET, CONCRETE	02050.30
CURING COMPOUND, CONCRETE	02050.10
DAMP PROOFING, CLEAR	00597.11
DELINEATORS - (TYPES 2, 3 & 5)	00840.10
DELINEATORS, TEMP	00224.14
DETECTABLE WARNING DEVICES	00759.12
DRAINS, TRENCH (PREFORMED)	00446.00
ELASTOMERIC CONCRETE	00584.10
ELECTRONIC CUTTABLE FILM	02910.60
EROSION CONTROL	00280.00
EXPANSION JOINTS, BRIDGE	00585.10
FENCING, WORKZONE	00221.13

CATEGORY	SPEC #
FLAGGER STATION LIGHTING	00223.22
FLAGGER STOP/SLOW PADDLE	00223.21
FLY ASH	02030.10
GALVANIZING REPAIR OF HOT-DIP	02530.71
GEOGRIDS - SUBGRADE REINFORCEMENT	02320.10
GEOGRIDS - TYPE I MSEW	02320.10
GEOSYNTHETICS	02320.10B
GLARE SHIELDS	00822.00
GLARESCREEN TEMPORARY	00226.11
GROUT, EPOXY	02080.10
GROUT, KEYWAY	02080.30
GROUT, NON-EPOXY (NON SHRINK)	02080.20
GROUT, STRUCTURAL	02080.60
GROUT, TENDON	02080.50
GUARDRAIL BLOCKS, PLASTIC	02110.20
GUARDRAIL TERMINALS	00810.10
HOT APPLIED JOINT SEALANT	02440.30
IMPACT ATTENUATOR, PERM.	00830.00
IMPACT ATTENUATOR, TEMP.	00226.12
IMPACT ATTENUATOR, TRUCK MTD	00226.23
JOINT FILLER, PREFORMED	02440.10
LATEX EMULSION PAINT	02210.30

OREGON DEPARTMENT OF TRANSPORTATION

"QPL" INDEX BY CATEGORY TO GET SPECIFICATION NUMBERS

CATEGORY	SPEC#
LOOP SEALANTS, TRAFFIC	00990.43
LUBE FOR FASTENERS	02560.70
LUBE FOR GALV FASTENERS	02560.70
LUBE FOR STAINLESS FASTENERS	02560.70
MAILBOX SUPPORTS	01070.00
MANHOLE RISER RINGS	00470.00
MANHOLE STEPS	02450.30
MARKERS, CONICAL	00224.11
MARKERS, TUBULAR	00224.10
MARKERS, TUBULAR, SURF. MTD, PERM.	00856.10
MARKERS, TUBULAR, SURF. MTD, TEMP.	00224.12
MARKINGS, LONGITUDINAL - DURABLE	00865.00
MARKINGS, LONGITUDINAL - HIGH PERF	00866.00
MARKINGS, LONGITUDINAL - PAINT	00860.00
MARKINGS, TRANSVERSE	00867.00
MECHANICAL ANCHOR SYSTEM	00535.10B
MEMBRANE, SPRAY WATERPROOFING	00591.00
METAKAOLIN	02030.50
MOISTURE RETENTION CHEM FOR SOIL	01040.22
MPCO AGGREGATE	00556.10B
MULTI - LAYER POLY. CON. OVERLAY	00556.10A
PAINT STRIPING BEADS, TEMP	00225.12B

CATEGORY	SPEC#
PAINT STRIPING BEADS, TEMP	00225.12B
PAINT STRIPING, TEMP	00225.12A
PAVEMENT MARKER ADHESIVE	00855.00
PAVEMENT MARKER, FLEXIBLE	00225.10
PAVEMENT MARKER, PERMANENT	00855.00
PCC REPAIR	02015.20
PCC REPAIR POLYMER MODIFIED	02015.30
PCC REPAIR, RESURFACER	02015.60
PCC REPAIR, SURFACE	02015.50
PCMS / PVMS - CHNGABLE MESSAGE SIGN	00222.15B
PEDESTRIAN CHANNELIZING DEVICE	00228.10
PERFORATED STEEL SQ TUBE - ANCHORS	00930.00
PERFORATED STEEL SQ TUBE - SLIP BASE	00930.00
PERFORATED STEEL SQ TUBE - SUPPORTS	00930.00
PILE TIPS	02520.10E
PIPE - POLYETHYLENE	02415.10
PIPE - POLYPROPYLENE	02415.40
PIPE - PVC	02415.50
PIPE- SOLID WALL POLYETHYLENE	02415.20
PIPE, MASTIC	00445.12
PIPE, POLYMER COATINGS FOR METAL PIPE	02420.20
PIPE-STEEL REINFORCED POLYETHYLENE	02415.30

CATEGORY	SPEC#
PLASTIC DRUMS, TEMPORARY	00224.13
POROUS PAVER	00760.00
POURED SEALANT, SILICONE (2 PART)	02440.11
PRECOMPRESSED FOAM SILICONE JOINT	02440.23
PREFORMED COMPRESSION JOINT SEAL	02440.22
PSST SIGN SUPPORTS, TEMP	00222.11E
RADAR SPEED TRAILER	00222.15C
RAMPS, TEMPORARY SIDEWALK	00228.13
RAPID SET CEMENT	02011.10
REBAR MANUFACTURERS	02510.10
REBAR SPLICE, MECHANICAL	02510.20
REFLECTIVE ELEMENTS FOR MARKINGS	00850.00
REINFORCEMENT, HEADED BAR	02510.25
RESIN BONDED ANCHOR SYSTEM	00535.10A
ROCK BOLTS	00398.00
SEQUENTIAL ARROW SIGN	00222.15A
SIGN COVERS, TEMPORARY	00222.12A
SIGN SHEETING, TYPES I - X	02910.20
SIGN SHEETING, WORKZONE RIGID	00222.10B
SIGN SHEETING, WORKZONE ROLL-UP	00222.10D
SIGN SUPPORTS, PORTABLE	00222.11B
SILICA FUME	02030.20

OREGON DEPARTMENT OF TRANSPORTATION

"QPL" INDEX BY CATEGORY TO GET SPECIFICATION NUMBERS

CATEGORY	SPEC#
SLAG (GGBFS)	02030.40
SMART WORK ZONE SYSTEM VENDOR	00229.10
SOIL BIO AMENDMENT	01040.17
SOIL STERILIZATION	01040.21
STORMWATER CONTROL FACILITIES	01010.03
STRIP SEALS	02440.20
STRUCTURAL STEEL CAULKING	00594.12
STRUCTURAL STEEL COATINGS	00594.10
SYNTHETIC FIBER, MACRO, MICRO, BLEND	02045.00
SYNTHETIC SLURRY	00512.14
TAPE, NON-REFLECTIVE	00225.11
TAPE, TEMPORARY	00225.11
TEMPORARY BARRIER	00226.11A
TEMPORARY WALKS	00228.14
TIMBER COATING	02210.20
TRAFFIC SIGNAL, PORTABLE	00227.13
TRANSVERSE RUMBLE STRIPS, TEMP.	00225.14
WATERPROOFING - CAP	00597.11
WOOD PRESERVATIVE, FIELD	02190.30

Erosion Control

Category	Sub Category	Section
Erosion Prevention Materials		
	Matting – Slope	00280.14e
	Type A - Slopes 1V:3H or flatter - Clay Soil	
	Type B - Slopes 1V:3H or flatter - Sandy Soil	
	Type C - Slopes steeper than 1V:3H - Clay Soil	
	Type D - Slopes steeper than 1V:3H - Sandy Soil	
	Matting – Flexible Channel Liner	
	Type E-Shear Stress Range 2 lbs/ft^2	
	Type F-Shear Stress Range 4 lbs/ft^2	
	Type G-Shear Stress Range 6 lbs/ft^2	
	Type H-Shear Stress Range 8 lbs/ft^2	
Runoff Control Materials		
	Check Dam	
	Type 5 – Prefabricated System	00280.15a
	Compost Filter Sock	
	Filter Sock Material	00280.15f (1)
Sediment Control Materials		
	Inlet Protection	
	Type 3 – Prefabricated Filter Inserts	00280.16d
	Sediment Barrier	
	Type 7 – Prefabricated Barrier System	00280.16e
	Sediment Mat	00280.16f

Erosion Control

Category	Sub Category	Section
Sediment Control Materials Cont.		
Flocculants		00280.16k
Hydro-mulch		01030.15a
Moisture Retention Chemicals		01040.22b
Miscellaneous Items		01040.23

ODOT CONSTRUCTION / MATERIALS SECTION
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STANDARD SPEC #	CATEGORY	PRODUCT NAME	LOCAL REPRESENTATIVE AND/OR MANUFACTURER	EFFECTIVE DATE	PRODUCT NUMBER	LIST	REMARKS
00226.23	IMPACT ATTENUATOR, TL-3 TRUCK MOUNTED NCHRP 350 TL-3	VORTEQ TL-3	VALTIR LLC JIM CROWLEY 312/467-6750 DAN MCCARTHY 760/518-9929 CORAL SALES 800/538-7245	07/10/08	3644	A	TRAILER MOUNTED. MUST USE SUPPORT TRUCKS APPROX 20K LBS GVW OR HIGHER.
00227.13	TRAFFIC SIGNAL, PORTABLE TRAILER MOUNT	ADDCO PTS-2000	JOHN THOMAS, INC. 888/447-7263 ANNE BROUSIL 815/288-2343 TRAFFIC SAFETY 800/547-8518	01/12/06	1586	Q	PROJECT MUST INCLUDE SPECS FOR PORTABLE SIGNALS. APPROVAL NEEDED PRIOR TO USE.
00227.13	TRAFFIC SIGNAL, PORTABLE TRAILER MOUNT	HORIZON SQ-3TS	HORIZON SIGNAL 800/852-8796 HIGHWAY SPECIALTIES 503/390-1113	01/12/06	2646	Q	PROJECT MUST INCLUDE SPECS FOR PORTABLE SIGNALS. APPROVAL NEEDED PRIOR TO USE.
00227.13	TRAFFIC SIGNAL, PORTABLE TRAILER MOUNT	MODEL PTL 2.4X	NORTH AMERICA TRAFFIC 877/352-4626	10/09/08	3683	Q	PROJECT MUST INCLUDE SPECS FOR PORTABLE SIGNALS. APPROVAL NEEDED PRIOR TO USE.
00227.13	TRAFFIC SIGNAL, PORTABLE TRAILER MOUNT	RC FLAGMAN PTL 2.4	NORTH AMERICA TRAFFIC 877/352-4626	02/08/07	3297	Q	PROJECT MUST INCLUDE SPECS FOR PORTABLE SIGNALS. APPROVAL NEEDED PRIOR TO USE.
00227.13	TRAFFIC SIGNAL, PORTABLE TRAILER MOUNT	STS PST-1000 & STS PST-1000A	SUPERIOR TRAFFIC SERVICES, LLC JEFF HOLLENBECK 406/531-9914 MIKE DAVIS 509/220-0339	02/21/18	5013	Q	PROJECT MUST INCLUDE SPECS FOR PORTABLE SIGNALS. APPROVAL NEEDED PRIOR TO USE.
00228.10	PEDESTRIAN CHANNELIZING DEVICE (PCD)	PLASTICADE PATHCADE BARRICADE SYSTEM ANTI-TRIP FOOT RECESSED WHEN USED AS PCD	PLASTICADE 800/772-0355	05/10/22	5426	A	384 SQ IN OF SHEETING PER SIDE SHEETING WILL MATCH THE COLOR OF THE BODY. WHITE TYPE III OR IV ORANGE TYPE VIII OR IX
00228.10	PEDESTRIAN CHANNELIZING DEVICE (PCD)	SAFETY WALL SW-3674	PLASTIC SAFETY SYSTEMS INC 216/231/8590	06/13/11	4402	A	384 SQ IN OF SHEETING PER SIDE SHEETING WILL MATCH THE COLOR OF THE BODY. WHITE TYPE III OR IV ORANGE TYPE VIII OR IX
00228.10	PEDESTRIAN CHANNELIZING DEVICE (PCD)	STRONGWALL ADA PEDESTRIAN BARRICADE	PLASTICADE 800/772-0355	06/23/14	4748	A	384 SQ IN OF SHEETING PER SIDE SHEETING WILL MATCH THE COLOR OF THE BODY. WHITE TYPE III OR IV ORANGE TYPE VIII OR IX

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00228.10	PEDESTRIAN CHANNELIZING DEVICE (PCD)	TRAFFIX URBANITE WALL SHALL HAVE ADA COMPLIANT LEGS	TRAFFIX DEVICES INC. 801/9797099 TRAFFIC SAFETY SUPPLY COMPANY 503/235-8531	03/14/17	5031	A	384 SQ IN OF SHEETING PER SIDE SHEETING WILL MATCH THE COLOR OF THE BODY. WHITE TYPE III OR IV ORANGE TYPE VIII OR IX
00228.10	PEDESTRIAN CHANNELIZING DEVICE (PCD)	YODOCK 2001	YODOCK 888/496-3625 CORAL SALES 800/538-7245	01/26/12	4561	A	384 SQ IN OF SHEETING PER SIDE SHEETING WILL MATCH THE COLOR OF THE BODY. WHITE TYPE III OR IV ORANGE TYPE VIII OR IX
00228.10	PEDESTRIAN CHANNELIZING DEVICE (PCD)	YODOCK 2001M	YODOCK 888/496-3625 CORAL SALES 800/538-7245	06/11/13	2652	A	384 SQ IN OF SHEETING PER SIDE SHEETING WILL MATCH THE COLOR OF THE BODY. WHITE TYPE III OR IV ORANGE TYPE VIII OR IX
00228.10	PEDESTRIAN CHANNELIZING DEVICE (PCD) MASH TL-3 2016	TPAR	PEXCO LLC- DAVIDSON TRAFFIC 877/335-4638 STEVE LOOP 253/284-8000 CRAIG SCHULZ 253/284-8005 TRAFFIC SAFETY 800/547-8518	06/10/13	4604	A	384 SQ IN OF SHEETING PER SIDE SHEETING WILL MATCH THE COLOR OF THE BODY. WHITE TYPE III OR IV ORANGE TYPE VIII OR IX
00228.12	BICYCLE CHANNELIZING DEVICE (BCD)	YODOCK 2001SL SLIMLINE CHANNELIZER	YODOCK 888/496-3625 CORAL SALES 800/538-7245	05/11/16	4659	A	72 SQ IN WHITE SHEETING PER SIDE TYPE III OR IV
00228.13	TEMPORARY CURB RAMPS	BOARDWALK PLATFORM 2	PSS 800/662-6338	05/22/17	5046	A	RAMP AND PLATFORM
00228.13	TEMPORARY CURB RAMPS	BOARDWALK RAMP	PSS 800/662-6338	03/24/17	5043	A	RAMP
00229.10	SMART WORK ZONE SYSTEM VENDOR	ASTI	ASTI TRANSPORTATION SYSTEMS 302/328-3220	09/09/10	4071	A	ELEVATED, TRAILER-MOUNTED, MICROWAVE / BLUETOOTH SENSORS.
00229.10	SMART WORK ZONE SYSTEM VENDOR	ICONE	ICONE PRODUCTS 315/626-6800	05/12/11	3674	A	GROUND-MOUNTED, DOPPLER RADAR SENSORS WITHIN PORTABLE TRAFFIC DRUMS.

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00229.10	SMART WORK ZONE SYSTEM VENDOR	JAMLOGIC PTS	VER-MAC 888/488-7446	08/11/11	4075	A	ELEVATED, TRAILER-MOUNTED, DOPPLER/ MICROWAVE/ BLUETOOTH SENSORS.
00229.10	SMART WORK ZONE SYSTEM VENDOR	SALANDER SOFTWARE SERVICES	SALANDER LLC 612/964-6004	03/06/17	4947	A	
00229.10	SMART WORK ZONE SYSTEMS VENDOR	SAWS-SOLAR ADVANCED WARNING SYSTEM	SOLAR ADVANCED WARNING SYSTEMS INC. DARIO ALVAREZ 512/810-6989	11/02/22	5431	A	CONFLICT MONITORING-TRUCKS ENTERING/CROSSING/EXITING WARNING
00280.14E	MATTING - TYPE A SLOPE	AIRTROL GEOBINDER	USG CORPORATION 916/417-5048 HANES GEO COMP. 800/324-4594	07/09/09	3905	A	
00280.14E	MATTING - TYPE A SLOPE	BIONET S75BN	WESTERN GREEN 800/582-4005 CASCADE GEOS 971/339-1020	12/02/21	5385	A	STRAW AND JUTE NETTING
00280.14E	MATTING - TYPE A SLOPE	EARTHGUARD FIBER MATRIX	LSC ENVIRONMENTAL PRODUCTS 800/800-7671 HANES GEOCOMPONENTS 800/426-4976	01/08/09	2972	A	SPRAY W/ WOOD CELLULOSE FIBER GUAR TACKIFIER, PAM STABILIZER & STARCH BIO-DEGRADABLE
00280.14E	MATTING - TYPE A SLOPE	ENVIRO-SHIELD BONDED FIBER MTX	USG CORPORATION 916/417-5048 HANES GEO COMP. 800/324-4594	07/09/09	3533	A	
00280.14E	MATTING - TYPE A SLOPE	EROSION CONTROL BLANKET C 32 BD	EROSION CONTROL BLANKET 866/317-3346 ACF WEST INC 503/771-5115	05/01/15	4848	A	
00280.14E	MATTING - TYPE A SLOPE	EROSION CONTROL BLANKET S 31 BD	EROSION CONTROL BLANKET 866/317-3346 ACF WEST INC 503/771-5115	12/16/14	4843	A	

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00280.14E	MATTING - TYPE A SLOPE	EROSION CONTROL BLANKET SC 32 BD	EROSION CONTROL BLANKET 866/317-3346 ACF WEST INC 503/771-5115	02/13/15	4846	A	
00280.14E	MATTING - TYPE A SLOPE	EROSION CONTROL BLANKET S 32 BD	EROSION CONTROL BLANKET 866/317-3346 ACF WEST INC 503/771-5115	12/16/14	4845	A	
00280.14E	MATTING - TYPE A SLOPE	EXCEL CS-3 ALL NATURAL	WESTERN EXCELSIOR 800/967-4009 GEOTK 360/750-1955	02/08/07	3397	A	70% WHEAT STRAW & 30% COCONUT. WITH JUTE SCRIM
00280.14E	MATTING - TYPE A SLOPE	FLEXTERRA HP-FGM	PROFILE PRODUCTS 847/215-1144 DAMON SUMP 503/537-8462 ACF WEST 800/878-5115	02/10/11	4205	A	FLEXIBLE GROWTH MEDIUM HYDRAULICALLY APPLIED. RECYCLED THERMALLY REFINED WOOD FIBERS.
00280.14E	MATTING - TYPE A SLOPE	FUSION	LSC ENVIRONMENTAL PRODUCTS 800/800-7671 HANES GEOCOMPONENTS 800/426-4976	06/19/19	5199	A	HYDRO. APPLIED, GAR, PAM STABILIZER SOIL BIO-AMENDMENTS
00280.14E	MATTING - TYPE A SLOPE	GEOJUTE	BELTON INDUSTRIES 800/225-4099 BOB MORAN ACF WEST 800/878-5115	10/11/01	2490	A	WOVEN JUTE. BIODEGRADEABLE.
00280.14E	MATTING - TYPE A SLOPE	HYDRA CX2	NORTH AMERICAN GREEN 800/772-2040	05/14/09	3532	A	
00280.14E	MATTING - TYPE A SLOPE	HYDROSTRAW BONDED FIBER MATRIX	HYDROSTRAW 800/545-1755 ED LEE	11/11/10	4164	A	
00280.14E	MATTING - TYPE A SLOPE	KANSAS EROSION KEP-C100 NATURAL	KANSAS EROSION 919/480-5616 OBC NORTHWEST 503/266-2021	07/19/21	5357	A	BIODEGRADABLE COIR & JUTE NETTING

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00280.14E	MATTING - TYPE A SLOPE	KANSAS EROSION KEP-S2 NATURAL	KANSAS EROSION 919/480-5616 OBC NORTHWEST 503/266-2021	07/19/21	5358	A	BIODEGRADABLE WHEAT STRAW & JUTE NETTING
00280.14E	MATTING - TYPE A SLOPE	KANSAS EROSION KEP-SC2 NATURAL	KANSAS EROSION 919/480-5616 OBC NORTHWEST 503/266-2021	07/19/21	5359	A	BIODEGRADABLE WHEAT STRAW & COIR, JUTE NETTING
00280.14E	MATTING - TYPE A SLOPE	NORTH AMERICAN GREEN S150BN	NORTH AMERICAN GREEN 800/772-2040 OR 812/687-6632 ACF WEST 800/878-5115	07/10/97	1381	A	STRAW FIBER COVERED WITH TWISTED PAPER YARN NETTING. 100% BIO-DEGRADABLE.
00280.14E	MATTING - TYPE A SLOPE	NORTH AMERICAN GREEN S75BN	NORTH AMERICAN GREEN 800/772-2040 OR 812/687-6632 ACF WEST 800/878-5115	07/10/97	1380	A	STRAW FIBER CONVERED WITH BIO- DEGRADABLE NETTING. 100% BIO-DEGRADABLE.
00280.14E	MATTING - TYPE A SLOPE	SOIL GUARD	MAT, INC. 888/477-3028 (WAS WEYERHAEUSER UNTIL 12/99)	11/09/95	1403	A	MADE OF FIR AND HEMLOCK. BONDED FIBER MATRIX. HYDRAULICALLY APPLIED.
00280.14E	MATTING - TYPE A SLOPE HYDRAULICALLY APPLIED	BINDEX BFM	AMERICAN EXCELSIOR 888/352-9582 OR 715/236-5643 HANES GEO COMPONENTS 360/699-1426	12/10/12	4563	A	HYDRAULICALLY APPLIED WOOD FIBER
00280.14E	MATTING - TYPE A SLOPE HYDRAULICALLY APPLIED	FLEXTERRA FGM	PROFILE PRODUCTS 847/215-1144 DAMON SUMP 503/537-8462 ACF WEST 800/878-5115	11/09/06	3319	A	HYDRAULICALLY APPLIED WOOD FIBER
00280.14E	MATTING - TYPE A SLOPE HYDRAULICALLY APPLIED	PROMATRIX ENGINEERED FIBER MATRIX	PROFILE PRODUCTS, LLC 847/215-3454 ACF WEST 503/771-5115	09/19/12	4506	A	HYDRAULICALLY APPLIED WOOD FIBER
00280.14E	MATTING - TYPE B SLOPE	BIONET S75BN	WESTERN GREEN 800/582-4005 CASCADE GEOS 971/339-1020	12/02/21	5385	A	STRAW AND JUTE NETTING

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00280.14E	MATTING - TYPE B SLOPE	EARTHGUARD FIBER MATRIX/VERTEX	LSC ENVIRONMENTAL PRODUCTS 800/800-7671 HANES GEOCOMPONENTS 800/426-4976	01/08/09	2972	A	SPRAY W/ WOOD CELLULOSE FIBER GUAR TACKIFIER, PAM STABILIZER & STARCH BIODEGRADABLE
00280.14E	MATTING - TYPE B SLOPE	EROSION CONTROL BLANKET C 32 BD	EROSION CONTROL BLANKET 866/317-3346 ACF WEST INC 503/771-5115	05/01/15	4848	A	BIODEGRADABLE
00280.14E	MATTING - TYPE B SLOPE	EROSION CONTROL BLANKET SC 32 BD	EROSION CONTROL BLANKET 866/317-3346 ACF WEST INC 503/771-5115	02/13/15	4846	A	BIODEGRADABLE
00280.14E	MATTING - TYPE B SLOPE	EROSION CONTROL BLANKET S 32 BD	EROSION CONTROL BLANKET 866/317-3346 ACF WEST INC 503/771-5115	12/16/14	4845	A	BIODEGRADABLE
00280.14E	MATTING - TYPE B SLOPE	EROSION CONTROL BLANKET S 31 BD	EROSION CONTROL BLANKET 866/317-3346 ACF WEST INC 503/771-5115	12/16/14	4843	A	BIODEGRADABLE
00280.14E	MATTING - TYPE B SLOPE	EXCEL CS-3 ALL NATURAL	WESTERN EXCELSIOR 800/967-4009 GEOTK 360/750-1955	02/08/07	3397	A	70% WHEAT STRAW & 30% COCONUT. WITH JUTE SCRIM BIODEGRADABLE
00280.14E	MATTING - TYPE B SLOPE	FLEXTERRA HP-FGM	PROFILE PRODUCTS 847/215-1144 DAMON SUMP 503/537-8462 ACF WEST 800/878-5115	02/10/11	4205	A	FLEXIBLE GROWTH MEDIUM HYDRAULICALLY APPLIED. RECYCLED THERMALLY REFINED WOOD FIBERS BIODEGRADABLE
00280.14E	MATTING - TYPE B SLOPE	FUSION	LSC ENVIRONMENTAL PRODUCTS 800/800-7671 HANES GEOCOMPONENTS 800/426-4976	06/19/19	5199	A	HYDRO. APPLIED, GAR, PAM STABILIZER SOIL BIO-AMENDMENTS BIODEGRADABLE
00280.14E	MATTING - TYPE B SLOPE	GEOJUTE PLUS	BELTON INDUSTRIES INC 800/225/4099 ACF WEST INC 503/771/5115	06/30/11	2490	Q	NOT FOR USE AS TYPE A & C

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00280.14E	MATTING - TYPE B SLOPE	HYDRA CX2	NORTH AMERICAN GREEN 800/772-2040	05/14/09	3532	A	BIODEGRADABLE
00280.14E	MATTING - TYPE B SLOPE	KANSAS EROSION KEP-C100 NATURAL	KANSAS EROSION 919/480-5616 OBC NORTHWEST 503/266-2021	07/19/21	5357	A	BIODEGRADABLE COIR & JUTE NETTING
00280.14E	MATTING - TYPE B SLOPE	KANSAS EROSION KEP-S2 NATURAL	KANSAS EROSION 919/480-5616 OBC NORTHWEST 503/266-2021	07/19/21	5358	A	BIODEGRADABLE WHEAT STRAW & JUTE NETTING
00280.14E	MATTING - TYPE B SLOPE	KANSAS EROSION KEP-SC2 NATURAL	KANSAS EROSION 919/480-5616 OBC NORTHWEST 503/266-2021	07/19/21	5359	A	BIODEGRADABLE WHEAT STRAW & COIR, JUTE NETTING
00280.14E	MATTING - TYPE B SLOPE	SOIL GUARD	MAT, INC. 888/477-3028 (WAS WEYERHAEUSER UNTIL 12/99)	11/09/95	1403	A	MADE OF FIR AND HEMLOCK. BONDED FIBER MATRIX. HYDRAULICALLY APPLIED. BIODEGRADABLE
00280.14E	MATTING - TYPE B SLOPE HYDRAULICALLY APPLIED	BINDEX BFM	AMERICAN EXCELSIOR 888/352-9582 OR 715/236-5643 HANES GEO COMPONENTS 360/699-1426	12/10/12	4563	A	HYDRAULICALLY APPLIED WOOD FIBER
00280.14E	MATTING - TYPE B SLOPE HYDRAULICALLY APPLIED	FLEXTERRA FGM	PROFILE PRODUCTS 847/215-1144 DAMON SUMP 503/537-8462 ACF WEST 800/878-5115	11/09/06	3319	A	HYDRAULICALLY APPLIED WOOD FIBER BIODEGRADABLE
00280.14E	MATTING - TYPE B SLOPE HYDRAULICALLY APPLIED	PROMATRIX ENGINEERED FIBER MATRIX	PROFILE PRODUCTS, LLC 847/215-3454 ACF WEST 503/771-5115	09/19/12	4506	A	HYDRAULICALLY APPLIED WOOD FIBER BIODEGRADABLE
00280.14E	MATTING - TYPE C SLOPE	AIRTROL GEOBINDER	USG CORPORATION 916/417-5048 HANES GEO COMP. 800/324-4594	07/09/09	3905	A	

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00280.14E	MATTING - TYPE C SLOPE	BIONET S150BN	WESTERN GREEN 800/582-4005 CASCADE GEOS 971/339-1020	12/02/21	5386	A	STRAW AND JUTE NETTING
00280.14E	MATTING - TYPE C SLOPE	COCOFLEX ET-FGM	PROFILE PRODUCTS 847/215-1144 DAMON SUMP 503/537-8462 ACF WEST 800/878-5115	03/12/09	3803	A	EXTENDED TERM FLEXIBLE GROWTH MEDIUM. WOOD & COCONUT. BIODEGRADABLE
00280.14E	MATTING - TYPE C SLOPE	EARTHGUARD FIBER MATRIX	LSC ENVIRONMENTAL PRODUCTS 800/800-7671 HANES GEOCOMPONENTS 800/426-4976	08/13/09	2972	A	SPRAY W/ WOOD CELLULOSE FIBER GUAR TACKIFIER, PAM STABILIZER & STARCH BIO-DEGRADABLE
00280.14E	MATTING - TYPE C SLOPE	ENVIRO-SHIELD BONDED FIBER MTX	USG CORPORATION 916/417-5048 HANES GEO COMP. 800/324-4594	07/09/09	3533	A	BIODEGRADABLE
00280.14E	MATTING - TYPE C SLOPE	EROSION CONTROL BLANKET SC 32 BD	EROSION CONTROL BLANKET 866/317-3346 ACF WEST INC 503/771-5115	02/13/15	4846	A	BIODEGRADABLE
00280.14E	MATTING - TYPE C SLOPE	EROSION CONTROL BLANKET S 32 BD	EROSION CONTROL BLANKET 866/317-3346 ACF WEST INC 503/771-5115	12/16/14	4845	A	BIODEGRADABLE
00280.14E	MATTING - TYPE C SLOPE	EROSION CONTROL BLANKET C 32 BD	EROSION CONTROL BLANKET 866/317-3346 ACF WEST INC 503/771-5115	05/01/15	4848	A	BIODEGRADABLE
00280.14E	MATTING - TYPE C SLOPE	EXCEL CS-3 ALL NATURAL	WESTERN EXCELSIOR 800/967-4009 GEOTK 360/750-1955	02/08/07	3397	A	70% WHEAT STRAW & 30% COCONUT. WITH JUTE SCRIM BIODEGRADABLE
00280.14E	MATTING - TYPE C SLOPE	FLEXTERRA HP-FGM	PROFILE PRODUCTS 847/215-1144 DAMON SUMP 503/537-8462 ACF WEST 800/878-5115	02/10/11	4205	A	FLEXIBLE GROWTH MEDIUM HYDRAULICALLY APPLIED. RECYCLED THERMALLY REFINED WOOD FIBERS BIODEGRADABLE

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STANDARD SPEC #	CATEGORY	PRODUCT NAME	LOCAL REPRESENTATIVE AND/OR MANUFACTURER	EFFECTIVE DATE	PRODUCT NUMBER	LIST	REMARKS
00280.14E	MATTING - TYPE C SLOPE	FUSION	LSC ENVIRONMENTAL PRODUCTS 800/800-7671 HANES GEOCOMPONENTS 800/426-4976	06/19/19	5199	A	HYDRO. APPLIED, GAR, PAM STABILIZER SOIL BIO-AMENDMENTS BIODEGRADABLE
00280.14E	MATTING - TYPE C SLOPE	GEOJUTE	BELTON INDUSTRIES 800/225-4099 BOB MORAN ACF WEST 800/878-5115	10/11/01	2490	A	WOVEN JUTE. BIODEGRADEABLE.
00280.14E	MATTING - TYPE C SLOPE	HYDRA CM STEEP SLOPE MATRIX	NORTH AMERICAN GREEN 800/772-2040	11/11/10	4265	A	70% STRAW & 20% RECLAIMED COTTON FIBER. BIODEGRADABLE
00280.14E	MATTING - TYPE C SLOPE	HYDRA CX2	NORTH AMERICAN GREEN 800/772-2040	05/14/09	3532	A	BIODEGRADABLE
00280.14E	MATTING - TYPE C SLOPE	HYDROSTRAW ALL IN 1 BONDED FIBER MATRIX	HYDROSTRAW 800/545-1755 RON EDWARDS	07/09/15	4899	A	BIODEGRADABLE
00280.14E	MATTING - TYPE C SLOPE	HYDROSTRAW BONDED FIBER MATRIX	HYDROSTRAW 800/545-1755 ED LEE	11/11/10	4164	A	BIODEGRADABLE
00280.14E	MATTING - TYPE C SLOPE	KANSAS EROSION KEP-C100 NATURAL	KANSAS EROSION 919/480-5616 OBC NORTHWEST 503/266-2021	07/19/21	5357	A	BIODEGRADABLE COIR & JUTE NETTING
00280.14E	MATTING - TYPE C SLOPE	KANSAS EROSION KEP-S2 NATURAL	KANSAS EROSION 919/480-5616 OBC NORTHWEST 503/266-2021	07/19/21	5358	A	BIODEGRADABLE WHEAT STRAW & JUTE NETTING
00280.14E	MATTING - TYPE C SLOPE	KANSAS EROSION KEP-SC2 NATURAL	KANSAS EROSION 919/480-5616 OBC NORTHWEST 503/266-2021	07/19/21	5359	A	BIODEGRADABLE WHEAT STRAW & COIR, JUTE NETTING

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00280.14E	MATTING - TYPE C SLOPE	SOIL GUARD	MAT, INC. 888/477-3028 (WAS WEYERHAEUSER UNTIL 12/99)	11/09/95	1403	A	MADE OF FIR AND HEMLOCK. BONDED FIBER MATRIX. HYDRAULICALLY APPLIED. BIODEGRADABLE
00280.14E	MATTING - TYPE C SLOPE HYDRAULICALLY APPLIED	BINDEX BFM	AMERICAN EXCELSIOR 888/352-9582 OR 715/236-5643 HANES GEO COMPONENTS 360/699-1426	12/10/12	4563	A	HYDRAULICALLY APPLIED WOOD FIBER BIODEGRADABLE
00280.14E	MATTING - TYPE C SLOPE HYDRAULICALLY APPLIED	FLEXTERRA FGM	PROFILE PRODUCTS 847/215-1144 DAMON SUMP 503/537-8462 ACF WEST 800/878-5115	11/09/06	3319	A	HYDRAULICALLY APPLIED WOOD FIBER BIODEGRADABLE
00280.14E	MATTING - TYPE D SLOPE	BIONET S150BN	WESTERN GREEN 800/582-4005 CASCADE GEOS 971/339-1020	12/02/21	5386	A	STRAW AND JUTE NETTING
00280.14E	MATTING - TYPE D SLOPE	COCOFLEX ET-FGM	PROFILE PRODUCTS 847/215-1144 DAMON SUMP 503/537-8462 ACF WEST 800/878-5115	03/12/09	3803	A	EXTENDED TERM FLEXIBLE GROWTH MEDIUM. WOOD & COCONUT.
00280.14E	MATTING - TYPE D SLOPE	CURLEX NET FREE	AMERICAN EXCELSIOR 888/352-9582 OR 715/236-5643 HANES GEO COMPONENTS 360/699-1426	11/13/08	3712	A	BIODEGRADABLE
00280.14E	MATTING - TYPE D SLOPE	EARTHGUARD FIBER MATRIX/VERTEX	LSC ENVIRONMENTAL PRODUCTS 800/800-7671 HANES GEOCOMPONENTS 800/426-4976	08/13/09	2972	A	SPRAY W/ WOOD CELLULOSE FIBER GUAR TACKIFIER, PAM STABILIZER & STARCH BIODEGRADABLE
00280.14E	MATTING - TYPE D SLOPE	EROSION CONTROL BLANKET SC 32 BD	EROSION CONTROL BLANKET 866/317-3346 ACF WEST INC 503/771-5115	02/13/15	4846	A	BIODEGRADABLE
00280.14E	MATTING - TYPE D SLOPE	EROSION CONTROL BLANKET C 32 BD	EROSION CONTROL BLANKET 866/317-3346 ACF WEST INC 503/771-5115	05/01/15	4848	A	BIODEGRADABLE

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00280.14E	MATTING - TYPE D SLOPE	EROSION CONTROL BLANKET S 32 BD	EROSION CONTROL BLANKET 866/317-3346 ACF WEST INC 503/771-5115	12/16/14	4845	A	BIODEGRADABLE
00280.14E	MATTING - TYPE D SLOPE	EXCEL CS-3 ALL NATURAL	WESTERN EXCELSIOR 800/967-4009 GEOTK 360/750-1955	02/08/07	3397	A	70% WHEAT STRAW & 30% COCONUT. WITH JUTE SCRIM BIODEGRADABLE
00280.14E	MATTING - TYPE D SLOPE	FLEXTERRA HP-FGM	PROFILE PRODUCTS 847/215-1144 DAMON SUMP 503/537-8462 ACF WEST 800/878-5115	02/10/11	4205	A	FLEXIBLE GROWTH MEDIUM HYDRAULICALLY APPLIED. RECYCLED THERMALLY REFINED WOOD FIBERS BIODEGRADABLE
00280.14E	MATTING - TYPE D SLOPE	FUSION	LSC ENVIRONMENTAL PRODUCTS 800/800-7671 HANES GEOCOMPONENTS 800/426-4976	06/19/19	5199	A	HYDRO. APPLIED, GAR, PAM STABILIZER SOIL BIO-AMENDMENTS BIODEGRADABLE
00280.14E	MATTING - TYPE D SLOPE	GEOJUTE PLUS	BELTON INDUSTRIES INC 800/225/4099 ACF WEST INC 503/771/5115	06/30/11	2490	Q	NOT FOR USE AS TYPE A & C
00280.14E	MATTING - TYPE D SLOPE	GROUNDCONTROL HY-C3 STRAW & COTTON	EAST COAST EROSION CONTROL 610/488-8496	05/03/13	4619	A	HYDRAULICALLY APPLIED BIODEGRADABLE
00280.14E	MATTING - TYPE D SLOPE	GROUNDCONTROL HY-C4 STRAW & COTTON	EAST COAST EROSION CONTROL 610/488-8496	05/03/13	4620	A	HYDRAULICALLY APPLIED BIODEGRADABLE
00280.14E	MATTING - TYPE D SLOPE	HYDRA CM STEEP SLOPE MATRIX	NORTH AMERICAN GREEN 800/772-2040	11/11/10	4265	A	70% STRAW & 20% RECLAIMED COTTON FIBER. BIODEGRADABLE
00280.14E	MATTING - TYPE D SLOPE	HYDRA CX2	NORTH AMERICAN GREEN 800/772-2040	05/14/09	3532	A	BIODEGRADABLE

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00280.14E	MATTING - TYPE D SLOPE	KANSAS EROSION KEP-C100 NATURAL	KANSAS EROSION 919/480-5616 OBC NORTHWEST 503/266-2021	07/19/21	5357	A	BIODEGRADABLE COIR & JUTE NETTING
00280.14E	MATTING - TYPE D SLOPE	KANSAS EROSION KEP-S2 NATURAL	KANSAS EROSION 919/480-5616 OBC NORTHWEST 503/266-2021	07/19/21	5358	A	BIODEGRADABLE WHEAT STRAW & JUTE NETTING
00280.14E	MATTING - TYPE D SLOPE	KANSAS EROSION KEP-SC2 NATURAL	KANSAS EROSION 919/480-5616 OBC NORTHWEST 503/266-2021	07/19/21	5359	A	BIODEGRADABLE WHEAT STRAW & COIR, JUTE NETTING
00280.14E	MATTING - TYPE D SLOPE	SOIL GUARD	MAT, INC. 888/477-3028 (WAS WEYERHAEUSER UNTIL 12/99)	11/09/95	1403	A	MADE OF FIR AND HEMLOCK. BONDED FIBER MATRIX. HYDRAULICALLY APPLIED. BIODEGRADABLE
00280.14E	MATTING - TYPE D SLOPE HYDRAULICALLY APPLIED	BINDEX BFM	AMERICAN EXCELSIOR 888/352-9582 OR 715/236-5643 HANES GEO COMPONENTS 360/699-1426	12/10/12	4563	A	HYDRAULICALLY APPLIED WOOD FIBER BIODEGRADABLE
00280.14E	MATTING - TYPE D SLOPE HYDRAULICALLY APPLIED	FLEXTERRA FGM	PROFILE PRODUCTS 847/215-1144 DAMON SUMP 503/537-8462 ACF WEST 800/878-5115	01/08/09	3319	A	HYDRAULICALLY APPLIED WOOD FIBER BIODEGRADABLE
00280.14E	MATTING - TYPE E FLEXIBLE CHANNEL LINER	EROSION CONTROL BLANKET SC 32 BD	EROSION CONTROL BLANKET 866/317-3346 ACF WEST INC 503/771-5115	02/13/15	4846	A	BIODEGRADABLE
00280.14E	MATTING - TYPE E FLEXIBLE CHANNEL LINER	EXCEL CS-3 ALL NATURAL	WESTERN EXCELSIOR 800/967-4009 GEOTK 360/750-1955	02/08/07	3397	A	70% WHEAT STRAW & 30% COCONUT. WITH JUTE SCRIM BIODEGRADABLE
00280.14E	MATTING - TYPE E FLEXIBLE CHANNEL LINER	KANSAS EROSION KEP-C100 NATURAL	KANSAS EROSION 919/480-5616 OBC NORTHWEST 503/266-2021	07/19/21	5357	A	BIODEGRADABLE COIR & JUTE NETTING

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00280.14E	MATTING - TYPE E FLEXIBLE CHANNEL LINER	KANSAS EROSION KEP-S2 NATURAL	KANSAS EROSION 919/480-5616 OBC NORTHWEST 503/266-2021	07/19/21	5358	A	BIODEGRADABLE WHEAT STRAW & JUTE NETTING
00280.14E	MATTING - TYPE E FLEXIBLE CHANNEL LINER	KANSAS EROSION KEP-SC2 NATURAL	KANSAS EROSION 919/480-5616 OBC NORTHWEST 503/266-2021	07/19/21	5359	A	BIODEGRADABLE WHEAT STRAW & COIR, JUTE NETTING
00280.14E	MATTING - TYPE E FLEXIBLE CHANNEL LINER	KOIRMAT 700	NEDIA ENTERPRISES 888/725-6999	05/14/09	3718	A	BIODEGRADABLE
00280.14E	MATTING - TYPE E FLEXIBLE CHANNEL LINER	NORTH AMERICAN GREEN C125BN	NORTH AMERICAN GREEN 800/772-2040 ACF WEST 800/878-5115	11/08/07	3565	A	BIODEGRADABLE JUTE COCONUT
00280.14E	MATTING - TYPE E SLOPE	EROSION CONTROL BLANKET C 32 BD	EROSION CONTROL BLANKET 866/317-3346 ACF WEST INC 503/771-5115	05/01/15	4848	A	BIODEGRADABLE
00280.14E	MATTING - TYPE F FLEXIBLE CHANNEL LINER	AEC PREMIER STRAW DOUBLE NET	AMERICAN EXCELSIOR 888/352-9582 OR 715/236-5643 HANES GEO COMPONENTS 360/699-1426	01/09/12	4527	A	STRAW
00280.14E	MATTING - TYPE F FLEXIBLE CHANNEL LINER	AEC PREMIER STRAW/COCONUT	AMERICAN EXCELSIOR 888/352-9582 OR 715/236-5643 HANES GEO COMPONENTS 360/699-1426	01/09/12	3520	A	70% WHEAT STRAW & 30% COCONUT.
00280.14E	MATTING - TYPE F FLEXIBLE CHANNEL LINER	CURLEX ENFORCER	AMERICAN EXCELSIOR 888/352-9582 OR 715/236-5643 HANES GEO COMPONENTS 360/699-1426	11/14/02	2637	A	ASPEN EXCELSIOR WITH POLY NETTING ON BOTH SIDES.
00280.14E	MATTING - TYPE F FLEXIBLE CHANNEL LINER	CURLEX III (STITCHED)	AMERICAN EXCELSIOR 888/352-9582 OR 715/236-5643 HANES GEO COMPONENTS 360/699-1426	12/12/02	2621	A	ASPEN EXCELSIOR WITH POLY NETTING ON BOTH SIDES.

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00280.14E	MATTING - TYPE F FLEXIBLE CHANNEL LINER	ECP-2 POLYPROPYLENE TURF REINFORCEMENT MAT (TRM)	EAST COAST EROSION BLANKETS 610/488-8496 LAYFIELD COPORATION 800/796-6868	02/13/15	4852	Q	CONSTRUCTION MATERIAL CMO REQUIRED
00280.14E	MATTING - TYPE F FLEXIBLE CHANNEL LINER	ECP-3 POLYPROPYLENE TURF REINFORCEMENT MAT (TRM)	EAST COAST EROSION BLANKETS 610/488-8496 LAYFIELD COPORATION 800/796-6868	02/13/15	4853	Q	CONSTRUCTION MATERIAL CMO REQUIRED
00280.14E	MATTING - TYPE F FLEXIBLE CHANNEL LINER	ERONET P300	WESTERN GREEN 800/582-4005 CASCADE GEOS 971/339-1020	12/02/21	5387	Q	POLYPROPYLENE NET CONSTRUCTION MATERIAL CMO REQUIRED
00280.14E	MATTING - TYPE F FLEXIBLE CHANNEL LINER	EROSION CONTROL BLANKET SC 32 BD	EROSION CONTROL BLANKET 866/317-3346 ACF WEST INC 503/771-5115	02/13/15	4846	A	
00280.14E	MATTING - TYPE F FLEXIBLE CHANNEL LINER	EROSION CONTROL BLANKET SC 32	EROSION CONTROL BLANKET 866/317-3346 ACF WEST INC 503/771-5115	02/13/15	4849	A	
00280.14E	MATTING - TYPE F FLEXIBLE CHANNEL LINER	EROSION CONTROL BLANKET PC 42	EROSION CONTROL BLANKET 866/317-3346 ACF WEST INC 503/771-5115	02/20/15	4851	A	
00280.14E	MATTING - TYPE F FLEXIBLE CHANNEL LINER	EROSION CONTROL BLANKET EX 32	EROSION CONTROL BLANKET 866/317-3346 ACF WEST INC 503/771-5115	12/16/14	4841	A	
00280.14E	MATTING - TYPE F FLEXIBLE CHANNEL LINER	EROSION CONTROL BLANKET C 32	EROSION CONTROL BLANKET 866/317-3346 ACF WEST INC 503/771-5115	12/16/14	4847	A	
00280.14E	MATTING - TYPE F FLEXIBLE CHANNEL LINER	EROSION CONTROL BLANKET P 42	EROSION CONTROL BLANKET 866/317-3346 ACF WEST INC 503/771-5115	12/16/14	4850	Q	CONSTRUCTION MATERIAL CMO REQUIRED

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00280.14E	MATTING - TYPE F FLEXIBLE CHANNEL LINER	EXCEL CC-4	WESTERN EXCELSIOR 800/967-4009 GEOTK 360/750-1955	02/08/07	3399	A	COCONUT FIBER
00280.14E	MATTING - TYPE F FLEXIBLE CHANNEL LINER	EXCEL PP5-10	WESTERN EXCELSIOR 800/967-4009 GEOTK 360/750-1955	12/14/06	3304	A	POLYFIBER
00280.14E	MATTING - TYPE F FLEXIBLE CHANNEL LINER	EXCEL PP5-12	WESTERN EXCELSIOR 800/967-4009 GEOTK 360/750-1955	02/08/07	3401	A	SYNTHETIC FIBERS
00280.14E	MATTING - TYPE F FLEXIBLE CHANNEL LINER	EXCEL PP5-8	WESTERN EXCELSIOR 800/967-4009 GEOTK 360/750-1955	02/08/07	3400	A	POLY FIBERS
00280.14E	MATTING - TYPE F FLEXIBLE CHANNEL LINER	EXCEL SD-3	WESTERN EXCELSIOR 800/967-4009 GEOTK 360/750-1955	02/08/07	3398	A	ASPEN EXCELSIOR
00280.14E	MATTING - TYPE F FLEXIBLE CHANNEL LINER	GREEN ARMOR SYSTEM 7020	PROFILE PRODUCTS 847/215-1144 DAMON SUMP 503/537-8462 ACF WEST 800/878-5115	05/10/18	5124	A	
00280.14E	MATTING - TYPE F FLEXIBLE CHANNEL LINER	KOIRMAT 700	NEDIA ENTERPRISES 888/725-6999	05/14/09	3718	A	
00280.14E	MATTING - TYPE F FLEXIBLE CHANNEL LINER	LANDLOK 435	PROPEX OPERATING COMPANY, LLC 423/553-2463 ACF WEST INC 503/771-5115	10/29/12	4544	Q	TURF REINFORCEMENT MAT CONSTRUCTION MATERIAL CMO REQUIRED
00280.14E	MATTING - TYPE F FLEXIBLE CHANNEL LINER	LANDLOK 450	PROPEX OPERATING COMPANY, LLC 423/553-2463 ACF WEST INC 503/771-5115	10/29/12	4545	Q	TURF REINFORCEMENT MAT CONSTRUCTION MATERIAL CMO REQUIRED

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00280.14E	MATTING - TYPE F FLEXIBLE CHANNEL LINER	LANDLOK C2	PROPEX OPERATING COMPANY, LLC 423/553-2463 ACF WEST INC 503/771-5115	10/29/12	4543	A	COCONUT FIBER
00280.14E	MATTING - TYPE F FLEXIBLE CHANNEL LINER	LANDLOK CS2	PROPEX OPERATING COMPANY, LLC 423/553-2463 ACF WEST INC 503/771-5115	10/29/12	4542	A	70% WHEAT STRAW 30% COCONUT FIBER
00280.14E	MATTING - TYPE F FLEXIBLE CHANNEL LINER	LANDLOK S2	PROPEX OPERATING COMPANY, LLC 423/553-2463 ACF WEST INC 503/771-5115	10/29/12	4541	A	WHEAT STRAW
00280.14E	MATTING - TYPE F FLEXIBLE CHANNEL LINER	NORTH AMERICAN GREEN C125BN	NORTH AMERICAN GREEN 800/772-2040 ACF WEST 800/878-5115	11/08/07	3565	A	BIODEGRADABLE JUTE COCONUT
00280.14E	MATTING - TYPE F FLEXIBLE CHANNEL LINER	NORTH AMERICAN GREEN C350	NORTH AMERICAN GREEN 800/772-2040 ACF WEST 800/878-5115	07/10/97	1378	A	COCONUT
00280.14E	MATTING - TYPE F FLEXIBLE CHANNEL LINER	NORTH AMERICAN GREEN S150 STRAW MATS	NORTH AMERICAN GREEN 800/772-2040 OR 812/687-6632 ACF WEST 800/878-5115	03/15/89	297	A	WHEAT STRAW
00280.14E	MATTING - TYPE F FLEXIBLE CHANNEL LINER	RECYCLEX - TRM	AMERICAN EXCELSIOR 888/352-9582 OR 715/236-5643 HANES GEO COMPONENTS 360/699-1426	11/09/06	2618	Q	ARTIFICAL FIBER (SODA BOTTLES) CONSTRUCTION MATERIAL CMO REQUIRED
00280.14E	MATTING - TYPE F FLEXIBLE CHANNEL LINER	T-RECS HIGH PERFOMANCE TRM	EAST COAST EROSION CONTROL 610/488-8496	05/03/13	4617	Q	CONSTRUCTION MATERIAL CMO REQUIRED
00280.14E	MATTING - TYPE G FLEXIBLE CHANNEL LINER	CURLEX ENFORCER	AMERICAN EXCELSIOR 888/352-9582 OR 715/236-5643 HANES GEO COMPONENTS 360/699-1426	11/14/02	2637	A	ASPEN EXCELSIOR WITH POLY NETTING ON BOTH SIDES.

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00280.14E	MATTING - TYPE G FLEXIBLE CHANNEL LINER	ECP-2 POLYPROPYLENE TURF REINFORCEMENT MAT (TRM)	EAST COAST EROSION BLANKETS 610/488-8496 LAYFIELD COPORATION 800/796-6868	02/13/15	4852	Q	CONSTRUCTION MATERIAL CMO REQUIRED
00280.14E	MATTING - TYPE G FLEXIBLE CHANNEL LINER	ECP-3 POLYPROPYLENE TURF REINFORCEMENT MAT (TRM)	EAST COAST EROSION BLANKETS 610/488-8496 LAYFIELD COPORATION 800/796-6868	02/13/15	4853	Q	CONSTRUCTION MATERIAL CMO REQUIRED
00280.14E	MATTING - TYPE G FLEXIBLE CHANNEL LINER	EROSION CONTROL BLANKET EX 32	EROSION CONTROL BLANKET 866/317-3346 ACF WEST INC 503/771-5115	12/16/14	4841	A	
00280.14E	MATTING - TYPE G FLEXIBLE CHANNEL LINER	EROSION CONTROL BLANKET PC 42	EROSION CONTROL BLANKET 866/317-3346 ACF WEST INC 503/771-5115	02/20/15	4851	A	
00280.14E	MATTING - TYPE G FLEXIBLE CHANNEL LINER	EROSION CONTROL BLANKET P 42	EROSION CONTROL BLANKET 866/317-3346 ACF WEST INC 503/771-5115	12/16/14	4850	Q	CONSTRUCTION MATERIAL CMO REQUIRED
00280.14E	MATTING - TYPE G FLEXIBLE CHANNEL LINER	EXCEL PP5-10	WESTERN EXCELSIOR 800/967-4009 GEOTK 360/750-1955	12/14/06	3304	A	POLYFIBER
00280.14E	MATTING - TYPE G FLEXIBLE CHANNEL LINER	EXCEL PP5-12	WESTERN EXCELSIOR 800/967-4009 GEOTK 360/750-1955	02/08/07	3401	A	SYNTHETIC FIBERS
00280.14E	MATTING - TYPE G FLEXIBLE CHANNEL LINER	EXCEL PP5-8	WESTERN EXCELSIOR 800/967-4009 GEOTK 360/750-1955	02/08/07	3400	A	POLY FIBERS
00280.14E	MATTING - TYPE G FLEXIBLE CHANNEL LINER	GREEN ARMOR SYSTEM 7020	PROFILE PRODUCTS 847/215-1144 DAMON SUMP 503/537-8462 ACF WEST 800/878-5115	05/10/18	5124	A	MUST BE VEGETATED PER DATA SHEET TO MEET SHEAR STRENGTH SPECIFICATIONS

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00280.14E	MATTING - TYPE G FLEXIBLE CHANNEL LINER	KOIRMAT 700	NEDIA ENTERPRISES 888/725-6999	05/14/09	3718	A	
00280.14E	MATTING - TYPE G FLEXIBLE CHANNEL LINER	RECYCLEX - TRM	AMERICAN EXCELSIOR 888/352-9582 OR 715/236-5643 HANES GEO COMPONENTS 360/699-1426	11/09/06	2618	Q	ARTIFICAL FIBER (SODA BOTTLES) CONSTRUCTION MATERIAL CMO REQUIRED
00280.14E	MATTING - TYPE G FLEXIBLE CHANNEL LINER	RECYCLEX TRM-V	AMERICAN EXCELSIOR 888/352-9582 OR 715/236-5643 HANES GEO COMPONENTS 360/699-1426	01/09/12	4528	Q	TURF REINFORCEMENT MAT PERMANENT 100% RECYCLED CONSTRUCTION MATERIAL CMO REQUIRED
00280.14E	MATTING - TYPE G FLEXIBLE CHANNEL LINER	T-RES HIGH PERFORMANCE TRM	EAST COAST EROSION CONTROL 610/488-8496	02/13/15	4617	Q	CONSTRUCTION MATERIAL CMO REQUIRED
00280.14E	MATTING - TYPE H FLEXIBLE CHANNEL LINER	ARMORFLEX CLOSED CELL BLOCK	CONTECH ENGINEERED SOLUTIONS, LLC 503/258-3101	01/10/08	3590	A	SUBJECT TO APPROVAL BY NATURAL RESOURCE AGENCIES AT DESIGN. CONCRETE BLOCKS
00280.14E	MATTING - TYPE H FLEXIBLE CHANNEL LINER	ARMORFLEX OPEN CELL BLOCK	CONTECH ENGINEERED SOLUTIONS, LLC 503/258-3101	02/14/08	3575	A	
00280.14E	MATTING - TYPE H FLEXIBLE CHANNEL LINER	ARMORFLEX TAPERED CELL BLOCK	CONTECH ENGINEERED SOLUTIONS, LLC 503/258-3101	02/14/08	3591	A	
00280.14E	MATTING - TYPE H FLEXIBLE CHANNEL LINER	ECP-2 POLYPROPYLENE TURF REINFORCEMENT MAT (TRM)	EAST COAST EROSION BLANKETS 610/488-8496 LAYFIELD COPORATION 800/796-6868	02/13/15	4852	Q	CONSTRUCTION MATERIAL CMO REQUIRED
00280.14E	MATTING - TYPE H FLEXIBLE CHANNEL LINER	ECP-3 POLYPROPYLENE TURF REINFORCEMENT MAT (TRM)	EAST COAST EROSION BLANKETS 610/488-8496 LAYFIELD COPORATION 800/796-6868	02/13/15	4853	Q	CONSTRUCTION MATERIAL CMO REQUIRED

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00280.14E	MATTING - TYPE H FLEXIBLE CHANNEL LINER	EROSION CONTROL BLANKET PC 42	EROSION CONTROL BLANKET 866/317-3346 ACF WEST INC 503/771-5115	02/20/15	4851	A	
00280.14E	MATTING - TYPE H FLEXIBLE CHANNEL LINER	EROSION CONTROL BLANKET P 42	EROSION CONTROL BLANKET 866/317-3346 ACF WEST INC 503/771-5115	12/16/14	4850	Q	CONSTRUCTION MATERIAL CMO REQUIRED
00280.14E	MATTING - TYPE H FLEXIBLE CHANNEL LINER	EROSION CONTROL BLANKET P42 TRM	EROSION CONTROL BLANKET 866/317-3346 ACF WEST INC	11/13/08	3701	Q	CONSTRUCTION MATERIAL CMO REQUIRED
00280.14E	MATTING - TYPE H FLEXIBLE CHANNEL LINER	EXCEL PP5-10	WESTERN EXCELSIOR 800/967-4009 GEOTK 360/750-1955	12/14/06	3304	A	POLYFIBER
00280.14E	MATTING - TYPE H FLEXIBLE CHANNEL LINER	EXCEL PP5-12	WESTERN EXCELSIOR 800/967-4009 GEOTK 360/750-1955	02/08/07	3401	A	SYNTHETIC FIBERS
00280.14E	MATTING - TYPE H FLEXIBLE CHANNEL LINER	EXCEL PP5-8	WESTERN EXCELSIOR 800/967-4009 GEOTK 360/750-1955	02/08/07	3400	A	POLY FIBERS
00280.14E	MATTING - TYPE H FLEXIBLE CHANNEL LINER	GREEN ARMOR SYSTEM 7020	PROFILE PRODUCTS 847/215-1144 DAMON SUMP 503/537-8462 ACF WEST 800/878-5115	05/10/18	5124	A	MUST BE VEGETATED PER DATA SHEET TO MEET SHEAR STRENGTH SPECIFICATIONS
00280.14E	MATTING - TYPE H FLEXIBLE CHANNEL LINER	LANDLOK 1051	PROPEX OPERATING COMPANY, LLC 423/553-2463 ACF WEST INC 503/771-5115	10/29/12	4546	Q	TURF REINFORCEMENT MAT CONSTRUCTION MATERIAL CMO REQUIRED
00280.14E	MATTING - TYPE H FLEXIBLE CHANNEL LINER	PYRAMAT	PROPEX OPERATING COMPANY, LLC 423/553-2463 ACF WEST INC 503/771-5115	10/29/12	4547	Q	TURF REINFORCEMENT MAT CONSTRUCTION MATERIAL CMO REQUIRED

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00280.14E	MATTING - TYPE H FLEXIBLE CHANNEL LINER	RECYCLEX - TRM	AMERICAN EXCELSIOR 888/352-9582 OR 715/236-5643 HANES GEO COMPONENTS 360/699-1426	11/09/06	2618	Q	ON THE TEXAS QPL. ARTIFICAL FIBER (SODA BOTTLES) CONSTRUCTION MATERIAL CMO REQUIRED
00280.14E	MATTING - TYPE H FLEXIBLE CHANNEL LINER	RECYCLEX TRM-V	AMERICAN EXCELSIOR 888/352-9582 OR 715/236-5643 HANES GEO COMPONENTS 360/699-1426	01/09/12	4528	Q	 CONSTRUCTION MATERIAL CMO REQUIRED
00280.14E	MATTING - TYPE H FLEXIBLE CHANNEL LINER	T-RES HIGH PERFORMANCE TRM	EAST COAST EROSION CONTROL 610/488-8496	02/13/15	4617	Q	 CONSTRUCTION MATERIAL CMO REQUIRED
00280.15A	CHECK DAM, TYPE 2	BMH-STRAW WATTLE W/NATURAL FIBER BIO-DEGRADABLE NETING 9", 12"	BLUE MOUNTAIN HAY, LLC 541/968-8565	11/09/20	5301	A	BIODEGRADABLE NETTING (BURLAP OR TENCEL)
00280.15A	CHECK DAM, TYPE 2	WESTERN FIBER ROLL 9"	WESTERN FIBER COMPANY DON SUGARMAN 310/939-9254	06/17/21	5339	A	BIODEGRADABLE NETTING (COTTON)
00280.15A	CHECK DAM, TYPE 3	BIO FILTER BAG	CITY OF ROSES DISPOSAL AND RECYCLING INC. 503/849-8881	11/12/09	2430	A	NOT BIO-DEGRADEABLE SHORT TERM WAS NAMED GRABHORN BIO FILTER BAG
00280.15A	CHECK DAM, TYPE 3	CURLEX SEDIMENT LOG	AMERICAN EXCELSIOR 888/352-9582 OR 715/236-5643 HANES GEO COMPONENTS 360/699-1426	05/08/08	2624	A	NOT BIO-DEGRADEABLE
00280.15A	CHECK DAM, TYPE 3	CURLEX SFW WATTLES	AMERICAN EXCELSIOR 888/352-9582 OR 715/236-5643 HANES GEO COMPONENTS 360/699-1426	02/13/15	4863	A	NOT BIO-DEGRADEABLE
00280.15A	CHECK DAM, TYPE 3	FILTREXX FILTERSOXX DITCHCHEXX	FILTREXX INTERNATIONAL 440/926-2607	12/08/05	3257	A	NOT BIO-DEGRADEABLE

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00280.15A	CHECK DAM, TYPE 3	RICE STRAW FIBER ROLL	KRISTAR ENTERPRISES 800/579-8819	11/09/06	2634	A	AVAILABLE,PHOTO OR BIODEGRADABLE NETTING
00280.15A	CHECK DAM, TYPE 3	SILTRAP CHECK BAG	HIGHWAY FUEL 503/363-6444	10/13/20	5260	A	
00280.15A	CHECK DAM, TYPE 4	WOVEN POLYPROPYLENE SANDBAG MODEL: PPB1426T1600	SACRAMENTO BAG CO 800/287-2247 BUSSARD EROSION CONTROL 800/252-2692	07/11/02	2429	A	NOT BIODEGRADEABLE
00280.15A	CHECK DAM, TYPE 5	GEOBALE	GEOHAY 864/472-7000	12/13/07	3579	A	NOT BIO-DEGRADEABLE
00280.15A	CHECK DAM, TYPE 5	GEOFILTER	GEOHAY 864/472-7000	12/13/07	3580	A	NOT BIO-DEGRADEABLE
00280.15A	CHECK DAM, TYPE 5	GEO-RIDGE	NILEX 303/766-2000 ACF WEST 800/878-5115	04/14/05	2357	A	OK FOR REDUCING VELOCITITES, BUT NOT AS A CHECK DAM ALONE. USE WITH A MATTING NOT BIO-DEGRADEABLE
00280.15A	CHECK DAM, TYPE 5	TRIANGULAR SILT DIKE	TRIANGULAR SILT DIKE CO, INC. REP: JASON ROACH 405/741-7406 CSI GEOSYNTHETICS 800/426-7976	09/13/01	1592	A	GEOTEXTILE FABRIC AND URETHANE FOAM. NOT BIO-DEGRADEABLE
00280.15A	CHECK DAM, TYPE: OTHER	EARTHSAVER RICE STRAW WATTLES	RH DYCK 530/662-7700 BUSSARD EROSION 541/926-7747	11/09/06	2431	A	NOT BIO-DEGRADEABLE
00280.15A	CHECK DAM, TYPE: OTHER STRAW WATTLE	PERMALOK/PERMEATEX STRAW WATTL	NORTHWEST LININGS & GEOTEXTILE 253/867-5366	10/14/10	4194	A	NOT BIO-DEGRADEABLE

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00280.15D	SLOPE DRAIN, TEMPORARY	TRIANGULAR SILT DIKE	TRIANGULAR SILT DIKE CO, INC. REP: JASON ROACH 405/741-7406 CSI GEOSYNTHETICS 800/426-7976	09/13/01	1592	A	APPEARS TO BE A SUITABLE SUBSTITUTE FOR STRAW BALES OR SAND BAGS.
00280.15F	COMPOST FILTER SOCK MATERIAL	E-TUBE FILTER SOCK FABRIC	SOIL-TEK ETUBE FILTER SOCK PRODUCTS 515/480-0873	08/13/14	4761	A	FABRIC FOR RUNOFF CONTROL MATERIALS NOT FULLY BIODEGRADABLE PHOTO-DEGRADABLE
00280.15F	COMPOST FILTER SOCK MATERIAL	FILTREXX SILTSOXX BIOSOXX	FILTREXX 404/687-8393	10/24/19	5219	A	FABRIC FOR RUNOFF CONTROL MATERIALS BIO-DEGRADABLE
00280.15F	COMPOST FILTER SOCK MATERIAL	FILTREXX SILTSOXX WITH NATURAL PLUS MESH BIODEGRADABLE	FILTREXX 404/687-8393	12/28/20	5330	A	FABRIC FOR RUNOFF CONTROL MATERIALS BIO-DEGRADABLE
00280.15F	COMPOST FILTER SOCK MATERIAL	PAC-SOCK COMPOST FILTER SOCK	PACIFIC CONTRACTOR SUPPLY 541/936-2619	07/07/21	5352	A	FABRIC FOR RUNOFF CONTROL MATERIALS PHOTO-DEGRADABLE
00280.16D	INLET PROTECTION TYPE 10	CURB INLET SEDIMENT DAM	AMERICAN ENVIRON. CARDWELL; 541/688-7609 FAMILIAN NW 800/456-8611	10/10/02	2203	A	DESIGNED FOR CURBED INLET PROTECTION. NEED TO MONITOR.
00280.16D	INLET PROTECTION - TYPE 1	BASIN WORK'R ECO	MIKE'S PRODUCTS 503/256-5607	07/24/15	4885	A	
00280.16D	INLET PROTECTION - TYPE 1	MIKE'S PROD POCKETD SILT FENCE	MIKE'S PRODUCTS 503/256-5607 RESPONSIVE SUPPLY 503/804-7860	04/08/10	3996	A	
00280.16D	INLET PROTECTION - TYPE 1 CURB	DP DRAIN TOPPER CURB	DP 208/270-1225	09/30/20	5292	A	CURB

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00280.16D	INLET PROTECTION - TYPE 3	BASIN WORK'R ECO NO FRAME	MIKE'S PRODUCTS 503/256-5607	07/24/15	4885	A	VERIFY PRODUCT SIZE VS INLET SIZE. INSTALL AND MONITOR PER MFG INSTRUCTIONS
00280.16D	INLET PROTECTION - TYPE 3	DANDY CURB BAG SURFACE AND CURB INLET	DANDY PRODUCTS, INC 800/591-2284 SPILL CONTROL, INC 800/300-1649	11/17/14	4814	A	DESIGNED FOR 250 GPM/FTSQ VERIFY PRODUCT SIZE VS INLET SIZE. INSTALL AND MONITOR PER MFG INSTRUCTIONS
00280.16D	INLET PROTECTION - TYPE 3	DANDY CURB SACK SURFACE AND CURB INLET	DANDY PRODUCTS, INC 800/591-2284 SPILL CONTROL, INC 800/300-1649	11/17/14	4810	A	DESIGNED FOR 250 GPM/FTSQ VERIFY PRODUCT SIZE VS INLET SIZE. INSTALL AND MONITOR PER MFG INSTRUCTIONS
00280.16D	INLET PROTECTION - TYPE 3	DANDY SACK NO FRAME	DANDY PRODUCTS, INC 800/591-2284 SPILL CONTROL, INC 800/300-1649	11/17/14	4812	A	DESIGNED FOR 250 GPM/FTSQ VERIFY PRODUCT SIZE VS INLET SIZE. INSTALL AND MONITOR PER MFG INSTRUCTIONS
00280.16D	INLET PROTECTION - TYPE 3	DRAIN BAGS NO FRAME	SPILL CONTROL,INC 800/300-1649	10/24/12	4539	A	VERIFY PRODUCT SIZE VS INLET SIZE. INSTALL PER MFG INSTRUCTIONS. MONITOR & MAINTAIN AS REQUIRED
00280.16D	INLET PROTECTION - TYPE 3	DRAIN WEB DW4000REC 36"X24" FRAMED	ENVIROMET 360/944-6100	12/20/17	5103	A	VERIFY PRODUCT SIZE VS INLET SIZE. INSTALL PER MFG INSTRUCTIONS. MONITOR & MAINTAIN AS REQUIRED
00280.16D	INLET PROTECTION - TYPE 3	DREAM STREAM GCDOTFB-3624 NO FRAME 36"X36"	THE GATE COMPANY 360/273-5802 MANARK PRODUCTS 360/790-9271	10/14/10	4174	A	VERIFY PRODUCT SIZE VS INLET SIZE. INSTALL PER MFG INSTRUCTIONS. MONITOR & MAINTAIN AS REQUIRED
00280.16D	INLET PROTECTION - TYPE 3	FLEXSTORM INLET FILTER FRAMED	INLET & PIPE PROTECTION 866/287-8655 ADVANCED DRAINAGE SYSTEMS 800/821-6710	04/08/10	3965	A	VERIFY PRODUCT SIZE VS INLET SIZE. INSTALL PER MFG INSTRUCTIONS. MONITOR & MAINTAIN AS REQUIRED
00280.16D	INLET PROTECTION - TYPE 3	FRAME & FILTER ASSEMBLY-DOME POLYMER FRAME	SILT SAVER, INC 770/388-7818 FERGUSON 541/618-7418	12/20/17	5101	A	VERIFY PRODUCT SIZE VS INLET SIZE. INSTALL PER MFG INSTRUCTIONS. MONITOR & MAINTAIN AS REQUIRED

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00280.16D	INLET PROTECTION - TYPE 3	HI-FLOW SILTSACK	ACF ENVIRONMENTAL DAVID KELLY 800/448-3636 DIST.: ACF WEST, INC. MELISSA HURLEY 503/771-5115	09/13/01	1164	A	VERIFY PRODUCT SIZE VS INLET SIZE. INSTALL AND MONITOR PER MFG INSTRUCTIONS REBAR USED INPLACE OF FRAME
00280.16D	INLET PROTECTION - TYPE 3	INLET PRO UNIERSAL W/FRAME 16"X20" - 28"X36"	HANES GEO COMPONENTS 888/239-4539 360/831-3613	04/02/21	5317	A	
00280.16D	INLET PROTECTION - TYPE 3	MIKE'S PRODUCTS BASIN WORK'R FRAMED	MIKE'S PRODUCTS 503/256-5607 RESPONSIVE SUPPLY 503/804-7860	04/08/10	3995	A	VERIFY PRODUCT SIZE VS INLET SIZE. INSTALL PER MFG INSTRUCTIONS. MONITOR & MAINTAIN AS REQUIRED
00280.16D	INLET PROTECTION - TYPE 3	NON-WOVEN SILT SACK	ACF ENVIRONMENTAL DAVID KELLY 800/448-3636	02/10/05	2958	A	VERIFY PRODUCT SIZE VS INLET SIZE INSTALL AND MONITOR PER MFG INSTRUCTIONS REBAR USED INPLACE OF FRAME
00280.16D	INLET PROTECTION - TYPE 3	REGULAR FLOW SILTSACK	ACF ENVIRONMENTAL 804/271/2363 ACF WEST 800/878/5115	08/01/11	4442	A	VERIFY PRODUCT SIZE VS INLET SIZE INSTALL AND MONITOR PER MFG INSTRUCTIONS REBAR USED INPLACE OF FRAME
00280.16D	INLET PROTECTION - TYPE 3	STORM DRAIN DEFENDER DD300REC 16"X20 TO 24"X36 FRAMED	ENVIROMET 360/944-6100	12/20/17	5102	A	VERIFY PRODUCT SIZE VS INLET SIZE. INSTALL PER MFG INSTRUCTIONS. MONITOR & MAINTAIN AS REQUIRED
00280.16D	INLET PROTECTION - TYPE 3	STORM SENTINEL MODEL 4320NO 48" X 36" NO FRAME	ENPAC CORPORATION 800/936-7229 PAT GOTHRO (ENPAC)253/288-9215 FNW- DOUG MYERS 253/437-5141 FNW- MIKE STEWART 503/240-6747	04/29/14	4745	A	VERIFY PRODUCT SIZE VS INLET SIZE. INSTALL PER MFG INSTRUCTIONS. MONITOR & MAINTAIN AS REQUIRED NO OVERFLOW
00280.16D	INLET PROTECTION - TYPE 3	STORM SENTINEL MODEL 4326NO 60" X 60" NO FRAME	ENPAC CORPORATION 800/936-7229 PAT GOTHRO (ENPAC)253/288-9215 FNW- DOUG MYERS 253/437-5141 FNW- MIKE STEWART 503/240-6747	04/29/14	4746	A	VERIFY PRODUCT SIZE VS INLET SIZE. INSTALL PER MFG INSTRUCTIONS. MONITOR & MAINTAIN AS REQUIRED NO OVERFLOW
00280.16D	INLET PROTECTION - TYPE 3	STORM SENTINEL MODEL 4341	ENPAC CORPORATION 800/936-7229 PAT GOTHRO (ENPAC)253/288-9215 FNW- DOUG MYERS 253/437-5141 FNW- MIKE STEWART 503/240-6747	11/09/06	2936	A	VERIFY PRODUCT SIZE VS INLET SIZE. INSTALL PER MFG INSTRUCTIONS. MONITOR & MAINTAIN AS REQUIRED WAS MODEL 1341

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00280.16D	INLET PROTECTION - TYPE 3	STORM SENTINEL MODEL 4341 NO 36" X 24" FRAMED	ENPAC CORPORATION 800/936-7229 PAT GOTHRO (ENPAC)253/288-9215 FNW- DOUG MYERS 253/437-5141 FNW- MIKE STEWART 503/240-6747	04/29/14	4747	A	VERIFY PRODUCT SIZE VS INLET SIZE. INSTALL PER MFG INSTRUCTIONS. MONITOR & MAINTAIN AS REQUIRED NO OVERFLOW
00280.16D	INLET PROTECTION - TYPE 3	STORM SENTINEL MODEL 4348 16"X20" TO 28"X36" FRAMED	ENPAC CORPORATION 800/936-7229 PAT GOTHRO (ENPAC)253/288-9215 FNW- DOUG MYERS 253/437-5141 FNW- MIKE STEWART 503/240-6747	10/14/10	4119	A	VERIFY PRODUCT SIZE VS INLET SIZE. INSTALL PER MFG INSTRUCTIONS. MONITOR & MAINTAIN AS REQUIRED
00280.16D	INLET PROTECTION - TYPE 3	STORMGUARD FRAMED	SPILL CONTROL,INC 800/300-1649	12/24/12	4538	A	VERIFY PRODUCT SIZE VS INLET SIZE. INSTALL PER MFG INSTRUCTIONS. MONITOR & MAINTAIN AS REQUIRED
00280.16D	INLET PROTECTION - TYPE 3	STREAMGUARD NO FRAME	FOSS INTERNATIONAL AND INFRASTRUCTURE SERVICES CO. JOE SMITH 206/378-4101	10/11/01	1600	A	VERIFY PRODUCT SIZE VS INLET SIZE. INSTALL PER MFG INSTRUCTIONS. MONITOR & MAINTAIN AS REQUIRED
00280.16D	INLET PROTECTION - TYPE 3	ULTRA-DRAIN GUARD ADJ. FRAME MOD. #8930	ULTRATECH INTERNATIONAL 800/353-1611 EXT 211	05/02/13	4611	A	ADJUSTABLE FRAME INSTALL PER MFG INSTRUCTIONS. MONITOR & MAINTAIN AS REQUIRED
00280.16D	INLET PROTECTION - TYPE 3	ULTRA-DRAIN GUARD RE-USABLE NO FRAME	ULTRATECH INTERNATIONAL 800/353-1611 EXT 211	11/09/06	3308	A	VERIFY PRODUCT SIZE VS INLET SIZE. INSTALL PER MFG INSTRUCTIONS. MONITOR & MAINTAIN AS REQUIRED
00280.16D	INLET PROTECTION - TYPE 3	WIRELESS DRAIN WEB DD-W-100 (SERIES)	ENVIROMET 360/944-6100	04/02/18	5114	A	MODEL DD-100 HAS AN OVER FLOW MODEL DD-W100NO NO OVER FLOW
00280.16D	INLET PROTECTION - TYPE 3 24" X 36" MAX	ULTRA-DRAIN GUARD ECONOMY FRAME ADJ. FRAME MOD. #8936	ULTRATECH INTERNATIONAL 800/353-1611 EXT 211	11/21/19	5224	A	ADJUSTABLE FRAME INSTALL PER MFG INSTRUCTIONS. MONITOR & MAINTAIN AS REQUIRED OVERFLOW OPENINGS
00280.16D	INLET PROTECTION - TYPE 3 GAS & OIL	ULTRA-DRAIN GUARD OIL & SEDIME NO FRAME	ULTRATECH INTERNATIONAL 800/353-1611 EXT 211	01/10/08	3309	A	FOR GAS & OIL. VERIFY PRODUCT SIZE VS INLET SIZE. INSTALL PER MFG INSTRUCTIONS. MONITOR & MAINTAIN AS REQUIRED

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00280.16D	INLET PROTECTION - TYPE 4	BIO FILTER BAG	CITY OF ROSES DISPOSAL AND RECYCLING INC. 503/849-8881	11/12/09	2430	A	NOT BIO-DEGRADEABLE WAS NAMED GRABHORN BIO FILTER BAG
00280.16D	INLET PROTECTION - TYPE 4	SILTRAP BIO BAGS	HIGHWAY FUEL 503/363-6444	11/13/08	3697	A	PRESIZED WOOD CHIPS IN POLY MESH BAG.
00280.16D	INLET PROTECTION - TYPE 4	SLOPEGARD 3	KRISTAR ENTERPRIS 800/579-8819	11/09/06	2633	A	
00280.16D	INLET PROTECTION - TYPE 6 OTHER	GEOFILTER	GEOHAY 864/472-7000	12/13/07	3580	A	
00280.16D	INLET PROTECTION - TYPE 7	CURLEX SEDIMENT LOG	AMERICAN EXCELSIOR 888/352-9582 OR 715/236-5643 HANES GEO COMPONENTS 360/699-1426	05/08/08	2624	A	
00280.16D	INLET PROTECTION - TYPE 7	CURLEX SFW WATTLES	AMERICAN EXCELSIOR 888/352-9582 OR 715/236-5643 HANES GEO COMPONENTS 360/699-1426	02/13/15	4863	A	
00280.16D	INLET PROTECTION - TYPE 7	DREAM STREAM GCDOTFB-3624	THE GATE COMPANY 360/273-5802 MANARK PRODUCTS 360/790-9271	10/14/10	4174	A	NEED TO MONITOR.
00280.16D	INLET PROTECTION - TYPE 7	ENVIRO STRAW 9" STRAW WATTLE	ENVIRO-STRAW 208/270-1225	01/21/14	4703	A	
00280.16D	INLET PROTECTION - TYPE 7	FILTREXX FILTERSOXX INLETSOXX	FILTREXX INTERNATIONAL 440/926-2607	12/08/05	3258	A	

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00280.16D	INLET PROTECTION - TYPE 7	FILTREXX FILTERSOXX SILTSOXX	FILTREXX INTERNATIONAL 440/926-2607	06/11/09	3256	A	USE MFG APPROVED COMPOST MEDIA & ADDITIVES & MEET ODOT SPECS.
00280.16D	INLET PROTECTION - TYPE 7	SS FIBER ROLLS (9X25) UV	EROSION CONTROL SERVICES MARK CLELLAND 208/337-4620	04/08/10	3928	A	
00280.16E	SEDIMENT BARRIER, OTHER	DIRTBAG 55	ACF ENVIRONMENTAL DAVID KELLY 800/448-3636 DIST.: ACF WEST, INC. MELISSA HURLEY 503/771-5115	02/12/09	1886	A	THIS BAG IS 180" BY 180". AND TESTED TO 100 LB/IN2. APPLICATION: DOWNSTREAM END OF PIPE.
00280.16E	SEDIMENT BARRIER, OTHER	FILTREXX FILTERSOXX SILTSOXX	FILTREXX INTERNATIONAL 440/926-2607	06/11/09	3256	A	USE MFG APPROVED COMPOST MEDIA & ADDITIVES & MEET ODOT SPECS.
00280.16E	SEDIMENT BARRIER, TYPE 1	ENVIRO STRAW 9" STRAW WATTLE	ENVIRO-STRAW 208/270-1225	01/21/14	4703	A	
00280.16E	SEDIMENT BARRIER, TYPE 3	AEC PREMIER STRAW WATTLES	AMERICAN EXCELSIOR 888/352-9582 OR 715/236-5643 HANES GEO COMPONENTS 360/699-1426	11/09/06	3327	A	
00280.16E	SEDIMENT BARRIER, TYPE 3	CAL VISTA RICE STRAW WATTLE 8 X 25	CAL VISTA EROSION CONTROL JERRY SHADINGER 530/476-0706	12/11/08	3526	A	
00280.16E	SEDIMENT BARRIER, TYPE 3	EARTHSAVER 8.25x25 WHEAT STRAW WATTLE	EARTHSAVERS EROSION CONTROL 530/662-7700	05/31/12	4410	A	PHOTODEGRADABLE
00280.16E	SEDIMENT BARRIER, TYPE 3	EARTHSAVER RICE STRAW WATTLES	RH DYCK 530/662-7700 BUSSARD EROSION 800/252-2692 CSI GEOSYNTHETICS 360/699-1426	07/11/02	2431	A	

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00280.16E	SEDIMENT BARRIER, TYPE 3	IEC 9" STRAW WATTLE	IDAHO EROSION CONTROL 208/329-9120 PACIFIC GEOSOURCE 503/261-3515	10/14/10	4184	A	
00280.16E	SEDIMENT BARRIER, TYPE 3	OSW-NATURAL NET STRAW WATTLE	OREGON STRAW WATTLE 503/519-0848	09/10/18	5151	A	WHEAT/RYE STRAW BIODEGRADABLE
00280.16E	SEDIMENT BARRIER, TYPE 3	OSW-R9 STRAW WATTLE	OREGON STRAW WATTLE 503/519-0848	12/11/08	3722	A	RYE STRAW
00280.16E	SEDIMENT BARRIER, TYPE 3	RICE STRAW FIBER ROLL	KRISTAR ENTERPRIS 800/579-8819	11/09/06	2634	A	
00280.16E	SEDIMENT BARRIER, TYPE 3	SEDIMENTSTOP	NORTH AMERICAN GREEN 800/772-2040 ACF WEST 800/878-5115	07/13/06	3286	A	
00280.16E	SEDIMENT BARRIER, TYPE 3	SLOPEGARD 1	KRISTAR ENTERPRIS 800/579-8819	11/09/06	2632	A	APPEARS OK AS TYPE 3 SEDIMENT BARRIER.
00280.16E	SEDIMENT BARRIER, TYPE 3	SOIL STOPPERS RICE STRAW WATTL 9" WATTLE	SOIL STOPPERS 209/993-2109	03/08/07	3439	A	
00280.16E	SEDIMENT BARRIER, TYPE 3	SS FIBER ROLLS (9X25) UV	EROSION CONTROL SERVICES MARK CLELLAND 208/337-4620	04/08/10	3928	A	TYPE 3.
00280.16E	SEDIMENT BARRIER, TYPE 3	STRAW WATTLE 9"	KT MANUFACTURING 208/576-3301	09/26/18	5153	A	PHOTODEGRADABLE 6-12 MONTHS OR 12-18 MONTHS AVAILABLE

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00280.16E	SEDIMENT BARRIER, TYPE 3	WESTERN FIBER 9" STRAW WATTLE	WESTERN FIBER CO. 661/854-5556 OR 310/939-9254	11/13/08	3710	A	WHEAT STRAW, POLYETHYLENE NET PHOTODEGRADABLE
00280.16E	SEDIMENT BARRIER, TYPE 3 STRAW WATTLE	PERMALOK/PERMEATEX STRAW WATTL	NORTHWEST LININGS & GEOTEXTILE 253/867-5366	10/14/10	4194	A	RICE STRAW
00280.16E	SEDIMENT BARRIER, TYPE 4	WOVEN POLYPROPYLENE SANDBAG MODEL: PPB1426T1600	SACRAMENTO BAG CO 800/287-2247 BUSSARD EROSION CONTROL 800/252-2692	07/11/02	2429	A	
00280.16E	SEDIMENT BARRIER, TYPE 7	ENVIRONMENTAL BARRICADE	BONAR PLASTICS 360/887-2230 ENVIRONMENTAL BARRICADES RICHARD STRIEFEL 800/656-1296	06/14/01	2401	A	
00280.16E	SEDIMENT BARRIER, TYPE 7	GEOBALE	GEOHAY 864/472-7000	12/13/07	3579	A	
00280.16E	SEDIMENT BARRIER, TYPE 7	GEOFILTER	GEOHAY 864/472-7000	12/13/07	3580	A	
00280.16E	SEDIMENT BARRIER, TYPE 7	HARD SURFACE GUARD	ERTEC ENVIRONMENTAL SYSTEMS 866/521-0724	11/05/18	5146	A	
00280.16E	SEDIMENT BARRIER, TYPE 7	PROWATTLE	ERTEC ENVIRONMENTAL SYSTEMS 866/521-0724	11/05/18	5144	A	
00280.16E	SEDIMENT BARRIER, TYPE 7	S-FENCE	ERTEC ENVIRONMENTAL SYSTEMS 866/521-0724	11/05/18	5145	A	

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00280.16E	SEDIMENT BARRIER, TYPE 7	TRIANGULAR SILT DIKE	TRIANGULAR SILT DIKE CO, INC. REP: JASON ROACH 405/741-7406 CSI GEOSYNTHETICS 800/426-7976	09/13/01	1592	A	DO NOT USE IN WATER. RE-USEABLE. SUITABLE SUBSTITUTION FOR SAND BAGS.
00280.16E	SEDIMENT BARRIER, TYPE 8	SILTRAP BIOFILTER SOCK	HIGHWAY FUEL 503/363-6444	05/12/20	5259	A	BIODEGRADABLE SWITCHGRASS NOT APPROVED NOT REUSABLE, NOT MOVABLE ONCE PLACED
00280.16F	SEDIMENT MAT	SEDIMAT	INDIAN VALLEY INDUSTRIES 800/659-5111 CSI GEOSYNTHETICS 800/426-7976	06/14/07	1924	A	FOR USE ON DOWNSTREAM END OF OUTLET END OF PIPE.
00280.16K	SEDIMENT CONTROL MATERIAL FLOCCULANT	CHITOSAN LACTATE PASSIVE TREATMENT SOCK/GELFLOC SOCK	SOUND ENVIRONMENTAL CONCEPTS,LLC 206/730-5376	11/14/17	5082	A	
00280.16K	SEDIMENT CONTROL MATERIAL FLOCCULANT	CHITOVAN LIQUID (ACETATE) 1%	DUNGENESS ENVIRONMENTAL 206/730-5370 ACF WEST 800/878-5115 CSI GEOSYNTHETICS 800/426-7976	09/11/10	3837	A	
00280.16K	SEDIMENT CONTROL MATERIAL FLOCCULENT	CHITOVAN CHITOSAN LACTATE CARTRIDGE	DUNGENESS ENVIRONMENTAL SOLUTIONS, INC 425/481-0600 HANES GEO SOLUTIONS 360/831-3613	10/05/20	5293	A	
00340.11A	CHEMICAL DUST CONTROL-DRY TYPE 2	AIRTROL GEOBINDER	USG CORPORATION 916/417-5048 HANES GEO COMP. 800/324-4594 HANES GEO COMPONENTS 800/324-4595	07/09/09	3905	A	
00340.11A	CHEMICAL DUST CONTROL-DRY TYPE 2	DUST ARMOUR	USG CORPORATION 916/417-5048 HANES GEO COMP. 800/324-4594	07/09/09	3904	A	
00340.11A	CHEMICAL DUST CONTROL-DRY TYPE 2	DUST STOP	CYPHER INTERNATIONAL LTD. 204/489-1214	01/10/08	3173	A	MFG CLAIMS NATURAL POLYSACCHARIDES.

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01012.11	POROUS PAVERS LIGHT, MEDIUM, HEAVY DUTY	STORM WATER CONTROL WATER QUALITY BIOFILTRATION SWALE		01/01/22		A	SEE SECTION 01011.11
01030.15A	MULCHES TEMPORARY	RAINIER FIBER	RAINIER VENEER INC FIBER MARKETING INT INC 206/459/4942	02/16/11	4346	A	
01030.15A	MULCHES TEMPORARY W/TACK	RAINIER FIBER + TAC	RAINIER VENEER INC FIBER MARKETING INT INC 206/459/4942	02/16/11	4347	A	
01030.15A	MULCHES, TEMPORARY	AIRTROL GEOBINDER	USG CORPORATION 916/417-5048 HANES GEO COMP. 800/324-4594	07/09/09	3905	A	
01030.15A	MULCHES, TEMPORARY	BINDEX BLEND	AMERICAN EXCELSIOR 888/352-9582 OR 715/236-5643 HANES GEO COMPONENTS 360/699-1426	12/10/12	4565	A	60% WOOD FIBER 40% RECYCLED PAPER
01030.15A	MULCHES, TEMPORARY	BINDEX WOOD	AMERICAN EXCELSIOR 888/352-9582 OR 715/236-5643 HANES GEO COMPONENTS 360/699-1426	12/10/12	4566	A	WOOD FIBERS
01030.15A	MULCHES, TEMPORARY	EARTH BARRIER MBFM	AGRIVESTMENTS 253/383-5014	08/14/08	3670	A	
01030.15A	MULCHES, TEMPORARY	ENVIRO-BLANKET MULCH W/AIRTROL WOOD FIBER HYDRAULIC MULCH	USG CORPORATION 916/417-5048 HANES GEO COMP. 800/324-4594	07/09/09	3907	A	
01030.15A	MULCHES, TEMPORARY	ENVIRO-BLANKET WOOD FIBR MULCH HYDRAULIC MULCH	USG CORPORATION 916/417-5048 HANES GEO COMP. 800/324-4594	07/09/09	3906	A	

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01030.15A	MULCHES, TEMPORARY	ENVIROPAM L	INNOVATIVE TURF SOLUTIONS 513/317-8311	03/10/11	4318	A	WAS NAMED HYDRAPAM
01030.15A	MULCHES, TEMPORARY	ENVIROPAM(L) LIQUID	INNOVATIVE TURF SOLUTIONS 513/317-8311	03/10/11	4318	A	WAS NAMED HYDRAPAM (L)
01030.15A	MULCHES, TEMPORARY	ENVIRO-SHIELD BONDED FIBER MATRIX	USG CORPORATION 916/417-5048 HANES GEO COMP. 800/324-4594	12/11/08	3533	A	HYDRAULICALLY APPLIED MULCH.
01030.15A	MULCHES, TEMPORARY	EXCEL FIBERMULCH II	AMERICAN EXCELSIOR 888/352-9582 OR 715/236-5643 HANES GEO COMPONENTS 360/699-1426	11/14/02	2625	A	ON TEXAS DOT QPL.
01030.15A	MULCHES, TEMPORARY	GEOSKIN	MULCH & SEED INNOVATION 205/540-5775	08/13/09	3897	A	85% STRAW & 15% COTTON PLANT MATERIAL.
01030.15A	MULCHES, TEMPORARY	GRASS MULCH	GRASS FIBER INC. 520 E. 2ND ST JUNCTION CITY, OR 97448	05/01/88	2131	A	MAIN COMPONENT:CELLULOSE FIBER ORGANIC. WITHOUT TACKIFIER.
01030.15A	MULCHES, TEMPORARY	GROUNDCONTROL HY-C1 STRAW & COTTON	EAST COAST EROSION CONTROL 610/488-8496	05/03/13	4618	A	HYDRAULICALLY APPLIED
01030.15A	MULCHES, TEMPORARY	GROUNDCONTROL HY-C3 STRAW & COTTON	EAST COAST EROSION CONTROL 610/488-8496	05/03/13	4619	A	HYDRAULICALLY APPLIED
01030.15A	MULCHES, TEMPORARY	HYDRA CM STEEP SLOPE MATRIX	NORTH AMERICAN GREEN 800/772-2040 OR 812/687-6632	11/11/10	4265	A	70% STRAW & 20% RECLAIMED COTTON FIBER.

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01030.15A	MULCHES, TEMPORARY	HYDROSPRAY	CELLULOSE FIBER 253/627-8008 EMERALD SEED & SUPPLY 541/504-0307	11/09/06	3063	A	INSTALL PER 01030.48(A)3.
01030.15A	MULCHES, TEMPORARY	HYDROSTRAW ALL IN 1 BONDED FIBER MATRIX	HYDROSTRAW 800/545-1755 RON EDWARDS	07/09/15	4899	A	
01030.15A	MULCHES, TEMPORARY	HYDROSTRAW BONDED FIBER MATRIX	HYDROSTRAW 800/545-1755 RON EDWARDS	11/11/10	4164	A	
01030.15A	MULCHES, TEMPORARY	HYDROSTRAW GUAR PLUS FORMULA	HYDROSTRAW 800/545-1755 RON EDWARDS	11/11/10	4165	A	3% GUAR
01030.15A	MULCHES, TEMPORARY	HYDROSTRAW HE CELLULOSE FIBER PLUS	PROFILE PRODUCTS, LLC 800/578-2354 ACF WEST 503/771-5115	09/24/21	5365	A	WHEAT STRAW FIBERS HIGH VISCOSITY COLLOIDAL POLYSACCHARIDES
01030.15A	MULCHES, TEMPORARY	MAT-FIBER	MAT, INC. 888/477-3028 CSI GEOSYNTHETICS 800/426-7976	01/13/05	2981	A	WOOD FIBER FOR HYDRO SEEDING
01030.15A	MULCHES, TEMPORARY	MAT-FIBER PLUS	MAT, INC. 888/477-3028 CSI GEOSYNTHETICS 800/426-7976	01/13/05	2982	A	WOOD FIBER FOR HYDRO SEEDING W/3% GUAR GUM TACKIFER.
01030.15A	MULCHES, TEMPORARY	NATURE'S OWN MULCH W/O TAC	HAMILTON MANUFACTURING 208/733-9689	03/12/98	1727	A	MAIN COMPONENT: CELLULOSE FIBER - PAPER/WOOD. ORGANIC. W/O TACKIFIER. RECYCLED PAPER/WOOD FIBER.
01030.15A	MULCHES, TEMPORARY	NATURESOWN MULCH W/TAC	HAMILTON MANUFACTURING 208/733-9689	02/27/12	4450	A	

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ODOT CONSTRUCTION / MATERIALS SECTION
QUALIFIED PRODUCTS LIST
APPROVED LIST - NO SAMPLES OR TESTS REQUIRED*
QUALIFIED LIST - ADDITIONAL REQUIREMENTS**
JANUARY 2024

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01030.15A	MULCHES, TEMPORARY	PAM 12	ENCAP 877/405-5050	12/11/08	3545	A	PAPER/STRAW WITH TACKIFIER.
01030.15A	MULCHES, TEMPORARY	PERMAMATRIX BIOTIC SOIL AMENDM	SUNMARK ENVIRONMENTAL 503/241-7333	11/11/10	4218	A	
01030.15A	MULCHES, TEMPORARY	PROFILE SB 50/50	PROFILE PRODUCTS, LL 808/312-7671 ACF WEST INC 503/849-0971	04/11/22	5425	A	HYDRAULICALLY APPLIED
01030.15A	MULCHES, TEMPORARY	PROFILE WOOD	PROFILE PRODUCTS 847/215-1144 DAMON SUMP 503/537-8462 ACF WEST 800/878-5115	07/13/06	3316	A	
01030.15A	MULCHES, TEMPORARY	PROFILE WOOD WITH TACK	PROFILE PRODUCTS 847/215-1144 DAMON SUMP 503/537-8462 ACF WEST 800/878-5115	03/13/08	3611	A	WOOD FIBER W/3% GUAR GUM TACKIFIER
01030.15A	MULCHES, TEMPORARY	SSEC LEGACY BLEND	PROFILE PRODUCTS, LLC 800/578-2354 CASCADE GEOSYNTHETICS 971/339-1019	09/24/21	5366	A	WHEAT STRAW FIBERS
01030.15A	MULCHES, TEMPORARY	TURBOMULCH 70% WOOD	WESTERN EXCELSIOR 800/967-4009 GEOTK 360/750-1955 DIST.: EMERALD SEED & SUPPLY	06/08/00	1804	A	WOOD FIBER, ORGANIC. W/O TACKIFIER. BIODEGRADABLE. 70% WOOD, 30% PAPER W/DYE.
01030.15A	MULCHES, TEMPORARY	WOODSTRAW	FOREST CONCEPTS 877/838-4759	12/13/07	3587	A	
01030.15A	MULCHES, TEMPORARY W/ TACKIFIER	BINDEX BLEND WT	AMERICAN EXCELSIOR 888/352-9582 OR 715/236-5643 HANES GEO COMPONENTS 360/699-1426	12/10/12	4564	A	60% WOOD FIBER 40% RECYCLED PAPER

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01030.15A	MULCHES, TEMPORARY W/ TACKIFIER	BINDEX WOOD WT	AMERICAN EXCELSIOR 888/352-9582 OR 715/236-5643 HANES GEO COMPONENTS 360/699-1426	12/10/12	4567	A	WOOD FIBERS
01030.15A	MULCHES, TEMPORARY W/O TACKIFIER	NATURESOWN EVOLUTION 70	HAMILTON MANUFACTURING 208/733-9689	02/10/11	4202	A	AGRICULTURAL FIBERS AND WOOD CELLULOSE FIBERS. HYDR APPLIED
01030.15A	MULCHES, TEMPORARY W/TACKIFIER	NATURESOWN EVOLUTION	HAMILTON MANUFACTURING 208/733-9689	02/10/11	4203	A	AGRICULTURAL FIBERS AND WOOD CELLULOSE FIBERS. HYDR APPLIED GUAR BASED TAC
01030.15A	MULCHES, TEMPORARY W/TACKIFIER	NATURESOWN X9000	HAMILTON MANUFACTURING 208/733-9689	02/10/11	204	A	AGRICULTURAL FIBERS AND WOOD CELLULOSE FIBERS. HYDR APPLIED POLYMER BASED TAC
01030.15A	MULCHING TEMPORARY	NATURESOWN EVOLUTION 70	HAMILTON MANUFACTURING INC 208/733/9689	08/04/11	4202	A	
01040.17	SOIL BIO-AMENDMENT	BACTIFEED SOIL TREATMENT	TERRA SANA, LLC 801/556-3727 SPOIL YOUR SOIL, LLC 541/761-6958	06/12/18	5140	A	
01040.17	SOIL BIO-AMENDMENT	MYCOAPPLY ENDO	MYCORRHIZAL APPLICATIONS 866/476-7800 OR 541/476-3985	02/11/10	3938	A	
01040.17	SOIL BIO-AMENDMENT	MYCOAPPLY ENDO PLUS	MYCORRHIZAL APPLICATIONS 866/476-7800 OR 541/476-3985	02/11/10	3939	A	
01040.17	SOIL BIO-AMENDMENT	MYCOAPPLY ENDO/ECTO PLUS	MYCORRHIZAL APPLICATIONS 866/476-7800 OR 541/476-3985	02/11/10	3940	A	

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01040.17	SOIL BIO-AMENDMENT	MYCOAPPLY ENDONET	MYCORRHIZAL APPLICATIONS 866/476-7800 OR 541/476-3985	02/11/10	3944	A	
01040.17	SOIL BIO-AMENDMENT	MYCOAPPLY MICRONIZED ENDO	MYCORRHIZAL APPLICATIONS 866/476-7800 OR 541/476-3985	02/11/10	3941	A	
01040.17	SOIL BIO-AMENDMENT	MYCOAPPLY MICRONIZED ENDO/ECTO	MYCORRHIZAL APPLICATIONS 866/476-7800 OR 541/476-3985	02/11/10	3942	A	
01040.17	SOIL BIO-AMENDMENT	MYCOAPPLY SOLUBLE MAXX	MYCORRHIZAL APPLICATIONS 866/476-7800 OR 541/476-3985	02/11/10	3943	A	
01040.17	SOIL BIO-AMENDMENT	NATURE'S OWN LIVING HUMUS	NATURE'S NEEDS 503/647-9489	04/14/05	2947	A	
01040.17	SOIL BIO-AMENDMENT	PERMAMATRIX BIOTIC SOIL AMENDM	SUNMARK ENVIRONMENTAL 503/241-7333	11/11/10	4218	A	
01040.17E	SOIL BIO-AMENDMENT MYCORRHIZAL	BIOTIC EARTH BLACK	VERDYOL PLANT REASEARCH 320/910-4800 ACF WEST 503/771-5115	05/30/13	4663	A	
01040.17E	SOIL BIO-AMENDMENT MYCORRHIZAL	FUSION	LSC ENVIRONMENTAL PRODUCTS 800/800-7671 HANES GEOCOMPONENTS 800/426-4976	06/19/19	5199	A	HYDRO. APPLIED, GAR, PAM STABILIZER SOIL BIO-AMENDMENTS
01040.17E	SOIL BIO-AMENDMENT MYCORRHIZAL	PROGANICS BIOTIC SOIL MEDIA (BSM)	PROFILE PRODUCTS LLC 800/508-8681 ACF WEST 503/771-5115	08/04/15	4897	A	

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01040.17F	SOIL BIO-AMENDMENT MICROBES	AG-1000	TERAGANIX 866/396-8976 EMERGE DNA 458/215-9922	12/04/20	5314	A	
01040.22	MOISTURE RETENTION CHEMICAL - FOR SOIL	SOIL MOIST - POLYMER	JRM CHEMICAL 800/962-4010 1675 MARYLHURST DR WEST LINN, OR 97068 503/636-8849	11/09/06	446	Q	ACRYLIC POLYMER REDUCE WATERINGS BY 50%. INTENDED FOR PLANTING IN LOW MOISTURE AREAS. CONSTRUCTION MATERIAL CMO REQUIRED
01070.00	MAILBOX SUPPORTS	T&T MAILBOX SUPPORT MODELS 15001 & 15002	TRAFFIC SAFETY/TAPCO 800/547-8518	07/14/05	3166	A	SLIGHT MODIFICATION OF TAPCO SUPPORT BY TRAFFIC SAFETY TO MEET OUR REQUIREMENTS - RD100. INCLUDES V-WING ANCHOR (20VR3)
01090.11	WEED CONTROL GEOTEXTILE	MIRAFI MSCAPE E	TENCATE GEOSYNTHETICS 480/489-0601 CASCADE GEOSYNTHETICS 971/339-1020	03/24/22	5398	Q	CONSTRUCTION MATERIAL CMO REQUIRED
02010.10	CEMENT, TYPE I, II	ASIA CEMENT COMPANY TAIWAN	ASHGROVE CEMENT CO. DAVE BURG 503/207-2109	12/09/20	5306	A	ASIA CEMENT COMPANY TAIWAN AASHTO TYPE I, II
02010.10	CEMENT, TYPE I, II	CAL PORTLAND - MOJAVE CEMENT	CALPORTLAND COMPANY DAVE GERMER 971/235-2540	12/11/08	3724	A	
02010.10	CEMENT, TYPE I, II	CAL PORTLAND - NANJING	CALPORTLAND COMPANY DAVE GERMER 971/235-2540	05/14/09	1619	A	SOURCE: ONODA (NANJING).
02010.10	CEMENT, TYPE I, II	NEVADA CEMENT	NEVADA CEMENT 775/575-2281 LAKEVIEW REDIMIX 541/947-2212	01/12/06	3229	A	SUBSTANCIALLY MET AASHTO M85 TYPE I, DID NOT MEET TYPE II REQUIREMENTS.
02010.10	CEMENT, TYPE III	ASH GROVE CEMENT - MONTANA CITY	ASHGROVE CEMENT CO. DAVE BURG 503/207-2109	04/03/19	5189	A	MONTANA CITY AASHTO TYPE III

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INSERT TAB

NTMAG

OREGON DEPARTMENT OF TRANSPORTATION

CONSTRUCTION SECTION

NONFIELD-TESTED MATERIALS ACCEPTANCE GUIDE

2024 STANDARD SPECIFICATIONS

January 2024 UPDATE

Updated versions of this guide are available by printing from the web address listed below. This document is to be used as a guide for documentation required for acceptance of Materials on ODOT Construction projects and does not relieve the user of requirements specified in the Construction Project Documents. Please notify the Contract Administration Unit, in the Construction Section at the ODOT Materials Laboratory, of any changes in Standard Drawings, Special Provisions, or Standard Specifications, etc., which would require additions to, deletions from, or changes to this listing.

Internet Address: https://www.oregon.gov/ODOT/Construction/Pages/Structure-Services.aspx

Contact 541-784-7721 to have correction made to this guide. A summary of changes since last publication is found at the end of this document.

*Special Provisions, Contract Plans, and Standard Specifications take precedence over this guide per 00150.10(a). Refer to the Contract for documentation requirements.

SECTION	TYPE OF CONSTRUCTION	MATERIALS	SUBSECTION	ACCEPTANCE DOCUMENTS				REMARKS
				FURNISHED BY CONTRACTOR TO		FURNISHED BY AGENCY		
				LAB	ENGR.	MATERIALS LAB	FIELD PERSONNEL	
		Rock Gabion Baskets	Refer to 00596A in this guide.					
00245**SP** *(con't)*	Temporary Water Management *(continued)*	Turbidity Monitoring	00245.60		R			"R" is Turbidity Monitoring Reports according to 00290.30(a)(8).
00250 **Special Provision**	Diversion Bridges *Refer to Special Provisions for any additional Contract-specific requirements.*	Submittals	00250.03		E			"E" is submittal(s) according to 00250.03 and 00150.35, at least 14 days before preinstallation conference.
		New Material	Refer to 00500 in this guide.					
		- Precast Prestressed Concrete Members	Refer to 00550 in this guide.					
		Used Material	00250.10(c)					
		- Structural Steel Members > Documented Steel > Undocumented Steel	00250.10(c)(2) 02530		T, Q, O		F	
		- Timber Members	Refer to 00570 in this guide.					
		- Piling, Steel Piles	Refer to 00520 in this guide.					Used timber piles not allowed.
00252 **Special Provision**	Temporary Work Bridges	Submittals	00252.40		E			"E" is submittal(s) according to 00252.40 and 00150.35.
00253	Temporary Work Access and Containment	Submittals	00253.03		E			"E" is submittal(s) according to 00253.03 and 00150.35, a minimum of 21 Calendar Days before preconstruction conference.
00270	Temporary Fences	New Materials	Refer to 01050.10 in this guide.					Refer to Contract Documents for required Materials.
		Temporary Barrier	Refer to 00226.11(a) in this guide.					Refer to Contract Documents for required Materials.
00280	Erosion and Sediment Control (ESC) *Engineer must ensure specified Materials and measures for Erosion and Sediment Control are used and documentation provided as required in this guide.*	Erosion and Sediment Control Plan - on Agency Controlled Lands - on Non-Agency Controlled Lands	00280.04 00280.05		E			"E" is submittal(s) according to 00280.04 and 00280.05 at least 10 Calendar Days before preconstruction conference. Note on test summary the date plan was received. Plan does not need to be submitted with semi-final documentation for non-Doc Express Projects.
		Erosion and Sediment Control Manager	00280.30		P			"P" is current ODOT ESCM certification or documentation of successful completion of alternative erosion control training accepted by Engineer submitted according to 00280.30 at least 10 Calendar Days before preconstruction conference.
	(continued on next page)	Erosion and Sediment Control Monitoring	00280.30 00280.62		R			"R" is Erosion and Sediment Control Monitoring Reports according to 00280.30 and 00280.62.

SECTION	TYPE OF CONSTRUCTION	MATERIALS	SUBSECTION	ACCEPTANCE DOCUMENTS				REMARKS
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				LAB	ENGR.	MATERIALS LAB	FIELD PERSONNEL	
00280 *(con't)*	Erosion and Sediment Control (ESC) *(continued)* *For temporary items under 00280, Engineer must verify items are as required by Contract Documents and functioning as intended.* *For permanent items under 00280, Engineer must acquire and retain the required documentation.*	Seed (Temporary)	01030.13		T		F	"T" is germination and purity information from tag on seed bag.
		Fertilizer	01030.14		Q		F	"Q" is from manufacturer.
		Mulch, Hydromulch (temporary or permanent)	00280.14(d) 01030.15(a)		Q		F, QPL	"QPL" is for hydromulch fiber.
		Mulch, Straw (temporary or permanent)	00280.14(d) 01030.15(b)		T or Q		F	"T" is seed lab test results for weed seed content. "Q" is "Oregon Certified Seed" field source, or Department of Agriculture certified weed free.
		Slope and Channel Liner Matting – Bonded Fiber Matrix, Polypropylene or Polymer	00280.14(e)		C		F, QPL	"C" is for Construction Material CMO according to 00160.20(d) for Channel Liner Matting Type F, G, and H installed as permanent features.
		Check Dams - Cereal Straw Based Products	00280.15(a) 01030.15(b)		T or Q		F	"T" is seed lab test results for weed seed content. "Q" is "Oregon Certified Seed" field source, or Department of Agriculture certified weed free.
		Check Dams, Type 5 - Prefabricated System	00280.15(a)				F, QPL	Field fabricated systems are not acceptable.
		Compost	00280.14(f) 00280.15(a) Type 6 00280.15(f) 00280.15(g) 00280.16(d) Type 7 00280.16(e) Type 8&9 03020.00		T, Q, P/R		F	"T" is STA lab analysis of compost. "Q" is from Supplier according to 03020.10 and 00165.35. "P/R" is copy of the DEQ permit or registration of compost Supplier. **Note:** Tackifier required according to 00280.14(b)(2) for Compost Erosion Blanket and/or Compost Berm.
		Inlet Protection, Type 3 - Prefabricated Filter Inserts	00280.16(d)				F, QPL	
		Sediment Barrier – Cereal Straw Based Products	00280.16(e) 01030.15(b)		T or Q		F	"T" is seed lab test results for weed seed content. "Q" is "Oregon Certified Seed" field source, or Department of Agriculture certified weed free.
		Sediment Barriers, Type 7 - Prefabricated Barrier System	00280.16(e)				F, QPL	
		Sediment Barriers, Sediment Mat	00280.16(f)				F, QPL	
		Straw Bales	00280.14(g) 01030.15(b)		Q		F	"Q" is "Oregon Certified Seed" field source, or Department of Agriculture certified weed free.
		Sediment Control - Geotextile	Refer to 00350 in this guide.					
		Prefabricated Construction Entrance	00280.16(a)				F	"F" must document visual verification.

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				FURNISHED BY CONTRACTOR TO		FURNISHED BY AGENCY		
				LAB	ENGR.	MATERIALS LAB	FIELD PERSONNEL	
00290	Environmental Protection	Environmental Protection	Refer to Contract Specifications for restrictions and required submittals.					
		Turbidity Monitoring	00290.30(a)(8)		R			"R" is Turbidity Monitoring Reports according to Special Provision 00290.30(a)(8).
		Pollution Control Plan	00290.30(b)		E			Note on test summary the date plan was received. Plan does not need to be submitted with semi-final documentation for non-Doc Express Projects.
00300 - ROADWORK								
00305	Construction Survey Work	3D Engineered Models	00305.05		E			
00310	Removal of Structures and Obstructions	Section does not contain any nonfield-tested materials.						
00320	Clearing and Grubbing	Section does not contain any nonfield-tested materials.						
00330	Earthwork	Selected Topsoil	Refer to 01040 in this guide.					
00331	Subgrade Stabilization	Subgrade Geotextile	Refer to 00350 in this guide.					
		Subgrade Reinforcement Geogrid	Refer to 00350 in this guide.					
00335	Blasting Methods and Protection of Excavation Backslopes	Blasting Plan	00335.40(d)		E			"E" is submittal(s) according to 00335.40(d) at least 21 Calendar Days before beginning drilling for excavations or when any perimeter controlled blasting is required.
		Blasting Reports	00335.40(h)		R			"R" is submittal(s) according to 00335.40(h) within 48 hours of making each blast.
00340	Watering	Additives	00340.11				F, QPL	"F" and "QPL" when called for by Special Provisions or ordered.

SECTION	TYPE OF CONSTRUCTION	MATERIALS	SUBSECTION	ACCEPTANCE DOCUMENTS				REMARKS
				FURNISHED BY CONTRACTOR TO		FURNISHED BY AGENCY		
				LAB	ENGR.	MATERIALS LAB	FIELD PERSONNEL	
00990 *(con't)*	Traffic Signals *(continued)*	Metal Illumination and Traffic Signal Supports	Refer to 00962 in this guide.					
		Illumination On and Associated Appurtenances On Traffic Signal Poles	Refer to 00970 of this guide.					
		Traffic Control Signs	00990.43 00940					
		Backer Rod and Loop Sealant	00990.10		C		F, QPL	"C" is for Construction Material CMO according to 00160.20(d)
01000 - RIGHT OF WAY DEVELOPMENT AND CONTROL								
01030	Seeding	Submittals - Weed Control Work Plan	01030.42(a)		E			"E" is submittal(s) according to 01030.42(a) at the preconstruction conference when applicable to Project.
		- Weed Control Coordinator	01030.30(a) 01030.42(b) 01030.42(c)(1)		P, R			"P" is submittal(s) according to 01030.30(a) at the preconstruction conference. "R" is documentation according to 01030.42(c)(1) from an approved disposal facility.
		Topsoil, Soil Conditioners, Amendments, and Bio-Amendments	Refer to 01040 in this guide.					
		Seed	01030.13 01030.60 01030.61		T, Q		F	"T" is test results showing purity/germination rates, seed percentages, and lot number for pure live seed according to Special Provisions. "Q" is information on label (may be documented separately by cert) - must include verifiable lot number to test results. "F" at time of application shall include form 734-5180. Additional "F" at end of Establishment Period must document that minimum ground coverage is achieved.
		Fertilizers	01030.14		Q		F	"Q" is label on container. "F" must document fertilizer proportions from label.
		Hydromulch	01030.15(a)				F, QPL	
		Straw Mulch	01030.15(b)		T or Q		F	Submit "Q" or "T" according to 01030.15(b).

(continued on next page)

SECTION	TYPE OF CONSTRUCTION	MATERIALS	SUBSECTION	ACCEPTANCE DOCUMENTS				REMARKS
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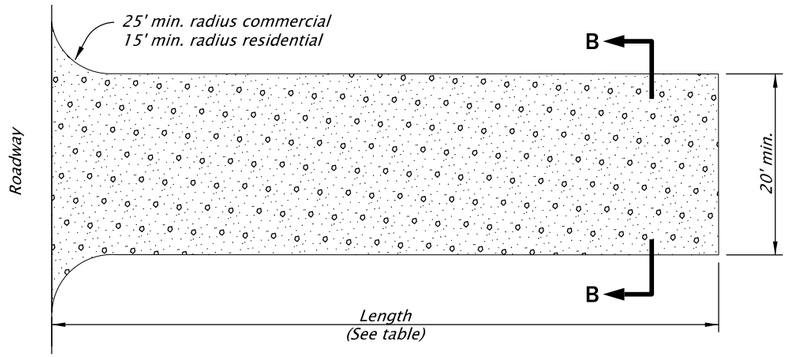
				LAB	ENGR.	MATERIALS LAB	FIELD PERSONNEL	
01030 *(con't)*	Seeding *(continued)*	Compost Mulch	01030.15(c) 03020		T, Q, P/R		F	"T" is particle size and media parameters results according to 03020.10. "Q" is compost requirements according to 03020.10. "P/R" is copy of DEQ permit or registration of compost producer.
		Tackifier	01030.16		Q		F	
		Pesticides	01030.17 01030.30(b)		Q, P		F	"Q" is manufacturer's federal registered label, and MSDS (if requested). Must recieve approval prior to use. "P" is for pesticide applicator according to 01030.30(b).
01040	Planting	Submittals - Planting Work Plan	01040.04(a)		E			"E" is submittal(s) according to 01040.04(a) within 90 Calendar Days of Award of the Contract.
		- Pesticide Applicators License and Chemical Registration	01040.03(b)		P			"P" is submittal(s) according to 01040.03(b).
		Soil Testing	01040.13		T		F	"T" is Soil fertility test and Soil amendment report. "F" must document Soil sampling locations.
		Selected Topsoil	00330.10 00330.11 01040.14(a)				F	"F" must document selected Topsoil appears to be plant and weed free, and is part of the Soil "A" horizon. Submit 20 lb sample to Engineer for approval.
		Imported Topsoil	01040.14(b)		Q	L	F	"L" is test results from ODOT Salem Central Materials Lab. "Q" must confirm weed free. Submit 20 lb sample to Engineer.
		Wetland Topsoil	01040.14(c)		Q		F	"Q" must confirm wetland Topsoil is free from substances detrimental to plant growth. Submit 20 lb sample to Engineer for approval.

(continued on next page)

SECTION	TYPE OF CONSTRUCTION	MATERIALS	SUBSECTION	ACCEPTANCE DOCUMENTS				REMARKS
				FURNISHED BY CONTRACTOR TO		FURNISHED BY AGENCY		
				LAB	ENGR.	MATERIALS LAB	FIELD PERSONNEL	
01040 *(con't)*	Planting *(continued)*	Soil Conditioners, Amendments, and Bio-Amendments	01040.15 01040.16 01040.17 03020		T, Q, P/R		F	"T" and "P/R" are for commercially manufactured compost according to 03020.90. Submit 15 lb. sample of mushroom compost and Peat moss Soil conditioners to Engineer for approval.
		Fertilizers	01030.14 01040.18		Q		F	"Q" is label on container. "F" must document fertilizer proportions from label.
		Plants	01040.19 01040.70-79		Q		F	"Q" is State inspection certificate and shipping certificate for each load or lot of plant material according to 01040.19(c). "Q" for sod lawn can be from turf farm according to 01040.19(h)(17). "F" must document the condition of the plants at each inspection and Final Inspection.
		Mulch - Bark - Cinder - Rock - Wood Chip	01040.20				F	"F" must document mulch appears to meet the applicable requirements of 01040.20(a),(b),(d),(e).
		Straw Mulch	01030.15(b) 01040.20(c)		T or Q		F	Submit "T" or "Q" according to 01030.15(b).
		Compost Mulch	01040.20(f) 03020		T, Q, P/R		F	"T" is particle size and media parameters results according to 03020.10. "Q" is compost requirements according to 03020.10. "P/R" is copy of DEQ permit or registration of compost producer.
		Herbicides	01040.21		Q		F	
		Weed Control Geotextile	01040.23		Q, C		F	"C" is for Construction Material CMO according to 00160.20(d)
		Water - Moisture Retention Chemicals	01040.22(b)				F, QPL	

INSERT TAB

Standard Drawings



CONSTRUCTION ENTRANCE - TYPE 1
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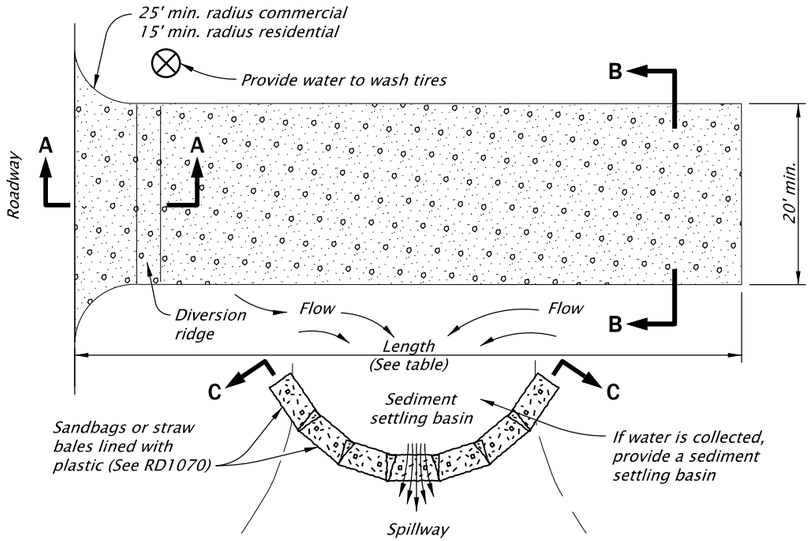

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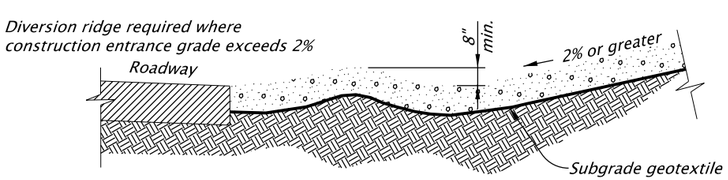
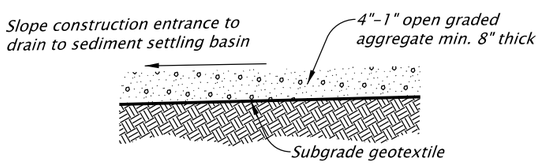
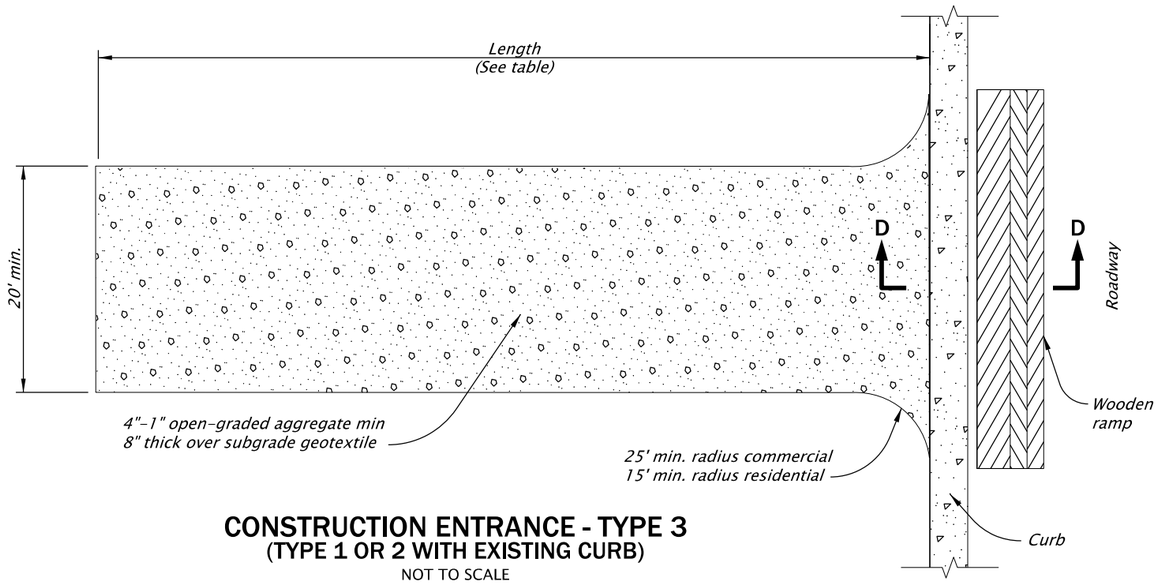
NOT TO SCALE



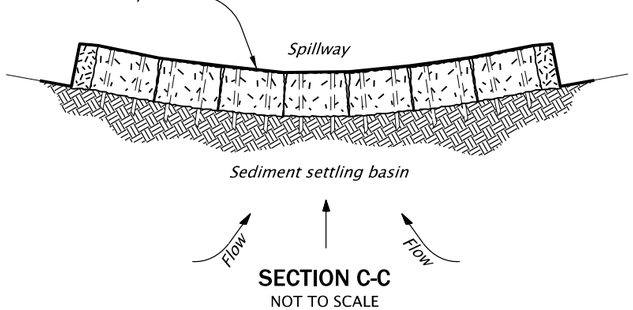
SECTION A-A
NOT TO SCALE



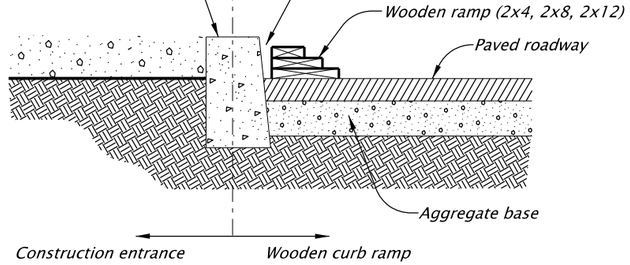
SECTION B-B
NOT TO SCALE



CONSTRUCTION ENTRANCE - TYPE 3
(TYPE 1 OR 2 WITH EXISTING CURB)
NOT TO SCALE



SECTION C-C
NOT TO SCALE



WOODEN CURB RAMP SECTION D-D
NOT TO SCALE

NOTES:
1. *The Type 1 entrance is a simple entrance without a diversion ridge or settling basin.*
2. *The wooden ramp may be used on either Type 1 or Type 2 entrances in situations where there is curb and the curb is not removed for the construction entrance.*

CONSTRUCTION ENTRANCE TABLE MINIMUM LENGTH	
Length (FT)	*Area Of Exposed Soil (Acre)*
20	*0.25*
50	*0.25 < A < 1.0*
100	*A > 1.0*

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All materials shall be in accordance with the current Oregon Standard Specifications.

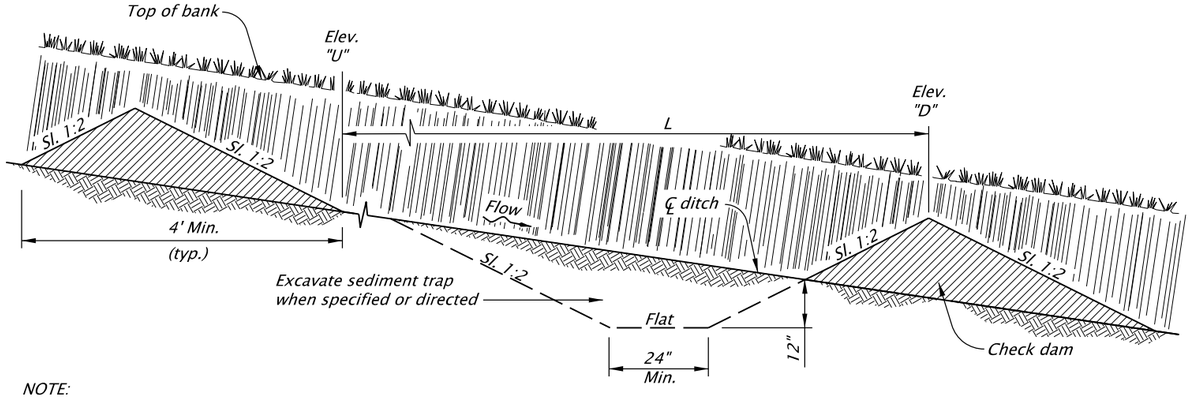
OREGON STANDARD DRAWINGS

CONSTRUCTION ENTRANCES

2024

DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

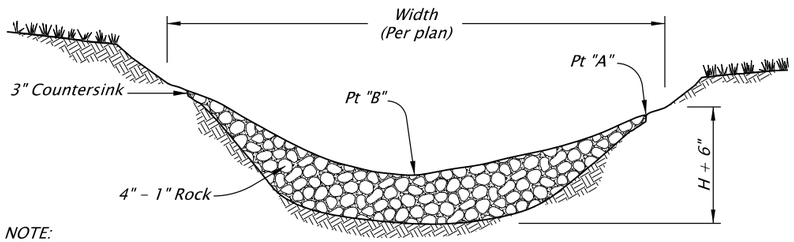
CALC. BOOK NO. N/A | SDR DATE 20-JAN-2021 | **RD1000**



NOTE:
L = Spacing along swale or ditch so that Elevation "U" equals Elevation "D".

TYPICAL PROFILE SECTION CHECK DAMS (SHOWN WITH AGGREGATE)

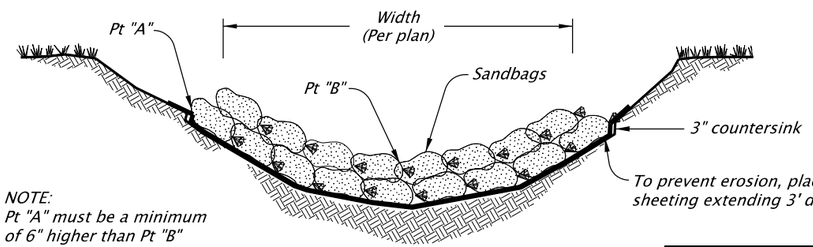
NOT TO SCALE



NOTE:
Pt "A" must be a minimum of 6" higher than Pt "B"

AGGREGATE CHECK DAM - TYPE 1

NOT TO SCALE



NOTE:
Pt "A" must be a minimum of 6" higher than Pt "B"

SANDBAG CHECK DAM - TYPE 4

NOT TO SCALE

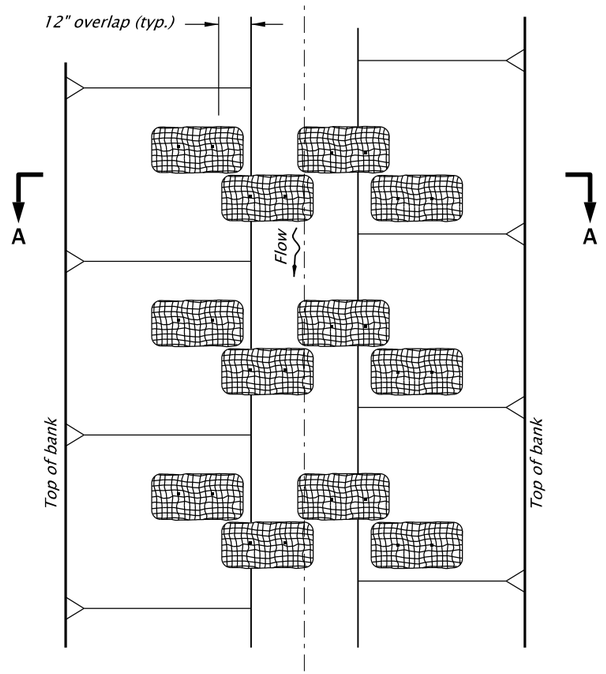
NOTES:

1. *Type 3 - stake biofilter bags with two 2"x2"x18" (minimum) wood stakes per bag. Drive stakes a minimum of 6" into the ground and flush with the top of the bags. Omit stakes if placed over paved surfaces. Overlap bags 12" minimum at each joint.*
2. *Type 4 - Tightly abut or overlap ends of sandbags at each joint.*
3. *Spacing between check dams for all check dam types shall comply with the typical profile section shown above.*
4. *Construct check dams Type 3 or 4 with two bags when installed in paved gutter with curb section.*

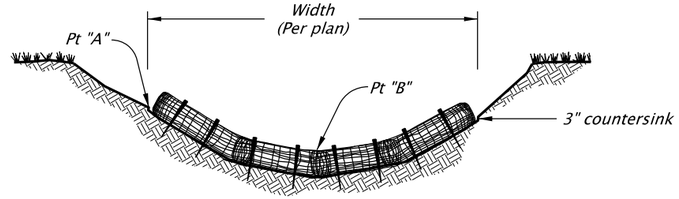
MAXIMUM CHECK DAM SPACING "L"

Ditch Grade	H=8"	H=12"	H=18"	H=24"
10%	* *	* *	15'	20'
9%	* *	* *	16'	22'
8%	* *	* *	18'	25'
7%	* *	* *	21'	28'
6%	* *	16'	25'	33'
5%	* *	20'	30'	40'
4%	16'	25'	37'	50'
3%	22'	33'	50'	66'
2%	33'	50'	75'	100'

** * Not allowed* *H = Min. dam height*



PLAN



SECTION A-A

BIOFILTER BAG CHECK DAM - TYPE 3

NOT TO SCALE

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

CHECK DAMS TYPE 1, 3 AND 4

2024

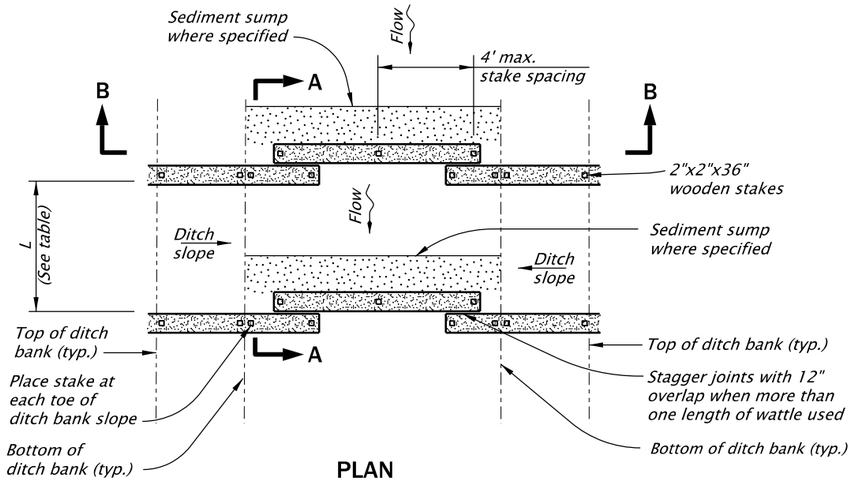
DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS
07-2024	ADDED NOTE 4

CALC. BOOK NO. N/A | SDR DATE 12-JUL-2024 | **RD1005**

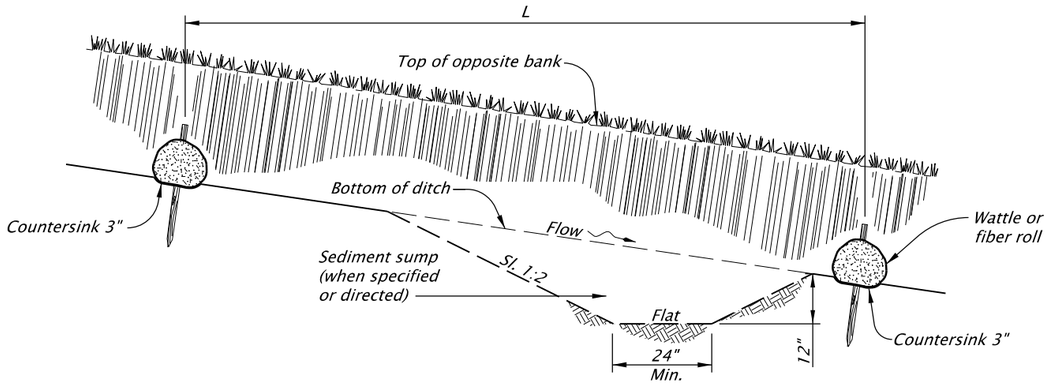
12-JUL-2024

RD1005.dgn

Effective Date: June 1, 2025 - November 30, 2025



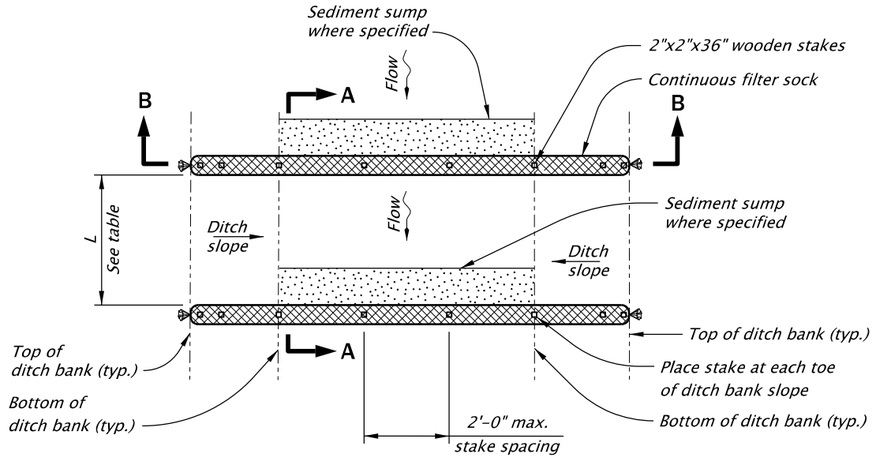
PLAN



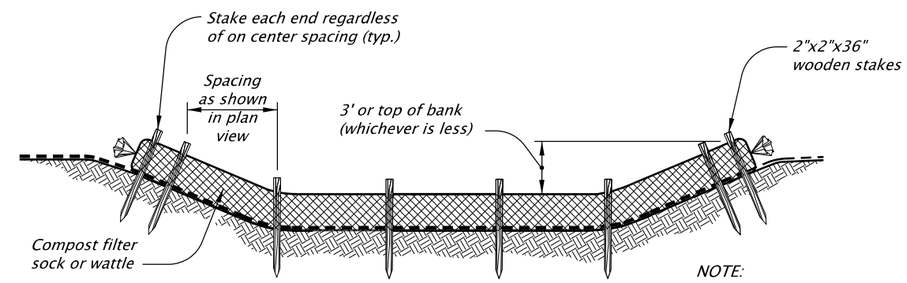
SECTION A-A

WATTLE / FIBER ROLL CHECK DAM - TYPE 2

NOT TO SCALE



PLAN

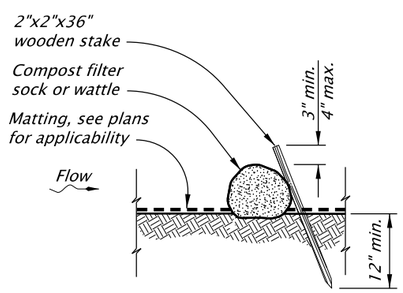


NOTE:
Fully biodegradable compost socks are suitable for permanent installation only. Product becomes too fragile to be moved or removed intact.

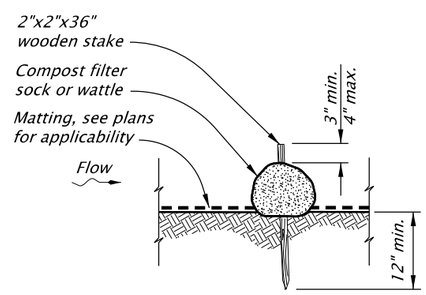
SECTION B-B

COMPOST FILTER SOCK CHECK DAM - TYPE 6

NOT TO SCALE



ALTERNATIVE 1



ALTERNATIVE 2

FIBER ROLL AND COMPOST SOCK STAKING ALTERNATIVES

NOT TO SCALE

MAXIMUM CHECK DAM SPACING "L"

Ditch Grade	H=8"	H=12"	H=18"	H=24"
10%	* *	* *	15'	20'
9%	* *	* *	16'	22'
8%	* *	* *	18'	25'
7%	* *	* *	21'	28'
6%	* *	16'	25'	33'
5%	* *	20'	30'	40'
4%	16'	25'	37'	50'
3%	22'	33'	50'	66'
2%	33'	50'	75'	100'

* * Not allowed H = Min. dam height

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All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

CHECK DAMS TYPE 2 AND 6

2024

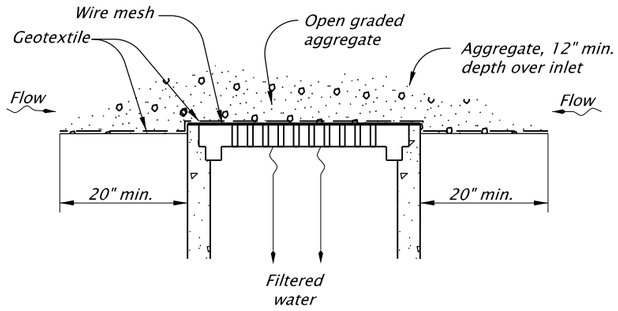
DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

CALC. BOOK NO. N/A SDR DATE 20-JAN-2021 RD1006

Effective Date: June 1, 2025 - November 30, 2025

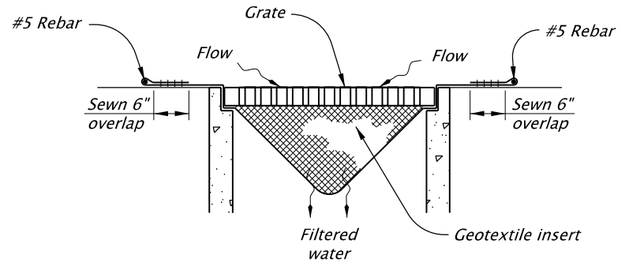
20-JAN-2021

RD1006.dgn



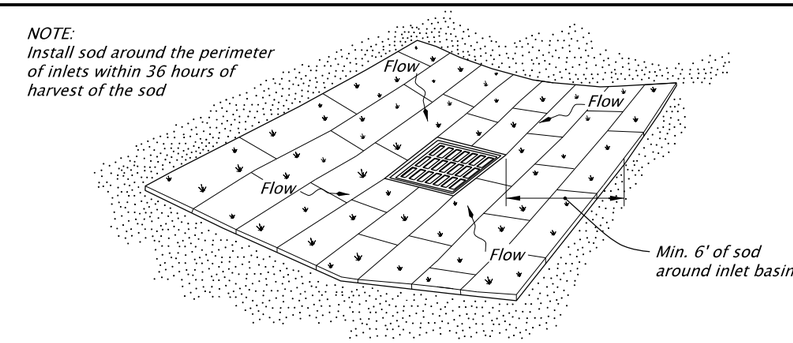
GEOTEXTILE/WIRE MESH/AGGREGATE - TYPE 2

NOT TO SCALE



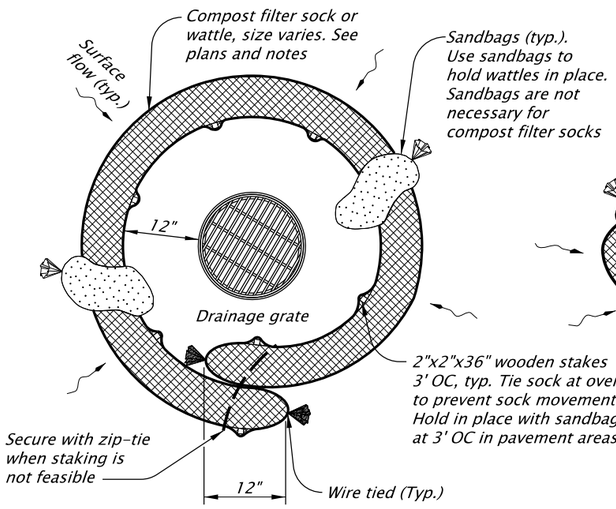
PREFABRICATED FILTER INSERT - TYPE 3

NOT TO SCALE

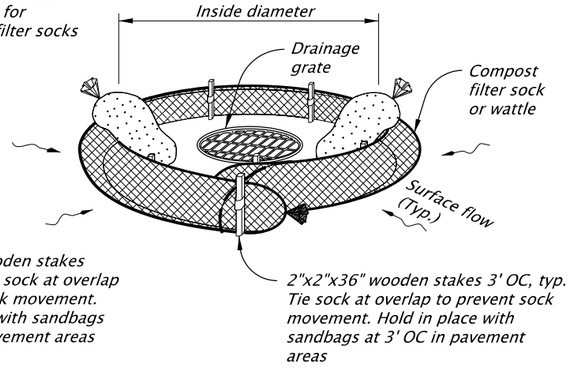


SOD PROTECTION - TYPE 6

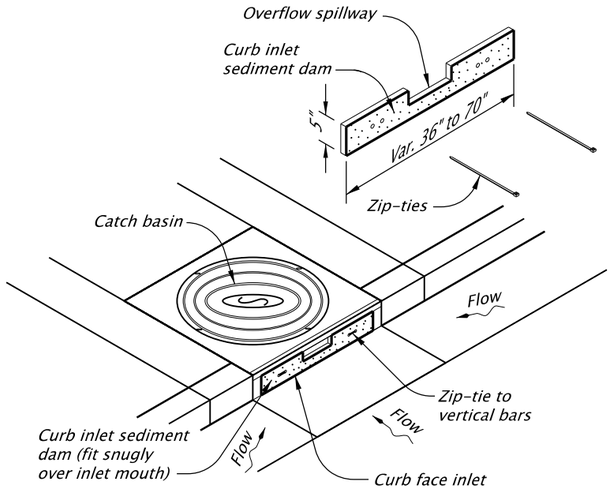
NOT TO SCALE



AREA DRAIN PLAN

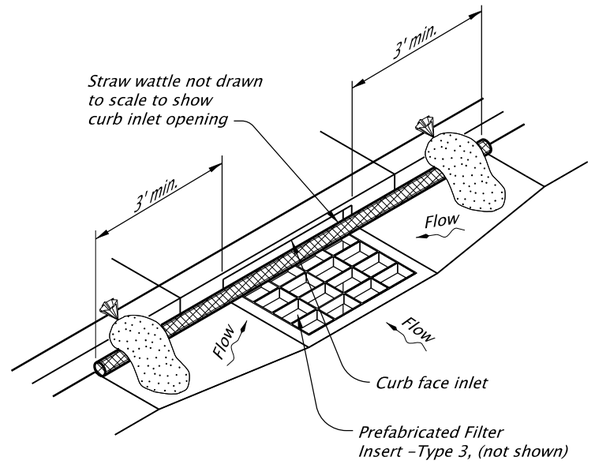


AREA DRAIN PERSPECTIVE VIEW



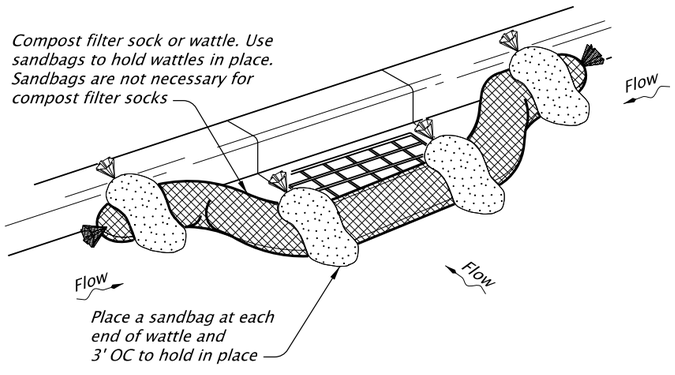
CURB INLET SEDIMENT DAM - TYPE 10

NOT TO SCALE



WATTLE BARRIER WITH FILTER INSERT - TYPE 11

NOT TO SCALE



CURB INLET PERSPECTIVE VIEW

COMPOST FILTER SOCK OR WATTLE - TYPE 7

NOT TO SCALE

NOTES:

Type 2 - Geotextile/wire mesh/aggregate
Place the wire mesh over the grate.
Place sediment fence geotextile over the wire mesh and perimeter area around structure.
Install aggregate over the geotextile fabric.

Type 3 - Prefabricated filter inserts
Install prefabricated filter inserts according to the plans, special provisions, and manufacturer recommendations.
Prefabricated inserts with provisions for overflow are allowed only when accompanied by additional BMP's to prevent the potential of sediments entering project storm systems.
Field fabricated inserts are not allowed.

Type 7 - Compost filter sock
Drive 2"x2" wood stakes a minimum of 6" into ground and flush with the top of the sock.
Overlap ends of sock per manufacturers recommendations (12"min., 36" max.).
Use 8" to 12" dia sock on curbside in traffic areas.

(Type 7 cont.)
Use 12" to 18" dia sock in non-traffic areas or areas where the larger socks can be used safely.
use synthetic mesh socks for temporary installations.

Type 10 - Curb inlet sediment dam
Fit curb inlet sediment dam snugly into inlet mouth. Curb inlet sediment dam is required for use with inlet filter insert where at-grade inlet grate and curb inlet are combined at a catch basin.

Type 11 - Wattle barrier with filter insert
Install prefabricated filter insert per Type 3 detail.
Install wattles over opening and 36" to each side of opening tight against curb. Adjust wattle to force storm water to flow through filter insert or wattle prior to leaving the site.
Adjust, replace or modify the inlet protection as needed to prevent sediment laden water from entering the catch basin.

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All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

INLET PROTECTION TYPE 2, 3, 6, 7, 10 AND 11

2024

DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS
01-2021	MOVED NOTES UP FROM OVERLAPPING THE SHEET BORDER

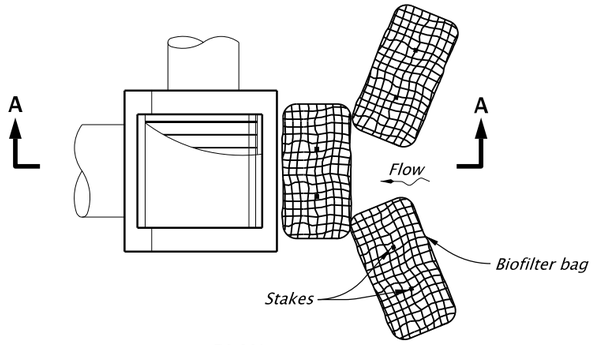
CALC. BOOK NO. N/A | SDR DATE 20-JAN-2021 | RD1010

Effective Date: June 1, 2025 - November 30, 2025

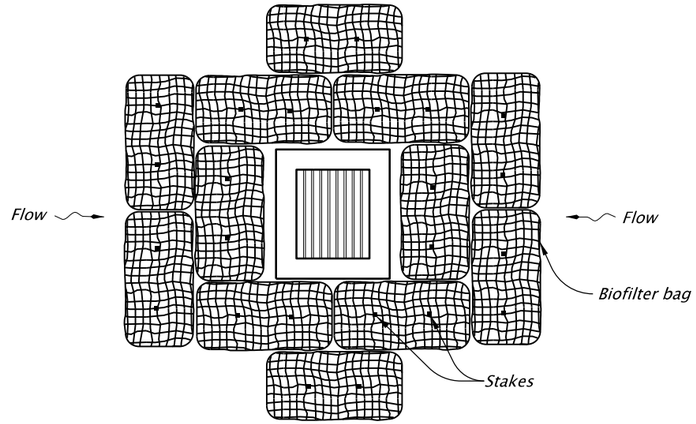
20-JAN-2021

RD1010.dgn

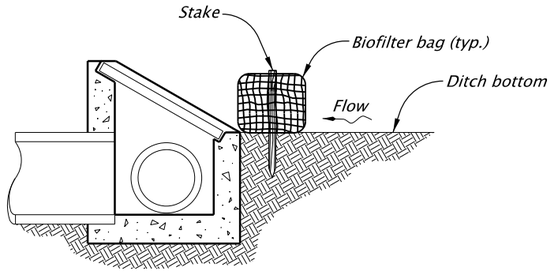
RD1015.dgn 20-JAN-2021



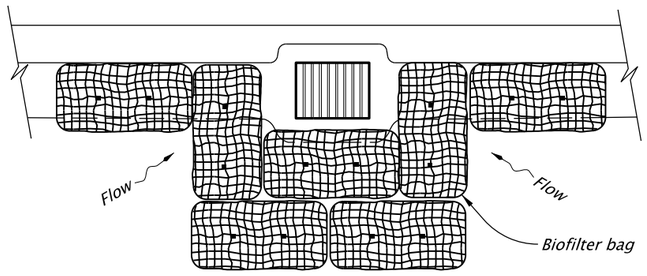
PLAN
DITCH INLET



PLAN
AREA DRAIN



SECTION A-A
DITCH INLET



PLAN
CATCH BASIN

BIOFILTER BAGS - TYPE 4

NOT TO SCALE

NOTES:

1. *Stake biofilter bags with 2"x2"x36" wood stakes, and use a minimum 2 stakes per bag. Drive stakes a minimum of 6" into the ground and flush with the top of the bags.*
2. *Omit stakes when bags are placed on pavement surface.*
3. *Overlap all bag joints 6".*
4. *Biofilter bags used on active roadways are easily displaced and made ineffective if struck by vehicles. If struck by a cyclist, falls with injury could result. On active roadways alternative inlet protection should be considered.*

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OREGON STANDARD DRAWINGS

INLET PROTECTION TYPE 4

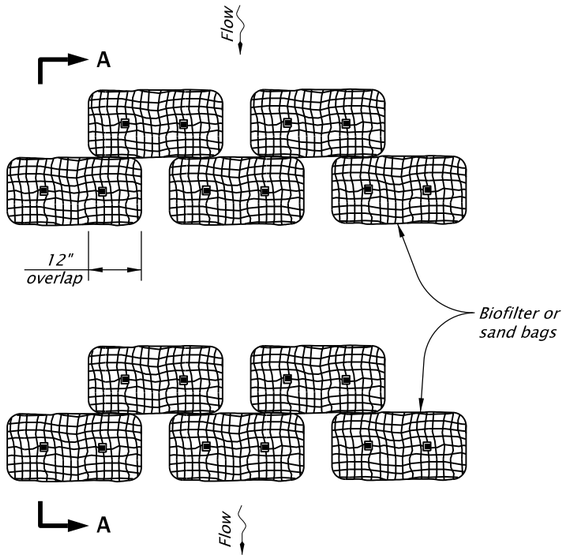
2024

DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

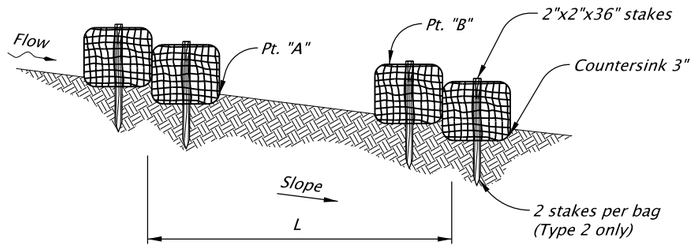
CALC BOOK NO. N/A | SDR DATE 20-JAN-2021 | RD1015

Effective Date: June 1, 2025 - November 30, 2025

RD1030.dgn 20-JAN-2021



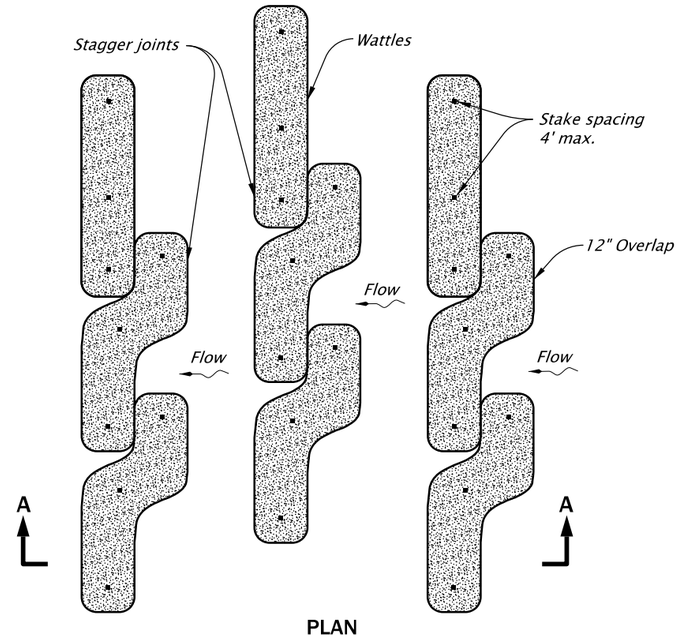
PLAN



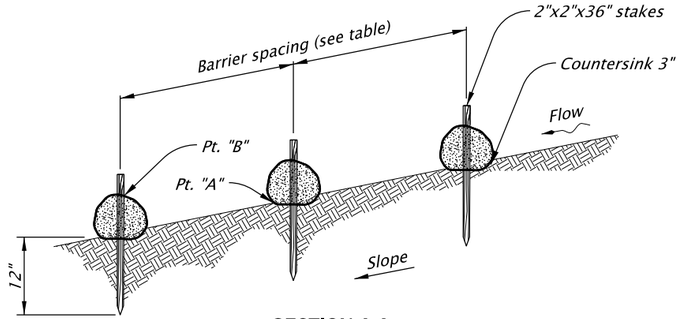
SECTION A-A

BIOFILTER BAG / SAND BAG BARRIER - TYPE 2 AND 4

NOT TO SCALE



PLAN



SECTION A-A

FIBER ROLL BARRIER - TYPE 3

NOT TO SCALE

NOTES:

1. *For Type 2 barrier, drive stakes flush with top of bag and into undisturbed ground a min. of 12". Omit stakes if bags are placed on paved surface.*

2. *For Type 2 and Type 4 barriers, space bags (L) so that the elevation of point "A" is less than or equal to the elevation of point "B".*

Type 2 – Biofilter bags
Type 3 – Wattles
Type 4 – Sand bags

BARRIER SPACING		
INSTALL PARALLEL ALONG CONTOURS AS FOLLOWS		
% SLOPE	% SLOPE	MAXIMUM SPACING ON SLOPE
10% Flatter	1:10 or Flatter	300'
10 > % ≥ 15	10 > X ≥ 7.5	150'
15 > % ≥ 20	7.5 > X ≥ 5	100'
20 > % ≥ 30	5 > X ≥ 3	50'
Steeper than 30%	Steeper than 1:3	25'

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

SEDIMENT BARRIER TYPE 2, 3 AND 4

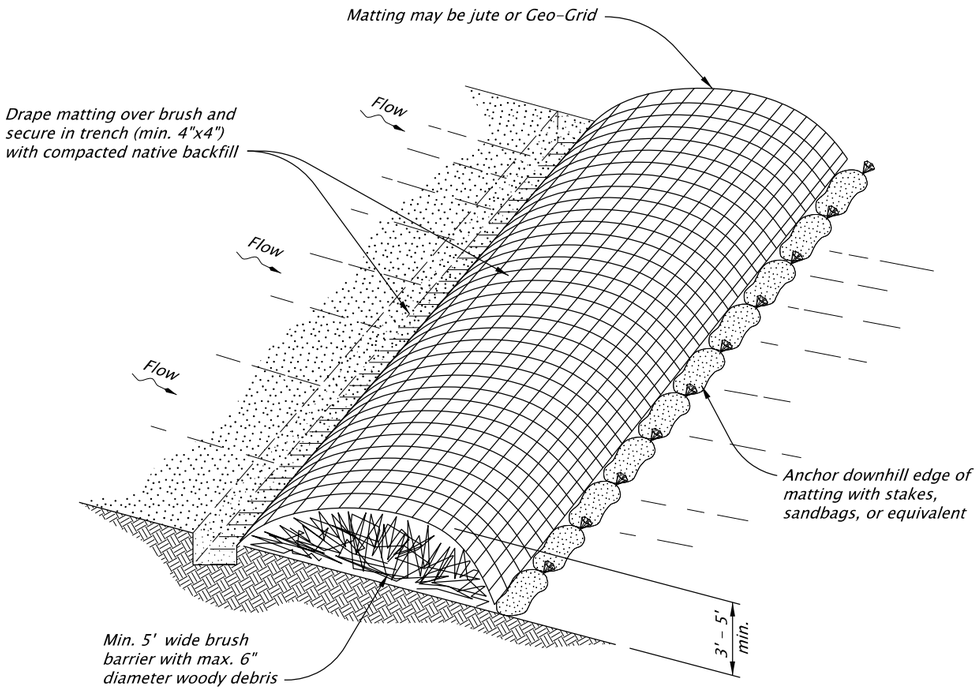
2024

DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

CALC. BOOK NO. N/A | SDR DATE 20-JAN-2021 | **RD1030**

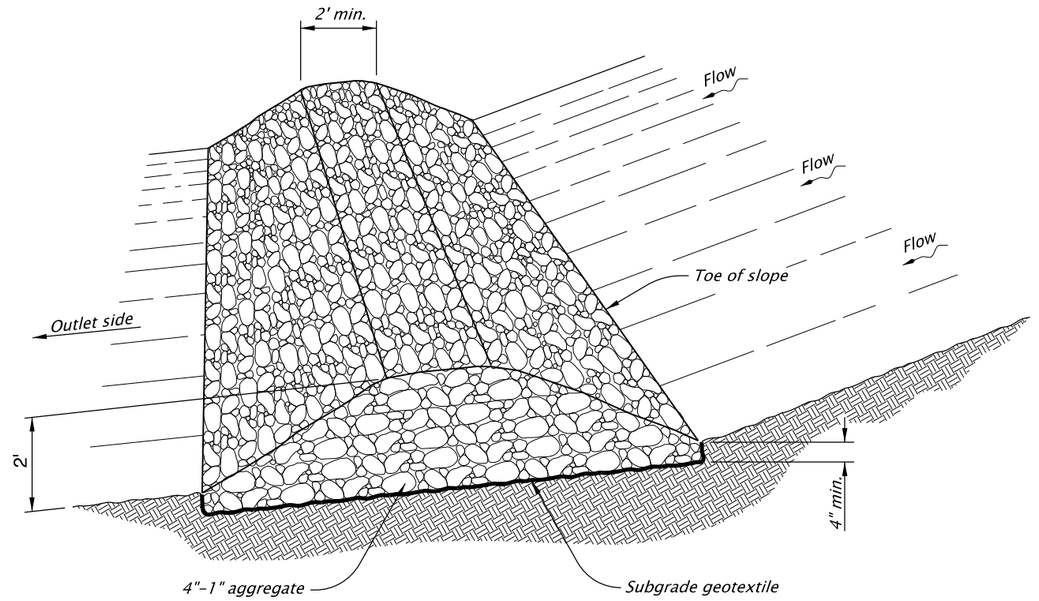
Effective Date: June 1, 2025 – November 30, 2025

RD1031.dgn 20-JAN-2021



BRUSH BARRIER - TYPE 5

NOT TO SCALE



AGGREGATE BARRIER - TYPE 6

NOT TO SCALE

NOTES:

1. *Direct diverted flows from the outlet side of the rock filter berm/dams onto a stabilized area, such as vegetation and or rock, or into a sediment trapping facility.*
2. *Embed barrier a min. of 4" into the existing ground/embankments.*
3. *Use 1:3 or flatter side slope. Within the safety clear zone, use 1:6 or flatter side slopes.*
4. *Use 4"-1" clean aggregate.*

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

SEDIMENT BARRIER TYPE 5 AND 6

2024

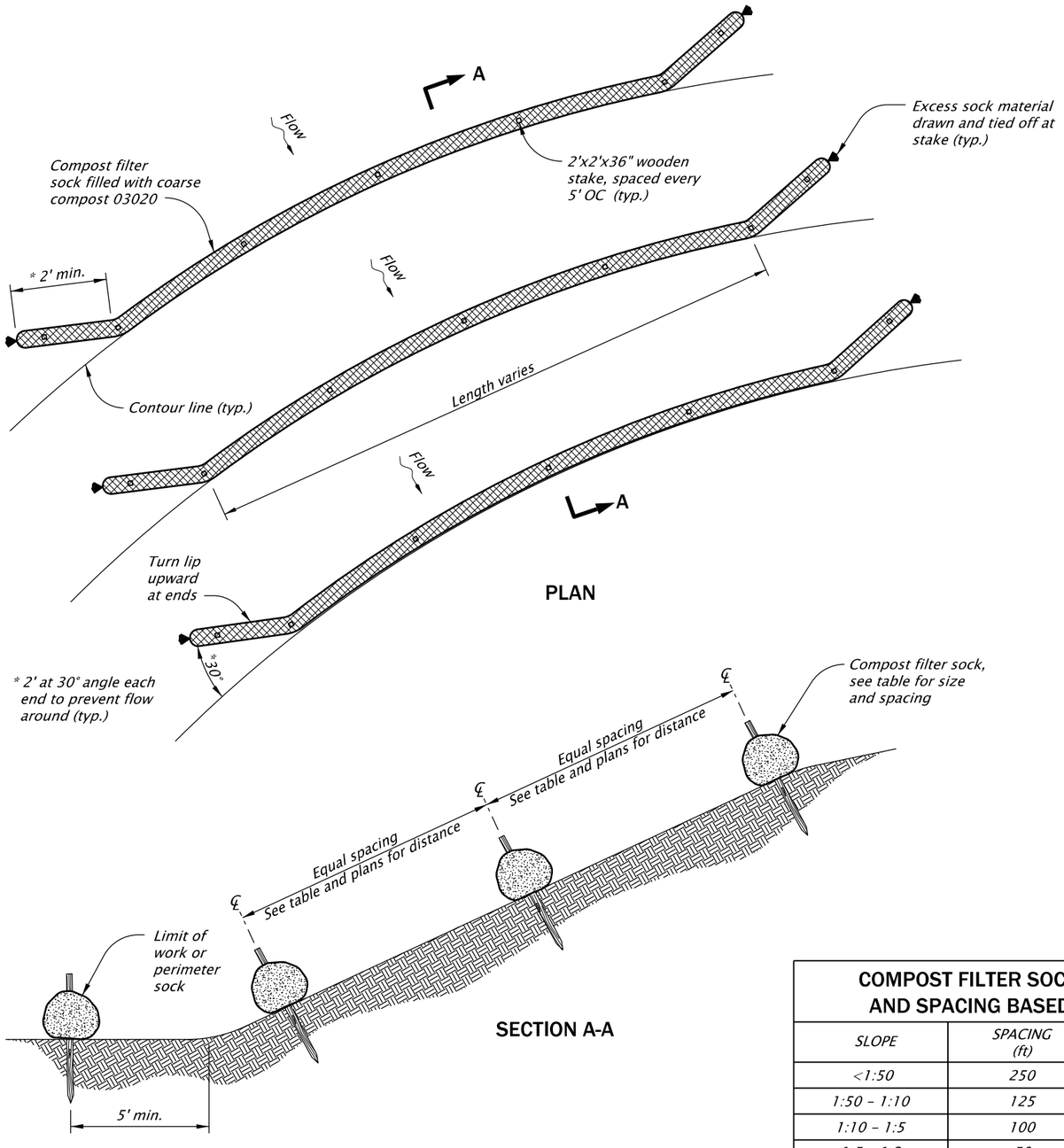
DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

CALC. BOOK NO. N/A | SDR DATE 20-JAN-2021 | **RD1031**

Effective Date: June 1, 2025 - November 30, 2025

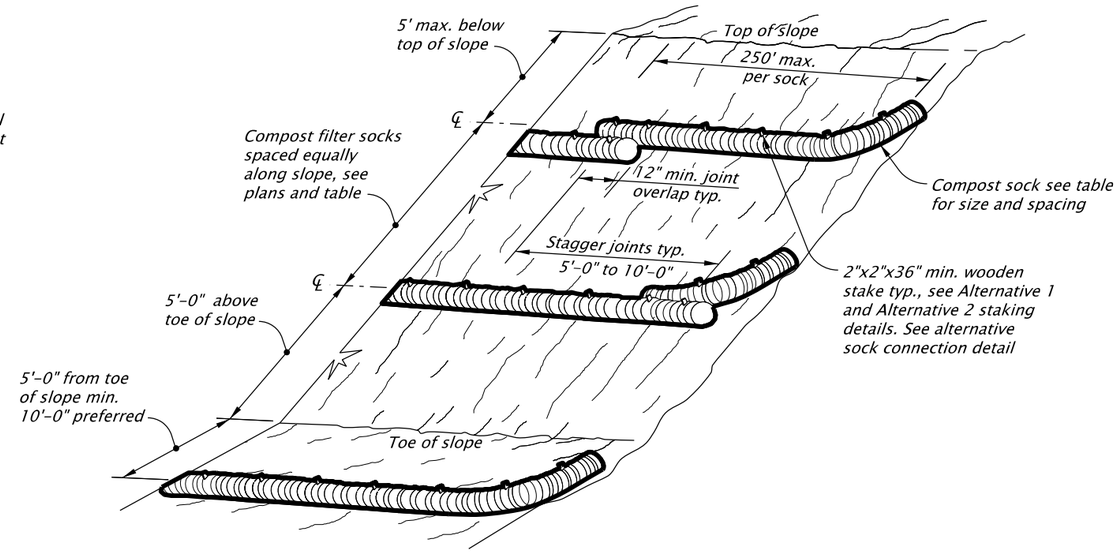
20-JAN-2021

RD1032.dgn

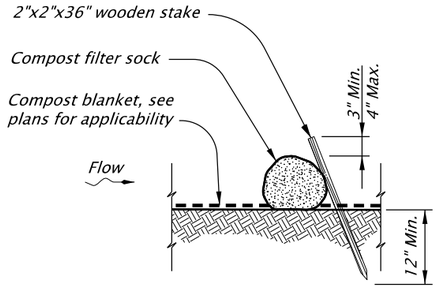


PLAN

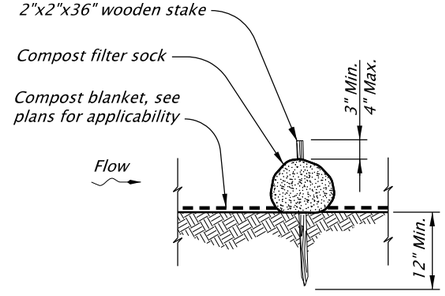
SECTION A-A



SLOPE APPLICATION - PERSPECTIVE VIEW



ALTERNATIVE 1 (Staking)



ALTERNATIVE 2 (Staking)

COMPOST FILTER SOCK DIAMETER AND SPACING BASED ON SLOPE		
SLOPE	*SPACING (ft)*	*DIAMETER (in)*
<1:50	*250*	*8*
1:50 - 1:10	*125*	*12*
1:10 - 1:5	*100*	*12*
1:5 - 1:2	*50*	*18*
>1:2	*25*	*18*

NOTE:
Fully biodegradable compost sock mesh is recommended for permanent installations. Where compost socks must be moved or removed, synthetic sock mesh should be used.

COMPOST FILTER SOCK

NOT TO SCALE

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

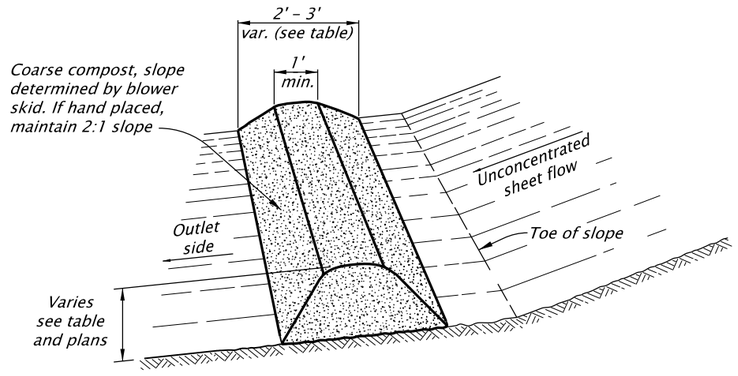
SEDIMENT BARRIER TYPE 8

2024

DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

CALC. BOOK NO. N/A | SDR DATE 20-JAN-2021 | **RD1032**

Effective Date: June 1, 2025 - November 30, 2025



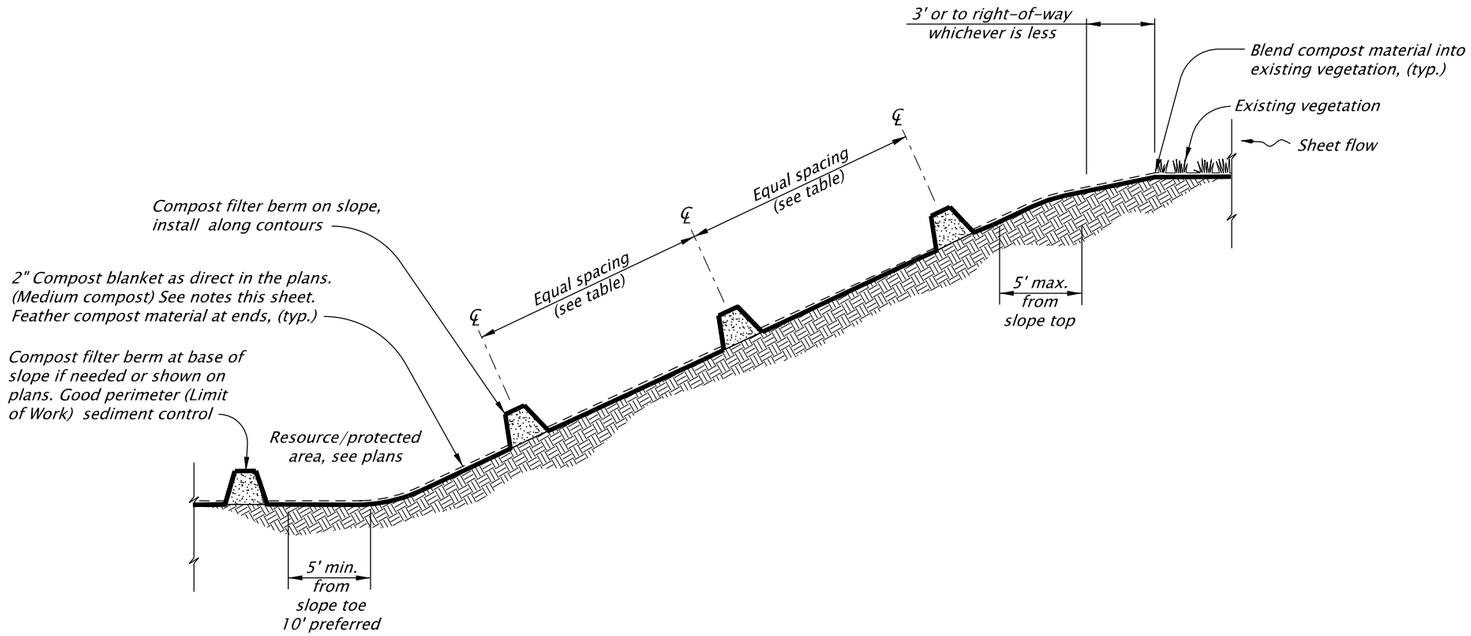
COMPOST FILTER BERM - TYPE 9

NOT TO SCALE

COMPOST FILTER BERM DIMENSIONS AND SPACING BASED ON SLOPE				
SLOPE	BERM SPACING	BERM DIMENSIONS		
		HEIGHT	BOTTOM WIDTH	TOP WIDTH
> 50:1	250 ft	1 ft	2 ft (min.)	1 ft
50:1 – 10:1	125 ft	1 ft	2 ft (min.)	1 ft
10:1 – 5:1	100 ft	1 ft	2 ft (min.)	1 ft
3:1 – 2:1	50 ft	1.3 ft	2.6 ft (min.)	1 ft
> 2:1		1.5 ft	3 ft (min.)	1 ft

NOTES:

1. Compost filter berm's are sediment control devices for areas where runoff occurs as sheet flow. See Section 00280, Oregon Standard Specifications.
2. The maximum drainage area for a continuous berm shall be 1/4 acre per 100 linear feet of filter berm.
3. Where possible, berm's should be placed away from the toe of slopes a minimum of 5 feet (10 feet preferred) to allow for energy dissipation and sediment storage.
4. Direct the outlet side of filter berm, located at base of slope, onto a stabilized area, such as vegetation and/or aggregate.
5. Place filter berm's along or on the ground contour with the ends of the filter berm turned up slope. Adequate area shall be provided behind berm for ponding.
6. Compost filter berm's may be vegetated with temporary or permanent seeding after placement.
7. If placed in area with existing ground vegetation, cut vegetation to 2–4 inches above grade at berm footprint. Do not remove existing vegetation or cut back outside berm footprint unless directed by Agency.
8. If soils are exposed apply compost blanket per details and specifications.



COMPOST FILTER BERM SERIES

NOT TO SCALE

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

SEDIMENT BARRIER TYPE 9

2024

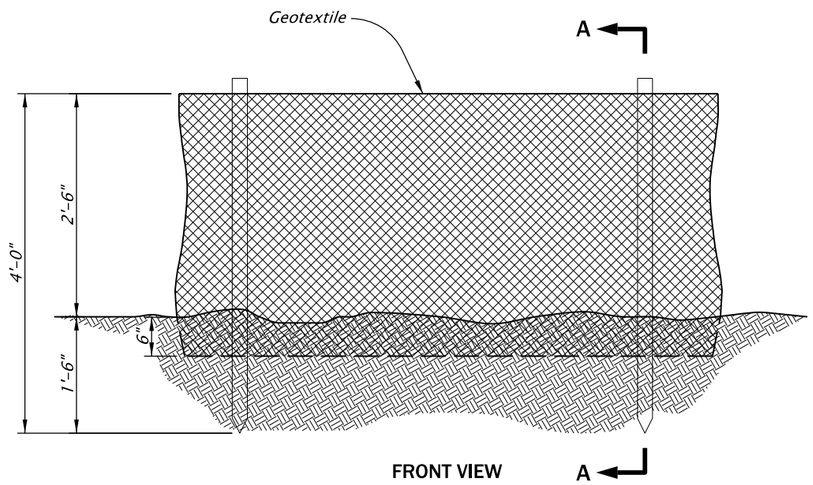
DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

CALC. BOOK NO. N/A | SDR DATE 20-JAN-2021 | **RD1033**

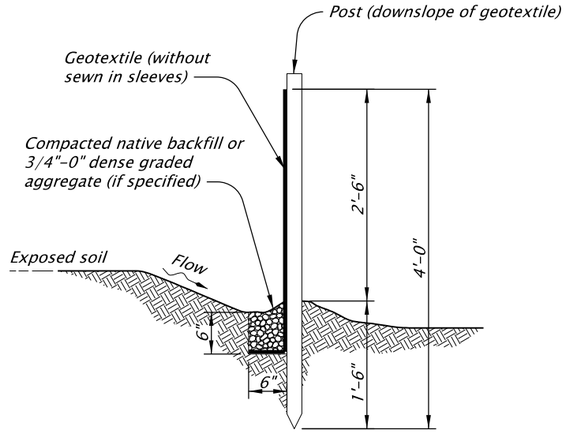
Effective Date: June 1, 2025 – November 30, 2025

20-JAN-2021

RD1033.dgn



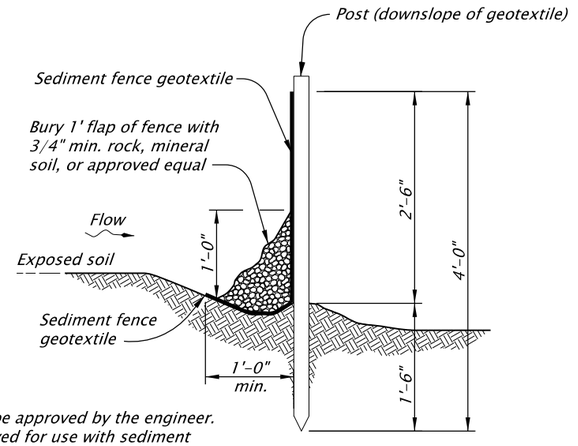
FRONT VIEW



SECTION A-A

SEDIMENT FENCE AND GEOTEXTILE BURY DETAIL - TYPE 1

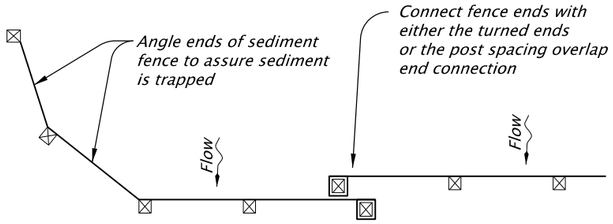
NOT TO SCALE



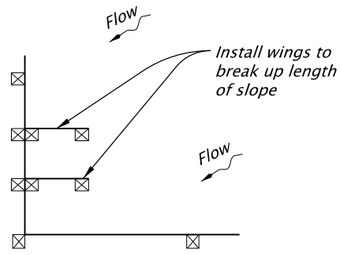
NOTES:
1. Use must be approved by the engineer.
2. Not approved for use with sediment fencing with sewn-in post sleeves.

ALTERNATE SEDIMENT FENCE WITHOUT TRENCHING - TYPE 2

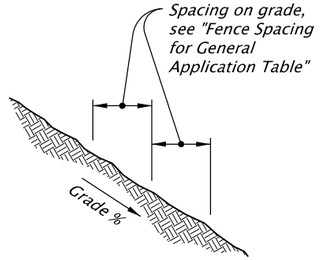
NOT TO SCALE



PLAN VIEW



TERMINATION AT CORNER OR PROPERTY LINE



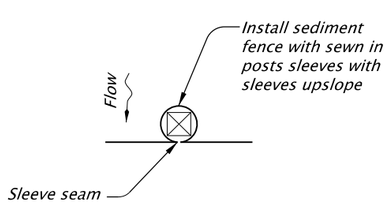
GENERAL NOTES:
1. Use 2"x2" wood fence posts.
2. Posts to be installed on downhill side of sediment fence geotextile. Position posts to prevent separation from geotextile.
3. Compact filter fabric trench backfill and soil on uphill side of fence.
4. Locate fence no closer than three feet to the toe of a slope.
5. Wing spacing shall comply with "Fence Spacing for General Application Table".

FENCE SPACING FOR GENERAL APPLICATION TABLE

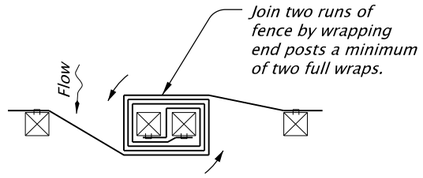
INSTALL PARALLEL ALONG CONTOURS AS FOLLOWS	
GRADE	MAXIMUM SPACING ON GRADE
Grade < 10%	300'
10% ≤ Grade < 15%	150'
15% ≤ Grade < 20%	100'
20% ≤ Grade < 30%	50'
30% ≤ Grade	25'

POST SPACING TABLE

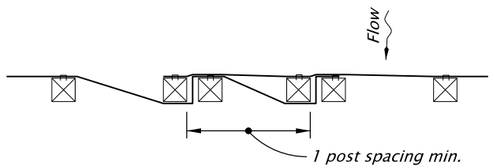
6'	Sediment Fence with Geotextile elongation less than 50%
4'	Sediment Fence with Geotextile elongation 50% or more



GEOTEXTILE WITH POST SLEEVES



TURNED ENDS CONNECTION



POST SPACING OVERLAP CONNECTION

GEOTEXTILE END CONNECTIONS

NOT TO SCALE

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All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

SEDIMENT FENCE

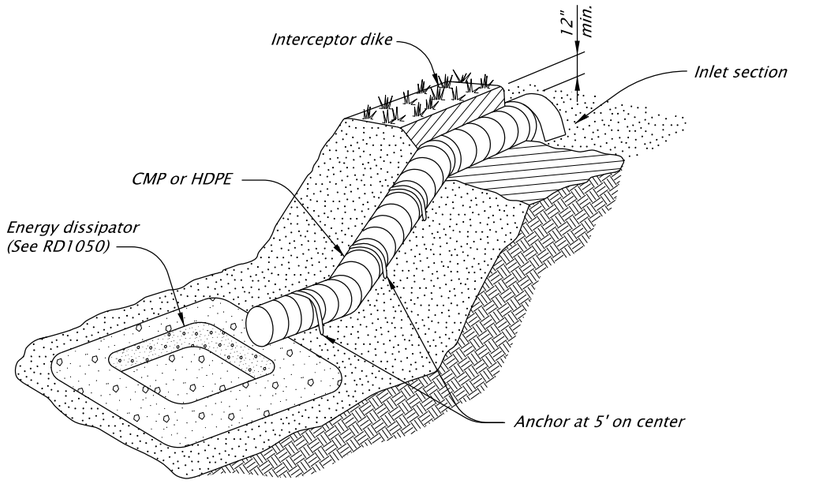
2024

DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

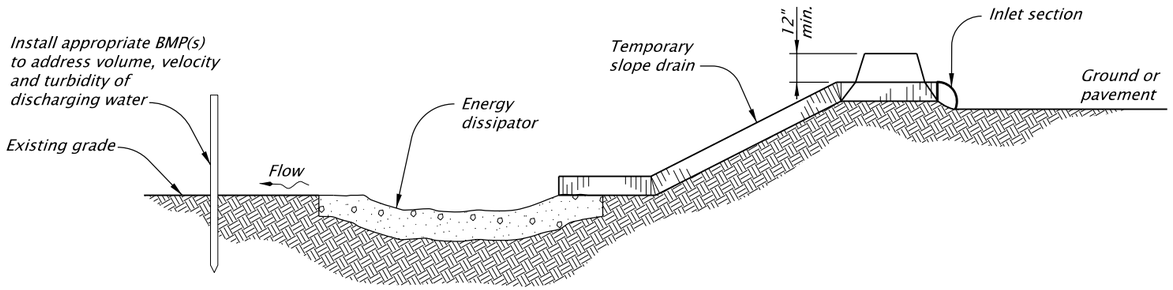
CALC. BOOK NO. N/A | SDR DATE 20-JAN-2021 | **RD1040**

Effective Date: June 1, 2025 - November 30, 2025

RD1045.dgn 20-JAN-2021



PERSPECTIVE

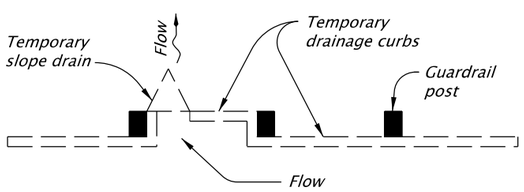


PROFILE

TEMPORARY SLOPE DRAIN
NOT TO SCALE

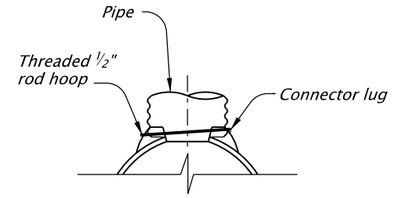
NOTES:

1. *Temporary slope drains shall be used at the top of fill slopes as the embankment is constructed to prevent erosion.*
2. *Temporary drainage curbs shall be used in conjunction with temporary slope drains to prevent erosion on completed slopes and to direct flow into end section.*
3. *All dimensions not indicated will be as directed.*

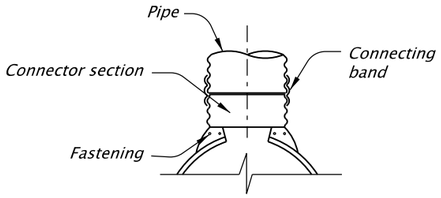


PLAN

TEMPORARY DRAIN AT GUARDRAIL
NOT TO SCALE

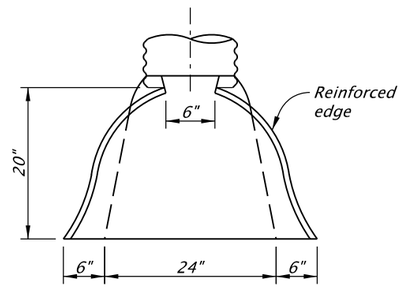


OPTION 1

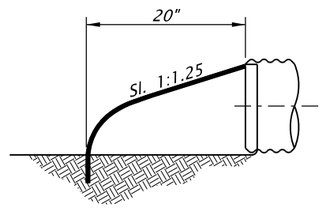


OPTION 2

CONNECTION DETAILS
NOT TO SCALE

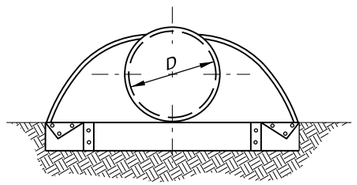


PLAN



SIDE VIEW

PIPE SIZE TABLE		
PIPE		CONTRIBUTING AREA
Slope (min.)	D in. (min.)	TO SLOPE DRAIN (sq ft)
3.8%	6	A < 200
2.5%	8	200 ≤ A < 500
1.9%	10	500 ≤ A < 850
1.5%	12	850 ≤ A < 1400
–	special design reqd.	1400 ≤ A



FRONT VIEW

INLET SECTION DETAILS
NOT TO SCALE

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

TEMPORARY SLOPE DRAIN WITH ENERGY DISSIPATOR

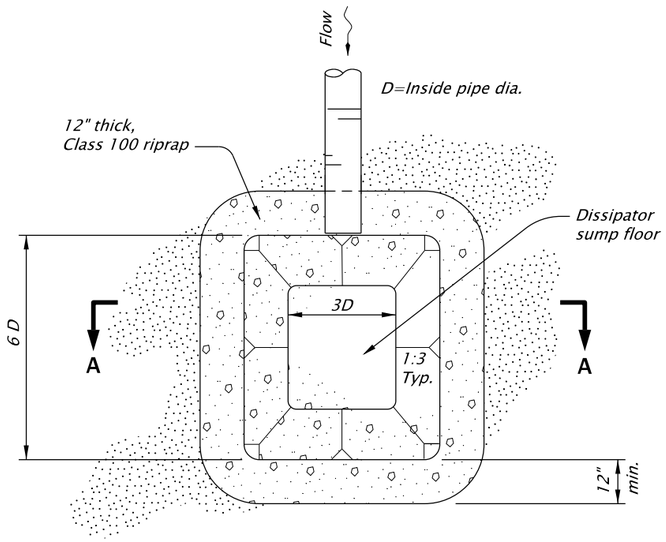
2024

DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

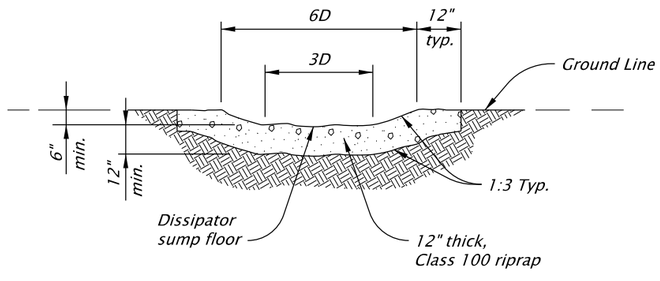
CALC. BOOK NO. N/A | SDR DATE 20-JAN-2021 | **RD1045**

Effective Date: June 1, 2025 – November 30, 2025

RD1050.dgn 20-JAN-2021



PLAN



SECTION A-A

NOTES:
1. *All dimensions not indicated will be as directed.*

2. *Install level spreader, sediment barrier(s), check dam(s) or other appropriate BMP(s) to address volume, velocity and turbidity of discharge water.*

TEMPORARY SCOUR BASIN / ENERGY DISSIPATOR
NOT TO SCALE

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

TEMPORARY SCOUR BASIN / ENERGY DISSIPATOR

2024

DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

CALC. BOOK NO. N/A | SDR DATE 20-JAN-2021 | **RD1050**

Effective Date: June 1, 2025 - November 30, 2025

20-JAN-2021
RD1055.dgn

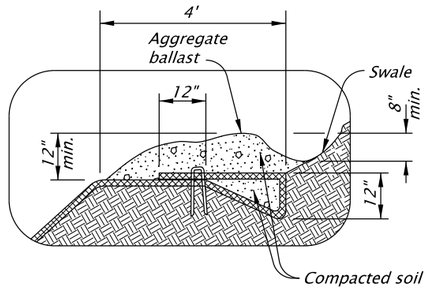


FIGURE A1:
TOP OF BANK ANCHOR TRENCH, H>3' AND TERMINAL SLOPE
NOT TO SCALE

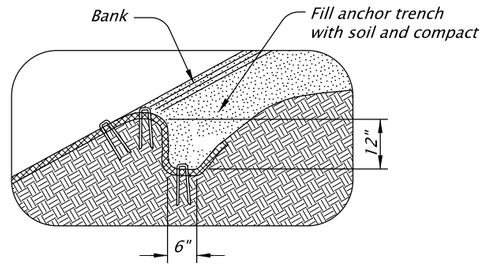


FIGURE A2:
TOP OF BANK ANCHOR TRENCH, H<3'
NOT TO SCALE

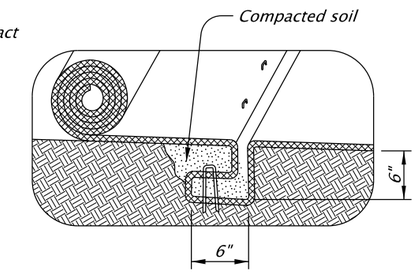


FIGURE A3:
CHANNEL CHECK SLOT
NOT TO SCALE

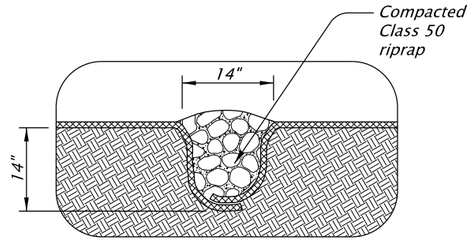


FIGURE A4:
CHANNEL CHECK SLOT WITH ROCK BACKFILL
NOT TO SCALE

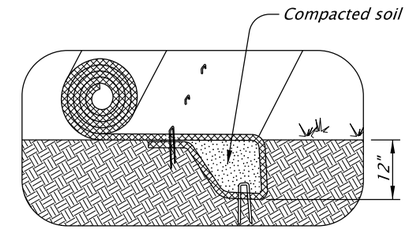
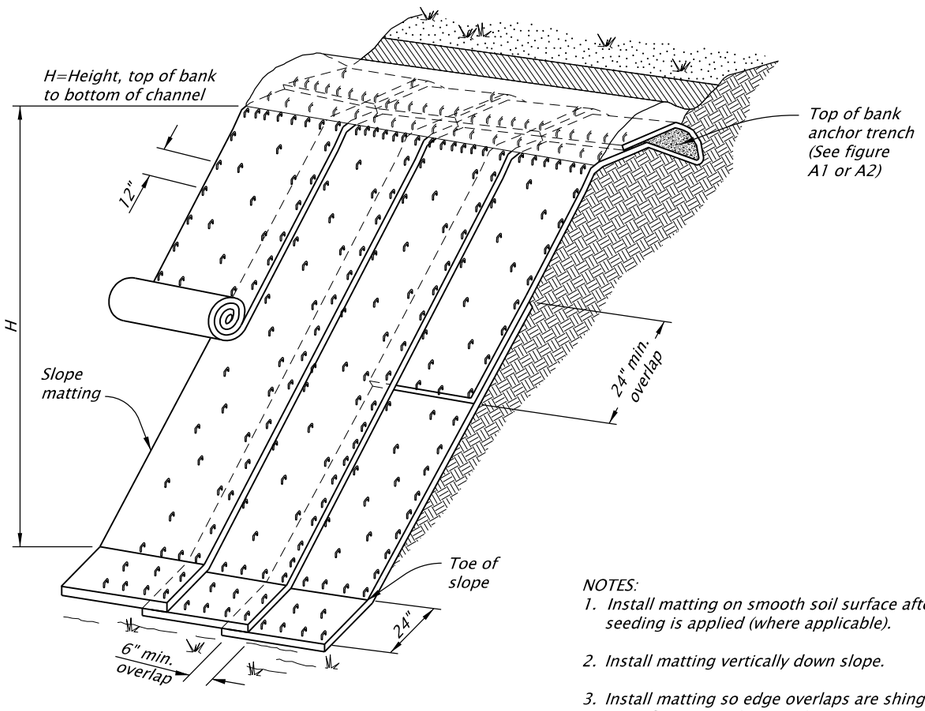
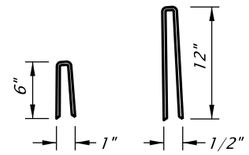


FIGURE A5:
INITIAL CHANNEL ANCHOR TRENCH
NOT TO SCALE

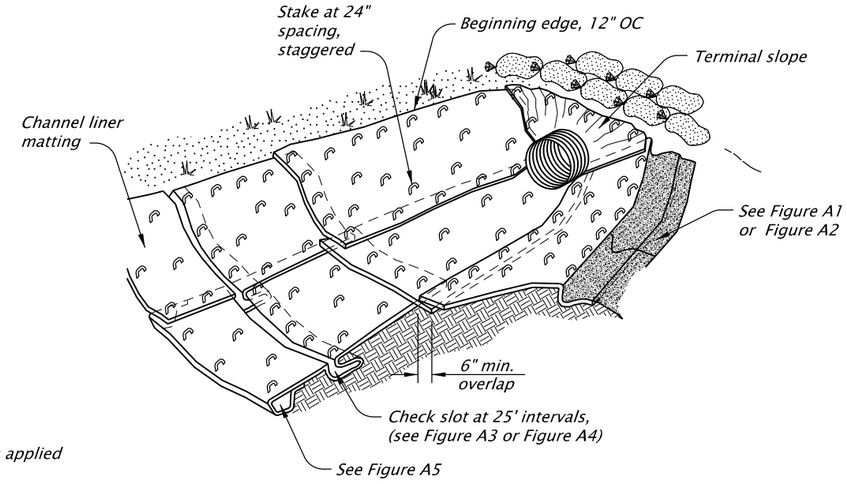


SLOPE MATTING ISOMETRIC VIEW
NOT TO SCALE

NOTES:
1. *Install matting on smooth soil surface after seeding is applied (where applicable).*
2. *Install matting vertically down slope.*
3. *Install matting so edge overlaps are shingled away from prevailing winds.*
4. *Place fastener at 12" OC on matting edges*
5. *Overlap upper mat over lower mat, and fasten.*
6. *Stagger alternate rows of fasteners placed at 24" OC*
7. *Extend mat 24" beyond toe of slope; fold mat back under 4" and fasten.*
8. *Matting Types A through E: Furnish fully biodegradable product. Matting with plastic or photodegradable components will not be accepted.*



STAPLES
NOT TO SCALE



CHANNEL MATTING ISOMETRIC VIEW
NOT TO SCALE

NOTES:
1. *Install matting on smooth soil surface after seeding is applied (where applicable).*
2. *Install channel liner matting, in the direction of water flow. Anchor upstream end of mat with check slot for culvert outfalls, place mat under pipe 12" minimum upstream from pipe outlet.*
3. *Construct check slots across channel bottom at 25' spacing and at the end of each mat (Fig. A3 or A4).*
4. *Overlap side channel liner matting edges 6" over the center channel liner matting and fasten edges 12" OC Continue overlap and stapling pattern for each additional side channel liner mat.*
5. *Lap upstream matting end 12" over beginning edge of downstream matting. Fasten 12" OC*
6. *Anchor top edge of side channel matting in trench and fasten 12" OC (Fig. A2).*
7. *Fasten matting interior at 24" OC with staggered spacing.*
8. *Construct initial anchor trench at downstream end of matting and terminal slope anchor at upstream end.*
9. *Matting Types A through E: Furnish fully biodegradable product. Matting with plastic or photodegradable components will not be accepted.*

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

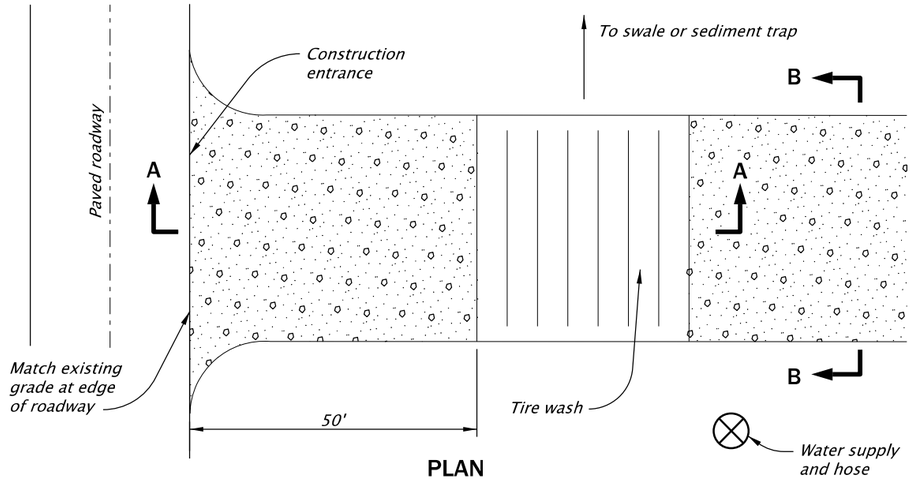
SLOPE AND CHANNEL MATTING

2024

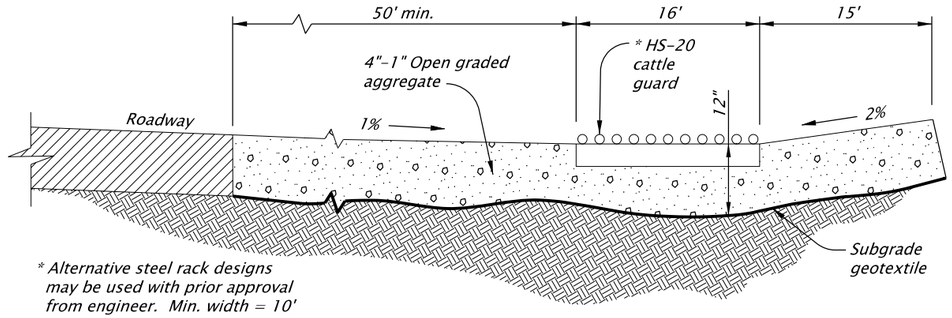
DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

CALC. BOOK NO. N/A | SDR DATE 20-JAN-2021 | **RD1055**

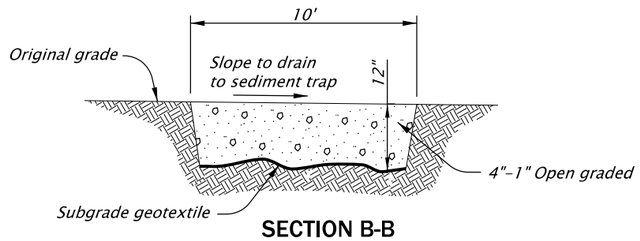
Effective Date: June 1, 2025 - November 30, 2025



PLAN



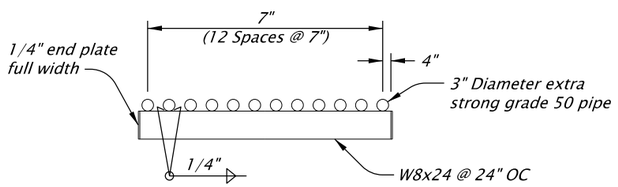
SECTION A-A



SECTION B-B

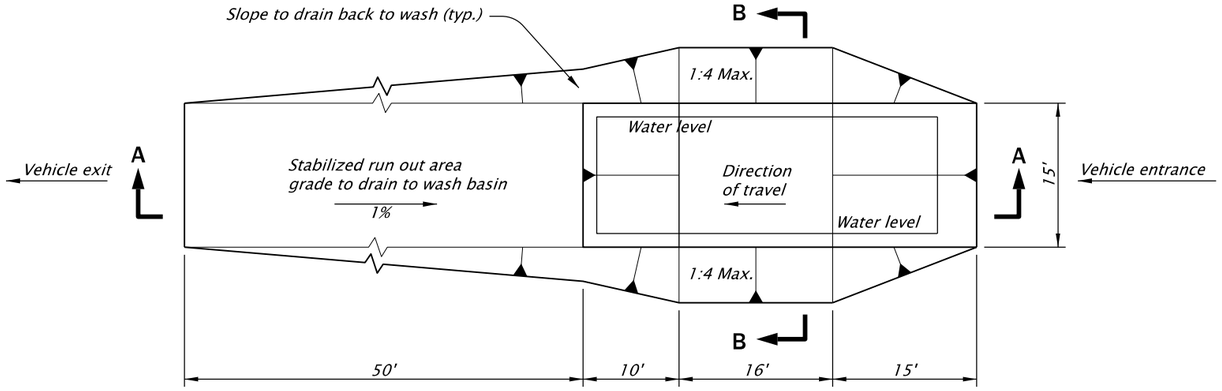
TIRE WASH - TYPE 1 (MANUAL HOSE WASH)

NOT TO SCALE

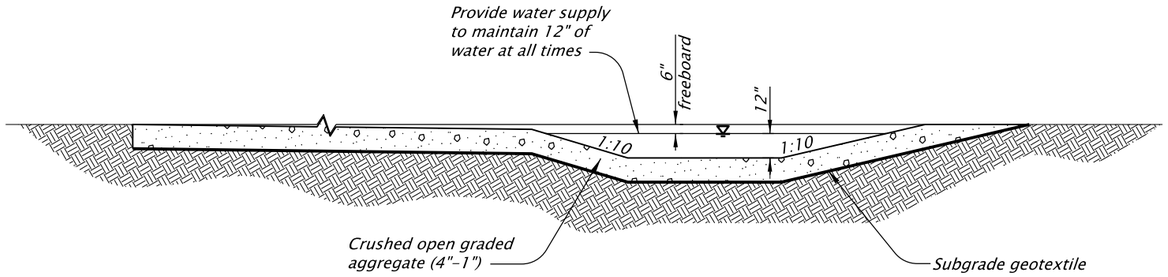


HS-20 CATTLE GUARD

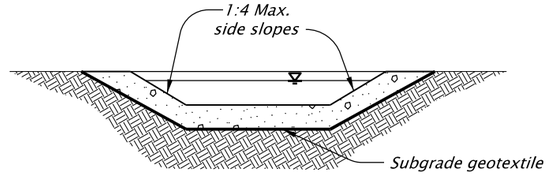
NOT TO SCALE



PLAN



SECTION A-A



SECTION B-B

TIRE WASH - TYPE 2

NOT TO SCALE

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OREGON STANDARD DRAWINGS

TIRE WASH FACILITY TYPE 1 AND 2

2024

DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

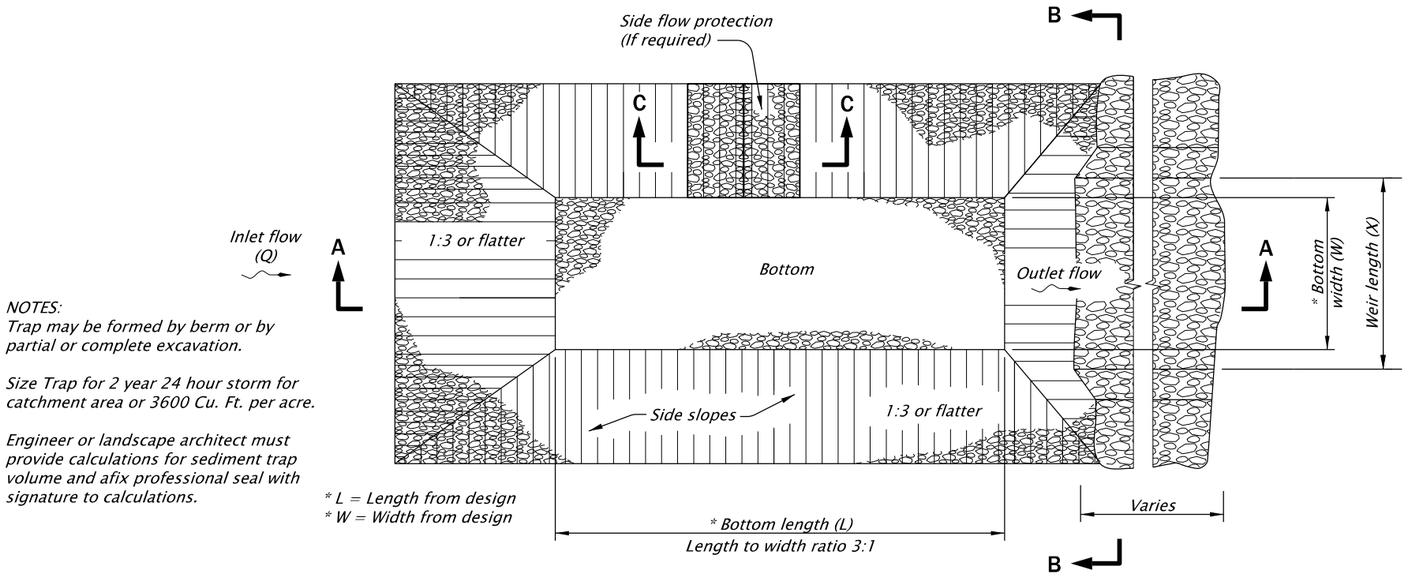
CALC. BOOK NO. N/A | SDR DATE 20-JAN-2021 | **RD1060**

20-JAN-2021

RD1060.dgn

Effective Date: June 1, 2025 - November 30, 2025

RD1065.dgn 20-SEPT-2023



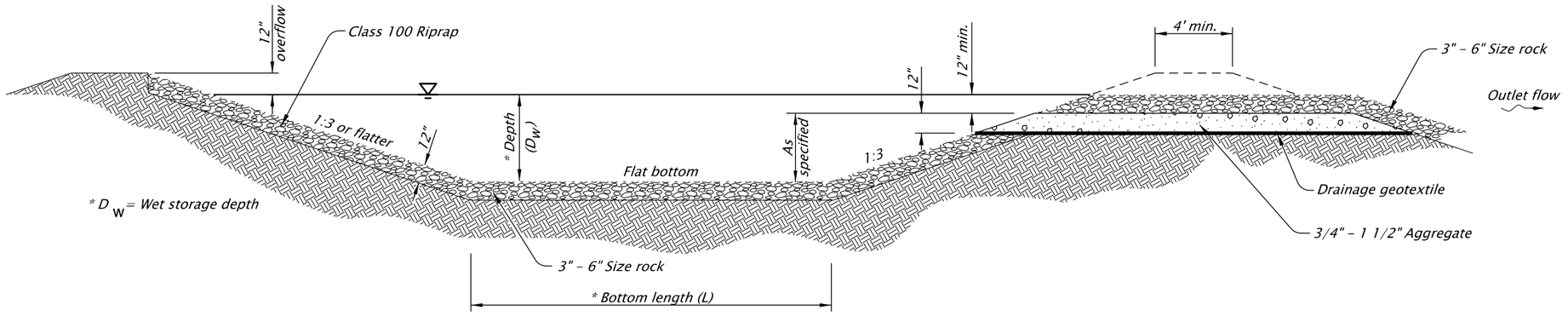
NOTES:
Trap may be formed by berm or by partial or complete excavation.

Size Trap for 2 year 24 hour storm for catchment area or 3600 Cu. Ft. per acre.

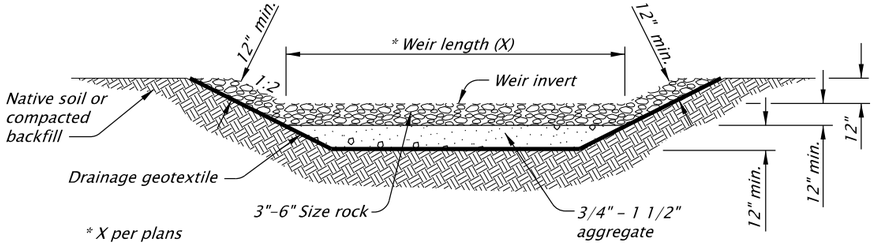
Engineer or landscape architect must provide calculations for sediment trap volume and afix professional seal with signature to calculations.

* L = Length from design
* W = Width from design

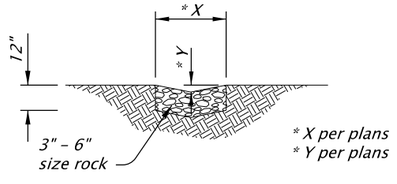
PLAN



SECTION A-A



SECTION B-B



SECTION C-C

SEDIMENT TRAP
NOT TO SCALE

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

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OREGON STANDARD DRAWINGS

SEDIMENT TRAP

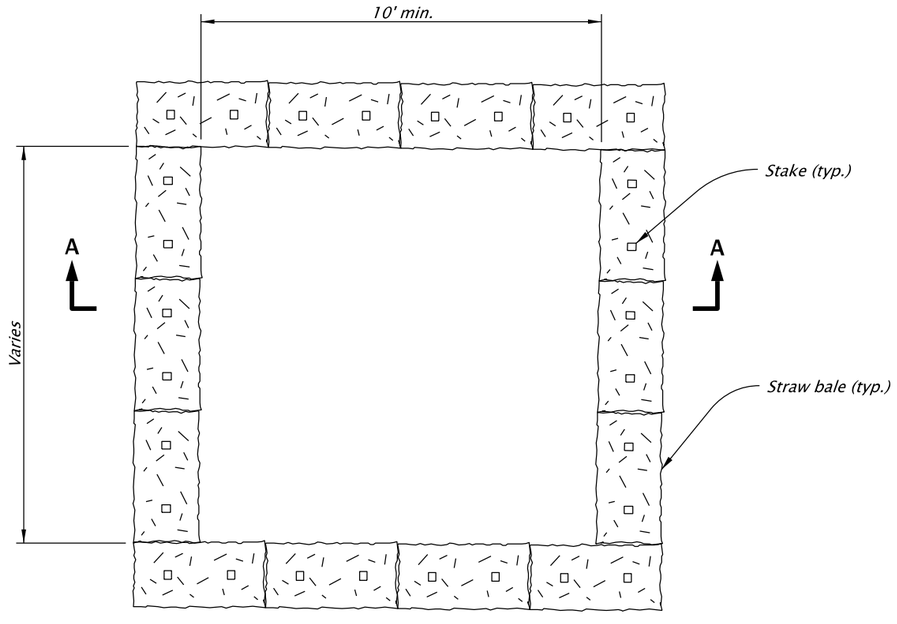
2024

DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS
09-2023	UPDATED NOTES

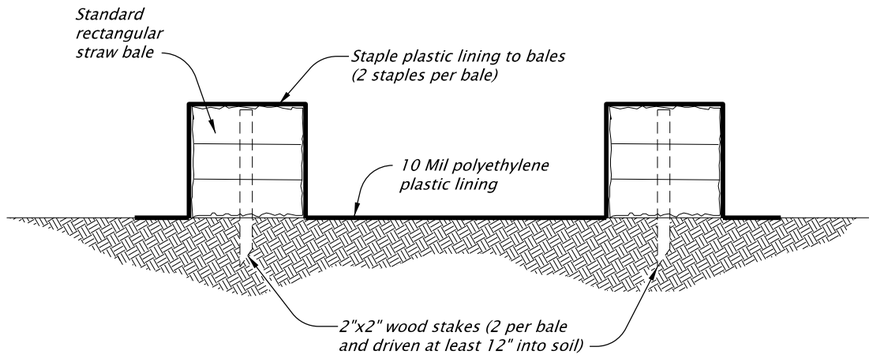
CALC. BOOK NO. N/A | SDR DATE 20-SEPT-2023 | **RD1065**

Effective Date: June 1, 2025 - November 30, 2025

20-JAN-2021
RD1070.dgn

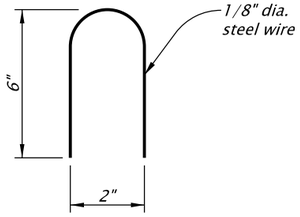


PLAN



SECTION A-A

CONCRETE TRUCK WASH OUT FACILITY
NOT TO SCALE



STAPLE DETAIL
NOT TO SCALE

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

CONCRETE TRUCK WASH OUT

2024

DATE	REVISION DESCRIPTION

CALC. BOOK NO. N/A | SDR DATE 20-JAN-2021 | **RD1070**

Effective Date: June 1, 2025 - November 30, 2025