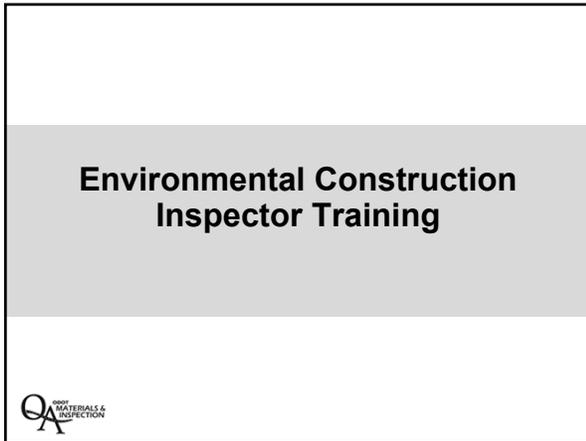


**INSERT TAB**

**Unit 1  
Pre-Construction**





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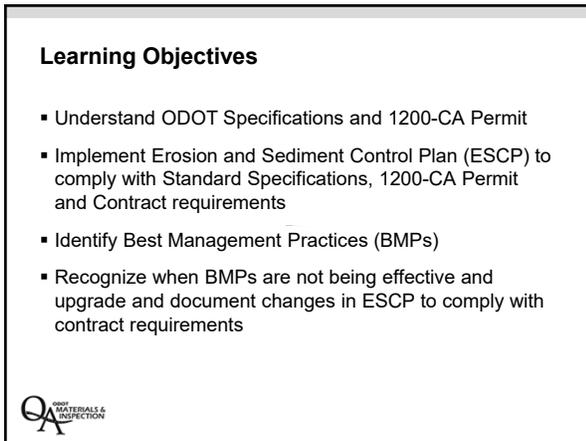
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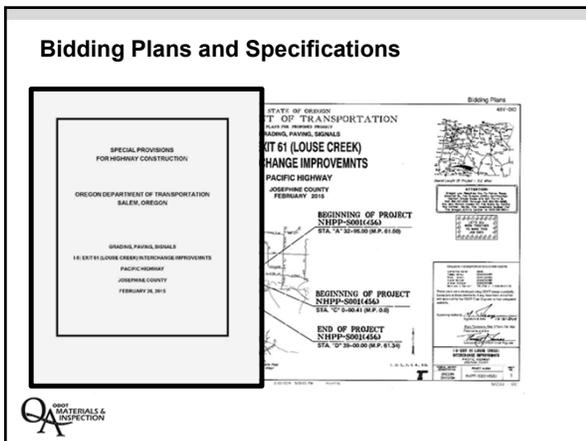
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**SPECIAL PROVISIONS  
FOR HIGHWAY CONSTRUCTION**

**OREGON DEPARTMENT OF TRANSPORTATION  
SALEM, OREGON**

**GRADING, PAVING, SIGNALS**

**I-5: EXIT 61 (LOUSE CREEK) INTERCHANGE IMPROVEMNTS**

**PACIFIC HIGHWAY**

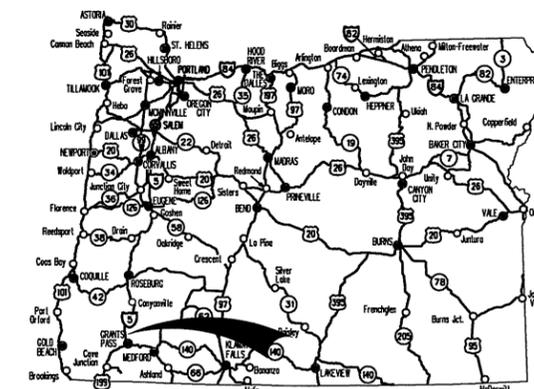
**JOSEPHINE COUNTY**

**FEBRUARY 26, 2015**



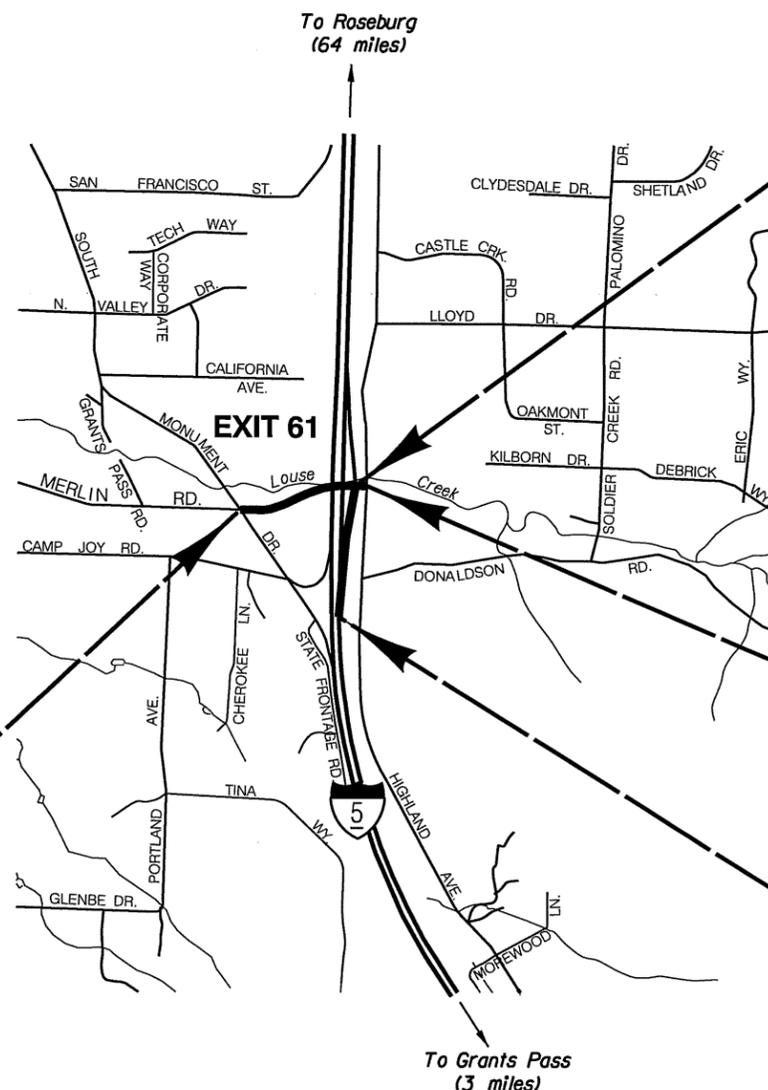
INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
1	Title Sheet
1A	Index Of Sheets Cont. & Std. Drg. Nos.

STATE OF OREGON  
 DEPARTMENT OF TRANSPORTATION  
 PLANS FOR PROPOSED PROJECT  
**GRADING, PAVING, SIGNALS**  
**I-5: EXIT 61 (LOUSE CREEK)**  
**INTERCHANGE IMPROVEMNTS**  
**PACIFIC HIGHWAY**  
 JOSEPHINE COUNTY  
 FEBRUARY 2015



Overall Length Of Project - 0.2 Miles

**ATTENTION:**  
 Oregon Law Requires You To Follow Rules Adopted By The Oregon Utility Notification Center. Those Rules Are Set Forth In OAR 952-001-0010 Through OAR 952-001-0090. You May Obtain Copies Of The Rules By Calling The Center. (Note: The Telephone Number For The Oregon Utility Center Is (503) 232-1987.)



**BEGINNING OF PROJECT**  
**NHPP-S001(456)**  
 STA. "A" 32+95.00 (M.P. 61.50)

**BEGINNING OF PROJECT**  
**NHPP-S001(456)**  
 STA. "C" 0+00.41 (M.P. 0.0)

**END OF PROJECT**  
**NHPP-S001(456)**  
 STA. "C" 14+06.79 (M.P. 0.3)

**END OF PROJECT**  
**NHPP-S001(456)**  
 STA. "D" 39+00.00 (M.P. 61.34)

T. 35 S., R. 6 W., W.M.



<b>OREGON TRANSPORTATION COMMISSION</b>		
Catherine Mater	CHAIR	
Tammy Baney	COMMISSIONER	
David Lahman	COMMISSIONER	
Susan Morgan	COMMISSIONER	
Alando Simpson	COMMISSIONER	
Matthew L. Garrett	DIRECTOR OF TRANSPORTATION	
These plans were developed using ODOT design standards. Exceptions to these standards, if any, have been submitted and approved by the ODOT Chief Engineer or their delegated authority.		
Approving Authority:  Signature & date <b>12-31-2014</b>		
Mark Thompson, Reg. 3 Tech. Ctr. Mgr. Print name and title		
Concurrence by ODOT Chief Engineer		
<b>I-5: EXIT 61 (LOUSE CREEK)</b> <b>INTERCHANGE IMPROVEMNTS</b> PACIFIC HIGHWAY JOSEPHINE COUNTY		
FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
OREGON DIVISION	NHPP-S001(456)	1



**CONTRACT AND BONDS  
FOR HIGHWAY CONSTRUCTION**

**OREGON DEPARTMENT OF TRANSPORTATION  
SALEM, OREGON**



**GRADING, PAVING, SIGNALS**

**I-5: EXIT 61 (LOUSE CREEK) INTERCHANGE IMPROVEMENTS**

**PACIFIC HIGHWAY**

**JOSEPHINE COUNTY**

**CONTRACT NUMBER** 14785

**EXPENDITURE ACCOUNT NUMBER** CON03704

**CLASS OF PROJECT** NHPP-S001(456)

**CONTRACTOR** JRT CONSTRUCTION

**DATE OF AWARD** \_\_\_\_\_

**SPECIFIED COMPLETION** SEE SUBSECTION 00180.50(h)



INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
1	Title Sheet
1A	Index Of Sheets Cont. & Std. Drg. Nos.

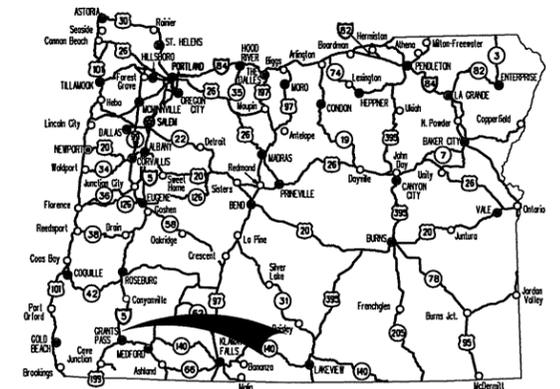
STATE OF OREGON  
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED PROJECT  
GRADING, PAVING, SIGNALS

**I-5: EXIT 61 (LOUSE CREEK)  
INTERCHANGE IMPROVEMNTS**

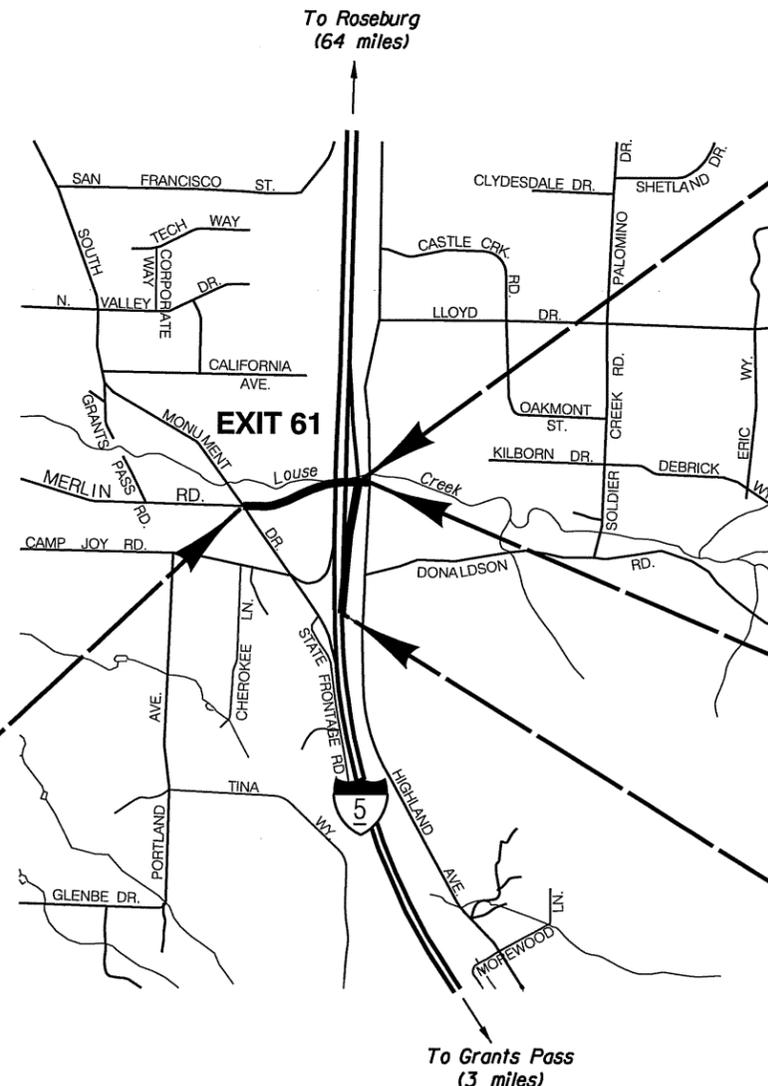
PACIFIC HIGHWAY

JOSEPHINE COUNTY  
FEBRUARY 2015



Overall Length Of Project - 0.2 Miles

**ATTENTION:**  
Oregon Law Requires You To Follow Rules Adopted By The Oregon Utility Notification Center. Those Rules Are Set Forth In OAR 952-001-0010 Through OAR 952-001-0090. You May Obtain Copies Of The Rules By Calling The Center. (Note: The Telephone Number For The Oregon Utility Center Is (503) 232-1987.)



**BEGINNING OF PROJECT  
NHPP-S001(456)**  
STA. "A" 32+95.00 (M.P. 61.50)

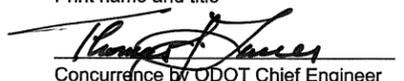
**BEGINNING OF PROJECT  
NHPP-S001(456)**  
STA. "C" 0+00.41 (M.P. 0.0)

**END OF PROJECT  
NHPP-S001(456)**  
STA. "C" 14+06.79 (M.P. 0.3)

**END OF PROJECT  
NHPP-S001(456)**  
STA. "D" 39+00.00 (M.P. 61.34)

T. 35 S., R. 6 W., W.M.



OREGON TRANSPORTATION COMMISSION		
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These plans were developed using ODOT design standards. Exceptions to these standards, if any, have been submitted and approved by the ODOT Chief Engineer or their delegated authority.		
Approving Authority:  Signature & date 12-31-2014		
Mark Thompson, Reg. 3 Tech. Ctr. Mgr. Print name and title		
 Concurrence by ODOT Chief Engineer		
<b>I-5: EXIT 61 (LOUSE CREEK) INTERCHANGE IMPROVEMNTS</b> PACIFIC HIGHWAY JOSEPHINE COUNTY		
FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
OREGON DIVISION	NHPP-S001(456)	1



Submittal	Specification	Due Date
Proposed Material Sources	00160.01	15 days prior to use
Request for Subcontract Consent	00180.21	Must be approved before subcontracted work begins
Project Schedule	00180.41	10 days before pre-con
TOD/Business Logo Signs	00225.05	5 days before pre-con
Traffic Control Plan (Include list and quantities of temp signs)	00225.05, *See Special Provisions for additional requirements	5 days before pre-con
Erosion and Sediment Control Plan	00280.04	10 days before pre-con
ESCM Name & Certification	00280.30	10 days before pre-con
Pollution Control Plan	00290.30(b)	10 days before pre-con
Spill Response Agreement	00290.20(g)	10 days before pre-con

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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:

- An approved Pollution Control Plan
- An approved Erosion and Sediment Control Plan

**ODOT must respond to submittals in 00180.40**




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**00280.04 Erosion and Sediment Control Plan...**

- When using the Agency's ESCP without modification, submit a written notification indicating the Agency's ESCP will be used without modification.
- If contractor uses an agency modified plan, submit the following;
  - Proposed ESCP showing all Erosion and Sediment Control work and quantities
  - ESCP implementation Schedule for each phase of work




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Submittals for PME Phase 4 (Included in Manual)	Standard Specification Example No.		PME Phase 4 Special Provision / Pg.	
Erosion and Sediment Control Plan	00280.04	No. 1		
ESCM Name & Certification	00280.30	No. 2	00280.30	244/397
Pollution Control Plan	00290.30(b)	No. 3		
Spill Response Agreement	00290.20(g)	No. 4		
Scaled Haz Storage Site Plans	00290.30(b)	No. 5		
Protection of Fish – Regulated Work areas	in-water work schedule	No. 6	00290.34(a)	249/397
Protection of Wildlife – Migratory Bird Protection Plan		No. 7	00290.36(c)	254/397

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*Example No. 1*  
*EROSION and SEDIMENT CONTROL PLAN*  
*SECTION 00280.04*

  
Salem, Oregon 97317

May 9, 2016

Oregon Department of Transportation  
3700 SW Philomath BLVD  
Corvallis, OR 97333

Attn: Steve Schultz

Re: Erosion & Sediment Control Plan

It's  intention to adopt the Agency's Erosion Control Plan for use on the project. During construction the plan may be modified as needed due to change in scheduling or staging. All changes will be documented on the Erosion and sediment control plans. No construction will begin without installation of proper erosion control measures. The project site will be stabilized during the winter shutdown between the 2016 and 2017 season. A majority of early on-site erosion control measures are sediment fence, check dams, inlet protection, matting, compost sock and erosion control blankets. Once the work is completed for the 2016 season permanent erosion control measures will be installed such as permanent landscaping and seeding.

A majority of the work will be performed in the first season. Many different construction activities will be performed during the same time. Stage I will consist of the installation of the wildlife crossing pipe, Eddy B & C landslide correction, roadway construction, cut 4 - 6, Crystal Creek landslide correction and the Cougar Creek tributary 3. As stated in the plans and specifications in-water work will be performed during the regulated working window.

Stage II & III will focus more on roadway construction including; subgrade stabilization, water quality swales, installation of guardrail, grading and paving.

Stage IV Phase I & 2 consist of removing concrete barrier, building subgrade and paving the roadway connection.

After Stage IV Phase 1 & 2 is completed in the middle of October the winter shut down will occur until the end of May 2017.

Season 2 will begin with reinstalling temporary erosion control measures necessary to begin construction activities. Stage V Phase I will begin with roadway construction on the "S" Line – New Corvallis-Newport Highway and "B" Line – Crystal Creek Loop. Activities will include installation of storm pipe and structures, paving and installation of concrete barrier. AC base course and temporary striping will be installed as well.

Stage V Phase 2 is the installation of "Culvert B" as well as the installation of the turbidity barrier. We will be constructing the west to be paved and striped. To finish the project we will be finishing the roadway construction on the "B" Line – Crystal Creek Loop by building the subgrade and preparing it for

*Example No. 2*  
**ESCM QUALIFICATIONS**  
**SP 00280.30**  
**Pg. 244/397**

[REDACTED]  
Salem, Oregon 97317

May 9, 2016

Oregon Department of Transportation  
3700 SW Philomath BLVD  
Corvallis, OR 97333

Attn: Steve Schultz

Re: Erosion and Sediment Control Manager Qualifications

I will be acting as the Erosion & Sediment Control Manager for the project. I am a registered Engineer for the State of Oregon and my certification number is [REDACTED]. I have participated on multiple Agency projects over the years that include FFO I-5 @ OR214 Interchange (Woodburn) Development, FFO – US101: SE 23<sup>rd</sup> Drive – SW 35<sup>th</sup> Street (Lincoln City) Section, and FFO – I-5 @ Kuebler Interchange – S.B. Ramp Improvements (Salem) Section. On These projects I worked directly with the Agency inspecting and monitoring erosion control. Prior to working for [REDACTED] I worked for ODOT out of their Region 2 office in Corvallis. I successfully completed ODOT's training course to become a certified Erosion Control Inspector. I have five years of experience as an Erosion Control Inspector where most of my experience comes from working on previous phases of the Eddyville Project.

Sincerely,

[REDACTED]  
Project Manager



## POLLUTION CONTROL PLAN

PROJECT NAME FFO - US20 PME: UPRR - Eddyville (Phase 4)	HIGHWAY US20 Corvallis - Newport	MILEPOST - TO M.P. 15.87	MILEPOST - FROM M.P. 21.48	CONTRACT NUMBER 14890
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**1. On-call spill response team:**

COMPANY NWFF Environmental	CALL NUMBER 1-800-942.4614	TRIGGERS FOR CALLING Smell, Spill, Known Contaminates
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**2. Emergency contacts:**

AGENCY PROJECT MANAGER Steven Schultz, P.E.	OFFICE PHONE NUMBER 541-757-4104	MOBILE PHONE NUMBER 503-██████████	PROJECT MANAGER'S SECONDARY CONTACT Markus Schaaf	OFFICE PHONE NUMBER 541-757-4280	MOBILE PHONE NUMBER 541-██████████
CONTRACTOR ██████████	OFFICE PHONE NUMBER 503-██████████	MOBILE PHONE NUMBER 503-██████████	CONTRACTOR'S SECONDARY CONTACT ██████████	OFFICE PHONE NUMBER 503-██████████	MOBILE PHONE NUMBER 541-██████████

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*
Coating, painting and removal	N/A
Concrete work	Washout in tubs or plastic lined earth/straw berms
Dewatering	Dewater into silt sacks or vegetated areas with appropriate erosion control measures
Disturbance of roadside soils	Erosion control installed prior to disturbance, material used on site or delivered to approved dump sites
Excavation and trenching	Erosion control installed prior to disturbance, material used on site or delivered to approved dump sites
Landscaping	Erosion control installed prior to disturbance
Lighting and electrical	N/A
Paving	N/A
Striping and removal	Haul stripe and place is Agency provided disposal site
Vehicle and equipment maintenance, fueling	All maintenance at shop in Salem, Fueling will take place on level surfaces, monitored automatic shut-off valves
Working on contaminated sites	N/A

\* 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
Pesticides/Herbicides	Subcontractor Vehicle	Landscape	Landscape Sub

Fertilizers	Subcontractor Vehicle	Landscape	Landscape Sub
Petroleum based products	Staging Area	Re-fueling	Prime
Concrete	Concrete Truck	Site Features	Prime
Fuel	Staging Area	Re-fueling	Prime
Curing compounds	Prime Vehicle	Misc.	Prime
Thermoplastics	Subcontractor Vehicle	Striping	Striping Sub
Coatings	N/A	N/A	N/A
Luminaires & Electronics	N/A	N/A	N/A
Other (describe in field at right)			

**5. Project waste inventory (Identify any waste that will be generated):**

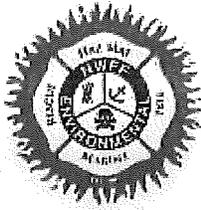
PROJECT WASTE	HAZARDOUS?	REDUCTION	STORAGE/CONTAINMENT	RECYCLE, RE-USE OR DISPOSE, EXPLAIN WHY	DISPOSAL DOCUMENTATION
Excavation Spoils	No	N/A	Disposal Sites 1 & 2	Dispose- Export Project	Per Lump Sum Breakdown

**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  
See Google Earth Print of jobsite staging area



# NWFF Environmental

Philomath, OR • Portland, OR • Vancouver, WA • Salt Lake City, UT • Pocatello, ID  
Toll free 1.800.942.4614 • Fax 541.929.2115 • www.nwffenviro.com  
P.O. Box 188, Philomath, OR 97370

## Spill Response Agreement

This is a Spill Response Agreement between NWFF, Inc. dba NWFF Environmental (Herein NWFF), and (Herein Client). The Response Agreement is the terms and conditions should Client engage NWFF for Spill Response.

As an independent contractor, NWFF will provide Client with 24-hour emergency spill response services upon request. Following the Spill Response Flow Chart guidelines, Client will notify NWFF when services are requested.

NWFF will respond promptly to properly control, contain, clean-up, transport, and dispose of all spilled or contaminated materials. NWFF will provide all necessary regulatory reports and paperwork in compliance with the standards set by all State and Federal regulations.

Prior to beginning above described operations, NWFF will require a signed work order from an authorized employee of Client; this can be faxed. NWFF will then respond with a minimum of one (1) Response Manager and two (2) Hazardous Material Technicians in addition to the appropriate equipment and vehicles. NWFF will have full responsibility and full authority at the scene of all incidents on behalf of, and in the best interest of Client. Client will be notified of any additional services that may be requested or required.

Client agrees to pay for labor, services, and materials furnished by NWFF within 15 days of receiving an invoice. If not paid within 30 days, compound interest will be calculated and charged.

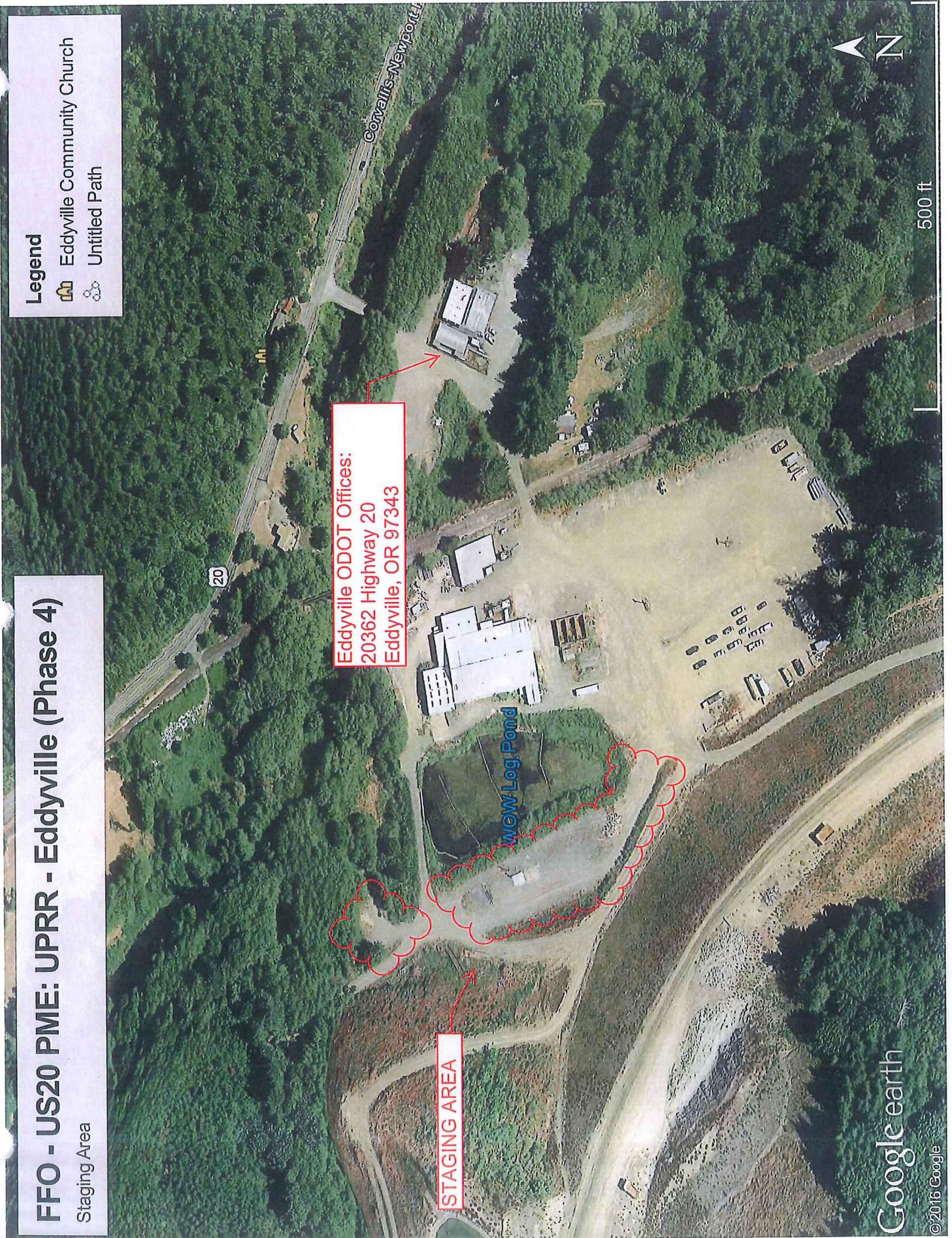
NWFF agrees to carry and maintain all required insurance coverage. Proof of insurance is available upon request. If not completely satisfied, Client reserves the right to terminate (in writing), the services of NWFF at any time during the operation. Client agrees to pay all invoices up to the time the termination notice is received.

If NWFF utilizes the services of an attorney for the purpose of collecting past amounts due and unpaid by Client, Client agrees to pay NWFF reasonable attorney fees for such service, regardless if no legal action may be commenced or filed. In the event of any legal action or proceedings between parties, the prevailing party shall be entitled to court costs, reasonable attorney fees, and expenses in any such action or proceeding including any appeals thereof.

I understand and agree to the terms herein:

June 3<sup>rd</sup> 2013  
Date  
[Redacted]  
Printed Name & Title  
[Redacted]  
Authorized Client Signature

3 June 2013  
Date  
[Redacted]  
Printed Name & Title  
[Redacted]  
NWFF Representative Signature



**FFO - US20 PME: UPRR - Eddyville (Phase 4)**  
Staging Area

**Legend**  
Eddyville Community Church  
Untitled Path

**Eddyville ODOT Offices:**  
20362 Highway 20  
Eddyville, OR 97343

**STAGING AREA**

New Log Pond

20

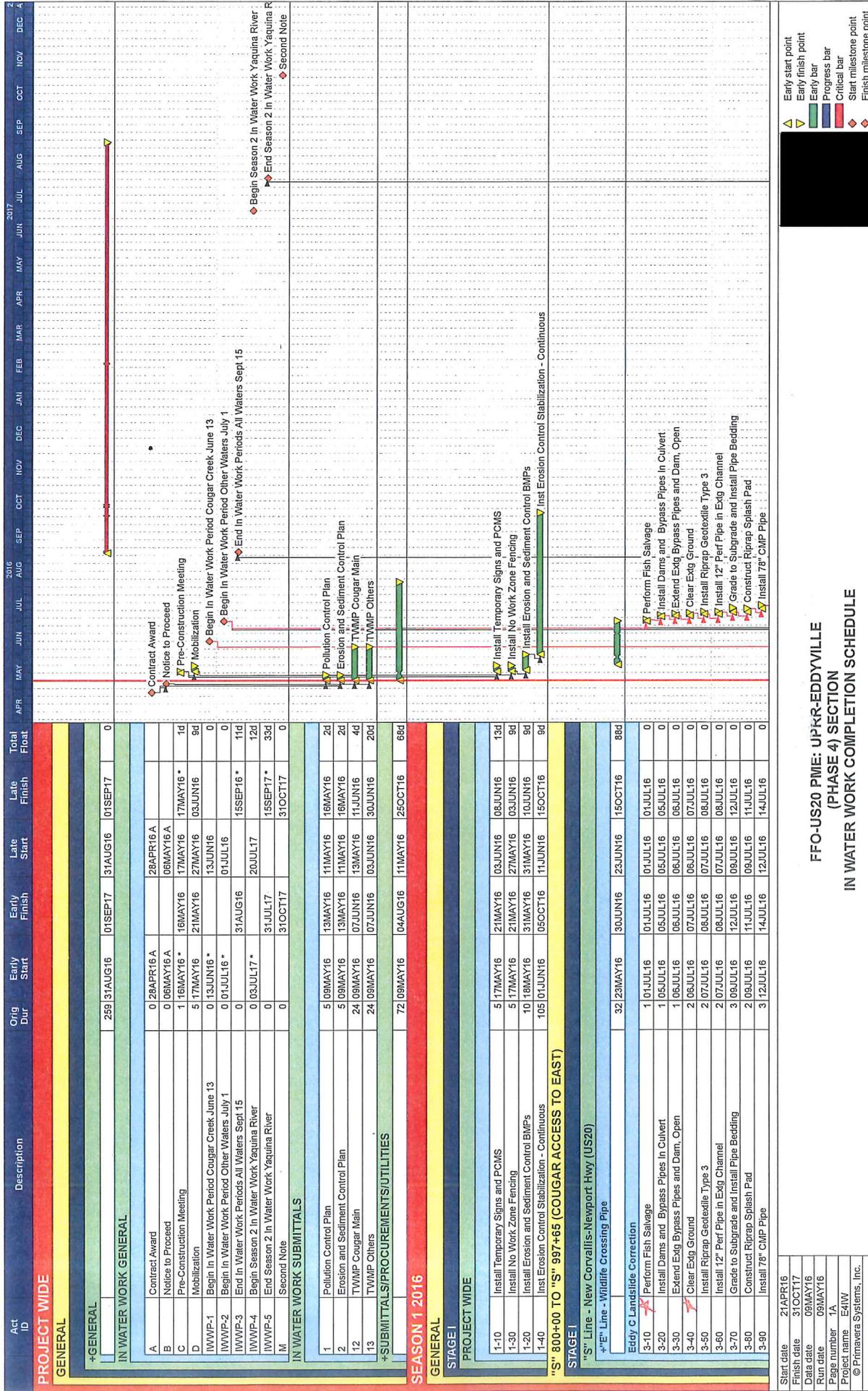
Corvallis-Newport

500 ft



Google earth  
©2016 Google

# Example No. 6, PROTECTION OF FISH, SP 00290.34(a), Pg. 249/397



## FFO-US20 PME: UPKR-EDDYVILLE (PHASE 4) SECTION IN WATER WORK COMPLETION SCHEDULE

Start date	21APR16
Finish date	31OCT17
Date date	09MAY16
Run date	09MAY16
Page number	1A
Project name	E4IW
© Primavera Systems, Inc.	

- ▲ Early start point
- ▼ Early finish point
- ▬ Early bar
- ▬ Progress bar
- ▬ Critical bar
- ◆ Start milestone point
- ◆ Finish milestone point

Example No. 6, PROTECTION OF FISH, SP 00290.34(a), Pg. 249/397

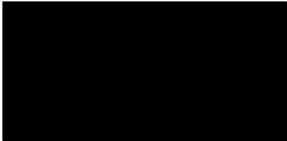
Act ID	Description	Orig Dur	2016												Total Float
			Early Start	Early Finish	Late Start	Late Finish	2017	2018	2019	2020	2021	2022	2023	2024	
29-70	Remove Bypass Pipe and Dam	1	28JUL17	28JUL17	07AUG17	07AUG17									6d
29-80	Remove Turbidity Barrier	1	31JUL17	31JUL17	08AUG17	08AUG17									6d
29-90	Finish Erosion Control Stabilization	2	01AUG17	02AUG17	09AUG17	10AUG17									6d
+Roadway Construction															
		24	12JUL17	14AUG17	18JUL17	25AUG17									9d
+*B* Line - Crystal Creek Loop (Old US20)															
		13	28JUL17	15AUG17	04AUG17	25AUG17									8d
+															
		63	03AUG17	31OCT17	10AUG17	31OCT17									0

\* Tree/debris removal below othw needs to take place prior to fish salvage in both Eddy C and Congar tributaries, This work needs to take place during the IWWW.

\* Need to add fish salvage to "Culvert B" at sta. "S" 708+49, fish salvage can occur before or concurrently with the turbidity curtain install.

Start date 21APR16  
 Finish date 31OCT17  
 Data date 09MAY16  
 Run date 09MAY16  
 Page number 4A  
 Project name E4IW  
 © Primavera Systems, Inc.

FFO-US20 PME: UPRR-EDDYVILLE  
 (PHASE 4) SECTION  
 IN WATER WORK COMPLETION SCHEDULE



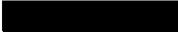
Salem, Oregon 97317

May 9, 2016

Oregon Department of Transportation  
3700 SW Philomath BLVD  
Corvallis, OR 97333

Attn: Steve Schultz

Re: Migratory Bird Protection Plan

 has worked on many ODOT projects where the potential for migratory bird nesting has existed. Our superintendents and foreman are experienced and will be responsible for observations for migratory birds and instructing others in nesting habitat awareness for work that has the potential to be impacted by nesting birds, specifically tree removal. The observations and instruction will ensure that a proper visual inspection will occur during the nesting period of March 1 through September 1 to attempt to prevent nesting or to remove nests prior to eggs being laid.

Work prior to award of contract has removed most trees conducive to migratory birds for their nesting habitat. Additional tree removal may be required and will be performed between September 1 and February 28. If it is determined that tree removal will need to occur for work during the 2016 construction season, we will notify the Agency for review and direction.

We will notify the Agency if nests are discovered or if it becomes apparent that migratory birds are attempting to nest in the construction zone.

It is the intention of this plan to comply with the Migratory Bird Treaty Act (16 U.S.C 703-712) per Sect. 290.36(c) of the Standard Specifications. In the event that a nest is discovered that contains eggs, we will promptly stop work in the area and notify the Agency for review and direction. We understand that discovery may lead to a work suspension.

Sincerely,



Project Manager



**INSERT TAB**

**Unit 2**  
**280s / 1200 CA**



<b>1200-CA permit Collaboration with 280 Specifications</b>		
	<b>OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION - 2015</b>	
<b>NPDES - 1200-CA section</b>	<b>SPEC SECTION NUMBERS</b>	
(Sched. A) 1- Performance Limitations	00280.04 & 00280.05	
(Sched. A) 2 - ESCP Preparation and Submittal	00280.00, 00280.04 & 00280.05	
(Sched. A) 2 - ESCP Preparation and Submittal (wet season work)	280.41 (c)	
(Sched. A) 3. c. i - ESCP Requirements (construction entrance)	00280.46(a)	
(Sched. A) 3 d. iv - ESCP Requirements (Concrete washout)	280.16(i), 00280.46(i)	
(Sched. A) 3 d. ii. Additional Controls & Practices (vegetative control)	280.14 (d), 280.44(d),	
(Sched. A) 3 d. iii. Additional Controls & Practices (erosion control)	280.16, 280.44	
(Sched. A) 3 d. iv. Additional controls & Practices (sediment control)	280.14 (d), 280.46,	
(Sched. A) 4. a, c, e. Maintenance Requirements (sediment removal)	280.30 (8th bullet), 280.63	
(Sched. A) 4. f. Maintenance Requirements (Installation timing)	280.40	
(Sched. A) 4. h. - Maintenance Requirements (work suspension)	280.42	
(Sched. A) 5a & b - Additional Requirements (Turbidity)	280.62(c)	
(Sched. B) 1 - Minimum Monitoring Requirements	280.06, 280.30	
(Sched. B) 2 -Minimum Monitoring Requirements	280.30 (7th bullet), 280.62(b)	
(Sched. B) 3 - Minimum Monitoring Requirements	280.30 (6th bullet), 280.62(a)	
(Sched. B) 7. a. - Written Records (rainfall)	280.30 (3rd Bullet), 280.62	
(Sched. B) 7. b. - Written Records (observations)	280.30 (5th & 6th Bullets), 280.62	
(Sched. B) 7. c. Written Records (site discharge)	280.30 (4th Bullet), 280.62	
(Sched. B) 7. d. - Written Records (reporting)	280.30 (10th, 11th, 12th, & 13th Bullets), 280.62	
(Sched. D) 4 - Definitions	280.02	
(Sched. F) - Section B., 1 - Proper Operation & Maintenance	280.60	
(Sched. F) - Section D., 5 - 24 Hour Reporting	280.62(c)	



**Standard Specifications & Permit Requirements**



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**Topics of Discussion**

**Erosion Control is important**

**Regulations, Regulatory Agencies and Permits**  
Clean Water Act, NPDES, EPA, DEQ, USACE

**Specifications, Part 00200**  
Temporary Features and Appurtenances

- **Section 00280** Erosion and Sediment Control
- Typical Erosion and Sedimentation
- Typical Best Management Practices
- Typical Erosion and Sediment Control "Fails"

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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
- 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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**Regulations and Regulatory Agencies**

- Clean Water Act – Federal law to prevent pollution in the waters of the United States
- National Pollutant Discharge Elimination System (NPDES) – our regulations of concern
- Point and nonpoint sources
- Agencies overseeing clean water act
  - Environmental Protection Agency (Federal) (EPA)
  - Division of State Lands (State) (DSL)




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**Other Agencies and Acts**

US Army Corps of Engineers (USACE) – **404 Permit**

In-water work activities

- Any activity that might result in discharge/disturbance to waters require Federal 404 Permit
  - Nationwide General Permit
  - Individual Permit
- Permit require DEQ 401 Certification to comply with State water quality regulations
- When needed the PM will provide to the Contractor at the Pre-Construction meeting




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**NPDES Permits**

- Oregon is a delegated state
  - Authorized to issue NPDES Permits
  - State Agency: Oregon Department of Environmental Quality (DEQ)
- NPDES Permit types
  - Individual 1200-C (For local agencies, businesses etc.)
  - General 1200-CA (Agency with several projects of similar type. ODOT has acquired this permit)

<http://www.deq.state.or.us/wq/wqpermit/permits.htm#pmts>




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**General Permit: 1200-CA**

**Activities covered by this permit:**

- All ground disturbing construction activities under the authority of a public agency with the disturbance of one or more acres.
- Phased construction where full build-out disturbs a total of one or more acres.
- ODOT has 5 Regions, each Region has its own 1200-CA Permit.
- ODOT's 1200-CA cannot be used on ODOT funded Local Agency projects.




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**ODOT 1200-CA Permit**

- Project Manager will provide a copy of the permit to the Contractor at the preconstruction conference.
- A copy of the permit must be retained on an active site
- Local permits may be required in addition to 1200-CA permit (local regulations may be more stringent and must comply)




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**Oregon Dept. of Environmental Quality Resources**

<http://www.deq.state.or.us/wq/wqpermit/docs/general/npdes1200c/ErosionSedimentControl.pdf>

**Erosion and Sediment Control Manual**

- Appendix A: Climate Information and Rainfall
- Appendix B: Soil Survey Information
- Appendix C: Acronyms and Terms
- Appendix D: Runoff Control BMPs
- Appendix E: Erosion Prevention BMPs
- Appendix F: Sediment Control BMPs
- Appendix G: Non-Storm Water Pollution Control BMPs




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**Section 00280 Description**

**00280.00 Scope**

- This work consists controlling soil erosion by wind or water and preventing eroded sediments from leaving site.
- Requirements described in these Specifications and ESCP are the **minimum** for all project construction sites. Changing site conditions frequently require additional measures.
- These Specifications cover all ODOT projects unless specified and includes disposal sites.
- Throughout this presentation Permit requirements are cross referenced to the supporting Specification number




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**00280.00 Scope**

- Comply with Federal, State, and Local laws, rules, and regulations
- Local permits may be more stringent than these specifications
- This work consists of providing effective functioning erosion and sediment control until the site is permanently stabilized.
- **Contractor is responsible to comply with all permit requirements and specification conditions**
- Inspector verifies Contractor performs work




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**0280.04**  
**Erosion and Sediment Control Plan (ESCP)**  
**on Agency Controlled Lands**

- Agency developed ESCP is preliminary
- Contractor may adopt it as a basis for Project ESCP
- Additional or revised features may be required depending on Contractor's methods of operation and schedule
- 00280.04 satisfies the intent of 1200-CA Schedule A.2




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1200-CA Schedule A.1 requires an Erosion and Sediment Control Plan (ESCP) developed and implemented to prevent:

- Earth slides or mudflows that leave site or are likely to discharge to surface waters
- Concentration of flow causing erosion or that are likely to leave site with a sediment load
- Evidence of rills, rivulets or channels
- Deposition of sediment where it can move into unprotected storm water inlets
- Lack of maintenance of failing inlet protection
- 00280.04 satisfies these permit requirements.



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What are Erosion and Sedimentation?

Rill  
(Shadow Channel)



Mudflow



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What are Erosion and Sedimentation?

Sediment  
leaving site



Turbid water  
leaving site



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**What are Erosion and Sedimentation?**

Mud tracking off site



Failed maintenance



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**ODOT 1200-CA, Schedule A.2**

**Erosion and Sediment Control Plan (ESCP) Preparation Requirements (continued)**

- DEQ may request modifications to the ESCP at any time. Inspector may require ESCP modifications
- 00280.04 includes language the inspector may use as enforcement piece to revise ESCP to provide better performance.

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**ODOT 1200-CA, Schedule A.2**

**ESCP Preparation Requirements (continued)**

- Inspector be aware that 1200-CA, Schedule A.2.e identifies non-stormwater discharges that are allowable if identified in ESCP

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**00280.04 – ESCP requirements**

- Do not begin work until the ESCP and the implementation schedules are approved by Agency.
- Contractor – Update the ESCP and schedules at least monthly. Add approved changes to the ESCP no later than 24 hours after changes have been implemented in the field. (00280.30) – Inspector to verify
- Provide ESCP updates and revisions to the construction PM.
- The ESCP shall include procedures necessary to meet local erosion and sediment control requirements or storm water management requirements. (1200-CA, A.2.c)




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**1200-CA Schedule A.3.d / 00280.41  
ESCP Requirements (Continued)**

**Additional Controls and Practices (Wet Season work)**

**00280.02** – Definition of wet season Oct 1 – May 31

- Minimizing clearing and grading
- Description and schedule for installing additional erosion control
- Description and schedule for installing additional runoff control
- Description and schedule for installing additional sediment control
- Description of isolation of storm water from pollutants




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**Section 00280.05  
ESCP on Non-Agency Controlled Lands**

Submittals same as for Agency-controlled lands

- ODOT's 1200-CA permit does not cover non-Agency controlled land
- Work on non-Agency lands require 1200-C (individual) permit or proof permit is not required and statement that hold the Agency harmless for work on the land.
- ODOT's inspector verifies permit and/or other required documents are obtained, but has no jurisdiction over activities on non-Agency lands.




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**Inspector Responsibilities**

- Have knowledge and understanding of the project, the ESCP and the Pollution Control Plan (PCP).
- Ensure that the Contractor submits revisions to the ESCP and presents the revised ESCP at the Pre-Con meeting.
- Ensure that the Contractor updates the ESCP as construction progresses.
- Ensure that the Contractor maintains the erosion control facilities as needed.
- Ensure the Contractor keeps the project in Permit compliance.




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**00280.06, 00280.30 & 00280.61  
Erosion and Sediment Control Manager (ESCM)**

- Contractor shall provide a person experienced in all disciplines of highway construction as the Erosion and Sediment Control Manager (ESCM). – This requirement supports 1200-CA, B.1
- The ESCM is responsible for assuring the duties described in 00280.61 (ineffective controls) are done
- ESCM has the authority to immediately mobilize personnel to correct and modify erosion prevention and sediment control devices as required. – This requirement supports 1200-CA, Schedule F, Section A.3.




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**1200-CA, Schedule B / 00280.06 & 00280.30  
ESCM Requirements**

- ESCM is Agency inspector's point of contact for ESC issues.
- Provide the ESCM's name and 24-hour contact number ten days before the preconstruction conference
- Should the ESCM be replaced during a project contract, the Contractor shall provide written notice within 5 days.




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**1200-CA, Schedule B / 00280.06, 00280.30 & 00280.41  
ESCM Responsibilities**

- Complete monitoring reports weekly during active projects and once every 2 weeks during inactive projects of more than 7 days. (ODOT Erosion Monitoring Form)
- Complete monitoring reports after more than 1/2 inches of rain in a 24-hour period
- Monitor receiving waters for turbidity
- Revise ESCP to meet conditions of construction (i.e. phasing, timing, weather). Present revised ESCP during construction as necessary.



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**Key Responsibility of ESCM – 00280.30**

- Ensure site remains in compliance with 1200-CA permit
- Monitor site for erosion and sedimentation
- Verify effective functioning of all ESC facilities
- Ensure the maintenance, repair and update ALL erosion and sediment control facilities and mobilize repair crews.
- Record remediation actions (i.e., sediment clean-up)
- Complete Erosion Control Monitoring Form
- Prepare and implement contingency plan for rainy season
- Accompany Agency's representative on inspections



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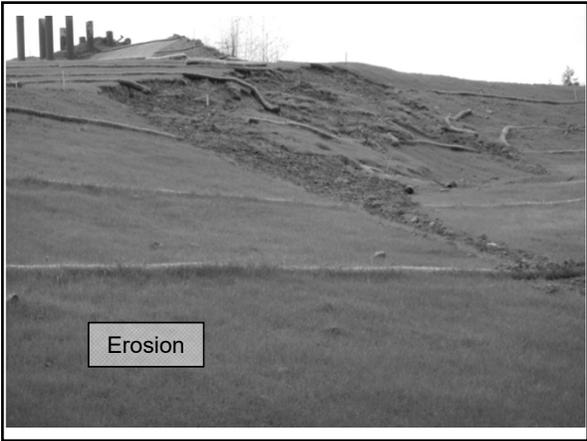
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**00280.14 – 00280.16**  
**Materials**

- **00280.14** – Erosion Prevention – This section supports 1200-CA, Schedule A.3.D.i, ii and iii
- **00280.15** – Runoff Control – This section supports 1200-CA, Schedule A. 3. D. iv.
- **00280.16** – Sediment Control – This section supports 1200-CA, Schedule A.3.D.iv and v.
- Material descriptions and requirements ranging from Biofilter Bags to Chemical Soil Stabilization



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**00280.14 – 00280.16**  
**Materials (continued)**

- When specified, use materials from the Qualified Product List (QPL)
- QPL Program discussion



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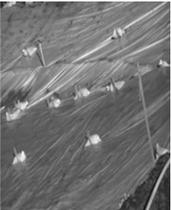
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**Construction**

**00280.44 – Erosion Prevention BMPs**



Plastic sheeting –  
280.44(a)

Slope Matting  
280.44(e)

Fiber Rolls & Vegetation  
280.46(e) & 1030



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**Construction (continued)**

**00280.44 – Erosion Prevention BMPs**



Compost Mulch  
280.44(f)

Straw Mulch  
280.44(d)

Hydromulch  
280.44(e)(4) & 1030.48(a)



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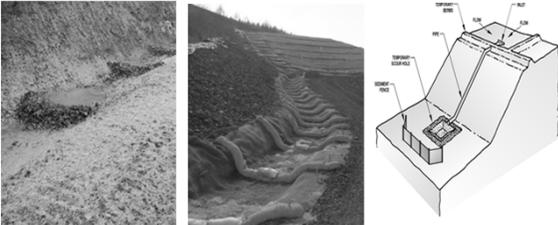
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**Construction (continued)**

**00280.45 – Runoff Control BMPs**



Check Dams  
280.45(a)

Lined Channel  
280.44(e)

Temp. Slope Drain  
280.45(d)



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**Construction (continued)**

**00280.46 – Sediment Control BMPs**



Const. Entrance  
280.46(a)

Sediment Fence  
280.46(c)

Inlet Protection  
280.46(d)



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**Construction**

**00280.40 Installation**

- Install all BMPs as shown in the plans or approved ESCP
- Install BMPs before performing clearing activities
- BMPs can be non-structural such as limiting clearing of vegetation
- Provide continuous erosion prevention and sediment control for the entire period of the project
- If planned or installed BMP are not effective, modify or change them so they are effective
- Do not follow plans blindly – Thinking is required



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**Construction (continued)**

**00280.41 Work Restrictions**

- This Section supports **1200-CA, Schedule A.2 and A.3.d**
- Disturbance limits
- Perimeter controls
- Wet season (Oct 1-May 30)  
Requires update to ESCP
- Disturbance restrictions  
If soil erosion is not effectively controlled, the Agency will limit the disturbed areas



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**Construction (continued)**

**00280.42 Stabilization**

Contract requirements described in 00280.42 exceed the permit requirement of 1200-CA, Schedule A.4.h

**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



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**Construction (continued)**

**00280.42 Stabilization (continued)**

**00280.42 (a) Soil Exposure Limitations (continued)**

- West of the Cascades (Entire Year)  
Stabilize all other areas within 14 days of exposure
- East of the Cascades (October 1-April 30)  
Stabilize all other areas within 14 days of exposure
- East of the Cascades (May 1-September 30)  
Stabilize slope and embankment construction in stages based on site conditions, weather and as determined by Agency



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**Construction (continued)**

**00280.42 Stabilization: Soil Exposure Limitations (continued)**

- **00280.42 (b) Temporary Stabilization**
  - Every 14 days or more frequently
  - During wet periods
  - When sediments leave site
- **00280.42 (c) Permanent Stabilization**
  - Provide permanent stabilization when earthwork to establish finish grades is complete. – ...“at the earliest practicable time”
  - If seed is not established, provide additional BMP’s



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**Construction (continued)**

**00280.43 Area Preparation**

- Prepare areas as per 01040.48(d)
- Track all fill slopes
  - Steeper than 1V:3H
  - Flatter than 1V:1.5H
  - Parallel to slope contours
  - Track grousers greater than 1 3/8"



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**Construction (continued)**

**00280.48 Emergency Materials**

- Should/will be listed in the Special Provisions
- Stockpile materials on-site for unknown weather or erosion conditions, in addition to materials required by ESCP
- All materials must be removed from the site at the completion of project (within 30 days)



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**Sediment Fence Issues**



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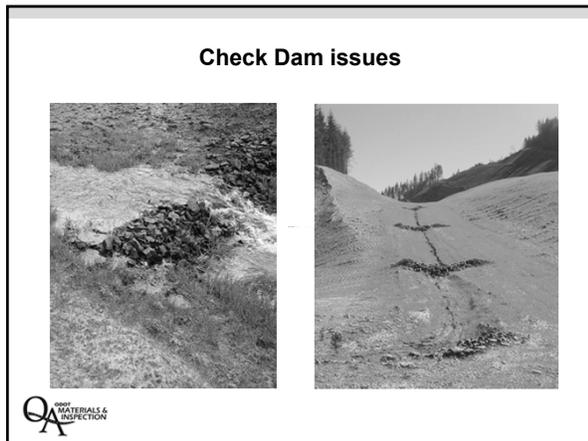
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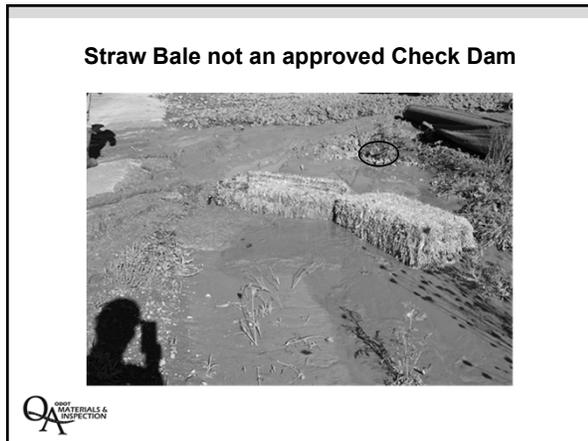
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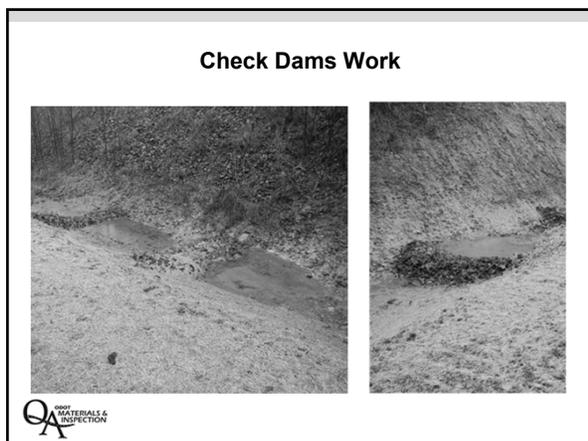
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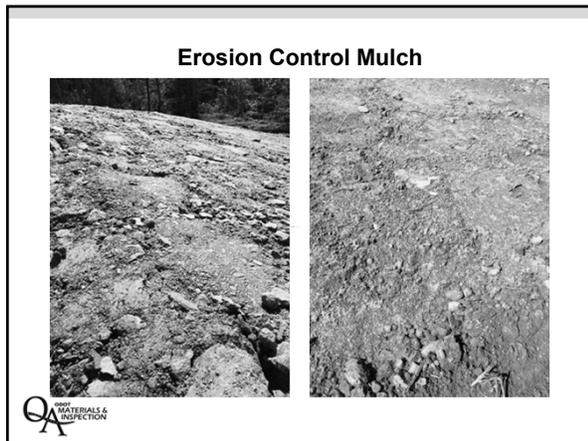
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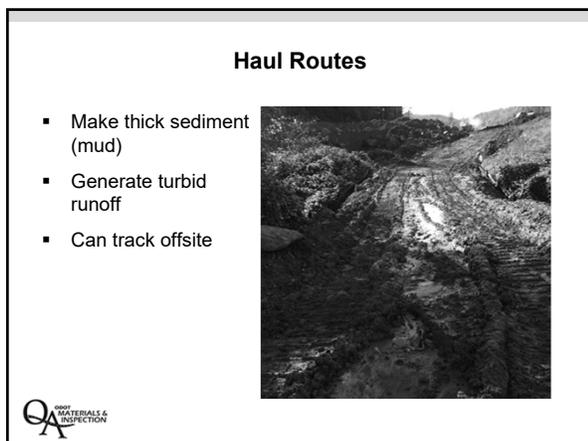
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**Maintenance**

**00280.61 Ineffective Controls**

- Repair, replace or provide additional devices when control features does not function effectively
- Devices repaired, replaced, or added due to improper installation, insufficient maintenance, or damage from the Contractor operations will be made at no additional cost to the Agency
- **1200-CA, Schedule F, Section B.1** – Requires permittee to operate and maintain all BMP to achieve compliance with the permit.



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**Maintenance**

**00280.62 Inspection and Monitoring (continued)  
Monitoring Receiving Stream**

- Observe and record color and turbidity – This requirement supports **1200-CA, Schedule B.7.c**
- Permit Non-Compliance & WQ Violations
  - verbal report to the Engineer within 24 hours
  - written report within 5 calendar daysThis requirement supports **1200-CA, Schedule F, Section D.5**



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**Maintenance**

**00280.63 Sediment Removal**

- Remove sediment and upgrade or repair the devices ASAP (no later than 2 days after the ground has dried for equipment operation) – This requirement supports **1200-CA, Schedule A.4**
- Under no conditions shall sediment be intentionally washed into storm sewers or drainage ways unless it is captured by a BMP before entering receiving waters
- With Agency approval, hand carry and install ESC devices when rainfall continues



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**Maintenance**

**00280.63 Sediment Removal (continued)**

- Catch Basins-storage capacity <50%
- Sediment Controls-filtering capacity <33%
- The above requirements support **1200-CA, A.4 d & e**
- Construction Entrances – add or replace aggregate or other material for proper function of entrances
- Paved Areas
  - keep them clean
  - use methods that prevent transport of sediment-laden water to streams



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**Finishing and Clean-up**

**00280.70 Removal of temporary ESC devices**

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

**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.**



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**00280.80 – Measurement**

**Multiple methods for calculation**

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



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**00280.90 – Payment**

- Lump Sum Basis (4-25% payments)
- If only payment item is “Erosion Control” all labor and materials are incidental.
- Emergency materials are paid at bid item price if used.
- Unit, Length, Area Basis
  - Payment will be in full for furnishing and placing materials including equipment, labor, and incidentals



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**Special Provisions**  
**Ex. Items**

- **00280.05 Project Signing** – Install a minimum of two “Erosion Concerns? CALL (XXX) XXX-XXXX” (CG20-10) Type “OO” signs within the Project limits.
- **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**



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**Special Provisions**  
**Ex. Items (continued)**

- **00280.70 Removal** – Add the following paragraph to the end of this section: If shown or if directed, compost filter material may be dispersed in place. Cut open compost filter socks and dispose of sock material according to 00290.20



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**Compost – Specification  
(03020 – Erosion Materials)**

- Check Special Provisions for Compost requirements (Handout)
- Contractor make sure the Specs are met
- Contractor will be responsible for removing and replacing material
- Check Compost Technical Data Sheet for OR-DOT Projects (handout)



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**Compost**

- Use Compost Standard Details
- Compost particle size is important in BMP function.
- Compost use variance should be approved by PE/PM
- Problems obtaining compost products – report to Program Coordinators



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**SCHEDULE A**  
**LIMITATIONS AND CONTROLS FOR STORM WATER DISCHARGES**

1. **Performance Limitations** An Erosion and Sediment Control Plan (ESCP) shall be developed and implemented to prevent the discharge of significant amounts of sediment to surface waters. The following conditions describe significant amounts of sediment and shall be prevented from occurring.
  - a. Earth slides or mud flows that leave the construction site and are likely to discharge to surface waters.
  - b. Evidence of concentrated flows\* of water causing erosion when such flows are not filtered or settled to remove sediment prior to leaving the construction site and are likely to discharge to surface waters. Evidence includes the presence of rills, rivulets or channels.
  - c. Turbid flows\* of water that are not filtered or settled to remove turbidity prior to leaving the construction site and are likely to discharge to surface waters.
  - d. Deposits of sediment at the construction site in areas that drain to unprotected storm water inlets or catch basins that discharge to surface waters. Inlets and catch basins with failing sediment controls due to lack of maintenance or inadequate design will be considered unprotected.
  - e. Deposits of sediment from the construction site on public or private streets outside of the permitted construction activity that are likely to discharge to surface waters.
  - f. Deposits of sediment from the construction site on any adjacent property outside of the permitted construction activity that are likely to discharge to surface waters.

\* Flow to storm water inlets or catch basins located on the site will be considered “leaving the site” if there are no sediment control structures designed for expected construction flows downstream of the inlets or catch basins that are under the permittee’s control.

2. **Erosion and Sediment Control Plan Preparation and Submittal** The permittee shall ensure that a comprehensive ESCP is prepared and implemented for the construction activity regulated by this permit.
  - a. A copy of the ESCP shall be retained on-site and made available to the Department upon request. During inactive periods of greater than seven (7) consecutive calendar days, the ESCP shall be retained by the permittee.
  - b. The Department may request modifications to the ESCP at any time if the ESCP is ineffective at preventing the discharge of significant amounts of sediment and turbidity to surface waters.
  - c. The ESCP shall include any procedures necessary to meet local erosion and sediment control requirements or storm water management requirements.
  - d. If possible, during the period of October through May, construction activities should avoid or minimize excavation and bare ground activities. If the operator chooses to continue land disturbance activities within this period, additional wet weather requirements (refer to A.3.d) are required in the ESCP. Specifically, if construction activity occurs during the winter season where slopes are greater than five (5) percent and the soils have medium to high erosion potential additional erosion controls will be required.

- e. The following non-storm water discharges are allowed as long as they are identified in the ESCP and all necessary controls are implemented to minimize sediment transport. These include: firefighting activity, hydrant flushing and potable waterline flushing (DEQ guidance must be followed), air conditioning condensate, dewatering activities of uncontaminated groundwater or spring water, and uncontaminated foundation or footer drain water.
3. **Erosion and Sediment Control Plan Requirements** The ESCP shall, at a minimum, include the following elements.
- a. **Site Description** A description of the following:
- i. Nature of the construction activity, including a proposed timetable for major activities.
  - ii. Estimates of the total area of the permitted site and the area of the site that is expected to undergo clearing, grading and/or excavation.
  - iii. Nature of the fill material to be used, the insitu soils, and the erosion potential of such soils.
  - iv. Names of the receiving water(s) for storm water runoff.
- b. **Site Map** Indicating the following: (Note: In order to provide all the required information, a general location map in addition to the site map is required.)
- i. Areas of total development
  - ii. Drainage patterns
  - iii. Areas of total soil disturbance (including, but not limited to, showing cut and fill areas and pre and post development elevation contours)
  - iv. Areas used for the storage of soils or wastes
  - v. Areas where vegetative practices are to be implemented. Include type of vegetation seed mix.
  - vi. Location of all erosion and sediment control measures or structures
  - vii. Location of impervious structures after construction is completed. Include buildings, roads, parking lots, outdoor storage areas, etc., if any.
  - viii. Springs, wetlands and other surface waters located on-site
  - ix. Boundaries of the 100-year flood plain if determined
  - x. Location of storm drainage outfalls to receiving water(s) if applicable
  - xi. Location of drinking water wells and underground injection controls
  - xii. Details of sediment and erosion controls
  - xiii. Details of detention ponds, storm drain piping, inflow and outflow details
- c. **Required Controls and Practices** The following controls and practices are required:
- i. Each site shall have graveled, paved, or constructed entrances, exits and parking areas, prior to beginning any other work, to reduce the tracking of sediment onto public or private roads.
  - ii. All unpaved roads located on-site shall be graveled. Other effective erosion and sediment control measures either on the road or down gradient may be used in place of graveling.
  - iii. When trucking saturated soils from the site, either water-tight trucks shall be used or loads shall be drained on-site until dripping has been reduced to minimize spillage on roads.
  - iv. A description of procedures that describe controls to prevent the discharge of all wash water from concrete trucks.
  - v. A description of procedures for correct installation or use of all erosion and sediment control measures.
  - vi. A description of procedures for prompt maintenance or repair of erosion and sediment control measures utilized on-site (refer to A.4).
- d. **Additional Controls and Practices** Additional controls and practices shall be developed that are appropriate for the site. At a minimum the following shall be considered:

- i. A description of clearing and grading practices, including a schedule of implementation, that will minimize the area of exposed soil throughout the life of the project. Whenever practicable, clearing and grading shall be done in a phased manner to prevent exposed inactive areas from becoming a source of erosion.
- ii. A description of vegetative erosion control practices, including a schedule of implementation, designed to preserve existing vegetation where practicable and re-vegetate open areas when practicable after grading or construction.

In developing vegetative erosion control practices, at a minimum the following shall be considered: temporary seeding, permanent seeding, mulching, sod stabilization, vegetative buffer strips, and protection of trees with protective construction fences.

- iii. A description of additional erosion control practices, including a schedule of implementation, designed to protect exposed areas and prevent soil from being eroded by storm water.

In developing additional erosion control practices, at a minimum the following shall be considered: mulching with straw or other vegetation, use of erosion control blankets, and application of soil tackifiers.

- iv. A description of sediment control practices, including a schedule of implementation, that will be used to divert flows from exposed soil, store flows to allow for sedimentation, filter flows, or otherwise reduce soil laden runoff. All temporary sediment control practices shall not be removed until permanent vegetation or other cover of exposed areas is established.

In developing sediment control practices, at a minimum the following shall be considered: use of silt fences, earth dikes, brush barriers, drainage swales, check dams, subsurface drains, pipe slope drains, rock outlet protection, sediment traps, and temporary or permanent sedimentation basins.

- v. A description of erosion and sediment control practices that will be used to prevent stockpiles from becoming a source of erosion. Stockpiles located away from the construction activity but still under the control of the permittee shall also be protected to prevent significant amounts of sediment from discharging to surface waters. At the end of each workday the soil stockpiles must be stabilized or covered.

In developing these practices, at a minimum the following shall be considered: diversion of uncontaminated flows around stockpiles, use of cover over stockpiles, and installation of silt fences around stockpiles.

- vi. A description of the best management practices that will be used to prevent or minimize storm water from being exposed to pollutants from spills, cleaning and maintenance activities, and waste handling activities. These pollutants include fuel, hydraulic fluid, and other oils from vehicles and machinery, as well as debris, leftover paints, solvents, and glues from construction operations. The reuse and recycling of construction wastes should be promoted.

In developing these practices, at a minimum the following shall be considered: written spill prevention and response procedures; employee training on spill prevention and proper disposal procedures; regular maintenance schedule for vehicles and machinery; and covered storage areas for waste and supplies.

4. **Maintenance Requirements** The following maintenance activities shall be implemented.
- a. Significant amounts of sediment that leave the site shall be cleaned up within 24 hours and placed back on the site or properly disposed. Any in-stream clean up of sediment shall be performed according to Oregon Division of State Lands' required timeframe.
  - b. Under no conditions shall sediment be intentionally washed into storm sewers or drainageways unless it is captured by a BMP before entering receiving waters.
  - c. For a filter fence, the trapped sediment shall be removed before it reaches one third of the above ground fence height.
  - d. For catch basin protection, cleaning must occur when design capacity has been reduced by fifty percent.
  - e. For a sediment basin, removal of trapped sediments shall occur when design capacity has been reduced by fifty percent.
  - f. All erosion and sediment controls not in the direct path of work shall be installed before any land disturbance.
  - g. If fertilizers are used to establish vegetation, the application rates shall follow manufacture's guidelines and the application shall be done in such a way to minimize nutrient-laden runoff to receiving waters.
  - h. If construction activities cease for thirty (30) days or more, the entire site must be stabilized, using vegetation or a heavy mulch layer, temporary seeding, or another method that does not require germination to control erosion.
  - i. Any use of toxic or other hazardous materials shall include proper storage, application, and disposal.
  - j. The permittee shall manage abandoned hazardous wastes, used oils, contaminated soils or other toxic substances discovered during construction activities in a manner approved by the Department.
  - k. If a storm water treatment system for construction activities is employed, the operation and maintenance plan shall be submitted to the Department for approval.
5. **Additional Requirements**
- a. **Water Quality Standards:**  
The ultimate goal for permittees is to comply with water quality standards in OAR 340-41. In instances where a storm water discharge adversely impacts water quality, the Department may require the facility to implement additional management practices, apply for an individual permit, or take other appropriate action.
  - b. **Turbidity (Nephelometric Turbidity Units, NTU) Water Quality Standard:**  
No more than a ten percent cumulative increase in natural stream turbidities shall be allowed, as measured relative to a control point immediately upstream of the turbidity causing activity. However, limited duration activities necessary to address an emergency or to accommodate essential dredging, construction or other legitimate activities and which cause the standard to be

exceeded may be authorized provided all practicable turbidity control techniques have been applied and one of the following has been granted:

(A) Emergency activities: Approval coordinated by DEQ with the Department of Fish and Wildlife under conditions they may prescribe to accommodate response to emergencies or to protect public health and welfare;

(B) Dredging, Construction or other Legitimate Activities: Permit or certification authorized under terms of Section 401 or 404 (Permits and Licenses, Federal Water Pollution Control Act) or OAR 14I-085-0100 et seq. (Removal and Fill Permits, Division of State Lands), with limitations and conditions governing the activity set forth in the permit or certificate.

[see OAR 340-041-(basin)(2)(c)]

c. Water Quality Limited Streams:

The Department may establish additional controls on construction activities that discharge storm water 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. The Department may also require application for individual permit or develop a watershed-based general permit for the activity.

**SCHEDULE B**  
**MINIMUM MONITORING REQUIREMENTS**

**All Sites**

1. A person with knowledge and experience in construction storm water controls and management practices shall conduct the inspections. The ESCP shall identify the person(s) and/or title of the personnel that will conduct the inspections and provide a contact phone number for such person(s).

**Active Sites**

2. Frequency of inspections shall be daily during storm water runoff or snowmelt runoff and at least once every seven (7) calendar days and within 24 hours after any storm event of greater than 0.5 inches of rain per 24-hour period.

**Inactive Sites**

3. During inactive periods of greater than seven (7) consecutive calendar days, inspections shall only be required once every two (2) weeks.
4. Prior to discontinuing activities at the site, any exposed area shall be stabilized to prevent erosion. Stabilization may occur by applying appropriate cover (mulch, erosion control blanket, soil tackifier, etc.) or establishing adequate vegetative cover.
5. When a site is inaccessible due to adverse weather conditions, inspections shall not be required. Adverse weather condition shall be recorded on the inspection sheet.
6. Prior to leaving an inactive site or in anticipation of site inaccessibility, existing erosion and sediment control measures shall be inspected to ensure that they are in working order. Any necessary maintenance or repair shall be made prior to leaving the site.

**Written Records**

7. All visual inspections must document the following information:
  - a. Inspection date, inspector's name, weather conditions, and rainfall amount for past 24 hours (inches). (Rainfall information can be obtained from the nearest weather recording station.)
  - b. List observations of all BMPs: erosion and sediment controls, chemical and waste controls, locations where vehicles enter and exit the site, status of areas that employ temporary or final stabilization control, soil stockpile area, and nonstormwater controls.
  - c. At representative discharge location(s) from the construction site conduct observation and document the quality of the discharge for any turbidity, color, sheen, or floating materials. If possible, in the receiving stream, observe and record color and turbidity or clarity upstream and downstream within 30 feet of the discharge from the site. For example, a sheen or floating material could be noted as present/absent, if observation is yes, it could indicate concern about a possible spill and/or leakage from vehicles or materials storage. For turbidity and color an observation would describe any apparent color and the clarity of the discharge, and any apparent difference in comparison with the receiving stream.

- d. If significant amounts of sediment are leaving the property, briefly explain the corrective measures taken to reduce the discharge and/or clean it up and describe efforts to prevent future releases. The ESCP shall be amended accordingly.
  - e. If a site is inaccessible due to inclement weather the inspection shall include observations at a relevant discharge point or downstream location, if practical.
8. All inspection records for an active site shall be kept on-site or be maintained with the permittee, and shall made available to the Department, its Agent, or local municipality upon request.
  9. A written record of inspections for an inactive site shall be maintained with the permittee and made available to the Department, its Agent, or local municipality upon request.
  10. Retention of all inspection records shall be for a period of one year from project completion.

**SCHEDULE C**  
**COMPLIANCE SCHEDULE**

1. Registration of Underground Injection Systems (40 CFR 144 and OAR 340-044). The permittee shall submit to DEQ a registration form if construction activities include disposal of storm water or other wastewater discharges to an injection system. These types of disposal systems are classified under the Underground Injection Control Program as a Class V well, require registration, and must meet Division 44 standards.
  - a. A new permittee shall register any applicable underground treatment systems **prior to** the construction of a new facility.
  - b. For facilities covered by the previous 1200-CA permit the registration form is due within **thirty (30) days** after receipt of this new 1200-CA permit.

**SCHEDULE D**  
**SPECIAL CONDITIONS**

1. Issuance of this permit does not relieve the permittee from all other permitting and licensing requirements. Prior to beginning construction activities, all other necessary approvals shall be obtained.
2. The permit 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 permittee 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:

*Best Management Practices (BMPs)* Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/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.

*Dewatering* The removal and disposal of surface water or groundwater for purposes of preparing a site for construction.

*Erosion* The movement of soil particles resulting from the tracking, flow or pressure from storm water or wind.

*Grade* Construction activity that causes the disturbance of the earth. This shall include but not be limited to any excavating, filling, stockpiling of earth materials, grubbing, root mat or topsoil disturbance, or any combination of them.

*Hazardous Materials* As defined in 40 CFR 302 Designation, Reportable Quantities, and Notification. Available on the web at <http://www.epa.gov>.

*Phasing* Clearing a parcel of land in distinct phases, with the stabilization of each phase before clearing of the next phase; including soil stockpiling.

*Stabilization* The completion of all soil disturbance activities at the site and the establishment of a permanent vegetative cover, or equivalent permanent stabilization measures (such as riprap, gabions, geotextiles, or bioengineering methods) that will prevent erosion.

*Start of Construction* The first land-disturbing activity associated with a development, including land preparation such as clearing, grading, excavation, and filling; installation of streets and walkways; erection of temporary forms; and installation of accessory buildings such as garages.

*Storm Water* Storm water runoff, snow melt runoff, and surface runoff associated with a storm event.

*Turbidity* An expression of the optical property of a sample which causes light to be scattered and absorbed rather than transmitted in a straight line through the sample. It is caused by the presence of suspended matter in a liquid.

**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 a violation 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 violation of 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 on the 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 Section 307(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 B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS**

1. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls, and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary

facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

2. Duty to Halt or Reduce Activity

For industrial or commercial facilities, upon reduction, loss, or failure of the treatment facility, the permittee shall, to the extent necessary to maintain compliance with its permit, control production or all discharges or both until the facility is restored or an alternative method of treatment is provided. This requirement applies, for example, when the primary source of power of the treatment facility fails or is reduced or lost. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

3. Bypass of Treatment Facilities

a. Definitions

- (1) "Bypass" means intentional diversion of waste streams from any portion of the treatment facility. The term "bypass" does not include nonuse of singular or multiple units or processes of a treatment works when the nonuse is insignificant to the quality and/or quantity of the effluent produced by the treatment works. The term "bypass" does not apply if the diversion does not cause effluent limitations to be exceeded, provided the diversion is to allow essential maintenance to assure efficient operation.
- (2) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities or treatment processes which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. Prohibition of bypass.

(1) Bypass is prohibited unless:

- (a) Bypass was necessary to prevent loss of life, personal injury, or severe property damage;
- (b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and
- (c) The permittee submitted notices and requests as required under General Condition B.3.c.

- (2) The Director may approve an anticipated bypass, after considering its adverse effects and any alternatives to bypassing, when the Director determines that it will meet the three conditions listed above in General Condition B.3.b.(1).

c. Notice and request for bypass.

- (1) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior written notice, if possible at least ten days before the date of the bypass.
- (2) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in General Condition D.5.

4. Upset

a. Definition. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operation error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.

b. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of General Condition B.4.c are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

c. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

- (1) An upset occurred and that the permittee can identify the causes(s) of the upset;
- (2) The permitted facility was at the time being properly operated;
- (3) The permittee submitted notice of the upset as required in General Condition D.5, hereof (24-hour notice); and
- (4) The permittee complied with any remedial measures required under General Condition A.3 hereof.

d. Burden of proof. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

5. Treatment of Single Operational Event

For purposes of this permit, A Single Operational Event which leads to simultaneous violations of more than one pollutant parameter shall be treated as a single violation. A single operational event is an exceptional incident which causes simultaneous, unintentional, unknowing (not the result of a knowing act or omission),

temporary noncompliance with more than one Clean Water Act effluent discharge pollutant parameter. A single operational event does not include Clean Water Act violations involving discharge without a NPDES permit or noncompliance to the extent caused by improperly designed or inadequate treatment facilities. Each day of a single operational event is a violation.

6. Overflows from Wastewater Conveyance Systems and Associated Pump Stations

a. Definitions

- (1) "Overflow" means the diversion and discharge of waste streams from any portion of the wastewater conveyance system including pump stations, through a designed overflow device or structure, other than discharges to the wastewater treatment facility.
- (2) "Severe property damage" means substantial physical damage to property, damage to the conveyance system or pump station which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of an overflow.
- (3) "Uncontrolled overflow" means the diversion of waste streams other than through a designed overflow device or structure, for example to overflowing manholes or overflowing into residences, commercial establishments, or industries that may be connected to a conveyance system.

b. Prohibition of overflows. Overflows are prohibited unless:

- (1) Overflows were unavoidable to prevent an uncontrolled overflow, loss of life, personal injury, or severe property damage;
- (2) There were no feasible alternatives to the overflows, such as the use of auxiliary pumping or conveyance systems, or maximization of conveyance system storage; and
- (3) The overflows are the result of an upset as defined in General Condition B.4. and meeting all requirements of this condition.

c. Uncontrolled overflows are prohibited where wastewater is likely to escape or be carried into the waters of the State by any means.

d. Reporting required. Unless otherwise specified in writing by the Department, all overflows and uncontrolled overflows must be reported orally to the Department within 24 hours from the time the permittee becomes aware of the overflow. Reporting procedures are described in more detail in General Condition D.5.

7. Public Notification of Effluent Violation or Overflow

If effluent limitations specified in this permit are exceeded or an overflow occurs, upon request by the Department, the permittee shall take such steps as are necessary to alert the public about the extent and nature of the discharge. Such steps may include, but are not limited to, posting of the river at access points and other places, news releases, and paid announcements on radio and television.

8. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in such a manner as to prevent any pollutant from such materials from entering public waters, causing nuisance conditions, or creating a public health hazard.

**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 until the plans and specifications are submitted to and approved by the Department. The permittee shall give notice to 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 or activity 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 the rules of the Commission. No permit shall be transferred to a third party without prior written approval from the 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 under ORS 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 received within 24 hours.

6. Other Noncompliance

The permittee shall report all instances of noncompliance not reported under General Condition D.4 or D.5, at the 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 the Department, 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 in accordance 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.

10. Changes to Indirect Dischargers - [Applicable to Publicly Owned Treatment Works (POTW) only]

The permittee must provide adequate notice to the Department of the following:

- a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of the Clean Water Act if it were directly discharging those pollutants and;
- b. Any substantial change in the volume or character of pollutants being introduced into the POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
- c. For the purposes of this paragraph, adequate notice shall include information on (i) the quality and quantity of effluent introduced into the POTW, and (ii) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

11. **Changes to Discharges of Toxic Pollutant - [Applicable to existing manufacturing, commercial, mining, and silvicultural dischargers only]**

The permittee must notify the Department as soon as they know or have reason to believe of the following:

- a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
  - (1) One hundred micrograms per liter (100 g/l);
  - (2) Two hundred micrograms per liter (200 g/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 g/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;
  - (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or
  - (4) The level established by the Department in accordance with 40 CFR 122.44(f).
- b. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
  - (1) Five hundred micrograms per liter (500 g/l);
  - (2) One milligram per liter (1 mg/l) for antimony;
  - (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or
  - (4) The level established by the Department in accordance with 40 CFR 122.44(f).

**SECTION E. DEFINITIONS**

1. BOD means five-day biochemical oxygen demand.
2. TSS means total suspended solids.
3. mg/l means milligrams per liter.
4. kg means kilograms.
5. m<sup>3</sup>/d means cubic meters per day.
6. MGD means million gallons per day.
7. Composite sample means a sample formed by collecting and mixing discrete samples taken periodically and based on time or flow.
8. FC means fecal coliform bacteria.
9. Technology based permit effluent limitations means technology-based treatment requirements as defined in 40 CFR 125.3, and concentration and mass load effluent limitations that are based on minimum design criteria specified in OAR 340-41.
10. CBOD means five day carbonaceous biochemical oxygen demand.
11. Grab sample means an individual discrete sample collected over a period of time not to exceed 15 minutes.
12. Quarter means January through March, April through June, July through September, or October through December.
13. Month means calendar month.
14. Week means a calendar week of Sunday through Saturday.
15. Total residual chlorine means combined chlorine forms plus free residual chlorine.
16. The term "bacteria" includes but is not limited to fecal coliform bacteria, total coliform bacteria, and E. coli bacteria.
17. POTW means a publicly owned treatment works.



**INSERT TAB**

**Unit 3  
Hazardous Materials**



**HazMat  
for Inspectors**



**Shawn Rapp**  
ODOT State HazMat Program Lead



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**What is HazMat?**

- LUST
- Contaminated media
- Asbestos
- Lead-based paint
- Painting
- Fuel
- Construction materials
- Other demolition wastes
- Spills
- Abandoned HazMat



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**Underground Storage Tanks – SP 293**



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**Underground Storage Tanks – SP 293**

- **Hazards:** Vapors, explosion, excavation, heavy equipment
- **Restrictions:** Do not enter the work zone
- **Documentation:**
  - Contractor qualifications (DEQ Tank License, HazWoper, Supervisor)
  - Health and safety plan
  - DEQ reports
  - 30-day notice of intent (before)
  - 30-day checklist and report (after)



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**Contaminated Media – SP 294**



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**Contaminated Media – SP 294**

- **Hazards:** Toxic chemicals = don't sniff it, don't touch it
- **Restrictions:** Do not touch, do not enter the work zone, stay upwind
- **Documentation:**
  - Contractor qualifications (HazWoper & Supervisor)
  - Health & Safety Plan
  - Lab results
  - Disposal receipts



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**Asbestos – SP 295**

- **Hazards:** Inhalation of asbestos fibers
- **Restrictions:** Do not enter containment or work area
- **Documentation:**
  - 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



QA MATERIALS & INSPECTION

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**Paint and Painted Materials – SP 296**

This collage contains three images: a bridge structure; a building with arched windows; and a large pile of material, possibly paint or debris.

QA MATERIALS & INSPECTION

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**Paint and Painted Materials – SP 296**

- **Hazards:** Toxic dust (lead, cadmium, chromium)
- **Restrictions:** Lead awareness and respirator training (ODOT); wear respiratory protection; wash hands.
- **Documentation:**
  - Worker qualifications (lead awareness training)
  - Lead work safety plan
  - Containment plan
  - Waste characterization and lab results
  - Disposal receipts and shipping papers
  - Hazardous waste ID# (if applicable)



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**Paint and Painted Materials – SP 296**



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**Paint and Painted Materials – SP 296**

- **Hazards:** Toxic vapors and mists
- **Restrictions:** Respirator training and fit test; wear respiratory protection
- **Documentation:** Pollution Control Plan, Containment Plan, disposal receipts (for used solvents and filters), disposal receipts and shipping papers, hazardous waste ID# (if applicable)



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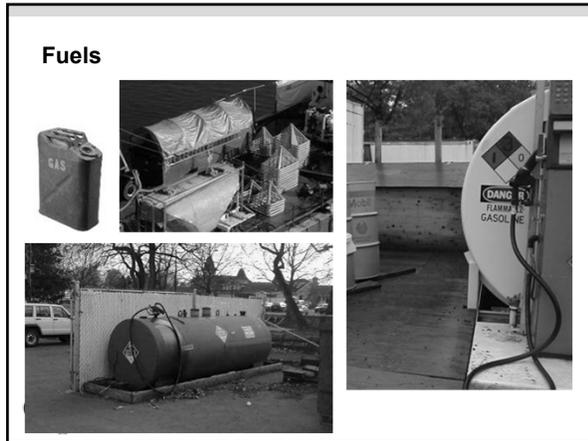
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**Fuel**

- **Hazards:** Toxic vapors, explosion, fire
- **Restrictions:** No need to touch contractor's fuel.
- **Documentation:**
  - Pollution Control Plan
  - Spill Prevention Control and Countermeasures (SPCC) Plan (>1,320 gallons in 55-gal or more containers, near water)



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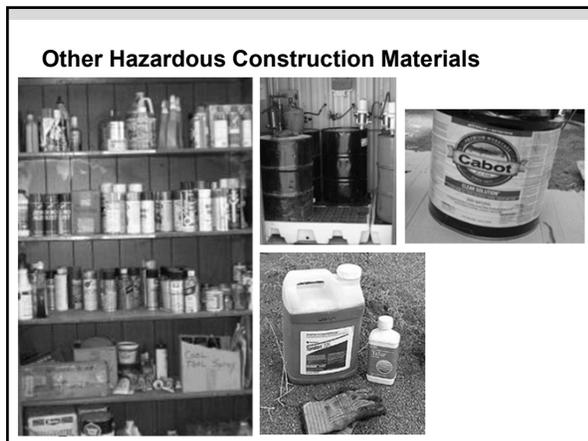
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**Other Hazardous Construction Materials**

- **Examples:** Paint, solvents, spray cans, oils, pesticides and herbicides, etc.
- **Restrictions:** Do not touch contractor's materials
- **Documentation:** Pollution Control Plan



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**Other Construction Wastes**

- Painted timbers (SP 296)
- Mercury vapor lamps (SP 297)
- PCB in electrical equipment (SP 297)
- Striping grindings (SP 296)
- Painted concrete and metal (SP 296)



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**Other Construction Wastes**

- **Restrictions:** Do not touch hazardous substances or wastes
- **Documentation:** Pollution control plan, disposal receipts



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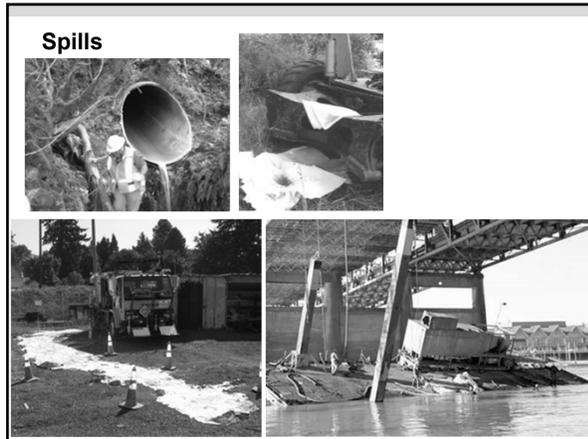
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**Spills Responsibilities**

- #1 - SAFETY
- Call Region Dispatch/HazMat
- If Dispatch or HazMat does or cannot – call OERS (>42 gallons)
- ***\*IR HazMat Training and Booklet\****
- Ensure cleanup = 100% (small spills = <42 gallons)
- Get DEQ reports, lab results and disposal receipts
- Consult Region HazMat





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**Spills Key references**

- **290.20(g)** – Spills and Releases
- **290.30(a)** – Pollution Control Measures
- **290.30(b)** – Pollution Control Plan
- **Incident Response** – ODOT First Responder Manual (contractor or 3<sup>rd</sup> party spill – construction zone accident, etc.)
- Call Regional HazMat with questions!
- Assist onsite as ODOT Rep until relieved




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**Abandoned HazMat**

- Labeled sealed containers
- Unidentifiable containers
- Drug lab wastes
- Trash



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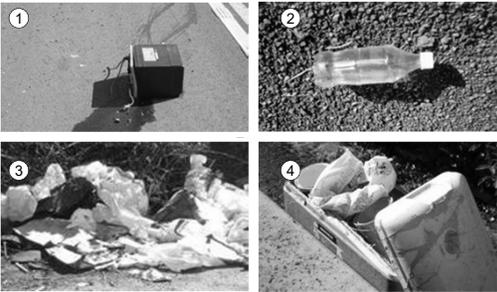
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**Should I move this myself?**



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**Is this one safe?**



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Maybe not...



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Can a sealed container, marked corrosive, be moved out of the way?



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A hose by any other name,  
would smell as sweet.



Can I move this out of the way?



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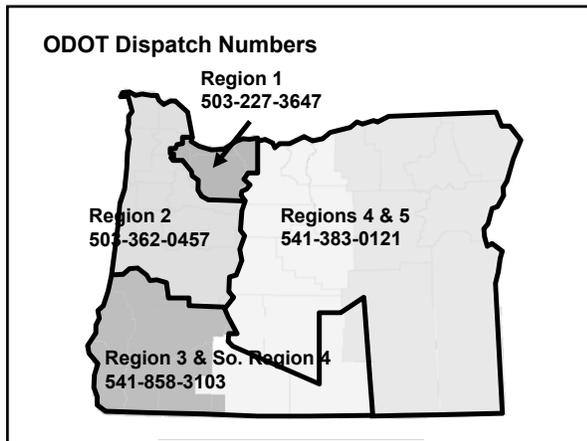
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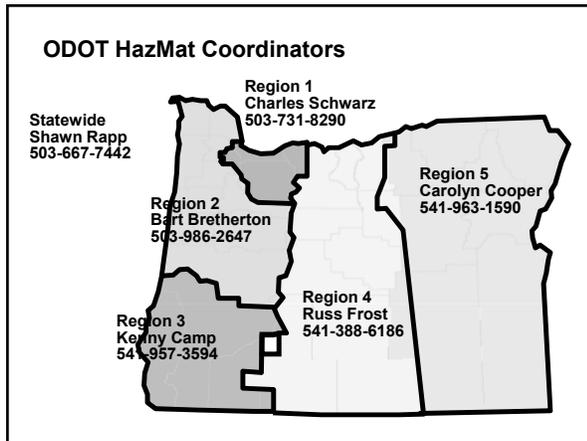
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- Other Useful Contacts**
- **OERS** (State Oil & HazMat reporting)  
1-800-452-0311
  - **NRC** (Federal HazMat spill reporting – report all impacts or threats to waterways. Also non-petroleum HazMat)  
1-800-424-8802
  - **NRC Environmental** (state cleanup contractor)  
1-800-337-7455
  - **DEQ Switchboard**  
1-800-452-4011
  - **DEQ Technical Assistance** (waste management)  
Portland: 503-229-5263      Salem: 503-378-8240  
Eugene: 541-686-7838      Medford: 541-776-6010  
Bend & Eastern Oregon: 541-388-6146

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**INSERT TAB**

**Unit 4  
Turbidity Monitoring**



**Turbidity Monitoring During Construction**



**William Fletcher**  
Water Resources Program Coordinator  
503.986.3509  
[William.b.fletcher@odot.state.or.us](mailto:William.b.fletcher@odot.state.or.us)



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**Turbidity Monitoring**

Excess turbidity is a sign that erosion and sediment control is not working, and that improvements are needed.



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**Turbidity Monitoring**

Monitoring is required for  
**In-water work**  
(CWA 401 Cert):  
every 2 to 4 hours

**Stormwater discharges**  
(NPDES 1200-CA):  
daily during rain storms per special provisions



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**Turbidity Monitoring**

Specification related to turbidity:  
Special Provision **00290.30 (a)(1)**

"Do not cause turbidity to waters of the State and US outside of regulated levels."

This is expanded in

- (7) Water Quality, and
- (8) Visual Turbidity Monitoring (or Turbidity Monitoring with a Meter).



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**Turbidity Monitoring Methods**

**Visual monitoring allowed:**

- Nationwide 404 with pre-certified 401
- NPDES 1200-CA



**Turbidity meter required:**

- Individual 404 permit with meter use specified in the 401 certification
- Check project Special Provisions to verify if a method is mandated



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**Safety First!**

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



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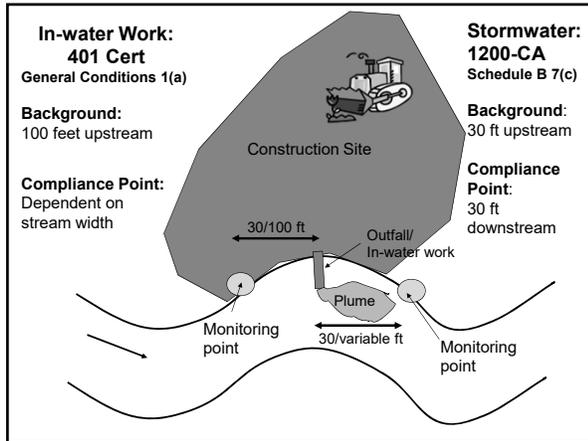
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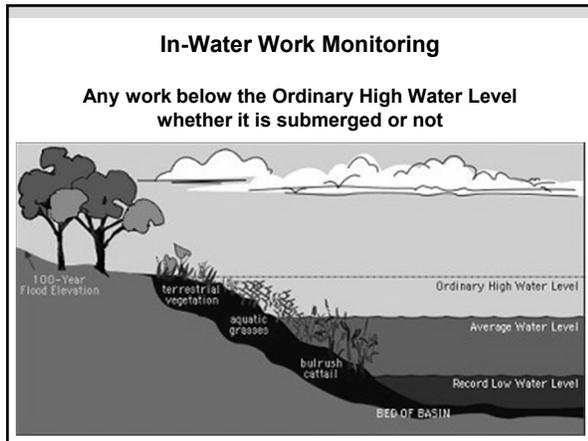
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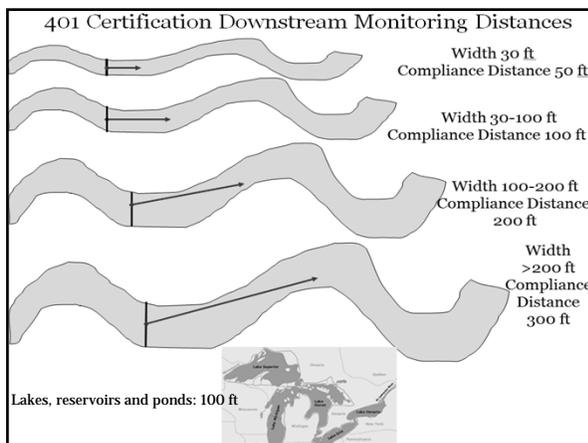
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**Considerations**

**Non-Project Turbidity Sources**

- Place the monitoring point between the non-project source and the Project activity or discharge point.
- Record on the monitoring form, and take a photograph.



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**Considerations**

**In-stream Metered Monitoring Location**

- Well-mixed stream: Away from the shore line
- Visible plume: In the plume



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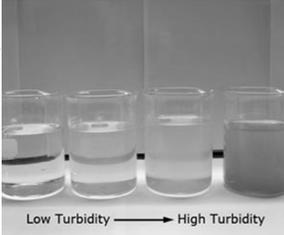
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**Turbidity Monitoring  
Stormwater Discharge (1200-CA Criteria)**

- **Visual:** A noticeable increase in turbidity
- **Metered:** 10% increase above background  
(For all practical purposes, up to a 5 NTU increase is permitted)



Low Turbidity → High Turbidity



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**What is a visible plume/noticeable increase?**

Any difference you can see between upstream and downstream, or across the stream at the compliance point.





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**Turbidity Monitoring:  
Stormwater Discharge Response**

**Based on Schedule A 5a and Schedule B 7d**

**With exceedance of the criteria:**

- Inspect the site to identify turbidity sources
- Immediately upgrade/repair erosion and sediment controls
- Repeat monitoring, inspection and upgrade until exceedances stop
- Record each inspection and remedial steps




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**In- water Work (401 Cert)  
Response to Visual Monitoring  
Permit General Conditions 1a)ii)D**



Turbidity Level	1st Monitoring Interval	2nd Monitoring Interval
No Plume Observed	Continue to monitor every 4 hours	Continue to monitor every 4 hours
Plume Observed Within Compliance Distance (Mixing Zone)	Modify BMPs & continue to monitor every 4 hours	Stop work after 8 hours with plume in mixing zone
Plume Observed Beyond Compliance Distance	Stop Work for 24 Hours	Stop Work for 24 Hours




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**Response to Metered Monitoring (401 Cert)**  
**General Conditions 1a)ii)D**



Turbidity Level	1st Monitoring Interval	2nd Monitoring Interval
0 to 5 NTU above background	Continue to monitor every 4 hours	Continue to monitor every 4 hours
5 to 29 NTU above background	Modify BMPs & continue to monitor every 4 hours	Stop work after 8 hours at 5-29 NTU above background
30 to 49 NTU above background	Modify BMPs & continue to monitor every 2 hours	Stop work after 2 hours at 30-49 NTU above background
50 NTU or more above background	Stop work	Stop work




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**Turbidity Meter vs Visual Monitoring**

Meter	Visual
<p><b>Disadvantage:</b> More work Additional equipment Exceedance with &lt;10% increase in very turbid streams</p>	<p><b>Disadvantage:</b> More stringent conditions leading to work stoppage Potential for contested observations</p>
<p><b>Advantages:</b> No limit on turbidity within compliance zone. Continue work for a period with moderate turbidity outside the compliance zone. Definitive data.</p>	<p><b>Advantages:</b> Ease of conducting monitoring. More latitude for NTU increases in very turbid streams</p>




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**IN-WATER WORK TURBIDITY MONITORING REPORT**

PROJECT NAME: \_\_\_\_\_ KEY NUMBER: \_\_\_\_\_ CONTRACT NUMBER: \_\_\_\_\_

**1. For ODOT Use**

OSL permit no. \_\_\_\_\_  
 Army Corps of Engineers permit no. \_\_\_\_\_  
 Instream work start date: \_\_\_\_\_  
 Instream work end date: \_\_\_\_\_  
 Extension date (if applicable): \_\_\_\_\_  
 Nationwide permit no. \_\_\_\_\_

**Wetted stream width** (Check the one that applies to your project)  
 < 30 feet  
 > 30 feet to 100 feet  
 > 100 feet to 200 feet  
 > 200 feet  
 > Lakes, ponds and reservoirs  
 Individual permit (additional conditions)

**Compliance Distance**  
 Approximate downstream compliance point (Check the one that applies to your project)  
 50 feet  
 100 feet  
 200 feet  
 300 feet  
 Lesser of 100 feet or maximum surface dimension

**2. For Contractor Use**

**Turbidity meter monitoring**  
 Turbidity measurements (NTUs) – First monitoring four hours after work begins

MONITORED BY	DATE	MONITORING START TIME	WATER STAGE (FEET OR FLOW)	100 FEET UP CURRENT	FEET DOWN CURRENT	STOP TIME	COMMENTS

**Visual observation**  
 Plume observed – First monitoring four hours after work begins

MONITORED BY	DATE	MONITORING START TIME	WATER STAGE (FEET OR FLOW)	WIDE COMPLIANCE DISTANCE	OUTSIDE COMPLIANCE DISTANCE	STOP TIME	COMMENTS

**3. Signature and submission**

PROVIDER: \_\_\_\_\_ SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_ TITLE: \_\_\_\_\_ PHONE: \_\_\_\_\_

Submit according to Section 00290.  
 Distribution: Original to Agency Project Manager

134-2188 (1/15) Page 1 of 1

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**Turbidity Criteria Exceptions**

**Anticipated Exceedances**

- Still requires monitoring
- Negotiated ahead of time and included in the permit
- Extra conditions, including timing and duration restrictions may be imposed



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**Turbidity Criteria Exceptions**

**Exceedances due to factors outside ODOT's control (extreme weather etc.)**

- Must be reported
- E&SC must be immediately restored
- Violation, but not a problem if E&SC in place according to plan



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**Post-Construction Stormwater Management Best Management Practices (BMPs)**



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

- Clean up storm water
- Maintain site hydrology



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**Why we built stormwater treatment BMPs**

- **Clean Water Act**
  - 401 Certification
  - NPDES MS4 Permit
- **Endangered Species Act**
  - FAHP Biological Opinion
  - Individual Biological Opinion



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**Stormwater Facilities Specifications 2015 Boilerplate:**

- 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
- 00842 – Drainage Facility Markers



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**Stormwater BMPs include:**

- Filter strips
- Bioswales; bioretention; infiltration facilities
- Media filter drains
- Detention / retention ponds
- Proprietary devices



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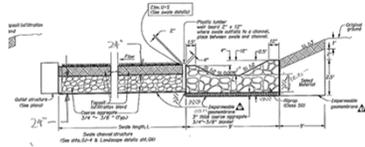
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**Things to watch for:**

- 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



QA MATERIALS & INSPECTION

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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).



QA MATERIALS & INSPECTION

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**Modification to BMP Designs**

**Always** get approval from the Hydraulic Engineer for changes in:

- Size
- Configuration
- Materials

QA MATERIALS & INSPECTION

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**Making sure it gets done right!**

A lot of this is new to everyone concerned, so

- 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 Designer



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**INSERT TAB**

**Unit 5**  
**Seed / Mulch / Plant**



**Right of Way  
Development and  
Control**  
Environmental Inspector  
Training



© ODOT Flickr image



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**Right of Way Development  
is unlike Construction**

**Materials are perishable, living things.**

- Site preparation – healthy soil
- Healthy seeds and plants
- Mulch
- Plant establishment
- Integrated vegetation management



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**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 and associated tasks** as directed.



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**Section 01000 –  
Right of Way Development and Control (continued)**

**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




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**Section 01000 –  
Right of Way Development and Control (continued)**

**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




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**Noxious Weeds**



Type A: Giant Hogweed /  
*Heracleum mantagazzianum*  
(Sap can cause burning, blisters & long lasting scars)



Type B: Butterfly Bush /  
*Buddleia davidii*  
(Flowers attract butterflies and have sweet fragrance)




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**Soil**

Rather than publish duplicate information Specifications reference information published in one location.

- **01030.11 Topsoil** – Refer to 01040.14
- **01030.12 Soil Modifiers** – Refer to 01040.16, 01040.17 & 01040.18
- **01030.45 Soil Testing** – Refer to 01040.13



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- Soils defined in Section **01040.14**
- Healthy soil is 1/3 mineral, 1/3 organic matter & 1/3 pore space , plus soil biology.



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**Soil Biology**



Many varieties of Nematodes exist

Bacteria, Fungi, Protozoa, Nematodes, Arthropods and Earthworms decompose organic materials, sequester nitrogen, fix nitrogen from the air, enhance soil aggregation and porosity, prey on crop pests and are food for above-ground animals



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**Section 01000 –  
Right of Way Development and Control (continued)**

**01030.13 Seed – Labels, Quality, Pure Live Seed, Inspection, Mixes**

Look for:

- Compliance with Oregon and federal Seed Regs
- Testing date
- Not sprouted, moldy, wet or damaged




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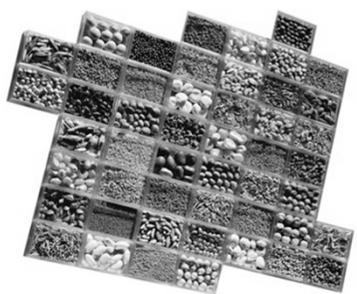
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**Seed Sizes Vary –** From fewer than 100 per Lb. to as many as 2.5 million per ounce!

**01030.13(c)** Specifies in Seeds per acre rather than weight per acre





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**Nursery Label / Sample**

**Dundale Pea**

PURE SEED	GERM	ORIGIN
99.94% Dundale Plus	83.00%	OR
0.00% Other Crop	Tested	11/20/14
0.00% Inert Matter	Lot Number	WS-13-2P-71
0.00% Weed Seed	AMSR	1000
Noxious Weeds: None Found		
in CA/DN/MO/RU/WA, Sell BY: 12/2016		
Net Weight: 2 lbs.	Packaged For: WA,OR	
<b>Coastal Farm &amp; Home</b>		
 7848299872		
THIS LABEL IS SUBJECT TO THE TERMS OF THE PURCHASE ORDER FROM THE BUYER. THIS LABEL IS NOT VALID UNLESS IT IS ACCOMPANIED BY THE ORIGINAL PURCHASE ORDER AND THE ORIGINAL INVOICE FROM THE BUYER. THIS LABEL IS NOT VALID UNLESS IT IS ACCOMPANIED BY THE ORIGINAL PURCHASE ORDER AND THE ORIGINAL INVOICE FROM THE BUYER. THIS LABEL IS NOT VALID UNLESS IT IS ACCOMPANIED BY THE ORIGINAL PURCHASE ORDER AND THE ORIGINAL INVOICE FROM THE BUYER.		




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**Calculation of Amount of Seed (lbs / ac)**

Specified Seeding Rate = 100 PLS / Ac

**Actual Seeding Rate =  $\frac{100 \text{ PLS / AC}}{0.9294}$**   
 Germination 93% x Seed Purity 99.94%  
 (0.93 x 0.9994 = 0.9294)

Actual Seeding Rate =  $\frac{100}{0.9294}$

Actual Seeding Rate = **107.59** pounds per acre




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**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




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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 10-15-5 fertilizer =  
 10% by weight nitrogen  
 15% by weight phosphorus  
 5% by weight potassium




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FERTILIZER GRADE

5-10-5

MEANS

5%	-	10%	-	5%
NITROGEN	-	PHOSPHORUS	-	POTASH
(N)	-	(P <sub>2</sub> O <sub>5</sub> )	-	(K <sub>2</sub> O)



OR

2 lbs.	-	4 lbs.	-	2 lbs.
N/40 lb. bag	-	P <sub>2</sub> O <sub>5</sub> /40 lb. bag	-	K <sub>2</sub> O/40 lb. bag

**Reading Fertilizer Labels**

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**01030.15 – Mulch for seeding**

- Hydro-mulch – Wood pulp, BFM or High Performance Growth Media (usually include tackifier & 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.




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**Mulch Types**



Compost Mulch      Straw Mulch      Hydromulch




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**Materials Specifications**

- **01030.16 Tackifier**  
Liquid or dry powder. Plant based (Guar or Plantain) or chemical (Polyacrylamide)
- **01030.17 Pesticides**



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**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
- 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



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**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 & 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 & March 1 - April 30)




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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




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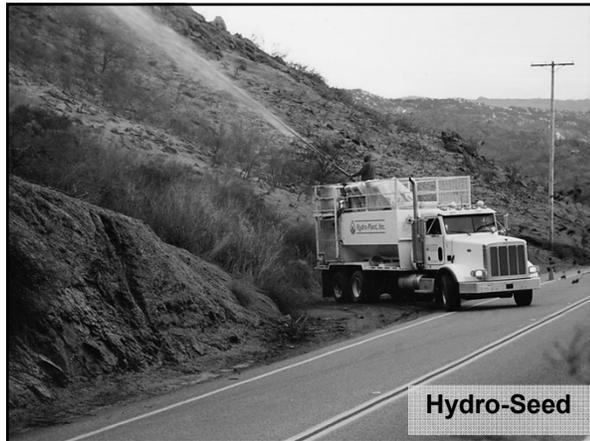
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**Establishment**

**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

QA 2007 MATERIALS & INSPECTION

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**Measurement & 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!

QA 2007 MATERIALS & INSPECTION

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**Section 01000 –  
Right of Way Development and Control (continued)**

**01040.02 Definitions**  
Plant Establishment Period – time-based evaluation of planting success, usually one year, with regular reviews and activities required: watering, weeding, etc.




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**Section 01000 –  
Right of Way Development and Control**

**01040.04 Planting Work Plan**

- Required within 90 days of award submit for approval;
- Ensure proper site preparation prior to planting
- Utility locate and use
- Verify work area dimensions
- 24-hour notice for inspectors of plant deliveries.
- Plant establishment (watering plan)
- Weed control work plan (WCWP)




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**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 & 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.




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**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**




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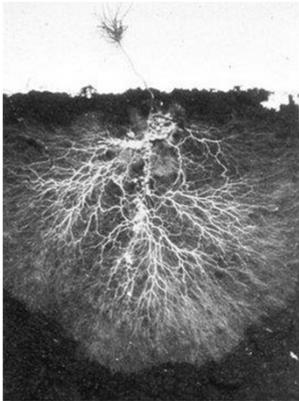
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**Mycorrhizal fungi on roots**

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**Materials – 01040.19 Plants**  
**Nomenclature, Quality, Certification, Description**

- Healthy, first-class representatives of their species or variety, free from disease and insect pests, with well-developed top growth – **Remove Container and Look at Root Ball**
- State Inspection Certificate
- Subject to inspection at any time
- No substitutions without evidence and only by written approval from the Agency (PM & POR)
- Many types and varieties, conditions




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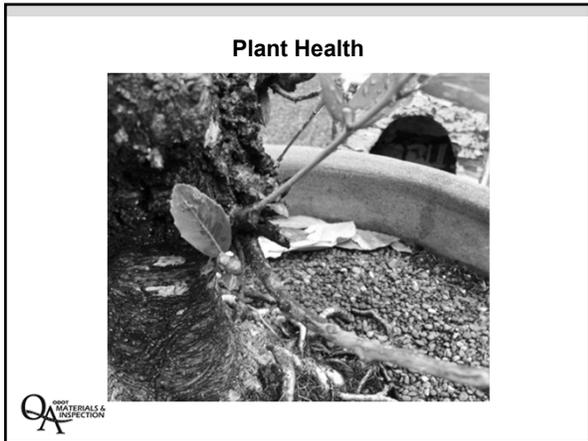
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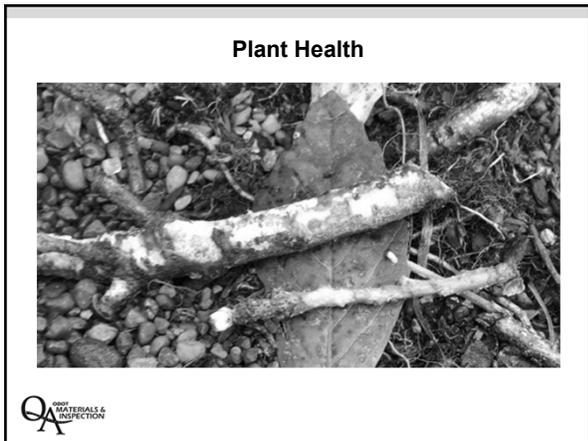
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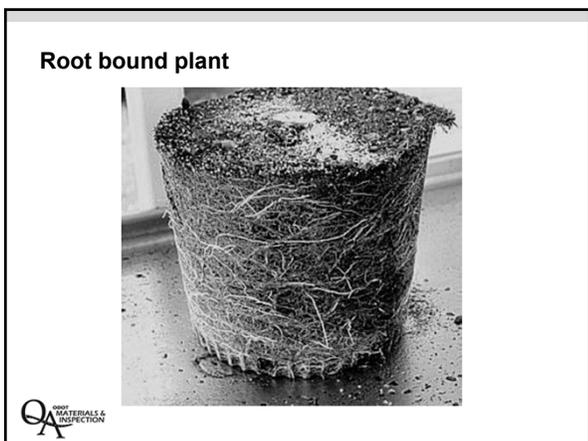
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**Materials Specifications**

- **01040.20 Mulch for planting**  
May be bark, cinder, rock, wood chip, shredded wood or compost
- **01040.21 Herbicides**
- **01040.22 Water**
- **01040.23 Misc.**  
Includes browse protectors, game repellent, root barrier, tree grates, stakes and ties

QA 2007 MATERIALS & INSPECTION

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**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 for  
planting



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**01040.41- .42 Planting Seasons**

- **West of the Cascades**  
September 1 through May 15
- **East of the Cascades**  
October 15 through November 30

**Can be modified as appropriate through Special Provisions**



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**01040.43 & 01040.44 Area Preparation**

**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.



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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



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**01040.49 General Planting**

- Healthy plants come in many forms: Bulbs, sod, tubelings, plugs, cuttings, bare root, seedlings, container grown, hand collected, balled and burlapped.
- Inspect plants before planting. Look for signs of life!
- Inspect planting pit. No standing water (except for wetland plantings).
- Place mix of backfill, soil / bio amendments, fertilizers
- Moisten after planting
- Mulch
- Add water
- Keep work area in a neat, orderly condition



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Project soon after planting and seeding / mulching

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**Wetland Planting using contract grown native forb sod**  
(erosion control, seeding and planting  
all installed simultaneously)



QA 2007 MATERIALS & INSPECTION

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**Establishment**

**01040.70 – Plant Establishment**

- Contractor is responsible for all plant material.
- Typically 1 calendar year

**01040.71 – Plant Care & Success Criteria**

- Plant care practices are listed
- Success goals are listed

QA 2007 MATERIALS & INSPECTION

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**Finishing and Clean-up**

**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.

QA 2007 MATERIALS & INSPECTION

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**Measurement & Payment**

**01040.80 – Measurement**

- Unit, Area, Volume, Length Basis  
(Mulch is measured by either volume or weight)

**01040.90 – Payment**

- Partial Payments: 30% at planting, 10% at each periodic inspection and 40% at final acceptance



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**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



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**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 Project Manager / 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 / Project Manager’s narrative – the best opportunity for learning how to improve next time.



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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)




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PLANTING		
Due	Section	What
within 90 calendar days of award of contract	01040.04(a)	Planting Work Plan
before arranging procurement of materials	01040.04(a)	List of project materials for approval
before planting	01040.13(a)	(1) Soil fertility analysis of existing soils performed by a certified lab (2) Soil amendments report
before planting	01040.13(b)	(1) Soil Bio-amendments report
20 days before furnishing topsoil	01040.14	(1) Give agency notice of intent to use source (2) Provide access to the agency to the source (3) Provide a 20-pound representative soil sample for testing (4) Obtain approval of source
prior to construction	01040.15	Submit 15-pound sample of soil conditioner for approval.
prior to use	01040.16	Approval of soil amendments
90 days after execution of contract	01040.19(e)	List of nursery sources for specified plants




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**Presenter Information**

**Bob Marshall**  
 Roadside Development and Erosion Control  
 Program Leader  
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**INSERT TAB**

**Unit 6  
Protection  
of Fish**



**Aquatic Biology**



**Tom Loynes**  
ODOT/NOAA Fisheries Liaison  
(503) 986-3742  
thomas.m.loynes@odot.state.or.us



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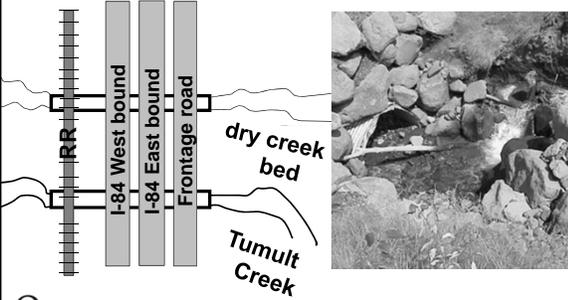
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**Tumult Creek Revisited**



dry creek bed  
Tumult Creek



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**Outcomes**

- Communication and coordination deficiencies identified
- Mandatory Statewide Maintenance training implemented
- 15 new ODOT environmental staff added
- Off-site mitigation required



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**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





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**FAHP Construction Monitoring Inspections**

Silt fence, and other erosion control installation	<b>24.22%</b>
Fuel storage & oil leak protection	14.91%
Soil erosion issues visible	14.29%
Environmental permits on-site	8.70%
Construction debris management	8.70%
Turbidity issues	2.48%
Work containment system	4.97%




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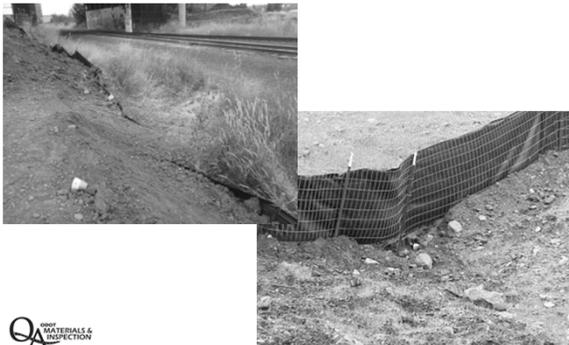
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**Silt Fence and Erosion Control**





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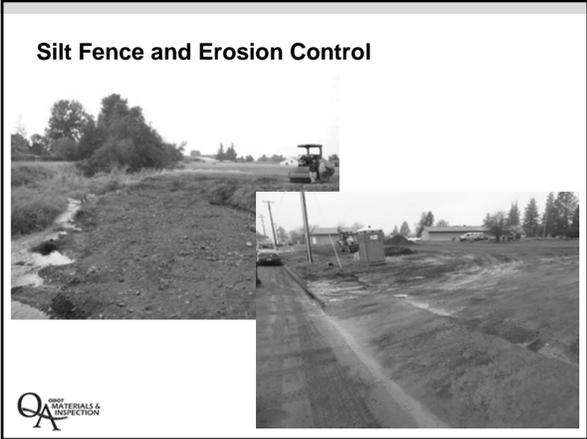
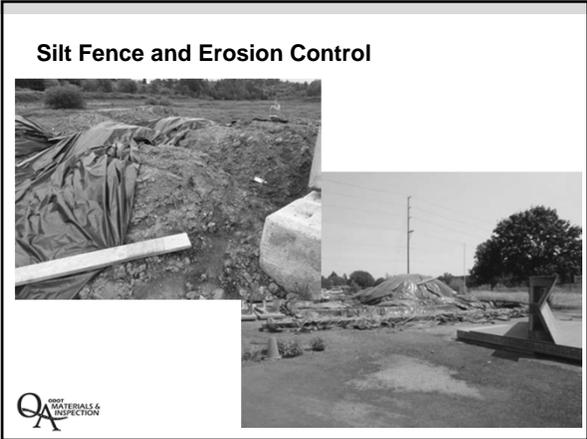
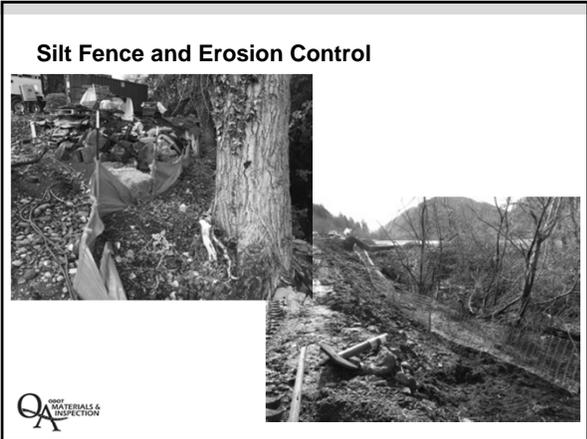
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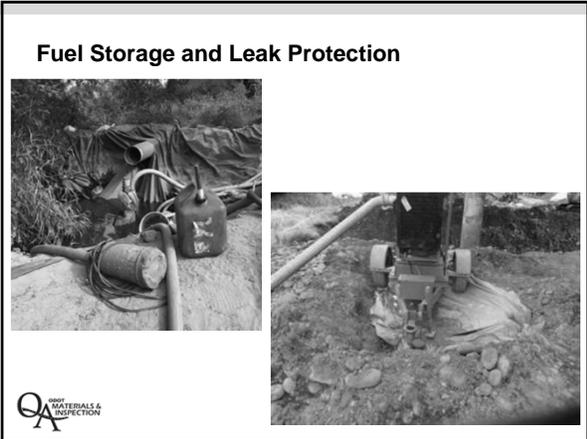
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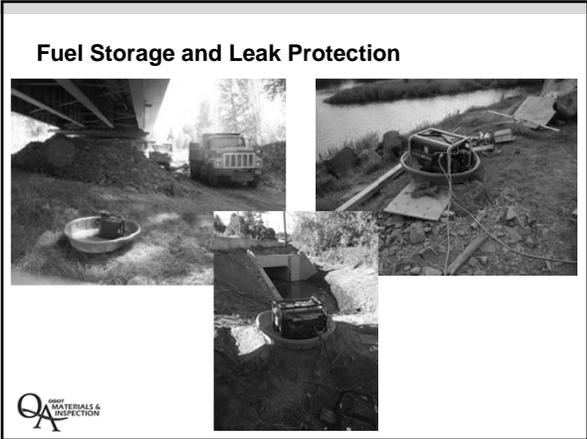
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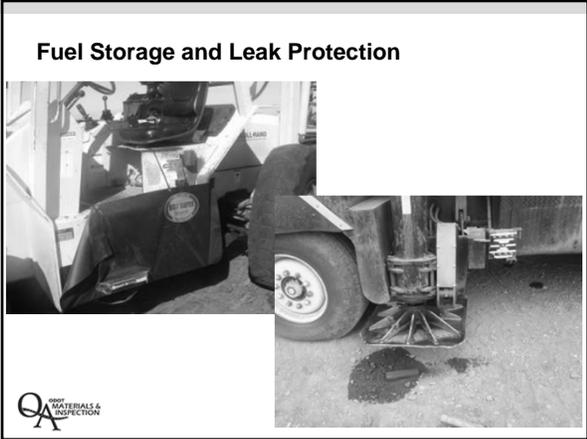
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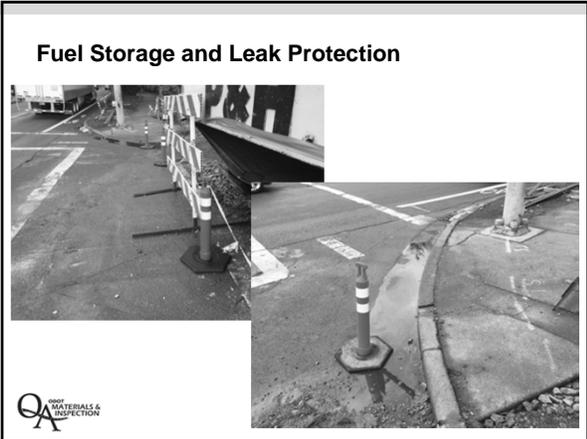
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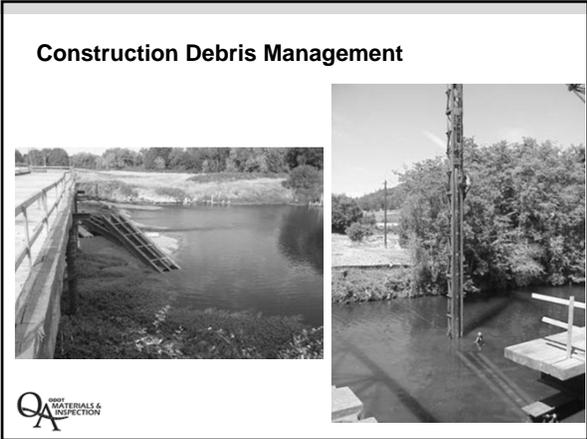
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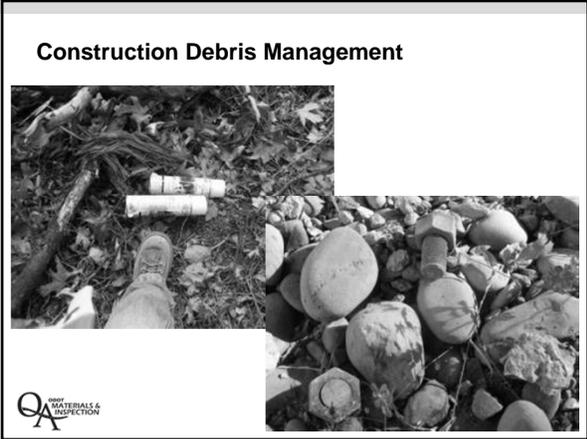
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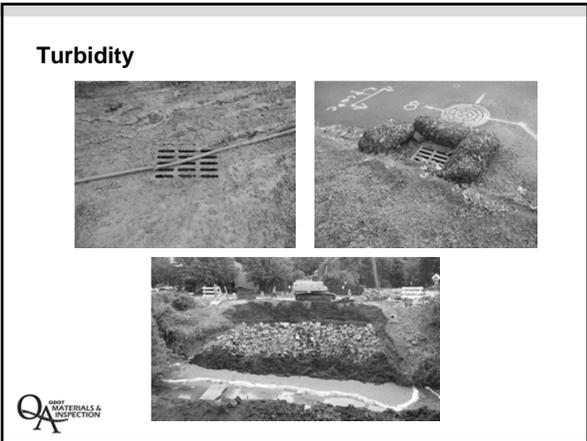
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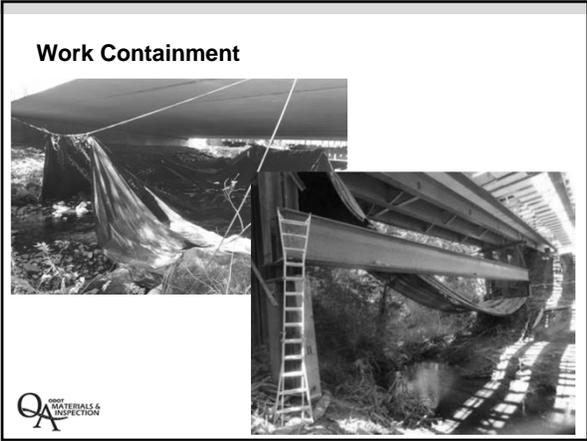
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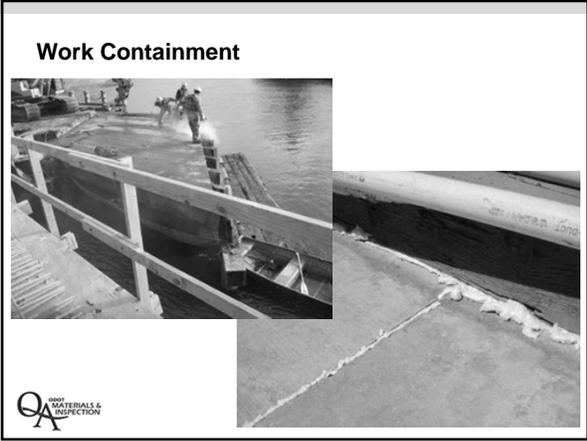
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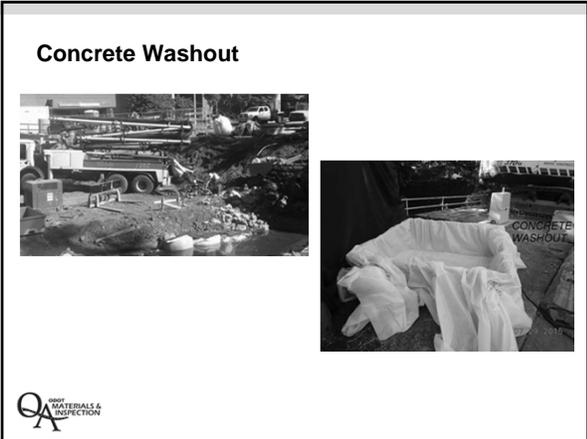
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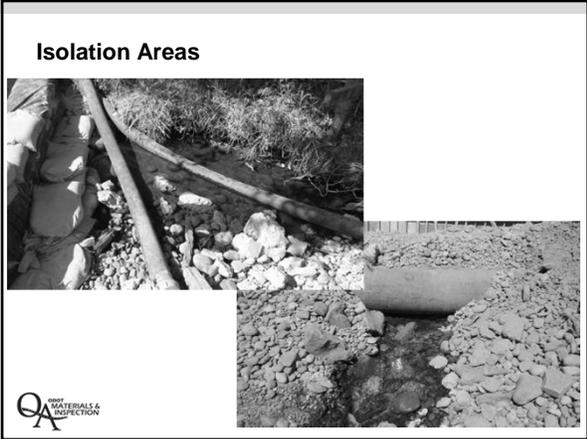
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**Section 00290.34  
Protection of Fish and Fish Habitat**

- **00290.34(a)** Regulated Work Area
  1. General Requirements
  2. Work area Isolation
  3. Intake Screening
- **00290.34(b)** Prohibited Operations
  4. Special Habitats
  5. Site Restoration
  6. Water Diversion
- **00290.34(c)** Fish Protection Measures Required by Environmental permits
  7. Hydro-Acoustic
  8. Drilling
  9. Treated Wood
  10. Piling Removal
  11. Ditch Cleaning
  12. Floating Structures
  13. Temporary Utility Lines




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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
- Barge use






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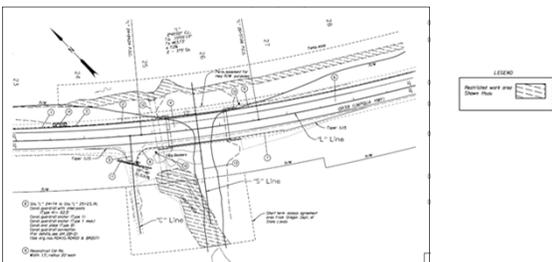
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**00290.34(a) Regulated Work Areas**

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 \_\_\_\_\_.




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**Regulated Areas and Regulated Work Areas**



QA MATERIALS & INSPECTION

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**Containment**

Several Special Provisions related to containment:

- Pollution Control & Water Quality (00290.34(a))
- Aquatic Species Protection (00290.34(c))
- Work Containment Plan & System (00290.42)

**Basically, keep construction-related "stuff" out of the water!**



QA MATERIALS & INSPECTION

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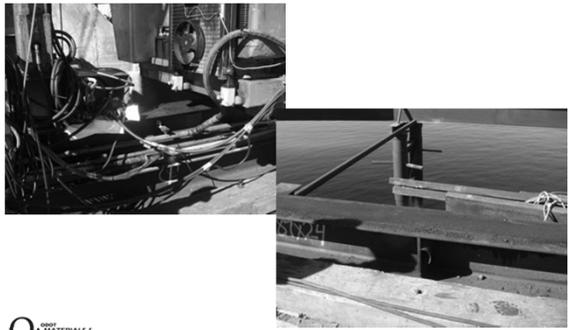
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**Containment**



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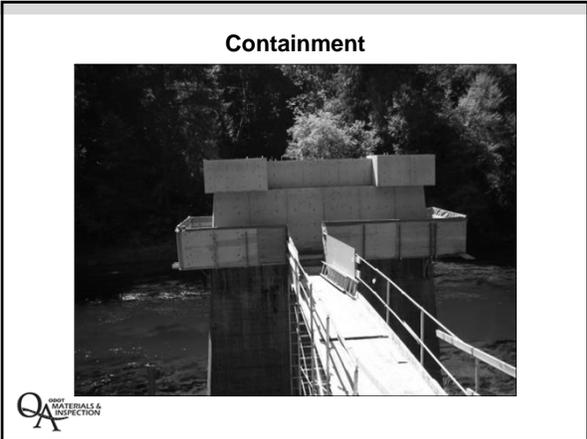
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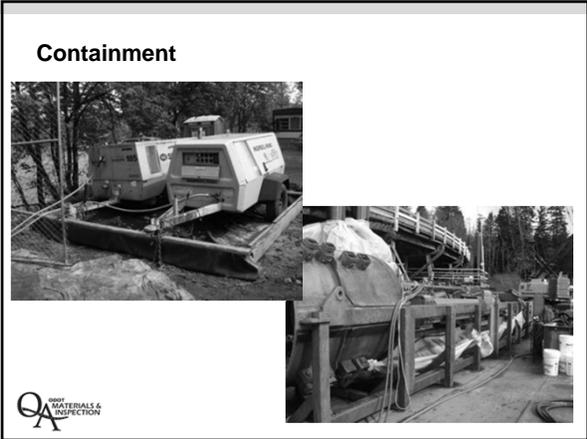
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**In-Water Work Window**

- 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.

QA MATERIALS & INSPECTION

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**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



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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



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**Scenario 1: Pile removal in the wet within the regulated work area. Proposed work not isolated.**



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**Scenario 2:** Work in the dry – riprap installation, pile driving



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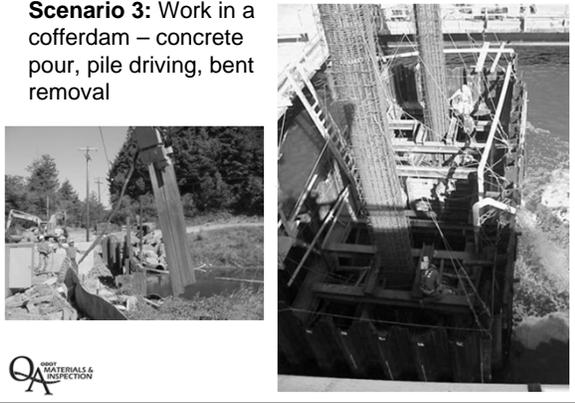
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**Scenario 3:** Work in a cofferdam – concrete pour, pile driving, bent removal



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**00290.34(c)2 Work Area Isolation & 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



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**00245 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.

QA MATERIALS & INSPECTION

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**00245 Temporary Water Management**

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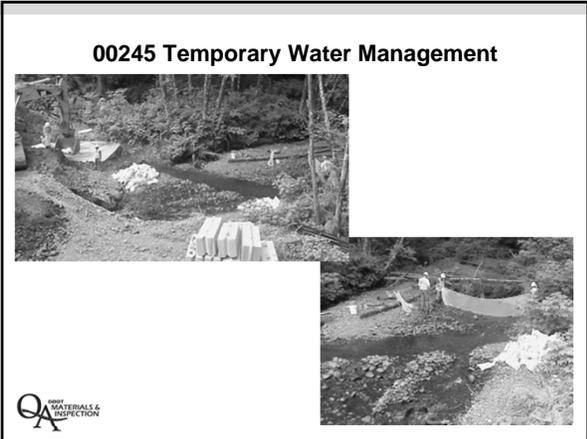
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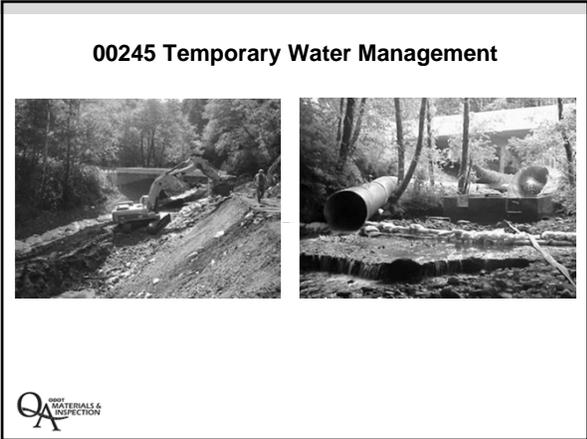
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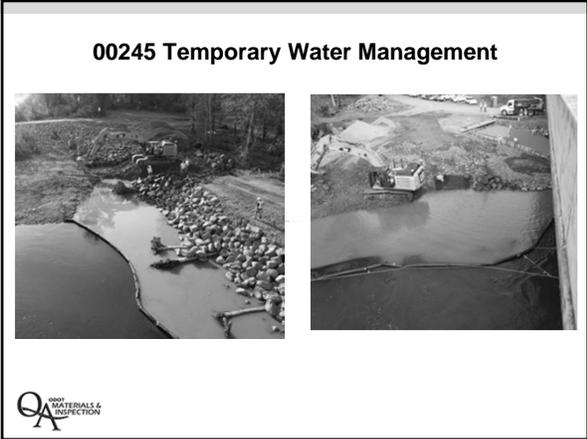
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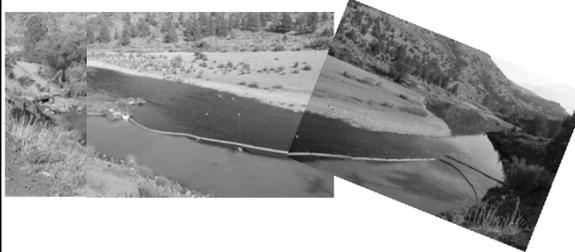
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**00245 Temporary Water Management**



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**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.



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**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.



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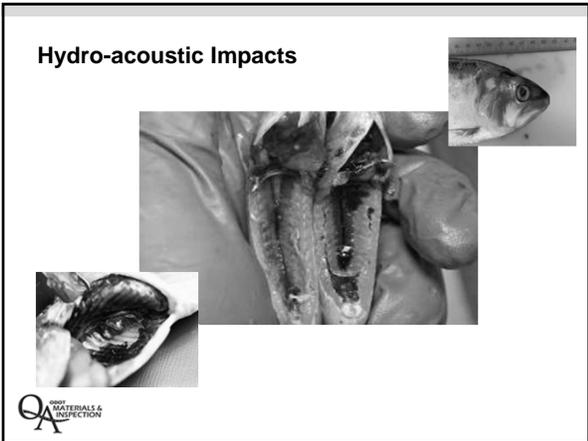
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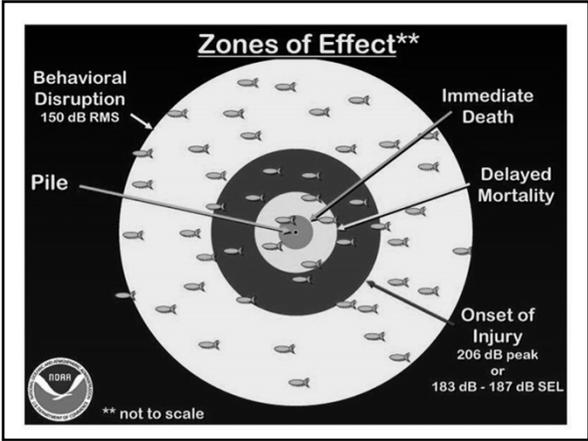
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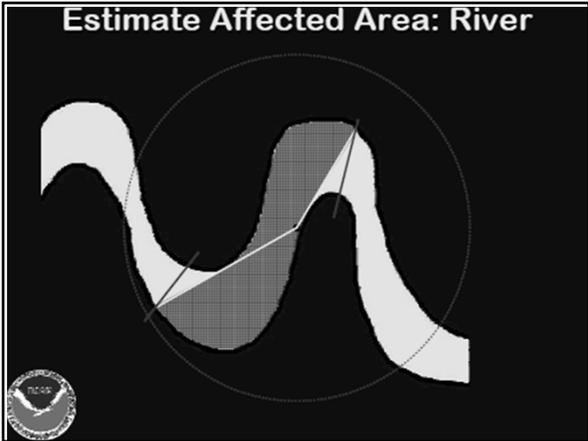
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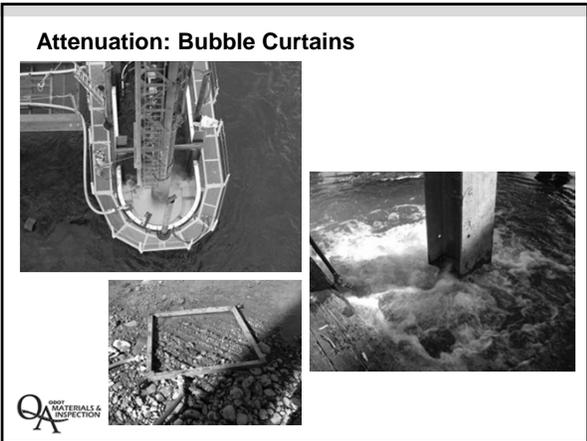
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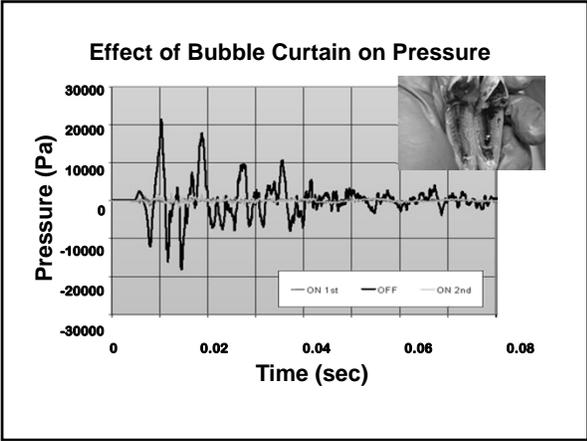
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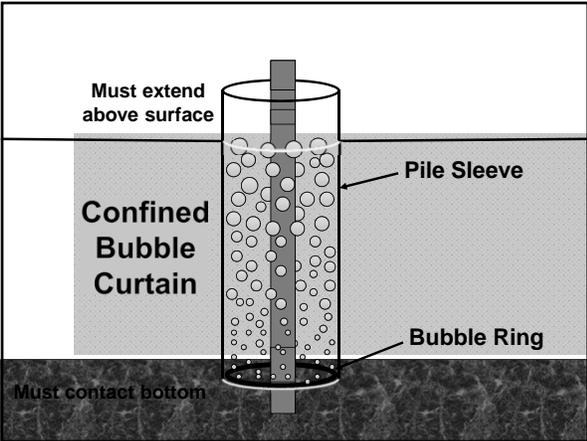
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**00290.34(c)12 Barge Use**



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**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.



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**INSERT TAB**

**Unit 7**  
**Protection**  
**of Wildlife**



**Wildlife & Wildlife Habitat**



Chris Maguire  
Wildlife Biology Program Lead  
(503) 986-3385  
christine.c.maguire@odot.state.or.us



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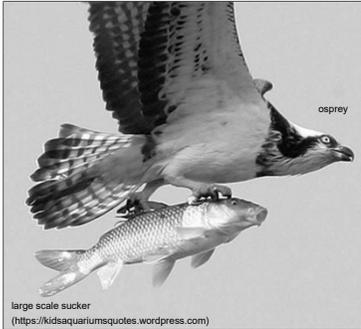
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**Biological resources are more than fish!!**



osprey

large scale sucker  
(<https://kidsaquariumsquotes.wordpress.com>)



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**Animal Mobility and Specs**

- **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)



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**Training Topics – Wildlife**

- **Laws** that protect wildlife
- Protected wildlife **species**
- Inspector **responsibilities**
- Wildlife **specs**
- Wildlife **challenges**
- **Miscellaneous** wildlife considerations



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**00290.36 Protection of Wildlife and Wildlife Habitat**

- Comply with the laws\* of the Oregon Department of Fish and Wildlife (**ODFW**) and U.S. Fish and Wildlife Service (**USFWS**)
- Conduct operations to avoid any hazards to the safety and propagation of wildlife



\*We will only discuss laws that most impact transportation projects



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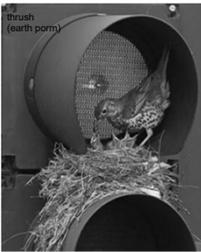
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**00290.36 Protection of Wildlife and Wildlife Habitat**

- 00290.36(a) Migratory Birds
- 00290.36(b) Bats
- 00290.36(c) Avoid Nesting
- 00290.36(c) Prevent Nesting
- 00290.36(d) Wildlife Avoidance/ Harassment (High Noise)



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**Migratory Birds**  
(3 primary laws in Oregon)

- 1) **Endangered Species Act (ESA);**  
includes species other than birds; 6 federal-listed species; 8 state-listed species)
- 2) **Migratory Bird Treaty Act (MBTA);**  
>500 species)
- 3) **Bald and Golden Eagle Protection Act (BGEPA);**  
2 species)




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**Actions Prohibited w/o Permit**

	<b>P = Prohibited</b> <b>A = Allowed</b>		
Action	ESA	MBTA	BGEPA
Birds (move, harm, kill)	P	P	P
Birds (harass, disturb)	P	Call REC	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)	Call REC	Call REC	Call REC

\*Active Nest = has eggs or flightless young




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**MBTA is a “strict liability law”**

This means that a party can be convicted under the statute without demonstration of specific intent or guilty knowledge







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**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 while carrying out employment duties”



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**290.36(a) Migratory Birds**

- Comply with the MBTA which **protects most species** of birds in Oregon
- **Do not remove or disturb nests** containing eggs and dependent young (*i.e., active nest*)
- Do not disturb the **surface** the active nest is built on



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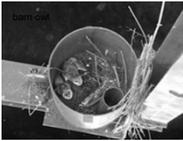
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**290.36(a) Migratory Birds (cont.)**

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



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**Birds nest just about everywhere...**

QA MATERIALS & INSPECTION

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**ODOT MBTA Permit**  
*(based on Hwy Directive and due diligence to protect)*

- **ODOT biological staff** are authorized to take birds
- If **APHIS-Wildlife Services** is contracted for bird management, APHIS is authorized to take birds
- **Private contractors** and **Local Governments** are **not authorized** to take birds (except by special permission)

QA MATERIALS & INSPECTION

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**4 MBTA Take Permit Scenarios**

Project Type	Permit Holder	Take Authorization
Typical ODOT	ODOT	ODOT Biological Staff & APHIS
Atypical ODOT	ODOT	Contractor's Biologist (w/permission)
Local Gov't	ODOT	ODOT Biological Staff & APHIS
Local Gov't	Local Gov't	???

QA MATERIALS & INSPECTION

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**SP290.36(a) Migratory Birds** 

- Bird management activities will be performed by the Agency (i.e., ODOT Biological staff or USDA APHIS-Wildlife Services)
- Ensure that Agency and its **permitted agents** have **access** to the project areas as needed to prevent migratory bird nesting (i.e., harassment & exclusionary devices)
- Notify the Engineer, in writing, a minimum of 10 calendar days prior to starting activities that could harm nesting birds




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**SP290.36(a) Migratory Birds (cont.)**

- Avoid disturbing migratory bird **nesting habitat** (shrubs, trees, structures) from **March 1 to September 1** of each year\* 
- **If avoidance is not possible**, obtain approval from the Engineer before falling trees or clearing vegetation that could disturb migratory bird habitat between March 1 and September 1

\*Vegetation clearing often occurs under separate contract




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**Rare Use of the ODOT MBTA Permit**

When the project is of such **magnitude or complexity** that neither ODOT Biological staff nor APHIS-Wildlife Services is able to oversee bird management, contractors (*with Environmental Resources Unit Manager pre-approval*) may be tasked with the work.





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**Special Specs to Avoid/Minimize Migratory Bird Take**



184 Bald Eagle - February 2013  
Portland Fire & Rescue



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**SP290.36(c) Prevent Nesting**

Submit a **migratory bird protection plan** for review and approval at least 10 calendar days before pre-construction conference and include:

- List of **qualified biologists**
- Exclusionary measures/harassment methods
- Exclusionary measures implementation/inspection schedule...
- In the event the Contractor fails to prevent nesting of native birds, the **Engineer may suspend work** according to 00180.70



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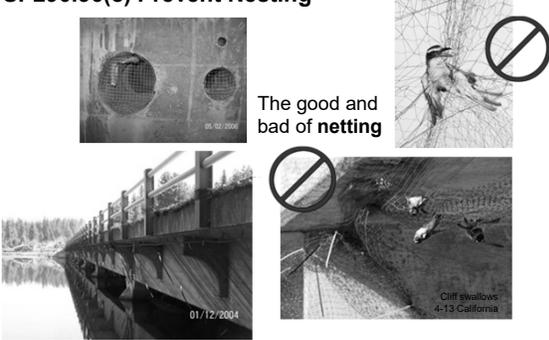
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**SP290.36(c) Prevent Nesting**

The good and bad of **netting**



05/02/2009

01/12/2004

Cliff Netting 4-13 California



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**SP290.36(c) Prevent Nesting**

Remove inactive nests as they are being built...





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**SP290.36(c) Avoid Nesting**

Submit a **migratory bird protection plan** for review and approval at least 10 calendar days before pre-construction conference and include:

- Measures to **avoid** disturbance to migratory bird **nesting habitat** from March 1 to September 1
- In the event nesting birds are encountered during construction, the **Engineer may suspend work** according to 00180.70




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**4 MBTA Take Permit Scenarios**

Project Type	Permit Holder	Take Authorization
Typical ODOT	ODOT	ODOT Biological Staff & APHIS
Atypical ODOT	ODOT	Contractor's Biologist (w/permission)
Local Gov't	ODOT	ODOT Biological Staff & APHIS
Local Gov't	Local Gov't	???




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**If a Local Gov't uses the ODOT MBTA permit**

- Bird management **must** be performed by ODOT environmental staff or APHIS-Wildlife Services
- Bird management **cannot** be performed by Local Agency staff or contractors





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**If a Local Gov't uses its own MBTA Permit**

- Local Gov't MBTA permit conditions **may differ** from the ODOT permit
- Contractors and Local Government **personnel** may be authorized to take birds not just APHIS-Wildlife Services
- Know the terms and conditions of the **specific MBTA permit** that covers the project





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**SP290.36(d) Wildlife Avoidance/Harassment (High Noise – mostly for ESA and BGPA)**

**Examples**

- Non-blasting high noise [as defined in specs] producing construction activities are **not allowed** between [date] and [date].
- Non-blasting high noise producing construction activities conducted from [date] to [date] shall implement a daily **limited operating period** of daytime work being conducted from two hours after sunrise to two hours before sunset.






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**SP290.36(x) Wildlife Avoidance/Harassment**  
*(Sight Distance – mostly for ESA and BGPA)*

**Example:**

- Minimize visual activity within 0.25 miles of suitable open sand beach nesting habitat during the snowy plover nesting season from March 1 to August 15.





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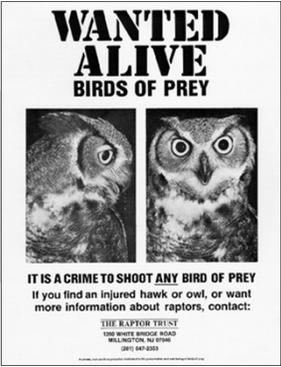
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**Any Bird Questions?**





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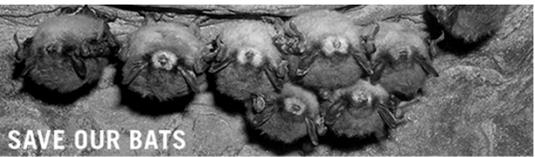
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**Bats**

- There are no **specific laws** that protect bats in Oregon
- ODOT protects bats and enhances their habitats to help prevent them from being listed under the ESA



**SAVE OUR BATS**




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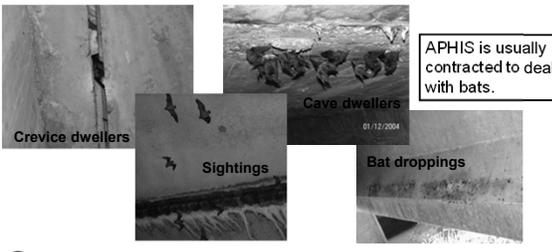
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**290.36(b) Bats**  
Avoid destruction of bat colonies **as shown** [on plans]  
(If known...)



Crevice dwellers

Sightings

Cave dwellers  
01/12/2004

Bat droppings

APHIS is usually contracted to deal with bats.

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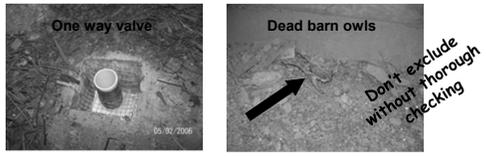
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**SP290.36(b) Bats**

- **Schedule bridge demolition** outside of the bat breeding season [date to date]. (*Hibernation period is also important.*)
- If this is not feasible and if approved by the Project Manager, apply exclusionary methods prior to this date to exclude bats from accessing suitable habitat...



One way valve

Dead barn owls

Don't exclude without thorough checking

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**2015 Region 3 Bat Bite Incident**



QA MATERIALS & INSPECTION

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Special Wildlife Specs

*Project Specific Specials*



QA MATERIALS & INSPECTION

Steller Sea Lion - USFWS

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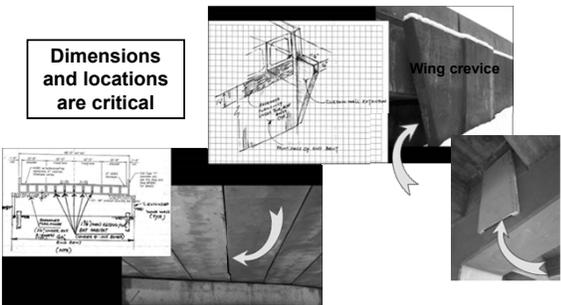
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Bat Habitat Plans – Crevices

Dimensions and locations are critical



Wing crevice

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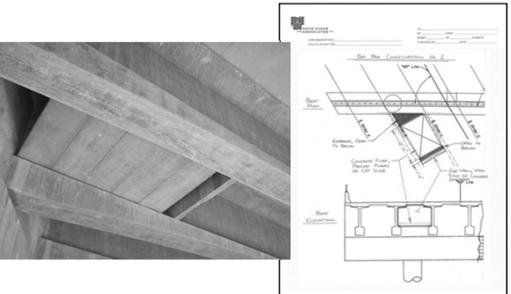
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Bat Habitat Plans – “Caves”



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**Marine Mammals\***  
(seals, whales, dolphins, otters, walrus)

- Marine Mammal Protection Act (MMPA)
- Endangered Species Act (ESA)

**Contact the REC immediately if you see a marine mammal**

\*Up to the Bonneville Dam



California sea lion

QA MATERIALS & INSPECTION  
Wikipedia Wikipedia

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**Other Protected Terrestrial Animals**

- Mammals (e.g., wolf, wolverine)
- Amphibians (e.g., Oregon spotted frog)
- Invertebrates (e.g., certain butterflies, fairy shrimp)



*If these species will be impacted, work restrictions will be project specific*

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Newport, Oregon

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**Project Specific Wildlife Passage**



© Palm 31 Criner  
© Silvia Rosa

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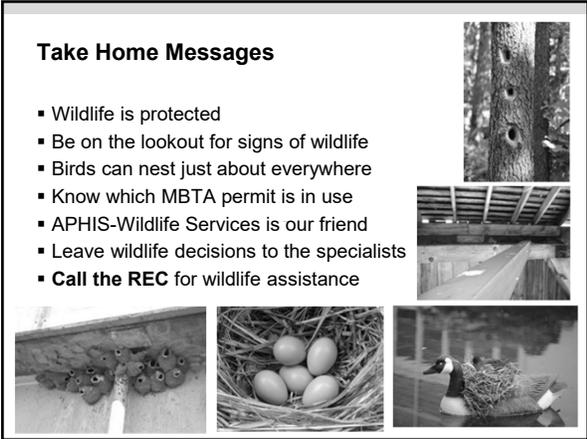
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**INSERT TAB**

**Unit 8**  
**Cultural Resources**



**ODOT  
Cultural  
Resources**






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*Cultural Resources???*  
*Why does it even matter?*  
*What is it?*  
*What do I need to do about it?*

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**Why it matters:** Cultural Resources help preserve a sense of place and tie us to the past.






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**Why it matters:** Cultural Resources are protected under **Federal and State Laws.**



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**Federal Resource Laws**

- Native American Graves and Repatriation Act (NAGRPA)
- Department of Transportation Act – Section 4 (f)
- Antiquities Act of 1906
- National Historic Preservation Act – Section 106
- Archaeological Resources Protection Act



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**Oregon State Laws**

- ORS 97.740 – Indian Graves and Protected Objects
- ORS 358.653 – Protection of Publicly Owned Historic Property
- ORS 358.905-961 – Archaeological Sites and Objects
- ORS 192.501 (11) – Protection of Sensitive Cultural Information



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**Tribal relations**



Burns Paiute-Burns  
 Umatilla-Pendleton  
 Grand Ronde-Grand Ronde  
 Coquille-North Bend  
 Siletz-Siletz



Coos, Lower Umpqua and Siuslaw-Coos Bay  
 Cow Creek Band of Umpqua-Roseburg  
 Klamath-Klamath Falls  
 Warm Springs-Warm Springs

Importantly, on federalized projects Tribal coordination extends outside Oregon!!

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**What is it? Archaeological sites:**

Any group of artifacts and/or features 50 (Federal) or 75 (State) years of age.




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**What an archaeological site looks like...**

- Prehistoric Sites (Native American)
- Historic (after Euro-contact)
- Vary in size and significance
- Ten or more artifacts

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**Lithic scatters:  
flaked stone, points**

QA  
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**Shell middens**

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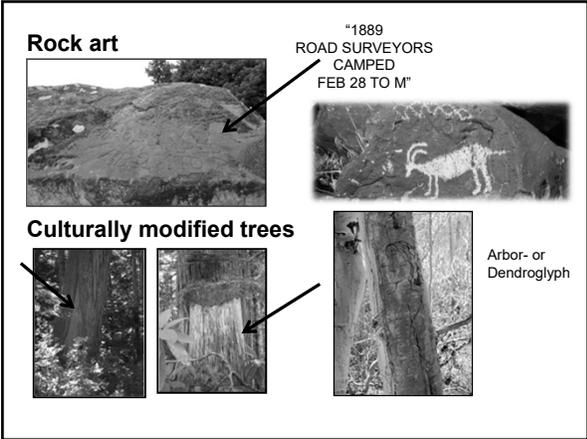
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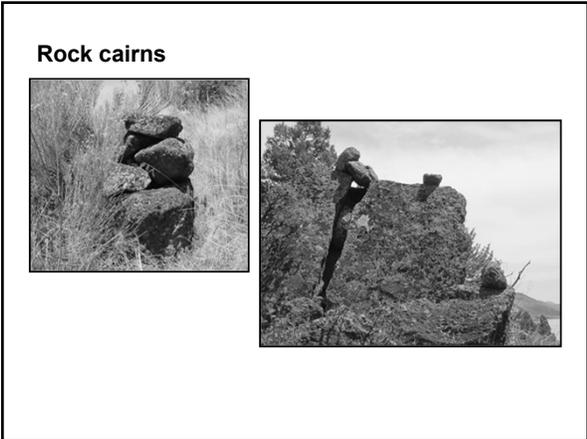
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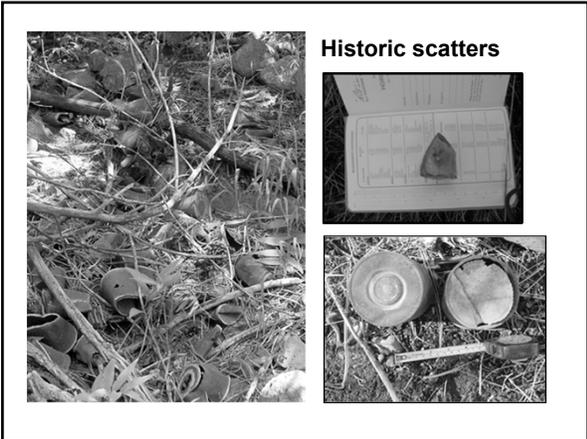
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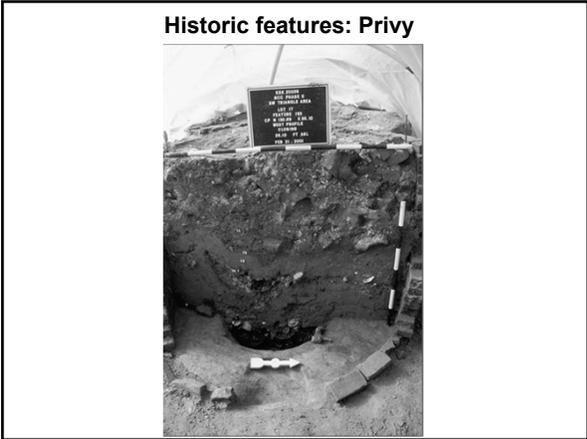
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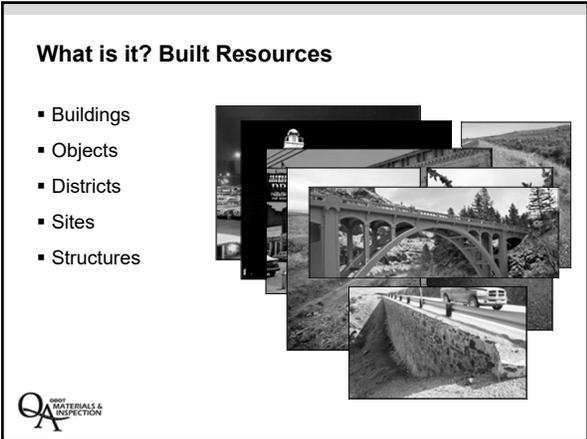
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**Other Resource Types**

- Linear features like
  - Railroad Grades
  - Historic Roads
  - Canals and ditches
  - Telegraph and Telephone Lines



ORIGINAL EMIGRATION  
PACIFIC NORTHWEST  
FROM PORTLAND TO THE  
OLD OREGON TRAIL

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**Prior to the construction phase...**

- Archaeologists & Historians work to identify cultural resources during planning and project development
- By construction, relatively low risk of encountering cultural resources
- **BUT remember, we don't have superpowers...we do the best we can!**



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**So, what do you need to do about it????**



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**Incorporated into construction**

**Special Provisions**  
Identifies cultural resource concerns and monitoring

**Design Plans**  
No Work Zones

**Standard Specifications**

- 290.50 Protection of Cultural Resources  
Contractors must comply w/cultural resources laws and establishes procedures for inadvertent discovery  
Inadvertent Discovery Plans
- 290.51 Protection of Sensitive Cultural Sites  
Contractors must comply w/cultural resources laws and ensure protection of those sites



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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 the archaeological sites during construction
- Established in the field with orange mesh fencing and/or lath and flagging
- Inspector and Project Archaeologist will meet on site to establish no work zones



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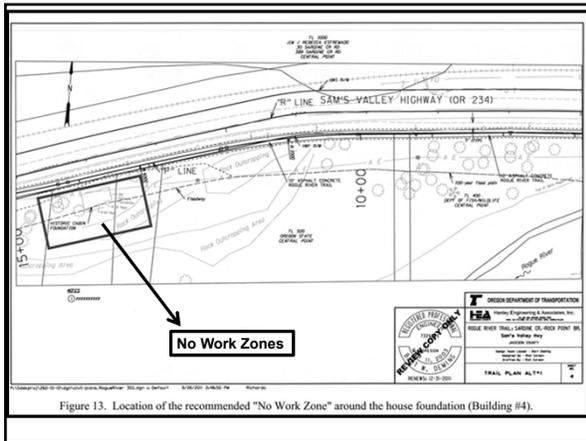
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**Monitors during construction**

- Ensure protection of known sites
- Identify and evaluate sites encountered during construction ("can keep work moving along")
- Monitors will work directly with Inspectors on site
- \*Inspectors\* Check Special Provisions for notification requirements. Ensure PM or APM are aware of timelines to facilitate proper coordination with monitors to avoid project delays.




**QA**  
QUALITY MATERIALS & INSPECTION

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**Urban Environments**  
What lies beneath!



**QA**  
2007 MATERIALS & INSPECTION

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Example of downtown Central Point:  
Historic maps indicated a possible feature.



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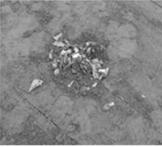
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**290.50 -Inadvertent Discovery: Step by Step**

- Stop work immediately
- Protect the site
- Contact Engineer, REC, Project Archaeologist and PM
- Move work to another location
- **Human remains =** contact State Police, REC & PM



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**Do I really have to stop???**



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**When do YOU stop work?**

- Dark organic lens
- Human remains
- Intact brick
- Multiple artifacts



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### Post bid clearance for staging and disposal areas

- If a Contractor identifies a new location, it needs to be located in "previously improved or disturbed sites, including existing roadways, pullouts, turnouts, parking lots and storage yards that have been compacted, graveled and paved, unless otherwise approved in writing."
- It is the Contractor's responsibility to provide the necessary environmental clearances once the project has gone to bid. (ODOT Technical Bulletin GE08-04(B))



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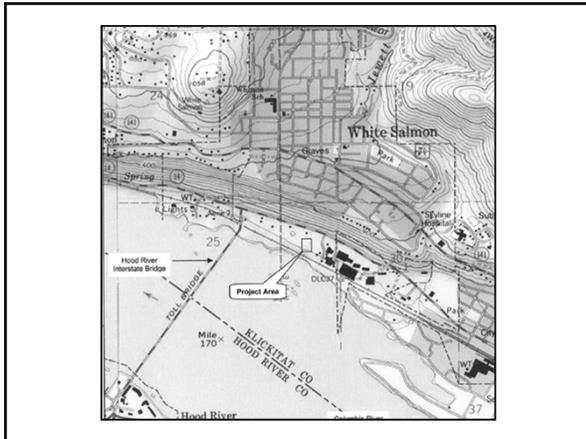
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### 290.51 (a): Disturbing known cultural sites

- ODOT and the Contractor will be held responsible
- Expensive mitigation
- Erodes our credibility



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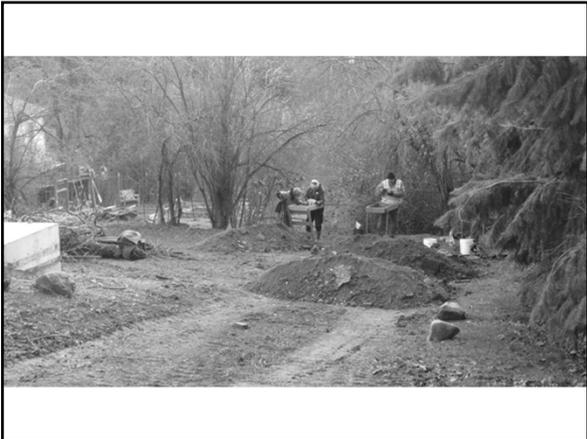
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**ODOT Archaeology Super Squad**

<b>Carolyn Holthoff</b> Cultural Resources Program Manager 503.986.3309 <a href="mailto:Carolyn.P.Holthoff@odot.state.or.us">Carolyn.P.Holthoff@odot.state.or.us</a>	<b>Kurt Roedel, Archaeologist</b> Region 2 & Major Projects 503.986.6571 <a href="mailto:Kurt.Roedel@odot.state.or.us">Kurt.Roedel@odot.state.or.us</a>
<b>Tobin C. Bottman, Archaeologist</b> Regions 1, 4 & 5 503.986.3783 <a href="mailto:Tobin.C.Bottman@odot.state.or.us">Tobin.C.Bottman@odot.state.or.us</a>	<b>Jessica Bochart, Archaeologist</b> Region 3 541.864.8820 <a href="mailto:Jessica.Bochart@odot.state.or.us">Jessica.Bochart@odot.state.or.us</a>
<b>Daniel Pettit, Archaeologist</b> Regions 1, 4 & 5 503.986.6389 <a href="mailto:Daniel.K.Pettit@odot.state.or.us">Daniel.K.Pettit@odot.state.or.us</a>	



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**ODOT Historic Resources Super Squad**

<b>Region 1</b> Robert Hadlow, PhD.	503-731-8239
<b>Region 2</b> Sarah Jalving	503-986-6926
<b>Region 3, 4 &amp; 5</b> Larissa Rudnicki	503-986-6782
<b>Statewide Program Coordinator</b> Chris Bell	503-986-3853





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**INSERT TAB**

**Unit 9  
REC**



**ODOT**  
**Environmental Inspector Training**  
 Region Environmental Coordinator




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**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.
- Provide review on ESCP/PCP.
- Conduct ESC inspections.
- Provide recommendations.
- Coordinates with specialists when needed.





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**When to call the REC**

**Whenever!**




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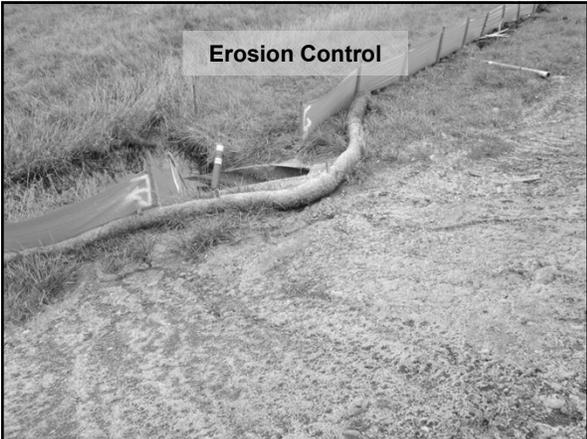
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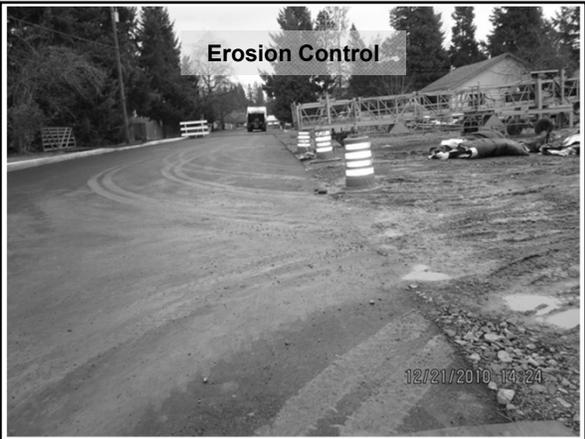
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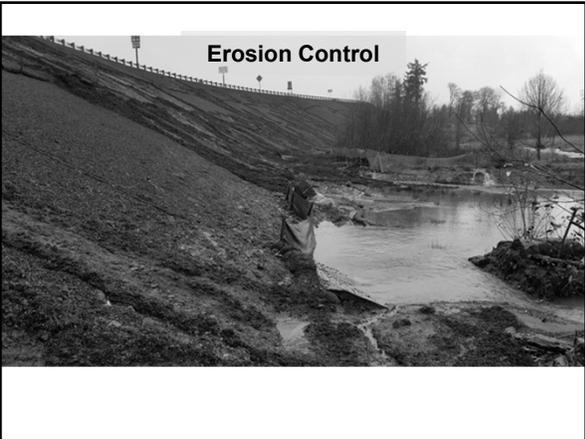
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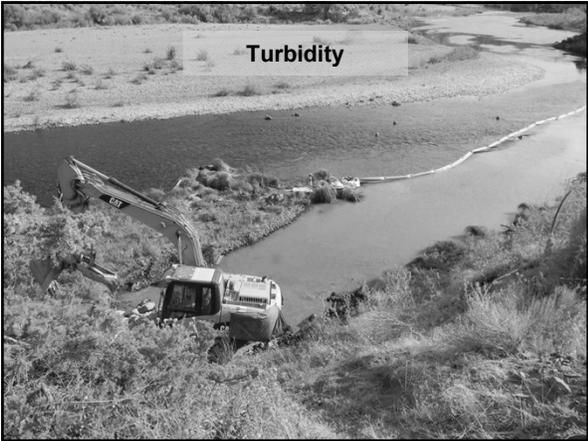
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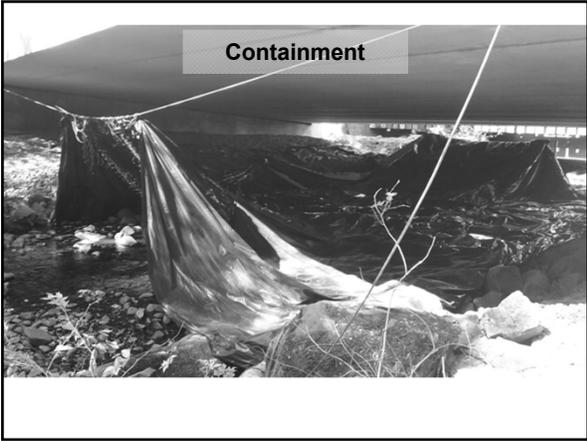
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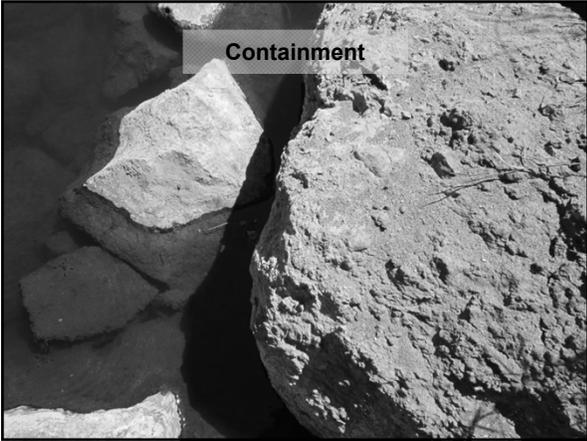
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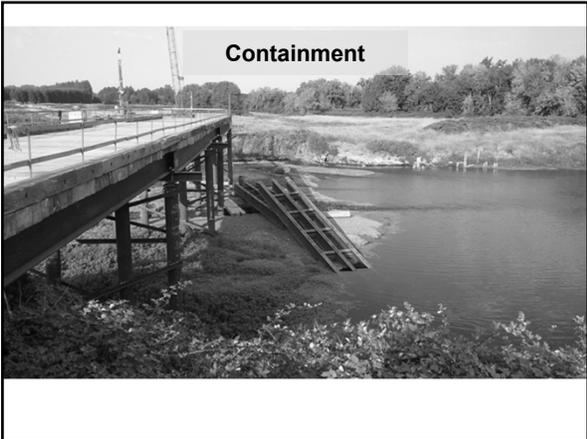
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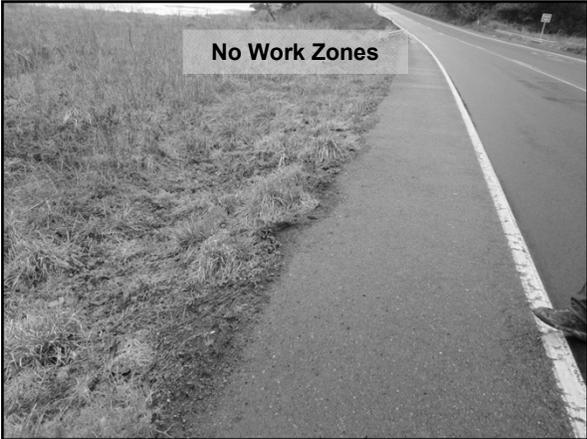
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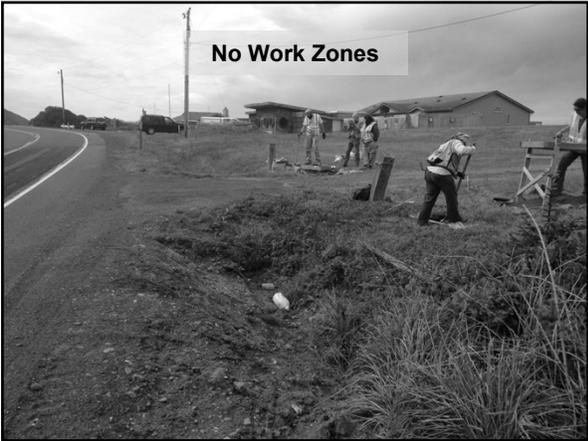
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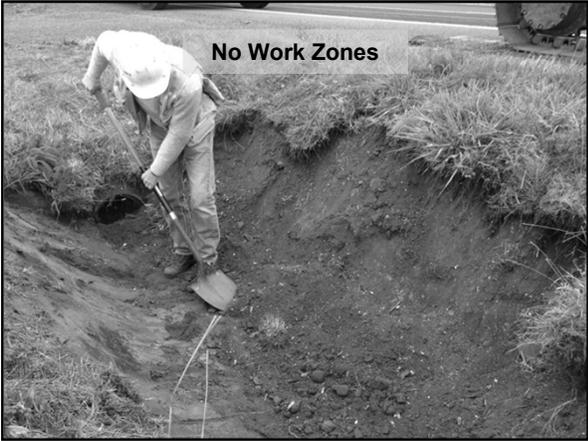
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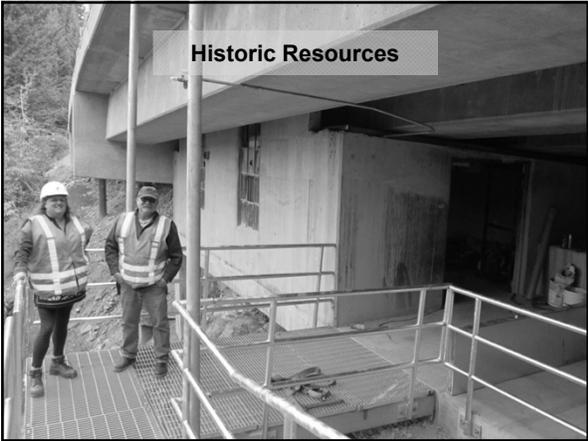
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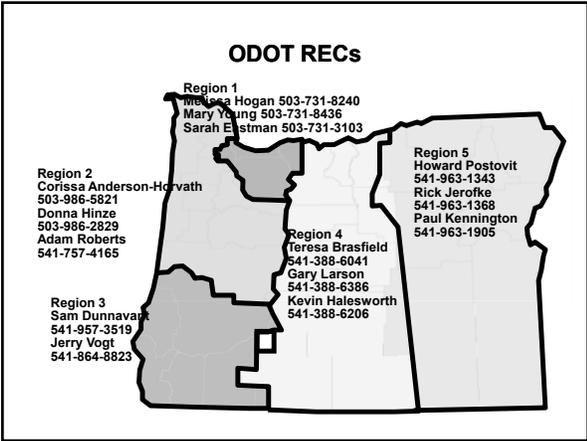
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**INSERT TAB**

**Erosion  
Monitoring Forms**





# EROSION AND SEDIMENT CONTROL MONITORING

<b>PROJECT NAME</b> FFO-US20 PME: UPRR - EDDYVILLE (PHASE 4) SECTION	<b>INSPECTION DATE</b> 06/23/2016	<b>KEY NUMBER</b> 18323	<b>CONTRACT NUMBER</b> 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				05/18/2016	NO	NO
Sediment Fence	YES				05/19/2016	NO	NO
Sediment Fence	YES				05/23/2016	NO	NO
Sediment Fence	YES				05/27/2016	NO	NO
Sediment Fence	YES				06/06/2016	NO	NO
Sediment Fence	YES				06/08/2016	NO	NO
Sediment Fence	YES				06/23/2016	NO	NO

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  
 Fairly heavy rain storms. We shut down most activities before noon and began monitoring the site. Installed 300 LF of Sediment Fence along Cut 10, and 245 LF at Disposal site 1.

**3. Weekly rainfall amounts:**

RAINFALL REPORTING STATION PME Office	MONITORING PERIOD 6/23/16	<input checked="" type="checkbox"/> ACTIVE <input type="checkbox"/> INACTIVE	24-HOUR RAINFALL AMOUNT: 0.54	ENDING DATES: 6/23		
--	------------------------------	---	----------------------------------	-----------------------	--	--

**4. Signature**

ESCM PRINTED NAME [REDACTED]	ESCM SIGNATURE [REDACTED]	DATE 06/23/2016	CERT NO. [REDACTED] 6PE	PHONE 541-[REDACTED]
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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 1/2 inch of rain per 24 hour period. See Section 00280 for additional information.

Distribution: Original to Agency Project Manager

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# EROSION AND SEDIMENT CONTROL MONITORING

PROJECT NAME FFO-US20 PME: UPRR - EDDYVILLE (PHASE 4) SECTION	INSPECTION DATE 08/09/2016	KEY NUMBER 18323	CONTRACT NUMBER 14890
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**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				05/18/2016	NO	NO
Sediment Fence	YES				05/19/2016	NO	NO
Sediment Fence	YES				05/23/2016	NO	NO
Sediment Fence	YES				05/27/2016	NO	NO
Sediment Fence	YES				06/06/2016	NO	NO
Sediment Fence	YES				06/08/2016	NO	NO
Sediment Fence	YES				06/23/2016	NO	NO
Sediment Fence	YES				07/06/2016	NO	NO

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  
Very light rain. No effect on working conditions.

**3. Weekly rainfall amounts:**

RAINFALL REPORTING STATION PME Office	MONITORING PERIOD 8/09/16	<input checked="" type="checkbox"/> ACTIVE <input type="checkbox"/> INACTIVE	24-HOUR RAINFALL AMOUNT: 0.01	ENDING DATES: 8/09			
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**4. Signature**

ESCM PRINTED NAME [REDACTED]	ESCM SIGNATURE [REDACTED]	DATE 08/09/2016	CERT NO. [REDACTED] 6PE	PHONE 541-[REDACTED]
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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 1/2 inch of rain per 24 hour period. See Section 00280 for additional information.

Distribution: Original to Agency Project Manager





# EROSION AND SEDIMENT CONTROL MONITORING

PROJECT NAME FFO-US20 PME: UPRR - EDDYVILLE (PHASE 4) SECTION	INSPECTION DATE 08/31/2016	KEY NUMBER 18323	CONTRACT NUMBER 14890
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**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				05/27/2016	NO	NO
Sediment Fence	YES				06/06/2016	NO	NO
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

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

Small amount of rain today. We installed additional sediment fence and straw bails in Cut 10 to provide added erosion control because more rain is expected tomorrow.

**3. Weekly rainfall amounts:**

RAINFALL REPORTING STATION PME Office	MONITORING PERIOD 8/31/16	<input checked="" type="checkbox"/> ACTIVE <input type="checkbox"/> INACTIVE	24-HOUR RAINFALL AMOUNT: 0.11	ENDING DATES: 8/31		
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**4. Signature**

ESCM PRINTED NAME [REDACTED]	ESCM SIGNATURE [REDACTED]	DATE 08/31/2016	CERT NO. [REDACTED] 6PE	PHONE 541-[REDACTED]
---------------------------------	------------------------------	--------------------	----------------------------	-------------------------

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 1/2 inch of rain per 24 hour period. See Section 00280 for additional information.

Distribution: Original to Agency Project Manager



**INSERT TAB**

**QPL**



OREGON DEPARTMENT OF TRANSPORTATION  
CONSTRUCTION SECTION

# QUALIFIED PRODUCTS LIST

PUBLISHING DATE: JULY 2016 (AMENDED 9/26/16)



This list is published every six months and is available only from the Internet. Please notify the Product Evaluation Coordinator, in the Construction Section at the ODOT Materials Laboratory, of any changes in Standard Drawings, Special Provisions, or Specifications, etc., which would require additions to, deletions from, or changes to this listing.

# 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.

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.

<u>Description</u>	<u>Page #</u>
Index by Category, for Spec #.....	I-II
Traffic Control Devices.....	III
Erosion Control Devices.....	IV - V
Pavement Markings.....	VI - VII
Qualified & Approved List.....	1 – 202
by Spec Number	
Reinforcing Steel.....	A1-A11

The "QPL" and submittal forms are accessible from the Internet:  
<http://www.oregon.gov/ODOT/HWY/CONSTRUCTION/>

Although the products listed may be approved for use, they are not exempt from State Purchasing Rules, practices and guidelines, or manufacturer's warranties 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.state.or.us](mailto:dean.m.chess@odot.state.or.us)**

**FAX: 503/986-3096**



**Erosion Control**

QPL

<u>Category</u>	<u>Remarks</u>	<u>Section</u>
Check Dam	Type 1 – Aggregate .....	00280.15a
	Type 2 – Straw Bale	
	Type 3 – Biofilter Bag	
	Type 4 – Sand Bag	
	Type 5 – Prefabricated Check Dam System	
	Type 6 – Compost Filter Sock	
Chemical Dust Control	Type 1 – Liquid .....	00280.14c
	Type 2 – Dry	
Drainage Curb.....	.....	00280.15c
Flow Spreader .....	.....	00280.15e
	.....	
Inlet Protection	Type 1 – Sediment Fence .....	00280.16d
	Type 2 – Geotextile w/Aggregate Filter	
	Type 3 – Prefabricated Filter Insert (Standard and Oil/Gas Versions)	
	Type 4 – Biofilter Bag	
	Type 5 – Masonry and Aggregate	
	Type 6 – Sod	
	Type 7 – Compost Filter Sock	
	Type 8 - Other	
Matting** – Slope	Type A - Slopes 1:3 or flatter - Clay Soil .....	00280.14e
	Type B - Slopes 1:3 or flatter - Sandy Soil	
	Type C - Slopes steeper than 1:3 - Clay Soil	
	Type D - Slopes steeper than 1:3 - Sandy Soil	
Matting** – Flexible Channel Liner	Type E - Shear Stress Range 0 – 96 Pascals (0 –2 lbs/sq ft) .....	00280.14e
	Type F - Shear Stress Range 0 – 192 Pascals (0 –4 lbs/sq ft)	
	Type G - Shear Stress Range 0 – 287 Pascals (0 –6 lbs/sq ft)	
	Type H - Shear Stress Range 0 – 383 Pascals (0 –8 lbs/sq ft)	

\*\*Texas DOT Website for use with Mattings:  
<http://www.txdot.gov/inside-txdot/division/maintenance/maintenance/erosion-control.html>

**Erosion Control**

<u>Category</u>	<u>Remarks</u>	<u>Section</u>
Mulches, Temporary	.....	00280.14d
Outlet Protection	Type 1 – In Channel .....	00280.00
	Type 2 – End of Pipe .....	
	Type 3 – Flocculent .....	
Plastic Sheeting	.....	00280.14a
Sediment Barrier, Temporary	Type 1 – Straw Bale .....	00280.16e
	Type 2 – BioFilter Bag .....	
	Type 3 – Fiber Rolls (Wattles) .....	
	Type 4 – Sand Bags .....	
	Type 5 – Brush Barriers .....	
	Type 6 – Filter Berm .....	
	Type 7 – Pre-Fabricated Sediment Barrier .....	
	Type 8 – Compost Filter Sock .....	
	Type 9 – Compost Filter Berm .....	
Sediment Fence	.....	00280.16c
Sediment Mat	.....	00280.16f
Slope Drain, Temporary	.....	00280.15d
Slope Protection	Type 1 – Soft Armoring .....	00390.00
	Type 2 – Cellular Confinement .....	
	Type 3 – Other .....	

**ODOT CONSTRUCTION / MATERIALS SECTION  
 QUALIFIED PRODUCTS LIST  
 APPROVED LIST - NO SAMPLES OR TESTS REQUIRED\*  
 QUALIFIED LIST - ADDITIONAL REQUIREMENTS\*\*  
 JULY 2016 (AMENDED 9/26/16)**

<u>STANDARD SPEC #</u>	<u>CATEGORY</u>	<u>PRODUCT NAME</u>	<u>LOCAL REPRESENTATIVE AND/OR MANUFACTURER</u>	<u>EFFECTIVE DATE</u>	<u>PRODUCT NUMBER</u>	<u>LIST</u>	<u>REMARKS</u>
00280.14D	MULCHES, TEMPORARY	TERRA MULCH	PROFILE PRODUCTS 847/215-1144 DAMON SUMP 503/537-8462 ACF WEST 800/878-5115 AGRIVESTMENT 253/383-5014	11/09/06	3317	A	SLOPES UP TO: 2H : 1V
00280.14D	MULCHES, TEMPORARY	TERRA-MATRIX SM STABILIZED FIBER MATRIX	PROFILE PRODUCTS 847/215-1144 DAMON SUMP 503/537-8462 ACF WEST 800/878-5115 AGRIVESTMENT 253/383-5014	02/08/07	3416	A	WOOD FIBER
00280.14D	MULCHES, TEMPORARY	TURBOMULCH 70% WOOD	WESTERN EXCELSIOR 800/987-4009 GEOTEK 360/750-1955 DIST.: EMERALD SEED & SUPPLY ARMAN KLUEHE, 503/254-8414	06/08/00	1804	A	WOOD FIBER, ORGANIC. W/O TACKIFIER. BIODEGRADABLE. 70% WOOD, 30% PAPER W/DYE.
00280.14D	MULCHES, TEMPORARY	WOODSTRAW	FOREST CONCEPTS 877/838-4759	12/13/07	3587	A	
00280.14D	MULCHES, TEMPORARY TACKIFIER	EARTH BIND 100	ENVIROAD 208/392-4549	05/14/09	3873	A	POSSIBLE PROBLEMS IN S.C. PER APEL (4/06).
00280.14D	MULCHES, TEMPORARY TACKIFIER	ECO E-TAC	APEX RESOURCES 502/254-3118 FIBER MARKETING 425/277-9966	07/13/06	3265	A	
00280.14D	MULCHES, TEMPORARY TACKIFIER	ECOTAC GUAR GG-1200	FIBER MARKETING 800/426-6002	04/09/09	3232	A	TAC ONLY, ORGANIC HYDROCOLLOID
00280.14D	MULCHES, TEMPORARY TACKIFIER	FIBERRX	HYDROSTRAW 800/545-1755 RON EDWARDS	01/21/14	4685	A	FOR USE WITH HYDRAULICALLY APPLIED
00280.14D	MULCHES, TEMPORARY TACKIFIER	FMI POWER TACK	APEX RESOURCES 502/254-3118 FIBER MARKETING 425/277-9966	07/13/06	3269	A	

\*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 NFTMAG.  
 LIST PUBLISHED BY: ODOT MATERIALS LAB; 800 AIRPORT RD SE; SALEM, OR 97301-4798; (503) 986-3059. PLEASE REPORT ANY PROBLEMS USING THESE PRODUCTS.

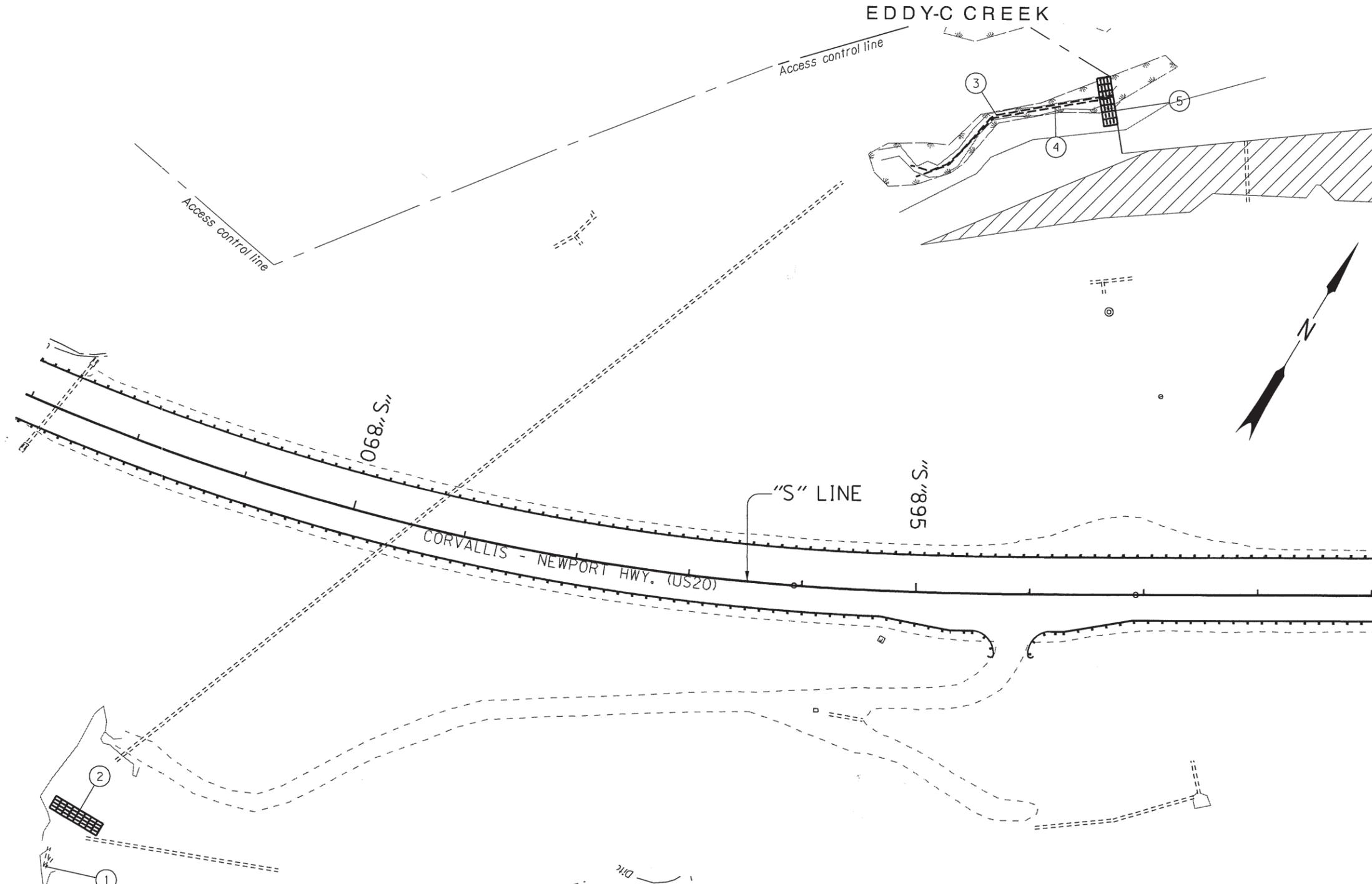


**INSERT TAB**

**Red-line Plans**



EDDY-C CREEK



- ① Sta. "S" 888+46.378' Rt.  
Exc. to expose extg. HDPE water management pipes and remove end plugs to allow stream bypass.
- ② Inst. sand bag isolation dam over extg. HDPE water management pipes such that creek water enters pipes and the work area is isolated.  
(For details, see sht. GG-4)
- ③ Inst. 6" min. bypass pipe extension - 200'
- ④ Inst. 6" min. bypass pipe extension - 195'
- ⑤ Inst. sand bag isolation dam over water management extension pipes, across the creek channel, to isolate the work area, such that creek water does not get past the dam.  
(For details, see sht. GG-4)

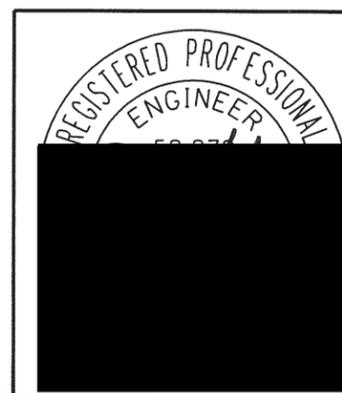
- NOTES:
1. The implementation of these temporary water management plans and the construction, maintenance, replacement and upgrading of these facilities are the responsibility of the contractor until all construction is completed and approved.
  2. The temporary water management facilities shown on this plan are the minimum requirements for anticipated site conditions. During the construction periods, these facilities shall be upgraded for unexpected storm events and to ensure that sediment and sediment-laden water does not leave the site.
  3. And fish/amphibian salvage must be completed prior to the start of the TWM.
  4. Const. buttress over water management pipe.
  5. Upon project completion, plug and abandon bypass pipes and extensions, as directed.

No work area shown thus:

ESTIMATED DISCHARGE FOR TEMPORARY WATER MANAGEMENT

MONTH	AVERAGE DAILY DISCHARGE cfs (gpm)		
	Avg. daily discharge expected to be exceeded 2 days each month (5%)	Avg. daily discharge expected to be exceeded 8 days each month (25%)	Avg. daily discharge expected to be exceeded 16 days each month (50%)
July	0.67 (302)	0.41 (184)	0.31 (139)
August	0.31 (139)	0.21 (93)	0.21 (93)
September	0.52 (232)	0.27 (115)	0.15 (69)

Discharges are not expected to exceed these predicted discharges.  
In-water work period extends from July 1, 2016 to September 15, 2016. Temporary water management shown on plans recommended throughout In-water work period. The estimated discharges are based on nearby gauged basins. Discharges in the subject watershed may differ.



**OREGON DEPARTMENT OF TRANSPORTATION**

**REGION 2 TECH CENTER**

**FFO-US20 PME: UPRR - EDDYVILLE (PHASE 4) SECTION**  
CORVALLIS - NEWPORT HIGHWAY  
LINCOLN COUNTY

**TEMPORARY WATER MANAGEMENT PLAN**

SHEET NO. **GG-3**

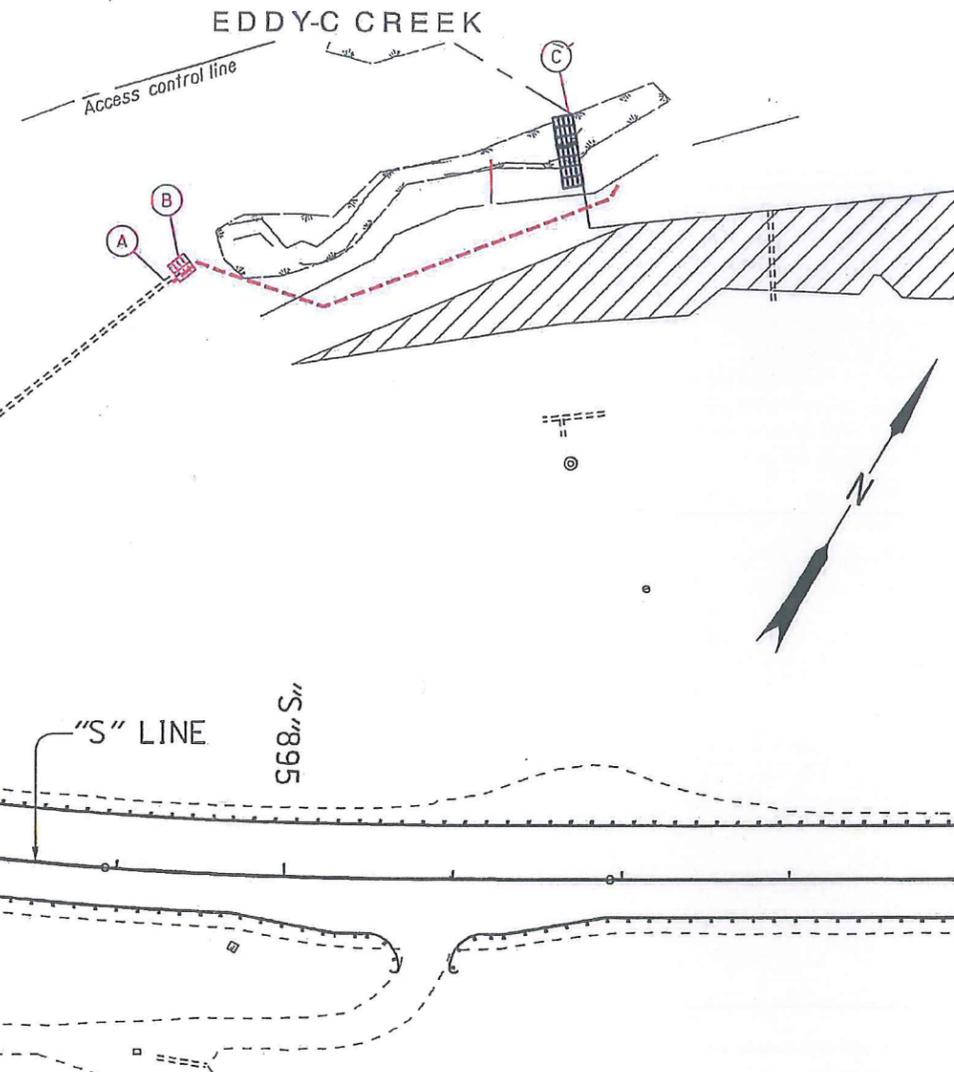


**Installation Sequence For De-Watering**

1. Perform fish salvage entire length of Eddy C to be isolated.
2. Install 6" bypass pipe (A) in outlet of existing culvert.
3. Install sand bag isolation dam (B) in exit culvert and over bypass pipe so stream water is diverted into bypass.
4. Install downstream dam (C).
5. Adjust inlet end of bypass pipe as succeeding pieces of permanent culvert are installed.

**Removal Sequence**

1. After all work in Eddy C is complete and before September 15, stream water will be released back into the existing culvert.
2. Remove all temporary isolation dams.
3. Remove bypass pipe.



- (A) 6" bypass pipe
- (B) Inst. sand bag isolation dam inside extg. culvert to divert stream flow into bypass pipe. (For details, see sh. GG-4 of contract plans)
- (C) Inst. sand bag isolation dam across creek channel to isolate work zone. (For details, see sh. GG-4 of contract plans)

**On-Site Back Up Material**  
 Extra sand, sand bags, and plastic will be on site for use if needed.  
 A 4" Dri-Prime pump and clean filter bags will be on site for use in an emergency after the temporary diversion is installed.



No work area shown thus:

Oregon Dept. of Transportation  
 Project Manager's Office

Approved  
 Approved as Noted  
 Returned For Correction  
 By A. [Signature] Date 6/21/16

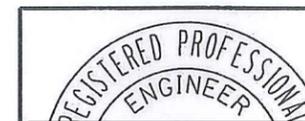
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Hydrology information provided by ODOT assumed to be accurate. Design based on original plan provided in the project contract plans.



EXPIRES: 06-30-2016

OREGON DEPARTMENT OF TRANSPORTATION

REGION 2 TECH CENTER

FFO-US20 PME: UPRR - EDDYVILLE  
 (PHASE 4) SECTION  
 CORVALLIS - NEWPORT HIGHWAY  
 LINCOLN COUNTY

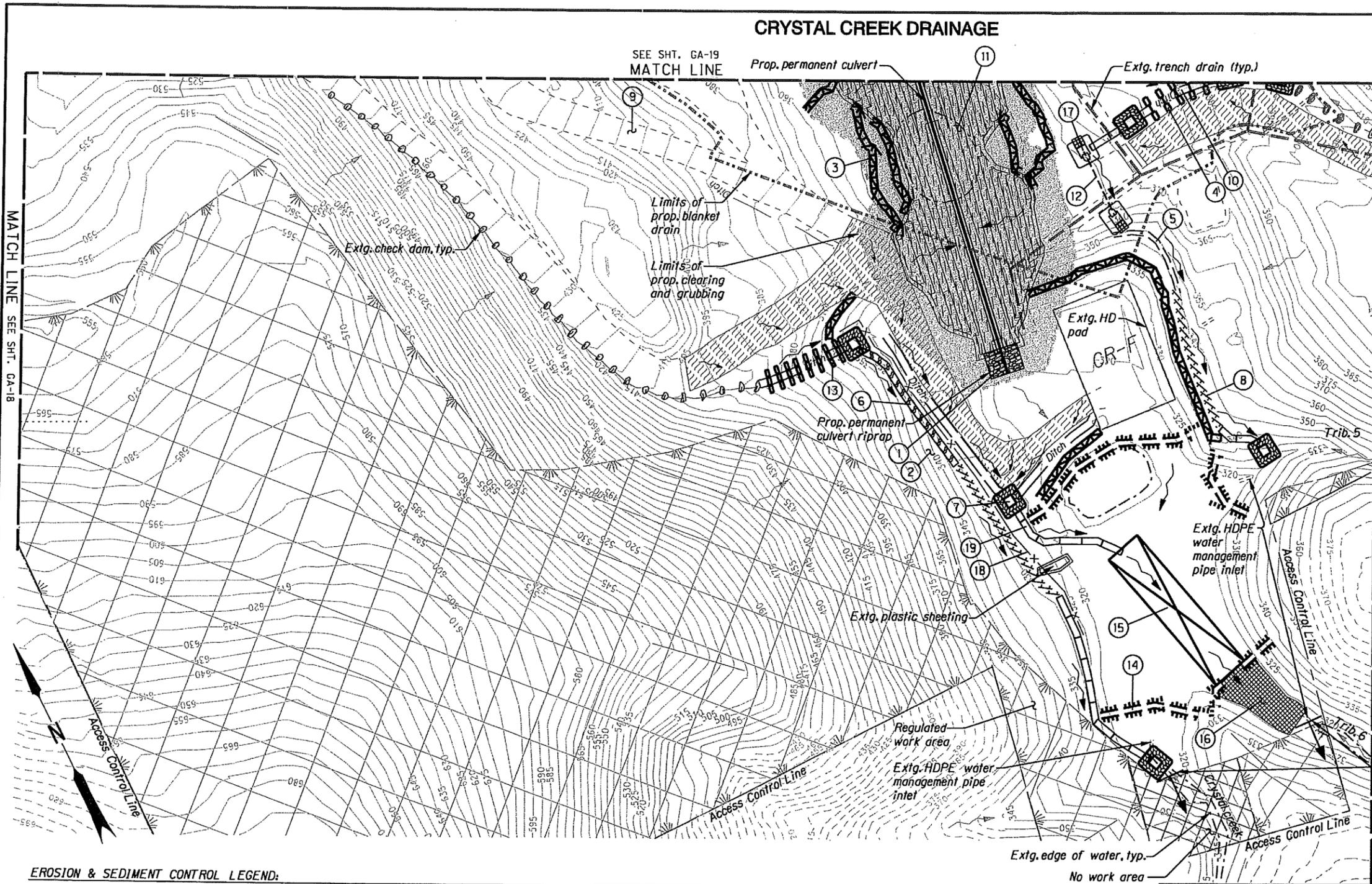


TEMPORARY WATER  
 MANAGEMENT PLAN

SHEET NO.  
 GG-3



CRYSTAL CREEK DRAINAGE



- ① Apply permanent seeding, mix no. 1 to prop. permanent culvert riprap - 0.02 ac.
- ② Apply temporary erosion control seeding to all areas disturbed by construction activities (For seeding, see specifications)
- ③ Inst. sediment barrier (type 3) - 890' (For details, see sht. GA-3)
- ④ Inst. aggregate check dam (type 1) 24" - 5
- ⑤ Const. diversion dike/swale - 94' (For details, see sht. GA-6)
- ⑥ Const. lined channel with matting, type G - 140' (For details, see sht. GA-5)
- ⑦ Const. temporary scour hole - 5
- ⑧ Const. turbidity treatment swale - 281' (For details, see sht. GA-7)
- ⑨ Const. rock plating on work roads as directed (For details, see sht. GA-8)
- ⑩ Const. rock lined roadside ditch (450') - 180 tons (For details, see sht. GA-8)
- ⑪ Install riprap geotextile (type 3) (For details, see sht. GK-12)
- ⑫ Const. temporary culvert - 64' (For details, see sht. GA-7)
- ⑬ Inst. aggregate check dam (type 1) 36" - 8
- ⑭ Const. sandbag isolation barrier - 401' (For details, see sht. GA-6)
- ⑮ Inst. sediment trap - size and location to be field adjusted as approved by engineer - 1 (For details, see sht. GA-4)
- ⑯ Inst. matting (type F) - 290 sq. yd.
- ⑰ Const. temporary collection basin - 2 (For details, see sht. GA-5)
- ⑱ Inst. orange plastic temporary fence - 376'

Note: Maintain erosion and sediment control BMP existing on site. (See specifications.)

No impacts upstream of this point

EROSION & SEDIMENT CONTROL LEGEND:

Extg. direction of drainage arrow	Diversion dike/swale	Temporary scour hole	Temporary slope drain
Extg. aggregate check dam (type 1)	Temporary scour hole	Sediment trap	Sandbag isolation barrier
Extg. plastic sheeting	Temporary culvert	Sandbag isolation barrier	Matting (type F)
Prop. direction of drainage arrow	Section of work road regraded to change drainage direction	Sandbag isolation barrier	Temporary collection basin
Sediment barrier (type 3)	Riprap geotextile (type 3)	Sandbag isolation barrier	Orange plastic temporary fence
Aggregate check dam (type 1) 24"	Turbidity treatment swale	Sandbag isolation barrier	
Lined channel with matting (type G)	Aggregate check dam (type 1) 36"		
Rock lined roadside ditch			

Note: No work permitted in "No Work Area." No ground disturbance or permanent impacts permitted in "Regulated Work Area."

OREGON DEPARTMENT OF TRANSPORTATION

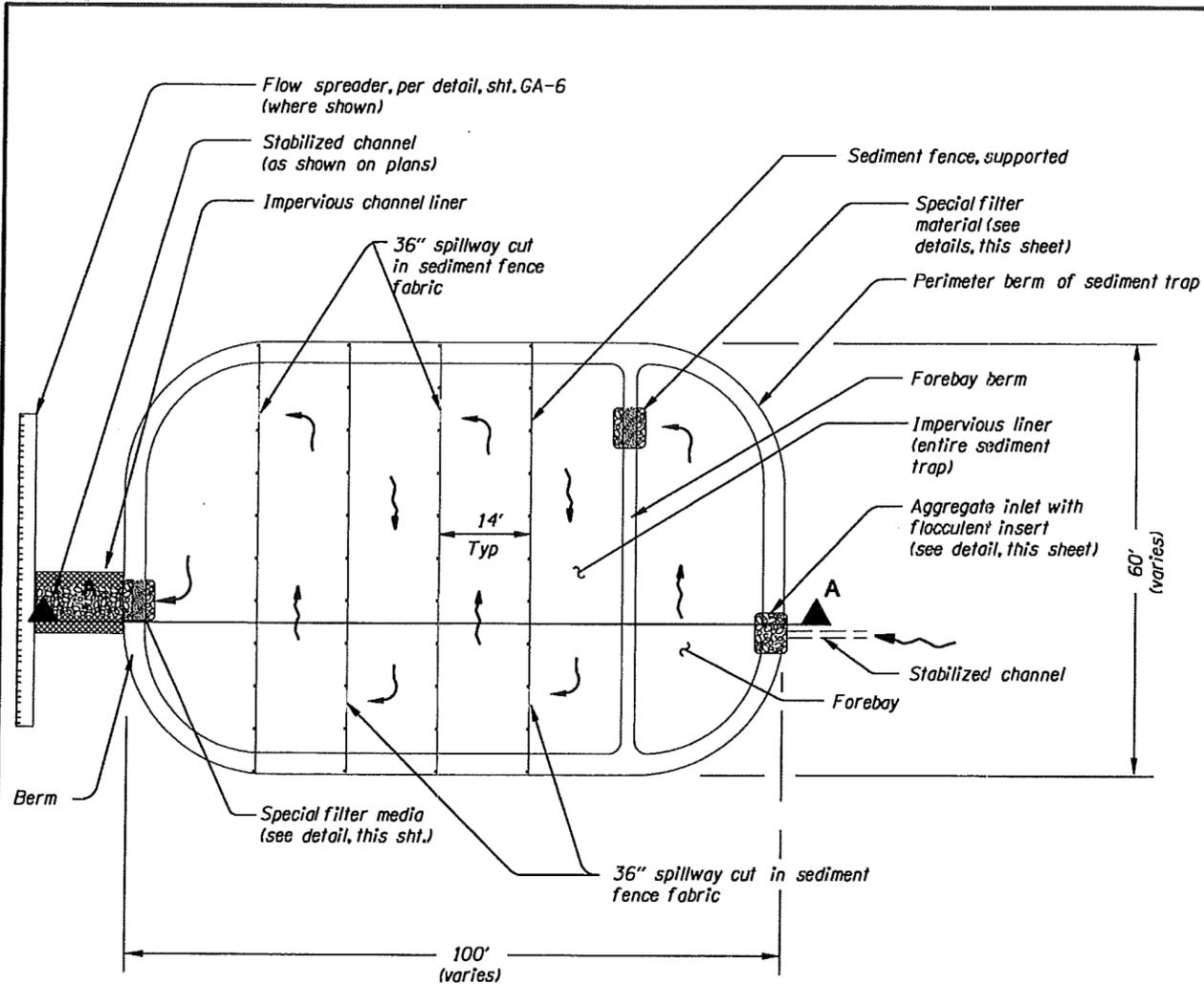
DAVID EVANS AND ASSOCIATES INC.  
2100 Southwest River Parkway  
Portland Oregon 97201 Ph: 503.223.6663

**FFO-US20 PME: UPRR - EDDYVILLE (PHASE 2) SECTION**  
CORVALLIS - NEWPORT HIGHWAY  
LINCOLN COUNTY

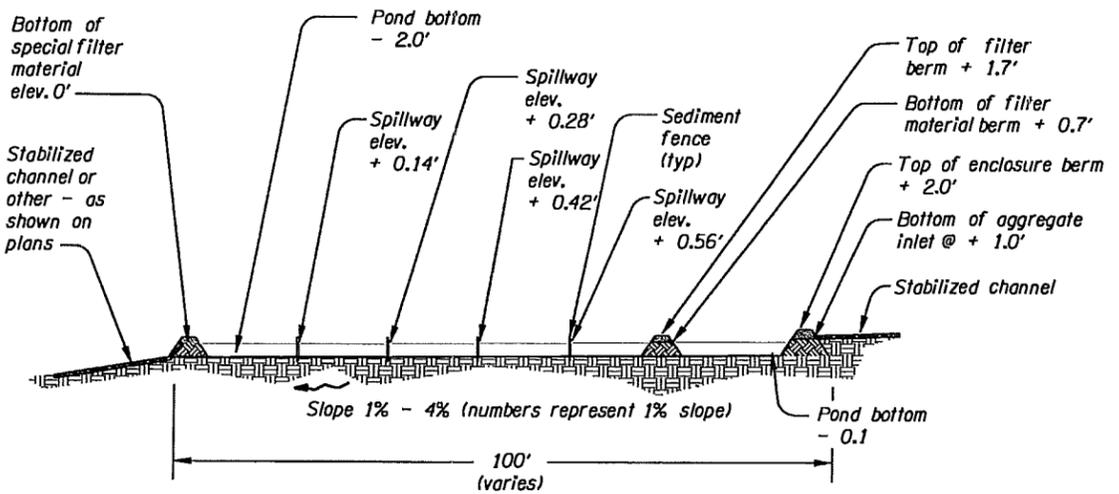
**EROSION AND SEDIMENT CONTROL PLAN**

SHEET NO. GA-19A

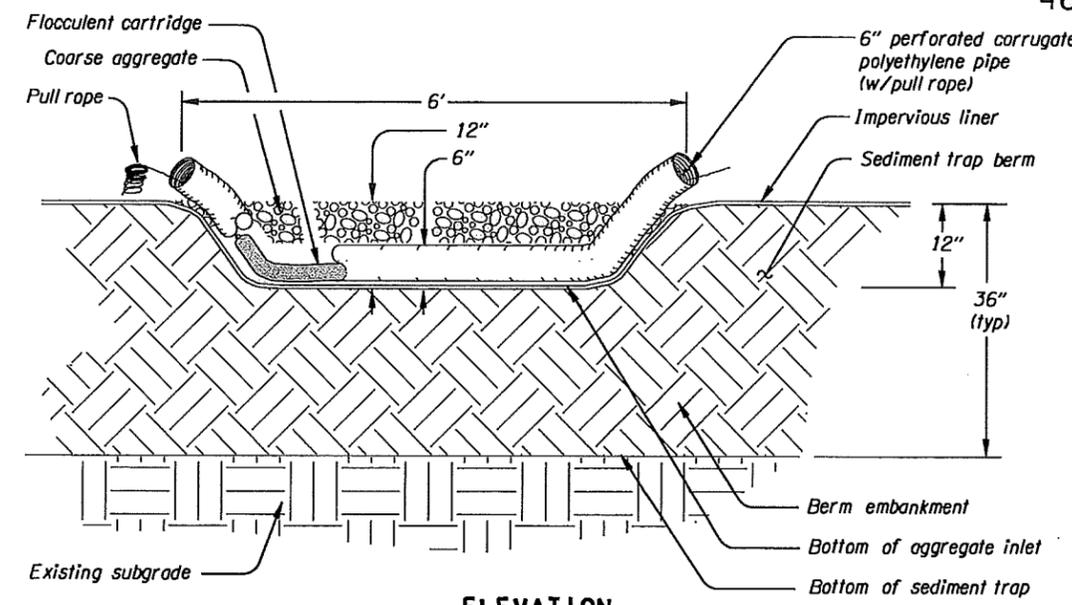




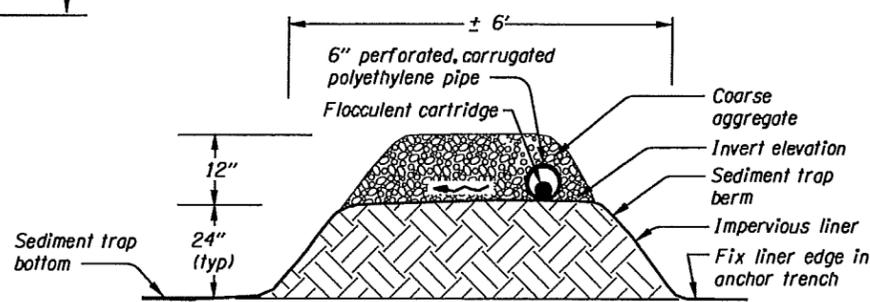
PLAN  
SEDIMENT TRAP



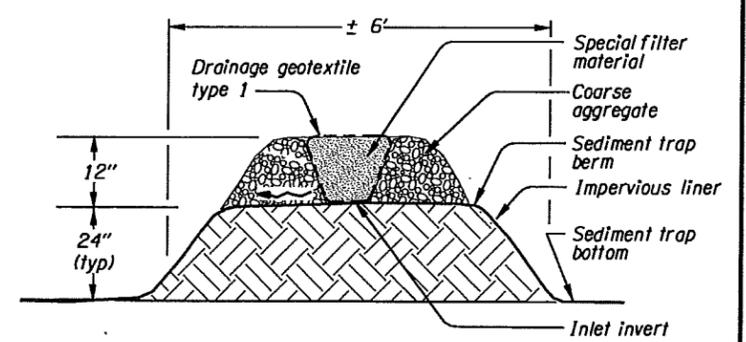
Section A-A  
SEDIMENT TRAP



ELEVATION  
AGGREGATE INLET W/FLOCCULENT CARTRIDGE AT SEDIMENT TRAP



SECTION  
AGGREGATE INLET W/FLOCCULENT CARTRIDGE AT SEDIMENT TRAP



SECTION  
SPECIAL FILTER MEDIA AT SEDIMENT TRAP

**Notes:**

1. Slope from outfall into forebay to exit through special filter material is between 1% and 4%
2. Sediment traps shall be field located and shaped and sized as warranted by site conditions.
3. Cover penetrations in impervious liner with sodium bentonite clay.
4. Elevations given are conceptual and relative.
5. Construct sediment trap enclosure with native material or imported material by embankment or excavation or a combination thereof.
6. Minimum area of sediment trap is 2500 SF.
7. Forebay area 20% of sediment trap total area (approx)

<p>OREGON DEPARTMENT OF TRANSPORTATION</p>	
<p>DAVID EVANS AND ASSOCIATES INC. 2100 Southwest River Parkway Portland Oregon 97201 Ph: 503.223.6663</p>	
<p>FFO-US20 PME: UPRR - EDDYVILLE (PHASE 2) SECTION CORVALLIS - NEWPORT HIGHWAY LINCOLN COUNTY</p>	
<p>EROSION AND SEDIMENT CONTROL DETAILS</p>	<p>SHEET NO. GA-4</p>

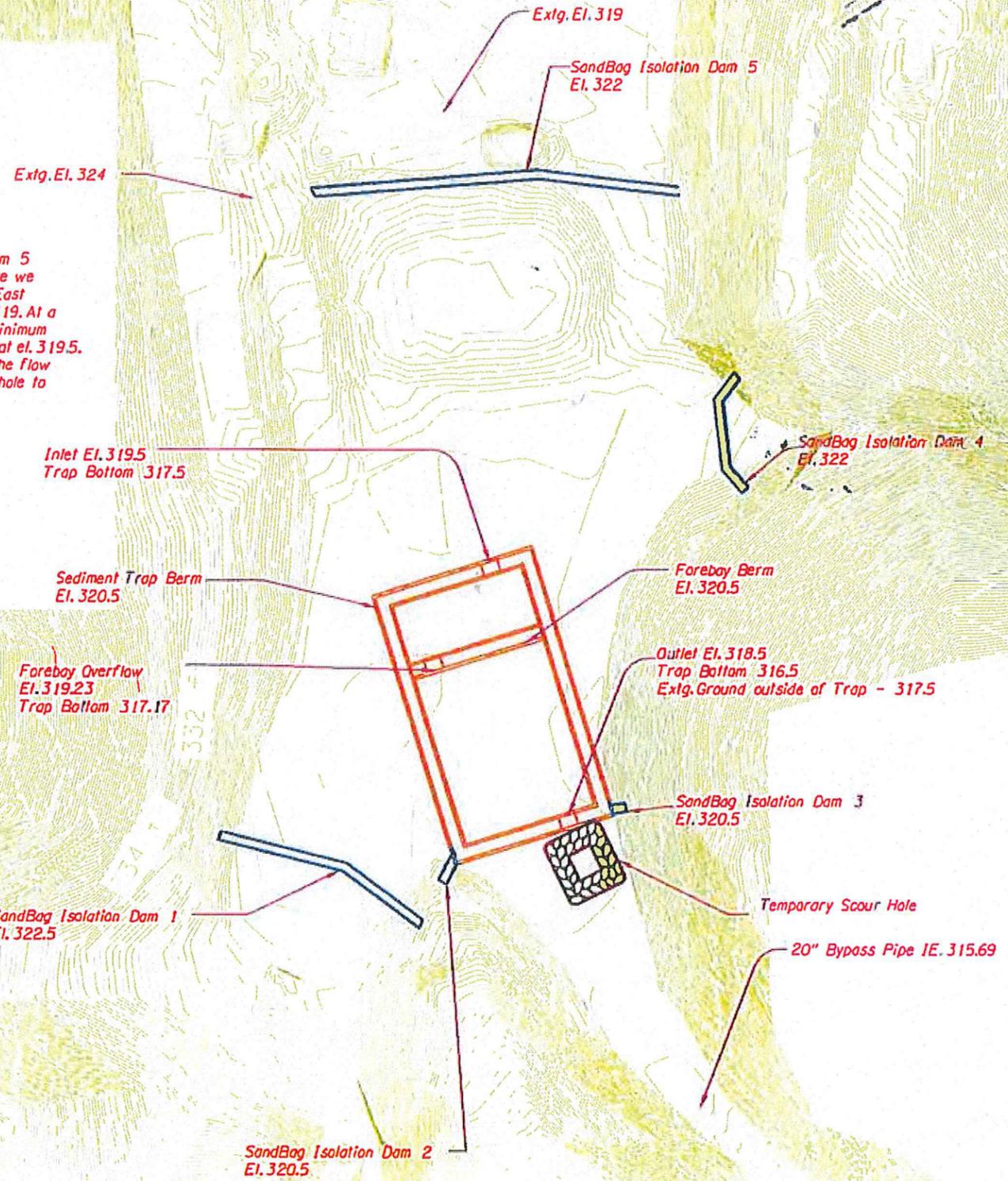


GENERAL NOTES/COMMENTS/CONCERNS

I proposed a scour hole at the outfall of the sediment trap instead of the Type F matting. This area will likely be always under water and I am not sure what benefit the matting will provide. This needs to be reviewed with ODOT.

Need to determine how to get water from north of Isolation Dam 5 to the sediment trap. The point on the erosion control plans where we are shown to collect the water is at approximate elevation 324. East of this point the elevation of existing ground is approximately 319. At a minimum we need to build the access roads in this area to a minimum elevation of 320 so that water will flow into the sediment trap at el. 319.5. We can look at moving the scour hole to the east and directing the flow to a low point of 320 and then using a temp slope and scour hole to bypass the dam.

Contours at 1' interval

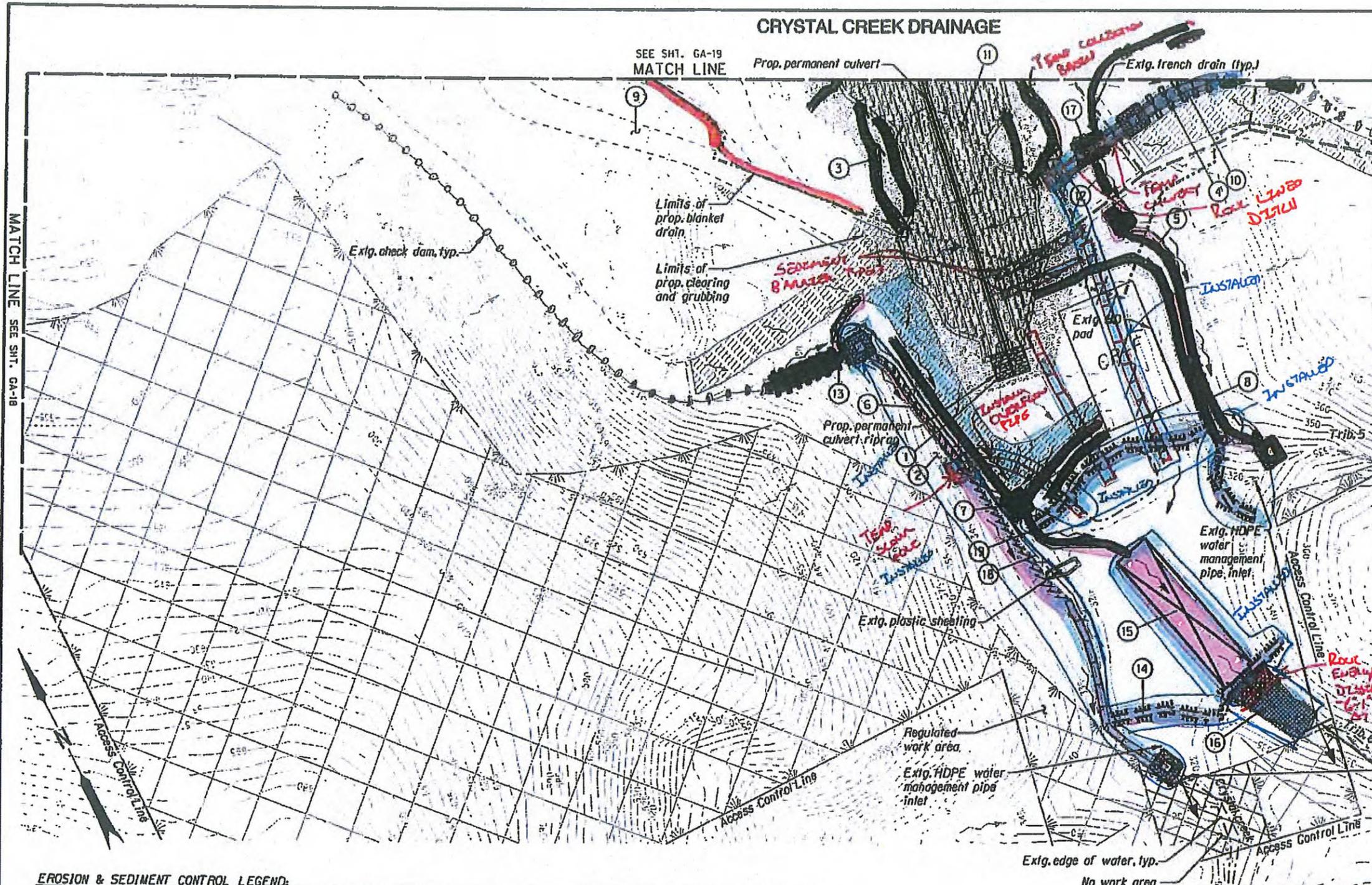


CRYSTAL CREEK SEDIMENT TRAP LAYOUT AND REVISIONS





CRYSTAL CREEK DRAINAGE



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- ④ Inst. aggregate check dam (type 1) 24" - 5
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- ⑦ Const. temporary scour hole - 5
- ⑧ Const. turbidity treatment swale - 281' (For details, see sht. GA-7)
- ⑨ Const. rock plating on work roads as directed (For details, see sht. GA-8)
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- ⑯ Inst. matting (type F) - 290 sq. yd.
- ⑰ Const. temporary collection basin - 2 (For details, see sht. GA-5)
- ⑱ Inst. orange plastic temporary fence - 376'
- ⑲ Inst. temporary slope drain - 374'

Note:  
Maintain erosion and sediment control BMP existing on site. (See specifications.)

No impacts upstream of this point

EROSION & SEDIMENT CONTROL LEGEND:

Exig. direction of drainage arrow	Diversion dike/swale	Temporary slope drain
Exig. aggregate check dam (type 1)	Temporary scour hole	Sediment trap
Exig. plastic sheeting	Temporary culvert	Sandbag isolation barrier
Prop. direction of drainage arrow	Section of work road regraded to change drainage direction	Matting (type F)
Sediment barrier (type 3)	Riprap geotextile (type 3)	Temporary collection basin
	Turbidity treatment swale	Orange plastic temporary fence
Lined channel with matting (type G)		
Rock lined roadside ditch		

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200 Southwest River Parkway  
Portland Oregon 97201 P# 503.223.6663

**FFO-US20 PME: UPRR - EDDYVILLE (PHASE 2) SECTION**  
CORVALLIS - NEWPORT HIGHWAY  
LINCOLN COUNTY



**EROSION AND SEDIMENT CONTROL PLAN**

SHEET NO.  
GA-19A

