OPERATION & MAINTENANCE MANUAL

DFI No.: D00400
Facility Type: Detention Pond

MARCH, 2011

INDEX

1. Identification

Drainage Facility ID (DFI):	**D00400**
Facility Type:	Detention Pond
Construction Drawings:	(V-File Number) 32V-086
Location:	District: 7
	Highway No.: 001
	Mile Post: 244.80 / 244.84 (beg./end)
	Description: This facility is located on the northern side of US101 (Hwy 009, Oregon Coast Highway) in the gore area where OR42 intersects the highway. Access can be obtained from the OR42 connection road.

2. Facility Contact Information

Contact the Engineer of Record, Region Technical Center, or Geo-Environmental's Senior Hydraulics Engineer for:

- Operational clarification
- Maintenance clarification
- Repair or restoration assistance

Engineering Contacts:

Region Technical Center Hydraulics Engineer (541) 957-3693

Or

Geo-Environmental Senior Hydraulics Engineer (503) 986-3365.

3. Construction

Engineer of Record:	ODOT Designer – Region 3 Tech. Center, Thomas Wallace, Rdwy. Mngr., 541-957-3573
Facility construction:	2000
Contractor:	LTM, Inc. Construction Company.]

4. Storm Drain System and Facility Overview

A detention facility is designed to control the quantity of runoff, by reducing the peak discharge and only detaining runoff for some short period of time. These facilities are designed to store and gradually release or attenuate stormwater runoff via a control structure or release mechanism, and completely drain after the design storm has passed. The most common detention facilities include:

- Dry ponds - these are depressed storage areas that store runoff during wet weather and are dry the rest of the time. Usually they are earthen depressions.
- Tanks - these are underground storage facilities that are typically constructed from large diameter pipe.
- Vaults - these are enclosed underground storage facilities. They are typically constructed from reinforced concrete.

This facility is located in the middle of the triangular shaped intersection between US101 and OR42. The pond is positioned near the gore or apex where US101 and the connection road intersect (southern portion of the intersection).

The detention pond associated with the Davis Slough Sec. project was constructed as part of a larger wetland mitigation project. The pond is designed to regulate flow into the wetland mitigation site that is located immediately downstream from the pond. The facility is designed to store and gradually release stormwater runoff via an outlet control structure that consists of two Type-D inlets connected in series. The low flow inlet restricts storm flow through a 0.5-inch orifice that discharges directly into the overflow inlet. This orifice is the only flow control mechanism designed to release flow into the pond. During high flow events, the secondary or high flow inlet collects stormwater and allows the flow to discharge through a 12-inch culvert without restriction. Refer to the Operational Plan in Appendix A for further information and a diagram of the outlet control structure.

The facility does not include any water quality treatment mechanisms. However, the facility will temporarily reduce the velocity of stormwater and allow sediment to settle in the pond.

A. Maintenance equipment access:

   Maintenance crew can access the facility from the connection road between US101 and OR42. Wide gravel shoulders that allow for parking are located adjacent to the facility.

B. Heavy equipment access into facility:

☒ Allowed (no limitations)
☐ Allowed (with limitations)
☐ Not allowed

C. Special Features:

☐ Amended Soils
☐ Porous Pavers
☐ Liners
☐ Underdrains

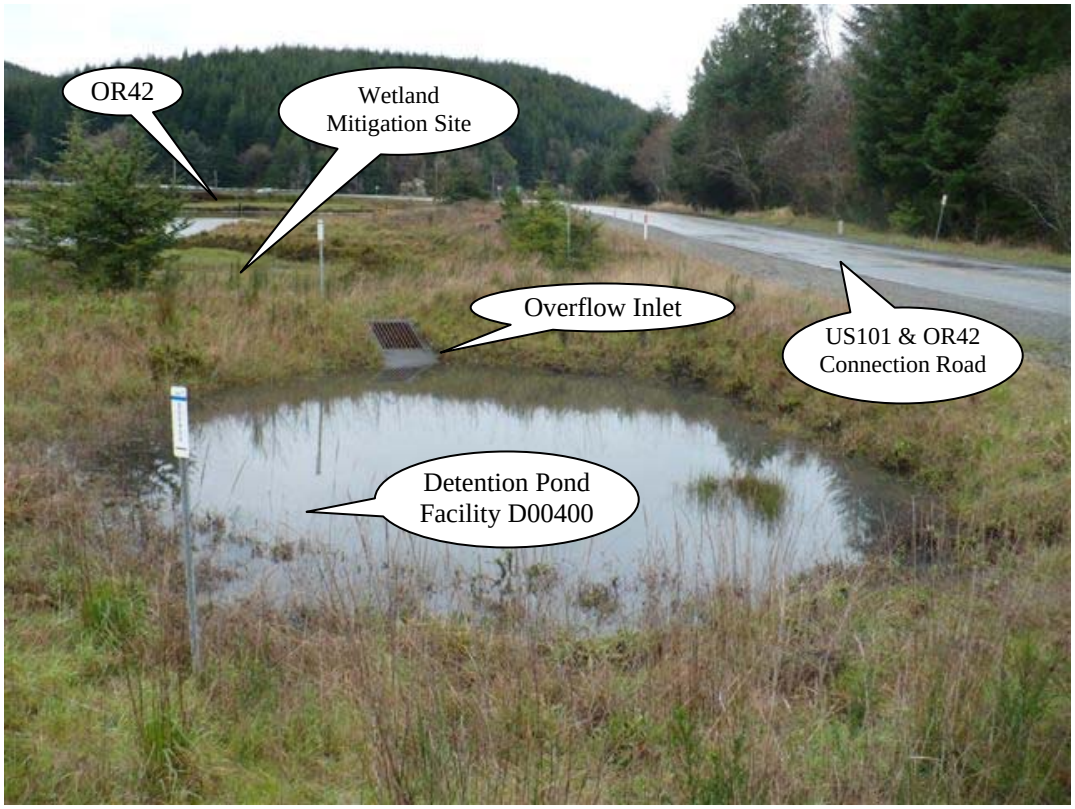


Photo 1: Looking north, stormwater enters the detention pond from a 12-inch pipe that is connected to a storm system which collects water from US101. Flow from the pipe is stored in the detention pond and released through a low flow inlet (submerged in the picture above) that has a 0.5-inch orifice outlet. The overflow inlet shown, above, allows free discharge of stormwater from the pond during high flow events.

Photo 2: Type-D overflow inlet allows the free discharge of stormwater during high flow events.

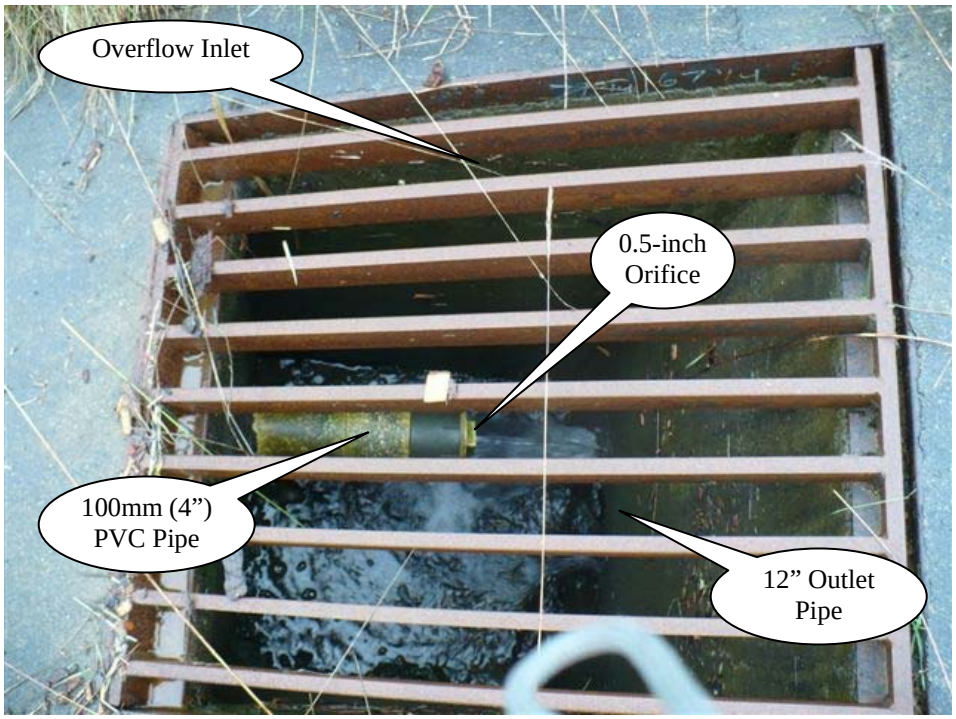


Photo 3: Photo looking inside of the overflow inlet. The 4-inch PVC pipe, shown, discharges stormwater from the low flow inlet. The jet of water flowing through the 0.5 inch orifice can be seen in this picture. In addition to any high flows that enter the overflow inlet through the grate, the water from the orifice discharges through the 12-inch pipe located near the bottom of the inlet.

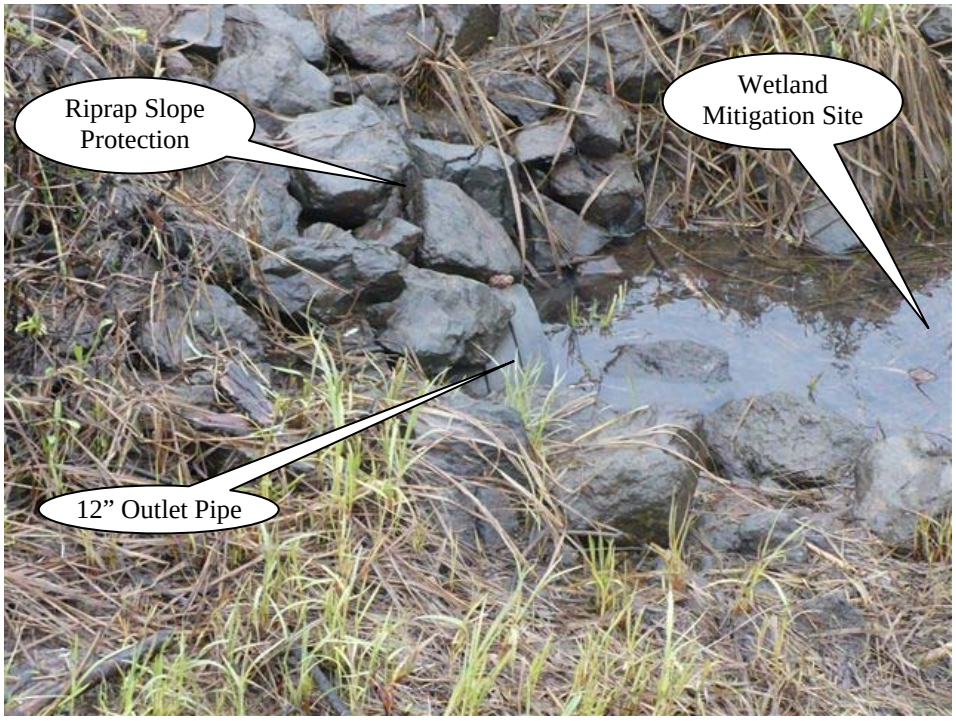


Photo 4: Photo showing the 12-inch detention pond outlet pipe. This pipe discharges directly into the wetland mitigation site shown on the right side of the picture.

Photo 5: Photo showing the detention pond outlet. This pipe discharges directly into the wetland mitigation site shown.

5. Facility Haz Mat Spill Feature(s)

The detention pond can be used to store a volume of liquid by blocking the 12-inch diameter outlet pipe located at the outlet control structure of the detention facility. Refer to Photo 3.

6. Auxiliary Outlet (High Flow Bypass)

Auxiliary Outlets are provided if the primary outlet control structure can not safely pass the projected high flows. Broad-crested spillway weirs and over flow risers are the two most common auxiliary outlets used in stormwater treatment facility design. The auxiliary outlet feature is either a part of the facility or an additional storm drain feature/structure.

The auxiliary outlet feature for this facility is:

☒ Designed into facility

☐ Other, as noted below
There is no auxiliary outlet for this facility.

7. Maintenance Requirements

Routine maintenance table for non-proprietary stormwater treatment and storage/detention facilities have been incorporated into ODOT's Maintenance Guide. These tables summarize the maintenance requirements for ponds, swales, filter strips, bioslopes, and detention tanks and vaults. Special maintenance requirements in addition to the routine requirements are noted below when applicable.

The ODOT Maintenance Guide can be viewed at the following website:

http://www.oregon.gov/ODOT/HWY/OOM/MGuide.shtml

Maintenance requirements for proprietary structures, such as underground water quality manholes and/or vaults with filter media are noted in Appendix C when applicable.

The following stormwater facility maintenance table (See ODOT Maintenance Guide) should be used to maintain the facility outlined in this Operation and Maintenance Manual or follow the Maintenance requirements outlined in Appendix C when proprietary structure is selected below:

☒ Table 1 (general maintenance)
☒ Table 2 (stormwater ponds)

☐ Table 3 (water quality biofiltration swales)
☐ Table 4 (water quality filter strips)
☐ Table 5 (water quality bioslopes)
☐ Table 6 (detention tank)
☐ Table 7 (detention vault)
☐ Appendix C (proprietary structure)
☐ Special Maintenance requirements:N/A

Note: Special maintenance Requirements Require Concurrence from ODOT SR Hydraulics Engineer.

8. Waste Material Handling

Material removed from the facility is defined as waste by DEQ. Refer to the roadwaste section of the ODOT Maintenance Yard Environmental Management System (EMS) Policy and Procedures Manual for disposal options: http://egov.oregon.gov/ODOT/HWY/OOM/EMS.shtml

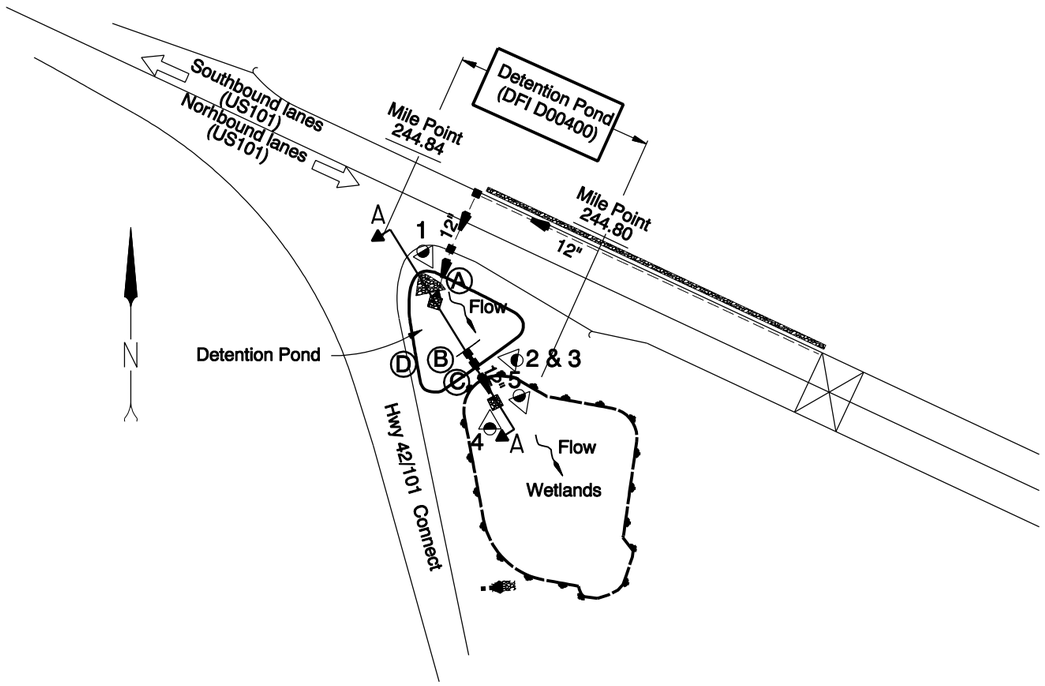
Contact any of the following for more detailed information about management of waste materials found on site:

ODOT Clean Water Unit	(503) 986-3008
ODOT Statewide Hazmat Coordinator	(503) 229-5129
ODOT Region Hazmat Coordinator	(541) 957-3594
ODEQ Northwest Region Office	(503) 229-5263

Appendix A

Content:

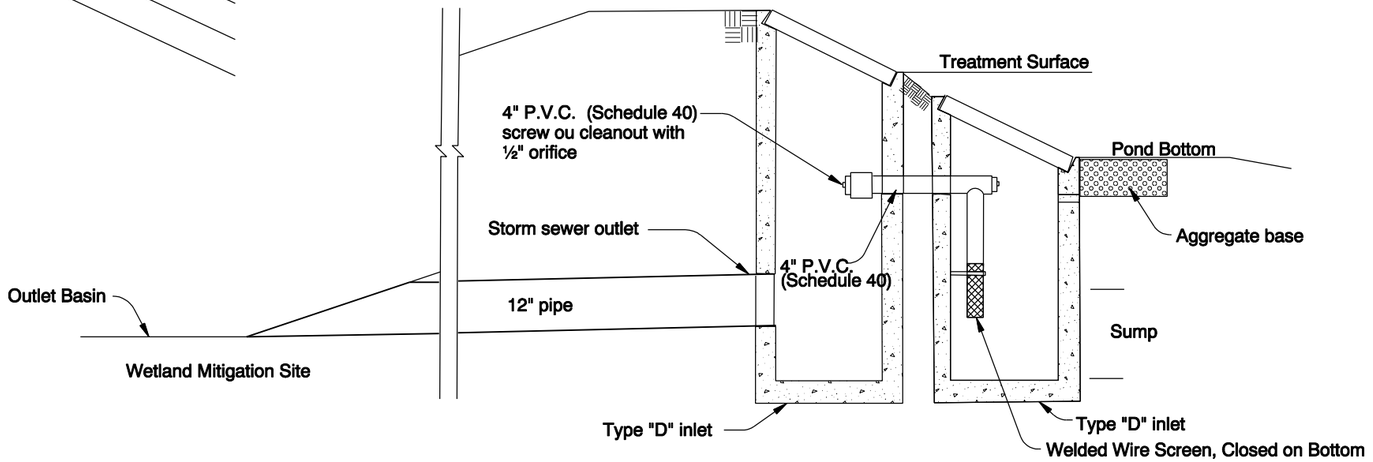
- **Operational Plan and Profile Drawing(s)**



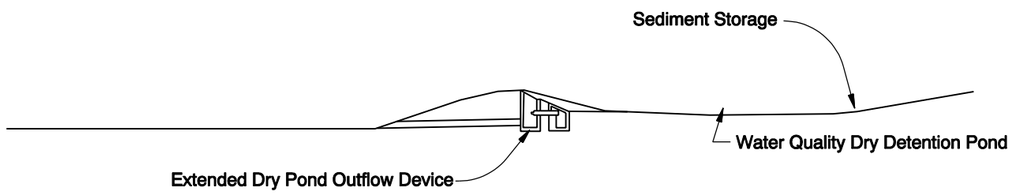
Plan
N.T.S.

LEGEND:

- Photograph location / direction
- (A) 12" Storm drain pipe outfalls into pond
- (B) Low flow Inlet
- (C) Overflow inlet
- (D) Maintenance access
- ■ and or □ Inlet
- Storm Pipe (Facility)
- Storm Pipe
- Conveyance Direction
- Pavement / Facility Flow Path



EXTENDED DRY POND OUTFLOW DEVICE
N.T.S.



Section A-A
N.T.S.

OREGON DEPARTMENT OF TRANSPORTATION

Prepared By: J. Carpenter

Drafted By: L. Coffel

DFI D00400
MAINTENANCE DISTRICT 7 HWY 009
DETENTION POND
OREGON COAST HIGHWAY MP 244.80/244.84
COOS COUNTY

Appendix B

Content:

- **ODOT Project Plan Sheets**
  - ***Cover/Title Sheet***
  - ***Water Quality/Detention Plan Sheets***
  - ***Other Details***

32V-86

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
1	Title Sheet
1A	Standard Drawing Nos.
2, 2A, 2A-2	Typical Sections
2B, 2B-2	Details
2B-3	Water Quality Details & Plans
2C Thru 2C-6 Incl.	Traffic Control Plans
2D Thru 2D-5 Incl.	Erosion Control Details
2D-6 Thru 2D-8 Incl.	Erosion Control Plans
2E	Pipe Data
3, 4, 4A, 4B	Plan & Profile
	ROADSIDE DEVELOPMENT
RD1	Wetland Mitigation Site - Location & Typical Cross Section
RD2	Wetland Mitigation & Planting Plan
RD3	Typical Details
RD4	Planting Details

DRAWING NO.	DESCRIPTION
	BRIDGE NO. 18628
57830	Plan & Elevation
57831	Foundation Data
57832	Footing Plan & General Notes
57833	Deck Plan & Details
57834	Deck Section Details
57835	Bent 4 Details (Bent 2 & 3 Similar)
57836	Bent & Miscellaneous Details
57837	Bent 5 Details (Bent 1 Similar)
57838	Bearing Details
57839	Wingwall & Miscellaneous Details
57840	Construction Sequence & Miscellaneous Details
57841	Existing Structure Removal Sequence
	PERMANENT SIGNING
S-4159	Sign Plan & Details
S-4160	Sign & Post Data Tables
	TRAFFIC SIGNAL
11877	Temporary Signal Plan
11878	Detector Plan

STATE OF OREGON

DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED PROJECT

"AS CONSTRUCTED"
Date: 10-9-01

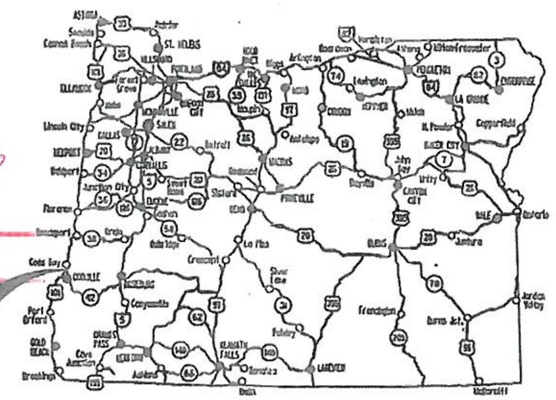
GRADING, STRUCTURE, PAVING, & SIGNING

DAVIS SLOUGH BRIDGE SEC.

OREGON COAST HIGHWAY

COOS COUNTY
MARCH 2000

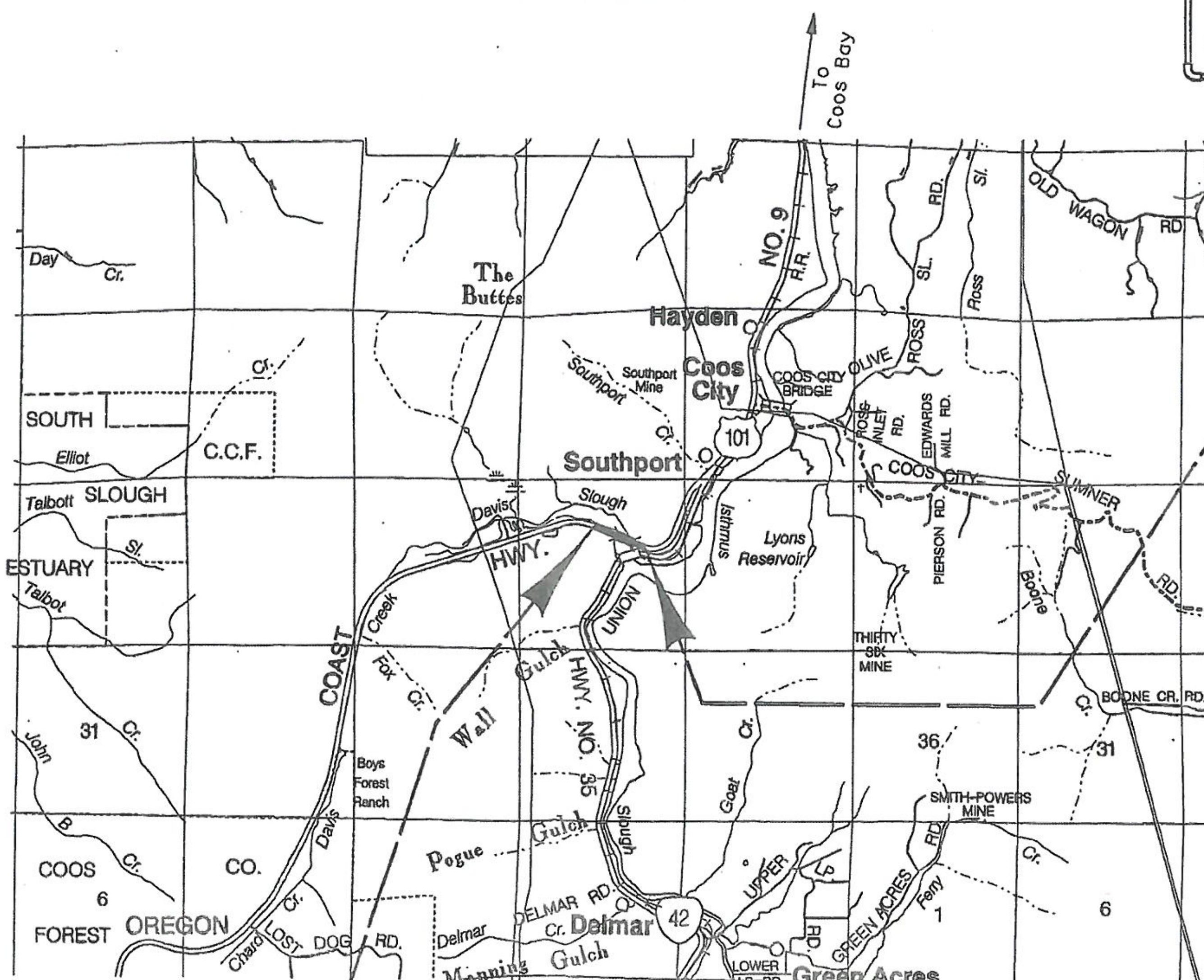
12393



Overall Length Of Project - 0.451 km (0.28 Mile)

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 From The Center, Or Answers To Questions About The Rules By Calling (503) 232-1987.

LET'S ALL WORK TOGETHER TO MAKE THIS JOB SAFE



BRF-S009(87)
BEGINNING OF PROJECT
STA. 19+944.746 (M.P. 244.71)

T. 26 S., R. 13 W., W.M.

BRF-S009(87)
END OF PROJECT
STA. 20+400.015 (M.P. 244.99)

OREGON TRANSPORTATION COMMISSION

Henry H. Hewitt	CHAIRMAN
Susan Brody	VICE CHAIRMAN
Steven H. Corey	COMMISSIONER
Stuart Foster	COMMISSIONER
John Russell	COMMISSIONER
Grace Crunican	DIRECTOR OF TRANSPORTATION

REGISTERED PROFESSIONAL ENGINEER 18,458 OREGON MAY 14, 1976 JEFFREY SCHEICK Expires June 30, 2000

Jeffrey Scheick
TECHNICAL SERVICES MANAGING ENGINEER

DAVIS SLOUGH BRIDGE SEC.
OREGON COAST HIGHWAY
COOS COUNTY

METRIC

FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
REGION 10	OREGON DIVISION	BRF-S009(87)	1

19-JAN-2000 11:09
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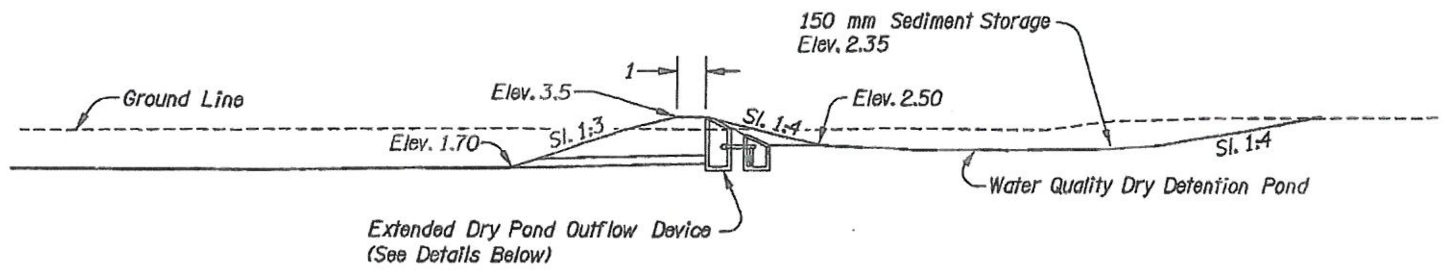
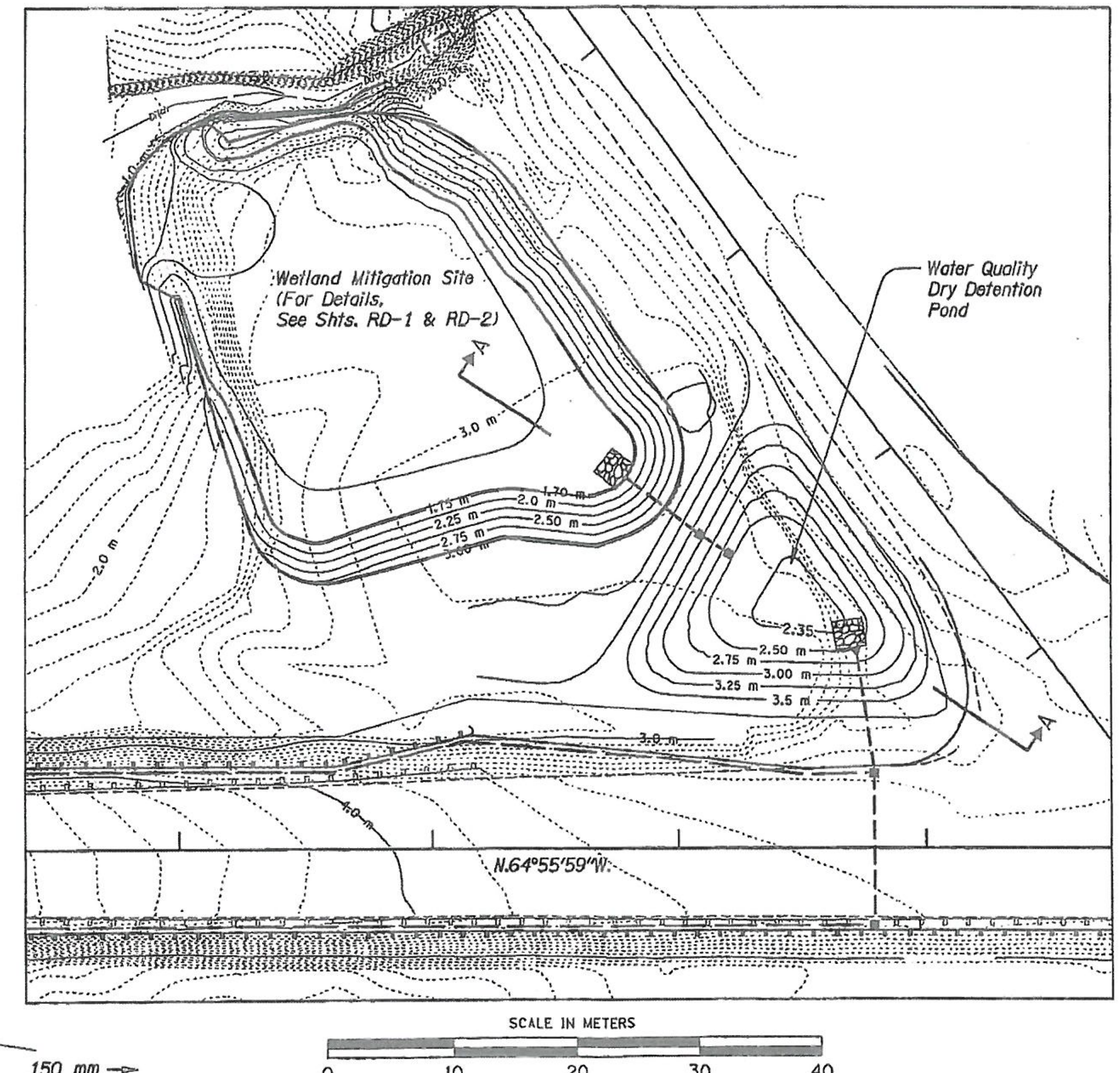
WATER QUALITY PLAN AND DETAILS

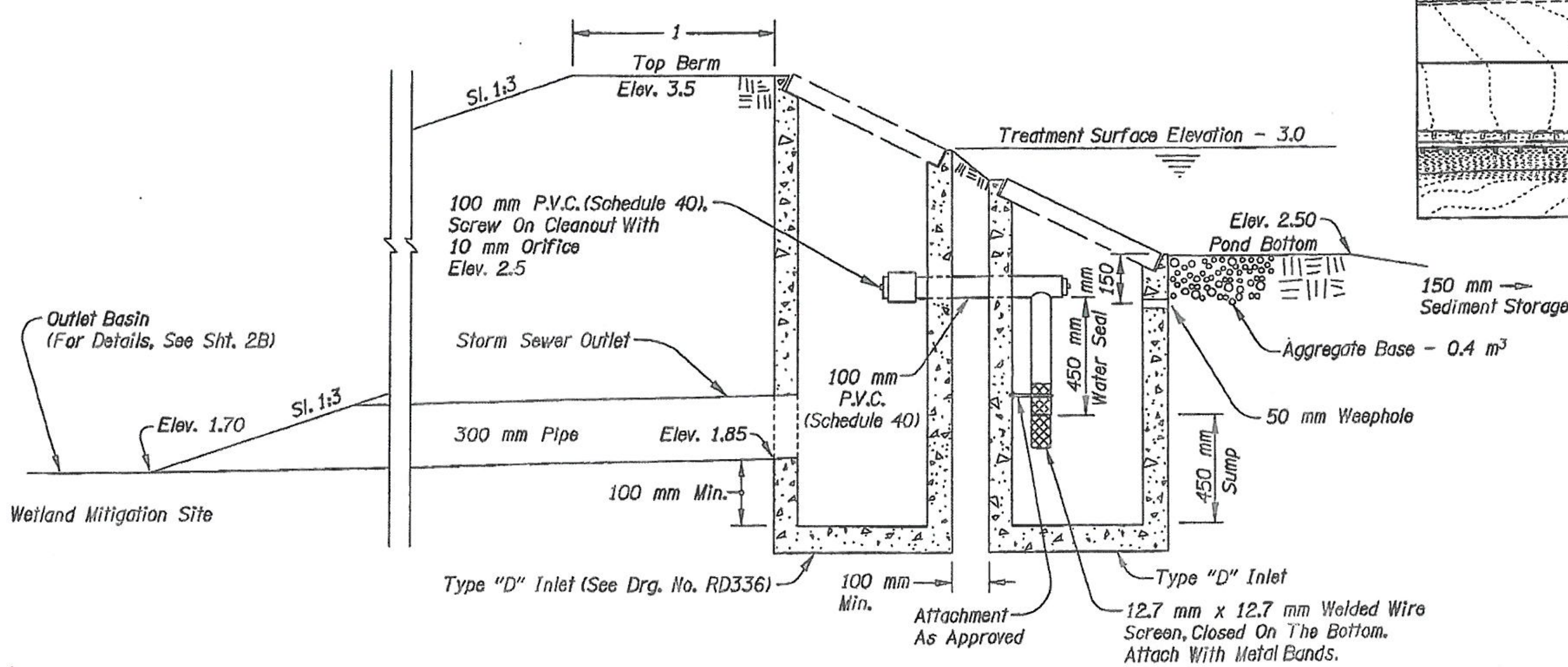
"All Dimensions Are In Meters Unless Otherwise Noted"



SECTION A-A

"AS CONSTRUCTED"
Date: 10-9-01
By: Jamie McHardy





EXTENDED DRY POND OUTFLOW DEVICE

WATER QUALITY PLANS & DETAILS	REVIEWED BY	DAVIS SLOUGH BRIDGE SEC. OREGON COAST HIGHWAY COOS COUNTY
Designed By Rhonda James	Registered Professional Engineer 15441 Paul R. Wirfs Oregon May 30, 1991 Expires June 30, 2000	FEDERAL HIGHWAY ADMINISTRATION: REGION 10, OREGON DIVISION; PROJECT NUMBER; SHEET NO. 2B-3
Drafted By Jim Holeman		

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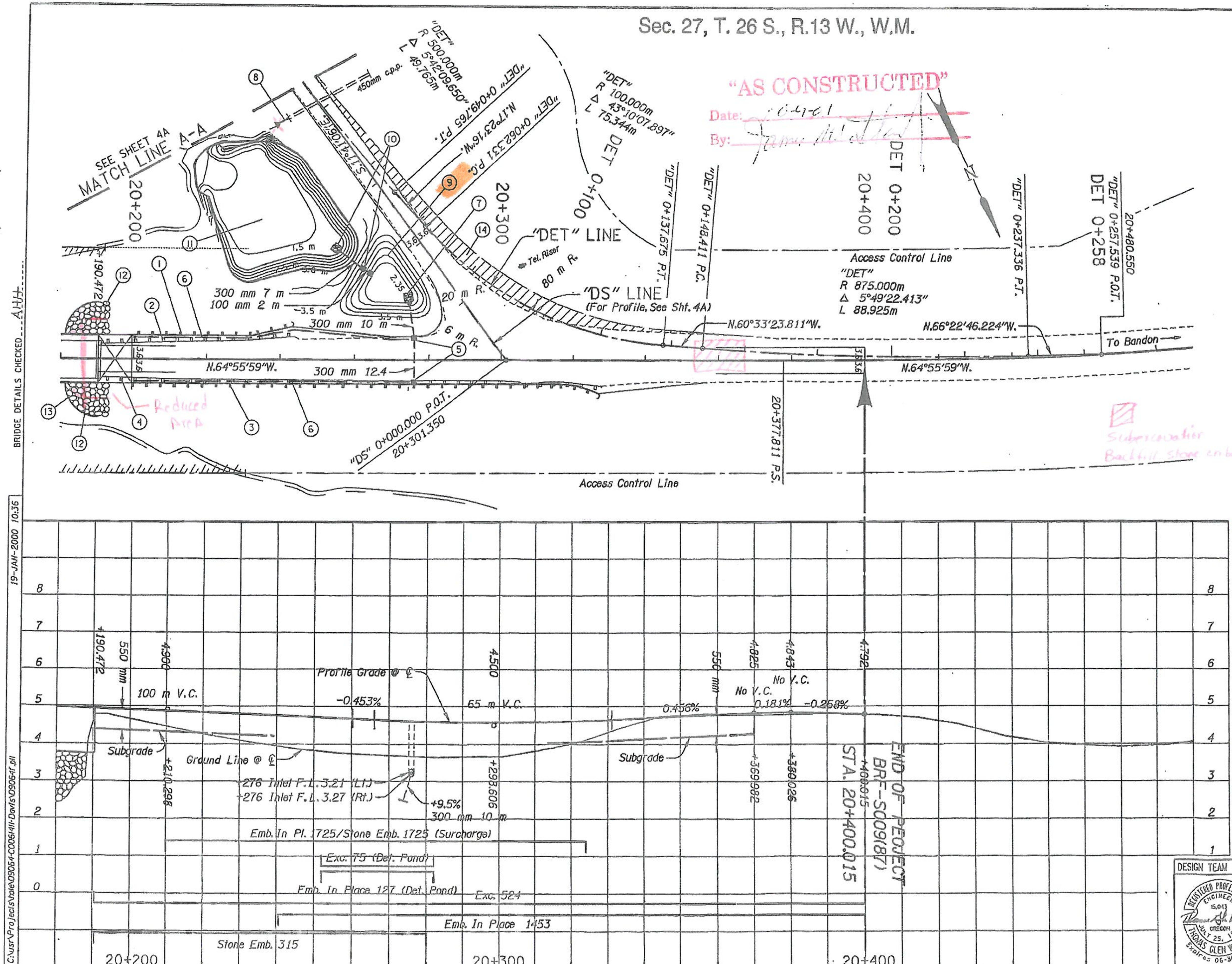
32V-86

METRIC



① Sta. 20+199.48 To Sta. 20+243.12, Lt.
Const. Guardrail – 22.86 m (Type 2A)
– 3.81 m (Type 3)
Const. Guardrail Transition
Flare Rate=15:1, W=2.49 m, E=0
Const. Guardrail Terminal, Flared

② Sta. 20+191.03 To Sta. 20+243.96, Lt.
Remove Extg. Guardrail – 53 m

③ Sta. 20+199.48 To Sta. 20+326.94, Rt.
Const. Guardrail – 106.68 m (Type 2A)
– 3.81 m (Type 3)
Const. Guardrail Transition
Flare Rate=15:1, W=2.49 m, E=0
Const. Guardrail Terminal, Flared

④ Sta. 20+191.03 To Sta. 20+309.14, Rt.
Remove Extg. Guardrail – 118.11 m

⑤ Sta. 20+276, Lt. & Rt.
Const. Type "G-1" Inlet – 2
Inst. 300 mm Sew. Pipe – 22.4 m
Const. Paved End Slope
Tr. Exc. – 15.2 m³
(See Drg. No. RD336)

⑥ Const. Drainage Curb
(See Drg. Nos. RD420 & RD700)

⑦ Const. Outlet Basin
Const. Loose Riprap (Class 50) – 6 m³
(For Details, See Sht. 2B)

⑧ Sta. "DS"0+088.27±
450 mm C.P.P. – 24.6 m (In Place)
Extend – 2 m Lt.
~~Const. Paved End Slope~~
Tr. Exc. – 1.68 m³

⑨ Const. Water Quality Detention Pond
Area – 60 m² Min., 1:4 Slopes
(For Details, See Sht. 2B-3)

⑩ Sta. "DS" 0+040.71
Const. Type "D" Inlet – 2
Inst. 300 mm Sew. Pipe – 7 m
Inst. 100 mm P.V.C. Pipe – 2 m
Inst. Orifice Plug – 10 mm
Const. Outlet Basin
Const. Loose Riprap (Class 50) – 6 m³
(For Details, See Shts. 2B & 2B-2)

⑪ Const. Wetland Mitigation
(For Details, See Shts. RD-1 & RD-2)

⑫ See Sht. 3, Note 8

⑬ See Sht. 3, Note 9

⑭ Const. Temp. Widening
Remove Temp. Widening
(For Details, See Sht. 2C-3)

All Dimensions Shown Are In Meters
Unless Otherwise Noted

DESIGN TEAM LEADER

REGISTERED PROFESSIONAL ENGINEER 15,013 OREGON JULY 25, 1980 THOMAS GLEN WALLACE Expires 06-30-2000

DAVIS SLOUGH BRIDGE SEC.
OREGON COAST HIGHWAY
COOS COUNTY

FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
REGION 10	OREGON DIVISION		4

VIEW 2