OPERATION & MAINTENANCE MANUAL

DFI No. : D00742

Facility Type: Water Quality Structure

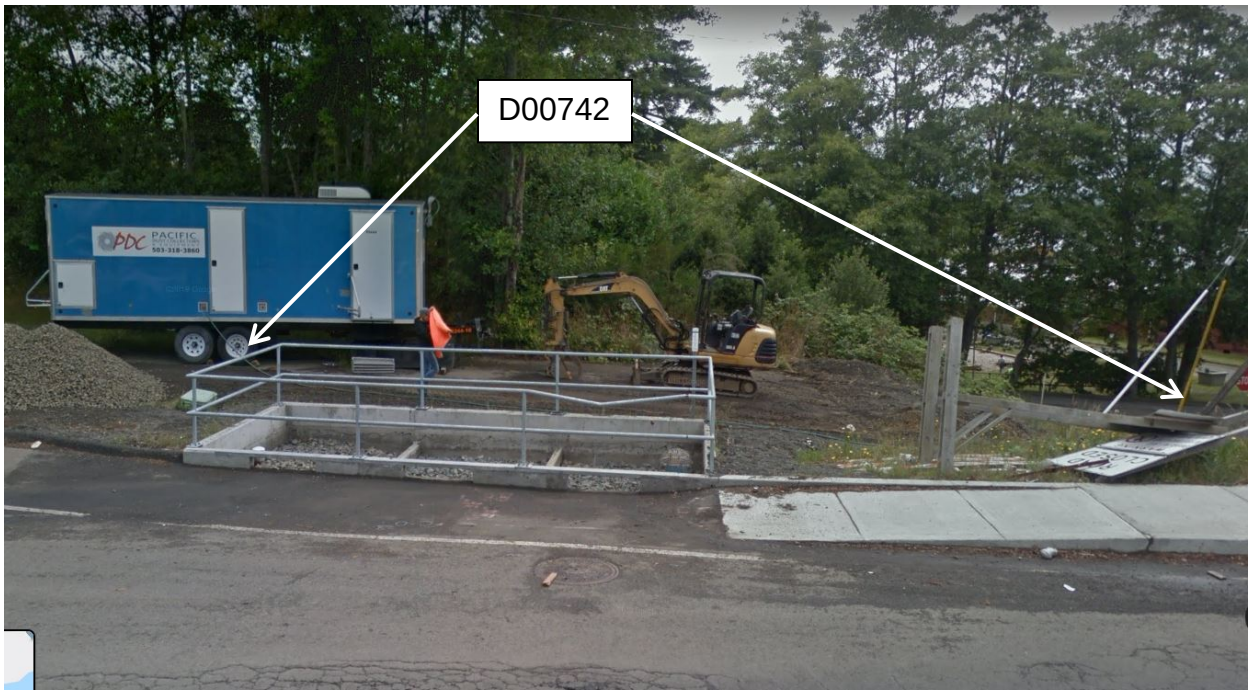


Figure 1: DFI No. D00742, Looking East

[March 2018]

INDEX

1. Identification

Drainage Facility ID (DFI):	**D00742**
Facility Type:	Water Quality Structure
Construction Drawings:	(V-File Number) 46V-127
Location:	District: 1
	Highway No.: 105
	Mile Post: 7.10
	Description: East side of Hwy. just after the Bridge

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 Hydro Unit Manager

Or

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

3. Construction

Engineer of Record: Bruce Carmichael – Region 2 Tech. Center
Phone: 503.986.2713

Facility construction:
Contractor: Oregon State Bridge Construction, Inc.
Construction Date: April 2015

4. Storm Drain System and Facility Overview

Water Quality Treatment Filtration Box:

This water quality filtration box is an underground media filter facility designed to treat stormwater runoff. This design was developed by the engineer of record (shown above). Roadway stormwater will enter the box via curb openings. The stormwater will then percolate through 18-inches of water quality mix. Thence the stormwater will be collected in underdrain (perforated pipe) and be discharged out of the box and to a street storm drain system and ultimately to Old Youngs Bay. Stormwater treatment is primarily accomplished by filtration and adsorbtion which acts to remove the suspended solids load and attached pollutants and to remove metal cations.

- Water Quality Treatment Filtration Box.
- Near north end of Old Youngs Bay Bridge, east side of road.
- Empty lot behind and around the facility.
- Contributing drainage basin and piping system, inlets and outlets – see appendix.
- Discharge to City storm drain system.

A. Maintenance equipment access:
Park maintenance vehicle, exit the vehicle, thence walk to facility.

B. Heavy equipment access into facility:

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

C. Special Features:

☐ Amended Soils
☐ Porous Pavers
☐ Liners
☒ Underdrains

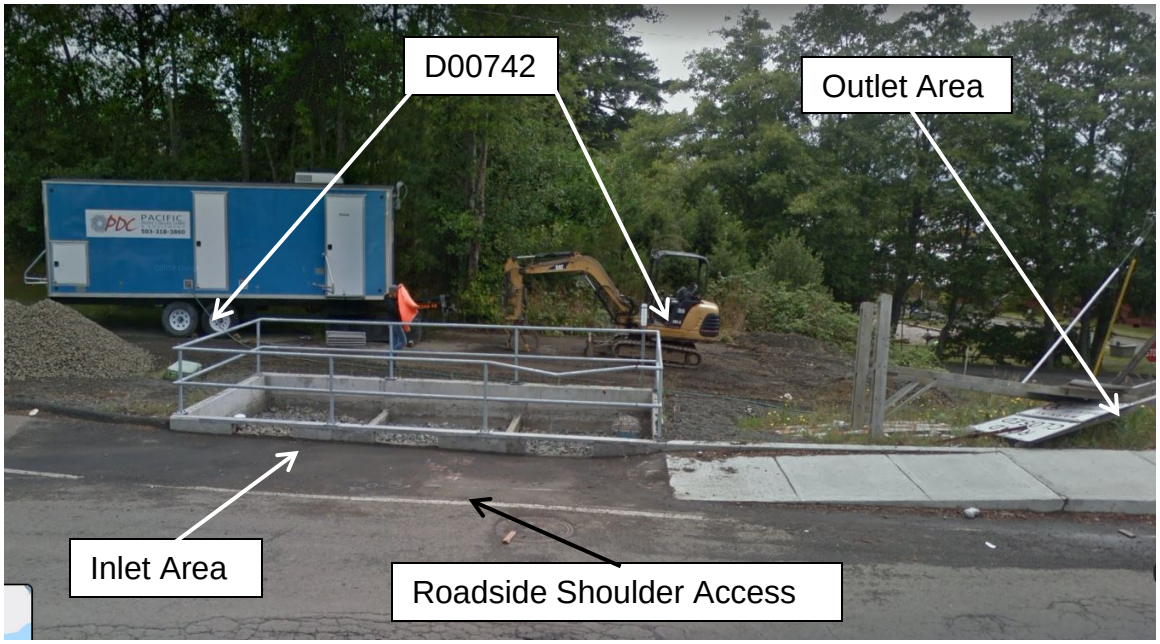


Photo 1: Looking East

5. Facility Haz Mat Spill Feature(s)

The water quality structure can be used to store a volume of liquid.

6. Auxiliary Outlet (High Flow Bypass)

Auxiliary outlet is the backside of the box which is lower than the flowline of the curb openings. Stormwater will overflow to grass area and go downhill to City storm drain inlet.

The auxiliary outlet feature for this facility is:

☒ Designed into facility
See above.

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:

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

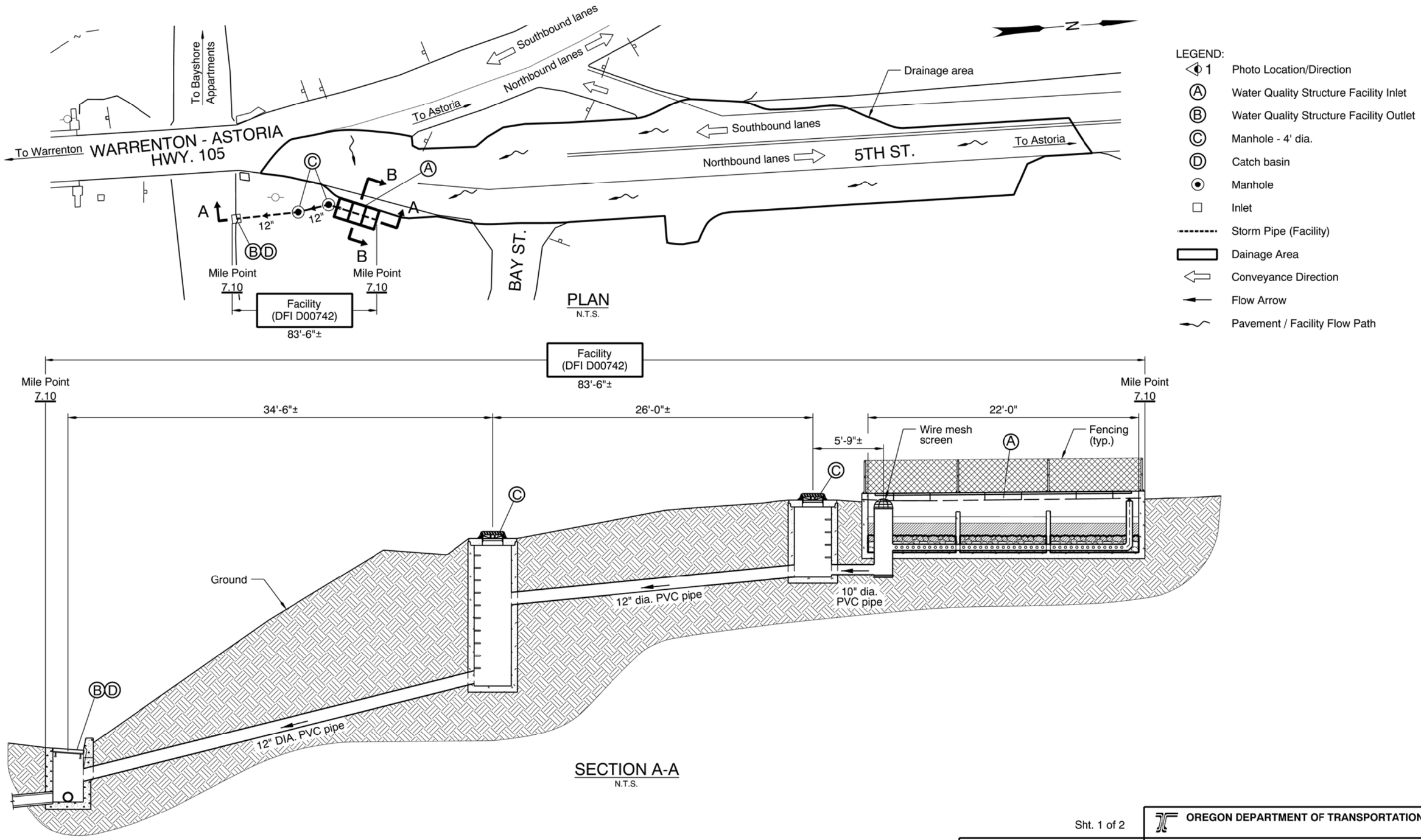
Contact any of the following for more detailed information about management of waste materials found on site:

ODOT Clean Water Unit	(503) 986-3008
ODOT Statewide Hazmat Coordinator	(503) 229-5129
ODOT Region Hazmat Coordinator	(503) 986-2647
ODEQ Northwest Region Office	(503) 229-5263

Appendix A

Content:

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



Sht. 1 of 2

OREGON DEPARTMENT OF TRANSPORTATION

Prepared By: B. Carmichael

Drafted By: M. Skelton

DFI D00742
MAINTENANCE DISTRICT 1 US101
WATER QUALITY STRUCTURE FACILITY
WARRENTON-ASTORIA HIGHWAY MP 7.10
CLATSOP COUNTY

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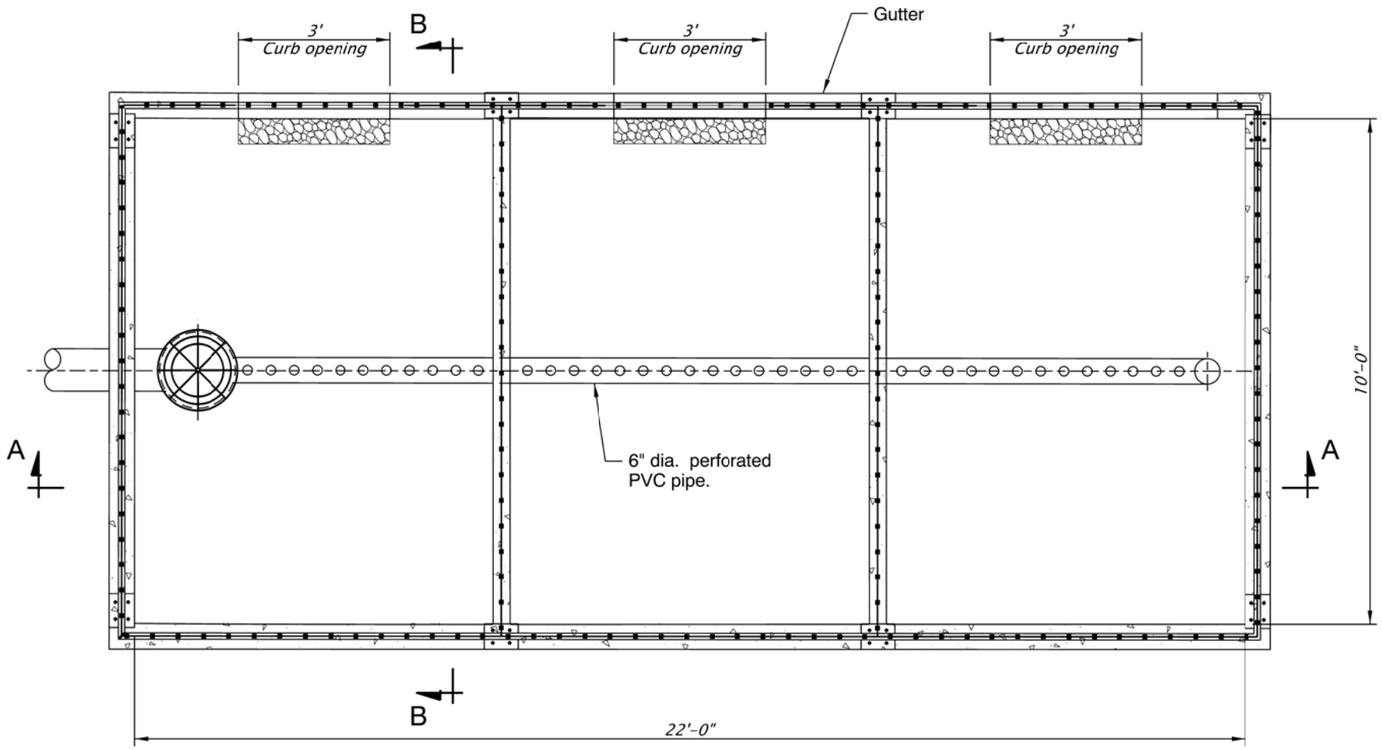
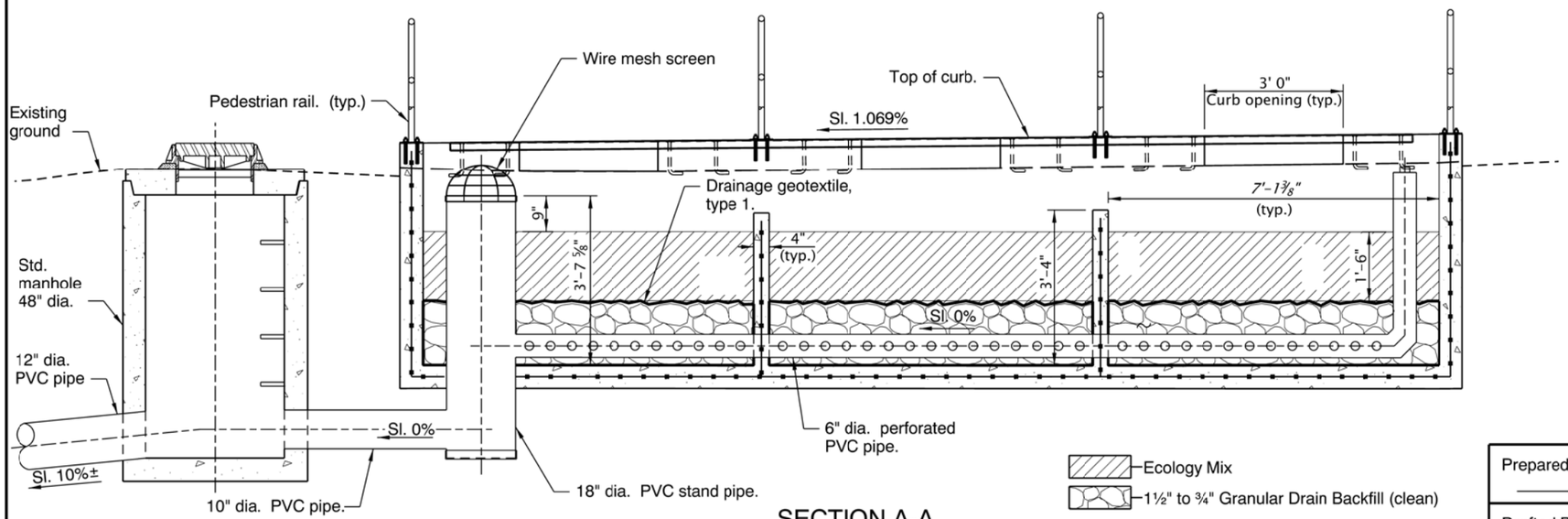


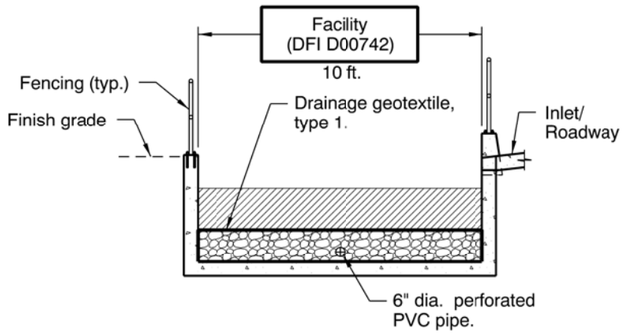
WATER QUALITY STRUCTURE FACILITY PLAN

N.T.S.



SECTION A-A

N.T.S.



SECTION B-B

N.T.S.

Sht. 2 of 2

OREGON DEPARTMENT OF TRANSPORTATION

Prepared By: B. Carmichael

Drafted By: M. Skelton

DFI D00742
MAINTENANCE DISTRICT 1 US101
WATER QUALITY STRUCTURE FACILITY
WARRENTON-ASTORIA HIGHWAY MP 7.10
CLATSOP COUNTY

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Rotation: 85.148° Scale: 1"=100'

Appendix B

Content:

- **ODOT Project Plan Sheets**
  - ***Cover/Title Sheet***
  - ***Water Quality Design Sheets***
  - ***Water Quality Drainage Area Plat***

46V-127

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
1	Title Sheet
1A	Index Of Sheets Cont.
1A-2	Std. Drg. Nos.

STATE OF OREGON

DEPARTMENT OF TRANSPORTATION

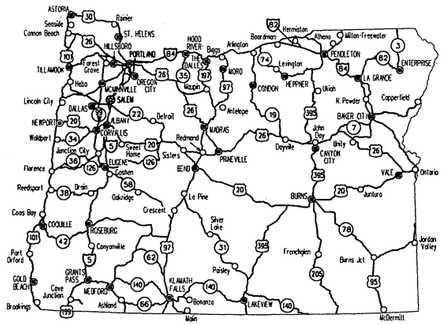
PLANS FOR PROPOSED PROJECT

STRUCTURES

US101(BUS.): OLD YOUNGS BAY & LEWIS & CLARK RIVER BRIDGES SECS.

WARRENTON - ASTORIA HIGHWAY

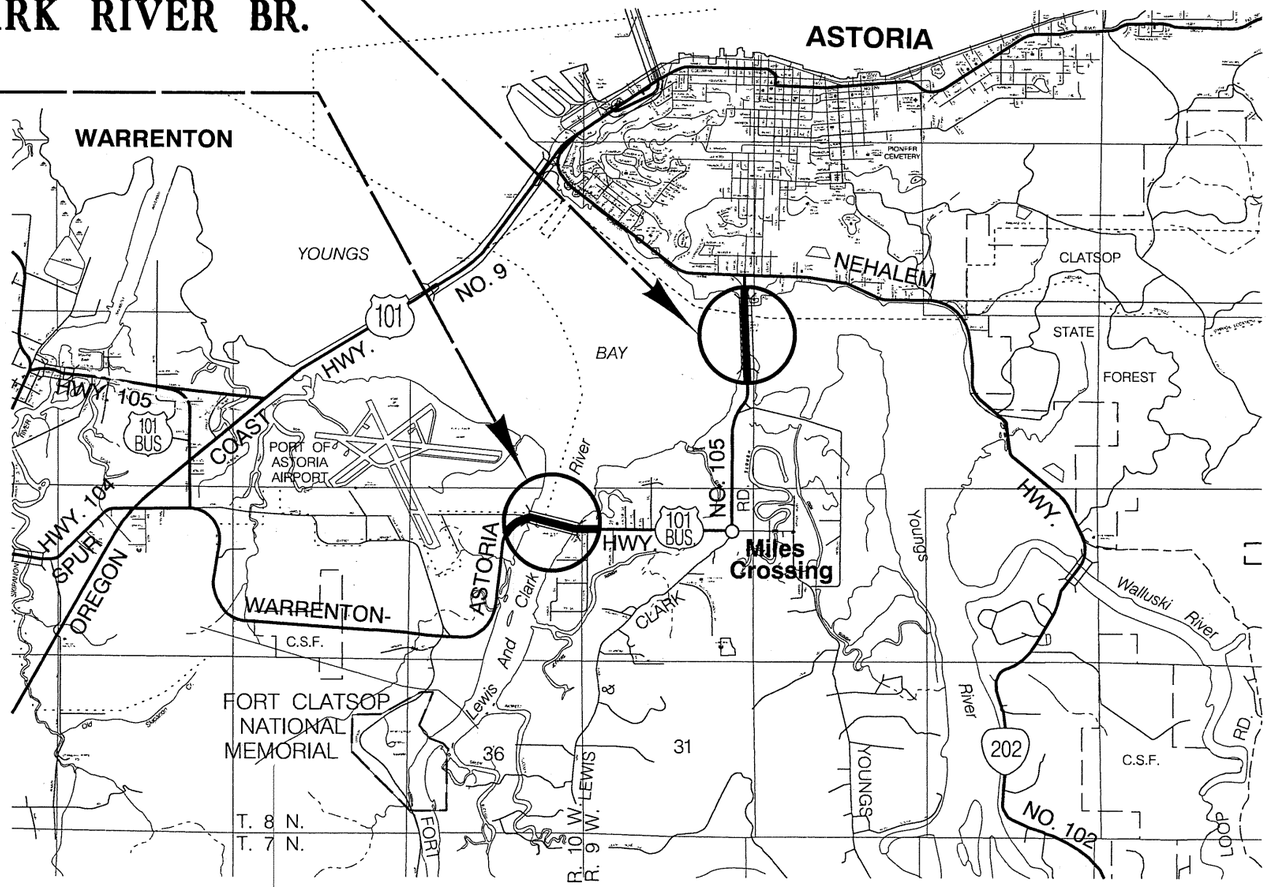
CLATSOP COUNTY
APRIL 2014



Overall Length Of Project - 0.64 Miles

OLD YOUNGS BAY BR.
STP-S105(005)
M.P. 6.89

LEWIS & CLARK RIVER BR.
STP-S105(005)
M.P. 4.78



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.)

SAFETY FIRST
LET'S ALL WORK TOGETHER TO MAKE THIS JOB SAFE

OREGON TRANSPORTATION COMMISSION

Pat Egan	CHAIR
David Lohman	COMMISSIONER
Vacant	COMMISSIONER
Mark Frohnmayer	COMMISSIONER
Tammy Baney	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.

By: Carol A. Cartwright 3/3/14
Signature & date

Carol A. Cartwright - R2 Tech Center Manager
Print name and title

Concurrence by ODOT Chief Engineer

N

T. 8 N., R. 9 & 10 W., W.M.

US101(BUS.): OLD YOUNGS BAY & LEWIS & CLARK RIVER BRIDGES SECS.
WARRENTON - ASTORIA HIGHWAY
CLATSOP COUNTY

FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
OREGON DIVISION	STP-S105(005)	1

PE00 1913 000

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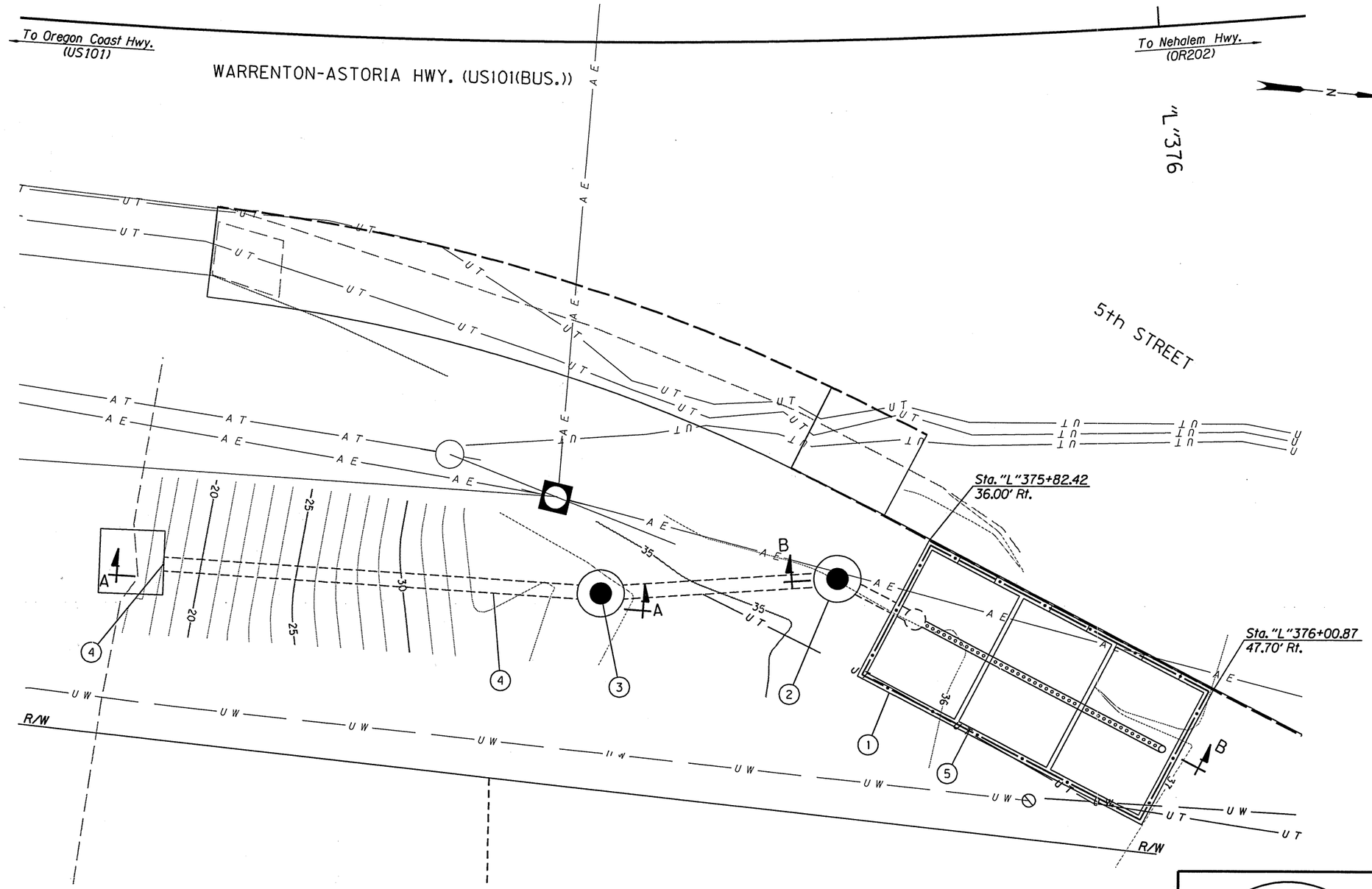
46V-127



WATER QUALITY STRUCTURE FACILITY PLAN

(1) Sta. "L" 375+82.42, 36.00' Rt. to
Sta. "L" 376+00.87, 47.70' Rt.
Const. Water Quality Structure Facility
Concrete - 10.5 cu.yd.
Drainage Geotextile, type 1 - 35 sq.yd.
Wire reinforcement - 64 sq.yd.
Granular drain backfill material - 11.3 cu.yd.
Ecology mix - 12.2 cu.yd.
General Excavation - 60 cu.yd.
(For details, see shts. GJ-2, GJ-3 and GJ-4)

(2) Sta. "L" 375+76.20, 38'.59' Rt.
Const. std. manhole 48" dia.
Manhole bottom el. = 30.58
10" PVC pipe - 6 ft.
10' depth
(For details, see sht. GJ-3)

(3) Sta. "L" 375+60.36, 39.50' Rt.
Const. std. manhole 48" dia.
Manhole bottom el. = 22.24 ft.
12" PVC pipe - 20 ft.
10' depth
(For details, see sht. GJ-3)

(4) 12" PVC pipe - 35 ft.
10' depth
Connect to existing inlet.
(For details, see sht. GJ-3)

(5) Const. Pedestrian Rail - 65 ft.
(Bolt down option)
All 4 sides of water quality structure
Top rail height = 36". (2 rails)
(For details see sht. GJ-4)

Note:
For Section A-A & Section B-B, see sht. GJ-3.

REGISTERED PROFESSIONAL ENGINEER
65305
OREGON
JANUARY 23, 2001
BRUCE A. CARMICHAEL
EXPIRES: 12/31/2015

OREGON DEPARTMENT OF TRANSPORTATION

REGION 2 TECH CENTER

US101(BUS.): OLD YOUNGS BAY & LEWIS & CLARK RIVER BRIDGES SECS.
WARRENTON - ASTORIA HIGHWAY
CLATSOP COUNTY

Reviewed By - Bo Miller
Designed By - Bruce Carmichael
Drafted By - Michael Skelton

STORMWATER PLAN

SHEET NO. GJ

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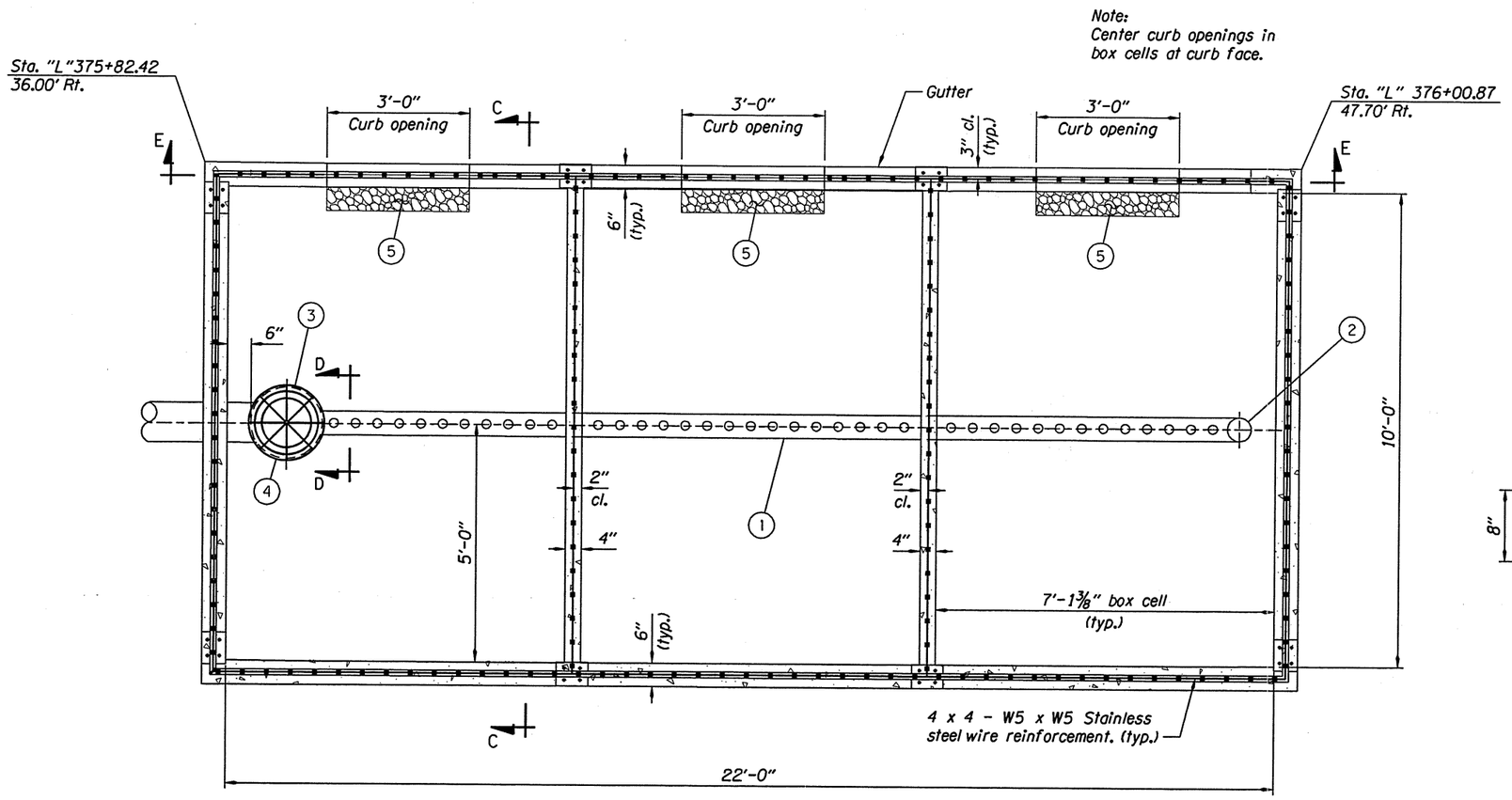


WATER QUALITY STRUCTURE FACILITY PLAN

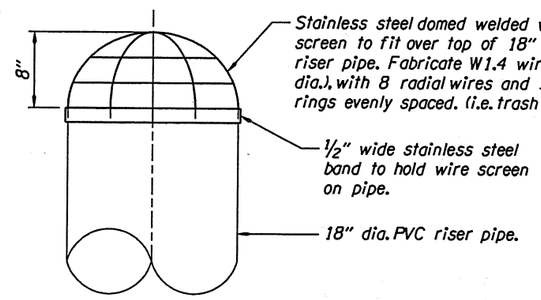
(1) Inst. 6" dia. perforated PVC pipe - 20 ft.
(For details see sht. GJ-3)

(2) Inst. 6" dia. PVC cleanout pipe (non-perforated) with screw on cap - 4 ft.
(For details, see sht. GJ-3)

(3) Inst. 18" dia. PVC stand pipe - 6 ft.
(For details, see sht. GJ-3)

(4) Fabricate and install domed welded wire mesh screen on top of 18" dia. PVC stand pipe.

(5) Const. 6" x 36" x 4" thk. drain rock drip pads - 1.5 cu.ft.
(under curb openings)



VIEW D-D

Note:
For Section C-C see sht. GJ-4.
For Section E-E see Sht. GJ-5.

REGISTERED PROFESSIONAL ENGINEER
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JANUARY 23, 2001
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REGION 2 TECH CENTER

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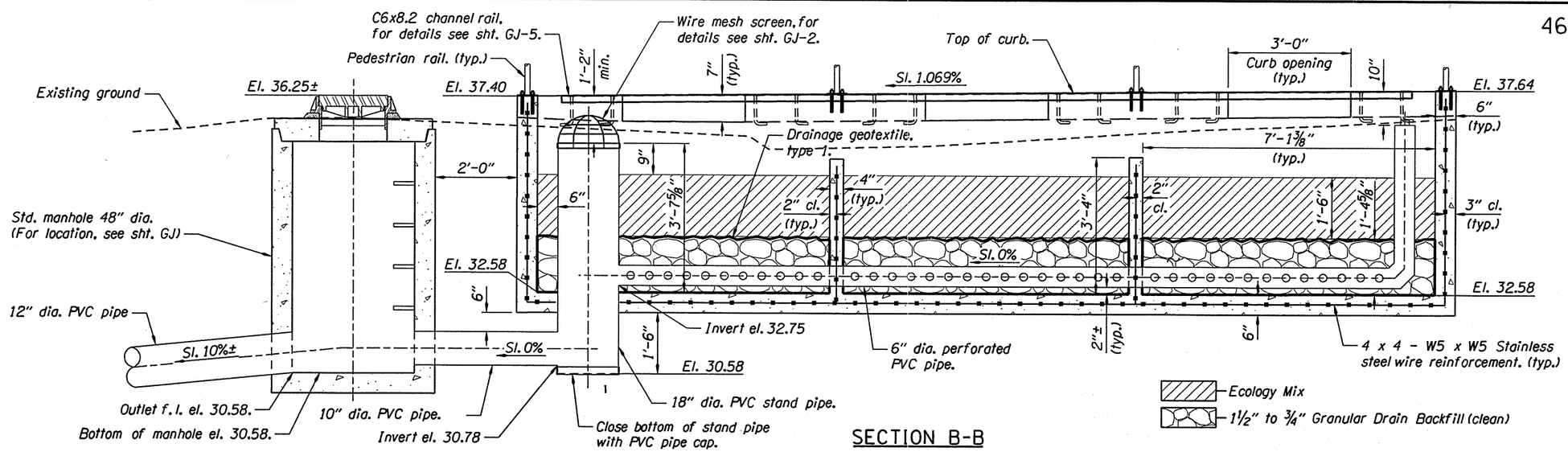
WARRENTON - ASTORIA HIGHWAY
CLATSOP COUNTY

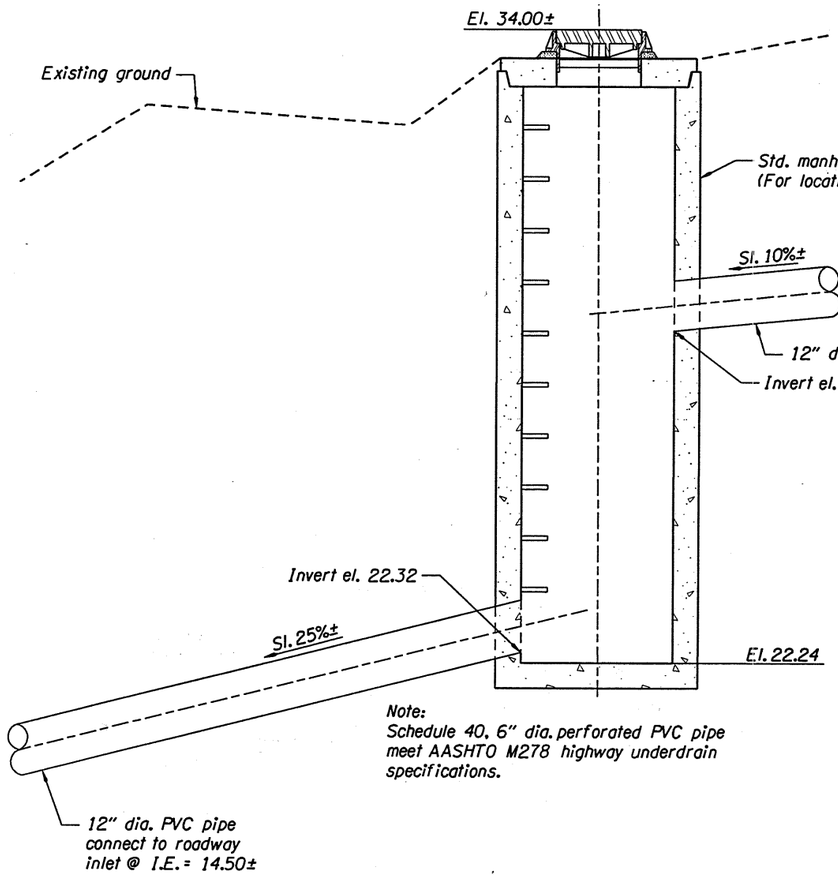
Reviewed By - Bo Miller
Designed By - Bruce Carmichael
Drafted By - Michael Skelton

STORMWATER DETAILS

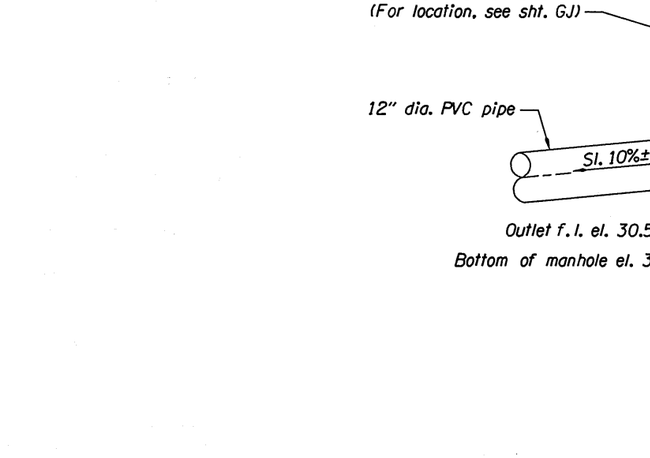
SHEET NO. GJ-2

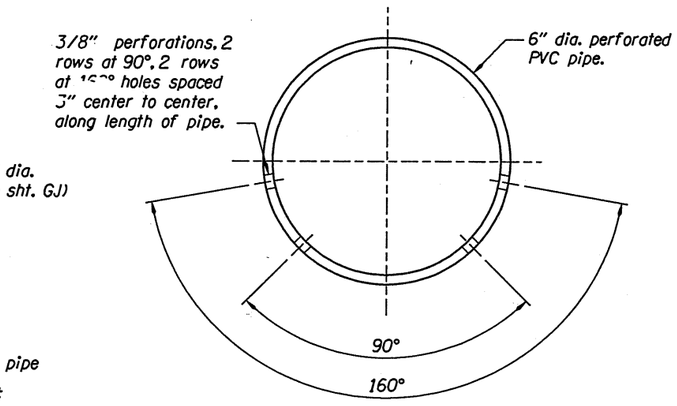


SECTION B-B



SECTION A-A





PERFORATED PIPE DETAIL

Note:
For Section A-A & Section B-B location see sht. GJ.

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65305
OREGON
JANUARY 23, 2001
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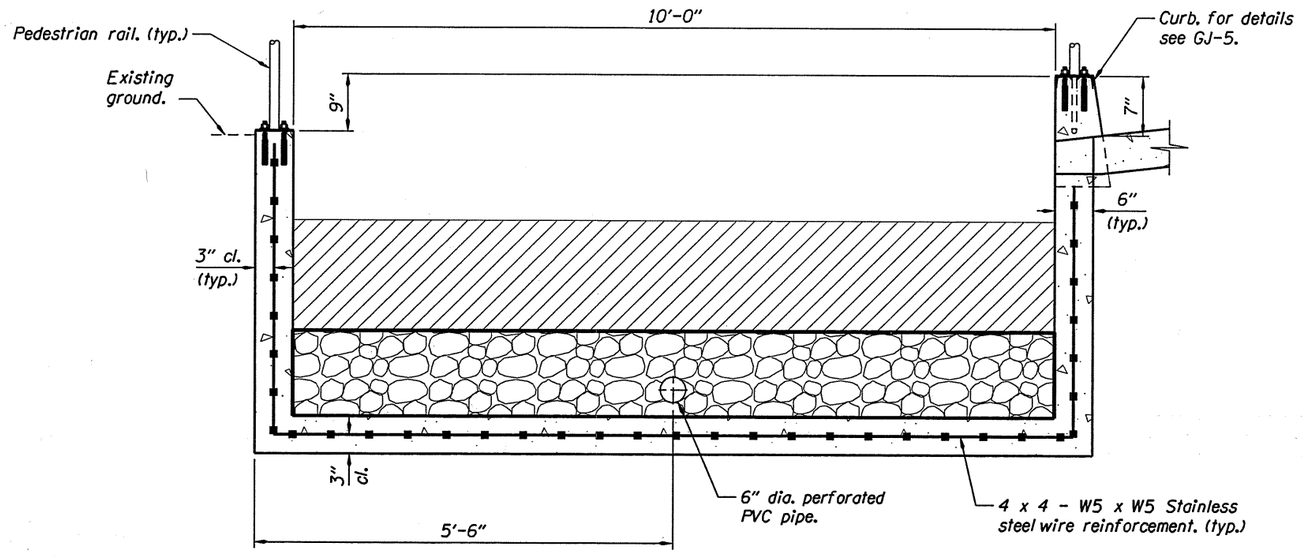
REGION 2 TECH CENTER

US101(BUS.): OLD YOUNGS BAY & LEWIS & CLARK RIVER BRIDGES SECS.
WARRENTON - ASTORIA HIGHWAY
CLATSOP COUNTY

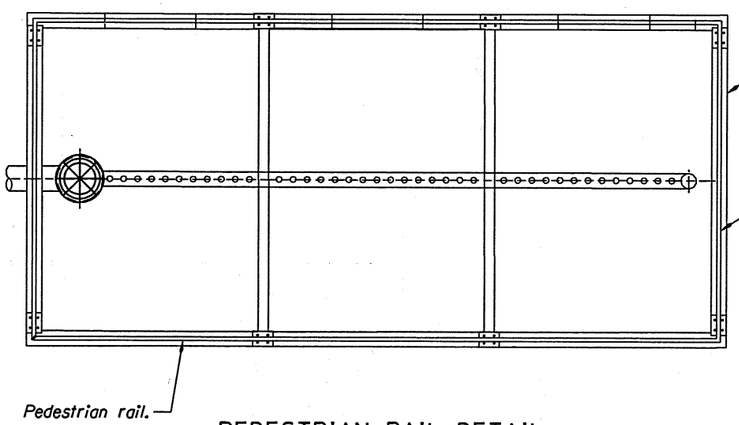
Reviewed By - Bo Miller
Designed By - Bruce Carmichael
Drafted By - Michael Skelton

STORMWATER DETAILS

SHEET NO. GJ-3



SECTION C-C



PEDESTRIAN RAIL DETAIL

Note:
For Section C-C see sht. GJ-2.

REGISTERED PROFESSIONAL ENGINEER
65305
OREGON
JANUARY 23, 2001
BRUCE A. CARMICHAEL
EXPIRES: 12/31/2015

OREGON DEPARTMENT OF TRANSPORTATION

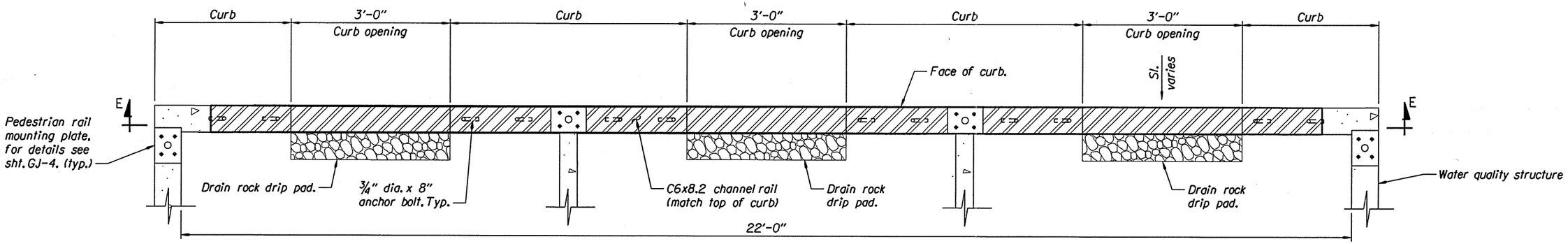
REGION 2 TECH CENTER

US101(BUS.): OLD YOUNGS BAY & LEWIS & CLARK RI ER BRIDGES SECS.
WARRE ITON - ASTORIA HIGHWAY
CLATSOP COUNTY

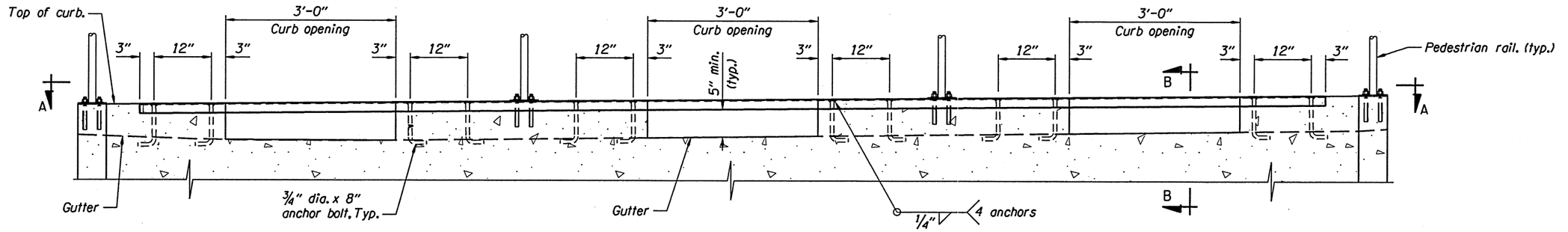
Reviewed By - Bo Miller
Designed By - Bruce Carmichael
Drafted By - Michael Skelton

STORMWATER DETAILS

SHEET NO. GJ-4



SECTION A-A



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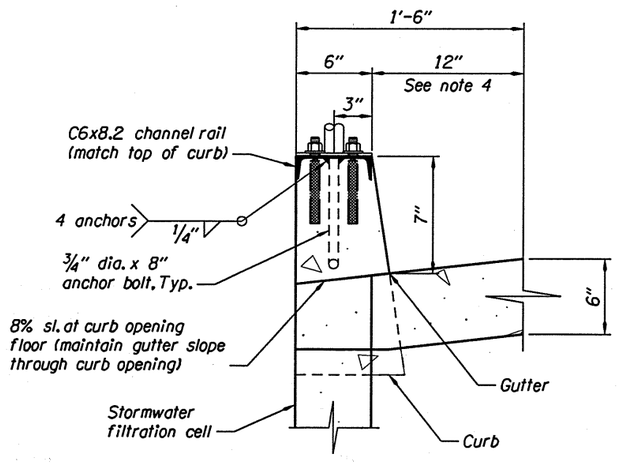


SECTION B-B

GENERAL NOTES:
1. This structure shall be monolithic Commercial Grade Concrete.
2. Hot-dip galvanize C6x8.2 channel and anchor bolts after fabrication.
3. Curb exposure 7".
4. Width to match adjacent gutter pan, if present.
5. For outfall, see Roadway Plans.
6. Center curb openings in box cells at curb face.

REGISTERED PROFESSIONAL ENGINEER
65305
OREGON
JANUARY 23, 2001
BRUCE A. CARMICHAEL
EXPIRES: 12/31/2015

OREGON DEPARTMENT OF TRANSPORTATION

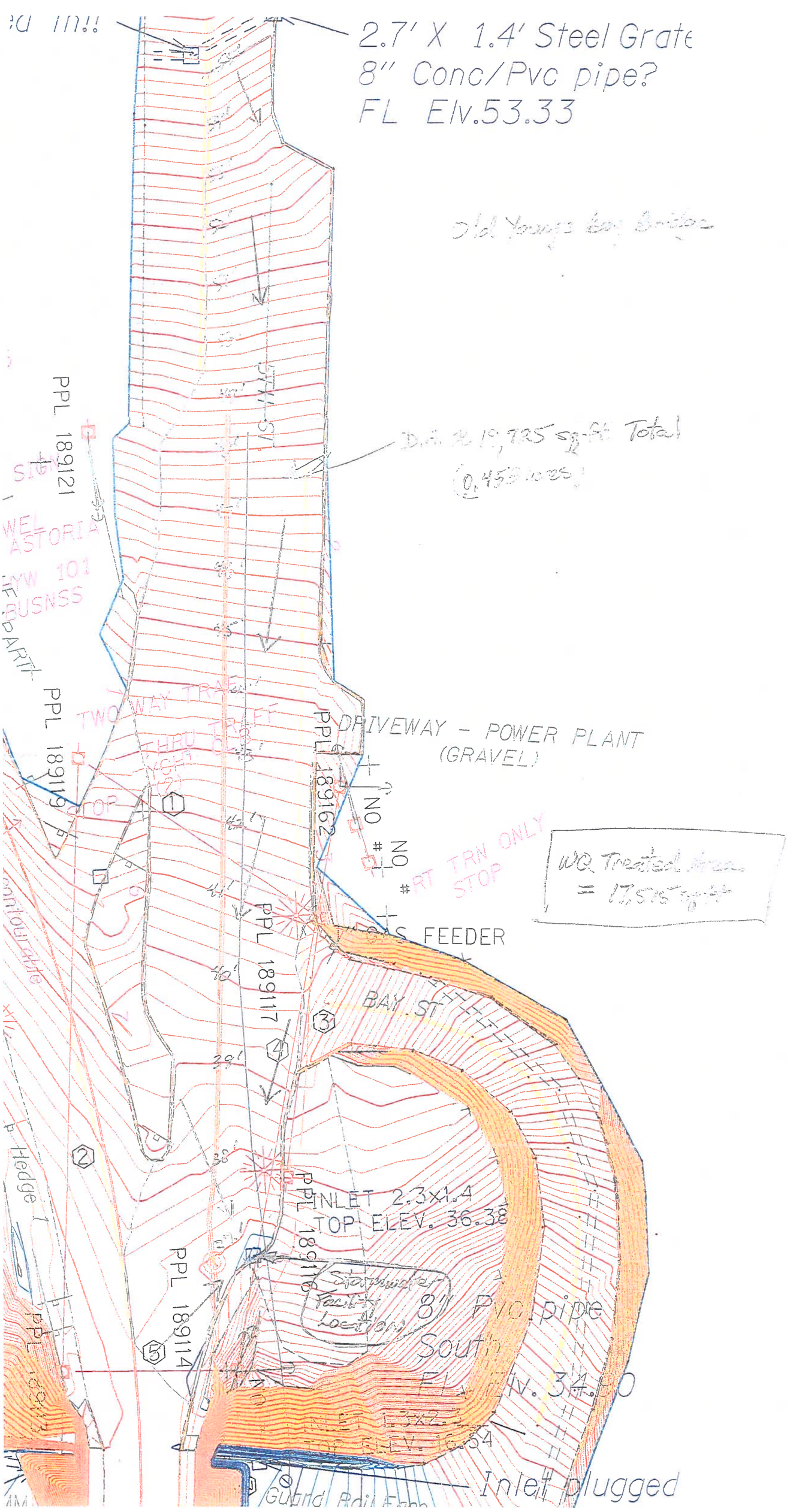
REGION 2 TECH CENTER

US101(BUS.): OLD YOUNGS BAY & LEWIS & CLARK RIVER BRIDGES SECS.
WARRENTON - ASTORIA HIGHWAY
CLATSOP COUNTY

Reviewed By - Bo Miller
Designed By - Bruce Carmichael
Drafted By - Michael Skelton

STORMWATER DETAILS

SHEET NO. GJ-5


2.7' X 1.4' Steel Grate
8" Conc/Pvc pipe?
FL Elv.53.33
PPL 189121
PPL 189119
PPL 189162
PPL 189117
PPL 189116
PPL 189114
DRIVEWAY - POWER PLANT
(GRAVEL)
TWO WAY TRAFFIC
THRU TRAFFIC
RT TRN ONLY
STOP
NO
S FEEDER
BAY ST
PINLET 2.3x1.4
TOP ELEV. 36.38
Stormwater Facility Location
8" PVC pipe
South
FL Elv. 34.10
Inlet plugged
WQ Treated Area
= 17,515 sq-ft
Hedge

Appendix C

Content:

- **Special Maintenance requirements**

Ecology Mix - Furnish ecology mix consisting of the following materials:

- Aggregates: 3/8” - No. 8 aggregate meeting the requirements of ODOT Standard Specifications Section 00680.

- Perlite: Horticultural grade, free of any toxic materials. Minimum of 70% retained by a No. 18 sieve. Maximum of 10% smaller than that which passes through a No. 30 sieve.

- Dolomite: Calcium magnesium carbonate - CaMg(CO3)2. Agricultural grade, free of any toxic materials. 100% passing a No. 8 sieve and 100% retained by a No. 16 sieve.

- Gypsum: Non-calcined, agricultural gypsum - CaSO4-2(H20) (hydrated calcium sulfate). Agricultural grade, free of any toxic materials. 100% passes through a No. 8 sieve and 100% retained by a No. 16 sieve.

Mix the above materials as follows: for every 3 cubic yards of aggregate add 1 cubic yard of perlite, 10 pounds of dolomite, and 1.5 pounds of gypsum.

o