OPERATION & MAINTENANCE MANUAL

DFI No. : D00287
Facility Type: Water Quality Extended Det. Dry Pond

MARCH, 2011

INDEX

1. Identification

Drainage Facility ID (DFI):	**D00287**
Facility Type:	Water Quality Extended Det. Dry Pond
Construction Drawings:	(V-File Number) 32V-80
Location:	District: 2B
	Highway No.: 026
	Mile Post: 0.43 (beg./end)
	Description: This facility is located on west side of Willamette River just N. of Ross Island Bridge immediately adjacent to I-5. Access can be obtained from SW Grover St. located off of Moody Avenue.

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:	ODOT Designer – Geo-Environmental Section., Paul Wirfs, PE, 503-986-3252.
Facility construction:	2000
Contractor:	Mowat Construction Company

4. Storm Drain System and Facility Overview

A water quality extended detention dry pond is a basin that is designed to detain stormwater for a sufficient time to allow particles and attached pollutants to settle. The outlet control structure limits the rate of runoff leaving the pond by using an orifice. These facilities are designed to completely drain over a 48 hour period. The size of these facilities depends on the location and the amount of contributing impervious area.

This facility is north of the Ross Island Bridge (US 26 bridge crossing the Willamette River) and immediately east of I-5 (Hwy 001) between the I-5 (Hwy 001). Refer to the Operational Plan in Appendix A and Photo 1. The facility can be accessed from an access easement located off of SW Grover St, a cross street to SW Moody Avenue in the SW Waterfront Area.

The contributing drainage area for the facility includes the westbound travel lane of the bridge deck for the Ross Island Bridge from the facility to the west and the crest in the bridge to the east. Prior to treatment of by the extended det. dry pond, the stormwater is first treated by a water quality manhole facility (DFI D00288) immediately south of the facility (Point A in the Operational Plan located in Appendix A; Photo 2). The water quality manhole provides pretreatment by capturing oil, debris, and sediments.

The extended det. dry pond consists of a water quality storage basin, inlet structure (Point B), and an outlet control structure composed of two ditch inlets (Point C; Photos 2 through 6). After treatment within the extended det. dry pond, the stormwater is conveyed by a 12-inch storm pipe to a City of Portland Storm system located within SW Moody Avenue as shown on the Operational Plan in Appendix A and the Project Plans in Appendix B.

A. Maintenance equipment access:
   Maintenance can access the facility from off of SW Moody Avenue by turning onto SW Grover St., located west of SW Moody Avenue, near the Ross Island Bridge. The access easement for the facility is to the north through a parking lot facility as shown on the Operational Plan; Appendix A (Photo 7).

B. Heavy equipment access into facility:

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

C. Special Features:

☐ Amended Soils
☐ Porous Pavers
☐ Liners
☐ Underdrains

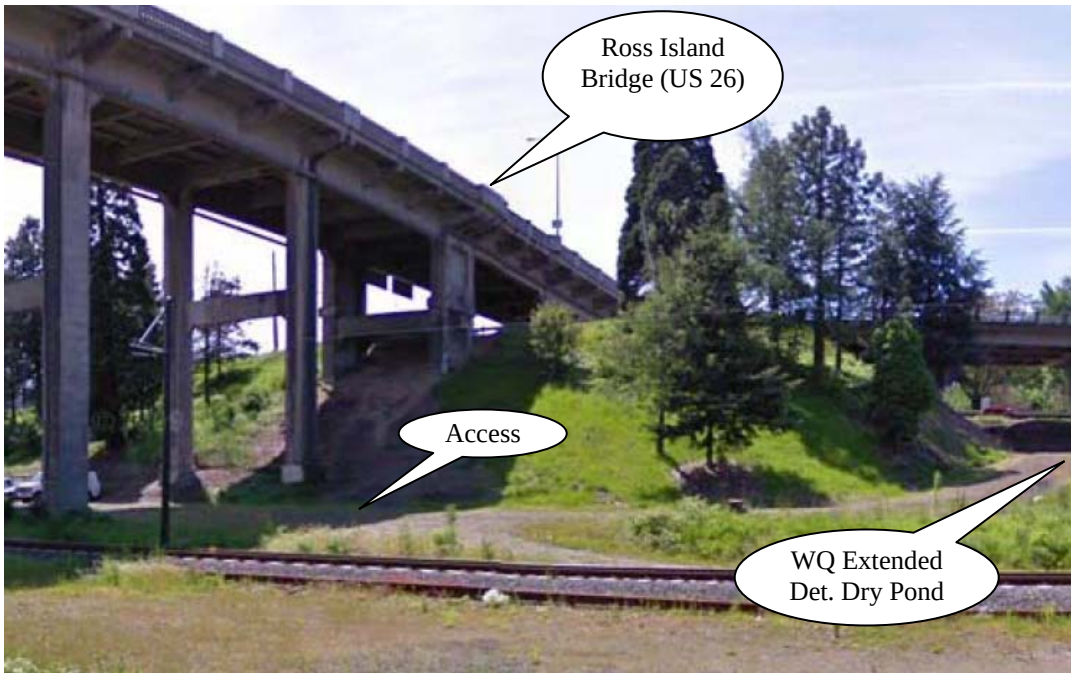


Photo 1: Looking west from Moody Avenue toward the facility and drainage area.

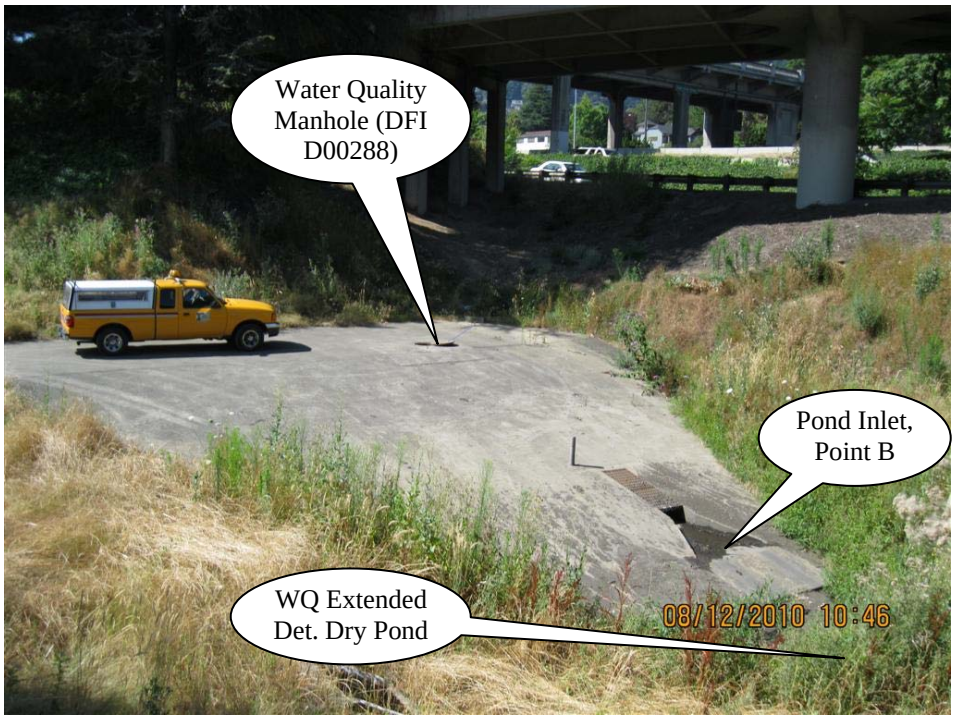


Photo 2: This photo includes the pond inlet, concrete slab, and nearby water quality manhole (DFI D00288).

Photo 3: Close up of pond inlet. Pretreated water from a water quality manhole (DFI D00288) is directed into this inlet. Notice the fine sediment buildup.

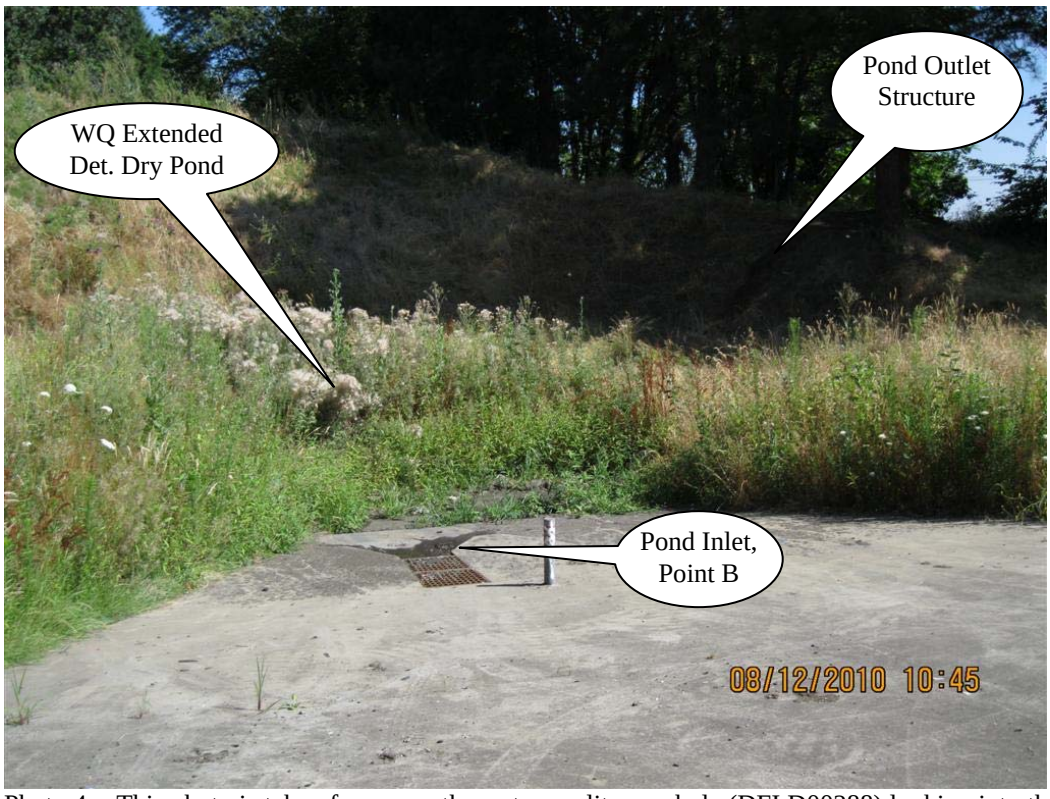


Photo 4: This photo is taken from near the water quality manhole (DFI D00288) looking into the extended det. dry pond.

Photo 5: Close up of water quality outlet of the outlet control structure. Outlet piping is visible.

Photo 6: Outlet control structure, including both the water quality outlet and the emergency overflow outlet.

Photo 7: Gravel access road to facility. Photograph is looking towards the southeast at the Ross Island Bridge (US 026).

5. Facility Haz Mat Spill Feature(s)

The extended detention dry pond can be used to store a volume of liquid by blocking the 12-inch diameter outlet pipe located at the outlet of the extended detention dry pond. This pipe is noted as point C on the Operational Plan; Appendix A. Another option may include blocking the control structure grates with either plates or sandbags.

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
The high flow bypass within the pond is located within the outlet control structure. The second (higher) inlet of this facility serves as a outflow

inlet in the event the primary outlet becomes plugged or the flows into the pond exceed the orifice.

☐ Other, as noted below

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:
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

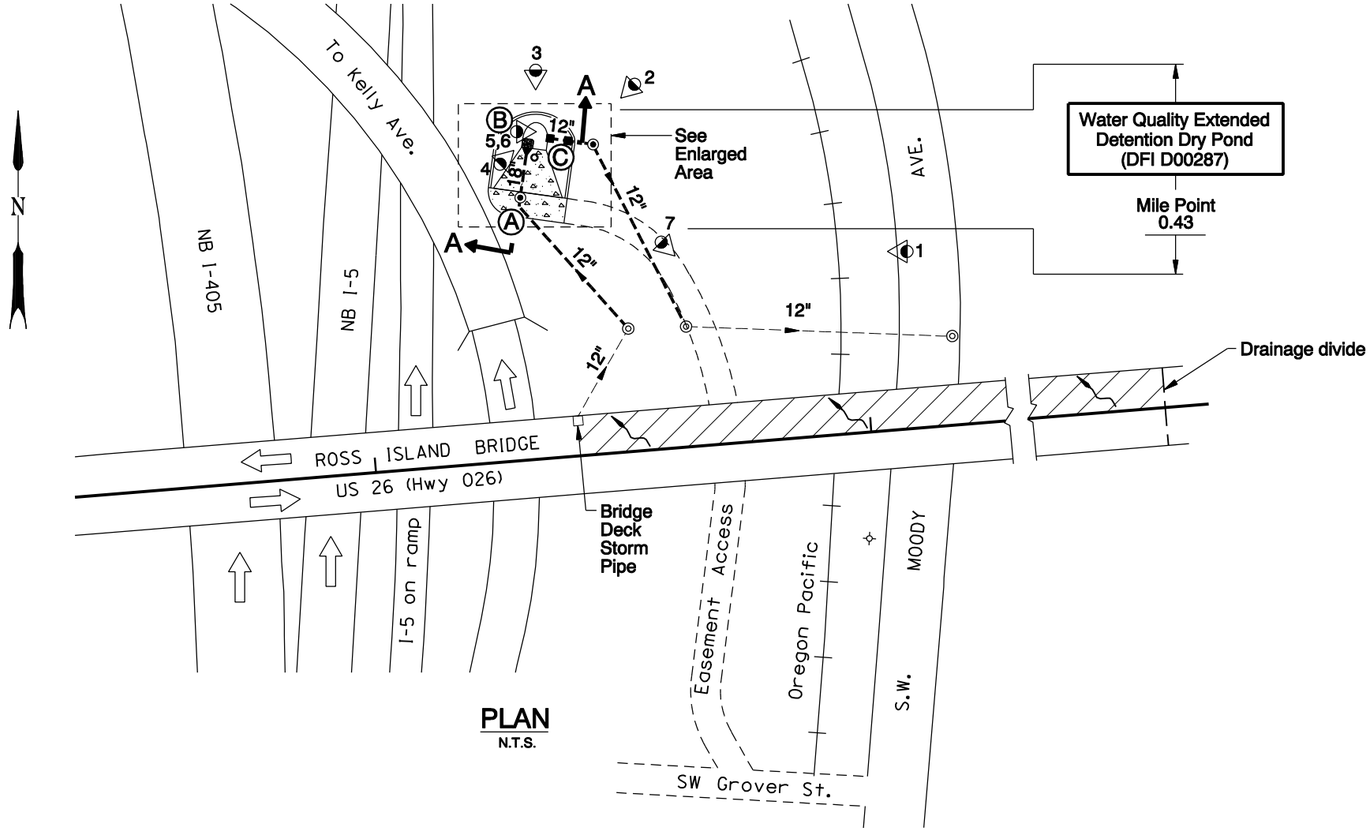
Contact any of the following for more detailed information about management of waste materials found on site:

ODOT Clean Water Unit	(503) 986-3008
ODOT Statewide Hazmat Coordinator	(503) 229-5129
ODOT Region Hazmat Coordinator	(503) 731-8304
ODEQ Northwest Region Office	(503) 229-5263

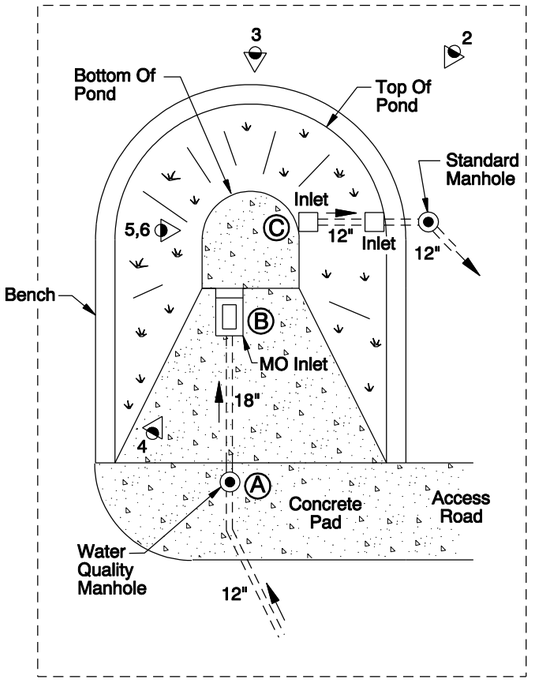
Appendix A

Content:

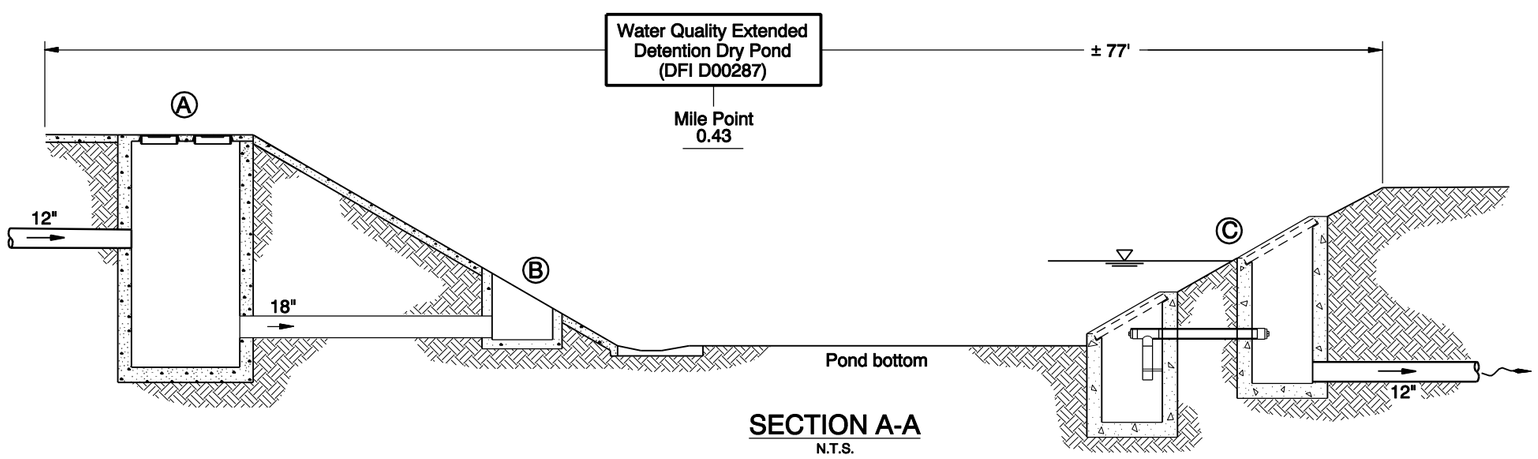
- **Operational Plan and Profile Drawing(s)**



PLAN
N.T.S.



Enlarged Area



SECTION A-A
N.T.S.

LEGEND:

- Photo Location / Direction
- Ⓐ Water Quality Manhole (DFI D00288)
- Ⓑ Pond/Facility Inlet
- Ⓒ Outlet Control Structure
- ◉ and/or ◎ Manhole
- ■ and/or □ Inlet
- Storm Pipe (Facility)
- Storm Pipe
- Conveyance Direction
- Pavement / Facility Flow Path
- Contributing drainage area

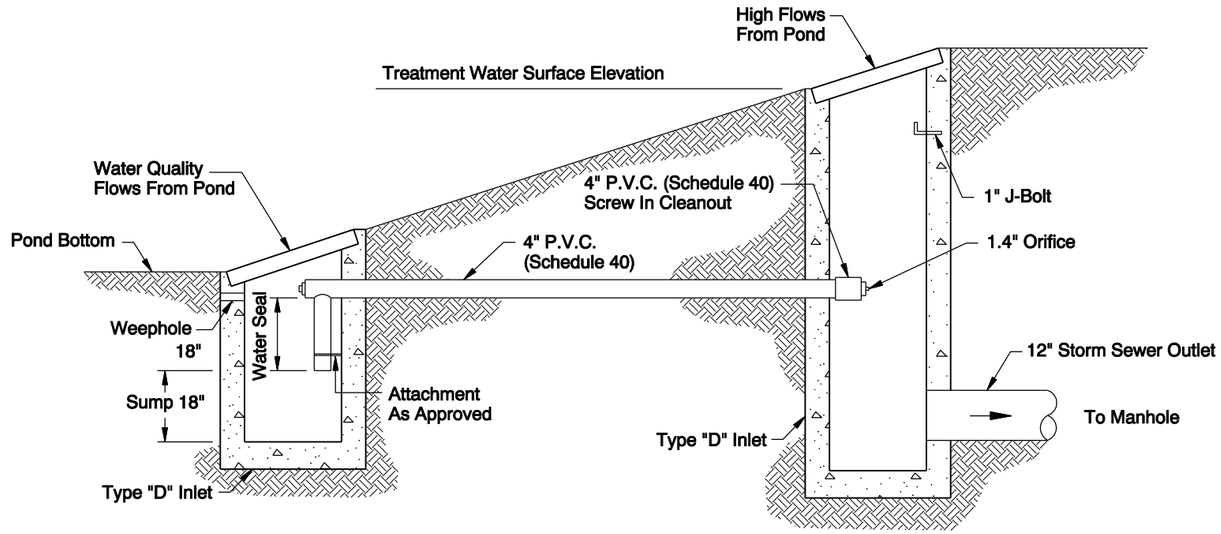
Sht. 1 of 2

OREGON DEPARTMENT OF TRANSPORTATION

Reviewed By: Bob Knorr

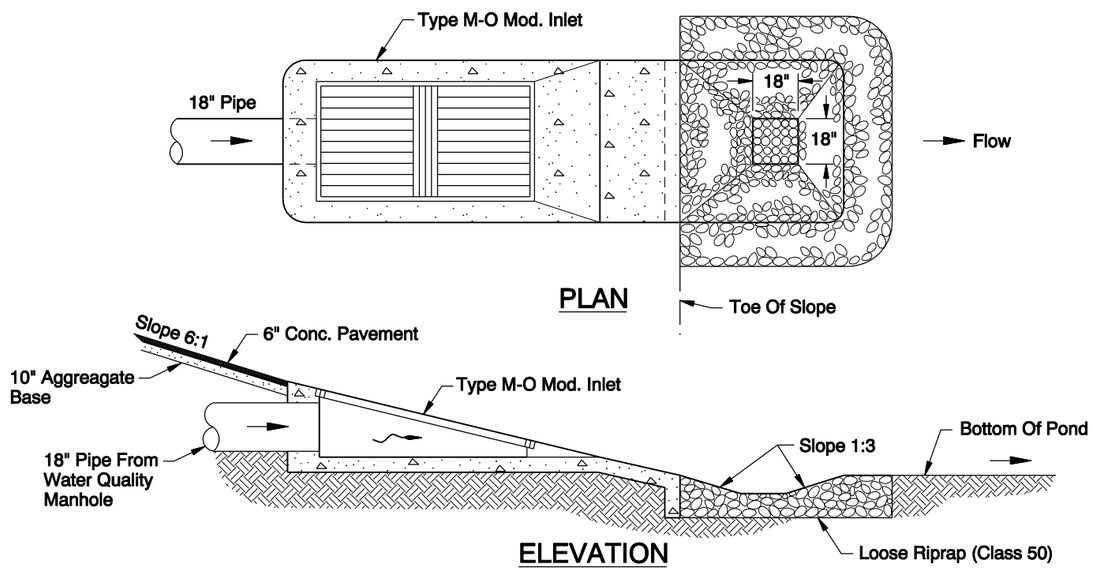
Drafted By: Jim Holeman

DFI D00287
MAINTENANCE DISTRICT 2B HWY 26
WATER QUALITY EXTENDED DETENTION DRY POND
MT HOOD HWY MP 0.43
MULTNOMAH COUNTY



WATER QUALITY POND OUTLET DEVICE DETAIL AT POINT Ⓒ

N.T.S.



FACILITY INLET BASIN DETAIL AT POINT Ⓑ

N.T.S.

LEGEND:

- Photo Location / Direction
- Ⓐ Water Quality Manhole (DFI D00288)
- Ⓑ Pond/Facility Inlet
- Ⓒ Outlet Control Structure
- Manhole
- Inlet
- Storm Pipe (Facility)
- Storm Pipe
- Conveyance Direction
- Pavement / Facility Flow Path
- Contributing drainage area

Sht. 2 of 2

OREGON DEPARTMENT OF TRANSPORTATION

Reviewed By: Bob Knorr

Drafted By: Jim Holeman

DFI D00287
MAINTENANCE DISTRICT 2B HWY 26
WATER QUALITY EXTENDED DETENTION DRY POND
MT HOOD HWY MP 0.43
MULTNOMAH COUNTY

Appendix B

Content:

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

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
1	Title Sheet
1A 1A-2	Title Sheet Contd. (Signal Sites), Index Of Sheets Contd. Standard Drawing Nos.
2	Typical Sections & Details
2A Thru 2A-6 Incl.	Details
2B Thru 2B-15 Incl.	Traffic Control Details
2B-16 Thru 2B-22 Incl.	Traffic Control Plans - Stage I
2B-23 Thru 2B-29 Incl.	Traffic Control Plans - Stage II
2B-30	Traffic Control Plans
2C	Erosion Control Details
2C-2	Erosion Control Plans
2D	Disposal Site
2E	Pipe Data
3, 4	Plans
4A	Profile
5	Plan

DRAWING NO.	DESCRIPTION
ROADSIDE DEVELOPMENT	
R1	Contour Grading Plan
BRIDGE NO. 5054	
57730	Index
57731	Plan & Elevation
57732	General Notes & Reference Numbers
57733 Thru 57737 Incl.	Deck Plan
57738 Thru 57740 Incl.	Stage Details For Steel Spans
57741 Thru 57743 Incl.	Stage Details For Concrete Spans
57744	Sidewalk, Curb, & Deck Details For Steel Spans
57745	Sidewalk, Curb, & Deck Details For Conc. Spans
57746	Deck Reinforceing At Corbel Details
57747	Corbels At Interior X-Beam (Conc. Spans, South Side Only)
57748	Corbels At Bents (Conc. Spans, South Side Only)
57749	Additional Concrete Corbel Details
57750	Concrete Rebar Placement At Tower Bents
57751	"W" X-Section Locations Spans 1-6
57752 Thru 57754 Incl.	West End-Sections
57755	Removal Pay Limits Pier 1 & 6
57756	Proposed Modificiations At Pier 1 & 6
57757	Build-up Slab Details At Expansion Joints Concrete Spans
57758, 57759	East Ramp Deck Modifications
57760, 57761	East Ramp Deck & Gore Modifications

STATE OF OREGON

DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED PROJECT

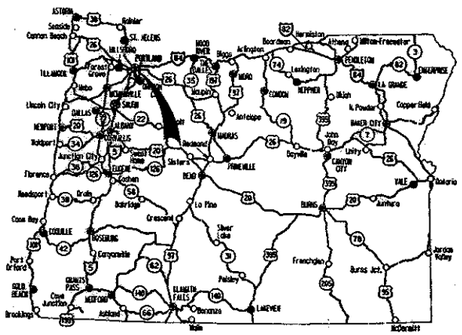
STRUCTURE, SIGNING, & ILLUMINATION

WILLAMETTE RIVER (ROSS ISLAND) BRIDGE (PORTLAND) SEC.

MT. HOOD HIGHWAY

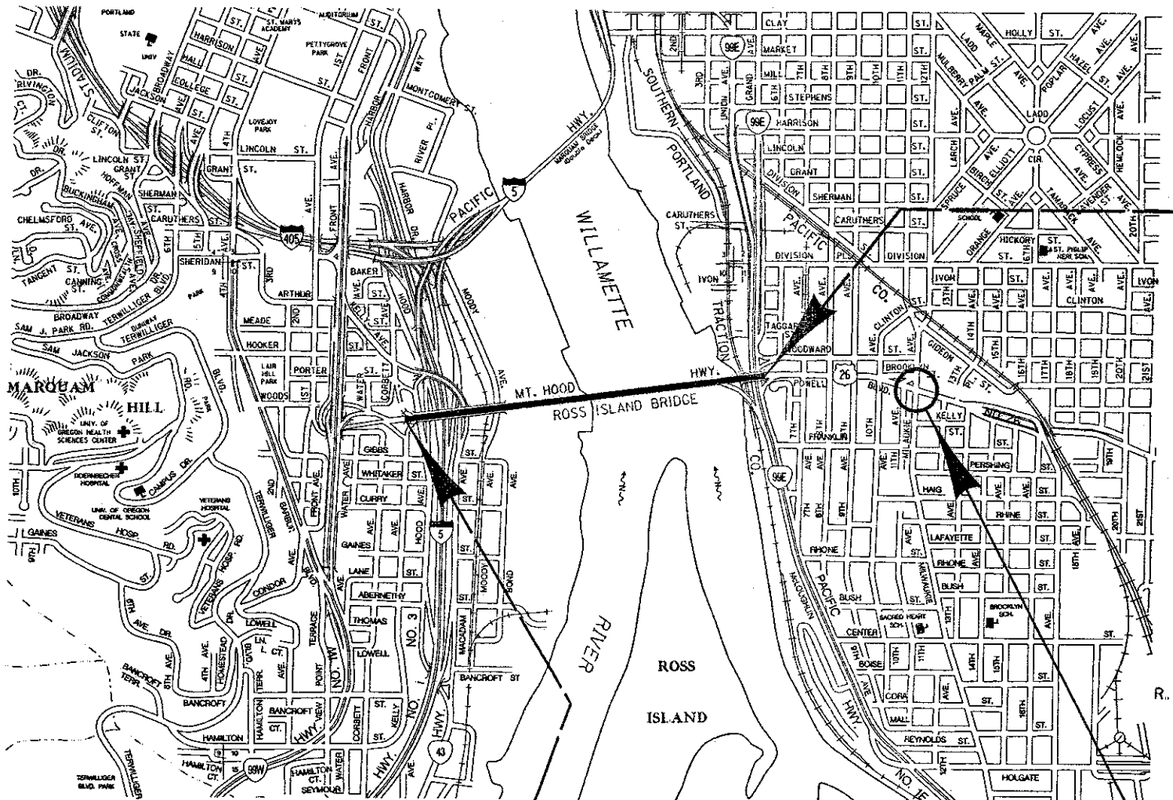
MULTNOMAH COUNTY

OCTOBER 1999



Overall Length Of Project - 1.153 km (0.72 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.



Temp. Signal Modification
Milwaukie Ave./Powell Blvd.

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, 1996
JEFFREY SCHEICK
Expires Jun. 30, 2000

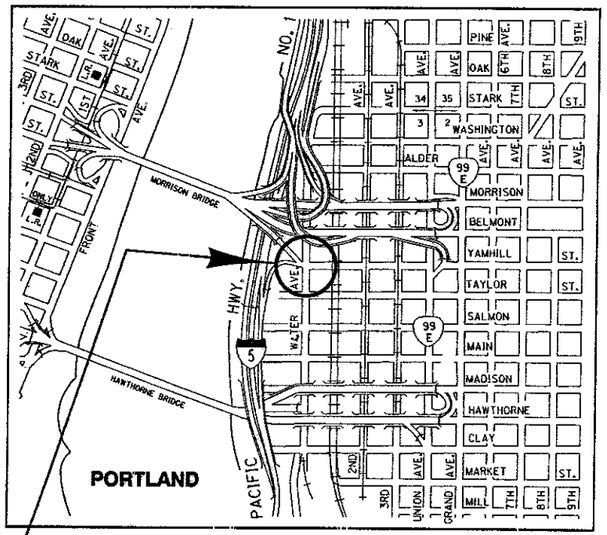
Jeffrey Scheick

TECHNICAL SERVICES MANAGING ENGINEER

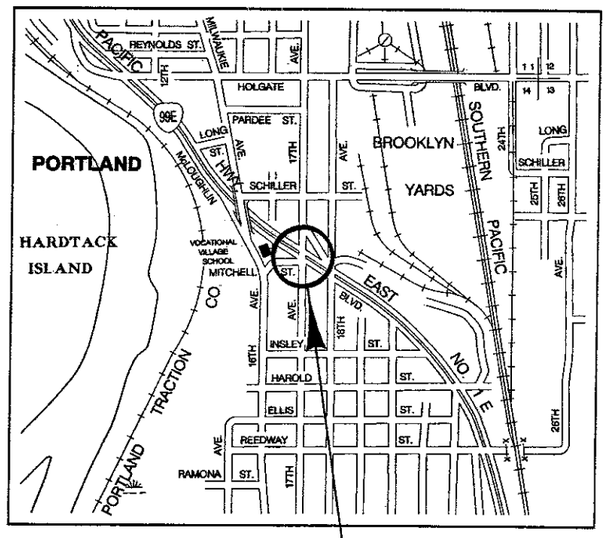
WILLAMETTE RIVER (ROSS ISLAND) BRIDGE (PORTLAND) SEC.
MT. HOOD HIGHWAY
MULTNOMAH COUNTY

FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
REGION 10	OREGON DIVISION	X-BHF-S026(17)	1

METRIC



Temp. Signal Installation
Water St./Yamhill St.



Signal Modification
17th Ave./McLoughlin Blvd.

INDEX OF SHEETS CONTD.

DRAWING NO.	DESCRIPTION
	BRIDGE NO. 5054 Contd.
57762	Rebar Placement & Butterfly Sign Placement At Gore Of East Off Ramp
57763	East Gore Deck Cross Sections
57764	Proposed Deck Plan Rebar Placement (West Gore)
57765	West Ramp Gore Pedestal Reinforcing Details & Butterfly Sign Support Placement
57766	Spans 29 & 30 Structure Modifications
57767	Post Bracket Details, Spans 29 & 30 Right Side Only
57768	Rail Support Beam Details, Spans 29 & 30 Right Side Only
57769	Box Beam Details, Spans 29 & 30 Right Side Only
57770 Thru 57777 Incl.	Baluster Rail Details
57778, 57779	Deck Drain & Cleanout Locations
57780, 57781	Drain Details - Steel Spans
57782	Drain Details - Concrete Spans
57783	Typical Downspout Details At Bents 13 & 29
57784	Manhole Details & Drain Details
57785	Location Of Temporary Waterline Hangers Near East Ramp Gore
57786	Temp. Waterline Hanger Details Near E. Ramp Gore
57787	Navigation Light Access Details At Midspan Of Span 3
57788	Access Ladder, Cage & Platform Details At Midspan Of Span 3
57789	Navigation Light Platform & Details At Midspan Of Span 3
57790 Thru 57793 Incl.	Navigation Light Cage Details At Midspan Of Span 3
57794	Navigation Light Access Details At Pier 3 & 4
57795, 57796	Landing Frame Details - Pier 3 & 4
57797	Joint Details
57798 Thru 57800 Incl.	Pier 2 Typical Expansion Joint & Deck Details (Pier 5 Similar)
57801	Pier 2 Northside Joint Details (Pier 5 Similar)
57802 Thru 57804 Incl.	Butterfly Sign Details At East Ramp Gore
57805 Thru 57807 Incl.	Butterfly Sign Details At West Ramp Gore
57808 Thru 57810 Incl.	Sign Bridge Details
57811, 57812	Hood Ave. Sign (Span 5) Details
57813	Sign Support Bracket - Span 29
57814	Luminaire Support Bracket Details At East Gore
57815	Utility Location

DRAWING NO.	DESCRIPTION
	PERMANENT PAVEMENT MARKINGS
ST1	Striping Plan Details
ST2	Striping Plan
	PERMANENT SIGNING
S-4228	Signing Plan
S-4229, S-4230	Sign Details
S-4231 Thru S-4233 Incl.	Sign & Post Data Tables
	ILLUMINATION
I-0677	Temporary Illumination Specifications & Legend
I-0678 Thru I-0680 Incl.	Temporary Illumination Plan
I-0681	Illumination Legend & Metal Light Pole Table
I-0682, I-0683	Illumination Plans
I-0684, I-0685	Illumination Details
I-0686	Illumination Plan
I-0687	Centerline Navigation Light Details
I-0688, I-0689	Pier 3 & 4 Navigation Light Details
I-0690	City Of Portland Illumination Details
	TRAFFIC SIGNAL PLANS
11823	Temporary Signal Plan - Water Ave. At I-5 NB Off-Ramp/Yamhill St.
11824	Detector Plan - Water Ave. At I-5 NB Off-Ramp/Yamhill St.
11879	Signal Modification Plan - McLoughlin Blvd. At S.E. 17th Ave.
11880	Detector Modification Plan - McLoughlin Blvd. At S.E. 17th Ave.
11887	Signal Modification Plan - Milwaukie Ave. At S.E. Powell Blvd.

WILLAMETTE RIVER (ROSS ISLAND) BRIDGE (PORTLAND) SEC.
MT. HOOD HIGHWAY
MULTNOMAH COUNTY

METRIC

FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
REGION 10	OREGON DIVISION		1A

16-AUG-1999 08:03

VIEW A3 C026-1426

Standard Drg. Nos.

RD300	- Pipe Backfill/Compaction
RD324, RD327	- Manholes
RD336	- Concrete Inlets
RD354	- Coupling Bands
RD357	- Alum. & Steel Corrugated Pipe Fill Height Tables
RD366	- Circular Conc. Pipe Fill Height Table
RD500	- Precast Concrete Barrier Pin & Loop Assembly
RD510	- Concrete Barrier Terminal
RD705	- Island & Traffic Separators
RD800	- Traffic Delineators
RD900, RD901, RD905, RD910, RD915, RD920	- Traffic Control Plans
RD935	- Barricades
RD940, RD945	- Temp. Impact Attenuators
BR120	- Deck Drains
BR425	- 840 mm Std. Precast Prestressed Box
BR445	- Precast Prestressed Boxes & Slabs
BR930, BR931, BR932, BR933	- Truss Type Sign Bridge 15 m To 51 m Span Range
BR956, BR960	- Slip Base & Fixed Base Luminaire Supports
BR970	- Luminaire Base On Structures
TM100	- Temp. Wood Post Sizing Charts
TM200 Thru TM204 Incl.	- Signing Details
TM205	- Perm. Wood Post Sizing Charts
TM207	- Secondary Signing Details
TM211	- Fwy. & Expressway. Signing Details
TM212, TM213, TM214, TM215	- Mounting Details
TM300	- Electric Cabintets
TM301	- Wood Pole Installation & Luminaire Braket Arm
TM400	- Signal Pole Details
TM401	- Pole foundation
TM402	- Pedestrian Signals
TM403	- Vehicle Signals
TM404	- Controller & Rps Details
TM405	- Service/Terminal Cabinets
TM406	- Wiring & Signal Types
TM407	- Junction Boxes
TM408	- Detectors
TM409	- Overhead Signs

WILLAMETTE RIVER (ROSS ISLAND) BRIDGE (PORTLAND) SEC.
MT. HOOD HIGHWAY
MULTNOMAH COUNTY

FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
REGION 10	OREGON DIVISION		1A-2

METRIC

VIEW A4 C026-1426

WATER QUALITY POND OUTLET DEVICE DETAIL

All Dimensions Are Shown In Millimeters (mm), Unless Otherwise Noted.

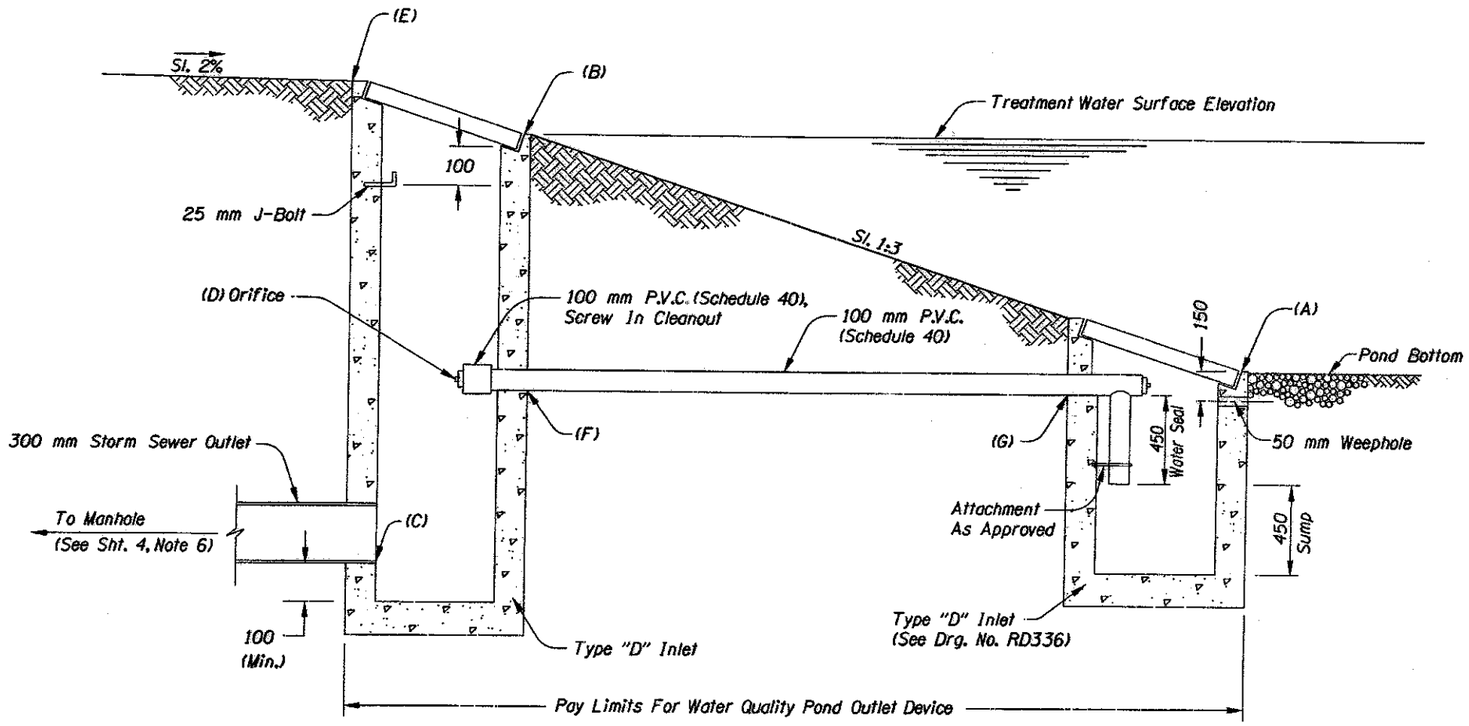


TABLE "A"	
A	13.6 m (Elevation)
B	14.8 m (")
C	12.6 m (")
D	35 mm (Orifice Dia.)
E	15.1 m (Elevation)
F	13.5 m (")
G	13.5 m (")

DESIGN ENGINEER

REGISTERED PROFESSIONAL ENGINEER
5148
OREGON
MAY 30, 1995
PAUL R. WIRTS
Expires June 30, 2000

WILLAMETTE RIVER (ROSS ISLAND) BRIDGE (PORTLAND) SEC.
MT. HOOD HIGHWAY
MULTNOMAH COUNTY

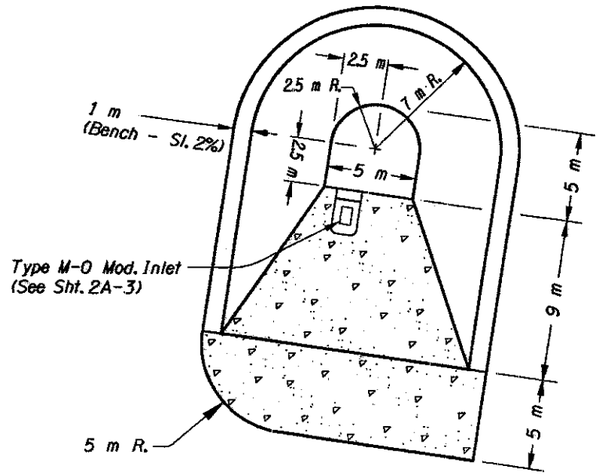
FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
REGION 10	OREGON DIVISION		2A

VIEW 1

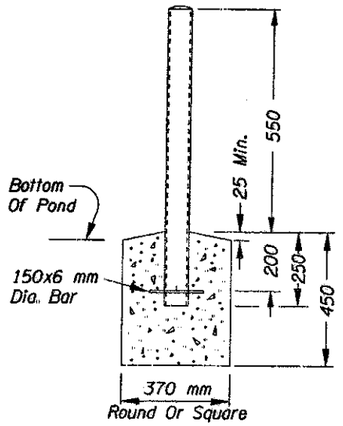
VIEW 1

D E T A I L S

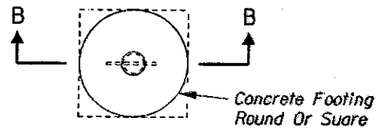
All Dimensions Are Shown In Millimeters (mm), Unless Otherwise Noted.



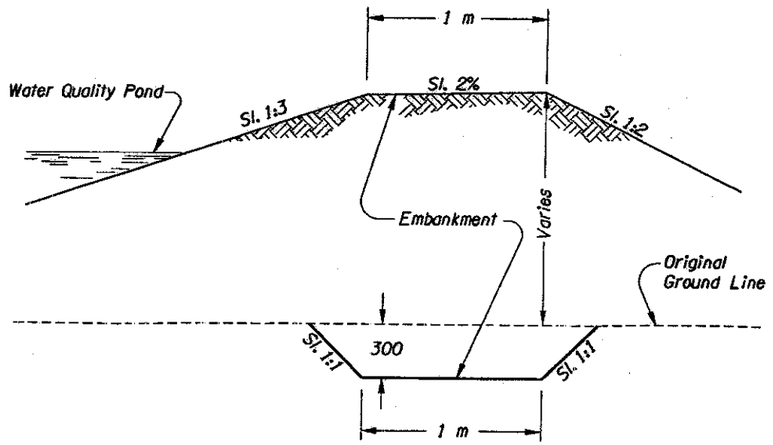
POND LAYOUT PLAN



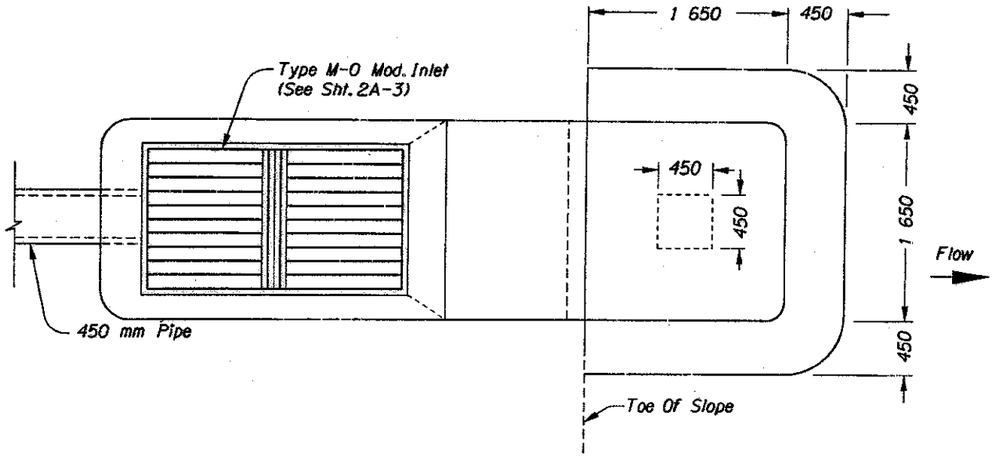
SECTION B-B



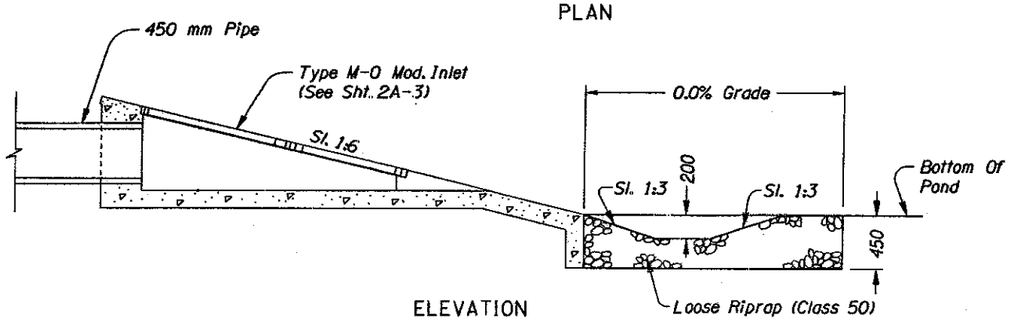
PLAN



POND BERM



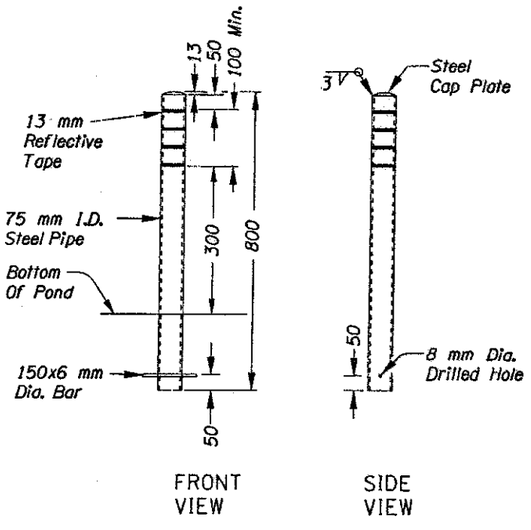
PLAN



ELEVATION

OUTLET BASIN

(For Location, See Plans)

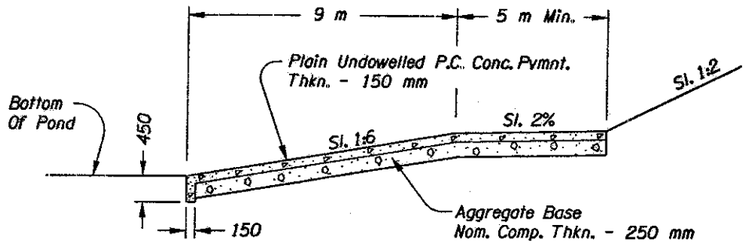


FRONT VIEW

SIDE VIEW

NON-REMOVABLE

BOLLARD



POND ACCESS TYPICAL SECTION

DESIGN ENGINEER

REGISTERED PROFESSIONAL ENGINEER 15448 OREGON MAY 30, 1991 PAUL R. WIRFS Expires June 30 2000

Paul R. Wirfs

WILLAMETTE RIVER (ROSS ISLAND) BRIDGE (PORTLAND) SEC.

MT. HOOD HIGHWAY

MULTNOMAH COUNTY

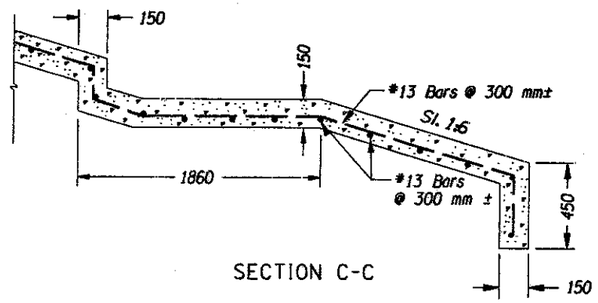
FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
REGION 10	OREGON DIVISION		2A-2

VIEW 2

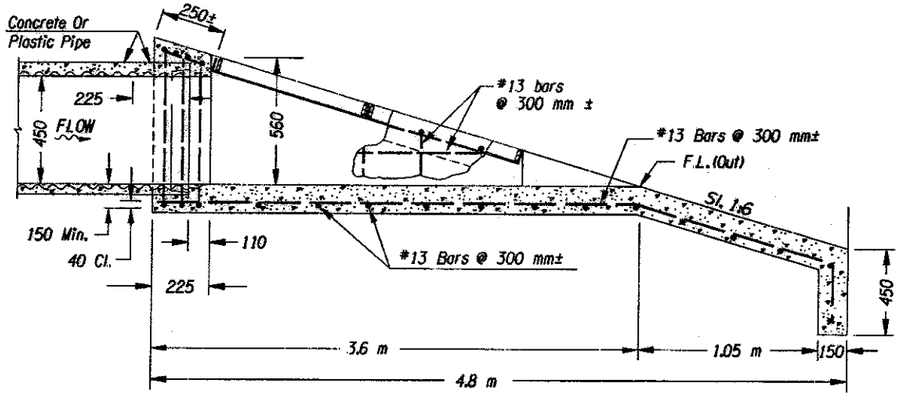
VIEW 2

D E T A I L S

All Dimensions Are Shown In Millimeters (mm), Unless Otherwise Noted.



SECTION C-C



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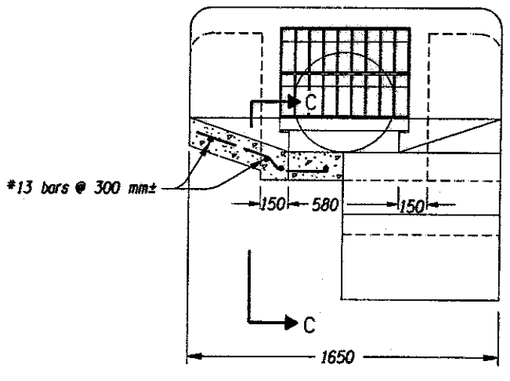

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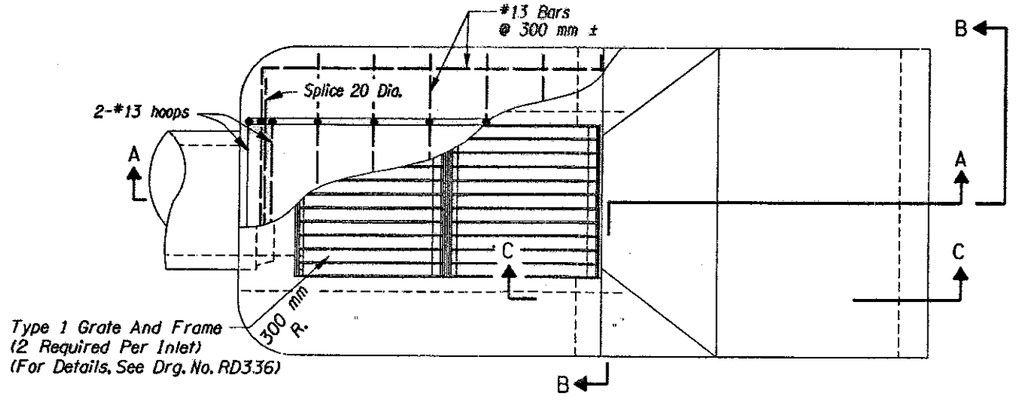


PLAN

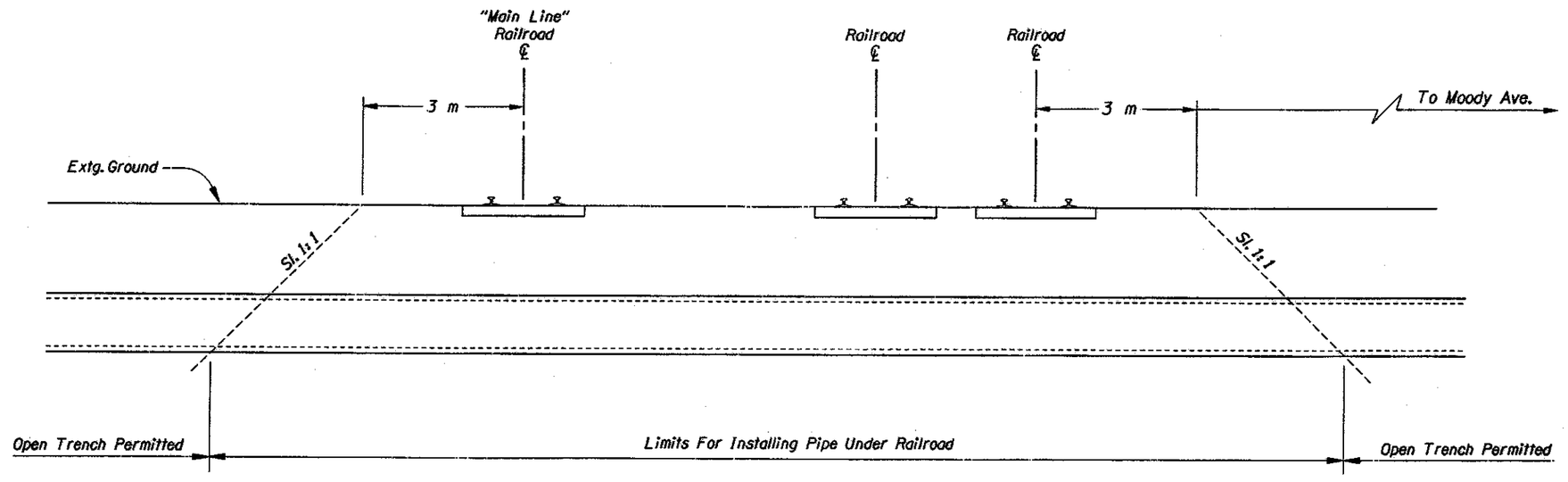
TYPE M-O MODIFIED INLET

DESIGN ENGINEER	WILLAMETTE RIVER (ROSS ISLAND) BRIDGE (PORTLAND) SEC. MT. HOOD HIGHWAY MULTNOMAH COUNTY		
REGISTERED PROFESSIONAL ENGINEER 5448 Paul R. Wirs OREGON MAY 30, 1991 PAUL R. WIRES Expires June 30, 2000	FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
	REGION 10 / OREGON DIVISION		2A-3

VIEW 3

VIEW 3

D E T A I L S



PIPE UNDER RAILROAD DETAIL

(For Location, See Plans)

DESIGNED BY

REGISTERED PROFESSIONAL ENGINEER 17,856 OREGON JULY 25, 1995 DANNY Y. HORI Expires June 30, 2001

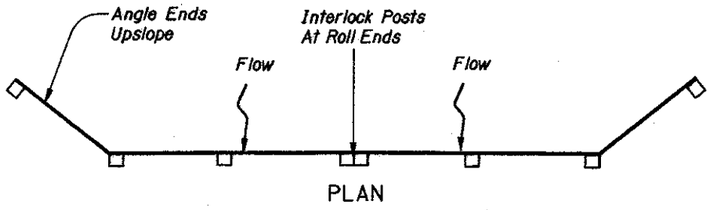
WILLAMETTE RIVER (ROSS ISLAND) BRIDGE (PORTLAND) SEC.
MT. HOOD HIGHWAY
MULTNOMAH COUNTY

FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
REGION 10	OREGON DIVISION		2A-4

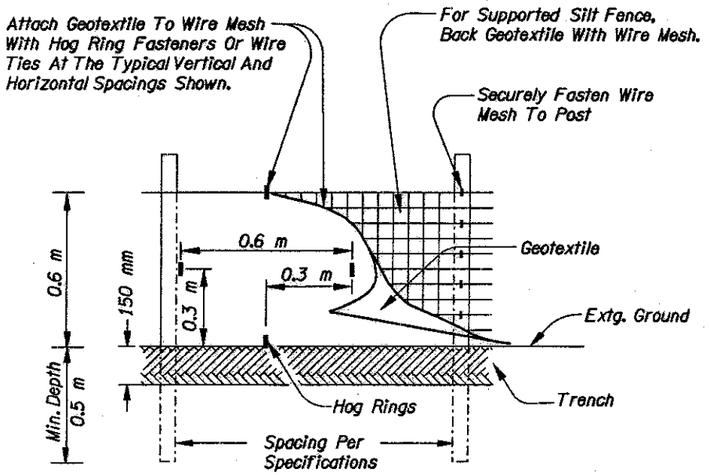
VIEW 4

VIEW 4

EROSION CONTROL DETAILS

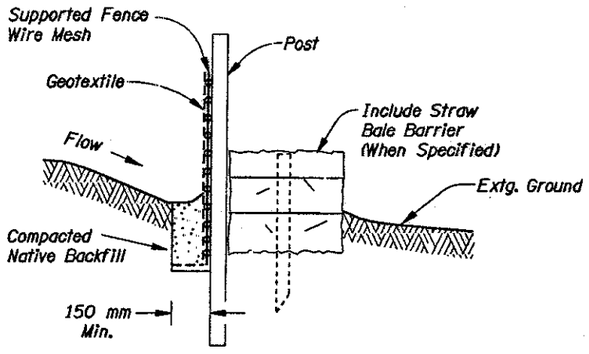


PLAN



ELEVATION

Install Along Contours As Follows:	
SLOPE	MAXIMUM SPACING
Less Than 10%	90 m
Less Than 15%	45 m
Less Than 20%	30 m
Less Than 30%	15 m
Greater Than 30%	8 m



PROFILE

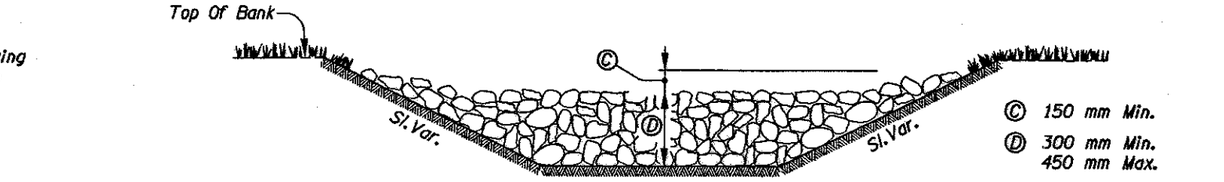
FIELD FABRICATED SILT FENCE

(Supported And Unsupported)

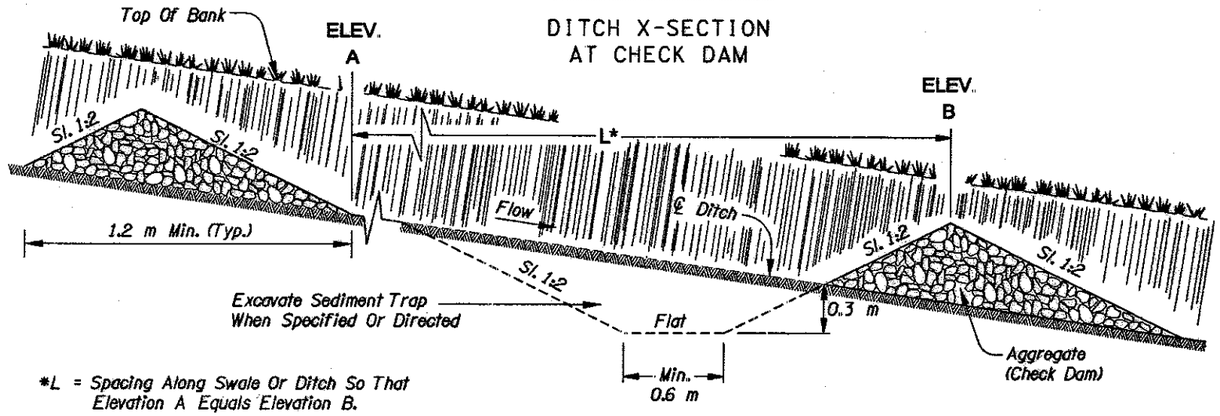
NOTE:
When Bid Item Is "Check Dam-Per Each" The Following Materals May Be Used, As Appropriate To Provide The Functional Requirements Of The Control.
1. Aggregate (As Shown)
2. Straw Bales With Aggregate Wier
3. Bio-Filter Bags
4. Sand Bags
5. "Triangular Silt Dike" (Manufacture Trade Name)

CHECK DAM
Approximate Spacing

Ditch Grade	D = Dimension 300 mm	450 mm
6%	5 m O.C.	8 m O.C.
5%	6 m	9 m
4%	8 m	12 m
3%	10 m	15 m
2%	15 m	24 m

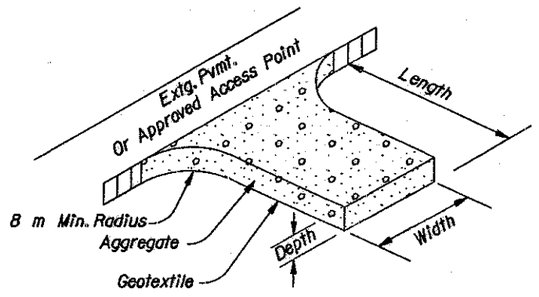


DITCH X-SECTION AT CHECK DAM



*L = Spacing Along Swale Or Ditch So That Elevation A Equals Elevation B.

DITCH PROFILE SECTION
TYPE 1
CHECK DAM



NOTES:
① Length:
15 m Min. - For Less Than 0.4 ha Exposed Soil
30 m Min. - For Greater Than 0.4 ha Exposed Soil

② Width:
6 m Min. - Full Width Of Ingress/Egress Minimum

③ Depth:
200 mm Min

AGGREGATE CONSTRUCTION ENTRANCE

EROSION CONTROL PLANS & DETAILS	EROSION CONTROL	WILLAMETTE RIVER (ROSS ISLAND) BRIDGE (PORTLAND) SEC. MT. HOOD HIGHWAY MULTNOMAH COUNTY		
Designed By: Dana C. Nelson	REGISTERED PROFESSIONAL ENGINEER 1544 OREGON MAY 30, 1986 PAUL R. WIRFS Expires June 30, 2000	FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
Drafted By: Annie Delli Gatti		REGION 10 / OREGON DIVISION		2C

EROSION CONTROL PLAN

① *Const. Unsupported Silt Fence (For Details, See Sht. 2-C)*

② *Const. Aggregate Check Dams (For Details, See Sht. 2-C)*

③ *Const. Aggregate Construction Entrance (For Details, See Sht. 2-C)*

GENERAL NOTES:

The Implementation Of These Erosion Control Plans And The Construction, Maintenance, Replacement And Upgrading Of These Facilities Are The Responsibility Of The Contractor Until All Construction Is Completed And Approved.

Develop A Revised Plan Of The Erosion Control Facilities Shown In Accordance With The Requirements Of Sec. 00.280, Supplemental Standard Specifications. This Plan Must Be Constructed In Conjunction With All Clearing And Grading Activities. Construct In Such A Manner As To Insure That Sediment And Sediment-Laden Water Does Not Enter The Drainage System, Roadway, Or Violate Applicable Water Standards. Construct Controls In Segments Applicable To Each Staging Phase.

The Erosion Control Facilities Shown On This Plan Are The Minimum Requirements For Anticipated Site Conditions. During The Construction Period, These Facilities Shall Be Upgraded For Unexpected Storm Events And To Insure That Sediment And Sediment-Laden Water Do Not Leave The Site.

Stabilized Construction Entrances Shall Be Installed At The Beginning Of Construction And Maintained For The Duration Of The Project. Additional Measures May Be Required To Insure That All Paved Areas Are Kept Clean For The Duration Of The Project.

Construct Silt Fence At The Toe Of Fill Slopes In Areas Where Sediment-Laden Water Has A Potential Of Entering Waterways Or Leaving The R/W.

LEGEND

- *Unsupported Silt Fence*
- *Check Dam*
- *Aggregate Const. Entrance*

EROSION CONTROL

REGISTERED PROFESSIONAL ENGINEER 5148 Paul R. Wiles OREGON MAY 30, 1990 PAUL R. WILES Expires June 30, 2000

WILLAMETTE RIVER (ROSS ISLAND) BRIDGE (PORTLAND) SEC.
MT. HOOD HIGHWAY
MULTNOMAH COUNTY

FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
REGION 10	OREGON DIVISION		2C-2

VIEW 2

PIPE4D

PIPE DATA SHEET

32V-80

METRIC

SHEET NUMBER	NOTE No. ON PLANS	DESIGN HEIGHT OF COVER (METERS) ①	PIPE – CIRCULAR OR ELLIPTICAL – SIZE IN (mm) 300 – LENGTH IN METERS	PIPE – CIRCULAR OR ELLIPTICAL – SIZE IN (mm) 450 – LENGTH IN METERS	USE / INSTALLATION CRITERIA – STORM SEWER	USE / INSTALLATION CRITERIA – WATERTIGHT JOINTS	PH	RESISTIVITY (HUNDREDS)	ALUMINUM – RIVETED, WELDED OR LOCK SEAM – 68 x 13 – PLATE THKN. (mm)	ALUMINUM – 68 x 13 – CROSS SECTION ③	ALUMINUM – COATING ⑤	ALUMINIZED OR GALVANIZED IRON AND STEEL – RIVETED, WELDED OR LOCK SEAM – 68 x 13 – PLATE THKN. (mm)	ALUMINIZED OR GALVANIZED IRON AND STEEL – 68 x 13 – CROSS SECTION ③	COATING ⑤ – GALVANIZED	COATING ⑤ – ALUMINIZED	RIGID – PRE-CAST CONCRETE – REINF. – IV	SPECIAL – CORRUGATED POLYETHYLENE	SPECIAL – STEEL PIPE ASTM A53	MANHOLES – DEPTH, TOP OF COVER TO INVERT (m)	MANHOLES – DIAMETER OF LARGEST PIPE IN BASE (mm)	MANHOLES – CONC. – PRECAST	MANHOLES – CONC. – CAST-IN-PLACE	MANHOLES – SPECIAL (WATER QUALITY)	INLETS – TYPE – "M-O" MODIFIED – Number Required	INLETS – TYPE – W.O. POND OUTLET – Number Required	REMARKS
4	4	0.30	21.1		✓	✓	6.1	34																		
																		✓	1.3	300	✓	✓				Conn. To Bridge Drain Pipe
	5	0.30	31.8		✓	✓	6.1	34																		M.H. F.L. 15.27 m
	5		(Alternate)						1.52	R	U	1.63	R		U	✓	✓		1.7	450			✓			M.H. F.L. 13.54 m (In)
												2.77	R	A												M.H. F.L. 13.84 m (Out)
	5	0.30		8.3	✓	✓	6.1	34																		
																✓	✓							1		Inlet F.L. 13.80 m (Out)
	6	0.30	3		✓	✓	6.1	34																		
	6		(Alternate)						1.52	R	U	1.63	R		U	✓	✓		3.7	300	✓	✓			1	M.H. F.L. 12.24 m
												2.77	R	A												
	7	0.30	42.5		✓	✓	6.1	34																		
	7		(Alternate)						1.52	R	U	1.63	R		U	✓	✓		4.6	300	✓	✓				M.H. F.L. 7.14 m
												2.77	R	A												
	8	0.30	53.6		✓	✓	6.1	34																		
										1.52	R	U	1.63	R		U	✓	✓								Connect To Extg. Manhole
																										Extg. M.H. F.L. 5.00 m

NOTE:
All Flow Line Elevations Are Center Of Manhole, Unless Otherwise Noted.

GENERAL NOTES:

1. A check (√) indicates column heading applies.
2. A new pipe culvert installation shall be of like material throughout.
3. Extension of existing metal culverts may be of unlike metal or corrugations. For connecting details, see Standard Drg. RD354.
4. Dimensions shown are nominal.
5. All pipes shall conform to the AASHTO specification applicable for the type of material and the diameter of the pipe involved

FOOTNOTES:

① Design height of cover is the critical design height used to select pipe materials. The height of cover for any given run of pipe may vary. Design height of cover shall be measured to subgrade.

② Cross-sectional dimensions may vary with different materials. When galvanized iron or steel and aluminum are acceptable alternates use a separate line for each type of material.

③ Cross-sectional shape of pipe normal to longitudinal axis, prior to loading
A = Pipe - Arch
R = Round
E = Elliptical (5% nominal elongation)

④ Minimum allowable diameter for Class 1 nonreinforced concrete pipe is 375 mm.

⑤ Abbreviations for protective coatings for metal pipe
A = Type A asphalt coated
C = Type C asphalt coated
D = Type D asphalt coated and fully lined
AP = Asbestos protected
U = Uncoated
CIM = Chevron industrial membrane
Ep = Epoxy coated

⑥ Abbreviations for existing pipe materials
AB = Asbestos cement
Al = Corrugated aluminum
Co = Concrete
Pl = Plastic
St = Corrugated steel
X = Other material, see remarks column

DRG. NOS.

■	RD300	Pipe Backfill/Comp. & Mult. Inst.
☐	RD303	Subsurface Drain
☐	RD309	Sloped Ends,Metal
☐	RD312	Sloped Ends,Concrete
☐	RD315	Paved End Slope
☐	RD318	Safety End Section-Metal Pipe
☐	RD321	Safety End Section-Conc. Pipe
■	RD324	Manholes-Cast-In Place, Covers
■	RD327	Manholes Precast
☐	RD330	Large Precast Manhole
☐	RD333	Manhole With Inlet
■	RD336	Conc. Inlets (G & CG Series, Curb Inlet & D Inlet)
☐	RD339	Conc. Inlets (Type M-E, M-0 & B)
☐	RD342	Conc. Inlets (Type CG-3)
☐	RD345	Siphon Box
☐	RD348	Slotted Drains
☐	RD351	Slope Anchors
■	RD354	Coupling Band

8-9-99
Checked By Standards Engineer

DESIGNED BY
15,441
Paul R. Wirfs
MAY 30, 1991
PAUL R. WIRFS
Expires June 30, 2000

WILLAMETTE RIVER (ROSS ISLAND)
BRIDGE (PORTLAND) SEC.
MT. HOOD HIGHWAY
MULTNOMAH COUNTY

FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
REGION 10	OREGON DIVISION		2E

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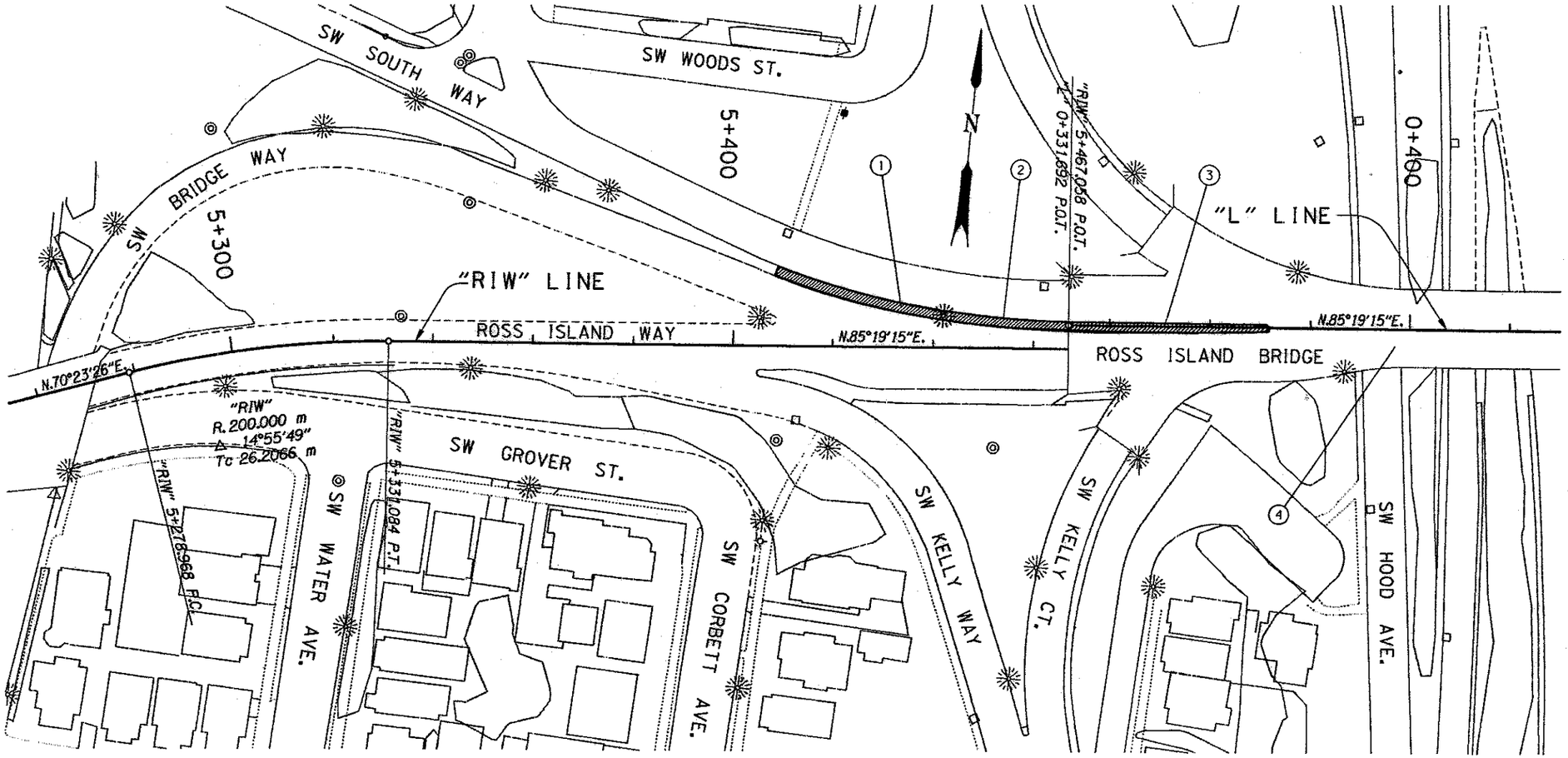
VIEW 1

VIEW 1

Sec. 10, T.1S., R.1E., W.M.



(1) *Remove Extg. Island, Shown Thus:*

(2) *Const. Conc. Island Type "A" - 108.1 m²*
(Non-Mountable)
(For Details, See Sht. 2A-5)
(See Drg. No. RD705)

(3) *Const. Conc. Island Type "C" - 58.9 m²*
(Non-Mountable)
(For Details, See Sht. 2A-5)
(See Drg. No. RD705)

(4) *Bridge No. 5054*
Sta. "L" 0+331.8 To Sta. "L" 1+434.7
Remove Extg. Bridge Rail
Const. Bridge Rail
Remove Extg. Sidewalk
Const. Sidewalk
Inst. Drain Pipe
Remove Illumination
Inst. Illumination
Repair Joints
Const. Microsilica Overlay
(For Drg. Nos., See Shts. 1 & 1A)

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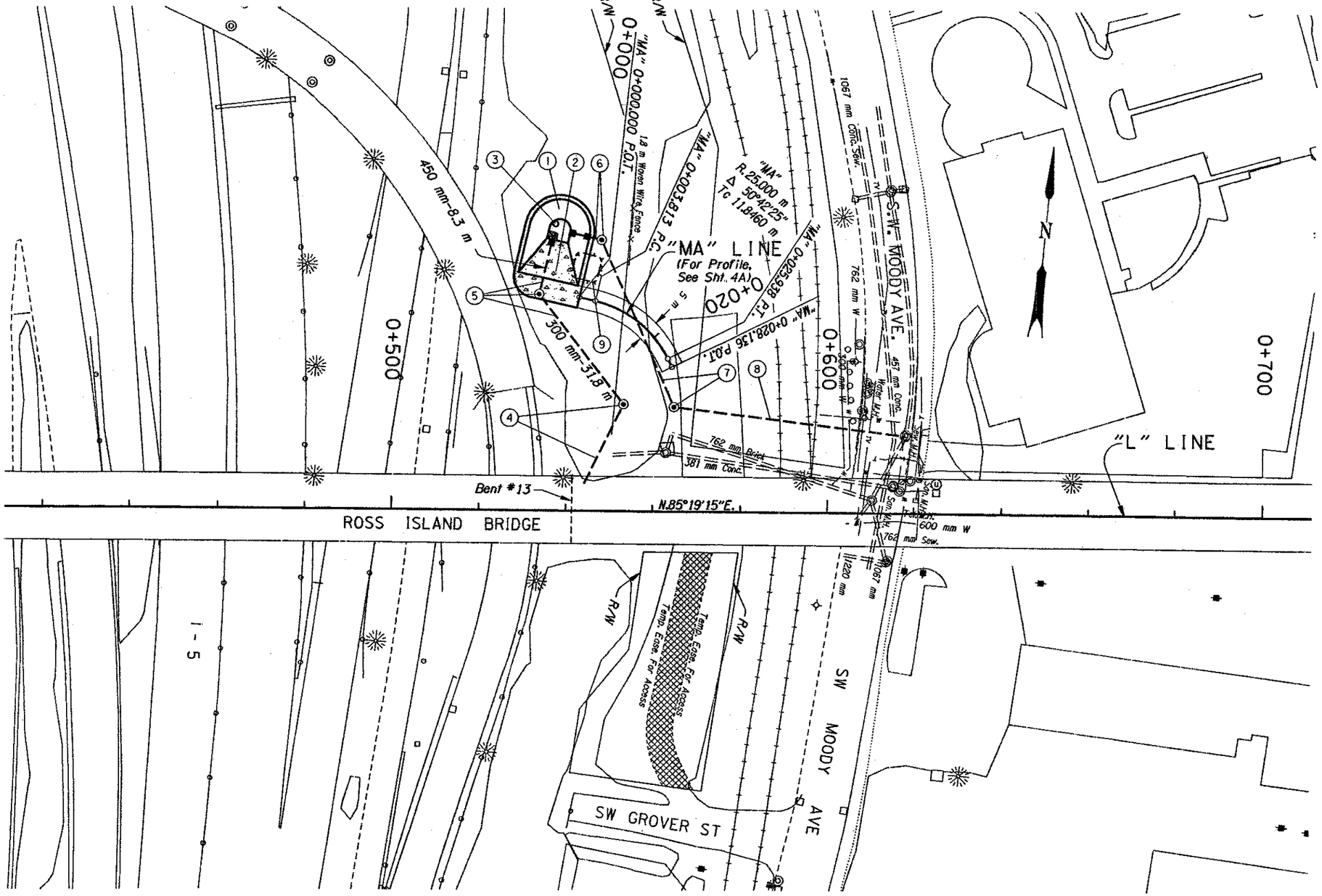
VIEW 1

DESIGNED BY	WILLAMETTE RIVER (ROSS ISLAND) BRIDGE (PORTLAND) SEC. MT. HOOD HIGHWAY MULTNOMAH COUNTY			
REGISTERED PROFESSIONAL ENGINEER 17,856 OREGON JULY 25, 1989 DANNY Y. HORI Expires June 30, 2001	FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
	REGION 10	OREGON DIVISION		3

VIEW 1

Sec. 10, T.1S., R.1E., W.M.



Areas Not To Be Occupied Before 10-01-2000, Shown Thus:

① Const. Water Quality Pond
(For Details, See Sht. 2A-2)

② Const. Conc. Pond Access - 155.1 m²
(For Details, See Sht. 2A-2)

③ Inst. Bollard
(For Details, See Sht. 2A-2)

④ Sta. "L" 0+553.0 Lt.
Const. Manhole
Inst. 300 mm Sew. Pipe - 21.1 m
Connect To Bridge Drain Pipe
Tr. Exc. - 22 m³
(See Drg. Nos. RD300, RD324, RD327, RD354, RD357, RD366 & Bridge Drg. No. 57783)

⑤ Sta. "L" 0+532.80, Lt.
Const. Special Manhole
Const. Type "M-0" Mod. Inlet
Inst. 300 mm Sew. Pipe - 31.8 m
Inst. 450 mm Sew. Pipe - 8.3 m
Const. Loose Riprap (Class 50) - 2.2 m³
Tr. Exc. - 88 m³
(For Details, See Shts. 2A-2 & 2A-3)
(See Drg. No. RD336)
(See Special Provisions, Section 00470)

⑥ Sta. "L" 0+547.20, Lt.
Const. Manhole
Const. Water Quality Pond Outlet Device
Inst. 300 mm Sew. Pipe - 3 m
Tr. Exc. - 11 m³
(For Details, See Sht. 2A)
(See Drg. No. RD336)

⑦ Sta. "L" 0+566.20, Lt.
Const. Manhole
Inst. 300 mm Sew. Pipe - 42.5 m
Tr. Exc. - 126 m³

⑧ Sta. "L" 0+566.20 To Sta. "L" 0+617.80, Lt.
Inst. 300 mm Sew. Pipe - 53.6 m
Under Pvmt. - 11 m
Under Railroad - 22 m
Connect To Extg. Manhole
Tr. Exc. - 204 m³
(For Details, See Sht. 2A-4)

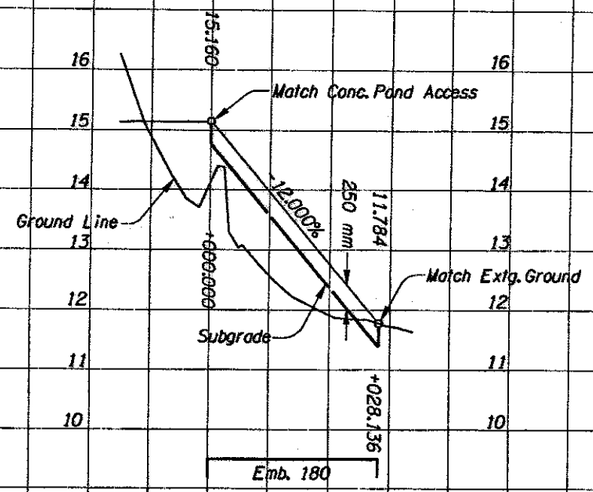
⑨ Const. Pond Berm
(For Details, See Sht. 2A-2)

DESIGN ENGINEER	WILLAMETTE RIVER (ROSS ISLAND) BRIDGE (PORTLAND) SEC. MT. HOOD HIGHWAY MULTNOMAH COUNTY		
REGISTERED PROFESSIONAL ENGINEER 15,149 OREGON MAY 30, 1986 PAUL R. WIFFS Expires June 30, 2000	FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
	REGION 10 / OREGON DIVISION		4

VIEW 2

VIEW 2

'MA" LINE



DESIGN ENGINEER	WILLAMETTE RIVER (ROSS ISLAND) BRIDGE (PORTLAND) SEC. MT. HOOD HIGHWAY MULTNOMAH COUNTY		
REGISTERED PROFESSIONAL ENGINEER 5.14 OREGON MAY 30, 1975 PAUL R. WINES Expires June 30, 2000	FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
	REGION 10 / OREGON DIVISION		4A

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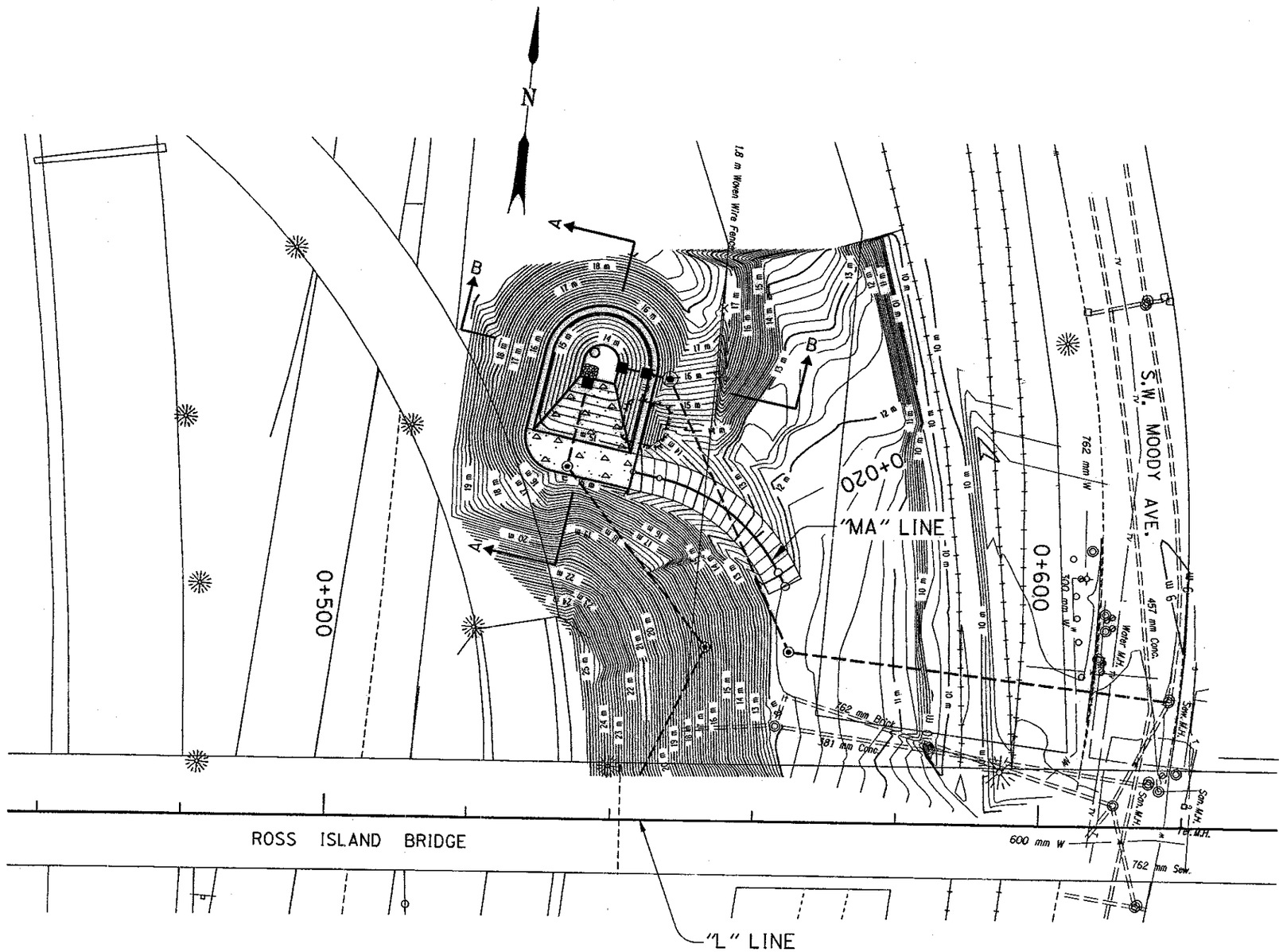
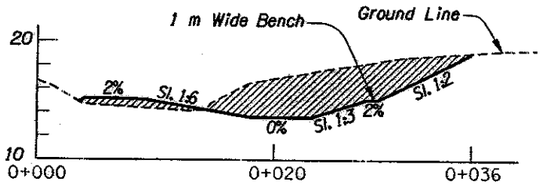
VIEW 5

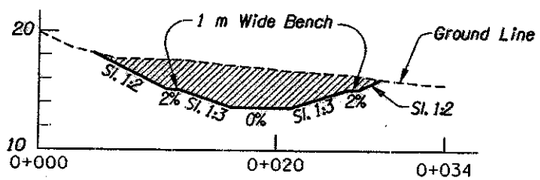
VIEW 5

CONTOUR GRADING PLAN





SECTION A-A



SECTION B-B

EARTHWORK TABLE		
	Exc.	Emb.
WATER QUALITY POND	965	80

DESIGN ENGINEER

REGISTERED PROFESSIONAL ENGINEER 15,446 Paul R. Wirfs OREGON MAY 30, 1997 PAUL R. WIRFS Expires: June 30, 2000

WILLAMETTE RIVER (ROSS ISLAND) BRIDGE (PORTLAND) SEC.
MT. HOOD HIGHWAY
MULTNOMAH COUNTY

FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
REGION 10	OREGON DIVISION		R1

VIEW 4

VIEW 4