OPERATION & MAINTENANCE MANUAL

DFI No.: **DFI D00138**
Facility Type: **Detention Tank/Pipe**

June 2016

INDEX

1. Identification

Drainage Facility ID (DFI): **D00138**

Facility Type: Detention Tank/Pipe

Construction Drawings: (V-File Number) 39V-058

Location: District: 2A

Highway No.: 064

Mile Post: 1.00

Description: This facility is located on I-5 (Hwy 001) southbound off-ramp I-205 (Hwy 064) northbound onramp south roadside shoulder at MP 1.00.

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:

Jerome D Lane, OBEC Consulting Engineers

Facility construction: 2006

Contractor: Oregon Mainline Paving, LLC, McMinnville

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 on I-5 (Hwy 001) southbound off-ramp I-205 (Hwy 064) northbound onramp south roadside shoulder at MP 1.00. The facility detains stormwater runoff from along adjacent onramp and onramp median (Appendix B). This facility is an online facility directing all flow from the water quality manhole (DFI D00137) through the detention tank/pipe (DFI D00138) via a 24-inch pipe. The detention tank/pipe is a 192 foot long underground set of three 72-inch diameter pipes. The pipes are structurally mounted to an underground slab and buried immediately adjacent to the shoulder of the northbound lanes of I-205 (Hwy 064). The facility stores stormwater in the detention tank/pipes and gradually releases or attenuates the flow via a control structure or release mechanism, then releasing it slowly over a more extended period of time. A weir wall set at sufficient height to restrain the design flow acts as the mechanism controlling facility discharge (see Point B in the Operational Plan). The facility discharges into the adjacent drainage way by a 24-inch storm pipe.

For further information and details regarding the system refer to Appendix A for the Operational Plan and Profile Drawing.

A. Maintenance equipment access:
   The facility can be accessed for maintenance from the shoulder located on the south shoulder of the northbound (at location, highway is east-west) of I-205. The shoulder is a minimum of 11 feet and the adjacent slopes are minimal. Maintenance equipment can park on these slopes near the facility. There are no guardrails at the road edge.

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: Drainage area to the facility looking to the west or decreasing mileage.

Photo 2: Rim of the inlet vault structure located on the northwest edge of the facility. WQ Treatment manhole, CDS Unit DFI D00137 located in the background (looking north).

Photo 3: Photo is looking to the east or increasing mileage.

Photo 4: The inlet vault structure on the northwest end of the facility.

5. Facility Haz Mat Spill Feature(s)

Hazardous liquids could potentially be captured in this facility if the eastern most manhole, the detaining manhole, is blocked at the outlet structure. The manholes and detention pipe details can be found in the operational plan attached in Appendix B.

6. Auxiliary Outlet (High Flow Bypass)

Auxiliary Outlets are provided if the primary outlet control structure cannot safely pass the projected high flows. Broad-crested spillway weirs and over flow risers are the two most common auxiliary outlets used in stormwater 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 – An overflow weir wall is located with the outlet vault, Point B in Operational Plan and Profile Drawings. In the event the restricting orifice is plugged or the flows exceed the anticipated high flow, the water overtops the weir wall and exits the detention facility through the outlet pipe.

☐Other, as noted –

7. Maintenance Actions

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 actions for ponds, swales, filter strips, bioslopes, and detention tanks and vaults. Special maintenance actions in addition to the routine actions 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 actions 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 actions 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 Actions:

Note: Special maintenance Actions 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 road waste 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

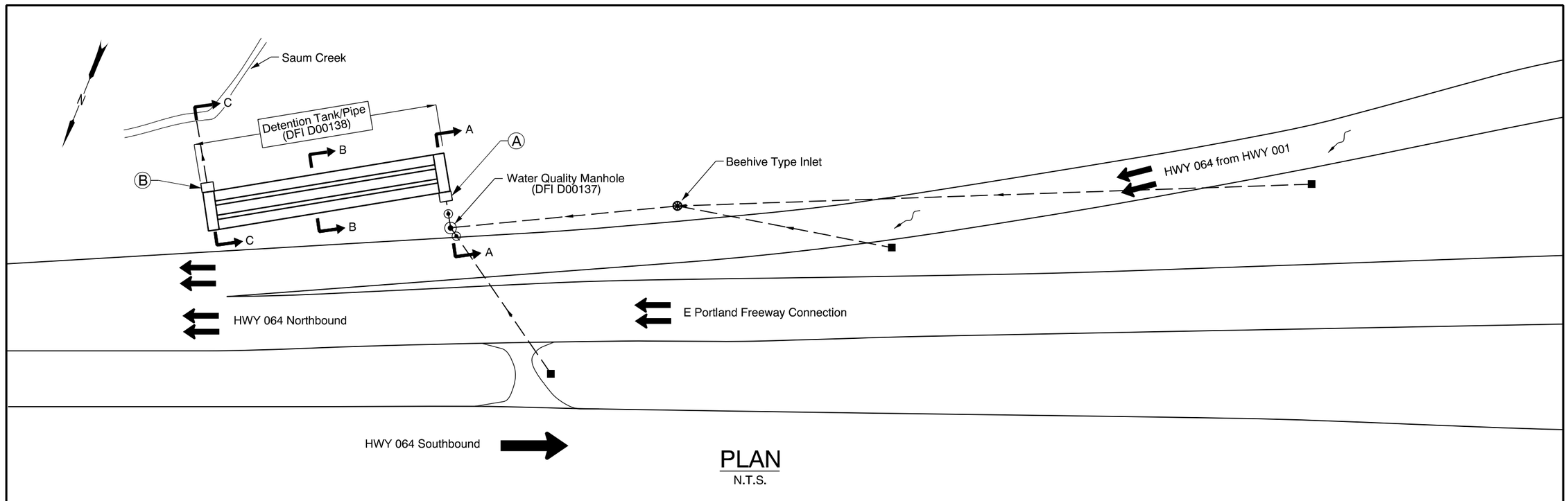
Contact any of the following for more detailed information about management of waste materials found on site:

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

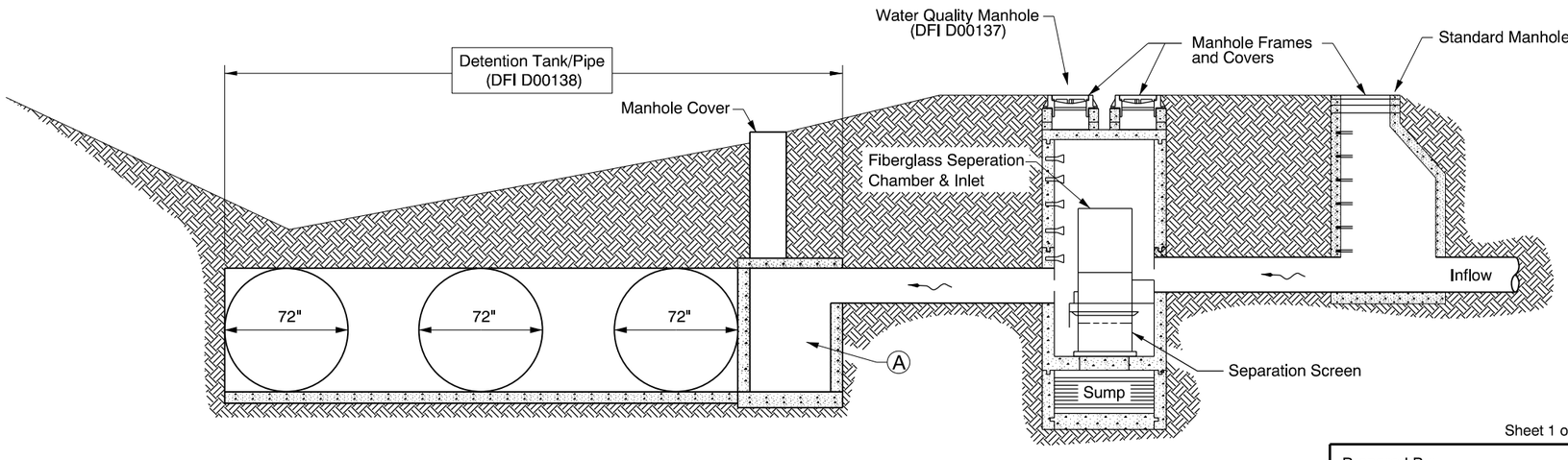
Appendix A

Content:

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



PLAN
N.T.S.



PROFILE A-A
N.T.S.

LEGEND

- Traffic Direction
- Flow Path
- Manhole
- Catch Basin
- (A) Inlet Vault
- (B) Outlet Vault

Sheet 1 of 2

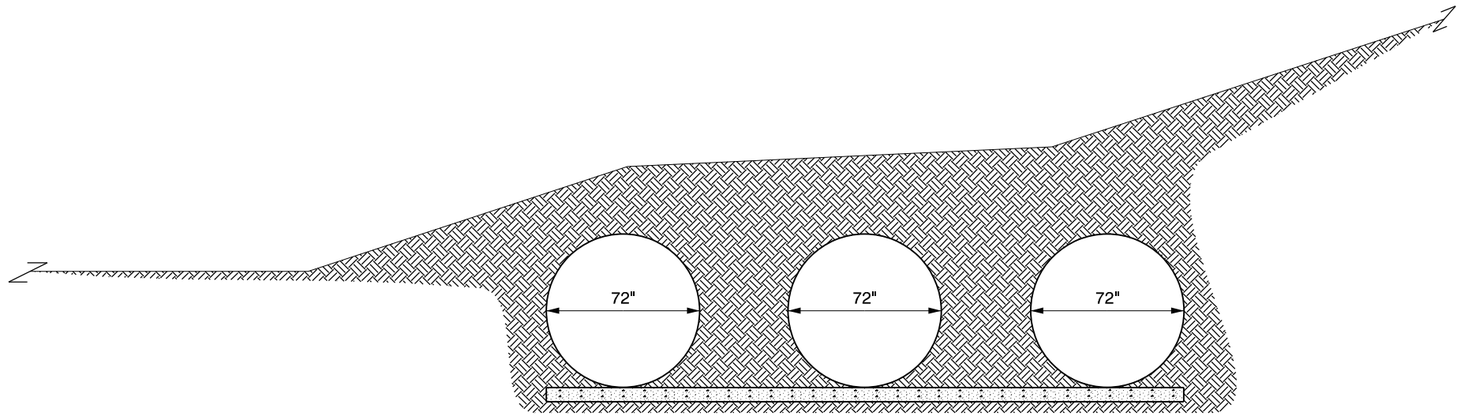
OREGON DEPARTMENT OF TRANSPORTATION

Prepared By: Brooklyn Scholz

Drafted By: Brooklyn Scholz

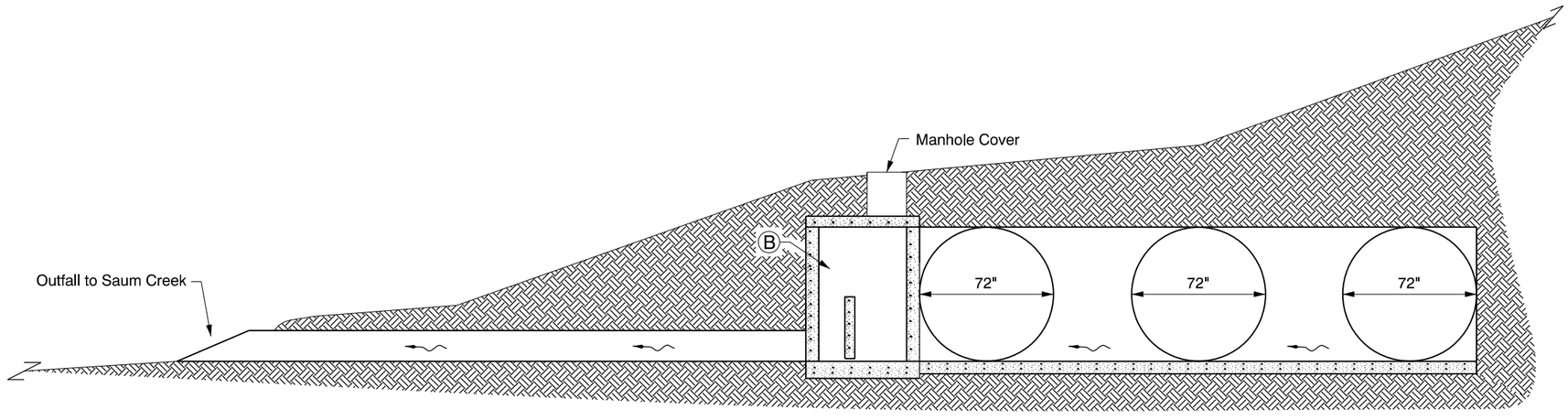
DFI D00138
MAINTENANCE DISTRICT 2B HWY 064
DETENTION TANK/PIPE
HIGHWAY MP 1.00
WASHINGTON

D00138_Operational_Plan.dgn



PROFILE B-B

N.T.S.



PROFILE C-C

N.T.S.

Sheet 2 of 2

OREGON DEPARTMENT OF TRANSPORTATION

Prepared By: Brooklyn Scholz

Drafted By: Brooklyn Scholz

DFI D00138
MAINTENANCE DISTRICT 2B HWY 064
DETENTION TANK/PIPE
HIGHWAY MP 1.00
WASHINGTON

D00138_Operational_Plan.dgn

Appendix B

Content:

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

Revised Plan
Sheets Incorporated

39V-58

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
1	Title Sheet
1A, 1B	Index Of Sheets Cont'd.
1C	Std. Drg. Nos.

Revised Plan
Sheets Incorporated

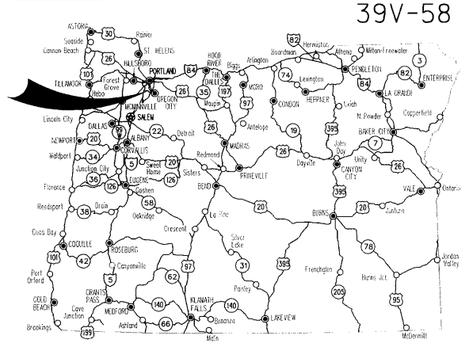
STATE OF OREGON
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED PROJECT

GRADING, DRAINAGE, STRUCTURES, PAVING, SIGNING & ILLUMINATION

I-205: WILLAMETTE RIVER BR. - PACIFIC HWY. (UNIT 3) SEC.

EAST PORTLAND FREEWAY

CLACKAMAS & WASHINGTON COUNTIES
APRIL 2006

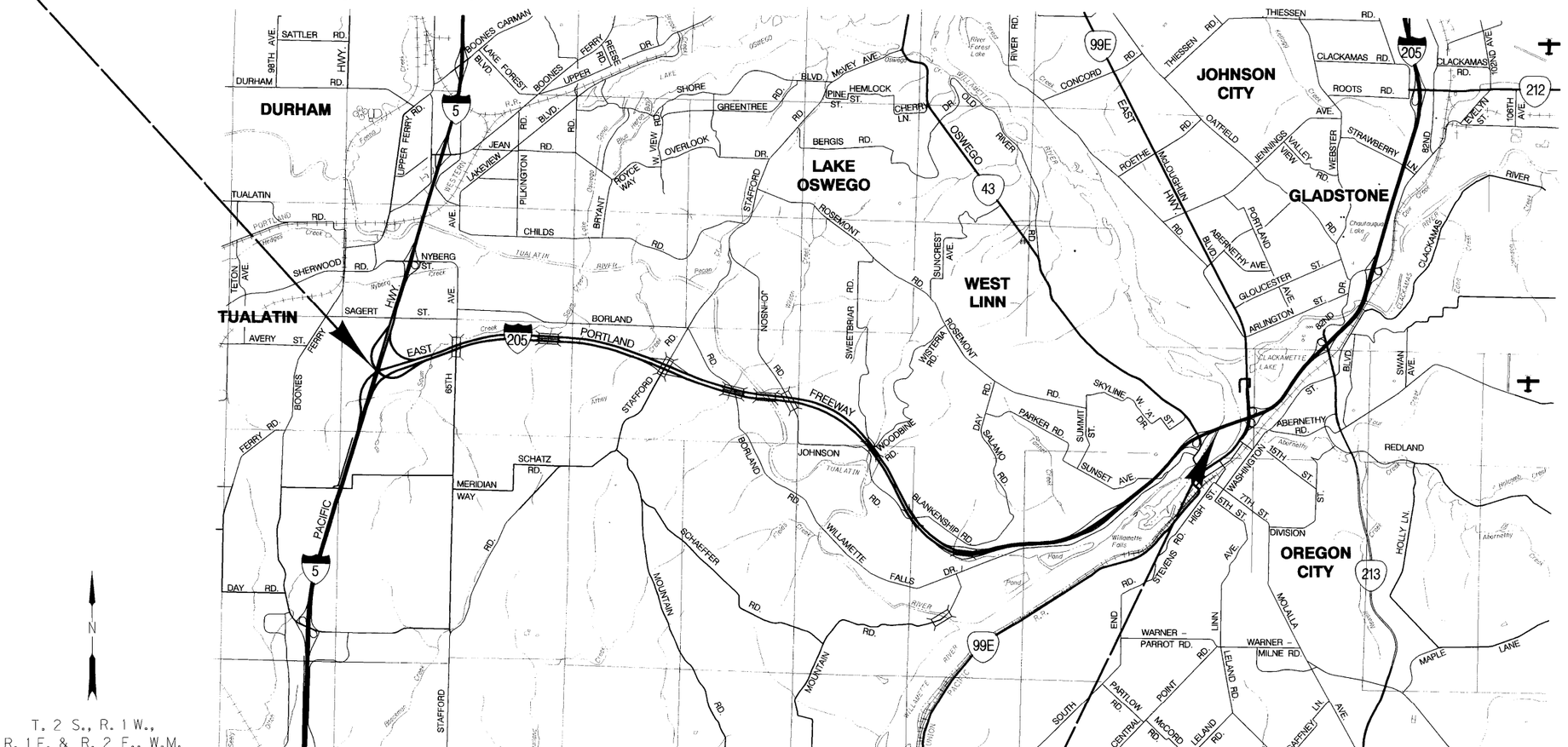


Overall Length Of Project - 8.90 Miles

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.)

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

END OF PROJECT IM-OTIA-S064(032)
STA. "LS2" 1231+71.15 (M.P. -0.10)



T. 2 S., R. 1 W.,
R. 1 E. & R. 2 E., W.M.

BEGINNING OF PROJECT IM-OTIA-S064(032)
STA. "L" 735+41.85 (M.P. 8.80)

OREGON TRANSPORTATION COMMISSION

Stuart Foster	CHAIRMAN
Gail L. Achterman	COMMISSIONER
Mike Nelson	COMMISSIONER
Randall Papé	COMMISSIONER
Janice J. Wilson	COMMISSIONER
Matthew Garrett	DIRECTOR OF TRANSPORTATION

REGISTERED PROFESSIONAL ENGINEER
14,953
OREGON
JULY 25, 1990
LAWRENCE H. FOX

EXPIRES: 12/31/07

LAWRENCE H. FOX
OBEC CONSULTING ENGINEERS - PROJECT MANAGER

OREGON DEPARTMENT OF TRANSPORTATION
CONCURRENCE

TECHNICAL SERVICES MANAGING ENGINEER — DATE 2/23/06

I-205: WILLAMETTE RIVER BR. - PACIFIC HWY. (UNIT 3) SEC.
EAST PORTLAND FREEWAY
CLACKAMAS & WASHINGTON COUNTIES

FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
OREGON DIVISION	IM-OTIA-S064(032)	1

File No. 15980

I:\Projects\019\019082\Roadway\12874fs.tsl 2/7/2006

Sec. 25, T. 2 S., R. 1 W., W.M.

39V-58

"LN2" 1170+00

"G2" 1170+00

"G2" 1173+12.05 P.S.

"LN2" 1175+00

"G2" 1175+00

"G2" 400.00' Sp. S 4°00'00" a 0.5

"G2" 1177+12.05 P.S.C.

"G2" 2°00'00" C.L. 10°08'30" T△ Ts 454.38' e 6.5%

"G2" 1178+19.14 P.C.S.

"LN2" 1180+00

"G2" 1180+00

"G2" 400.00' Sp. S 4°00'00" a 0.5

"G2" 1182+19.14 P.T.

"G2" LINE

"G2" 1185+14.11 P.S.

"G2" 1185+00

"LN2" 1185+00

R/W

S68°05'25"W

S70°35'25"W

S57°56'55"W

I-205 NB

"LN2" LINE

"LS2" LINE

I-205 SB

"LS2" 1175+00

"LS2" 1177+66.10 P.O.T., 12' Rt. = "LS2" 1177+66.10 P.O.C.

"LS2" 0°15'00" C.R. △ 4°24'30" T 882.10' e 2%

"LS2" 1180+00

"F2" 1181+16.10 P.S.

"F2" 300.00' Sp. S 9°00'00" a 2.0

"F2" LINE

"F2" 1184+16.10 P.S.C.

"LS2" 1185+00

"F2" 1185+00

"LS2" 1185+00.65 P.T.

"F2" 6°00'00" C.R. T△ 96°35'30" Ts 1071.63' e 10%

"NC2" 1184+98.86 P.S., 12' Rt. = "LN2" 1184+98.86 P.O.T.

"NC2" 1185+00

S76°25'18"W

S74°06'30"W

R/W

REGISTERED PROFESSIONAL ENGINEER
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OREGON
JULY 5, 1983
JEROME D. LANE

EXPIRES: 12/31/06

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1335 POPLAR DRIVE MEDFORD, OREGON 97504-6207

OREGON DEPARTMENT OF TRANSPORTATION
ROADWAY ENGINEERING SECTION

I-205: WILLAMETTE RIVER BR. - PACIFIC HWY. (UNIT 3) SEC.
EAST PORTLAND FREEWAY
CLACKAMAS & WASHINGTON COUNTIES

Design Team Leader - Jerry Lane
Designed By - Tom Metcalf
Drafted By - Serban Dinca

ALIGNMENT PLAN

SHEET NO. 37

File No. 16245

1:1200 - 5

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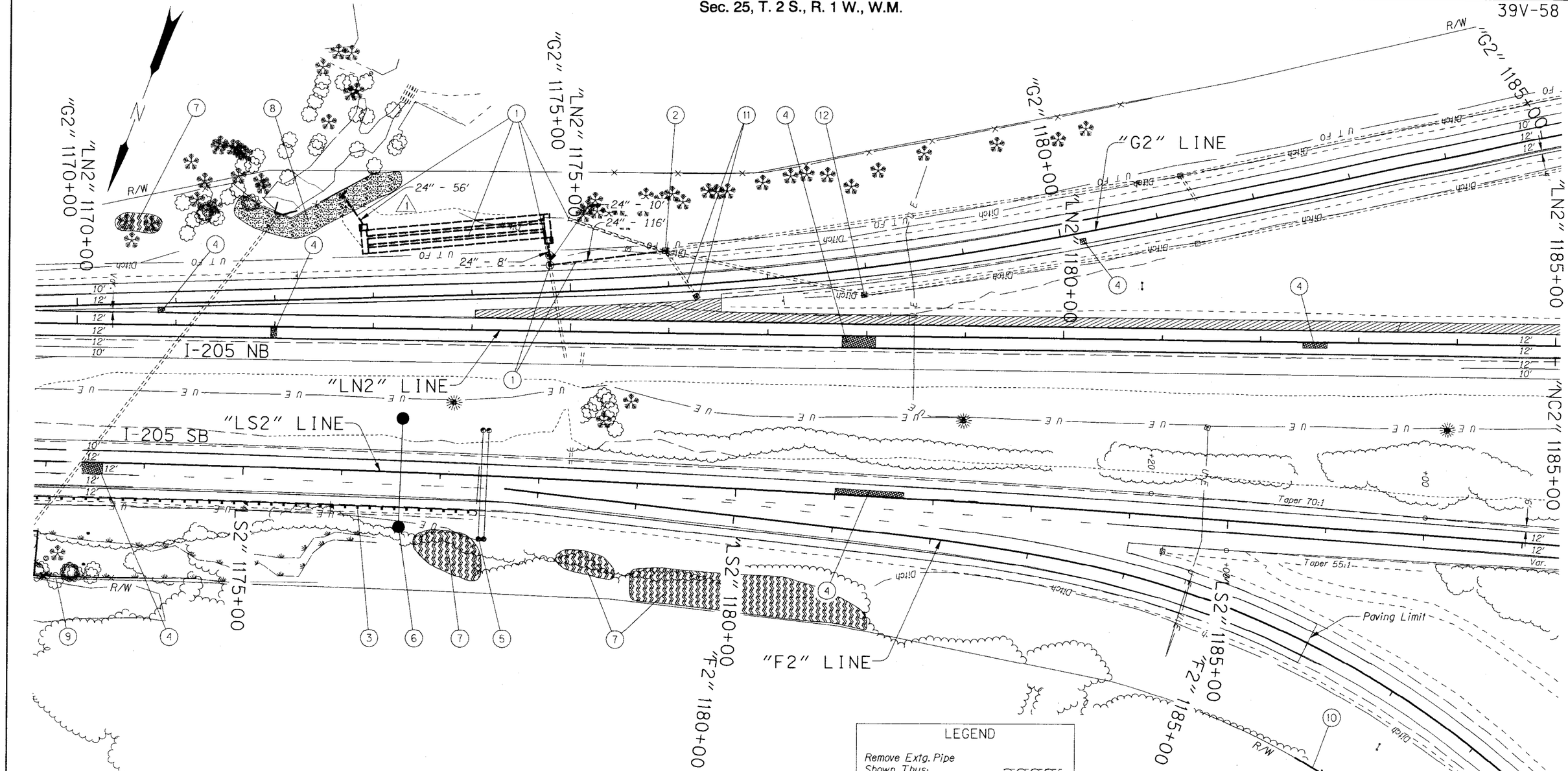
2/6/2006

Sec. 25, T. 2 S., R. 1 W., W.M.

39V-58



LEGEND

- *Remove Extg. Pipe Shown Thus:*
- *Continuously Reinf. Conc. Pvmt. Repair Shown Thus:*
- *Remove Extg. Surfacing Shown Thus:*
- *Type "A" Weed Control Shown Thus:*
- *Type "B" Weed Control Shown Thus:*

REVISIONS	
1	Revised 03-23-2006 Revised Slope Limits

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OREGON DEPARTMENT OF TRANSPORTATION
ROADWAY ENGINEERING SECTION

I-205: WILLAMETTE RIVER BR. - PACIFIC HWY. (UNIT 3) SEC.
EAST PORTLAND FREEWAY
CLACKAMAS & WASHINGTON COUNTIES

Design Team Leader - Jerry Lane
Designed By - Tom Metcalf
Drafted By - Serban Dinca

GENERAL CONSTRUCTION

SHEET NO. 37A

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File No. 16246 1:1200 - 1

(1) *Sta. "LN2" 1174+77.9, 67.7' Lt.*
Remove Extg. Pipe
Const. Conc. Manhole
Connect To Extg. Pipe
Const. Water Quality Manhole
Inst. 24" Sew. Pipe - 190'
10' Depth
Const. Underground Detention Facility #7
(For Details, See Sht. GJ-10)

(2) *Adjust Inlet - 3*

(3) *See Sht. 36B, Note 11*
Const. Guardrail (Type 2A)
Const. Anchor (Type 1 Mod.)
Inst. End Piece (Type B)

(4) *Continuously Reinf. Conc.*
Pvmt. Repair - 159 Sq. Yd.
△1 *(For Details, See Shts. 2B-18, 2B-19 & 2B-20)*

(5) *Sta. "LS2" 1177+50*
Remove Extg. Sign Bridge
(For Drg. Nos., See Sht. 1A)

(6) *Sta. "LS2" 1176+60*
Const. Sign Bridge
(For Drg. Nos., See Sht. 1A)

(7) *Type "A" Weed Control*

(8) *Type "B" Weed Control*

(9) *See Sht. 36B, Note 20*

(10) *Sta. "LS2" 1185+87 To Sta. "LS2" 1186+20, Rt.*
Remove Type 2 Fence - 40'
Const. Type 2 Fence - 40'

(11) *Sta. "LN2" 1176+27.66, 39.27' Rt.*
Remove Extg. Inlet
Abandon Extg. Pipe

(12) *Sta. "LN2" 1177+96.48, 42.48' Rt.*
Remove Extg. Inlet
Const. Type "G-2MA" Inlet

REVISIONS	
△1	Revised 04-10-2006 Revised Note

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OREGON DEPARTMENT OF TRANSPORTATION
ROADWAY ENGINEERING SECTION

I-205: WILLAMETTE RIVER BR. - PACIFIC HWY. (UNIT 3) SEC.
EAST PORTLAND FREEWAY
CLACKAMAS & WASHINGTON COUNTIES

Design Team Leader - Jerry Lane
Designed By - Tom Metcalf
Drafted By - Serban Dinca

CONSTRUCTION NOTES

SHEET NO. 37B

39V-58

"LN2" LINE

210
200
190
180
170
160
150

24"
Subgrade
Extg. Ground @ ℄
+27.66, 39.27' Rt.
Remove Extg. Inlet
Const. Type "G-2MA" Inlet
Rim 184.60
F.L. 180.81 (Extg.)
Extg. Pipe
24" - 116'
@ 4.6%
For Details,
See Sht. GJ-10
24"
Subgrade
Exc. 810 C.Y.
Emb. 1520 C.Y.
△1

1170+00
1175+00
1180+00
1185+00

REVISIONS	
△1	Revised 04-10-2006 Revised Quantity

REGISTERED PROFESSIONAL ENGINEER
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JEROME D. LANE
EXPIRES: 12/31/06

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OREGON DEPARTMENT OF TRANSPORTATION
ROADWAY ENGINEERING SECTION

I-205: WILLAMETTE RIVER BR. - PACIFIC HWY. (UNIT 3) SEC.
EAST PORTLAND FREEWAY
CLACKAMAS & WASHINGTON COUNTIES

Design Team Leader - Jerry Lane
Designed By - Tom Metcalf
Drafted By - Serban Dinca

PROFILE

SHEET NO. 37C

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File No. 16248 1:1200 - 2

39V-58

"LS2" LINE

220
210
200
190
180
170
160
150

17"
Subgrade
Extg. Ground @ ℄
17"
Subgrade

Exc. 330 C.Y.
Emb. 1360 C.Y.

1175+00
1180+00
1185+00

REGISTERED PROFESSIONAL ENGINEER
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OREGON DEPARTMENT OF TRANSPORTATION
ROADWAY ENGINEERING SECTION

I-205: WILLAMETTE RIVER BR. -
PACIFIC HWY. (UNIT 3) SEC.
EAST PORTLAND FREEWAY
CLACKAMAS & WASHINGTON COUNTIES

Design Team Leader - Jerry Lane
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Drafted By - Yoshi Ishii

PROFILE

SHEET NO.
37D

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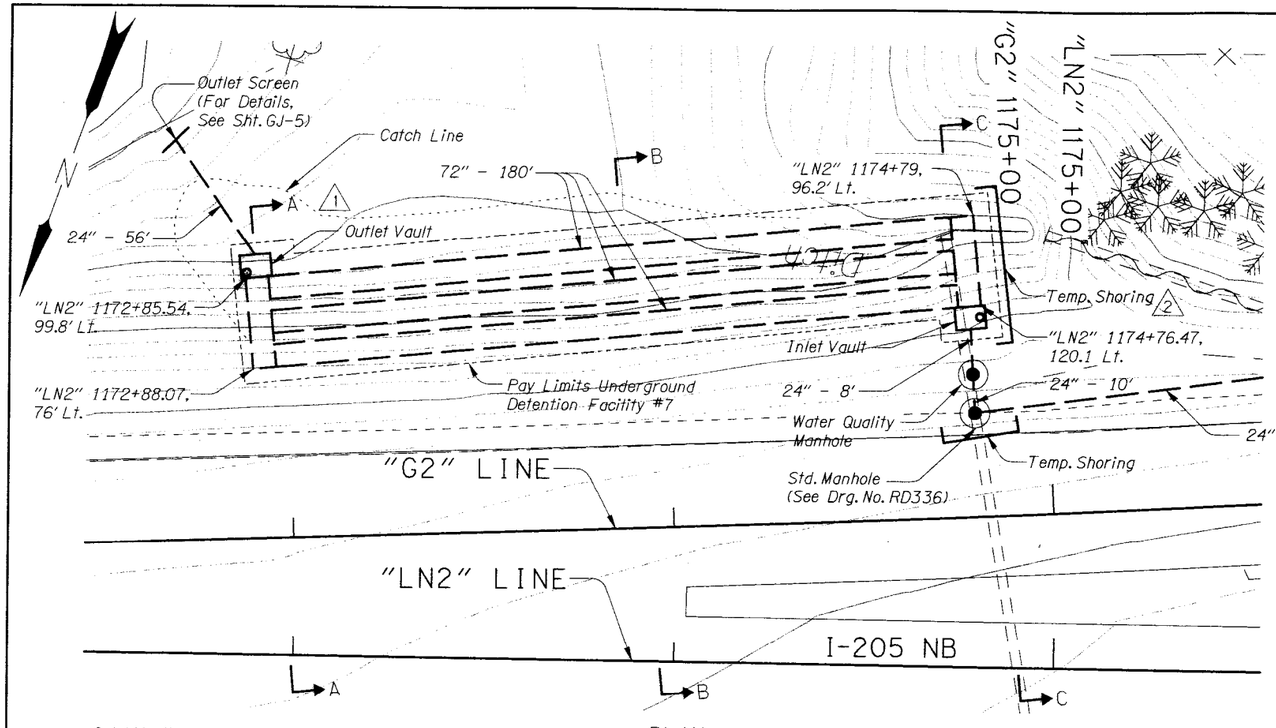
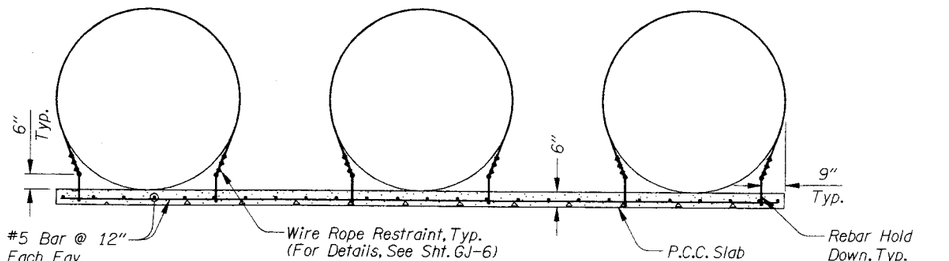
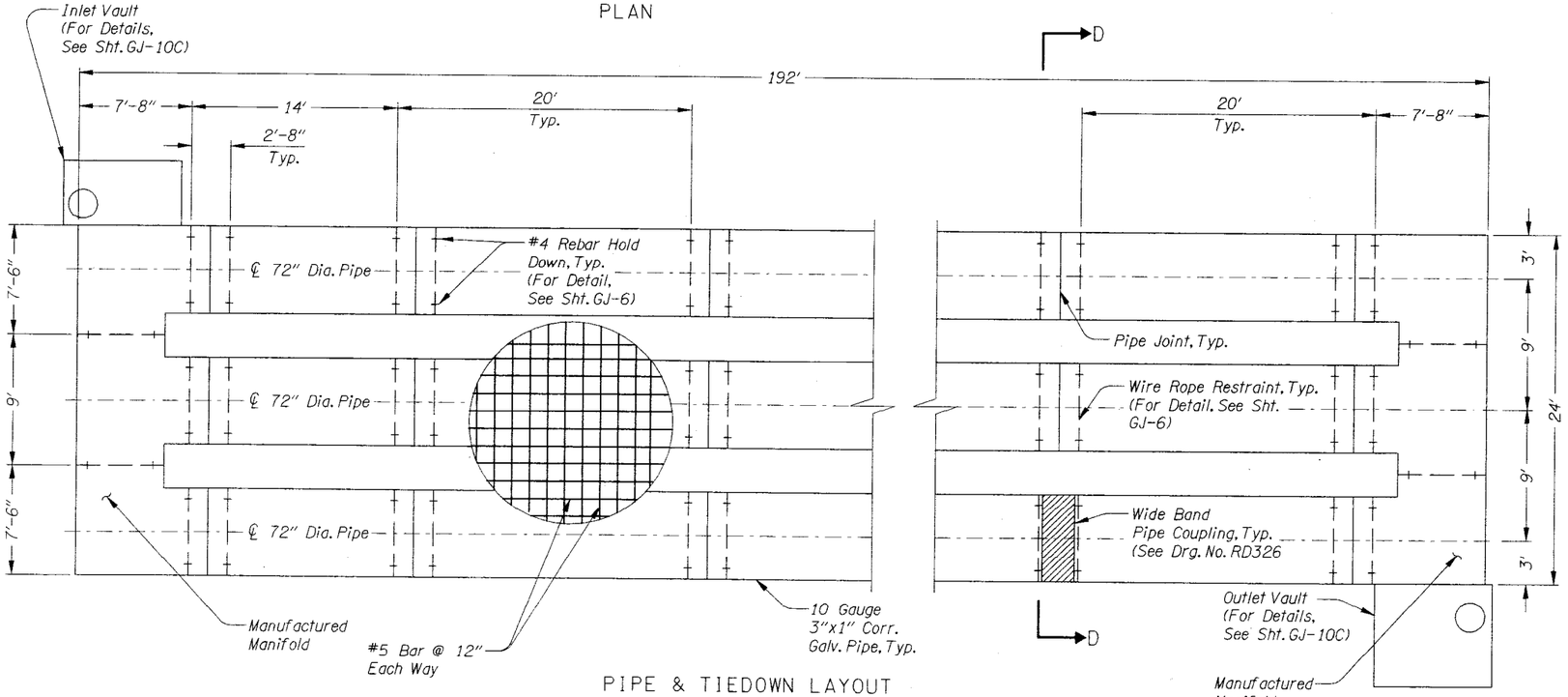
1335 POPLAR DRIVE MEDFORD, OREGON 97504-5207



PLAN



SECTION D-D



PIPE & TIEDOWN LAYOUT

UNDERGROUND DETENTION FACILITY #7

(See Sht. 37A, Note 1)

REVISIONS	
1	Revised 03-23-2006 Revised Catch Line
2	Revised 03-23-2006 Added Temp. Shoring

REGISTERED PROFESSIONAL ENGINEER
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OREGON
JULY 5, 1983
JEROME D. LANE
Jerome D. Lane
EXPIRES: 12/31/06

OREGON DEPARTMENT OF TRANSPORTATION
ROADWAY ENGINEERING SECTION

I-205: WILLAMETTE RIVER BR. - PACIFIC HWY. (UNIT 3) SEC.
EAST PORTLAND FREEWAY
CLACKAMAS & WASHINGTON COUNTIES

Design Team Leader - Jerry Lane
Designed By - James Kent
Drafted By - Mathew Bunde

UNDERGROUND DETENTION FACILITY #7

SHEET NO. GJ-10

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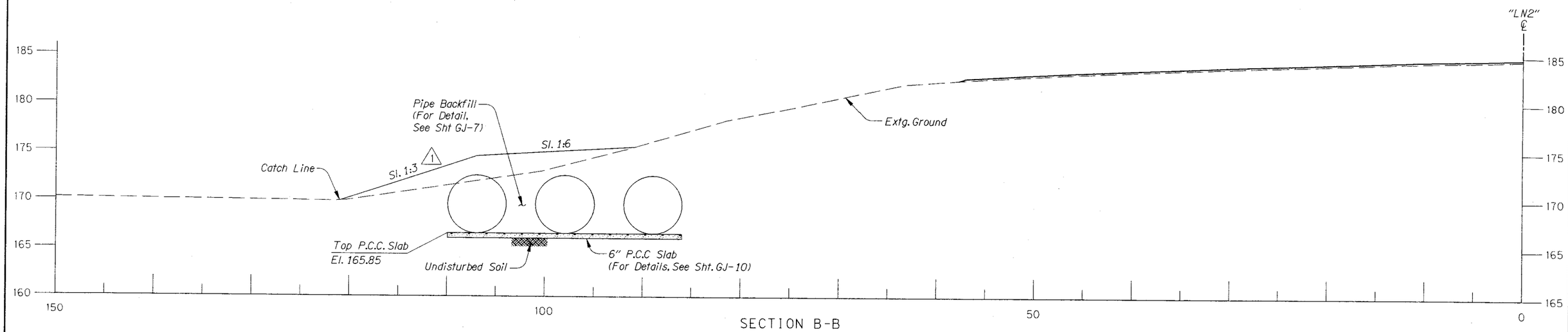
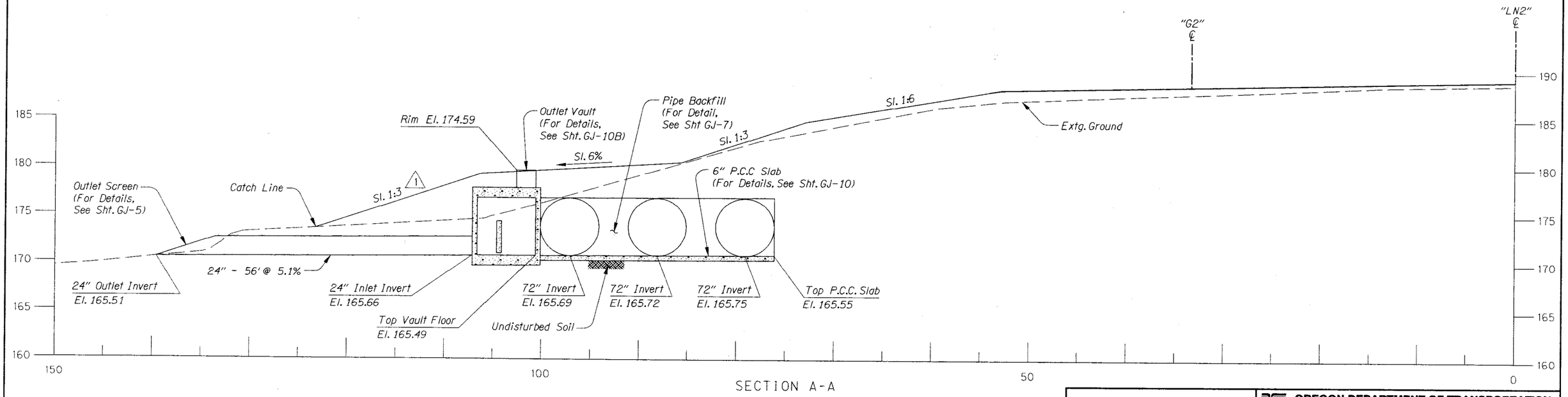
2235 MISSION STREET SE, SUITE 100 SALEM, OREGON 97302-1295
1335 POPLAR DRIVE MEDFORD, OREGON 97504-5207



SECTION B-B



SECTION A-A

REVISIONS	
1	Revised 03-23-2006 Revised Slope

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JEROME D. LANE
EXPIRES: 12/31/06

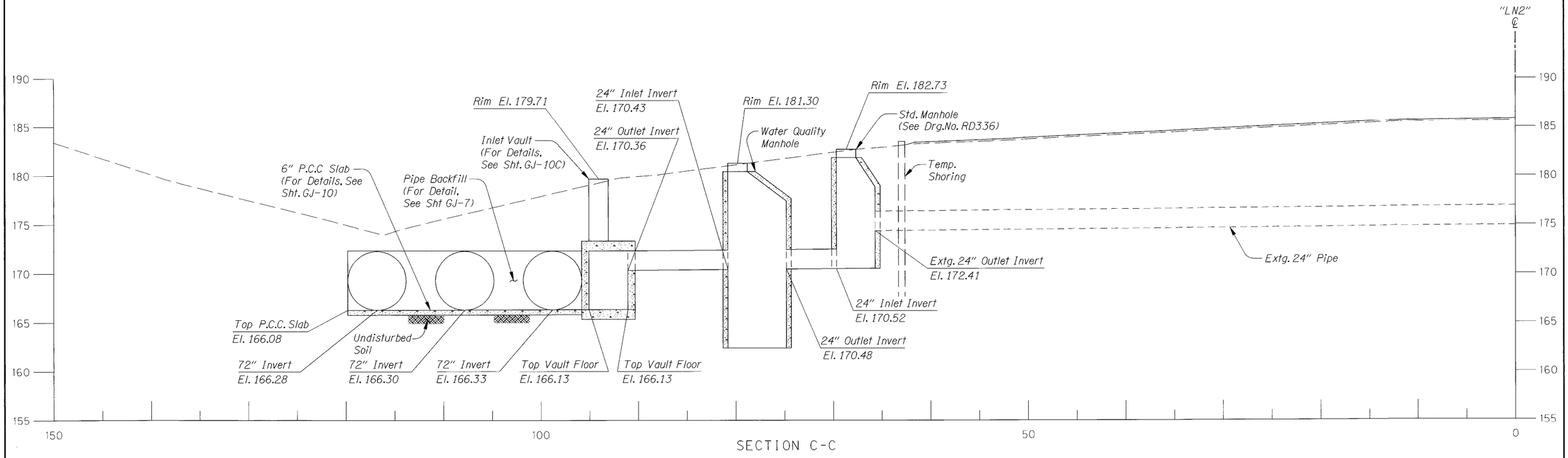
OREGON DEPARTMENT OF TRANSPORTATION
ROADWAY ENGINEERING SECTION

I-205: WILLAMETTE RIVER BR. - PACIFIC HWY. (UNIT 3) SEC.
EAST PORTLAND FREEWAY
CLACKAMAS & WASHINGTON COUNTIES

Design Team Leader - Jerry Lane
Designed By - James Kent
Drafted By - Mathew Bunde

UNDERGROUND DETENTION FACILITY #7 CROSS SECTIONS

SHEET NO. GJ-10A



SECTION C-C

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REGISTERED PROFESSIONAL ENGINEER
12295
Jerome D. Lane
OREGON
JULY 5, 1983
JEROME D. LANE
EXPIRES: 12/31/06

OREGON DEPARTMENT OF TRANSPORTATION
ROADWAY ENGINEERING SECTION

I-205: WILLAMETTE RIVER BR. - PACIFIC HWY. (UNIT 3) SEC.
EAST PORTLAND FREEWAY
CLACKAMAS & WASHINGTON COUNTIES

Design Team Leader - Jerry Lane
Designed By - James Kent
Drafted By - Mathew Bunde

UNDERGROUND DETENTION FACILITY #7 CROSS SECTIONS

SHEET NO. GJ-10B

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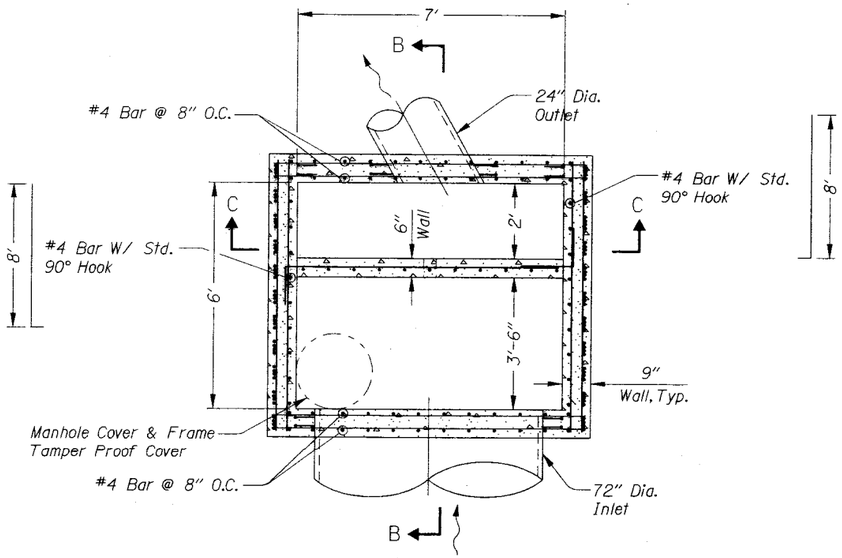


PLAN

GENERAL NOTES:

All Material And Workmanship Shall Conform To The 2002 Oregon Standard Specifications For Construction.

Entry & Outlet Vaults Designed For HL-93 Live Load.

Concrete Members Designed By Load Factor Design Method.

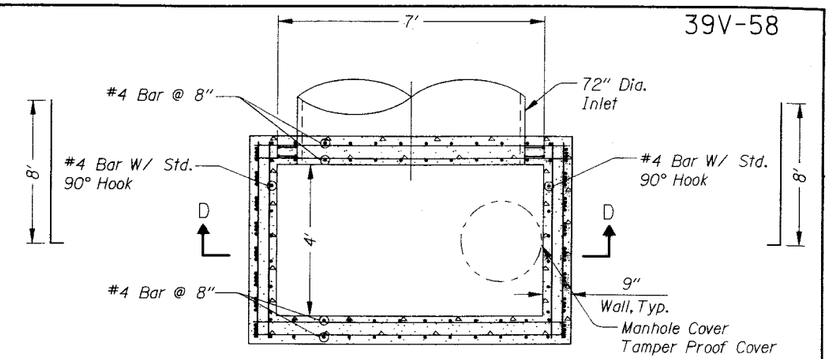
All Reinforcement Steel Shall Conform To Astm Specification A615, Grade 60 Or A706.

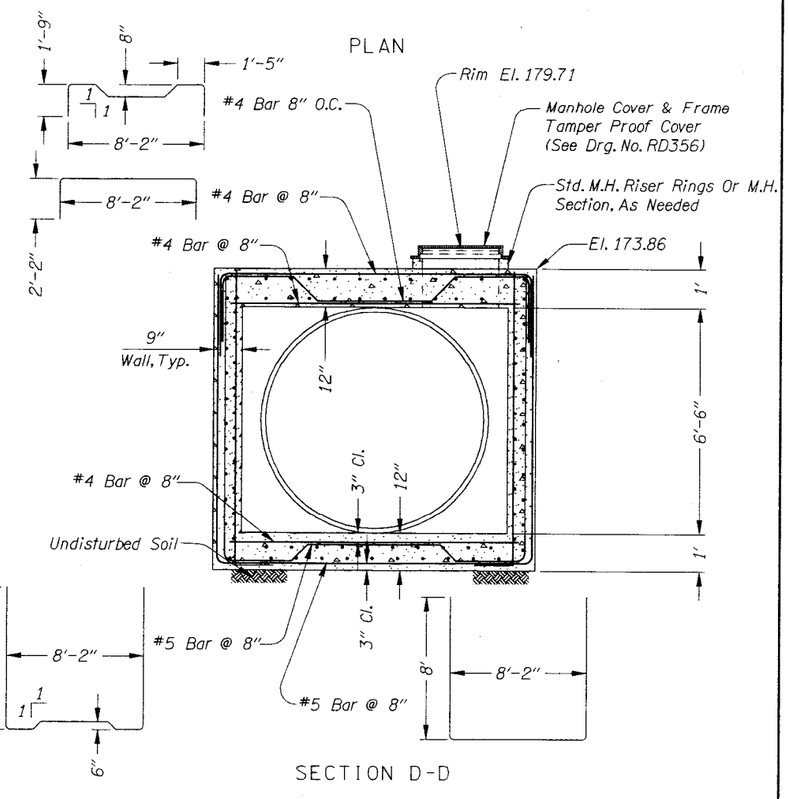
The Following Splice Lengths Shall Be Used,

Bar Size		3	4	5	6	7	8	9	10	11
Splice Length	Uncoated	1'-0"	1'-4"	1'-8"	2'-0"	2'-8"	3'-6"	4'-4"	5'-7"	6'-9"
	Epoxy Coated	1'-5"	1'-10"	2'-4"	2'-10"	3'-9"	4'-11"	6'-1"	7'-10"	9'-6"

All Bars Shall Be Placed 2" Clear Of The Nearest Face Of Concrete Unless Shown Otherwise.

Concrete In Box Culverts Shall Be Class 3600-1½" Or ¾"

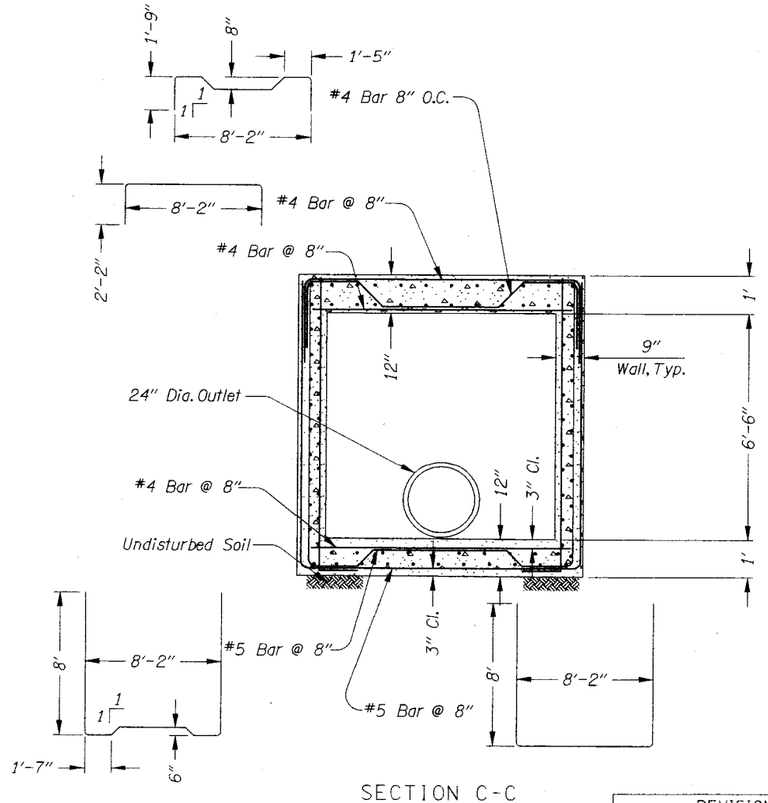




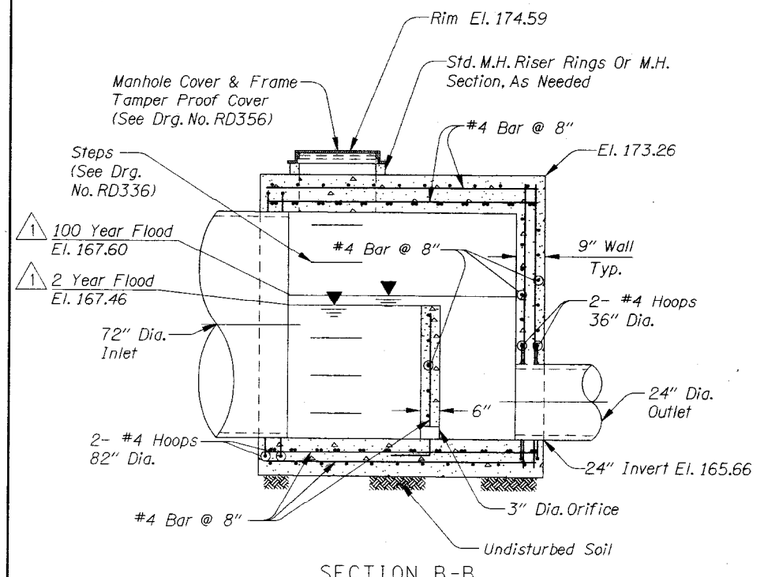
PLAN

SECTION D-D

INLET VAULT



SECTION C-C



SECTION B-B

OUTLET VAULT

REVISIONS	
1	Revised 03-23-2006 Revised Elevations

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UNDERGROUND DETENTION FACILITY #7 DETAILS

SHEET NO. GJ-10C