

# OPERATION & MAINTENANCE MANUAL

DFI No. : D00146

Facility Type: Detention Tank/Pipe



JULY, 2011

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## 1. Identification

Drainage Facility ID (DFI): **D00146**  
Facility Type: Detention Tank/Pipe  
Construction Drawings: (V-File Number) 39V-058  
Location: District: 2B (Old 2A)  
Highway No.: 064  
Mile Post: 1.81; 1.83 (beg./end)  
Description: This facility is located on the right shoulder of southbound I-205 (Hwy 064) west of Prosperity Park Road. Access to the facility can be obtained from the southbound travel lanes.

## 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: Consultant Designer – OBEC Consulting  
Engineering, Jerome D. Lane, 503-589-4100  
Facility construction: 2006  
Contractor: Oregon Mainline Paving, LLC 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 detention tank/pipe facility is located west of Prosperity Park Road and east of 65<sup>th</sup> Avenue. The facility treats and detains sheet flow stormwater runoff from both the north and southbound travel lanes of I-205 (Hwy 064) and the surrounding grass median area. The runoff and ditch flows are directed to the detention system after receiving initial treatment from having flowed through a water quality manhole (D00145) (see points A and B in Operational Plan, Appendix A). Runoff from each of these sources is conveyed by a 18-inch storm pipe to a specially engineered water quality manhole. After treatment, the water flows from the manhole through an 18-inch storm pipe and discharges into the remaining system. The facility, itself, consists of two 100-foot long, 60-inch diameter detention pipes, used to detain the stormwater runoff (see point C in Operational Plan; Appendix A).

After detainment, the water quality flows are discharged through the outlet vault for flow control, and out of the facility through an 18-inch pipe (see points E and F on Operational Plan).

##### A. Maintenance equipment access:

Access to the facility is attainable along the right shoulder of southbound I-205. The facility is equipped with an inlet vault (point D of the Operational Plans, Appendix A), which serves as a direct access point into the facility for maintenance.

##### 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 down into outlet vault, Point E, Operational Plan.



Photo 2: Looking down into outlet vault, Point E, Operational Plan.

## 5. Facility Haz Mat Spill Feature(s)

The detention tank/pipe can be used to store a volume of liquid by blocking the 18-inch diameter outlet pipe located inside of the system's outlet vault. This pipe is noted as point E in the Operational Plans, Appendix A.

## 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

This facility does not possess an auxiliary outlet feature.

## 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

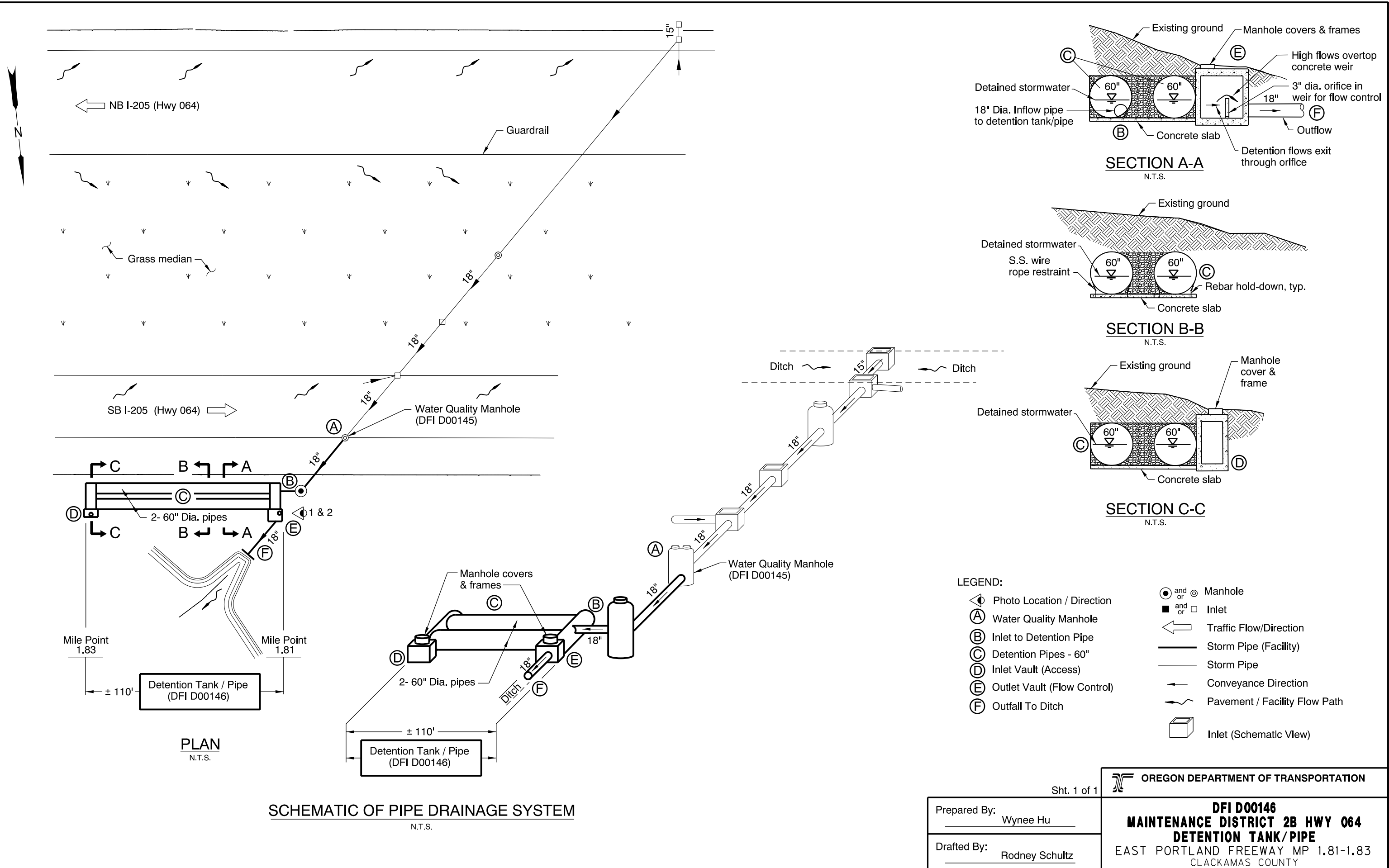
ODOT Statewide Hazmat Coordinator (503) 229-5129  
ODOT Region Hazmat Coordinator (503) 731-8304  
ODEQ Northwest Region Office (503) 229-5263



# Appendix A

## Content:

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



- LEGEND:**
- ◁ Photo Location / Direction
  - ⊙ and ⊙ Manhole
  - Ⓐ Water Quality Manhole
  - Ⓑ Inlet to Detention Pipe
  - Ⓒ Detention Pipes - 60"
  - Ⓓ Inlet Vault (Access)
  - Ⓔ Outlet Vault (Flow Control)
  - Ⓕ Outfall To Ditch
  - ◁ and ⊙ Inlet
  - ← Traffic Flow/Direction
  - Storm Pipe (Facility)
  - Storm Pipe
  - Conveyance Direction
  - ~ Pavement / Facility Flow Path
  - ▢ Inlet (Schematic View)

Sht. 1 of 1 OREGON DEPARTMENT OF TRANSPORTATION

Prepared By: Wynee Hu  
 Drafted By: Rodney Schultz

**DFI D00146**  
**MAINTENANCE DISTRICT 2B HWY 064**  
**DETENTION TANK/PIPE**  
 EAST PORTLAND FREEWAY MP 1.81-1.83  
 CLACKAMAS COUNTY

**SCHMATIC OF PIPE DRAINAGE SYSTEM**  
 N.T.S.

# Appendix B

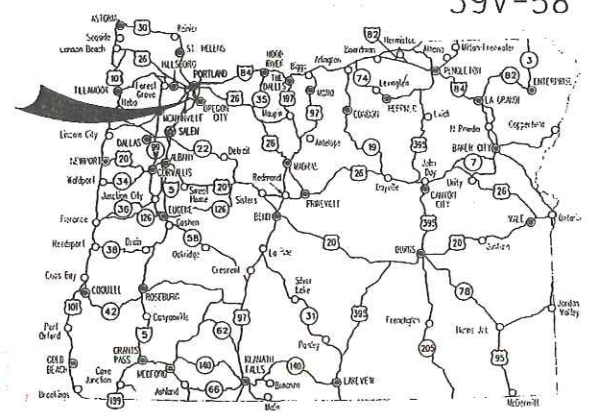
## Content:

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

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

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**

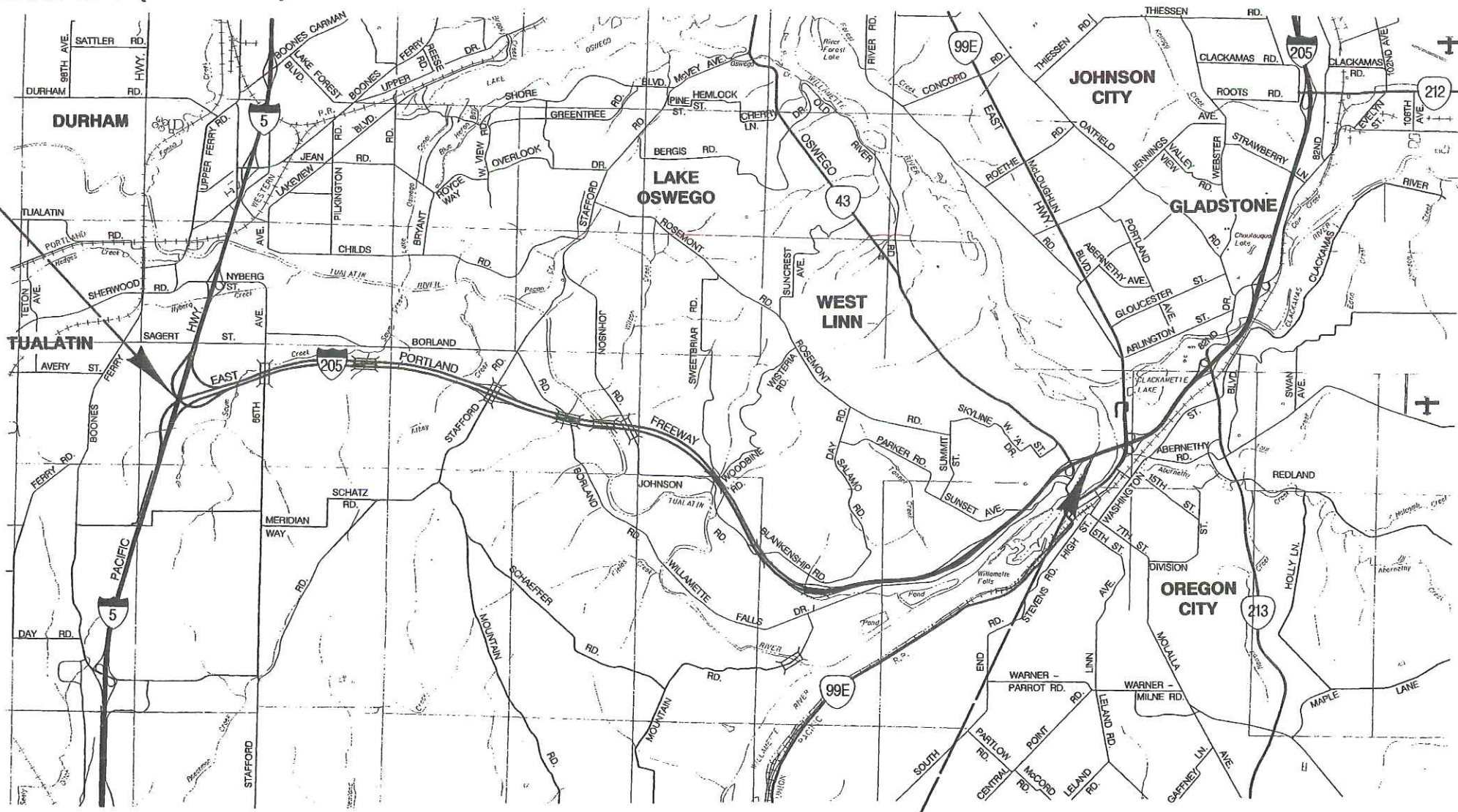


Overall Length Of Project - 8.90 Miles

**"AS CONSTRUCTED"**  
*Mark B. Green*  
 Date 6/26/09 Project Mgr

**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.)

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



LET'S ALL  
 WORK TOGETHER  
 TO MAKE THIS  
 JOB SAFE

- 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 |



EXPIRES: 12/31/07

LAWRENCE H. FOX  
 OBEC CONSULTING ENGINEERS - PROJECT MANAGER

OREGON DEPARTMENT OF TRANSPORTATION  
 CONCURRENCE  
*Harold E. Suley* 2/23/06  
 TECHNICAL SERVICES MANAGING ENGINEER DATE

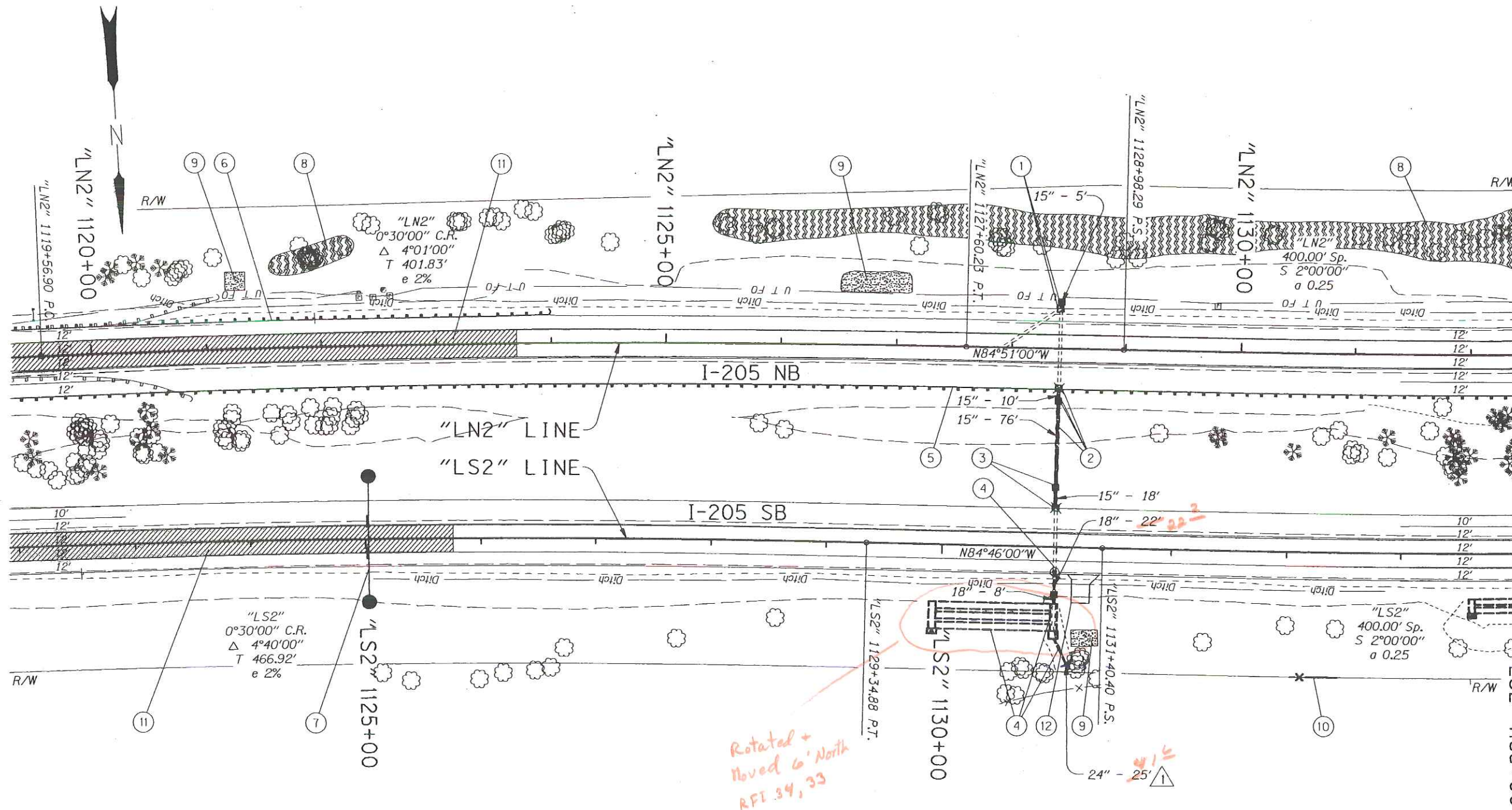
**I-205: WILLAMETTE RIVER BR. -  
 PACIFIC HWY. (UNIT 3) SEC.  
 EAST PORTLAND FREEWAY  
 CLACKAMAS & WASHINGTON COUNTIES**

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



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)**



- ① Sta. "LN2" 1128+41.9, 40.1' Lt.  
Cap Extg. Inlet  
Const. Type "G-2MA" Inlet  
Extend 15" Sew. Pipe - 5' Lt.  
5' Depth
- ② Sta. "LN2" 1128+41.9, 46.3' Rt.  
Remove Extg. Pipe  
Cap Extg. Inlet  
Const. Type "G-2MA" Inlet  
Inst. 15" Sew. Pipe - 76'  
Inst. 15" Sew. Pipe - 10'  
10' Depth
- ③ Sta. "LS2" 1130+98, 52.5' Lt.  
Cap Extg. Inlet  
Const. Type "G-2MA" Inlet  
Extend 15" Sew. Pipe - 18' Lt.  
5' Depth
- ④ Sta. "LS2" 1130+98.6, 44.2' Rt.  
Const. Type "G-2MA" Inlet  
Inst. 18" Sew. Pipe - 30'  
5' Depth  
Const. Water Quality Manhole  
Inst. 24" Sew. Pipe - 25'  
5' Depth  
Const. Underground Detention Facility #2  
(For Details, See Sht. GJ-5)
- ⑤ See Sht. 32A, Note 10  
Remove Extg. Guardrail  
Const. Guardrail (Type 2A)
- ⑥ See Sht. 32A, Note 11  
Remove Extg. Guardrail  
Const. Guardrail (Type 2A)  
Const. Guardrail Terminal, Non-Flared (50')  
Flare Rate=0, W=1', E=0
- ⑦ Sta. "LS2" 1125+00  
Const. Sign Bridge  
(For Drg. Nos., See Sht. 1A)
- ⑧ Type "A" Weed Control
- ⑨ Type "B" Weed Control
- ⑩ Sta. "LS2" 1133+00 To  
Sta. "LS2" 1133+45, Rt.  
Remove Type 2 Fence - 45'  
Const. Type 2 Fence - 45'
- ⑪ See Sht. 32A, Note 19
- ⑫ Sta. "LS2" 1131+20, Rt.  
Const. Conc. Parking Pad - 50 Sq. Yd.  
(For Details, See Sht. 2B-13)

Rotated +  
Moved 6' North  
RFI 34, 33

**"AS CONSTRUCTED"**  
*Mark Bevan*  
Date 6/26/09 Project Mngr

**LEGEND**

Remove Extg. Pipe Shown Thus:	
Remove Extg. Surfacing Shown Thus:	
Type "A" Weed Control Shown Thus:	
Type "B" Weed Control Shown Thus:	

**REVISIONS**

	Revised 04-10-2006
	Revised Drainage



**OREGON DEPARTMENT OF TRANSPORTATION  
ROADWAY ENGINEERING SECTION**

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

EAST PORTLAND FREEWAY  
CLACKAMAS & WASHINGTON COUNTIES

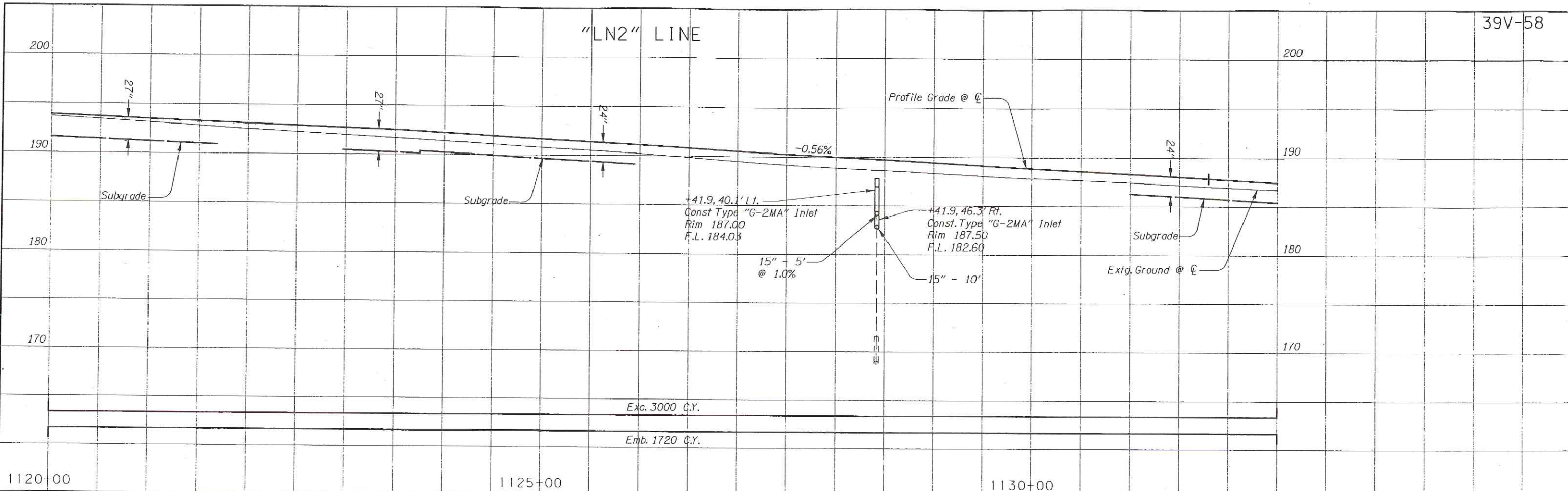
Design Team Leader - Jerry Lane  
Designed By - Tom Metcalf  
Drafted By - Serban Dinca

**ALIGNMENT AND  
GENERAL CONSTRUCTION**

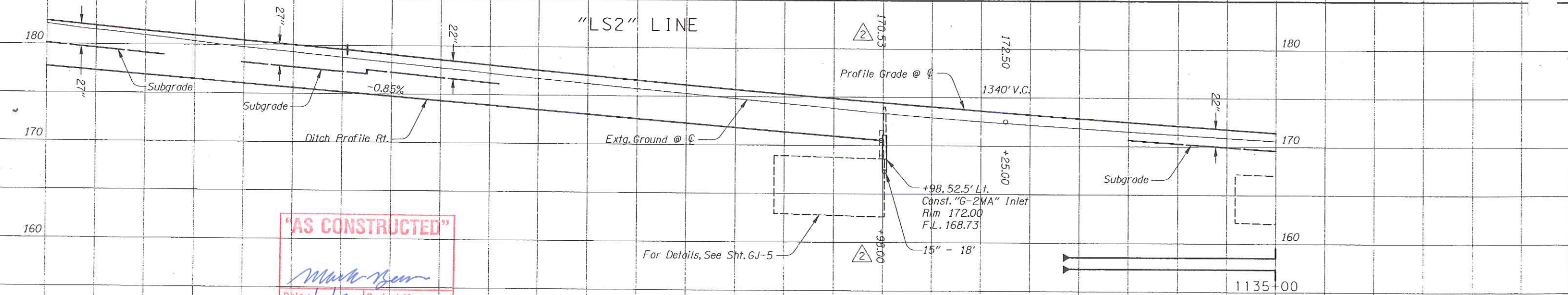
SHEET NO. **33**

**OBEC CONSULTING ENGINEERS**  
Corporate Office: 820 COUNTRY CLUB ROAD, SUITE 1008 EUGENE, OREGON 97401-8008  
2225 MISSION STREET SE, SUITE 100 SALEM, OREGON 97302-1285  
1335 POPLAR DRIVE MEDFORD, OREGON 97504-5207

"LN2" LINE



"LS2" LINE



**"AS CONSTRUCTED"**

*Mark Beer*  
Date 6/26/09 Project Mngr

REVISIONS	
1	Revised 04-10-2006 Revised Quantity
2	Revised 04-10-2006 Revised Drainage

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

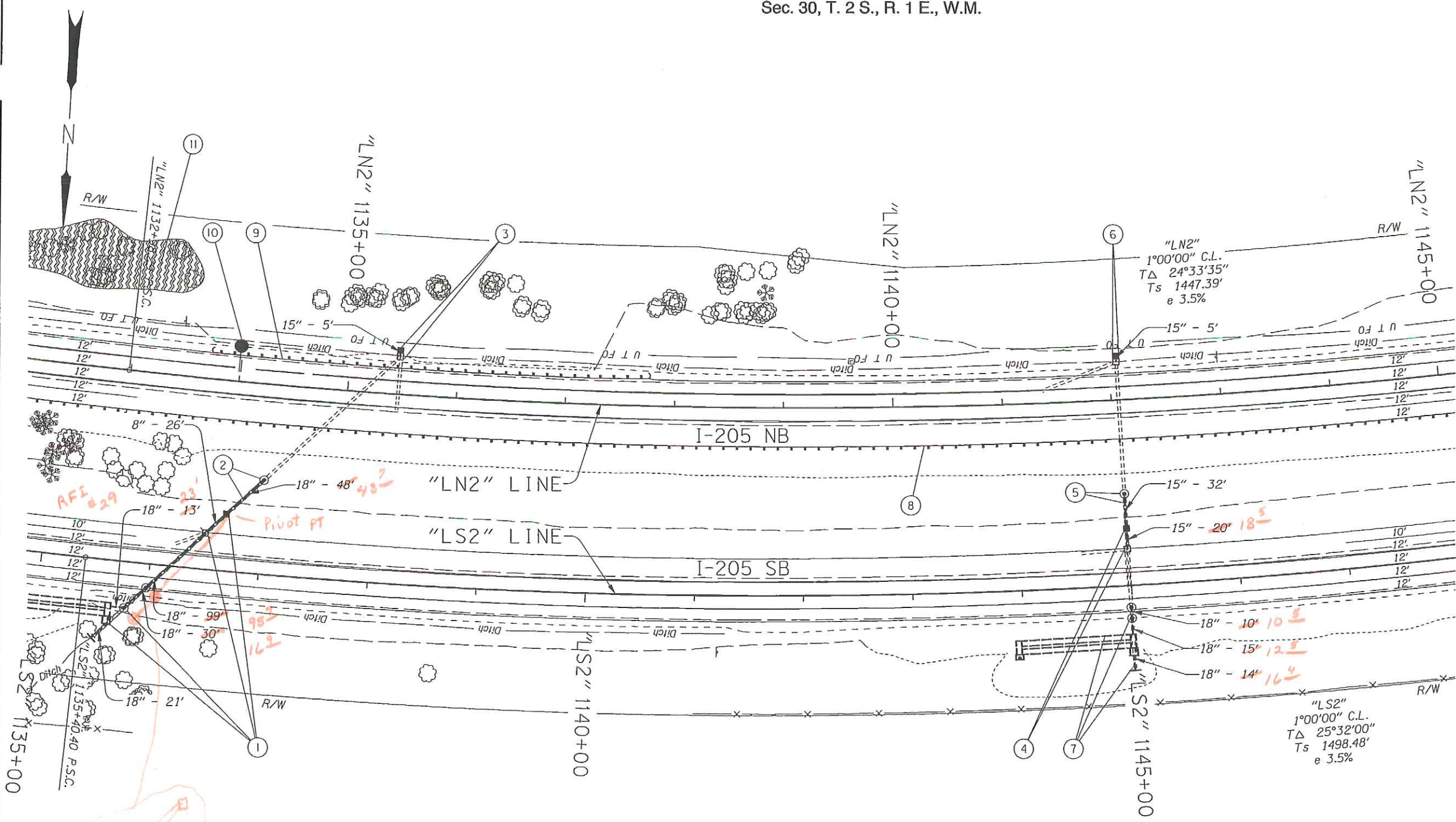
Design Team Leader - Jerry Lane  
Designed By - Tom Metcalf  
Drafted By - Serban Dinca

**PROFILES**

SHEET NO. 33A

OBEC CONSULTING ENGINEERS  
www.obec.com

Corporate Office: 920 COUNTRY CLUB ROAD, SUITE 100B EUGENE, OREGON 97401-8289  
2225 MISSION STREET SE, SUITE 100 SALEM, OREGON 97302-1295  
1335 POPLAR DRIVE MEDFORD, OREGON 97504-8207



**"AS CONSTRUCTED"**

*Mark New*

Date 6/26/09 Project Mngr

**LEGEND**

Remove Extg. Pipe  
Shown Thus:

Type "A" Weed Control  
Shown Thus:

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 - Tom Metcalf  
Drafted By - Serban Dinca

**ALIGNMENT AND  
GENERAL CONSTRUCTION**

SHEET NO. 34

**OBEC CONSULTING ENGINEERS**  
www.obec.com

Corporate Office: 920 COUNTRY CLUB ROAD, SUITE 1008 EUGENE, OREGON 97401-8088  
2225 MISSION STREET SE, SUITE 100 SALEM, OREGON 97302-1295  
1335 POPLAR DRIVE MEDFORD, OREGON 97504-0307

- ① Sta. "LS2" 1136+66.2, 52.5' Lt.  
Abandon Extg. Sew. Pipe  
Cap Extg. Inlet  
Const. Type "G-2MA" Inlet  
Inst. 18" Sew. Pipe - 154' <sup>54' 3", 95' 2" (160')</sup>  
10' Depth  
Tunneling, Boring And Jacking - 90'  
Extend 8" Sew. Pipe - 26' Lt.  
5' Depth  
Const. Conc. Manhole  
Const. Water Quality Manhole  
Const. Underground Detention Facility #3  
(For Details, See Sht. GJ-6)
- ② Sta. "LN2" 1134+31, 88.43 Rt.  
Const. Conc. Manhole  
Over Extg. Sew. Pipe  
Inst. 18" Sew. Pipe - 48' <sup>43' 2"</sup>  
5' Depth
- ③ Sta. "LN2" 1135+46.3, 34.7' Lt.  
Cap Extg. Inlet  
Const. Type "G-2MA" Inlet  
Extend 15" Sew. Pipe - 5' Lt.  
5' Depth
- ④ Sta. "LN2" 1142+07.64, 118.77' Rt.  
Cap Extg. Inlet  
Const. Type "G-2MA" Inlet  
Extend 15" Sew. Pipe - 20' Lt. <sup>18' 5"</sup>  
5' Depth
- ⑤ Sta. "LN2" 1142+07, 86.71' Rt.  
Remove Extg. Pipe  
Const. Conc. Manhole  
Over Extg. Sew. Pipe  
Inst. 15" Sew. Pipe - 32'  
10' Depth
- ⑥ Sta. "LN2" 1142+05.9, 40.1' Lt.  
Cap Extg. Inlet  
Const. Type "G-2MA" Inlet  
Extend 15" Sew. Pipe - 5' Lt. <sup>6.5'</sup>  
5' Depth
- ⑦ Sta. "LS2" 1144+98.6, 27.1' Rt.  
Const. Conc. Manhole  
Const. Water Quality Manhole  
Inst. 18" Sew. Pipe - 39'  
~~5' Depth~~ <sup>>10'</sup>  
Const. Underground Detention Facility #4  
(For Details, See Sht. GJ-7)
- ⑧ See Sht. 32A, Note 10  
Const. Guardrail (Type 2A)
- ⑨ Sta. "LN2" 1133+75 To Sta. "LN2" 1137+75, Lt.  
Const. Guardrail - 350' (Type 2A)  
Const. Guardrail Terminal, Non-Flared (50')  
Flare Rate=0, W=1', E=0  
Const. Anchor (Type 1 Mod.)  
Inst. End Piece (Type B)
- ⑩ Sta. "LN2" 1134+00  
Const. Cantilever Sign & Foundation  
(For Drg. Nos., See Sht. 1A)
- ⑪ See Sht. 33, Note 8

**"AS CONSTRUCTED"**

*Mathew Bunde*

Date 6/26/09 Project Mngr

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

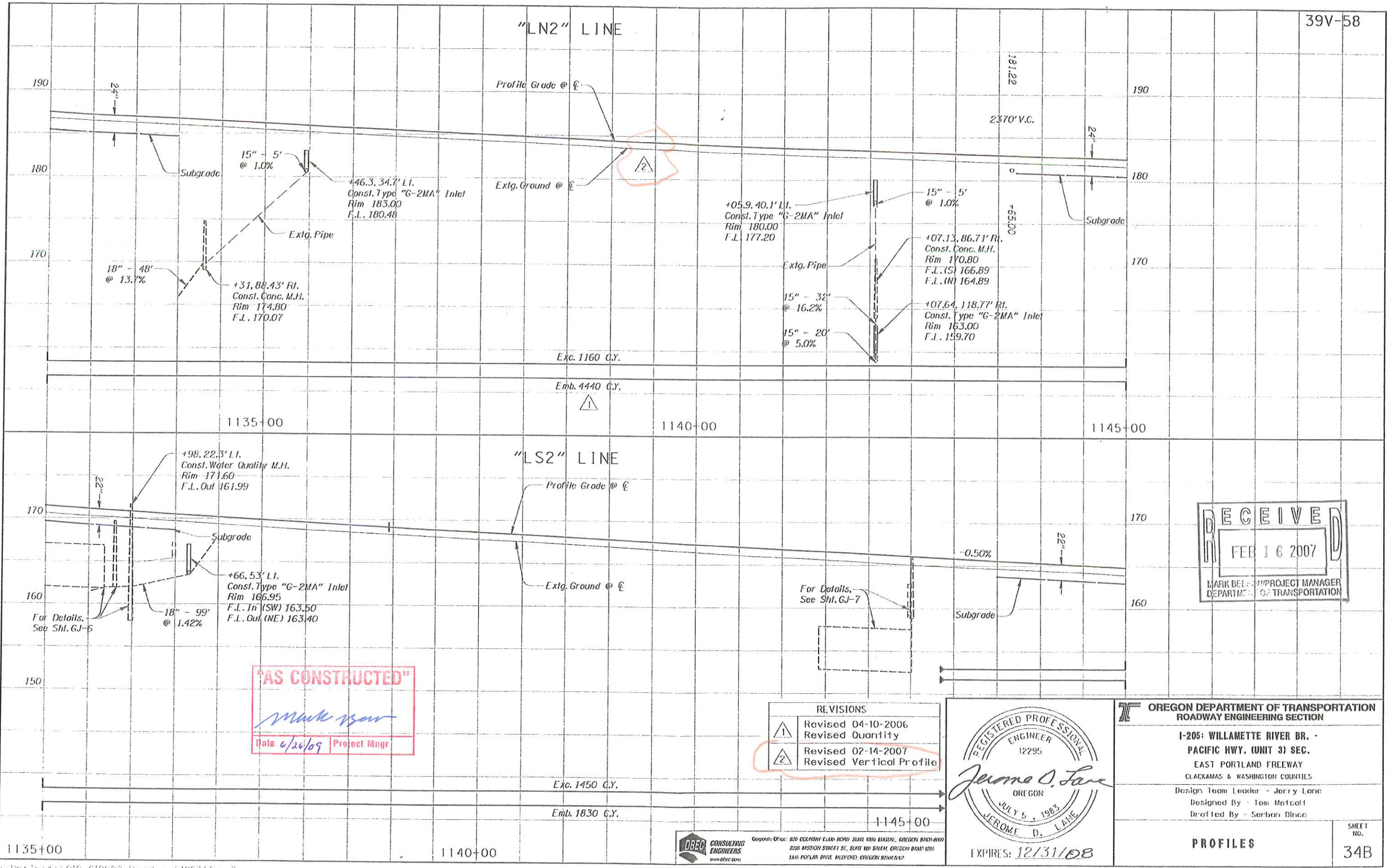
Design Team Leader - Jerry Lane  
Designed By - Tom Metcalf  
Drafted By - Mathew Bunde

**CONSTRUCTION NOTES**

SHEET NO.  
**34A**

OBEC CONSULTING ENGINEERS  
Corporate Office: 520 COUNTRY CLUB ROAD, SUITE 1000 EUGENE, OREGON 97401-6009  
2225 MISSION STREET SE, SUITE 100 SALEM, OREGON 97302-1255  
1335 POPLAR DRIVE MEDFORD, OREGON 97504-5207





**RECEIVED**  
 FEB 16 2007  
 MARK BEEBE, PROJECT MANAGER  
 DEPARTMENT OF TRANSPORTATION

**"AS CONSTRUCTED"**  
*Mark Beebe*  
 Date 6/26/09 Project Mngr

REVISIONS	
①	Revised 04-10-2006 Revised Quantity
②	Revised 02-14-2007 Revised Vertical Profile

REGISTERED PROFESSIONAL ENGINEER  
 12295  
*Jerome D. Lane*  
 OREGON  
 JULY 5, 1983  
 JEROME D. LANE  
 EXPIRES: 12/31/08

**OREGON DEPARTMENT OF TRANSPORTATION**  
 ROADWAY ENGINEERING SECTION

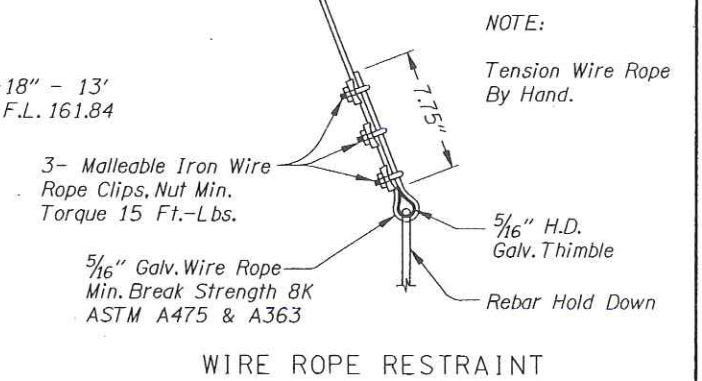
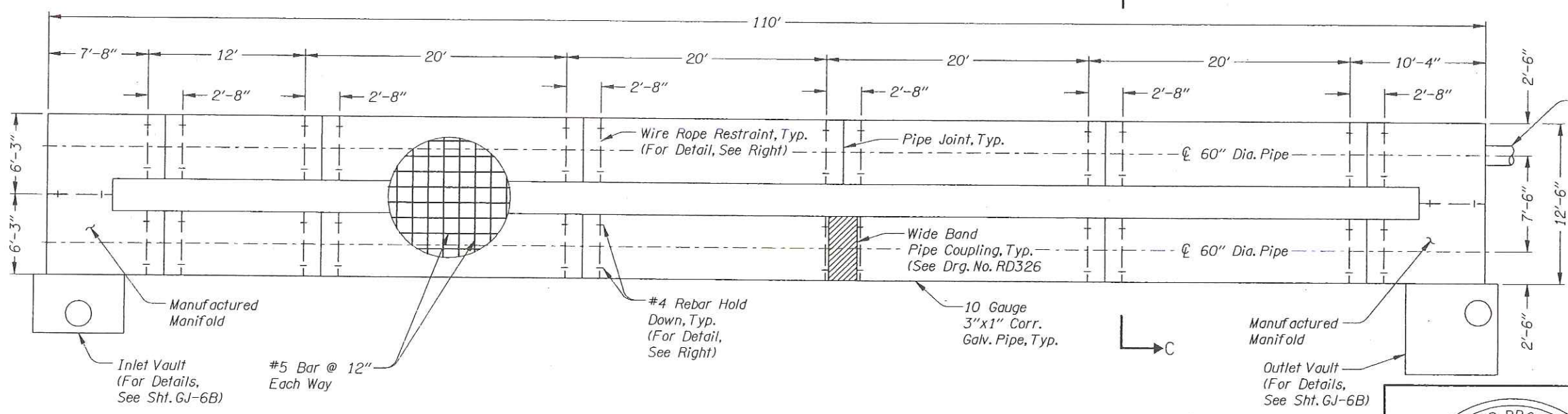
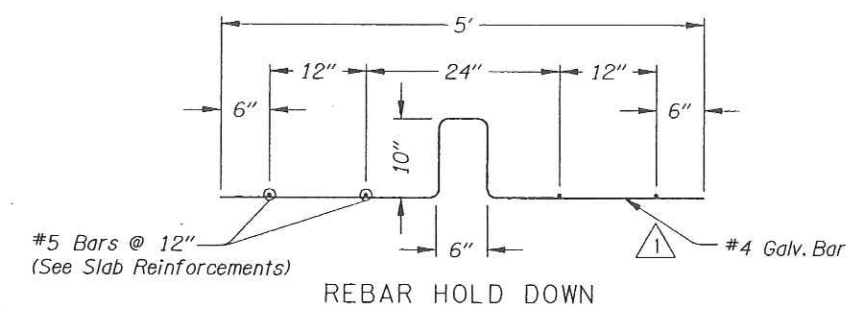
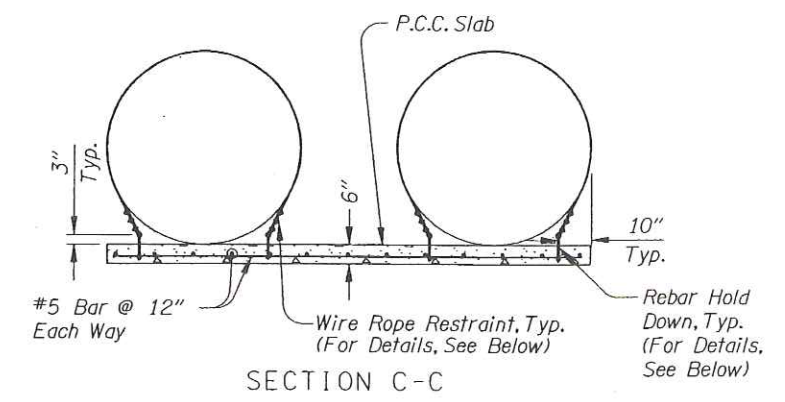
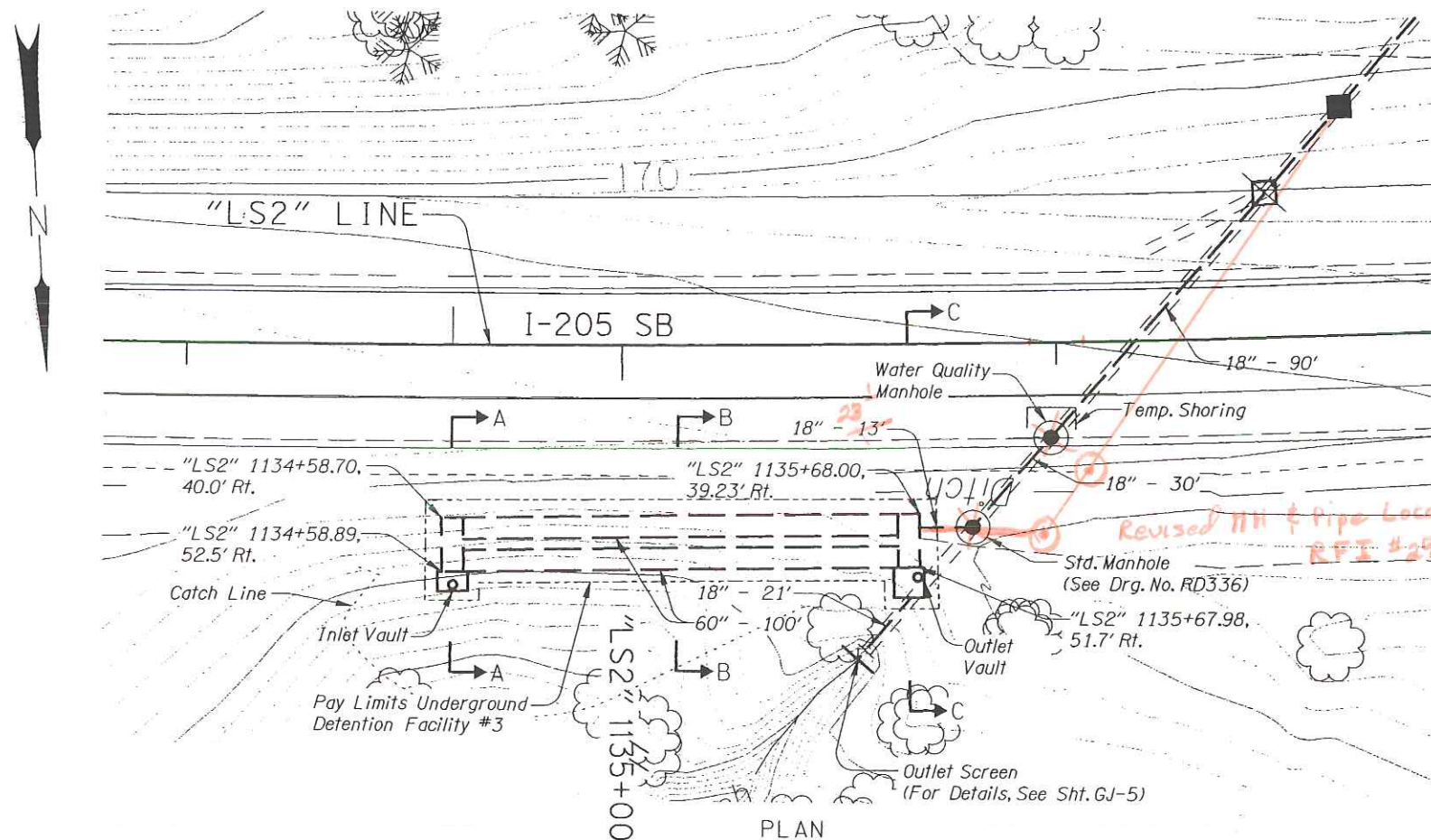
1-205 WILLAMETTE RIVER BR. - PACIFIC HWY. (UNIT 3) SEC. EAST PORTLAND FREEWAY CLACKAMAS & WASHINGTON COUNTIES

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

**PROFILES**

SHEET NO. 34B

**OBEC CONSULTING ENGINEERS**  
 Corporate Office: 820 COUNTRY CLUB ROAD, SUITE 1000, BURGESS, OREGON 97101-0000  
 2205 MESSON STREET SE, SUITE 100 SALEM, OREGON 97302-1005  
 1835 POPLAR DRIVE, MEDFORD, OREGON 97504-0007



PIPE & TIEDOWN LAYOUT  
 UNDERGROUND DETENTION FACILITY #3  
 (See Sht. 34, Note 1)

**"AS CONSTRUCTED"**  
 Mark Bon  
 Date 6/26/09 Project Mngr

REVISIONS	
△	Revised 03-23-2006 Added Leader

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

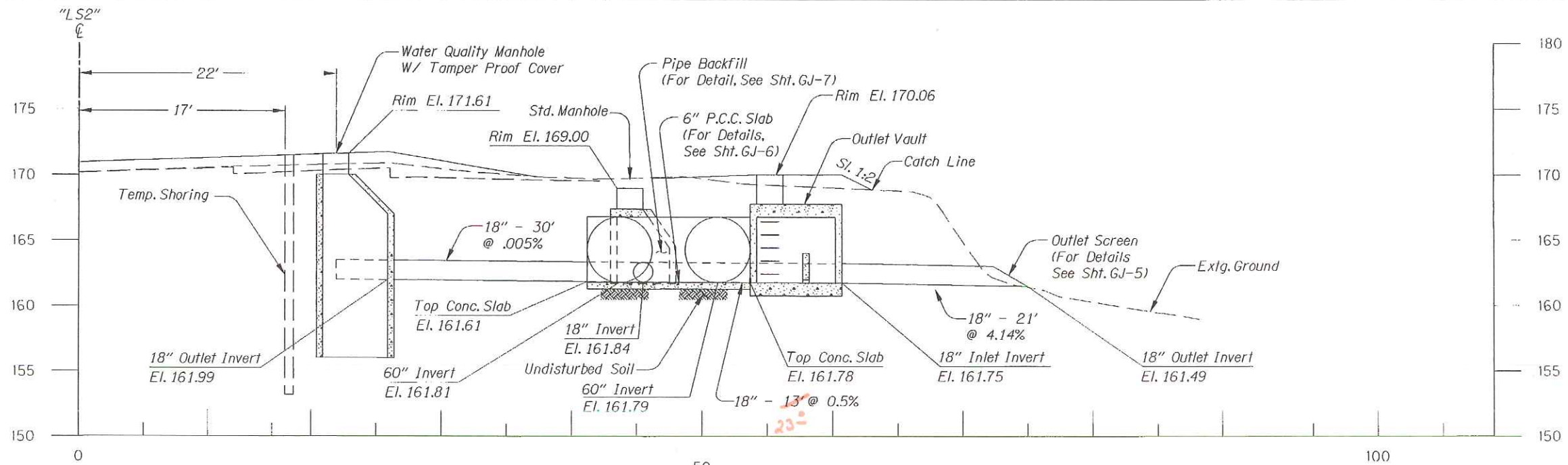
**OREGON DEPARTMENT OF TRANSPORTATION  
 ROADWAY ENGINEERING SECTION**

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

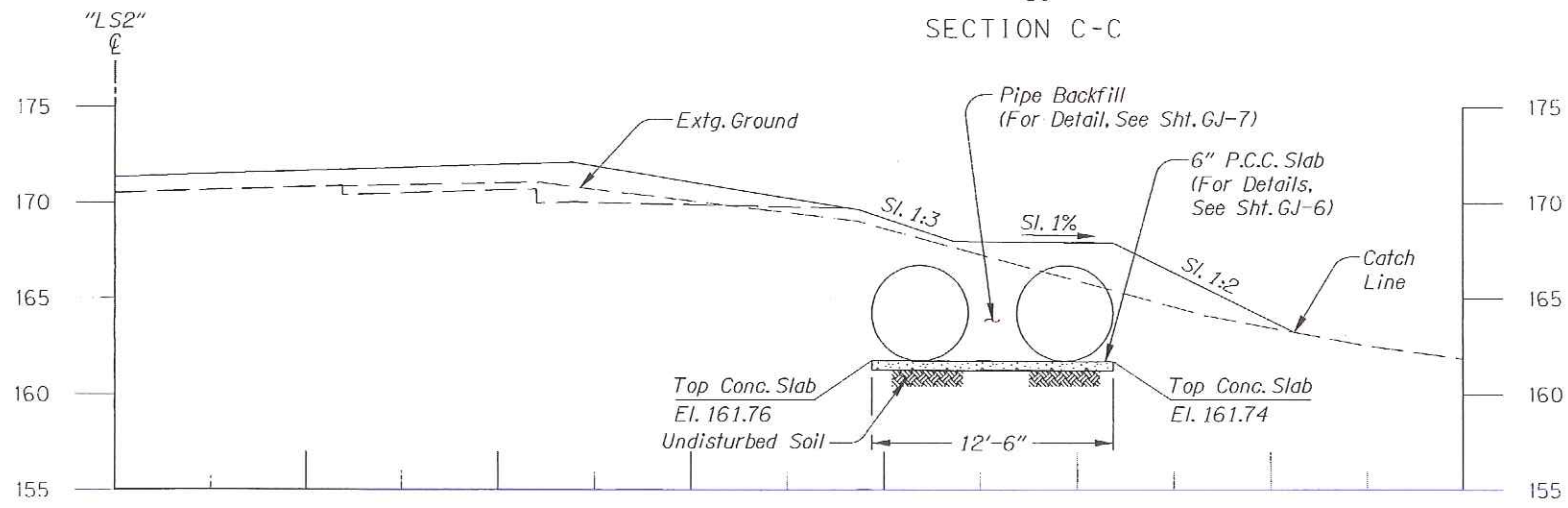
Design Team Leader - Jerry Lane  
 Designed By - James Kent  
 Drafted By - Mathew Bunde

**UNDERGROUND DETENTION FACILITY #3**

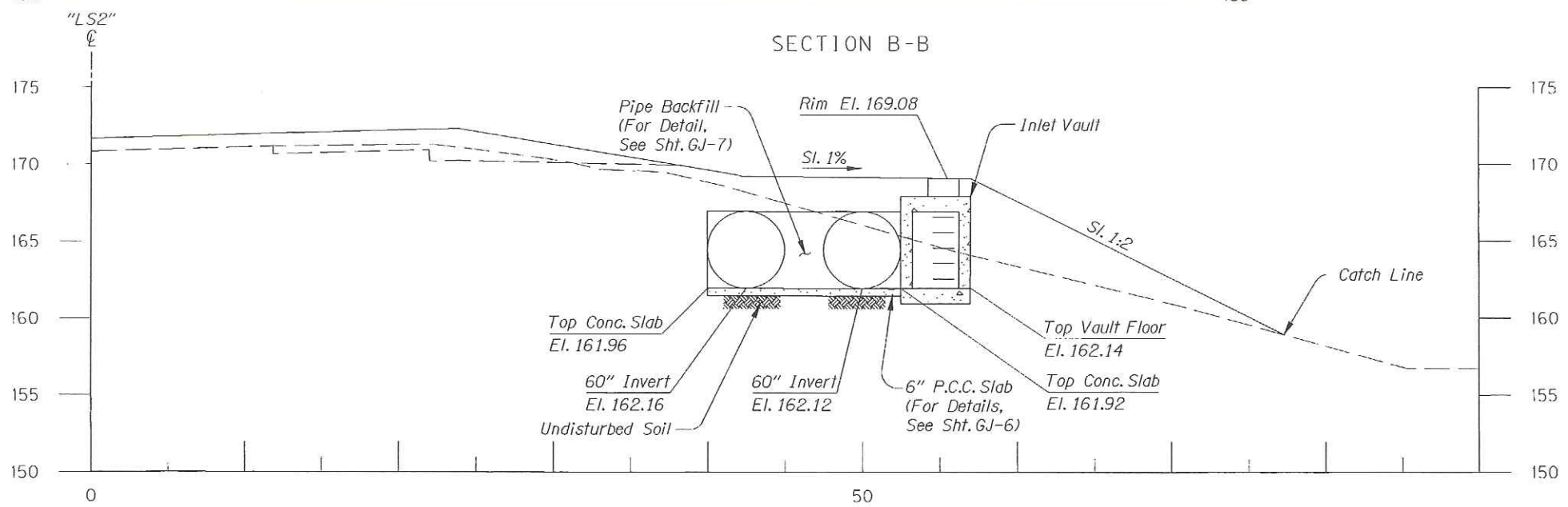
SHEET NO. GJ-6



SECTION C-C

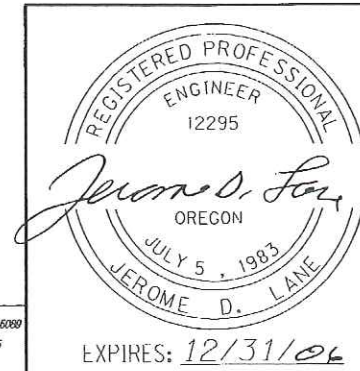


SECTION B-B



SECTION A-A

**"AS CONSTRUCTED"**  
*Mathew Bunde*  
 Date 6/24/09 Project Mngr



<b>OREGON DEPARTMENT OF TRANSPORTATION</b> 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	
<b>UNDERGROUND DETENTION FACILITY #3</b> CROSS SECTIONS	SHEET NO. <b>GJ-6A</b>

**OBEC CONSULTING ENGINEERS**  
 Corporate Office: 920 COUNTRY CLUB ROAD, SUITE 100B EUGENE, OREGON 97401-5089  
 2235 MISSION STREET SE, SUITE 100 SALEM, OREGON 97302-1295  
 1335 POPLAR DRIVE MEDFORD, OREGON 97504-5207

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.

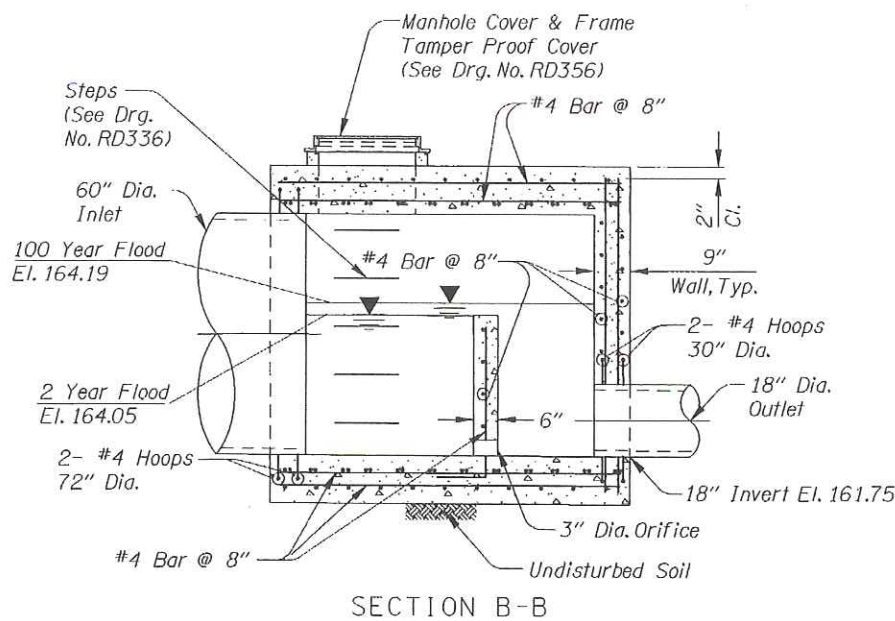
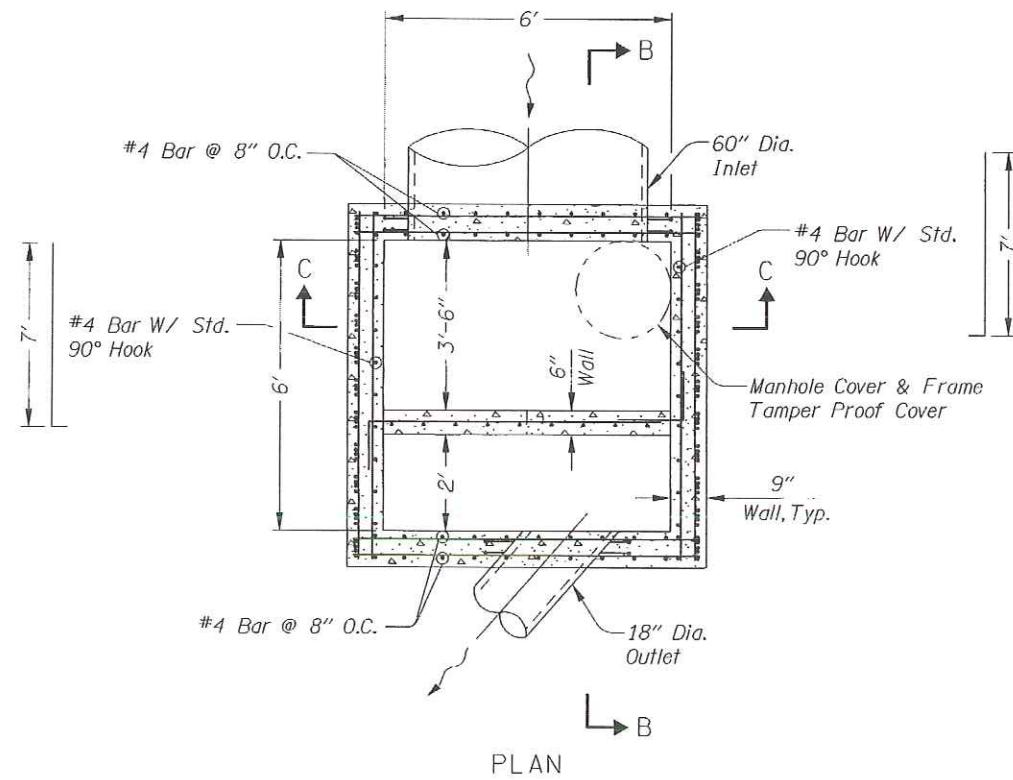
All Reinforcement Steel Shall Conform To Astm Specification A615, Grade 60 Or A706.

The Following Splice Lengths Shall Be Used.

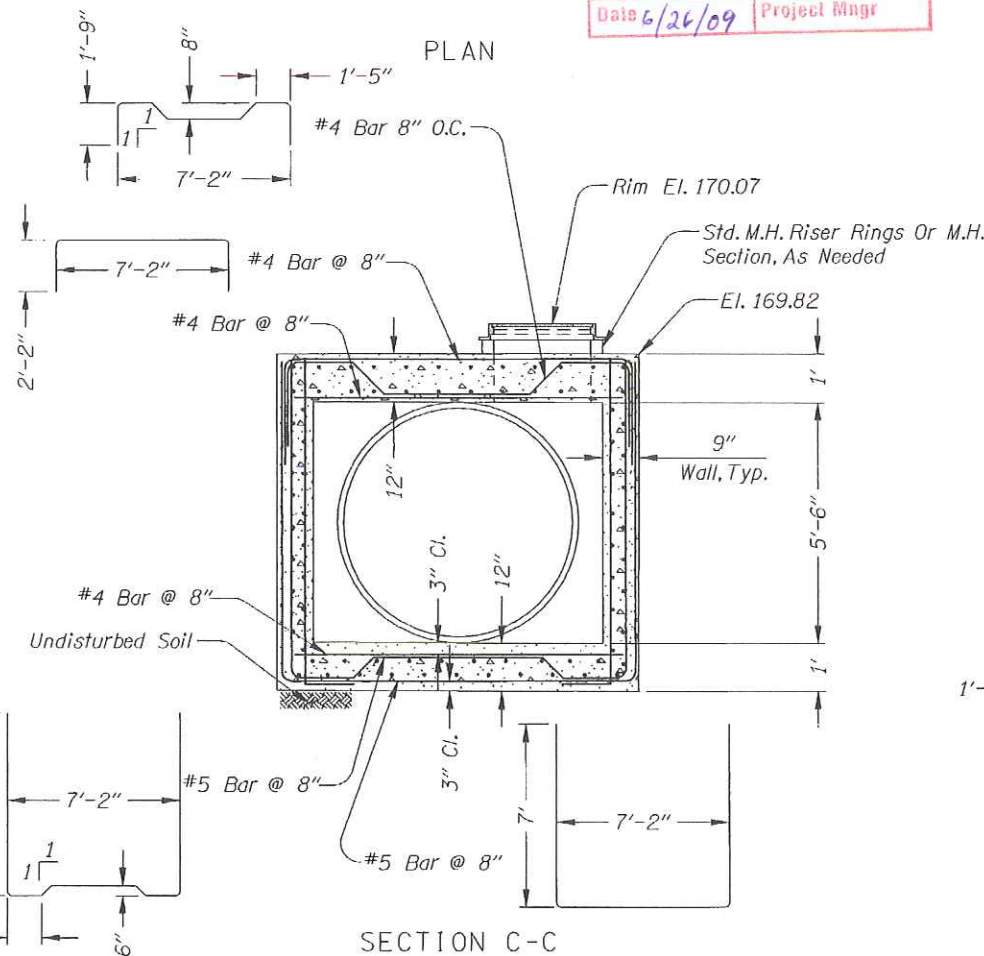
Bar Size	3	4	5	6	7	8	9	10	11
Splice Length Uncoated	1'-0"	1'-4"	1'-8"	2'-0"	2'-8"	3'-6"	4'-4"	5'-7"	6'-9"
Splice Length Epoxy Coated	1'-5"	1'-10"	2'-4"	2'-10"	3'-9"	4'-11"	6'-1"	7'-10"	9'-6"

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

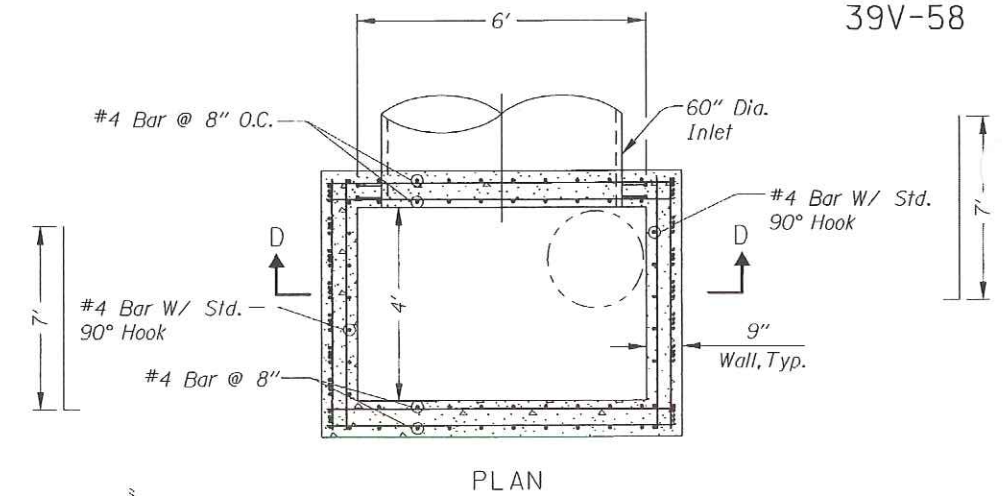
Concrete In Box Culverts Shall Be Class 3600-1 1/2" Or 3/4"



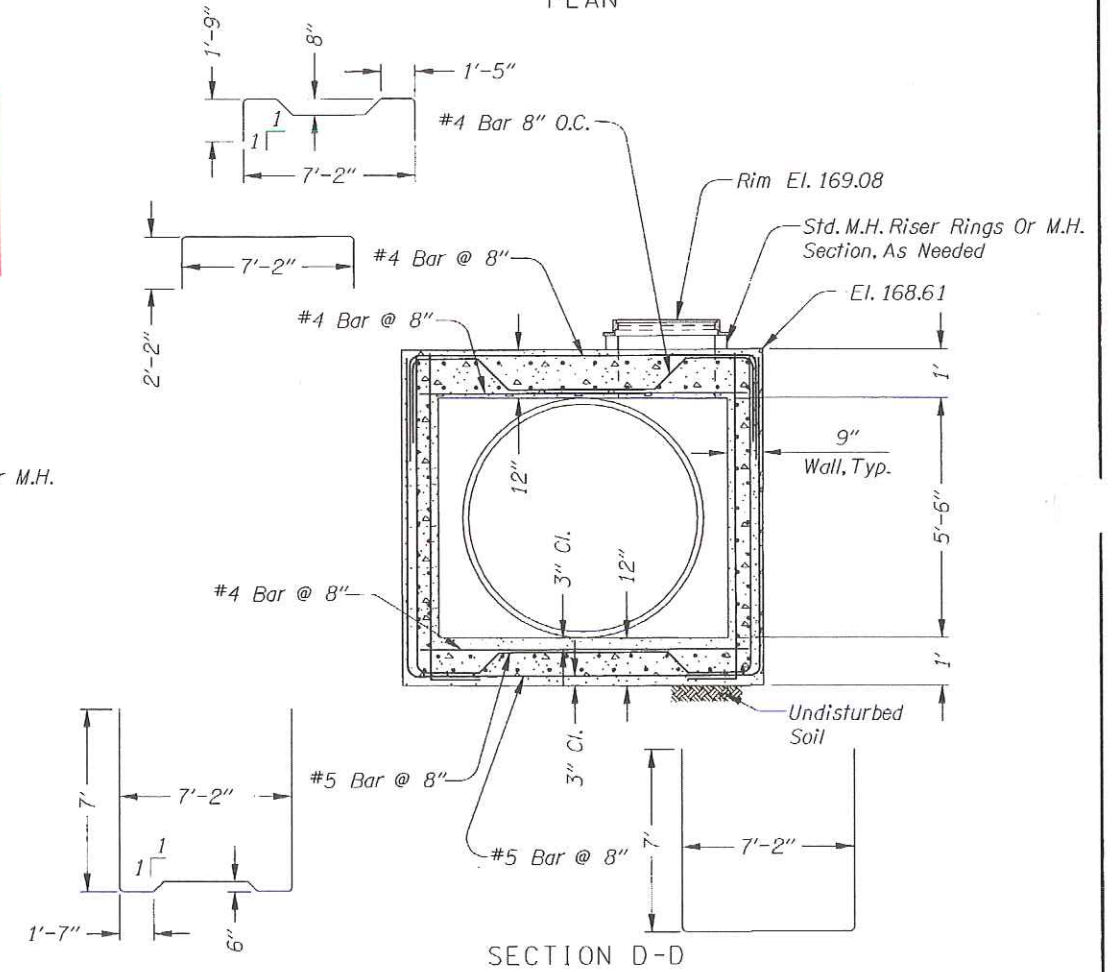
OUTLET VAULT



SECTION C-C



PLAN



SECTION D-D

INLET VAULT



**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 #3  
DETAILS**

SHEET NO. GJ-6B

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