OPERATION & MAINTENANCE MANUAL

DFI No. : D00135
Facility Type: Water Quality Manhole

JUNE, 2011

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1. Identification

Drainage Facility ID (DFI):	**D00135**
Facility Type:	Water Quality Manhole
Construction Drawings:	(V-File Number) 39V-058
Location:	District: 2B (Old 2A)
	Highway No.: 064
	Mile Post: 3.15; (beg. / end)
	Description: This facility is located on the northwest quadrant of the I-205 (Hwy 64) and SW Stafford Road Interchange, between the southbound lane and the southbound on-ramp.

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 Engineers, Jerome D. Lane, P.E., (503)-589-4100
Facility construction:	2006
Contractor:	Oregon Mainline Paving, LLC

4. Storm Drain System and Facility Overview

This water quality manhole is an underground facility designed to treat stormwater runoff. The system is a proprietary product called CDS® manufactured by Contech Construction Products, Inc. The underground vortex system provides treatment using 'continuous deflective separation' by removing or separating the solids from the water via a fiberglass separation chamber and inlet, a separation screen, and a sump at the bottom. This facility contains an Operation and Maintenance manual as prepared by the manufacturer and is provided in Appendix C.

The facility (Photo 1) is located in the grassy area between the travel lanes and on-ramp of I-205 (Hwy 64). Access can be obtained from either the on-ramp or the right shoulder of southbound I-205.

Water enters the facility from an inlet (Point D, Operational Plan, Appendix A, and Photo 1) located south of the water quality manhole (Point A, and Photos 2 and 3) and outflows to a ditch located north of this facility.

A. Maintenance equipment access:
   Access can be obtained from either the on-ramp or the right shoulder of southbound I-205.

B. Heavy equipment access into facility:

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

C. Special Features:

   ☐ Amended Soils
   ☐ Porous Pavers
   ☐ Liners
   ☐ Underdrains

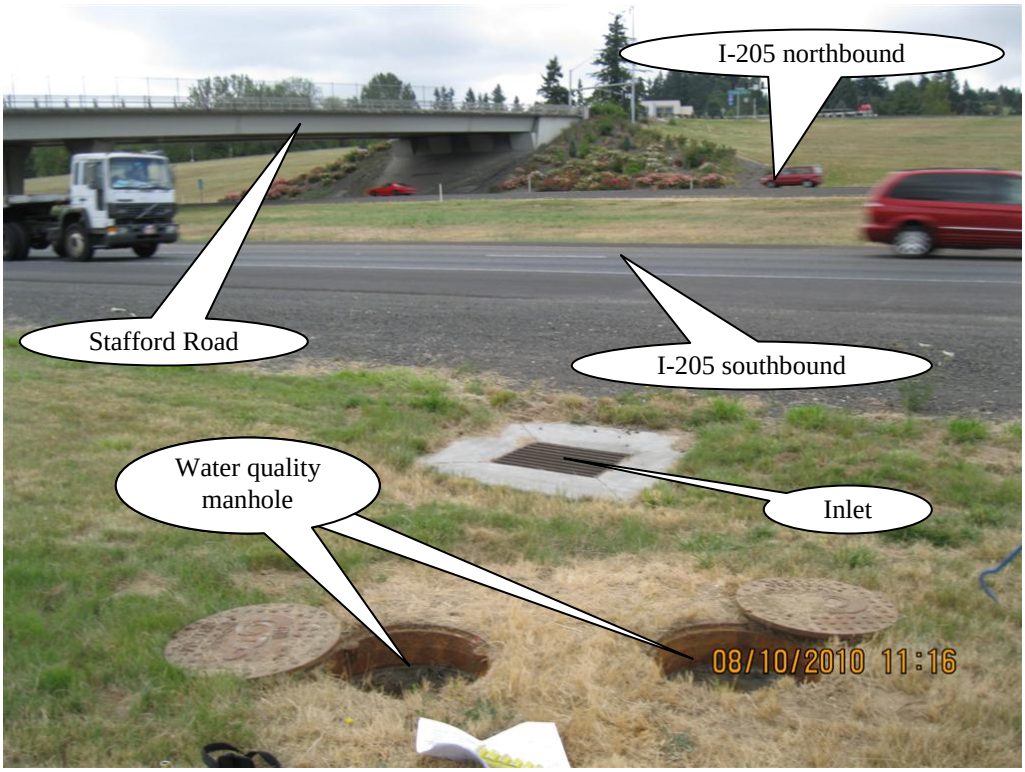


Photo 1: Looking southwest

Photo 2: Water quality manhole interior

Photo 3: Water quality manhole interior

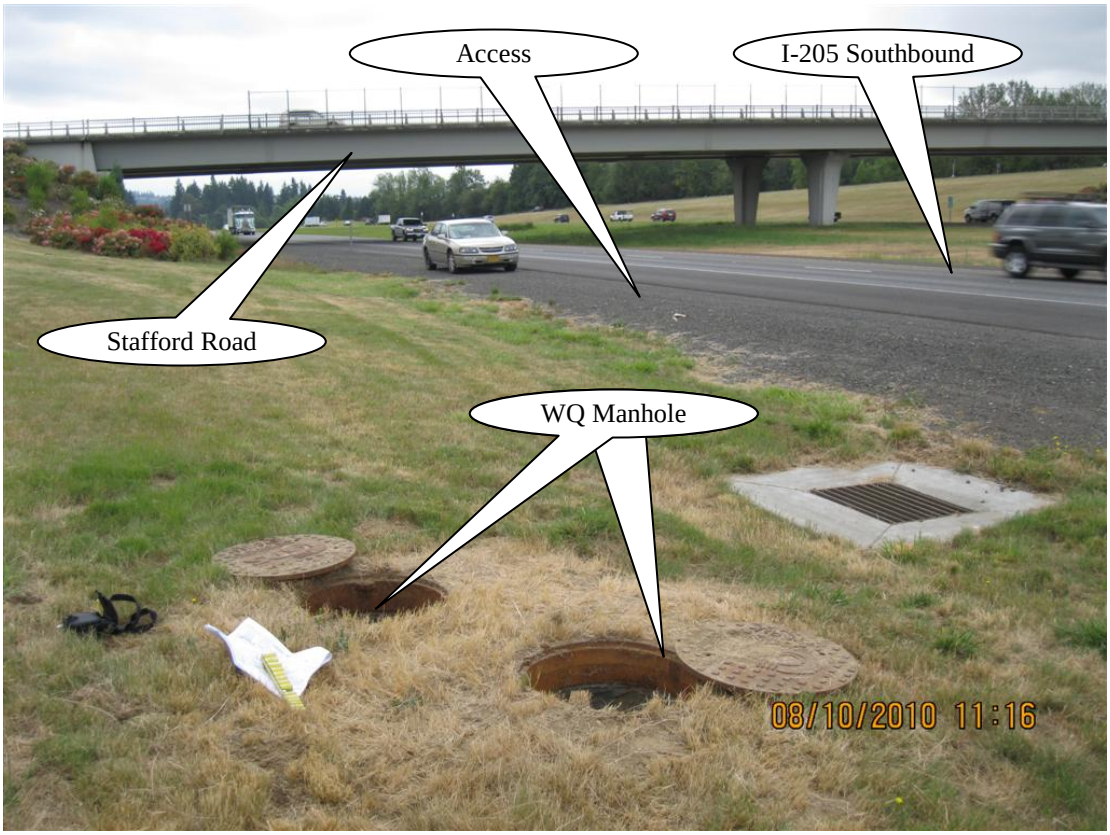


Photo 4: Water quality manhole looking south

5. Facility Haz Mat Spill Feature(s)

The water quality manhole can be used to store a volume of liquid by blocking the 18-inch diameter pipe that outfalls into the ditch located north of the standard manhole.

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
As stormwater flows exceed the unit's design capacity a diversion weir routes the water around a separation chamber, effectively bypassing the treatment features, so that flows exit the manhole and leave any captured pollutants behind, to be retained in the separation cylinder and sump below. See Appendix C.

☐ 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: See Appendix C and the Proprietary Structure Maintenance Requirements for an O&M Manual specifically written for the water quality structure.

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

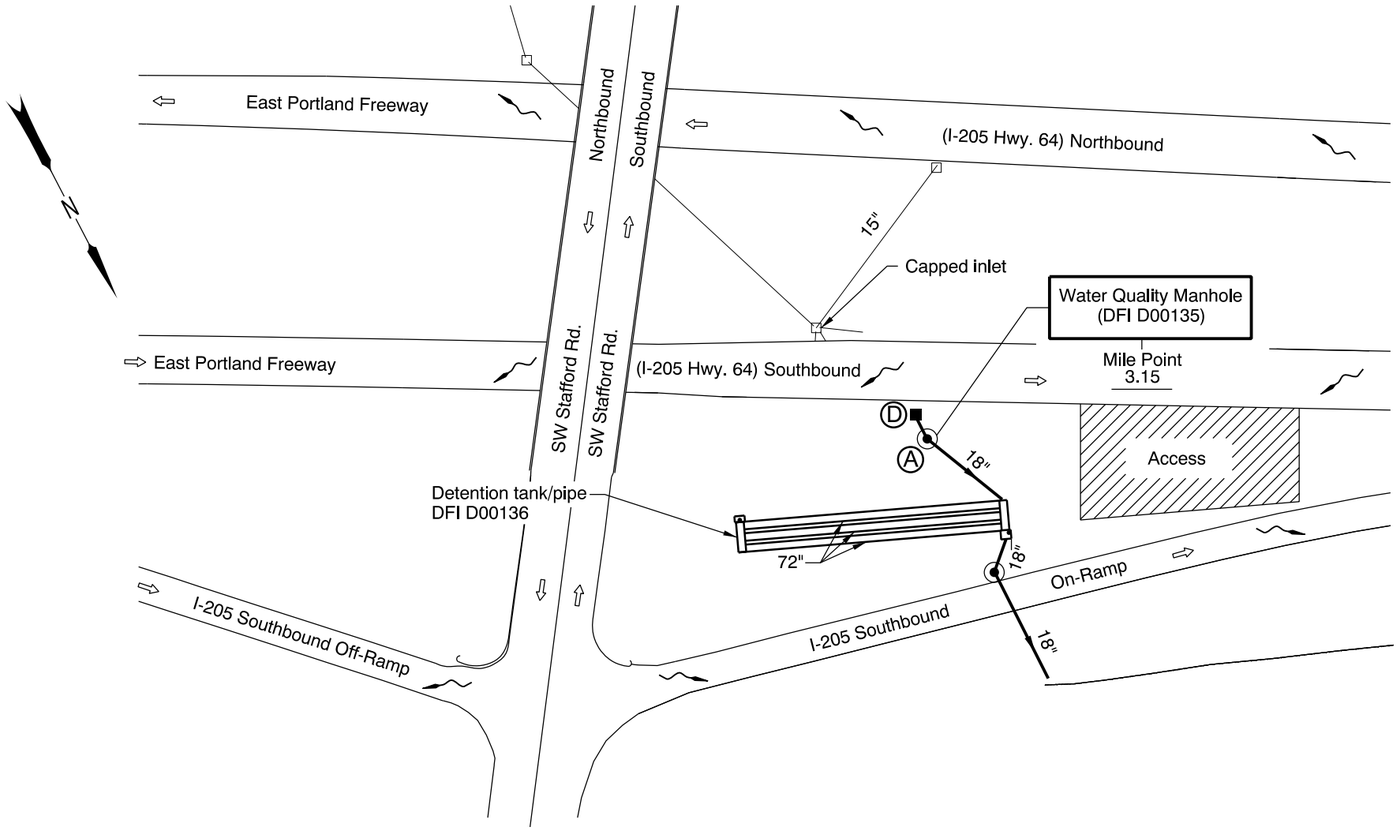
Contact any of the following for more detailed information about management of waste materials found on site:

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

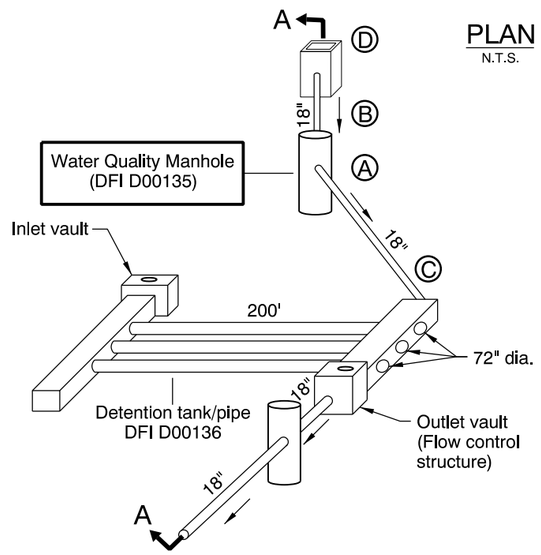
Appendix A

Content:

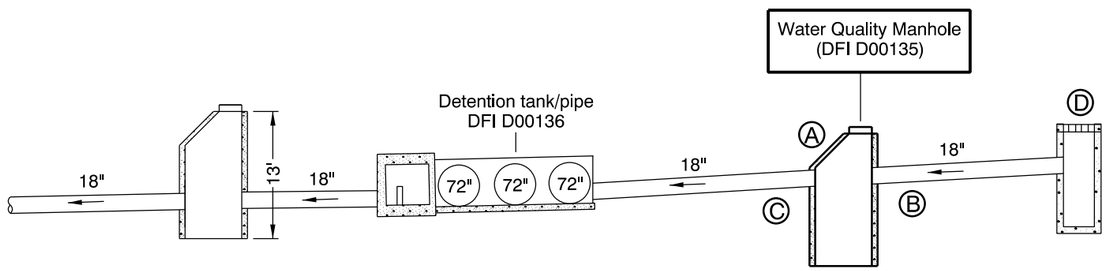
- **Operational Plan and Profile Drawing(s)**



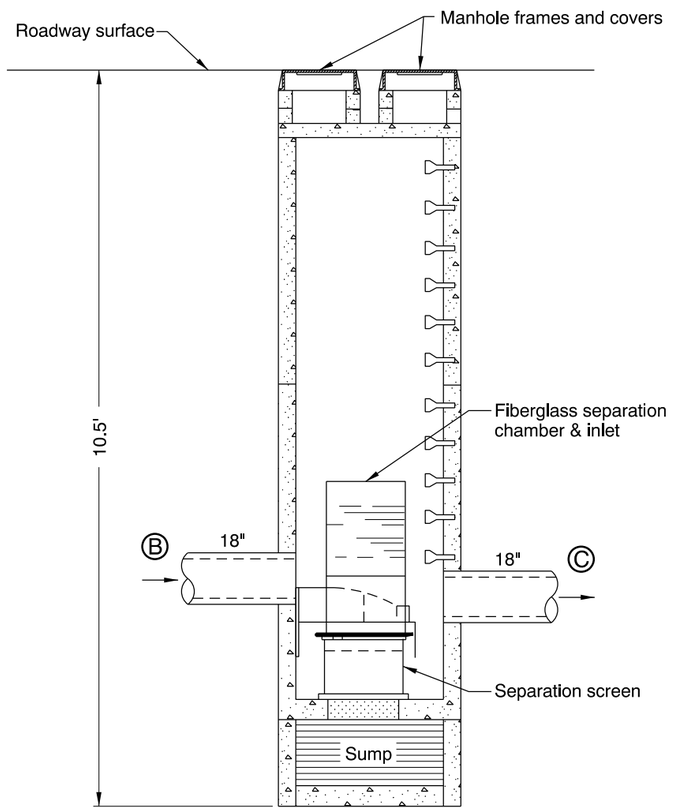
PLAN
N.T.S.



SCHEMATIC OF PIPE DRAINAGE SYSTEM
N.T.S.



SECTION A-A
N.T.S.



WATER QUALITY MANHOLE DETAIL AT POINT Ⓐ
N.T.S.

LEGEND:

- Photo Location / Direction
- Ⓐ Water Quality Manhole
- Ⓑ Facility Inlet
- Ⓒ Facility Outlet
- Ⓓ Inlet
- Manhole
- Inlet
- Traffic Flow/Direction
- Storm Pipe (Facility)
- Storm Pipe
- Conveyance Direction
- Pavement / Facility Flow Path
- Maintence Access

OREGON DEPARTMENT OF TRANSPORTATION

Prepared By: Craig Fox

Drafted By: Mathew Bunde

DFI D00135
MAINTENANCE DISTRICT 2B HWY 64
WATER QUALITY MANHOLE
EAST PORTLAND FREEWAY MP 3.15
CLACKAMAS COUNTY

Appendix B

Content:

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

39V-58

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

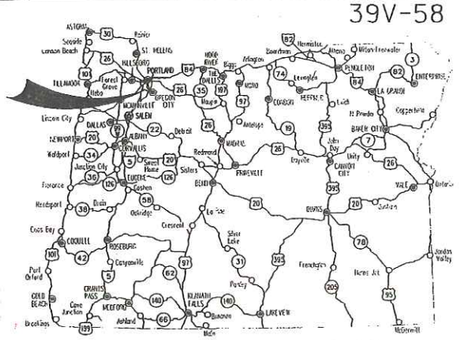
CLACKAMAS & WASHINGTON COUNTIES

APRIL 2006

"AS CONSTRUCTED"

Mark Beeson

Date 6/26/09 Project Mngr



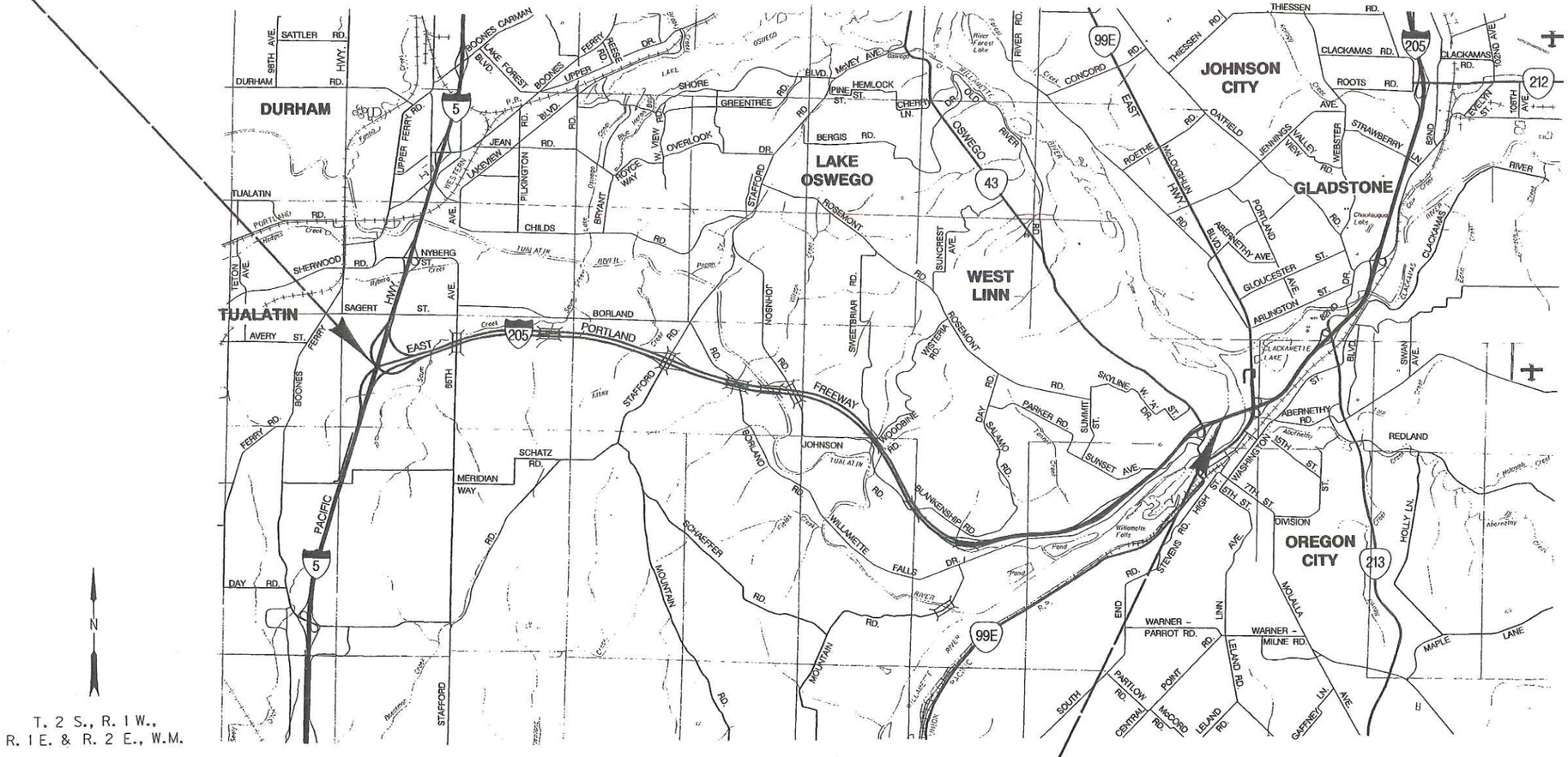
Overall Length Of Project - 8.90 Miles

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.)

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

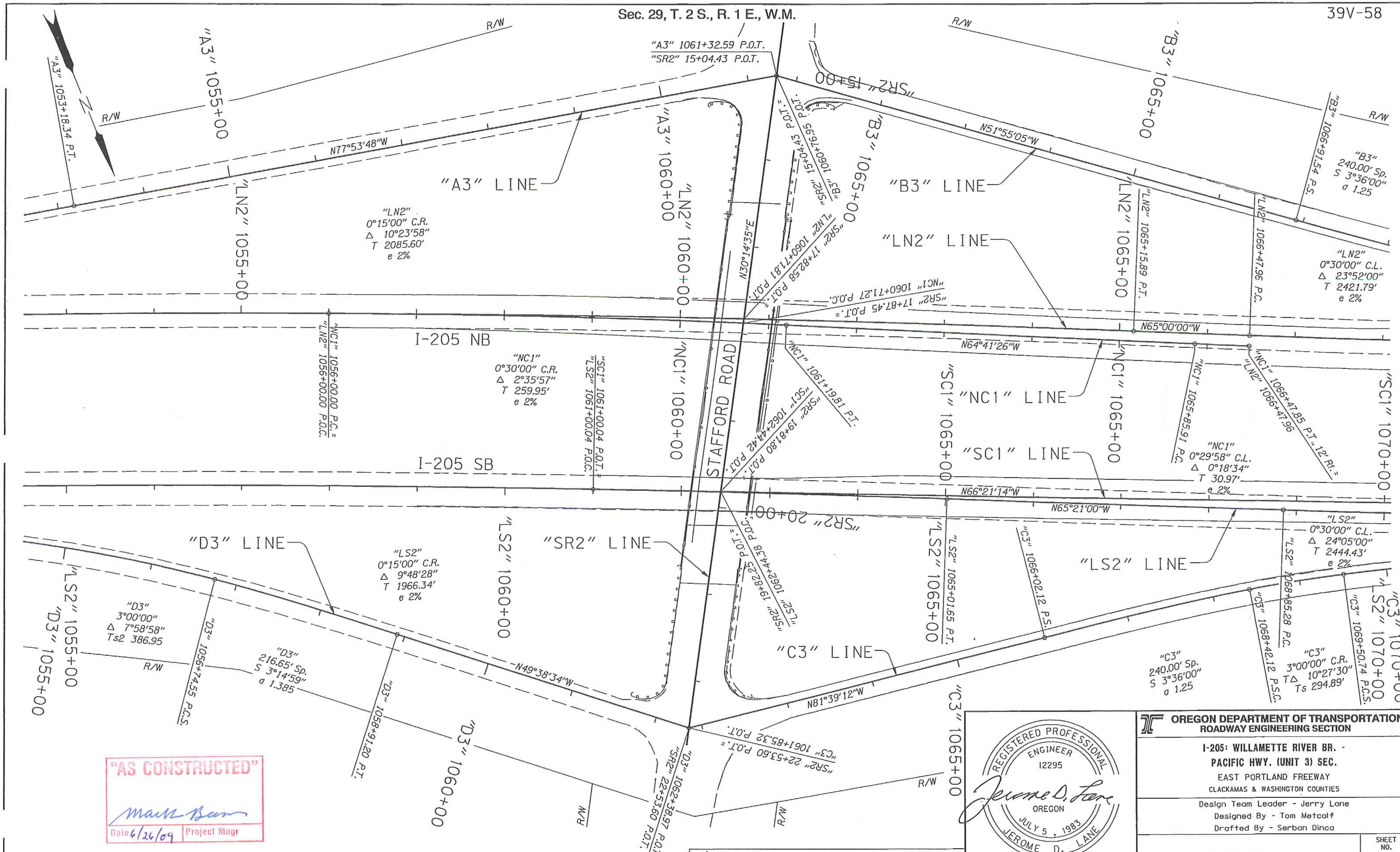
Harold E. Lasley 2/23/06
TECHNICAL SERVICES MANAGING ENGINEER DATE

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

File No. 15980

i:\Projects\019\019082\Roadway\12874fs.fs1 2/14/06



Sec. 29, T. 2 S., R. 1 E., W.M.
39V-58
N
R/W
"A3" 1061+32.59 P.O.T.
"SR2" 15+04.43 P.O.T.
"A3" 1053+18.34 P.T.
"A3" 1055+00
N77°53'48"W
"A3" LINE
"LN2" 1055+00
"LN2" 0°15'00" C.R. Δ 10°23'58" T 2085.60' e 2%
"A3" 1060+00
"LN2" 1060+00
N30°14'35"E
"SR2" 15+04.43 P.O.T. = "B3" 1060+76.95
"B3" 1065+00
"B3" LINE
N51°55'05"W
"B3" 1065+00
"B3" 1066+91.54 P.S.
"B3" 240.00' Sp. S 3°36'00" a 1.25
"LN2" LINE
"LN2" 1065+00
"LN2" 1065+15.89 P.T.
"LN2" 1066+47.96 P.C.
"LN2" 0°30'00" C.L. Δ 23°52'00" T 2421.79' e 2%
"LN2" 1060+71.81 P.O.T. = "SR2" 17+82.58 P.O.T.
"NC1" 1060+71.27 P.O.C. = "SR2" 17+87.45 P.O.T.
N65°00'00"W
N64°41'26"W
I-205 NB
"NC1" 1056+00.00 P.C. = "LN2" 1056+00.00 P.O.C.
"NC1" 0°30'00" C.R. Δ 2°35'57" T 259.95' e 2%
"SC1" 1061+00.04 P.O.T. = "LS2" 1061+00.04 P.O.C.
"NC1" 1060+00
STAFFORD ROAD
"NC1" 1061+19.81 P.T.
"SC1" 1062+44.42 P.O.T. = "SR2" 19+81.80 P.O.T.
"SC1" 1065+00
"NC1" LINE
"NC1" 1065+00
"NC1" 1065+85.91 P.C.
"NC1" 1066+47.85 P.T., 12' Rt. = "LN2" 1066+47.96
"NC1" 0°29'58" C.L. Δ 0°18'34" T 30.97' e 2%
"SC1" 1070+00
"SC1" LINE
I-205 SB
N66°21'14"W
N65°21'00"W
"SR2" 20+00
"LS2" 0°30'00" C.L. Δ 24°05'00" T 2444.43' e 2%
"D3" LINE
"SR2" LINE
"LS2" 0°15'00" C.R. Δ 9°48'28" T 1966.34' e 2%
"LS2" 1060+00
"SR2" 19+82.25 P.O.T. = "LS2" 1062+44.38 P.O.C.
"LS2" 1065+00
"LS2" 1065+01.65 P.T.
"C3" 1066+02.12 P.S.
"LS2" LINE
"LS2" 1068+85.28 P.C.
"C3" 1068+42.12 P.S.C.
"C3" 1069+50.74 P.C.S.
"LS2" 1070+00
"C3" 1070+00
"LS2" 1055+00
"D3" 1055+00
"D3" 3°00'00" Δ 7°58'58" Ts2 386.95
"D3" 1056+74.55 P.C.S.
"D3" 216.65' Sp. S 3°14'59" a 1.385
"D3" 1058+91.20 P.I.
"D3" 1060+00
N49°38'34"W
"C3" LINE
N81°39'12"W
"C3" 240.00' Sp. S 3°36'00" a 1.25
"C3" 3°00'00" C.R. TΔ 10°27'30" Ts 294.89'
"C3" 1061+85.32 P.O.T. = "SR2" 22+53.60 P.O.T.
"D3" 1062+38.97 P.O.T. = "SR2" 22+53.60 P.O.T.
"C3" 1065+00

"AS CONSTRUCTED"
Mark Baer
Date 6/24/09 Project Mngr

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

OBEC CONSULTING ENGINEERS www.obec.com
Corporate Office: 920 COUNTRY CLUB ROAD, SUITE 100B EUGENE, OREGON 97401-6009
2235 MISSION STREET SE, SUITE 100 SALEM, OREGON 97302-1295
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

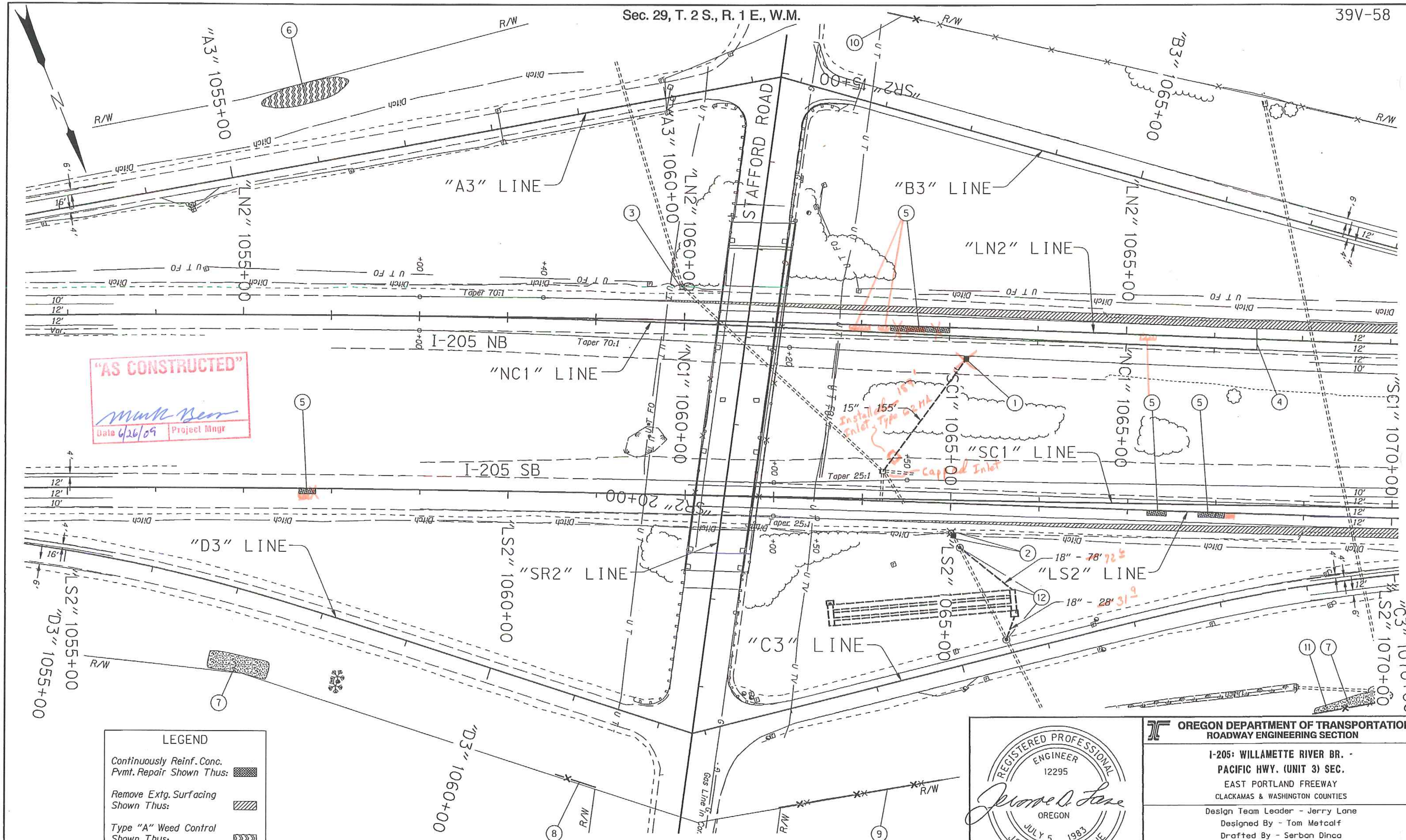
ALIGNMENT PLAN

SHEET NO. 28

File No. 16216

Sec. 29, T. 2 S., R. 1 E., W.M.

39V-58



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Mark Beer

Date 6/26/09 Project Mngr

LEGEND

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

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Jerome D. Lane
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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. 28A

(1) *Sta. "LN2" 1063+20, 35' Rt.*
Const. Type "G-2MA" Inlet
Inst. 15" Sew. Pipe - 155'
5' Depth

Inlet not installed
Pipe installed but not connected

(2) *Sta. "LS2" 1065+04.5, 36.4' Rt.*
Remove Extg. Inlet
Const. Type "G-2MA" Inlet
Over Extg. Sew. Pipe

(3) *Adjust Inlet*

(4) *Sta. "LN2" 1066+47.96*
Const. Terminal Expansion Joint - 24'
(For Details, See Sht. 2B-25)
(See Drg. No. RD605)

(5) *Continuously Reinf. Conc. Pvmt. Repair - 93 Sq. Yd.* (2)
(For Details, See Shts. 2B-18, 2B-19 & 2B-20)

(6) *Type "A" Weed Control*

(7) *Type "B" Weed Control*

(8) *Sta. "LS2" 1060+60 To Sta. "LS2" 1061+05, Rt.*
Remove Type 2 Fence - 50'
Const. Type 2 Fence - 50'
(See Drg. No. RD810)

(9) *Sta. "LS2" 1063+16 To Sta. "LS2" 1065+01, Rt.*
Remove Type 2 Fence - 190'
Const. Type 2 Fence - 190'

(10) *Sta. "LN2" 1062+19 To Sta. "LN2" 1062+57, Lt.*
Remove Type 2 Fence - 40'
Const. Type 2 Fence - 40'

(11) *Sta. "LS2" 1066+22 To Sta. "LS2" 1072+98, Rt.*
Remove Type 2 Fence - 700'
Const. Type 2 Fence - 700'

(12) *Sta. "LS2" 1065+12.19, 50.5' Rt.*
Const. Water Quality Manhole
Inst. 18" Sew. Pipe - 78'
(1) *5' Depth* 10'
Const. Conc. Manhole
Inst. 18" Sew. Pipe - 28'
5' Depth 10'
Const. Underground Detention Facility #8
(For Details, See Sht. GJ-12)

"AS CONSTRUCTED"
Mark Bean
Date 4/26/09 | Project Mngr

REVISIONS	
(1)	Revised 03-23-2006 Revised Note
(2)	Revised 04-10-2006 Revised Note

OBEC CONSULTING ENGINEERS
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Corporate Office: 920 COUNTRY CLUB ROAD, SUITE 100B EUGENE, OREGON 97401-6099
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REGISTERED PROFESSIONAL ENGINEER
12295
Jerome D. Lane
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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

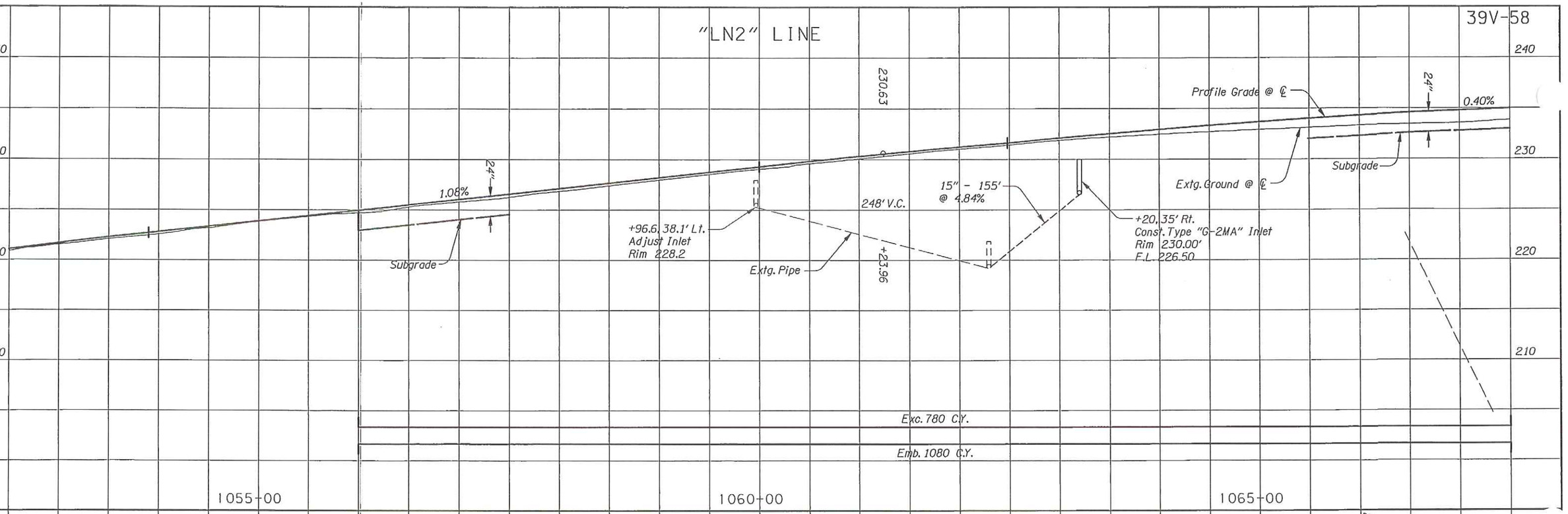
Design Team Leader - Jerry Lane
Designed By - Tom Metcalf
Drafted By - Serban Dinca

CONSTRUCTION NOTES

SHEET NO. 28B

39V-58

"LN2" LINE



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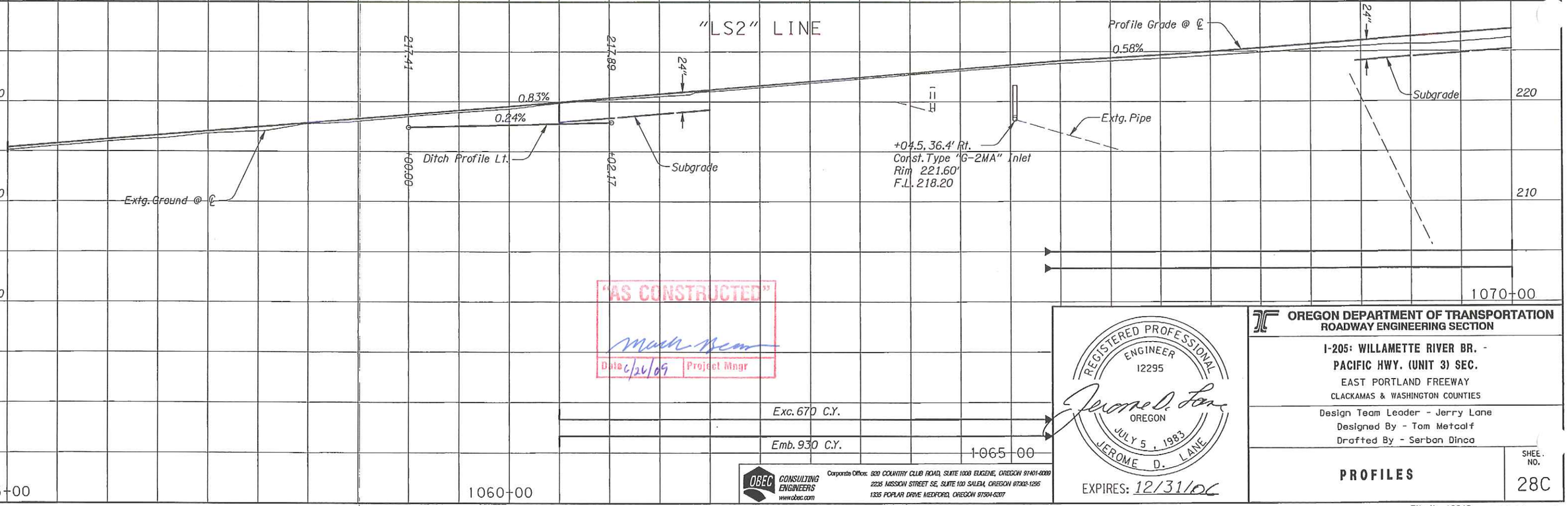

"AS CONSTRUCTED"

Mark Bean

Date 6/26/09 | Project Mngr

REGISTERED PROFESSIONAL ENGINEER
12295
Jerome D. Lane
OREGON
JULY 5, 1983
JEROME D. LANE

EXPIRES: 12/31/06

OBEC CONSULTING ENGINEERS
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Corporate Offices: 920 COUNTRY CLUB ROAD, SUITE 1008 EUGENE, OREGON 97401-6089
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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

PROFILES

SHEET NO. 28C

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2/6/2006

File No. 16219

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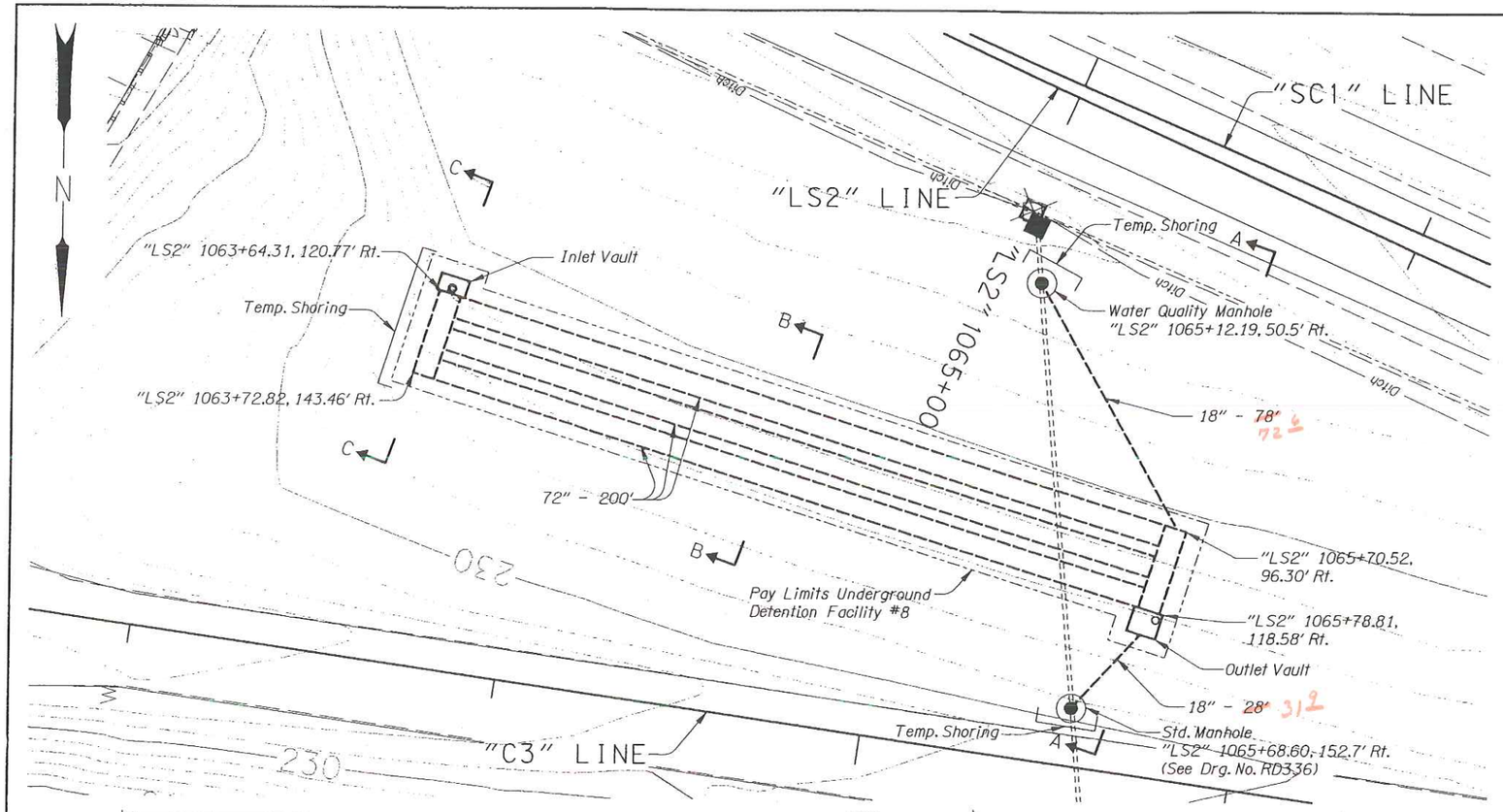
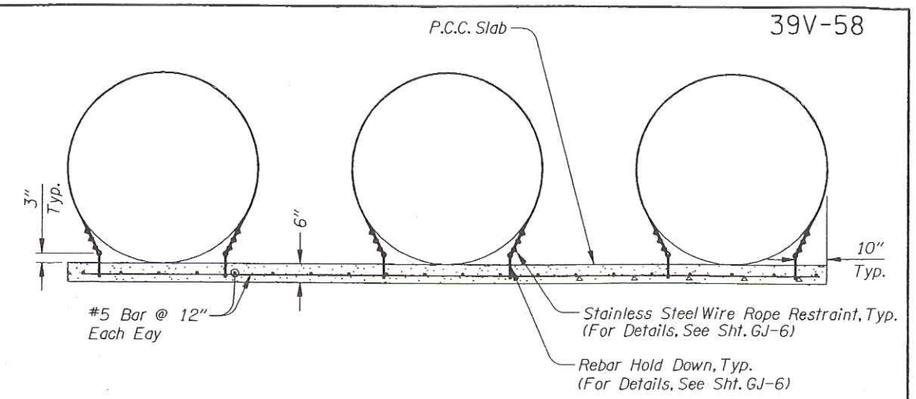
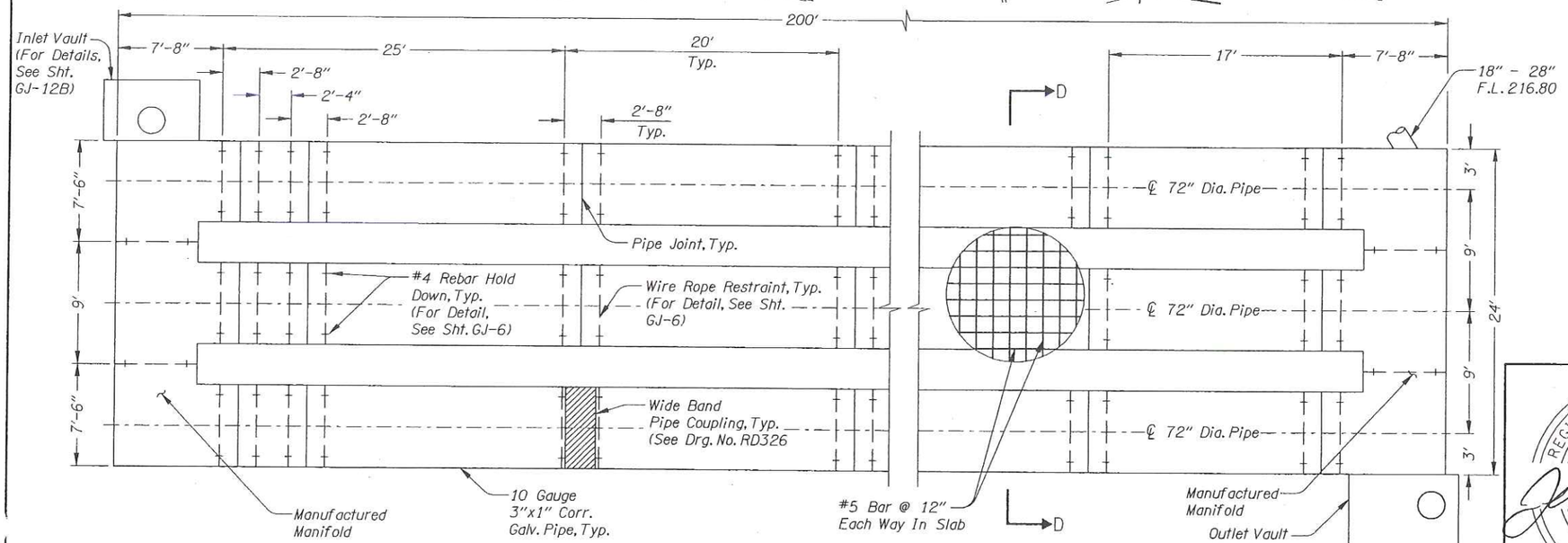




SECTION D-D

"AS CONSTRUCTED"
Date 6/26/09 Project Mngr



PIPE & TIEDOWN LAYOUT

UNDERGROUND DETENTION FACILITY #8

(See Sht. 28B, Note 12)

REVISIONS	
⚠	Revised 03-23-2006 Added Pay Limits

REGISTERED PROFESSIONAL ENGINEER
12295
OREGON
JULY 5, 1983
JEROME D. LANE

EXPIRES: 12/31/06

OBEC CONSULTING ENGINEERS
www.obec.com

Corporate Office: 920 COUNTRY CLUB ROAD, SUITE 1008 EUGENE, OREGON 97401-6099
2235 MISSION STREET SE, SUITE 100 SALEM, OREGON 97302-1256
1336 POPLAR DRIVE MEDFORD, OREGON 97504-5207

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 - Michael Gamble
Drafted By - Mathew Bunde

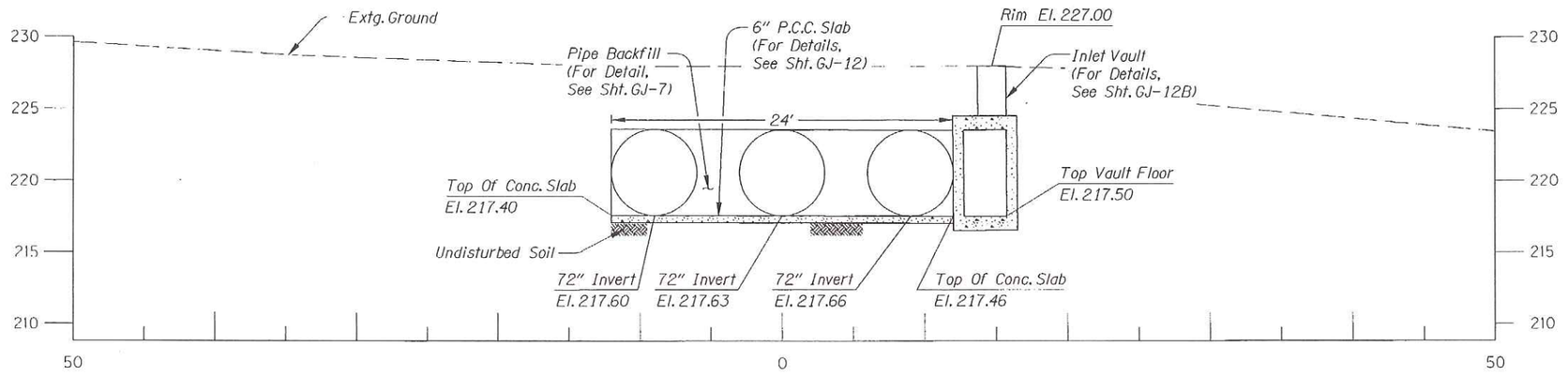
UNDERGROUND DETENTION FACILITY #8

SHEET NO. GJ-12

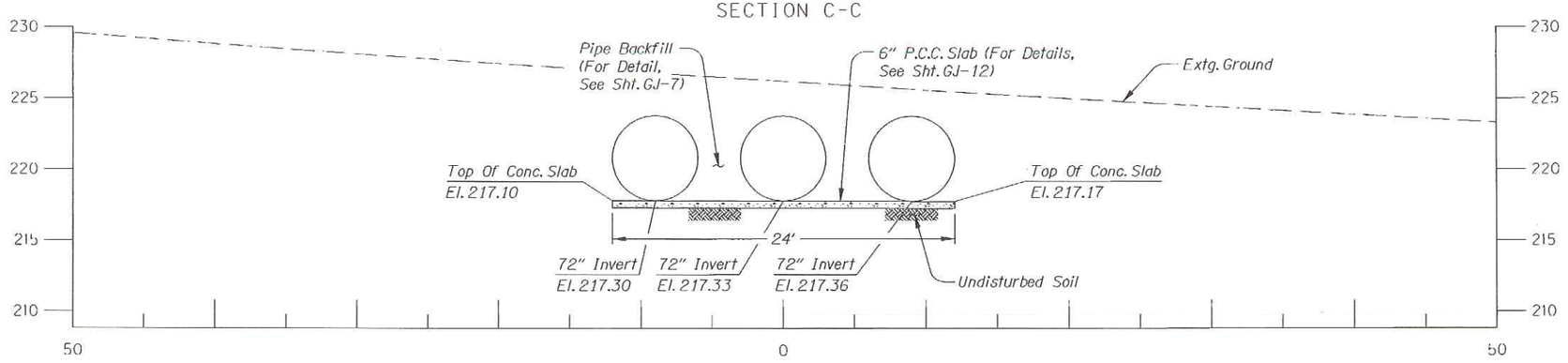
I:\Projects\019\019082\Roadway\12874f.dt12 3/23/2006 09:03 AM

File No. 16326

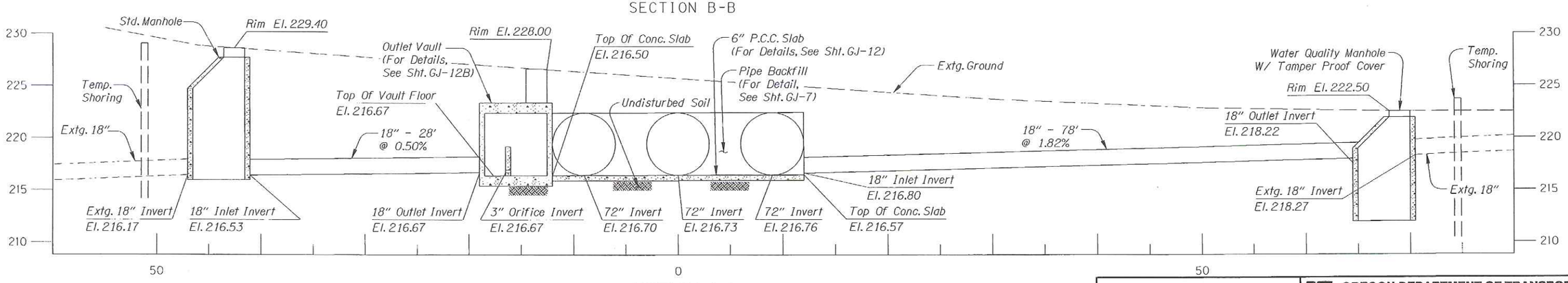
1:200 - 4



SECTION C-C



SECTION B-B



SECTION A-A

"AS CONSTRUCTED"

Date 6/26/09 | Project Mngr

REGISTERED PROFESSIONAL ENGINEER 12295 OREGON JULY 5, 1983 JEROME D. LANE

Jerome D. Lane

EXPIRES: 12/31/06

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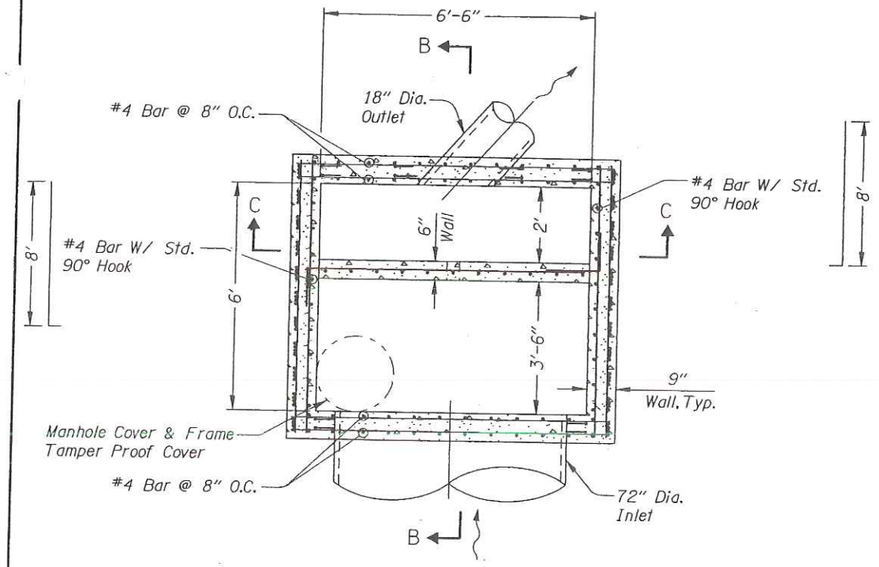
OREGON DEPARTMENT OF TRANSPORTATION
ROADWAY ENGINEERING SECTION

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

Design Team Leader Jerry Lane
Designed By Michael Gamble
Drafted By - Mathew Bunde

UNDERGROUND DETENTION FACILITY #8 CROSS SECTIONS

SHEET NO. GJ-12A



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.

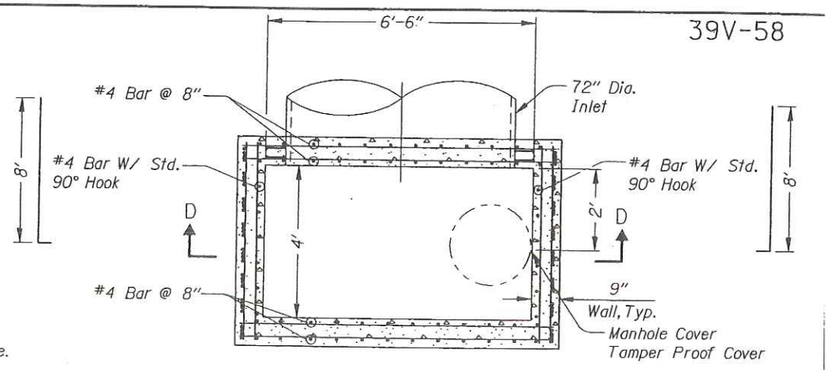
All Reinforcement Steel Shall Conform To Astm Specification A615, Grade 60 Or A706.

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.

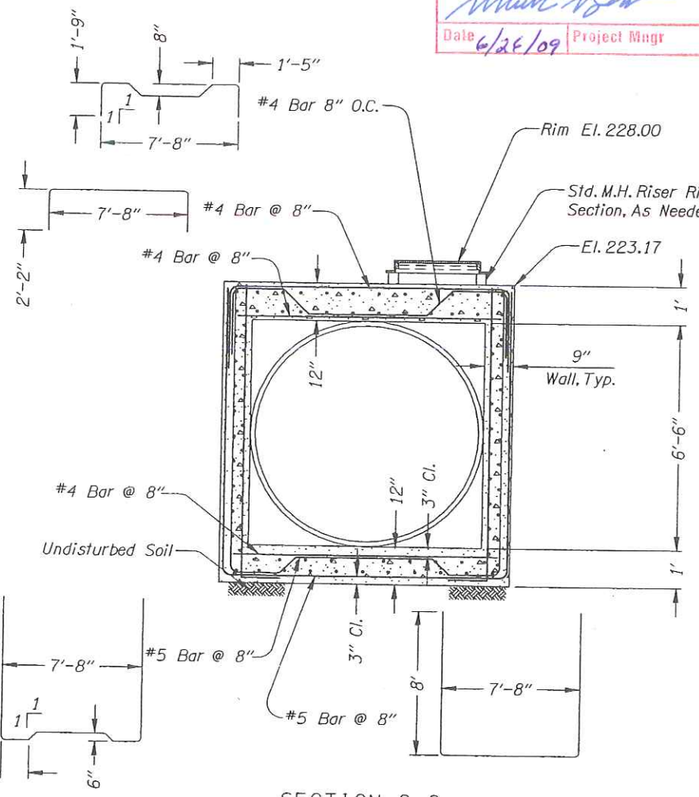
Concrete In Box Culverts Shall Be Class 3600-1½" Or ¾"



PLAN

"AS CONSTRUCTED"

Date 6/26/09 | Project Mngr



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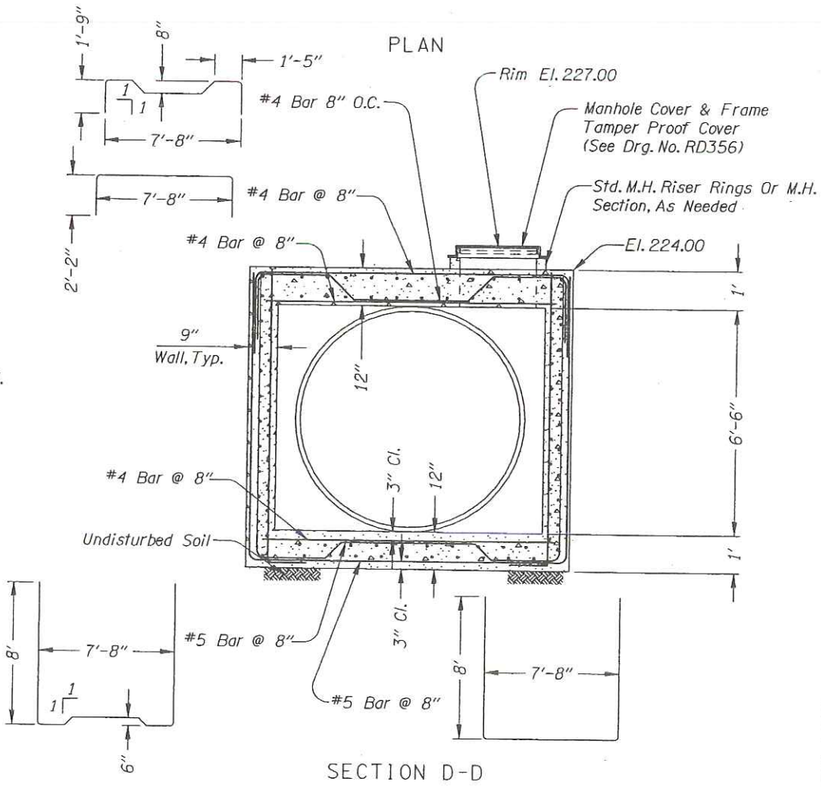

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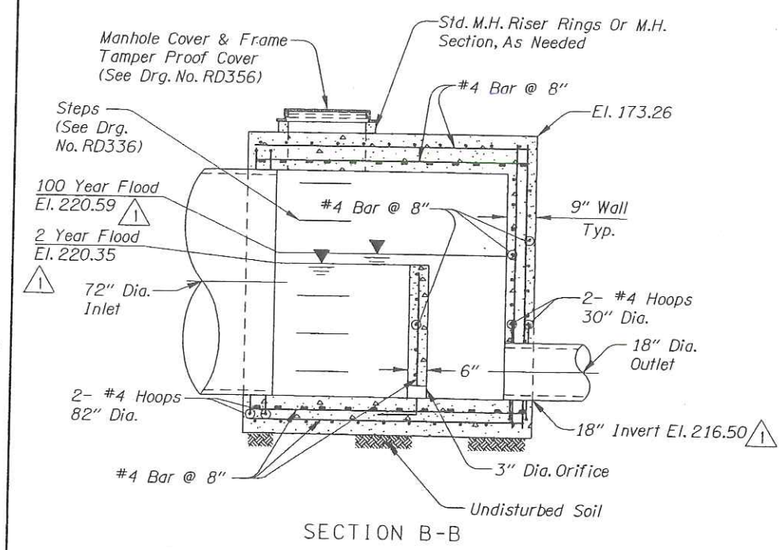

SECTION B-B

INLET VAULT

OUTLET VAULT

REVISIONS	
1	Revised 03-23-2006 Revised Elevations

REGISTERED PROFESSIONAL ENGINEER 12295 OREGON JULY 5, 1983 JEROME D. LANE

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UNDERGROUND DETENTION FACILITY #8 DETAILS

SHEET NO. GJ-12B

Appendix C

Content:

- **Proprietary Structure Maintenance Requirements**