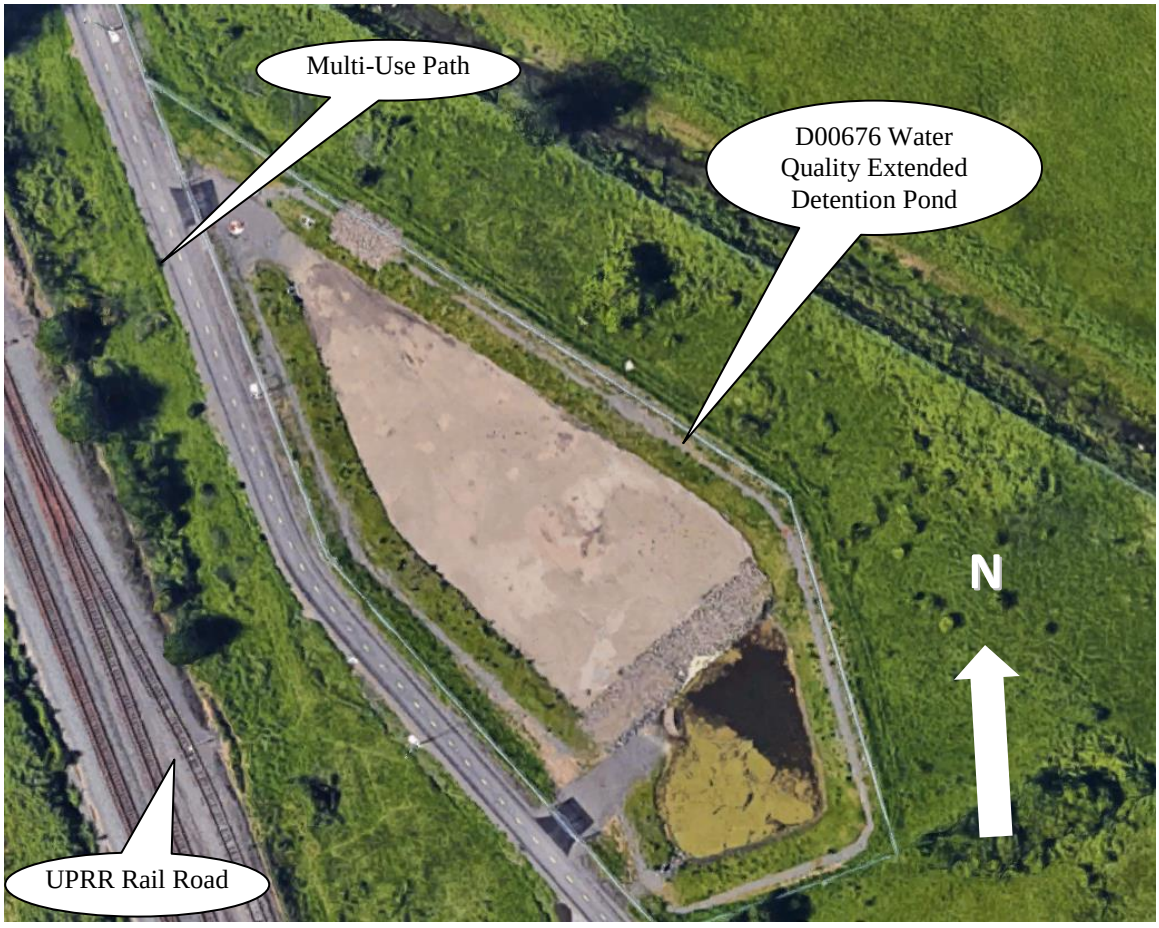
OPERATION & MAINTENANCE MANUAL

DFI No. : D00676

Facility Type: Water Quality Extended Detention Pond



[April, 2018]

INDEX

1. Identification

Drainage Facility ID (DFI):	**D00676**
Facility Type:	Water Quality Extended Detention Pond
Construction Drawings:	(V-File Number) 46V-022
Location:	District: 2B
	Highway No.: 75
	Mile Post: (0.45 to 0.50) Hwy 75
	Description: This facility is located north of the freeway in an area bounded to the west by the UPRR railroad tracks, to the south by Lawnfield Road, and to the north by Dean Creek.

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, Amy Jones, 971-634-2005]
Facility construction:	[2014]
Contractor:	Kerr Contractors, Inc.

4. Storm Drain System and Facility Overview

An 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 sizing of these facilities depends on the location and the amount of contributing impervious area.

This extended detention pond is designed to store runoff during wet weather and is dry the remainder of the time. It is located in an area bounded to the west by the UPRR railroad tracks, to the south by Lawnfield Road, and to the north by Dean Creek. Access to the facility is provided from a multi-use path/maintenance access road that is accessed on the north side of Lawnfield Road.

There is one culvert that conveys stormwater runoff from paved areas along the Sunrise Corridor and Industrial Way alignments into the detention pond. The locations of this is noted on the Operation Plan as point A in Appendix A

Runoff exits the pond by way of a Type “D” inlet connected to 12-inch storm drain pipe that connects to a manhole containing the flow control assembly. See Photo 1 and Point C on the Operational Plan in Appendix A.

The storm drain outlet pipe from the flow control manhole connects to the auxiliary outfall. The storm drain pipe from the auxiliary outfall is 24-inches in diameter and connects to a manhole connecting to the flow control manhole. These are shown in the Operational Plan in Appendix A. The receiving waterway for the outlet pipe is Dean Creek.

A. Maintenance equipment access:
   The pond and outlet structures can be accessed from a multi-use path/maintenance access road connecting to Lawnfield Road. See maintenance access road layout on the Operational Plan in Appendix A.

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: a view of extended detention pond, looking Southeast.

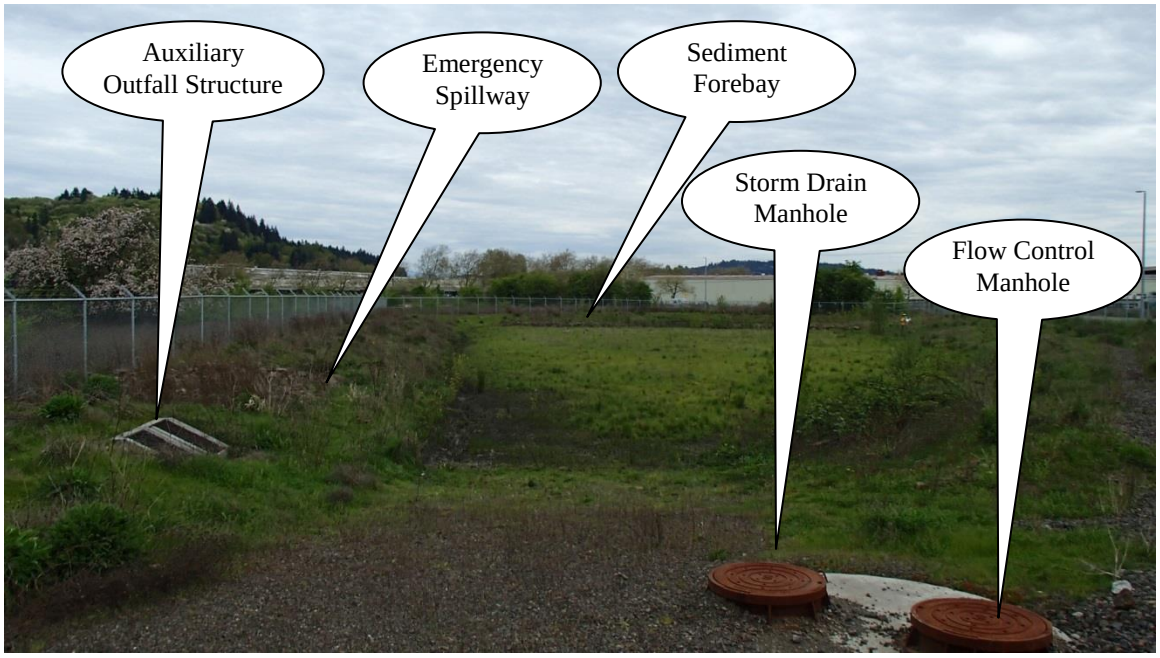


Photo 2: a view of extended detention pond, looking Southeast.

5. Facility Haz Mat Spill Feature(s)

The pond can be used to store a volume of liquid by blocking the 12-inch diameter outlet pipe with the Type “D” inlet located at the outfall strucutre in the middle of the south side of the pond. This pipe is noted as point C in the Operational Plan. A barrier such as a metal plate over the metal grate on the inlet could be used to prevent liquid from draining from the pond.

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 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
High flows exit the pond through the auxiliary outlet structure consisting of two type “D” inlets. These inlets connect to the outfall pipe from the main outfall and flow control structure. See Photo 2 and Point E in the Operational Plan in Appendix A. There is also an emergency overflow spillway to safely convey the 100 year storm event.

☒ Other, as noted below

There is an curtain drain pipe system around the entire pond designed to prevent the roadway runoff from mixing with the groundwater prior to its treatment.

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

The following stormwater facility maintenance table (See ODOT Maintenance Guide) should be used to maintain the facility outlined in this Operation and Maintenance Manual:

- ☒ Table 1 (general maintenance)
- ☒ Table 2 (stormwater ponds)
- ☐ Table 3 (water quality biofiltration swales)
- ☐ Table 4 (water quality filter strips)
- ☐ Table 5 (water quality bioslopes)
- ☐ Table 6 (detention tank)
- ☐ Table 7 (detention vault)
- ☐ Appendix C (proprietary structure)
- ☐ Special Maintenance requirements

8. Waste Material Handling

Material removed from the facility is defined as waste by DEQ. Refer to the roadwaste section of the ODOT Maintenance Yard Environmental Management System (EMS) Policy and Procedures Manual for disposal options: http://egov.oregon.gov/ODOT/HWY/OOM/EMS.shtml

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

ODOT Clean Water Unit	(503) 986-3008
ODOT Statewide Hazmat Coordinator	(503) 229-5129
ODOT Region Hazmat Coordinator	(503) 731-8290
ODEQ Northwest Region Office	(503) 229-5263

Appendix A

Content:

- **Operational Plan and Profile Drawing**

N

WQ Extended Dry Detention Pond (DFI D00676)

Curtain drain

DETENTION POND

MULTI-USE PATH

LAWNFIELD ROAD

Access from Lawnfield Road

36-Inch Outfall to Dean Creek

Dean Creek

Flow

Flow

Flow

36"

36"

36"

36"

36"

36"

36"

36"

2/SE

1/SE

1/SE

18"

12"

A

A

B

A

C

D

E

F

G

Access point

Access point

MINUTE MAN WAY

I-205

Southbound lanes (Interstate 205)

Northbound lanes (Interstate 205)

UPRR Railroad

PLAN
N.T.S.

LEGEND:

- Photo Location / Direction
- (A) 36" Storm drain pipe outlet
- (B) Sediment forebay
- (C) Type"D" inlet and 12" storm drain pipe outfall
- (D) Pond flow control manhole with overflow riser and cover
- (E) Auxiliary outfall structure
- (F) Emergency spillway
- (G) Storm drain manhole
- Manhole (and/or)
- Inlet (and/or)
- Storm Pipe (Facility)
- Storm Pipe (Existing)
- Conveyance Direction
- Pavement / Facility Flow Path

G

D

C

B

36"

24"

12"

Flow

Flow

Flow

Type "D" inlet w/ metal grate

Pond storage volume/maximum water depth

Pond bottom

Curtain drain

Flow control assembly

Flow control structure. Confied space requirements apply when accessing this structure to perform maintenance or repair

SECTION A-A
N.T.S.

OREGON DEPARTMENT OF TRANSPORTATION

Prepared By: Amy Jones

Drafted By: Amy Jones

DFI D00676
MAINTENANCE DISTRICT 2B HWY 75
EXTENDED DETENTION POND
SUNRISE CORRIDOR MP 0.45 TO 0.50
CLACKAMAS COUNTY

DFI_D00676.dgn :: Default 4/24/2018 12:11:00 PM hwyr15v

DFI_D00676.dgn

Appendix B

Content:

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

46V-022

STATE OF OREGON

DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED PROJECT

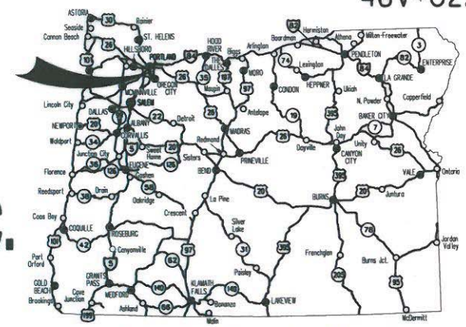
GRADING, DRAINAGE, STRUCTURES, PAVING, SIGNING, ILLUMINATION, SIGNALS & ROADSIDE DEVELOPMENT

FFO - OR212/224: SUNRISE CORRIDOR (I-205 - SE 122ND AVE) SEC.

CLACKAMAS HWY.

CLACKAMAS COUNTY
MARCH 2013

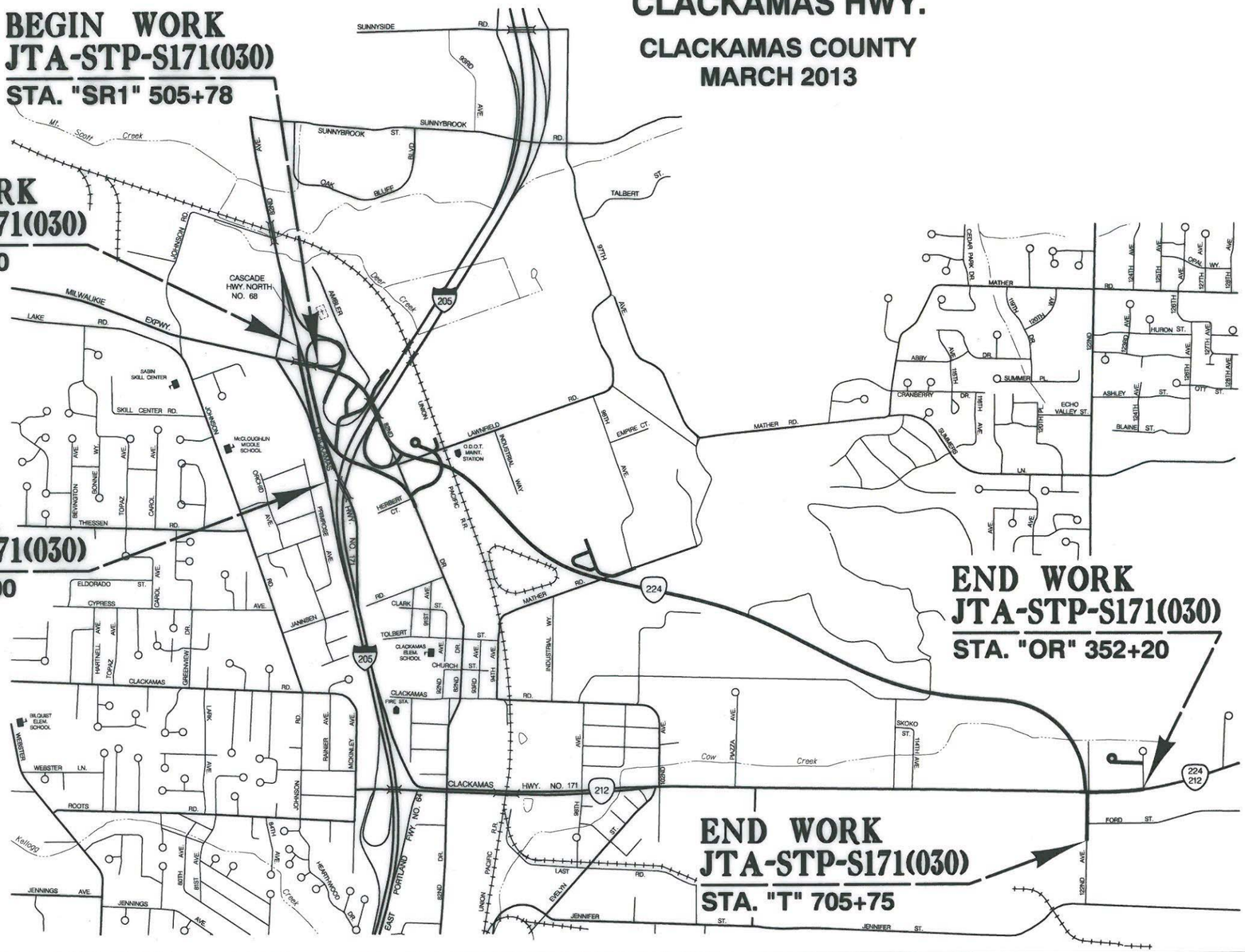
INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
1	Title Sheet
1A	Index Of Sheets Cont'd.



Overall Length Of Project - 3.90 Miles

BEGIN WORK
JTA-STP-S171(030)
STA. "SR1" 505+78

BEGIN WORK
JTA-STP-S171(030)
STA."G" 463+00



END WORK
JTA-STP-S171(030)
STA. "G" 492+00

END WORK
JTA-STP-S171(030)
STA. "OR" 352+20

END WORK
JTA-STP-S171(030)
STA. "T" 705+75

N

SEC. 4, 5, 9, 10, 11
T. 2 S., R. 2 E., W.M.

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

OREGON TRANSPORTATION COMMISSION

Pat Egan	CHAIR
David Lohman	COMMISSIONER
Mary F. Olson	COMMISSIONER
Mark Frohnmayer	COMMISSIONER
Tammy Baney	COMMISSIONER
Matthew L. Garrett	DIRECTOR OF TRANSPORTATION

PLANS PREPAIRED FOR
OREGON DEPARTMENT OF TRANSPORTATION

OBEC CONSULTING ENGINEERS
www.obec.com
CORPORATE OFFICE:
920 COUNTRY CLUB ROAD, SUITE 100B EUGENE, OREGON 97401-8089
REGIONAL OFFICES:
LAKE OSWEGO; SALEM; MEDFORD, OREGON; VANCOUVER, WASHINGTON

These plans were developed using ODOT design standards. Exceptions to these standards, if any, have been submitted and approved by the ODOT Chief Engineer or their delegated authority.

Approving Authority: _____ 12/31/12
Signature & date

LAWRENCE H. FOX - PROJECT MANAGER
Print name and title

Concurrence by ODOT Chief Engineer

FFO - OR212/224: SUNRISE CORRIDOR (I-205 - SE 122ND AVE) SEC.
CLACKAMAS HWY.
CLACKAMAS COUNTY

FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
OREGON DIVISION	JTA-STP-S171(030)	1

File No.

46V-022

DFI D00676

Sheet 3

Sheet 4

Sheet 5

Sheet 6

Sheet 7

Sheet 8

CASCADE HWY. NORTH (OR213, 82ND AVE.)

CLACKAMAS HWY. (OR224, MILWAUKIE EXPRESSWAY)

I-205 EAST PORTLAND FREEWAY

LAWNFIELD RD.

AMBLER RD.

82ND DR.

HERBERT CT.

MATHER RD.

INDUSTRIAL WAY

"A" LINE

"B" LINE

"C" LINE

"G" LINE

"LS1" LINE

"NBS" LINE

"SBS" LINE

"SUP1" LINE

"SUP3" LINE

"SUP4" LINE

"SUP5" LINE

"AM" LINE

"82D" LINE

"82E" LINE

"EM" LINE

"LN3" LINE

"UPRR" LINE

"EAR" LINE

"SR1" LINE

"BX" LINE

"SR2" LINE

"F1" LINE

"I" LINE

REGISTERED PROFESSIONAL ENGINEER
73309
OREGON
MAY 13, 2003
TOM METCALF
EXPIRES: 12/31/14

OREGON DEPARTMENT OF TRANSPORTATION

OBEC CONSULTING ENGINEERS
www.obec.com

CORPORATE OFFICE:
920 COUNTRY CLUB ROAD, SUITE 100B EUGENE, OREGON 97401-6089
REGIONAL OFFICES:
LAKE OSWEGO; SALEM; MEDFORD, OREGON; VANCOUVER, WASHINGTON

FFO - OR212/224: SUNRISE CORRIDOR (I-205 - SE 122ND AVE) SEC.

CLACKAMAS HWY.

CLACKAMAS COUNTY

Design Team Leader - Tom Metcalf
Designed By - Jason Rahm/Alissa Loberg
Drafted By - Serban Dinca/Brittney Zornado

SHEET LAYOUT PLAN

SHEET NO. 1B

File No.

Sec. 4 & 9, T. 2 S., R. 2 E., W.M.

46V-022

1. Industrial Way extension
(For sht. nos., see sht. 1A-4)

2. Sta. "SUP1" 619+22, 200.6' Rt.
Inst. 36" storm sew. pipe - 259'
5' depth

3. Sta. "SUP1" 618+06, 12.3' Rt.
Const. storm manhole 72" dia.
Inst. 36" storm sew. pipe - 56'
5' depth
Const. riprap basin
(For details, see sht. GJ-22)

4. Sta. "SUP1" 614+24, 43.76' Lt.
Const. storm manhole 72" dia.
Inst. 36" storm sew. pipe - 186'
5' depth
(For details, see sht. GJ-25)

5. Sta. "SUP1" 612+40, 11.9' Lt.
Const. storm manhole - 72" dia.
Inst. 36" storm sew. pipe - 256'
5' depth

6. Sta. "SUP1" 609+86, 15.4' Lt.
Const. storm manhole - 72" dia.
Inst. 36" storm sew. pipe - 42'
5' depth
Const. sloped end
Const. riprap basin
(For details, see sht. GJ-22)

7. Sta. "SUP1" 615+00
Const. storage pond. D00676 (SWM09)
Inst. facility field markers Type S1 - 2
Inst. facility field markers Type S2
(For details, see sht. GJ-12 & GJ-20)

8. Const. access road
Aggregate base - 155 tons
(For details, see sht. GJ-12 & GJ-20)

9. Preserve and protect extg. water lines

10. Extg. culv. to be removed
See Industrial Way extension plans
for new flow splitter weir and
ditch configuration details
(For sht. nos., see sht. 1A-4)

11. Sta. "SUP1" 616+00 to
Sta. "SUP1" 616+70, Rt.
Aesthetic grading
"V" bottom, 1:3 slopes
Dt. exc. - 8 C.Y.
(For details, see sht. GJ-23)

12. Adjust water valves with new box & lid - 5

13. Remove extg. fire hydrant

14. Adjust sanitary manhole
(For details, see sht. SA-2)

15. Adjust gas valve
(By others)

16. Relocate telephone line & pedestal
(By others)

17. Adjust extg. utility water meter
vault, & service

18. Adjust utility vault, cabinet, or pad
to finish grade - 2

19. Relocate conduit & tranformer pad
for electrical service. Utility to
relocate transformer & install
new service.

20. Remove abandoned pole

21. Preserve & protect communication
conduit

22. Const. fire hydrant assembly
Connect to extg. valve
(For details, see sht. WA-D1)

"SUP1" 610+00
"SUP1" 615+00
"SUP1" 620+00
"SR1" 530+00
"I" 30+00
"SUP1" LINE
"SR1" LINE
"I" LINE
36"-42'
36"-256'
36"-186'
36"-56'
36"-259'
Ditch

WQ Extended Dry Detention Pond (DFI D00122)

LEGEND
- Wetland
- No work area
- Regulated work area

REGISTERED PROFESSIONAL ENGINEER
64362
OREGON
NOVEMBER 14, 2000
AMY L. JONES
EXPIRES: 06/30/2013

OREGON DEPARTMENT OF TRANSPORTATION

OBEC CONSULTING ENGINEERS
www.obec.com
CORPORATE OFFICE:
920 COUNTRY CLUB ROAD, SUITE 100B EUGENE, OREGON 97401-6089
REGIONAL OFFICES:
LAKE OSWEGO; SALEM; MEDFORD, OREGON; VANCOUVER, WASHINGTON

FFO - OR212/224: SUNRISE CORRIDOR (I-205 - SE 122ND AVE) SEC.
CLACKAMAS HWY.
CLACKAMAS COUNTY

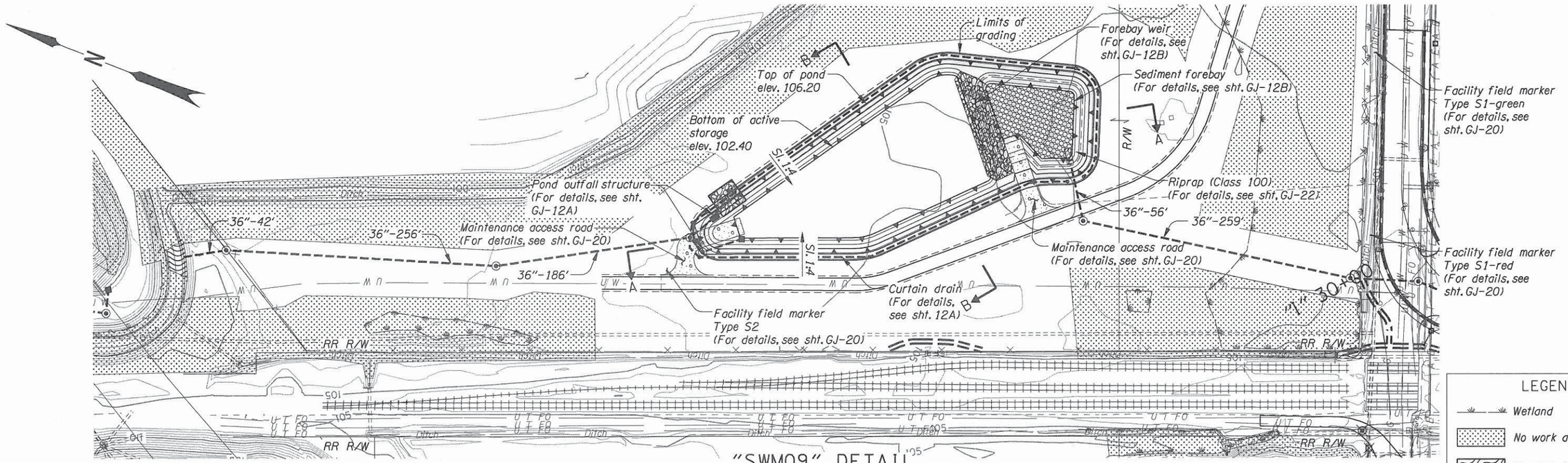
Design Team Leader - Tom Metcalf
Designed By - Ben Wewerka/Amy Jones
Drafted By - Serban Dinca/Brittney Zornado

DRAINAGE & UTILITIES PLAN & NOTES

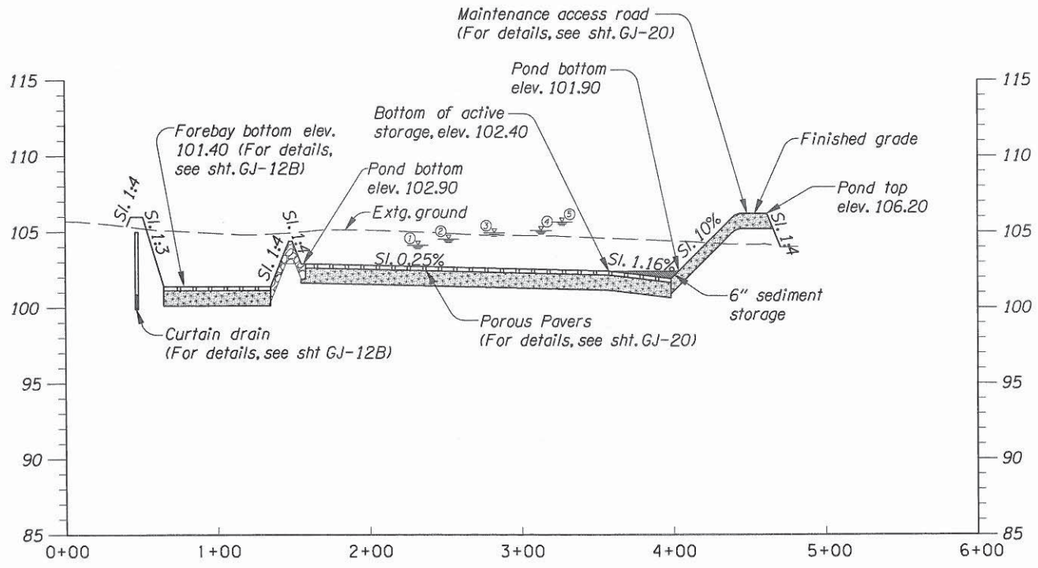
SHEET NO. GJ

File No.

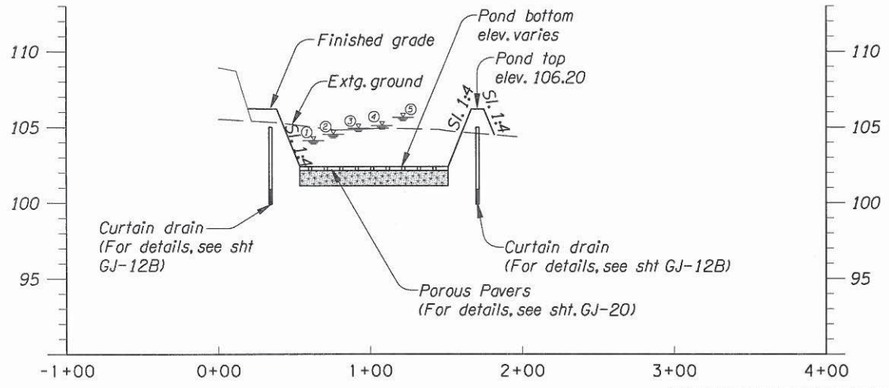
46V-022



"SWM09" DETAIL
STORAGE POND, DFI-D00676



SECTION A-A



SECTION B-B

1. Water quality WSE - 104.11
2. 2 year WSE - 104.52
3. 25 year WSE - 104.93
4. 50 year WSE - 105.09
5. 100 year WSE - 105.65
(Via emergency spillway only)

REGISTERED PROFESSIONAL ENGINEER
64332
OREGON
NOVEMBER 14, 2000
AMY L. JONES
EXPIRES: 06/30/2013

OREGON DEPARTMENT OF TRANSPORTATION

OBEC CONSULTING ENGINEERS
www.obec.com
CORPORATE OFFICE:
920 COUNTRY CLUB ROAD, SUITE 100B EUGENE, OREGON 97401-6089
REGIONAL OFFICES:
LAKE OSWEGO; SALEM; MEDFORD, OREGON; VANCOUVER, WASHINGTON

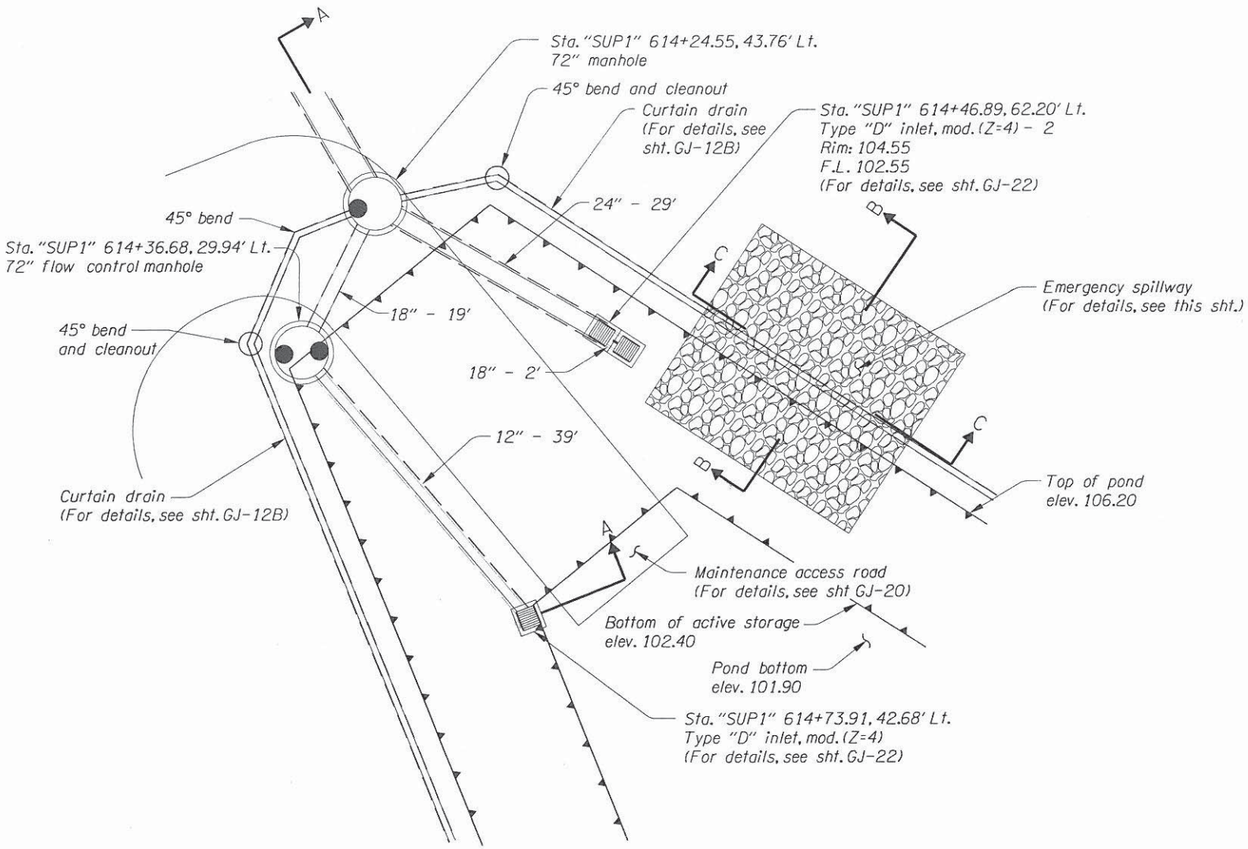
FFO - OR212/224: SUNRISE CORRIDOR (I-205 - SE 122ND AVE) SEC.
CLACKAMAS HWY.
CLACKAMAS COUNTY

Design Team Leader - Tom Metcalf
Designed By - Ben Wewerka/Amy Jones
Drafted By - Serban Dinca/Brittney Zornado

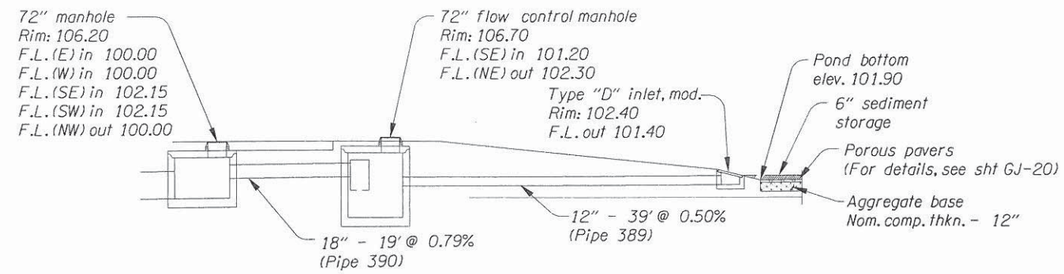
STORMWATER DETAILS

SHEET NO. GJ-12

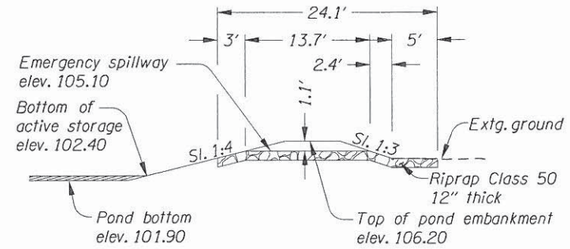
File No.



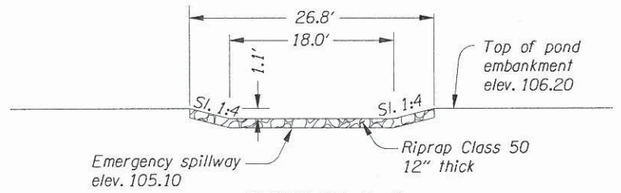
PLAN



SECTION A-A



SECTION B-B



SECTION C-C

"SWM09" OUTFALL STRUCTURE DETAIL
DFI-D00676

REGISTERED PROFESSIONAL ENGINEER
64372
OREGON
NOVEMBER 14, 2000
AMY L. JONES
EXPIRES: 06/30/2013

OREGON DEPARTMENT OF TRANSPORTATION

OBEC CONSULTING ENGINEERS
www.obec.com
CORPORATE OFFICE:
920 COUNTRY CLUB ROAD, SUITE 100B EUGENE, OREGON 97401-6089
REGIONAL OFFICES:
LAKE OSWEGO; SALEM; MEDFORD, OREGON; VANCOUVER, WASHINGTON

FFO - OR212/224: SUNRISE CORRIDOR (I-205 - SE 122ND AVE) SEC.

CLACKAMAS HWY.

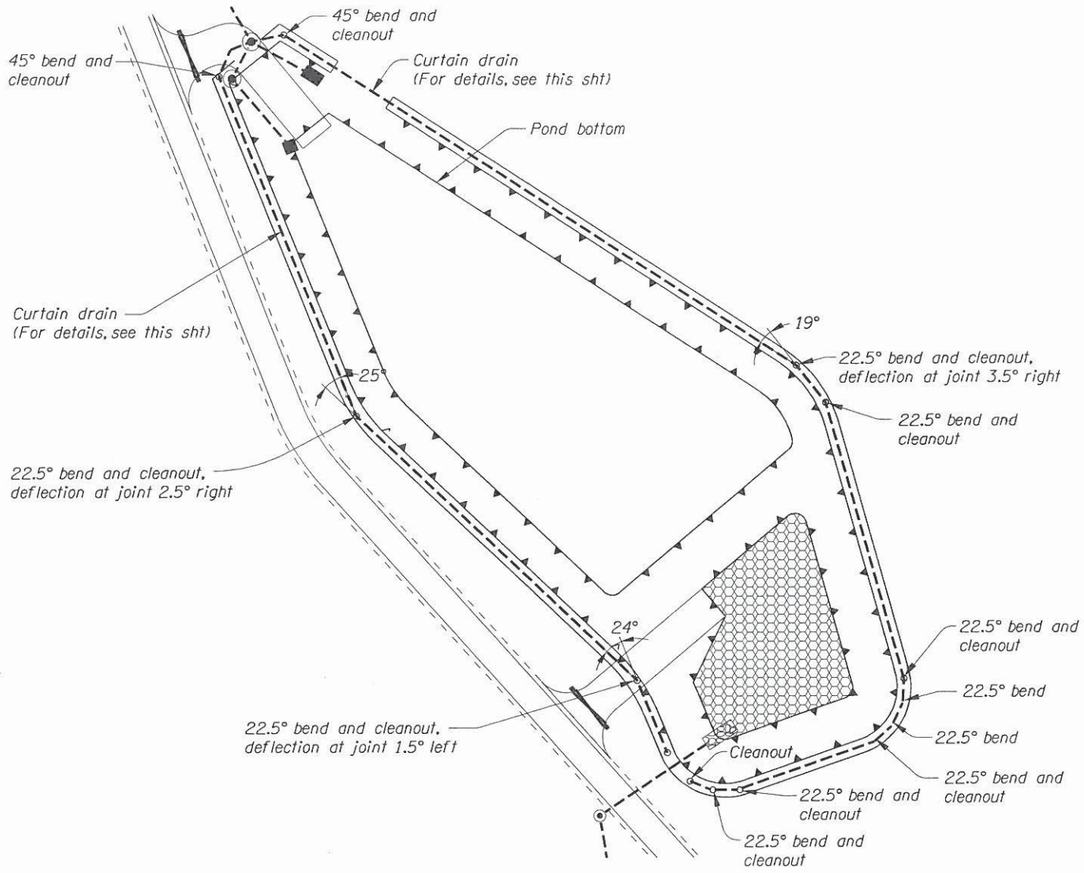
CLACKAMAS COUNTY

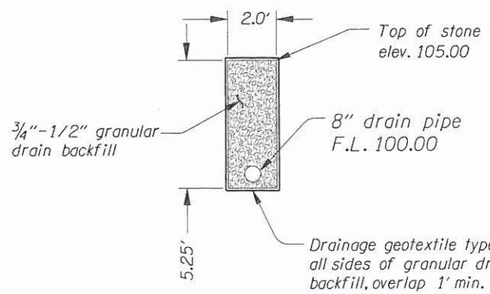
Design Team Leader - Tom Metcalf
Designed By - Ben Wewerka/Amy Jones
Drafted By - Serban Dinca/Brittney Zornado

STORMWATER DETAILS

SHEET NO. GJ-12A

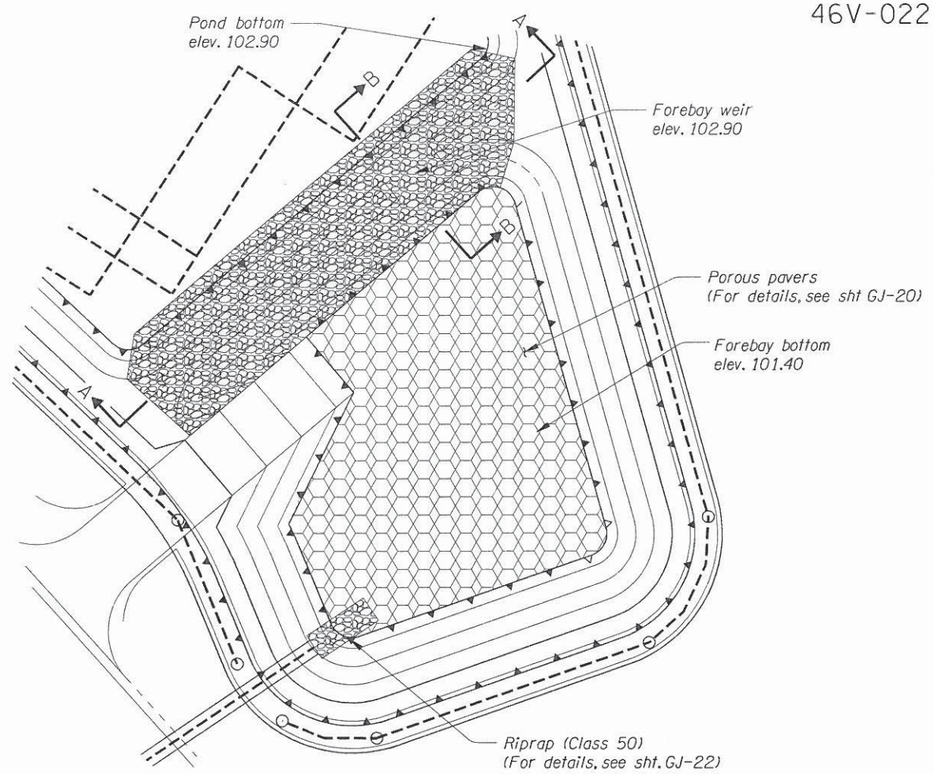
File No.



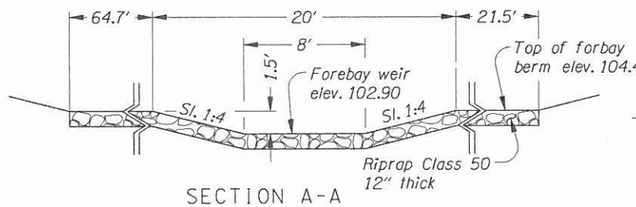


CURTAIN DRAIN TYPICAL SECTION

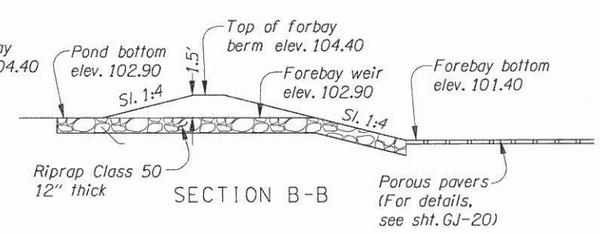
"SWM09" DRAIN PIPE NETWORK DETAIL
DFI-D00676



PLAN



SECTION A-A



SECTION B-B

"SWM09" FOREBAY DETAIL
DFI-D00676

REGISTERED PROFESSIONAL ENGINEER
64331
OREGON
NOVEMBER 14, 2000
AMY L. JONES
EXPIRES: 06/30/2013

OREGON DEPARTMENT OF TRANSPORTATION

OBEC CONSULTING ENGINEERS
www.obec.com
CORPORATE OFFICE:
920 COUNTRY CLUB ROAD, SUITE 100B EUGENE, OREGON 97401-6069
REGIONAL OFFICES:
LAKE OSWEGO, SALEM; MEDFORD, OREGON; VANCOUVER, WASHINGTON

FFO - OR212/224: SUNRISE CORRIDOR (I-205 - SE 122ND AVE) SEC.

CLACKAMAS HWY.

CLACKAMAS COUNTY

Design Team Leader - Tom Metcalf
Designed By - Ben Wewerka/Amy Jones
Drafted By - Serban Dinca/Brittney Zornado

STORMWATER DETAILS

SHEET NO. GJ-12B

File No.