OPERATION & MAINTENANCE MANUAL

DFI No. : D00182

Facility Type: Detention Pond

JUNE, 2011

INDEX

1. Identification

Drainage Facility ID (DFI):	**D00182**
Facility Type:	Detention Pond
Construction Drawings:	(V-File Number) 26V-092
Location:	District: 1 (Old 2A)
	Highway No.: 092
	Mile Post: 28.98 (beg./end)]
	Description: This facility is located northeast of the Wyeth Street and the Columbia River Highway (Hwy 092) intersection, situated east of the Burlington Northern Railroad track.

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 - W&H Pacific, William Evans, P.E., (503) 362-4675

Facility construction: 1996
Contractor: N/A

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 171-ft detention pond facility is located northeast of the Wyeth Street and the Columbia River Highway intersection, east of the Burlington Northern Railroad track.

This facility primarily receives stormwater runoff that sheet flows along both Wyeth Street and 17th Street, and flows into three catch basins located curbside along the intersection of Wyeth Street and 17th Street. The three catch basins empty into a 12-inch diameter pipe which carries the flow into the detention pond; see Point B of the Operational Plan, Appendix A. Flow is also conveyed into the detention pond through an 18-inch culvert pipe, collecting water from a drainage ditch southwest of the pond; see point A of the Operational Plan, Appendix A.

After detainment and treatment stormwater is directed from the facility outlet to a manhole northeast of the facility by way of an 18” pipe (point C on the Operational Plan). From there the flow is eventually discharged into the Columbia River.

A. Maintenance equipment access:
   This detention pond is enclosed by a fence. The only access is made via the gated entrance along the west side of the facility; see point D on the Operational Plan.

B. Heavy equipment access into facility:

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

C. Special Features:

☐ Amended Soils
☐ Porous Pavers
☐ Liners
☒ Underdrains

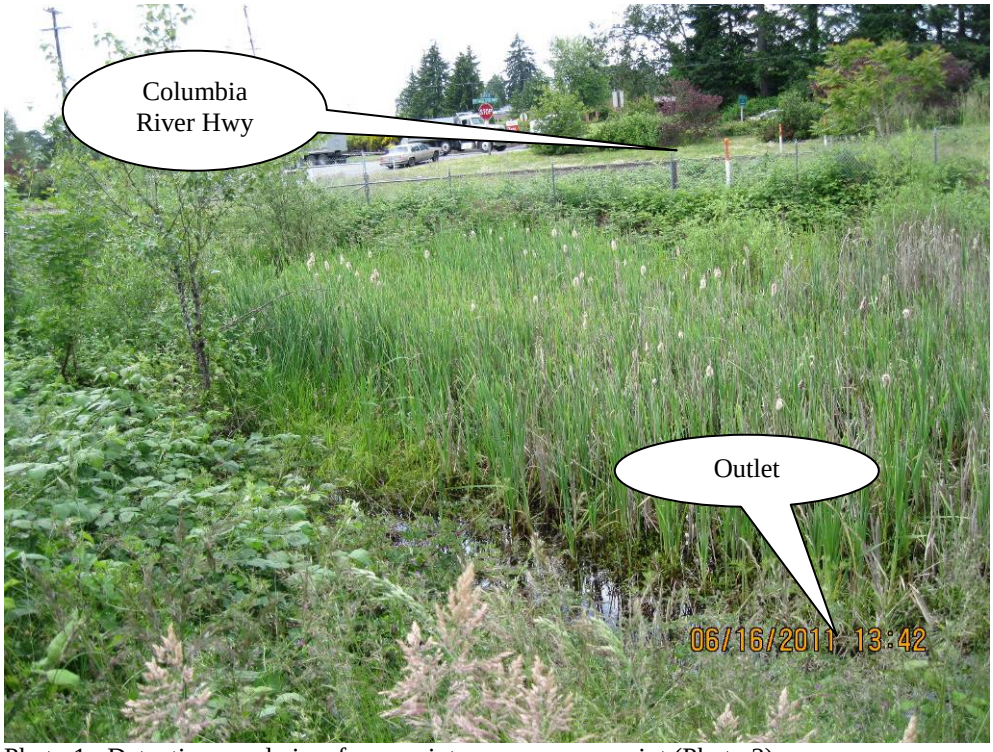


Photo 1: Detention pond view from maintenance access point (Photo 2)

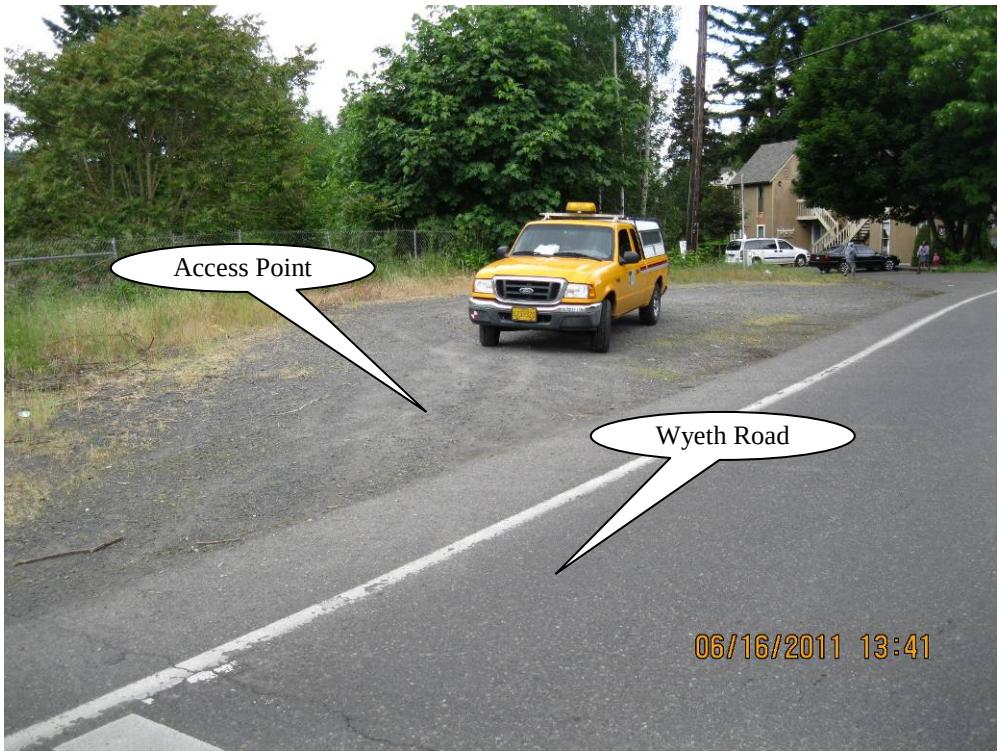


Photo 2: Maintenance vehicle access point.

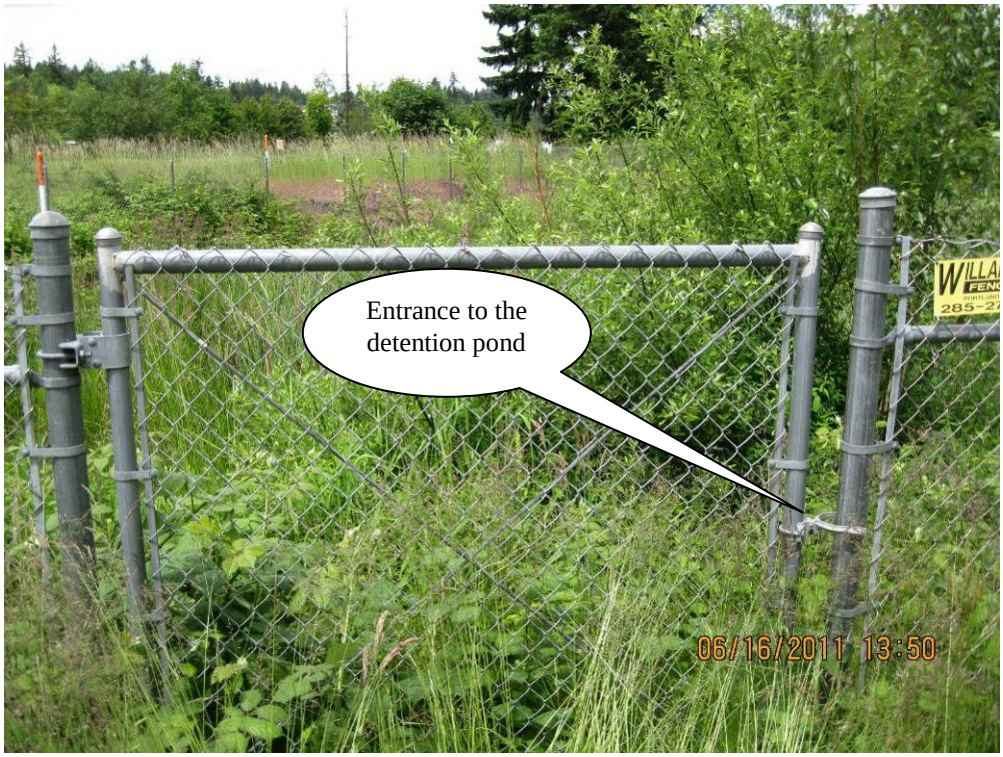


Photo 3: Entrance into the gate that surrounds to detention pond. Gate is unlocked

5. Facility Haz Mat Spill Feature(s)

The detention pond can be used to store a volume of liquid by blocking the 18-inch diameter outlet pipe located at the outlet of the detention pond This pipe is noted as point C in the Operational Plan; 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 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
All flows exit the facility through the 18-inch outlet pipe. There are no auxiliary outlet features for this facility.

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:

Mark as Required and always include Table 1:

☒ 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

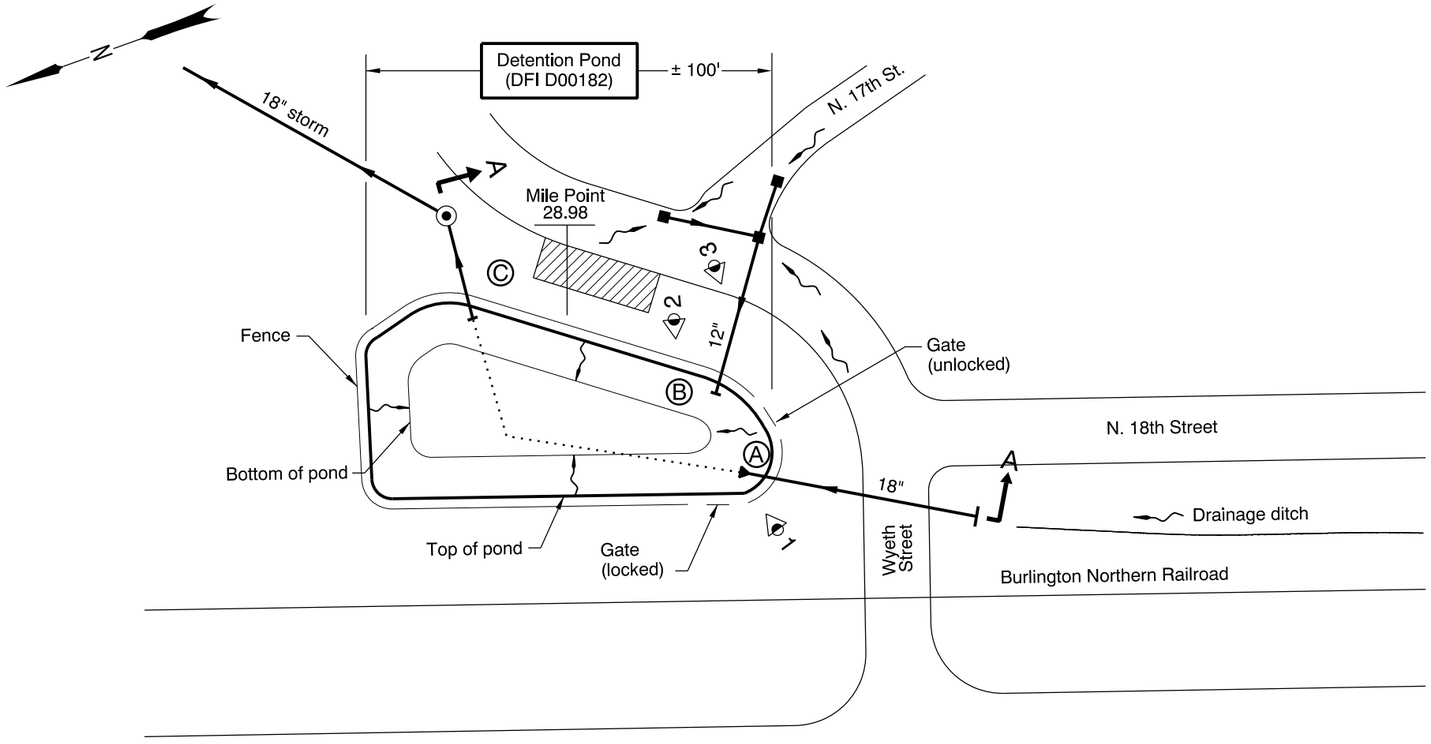
Contact any of the following for more detailed information about management of waste materials found on site:

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

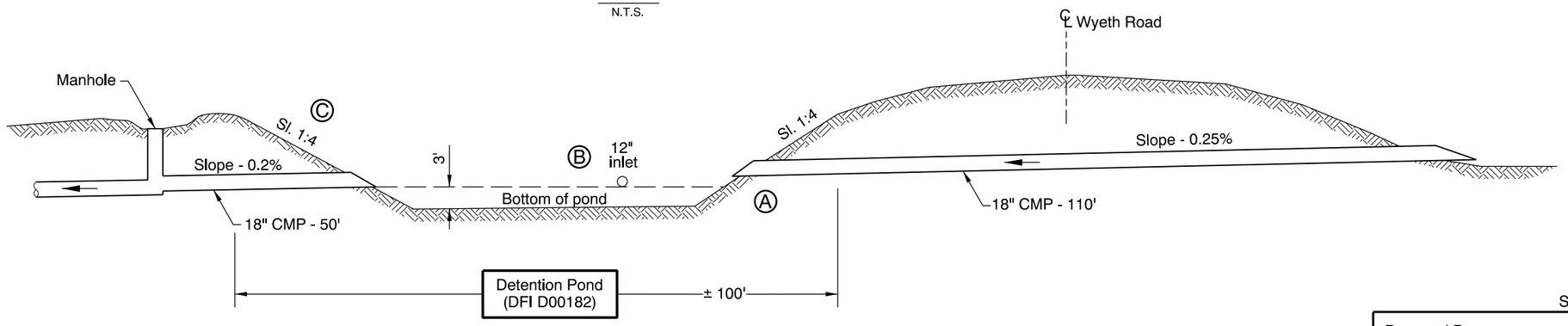
Appendix A

Content:

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



PLAN
N.T.S.



SECTION A-A
N.T.S.

LEGEND:

- Photo Location / Direction
- (A) Pond Inlet from 18" Pipe
- (B) Second Pond Inlet from 12" Pipe
- (C) Pond Outlet is 18" Pipe
- Manhole
- Inlet
- Traffic Flow / Direction
- Maintenance Access
- Storm Pipe (Facility)
- Storm Pipe
- Conveyance Direction
- Pavement / Facility Flow Path

Sht. 1 of 1

OREGON DEPARTMENT OF TRANSPORTATION

Prepared By: J.D. Koziol

Drafted By: Ed Gahan/HDR

DFI D00182
MAINTENANCE DISTRICT 1 HWY 92
DETENTION POND
LOWER COLUMBIA R. HIGHWAY MP 28.98
COLUMBIA COUNTY

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DFI_D00182.dgn

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	Index Of Sheets Cont'd. & Standard Drawing Nos.
2, 2A Thru 2A-6 Incl.	Typical Sections
2B Thru 2B-8 Incl., 2B-8A, 2B-9, 2B-9A, 2B-10, 2B-11, 2B-12, 2B-13 Thru 2B-16 Incl., 2B-16A, 2B-17 Thru 2B-26 Incl.	Details
2C Thru 2C-19 Incl.	Temporary Protection & Direction Of Traffic
2D Thru 2D-9 Incl.	Pipe Data
2E, 2E-2, 2E-3	Summary
3, 3A, 3B, 4, 5, 6, 7, 7A, 7B, 8, 8A, 8B, 8C, 9, 9A, 10, 10A, 10B, 11, 12, 12A, 12B, 13, 14, 14A, 14B, 14C, 15, 16, 16A, 17, 18, 19, 19A, 20, 20A, 21, 21A, 21B, 22, 22A, 22B, 23, 23A, 23B, 23C, 24, 24A, 25, 26, 26A, 26B, 27, 27A, 28, 28A, 29, 30, 30A, 30B, 30C, 31, 32, 33, 33A, 34, 35, 35A, 35B, 36,	Plans & Profiles
37, 37A, 37B	Landscaping

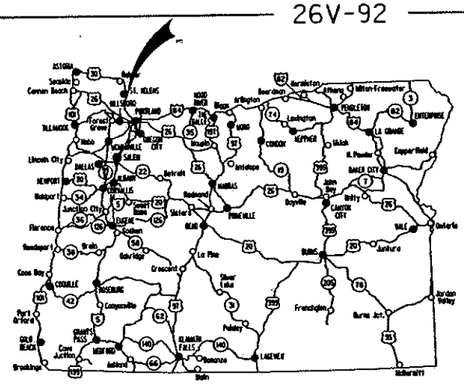
CONT'D. ON SHT. 1A

STATE OF OREGON

DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED PROJECT

REVISED AS CONSTRACTED
10/1998 CONTRACT C11695
PROJ. MGR. _____



Overall Length Of Project - 7.25 Miles

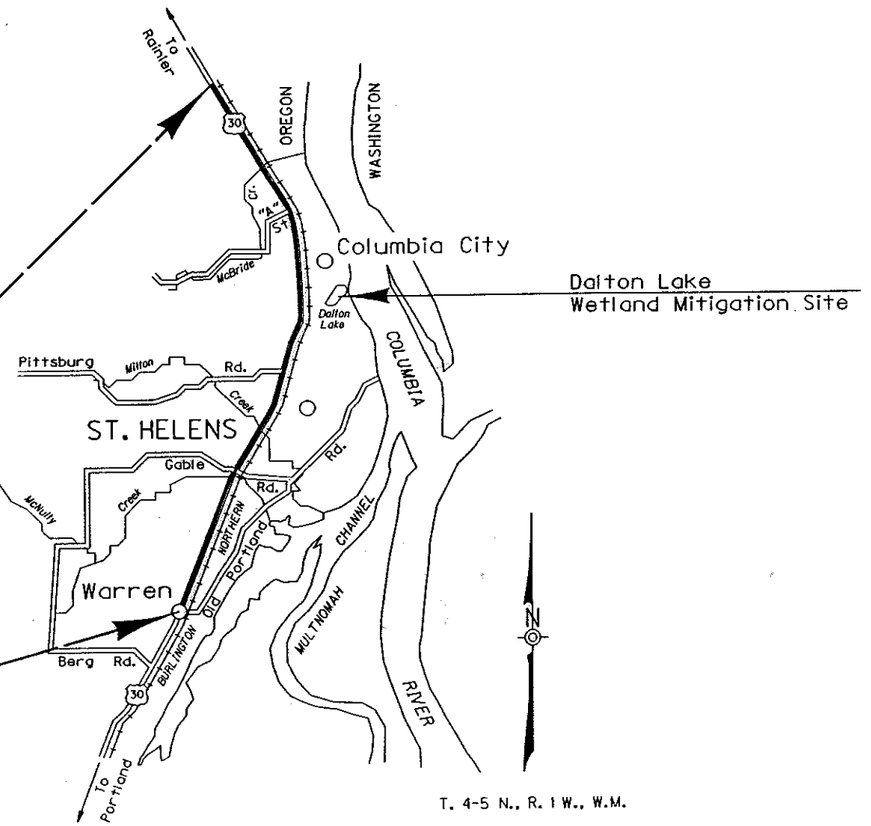
GRADING, STRUCTURES, PAVING, SIGNING, SIGNALS, & LANDSCAPING

COLUMBIA CITY N.C.L. - WARREN SEC.

COLUMBIA RIVER HIGHWAY (LOWER)

COLUMBIA COUNTY
JANUARY 1996

THE TRAFFIC CONTROL YOU PROVIDE PROTECTS YOU AS WELL AS THE PUBLIC. LET'S ALL WORK TOGETHER TO MAKE THIS JOB SAFE.



NH-S02W(9)

BEGINNING OF PROJECT
STA. 525 + 00 M.P. 33.02)

END OF PROJECT NH-S02W(9)
STA. 906 + 50 M.P. 25.77)

OREGON TRANSPORTATION COMMISSION

Henry H. Hewitt	CHAIRMAN
Susan Brody	VICE CHAIRMAN
Cynthia J. Ford	COMMISSIONER
Steven H. Corey	COMMISSIONER
Stuart Foster	COMMISSIONER
Kenneth E. Husby	INTERIM DIRECTOR OF TRANSPORTATION

PLANS PREPARED BY:

W&H PACIFIC
6400 S.W. Nimbus Avenue
BEAVERTON, OREGON 97005
(503) 626-6444

REGISTERED PROFESSIONAL ENGINEER
M.947
OREGON
JULY 25, 1980
WILLIAM J. EVANS
Expires Dec. 31, 1995

OREGON DEPARTMENT OF TRANSPORTATION
CONCURRENCE

TECHNICAL SERVICES MANAGING ENGINEER — DATE 11/30/95

COLUMBIA CITY N.C.L. - WARREN SEC.
COLUMBIA RIVER HIGHWAY (LOWER)
COLUMBIA COUNTY

FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
REGION 10	OREGON DIVISION	NH-S02W(9)	1

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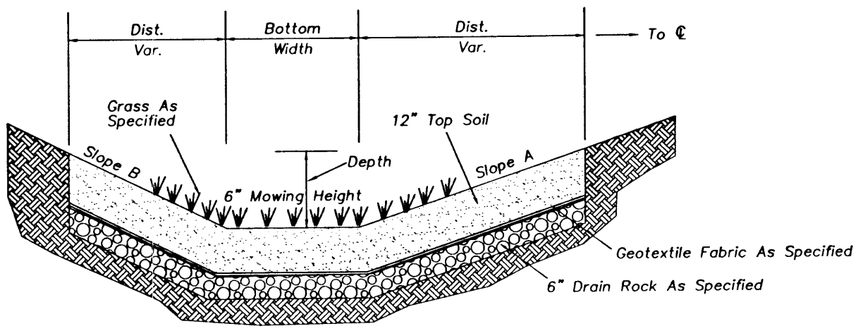
NOT REVISED AS CONSTRUCTED
10/98 CONTRACT 11695

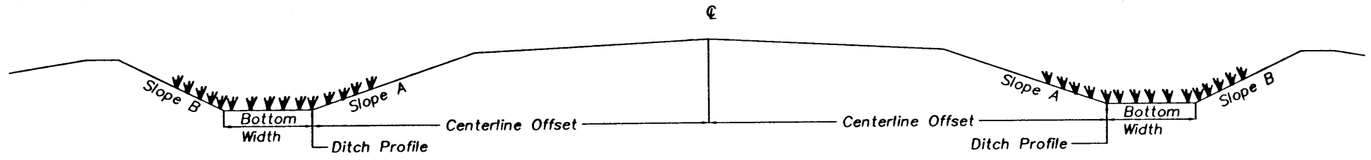
BIO-FILTER SWALE

Bio-Filter Swale Table

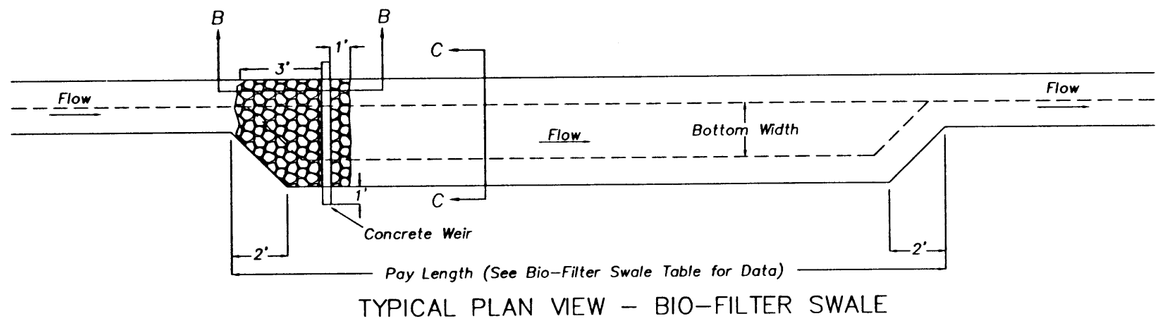
Station From	Station To	Left Or Right	Slope A	Slope B	Bottom Width (Ft)	Depth (Ft)	Length (Ft)	Channel Slope (%)
573+00	575+50	Rt	6:1	4:1	4	1	250	1.83
610+50	613+50	Rt	6:1	4:1	4	1	300	1.10
615+20	618+20	Rt	6:1	1½:1	4	1	300	0.57
719+70	720+90	Rt	6:1	4:1	4	1	120	1.57
720+90	722+60	Rt	6:1	4:1	4	1	170	1.33
797+90	800+08	Lt	3:1	2:1	4	1	218	0.83
839+45	–	Lt	2:1	2:1	10	1	160	3.12
856+70	860+75	Lt	4:1	4:1	4	1	405	0.75–2.0
897+37	–	Lt	3:1	3:1	6	1	290	1.20
898+50	900+75	Rt	4:1	1½:1	4	1	225	0.98



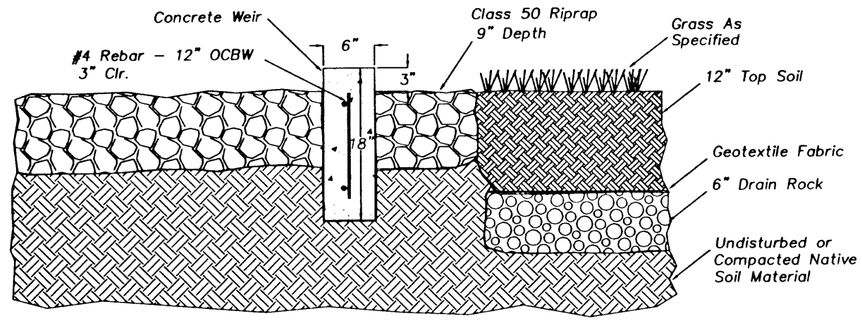
TYPICAL SECTION C–C



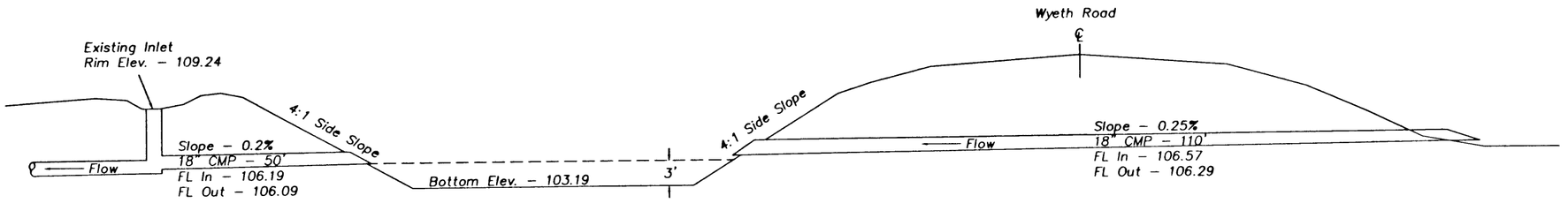
Swale On Left Side — BIO-FILTER SWALE CROSS SECTION (See Bio-Filter Swale Table For Data) — Swale On Right Side



TYPICAL PLAN VIEW – BIO-FILTER SWALE



SECTION B – B



WYETH POND – SECTION A–A (FOR LOCATION SEE SHT 21)

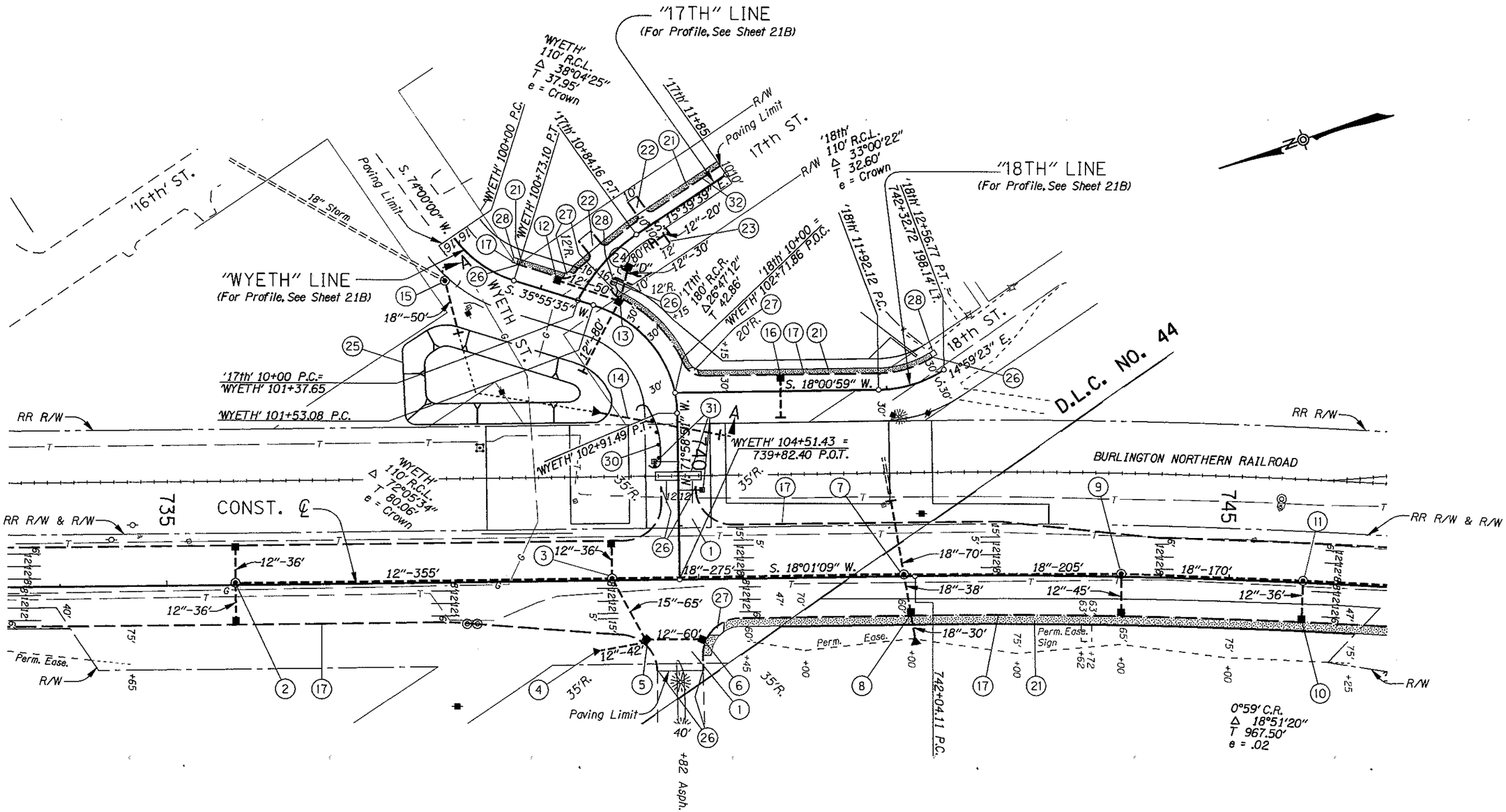
COLUMBIA CITY N.C.L. - WARREN SEC.
COLUMBIA RIVER HIGHWAY (LOWER)
COLUMBIA COUNTY

FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
REGION 10	OREGON DIVISION		2B–17

2B-17.DWG 05-OCT-1995 WOM

Sec. 4, T. 4N., R. 1W., W.M.

REVISED AS CONSTRUCTED
10/98 CONTRACT 11695



COLUMBIA CITY N.C.L. - WARREN SEC.
COLUMBIA RIVER HIGHWAY (LOWER)
COLUMBIA COUNTY

FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
REGION 10	OREGON DIVISION		21

26-SEP-1995 TJT
21_PLAN.DGN

REVISED AS CONSTRUCTED
10/98 CONTRACT 11695

(1) Const. Road Conn. - 2

(2) Sta. 735+65, ℄
Const. Manhole
Const. Type "CG-2" Inlet - 2
Inst. 12" Sew. Pipe - 72'
Tr. Rock Exc. - 30 C.Y.

(3) Sta. 739+20, ℄
Const. Manhole
Const. Type "CG-2" Inlet
Inst. 12" Sew. Pipe - 391'
Inst. 15" Sew. Pipe - 65'
Tr. Exc. - 60 C.Y.
Tr. Rock Exc. - 100 C.Y.

(4) Sta. 739+05, Rt.
Const. Paved End Slope

(5) Sta. 739+50, Rt.
Const. Type "CG-2" Inlet
Inst. 12" Sew. Pipe - 102'
Tr. Exc. - 20 C.Y.

(6) Sta. 740+10, Rt.
Const. Type "CG-2" Inlet

(7) Sta. 741+95, ℄
Const. Manhole
Inst. 18" Sew. Pipe - 383'
Conn. Outlet To Extg. Pipe
Tr. Exc. - 100 C.Y.
Tr. Rock Exc. - 123 C.Y.

(8) Sta. 742+00, Rt.
Const. Type "CG-2" Inlet
Inst. 18" Sew. Pipe - 30'
Const. Paved End Slope
Tr. Rock Exc. - 10 C.Y.

(9) Sta. 744+00, Rt.
Const. Manhole
Const. Type "CG-2" Inlet
Inst. 12" Sew. Pipe - 45'
Inst. 18" Sew. Pipe - 205'
Tr. Exc. - 70 C.Y.
Tr. Rock Exc. - 63 C.Y.

(10) Sta. 745+70, Rt.
Const. Type "CG-2" Inlet
Inst. 12" Sew. Pipe - 36'
Tr. Rock Exc. - 15 C.Y.

(11) Sta. 745+70, ℄
Const. Manhole
Inst. 18" Sew. Pipe - 170'
Tr. Exc. - 66 C.Y.
Tr. Rock Exc. - 66 C.Y.

(12) Sta. "WYETH" 101+20, Lt.
Const. Type "CG-2" Inlet
Inst. 12" Sew. Pipe - 20'
Tr. Rock Exc. - 8 C.Y.

(13) Sta. "WYETH" 101+70, Lt.
Const. Type "CG-2" Inlet
Const. Type "D" Inlet
Inst. 12" Sew. Pipe - 160'
Tr. Exc. - 30 C.Y.
Tr. Rock Exc. - 41 C.Y.

(14) Sta. "WYETH" 103+05.
Inst. 18" Culv. Pipe - 110'
Const. Paved End Slope
Tr. Exc. - 57 C.Y.

(15) Sta. "WYETH" 100+25, Rt.
Const. Manhole
Inst. 18" Culv. Pipe - 50'
Connect To Extg. Sew. Pipe
Tr. Exc. - 30 C.Y.

(16) Sta. "18th" 11+00, Lt.
Const. Type "CG-2" Inlet
Inst. 12" Sew. Pipe - 40'
Tr. Exc. - 15 C.Y.

(17) Const. Type "A" Curb

(21) Const. P.C. Conc. Walk
(For Planting Detail, See Sheets 37, 37A & 37B)

(22) Sta. "17th" 10+45, Lt.
Sta. "17th" 11+00, Lt.
Const. Appr. - 2
Tr. Exc. - 7 C.Y.

(23) Sta. "17th" 11+00, Rt.
Const. Appr.
Inst. 12" Culv. Pipe - 20'
Tr. Exc. - 7 C.Y.

(24) Sta. "17th" 10+45, Rt.
Const. Appr.

(25) Const. Water Quality Pond
4:1 Side Slopes
Bottom Elevation = 103.19
(See Sheet 2B-17)

(26) Const. Curb Ending - 7

(27) Const. Sidewalk Ramp - 4

(28) Const. Asph. Sidewalk Ramp - 4
(For Details, See Sheet 2B-10)

(30) Const. Guard Rail - 12.5' (Type 2A)
- 12.5' (Type 3)
Flare Rate = 9:1, W=10', E=0
Inst. SRT-75 End Terminal
Const. Anchor - Type 1 Mod.
Inst. End Piece - Type B
(See Drg. No. 2115)

(31) Const. Conc. R.R. Xing
Inst. R.R. Gate Signal - 2 } (By Others)

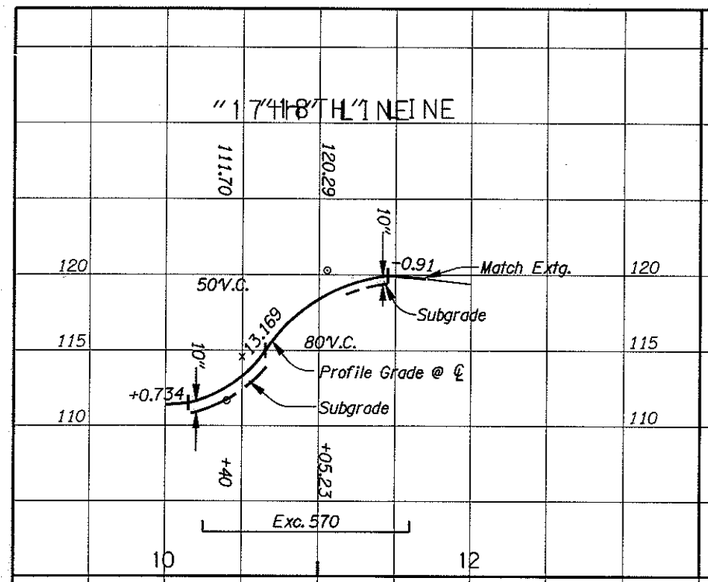
(32) Const. Type "C" Curb

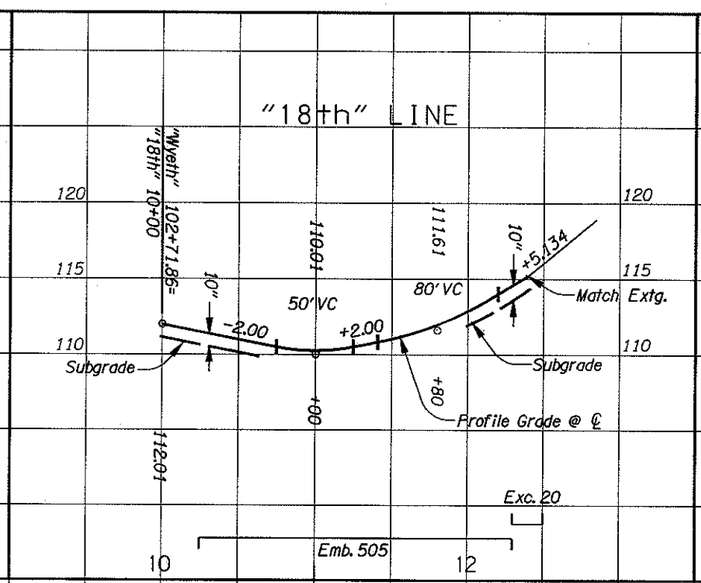
21_PLAN.DGN ########################## 27-SEP-1995 TJT

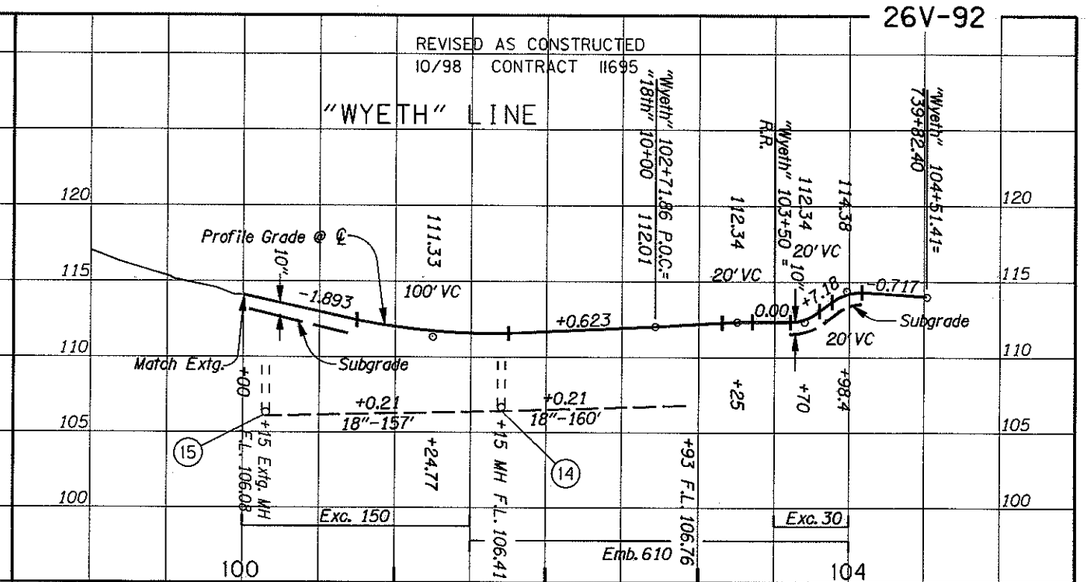
COLUMBIA CITY N.C.L. - WARREN SEC.
COLUMBIA RIVER HIGHWAY (LOWER)
COLUMBIA COUNTY

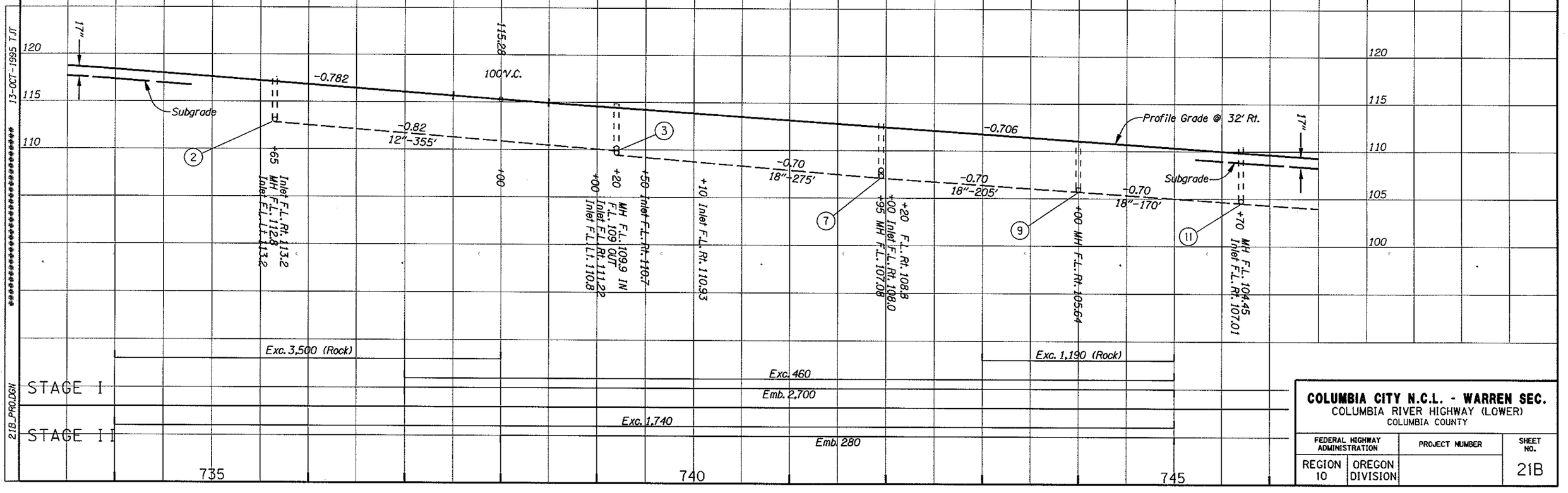
FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
REGION 10	OREGON DIVISION		21A

REVISED AS CONSTRUCTED
10/98 CONTRACT 11695









STAGE I

STAGE II

13-OCT-1995 TJT

21B_PRO.DGN

COLUMBIA CITY N.C.L. - WARREN SEC.
COLUMBIA RIVER HIGHWAY (LOWER)
COLUMBIA COUNTY

FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
REGION 10	OREGON DIVISION		21B