OPERATION & MAINTENANCE MANUAL

DFI No. : D00112
Facility Type: Water Quality Biofiltration Swale

MARCH, 2011

INDEX

1. Identification

Drainage Facility ID (DFI):	**D00112**
Facility Type:	Water Quality Biofiltration Swale
Construction Drawings:	(V-File Number) 29V-50/33V-100
Location:	District: 2B (Old 2A)
	Highway No.: 047
	Mile Post: 70.85 / 70.85 (beg./end)
	Description: This facility is located on the north side of the westbound on-ramp to US26 (Hwy 47) just north of the US08 (Hwy 29, Canyon Road) Interchange. Access can be obtained from the westbound 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:	ODOT Designer – Region 2 Tech. Center, John Marks, P.E., 503-986-2990
Facility construction:	1997
Contractor:	N/A

4. Storm Drain System and Facility Overview

A water quality swale is a flat-bottomed open channel designed to treat stormwater runoff from highway pavement areas. This type of facility is lined with grass. Treatment by trapping sedimentation occurs when stormwater runoff flows through the grass.

The swale is located on the north side of the westbound on-ramp to US 26 (Hwy 047) at the Canyon Road Interchange. The swale is at a low spot in the topography where it drains into a natural drainage corridor (unnamed ditch) which is directed under US 26 (Hwy 047) through a 36-inch culvert to the south side. This location lies under a bridge for the light rail line.

The drainage area for the swale includes the westbound on-ramp to US 26 (Hwy 047) and additional travel lanes of westbound US 26; see the Operational Plan, Appendix A. The stormwater is treated by flowing through the swale which is approximately 130 feet in length. The swale bottom is lined with an erosion control product called “GeoWeb” which is a cellular confinement system.

The swale is considered an offline system with a high-low split-flow manhole located upstream of the facility; see Point A on the Operational Plan. The flow splitter is used to bypass the water quality flows into the facility and convey the high flows through a separate conveyance system that discharges into an unnamed ditch. The high flows do not receive treatment. . After the flow splitter, the water is pretreated through a pollution control manhole (Point C). The stormwater is then directed through a 12-inch storm pipe into the 130 foot long swale where it is treated. After treatment, the water is directed into the same unnamed ditch and conveyed across US 26 (Hwy 047) through a 36-inch culvert.

The swale location appears to add additional maintenance due to vegetation and trash debris. The facility was observed as substantially overgrown. Additionally, significant trash accumulation has developed within the facility area.

For further information and details regarding the system refer to Appendix A of the Operational Plan and Appendix B for the Construction Project Plan sheets.

A. Maintenance equipment access:
   The facility can be accessed for maintenance at the westbound on-ramp to US 26 (Hwy 047). Photo 1 includes a photo of the access gate.

B. Heavy equipment access into facility:

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

C. Special Features:

☐ Amended Soils
☐ Porous Pavers
☒ Liners – Geoweb erosion control system.
☐ Underdrains

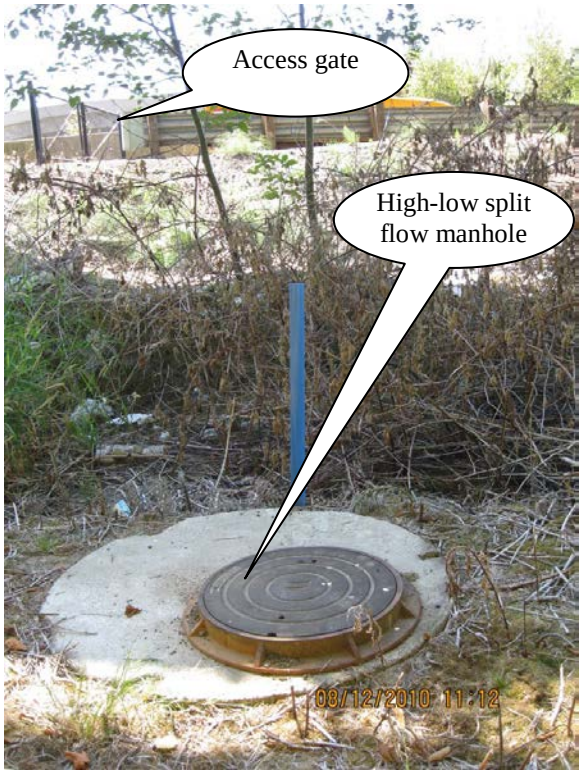


Photo 1: High-low split flow manhole looking towards the south. Access gate is located in the background.

Photo 2: High-Low split flow manhole.

Photo 3: A photo of the water quality swale with significant vegetation and overgrowth.

Photo 4: Drainage area looking towards the east on the westbound on-ramp to US 26 (Hwy 047). Overhead is the light rail line.

5. Facility Haz Mat Spill Feature(s)

The water quality biofiltration swale can be used to store a volume of liquid by blocking the rock-lined ditch located at the outlet of the swale facility. The outlet is noted as Point D on the Operational Plan, Appendix A. The use of sandbags stacked to create a berm at that location will assist in the containment of the liquid.

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 swale does not contain an auxiliary outlet or overflow as there is no outlet control device for this swale. All treated stormwater enters the 36-inch diameter culvert.

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 or 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

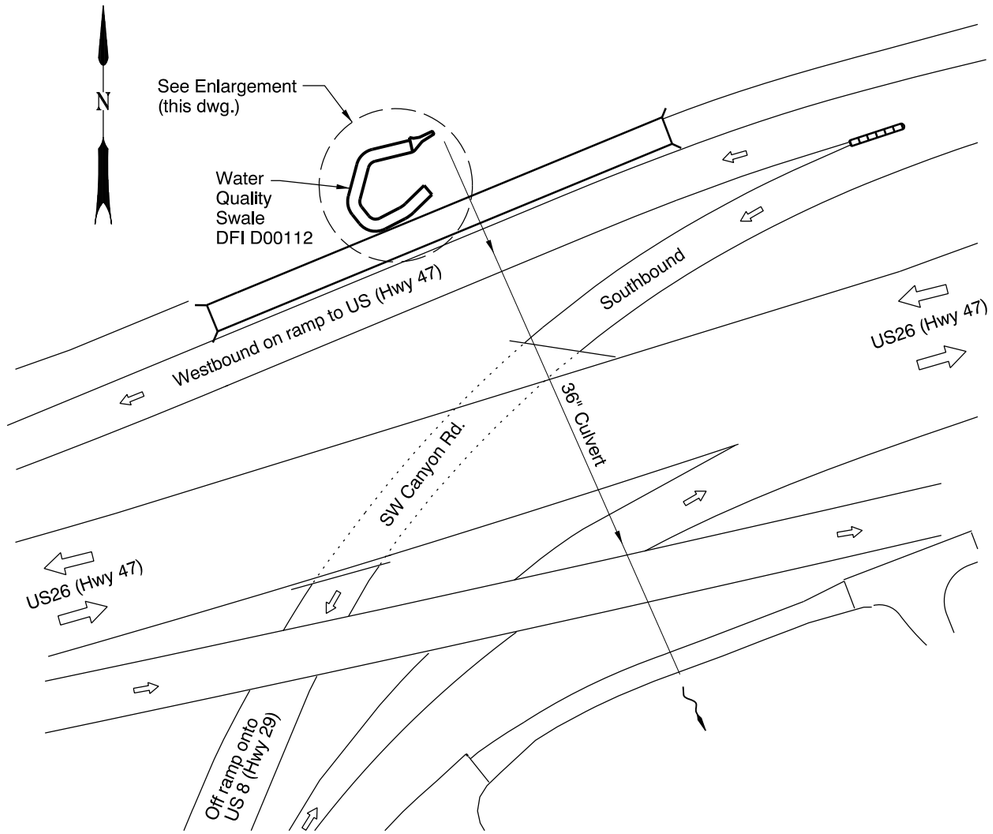
Contact any of the following for more detailed information about management of waste materials found on site:

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

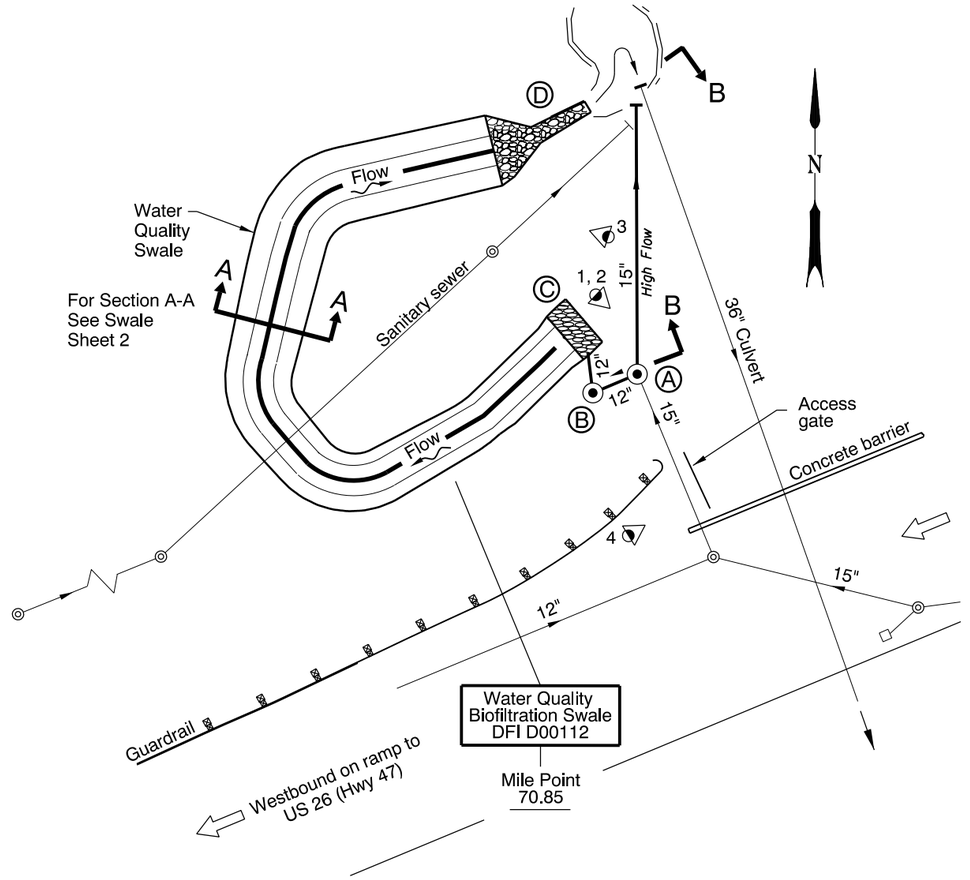
Appendix A

Content:

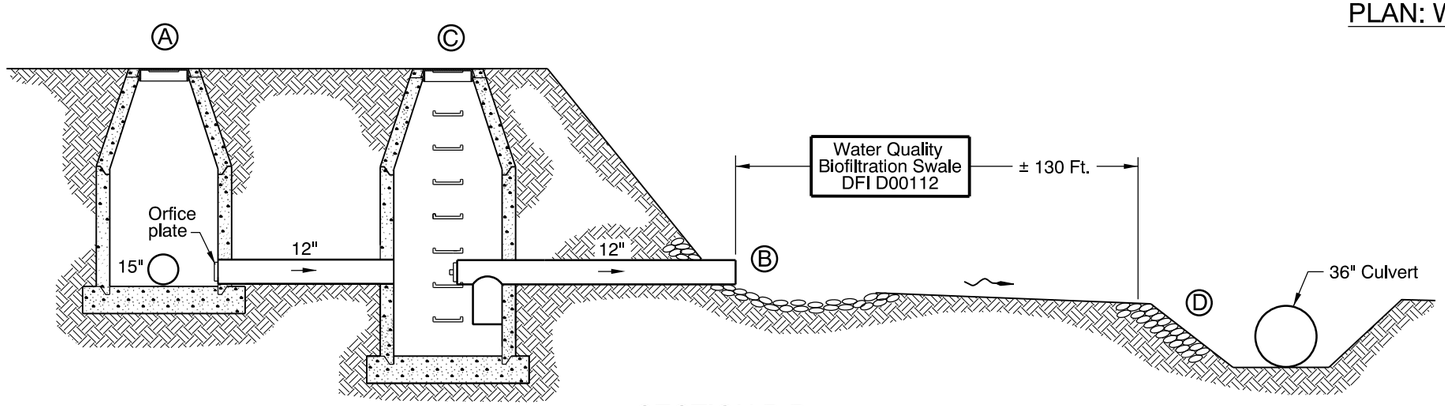
- **Operational Plan and Profile Drawing(s)**



PLAN
N.T.S.



ENLARGEMENT
PLAN: Water Quality Swale
N.T.S.



SECTION B-B
N.T.S.

LEGEND:

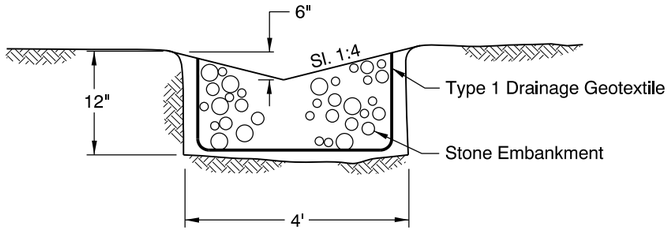
- Photo Location / Direction
- (A) High-Low Split Flow Manhole
- (B) Pollution Control Manhole
- (C) Swale Inlet/Flow Spreader
- (D) Rocklined Ditch / Facility Outlet
- Manhole and/or
- Inlet and/or
- Storm Pipe (Facility)
- Storm Pipe
- Conveyance Direction
- Pavement / Facility Flow Path

OREGON DEPARTMENT OF TRANSPORTATION

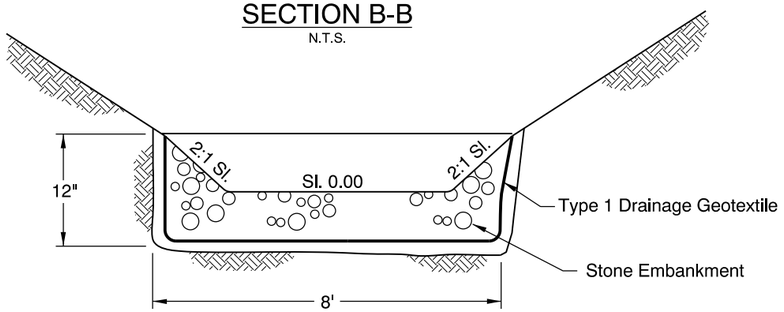
Prepared By: Bob Knorr

Drafted By: Gene Leon

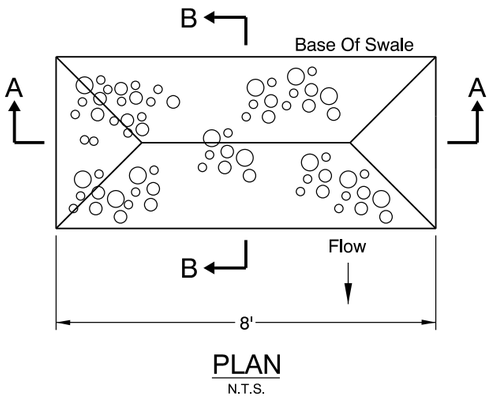
DFI D00112
MAINTENANCE DISTRICT 2B HWY 47
WATER QUALITY BIOFILTRATION SWALE
SUNSET HWY 47 MP 70.85
WASHINGTON COUNTY



SECTION B-B
N.T.S.

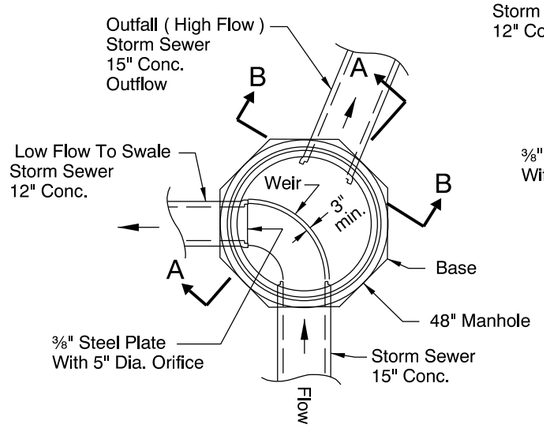


SECTION A-A
N.T.S.



PLAN
N.T.S.

FLOW SPREADER AT POINT Ⓒ



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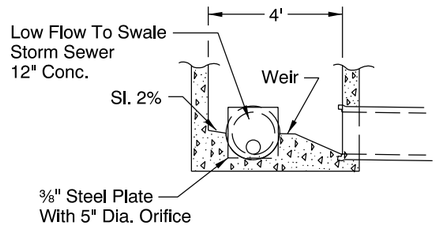
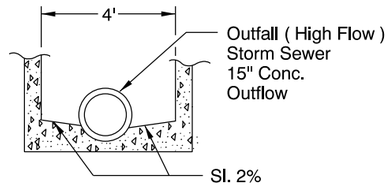
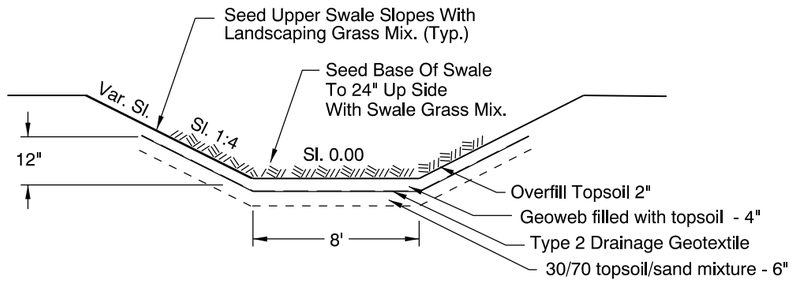


SECTION A-A
N.T.S.



SECTION B-B
N.T.S.

HIGH/LOW SPLIT FLOW MANHOLE AT POINT Ⓐ



SECTION A-A
N.T.S.

SWALE

Sht. 2 of 2

OREGON DEPARTMENT OF TRANSPORTATION

Prepared By: Bob Knorr

Drafted By: Gene Leon

DFI D00112
MAINTENANCE DISTRICT 2B HWY 47
WATER QUALITY BIOFILTRATION SWALE
SUNSET HWY 47 MP 70.85
WASHINGTON COUNTY

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.
1A-2	Index Of Sheets Cont'd.
1A-3	Standard Drawing Nos.
1B	Signature Sheet
1C	Sheet Layout
2, 2A, 2A-2 Thru 2A-20 Incl.	Typical Sections
2B Thru 2B-22 Incl.	Details
2C Thru 2C-103 Incl.	Traffic Control Plans
2D	Disposal Site
2E Thru 2E-8 Incl.	Water Quality Plans
2F Thru 2F-17 Incl.	Erosion Control Plans
2G Thru 2G-10 Incl.	Pipe Data
2H Thru 2H-14 Incl.	Summary
3	All Construction Items & Notes, RW
3A	Profile
4	Alignment
4-RW	Right of Way
4A, 4A-2	General Construction Plans
4B, 4B-2	Drainage Plans
4C	Alignment
4C-RW	Right of Way
4D, 4D-2	General Construction Plans
4E, 4E-2	Drainage Plans
4F	Alignment
4F-RW	Right of Way
4G, 4G-2	General Construction Plans
4H, 4H-2, 4J	Drainage Plans
4J-RW	Right of Way
4K, 4L, 4M, 4N, 4P, 4Q, 4R, 4S, 4T, 4U, 4V, 4W	Profiles
5	Alignment
5-RW	Right of Way
5A, 5A-2	General Construction Plans
5B, 5B-2	Drainage Plans
5C, 5D, 5E, 5F, 5G	Profiles
6	Alignment
6-RW	Right of Way
6A, 6A-2	General Construction Plans
6B, 6B-2	Drainage Plans
6C, 6D, 6E, 6F, 6G, 6H	Profiles
7	Alignment
7-RW	Right of Way
7A, 7A-2	General Construction Plans
7B, 7B-2	Drainage Plans

STATE OF OREGON

DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED PROJECT

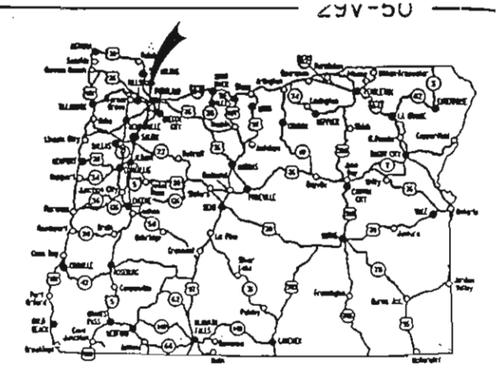
GRADING, STRUCTURES, PAVING, SIGNING, ILLUMINATION, SIGNALS, LANDSCAPING, UTILITY RELOCATIONS, & DEBRIS FILL REMOVAL

CAMELOT INTCHGE. - SYLVAN INTCHGE. (PHASE 1) SEC.

SUNSET HIGHWAY

MULTNOMAH & WASHINGTON COUNTIES

OCTOBER 1997

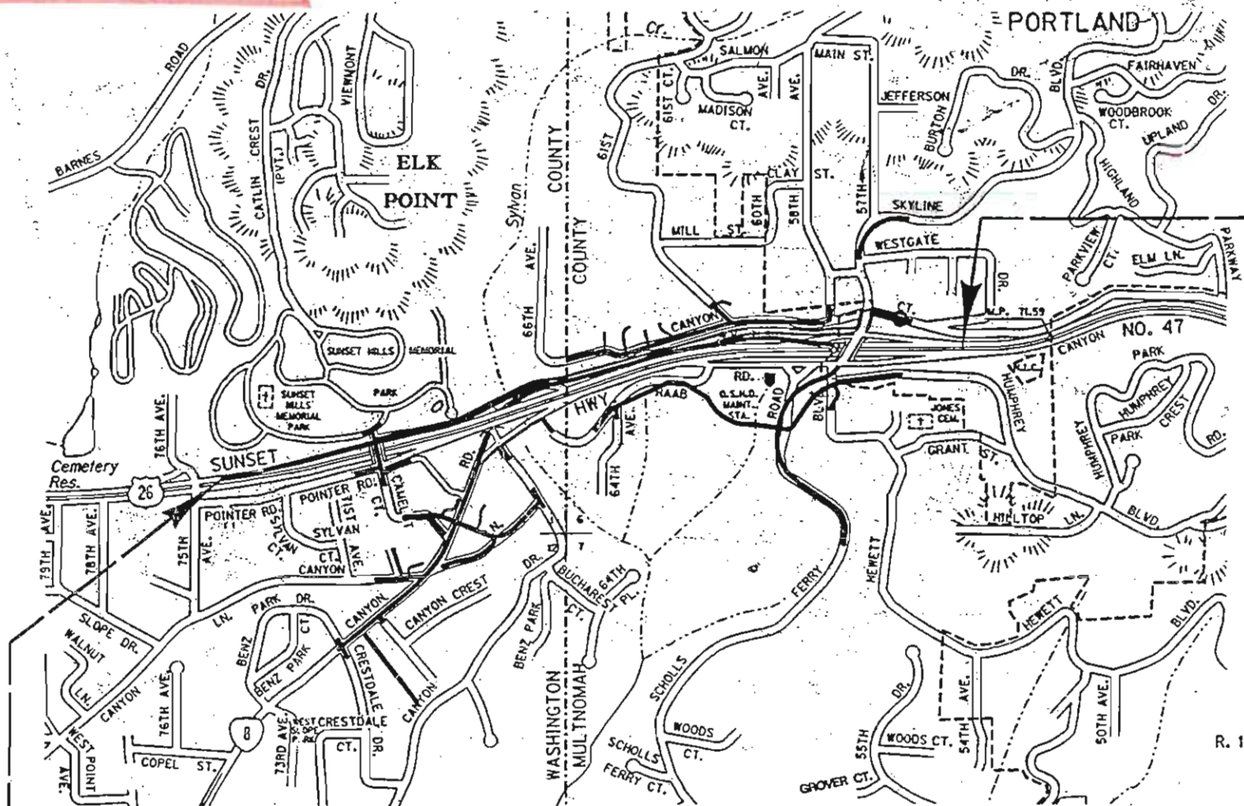


Overall Length Of Project - 1.545 km (0.96 Mile)

"AS CONSTRUCTED"
Bill Edmonson
Project Manager
JAN 17 02
Date

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 From The Center.

LET'S ALL WORK TOGETHER TO MAKE THIS JOB SAFE



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

METRIC

STP-MASTP-S047(23)
END OF PROJECT
STA. "L" 100 + 864.334 (M.P. 71.41)

STP-MASTP-S047(23)
BEGINNING OF PROJECT
STA. "L" 99 + 319.000 (M.P. 70.45)

OREGON TRANSPORTATION COMMISSION

Henry H. Hewitt	CHAIRMAN
Susan Brody	VICE CHAIRMAN
Steven H. Corey	COMMISSIONER
Stuart Foster	COMMISSIONER
John Russell	COMMISSIONER
Grace Crunican	DIRECTOR OF TRANSPORTATION

REGISTERED PROFESSIONAL ENGINEER
OREGON
AUGUST 22, 1975
THOMAS D. LUIAY
Expires Dec. 31, 1998

Thomas D. Luiay

TECHNICAL SERVICES MANAGING ENGINEER

CAMELOT INTCHGE. - SYLVAN INTCHGE. (PHASE 1) SEC.
SUNSET HIGHWAY
MULTNOMAH & WASHINGTON COUNTIES

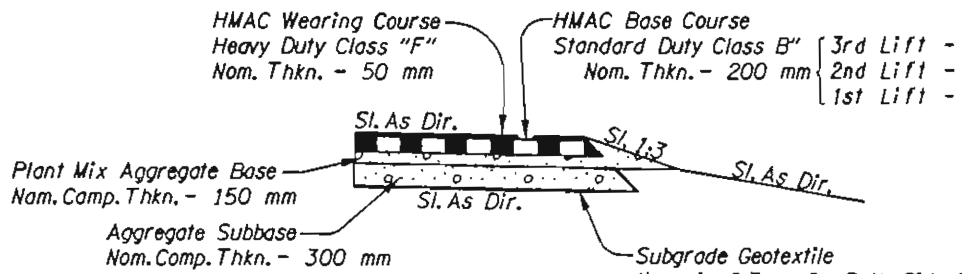
FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
REGION 10	OREGON DIVISION	STP-S047(23)	1

EW A1 C026-1409-300

08-SEP-15

WATER QUALITY TREATMENT FACILITY APPROACH GRADING & PAVING

(For Location, See Sht. 5A-2, Note 33)

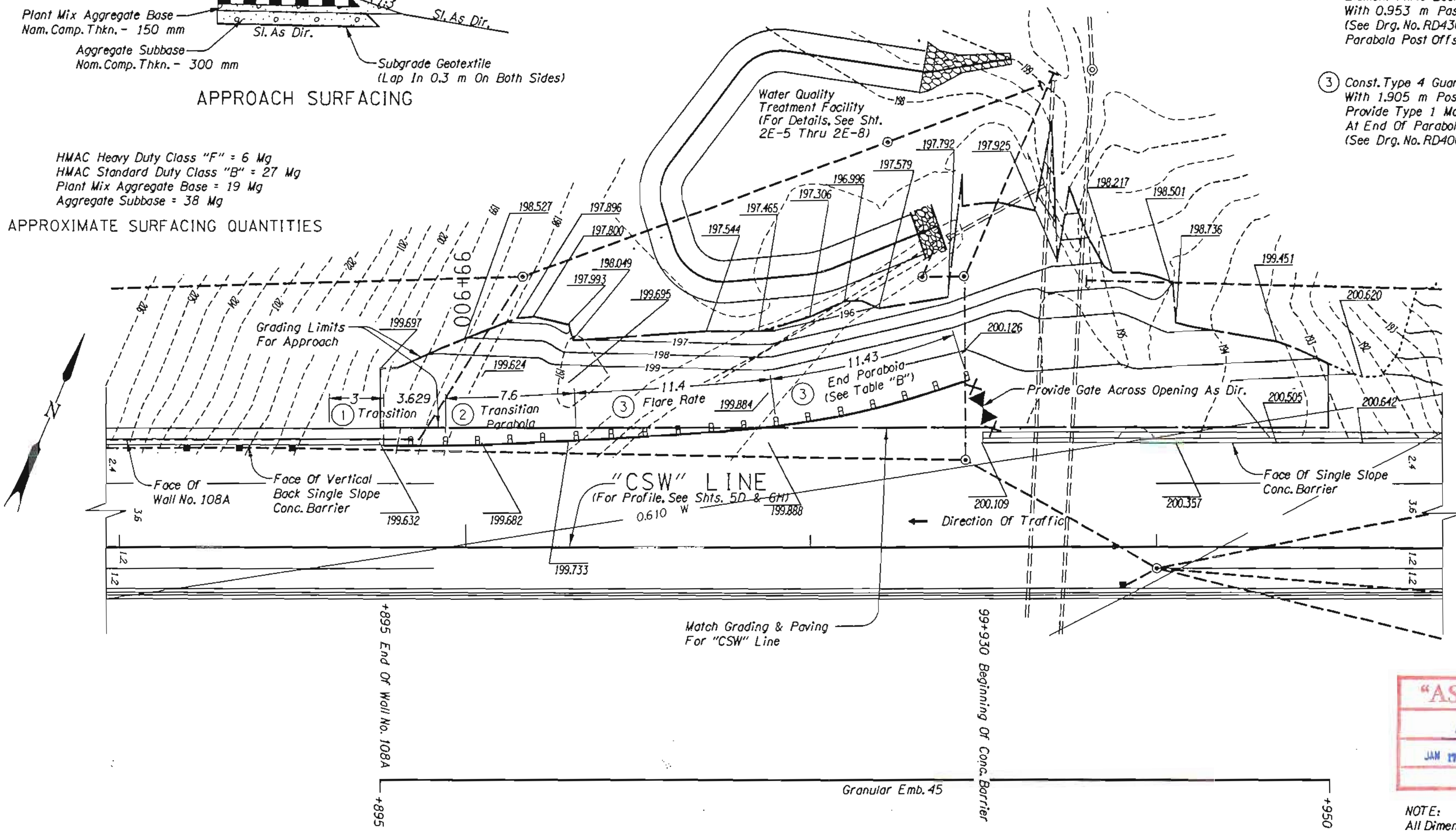


APPROACH SURFACING

HMAC Heavy Duty Class "F" = 6 Mg
HMAC Standard Duty Class "B" = 27 Mg
Plant Mix Aggregate Base = 19 Mg
Aggregate Subbase = 38 Mg

APPROXIMATE SURFACING QUANTITIES

1. Delete The Thrie Beam Rail To Standard Guard Rail Transition Element (For Details, See Drg. No. RD570)
2. At Transition Parabola Use Double Element Thrie Beam Guard Rail With 0.953 m Post Spacing (See Drg. No. RD430 For Parabola Post Offsets)
3. Const. Type 4 Guard Rail With 1.905 m Post Spacing Provide Type 1 Mod. Anchor At End Of Parabola (See Drg. No. RD400)



NOTE:
All Dimensions Are Shown In Meters Unless Otherwise Noted.

"AS CONSTRUCTED"
Bill Edmunson — Project Manager
JAN 17 '98 — Date

TABLE "B"

	END OF PARABOLA					
	P1	P2	P3	P4	P5	P6
X	1.905	3.810	5.715	7.620	9.525	11.430
Y	0.034	0.137	0.308	0.546	0.850	1.219

Extg. Contours, Shown Thus : - - - 123 - - -
Design Contours, Shown Thus : ——— 123 ———
Finish Grade Elevations (Top Of Asphalt Concrete), Shown Thus : 123.456 F.G.

CAMELOT INTCHGE. - SYLVAN INTCHGE. (PHASE 1) SEC.
SUNSET HIGHWAY
MULTNOMAH & WASHINGTON COUNTIES

FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
REGION 10	OREGON DIVISION		2B-13

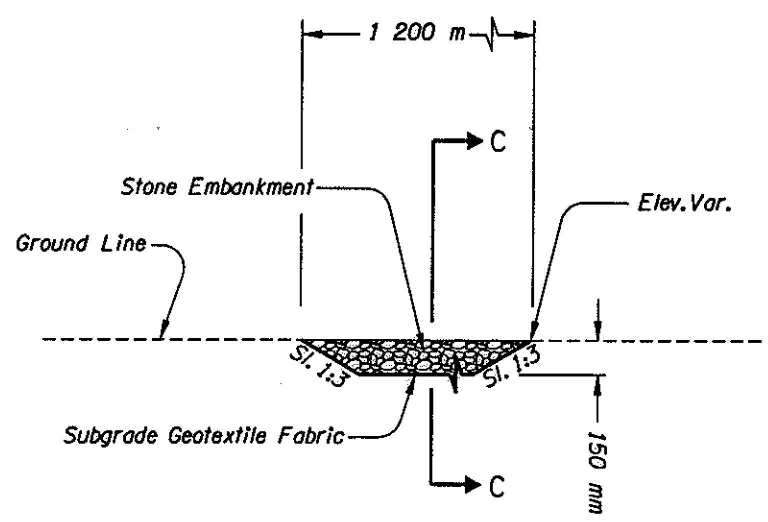
BRIDGE DETAILS CHECKED

C:\usr\PROJECTS\06071\plans\06071d2.dn2

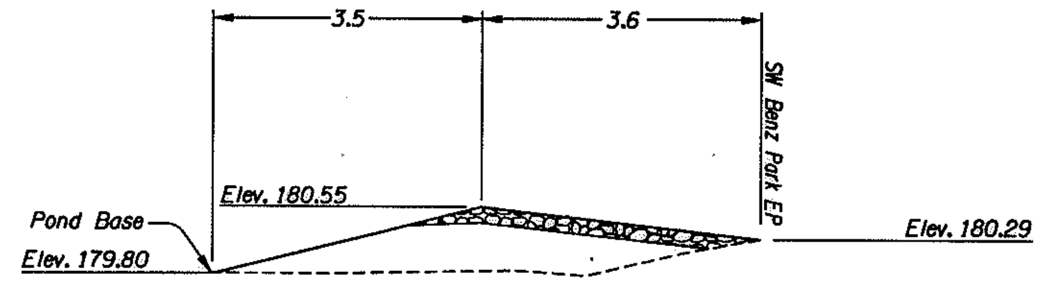
07-SEP-1997 21:55

VIEW 2

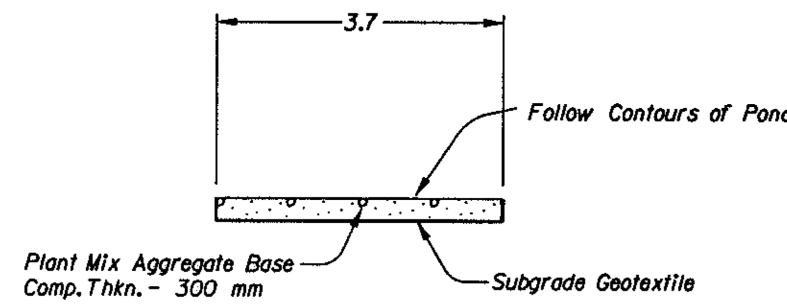
WATER QUALITY TREATMENT FACILITY DETAILS - BENZ PARK



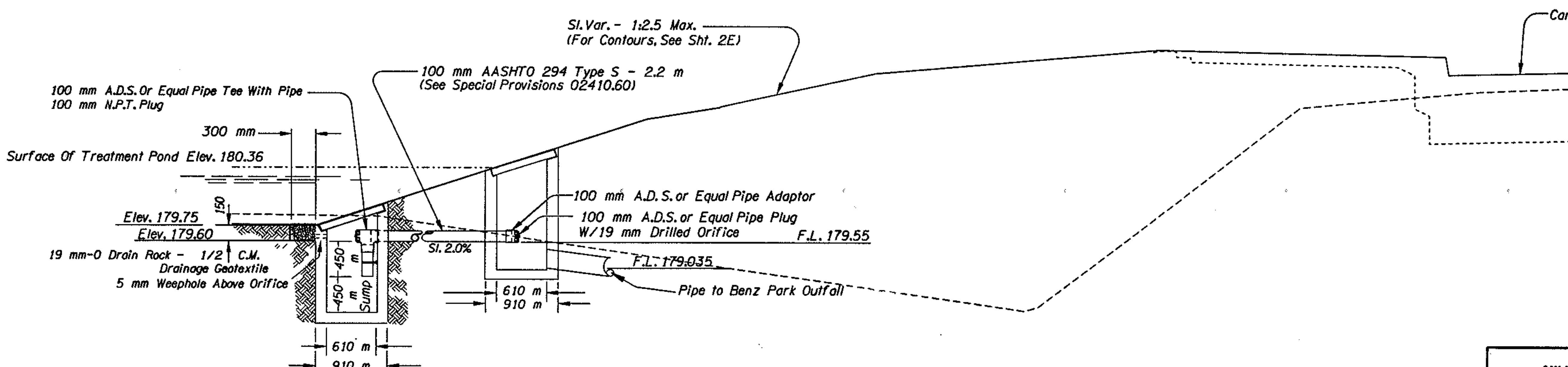
SPILLWAY



SECTION C-C
(For Location, See Sht. 2E)



WATER QUALITY ACCESS ROAD



SECTION B-B

POND OUTLET STRUCTURE
(See USA Standard Drg. 150)

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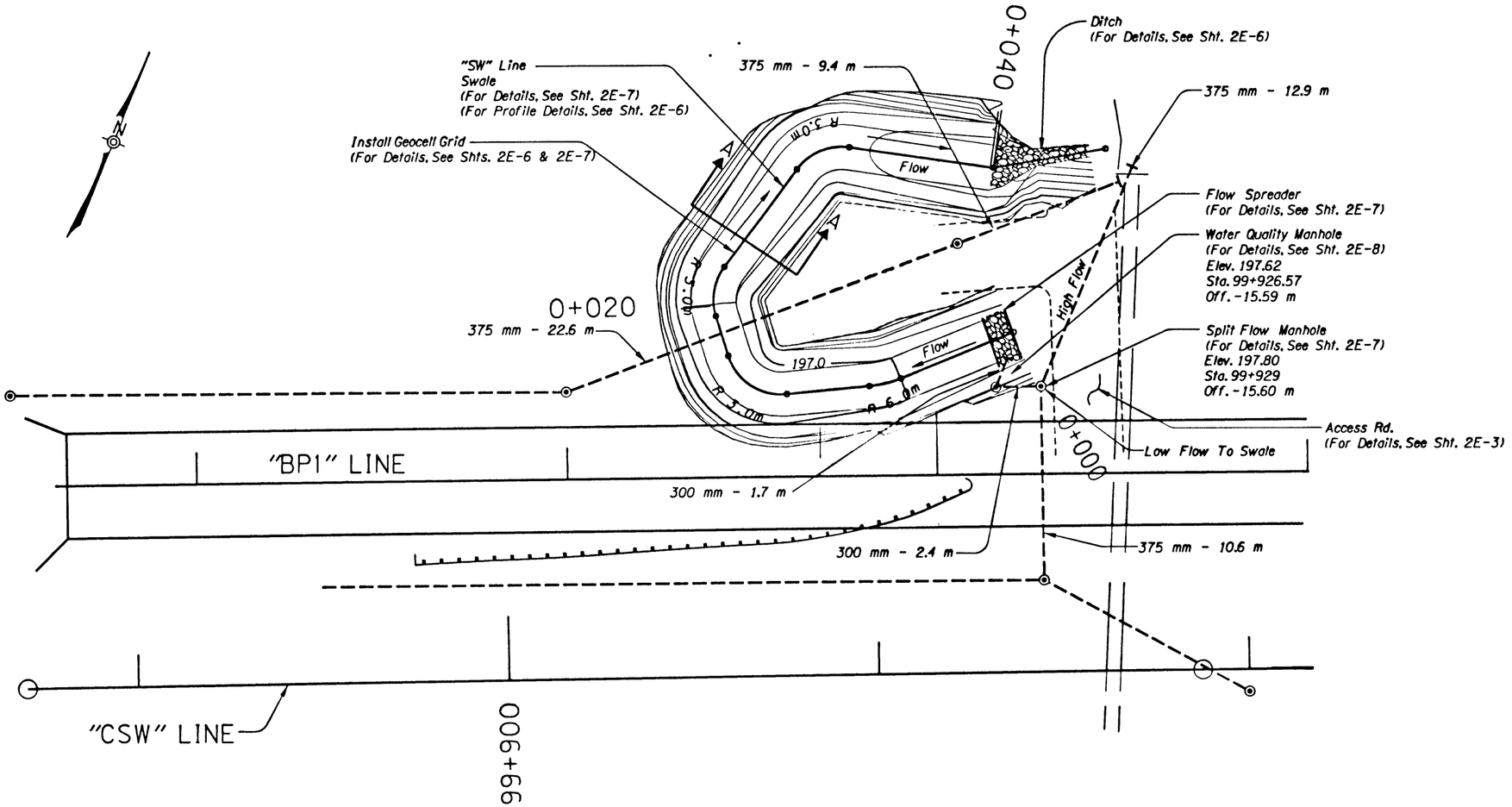
VIEW 4

CAMELOT INTCHGE. - SYLVAN INTCHGE. (PHASE 1) SEC.
SUNSET HIGHWAY
MULTNOMAH & WASHINGTON COUNTIES

FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
REGION 10	OREGON DIVISION		2E-3

WATER QUALITY TREATMENT FACILITY DETAILS - SWALE

METRIC



WATER QUALTY FACILITY APPROACH

(For Details, See Sht. 2B-13)

BRIDGE DETAILS CHECKED

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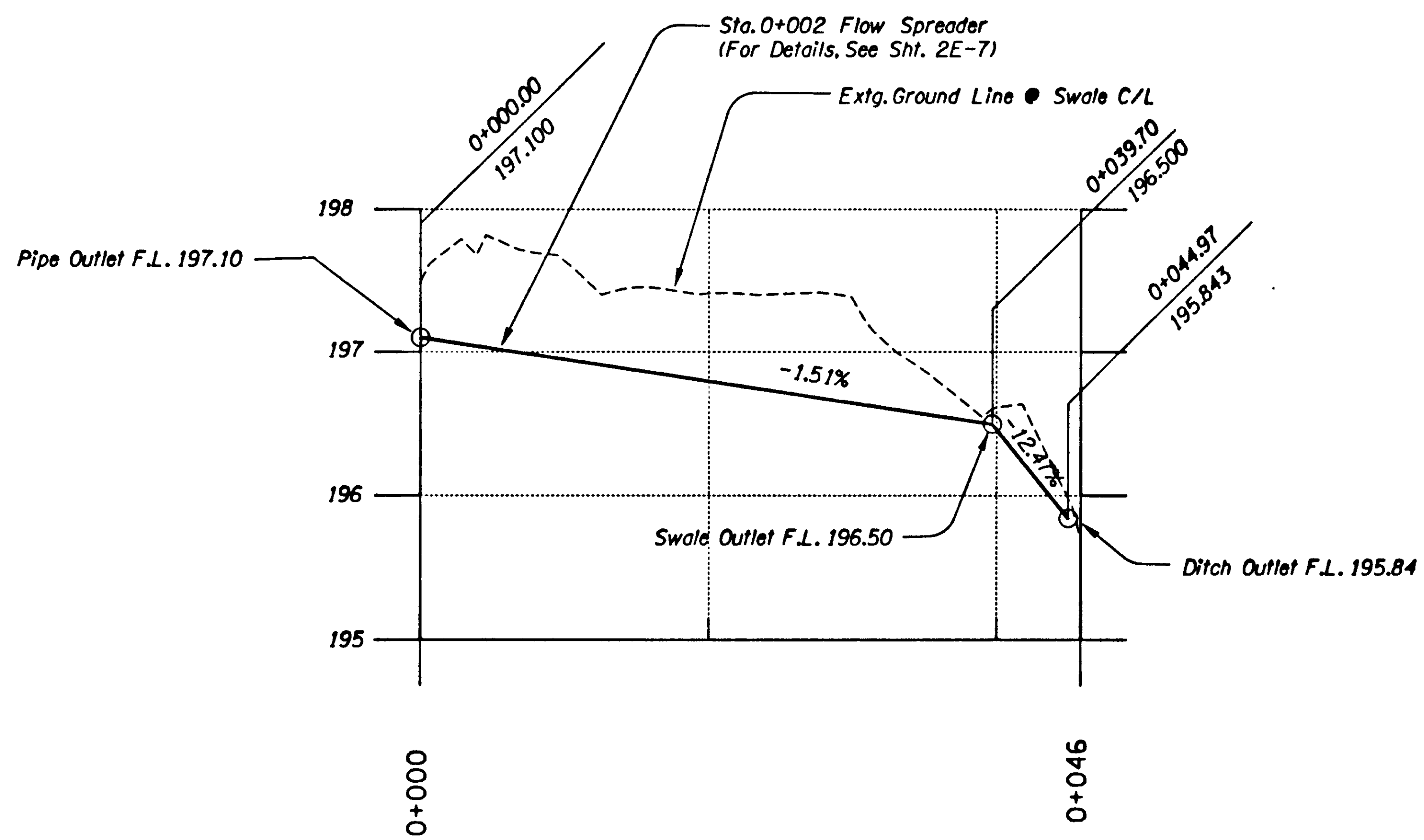
VIEW 2

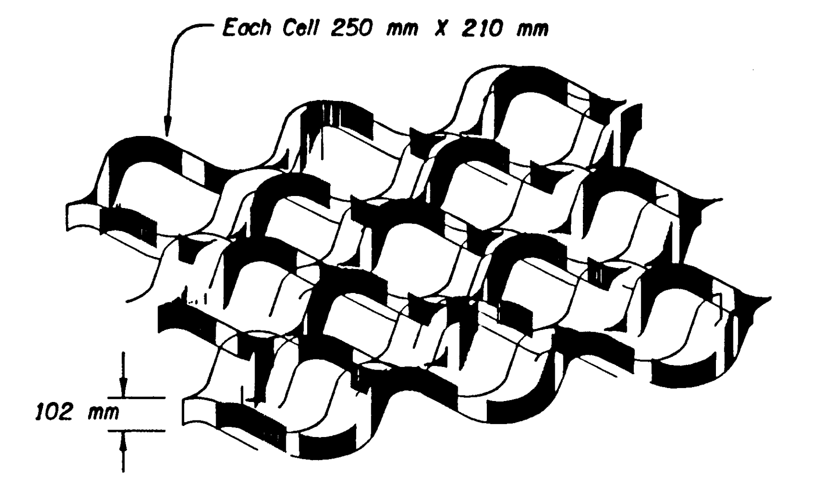
CAMELOT INTCHGE. - SYLVAN INTCHGE. (PHASE 1) SEC. SUNSET HIGHWAY MULTNOMAH & WASHINGTON COUNTIES			
FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
REGION 10	OREGON DIVISION		2E-5

WATER QUALITY TREATMENT FACILITY DETAILS - SWALE

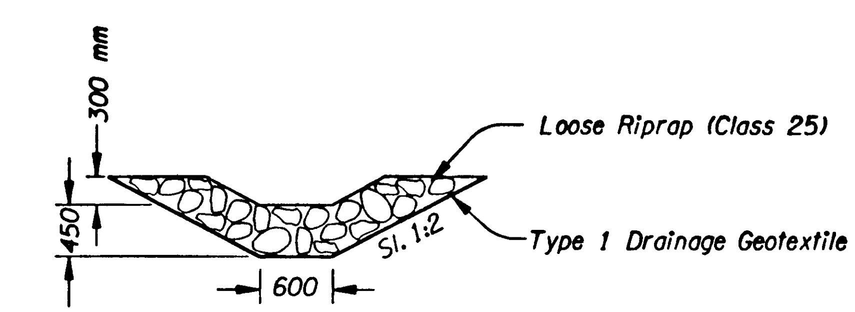


(For Swale Location, See Sht. 2E-5)

"SW" LINE
SWALE AT SYLVAN CULVERT



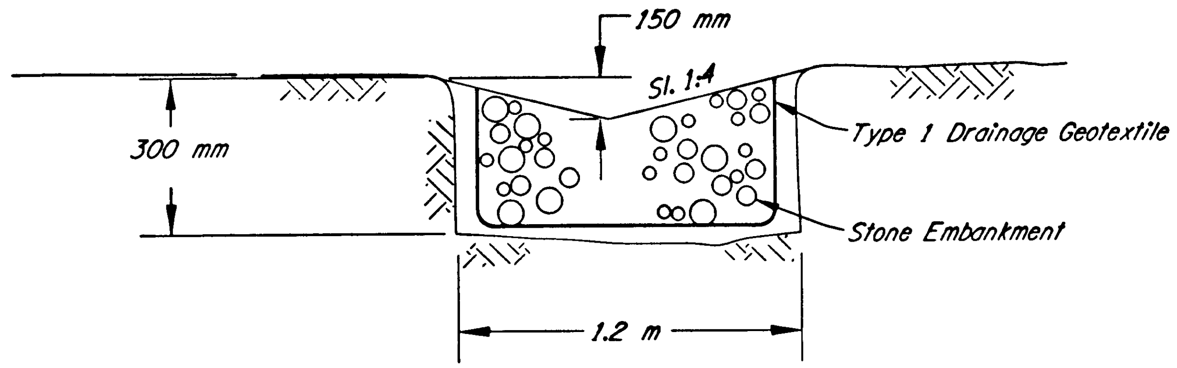
POLYETHYLENE GEOCELL GRID DETAIL
Perforated Geoweb Or Equal



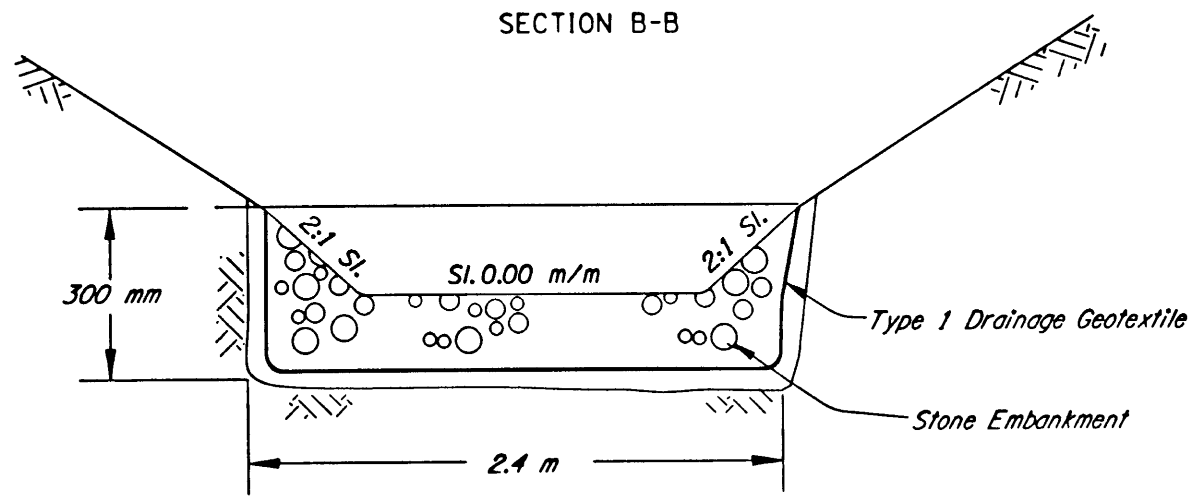
DITCH

CAMELOT INTCHGE. - SYLVAN INTCHGE. (PHASE 1) SEC. SUNSET HIGHWAY MULTNOMAH & WASHINGTON COUNTIES		
FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
REGION 10 / OREGON DIVISION		2E-6

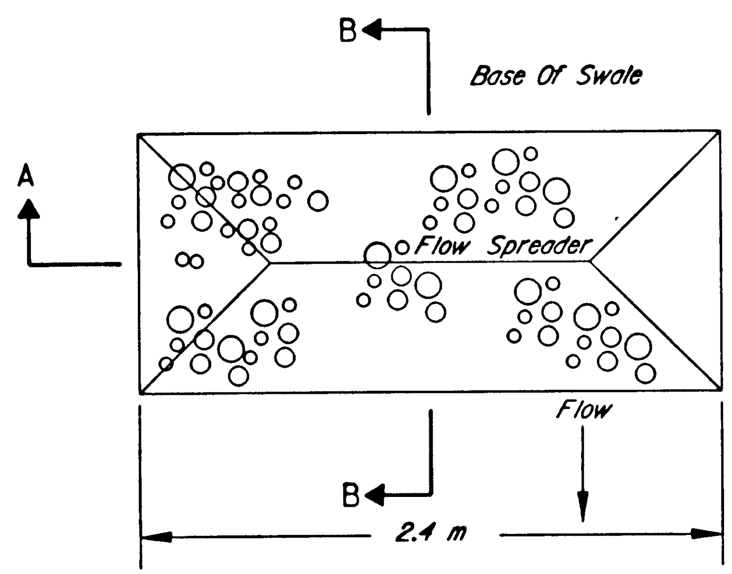
WATER QUALITY TREATMENT FACILITY DETAILS - SWALE



SECTION B-B

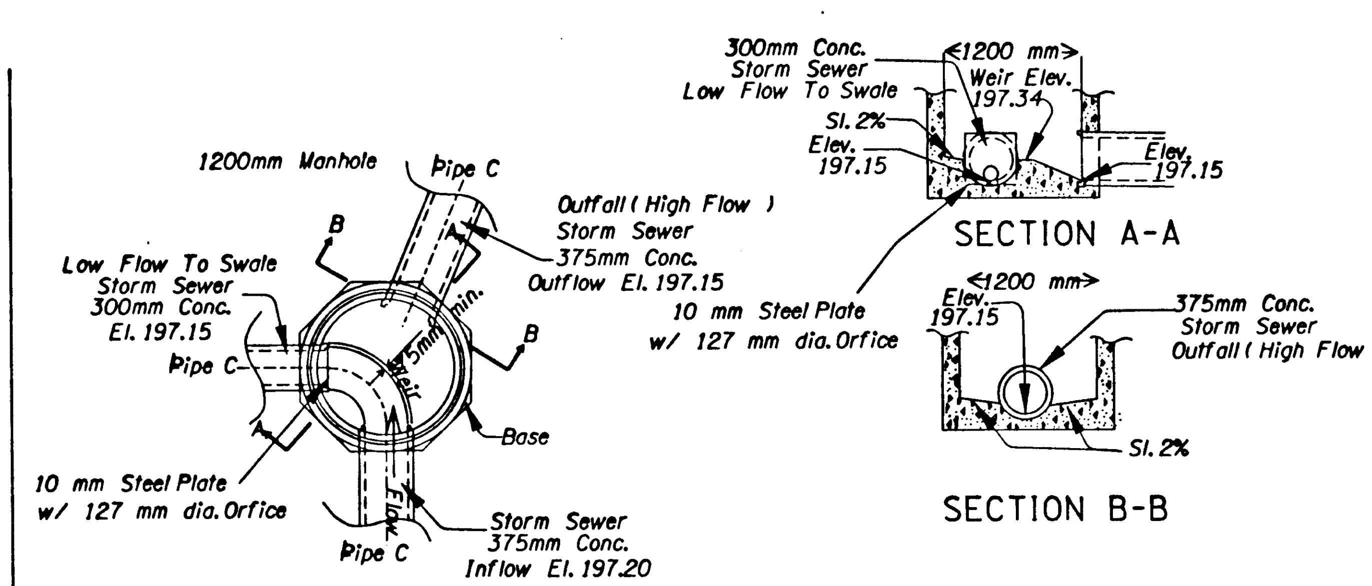


SECTION A-A



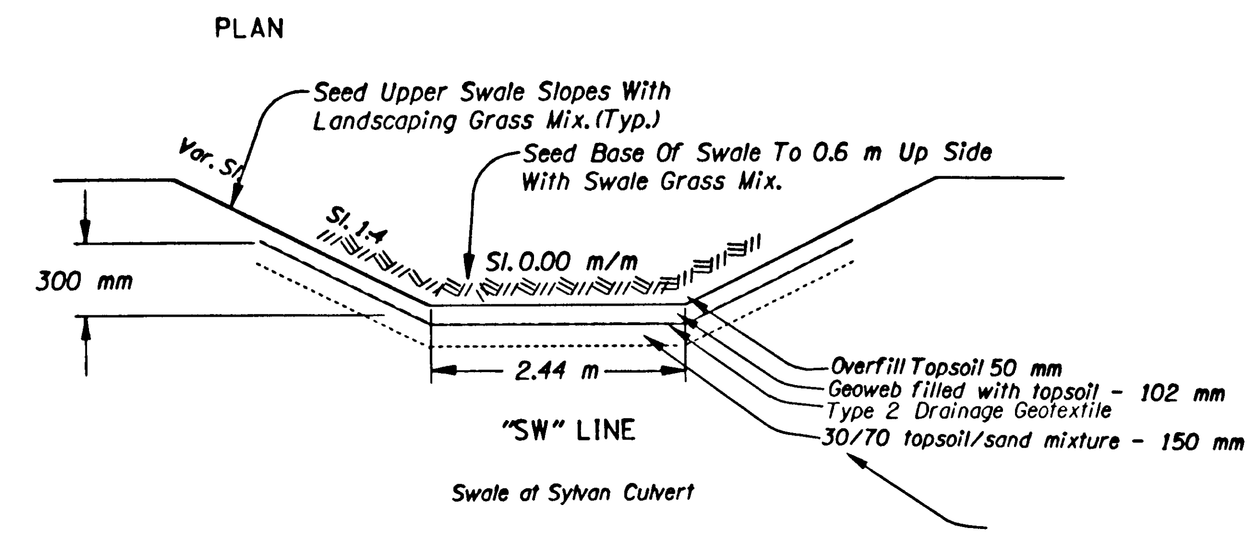
PLAN

FLOW SPREADER



SPLIT FLOW MANHOLE
"CSW" Sta. 99+929.00 15.60 LT

(For Details Not Shown, See Drg. No. RD327, RD330, RD333



SECTION A-A

SWALE

CAMELOT INTCHGE. - SYLVAN INTCHGE. (PHASE 1) SEC. SUNSET HIGHWAY MULTNOMAH & WASHINGTON COUNTIES			
FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
REGION 10	OREGON DIVISION		2E-7

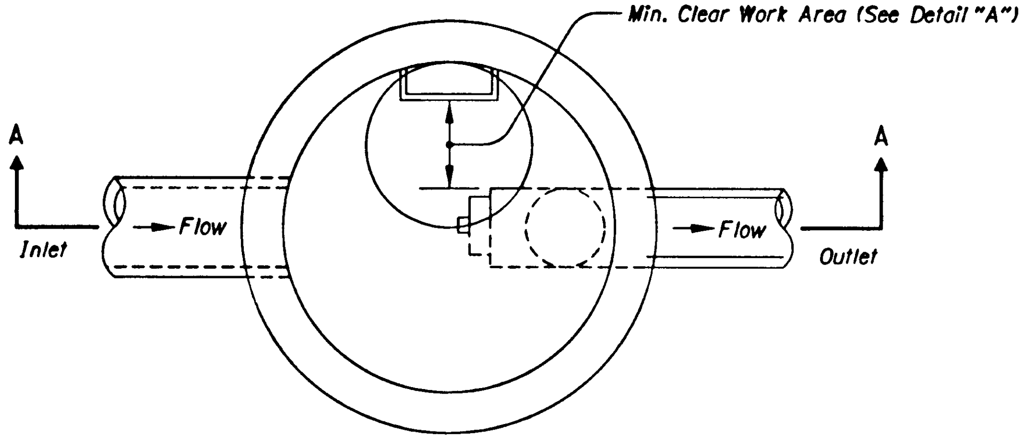
07-SEP-1997 21:54

VIEW 3

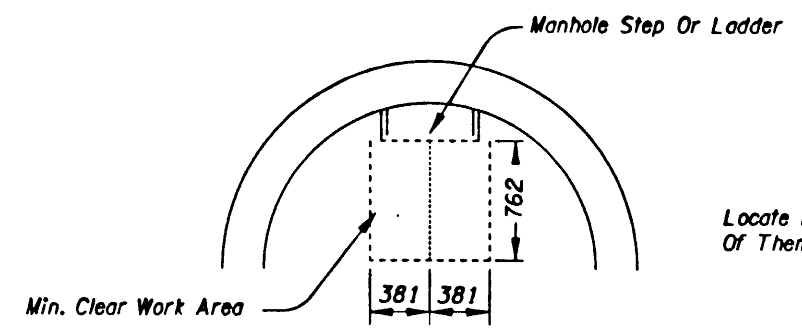
WATER QUALITY MANHOLE - SWALE

(All Dimensions Are In mm Unless Otherwise Noted)

"CSW" Sta. 99+926.57, 15.59 Lt.

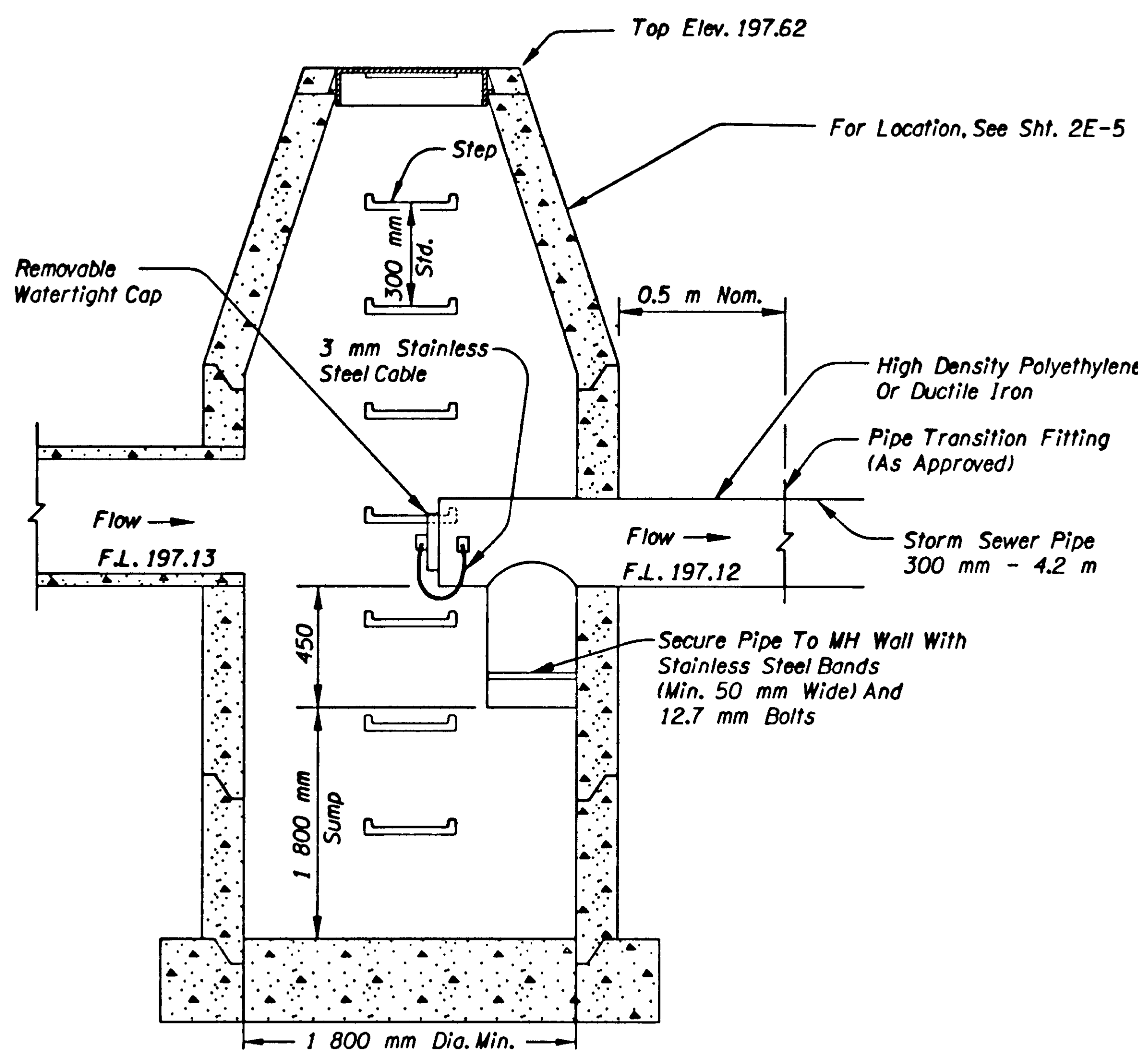


PLAN



Locate Pipes, Etc. So That No Portion Of Them Are Are Within Min. Clear Work Area

DETAIL "A"



SECTION A-A

(For Details Not Shown, See Manhole Standard Drawings)

NOTES:

1. *Hardware, Fasteners And Anchors To Be Stainless Steel: Use 3 mm Stainless Steel Cable*
2. *See Pipe Data Sheet And Plan Sheets For Pipe Size(s).*
3. *See Pipe Data Sheet And Plan Sheets For Manhole Size(s).*
4. *See Pipe Data Sheet And Plan Sheets For Sump Depth.*
5. *Manhole And Base Per Manhole Standard Drawings.*
6. *Hardware, Fasteners, Anchors, Fittings, Appurtenances, Labor And Equipment Is Incidental To Water Quality Manhole Item.*

SUMP VOLUME REQUIREMENTS

Single Family Residential	*.245 m^3/hectare*
Multi Family Residential	*1.539 m^3/hectare*
Commercial/Industrial	*6.577 m^3/hectare*

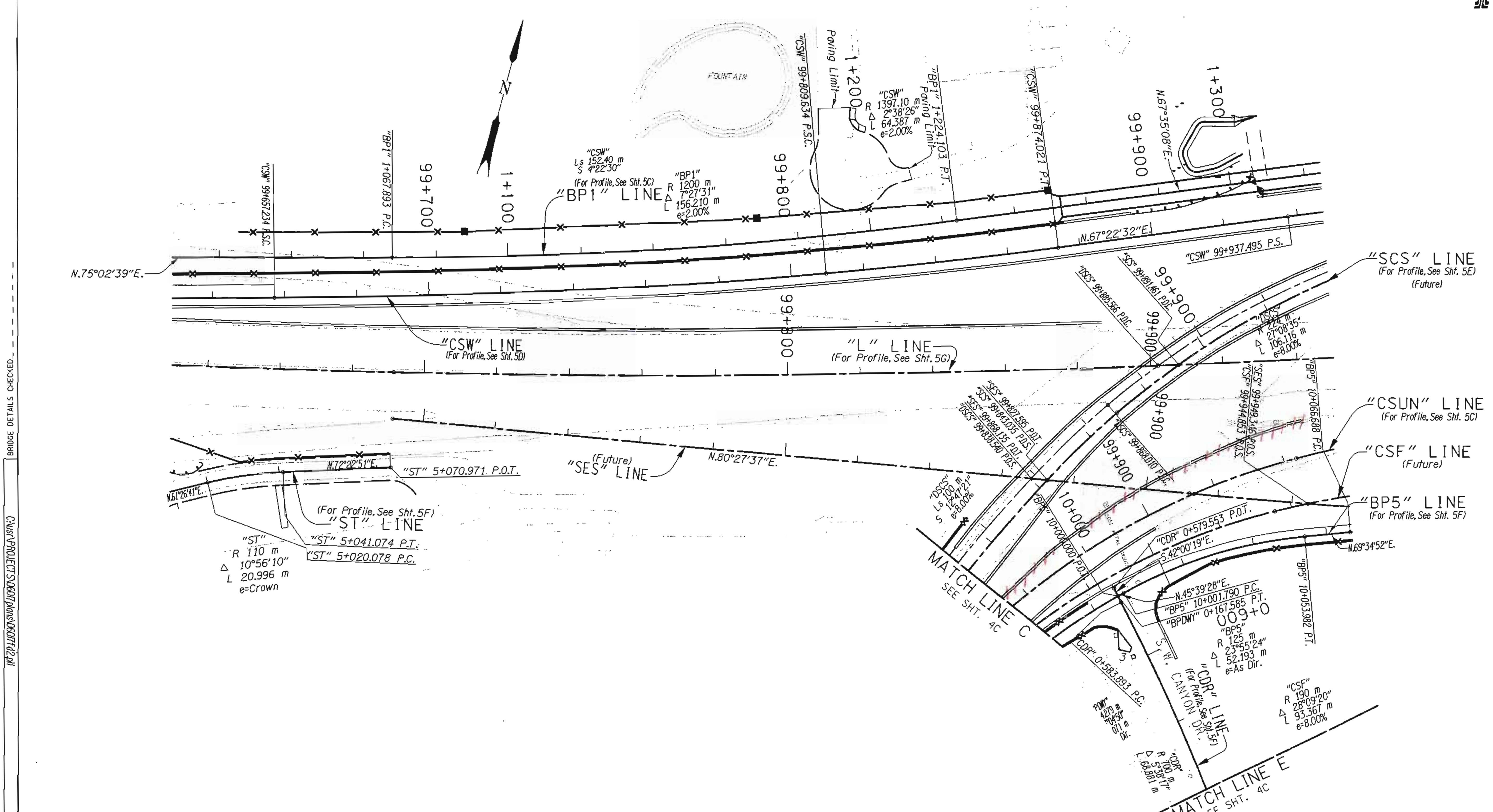
CAMELOT INTCHGE. - SYLVAN INTCHGE. (PHASE 1) SEC.
SUNSET HIGHWAY
MULTNOMAH & WASHINGTON COUNTIES

FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
REGION 10	OREGON DIVISION		2E-8

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

ALIGNMENT 29V-50

METRIC



"AS CONSTRUCTED"

Project Manager

JAN 17 '02

Date

BRIDGE DETAILS CHECKED

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VIEW 5

CAMELOT INTCHGE. - SYLVAN INTCHGE. (PHASE 1) SEC. SUNSET HIGHWAY MULTNOMAH & WASHINGTON COUNTIES			
FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
REGION 10	OREGON DIVISION		5

29V-50

METRIC

(1) Remove Guard Rail

(2) See Sht. 4A-2, Note 3
Const. Retaining Wall No. 108A

(3) Bridge No. 18210
Sta. "BP1" 1+257.147 To Sta. "BP1" 1+351.947
Const. Structure - 94.8 m
(See Drg. Nos. 55179 Thru 55192)

(4) See Sht. 3, Note 1
Const. Single Slope Conc. Barrier

(5) Const. Asph. Conc. Appr. - 2

(6) Const. Type "T" Cul-De-Sac
(For Details, See Sht. 2B-19)

(7) Const. Type "CIRCULAR" Cul-De-Sac
(For Details, See Sht. 2B-15)

(8) Sta. "DSCS" 99+821 To Sta. "DSCS" 100+001, Lt.
Const. Single Slope Conc. Barrier - 180 m

(9) Const. Type "C" Curb

(10) See Sht. 4D-2 Note 40
Const. Single Slope
Conc. Barrier - 180 m

(11) Const. Sidewalk Ramp

(12) Const. Retaining Wall #123 To
Standard Conc. Barrier Transition - 3.81 m
(For Details, See Sht. 2B-22)
(12A) Const. Conc. Barrier Terminal - 7.62 m
(See Drg. No. RD510)

(13) See Sht. 4A-2, Note 14
Const. Single Slope Conc. Barrier
(13A) Place Leading End Behind
Sidewalk For Protection

(14) See Sht. 4D-2, Note 24
Const. Single Slope Conc. Barrier
(14A) Const. Guard Rail Connection To
Single Slope Conc. Barrier
(See Drg. No. RD570)

(15) Sta. "CSW" 99+930 To Sta. "SWC" 100+640.5
Const. Single Slope Conc. Barrier - 710.5 m

(16) See Sht. 4A-2, Note 19
Const. Single Slope Conc. Barrier

(17) See Sht. 4D-2, Note 24
Const. Single Slope Conc. Barrier

(18) Const. P.C. Conc. Sidewalk
1.8 m Wide, 11.5 m Long
Match Extg. Sidewalk Width
Nom. Thkn. - 100 mm
Provide Aggregate Leveling Course
Nom. Comp. Thkn. - 50 mm
Slope As Directed

(19) Inst. Removable Bollard
(For Details, See Sht. 2B-3)

(20) Const. Type CL-4R Fence

(21) See Sht. 4A-2, Note 18
Const. Wrought Iron Fence
(For Details, See Landscaping Plans)

(22) Inst. Multiple Mailbox Support

(23) See Sht. 4D-2, Note 22
Const. Single Slope Conc. Barrier

(24) See Sht. 4D-2, Note 6
Const. Retaining Wall No. 124

(25) See Sht. 4D-2, Note 5
Const. Retaining Wall No. 107

(26) Bridge No. 18415
Sta. "CDR" 0+593.024 To Sta. "BP5" 10+102.979
Const. Retaining Wall No. 123
(See Drg. Nos. 55284 Thru 55289)

(27) See Sht. 4D-2, Note 26
Const. Type CL-4 Fence

(28) See Sht. 4D-2, Note 27
Const. Standard Pedestrian Rail

(29) See Sht. 4D-2, Note 35
Const. Type CL-4R Fence

(30) See Sht. 4A-2, Note 15
Const. Type CL-4 Fence

(31) Const. Standard Pedestrian Rail
(See Drg. No. BR250)

(32) Sta. "DSCS" 99+810.5 To Sta. "DSCS" 99+821
Const. Type "C" Curb To
Single Slope Conc. Barrier Transition
(See Drg. No. RD580)

(33) Const. Water Quality Treatment Facility Appr.
(For Details, See Sht. 2B-13)

(34) Const. Water Quality Treatment Facility
(For Details, See Shts. 2E-5 Thru 2E-8)

~~(35) See Sht. 4D-2, Note 35~~
~~Const. Single Slope Conc. Barrier~~

(36) See Sht. 4A-2, Note 21
Const. Guard Rail

(37) Const. Monolithic Curb & Sidewalk
Match Extg. Sidewalk Width

"AS CONSTRUCTED"
Bill Edmunson
Project Manager
JAN 17 '02
Date

To Face Sht. 5A

BRIDGE DETAILS CHECKED

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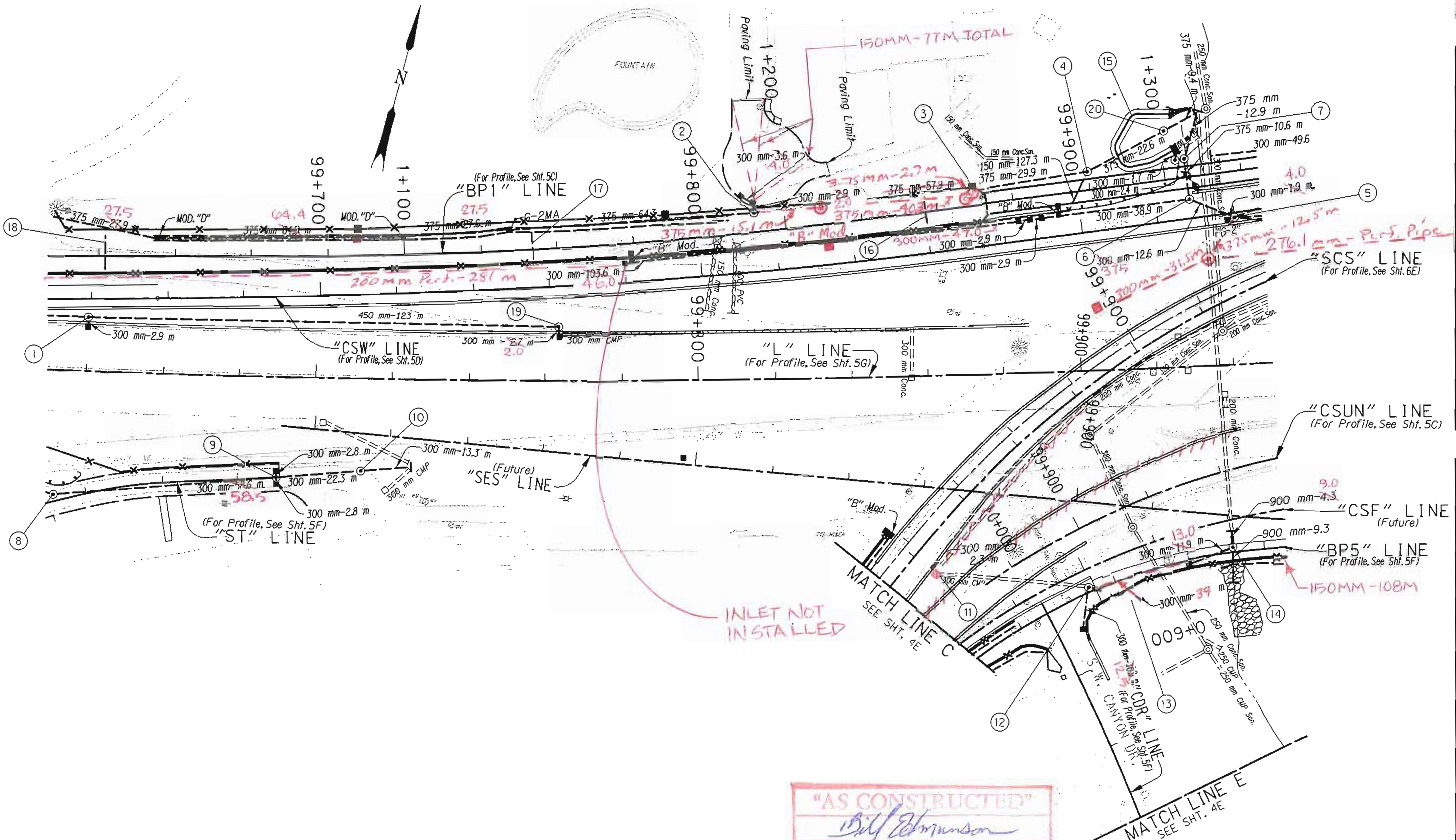
VIEW 2

CAMELOT INTCHGE. - SYLVAN INTCHGE. (PHASE 1) SEC. SUNSET HIGHWAY MULTNOMAH & WASHINGTON COUNTIES			
FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
REGION 10	OREGON DIVISION		5A-2



Abandon Pipe Shown Thus :

"AS CONSTRUCTED"
Bill Edmunson
Project Manager
JAN 17 02
Date

CAMELOT INTCHGE. - SYLVAN INTCHGE. (PHASE 1) SEC.
SUNSET HIGHWAY
MULTNOMAH & WASHINGTON COUNTIES

FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
REGION 10	OREGON DIVISION		5B

BRIDGE DETAILS CHECKED

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VIEW 5

1. See Sht. 4B-2, Note 5

2. Sta. "BP1" 1+192.5 m Lt.
Const. Ditch (As Dir. By Engineer)
Const. Manhole
Const. Type "D" Mod. Inlet - 2
Const. Type "G-2MA" Inlet - 2
Const. U.S.A. Type "CG-1" Inlet - 2
Inst. 300 mm Sew. Pipe - 6.5 m
Inst. 375 mm Sew. Pipe - 184.7 m
Const. Loose Riprap (Class 25) - 45 m^3
Tr. Exc. - 307 m^3
(See Drg. No. RD336)
(See U.S.A. Drg. Nos. 140A-ST, 140B-ST, & 150-ST)
150MM DRAIN PIPE - 77M
CG-2 - 2

3. Sta. "BP1" 1+250, ~~3.8 m~~ 2.5 Lt.
Const. Manhole - 3
Inst. 375 mm Sew. Pipe - ~~57.9 m~~ 57.0M
Tr. Exc. - ~~273 m^3~~ 476 m^3
Sta. "BP1" 1+207, 4.0 Lt.
Sta. "BP1" 1+247, 4.0 Lt.

4. Sta. "BP1" 1+280.5 m Lt.
Const. U.S.A. Water Quality Manhole (1 500 mm)
Const. Wall Gutter Drain - 2
Const. Type "B" Mod. Inlet - 2
Inst. 150 mm Drain Pipe - 127.3 m
Inst. 375 mm Sew. Pipe - 29.9 m
Tr. Exc. - 124 m^3
Rock Tr. Exc. - 54 m^3
(For Details, See Sht. 2B-12)
(See U.S.A. Drg. Nos. 060-ST, 060A-ST & 100-ST)
(See Drg. Nos. RD330 & 55306)

5. Sta. "CSW" 99+940, 1.20 m Rt.
Const. Manhole With Bolt Down Cover - Split Flow
Const. Type "G-2" Inlet
Const. Wall Gutter Drain - 3
Const. Type "B" Mod. Inlet - ~~4~~ 2
Inst. 150 mm Drain Pipe - 188.4 m
Inst. 300 mm Drain Pipe - ~~734.6 m~~ 494.0
Inst. 300 mm Sew. Pipe - 55.5 m 4.0
~~Inst. 300 mm Poly Sew. Pipe - 30.7 m~~
Tr. Exc. - 87 m^3
(For Details, See Sht. 2B)
(See Drg. No. 55306)
Inst. 375mm Sew Pipe - 13.0 m

6. Sta. "CSW" 99+929.5 m Lt.
Const. Manhole With Bolt Down Cover
Const. Type "G-2" Inlet - 4
Inst. 300 mm Sew. Pipe - ~~160.9 m~~ 138.0
Tr. Exc. - 78 m^3
Rock Tr. Exc. - 115 m^3
(For Details, See Sht. 2B)
Const Type "B" Mod. Inlet
Inst. 200mm Drain Pipe - 376.0M

7. Sta. "CSW" 99+929, 15.60 m Lt.
Const. Split Flow Manhole
Inst. 375 mm Sew. Pipe - 23.5 m
Tr. Exc. - 30 m^3
(For Details, See Sht. 2E-7)
INST. 300MM SEW. PIPE - 2M

8. See Sht. 4B-2, Note 7

9. Sta. "ST" 5+070
Const. U.S.A. Manhole
Const. U.S.A. Type "CG-1" Inlet - 2
Inst. 300 mm Sew. Pipe - 64.2 m
Tr. Exc. - 51 m^3
(See U.S.A. Drg. Nos. 010-ST, 140A-ST, 140B-ST & 150-ST)

10. Sta. "SES" 99+713, 9.85 m Rt.
Const. Water Quality Manhole (1 500 mm)
Inst. 300 mm Sew. Pipe - 35.6 m
Under Pvmt. - 22.3 m
Tr. Exc. - 26 m^3
(For Details, See Sht. 2B-12)
(See Drg. No. RD330)

11. Sta. "DSCS" ~~99+819.02, 10.44 m Rt.~~ 99+817.6, 8.65 m Rt
Remove Inlet
~~Const. Type "B" Manhole~~
Connect To Extg. Pipe
Const. Type "G-2" Inlet
Inst. 300 mm Sew. Pipe - 2.3 m
Tr. Exc. - 1 m^3

12. Sta. ~~"CDR" 0+580.72, 12.74 m Lt.~~ "BP5" 10+011.69, 2.04 m Lt
Const. U.S.A. ~~Water Quality Manhole~~ (1 500 mm)
Connect To Extg. Pipe
Const. Type "G-2" Inlet
Inst. 300 mm Sew. Pipe - ~~10.9 m~~ 13.0
Tr. Exc. - 7 m^3
(For Details, See Sht. 2B-12)
(See U.S.A. Drg. No. 100-ST)
(See Drg. No. RD330)

13. ~~Sta. "BP5" 10+022.03, 4.59 m Rt.~~
~~Const. U.S.A. Manhole~~
~~Inst. 300 mm Sew. Pipe - 39.5 m~~
~~Tr. Exc. - 59 m^3~~

14. Sta. "BP5" 10+051.72, 1.30 m Lt.
Const. Energy Dissipation Manhole
Const. Type "G-1" Inlet
Inst. 300 mm Sew. Pipe - ~~11.9 m~~ 52 m
Inst. 900 mm Sew. Pipe - ~~13.6 m~~ 18.0M
Const. Loose Riprap (Class 350) - 53 m^3
Const. Loose Riprap (Class 1000) - 75 m^3
Const. Stone Embankment 193 m^3
Inst. Type 2 Riprap Geotextile - 42 m^2
Inst. Willow Cuttings - 225
~~Tr. Exc. - 46 m^3~~
(For Details, See Shts. 2B-10 & 2B-11)
(See Drg. No. RD336)

15. Sta. "CSW" 99+926.57, 15.59 m Lt.
Const. U.S.A. Water Quality Manhole
Const. Water Quality Swale
Inst. 300 mm Sew. Pipe - 4.1 m
Inst. Drainage Geotextile (Type 1) - 35 m^2
Const. Stone Embankment - 6 m^3
Const. Loose Riprap (Class 25) - 4 m^3
Const. Geocell Grid - 120 m^2
Inst. Plant Mix Aggr. Base - 61 m^3
Inst. Subgrade Geotextile - 95 m^2
Inst. Water Quality Seed Mix - 250 m^2
Topsoil Sand (30/70) - 18 m^3
Topsoil - 18 m^3
Tr. Exc. - 5 m^3
(For Details, See Shts. 2E-5 Thru 2E-8)
(See U.S.A. Drg. No. 100-ST)

16. See Sht. 4B-2, Note 8

17. Inst. 150 mm PVC Conduit - 7.2 m

18. Inst. 150 mm PVC Conduit - 8.2 m

19. Sta. "L" 99+763.59, 14.15 m Lt.
Const. Manhole
Const. Type "G-2" Inlet
~~Const. Trapped Catch Basin~~
Inst. 300 mm Sew. Pipe - ~~2.7 m~~ 2.0
Rock Tr. Exc. - 2 m^3
INST. 450MM SEW. PIPE - 123M

20. Sta. "BP1" 1+301.24, 12.65 m Lt.
Const. Manhole
Inst. 375 mm Sew. Pipe - 32 m
Tr. Exc. - 41.8 m^3

21. Sta "W108A" Lt 280
Const Asphalt Gutter Drain
Inst. 200mm Perf. Pipe - 202 m
(For Details see sht. 55306)

22. Sta "CSW" 99+932.05, 10.54 Rt.
Const. Manhole (1800mm)
Const "D" Mod Inlet
Inst 300 mm Sew. Pipe - 31.5m
Connect Extg 900mm Sew.

Inst. 375 mm - 12.5
Inst 300mm Drain - 276.1m

"AS CONSTRUCTED"
Bill Edmunson
Project Manager
JAN 17 '02
Date

To Face Sht. 5B

CAMELOT INTCHGE. - SYLVAN INTCHGE. (PHASE 1) SEC.
SUNSET HIGHWAY
MULTNOMAH & WASHINGTON COUNTIES

FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
REGION 10	OREGON DIVISION		5B-2

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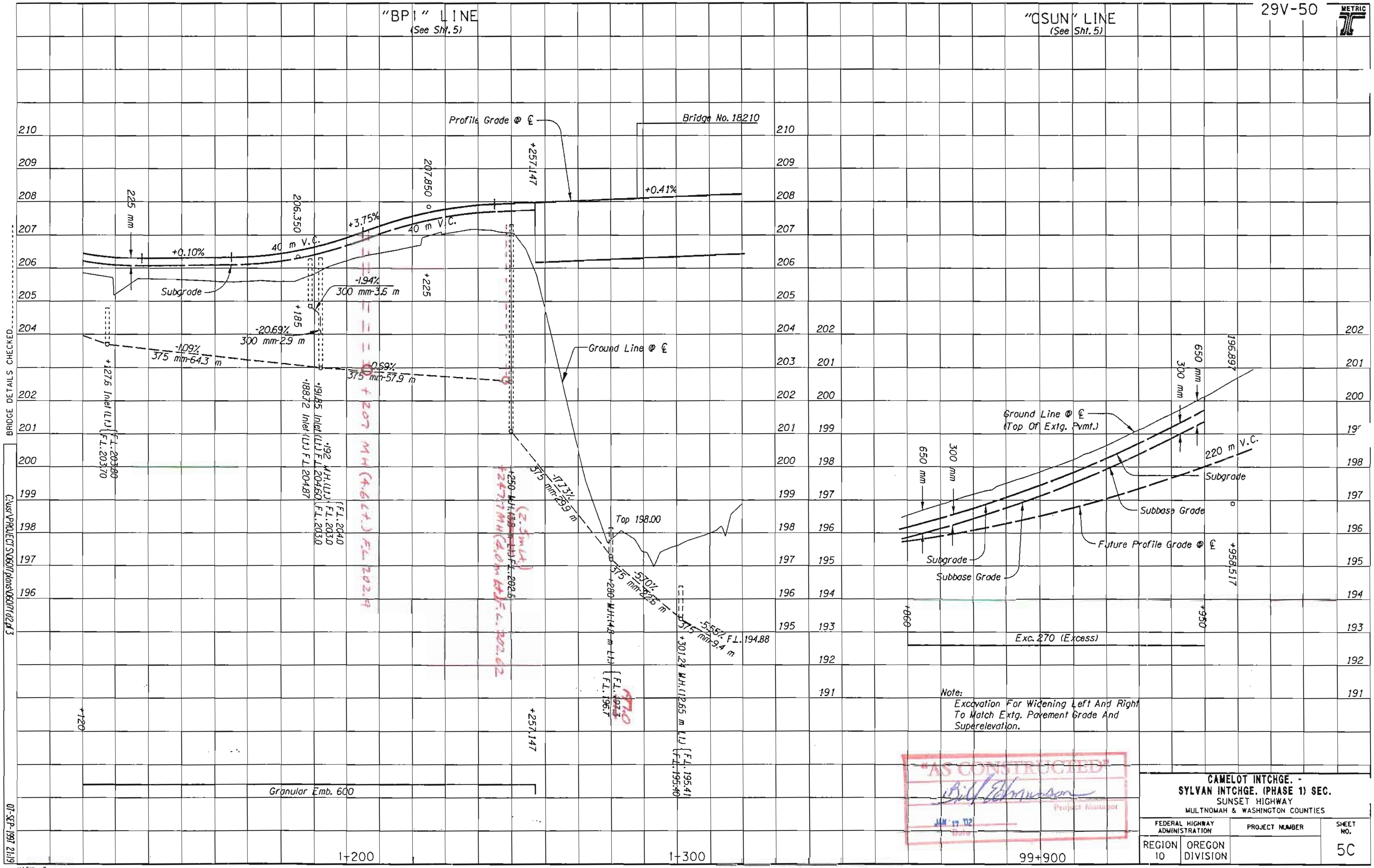
VIEW 3

29V-50


"BPI" LINE
(See Sht. 5)
"CSUN" LINE
(See Sht. 5)
METRIC
Profile Grade @ ℄
Bridge No. 18210
+257.147
207.850
206.350
225 mm
+0.10%
+3.75%
40 m V.C.
+0.41%
Subgrade
-1.94%
300 mm-3.6 m
+225
+185
-20.69%
300 mm-2.9 m
-1.09%
375 mm-64.3 m
-0.59%
375 mm-57.9 m
Ground Line @ ℄
+127.6 Inlet (L.I.) F.L. 203.80 F.L. 203.70
+188.72 Inlet (L.I.) F.L. 204.87
+191.85 Inlet (L.I.) F.L. 204.60 F.L. 203.0 F.L. 203.0
+192 M.H. (L.I.) F.L. 204.0 F.L. 203.0
+250 M.H. F.L. 202.6
-17.73%
375 mm-29.9 m
Top 198.00
-5.70%
375 mm-22.6 m
-5.55%
375 mm-9.4 m
F.L. 194.88
+280 M.H. (4.8 m Lt.) F.L. 197.3 F.L. 196.7
+301.24 M.H. (12.65 m Lt.) F.L. 195.41 F.L. 195.40
+120
+257.147
Granular Emb. 600
1+200
1+300
BRIDGE DETAILS CHECKED
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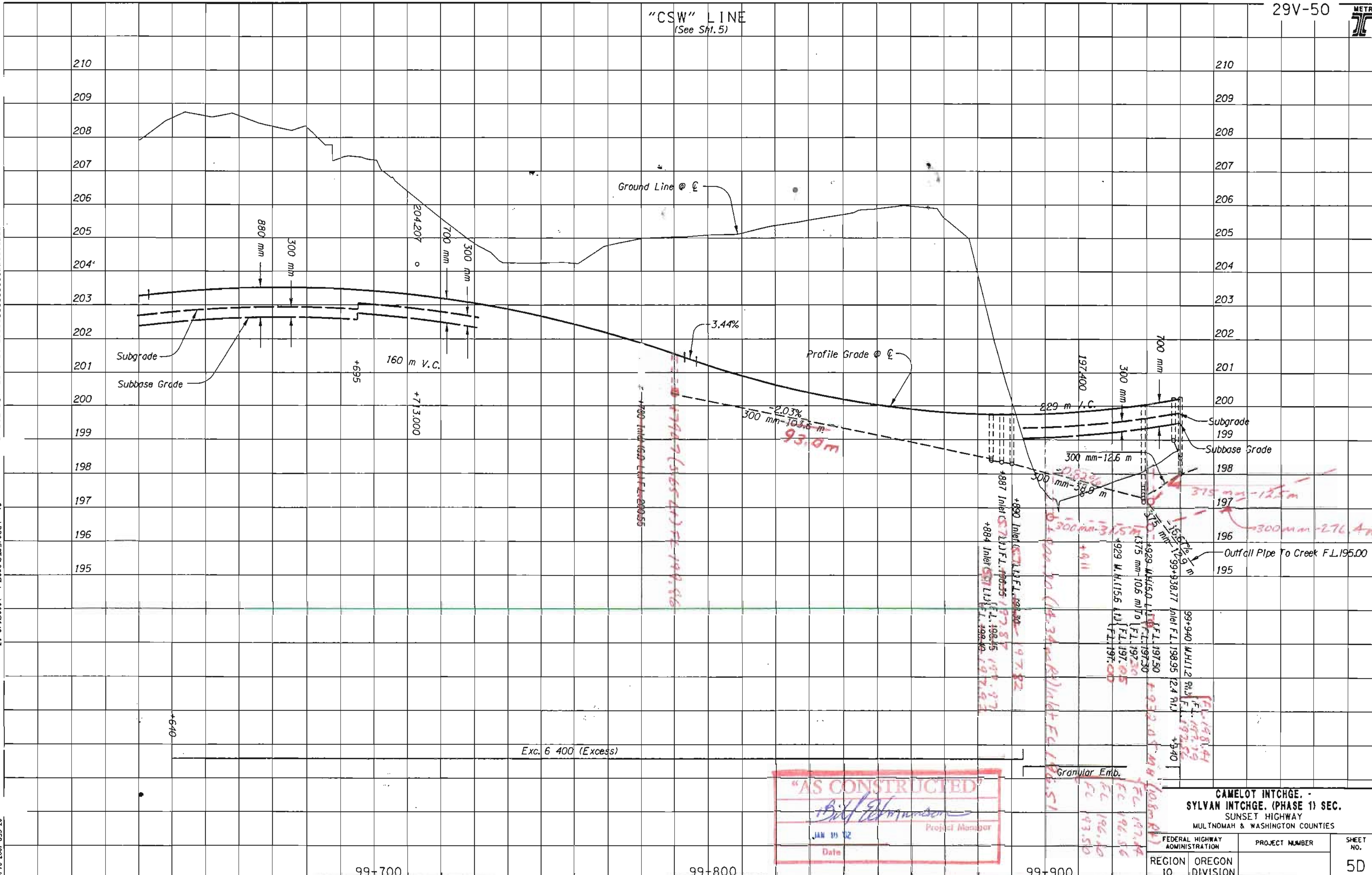
VIEW 2
196.897
650 mm
300 mm
Ground Line @ ℄
(Top Of Extg. Pvmt.)
220 m V.C.
Subgrade
Subbase Grade
Future Profile Grade @ ℄
+958.517
+860
+950
Exc. 270 (Excess)
99+900
210
209
208
207
206
205
204
203
202
201
200
199
198
197
196
195
194
193
192
191
Note:
Excavation For Widening Left And Right To Match Extg. Pavement Grade And Superelevation.
"AS CONSTRUCTED"
Project Manager
JAN 17 '02
Date

CAMELOT INTCHGE. - SYLVAN INTCHGE. (PHASE 1) SEC.
SUNSET HIGHWAY
MULTNOMAH & WASHINGTON COUNTIES

FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
REGION 10 / OREGON DIVISION		5C

METRIC


"CSW" LINE
(See Sht. 5)
Ground Line @ ℄
Profile Grade @ ℄
Subgrade
Subbase Grade
160 m V.C.
229 m V.C.
-3.44%
-2.03%
880 mm
300 mm
700 mm
204.207
+695
+713.000
197.400
300 mm-103.6 m
93.0m
300 mm-12.6 m
300 mm-39.9 m
375 mm-12.5 m
300 mm-276.4 m
Outfall Pipe To Creek F.L.195.00
+640
+840
Exc. 6 400 (Excess)
Granular Emb.
99+700
99+800
99+900
210
209
208
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206
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"AS CONSTRUCTED"
Project Manager
JAN 19 '02
Date
BRIDGE DETAILS CHECKED
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VIEW 3

CAMELOT INTCHGE. -
SYLVAN INTCHGE. (PHASE 1) SEC.
SUNSET HIGHWAY
MULTNOMAH & WASHINGTON COUNTIES

FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
REGION 10	OREGON DIVISION		5D

T.1 S., R.1 W., W.M.

29V-50

DRAINAGE & EXTG. UTILITIES

"CSW" LINE (For Profile, See Sht. 6H)

"BP1" LINE (For Profile, See Sht. 6G)

"BP5" LINE (For Profile, See Sht. 6H)

"BSCS" LINE (For Profile, See Sht. 6F)

"CC" LINE (For Profile, See Sht. 6D)

"BIM" LINE (For Profile, See Sht. 6H)

"BIE" LINE (For Profile, See Sht. 6H)

"SCS" LINE (For Profile, See Sht. 6E)

"L" LINE (Future)

"CSUN" LINE (Future)

"CSE" LINE (Future)

"SES" LINE (Future)

"R" LINE (For Profile, See Sht. 6C)

S.W. CANYON COURT

S.W. 44TH AVE.

S.W. R44B RD.

MULTNOMAH COUNTY

WASHINGTON COUNTY

Sec. 5

Sec. 6

INLET NOT INSTALLED

INLET NOT INSTALLED

Abandon Pipe Shown Thus :

"AS CONSTRUCTED"

Bill Edmunson Project Manager

JAN 18 '02 Date

CAMELOT INTCHGE. - SYLVAN INTCHGE. (PHASE 1) SEC.

SUNSET HIGHWAY

MULTNOMAH & WASHINGTON COUNTIES

FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
REGION 10	OREGON DIVISION		6B

BRIDGE DETAILS CHECKED

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VIEW 6

(29) Sta. "CC" 50+060, 4.3m Rt
Const. San. MH
Inst. 200mm PVC - 65.7 m

(30) Sta "CC" 50+096.42, 4.13m Rt.
Const. Inside Drop San. MH.
Inst. 200mm PVC - 34.9m

(31) Sta. "CC" 50+137.4, 5.33 m Rt.
Extg COP MH #8
Inst 200mm Class 50 - 41.3m
(Connect to Extg MH)
(See Sheet P2)

(32) See Sheet 5B Note 22

(1) See Sht. 5B-2, Note 7

(2) See Sht. 5B-2, Note 6

(3) See Sht. 5B-2, Note 5

(4) Sta. "DSCS" 99+984.98, 4.82 m Rt.
Const. Type "B" Manhole w/ 0.6m Sump
Const. Type "CG-2" Inlet
Inst. 300 mm Sew. Pipe - ~~54.2 m~~ 66.0M
Tr. Exc. - ~~2 m³~~ 98m³
Rock Tr. Exc. - 51 m³
(See Drg. Nos. RD324 & RD327)
Const. Type Mod "D" Inlet
Const. Type "G-2" Inlet

(5) Sta. "DSCS" 100+037.4 m Rt.
Const. Manhole With Bolt Down Cover
Inst. 300 mm Sew. Pipe - ~~67.9 m~~ 51.0
Rock Tr. Exc. - 76 m³
(For Details, See Sht. 2B)

(6) Sta. "DSCS" 100+105, 3.60 m Rt.
Const. Manhole With Bolt Down Cover
Const. Type "G-2" Inlets - 2
Inst. 300 mm Sew. Pipe - ~~122.8 m~~ 89.0
Tr. Exc. - 61 m³
Rock Tr. Exc. - 93 m³
(For Details, See Sht. 2B)

(7) Sta. "DSCS" 100+225, 3.60 m Rt.
Const. Manhole With Bolt Down Cover
Inst. 300 mm Sew. Pipe - ~~24.9 m~~ 120.0M
Tr. Exc. - 35 m³
(For Details, See Sht. 2B)

1+346.96, 9.31m Lt.

(8) Sta. "BP1" ~~1+362, 3.80 m Lt.~~
Const. Drop Manhole "Inside"
Const. Type "G-2" Inlet - 4
Const. Trapped Catch Basin
Const. Wall Gutter Drains - 4 3
Inst. 150 mm Drain Pipe - ~~242.4 m~~ 244.0
~~Inst. 150 mm Poly Sew. Pipe - 7.5 m~~ ~~6.6 m~~
Inst. 300 mm Sew. Pipe - ~~60.5 m~~ 52.0
Tr. Exc. - 170 m³
(For Details, See Shts. 2B-2 & 2B-17)
CONST. TYPE B (MOD) INLET - 3

(9) ~~Sta. "BP1" 1+358, 3.80 m Rt.~~
~~Const. Manhole~~
~~Const. Type "G-2" Inlet - 2~~
~~Inst. 300 mm Sew. Pipe - 5.5 m~~
~~Tr. Exc. - 4 m³~~
~~(For Details, See Sht. 5B306)~~
~~(See Drg. No. RD303)~~

50+074.76 2.32m Rt

(10) Sta. "CC" ~~50+077, 2.53 m Rt.~~
Const. C.O.P. Manhole
Const. Trapped Catch Basin - 2
Const. Type "CG-2" Inlet - ~~2~~ 2
Inst. 300 mm Sew. Pipe - ~~29.5 m~~ 17.0
Tr. Exc. - 26 m³
(For Details, See Sht. 2B-17)
(See C.O.P. Drg. Nos. 4-06-1 & 4-06-3)
Const. Type "G-2" Inlet

50+094.57, 2.17 Rt

(11) Sta. "CC" ~~50+095, 2.53 m Rt.~~
Const. C.O.P. Manhole
~~Const. Type "CG-2" Inlet~~
Inst. 300 mm Sew. Pipe - ~~25.2 m~~ 26.9m
Tr. Exc. - 35 m³
(See Drg. Nos. 4-06-1 & 4-06-3)

(12) Sta. "CC" 50+~~122~~, 5.10 m Lt.
Const. C.O.P. ~~HDPE Inside Drop~~ Manhole
~~(Energy Dissipation)~~
Const. Trapped Catch Basin - 3 2
Const. Type "CG-2" Inlet - ~~2~~ 3
Inst. 300 mm Sew. Pipe - ~~39.2 m~~ 43
Under Pvmt. - 15.6 m
Tr. Exc. - 90 m³
(For Details, See Shts. 2B-9, 2B-10 & 2B-17)
(See Drg. No. RD336)
Const. Mod "D" Inlet
Inst. 450m Sew Pipe 8.0M

(13) Sta. "CC" 50+123.50, 2. m Rt.
Const. C.O.P. Drop Manhole
Const. Type "CG-2" Inlet - 2
Inst. 300 mm Sew. Pipe - ~~61.6 m~~ 13.0M
Tr. Exc. - 106 m³
(See C.O.P. Drg. Nos. 4-06-1 & 4-27-2)

50+149.7

(14) Sta. "CC" ~~50+152.30~~, 2.53 m Rt.
Const. C.O.P. Manhole
Const. Type "G-2" Inlet
Const. Type "CG-2" Inlet
Const. Trapped Catch Basin
Inst. 300 mm Sew. Pipe - ~~60.6 m~~ 40.0M
Tr. Exc. - 77 m³
(For Details, See Sht. 2B-17)

(15) Sta. "DSCS" 100+202.53, 6.50 m Lt.
Const. Drop Manhole With Bolt Down Cover
Remove 450 mm Sew. Pipe - 20.9 m
Inst. 700 mm HDPE Sew. Pipe - ~~20.9 m~~ 23
Tr. Exc. - 155 m³
(For Details, See Shts. 2B & 2B-2)

(16) See Sht. 5B-2, Note 14

(17) Sta. "R" 9+892.81, 5.23 m Rt.
Const. U.S.A. Manhole CONST. G-2 INLET
Const. U.S.A. Area Drain & Grate Type II - 2
Inst. 150 mm Drain Pipe - 37.2 m
Inst. 300 mm Sew. Pipe - ~~93.4 m~~ 11.0M
~~Tr. Exc. - 154 m³~~
(See U.S.A. Drg. No. 010-ST)

"BP5" 10+114.75 1.79m Lt

(18) Sta. "R" ~~9+850.30, 4.09 m Lt.~~
Const. U.S.A. Manhole
Inst. 150 mm Drain Pipe - ~~18.7 m~~ 17M
Inst. 300 mm Sew. Pipe - ~~19.3 m~~ 64.0M
Connect To Extg. Pipe
Repair 300 mm Pipe (As Dir.)
Tr. Exc. - 31 m³
INST. 100MM DRAIN PIPE - 21M

(19) Sta. "R" 10+084.51, 7.84 m Rt.
~~Const. C.O.P. Drop Manhole~~
Const. Type "CG-2" Inlet -2
Inst. 150 mm Drain Pipe - ~~128.7 m~~ 104
Inst. 250 mm Drain Pipe - 134.3
Inst. 300 mm Sew. Pipe - ~~78.4 m~~ 76.9m
Tr. Exc. - 340 m³
(See C.O.P. Drg. No. 4-27-2)

(20) Sta. "CSUN" 100+228.88, 0.31 m Lt.
Reconst. Manhole

(21) Sta. "CSUN" 100+230.16, 6.84 m Rt.
Const. Drop Manhole With Bolt Down Cover
Tr. Exc. - 80 m³
(For Details, See Shts. 2B & 2B-2)

(22) Sta. "SES" 100+227.59 4.85 m, Rt.
Const. Drop Manhole With Bolt Down Cover
(Energy Dissipation)
Inst. 300 mm Sew. Pipe - ~~81.2 m~~ 73M
Inst. 700 mm HDPE Sew. Pipe - 35.5 m
Inst. Willow Cuttings - 72
Const. Loose Riprap (Class 350) - 24 m³
Tr. Exc. - 302 m³
Rock Tr. Exc. - 5 m³
(For Details, See Shts. 2B, 2B-2, 2B-7, 2B-9 & 2B-10)
INST. 450MM SEW. PIPE - 5M

(23) Sta. "R" 10+155.60, 3.50 m Lt.
Const. C.O.P. Manhole
Const. Type "CG-2" Inlet
Inst. 300 mm Sew. Pipe - 8.3 m
Tr. Exc. - 8 m³
(See C.O.P. Drg. No. 4-06-1)

(24) Adjust Manhole
(For Details, See Sht. 2B)

(25) Repair Pipe (As Dir.)

(26) Inst. 150 mm PVC Conduit - 12.8 m

(27) Inst. 150 mm PVC Conduit - 13.4 m

(28) Inst. 150 mm PVC Conduit - 17.2 m

"AS CONSTRUCTED"
Bill Edmunson
Project Manager
JAN 10 '02
Date

To Face Sht. 6B

CAMELOT INTCHGE. -
SYLVAN INTCHGE. (PHASE 1) SEC.
SUNSET HIGHWAY
MULTNOMAH & WASHINGTON COUNTIES

FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
REGION 10	OREGON DIVISION		6B-2

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VIEW 5

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
1	Title Sheet
1A	Index Of Sheets
1A-2	Index Of Sheets Cont'd.
1A-3	Standard Drawing Nos.
2, 2A Thru 2A-18 Incl.	Typical Sections
2B Thru 2B-11 Incl.	Details
2C Thru 2C-8 Incl.	Traffic Control Plans
2CA-1 Thru 2CA-27 Incl.	Traffic Control Plans - Pointer Road Work Area
2CB-1 Thru 2CB-22 Incl.	Traffic Control Plans - South Side Work Area
2CC-1 Thru 2CC-61 Incl.	Traffic Control Plans - Sylvan Work Area
2D Thru 2D-9 Incl.	Water Quality Plans
2E Thru 2E-15 Incl.	Erosion Control Plans
2F	Hazardous Material Remediation Plans
2G Thru 2G-6 Incl.	Pipe Data
3	Alignment & All Construction
4	Alignment
4A	Right Of Way
4B, 4B-2	General Construction Plans
4C, 4C-2	Drainage Plans
4D, 4E	Profiles
5	Alignment
5A	Right Of Way
5B, 5B-2	General Construction Plans
5C	Drainage Plan
5D, 5E	Profiles
6	Alignment
6A	Right Of Way
6B, 6B-2	General Construction Plans
6C	Detour Plan
6D, 6D-2	Drainage Plans
6E, 6F, 6G, 6H, 6J	Profiles
7	Alignment
7A	Right Of Way
7B, 7B-2	General Construction Plans
7C	Detour Plan
7D, 7D-2	Drainage Plans
7E, 7F, 7G, 7H	Profiles
8	Alignment
8A	Right Of Way
8B, 8B-2	General Construction Plans
8C, 8C-2	Drainage Plans
8D, 8E, 8F	Profiles
9	Alignment
9A	Right Of Way
9B, 9B-2	General Construction Plans
9C	Detour Plan
9D, 9D-2	Drainage Plans

STATE OF OREGON

DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED PROJECT

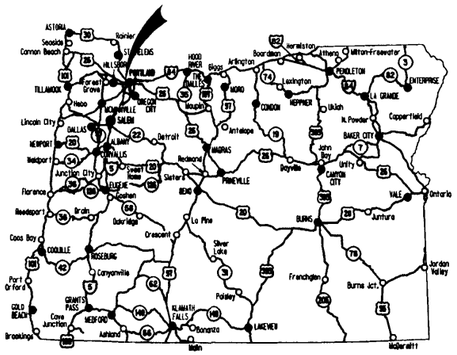
GRADING, STRUCTURES, PAVING, SIGNING, ILLUMINATION, SIGNALS, ROADSIDE DEVELOPMENT & UTILITY RELOCATIONS

CAMELOT INTCHGE. - SYLVAN INTCHGE. (PHASE 2) SEC.

SUNSET HIGHWAY

MULTNOMAH & WASHINGTON COUNTIES

OCTOBER 2000

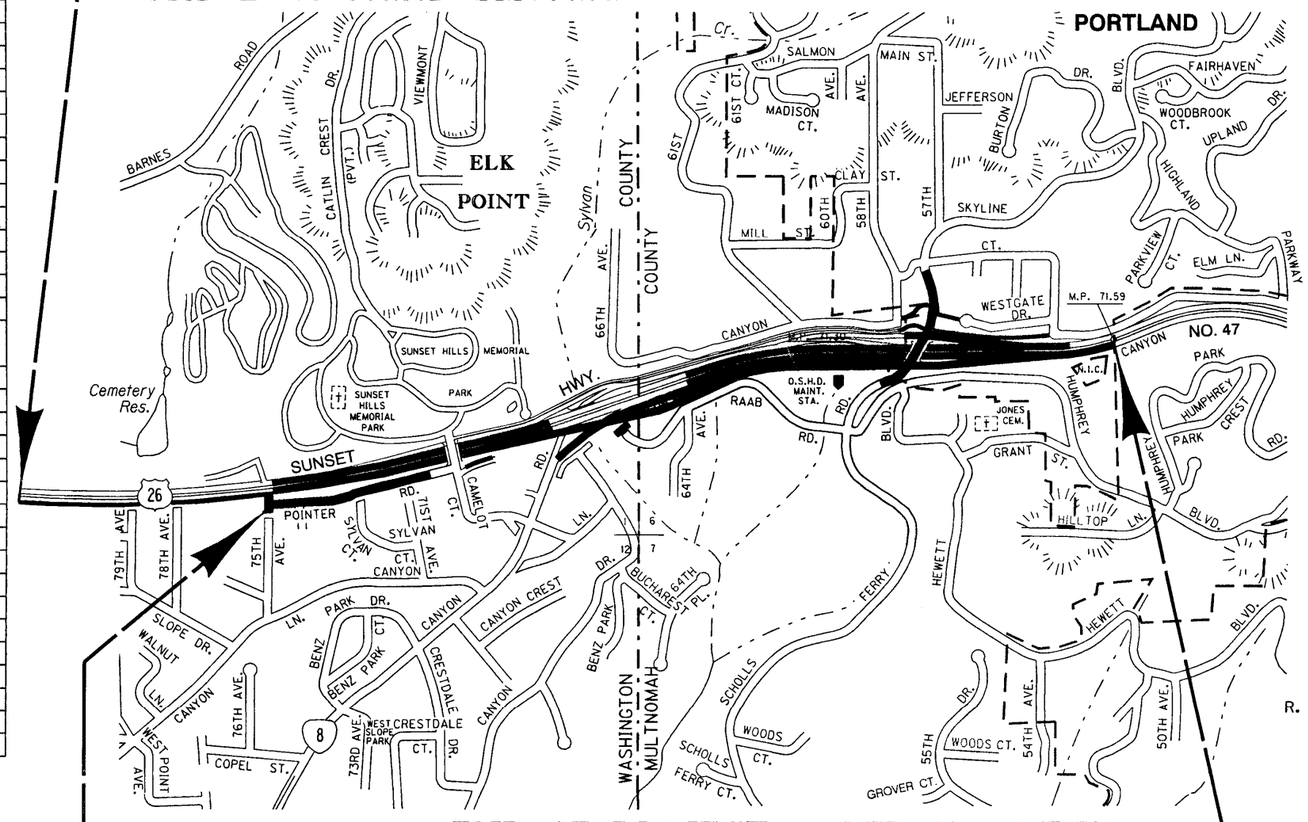


Overall Length Of Project - 2.013 km (1.25 Miles)

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 From The Center, Or Answers To Questions About The Rules By Calling (503) 232-1987.

LET'S ALL WORK TOGETHER TO MAKE THIS JOB SAFE

BEGIN. OF CONTRACT
STA. "L" 98+700.801 (M.P. 70.06)



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

NH-MGS-S047(32)
BEGINNING OF PROJECT
STA. "L" 99+197.000 (M.P. 70.37)

END OF PROJECT NH-MGS-S047(32)
STA. "L" 101+210 (M.P. 71.62)

METRIC

OREGON TRANSPORTATION COMMISSION

Henry H. Hewitt	CHAIRMAN
Susan Brody	VICE CHAIRMAN
Steven H. Corey	COMMISSIONER
Stuart Foster	COMMISSIONER
John Russell	COMMISSIONER
Grace Crunican	DIRECTOR OF TRANSPORTATION

REGISTERED PROFESSIONAL ENGINEER
18,458
OREGON
MAY 14, 1996
JEFFREY SCHEICK
Expires Jun. 30, 2002

Jeffrey Scheick

TECHNICAL SERVICES MANAGING ENGINEER

CAMELOT INTCHGE. - SYLVAN INTCHGE. (PHASE 2) SEC.
SUNSET HIGHWAY
MULTNOMAH & WASHINGTON COUNTIES

FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
OREGON DIVISION	NH-MGS-S047-(32)	1

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

"L" LINE
(For Profile, See Sht. 6E)

"SES" LINE
(For Profile, See Sht. 6F)

"CSUN" LINE
(For Profile, See Sht. 6G)

"CSF" LINE
(For Profile, See Sht. 6H)

375 mm-2.5 m
300 mm-12.5 m
300 mm-49.5 m
300 mm-17.5 m
300 mm-55 m
300 mm-31.5 m
300 mm-37 m
450 mm-36.5 m
300 mm-27.5 m
375 mm-60 m
300 mm-5.5 m
300 mm-13 m
300 mm-3 CMP San.
300 mm Perf. Pipe-198 m
100 mm Perf. Pipe-76.5m

Plug & Abandon Pipe Shown Thus:

NOTE: Field Verify With The Engr. All Locations Of Drainage Structures & Pipes.

REGISTERED PROFESSIONAL ENGINEER
19156
OREGON
JULY 15, 1997
BRUCE S. COUNCIL
Expires Dec. 31, 2001

OREGON DEPARTMENT OF TRANSPORTATION
ROADWAY ENGINEERING SECTION

CAMELOT INTCHGE. -
SYLVAN INTCHGE. (PHASE 2) SEC.
SUNSET HIGHWAY
MULTNOMAH & WASHINGTON COUNTIES

Reviewed By-Bruce S. Council
Designed By-Magnolia Bartley-Lam Han
Drafted By-Martin G. Casillas

DRAINAGE & UTILITIES

SHEET NO. 6D

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VIEW 3

VIEW 3

(1) *Sta. "SES" 99+725.6, 8.1 m Rt.*
Remove Extg. Inlet - 2
Const. Type "BP" Manhole, Conn. Extg. Pipes
Const. Type "G-2" Inlet - 5
Inst. 375 mm Sew. Pipe - 2.5 m
Inst. 300 mm Sew. Pipe - 166 m
Inst. 25 mm Preformed Expansion Joint @ Wall Connection
Tr. Exc. - 76 m^3
Under Pvmt. - 79 m

(2) *Sta. "CSF" 99+895, Rt.*
300 mm Sew. Pipe - In Place
Remove - 1.2 m
Const. Manhole With Type "G-2" Inlet
(See Drg. No. RD333)

(3) *Sta. "SES" 99+903.3, 2.11 m Lt.*
Const. Type "B" Inlet
Conn. Deck Drain
Const. Subsurface Drain Outlet
Inst. 100 mm Perf. Pipe - 76.5 m
Drainage Geotextile Type "1" - 36 m^2
(For Bridge No. 18647, See Sht. 1A)

(4) *Sta. "L" 99+936.33, 23.92 m Rt.*
900 mm Sew. Pipe - In Place
Remove - 1.8 m
Const. Drop Manhole Over Extg. 900 mm Pipe - 1.8 m Dia.
Inst. 300 mm Sew. Pipe - 37 m
Inst. 450 mm Sew. Pipe - 36.5 m
Tr. Exc. - 280 m^3
(For Details, See Sht. 2B-6)
(See Drg. Nos. RD324 & RD330)

(5) *Sta. "L" 99+972, 18.5 m Rt.*
Const. Drop Manhole
Inst. 375 mm Sew. Pipe - 20.5 m
Inst. 300 mm Sew. Pipe - 27.5 m
Inst. 300 mm Perf. Pipe - 198 m
Drainage Geotextile Type "1" -36 m^2
Const. Subsurface Drain Outlet
Tr. Exc. - 84 m^3
(For Details, See Sht. 2B-6)

(6) *Sta. "CSUN" 100+005, Lt.*
Cap Inlet

(7) *Sta. "CSF" 99+980, 1.6 m Rt.*
Const. Manhole With Type "G-2" Inlet
Inst. 375 mm Sew. Pipe - 60 m
Tr. Exc. - 101 m^3

(8) *See Sht. 7D-2, Note 2*

(9) *See Sht. 7D-2, Note 1*

(10) *Sta. "BP5" 10+069, 1.4 m Lt.*
300 mm Sew. Pipe - In Place
Remove - 1.2 m
Const. Manhole Over Extg. 300 mm Pipe
Const. Type "B" Inlet
Inst. 300 mm Sew. Pipe - 5.5 m
Under Pvmt. - 1 m
Conn. Deck Drain
Tr. Exc. - 5 m^3
(For Bridge No. 18647, See Sht. 1A)

(11) *Sta. "BP5" 10+114.75, 1.8 m Lt.*
Inst. 300 mm Sew. Pipe - 13 m
Under Pvmt. - 6.7 m
Reconst. Manhole
Tr. Exc. - 29.2 m^3

(12) *Sta. "SES" 100+013, 7.6 m Rt.*
Const. Manhole
Inst. 300 mm Sew. Pipe - 27.5 m
Tr. Exc. - 120 m^3

(13) *Sta. "SCS" 99+938, 47 m Lt*
Extg. 900 mm In-Place
Saw Cut & Remove Pipe - 2 m
Inst. Cure-In-Place-Pipe Lining
Nom. Thkn. - 22 mm
Inst. Metal Flare End Section At Pipe Inlet
Place Loose Riprap (Class 200) - 28 m^3
Inst. Type "1" Riprap Geotextile - 40 m^2
(For Details, See Sht. 2B-8)

(14) *Sta. "CSF" 99+916, Lt.*
Adjust Manhole, Use Method "B"
(For Details, See Sht. 2B)

(15) *Sta. "L" 99+855.6, Lt.*
Remove Extg. Inlet
Const. Type "G-2" Inlet
Conn. To Extg. Pipe

(16) *Sta. "CSF" 99+921, 2.1 m Rt.*
Const. Manhole With Type "G-2" Inlet
Inst. 300 mm Sew. Pipe - 3 m
Reconst. Extg. Manhole
Tr. Exc. - 1 m^3

(17) *Sta. "CSUN" 99+865.38, 19 m Lt.*
Inst. 150 mm PVC Conduit - 14.5 m

(18) *Sta. "BP5" 10+069, 1.4 m Lt.*
Inst. 150 mm PVC Conduit - 20.5 m

REGISTERED PROFESSIONAL ENGINEER
19156
OREGON
JULY 15, 1997
BRUCE S. COUNCIL
Expires Dec. 31, 2001

OREGON DEPARTMENT OF TRANSPORTATION
ROADWAY ENGINEERING SECTION

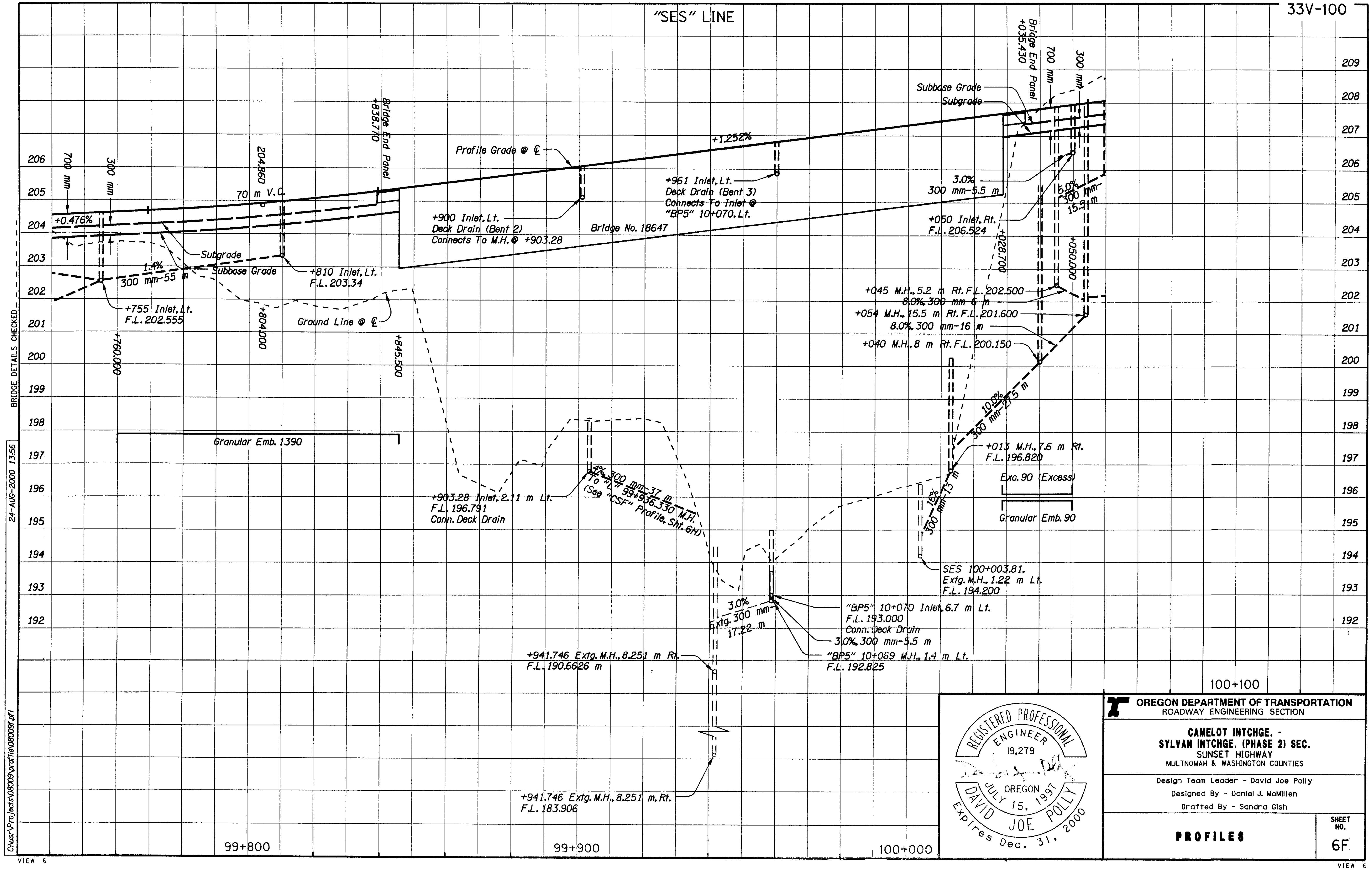
CAMELOT INTCHGE. -
SYLVAN INTCHGE. (PHASE 2) SEC.
SUNSET HIGHWAY
MULTNOMAH & WASHINGTON COUNTIES

Reviewed By - Bruce Council
Designed By - Magnolia Bartley
Drafted By - Heather Gonsior

DRAINAGE NOTES

SHEET NO. 6D-2

VIEW 2



33V-100
"SES" LINE
Bridge End Panel +838.710
Bridge End Panel +035.430
700 mm
300 mm
204.860
70 m V.C.
+0.476%
+1.252%
Profile Grade @ ℄
Subgrade
Subbase Grade
1.4% 300 mm-55 m
+755 Inlet, Lt. F.L. 202.555
+760.000
+804.000
+810 Inlet, Lt. F.L. 203.34
Ground Line @ ℄
+845.500
+900 Inlet, Lt. Deck Drain (Bent 2) Connects To M.H. @ +903.28
Bridge No. 18647
+961 Inlet, Lt. Deck Drain (Bent 3) Connects To Inlet @ "BP5" 10+070, Lt.
3.0% 300 mm-5.5 m
+050 Inlet, Rt. F.L. 206.524
+028.700
+050.000
6.0% 300 mm-15.5 m
+045 M.H., 5.2 m Rt. F.L. 202.500
8.0%, 300 mm-6 m
+054 M.H., 15.5 m Rt. F.L. 201.600
8.0%, 300 mm-16 m
+040 M.H., 8 m Rt. F.L. 200.150
10.0% 300 mm-27.5 m
+013 M.H., 7.6 m Rt. F.L. 196.820
Granular Emb. 1390
Exc. 90 (Excess)
Granular Emb. 90
+903.28 Inlet, 2.11 m Lt. F.L. 196.791 Conn. Deck Drain
4% 300 mm-37 m To "L" 99+936.330 M.H. (See "CSF" Profile, Sht. 6H)
16% 300 mm-13 m
SES 100+003.81, Extg. M.H., 1.22 m Lt. F.L. 194.200
3.0% Extg. 300 mm-17.22 m
"BP5" 10+070 Inlet, 6.7 m Lt. F.L. 193.000 Conn. Deck Drain
3.0%, 300 mm-5.5 m
"BP5" 10+069 M.H., 1.4 m Lt. F.L. 192.825
+941.746 Extg. M.H., 8.251 m Rt. F.L. 190.6626 m
+941.746 Extg. M.H., 8.251 m, Rt. F.L. 183.906
209
208
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193
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99+800
99+900
100+000
100+100
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VIEW 6
REGISTERED PROFESSIONAL ENGINEER 19,279 OREGON JULY 15, 1997 DAVID JOE POLLY Expires Dec. 31, 2000

OREGON DEPARTMENT OF TRANSPORTATION
ROADWAY ENGINEERING SECTION

CAMELOT INTCHGE. - SYLVAN INTCHGE. (PHASE 2) SEC.
SUNSET HIGHWAY
MULTNOMAH & WASHINGTON COUNTIES

Design Team Leader - David Joe Polly
Designed By - Daniel J. McMillen
Drafted By - Sandra Gish

PROFILES

SHEET NO. 6F