OPERATION & MAINTENANCE MANUAL

DFI No. D00110
Facility Type: Water Quality Extended Detention Dry Pond

AUGUST, 2011

INDEX

1. Identification

Drainage Facility ID (DFI):	**D00110**
Facility Type:	Water Quality Extended Detention Dry Pond
Construction Drawings:	(V-File Number) 29V-50
Location:	District: 2B (Old 2A)
	Highway No.: 029
	Mile Post: 0.68 (beg./end)
	Description: This facility is located at the northwest corner of S.W. Canyon Rd - OR8 (Hwy 29) and SW Benz Park Drive.

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, Elaine Kuehn, John Marks, 503-986-2990
Facility construction:	October 1997
Contractor:	N/A

4. Storm Drain System and Facility Overview

A water quality 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 size of these facilities depends on the location and the amount of contributing impervious area.

This facility is located at the northwest corner of S.W. Canyon Rd - OR8 (Hwy 29) and SW Benz Park Drive in southwest Portland, Oregon.

A high-low split flow manhole is located northeast of the pond and is used to bypass the low flows for water quality treatment into the pond. The high flows are directed into the conveyance line on S.W. Canyon Rd -US8 (Hwy 29) and do not receive treatment. The facility consists of water quality storage, freeboard storage, a 12-inch inlet pipe, and an outlet control structure.

Untreated lower stormwater flows are first directed to a water quality manhole for pretreatment. After the water quality manhole the flow is directed into the pond. Treated water from this pond discharges into an 18-inch diameter conveyance system within S.W. Canyon Rd.

The drainage basin area for the extended dry pond includes S.W. Canyon Rd northeast of the pond towards US26 (Hwy 047).

A. Maintenance equipment access:
   Access to the facility can be obtained from S.W. Benz Park; see Point E and F on the Operational Plan and Photo 2. As a side note: The current access into the facility is the emergency spillway—the designed access is vegetated over.

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: Outlet control structure for extended dry detention pond facility. Primary inlet appears plugged and is in need of maintenance.

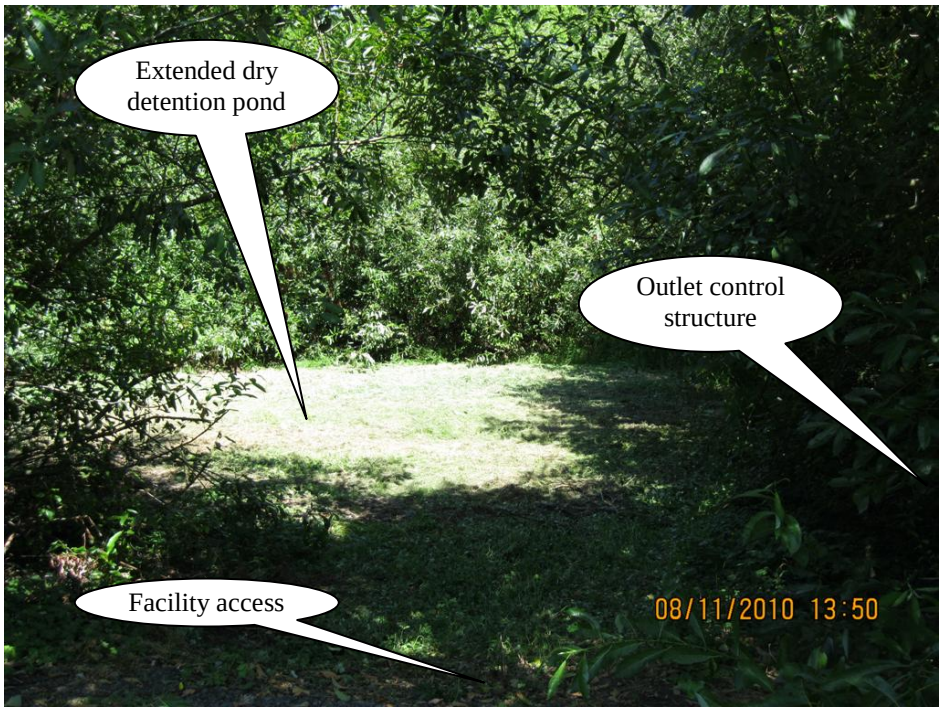


Photo 2: Extended dry detention pond. Vegetation surrounds the perimeter. Outlet structure is located to the right. Foreground shows the access from S.W. Benz Park Dr.

5. Facility Haz Mat Spill Feature(s)

The water quality extended dry detention pond can be used to store a volume of liquid by blocking the 18-inch diameter outlet pipe located at the outlet control structure. This pipe is notes as Point B on the Operational Plan, Appendix A. Covering the inlet grates with sandbags or a steel plate may be help accomplish this task.

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
A secondary auxiliary inlet/outlet grated catch basin has been designed as part of the facility's outlet control structure, and acts as an emergency overflow in the event the primary outlet control device is plugged.

Before flows ever reach the higher level of the secondary inlet/outlet device, however, they are typically released through a primary inlet/outlet grated catch basin located below the secondary device. If runoff should ever exceed the water quality event, where flows normally are directed to the lower primary outlet, the pond level will rise and flows will be released through the secondary auxiliary inlet/outlet device located just above the primary outlet.

☐ 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 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

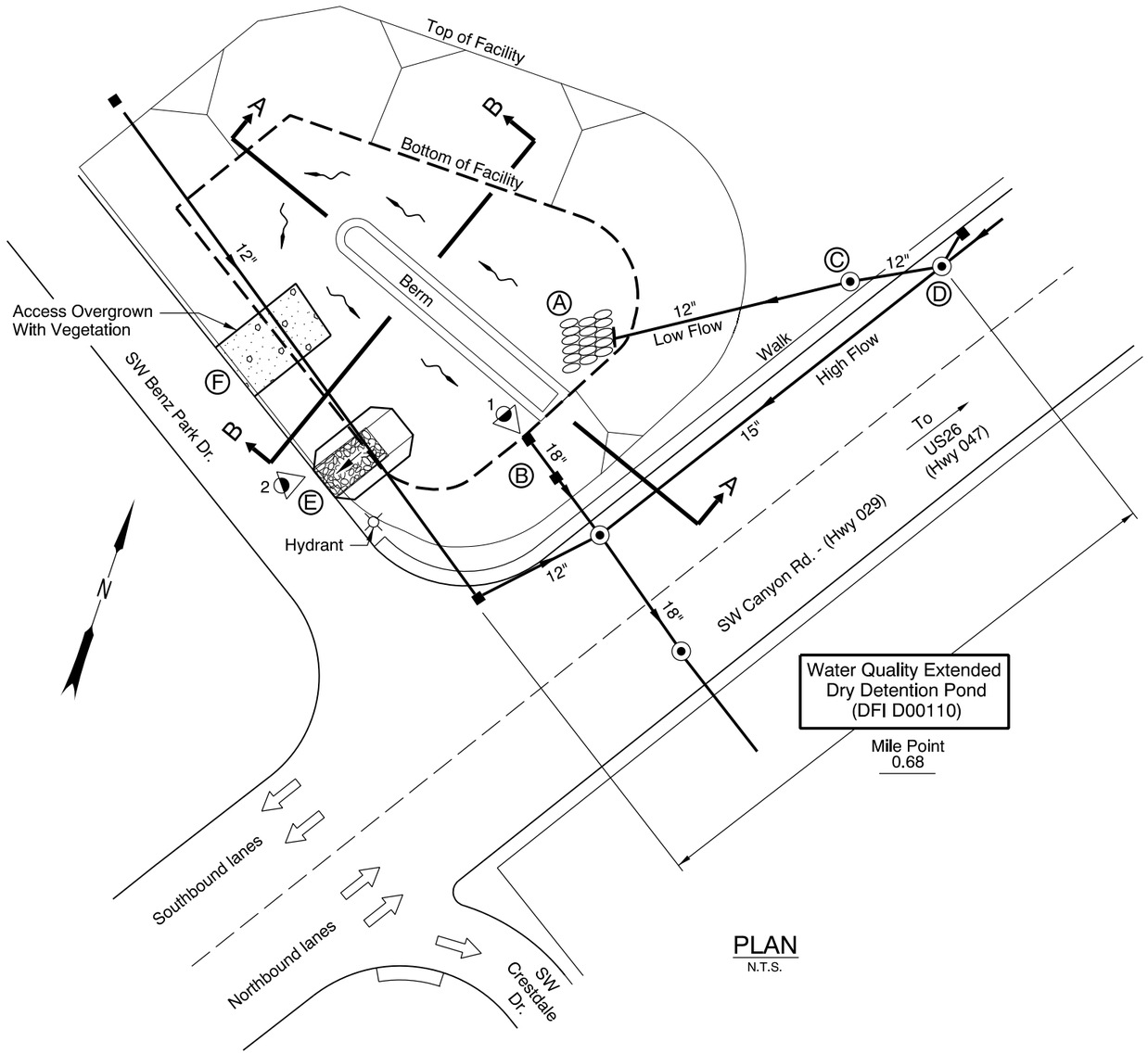
Contact any of the following for more detailed information about management of waste materials found on site:

ODOT Clean Water Unit	(503) 986-3008
ODOT Statewide Hazmat Coordinator	(503) 229-5129
ODOT Region Hazmat Coordinator	(503) 731-8304
ODEQ Northwest Region Office	(503) 229-5263

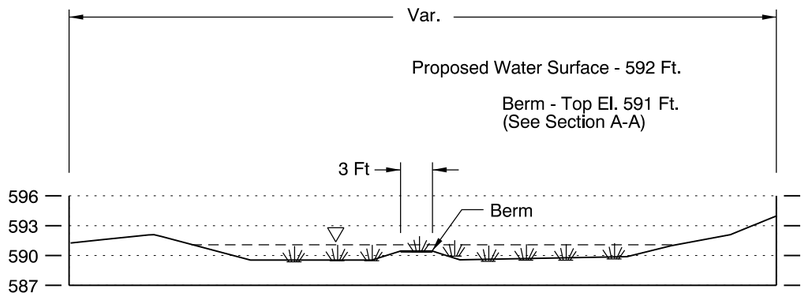
Appendix A

Content:

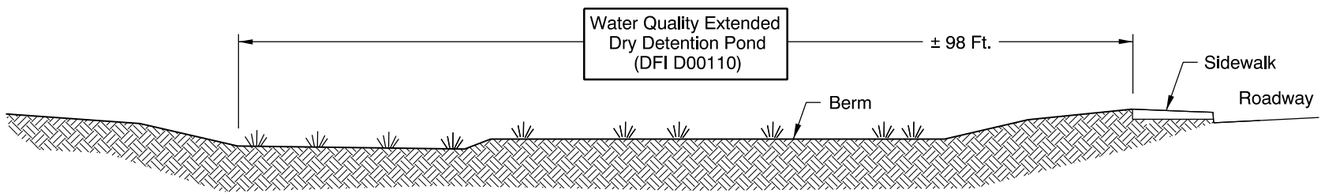
- **Operational Plan and Profile Drawing(s)**



PLAN
N.T.S.



SECTION B-B
N.T.S.



SECTION A-A
N.T.S.

LEGEND:

- Photo Location / Direction
- (A) Inlet, 12" Dia.
- (B) Outlet Control Structure
- (C) Pollution Control Manhole
- (D) High/Low Split Flow Manhole
- (E) Spillway
- (F) Access Road
- Manhole
- Inlet
- Storm Pipe (Facility)
- Storm Pipe
- Conveyance Direction
- Pavement / Facility Flow Path

Sht. 1 of 2

OREGON DEPARTMENT OF TRANSPORTATION

Prepared By: Bob Knorr

Drafted By: Jim Holeman

DFI D00110
MAINTENANCE DISTRICT 2B HWY 29
WATER QUALITY EXTENDED DRY DETENTION POND
TUALATIN VALLEY HWY 29 MP 0.68
WASHINGTON COUNTY

Z:\Hydraulics\Hydraulics OM\Completed_Facility_Files\Dist_2B\Hwy_029\2B_029_D00110\Operational Plan\DFI_D00110.dgn :: Default 1/15/2014 3:19:47 PM hwyr33e

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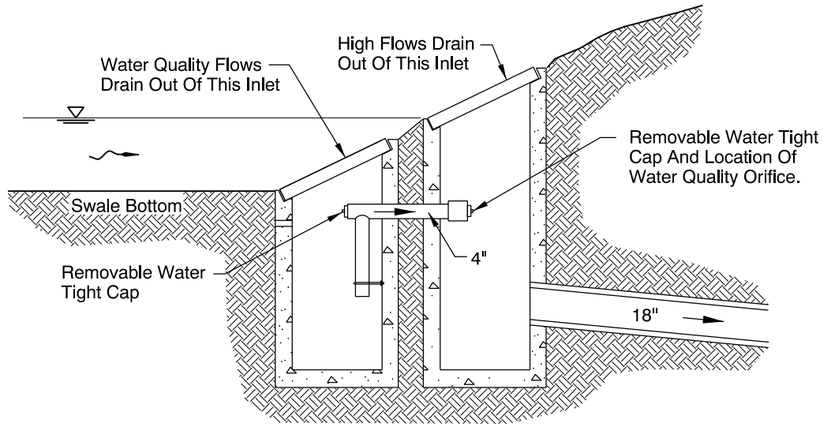
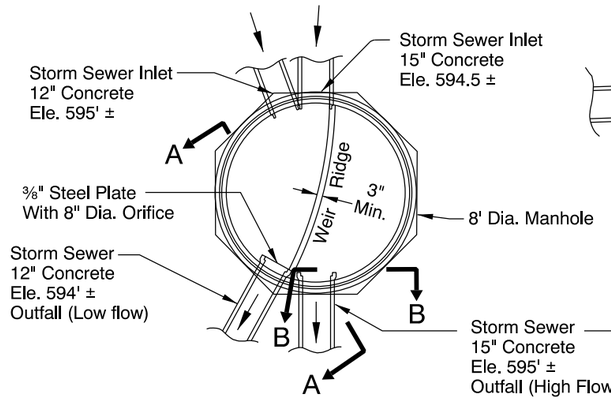
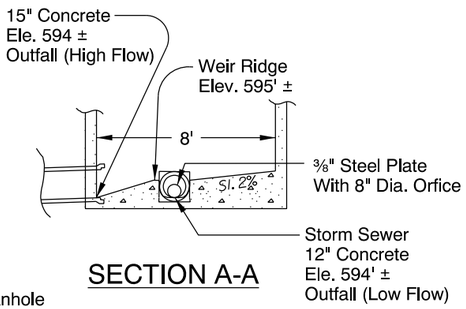


OUTLET CONTROL STRUCTURE DETAIL AT POINT Ⓑ

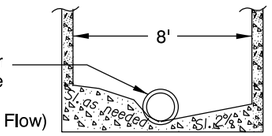
N.T.S.



PLAN



SECTION A-A



SECTION B-B

SPLIT FLOW MANHOLE DETAIL AT POINT Ⓓ

N.T.S.

Sht. 2 of 2

OREGON DEPARTMENT OF TRANSPORTATION

Prepared By: Bob Knorr

Drafted By: Jim Holeman

DFI D00110
MAINTENANCE DISTRICT 2B HWY 29
WATER QUALITY EXTENDED DRY DETENTION POND
TUALATIN VALLEY HWY 29 MP 0.68
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, 4W, 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

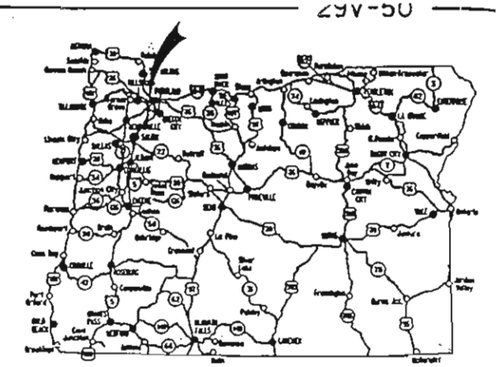
GRADING, STRUCTURES, PAVING, SIGNING, ILLUMINATION, SIGNALS, LANDSCAPING, UTILITY RELOCATIONS, & DEBRIS FILL REMOVAL

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

SUNSET HIGHWAY

MULTNOMAH & WASHINGTON COUNTIES

OCTOBER 1997

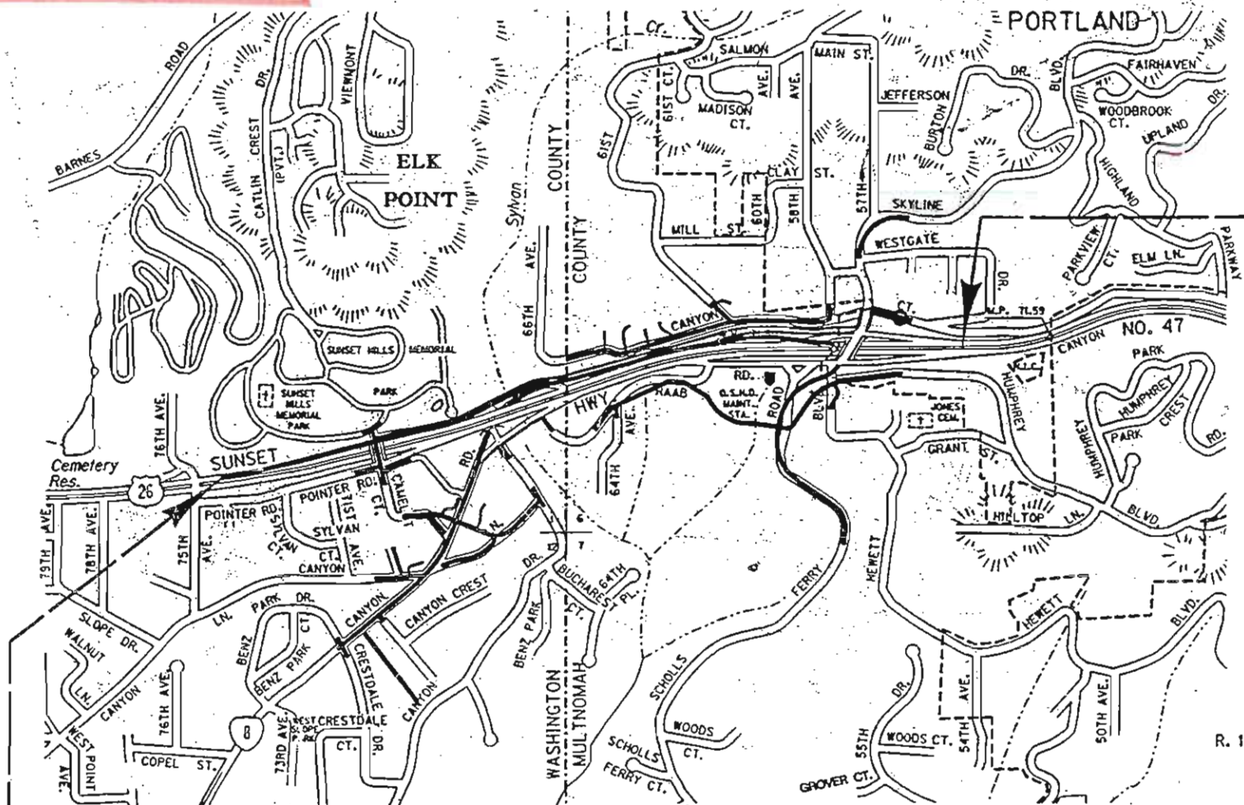


Overall Length Of Project - 1.545 km (0.96 Mile)

"AS CONSTRUCTED"
Bill Edmundson
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



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

METRIC

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

08-SEP-15

EW A1 C026-1409-300

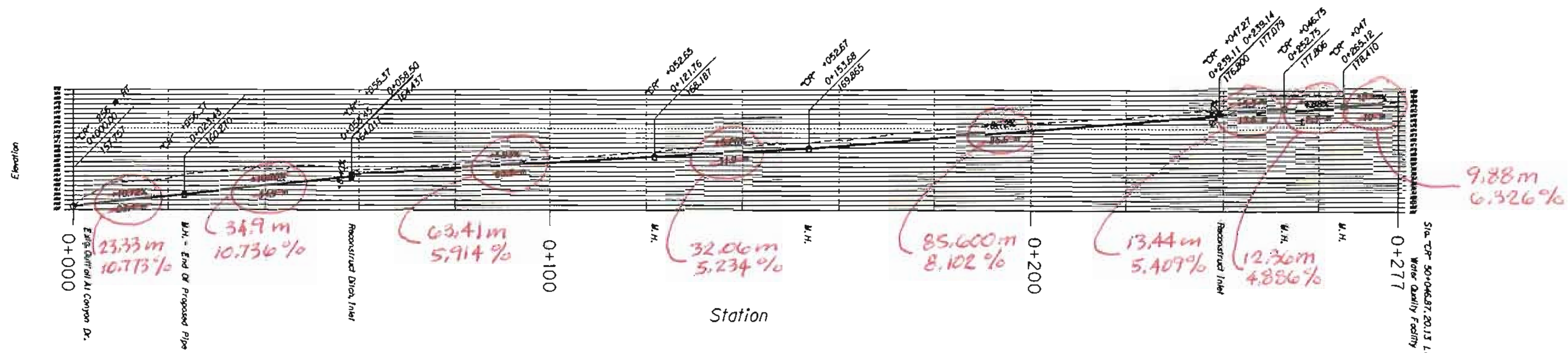
DRAINAGE DETAIL

BENZ PARK OUTFALL

FROM STA "CR" ~~50+046.87, 20.13 LT.~~ 50+047.04, 19.66 LT.

(Benz Park Water Quality Facility)

(See Plan Shts. 4H, 4J And Profile Sht. 4S)



"AS CONSTRUCTED"

Bill Edmundson

Project Manager

Date

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

FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
REGION 10	OREGON DIVISION		2B-18

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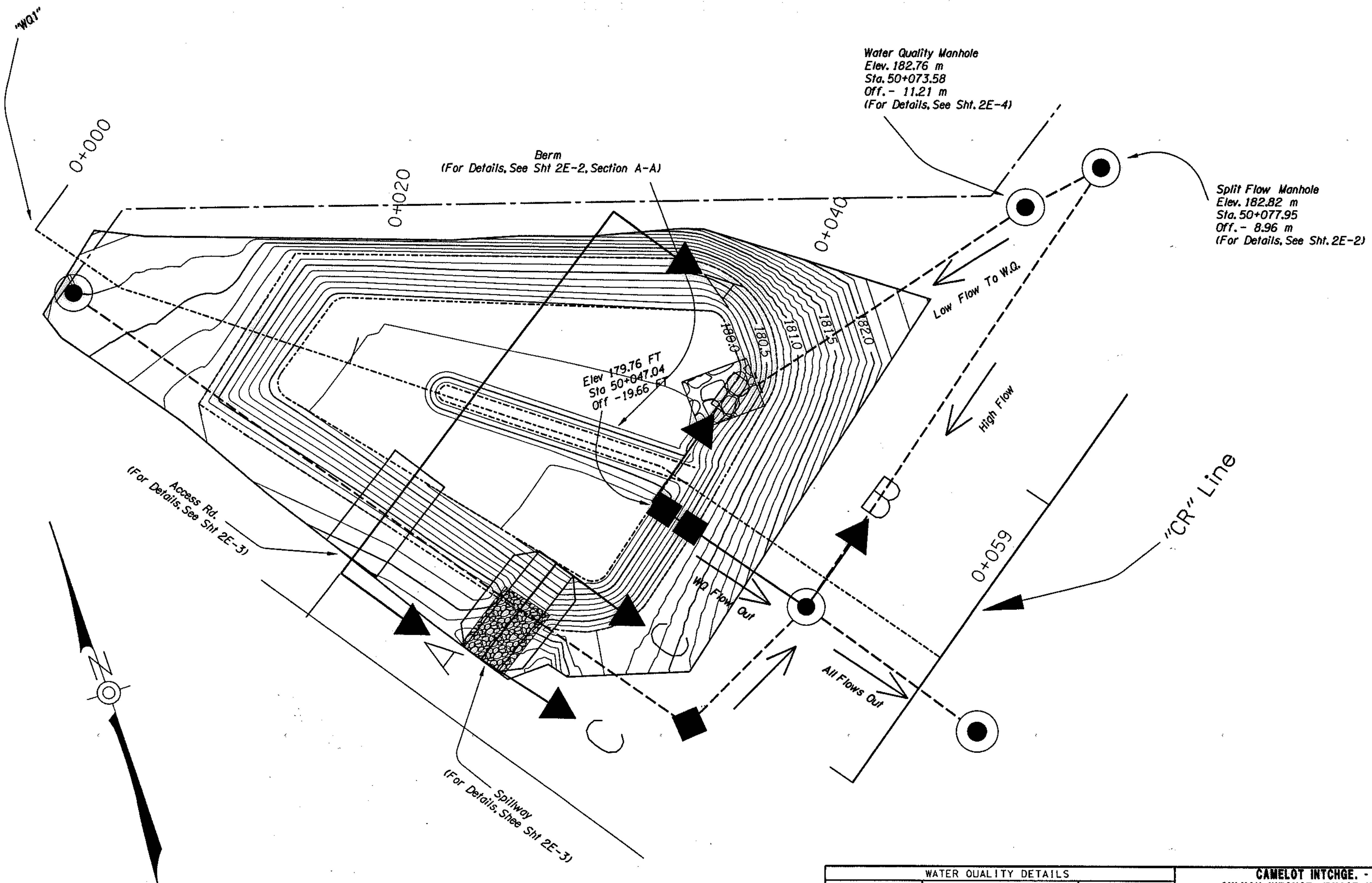
VIEW 4

WATER QUALITY TREATMENT FACILITY DETAILS - BENZ PARK



WATER QUALITY DETAILS			CAMELOT INTCHGE. - SYLVAN INTCHGE. (PHASE 1) SEC. SUNSET HIGHWAY MULTNOMAH & WASHINGTON COUNTIES			
REGISTERED PROFESSIONAL ENGINEER 9,687 John K. Marks OREGON JULY 14, 1978 JOHN R. MARKS Expires Dec. 31, 1998	Elaine Kuehn - Designer Elaine Kuehn - Drafter	OREGON DEPARTMENT OF TRANSPORTATION	FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
			REGION 10	OREGON DIVISION		2E

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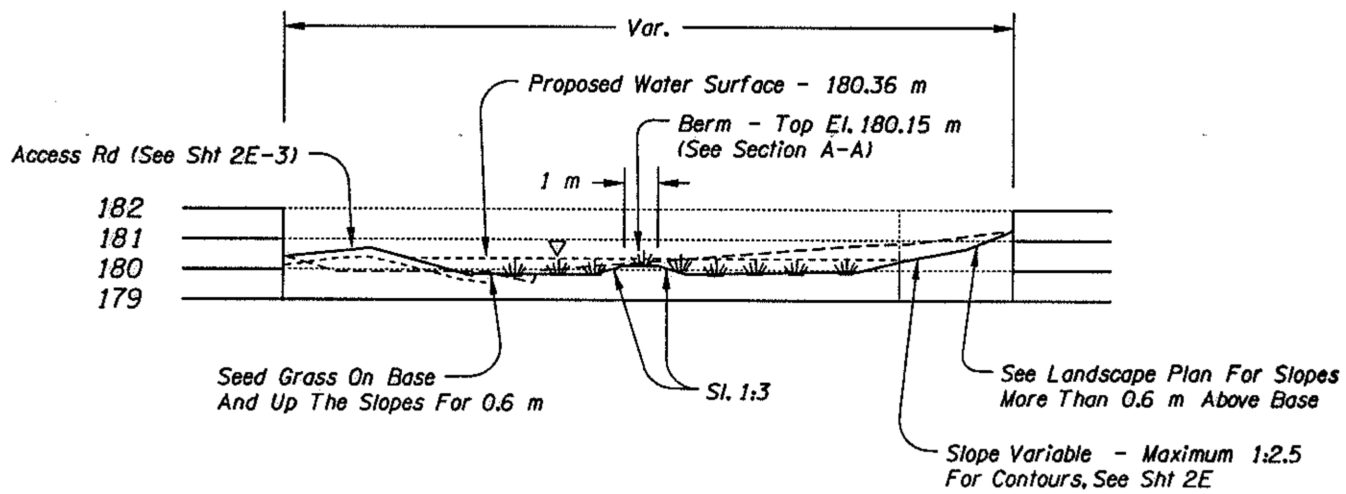
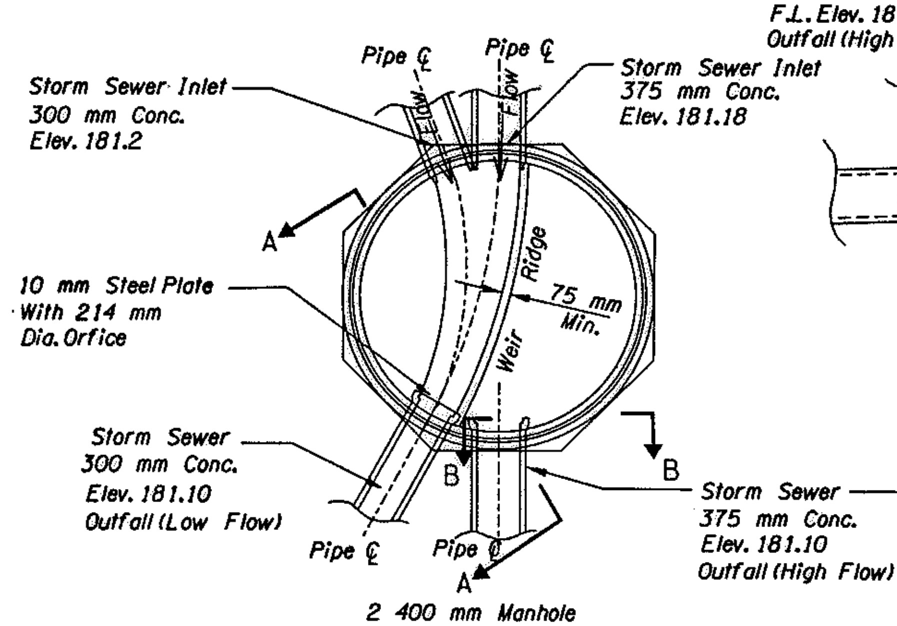
VIEW 2

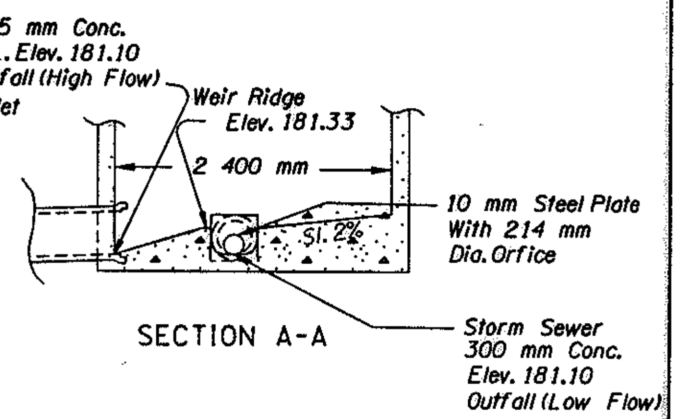
WATER QUALITY TREATMENT FACILITY DETAILS - BENZ PARK



SECTION A-A

1V : 1H





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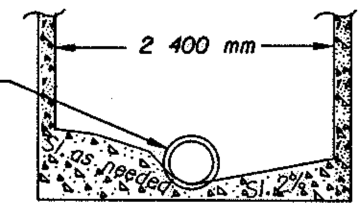
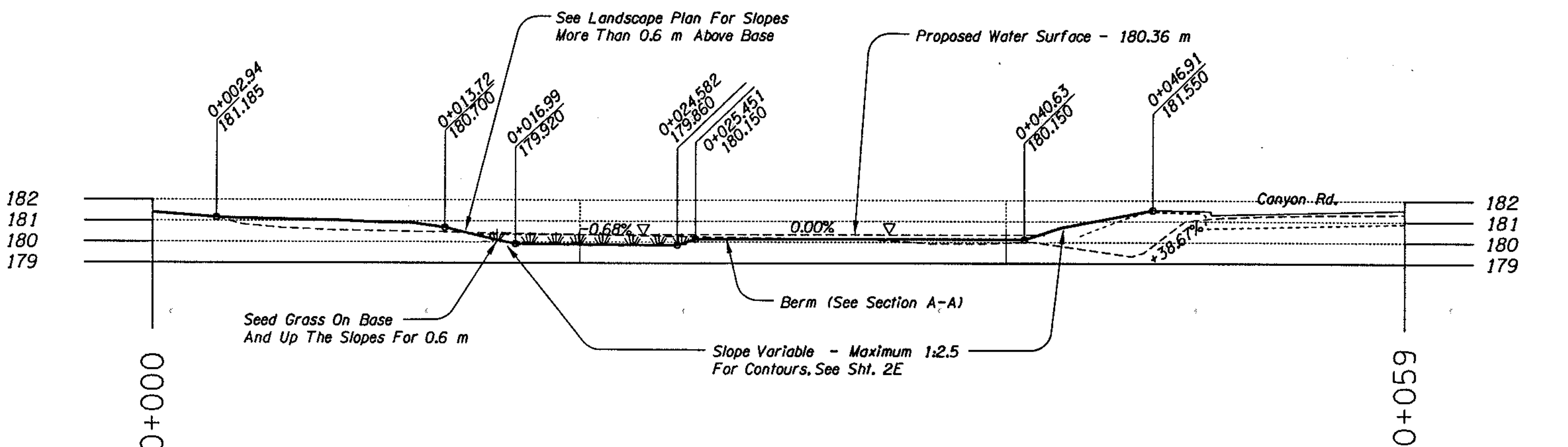


SECTION B-B

SPLIT FLOW MANHOLE

"CR" Sta. 50+077.95, 8.96 Lt.

(For Details Not Shown, See Drg. Nos. RD324, RD330 & RD333)



POND PROFILE : PARTIAL PROFILE OF "WQ1"

(Annotation Shows Major Transition Points In Profile For Information; Pond Should Be Constructed Based On Contours Shown On Sht. 2-E)

1V : 1H

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

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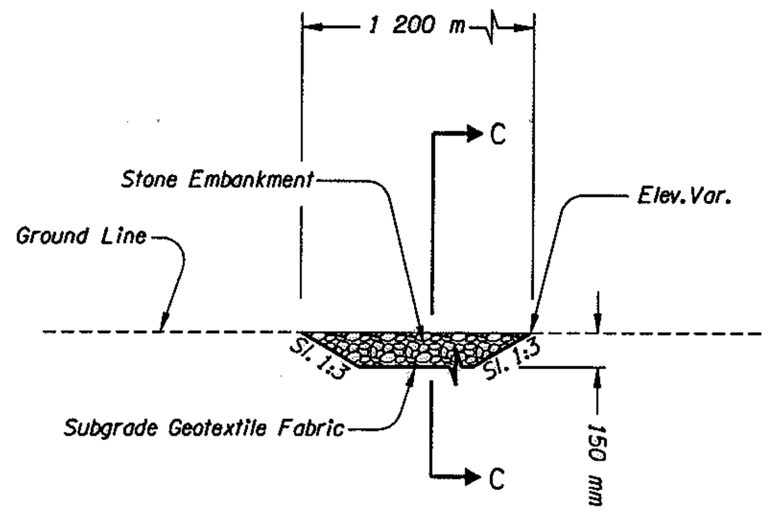
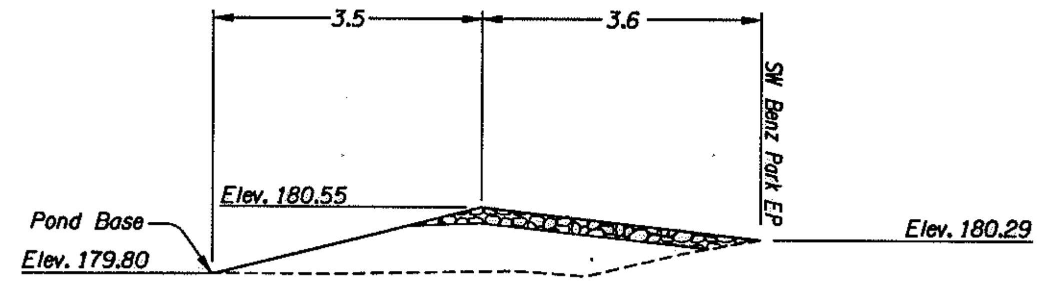
VIEW 3

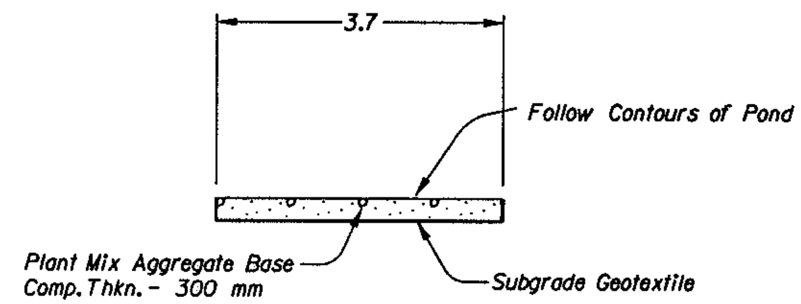
WATER QUALITY TREATMENT FACILITY DETAILS - BENZ PARK



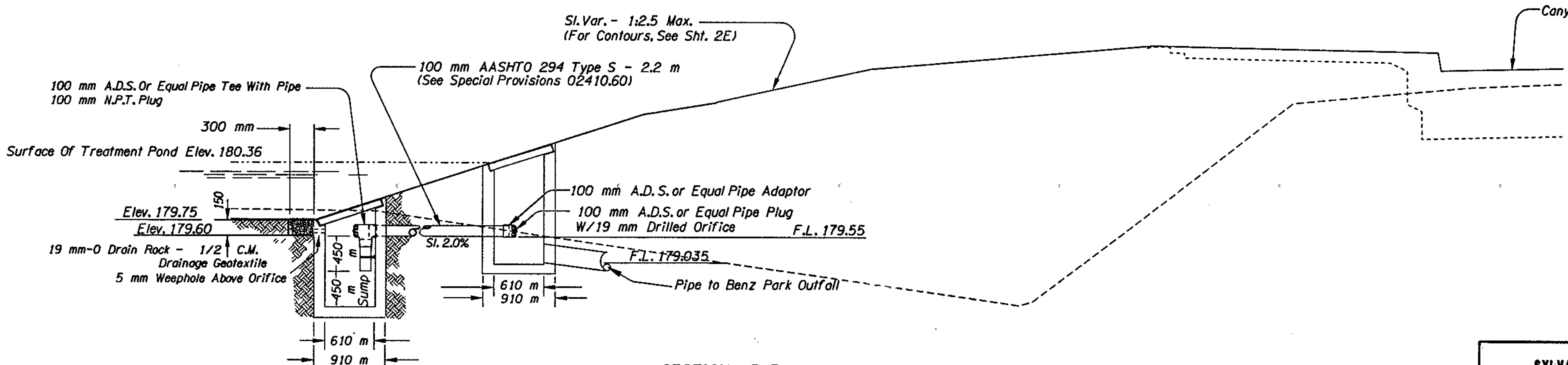
SPILLWAY



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



WATER QUALITY ACCESS ROAD



SECTION B-B

POND OUTLET STRUCTURE
(See USA Standard Drg. 150)

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

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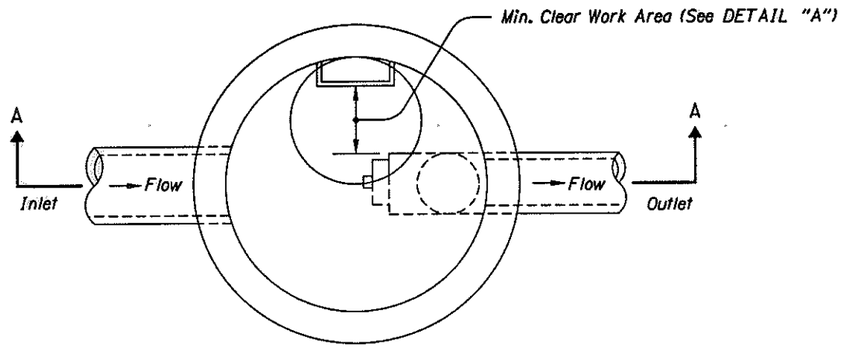
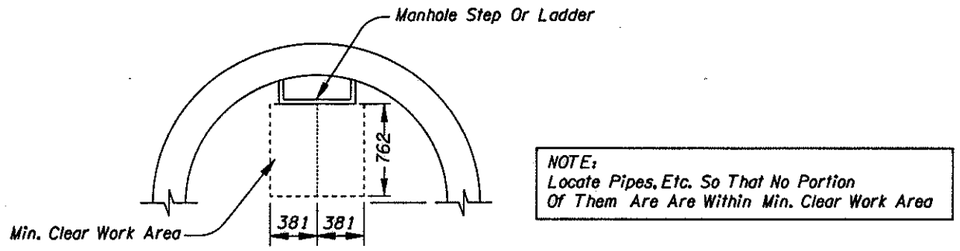
VIEW 4

WATER QUALITY MANHOLE - BENZ PARK

"CR" STA. 50+073.58 11.21, LT.

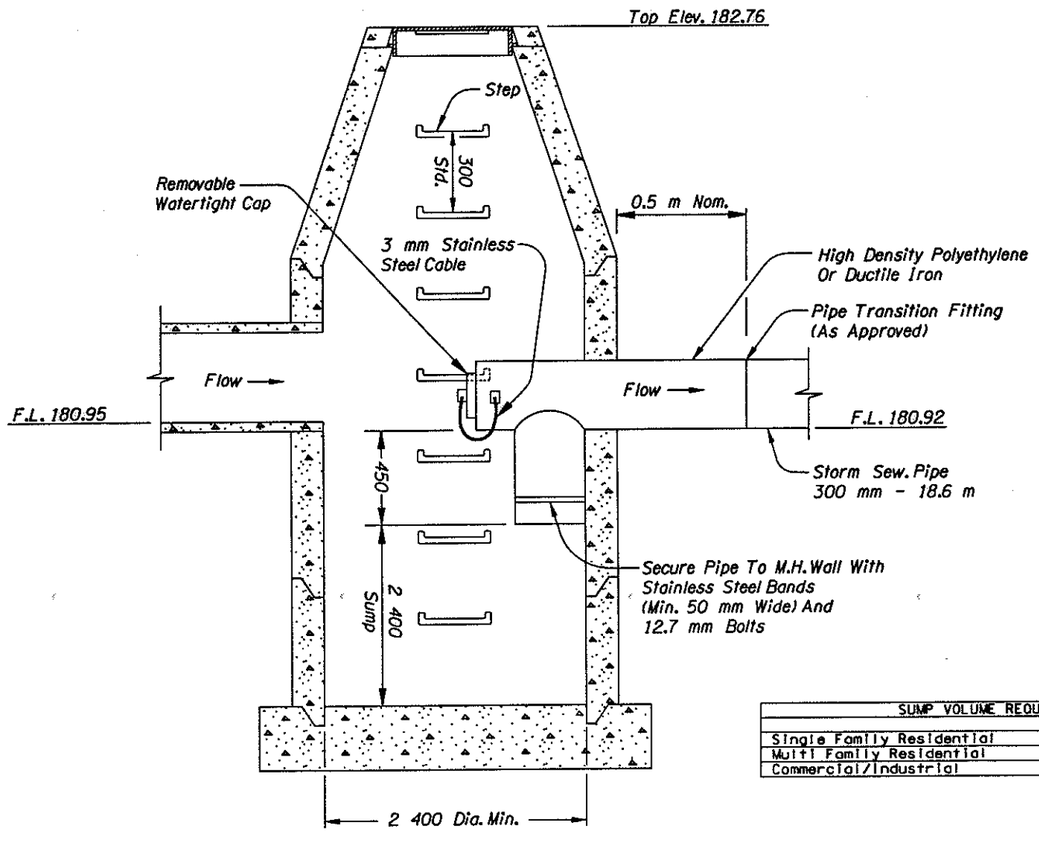


PLAN



DETAIL "A"

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



SECTION A-A

(For Details Not Shown, See Manhole Standard Drawings)
(For Location, See Sht. 2E)

SUMP VOLUME REQUIREMENTS	
Single Family Residential	0.245 m^3/hectare
Multi Family Residential	1.539 m^3/hectare
Commercial/Industrial	6.577 m^3/hectare

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.

NOTE:
1. All Dimensions Are Shown In Millimiters Unless Otherwise Noted

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

FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
REGION 10	OREGON DIVISION		2E-4

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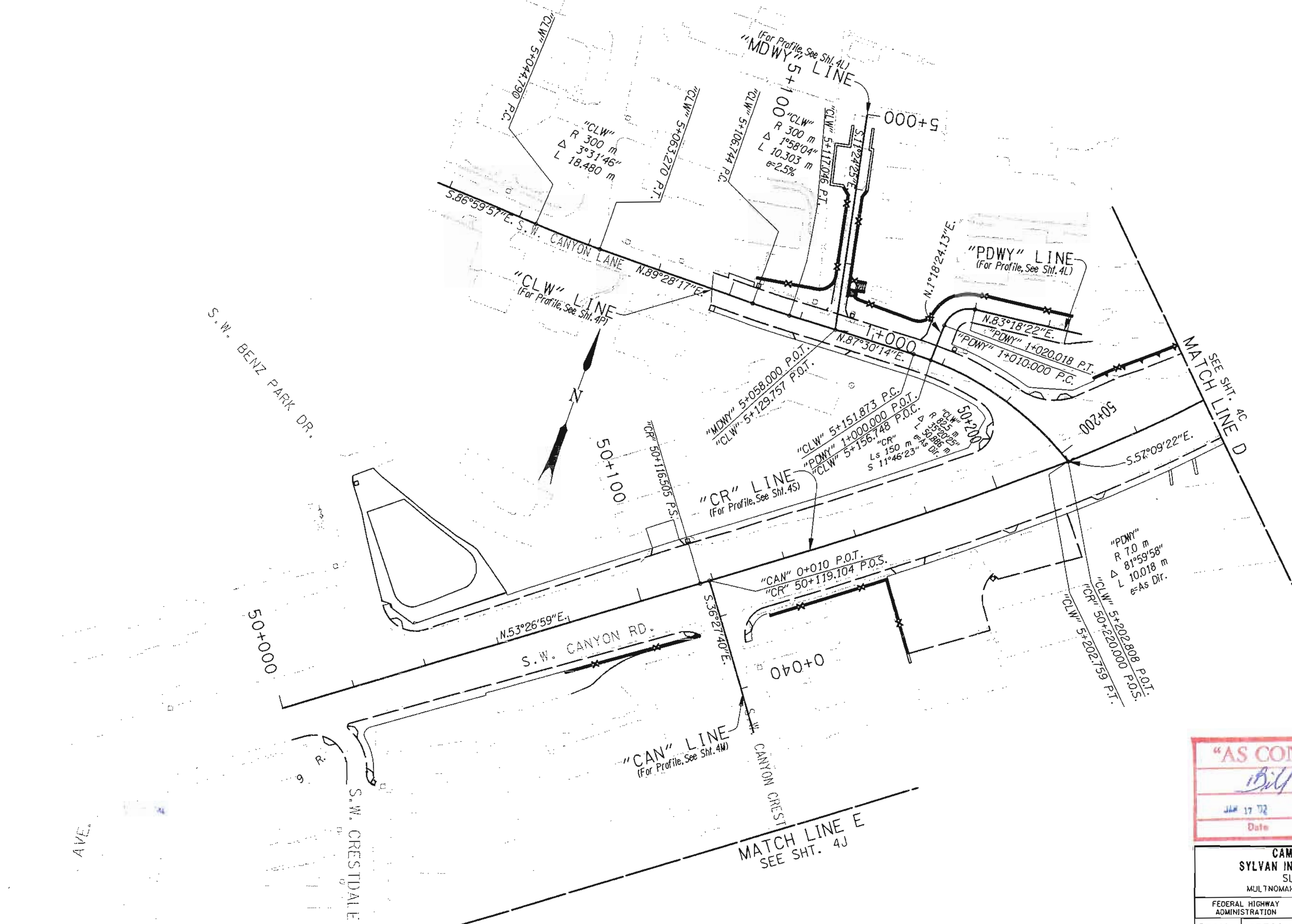
VIEW 1

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

ALIGNMENT 29V-50 METRIC



"MDWY" LINE
(For Profile See Sht. 4L)
"CLW" 5+044.790 P.C.
"CLW" R 300 m Δ 3°31'46" L 18.480 m
"CLW" 5+063.270 P.I.
"CLW" 5+106.744 P.C.
"CLW" R 300 m Δ 1°58'04" L 10.303 m e=2.5%
"CLW" 5+117.046 P.T.
5+100
5+000
S.1°24'25"E.
S.86°59'57"E. S.W. CANYON LANE
N.89°28'17"E.
"CLW" LINE
(For Profile, See Sht. 4P)
N.1°18'24.13"E.
"PDWY" LINE
(For Profile, See Sht. 4L)
N.83°18'22"E.
"PDWY" 1+020.018 P.T.
"PDWY" 1+010.000 P.C.
1+000
N.87°30'14"E.
"MDWY" 5+058.000 P.O.T.
"CLW" 5+129.757 P.O.T.
"CLW" 5+151.873 P.C.
"PDWY" 1+000.000 P.O.T.
"CLW" 5+156.748 P.O.C.
"CR" Ls 150 m S 11°46'23"
"CLW" R 82.5 m Δ 35°20'25" L 50.886 m e=As Dir.
50+200
MATCH LINE D
SEE SHT. 4C
S.57°09'22"E.
S.W. BENZ PARK DR.
N
50+100
"CR" 50+116.505 P.S.
"CR" LINE
(For Profile, See Sht. 4S)
"PDWY" R 7.0 m Δ 81°59'58" L 10.018 m e=As Dir.
"CAN" 0+010 P.O.T.
"CR" 50+119.104 P.O.S.
"CLW" 5+202.808 P.O.T.
"CR" 50+220.000 P.O.S.
"CLW" 5+202.759 P.T.
50+000
N.53°26'59"E.
S.W. CANYON RD.
S.36°27'40"E.
0+040
"CAN" LINE
(For Profile, See Sht. 4M)
S.W. CANYON CREST
MATCH LINE E
SEE SHT. 4J
S.W. CRESTDALE
AVE.

"AS CONSTRUCTED"

Bill Edmunson

Project Manager

JAN 17 '02

Date

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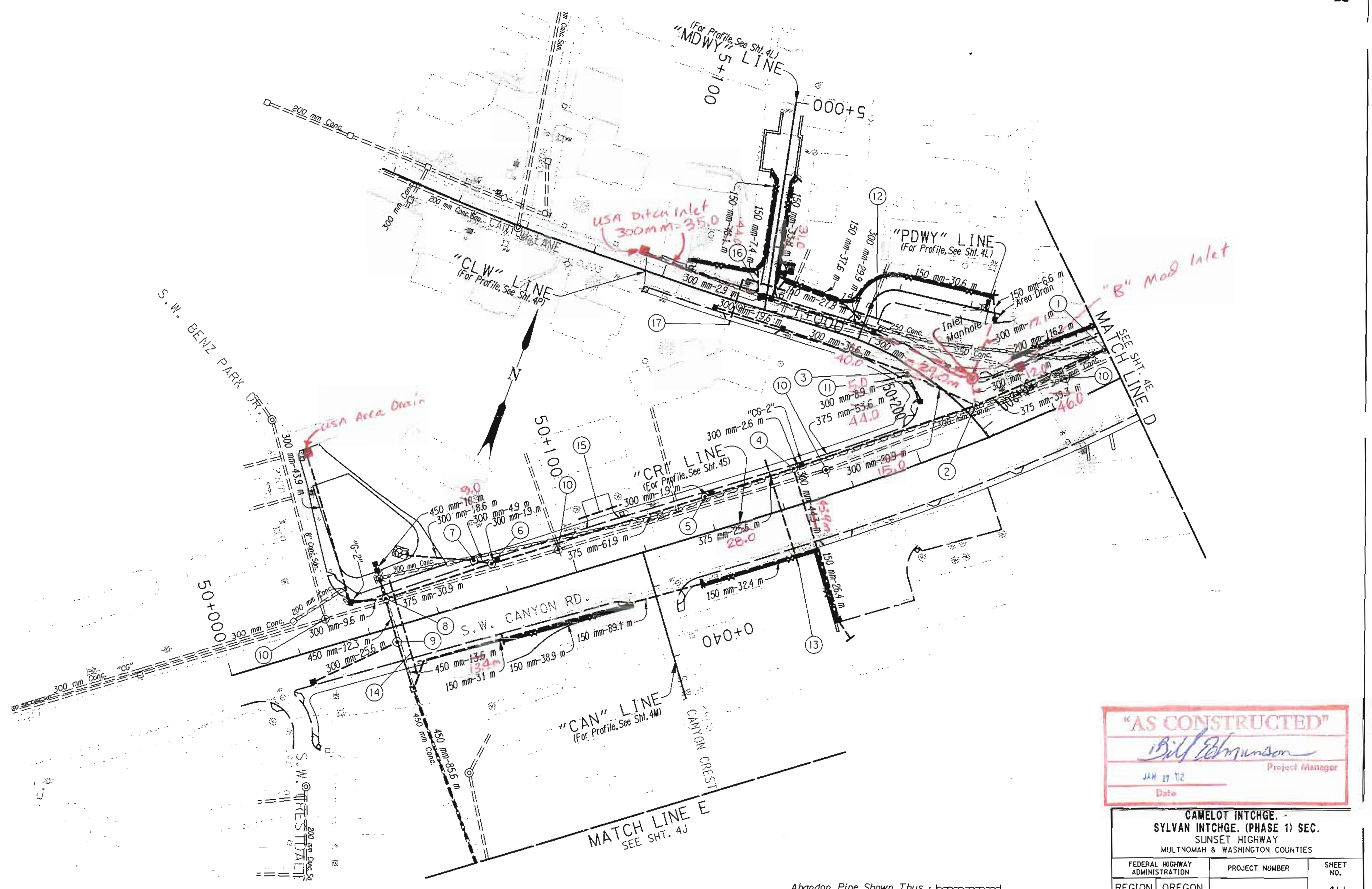
VIEW 4

CAMELOT INTCHGE. - SYLVAN INTCHGE. (PHASE 1) SEC. SUNSET HIGHWAY MULTNOMAH & WASHINGTON COUNTIES		
FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
REGION 10 / OREGON DIVISION		4F



"AS CONSTRUCTED"
Bill Edmundson
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		4H

BRIDGE DETAILS CHECKED

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VIEW 4

(1) Sta. "CR" 50+260.9 m Lt.
Remove Inlet
Const. Manhole
Const. Type "G-2" Inlet – 2
Inst. 300 mm Sew. Pipe - 5.3 m
Inst. 375 mm Sew. Pipe - 75.9 m
Tr. Exc. - 98 m^3
Rock Tr. Exc. - 30 m^3

(2) Sta. "CR" ~~50+220.9.60 m Lt.~~ 50+213.16, 9.85 m Lt.
Remove Extg. Sew. Pipe - 72.1 m
Remove Inlet - 2
Const. Drop Manhole
Const. U.S.A. Oversize Curb Inlet Manhole
Const. U.S.A. Area Drain &
Grate Type II Mod. (Sump)
Const. U.S.A. Type "CG-1" Inlet - 3
Const. Type "B" Mod. Inlet - 2
Const. Wall Gutter Drains - 4
Inst. 150 mm Drain Pipe - ~~153.1~~ m 191
~~Inst. 150 mm Poly Sew. Pipe - 41.8 m~~
~~Inst. 200 mm Drain Pipe~~ - 116.2M (OK)
Inst. 300 mm Sew. Pipe - ~~108.9 m~~ 90M
Inst. 375 mm Sew. Pipe - ~~39.3~~ m 46M
Tr. Exc. - 74 m^3
Rock Tr. Exc. - 149 m^3
(For Details, See Sht. 2B-2)
(See U.S.A. Drg. Nos. 140A-ST, 140B-ST, 150-ST, 220-ST, 230-ST & 240-SA)
Const. USA Ditch Inlet TYP 2

(3) Sta. "CLW" 5+173.50.2 m Rt.
Const. U.S.A. Manhole
Const. U.S.A. Type "CG-1" Inlet - 2
Const. U.S.A. Type "CG-2 Inlet
Inst. 300 mm Sew. Pipe - ~~65.1~~ m 115
Tr. Exc. - 67 m^3
(See U.S.A. Drg. Nos. 010-ST, 160-ST & 170-ST)

(4) Sta. "CR" 50+~~165.76, 10.04 m Lt.~~ 167.97, 10.11 m Lt.
Remove Extg. Pipe - 53.6 m
Const. Manhole
Const. Type "CG-2" Inlet
Const. Trapped Catch Basin
Inst. 150 mm Drain Pipe - ~~26.4~~ m 56
Inst. 300 mm Sew. Pipe - ~~46.9 m~~ 46.5 m
Inst. 375 mm Sew. Pipe - ~~53.6~~ m 44.0
Tr. Exc. - 152 m^3
Rock Tr. Exc. - 69 m^3
(For Details, See Sht. 2B-17)

(5) Sta. "CR" 50+140.9.30 m Lt.
Remove Extg. Sew. Pipe - 25.6 m
Const. Manhole
Const. Type "CG-2" Inlet
Inst. 300 mm Sew. Pipe - ~~7.9~~ m 3.0
Inst. 375 mm Sew. Pipe - ~~25.6~~ m 28.0
Tr. Exc. - 54 m^3

(6) Sta. "CR" 50+077.95, 8.96 m Lt.
Remove Extg. Sew. Pipe - 61.9 m
Remove Inlet
Const. Type "CG-2" Inlet
Const. Type "B" Manhole With Flow Splitter (2 400 mm)
Inst. 300 mm Sew. Pipe - 1.9 m
Inst. 375 mm Sew. Pipe - 61.9 m
Tr. Exc. - 108 m^3
(For Details, See Sht. 2E-2)

(7) Sta. "CR" 50+073.58, 11.21 m Lt.
Remove Extg. Sew. Pipe - 32.0 m
Const. Extended Dry Detention Pond
Const. U.S.A. Water Quality Manhole (2 400 mm)
Inst. 300 mm Sew. Pipe - 23.5 m
Const. Loose Riprap (Class 100) - 12 m^3
Const. Filter Blanket (100 mm - 0 mm) - 1 m^3
Inst. Drain Riprap Geotextile (Type 1) - 12 m^2
Inst. Subgrade Geotextile - 40 m^2
Inst. Plant Mix Aggr. Subbase - 9 m^3
Water Quality Seed Mix - 300 m^2
Stone Emb. - 2 m^3
Tr. Exc. - 28 m^3
(For Details, See Shts. 2E Thru 2E-4)
(See U.S.A. Org. No. 100-ST)

(8) Sta. "CR" 50+047, 8.10 m Lt.
Remove Inlet
Remove Extg. Sew. Pipe - 6.4 m
Const. Manhole ~~-2~~ 1
Const. Type "G-2" Inlet
Const. Type "D" Mod. Inlet - 2
Inst. 300 mm Sew. Pipe - 53.5 m
Inst. 375 mm Sew. Pipe - 30.9 m
Inst. 450 mm Sew. Pipe - ~~10~~ m 9.0
Tr. Exc. - 127 m^3
(For Details, See Sht. 2B-18)
(See U.S.A. Drg. No. 150-ST)
Const. USA Area Dr.

(9) Sta. "CR" 50+046.75, 4.26 m Rt.
Remove Extg. Sew. Pipe - 12.3 m
Const. Manhole
Const. Type "G-2" Inlet
Inst. 300 mm Sew. Pipe - 25.6 m
Inst. 450 mm Sew. Pipe - 12.3 m
Under Pvmt. - 37.8 m
Tr. Exc. - 88 m^3
(For Details, See Sht. 2B-18)
INST. 150MM DRAIN PIPE - 75M

(10) Adjust Manhole - 4
(For Details, See Sht. 2B)

(11) Inst. 150 mm PVC Conduit - 25.5 m

(12) Inst. 150 mm PVC Conduit - 15.7m

(13) Inst. 150 mm PVC Conduit - ~~31.3~~ m 28

(14) Inst. 150 mm PVC Conduit - ~~28.2~~ m 24

(15) Inst. 150 mm PVC Conduit - 12.4 m

(16) Inst. 150 mm PVC Conduit - ~~13.2~~ m 12

(17) Inst. 150 mm PVC Conduit - 13.2 m

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

To Face Sht. 4H

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

FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
REGION 10	OREGON DIVISION		4H-2

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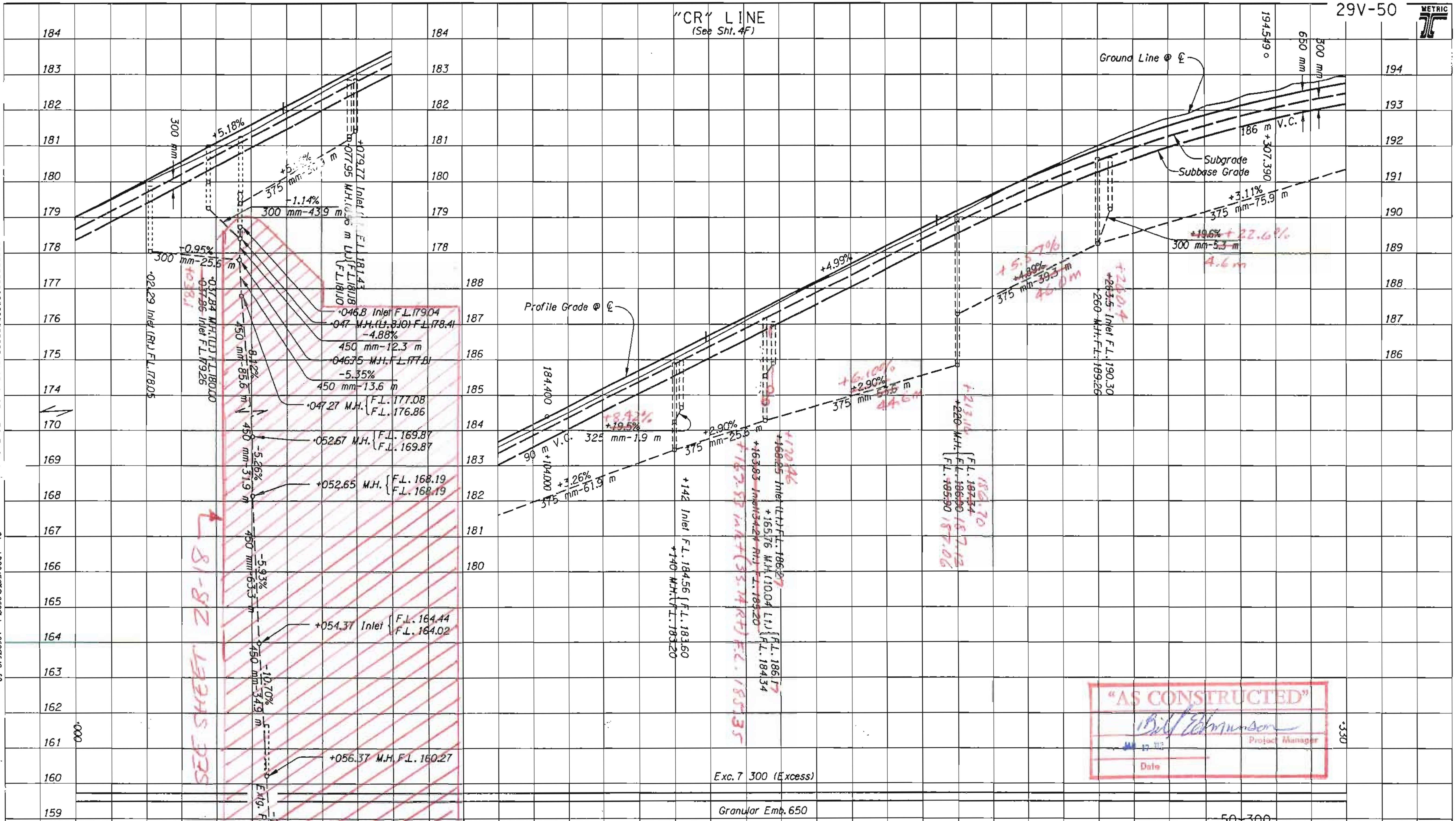
VIEW 1



"CR" LINE
(See Sht. 4F)
METRIC
Ground Line @ ℄
Subgrade
Subbase Grade
Profile Grade @ ℄
194.549
650 mm
300 mm
186 m V.C.
+307.390
+3.11%
375 mm-75.9 m
+19.6%
300 mm-5.3 m
+22.6%
4.6 m
+4.99%
+4.89%
375 mm-39.3 m
+5.57%
46.0 m
+263.5 Inlet F.L. 190.30
+260 M.H. F.L. 189.26
+2.90%
375 mm-55.5 m
+6.10%
44.6 m
+220 M.H.
F.L. 187.34
F.L. 186.20
F.L. 185.90
184.400
90 m V.C.
+104.000
325 mm-1.9 m
+19.5%
+3.26%
375 mm-61.9 m
+2.90%
375 mm-25.5 m
+142 Inlet F.L. 184.56
+140 M.H. F.L. 183.60
F.L. 183.20
+168.25 Inlet (Lt.) F.L. 186.27
+165.76 M.H. (10.04 Lt.)
F.L. 186.17
F.L. 184.34
+163.63 Inlet (3.24 Rt.) F.L. 185.20
+5.18%
300 mm
375 mm-39.3 m
+079.77 Inlet F.L. 181.43
+077.95 M.H. (10.6 m Lt.)
F.L. 181.18
F.L. 181.10
-1.14%
300 mm-43.9 m
-0.95%
300 mm-25.6 m
+02.29 Inlet (Rt.) F.L. 178.05
+03.84 M.H. (Lt.) F.L. 180.00
+03.26 Inlet F.L. 179.26
+046.8 Inlet F.L. 179.04
+047 M.H. (Lt. 3.10) F.L. 178.41
-4.88%
450 mm-12.3 m
+046.75 M.H. F.L. 177.81
-5.35%
450 mm-13.6 m
+047.27 M.H.
F.L. 177.08
F.L. 176.86
450 mm-85.6 m
-8.12%
+052.67 M.H.
F.L. 169.87
F.L. 169.87
450 mm-31.9 m
-5.26%
+052.65 M.H.
F.L. 168.19
F.L. 168.19
450 mm-63.3 m
-5.93%
+054.37 Inlet
F.L. 164.44
F.L. 164.02
450 mm-34.9 m
-10.70%
+056.37 M.H. F.L. 160.27
Exg. Pipe 23.41 m
-10.72%
(256 m Rt.) F.L. 157.76 (Outfall In Creek)
SEE SHEET 2R-18
Exc. 7 300 (Excess)
Granular Emb. 650
50+000
50+100
50+200
50+300
+000
+330
BRIDGE DETAILS CHECKED
"AS CONSTRUCTED"
Project Manager
Date
07-SEP-1997
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		4S