



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY  
GOVERNOR

LYNDO TIPPETT  
SECRETARY

February 26, 2007

MEMORANDUM TO: Mr. Tim Johnson, PE  
Division Eight Engineer

FROM: Philip S. Harris, III, P.E., Unit Head *E. J. Fush*  
Natural Environment Unit *PH*  
Project Development and Environmental Analysis Branch

SUBJECT: Moore and Lee Counties, US 1 from South of SR 1853  
(Camp Easter Road) North of Lakeview to SR 1180  
(Wildlife Rd) South of Sanford; State Project No.  
8.T560302; TIP R-0210

Attached is the 401 Water Quality Certification modification for the above referenced project. All environmental permits have been received for the construction of this project.

PSH/gyb

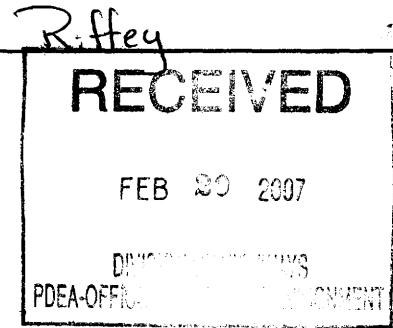
Attachment

Mr. D.R. Henderson, P.E., Roadway Design  
Mr. Jay Bennett, P.E., Roadway Design  
Mr. Art McMillan, P.E., Highway Design  
Mr. Don G. Lee, CPESC, Roadside Environmental Unit  
Mr. Tim Johnson, P.E., Division 8  
Mr. John R.G. Olinger, P.E., Division 8  
Mr. Art C. King, Division 8  
Mr. Eric Midkiff, P.E., PDEA Central Region Unit Head



Michael F. Easley, Governor  
William G. Ross Jr., Secretary  
North Carolina Department of Environment and Natural Resources

Alan W. Klimek, P.E. Director  
Division of Water Quality



February 12, 2007

Dr. Gregory J. Thorpe, PhD., Manager  
Project Development and Environmental Analysis Branch  
N.C. Department of Transportation  
1548 Mail Service Center  
Raleigh, NC 27699-1548

Subject: Revised Approval of Design Request in Accordance with Settlement Agreement and Withdrawal of Petition 05 EHR 0479 Filed October 23, 2006 for the Vass Bypass in Moore and Lee Counties, R-0210, Division 8.

Dear Dr. Thorpe:

This approval supercedes the approval dated February 2, 2007 issued to the NC Department of Transportation for the referenced project. You have our approval to construct the proposed activities detailed in your request for the referenced project dated received December 18, 2006 and the subsequent additional information dated received January 12, 2007. Modified hazardous spill catchment basins (mHSCB) shall be constructed at the locations shown in Table 1.

Table1 – Modified hazardous spill catchment basin locations and design volumes.

Project Section	Project Station No.	Volume (cubic yards)
R-210A	60+50 Lt	360
	75+80 Lt	1,095
	77+00 Lt	39
	77+20 Lt	150
	75+00 Rt	1,019
	79+00 Lt	150
	81+80 Rt	39
	86+30 Rt	50
R-210B	140+80 Rt	260
R-210C	20+80 Lt	193
	31+60 Rt	226
	31+80 Lt	277

Sandbags shall be stockpiled at the locations listed below in Table 2. The number of sandbags at each location should be adequate to block the flow of hazardous materials in the ditch or swale by utilizing the full storage capacity of the ditch or swale.

Table 2 – Locations of sandbag stockpiles.

<b>Project Section</b>	<b>Project Station No.</b>	
R-210A	52+60 Lt	
	52+50 Rt	
	61+50 Lt	
	61+10 Rt	
	63+20 Lt	
	65+20 Lt	
	67+20 Lt	
	68+10 Lt	
	67+80 Rt	
	79+50 Lt	
	91+50 Lt	
	R-210B	140+40 Lt
		141+40 Lt
141+40 Rt		
153+15 Lt		
R-210C	20+60 Rt	
	30+50 Rt	
	31+10	
	38+50 Lt	
	39+20 Lt	
	48+40 Lt	
	49+00 Rt	

Direct discharges of stormwater listed below in Table 3 shall be corrected in accordance with the application dated received December 18, 2006 and subsequent additional information dated received January 12, 2007.

Table 3 – Locations of direct stormwater discharges.

<b>Project Section</b>	<b>Project Station No.</b>
R-210A	77+20 Rt
	81+90 Lt
R-210C	29+10 Med
	31+10

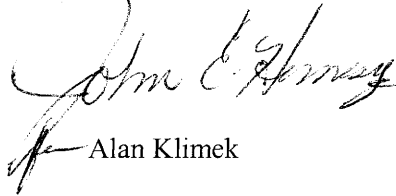
In section R-210A at Station No. 94+60 Lt, additional steambank protection will be installed in accordance with the application dated received December 18, 2006 and subsequent additional information dated received January 12, 2007.

This approval for the design request represents that the North Carolina Department of Transportation has appropriately complied with Item #4 of the Settlement Agreement and Withdrawal of Petition for the referenced project, and that the Division of Water Quality has complied with Item #5 of the Settlement Agreement and Withdrawal of Petition for the referenced project. To demonstrate compliance with Item

#6 of the Settlement Agreement and Withdrawal of Petition for the referenced project, NC DOT shall notify DWQ in writing within 48 hours of the award of the contract for the work described above and of the completion of the work.

If you have any questions regarding this letter, please contact John Hennessy at 919-733-5694 or Brian Wrenn at 919-733-5715.

Sincerely,

A handwritten signature in black ink, appearing to read "Alan Klimek". The signature is fluid and cursive, with a large initial "A" and "K".

Alan Klimek

Cc: Ken Averitte, Fayetteville Regional Office, DWQ  
Richard Spencer, Wilmington Regulatory Field Office, US ACE  
Chris Militscher, US EPA  
Travis Wilson, NC WRC  
Gary Jordan, US FWS  
Paul Rawls, Surface Water Protection Section Chief, DWQ  
File Copy

Attachment A - Summary of Emergency Spill Control Measures and Devices - Location and Site Identification  
 TIP No. R-210 WM


R-210 Section	Settlement Sheet No.	Settlement Site No.	Station Number	R-210WM Sheet No.	R-210 WM Id	Emergency Spill Control Measure or Device
A	7	1	23+10-Rt-	5	No Id	HSCB - already constructed
	9	3	31+70-Rt-	6	No Id	HSCB - already constructed
			33+70-Rt-	6	No Id	HSCB - already constructed
	10	3 & 4	34+90-Rt-	7	No Id	HSCB - already constructed
			36+00-Rt-	7	No Id	HSCB - already constructed
			36+30-Lt-	7	No Id	HSCB - already constructed
	14	10	52+60-Lt-	8	A	Sandbag Stockpile
			52+50-Rt-	8	B	Sandbag Stockpile
	16	15	60+50-Lt-	9	1	mHSCB
			61+50-Lt-	9	C	Sandbag Stockpile
	17		61+10-Rt-	9	D	Sandbag Stockpile
			63+20-Lt-	10	E	Sandbag Stockpile
		65+20-Lt-	10	F	Sandbag Stockpile	
18		67+20-Lt-	11	G	Sandbag Stockpile	
		68+10-Lt-	11	I	Sandbag Stockpile	
		67+80-Rt-	11	H	Sandbag Stockpile	
20	18 & 20	75+80-Lt-	13	2	mHSCB	
		77+00-Lt-	13	3	mHSCB	
		77+20-Rt-	13	4	mHSCB	
		77+20-Rt-	13	CC	Direct Discharge of stormwater shall be eliminated.	
		75+00-Rt-	13	5	mHSCB	
21		79+00-Lt-	14	6	mHSCB	
		79+50-Lt-	14	J	Sandbag Stockpile	
22		81+80-Rt-	15	7	mHSCB for Lateral ditch	
		81+90-Lt-	15	DD	Direct Discharge of stormwater shall be eliminated	
23		86+30-Rt-	16	8	mHSCB for Lateral ditch	
24		91+50-Lt-	17	K	Sandbag Stockpile	
		94+60-Lt-	17	EE	Additional outlet protection shall be provided for stormwater pipe	
B	14	9	140+40-Lt-	18	L	Sandbag Stockpile
			140+80-Rt-	18	9	mHSCB for Lateral ditch
	15	9	141+40-Lt-	19	M	Sandbag Stockpile
			141+40-Rt-	19	N	Sandbag Stockpile
	18		153+15-Lt-	20	O	Sandbag Stockpile
	4	3	20+80-Lt-	21	10	mHSCB
C			20+60-Lt-	21	P	Sandbag Stockpile
	7	4 & 5	31+60-Rt-	22	11	mHSCB for Lateral ditch
			29+10-Med-	22	AA	stormwater flow will be directed into constructed grass swale prior to discharge
			30+50-Rt-	22	Q	Sandbag Stockpile
			31+10	22	R	Sandbag Stockpile
			31+10	22	BB	stormwater flow will be directed into constructed grass swale prior to discharge
	8	5	31+80-Lt-	23	12	mHSCB for Lateral ditch
	9	6	38+50-Lt-	24	S	Sandbag Stockpile
			39+20-Lt-	24	T	Sandbag Stockpile
	12	10	48+40-Lt-	25	U	Sandbag Stockpile
		49+00-Rt-	25	V	Sandbag Stockpile	

**Attachment C - Storage Volume and Calculations of Storage Volumes  
TIP No. R-210WM**

Project Section	Project Station No.	Volume Required Cubic Yards	Volume Available Cubic Yards	
R-210A	60+50 Lt	222.8	360	
	75+80 Lt	78.7	1095	
	77+00 Lt	37.7	39	
	77+20 Lt	106.4	150	
	75+00 Rt	916	1019	
	79+00 Lt	106.4	150	
	81+80 Rt	33.3	39	
	86+30 Rt	44.4	50	
	R-210B	140+80 Rt	94.5	260
R-210C				
	20+80 Lt	123.4	193	
	31+60 Rt	55.4	226	
	31+80 Lt	250.9	277	

See Sheet 1-A For Index of Sheets

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS



ALL DIMENSIONS IN THESE PLANS ARE IN METERS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-0210WM	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34330.43		CONST.	

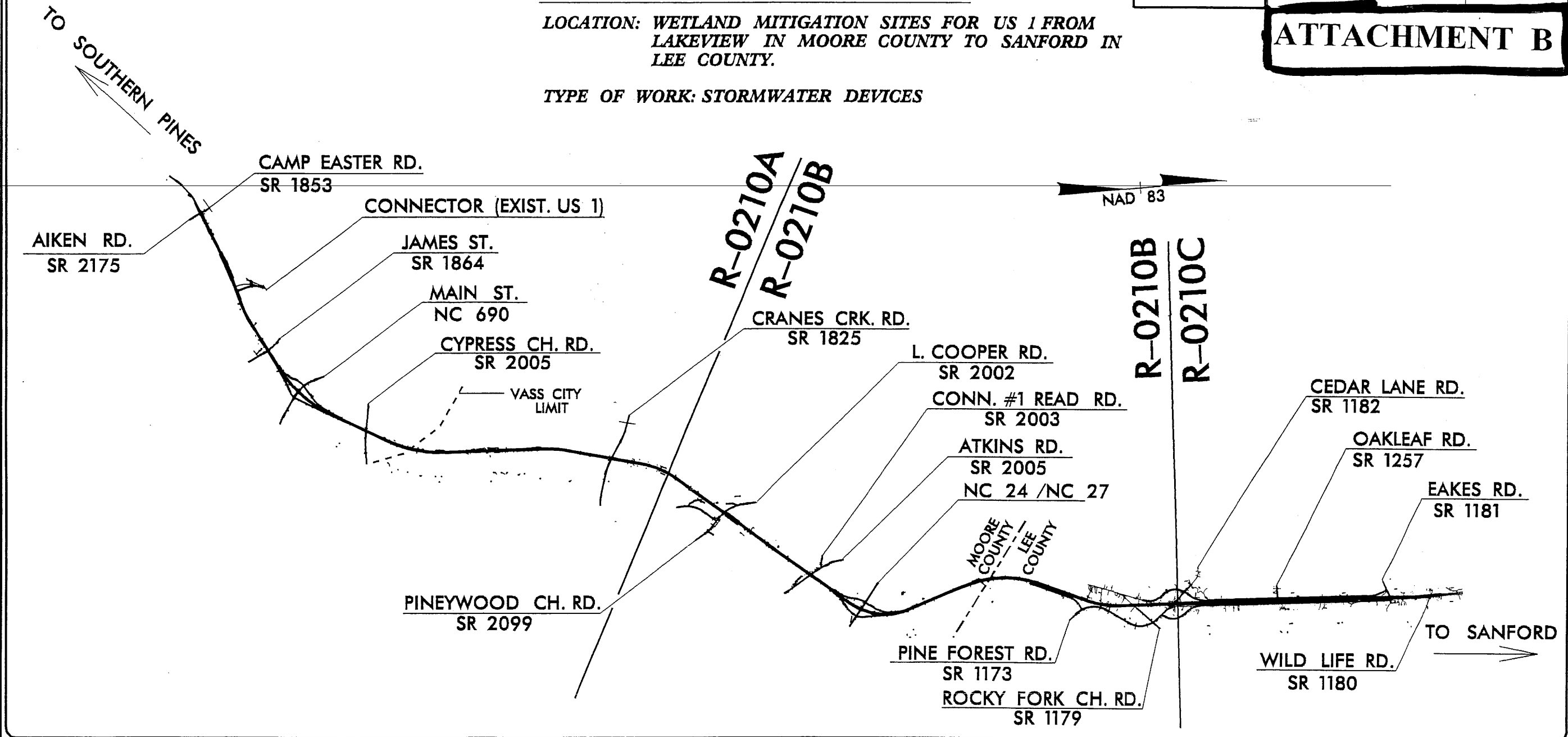
**MOORE & LEE COUNTIES**

LOCATION: WETLAND MITIGATION SITES FOR US 1 FROM LAKEVIEW IN MOORE COUNTY TO SANFORD IN LEE COUNTY.

TYPE OF WORK: STORMWATER DEVICES

**ATTACHMENT B**

PROJECT: R-0210WM



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PROJECT: R-0210WM

**GRAPHIC SCALES**  
  
NOT TO SCALE


**PROJECT LENGTH**  
  
TOTAL LENGTH OF STATE PROJECT R-0210WM = 20.207 KM

Prepared In the Office of:  
**DIVISION OF HIGHWAYS**  
1000 Birch Ridge Dr., Raleigh, NC 27610

1995 STANDARD SPECIFICATIONS

LETTING DATE:

**DIVISION OF HIGHWAYS**  
STATE OF NORTH CAROLINA



P.E.  
STATE HIGHWAY DESIGN ENGINEER

6/2/99  
5-DEC-2006 13:43  
\\sdr\apps\esherpless\dot\desktop\210\stuf\1-r0210c\_hyd\_det\_swale.dgn  
esherpless AT HY221557

# SPECIAL SWALE W/RIP RAP BERM -TYPICAL-

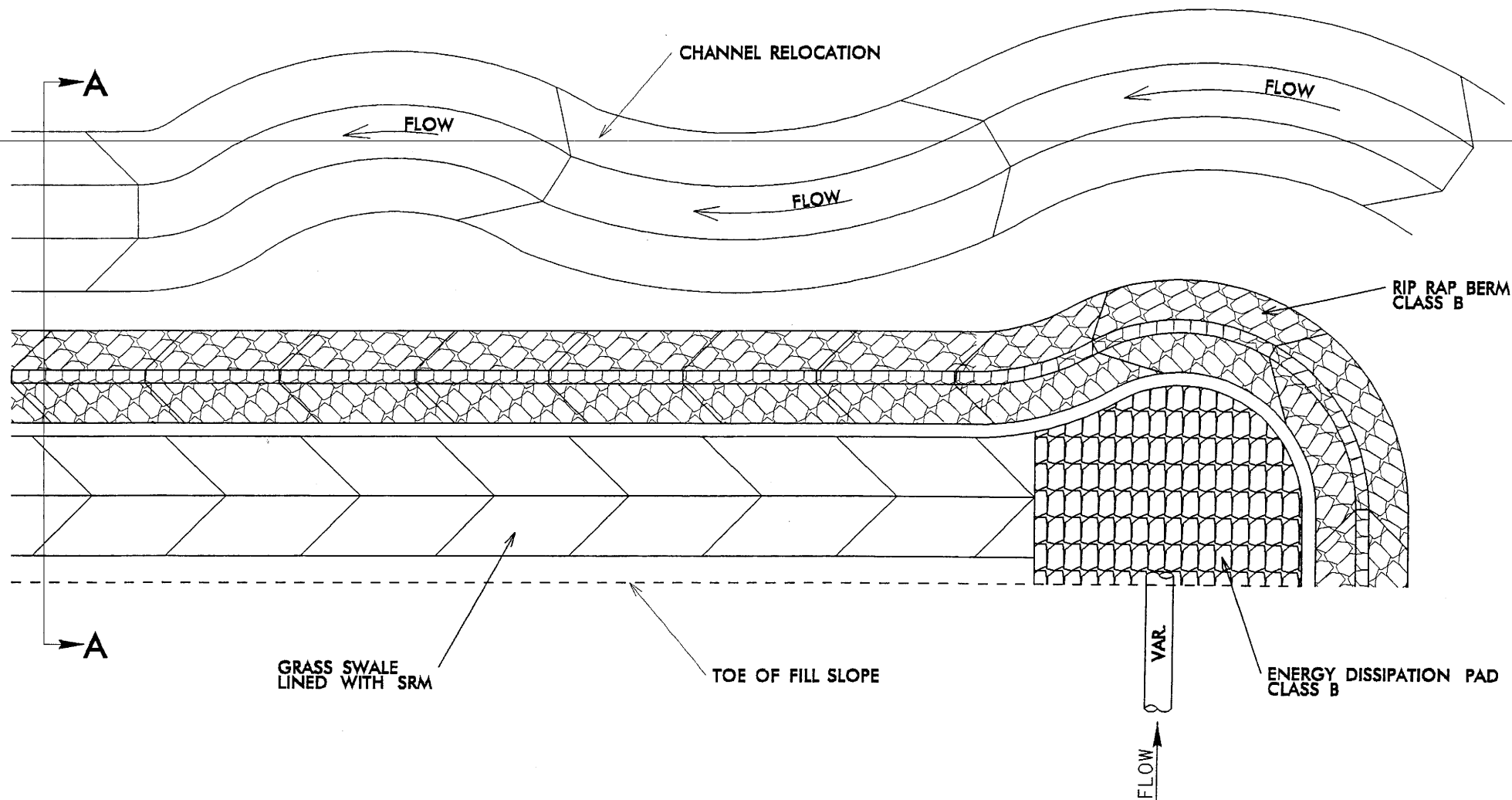
USE TYPICAL

-L- STA. 28+80 LT TO STA. 29+10 LT, R-0210 C\*  
-L- STA. 30+50 LT TO 31+20 LT R-0210 C

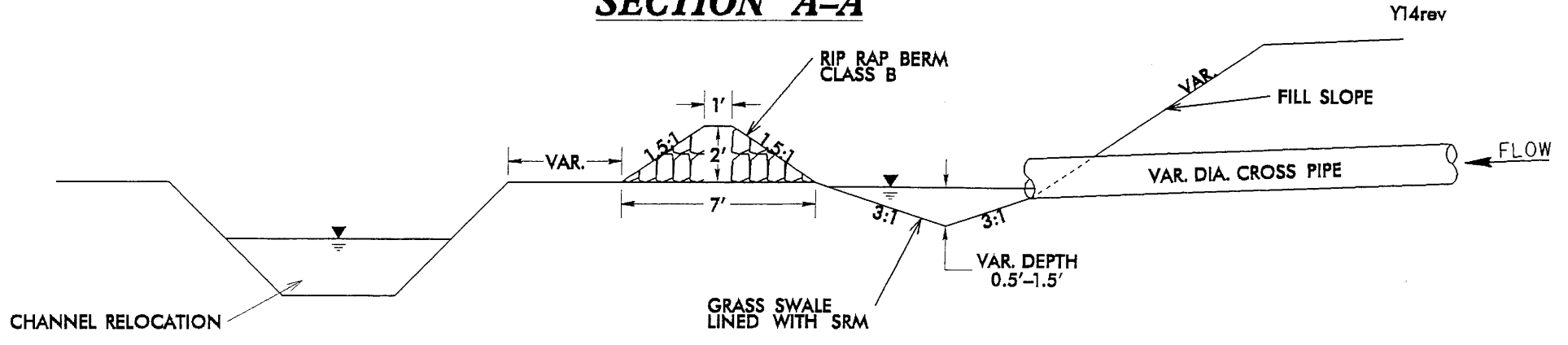
\*NOTE: REMOVE 8'+/- OF 15" RCP AT -L- STA 29+10 LT

PROJECT REFERENCE NO. R-0210C	SHEET NO. 2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
SH#2	

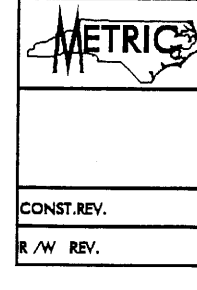
## PLAN VIEW



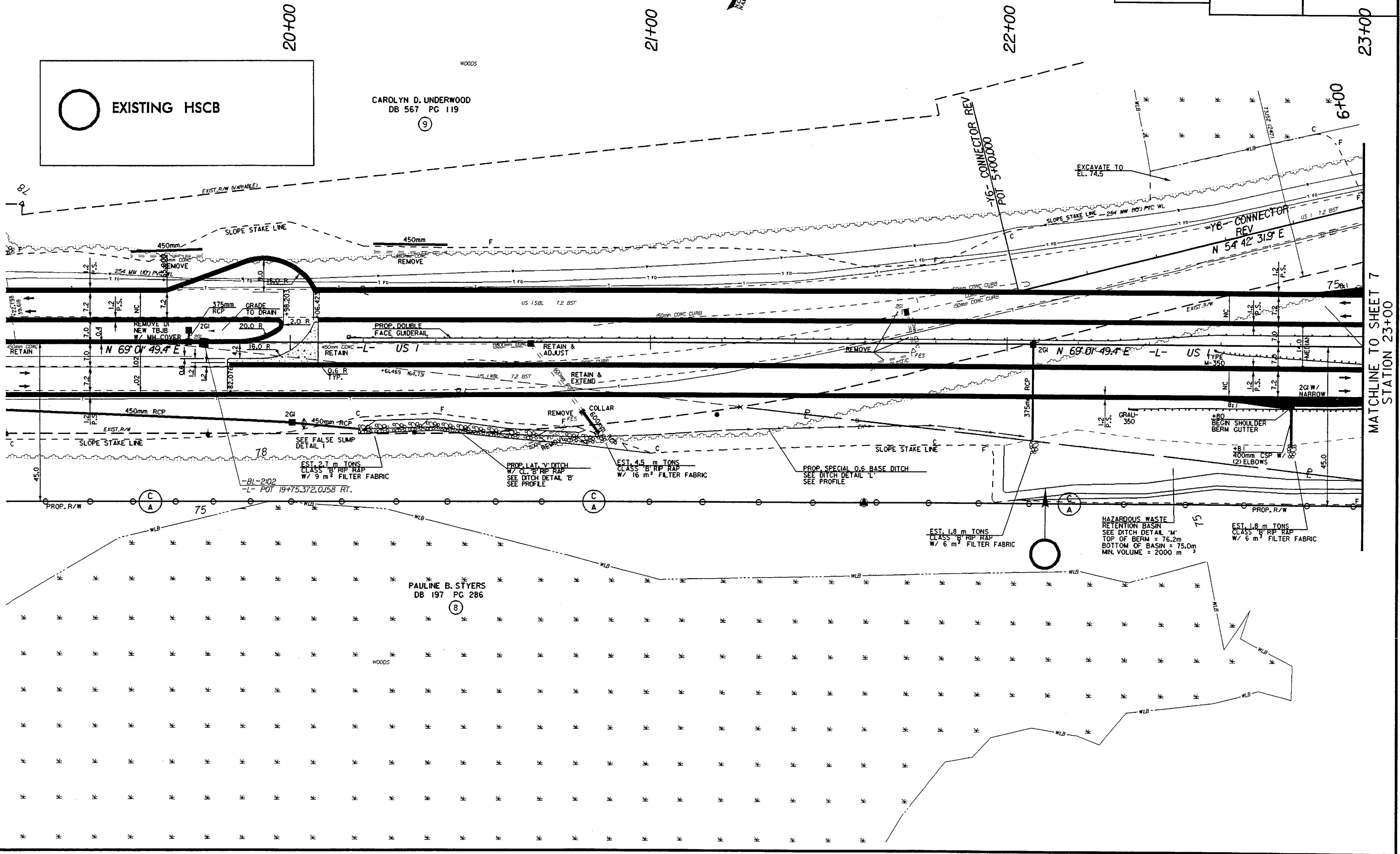
## SECTION A-A







PROJECT REFERENCE NO.		SHEET NO.	
R-0210NM		4	
R-210 A		6	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
CONST. REV.			
R/W REV.			



○ EXISTING HSCB

CAROLYN D. UNDERWOOD  
DB 567 PG 119  
(9)

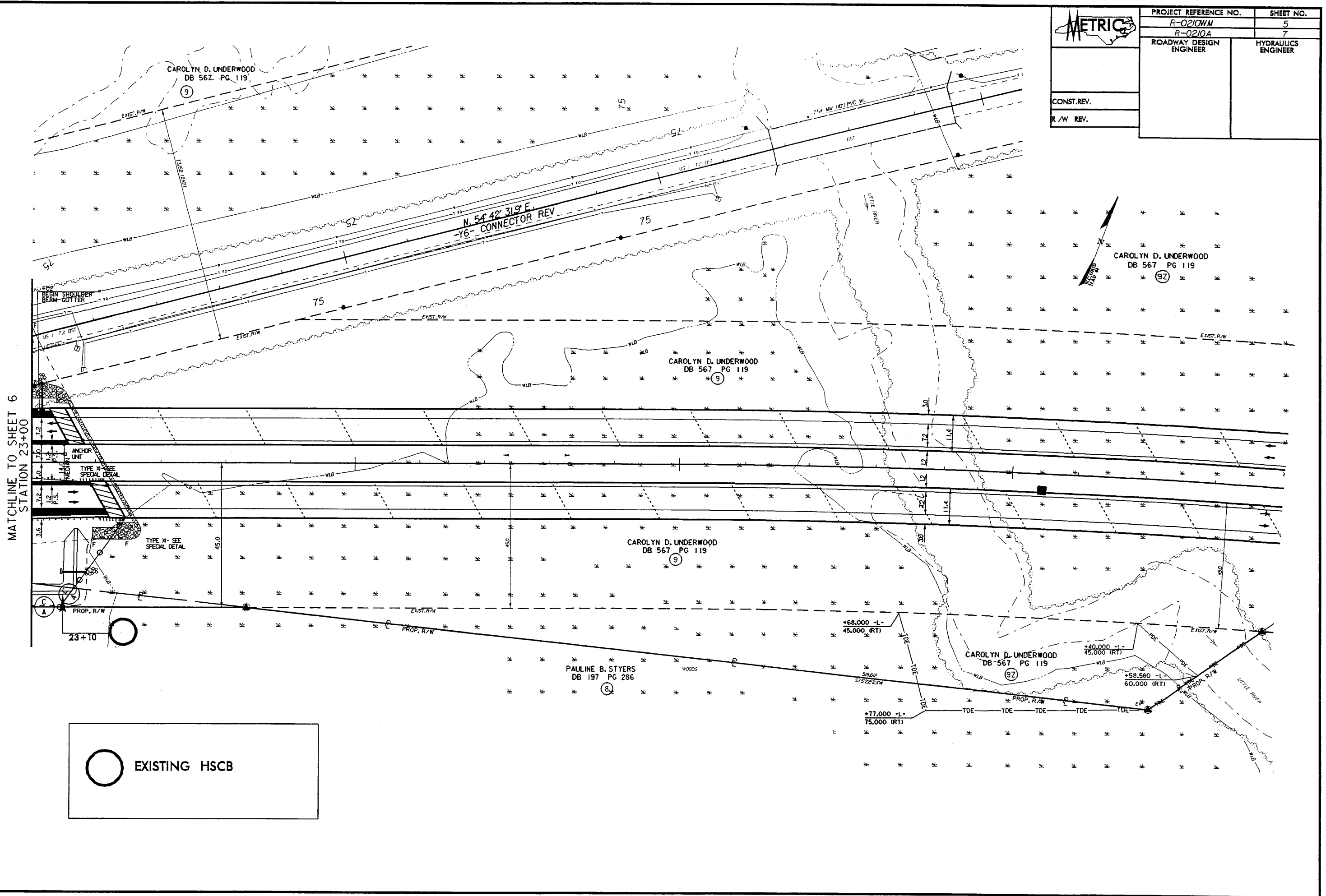
PAULINE B. STYERS  
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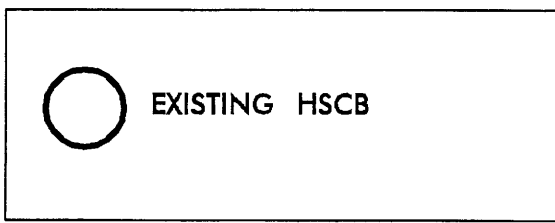


PROJECT REFERENCE NO.		SHEET NO.	
R-0210W/M		5	
R-0210A		7	
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CONST. REV.			
R/W REV.			




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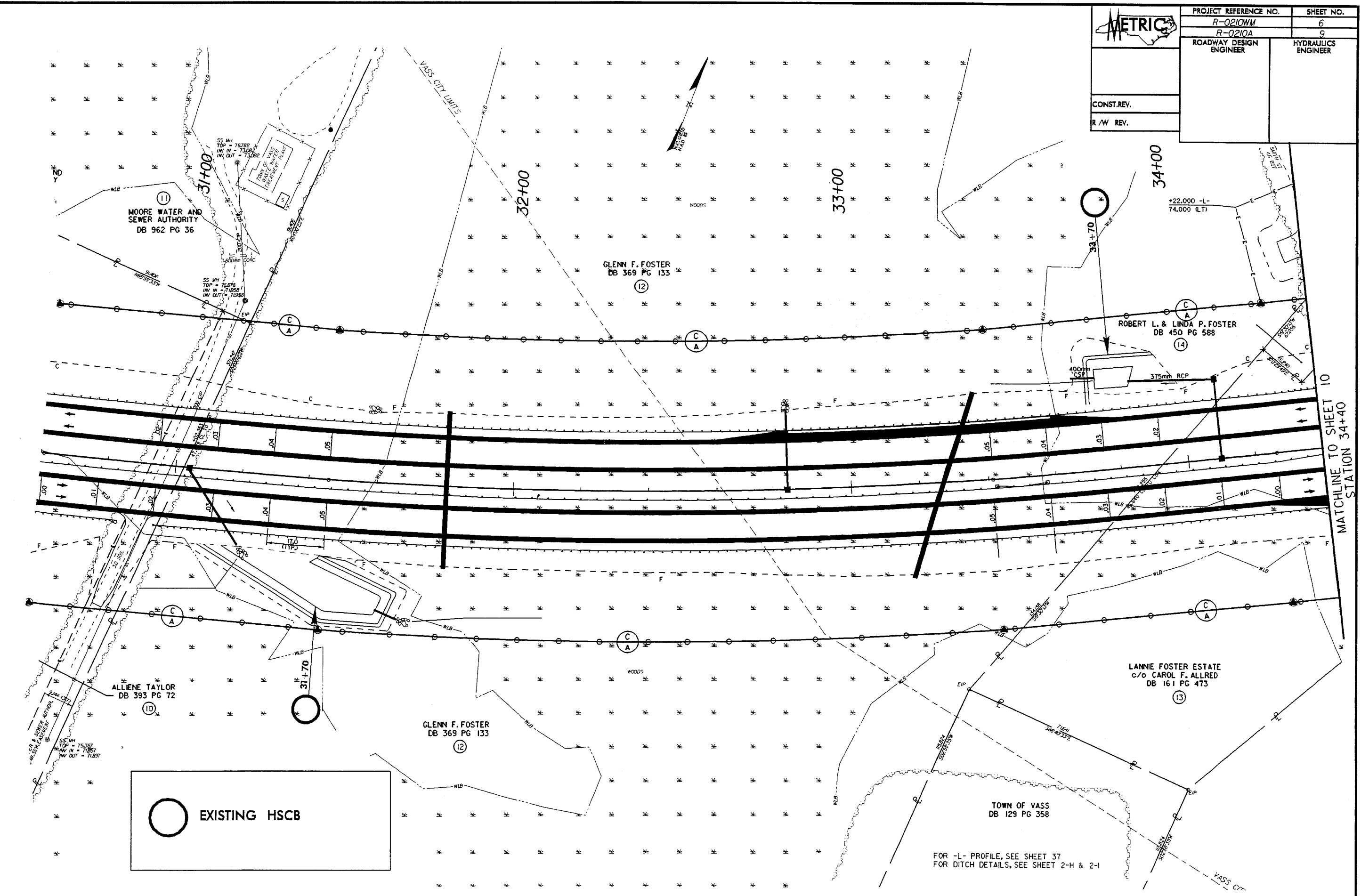
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R/W REV.		


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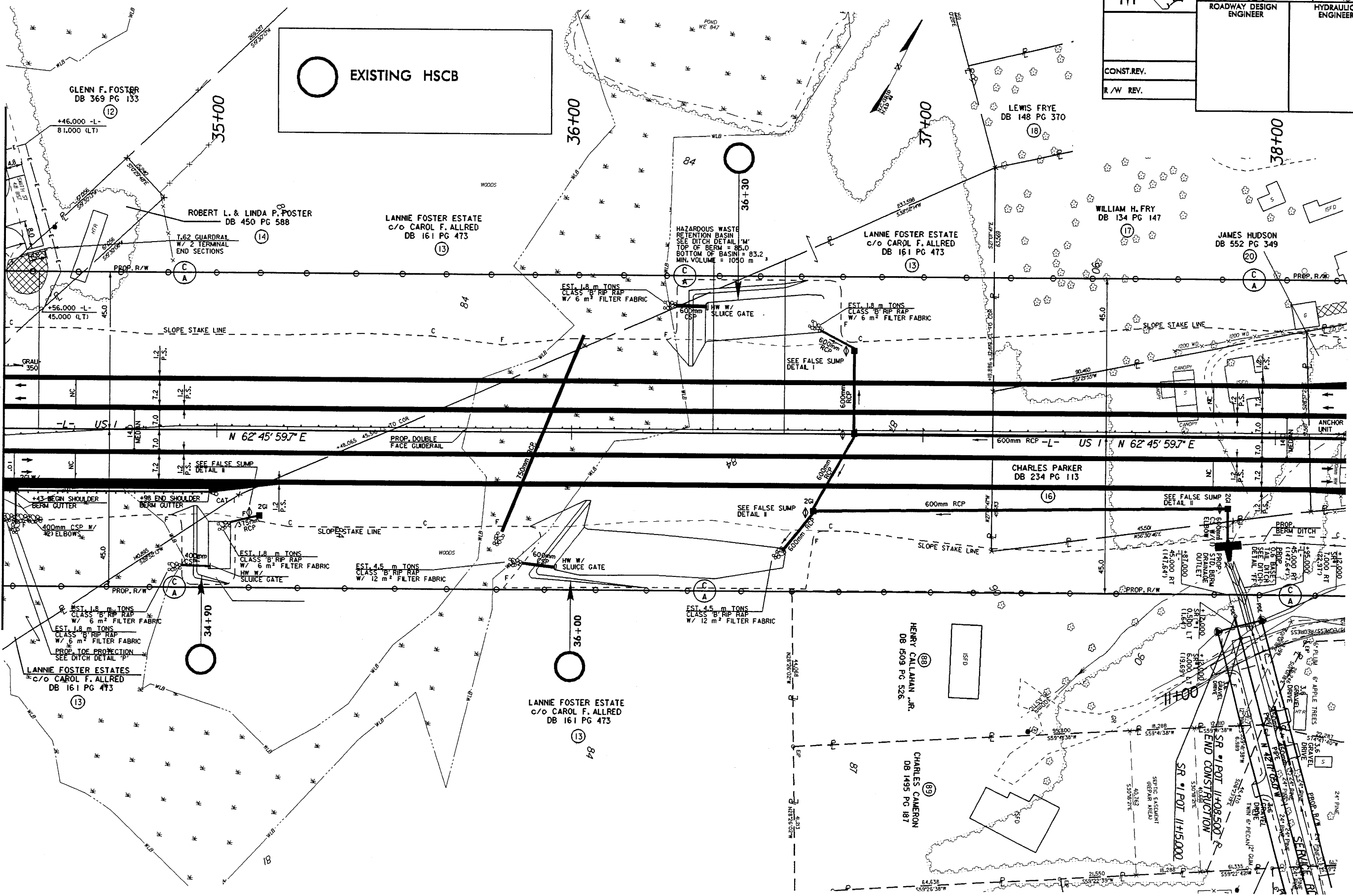
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FOR -L- PROFILE, SEE SHEET 37  
 FOR DITCH DETAILS, SEE SHEET 2-H & 2-I

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R/W REV.		

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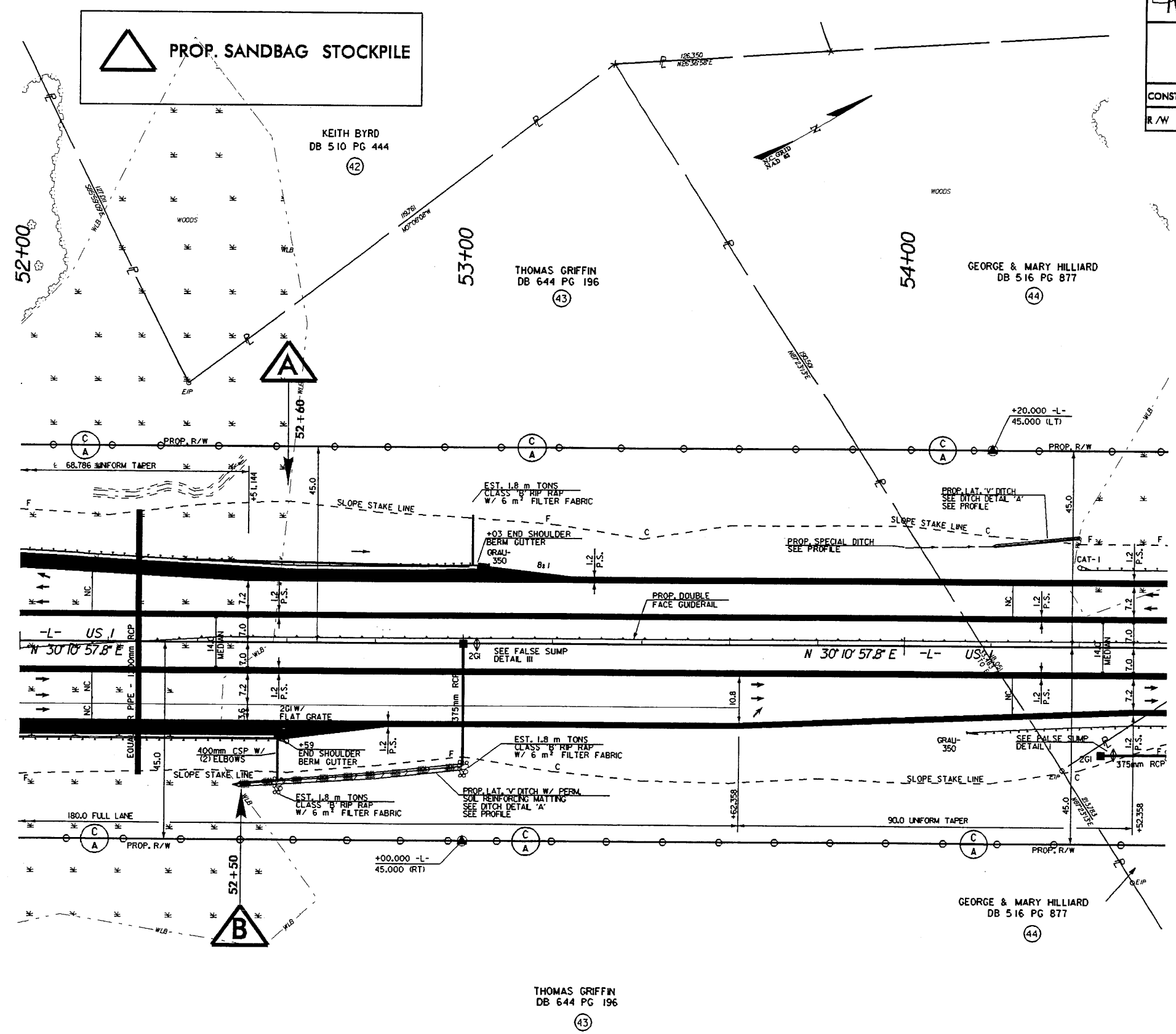


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CONST. REV.			
R/W REV.			



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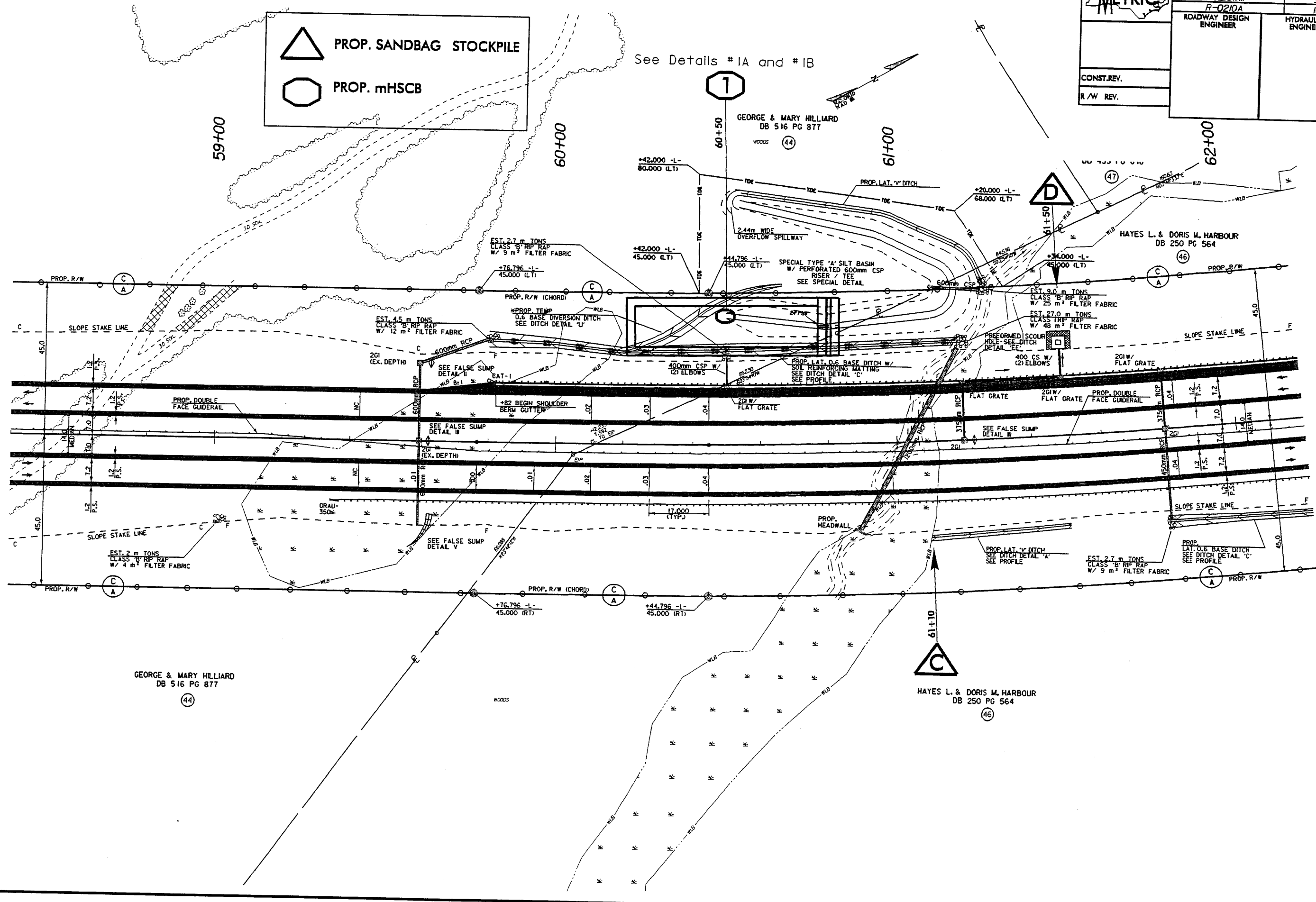
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THOMAS GRIFFIN  
DB 644 PG 196

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	R-0210/W	9
	R-0210/A	16
	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST. REV.		
R/W REV.		

PROP. SANDBAG STOCKPILE  
 PROP. mHSCB

See Details # 1A and # 1B





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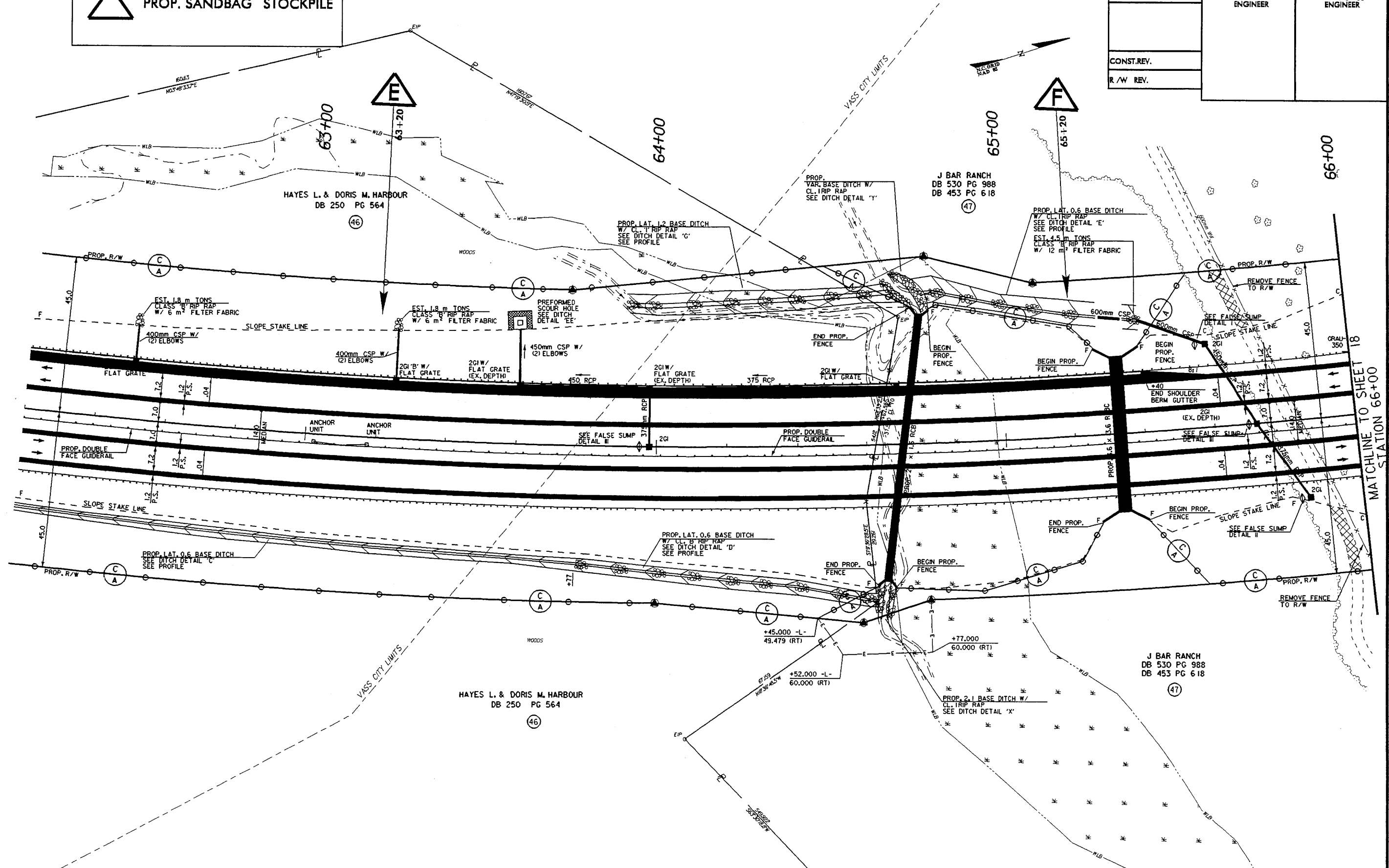
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GEORGE & MARY HILLIARD  
DB 516 PG 877

HAYES L. & DORIS M. HARBOUR  
DB 250 PG 564

 PROP. SANDBAG STOCKPILE

	PROJECT REFERENCE NO.	SHEET NO.
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CONST.REV.		
R/W REV.		



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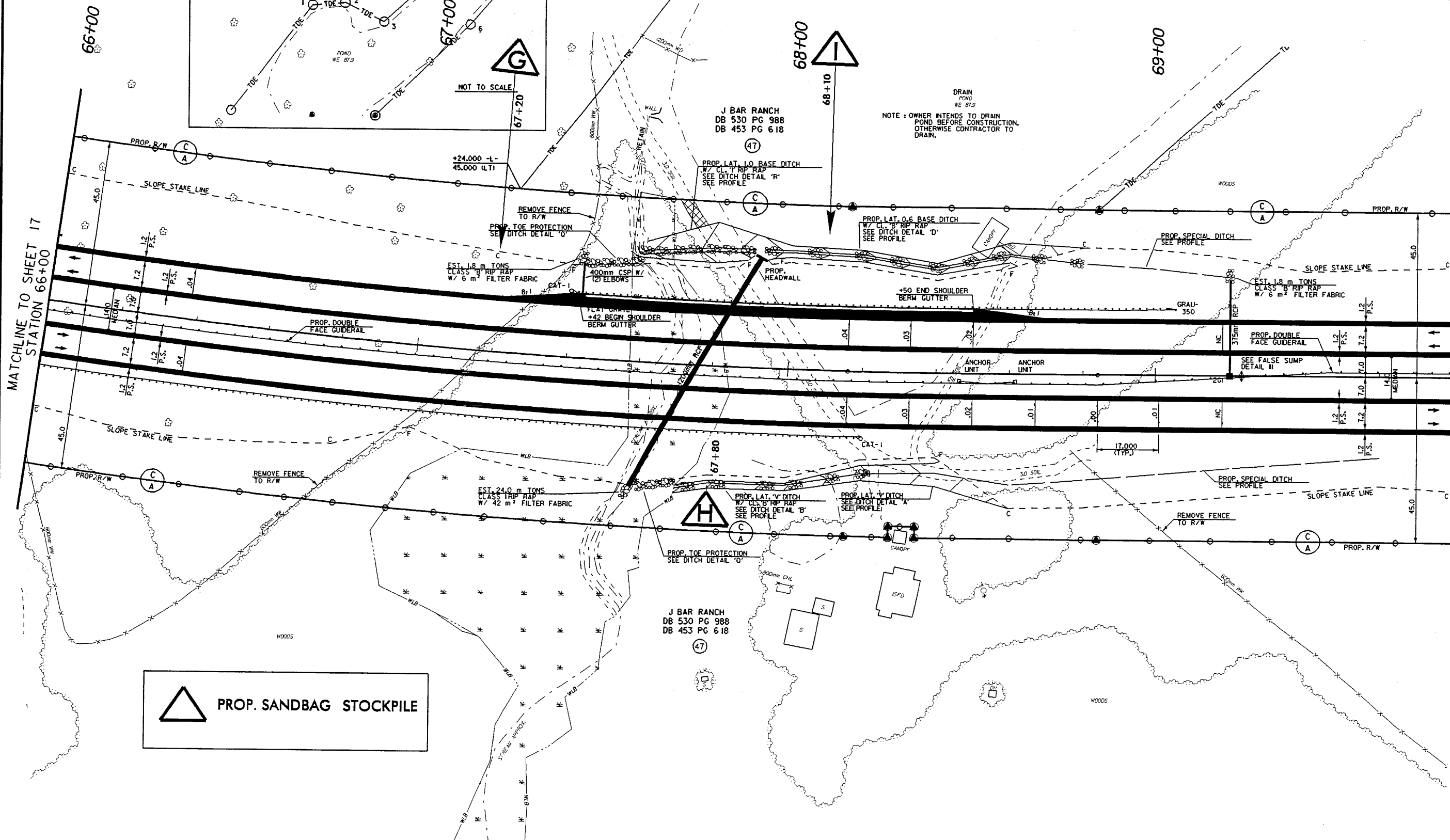
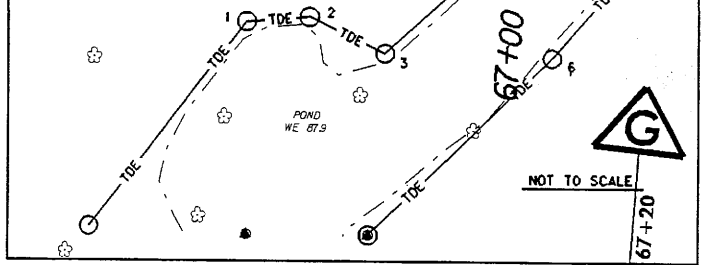
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R-0210A	18
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST. REV.	
R/W REV.	

TDE AROUND POND			
NO.	LINE	STATION	OFFSET
1	-L-	68+13.500	163.000
2	-L-	68+51.000	166.000
3	-L-	68+93.000	146.000
4	-L-	69+96.000	241.000
5	-L-	70+44.000	213.000
6	-L-	69+53.000	106.000




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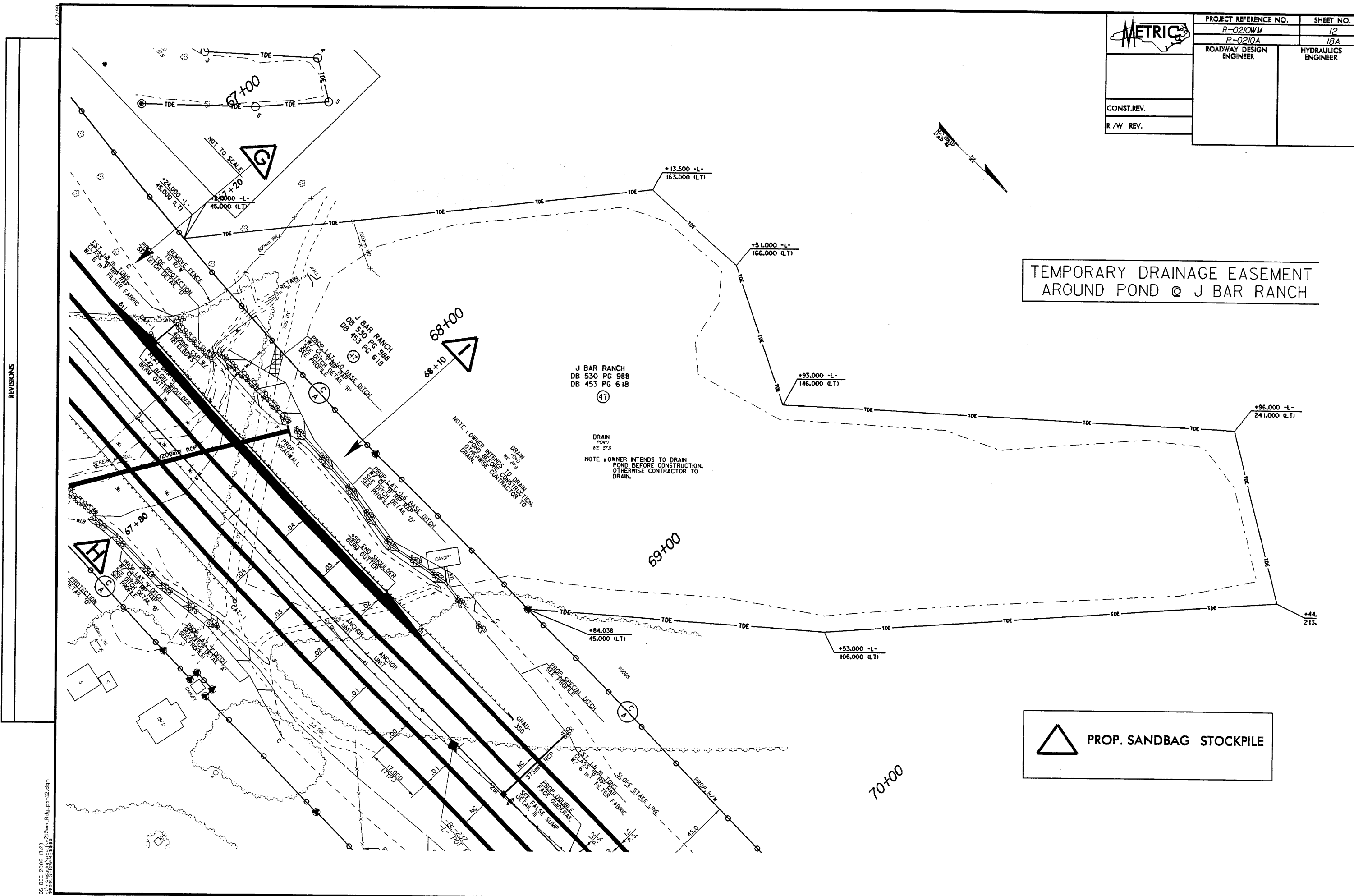




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R-0210A	18A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST. REV.	
R/W REV.	

TEMPORARY DRAINAGE EASEMENT  
AROUND POND @ J BAR RANCH

 PROP. SANDBAG STOCKPILE

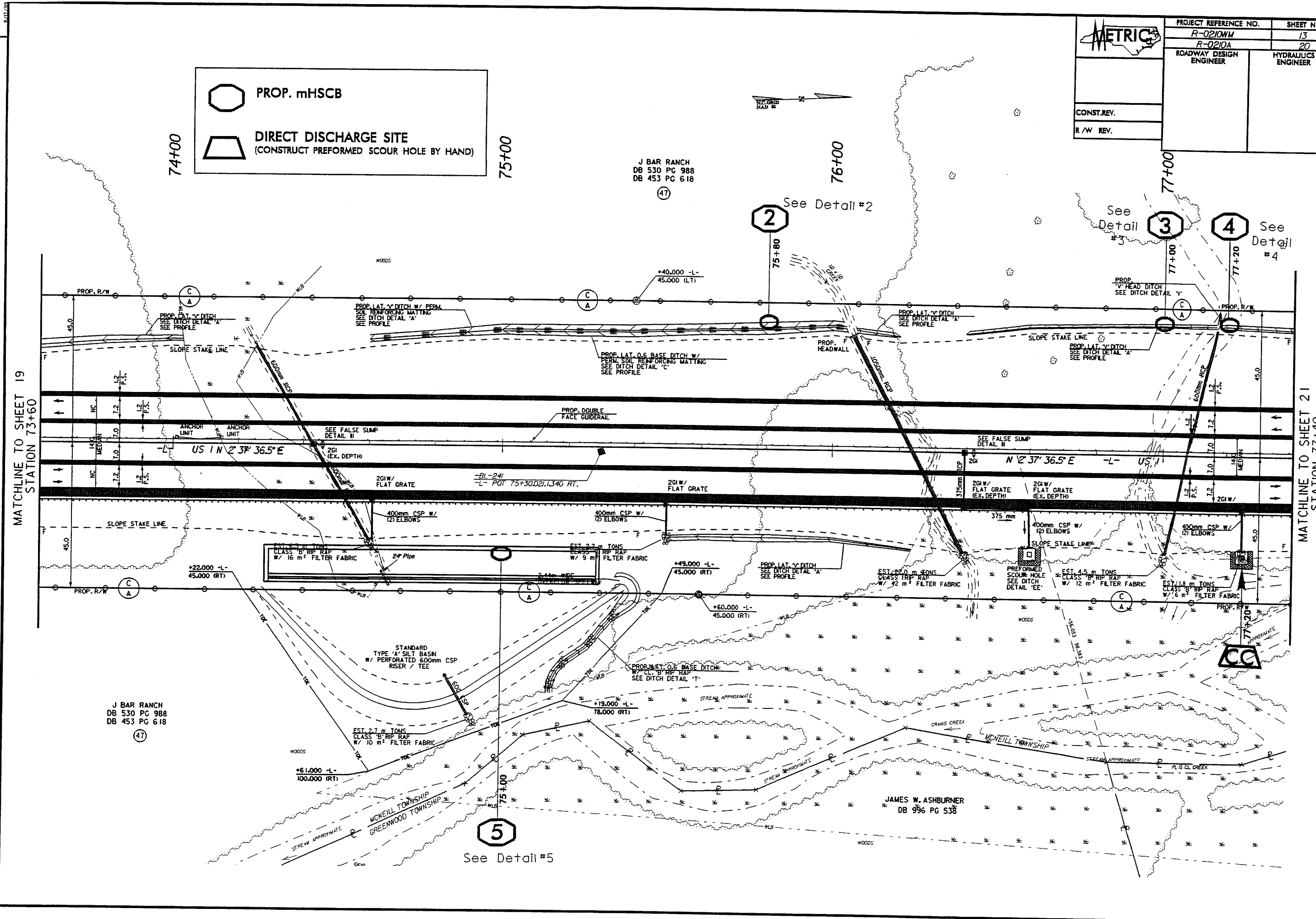
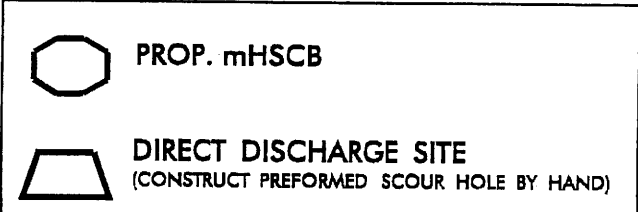


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R-0210A	20
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CONST. REV.	
R/W REV.	



MATCHLINE TO SHEET 19  
STATION 73+60

MATCHLINE TO SHEET 21  
STATION 77+40

J BAR RANCH  
DB 530 PC 988  
DB 453 PG 618

JAMES W. ASHBURNER  
DB 996 PG 538

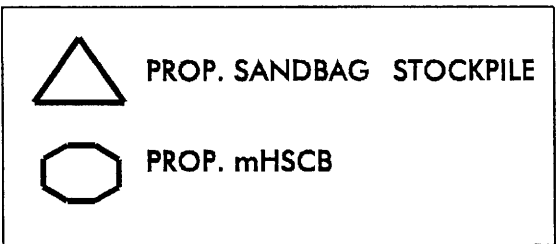
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6/19/07



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R-0210A		21	
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CONST. REV.			
R/W REV.			



J BAR RANCH  
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DB 453 PG 6 18

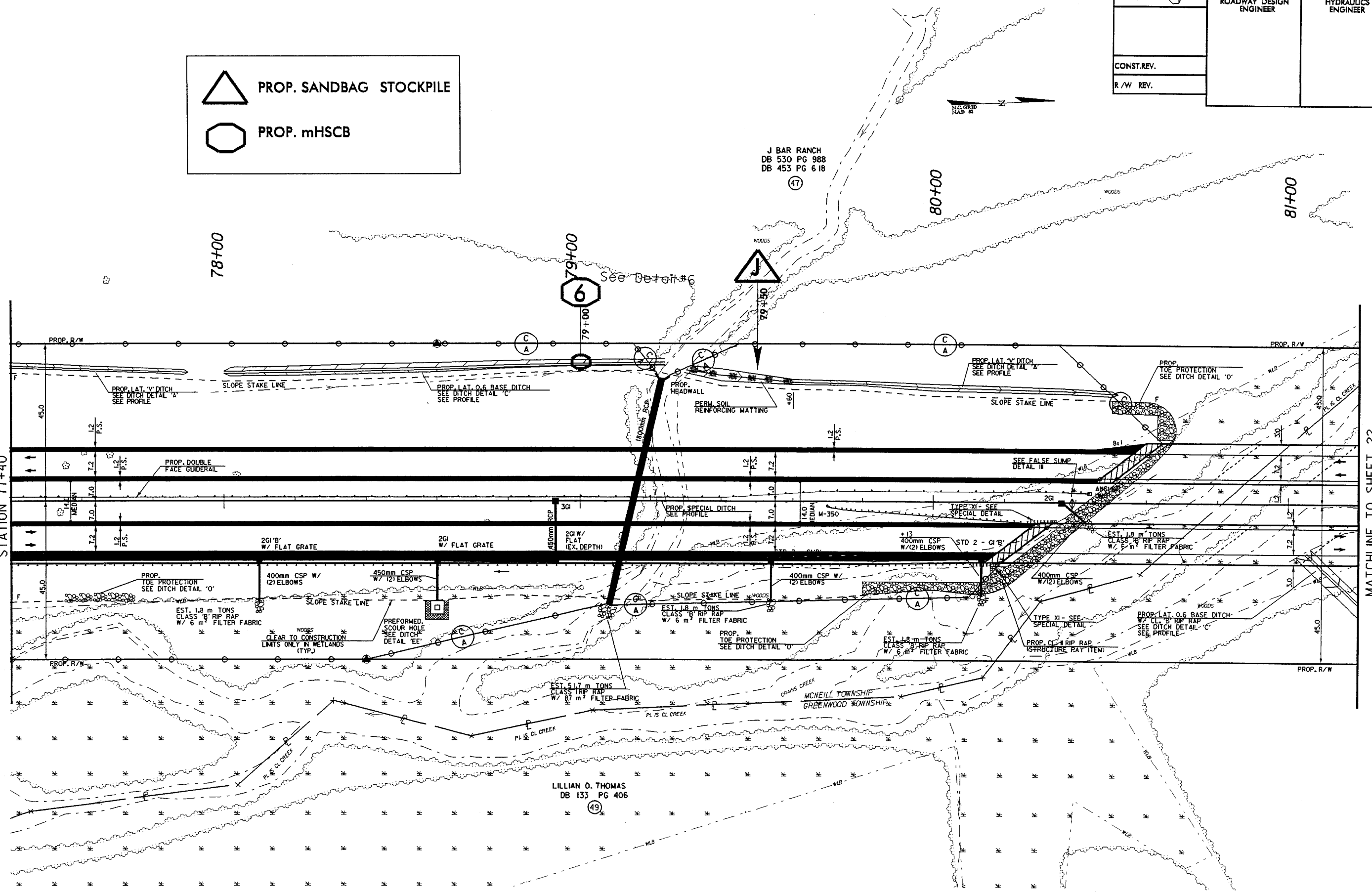
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79+00

80+00

81+00

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



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R-0210A		22	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
CONST. REV.			
R/W REV.			

 PROP. mHSCB  
 DIRECT DISCHARGE SITE  
 (ADD 20' HDPE TO DIRECT DISCHARGE LINE AHEAD)

J BAR RANCH  
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DB 453 PG 618

LILLIAN O. THOMAS  
DB 133 PG 406

LILLIAN O. THOMAS  
DB 133 PG 406

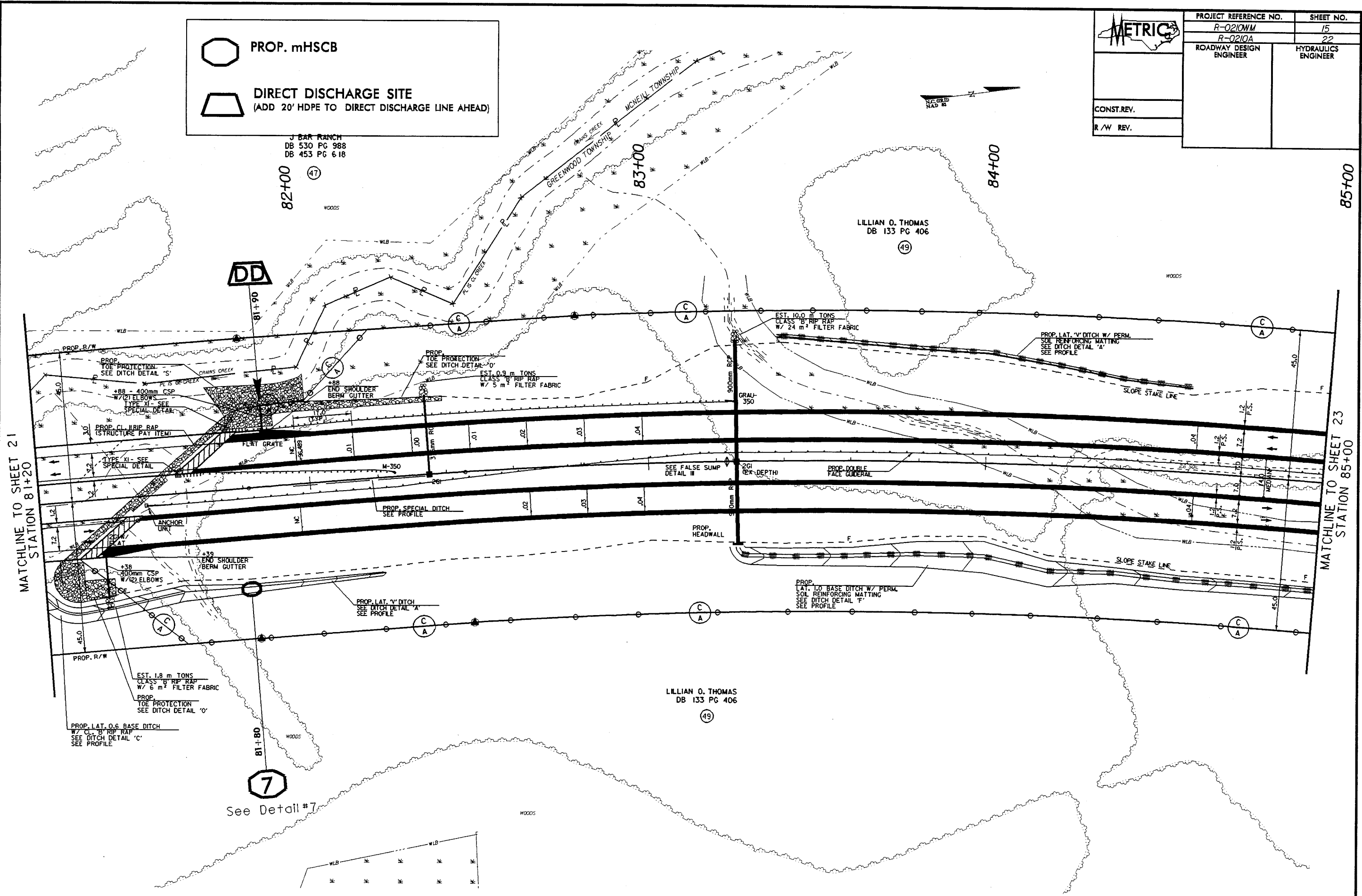
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STATION 81+20

MATCHLINE TO SHEET 23  
STATION 85+00

**7**  
See Detail #7

REVISIONS

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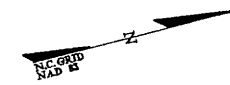
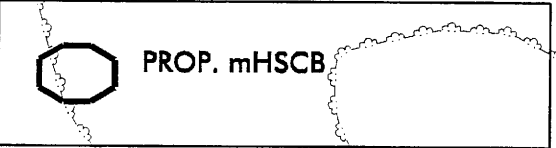
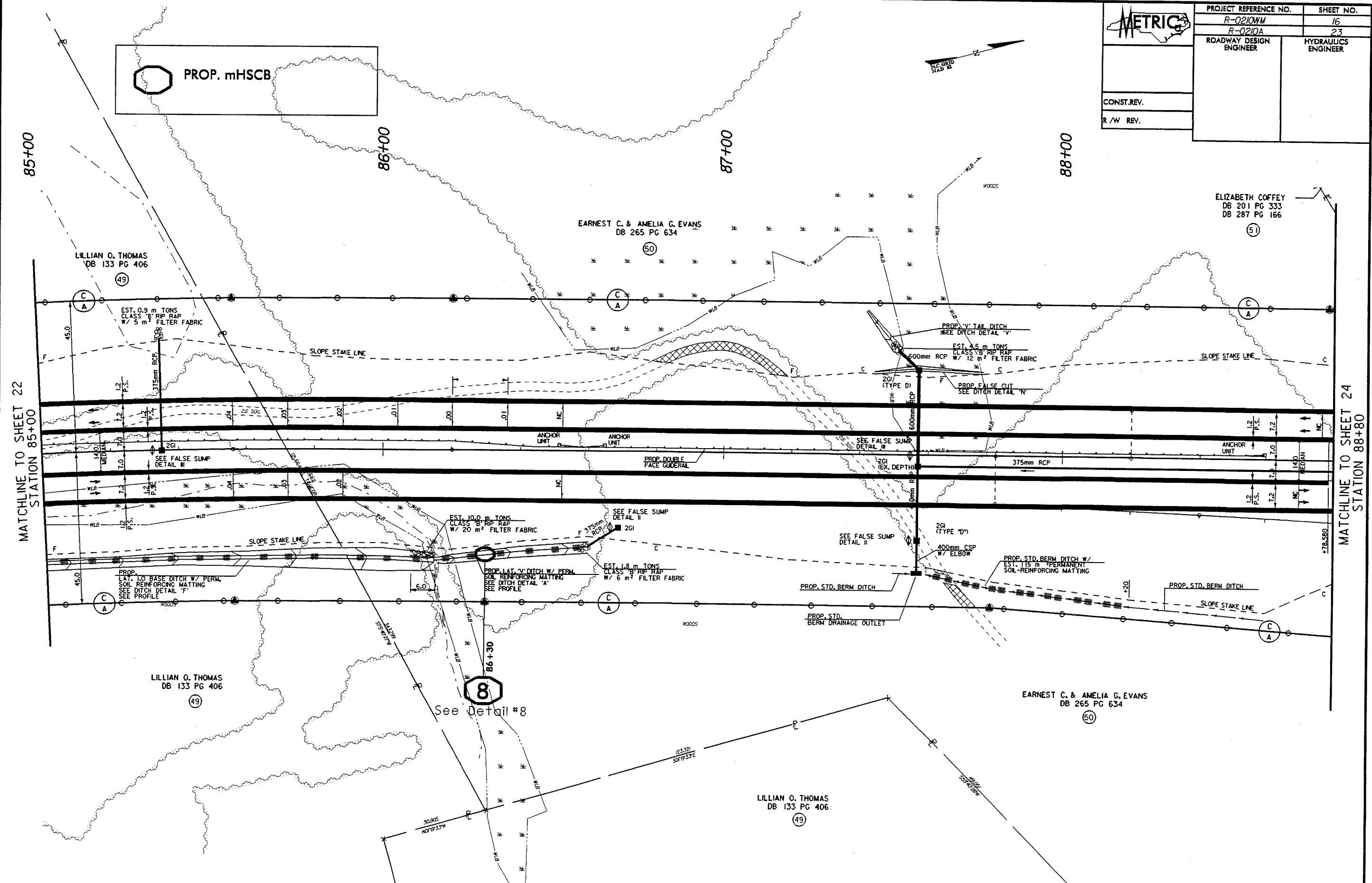




PROJECT REFERENCE NO.		SHEET NO.	
R-02101M		16	
R-02101A		23	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER		
CONST. REV.			
R/W REV.			

MATCHLINE TO SHEET 22  
STATION 85+00

MATCHLINE TO SHEET 24  
STATION 88+80



REVISIONS

R-02101A.dwg  
1/20/09  
L. THOMAS

LILLIAN O. THOMAS  
DB 133 PG 406  
(49)

EARNEST C. & AMELIA G. EVANS  
DB 265 PG 634  
(50)

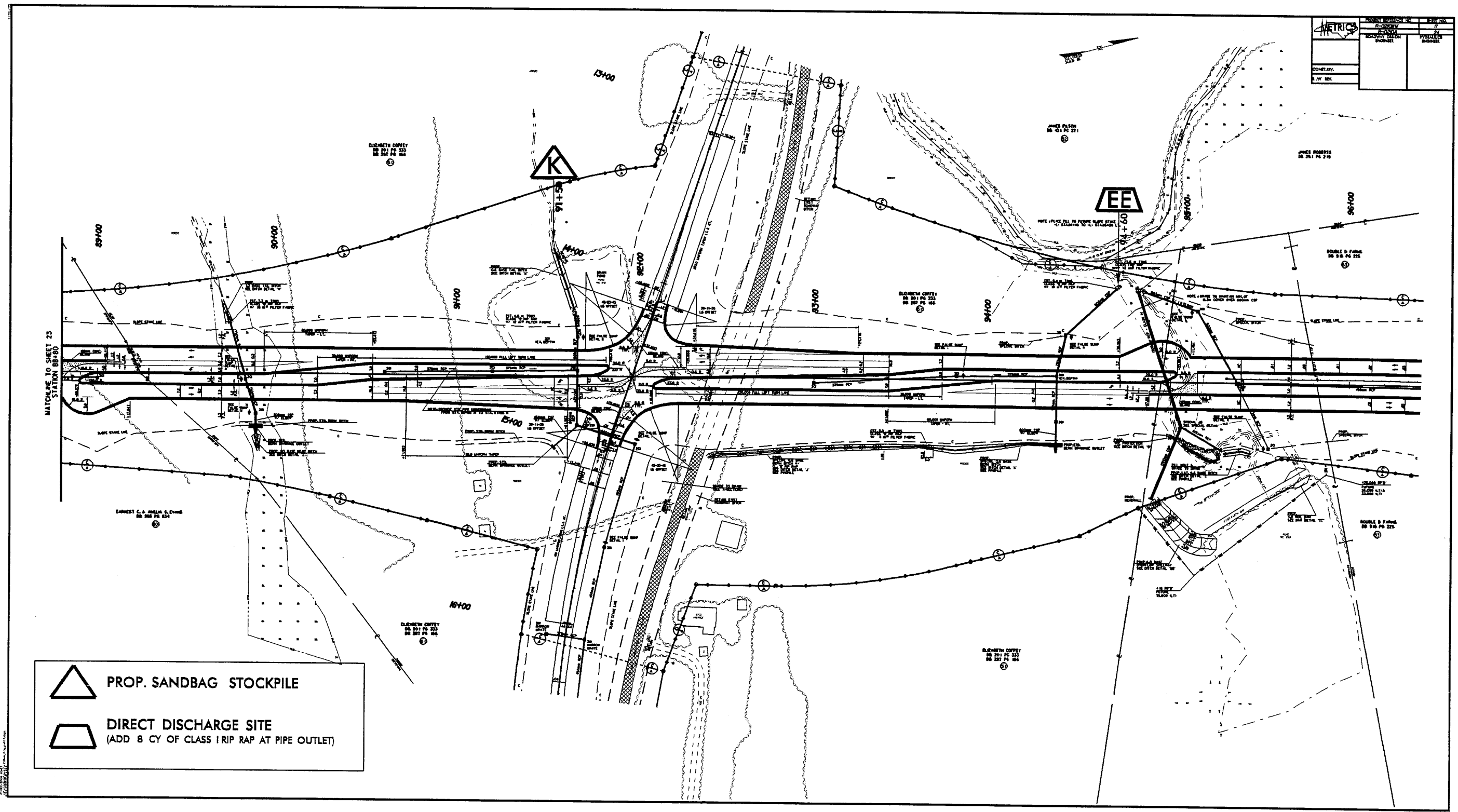
ELIZABETH COFFEY  
DB 201 PG 333  
DB 287 PG 166  
(51)



LILLIAN O. THOMAS  
DB 133 PG 406  
(49)


See Detail #8  
(8)


EARNEST C. & AMELIA G. EVANS  
DB 265 PG 634  
(50)

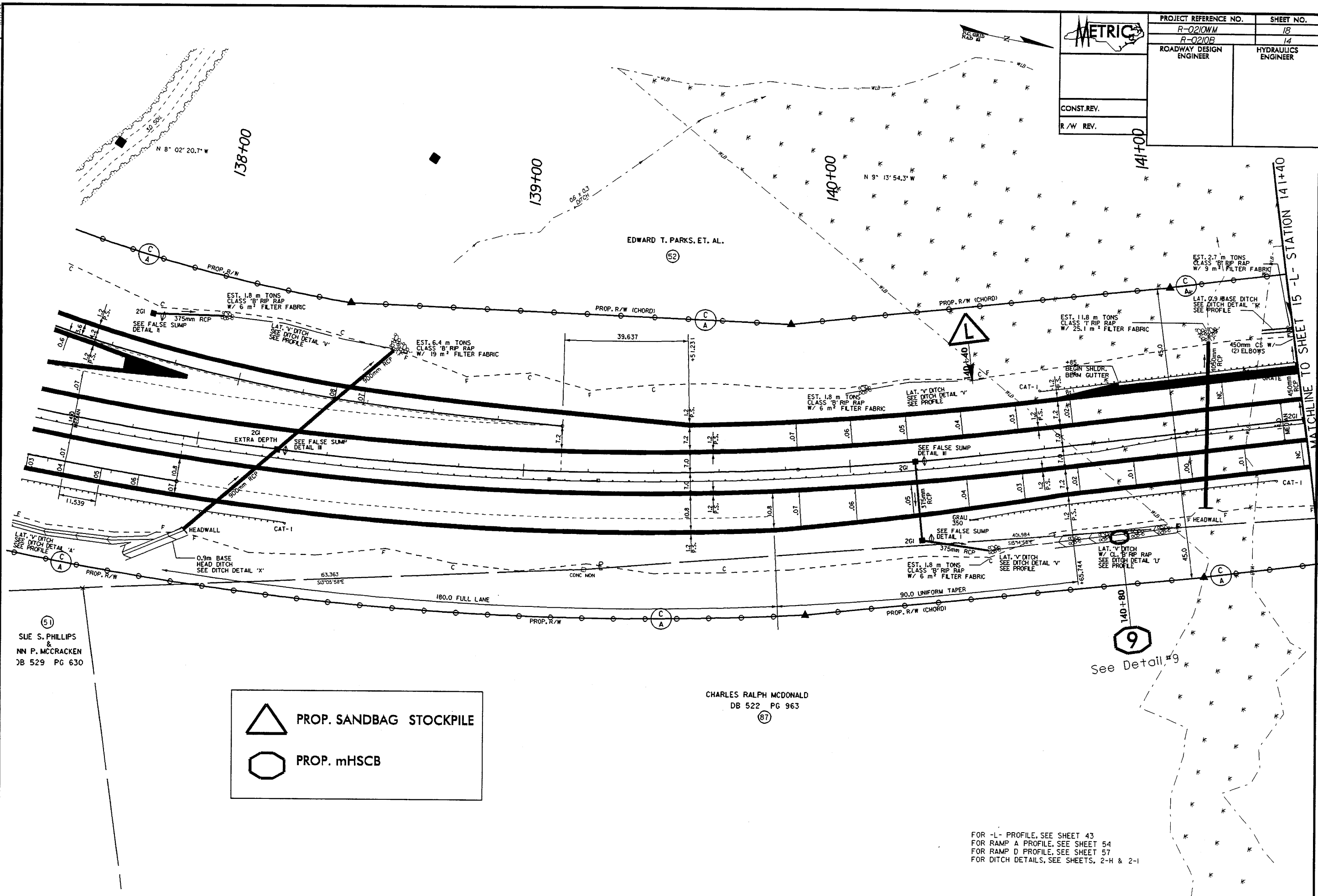
LILLIAN O. THOMAS  
DB 133 PG 406  
(49)



 PROP. SANDBAG STOCKPILE  
 DIRECT DISCHARGE SITE  
 (ADD 8 CY OF CLASS I RIP RAP AT PIPE OUTLET)



	
PROJECT NO. _____ DRAWING NO. _____ DATE _____	SHEET NO. _____ TOTAL SHEETS _____
CONTRACT NO. _____ CLIENT _____	DESIGNER _____ CHECKER _____ APPROVER _____

	PROJECT REFERENCE NO.	SHEET NO.
	R-0210MM R-0210B	13 14
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
CONST. REV.		
R/W REV.		



REVISIONS

(5) SUE S. PHILLIPS & NN P. MCCRACKEN  
DB 529 PG 630


	PROP. SANDBAG STOCKPILE
	PROP. mHSCB

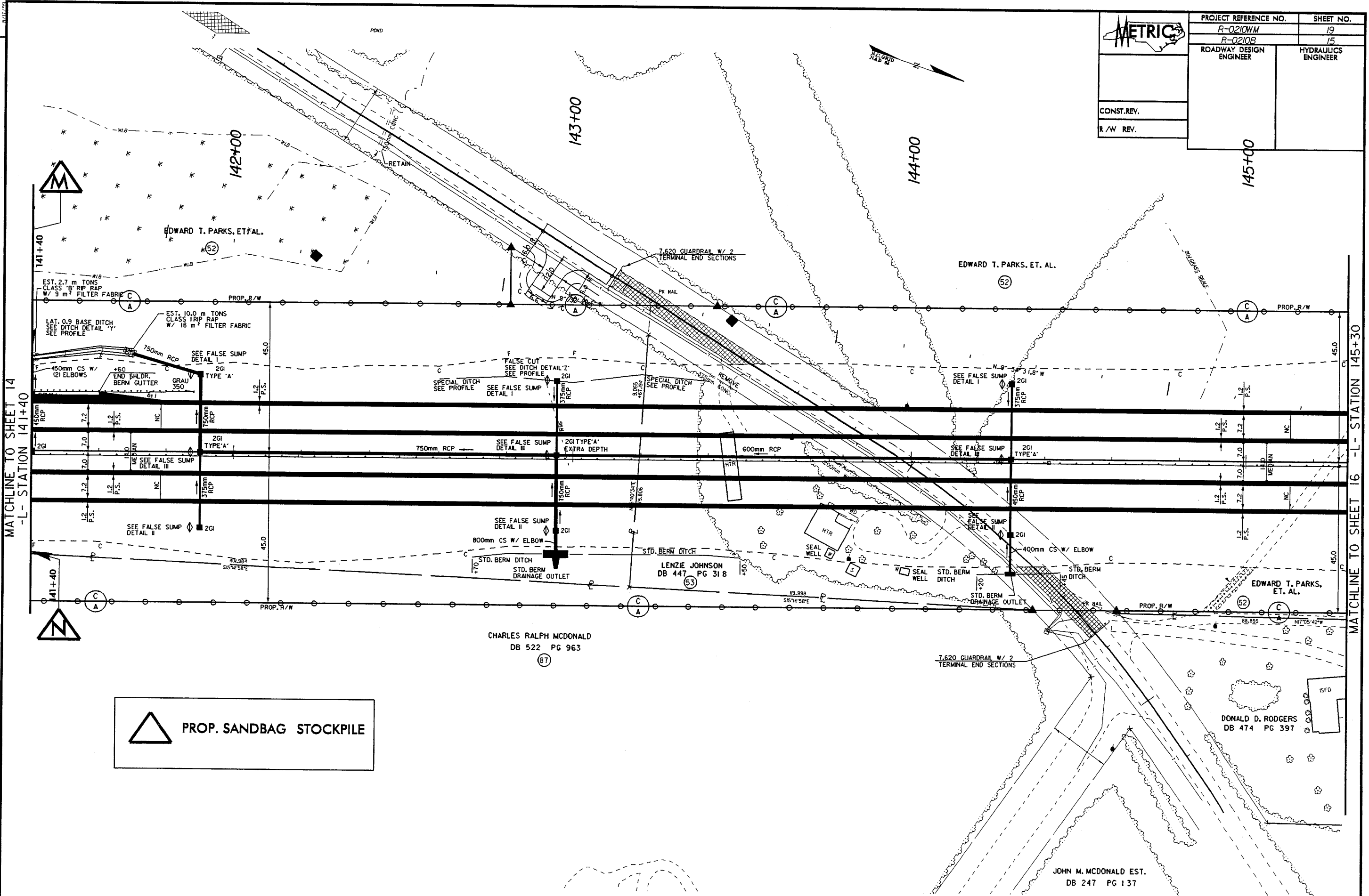
CHARLES RALPH McDONALD  
DB 522 PG 963  
(67)


(9) See Detail #9

FOR -L- PROFILE, SEE SHEET 43  
FOR RAMP A PROFILE, SEE SHEET 54  
FOR RAMP D PROFILE, SEE SHEET 57  
FOR DITCH DETAILS, SEE SHEETS, 2-H & 2-I

DEC-2006 13:29 210mm\_Rdyp-phh18.dgn

	PROJECT REFERENCE NO.	SHEET NO.
	R-0210WM R-0210B	19
	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST. REV.		
R/W REV.		



 PROP. SANDBAG STOCKPILE

-DEC-2006 1329  
 210mm\_Rdy\_psh13.dgn  
 11/21/06 10:58 AM

REVISIONS

MATCHLINE TO SHEET 14 -L- STATION 141+40

MATCHLINE TO SHEET 16 -L- STATION 145+30

JOHN M. McDONALD EST.  
DB 247 PG 137

CHARLES RALPH McDONALD  
DB 522 PG 963  
(87)

LENZIE JOHNSON  
DB 447 PG 318  
(53)

DONALD D. RODGERS  
DB 474 PG 397

EDWARD T. PARKS, ET. AL.  
(52)

EDWARD T. PARKS, ET. AL.  
(52)

141+40

142+00

143+00

144+00

145+00

141+40

141+40

145+30

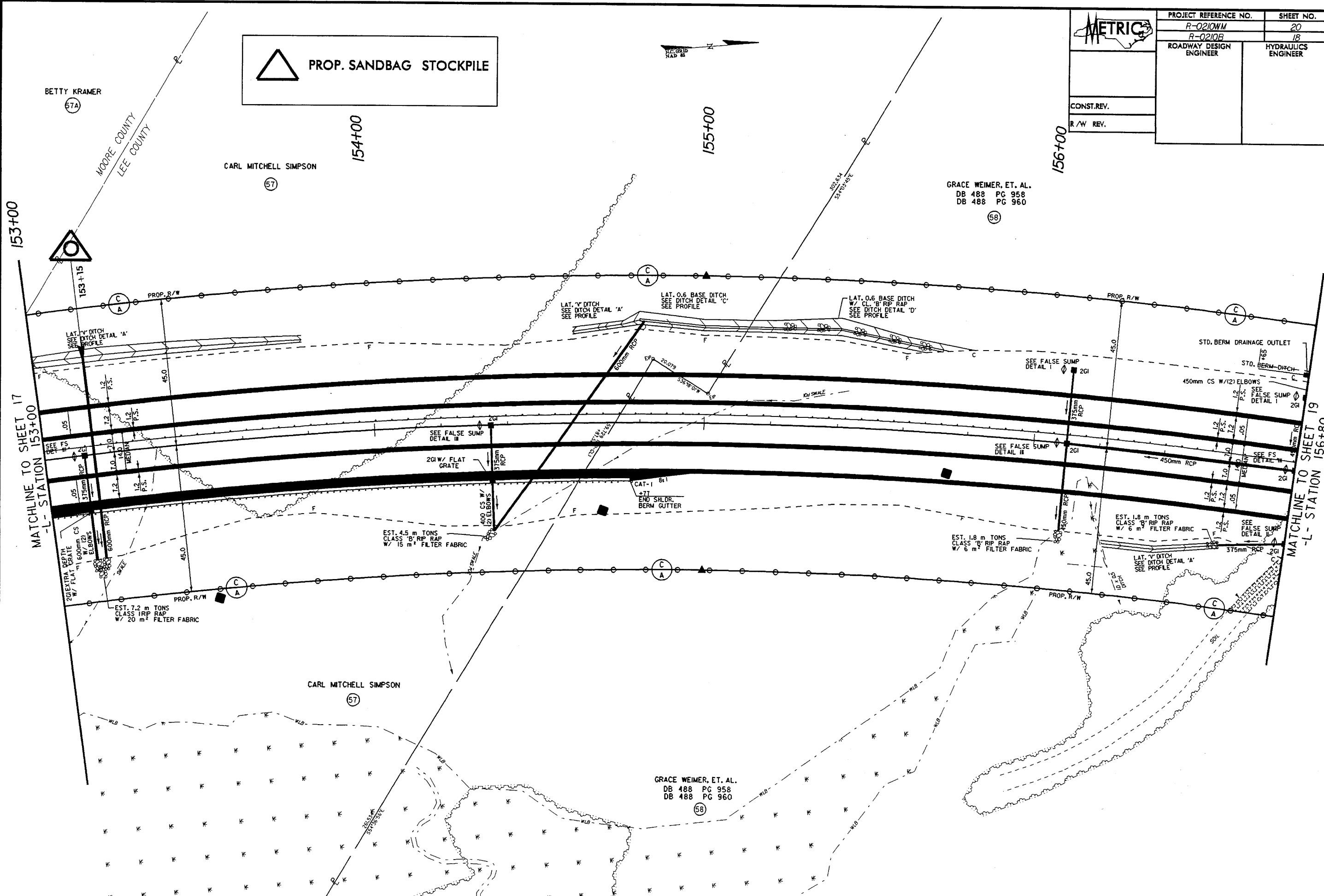
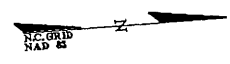
145+30





PROJECT REFERENCE NO.		SHEET NO.
R-0210NM		20
R-0210E		18
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
CONST. REV.		
R/W REV.		

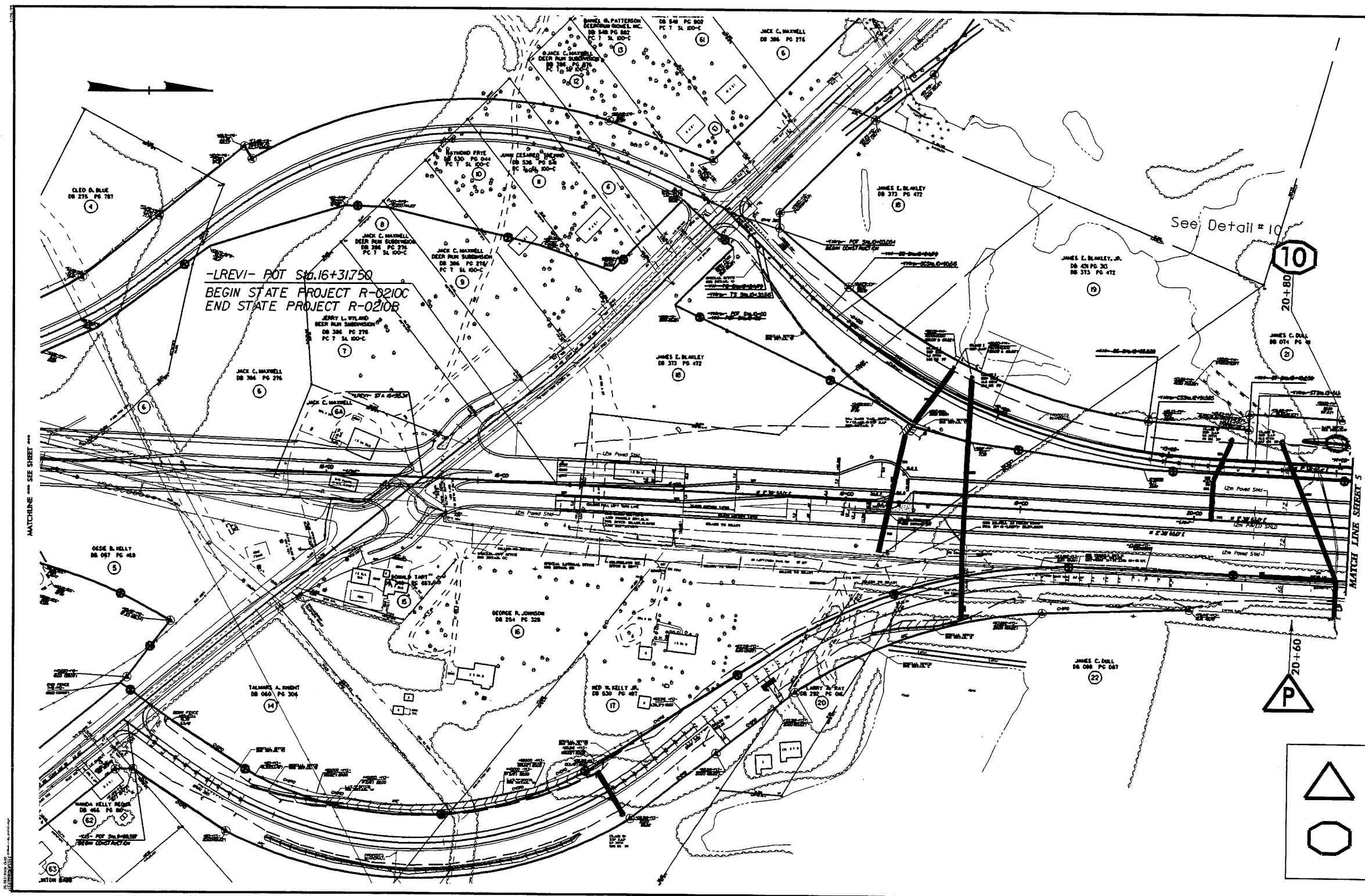
PROP. SANDBAG STOCKPILE





REVISIONS

DEC-2006 13:59 210mm\_rdg-prh-218.dgn

PROJECT NO.	DATE	BY
DESIGNED BY	CHECKED BY	APPROVED BY
CONTRACT NO.	SHEET NO.	



	PROP. SANDBAG STOCKPILE
	PROP. mHSCB

10

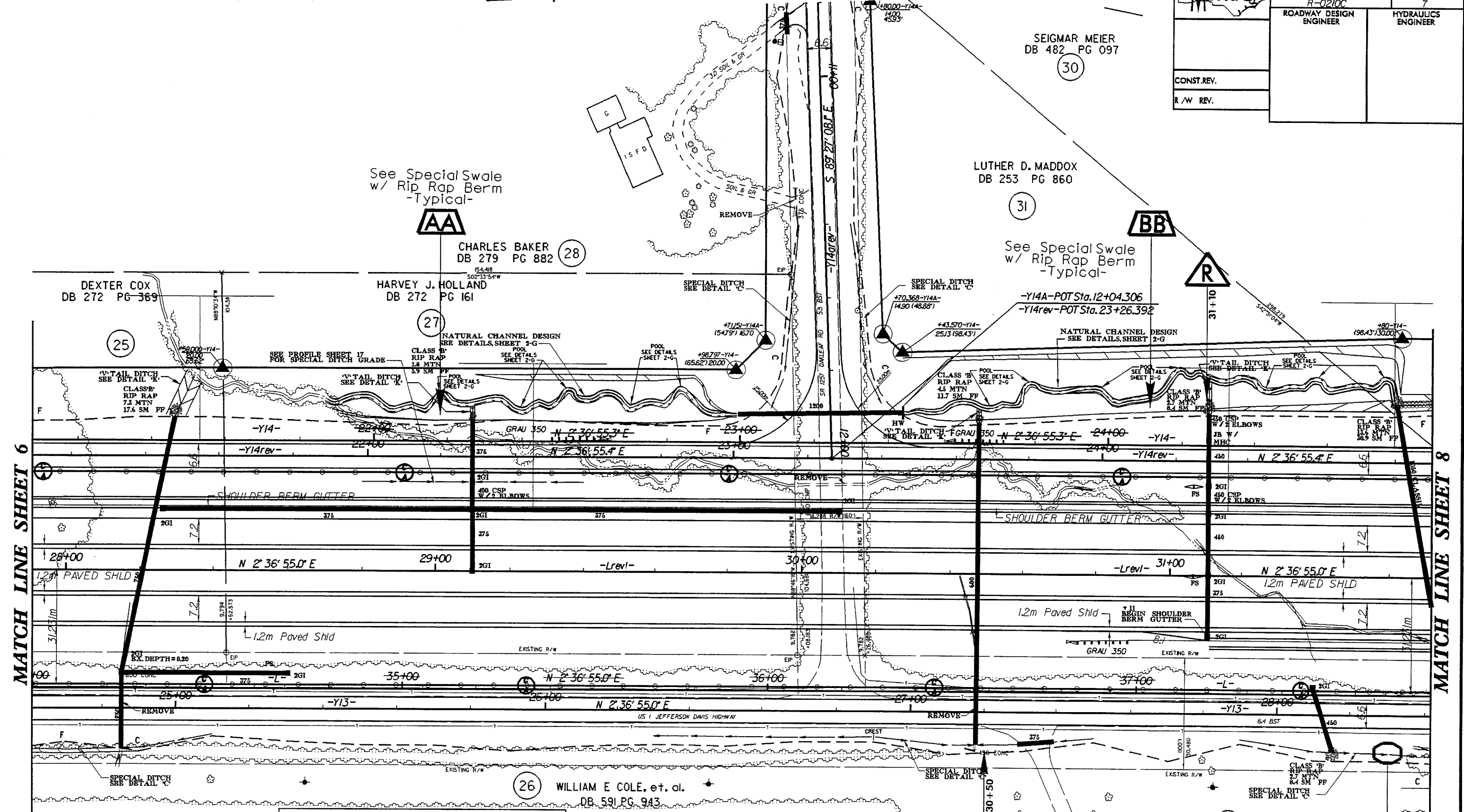
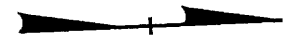
20+60  
P

MATCHLINE SEE SHEET

MATCHLINE SEE SHEET 5






PROJECT REFERENCE NO.	SHEET NO.
R-0210NM	22
R-0210C	7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST. REV.	
R/W REV.	



MATCH LINE SHEET 6

MATCH LINE SHEET 8

-  PROP. SANDBAG STOCKPILE
-  PROP. mHSCB
-  GRASS SWALE

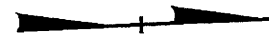
REVISIONS

8/17/09

C:\2005\_0915\_210m\_rdy\_p1122.dgn



PROJECT REFERENCE NO.		SHEET NO.	
R-0210MM		23	
R-0210C		8	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER		
CONST. REV.			
R/W REV.			



See Detail #12

SEIGMAR MEIER  
DB 482 PG 097

BLACKWELDER

LARRY W. BOULDIN  
DB 314 PG 047

12

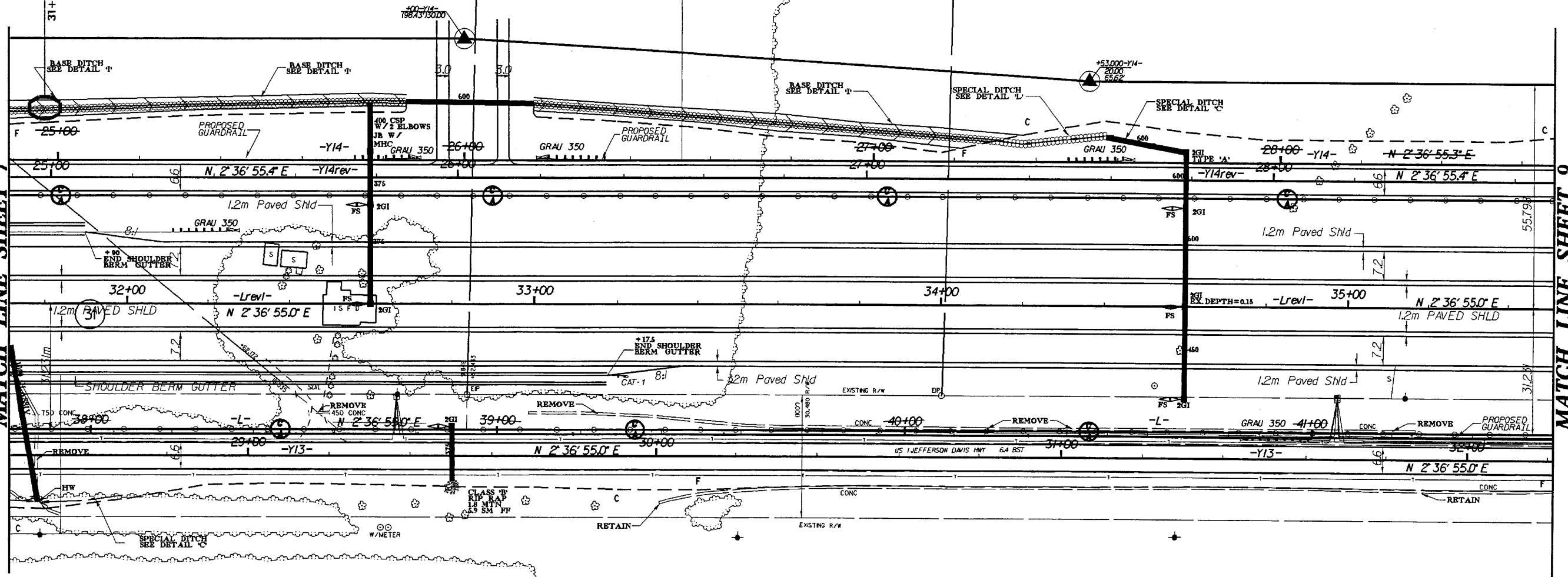
30

29A

32

MATCH LINE SHEET 7

MATCH LINE SHEET 9



PROP. mHSCB


26

WILLIAM E COLE, et. al.  
DB 591 PG 943

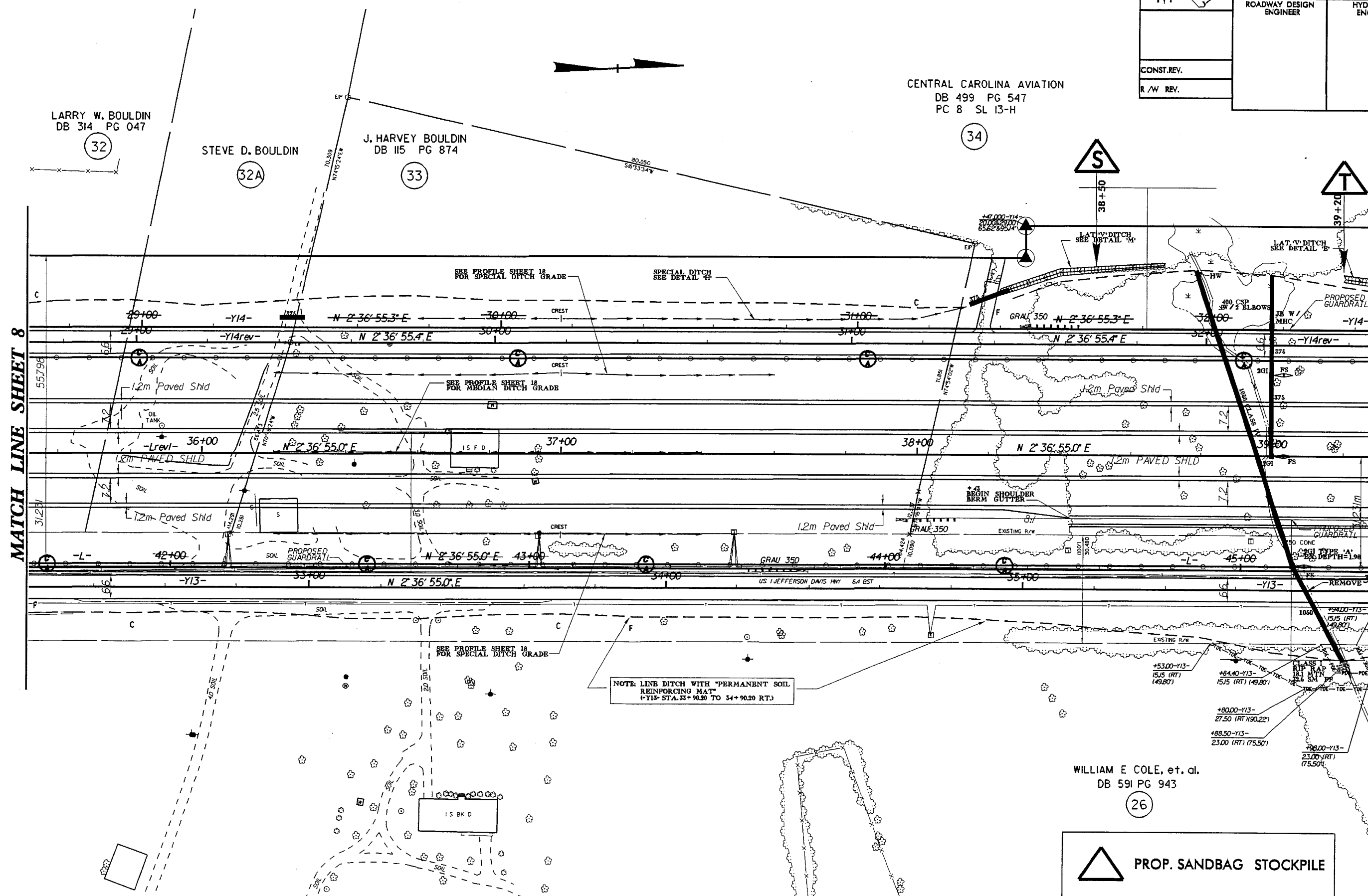
WILLIAM E COLE

REVISIONS

DEC-2006 13:30 210mm\_rdy\_psh23.dgn

	PROJECT REFERENCE NO.	SHEET NO.
	R-0210WM R-0210C	24
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
CONST. REV.		
R/W REV.		

CENTRAL CAROLINA AVIATION  
DB 499 PG 547  
PC 8 SL 13-H




MATCH LINE SHEET 8

MATCH LINE SHEET 10

NOTE: LINE DITCH WITH "PERMANENT SOIL REINFORCING MAT" (-Y13- STA. 33+90.30 TO 34+90.20 RT.)

WILLIAM E COLE, et. al.  
DB 591 PG 943

(26)



PROP. SANDBAG STOCKPILE

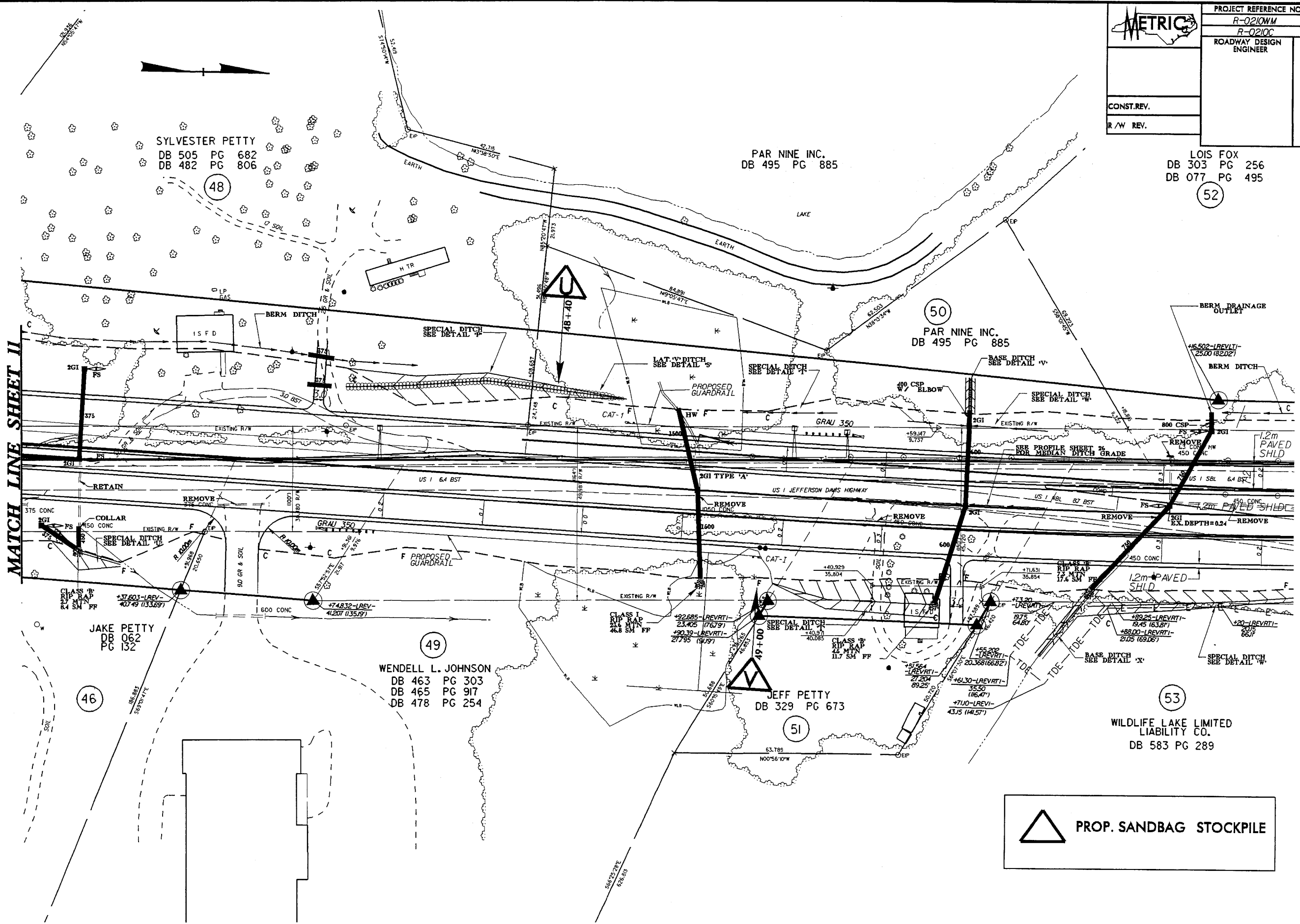
REVISIONS

1-DEC-2006 13:30 2:00min...Rdy...psh24.dgn




PROJECT REFERENCE NO.		SHEET NO.	
R-0210WM		25	
R-0210C		12	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
CONST. REV.			
R/W REV.			

LOIS FOX  
DB 303 PG 256  
DB 077 PG 495



MATCH LINE SHEET 11

REVISIONS

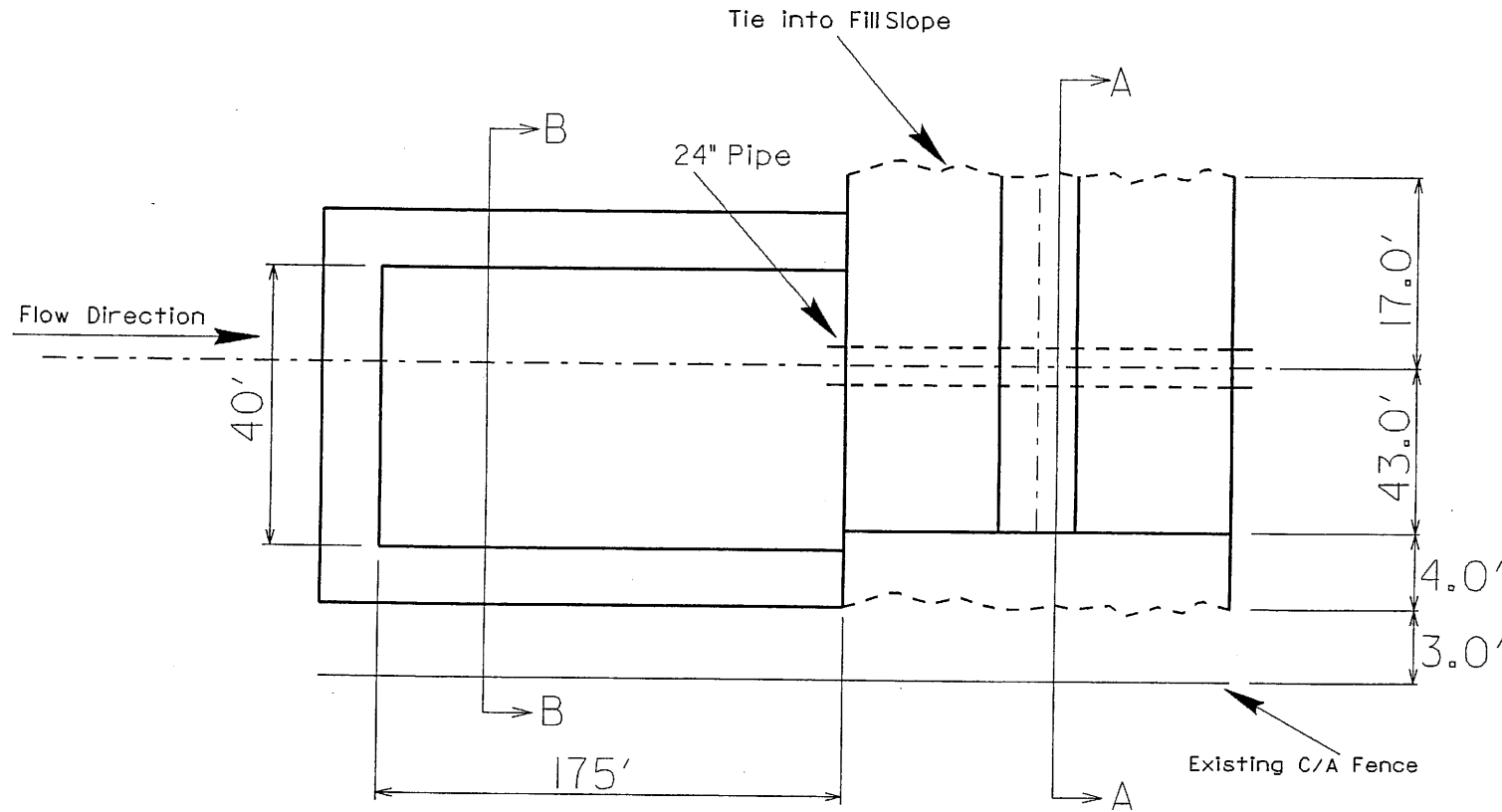
 PROP. SANDBAG STOCKPILE

C:\2006\_13\30\_210\wm\_Pdly\_psh25.dgn  
REVISIONS

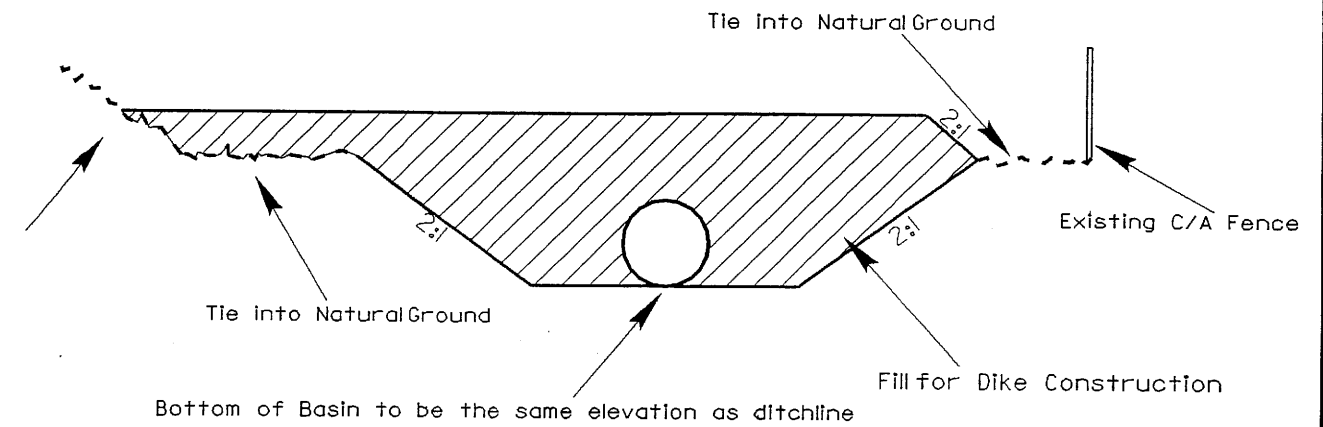
PROJECT REFERENCE NO. R-0210 WM	SHEET NO. 26
HW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# -DETAIL #1A- STA. 60+50 Lt. (R-0210 A)

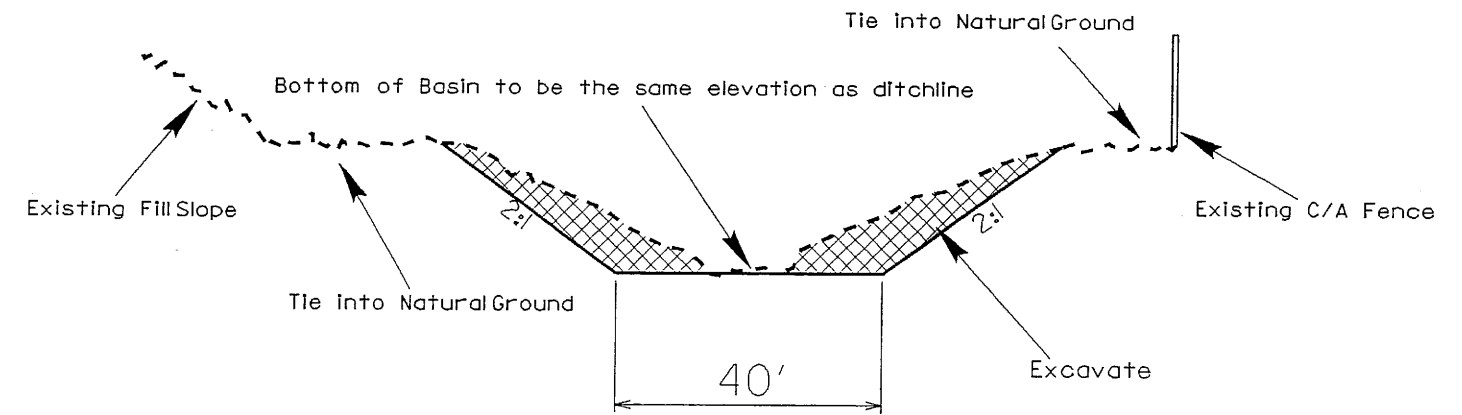
## Top View



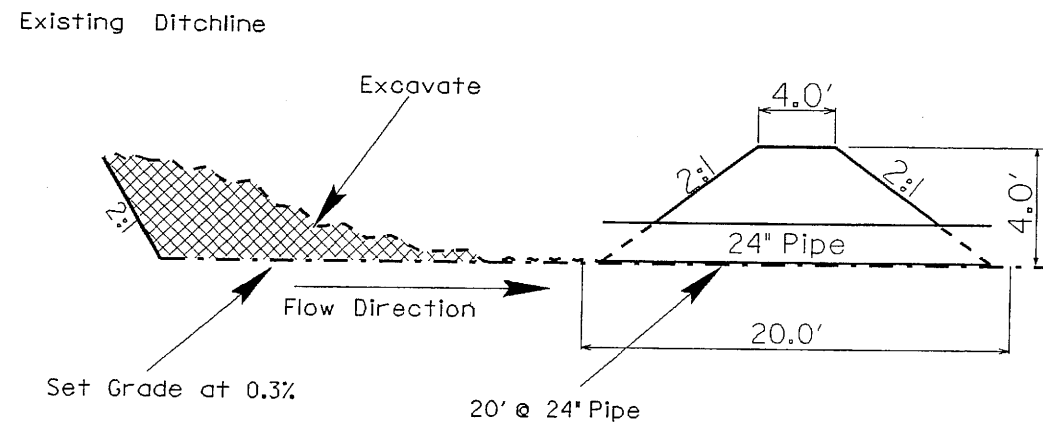
## Section A-A



## Section B-B



## Profile View



### Notes

I. Not To Scale

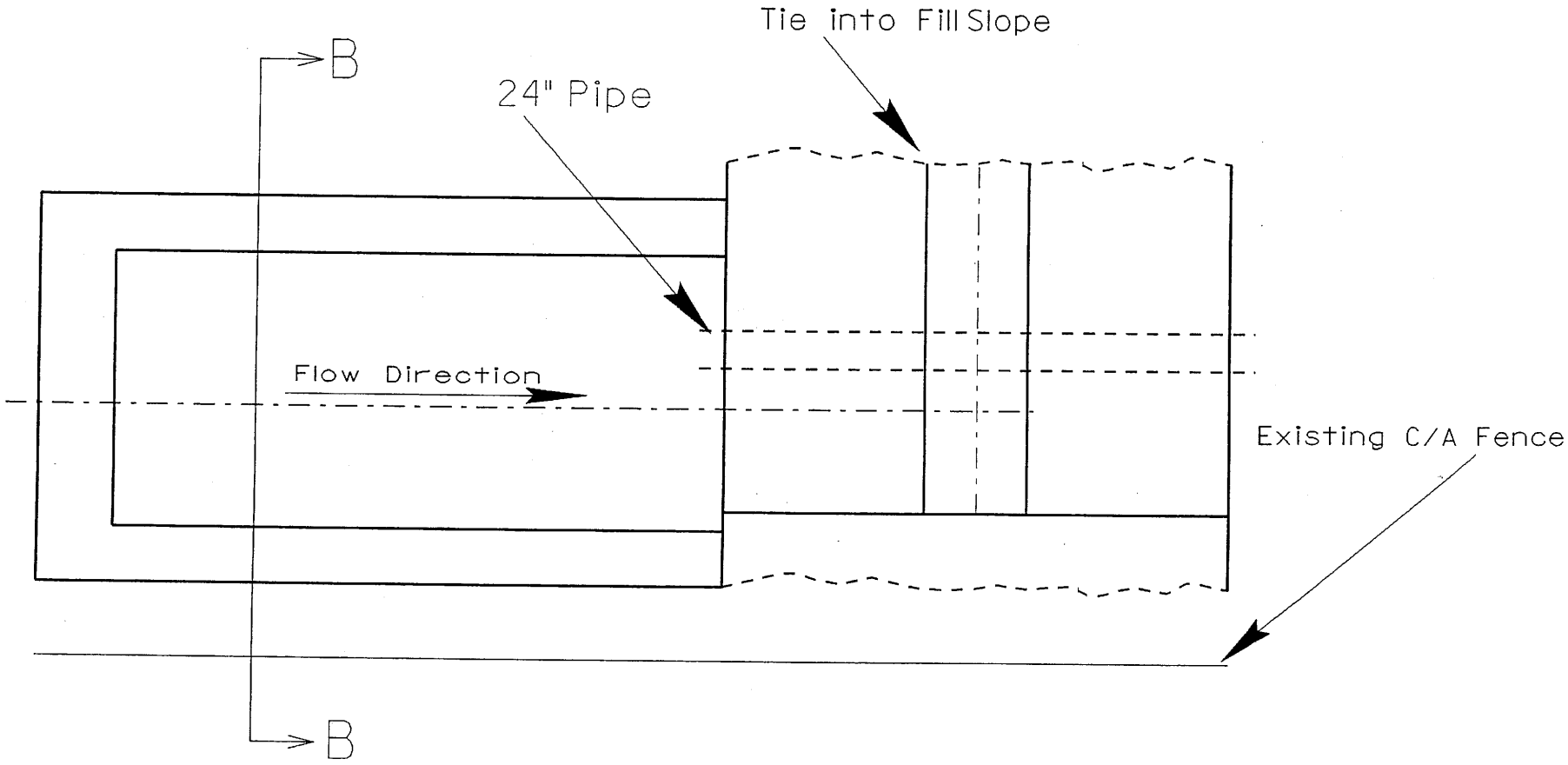
5/14/95  
 -DEC-2006 07:58  
 c:\m\mcs\6050\0210\_hyd\_sur\_2a.dgn

5/14/99

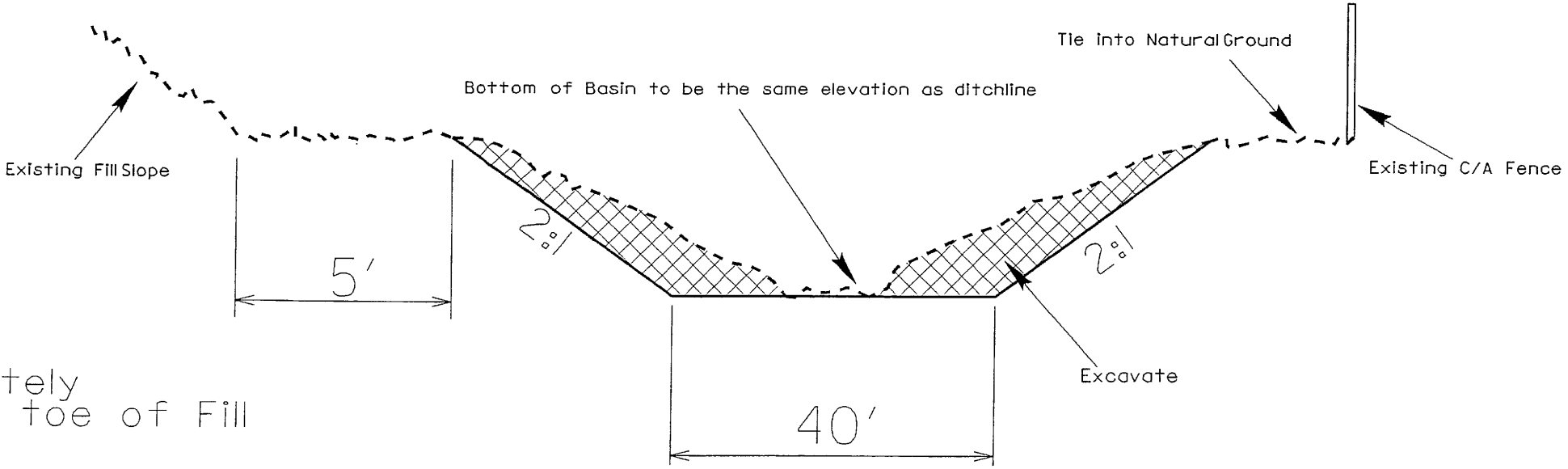
PROJECT REFERENCE NO. R-0210 WM		SHEET NO. 27	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

**-DETAIL IB-**  
**STA. 60+50 Lt. (R-0210 A)**

Top View



Section B-B



Notes

1. Not To Scale
2. Begin Excavation approximately 5' from base of existing toe of Fill

-DEC-2006 07.50  
c:\mcorp\us\projects\6950\1--0210\_hyd\_sur\_2.d.dgn  
less AT

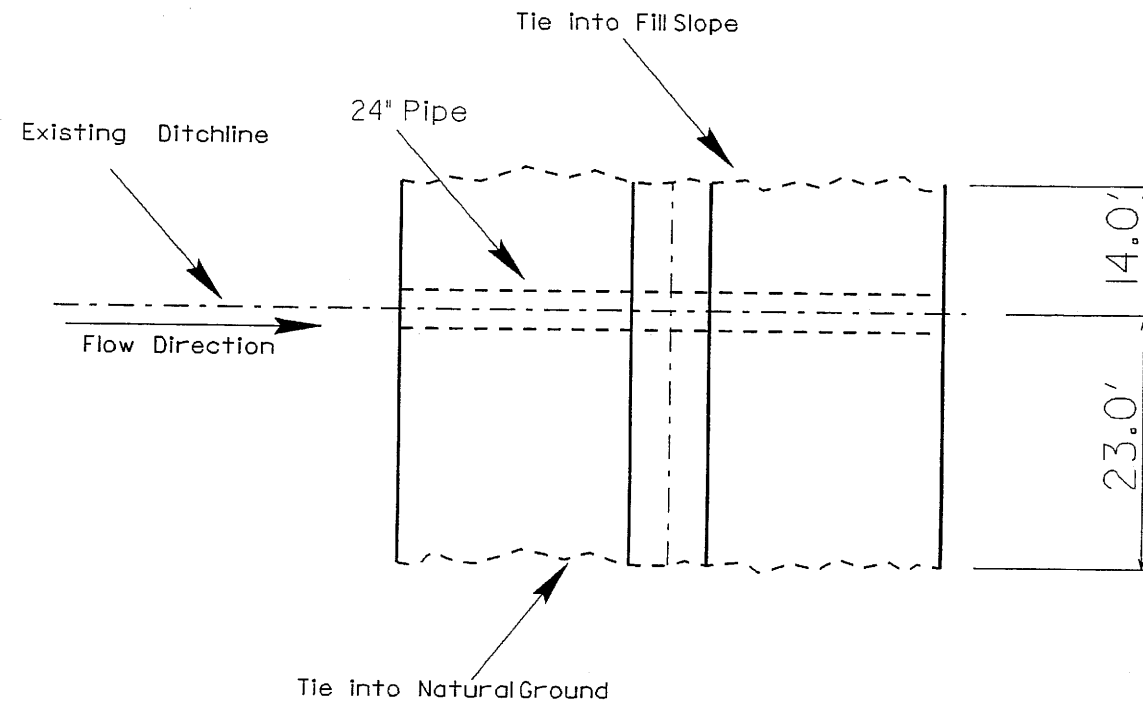


5/14/99

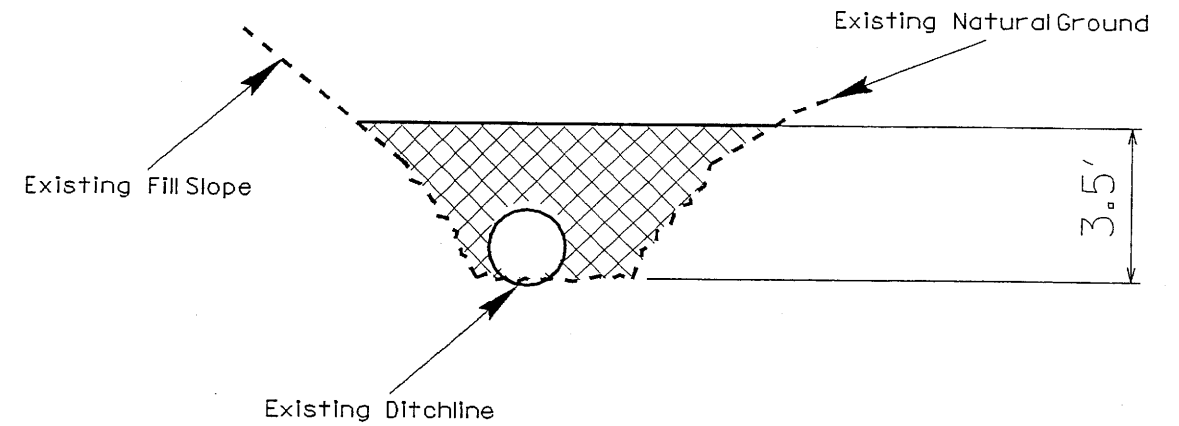
# -DETAIL #2- STA. 75+80 LT. (R-0210A)

PROJECT REFERENCE NO. R-0210 WM	SHEET NO. 28
HW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

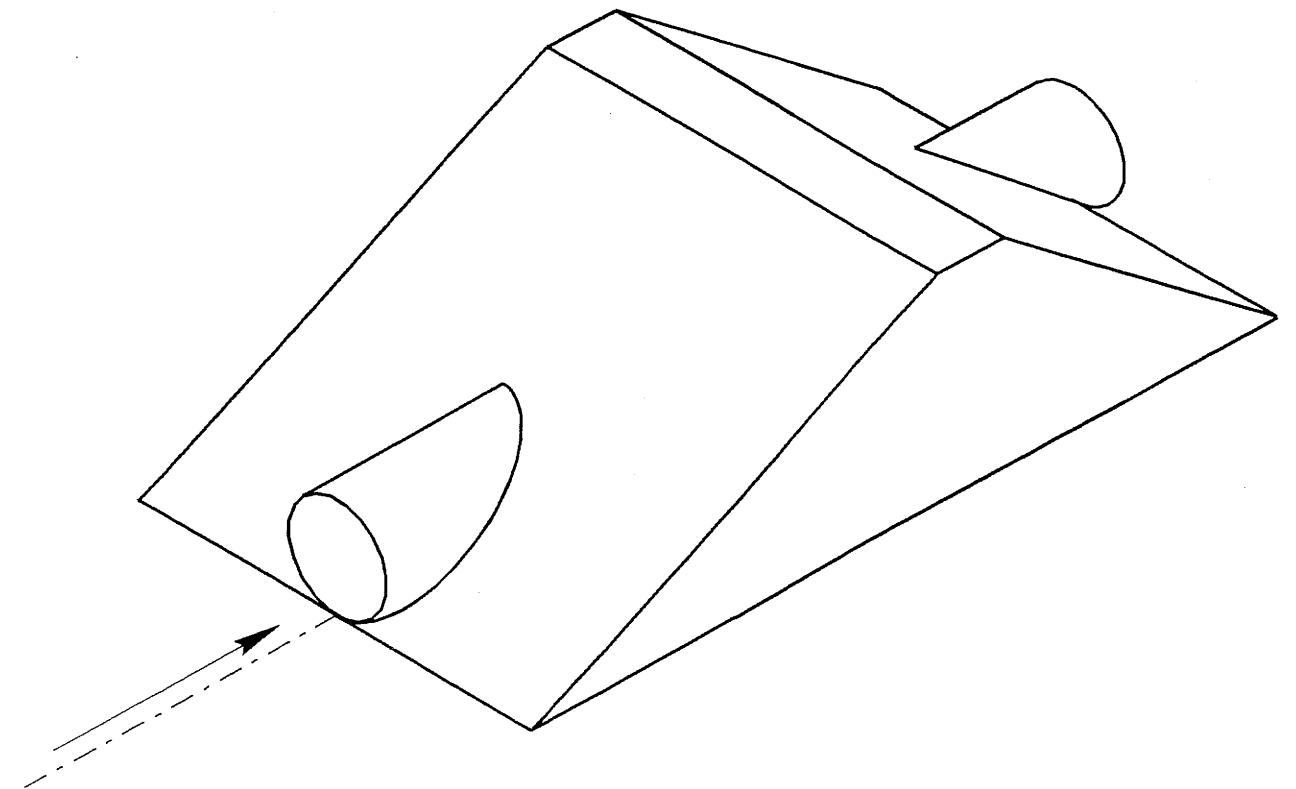
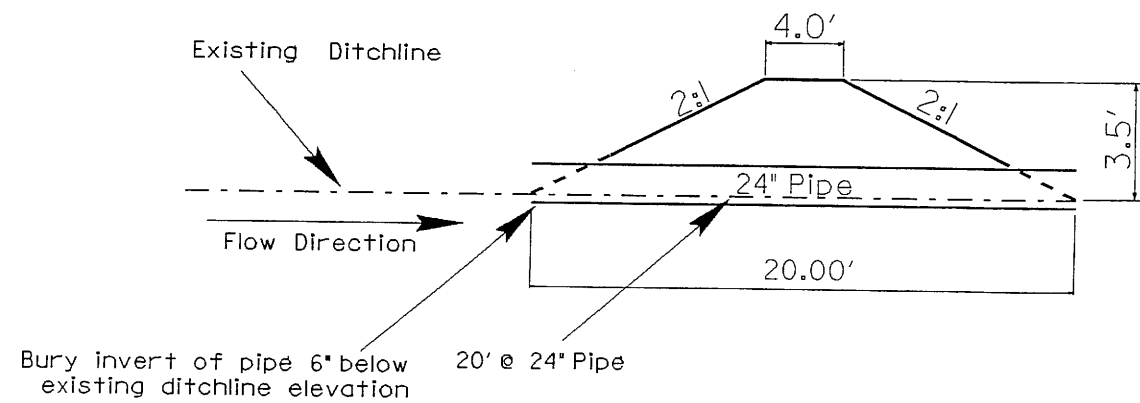
### Top View



### Front View



### Profile View



### Notes

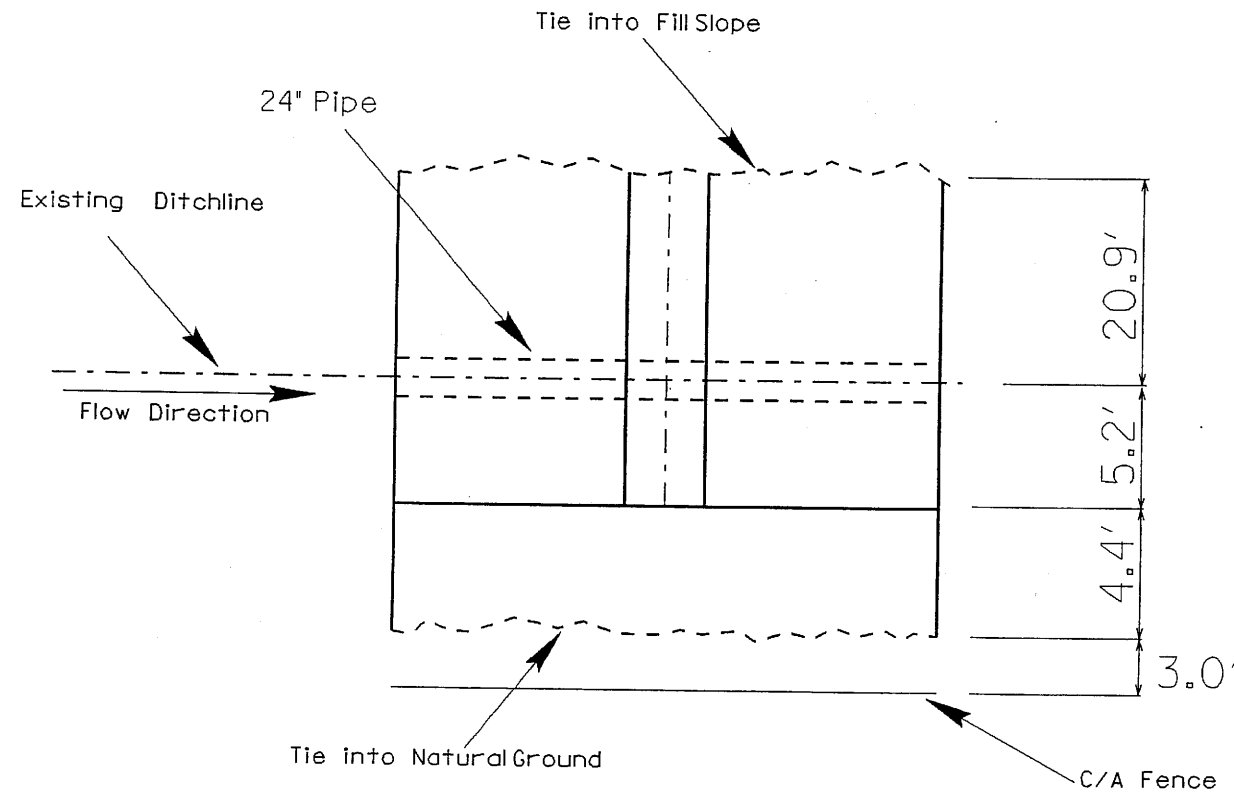
1. Install Dike 82' South of 15" RCP at Sta. 76+05
2. Not To Scale
3. Existing Ditchline is located 72' from EOP of US-1

5/14/99

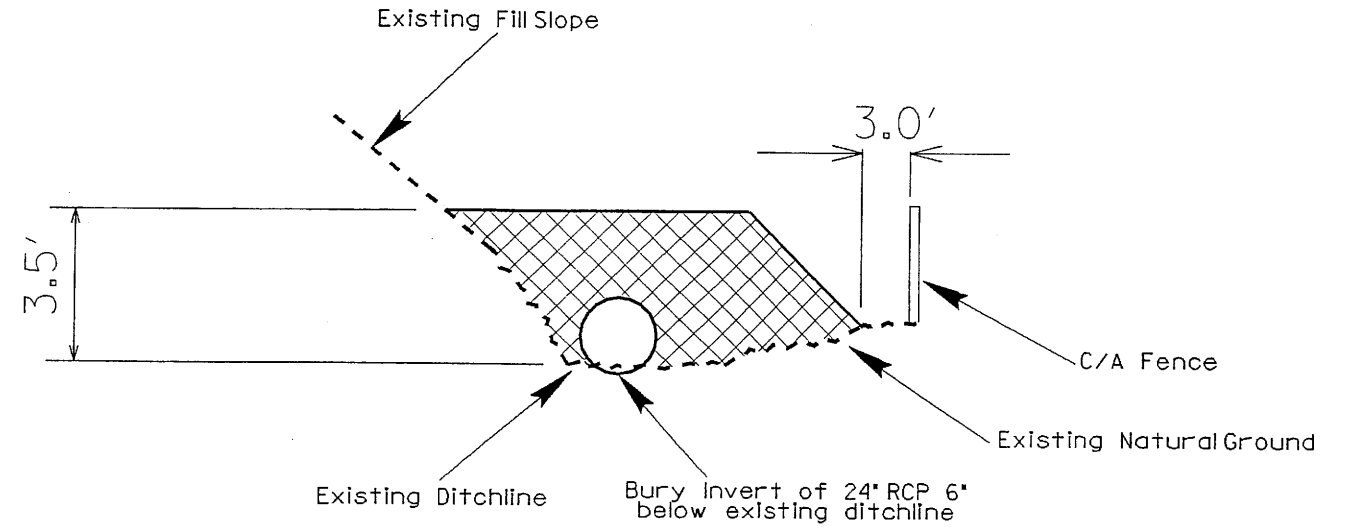
# -Detail #3- STA. 77+00 LT. (R-0210A)

PROJECT REFERENCE NO. R-0210 WM	SHEET NO. 29
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

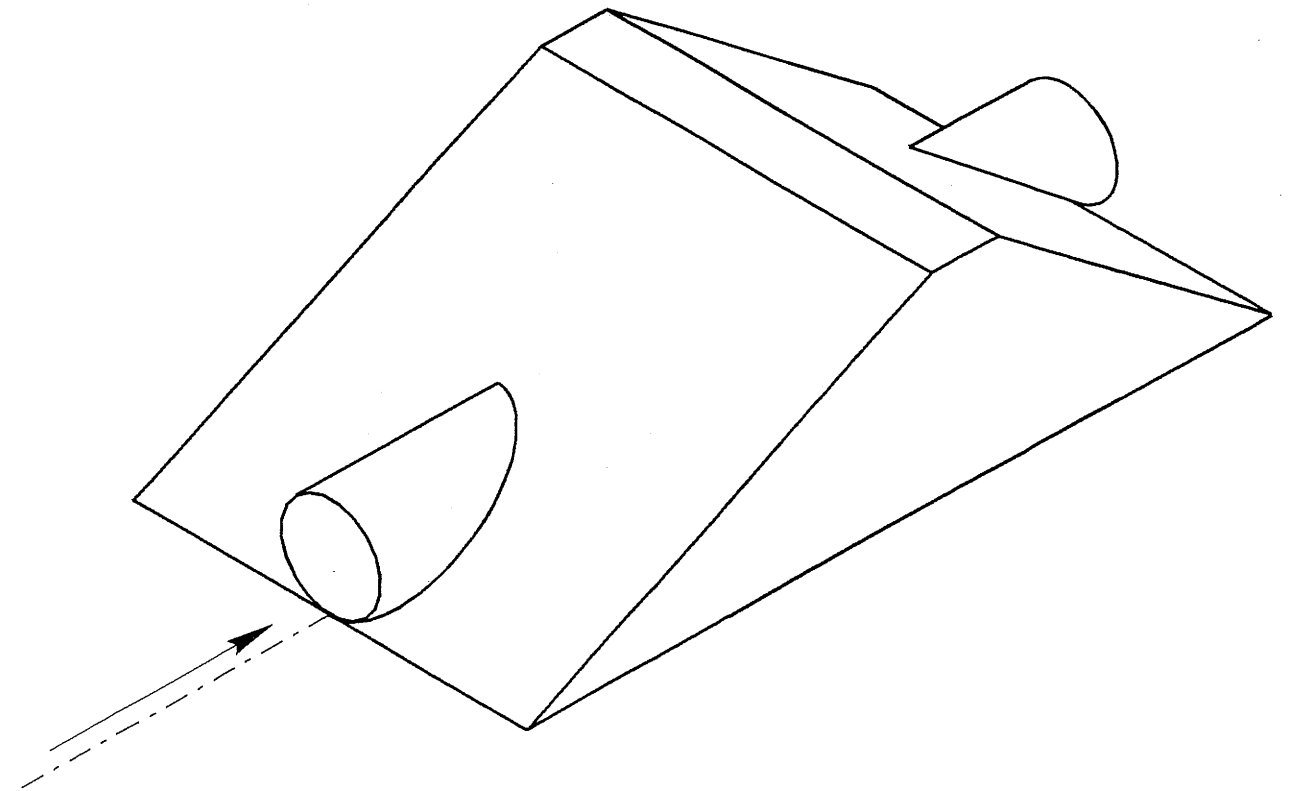
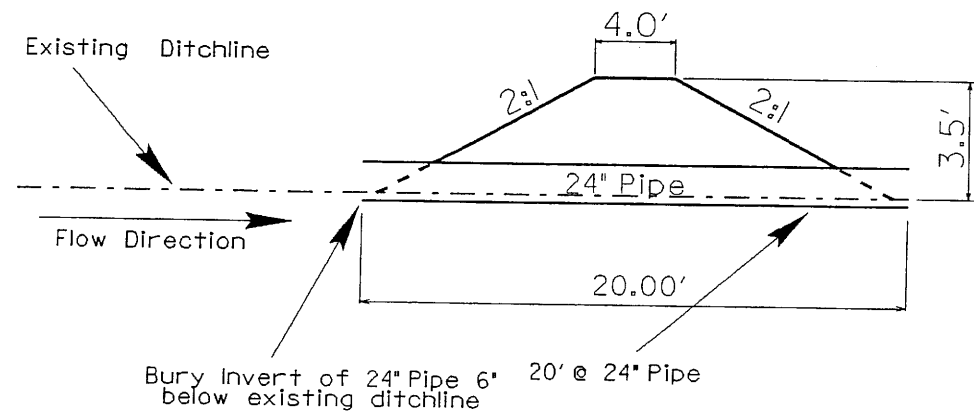
### Top View



### Front View



### Profile View



### Notes

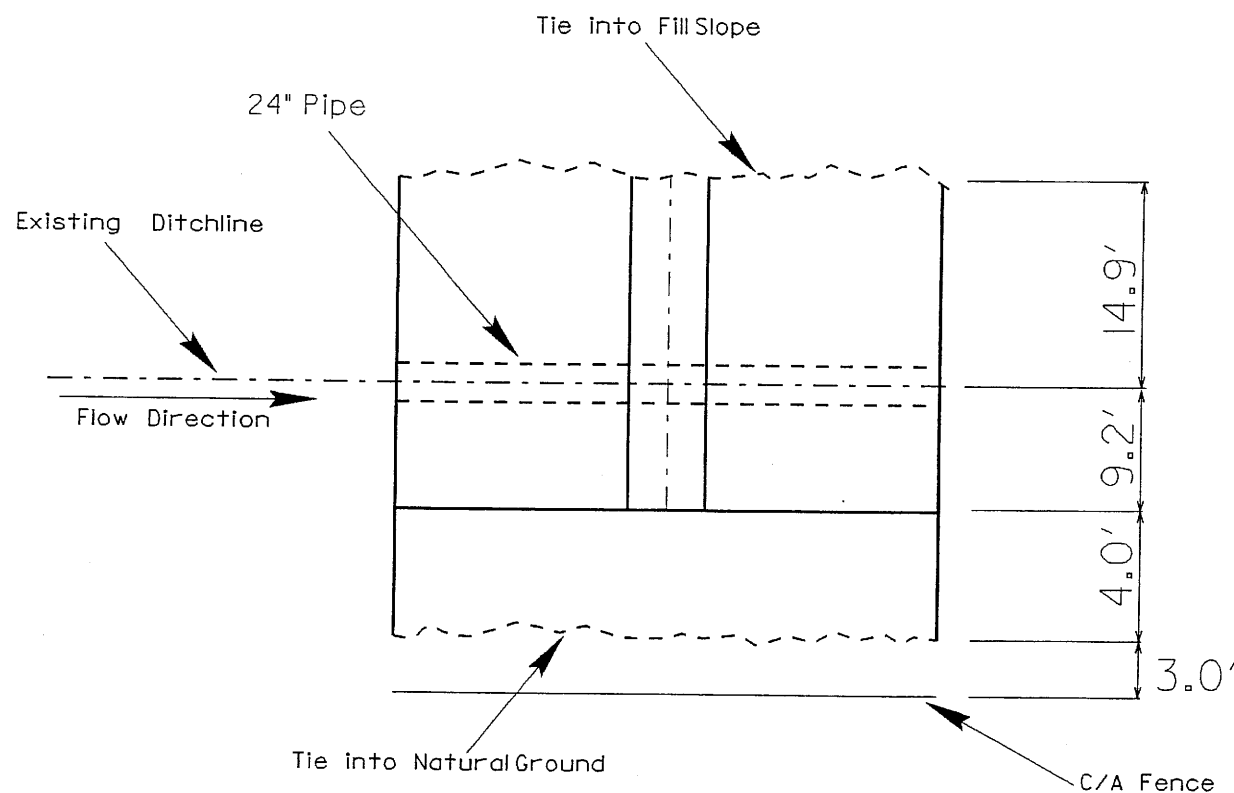
1. Install Dike 50' South of 24" RCP at Sta. 77+16
2. Not To Scale
3. Existing Ditchline is located 84' from EOP of US-1

35-DEC-2006 08:08  
D:\p\cor\A\1100\1100-0210a\_hyd\_sur\_7900\_2a.dgn

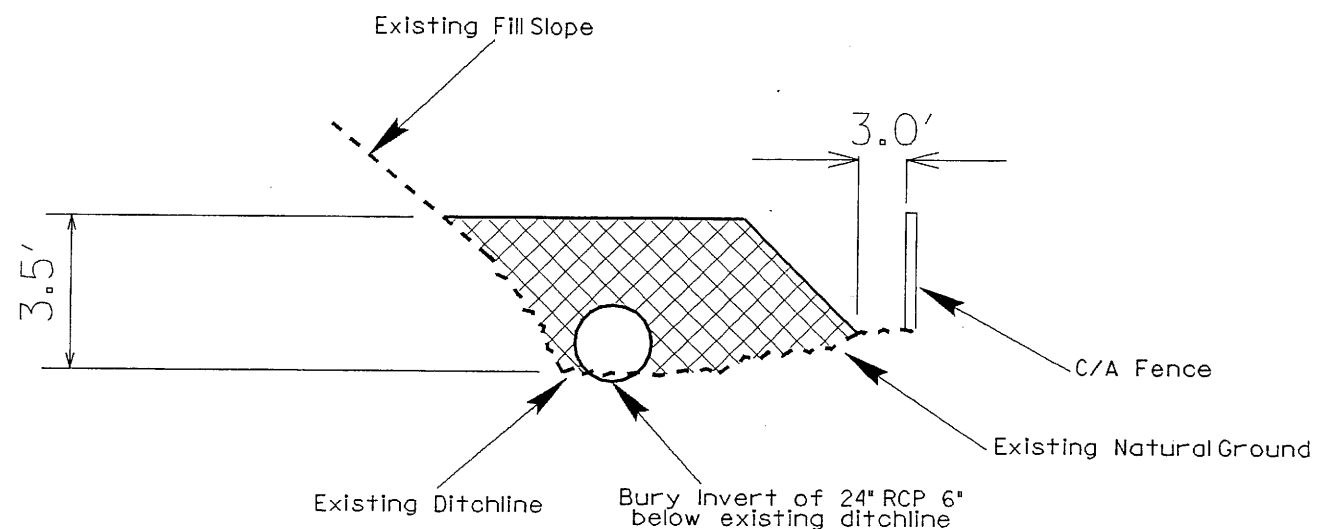
PROJECT REFERENCE NO. R-0210 WM	SHEET NO. 30
MW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# -Detail #4- STA. 77+20 LT. (R-0210A)

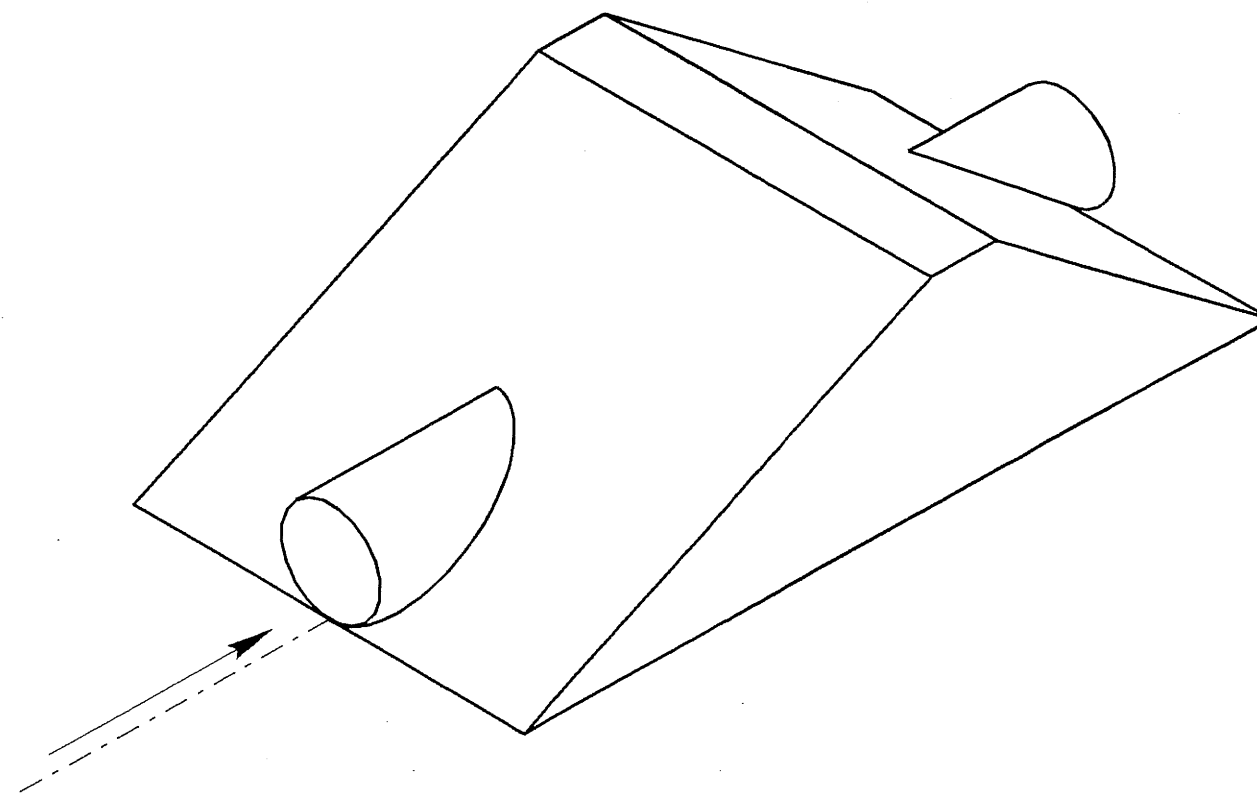
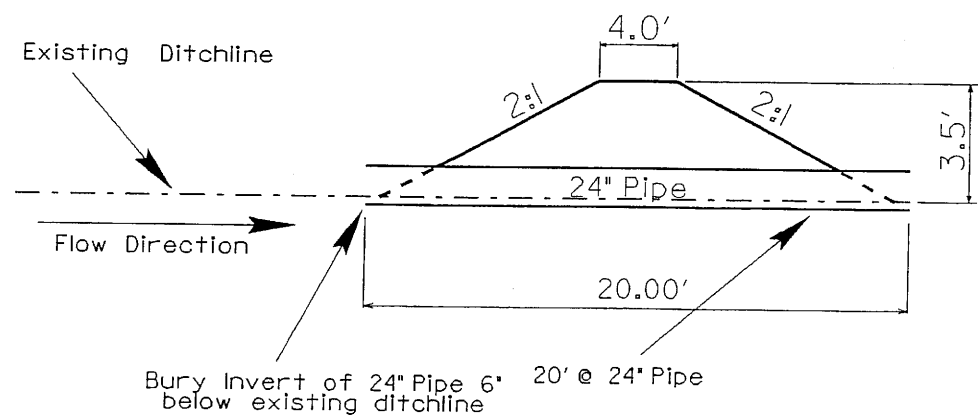
## Top View



## Front View



## Profile View



### Notes

1. Install Dike 15' North of 24" RCP at Sta. 77+16
2. Not To Scale
3. Existing Ditchline is located 80' from EOP of US-1

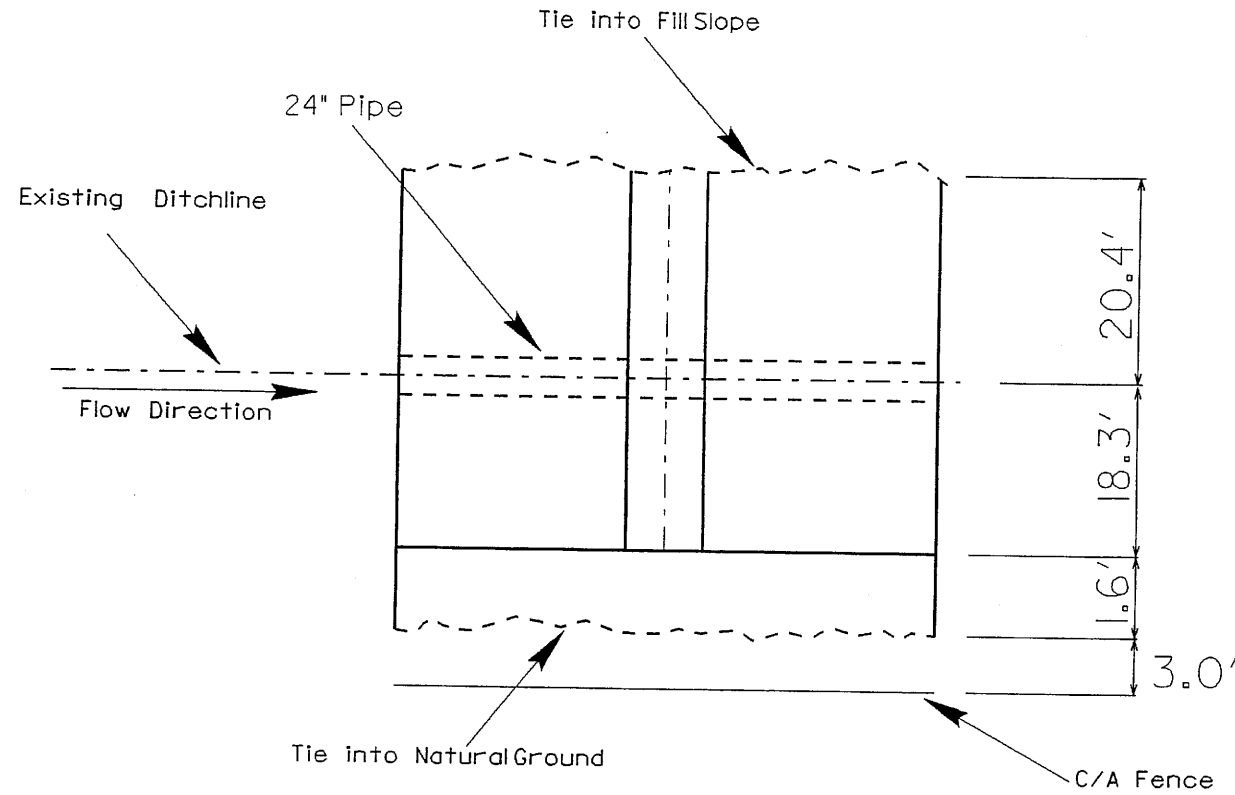
5/14/99  
05-DEC-2006 08:16  
D:\p00r\8111\10210a\_hyd\_sur\_7900\_2.dgn



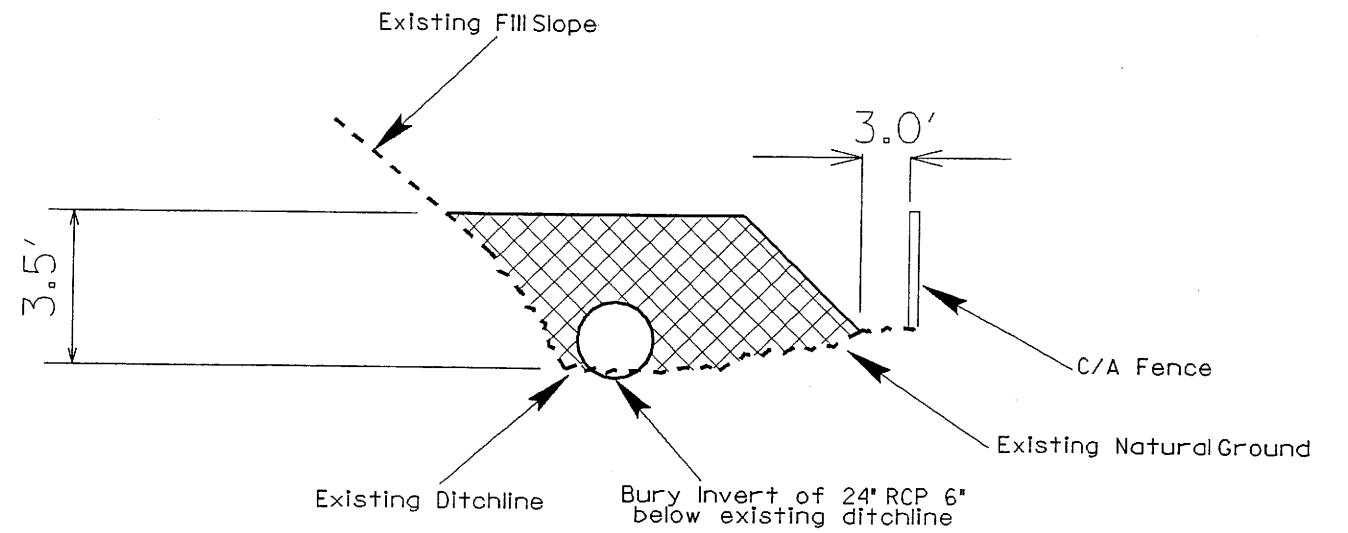
# -Detail #6- STA. 79+00 LT. (R-0210A)

PROJECT REFERENCE NO. <i>R-0210 WM</i>	SHEET NO. <b>32</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

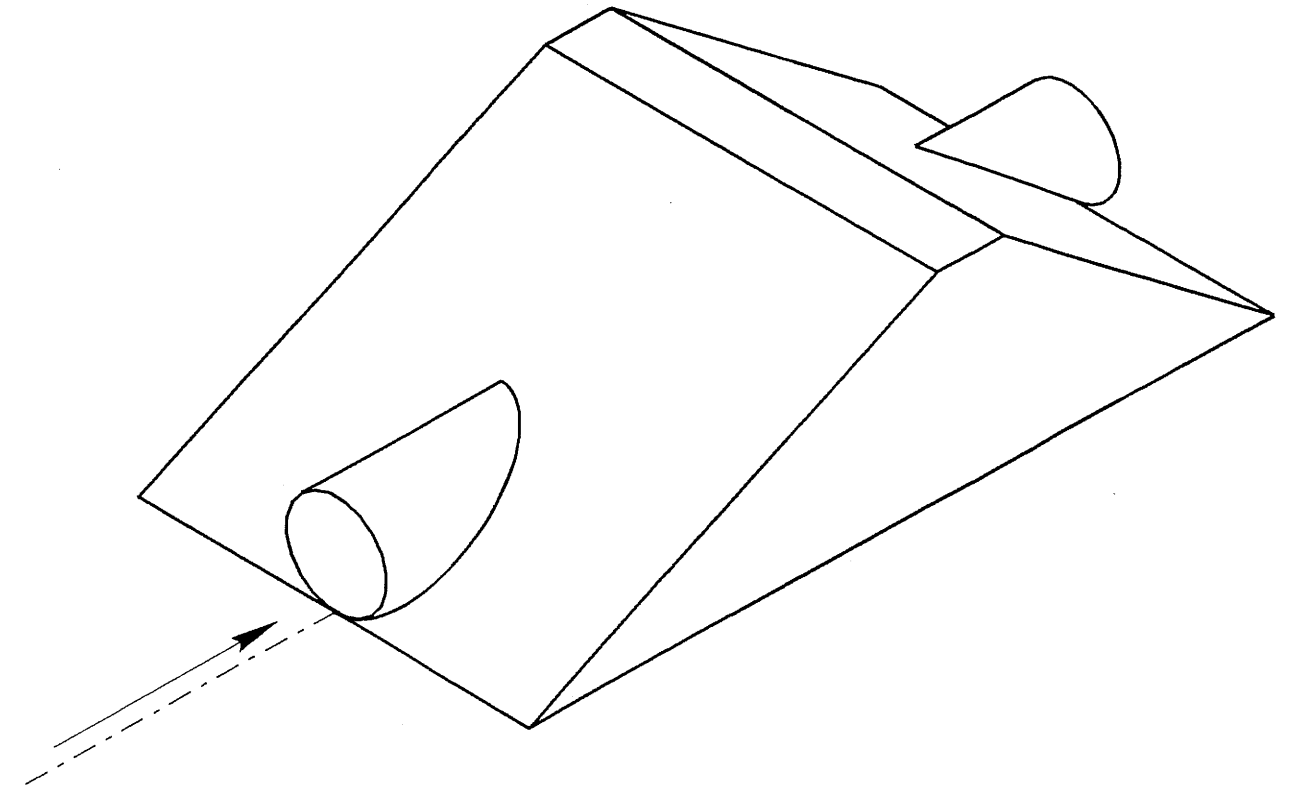
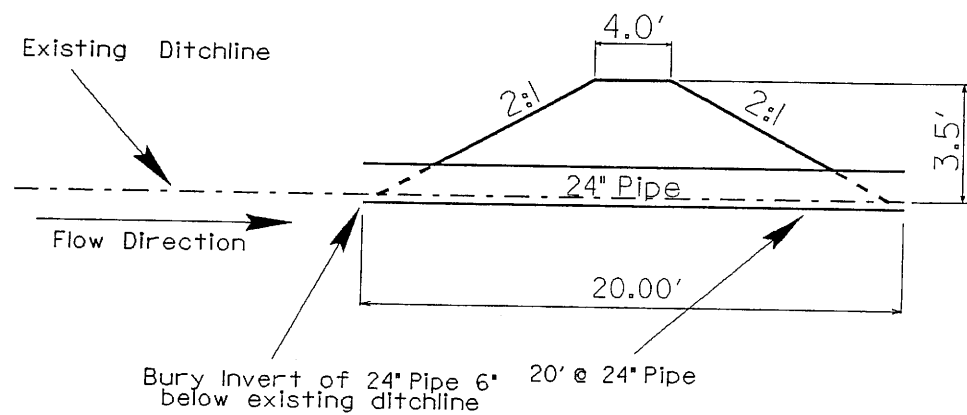
## Top View



## Front View



## Profile View



### Notes

1. Install Dike 25' South of 72" RCP at Sta. 79+20
2. Not To Scale
3. Existing Ditchline is located 75' from EOP of US-1

05-DEC-2006 08:24  
once\moor\g\us\7900\N-0210a\_hyd\_sur\_7900\_2.dwg  
AutoCAD 2004

5/14/99

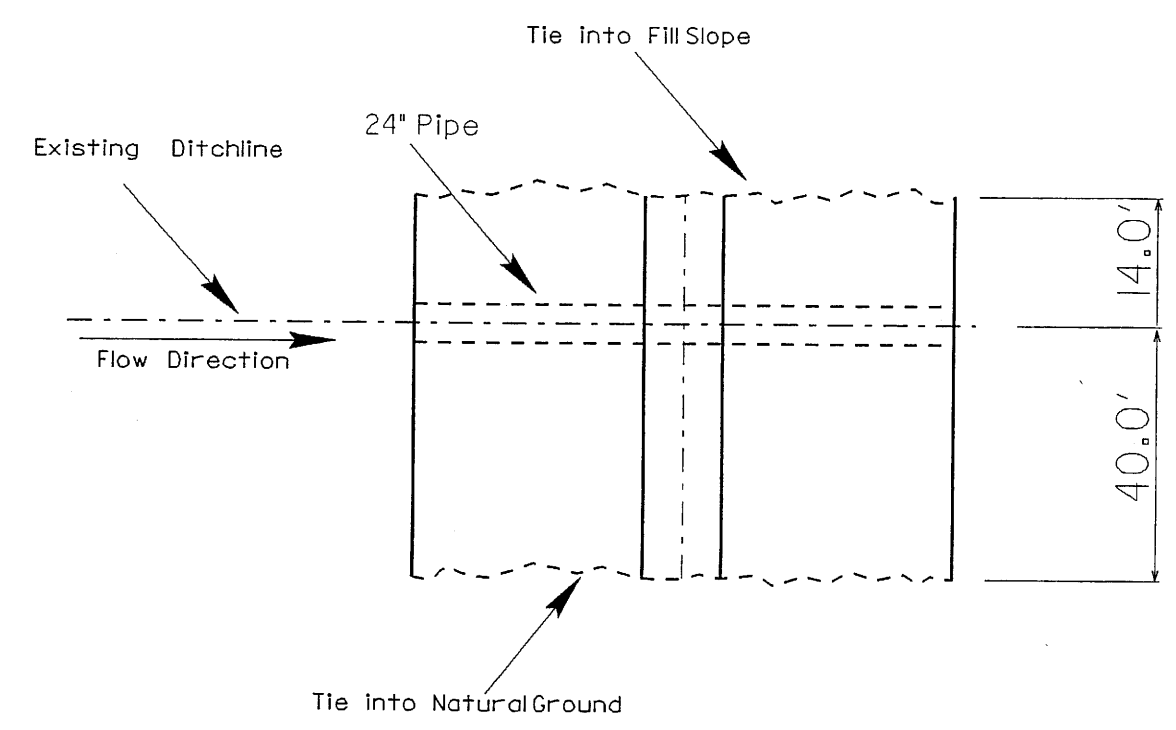


5/14/99

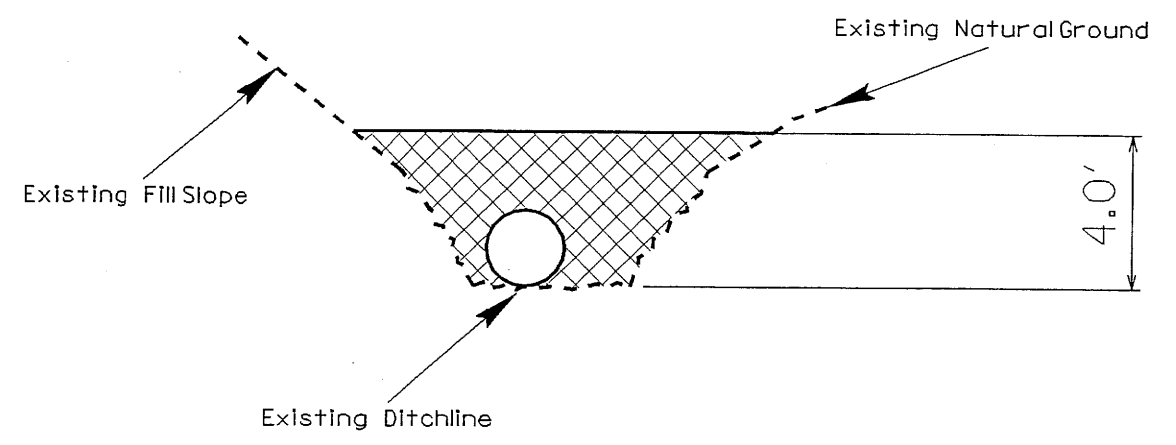
PROJECT REFERENCE NO.		SHEET NO.	
R-0210 WM		34	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

# -Detail #8- STA. 86+30 RT. (R-0210A)

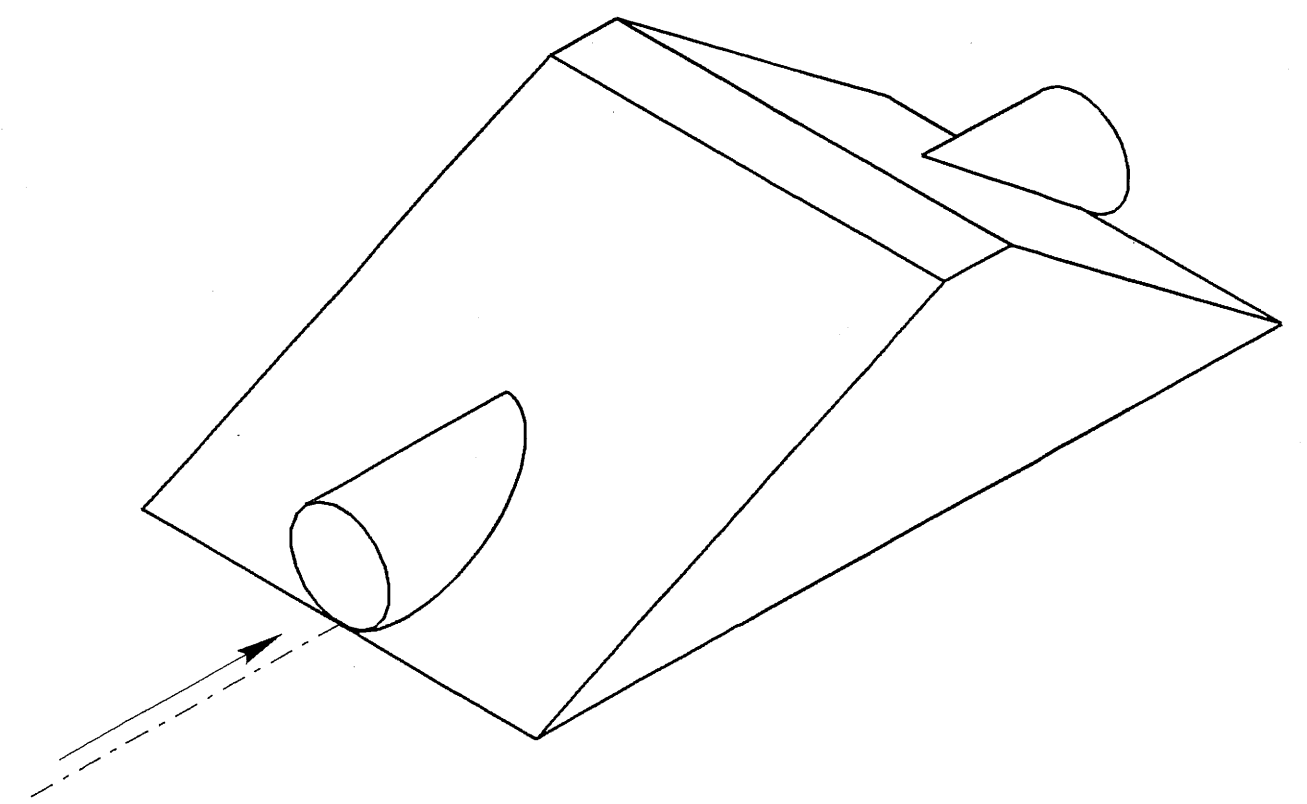
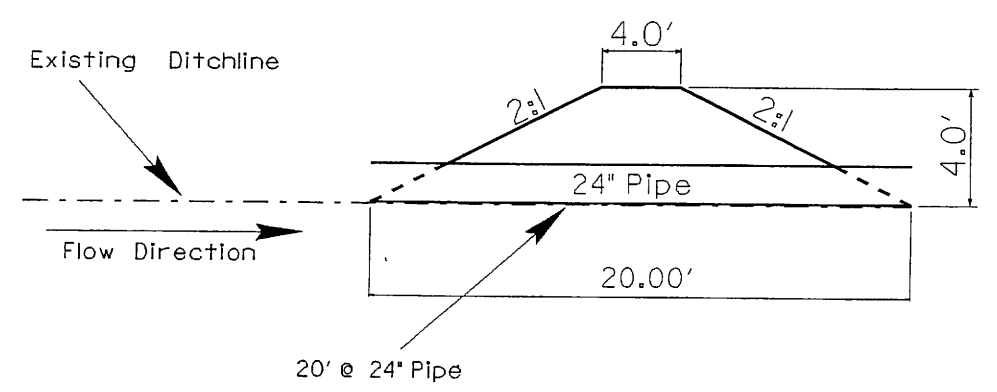
Top View



Front View



Profile View



Notes

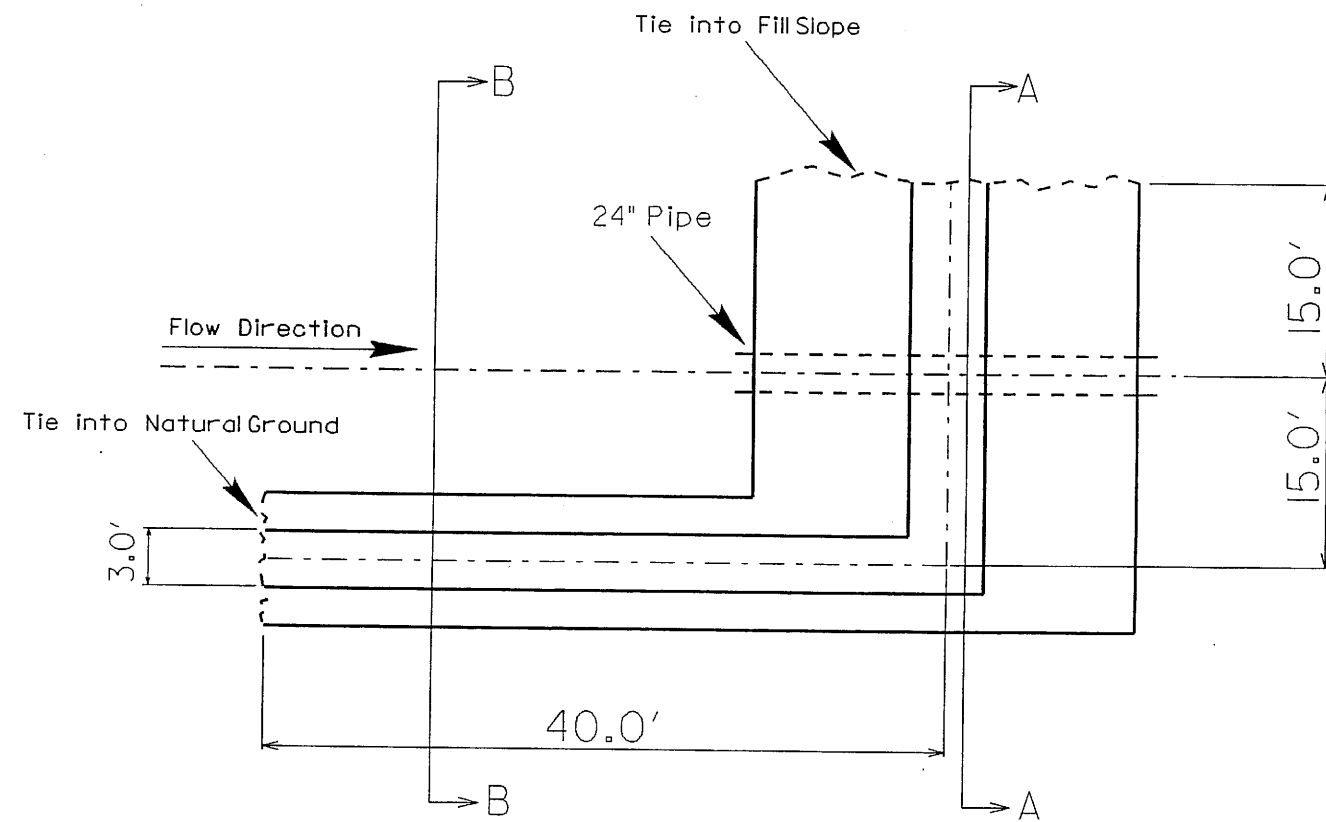
1. Install Dike 120' South of 15" RCP at Sta. 86+60
2. Not To Scale
3. Existing Ditchline is located 48.5' from EOP of US-1

05-DEC-2006 09:31  
n:\p\m\p\11711253\8630\1-0210\_hyd\_sur\_2d.dgn

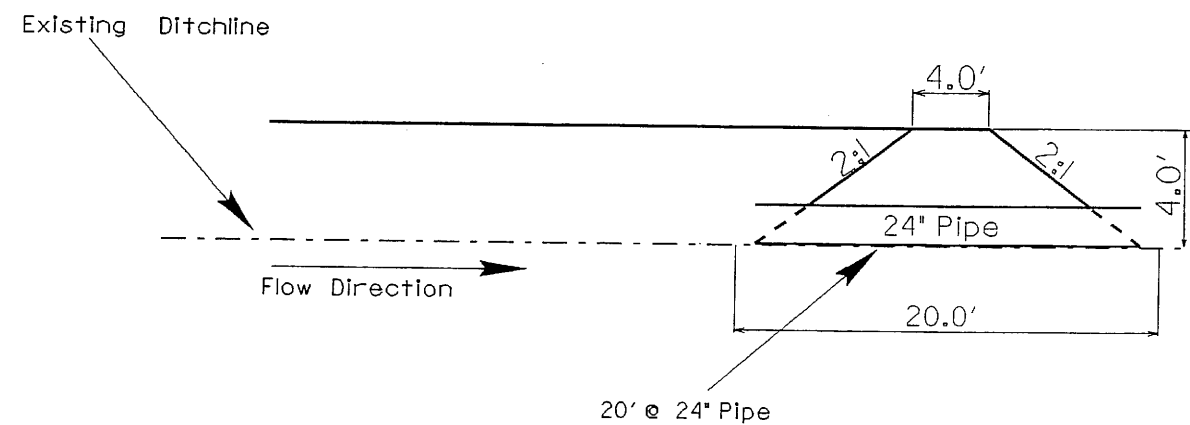
PROJECT REFERENCE NO. R-0210 WM	SHEET NO. 35
HW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# -Detail #9- STA. 140+80 Rt. (R-0210 B)

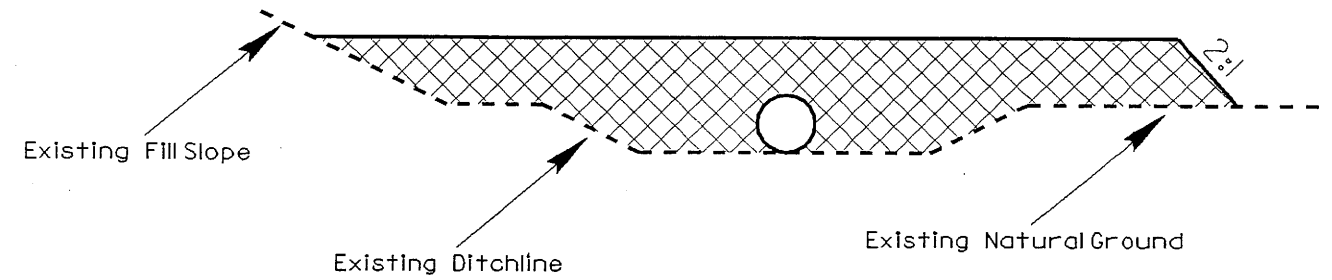
Top View



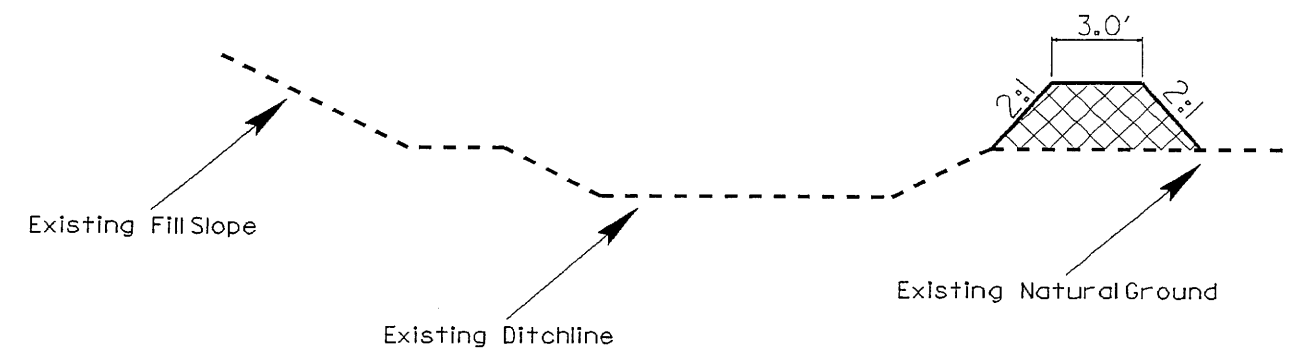
Profile View



Section A-A



Section B-B



Notes

1. Install 65' South of 42" RCP at Sta. 141+05
2. Not To Scale
3. Remove Class B stone for pipe installation
4. Existing Ditchline is located 50.0' Rt. of US-IEOP

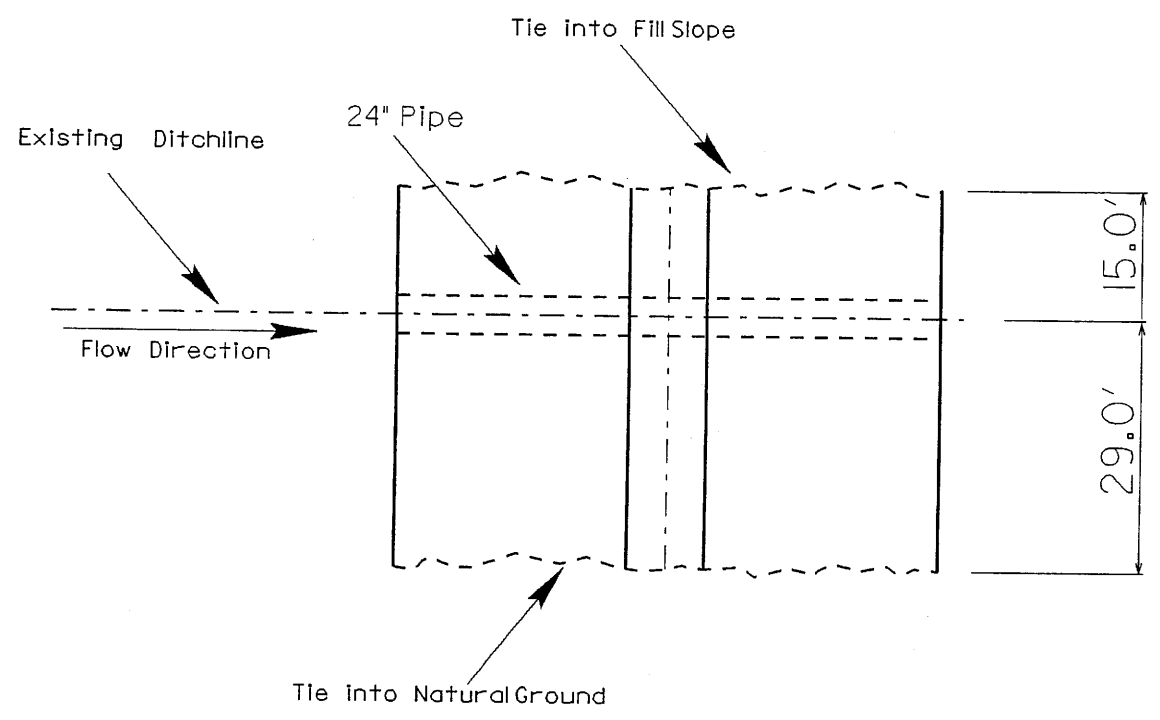
05-DEC-2006 08:37  
 ange\moore\p1\14080.r210b\_hyd\_sur\_r210\_2cd.dgn



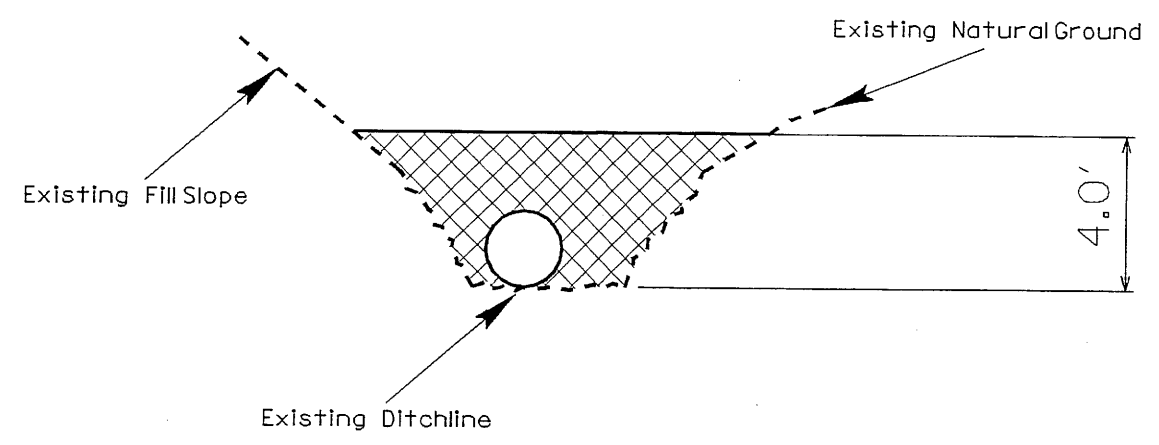
PROJECT REFERENCE NO. R-0210 WM	SHEET NO. 36
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# -Detail #10- STA. 20+80 LT. (R-0210C)

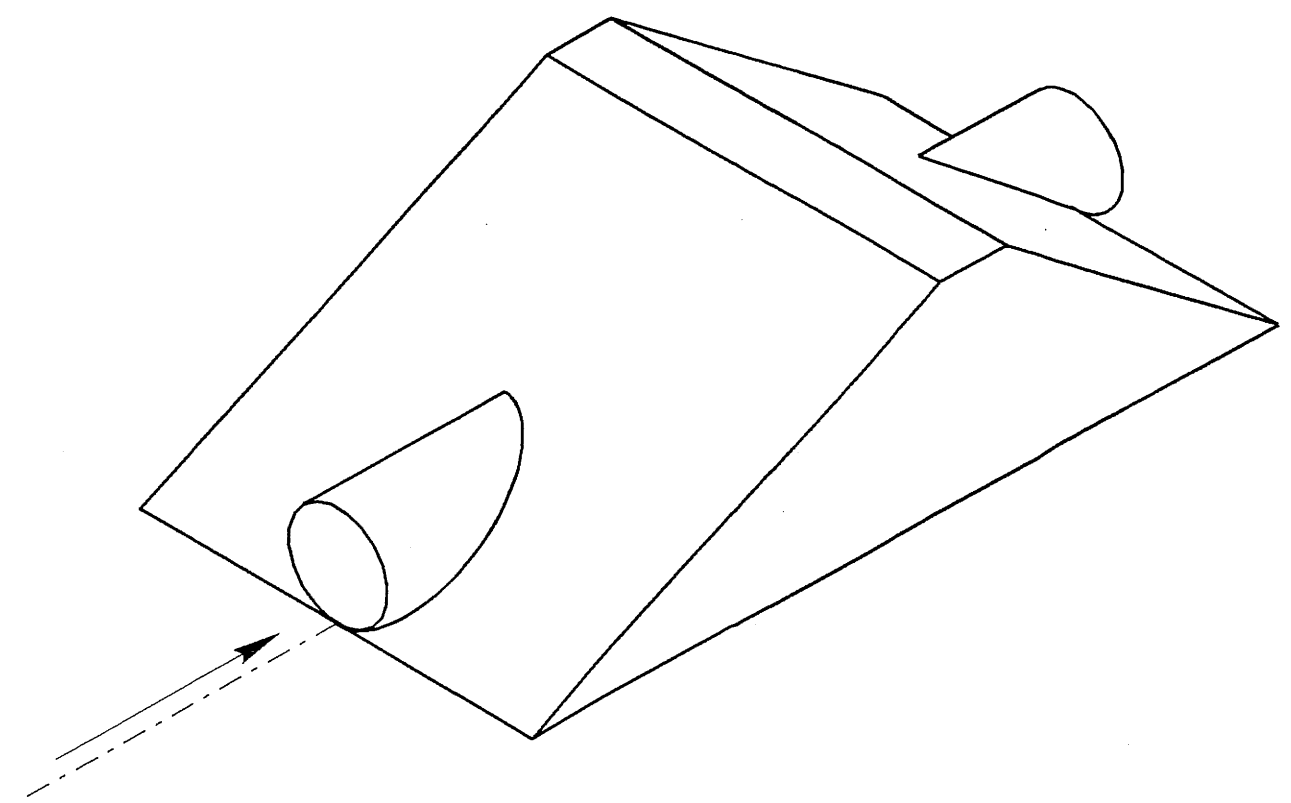
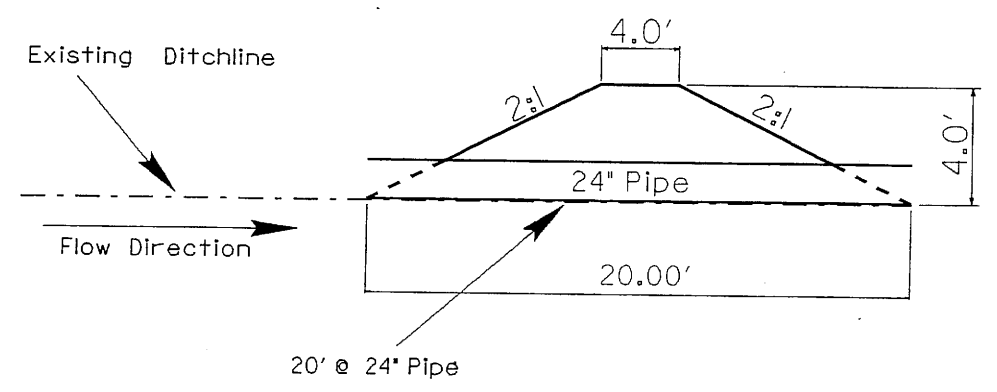
Top View



Front View



Profile View



Notes

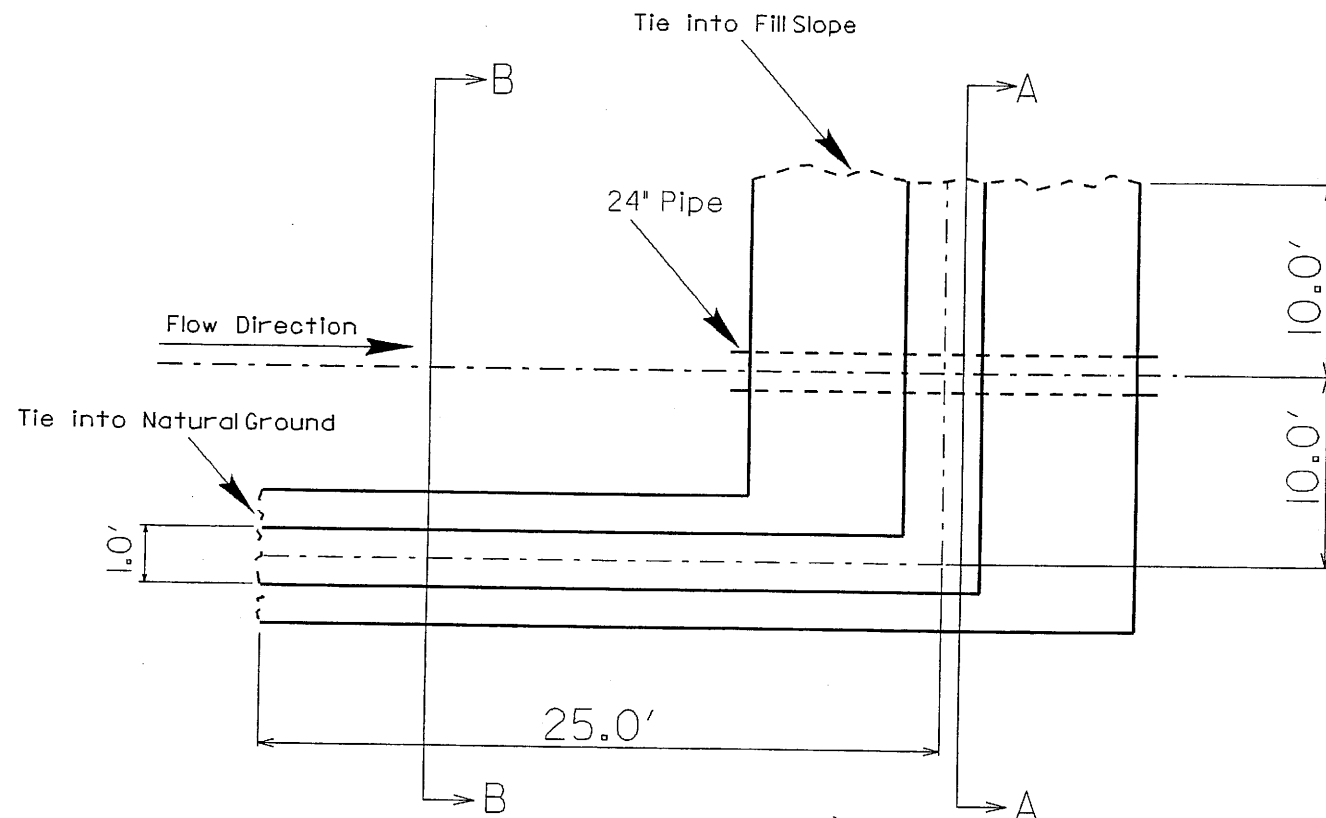
1. Install Dike 40' South of 30" RCP at Sta. 21+90
2. Not To Scale
3. Existing Ditchline is located 38' from EOP of US-1

5/14/99  
05-DEC-2006 08:43  
d:\nce\moor\p\10\2080\1-210\_hyd\_sur\_2080\_2.dgn  
Please AT HYDRAULICS

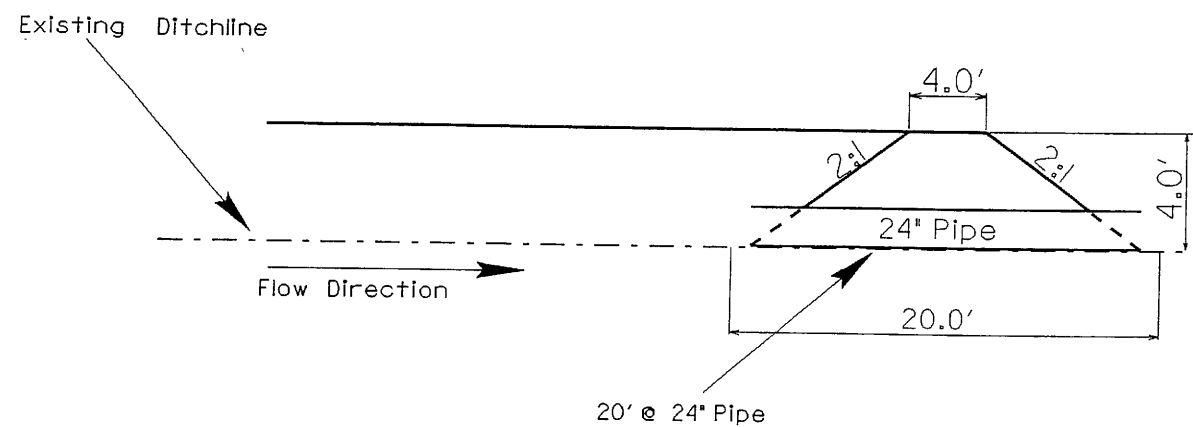
PROJECT REFERENCE NO. R-0210 WM	SHEET NO. 37
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

-Detail #11-  
STA. 31+60 Rt. (R-0210 C)

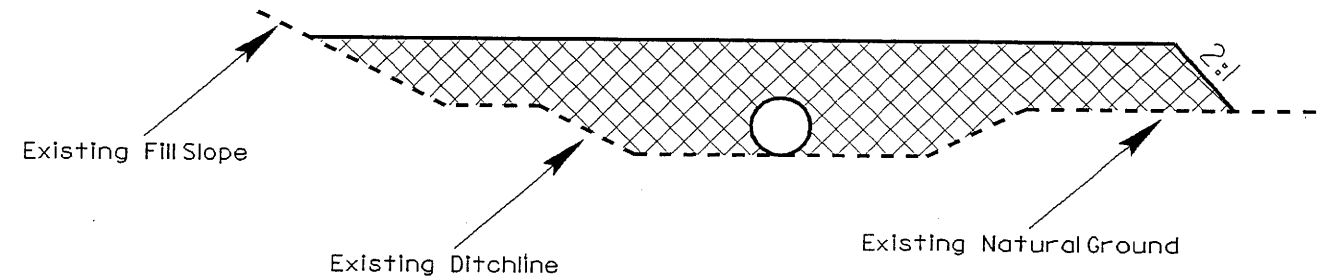
Top View



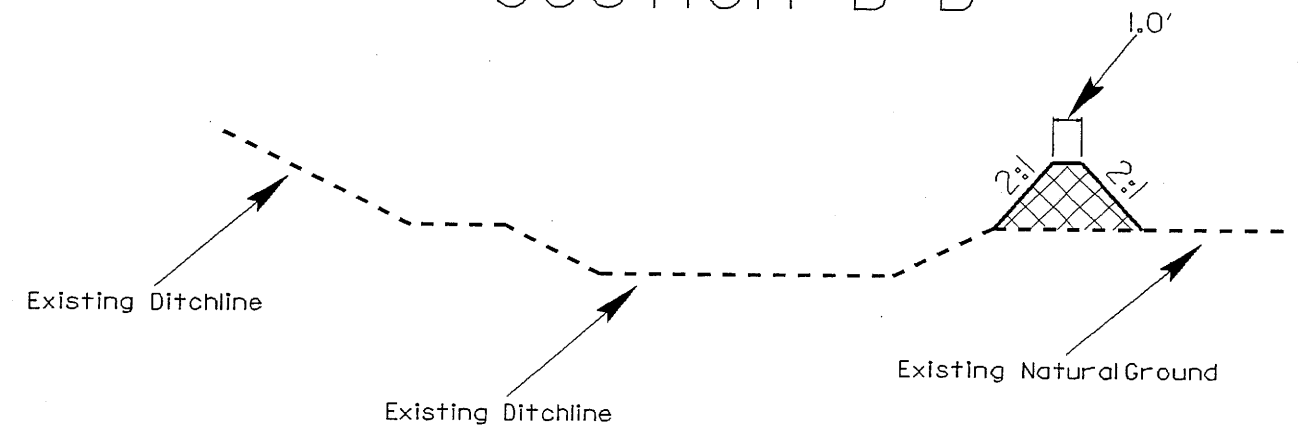
Profile View



Section A-A



Section B-B



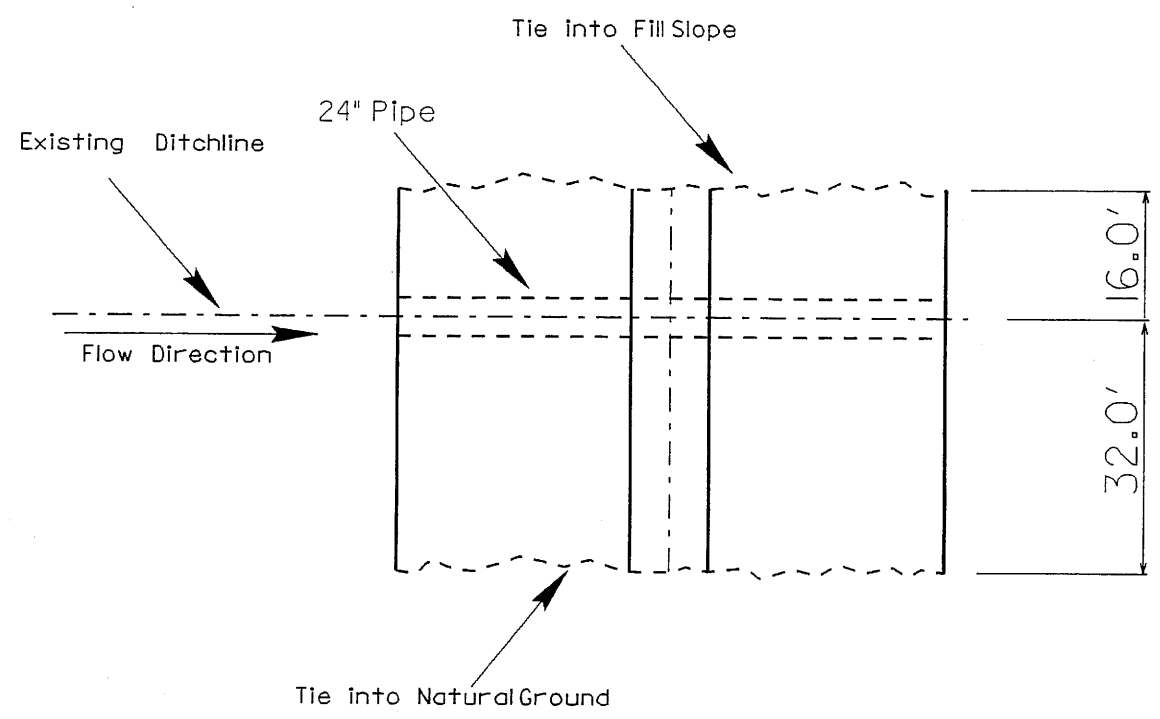
Notes

1. Install Dike 25' South of 42" RCP outlet at Sta. 31+80
2. Not To Scale
3. Existing Ditchline is located 30' from Service Rd. EOP

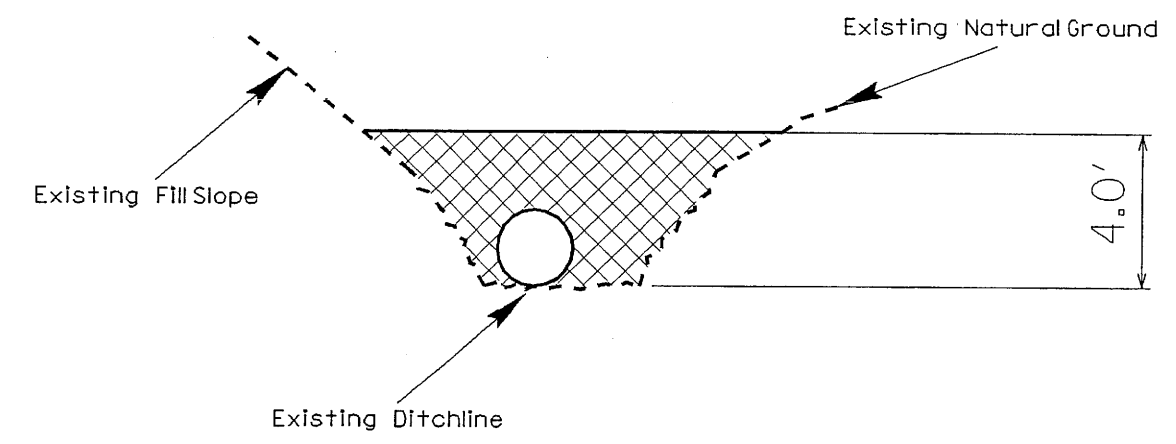
PROJECT REFERENCE NO.		SHEET NO.	
R-0210 WM		38	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

# -Detail #12- STA. 31+80 RT. (R-0210 C)

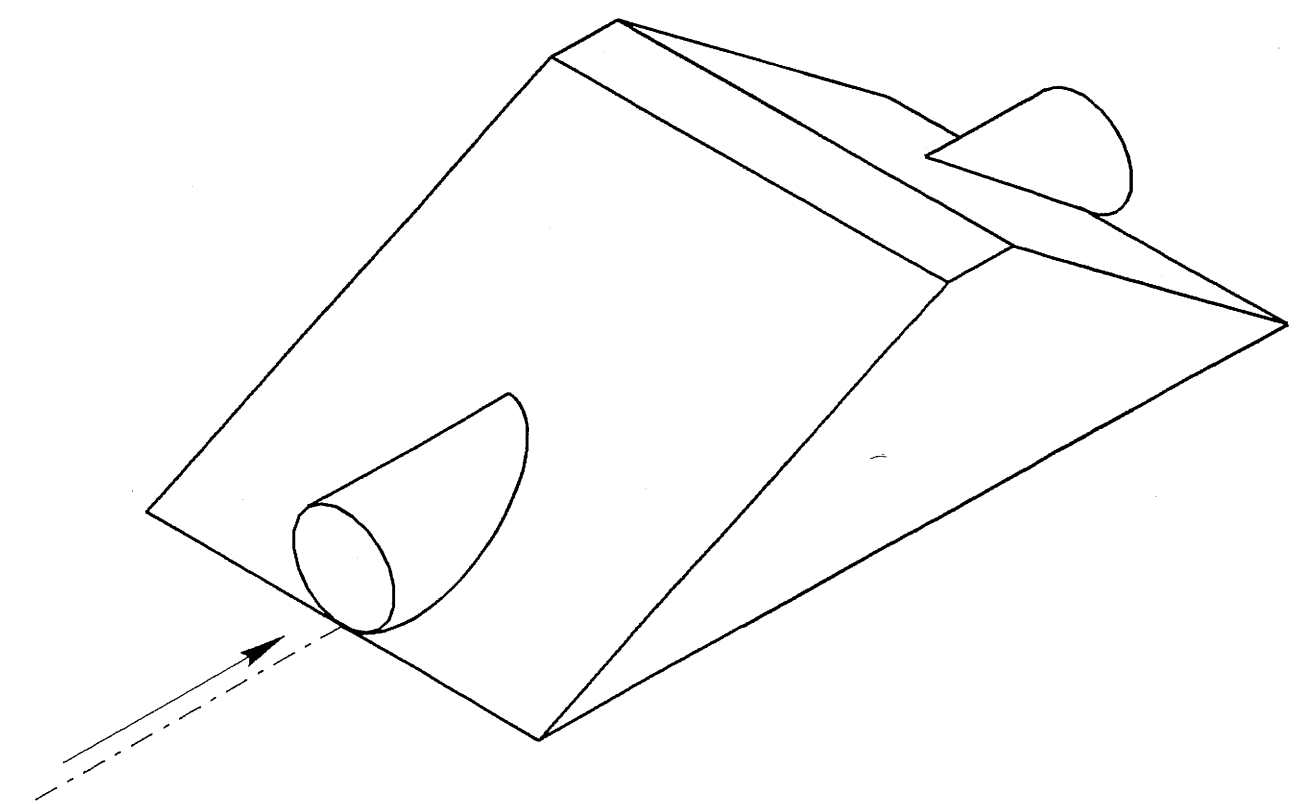
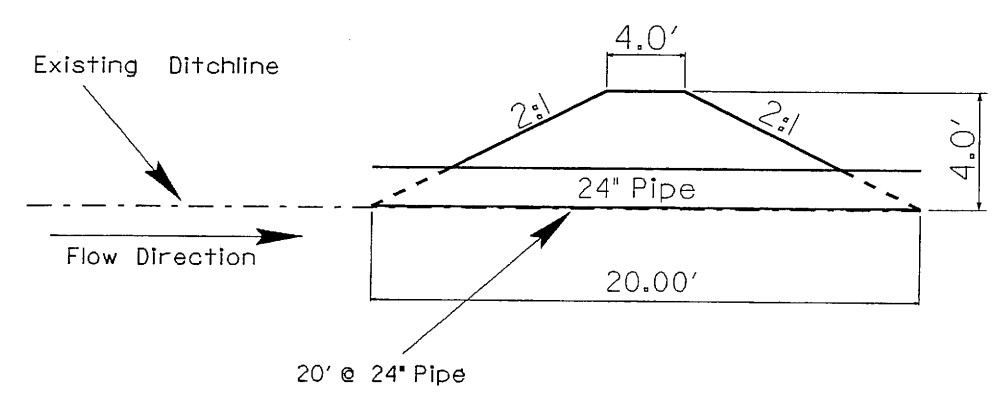
Top View



Front View



Profile View



Notes

1. Install Dike 60' North of 42" RCP at Sta. 31+60
2. Not To Scale
3. Existing Ditchline is located 48' from Service Road E0P

5/14/99  
 05-DEC-2006 08:53  
 s:\p\moores\p\2d\210c31801.r\_hyd\_sur2d.dgn