

See Sheet 1-A For Index of Sheets  
See Sheet 1-B For Conventional Symbols

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**GUILFORD COUNTY**

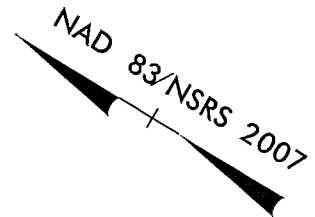
LOCATION: US 421 AT SR 3418 (NEELLEY RD.)  
SOUTH OF GREENSBORO

TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURE,  
AND CULVERTS

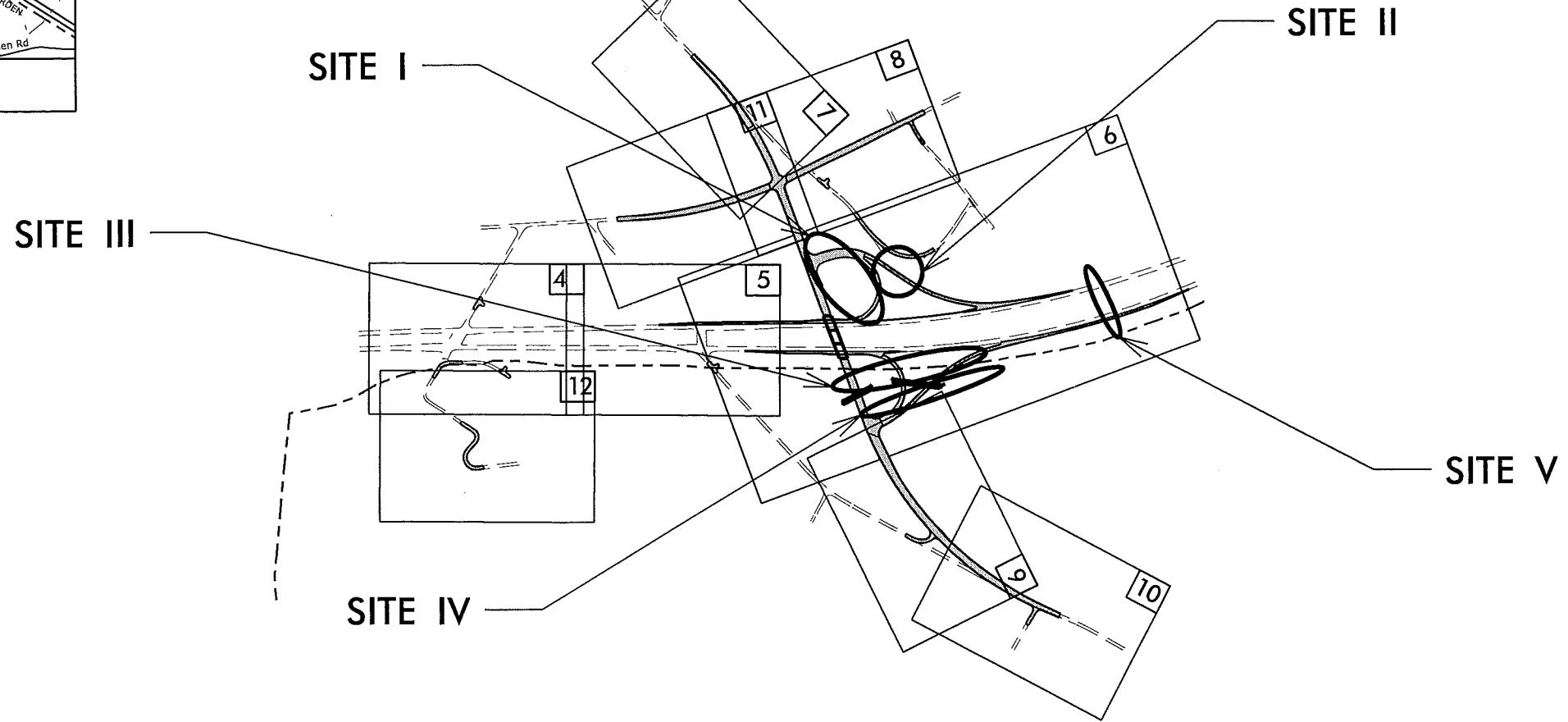
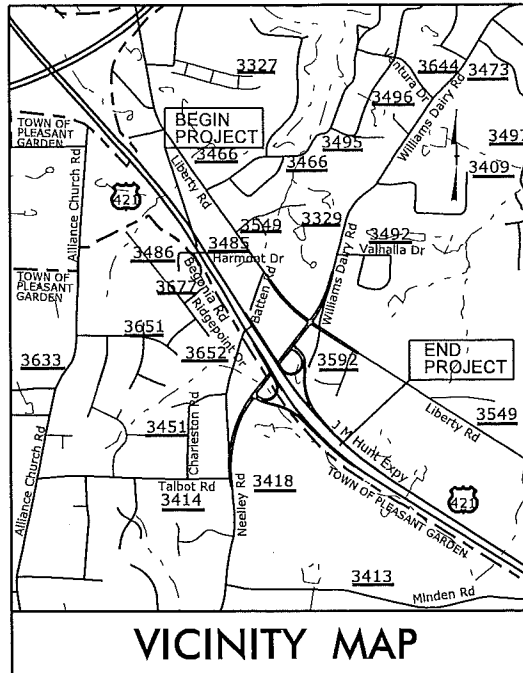
**WETLANDS AND STREAM IMPACTS**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2612B	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34483.1.1	CMNHS-0421(41)	PE	
34483.2.3	CMNHF-0421(41)	RW & UTILITIES	

PERMIT DRAWING  
SHEET 1 OF 23

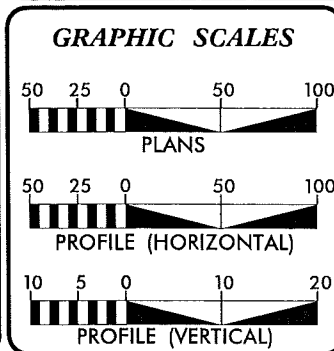


TIP PROJECT: R-2612B



PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION

CONTRACT:



**DESIGN DATA**

ADT 2014 =	34,067
ADT 2034 =	51,733
DHV =	11 %
D =	70 %
T =	17 % *
V =	70 MPH
* (TTST 12 + DUAL 5)	
FUNC CLASS =	FREEWAY
STATEWIDE TIER	

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT R-2612B	=	0.713 MI
TOTAL LENGTH TIP PROJECT R-2612B	=	0.713 MI

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

2012 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE: JULY 30, 2012	BRENDA MOORE, PE PROJECT ENGINEER
LETTING DATE: JUNE 17, 2014	TATIA L. WHITE, PE PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.

**ROADWAY DESIGN ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.



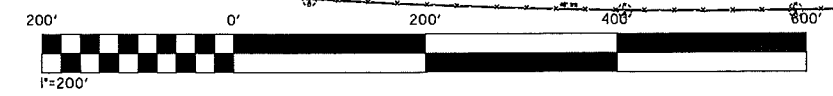
\$\$\$\$\$SYTIME\$\$\$\$\$  
\$\$\$\$\$DCN\$\$\$\$\$  
\$\$\$\$\$USERNAME\$\$\$\$\$

# SITE I SITE II

- |  |                                  |  |                                            |
|--|----------------------------------|--|--------------------------------------------|
|  | DENOTES EXCAVATION IN WETLAND    |  | DENOTES IMPACTS IN SURFACE WATER (POND)    |
|  | DENOTES FILL IN WETLAND          |  | DENOTES MECHANIZED CLEARING                |
|  | DENOTES IMPACTS IN SURFACE WATER |  | DENOTES TEMPORARY IMPACTS IN SURFACE WATER |

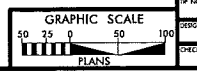
# SITE V

# SITE III SITE IV



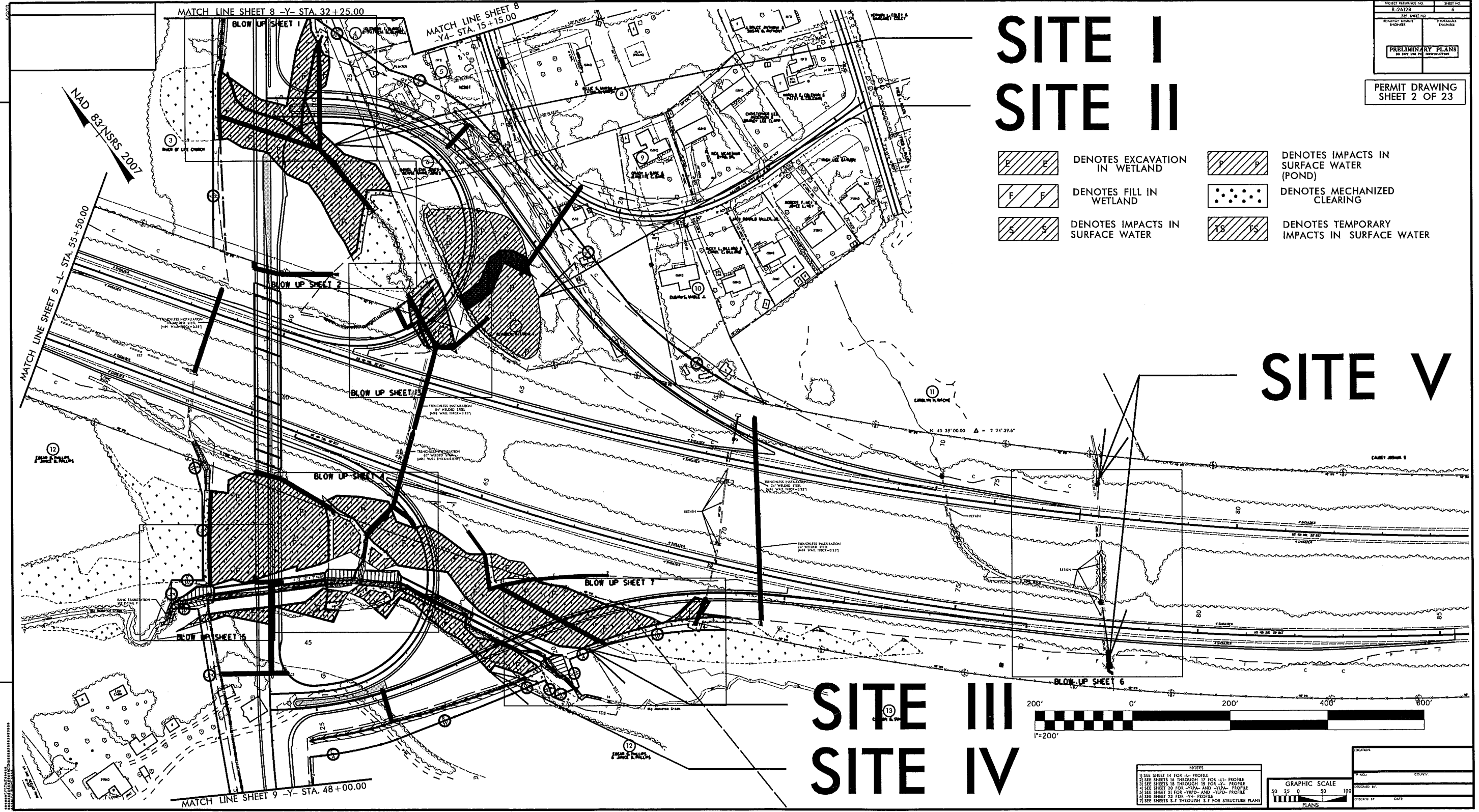
**NOTES**

- SEE SHEET 14 FOR -L- PROFILE
- SEE SHEETS 18 THROUGH 19 FOR -L1- PROFILE
- SEE SHEETS 18 THROUGH 19 FOR -L2- PROFILE
- SEE SHEET 20 FOR -WPA- AND -TYP- PROFILE
- SEE SHEET 21 FOR -WPA- AND -TYP- PROFILE
- SEE SHEET 22 FOR -Y- PROFILE
- SEE SHEETS 23 THROUGH 24 FOR STRUCTURE PLANS



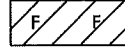


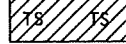


DATE:	
SCALE:	
PROJECT NO.:	
DATE:	

REVISIONS  
 05/19/13 - RW REVISION: UPDATED EXISTING RIGHT OF WAY AT -Y4- STA. 20+25 +/- ON PARCELS 7, 9 AND 10. JBW

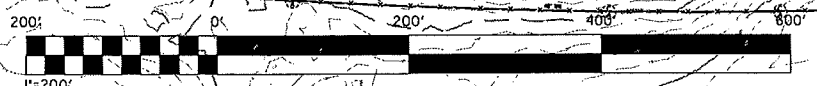


# SITE I SITE II

- |                                                                                     |                                     |                                                                                     |                                               |
|-------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------|
|  | DENOTES EXCAVATION<br>IN WETLAND    |  | DENOTES IMPACTS IN<br>SURFACE WATER<br>(POND) |
|  | DENOTES FILL IN<br>WETLAND          |  | DENOTES MECHANIZED<br>CLEARING                |
|  | DENOTES IMPACTS IN<br>SURFACE WATER |  | DENOTES TEMPORARY<br>IMPACTS IN SURFACE WATER |

# SITE V

# SITE III SITE IV

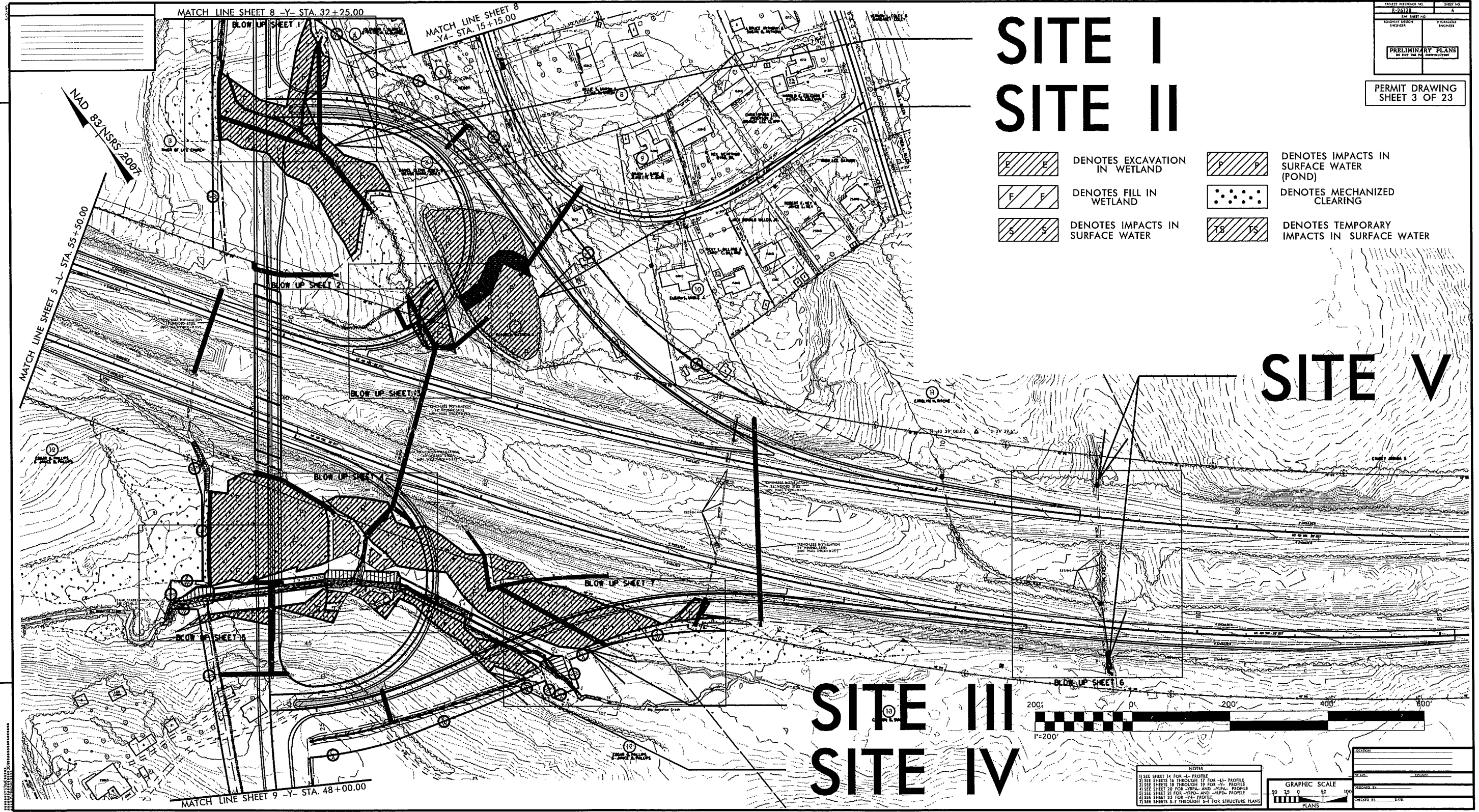


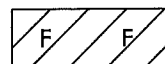
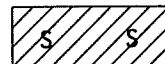

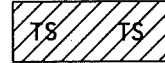
NOTES  
 1) SEE SHEET 14 FOR -L- PROFILE  
 2) SEE SHEETS 18 THROUGH 19 FOR -Y- PROFILE  
 3) SEE SHEETS 18 THROUGH 19 FOR -X- PROFILE  
 4) SEE SHEET 20 FOR -YPA- AND -YPA- PROFILE  
 5) SEE SHEET 21 FOR -YPO- AND -YPO- PROFILE  
 6) SEE SHEET 21 FOR -YPA- PROFILE  
 7) SEE SHEETS 2-1 THROUGH 2-4 FOR STRUCTURE PLANS

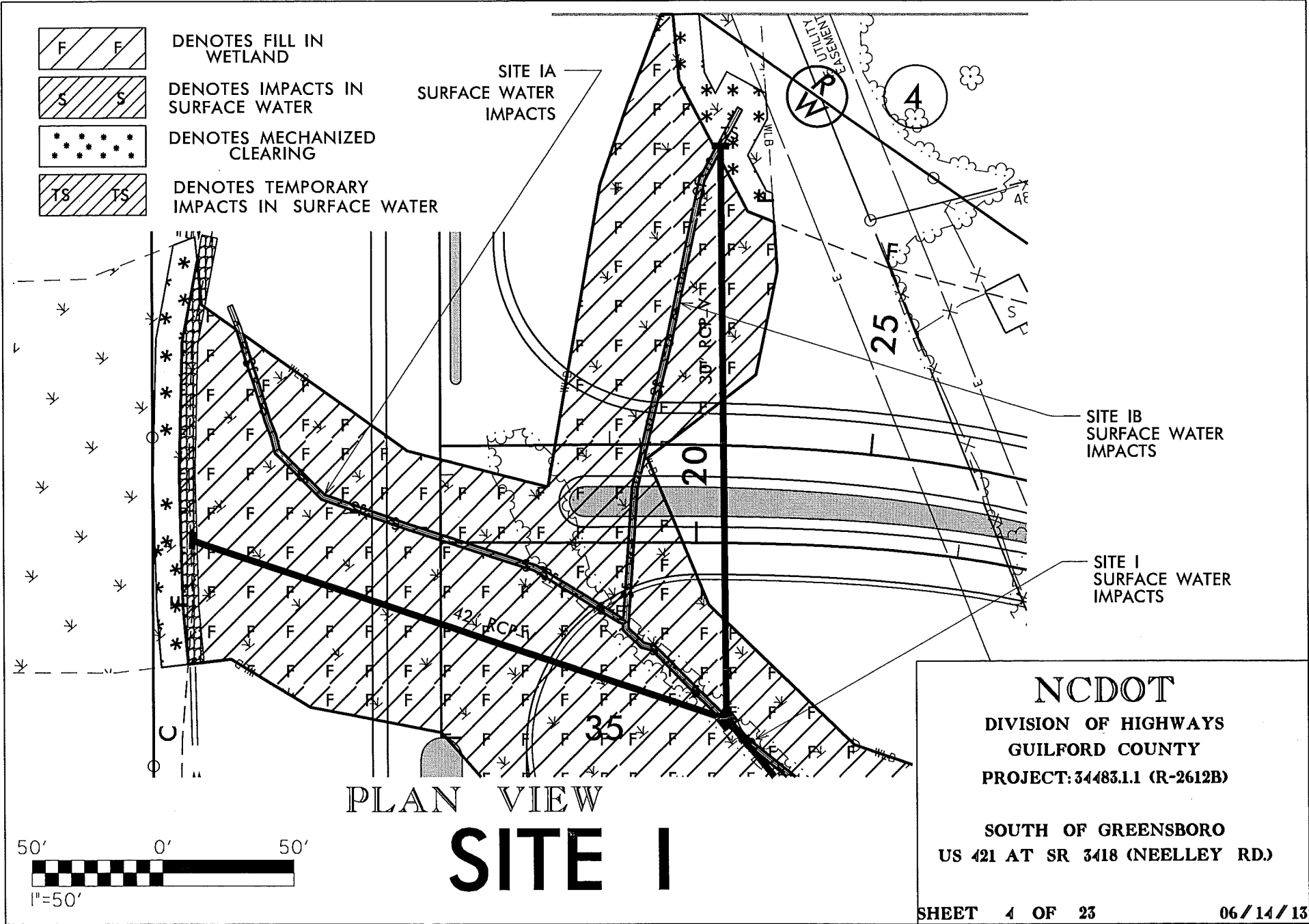
GRAPHIC SCALE  
 0 25 50 100  
 FEET  
 PLANS

DATE	_____
SCALE	_____
PROJECT NO.	_____
DESIGNED BY	_____
CHECKED BY	_____
DATE	_____

REVISIONS  
 05/2013 - RAW REVISION: UPDATED EXISTING RIGHT OF WAY AT -Y4- STA. 20+25 +/- ON PARCELS 7, 9 AND 10. JBW



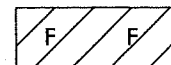

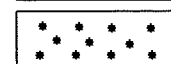
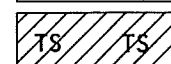
-  DENOTES FILL IN WETLAND
-  DENOTES IMPACTS IN SURFACE WATER
-  DENOTES MECHANIZED CLEARING
-  DENOTES TEMPORARY IMPACTS IN SURFACE WATER



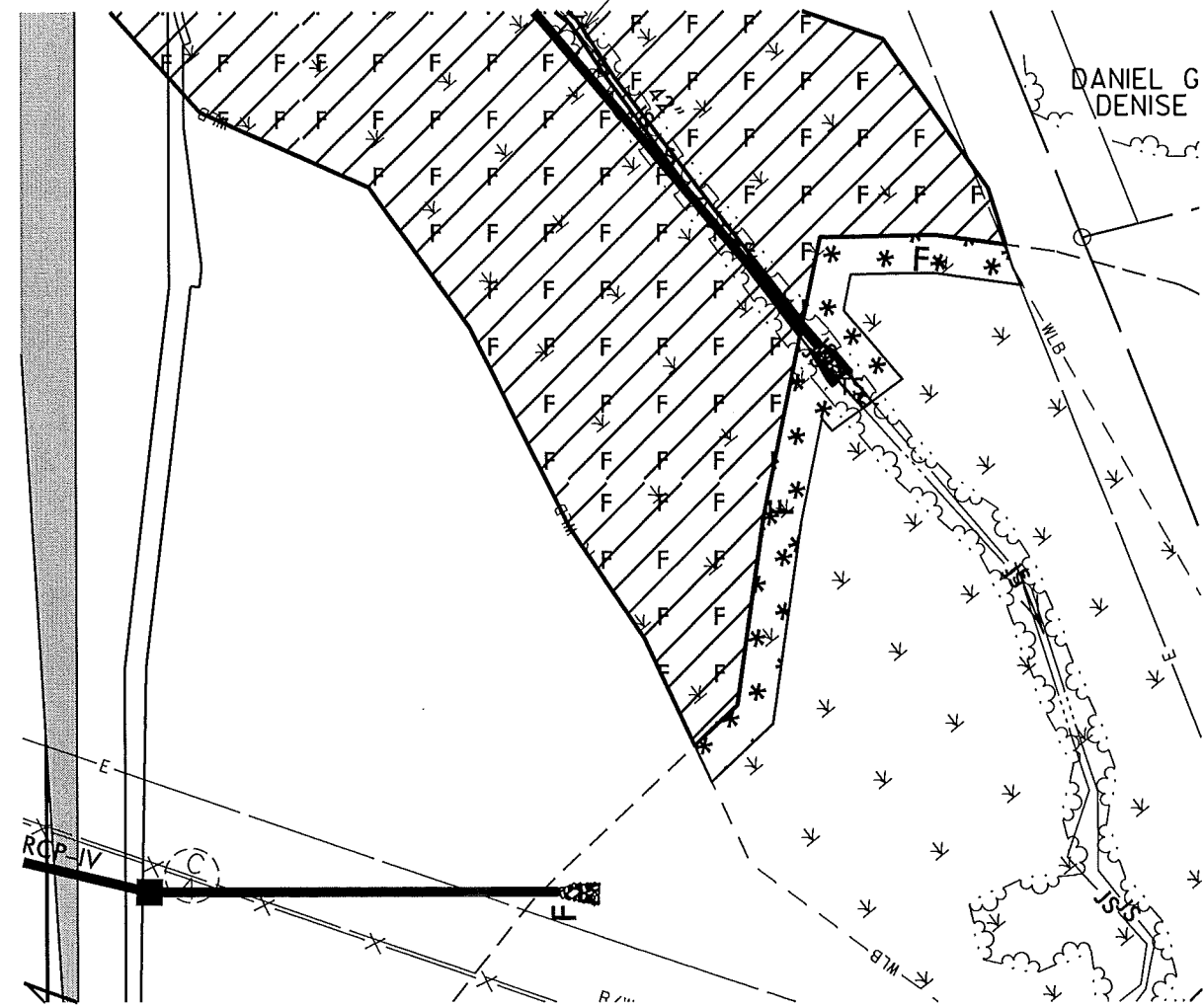
**NCDOT**  
 DIVISION OF HIGHWAYS  
 GUILFORD COUNTY  
 PROJECT: 34483.1.1 (R-2612B)

SOUTH OF GREENSBORO  
 US 421 AT SR 3418 (NEELLEY RD.)

SHEET 4 OF 23      06/14/13

-  DENOTES FILL IN WETLAND
-  DENOTES IMPACTS IN SURFACE WATER
-  DENOTES MECHANIZED CLEARING
-  DENOTES TEMPORARY IMPACTS IN SURFACE WATER

SITE I  
SURFACE WATER  
IMPACTS



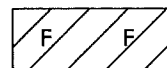
PLAN VIEW  
**SITE I**



**NCDOT**  
DIVISION OF HIGHWAYS  
OGILFORD COUNTY  
PROJECT: 34483.1.1 (R-2612B)

SOUTH OF GREENSBORO  
US 421 AT SR 3418 (NEELLEY RD.)

SHEET 5 OF 23 05/01/13



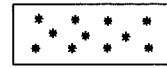
DENOTES FILL IN WETLAND



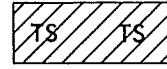
DENOTES EXCAVATION IN WETLAND



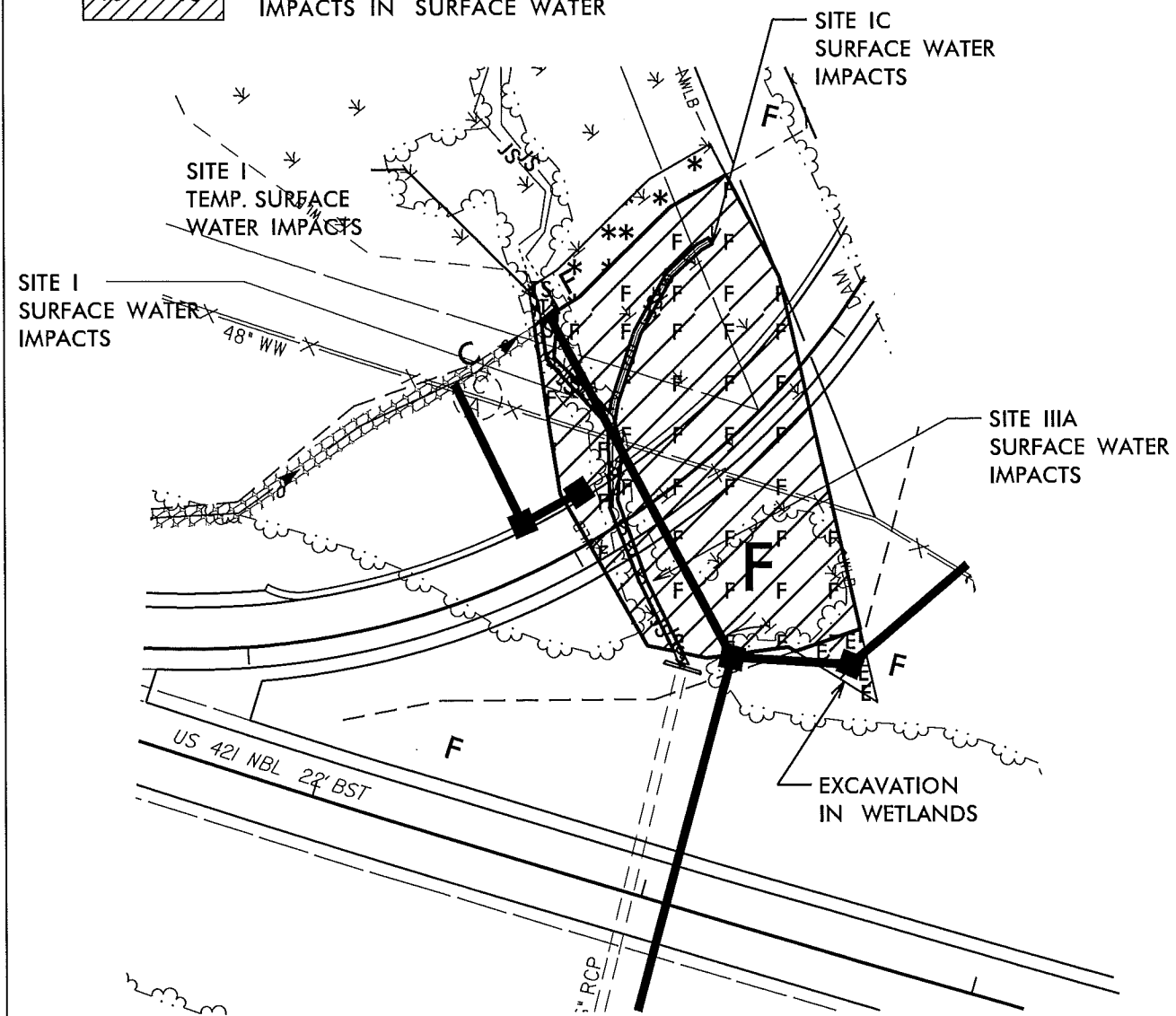
DENOTES IMPACTS IN SURFACE WATER



DENOTES MECHANIZED CLEARING



DENOTES TEMPORARY IMPACTS IN SURFACE WATER



PLAN VIEW

# SITE I & III

50' 0' 50'

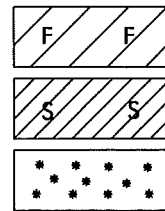


1"=50'

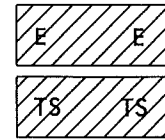
## NCDOT

DIVISION OF HIGHWAYS  
GUILFORD COUNTY  
PROJECT: 34483.1.1 (R-2612B)

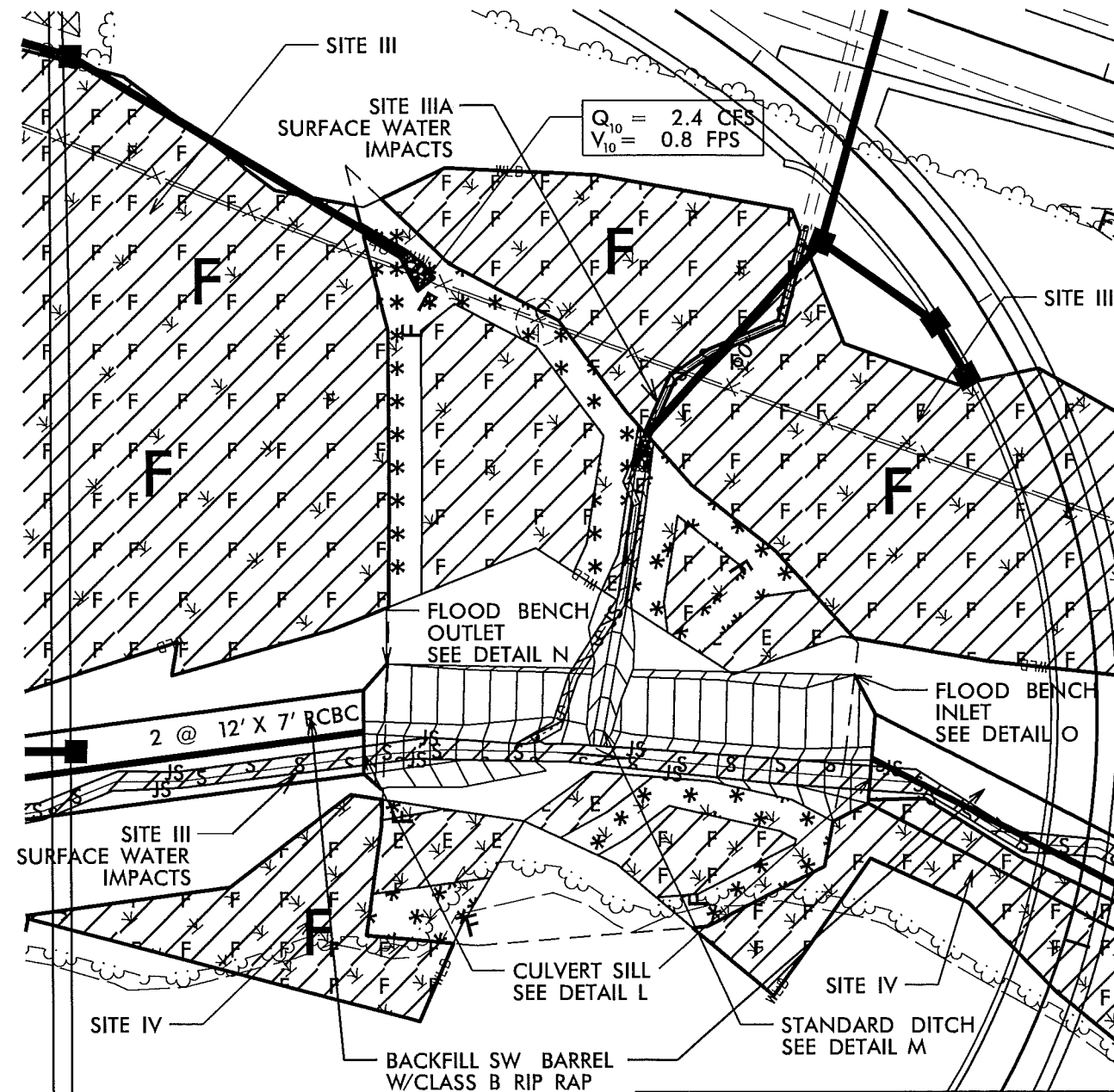
SOUTH OF GREENSBORO  
US 421 AT SR 3418 (NEELLEY RD.)



DENOTES FILL IN WETLAND  
 DENOTES IMPACTS IN SURFACE WATER  
 DENOTES MECHANIZED CLEARING

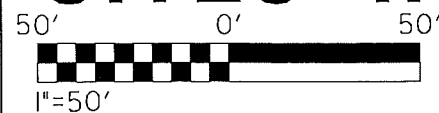


DENOTES EXCAVATION IN WETLAND  
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER



PLAN VIEW

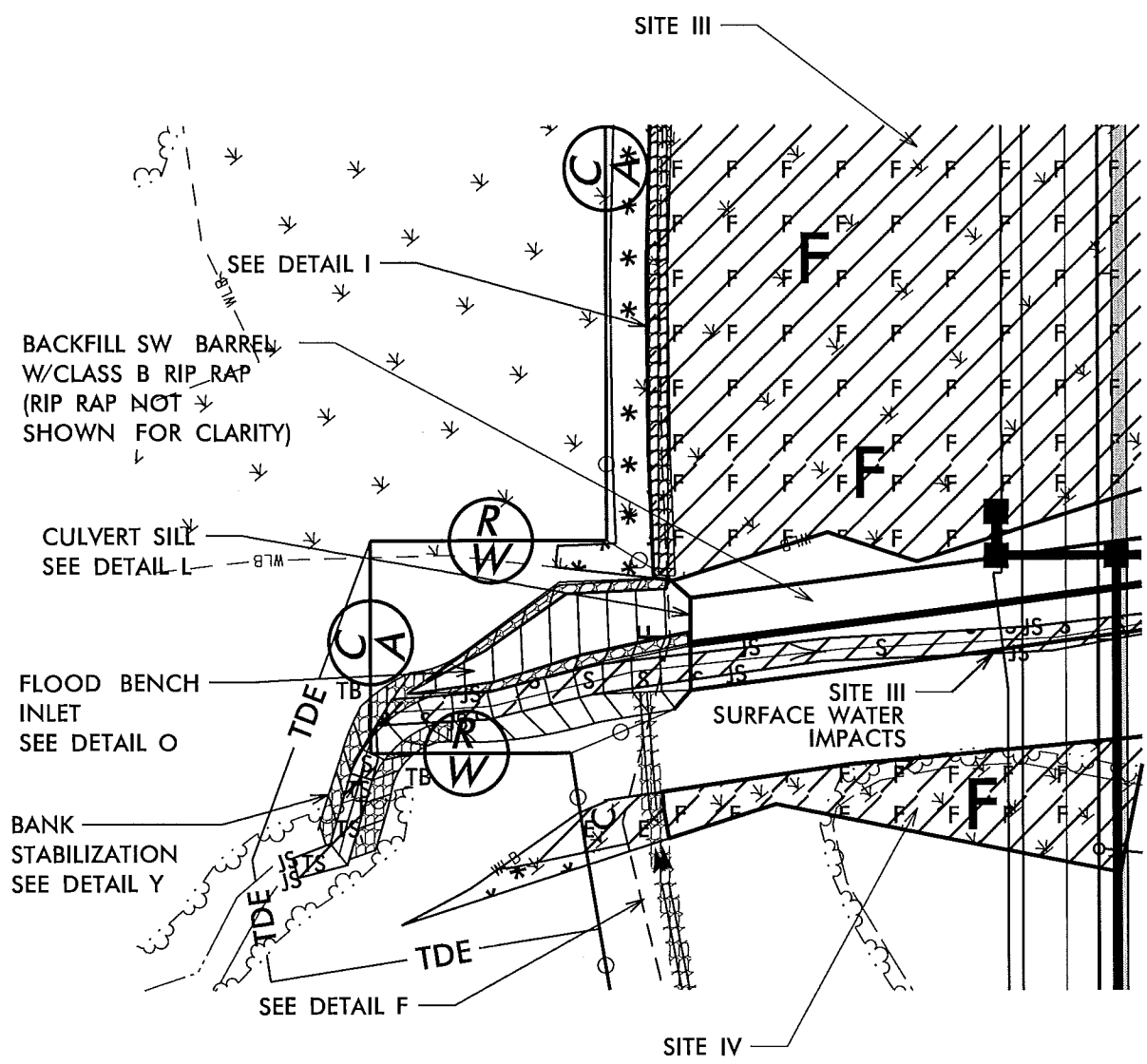
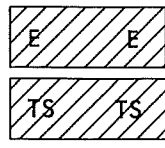
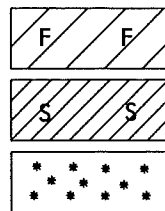
SITES III & IV



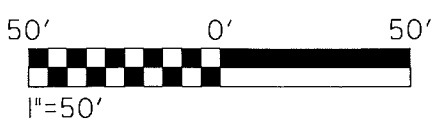
NCDOT

DIVISION OF HIGHWAYS  
 GUILFORD COUNTY  
 PROJECT: 34483.1.1 (R-2612B)

SOUTH OF GREENSBORO  
 US 421 AT SR 3418 (NEELLEY RD.)

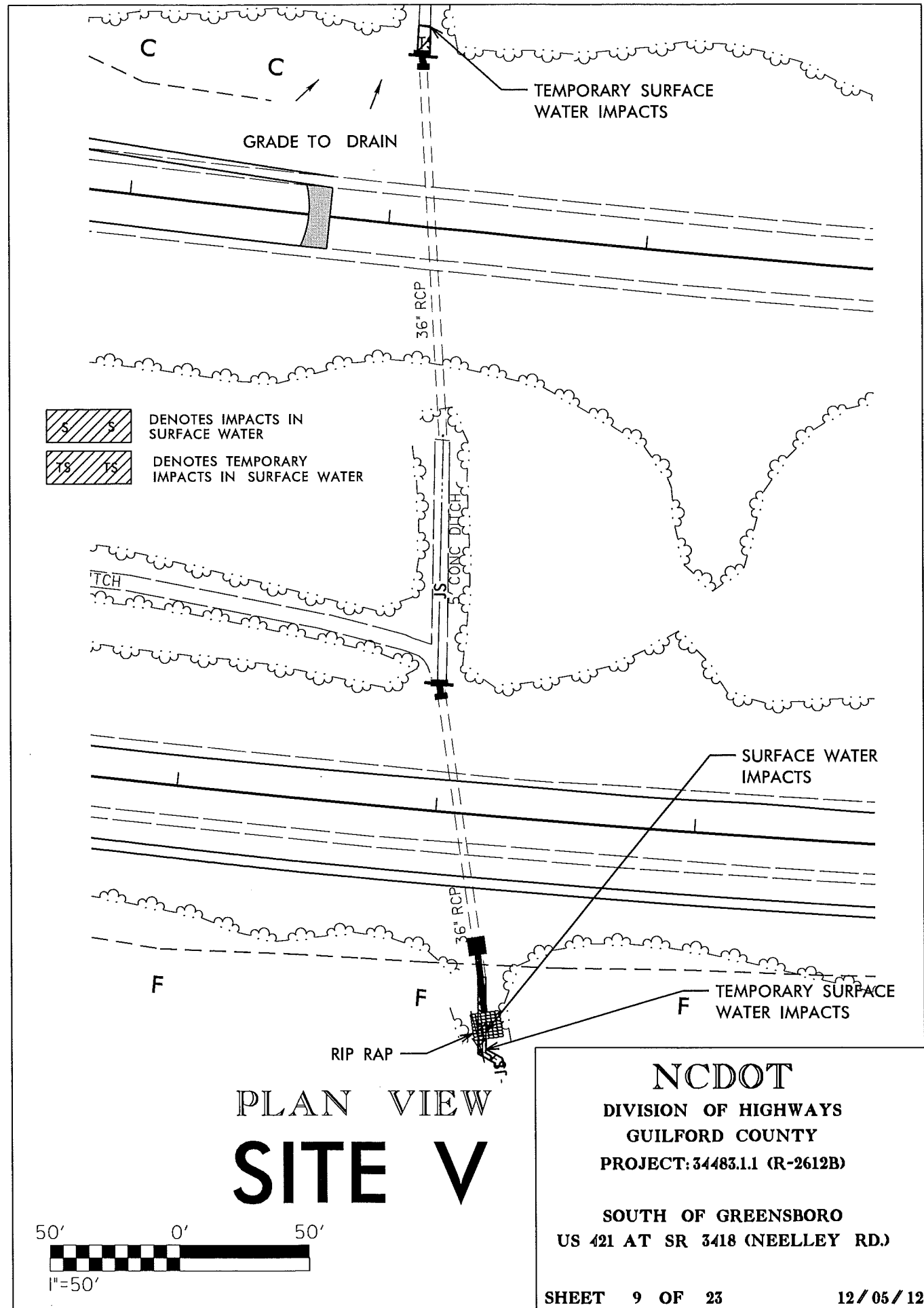




PLAN VIEW  
**SITES III & IV**



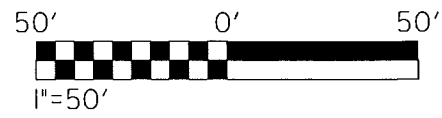
**NCDOT**  
 DIVISION OF HIGHWAYS  
 GUILFORD COUNTY  
 PROJECT: 34483.1.1 (R-2612B)  
  
 SOUTH OF GREENSBORO  
 US 421 AT SR 3418 (NEELLEY RD.)  
  
 SHEET 8 OF 23 06/13/13



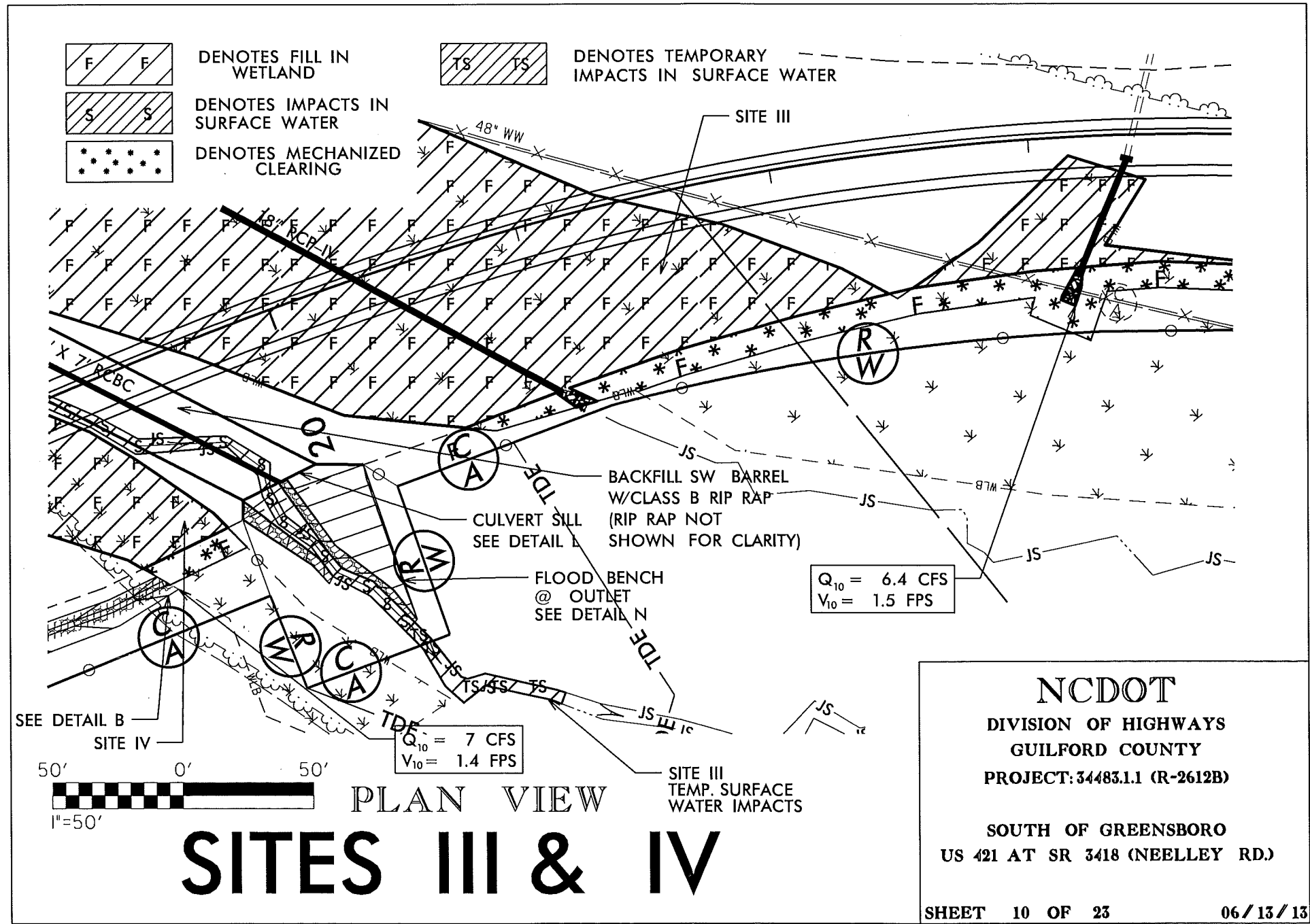


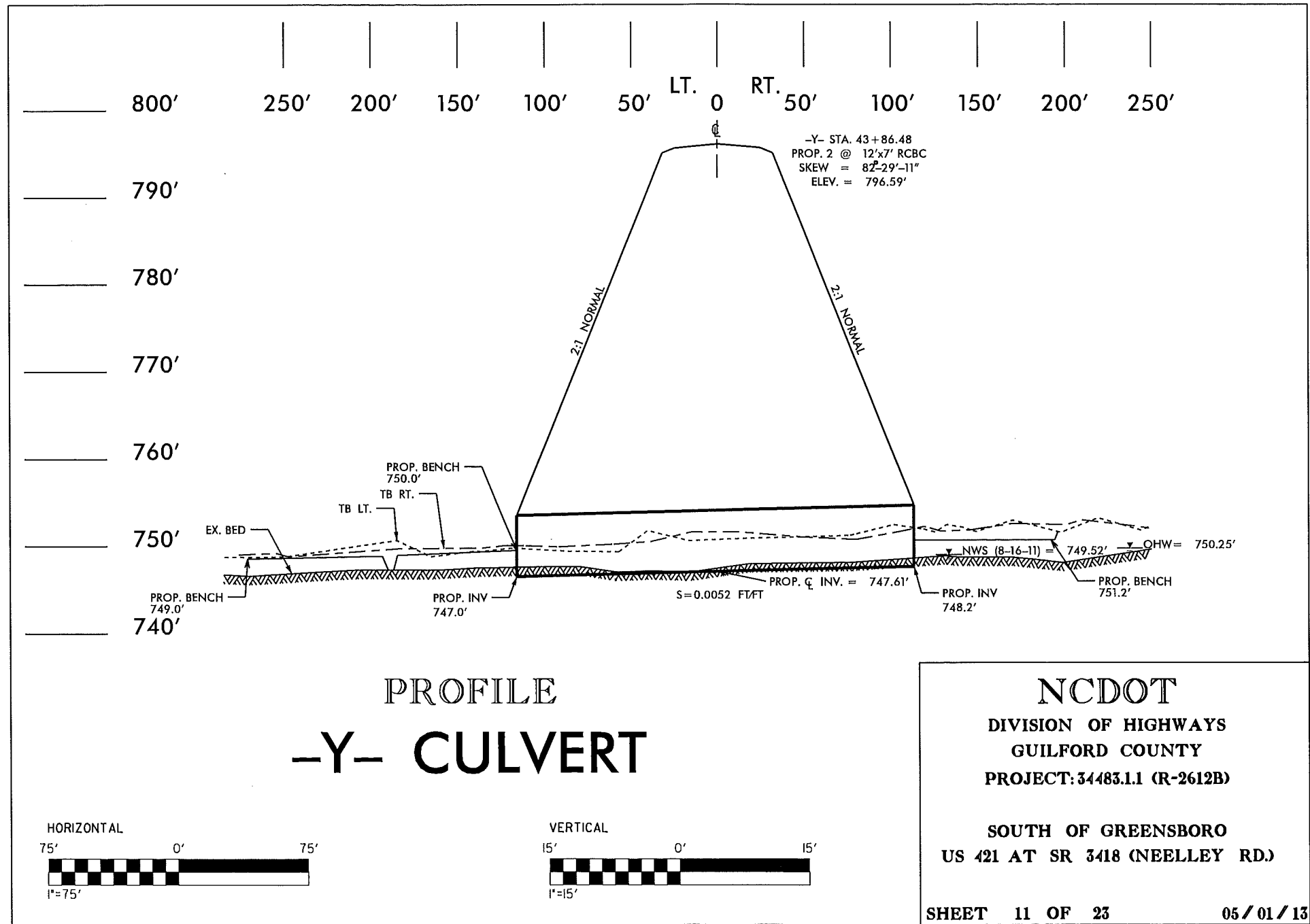
 DENOTES IMPACTS IN SURFACE WATER  
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

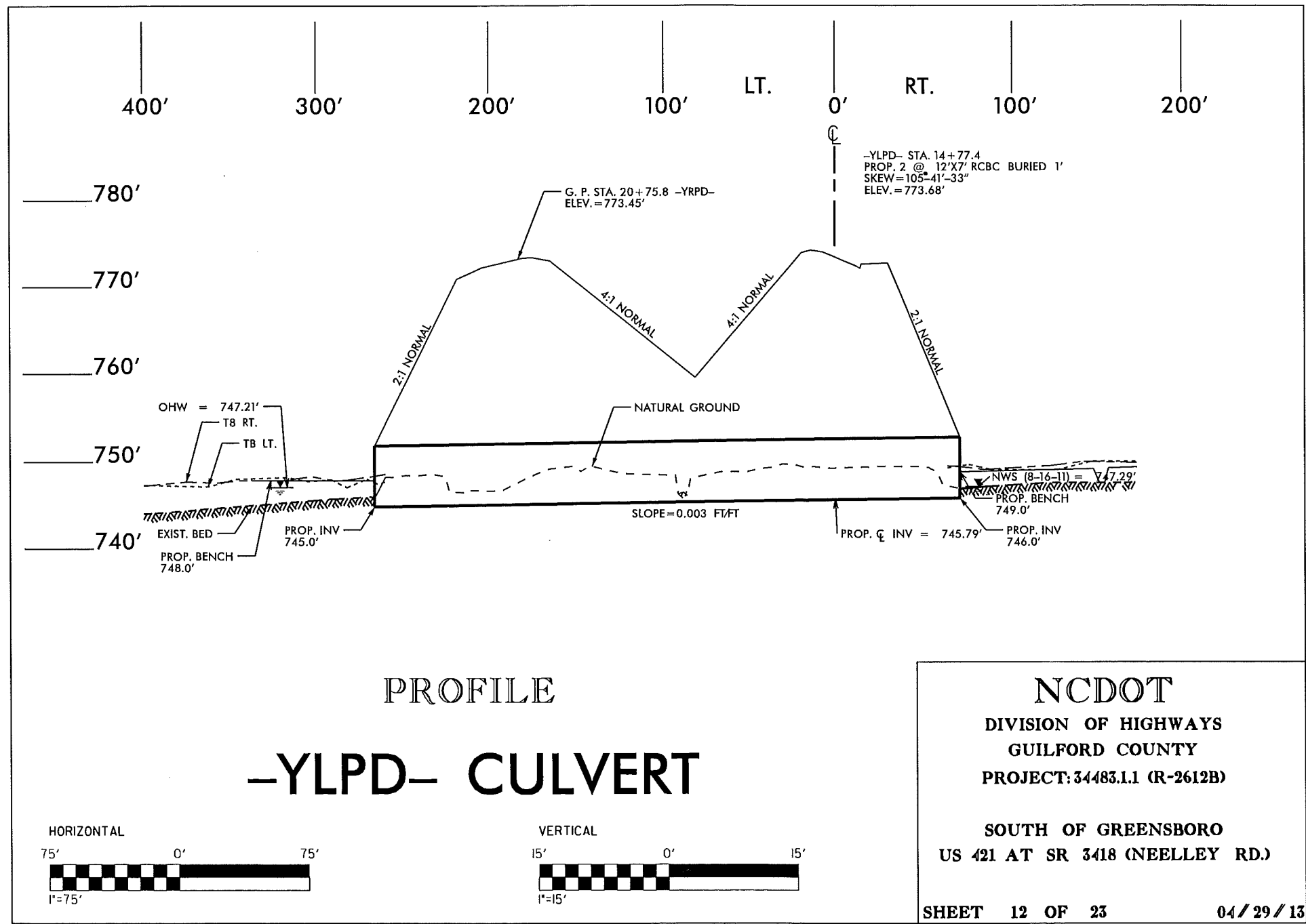
PLAN VIEW  
**SITE V**



**NCDOT**  
 DIVISION OF HIGHWAYS  
 GUILFORD COUNTY  
 PROJECT: 34483.1.1 (R-2612B)  
  
 SOUTH OF GREENSBORO  
 US 421 AT SR 3418 (NEELLEY RD.)  
  
 SHEET 9 OF 23      12/05/12

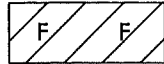


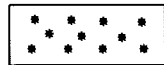


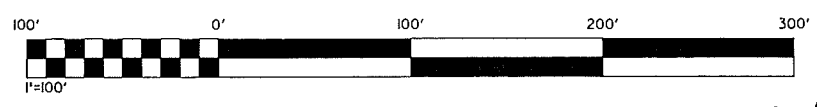


PROJECT REFERENCE NO. R-2612B	SHEET NO. 8
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

NAD 83/NRS 2007

 DENOTES FILL IN WETLAND

 DENOTES MECHANIZED CLEARING



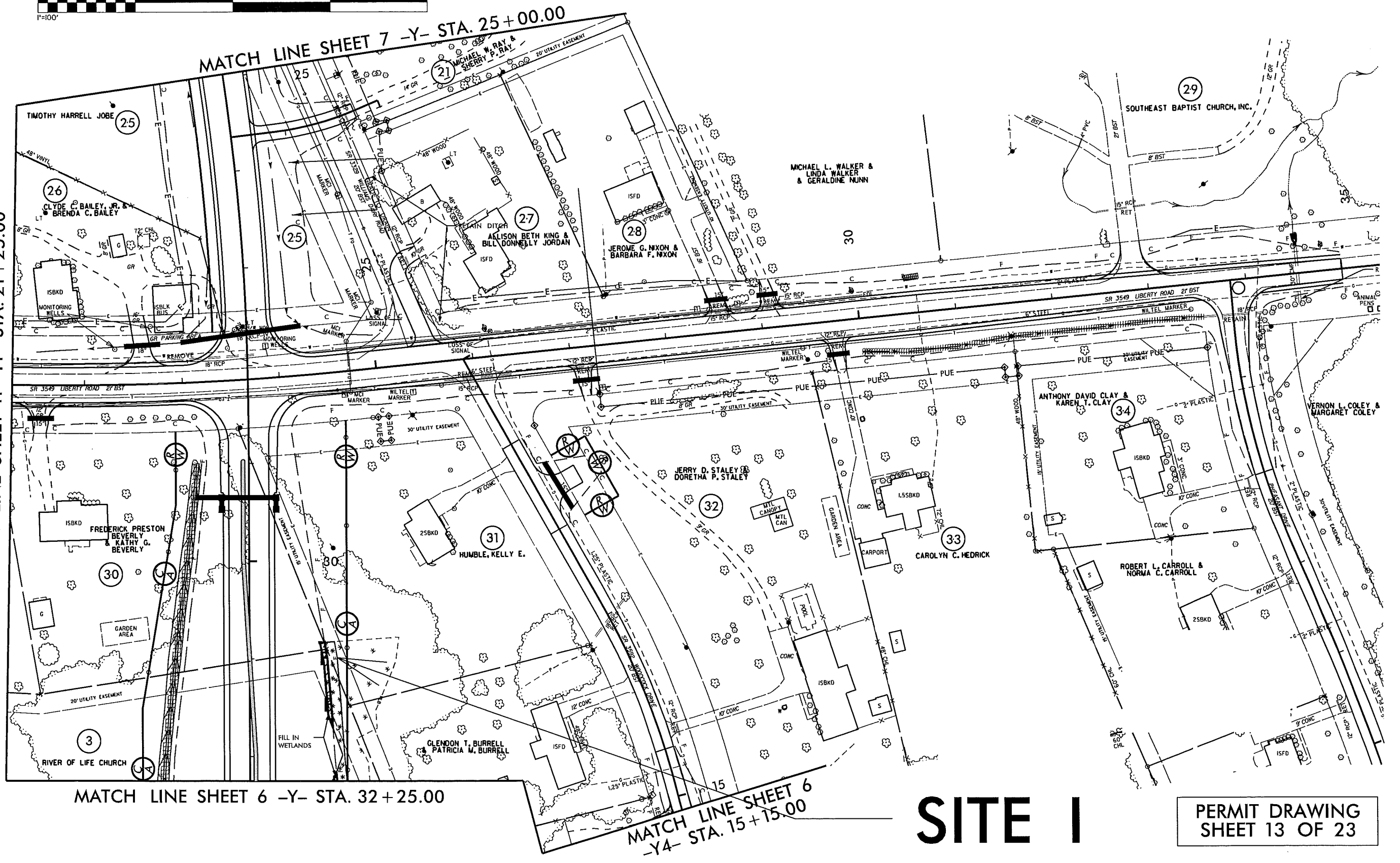
02/22/13 - RW REVISION: CHANGED TEMPORARY CONSTRUCTION EASEMENT TO PROPOSED RIGHT OF WAY ON PARCEL 32 - TEM.

MATCH LINE SHEET 11 -Y1- STA. 21+25.00

MATCH LINE SHEET 7 -Y- STA. 25+00.00

MATCH LINE SHEET 6 -Y- STA. 32+25.00

MATCH LINE SHEET 6 -Y4- STA. 15+15.00

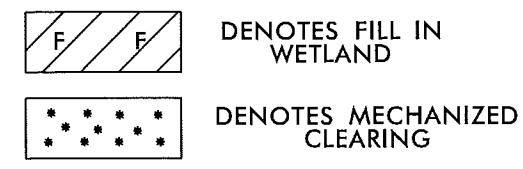


# SITE I

**PERMIT DRAWING**  
SHEET 13 OF 23

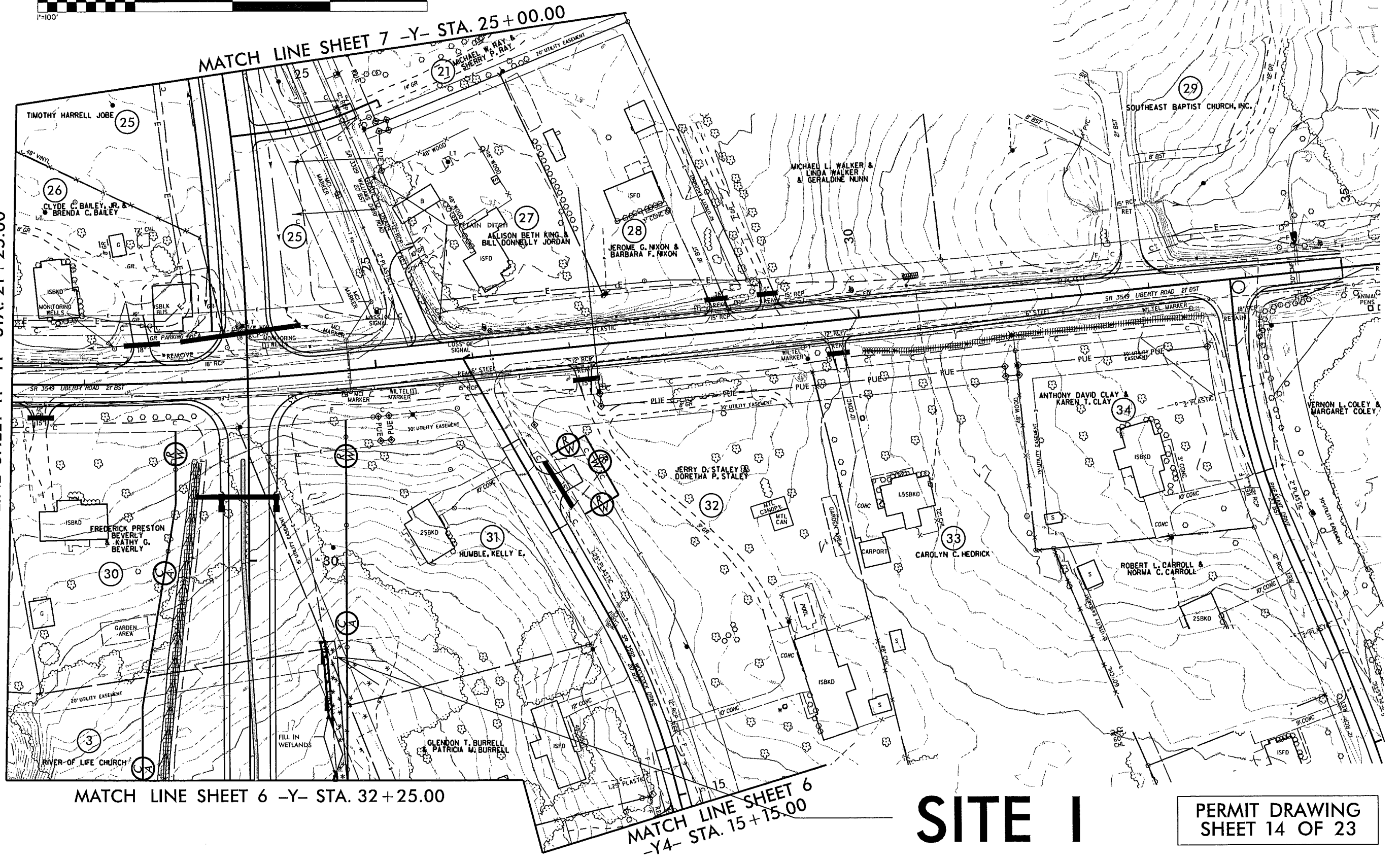
8/17/99  
REVISIONS  
SYSTEM: \$\$\$\$\$\$  
DRAWN: \$\$\$\$\$\$  
CHECKED: \$\$\$\$\$\$  
DATE: \$\$\$\$\$\$

PROJECT REFERENCE NO. R-2612B		SHEET NO. 8	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION			



REVISIONS  
 02/22/13 - RW REVISION: CHANGED TEMPORARY CONSTRUCTION EASEMENT TO PROPOSED RIGHT OF WAY ON PARCEL 32 - TEM.

MATCH LINE SHEET 11 -Y1- STA. 21+25.00



MATCH LINE SHEET 6 -Y- STA. 32+25.00

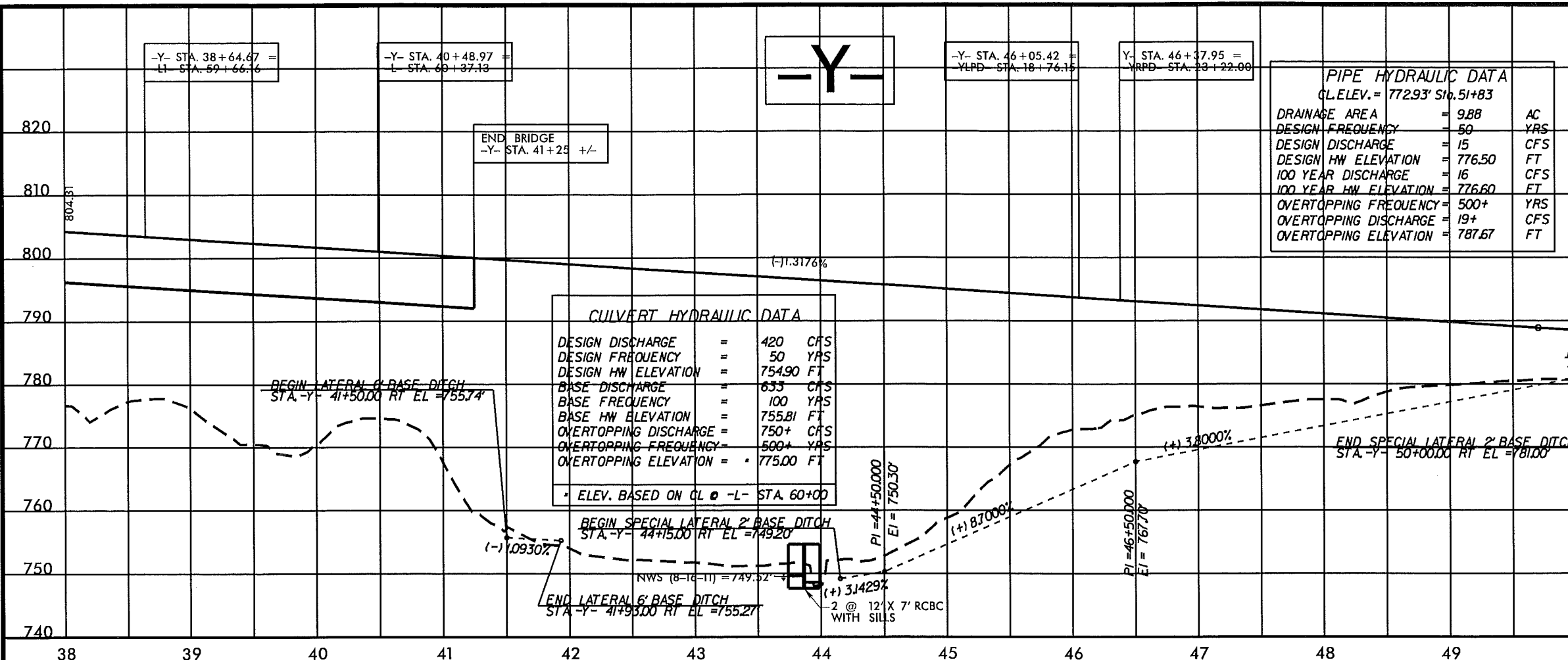
MATCH LINE SHEET 6 -Y4- STA. 15+15.00

# SITE I

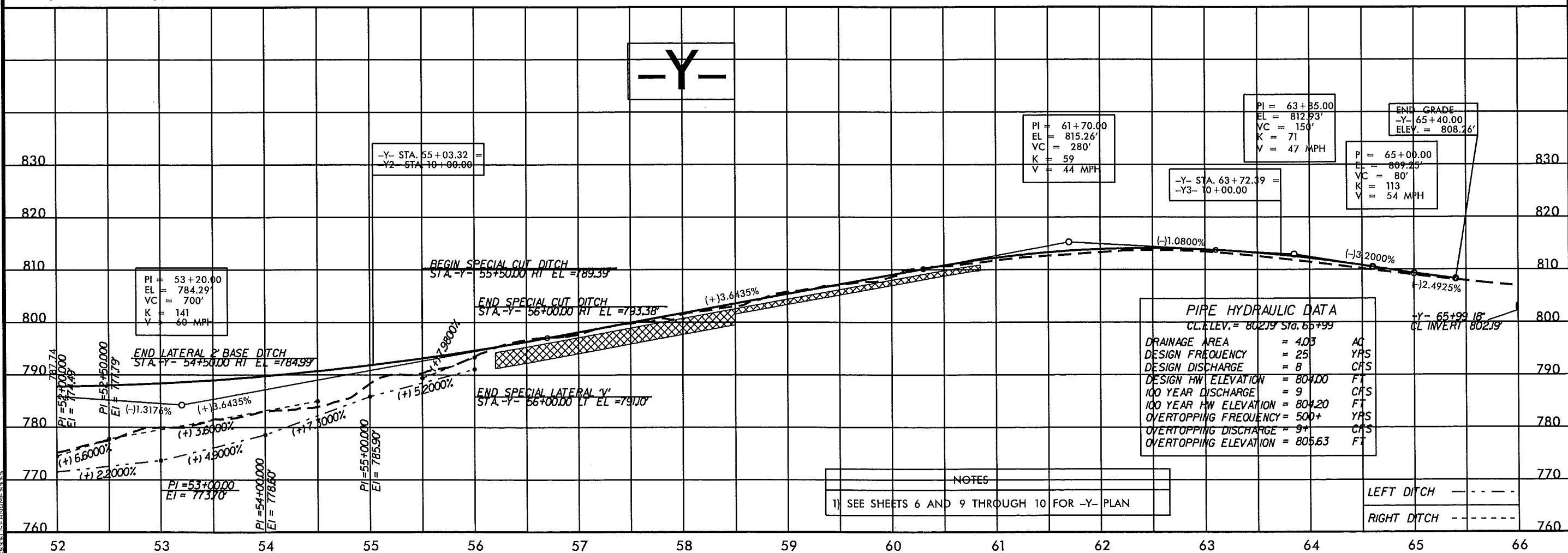
**PERMIT DRAWING**  
SHEET 14 OF 23

SYSTEMS DESIGN  
 8/17/99

5/28/99



**PERMIT DRAWING**  
**SHEET 15 OF 23**



**NOTES**  
1) SEE SHEETS 6 AND 9 THROUGH 10 FOR -Y- PLAN

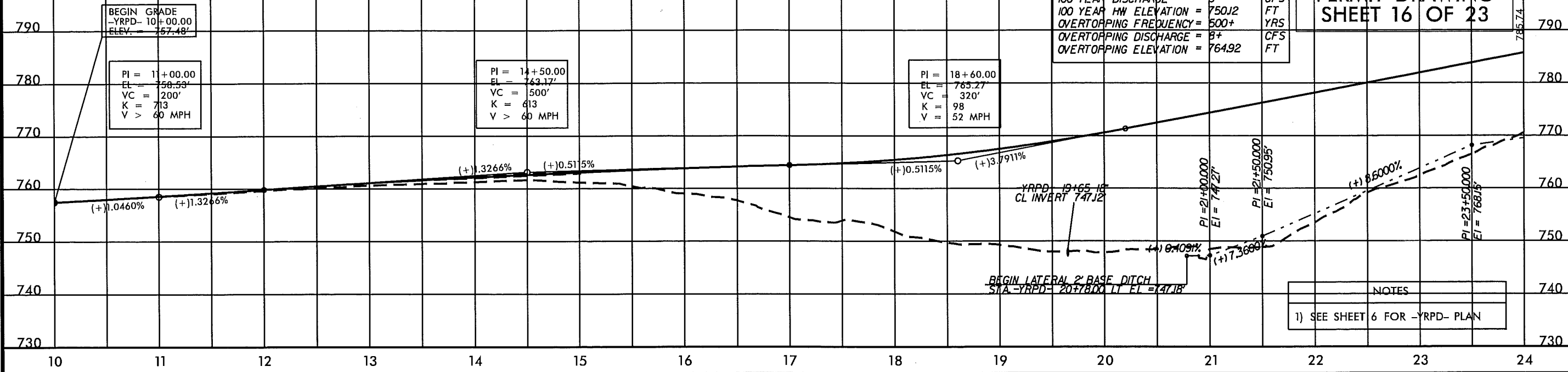
LEFT DITCH - - - - -  
RIGHT DITCH - - - - -

5/28/99

# -YRPD-

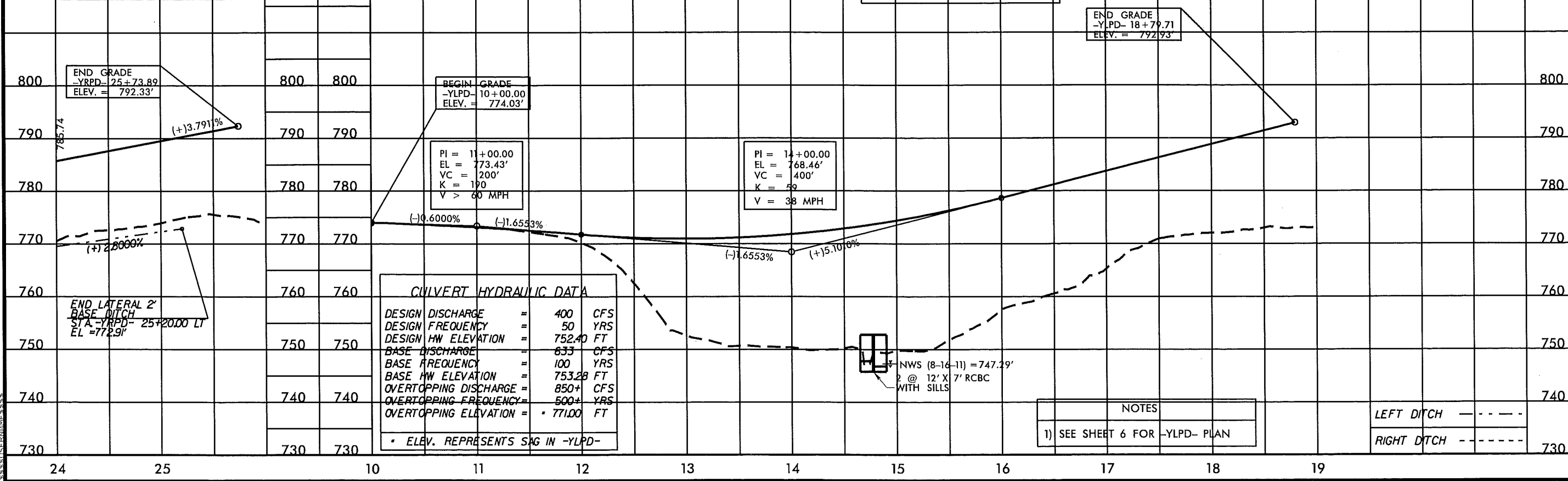
PIPE HYDRAULIC DATA	
CL ELEV. = 747.12' Sta. 19+65	
DRAINAGE AREA = 2.78	AC
DESIGN FREQUENCY = 50	YRS
DESIGN DISCHARGE = 7	CFS
DESIGN HW ELEVATION = 750.02	FT
100 YEAR DISCHARGE = 8	CFS
100 YEAR HW ELEVATION = 750.12	FT
OVERTOPPING FREQUENCY = 500+	YRS
OVERTOPPING DISCHARGE = 8+	CFS
OVERTOPPING ELEVATION = 764.92	FT

## PERMIT DRAWING SHEET 16 OF 23



# -YRPD-

# -YLPD-

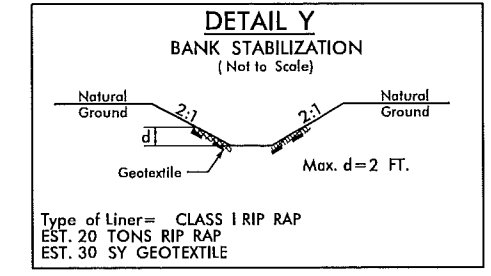
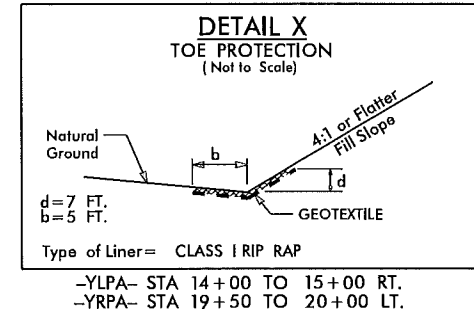
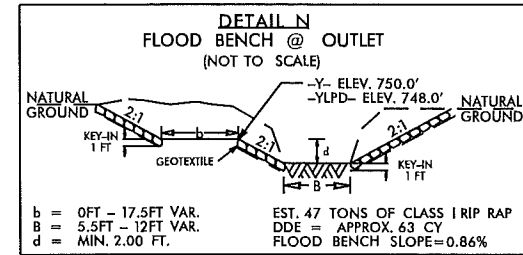
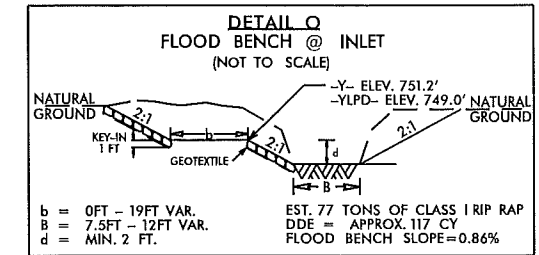
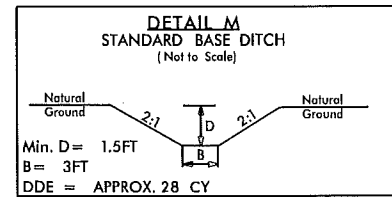
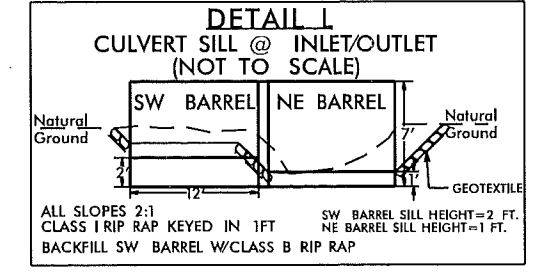
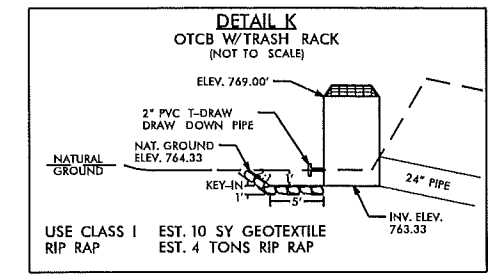
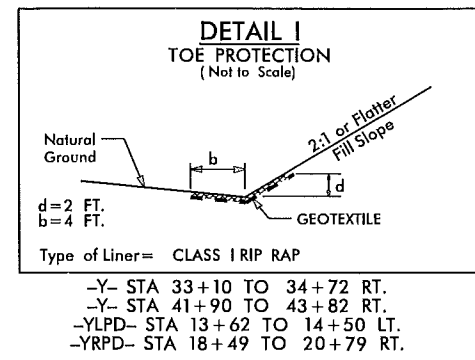
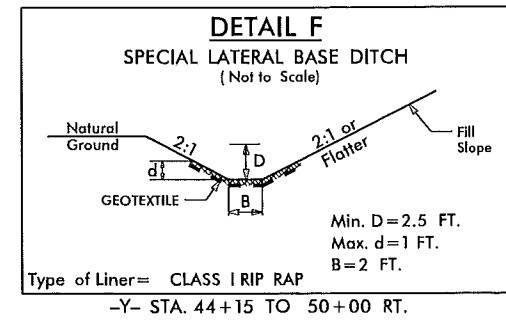
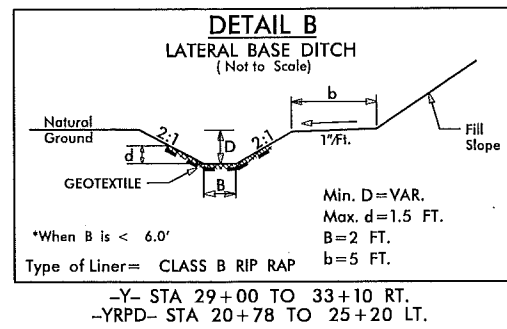


DATE PLOTTED: 5/28/99  
SCALE: 1" = 10'  
DRAWN BY: [illegible]  
CHECKED BY: [illegible]



PROJECT REFERENCE NO. R-2612B	SHEET NO. 2-E
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

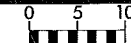
**PERMIT DRAWING**  
**SHEET 17 OF 23**



REVISIONS

1  
2  
3  
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B/23/09



PROJ. REFERENCE NO. R-2612B SHEET NO. X-36

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

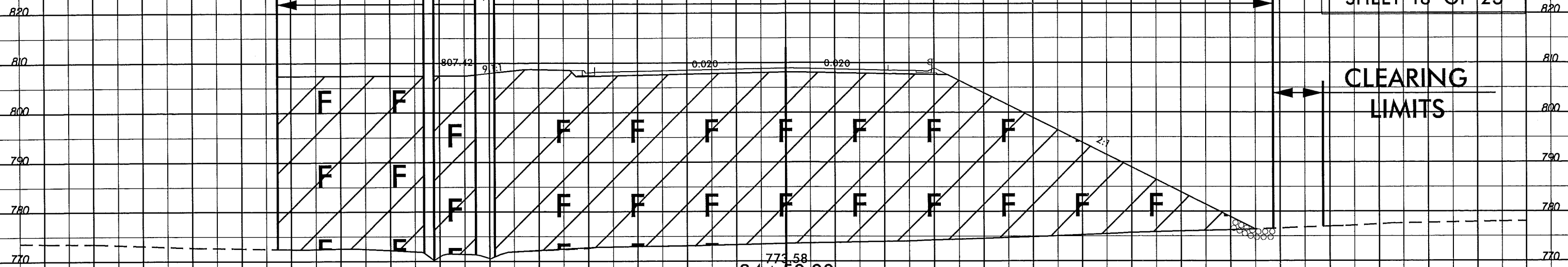
WLB

JS Stream

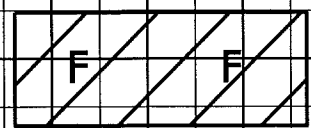
FILL IN WETLAND

PERMIT DRAWING SHEET 18 OF 23

CLEARING LIMITS

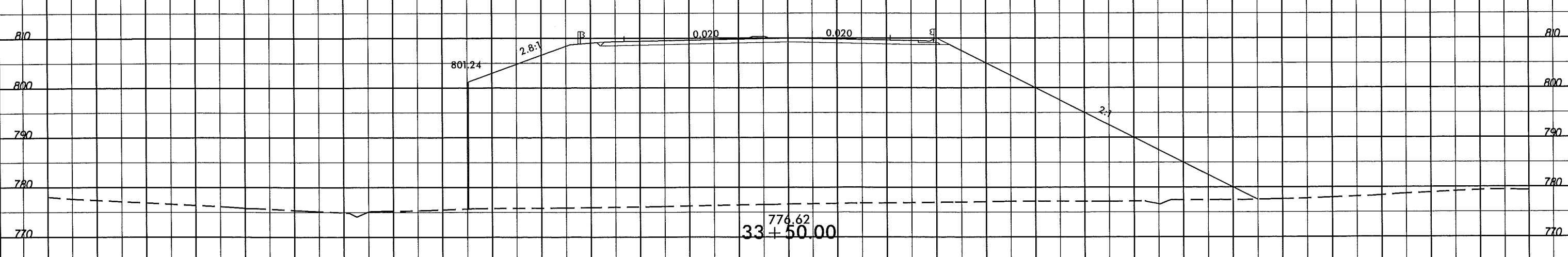
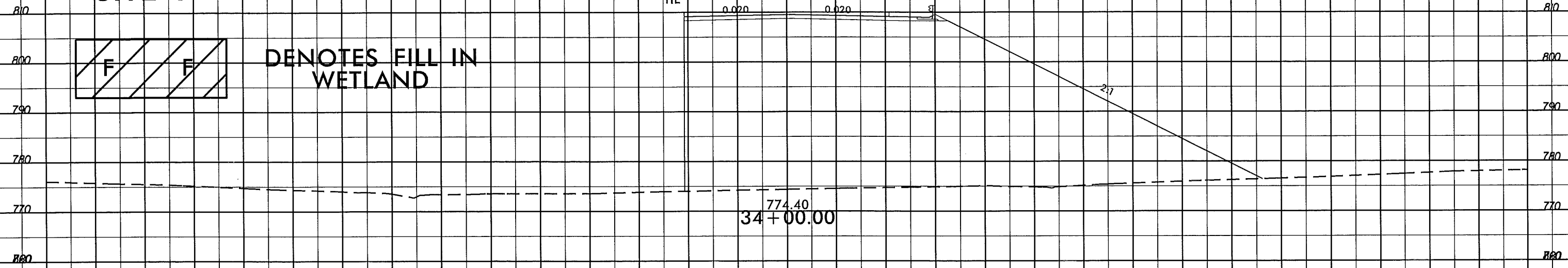


# WETLAND/SURFACE WATER PERMIT DWG. SITE I



DENOTES FILL IN WETLAND

YRPA / YLPA TIE

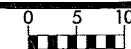


-Y-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

\*\*\*\*\*SYTIME\*\*\*\*\*  
\*\*\*\*\*02/28/2009\*\*\*\*\*  
\*\*\*\*\*09:59:59\*\*\*\*\*  
\*\*\*\*\*C:\WORK\2009\0228\\*\*\*\*\*  
\*\*\*\*\*D:\WORK\2009\0228\\*\*\*\*\*

B/23/99



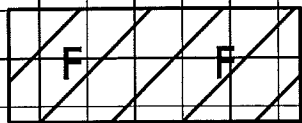
PROJ. REFERENCE NO. R-2612B SHEET NO. X-38

190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110

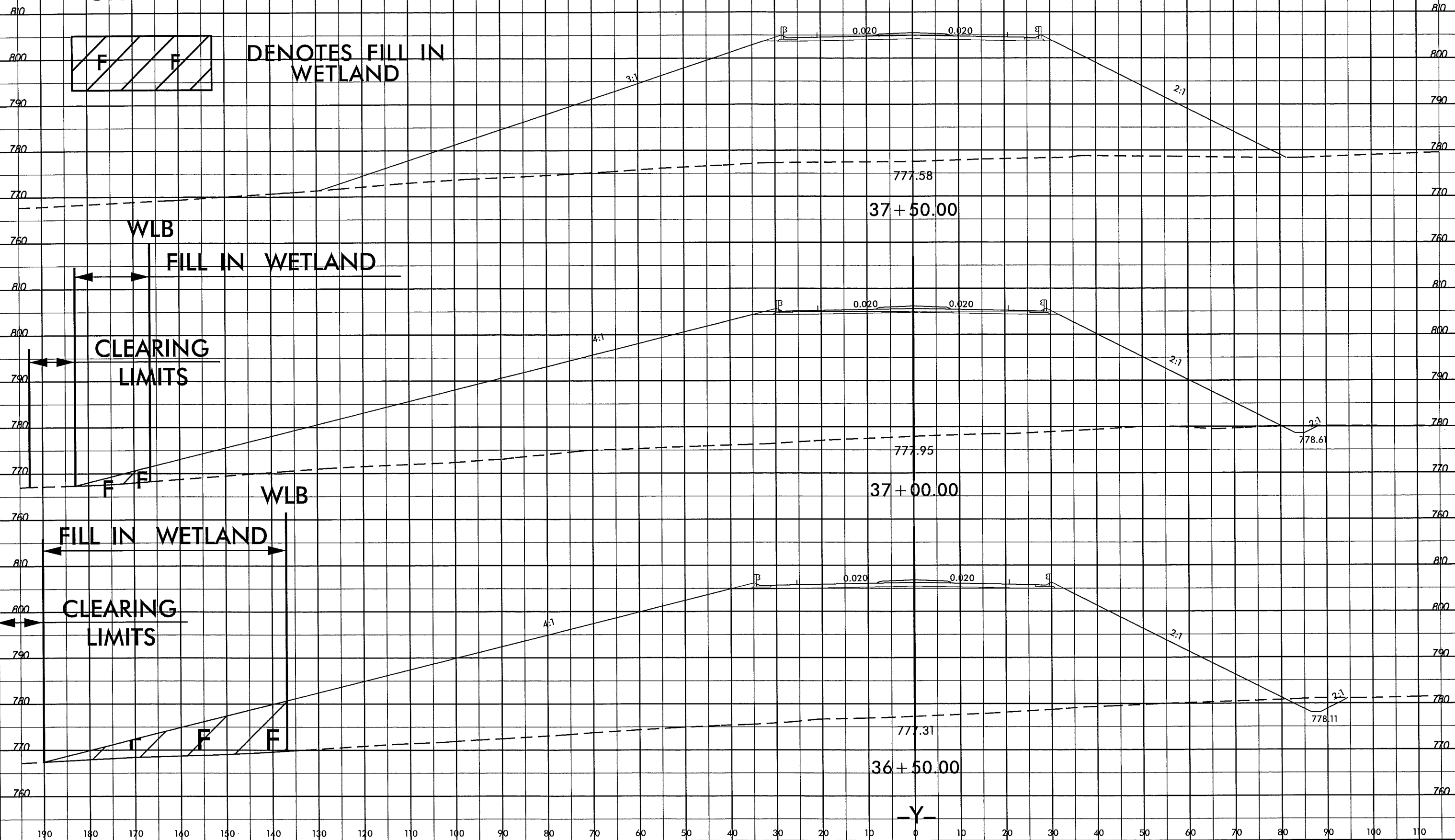
# WETLAND/SURFACE WATER PERMIT DWG.

## PERMIT DRAWING SHEET 19 OF 23

### SITE I



DENOTES FILL IN WETLAND

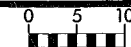


—Y—

190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110

DATE: 08/23/99  
DRAWN BY: [illegible]  
CHECKED BY: [illegible]  
SCALE: AS SHOWN  
PROJECT: [illegible]

B723/99



PROJ. REFERENCE NO.

SHEET NO.

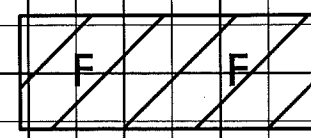
R-2612B

X-43

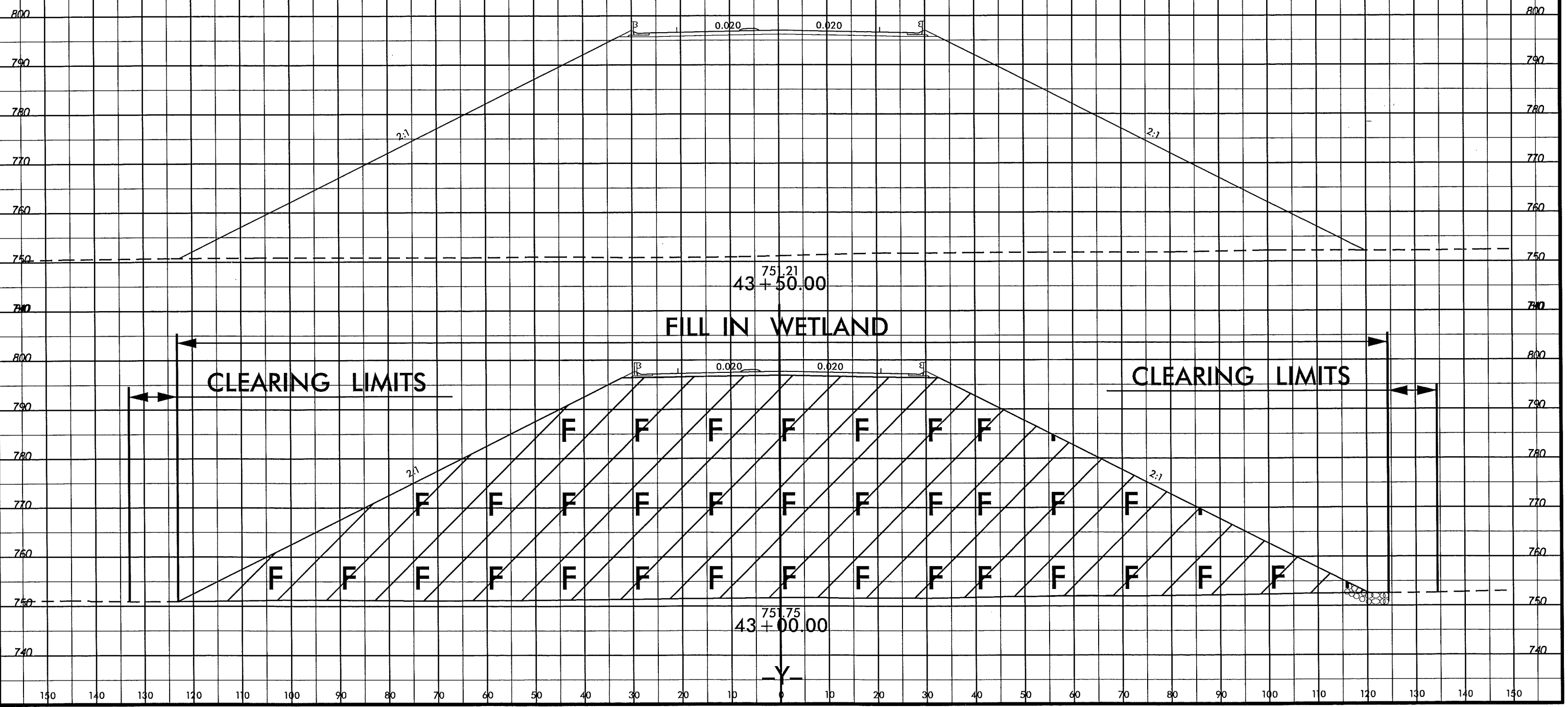
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**PERMIT DRAWING  
SHEET 20 OF 23**

# WETLAND/SURFACE WATER PERMIT DWG. SITE III

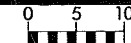


DENOTES FILL IN  
WETLAND



VERTICAL SCALE: 1" = 10'

B/23/99



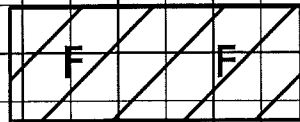
PROJ. REFERENCE NO. R-2612B SHEET NO. X-63

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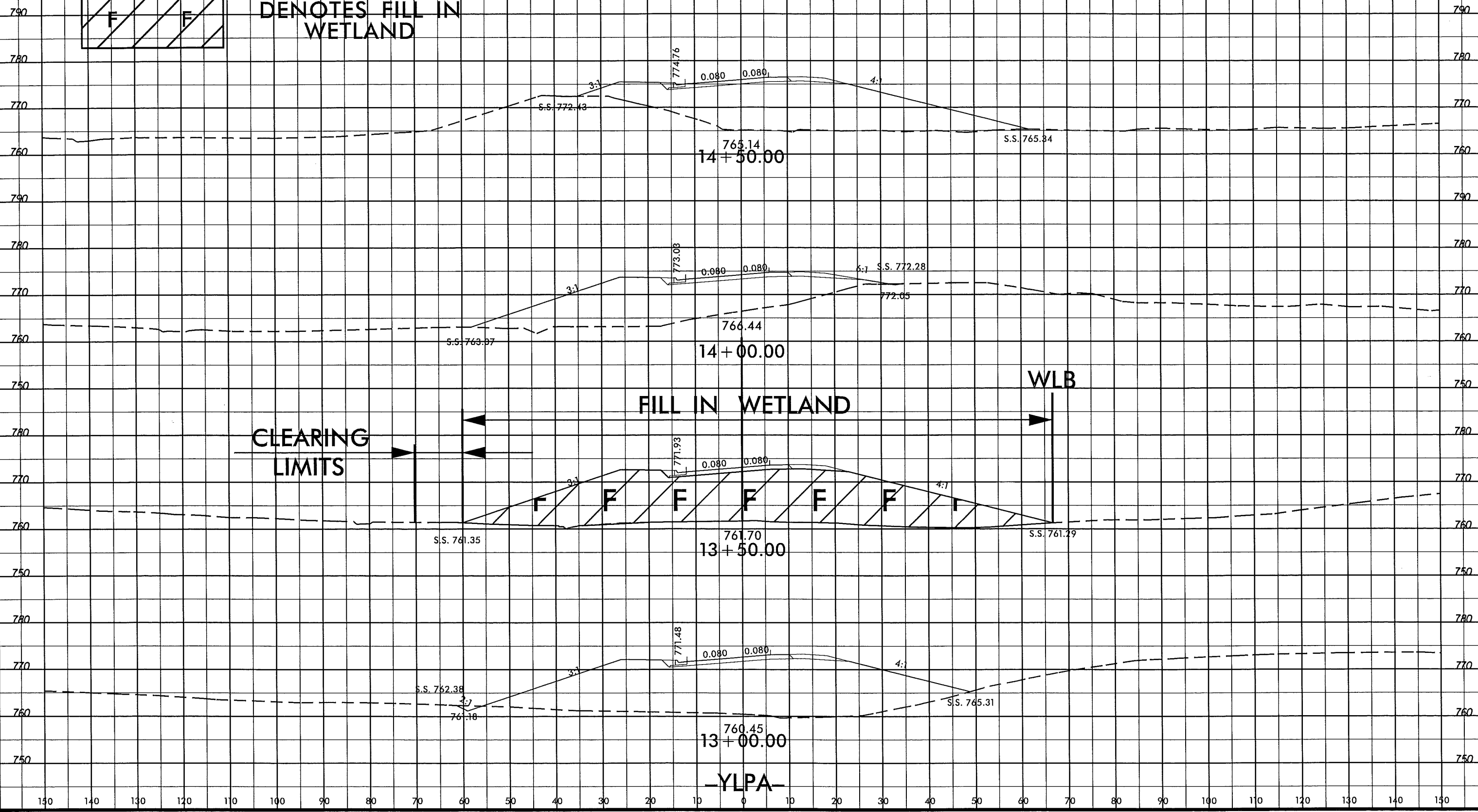
# WETLAND/SURFACE WATER PERMIT DWG.

## PERMIT DRAWING SHEET 21 OF 23

### SITE I



DENOTES FILL IN  
WETLAND



CLEARING  
LIMITS

FILL IN WETLAND

WLB

YLPA

DATE: 11/15/99  
BY: [Signature]  
CHECKED: [Signature]  
SCALE: AS SHOWN  
PROJECT: [Project Name]

8/23/99



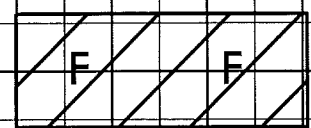
PROJ. REFERENCE NO. R-2612B SHEET NO. X-70

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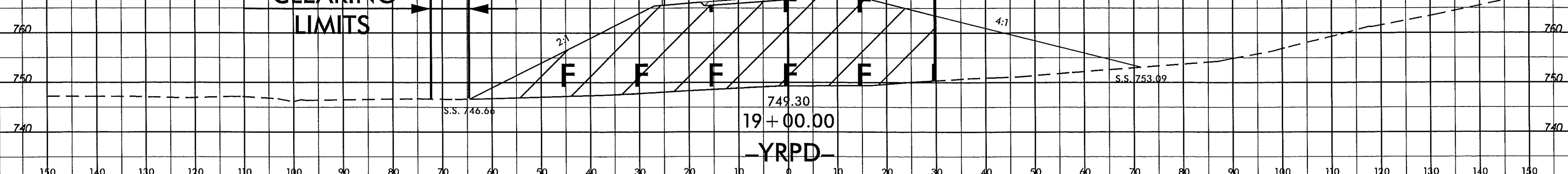
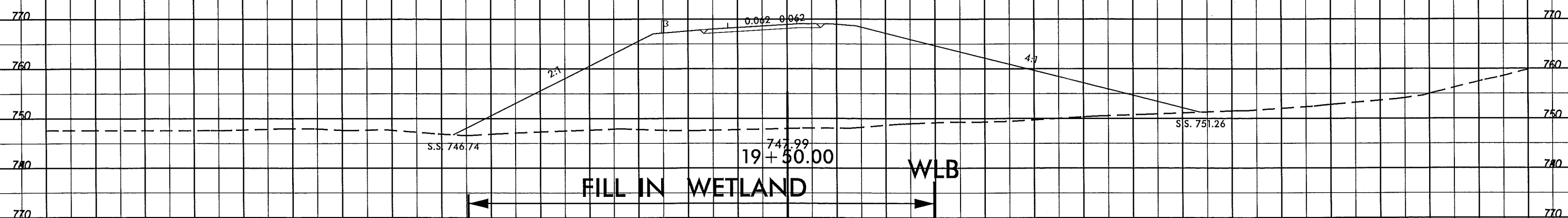
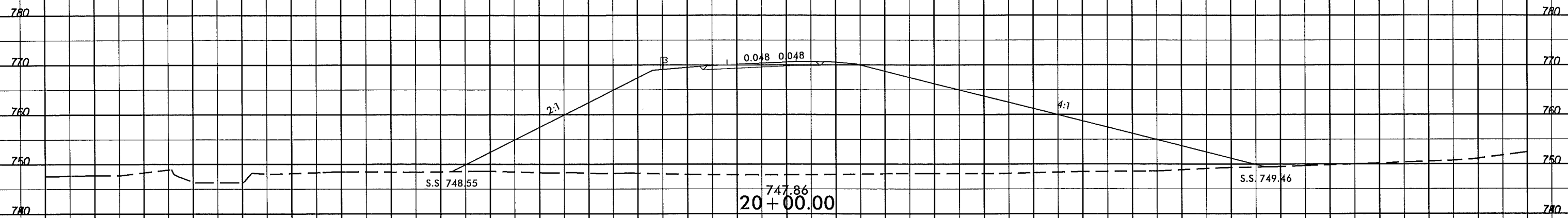
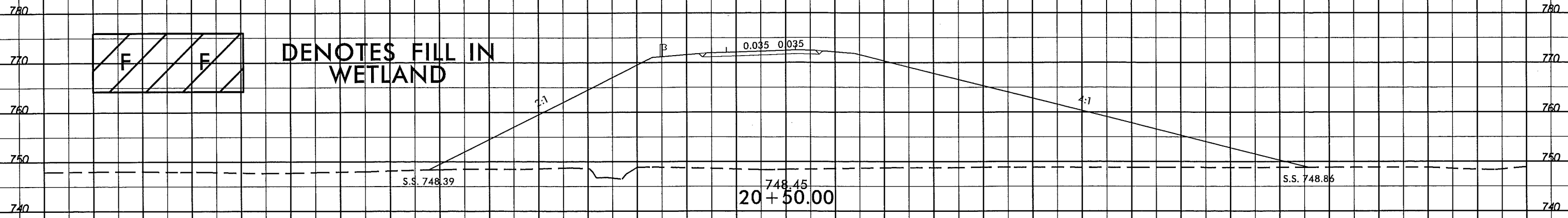
# WETLAND/SURFACE WATER PERMIT DWG.

## PERMIT DRAWING SHEET 22 OF 23

### SITE III



DENOTES FILL IN WETLAND



YRPD

DATE: 8/23/99  
BY: [illegible]  
CHECKED: [illegible]  
APPROVED: [illegible]

WETLAND PERMIT IMPACT SUMMARY												
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
I	Y STA. 30+82 to 39+10	42" Pipe	1.38		<0.01	0.16		0.01	<0.01	251	20	
IA	Y STA. 33+36 to 34+56	42" Pipe						<0.01		209		
IB	Y STA. 32+61 to 34+56 LT.	30" Pipe						<0.01	<0.01	186	16	
IC	YLPA STA. 13+32 to 13+99 LT.	42" Pipe						<0.01		60		
II	YRPA STA. 18+25 to 21+90							1.00				
III	L STA. 59+63 to 70+54 RT.	2@12'X7' RCBC	2.48	*0.01	<0.01	0.25		0.12	<0.01	932	72	
		Bank Stabilization							<0.01		35	
IIIA	YLPA STA. 13+16 LT.	42" Pipe						0.01		265		
IV	L STA. 60+09 to 67+07 RT.		0.44	*0.03	<0.01	0.06						
V	L STA. 77+71 LT. & RT.	36" Pipe						<0.01	<0.01	24	24	
TOTALS:			4.30	*0.04	0.01	0.47	0	1.17	0.02	1927	167	0

NOTES: \* TEMPORARY FILL IN WETLANDS IS DUE TO TEMPORARY EXCAVATION FOR CULVERT CONSTRUCTION.  
EXISTING GROUND TO BE REESTABLISHED UPON COMPLETION OF CULVERTS.  
STOCKPILE MATERIAL REMOVED.

N.C.D.O.T.  
DIVISION OF HIGHWAYS  
GUILFORD COUNTY  
PROJECT: 34483.1.1 (R-2612B)  
US 421 AT SR 3418 (NEELLEY ROAD)  
SOUTH OF GREENSBORO