

 North Carolina Department of Transportation Highway Stormwater Program STORMWATER MANAGEMENT PLAN FOR NCDOT PROJECTS 											
(Version 3.00; Released August 2021)											
WBS Element:		TIP/Proj No:		County(ies):		Page 1 of 5					
General Project Information											
WBS Element:		49742.3		TIP Number:		HE-0001		Project Type: Other			
NCDOT Contact:		Brendan Merithew, PE		Contractor / Designer:		Rick Tipton, PE					
Address: NCDOT Division 13 55 Orange Street Asheville, NC 28801 Address: Gannett Fleming One Glenwood Avenue, Suite 900 Raleigh, NC 27603		Phone: Phone: 		Email: Email: 		City/Town: Biltmore Park, NC County(ies): Buncombe		River Basin(s): French Broad CAMA County? No			
										Wetlands within Project Limits? Yes	
Project Description											
Project Length (lin. miles or feet):		1.016 mi		Surrounding Land Use:		Wooded, Commercial/Residential					
Proposed Project											
Project Built-Up Area (ac.)		9.0 ac.		Existing Site		3.6 ac.					
Typical Cross Section Description:		Widening: 8-lane, divided with concrete median barrier. Widen paved shoulder on LT side with roadside ditches. New Location: Ramps - 1 lane w/ paved shoulder. Y line - 2 lane, divided with concrete median barrier. Paved shoulders and roadside ditches.				8-lane, divided with concrete median barrier. Paved shoulders with roadside ditches.					
Annual Avg Daily Traffic (veh/hr/day):		Design/Future: 113700		Year: 2045		Existing: 89900		Year: 2023			
General Project Narrative: (Description of Minimization of Water Quality Impacts)		The purpose of this project is to construct a new Diverging Diamond Interchange at Exit 35 on I-26 with a new location Y-line from the interchange to a roundabout on East Frederick Law Olmsted Way. The project will be broken into two sections for construction. The first section will consist of the proposed Y-line from the interchange to the roundabout on East Frederick Law Olmsted Way. This portion of the project is new location and can be constructed in one continuous phase. The interchange will be constructed inside the currently active TIP Project I-4700. During Phase IA of construction for I-4700, the Eastbound lanes along I-26 are shifted to the inside so that the outer two lanes and shoulder can be reconstructed. Ideally, Ramps A and B as well as end bent two would be constructed first to minimize impacts to traffic. End bent one would be better suited for construction during Phase IB of I-4700 as the traffic will be shifted into the outer two lanes. During Phase II of construction for I-4700, the Westbound lanes of I-26 are shifted adjacent to EB traffic. Ramps C and D can be constructed during this period. Jurisdictional features including wetlands, and streams are all present within the project limits. The proposed drainage system for this project will primarily tie to the existing network proposed by the I-4700 project. Retaining walls are currently under design to reduce impacts along the corridor of this project.									

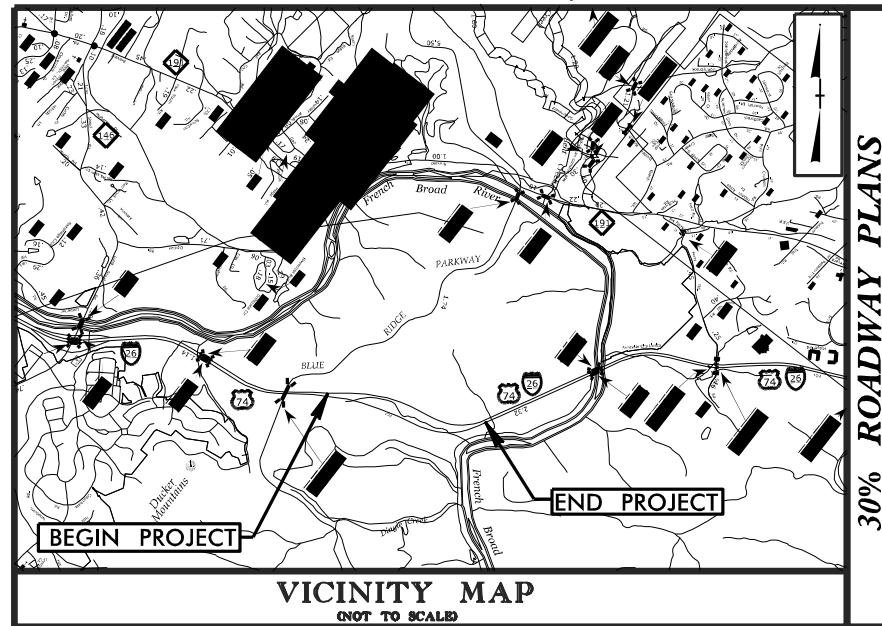
		North Carolina Department of Transportation Highway Stormwater Program STORMWATER MANAGEMENT PLAN FOR NCDOT PROJECTS			
Version 3.00; Released August 2021					
WBS Element: 49742.3		TIP/Proj No.: HE-0001		County(ies): Buncombe	
				Page	2 of 5
General Project Information					
Waterbody Information					
Surface Water Body (1):		FBR		NCDWR Stream Index No.: 6-(54.75)	
NCDWR Surface Water Classification for Water Body		Primary Classification:		Class B	
		Supplemental Classification:		None	
Other Stream Classification:		None			
Impairments:		None			
Aquatic T&E Species?		Yes Comments: FBR is occupied by the endangered Appalachian elktoe habitat.			
NRTR Stream ID:		FBR		Buffer Rules in Effect: N/A	
Project Includes Bridge Spanning Water Body?		No		Deck Drains Discharge Over Buffer? N/A	
Deck Drains Discharge Over Water Body?		N/A		Dissipator Pads Provided in Buffer?	
(If yes, provide justification in the General Project Narrative)		(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
Surface Water Body (2):					
		UT to FBR (SA)		NCDWR Stream Index No.: N/A	
NCDWR Surface Water Classification for Water Body		Primary Classification:		Class B	
		Supplemental Classification:		None	
Other Stream Classification:		None			
Impairments:		None			
Aquatic T&E Species?		No Comments: No listed species in waterbody; however, receiving body, FBR, is occupied app. elktoe habitat.			
NRTR Stream ID:		S(A-O)		Buffer Rules in Effect:	
Project Includes Bridge Spanning Water Body?		No		Deck Drains Discharge Over Buffer? N/A	
Deck Drains Discharge Over Water Body?		N/A		Dissipator Pads Provided in Buffer? N/A	
(If yes, provide justification in the General Project Narrative)		(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
Surface Water Body (3):					
		UT to FBR (SD)		NCDWR Stream Index No.: N/A	
NCDWR Surface Water Classification for Water Body		Primary Classification:		Class B	
		Supplemental Classification:		None	
Other Stream Classification:		None			
Impairments:		None			
Aquatic T&E Species?		No Comments: No listed species in waterbody; however, receiving body, FBR, is occupied app. elktoe habitat.			
NRTR Stream ID:		SD(X-Z)		Buffer Rules in Effect:	
Project Includes Bridge Spanning Water Body?		No		Deck Drains Discharge Over Buffer? N/A	
Deck Drains Discharge Over Water Body?		N/A		Dissipator Pads Provided in Buffer? N/A	
(If yes, provide justification in the General Project Narrative)		(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
WBS Element: 49742.3		TIP No.: HE-0001		County(ies): Buncombe	
				Page	3 of 5
Additional Waterbody Information					
Surface Water Body (4):		UT to FBR SE		NCDWR Stream Index No.: N/A	
NCDWR Surface Water Classification for Water Body		Primary Classification:		Class B	
		Supplemental Classification:		None	
Other Stream Classification:		None			
Impairments:		None			
Aquatic T&E Species?		No Comments: No listed species in waterbody; however, receiving body, FBR, is occupied app. elktoe habitat.			
NRTR Stream ID:		SE(Q-W)		Buffer Rules in Effect:	
Project Includes Bridge Spanning Water Body?		No		Deck Drains Discharge Over Buffer? N/A	
Deck Drains Discharge Over Water Body?		N/A		Dissipator Pads Provided in Buffer? N/A	
(If yes, provide justification in the General Project Narrative)		(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
Surface Water Body (5):					
		UT to FBR (SDX)		NCDWR Stream Index No.: N/A	
NCDWR Surface Water Classification for Water Body		Primary Classification:		Class B	
		Supplemental Classification:		None	
Other Stream Classification:		None			
Impairments:		None			
Aquatic T&E Species?		Yes Comments: No listed species in waterbody; however, receiving body, FBR, is occupied app. elktoe habitat.			
NRTR Stream ID:		SDX		Buffer Rules in Effect:	
Project Includes Bridge Spanning Water Body?		No		Deck Drains Discharge Over Buffer? N/A	
Deck Drains Discharge Over Water Body?		N/A		Dissipator Pads Provided in Buffer? N/A	
(If yes, provide justification in the General Project Narrative)		(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	

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nwoods AT PC77611
pw/ghe-pw-bentley.com:gfnet-pw-01\Documents\Projects\691725-Working\Task 003 - HE-0001 I-26 Bldmore\Permit Drawings\HE-0001_cdy_ish.dgn

TIP PROJECT: HE-0001

CONTRACT:

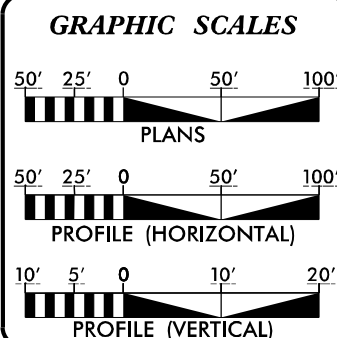
See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols



BEGIN TIP PROJECT HE-0001
-WBL- STA. 1086 + 17.11

END TIP PROJECT HE-0001
-L- STA. 1138 + 79.12

NOTES:
THIS IS A CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.



DESIGN DATA

ADT 2021 = 9,100
ADT 2046 = 18,600
K = 10 %
D = 55 %

V = 75 MPH
* TTST = 1% DUAL 4%

FUNC CLASS = INTERSTATE

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT HE-0001 = 2.033 Miles
LENGTH STRUCTURES = 0.019 Miles
TOTAL LENGTH TIP PROJECT HE-0001 = 2.052 Miles

NCDOT CONTACT: MCCRAY COATES, PE
DIVISION 13 PROJECT MANAGER

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

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: 2022

LETTING DATE:

RICK TIPTON, PE
PROJECT ENGINEER

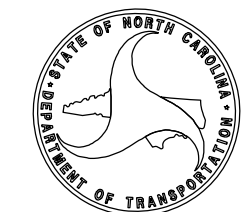
ANGEL B. PRIDGEN, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

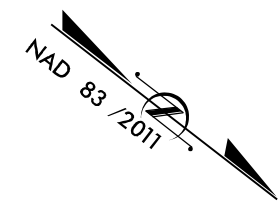


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BUNCOMBE COUNTY

LOCATION: NEW I-26 DIVERGING DIAMOND INTERCHANGE (EXIT 35)
AND ACCESS ROAD CONNECTING TO NC 191 (BREVARD RD)

TYPE OF WORK: GRADING, PAVING, DRAINAGE, STRUCTURE, SIGNALS, AND
RETAINING WALLS



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	HE-0001	1	11
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
XXXXXXXX	XXXXXX	PE	

**DRAINAGE IN RED IS PART OF HE-0001
ALL OTHER DRAINAGE IS EXISTING OR
BEING BUILT UNDER I-4700**

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PLANS PREPARED BY: Gannett Fleming
One Glenwood Avenue
Suite 900
Raleigh, NC 27601
(919) 420-7600
FAC. L.L. No. P-0270

PROJECT REFERENCE NO.	SHEET NO.
HE-0001A	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

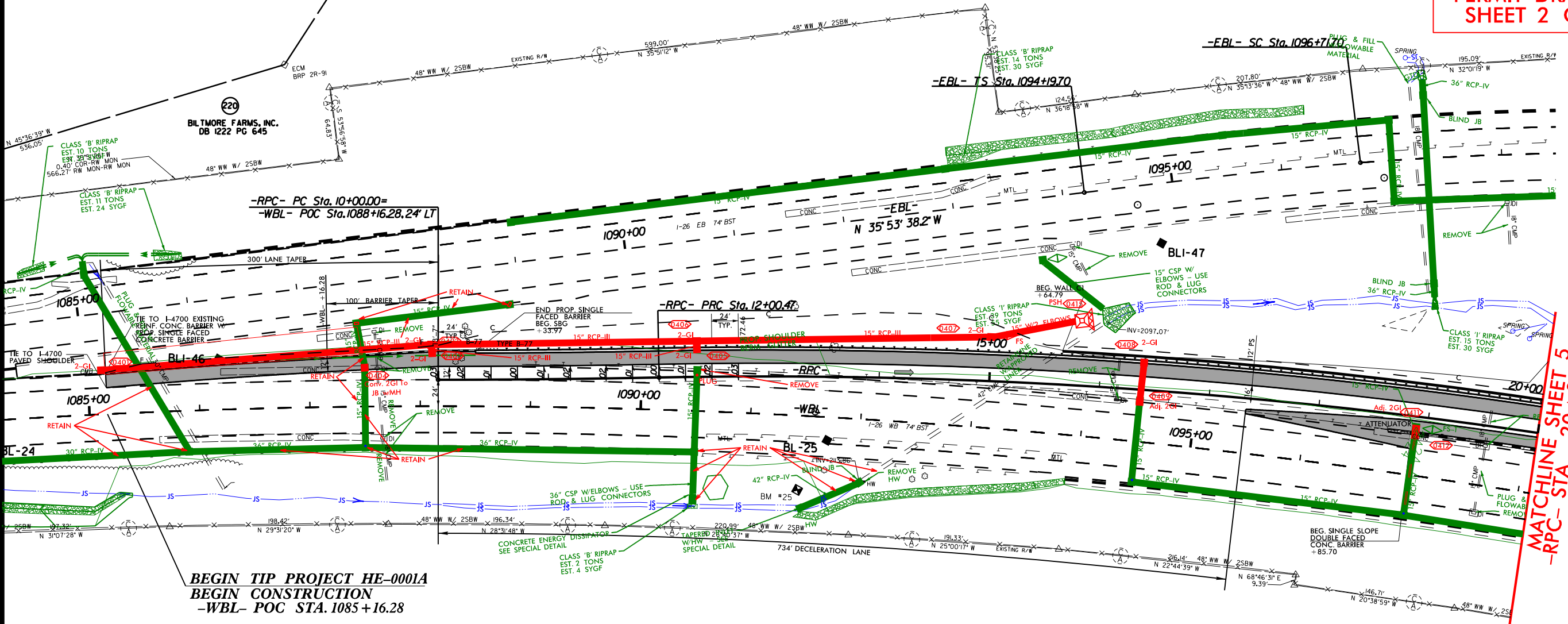
PERMIT DRAWING
SHEET 2 OF 19

NO STREAM IMPACTS



-WBL- (EXISTING I-4700 ALIGNMENT)		-RPC-	
PI Sta 1093+37.38		PI Sta 11+00.24	PI Sta 19+38.58
$\Delta = 22^{\circ}08'01.8"$ (RT)		$\Delta = 1^{\circ}08'55.1"$ (LT)	$\Delta = 17^{\circ}25'49.5"$ (RT)
D = 0'55'00.2"		D = 0'34'22.6"	D = 1'11'23.8"
L = 2414.43'		L = 200.47'	L = 1464.81'
T = 1222.45'		T = 100.24'	T = 738.11'
R = 6250.00'		R = 10000.00'	R = 4815.00'
		SE = 02	SE = 03
		RO = 24'	RO = 24'
		DS = 65 MPH	DS = 55 MPH
-EBL- (EXISTING I-4700 ALIGNMENT)			
PIs Sta 1095+87.72	PI Sta 1102+31.31		
$\Theta_s = 2^{\circ}31'12.0"$	$\Delta = 22^{\circ}06'20.5"$ (RT)		
LS = 252.00'	D = 2'00'00.0"		
LT = 168.02'	L = 1105.29'		
ST = 84.02'	T = 559.60'		
	R = 2864.79'		

BILTMORE FARMS, INC.
DB 1222 PG 645



MATCHLINE SHEET 5
-RPC- STA 20+00.00

BILTMORE FARMS, INC.
DB 1222 PG 645

FOR -RPC- PROFILE SEE SHEET 10

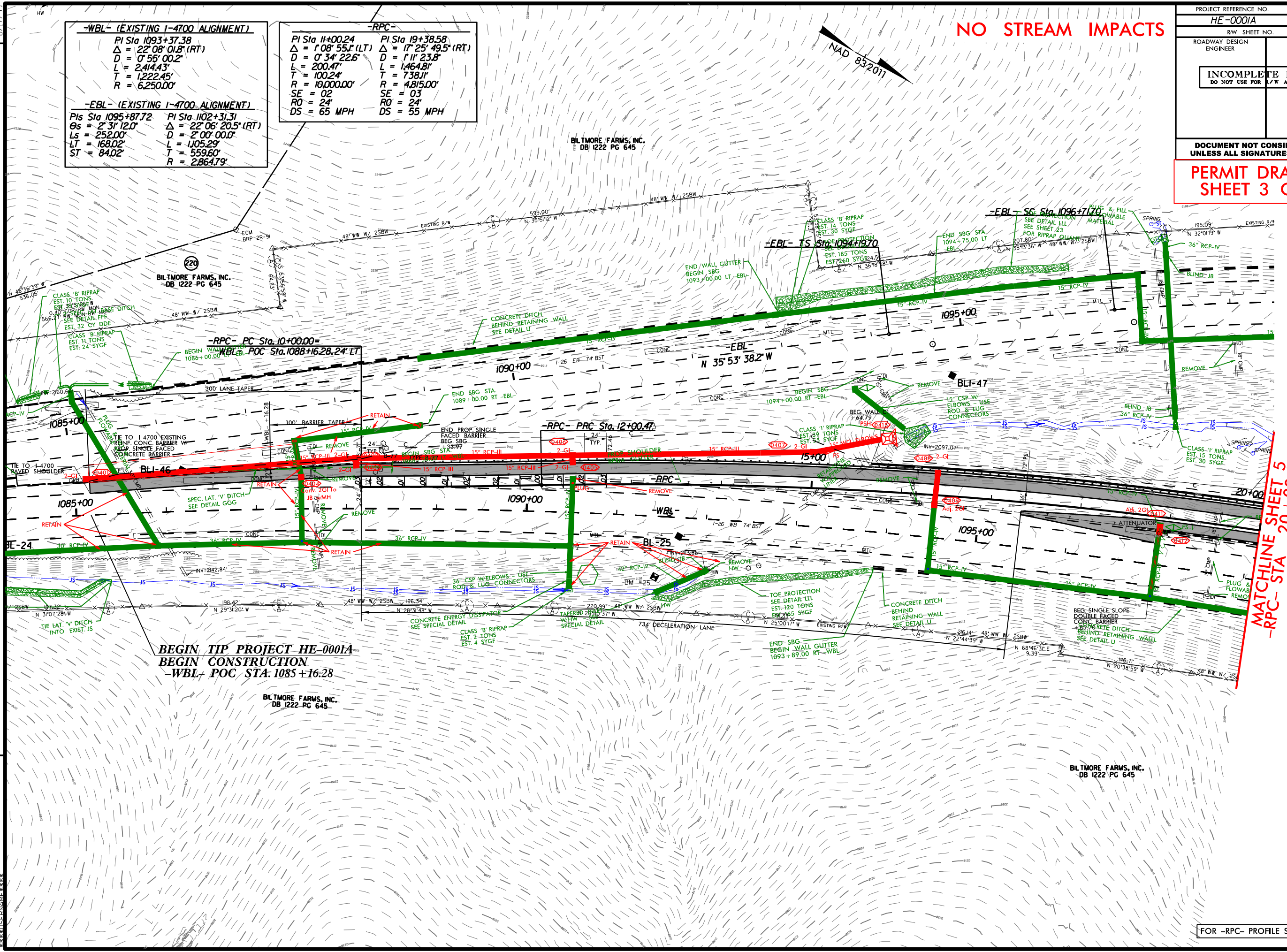
PROJECT REFERENCE NO.	SHEET NO.
HE-0001A	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	

DOCUMENT NOT CONSIDERED FINAL
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PERMIT DRAWING
SHEET 3 OF 19

-WBL- (EXISTING I-4700 ALIGNMENT) PI Sta 1093+37.38 $\Delta = 22^{\circ}08'01.8" (RT)$ $D = 0^{\circ}56'00.2"$ $L = 2414.43'$ $T = 1222.45'$ $R = 6250.00'$	
-EBL- (EXISTING I-4700 ALIGNMENT) PIs Sta 1095+87.72 PI Sta 1102+31.31 $\Delta = 2^{\circ}31'12.0"$ $\Delta = 22^{\circ}06'20.5" (RT)$ $Ls = 252.00'$ $D = 2^{\circ}00'00.0"$ $LT = 168.02'$ $L = 1105.29'$ $ST = 84.02'$ $T = 559.60'$ $R = 2864.79'$	
-RPC- PI Sta 11+00.24 PI Sta 19+38.58 $\Delta = 1^{\circ}08'55.1" (LT)$ $\Delta = 17^{\circ}25'49.5" (RT)$ $D = 0^{\circ}34'22.6"$ $D = 1^{\circ}11'23.8"$ $L = 200.47'$ $L = 1464.81'$ $T = 100.24'$ $T = 738.11'$ $R = 10000.00'$ $R = 4815.00'$ $SE = 02$ $SE = 03$ $RO = 24'$ $RO = 24'$ $DS = 65 MPH$ $DS = 55 MPH$	

NO STREAM IMPACTS



BEGIN TIP PROJECT HE-0001A
BEGIN CONSTRUCTION
-WBL- POC STA. 1085+16.28

MATCHLINE SHEET 5
-RPC- STA 20+00.00

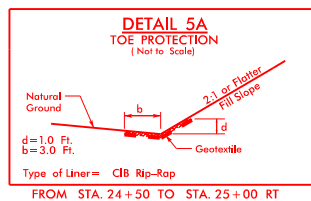
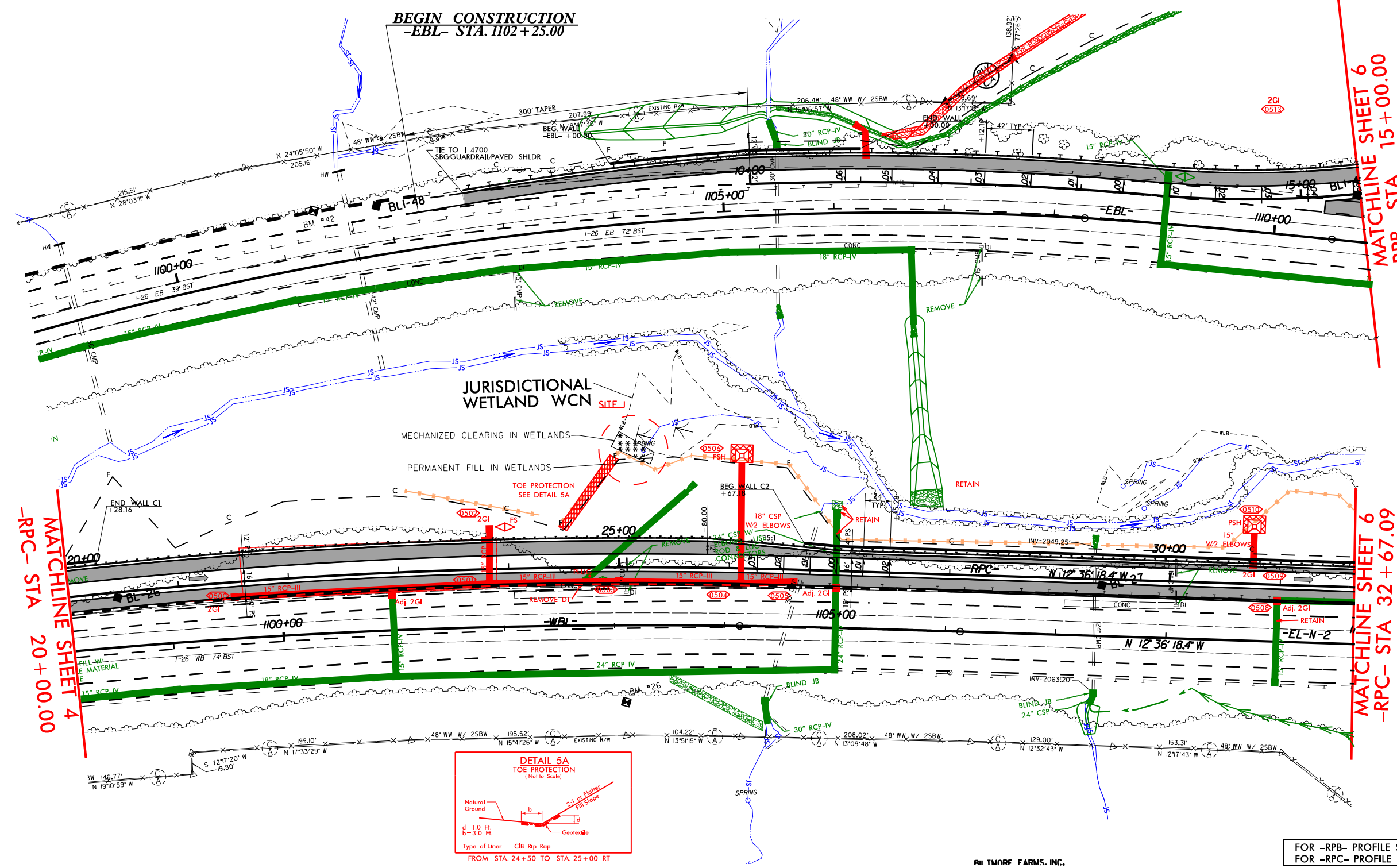
FOR -RPC- PROFILE SEE SHEET 10

WETLAND AND SURFACE WATER IMPACTS PERMIT

PROJECT REFERENCE NO.	SHEET NO.
HE-0001A	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

PERMIT DRAWING
SHEET 4 OF 19

LEGEND	
	TEMPORARY FILL IN WETLAND
	MECHANIZED CLEARING (GRUBBING)
	SAFETY FENCE



FOR -RPB- PROFILE SEE RDY SHEET 12
FOR -RPC- PROFILE SEE RDY SHEET 13

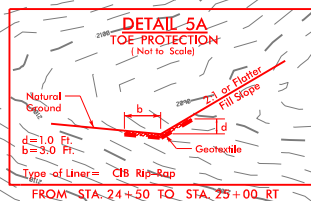
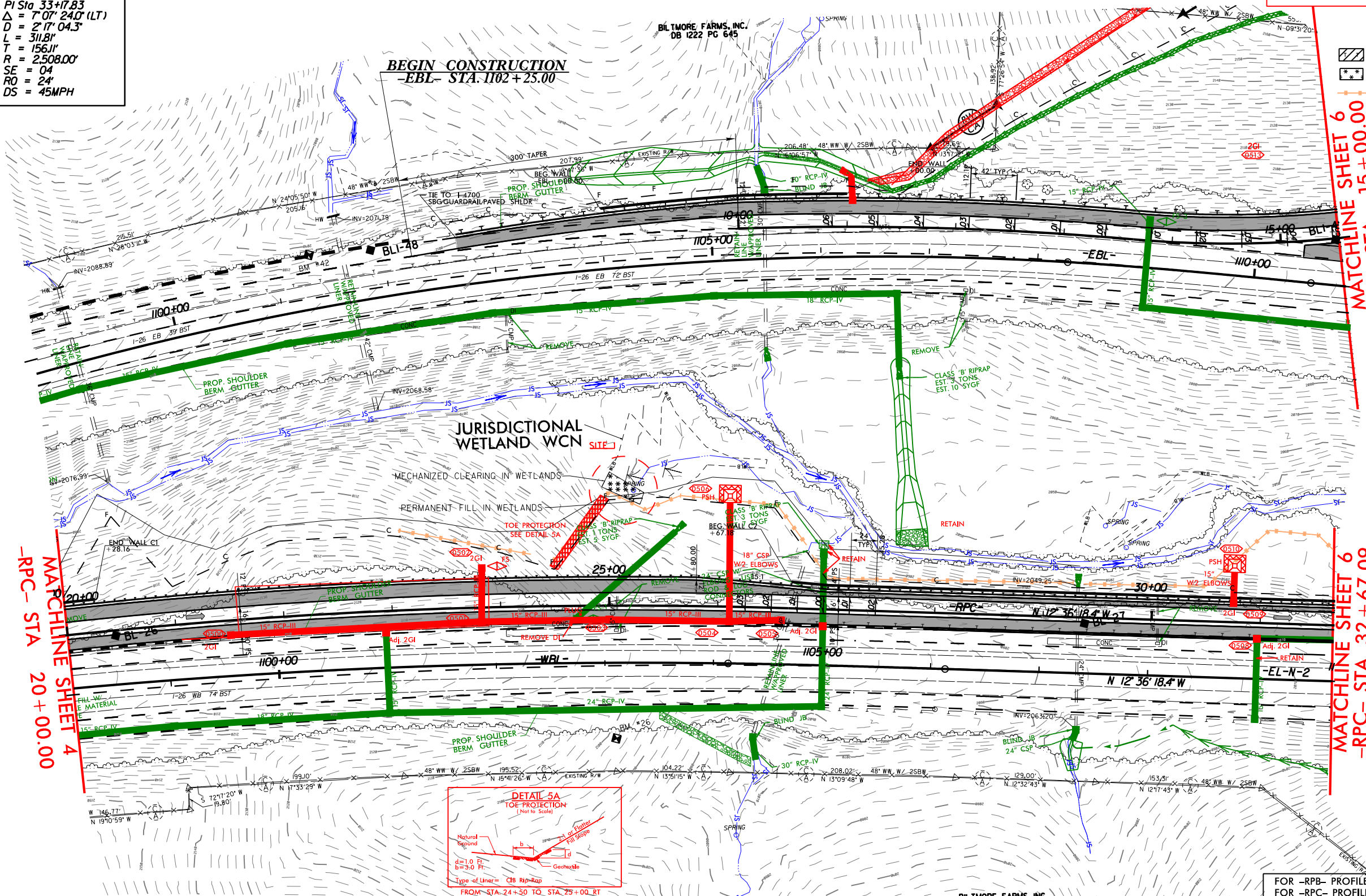
WETLAND AND SURFACE WATER IMPACTS PERMIT

PROJECT REFERENCE NO.	SHEET NO.
HE-0001A	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	

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PERMIT DRAWING
SHEET 5 OF 19

-EBL- (EXISTING I-4700 ALIGNMENT)		-RPB-	
PI Sta 1102+31.31	PIs Sta 1108+61.00	PI Sta 11+82.29	PI Sta 18+11.83
$\Delta = 22^{\circ}06'20.5"$ (RT)	$\Theta_s = 2^{\circ}31'11.3"$	$\Delta = 6^{\circ}57'16.5"$ (RT)	$\Delta = 48^{\circ}14'06.0"$ (RT)
$D = 2^{\circ}00'00.0"$	$L_s = 251.98'$	$D = 1^{\circ}54'35.5"$	$D = 5^{\circ}43'46.5"$
$L = 1,105.29'$	$LT = 168.00'$	$L = 364.14'$	$L = 841.86'$
$T = 559.60'$	$ST = 84.0'$	$T = 182.29'$	$T = 447.69'$
$R = 2,864.79'$		$R = 3,000.00'$	$R = 1,000.00'$
		$SE = 06'$	$SE = 04'$
		$RO = 168'$	$RO = 48'$
		$DS = 55MPH$	$DS = 55MPH$
-WBL2-(EXISTING I-4700 ALIGNMENT)			
PI Sta 1093+37.38	PIs Sta 1105+71.35		
$\Delta = 22^{\circ}08'01.8"$ (RT)	$\Theta_s = 0^{\circ}34'39.0"$		
$D = 0^{\circ}55'00.2"$	$L_s = 125.99'$		
$L = 2,414.43'$	$LT = 83.99'$		
$T = 1,222.45'$	$ST = 42.00'$		
$R = 6,250.00'$			
-RPC-			
PI Sta 19+38.58	PI Sta 33+17.83		
$\Delta = 17^{\circ}25'49.5"$ (RT)	$\Delta = 7^{\circ}07'24.0"$ (LT)		
$D = 1^{\circ}11'23.8"$	$D = 2^{\circ}17'04.3"$		
$L = 1,464.81'$	$L = 311.81'$		
$T = 738.11'$	$T = 156.11'$		
$R = 4,815.00'$	$R = 2,508.00'$		
$SE = 03'$	$SE = 04'$		
$RO = 24'$	$RO = 24'$		
$DS = 55MPH$	$DS = 45MPH$		



LEGEND	
	TEMPORARY FILL IN WETLAND
	MECHANIZED CLEARING (GRUBBING)
	SAFETY FENCE

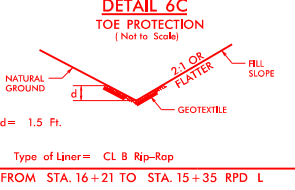
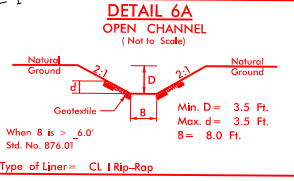
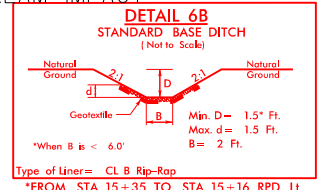
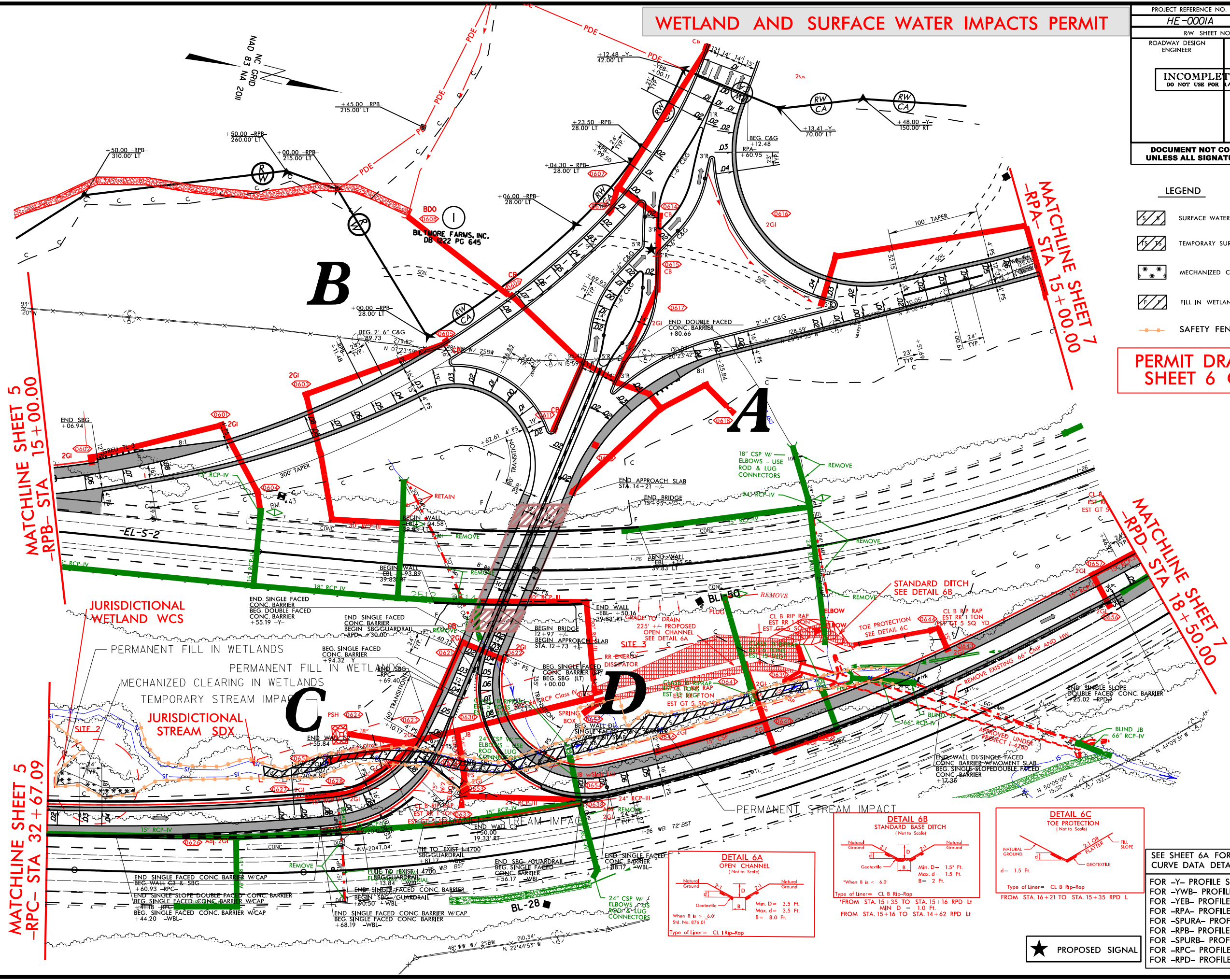
FOR -RPB- PROFILE SEE RDY SHEET 12
FOR -RPC- PROFILE SEE RDY SHEET 13

WETLAND AND SURFACE WATER IMPACTS PERMIT

PROJECT REFERENCE NO.	SHEET NO.
HE-0001A	6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

- LEGEND
- SURFACE WATER IMPACTS
 - TEMPORARY SURFACE WATER IMPACTS
 - MECHANIZED CLEARING (GRUBBING)
 - FILL IN WETLAND
 - SAFETY FENCE

PERMIT DRAWING
SHEET 6 OF 19



SEE SHEET 6A FOR INTERCHANGE
CURVE DATA (RDY SHEETS)

FOR -Y- PROFILE SEE SHEET 9
FOR -YWB- PROFILE SEE SHEET 10
FOR -YEB- PROFILE SEE SHEET 10
FOR -RPA- PROFILE SEE SHEET 11-12
FOR -SPUR- PROFILE SEE SHEET 12
FOR -RPB- PROFILE SEE SHEET 12
FOR -SPURB- PROFILE SEE SHEET 12
FOR -RPA- PROFILE SEE SHEET 14

★ PROPOSED SIGNAL

Legend for wetland mapping symbols:

- SURFACE WATER IMPACTS
- TEMPORARY SURFACE WATER IMPACTS
- MECHANIZED CLEARING (GRUBBING)
- FILL IN WETLAND
- SAFETY FENCE

**PERMIT DRAWING
SHEET 7 OF 19**

MATCHLINE SHEET 5
15 + 00.00

MATCHLINE SHEET 5
-RPC- STA 32 + 67.09

MATCHLINE SHEET 15 + 00.00
-RPA- STA

MATCHLINE SHEET 7
-RPD- STA 18+50.00

DETAIL 6B
STANDARD BASE DITCH
(Not to Scale)

Labels in diagram: Natural Ground, 2:1, D, Geotextile, B, 2:1, Natural Ground.

Min. D = 1.5' Ft.
Max. d = 1.5 Ft.
B = 2 Ft.

*When B is < 6.0'.

Type of Liner = CL B Rip-Rap

*FROM STA. 15+35 TO STA. 15+16 RPD L

DETAIL 6C
TOE PROTECTION
 (Not to Scale)

NATURAL GROUND

2:1 OR FLATTER

FILL SLOPE

GEOTEXTILE

d

d = 1.5 Ft.

Type of Liner = CL B Rip-Rap

FROM STA. 16+21 TO STA. 15+35 RPD L

SEE SHEET 6A FOR INTERCHANGE
CURVE DATA DETAIL (RDY SHEETS)

FOR -Y- PROFILE SEE SHEET 9
FOR -YWB- PROFILE SEE SHEET 10
FOR -YEB- PROFILE SEE SHEET 10
FOR -RPA- PROFILE SEE SHEET 11-12
FOR -SPURA- PROFILE SEE SHEET 12
FOR -RPB- PROFILE SEE SHEET 12
FOR -SPURB- PROFILE SEE SHEET 12
FOR -RPC- PROFILE SEE SHEET 13
FOR -RPD- PROFILE SEE SHEET 14

★ PROPOSED SIGNA

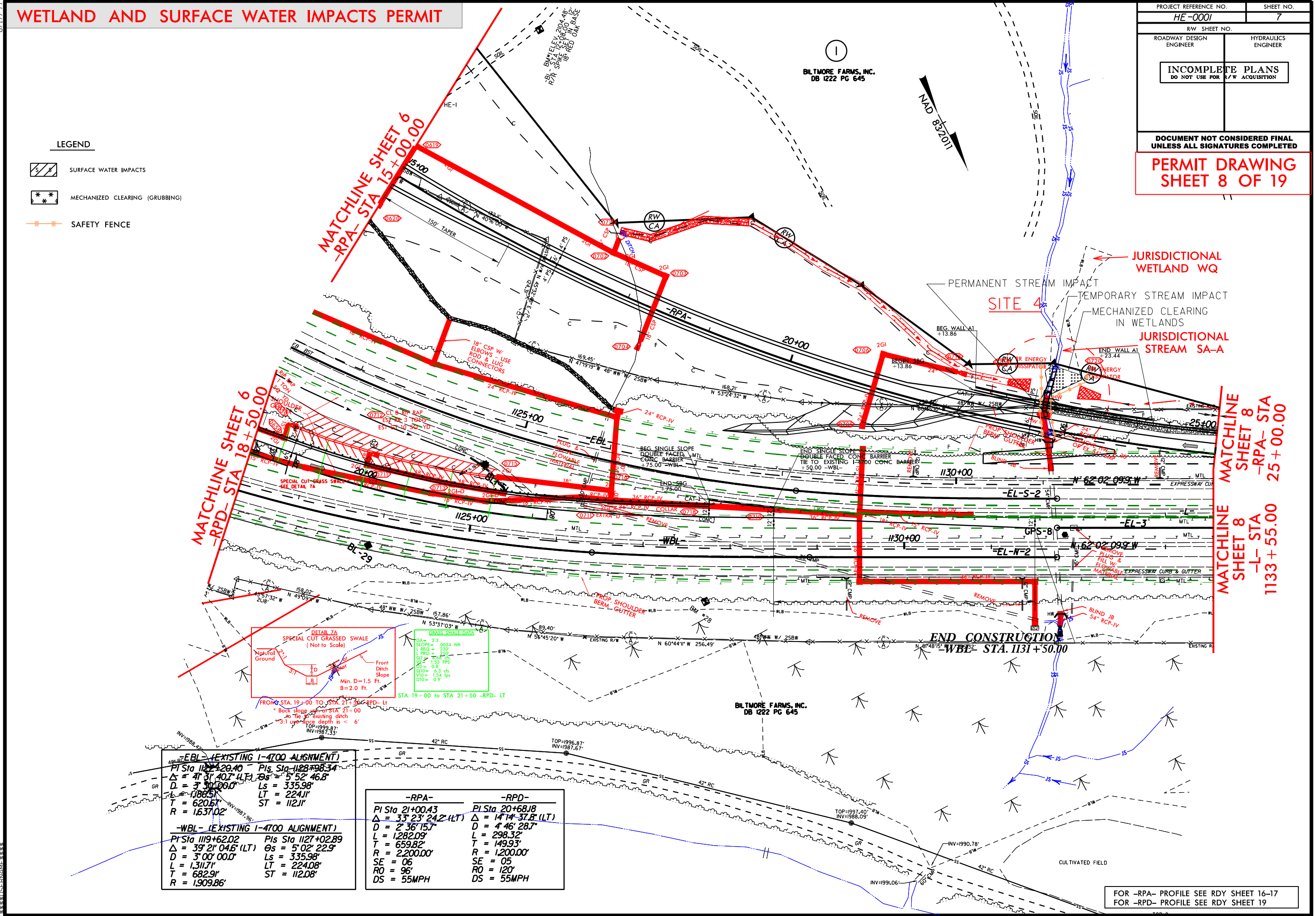
WETLAND AND SURFACE WATER IMPACTS PERMIT

PROJECT REFERENCE NO.	SHEET NO.
HE-0001	7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	

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PERMIT DRAWING
SHEET 8 OF 19

- LEGEND
- SURFACE WATER IMPACTS
 - MECHANIZED CLEARING (GRUBBING)
 - SAFETY FENCE



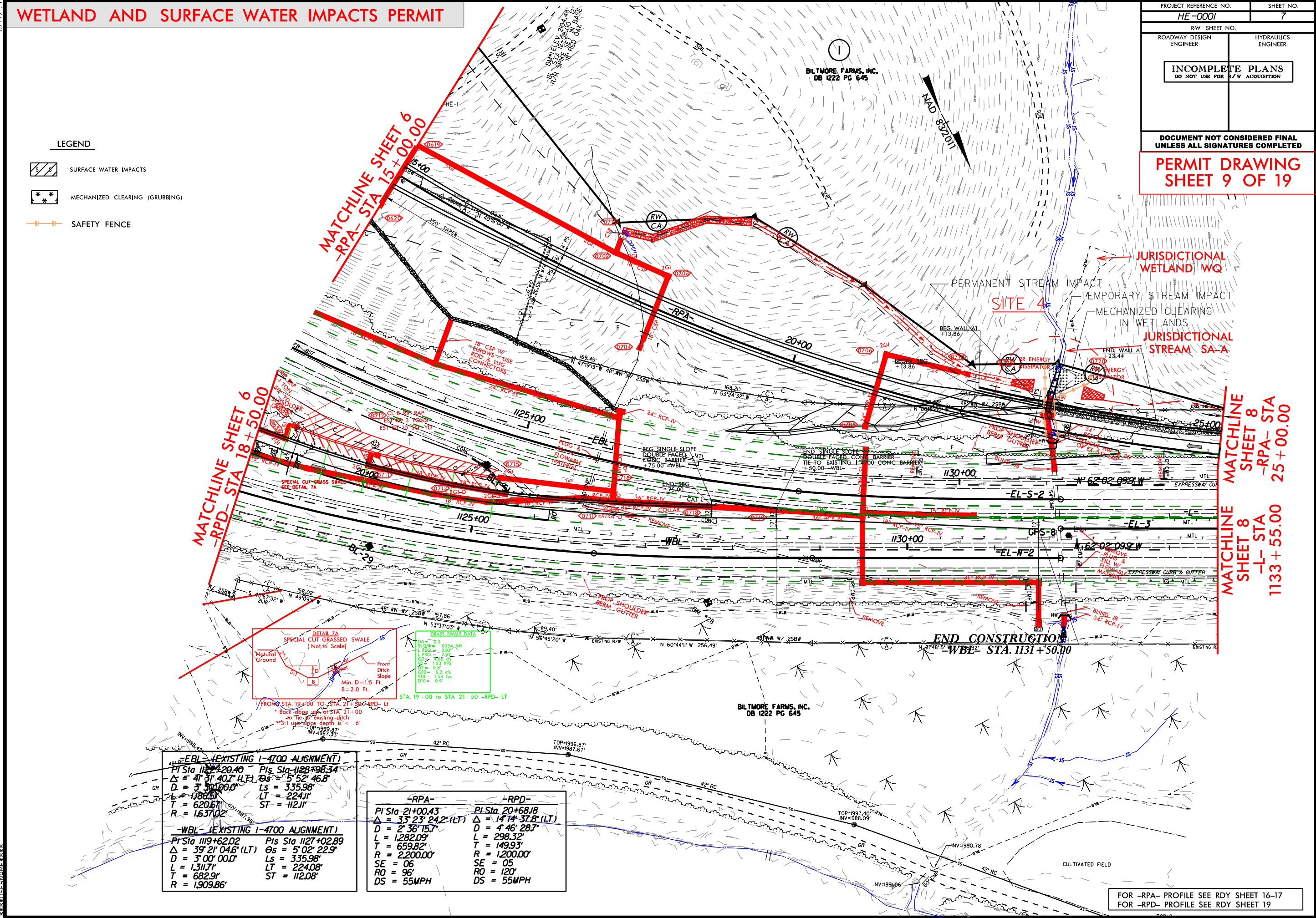
WETLAND AND SURFACE WATER IMPACTS PERMIT

PROJECT REFERENCE NO.	SHEET NO.
HE-0001	7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	

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PERMIT DRAWING
SHEET 9 OF 19

- LEGEND
- SURFACE WATER IMPACTS
 - MECHANIZED CLEARING (GRUBBING)
 - SAFETY FENCE



EBL - (EXISTING I-4700 ALIGNMENT)	
PI Sta 1124+20.40	PIs Sta 1128+98.34
$\Delta = 41^{\circ} 31' 40.7''$ (LT)	$\Theta_s = 5^{\circ} 52' 46.8''$
$D = 3^{\circ} 00' 00.0''$	$L_s = 335.98'$
$L = 1186.51'$	$LT = 224.11'$
$T = 620.57'$	$ST = 112.11'$
$R = 1637.02'$	
-WBL - (EXISTING I-4700 ALIGNMENT)	
PI Sta 1119+62.02	PIs Sta 1127+02.89
$\Delta = 39^{\circ} 21' 04.6''$ (LT)	$\Theta_s = 5^{\circ} 02' 22.9''$
$D = 3^{\circ} 00' 00.0''$	$L_s = 335.98'$
$L = 1,311.71'$	$LT = 224.08'$
$T = 682.91'$	$ST = 112.08'$
$R = 1,909.86'$	

-RPA-	-RPD-
PI Sta 21+00.43	PI Sta 20+68.18
$\Delta = 33^{\circ} 23' 24.2''$ (LT)	$\Delta = 14^{\circ} 14' 37.8''$ (LT)
$D = 2^{\circ} 36' 15.7''$	$D = 4^{\circ} 46' 28.7''$
$L = 1,282.09'$	$L = 298.32'$
$T = 659.82'$	$T = 149.93'$
$R = 2,200.00'$	$R = 1,200.00'$
$SE = 06$	$SE = 05$
$RO = 96$	$RO = 120'$
$DS = 55MPH$	$DS = 55MPH$

FOR -RPA- PROFILE SEE RDY SHEET 16-17
FOR -RPD- PROFILE SEE RDY SHEET 19

8/17/99

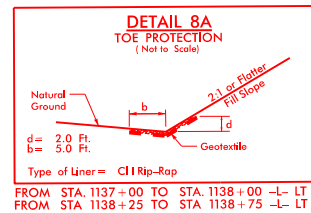
PROJECT REFERENCE NO.	SHEET NO.
HE-0001	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 9 OF 19

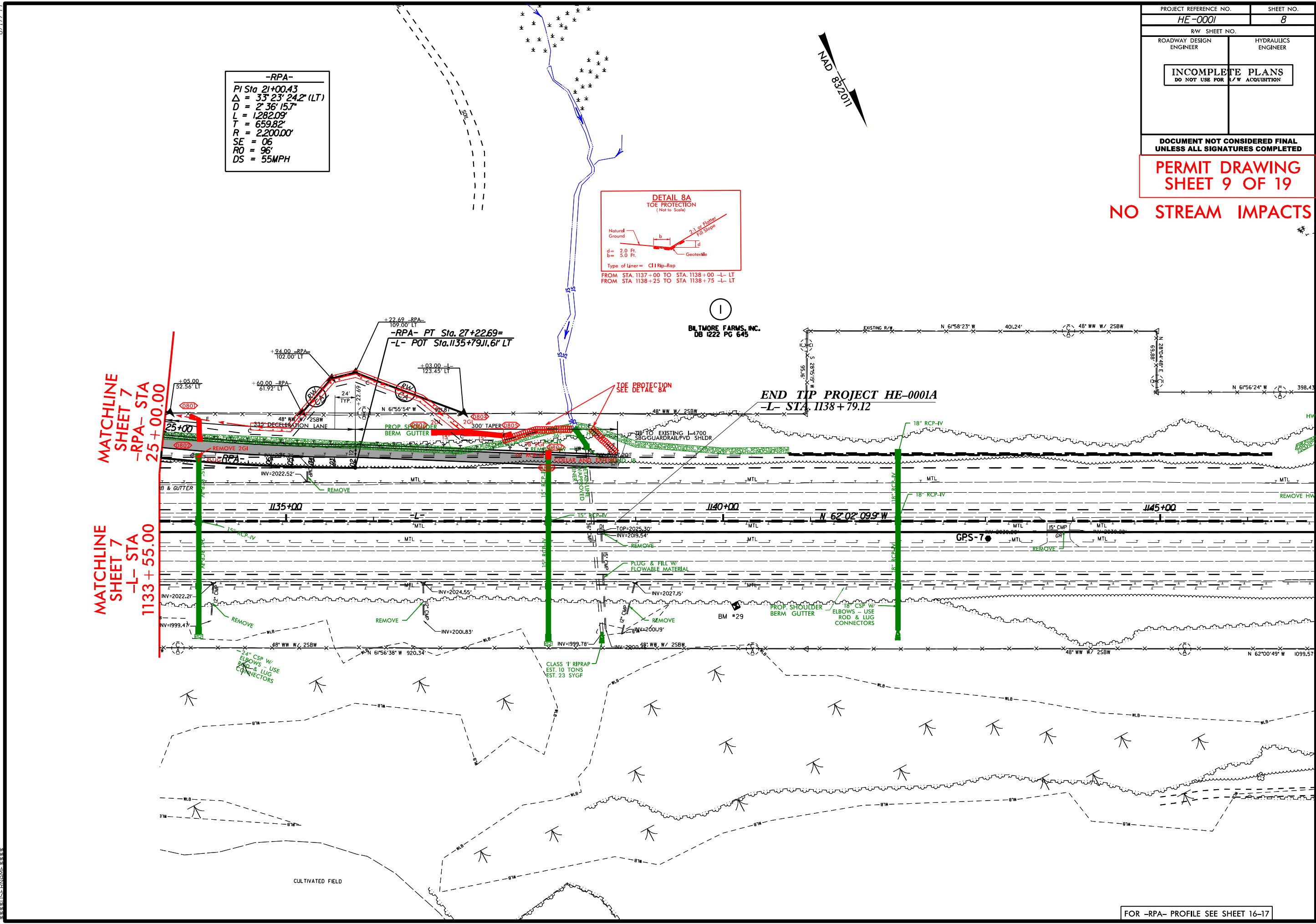
NO STREAM IMPACTS

-RPA-
PI Sta. 21+00.43
 $\Delta = 33^{\circ} 23' 24.2''$ (LT)
D = 2' 36" 15.7"
L = 1282.09'
T = 659.82'
R = 2200.00'
SE = 06
RO = 96
DS = 55MPH



MATCHLINE
SHEET 7
-RPA- STA
25+00.00

MATCHLINE
SHEET 7
-L- STA
1133+55.00



FOR -RPA- PROFILE SEE SHEET 16-17

8/17/99

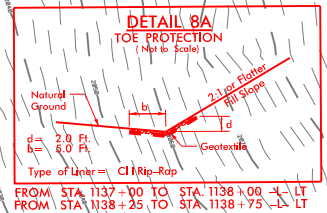
PROJECT REFERENCE NO.	SHEET NO.
HE-0001	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 9 OF 19

NO STREAM IMPACTS

-RPA-
PI Sta. 21+00.43
 $\Delta = 33^{\circ}23'24.2"$ (LT)
D = 2' 36" 15.7"
L = 1282.09'
T = 659.82'
R = 2200.00'
SE = 06
RO = 96
DS = 55MPH



MATCHLINE
SHEET 7
-RPA- STA
25+00.00

MATCHLINE
SHEET 7
-L- STA
1133+55.00

-RPA- PT Sta. 27+22.69=
-L- POT Sta. 1135+79.11.61' LT

BALMORE FARMS, INC.
DB 1222 PG. 645

END TIP PROJECT HE-0001A
-L- STA. 1138+79.12

CONCRETE DITCH
BEHIND RETAINING WALL
SEE DETAIL U

END WALL GUTTER
1144+58.00 LT

GPS-7

CULTIVATED FIELD

FOR -RPA- PROFILE SEE SHEET 16-17

WETLAND AND SURFACE WATER IMPACTS PERMIT

LEGEND



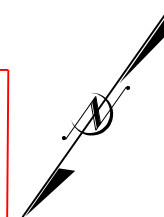
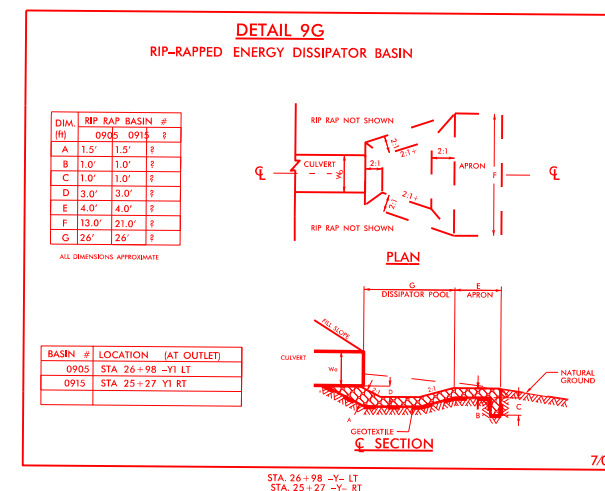
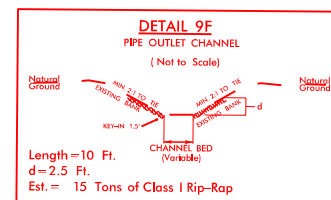
SURFACE WATER IMPACTS



TEMPORARY SURFACE WATER IMPACTS

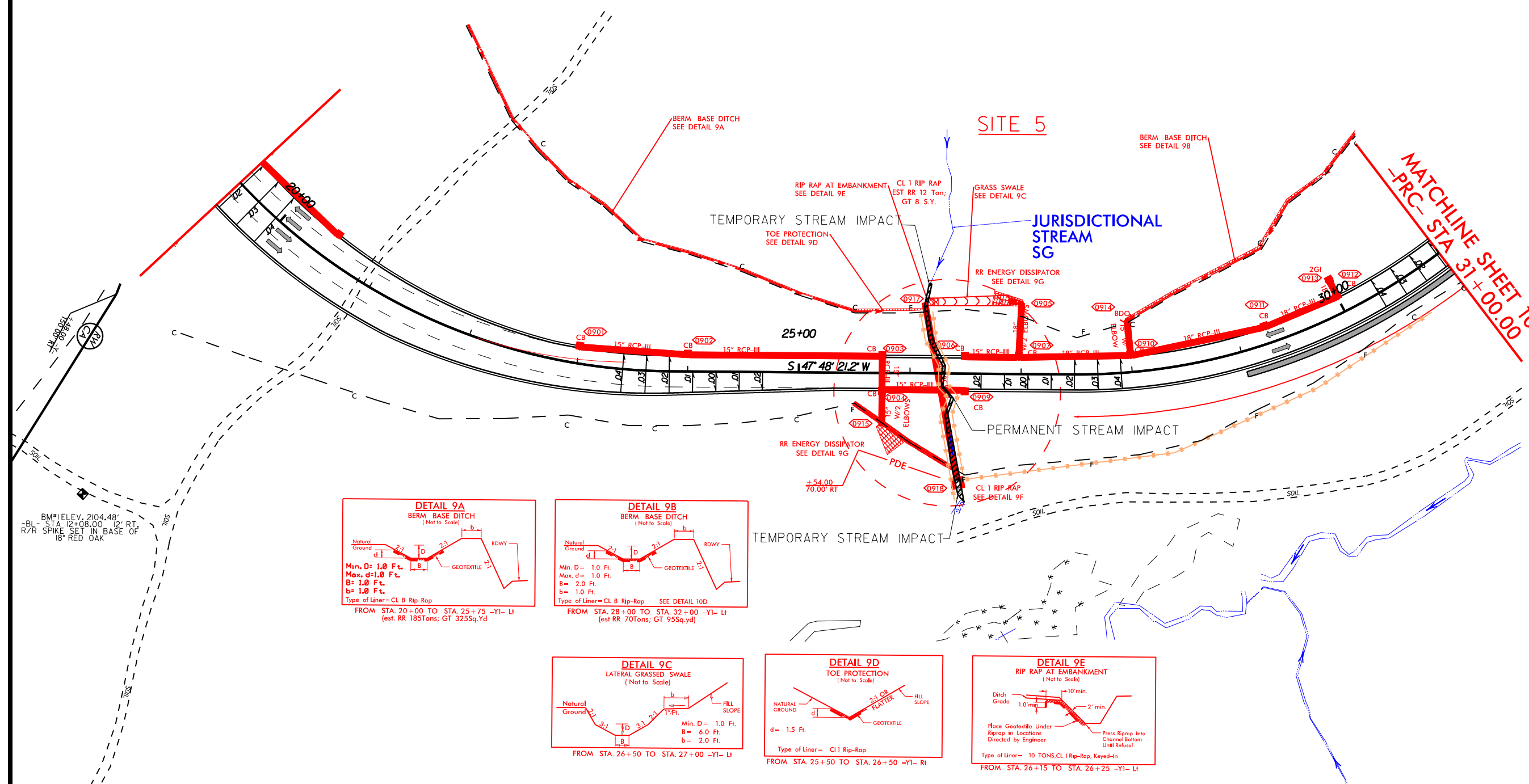


SAFETY FENCE



PROJECT REFERENCE NO.	SHEET NO.
<i>HE-0001B</i>	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETE	

PERMIT DRAWING
SHEET 12 OF 19



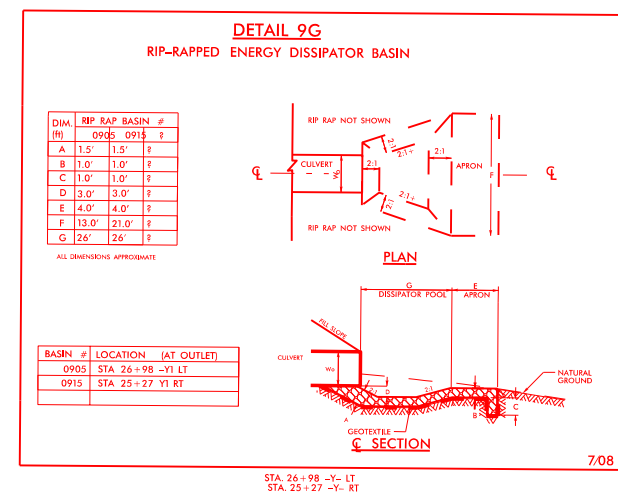
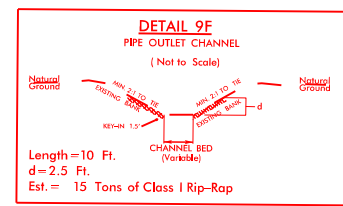
WETLAND AND SURFACE WATER IMPACTS PERMIT

LEGEND

 SURFACE WATER IMPACTS

 TEMPORARY SURFACE WATER IMPACTS

 SAFETY FENCE



PROJECT REFERENCE NO. **HE-0001B** SHEET NO. **9**

R/W SHEET NO.

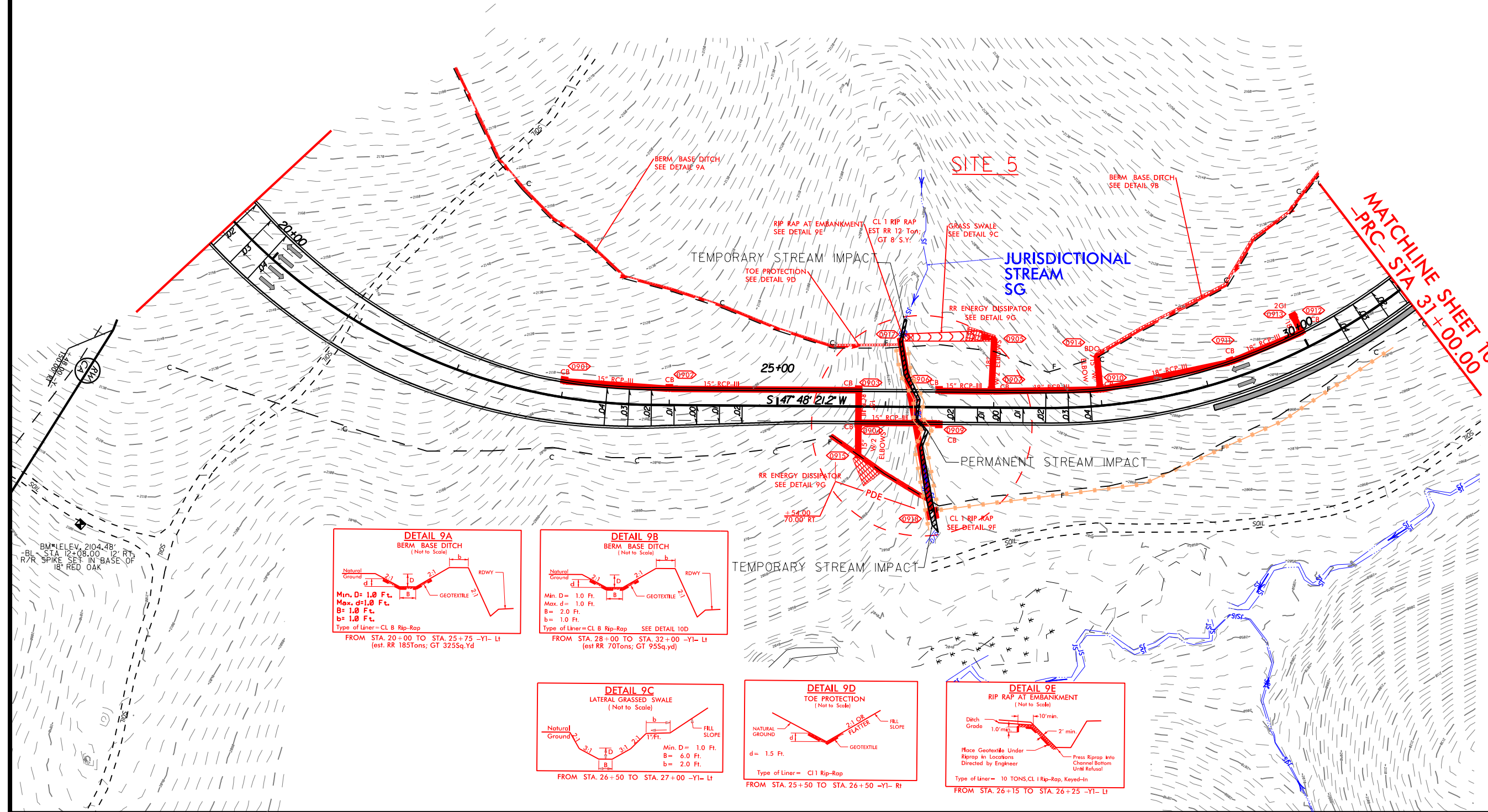
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 13 OF 19



WETLAND AND SURFACE WATER IMPACTS PERMIT

LEGEND

- SURFACE WATER IMPACTS
- TEMPORARY SURFACE WATER IMPACTS
- MECHANIZED CLEARING (GRUBBING)
- SAFETY FENCE

PROJECT REFERENCE NO.
HE-000IB

SHEET NO.
10

R/W SHEET NO.

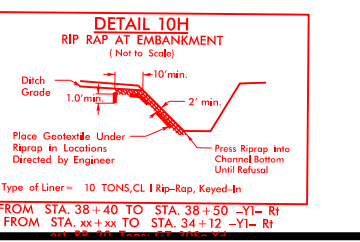
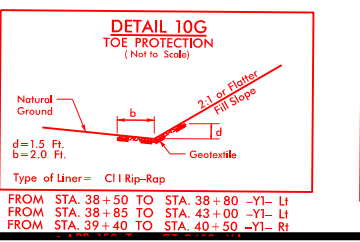
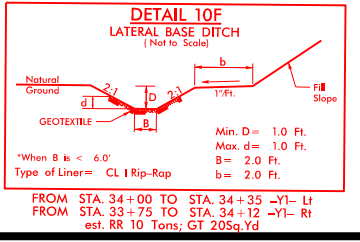
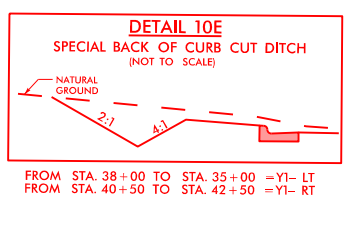
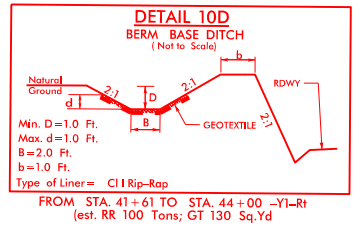
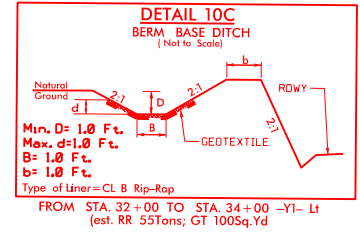
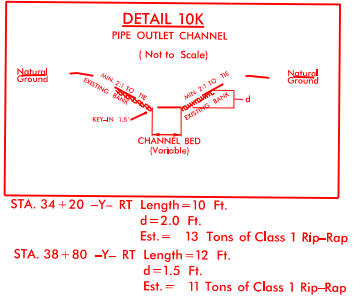
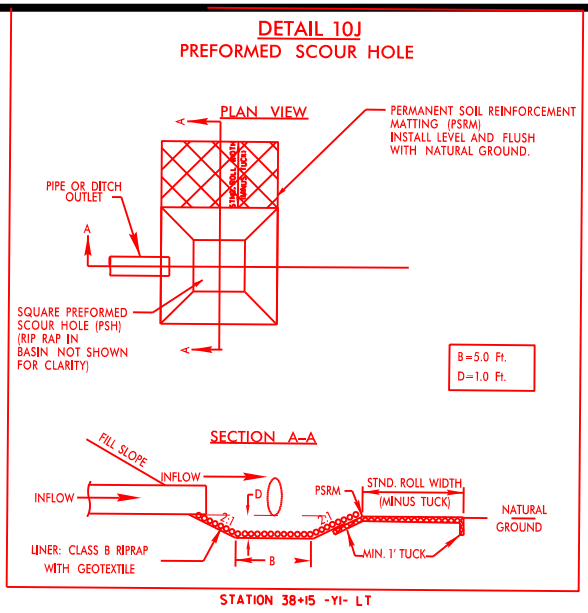
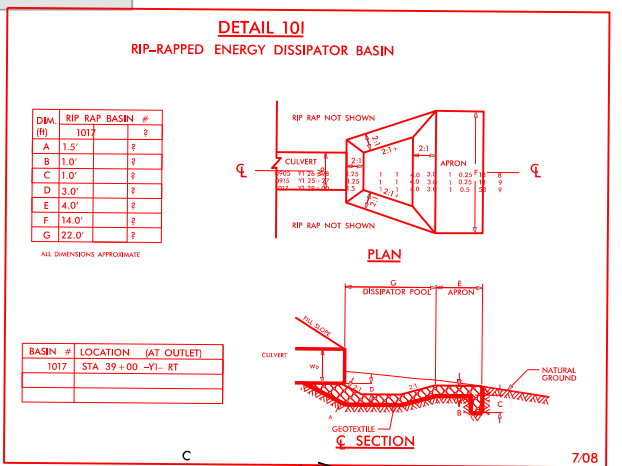
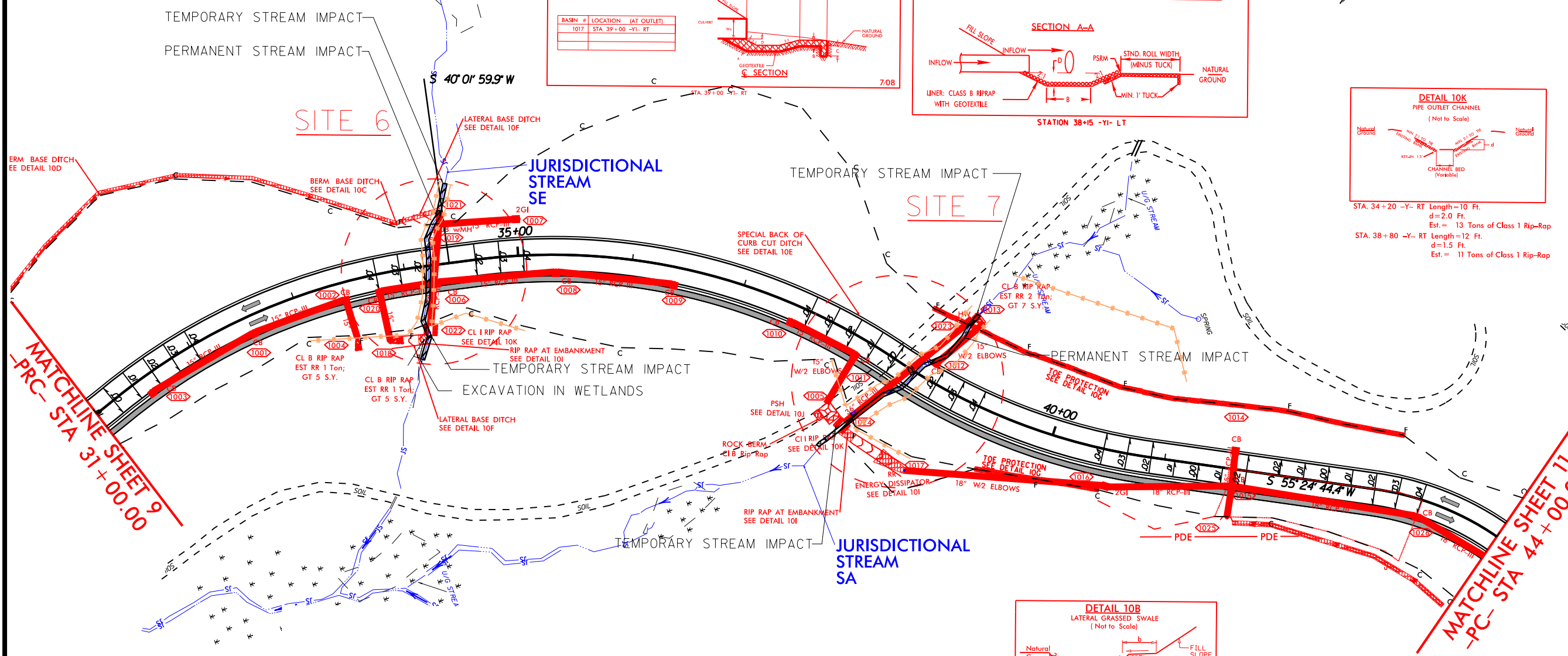
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 14 OF 19



WETLAND AND SURFACE WATER IMPACTS PERMIT

LEGEND

- SURFACE WATER IMPACTS
- TEMPORARY SURFACE WATER IMPACTS
- MECHANIZED CLEARING (GRUBBING)
- SAFETY FENCE

PROJECT REFERENCE NO.
HE-0001B

SHEET NO.
10

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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PERMIT DRAWING
SHEET 15 OF 19

DETAIL 101
RIP-RAPPED ENERGY DISSIPATOR BASIN

ITEM	RIP RAP BASIN #	#
A	1017	2
B	1017	2
C	1017	2
D	1017	2
E	1017	2
F	1017	2
G	1017	2

ALL DIMENSIONS APPROXIMATE

BASIN # LOCATION (AT OUTLET)
1017 STA 39+00 -Y1- RT

DETAIL 10J
PREFORMED SCOUR HOLE

PLAN VIEW

PERMANENT SOIL REINFORCEMENT MATTING (PSRM) INSTALL LEVEL AND FLUSH WITH NATURAL GROUND.

PIPE OR DITCH OUTLET

SQUARE PREFORMED SCOUR HOLE (PSH) (RIP RAP IN BASIN NOT SHOWN FOR CLARITY)

B=5.0 Ft.
D=1.0 Ft.

SECTION A-A

INFLOW

FILL SLOPE

PSRM

STND. ROLL WIDTH (MINUS TUCK)

NATURAL GROUND

MIN. 1" TUCK

LINER: CLASS B RIPRAP WITH GEOTEXTILE

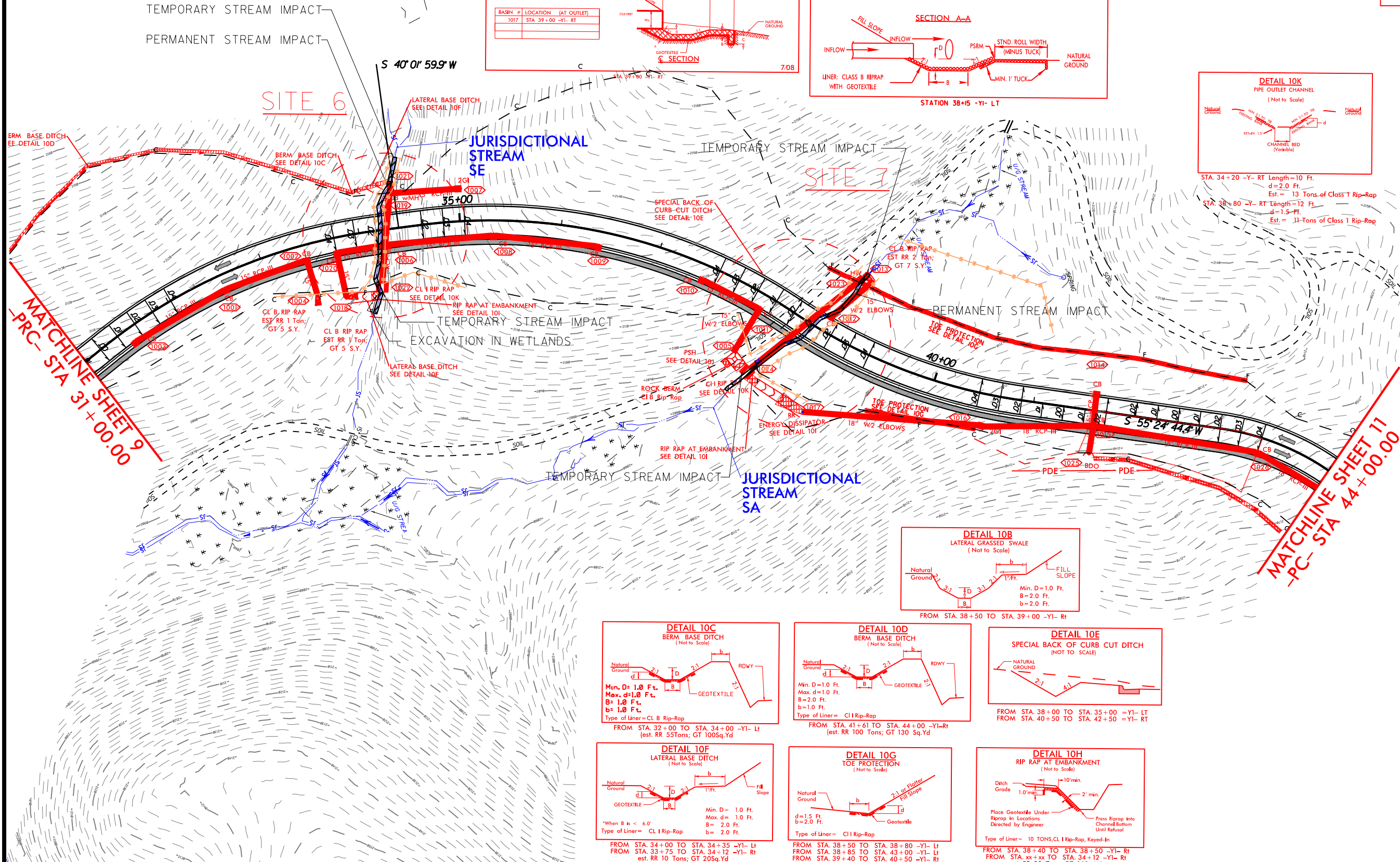
STATION 38+15 -Y1- LT

DETAIL 10K
PIPE OUTLET CHANNEL

(Not to Scale)

STA. 34+20 -Y- RT Length=10 Ft.
d=2.0 Ft.
Est. = 13 Tons of Class 1 Rip-Rap

STA. 38+80 -Y- RT Length=12 Ft.
d=1.5 Ft.
Est. = 11-Tons of Class 1 Rip-Rap



DETAIL 10C
BERM, BASE DITCH

(Not to Scale)

Min. D= 1.0 Ft.
Max. d=1.0 Ft.
B= 1.0 Ft.
b= 1.0 Ft.

Type of Liner= CL B Rip-Rap

FROM STA. 32+00 TO STA. 34+00 -Y1- Lt
(est. RR 55Tons; GT 100Sq.Yd)

DETAIL 10D
BERM, BASE DITCH

(Not to Scale)

Min. D=1.0 Ft.
Max. d=1.0 Ft.
B=2.0 Ft.
b=1.0 Ft.

Type of Liner= CL I Rip-Rap

FROM STA. 41+61 TO STA. 44+00 -Y1- Rt
(est. RR 100 Tons; GT 130 Sq.Yd)

DETAIL 10E
SPECIAL BACK OF CURB CUT DITCH

(NOT TO SCALE)

FROM STA. 38+00 TO STA. 35+00 -Y1- Lt
FROM STA. 40+50 TO STA. 42+50 -Y1- Rt

DETAIL 10F
LATERAL BASE DITCH

(Not to Scale)

Min. D= 1.0 Ft.
Max. d= 1.0 Ft.
B= 2.0 Ft.
b= 2.0 Ft.

Type of Liner= CL I Rip-Rap

FROM STA. 34+00 TO STA. 34+35 -Y1- Lt
FROM STA. 33+75 TO STA. 34+12 -Y1- Rt
(est. RR 10 Tons; GT 20Sq.Yd)

DETAIL 10G
TOE PROTECTION

(Not to Scale)

d=1.5 Ft.
b=2.0 Ft.

Type of Liner= CL I Rip-Rap

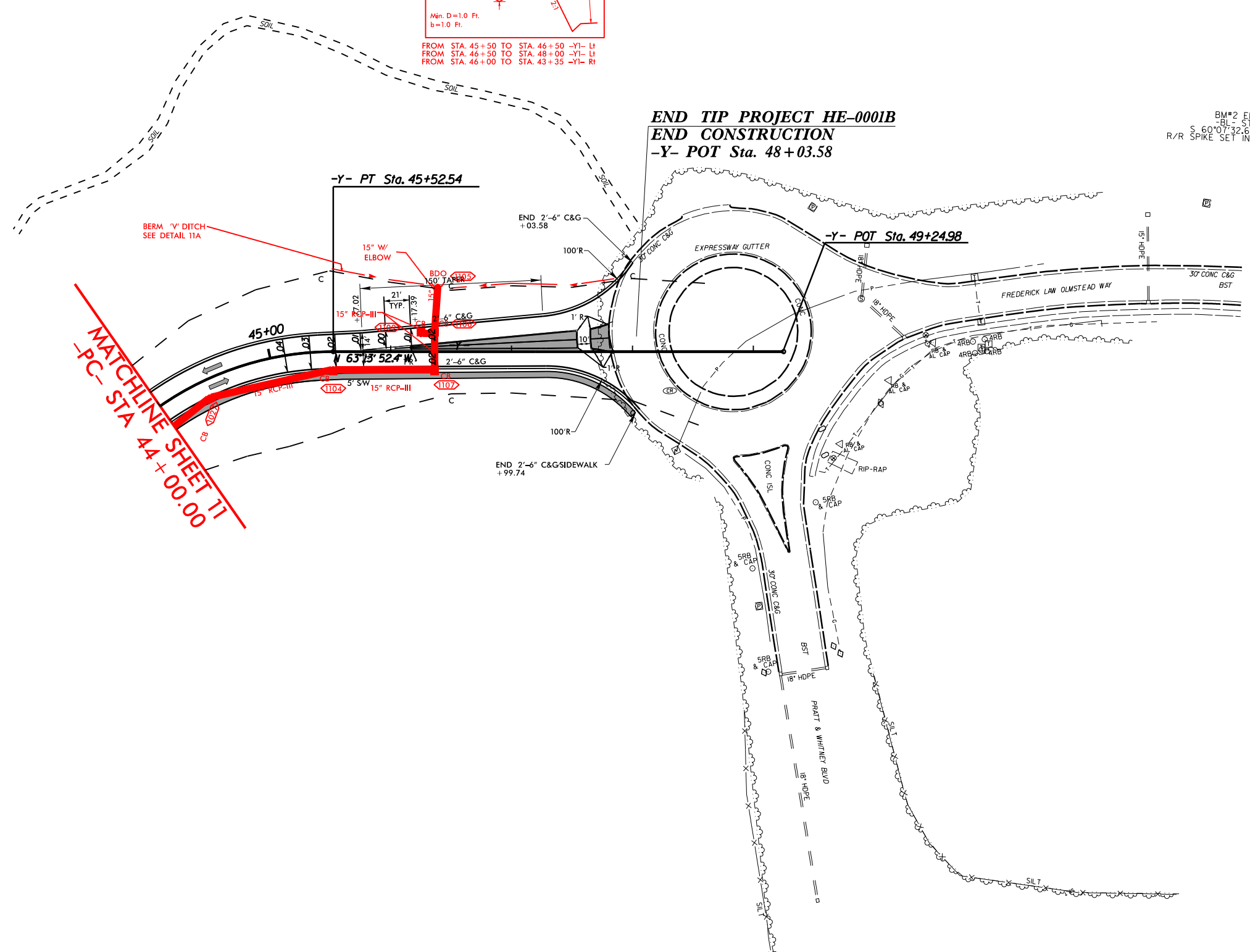
FROM STA. 38+50 TO STA. 38+80 -Y1- Lt
FROM STA. 38+85 TO STA. 39+12 -Y1- Lt
FROM STA. 39+40 TO STA. 40+50 -Y1- Rt

DETAIL 10H
RIP RAP AT EMBANKMENT

(Not to Scale)

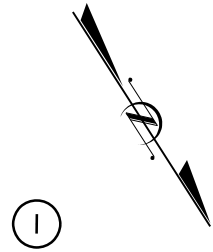
Type of Liner= 10 TONS, CL I Rip-Rap, Keyed-In

FROM STA. 38+40 TO STA. 38+50 -Y1- Rt
FROM STA. xx+xx TO STA. 34+12 -Y1- Rt



-Y-
PI Sta 44+33.13
 $\Delta = 61' 21" 23.2' (RT)$
 $D = 22' 55" 05.9'$
 $L = 267.72'$
 $T = 148.31'$
 $R = 250.00'$
 $SE = 04'$
 $RO = 42'$
 $DS = 30MPH$

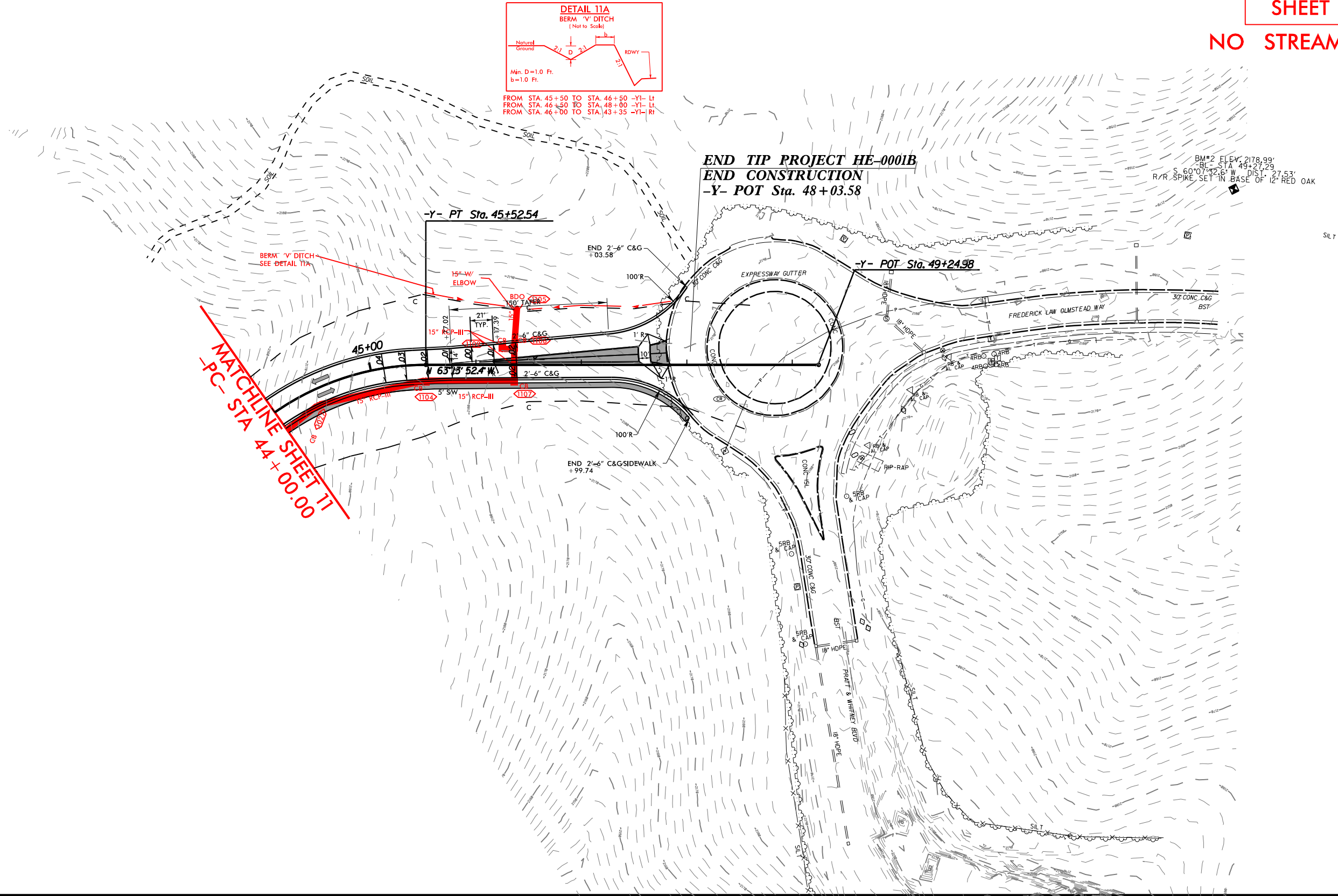
WETLAND AND SURFACE WATER IMPACTS PERMIT



PROJECT REFERENCE NO.	SHEET NO.
HE-0001B	11
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

PERMIT DRAWING
SHEET 17 OF 19

NO STREAM IMPACTS



WETLAND AND SURFACE WATER IMPACTS SUMMARY												
			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	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)
1	RPC 25+17 to 25+30 LT	Fill in Wetlands/Mechanized Clearing Due to Roadway Widening	< 0.01			0.01						
2	RPC 31+75 to 32+62 LT	Fill in Wetlands/Mechanized Clearing due to Roadway Widening	0.02			0.03						
3	RPC 34+99 to 36+35 RPD 11+38 to 15+16 LT	Stream relocated to Proposed Channel Due to Roadway Widening and Extension of Proposed 9'X7' RCBC and 66in RCP (292')	< 0.01							512	73	
4	RPA 22+89 to 23+34	Inlet of Proposed 54in RCP/Mechanized Clearing Due to Roadway Widening and Installation of Proposed 54in RCP extension				0.02				50	16	
5	-Y- 26+12 to 26+39	Proposed 30in RCP								160	40	
6	-Y- 33+95 to 34+08	Excavation in Wetland Due to Outlet of Proposed 24in RCP			0.01							
6	-Y- 34+08 to 34+46	Proposed 24in RCP								114	45	
7	-Y- 38+34 to 38+94	Proposed 36in RCP								145	16	
TOTALS*:			0.03		0.01	0.06				981	190	0

NOTES:

Revised 2018 Feb