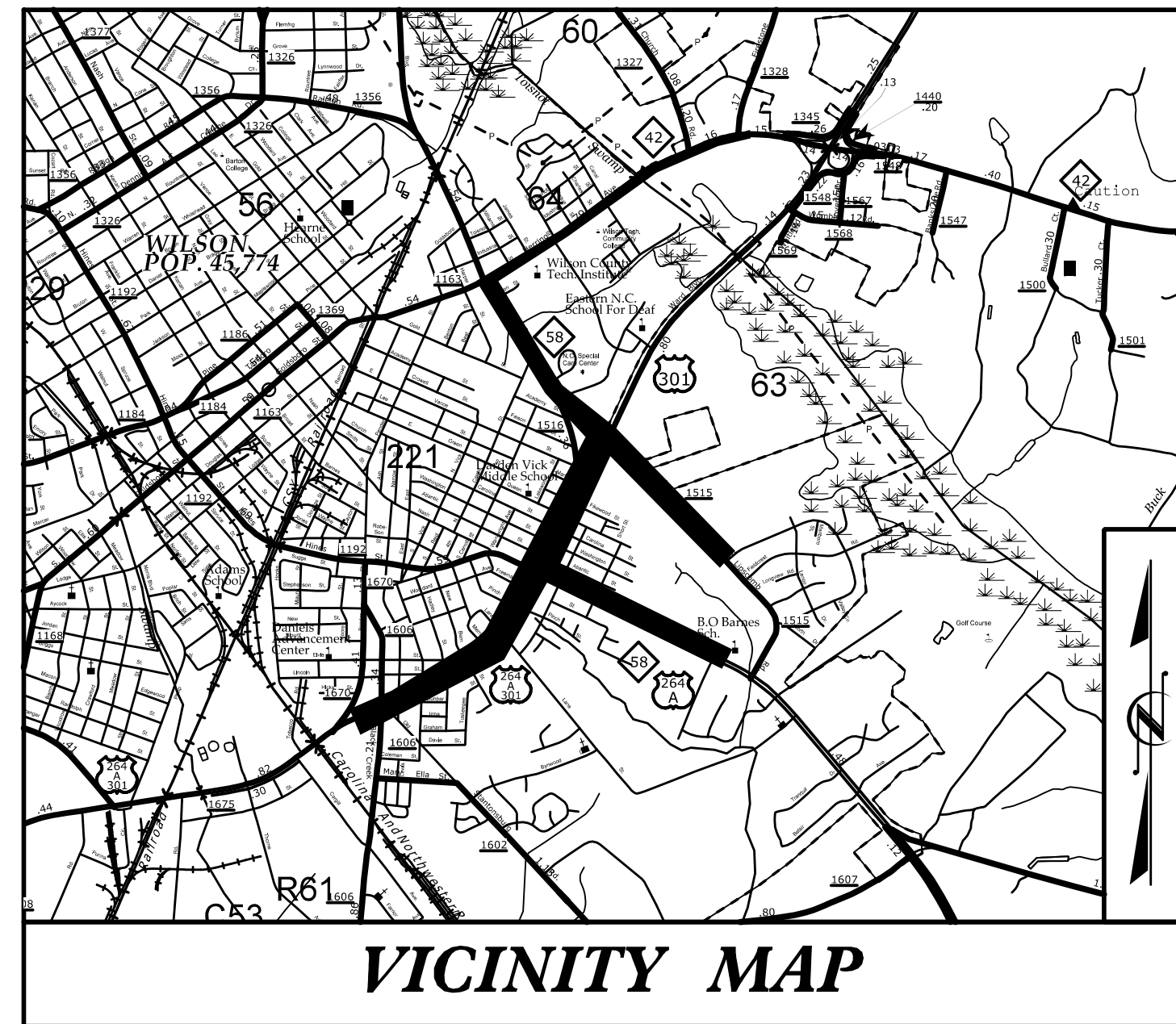


**This electronic collection of documents is provided  
for the convenience of the user  
and is Not a Certified Document –**

**The documents contained herein were originally issued  
and sealed by the individuals whose names and license  
numbers appear on each page, on the dates appearing  
with their signature on that page.**

**This file or an individual page  
shall not be considered a certified document.**

**TIP PROJECT: U-5935**



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

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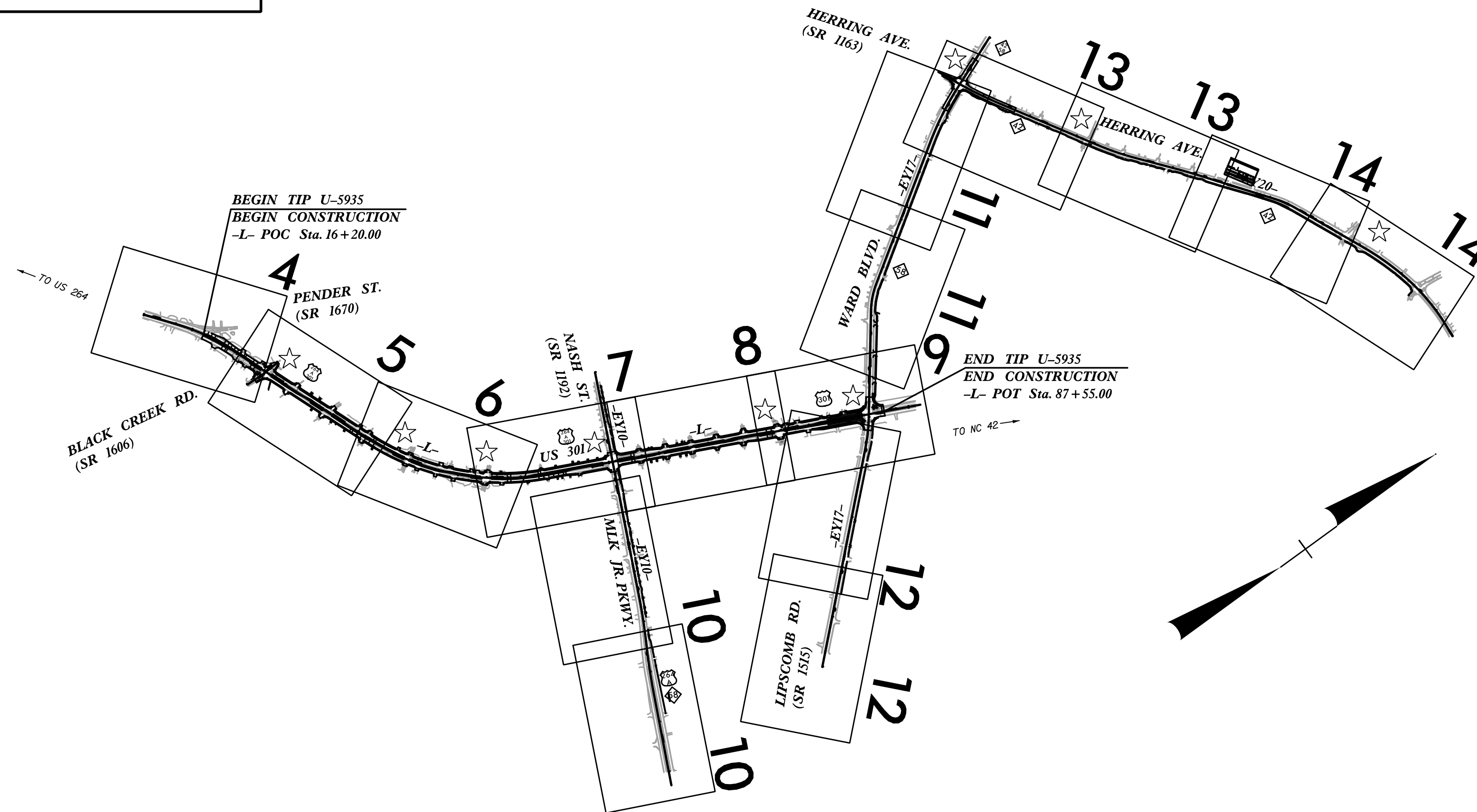
PLAN FOR PROPOSED  
HIGHWAY EROSION CONTROL

---

**WILSON COUNTY**

**LOCATION: US 301 FROM JUST EAST OF BLACK CREEK ROAD (SR 1606)  
TO LIPSCOMB ROAD (SR 1515) AND ALONG WARD BOULEVARD  
AND HERRING AVENUE FROM US 301 TO FIRESTONE PARKWAY**

**TYPE OF WORK: GRADING, PAVING, DRAINAGE, AND SIGNALS**



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-5935	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

**EROSION AND SEDIMENT CONTROL MEASURES**

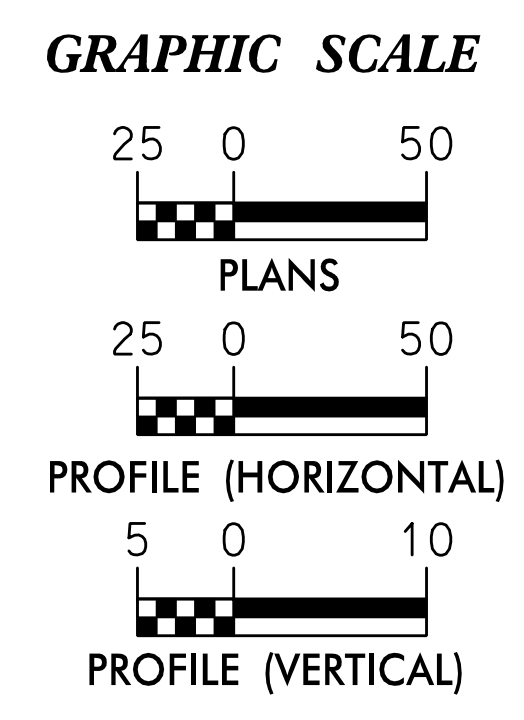
Sed. #	Description	Symbol
1630.03	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	TSF
1606.01	Special Sediment Control Fence	SCF
1622.01	Temporary Berms and Slope Drains	TBSD
1630.02	Silt Basin Type B	SB
1633.01	Temporary Rock Silt Check Type-A	TRSCA
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	TRSCA-PAM
1633.02	Temporary Rock Silt Check Type-B	TRSCB
	Wattle/Coir Fiber Wattle	WF
	Wattle/Coir Fiber Wattle with Polyacrylamide (PAM)	WF-PAM
1634.01	Temporary Rock Sediment Dam Type-A	TRSDA
1634.02	Temporary Rock Sediment Dam Type-B	TRSDB
1635.01	Rock Pipe Inlet Sediment Trap Type-A	RPISTRA
1635.02	Rock Pipe Inlet Sediment Trap Type-B	RPISTRB
1630.04	Stilling Basin	SB
1630.06	Special Stilling Basin	SSB
	Rock Inlet Sediment Trap:	
1632.01	Type A	RIA
1632.02	Type B	RIAB
1632.03	Type C	RIAC
	Skimmer Basin	SKB
	Tiered Skimmer Basin	TSKB
	Infiltration Basin	IB

**THIS PROJECT CONTAINS  
EROSION CONTROL PLANS  
FOR CLEARING AND  
GRUBBING PHASE OF  
CONSTRUCTION.**

**THIS PROJECT HAS  
BEEN DESIGNED TO  
SENSITIVE WATERSHED  
STANDARDS.**

**ENVIRONMENTALLY  
SENSITIVE AREA(S) EXIST  
ON THIS PROJECT**

*Refer To E. C. Special Provisions  
for Special Considerations.*



THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 1, 2016 AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER RESOURCES.

Prepared In the Office of:

NC FIRM LICENSE No: F-1148  
1151 SE Cary Parkway  
Suite 101  
Cary, NC 27518  
(919) 557-0929

Designed by:

**BRANDON BARHAM, PE**  
NAME

3368  
LEVEL III CERTIFICATION NO.

Reviewed In the Office of:

**ROADSIDE ENVIRONMENTAL UNIT**  
1 South Wilmington St.  
Raleigh, NC 27611

**2012 STANDARD SPECIFICATIONS**

Reviewed by:

**DONALD PEARSON, EI, CPESC**

*Roadway Standard Drawings*

The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2012 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01 Railroad Erosion Control Detail	1632.01 Rock Inlet Sediment Trap Type A
1605.01 Temporary Silt Fence	1632.02 Rock Inlet Sediment Trap Type B
1606.01 Special Sediment Control Fence	1632.03 Rock Inlet Sediment Trap Type C
1607.01 Gravel Construction Entrance	1633.01 Temporary Rock Silt Check Type A
1622.01 Temporary Berms and Slope Drains	1633.02 Temporary Rock Silt Check Type B
1630.01 Riser Basin	1634.01 Temporary Rock Sediment Dam Type A
1630.02 Silt Basin Type B	1634.02 Temporary Rock Sediment Dam Type B
1630.03 Temporary Silt Ditch	1635.01 Rock Pipe Inlet Sediment Trap Type A
1630.04 Stilling Basin	1635.02 Rock Pipe Inlet Sediment Trap Type B
1630.05 Temporary Diversion	1640.01 Coir Fiber Baffle
1630.06 Special Stilling Basin	1645.01 Temporary Stream Crossing
1631.01 Matting Installation	

3/16/2016 BY: [unclear]  
 RE: Environmental Design U-5935-REU.TSH.dgn  
 Brandon Barham

PROJECT REFERENCE NO. <i>U-5935</i>	SHEET NO. <i>EC-02</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL

NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

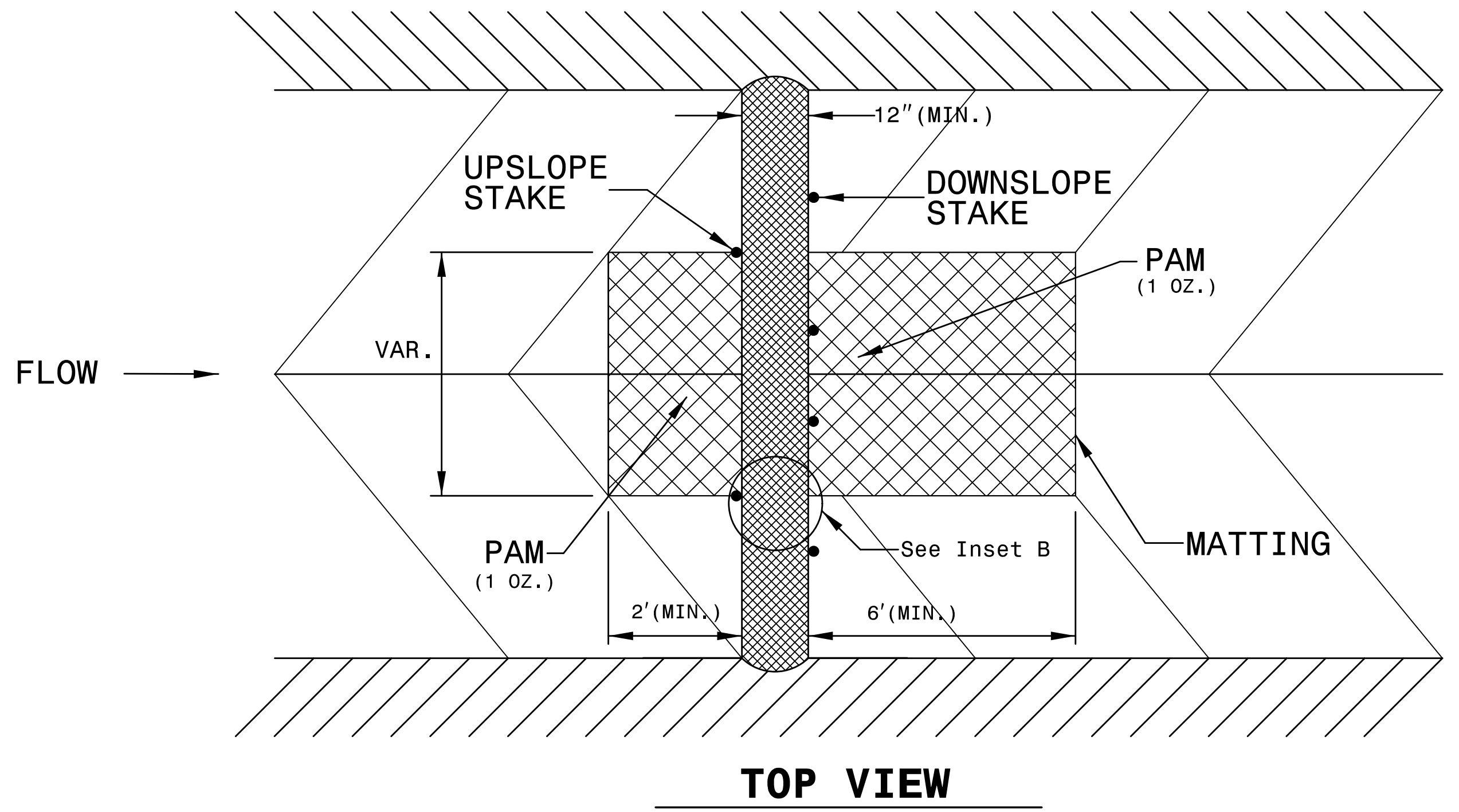
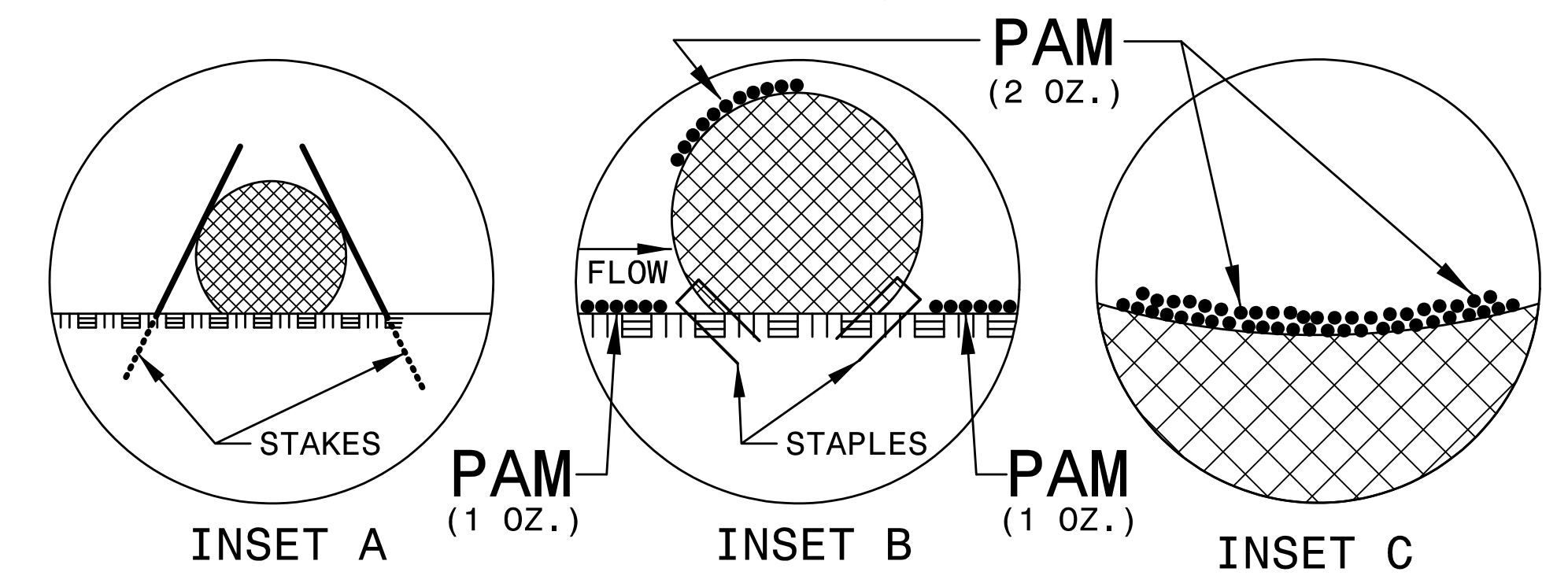
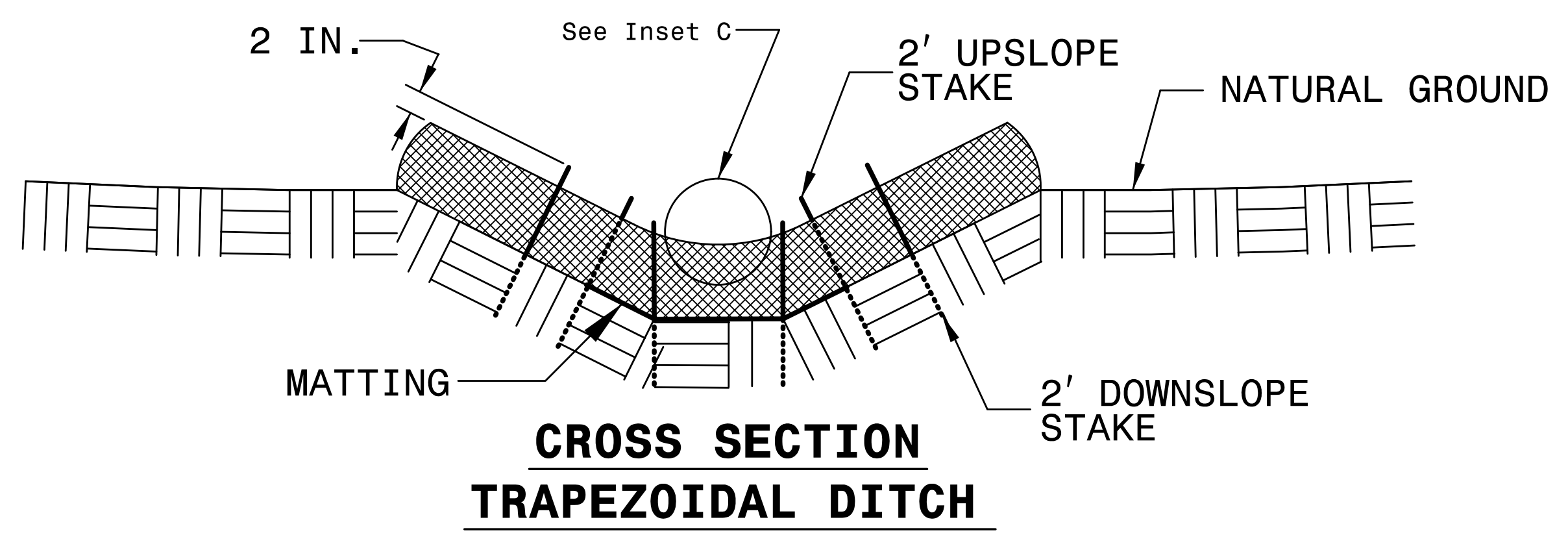
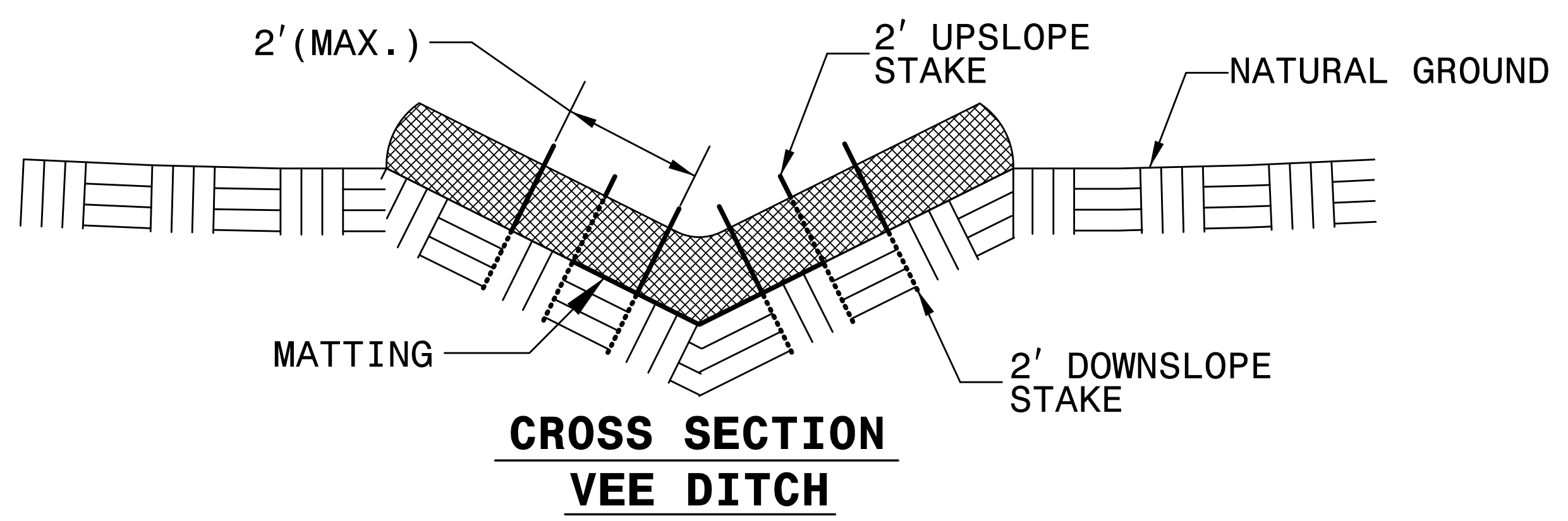
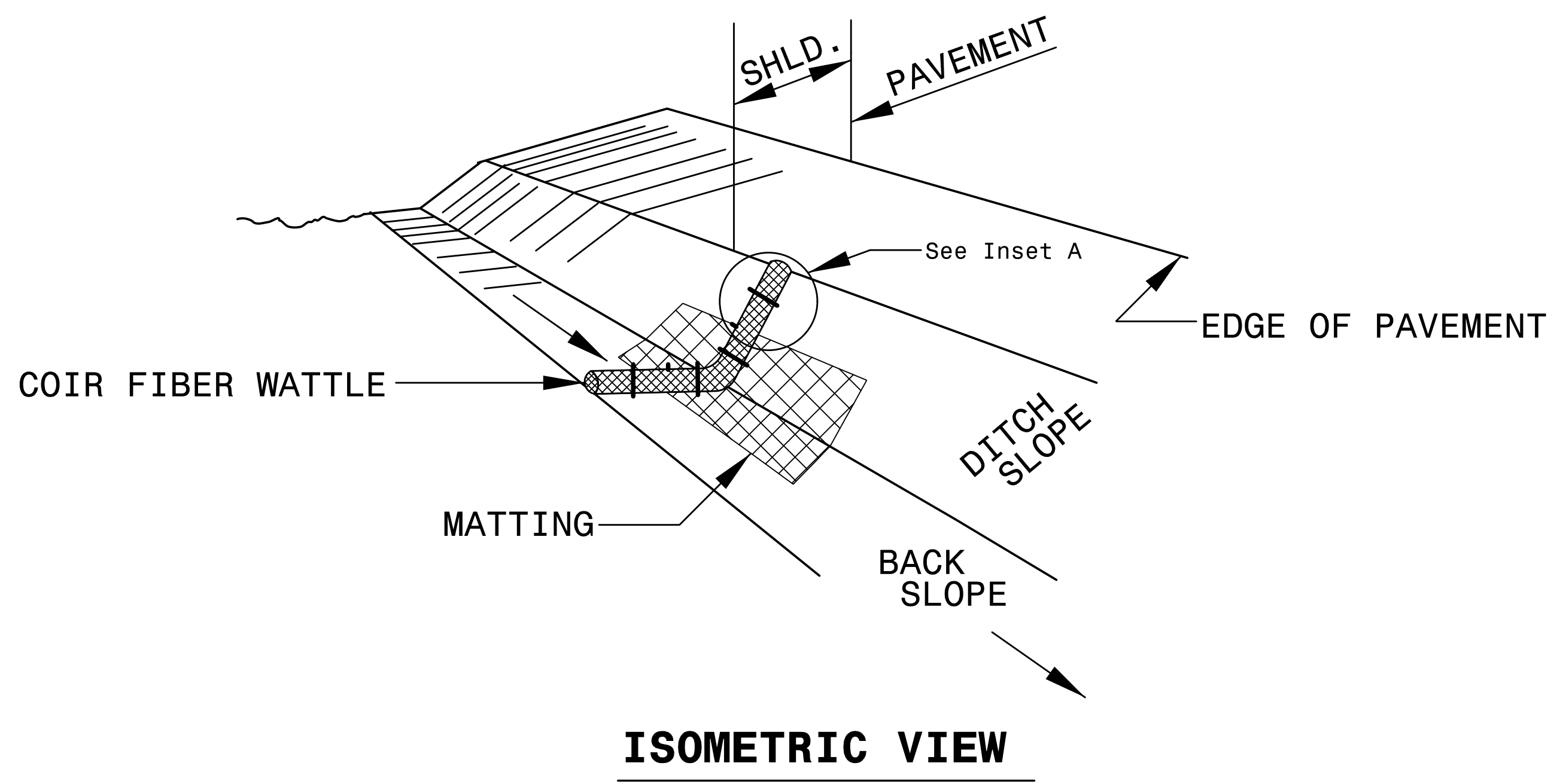
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.



DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

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## ***SOIL STABILIZATION TIMEFRAMES***

<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.



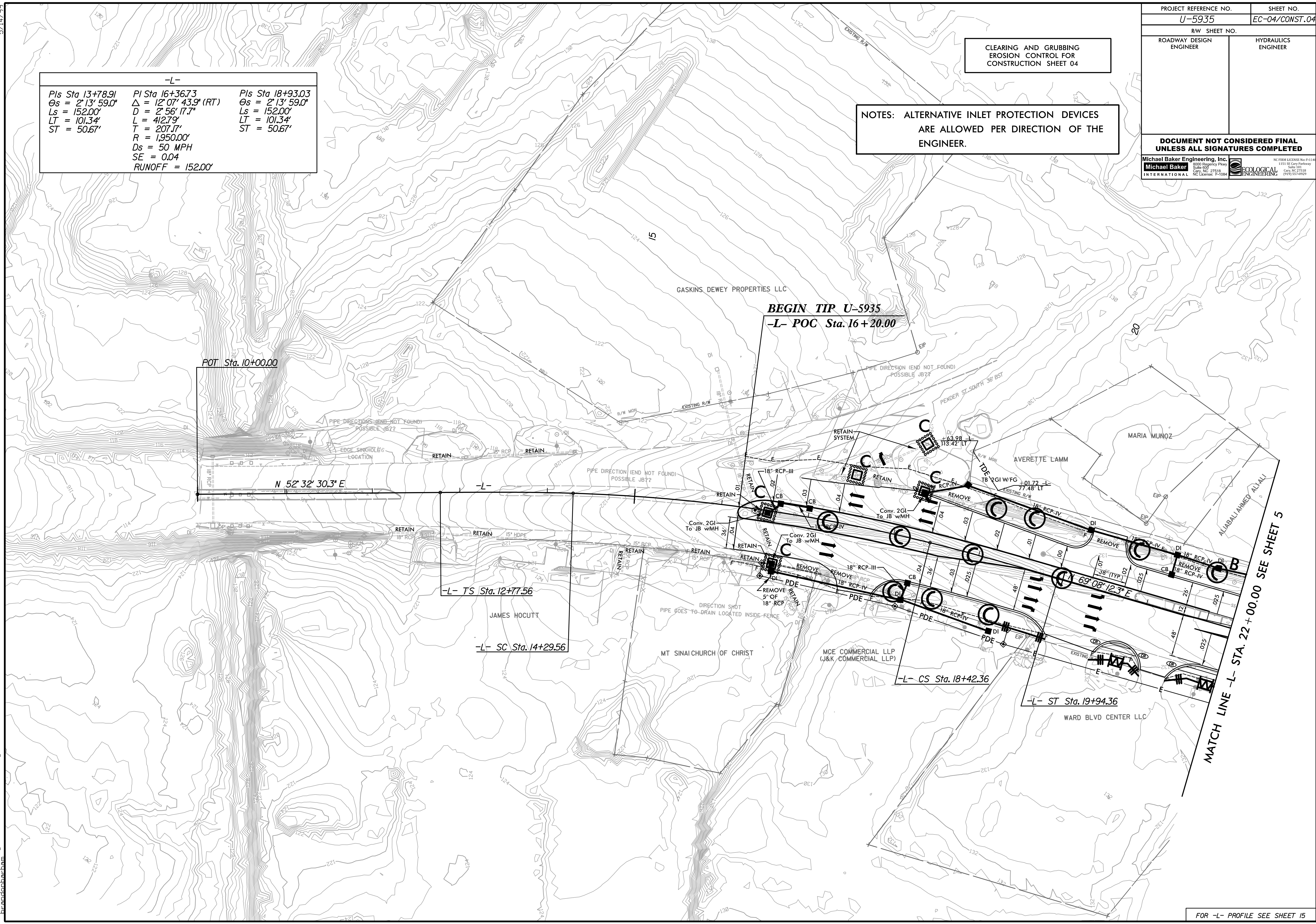
5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-5935	EC-04/CONST.04
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	
Michael Baker Engineering, Inc. 1000 Virginia Ferry Suite 100 Cary, NC 27518 Tel: 919.275.1800 Fax: 919.275.1801 Michael Baker International, Inc. License: P-1084	ECOLOGICAL ENGINEERING 1103 SE City Parkway Suite 110 Cary, NC 27518 Tel: 919.557-4929

-L-		
PIs Sta 13+78.91	PI Sta 16+36.73	PIs Sta 18+93.03
$\Theta_s = 2' 13' 59.0''$	$\Delta = 12' 07' 43.9''$ (RT)	$\Theta_s = 2' 13' 59.0''$
$L_s = 152.00'$	$D = 2' 56' 17.7''$	$L_s = 152.00'$
$LT = 101.34'$	$L = 412.79'$	$LT = 101.34'$
$ST = 50.67'$	$T = 207.17'$	$ST = 50.67'$
	$R = 1,950.00'$	
	$D_s = 50$ MPH	
	$SE = 0.04$	
	$RUNOFF = 152.00'$	

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 04

NOTES: ALTERNATIVE INLET PROTECTION DEVICES  
ARE ALLOWED PER DIRECTION OF THE  
ENGINEER.

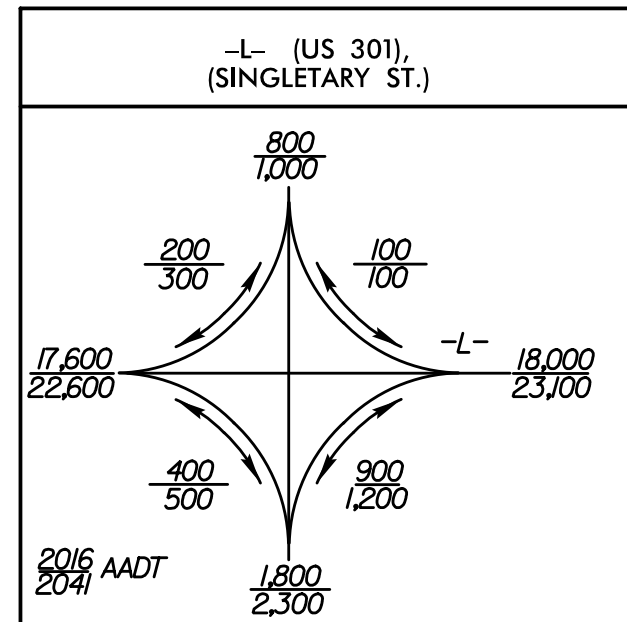
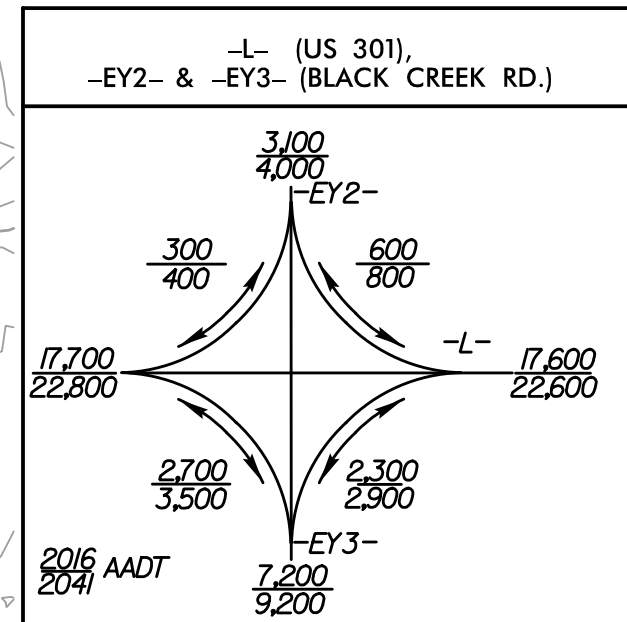


MATCH LINE -L- STA. 22+00.00 SEE SHEET 5

FOR -L- PROFILE SEE SHEET 15

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Production

5/14/99  
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-L-		
Pls Sta 35+66.66	Pl Sta 44+91.24	Pls Sta 53+43.81
$\Theta_s = 1^{\circ}45'16.9''$	$\Delta = 40^{\circ}05'11.7''$ (LT)	$\Theta_s = 1^{\circ}45'16.9''$
$L_s = 147.00'$	$D = 2^{\circ}23'14.4''$	$L_s = 147.00'$
$LT = 98.00'$	$L = 1679.14'$	$LT = 98.00'$
$ST = 49.00'$	$T = 875.58'$	$ST = 49.00'$
	$R = 2,400.00'$	
	$D_s = 50$ MPH	
	$SE = 0.04$	
	<b>RUNOFF = 147.00'</b>	

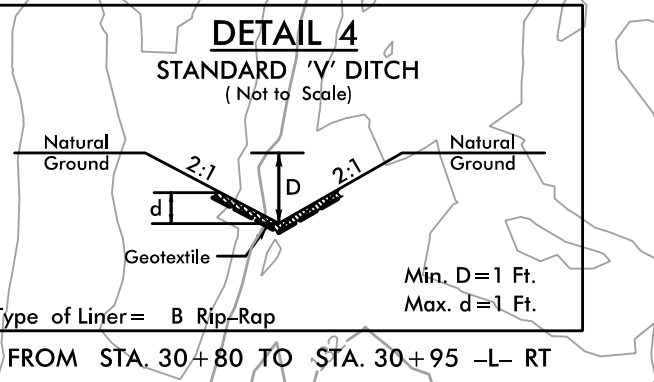
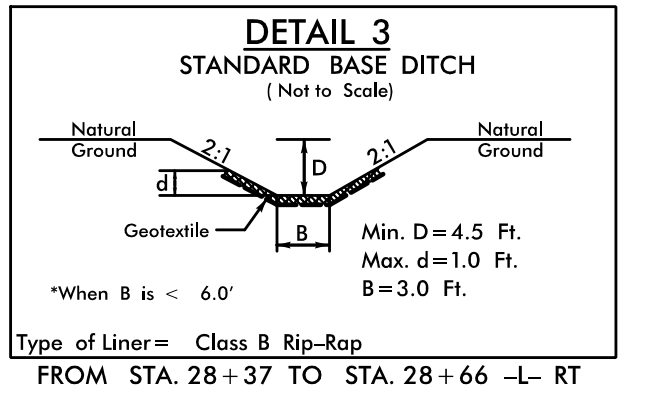
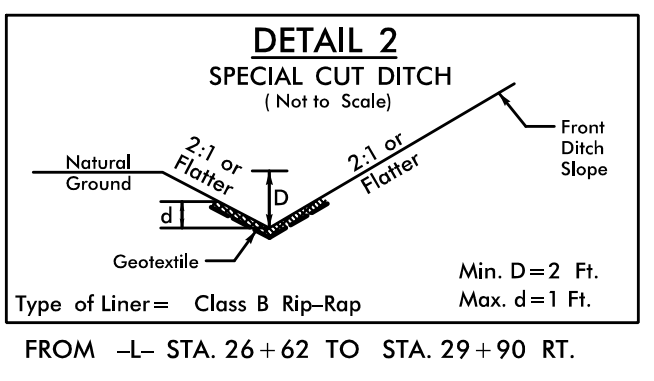
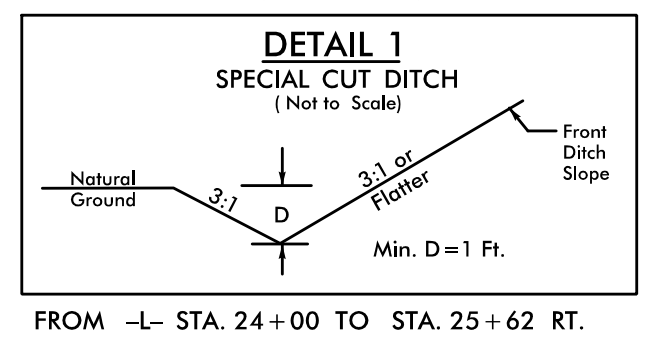
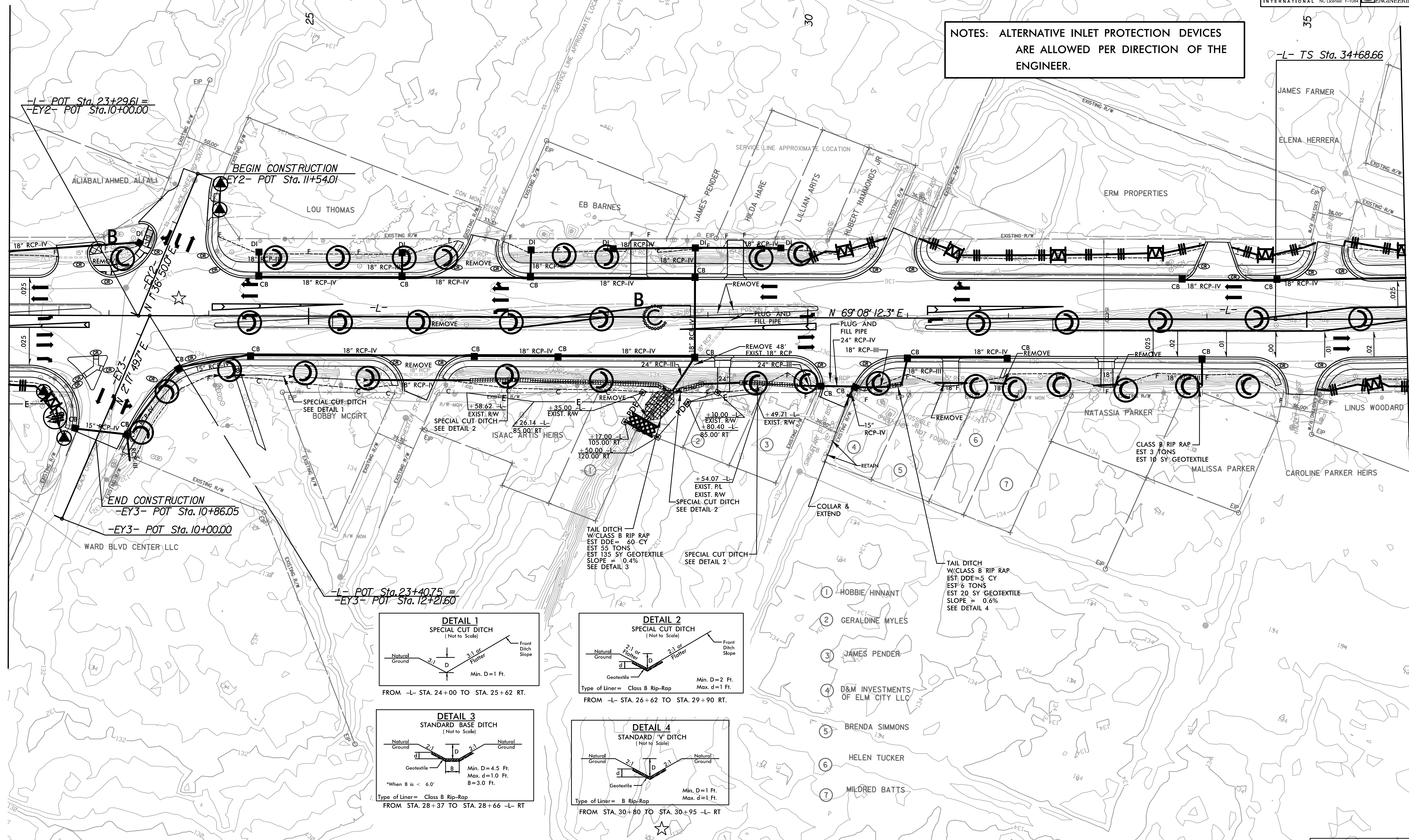
CLEARING AND GRUBBING  
 EROSION CONTROL FOR  
 CONSTRUCTION SHEET 05

PROJECT REFERENCE NO. <b>U-5935</b>	SHEET NO. <b>EC-05/CONST.05</b>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	
<b>Michael Baker Engineering, Inc.</b> <small>1000 Highcroft Pkwy        Suite 100        Cary, NC 27518        Phone: 919.275.1800        Fax: 919.275.1801        E-mail: info@mbe.com        Website: www.mbakeng.com</small>	<small>NC FIRM LICENSE NO. P-114        1153 E. Cary Parkway        Suite 110        Cary, NC 27518        (919) 557-4929</small> <b>ECOLOGICAL ENGINEERING</b>

NOTES: ALTERNATIVE INLET PROTECTION DEVICES  
 ARE ALLOWED PER DIRECTION OF THE  
 ENGINEER.

MATCH LINE -L- STA. 22 + 00.00 SEE SHEET 4

MATCH LINE -L- STA. 36 + 00.00 SEE SHEET 6



FOR -L- PROFILE SEE SHEETS 15 & 16

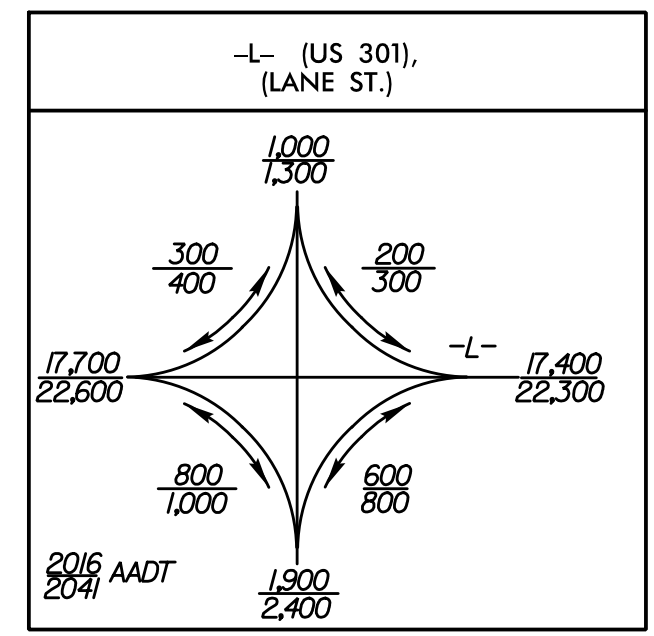
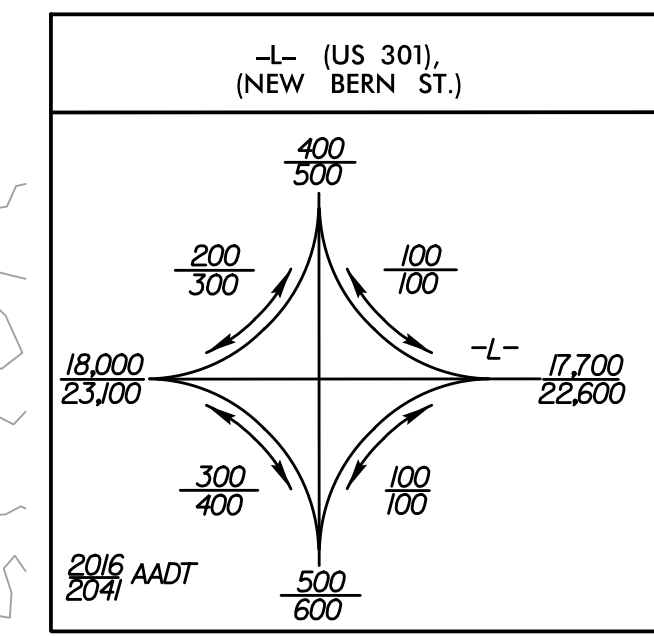
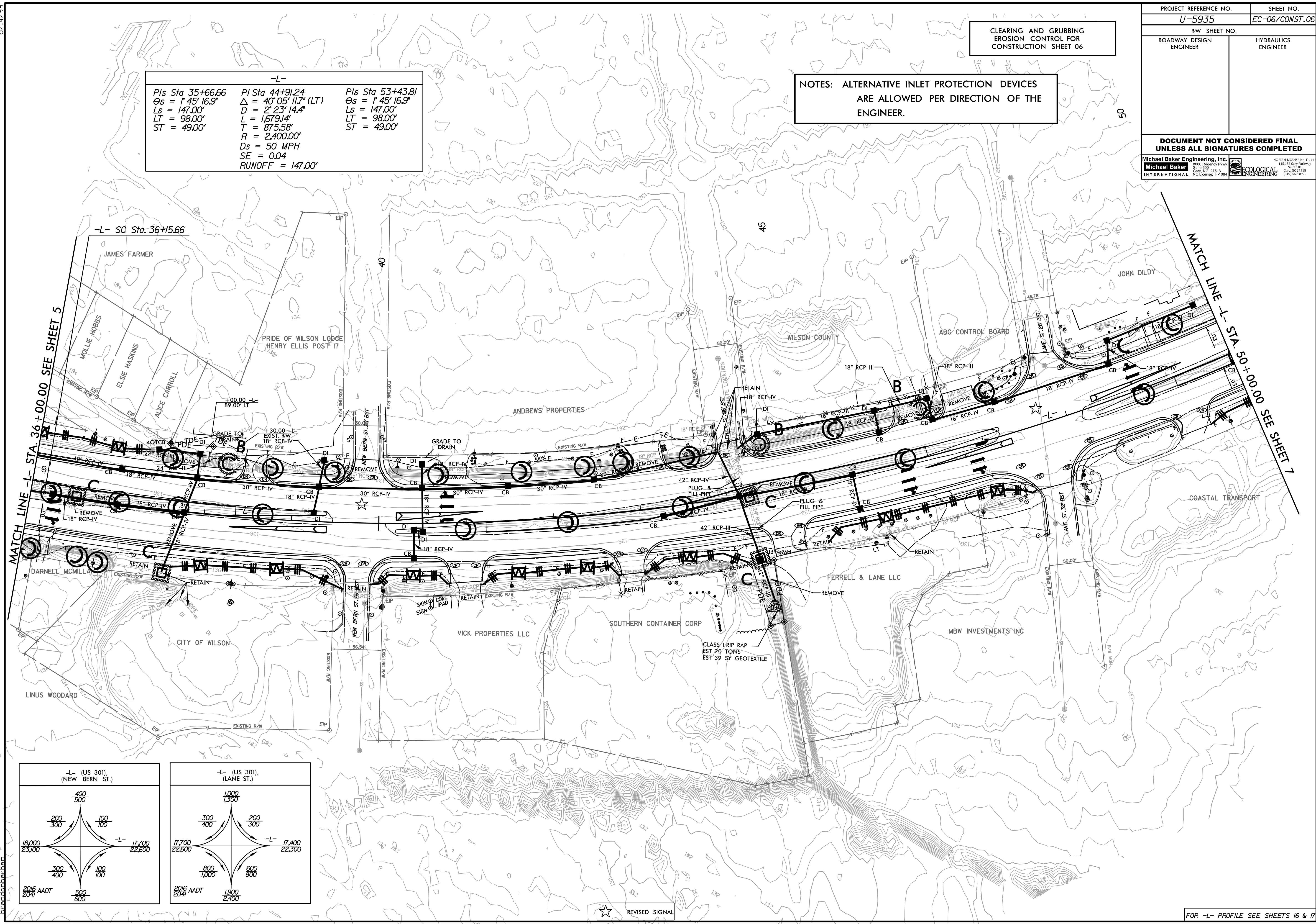
5/14/99

PROJECT REFERENCE NO. <b>U-5935</b>	SHEET NO. <b>EC-06/CONST.06</b>
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 06

NOTES: ALTERNATIVE INLET PROTECTION DEVICES  
ARE ALLOWED PER DIRECTION OF THE  
ENGINEER.

-L-		
PIs Sta 35+66.66 Os = 1'45"16.9" Ls = 147.00' LT = 98.00' ST = 49.00'	PI Sta 44+91.24 Δ = 40'05"11.7" (LT) D = 2'23"14.4" L = 1,679.14' T = 875.58' R = 2,400.00' Ds = 50 MPH SE = 0.04 RUNOFF = 147.00'	PIs Sta 53+43.81 Os = 1'45"16.9" Ls = 147.00' LT = 98.00' ST = 49.00'



★ REVISED SIGNAL

FOR -L- PROFILE SEE SHEETS 16 & 17

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Michael Baker Engineering, Inc.  
1000 Highway 101  
Suite 100  
Cary, NC 27518  
Phone: 919.275.1111  
Fax: 919.275.1118  
INTERNATIONAL NC License: F-1084

ECOLOGICAL ENGINEERING  
11000 Highway 101  
Suite 110  
Cary, NC 27518  
Phone: 919.275.1111  
Fax: 919.275.1118



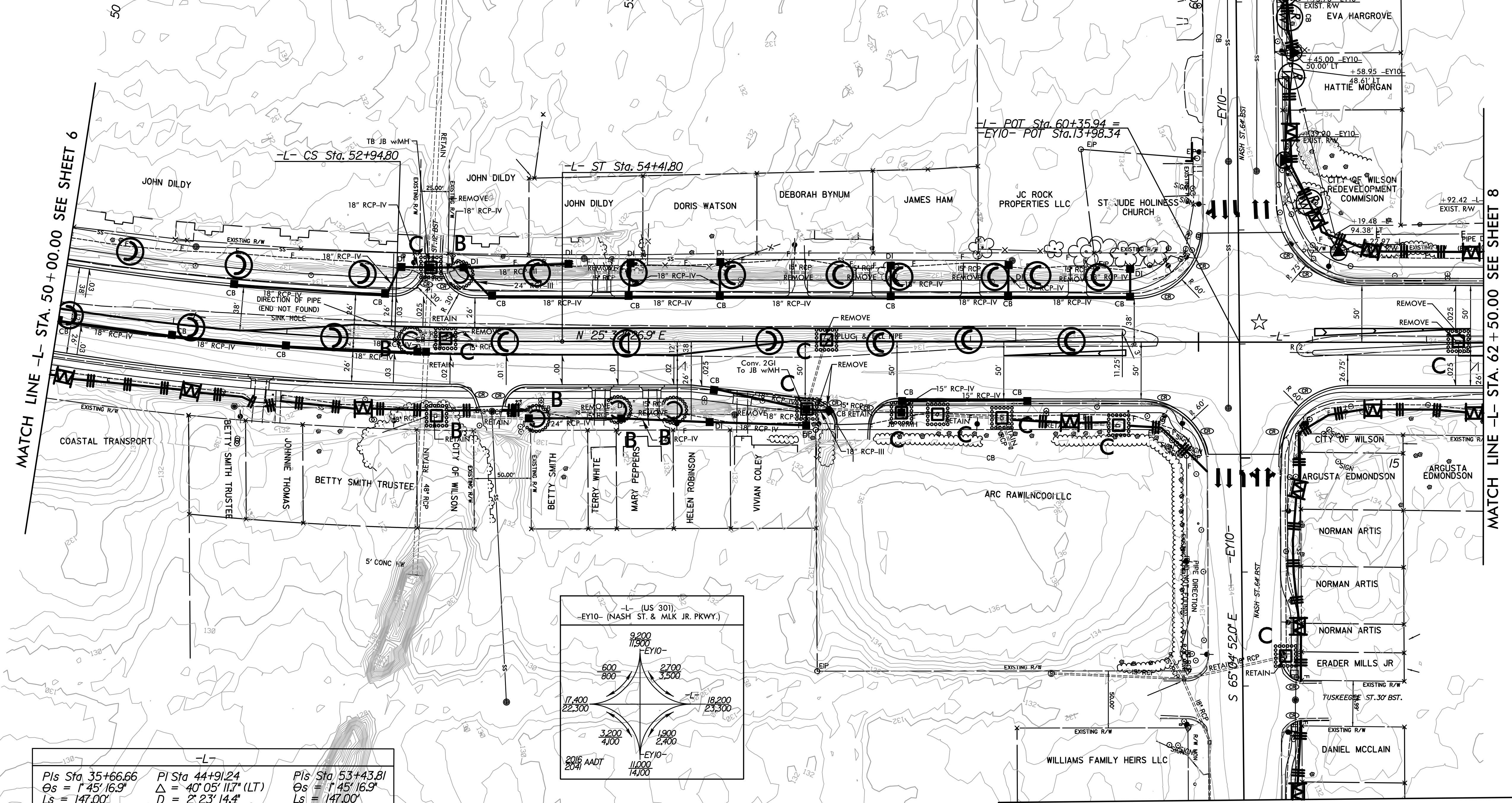
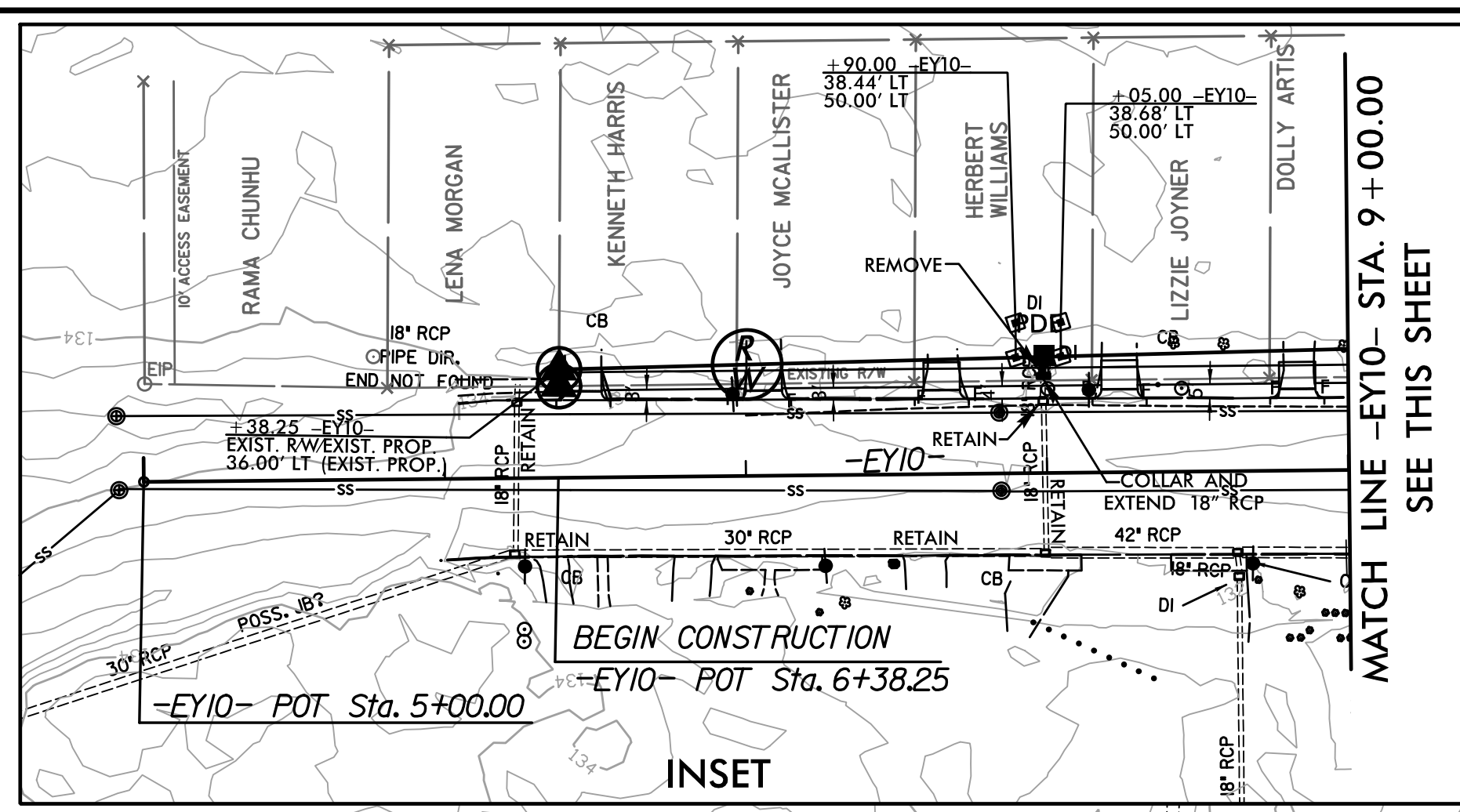
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PROJECT REFERENCE NO. U-5935		SHEET NO. EC-07/CONST.07	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
Michael Baker Engineering, Inc. 8000 Regency Plaza Suite 800 Cary, NC 27518 Phone: 919.241.1100 Fax: 919.241.1101 International NC License: P-1084		ECOLOGICAL ENGINEERING 1103 SE Clay Parkway Suite 100 Cary, NC 27518 Phone: 919.241.1100 Fax: 919.241.1101 International NC License: P-1084	

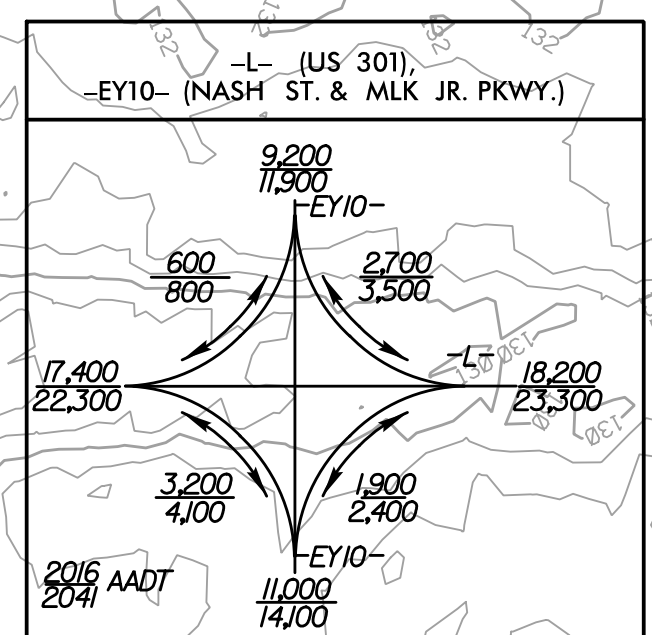
CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 7

MATCH LINE -EY10- STA. 9+00.00  
SEE INSET "A" THIS SHEET

NOTES: ALTERNATIVE INLET PROTECTION DEVICES  
ARE ALLOWED PER DIRECTION OF THE  
ENGINEER.



Pls Sta 35+66.66 $\Delta s = 1' 45'' 16.9''$ $Ls = 147.00'$ $LT = 98.00'$ $ST = 49.00'$	Pls Sta 44+91.24 $\Delta = 40' 05'' 11.7'' (LT)$ $D = 2' 23'' 14.4''$ $L = 167.914'$ $T = 875.58'$ $R = 2,400.00'$ $Ds = 50 \text{ MPH}$ $SE = 0.04$ $RUNOFF = 147.00'$	Pls Sta 53+43.81 $\Delta s = 1' 45'' 16.9''$ $Ls = 147.00'$ $LT = 98.00'$ $ST = 49.00'$
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★ = REVISED SIGNAL

MATCH LINE -EY10- STA. 18+00.00 SEE SHEET 10

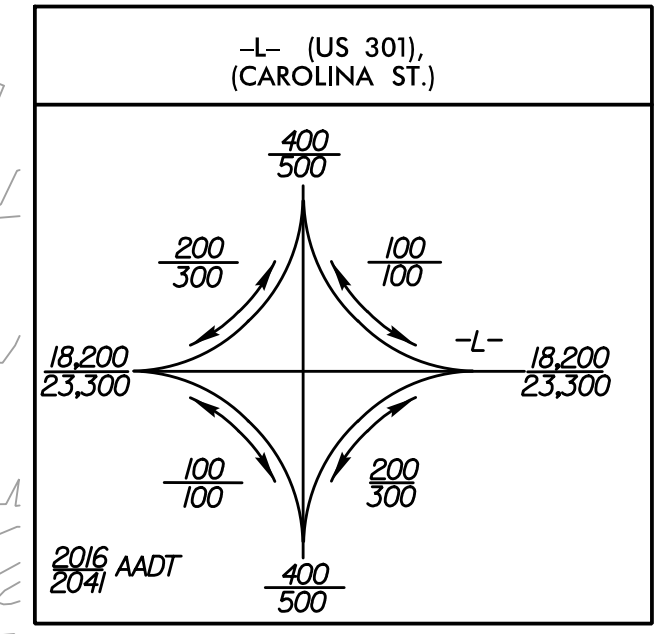
FOR -L- PROFILE SEE SHEET 18

5/14/99

PROJECT REFERENCE NO. <b>U-5935</b>	SHEET NO. <b>EC-08/CONST.08</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	
<b>Michael Baker Engineering, Inc.</b> 8000 Regency Park Suite 600 Cary, NC 27518 Phone: 919-236-7000 Fax: 919-236-7001 NC License: F-1084	<b>ECOLOGICAL ENGINEERING</b> 1103 SE City Parkway Suite 110 Cary, NC 27518 Phone: 919-557-9929

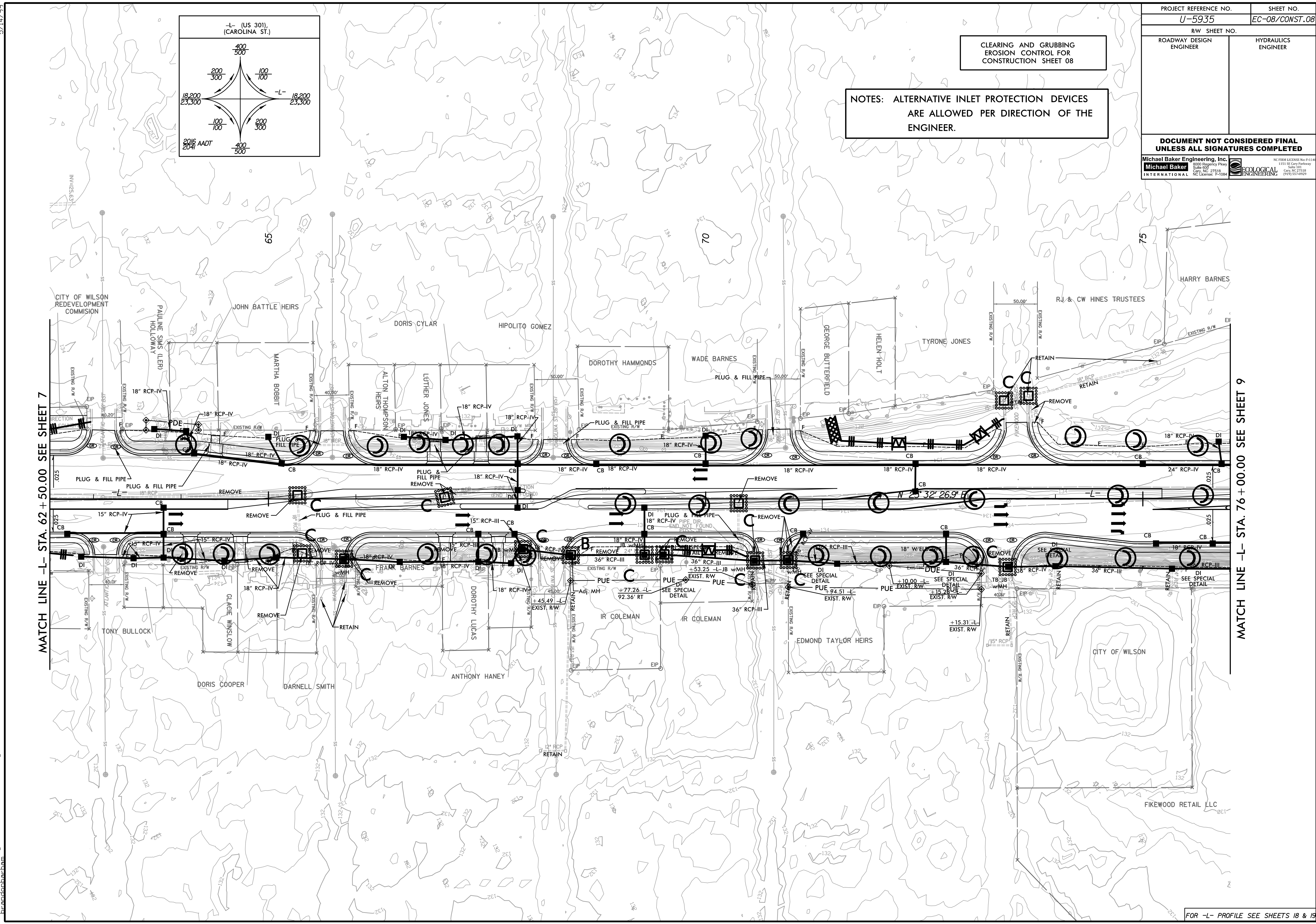
CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 08

NOTES: ALTERNATIVE INLET PROTECTION DEVICES  
ARE ALLOWED PER DIRECTION OF THE  
ENGINEER.



MATCH LINE -L- STA. 62 + 50.00 SEE SHEET 7

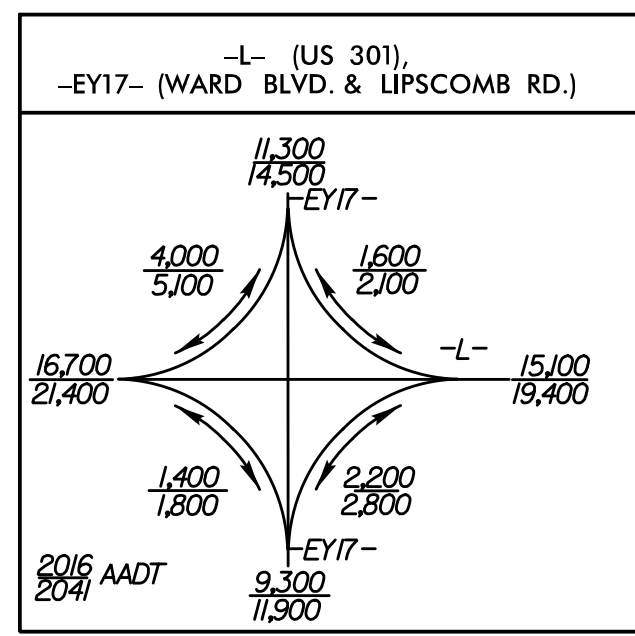
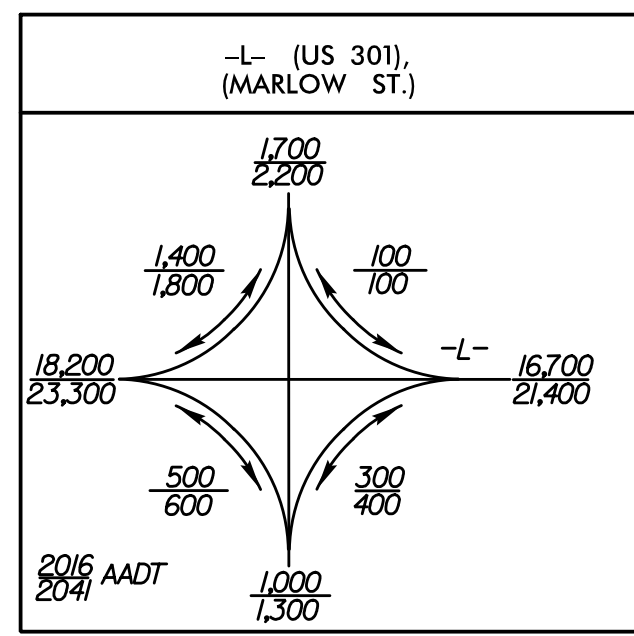
MATCH LINE -L- STA. 76 + 00.00 SEE SHEET 9



FOR -L- PROFILE SEE SHEETS 18 & 19

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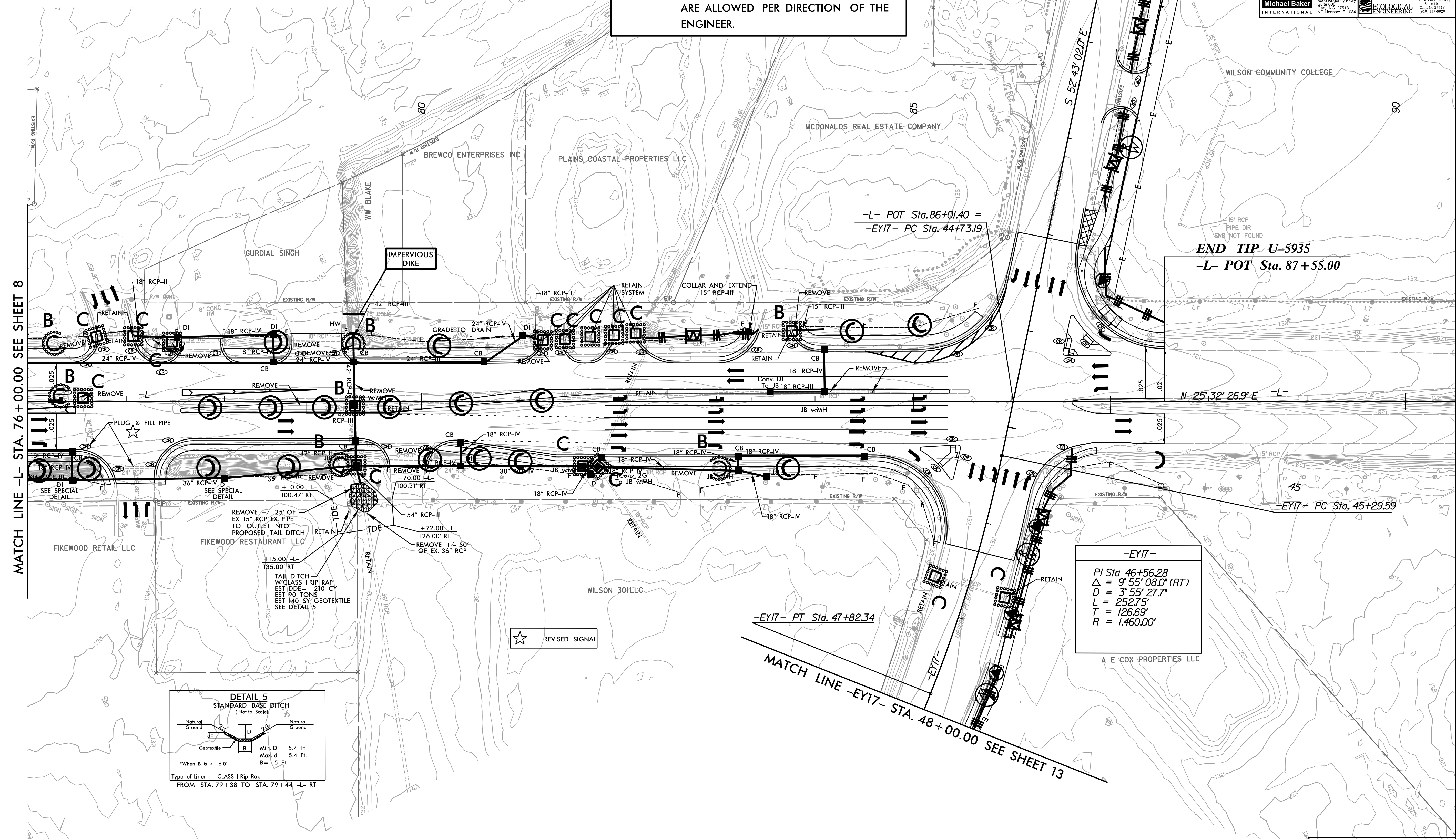
5/14/99



CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 09

PROJECT REFERENCE NO. <b>U-5935</b>	SHEET NO. <b>EC-09/CONST.09</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<p><b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b></p> <p>Michael Baker Engineering, Inc. 1800 Regency Park Suite 600 Cary, NC 27518 Phone: 919.275.1188 Fax: 919.275.1189 NC License: F-1084</p> <p>ECOLOGICAL ENGINEERING 1153 SE Glenborough Suite 110 Cary, NC 27518 Phone: 919.557-9929 NC License: F-1144</p>	

NOTES: ALTERNATIVE INLET PROTECTION DEVICES ARE ALLOWED PER DIRECTION OF THE ENGINEER.

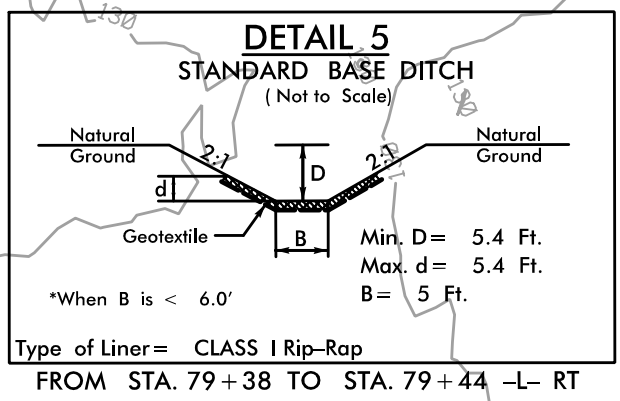


MATCH LINE -L- STA. 76+00.00 SEE SHEET 8

MATCH LINE -EY17- STA. 40+00.00 SEE SHEET 11

MATCH LINE -EY17- STA. 48+00.00 SEE SHEET 13

-EY17-  
PI Sta 46+56.28  
Δ = 9° 55' 08.0" (RT)  
D = 3' 55' 27.7"  
L = 252.75'  
T = 126.69'  
R = 1,460.00'



☆ = REVISED SIGNAL

END TIP U-5935  
-L- POT Sta. 87+55.00

-EY17- PC Sta. 45+29.59

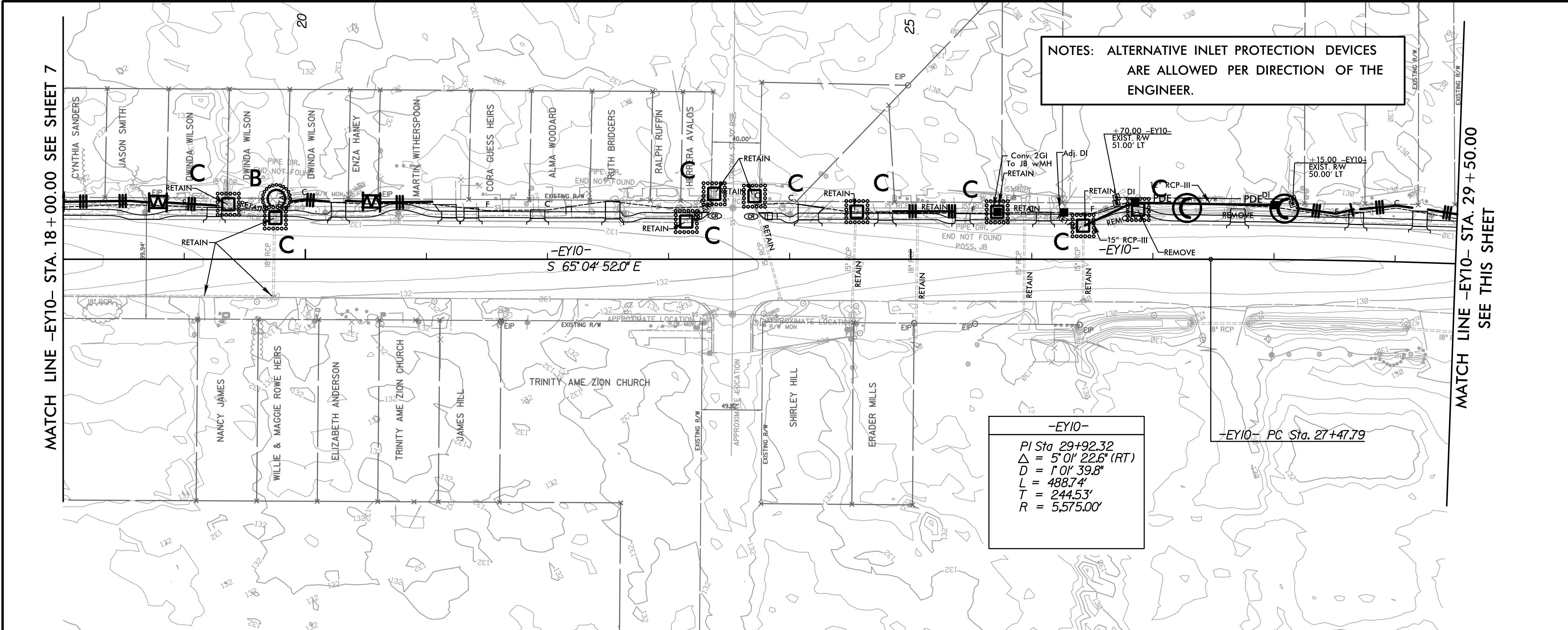
-L- POT Sta. 86+01.40 =  
-EY17- PC Sta. 44+73.19

FOR -L- PROFILE SEE SHEET 20

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PROJECT REFERENCE NO. <b>U-5935</b>		SHEET NO. <b>EC-10/CONST.10</b>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>			
Michael Baker Engineering, Inc. Michael Baker International		ECOLOGICAL ENGINEERING	

MATCH LINE -EY10- STA. 18 + 00.00 SEE SHEET 7



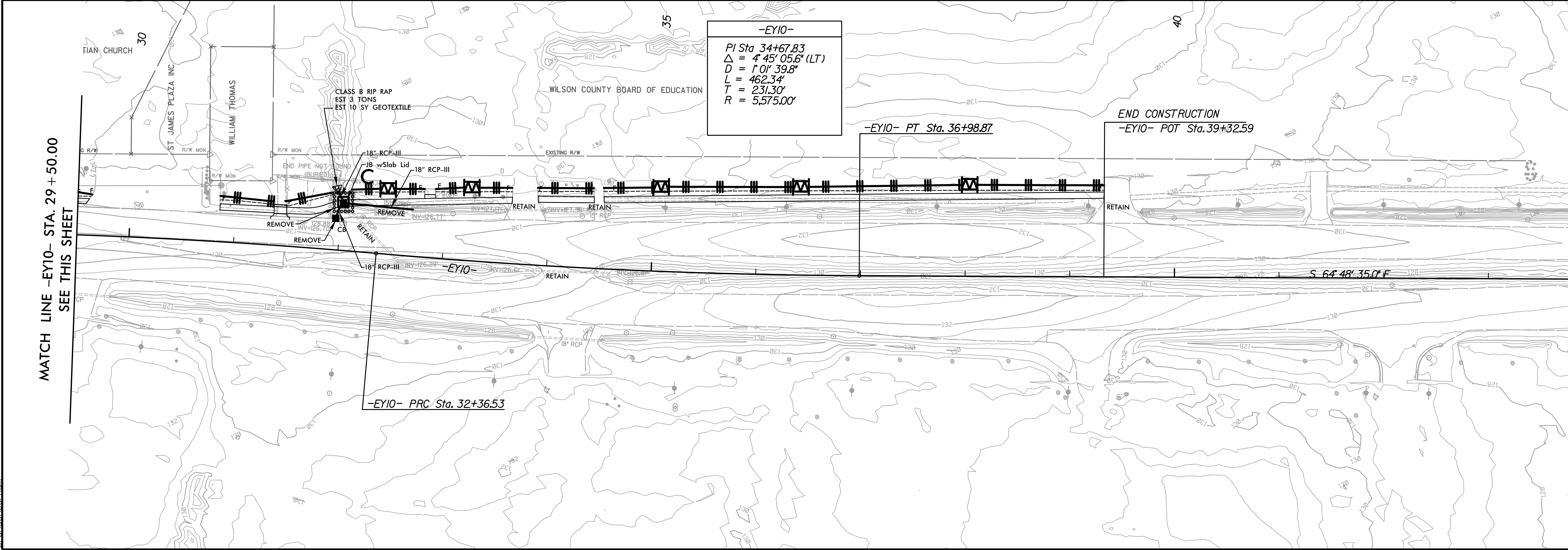
NOTES: ALTERNATIVE INLET PROTECTION DEVICES ARE ALLOWED PER DIRECTION OF THE ENGINEER.

-EY10-  
 PI Sta 29+92.32  
 $\Delta = 5^{\circ} 01' 22.6''$  (RT)  
 $D = 1^{\circ} 01' 39.8''$   
 $L = 488.74'$   
 $T = 244.53'$   
 $R = 5,575.00'$

-EY10- PC Sta. 27+47.79

MATCH LINE -EY10- STA. 29 + 50.00 SEE THIS SHEET

MATCH LINE -EY10- STA. 29 + 50.00 SEE THIS SHEET



-EY10-  
 PI Sta 34+67.83  
 $\Delta = 4^{\circ} 45' 05.6''$  (LT)  
 $D = 1^{\circ} 01' 39.8''$   
 $L = 462.34'$   
 $T = 231.30'$   
 $R = 5,575.00'$

-EY10- PT Sta. 36+98.87

END CONSTRUCTION  
-EY10- POT Sta. 39+32.59

S 64° 48' 35.0" E

-EY10- PRC Sta. 32+36.53

8/17/99

-EY17-

PI Sta 13+85.55  
 $\Delta = 11' 27' 37.3" (LT)$   
 $D = 1' 54' 58.5"$   
 $L = 598.06'$   
 $T = 300.03'$   
 $R = 2,990.00'$

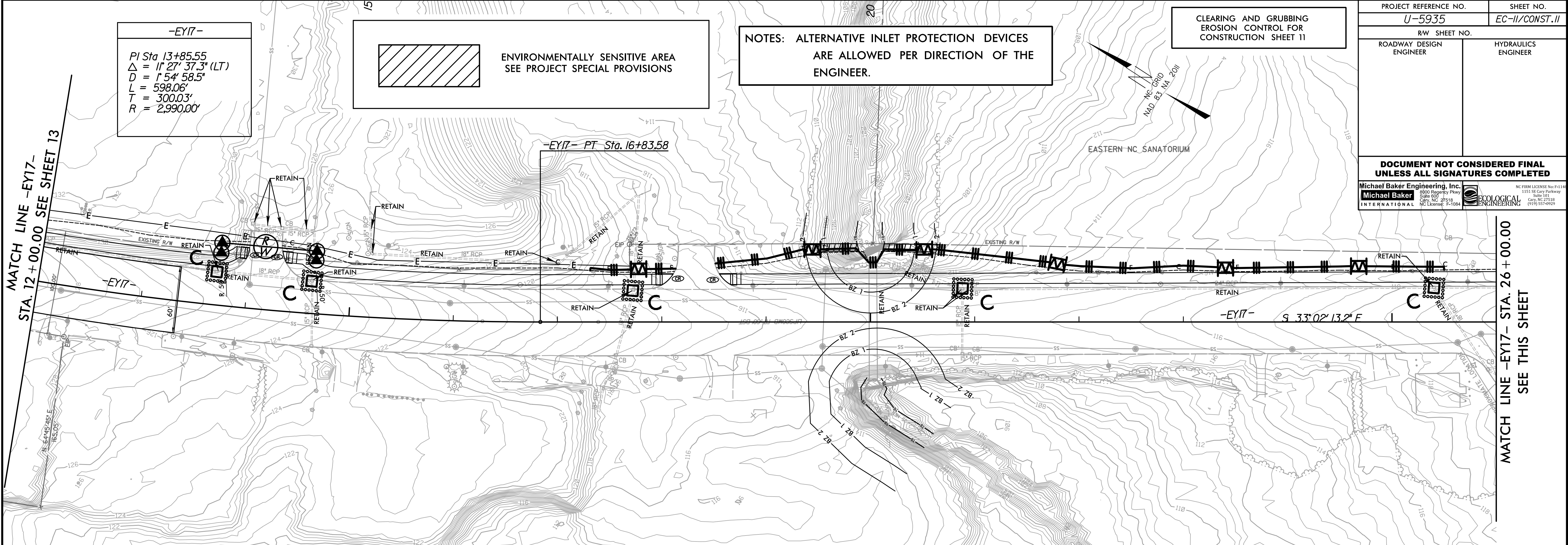
 ENVIRONMENTALLY SENSITIVE AREA  
 SEE PROJECT SPECIAL PROVISIONS

NOTES: ALTERNATIVE INLET PROTECTION DEVICES  
 ARE ALLOWED PER DIRECTION OF THE  
 ENGINEER.

CLEARING AND GRUBBING  
 EROSION CONTROL FOR  
 CONSTRUCTION SHEET 11

PROJECT REFERENCE NO. U-5935	SHEET NO. EC-II/CONST.11
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	
Michael Baker Engineering, Inc. Michael Baker International	ECOLOGICAL ENGINEERING

MATCH LINE -EY17-  
 STA. 12 + 00.00 SEE SHEET 13

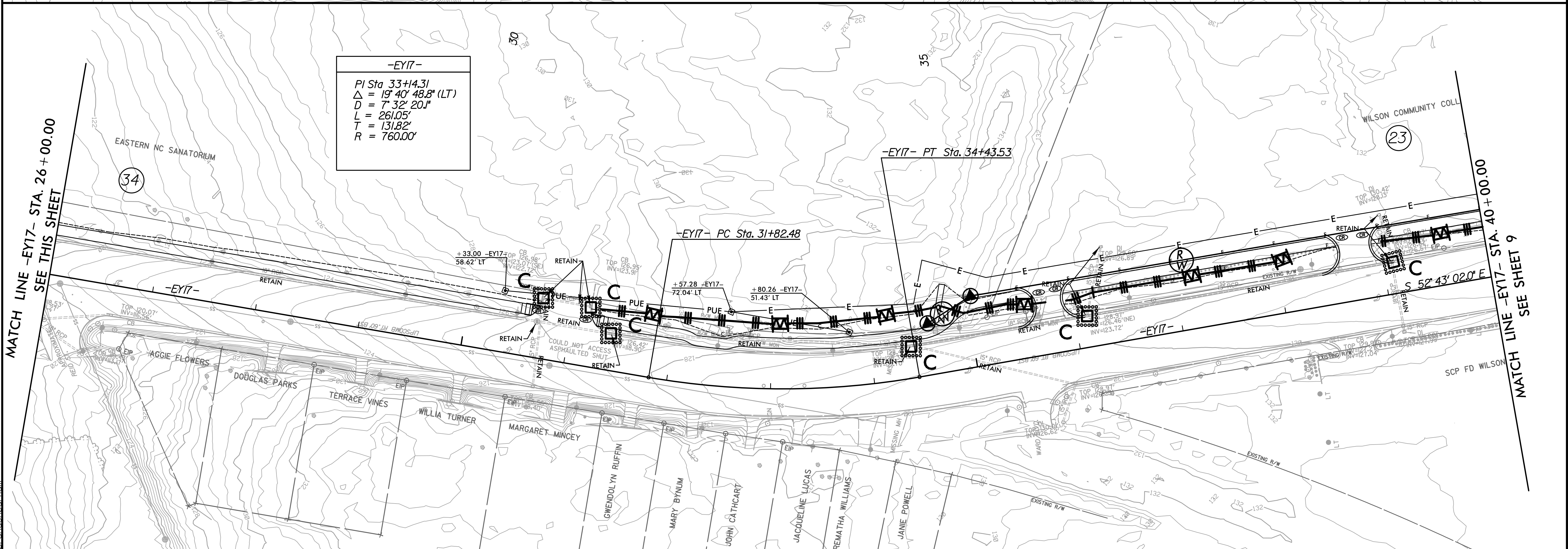


MATCH LINE -EY17- STA. 26 + 00.00  
 SEE THIS SHEET

-EY17-

PI Sta 33+14.31  
 $\Delta = 19' 40' 48.8" (LT)$   
 $D = 7' 32' 20.1"$   
 $L = 261.05'$   
 $T = 131.82'$   
 $R = 760.00'$

MATCH LINE -EY17- STA. 26 + 00.00  
 SEE THIS SHEET



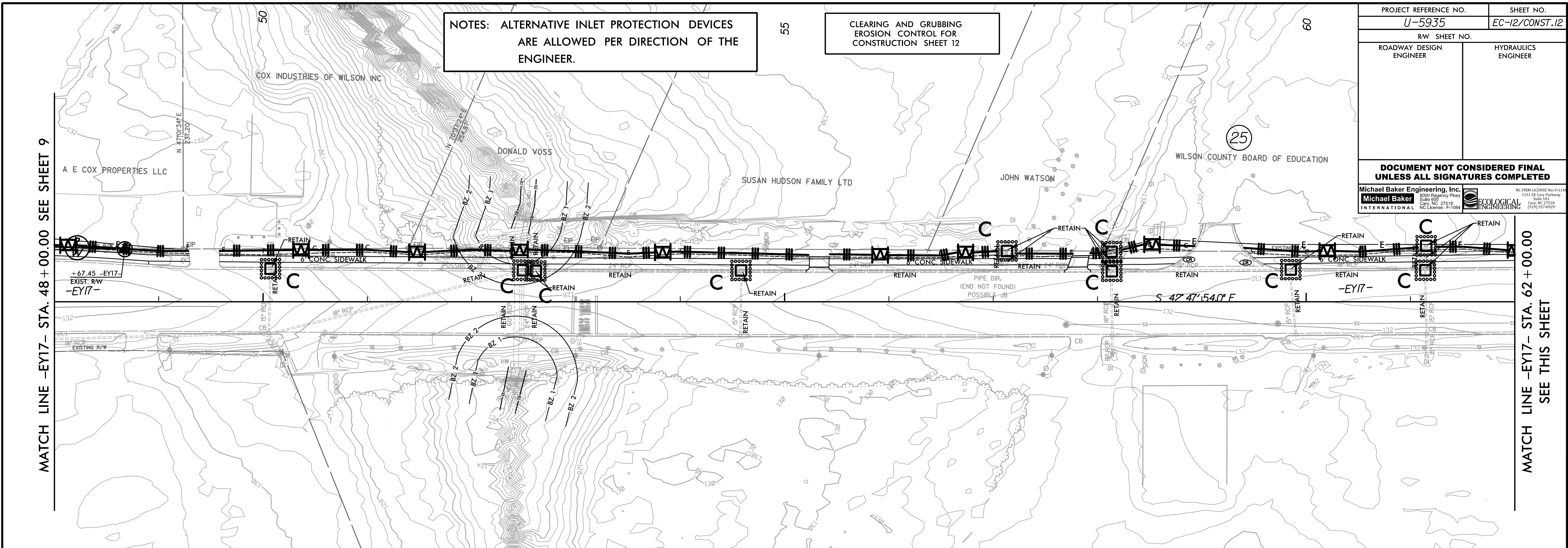
MATCH LINE -EY17- STA. 40 + 00.00  
 SEE SHEET 9

8/17/99

PROJECT REFERENCE NO.		SHEET NO.	
U-5935		EC-12/CONST.12	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>			
Michael Baker Engineering, Inc. 1315 S. Salisbury Parkway Cary, NC 27518 NC License: 7-1084		ECOLOGICAL ENGINEERING 1101 S. Salisbury Parkway Cary, NC 27518 (919) 557-9221	

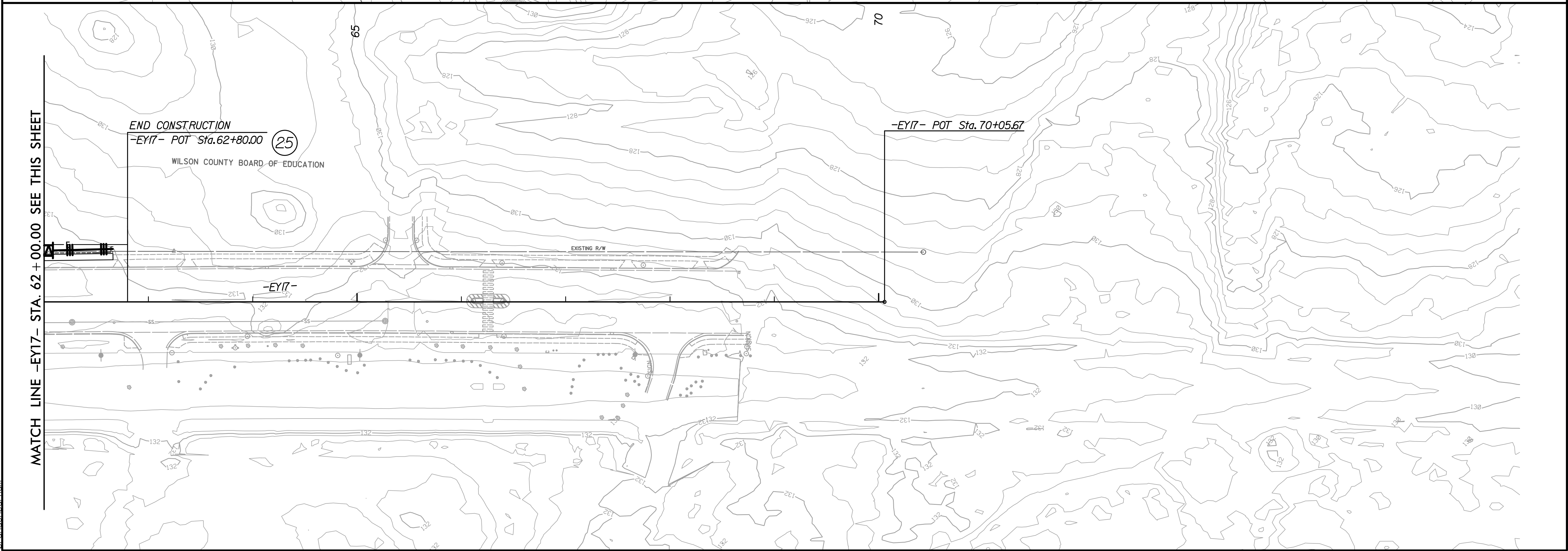
NOTES: ALTERNATIVE INLET PROTECTION DEVICES ARE ALLOWED PER DIRECTION OF THE ENGINEER.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 12



MATCH LINE -EY17- STA. 48 + 00.00 SEE SHEET 9

MATCH LINE -EY17- STA. 62 + 00.00 SEE THIS SHEET



MATCH LINE -EY17- STA. 62 + 00.00 SEE THIS SHEET

END CONSTRUCTION  
-EY17- POT Sta. 62+80.00

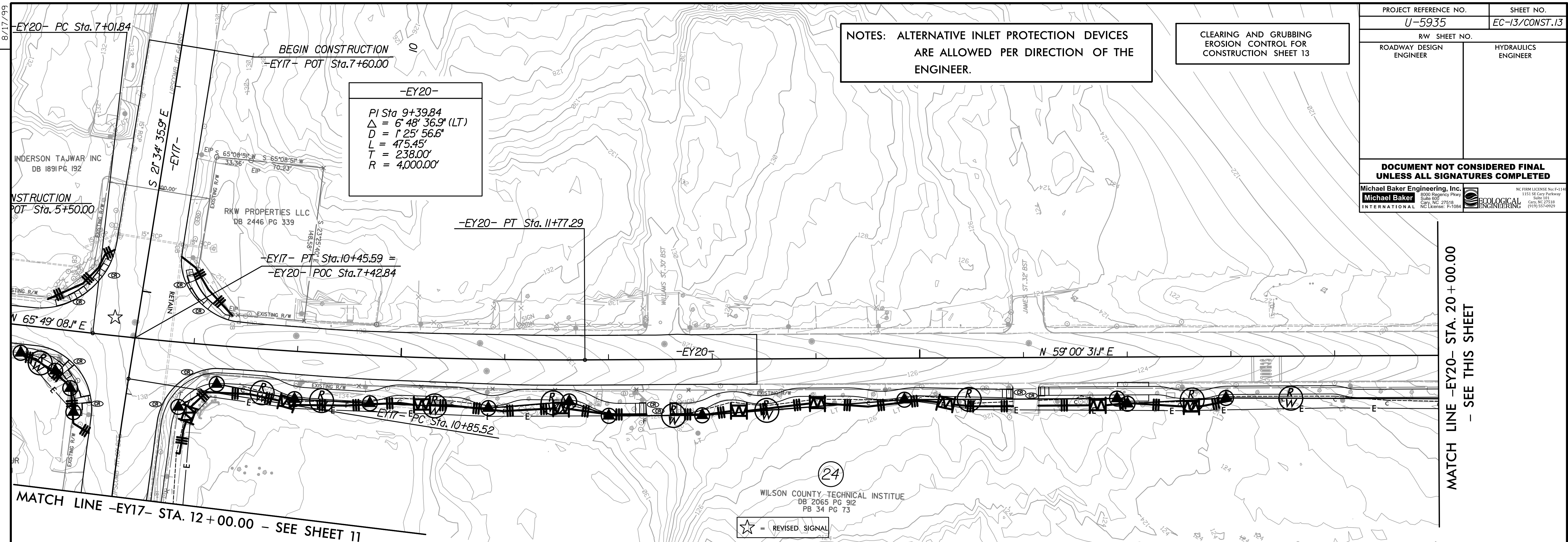
-EY17- POT Sta. 70+05.67

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R:\Environmental\Design\U-5935\_REU\_PSH\_12.dgn  
Brandon

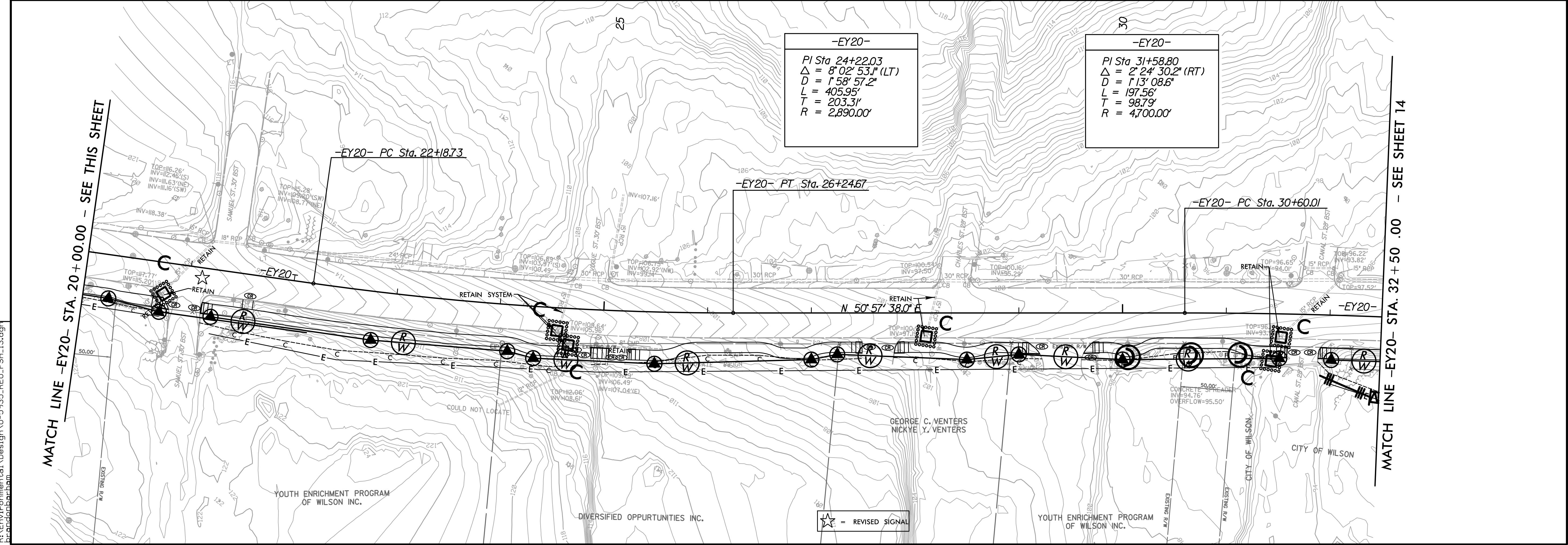
PROJECT REFERENCE NO. U-5935	SHEET NO. EC-13/CONST.13
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	
Michael Baker Engineering, Inc. 1501 S. Salisbury Blvd. Raleigh, NC 27615 Michael Baker International	ECOLOGICAL ENGINEERING 1101 S. Salisbury Blvd. Raleigh, NC 27615 (919) 557-0929

NOTES: ALTERNATIVE INLET PROTECTION DEVICES ARE ALLOWED PER DIRECTION OF THE ENGINEER.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 13



MATCH LINE -EY20- STA. 20 + 00.00 - SEE THIS SHEET



MATCH LINE -EY20- STA. 32 + 50 .00 - SEE SHEET 14

REVISIONS

3:19:52 PM  
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mrandon

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-5935	EC-14/CONST.14
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

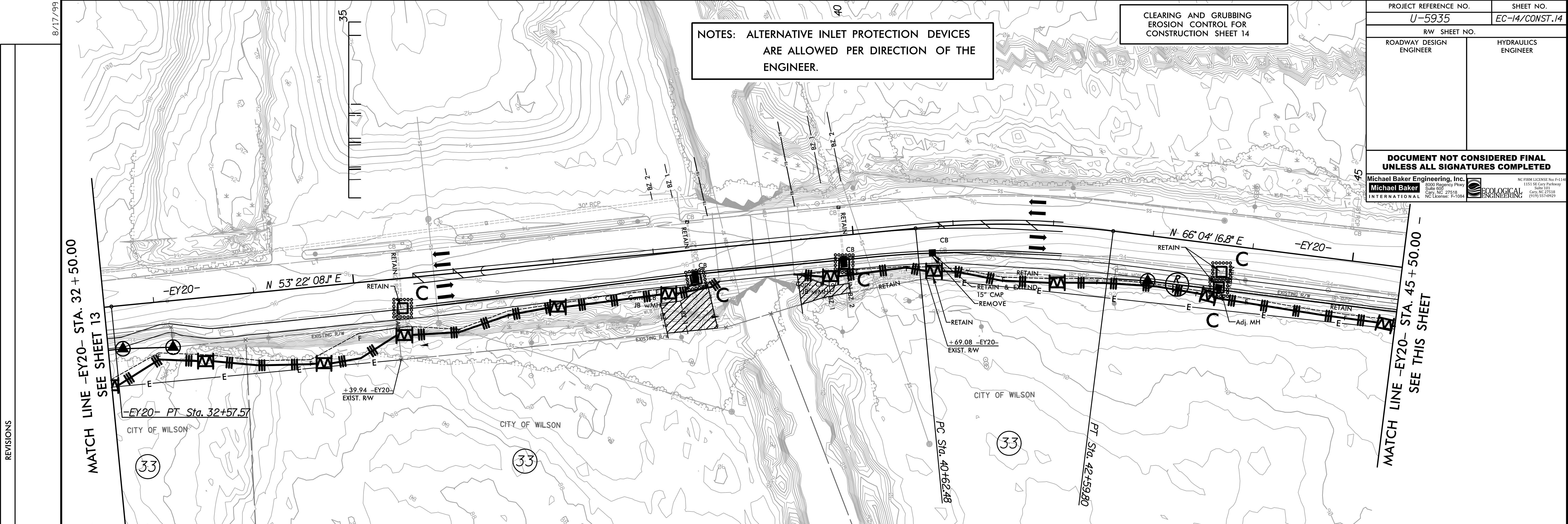
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Michael Baker Engineering, Inc.  
 6500 Progress Plaza  
 Suite 602 27518  
 Cary, NC 27518  
 NC License: P-1084

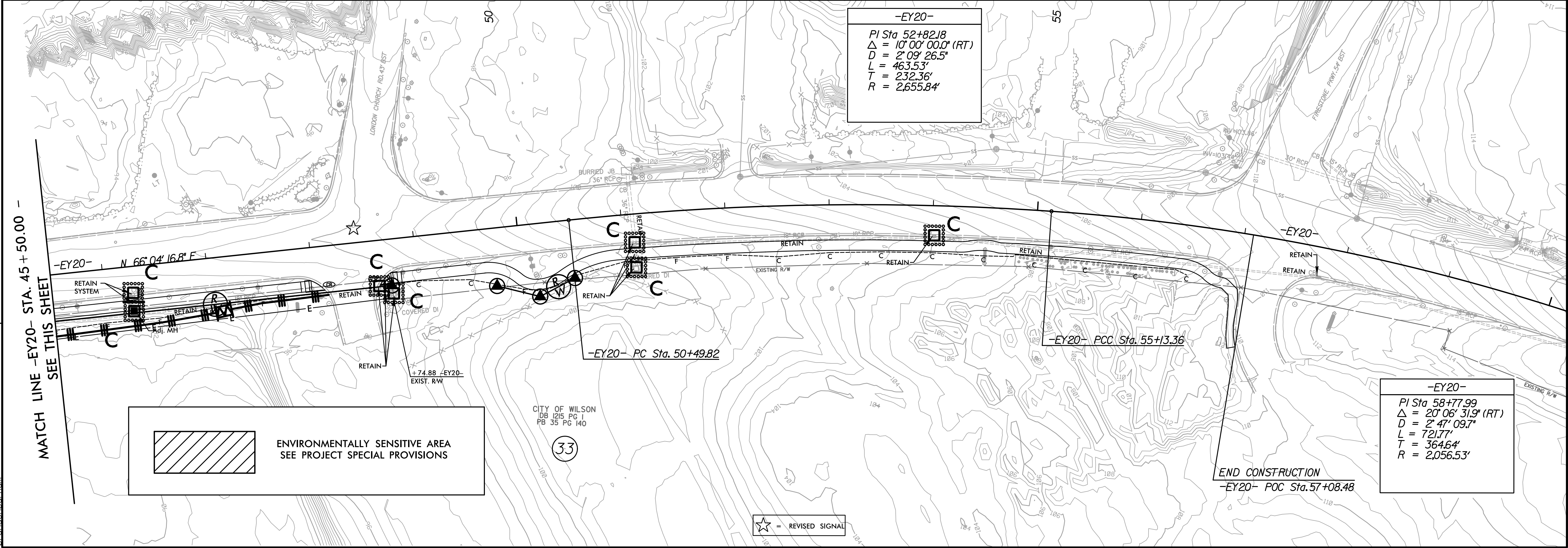
ECOLOGICAL ENGINEERING  
 1101 S. Cary Parkway  
 Suite 101  
 Cary, NC 27518  
 (919) 557-0929

NOTES: ALTERNATIVE INLET PROTECTION DEVICES ARE ALLOWED PER DIRECTION OF THE ENGINEER.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 14



REVISIONS



-EY20-  
 $PI\ Sta\ 52+82.18$   
 $\Delta = 10' 00' 00.0" (RT)$   
 $D = 2' 09' 26.5"$   
 $L = 463.53'$   
 $T = 232.36'$   
 $R = 2,655.84'$

 ENVIRONMENTALLY SENSITIVE AREA  
 SEE PROJECT SPECIAL PROVISIONS

-EY20-  
 $PI\ Sta\ 58+77.99$   
 $\Delta = 20' 06' 31.9" (RT)$   
 $D = 2' 47' 09.7"$   
 $L = 721.77'$   
 $T = 364.64'$   
 $R = 2,056.53'$

END CONSTRUCTION  
-EY20- POC Sta. 57+08.48

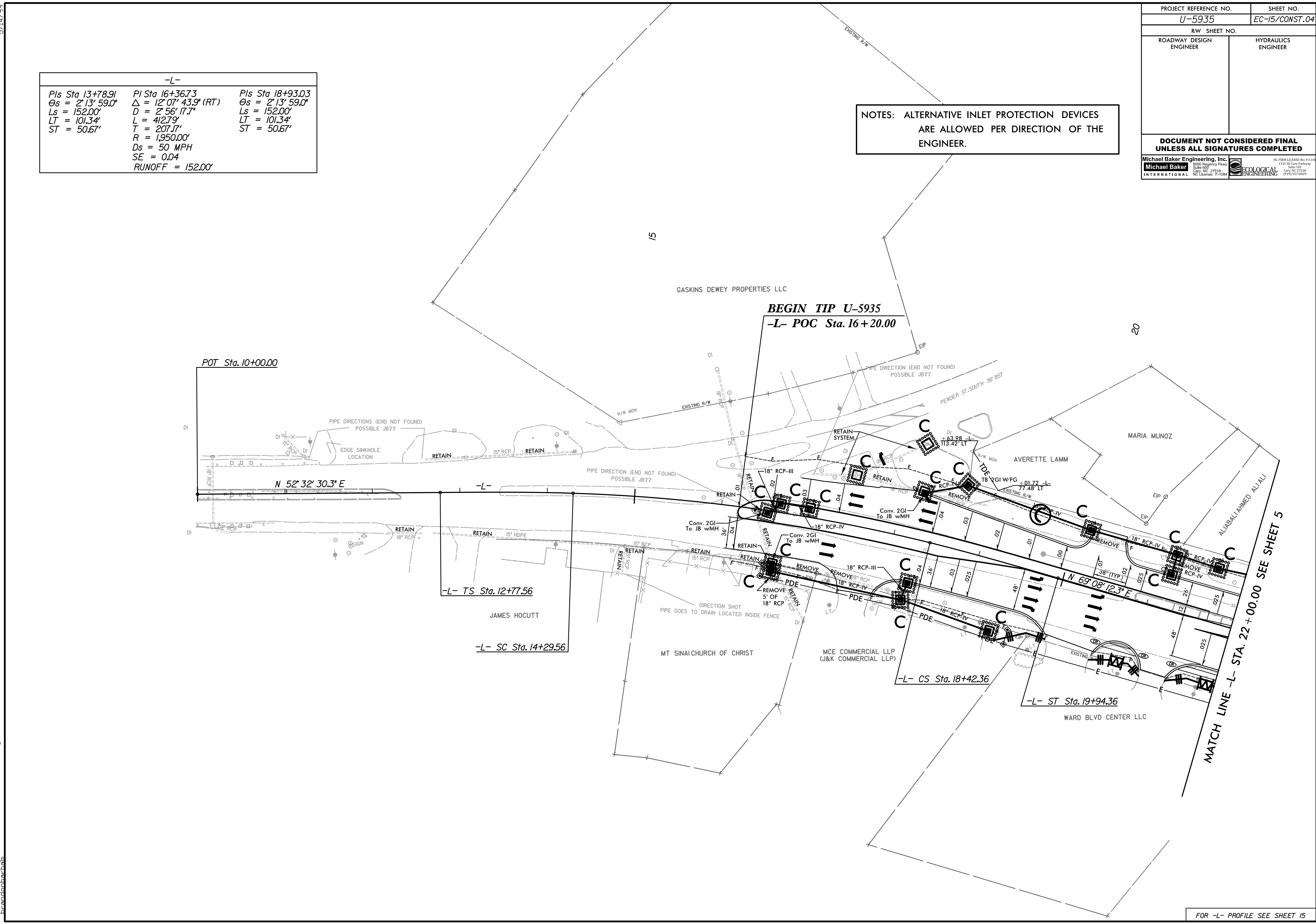
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R:\Environmental\Design\U-5935\_REU\_PSH\_14.dgn  
pandabachan



PROJECT REFERENCE NO.	SHEET NO.
U-5935	EC-15/CONST.04
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	
Michael Baker Engineering, Inc. 8000 Regency Plaza Suite 600 Cary, NC 27518 Phone: 919.225.1100 Fax: 919.225.1101 Email: info@mbaker.com Website: www.mbakercorp.com	ECOLOGICAL ENGINEERING 1103 SE Clay Parkway Suite 110 Cary, NC 27518 Phone: 919.557.4929

-L-		
PIs Sta 13+78.91	PI Sta 16+36.73	PIs Sta 18+93.03
$\theta_s = 2' 13" 59.0"$	$\Delta = 12' 07" 43.9" (RT)$	$\theta_s = 2' 13" 59.0"$
$L_s = 152.00'$	$D = 2' 56' 17.7"$	$L_s = 152.00'$
$LT = 101.34'$	$L = 412.79'$	$LT = 101.34'$
$ST = 50.67'$	$T = 207.17'$	$ST = 50.67'$
	$R = 1,950.00'$	
	$D_s = 50 \text{ MPH}$	
	$SE = 0.04$	
	$RUNOFF = 152.00'$	

NOTES: ALTERNATIVE INLET PROTECTION DEVICES ARE ALLOWED PER DIRECTION OF THE ENGINEER.



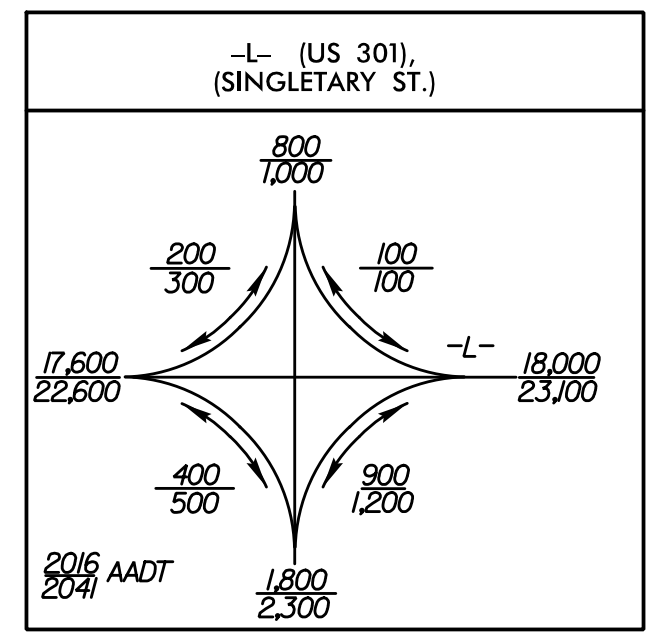
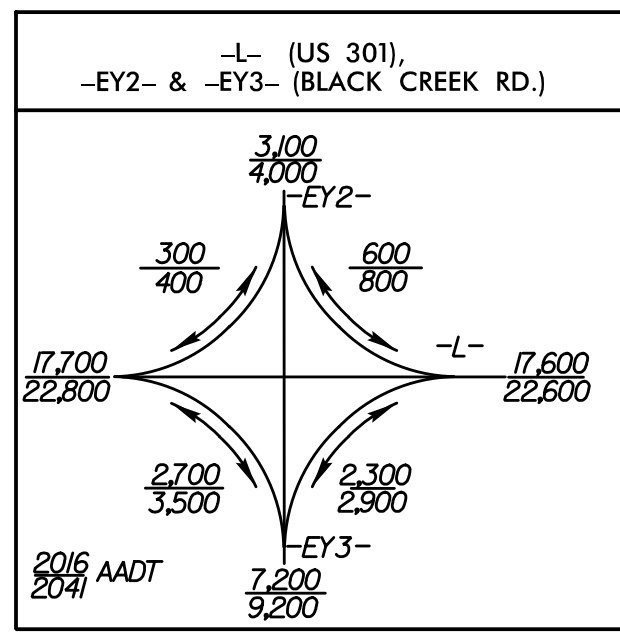
MATCH LINE -L- STA. 22+00.00 SEE SHEET 5

FOR -L- PROFILE SEE SHEET 15

5/14/99

3:45:59 PM 5/14/99 D:\proj\U-5935.REU\_PSH\_04\_FINAL.dgn

5/14/99

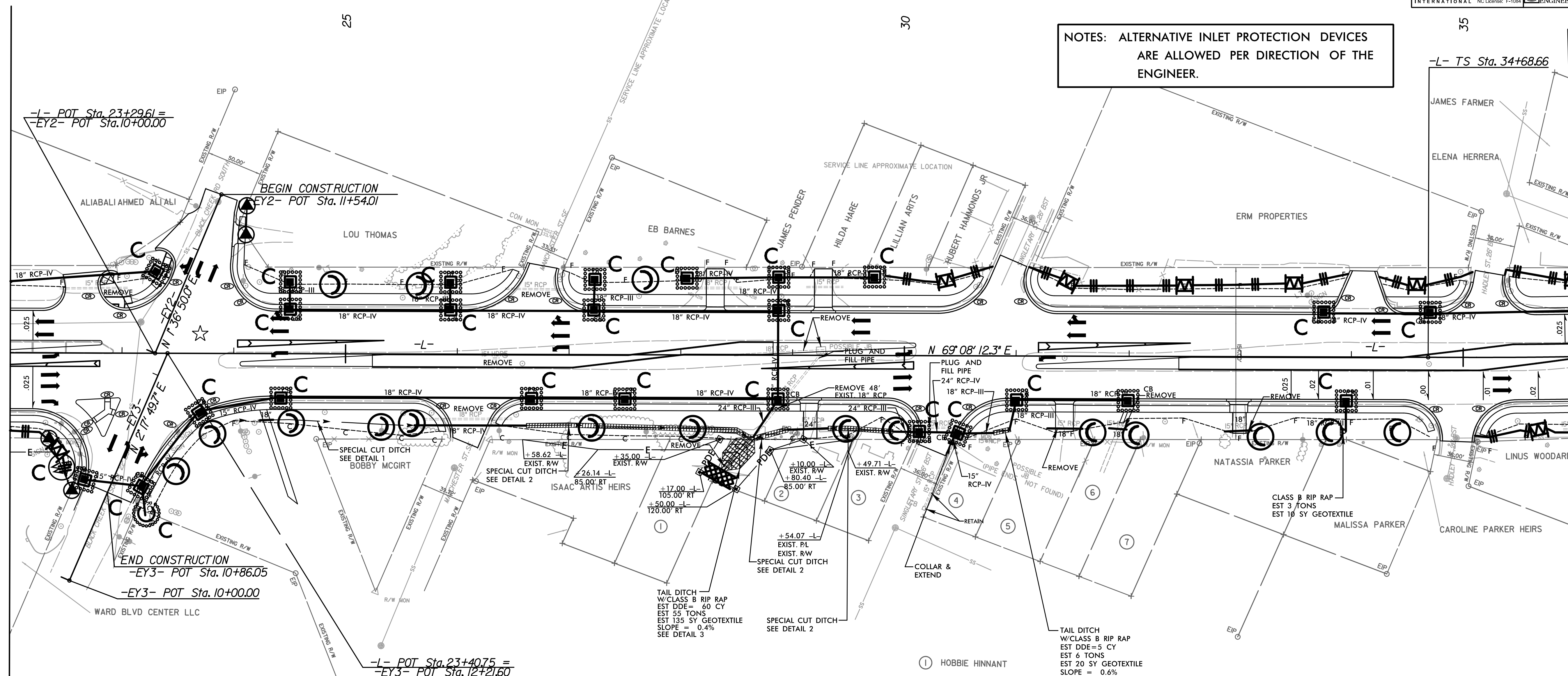


-L-		
Pls Sta 35+66.66	Pl Sta 44+91.24	Pls Sta 53+43.81
$\Theta_s = 1' 45' 16.9''$	$\Delta = 40' 05' 11.7''$ (LT)	$\Theta_s = 1' 45' 16.9''$
$L_s = 147.00'$	$D = 2' 23' 14.4''$	$L_s = 147.00'$
$LT = 98.00'$	$L = 1679.14'$	$LT = 98.00'$
$ST = 49.00'$	$T = 875.58'$	$ST = 49.00'$
	$R = 2,400.00'$	
	$D_s = 50$ MPH	
	$SE = 0.04$	
	$RUNOFF = 147.00'$	

PROJECT REFERENCE NO. <b>U-5935</b>	SHEET NO. <b>EC-16/CONST.05</b>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	
Michael Baker Engineering, Inc. 8000 Regency Place Suite 100 Cary, NC 27518 NC License: F-1084	ECOLOGICAL ENGINEERING 1153 SE City Parkway Suite 110 Cary, NC 27518 (919) 557-9929

MATCH LINE -L- STA. 22 + 00.00 SEE SHEET 4

MATCH LINE -L- STA. 36 + 00.00 SEE SHEET 6

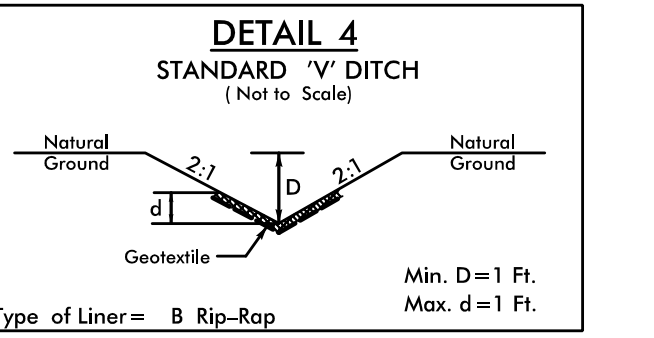
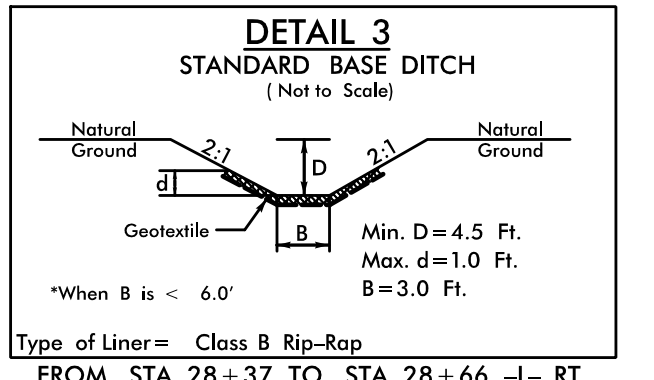
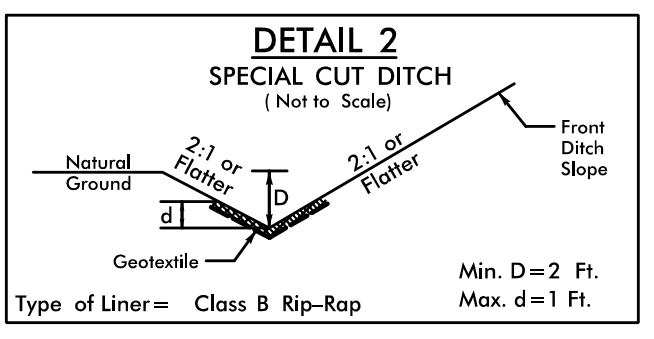
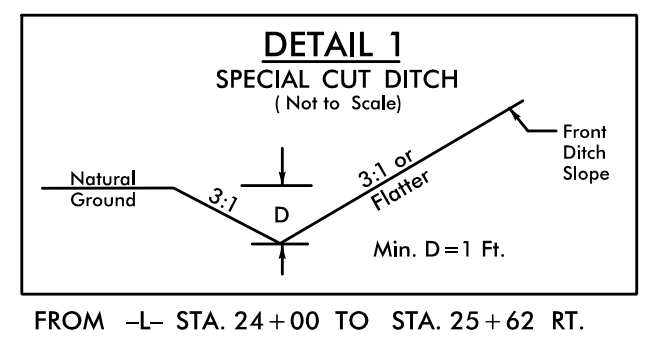


NOTES: ALTERNATIVE INLET PROTECTION DEVICES ARE ALLOWED PER DIRECTION OF THE ENGINEER.

-L- POT Sta. 23+29.61 =  
-EY2- POT Sta. 10+00.00

END CONSTRUCTION  
-EY3- POT Sta. 10+86.05  
-EY3- POT Sta. 10+00.00

-L- POT Sta. 23+40.75 =  
-EY3- POT Sta. 12+21.60



- ① HOBBIE HINNANT
- ② GERALDINE MYLES
- ③ JAMES PENDER
- ④ D&M INVESTMENTS OF ELM CITY LLC
- ⑤ BRENDA SIMMONS
- ⑥ HELEN TUCKER
- ⑦ MILDRED BATTS

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 5/14/99

FOR -L- PROFILE SEE SHEETS 15 & 16

PROJECT REFERENCE NO.	SHEET NO.
U-5935	EC-17/CONST.06
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

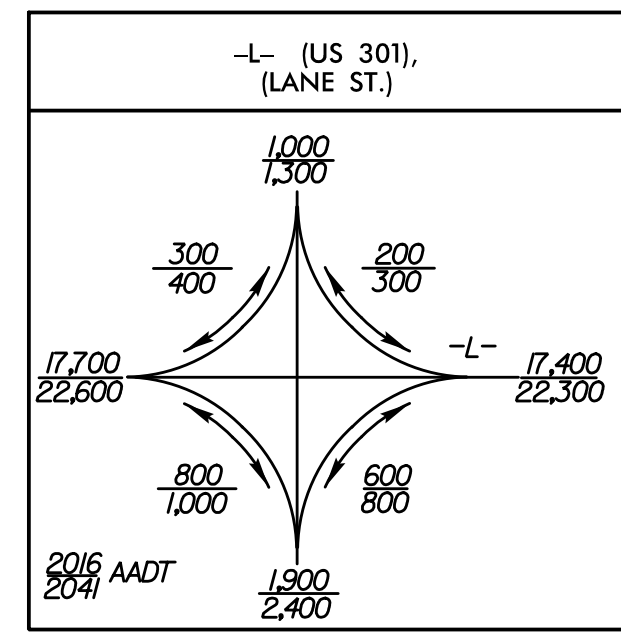
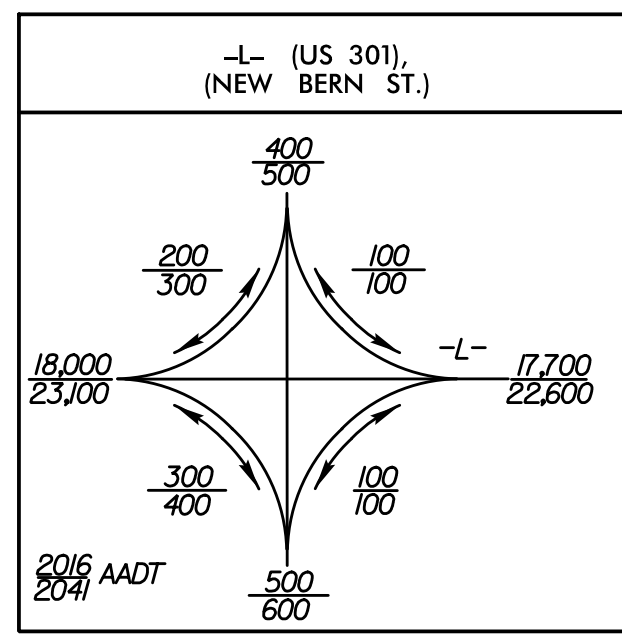
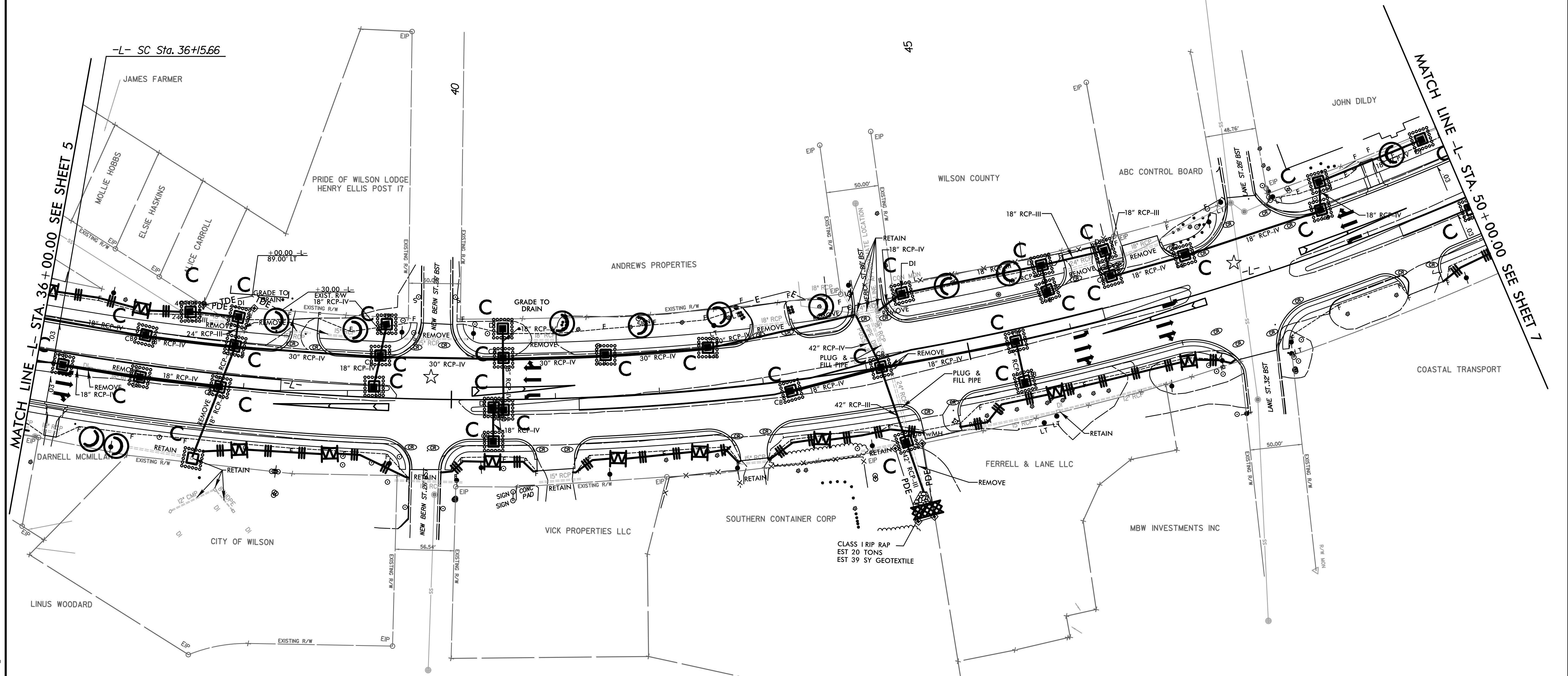
**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**

Michael Baker Engineering, Inc.  
10000 Research Pkwy  
Suite 800  
Cary, NC 27518  
Phone: 919.557.4200  
Fax: 919.557.4202  
NC License: P-1084

ECOLOGICAL ENGINEERING  
1101 SE Clay Parkway  
Suite 110  
Cary, NC 27518  
Phone: 919.557.4202  
Fax: 919.557.4202  
NC License: P-1084

NOTES: ALTERNATIVE INLET PROTECTION DEVICES  
ARE ALLOWED PER DIRECTION OF THE  
ENGINEER.

-L-		
Pls Sta 35+66.66	Pls Sta 44+91.24	Pls Sta 53+43.81
$\Theta_s = 1'45''16.9''$	$\Delta = 40'05''11.7''$ (LT)	$\Theta_s = 1'45''16.9''$
$L_s = 147.00'$	$D = 2'23''14.4''$	$L_s = 147.00'$
$LT = 98.00'$	$L = 1,679.14'$	$LT = 98.00'$
$ST = 49.00'$	$T = 875.58'$	$ST = 49.00'$
	$R = 2,400.00'$	
	$D_s = 50$ MPH	
	$SE = 0.04$	
	$RUNOFF = 147.00'$	



☆ = REVISED SIGNAL

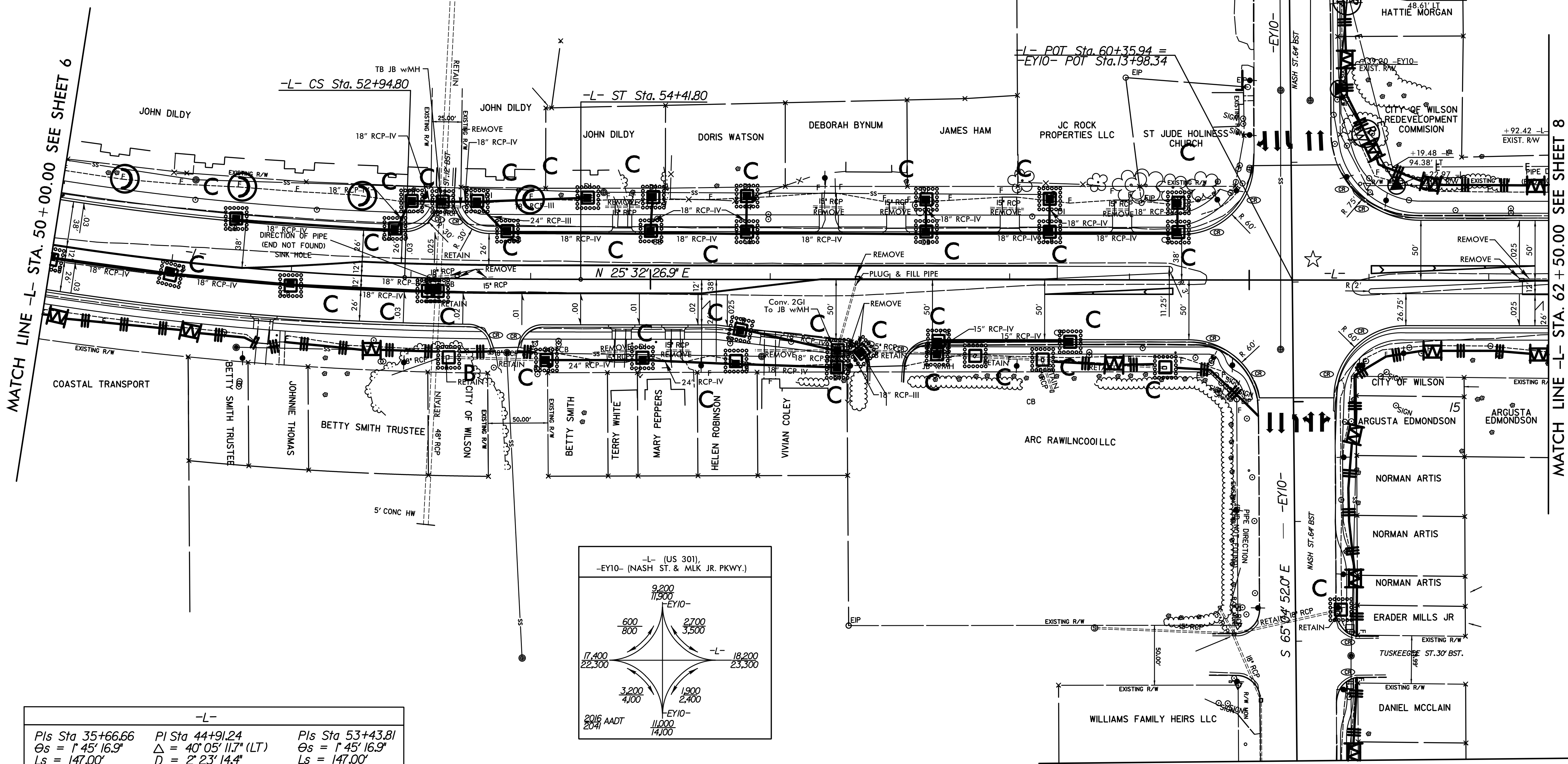
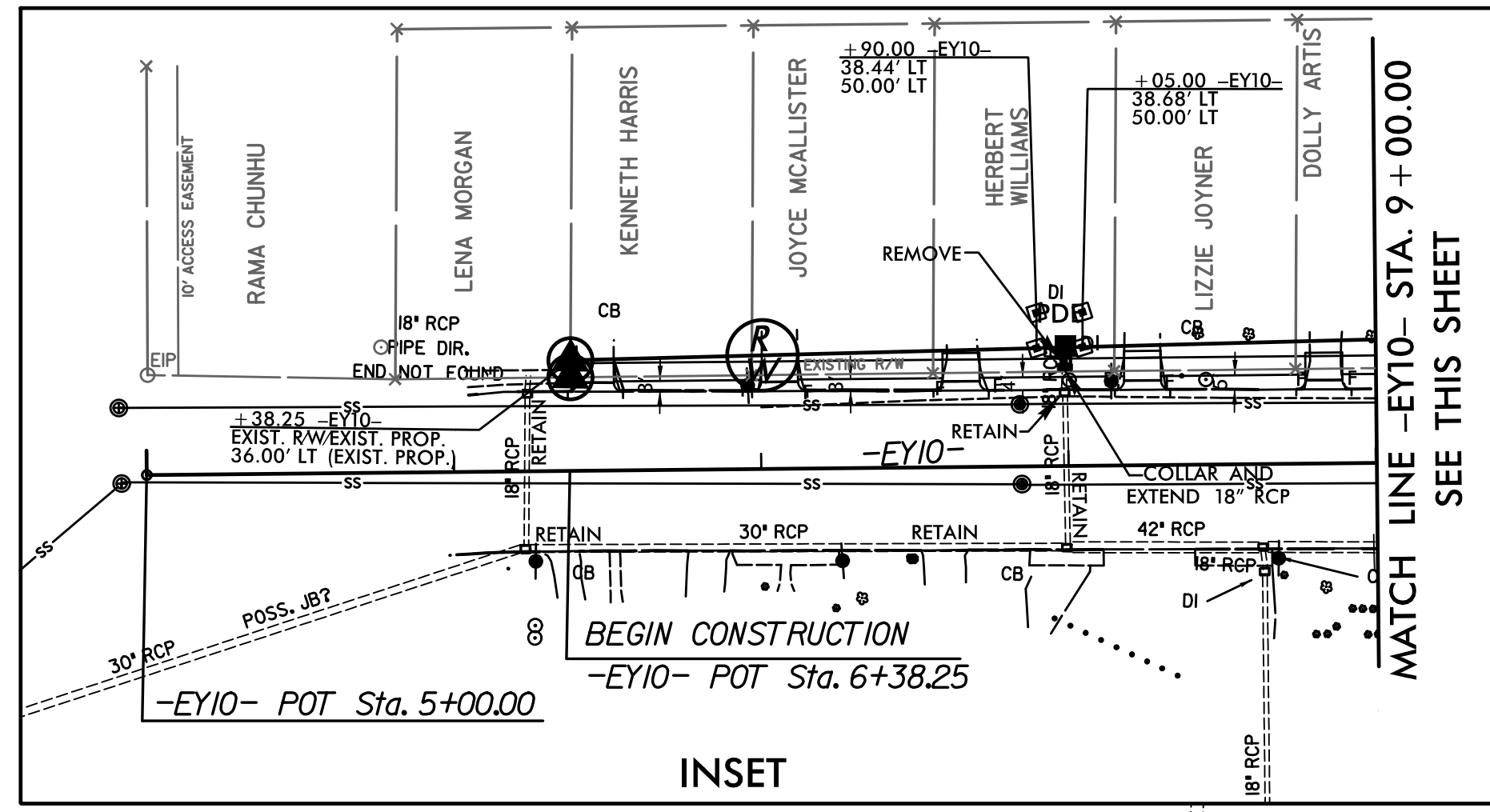
FOR -L- PROFILE SEE SHEETS 16 & 17

5/14/99

3:20:05 PM  
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MATCH LINE -EY10- STA. 9+00.00  
SEE INSET "A" THIS SHEET

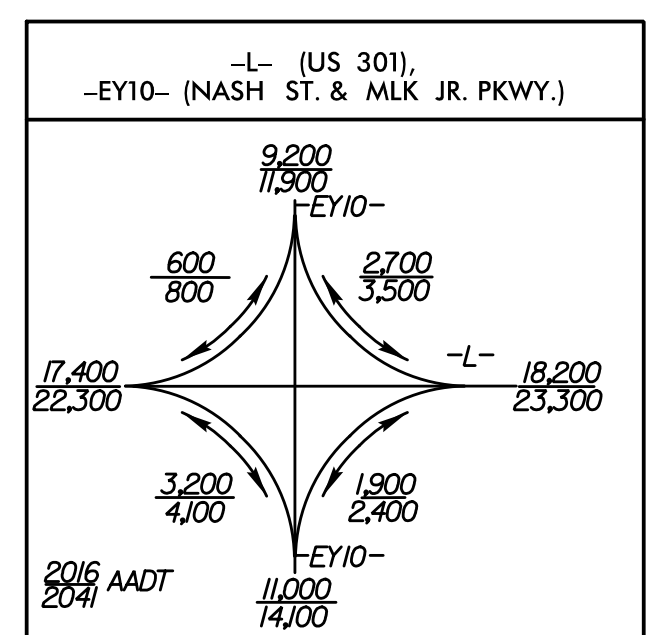
NOTES: ALTERNATIVE INLET PROTECTION DEVICES  
ARE ALLOWED PER DIRECTION OF THE  
ENGINEER.



MATCH LINE -L- STA. 50+00.00 SEE SHEET 6

MATCH LINE -L- STA. 62+50.00 SEE SHEET 8

MATCH LINE -EY10- STA. 18+00.00 SEE SHEET 10



-L-		
Pls Sta 35+66.66	Pls Sta 44+91.24	Pls Sta 53+43.81
$\theta_s = 1' 45'' 16.9''$	$\Delta = 40' 05'' 11.7''$ (LT)	$\theta_s = 1' 45'' 16.9''$
$L_s = 147.00'$	$D = 2' 23'' 14.4''$	$L_s = 147.00'$
$LT = 98.00'$	$L = 1,679.14'$	$LT = 98.00'$
$ST = 49.00'$	$T = 875.58'$	$ST = 49.00'$
	$R = 2,400.00'$	
	$D_s = 50$ MPH	
	$SE = 0.04$	
	$RUNOFF = 147.00'$	

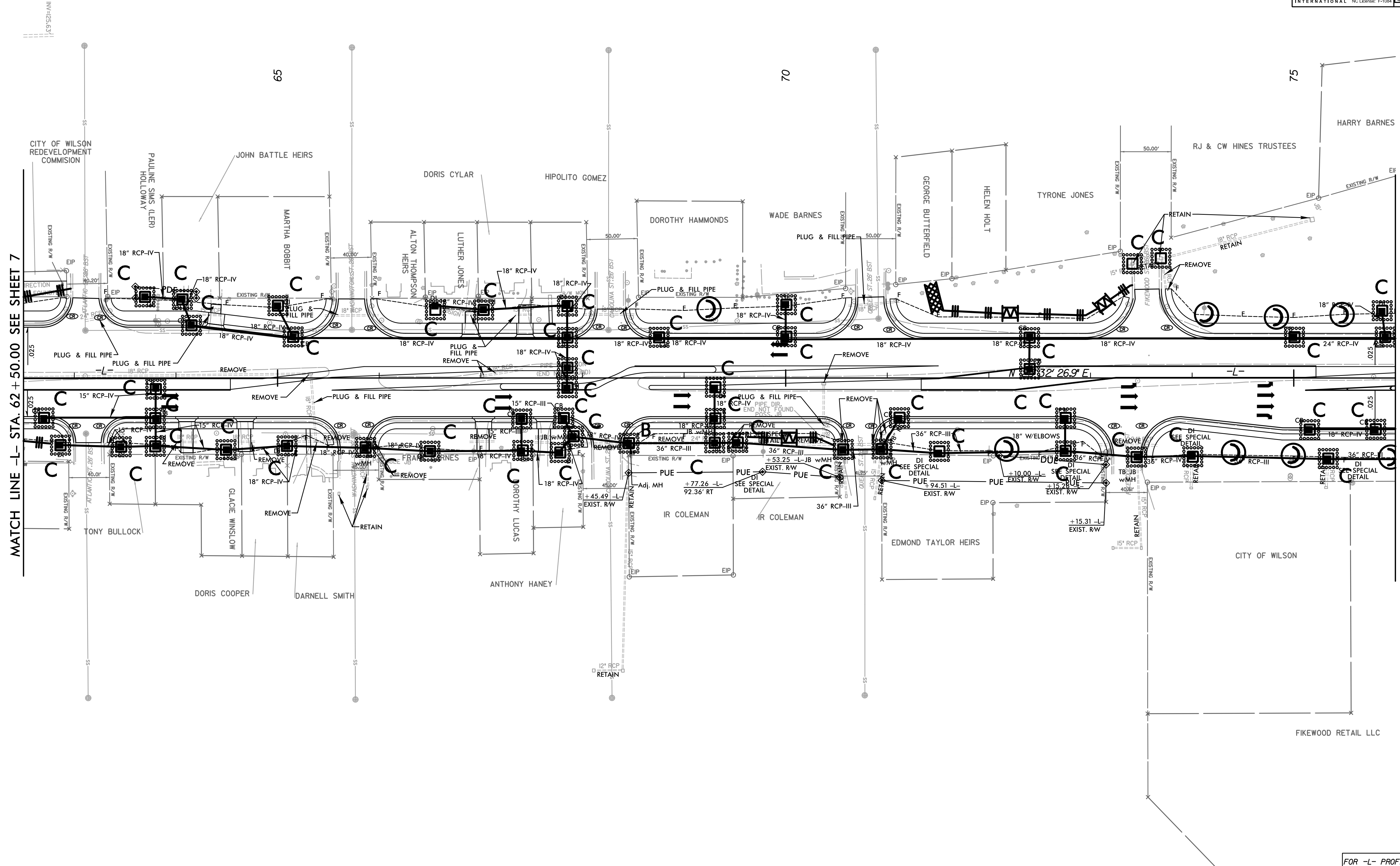
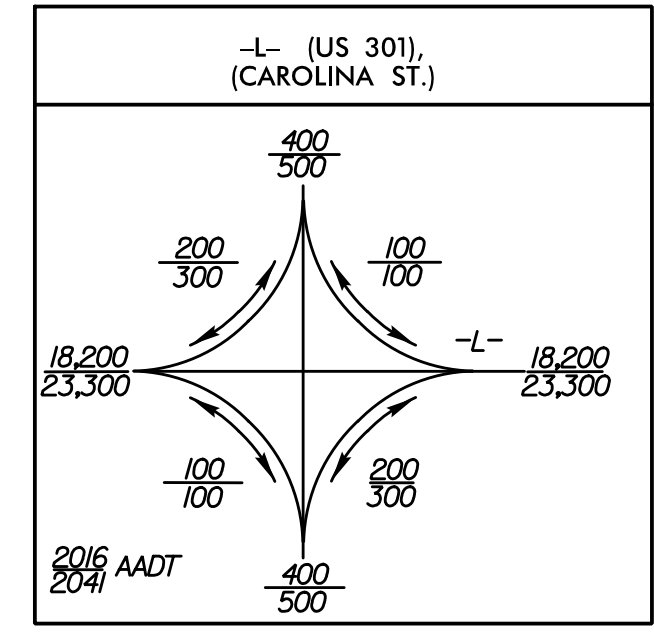
★ = REVISED SIGNAL

8/11/99  
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5/14/99

PROJECT REFERENCE NO. <b>U-5935</b>	SHEET NO. <b>EC-19/CONST.08</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	
<b>Michael Baker Engineering, Inc.</b> 8000 Regency Park Suite 600 Cary, NC 27518 NC License: F-1084	<b>ECOLOGICAL ENGINEERING</b> 1103 SE Cary Parkway Suite 110 Cary, NC 27518 (919) 557-0929

NOTES: ALTERNATIVE INLET PROTECTION DEVICES ARE ALLOWED PER DIRECTION OF THE ENGINEER.



MATCH LINE -L- STA. 62 + 50.00 SEE SHEET 7

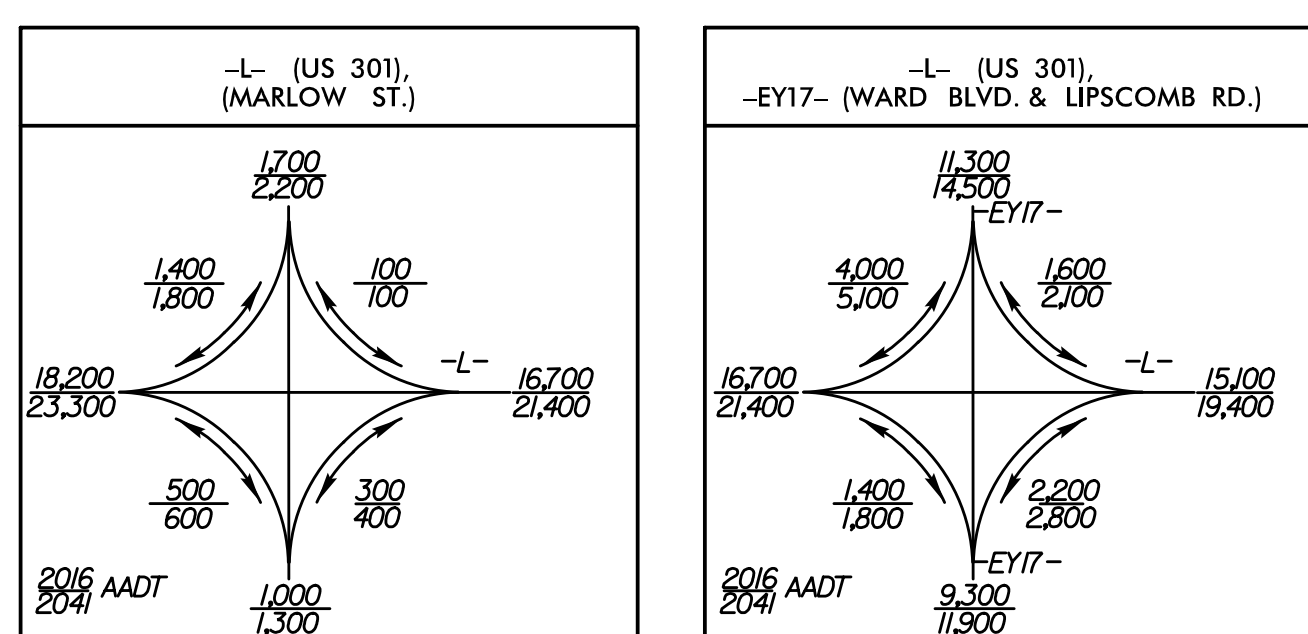
MATCH LINE -L- STA. 76 + 00.00 SEE SHEET 9

FOR -L- PROFILE SEE SHEETS 18 & 19

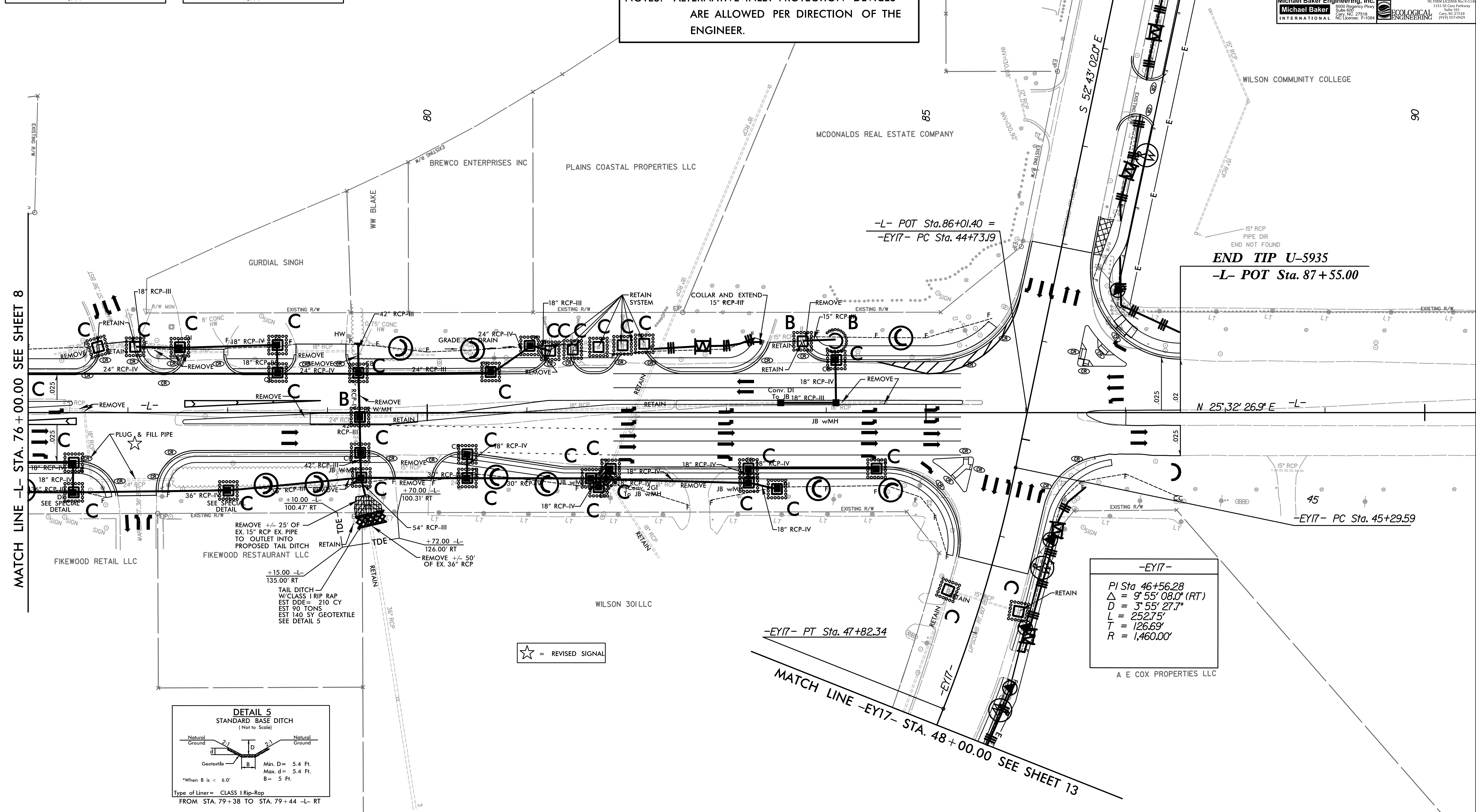
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PROJECT REFERENCE NO. <b>U-5935</b>	SHEET NO. <b>EC-20/CONST.09</b>
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	
Michael Baker Engineering, Inc. 8000 Regency Park Suite 600 Cary, NC 27518 (919) 557-4929 <small>NC License: P-1144 EC License: 27518</small>	ECOLOGICAL ENGINEERING <small>NC License: P-1144 EC License: 27518</small>

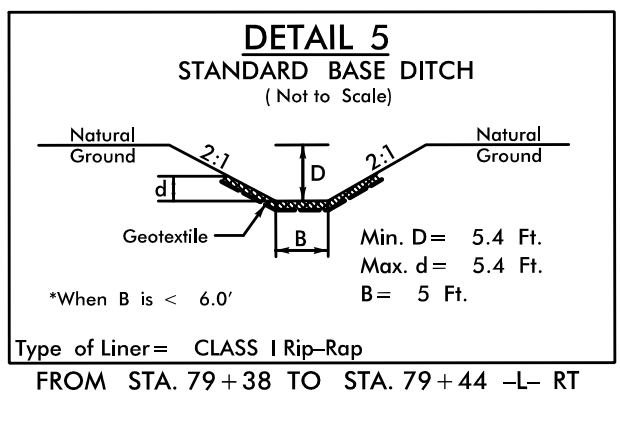
5/14/99 3:20:45 PM N:\envr\com\p\dwg\U-5935\_REU\_PSH\_09\_FINAL.dgn



**NOTES: ALTERNATIVE INLET PROTECTION DEVICES ARE ALLOWED PER DIRECTION OF THE ENGINEER.**



-EY17-  
 PI Sta 46+56.28  
 $\Delta = 9' 55' 08.0''$  (RT)  
 D = 3' 55' 27.7"  
 L = 252.75'  
 T = 126.69'  
 R = 1,460.00'  
 A E COX PROPERTIES LLC



END TIP U-5935  
 -L- POT Sta. 87+55.00

MATCH LINE -L- STA. 76+00.00 SEE SHEET 8

MATCH LINE -EY17- STA. 40+00.00 SEE SHEET 11

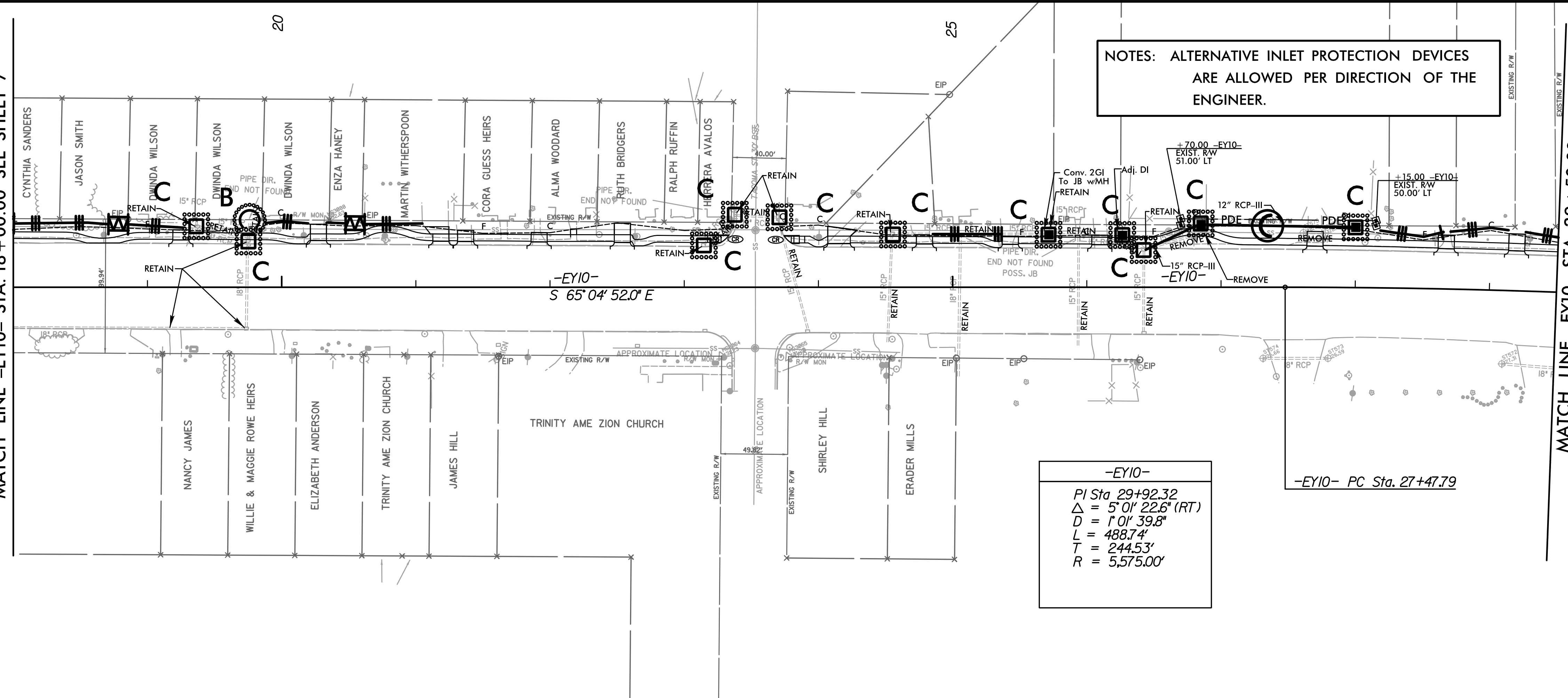
-EY17- PT Sta. 47+82.34  
 MATCH LINE -EY17- STA. 48+00.00 SEE SHEET 13

☆ = REVISED SIGNAL

FOR -L- PROFILE SEE SHEET 20

PROJECT REFERENCE NO.		SHEET NO.	
U-5935		EC-21/CONST.10	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>			
Michael Baker Engineering, Inc. Michael Baker International		ECOLOGICAL ENGINEERING	

MATCH LINE -EY10- STA. 18 + 00.00 SEE SHEET 7

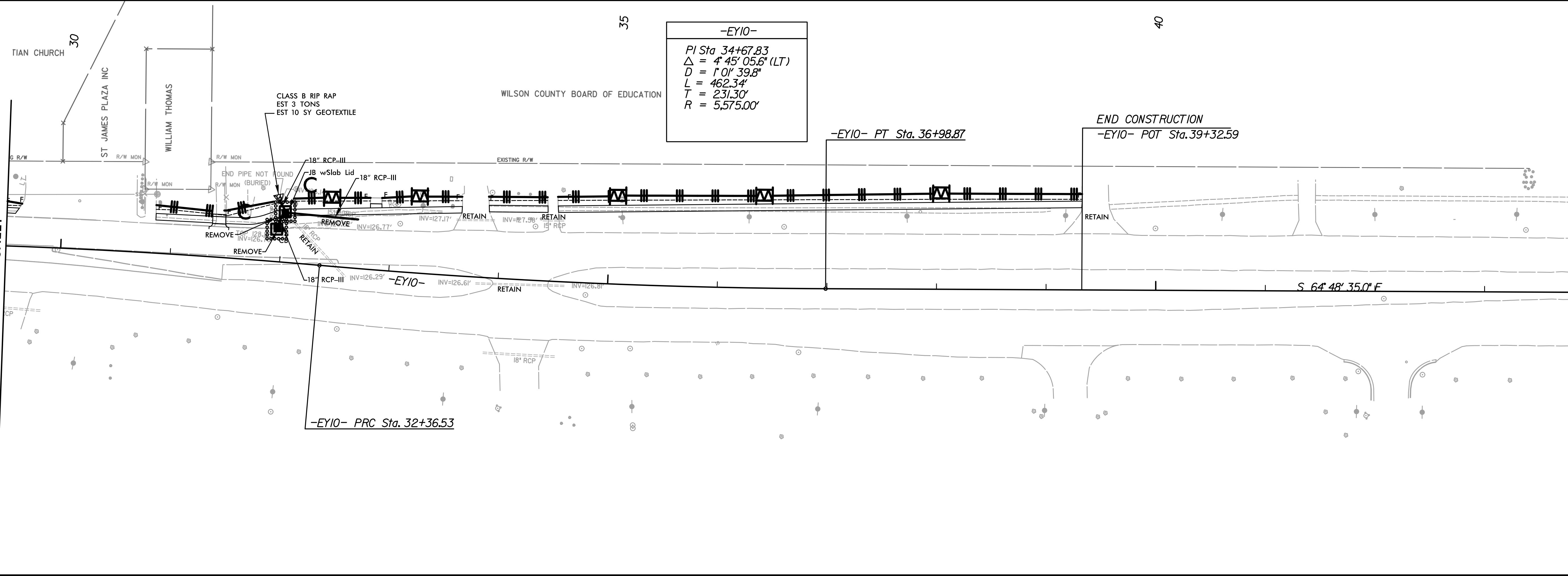


NOTES: ALTERNATIVE INLET PROTECTION DEVICES ARE ALLOWED PER DIRECTION OF THE ENGINEER.

-EY10-  
 PI Sta 29+92.32  
 $\Delta = 5^{\circ} 01' 22.6''$  (RT)  
 $D = 1^{\circ} 01' 39.8''$   
 $L = 488.74'$   
 $T = 244.53'$   
 $R = 5,575.00'$

MATCH LINE -EY10- STA. 29 + 50.00 SEE THIS SHEET

MATCH LINE -EY10- STA. 29 + 50.00 SEE THIS SHEET



-EY10-  
 PI Sta 34+67.83  
 $\Delta = 4^{\circ} 45' 05.6''$  (LT)  
 $D = 1^{\circ} 01' 39.8''$   
 $L = 462.34'$   
 $T = 231.30'$   
 $R = 5,575.00'$

END CONSTRUCTION  
 -EY10- POT Sta. 39+32.59

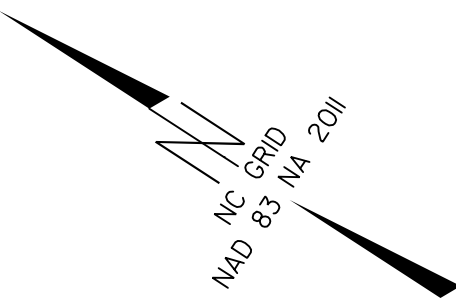
-EY10- PRC Sta. 32+36.53

S 64° 48' 35.0" E

8/17/99

PROJECT REFERENCE NO.		SHEET NO.	
U-5935		EC-22/CONST.II	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>			
Michael Baker Engineering, Inc. Michael Baker INTERNATIONAL		ECOLOGICAL ENGINEERING	

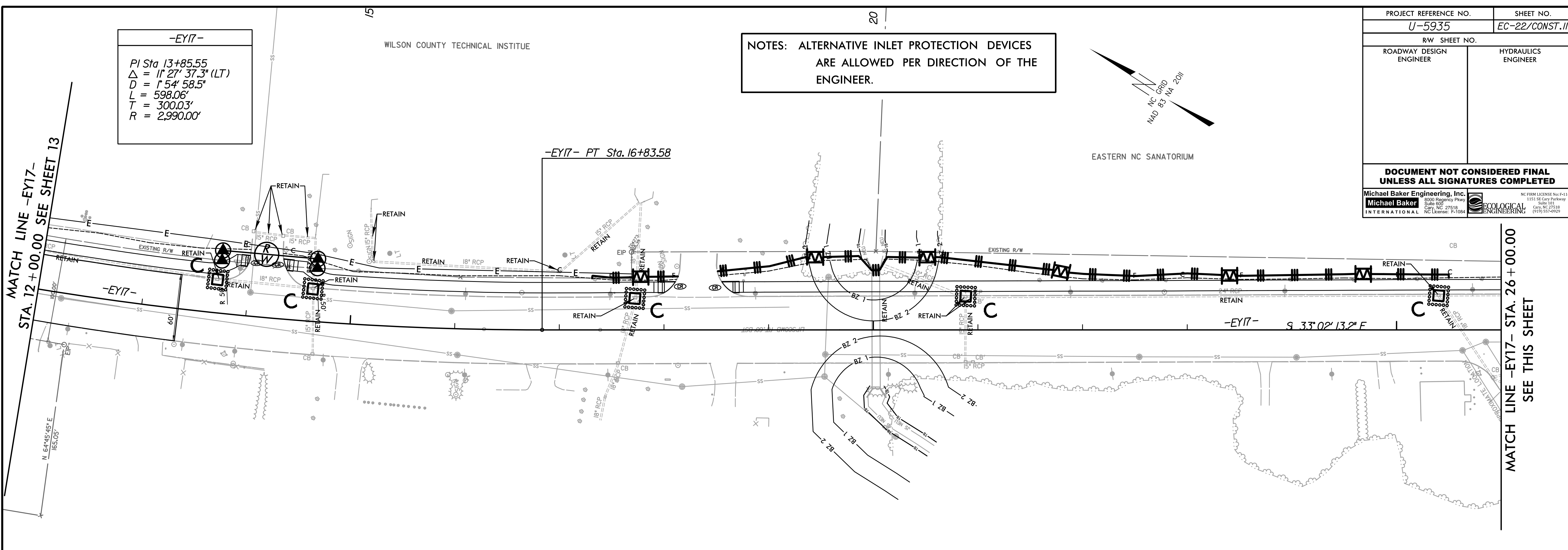
NOTES: ALTERNATIVE INLET PROTECTION DEVICES  
ARE ALLOWED PER DIRECTION OF THE  
ENGINEER.



-EY17-  
PI Sta 13+85.55  
 $\Delta = 11' 27' 37.3''$  (LT)  
D = 154' 58.5"  
L = 598.06'  
T = 300.03'  
R = 2,990.00'

MATCH LINE -EY17-  
STA. 12 + 00.00 SEE SHEET 13

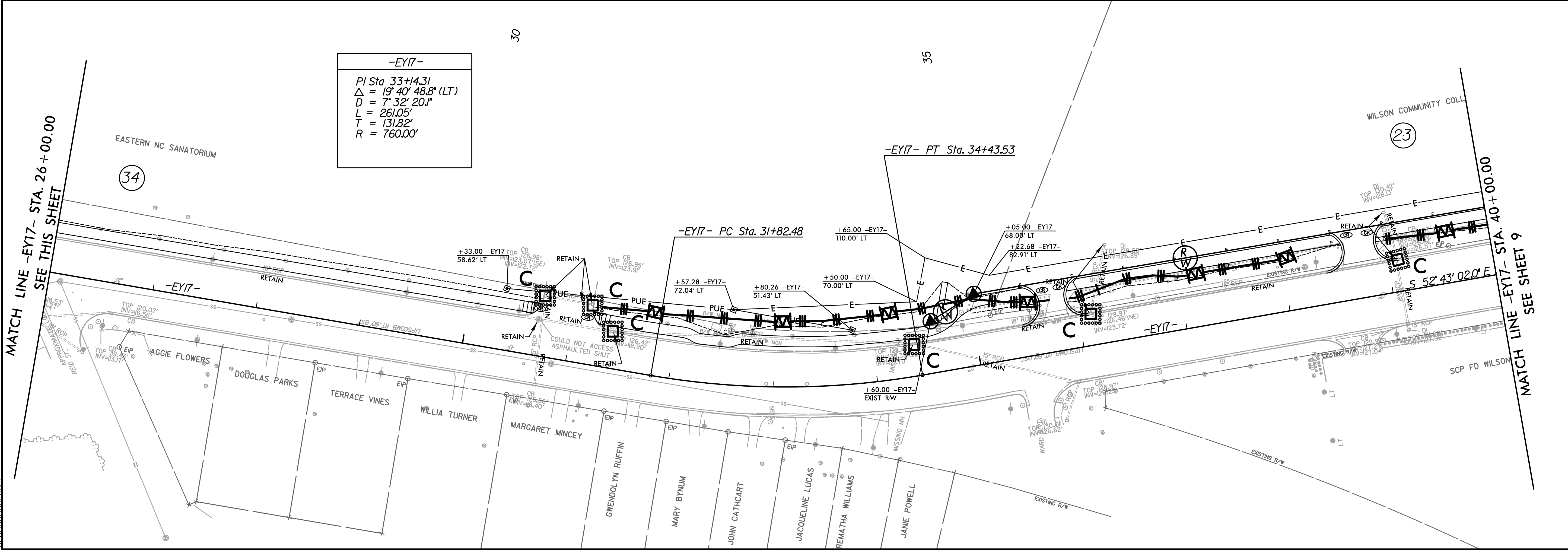
MATCH LINE -EY17- STA. 26 + 00.00  
SEE THIS SHEET



-EY17-  
PI Sta 33+44.31  
 $\Delta = 19' 40' 48.8''$  (LT)  
D = 7' 32' 20.1"  
L = 261.05'  
T = 131.82'  
R = 760.00'

MATCH LINE -EY17- STA. 26 + 00.00  
SEE THIS SHEET

MATCH LINE -EY17- STA. 40 + 00.00  
SEE SHEET 9



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brandon

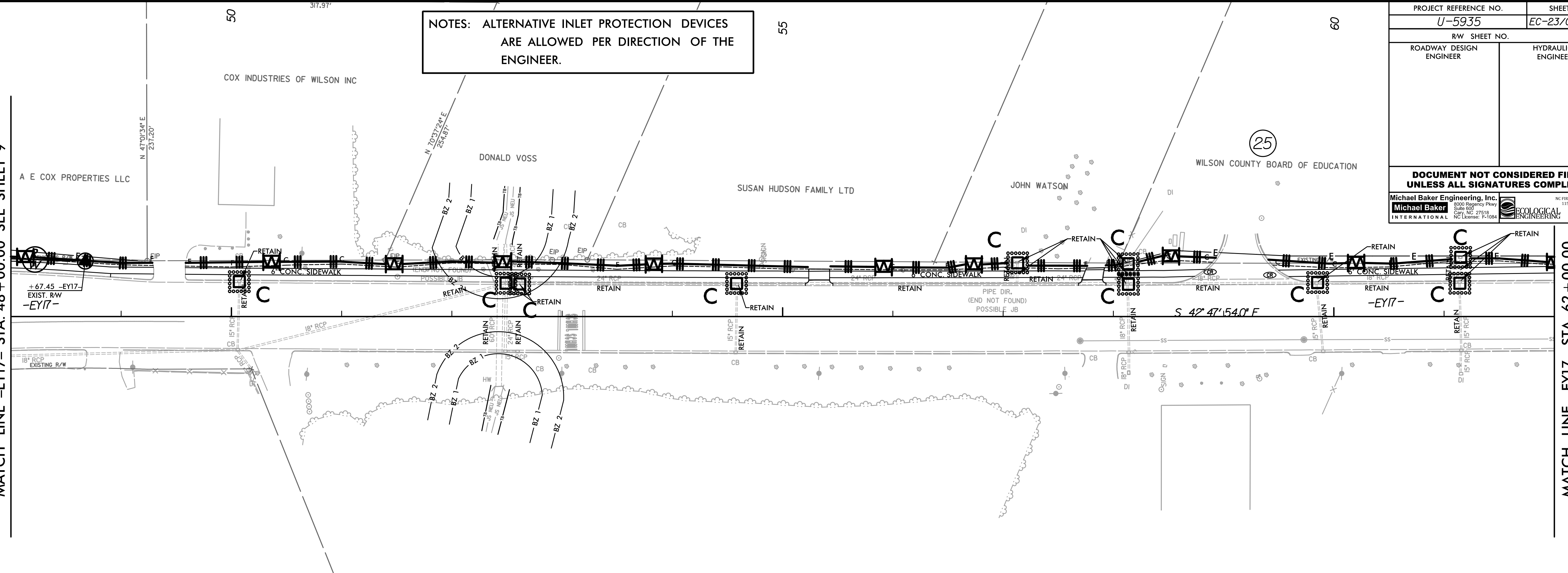


8/17/99

PROJECT REFERENCE NO.		SHEET NO.	
U-5935		EC-23/CONST.12	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>			
Michael Baker Engineering, Inc. Michael Baker International		ECOLOGICAL ENGINEERING	

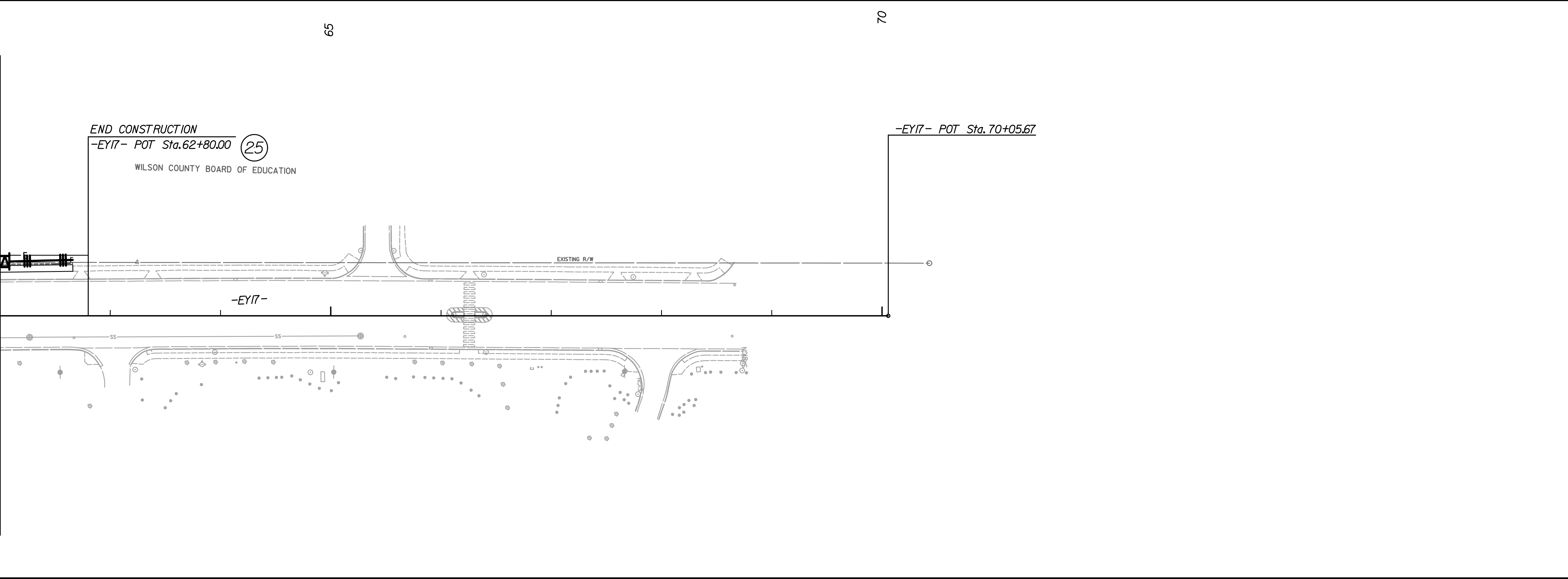
NOTES: ALTERNATIVE INLET PROTECTION DEVICES ARE ALLOWED PER DIRECTION OF THE ENGINEER.

MATCH LINE -EY17- STA. 48 + 00.00 SEE SHEET 9



MATCH LINE -EY17- STA. 62 + 00.00 SEE THIS SHEET

MATCH LINE -EY17- STA. 62 + 00.00 SEE THIS SHEET



3/20/24 PM  
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prandabachan

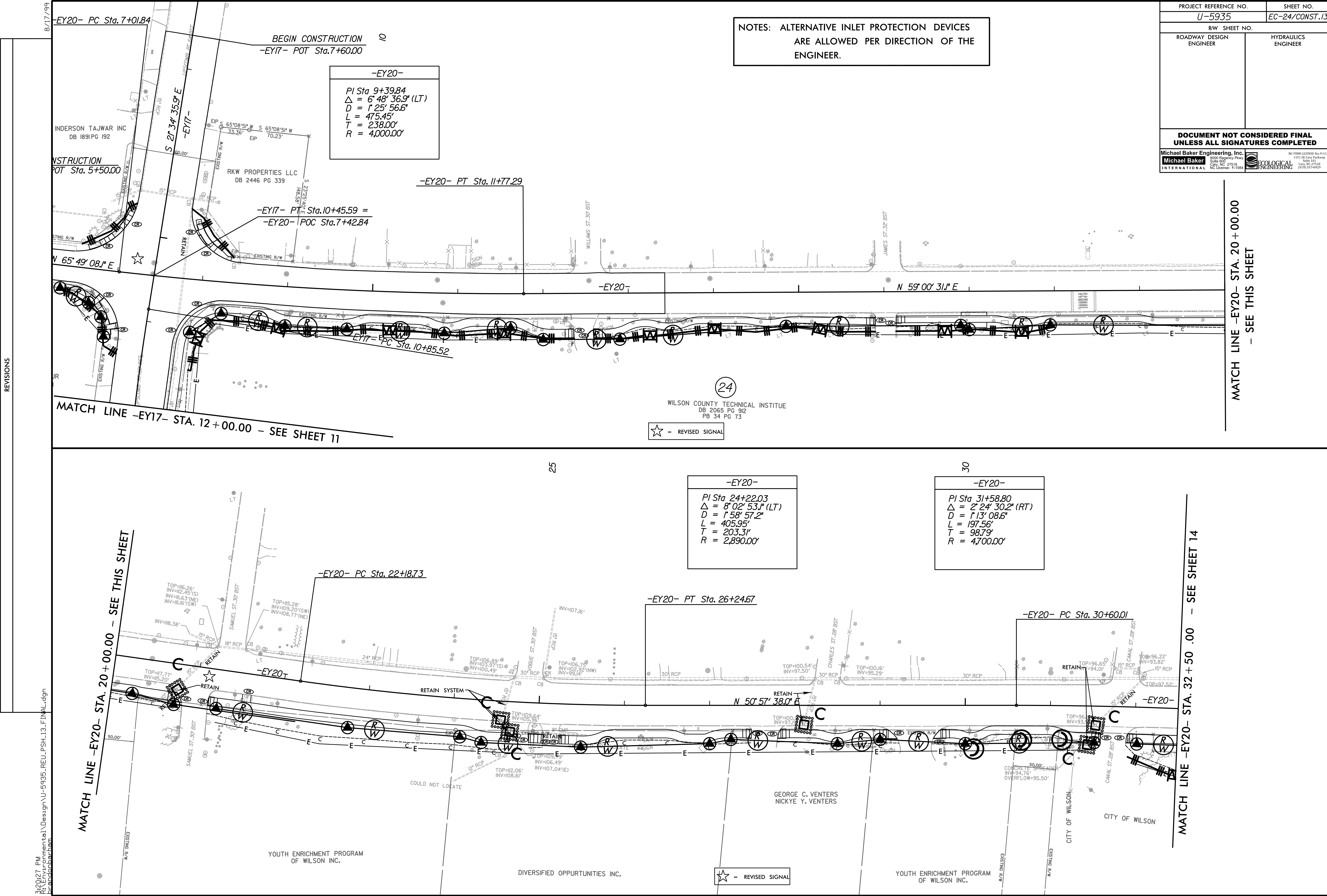
PROJECT REFERENCE NO.	SHEET NO.
U-5935	EC-24/CONST.13
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	
Michael Baker Engineering, Inc. 8000 Progress Plaza Suite 600 Cary, NC 27518 NC License: F-1084	ECOLOGICAL ENGINEERING 1101 S. Cary Parkway Suite 101 Cary, NC 27518 (919) 557-0929

NOTES: ALTERNATIVE INLET PROTECTION DEVICES ARE ALLOWED PER DIRECTION OF THE ENGINEER.

**-EY20-**  
 PI Sta 9+39.84  
 $\Delta = 6' 48' 36.9''$  (LT)  
 $D = 1' 25' 56.6''$   
 $L = 475.45'$   
 $T = 238.00'$   
 $R = 4,000.00'$

**-EY20-**  
 PI Sta 24+22.03  
 $\Delta = 8' 02' 53.1''$  (LT)  
 $D = 1' 58' 57.2''$   
 $L = 405.95'$   
 $T = 203.31'$   
 $R = 2,890.00'$

**-EY20-**  
 PI Sta 31+58.80  
 $\Delta = 2' 24' 30.2''$  (RT)  
 $D = 1' 13' 08.6''$   
 $L = 197.56'$   
 $T = 98.79'$   
 $R = 4,700.00'$



REVISIONS

MATCH LINE -EY20- STA. 20 + 00.00  
 - SEE THIS SHEET

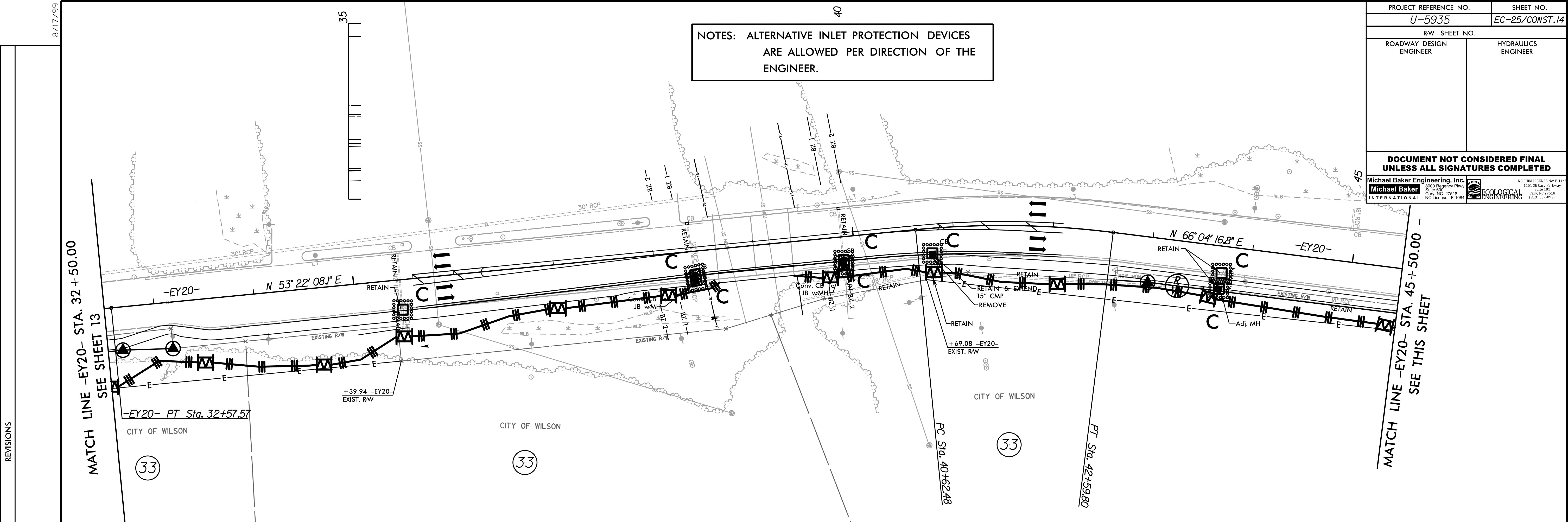
MATCH LINE -EY20- STA. 20 + 00.00 - SEE THIS SHEET

MATCH LINE -EY20- STA. 32 + 50 .00 - SEE SHEET 14

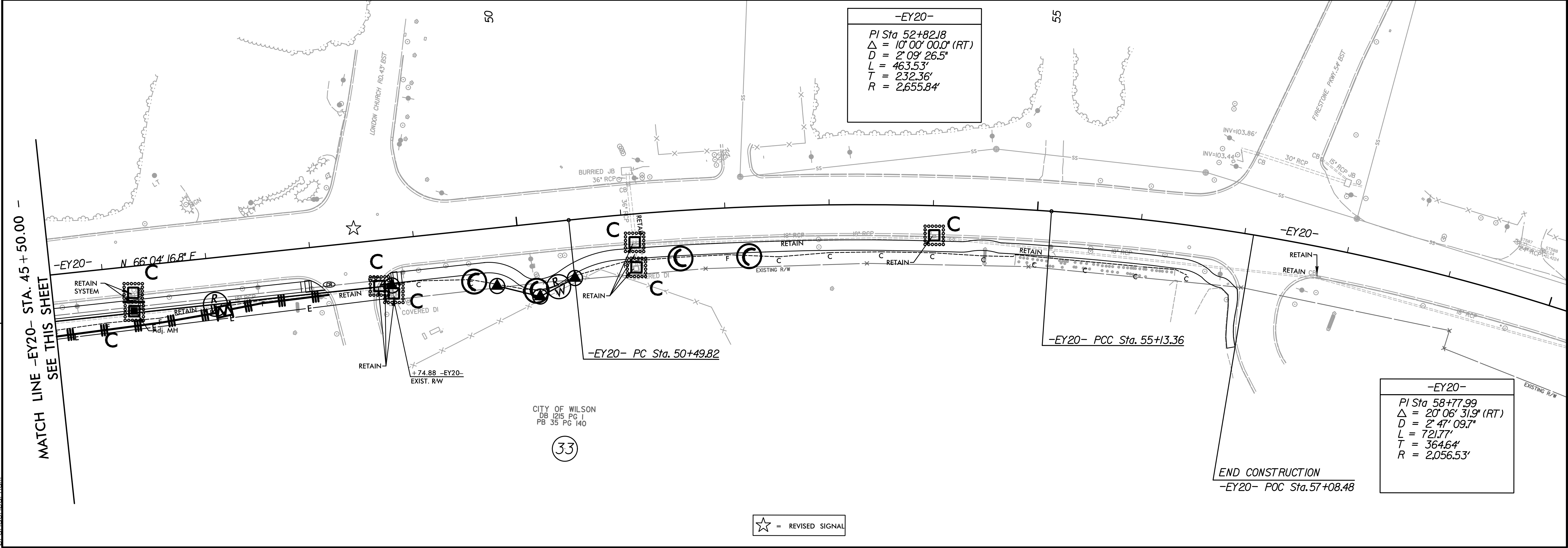
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 Brandon

PROJECT REFERENCE NO.	SHEET NO.
U-5935	EC-25/CONST.14
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	
Michael Baker Engineering, Inc. 6000 Piedmont Place Suite 600 Cary, NC 27518 NC License: P-1084	ECOLOGICAL ENGINEERING NC License: P-1114 1101 S. Cary Parkway Suite 101 Cary, NC 27518 (919) 557-0929

NOTES: ALTERNATIVE INLET PROTECTION DEVICES ARE ALLOWED PER DIRECTION OF THE ENGINEER.



REVISIONS



-EY20-  
 PI Sta 52+82.18  
 $\Delta = 10^{\circ} 00' 00.0''$  (RT)  
 $D = 2^{\circ} 09' 26.5''$   
 $L = 463.53'$   
 $T = 232.36'$   
 $R = 2,655.84'$

-EY20-  
 PI Sta 58+77.99  
 $\Delta = 20^{\circ} 06' 31.9''$  (RT)  
 $D = 2^{\circ} 47' 09.7''$   
 $L = 721.77'$   
 $T = 364.64'$   
 $R = 2,056.53'$

END CONSTRUCTION  
 -EY20- POC Sta. 57+08.48

☆ = REVISED SIGNAL

8/17/99  
 3:20:31 PM  
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 Brandon