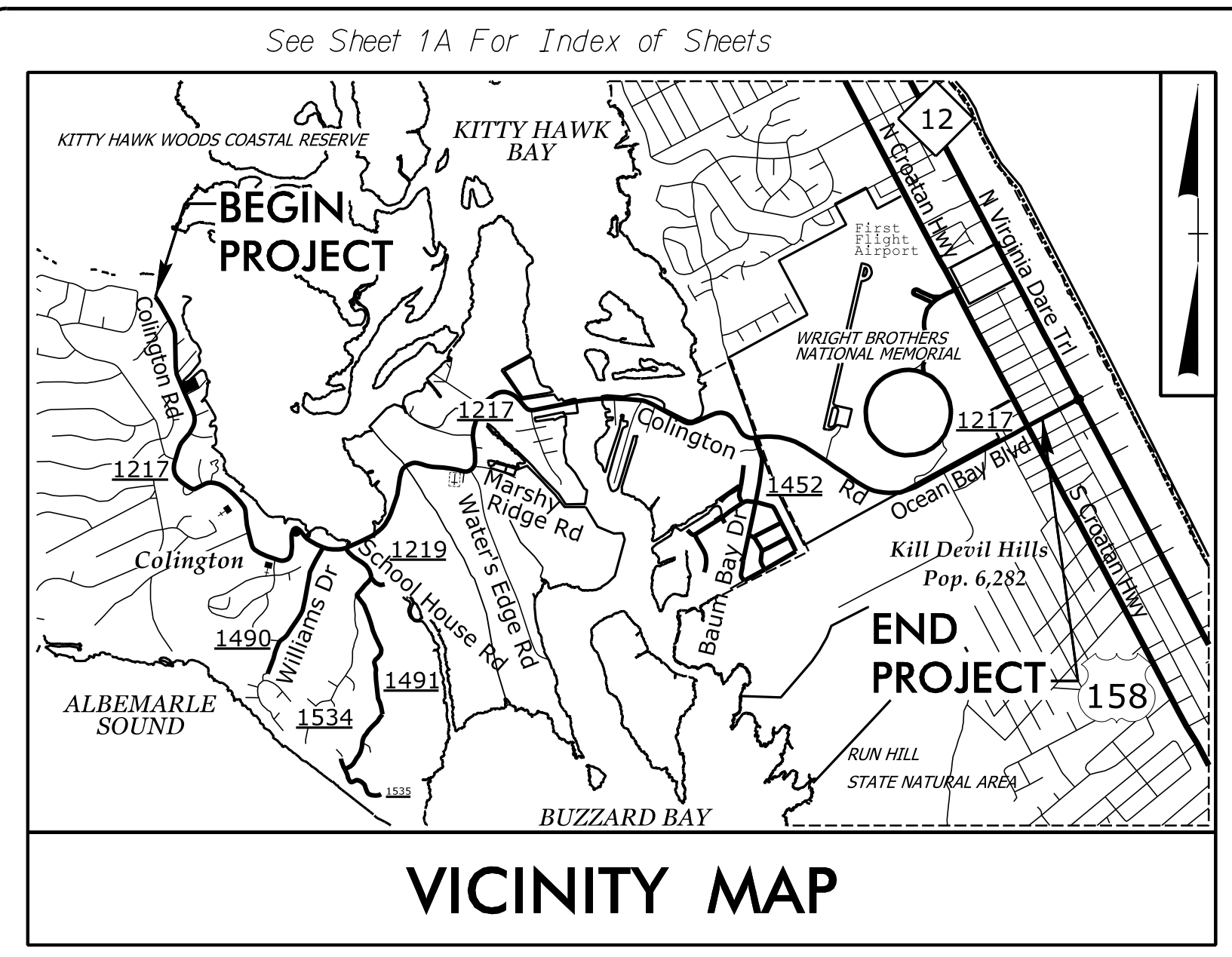


09.08/2018

TIP PROJECT: R-5014



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED  
HIGHWAY EROSION CONTROL

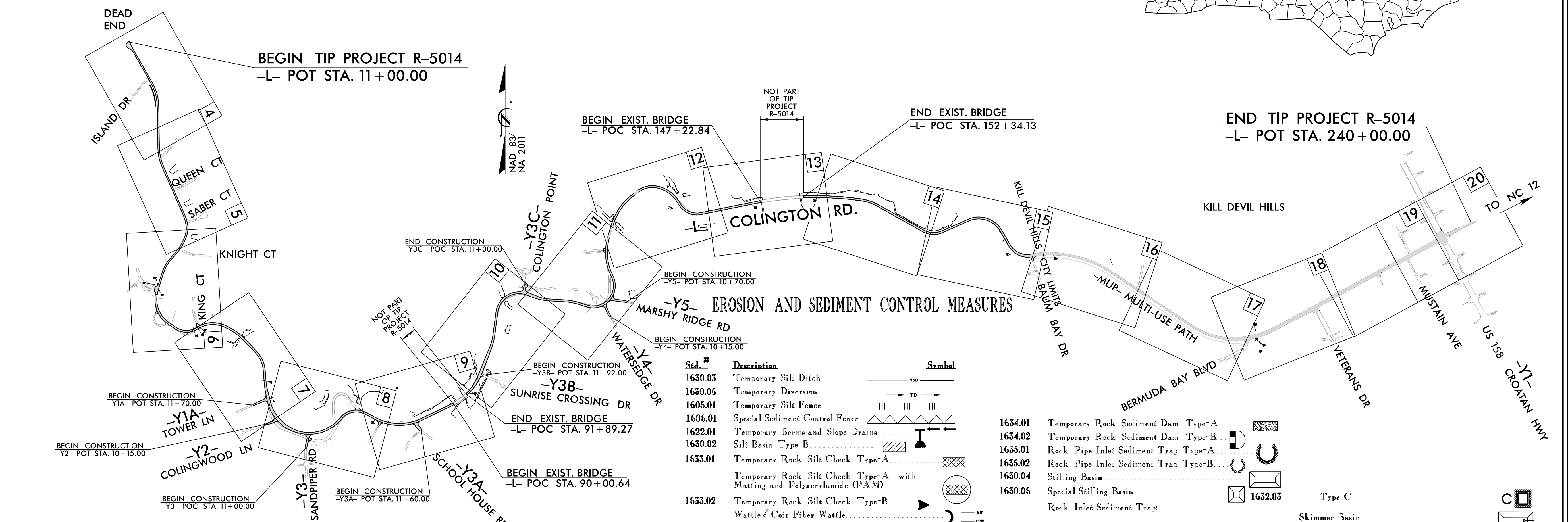
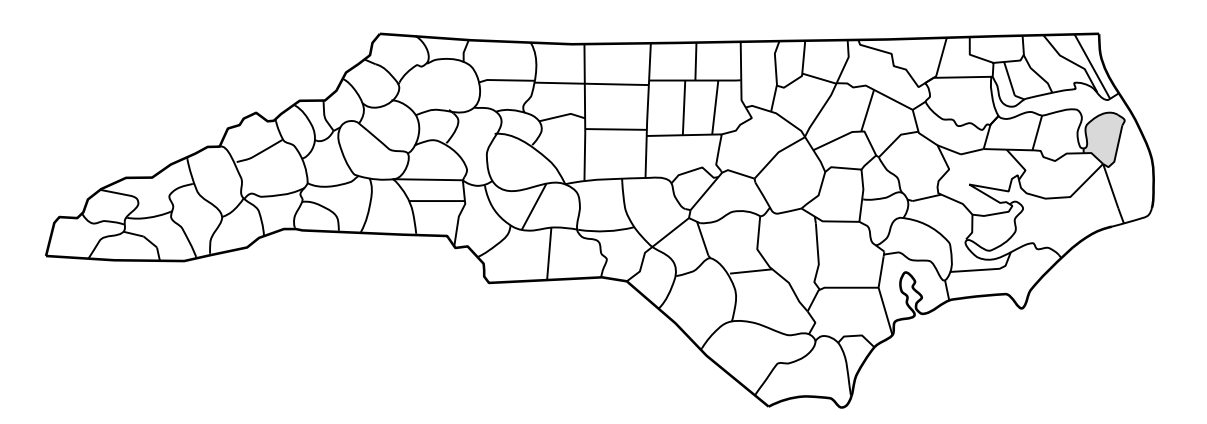
# DARE COUNTY

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5014	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
41162.1.1	STP-1217(6)	PE	

LOCATION: SR 1217 (COLINGTON RD.) FROM DEAD END TO US 158  
CROATAN HIGHWAY IN KILL DEVIL HILLS

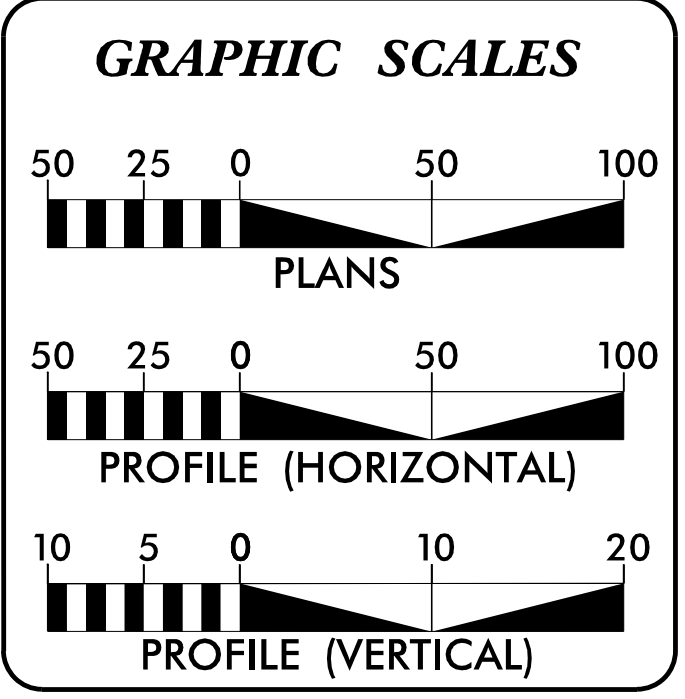
TYPE OF WORK: GRADING, DRAINAGE, & PAVING



Std. #	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	BSD
1630.02	Silt Basin Type B	SB
1635.01	Temporary Rock Silt Check Type-A	TRSCA
1635.02	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	TRSCA-PAM
1633.01	Temporary Rock Silt Check Type-B	TRSCB
1633.02	Wattle/Coir Fiber Wattle	WF
1632.01	Type A	A
1632.02	Type B	B
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
1632.03	Type C	C
1632.01	Skimmer Basin	SKB
1632.02	Tiered Skimmer Basin	TSKB
1632.03	Infiltration Basin	IB

THERE IS A DESIGN EXCEPTION FOR HORIZONTAL CURVE RADIUS AND ASSOCIATED HORIZONTAL STOPPING SIGHT DISTANCE.  
THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.  
A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF KILL DEVIL HILLS.  
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD

CONTRACT:



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

Prepared in the Office of:

**CALYX**  
ENGINEERS & CONSULTANTS  
Formerly Midway Engineers & Consultants  
7500 EAST INDEPENDENCE BOULEVARD, SUITE 100  
CHARLOTTE, NC 28227  
PHONE: 704.537.7300  
CALYXengineers.com  
NC License # F-1333

Designed by:

**JAMES R. HOPSON, JR., PE** 3736  
NAME LEVEL III CERTIFICATION NO.

Reviewed in the Office of:

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

2018 STANDARD SPECIFICATIONS

Reviewed by:

**WES CHANDLER, PE**

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 2018 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	

11/5/2018  
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jhopson

PROJECT REFERENCE NO.	SHEET NO.
R-5014	EC-02
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.

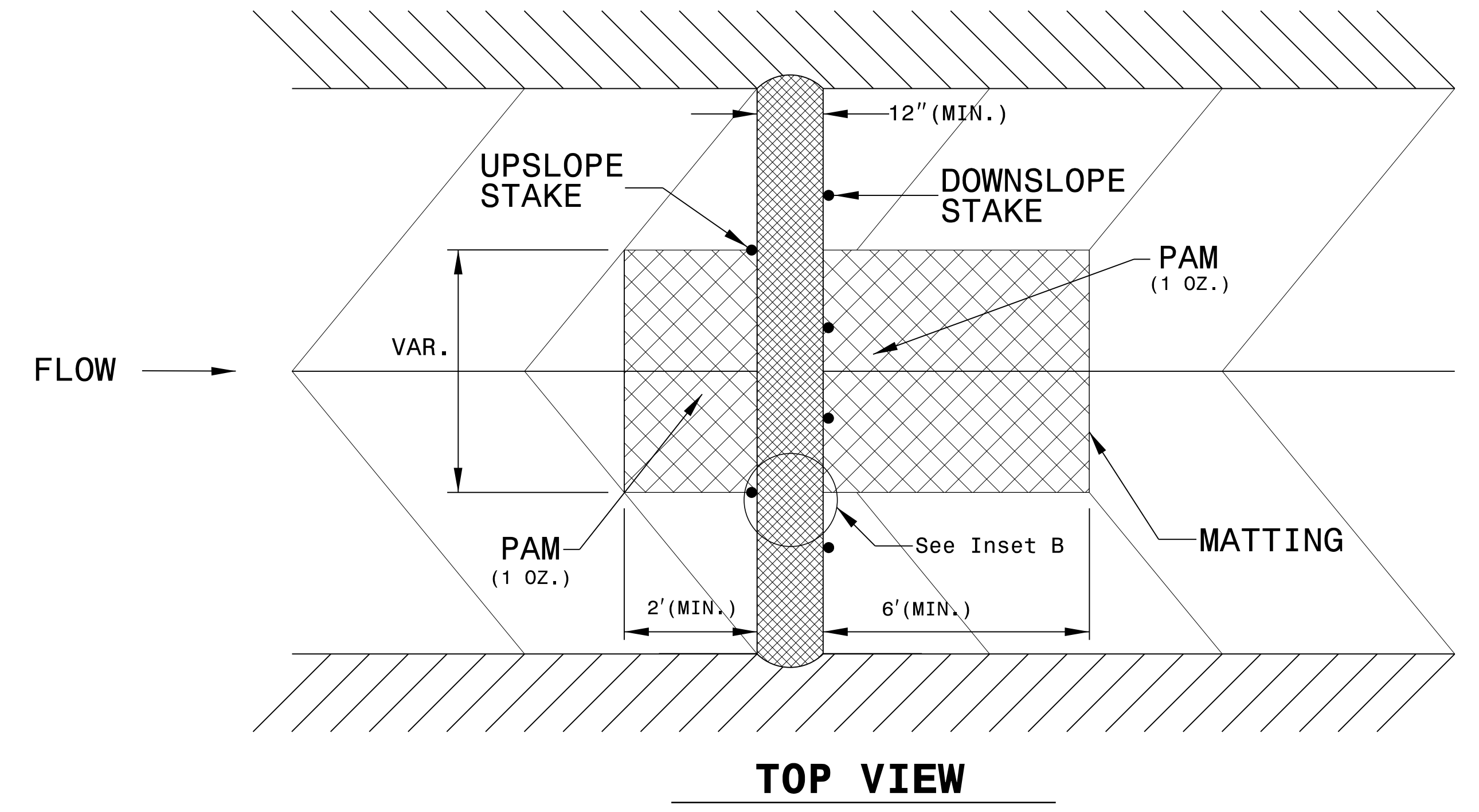
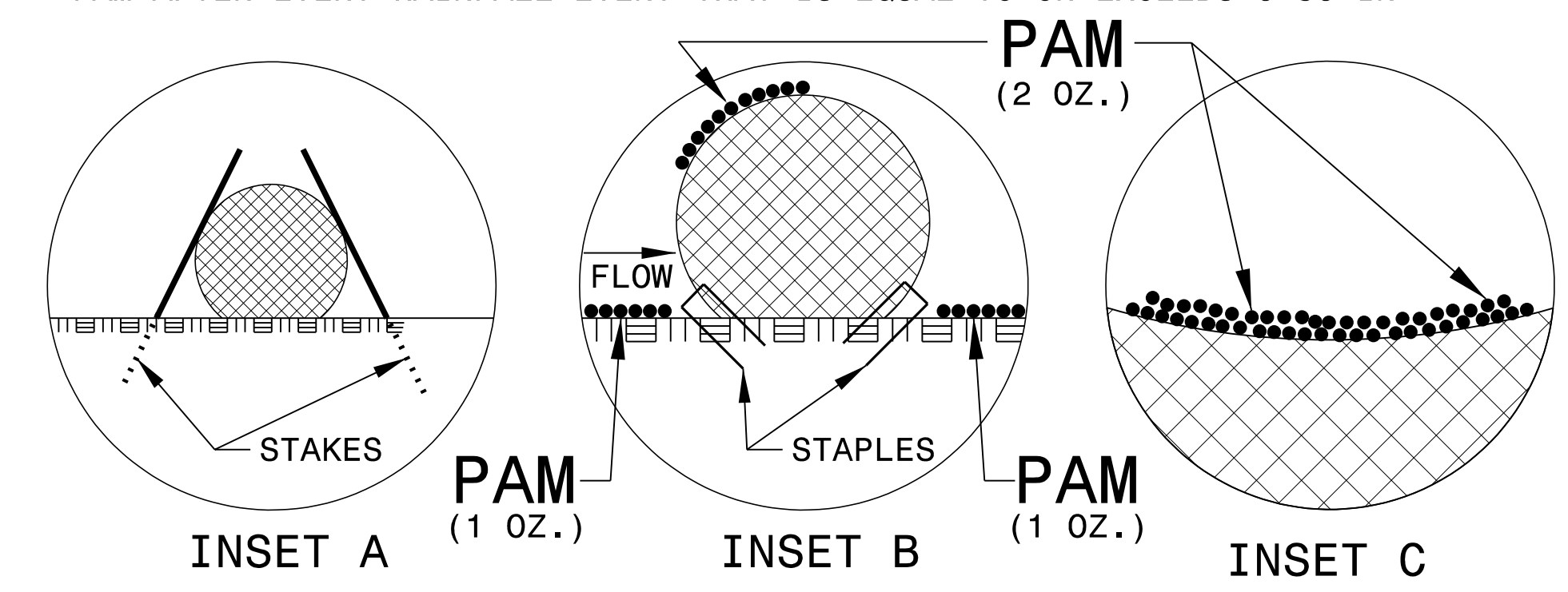
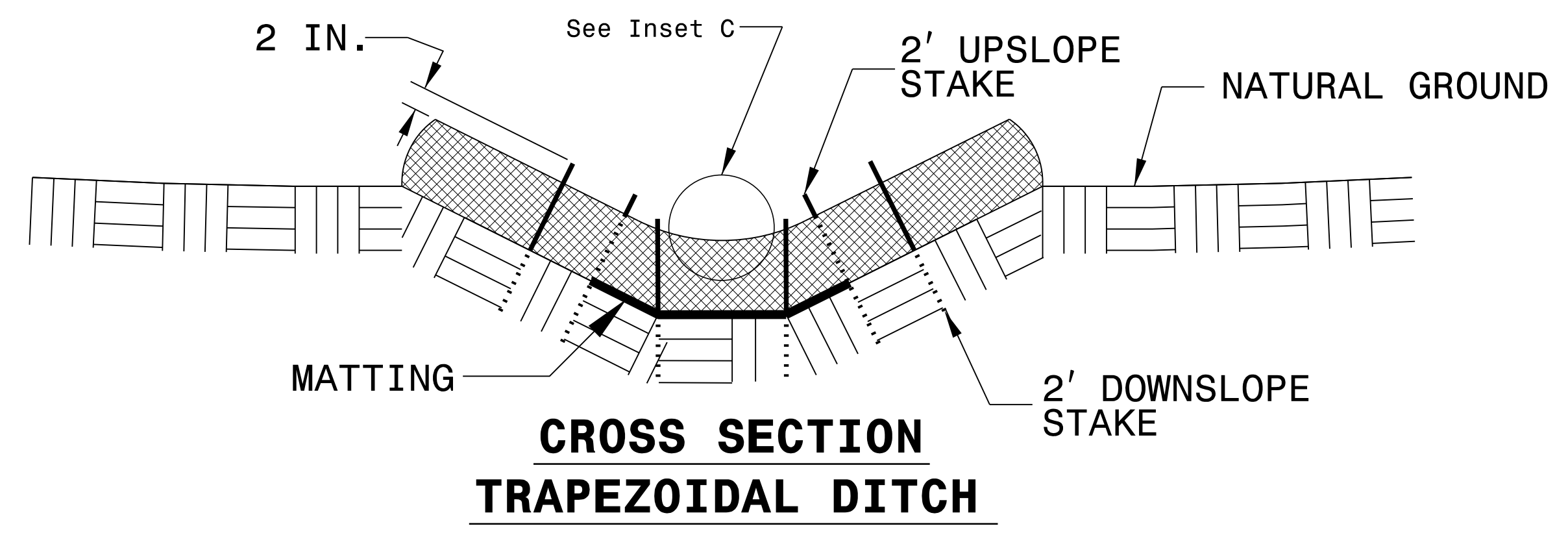
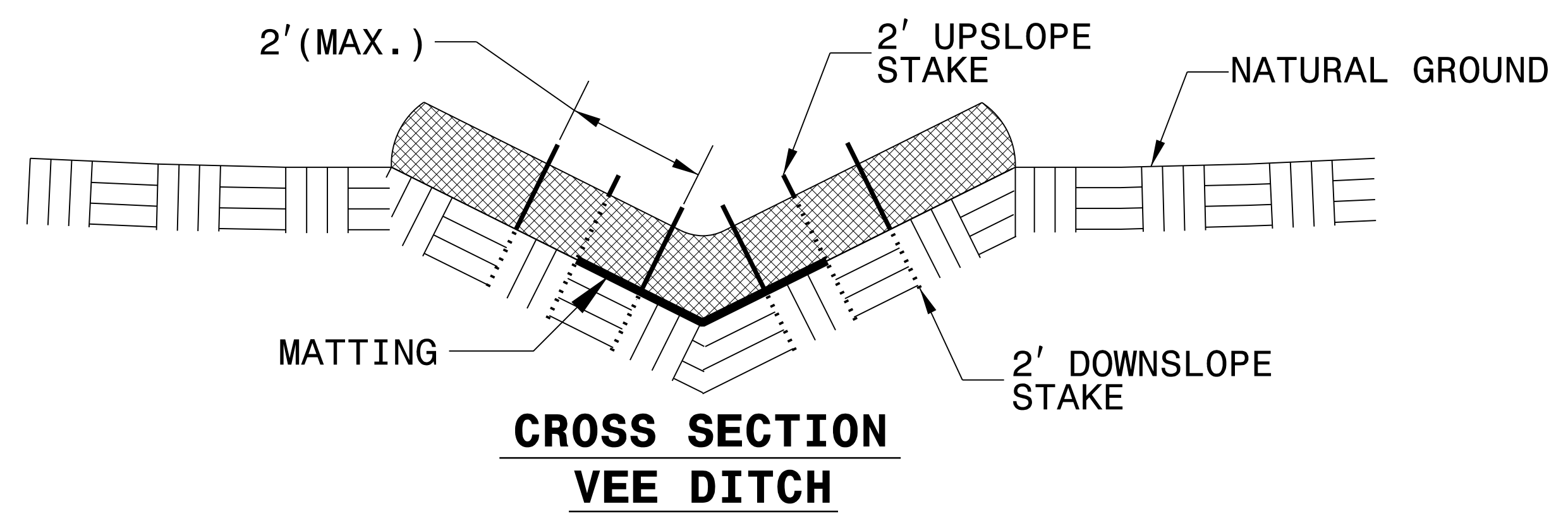
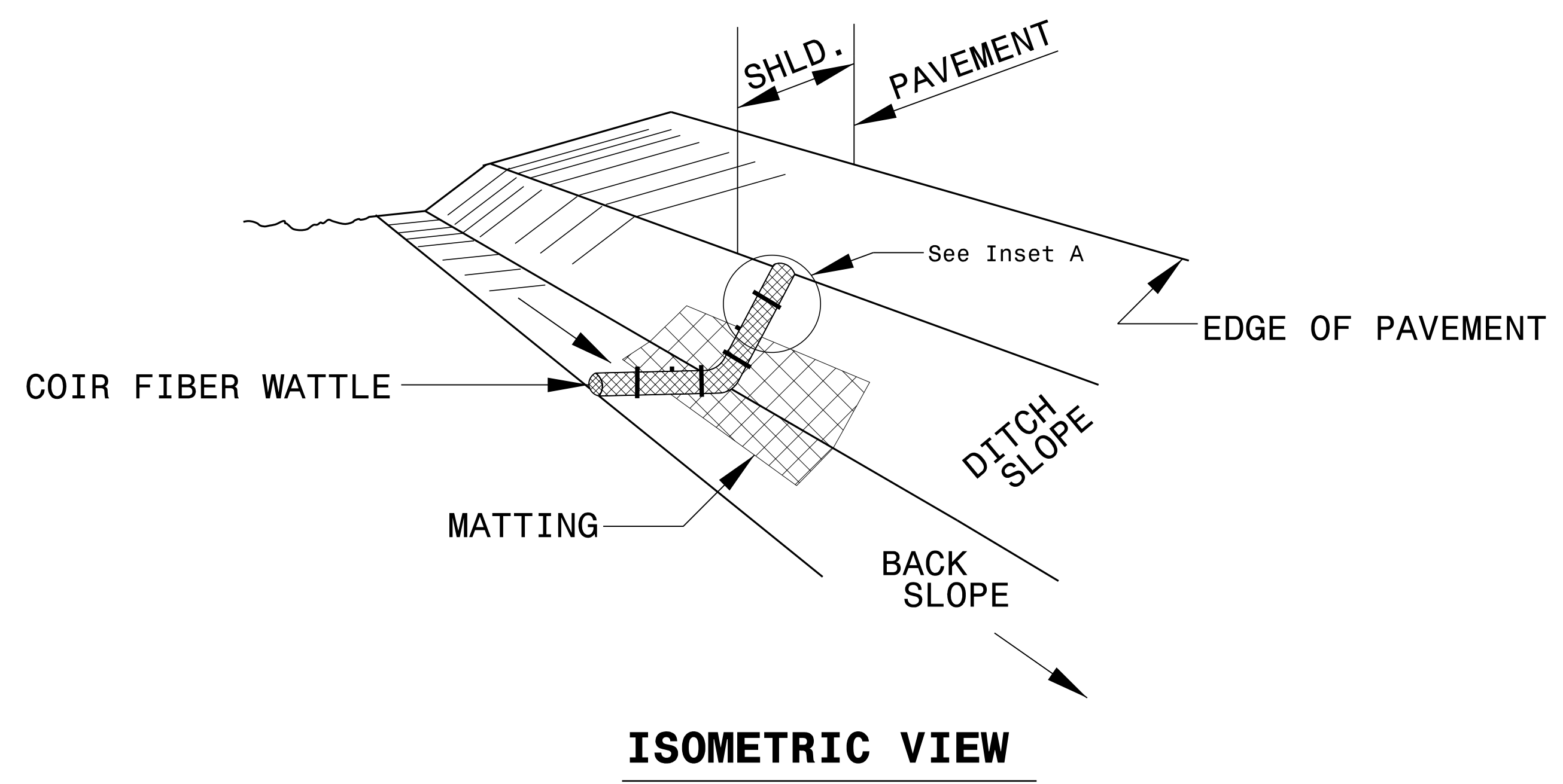
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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.

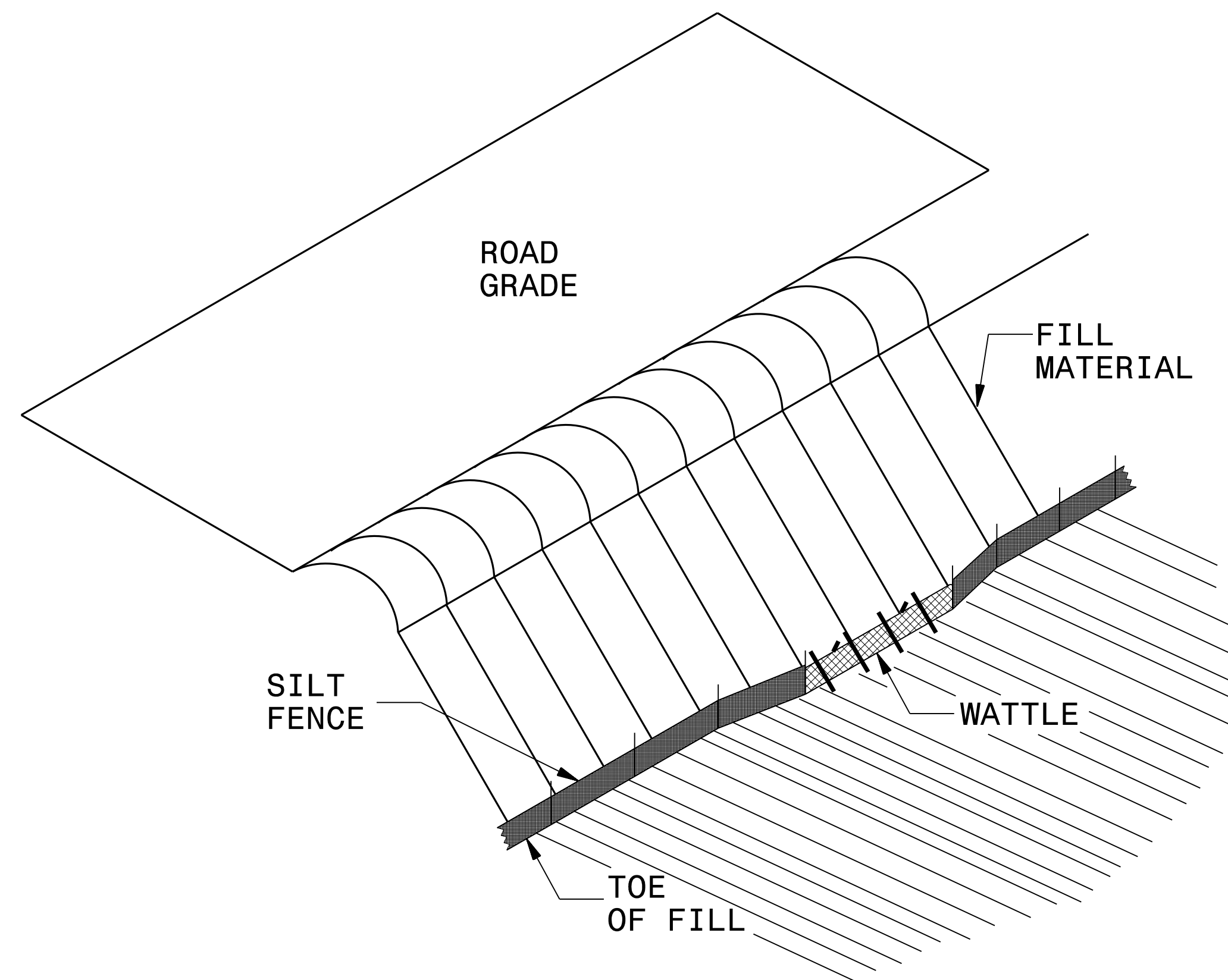
PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

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.

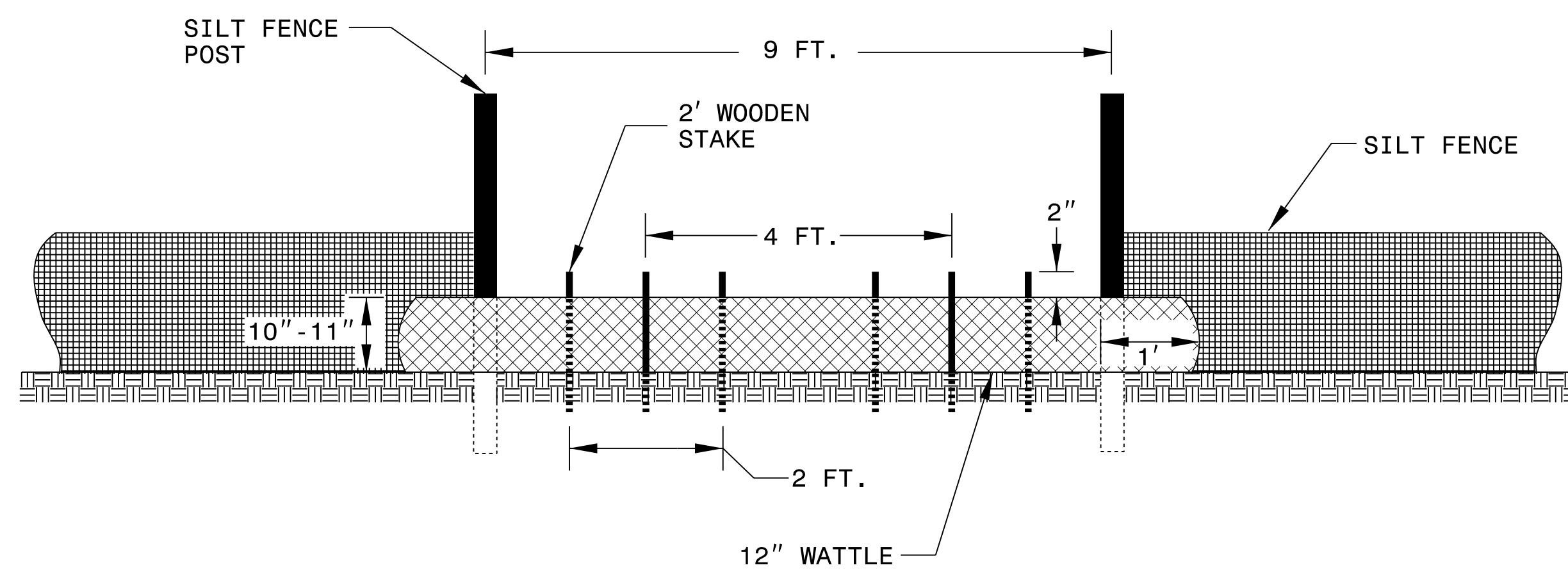


# SILT FENCE COIR FIBER WATTLE BREAK DETAIL

PROJECT REFERENCE NO.	SHEET NO.
R-5014	EC-02A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



**ISOMETRIC VIEW**

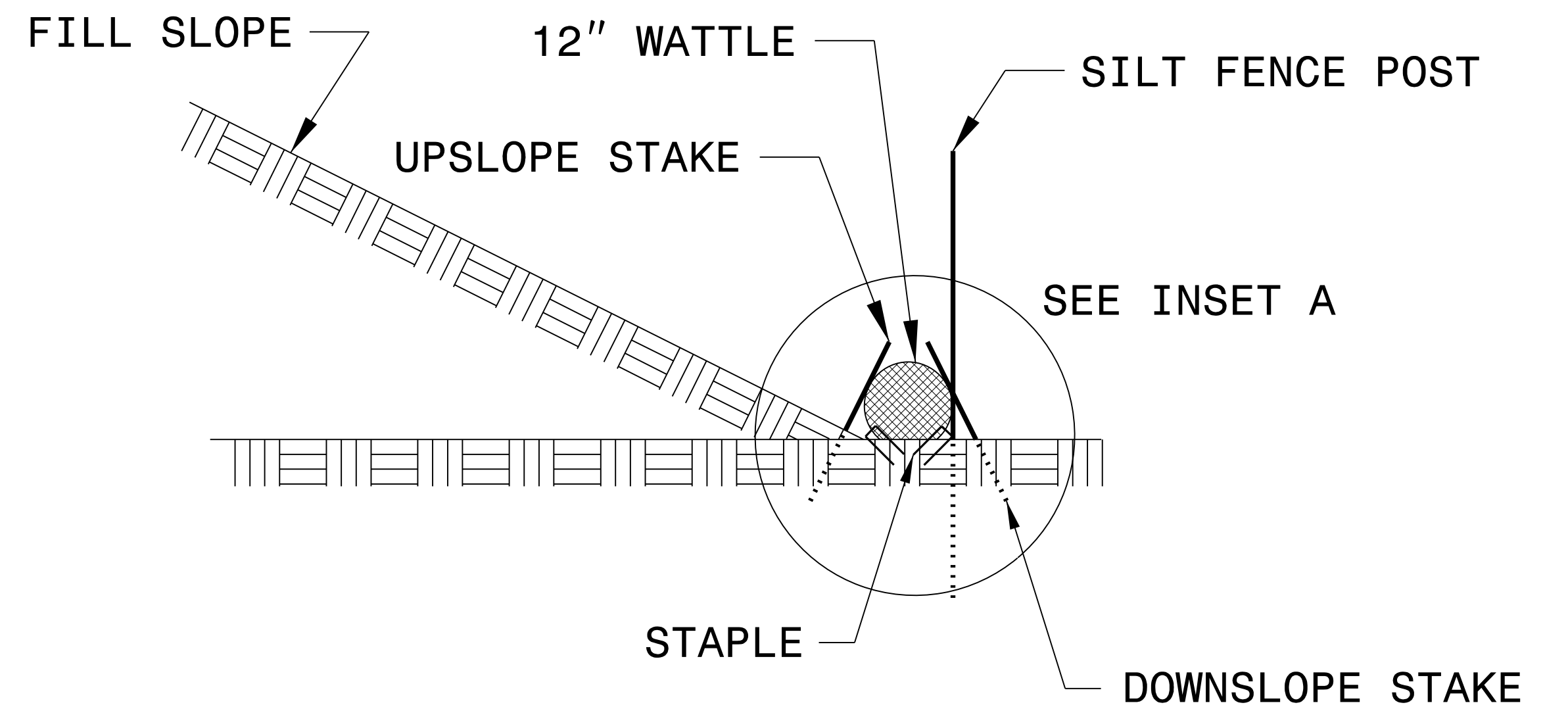
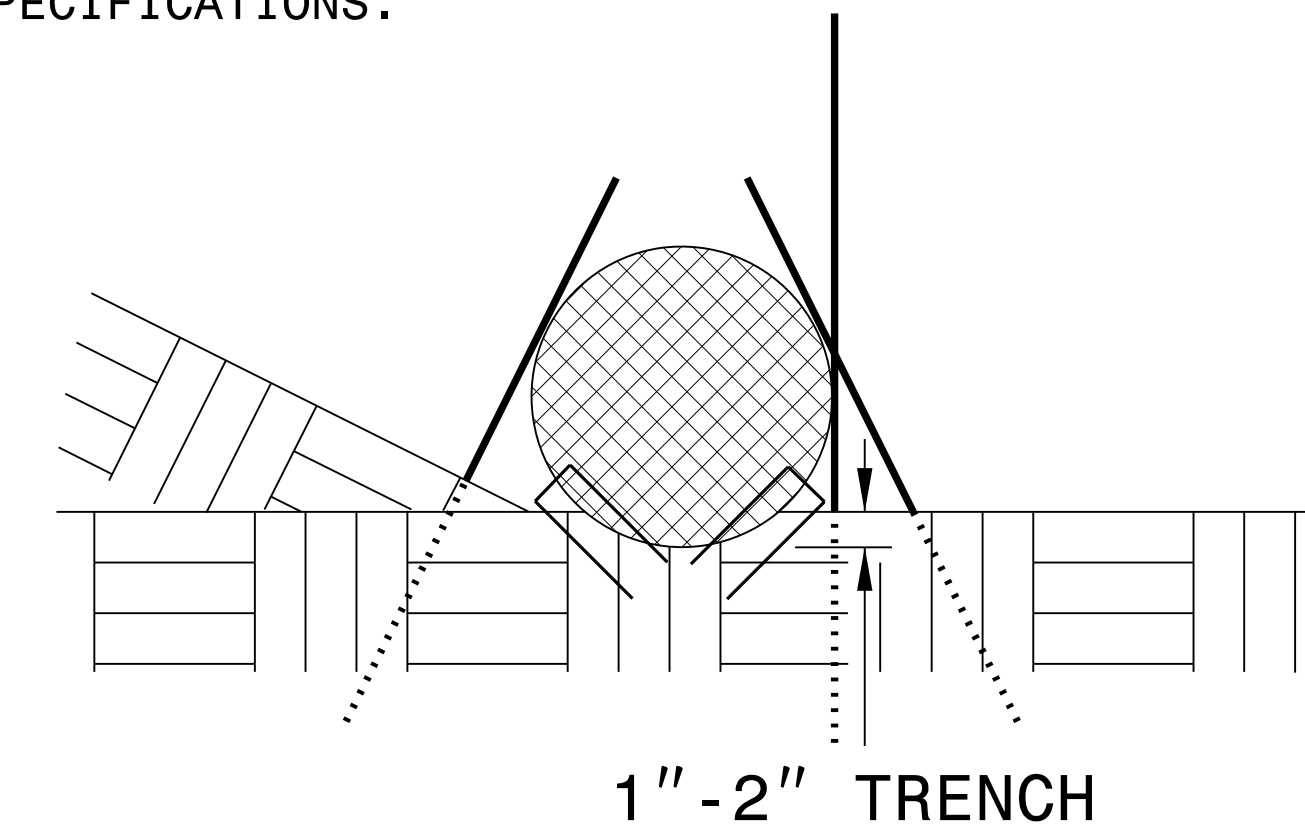


**VIEW FROM SLOPE**

**NOTES:**

- USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE AND LENGTH OF 10 FT.
- EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.
- DO NOT PLACE WATTLE ON TOE OF SLOPE.
- USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
- INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.
- 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.
- WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.
- INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.

**INSET A**



**SIDE VIEW**

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. <b>R-5014</b>	SHEET NO. EC-03
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

## SOIL STABILIZATION SUMMARY SHEET

### MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
6	-L-	42+50	47+27	LT	500
6	-L-	43+00	47+36	RT	610
6	-L-	47+27	50+70	LT	360
6	-L-	47+36	47+80	RT	50
6	-L-	49+55	52+00	RT	430
6	-L-	51+17	52+00	LT	30
7	-L-	52+00	53+93	LT	205
7	-L-	52+00	56+28	RT	428
7	-L-	56+00	57+00	LT	300
7	-L-	56+54	59+90	RT	470
7	-L-	61+00	62+00	RT	390
7	-L-	62+00	63+00	LT	360
7/8	-L-	66+00	69+50	LT	1250
8	-L-	71+50	74+00	RT	1250
8	-L-	71+50	74+50	LT	1070
8	-L-	75+00	77+50	RT	1340
8	-L-	76+00	77+50	LT	640
8	-L-	76+73	80+50	RT	525
9	-L-	76+73	80+50	RT	395
9	-L-	81+25	84+76	RT	370
9	-L-	81+50	85+00	RT	1370
9	-L-	85+50	87+00	RT	540
9/10	-L-	92+50	95+50	LT	1270
10	-L-	95+75	97+25	RT	160
10	-L-	96+20	99+76.92	LT	500
10	-L-	97+50	98+10	RT	45
10	-L-	98+10	99+76.92	RT	235
10	-L-	99+76.99	103+85	RT	430
10	-L-	99+76.92	104+10	LT	455
10	-L-	104+00	105+00	LT	430

### MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
10	-L-	108+00	108+97	RT	105
11	-L-	108+25	111+00	LT	290
11	-L-	109+87	112+00	RT	150
11	-L-	112+60	116+00	LT	240
11	-L-	117+00	118+50	RT	540
11	-L-	117+97	120+00	LT	285
11	-L-	122+50	126+25	RT	525
11	-L-	124+11	126+72	LT	455
12	-L-	126+50	127+50	LT	360
15	-L-	172+00	174+00	RT	850
15	-L-	175+50	177+00	LT	540
15	-L-	176+75	178+80	RT	165
15	-L-	179+00	180+00	RT	470
19	-L-	229+00	231+00	LT	325
19	-L-	231+00	234+60	LT	505
				SUBTOTAL	22213
				MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER	7587
				TOTAL	29800
				SAY	29800
<b>PERMANENT SOIL REINFORCEMENT MAT</b>					
7	-Y1A-	12+00	13+15	RT	85
				SUBTOTAL	85
				MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER	15
				TOTAL	100
				SAY	100



DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

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PROJECT REFERENCE NO.	SHEET NO.
R-5014	EC-03A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# ***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.



8/17/99

REVISIONS

1/5/2018  
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L. BOSSO

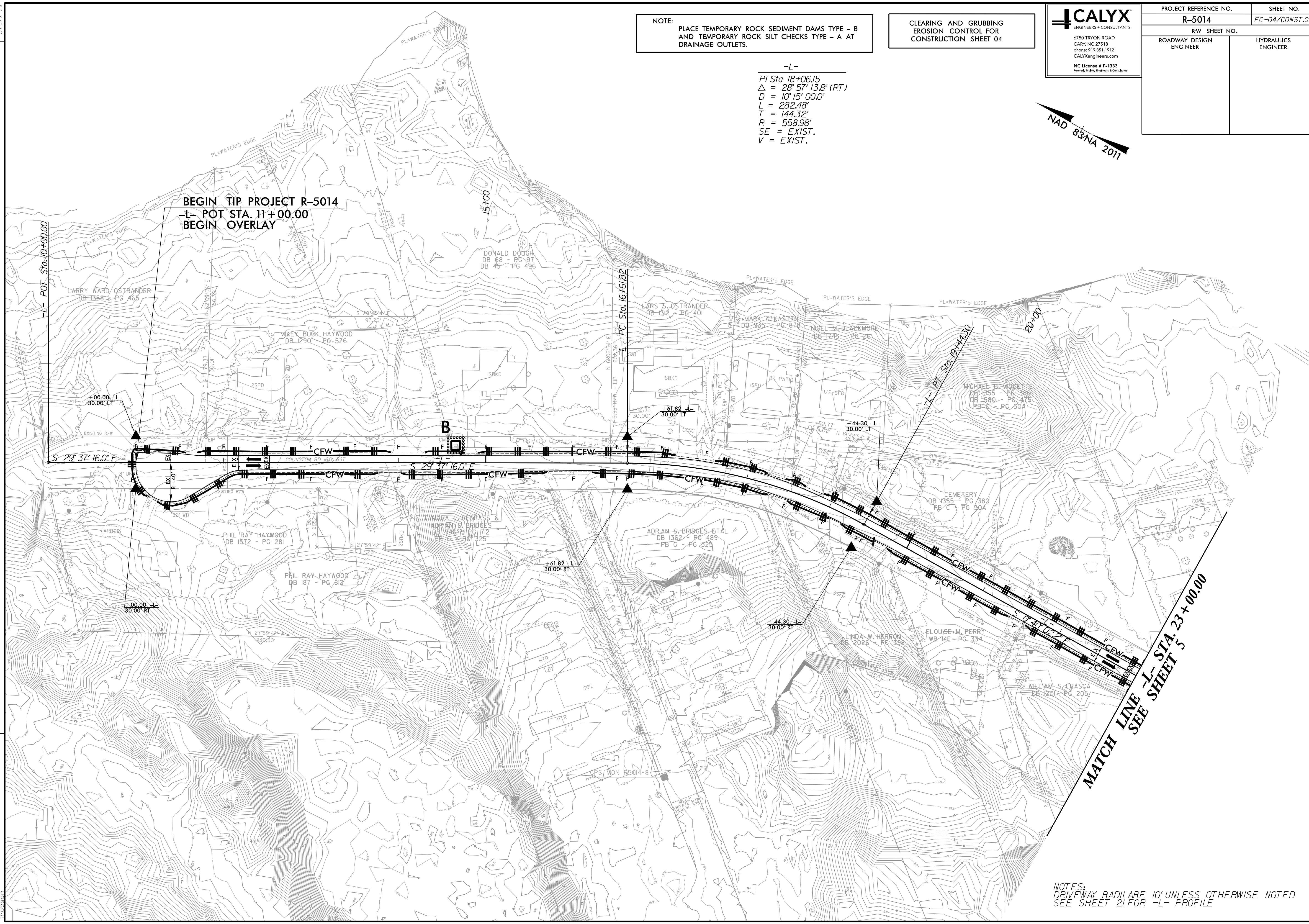
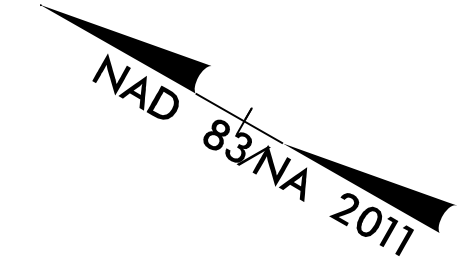
NOTE:  
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B  
AND TEMPORARY ROCK SILT CHECKS TYPE - A AT  
DRAINAGE OUTLETS.

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 04

**CALYX**  
ENGINEERS + CONSULTANTS  
6750 TRYON ROAD  
CARY, NC 27518  
phone: 919.851.1912  
CALYXengineers.com  
NC License # F-1333  
Formerly Hubbs Engineers & Consultants

PROJECT REFERENCE NO.	SHEET NO.
R-5014	EC-04/CONST.04
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

-L-  
PI Sta 18+06.15  
 $\Delta = 28' 57" 13.8" (RT)$   
 $D = 10' 15" 00.0"$   
 $L = 282.48'$   
 $T = 144.32'$   
 $R = 558.98'$   
SE = EXIST.  
V = EXIST.



BEGIN TIP PROJECT R-5014  
-L- POT STA. 11+00.00  
BEGIN OVERLAY

MATCH LINE -L- STA. 23+00.00  
SEE SHEET 5

NOTES:  
DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED  
SEE SHEET 21 FOR -L- PROFILE



8/17/99

REVISIONS

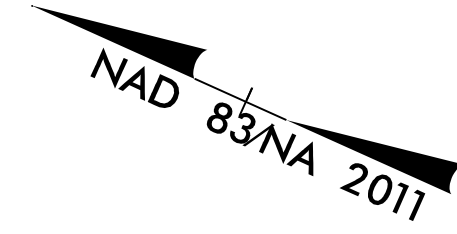
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NOTE:  
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B  
AND TEMPORARY ROCK SILT CHECKS TYPE - A AT  
DRAINAGE OUTLETS.

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 05

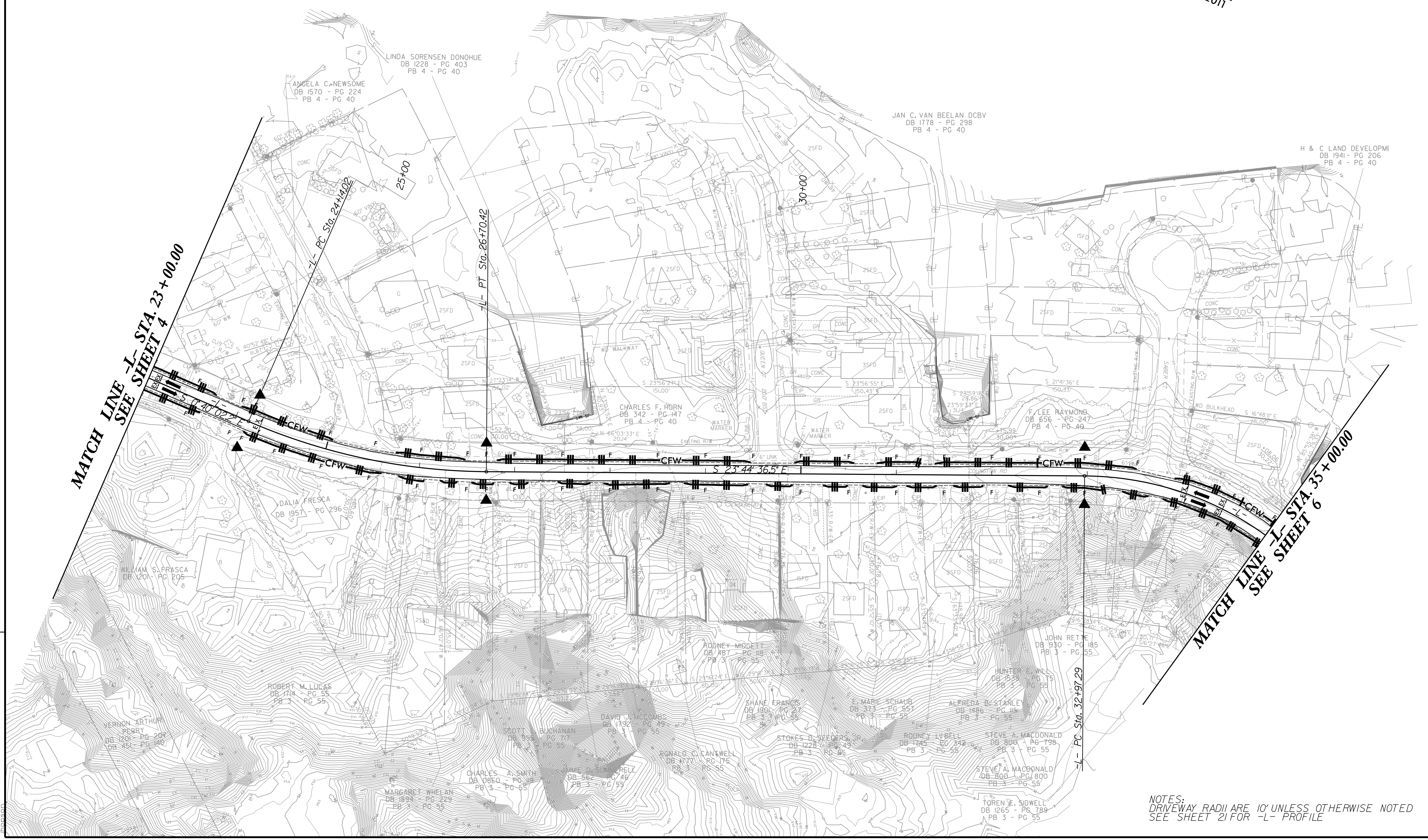
**CALYX**  
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6750 TRYON ROAD  
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phone: 919.851.1912  
CALYXengineers.com  
NC License # F-1333  
Formerly Hydus Engineers & Consultants

PROJECT REFERENCE NO. <b>R-5014</b>	SHEET NO. <b>EC-05/CONST.05</b>
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	



-L-

PI Sta 25+43.98 Δ = 23° 04' 34.3" (LT) D = 9' 00' 00.0" L = 256.40' T = 129.96' R = 636.62' SE = EXIST. V = EXIST.	PI Sta 34+44.90 Δ = 48° 32' 06.7" (RT) D = 17' 30' 00.0" L = 277.34' T = 147.61' R = 327.40' SE = EXIST. V = EXIST.
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NOTES:  
DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED  
SEE SHEET 21 FOR -L- PROFILE

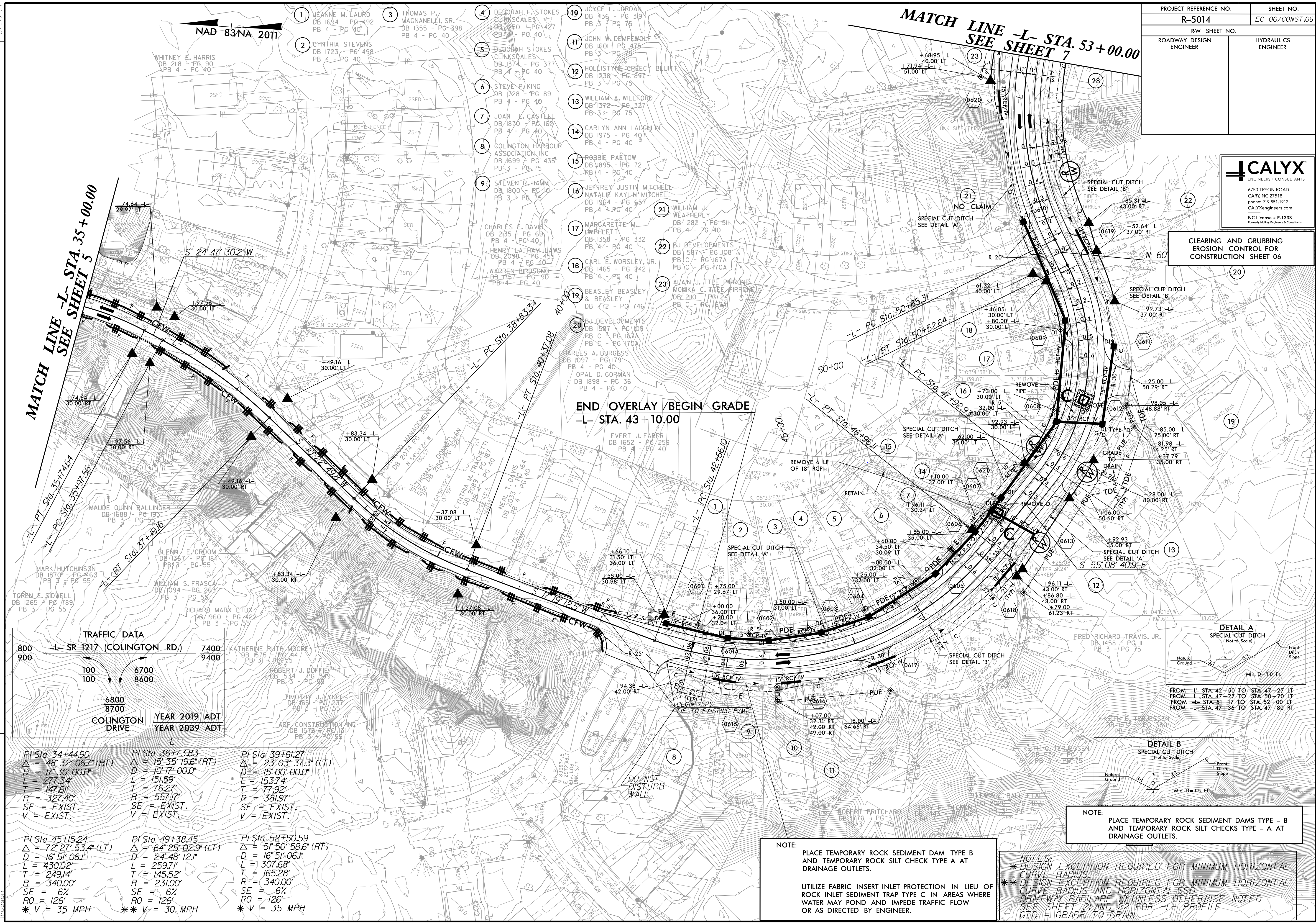


PROJECT REFERENCE NO.	SHEET NO.
R-5014	EC-06/CONST.06
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



**CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 06**

**MATCH LINE -L- STA. 53+00.00  
SEE SHEET 7**



TRAFFIC DATA	
800	7400
900	9400
100	6700
100	8600
6800	
8700	
COLINGTON DRIVE	YEAR 2019 ADT
	YEAR 2039 ADT

PI Sta 34+44.90 Δ = 48° 32' 06.7" (RT) D = 17° 30' 00.0" L = 277.34' T = 147.61' R = 327.40' SE = EXIST. V = EXIST.	PI Sta 36+73.83 Δ = 15° 35' 19.6" (RT) D = 10° 17' 00.0" L = 151.59' T = 76.27' R = 557.17' SE = EXIST. V = EXIST.	PI Sta 39+61.27 Δ = 23° 03' 37.3" (LT) D = 15° 00' 00.0" L = 153.74' T = 77.92' R = 381.97' SE = EXIST. V = EXIST.
PI Sta 45+15.24 Δ = 72° 27' 53.4" (LT) D = 16° 51' 06.1" L = 430.02' T = 249.14' R = 340.00' SE = 6% RO = 126' * V = 35 MPH	PI Sta 49+38.45 Δ = 64° 25' 02.9" (LT) D = 24° 48' 12.1" L = 259.71' T = 145.52' R = 231.00' SE = 6% RO = 126' * V = 30 MPH	PI Sta 52+50.59 Δ = 51° 50' 58.6" (RT) D = 16° 51' 06.1" L = 307.68' T = 165.28' R = 340.00' SE = 6% RO = 126' * V = 35 MPH

**NOTE:**  
PLACE TEMPORARY ROCK SEDIMENT DAM TYPE B AND TEMPORARY ROCK SILT CHECK TYPE A AT DRAINAGE OUTLETS.

**NOTE:**  
UTILIZE FABRIC INSERT INLET PROTECTION IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C IN AREAS WHERE WATER MAY POND AND IMPEDE TRAFFIC FLOW OR AS DIRECTED BY ENGINEER.

**NOTES:**  
\* DESIGN EXCEPTION REQUIRED FOR MINIMUM HORIZONTAL CURVE RADIUS.  
\* DESIGN EXCEPTION REQUIRED FOR MINIMUM HORIZONTAL CURVE RADIUS AND HORIZONTAL SSD DRIVEWAY RADIARE 10' UNLESS OTHERWISE NOTED SEE SHEET 21 AND 22 FOR -L- PROFILE  
GTD = GRADE TO DRAIN

**NOTE:**  
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

RIGHT OF WAY REVISION - 2/28/2018 - ADDED PERMANENT UTILITY EASEMENT TO PARCELS 10,11,12, AND 13.

REVISIONS

8.17.799

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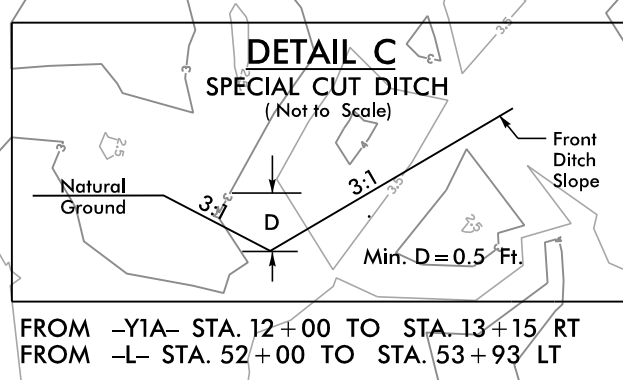
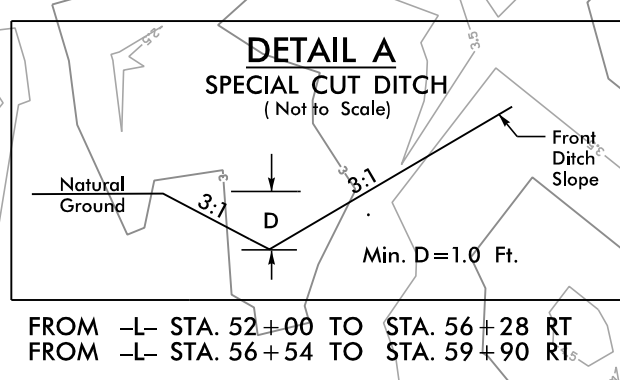
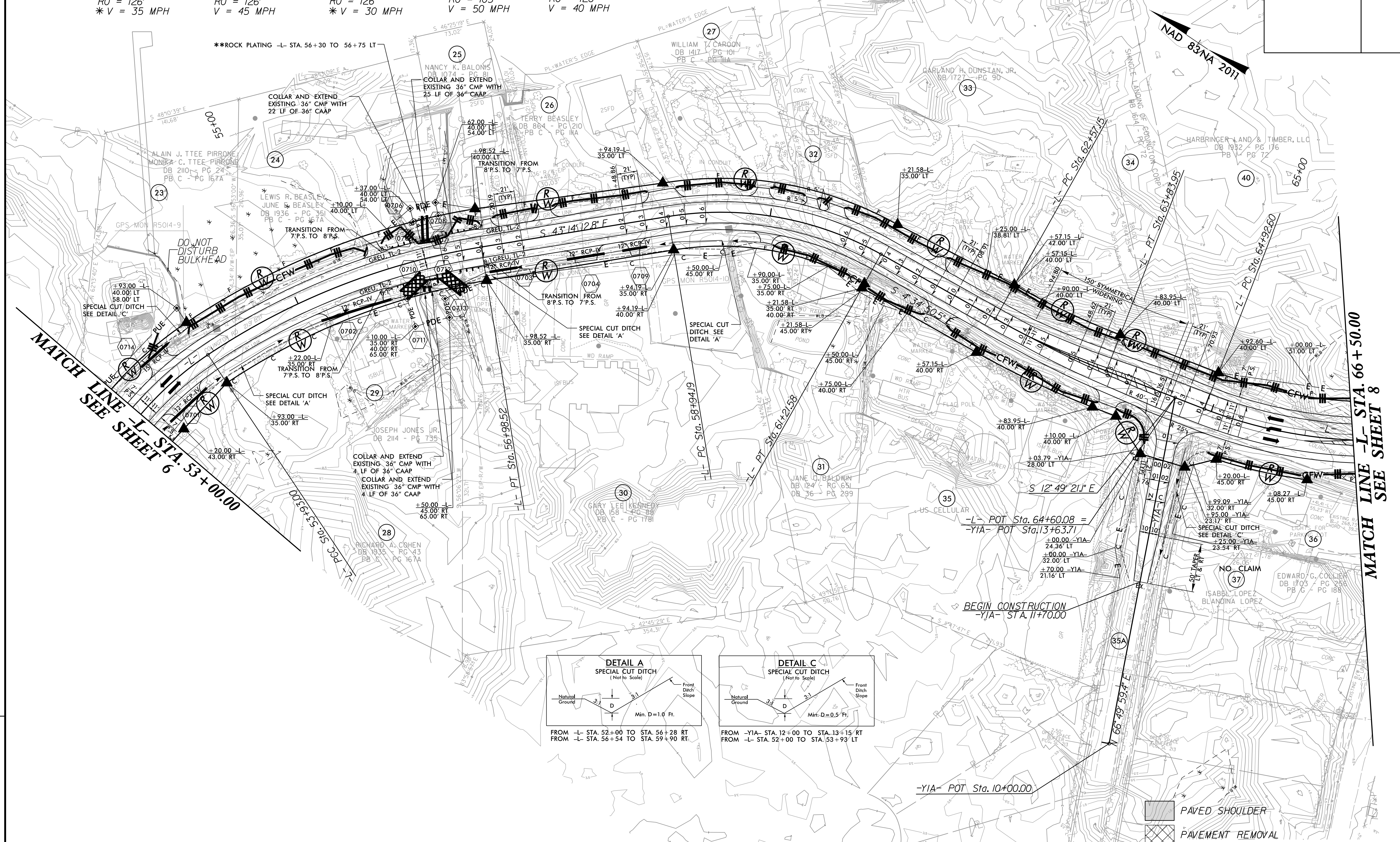


PROJECT REFERENCE NO. <b>R-5014</b>	SHEET NO. <b>EC-07/CONST.07</b>
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

**CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 07**

<p>PI Sta 52+50.59 Δ = 51°50' 58.6" (RT) D = 16' 51" 06.1" L = 307.68' T = 165.28' R = 340.00' SE = 6% RO = 126' * V = 35 MPH</p>	<p>PI Sta 55+48.13 Δ = 24° 28' 32.5" (RT) D = 8' 00' 39.4" L = 305.53' T = 155.13' R = 715.22' SE = 6% RO = 126' V = 45 MPH</p>	<p>PI Sta 60+12.41 Δ = 38° 39' 22.3" (RT) D = 17' 00' 00.0" L = 227.39' T = 118.21' R = 337.03' SE = 6% RO = 126' * V = 30 MPH</p>	<p>PI Sta 63+20.66 Δ = 8° 14' 30.6" (LT) D = 6' 30' 00.0" L = 126.80' T = 63.51' R = 881.47' SE = 5% RO = 105' V = 50 MPH</p>	<p>PI Sta 74+83.10 Δ = 127° 49' 20.5" (LT) D = 1' 48' 48.8" L = 1082.00' T = 990.50' R = 485.00' SE = 6% RO = 126' V = 40 MPH</p>
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\*\*ROCK PLATING -L- STA. 56+30 TO 56+75 LT



**NOTE:**  
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

**NOTES:**  
\* DESIGN EXCEPTION REQUIRED FOR MINIMUM HORIZONTAL CURVE RADIUS.  
\*\* SEE SHEET 26-1 FOR GEOTECHNICAL DETAILS. DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED. SEE SHEET 22 AND 23 FOR -L- PROFILE. SEE SHEET 31 FOR -YIA- PROFILE.

RIGHT OF WAY REVISION - 9/28/2017 - ADJUSTED RIGHT OF WAY AND TEMPORARY CONSTRUCTION EASEMENT ON PARCEL 30 AND 33.

REVISIONS

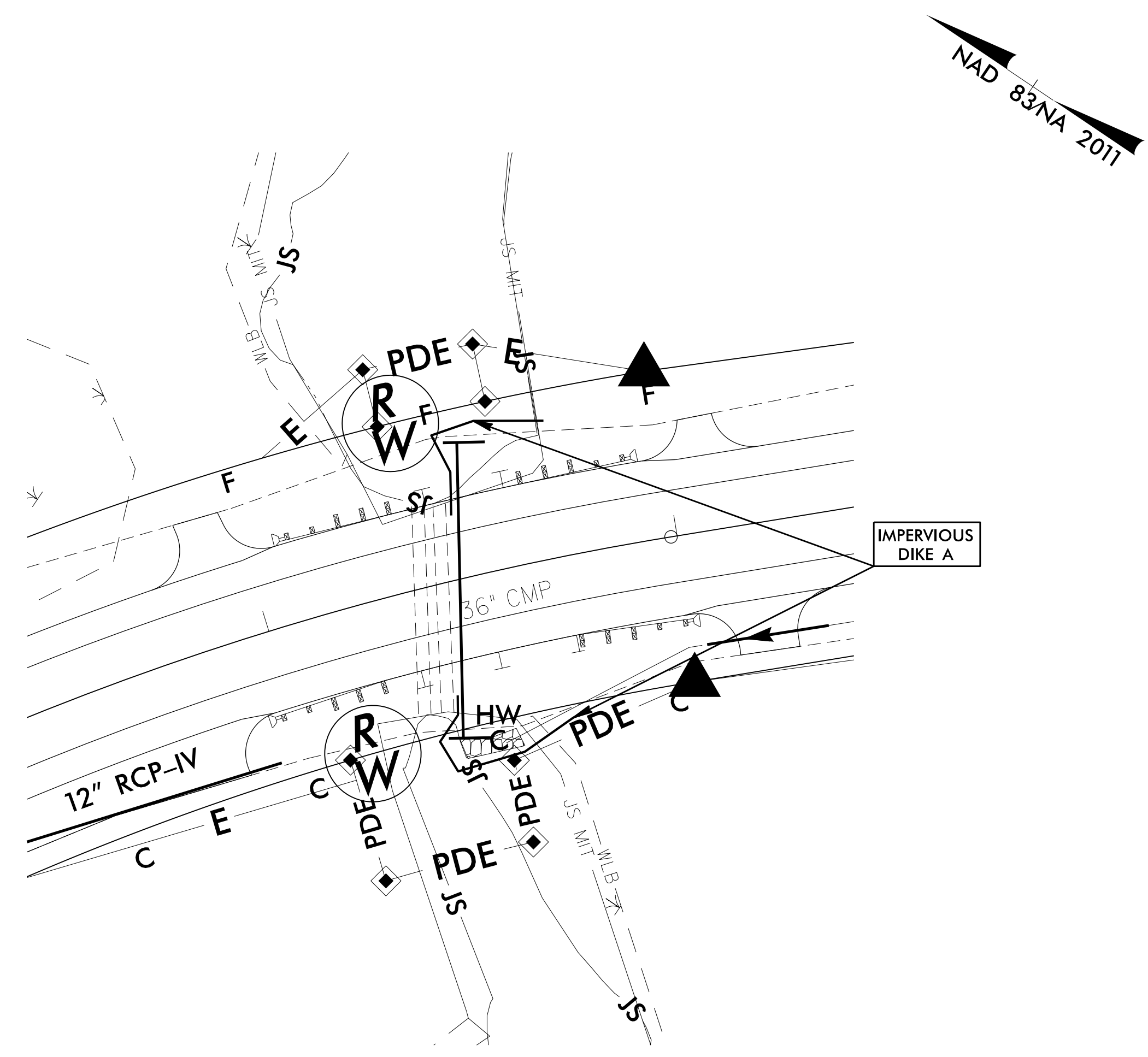
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# CULVERT CONSTRUCTION SEQUENCE STA. 56 + 40 -L-

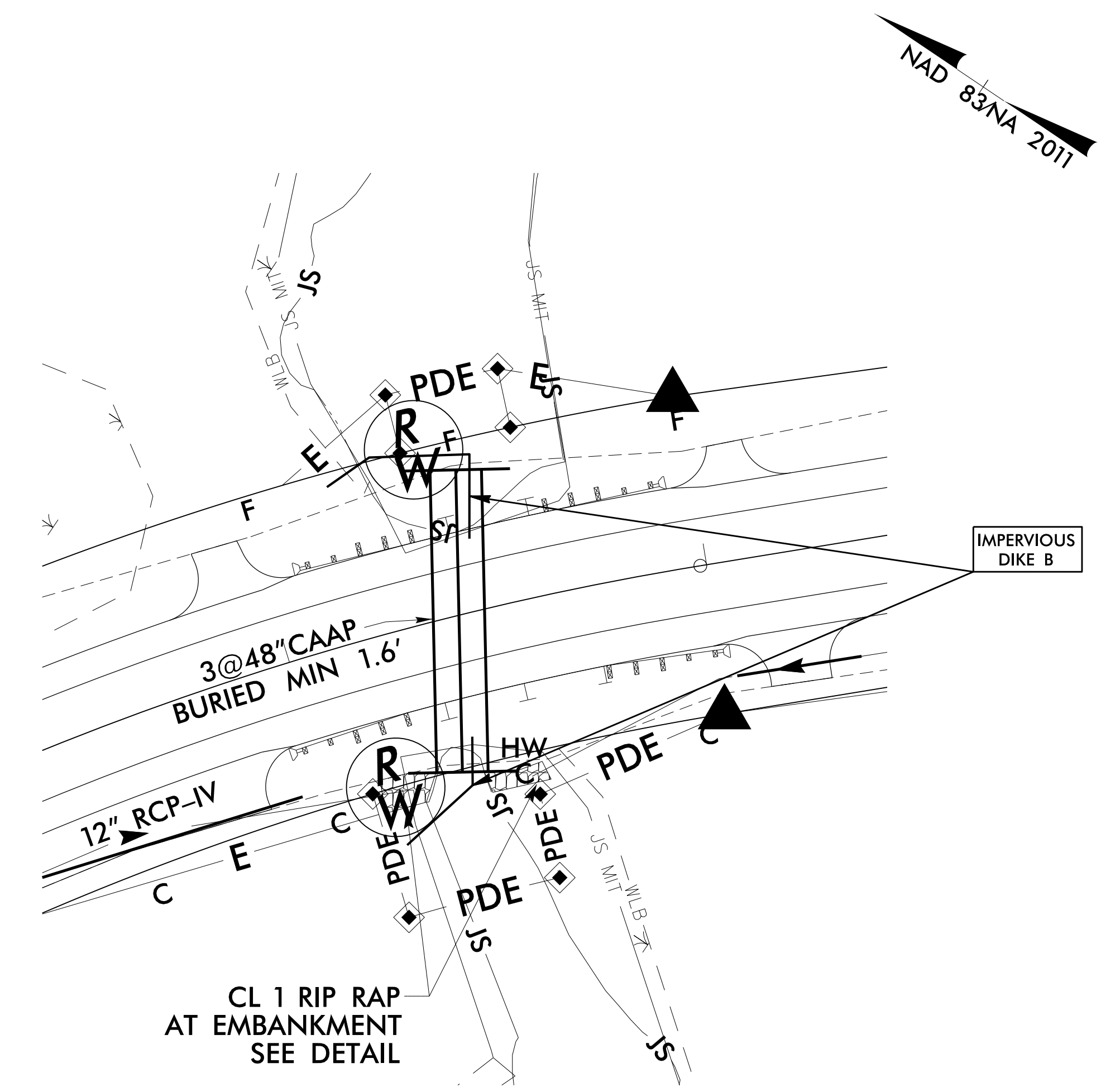
## PHASE I

1. UTILIZE SPECIAL STILLING BASIN(S) AS STILLING BASIN AS NEEDED THROUGHOUT THE SEQUENCING.
2. INSTALL IMPERVIOUS DIKE A UPSTREAM AND DOWNSTREAM MAINTAINING FLOW INTO THE EXISTING BARRELS.
3. INSTALL ONE 48" CAAP, PORTION OF HEADWALL, AND PROPOSED BANK STABILIZATION.



## PHASE II

4. REMOVE IMPERVIOUS DIKE A AND INSTALL IMPERVIOUS DIKE B UPSTREAM AND DOWNSTREAM DIVERTING FLOW INTO THE NEWLY INSTALLED 48" CAAP.
5. REMOVE THE EXISTING PIPES AND INSTALL THE REMAINING TWO 48" CAAP, HEADWALL, AND PROPOSED BANK STABILIZATION.
6. REMOVE IMPERVIOUS DIKE B AND COMPLETE ROADWAY.









8/17/99

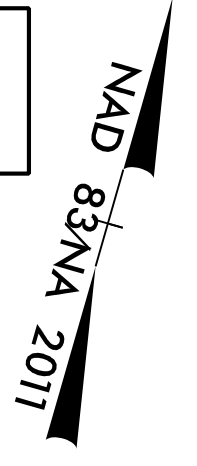
### CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 09

**CALYX**  
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Formerly: Hubbs Engineers & Consultants

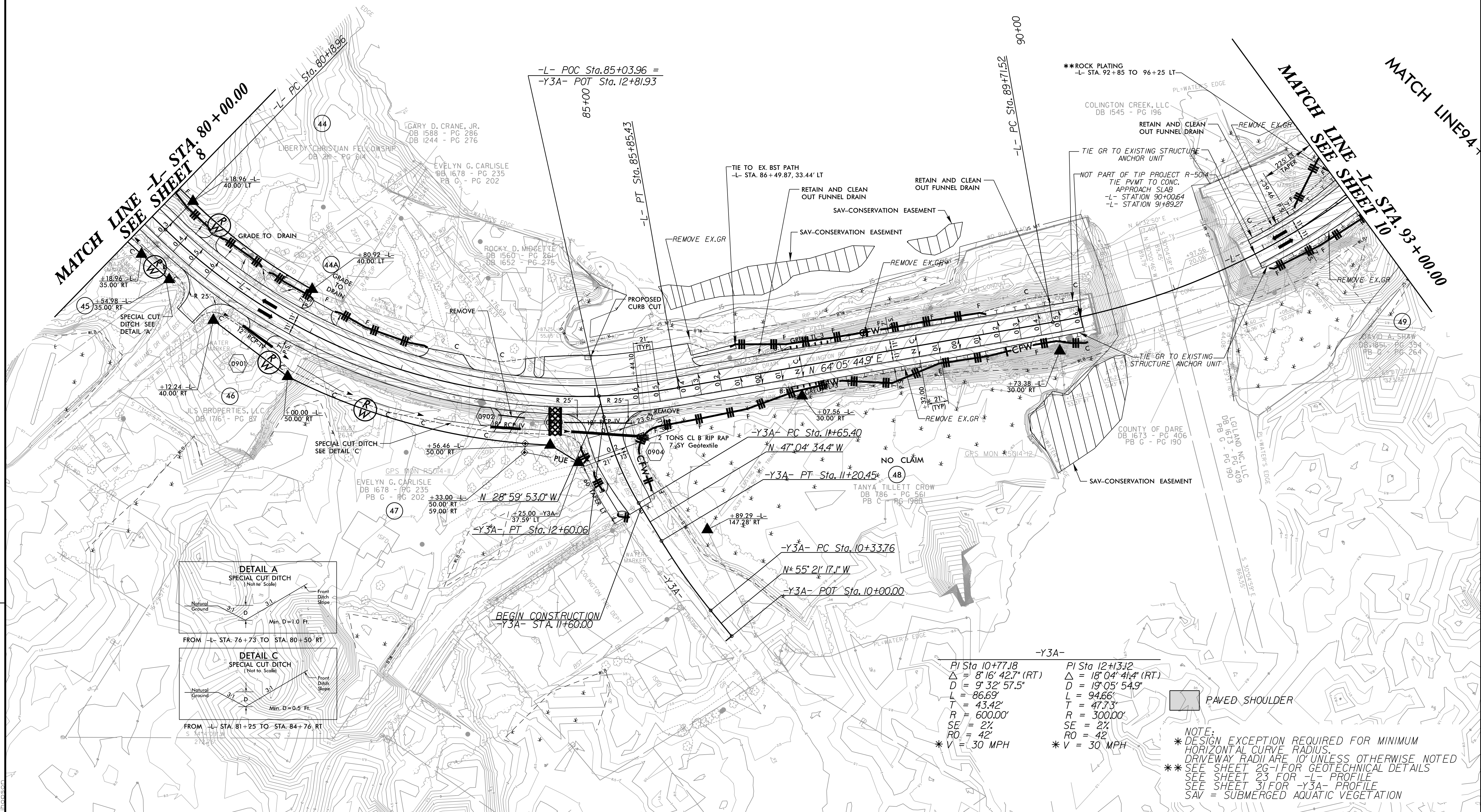
PROJECT REFERENCE NO. <b>R-5014</b>	SHEET NO. <b>EC-09/CONST.09</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

-L-	
PI Sta 83+25.29 Δ = 54°05'38.6" (LT) D = 9°32'57.5" L = 566.47' T = 306.34' R = 600.00' SE = 6% RO = 126' V = 40 MPH	PI Sta 92+55.51 Δ = 43°15'31.2" (LT) D = 8°00'00.0" L = 540.73' T = 283.99' R = 716.20' SE = 6% RO = 126' V = 45 MPH

NOTE:  
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B  
AND TEMPORARY ROCK SILT CHECKS TYPE - A AT  
DRAINAGE OUTLETS.

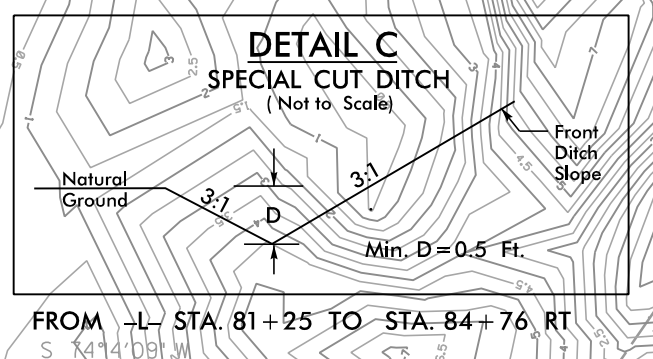
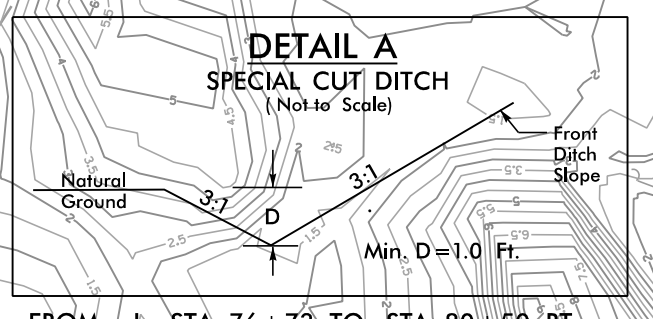


45 LIBERTY CHRISTIAN FELLOWSHIP  
DB 2111 - PG 614



MATCH LINE -L- STA. 80+00.00  
SEE SHEET 8

MATCH LINE -L- STA. 93+00.00  
SEE SHEET 10



-Y3A-	PI Sta 10+77.18 Δ = 8°16'42.7" (RT) D = 9°32'57.5" L = 86.69' T = 43.42' R = 600.00' SE = 2% RO = 42' * V = 30 MPH	PI Sta 12+13.12 Δ = 18°04'41.4" (RT) D = 19°05'54.9" L = 94.66' T = 47.73' R = 300.00' SE = 2% RO = 42' * V = 30 MPH
-------	--	--

PAVED SHOULDER

NOTE:  
\* DESIGN EXCEPTION REQUIRED FOR MINIMUM HORIZONTAL CURVE RADIUS.  
\* DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED  
\* SEE SHEET 26-1 FOR GEOTECHNICAL DETAILS  
\* SEE SHEET 23 FOR -L- PROFILE  
\* SEE SHEET 31 FOR -Y3A- PROFILE  
\* SAV = SUBMERGED AQUATIC VEGETATION

REVISIONS

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 1/5/2018  
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 2/14/2018



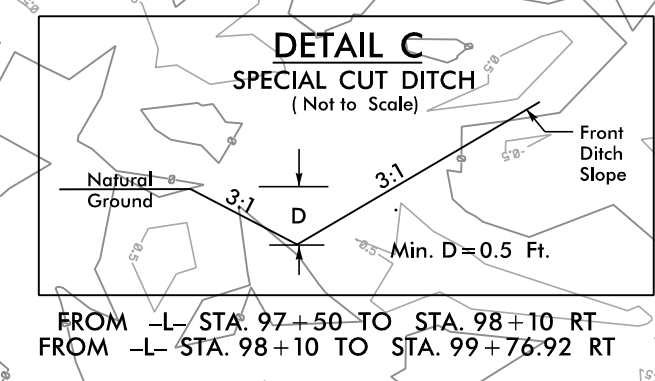
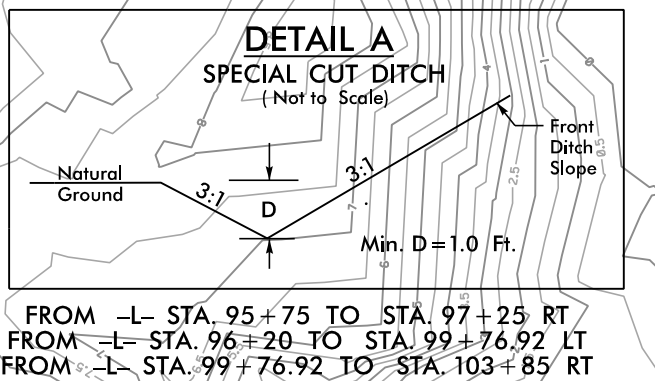
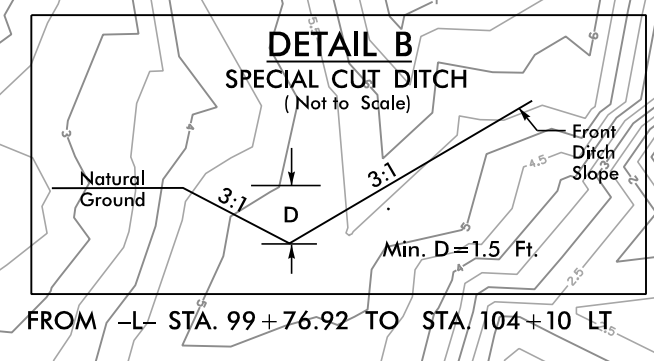
PROJECT REFERENCE NO.	SHEET NO.
R-5014	EC-10/CONST.10
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NOTE:  
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 10

**-L-**

PI Sta 92+55.51 Δ = 43°15'31.2" (LT) D = 8°00'00.0" L = 540.73' T = 283.99' R = 716.20' SE = 6% RO = 126' V = 45 MPH	PI Sta 98+84.89 Δ = 13°24'22.6" (LT) D = 7°15'00.0" L = 184.91' T = 92.88' R = 265.00' SE = 5% RO = 105' V = 45 MPH	PI Sta 105+78.55 Δ = 104°22'34.7" (RT) D = 2°37'15.8" L = 482.75' T = 341.49' R = 265.00' SE = 6% RO = 126' * V = 30 MPH
--	---	--



MATCH LINE -L- STA. 93 + 00.00  
SEE SHEET 9

MATCH LINE -L- STA. 107 + 50.00  
SEE SHEET 11

**-Y3C-**

PI Sta 10+44.77 Δ = 9°09'11.6" (RT) D = 57°17'44.8" L = 15.98' T = 8.00' R = 100.00' SE = EXIST.	PI Sta 11+17.82 Δ = 30°21'56.6" (LT) D = 38°11'49.9" L = 79.50' T = 40.71' R = 150.00' SE = EXIST.
--	--

PAVED SHOULDER

NOTES:  
\* DESIGN EXCEPTION REQUIRED FOR MINIMUM HORIZONTAL CURVE RADIUS.  
\*\* SEE SHEET 26-F FOR GEOTECHNICAL DETAILS DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED  
SEE SHEET 23 AND 24 FOR -L- PROFILE  
SEE SHEET 31 FOR -Y3B- AND -Y3C- PROFILE

8.17.19  
REVISIONS  
1/5/2018  
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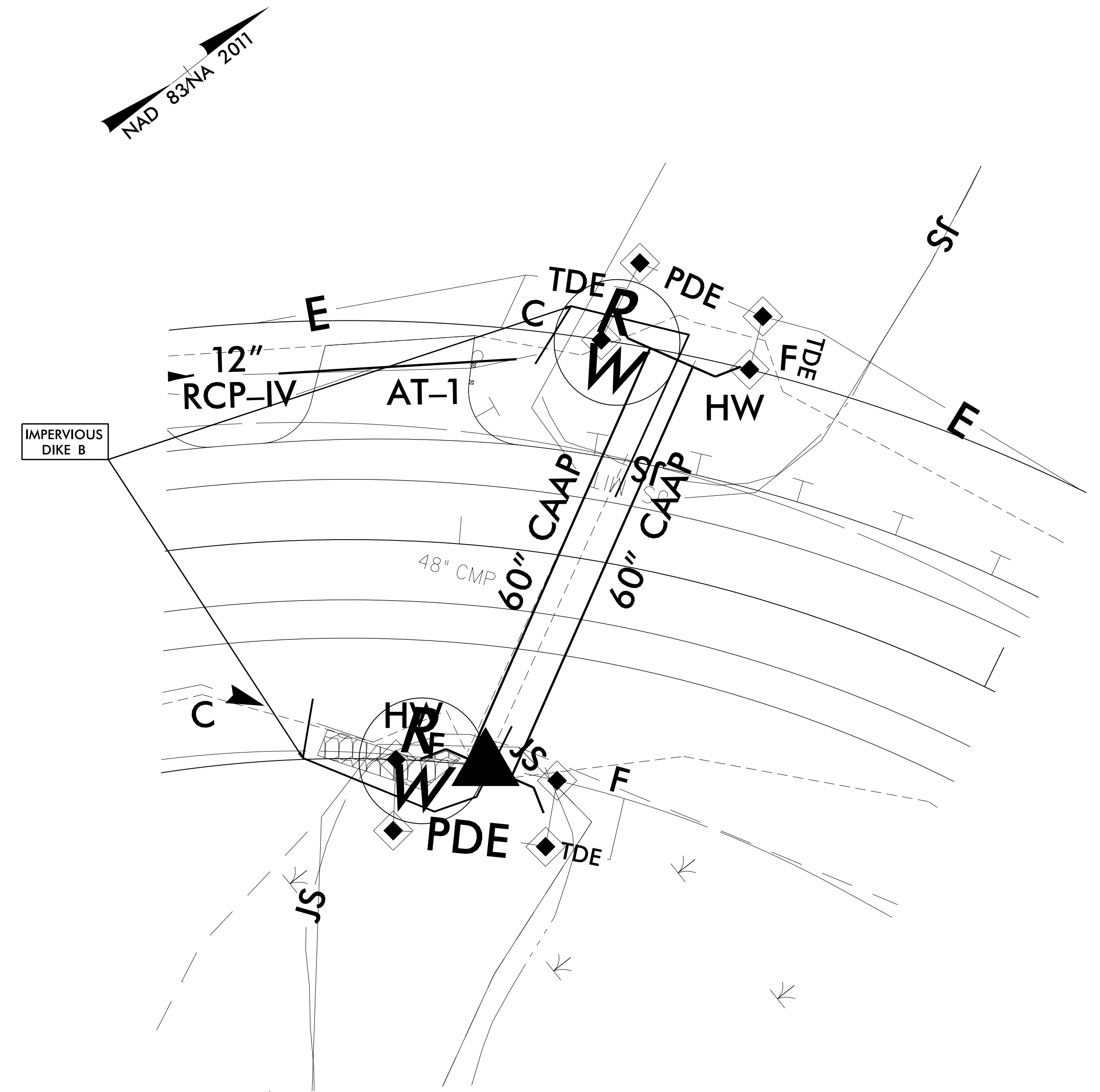
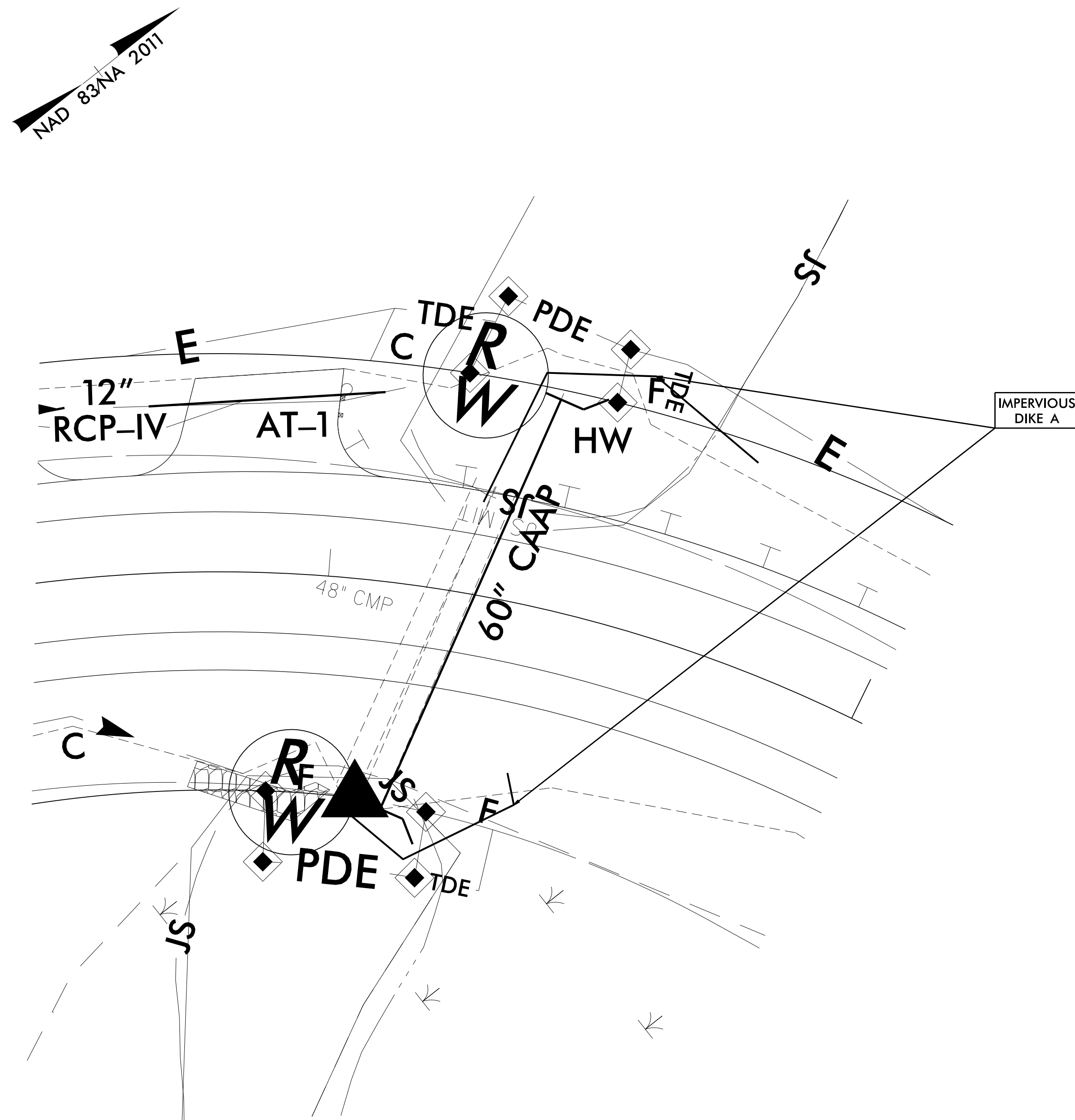
# CULVERT CONSTRUCTION SEQUENCE STA. 104+22 -L-

## PHASE I

1. UTILIZE SPECIAL STILLING BASIN(S) AS STILLING BASIN AS NEEDED THROUGHOUT THE SEQUENCING.
2. INSTALL IMPERVIOUS DIKE A UPSTREAM AND DOWNSTREAM MAINTAINING FLOW INTO THE SOUTHERN 48" CMP BARREL.
3. REMOVE ONE 48" CMP AND INSTALL ONE 60" CAAP AND A PORTION OF THE HEADWALLS.

## PHASE II

4. REMOVE IMPERVIOUS DIKE A AND INSTALL IMPERVIOUS DIKE B TO DIVERT FLOW INTO THE NEWLY INSTALLED 60" CAAP.
5. REMOVE THE REMAINING 48" CMP BARREL AND INSTALL THE 60" CAAP, COMPLETE HEADWALL, AND BANK STABILIZATION.
6. REMOVE IMPERVIOUS DIKE B AND COMPLETE ROADWAY.





8.17.799

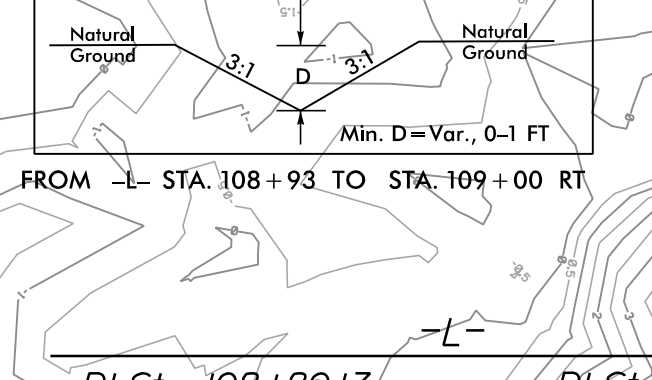
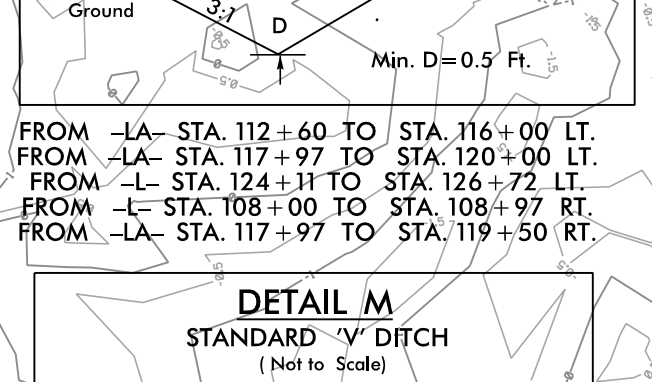
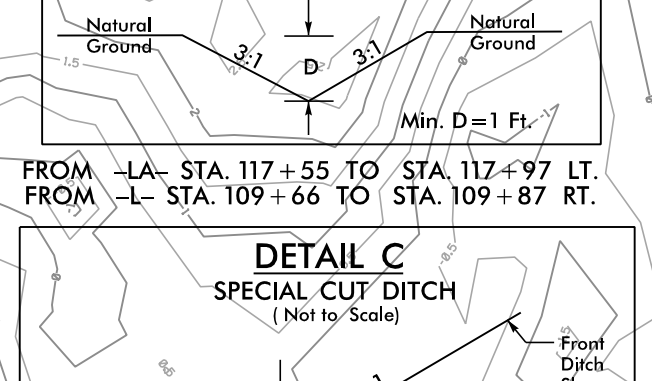
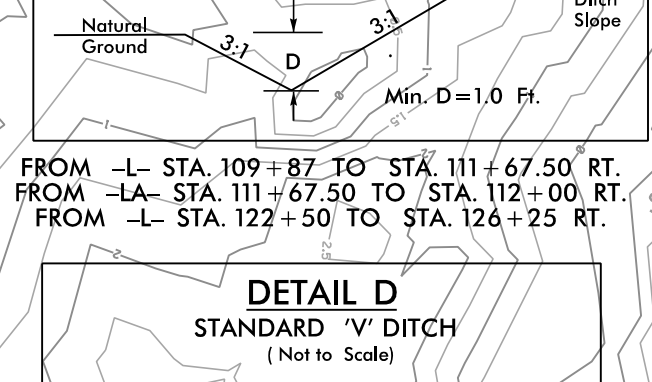
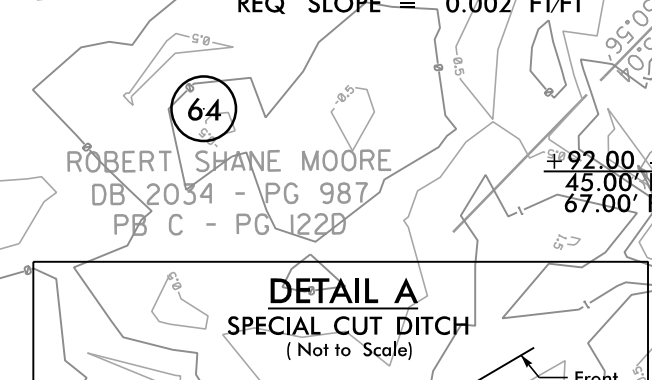
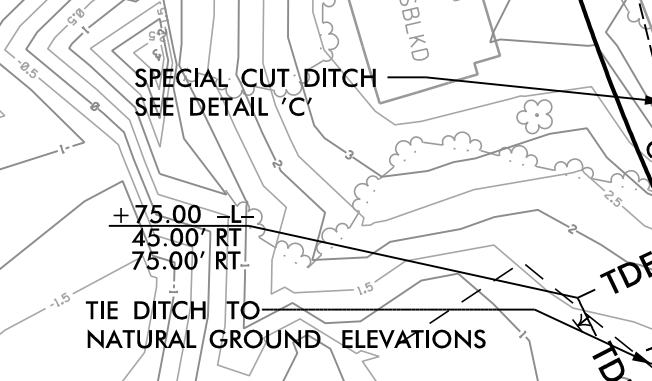
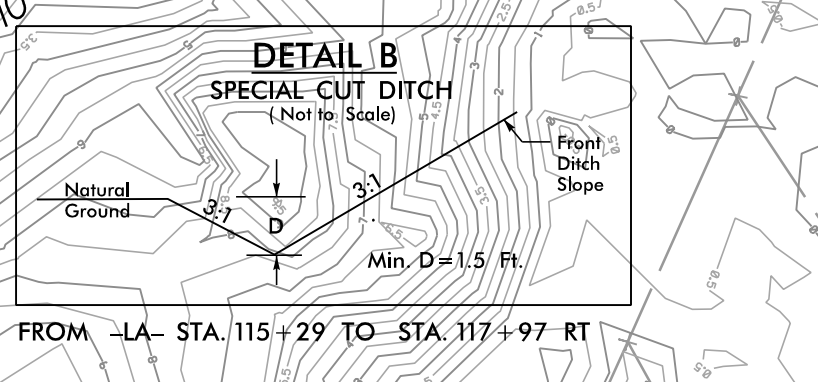
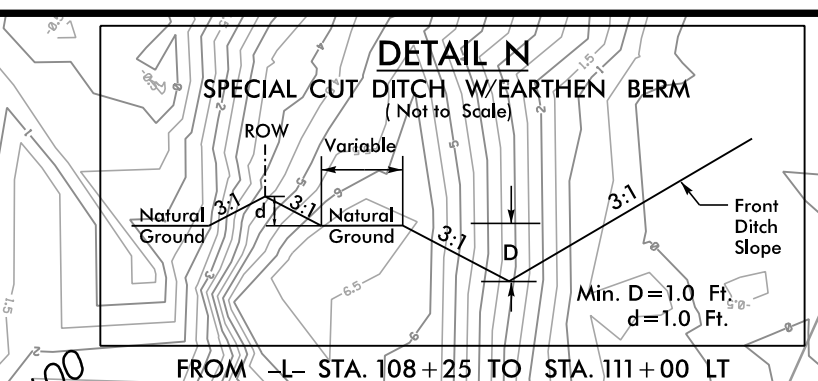
**MATCH LINE SEE SHEET 10**  
-L- STA. 107 + 50.00

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 11

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Formerly: Huber Engineers & Consultants

PROJECT REFERENCE NO. <b>R-5014</b>	SHEET NO. <b>EC-11/CONST.11</b>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.



PI Sta 108+80.13  
Δ = 18° 14' 45.7" (LT)  
D = 10' 15' 00.0"  
L = 178.01'  
T = 89.76'  
R = 558.98'  
SE = 6%  
RO = 126'  
V = 40 MPH

PI Sta 112+38.08  
Δ = 11° 15' 30.5" (RT)  
D = 8' 11" 06.4"  
L = 137.55'  
T = 69.00'  
R = 700.00'  
SE = 6%  
RO = 126'  
V = 45 MPH

PI Sta 122+74.92  
Δ = 40° 32' 51.9" (RT)  
D = 9' 30' 00.0"  
L = 426.82'  
T = 222.79'  
R = 603.11'  
SE = 6%  
RO = 126'  
V = 40 MPH

PI Sta 116+03.55  
Δ = 64° 28' 39.2" (LT)  
D = 23' 28' 54.8"  
L = 274.58'  
T = 153.89'  
R = 244.00'  
SE = 6%  
RO = 126'  
\* V = 30 MPH

PI Sta 118+78.14  
Δ = 64° 28' 39.2" (LT)  
D = 23' 28' 54.8"  
L = 274.58'  
T = 153.89'  
R = 244.00'  
SE = 6%  
RO = 126'  
\* V = 30 MPH

PI Sta 120+52.13  
Δ = 15° 06' 26.7" (RT)  
D = 57' 17" 44.8"  
L = 26.37'  
T = 13.26'  
R = 100.00'  
SE = EXIST.

PI Sta 12+43.44  
Δ = 15° 06' 26.7" (RT)  
D = 57' 17" 44.8"  
L = 26.37'  
T = 13.26'  
R = 100.00'  
SE = EXIST.

PI Sta 10+80.00  
Δ = 5° 00' 58.3" (LT)  
D = 8' 11" 06.4"  
L = 61.28'  
T = 30.66'  
R = 700.00'  
SE = EXIST.

PI Sta 10+44.05  
Δ = 8° 21' 37.3" (RT)  
D = 28' 38" 52.4"  
L = 29.8'  
T = 14.62'  
R = 200.00'  
SE = EXIST.

PI Sta 10+00.00  
Δ = 8° 21' 37.3" (RT)  
D = 28' 38" 52.4"  
L = 29.8'  
T = 14.62'  
R = 200.00'  
SE = EXIST.

NOTES:  
\* DESIGN EXCEPTION REQUIRED FOR MINIMUM HORIZONTAL CURVE RADIUS.  
DRIVEWAY RADI ARE 10 UNLESS OTHERWISE NOTED  
SEE SHEET 24 AND 25 FOR -L- AND -LA- PROFILE  
SEE SHEET 30 FOR -Y4- AND -Y5- PROFILE  
GTD = GRADE TO DRAIN

REVISIONS

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11/20/2018

**MATCH LINE SEE SHEET 12**  
-L- STA. 125 + 50.00

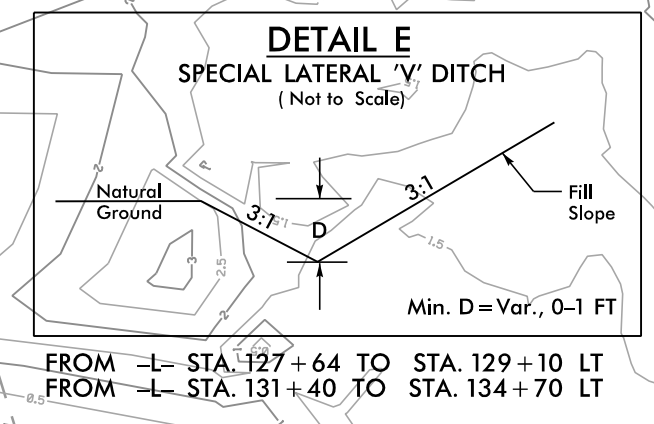
DO NOT DISTURB SIGN

PAVEMENT REMOVAL

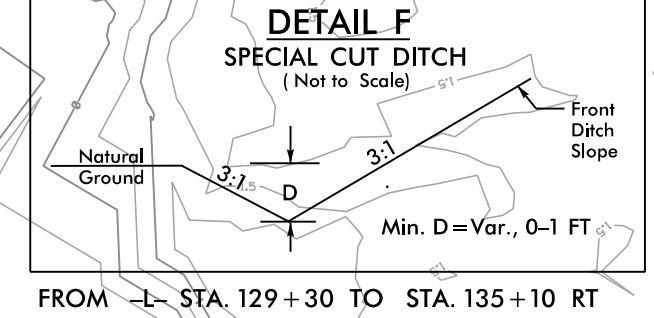
PAVED SHOULDER

NOTES:  
\* DESIGN EXCEPTION REQUIRED FOR MINIMUM HORIZONTAL CURVE RADIUS.  
DRIVEWAY RADI ARE 10 UNLESS OTHERWISE NOTED  
SEE SHEET 24 AND 25 FOR -L- AND -LA- PROFILE  
SEE SHEET 30 FOR -Y4- AND -Y5- PROFILE  
GTD = GRADE TO DRAIN

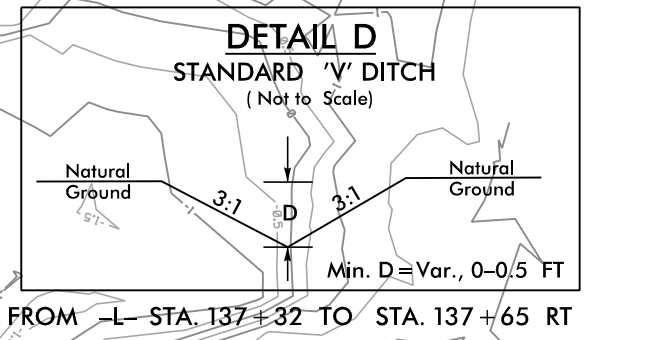




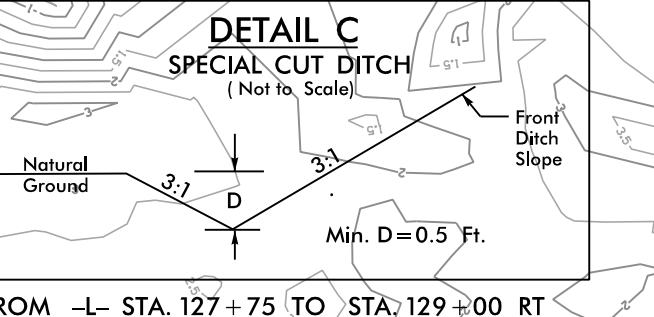
FROM -L- STA. 127+64 TO STA. 129+10 LT  
FROM -L- STA. 131+40 TO STA. 134+70 LT



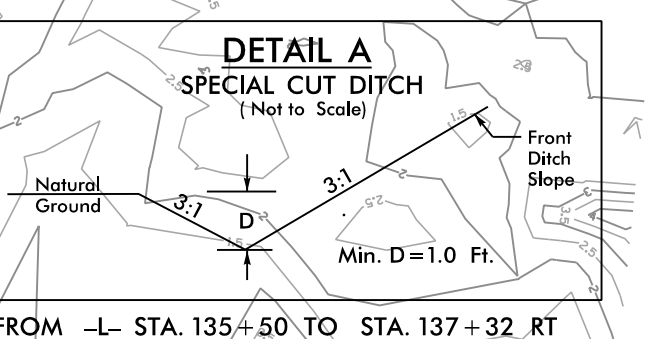
FROM -L- STA. 129+30 TO STA. 135+10 RT



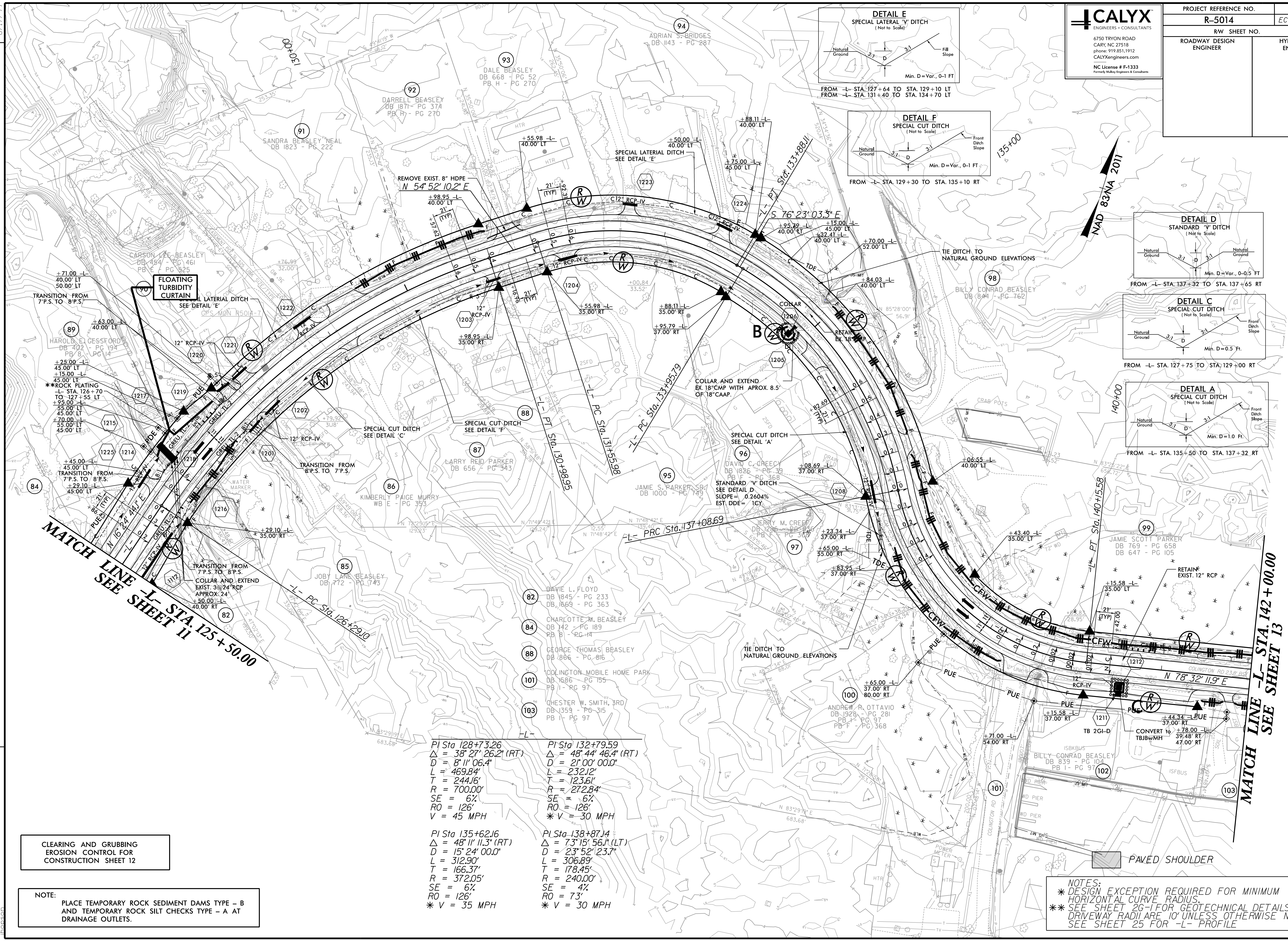
FROM -L- STA. 137+32 TO STA. 137+65 RT



FROM -L- STA. 127+75 TO STA. 129+00 RT



FROM -L- STA. 135+50 TO STA. 137+32 RT



**MATCH LINE -L- STA. 125+50.00**  
**SEE SHEET 11**

**MATCH LINE -L- STA. 142+00.00**  
**SEE SHEET 13**

<p>PI Sta 128+73.26 Δ = 38° 27' 26.2" (RT) D = 8' 11" 06.4" L = 469.84' T = 244.16' R = 700.00' SE = 6% RO = 126' V = 45 MPH</p>	<p>PI Sta 132+79.59 Δ = 48° 44' 46.4" (RT) D = 21' 00" 00.0" L = 232.12' T = 123.61' R = 272.84' SE = 6% RO = 126' * V = 30 MPH</p>
<p>PI Sta 135+62.16 Δ = 48° 11' 11.3" (RT) D = 15' 24" 00.0" L = 312.90' T = 166.37' R = 372.05' SE = 6% RO = 126' * V = 35 MPH</p>	<p>PI Sta 138+87.14 Δ = 73° 15' 56.1" (LT) D = 23' 52" 23.7" L = 306.89' T = 178.45' R = 240.00' SE = 4% RO = 73' * V = 30 MPH</p>

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 12

NOTE:  
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B  
AND TEMPORARY ROCK SILT CHECKS TYPE - A AT  
DRAINAGE OUTLETS.

NOTES:  
\* DESIGN EXCEPTION REQUIRED FOR MINIMUM  
HORIZONTAL CURVE RADII.  
\*\* SEE SHEET 26-F FOR GEOTECHNICAL DETAILS  
DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED  
SEE SHEET 25 FOR -L- PROFILE

REVISIONS

8/17/99  
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 12/15/2008

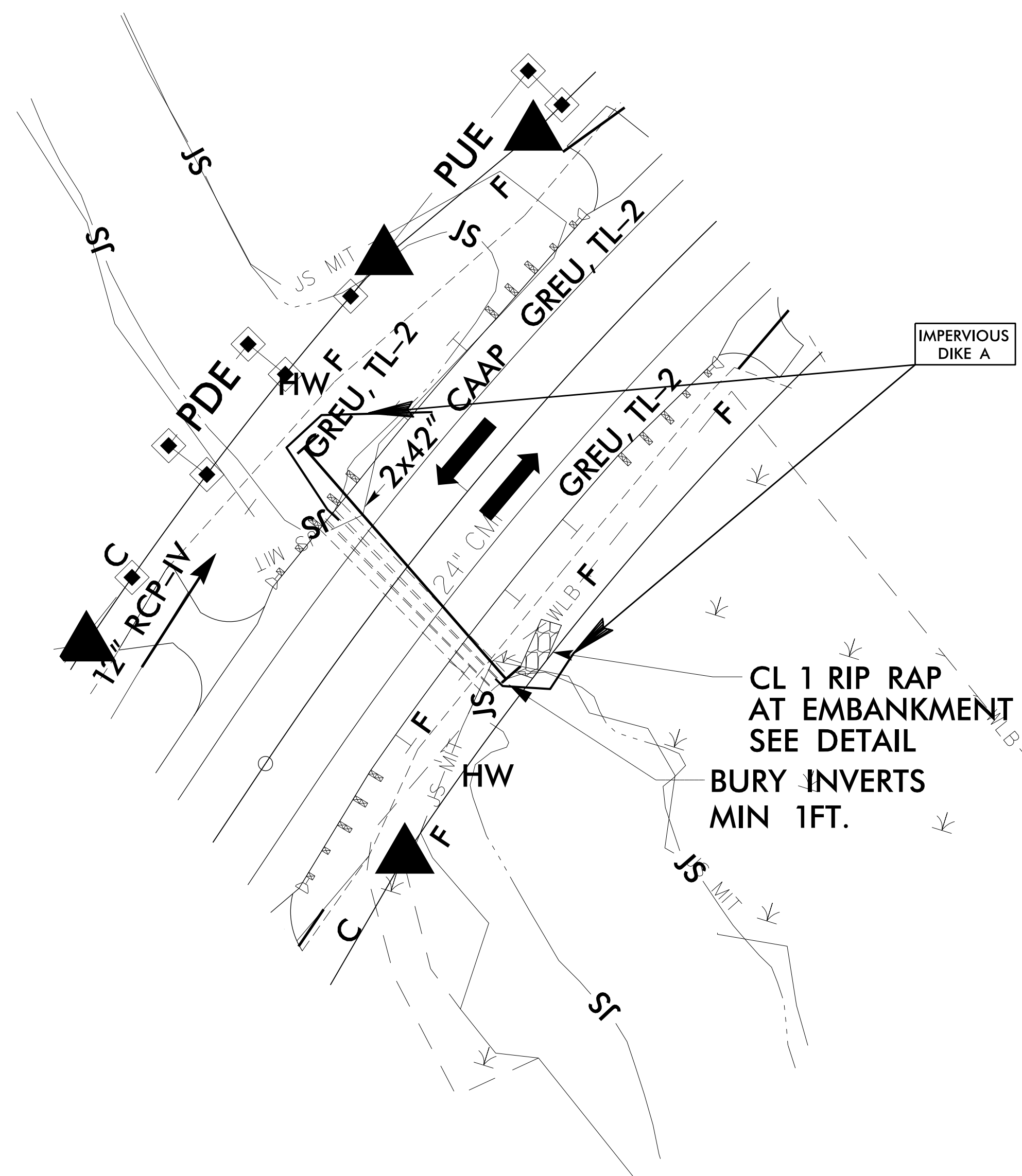


PROJECT REFERENCE NO.	SHEET NO.
R-5014	EC-12A/CONST.12
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# CULVERT CONSTRUCTION SEQUENCE STA. 126+75 -L-

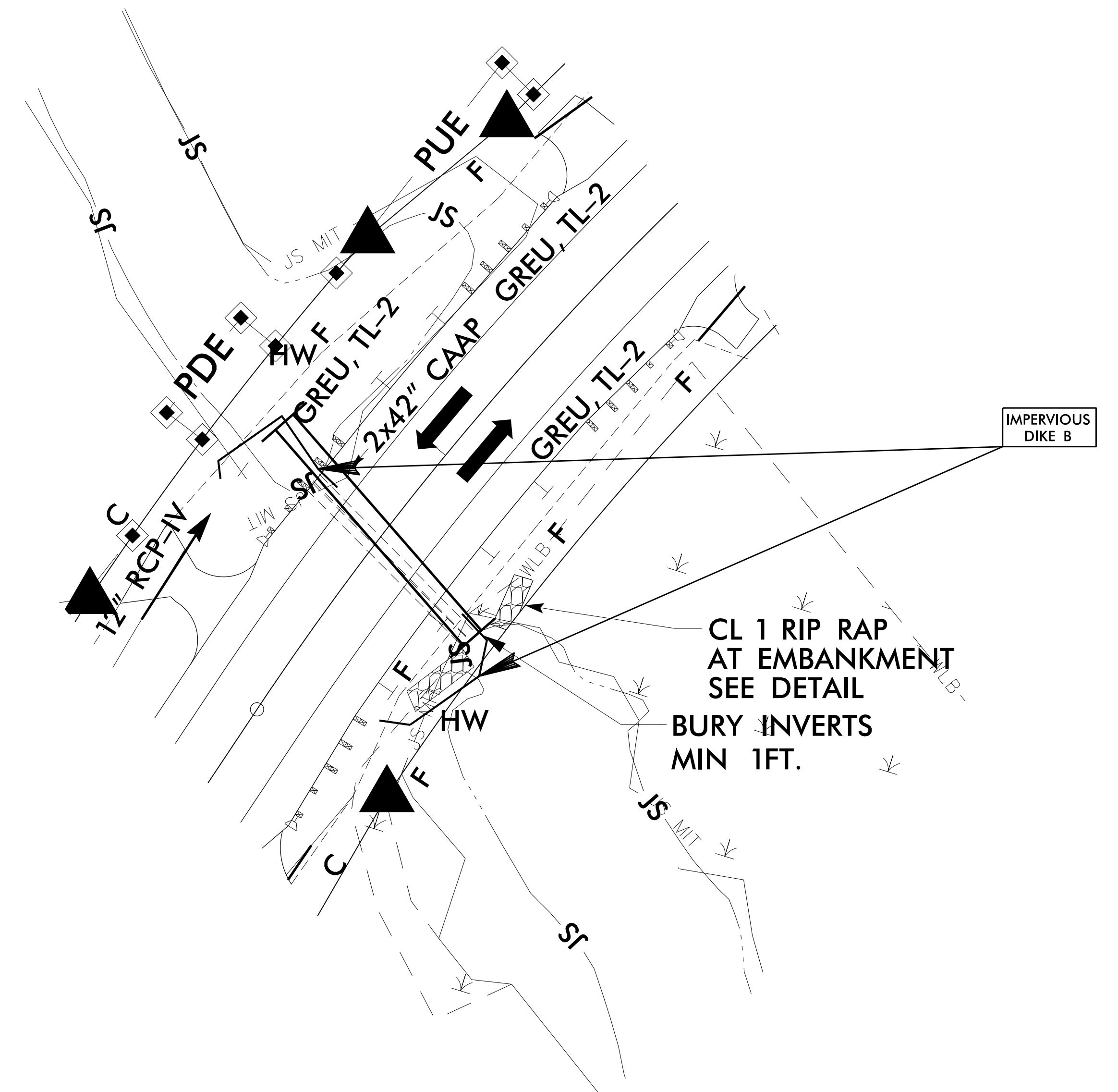
## PHASE I

1. UTILIZE SPECIAL STILLING BASIN(S) AS STILLING BASIN AS NEEDED THROUGHOUT THE SEQUENCING.
2. INSTALL IMPERVIOUS DIKE A UPSTREAM AND DOWNSTREAM MAINTAINING FLOW INTO THE TWO SOUTHERN 24" CMP BARRELS.
3. REMOVE ONE 24" CMP AND INSTALL ONE 42" CAAP, A PORTION OF THE HEADWALLS, AND STREAMBANK STABILIZATION.



## PHASE II

4. REMOVE IMPERVIOUS DIKE A AND INSTALL IMPERVIOUS DIKE B TO DIVERT FLOW INTO THE NEWLY INSTALLED 42" CAAP.
5. REMOVE THE REMAINING TWO 24" CMP BARRELS AND INSTALL THE 42" CAAP, COMPLETE HEADWALL, AND BANK STABILIZATION.
6. REMOVE IMPERVIOUS DIKE B AND COMPLETE ROADWAY.





8/17/99

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 13

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PROJECT REFERENCE NO. <b>R-5014</b>	SHEET NO. <i>EC-13/CONST.13</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

-L-  
PI Sta 151+21.7  
 $\Delta = 14' 36'' 20.0'' (RT)$   
 $D = 1' 37'' 00.0''$   
 $L = 903.44'$   
 $T = 454.18'$   
 $R = 3,544.07'$   
 $SE = 2\%$   
 $RO = 42'$   
 $V = 80 MPH$

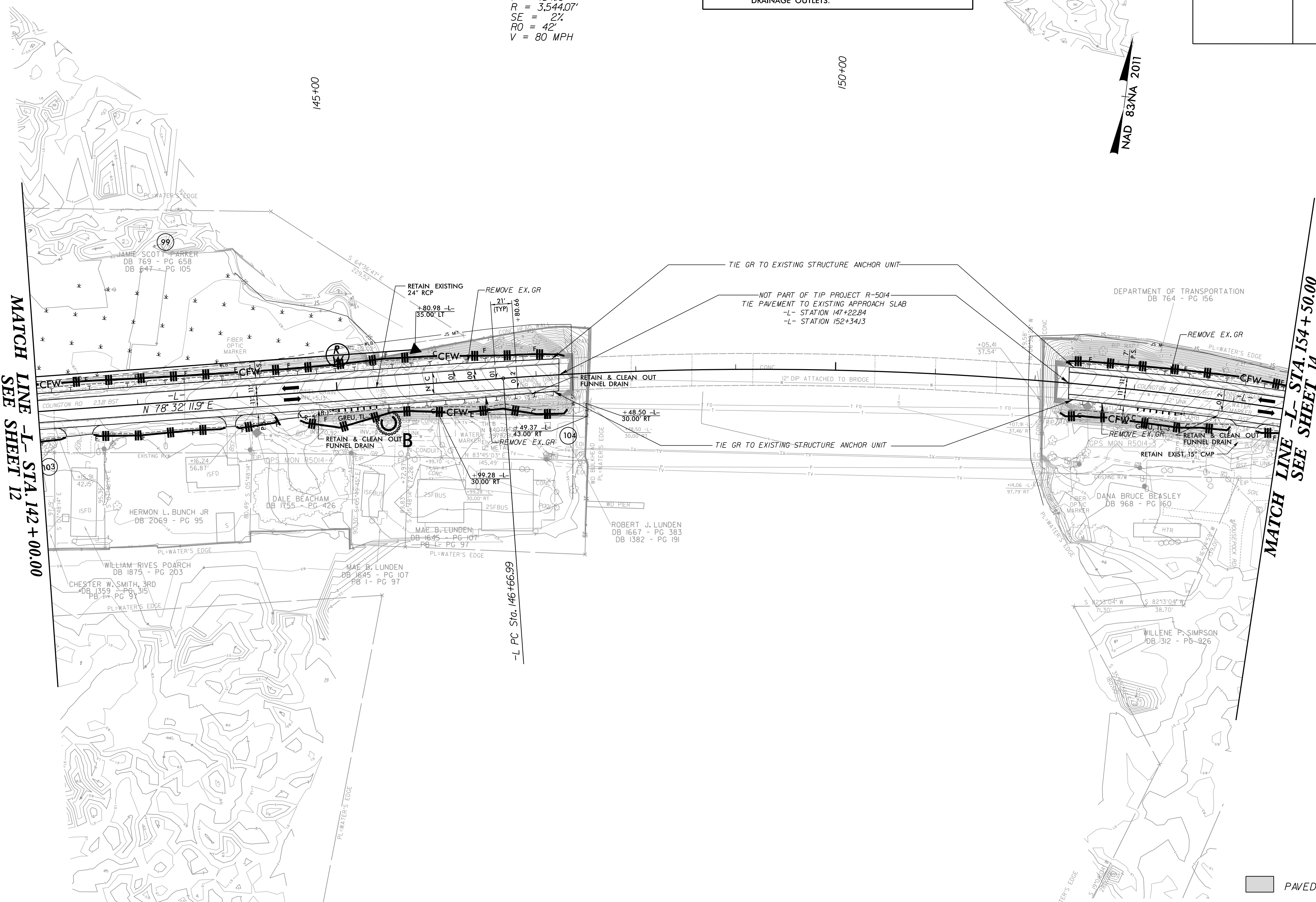
NOTE:  
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B  
AND TEMPORARY ROCK SILT CHECKS TYPE - A AT  
DRAINAGE OUTLETS.

NAD 83 NA 2011

REVISIONS

MATCH LINE -L- STA. 142 + 00.00  
SEE SHEET 12

MATCH LINE -L- STA. 154 + 50.00  
SEE SHEET 14



PAVED SHOULDER

NOTES:  
DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED  
SEE SHEET 25 AND 26 FOR -L- PROFILE

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 REVISIONS  
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 10/20/08  
 10/20/08



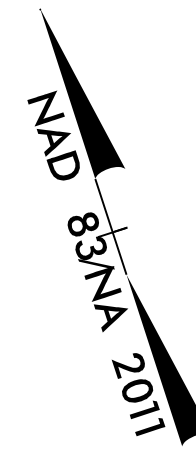
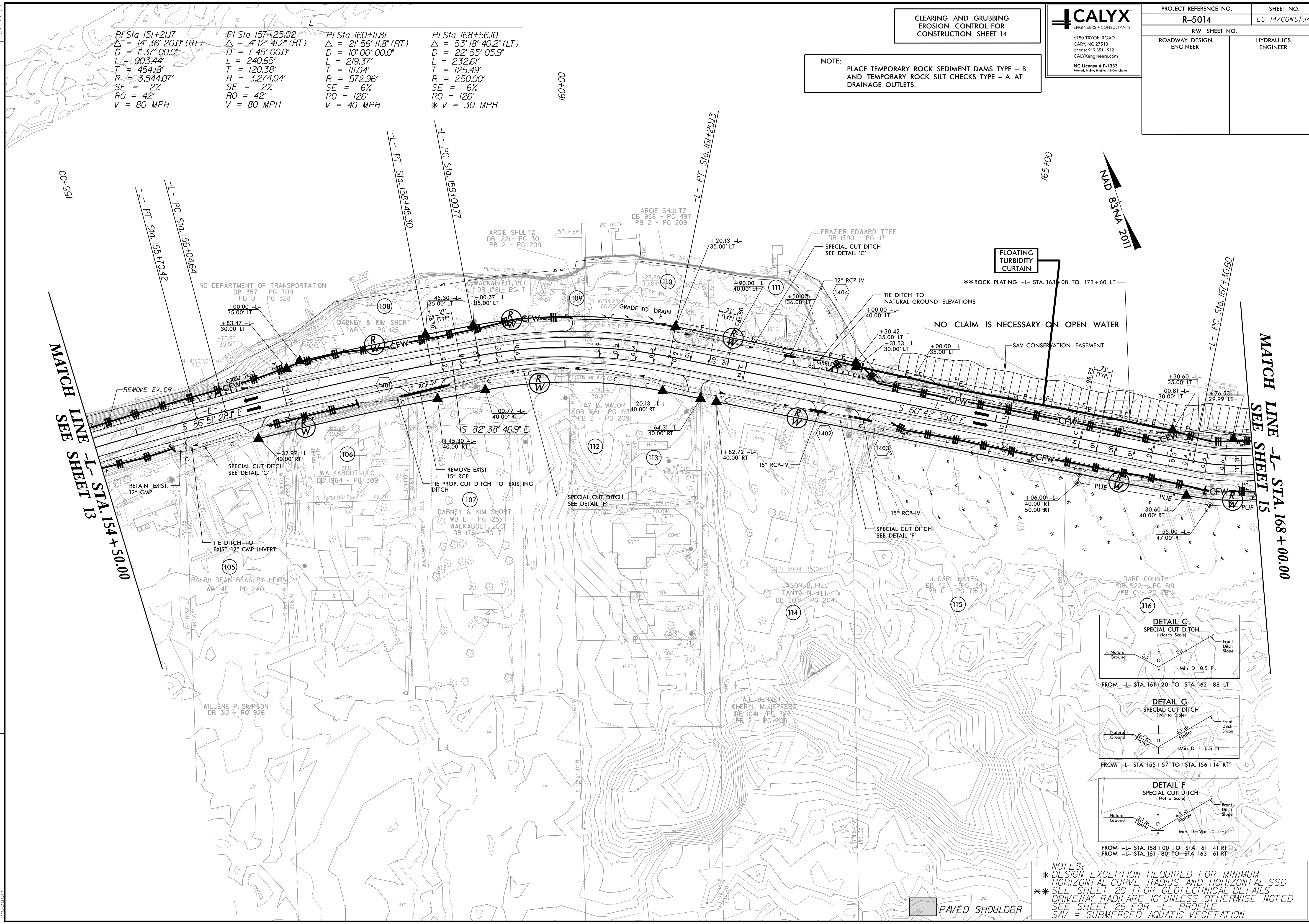
**CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 14**

**CALYX**  
ENGINEERS + CONSULTANTS  
6750 TRYON ROAD  
CARY, NC 27518  
phone: 919.851.1912  
CALYXengineers.com  
NC License # F-1333  
Formerly: Haldix Engineers & Consultants

PROJECT REFERENCE NO. <b>R-5014</b>	SHEET NO. <b>EC-14/CONST.14</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

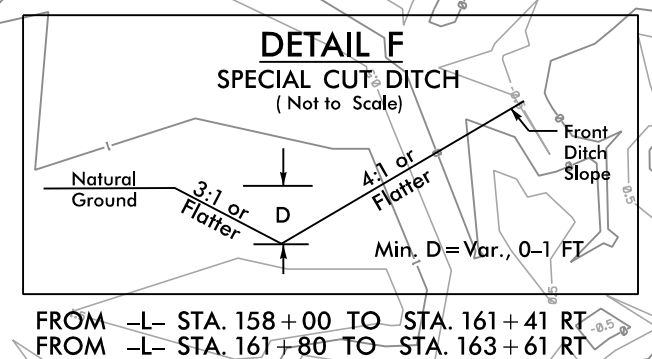
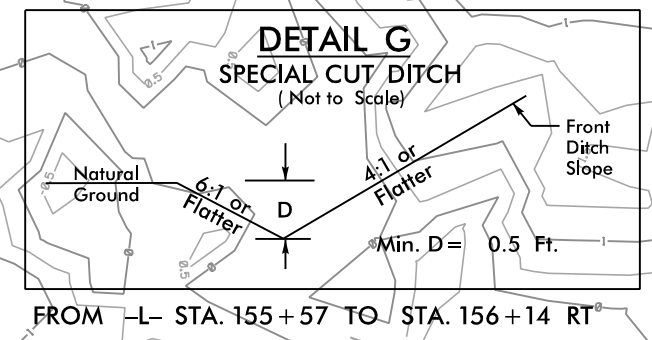
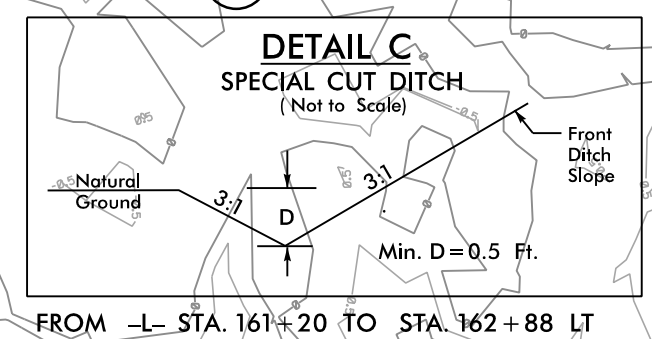
**NOTE:**  
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B  
AND TEMPORARY ROCK SILT CHECKS TYPE - A AT  
DRAINAGE OUTLETS.

<p>PI Sta 151+21.7 Δ = 14° 36' 20.0" (RT) D = 1' 37" 00.0" L = 903.44' T = 454.18' R = 3,544.07' SE = 2% RO = 42' V = 80 MPH</p>	<p>PI Sta 157+25.02 Δ = 4° 12' 41.2" (RT) D = 1' 45" 00.0" L = 240.65' T = 120.38' R = 3,274.04' SE = 2% RO = 42' V = 80 MPH</p>	<p>PI Sta 160+11.81 Δ = 21° 56' 11.8" (RT) D = 10' 00" 00.0" L = 219.37' T = 111.04' R = 572.96' SE = 6% RO = 126' V = 40 MPH</p>	<p>PI Sta 168+56.10 Δ = 53° 18' 40.2" (LT) D = 22° 55' 05.9" L = 232.61' T = 125.49' R = 250.00' SE = 6% RO = 126' * V = 30 MPH</p>
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MATCH LINE -L- STA. 154+50.00  
SEE SHEET 13

MATCH LINE -L- STA. 168+00.00  
SEE SHEET 15



**NOTES:**  
\* DESIGN EXCEPTION REQUIRED FOR MINIMUM HORIZONTAL CURVE RADIUS AND HORIZONTAL SSD  
\*\* SEE SHEET 26-1 FOR GEOTECHNICAL DETAILS  
\*\*\* DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED  
SEE SHEET 26 FOR -L- PROFILE  
SAV = SUBMERGED AQUATIC VEGETATION

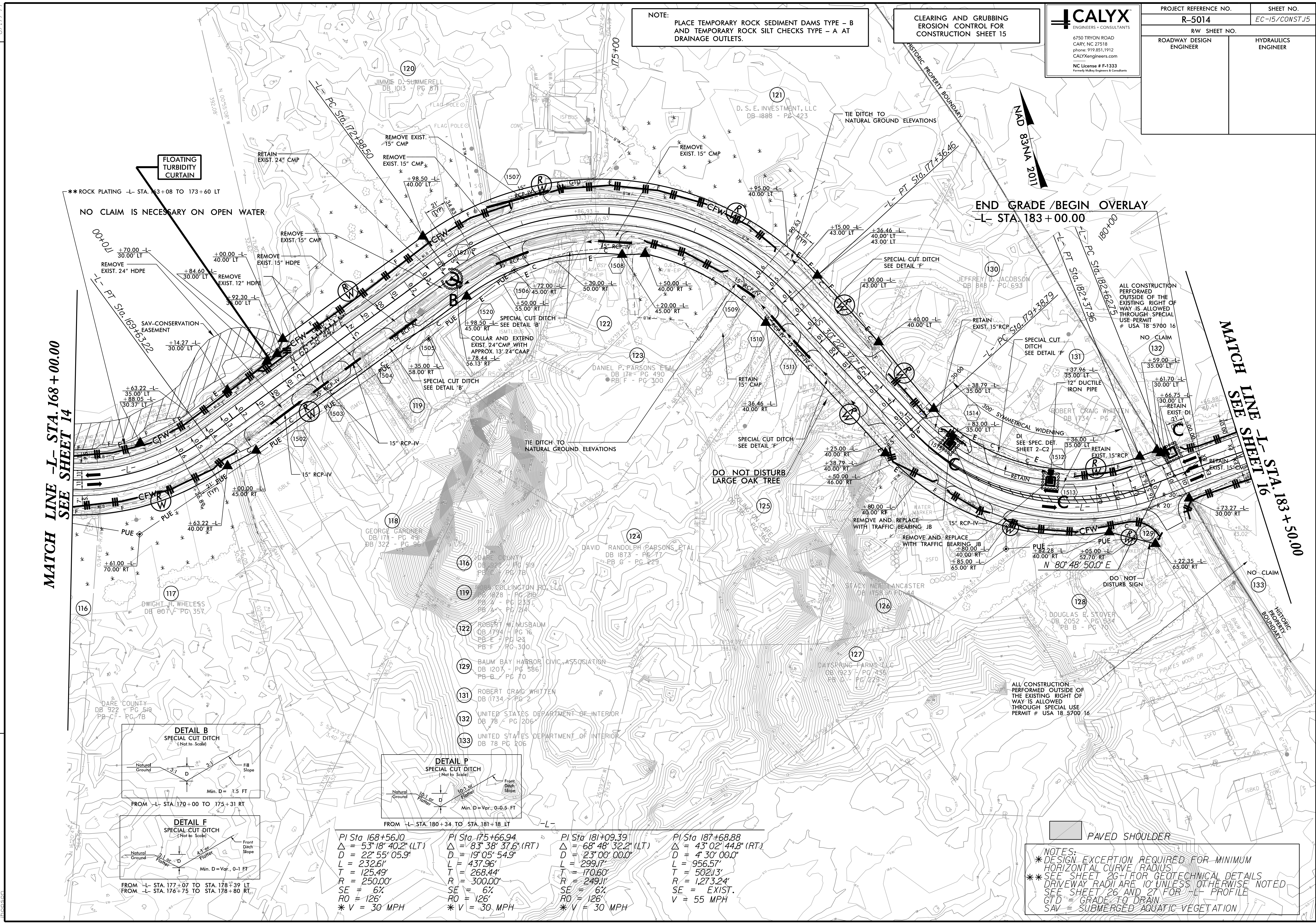
REVISIONS

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1/5/2018



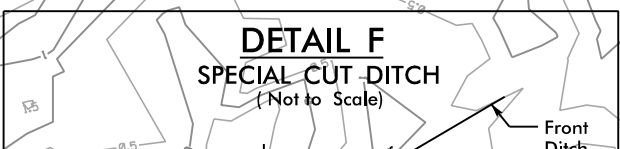
**NOTE:**  
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

**CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 15**



MATCH LINE -L- STA. 168 + 00.00  
SEE SHEET 14

MATCH LINE -L- STA. 183 + 50.00  
SEE SHEET 16



<b>PI Sta 168+56.10</b> $\Delta = 53^{\circ}18'40.2"$ (LT) $D = 22^{\circ}55'05.9"$ $L = 232.61'$ $T = 125.49'$ $R = 250.00'$ $SE = 6\%$ $RO = 126'$ $* V = 30 MPH$	<b>PI Sta 175+66.94</b> $\Delta = 83^{\circ}38'37.6"$ (RT) $D = 19^{\circ}05'54.9"$ $L = 437.96'$ $T = 268.44'$ $R = 300.00'$ $SE = 6\%$ $RO = 126'$ $* V = 30 MPH$	<b>PI Sta 181+09.39</b> $\Delta = 68^{\circ}48'32.2"$ (LT) $D = 23^{\circ}00'00.0"$ $L = 299.17'$ $T = 170.60'$ $R = 249.11'$ $SE = 6\%$ $RO = 126'$ $* V = 30 MPH$	<b>PI Sta 187+68.88</b> $\Delta = 43^{\circ}02'44.8"$ (RT) $D = 4^{\circ}30'00.0"$ $L = 956.57'$ $T = 502.13'$ $R = 1,273.24'$ $V = EXIST.$ $V = 55 MPH$
---	---	---	---

**NOTES:**  
 \* DESIGN EXCEPTION REQUIRED FOR MINIMUM HORIZONTAL CURVE RADII  
 \*\* SEE SHEET 26-F FOR GEOTECHNICAL DETAILS  
 DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED  
 SEE SHEET 26 AND 27 FOR "L" PROFILE  
 GTD = GRADE TO DRAIN  
 SAV = SUBMERGED AQUATIC VEGETATION

REVISIONS  
 RIGHT OF WAY REVISION - 02/05/2018 - PLACED NOTE AND NOT DISTURB SIGN ON PARCEL 129.  
 RIGHT OF WAY REVISION - 06/06/2018 - ADJUSTED CONSTRUCTION EASEMENT ON PARCEL 153.

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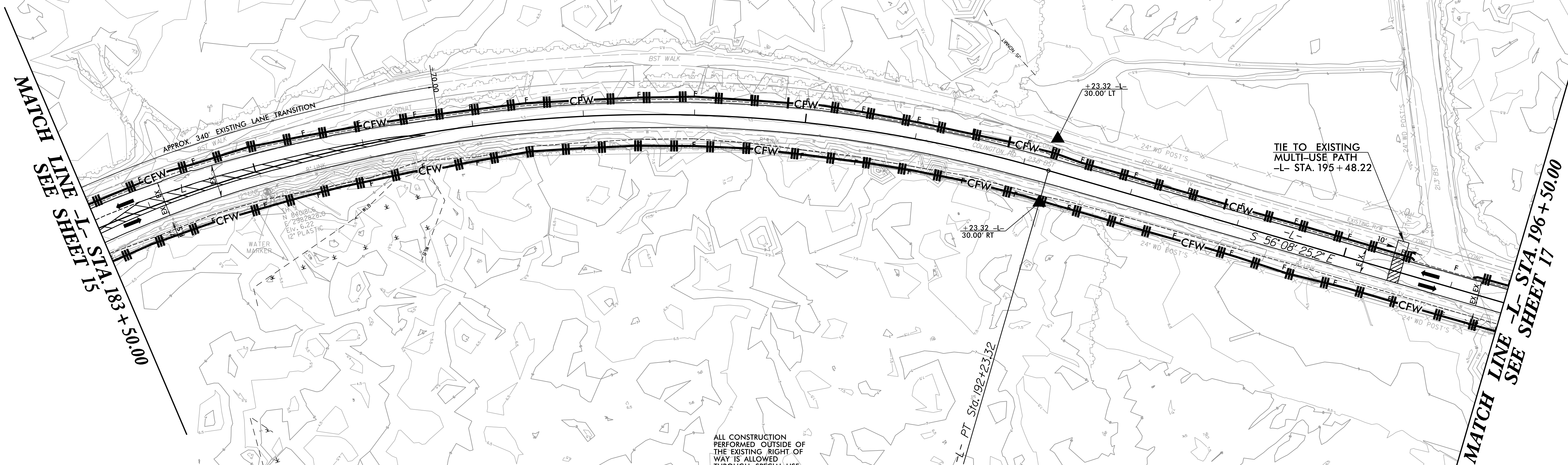
PROJECT REFERENCE NO. <b>R-5014</b>	SHEET NO. <i>EC-16/CONST.16</i>
RW SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

-L-  
 PI Sta 187+68.88  
 $\Delta = 43^{\circ}02'44.8"$  (RT)  
 $D = 4^{\circ}30'00.0"$   
 $L = 956.57'$   
 $T = 502.13'$   
 $R = 1273.24'$   
 SE = EXIST.  
 $V = 55$  MPH

ALL CONSTRUCTION PERFORMED OUTSIDE OF THE EXISTING RIGHT OF WAY IS ALLOWED THROUGH SPECIAL USE PERMIT # USA 18 5700 16

NO CLAIM

132  
 UNITED STATES DEPARTMENT OF INTERIOR  
 DB 78 - PG 206



ALL CONSTRUCTION PERFORMED OUTSIDE OF THE EXISTING RIGHT OF WAY IS ALLOWED THROUGH SPECIAL USE PERMIT # USA 18 5700 16

NO CLAIM

133  
 UNITED STATES DEPARTMENT OF INTERIOR  
 DB 78 - PG 206

CLEARING AND GRUBBING  
 EROSION CONTROL FOR  
 CONSTRUCTION SHEET 16

NOTE:  
 PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B  
 AND TEMPORARY ROCK SILT CHECKS TYPE - A AT  
 DRAINAGE OUTLETS.

PAVED SHOULDER

NOTES:  
 DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED  
 SEE SHEET 27 FOR -L- PROFILE

REVISIONS

8/17/99  
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 16/08/2008 10:50:00 AM



8/17/99

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NC License # F-1333  
Formerly: Hubbs Engineers & Consultants

PROJECT REFERENCE NO. <b>R-5014</b>	SHEET NO. <b>EC-17/CONST.17</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 17

NOTE:  
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B  
AND TEMPORARY ROCK SILT CHECKS TYPE - A AT  
DRAINAGE OUTLETS.

-L-  
PI Sta 209+11.27  
 $\Delta = 62' 13" 20.7" (LT)$   
 $D = 6' 05" 00.0"$   
 $L = 1,022.83'$   
 $T = 568.41'$   
 $R = 941.85'$   
 $SE = EXIST.$   
 $V = 50 \text{ MPH}$

ALL CONSTRUCTION  
PERFORMED OUTSIDE OF  
THE EXISTING RIGHT OF  
WAY IS ALLOWED  
THROUGH SPECIAL USE  
PERMIT # USA 18 5700 16

NO CLAIM  
132  
UNITED STATES DEPARTMENT OF INTERIOR  
DB 78 - PG 206

NO CLAIM  
133  
UNITED STATES DEPARTMENT OF INTERIOR  
DB 78 - PG 206

ALL CONSTRUCTION  
PERFORMED OUTSIDE OF  
THE EXISTING RIGHT OF  
WAY IS ALLOWED  
THROUGH SPECIAL USE  
PERMIT # USA 18 5700 16

MATCH LINE -L- STA. 196 + 50.00  
SEE SHEET 16

MATCH LINE SEE SHEET 18  
-L- STA. 209 + 50.00

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10/20/08

PAVED SHOULDER

NOTES:  
DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED  
SEE SHEET 27 AND 28 FOR -L- PROFILE



NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

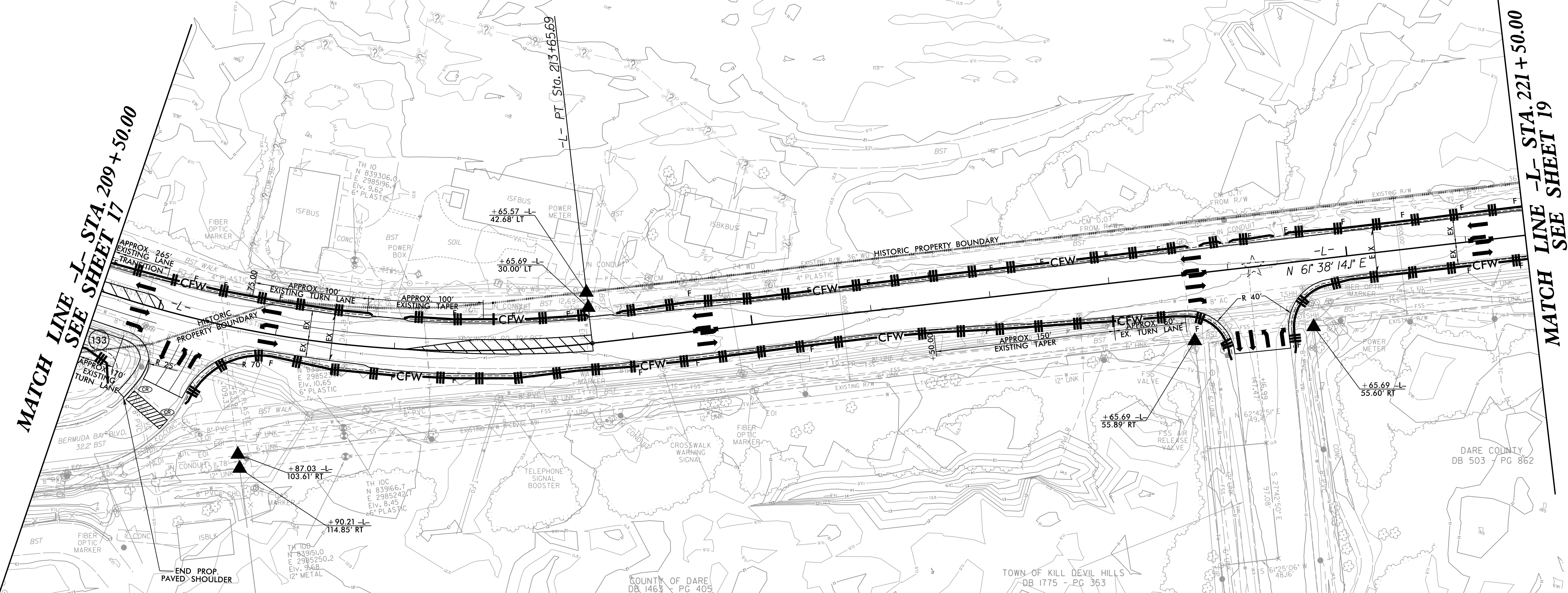
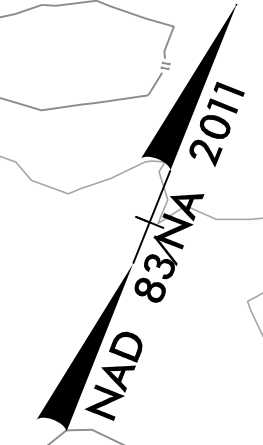
CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 18

-L-  
PI Sta 209+11.27  
 $\Delta = 62^{\circ}13'20.7''$  (LT)  
D = 6'05'00.0"  
L = 1,022.83'  
T = 568.41'  
R = 941.85'  
SE = EXIST.  
V = 50 MPH

ALL CONSTRUCTION PERFORMED OUTSIDE OF THE EXISTING RIGHT OF WAY IS ALLOWED THROUGH SPECIAL USE PERMIT # USA 18 5700 16

NO CLAIM

UNITED STATES DEPARTMENT OF INTERIOR  
DB 78 - PG 206



MATCH LINE -L- STA. 209 + 50.00  
SEE SHEET 17

MATCH LINE -L- STA. 221 + 50.00  
SEE SHEET 19

TRAFFIC DATA			
12300	-L- SR 1217 (COLINGTON RD.)	13300	
16900		18300	
	200	1200	
	300	1700	
	1400		
	2000		
	YEAR 2019 ADT		
	YEAR 2039 ADT		

TRAFFIC DATA			
13300	-L- SR 1217 (COLINGTON RD.)	14200	
18300		19600	
	1600	2600	
	2200	3500	
	4200		
	5700		
	VETERANS DR.		
	YEAR 2018 ADT		
	YEAR 2038 ADT		

NOTES: DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED  
SEE SHEET 28 FOR -L- PROFILE

RIGHT OF WAY REVISION - 06/06/2018 - ADJUSTED CONSTRUCTION EASEMENT ON PARCEL 133.

REVISIONS

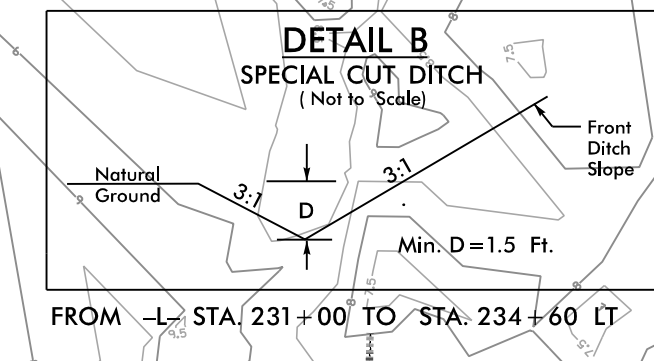
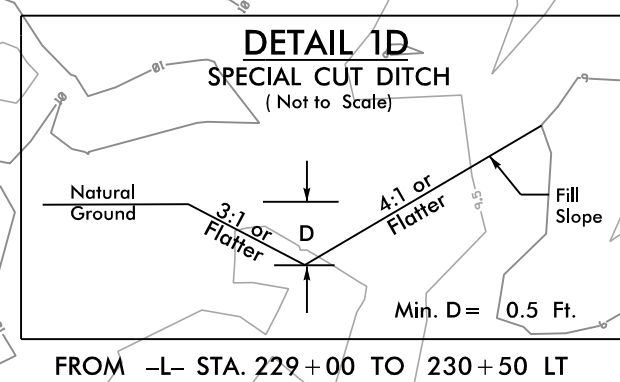
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18/05/2018



PROJECT REFERENCE NO. <b>R-5014</b>	SHEET NO. <i>EC-19/CONST.19</i>
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

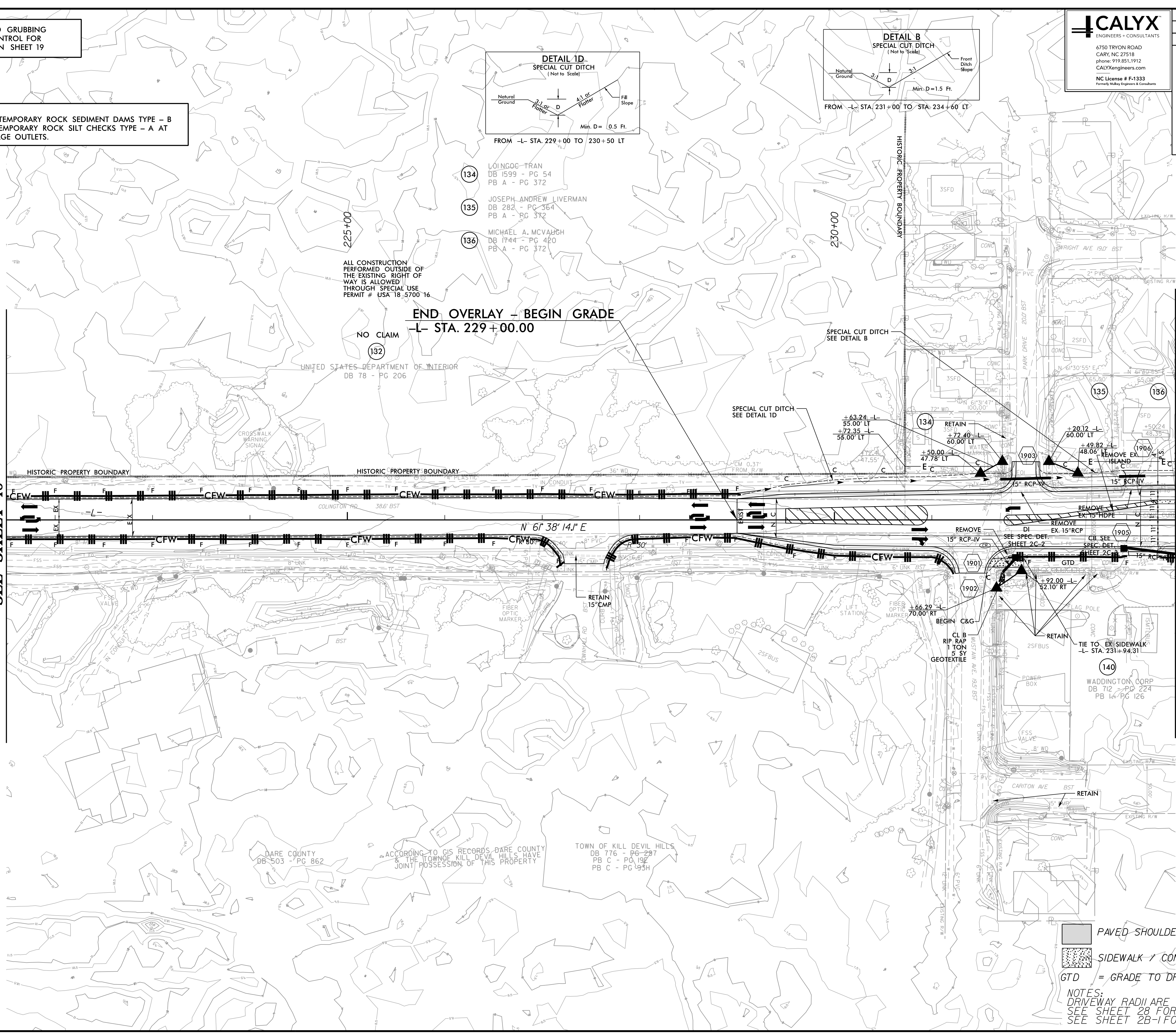
CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 19

NOTE:  
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B  
AND TEMPORARY ROCK SILT CHECKS TYPE - A AT  
DRAINAGE OUTLETS.



MATCH LINE -L- STA. 221+50.00  
SEE SHEET 18

MATCH LINE -L- STA. 233+50.00  
SEE SHEET 20



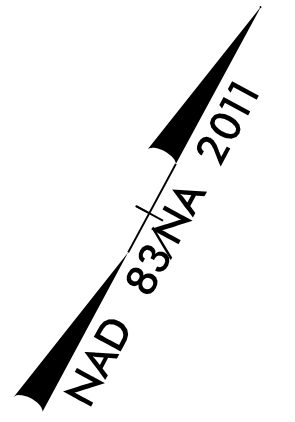
RIGHT OF WAY REVISION - 06/06/2018 - ADJUSTED ROW ON PARCEL 134,135 & 140. ADJUSTED CONSTRUCTION EASEMENT ON PARCEL 134,135 & 136

REVISIONS

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PAVED SHOULDER  
SIDEWALK / CONCRETE ISLAND  
GTD = GRADE TO DRAIN

NOTES:  
DRIVEWAY RADII ARE 5' UNLESS OTHERWISE NOTED  
SEE SHEET 28 FOR -L- PROFILE  
SEE SHEET 2B-1 FOR INTERSECTION DETAIL



8/17/99

DARE COUNTY DB 503 - PG 862  
ACCORDING TO GIS RECORDS DARE COUNTY & THE TOWNSHIP OF KILL DEVIL HILLS HAVE JOINT POSSESSION OF THIS PROPERTY  
TOWNSHIP OF KILL DEVIL HILLS DB 776 - PG 237  
PB C - PG 192  
PB C - PG 193H



PROJECT REFERENCE NO. <b>R-5014</b>	SHEET NO. <b>EC-20/CONST.20</b>
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

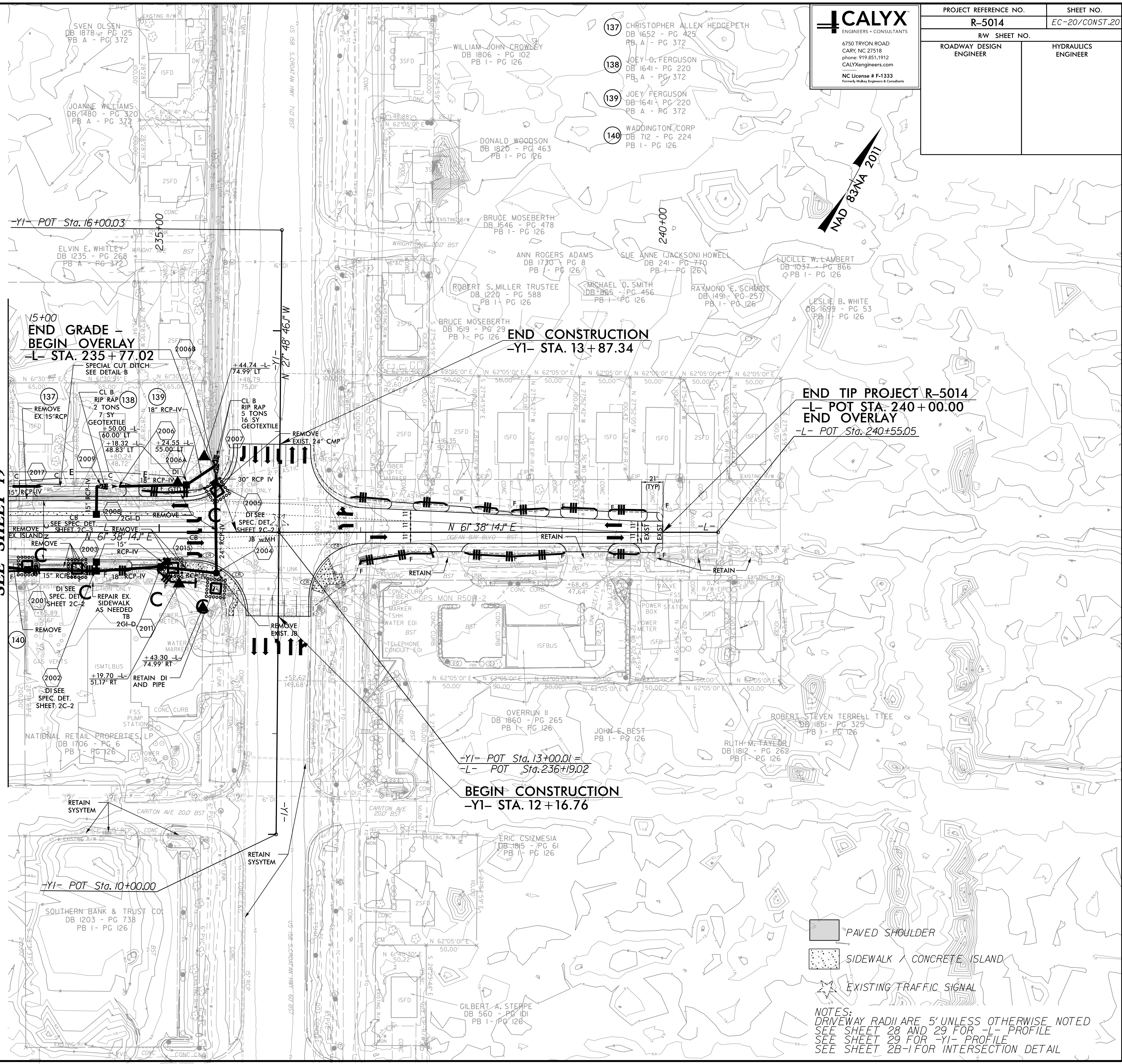
CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 20

NOTE:  
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B  
AND TEMPORARY ROCK SILT CHECKS TYPE - A AT  
DRAINAGE OUTLETS.

RIGHT OF WAY REVISION - 06/06/2018 - ADJUSTED ROW ON PARCEL 140, ADJUSTED CONSTRUCTION EASEMENT ON PARCELS 137,138,139

TRAFFIC DATA	
US 158 S. CROATAN HWY -YI-	
33400 45000	
-L- SR 1217 COLINGTON RD.	6700 9300
	4500 6400
-L- SR 1217 OCEAN BAY BLVD.	635 715
	635 715
31300 42100	
-YI- US 158 S. CROATAN HWY	
YEAR 2019 ADT YEAR 2039 ADT	

MATCH LINE -L- STA. 233 + 50.00  
SEE SHEET 19



END TIP PROJECT R-5014  
-L- POT STA. 240 + 00.00  
END OVERLAY  
-L- POT Sta. 240+55.05

END CONSTRUCTION  
-YI- STA. 13 + 87.34

BEGIN CONSTRUCTION  
-YI- STA. 12 + 16.76

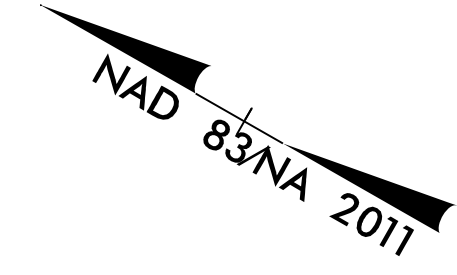
- PAVED SHOULDER
- SIDEWALK / CONCRETE ISLAND
- EXISTING TRAFFIC SIGNAL

NOTES:  
DRIVEWAY RADII ARE 5' UNLESS OTHERWISE NOTED  
SEE SHEET 28 AND 29 FOR -L- PROFILE  
SEE SHEET 29 FOR -YI- PROFILE  
SEE SHEET 2B-1 FOR INTERSECTION DETAIL

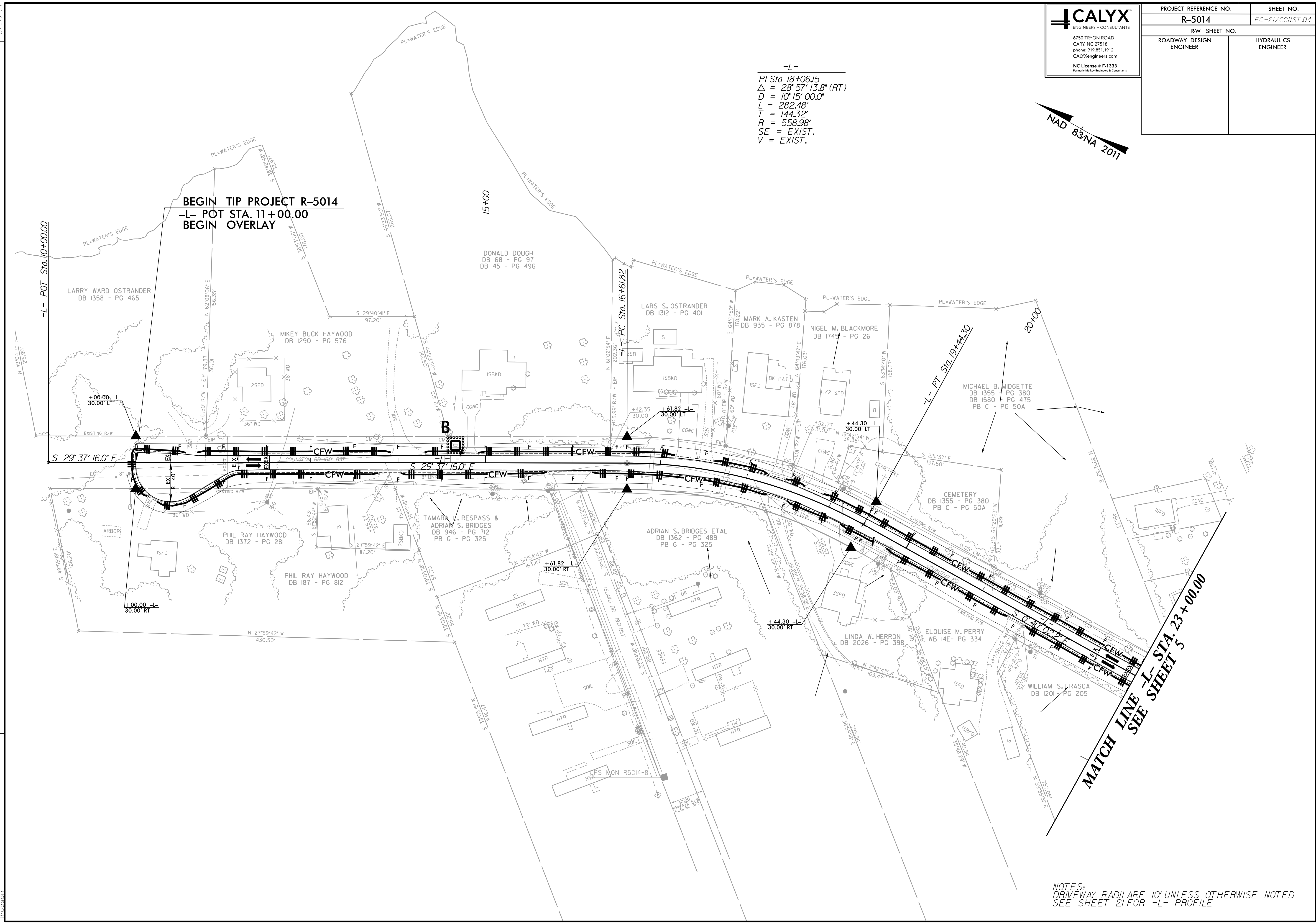


PROJECT REFERENCE NO.	SHEET NO.
R-5014	EC-21/CONST.04
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

-L-  
PI Sta 18+06.15  
 $\Delta = 28^{\circ} 57' 13.8" (RT)$   
 $D = 10' 15' 00.0"$   
 $L = 282.48'$   
 $T = 144.32'$   
 $R = 558.98'$   
SE = EXIST.  
V = EXIST.



REVISIONS



NOTES:  
DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED  
SEE SHEET 21 FOR -L- PROFILE

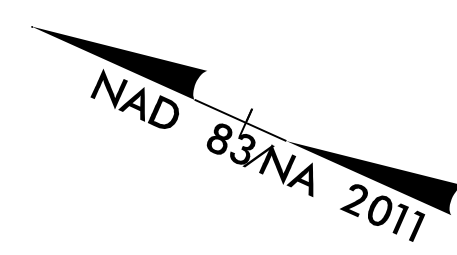
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8/17/99

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PROJECT REFERENCE NO. <b>R-5014</b>	SHEET NO. <i>EC-22/CONST.05</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



-L-

PI Sta 25+43.98 $\Delta = 23^{\circ}04'34.3"$ (LT) $D = 9^{\circ}00'00.0"$ $L = 256.40'$ $T = 129.96'$ $R = 636.62'$ $SE = EXIST.$ $V = EXIST.$	PI Sta 34+44.90 $\Delta = 48^{\circ}32'06.7"$ (RT) $D = 17^{\circ}30'00.0"$ $L = 277.34'$ $T = 147.61'$ $R = 327.40'$ $SE = EXIST.$ $V = EXIST.$
--	---



MATCH LINE -L- STA. 23+00.00  
SEE SHEET 4

MATCH LINE -L- STA. 35+00.00  
SEE SHEET 6

REVISIONS

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NOTES:  
DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED  
SEE SHEET 21 FOR -L- PROFILE



PROJECT REFERENCE NO.	SHEET NO.
R-5014	EC-23/CONST.06
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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**MATCH LINE -L- STA. 53+00.00**  
SEE SHEET 7

NAD 83NA 2011

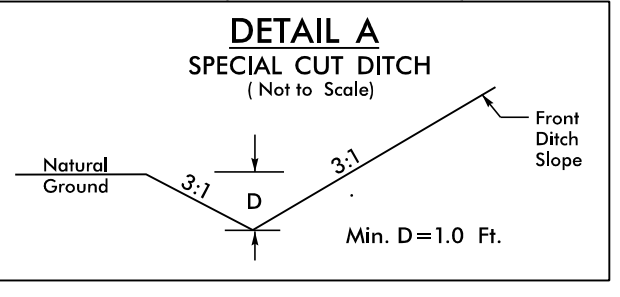
- 1 JEANNE M. LAURO  
DB 1694 - PG 492  
PB 4 - PG 40
- 2 CYNTHIA STEVENS  
DB 1723 - PG 498  
PB 4 - PG 40
- 3 THOMAS P. MAGNANELLI, SR.  
DB 1355 - PG 398  
PB 4 - PG 40
- 4 DEBORAH H. STOKES  
CLINKSCALES  
DB 1250 - PG 427  
PB 4 - PG 40
- 5 DEBORAH STOKES  
CLINKSCALES  
DB 1374 - PG 377  
PB 4 - PG 40
- 6 STEVE P. KING  
DB 1728 - PG 89  
PB 4 - PG 40
- 7 JOAN E. CASTEEL  
DB 1870 - PG 162  
PB 4 - PG 40
- 8 COLINGTON HARBOUR  
ASSOCIATION INC  
DB 1699 - PG 435  
PB 3 - PG 75
- 9 STEVEN R. HAMM  
DB 1800 - PG 10  
PB 3 - PG 75
- 10 JOYCE L. JORDAN  
DB 436 - PG 319  
PB 3 - PG 75
- 11 JOHN W. DEMPEWOLF  
DB 1601 - PG 475  
PB 3 - PG 75
- 12 HOLLISTYNE CREECY BLUITT  
DB 1238 - PG 897  
PB 3 - PG 75
- 13 WILLIAM A. WILLFORD  
DB 1372 - PG 327  
PB 3 - PG 75
- 14 CARLYN ANN LAUGHLIN  
DB 1975 - PG 407  
PB 4 - PG 40
- 15 ROBBIE PAETOW  
DB 1895 - PG 72  
PB 4 - PG 40
- 16 JEFFREY JUSTIN MITCHELL  
NATALIE KAYLIN MITCHELL  
DB 1964 - PG 657  
PB 4 - PG 40
- 17 MARGARETTE M.  
UMPLETT  
DB 1358 - PG 332  
PB 4 - PG 40
- 18 CARL E. WORSLEY, JR.  
DB 1465 - PG 242  
PB 4 - PG 40
- 19 BEASLEY BEASLEY  
& BEASLEY  
DB 772 - PG 746
- 20 BJ DEVELOPMENTS  
DB 1587 - PG 109  
PB C - PG 167A  
PB C - PG 170A
- 21 WILLIAM J.  
WEATHERLY  
DB 1282 - PG 511  
PB 4 - PG 40
- 22 BJ DEVELOPMENTS  
DB 1587 - PG 108  
PB C - PG 167A  
PB C - PG 170A
- 23 ALAIN J. TTEE PIRRONE  
MONIKA C. TTEE PIRRONE  
DB 2110 - PG 24  
PB C - PG 167A

**MATCH LINE -L- STA. 35+00.00**  
SEE SHEET 5

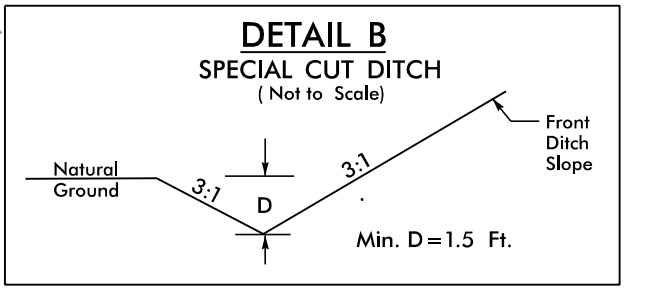
**END OVERLAY / BEGIN GRADE**  
-L- STA. 43+10.00

TRAFFIC DATA		
800	-L- SR 1217 (COLINGTON RD.)	7400
900		9400
100		6700
100		8600
		6800
		8700
COLINGTON DRIVE		
	YEAR 2019 ADT	
	YEAR 2039 ADT	

PI Sta 34+44.90 Δ = 48° 32' 06.7" (RT) D = 17° 30' 00.0" L = 277.34' T = 147.61' R = 327.40' SE = EXIST. V = EXIST.	PI Sta 36+73.83 Δ = 15° 35' 19.6" (RT) D = 10° 17' 00.0" L = 151.59' T = 76.27' R = 557.17' SE = EXIST. V = EXIST.	PI Sta 39+61.27 Δ = 23° 03' 37.3" (LT) D = 15° 00' 00.0" L = 153.74' T = 77.92' R = 381.97' SE = EXIST. V = EXIST.
PI Sta 45+15.24 Δ = 72° 27' 53.4" (LT) D = 16° 51' 06.1" L = 430.02' T = 249.14' R = 340.00' SE = 6% RO = 126' * V = 35 MPH	PI Sta 49+38.45 Δ = 64° 25' 02.9" (LT) D = 24° 48' 12.1" L = 259.71' T = 145.52' R = 231.00' SE = 6% RO = 126' * V = 30 MPH	PI Sta 52+50.59 Δ = 51° 50' 58.6" (RT) D = 16° 51' 06.1" L = 307.68' T = 165.28' R = 340.00' SE = 6% RO = 126' * V = 35 MPH



FROM -L- STA. 42+50 TO STA. 47+27 LT  
FROM -L- STA. 47+27 TO STA. 50+70 LT  
FROM -L- STA. 51+17 TO STA. 52+00 LT  
FROM -L- STA. 47+36 TO STA. 47+80 RT



FROM -L- STA. 43+00 TO STA. 47+36 RT  
FROM -L- STA. 49+55 TO STA. 52+00 RT

PAVED SHOULDER

NOTES:  
\* DESIGN EXCEPTION REQUIRED FOR MINIMUM HORIZONTAL CURVE RADIUS.  
\*\* DESIGN EXCEPTION REQUIRED FOR MINIMUM HORIZONTAL CURVE RADIUS AND HORIZONTAL SSD  
DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED  
SEE SHEET 21 AND 22 FOR -L- PROFILE  
GTD = GRADE TO DRAIN

RIGHT OF WAY REVISION - 2/28/2018 - ADDED PERMANENT UTILITY EASEMENT TO PARCELS 10,11,12, AND 13.

REVISIONS

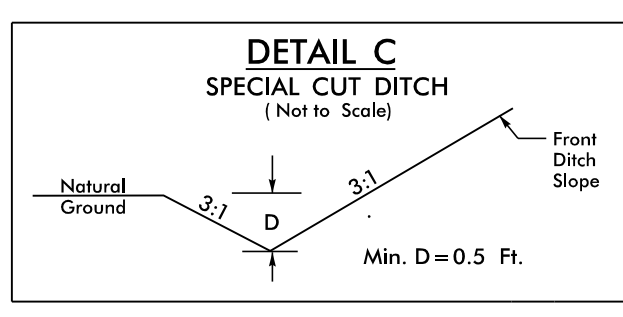
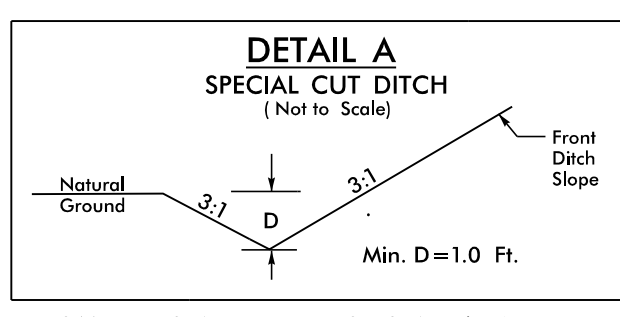
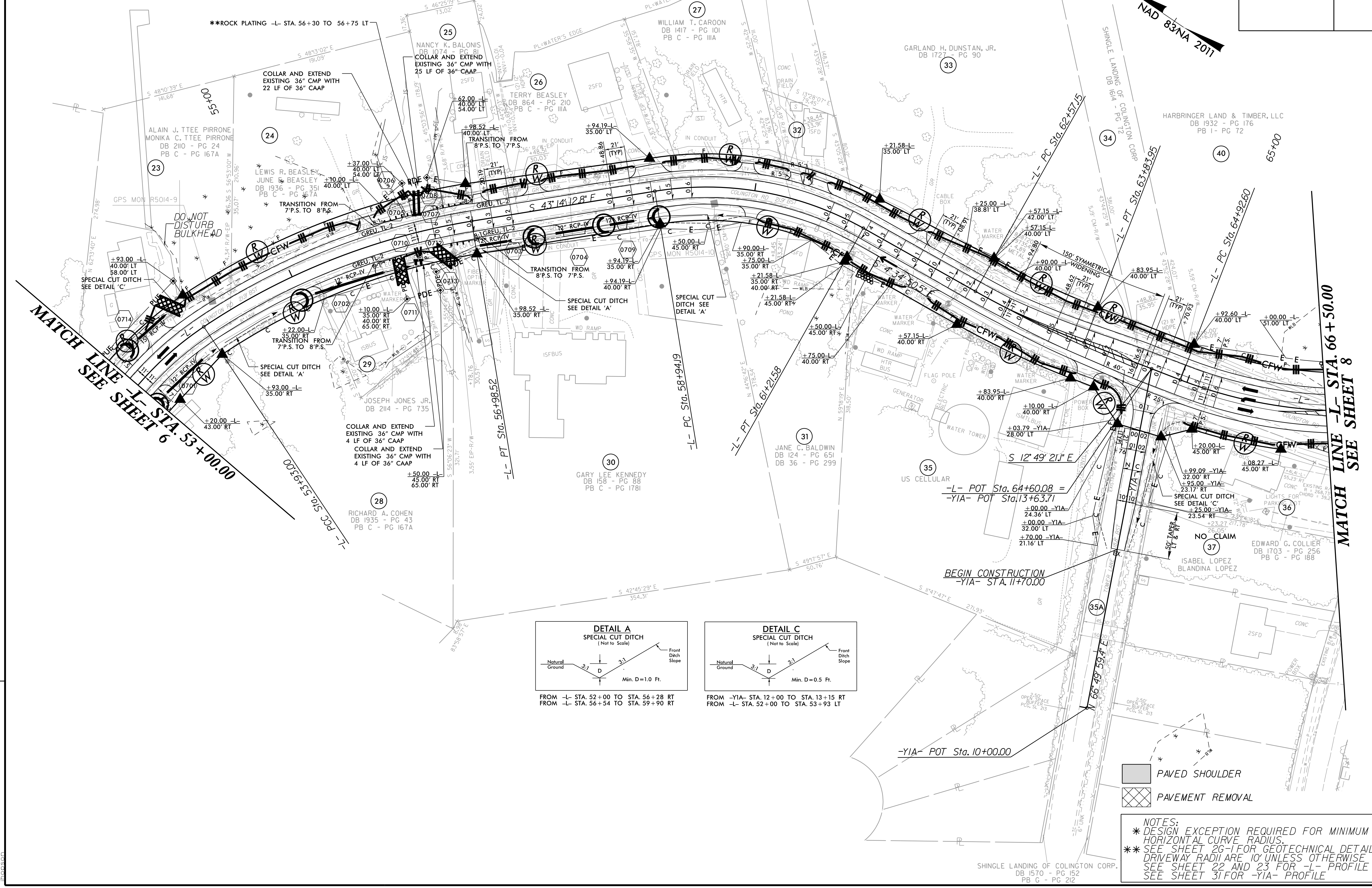
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PROJECT REFERENCE NO. <b>R-5014</b>	SHEET NO. <b>EC-24/CONST.07</b>
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

<b>PI Sta 52+50.59</b> $\Delta = 51^{\circ}50'58.6"$ (RT) $D = 16'51.06"$ $L = 307.68'$ $T = 165.28'$ $R = 340.00'$ $SE = 6\%$ $RO = 126'$ $*V = 35$ MPH	<b>PI Sta 55+48.13</b> $\Delta = 24^{\circ}28'32.5"$ (RT) $D = 8'00.394"$ $L = 305.53'$ $T = 155.13'$ $R = 715.22'$ $SE = 6\%$ $RO = 126'$ $V = 45$ MPH	<b>PI Sta 60+12.41</b> $\Delta = 38^{\circ}39'22.3"$ (RT) $D = 17'00.000"$ $L = 227.39'$ $T = 118.21'$ $R = 337.03'$ $SE = 6\%$ $RO = 126'$ $*V = 30$ MPH	<b>PI Sta 63+20.66</b> $\Delta = 8'14'30.6"$ (LT) $D = 6'30.000"$ $L = 126.80'$ $T = 63.51'$ $R = 881.47'$ $SE = 5\%$ $RO = 105'$ $V = 50$ MPH	<b>PI Sta 74+83.10</b> $\Delta = 127^{\circ}49'20.5"$ (LT) $D = 1'48'48.8"$ $L = 1082.00'$ $T = 990.50'$ $R = 485.00'$ $SE = 6\%$ $RO = 126'$ $V = 40$ MPH
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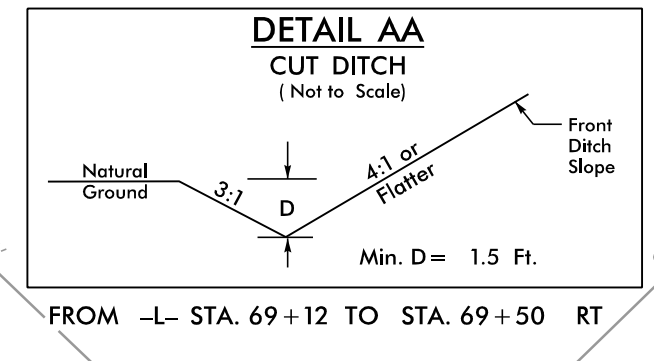
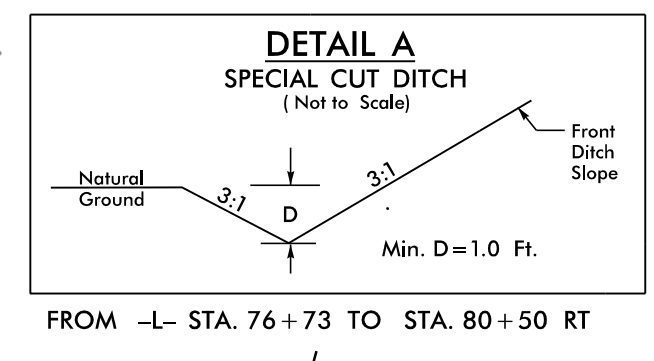
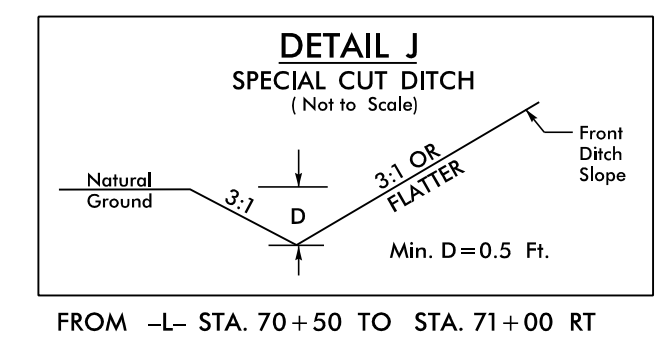
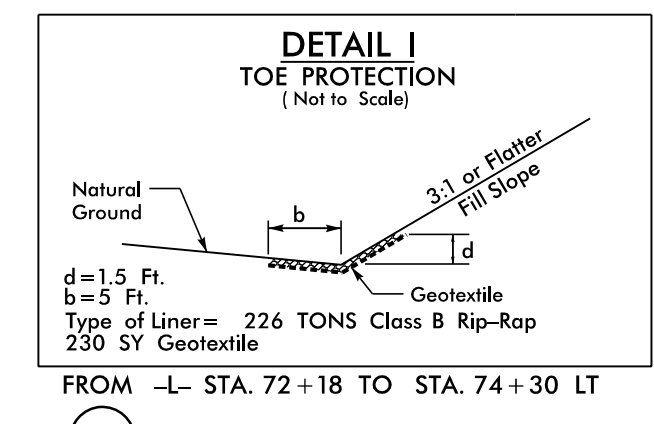
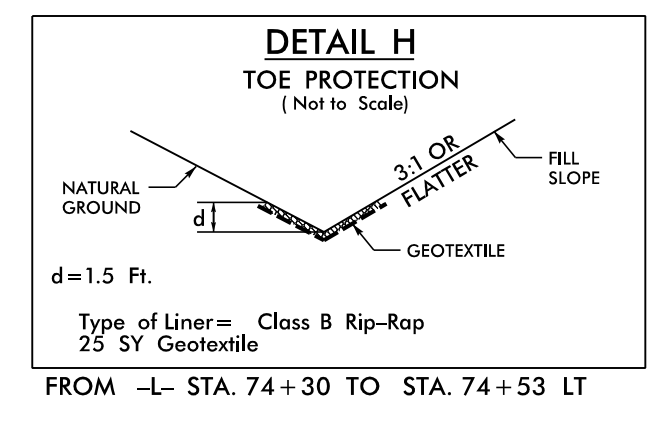


- PAVED SHOULDER
- PAVEMENT REMOVAL

**NOTES:**  
 \* DESIGN EXCEPTION REQUIRED FOR MINIMUM HORIZONTAL CURVE RADIUS.  
 \*\* SEE SHEET 26-1 FOR GEOTECHNICAL DETAILS.  
 DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED.  
 SEE SHEET 22 AND 23 FOR -L- PROFILE.  
 SEE SHEET 31 FOR -YIA- PROFILE.

REVISIONS  
 RIGHT OF WAY REVISION - 9/28/2017 - ADJUSTED RIGHT OF WAY AND TEMPORARY CONSTRUCTION EASEMENT ON PARCEL 30 AND 33.  
 I:\5\2018\Projects\commental\Design\RE014\_hyd\_EC\_psh\_24.dwg  
 8/17/99

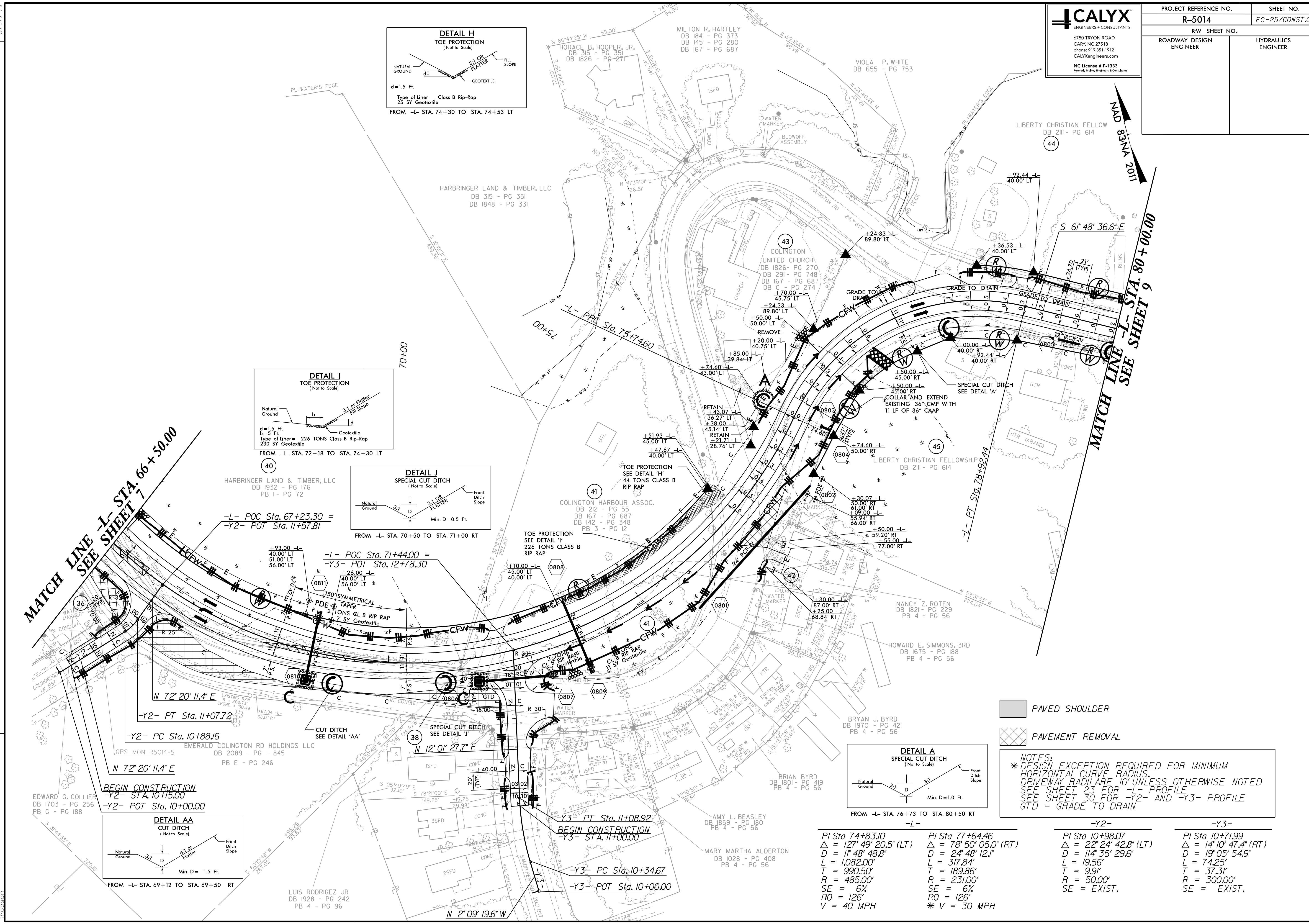




PAVED SHOULDER  
PAVEMENT REMOVAL

NOTES:  
\* DESIGN EXCEPTION REQUIRED FOR MINIMUM HORIZONTAL CURVE RADIUS. DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED. SEE SHEET 23 FOR -L- PROFILE. SEE SHEET 30 FOR -Y2- AND -Y3- PROFILE. GTD = GRADE TO DRAIN

-L-	-Y2-	-Y3-
PI Sta 74+83.10	PI Sta 10+98.07	PI Sta 10+71.99
$\Delta = 127^{\circ} 49' 20.5''$ (LT)	$\Delta = 22^{\circ} 24' 42.8''$ (LT)	$\Delta = 14^{\circ} 10' 47.4''$ (RT)
$D = 11^{\circ} 48' 48.8''$	$D = 11^{\circ} 35' 29.6''$	$D = 19^{\circ} 05' 54.9''$
$L = 1,082.00'$	$L = 317.84'$	$L = 74.25'$
$T = 990.50'$	$T = 189.86'$	$T = 37.31'$
$R = 485.00'$	$R = 231.00'$	$R = 300.00'$
$SE = 6\%$	$SE = 6\%$	$SE = EXIST.$
$RO = 126'$	$RO = 126'$	$RO = 126'$
$V = 40$ MPH	$* V = 30$ MPH	$* V = 30$ MPH



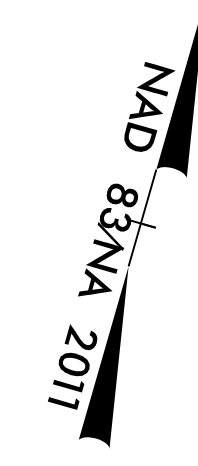
REVISIONS

8.17.99  
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1/5/2018

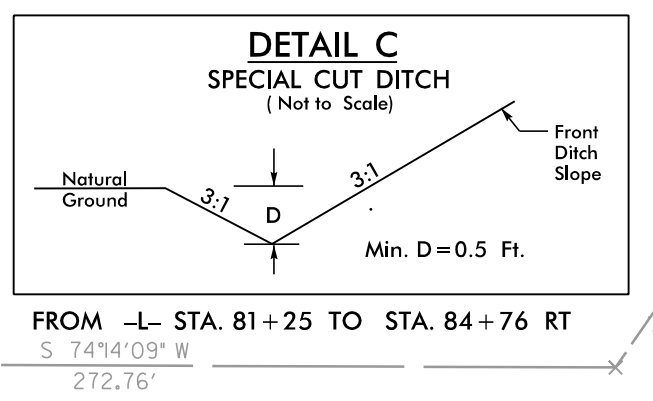
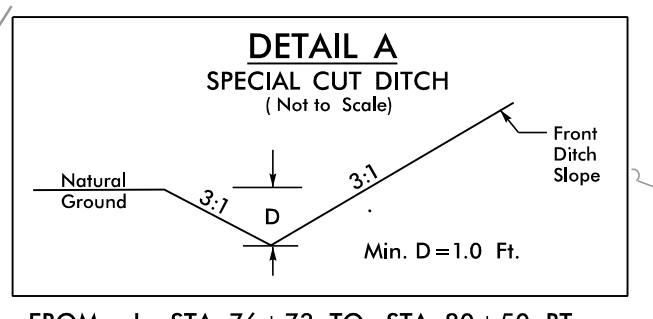
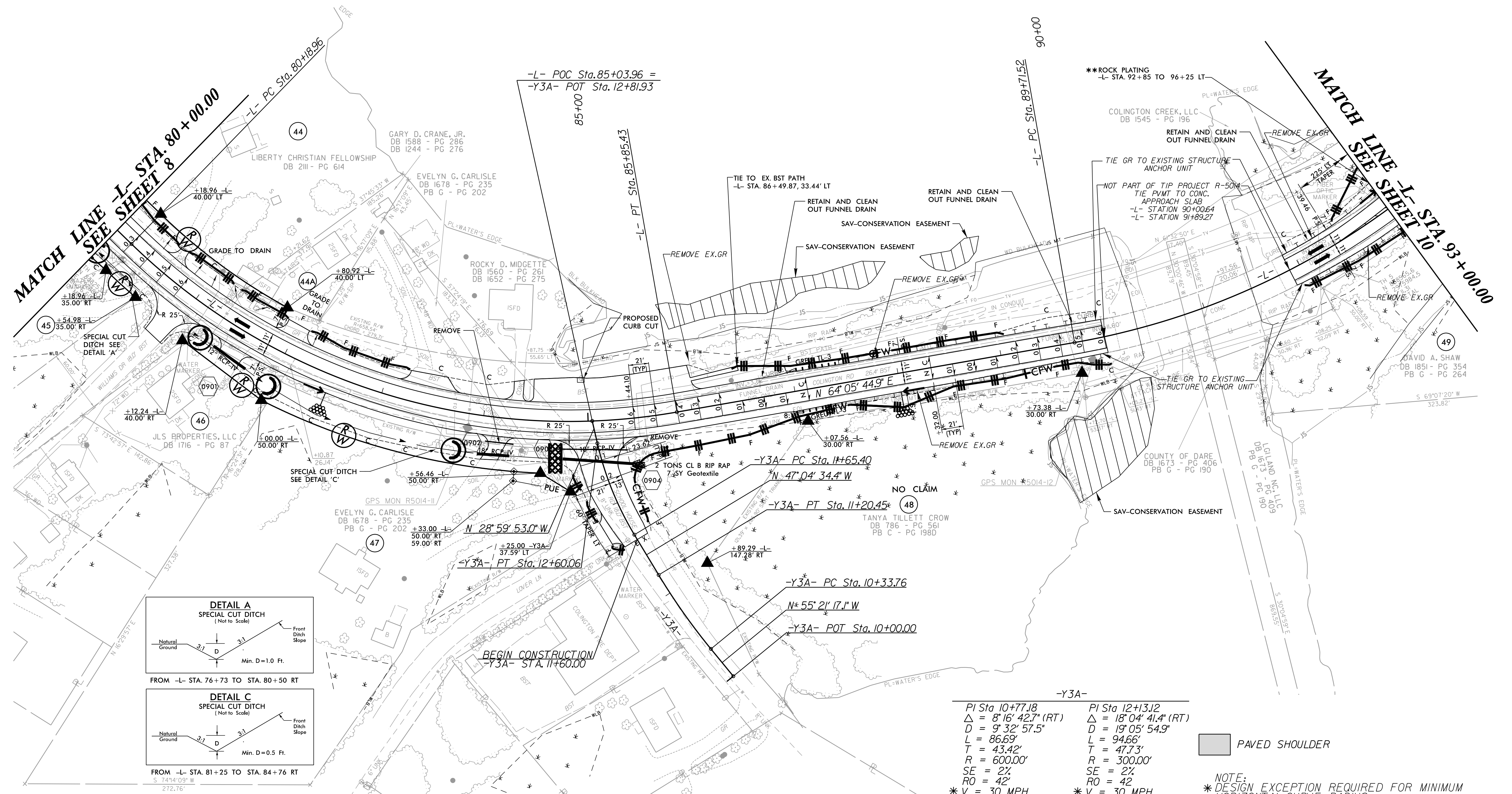


-L-

PI Sta 83+25.29 Δ = 54°05'38.6" (LT) D = 9°32'57.5" L = 566.47' T = 306.34' R = 600.00' SE = 6% RO = 126' V = 40 MPH	PI Sta 92+55.51 Δ = 43°15'31.2" (LT) D = 8°00'00.0" L = 540.73' T = 283.99' R = 716.20' SE = 6% RO = 126' V = 45 MPH
--	--



45 LIBERTY CHRISTIAN FELLOWSHIP  
DB 2III - PG 614



-Y3A-

PI Sta 10+77.18 Δ = 8°16'42.7" (RT) D = 9°32'57.5" L = 86.69' T = 43.42' R = 600.00' SE = 2% RO = 42' * V = 30 MPH	PI Sta 12+13.12 Δ = 18°04'41.4" (RT) D = 19°05'54.9" L = 94.66' T = 47.73' R = 300.00' SE = 2% RO = 42' * V = 30 MPH
--	--

PAVED SHOULDER

NOTE:  
\* DESIGN EXCEPTION REQUIRED FOR MINIMUM HORIZONTAL CURVE RADIUS.  
\* DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED  
\* SEE SHEET 26-1 FOR GEOTECHNICAL DETAILS  
\* SEE SHEET 23 FOR -L- PROFILE  
\* SEE SHEET 31 FOR -Y3A- PROFILE  
\* SAV = SUBMERGED AQUATIC VEGETATION

REVISIONS

8/17/09  
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10/26/2018

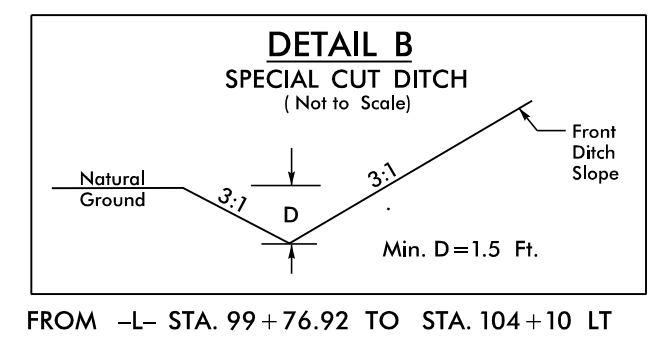


8.17.99

**CALYX**  
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Professional Engineers & Consultants

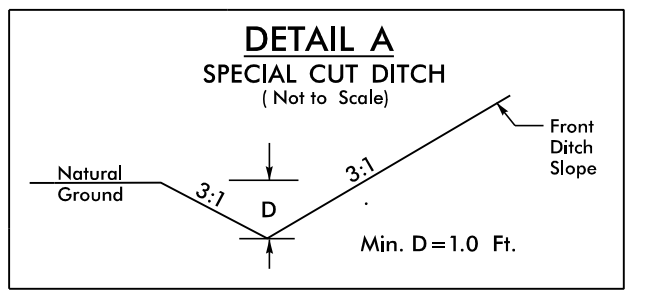
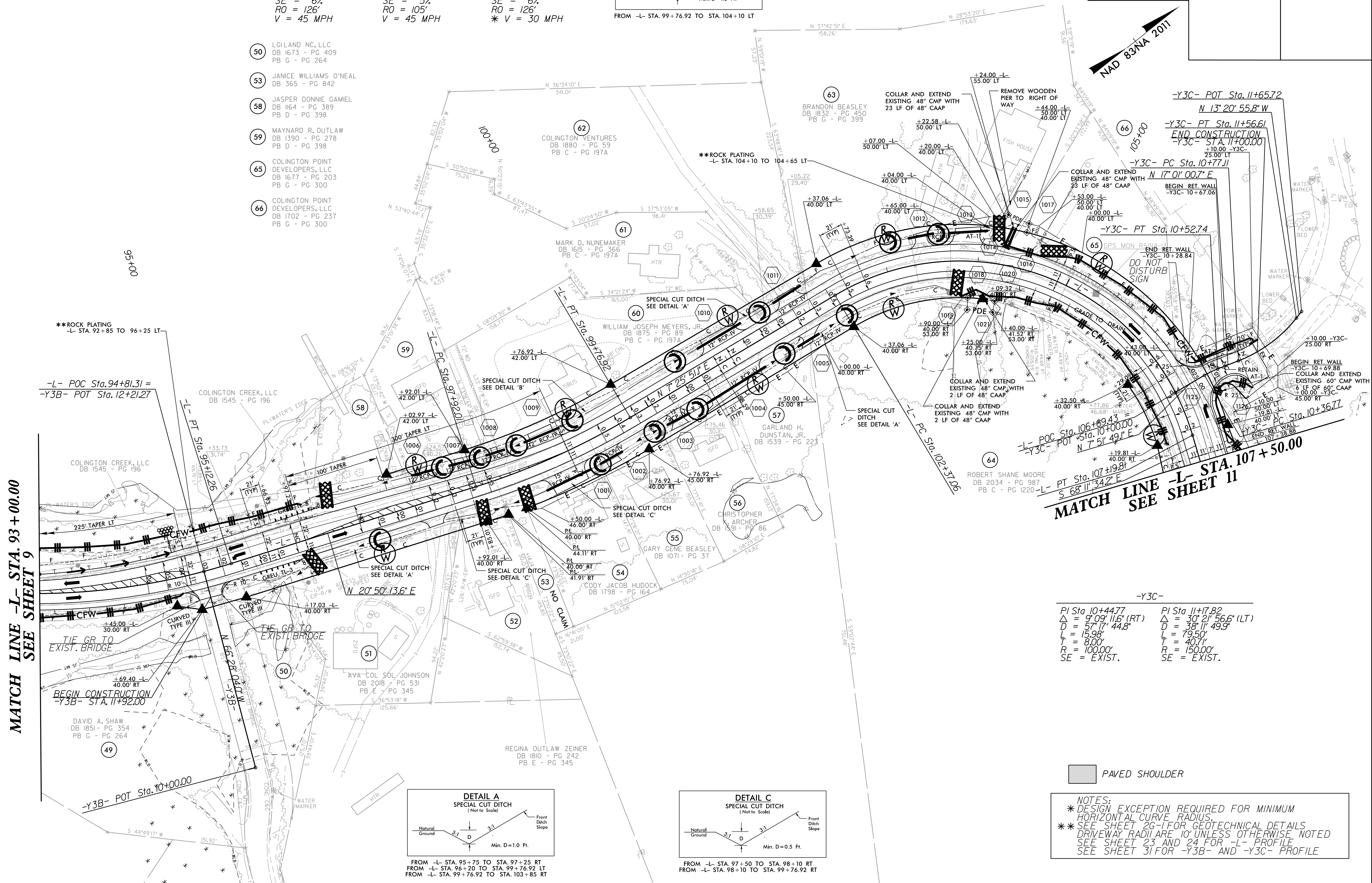
PROJECT REFERENCE NO.	SHEET NO.
R-5014	EC-27/CONST.10
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PI Sta 92+55.51 $\Delta = 43^{\circ}15'31.2" (LT)$ $D = 8^{\circ}00'00.0"$ $L = 540.73'$ $T = 283.99'$ $R = 716.20'$ $SE = 6\%$ $RO = 126'$ $V = 45 MPH$	PI Sta 98+84.89 $\Delta = 13^{\circ}24'22.6" (LT)$ $D = 7^{\circ}15'00.0"$ $L = 184.91'$ $T = 92.88'$ $R = 790.29'$ $SE = 5\%$ $RO = 105'$ $V = 45 MPH$	PI Sta 105+78.55 $\Delta = 104^{\circ}22'34.7" (RT)$ $D = 2^{\circ}37'15.8"$ $L = 482.75'$ $T = 341.49'$ $R = 265.00'$ $SE = 6\%$ $RO = 126'$ $* V = 30 MPH$
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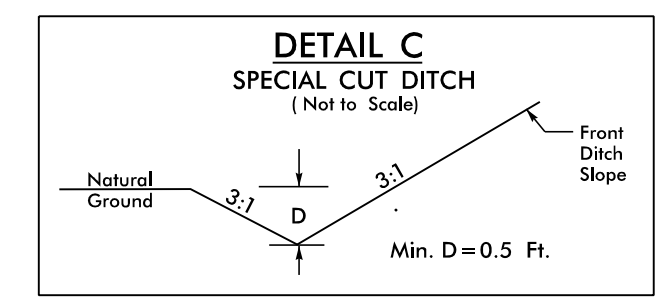


FROM -L- STA. 99+76.92 TO STA. 104+10 LT

- 50 LGLAND NC, LLC  
DB 1673 - PG 409  
PB G - PG 264
- 53 JANICE WILLIAMS O'NEAL  
DB 365 - PG 842
- 58 JASPER DONNIE GAMIEL  
DB 1164 - PG 389  
PB D - PG 398
- 59 MAYNARD R. OUTLAW  
DB 1390 - PG 278  
PB D - PG 398
- 65 COLINGTON POINT DEVELOPERS, LLC  
DB 1677 - PG 203  
PB G - PG 300
- 66 COLINGTON POINT DEVELOPERS, LLC  
DB 1702 - PG 237  
PB G - PG 300



FROM -L- STA. 95+75 TO STA. 97+25 RT  
FROM -L- STA. 96+20 TO STA. 99+76.92 LT  
FROM -L- STA. 99+76.92 TO STA. 103+85 RT



FROM -L- STA. 97+50 TO STA. 98+10 RT  
FROM -L- STA. 98+10 TO STA. 99+76.92 RT

PI Sta 10+44.77 $\Delta = 9^{\circ}09'11.6" (RT)$ $D = 57^{\circ}17'44.8"$ $L = 15.98'$ $T = 8.00'$ $R = 100.00'$ $SE = EXIST.$	PI Sta 11+17.82 $\Delta = 30^{\circ}21'56.6" (LT)$ $D = 38^{\circ}11'49.9"$ $L = 79.50'$ $T = 40.71'$ $R = 150.00'$ $SE = EXIST.$
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PAVED SHOULDER

NOTES:  
 \* DESIGN EXCEPTION REQUIRED FOR MINIMUM HORIZONTAL CURVE RADIUS.  
 \*\* SEE SHEET 26-1 FOR GEOTECHNICAL DETAILS DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED  
 SEE SHEET 23 AND 24 FOR -L- PROFILE  
 SEE SHEET 31 FOR -Y3B- AND -Y3C- PROFILE

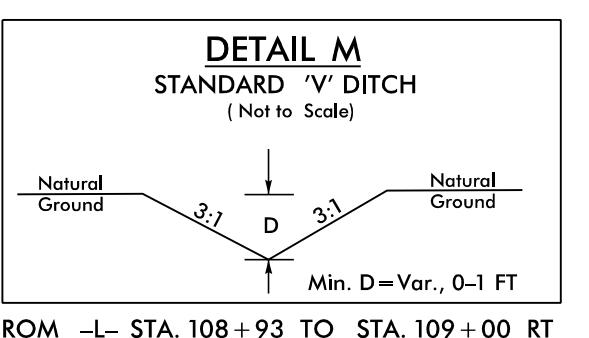
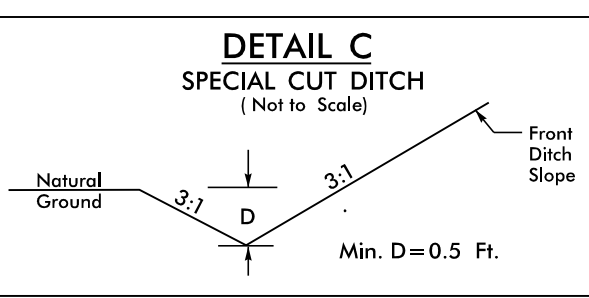
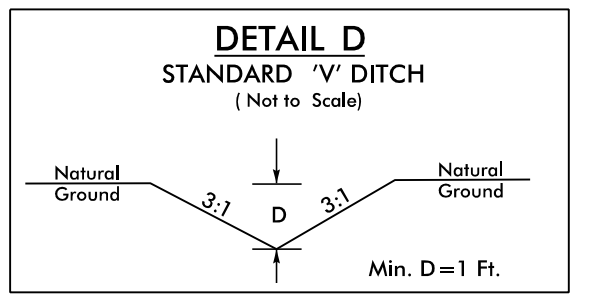
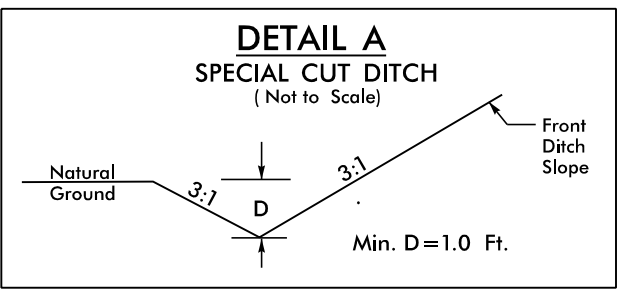
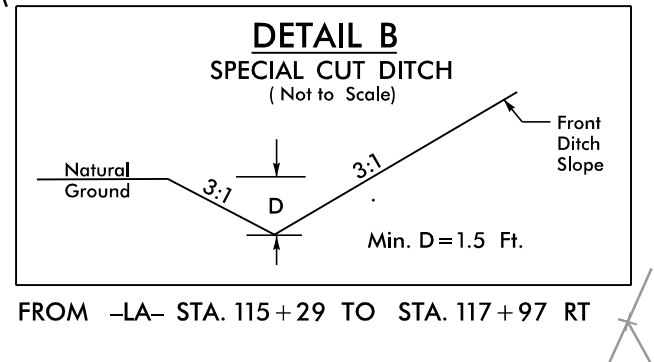
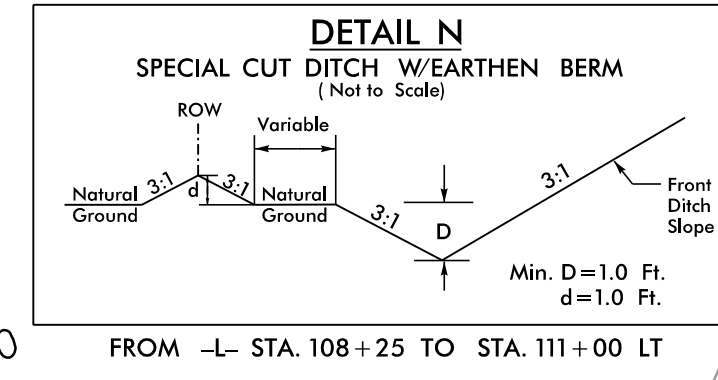
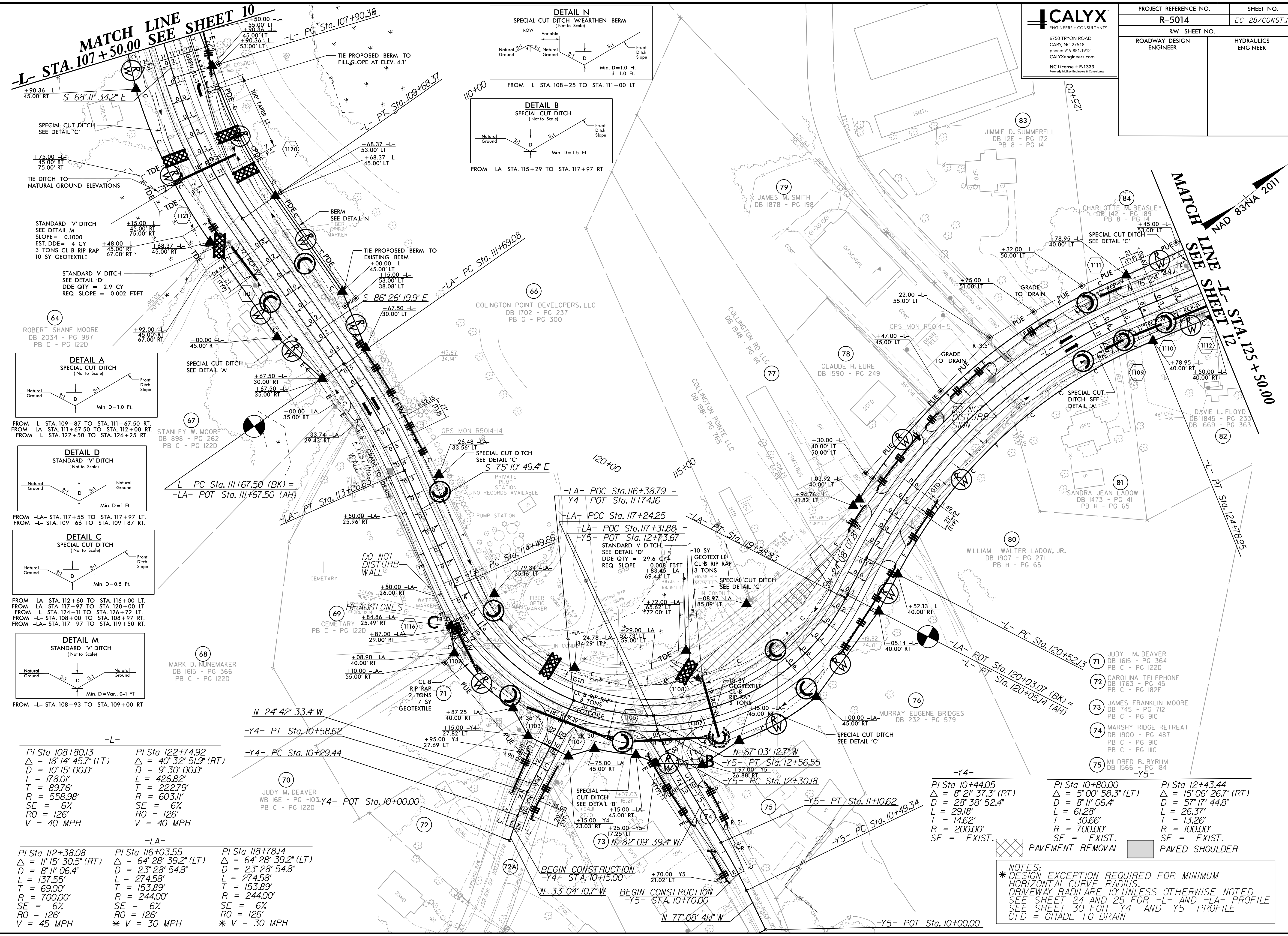
REVISIONS

MATCH LINE -L- STA. 93 + 00.00 SEE SHEET 9

MATCH LINE -L- STA. 107 + 50.00 SEE SHEET 11

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<p>PI Sta 108+80.13 Δ = 18° 14' 45.7" (LT) D = 10' 15" 00.0" L = 178.0' T = 89.76' R = 558.98' SE = 6% RO = 126' V = 40 MPH</p>	<p>PI Sta 122+74.92 Δ = 40° 32' 51.9" (RT) D = 9' 30" 00.0" L = 426.82' T = 222.79' R = 603.11' SE = 6% RO = 126' V = 40 MPH</p>
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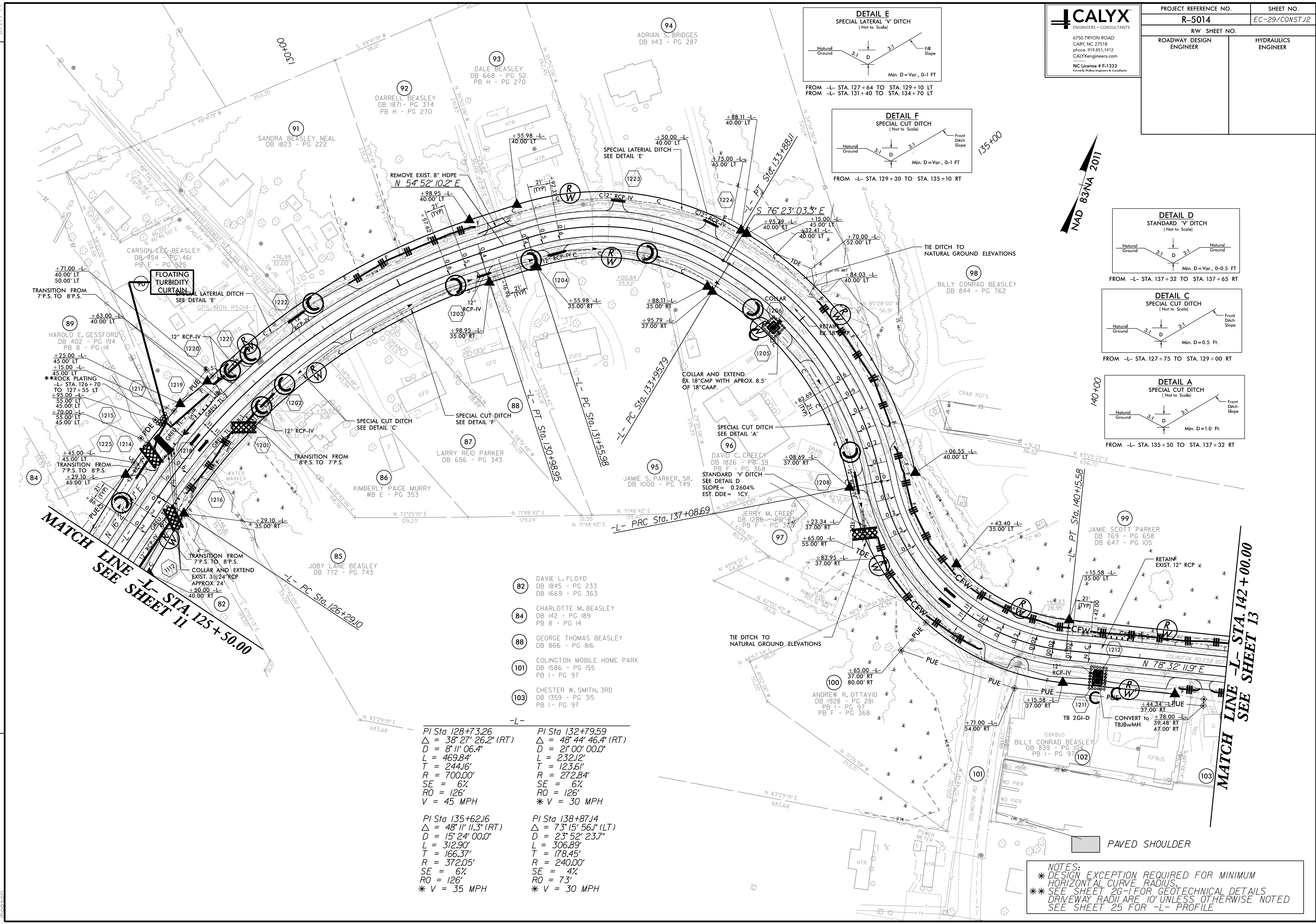
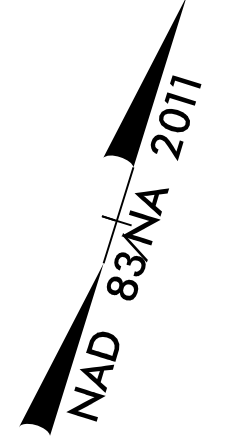
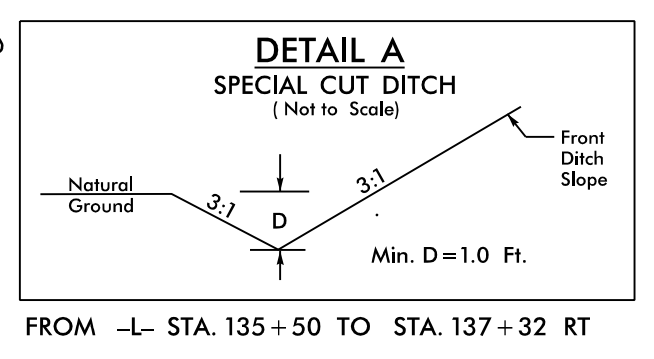
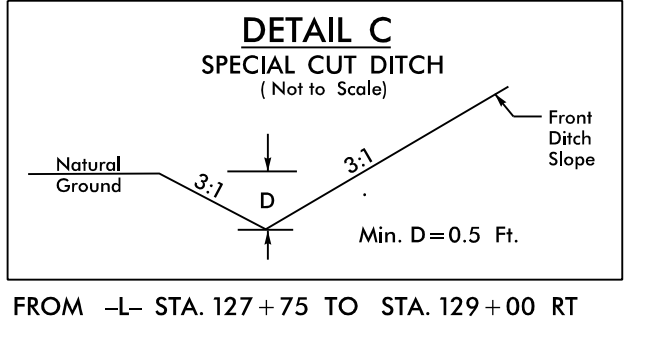
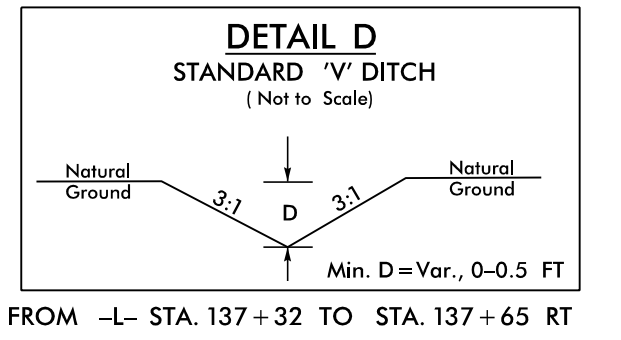
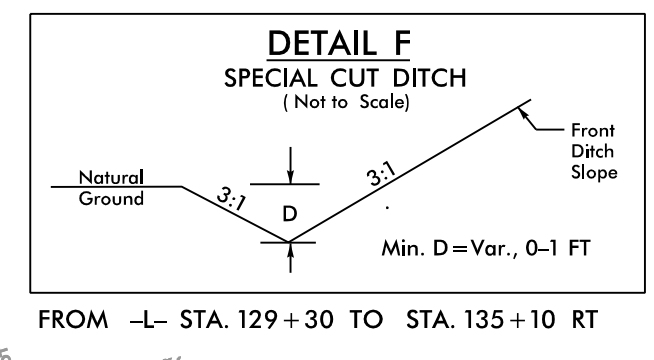
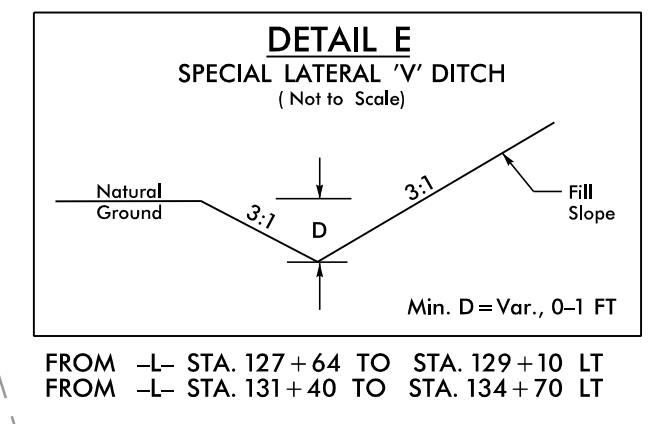
<p>PI Sta 112+38.08 Δ = 11° 15' 30.5" (RT) D = 8' 11" 06.4" L = 137.55' T = 69.00' R = 700.00' SE = 6% RO = 126' V = 45 MPH</p>	<p>PI Sta 116+03.55 Δ = 64° 28' 39.2" (LT) D = 23' 28" 54.8" L = 274.58' T = 153.89' R = 244.00' SE = 6% RO = 126' * V = 30 MPH</p>	<p>PI Sta 118+78.14 Δ = 64° 28' 39.2" (LT) D = 23' 28" 54.8" L = 274.58' T = 153.89' R = 244.00' SE = 6% RO = 126' * V = 30 MPH</p>
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NOTES:  
\* DESIGN EXCEPTION REQUIRED FOR MINIMUM HORIZONTAL CURVE RADIUS.  
DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED  
SEE SHEET 24 AND 25 FOR -L- AND -LA- PROFILE  
SEE SHEET 30 FOR -Y4- AND -Y5- PROFILE  
GTD = GRADE TO DRAIN

REVISIONS

8/17/99  
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 11/5/2018





- 82 DAVID L. FLOYD  
DB 1845 - PG 233  
DB 1669 - PG 363
- 84 CHARLOTTE M. BEASLEY  
DB 142 - PG 189  
PB 8 - PG 14
- 88 GEORGE THOMAS BEASLEY  
DB 866 - PG 816
- 101 COLINGTON MOBILE HOME PARK  
DB 1586 - PG 155  
PB 1 - PG 97
- 103 CHESTER W. SMITH, 3RD  
DB 1359 - PG 315  
PB 1 - PG 97

<p>PI Sta 128+73.26 Δ = 38° 27' 26.2" (RT) D = 8' 11" 06.4" L = 469.84' T = 244.16' R = 700.00' SE = 6% RO = 126' * V = 45 MPH</p>	<p>PI Sta 132+79.59 Δ = 48° 44' 46.4" (RT) D = 21' 00" 00.0" L = 232.12' T = 123.61' R = 272.84' SE = 6% RO = 126' * V = 30 MPH</p>
<p>PI Sta 135+62.16 Δ = 48° 11' 11.3" (RT) D = 15' 24" 00.0" L = 312.90' T = 166.37' R = 372.05' SE = 6% RO = 126' * V = 35 MPH</p>	<p>PI Sta 138+87.14 Δ = 73° 15' 56.1" (LT) D = 23' 52" 23.7" L = 306.89' T = 178.45' R = 240.00' SE = 4% RO = 73' * V = 30 MPH</p>

**MATCH LINE -L- STA. 125+50.00**  
SEE SHEET 11

**MATCH LINE -L- STA. 142+00.00**  
SEE SHEET 13

**NOTES:**  
\* DESIGN EXCEPTION REQUIRED FOR MINIMUM HORIZONTAL CURVE RADIUS.  
\*\* SEE SHEET 26-F FOR GEOTECHNICAL DETAILS  
DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED  
SEE SHEET 25 FOR -L- PROFILE

PAVED SHOULDER

REVISIONS

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 8/17/99

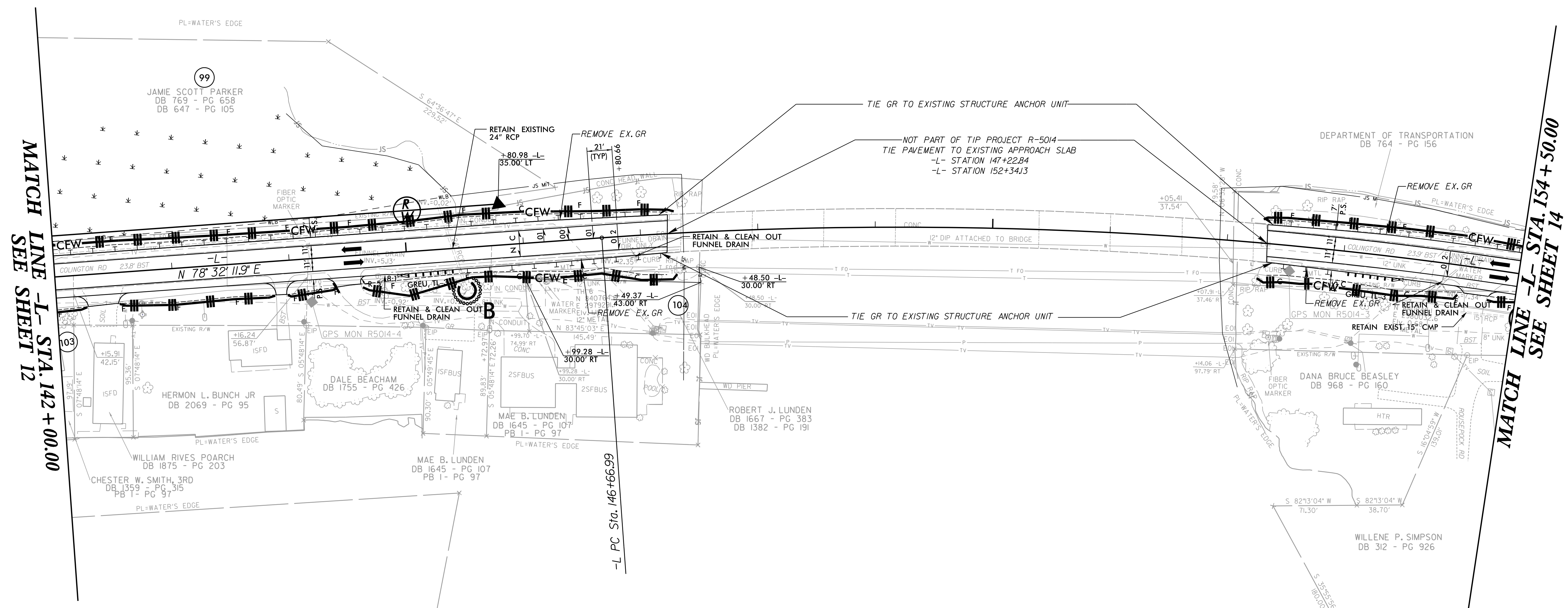


PROJECT REFERENCE NO. <b>R-5014</b>	SHEET NO. <i>EC-30/CONST.13</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

-L-  
PI Sta 151+21.7  
 $\Delta = 14' 36" 20.0" (RT)$   
 $D = 1' 37" 00.0"$   
 $L = 903.44'$   
 $T = 454.18'$   
 $R = 3,544.07'$   
 $SE = 2\%$   
 $RO = 42'$   
 $V = 80 MPH$

NAD 83 NA 2011

REVISIONS



MATCH LINE -L- STA. 142 + 00.00  
SEE SHEET 12

MATCH LINE -L- STA. 154 + 50.00  
SEE SHEET 14

PAVED SHOULDER

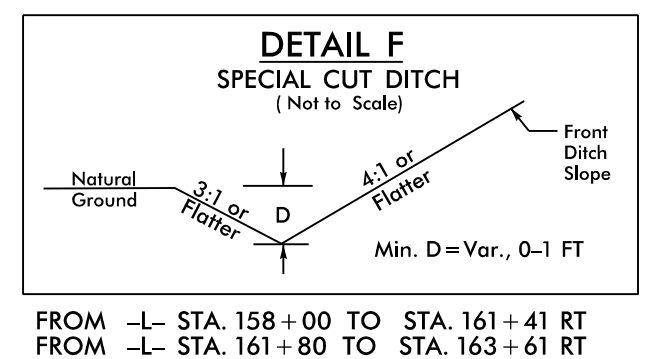
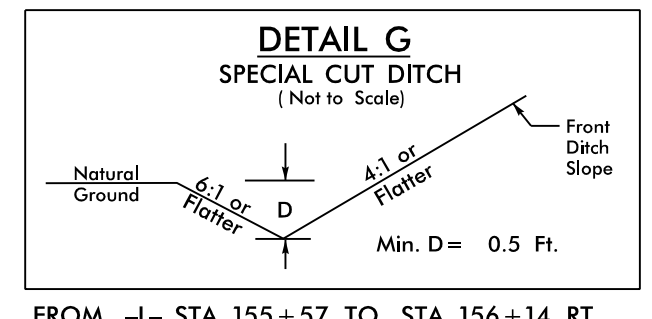
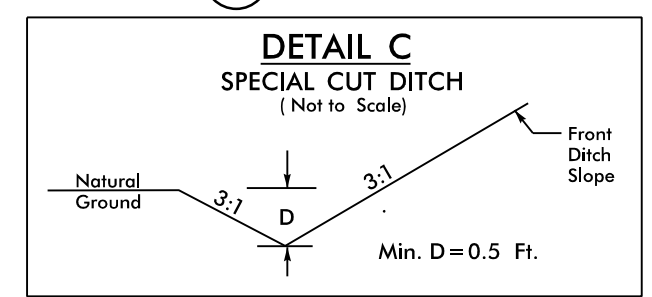
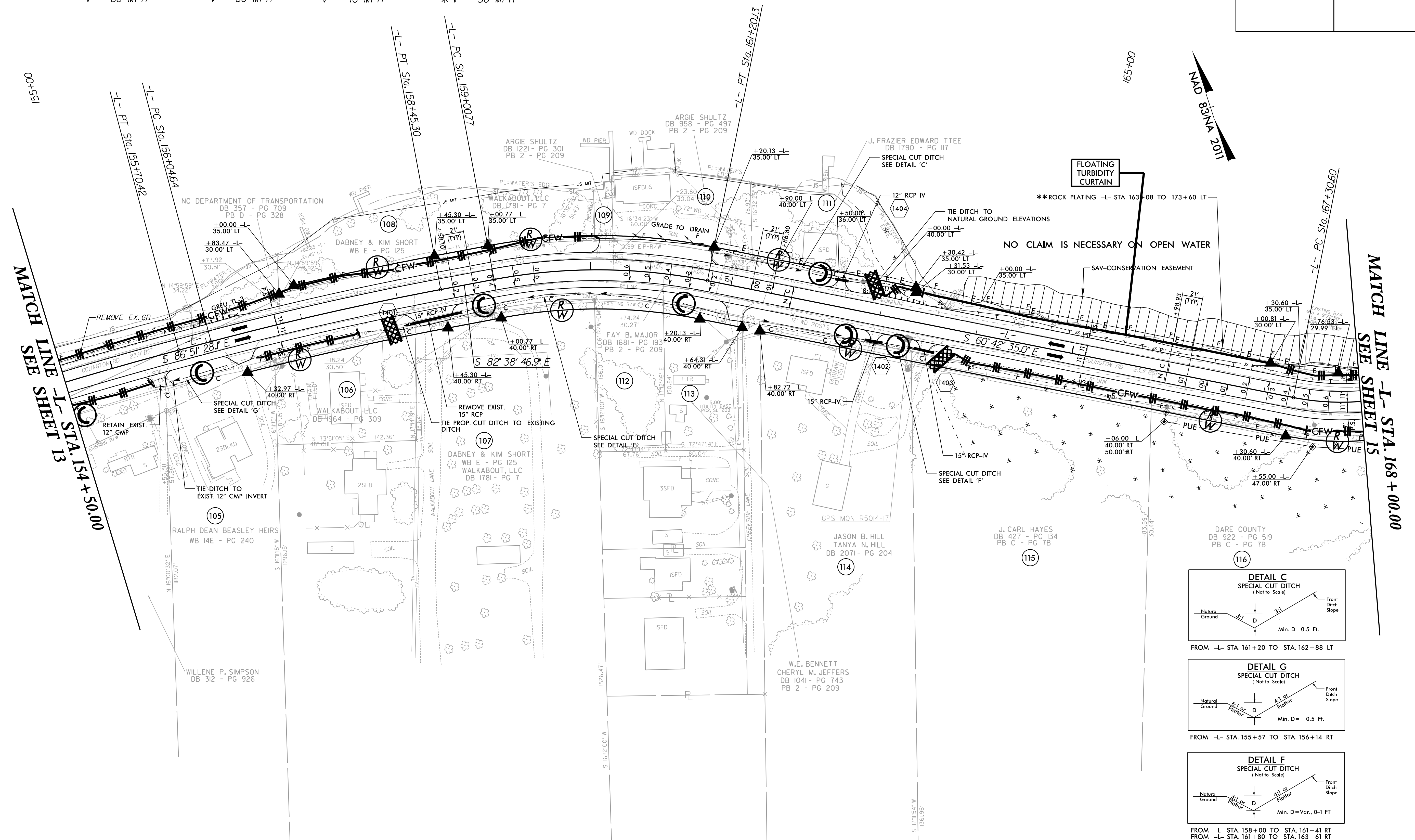
NOTES:  
DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED  
SEE SHEET 25 AND 26 FOR -L- PROFILE

8/17/99  
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10/1/2018  
10/1/2018  
10/1/2018



PROJECT REFERENCE NO. <b>R-5014</b>	SHEET NO. EC-31/CONST.14
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PI Sta 151+21.7 Δ = 14° 36' 20.0" (RT) D = 1° 37' 00.0" L = 903.44' T = 454.18' R = 3,544.07' SE = 2% RO = 42' V = 80 MPH	PI Sta 157+25.02 Δ = 4° 12' 41.2" (RT) D = 1° 45' 00.0" L = 240.65' T = 120.38' R = 3,274.04' SE = 2% RO = 42' V = 80 MPH	PI Sta 160+11.81 Δ = 21° 56' 11.8" (RT) D = 10° 00' 00.0" L = 219.37' T = 111.04' R = 572.96' SE = 6% RO = 126' V = 40 MPH	PI Sta 168+56.10 Δ = 53° 18' 40.2" (LT) D = 22° 55' 05.9" L = 232.61' T = 125.49' R = 250.00' SE = 6% RO = 126' * V = 30 MPH
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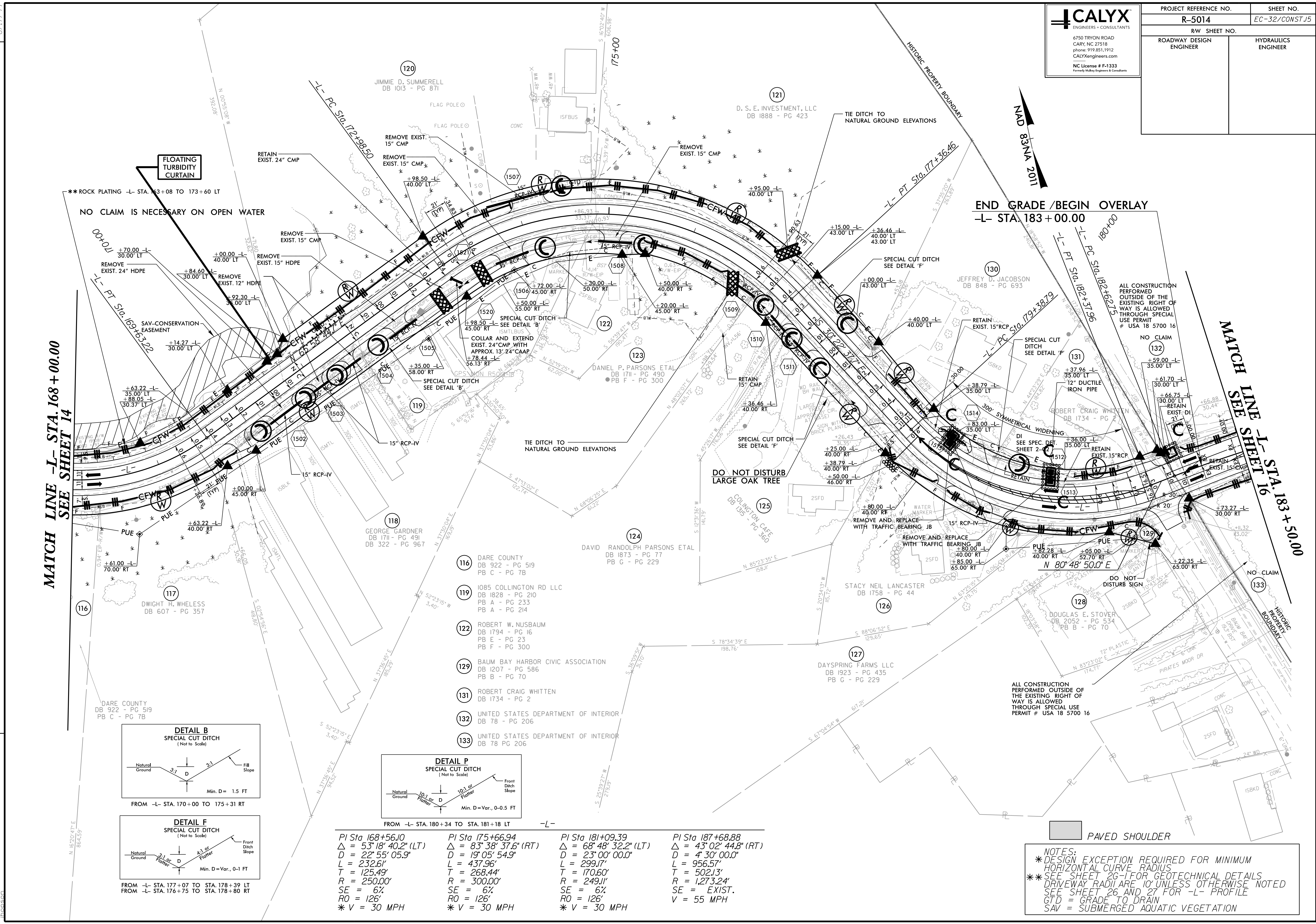
**NOTES:**  
\* DESIGN EXCEPTION REQUIRED FOR MINIMUM HORIZONTAL CURVE RADIUS AND HORIZONTAL SSD  
\*\* SEE SHEET 26-1 FOR GEOTECHNICAL DETAILS  
DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED  
SEE SHEET 26 FOR -L- PROFILE  
SAV = SUBMERGED AQUATIC VEGETATION

PAVED SHOULDER

REVISIONS

8/17/99  
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10/20/08

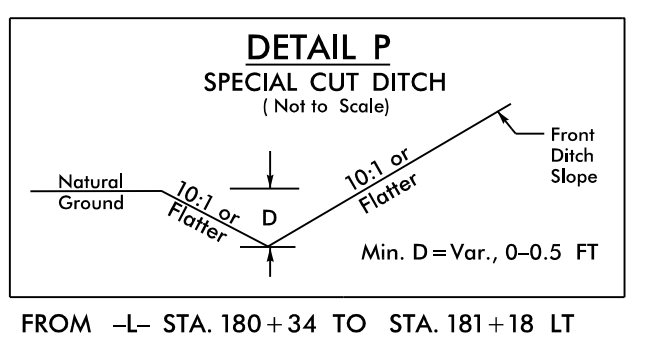
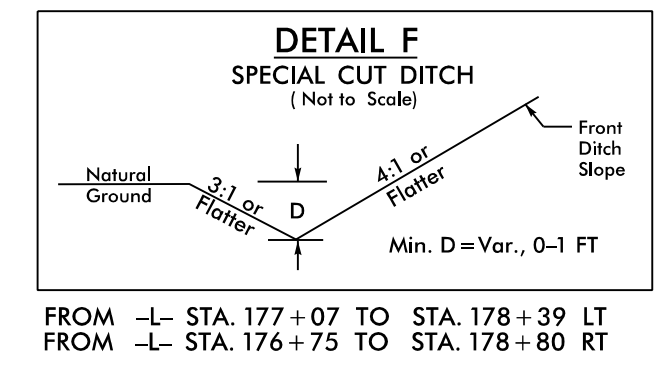
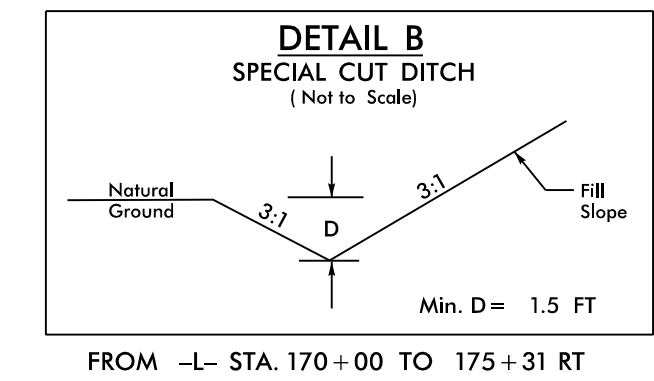




REVISIONS  
RIGHT OF WAY REVISION - 02/05/2018 - PLACED NOTE AND NOT DISTURB SIGN ON PARCEL 129.  
RIGHT OF WAY REVISION - 06/06/2018 - ADJUSTED CONSTRUCTION EASEMENT ON PARCEL 153.

MATCH LINE -L- STA. 168 + 00.00  
SEE SHEET 14

MATCH LINE -L- STA. 183 + 50.00  
SEE SHEET 16



<b>PI Sta 168+56.10</b> $\Delta = 53' 18" 40.2" (LT)$ $D = 22' 55" 05.9"$ $L = 232.61'$ $T = 125.49'$ $R = 250.00'$ $SE = 6\%$ $RO = 126'$ $* V = 30 MPH$	<b>PI Sta 175+66.94</b> $\Delta = 83' 38" 37.6" (RT)$ $D = 19' 05" 54.9"$ $L = 437.96'$ $T = 268.44'$ $R = 300.00'$ $SE = 6\%$ $RO = 126'$ $* V = 30 MPH$	<b>PI Sta 181+09.39</b> $\Delta = 68' 48" 32.2" (LT)$ $D = 23' 00" 00.0"$ $L = 299.17'$ $T = 170.60'$ $R = 249.11'$ $SE = 6\%$ $RO = 126'$ $* V = 30 MPH$	<b>PI Sta 187+68.88</b> $\Delta = 43' 02" 44.8" (RT)$ $D = 4' 30" 00.0"$ $L = 956.57'$ $T = 502.13'$ $R = 1,273.24'$ $V = EXIST.$ $V = 55 MPH$
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PAVED SHOULDER

**NOTES:**  
 \* DESIGN EXCEPTION REQUIRED FOR MINIMUM HORIZONTAL CURVE RADII  
 \*\* SEE SHEET 26-F FOR GEOTECHNICAL DETAILS  
 DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED  
 SEE SHEET 26 AND 27 FOR -L- PROFILE  
 GTD = GRADE TO DRAIN  
 SAV = SUBMERGED AQUATIC VEGETATION