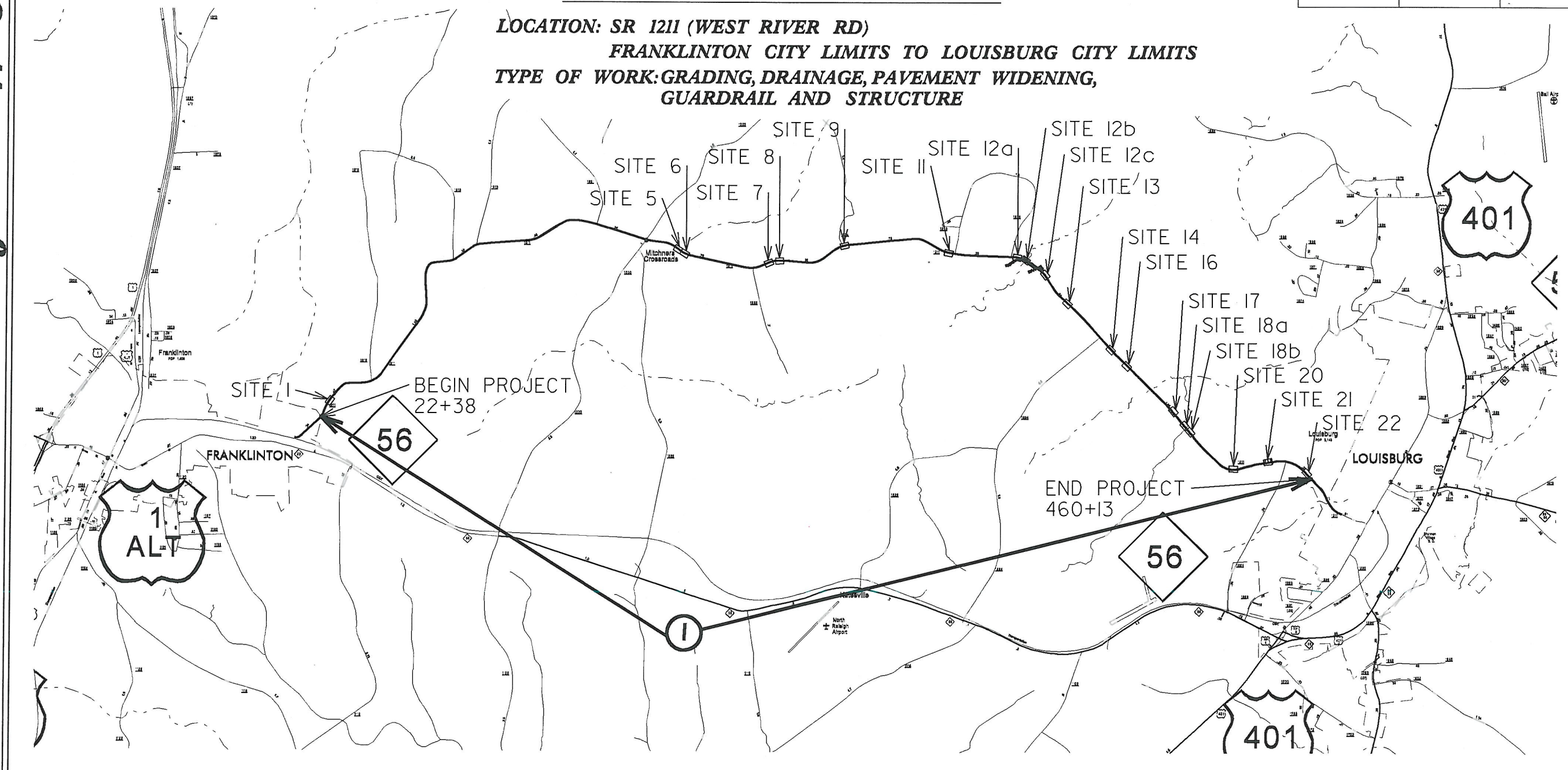


STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5509	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
49011.1.1	HRRR-1211(3)	PE	
49011.2.FD1	HRRR-1211(3)	RW	
49011.3.FD1	HRRR-1211(3)	CONST.	

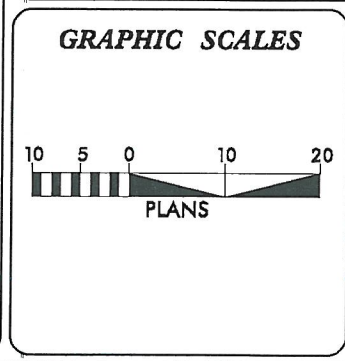
See Sheet 1-A For Index of Sheets

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS
FRANKLIN COUNTY

LOCATION: SR 1211 (WEST RIVER RD)
 FRANKLINTON CITY LIMITS TO LOUISBURG CITY LIMITS
 TYPE OF WORK: GRADING, DRAINAGE, PAVEMENT WIDENING,
 GUARDRAIL AND STRUCTURE



CONTRACT: DE00099 PROJECT: W-5509



DESIGN DATA

ADT 2011 = 1,700

PROJECT LENGTH

Length Roadway Project W-5509 = 8.29 Miles

Prepared in the Office of:
DIVISION OF HIGHWAYS
 2612 N. DUKE ST

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: SEPT 2013

LETTING DATE:

Ben Upshaw, PE
 PROJECT ENGINEER

Chris Hoffman
 PROJECT DESIGN ENGINEER

DIVISION DESIGN ENGINEER
 ROADWAY DESIGN AND HYDRAULICS

SIGNATURE

DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA

FIFTH DIVISION
 J. WALLY BOWMAN, P.E.
 DIVISION ENGINEER

05-AUG-2014 10:29
 S:\CNC\0413\Franklin\W5509\Roadway\Proj\W5509\RDJ.psh.Ldgn
 \$\$\$\$USERNAME\$\$\$

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	⊙
Property Corner	⊗
Property Monument	⊠
Parcel/Sequence Number	Ⓜ
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	-----
Proposed Wetland Boundary	-----
Existing Endangered Animal Boundary	-----
Existing Endangered Plant Boundary	-----
Known Soil Contamination: Area or Site	☠ ☠
Potential Soil Contamination: Area or Site	☠ ☠

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	⊙
Well	⊙
Small Mine	⊗
Foundation	⊠
Area Outline	⊠
Cemetery	⊠
Building	⊠
School	⊠
Church	⊠
Dam	⊠

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	⊠
Jurisdictional Stream	-----
Buffer Zone 1	-----
Buffer Zone 2	-----
Flow Arrow	←
Disappearing Stream	-----
Spring	⊙
Wetland	-----
Proposed Lateral, Tail, Head Ditch	-----
False Sump	⊠

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	⊙
Switch	⊠
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	-----
Proposed Right of Way Line with Concrete or Granite RW Marker	-----
Proposed Control of Access Line with Concrete CA Marker	-----
Existing Control of Access	-----
Proposed Control of Access	-----
Existing Easement Line	-----
Proposed Temporary Construction Easement	-----
Proposed Temporary Drainage Easement	-----
Proposed Permanent Drainage Easement	-----
Proposed Permanent Drainage / Utility Easement	-----
Proposed Permanent Utility Easement	-----
Proposed Temporary Utility Easement	-----
Proposed Aerial Utility Easement	-----
Proposed Permanent Easement with Iron Pin and Cap Marker	-----

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	-----
Proposed Slope Stakes Fill	-----
Proposed Curb Ramp	-----
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊙
Pavement Removal	⊠

VEGETATION:

Single Tree	⊙
Single Shrub	⊙
Hedge	-----
Woods Line	-----

Orchard	⊙
Vineyard	⊙

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	-----
Bridge Wing Wall, Head Wall and End Wall	-----
MINOR:	
Head and End Wall	-----
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	⊠
Paved Ditch Gutter	-----
Storm Sewer Manhole	⊙
Storm Sewer	-----

UTILITIES:

POWER:	
Existing Power Pole	⊙
Proposed Power Pole	⊙
Existing Joint Use Pole	⊙
Proposed Joint Use Pole	⊙
Power Manhole	⊙
Power Line Tower	⊠
Power Transformer	⊠
U/G Power Cable Hand Hole	⊠
H-Frame Pole	⊙
Recorded U/G Power Line	-----
Designated U/G Power Line (S.U.E.*)	-----

TELEPHONE:

Existing Telephone Pole	⊙
Proposed Telephone Pole	⊙
Telephone Manhole	⊙
Telephone Booth	⊠
Telephone Pedestal	⊠
Telephone Cell Tower	⊙
U/G Telephone Cable Hand Hole	⊠
Recorded U/G Telephone Cable	-----
Designated U/G Telephone Cable (S.U.E.*)	-----
Recorded U/G Telephone Conduit	-----
Designated U/G Telephone Conduit (S.U.E.*)	-----
Recorded U/G Fiber Optics Cable	-----
Designated U/G Fiber Optics Cable (S.U.E.*)	-----

WATER:

Water Manhole	⊙
Water Meter	⊙
Water Valve	⊙
Water Hydrant	⊙
Recorded U/G Water Line	-----
Designated U/G Water Line (S.U.E.*)	-----
Above Ground Water Line	-----

TV:

TV Satellite Dish	⊙
TV Pedestal	⊠
TV Tower	⊙
U/G TV Cable Hand Hole	⊠
Recorded U/G TV Cable	-----
Designated U/G TV Cable (S.U.E.*)	-----
Recorded U/G Fiber Optic Cable	-----
Designated U/G Fiber Optic Cable (S.U.E.*)	-----

GAS:

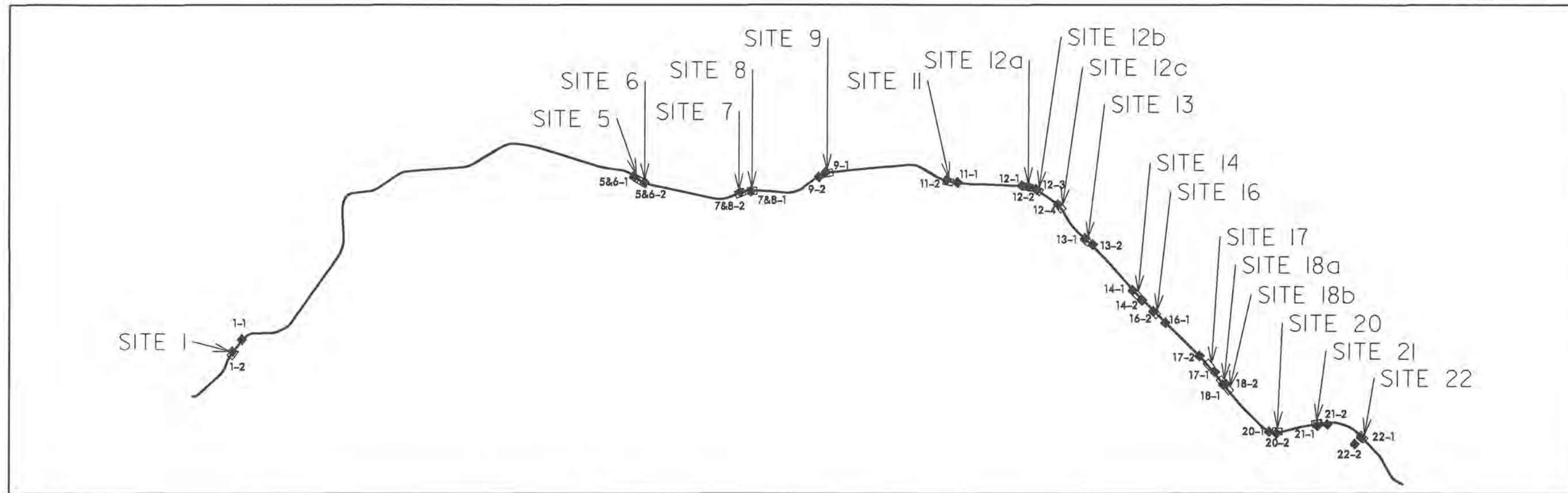
Gas Valve	⊙
Gas Meter	⊙
Recorded U/G Gas Line	-----
Designated U/G Gas Line (S.U.E.*)	-----
Above Ground Gas Line	-----

SANITARY SEWER:

Sanitary Sewer Manhole	⊙
Sanitary Sewer Cleanout	⊙
U/G Sanitary Sewer Line	-----
Above Ground Sanitary Sewer	-----
Recorded SS Forced Main Line	-----
Designated SS Forced Main Line (S.U.E.*)	-----

MISCELLANEOUS:

Utility Pole	⊙
Utility Pole with Base	⊙
Utility Located Object	⊙
Utility Traffic Signal Box	⊠
Utility Unknown U/G Line	-----
U/G Tank; Water, Gas, Oil	⊠
Underground Storage Tank, Approx. Loc.	⊠
A/G Tank; Water, Gas, Oil	⊠
Geoenvironmental Boring	⊙
U/G Test Hole (S.U.E.*)	⊙
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.



SURVEY CONTROL SYMBOL

SURVEY CONTROL DATA

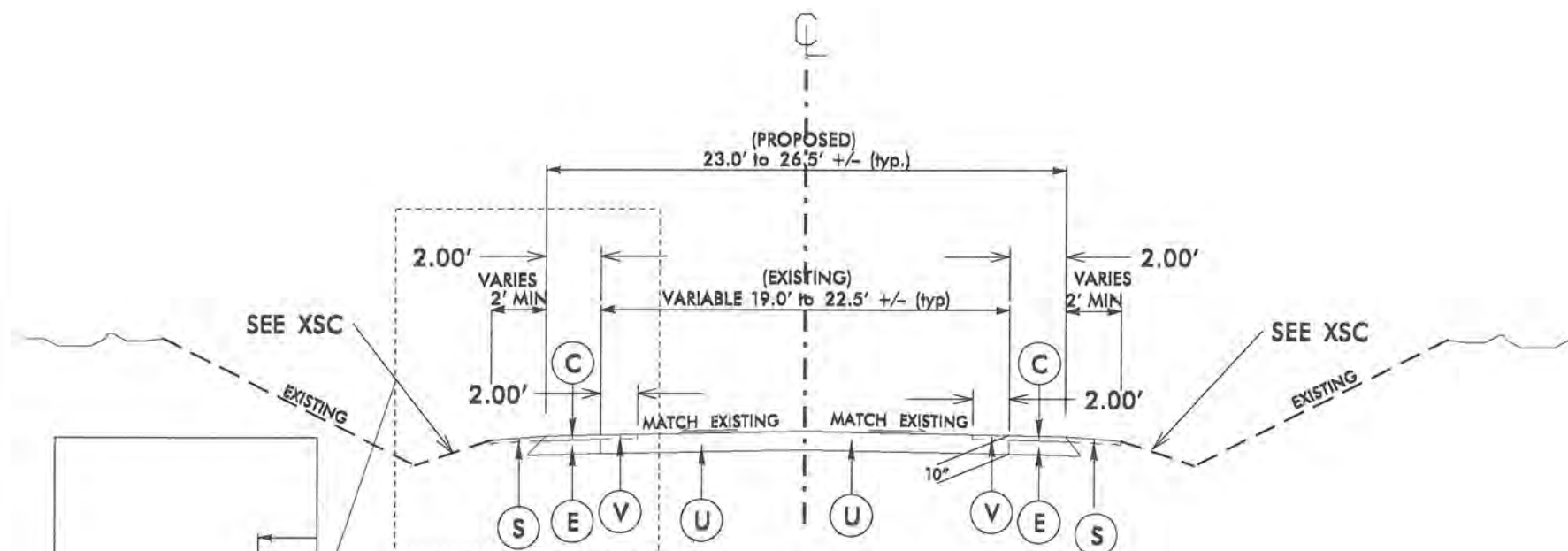
POINT	NORTH	EAST	ELEVATION
SITE 1-1	858971.7420	2168459.0600	413.57
SITE 1-2	858605.3240	2168158.8560	408.05
SITE 5&6-1	864062.9810	2180694.8620	362.55
SITE 5&6-2	863895.3240	2181018.5190	354.82
SITE 7&8-1	863619.9530	2184352.7000	331.55
SITE 7&8-2	863596.2960	2184009.6550	322.35
SITE 9-1	864218.2320	2186681.6030	318.77
SITE 9-2	864064.6110	2186472.6590	321.48
SITE 11-1	863908.2180	2190783.6310	255.13
SITE 11-2	863981.1960	2190444.5540	260.73
SITE 12-1	863808.9360	2192790.3580	215.61
SITE 12-2	863788.6150	2192997.3440	213.05
SITE 12-3	863681.0130	2193257.7410	213.60
SITE 12-4	863225.0370	2193925.2200	217.69
SITE 13-1	862178.0210	2194774.8660	248.40
SITE 13-2	861980.0150	2195015.2410	263.12
SITE 14-1	860555.3840	2196270.6060	271.69
SITE 14-2	860247.4840	2196563.4750	267.73
SITE 16-1	859546.1470	2197295.7900	254.28
SITE 16-2	859904.1190	2196917.9610	262.08
SITE 17-1	858014.7610	2198850.3860	245.57
SITE 17-2	858516.9450	2198367.4990	251.05

SURVEY CONTROL SYMBOL

SURVEY CONTROL DATA

POINT	NORTH	EAST	ELEVATION
SITE 18-1	857616.0760	2199105.6690	226.30
SITE 18-2	857637.6440	2199200.0780	220.82
SITE 20-1	856156.6700	2200555.8320	282.64
SITE 20-2	856103.6280	2200789.1350	287.31
SITE 21-1	856349.3670	2202080.7000	273.41
SITE 21-2	856385.4500	2202387.4140	271.04
SITE 22-1	855971.6100	2203436.4510	242.13
SITE 22-2	855771.2670	2203245.7740	239.51

SURVEY CONTROL		
SR 1211		
WEST RIVER RD		
DIVISION 05 FRANKLIN COUNTY		
REVISIONS	INT.	DATE
N.C. DEPARTMENT of TRANSPORTATION DIVISION of HIGHWAYS DIVISION FIVE DESIGN UNIT		SCALE: N/A DATE: 29 APR 2014
PREPARED BY: CAH		REVIEWED BY: BJU
REVIEWED BY: _____		



TYPICAL SECTION NO. 1
 -L- STA. 22 + 38 TO 321 + 60
 -L- STA. 324 + 40 TO 460 + 13

EXISTING SECTION NOT REQUIRING WIDENING
 -L- STA. 292 + 00 TO 295 + 50 LT

- NOTES:**
 1). PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

PAVEMENT SCHEDULE	
C	PROP. APPROX. 2.0" ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
E	PROP. APPROX. 8" ASPHALT CONC. BASE COURSE, TYPE B25.B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
U	EXISTING PAVEMENT.
S	SHOULDER RECONSTRUCTION
V	MILL EXISTING PAVEMENT, 2" DEPTH.

- PIPE OUTLET DITCH CUTS /RELOCATIONS (SEE XSC)**
 -L- STA. 191+38 (Site 5, Lt.)
 -L- STA. 194+75 (Site 6, Lt.)
 -L- STA. 225+56 (Site 7, Lt.)
 -L- STA. 293+88 (Site 11, Rt.)
 -L- STA. 366+62 (Site 14, Rt.)
 -L- STA. 375+10 (Site 16, Rt.)
 -L- STA. 399+44 (Site 17, Lt.)
 -L- STA. 442+21 (Site 21, Lt.)

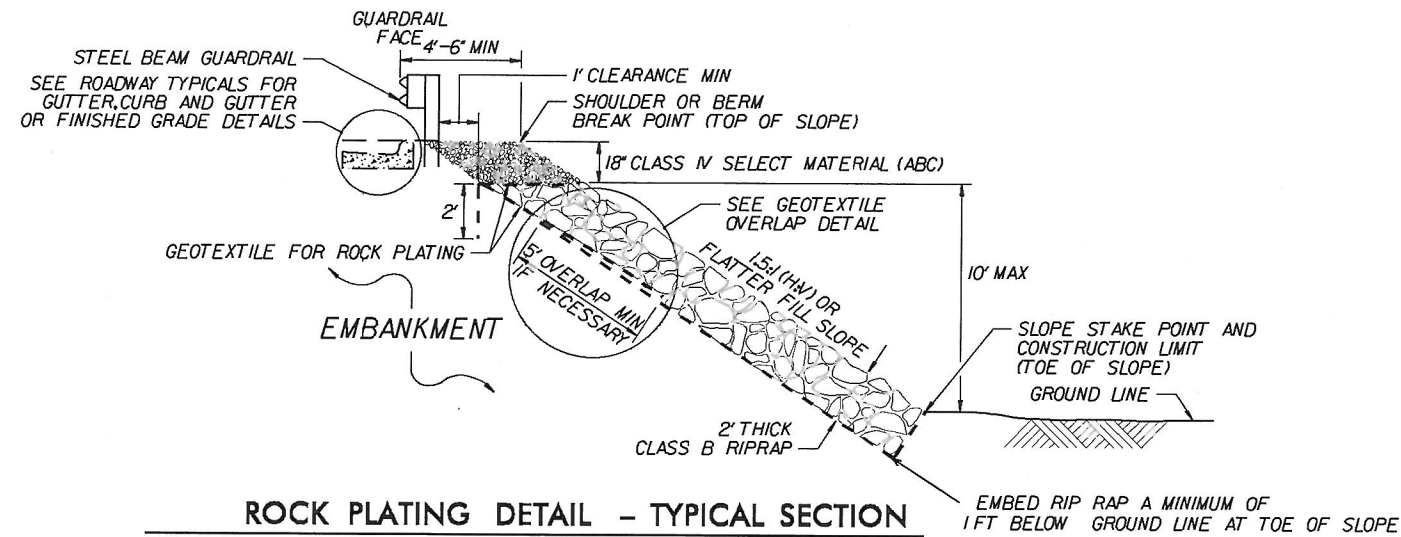
- DITCH & SLOPE CUTS /RELOCATIONS (SEE XSC)**
 -L- STA. 28+88 TO 29+45 (Site 1, Rt.)
 -L- STA. 193+95 TO 194+65 (Site 6, Rt.)
 -L- STA. 229+25 TO 229+99 (Site 8, Rt.)
 -L- STA. 326+62 TO 330+38 (Site 12c, Rt.)
 -L- STA. 428+00 TO 430+76 (Site 20, Lt.)

- 15" SIDE DRAINS**
- | | |
|---------------------|---------------------|
| -L- STA. 31+95 Rt. | -L- STA. 35+12 Lt. |
| -L- STA. 45+70 Lt. | -L- STA. 55+35 Rt. |
| -L- STA. 60+71 Lt. | -L- STA. 61+47 Rt. |
| -L- STA. 77+35 Lt. | -L- STA. 81+89 Lt. |
| -L- STA. 99+44 Rt. | -L- STA. 110+95 Rt. |
| -L- STA. 111+32 Rt. | -L- STA. 115+05 Rt. |
| -L- STA. 115+81 Rt. | -L- STA. 116+55 Rt. |
| -L- STA. 117+48 Rt. | -L- STA. 147+75 Lt. |
| -L- STA. 228+31 Rt. | -L- STA. 245+05 Lt. |
| -L- STA. 270+10 Lt. | -L- STA. 289+38 Lt. |
| -L- STA. 361+56 Lt. | -L- STA. 423+05 Lt. |

- NOTE:**
 1. THE LOCATIONS AND QUANTITIES OF THE 15" SIDE DRAINS ARE APPROXIMATE, ADJUST ACCORDINGLY, AS DIRECTED BY THE ENGINEER.
 2. SHOULD IT BE DEEMED THAT ADDITIONAL LOCATIONS ARE REQUIRED, THE CONTRACTOR WILL BE PAID AS PER THE STANDARD PAY ITEM PRICE.
 3. SHOULD IT BE DEEMED THAT ANY LOCATION IS NOT REQUIRED, NO ADDITIONAL COMPENSATION WILL BE PROVIDED.

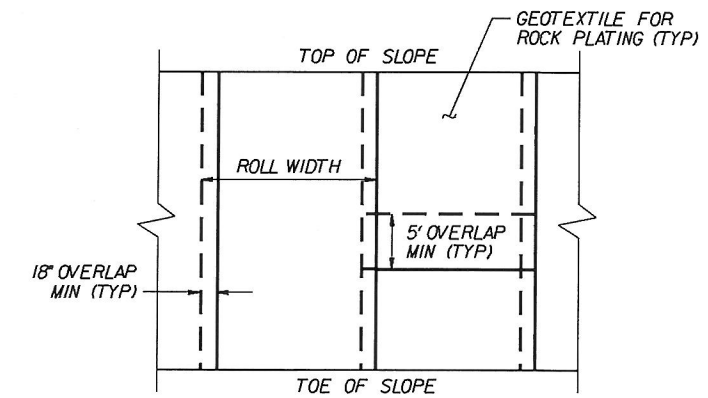
DIVISION FIVE DESIGN P.E. SIGNATURE	SHOULDER WIDENING SR 1211 (WEST RIVER ROAD)	 DIVISION OF HIGHWAYS DIVISION FIVE DESIGN UNIT
	DIVISION 05 FRANKLIN COUNTY REVISIONS: INIT. DATE	

FOR ROCK PLATING, SEE SECTION 275 OF THE STANDARD SPECIFICATIONS.



ROCK PLATING DETAIL - TYPICAL SECTION

RT STA 321+00 ± TO RT STA 322+25 ±
 LT STA 405+57 ± TO LT STA 407+75 ±
 RT STA 405+57 ± TO RT STA 407+75 ±



**GEOTEXTILE OVERLAP DETAIL
(PLAN VIEW)**

ROCK PLATING DETAIL		
DIVISION 05 FRANKLIN COUNTY		
REVISIONS		SCALE: NTS DATE: 30 APR 2014
	INT. DATE	PREPARED BY: CAH
		REVIEWED BY: BJU
N.C. DEPARTMENT of TRANSPORTATION DIVISION of HIGHWAYS DIVISION FIVE DESIGN UNIT		REVIEWED BY:

ENVIRONMENTAL DETAIL SR 1211 (WEST RIVER ROAD) SITE 18

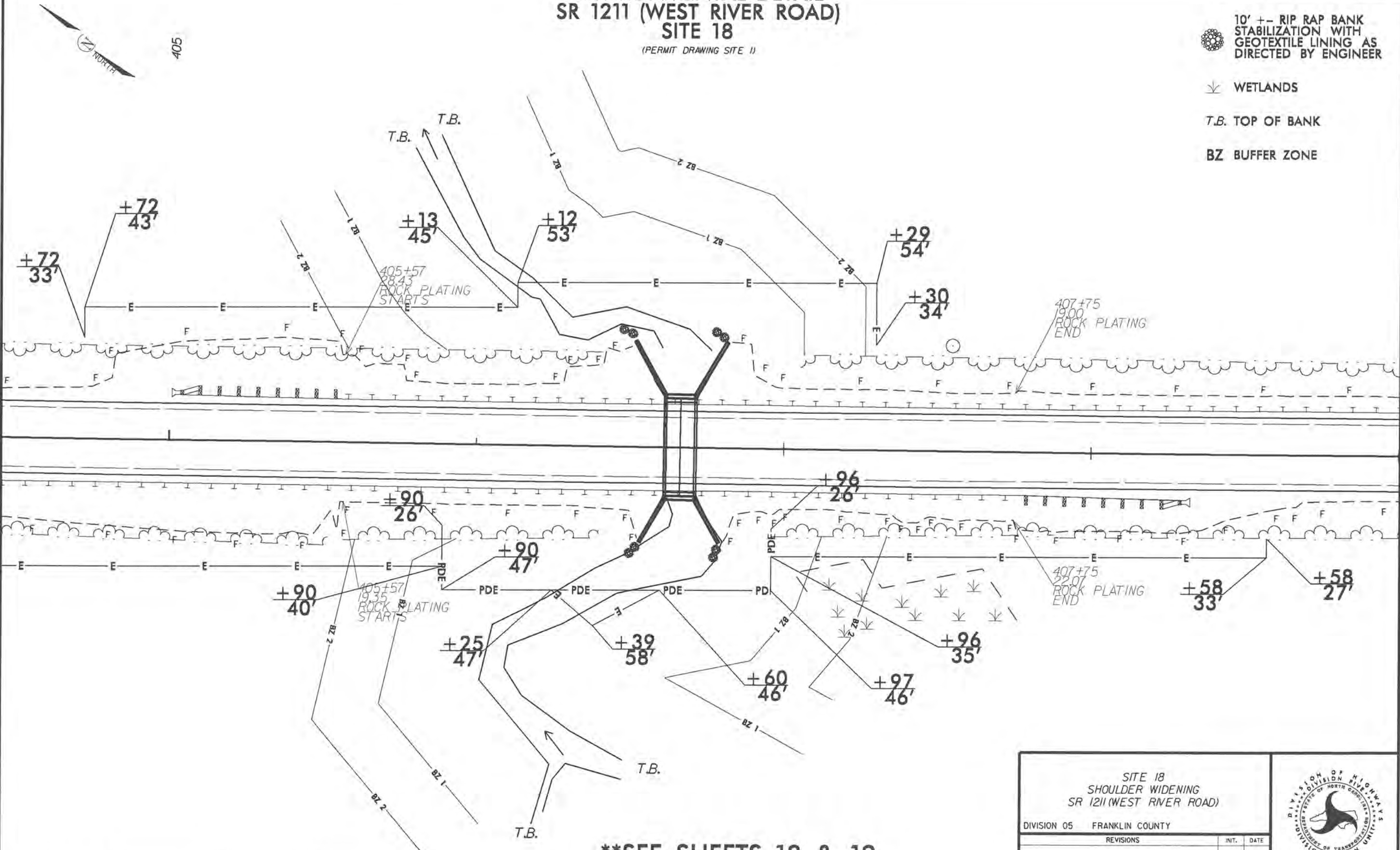
(PERMIT DRAWING SITE 1)

 10' +/- RIP RAP BANK STABILIZATION WITH GEOTEXTILE LINING AS DIRECTED BY ENGINEER


 WETLANDS

T.B. TOP OF BANK

BZ BUFFER ZONE



****SEE SHEETS 18 & 19
FOR CULVERT DETAILS
AND EASEMENT LIMITS**

SITE 18 SHOULDER WIDENING SR 1211 (WEST RIVER ROAD)		
DIVISION 05 FRANKLIN COUNTY		
REVISIONS	INIT.	DATE
N.C. DEPARTMENT of TRANSPORTATION DIVISION of HIGHWAYS DIVISION FIVE DESIGN UNIT		SCALE: 1"=30' DATE: 25 Jun 13 PREPARED BY: CAH REVIEWED BY:

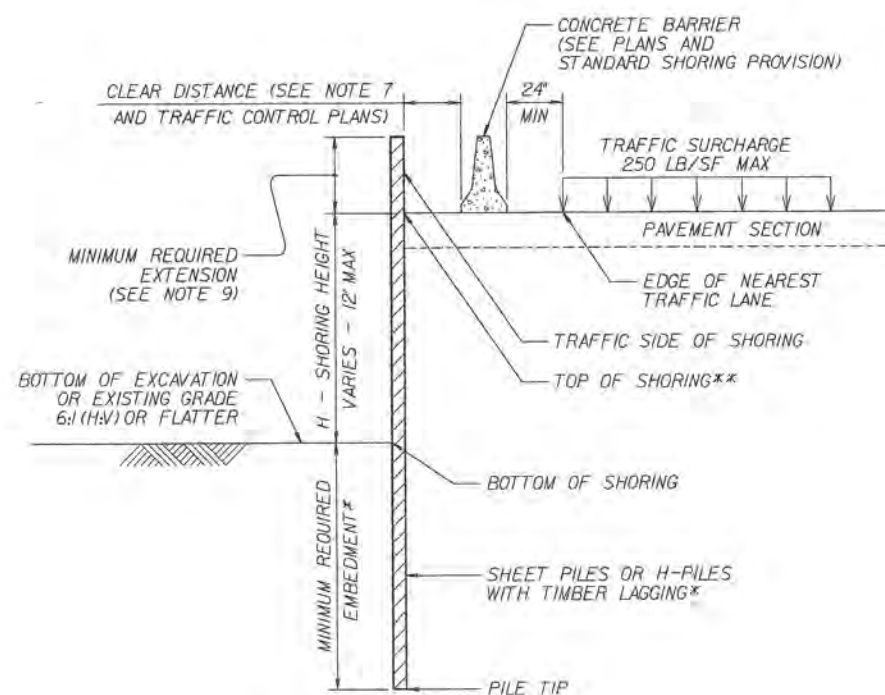
GROUNDWATER CONDITION (SEE NOTE 6)	H SHORING HEIGHT (FT)	SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT						SURCHARGE CASE WITH TRAFFIC IMPACT					
		SHEET PILES		H-PILES WITH TIMBER LAGGING				SHEET PILES		H-PILES WITH TIMBER LAGGING			
		MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS (IN ³ /FT)	MINIMUM REQUIRED EMBEDMENT* (FT) (SEE NOTE 10)			MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS (IN ³ /FT)	MINIMUM REQUIRED EMBEDMENT* (FT) (SEE NOTE 10)				
				HP 10x42	HP 12x53	HP 14x73			HP 10x42	HP 12x53	HP 14x73		
GROUNDWATER ELEVATION BETWEEN BOTTOM OF SHORING AND PILE TIP	< 6	11.5	4.5	11.5	11.5	11.5	16.0	12.0	13.0	13.0	13.0		
	7	13.0	7.0	13.0	13.0	13.0	17.0	14.5	14.5	14.5	14.5		
	8	15.0	10.0	--	15.0	15.0	18.0	17.0	--	15.5	15.5		
	9	17.0	14.0	--	17.0	17.0	19.0	20.0	--	17.0	17.0		
	10	18.5	19.5	--	--	--	20.0	23.5	--	--	18.5		
	11	20.5	26.0	--	--	--	21.0	28.0	--	--	20.0		
GROUNDWATER ELEVATION BELOW PILE TIP	< 6	7.5	3.0	8.0	8.0	8.0	11.0	10.0	9.5	9.5	9.5		
	7	8.5	4.5	9.5	9.5	9.5	12.0	12.0	10.5	10.5	10.5		
	8	10.0	6.5	10.5	10.5	10.5	12.5	14.0	11.5	11.5	11.5		
	9	11.0	9.5	--	12.0	12.0	13.5	16.5	--	12.5	12.5		
	10	12.5	13.0	--	--	13.5	14.0	19.5	--	13.5	13.5		
	11	13.5	17.0	--	--	14.5	15.0	22.5	--	--	14.5		
12	15.0	21.5	--	--	16.0	16.0	25.5	--	--	15.5			

MINIMUM REQUIRED EMBEDMENT AND SECTION MODULUS

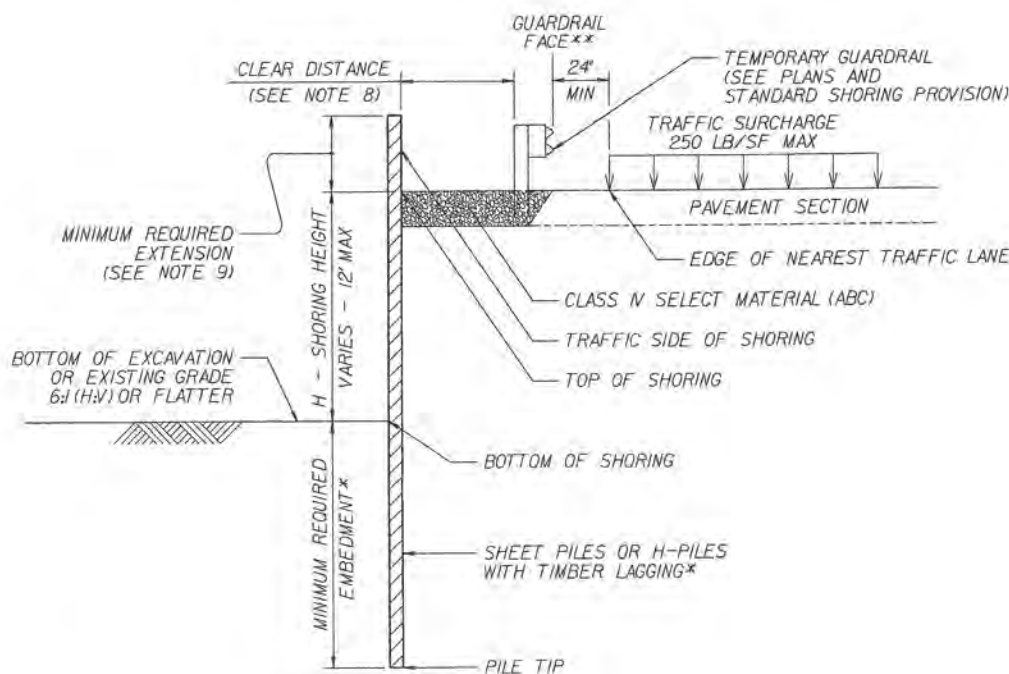
***DO NOT USE H-PILES WITH TIMBER LAGGING FOR GROUNDWATER CONDITION, SHORING HEIGHT AND H-PILE SIZE SHOWN IF MINIMUM REQUIRED EMBEDMENT IS "--".**

NOTES:

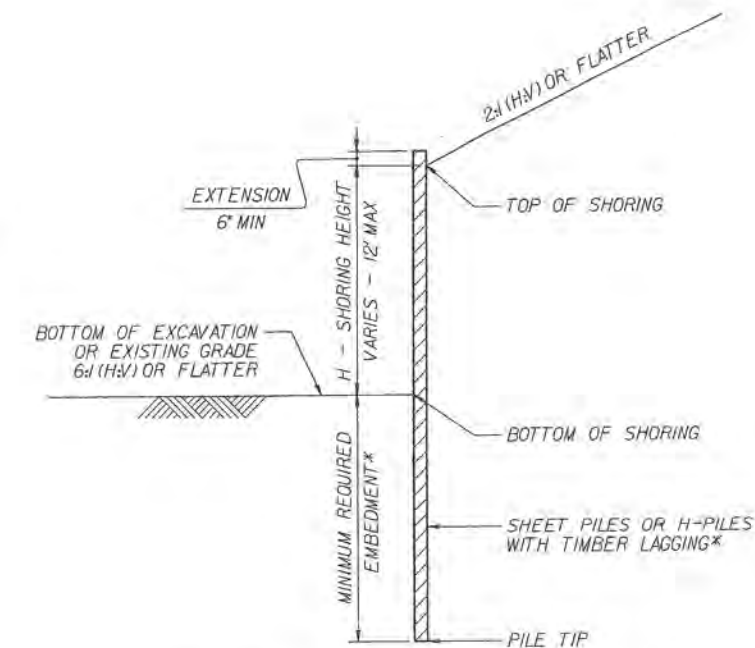
- AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING AS NOTED IN THE PLANS.
- FOR STANDARD TEMPORARY SHORING, SEE STANDARD SHORING PROVISION.
- STANDARD TEMPORARY SHORING IS BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
UNIT WEIGHT, $\gamma = 120$ LB/CF
FRICTION ANGLE, $\phi = 30$ DEGREES
COHESION, $c = 0$ LB/SF
- DO NOT USE STANDARD TEMPORARY SHORING IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE.
- DO NOT USE STANDARD TEMPORARY SHORING WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS WITHIN THE EMBEDMENT DEPTH.
- USE GROUNDWATER ELEVATION NOTED IN THE PLANS. IF NO GROUNDWATER ELEVATION IS SHOWN IN THE PLANS, USE "GROUNDWATER ELEVATION BETWEEN BOTTOM OF SHORING AND PILE TIP" FOR GROUNDWATER CONDITION. DO NOT USE STANDARD TEMPORARY SHORING IF GROUNDWATER IS ABOVE BOTTOM OF SHORING.
- AT THE CONTRACTOR'S OPTION OR IF AVAILABLE CLEAR DISTANCE IS LESS THAN THE MINIMUM REQUIRED FOR CONCRETE BARRIER, SET BARRIER NEXT TO AND UP AGAINST TRAFFIC SIDE OF PILES AND USE "SURCHARGE CASE WITH TRAFFIC IMPACT".
- AT THE CONTRACTOR'S OPTION OR IF AVAILABLE CLEAR DISTANCE IS LESS THAN 4' FOR TEMPORARY GUARDRAIL, ATTACH GUARDRAIL TO TRAFFIC SIDE OF PILES AS SHOWN IN THE PLANS AND USE "SURCHARGE CASE WITH TRAFFIC IMPACT".
- MINIMUM REQUIRED EXTENSION IS 6' FOR "SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT" AND 32" FOR "SURCHARGE CASE WITH TRAFFIC IMPACT".
- MINIMUM REQUIRED EMBEDMENT FOR H-PILES WITH TIMBER LAGGING IS BASED ON DRIVEN H-PILES AT MAXIMUM 6' SPACING. AT THE CONTRACTOR'S OPTION, EMBEDMENT DEPTHS MAY BE REDUCED BY 25% FOR DRILLED-IN H-PILES.
- SUBMIT A "STANDARD TEMPORARY SHORING SELECTION FORM" AT LEAST 7 DAYS BEFORE STARTING TEMPORARY SHORING CONSTRUCTION. UP TO 3 SHORING LOCATIONS MAY BE INCLUDED ON EACH FORM. STANDARD SHORING SELECTION FORMS ARE AVAILABLE FROM:
connect.ncdot.gov/resources/Geotechnical/Pages/Geotech_Forms_Details.aspx
- CONTACT THE ENGINEER IF PILES DO NOT ATTAIN THE MINIMUM REQUIRED EMBEDMENT.



CONCRETE BARRIER
**TOP OF SHORING = EDGE OF PAVEMENT



TEMPORARY GUARDRAIL
**GUARDRAIL FACE = EDGE OF PAVEMENT



STANDARD TEMPORARY SHORING (SLOPE CASE)
*SEE TABLE ABOVE.

STANDARD TEMPORARY SHORING (SURCHARGE CASE)
*SEE TABLE ABOVE.



GEOTECHNICAL ENGINEERING UNIT
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

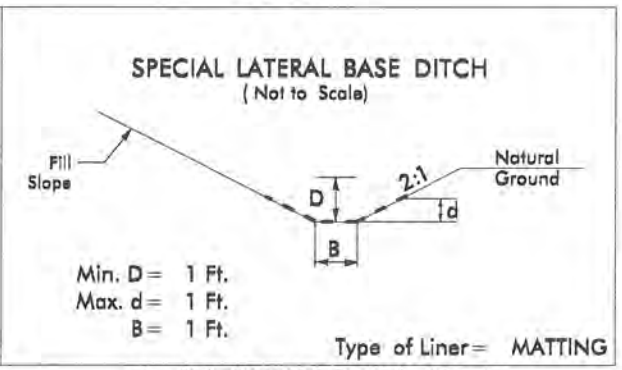
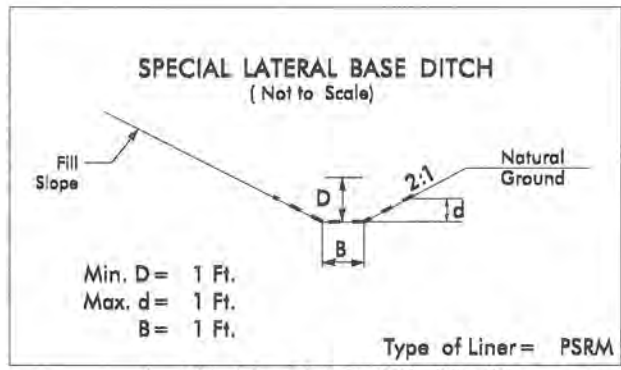
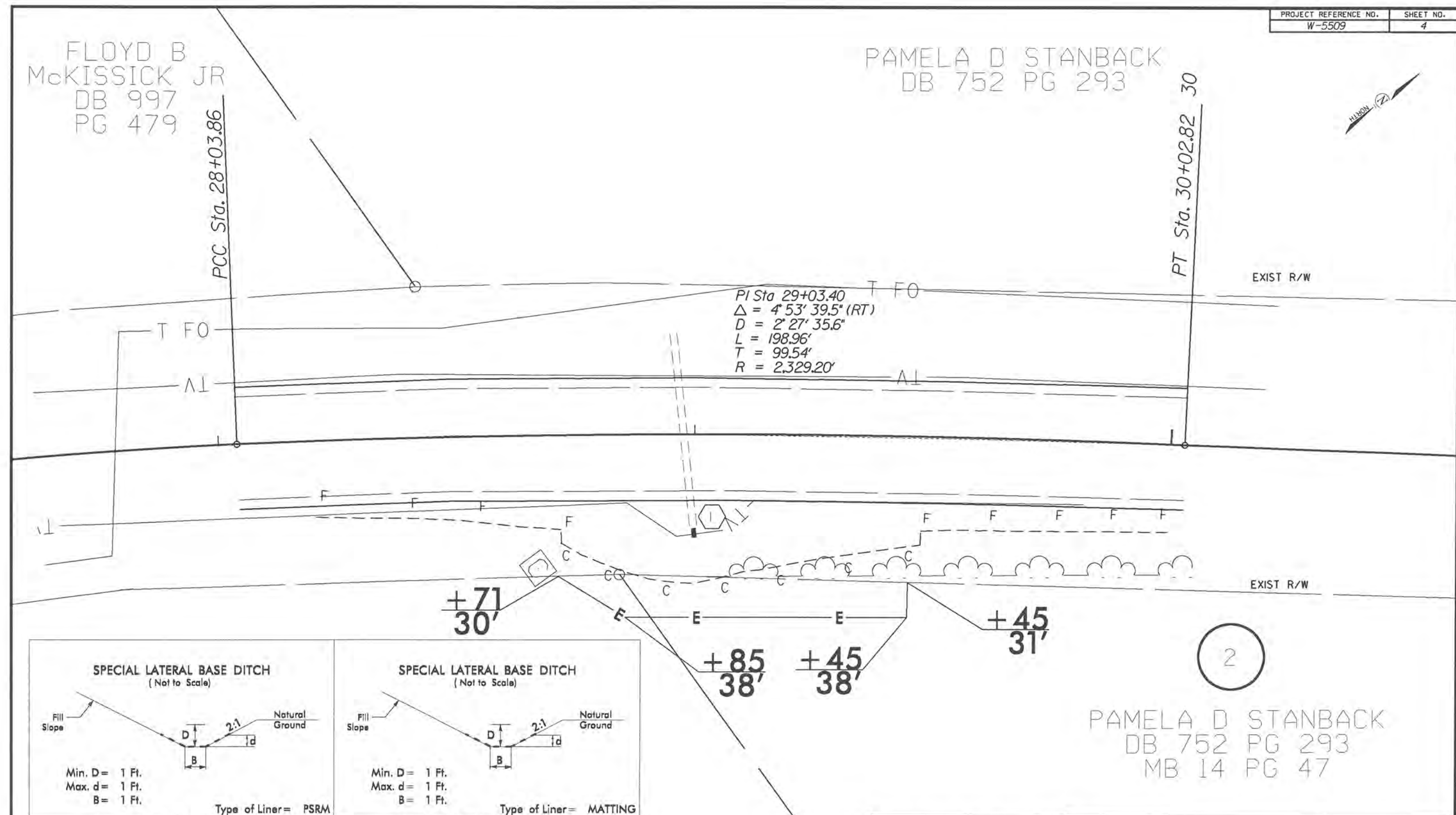
STANDARD DRAWING NO. 1801.01

STANDARD TEMPORARY SHORING

DATE: 11-19-13

FLOYD B
McKISSICK JR
DB 997
PG 479

PAMELA D STANBACK
DB 752 PG 293



-L- STA. 28+55 TO STA. 29+00

-L- STA. 29+01 TO STA. 29+45

JAMES O &
LINDA D ANDERSON
DB 811 PG 34
MB 14 PG 47

STRUCTURE NO.	REMARKS
1	2 FT. OF 18" RCP STA. 29+00 Rt.

PAMELA D STANBACK
DB 752 PG 293
MB 14 PG 47

DIVISION FIVE DESIGN

P. Stanback
P.E.

SITE 1
SHOULDER WIDENING
SR 1211 (WEST RIVER ROAD)

DIVISION 05 FRANKLIN COUNTY

REVISIONS	INT.	DATE

N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT

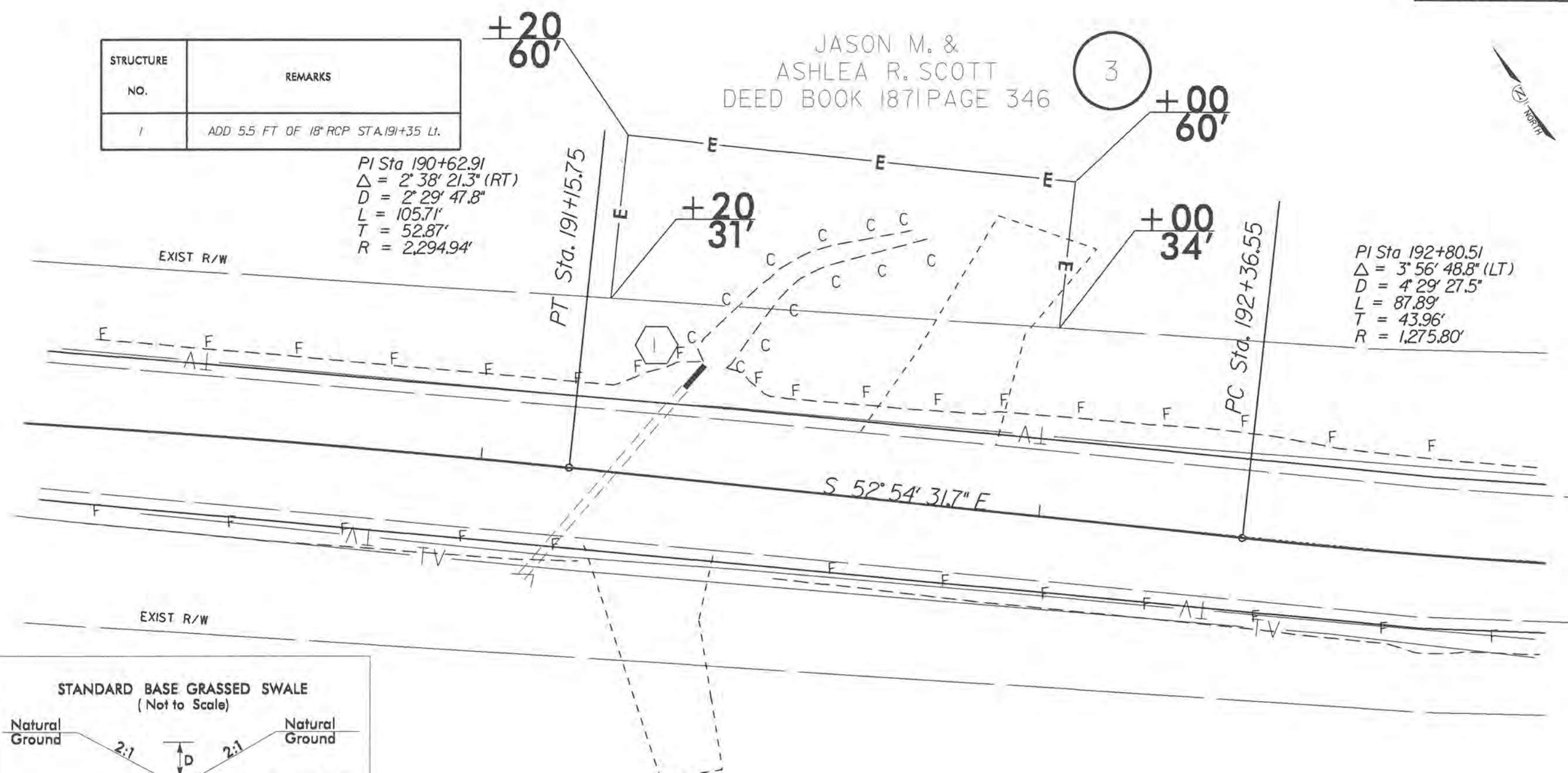
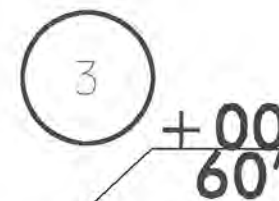
SCALE: 1"=20' DATE: 23 Apr 2014

PREPARED BY: CAH
REVIEWED BY: BJU

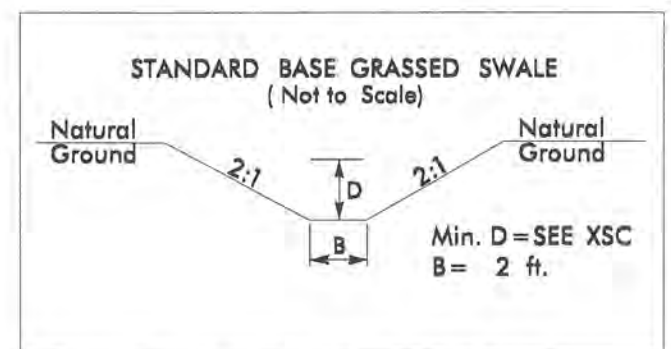
STRUCTURE NO.	REMARKS
1	ADD 5.5 FT OF 18" RCP STA. 191+35 LI.

PI Sta 190+62.91
 $\Delta = 2^\circ 38' 21.3" (RT)$
 $D = 2^\circ 29' 47.8"$
 $L = 105.71'$
 $T = 52.87'$
 $R = 2,294.94'$

JASON M. &
 ASHLEA R. SCOTT
 DEED BOOK 1871 PAGE 346

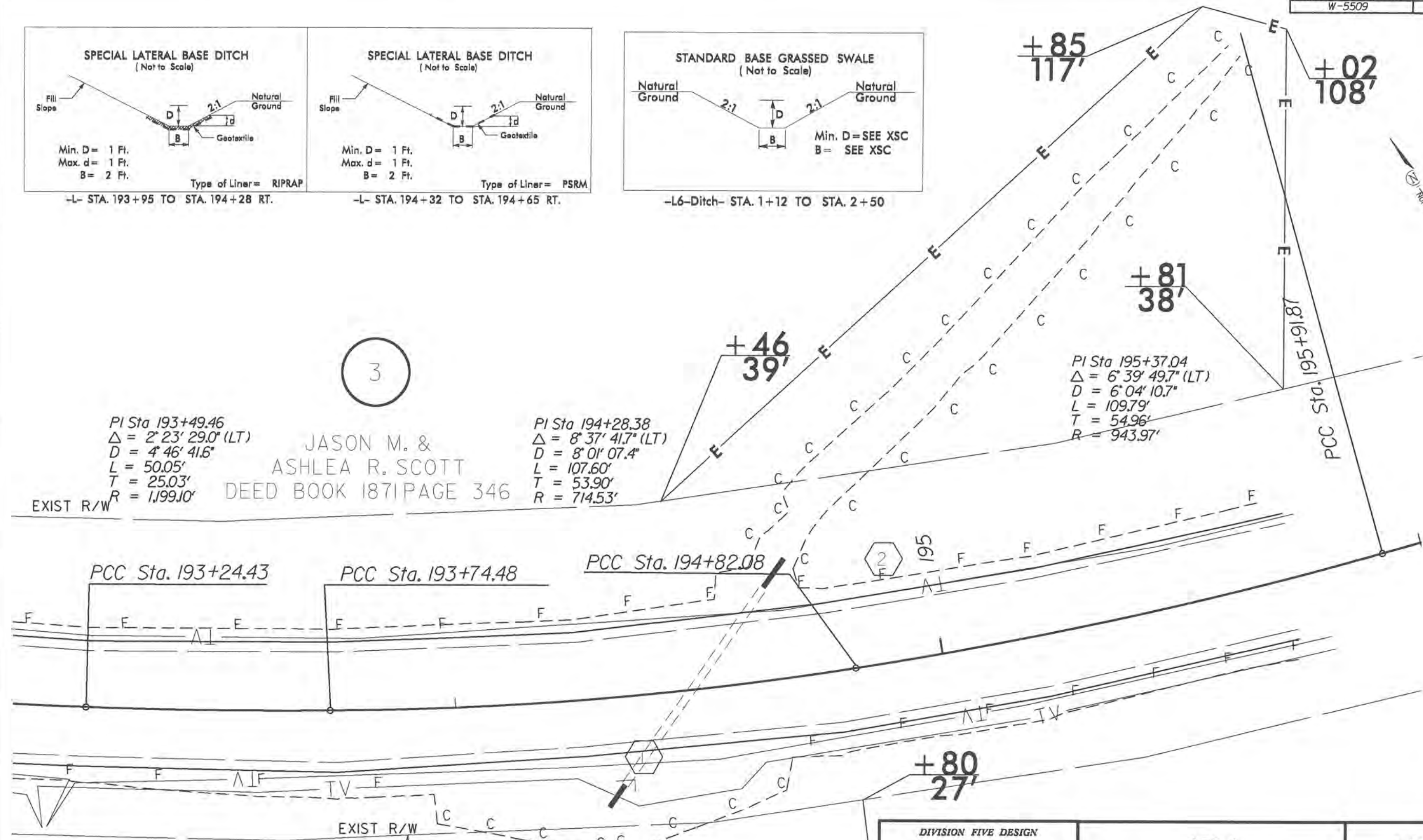
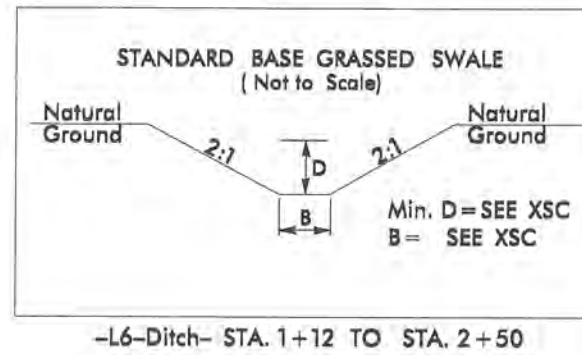
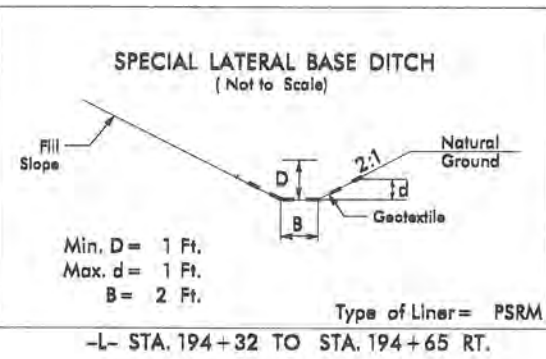
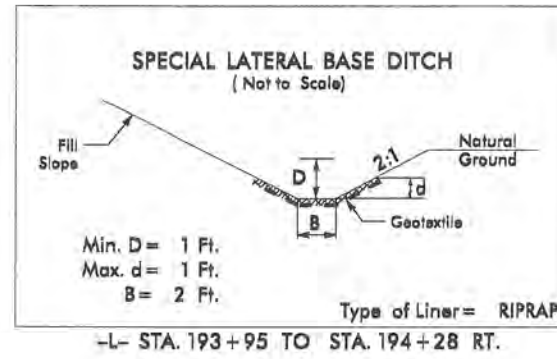


PI Sta 192+80.51
 $\Delta = 3^\circ 56' 48.8" (LT)$
 $D = 4^\circ 29' 27.5"$
 $L = 87.89'$
 $T = 43.96'$
 $R = 1,275.80'$



-L5-Ditch - STA. 0+56 TO STA. 1+04

DIVISION FIVE DESIGN SEAL 090459 ENGINEER BEN UPSHAW P.E.	SITE 5 SHOULDER WIDENING SR 1211 (WEST RIVER ROAD)					
	DIVISION 05 FRANKLIN COUNTY		SCALE: 1"=20' DATE: 23 Apr 2014			
SIGNATURE	REVISIONS <table border="1"> <tr> <th>NO.</th> <th>DATE</th> </tr> <tr> <td> </td> <td> </td> </tr> </table>	NO.	DATE			PREPARED BY: CAH REVIEWED BY: BJU
NO.	DATE					
N.C. DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS DIVISION FIVE DESIGN UNIT		REVISIONS				



PI Sta 193+49.46
Δ = 2° 23' 29.0" (LT)
D = 4° 46' 41.6"
L = 50.05'
T = 25.03'
R = 1,199.10'

JASON M. &
ASHLEA R. SCOTT
DEED BOOK 1871 PAGE 346

PI Sta 194+28.38
Δ = 8° 37' 41.7" (LT)
D = 8° 01' 07.4"
L = 107.60'
T = 53.90'
R = 714.53'

STRUCTURE NO.	REMARKS
1	ADD 5.5 FT OF 18" RCP STA.194+33 RT.
2	ADD 7.5 FT OF 18" RCP STA.194+65 Lt.

MARK M &
PATTY HARRIS CANNADY
C/O ED HARRIS
DEED BOOK 1178 PAGE 501

DIVISION FIVE DESIGN

SEAL 030459
ENGINEER
BEN UPSHAW

Be
P.E.

SITE 6
SHOULDER WIDENING
SR 1211 (WEST RIVER ROAD)

DIVISION 05 FRANKLIN COUNTY

REVISIONS	INT.	DATE

SCALE: 1"=20' DATE: 23 Apr 2014

PREPARED BY: CAH
REVIEWED BY: BJU

N.C. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION FIVE DESIGN UNIT

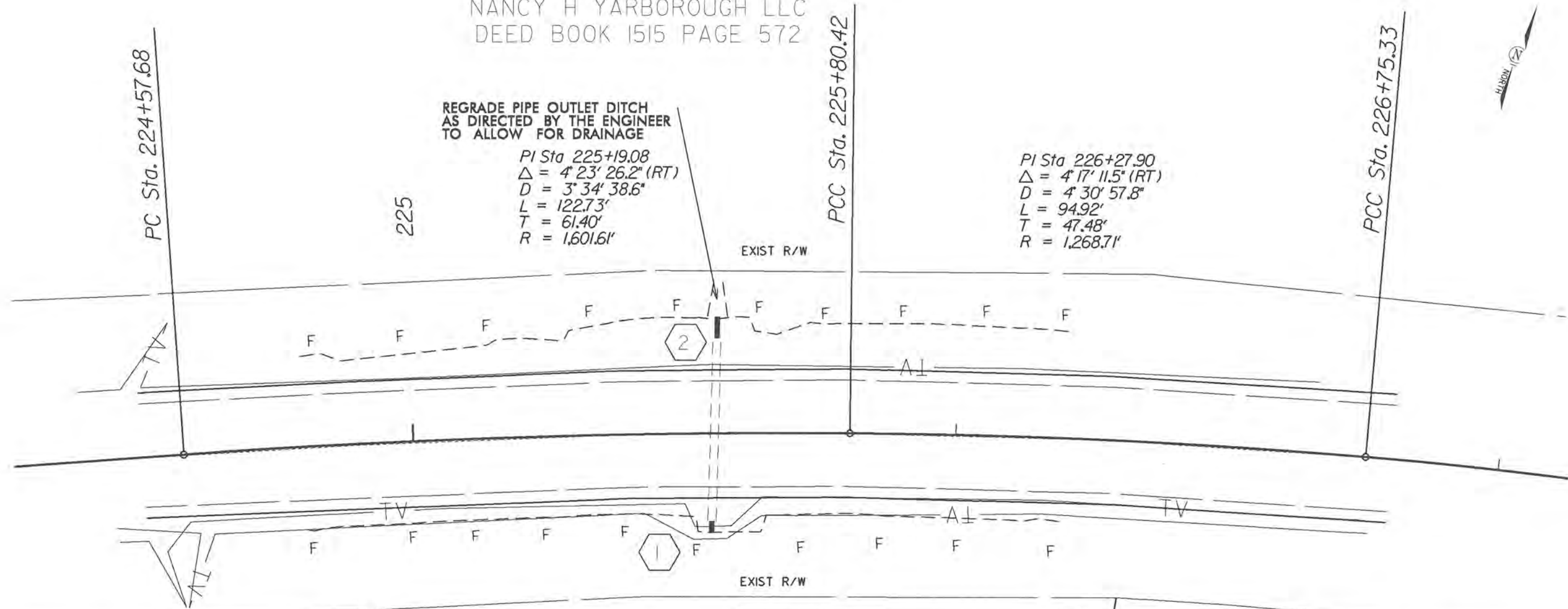
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DIVISION OF TRANSPORTATION
DESIGN UNIT

NANCY H YARBOROUGH LLC
DEED BOOK 1515 PAGE 572

REGRADE PIPE OUTLET DITCH
AS DIRECTED BY THE ENGINEER
TO ALLOW FOR DRAINAGE

PI Sta 225+19.08
Δ = 4' 23' 26.2" (RT)
D = 3' 34' 38.6"
L = 122.73'
T = 61.40'
R = 1,601.61'

PI Sta 226+27.90
Δ = 4' 17' 11.5" (RT)
D = 4' 30' 57.8"
L = 94.92'
T = 47.48'
R = 1,268.71'



STRUCTURE NO.	REMARKS
1	ADD 2.0 FT OF 18" RCP STA.225+55 Rt.
2	ADD 4.0 FT OF 18" RCP STA.225+56 Lt.

PHYLLIS BULLOCK
PIN 1886-43-1472

JOSEPH T &
LILLIE CUNNINGHAM
DEED BOOK 1853 PAGE 323
MB 11PG 77

PERCY LEE &
CATHERINE ANDERSON JR
DEED BOOK 844 PAGE 270

DIVISION FIVE DESIGN

6/12/14

SIGNATURE P.E.

SITE 7
SHOULDER WIDENING
SR 1211 (WEST RIVER ROAD)

DIVISION 05 FRANKLIN COUNTY

REVISIONS	INT.	DATE

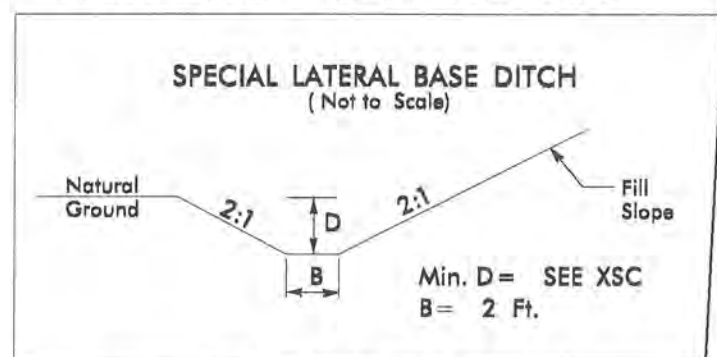
N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT

SCALE: 1"=20' DATE: 25 Jun 13

PREPARED BY: CAH
REVIEWED BY: BJU
REVIEWED BY: _____

MARIE CELESTE HAWKINS STALLINGS
DEED BOOK 152 PAGE 560

MARIE CELESTE HAWKINS STALLINGS
DEED BOOK 152 PAGE 560
MB 2006 PG 1



-L- STA. 229+25 TO STA. 229+99

PCC Sta. 228+68.24

PCC Sta. 230+22.47

230

EXIST R/W

PI Sta 229+45.39
Δ = 4' 25" 12.7" (RT)
D = 2' 5" 57.5"
L = 154.23'
T = 77.15'
R = 1,999.17'

ANTIONETTE McCORMICK
DEED BOOK 1627 PAGE 965
BM 2003 PG 129

ROSSIE M COOPER
DEED BOOK 925 PAGE 497
MB 2005 PG 300

STRUCTURE NO.	REMARKS
1	1.5 FT OF 18" RCP STA. 229+58 Rt.
2	GRADED D.I. TYPE 'D' (STANDARD 840.19) WITH N.S. GRATE (STANDARD 840.24) TOP ELEV. 329.09 INVERT ELEV. 326.66

5

6

DIVISION FIVE DESIGN

6/12/14

SIGNATURE

SITE 8
SHOULDER WIDENING
SR 1211 (WEST RIVER ROAD)

DIVISION 05 FRANKLIN COUNTY

REVISIONS	INT.	DATE

N.C. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION FIVE DESIGN UNIT

SCALE: 1"=20' DATE: 23 Apr 2014

PREPARED BY: CAH
REVIEWED BY: BJU

JAMES ALBERT CANNADY
DEED BOOK 1119 PAGE 281

JANICE F JOHNSON
DEED BOOK 1036 PAGE 649

255
 PI Sta 254+96.41
 $\Delta = 7^{\circ} 21' 49.5''$ (RT)
 $D = 6^{\circ} 01' 51.1''$
 $L = 122.10'$
 $T = 61.13'$
 $R = 950.04'$

PI Sta 255+81.43
 $\Delta = 2^{\circ} 28' 07.4''$ (RT)
 $D = 5^{\circ} 07' 53.4''$
 $L = 48.11'$
 $T = 24.06'$
 $R = 1,116.55'$

PCC Sta. 254+35.27

PCC Sta. 255+57.38

PCC Sta. 256+05.48


EXIST R/W

EXIST R/W

RICHARD T JUSTICE
DEED BOOK 922 PAGE 242

STRUCTURE NO.	REMARKS
1	5 FT OF 18" RCP STA. 254+94 Rt.

DIVISION FIVE DESIGN



SEAL
030459
ENGINEER
BEN UPSHAW

Ben Upshaw
P.E.
SIGNATURE

SITE 9
SHOULDER WIDENING
SR 1211 (WEST RIVER ROAD)

DIVISION 05 FRANKLIN COUNTY

REVISIONS	INT.	DATE

N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT



SCALE: 1"=20' DATE: 23 Apr 2014

PREPARED BY: CAH
REVIEWED BY: BJU

BONITA Y REESE
DEED BOOK III5 PAGE 23

CROSS KEYS CAPITAL LP
DEED BOOK 1673 PAGE 802

FREDERICK D NEIL ESTATE
C/O MATTHEW E NEIL
PIN 1896-04-6386

PI Sta 293+82.28
 $\Delta = 5^{\circ} 04' 10.7''$ (LT)
 $D = 3^{\circ} 45' 57.2''$
 $L = 134.62'$
 $T = 67.35'$
 $R = 1,521.44'$

PCC Sta. 293+14.93

PT Sta. 294+49.55

295



EXIST R/W

EXIST R/W

LAWRENCE R ALSTON ESTATE
DEED BOOK 1482 PAGE 820

7

+78
30'

+98
30'

REGRADE PIPE DITCH OUTLET
AS DIRECTED BY THE ENGINEER
TO ALLOW FOR DRAINAGE

+82
65'

+01
62'

KIMBERLY ANNE ARNOLD MURPH
DEED BOOK 1371 PAGE 502

STRUCTURE NO.	REMARKS
1	5.5 FT OF 24" RCP STA.293+87 Ft.

DIVISION FIVE DESIGN

6/12/14

SIGNATURE

SITE II
SHOULDER WIDENING
SR 1211 (WEST RIVER ROAD)

DIVISION 05 FRANKLIN COUNTY

REVISIONS	INT.	DATE

N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT

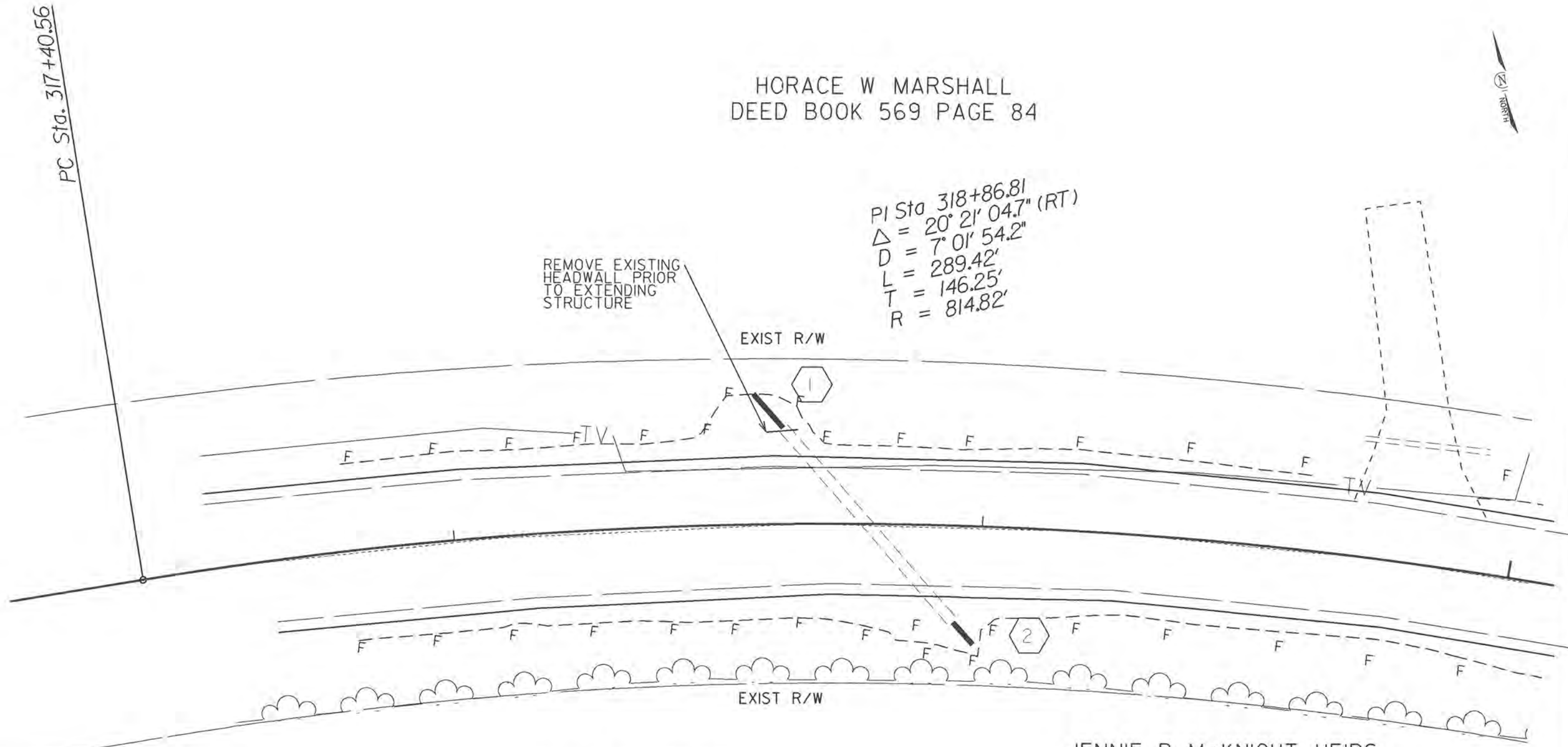
SCALE: 1"=20' DATE: 23 Apr 2014

PREPARED BY: CAH
REVIEWED BY: BJU

HORACE W MARSHALL
DEED BOOK 569 PAGE 84

PI Sta 318+86.81
 $\Delta = 20^\circ 21' 04.7''$ (RT)
 $D = 7^\circ 01' 54.2''$
 $L = 289.42'$
 $T = 146.25'$
 $R = 814.82'$

REMOVE EXISTING
HEADWALL PRIOR
TO EXTENDING
STRUCTURE



ETHEL McKNIGHT
DEED BOOK 584 PAGE 331

JENNIE B McKNIGHT HEIRS
C/O ALEXANDER McKNIGHT
DEED BOOK 431 PAGE 16

STRUCTURE NO.	REMARKS
1	8.0 FT OF 24" RCP STA.318+62 Lt.
2	5.5 FT OF 24" RCP STA.318+95 Rt.

DIVISION FIVE DESIGN

6/12/14
 P.E.
 SIGNATURE

SITE 12A
SHOULDER WIDENING
SR 1211 (WEST RIVER ROAD)

DIVISION 05 FRANKLIN COUNTY

REVISIONS	INT.	DATE

N.C. DEPARTMENT of TRANSPORTATION
 DIVISION of HIGHWAYS
 DIVISION FIVE DESIGN UNIT

SCALE: 1"=20' DATE: 23 Apr 2014

PREPARED BY: CAH
 REVIEWED BY: BJU
 REVIEWED BY:

HORACE W MARSHALL
PIN 1896-34-8299

PI Sta 321+58.97
 $\Delta = 11^{\circ} 15' 48.5''$ (RT)
 $D = 4^{\circ} 22' 48.2''$
 $L = 257.15'$
 $T = 128.99'$
 $R = 1,308.10'$

PT Sta. 322+87.13



EXIST R/W

REMOVE 50' OF EXISTING GUARDRAIL

322+25
ROCK PLATING
END

321+65.39
15.30 RT

321+95.41
14.84 RT

322+16.48
15.71 RT

EXIST R/W

INSTALL GRAU 350 END TREATMENT

321+00
ROCK PLATING
START

JENNIE B MCKNIGHT HEIRS
C/O ALEXANDER MCKNIGHT
DEED BOOK 43 PAGE 16

DIVISION FIVE DESIGN

6/12/14

Ben Upshaw
SIGNATURE

P.E.

SITE 12B
SHOULDER WIDENING
SR 1211 (WEST RIVER ROAD)

DIVISION 05 FRANKLIN COUNTY

REVISIONS	INT.	DATE

N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT

SCALE: 1"=20' DATE: 23 Apr 2014

PREPARED BY: CAH
REVIEWED BY: BJU

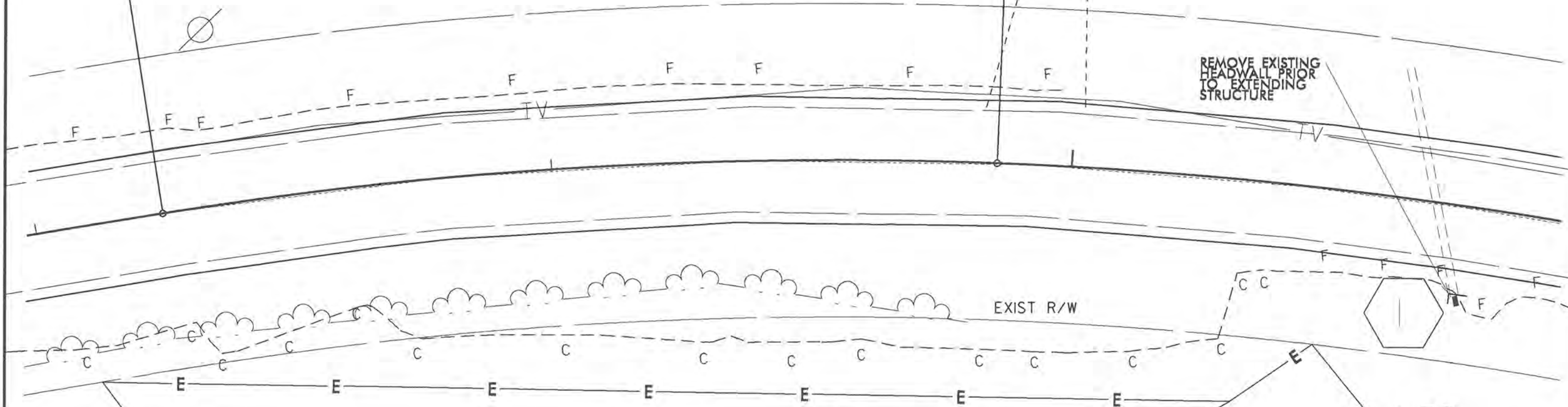


PCC Sta. 328+24.79

PCC Sta. 329+85.52

EXIST R/W

REMOVE EXISTING HEADWALL PRIOR TO EXTENDING STRUCTURE



LUMPKIN AND LUMPKIN LLC
DEED BOOK 1257 PAGE 974

STRUCTURE NO.	REMARKS
1	2.5 FT. OF 18" RCP STA. 330+76 Rt.

DIVISION FIVE DESIGN

Ben Upshaw
6/16/14

P.E.
SIGNATURE

SITE 12C
SHOULDER WIDENING
SR 1211 (WEST RIVER ROAD)

DIVISION 05 FRANKLIN COUNTY

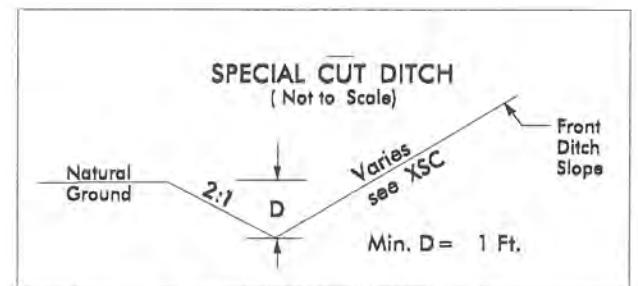
REVISIONS	INT.	DATE

N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT

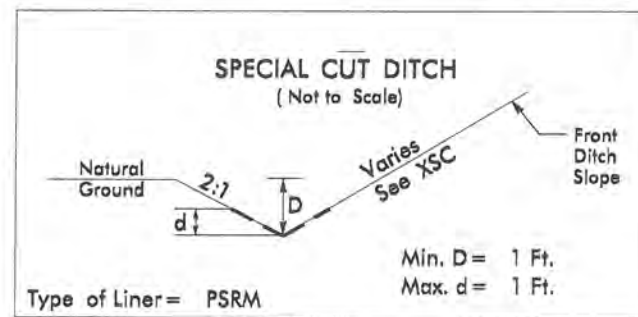
SCALE: 1"=20' DATE: 23 Apr 2014

PREPARED BY: CAH
REVIEWED BY: BJU
REVIEWED BY: _____

LUMPKIN AND
LUMPKIN LLC
DEED BOOK 1257 PAGE 974



-L- STA. 343+62 TO STA. 343+71



-L- STA. 343+77 TO STA. 344+15

345

S 47° 13' 10.3" E

EXIST R/W

T T &
HELEN H KEMP
DEED BOOK 1382 PAGE 167

STRUCTURE NO.	REMARKS
1	15 FT OF 18" RCP STA. 343+74 Lt.
2	GRATED D.I. TYPE 'D' (STANDARD 840J9) WITH N.S. GRATE (STANDARD 840,24) TOP ELEV. 249.39 INVERT ELEV. 247.23

DIVISION FIVE DESIGN

Ben Upshaw
P.E.
SIGNATURE

SITE 13
SHOULDER WIDENING
SR 1211 (WEST RIVER ROAD)

DIVISION 05 FRANKLIN COUNTY

REVISIONS	INT.	DATE

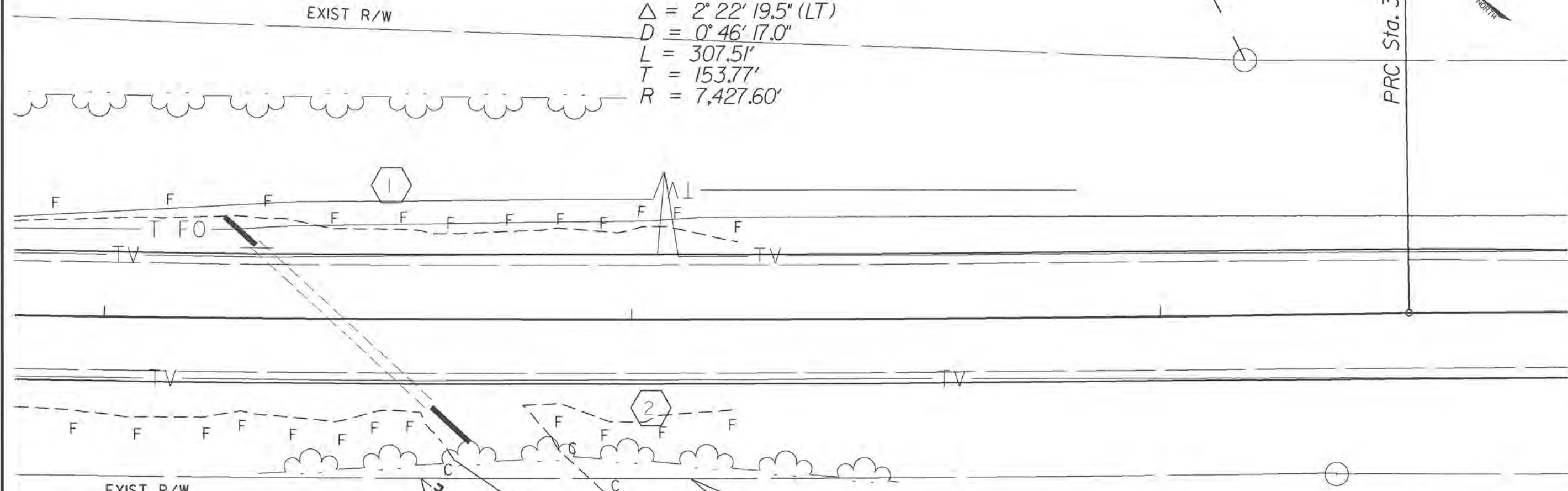
N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT

SCALE: 1"=20' DATE: 23 Apr 2014

PREPARED BY: CAH
REVIEWED BY: BJU

RONNIE B BECKHAM
DEED BOOK 723 PAGE 437

PI Sta 366+93.25
 $\Delta = 2^{\circ} 22' 19.5''$ (LT)
 $D = 0^{\circ} 46' 17.0''$
 $L = 307.51'$
 $T = 153.77'$
 $R = 7,427.60'$



PRC Sta. 368+46.98

HELEN H. KEMP, TRUSTEE OF
THE MARITAL INTEREST
AND FAMILY TRUST, FKA TT &
HELEN H KEMP
DEED BOOK 1767 PAGE 881
DEED BOOK 1767 PAGE 984

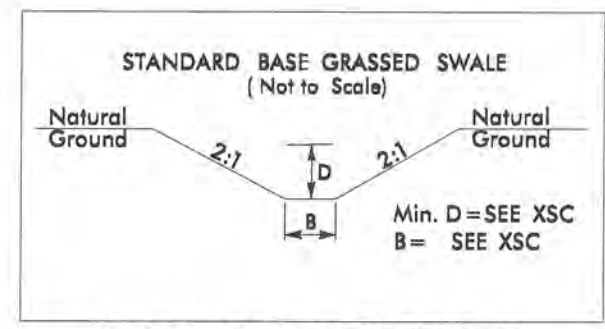
9-A

+60
30'

+11
30'

+65
74'

+46
96'



-L14-Ditch- STA. 1+39 TO STA. 2+38

STRUCTURE NO.	REMARKS
1	8.0 FT OF 24" RCP STA. 366+29 Lt.
2	10.0 FT OF 24" RCP STA. 366+62 Rt.

DIVISION FIVE DESIGN

6/16/14

BEN UPSHAW
P.E.

SIGNATURE

SITE 14
SHOULDER WIDENING
SR 1211 (WEST RIVER ROAD)

DIVISION 05 FRANKLIN COUNTY

REVISIONS	INT.	DATE

N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT

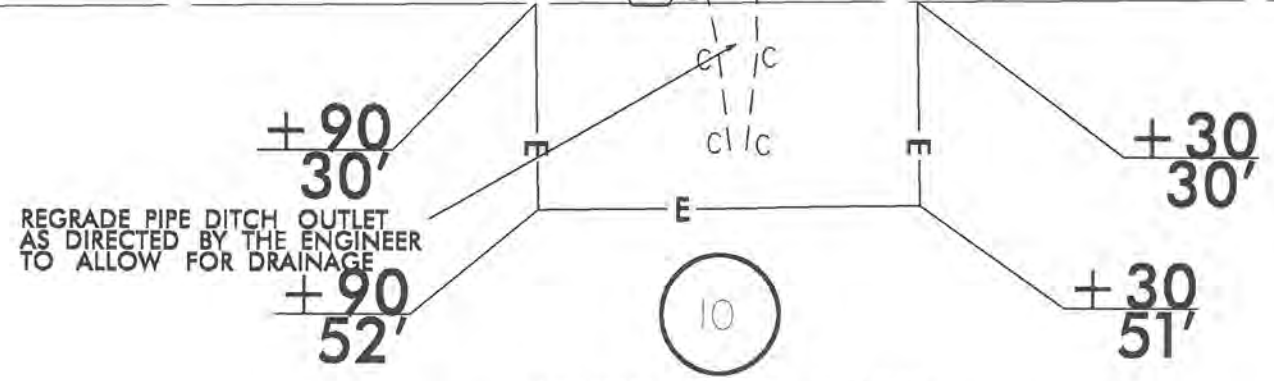
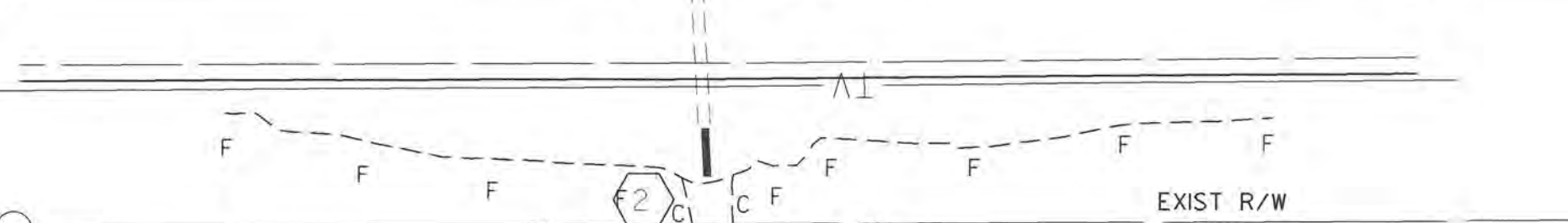
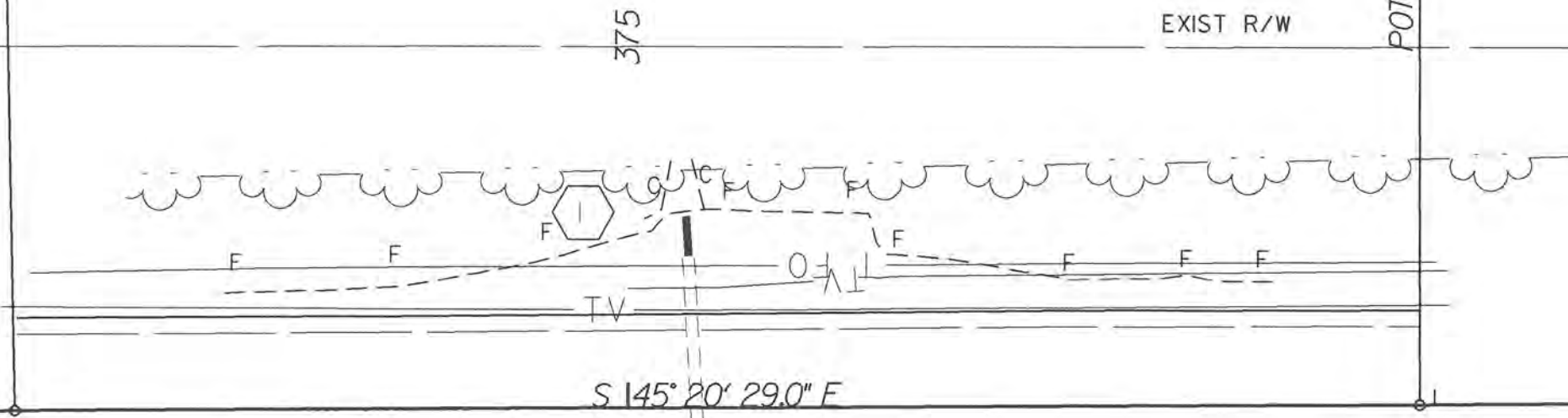
SCALE: 1"=20' DATE: 23 Apr 2014

PREPARED BY: CAH
REVIEWED BY: BJU

JOYNER FRANKLIN LLC
DEED BOOK 1833 PAGE 409
SLIDE 3 FILE 132A

PT Sta. 374+24.06

POT Sta. 375+98.15



JENNY LYNN CASH
DEED BOOK 1827 PAGE 745

STRUCTURE NO.	REMARKS
1	5.2 FT OF 18" RCP STA. 375+08 Lt.
2	6.5 FT OF 18" RCP STA. 375+10 Rt.

DIVISION FIVE DESIGN

6/16/14

SIGNATURE

SITE 16
SHOULDER WIDENING
SR 1211 (WEST RIVER ROAD)

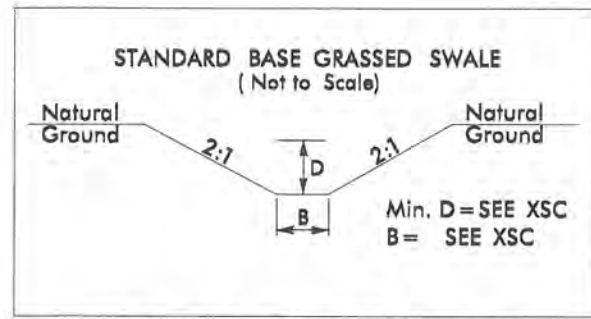
DIVISION 05 FRANKLIN COUNTY

REVISIONS	INT.	DATE

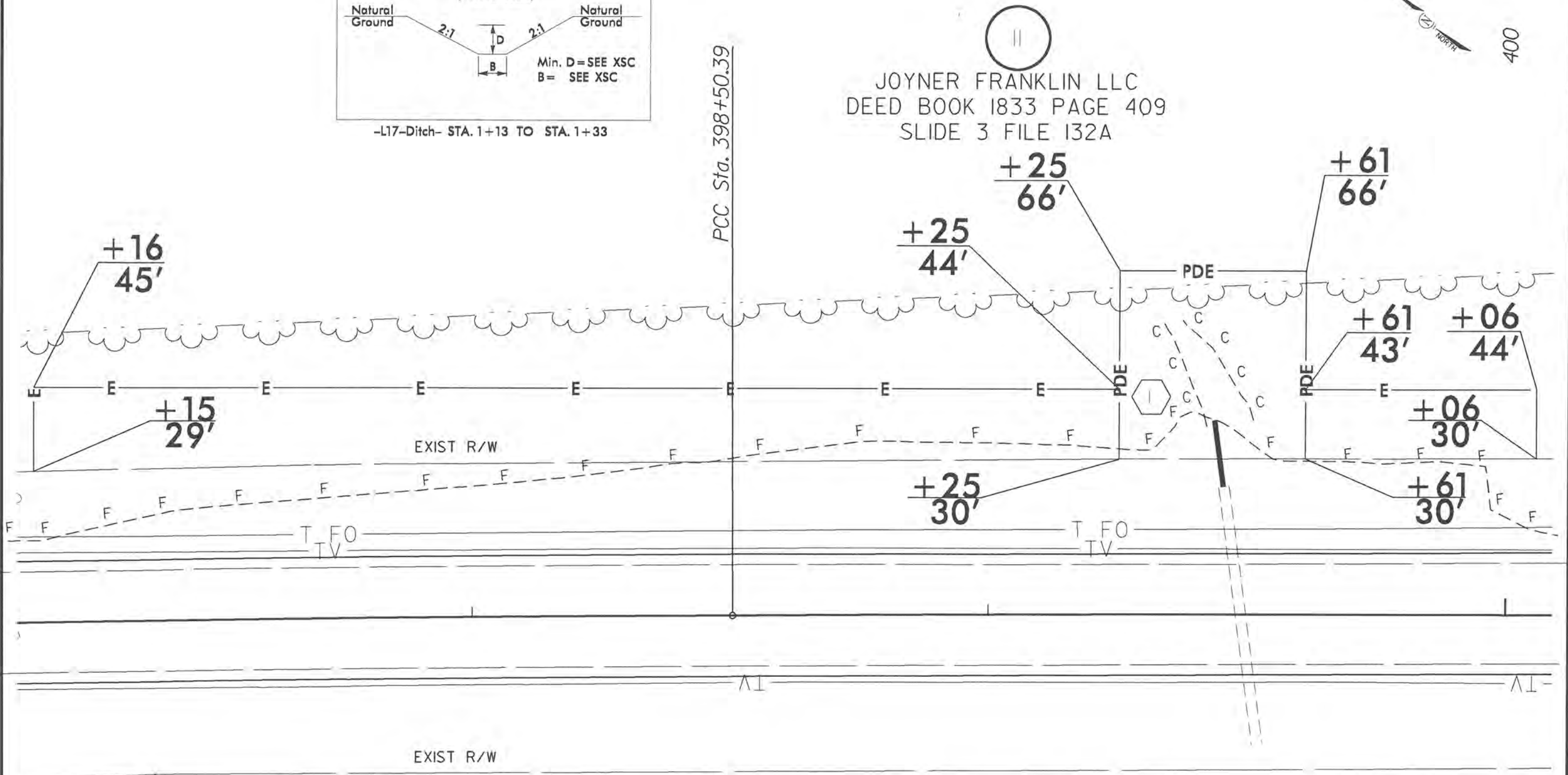
N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT

SCALE: 1"=20' DATE: 23 Apr 2014

PREPARED BY: CAH
REVIEWED BY: BJU



-L17-Ditch- STA. 1+13 TO STA. 1+33



STRUCTURE NO.	REMARKS
1	14 FT OF 18" RCP STA. 399+45 Lt.

CHARLES G &
SHIRLEY F BASS
DEED BOOK 728 PAGE 139

DIVISION FIVE DESIGN

6/16/14

BEN UPSHAW
P.E.

SIGNATURE

SITE 17
SHOULDER WIDENING
SR 1211 (WEST RIVER ROAD)

DIVISION 05 FRANKLIN COUNTY

REVISIONS	INTL.	DATE

N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT

DIVISION OF HIGHWAYS
DESIGN UNIT

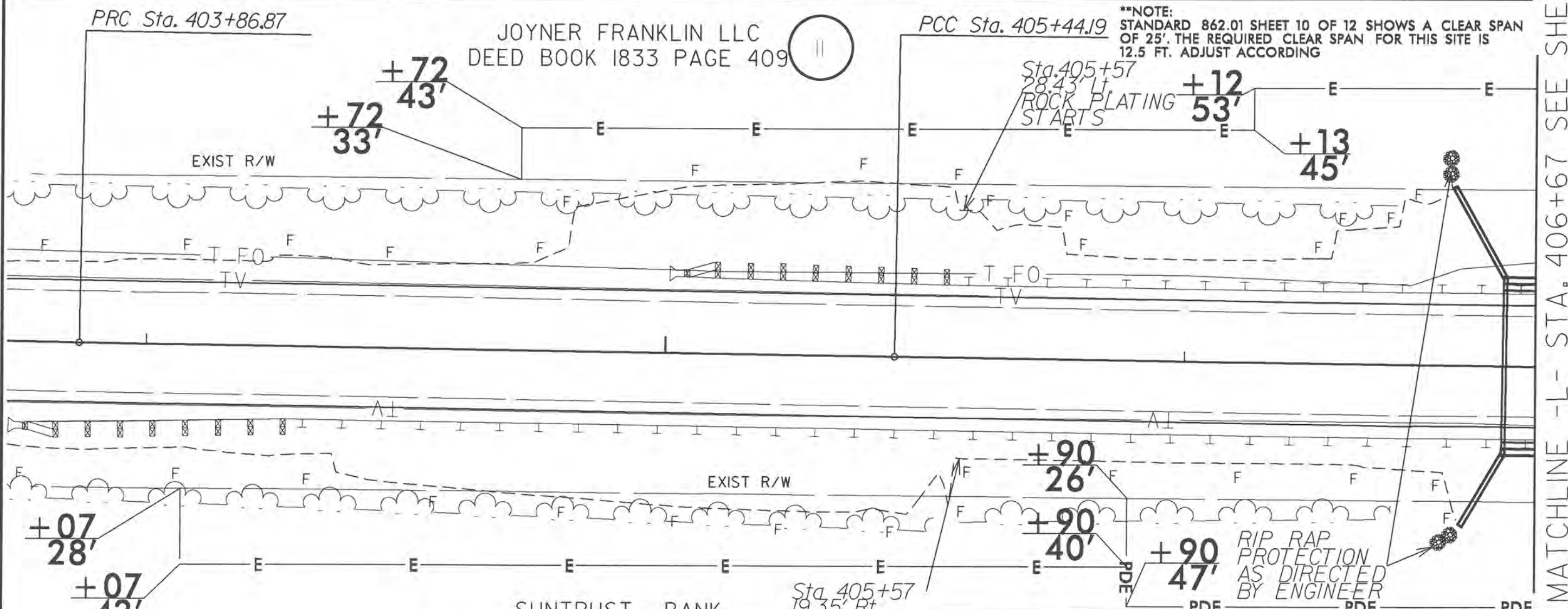
SCALE: 1"=20' DATE: 23 Apr 2014

PREPARED BY: CAH
REVIEWED BY: BJU

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
 TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
 FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
 W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
 G = GATING IMPACT ATTENUATOR TYPE 350
 NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM CL	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS										IMPACT ATTENUATOR TYPE 350			SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS				
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	XI	GRAU 350	M-350	XIII	CAT-1	VI MOD	BIC	AT-1	EA	G	NG									
-L-	405+03.90	409+53.90	LT.	450.00					14	5			50	1	1																				
-L-	403+78.90	408+28.90	RT.	450.00					14	5	50			1	1																				
PROJECT TOTALS				900																															
DEDUCTIONS FOR ANCHORS 4 GRAU @ 50				-200																															
GRAND TOTAL				700																															



****NOTE:**
 STANDARD 862.01 SHEET 10 OF 12 SHOWS A CLEAR SPAN OF 25'. THE REQUIRED CLEAR SPAN FOR THIS SITE IS 12.5 FT. ADJUST ACCORDING

****SEE SHEET 2-B FOR ENVIRONMENT DETAIL AND EASEMENT LIMITS**

MATCHLINE -L- STA. 406+67 SEE SHEET 19

DIVISION FIVE DESIGN

6/16/14

Ben Upshaw
P.E.

SITE 18
 SHOULDER WIDENING
 SR 1211 (WEST RIVER ROAD)

DIVISION 05 FRANKLIN COUNTY

REVISIONS	INT.	DATE

SCALE: 1"=20' DATE: 23 Apr 2014

N.C. DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 DIVISION FIVE DESIGN UNIT

PREPARED BY: CAH
 REVIEWED BY: BJU

****SEE SHEET 2-B
FOR ENVIROMENT DETAIL
AND EASEMENT LIMITS**

PEYTON M &
KEVIN D REYNOLDS
DEED BOOK 1368 PAGE 939
MB 2003 PG 294

PRC Sta. 409+41.64



MATCHLINE -L- STA. 406+67 SEE SHEET 18

10' +/- RIP RAP
PROTECTION
AS DIRECTED
BY ENGINEER

+29
54'

Sta. 407+75
9.00' Lt.
ROCK PLATING
END

+96
26'

Sta. 407+75
22.07' Rt.
ROCK PLATING
END

+58
33'

+96
46'

10' +/- RIP RAP
PROTECTION
AS DIRECTED
BY ENGINEER

WETLANDS
BOUNDARY

SUNTRUST BANK
DEED BOOK 1881 PAGE 643

12

DIVISION FIVE DESIGN

6/16/14

Be
SIGNATURE P.E.

SITE 18
SHOULDER WIDENING
SR 1211 (WEST RIVER ROAD)

DIVISION 05 FRANKLIN COUNTY

REVISIONS	INIT.	DATE

SCALE: 1"=20' DATE: 23 Apr 2014

N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT

PREPARED BY: CAH
REVIEWED BY: BJU

430

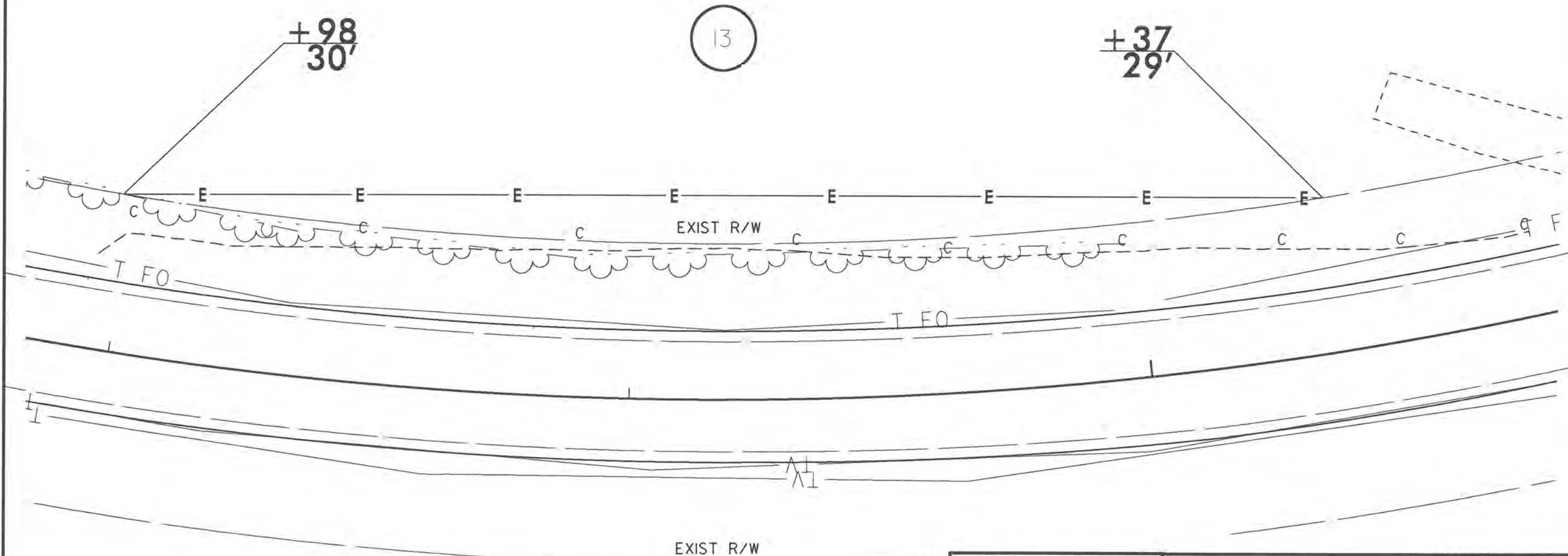


JOHN DOWNS EDDY II
DEED BOOK 1023 PAGE 312

13

+98
30'

+37
29'



EXIST R/W

THOMAS G &
SUSIE C ALBRIGHT
DEED BOOK 1211 PAGE 254

DIVISION FIVE DESIGN

6/6/14

SEAL
030459
BEN UPSHAW
P.E.

SIGNATURE

SITE 20
SHOULDER WIDENING
SR 1211 (WEST RIVER ROAD)

DIVISION 05 FRANKLIN COUNTY

REVISIONS	INT.	DATE

N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT



SCALE: 1"=20' DATE: 23 Apr 2014

PREPARED BY: CAH
REVIEWED BY: BJU

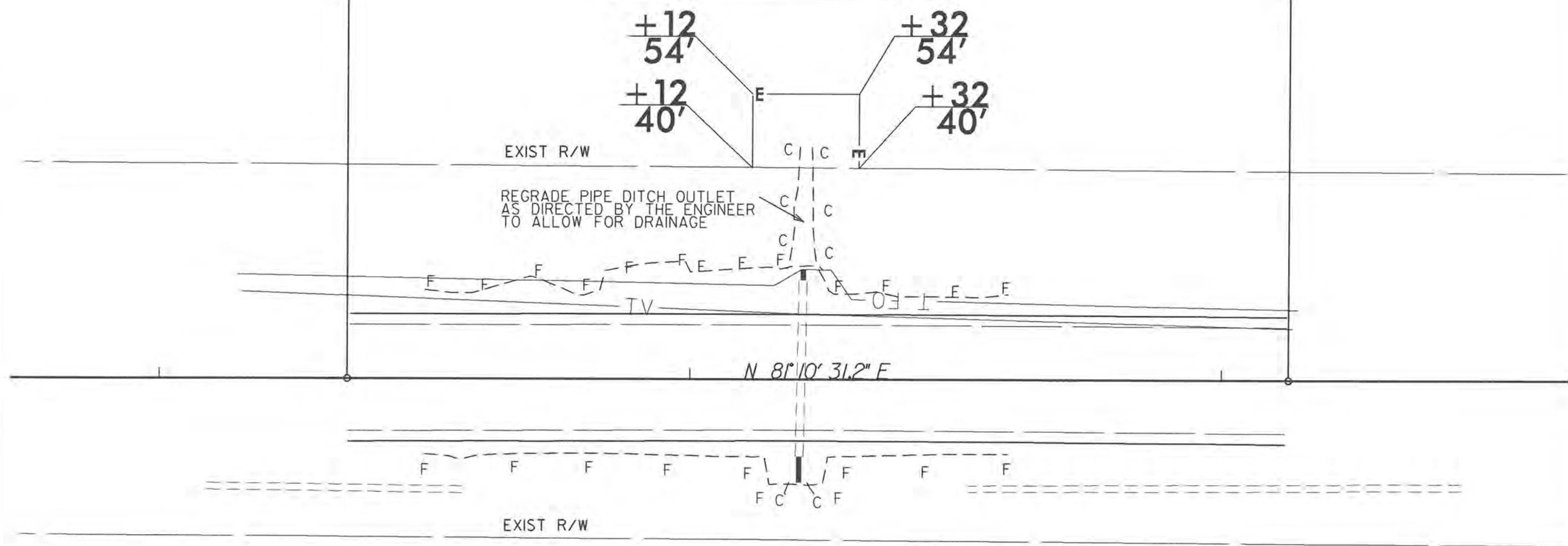
JOYNER FRANKLIN LLC
DEED BOOK 1833 PAGE 409



POT Sta. 441+35.45

POT Sta. 443+12.64

STRUCTURE NO.	REMARKS
1	2 FT OF 18" RCP STA.442+21 Lt.
2	5 FT OF 18" RCP STA.442+21 Rt.



FORD WAREHOUSE INC
DEED BOOK 727 PAGE 140

DIVISION FIVE DESIGN

2/16/14

Ben Upshaw

SIGNATURE P.E.

SITE 21
SHOULDER WIDENING
SR 1211 (WEST RIVER ROAD)

DIVISION 05 FRANKLIN COUNTY

REVISIONS	INT.	DATE

N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT

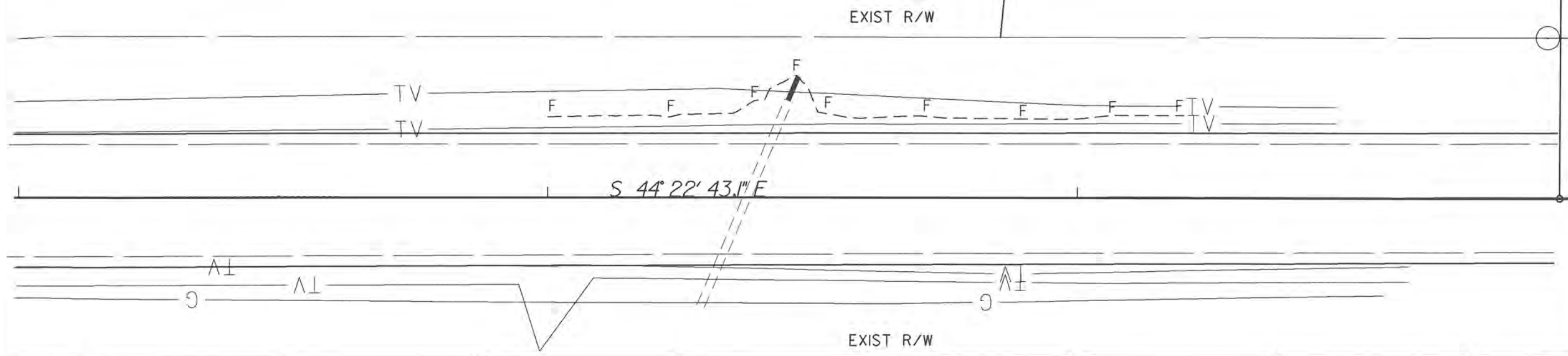
SCALE: 1"=20' DATE: 23 Apr 2014

PREPARED BY: CAH
REVIEWED BY: BJU

HERBERT FORD &
JENNIFER W PERRY
DEED BOOK 1096 PAGE 980

TOWN OF LOUISBURG
DEED BOOK 1195 PAGE 625

PI Sta. 458+90.90



STRUCTURE NO.	REMARKS
1	5 FT OF 18\" RCP STA. 457+45 Lt.

LOUISBURG
HOUSING ASSOCIATES
DEED BOOK 908 PAGE 570

DIVISION FIVE DESIGN

6/16/14

SIGNATURE

P.E.

SITE 22
SHOULDER WIDENING
SR 1211 (WEST RIVER ROAD)

DIVISION 05 FRANKLIN COUNTY

REVISIONS	INT.	DATE

N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT

SCALE: 1\"/>

PREPARED BY: CAH
REVIEWED BY: BJU

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

FRANKLIN COUNTY



TRAFFIC CONTROL SEQUENCE

STEP 1 - INSTALL ALL WORK ZONE ADVANCE WARNING SIGNS. (SEE RSD 1101.01, SHEET 3)

NOTE - CONDUCT STEPS 2, 3, 5, 6 & 7 IN ALL SITES.

STEP 2 - USING RSD 1101.02, SHEET 1, BEGIN CONSTRUCTION OF ALL PROPOSED WIDENING, PAVING, PIPE EXTENSIONS AND GUARDRAIL.

STEP 3 - USING RSD 1101.02, SHEET 1, BEGIN TO INSTALL ALL PAVEMENT MARKINGS IF NECESSARY.

NOTE - CONDUCT STEP 4 AT SITE 18 ONLY.

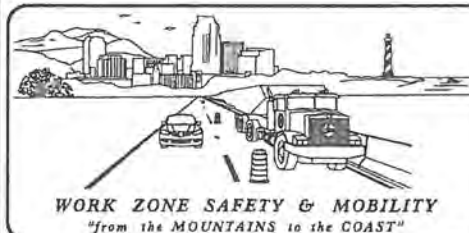
STEP 4 -

- A - USING RSD 1101.02, SHEET 1, CONSTRUCT PROPOSED PAVEMENT.
- B - USING RSD 1101.02, SHEET 1, INSTALL PROPOSED PAVEMENT MARKING.
- C - USING RSD 1101.02, SHEET 1, INSTALL PCB AS SHOWN ON TMP-3.
- D - BEHIND PCB, INSTALL TEMPORARY SHORING (SEE TMP-3).
- E - BEHIND PCB, CONSTRUCT CULVERT WALL EXTENSIONS, ETC.
- F - REMOVE SHORING
- G - USING RSD 1101.02, SHEET 1, REMOVE PCB.
- H - USING RSD 1101.02, SHEET 1, REPAIR PAVEMENT MARKINGS IF NECESSARY.

STEP 5 - COMPLETE CONSTRUCTION OF ALL PROPOSED PAVEMENT, PIPE EXTENSIONS AND GUARDRAIL.

STEP 6 - COMPLETE ALL PAVEMENT MARKINGS.

STEP 7 - REMOVE ALL DEVICES.



N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27659-1561
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)
PHONE: (919) 773-2800 FAX: (919) 771-2745

J. S. BOURNE, PE STATE TRAFFIC MANAGEMENT ENGINEER
J. ISHAK, PE TRAFFIC CONTROL PROJECT ENGINEER
H. SHYU TRAFFIC CONTROL PROJECT DESIGN ENGINEER
D. E. RICHARDSON TRAFFIC CONTROL DESIGN ENGINEER



APPROVED: _____
DATE: _____



INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP, TRAFFIC CONTROL SEQUENCE AND INDEX OF SHEETS
TMP-1A	ROADWAY STANDARD DRAWINGS, LEGEND AND GENERAL NOTES
TMP-2	PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS
TMP-2A	TEMPORARY SHORING DATA
TMP-3	TEMPORARY TRAFFIC CONTROL SITE 18 DETAIL

SHEET NO.
TMP-1

W-5509

TIP PROJECT:

M-APR-2014 0908
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ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1130.01	DRUM
1135.01	CONES
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1170.01	POSITIVE PROTECTION
1180.01	SKINNY-DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTI-LANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- TEMP. SHORING (LOCATION PURPOSES ONLY)
- WORK AREA
- REMOVAL

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

TRAFFIC CONTROL DEVICES

- DRUM
- SKINNY DRUM
- TEMPORARY CRASH CUSHION
- FLAGGER

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN

TEMPORARY PAVEMENT MARKING

- 4" PAINT
- PA WHITE EDGELINE

GENERAL NOTES

PROJ. REFERENCE NO.	SHEET NO.
W-5509	TMP-1A

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRABLE OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

LANE AND SHOULDER CLOSURE REQUIREMENTS

- A) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.
- B) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.
- C) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.
- E) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.
- F) DO NOT INSTALL MORE THAN ONE MILE OF LANE CLOSURE ON RIVER RD MEASURED FROM THE BEGINNING OF THE MERGE TAPER TO THE END OF THE LANE CLOSURE.
- G) DO NOT INSTALL MORE THAN ONE LANE CLOSURE IN ANY ONE DIRECTION ON RIVER RD.
- H) PROVIDE A MINIMUM OF 500 FT BETWEEN LANE CLOSURES, MEASURED FROM THE END OF ONE CLOSURE TO THE FIRST SIGN OF THE NEXT LANE CLOSURE.

PAVEMENT EDGE DROP OFF REQUIREMENTS

- I) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:
 - BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.
 - BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.
 - BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.
- J) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (WB-11) IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

- K) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

- L) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC BARRIER

- M) INSTALL TEMPORARY BARRIER ACCORDING TO THE TRANSPORTATION MANAGEMENT PLANS A MAXIMUM OF TWO (2) WEEKS PRIOR TO BEGINNING WORK IN ANY LOCATION. ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION PROCEED IN A CONTINUOUS MANNER TO COMPLETE THE PROPOSED WORK IN THAT LOCATION UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS OR AS DIRECTED BY THE ENGINEER.

DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE.

ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION AND NO WORK IS PERFORMED BEHIND THE TEMPORARY BARRIER FOR A PERIOD LONGER THAN TWO (2) MONTHS, REMOVE / RESET TEMPORARY BARRIER AT NO COST TO THE DEPARTMENT UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS, TEMPORARY BARRIER IS PROTECTING A HAZARD, OR AS DIRECTED BY THE ENGINEER.

INSTALL TEMPORARY BARRIER WITH THE TRAFFIC FLOW BEGINNING WITH THE UPSTREAM SIDE OF TRAFFIC. REMOVE TEMPORARY BARRIER AGAINST THE TRAFFIC FLOW BEGINNING WITH THE DOWNSTREAM SIDE OF TRAFFIC.

INSTALL AND SPACE DRUMS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH) TO CLOSE OR KEEP THE SECTION OF THE ROADWAY CLOSED UNTIL THE TEMPORARY BARRIER CAN BE PLACED OR AFTER THE TEMPORARY BARRIER IS REMOVED.

- N) PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER AT ALL TIMES DURING THE INSTALLATION AND REMOVAL OF THE BARRIER BY EITHER A TRUCK MOUNTED ATTENUATOR (MAXIMUM 72 HOURS) OR A TEMPORARY CRASH CUSHION.

PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER FROM ONCOMING TRAFFIC AT ALL TIMES BY A TEMPORARY CRASH CUSHION UNLESS THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER IS OFFSET FROM ONCOMING TRAFFIC AS FOLLOWS OR AS SHOWN IN THE PLANS: (SEE ALSO 1101.05)

POSTED SPEED LIMIT	MINIMUM OFFSET
40 OR LESS	15 FT
45 - 50	20 FT
55	25 FT
60 MPH or HIGHER	30 FT

PAVEMENT MARKINGS AND MARKERS

- O) INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

ROAD NAME	MARKING	MARKER
RIVER RD	PAINT	NA

- P) PLACE ONE APPLICATION OF PAINT FOR TEMPORARY TRAFFIC PATTERNS. PLACE A SECOND APPLICATION OF PAINT SIX (6) MONTHS AFTER THE INITIAL APPLICATION AND EVERY SIX MONTHS AS DIRECTED BY THE ENGINEER.
- Q) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- R) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

APPROVED:	DATE:		ROADWAY STANDARD DRAWINGS, LEGEND & GENERAL NOTES
	4/19/2014		

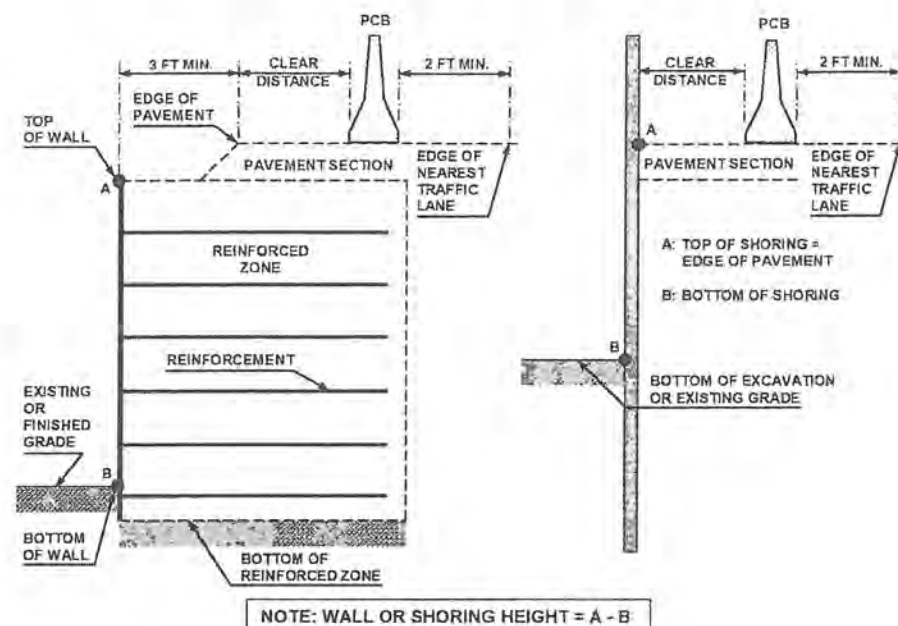


FIGURE A

NOTES

- 1- REFER TO THE TRAFFIC CONTROL PLANS FOR TEMPORARY SHORING LOCATIONS AND NOTES.
- 2- REFER TO THE "TEMPORARY SHORING" PROJECT SPECIAL PROVISION FOR INFORMATION ABOUT TEMPORARY SHORING AND PORTABLE CONCRETE BARRIER (PCB).
- 3- PCB IS REQUIRED IF TEMPORARY SHORING IS LOCATED WITHIN THE CLEAR ZONE IN ACCORDANCE WITH THE AASHTO ROADSIDE DESIGN GUIDE. DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE. (CONTACT NCDOT PAVEMENT MANAGEMENT UNIT FOR APPLICABLE PAVEMENT DESIGN).
- 4- BASED ON THE CLEAR DISTANCE, OFFSET, DESIGN SPEED AND PAVEMENT TYPE, CHOOSE AN UNANCHORED OR ANCHORED PCB FROM THE TABLE SHOWN IN FIGURE B. CLEAR DISTANCE IS DEFINED AS SHOWN IN FIGURE A AND OFFSET IS DEFINED AS SHOWN IN FIGURE B.
- 5- AT THE CONTRACTOR'S OPTION OR IF THE MINIMUM REQUIRED CLEAR DISTANCE IS NOT AVAILABLE, SET PCB NEXT TO AND UP AGAINST THE TRAFFIC SIDE OF THE TEMPORARY SHORING EXCEPT FOR BARRIER ABOVE TEMPORARY WALLS. PCB WITH THE MINIMUM REQUIRED CLEAR DISTANCE IS REQUIRED ABOVE TEMPORARY WALLS.
- 6- USE NCDOT PORTABLE CONCRETE BARRIER (PCB) IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1170.01 AND SECTION 1170 OF THE STANDARD SPECIFICATIONS.
- 7- PCB REQUIREMENTS FOR TEMPORARY WALLS APPLY TO TEMPORARY MECHANICALLY STABILIZED EARTH (MSE) WALLS AND TEMPORARY SOIL NAIL WALLS.
- 8- SET PCB WITH A MINIMUM HORIZONTAL DISTANCE OF 2 FT BETWEEN THE FRONT FACE OF THE BARRIER AND THE EDGE OF THE NEAREST TRAFFIC LANE AS SHOWN IN FIGURE A UNLESS OTHERWISE SHOWN IN THE PLANS AND OR AS APPROVED BY THE ENGINEER.
- 9- FOR PCB ABOVE AND BEHIND TEMPORARY WALLS, PROVIDE A MINIMUM DISTANCE OF 3 FT BETWEEN THE EDGE OF PAVEMENT AND THE WALL FACE AS SHOWN IN FIGURE A. IF THESE MINIMUM REQUIRED DISTANCES ARE NOT AVAILABLE, CONTACT THE ENGINEER.
- 10- TABLE SHOWN IN FIGURE B IS BASED ON NCDOT RESEARCH PROJECT NO. 2005-010 WITH VEHICLE TYPE USED FOR NCHRP 350 CRASH TESTS. BARRIER DEFLECTIONS AND RESULTING MINIMUM REQUIRED CLEAR DISTANCES MIGHT VARY SIGNIFICANTLY FOR LARGER HEAVIER VEHICLES, RUNS OF BARRIER LESS THAN 200 FT IN LENGTH AND WET OR DRY PAVEMENT.

MINIMUM REQUIRED CLEAR DISTANCE, inches								
Barrier Type	Pavement Type	Offset * ft	Design Speed, mph					
			<30	31-40	41-50	51-60	61-70	71-80
Unanchored PCB	Asphalt	<8	24	26	29	32	36	40
		8-14	26	28	31	35	38	42
		14-20	27	29	34	36	39	43
		20-26	28	31	35	38	40	44
		26-32	29	32	36	39	42	45
		32-38	30	34	38	41	43	46
		38-44	31	34	41	43	45	48
	44-50	31	35	41	43	46	49	
	50-56	32	36	42	44	47	50	
	>56	32	36	42	45	47	51	
	Concrete	<8	17	18	21	22	25	26
		8-14	19	20	23	25	26	29
		14-20	22	22	24	26	28	31
		20-26	23	24	26	27	30	34
26-32		24	25	27	28	32	35	
32-38		24	26	27	30	33	36	
38-44		25	26	28	30	34	37	
44-50	26	26	28	32	35	37		
50-56	26	26	28	32	35	38		
>56	26	27	29	32	36	38		
Anchored PCB	Asphalt	All Offsets	24 for All Design Speeds					
Anchored PCB	Concrete (including bridge approach slabs)	All Offsets	12 for All Design Speeds					

* See Figure Below

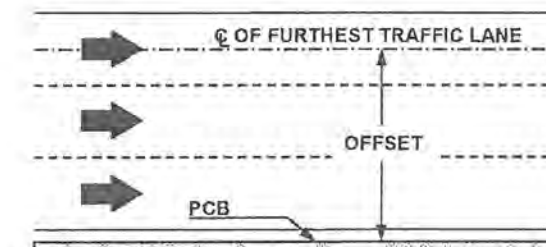


FIGURE B



PORTABLE CONCRETE BARRIER
AT
TEMPORARY SHORING LOCATIONS

TEMPORARY SHORING NOTES

SHORING LOCATION NO 1 ESTIMATED QUANTITY = 260 SF

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION. BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION -L- 406+42 ±, 12.0 FT RIGHT, TO STATION -L- 406+92 ±, 12.0 FT RIGHT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS, GROUNDWATER ELEVATION AND WEATHERED ROCK ELEVATION:

- UNIT WEIGHT (γ) = 120 LB/CF (SOIL)
- UNIT WEIGHT (γ) = 140 LB/CF (WEATHERED ROCK)
- FRICTION ANGLE (ϕ) = 30 DEGREES (SOIL)
- FRICTION ANGLE (ϕ) = 42 DEGREES (WEATHERED ROCK)
- COHESION (c) = 0 LB/SF
- GROUNDWATER ELEVATION = 216.0 FT ±
- WEATHERED ROCK ELEVATION = 204.6 FT ±

DRIVEN PILING FOR TEMPORARY SHORING FROM STATION -L- 406+42 ±, 12.0 FT RIGHT, TO STATION -L- 406+92 ±, 12.0 FT RIGHT WILL NOT PENETRATE BELOW ELEVATION 204.6 FT ± DUE TO OBSTRUCTIONS, VERY DENSE OR HARD SOIL, BOULDERS OR WEATHERED OR HARD ROCK.

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L- 406+42 ±, 12.0 FT RIGHT, TO STATION -L- 406+92 ±, 12.0 FT RIGHT.

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION -L- 406+42 ±, 12.0 FT RIGHT, TO STATION -L- 406+92 ±, 12.0 FT RIGHT. SEE STANDARD DRAWING NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

IT MAY BE PREFERRED TO USE A TEMPORARY SOIL NAIL WALL FOR TEMPORARY SHORING FROM STATION -L- 406+42 ±, 12.0 FT RIGHT, TO STATION -L- 406+92 ±, 12.0 FT RIGHT. FOR TEMPORARY SOIL NAIL WALLS, SEE TEMPORARY SOIL NAIL WALLS PROVISION.

SHORING LOCATION NO 2 ESTIMATED QUANTITY = 260 SF

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION. BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION -L- 406+42 ±, 12.0 FT LEFT, TO STATION -L- 406+92 ±, 12.0 FT LEFT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS, GROUNDWATER ELEVATION AND WEATHERED ROCK ELEVATION:

- UNIT WEIGHT (γ) = 120 LB/CF (SOIL)
- UNIT WEIGHT (γ) = 140 LB/CF (WEATHERED ROCK)
- FRICTION ANGLE (ϕ) = 30 DEGREES (SOIL)
- FRICTION ANGLE (ϕ) = 42 DEGREES (WEATHERED ROCK)
- COHESION (c) = 0 LB/SF
- GROUNDWATER ELEVATION = 216.0 FT ±
- WEATHERED ROCK ELEVATION = 204.7 FT ±

DRIVEN PILING FOR TEMPORARY SHORING FROM STATION -L- 406+42 ±, 12.0 FT LEFT, TO STATION -L- 406+92 ±, 12.0 FT LEFT MAY NOT PENETRATE BELOW ELEVATION 204.7 FT ± DUE TO OBSTRUCTIONS, VERY DENSE OR HARD SOIL, BOULDERS OR WEATHERED OR HARD ROCK.



DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L- 406+42 ±, 12.0 FT LEFT, TO STATION -L- 406+92 ±, 12.0 FT LEFT.

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION -L- 406+42 ±, 12.0 FT LEFT, TO STATION -L- 406+92 ±, 12.0 FT LEFT. SEE STANDARD DRAWING NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

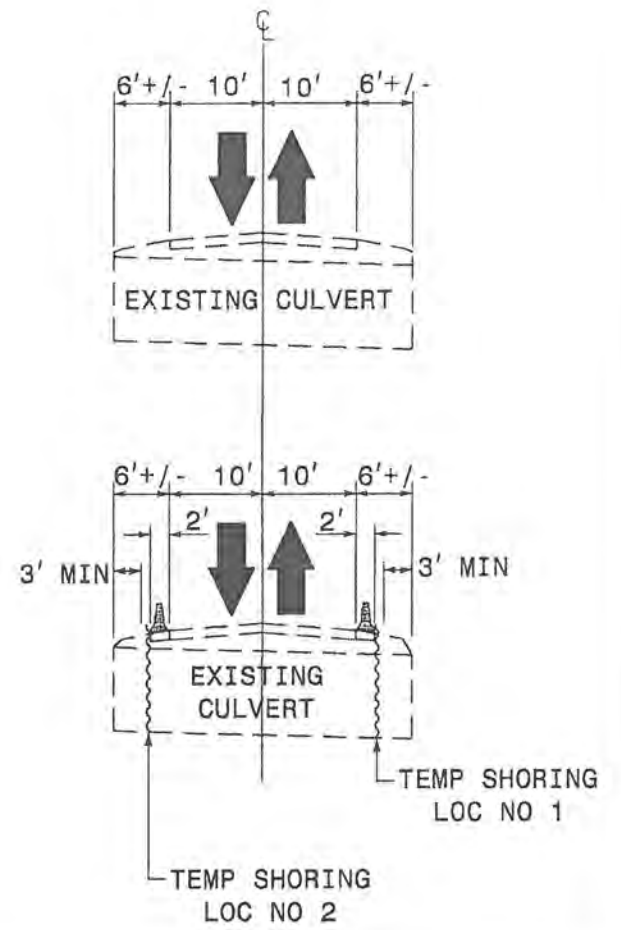
IT MAY BE PREFERRED TO USE A TEMPORARY SOIL NAIL WALL FOR TEMPORARY SHORING FROM STATION -L- 406+42 ±, 12.0 FT LEFT, TO STATION -L- 406+92 ±, 12.0 FT LEFT. FOR TEMPORARY SOIL NAIL WALLS, SEE TEMPORARY SOIL NAIL WALLS PROVISION.

THE TEMPORARY SHORING NOTES SHOWN ON THIS SHEET WERE PROVIDED THROUGH A SEALED DOCUMENT FROM THE GEOTECHNICAL ENGINEERING UNIT. THE DOCUMENT WAS SUBMITTED TO THE WZTC UNIT ON APRIL 1, 2014 AND SEALED BY A PROFESSIONAL ENGINEER, JINYOUNG PARK, PE LICENSE NO 32171

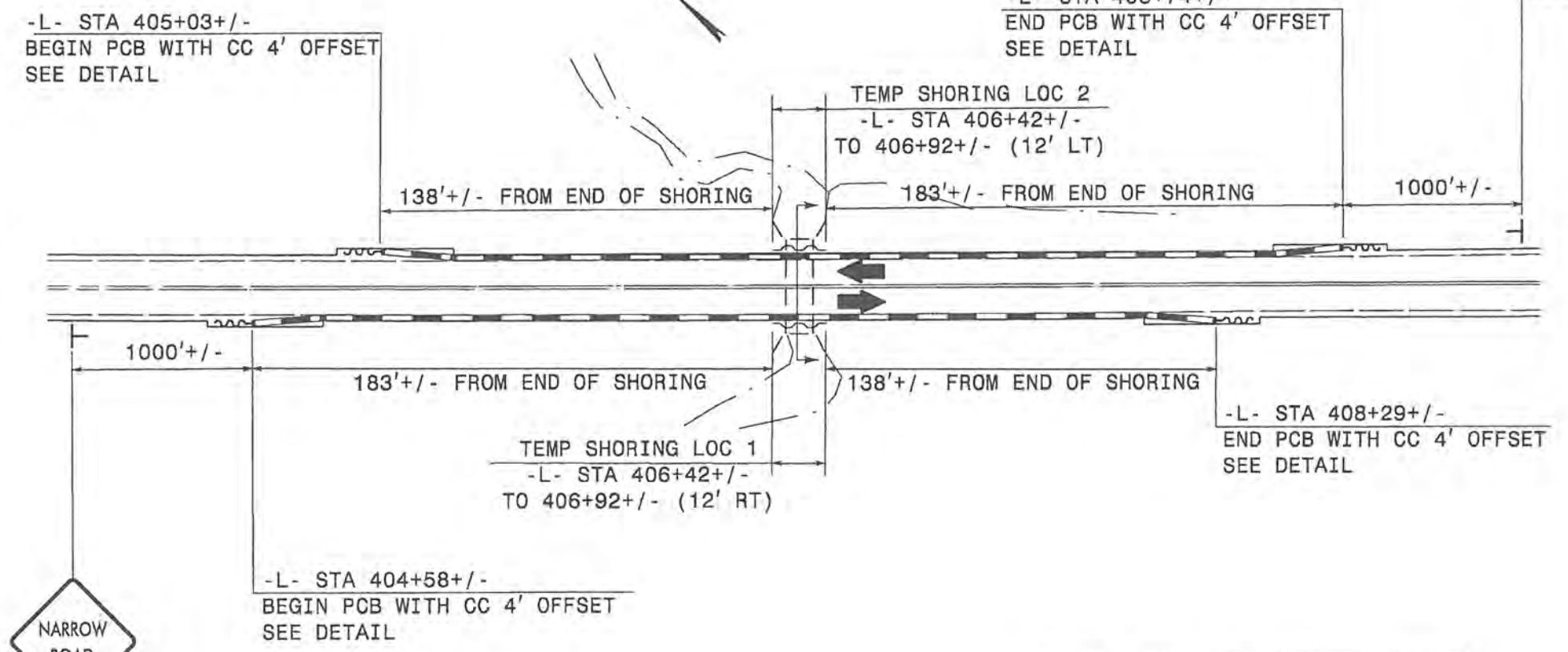
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APPROVED: 	DATE: 4-1-2014		TEMPORARY SHORING DATA
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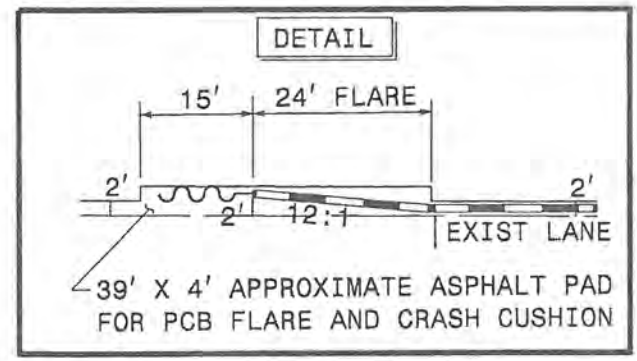
CUT SECTIONS



SITE 18 PLAN VIEW



SEE TMP-2A FOR SHORING NOTES

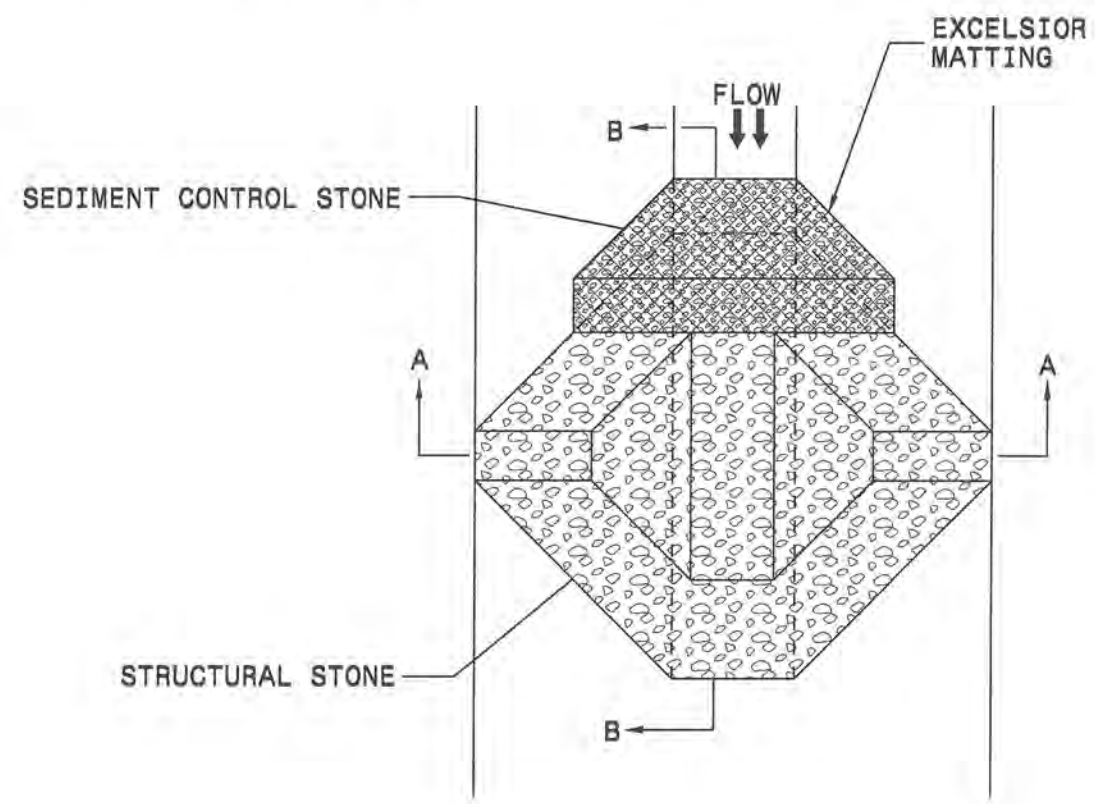


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APPROVED:	DATE:		SITE 18 & SHORING NOTES
	4-17-2014		

PROJECT REFERENCE NO. W-5509	SHEET NO. EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)



PLAN

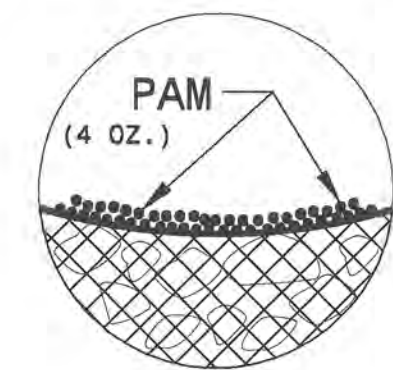
NOTES:

INSTALL TEMPORARY ROCK SILT CHECK TYPE A IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1633.01.

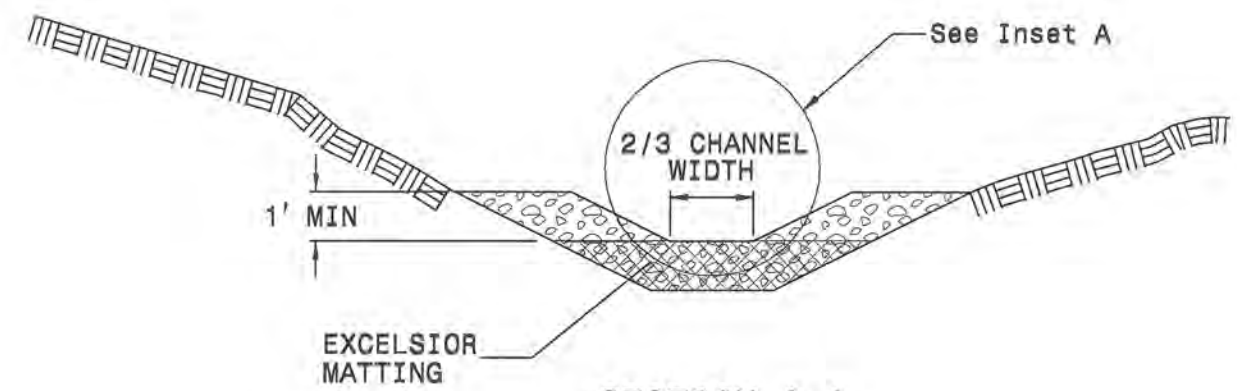
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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 ROCK SILT CHECK.

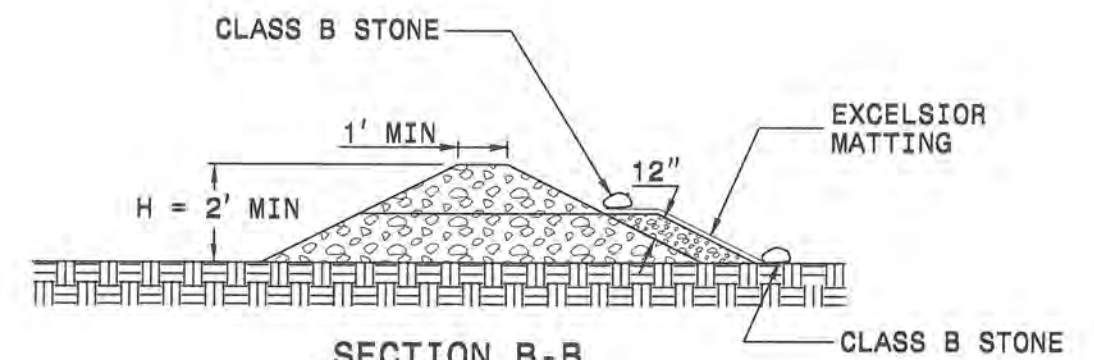
INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A

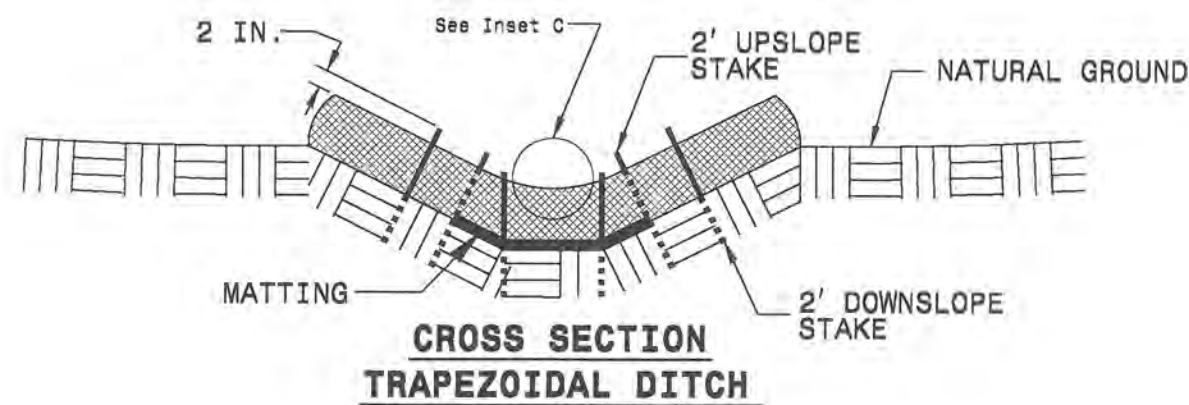
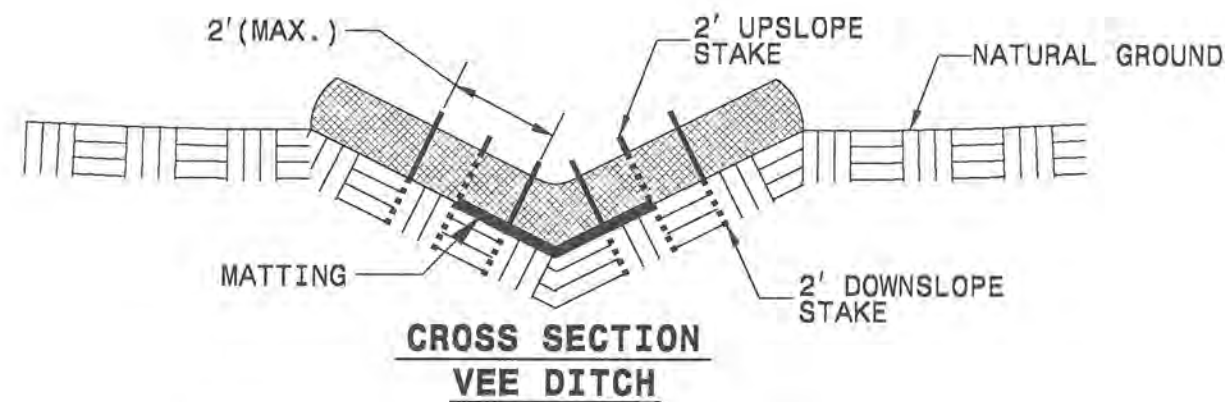
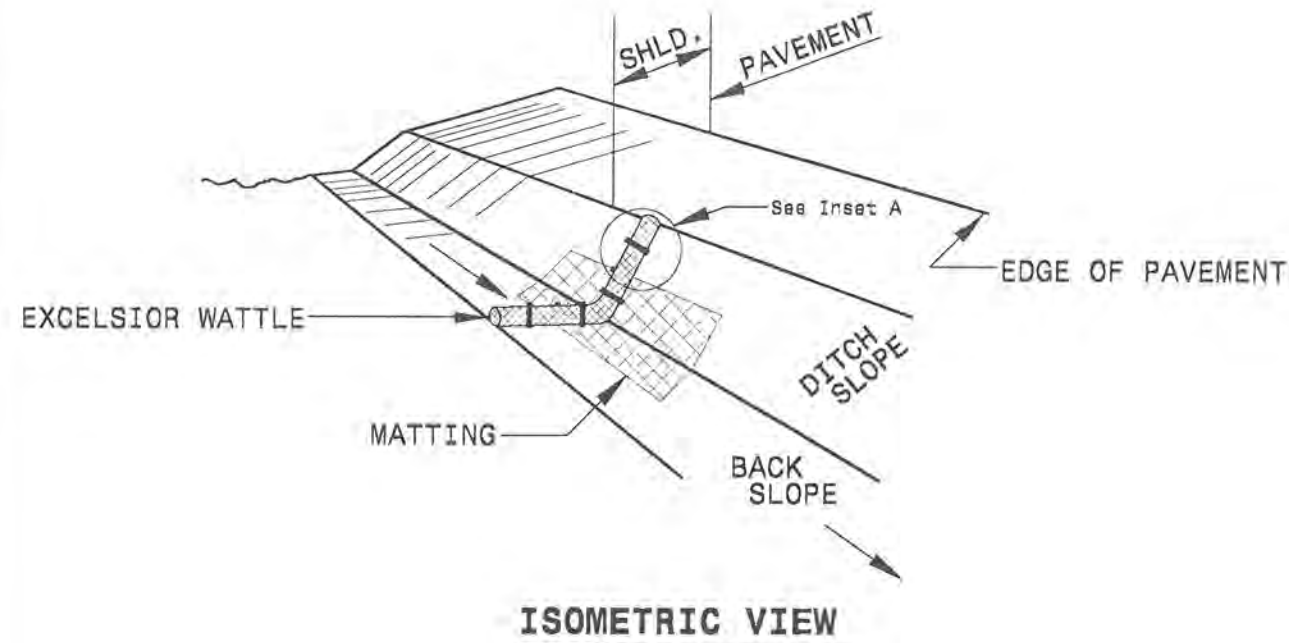


SECTION B-B

NOT TO SCALE

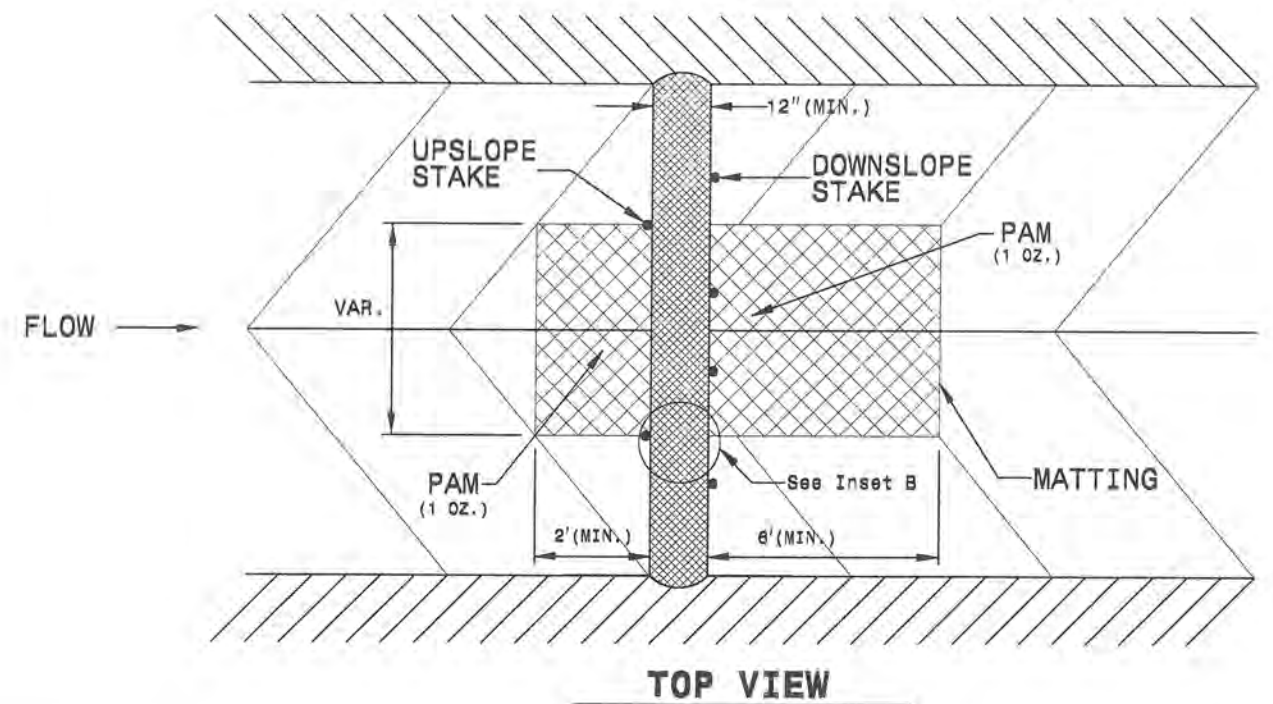
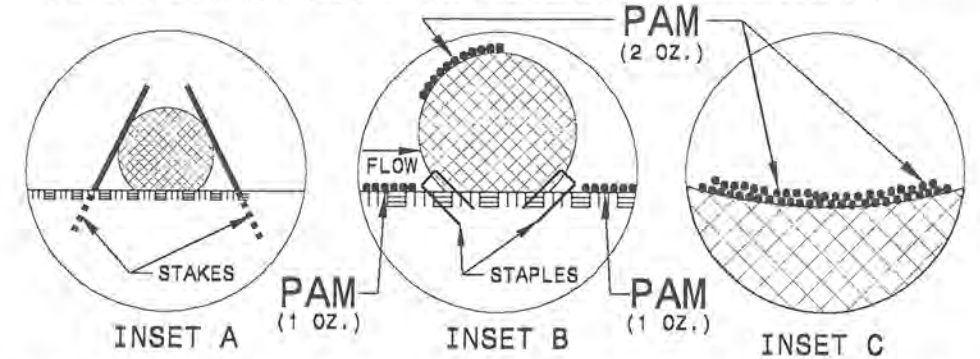
PROJECT REFERENCE NO. W-5509	SHEET NO. EC-2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



NOTES:

- USE MINIMUM 12 IN. DIAMETER EXCELSIOR 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 MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.

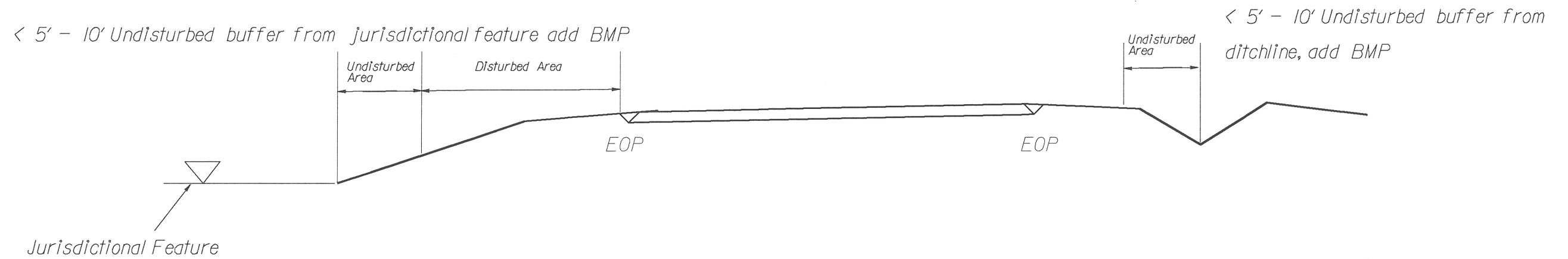
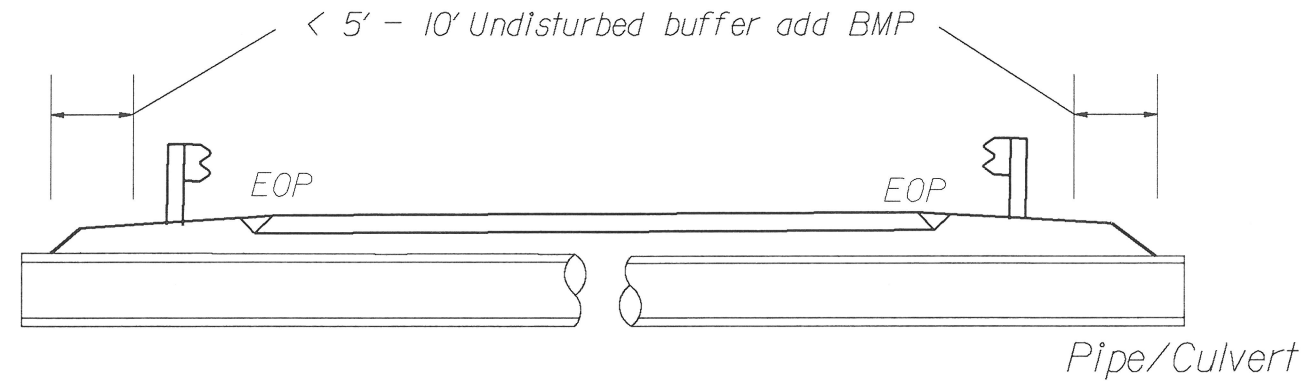


PROJECT REFERENCE NO. W-5509	SHEET NO. EC-2B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NOTES: Less than 5' - 10' undisturbed buffer from ROW, ditchline, water feature, or drainage inlet, add BMP.

BMP Options: Wattle or Silt Fence

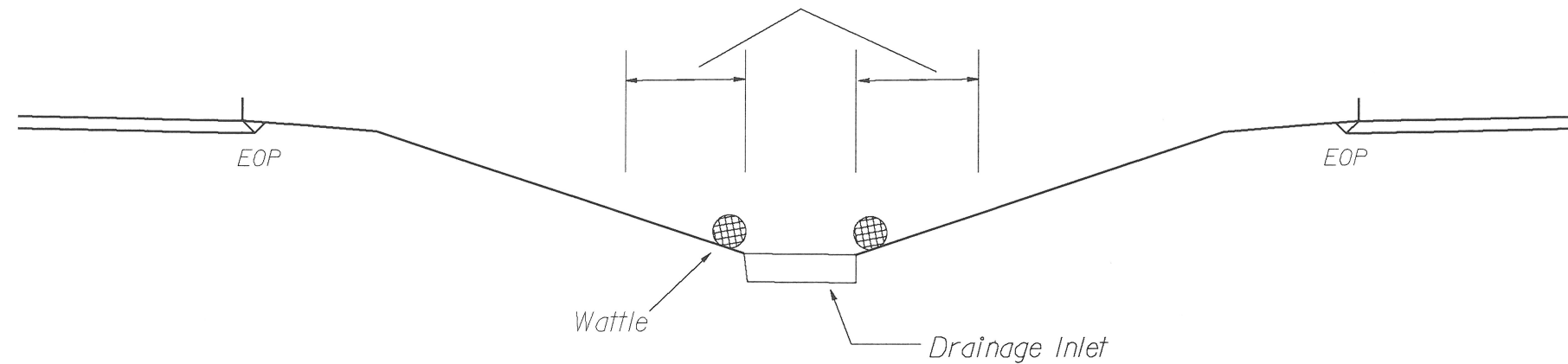
EROSION CONTROL DETAIL



Use BMP's if shoulders and/or frontslopes and/or ditchline and/or backslopes are disturbed



< 5' - 10' Undisturbed buffer from inlet, add wattle

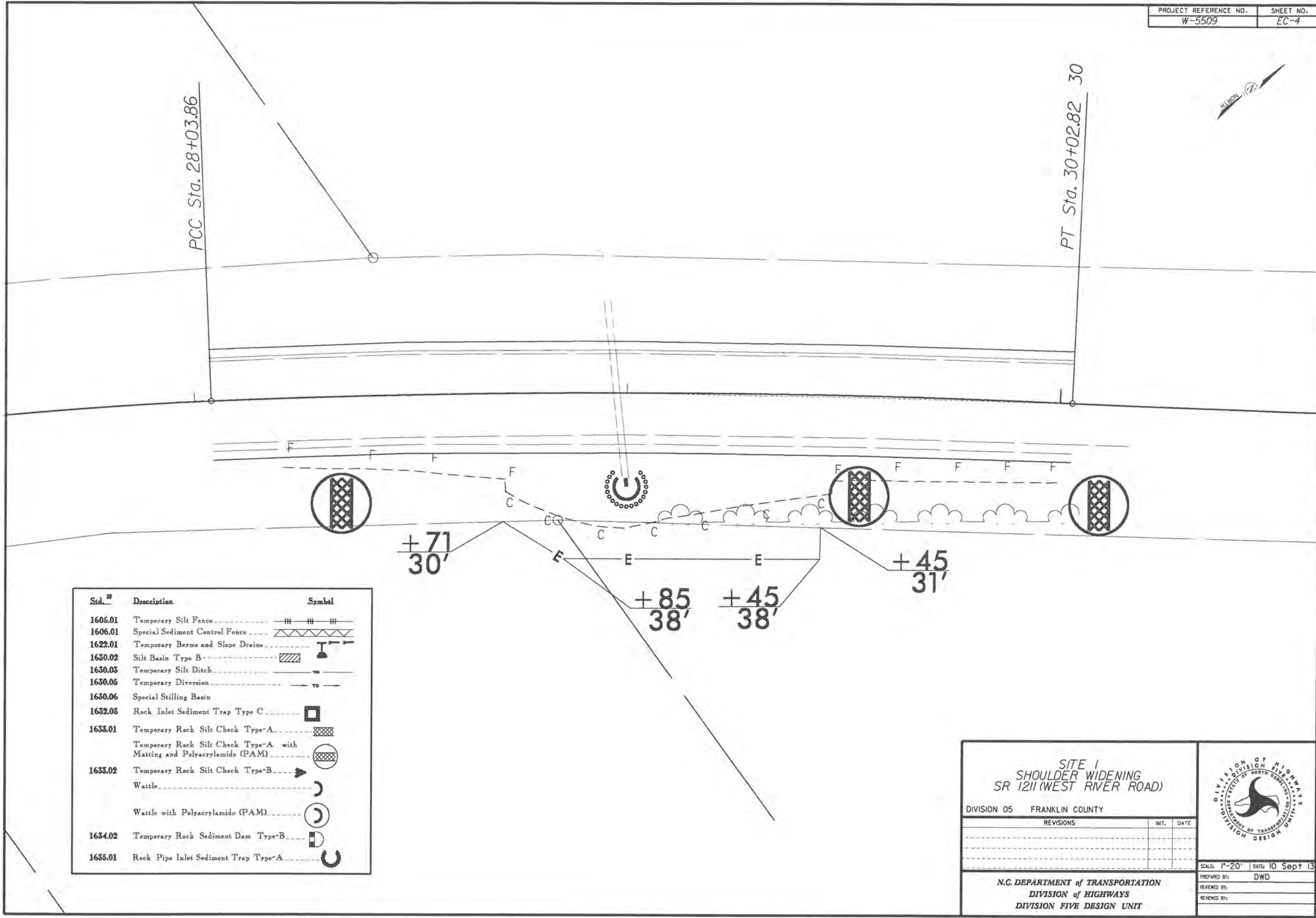


NOT TO SCALE



PCC Sta. 28+03.86

PT Sta. 30+02.82 30



Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	▤ ▤ ▤ ▤ ▤
1622.01	Temporary Berms and Slope Drains	— T —
1650.02	Silt Basin Type B	▨
1650.03	Temporary Silt Ditch	— T —
1650.05	Temporary Diversion	— T —
1650.06	Special Stilling Basin	— T —
1632.03	Rock Inlet Sediment Trap Type C	□
1633.01	Temporary Rock Silt Check Type-A	▤
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	▤
1633.02	Temporary Rock Silt Check Type-B	▤
	Wattle	⤵
	Wattle with Polyacrylamide (PAM)	⤵
1634.02	Temporary Rock Sediment Dam Type-B	▤
1635.01	Rock Pipe Inlet Sediment Trap Type-A	⊕

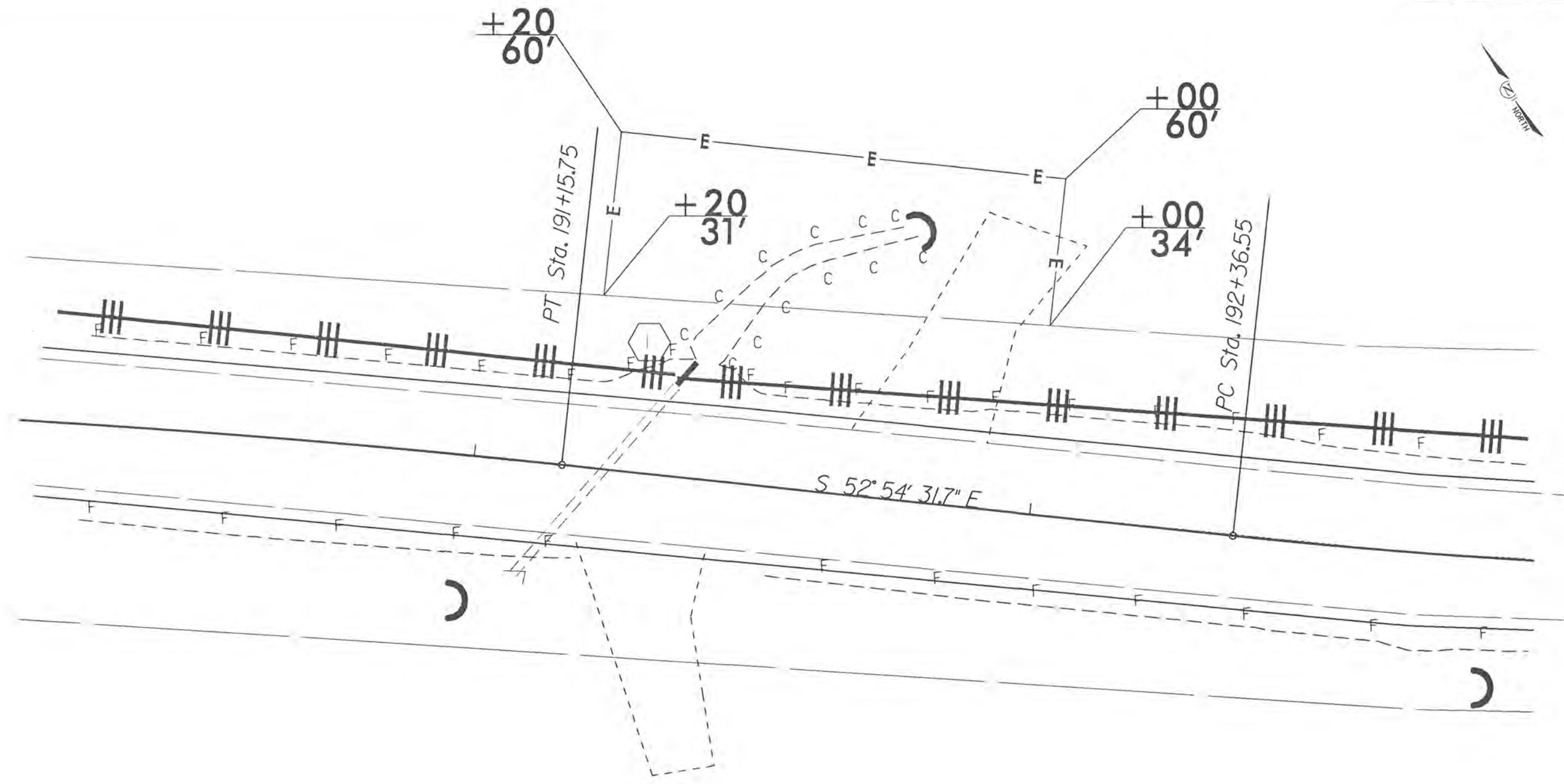
SITE 1
SHOULDER WIDENING
SR 1211 (WEST RIVER ROAD)

DIVISION 05 FRANKLIN COUNTY

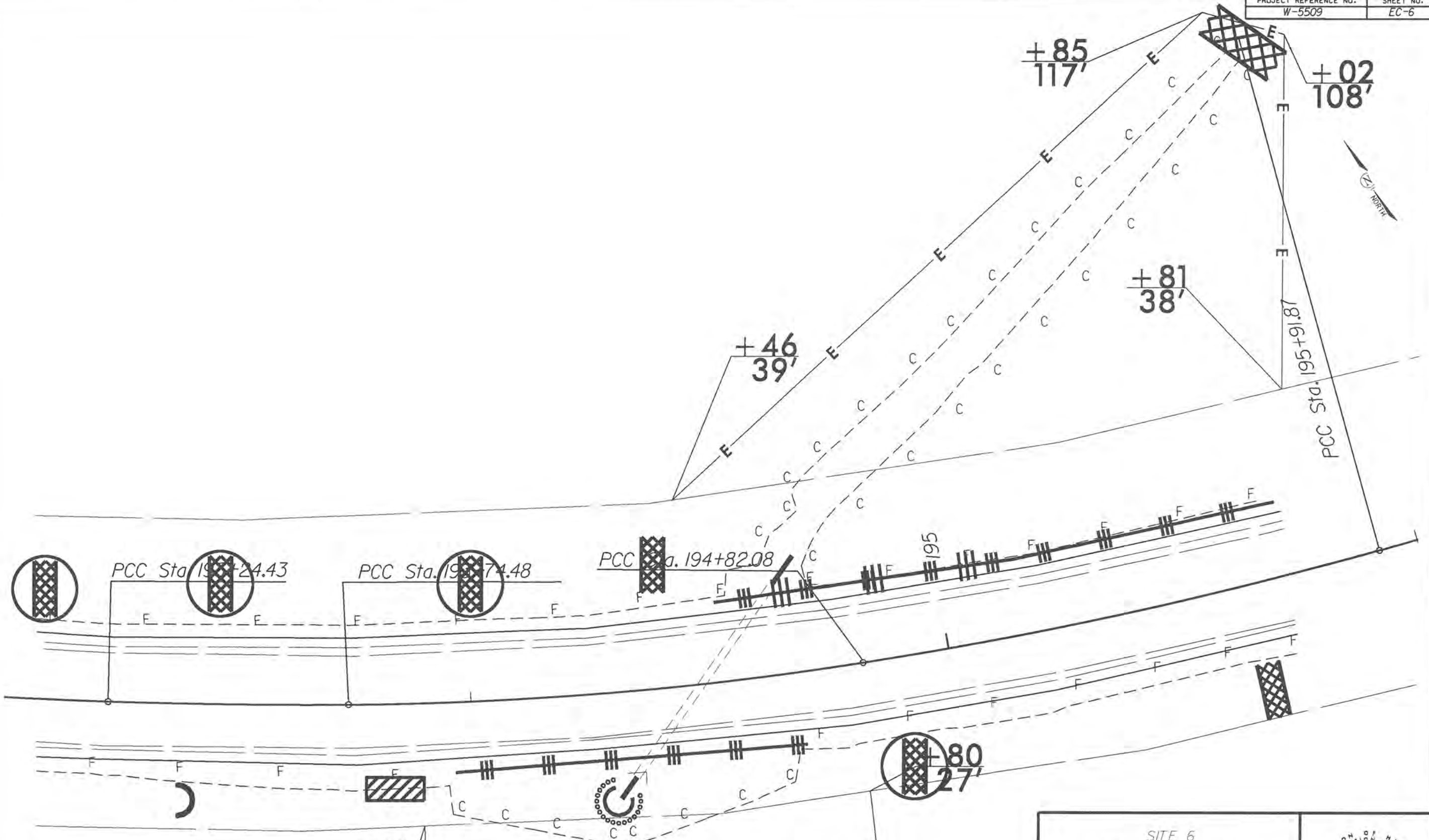
REVISIONS	INIT.	DATE

N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT

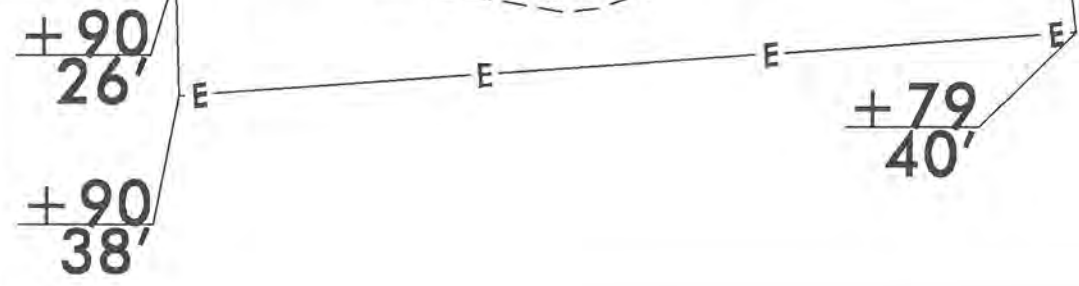
SCALE: 1"=20'	DATE: 10 Sept 13
PREPARED BY: DWD	
REVIEWED BY:	



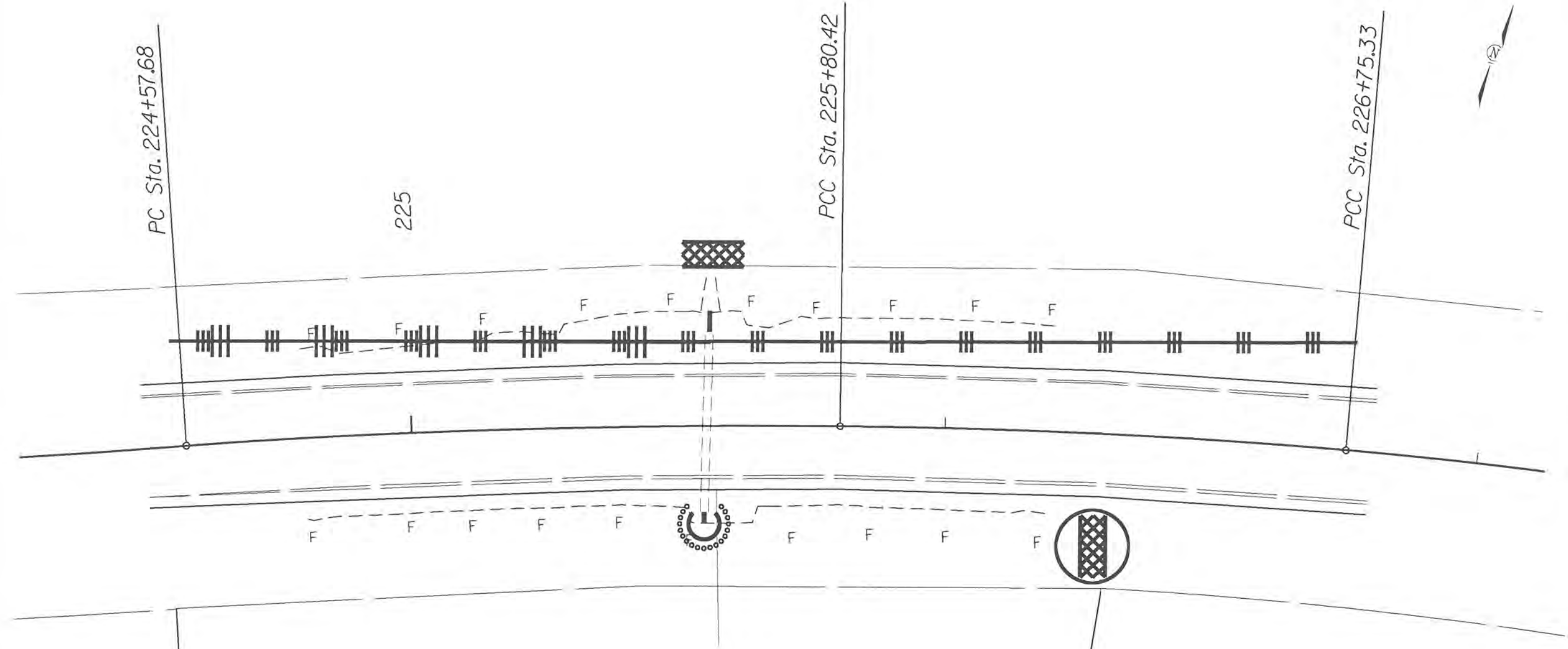
SITE 5 SHOULDER WIDENING SR 1211 (WEST RIVER ROAD)		
DIVISION 05 FRANKLIN COUNTY		
REVISIONS	INIT.	DATE
N.C. DEPARTMENT of TRANSPORTATION DIVISION of HIGHWAYS DIVISION FIVE DESIGN UNIT		SCALE: 1"=20' DATE: 11 Sept 13 PREPARED BY: DWD REVIEWED BY: REVIEWED BY:



SILT BASIN TYPE B
5' x 10' x 3'



SITE 6 SHOULDER WIDENING SR 1211 (WEST RIVER ROAD)		
DIVISION 05 FRANKLIN COUNTY		
REVISIONS	INT.	DATE
N.C. DEPARTMENT of TRANSPORTATION DIVISION of HIGHWAYS DIVISION FIVE DESIGN UNIT		SCALE: 1"=20' DATE: 12 Sept 13 PREPARED BY: DWD REVIEWED BY:



SITE 7
SHOULDER WIDENING
SR 1211 (WEST RIVER ROAD)

DIVISION 05 COUNTY

REVISIONS	INIT.	DATE

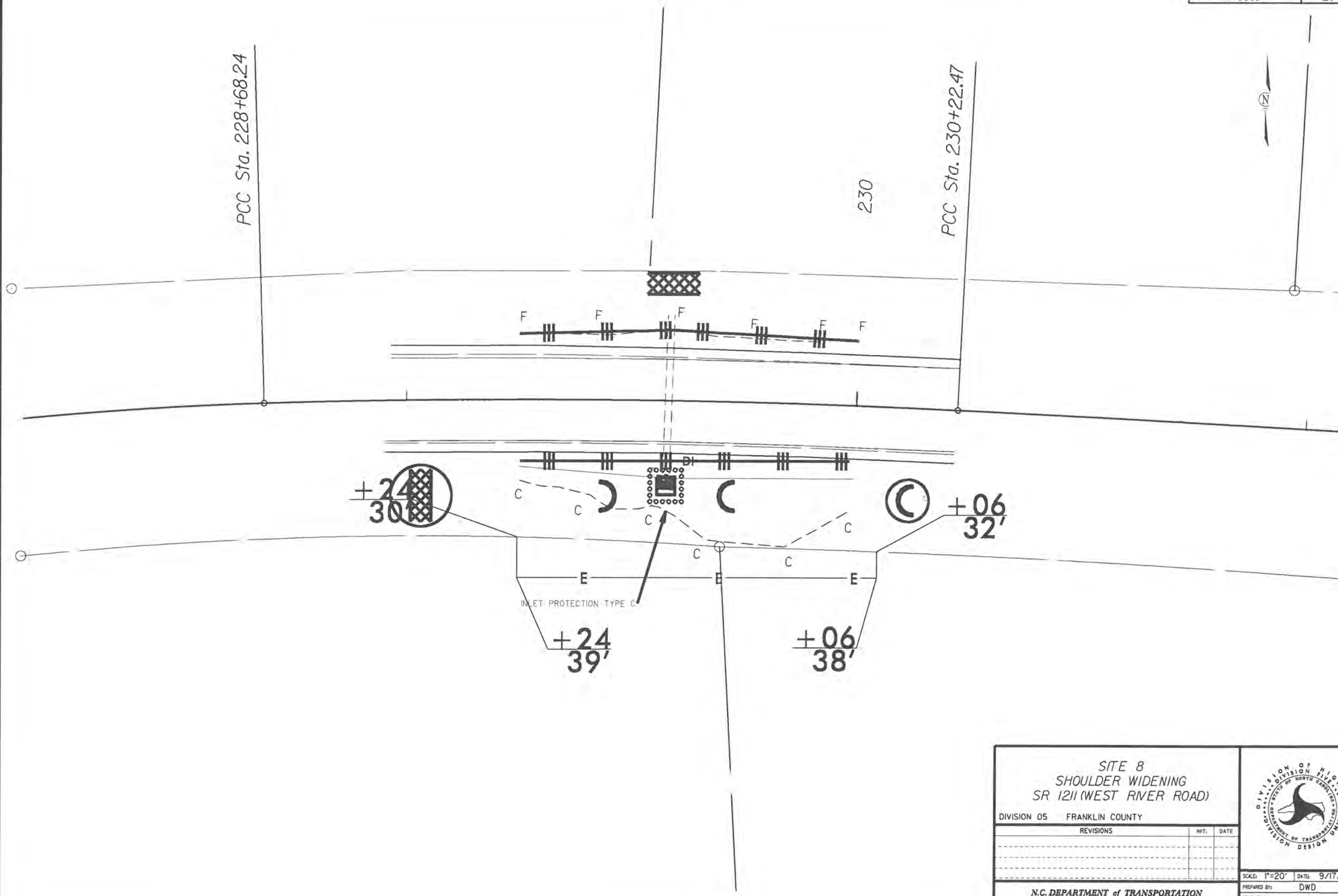
N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT

SCALE: 1"=20' DATE: 12 Sept 13

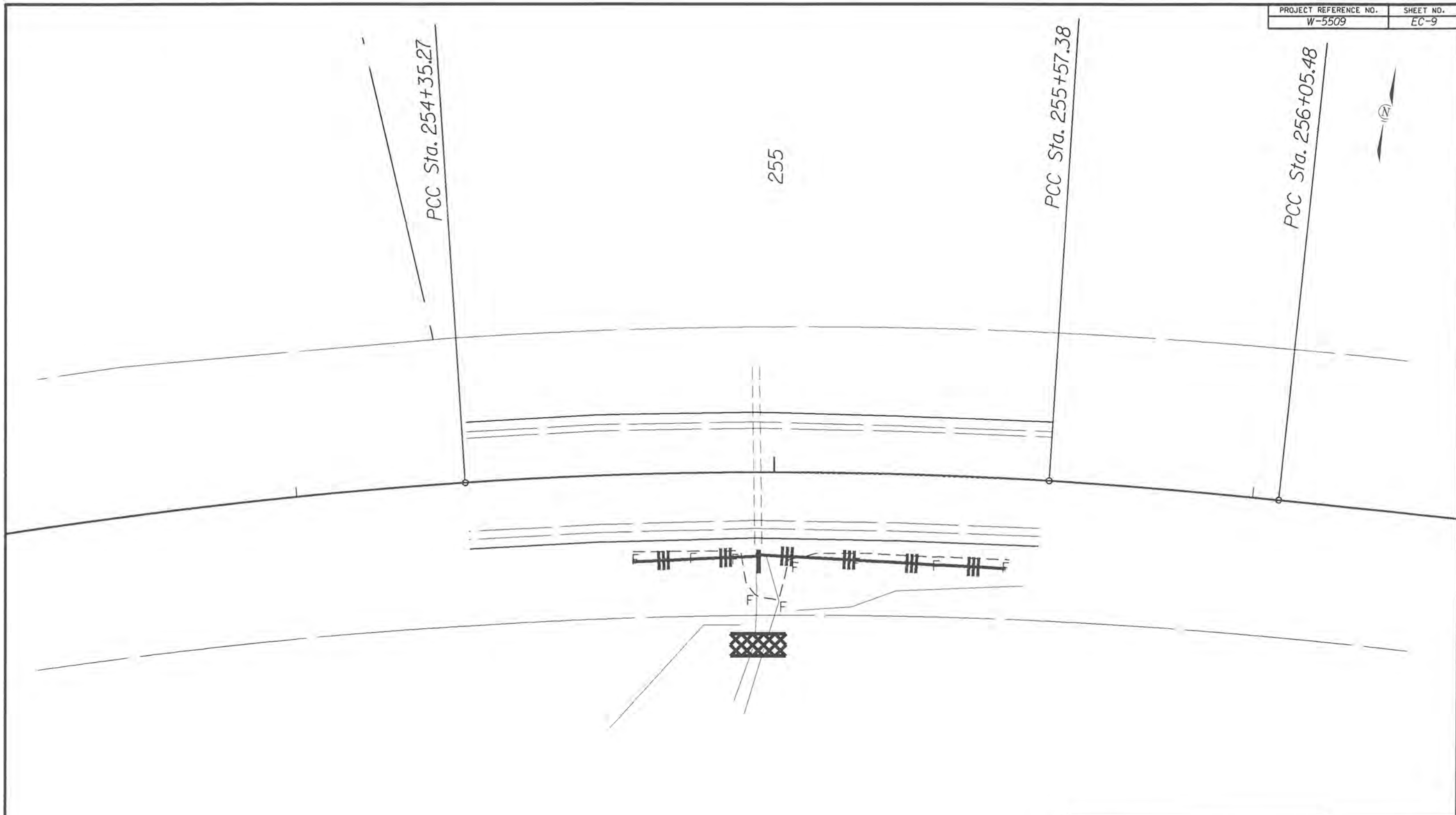
PREPARED BY: DWD

REVIEWED BY:

REVIEWED BY:



SITE 8 SHOULDER WIDENING SR 1211 (WEST RIVER ROAD)			
DIVISION 05 FRANKLIN COUNTY			
REVISIONS	INT.	DATE	SCALE: 1"=20' DATE: 9/17/2013 PREPARED BY: DWD REVIEWED BY: REVIEWED BY:
N.C. DEPARTMENT of TRANSPORTATION DIVISION of HIGHWAYS DIVISION FIVE DESIGN UNIT			



SITE 9 SHOULDER WIDENING SR 1211 (WEST RIVER ROAD)		
DIVISION 05 COUNTY		
REVISIONS	INIT.	DATE
N.C. DEPARTMENT of TRANSPORTATION DIVISION of HIGHWAYS DIVISION FIVE DESIGN UNIT		SCALE: 1"=20' DATE: 9/20/2013 PREPARED BY: DWD REVIEWED BY: REVIEWED BY:



PCC Sta. 293+14.93

PT Sta. 294+49.55

295



+78
30'

+98
30'

REGRADE PIPE DITCH OUTLET
AS DIRECTED BY THE ENGINEER
TO ALLOW FOR DRAINAGE

+82
65'

+01
62'

SITE II
SHOULDER WIDENING
SR 1211 (WEST RIVER ROAD)

DIVISION 05 FRANKLIN COUNTY

REVISIONS	INT.	DATE

N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT

SCALE: 1"=20' DATE: 9/17/2013

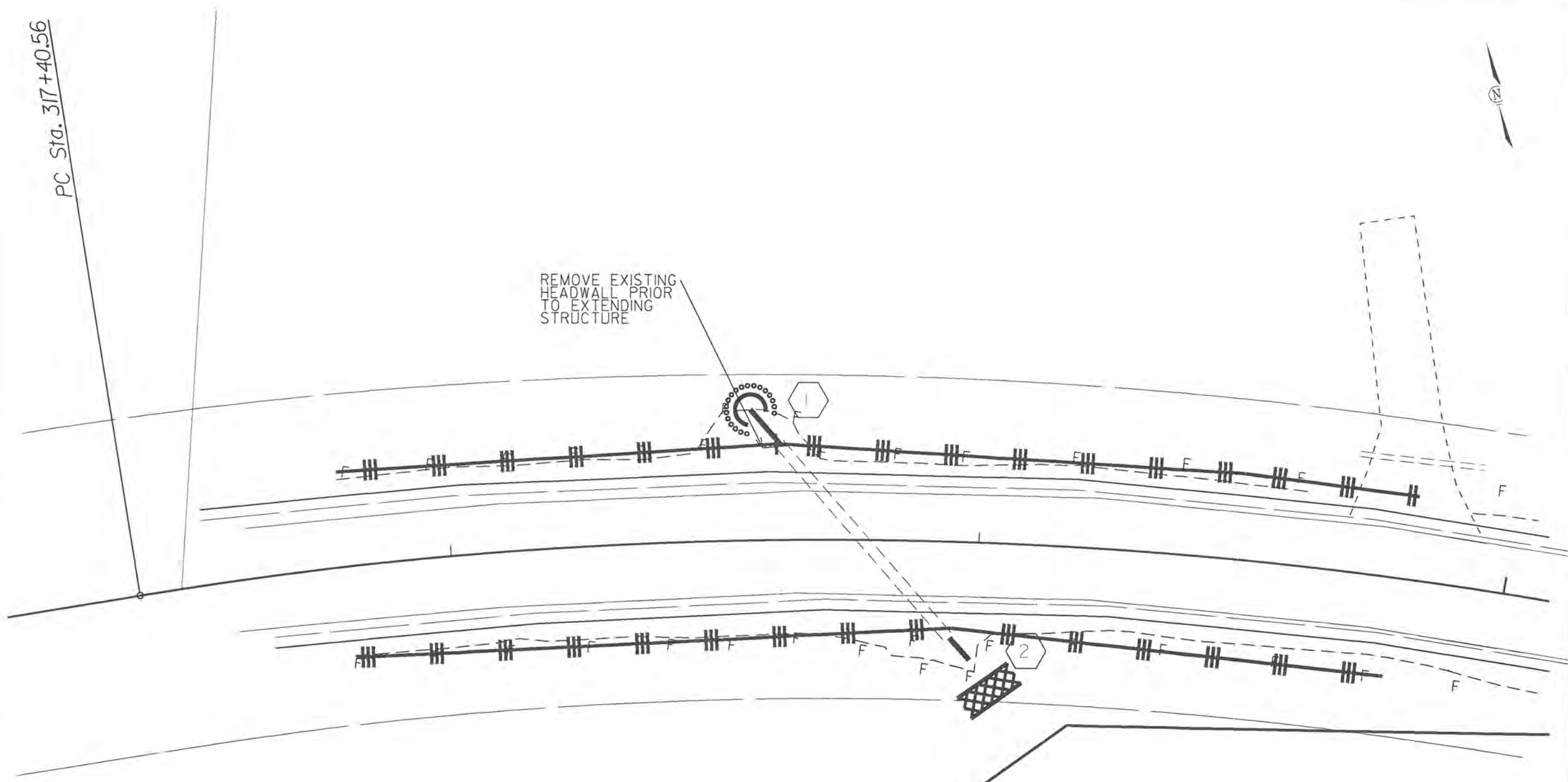
PREPARED BY: DWD

REVIEWED BY:

REVIEWED BY:

PC Sta. 317+40.56

REMOVE EXISTING HEADWALL PRIOR TO EXTENDING STRUCTURE



STRUCTURE NO.	REMARKS
1	8.0 FT OF 24" RCP STA.318+62 Lt.
2	5.5 FT OF 24" RCP STA.318+95 Rt.

SITE 12A
SHOULDER WIDENING
SR 1211 (WEST RIVER ROAD)

DIVISION 05 COUNTY

REVISIONS	INT.	DATE

N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT

SCALE: 1"=20' DATE: 9/17/2013

PREPARED BY: DWD

REVIEWED BY:

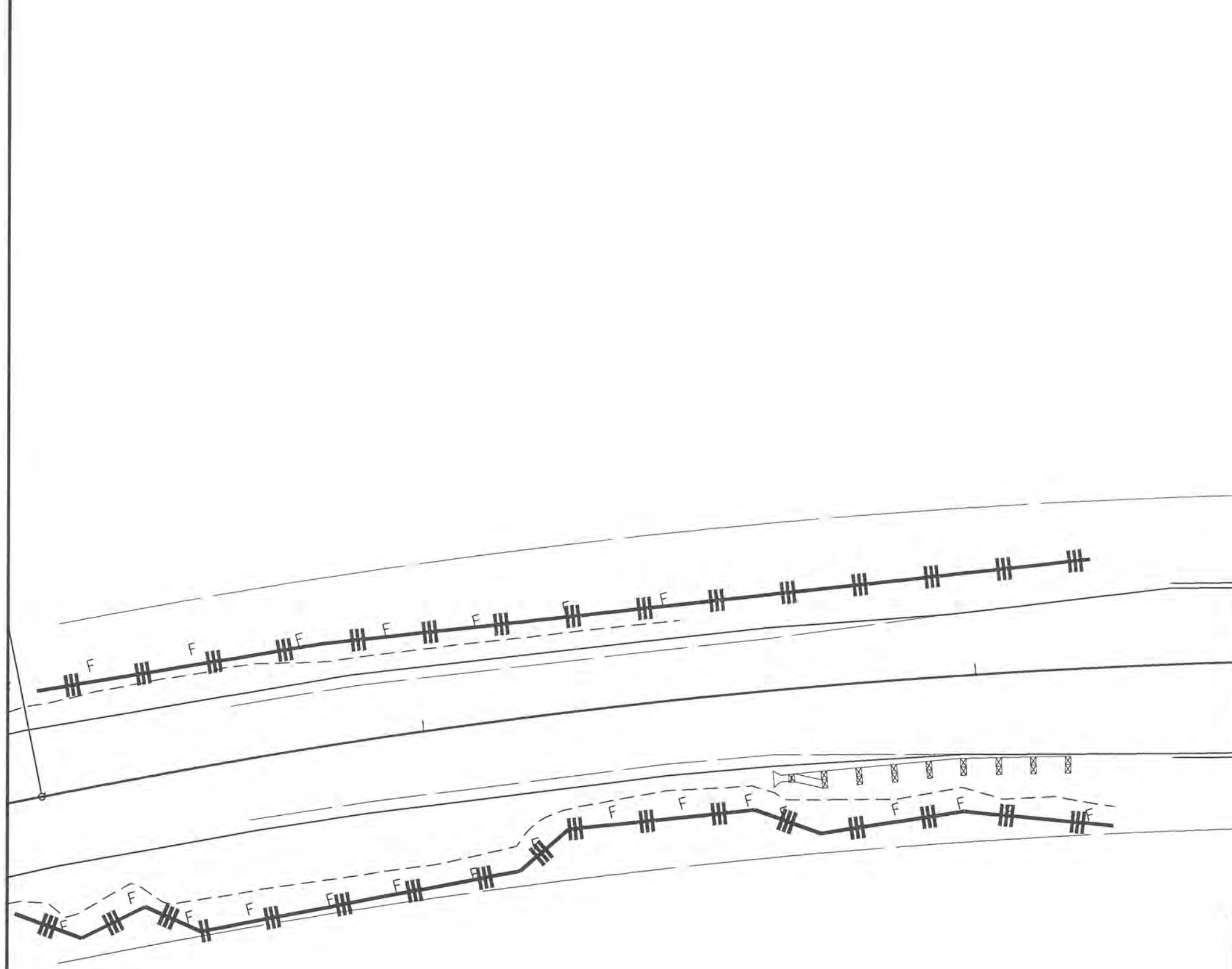
REVIEWED BY:



PT Sta. 322+87.13

EXIST R/W

EXIST R/W



SITE 12B
SHOULDER WIDENING
SR 1211 (WEST RIVER ROAD)

DIVISION 05 FRANKLIN COUNTY

REVISIONS	INIT.	DATE

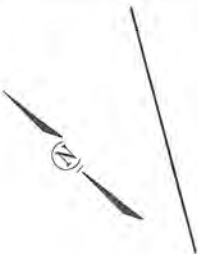
N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT

SCALE: 1"=20' DATE: 9/17/2013

PREPARED BY: DWD

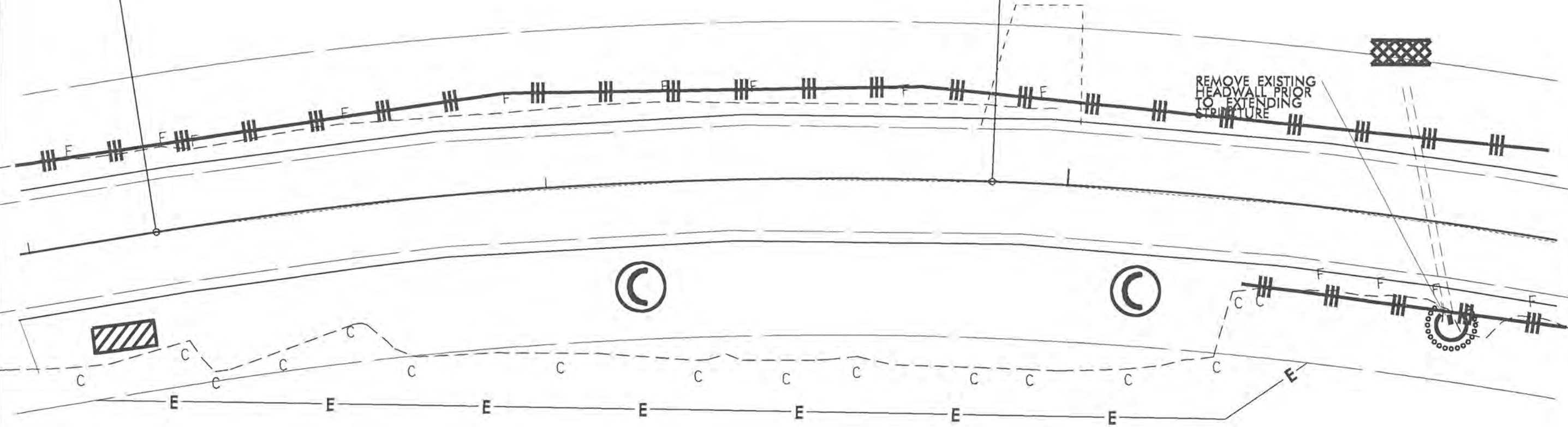
REVIEWED BY:

REVIEWED BY:



PCC Sta. 328+24.79

PCC Sta. 329+85.52



4 x 10 x 3
SILT BASIN TYPE B

THIS SECTION MUST BE
PERMANENTLY STABILIZED
WITHIN 30 DAYS OF
CLEARING AND GRUBBING

SITE 12C
SHOULDER WIDENING
SR 1211 (WEST RIVER ROAD)

DIVISION 05 COUNTY

REVISIONS	INT.	DATE

N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT

SCALE: 1"=20' DATE: 10/1/2013

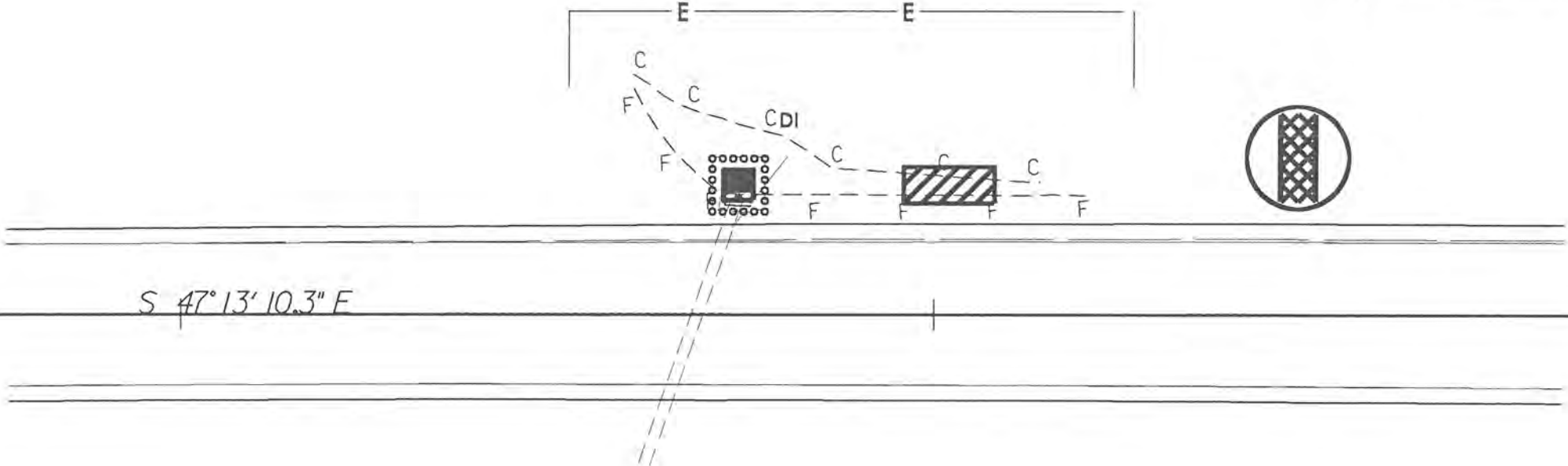
PREPARED BY: DWD

REVIEWED BY:

REVIEWED BY:

**2 x 6 x 3
SILT BASIN TYPE B**

THIS SECTION MUST BE
PERMANENTLY STABILIZED
WITHIN 30 DAYS OF
CLEARING AND GRUBBING



S 47° 13' 10.3" E

345

SITE 13 SHOULDER WIDENING SR 1211 (WEST RIVER ROAD)		
DIVISION 05 FRANKLIN COUNTY		
REVISIONS	INT.	DATE
N.C. DEPARTMENT of TRANSPORTATION DIVISION of HIGHWAYS DIVISION FIVE DESIGN UNIT		SCALE: 1"=20' DATE: 1/10/2013 PREPARED BY: DWD REVIEWED BY:

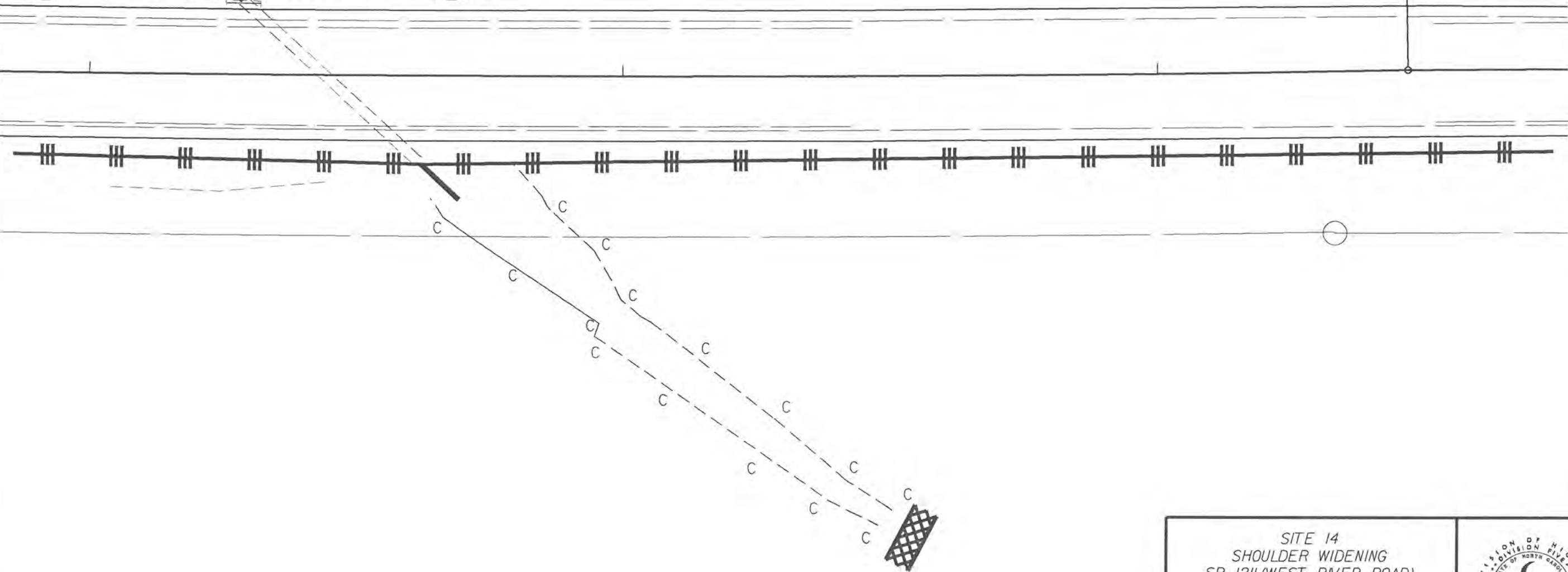
2' x 4' x 3
SILT BASIN
TYPE B

2' x 4' x 3
SILT BASIN
TYPE B

THIS SECTION MUST BE
PERMANENTLY STABILIZED
WITHIN 30 DAYS OF
CLEARING AND GRUBBING

THIS SECTION MUST BE
PERMANENTLY STABILIZED
WITHIN 30 DAYS OF
CLEARING AND GRUBBING

PRC Sta. 368+46.98



SITE 14
SHOULDER WIDENING
SR 1211 (WEST RIVER ROAD)

DIVISION 05 FRANKLIN COUNTY

REVISIONS	INT.	DATE

N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT

SCALE: 1"=20' | DATE: 5/22/2014

PREPARED BY: DWD

REVIEWED BY:

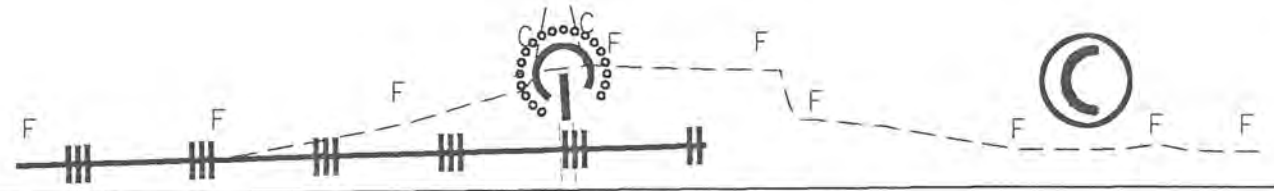
REVIEWED BY:



PT Sta. 374+24.06

POT Sta. 375+98.15

375



S 145° 20' 29.0" E



REGRADE PIPE DITCH OUTLET
AS DIRECTED BY THE ENGINEER
TO ALLOW FOR DRAINAGE

SITE 16
SHOULDER WIDENING
SR 1211 (WEST RIVER ROAD)

DIVISION 05 COUNTY

REVISIONS	INIT.	DATE

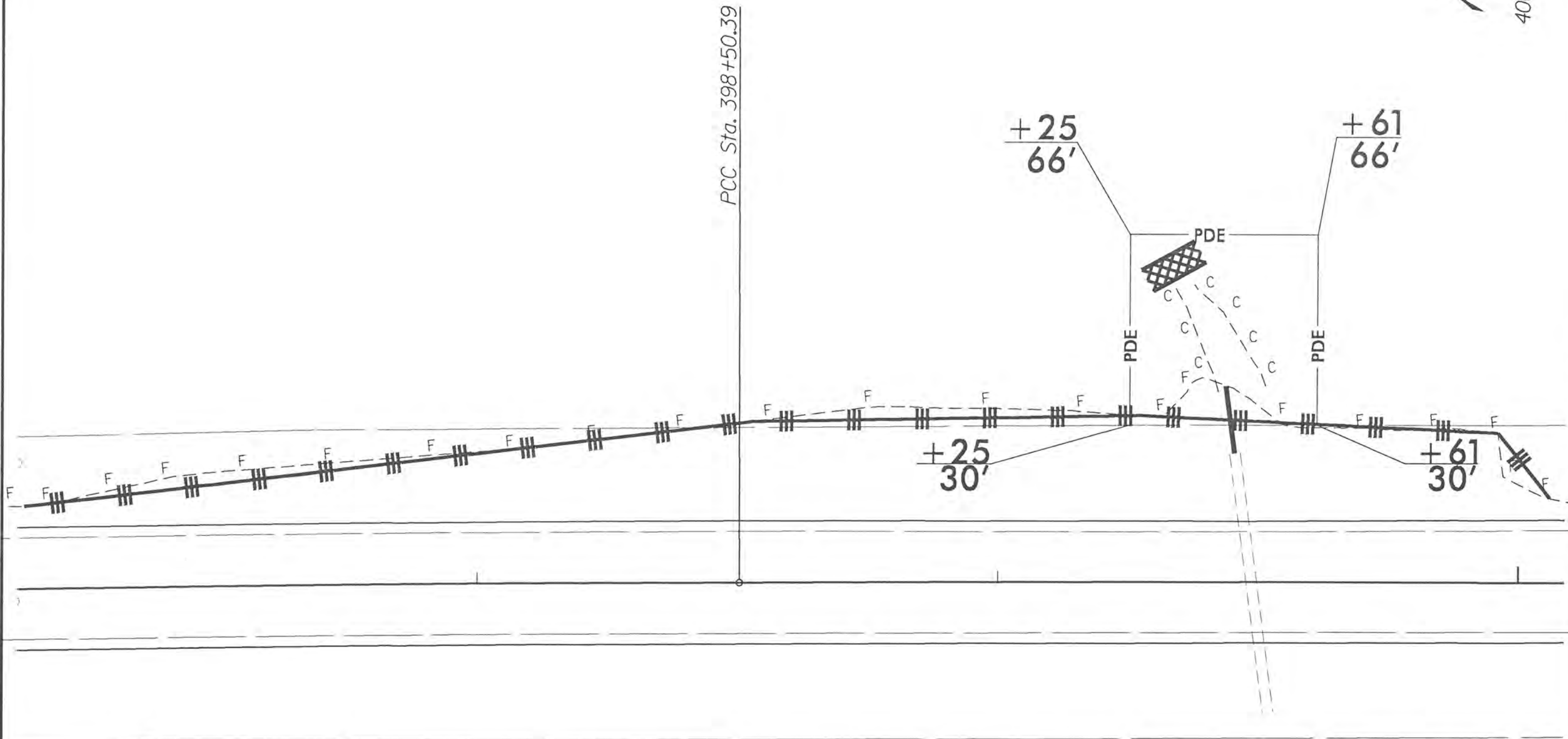
N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT

SCALE: 1"=20' DATE: 9/26/2013

PREPARED BY: DWD

REVIEWED BY:

REVIEWED BY:



SITE 17
SHOULDER WIDENING
SR 1211 (WEST RIVER ROAD)

DIVISION 05 COUNTY

REVISIONS	INIT.	DATE

N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT

SCALE: 1"=20' DATE: 9/23/2013

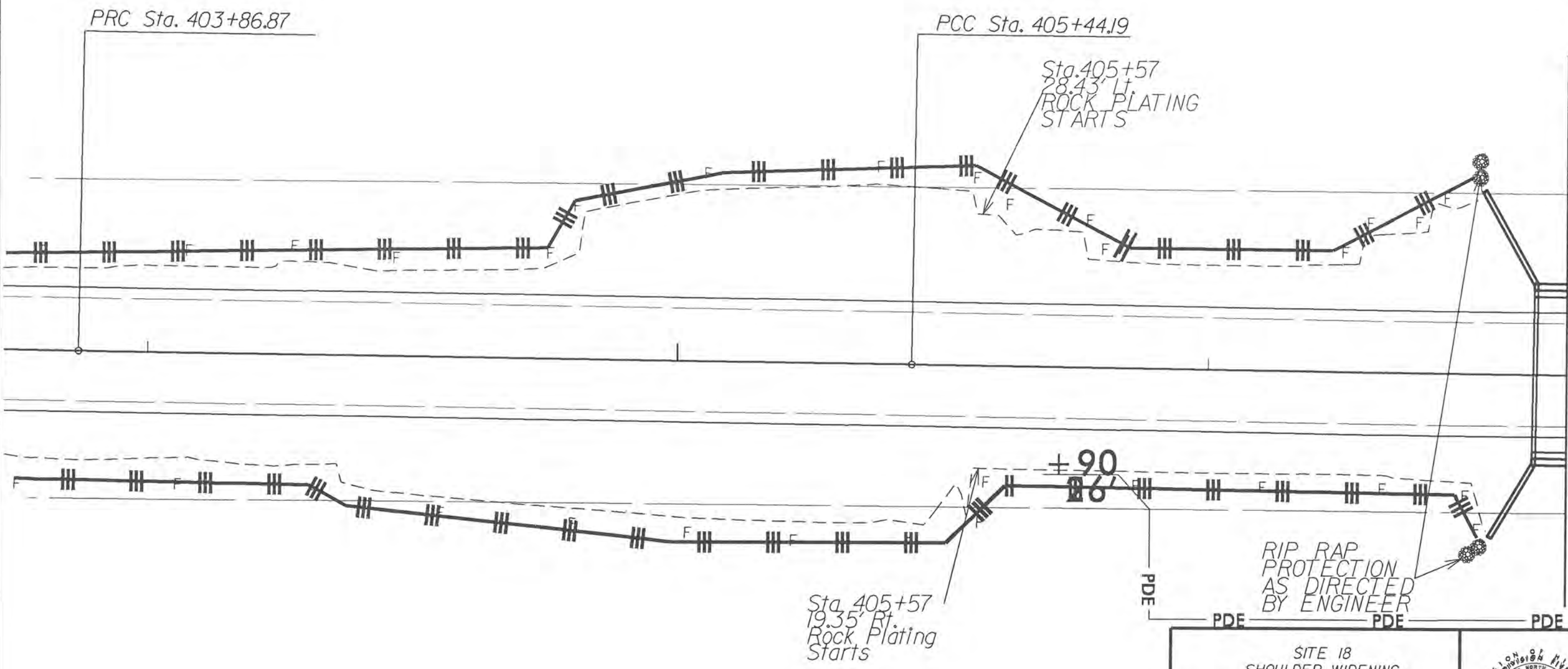
PREPARED BY: DWD

REVIEWED BY:

REVIEWED BY:



MATCHLINE -L- STA. 406+67 SEE SHEET 19



****SEE SHEET 2-B
FOR ENVIROMENT DETAIL
AND EASEMENT LIMITS**

SITE 18
SHOULDER WIDENING
SR 1211 (WEST RIVER ROAD)

DIVISION 05 FRANKLIN COUNTY

REVISIONS	INIT.	DATE

N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT



SCALE: 1"=20' DATE: 9/23/2013

PREPARED BY: DWD

REVIEWED BY:

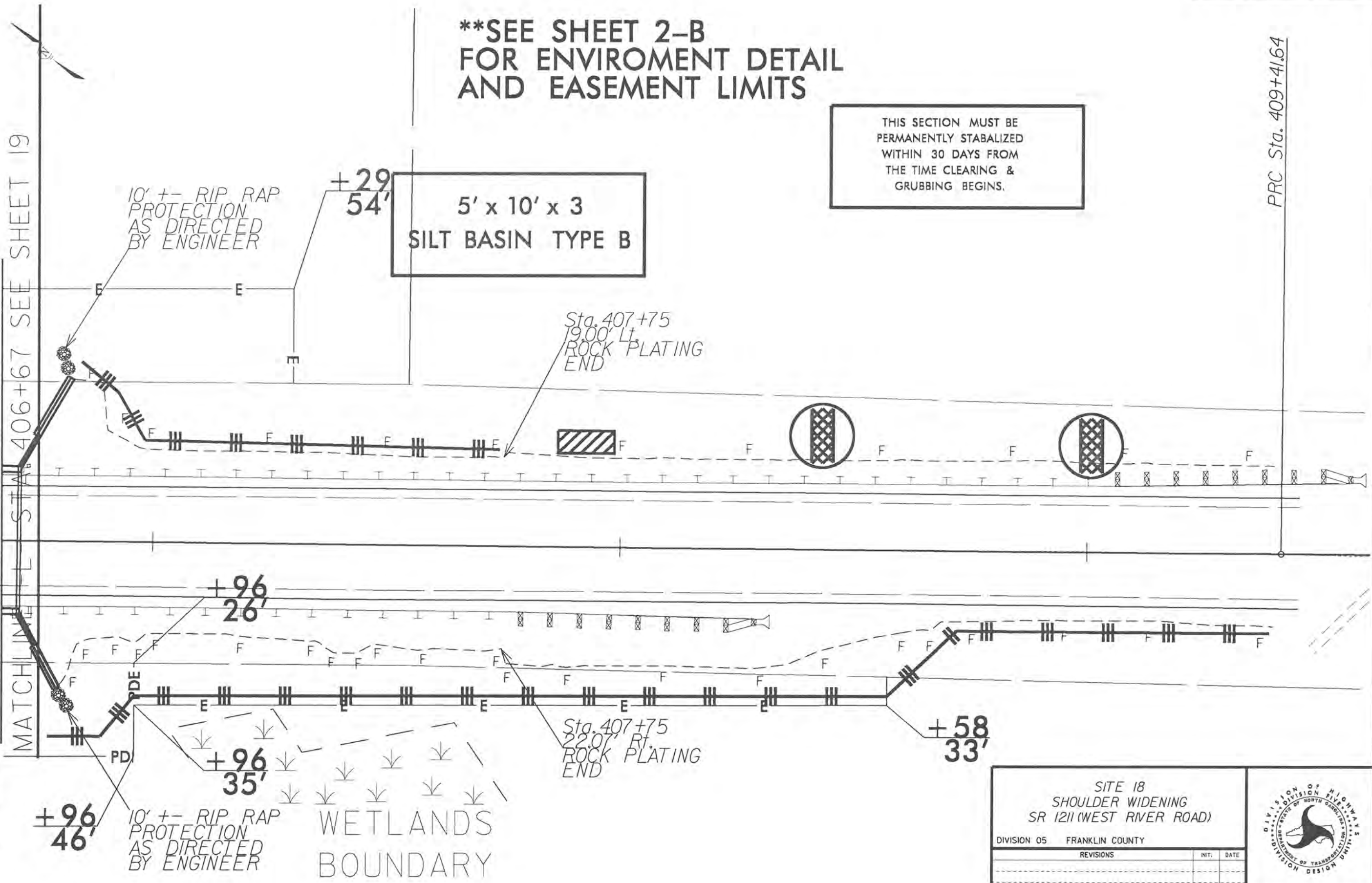
REVIEWED BY:

****SEE SHEET 2-B
FOR ENVIROMENT DETAIL
AND EASEMENT LIMITS**

THIS SECTION MUST BE PERMANENTLY STABILIZED WITHIN 30 DAYS FROM THE TIME CLEARING & GRUBBING BEGINS.

PRC Sta. 409+41.64

MATCHLINE -L- STA. 406+67 SEE SHEET 19
MATCHLINE -L- STA. 406+67 SEE SHEET 18



SITE 18
SHOULDER WIDENING
SR 1211 (WEST RIVER ROAD)

DIVISION 05 FRANKLIN COUNTY

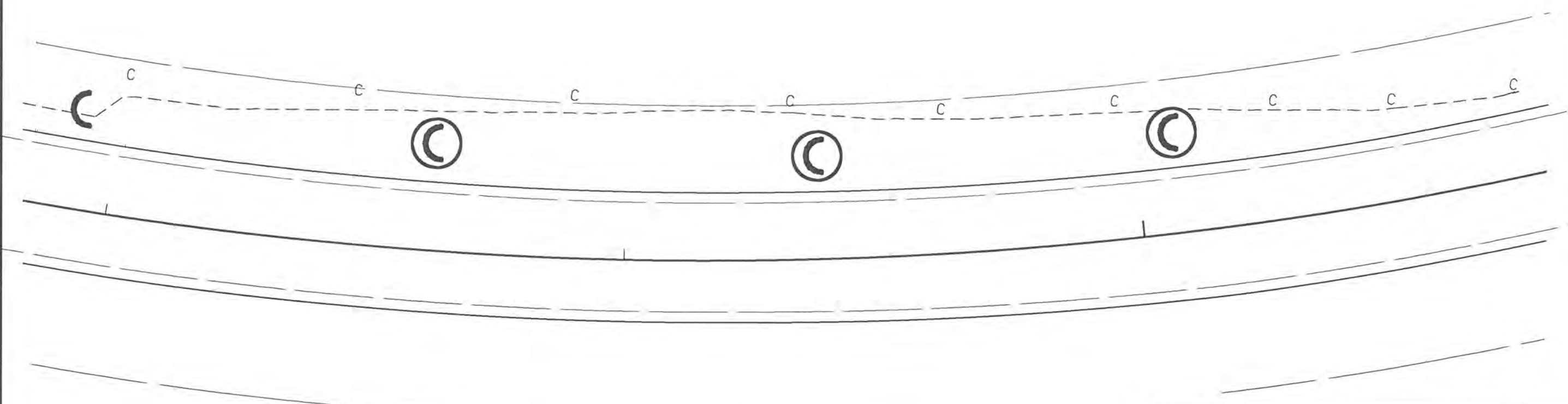
REVISIONS	INT.	DATE

N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT

SCALE: 1"=20' DATE: 9/23/2013

PREPARED BY: DWD
REVIEWED BY:
REVIEWED BY:

430



SITE 20
SHOULDER WIDENING
SR 1211 (WEST RIVER ROAD)

DIVISION 05 FRANKLIN COUNTY

REVISIONS	INIT.	DATE

N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT

SCALE: 1"=20' DATE: 9/30/2013

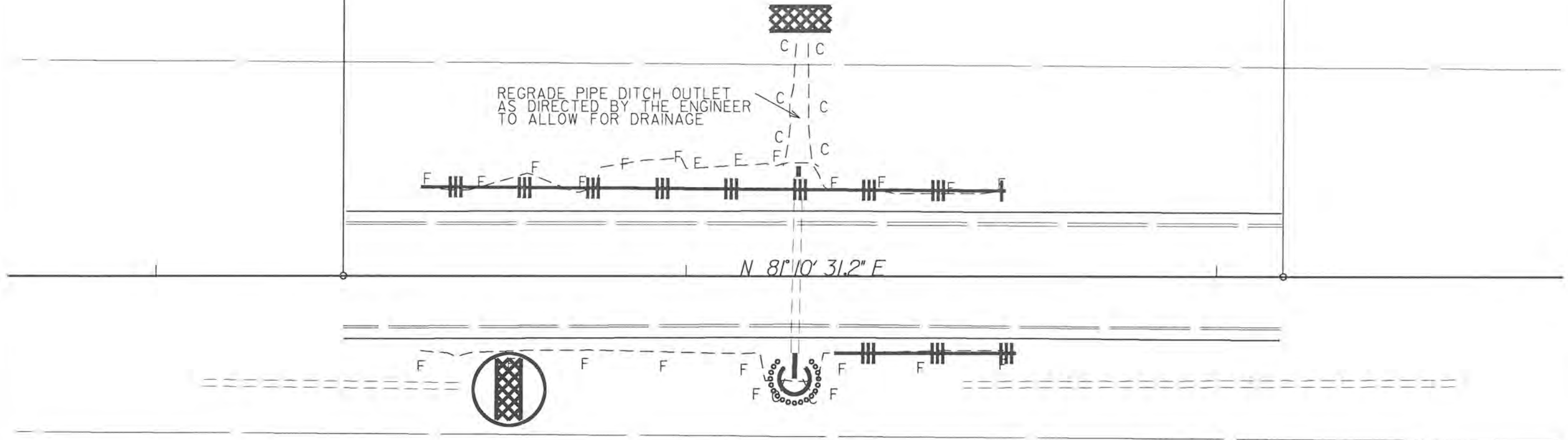
PREPARED BY: DWD

REVIEWED BY:

REVIEWED BY:

POT Sta. 441+35.45

POT Sta. 443+12.64



REGRADE PIPE DITCH OUTLET
AS DIRECTED BY THE ENGINEER
TO ALLOW FOR DRAINAGE

SITE 21
SHOULDER WIDENING
SR 1211 (WEST RIVER ROAD)

DIVISION 05 FRANKLIN COUNTY

REVISIONS	INT.	DATE

N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT

SCALE: 1"=20' DATE: 9/30/2013

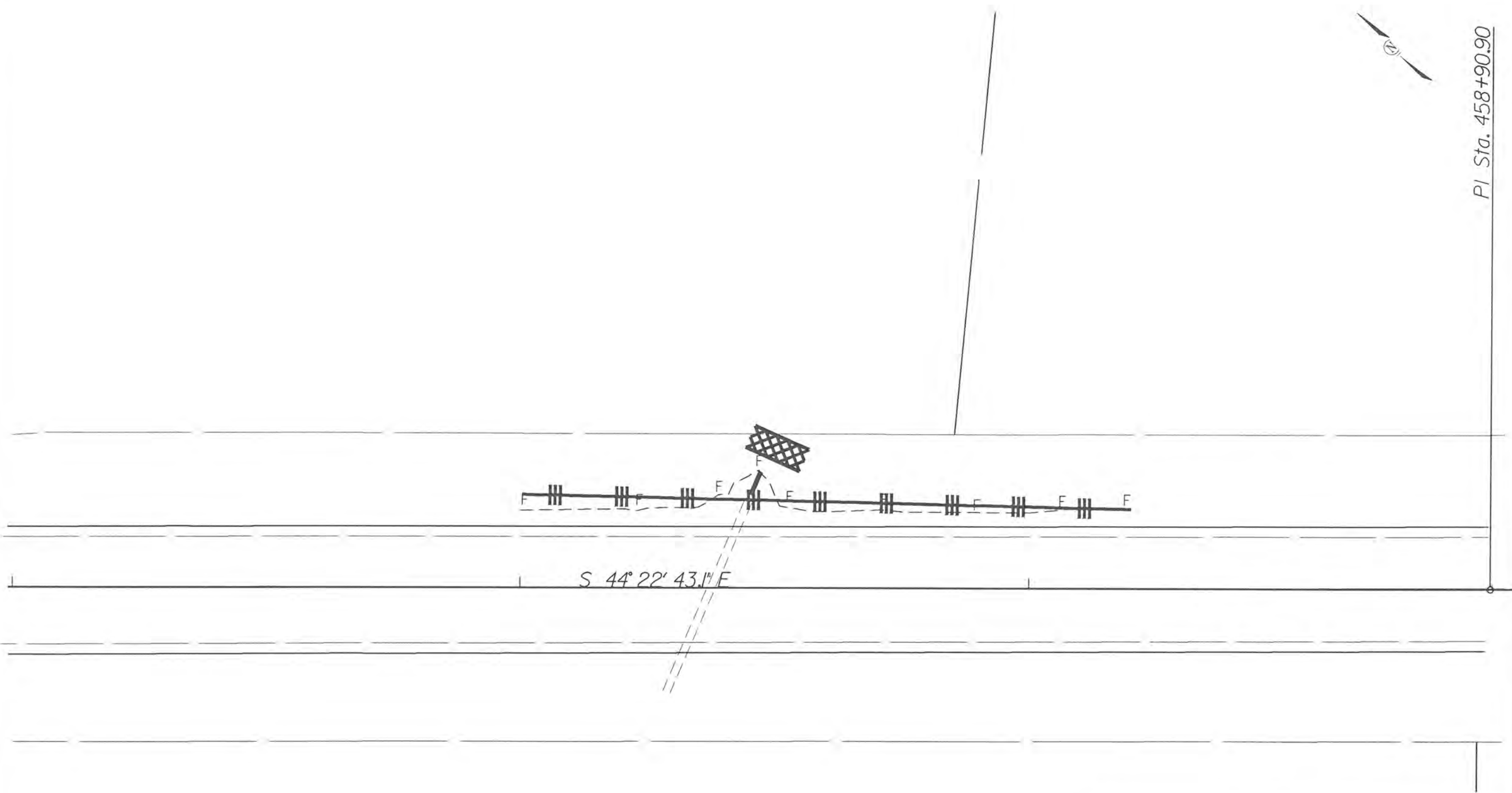
PREPARED BY: DWD

REVIEWED BY:

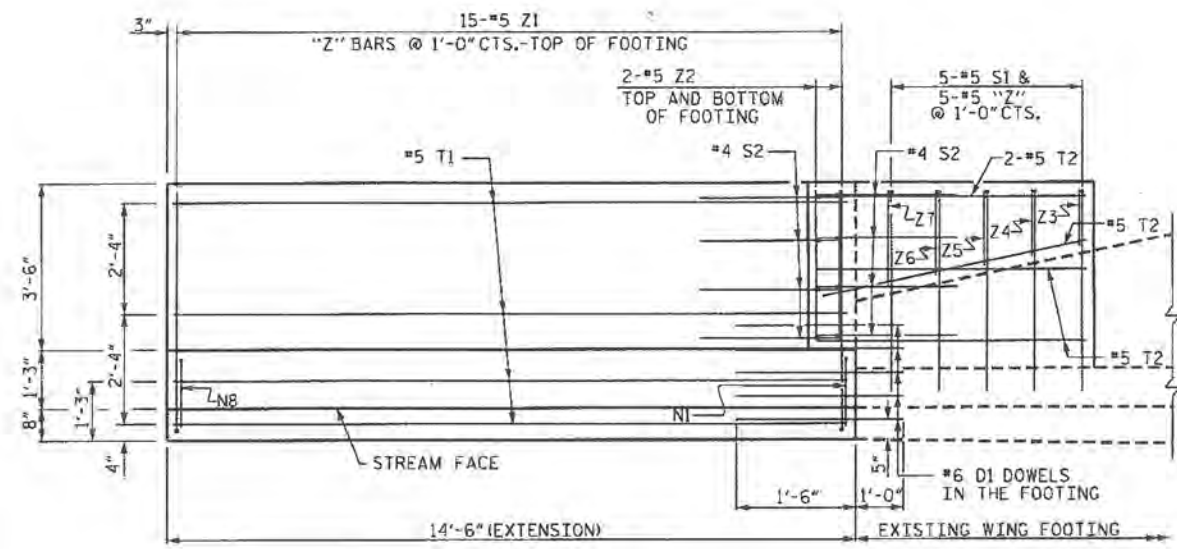
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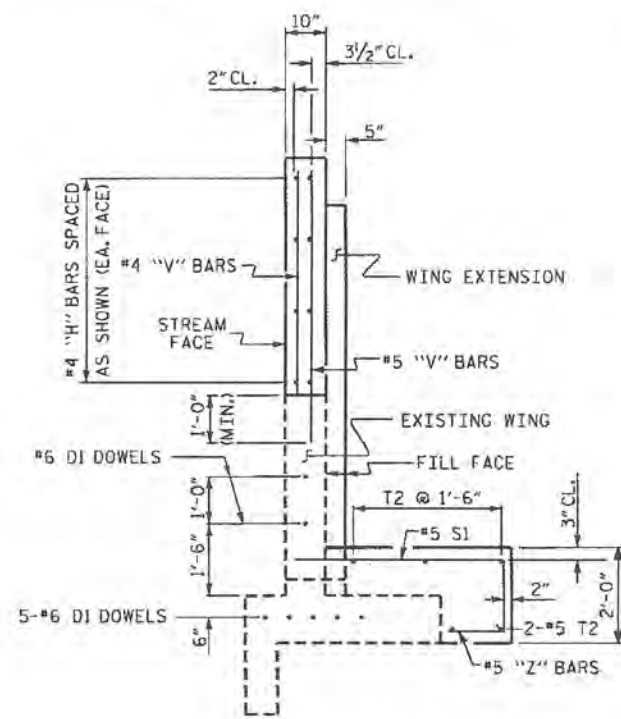
PI Sta. 458+90.90



SITE 22 SHOULDER WIDENING EC SR 1211 (WEST RIVER ROAD)		
DIVISION 05 FRANKLIN COUNTY		
REVISIONS	INIT.	DATE
N.C. DEPARTMENT of TRANSPORTATION DIVISION of HIGHWAYS DIVISION FIVE DESIGN UNIT		SCALE: 1"=20' DATE: 09/17/2013 PREPARED BY: DWD REVIEWED BY: REVIEWED BY:



PLAN
(OUTLET END OF CULVERT)
(LEFT WING SHOWN, RIGHT WING SIMILAR)

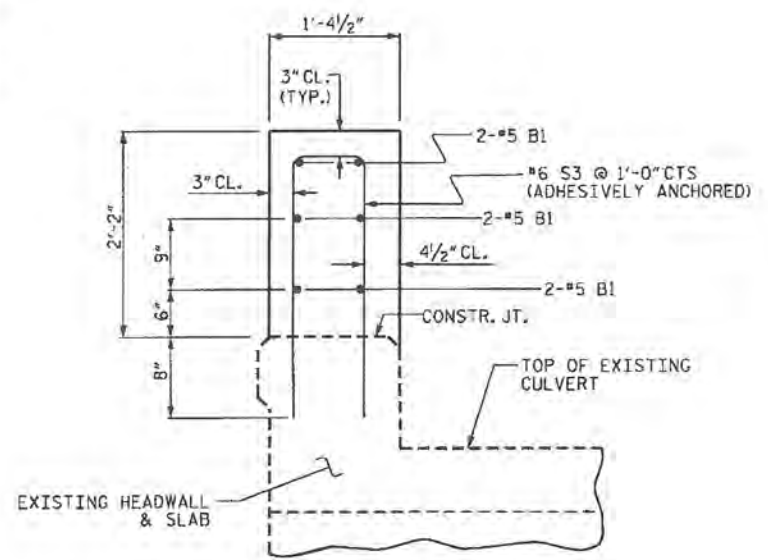


SECTION B-B

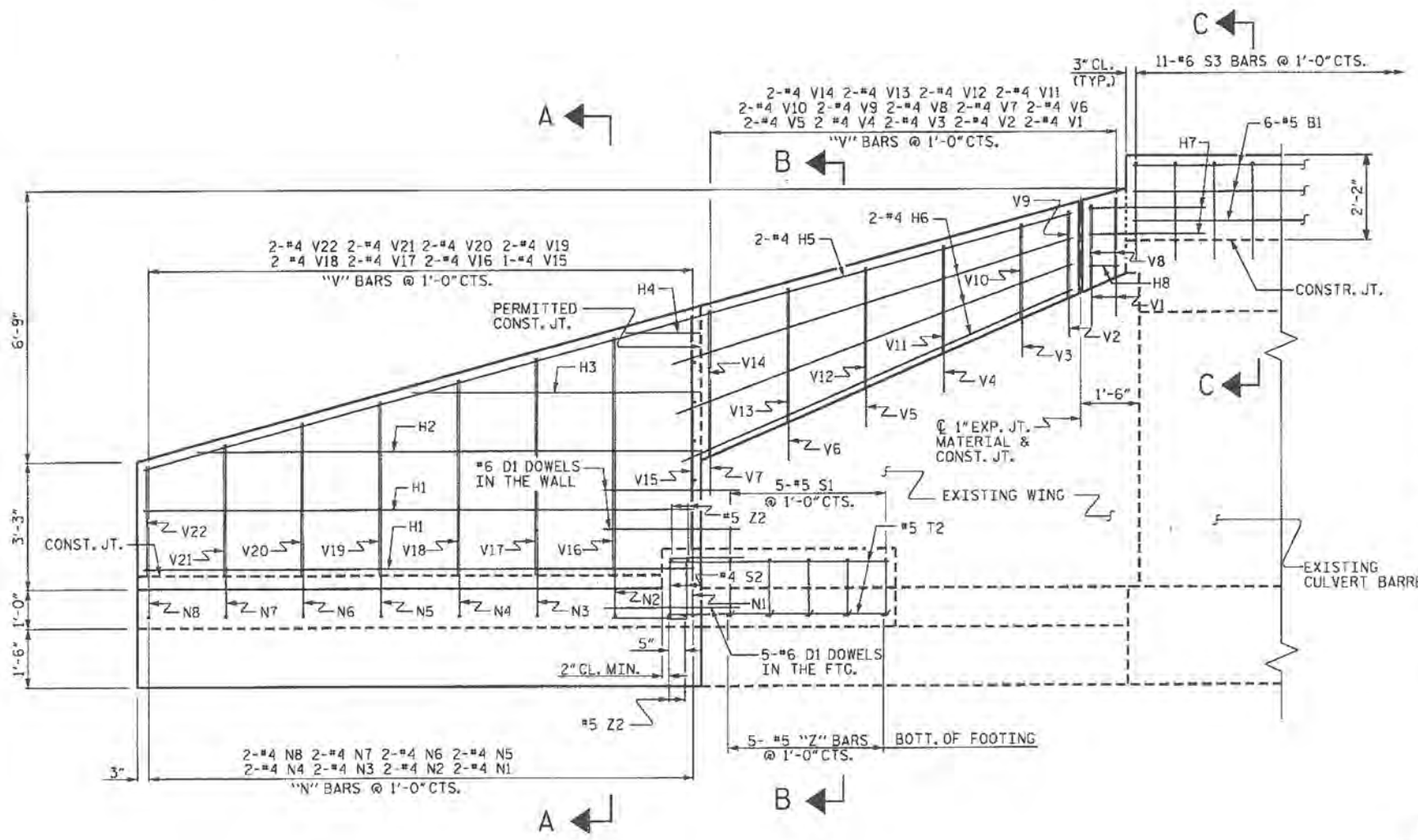
NOTES
THE #5 S1 BARS, #6 S3, #6 D1 BARS, AND #5 V1 THRU V7 BARS SHALL BE INSTALLED USING AN ADHESIVE ANCHORING SYSTEM. THE YIELD LOAD FOR #5 BARS IS 18.6 KIPS AND THE YIELD LOAD FOR #6 BARS IS 26.4 KIPS. EMBEDMENT INTO EXISTING STRUCTURE SHALL BE AS PER MANUFACTURER'S RECOMMENDATIONS. LEVEL ONE FIELD TESTING OF THE ANCHORING SYSTEM IS REQUIRED.

FOR ADHESIVELY ANCHORED REINFORCING STEEL AND DOWELS, SEE SECTION 420-13 OF THE STANDARD SPECIFICATION.

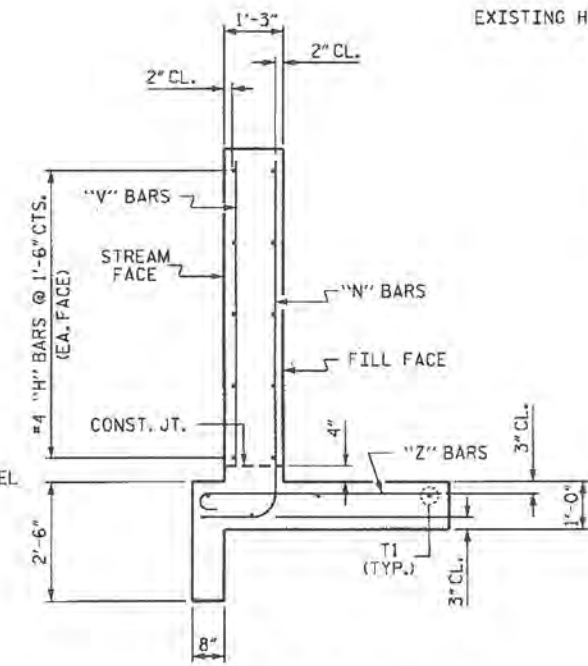
IF FIELD CONDITIONS VARY FROM THE PLANS, MODIFICATIONS WILL BE MADE AS NECESSARY AND AS DIRECTED BY THE ENGINEER.



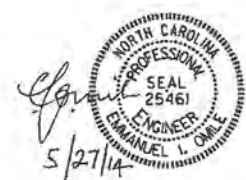
SECTION C-C
SECTION THRU HEADWALL



ELEVATION
(OUTLET END OF CULVERT)
(LEFT WING STREAM FACE SHOWN, RIGHT WING SIMILAR)



SECTION A-A
TYPICAL WING SECTION

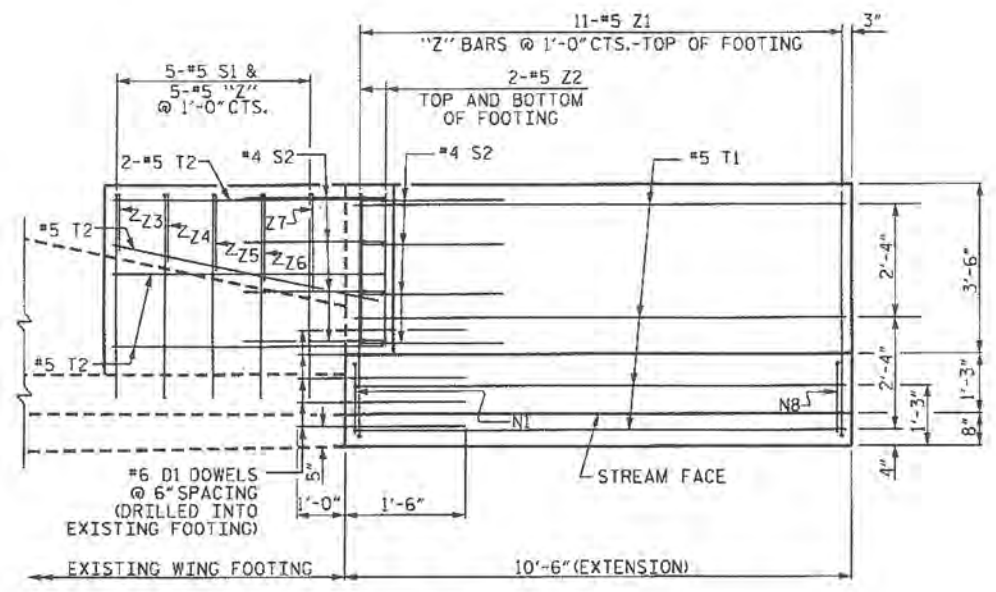


PROJECT NO. W-5509
FRANKLIN COUNTY
STATION: 406+67.00 -L-
SHEET 1 OF 3 SITE 18

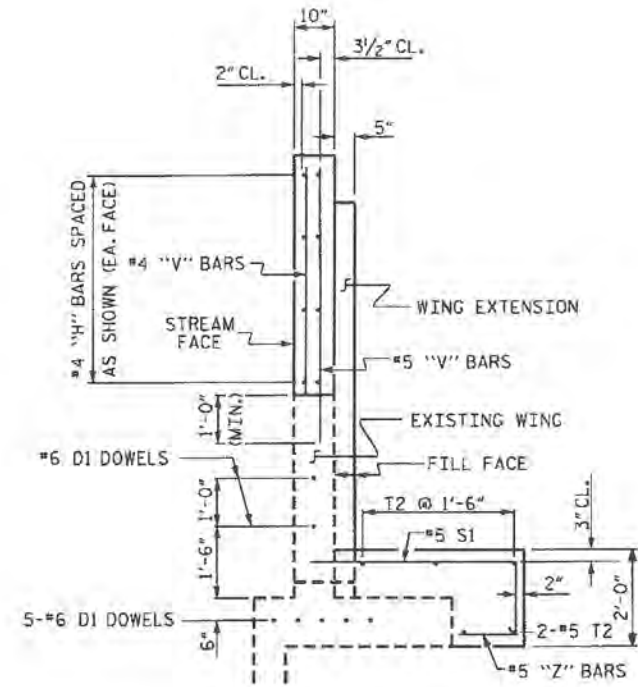
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
**WING EXTENSIONS FOR
CONCRETE BOX CULVERT
(OUTLET)**
SLOPE = 2:1 90°SKEW

ASSEMBLED BY: E.I. OMIE DATE: 6-24-13
CHECKED BY: S. WANCE DATE: 05/14
DRAWN BY: CCJ 10/99
CHECKED BY: RWW 03/00

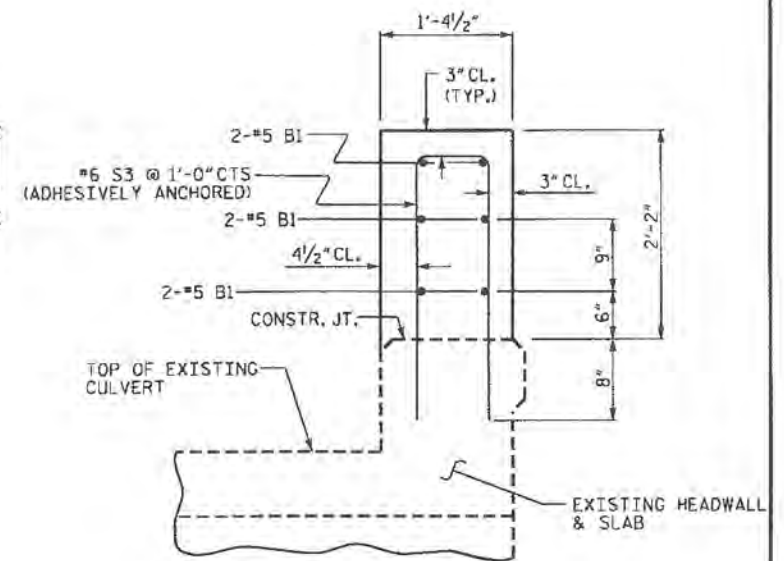
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	C-1	
1			3			TOTAL SHEETS	3
2			4				



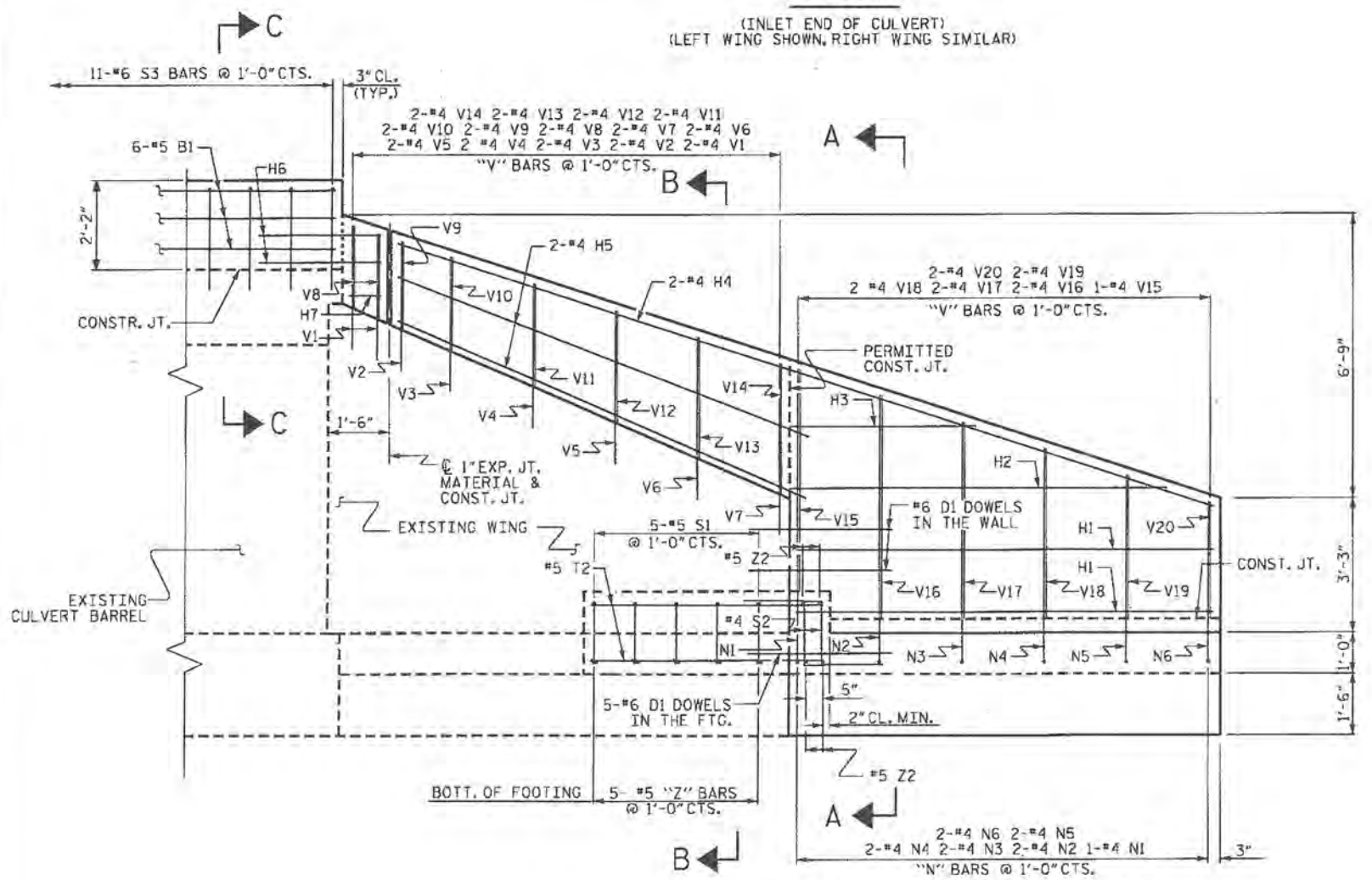
PLAN
(INLET END OF CULVERT)
(LEFT WING SHOWN, RIGHT WING SIMILAR)



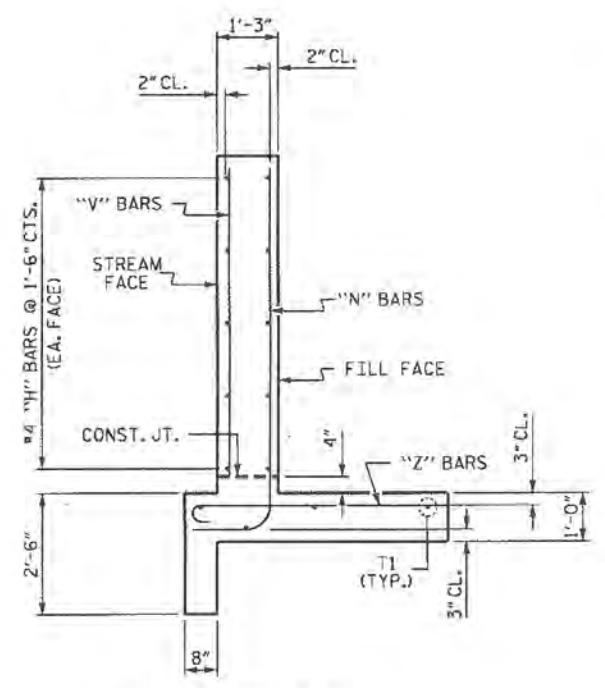
SECTION B-B



SECTION C-C
SECTION THRU HEADWALL



ELEVATION
(INLET END OF CULVERT)
(LEFT WING STREAM FACE SHOWN, RIGHT WING SIMILAR)



SECTION A-A
TYPICAL WING SECTION



NOTES
THE #5 S1 BARS, #6 S3, #6 D1 BARS, AND #5 V1 THRU V7 BARS SHALL BE INSTALLED USING AN ADHESIVE ANCHORING SYSTEM. THE YIELD LOAD FOR #5 BARS IS 18.6 KIPS AND THE YIELD LOAD FOR #6 BARS IS 26.4 KIPS. EMBEDMENT INTO EXISTING STRUCTURE SHALL BE AS PER MANUFACTURER'S RECOMMENDATIONS. LEVEL ONE FIELD TESTING OF THE ANCHORING SYSTEM IS REQUIRED.

FOR ADHESIVELY ANCHORED REINFORCING STEEL AND DOWELS, SEE SECTION 420-13 OF THE STANDARD SPECIFICATION.

IF FIELD CONDITIONS VARY FROM THE PLANS, MODIFICATIONS WILL BE MADE AS NECESSARY AND AS DIRECTED BY THE ENGINEER.

PROJECT NO. W-5509
FRANKLIN COUNTY
STATION: 406+67.00 -L18-
SHEET 2 OF 3 SITE 18

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
WING EXTENSIONS FOR CONCRETE BOX CULVERT (INLET)
SLOPE = 2:1 90°SKEW

ASSEMBLED BY: E.T. OMILE DATE: 6-24-13
CHECKED BY: S. WANCE DATE: 05/14
DRAWN BY: CCJ 10/99
CHECKED BY: RWW 03/00

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	C-2	
1			3			TOTAL SHEETS	
2			4			3	

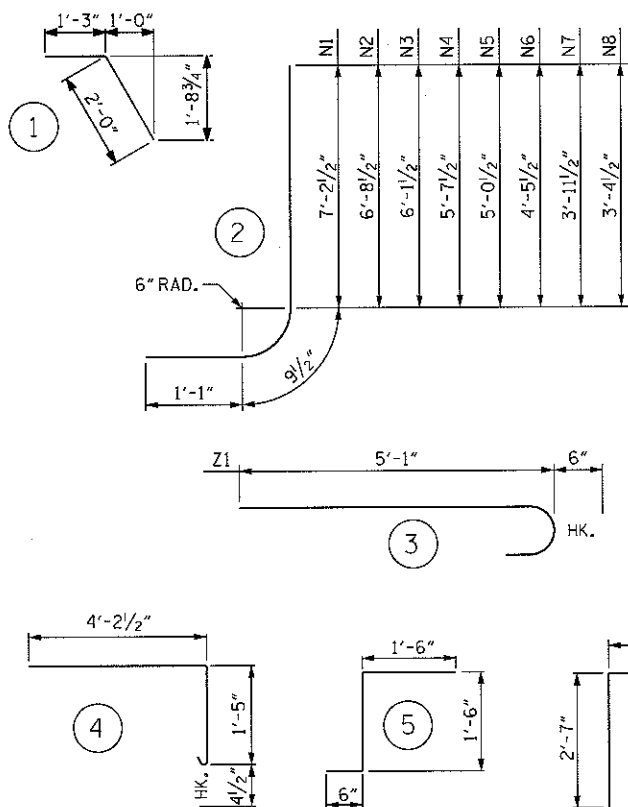
BILL OF MATERIAL

FOR 14'-6" WING EXTENSIONS AT OUTLET END

BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#5	STR	10'-0"	63	V8	4	#4	STR	2'-0"	5
						V9	2	#4	STR	2'-3"	3
D1	14	#6	STR	2'-6"	53	V10	2	#4	STR	2'-5"	3
						V11	2	#4	STR	2'-9"	4
H1	8	#4	STR	14'-2"	76	V12	2	#4	STR	3'-1"	4
H2	4	#4	STR	12'-11"	35	V13	2	#4	STR	3'-5"	5
H3	4	#4	STR	7'-5"	20	V14	2	#4	STR	3'-8"	5
H4	4	#4	STR	1'-11"	5	V15	2	#4	STR	6'-0"	8
H5	4	#4	STR	24'-9"	66	V16	4	#4	STR	6'-1"	16
H6	12	#4	STR	10'-10"	87	V17	4	#4	STR	5'-6"	15
H7	8	#4	STR	3'-3"	17	V18	4	#4	STR	5'-0"	13
H8	4	#4	STR	0'-9"	2	V19	4	#4	STR	4'-5"	12
						V20	4	#4	STR	3'-10"	10
						V21	4	#4	STR	3'-4"	9
						V22	4	#4	STR	2'-10"	8
N1	2	#4	2	9'-1"	12	Z1	30	#5	3	5'-7"	175
N2	4	#4	2	8'-7"	23	Z2	8	#5	STR	3'-2"	26
N3	4	#4	2	8'-0"	21	Z3	2	#5	STR	1'-2"	2
N4	4	#4	2	7'-6"	31	Z4	2	#5	STR	1'-4"	3
N5	4	#4	2	6'-11"	20	Z5	2	#5	STR	1'-7"	3
N6	4	#4	2	6'-4"	18	Z6	2	#5	STR	1'-9"	4
N7	4	#4	2	5'-10"	16	Z7	2	#5	STR	2'-0"	4
N8	4	#4	2	5'-3"	14						
S1	10	#5	4	6'-0"	63						
S2	16	#4	5	4'-5"	37						
S3	11	#6	6	5'-11"	98						
T1	8	#5	STR	14'-2"	118	TOTAL REINFORCING STEEL FOR 2 WINGS 1340 LBS					
T2	10	#5	STR	5'-8"	59	CLASS A CONCRETE					
V1	4	#5	STR	3'-0"	13	2 WINGS 9.1 CY					
V2	2	#5	STR	3'-3"	7	1 HEADWALLS 1.2 CY					
V3	2	#5	STR	3'-5"	7	1 END FOOTING 8.3 CY					
V4	2	#5	STR	3'-9"	8	1 END CURTAIN WALLS 1.1 CY					
V5	2	#5	STR	4'-1"	9	TOTAL 19.7 CY					
V6	2	#5	STR	4'-5"	9						
V7	2	#5	STR	4'-8"	10						

BAR TYPES

ALL BAR DIMENSIONS ARE OUT TO OUT.



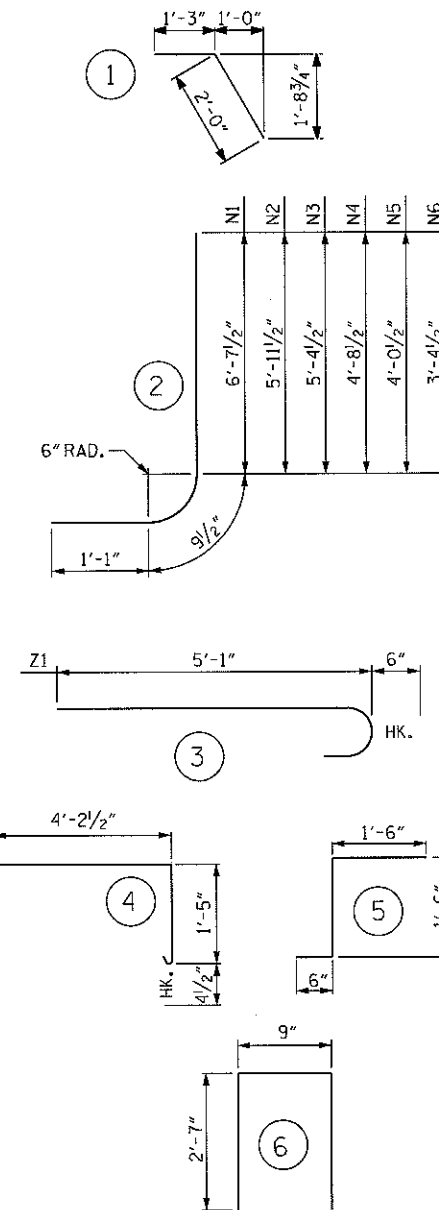
BILL OF MATERIAL

FOR 10'-6" WING EXTENSIONS AT INLET END

BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#5	STR	10'-0"	63	V8	4	#4	STR	2'-0"	5
						V9	2	#4	STR	2'-2"	3
D1	14	#6	STR	2'-6"	53	V10	2	#4	STR	2'-3"	3
						V11	2	#4	STR	2'-6"	3
H1	8	#4	STR	10'-2"	54	V12	2	#4	STR	2'-9"	4
H2	4	#4	STR	9'-2"	24	V13	2	#4	STR	2'-11"	4
H3	4	#4	STR	4'-6"	12	V14	2	#4	STR	3'-2"	4
H4	4	#4	STR	20'-10"	56	V15	2	#4	STR	5'-4"	7
H5	8	#4	STR	10'-10"	58	V16	4	#4	STR	5'-4"	14
H6	8	#4	STR	3'-3"	17	V17	4	#4	STR	4'-9"	13
H7	4	#4	STR	0'-9"	2	V18	4	#4	STR	4'-1"	11
						V19	4	#4	STR	3'-5"	9
						V20	4	#4	STR	2'-10"	8
N1	2	#4	2	8'-6"	11	Z1	22	#5	3	5'-7"	128
N2	4	#4	2	7'-10"	21	Z2	8	#5	STR	3'-2"	26
N3	4	#4	2	7'-3"	19	Z3	2	#5	STR	1'-2"	2
N4	4	#4	2	6'-7"	18	Z4	2	#5	STR	1'-4"	3
N5	4	#4	2	5'-11"	16	Z5	2	#5	STR	1'-7"	3
N6	4	#4	2	5'-3"	14	Z6	2	#5	STR	1'-9"	4
						Z7	2	#5	STR	2'-0"	4
S1	10	#5	4	6'-0"	63						
S2	16	#4	5	3'-6"	37						
S3	11	#6	6	5'-11"	98						
T1	8	#5	STR	14'-2"	118	TOTAL REINFORCING STEEL FOR 2 WINGS 1130 LBS					
T2	10	#5	STR	5'-8"	59	CLASS A CONCRETE					
V1	4	#5	STR	3'-0"	13	2 WINGS 6.7 CY					
V2	2	#5	STR	3'-2"	7	1 HEADWALLS 1.2 CY					
V3	2	#5	STR	3'-4"	7	1 END FOOTING 6.7 CY					
V4	2	#5	STR	3'-6"	7	1 END CURTAIN WALLS 0.8 CY					
V5	2	#5	STR	3'-9"	8	TOTAL 15.4 CY					
V6	2	#5	STR	3'-11"	8						
V7	2	#5	STR	4'-2"	9						

BAR TYPES

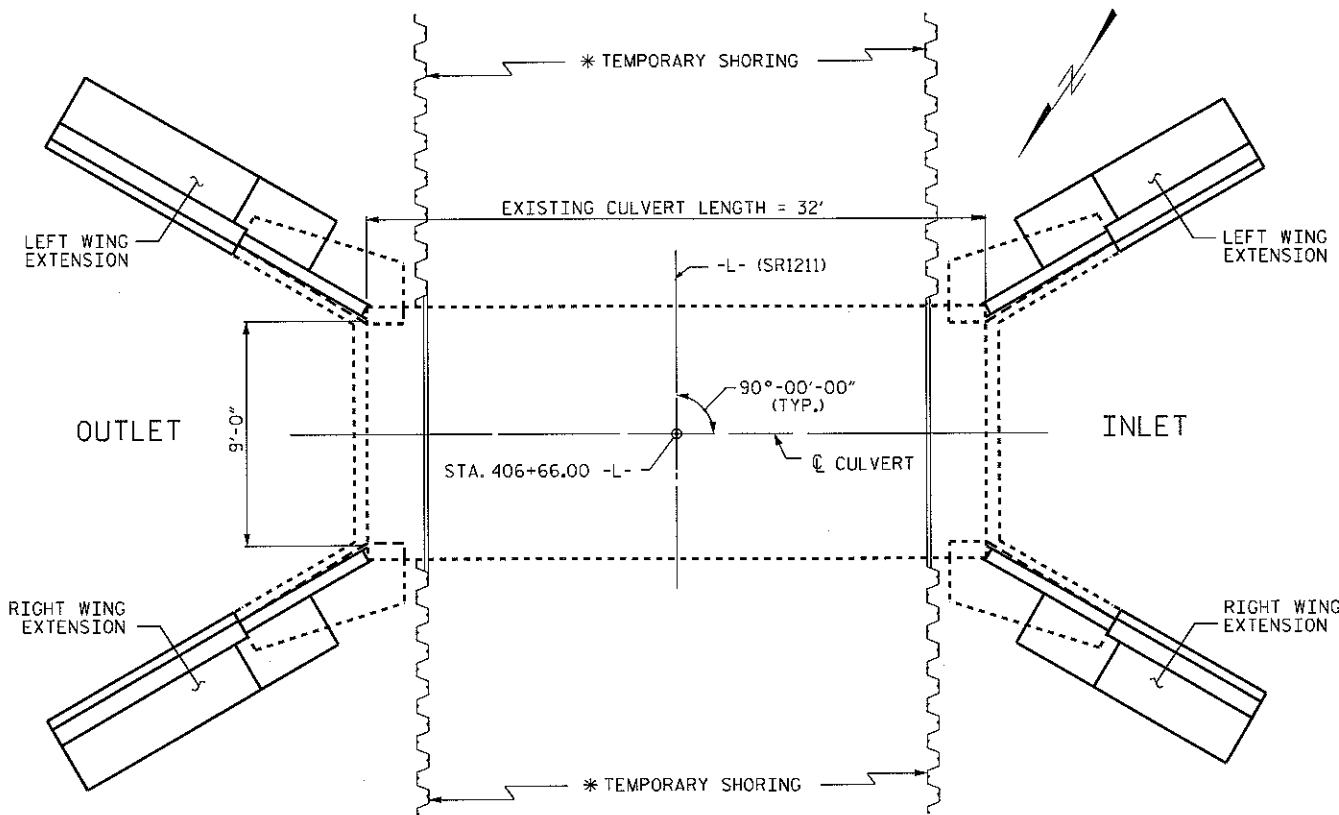
ALL BAR DIMENSIONS ARE OUT TO OUT.



TOTAL STRUCTURE QUANTITIES

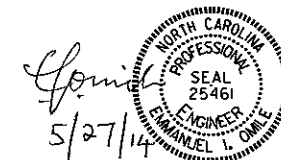
CLASS A CONCRETE	
OUTLET WINGS EXTENSION & ETC.	19.7 C.Y.
INLET WINGS EXTENSION & ETC.	15.4 C.Y.
TOTAL	35.1 C.Y.
REINFORCING STEEL	
OUTLET WINGS EXTENSION & ETC.	1,340 LBS.
INLET WINGS EXTENSION & ETC.	1,130 LBS.
TOTAL	2,470 LBS.
FOUNDATION CONDITION MAT'L	
INLET WING END	16 TONS
OUTLET WING END	21 TONS
TOTAL	37 TONS
CULVERT EXCAVATION	* LUMP SUM

* THE LUMP SUM QUANTITY FOR CULVERT EXCAVATION (WING EXTENSIONS) IS APPROXIMATELY 39 C.Y.



PLAN FOR WING EXTENSIONS

* FOR LIMITS OF TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS. FOR PAY ITEM FOR TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE ROADWAY PLANS.



PROJECT NO. W-5509
FRANKLIN COUNTY
 STATION: 406+67.00 -L18-

SHEET 3 of 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

WING EXTENSIONS FOR
 CONCRETE BOX CULVERT

BILL OF MATERIAL
 SLOPE = 2:1 90°SKEW

ASSEMBLED BY: E.I. OMILE	DATE: 6-24-13
CHECKED BY: S. WANCE	DATE: 05/14
DRAWN BY: CCJ 10/99	
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-3
1			3			TOTAL SHEETS
2			4			3