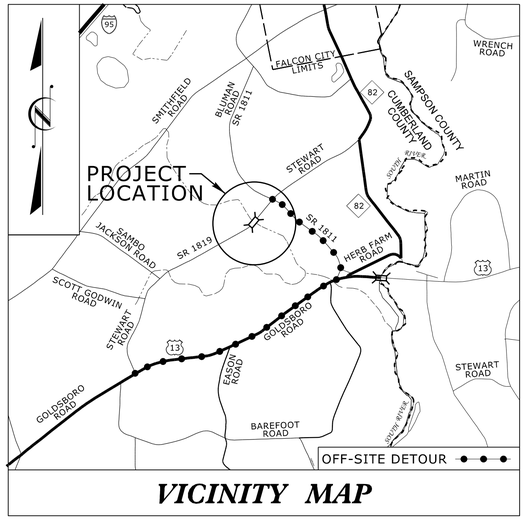
09/08/99

PROJECT: 17BP.6.R.75

CONTRACT: DF00260



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CUMBERLAND COUNTY

LOCATION: BRIDGE NO. 250141 STEWART ROAD (SR 1819) OVER SOUTH RIVER TRIBUTARY 1

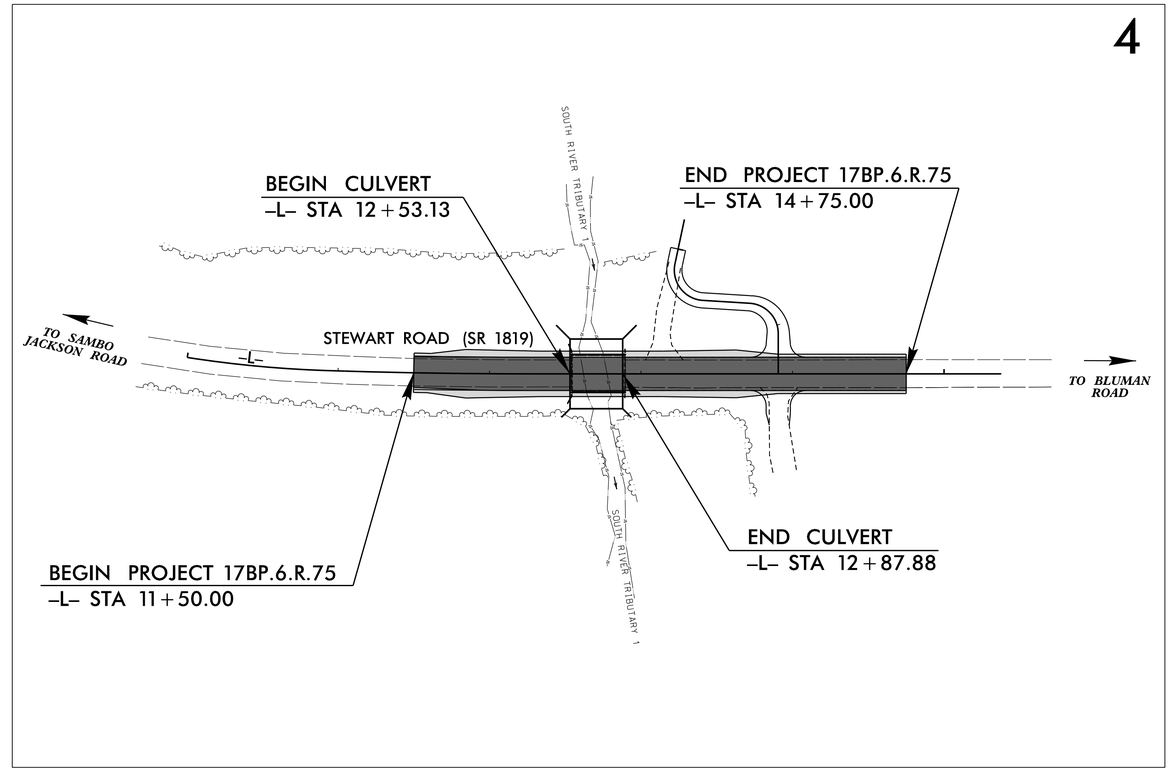
TYPE OF WORK: WIDENING, GRADING, PAVING, DRAINAGE, AND CULVERT

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.6.R.75	1	

W.B.S. NO.	F. A. PROJ. NO.	DESCRIPTION
17BP.6.R.75		PE
17BP.6.R.75		R/W, UTIL.
17BP.6.R.75		CONSTR.

FINAL PLANS
JUNE 14, 2021

4



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

PLANS: 20 10 0 20 40

PROFILE (HORIZONTAL): 20 10 0 20 40

PROFILE (VERTICAL): 4 2 0 4 8

DESIGN DATA

ADT 2017 = 380
V = 55 MPH
TTST = 3%
DUALS = 3%
FUNC CLASS = RURAL LOCAL

SUB–REGIONAL TIER GUIDELINES

PROJECT LENGTH

LENGTH ROADWAY PROJECT 17BP.6.R.75	=	0.055 MILES
LENGTH STRUCTURES PROJECT 17BP.6.R.75	=	0.007 MILES
TOTAL LENGTH PROJECT 17BP.6.R.75	=	0.062 MILES

Prepared in the Office of:
ATKINS
1616 E. MILLBROOK ROAD, SUITE #160
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F–0326

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JULY 30, 2018

LETTING DATE:
AUGUST 4, 2021

BRUCE PAYNE, P.E.
PROJECT ENGINEER

BRYCE REID, EI
PROJECT DESIGN ENGINEER

CHRISTY WRIGHT HUFF, P.E.
NCDOT CONTACT

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 043351 ENGINEER

SIGNATURE: 6/16/2021 P.E.

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022610

SIGNATURE: 6/16/2021 P.E.

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

P.E.
STATE HIGHWAY DESIGN ENGINEER

16-JUN-2021 08:46
O:\Transportation\Production\Trans\NCDOT\Division06\17BP.6.R.75\Roadway\Proj\17BP.6.R.75_rdy_tsh.dgn
$$$$USERNAME$$$$

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.6.R.75	1A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022610 ENGINEER BRUCE B. PAYNE, JR.

DocuSigned by: Bruce Payne 2/28/2019

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

INDEX OF SHEETS

GENERAL NOTES: 2018 SPECIFICATIONS
EFFECTIVE: 01-16-2018
REVISED:

GRADING AND SURFACING OR RESURFACING AND WIDENING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01

SIDE ROADS:

THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

GUARDRAIL:

THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE

South River EMC - Electric

Century Link - Telephone

Eastover Sanitary District - Water

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

RIGHT-OF-WAY MARKERS:

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY OTHERS.

EFF. 01-16-2018
REV.

2018 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2018 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
862.01	Guardrail Placement
862.02	Guardrail Installation
876.01	Rip Rap in Channels

27-FEB-2019 16:25
R:\ROADWAY\Projects\17BP.6.R.75_rdy_psh_1A.dgn
$$$$USERNAME$$$$

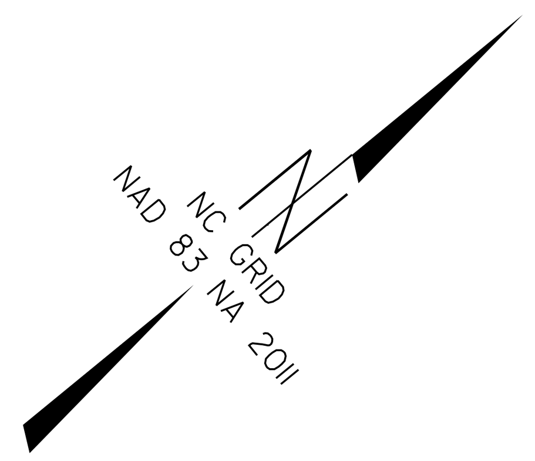
PROJECT REFERENCE NO.	SHEET NO.
17BP.6.R.75	1C-1
Location and Surveys	

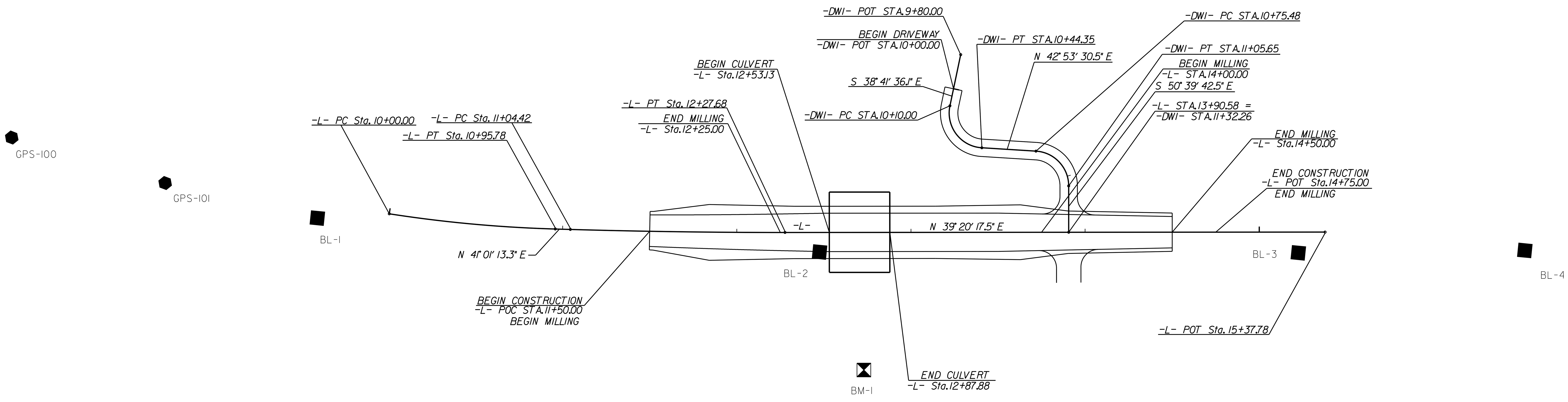
SURVEY CONTROL SHEET 17BP.6.R.75

BL

POINT	DESC.	NORTH	EAST	ELEVATION
100	GPS-100	513320.1363	2100154.1616	146.44
101	GPS-101	513966.9051	2101300.3957	141.55
1	BL-1	514137.5786	2101584.9475	133.53
2	BL-2	514350.3717	2101780.5164	131.31
3	BL-3	514562.5403	2101955.2801	135.52
4	BL-4	514759.4146	2102116.1939	136.62

BM1 ELEVATION = 128.16
N 514327 E 2101849
BL STATION 24+63.00 68 RIGHT
RRSPIKE10"OAK





REVISIONS

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "GPS-101"
WITH NAD 83/NSRS 2011 STATE PLANE GRID COORDINATES OF
NORTHING: 513966.905(ft) EASTING: 2101300.395(ft)
ELEVATION: 141.55(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999872376
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS101" TO -L- STATION 11+00.00 IS 467.8309 AT A BEARING OF N 53°34'50.86" E
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAD 83/2011

NOTES:

1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.

28-JAN-2019 08:31
O:\Transportation\Roadway\NCDOT\Division06\17BP.6.R.75\Roadway\Proj\250141_ls_1c-1.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
17BP.6.R.75	1D-1
Location and Surveys	

PROPOSED ALIGNMENT CONTROL SHEET 17BP.6.R.75

L

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
PC	514173.316	2101606.876							
CURVE			N 44°36'08.4" E	95.71	07°09'50.3"(LT)	07°28'47.5"	95.78	47.95	766.00
PT	514241.465	2101674.085							
LINE			N 41°01'13.3" E	8.64					
PC	514247.987	2101679.758							
CURVE			N 40°10'45.4" E	123.26	01°40'55.8"(LT)	01°21'52.9"	123.26	61.64	4198.44
PT	514342.160	2101759.283							
LINE			N 39°20'17.5" E	310.10					
POT	514581.997	2101955.854							

NOTES:

1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.

REVISIONS

28-JAN-2019 08:31
O:\Transportation\Roadway\NCDOT\Division06\17BP.6.R.75\Roadway\Proj\250141_ls_1d-1.dgn
$$$$USERNAME$$$$

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.6.R.75	2A-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022610 ENGINEER BRUCE E. PAYNE JR.

Docusigned by: Bruce Payne 2/28/2019

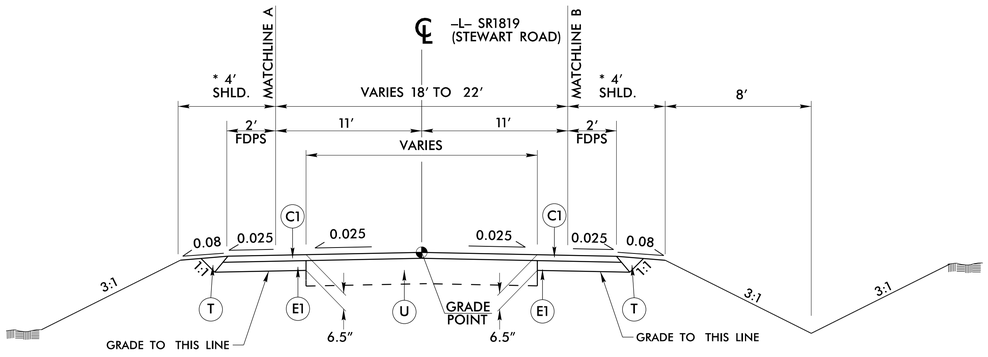
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PRELIMINARY PAVEMENT SCHEDULE

PER EMAIL FROM DIVISION 6 JULY 19, 2017

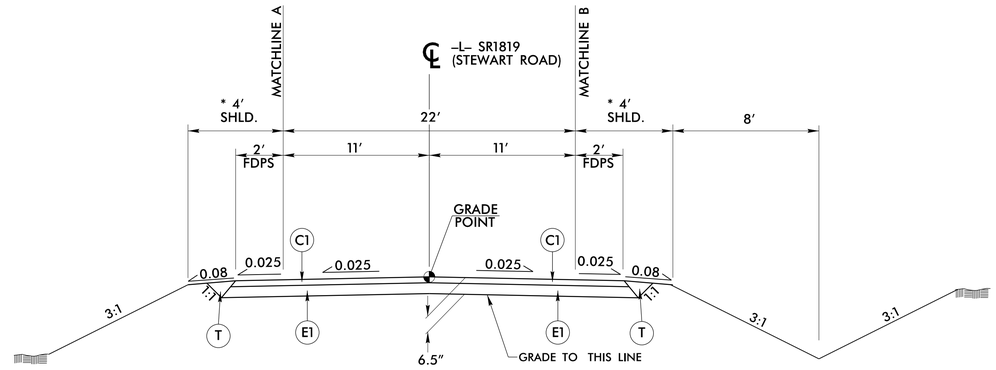
C1	PROP. APPROX. 2.5″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 138 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1″ DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1.5″ IN DEPTH.
E1	PROP. APPROX. 4″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1″ DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 4″ IN DEPTH OR GREATER THAN 5.5″ IN DEPTH.
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	MILLING BITUMINOUS PAVEMENT. 2.5″ DEPTH.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



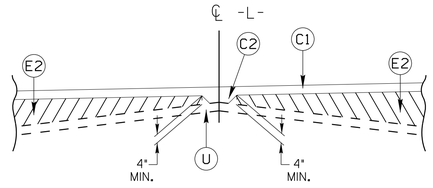
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 AS FOLLOWS:
–L– STA. 11+50.00 TO STA. 12+25.00
–L– STA. 13+75.00 TO STA. 14+75.00
NOTE: USE LEVELING COURSE AS NEEDED

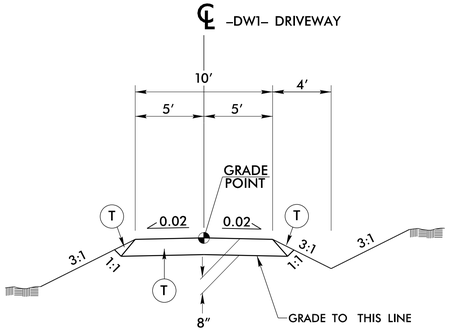


TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2 AS FOLLOWS:
–L– STA. 12+25.00 TO STA. 13+75.00

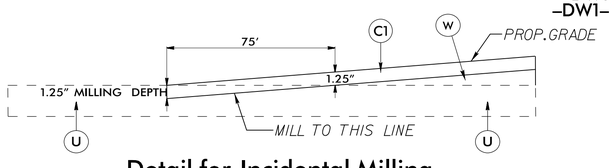


Detail Showing Method of Wedging



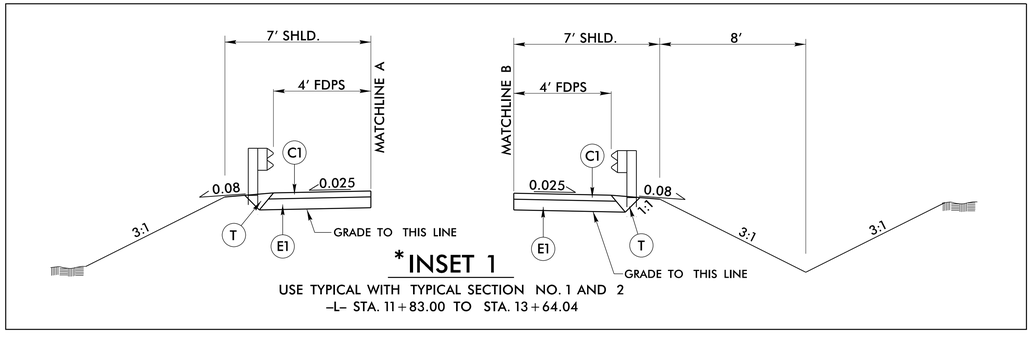
TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3 AS FOLLOWS:
–DW1– STA. 10+00.00 TO STA. 10+75.48 –EARTH MATERIAL
–DW1– STA. 10+75.48 TO STA. 11+22.07 –INCIDENTAL STONE



Detail for Incidental Milling

USE DETAIL FOR INCIDENTAL MILLING AS FOLLOWS:
–L– STA. 11+50.00 TO STA. 12+25.00
–L– STA. 14+00.00 TO STA. 14+75.00



*INSET 1

USE TYPICAL WITH TYPICAL SECTION NO. 1 AND 2
–L– STA. 11+83.00 TO STA. 13+64.04

12/06/07

COMPUTED BY: BDR DATE: 12/7/17
CHECKED BY: BBP DATE: 1/3/19

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

STATION	STATION	UNCL. EXCAV.	UNDERCUT EXCAV.	EMBANK. +%	BORROW	WASTE
-L-						
11+50.00	14+50.00	188	0	452	264	0
-DW1-						
10+10.00	11+20.07	44	0	1	0	43
PROJECT TOTALS:		232			264	43
USE SUIT. WASTE TO REPLACE BORROW					-43	-43
PROJECT TOTALS:		232			221	0
SAY:		240			230	

Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

NOTE: Approximate quantities only. Unclassified Excavation, Shoulder Borrow, Fine Grading, and Clearing and Grubbing will be paid for at the contract lump sum price for "Grading".

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION	SQ. YD.
-L-	12+25.00	12+54.23	CL	91.16
-L-	12+89.58	13+75.00	CL	172.75
			TOTAL:	263.91
			SAY:	270

NOTE: Invert Elevations are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

STATION	OFFSET	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	% MINIMUM REQUIRED SLOPE	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC)							
SIZE								12"	15"	18"	24"		DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP
THICKNESS OR GAUGE															
13+92 -L-	24 LT	0401													
13+91 -L-	25 RT	0402							36						
TOTAL									36						

STATION	C.S. PIPE (UNLESS NOTED OTHRWISE)													R.C. PIPE CLASS IV							
SIZE	12"	15"	18"	24"		30"		36"		42"		48"		12"	15"	18"	24"	30"	36"	42"	48"
THICKNESS OR GAUGE	.064	.064	.064	.064		.079		.079		.109		.109									
13+92 -L-																	36				
13+91 -L-																					
TOTAL																	36				

STATION	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	ENDWALLS CU. YDS. C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. *FT. A 5.0' THRU 10.0'	LIN. *FT. B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	
13+92 -L-													
13+91 -L-													
TOTAL													

STATION	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH GRATE STD. 840.22	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32								FLOWABLE FILL CY	CONC. COLLARS CL. "B" C.Y. STD 840.72 CY	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
13+92 -L-																					24	
13+91 -L-																					19	
TOTAL																					43	

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

"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 E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W	
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END
-L-	11+82.75	13+64.00	RT	181.25'			12+53.13 (BEGIN CULVERT)	12+87.88 (END CULVERT)	4'	7'	50'	50'	1'	0.68'
-L-	11+82.75	13+64.00	LT	181.25'			12+53.13 (END CULVERT)	12+87.88 (BEGIN CULVERT)	4'	7'	50'	50'	1.08'	0.75'
			SUBTOTAL	362.5'										
		LESS 4 GREU TL-3 @ 50' EACH		200'										
			PROJECT TOTALS	162.5'										
			SAY	162.5'										

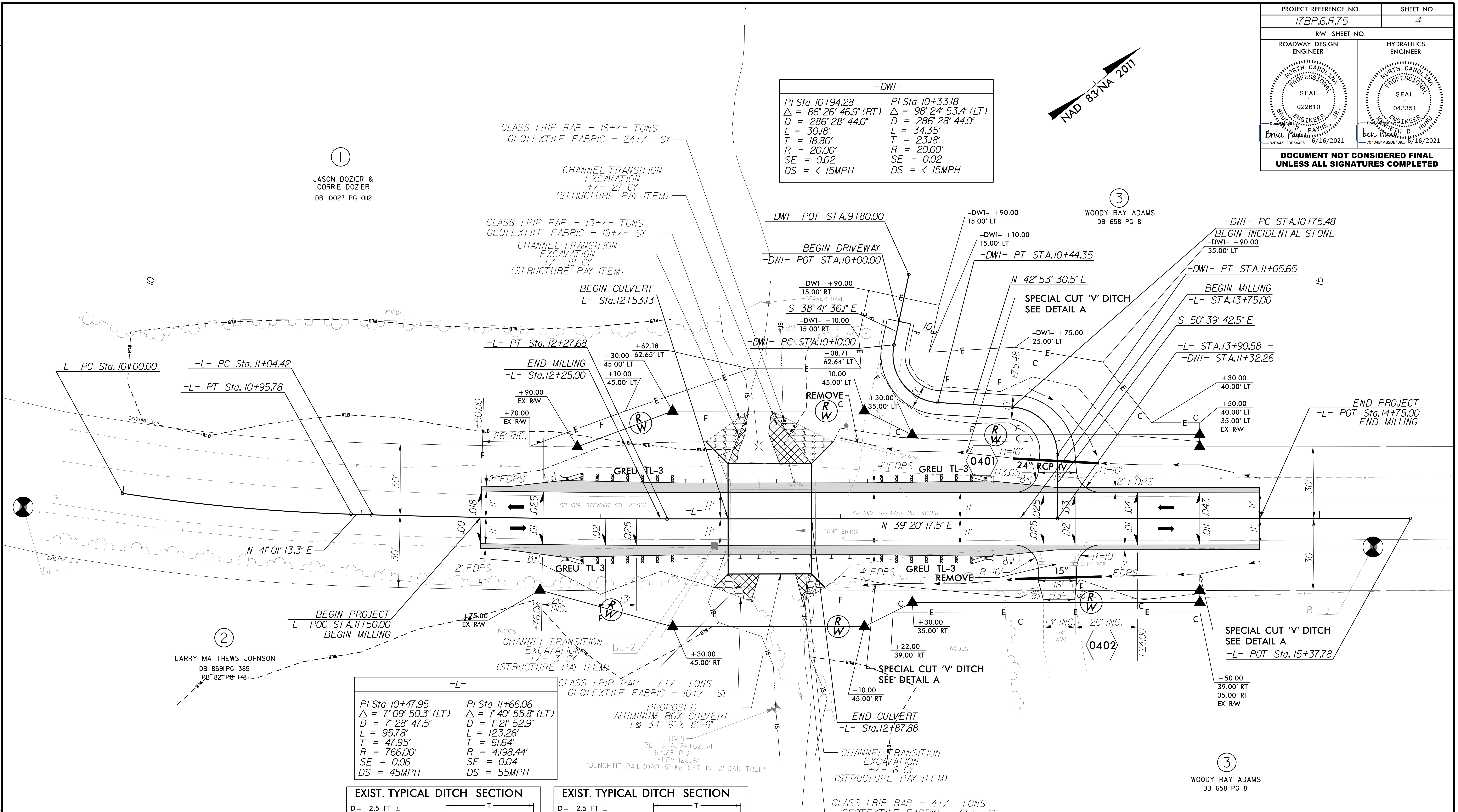
SURVEY LINE	BEG. STA.	ANCHORS									IMPACT ATTENUATOR TYPE 350			SINGLE FACED GUARDRAIL	REMOVE AND RESET EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
		XI MOD	XI	GREU TL-3	M-350	B-77	CAT-1	VI MOD	MOD B-77	AT-1	EA	G	NG				
-L-	11+82.75			2													
-L-	11+82.75			2													
SUBTOTAL																	
LESS 4 GREU TL-3 @ 50' EACH																	
PROJECT TOTALS				4													
SAY				4													ADDITIONAL GUARDRAIL POSTS = 5

16-JUN-2021 10:56
R:\Roadway\Proj\17BP.6.R.75_rdy_psh_3B-1.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
17BP.6.R.75	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
SEAL 022610 — NORTH CAROLINA PROFESSIONAL ENGINEER — BRUCE PAYNE, JR. — 6/16/2021	SEAL 043351 — NORTH CAROLINA PROFESSIONAL ENGINEER — KENNETH D. HUNU — 6/16/2021

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS



NAD 83/NA 2011
1
JASON DOZIER & CORRIE DOZIER
DB 10027 PG 0112
2
LARRY MATTHEWS JOHNSON
DB 8591 PG 385
PB 82 PG 178
3
WOODY RAY ADAMS
DB 658 PG 8
CLASS I RIP RAP - 16+/- TONS
GEOTEXTILE FABRIC - 24+/- SY
CHANNEL TRANSITION EXCAVATION +/- 27 CY (STRUCTURE PAY ITEM)
CLASS I RIP RAP - 13+/- TONS
GEOTEXTILE FABRIC - 19+/- SY
CHANNEL TRANSITION EXCAVATION +/- 18 CY (STRUCTURE PAY ITEM)
BEGIN CULVERT -L- Sta.12+53.13
-L- PT Sta. 12+27.68
END MILLING -L- Sta.12+25.00
-L- PC Sta. 10+00.00
-L- PC Sta. 11+04.42
-L- PT Sta. 10+95.78
N 41° 01' 13.3" E
BEGIN PROJECT -L- POC STA.11+50.00 BEGIN MILLING
-DWI- POT STA.9+80.00
BEGIN DRIVEWAY -DWI- POT STA.10+00.00
-DWI- PC STA.10+10.00
S 38° 41' 36.1" E
-DWI- PT STA.10+44.35
N 42° 53' 30.5" E
SPECIAL CUT 'V' DITCH SEE DETAIL A
-DWI- PC STA.10+75.48
BEGIN INCIDENTAL STONE
-DWI- PT STA.11+05.65
BEGIN MILLING -L- STA.13+75.00
S 50° 39' 42.5" E
-L- STA.13+90.58 = -DWI- STA.11+32.26
END PROJECT -L- POT Sta.14+75.00 END MILLING
SPECIAL CUT 'V' DITCH SEE DETAIL A -L- POT Sta. 15+37.78
GREU TL-3
24" RCP-IV
0401
0402
15"
REMOVE
N 39° 20' 17.5" E
SR 1819 STEWART RD 18' BST
CONC BRIDGE
CHANNEL TRANSITION EXCAVATION +/- 3 CY (STRUCTURE PAY ITEM)
CLASS I RIP RAP - 7+/- TONS
GEOTEXTILE FABRIC - 10+/- SY
PROPOSED ALUMINUM BOX CULVERT 1 @ 34'-9" X 8'-9"
END CULVERT -L- Sta.12+87.88
BM#1 -BL- STA. 24+62.54 67.68' RIGHT ELEV=128.16' "BENCHTIE RAILROAD SPIKE SET IN 10" OAK TREE"
CHANNEL TRANSITION EXCAVATION +/- 6 CY (STRUCTURE PAY ITEM)
CLASS I RIP RAP - 4+/- TONS
GEOTEXTILE FABRIC - 7+/- SY

-DWI-

PI Sta 10+94.28	PI Sta 10+33.18
Δ = 86° 26' 46.9" (RT)	Δ = 98° 24' 53.4" (LT)
D = 286° 28' 44.0"	D = 286° 28' 44.0"
L = 30.18'	L = 34.35'
T = 18.80'	T = 23.18'
R = 20.00'	R = 20.00'
SE = 0.02	SE = 0.02
DS = < 15MPH	DS = < 15MPH

-L-

PI Sta 10+47.95	PI Sta 11+66.06
Δ = 7° 09' 50.3" (LT)	Δ = 1° 40' 55.8" (LT)
D = 7° 28' 47.5"	D = 1° 21' 52.9"
L = 95.78'	L = 123.26'
T = 47.95'	T = 61.64'
R = 766.00'	R = 4,198.44'
SE = 0.06	SE = 0.04
DS = 45MPH	DS = 55MPH

EXIST. TYPICAL DITCH SECTION

D= 2.5 FT ±
B= 0.0 FT
T= 7.0 FT ±

GRASS LINED STABLE CONDITION

AT -L- STA. 13+70 LT

EXIST. TYPICAL DITCH SECTION

D= 2.5 FT ±
B= 0.0 FT
T= 8.0 FT ±

GRASS LINED STABLE CONDITION

AT -L- STA. 13+50 RT

DETAIL A

SPECIAL CUT DITCH (Not to Scale)

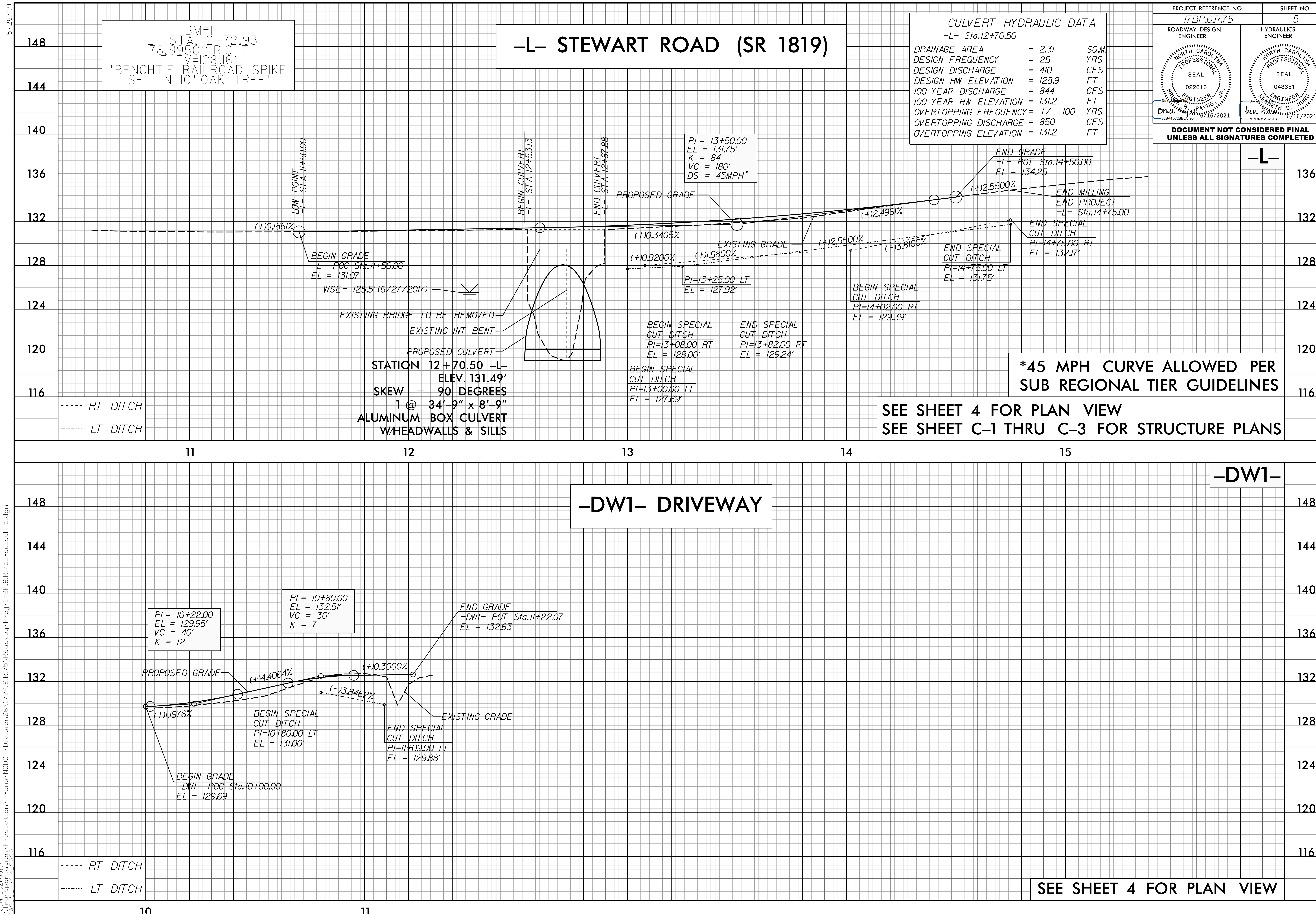
Natural Ground — 3:1 — D — 3:1 or Flatter — Front Ditch Slope

Min. D= 1.3 Ft.

FROM -L- STA. 13+08 RT TO STA. 14+75 RT
FROM -L- STA. 13+00 LT TO STA. 14+75 LT
FROM -DWI- STA. 10+80 LT TO STA. 11+09 LT

PAVED SHOULDER

SEE SHEET 5 FOR PROFILE VIEW
SEE SHEET C-1 THRU C-3 FOR CULVERT PLANS


PROJECT REFERENCE NO.
SHEET NO.
17BP.6.R.75
5
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 022610 ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 043351 ENGINEER
6/16/2021
6/16/2021
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
-L-
-L- STEWART ROAD (SR 1819)
BM#1
-L- STA. 12+72.93
78.9950' RIGHT
ELEV=128.16'
"BENCHTIE RAILROAD SPIKE SET IN 10" OAK TREE"
CULVERT HYDRAULIC DATA
-L- Sta.12+70.50
DRAINAGE AREA = 2.31 SQ.MI.
DESIGN FREQUENCY = 25 YRS
DESIGN DISCHARGE = 410 CFS
DESIGN HW ELEVATION = 128.9 FT
100 YEAR DISCHARGE = 844 CFS
100 YEAR HW ELEVATION = 131.2 FT
OVERTOPPING FREQUENCY = +/- 100 YRS
OVERTOPPING DISCHARGE = 850 CFS
OVERTOPPING ELEVATION = 131.2 FT
148
144
140
136
132
128
124
120
116
LOW POINT -L- STA 11+50.00
BEGIN CULVERT -L- STA 12+53.13
END CULVERT -L- STA 12+87.88
PI = 13+50.00
EL = 131.75'
K = 84
VC = 180'
DS = 45MPH*
PROPOSED GRADE
END GRADE
-L- POT Sta.14+50.00
EL = 134.25
(+)2.5500%
END MILLING
END PROJECT
-L- Sta.14+75.00
(+)2.4961%
END SPECIAL CUT DITCH
PI=14+75.00 RT
EL = 132.17'
(+)0.1861%
(+)0.3405%
EXISTING GRADE
(+)2.5500%
(+)3.8100%
END SPECIAL CUT DITCH
PI=14+75.00 LT
EL = 131.75'
(+)0.9200%
(+)1.6800%
BEGIN GRADE
-L- POC Sta.11+50.00
EL = 131.07
WSE= 125.5' (6/27/2017)
PI=13+25.00 LT
EL = 127.92'
BEGIN SPECIAL CUT DITCH
PI=14+02.00 RT
EL = 129.39'
EXISTING BRIDGE TO BE REMOVED
EXISTING INT BENT
PROPOSED CULVERT
BEGIN SPECIAL CUT DITCH
PI=13+08.00 RT
EL = 128.00'
END SPECIAL CUT DITCH
PI=13+82.00 RT
EL = 129.24'
BEGIN SPECIAL CUT DITCH
PI=13+00.00 LT
EL = 127.69'
STATION 12+70.50 -L-
ELEV. 131.49'
SKEW = 90 DEGREES
1 @ 34'-9" x 8'-9"
ALUMINUM BOX CULVERT
W/HEADWALLS & SILLS
*45 MPH CURVE ALLOWED PER SUB REGIONAL TIER GUIDELINES
SEE SHEET 4 FOR PLAN VIEW
SEE SHEET C-1 THRU C-3 FOR STRUCTURE PLANS
RT DITCH
LT DITCH
11
12
13
14
15
-DW1-
-DW1- DRIVEWAY
PI = 10+22.00
EL = 129.95'
VC = 40'
K = 12
PI = 10+80.00
EL = 132.51'
VC = 30'
K = 7
END GRADE
-DW1- POT Sta.11+22.07
EL = 132.63
PROPOSED GRADE
(+)4.4064%
(+)0.3000%
(-)13.8462%
(+)1.1976%
BEGIN SPECIAL CUT DITCH
PI=10+80.00 LT
EL = 131.00'
END SPECIAL CUT DITCH
PI=11+09.00 LT
EL = 129.88'
EXISTING GRADE
BEGIN GRADE
-DW1- POC Sta.10+00.00
EL = 129.69
SEE SHEET 4 FOR PLAN VIEW
10
11

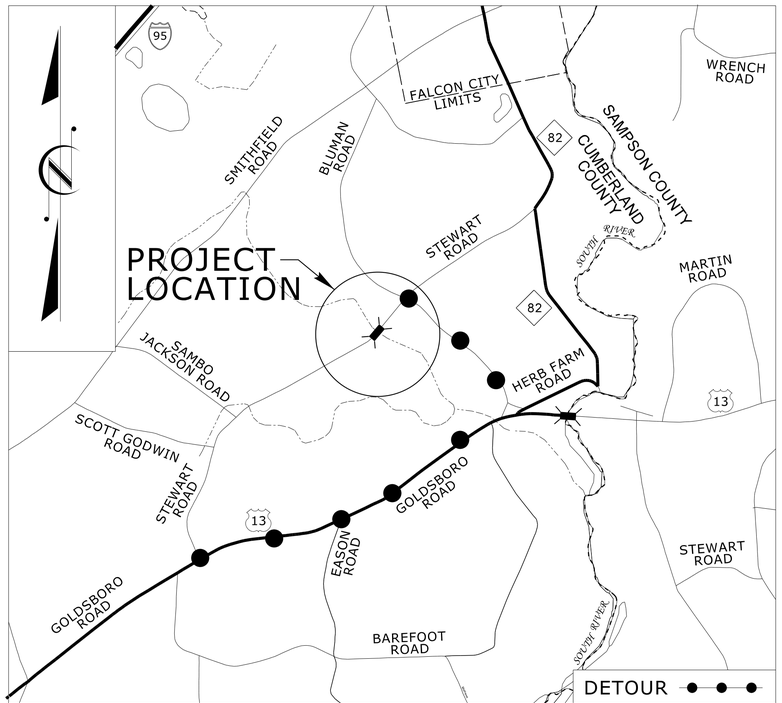
5/28/99

16-JUN-2021 08:54
Q:\Transportation\Production\Trans\NCDOT\Division06\17BP.6.R.75\Roadway\Proj\17BP.6.R.75_rdy_psh 5.dgn
$$$$USERNAME$$$$

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

CUMBERLAND COUNTY

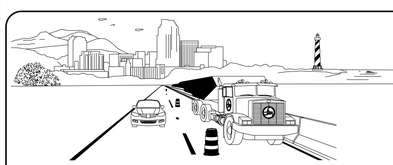


VICINITY MAP

LOCATION: REPLACE BRIDGE NO. 250141 OVER CREEK ON STEWART ROAD (SR 1819)

PLAN PREPARED FOR N.C.D.O.T. BY:

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326



WORK ZONE SAFETY & MOBILITY
"from the MOUNTAINS to the COAST"

N.C.D.O.T. DIVISION 06 TRAFFIC ENGINEERING
PO BOX 1150, FAYETTEVILLE, NC 28302 (MAIL)
450 TRANSPORTATION DRIVE, FAYETTEVILLE, NC 28301 (DELIVERY)
PHONE: (910) 364-0606 FAX: (910) 437-2599

FRANK D. WEST, JR — *DIVISION TRAFFIC ENGINEER*

JAMES V. FLOWERS — *ASSISTANT DIVISION TRAFFIC ENGINEER*

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

INDEX OF SHEETS

SHEET NO.
TMP-1

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

APPROVED: DocuSigned by: Melissa Toth — D86DCF8E04D4AF...

DATE: 2/28/2019

NORTH CAROLINA PROFESSIONAL SEAL 025892 ENGINEER MELISSA B. TOTH

TIP PROJECT: 17BP.6.R.75

2/28/2019
O:\Transportation\Roadway\NCDOT\Division06\17BP.6.R.75\Traffic\TrafficControl\TCP\17BP6R75 - TCP 01.dgn
User:ACEV7019

PROJ. REFERENCE NO.	SHEET NO.
17BP.6.R.75	TMP-1A

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
1101.03	TEMPORARY ROAD CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE 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

LEGEND

GENERAL

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

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM SKINNY DRUM TUBULAR MARKER
- TEMPORARY CRASH CUSHION
- FLASHING ARROW BOARD
- FLAGGER
- LAW ENFORCEMENT
- TRUCK MOUNTED ATTENUATOR (TMA)
- CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

GENERAL NOTES

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 UNDESIRED 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.

TRAFFIC PATTERN ALTERATIONS

A) NOTIFY THE ENGINEER THIRTY-ONE (31) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

B) INSTALL ADVANCED WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

C) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.

PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.

D) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.

COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.

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

TRAFFIC CONTROL DEVICES

F) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROAD.

G) THE CONTRACTOR IS DIRECTED TO THE TRAFFIC CONTROL SPECIAL PROVISIONS FOR INFORMATION REGARDING ALL TEMPORARY TRAFFIC CONTROL SIGNS AND DEVICES.

PAVEMENT MARKINGS AND MARKERS

H) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

I) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.

PHASING

STEP 1: INSTALL ALL DETOUR SIGNING KEEPING SIGNS COVERED (SEE SHEET TMP-3)

STEP 2: USING ROADWAY STANDARD DRAWING 1101.03, SHEETS 1 OF 9, CLOSE STEWART ROAD (SR 1819) TO TRAFFIC. UNCOVER ALL DETOUR SIGNING AND SHIFT TRAFFIC TO DETOUR (SEE SHEET TMP-3).

STEP 3: DISMANTLE AND REMOVE EXISTING BRIDGE

STEP 4: CONSTRUCT PROPOSED STRUCTURE, APPROACH ROADWAY TIE-INS AND ASSOCIATED ITEMS INCLUDING FINAL PAVEMENT MARKINGS AND MARKERS.

STEP 5: REMOVE ALL DETOUR SIGNING, ALL TEMPORARY TRAFFIC CONTROL DEVICES, AND OPEN STEWART ROAD (SR 1819) TO TRAFFIC.

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

APPROVED: DocuSigned by: Melissa Toth D86DCF8E04D04AF...

DATE: 6/15/2021

NORTH CAROLINA PROFESSIONAL SEAL 025892 ENGINEER MELISSA B. TOTH

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

ROADWAY STANDARD DRAWINGS, LEGEND, GENERAL NOTES AND PHASING

PROJ. REFERENCE NO.	SHEET NO.
17BP.6.R.75	TMP-2

SIGN NUMBER: SP1
TYPE: STATIONARY
QUANTITY: SEE PLANS

SIGN WIDTH: 3′-0″
HEIGHT: 2′-0″
TOTAL AREA: 6.0 Sq.Ft.

BORDER TYPE: INSET
RECESS: 0.47″
WIDTH: 0.63″
RADII: 1.5″

NO. Z BARS:
LENGTH:

BACKG COLOR: Fluorescent Orange
COPY COLOR: Black

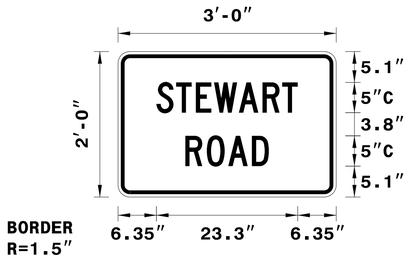
SYMBOL	X	Y	WID	HT

MAT′L: 0.080″ (2.0 mm) ALUMINUM

USE NOTES: 1,2

1. Legend and border shall be direct applied black non-reflective sheeting.
2. Background shall be NC GRADE B fluorescent orange retroreflective sheeting.

DESIGN BY: JG OERTER
CHECKED BY:
July 18, 2017
PROJECT ID: 17BP.6.R.75
LOCATION: CUMBERLAND COUNTY
DIV: 6



BORDER
R=1.5″
TH=0.63″
IN=0.47″

Panel Style: construction_guide.ssi
M.U.T.C.D.: 2009 Edition

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter locations are panel edge to lower left corner

																									Series/Size Text Length
	S	T	E	W	A	R	T																		C 2000
	6.4	9.6	12.9	15.9	20	23.9	27.1																		23.3
	R	O	A	D																					C 2000
	11.1	14.7	18.2	22.1																					13.8

NORTH CAROLINA D.O.T. SIGN DETAIL

APPROVED: DocuSigned by: Melissa Toth D86DCFBED4D04AF...
DATE: 2/28/2019

NORTH CAROLINA PROFESSIONAL SEAL 025892 ENGINEER MELISSA B. TOTH

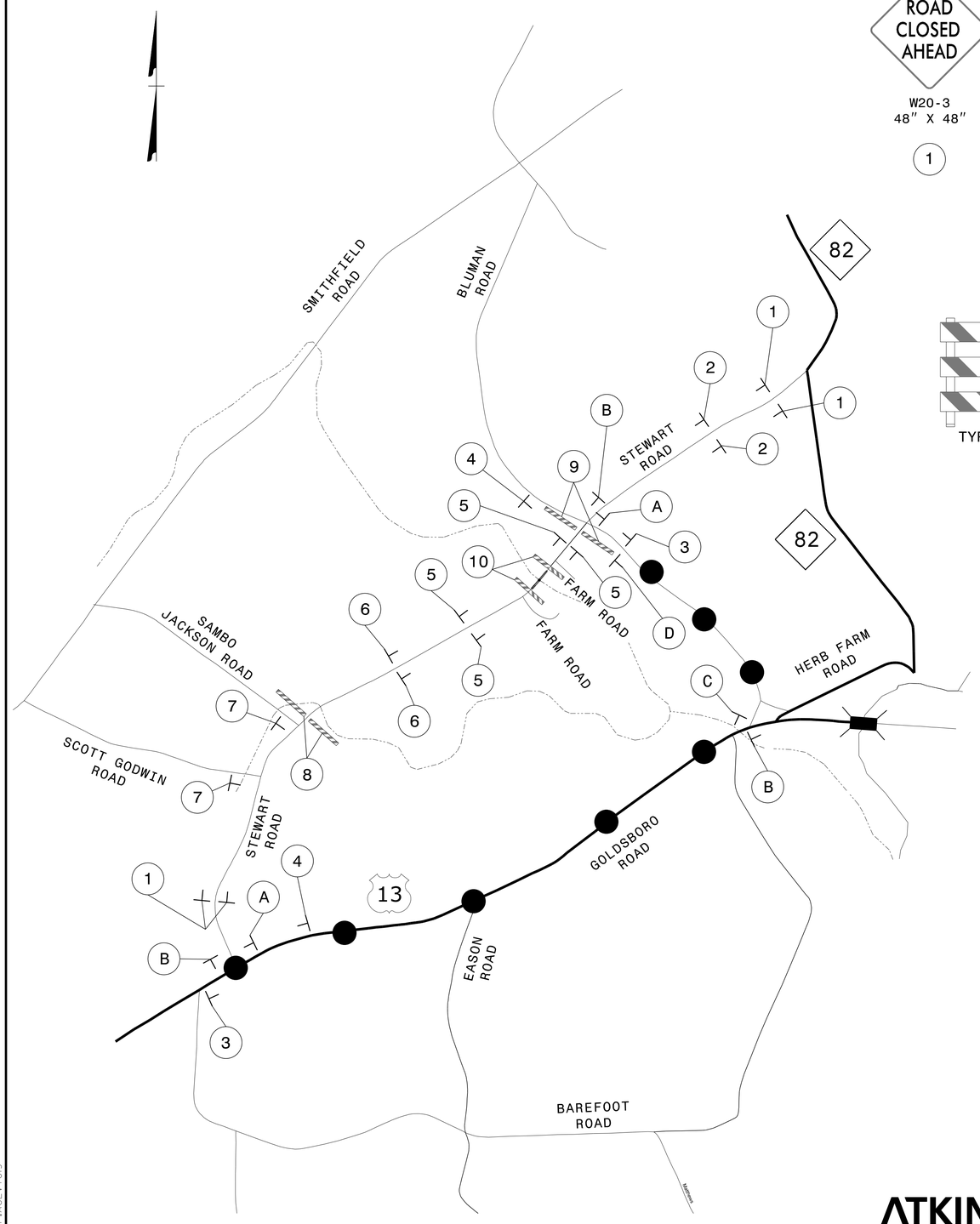
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

STEWART ROAD
(SR 1819)
SPECIAL SIGN
DESIGN

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

PROJ. REFERENCE NO.	SHEET NO.
17BP.6.R.75	TMP-3



W20-3
48″ X 48″

1

W20-2
48″ X 48″

2

W20-3
48″ X 48″

SP-4L
42″ X 12″

3

W20-3
48″ X 48″

SP-4R
42″ X 12″

4

W20-3
48″ X 48″

5

W20-3
48″ X 48″

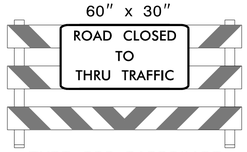
6

W20-3
48″ X 48″

R3-2
24″ X 24″

7

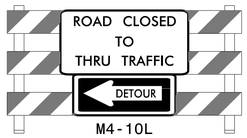
R11-4
60″ x 30″



TYPE III BARRICADE

8

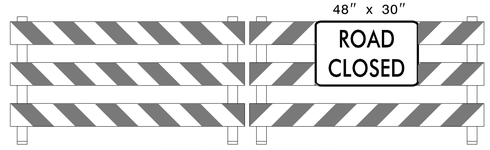
R11-4
60″ x 30″



M4-10L
48″ x 18″
TYPE III BARRICADE

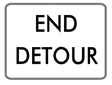
9

R11-2
48″ x 30″



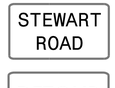
TYPE III BARRICADE

10



M4-8 A
24″ X 18″

A

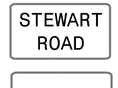


SEE TMP-2 FOR SIGN DESIGN
36″ X 24″

M4-8
24″ X 12″

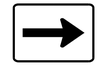
M6-1
21″ X 15″

B



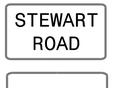
SEE TMP-2 FOR SIGN DESIGN
36″ X 24″

M4-8
24″ X 12″



M6-1
21″ X 15″

C



SEE TMP-2 FOR SIGN DESIGN
36″ X 24″

M4-8
24″ X 12″

M6-3
21″ X 15″

D

DETOUR ROUTE

SEE RSD 1101.03, SHEET 1 OF 9, AND 2 OF 9 FOR ADDITIONAL INFOMRAITON ON SIGN LOCATIONS AND NOTES.

APPROVED: Melissa Toth
DocuSigned by: D860CFBE04D04AF...

DATE: 2/28/2019

NORTH CAROLINA PROFESSIONAL SEAL 025892 ENGINEER MELISSA B. TOTH

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

STEWART ROAD (SR 1819) OFF-SITE DETOUR AND DETOUR SIGNS

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 160 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

2/28/2019
U:\Transportation\Roadway\NCDOT\Division06\17BP.6.R.75\Traffic\TrafficControl\TCP\17BP.6.R.75_ TCP 03.dgn
User:ACEY703

PROJECT REFERENCE NO.	SHEET NO.
17BP.6.R.75	PMP-1

APPROVED: Melissa Toth

DATE: 2/28/2019

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025892 ENGINEER MELISSA B. TOTH

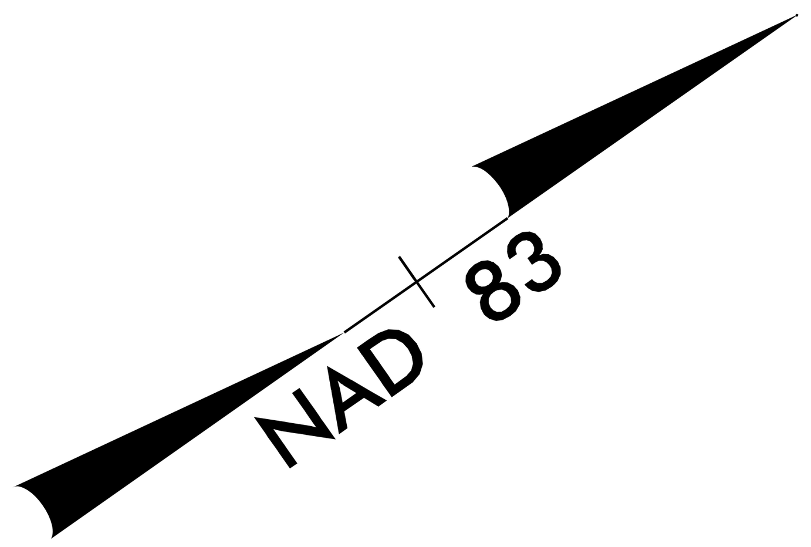
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

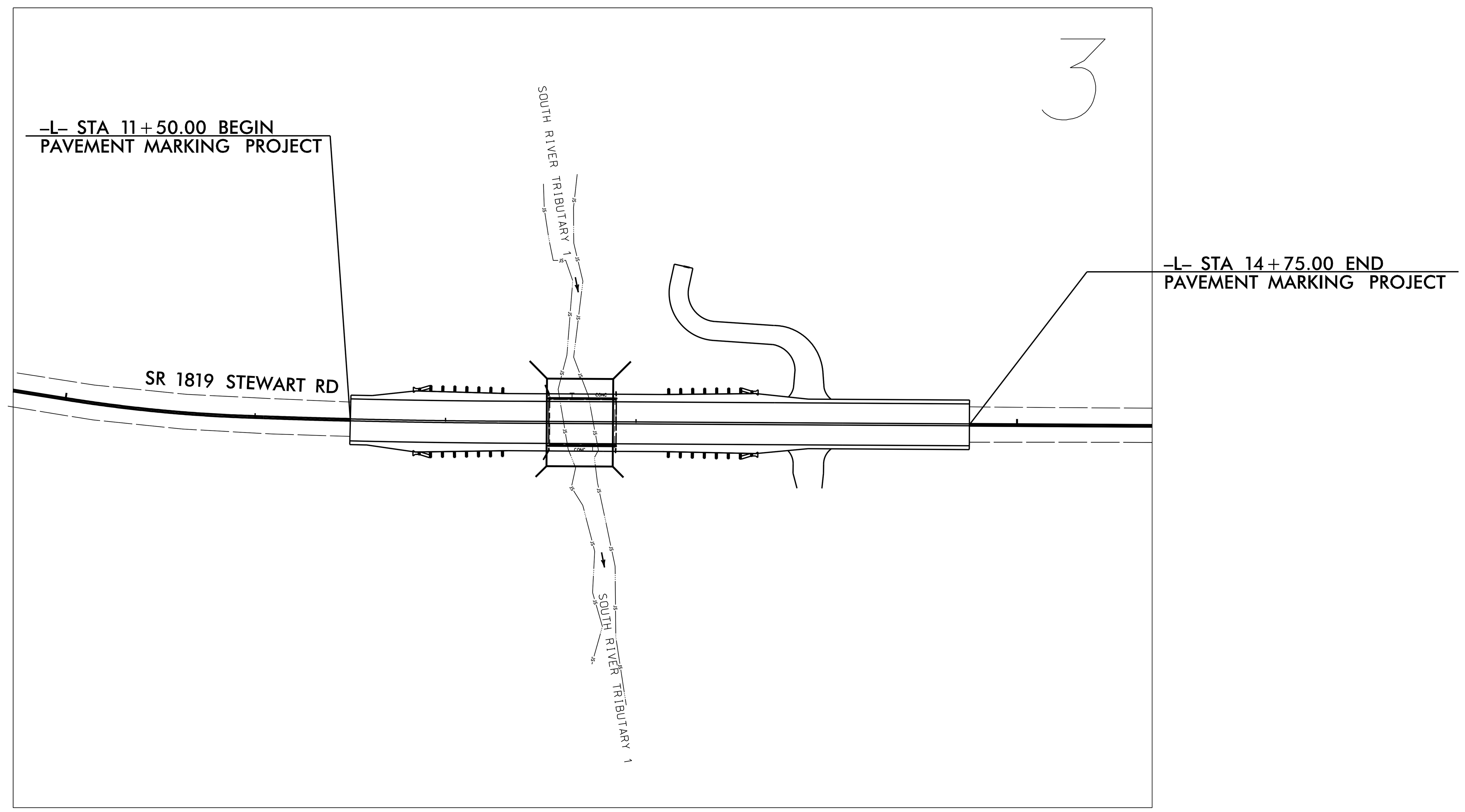
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN
CUMBERLAND COUNTY
LOCATION: BRIDGE NO. 250141 STEWART ROAD (SR 1819) OVER SOUTH RIVER TRIBUTARY 1

PROJECT: 17BP.6.R.75

CONTRACT:





INDEX

PLAN REVIEWED BY: N.C.D.O.T. SIGNING AND DELINEATION UNIT

__________ SIGNING & DELINEATION STANDARDS ENGINEER

__________ SIGNING & DELINEATION PROJECT DESIGN ENGINEER

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PLAN PREPARED BY: ATKINS

MELISSA B. TOTH, PE PROJECT ENGINEER

MILTON ACEVEDO PROJECT DESIGN ENGINEER

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

28-FEB-2019 12:01
O:\Transportation\Roadway\NCDOT\Division06\17BP.6.R.75\Traffic\PMP and Signing\CADD\Signing Layout Plans\PMP 01.dgn
HOEK7534 AT LUS354180

PROJECT REFERENCE NO.	SHEET NO.
17BP.6.R.75	PMP-2

APPROVED: Melissa Toth

DATE: 2/15/2019

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025892 ENGINEER MELISSA B. TOTH

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS
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 AND SPACING
1261.02	GUARDRAIL & BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION	
TA	WHITE EDGELINE	THERMOPLASTIC (4", 90 MILS)
TI	YELLOW DOUBLE CENTER	THERMOPLASTIC (4", 120 MILS)
MA	YELLOW & YELLOW	PERMANENT RAISED MARKER

GENERAL NOTES

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.

A) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKER
SR 1819 (STEWART ROAD)	THERMOPLASTIC	PERMANENT RAISED

B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.

D) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.

SUMMARY OF QUANTITIES

ITEM NO.		ITEM DESCRIPTION	QUANTITY	UNIT
DESC. NO.	SECT. NO.			
4685000000	1205	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)	650	LF
4686000000	1205	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)	650	LF
4900000000	1251	PERMANENT RAISED MARKER	4	EA

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

PAVEMENT MARKING NOTES AND QUANTITIES

PROJECT REFERENCE NO.	SHEET NO.
17BP.6.R.75	PMP-3

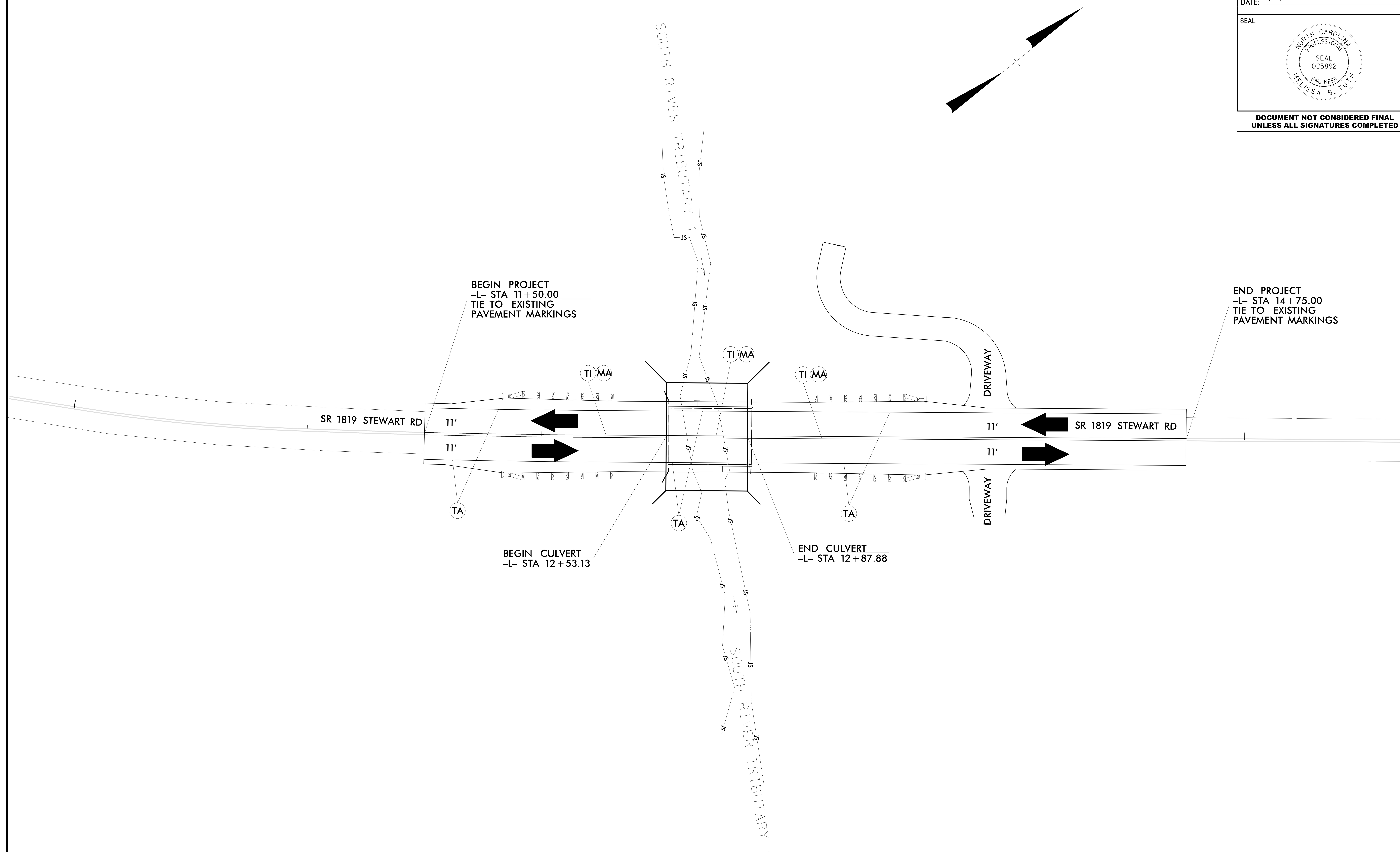
APPROVED: DocuSigned by: Melissa Toth D88DCF8E04D04AF...

DATE: 2/15/2019

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025892 ENGINEER MELISSA B. TOTH

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



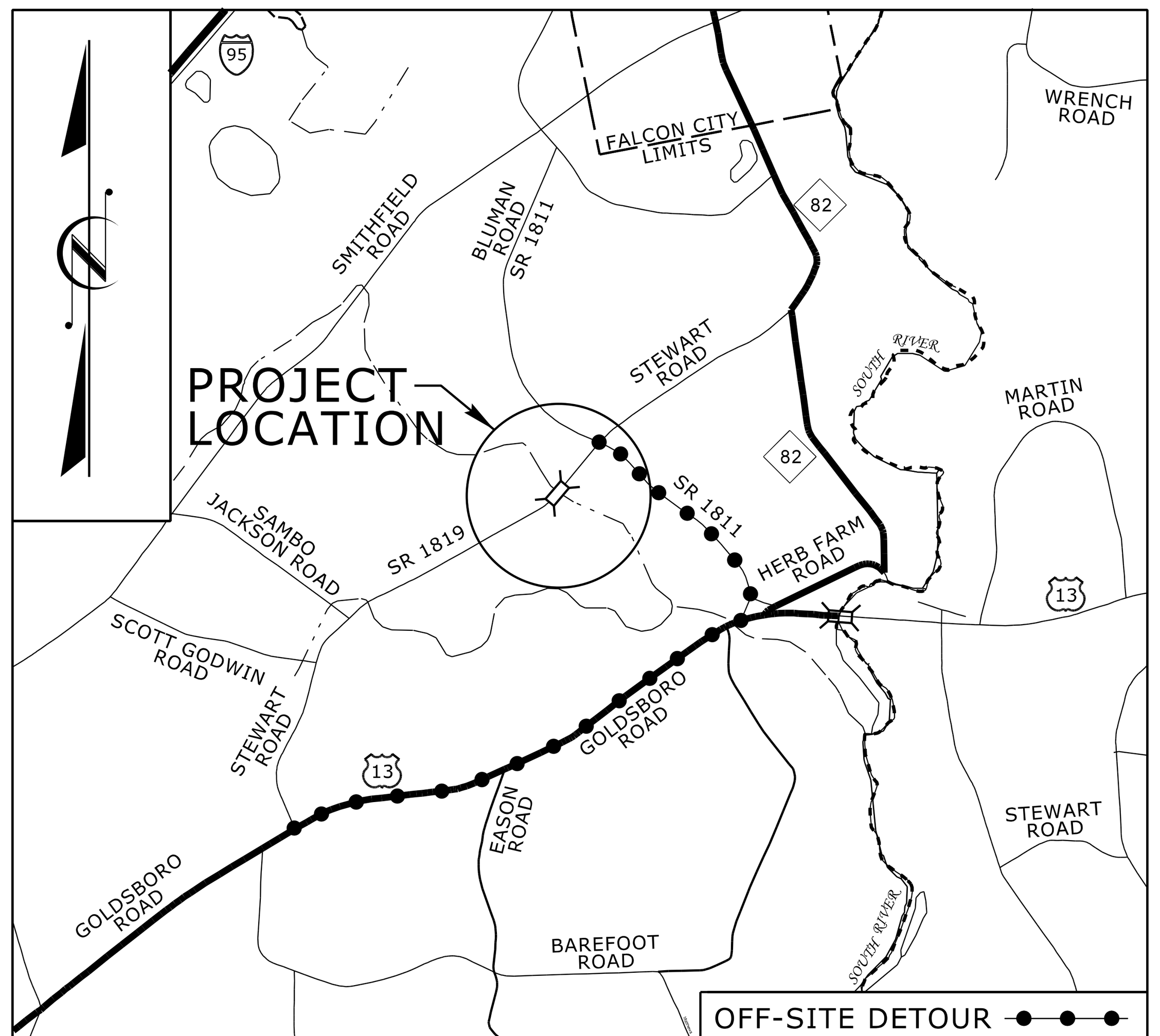
ATKINS 1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

PAVEMENT MARKING
-L- STA. 11+50 TO STA. 14+75

TIP PROJECT: 17BP.6.R.75

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.6.R.75	EC-1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



VICINITY MAP

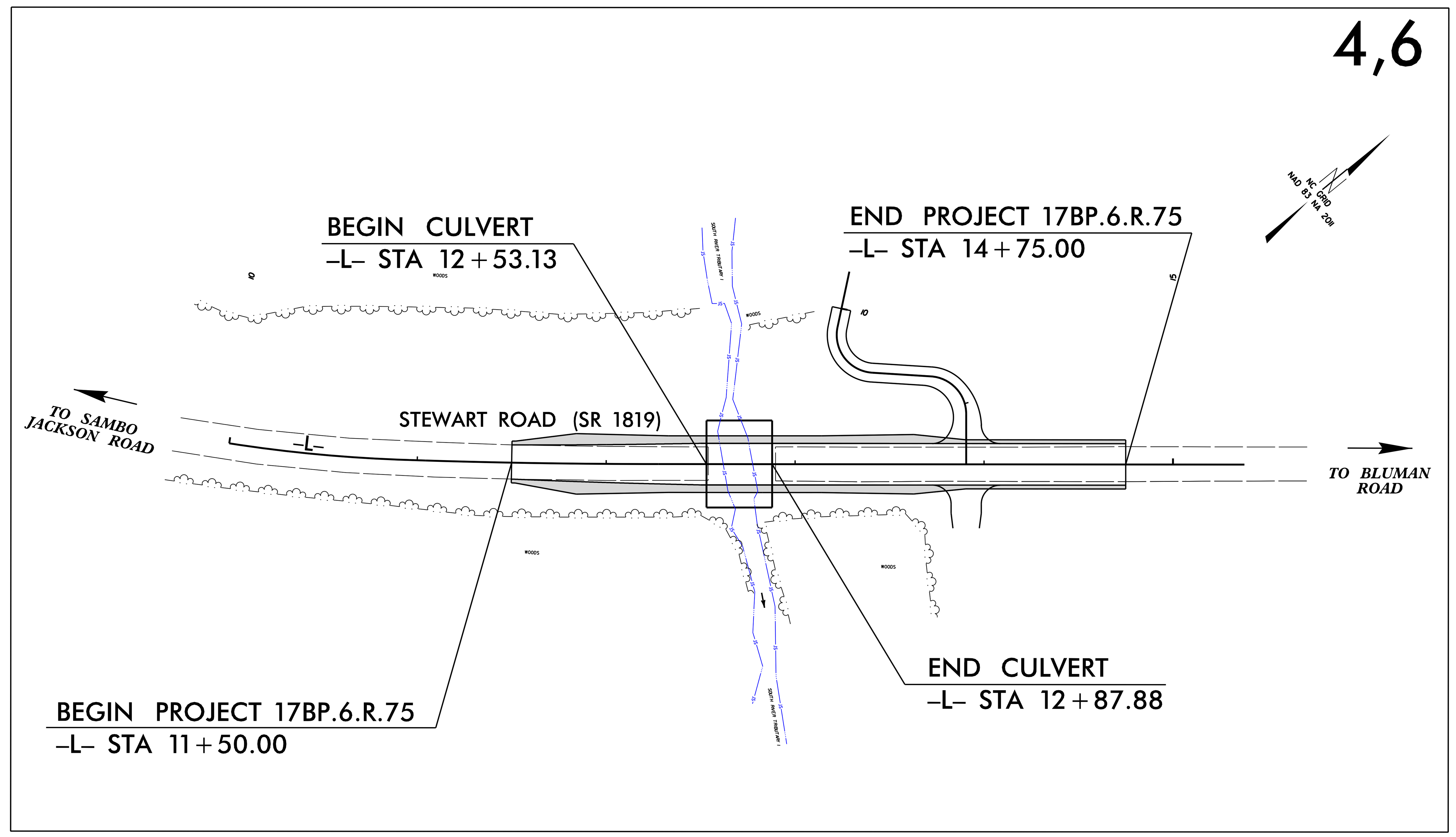
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

CUMBERLAND COUNTY

LOCATION: BRIDGE NO. 250141 STEWART ROAD (SR 1819) OVER SOUTH RIVER TRIBUTARY

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



EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
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 / Coir Fiber Wattle	EW / CFW
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
1630.06	Special Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	

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

GRAPHIC SCALE

20
PLANS

20
PROFILE (HORIZONTAL)

4
PROFILE (VERTICAL)

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

Prepared In the Office of:

ATKINS 1616 E. MILLBROOK ROAD, SUITE #160
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Designed by:

NADIA MATA, PE, CPESC — 3863
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:

MARK STALEY, CPESC, CPSWQ

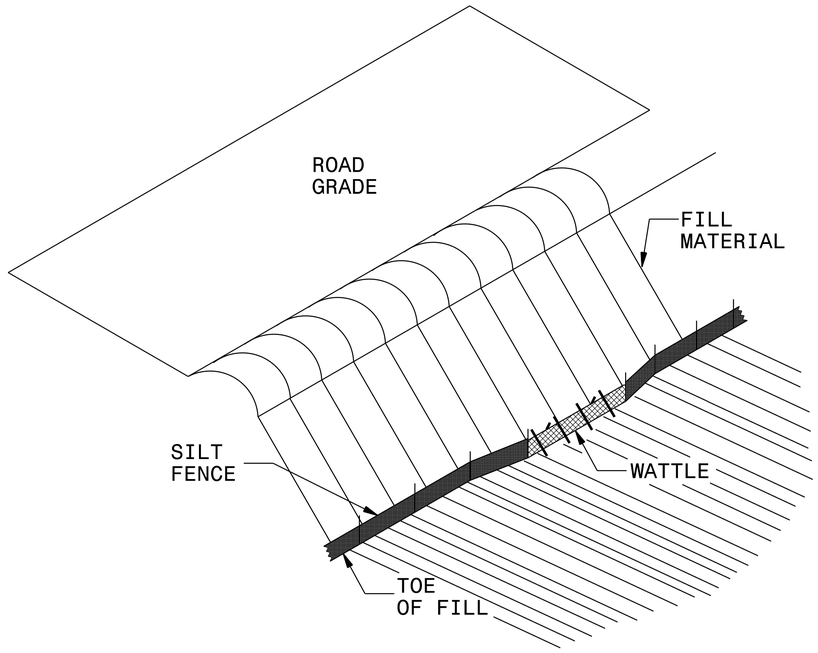
Roadway Standard Drawings

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 revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

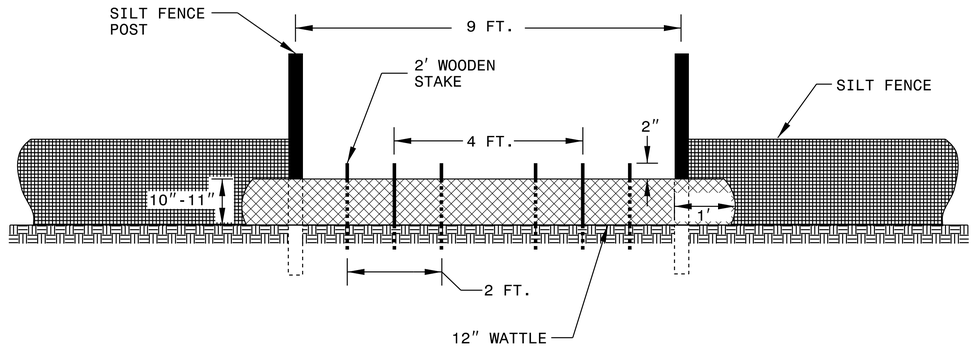
1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type B
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Check Type 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		

PROJECT REFERENCE NO.	SHEET NO.
17BP.6.R.75	EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SILT FENCE COIR FIBER WATTLE BREAK DETAIL



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.

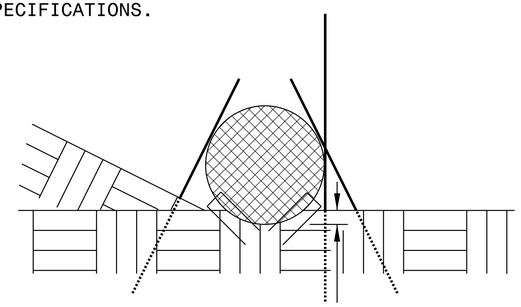
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

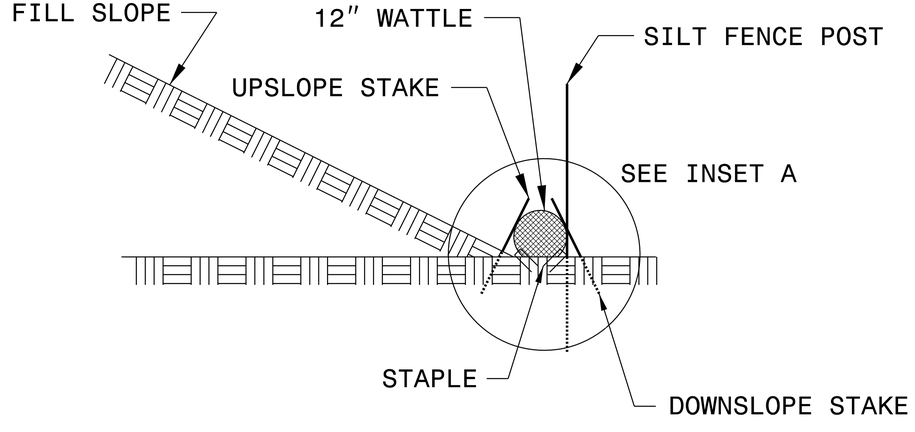
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

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

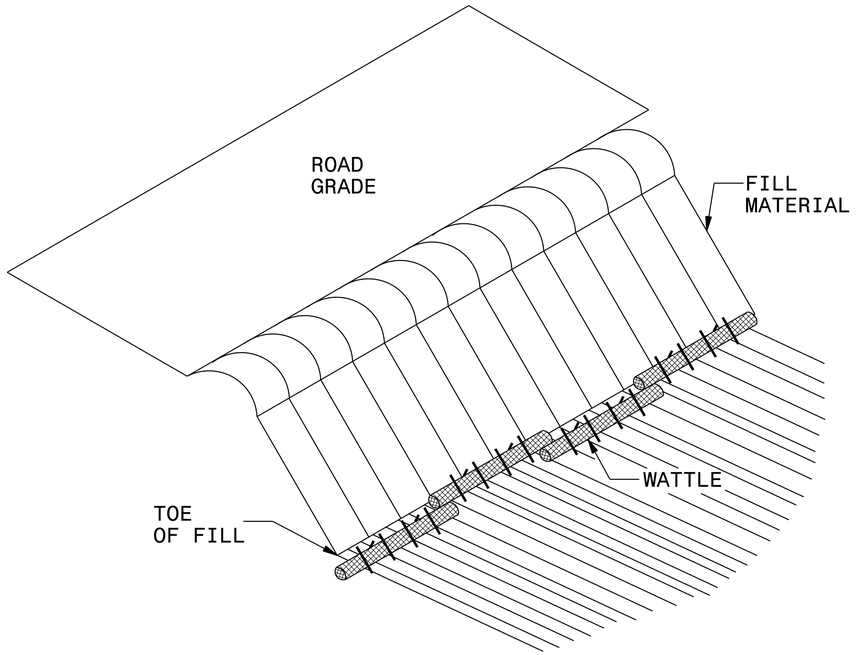




SIDE VIEW

PROJECT REFERENCE NO.	SHEET NO.
17BP.6.R.75	EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

COIR FIBER WATTLE BARRIER DETAIL



ISOMETRIC VIEW

NOTES:

USE MINIMUM 18 IN. NOMINAL DIAMETER COIR FIBER (COCONUT) WATTLE AND LENGTH OF 10 FT.

EXCAVATE A 2 TO 3 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE WATTLES ON TOE OF SLOPE.

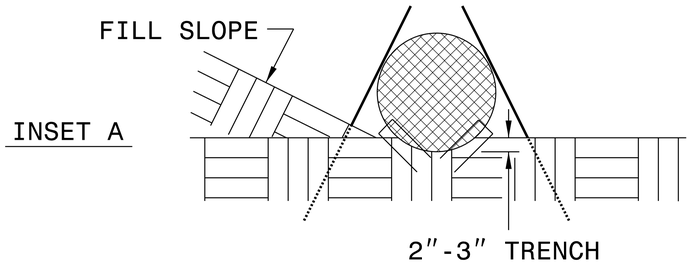
USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

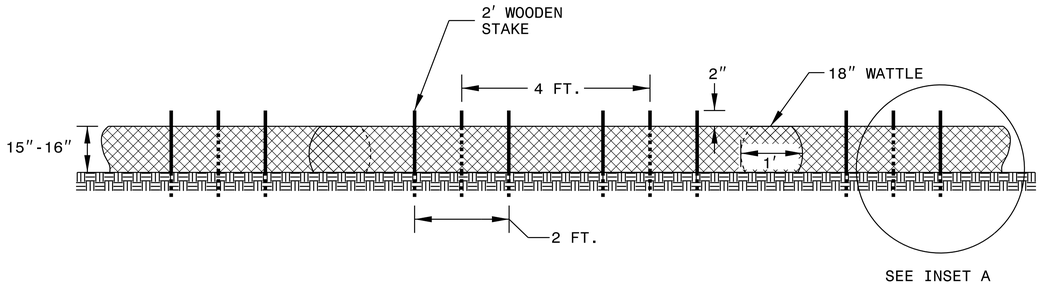
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.

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

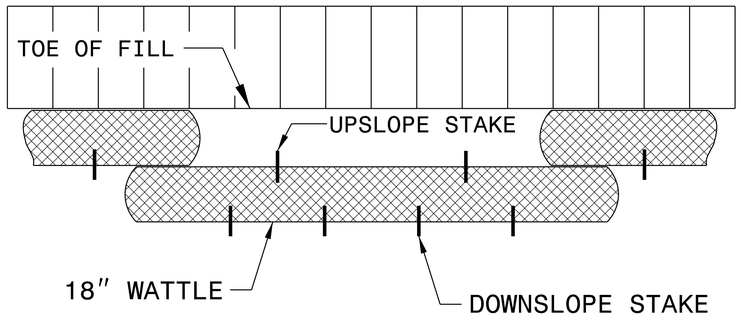
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

FOR BREAKS ALONG LARGE SLOPES, USE MAXIMUM SPACING OF 25 FT.





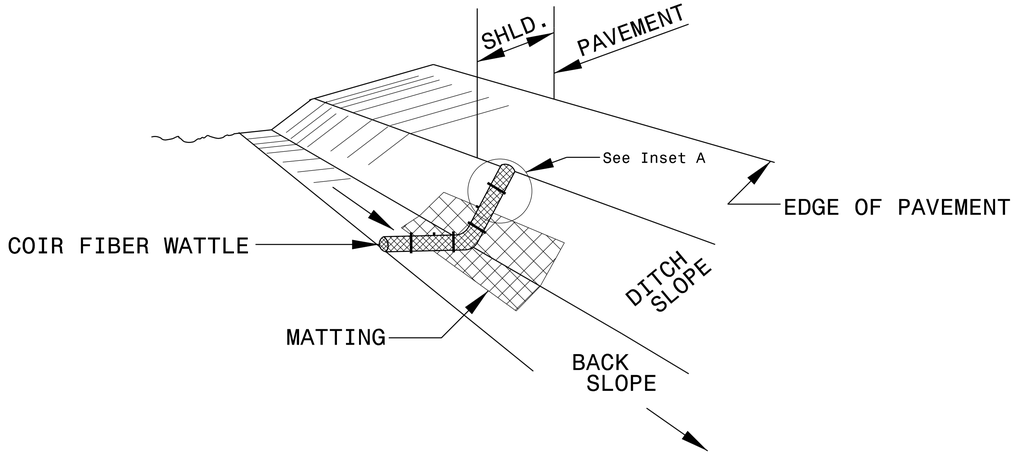
FRONT VIEW



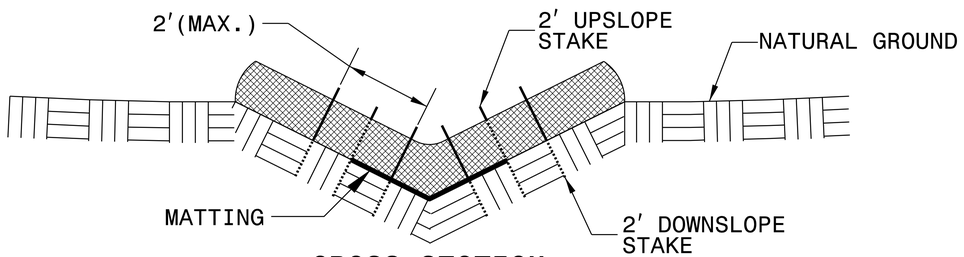
TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
17BP.6.R.75	EC-2B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

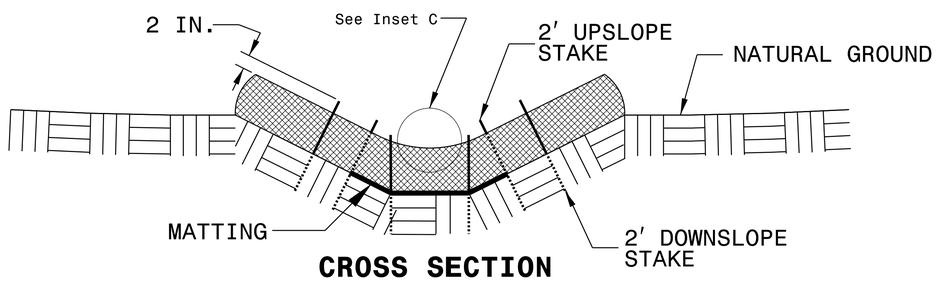
COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



ISOMETRIC VIEW



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH

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.

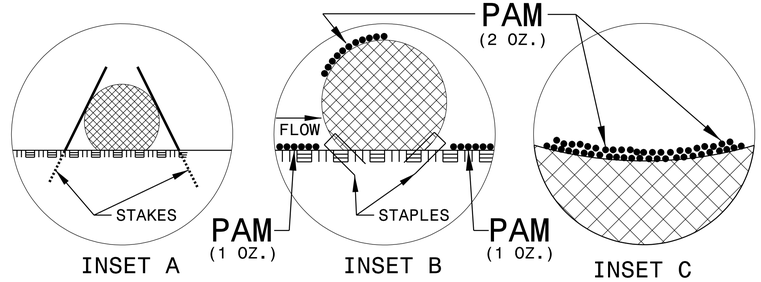
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

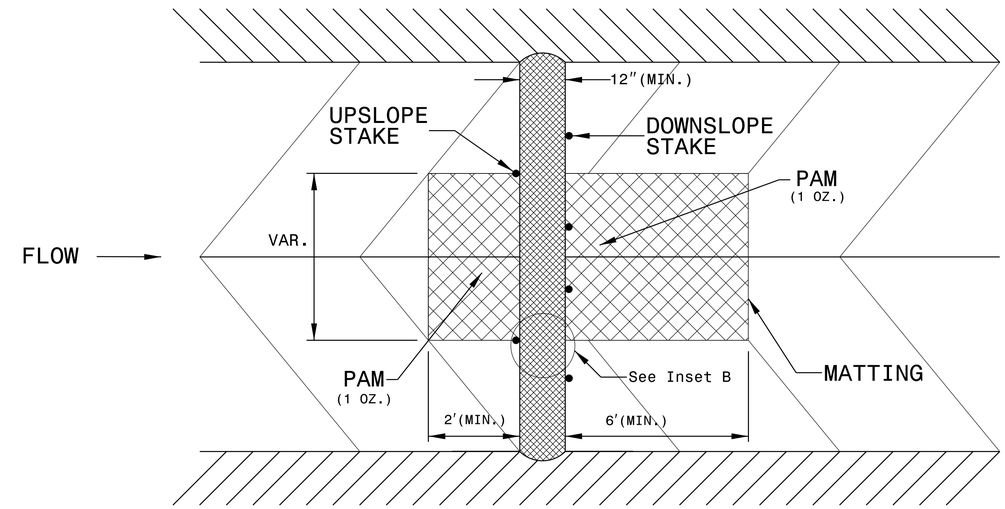
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

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 MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.

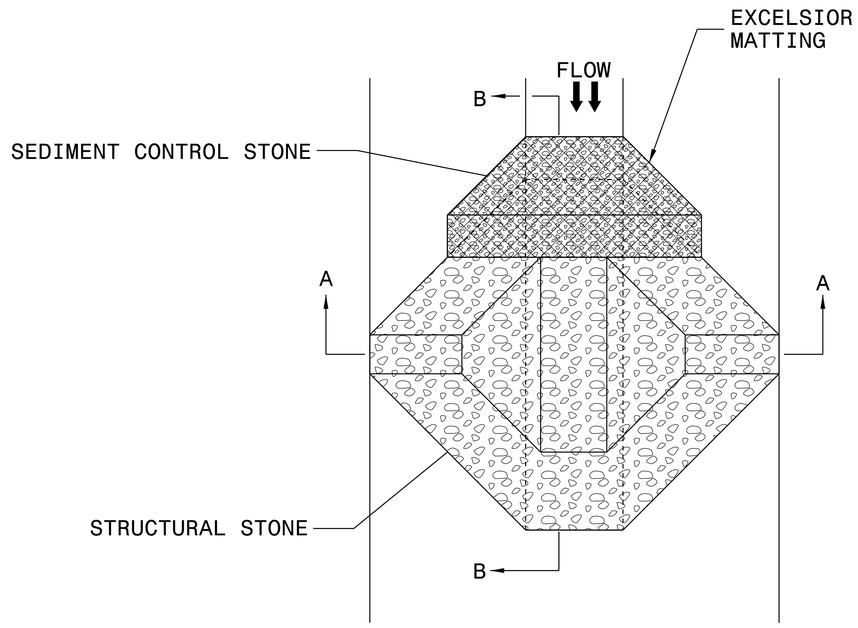




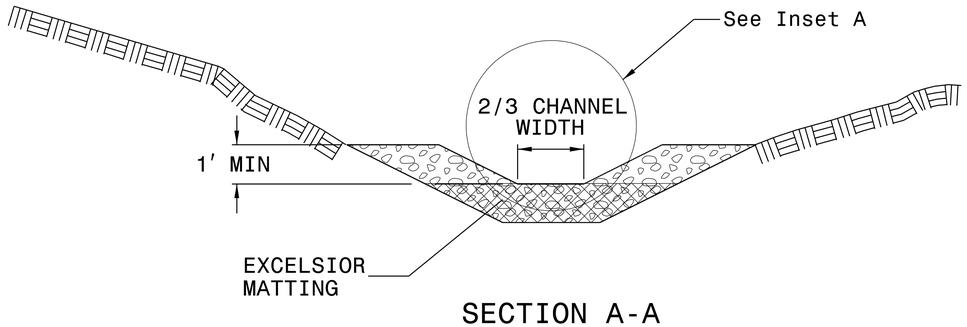
TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
17BP.6.R.75	EC-2C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



PLAN



SECTION A-A

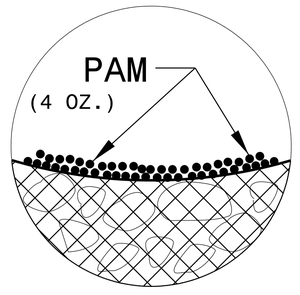
NOTES:

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

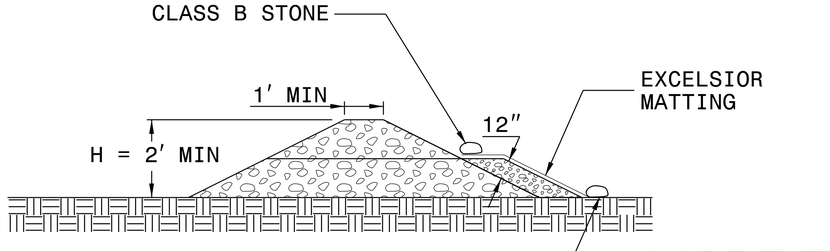
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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 B-B

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
17BP.6.R.75	EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
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.

PROJECT REFERENCE NO.	SHEET NO.
17BP.6.R.75	EC-3A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	13+08	13+82	RT	70
4	-L-	14+02	14+75	RT	70
4	-L-	13+00	13+25	LT	25
			SUBTOTAL		165
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					835
				TOTAL	1000
				SAY	1000

PERMANENT SOIL REINFORCEMENT MAT

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	13+25	14+75	LT	140
			SUBTOTAL		140
		ADDITIONAL PSRM TO BE INSTALLED			50
				TOTAL	190
				SAY	200

PROJECT REFERENCE NO.	SHEET NO.
17BP.6.R.75	EC-04/CONST.04
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

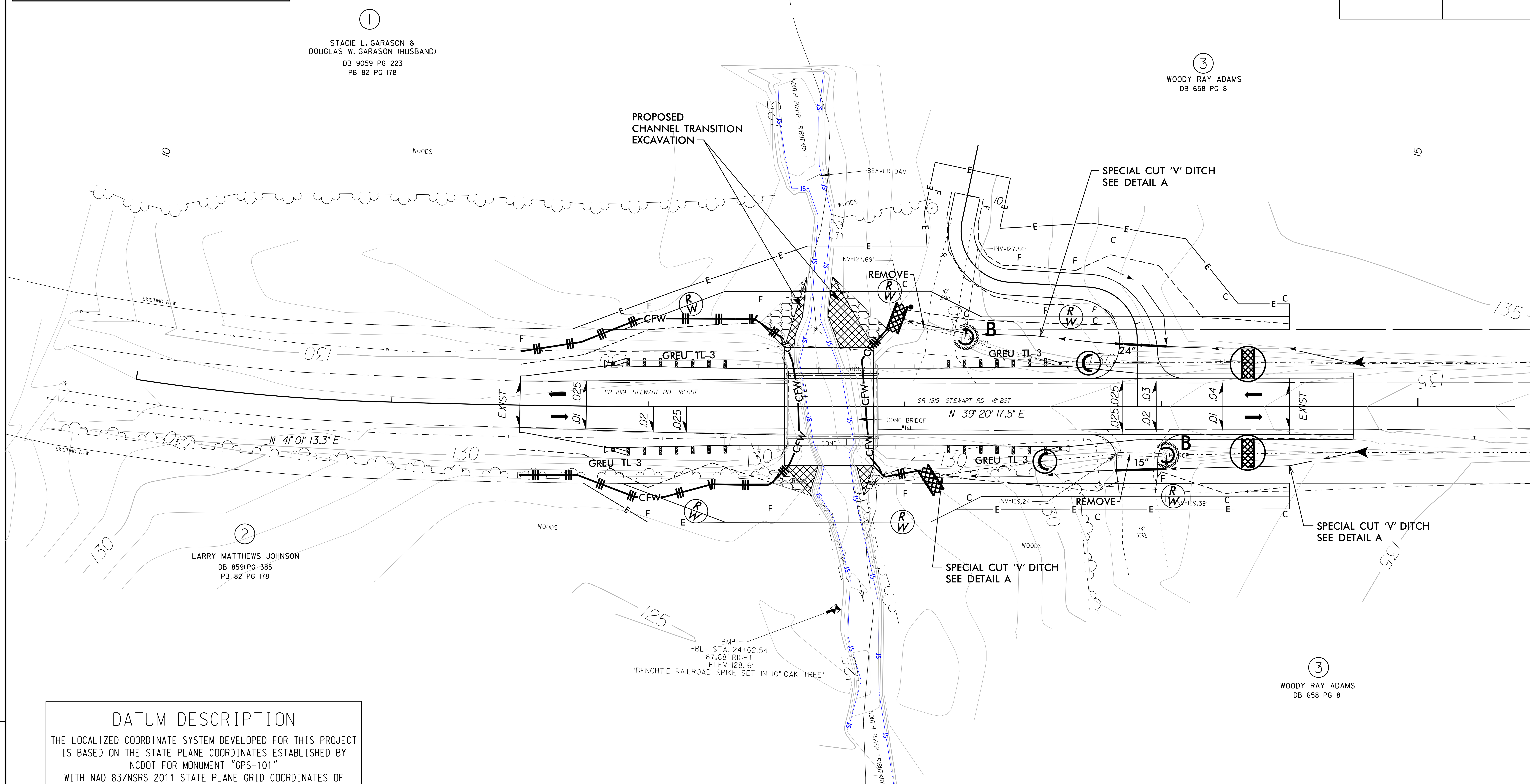
8/17/99

NOTE: UTILIZE SPECIAL STILLING BASIN(S) AS NEEDED.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 04

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

REVISIONS

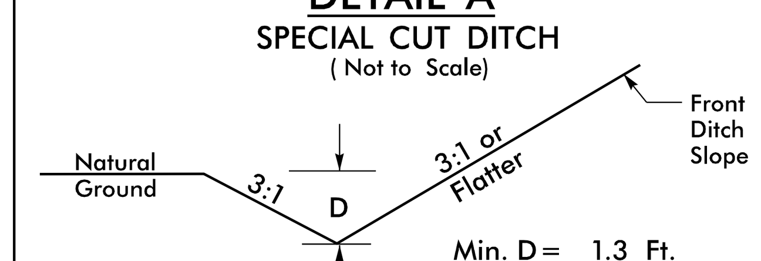


DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "GPS-101"
WITH NAD 83/NSRS 2011 STATE PLANE GRID COORDINATES OF NORTHING: 513966.905(ft) EASTING: 2101300.395(ft) ELEVATION: 141.55(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999872376
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS101" TO -L- STATION 11+00.00 IS 467.8309 AT A BEARING OF N 53°34'50.86" E
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAD 83/2011

DETAIL A

SPECIAL CUT DITCH
(Not to Scale)

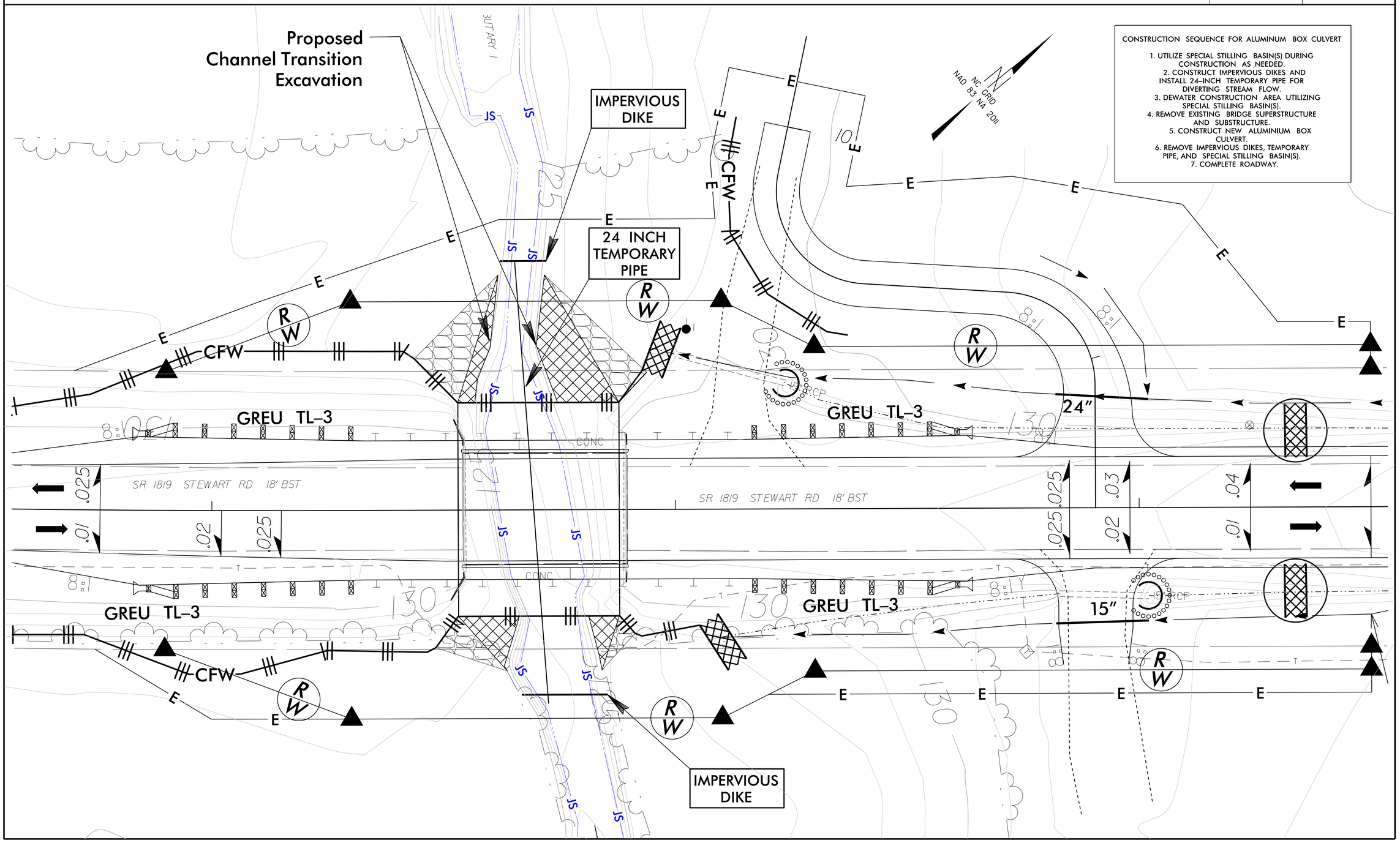


FROM -L- STA. 13+08 RT TO STA. 13+82 RT
FROM -L- STA. 14+02 RT TO STA. 14+75 RT
FROM -L- STA. 13+00 LT TO STA. 13+25 LT
FROM -L- STA. 13+25 LT TO STA. 14+75 LT
FROM -DW1- STA. 10+80 LT TO STA. 11+09 LT

25-JUL-2018 14:34
R:\Hydraulics\CADD\PSH\EC\17BP.6.R.75_EC_psh 4.dgn
$$$$USERNAME$$$$

CULVERT CONSTRUCTION SEQUENCE STA. 12 + 70.5 –L–

PROJECT REFERENCE NO.	SHEET NO.
17BP.6.R.75	EC-05/CONST.04
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



PROJECT REFERENCE NO.	SHEET NO.
17BP.6.R.75	EC-06/CONST.04
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NOTE: UTILIZE SPECIAL STILLING BASIN(S) AS NEEDED.

FINAL PHASE
EROSION CONTROL FOR
CONSTRUCTION SHEET 04

REVISIONS

8/17/99

(1)
STACIE L. GARASON &
DOUGLAS W. GARASON (HUSBAND)
DB 9059 PG 223
PB 82 PG 178

(2)
LARRY MATTHEWS JOHNSON
DB 8591PG 385
PB 82 PG 178

(3)
WOODY RAY ADAMS
DB 658 PG 8

(3)
WOODY RAY ADAMS
DB 658 PG 8

PROPOSED
CHANNEL TRANSITION
EXCAVATION

SPECIAL CUT 'V' DITCH
SEE DETAIL A

SPECIAL CUT 'V' DITCH
SEE DETAIL A

SPECIAL CUT 'V' DITCH
SEE DETAIL A

REMOVE

REMOVE

BEAVER DAM

SOUTH RIVER TRIBUTARY 1

SOUTH RIVER TRIBUTARY 1

WOODS

WOODS

WOODS

WOODS

EXISTING R/W

EXISTING R/W

N 41° 01' 13.3" E

N 39° 20' 17.5" E

SR 1819 STEWART RD 18' BST

SR 1819 STEWART RD 18' BST

CONC BRIDGE
*4L

EXIST

EXIST

GREU TL-3

GREU TL-3

GREU TL-3

GREU TL-3

CFW

CFW

24"

15"

14" SOIL

10" SOIL

INV=127.69'

INV=127.86'

INV=129.24'

INV=129.39'

BM#1
-BL- STA. 24+62.54
67.68' RIGHT
ELEV=128.16'
"BENCHTIE RAILROAD SPICKE SET IN 10" OAK TREE"

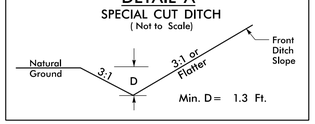
CREEK PER

CREEK

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "GPS-101"
WITH NAD 83/NSRS 2011 STATE PLANE GRID COORDINATES OF NORTHING: 513966.905(ft) EASTING: 2101300.395(ft)
ELEVATION: 141.55(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999872376
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS101" TO -L- STATION 11+00.00 IS 467.8309 AT A BEARING OF N 53°34'50.86" E
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAD 83/2011

DETAIL A
SPECIAL CUT DITCH
(Not to Scale)



FROM -L- STA. 13+08 RT TO STA. 13+82 RT
FROM -L- STA. 14+02 RT TO STA. 14+75 RT
FROM -L- STA. 13+00 LT TO STA. 13+25 LT
FROM -L- STA. 13+25 LT TO STA. 14+75 LT
FROM -DW1- STA. 10+80 LT TO STA. 11+09 LT

25-JUL-2018 14:34
R:\Highways\CADD\PSHYEC\17BP.6.R.75_EC_psh 6.dgn
$$$$USERNAME$$$$

09/08/99

PROJECT: 17BP.6.R.75

CONTRACT: DF00260

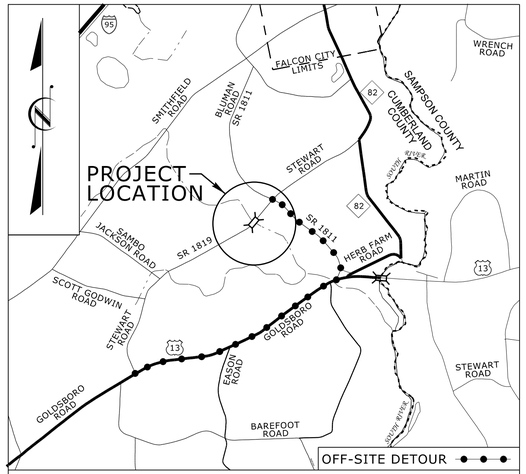
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.6.R.75	UO-1	2

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CUMBERLAND COUNTY

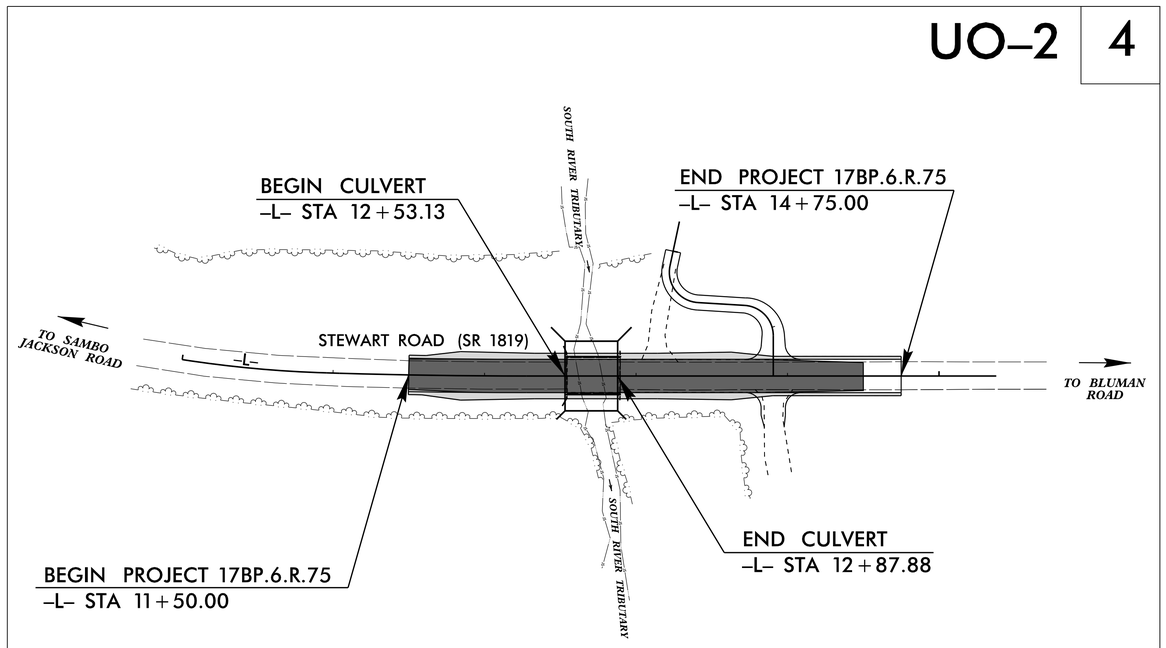
LOCATION: BRIDGE NO. 250141 STEWART ROAD (SR 1819) OVER SOUTH RIVER TRIBUTARY

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



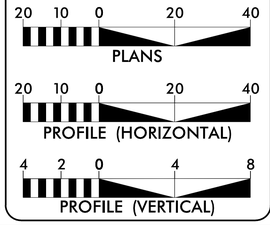
VICINITY MAP

UO–2 | 4



NAD 83 / NA 2011

GRAPHIC SCALES



INDEX OF UTILITY SHEETS

SHEET NO.	DESCRIPTION
UO–1	TITLE SHEET
UO–2	UTILITY PLAN SHEETS

Prepared in the Office of:
ATKINS
1616 E. MILLBROOK ROAD, SUITE #160
RALEIGH, NORTH CAROLINA 27609
(919) 876–6888 NCBEES #F–0326

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JULY 30, 2018

LETTING DATE: MARCH 20, 2019

BRUCE PAYNE, P.E.
PROJECT ENGINEER

IAN BERDEAU, P.E.
PROJECT DESIGN ENGINEER

CHRISTY WRIGHT HUFF, P.E.
NCDOT CONTACT

UTILITY OWNERS

POWER OVERHEAD – SOUTH RIVER EMC

WATER – EASTOVER SANITARY DISTRICT

COMMUNICATION – CENTURY LINK

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

27-FEB-2019 21:17
R:\Utilities\17BP.6.R.75_rdy_tsh_UO-1.dgn
$$$$USERNAME$$$$

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.6.R.75	U0-2
R/W SHEET NO.	

NAD 83/NA 2011

-DW1-

PI Sta 10+94.28	PI Sta 10+33.18
△ = 86° 26' 46.9" (RT)	△ = 98° 24' 53.4" (LT)
D = 286° 28' 44.0"	D = 286° 28' 44.0"
L = 30.18'	L = 34.35'
T = 18.80'	T = 23.18'
R = 20.00'	R = 20.00'
SE = 0.02	SE = 0.02
DS = < 15MPH	DS = < 15MPH

-L-

PI Sta 10+47.95	PI Sta 11+66.06
△ = 7° 09' 50.3" (LT)	△ = 1° 40' 55.8" (LT)
D = 7° 28' 47.5"	D = 1° 21' 52.9"
L = 95.78'	L = 123.26'
T = 47.95'	T = 61.64'
R = 766.00'	R = 4,198.44'
SE = 0.06	SE = 0.04
DS = 45MPH	DS = 55MPH

(1) STACIE L. GARASON & DOUGLAS W. GARASON (HUSBAND)
DB 9059 PG 223
PB 82 PG 178

(2) LARRY MATTHEWS JOHNSON
DB 8591 PG 385
PB 82 PG 178

(3) WOODY RAY ADAMS
DB 658 PG 8

(4) WOODY RAY ADAMS
DB 658 PG 8

SOUTH RIVER TRIBUTARY

SOUTH RIVER TRIBUTARY 1

BEAVER DAM

WOODS

EXISTING R/W

BL-1

BL-2

BL-3

Eastover Sanitary District Water Line has been capped (6/4/18) and is no longer in service.

South River EMC Power Lines power will be temporarily cut off during construction of the culvert.

Begin Proposed CenturyLink Telephone Cable

CenturyLink Telephone Cable Proposed Directional Drill

CenturyLink Telephone Cable Proposed Directional Drill

End Proposed CenturyLink Telephone Cable

GREU TL-3

PROP U/G TEL CABLES

15" PROP U/G TEL CABLES

18" RCP

24"

14" SOIL

CONC BRIDGE #141

SR 1819 STEWART RD 18' BST

BM#1
-BL- STA. 24+62.54
67.68' RIGHT
ELEV=128.16'
"BENCHTIE RAILROAD SPIKE SET IN 10" OAK TREE"

PAVED SHOULDER

SEE SHEET 5 FOR PROFILE VIEW

SEE SHEET C-1 THRU C-X FOR CULVERT PLANS

27-FEB-2019 23:08
R:\UTILITY\17BP.6.R.75_rdy_psh_U0-2.dgn
$$$$USERNAME$$$$

PROJ. REFERENCE NO.	SHEET NO.
17BP.6.R.75	X-1A

CROSS SECTON INDEX SHEET

Chain	Beg Sta	End Sta	LOC	Sheet No.	Comments / Log File
-L-	10+75	15+00		X-1 TO X-4	
-DW1-	10+00	11+30		X-5 TO X-8	

Chain	Beg Sta	End Sta	LOC	Sheet No.	Comments / Log File

PROJ. REFERENCE NO.	SHEET NO.
17BP.6.R.75	X–1B

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NOTE: Embankment does not include backfill for undercut

CROSS-SECTION SUMMARY

Station	Uncl. Exc.	Undercut	Embt	Station	Uncl. Exc.	Undercut	Embt	Station	Uncl. Exc.	Undercut	Embt	Station	Uncl. Exc.	Undercut	Embt
-L-	(cu. yd.)	(cu. yd.)	(cu. yd.)	-DW1-	(cu. yd.)	(cu. yd.)	(cu. yd.)		(cu. yd.)	(cu. yd.)	(cu. yd.)		(cu. yd.)	(cu. yd.)	(cu. yd.)
11+50.00	3	0	1	10+10.00	7	0	0								
11+75.00	4	0	2	10+20.00	6	0	0								
12+00.00	5	0	12	10+30.00	5	0	0								
12+25.00	14	0	7	10+40.00	2	0	0								
12+50.00	12	0	31	10+50.00	0	0	0								
12+75.00	0	0	267	10+60.00	1	0	1								
13+00.00	14	0	3	10+70.00	4	0	0								
13+25.00	14	0	8	10+80.00	16	0	0								
13+50.00	12	0	20	10+90.00	34	0	0								
13+75.00	29	0	16	11+00.00	46	0	0								
14+00.00	29	0	7	11+10.00	5	0	0								
14+25.00	50	0	12	11+20.00	0	0	3								
14+50.00	37	0	11	11+20.07	0	0	0								

NOTE: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Shoulder Borrow, Fine Grading, Clearing and Grubbing, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading".

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	17BP.6.R.75	X-1

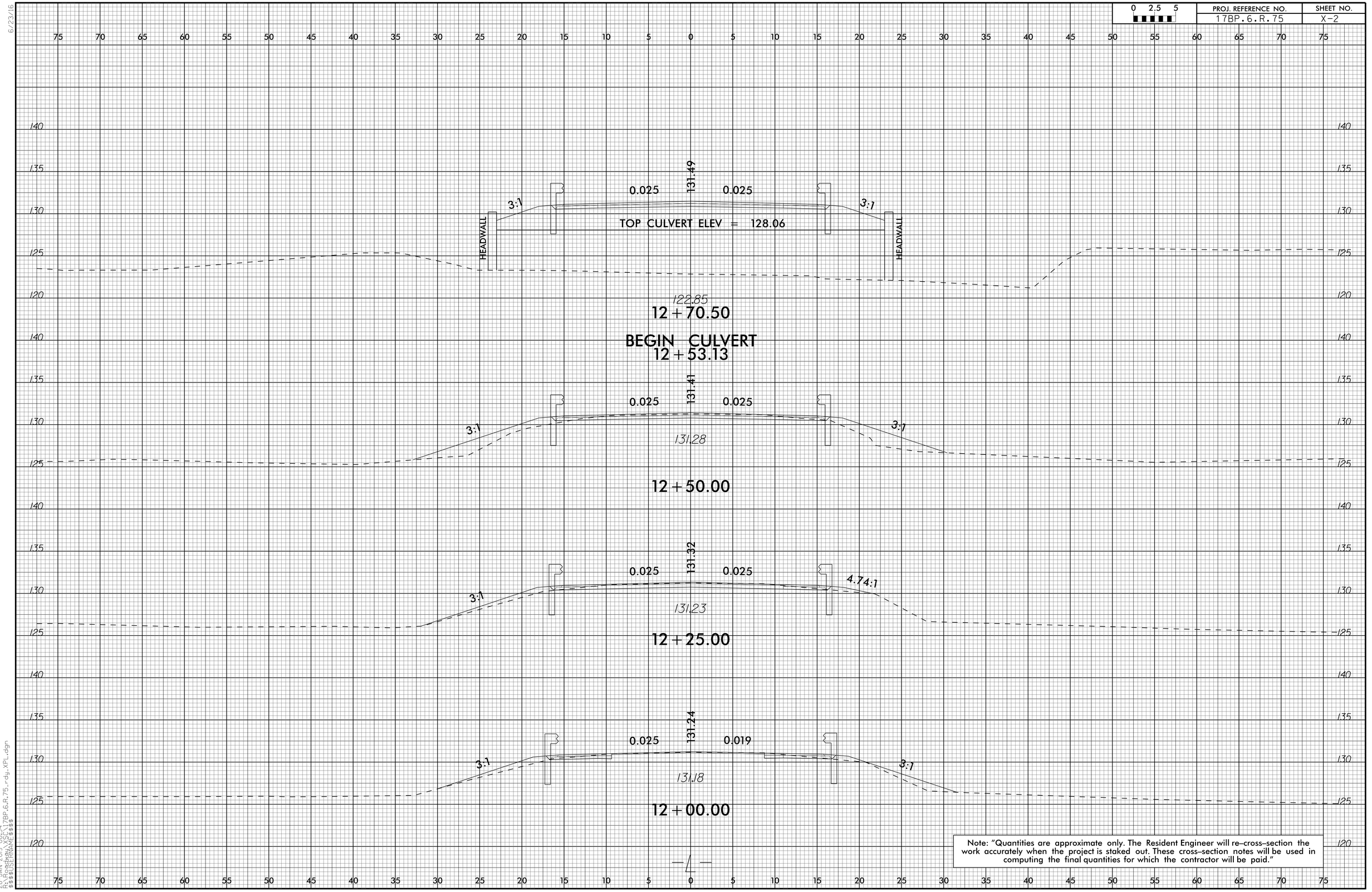
Note: "Quantities are approximate only. The Resident Engineer will re-cross-section the work accurately when the project is staked out. These cross-section notes will be used in computing the final quantities for which the contractor will be paid."

6/23/16

28-JAN-2019 08:34
R:\Roadway\XSC\17BP.6.R.75_rdy_XPL.dgn
$$$$USERNAME$$$$

6/23/16

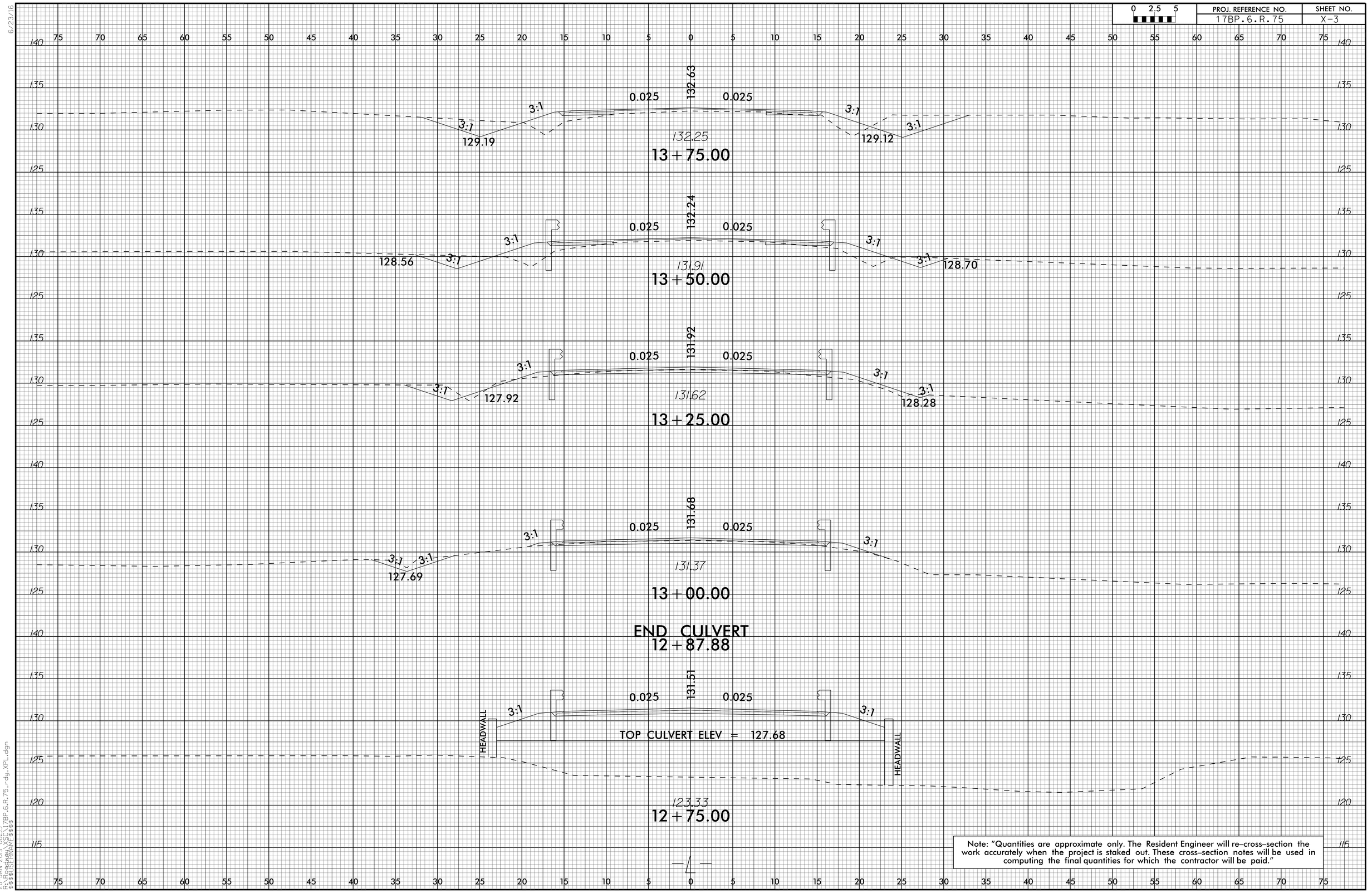
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	17BP.6.R.75	X-2



Note: "Quantities are approximate only. The Resident Engineer will re-cross-section the work accurately when the project is staked out. These cross-section notes will be used in computing the final quantities for which the contractor will be paid."

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	17BP.6.R.75	X-3



Note: "Quantities are approximate only. The Resident Engineer will re–cross–section the work accurately when the project is staked out. These cross–section notes will be used in computing the final quantities for which the contractor will be paid."

28-JAN-2019 08:35
R:\ROADWAY\17BP.6.R.75_rdy_XPL.dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	17BP.6.R.75	X-4

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

140 135 130 125

135.41
15+00.00

134.88
END PROJECT
14+75.00

134.25
0.043 0.011
3:1 3:1 3:1 3:1
131.11 131.22
14+50.00

133.64
0.040 0.010
3:1 3:1 3:1 3:1
130.47 130.27
14+25.00

133.09
0.031 0.019
3:1 3:1 3:1
129.83
14+00.00

Note: "Quantities are approximate only. The Resident Engineer will re-cross-section the work accurately when the project is staked out. These cross-section notes will be used in computing the final quantities for which the contractor will be paid."

28-JAN-2019 08:35
R:\RDY\17BP.6.R.75_rdy_XPL.dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	17BP.6.R.75	X-5

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

135 130 125 120

13.1:1 0.020 130.30 0.020 3:1

129.98

10+30.00

0.002 129.94 0.020 3.9:1

129.76

10+20.00

0.015 129.74 0.020 4.2:1

129.63

10+10.00

0.033 129.69 0.033

129.69

BEGIN DRIVEWAY
10+00.00

—DW1—

Note: "Quantities are approximate only. The Resident Engineer will re-cross-section the work accurately when the project is staked out. These cross-section notes will be used in computing the final quantities for which the contractor will be paid."

28-JAN-2019 08:35
R:\Roadway\Active\17BP.6.R.75_rdy_XPL.dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	17BP.6.R.75	X-6

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

140 135 130 125

132.35

3:1 3:1 0.020 0.020 3:1

132.36

10+80.00

132.05

6.5:1 0.020 0.020 3:1

131.72

10+70.00

131.63

3:1 0.020 0.020 3:1

131.04

10+60.00

131.18

3:1 0.020 0.020 3:1

130.51

10+50.00

130.74

3:1 0.020 0.020 3:1

130.21

10+40.00

—DW1—

Note: "Quantities are approximate only. The Resident Engineer will re–cross–section the work accurately when the project is staked out. These cross–section notes will be used in computing the final quantities for which the contractor will be paid."

28-JAN-2019 08:36
R:\Roadway\17BP.6.R.75_rdy_XPL.dgn
$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	17BP.6.R.75	X-7

Note: "Quantities are approximate only. The Resident Engineer will re-cross-section the work accurately when the project is staked out. These cross-section notes will be used in computing the final quantities for which the contractor will be paid."

6/23/16

28-JAN-2019 08:36
R:\Roadway\XSC\17BP.6.R.75_rdy_XPL.dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	17BP.6.R.75	X-8

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

140
135
130
125
120

132.53

11+30.00

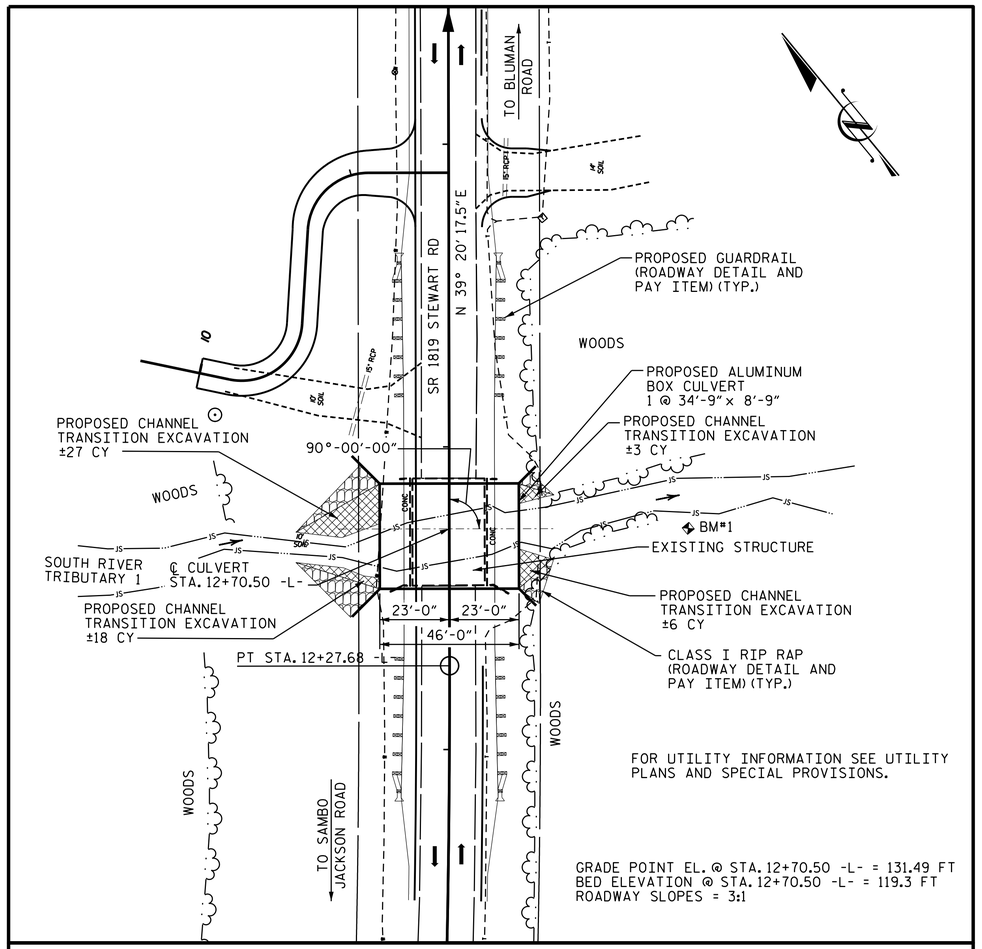
—DW1—

Note: "Quantities are approximate only. The Resident Engineer will re–cross–section the work accurately when the project is staked out. These cross–section notes will be used in computing the final quantities for which the contractor will be paid."

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

28-JAN-2019 08:36
R:\Roadway\17BP.6.R.75_rdy_XPL.dgn
$$$$USERNAME$$$$

BM#1 - SPIKE IN 10" OAK
78.96' RT. OF STA. 12+72.93 -L-
ELEV. = 128.16



LOCATION SKETCH

OVERTOPPING FLOOD DATA

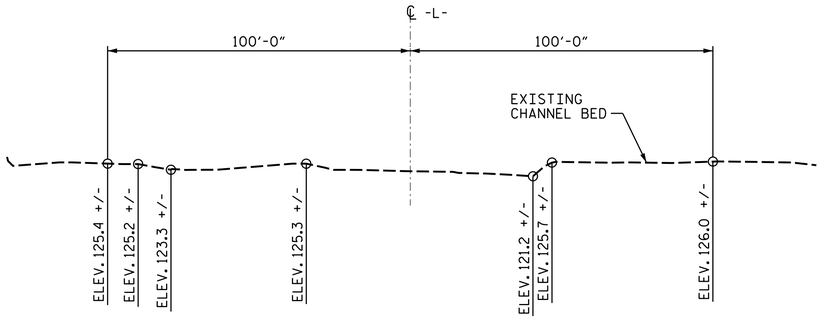
OVERTOPPING DISCHARGE	= 850 CFS
FREQUENCY OF OVERTOPPING FLOOD	= 100 + YR.
OVERTOPPING FLOOD ELEVATION OCCURS @ STA. 11+50 -L-	= 131.2 FT.

HYDRAULIC DATA

DESIGN DISCHARGE	= 410 CFS
FREQUENCY OF DESIGN FLOOD	= 25 YR.
DESIGN HIGH WATER ELEVATION	= 128.9 FT.
DRAINAGE AREA	= 2.31 SQ. MI.
BASE DISCHARGE (Q_{100})	= 844 CFS
BASE HIGH WATER ELEVATION	= 131.2 FT.

PREPARED IN THE OFFICE OF:
ATKINS
1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

DRAWN BY :	CAB	DATE :	01/19
CHECKED BY :	MHR	DATE :	01/19
DESIGN ENGINEER OF RECORD :	DRB	DATE :	01/19



PROFILE ALONG ℄ CULVERT

NOTES

ASSUMED LIVE LOAD ---------- HL-93 OR ALTERNATE LOADING.

DESIGN FILL ---------- MAX. 3.42' -------- MIN. 3.00'

THE RESIDENT ENGINEER SHALL CHECK THE LENGTH OF CULVERT BEFORE STAKING IT OUT TO MAKE CERTAIN THAT IT WILL PROPERLY TAKE CARE OF THE FILL.

FOR ALUMINUM BOX CULVERT, SEE SPECIAL PROVISIONS.

ALL MATERIALS SHALL MEET THE REQUIREMENTS OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES DATED JANUARY 2018.

THE DETAILS SHOWN ARE FOR GENERAL LAYOUT ONLY. THE SUPPLIER SHALL PROVIDE DESIGNS AND DETAILS FOR REVIEW AND APPROVAL THAT MEET THE REQUIREMENTS OF AASHTO LFRD BRIDGE DESIGN SPECIFICATIONS, SECTION 12, AND ARE SEALED BY A NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER.

UNLESS OTHERWISE INDICATED, THE SUPPLIER SHALL DESIGN, DETAIL AND FURNISH ALL STRUCTURAL ELEMENTS AND HARDWARE.

THE EXISTING STRUCTURE CONSISTING OF 2 SPANS, 1 @ 18'-1" AND 1 @ 17'-5" WITH A CLEAR ROADWAY WIDTH OF 24' AND A 6" ASPHALT WEARING SURFACE WITH 19 LINES OF 6x12 TIMBER JOIST ON TIMBER END BENTS AND BENT AND LOCATED AT THE EXISTING STRUCTURE, SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED FOR LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE DURING CONSTRUCTION OF THE PROPOSED BRIDGE, A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

EXCAVATE ONE FOOT MINIMUM BELOW CULVERT AND REPLACE THE EXCAVATED MATERIAL WITH FOUNDATION CONDITIONING MATERIAL IN ACCORDANCE WITH SECTION 414 OF THE STANDARD SPECIFICATIONS.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.

THIS STRUCTURE SHALL BE DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

FOR ASBESTOS ASSESSMENT FOR BRIDGE DEMOLITION AND RENOVATION ACTIVITIES, SEE SPECIAL PROVISIONS.

FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.

NO PRECAST REINFORCED BOX CULVERT OPTION WILL BE ALLOWED.

BACKFILL SILLS WITH NATIVE MATERIAL.

NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM AT THE PROJECT SITE DURING CULVERT CONSTRUCTION. NATIVE MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.

TOTAL STRUCTURE QUANTITIES

REMOVAL OF EXISTING STRUCTURE @ STA. 12+70.50 -L-	LUMP SUM
ASBESTOS ASSESSMENT	LUMP SUM
CULVERT EXCAVATION	LUMP SUM
FOUNDATION CONDITIONING MATERIAL	129 TONS
ALUMINUM BOX CULVERT @ STA. 12+70.50 -L-	LUMP SUM
MOMENT SLAB	69.5 LIN. FT.
CHANNEL EXCAVATION	54 CY

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

NORTH CAROLINA PROFESSIONAL SEAL 036548 ENGINEER DANIEL R. BURGUNDY

DocuSigned by: Daniel R Burgundy 4/18/2019
14D5C9A37EEC4B7...

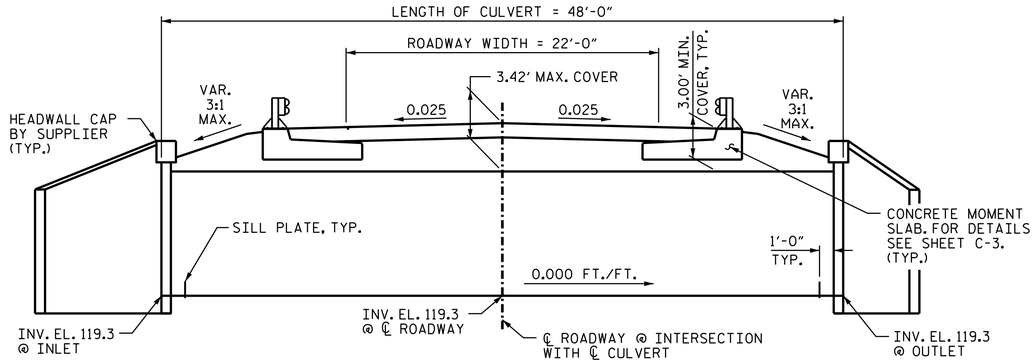
PROJECT NO. 17BP.6.R.75
CUMBERLAND COUNTY
STATION: 12+70.50 -L-

SHEET 1 OF 3 REPLACES STRUCTURE NO. 250141

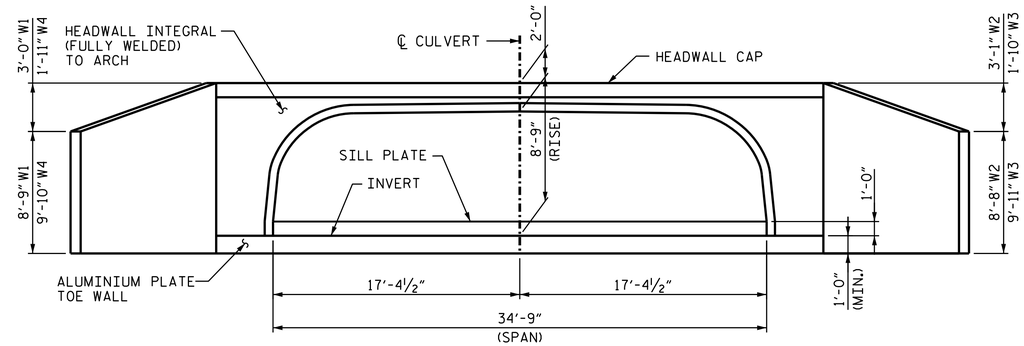
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SINGLE 34'-9" x 8'-9" ALUMINUM BOX CULVERT 90° SKEW

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

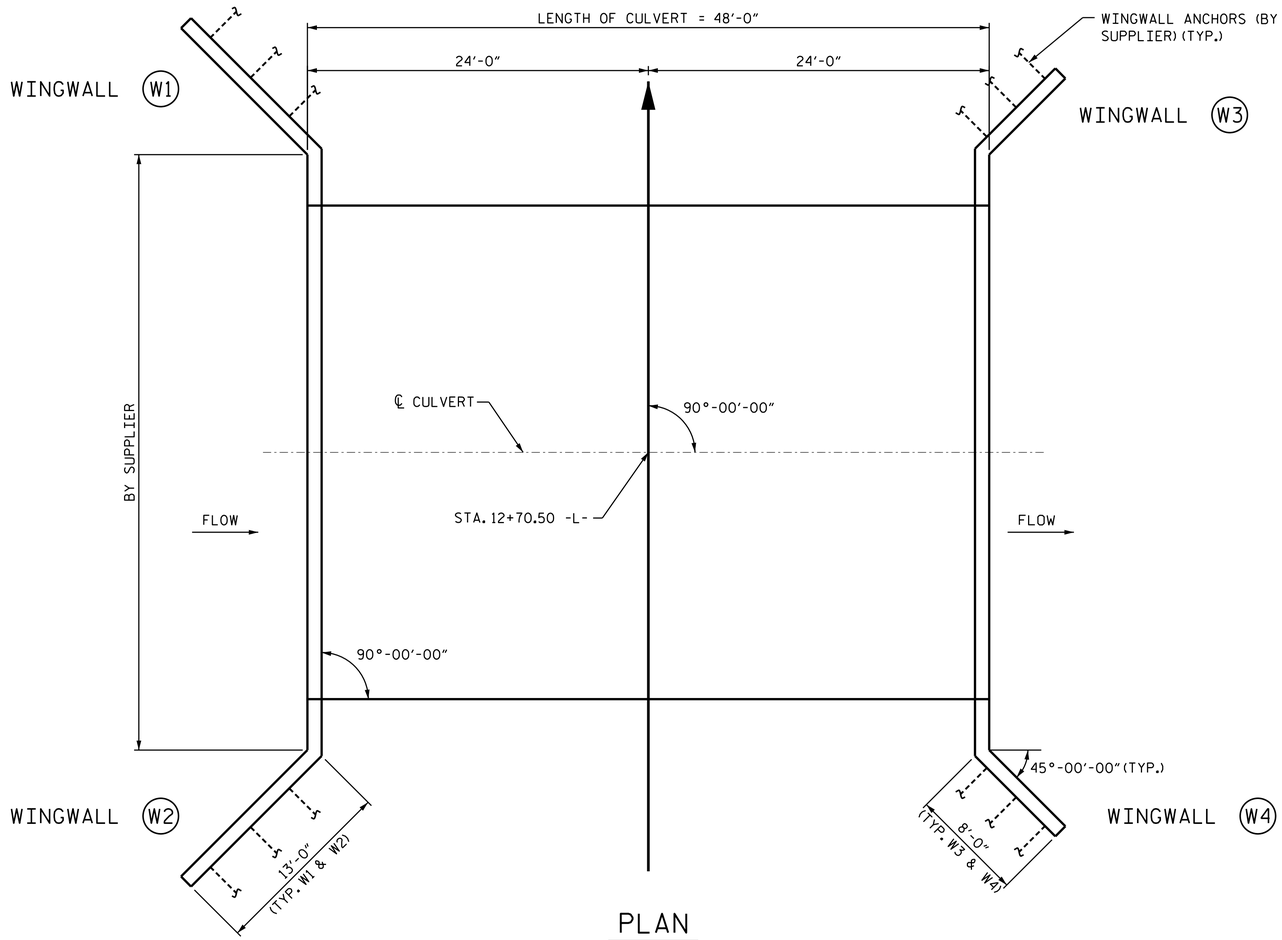


LENGTH FOR ALUMINUM BOX CULVERT



END ELEVATION

INLET SHOWN, OUTLET SIMILAR



PLAN

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

PROJECT NO. 17BP.6.R.75

CUMBERLAND COUNTY

STATION: 12+70.50 -L-

SHEET 2 OF 3 REPLACES STRUCTURE NO. 250141

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SINGLE 34'-9" x 8'-9" ALUMINUM BOX CULVERT 90° SKEW

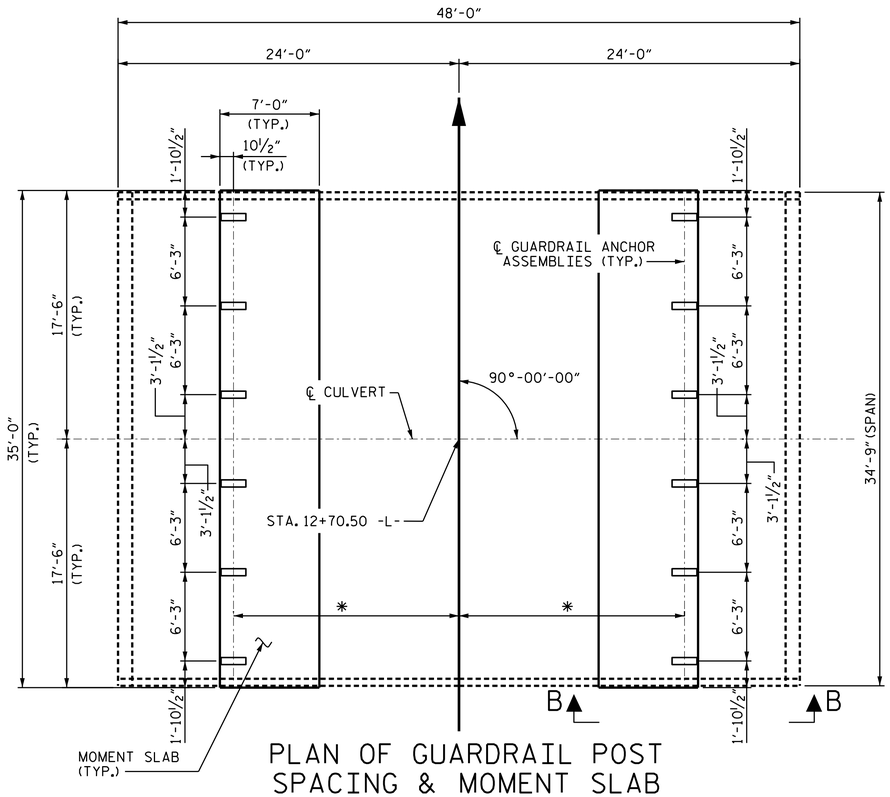
NORTH CAROLINA PROFESSIONAL SEAL 036548 ENGINEER DANIEL R. BURGUNDY

DocuSigned by: Daniel R Burgundy 1/18/2019
14D5C9A37EEC4B7...

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

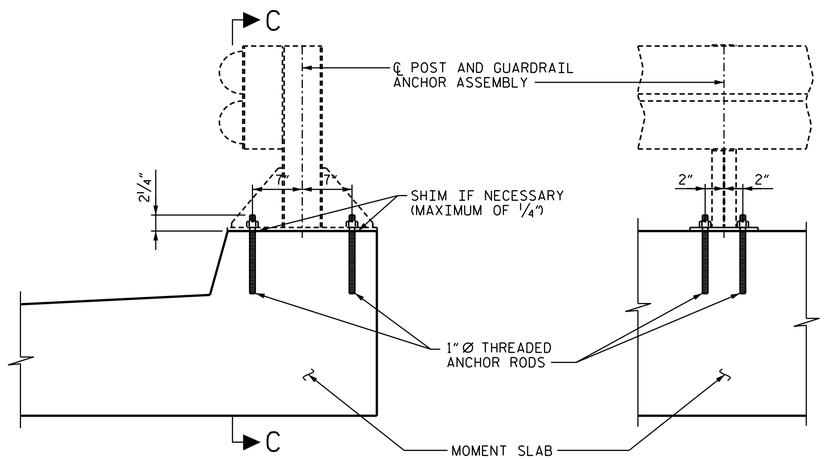
PREPARED IN THE OFFICE OF:
ATKINS
1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

DRAWN BY :	CAB	DATE : 01/19
CHECKED BY :	MHR	DATE : 01/19
DESIGN ENGINEER OF RECORD :	DRB	DATE : 01/19

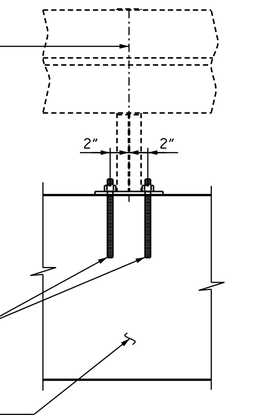


PLAN OF GUARDRAIL POST SPACING & MOMENT SLAB LAYOUT

* THIS DIMENSION TO BE DETERMINED BY THE ENGINEER IN THE FIELD.



SECTION B-B



SECTION C-C

NOTES

ALL GUARDRAIL ATTACHMENTS SHALL BE MADE USING ADHESIVELY ANCHORED ANCHOR BOLTS. LEVEL TWO FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 1" Ø BOLT IS 21.8 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS, SEE THE STANDARD SPECIFICATIONS.

ANCHOR BOLTS, NUTS AND WASHERS SHALL BE 1" Ø AND MEET THE REQUIREMENTS OF ASTM A325. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED.

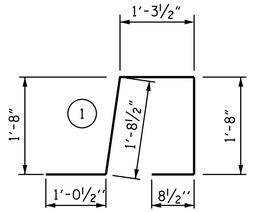
PAYMENT FOR GUARDRAIL, POSTS, ADHESIVELY ANCHORED ANCHOR BOLTS AND POST BASE PLATES IS INCLUDED IN ROADWAY PAY ITEMS.

THE GUARDRAIL POSTS SHALL NOT BE ATTACHED UNTIL THE MOMENT SLAB HAS ATTAINED AN AGE OF THREE CURING DAYS, OR A MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI. IN ADDITION, NO FILL MATERIAL, ASPHALT OR CONSTRUCTION EQUIPMENT IS ALLOWED ON THE MOMENT SLAB PRIOR TO SATISFYING THE MINIMUM CONCRETE CURING AND STRENGTH REQUIREMENTS.

ALL REINFORCING STEEL IN THE MOMENT SLAB SHALL BE EPOXY COATED.

THE CONTRACT UNIT PRICE FOR "MOMENT SLAB, LIN. FEET" WILL BE FULL COMPENSATION FOR SUBMITTALS, LABOR, TOOLS, EQUIPMENT, MOMENT SLAB MATERIALS, EXCAVATING, BACKFILLING, HAULING AND REMOVING EXCAVATED MATERIALS, AND SUPPLYING ANY INCIDENTALS NECESSARY TO CONSTRUCT THE CONCRETE MOMENT SLAB. SEE SPECIAL PROVISION.

BAR TYPES



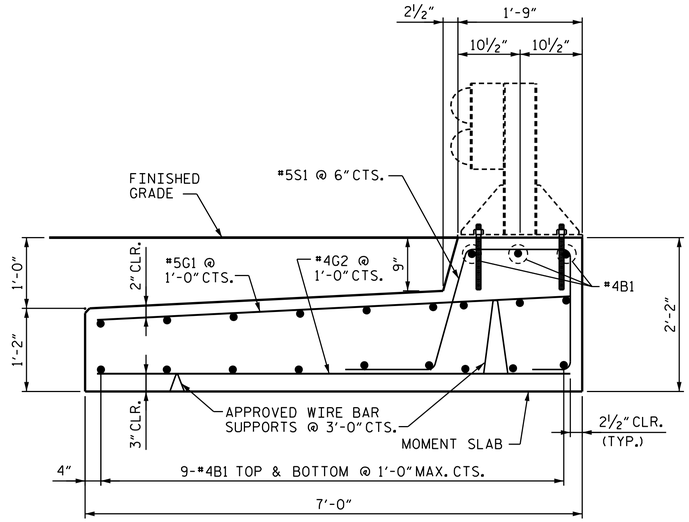
ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR TWO MOMENT SLABS

FOR CONCRETE MOMENT SLAB ONLY

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	42	#4	STR	34'-8"	973
G1	72	#5	STR	6'-7"	494
G2	72	#4	STR	6'-7"	317
S1	140	#5	①	6'-5"	937

CLASS AA CONCRETE	27.7 CY
EPOXY COATED REINFORCING STEEL	2721 LBS.
MOMENT SLAB	69.5 LIN. FT.



TYPICAL SECTION THROUGH MOMENT SLAB

PROJECT NO. 17BP.6.R.75
CUMBERLAND COUNTY
STATION: 12+70.50 -L-

SHEET 3 OF 3 REPLACES STRUCTURE NO. 250141

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SINGLE 34'-9" x 8'-9" ALUMINUM BOX CULVERT 90° SKEW

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

PREPARED IN THE OFFICE OF:
ATKINS
1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

DRAWN BY :	CAB	DATE :	01/19
CHECKED BY :	MHR	DATE :	01/19
DESIGN ENGINEER OF RECORD :	DRB	DATE :	01/19

NORTH CAROLINA PROFESSIONAL SEAL 036548 ENGINEER DANIEL R. BURGUNDY

DocuSigned by: Daniel R Burgundy 18/2019
14D5C9A3TEEC487...

STANDARD NOTES

DESIGN DATA:

SPECIFICATIONS	A.A.S.H.T.O. (CURRENT)
LIVE LOAD	SEE PLANS
IMPACT ALLOWANCE	SEE A.A.S.H.T.O.
STRESS IN EXTREME FIBER OF STRUCTURAL STEEL - AASHTO M270 GRADE 36	20,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50W	27,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50	27,000 LBS. PER SQ. IN.
REINFORCING STEEL IN TENSION - GRADE 60	24,000 LBS. PER SQ. IN.
CONCRETE IN COMPRESSION	1,200 LBS. PER SQ. IN.
CONCRETE IN SHEAR	SEE A.A.S.H.T.O.
STRUCTURAL TIMBER - TREATED OR UNTREATED EXTREME FIBER STRESS	1,800 LBS. PER SQ. IN.
COMPRESSION PERPENDICULAR TO GRAIN OF TIMBER	375 LBS. PER SQ. IN.
EQUIVALENT FLUID PRESSURE OF EARTH	30 LBS. PER CU. FT. (MINIMUM)

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2018 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED ¾" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1½" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A ¼" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A ¼" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.

ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.

IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE ⅞" Ø SHEAR STUDS FOR THE ¾" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - ⅞" Ø STUDS FOR 4 - ¾" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF ⅞" Ø STUDS ALONG THE BEAM AS SHOWN FOR ¾" Ø STUDS BASED ON THE RATIO OF 3 - ⅞" Ø STUDS FOR 4 - ¾" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5⁄16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1⁄16 INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.

ENGLISH

JANUARY, 1990

STD. NO. SN

REV. 6-16-95 EEM (/) RGW REV. 5-7-03 RWW (/) JTE REV. 10-1-11 MAA (/) GM
REV. 8-16-99 RWW (/) LES REV. 5-1-06 TLA (/) GM REV. 12-17 MAA (/) THC
9:53:01 AM
$$$$$$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$$$
BURG8652