

09/28/23

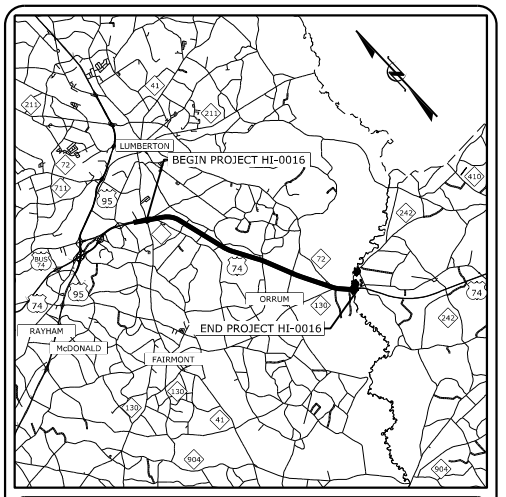
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	HI-0016	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
49987.1.1	0074244	PE	
49987.3.1	0074244	CONST	

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

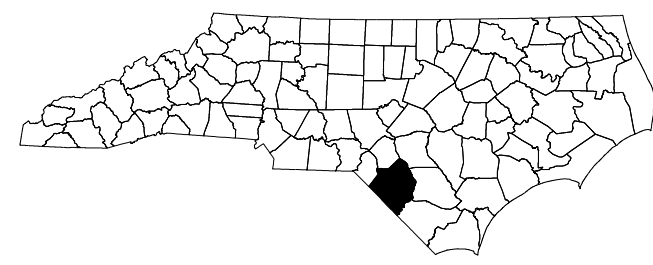
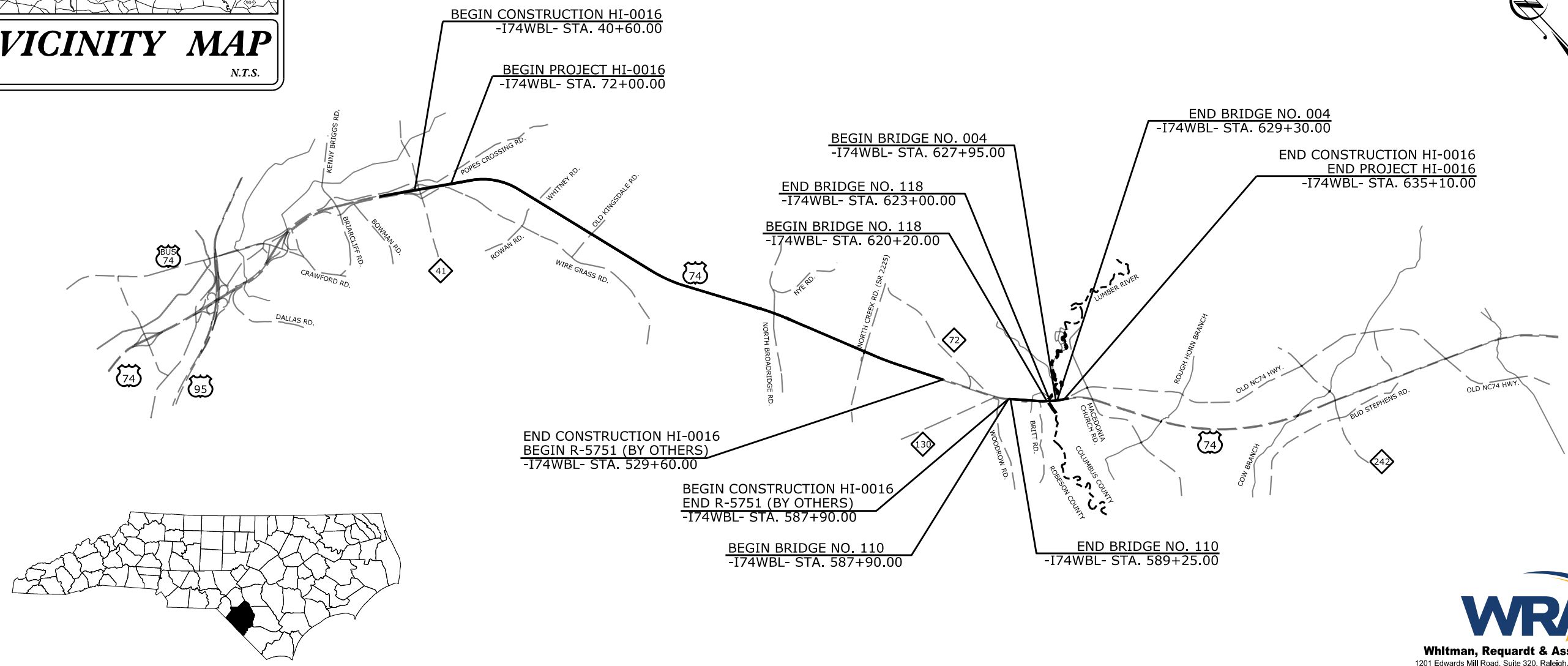
**ROBESON & COLUMBUS COUNTIES**

LOCATION: US-74 (FUTURE I-74) 1 MILE EAST OF NC 41  
TO 0.26 MILES EAST OF COLUMBUS COUNTY LINE  
TYPE OF WORK: PAVEMENT REHABILITATION, DRAINAGE  
& BRIDGE PRESERVATION

TIP PROJECT: HI-0016



**VICINITY MAP**  
N.T.S.



CONTRACT: C204845

**DESIGN DATA**

AADT2020 = 16,500

V = 70 MPH FROM NC41 TO JUST WEST OF SR 2225 (NORTH CREEK ROAD)

V = 60 MPH FROM SR 2225 (NORTH CREEK ROAD) TO THE COLUMBUS COUNTY LINE

FUNC CLASS =  
FREEWAY /FUTURE INTERSTATE

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT HI-0016 = 9.457 MI

LENGTH STRUCTURE TIP PROJECT HI-0016 = 0.104 MI

TOTAL LENGTH OF TIP PROJECT HI-0016 = 9.561 MI

Prepared for the Office of:  
**DIVISION OF HIGHWAYS**  
431 Transportation Dr, Fayetteville NC, 28301

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
N/A

LETTING DATE:  
DECEMBER 19, 2023

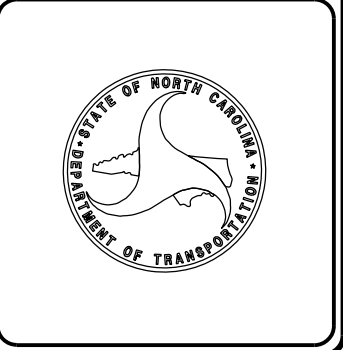
ALEX HENDERSON  
NCDOT CONTACT  
PROJECT MANAGER

DOUGLAS SAUNDERS, PE  
PROJECT ENGINEER

WILLIAM TILLITT, PE  
PROJECT DESIGN ENGINEER

10/24/2023

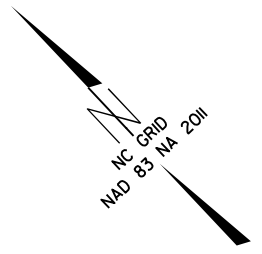
DocuSigned by:  
*William E. Tillitt*  
SIGNATURE: WILLIAM TILLITT, P.E.



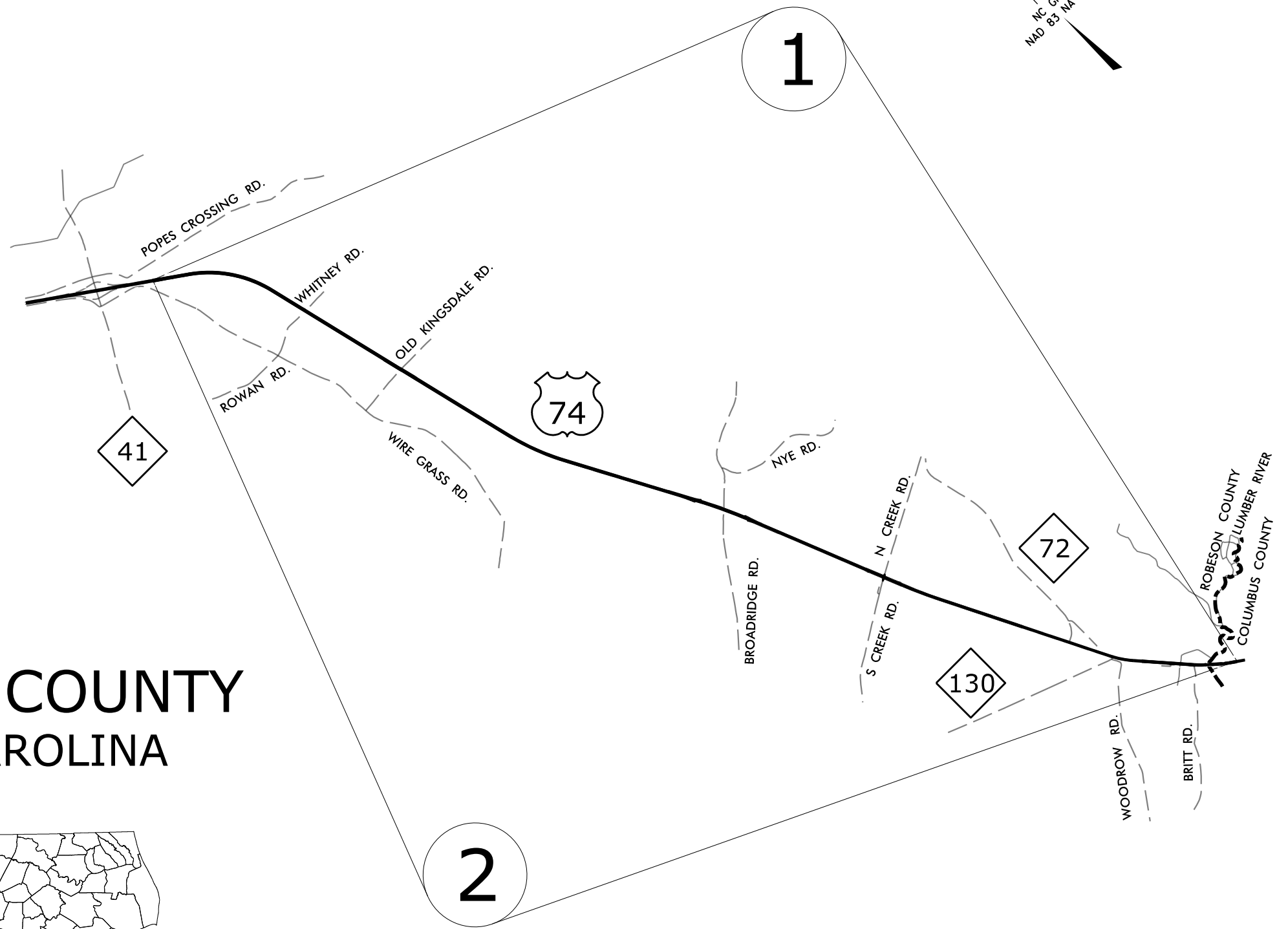
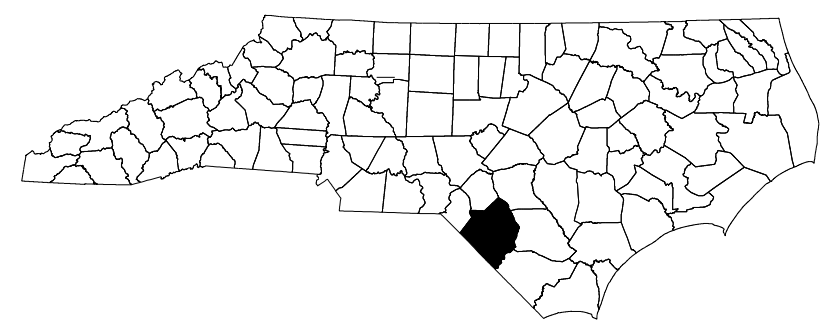
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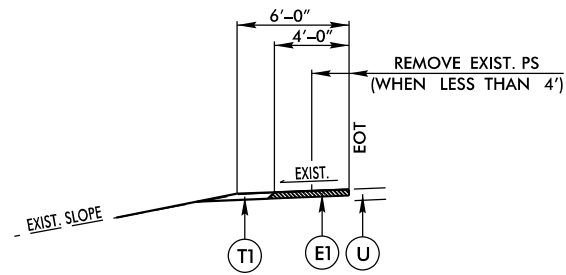
**Whitman, Reardon & Associates, LLP**  
 1201 Edwards Mill Road, Suite 320, Raleigh, North Carolina 27606



# ROBESON COUNTY NORTH CAROLINA



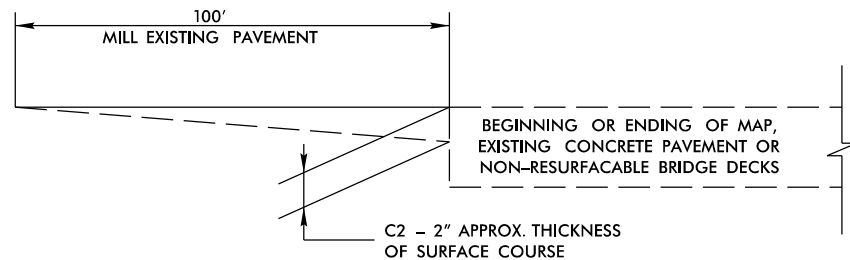
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**DETAIL A  
FULL DEPTH PAVED SHOULDER WIDENING  
(INSIDE/MEDIAN)  
STEP 1**

TO BE USED IN CONJUNCTION WITH T.S. 1 & 2  
 I-74 EB MEDIAN STA. 72+00.00 TO 142+00.00 +/-  
 I-74 EB MEDIAN STA. 142+00.00 TO 195+67.00 +/-  
 I-74 EB MEDIAN STA. 212+28.00 TO 352+50.00 +/-

FOR FINAL MILLING AND RESURFACING FILL  
 SEE TYPICAL SECTIONS 1 & 2



**INCIDENTAL MILLING AT PAVEMENT TIE-INS**

**NOTES:**

\*PAVEMENT REHABILITATION FOR RAMP ENTRANCE AND EXIT LANES WILL INCLUDE ADDITIONAL WIDTH FOR AREAS OF GORES. (SEE PLANS FOR LIMITS)

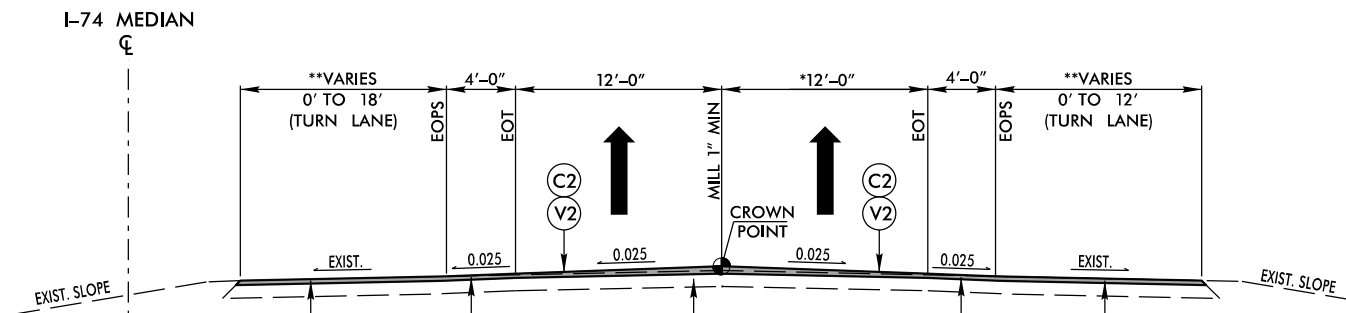
\*\*PAVEMENT REHABILITATION FOR MEDIAN CROSSOVERS AND LEFT TURN LANES WILL INCLUDE ADDITIONAL WIDTH. (SEE PLANS FOR LIMITS) LIMITS OF TYPICAL SECTIONS INDICATED ON THE PLANS ARE APPROXIMATE. TYPICAL SECTION LIMITS AND TRANSITIONS TO BE VERIFIED BY THE ENGINEER IN FIELD.

PAVE SHOULDERS FOR VEHICLE PULL-OFF AREA AS DIRECTED BY ENGINEER.

SURVEY ALL EXISTING CURVES INCLUDING FULL SUPERELEVATION SECTION, SUPERELEVATION RUNOFF, AND TANGENT RUNOUTS. PROVIDE FINDINGS TO NCDOT ENGINEER WITH RECOMMENDED SUPERELEVATIONS FOR CORRECTING DEFICIENCIES. CONTRACTOR SHALL STAKE EVERY 50 FEET THROUGHOUT EACH CURVE FOR EACH LIFT. ITEM SHALL BE PAID FOR UNDER CONSTRUCTION SURVEYING.

WEDGE ALL CURVES TO OBTAIN APPROVED SUPERELEVATIONS. WEDGING QUANTITIES FOR SUPERELEVATION CORRECTION WERE ESTIMATED FROM LIDAR. FINAL QUANTITIES WILL VARY.

MILLED SECTIONS SHALL BE RESURFACED IN THE SAME NIGHT.

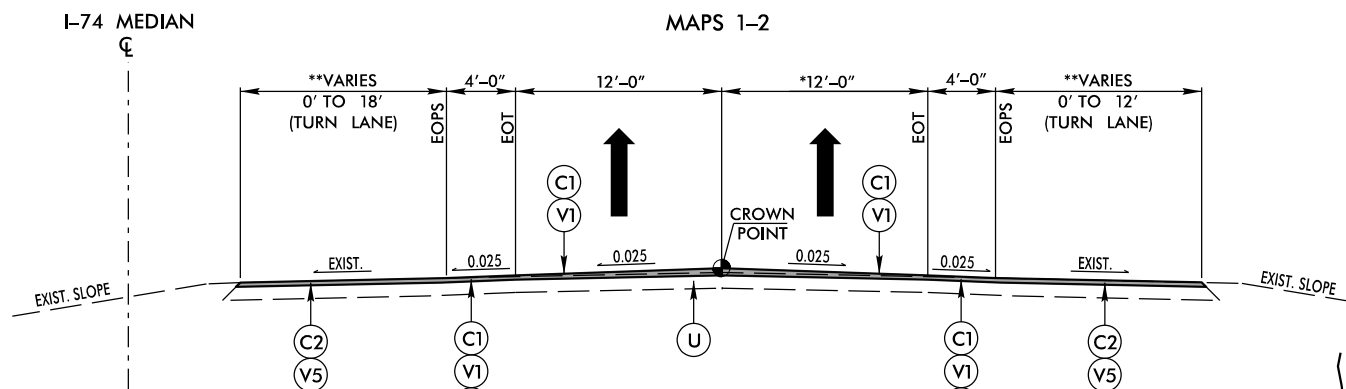


USE V2 (1" TO 2" MILLING) TO MILL A 0.025 SE GRADE

**TYPICAL SECTION NO. 1**

I-74 EB STA. 147+50.00 TO 352+40.00  
 I-74 EB STA. 404+25.00 TO 447+55.00  
 I-74 EB STA. 468+70.00 TO 529+25.00  
 I-74 EB STA. 589+05.00 (END BRIDGE) TO 620+05.00 (BEGIN BRIDGE)  
 I-74 EB STA. 622+85.00 (END BRIDGE) TO 627+80.00 (BEGIN BRIDGE)  
 I-74 EB STA. 629+20.00 (END BRIDGE) TO 635+00.00

I-74 WB STA. 147+90.00 TO 345+85.00  
 I-74 WB STA. 395+05.00 TO 447+90.00  
 I-74 WB STA. 469+05.00 TO 529+60.00  
 I-74 WB STA. 589+25.00 (END BRIDGE) TO 620+15.00 (BEGIN BRIDGE)  
 I-74 WB STA. 623+00.00 (END BRIDGE) TO 627+95.00 (BEGIN BRIDGE)  
 I-74 WB STA. 629+30.00 (END BRIDGE) TO 635+10.00

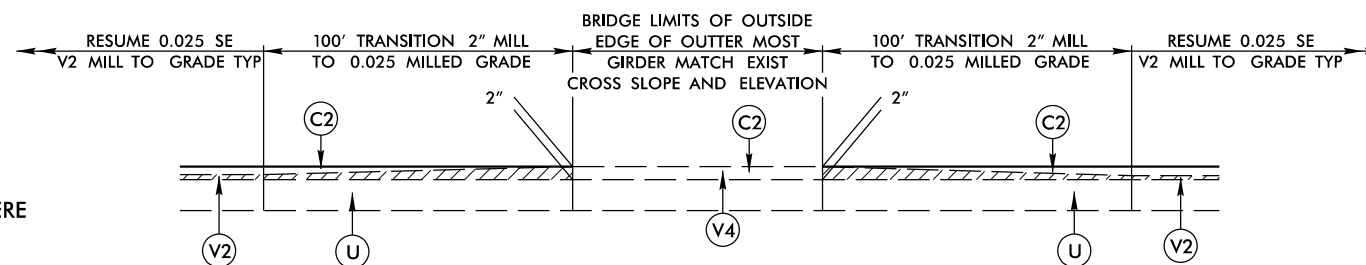


USE V1 (0.75" TO 1.5" MILLING) TO MILL A 0.025 SE GRADE

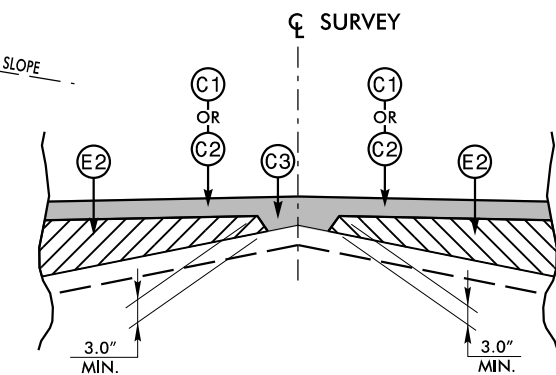
**TYPICAL SECTION NO. 2**

I-74 EB STA. 72+00.00 TO 147+50.00  
 I-74 EB STA. 352+40.00 TO 404+25.00  
 I-74 EB STA. 447+55.00 TO 468+70.00

I-74 WB STA. 72+00.00 TO 147+90.00  
 I-74 WB STA. 345+85.00 TO 395+05.00  
 I-74 WB STA. 447+90.00 TO 469+05.00



**MILLING UNDER BRIDGES**



**PAVEMENT REHABILITATION LIMITS LEGEND**

SEE PLAN SHEETS

**NOT TO SCALE**

**PAVEMENT SCHEDULE**

COURSE	DESCRIPTION
C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YARD
C2	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YARD
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 2.0" IN DEPTH.
E1	PROP. APPROX. 7.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 855 LBS. PER SQ. YARD
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 GREATER THAN 5.5" IN DEPTH OR LESS THAN 3.0" IN DEPTH.
T1	SHOULDER RECONSTRUCTION USING AGGREGATE SHOULDER BORROW AS DIRECTED BY ENGINEER
U	EXISTING ASPHALT PAVEMENT
V1	3/4" TO 1 1/2" MILLED ASPHALT PAVEMENT
V2	1" TO 2" MILLED ASPHALT PAVEMENT
V3	MILLED RUMBLE STRIPS
V4	2" MILLING
V5	1.5" MILLING

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE. SEE SHOULDER WEDGE DETAIL.

STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

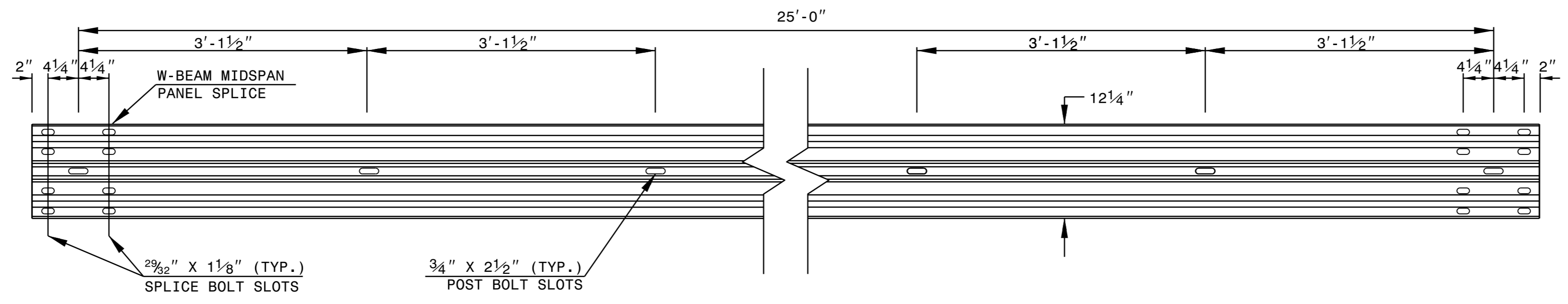
ROADWAY DETAIL DRAWING FOR  
**GUARDRAIL INSTALLATION**

SHEET 6 OF 8  
**862D02**

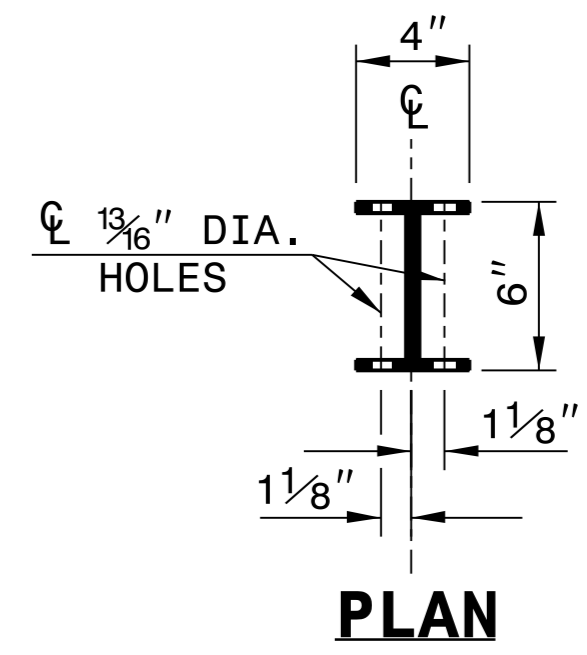
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
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RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR  
**GUARDRAIL INSTALLATION**

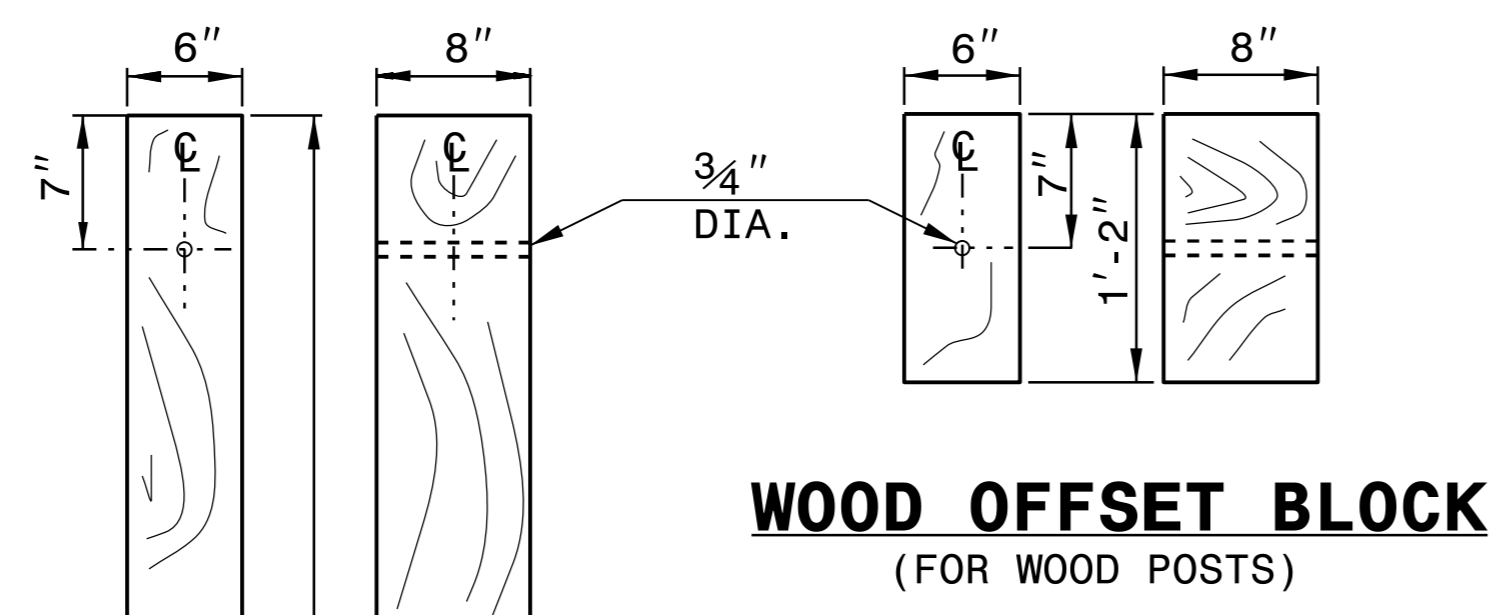
SHEET 6 OF 8  
**862D02**



**STANDARD W-BEAM GUARDRAIL**



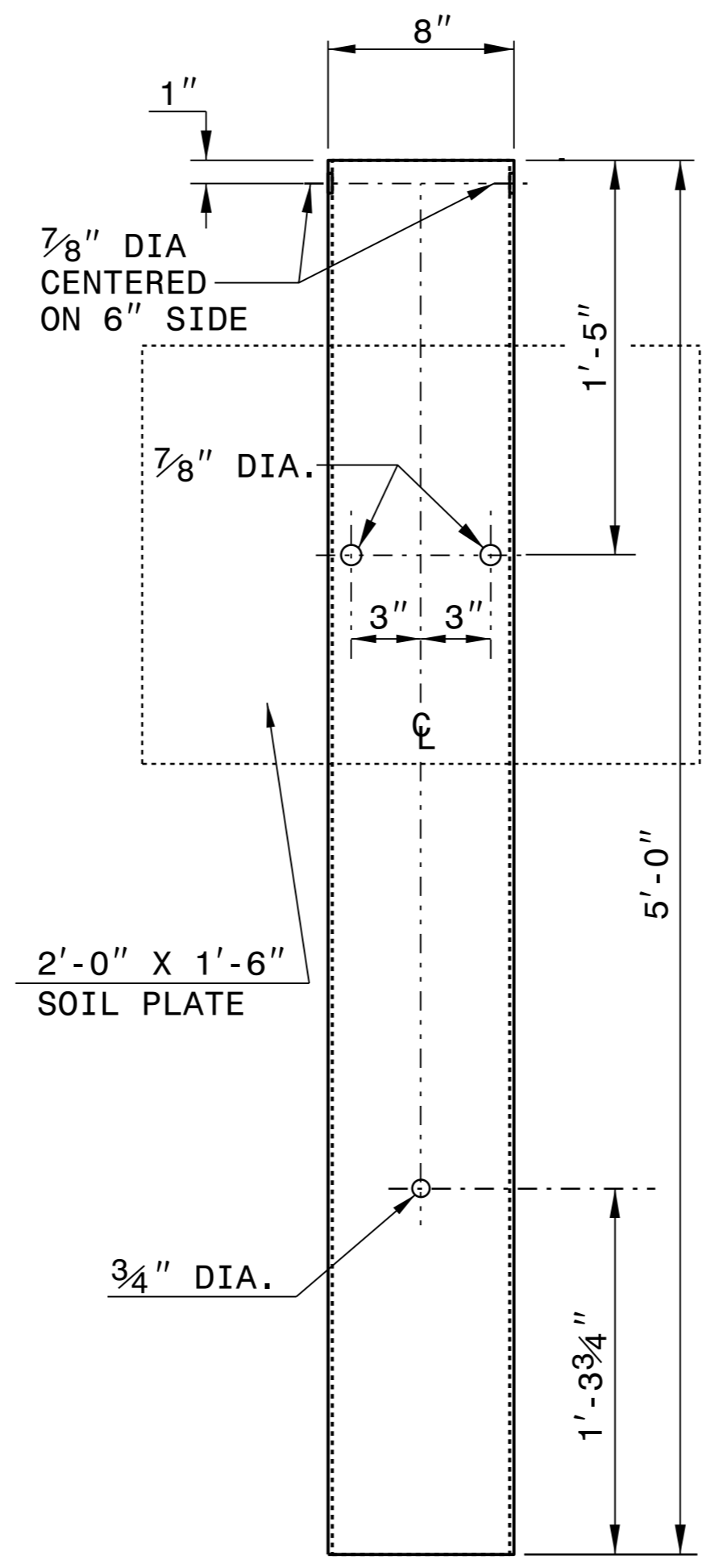
**PLAN**



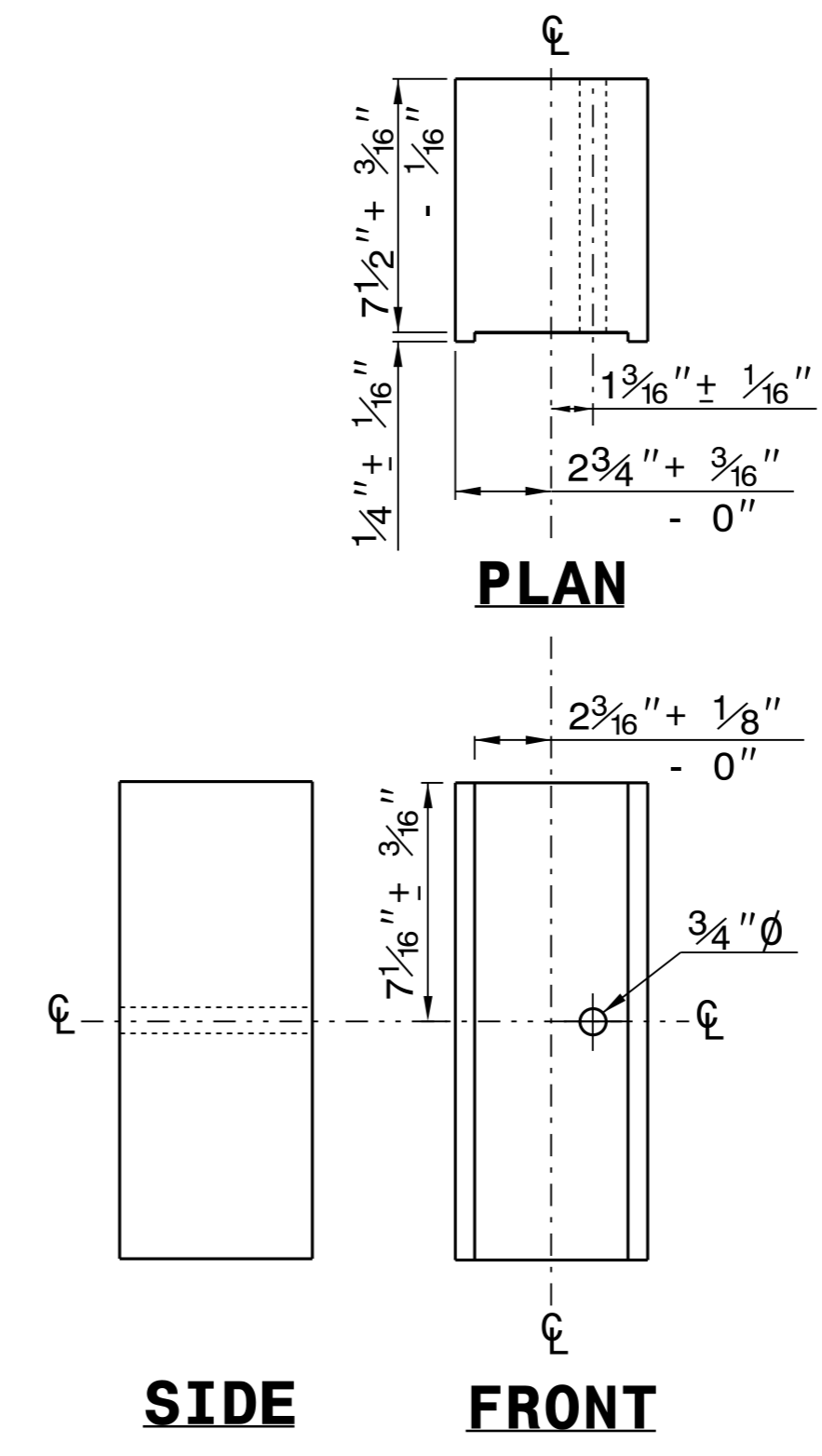
**WOOD OFFSET BLOCK  
(FOR WOOD POSTS)**

**STANDARD  
LINE POST**

**SHORT WOOD  
BREAKAWAY POST**



**STEEL TUBE  
TS 6"x8"x0.1875"**

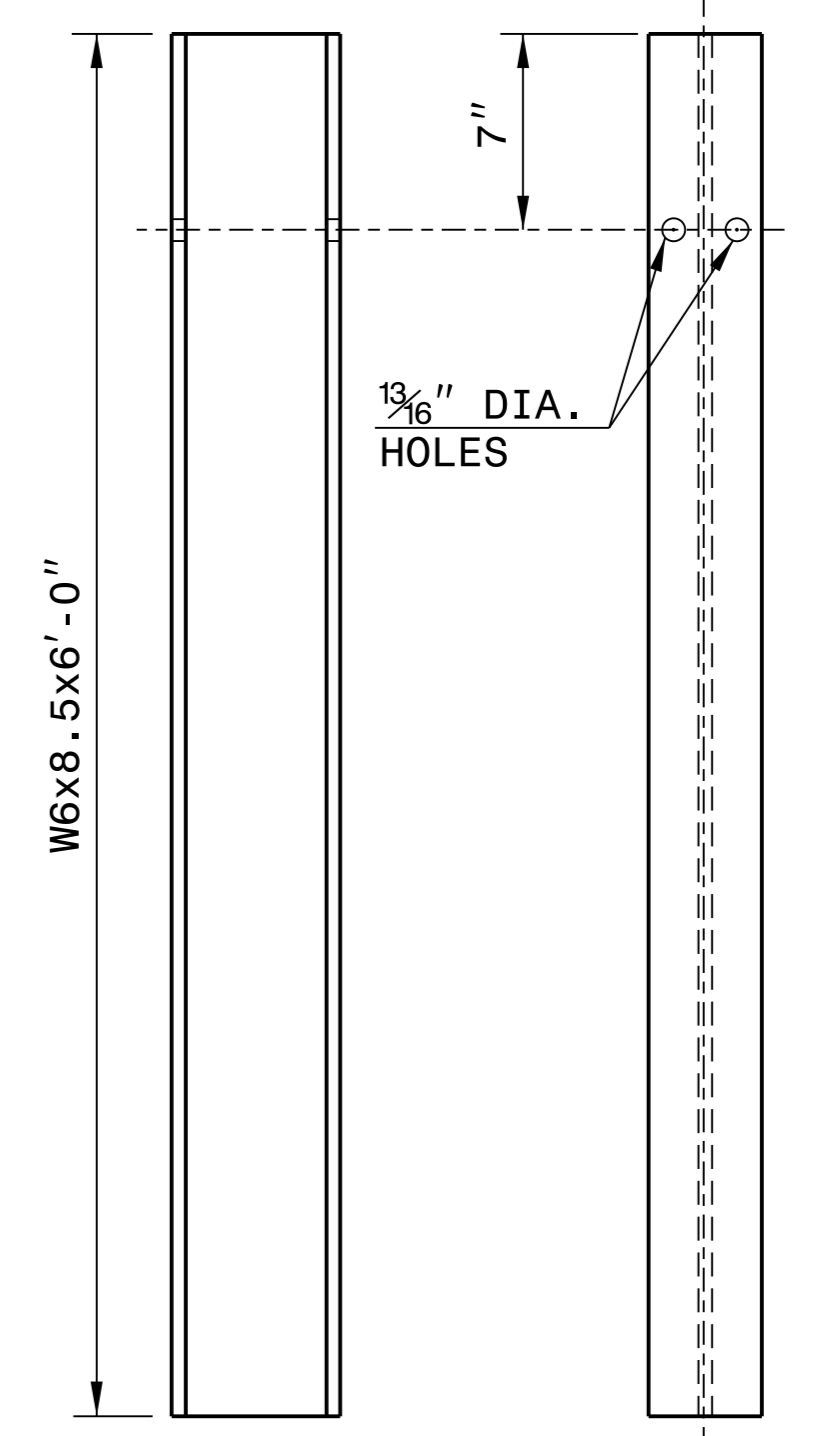


**PLAN**

**SIDE**

**FRONT**

**ROUTED  
OFFSET BLOCK**

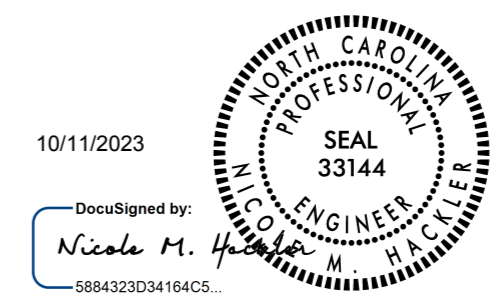


**SIDE**

**FRONT**

**"W6" STEEL POST**

**SYSTEM PARTS**



10/11/2023  
DocuSigned by:  
Nicole M. Howerton  
5884323416405

**CONTRACTS STANDARDS  
AND DEVELOPMENT UNIT**  
Office 919-707-6950 FAX 919-250-4119

**SEE TITLE BLOCK**

ORIGINAL BY: J. HOWERTON DATE: 3-7-2018  
MODIFIED BY: DATE: \_\_\_\_\_  
CHECKED BY: DATE: \_\_\_\_\_  
FILE SPEC.: \_\_\_\_\_

STATE OF  
NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

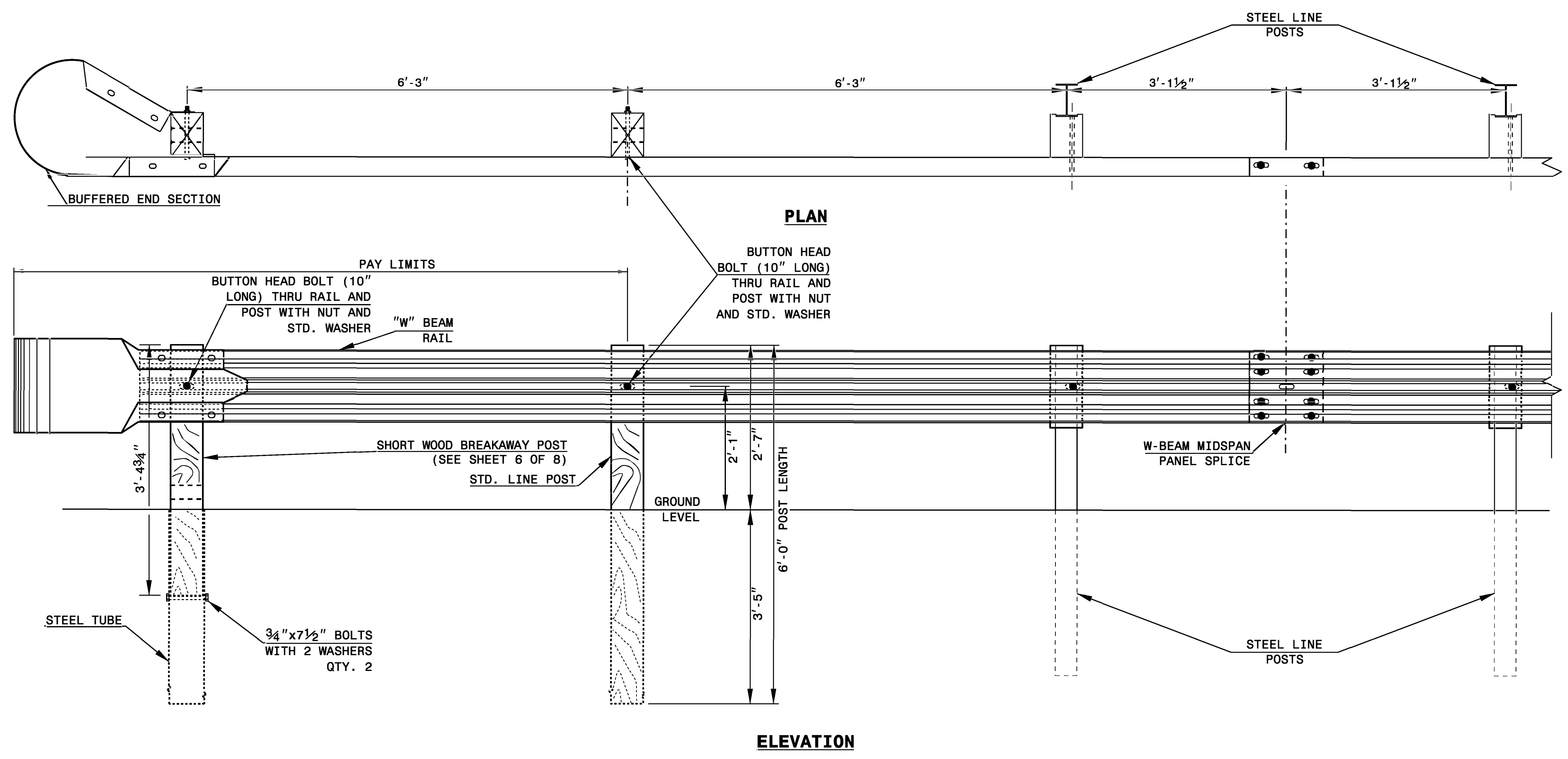
ROADWAY DETAIL DRAWING FOR  
**GUARDRAIL INSTALLATION**

SHEET OF

STATE OF  
NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR  
**GUARDRAIL INSTALLATION**

SHEET OF



**TRAILING END UNIT ASSEMBLY**  
**A.T. - 1 SYSTEM**

10/11/2023

DocuSigned by:  
*Nicole M. Hackle*  
588432034164CS

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UNLESS ALL SIGNATURES COMPLETED

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AND DEVELOPMENT UNIT**  
Office 919-707-6950 FAX 919-250-4119

**A.T. - 1 SYSTEM**

ORIGINAL BY: _____	DATE: _____
MODIFIED BY: _____	DATE: _____
CHECKED BY: _____	DATE: _____
FILE SPEC.: _____	

14-DEC-2017 10:36 S:\Contracts\2018\Standard Drawings\Special Details\Hewerton\Standard Drawings\Details in Lieu of Standards\Division 8\0862d0301.dgn

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE

SHEET 1 OF 7 862D03

**ELEVATION**

NOTE:  
 \*\*POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.  
 \*THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11 1/2" IF CONCRETE BACKWALL IS NOT PRESENT.  
 -SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.  
 -MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).  
 -LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.  
 -SEE SHEET 3 FOR POST SECTIONS 1 THRU 9.

**PLAN VIEW**

**GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE**

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE

SHEET 1 OF 7 862D03

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7 862D03

**ELEVATION**

NOTE:  
 \*\*POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.  
 \*THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11 1/2" IF CONCRETE BACKWALL IS NOT PRESENT.  
 -SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.  
 -MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).  
 -LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.  
 -SEE SHEET 3 FOR POST SECTIONS 1 THRU 9.

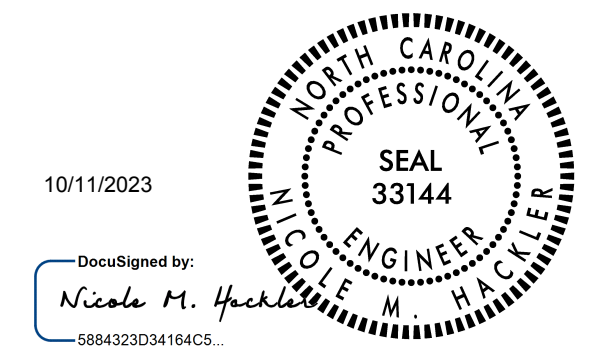
**PLAN VIEW**

**GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER**

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7 862D03



10/11/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS AND DEVELOPMENT UNIT Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

ORIGINAL BY: J. HOWERTON DATE: 06-22-12  
 MODIFIED BY: DATE:  
 CHECKED BY: DATE:  
 FILE SPEC.:



### SUMMARY OF QUANTITIES - ROADWAY

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH	WIDTH	0000100000-N	0000400000-N	0156000000-E	1245000000-E	1260000000-E	1297000000-E	1297000000-E	1308000000-E	1308000000-E	
												MOBILIZATION	CONSTRUCTION SURVEYING	REMOVAL OF EXISTING ASPHALT PAVEMENT	SHOULDER RECONSTRUCTION	AGGREGATE SHOULDER BORROW	1.5" MILLING	2" MILLING	0.75" TO 1.5" MILLING	1" TO 2" MILLING	
												LS	LS	SY	SMI	TON	SY	SY	SY	SY	SY
												MI	FT								
49987.3.1	Robeson	1	US 74 WB 2" MILL	FROM 1 MILE EAST OF 41 TO WHITNEY RD	1	2	2WD	NO	NO	2.0	24								2,104		126,067
		1	US 74 WB 1.5" MILL	WHITNEY RD TO EAST OF LUMBER RIVER BRIDGES	2	2	2WD	NO	NO	9.2	24							12,237		52,048	
		2	US 74 EB 2" MILL	FROM 1 MILE EAST OF 41 TO EAST OF LUMBER RIVER BRIDGES	1	2	2WD	NO	NO	11.2	24							12,181	2,913	52,767	124,107
TOTAL FOR MAP NO. 1										11.2											
TOTAL FOR MAP NO. 2										11.2											
GRAND TOTAL										22.4		1	1	6,740	5.00	4,475	24,418	5,017	104,815	250,174	
												1	1	6,740	5.00	4,475	24,420	5,020	104,815	250,175	

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH	WIDTH	1330000000-E	1491000000-E	1523000000-E	1575000000-E	1840000000-E	3001000000-N	3030000000-E	3045000000-E	3150000000-N
												INCIDENTAL MILLING	ASPHALT CONC BASE COURSE, TYPE B25.0C	ASPHALT CONC SURFACE COURSE, S9.5C	ASPHALT BINDER FOR PLANT MIX	MILLED RUMBLE STRIPS (ASPHALT CONCRETE)	IMPACT ATTENUATOR UNIT, TYPE TL-3	STEEL BEAM GUARDRAIL	STEEL BEAM GUARDRAIL, SHOP CURVED	ADDITIONAL GUARDRAIL POSTS
												SY	TONS	TONS	TONS	LF	EA	LF	LF	EA
												MI	FT							
49987.3.1	Robeson	1	US 74 WB 2" MILL	FROM 1 MILE EAST OF 41 TO WHITNEY RD	1	2	2WD	NO	NO	2.0	24			4,620	273	15,600				
		1	US 74 WB 1.5" MILL	WHITNEY RD TO EAST OF LUMBER RIVER BRIDGES	2	2	2WD	NO	NO	9.2	24			13,833	816	85,090				
		2	US 74 EB 2" MILL	FROM 1 MILE EAST OF 41 TO EAST OF LUMBER RIVER BRIDGES	1	2	2WD	NO	NO	11.2	24		5,210	21,564	1,507	96,060				
TOTAL FOR MAP NO. 1										11.2				18,453	1,089	100,690				
TOTAL FOR MAP NO. 2										11.2				5,210	21,564	1,507	96,060			
GRAND TOTAL										22.4		5,000	5,210	40,017	2,596	196,750	2	26,162.5	200	25
												5,000	5,210	40,020	2,600	196,750	2	26,162.5	200	25

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH	WIDTH	3195000000-N	3210000000-N	3215000000-N	3287000000-N	3317000000-N	3360000000-E	3503000000-E	3509000000-E	3515000000-E
												GUARDRAIL END UNITS, TYPE AT-1	GUARDRAIL END UNITS, TYPE CAT-1	GUARDRAIL ANCHOR UNITS, TYPE III	GUARDRAIL END UNITS, TYPE TL-3	GUARDRAIL ANCHOR UNITS, TYPE B-77	REMOVE EXISTING GUARDRAIL	WOVEN WIRE FENCE, 47" FABRIC	4" TIMBER FENCE POSTS, 7'-6" LONG	5" TIMBER FENCE POSTS, 8'-0" LONG
												EA	EA	EA	EA	EA	LF	LF	EA	EA
												MI	FT							
49987.3.1	Robeson	1	US 74 WB 2" MILL	FROM 1 MILE EAST OF 41 TO WHITNEY RD	1	2	2WD	NO	NO	2.0	24									
		1	US 74 WB 1.5" MILL	WHITNEY RD TO EAST OF LUMBER RIVER BRIDGES	2	2	2WD	NO	NO	9.2	24									
		2	US 74 EB 2" MILL	FROM 1 MILE EAST OF 41 TO EAST OF LUMBER RIVER BRIDGES	1	2	2WD	NO	NO	11.2	24									
TOTAL FOR MAP NO. 1										11.2										
TOTAL FOR MAP NO. 2										11.2										
GRAND TOTAL										22.4		1	12	4	26	30	27,870	2,220	131	50
												1	12	4	26	30	27,870	2,220	131	50



PROJECT NO.	SHEET NO.
HI-0016	38-3

**SUMMARY OF QUANTITIES - DRAINAGE**

PROJECT NO	COUNTY	DRAINAGE ITEM NO	PLAN SHEET	ROUTE	Hydraulics Recommendation	Median 2GI structure depth	0106000000-E	0318000000-E	0320000000-E	0366000000-E	0372000000-E	0378000000-E	0384000000-E	0390000000-E	0588000000-E	1220000000-E	2253000000-E	
							BORROW EXCAVATION	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES	FOUNDATION CONDITIONING GEOTEXTILE	15" RC PIPE CULVERTS, CLASS III	18" RC PIPE CULVERTS, CLASS III	24" RC PIPE CULVERTS, CLASS III	30" RC PIPE CULVERTS, CLASS III	36" RC PIPE CULVERTS, CLASS III	18" CS PIPE CULVERTS, 0.064" THICK	INCIDENTAL STONE BASE	PIPE COLLARS	
							CY	TON	SY	LF	LF	LF	LF	LF	TON	CY		
		1	4	46+00 I74EBL Rt.	Remove and replace 8' of 18" cmp on each end of pipe. Extend with concrete collars.	n/a	0.3		0.0						16		2.0	
		2	4	66+50 I74EBL It. (median)	Remove and replace existing 2GI. Remove and replace 4' of 18" rcp with concrete collar	4.1'	0.7	0.4	1.3		4						1.0	
		3	4	70+05 I74EBL Rt.	Remove and replace 12' of 24" rcp with 2 concrete collars. Remove and replace existing 2GI. Remove and replace 8' of 15" rcp with concrete collar. Replace 8' of 6' wide conc ditch each side of 2GI	n/a	0.4	1.3	4.0			12					2.0	
		4	4	77+40 I74EBL It. (median)	Remove and replace existing 2GI. Remove and replace 8' of 15" rcp with concrete collar. Replace 8' of 6' wide conc ditch each side of 2GI	5.0'	0.8	0.8	2.7		8						1.0	
		5	5	101+90 I74EBL It. (median)	Remove and replace existing 2GI. Remove and replace 8' of 15" rcp with concrete collar	3.2'	0.5	0.8	2.7		8						1.0	
		6	5	105+90 I74EBL It. (median)	replace concrete apron. Remove and replace 8' of 15" rcp with concrete collar	4.6'	0.7	0.8	2.7		8						1.0	
		7	5	124+15 I74EBL It. (median)	Remove and replace 2GI. Remove and replace 4' of 30" rcp with concrete collar on each side of structure.	3.3'	0.7	0.8	2.7				8				2.0	
		8	5	128+25 I74EBL It. (median)	Remove and replace 2GI. Remove and replace 4' of 30" rcp with concrete collar on each side of structure.	3.3'	0.7	0.8	2.7				8				2.0	
		8A	5	135+00 I74EBL It. (median)	Replace concrete apron.												1.0	
		9	6	150+00 I74EBL It. (median)	Remove and replace 2GI. Remove and replace 4' of 24" rcp with concrete collar on each side of structure.	7.4'	1.4	0.8	2.7			8					2.0	
		10	6	170+45 I74EBL It. (median)	Replace concrete apron.	2.6'												
		11	6	192+62 I74EBL It. (median)	Remove and replace 2GI. Remove and replace 4' of 15" rcp with concrete collar.	1.8	0.3	0.4	1.3		4						1.0	
		12	6	199+75 I74EBL It. (median)	Remove and replace 2GI. Remove and replace 4' of 15" rcp with concrete collar.	2.8'	0.4	0.4	1.3		4						1.0	
		12A	6	203+75 I74EBL It. (median)	Replace concrete apron.												1.0	
		13	7	211+10 I74EBL It. (median)	Remove and replace 2GI. Remove and replace 8' of 24" rcp with concrete collar on north side of structure. Remove and replace 4' of 24" rcp with concrete collar on south side of structure.	3.9'	0.7	1.3	4.0			12					2.0	
		14	7	215+60 I74EBL It. (median)	Remove and replace 2GI. Remove and replace 4' of 18" rcp with concrete collar.	2.3'	0.4	0.4	1.3		4						1.0	
		15	7	222+50 I74EBL It. (median)	Replace concrete apron	3.0'												
		16	7	227+80 I74EBL It. (median)	Remove and replace 2GI. Remove and replace 12' of 30" rcp with concrete collar on north side of structure. Remove and replace 4' of 30" rcp with concrete collar on south side of structure.	5.2'	1.1	1.7	5.3				16				2.0	
		17	7	234+60 I74EBL It. (median)	Remove and replace 2GI. Remove and replace 4' of 18" rcp with concrete collar.	2.1'	0.4	0.4	1.3		4						1.0	
		18	7	241+10 I74EBL It. (median)	Replace concrete apron. Remove and replace 8' of 36" rcp with concrete collar on north side of structure	5.8'	1.3		0.0					8			1.0	
		19	7	247+40 I74EBL It. (median)	Remove and replace 2GI. Remove and replace 4' of 15" rcp with concrete collar on east side and 4' of 18" rcp with concrete collar on south side	3.2'	0.5	0.8	2.7		4	4					2.0	
		20	7	255+30 I74EBL It. (median)	Remove and replace 2GI. Remove and replace 4' of 15" rcp with concrete collar.	1.8'	0.3	0.4	1.3		4						1.0	
		21	7	264+25 I74EBL It. (median)	Remove and replace 8' of 15" rcp with 2 concrete collars	min depth	0.3	0.8	2.7		8						2.0	
		22	7	277+75 I74EBL It. (median)	Replace concrete apron.	6.1'	1.5											
		23	8	296+35 I74EBL It. (median)	Replace concrete apron.	5.3'	1.3										2.0	
		23A	8	317+00 I74EBL It. (median)	Replace concrete apron.												1.0	
		24	8	321+75 I74EBL It. (median)	Remove and replace 2GI. Remove and replace 4' of 18" rcp with concrete collar.	3.2'	0.5	0.4	1.3		4						1.0	
		25	8	331+30 I74EBL It. (median)	Replace concrete apron.	4.8'	1.2										2.0	
		26	8	338+25 I74EBL It. (median)	Remove and replace 2GI. Remove and replace 4' of 18" rcp with concrete collar.	3.2'	0.5	0.4	1.3		4						1.0	
		26A	8	351+00 I74EBL It. (median)	Replace concrete apron.												1.0	
		27	9	419+15 I74EBL It. (median)	Replace concrete apron.	3.5'												
		28	10	456+08 I74EBL It. (median)	Adjust 2GI structure depth 1.25' higher, regrade ditch +/- .25' on either side of box to accommodate increase structure height.	2.8'	11.1											
		29	10	467+30 I74EBL It. (median)	Replace concrete apron.	4.5'												
		30	10	486+20 I74EBL It. (median)	Replace concrete apron.	3.4'											1.0	
		31	12	605+00 I74EBL It. (median)	Replace concrete apron.												1.0	
							SAY	27.9	14.4	45.3	48	24	32	32	8	16	250	40.0
							TOTAL	30	16	50	48	24	32	32	8	16	250	40

49987.3.1

Robison

PROJECT NO.

SHEET NO.

HI-0016

3B-4

## SUMMARY OF QUANTITIES - DRAINAGE

PROJECT NO.	COUNTY	DRAINAGE ITEM NO.	PLAN SHEET	ROUTE	Hydraulics Recommendation	Median 2GI structure depth	228600000-N	230800000-E	236500000-N	247300000-N	261900000-E	281500000-N	600000000-E	601200000-E	602900000-E	611700000-N	611750000-N	604200000-E	607101000-E	608400000-E
							MASONRY DRAINAGE STRUCTURES	MASONRY DRAINAGE STRUCTURES	FRAME WITH TWO GRATES, STD 840.22	CONCRETE APRON FOR DROP INLET	4" CONCRETE PAVED DITCH	ADJUSTMENT OF DROP INLETS	TEMPORARY SILT FENCE	SEDIMENT CONTROL STONE	SAFETY FENCE	RESPONSE FOR EROSION CONTROL	CONCRETE WASHOUT STRUCTURE	1/4" HARDWARE CLOTH	WATTLE	SEEDING & MULCHING
							EA	LF	EA	EA	SY	EA	LF	TON	LF	EA	EA	LF	LF	ACR
		1	4	46+00 I74EBL Rt.	Remove and replace 8' of 18" cmp on each end of pipe. Extend with concrete collars.	n/a								5				40	40	0.10
		2	4	66+50 I74EBL It. (median)	Remove and replace existing 2GI. Remove and replace 4' of 18" rcp with concrete collar	4.1'	1		1					5				40	40	0.10
		3	4	70+05 I74EBL Rt.	Remove and replace 12' of 24" rcp with 2 concrete collars	n/a								5				40	40	0.10
		4	4	77+40 I74EBL It. (median)	Remove and replace existing 2GI. Remove and replace 8' of 15" rcp with concrete collar. Replace 8' of 6' wide conc ditch each side of 2GI	5.0'	1		1		5.3			5				40	40	0.10
		5	5	101+90 I74EBL It. (median)	Remove and replace existing 2GI. Remove and replace 8' of 15" rcp with concrete collar	3.2'	1		1					5				40	40	0.10
		6	5	105+90 I74EBL It. (median)	replace concrete apron. Remove and replace 8' of 15" rcp with concrete collar	4.6'				1				5				40	40	0.10
		7	5	124+15 I74EBL It. (median)	Remove and replace 2GI. Remove and replace 4' of 30" rcp with concrete collar on each side of structure.	3.3'	1		1					5				40	40	0.10
		8	5	128+25 I74EBL It. (median)	Remove and replace 2GI. Remove and replace 4' of 30" rcp with concrete collar on each side of structure.	3.3'	1		1					5				40	40	0.10
		8A	5	135+00 I74EBL It. (median)	Replace concrete apron.					1										
		9	6	150+00 I74EBL It. (median)	Remove and replace 2GI. Remove and replace 4' of 24" rcp with concrete collar on each side of structure.	7.4'	1	2.4	1					5				40	40	0.10
		10	6	170+45 I74EBL It. (median)	Replace concrete apron.	2.6'				1				5				40	40	0.10
		11	6	192+62 I74EBL It. (median)	Remove and replace 2GI. Remove and replace 4' of 15" rcp with concrete collar.	1.8	1		1					5				40	40	0.10
		12	6	199+75 I74EBL It. (median)	Remove and replace 2GI. Remove and replace 4' of 15" rcp with concrete collar.	2.8'	1		1					5				40	40	0.10
		12A	6	203+75 I74EBL It. (median)	Replace concrete apron.					1										
		13	7	211+10 I74EBL It. (median)	Remove and replace 2GI. Remove and replace 8' of 24" rcp with concrete collar on north side of structure. Remove and replace 4' of 24" rcp with concrete collar on south side of structure.	3.9'	1		1					5				40	40	0.10
		14	7	215+60 I74EBL It. (median)	Remove and replace 2GI. Remove and replace 4' of 18" rcp with concrete collar.	2.3'	1		1					5				40	40	0.10
		15	7	222+50 I74EBL It. (median)	Replace concrete apron	3.0'				1				5				40	40	0.10
		16	7	227+80 I74EBL It. (median)	Remove and replace 2GI. Remove and replace 12' of 30" rcp with concrete collar on north side of structure. Remove and replace 4' of 30" rcp with concrete collar on south side of structure.	5.2'	1	0.2	1					5				40	40	0.10
		17	7	234+60 I74EBL It. (median)	Remove and replace 2GI. Remove and replace 4' of 18" rcp with concrete collar.	2.1'	1		1					5				40	40	0.10
		18	7	241+10 I74EBL It. (median)	Replace concrete apron. Remove and replace 8' of 36" rcp with concrete collar on north side of structure	5.8'				1				5				40	40	0.10
		19	7	247+40 I74EBL It. (median)	Remove and replace 2GI. Remove and replace 4' of 15" rcp with concrete collar on east side and 4' of 18" rcp with concrete collar on south side	3.2'	1		1					5				40	40	0.10
		20	7	255+30 I74EBL It. (median)	Remove and replace 2GI. Remove and replace 4' of 15" rcp with concrete collar.	1.8'	1		1					5				40	40	0.10
		21	7	264+25 I74EBL It. (median)	Remove and replace 8' of 15" rcp with 2 concrete collars	min depth								5				40	40	0.10
		22	7	277+75 I74EBL It. (median)	Replace concrete apron.	6.1'				1				5				40	40	0.10
		23	8	296+35 I74EBL It. (median)	Replace concrete apron.	5.3'				1				5				40	40	0.10
		23A	8	317+00 I74EBL It. (median)	Replace concrete apron.					1										
		24	8	321+75 I74EBL It. (median)	Remove and replace 2GI. Remove and replace 4' of 18" rcp with concrete collar.	3.2'	1		1					5				40	40	0.10
		25	8	331+30 I74EBL It. (median)	Replace concrete apron.	4.8'				1				5				40	40	0.10
		26	8	338+25 I74EBL It. (median)	Remove and replace 2GI. Remove and replace 4' of 18" rcp with concrete collar.	3.2'	1		1					5				40	40	0.10
		26A	8	351+00 I74EBL It. (median)	Replace concrete apron.					1										
		27	9	419+15 I74EBL It. (median)	Replace concrete apron.	3.5'				1				5				40	40	0.10
		28	10	456+08 I74EBL It. (median)	Adjust 2GI structure depth 1.25' higher, regrade ditch +/- .25' on either side of box to accommodate increase structure height.	2.8'						1		5				80	40	0.10
		29	10	467+30 I74EBL It. (median)	Replace concrete apron.	4.5'				1				5				40	40	0.10
		30	10	486+20 I74EBL It. (median)	Replace concrete apron.	3.4'				1				5				40	40	0.10
		31	12	605+00 I74EBL It. (median)	Replace concrete apron.					1										
					SAY		16	2.6	16	15	5.3	1	400	150	300	7	10	1,240	1,200	3.00
					TOTAL		16	2.6	16	15	6.0	1	400	150	300	7	10	1,250	1,200	3.0

49987-3.1

Robeson

## SIGNING QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	4072000000-E	4096000000-N	4102000000-N	4108000000-N	4155000000-N
									SUPPORTS, 3-LB STEEL U-CHANNEL LF	SIGN ERECTION, TYPE D EA	SIGN ERECTION, TYPE E EA	SIGN ERECTION, TYPE F EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL EA
49987.3.1	Robeson	1	US 74 WB 2" MILL	FROM 1 MILE EAST OF 41 TO WHITNEY RD	1	2	2WD	2.0					
		1	US 74 WB 1.5" MILL	WHITNEY RD TO EAST OF LUMBER RIVER BRIDGES	2	2	2WD	9.2					
		2	US 74 EB 2" MILL	FROM 1 MILE EAST OF 41 TO EAST OF LUMBER RIVER BRIDGES	1	2	2WD	11.2					
GRAND TOTAL									250	3	4	1	4

## WORK ZONE TRAFFIC CONTROL QUANTITIES

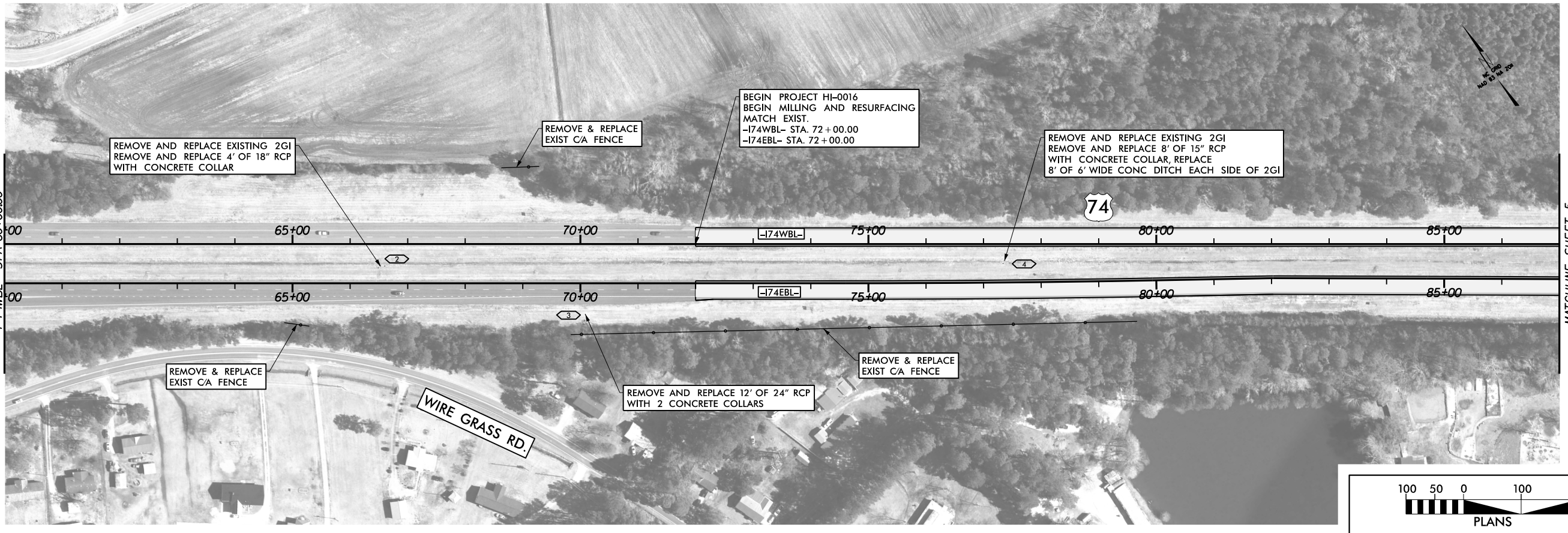
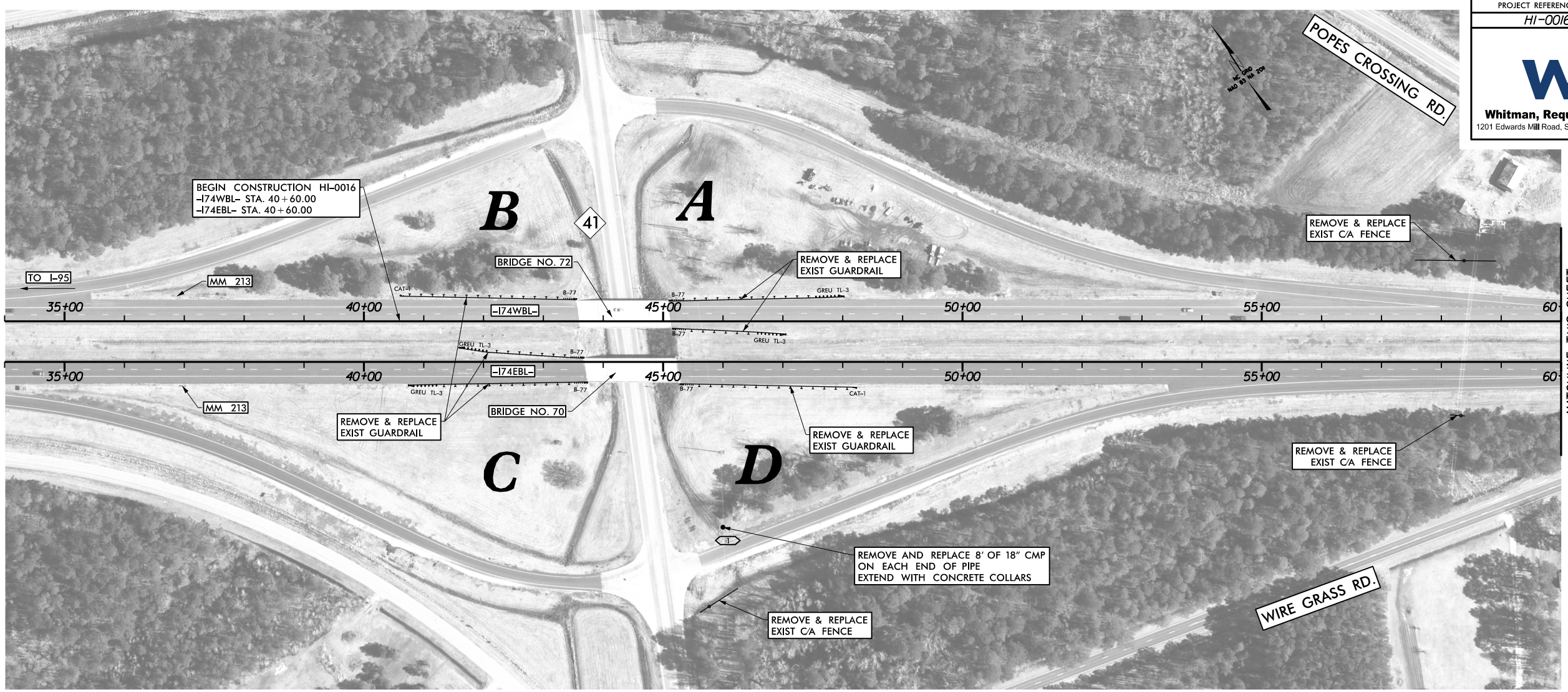
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	4400000000-E	4405000000-E	4423000000-N	4424000000-N	4434000000-N	4430000000-N	4600000000-N	4600000000-N	4600000000-N
									WORK ZONE SIGNS (STATIONARY) SF	WORK ZONE SIGNS (PORTABLE) SF	GENERIC TRAFFIC CONTROL ITEM - WORK ZONE DIGITAL SPEED LIMIT SIGNS EA	GENERIC TRAFFIC CONTROL ITEM - WORK ZONE PRESENCE LIGHTING EA	GENERIC TRAFFIC CONTROL ITEM - SEQUENTIAL FLASHING WARNING LIGHTS EA	<b>DRUMS</b> EA	GENERIC TRAFFIC CONTROL ITEM - SINGLE LANE CLOSURE EA	GENERIC TRAFFIC CONTROL ITEM - RAMP/LOOP TRAFFIC CONTROL EA	GENERIC TRAFFIC CONTROL ITEM - RAMP/LOOP CLOSURES EA
49987.3.1	Robeson	1	US 74 WB 2" MILL	FROM 1 MILE EAST OF 41 TO WHITNEY RD	1	2	2WD	2.0									
		1	US 74 WB 1.5" MILL	WHITNEY RD TO EAST OF LUMBER RIVER BRIDGES	2	2	2WD	9.2									
		2	US 74 EB 2" MILL	FROM 1 MILE EAST OF 41 TO EAST OF LUMBER RIVER BRIDGES	1	2	2WD	11.2									
GRAND TOTAL									800	384	4	14	13	100	340	8	8

### THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	WIDTH	4688000000-E		4700000000-E	4720000000-E	4725000000-E					4795000000-E	4815000000-E		
										THERMO PAVEMENT MARKING LINES (6", 90 MILS), WHITE	THERMO PAVEMENT MARKING LINES (6", 90 MILS), YELLOW	THERMO PAVEMENT MARKING LINES (12", 90 MILS), WHITE	THERMO PAVEMENT MARKING CHARACTER (90 MILS)	THERMO PAVEMENT MARKING SYMBOL (90 MILS), MERGE ARROW	THERMO PAVEMENT MARKING SYMBOL (90 MILS), LEFT ARROW	THERMO PAVEMENT MARKING SYMBOL (90 MILS), THRU ARROW	THERMO PAVEMENT MARKING SYMBOL (90 MILS), RIGHT ARROW	THERMO PAVEMENT MARKING SYMBOL (90 MILS), U-TURN ARROW	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE 2 (24")	PAINT PAVEMENT MARKING LINES (6") WHITE	PAINT PAVEMENT MARKING LINES (6") YELLOW	
										LF	LF	LF	EA	EA	EA	EA	EA	EA	LF	LF	LF	
49987.3.1	Robeson	1	US 74 WB 2" MILL	FROM 1 MILE EAST OF 41 TO WHITNEY RD	1	2	2WD	2.0	24													
		1	US 74 WB 1.5" MILL	WHITNEY RD TO EAST OF LUMBER RIVER BRIDGES	2	2	2WD	9.2	24													
		2	US 74 EB 2" MILL	FROM 1 MILE EAST OF 41 TO EAST OF LUMBER RIVER BRIDGES	1	2	2WD	11.2	24													
GRAND TOTAL										160,560	125,170	5,930	16	8	18	24	15	6	165	163,180	125,940	
										285,730		5,930	16	71					165	289,120		

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	WIDTH	4825000000-E	4835000000-E	4840000000-N	4845000000-N					4847096000-E		4905100000-N	
										PAINT PAVEMENT MARKING LINES (12") WHITE	PAINT PAVEMENT MARKING LINES (24") WHITE	PAINT PAVEMENT MARKING CHARACTER	PAINT PAVEMENT MARKING SYMBOL, MERGE ARROW	PAINT PAVEMENT MARKING SYMBOL, LEFT ARROW	PAINT PAVEMENT MARKING SYMBOL, THRU ARROW	PAINT PAVEMENT MARKING SYMBOL, RIGHT ARROW	PAINT PAVEMENT MARKING SYMBOL, U-TURN ARROW	POLYUREA PAVEMENT MARKING LINES WHITE (6", 30 MILS) STANDARD GLASS BEADS	POLYUREA PAVEMENT MARKING LINES YELLOW (6", 30 MILS) STANDARD GLASS BEADS	NON-CAST IRON SNOWPLOWABLE PAVEMENT MARKER	
										LF	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
49987.3.1	Robeson	1	US 74 WB 2" MILL	FROM 1 MILE EAST OF 41 TO WHITNEY RD	1	2	2WD	2.0	24												
		1	US 74 WB 1.5" MILL	WHITNEY RD TO EAST OF LUMBER RIVER BRIDGES	2	2	2WD	9.2	24												
		2	US 74 EB 2" MILL	FROM 1 MILE EAST OF 41 TO EAST OF LUMBER RIVER BRIDGES	1	2	2WD	11.2	24												
GRAND TOTAL										5,930	165	16	8	18	24	15	6	2,620	770	1,515	
										5,930	165	16	71					3,390	1,515		

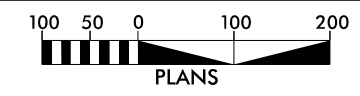
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