STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION 6

PLANS – REV. – 10-3-18

Letting Date: October 17, 2018

CONTRACT ID: DF00232

TIP NO.: -----

FEDERAL AID NO.: STATE FUNDED

WBS ELEMENT NO.: 2020CPT.06.05.10091.1 & 2020CPT.06.05.20091.1

ROUTE NO.: NC 87 BYP., NC 210 & SR 1704

LOCATION: VARIOUS

COUNTY: BLADEN

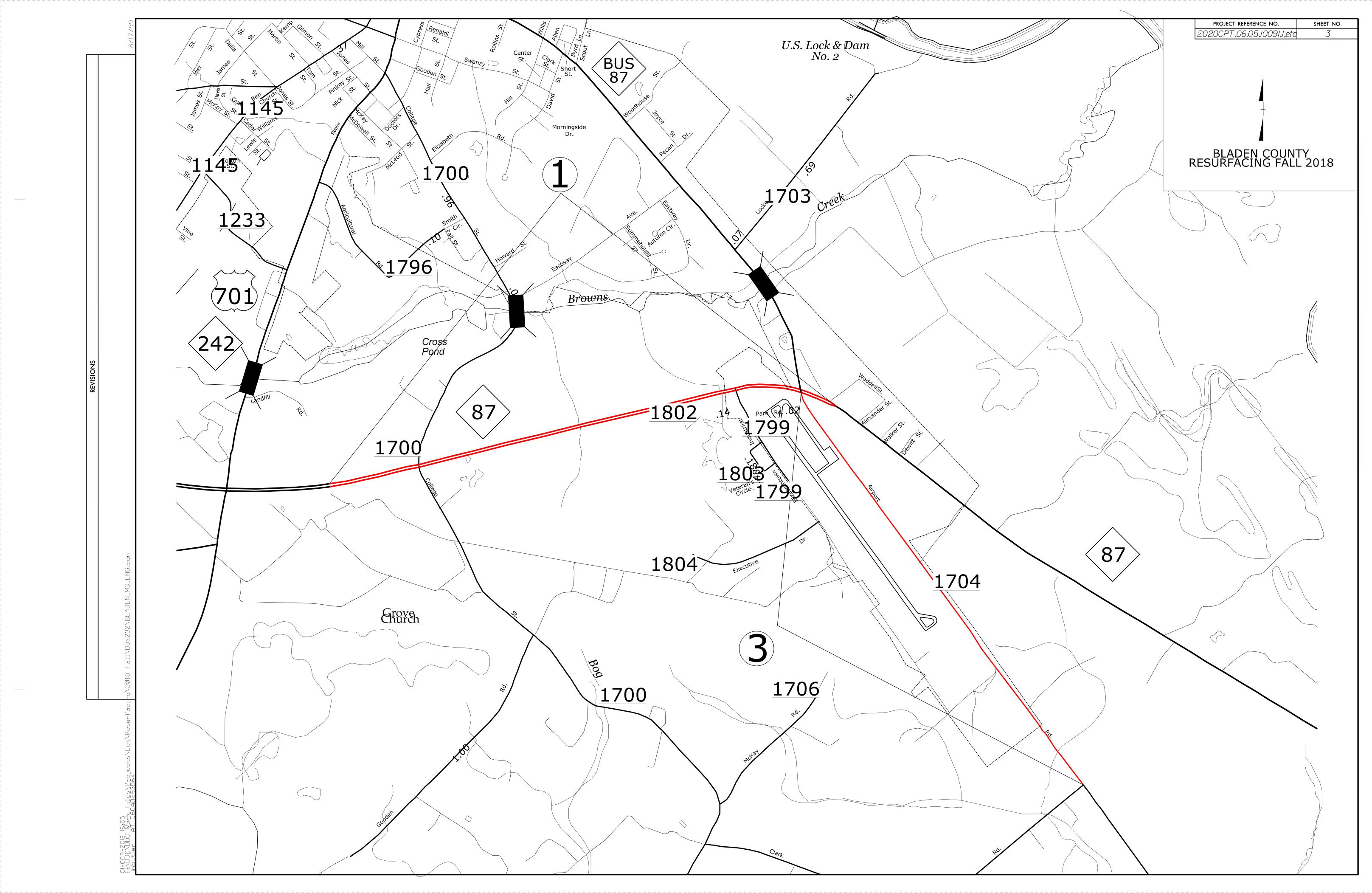
LENGTH OF PROJECT: 12.31 MILES

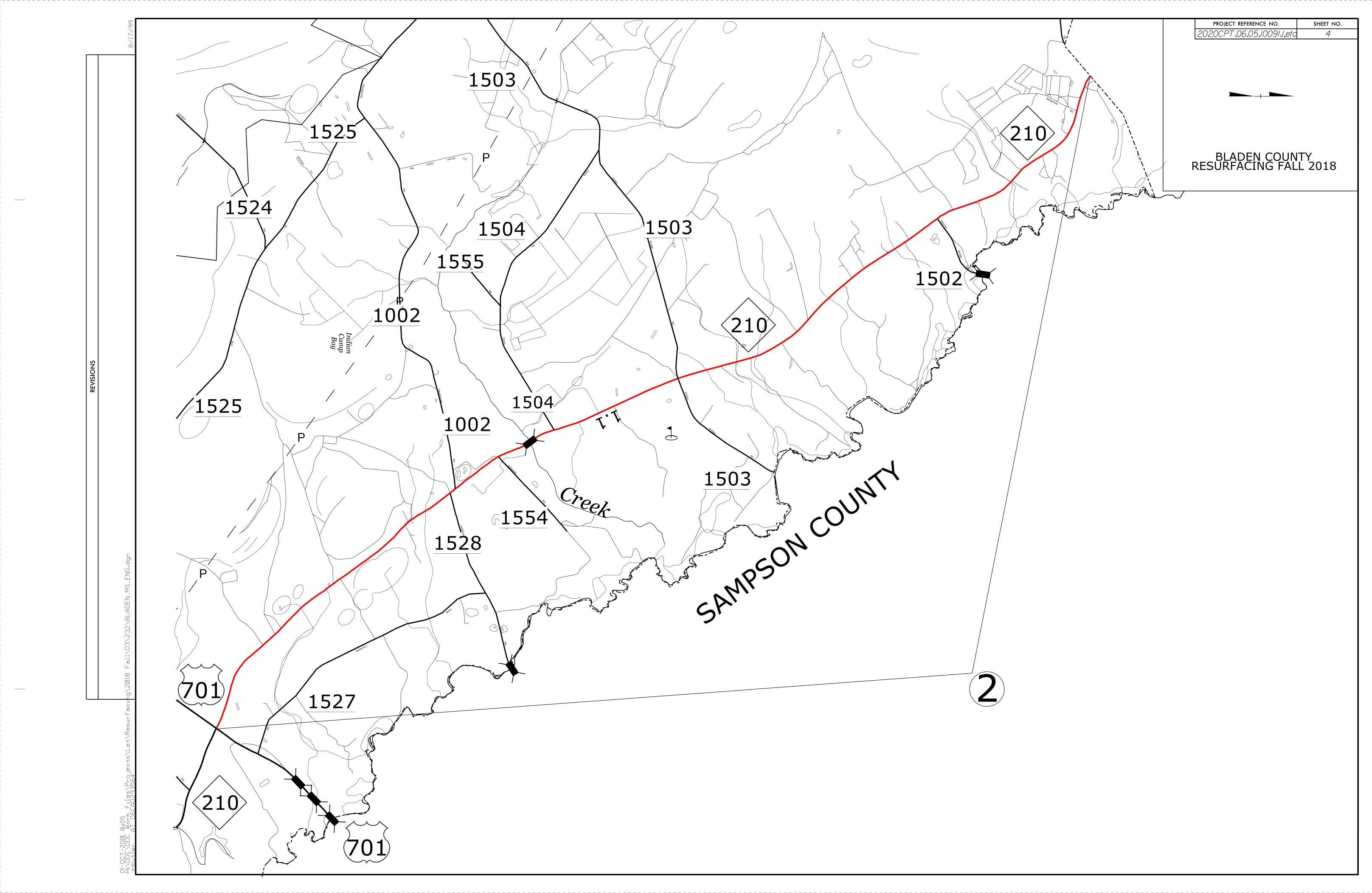
TYPE OF WORK: RESURFACING, MILLING, CURVE WIDENING & PVT. MKGS.

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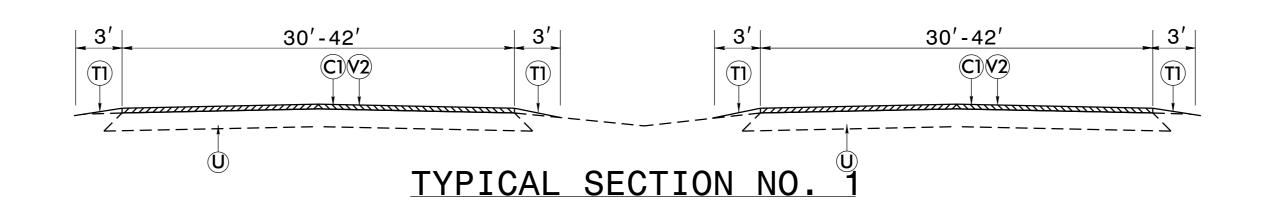
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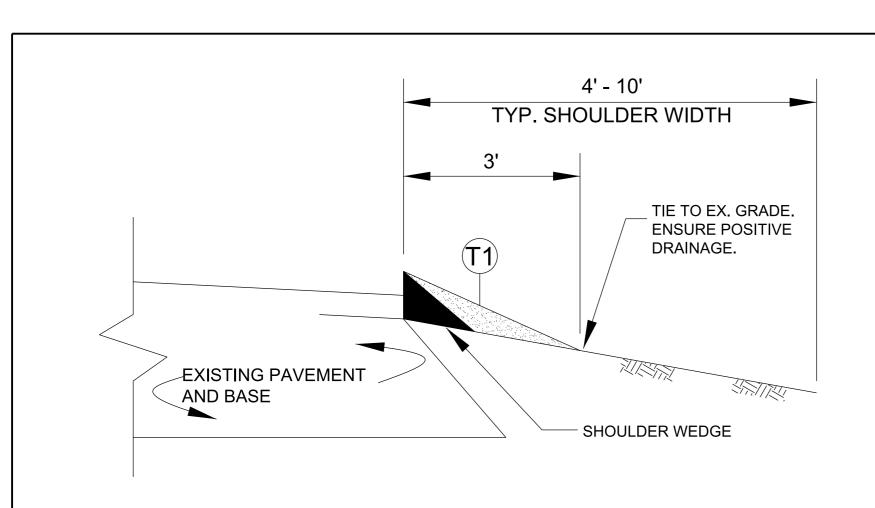




PROJECT REFERENCE NO.	SHEET NO.
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	PAVEMENT SCHEDULE
C1	1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
E1	5½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
T1	SHOULDER RECONSTRUCTION WITH AGGREGATE SHOULDER BORROW
U	EXISTING PAVEMENT
V1	0" - 1½" MILLING
V2	1½" MILLING

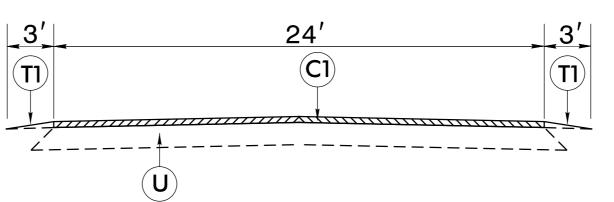




SHOULDER RECONSTRUCTION

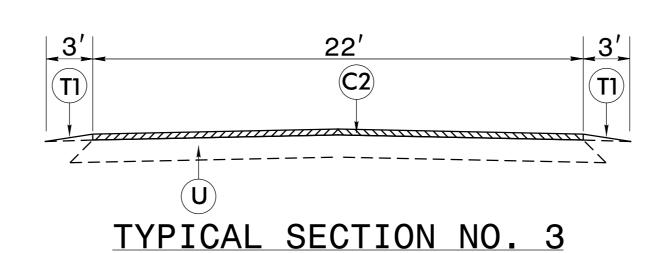
NOTES:

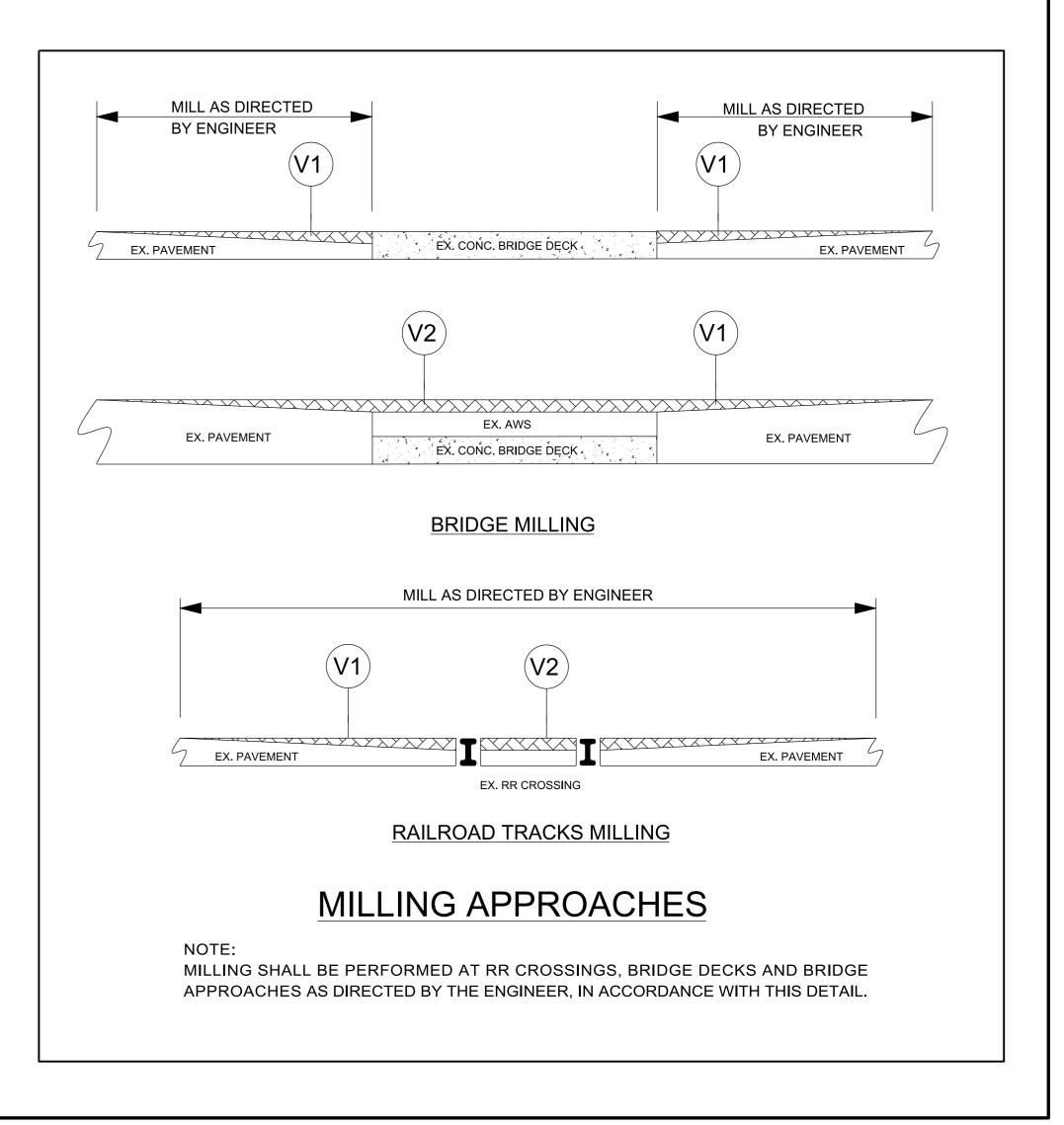
- 1.SHOULDER SHALL BE RECONSTRUCTED AS SHOWN IN STD. DWG. NO. 560.01 & 560.02, WITH A MINIMUM SLOPE OF 1" PER FOOT TO ENSURE POSITIVE DRAINAGE AWAY FROM ROADWAY.
- 2. AGGREGATE SHOULDER BORROW (ASB) MATERIAL SHALL BE PLACED USING A WIDENING MACHINE OR SIMILAR DEVICE. (WHERE APPLICABLE)
- 3. A VEGETATIVE BUFFER SHALL BE MAINTAINED BETWEEN THE DISTURBED AREA ALONG THE EDGE OF PAVEMENT AND THE DITCH SHOULDER POINT TO MINIMIZE EROSION. PULLING DITCHES OR CUTTING SHOULDERS TO GENERATE BORROW MATERIAL WILL NOT BE ALLOWED.
- 4. REQUIRED BORROW MATERIAL MAY BE OBTAINED BY THE CONTRACTOR FROM WIDENING OPERATIONS WITHIN THE PROJECT LIMITS, FROM NCDOT APPROVED BORROW PITS OR FROM NCDOT STOCKPILES. ANY EXCESS MATERIAL SHALL BE DISPOSED OF BY THE CONTRACTOR IN AN APPROVED DISPOSAL SITE.



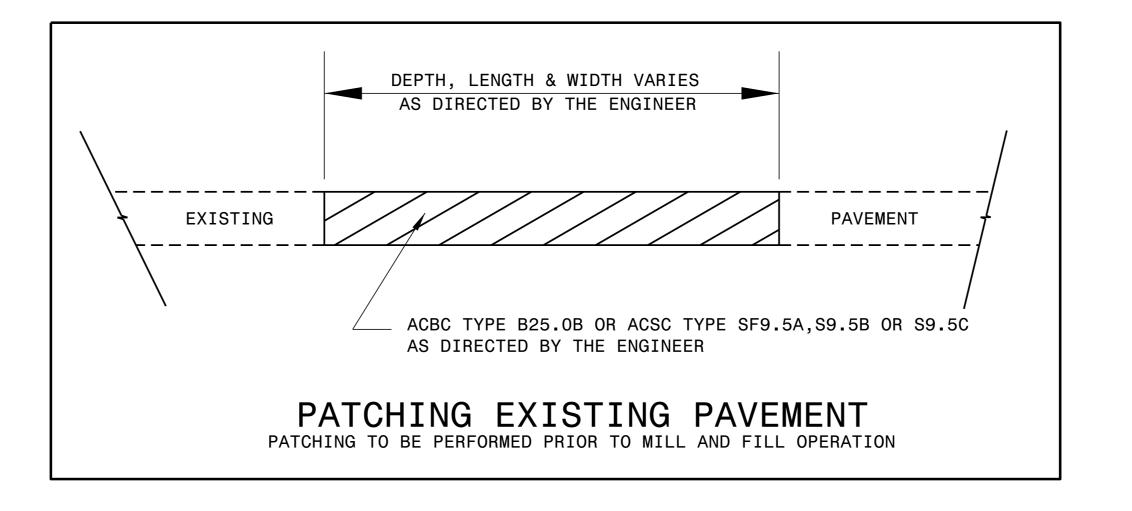
TYPICAL SECTION NO. 2

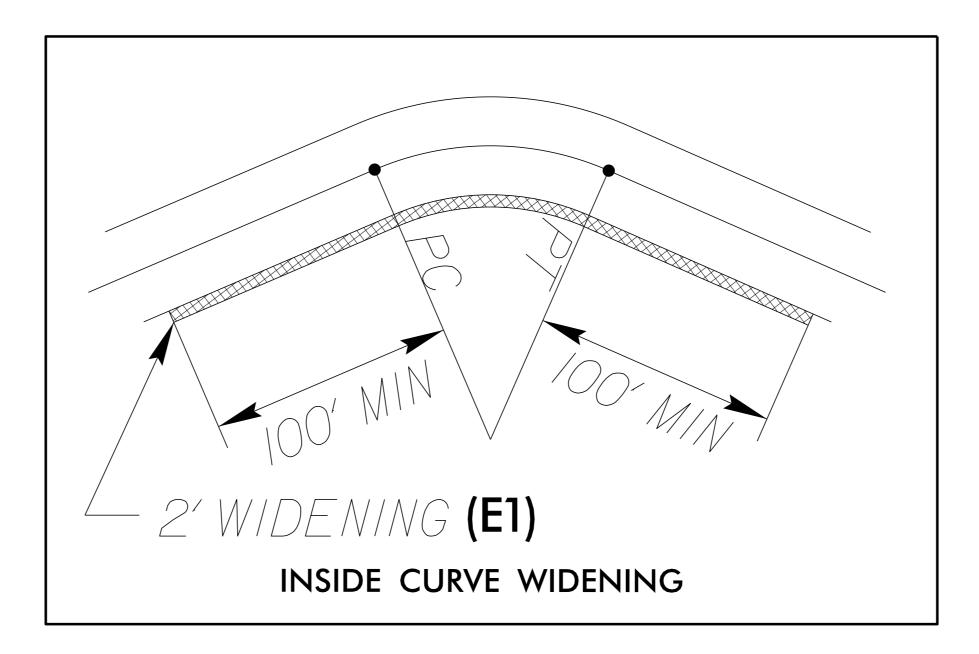
*PLUS ADDITIONAL 2'
INSIDE CURVE WIDENING
(SEE DETAIL)

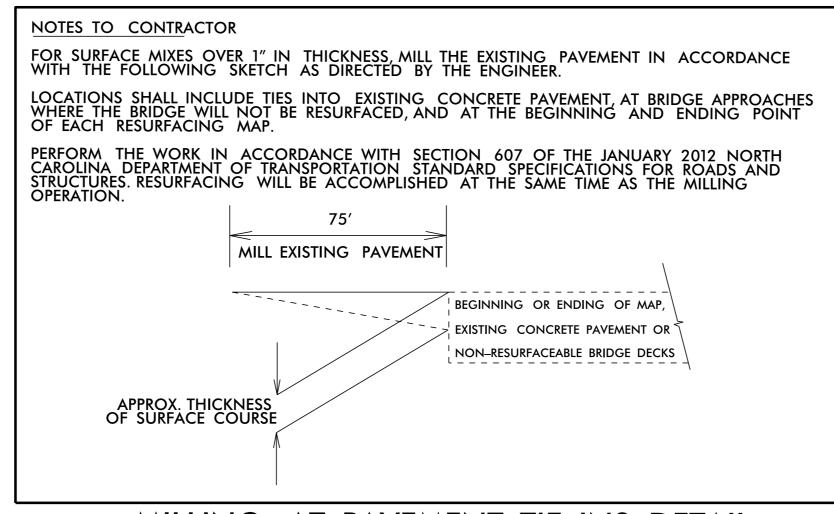




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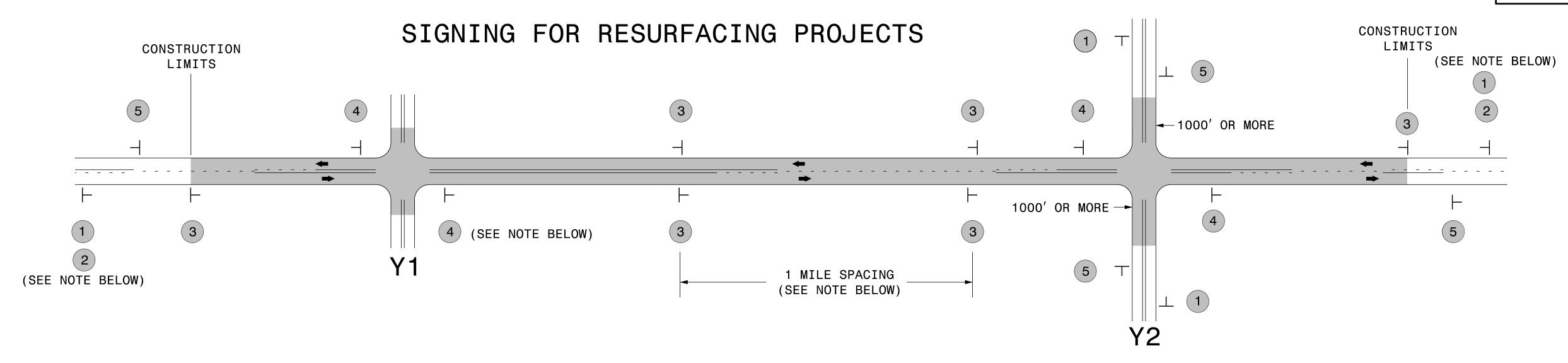




MILLING AT PAVEMENT TIE-INS DETAIL

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 SHEET NO.

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 7



LEGEND

├─ STATIONARY SIGN

← DIRECTION OF TRAFFIC FLOW

MAINLINE (-L-) SIGNING

PLACE 1000' PRIOR TO BEGINNING OF CONSTRUCTION LIMITS.

ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000' ALONG -Y- LINE.

HIDED CTATIONADY CIONING FOR THE

-Y- LINE SIGNING

NO REQUIRED STATIONARY SIGNING FOR THE FOLLOWING -Y- LINE CONDITIONS:

- 1) LESS THAN 1000' OF RESURFACING ALONG -Y- LINE 2) SUBDIVISION ROADS
- 3) DEAD END ROADS

WHEN PAVING/CONSTRUCTION ACTIVITIES PROCEED ACROSS AN UNSIGNED -Y- LINE, ADVANCE WARNING PORTABLE SIGNS SHALL BE USED ALONG THE -Y- LINE AS SHOWN BELOW. REMOVE UPON COMPLETION OF WORK.





PLACED 500' IN ADVANCE OF FLAGGER. PLACED 250' IN ADVANCE OF FLAGGER.

SIGNING NOTES AND PLACEMENT PER DIRECTION

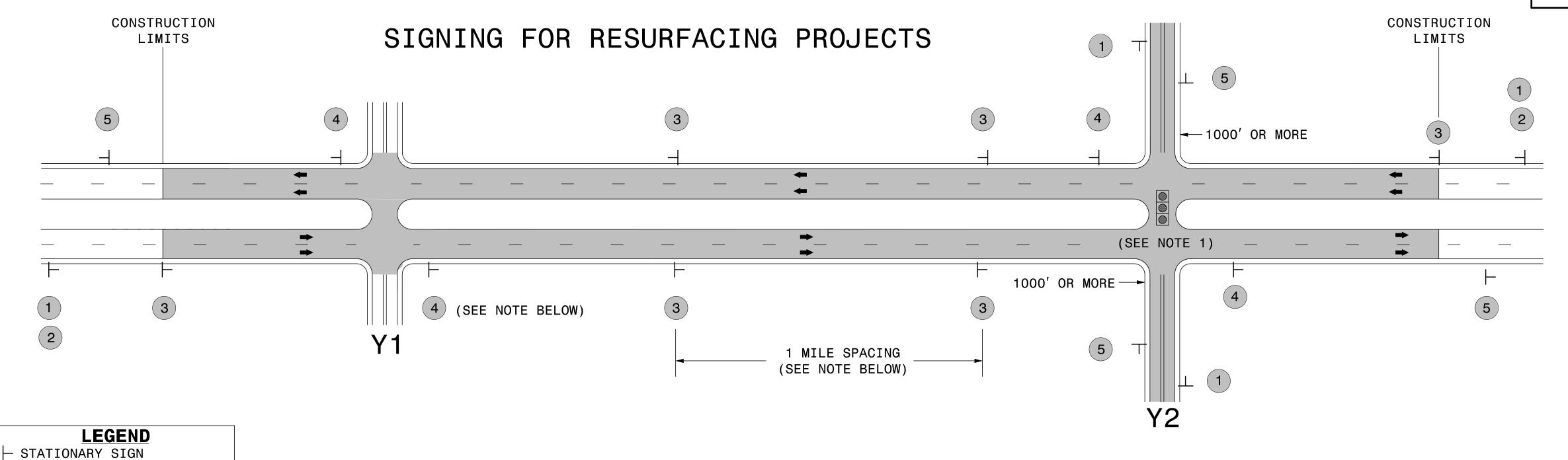
AHEAD W20-1 24" X 18" ROUND UP TO NEXT WHOLE NUMBER. (NO FRACTIONAL OR DECIMAL NUMBERS) PLACE INITIALLY AT THE CONSTRUCTION LIMITS AND SPACED 1 MILE APART LOW/SOFT THEREAFTER. IF NO -Y- LINES EXIST, PLACE 2ND SET 1/2 MILE FROM THE SHOULDER / CONSTRUCTION LIMITS AND THEN SPACE 1 MILE THEREAFTER. SP 13107 48" X 48" THESE ARE FOR -Y- LINES THAT ARE "THROUGH" ROADWAYS. DEAD END AND SUBDIVISION ROADS ARE NOT "THROUGH" ROADWAYS. INSTALL 500' +/- FROM **ROAD** EACH -Y- LINE APPROACH AS SHOWN ABOVE. FOR MULTIPLE -Y- LINES THAT UNDER ARE SEPARATED BY 0.25 MILES OR LESS, TREAT AS A SINGLE UNIT AND INSTALL WITHIN 500' OF EACH APPROACH. A MAXIMUM OF 2 SIGN SETS PER MILE. DO NOT SP 13106 48" X 48" INSTALL WHEN -Y- LINES ARE WITHIN 0.5 MILES FROM "END ROAD WORK" SIGN. END PLACE 500' FOLLOWING THE END OF CONSTRUCTION LIMITS. ROAD WORK G20–2 A 48'' X 24''

> OF HIGH NORTH CARDON TO NORTH CARDON TRAFFIC

RESURFACING
ADVANCE WARNING SIGNS
FOR
RURAL AND SUBURBAN
2 LANE ROADWAYS

| Users\rmgarrett\| Uownloads\| Resurtaoïng_Adv| Warn_2Ln (? er;rmqarrett

PROJ. REFERENCE NO. 2020CPT.06.05.10091.1,etc



MAINLINE (-L-) SIGNING

EACH -Y- LINE APPROACH AS SHOWN ABOVE. FOR MULTIPLE -Y- LINES THAT

SP 13106 48" X 48" INSTALL WHEN -Y- LINES ARE WITHIN 0.5 MILES FROM "END ROAD WORK" SIGN.

PLACE 500' FOLLOWING THE END OF CONSTRUCTION LIMITS.

ARE SEPARATED BY 0.25 MILES OR LESS, TREAT AS A SINGLE UNIT AND INSTALL WITHIN 500' OF EACH APPROACH. A MAXIMUM OF 2 SIGN SETS PER MILE. DO NOT

-Y- LINE SIGNING

PLACE 1000' PRIOR TO BEGINNING OF CONSTRUCTION LIMITS. ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000' ALONG -Y- LINE. O AHEAD W20-1 ND XX MILES 24" X 18" ROUND UP TO NEXT WHOLE NUMBER. (NO FRACTIONAL OR DECIMAL NUMBERS) A RE PLACE INITIALLY AT THE CONSTRUCTION LIMITS AND SPACED 1 MILE APART LOW/SOFT THEREAFTER. IF NO -Y- LINES EXIST, PLACE 2ND SET $\frac{1}{2}$ MILE FROM THE SHOULDER / CONSTRUCTION LIMITS AND THEN SPACE 1 MILE THEREAFTER. NO ER 48'' X 48'' IGNING THESE ARE FOR -Y- LINES THAT ARE "THROUGH" ROADWAYS. DEAD END AND SUBDIVISION ROADS ARE NOT "THROUGH" ROADWAYS. INSTALL 500' +/- FROM **ROAD**

UNDER

END

ROAD WORK

G20–2 A

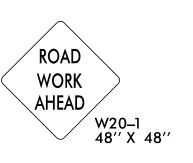
48" X 24"

NO REQUIRED STATIONARY SIGNING FOR THE FOLLOWING -Y- LINE CONDITIONS:

- 1) LESS THAN 1000' OF RESURFACING ALONG -Y- LINE
- 2) SUBDIVISION ROADS
- 3) DEAD END ROADS

WHEN PAVING/CONSTRUCTION ACTIVITIES PROCEED ACROSS AN UNSIGNED -Y- LINE, ADVANCE WARNING PORTABLE SIGNS SHALL BE USED ALONG THE

-Y- LINE AS SHOWN BELOW. REMOVE UPON COMPLETION OF WORK.

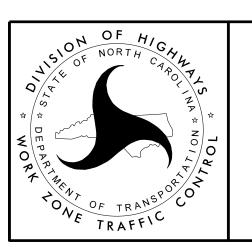




PLACED 500' IN ADVANCE OF FLAGGER. PLACED 250' IN ADVANCE OF FLAGGER.

NOTES:

1) MAY USE LAW ENFORCEMENT TO CONTROL TRAFFIC AT SIGNALIZED INTERSECTIONS AS DIRECTED BY THE ENGINEER. PROVIDE PORTABLE "ROAD WORK AHEAD" (W20-1) SIGNS 500' IN ADVANCE ALONG BOTH APPROACHES FROM THE SIDE STREETS WHEN PAVING PROCEEDS THROUGH THE INTERSECTION.



RESURFACING ADVANCE WARNING SIGNS FOR RURAL AND SUBURBAN MULTI-LANE ROADWAYS W/ SHOULDER SECTIONS

← DIRECTION OF TRAFFIC FLOW

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PROJECT REFERENCE NO.	SHEET N	9.
2020CPT 06 05 10091 1 etc.	9	

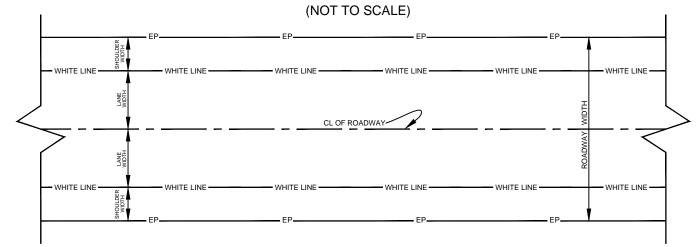
GUIDELINES FOR LANE WIDTHS ON RESURFACING PROJECTS

Contractor shall place the new pavement markings in accordance with this table and detail unless otherwise directed by the Engineer.

TWO LANE - 1	TWO WAY ROAD	WAY - 55 MPH											
ROADWAY WIDTH	ROADWAY WIDTH LANE WIDTH SHOULDER WID												
18'	9' *	0'											
20' 10' * 0'													
22'	10'	1'											
24'	10'	2'											
26'	11'	2'											
28'	12'	2'											
32'	12'	4'											
* May vary due to pavemer	nt width												

	NE - TWO WAY R 50 MPH OR LESS												
ROADWAY WIDTH LANE WIDTH SHOULDER WIDTH													
18'	9' *	0'											
20' 10' * 0'													
22'	10'	1'											
24'	10'	2'											
26'	11'	2'											
28'	11'	3'											
32'	11'	5'											
* May vary due to pavemer	nt width												

SCHEMATIC OF ROADWAY



	SUM	M	ARY	/ OF QUA	N	ΤI	TI	ES					2020CPT.06.0	05.10091.1, 2020CPT.	06.05.20091.1	10	
												1245000000-E	1260000000-E	1297000000-E	1330000000-E	1491000000-E	1519000000-E
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	ANE TYPE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH	MIDTH	SHOULDER RECONSTRUCTION	AGGREGATE SHOULDER BORROW	1½" MILLING	INCIDENTAL MILLING	BASE COURSE, B25.0C	SURFACE COURSE, S9.5B
										MI	FT	SMI	TON	SY	SY	TONS	TONS
2020CPT.06.05.10091.1	Bladen	1	NC 87 BYP.	FROM ALEXANDER ST. (BEGIN 4 LANE) TO CJ W. OF SR 1700	1	4	MD	NO	NO	1.7	60	6.80	1,100	64,367	133		
TOTAL	FOR MAP NO.	1								1.7		6.80	1,100	64,367	133		
2020CPT.06.05.10091.1	Bladen	2	NC 210	FROM US 701 TO CUMBERLAND CL	2	2	2WU	NO	NO	8.92	24	17.80	2,885	267	874	656	
TOTAL	FOR MAP NO.	2								8.92		17.80	2,885	267	874	656	
TOTAL FOR PROJ	NO. 2020CPT.0	6.05.1	0091.1							10.62		24.60	3,985	64,634	1,007	656	
2020CPT.06.05.20091.1	Bladen	3	SR 1704	FROM SR 1707 TO NC 87	4	2	2WU	NO	NO	1.69	22	3.40	547		44		1,812
TOTAL F	FOR MAP NO. :	3								1.69		3.40	547		44		1,812
TOTAL FOR PROJ	NO. 2020CPT.0	6.05.2	0091.1				-			1.69		3.40	547		44		1,812
	_													·	-	-	
GRA	AND TOTAL									12.31		28.00	4,532	64,634	1,051	656	1,812

PROJECT NO.

SHEET NO.

TOTAL NO.

												1520000000-E	1523000000-E	1524000000-E	1575000000-E	1704000000-E
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	LYP NO	LANES	LANE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH	WIDTH	LEVELING COURSE, S9.5B	SURFACE COURSE, S9.5C	LEVELING COURSE, S9.5C	ASPHALT BINDER FOR PLANT MIX	PATCHING EXISTING PAVEMENT
		_			•					MI	FT	TONS	TONS	TONS	TONS	TONS
2020CPT.06.05.10091.1	Bladen	1	NC 87 BYP.	FROM ALEXANDER ST. (BEGIN 4 LANE) TO CJ W. OF SR 1700	1	4	MD	NO	NO	1.7	60		5,514	75	336	102
TOTAL	FOR MAP NO.	1	•							1.7			5,514	75	336	102
2020CPT.06.05.10091.1	Bladen	2	NC 210	FROM US 701 TO CUMBERLAND CL	2	2	2WU	NO	NO	8.92	24		10,814	158	689	268
TOTAL	FOR MAP NO. 2	2								8.92			10,814	158	689	268
TOTAL FOR PROJ	NO. 2020CPT.0	6.05.1	0091.1							10.62			16,328	233	1,025	370
2020CPT.06.05.20091.1	Bladen	3	SR 1704	FROM SR 1707 TO NC 87	4	2	2WU	NO	NO	1.69	22	27			123	51
TOTAL	FOR MAP NO.	3	•							1.69		27			123	51
TOTAL FOR PROJ	TOTAL FOR MAP NO. 3 TOTAL FOR PROJ NO. 2020CPT.06.05.20091.1								1.69		27			123	51	
0.0	AND TOTAL									40.04			10.000	200	4.440	404
GRAND TOTAL								12.31		27	16,328	233	1,148	421		

THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO.	SHEET NO.	TOTAL NO.
2020CPT.06.05.10091.1, 2020CPT.06.05.20091.1	11	

1 11 E 17 W	<u> </u>		<u> </u>	CANDIA	1 14		Œ	<u> </u>	14 1 1 1 1 1 2 3	<u>, </u>											20200	PT.06.05.2009	1.1		
									4413000000-E	4457000000-N	46850	00000-E	4686000	000-E	46950	00000-E	4700000000-E	4710000000-E	4721000000-E			472500	0000-E		
PROJECT NO	COUNT	A MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	ANE LYPE	LENGTH	WORK ZONE ADVANCE/GENERA WARNING SIGNING	-	4" X 90 M WHITE THERMO	4" X 90 M YELLOW THERMO	4" X 120 M WHITE THERMO	4" X 120 M YELLOW THERMO	8" X 90 M WHITE THERMO	8" X 90 M YELLOW THERMO	12" X 90 M YELLOW THERMO	24" X 120 M WHITE THERMO		THERMO LT ARROW 90 M	THERMO RT ARROW 90 M	THERMO STR ARROW 90 M	THERMO STR & LT ARROW 90 M		THERMO STR & RT ARROW 90 M
						-	נ	MI	FT SF	LS	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA
2020CPT.06.05.10091.1	Blader	1	NC 87 BYF	FROM ALEXANDER ST. (BEGIN 4 LANE) TO CJ W. OF SR 1700	1	4 N	1D	1.7	60 381	1	15,812	15,812	8,496	2,400	625		600	115		16	8	28	2	3	
TOTAL	FOR MAP	NO. 1						1.7	381	1	15,812	15,812	8,496	2,400	625		600	115		16	8	28	2	3	
2020CPT.06.05.10091.1	Blader	2	NC 210	FROM US 701 TO CUMBERLAND CL	2	2 2\	WU :	3.92	24 999		93672			75937				25							
TOTAL	FOR MAP	NO. 2	•					3.92	999		93,672			75,937				25							
TOTAL FOR PROJ	NO 2020C	DT 06 01	E 10001 1				1	0.62	1,380	1	109,484	15,812	8,496	78,337	625		600	140		16	8	28	2	3	
TOTAL FOR PROJ	NO. 2020C	F1.06.0	5.10091.1								125,296		86,833		625							5	7		
2020CPT.06.05.20091.1	Bladen	_	SR 1704	FROM SR 1707 TO NC 87	4	2 2\	٧U	1.69	22 189		17592		300	16453		465		250	12	6	1			'	2
TOTAL	FOR MAP	NO. 3						1.69	189		17,592		300	16,453		465		250	12	6	1			'	2
TOTAL FOR PROJ	NO 2020C	PT 06 04	5 20091 1					1.69	189		17,592		300	16,453		465		250	12	6	1			'	2
TOTALTONTHOO		1.00.00									17,592		16,753		465								9		
																								'	
GR	AND TOTA	ı					1	2.31	1,569	1	127,076	15,812	8,796	94,790	625	465	600	390	12	22	9	28	2	3	2
Gitt	2 101A										14	2,888	103,5	86	1,	090						•	6		

										48100000	000-E	4820000000-E	4825000000-E	4835000000-E			48450000	00-N		4891000000-E	49000	00000-N
	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	WIDTH	4" WHITE PAINT	4" YELLOW PAINT	8" WHITE PAINT	12" YELLOW PAINT	24" WHITE PAINT	PAINT LT ARROW	PAINT RT ARROW	PAINT STR ARROW	PAINT STR & LT ARROW	PAINT MERGE ARROW	GENERIC PAVEMENT MARKING ITEM THERMO RUMBLE STRIP (4" X 240 M)	CRYSTAL & RED MARKERS	YELLOW & YELLOW MARKERS
								MI	FT	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	LF	EA	EA
2020CPT.06.05.10091.1	Bladen	1	NC 87 BYP.	FROM ALEXANDER ST. (BEGIN 4 LANE) TO CJ W. OF SR 1700	1	4	MD	1.7	60	24,308	18,212	625	600	115	16	8	28	2	3		300	30
TOTAL	FOR MAP NO.	. 1		·				1.7		24,308	18,212	625	600	115	16	8	28	2	3		300	30
2020CPT.06.05.10091.1	Bladen	2	NC 210	FROM US 701 TO CUMBERLAND CL	2	2	2WU	8.92	24											600.00		590
TOTAL	FOR MAP NO.	. 2						8.92												600		590
TOTAL FOR PROJ	NO 2020CBT	06 05 1	0001.1				,	10.62		24,308	18,212	625	600	115	16	8	28	2	3	600	300	620
TOTAL FOR FROS	NO. 2020CF1.	00.03.1	0091.1							42,52	.0						57				ç	20
2020CPT.06.05.20091.1	Bladen	3	SR 1704	FROM SR 1707 TO NC 87	4	2	2WU	1.69	22					1							20	125
	FOR MAP NO.	. 3	OK 1704	TROWGR TO TO TO				1.69													20	125
-								1.69													20	125
TOTAL FOR PROJ	NO. 2020CPT.	06.05.2	0091.1								· ·						I	· ·	L		1	45
GP	AND TOTAL							12.31		24,308	18,212	625	600	115	16	8	28	2	3	600	320	745
GK	ANDIOTAL			·						42.52	20		· ·				57			·	1.	065