

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION 6

PLANS

REV. – 2-1-2021

Letting Date: February 17, 2021

CONTRACT ID: DF00275

TIP NO.: -----

FEDERAL AID NO.: STATE FUNDED

WBS ELEMENT NO.: 2021CPT.06.08.10241.1, 2021CPT.06.08.20241.1 & 2021CPT.06.08.10242.1

ROUTE NO.: NC 904, NC 410 & VARIOUS SR

LOCATION: VARIOUS

COUNTY: COLUMBUS

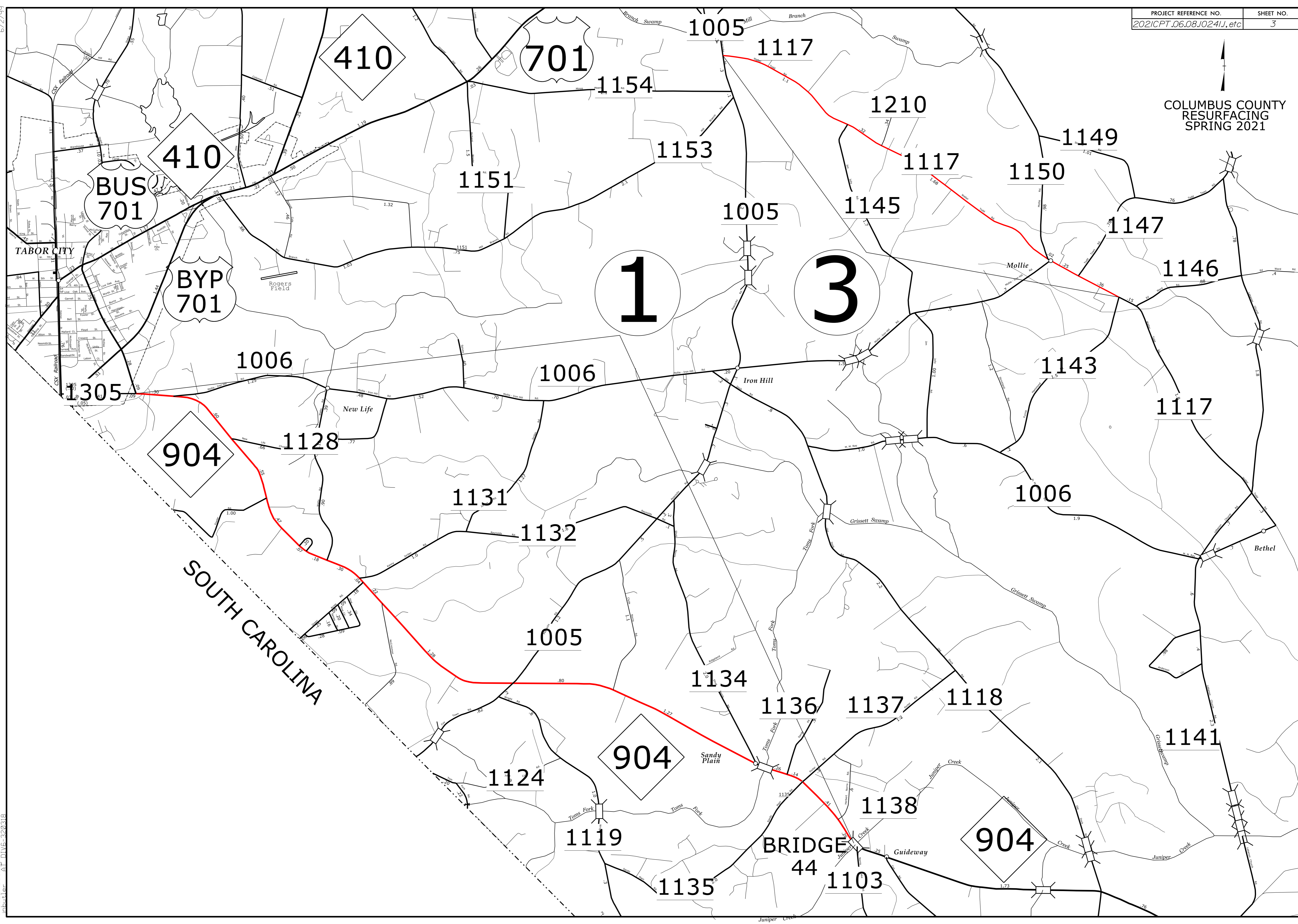
LENGTH OF PROJECT: 20.36 MILES

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

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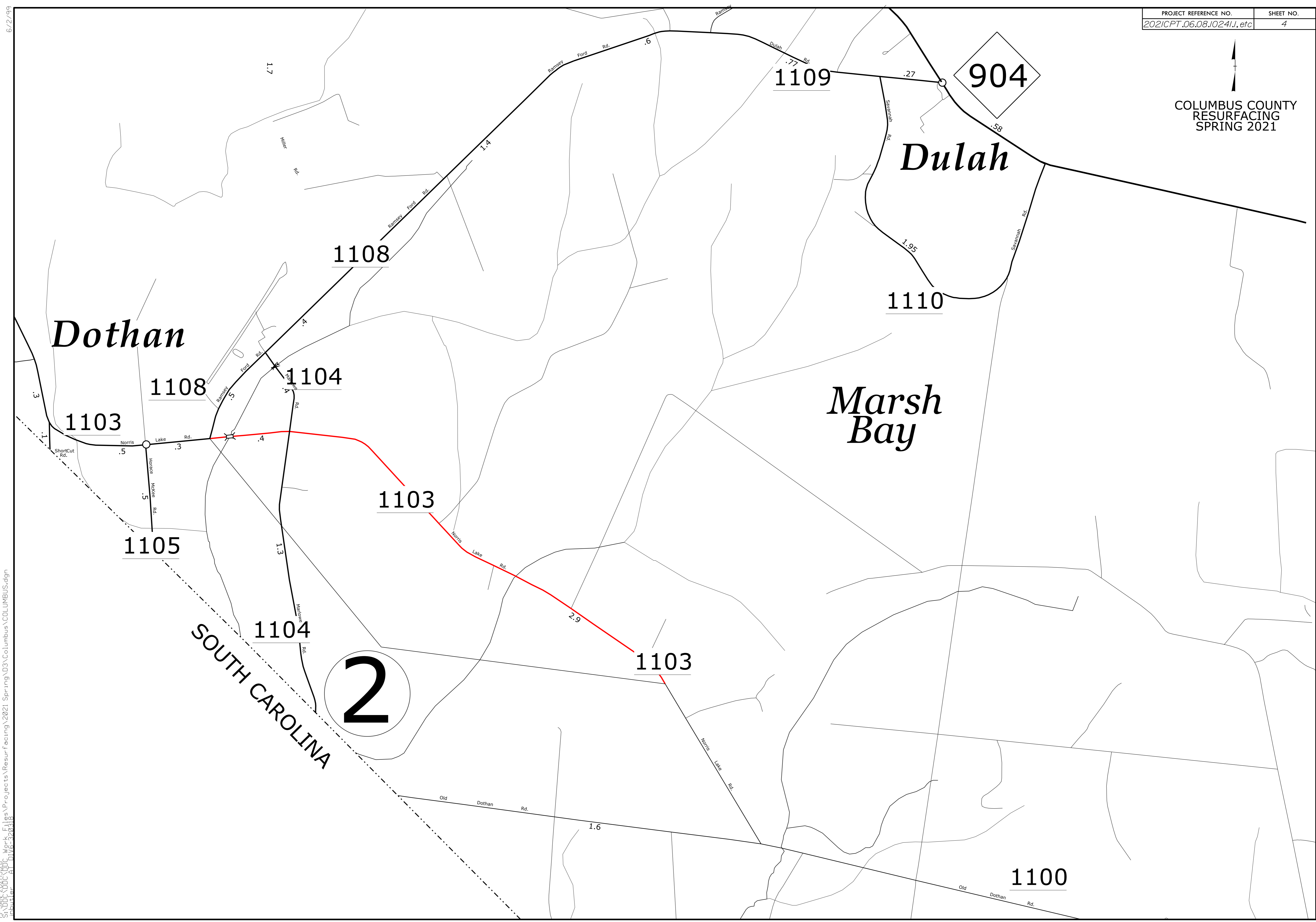
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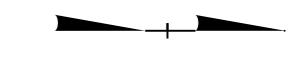
COLUMBUS COUNTY
RESURFACING
SPRING 2021



6/2/09

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S:\D\CDC\011118-520318

COLUMBUS COUNTY RESURFACING SPRING 2021



BLADEN COUNTY

Braswell

CHADBOURN

Mt. Olive

4

130

74

76

130
410

410

410

74

BUS
74
76

74
76

130

131

1443

1504

1528

1527

1528

1574

1573

1572

1576

1562

1005

1558

1574

1526

1523

1.82

1003

1.61

1529

.9

1002

1520

1.15

1521

1.37

1002

1.82

1522

1.22

1519

.71

1518

.66

1536

1535

1002

1003

1531

1.63

1533

1530

1.80

1519

1572

1534

1533

1533

1532

1517

1005

1002

1537

1538

1546

1003

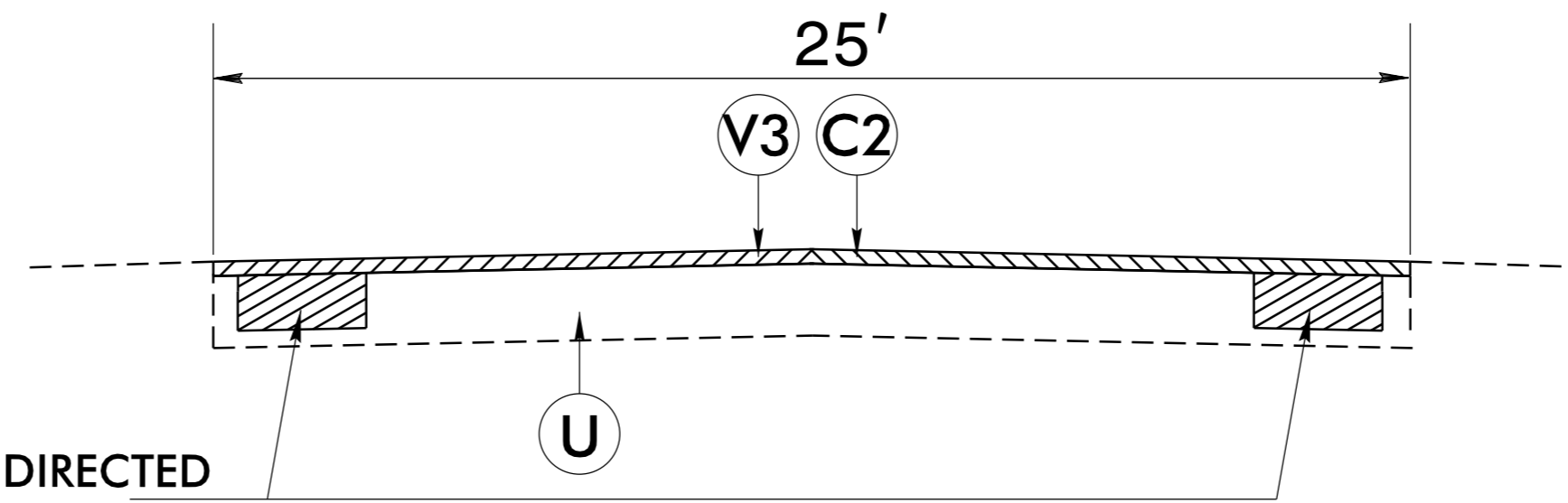
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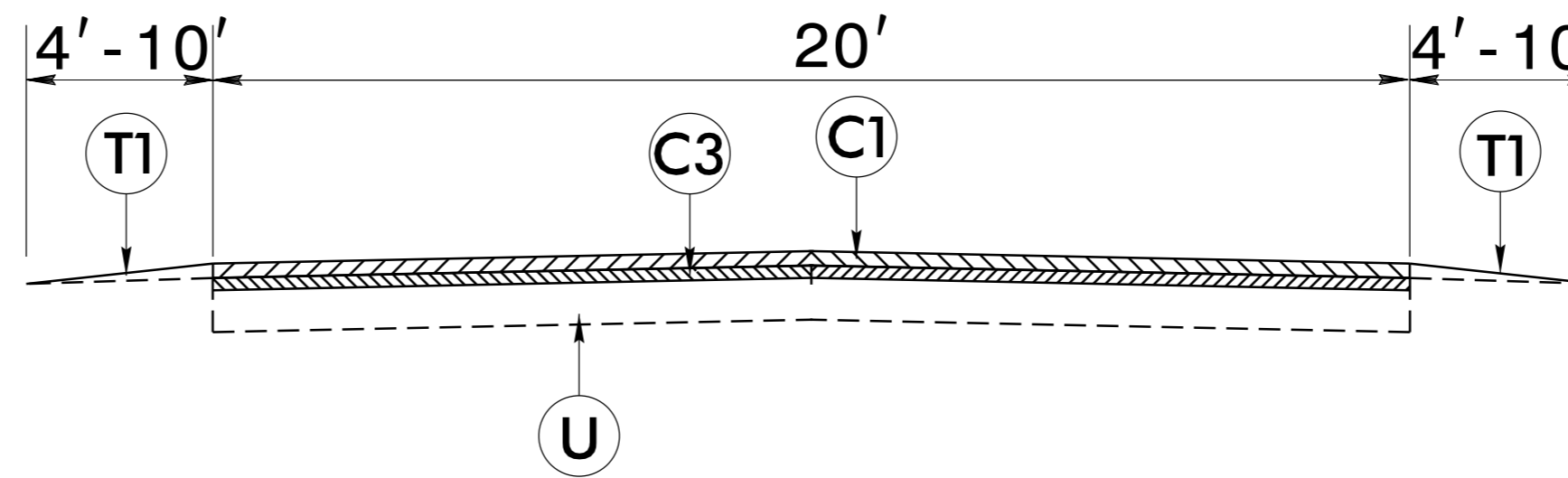
PAVEMENT SCHEDULE

C1	1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
D1	2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
T1	SHOULDER RECONSTRUCTION WITH AGGREGATE SHOULDER BORROW
U	EXISTING ASPHALT PAVEMENT
V1	0" - 1½" MILLING
V2	1½" MILLING
V3	¾" MILLING (PROFILE MILLING)
V4	2½" MILLING
V5	4" MILLING

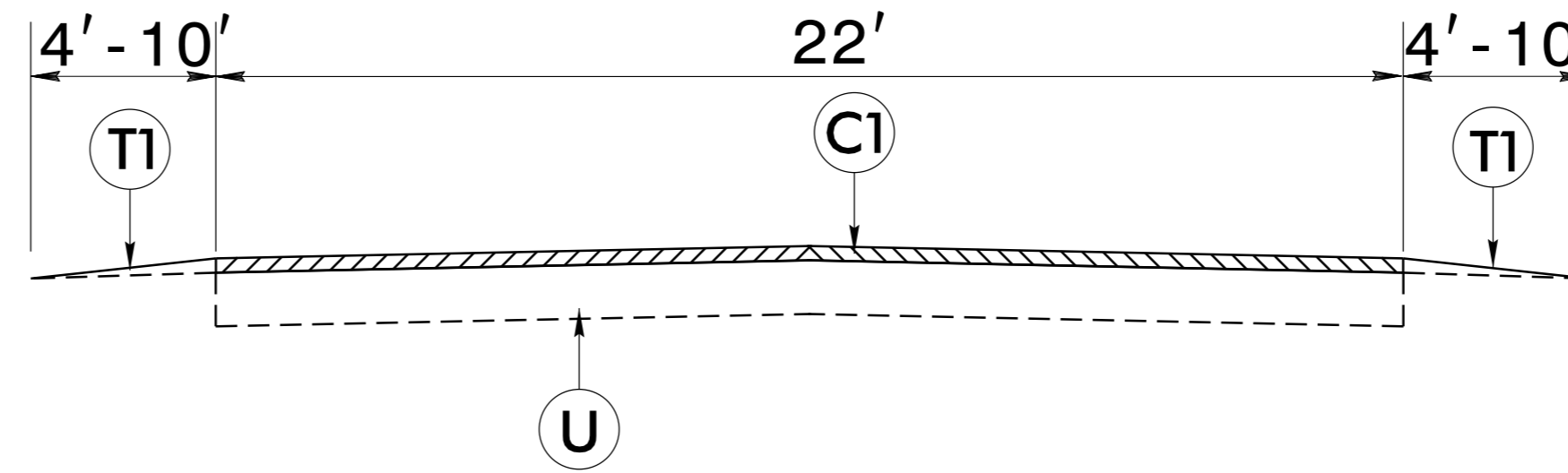
4" MILL AND FILL AS DIRECTED BY ENGINEER (SEE DETAIL)



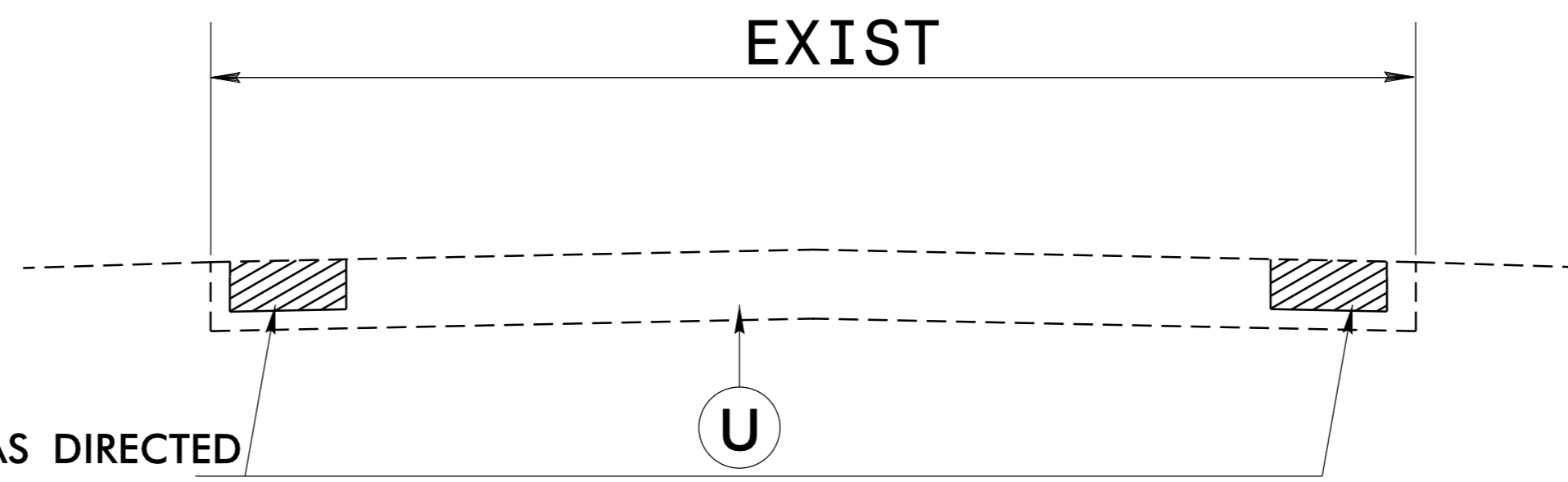
TYPICAL SECTION NO. 1



TYPICAL SECTION NO. 2



TYPICAL SECTION NO. 3



2.5" MILL AND FILL AS DIRECTED BY ENGINEER (SEE DETAIL)

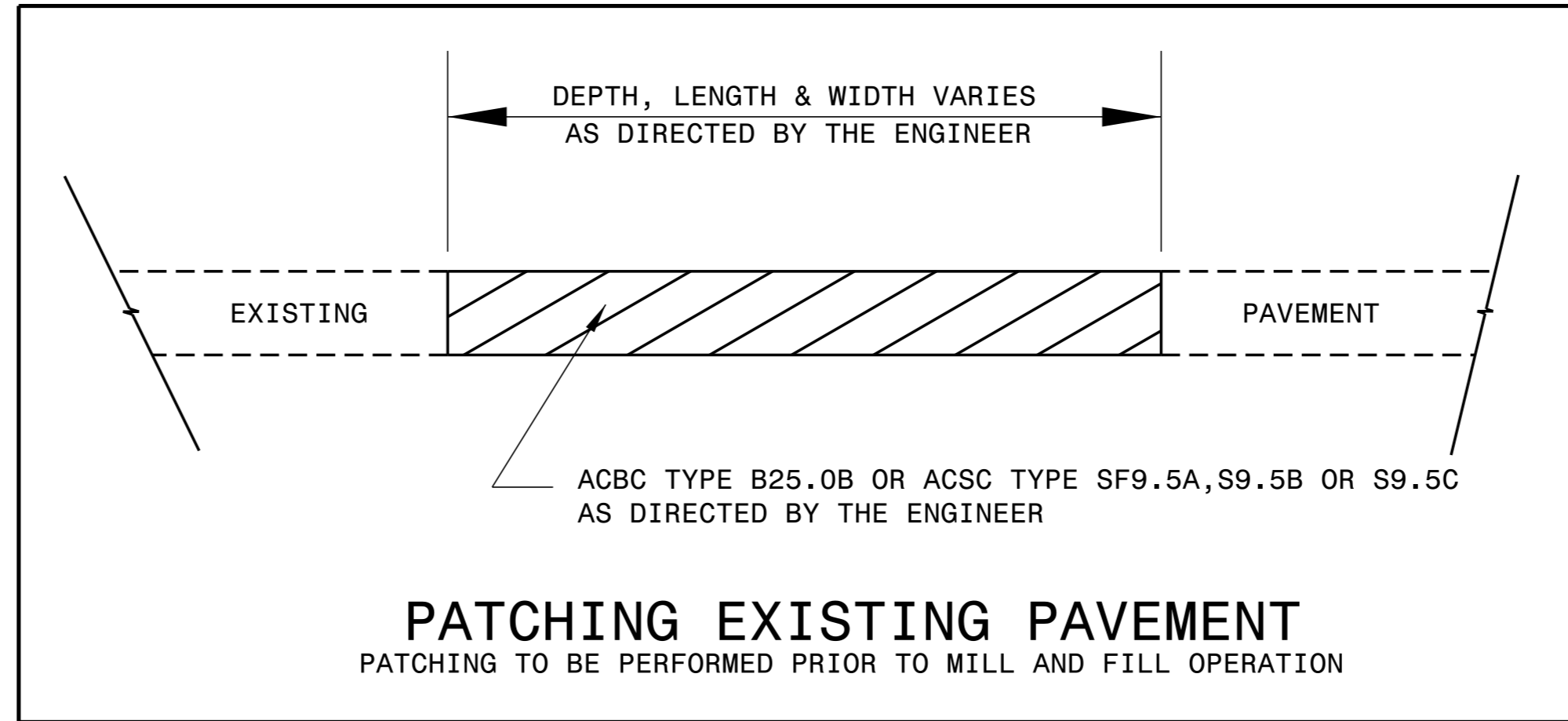
TYPICAL SECTION NO. 4

NOTES:

- UPON COMPLETION OF SURFACE MILLING, TEMPORARY PAINT MARKINGS SHALL BE INSTALLED WITHIN TIME FRAME ESTABLISHED IN STD. SPECS.
- CONTRACTOR SHALL BEGIN WIDENING AND/OR MILL & FILL OPERATION WITHIN 3 DAYS OF COMPLETING SURFACE MILLING.
- CONTRACTOR SHALL BEGIN PLACEMENT OF FINAL SURFACE WITHIN 3 DAYS OF COMPLETING WIDENING AND/OR MILL & FILL OPERATION.

PAVEMENT SCHEDULE

C1	1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
D1	2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
T1	SHOULDER RECONSTRUCTION WITH AGGREGATE SHOULDER BORROW
U	EXISTING ASPHALT PAVEMENT
V1	0" - 1½" MILLING
V2	1½" MILLING
V3	¾" MILLING (PROFILE MILLING)
V4	2½" MILLING
V5	4" MILLING

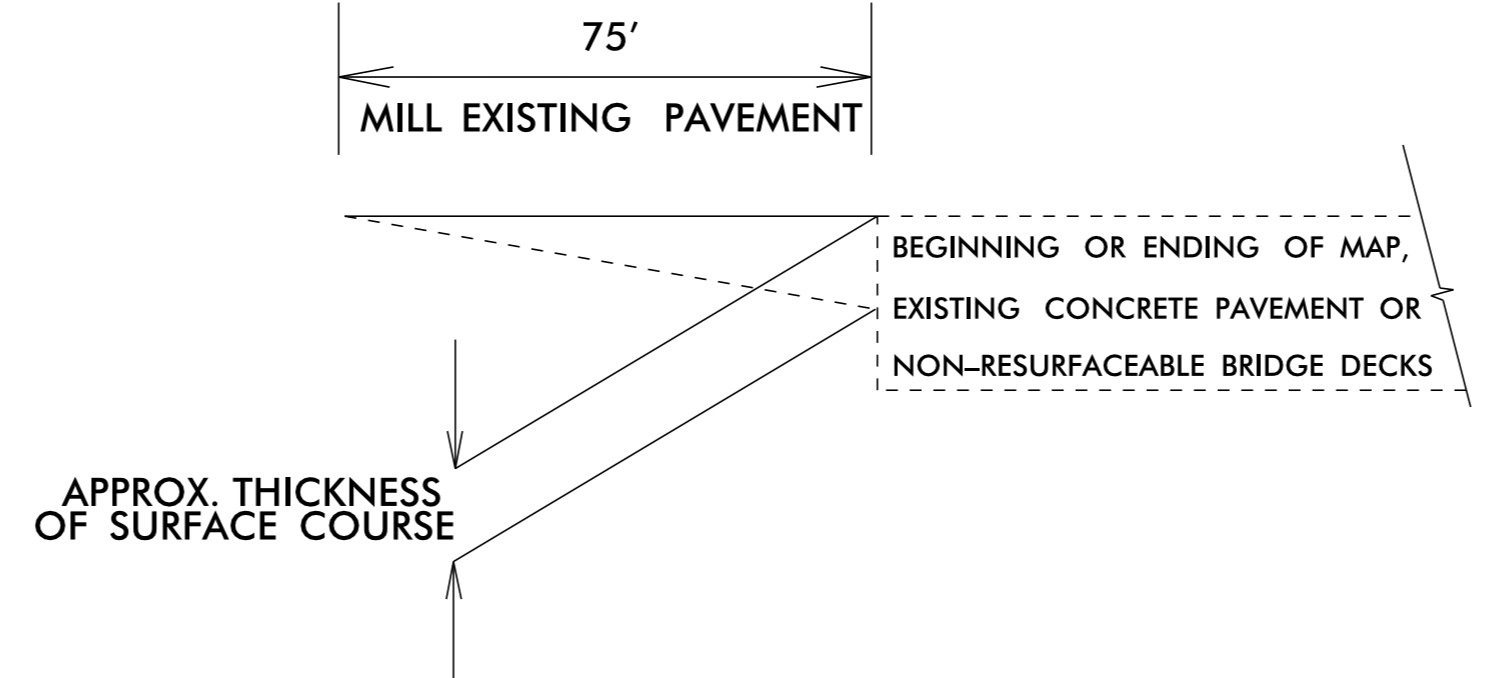


NOTES TO CONTRACTOR

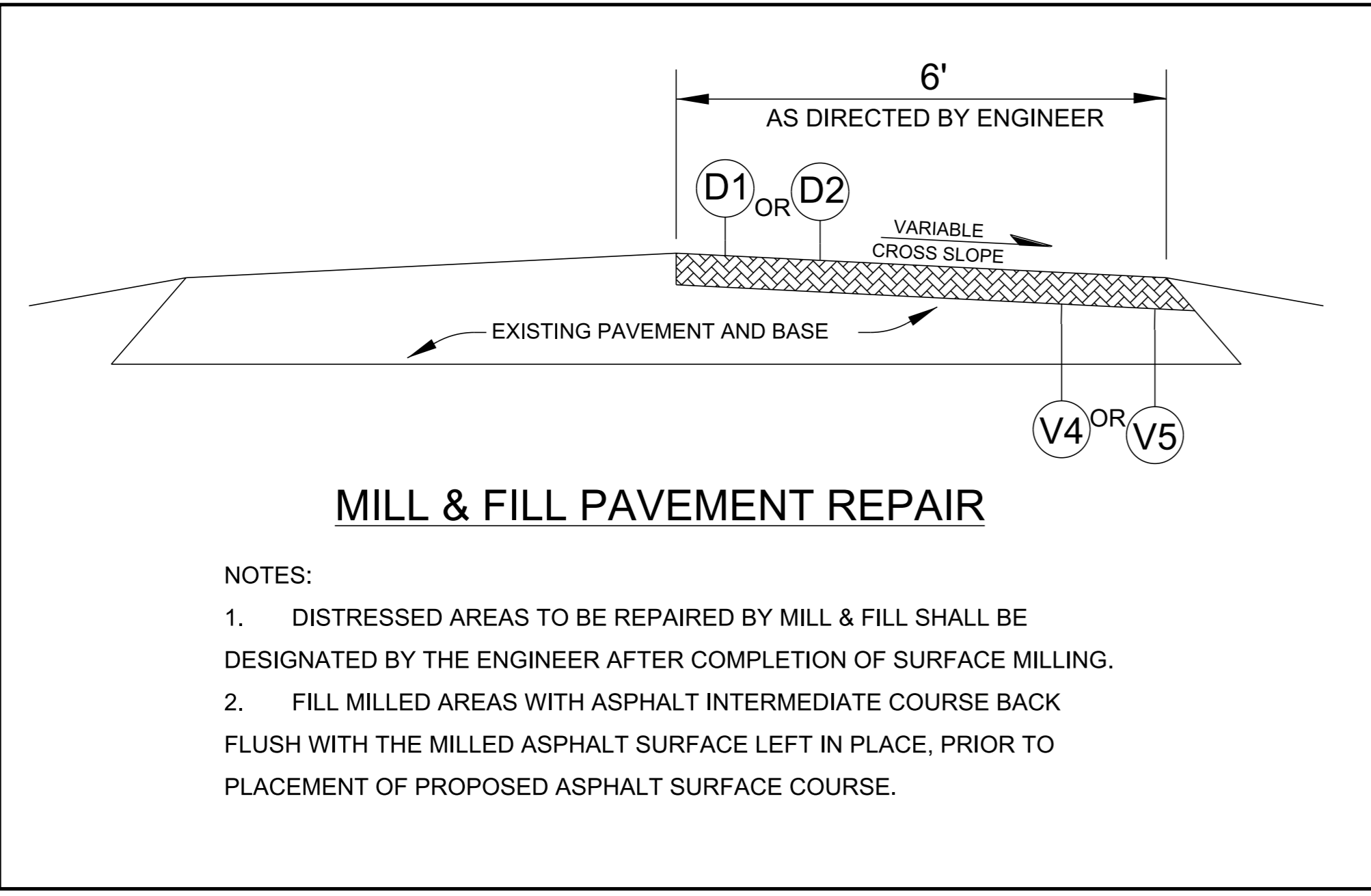
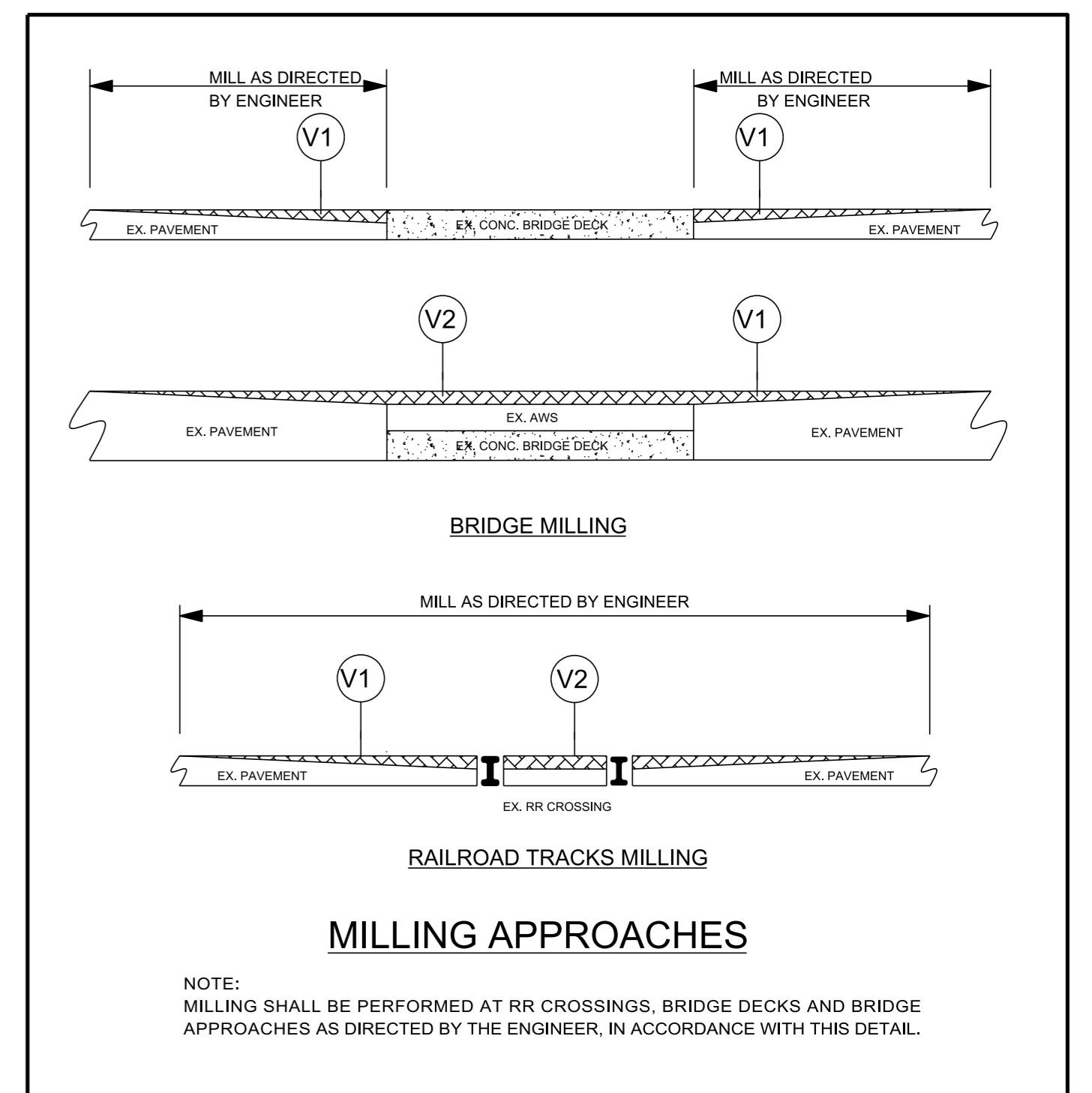
FOR SURFACE MIXES OVER 1" IN THICKNESS, MILL THE EXISTING PAVEMENT IN ACCORDANCE WITH THE FOLLOWING SKETCH AS DIRECTED BY THE ENGINEER.

LOCATIONS SHALL INCLUDE TIES INTO EXISTING CONCRETE PAVEMENT, AT BRIDGE APPROACHES WHERE THE BRIDGE WILL NOT BE RESURFACED, AND AT THE BEGINNING AND ENDING POINT OF EACH RESURFACING MAP.

PERFORM THE WORK IN ACCORDANCE WITH SECTION 607 OF THE JANUARY 2012 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES. RESURFACING WILL BE ACCOMPLISHED AT THE SAME TIME AS THE MILLING OPERATION.

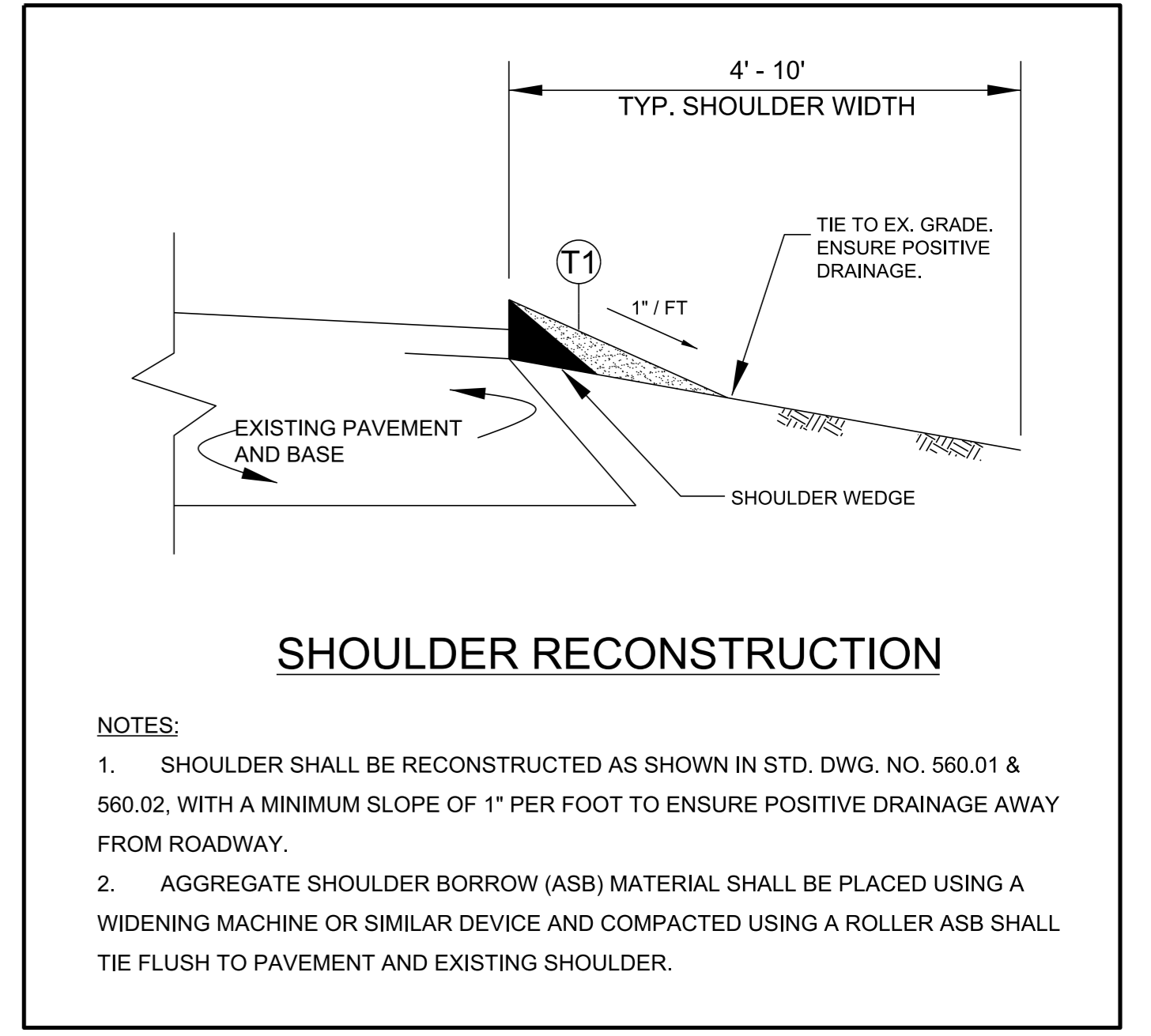


MILLING AT PAVEMENT TIE-INS DETAIL



NOTES:

1. DISTRESSED AREAS TO BE REPAIRED BY MILL & FILL SHALL BE DESIGNATED BY THE ENGINEER AFTER COMPLETION OF SURFACE MILLING.
2. FILL MILLED AREAS WITH ASPHALT INTERMEDIATE COURSE BACK FLUSH WITH THE MILLED ASPHALT SURFACE LEFT IN PLACE, PRIOR TO PLACEMENT OF PROPOSED ASPHALT SURFACE COURSE.

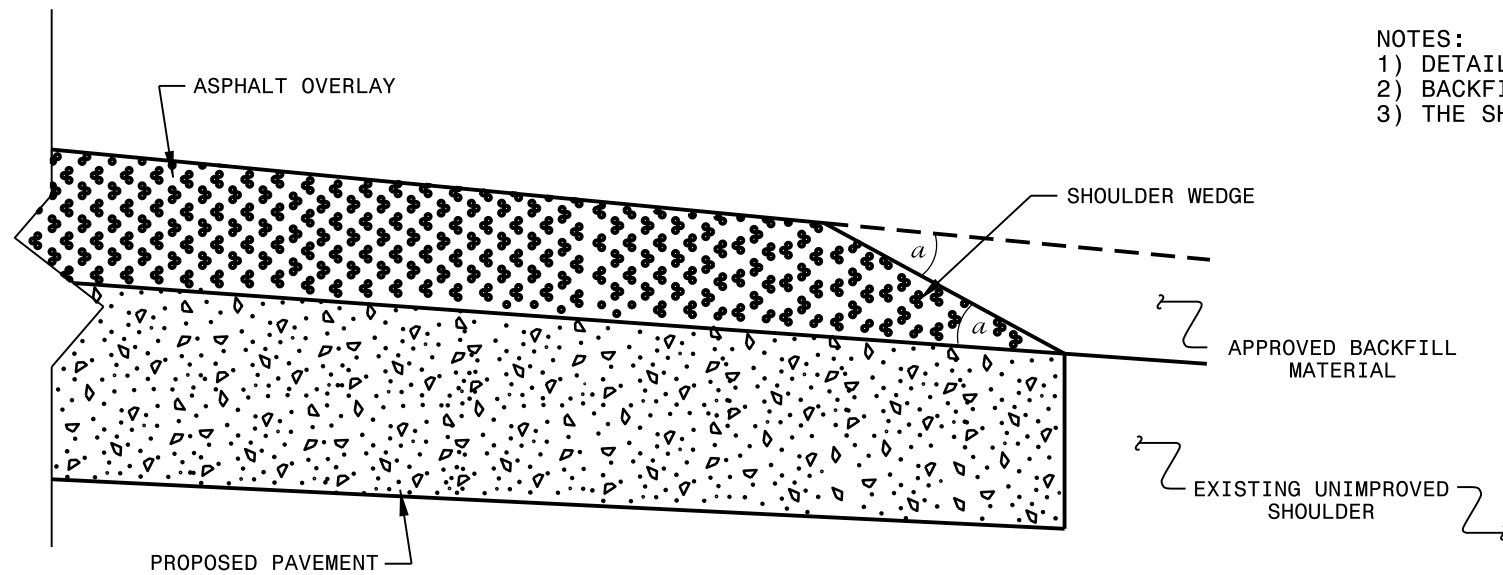


NOTES:

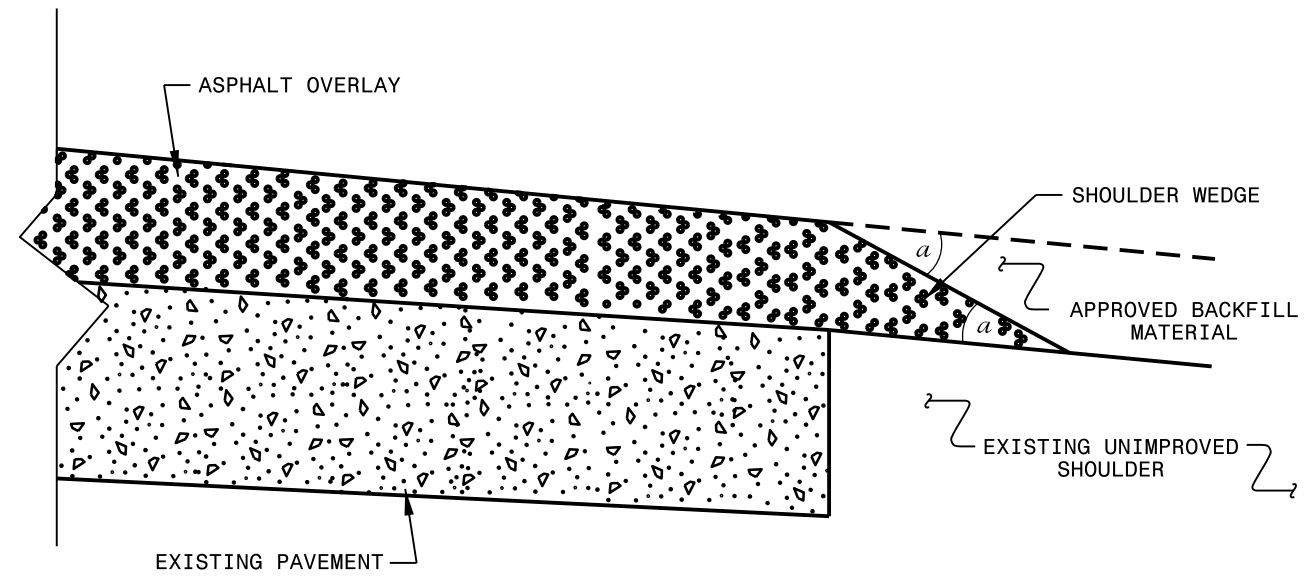
1. SHOULDER SHALL BE RECONSTRUCTED AS SHOWN IN STD. DWG. NO. 560.01 & 560.02, WITH A MINIMUM SLOPE OF 1" PER FOOT TO ENSURE POSITIVE DRAINAGE AWAY FROM ROADWAY.
2. AGGREGATE SHOULDER BORROW (ASB) MATERIAL SHALL BE PLACED USING A WIDENING MACHINE OR SIMILAR DEVICE AND COMPACTED USING A ROLLER ASB SHALL TIE FLUSH TO PAVEMENT AND EXISTING SHOULDER.

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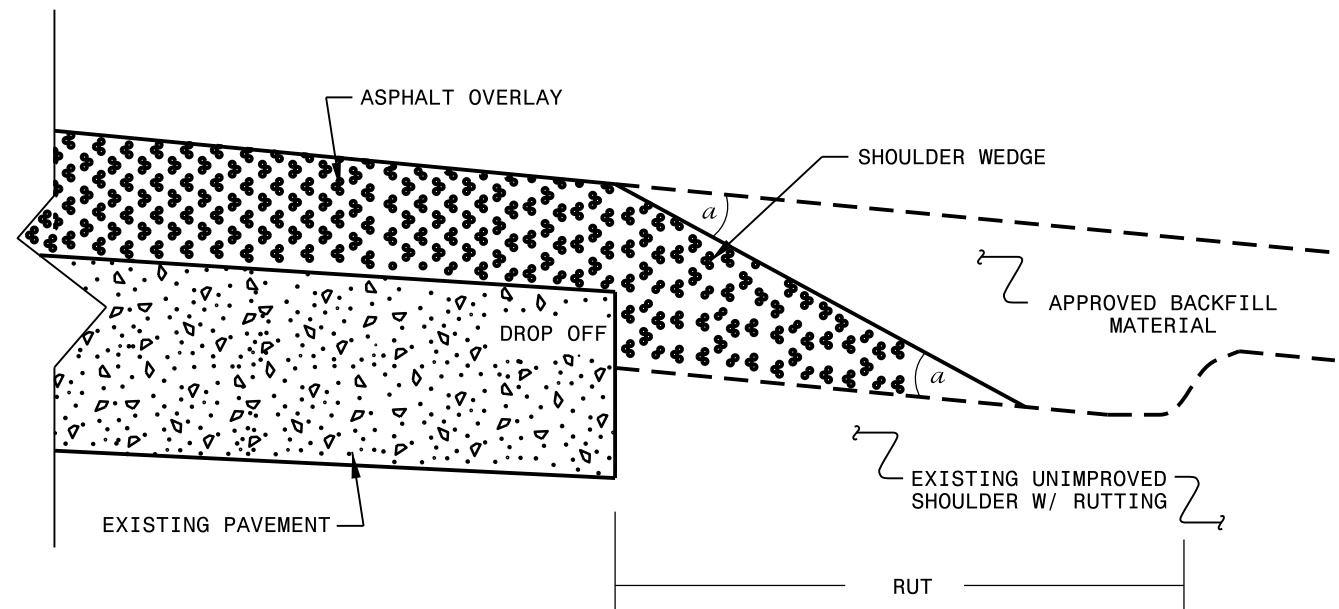
- NOTES:
- 1) DETAIL DOES NOT APPLY TO OGAFc AND ULTRA-THIN BONDED WEARING COURSE.
 - 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
 - 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS AND SIDE STREETS.



SHOULDER WEDGE DETAIL
(Resurfacing Projects w/ Widening or with Existing Paved Shoulder having no dropoffs)



SHOULDER WEDGE DETAIL
(Resurfacing Projects w/ NO Widening)



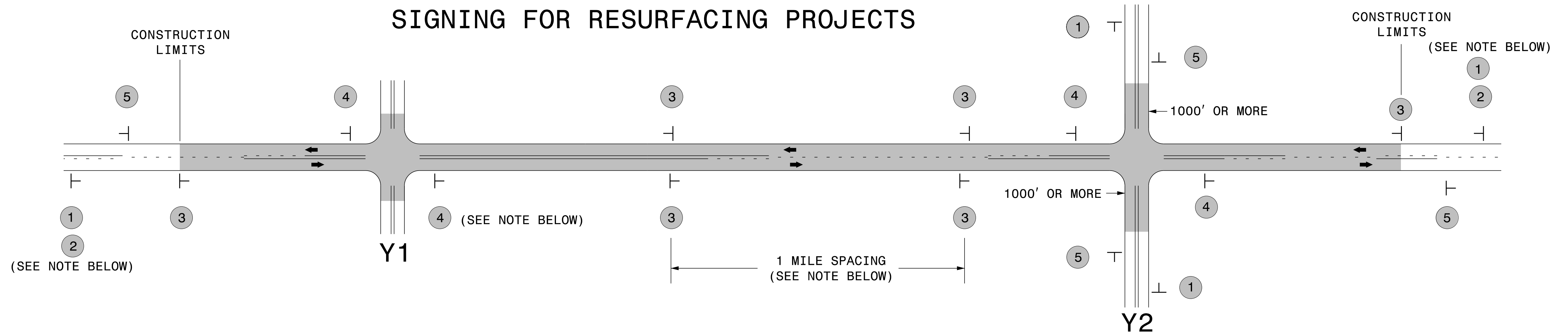
SHOULDER WEDGE DETAIL
(Resurfacing Adjacent to Rutted Shoulder)

- SHOULDER WEDGE ANGLE = 30°

CONTRACT STANDARDS AND DEVELOPMENT UNIT			
Office 919-707-6950		FAX 919-250-4119	
SHOULDER WEDGE DETAILS			
ORIGINAL BY: T.SPELL	DATE: 7-19-11		
MODIFIED BY:	DATE: 10/16/12		
CHECKED BY:	DATE:		
FILE SPEC.: susr/details/stand/shoulderwedgedetail.dgn			

SYSTEM: 06/08/11
 USER: T.SPELL
 FILE: susr/details/stand/shoulderwedgedetail.dgn

SIGNING FOR RESURFACING PROJECTS



LEGEND	
T	STATIONARY SIGN
←	DIRECTION OF TRAFFIC FLOW

MAINLINE (-L-) SIGNING

-Y- LINE SIGNING

SIGNING NOTES AND PLACEMENT PER DIRECTION	MAINLINE (-L-) SIGNING		-Y- LINE SIGNING	
	1	 W20-1 48" X 48"	PLACE 1000' PRIOR TO BEGINNING OF CONSTRUCTION LIMITS. ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000' ALONG -Y- LINE.	<p>NO REQUIRED STATIONARY SIGNING FOR THE FOLLOWING -Y- LINE CONDITIONS:</p> <ol style="list-style-type: none"> 1) LESS THAN 1000' OF RESURFACING ALONG -Y- LINE 2) SUBDIVISION ROADS 3) DEAD END ROADS <p>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.</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> W20-1 48" X 48" </div> <div style="text-align: center;"> W20-7 A 48" X 48" </div> </div> <p>PLACED 500' IN ADVANCE OF FLAGGER. PLACED 250' IN ADVANCE OF FLAGGER.</p>
	2	 W7-3aP 24" X 18"	#2 SIGN ONLY USED WHEN RESURFACING LIMITS ARE 2 OR MORE MILES IN LENGTH. ROUND UP TO NEXT WHOLE NUMBER. (NO FRACTIONAL OR DECIMAL NUMBERS)	
	3	 SP 13107 48" X 48"	PLACE INITIALLY AT THE CONSTRUCTION LIMITS AND SPACED 1 MILE APART THEREAFTER. IF NO -Y- LINES EXIST, PLACE 2ND SET 1/2 MILE FROM THE CONSTRUCTION LIMITS AND THEN SPACE 1 MILE THEREAFTER.	
	4	 SP 13106 48" X 48"	THESE ARE FOR -Y- LINES THAT ARE "THROUGH" ROADWAYS. DEAD END AND SUBDIVISION ROADS ARE NOT "THROUGH" ROADWAYS. INSTALL 500' +/- FROM EACH -Y- LINE APPROACH AS SHOWN ABOVE. FOR MULTIPLE -Y- LINES THAT 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 INSTALL WHEN -Y- LINES ARE WITHIN 0.5 MILES FROM "END ROAD WORK" SIGN.	
5	 G20-2 A 48" X 24"	PLACE 500' FOLLOWING THE END OF CONSTRUCTION LIMITS.		

3/19/2015
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 User:rmgarrrett

**RESURFACING
ADVANCE WARNING SIGNS
FOR
RURAL AND SUBURBAN
2 LANE ROADWAYS**

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 - TWO WAY ROADWAY - 55 MPH		
ROADWAY WIDTH	LANE WIDTH	SHOULDER WIDTH
18'	9' *	0'
20'	10' *	0'
22'	10'	1'
24'	10'	2'
26'	11'	2'
28'	12'	2'
32'	12'	4'

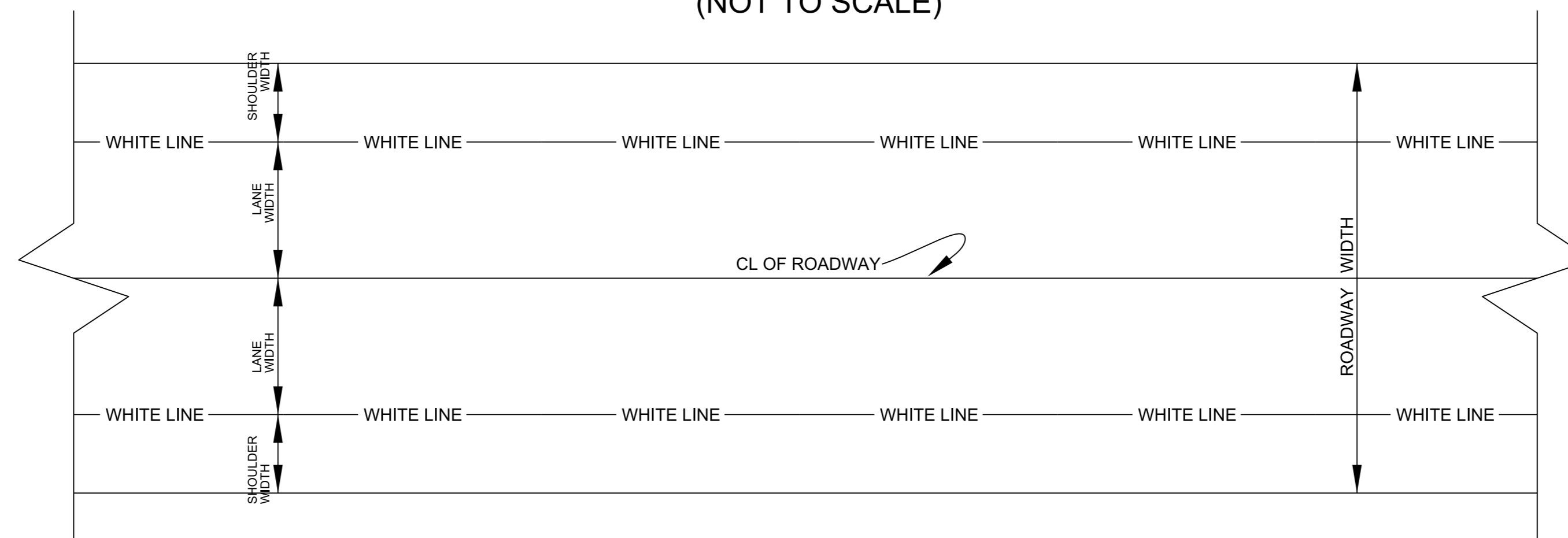
* May vary due to pavement width

TWO LANE - TWO WAY ROADWAY		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 pavement width

SCHEMATIC OF ROADWAY

(NOT TO SCALE)



SUMMARY OF QUANTITIES

PROJECT NO.	SHEET NO.	TOTAL NO.
2021CPT.06.08.10241.1, etc.		

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH	WIDTH	1220000000-E	1245000000-E	1260000000-E	1297000000-E				
												INCIDENTAL STONE BASE	SHOULDER RECONSTRUCTION	AGGREGATE SHOULDER BORROW	0.75" MILLING	2½" MILLING	1½" MILLING	4" MILLING	
												TONS	SMI	TON	SY	SY	SY	SY	
2021CPT.06.08.10241.1	Columbus	1	NC 904	FROM SR 1305 TO BRIDGE 44	1	2	2WU	NO	NO	7.11	25	71				104,280		807	1,936
TOTAL FOR MAP NO. 1										7.11		71				104,280		807	1,936
TOTAL FOR PROJ NO. 2021CPT.06.08.10241.1										7.11		71				104,280		807	1,936
													107,023						
2021CPT.06.08.20241.1	Columbus	2	SR 1103	FROM BEGIN PVT. TO SR 1108	2	2	2WU	NO	NO	2.35	21		4.70	784				226	
TOTAL FOR MAP NO. 2										2.35			4.70	784				226	
2021CPT.06.08.20241.1	Columbus	3	SR 1117	FROM SR 1005 TO SR 1143	3	2	2WU	NO	NO	3.71	22		7.40	1,237					
TOTAL FOR MAP NO. 3										3.71			7.40	1,237					
TOTAL FOR PROJ NO. 2021CPT.06.08.20241.1										6.06			12.10	2,021				226	
													226						
2021CPT.06.08.10242.1	Columbus	4	NC 410	FROM US 74 TO BLADEN CL	4	2	2WU	NO	NO	7.19	6							32,560	
TOTAL FOR MAP NO. 4										7.19								32,560	
TOTAL FOR PROJ NO. 2021CPT.06.08.10242.1										7.19								32,560	
													32,560						
GRAND TOTAL										20.36		71	12.10	2,021	104,280	32,560	1,033	1,936	
													139,809						

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH	WIDTH	1330000000-E	1503000000-E	1519000000-E	1520000000-E	1523000000-E	1575000000-E	1704000000-E
												INCIDENTAL MILLING	INTERMEDIATE COURSE, 119.0C	SURFACE COURSE, S9.5B	LEVELING COURSE, S9.5B	SURFACE COURSE, S9.5C	ASPHALT BINDER FOR PLANT MIX	PATCHING EXISTING PAVEMENT
												SY	TONS	TONS	TONS	TONS	TONS	TONS
2021CPT.06.08.10241.1	Columbus	1	NC 904	FROM SR 1305 TO BRIDGE 44	1	2	2WU	NO	NO	7.11	25	6,451	441			9,238	575	36
TOTAL FOR MAP NO. 1										7.11		6,451	441			9,238	575	36
TOTAL FOR PROJ NO. 2021CPT.06.08.10241.1										7.11		6,451	441			9,238	575	36
2021CPT.06.08.20241.1	Columbus	2	SR 1103	FROM BEGIN PVT. TO SR 1108	2	2	2WU	NO	NO	2.35	21	1,396		2,463	2,389		325	12
TOTAL FOR MAP NO. 2										2.35		1,396		2,463	2,389		325	12
2021CPT.06.08.20241.1	Columbus	3	SR 1117	FROM SR 1005 TO SR 1143	3	2	2WU	NO	NO	3.71	22	556		4,000	107		275	150
TOTAL FOR MAP NO. 3										3.71		556		4,000	107		275	150
TOTAL FOR PROJ NO. 2021CPT.06.08.20241.1										6.06		1,952		6,463	2,496		600	162
2021CPT.06.08.10242.1	Columbus	4	NC 410	FROM US 74 TO BLADEN CL	4	2	2WU	NO	NO	7.19	6		4,640				223	
TOTAL FOR MAP NO. 4										7.19			4,640				223	
TOTAL FOR PROJ NO. 2021CPT.06.08.10242.1										7.19			4,640				223	
GRAND TOTAL										20.36		8,403	5,081	6,463	2,496	9,238	1,398	198

THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO.	SHEET NO.	TOTAL NO.
2021CPT.06.08.10241.1, etc.		

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	4413000000-E		4457000000-N	4685000000-E		4695000000-E	4725000000-E		
								WORK ZONE ADVANCE/GENERAL WARNING SIGNING	TEMPORARY TRAFFIC CONTROL	4" X 90 M WHITE THERMO	4" X 90 M YELLOW THERMO	8" X 90 M YELLOW THERMO	THERMO LT ARROW 90 M	THERMO RT ARROW 90 M		
								SF	LS	LF	LF	LF	EA	EA		
								MI	FT							
2021CPT.06.08.10241.1	Columbus	1	NC 904	FROM SR 1305 TO BRIDGE 44	1	2	2WU	7.11	25	796	1	75,330	65,818	575	2	2
TOTAL FOR MAP NO. 1								7.11		796	1	75,330	65,818	575	2	2
TOTAL FOR PROJ NO. 2021CPT.06.08.10241.1								7.11		796	1	75,330	65,818	575	2	2
											141,148		4			
2021CPT.06.08.20241.1	Columbus	2	SR 1103	FROM BEGIN PVT. TO SR 1108	2	2	2WU	2.35	21	263						
TOTAL FOR MAP NO. 2								2.35		263						
2021CPT.06.08.20241.1	Columbus	3	SR 1117	FROM SR 1005 TO SR 1143	3	2	2WU	3.71	22	416		40,128	34,108			
TOTAL FOR MAP NO. 3								3.71		416		40,128	34,108			
TOTAL FOR PROJ NO. 2021CPT.06.08.20241.1								6.06		679		40,128	34,108			
											74,236					
2021CPT.06.08.10242.1	Columbus	4	NC 410	FROM US 74 TO BLADEN CL	4	2	2WU	7.19	6	805						
TOTAL FOR MAP NO. 4								7.19		805						
TOTAL FOR PROJ NO. 2021CPT.06.08.10242.1								7.19		805						
GRAND TOTAL								20.36		2,280	1	115,458	99,926	575	2	2
											215,384		4			

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	4810000000-E		4820000000-E	4845000000-N	4900000000-N				
								4" WHITE PAINT	4" YELLOW PAINT	8" YELLOW PAINT	PAINT LT ARROW	PAINT RT ARROW	CRYSTAL & RED MARKERS	YELLOW & YELLOW MARKERS		
								LF	LF	LF	EA	EA	EA	EA		
								MI	FT							
2021CPT.06.08.10241.1	Columbus	1	NC 904	FROM SR 1305 TO BRIDGE 44	1	2	2WU	7.11	25	75,330	65,818	575	2	2	18	485
TOTAL FOR MAP NO. 1								7.11		75,330	65,818	575	2	2	18	485
TOTAL FOR PROJ NO. 2021CPT.06.08.10241.1								7.11		75,330	65,818	575	2	2	18	485
											141,148		4		503	
2021CPT.06.08.20241.1	Columbus	2	SR 1103	FROM BEGIN PVT. TO SR 1108	2	2	2WU	2.35	21	42,006	49,420					
TOTAL FOR MAP NO. 2								2.35		42,006	49,420					
2021CPT.06.08.20241.1	Columbus	3	SR 1117	FROM SR 1005 TO SR 1143	3	2	2WU	3.71	22							
TOTAL FOR MAP NO. 3								3.71								
TOTAL FOR PROJ NO. 2021CPT.06.08.20241.1								6.06		42,006	49,420					
											91,426					
2021CPT.06.08.10242.1	Columbus	4	NC 410	FROM US 74 TO BLADEN CL	4	2	2WU	7.19	6	97,680						
TOTAL FOR MAP NO. 4								7.19		97,680						
TOTAL FOR PROJ NO. 2021CPT.06.08.10242.1								7.19		97,680						
											97,680					
GRAND TOTAL								20.36		215,016	115,238	575	2	2	18	485
											330,254		4		503	