

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION 6

PLANS

Letting Date: September 15, 2021

CONTRACT ID: DF00289

TIP NO.: -----

FEDERAL AID NO.: STATE FUNDED

WBS ELEMENT NO.: 2022CPT.06.03.10241.1, 2022CPT.06.03.20241.1

ROUTE NO.: NC 904, NC 905 & SR 1005

LOCATION: VARIES

COUNTY: COLUMBUS

LENGTH OF PROJECT: 9.10 MILES

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

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COLUMBUS COUNTY
RESURFACING
FALL 2021

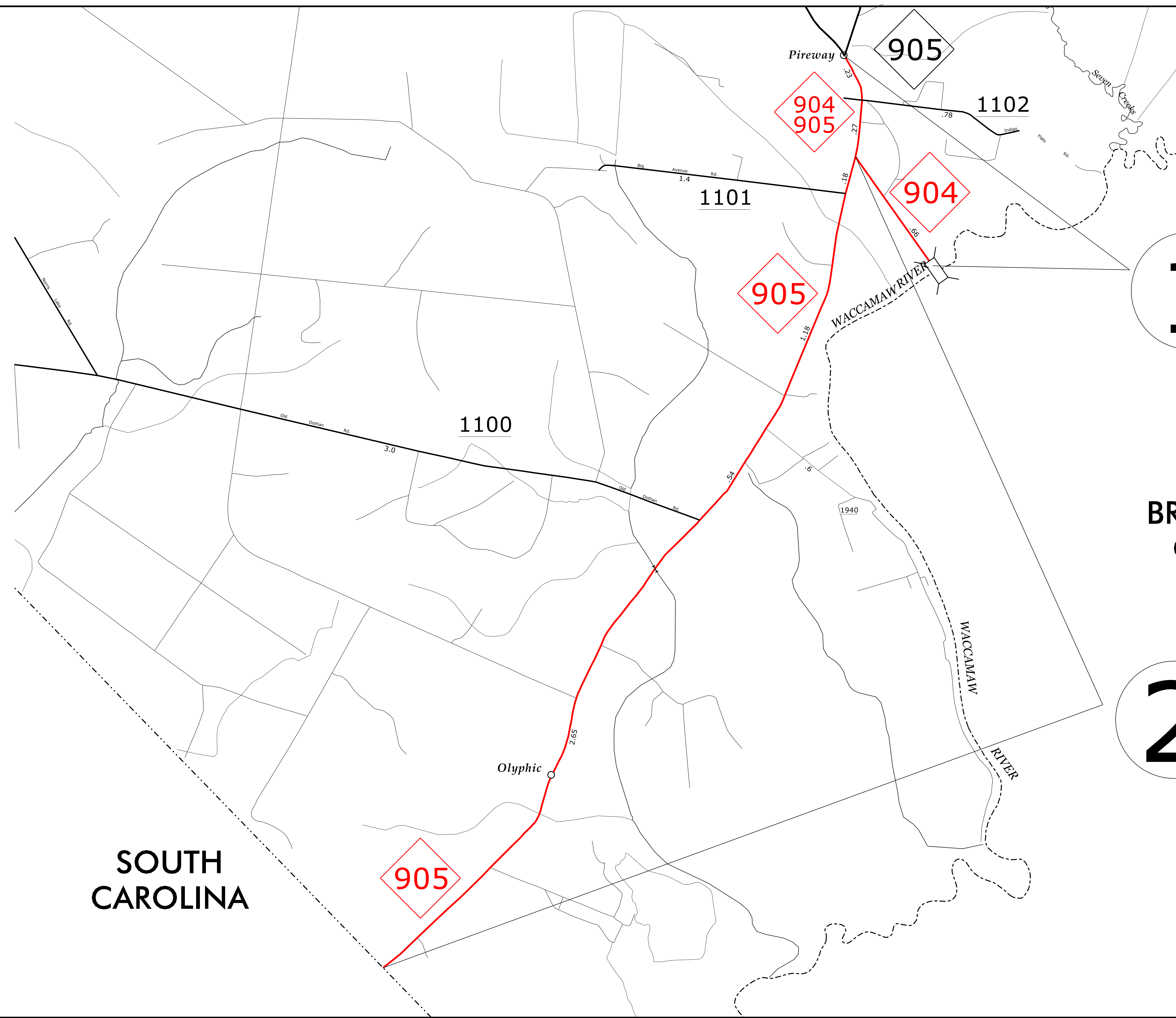


1

BRUNSWICK
COUNTY

2

SOUTH
CAROLINA



REVISIONS

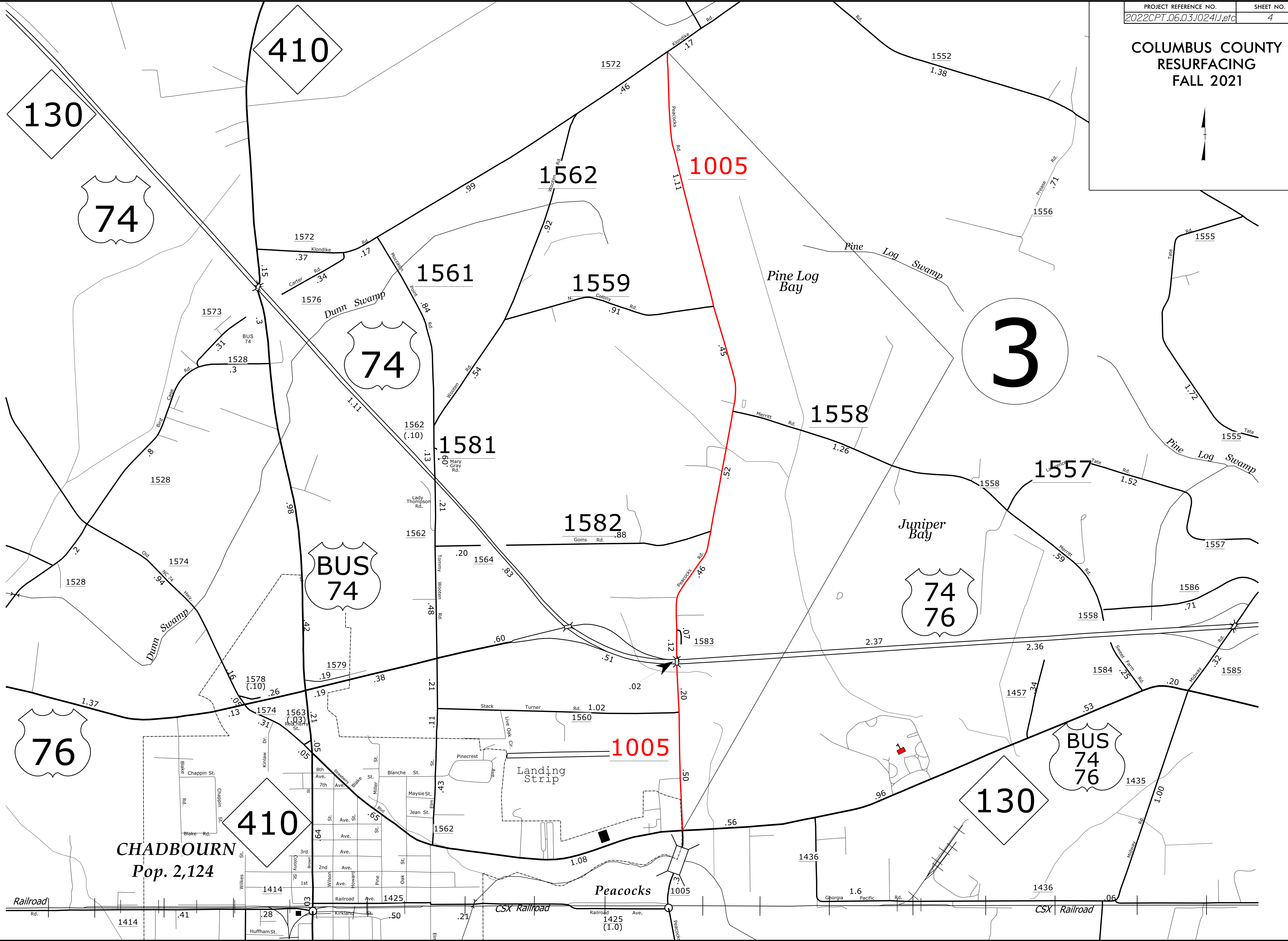
8/17/99

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COLUMBUS COUNTY RESURFACING FALL 2021



REVISIONS



8/17/99

10-AUG-2021 1:22
COLUMBUS COUNTY
GIS UNIT

130

74

410

74

1562

1005

3

1558

1557

BUS 74

74
76

76

CHADBOURN
Pop. 2,124

410

1005

130

BUS 74
76

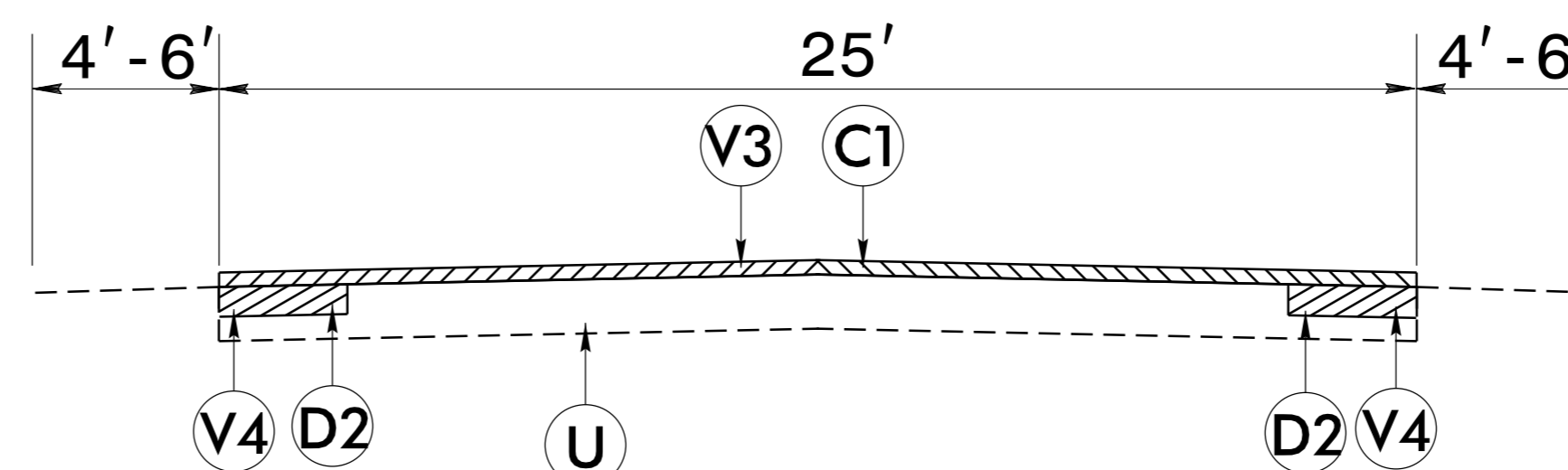
Railroad

CSX Railroad

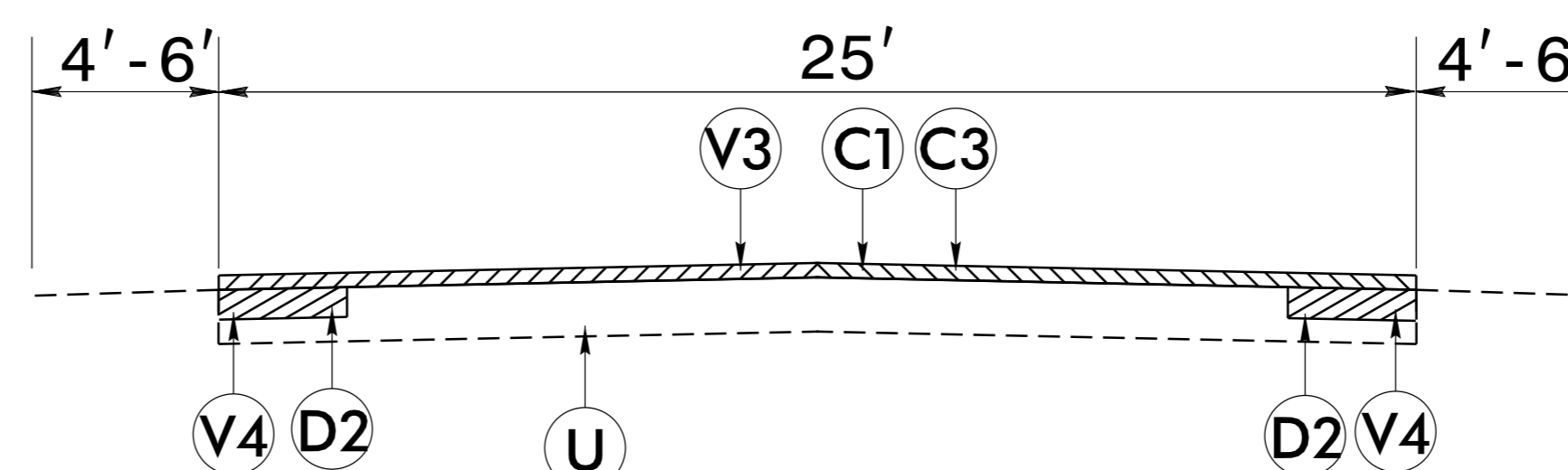
CSX Railroad

PAVEMENT SCHEDULE

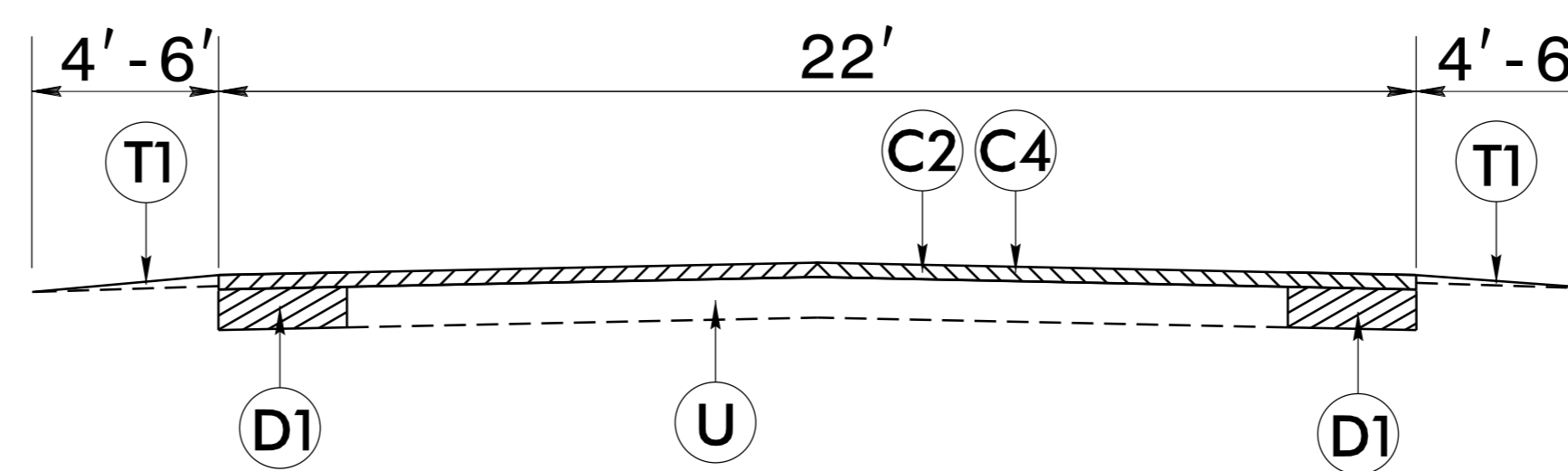
C1	1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
C4	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 2" IN DEPTH.
D1	4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 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
V4	2½" MILLING



TYPICAL SECTION NO. 1



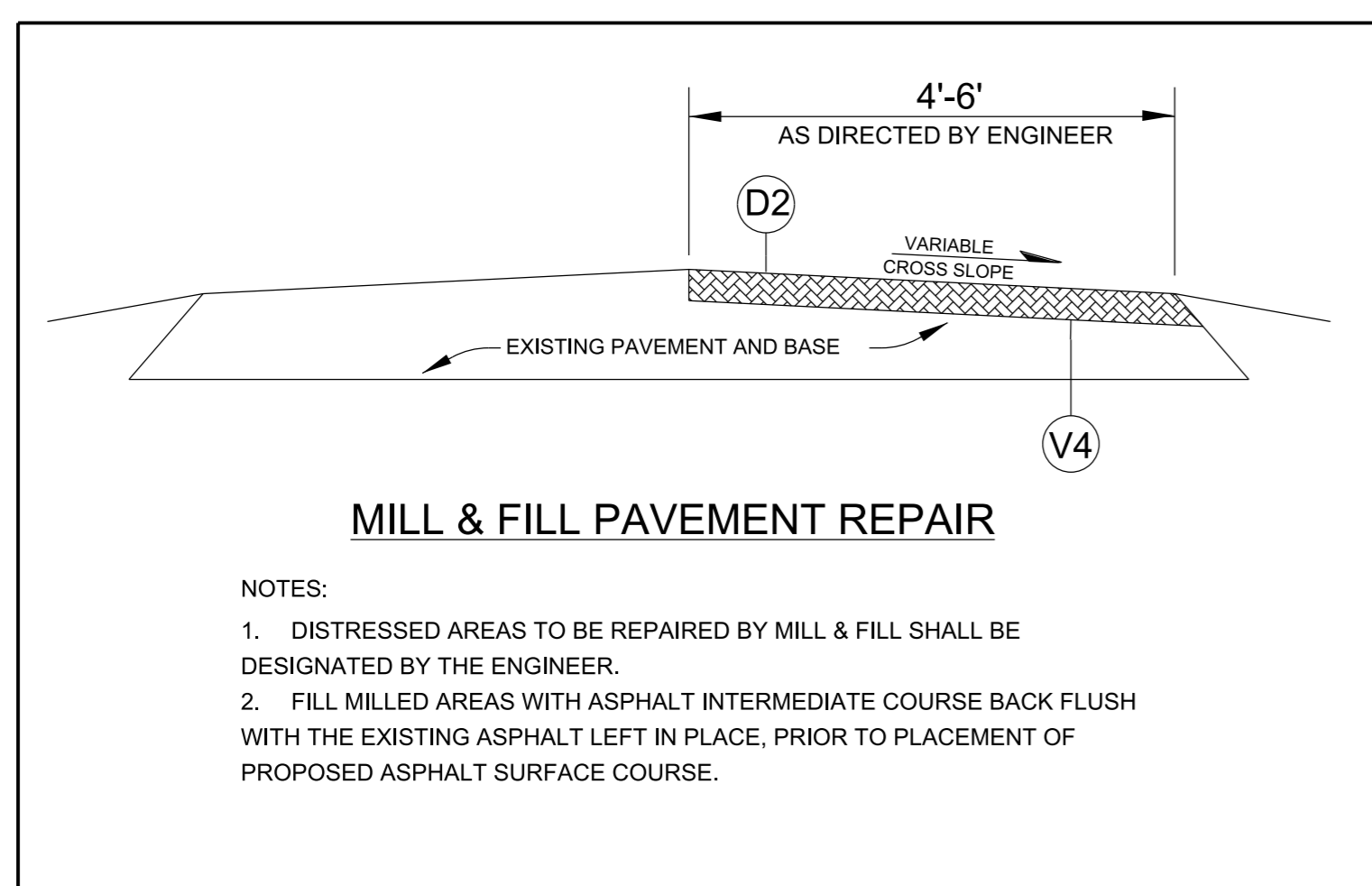
TYPICAL SECTION NO. 2



TYPICAL SECTION NO. 3

NOTES:

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



MILL & FILL PAVEMENT REPAIR

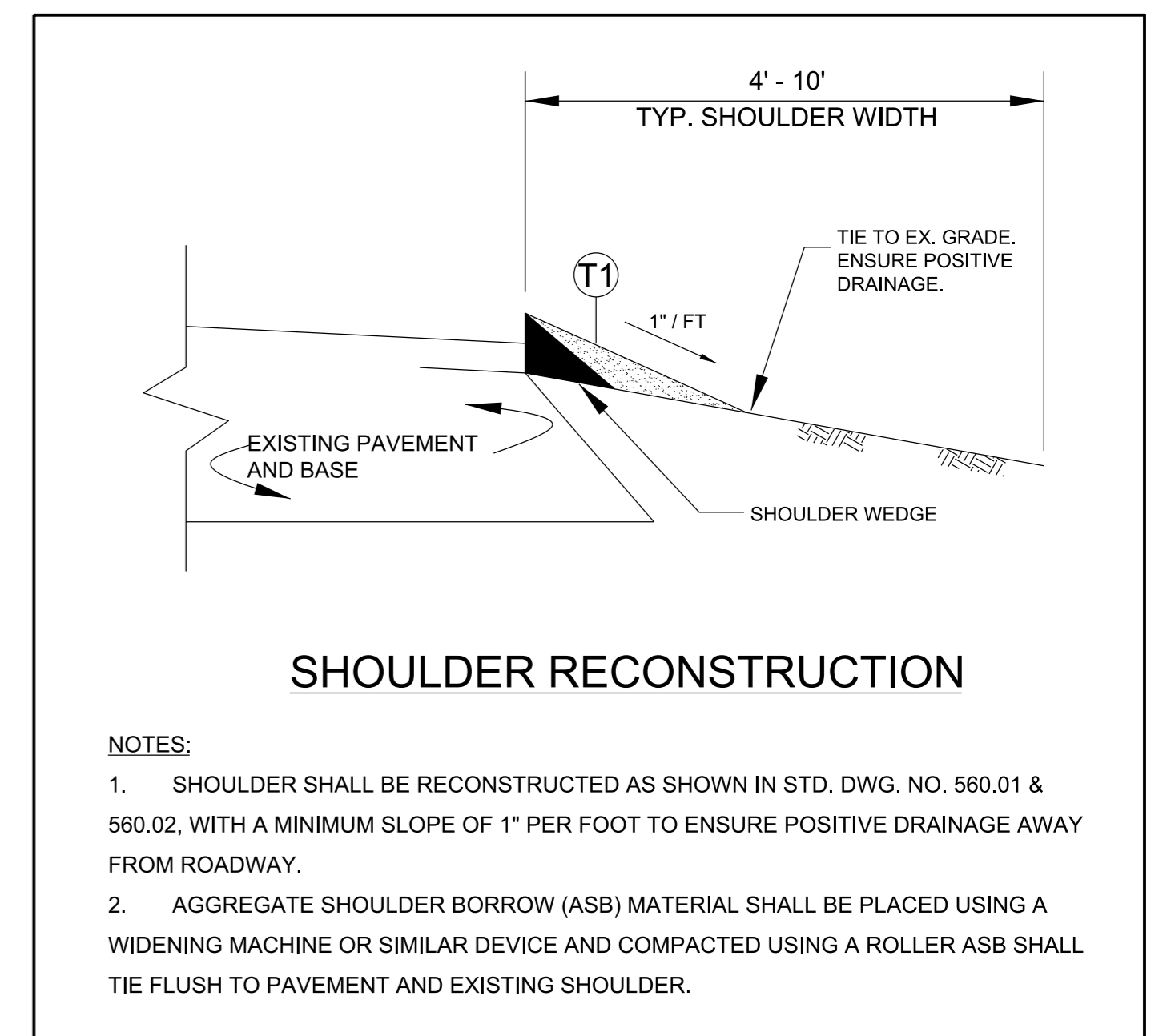
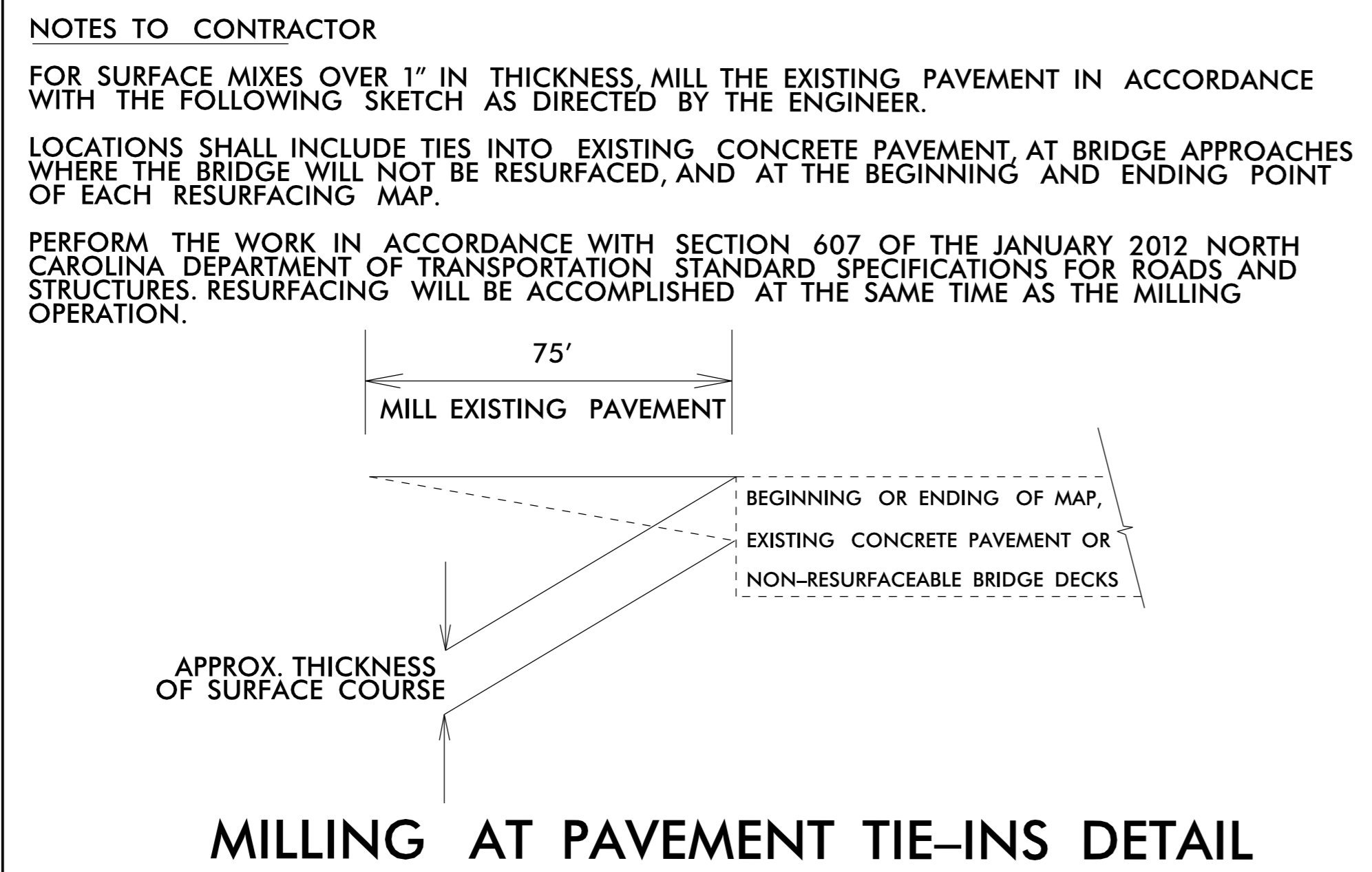
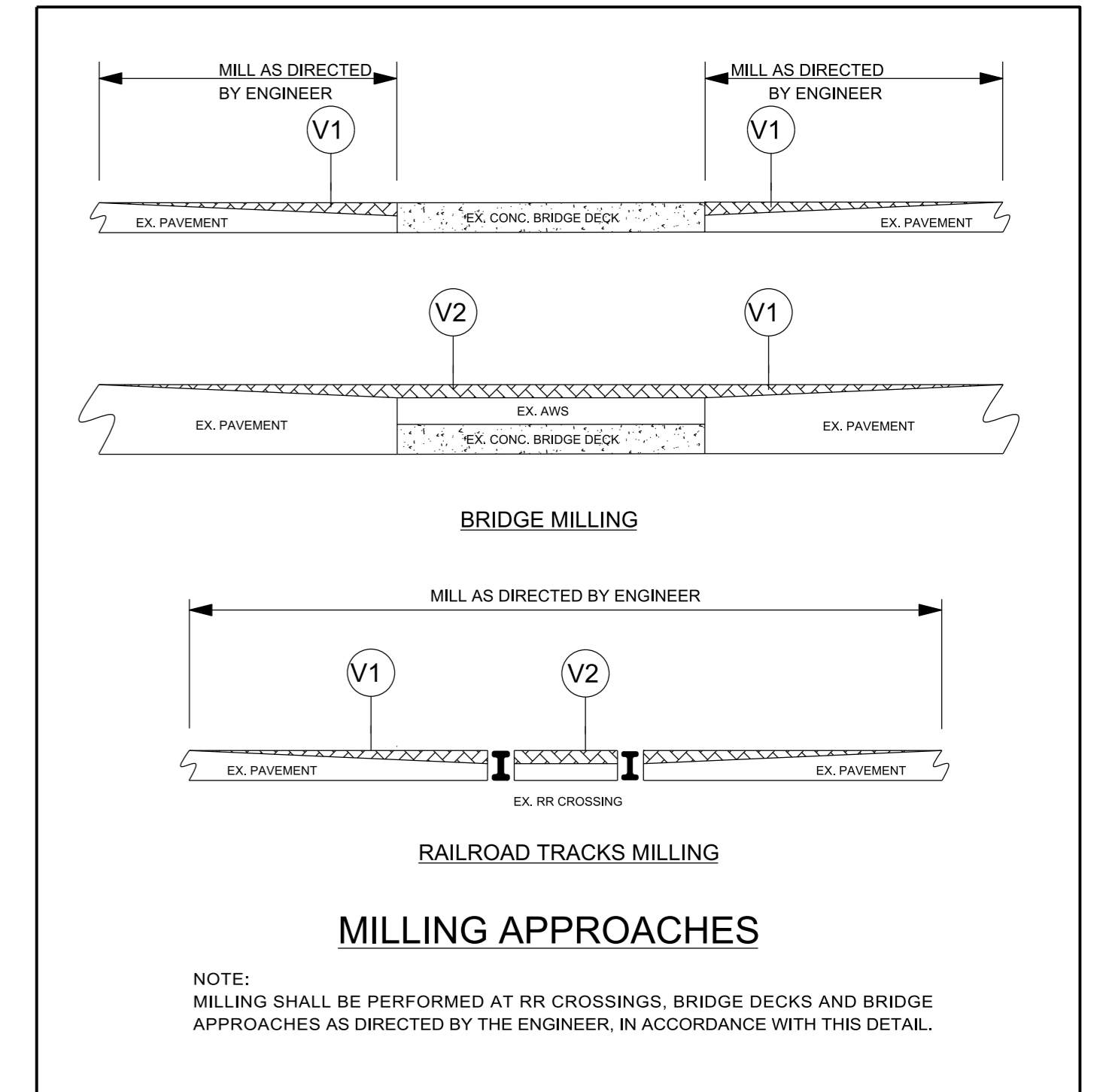
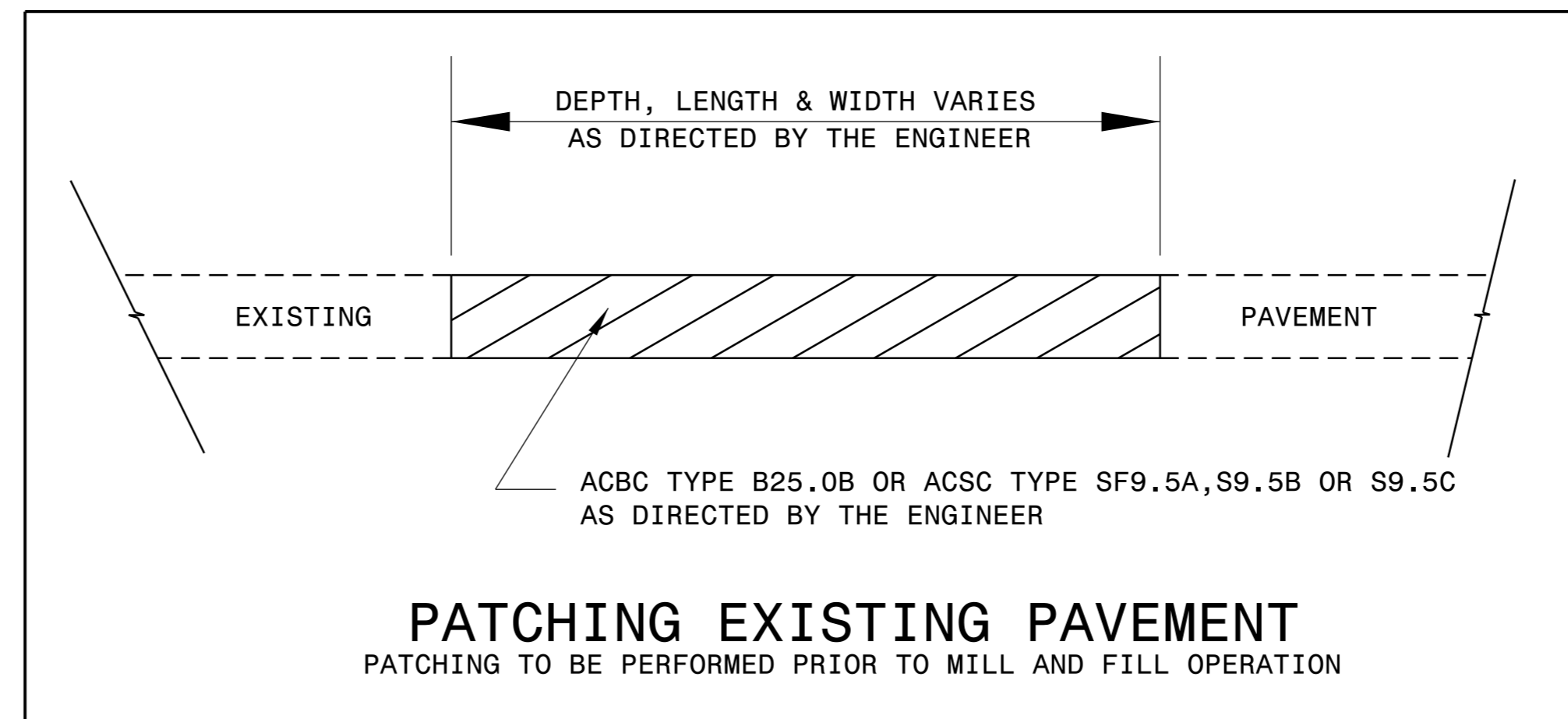
NOTES:

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

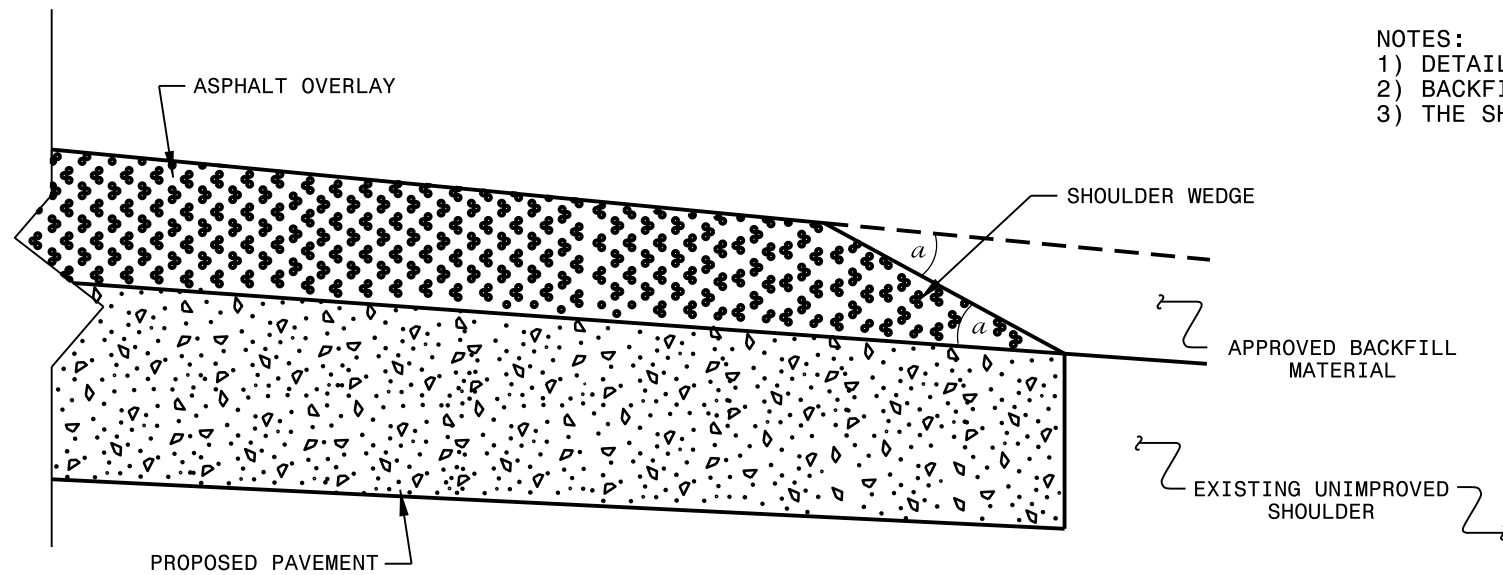
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10-AUG-2021 10:52 AM
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PAVEMENT SCHEDULE

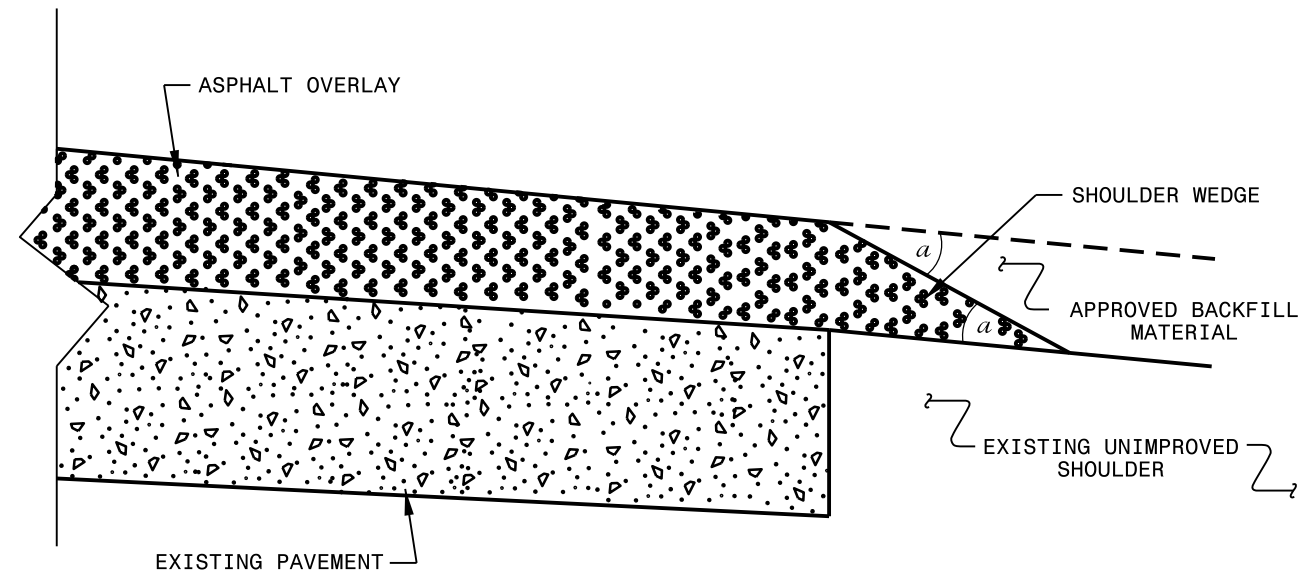
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C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
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T1	SHOULDER RECONSTRUCTION WITH AGGREGATE SHOULDER BORROW
U	EXISTING ASPHALT PAVEMENT
V1	0" - 1½" MILLING
V2	1½" MILLING
V3	¾" MILLING
V4	2½" MILLING



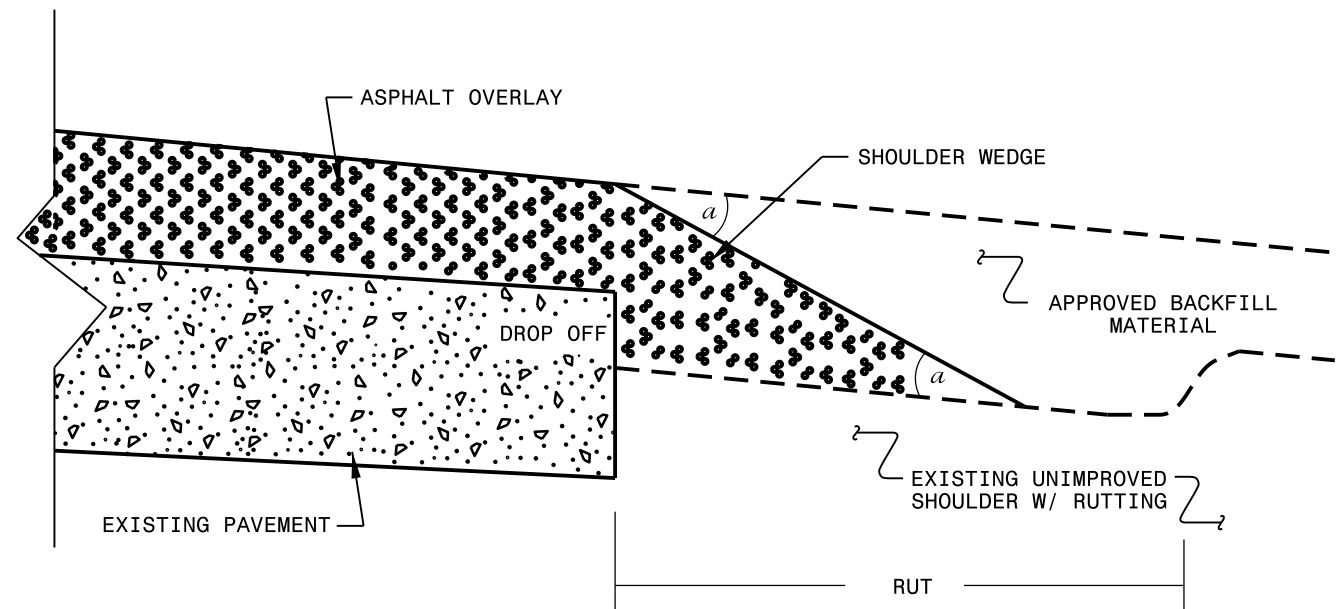
- NOTES:
- 1) DETAIL DOES NOT APPLY TO OGAFc AND ULTRA-THIN BONDED WEARING COURSE.
 - 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
 - 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS AND SIDE STREETS.



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	

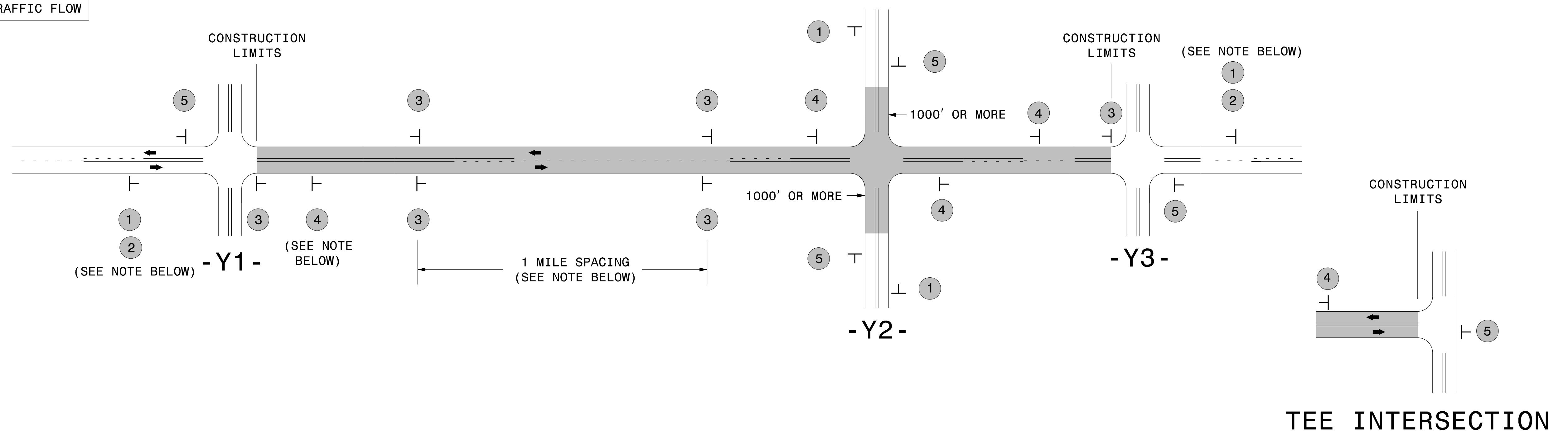
SYSTEMS DESIGN
USER NAME

SIGNING FOR RESURFACING PROJECTS

LEGEND

┆ STATIONARY SIGN

← DIRECTION OF TRAFFIC FLOW



MAINLINE (-L-) SIGNING

-Y- LINE SIGNING

SIGNING NOTES AND PLACEMENT PER DIRECTION	1	 <small>W20-1 48" X 48"</small>	PLACE 1000' PRIOR TO BEGINNING OF CONSTRUCTION LIMITS. ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000' ALONG -Y- LINE.
	2	 <small>W7-3aP 24" X 18"</small>	#2 SIGN ONLY USED WHEN CONSTRUCTION LIMITS ARE 2 OR MORE MILES IN LENGTH. ROUND UP TO NEXT WHOLE NUMBER. (NO FRACTIONAL OR DECIMAL NUMBERS)
	3	 <small>SP 13107 48" X 48"</small>	- PLACE INITIALLY AT THE CONSTRUCTION LIMITS AND SPACE 1 MILE APART THEREAFTER. - AT TEE INTERSECTIONS INSTALL INITIALLY 1/2 MILE FROM INTERSECTION AND SPACE 1 MILE APART THEREAFTER.
	4	 <small>SP 13106 48" X 48"</small>	- 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. - FOR TEE INTERSECTIONS, INSTALL WITHIN 500' +/- OF THE INTERSECTION ALONG -L- LINE.
	5	 <small>G20-2 A 48" X 24"</small>	PLACE 500' FOLLOWING THE END OF CONSTRUCTION LIMITS OR AS SHOWN WHEN WORK ENDS AT A 3-WAY TEE INTERSECTION.

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

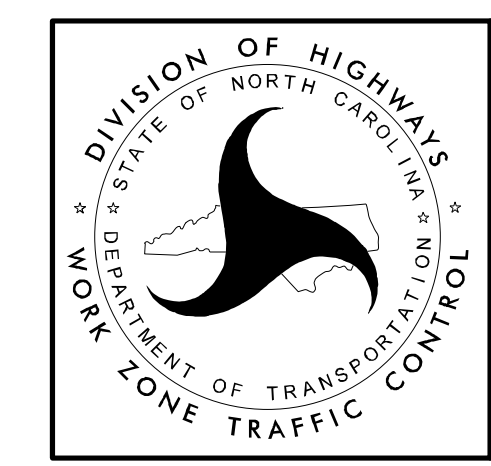
- 1) LESS THAN 1000' OF RESURFACING ALONG -Y- LINE
- 2) SUBDIVISION ROADS
- 3) DEAD END ROADS

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

 <small>W20-1 48" X 48"</small> PLACED 500' IN ADVANCE OF FLAGGER.	 <small>W20-7 A 48" X 48"</small> PLACED 250' IN ADVANCE OF FLAGGER.
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MAPS LESS THAN 2 MILES

FOR RESURFACING MAPS WITH CONSTRUCTION LIMITS LESS THAN 2 MILES IN LENGTH, NO STATIONARY SIGNS ARE REQUIRED. USE PORTABLE "ROAD UNDER CONSTRUCTION" OR "ROAD WORK AHEAD" SIGNS IN LIEU OF STATIONARY ADVANCE WARNINGS SIGNS.



ADVANCE WARNING SIGNS FOR RURAL AND SUBURBAN 2-LANE ROADWAY RESURFACING

5/15/2017 S:\TUXWZTC\Resurfacing\2L2W & AST Resurfacing Details\Resurfacing_AdvWarn_2Ln.dgn User:kadai

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'

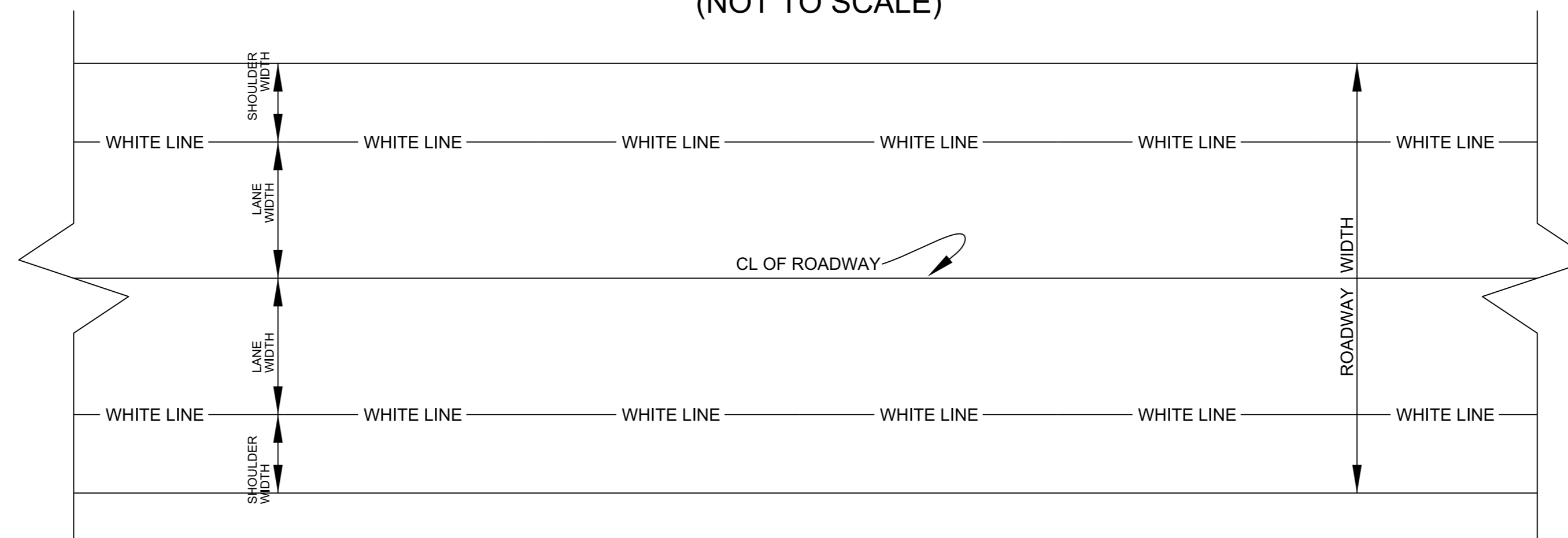
* May vary due to pavement width

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. 2022CPT.06.03.10241.1, 2022CPT.06.03.20241.1	SHEET NO.	TOTAL NO.
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PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	1220000000-E		1245000000-E	1260000000-E	1297000000-E		1330000000-E	1503000000-E	
										INCIDENTAL STONE BASE	SHOULDER RECONSTRUCTION	AGGREGATE SHOULDER BORROW	2.5" MILLING	0.75" MILLING	INCIDENTAL MILLING	INTERMEDIATE COURSE, I19.0C		
										MI	FT	TONS	SMI	TON	SY	SY	SY	TONS
2022CPT.06.03.10241.1	Columbus	1	NC 904	FROM NC 905 TO BRUNSWICK CL	1	2	2WU	NO	NO	1.16	25	12		1,408	17,013	1,404	201	
TOTAL FOR MAP NO. 1										1.16		12		1,408	17,013	1,404	201	
2022CPT.06.03.10241.1	Columbus	2	NC 905	FROM SC LINE TO NC 904	2	2	2WU	NO	NO	4.55	25		46	1,760	66,733	833	251	
TOTAL FOR MAP NO. 2										4.55			46	1,760	66,733	833	251	
TOTAL FOR PROJ NO. 2022CPT.06.03.10241.1										5.71		12		46	3,168	83,746	2,237	452
														86,914				
2022CPT.06.03.20241.1	Columbus	3	SR 1005	FROM US 74 BUS. TO SR 1572	3	2	2WU	NO	NO	3.39	22		6.78	1,130		2,183	1,814	
TOTAL FOR MAP NO. 3										3.39			6.78	1,130		2,183	1,814	
TOTAL FOR PROJ NO. 2022CPT.06.03.20241.1										3.39			6.78	1,130		2,183	1,814	
GRAND TOTAL										9.10		12	6.78	1,176	3,168	83,746	4,420	2,266
														86,914				

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	1519000000-E		1520000000-E	1523000000-E	1524000000-E	1575000000-E	1704000000-E	
										SURFACE COURSE, S9.5B	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	TONS
2022CPT.06.03.10241.1	Columbus	1	NC 904	FROM NC 905 TO BRUNSWICK CL	1	2	2WU	NO	NO	1.16	25		1,530		101	10	
TOTAL FOR MAP NO. 1										1.16			1,530		101	10	
2022CPT.06.03.10241.1	Columbus	2	NC 905	FROM SC LINE TO NC 904	2	2	2WU	NO	NO	4.55	25		5,681	30	355	10	
TOTAL FOR MAP NO. 2										4.55			5,681	30	355	10	
TOTAL FOR PROJ NO. 2022CPT.06.03.10241.1										5.71			7,211	30	456	20	
2022CPT.06.03.20241.1	Columbus	3	SR 1005	FROM US 74 BUS. TO SR 1572	3	2	2WU	NO	NO	3.39	22	4,414	1,544		486		
TOTAL FOR MAP NO. 3										3.39		4,414	1,544		486		
TOTAL FOR PROJ NO. 2022CPT.06.03.20241.1										3.39		4,414	1,544		486		
GRAND TOTAL										9.10		4,414	1,544	7,211	30	942	20

THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO.	SHEET NO.	TOTAL NO.
2022CPT.06.03.10241.1, 2022CPT.06.03.20241.1		

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH		WIDTH	4413000000-E	4457000000-N	4685000000-E		4810000000-E		4900000000-N
								MI	FT		WORK ZONE ADVANCE/GENERAL WARNING SIGNING	TEMPORARY TRAFFIC CONTROL	4" X 90 M WHITE THERMO	4" X 90 M YELLOW THERMO	4" WHITE PAINT	4" YELLOW PAINT	YELLOW & YELLOW MARKERS
											SF	LS	LF	LF	LF	LF	EA
2022CPT.06.03.10241.1	Columbus	1	NC 904	FROM NC 905 TO BRUNSWICK CL	1	2	2WU	1.16	25		130	1	12,250	8,922	12,250	8,922	77
TOTAL FOR MAP NO. 1							1.16				130	1	12,250	8,922	12,250	8,922	77
2022CPT.06.03.10241.1	Columbus	2	NC 905	FROM SC LINE TO NC 904	2	2	2WU	4.55	25		510		48,048	34,506	48,048	34,506	300
TOTAL FOR MAP NO. 2							4.55				510		48,048	34,506	48,048	34,506	300
TOTAL FOR PROJ NO. 2022CPT.06.03.10241.1							5.71				640	1	60,298	43,428	60,298	43,428	377
												103,726		103,726			
2022CPT.06.03.20241.1	Columbus	3	SR 1005	FROM US 74 BUS. TO SR 1572	3	2	2WU	3.39	22		380		35,798	23,153			224
TOTAL FOR MAP NO. 3							3.39				380		35,798	23,153			224
TOTAL FOR PROJ NO. 2022CPT.06.03.20241.1							3.39				380		35,798	23,153			224
												58,951					
GRAND TOTAL								9.1			1,020	1	96,096	66,581	60,298	43,428	601
												162,677		103,726			