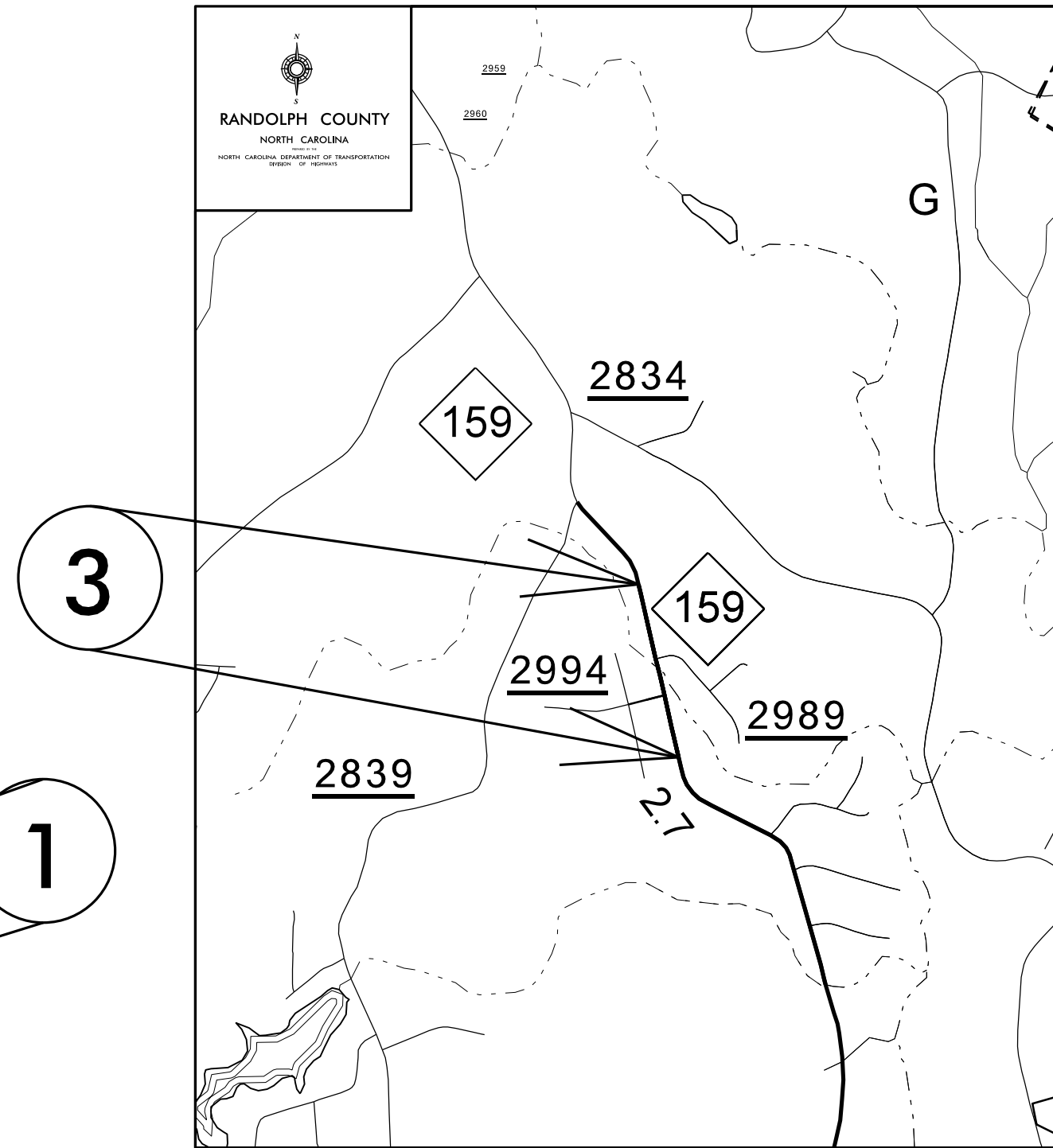
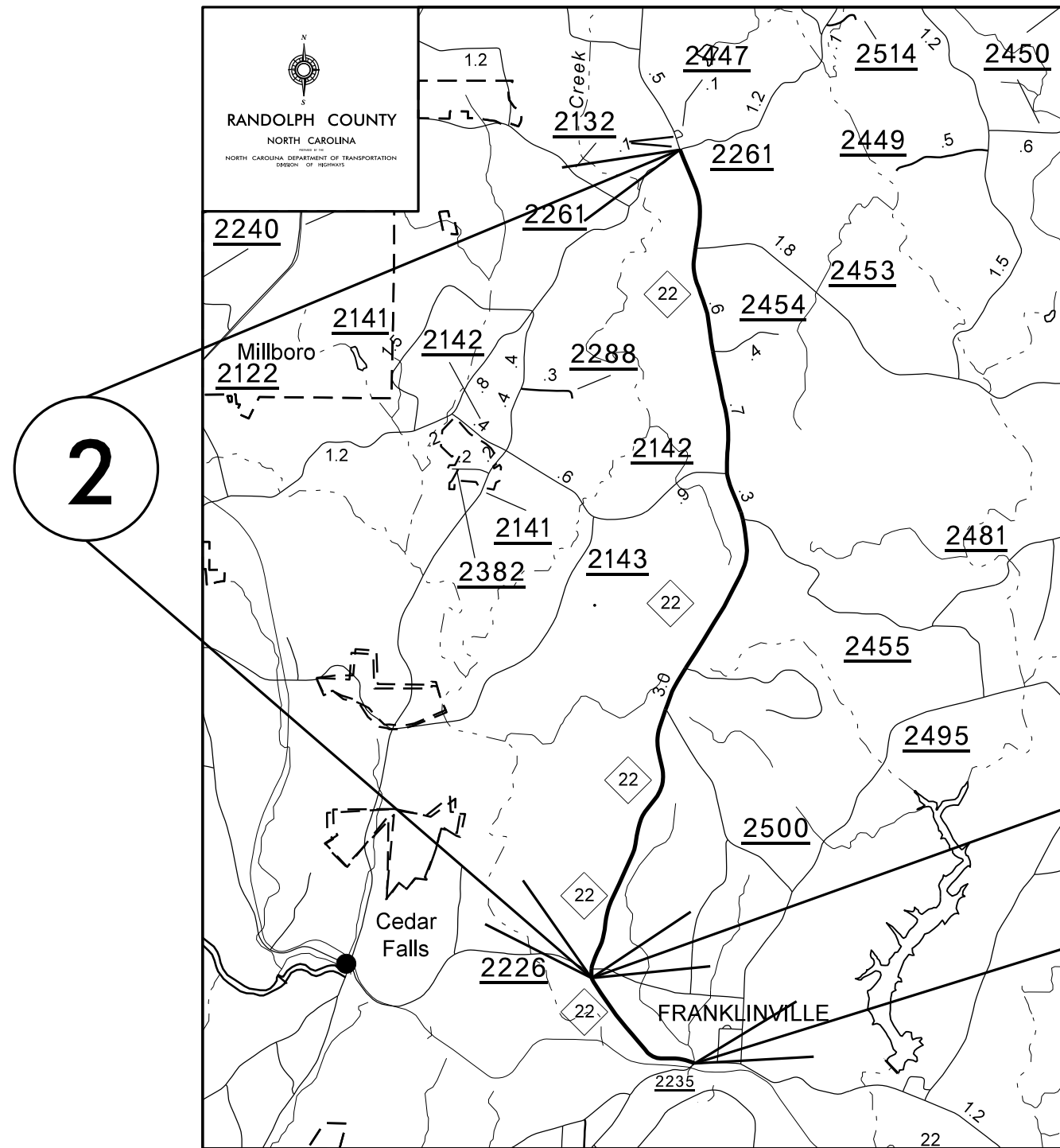


RANDOLPH COUNTY
PRIMARY AND SECONDARY RESURFACING MAP

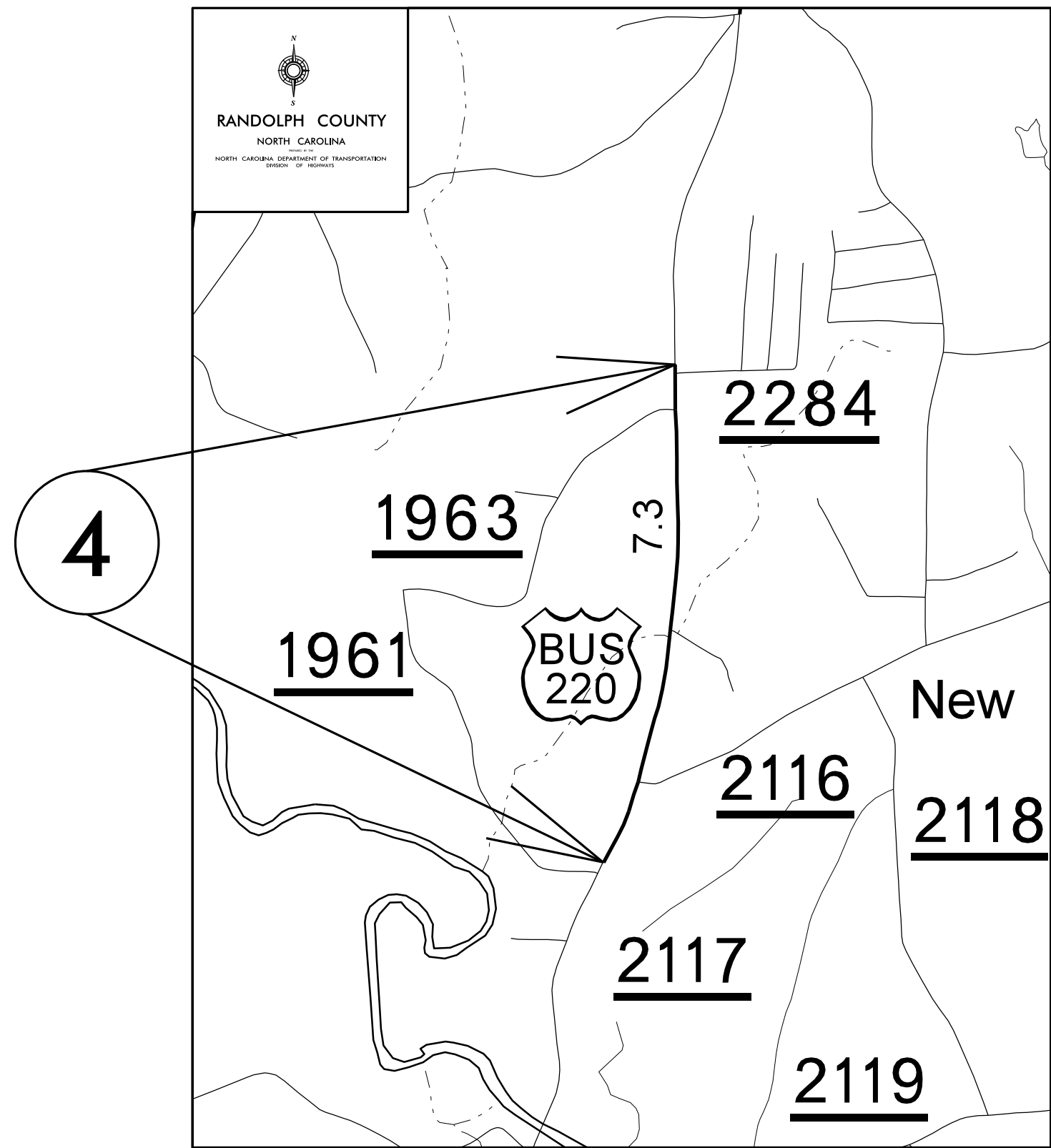
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Maps 1 and 2

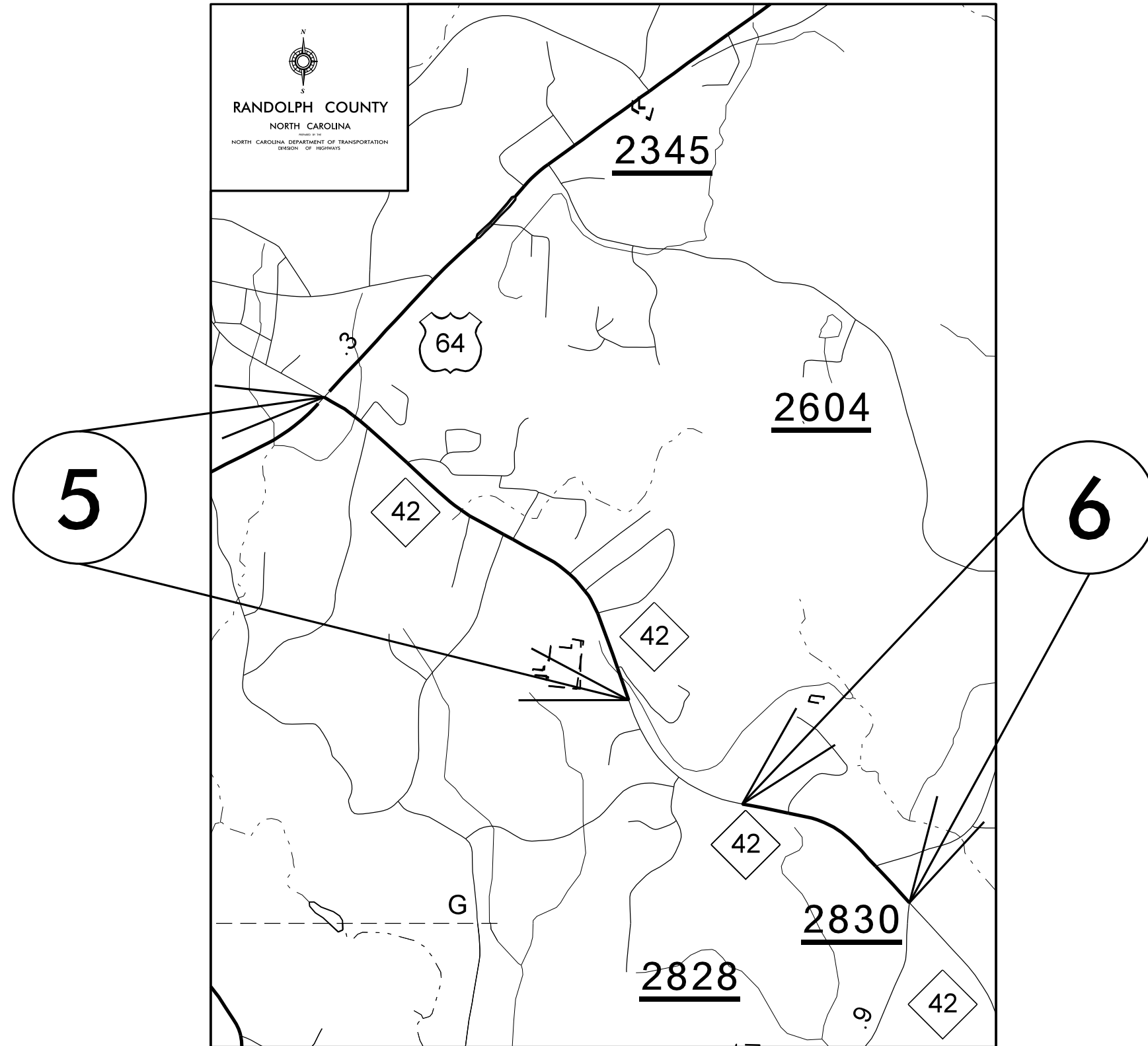
Map 3



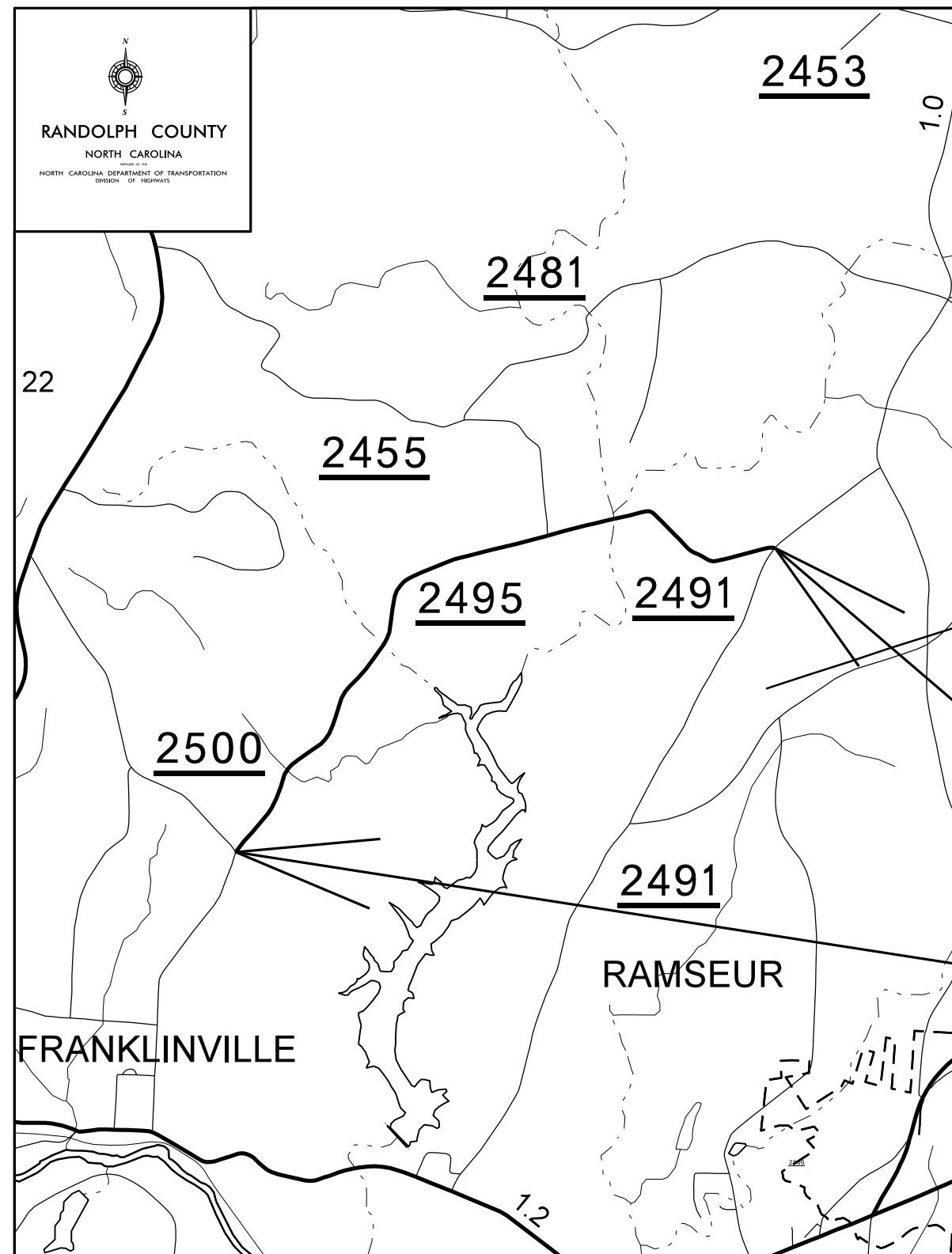
Map 4



Maps 5 and 6



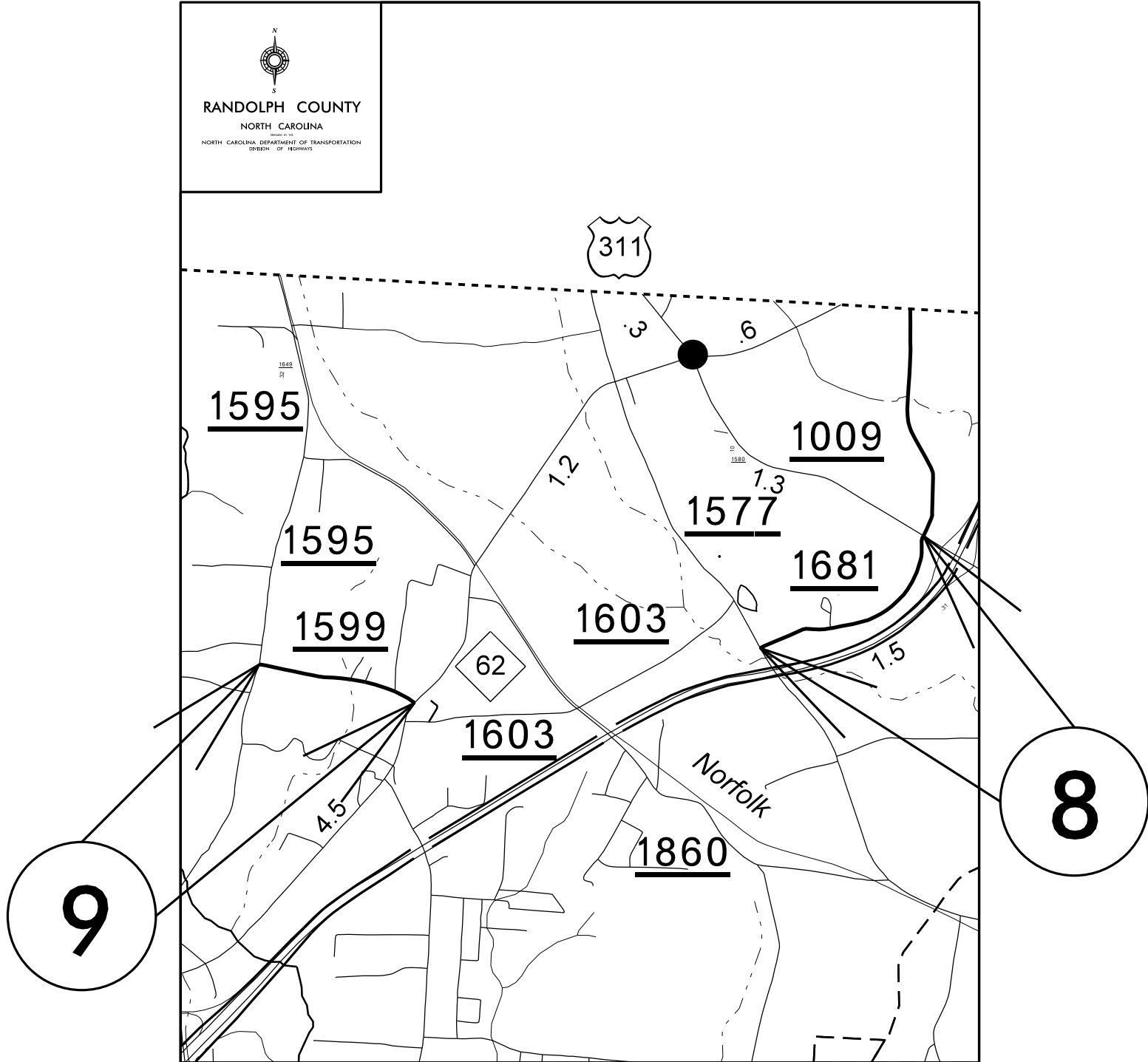
Map 7

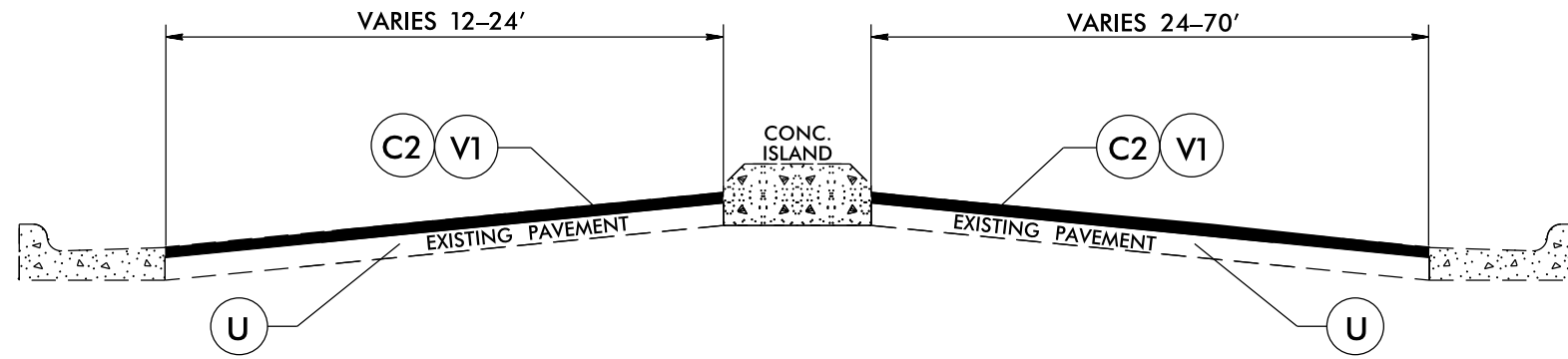


7

Maps 8 and 9

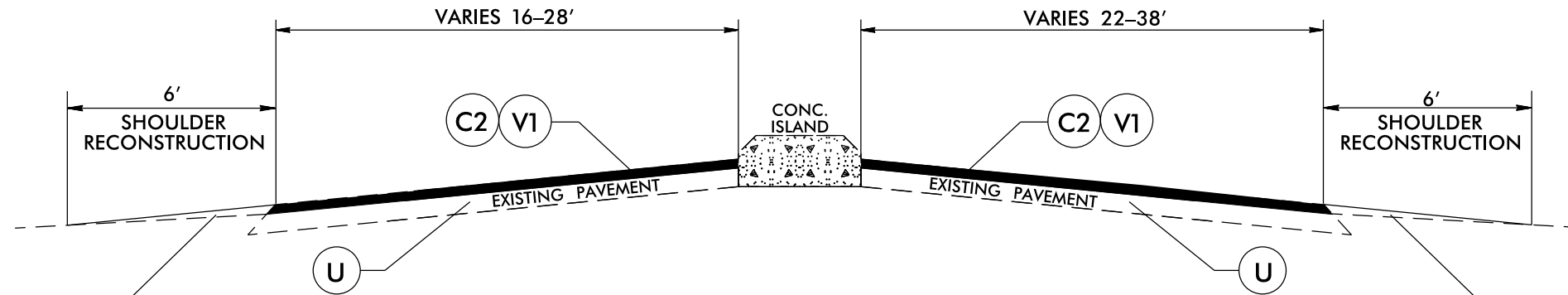
Map 10





TYPICAL SECTION NO. 4

USE FOR MAP #5

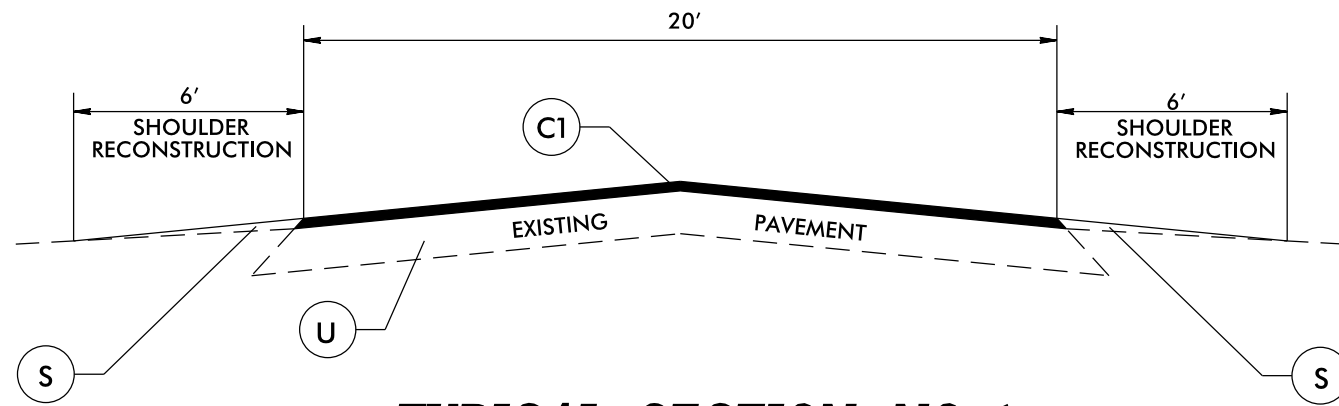


TYPICAL SECTION NO. 5

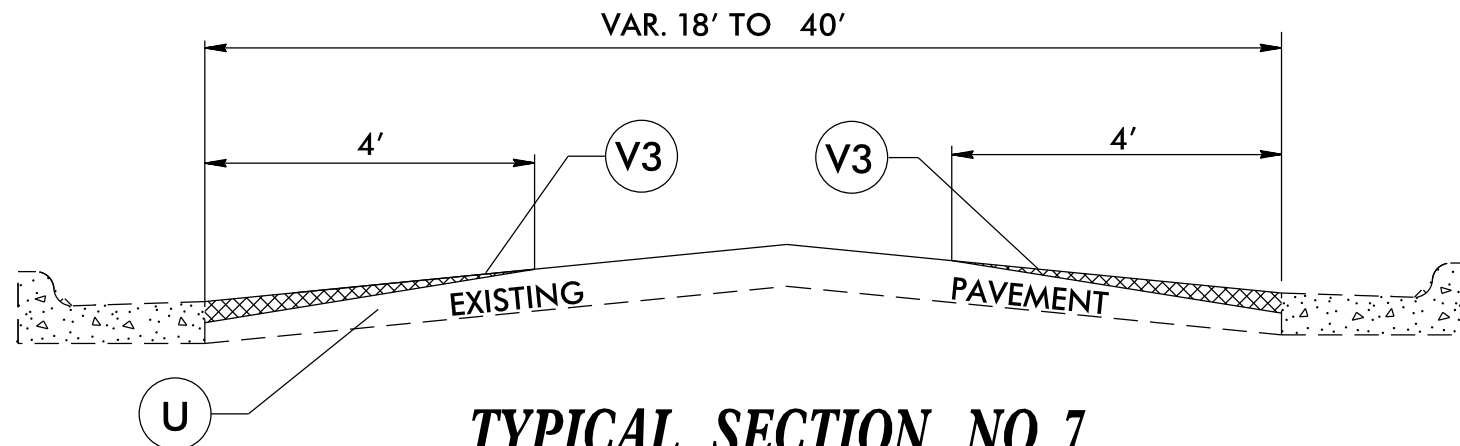
USE FOR MAP #5

PAVEMENT SCHEDULE

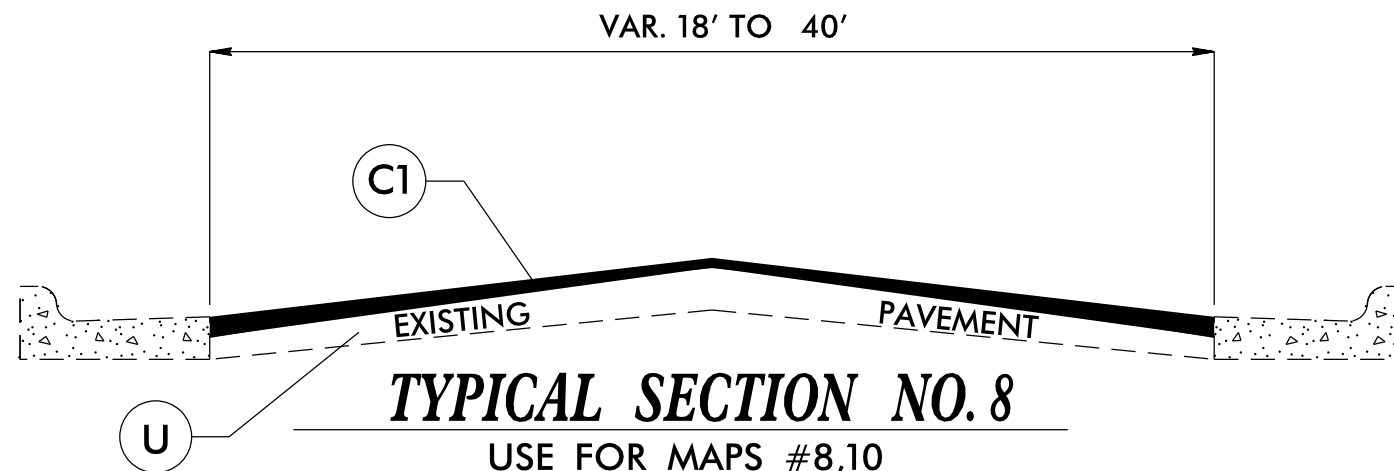
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C2	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. APPROX. 2.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
S	AGGREGATE SHOULDER BORROW
U	EXISTING PAVEMENT
V1	MILLING 1.5" IN DEPTH
V2	MILLING 2" IN DEPTH
V3	MILLING 0" TO 1.5" IN DEPTH



TYPICAL SECTION NO. 6
 USE FOR MAPS #7,8,10



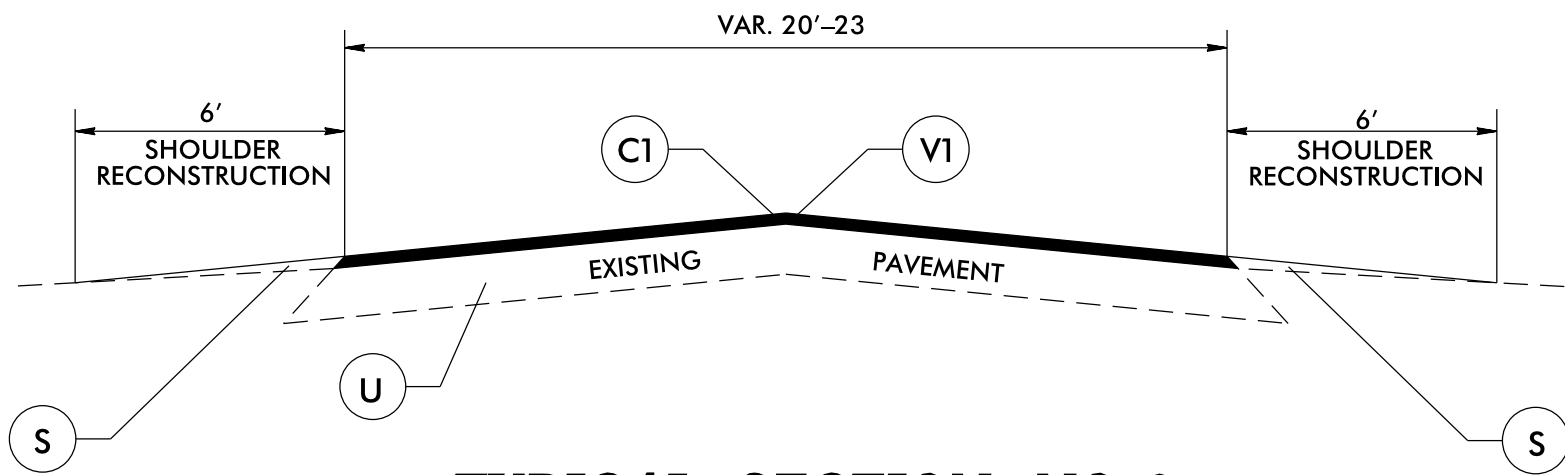
TYPICAL SECTION NO. 7
 USE FOR MAPS #8,10



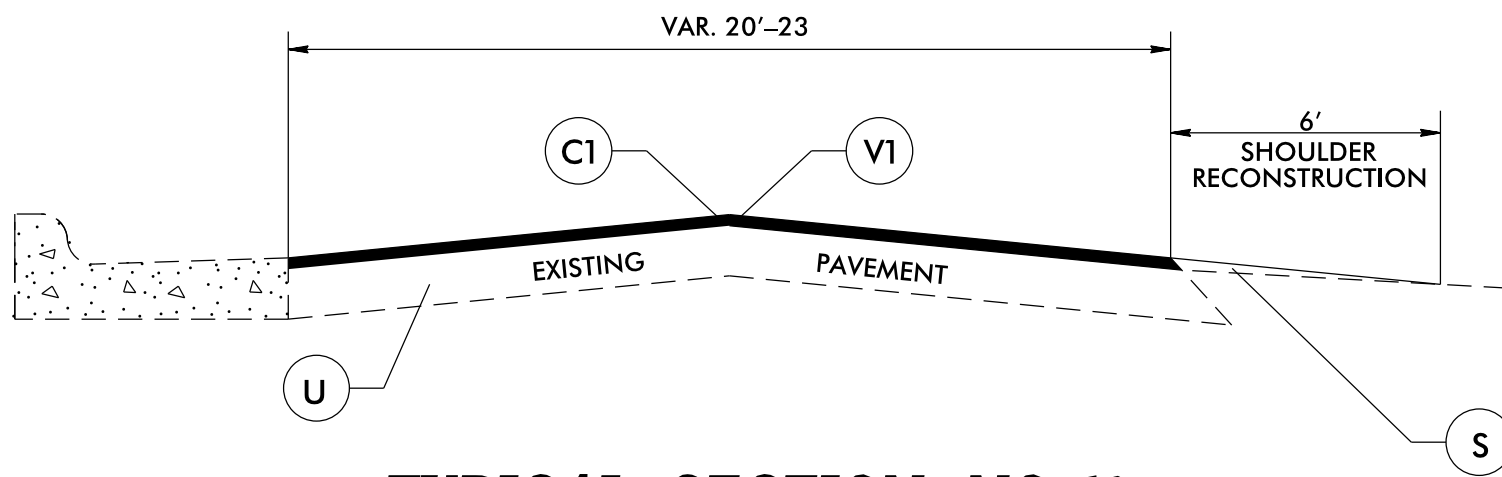
TYPICAL SECTION NO. 8
 USE FOR MAPS #8,10

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C2	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. APPROX. 2.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
S	AGGREGATE SHOULDER BORROW
U	EXISTING PAVEMENT
V1	MILLING 1.5" IN DEPTH
V2	MILLING 2" IN DEPTH
V3	MILLING 0" TO 1.5" IN DEPTH



TYPICAL SECTION NO. 9
USE FOR MAP #9



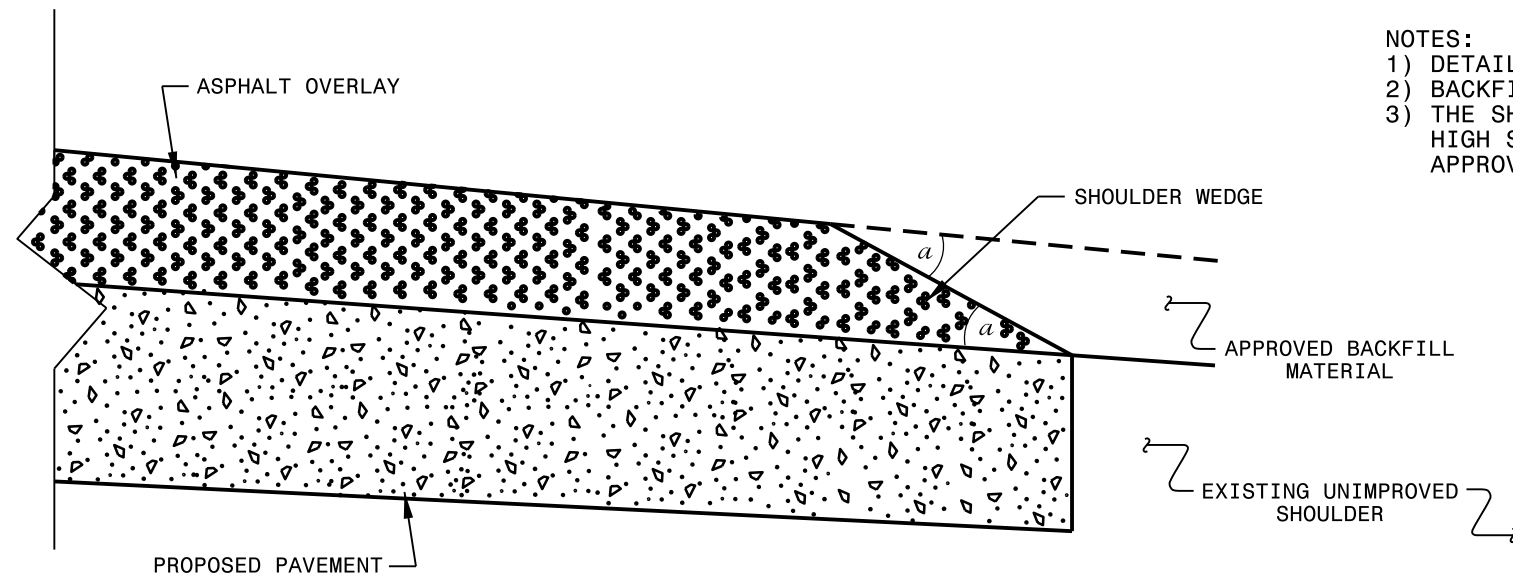
TYPICAL SECTION NO. 10
USE FOR MAP #9

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C2	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. APPROX. 2.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
S	AGGREGATE SHOULDER BORROW
U	EXISTING PAVEMENT
V1	MILLING 1.5" IN DEPTH
V2	MILLING 2" IN DEPTH
V3	MILLING 0" TO 1.5" IN DEPTH

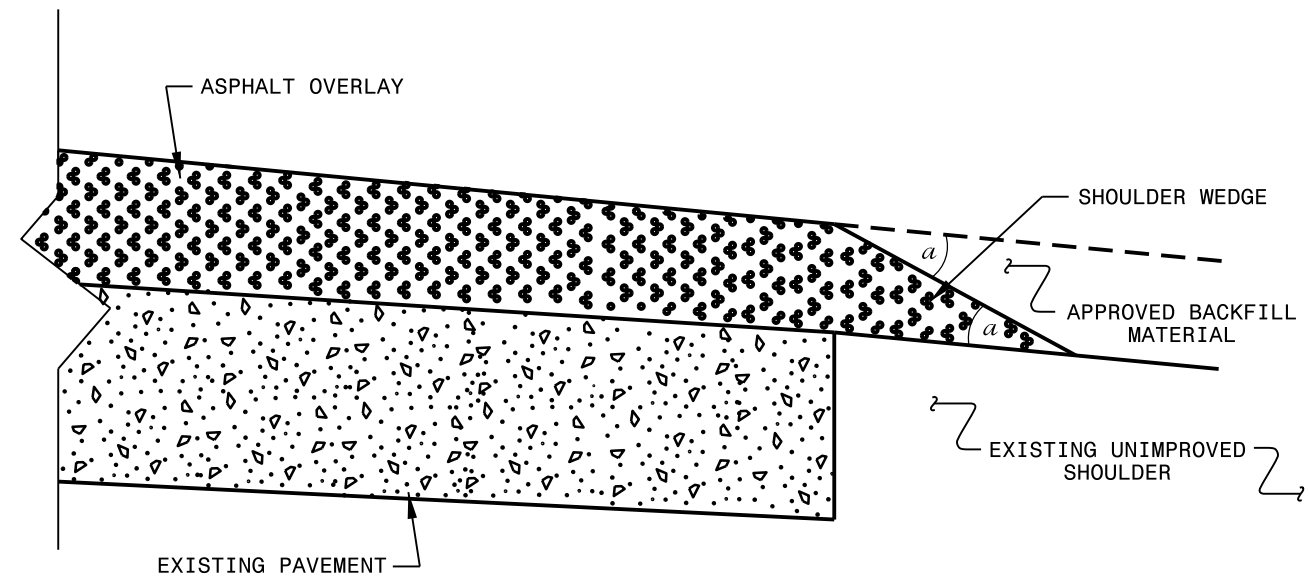
NOTES:

- 1) DETAIL DOES NOT APPLY TO OGAFB AND ULTRA-THIN BONDED WEARING COURSE.
- 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
- 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS, SIDE STREETS, HIGH SHOULDERS, AND OTHER LOCATIONS NOT FEASIBLE TO CONSTRUCT AS APPROVED BY THE ENGINEER.



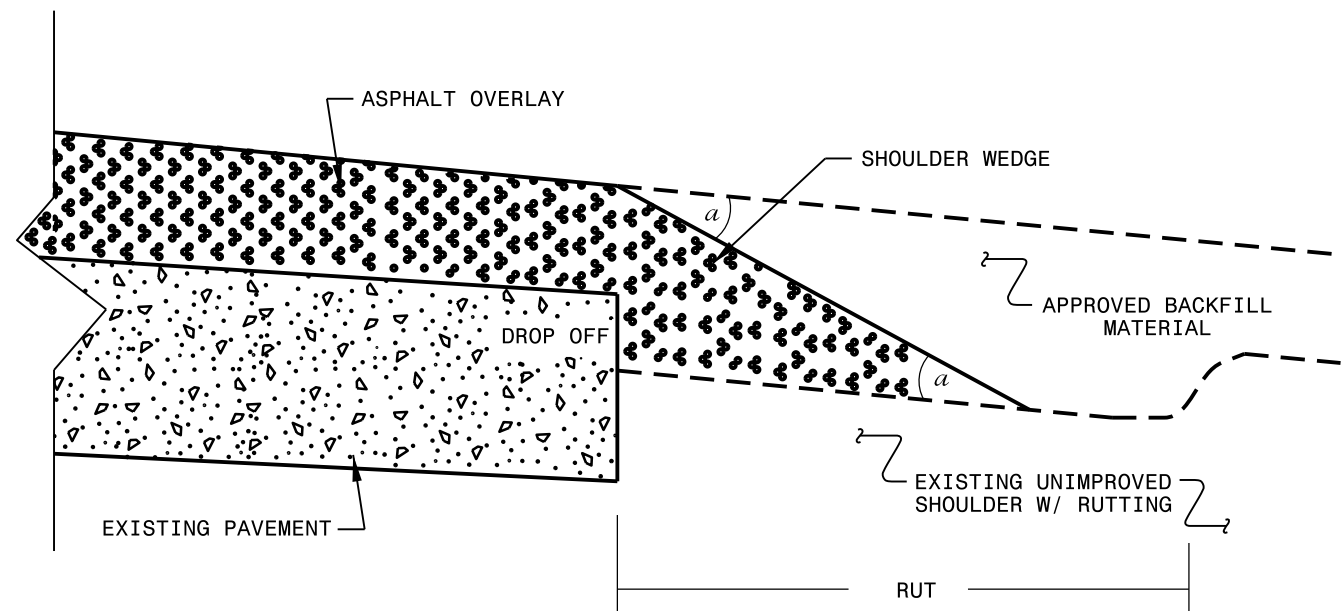
SHOULDER WEDGE DETAIL

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



SHOULDER WEDGE DETAIL

(Resurfacing Projects w/ NO Widening)



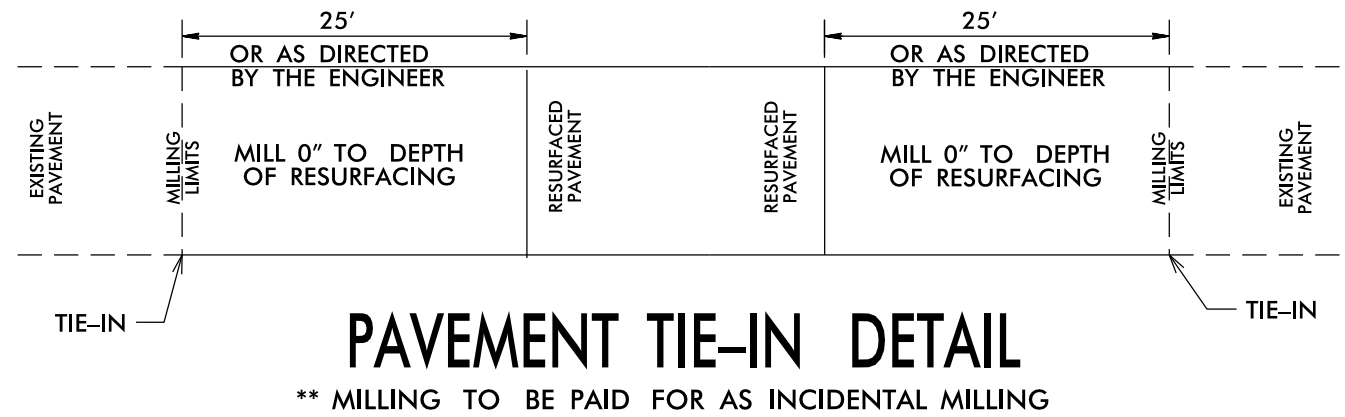
SHOULDER WEDGE DETAIL

(Resurfacing Adjacent to Rutted Shoulder)

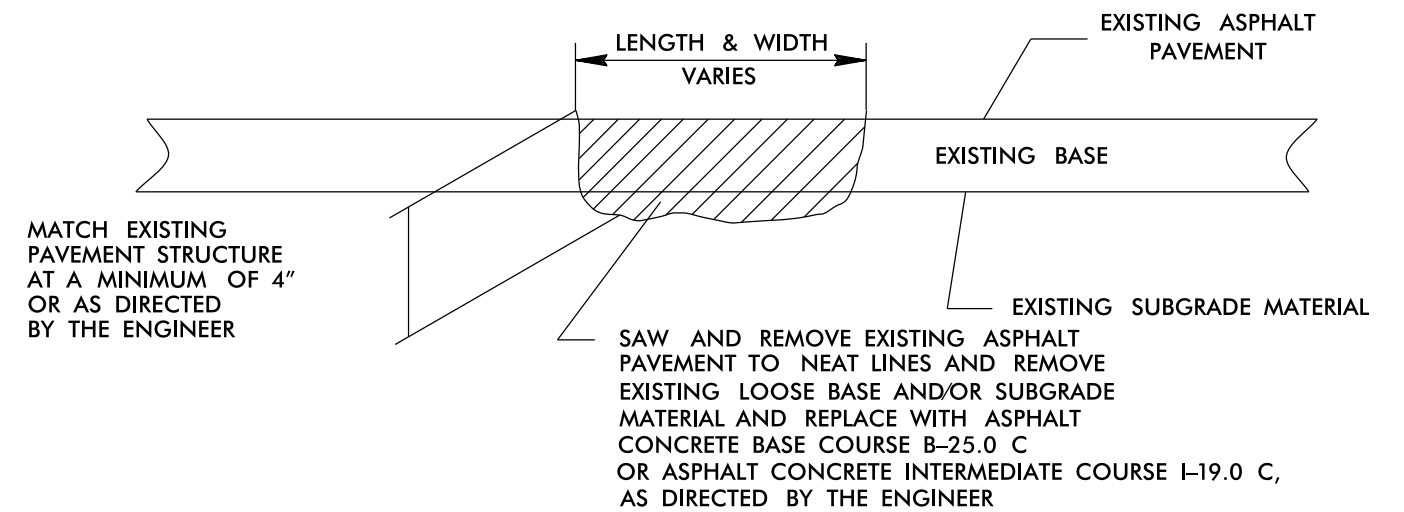
- SHOULDER WEDGE ANGLE = 30°

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: 2/2/16	
CHECKED BY:	DATE:	
FILE SPEC.: szusr/details/stand/shoulderwedgedetail.dgn		

DETAILS AND NOTES

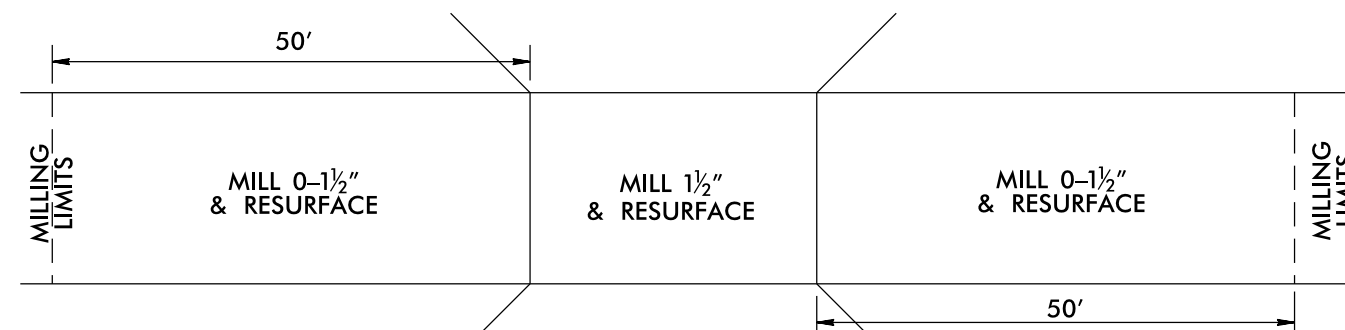


DETAILS OF PATCHING EXISTING PAVEMENT PRIOR TO RESURFACING



PROJECT NOTES

- FINAL PAVEMENT MARKINGS TO BE HANDLED BY STATE FORCES ON MAPS 7-10.
- TEMPORARY PAINT QUANTITIES INCLUDED FOR MAPS 1,3,4,5, AND 9 WITH MILLING.



USE FOR MAP #7 SR 2495 MULBERRY ACADEMY ST BRIDGE #139

* MILLING FOR APPROACHES SHALL BE PAID FOR UNDER INCIDENTAL MILLING

PROJECT NO.	SHEET NO.	TOTAL NO.
2022CPT.08.06.10761, 2022CPT.08.06.20	13	

SUMMARY OF QUANTITIES

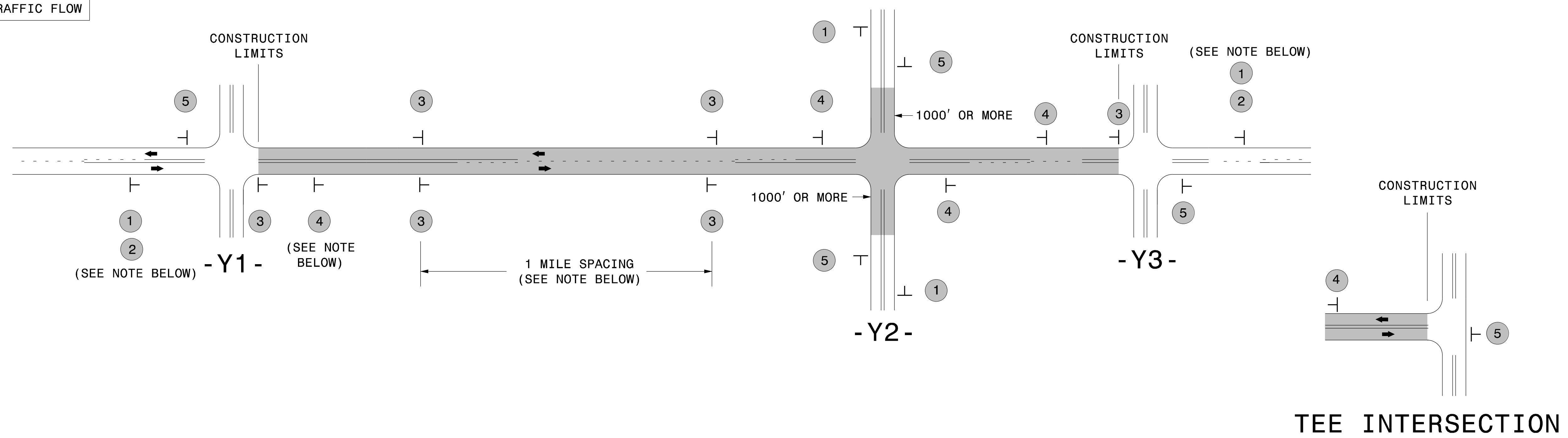
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH	WIDTH	1245000000-E	1260000000-E	1297000000-E	1308000000-E	1330000000-E	1519000000-E	1523000000-E	1575000000-E	1704000000-E	2830000000-N	2845000000-N	7444000000-E	7456000000-E					
												SHOULDER RECONSTRUCTION	AGGREGATE SHOULDER BORROW	1.5" MILLING	2" MILLING	0" TO 1.5" MILLING	INCIDENTAL MILLING	SURFACE COURSE, S9.5B	SURFACE COURSE, S9.5C	ASPHALT BINDER FOR PLANT MIX	PATCHING EXISTING PAVEMENT	ADJUST MANHOLES	ADJUST METER OR VALVE BOX	INDUCTIVE LOOP SAWCUT	LEAD-IN CABLE (14-2 PAIR)				
												MI	FT	SMI	TON	SY	SY	SY	SY	TONS	TONS	TONS	TONS	EA	EA	LF	LF		
2022CPT.08.06.10761	Randolph	1	NC-22	(FROM: SR 2235 ANDREW HUNTER RD. TO: SR 2226 CEDAR FALLS RD.)	1	2	2WU	NO	NO	0.81	23	1.62	251.00	12,546			520		1,134	68	100								
TOTAL FOR MAP NO. 1												0.81		1.62	251.00	12,546			520		1,134	68	100						
2022CPT.08.06.10761	Randolph	2	NC-22	(FROM: SR 2226 CEDAR FALLS RD. TO: SR 2261 OLD LIBERTY RD.)	2	2	2WU	NO	NO	4.95	23	9.89	1,390.00			2,080		6,378	383	100									
TOTAL FOR MAP NO. 2												4.95		9.89	1,390.00			2,080		6,378	383	100							
2022CPT.08.06.10761	Randolph	3	NC-159	(FROM: CJ NEAR ZOO CONNECTOR TO: CJ AT US 64 BYPASS)	1	2	2WU	NO	NO	0.35	23	0.70	98.00	5,196			390		505	30	60								
TOTAL FOR MAP NO. 3												0.35		0.70	98.00	5,196			390		505	30	60						
2022CPT.08.06.10761	Randolph	4	US-220 BUS	(FROM: MM 15.13 NEAR SR 1961 RANDLEMAN LAKE RD TO: MM 16.35 PAST SR 2284 ARCADIA RD.)	3	2	2WU	NO	NO	1.22	24	2.44	343.00		18,897			780		2,249	135	300							
TOTAL FOR MAP NO. 4												1.22		2.44	343.00		18,897			780		2,249	135	300					
2022CPT.08.06.10761	Randolph	5	NC-42 E	(FROM: U.S. 64 E. DIXIE DR. TO: ASHEBORO BYPASS TIE-IN)	2,4,5	2	2WU	NO	NO	1.65	25	2.88	404.00	5,027			2,080		3,027	182	120	1	1	900	900				
TOTAL FOR MAP NO. 5												1.65		2.88	404.00	5,027			2,080		3,027	182	120	1	1	900	900		
2022CPT.08.06.10761	Randolph	6	NC-42 E	(FROM: ASHEBORO BYPASS TIE-IN TO: SR 2830 OLD HUMBLE MILL RD.)	2	2	2WU	NO	NO	1.56	25	3.12	438.00					780		2,247	135	100							
TOTAL FOR MAP NO. 6												1.56		3.12	438.00					780		2,247	135	100					
TOTAL FOR PROJ NO. 2022CPT.08.06.10761												10.54		20.65	2,924.00	22,769	18,897			6,630			15,540	933	780	1	1	900	900
2022CPT.08.06.10761	Randolph	7	SR 2495 MULBERRY ACADEMY ST.	(FROM: SR 2491 PATTERSON GROVE RD. TO: SR 2500 ACADEMY RD. EXT.)	6	2	2WU	NO	NO	2.53	20	5.06	711.00	335			705		2,870	192	100								
TOTAL FOR MAP NO. 7												2.53		5.06	711.00	335			705		2,870	192	100						
2022CPT.08.06.10761	Randolph	8	SR 1681 BALFOUR DR.	(FROM: SR-1009 N MAIN ST. TO: SR 1577 ARCHDALE RD.)	6,7,8	2	2WU	NO	NO	0.82	24	1.44	202.00			358	146	1,125		75	80	1	8	240	240				
TOTAL FOR MAP NO. 8												0.82		1.44	202.00			358	146	1,125		75	80	1	8	240	240		
2022CPT.08.06.10761	Randolph	9	SR 1599 MENDENHALL RD EXT.	(FROM: SR 1595 SURRETT DR. TO: NC HWY 62)	9,10	2	2WU	NO	NO	0.61	21	1.22	171.00	8,268			781	802		54	60								
TOTAL FOR MAP NO. 9												0.61		1.22	171.00	8,268			781	802		54	60						
2022CPT.08.06.10761	Randolph	10	SR 2216 OLD CEDAR FALLS RD	(FROM: SR 2345 E. PRESNELL ST. TO SR 2215 HENLEY COUNTRY RD.)	6,7,8	2	2WU	NO	NO	2.15	21	4.30	604.00					44	520	2,484		166	100						
TOTAL FOR MAP NO. 10												2.15		4.30	604.00					44	520	2,484		166	100				
TOTAL FOR PROJ NO. 2022CPT.08.06.20761												6.11		12.02	1,688.00	8,603			402	2,152	7,281		487	340	1	8	240	240	
GRAND TOTAL												16.65		32.67	4,612.00	31,372	18,897			402	8,782	7,281	15,540	1,420	1,120	2	9	1,140	1,140

SIGNING FOR RESURFACING PROJECTS

LEGEND

┆ STATIONARY SIGN

← DIRECTION OF TRAFFIC FLOW



MAINLINE (-L-) SIGNING

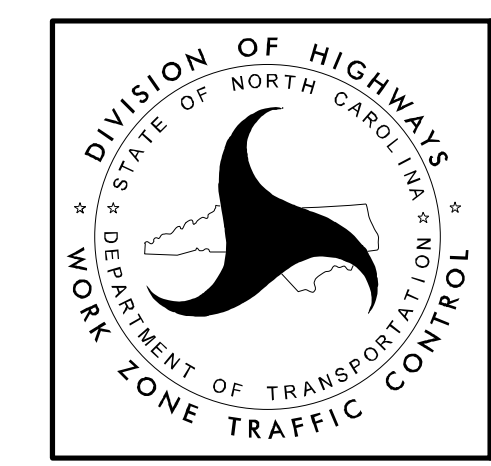
-Y- LINE SIGNING

SIGNING NOTES AND PLACEMENT PER DIRECTION	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.	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. <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> W20-1 48" X 48" PLACED 500' IN ADVANCE OF FLAGGER. </div> <div style="text-align: center;"> W20-7 A 48" X 48" PLACED 250' IN ADVANCE OF FLAGGER. </div> </div>
	2	 W7-3aP 24" X 18"	#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	 SP 13107 48" X 48"	- 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	 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. - FOR TEE INTERSECTIONS, INSTALL WITHIN 500' +/- OF THE INTERSECTION ALONG -L- LINE.	
	5	 G20-2 A 48" X 24"	PLACE 500' FOLLOWING THE END OF CONSTRUCTION LIMITS OR AS SHOWN WHEN WORK ENDS AT A 3-WAY TEE INTERSECTION.	

THE ABOVE SIGNS ARE ALL THAT ARE REQUIRED FOR A CONTRACTOR TO BEGIN A RESURFACING CONTRACT. ANY ADDITIONAL SIGNS REQUESTED BY NCDOT DIVISIONS SHALL BE INSTALLED WITHIN 7 BUSINESS DAYS OF THE START OF CONTRACT WORK.

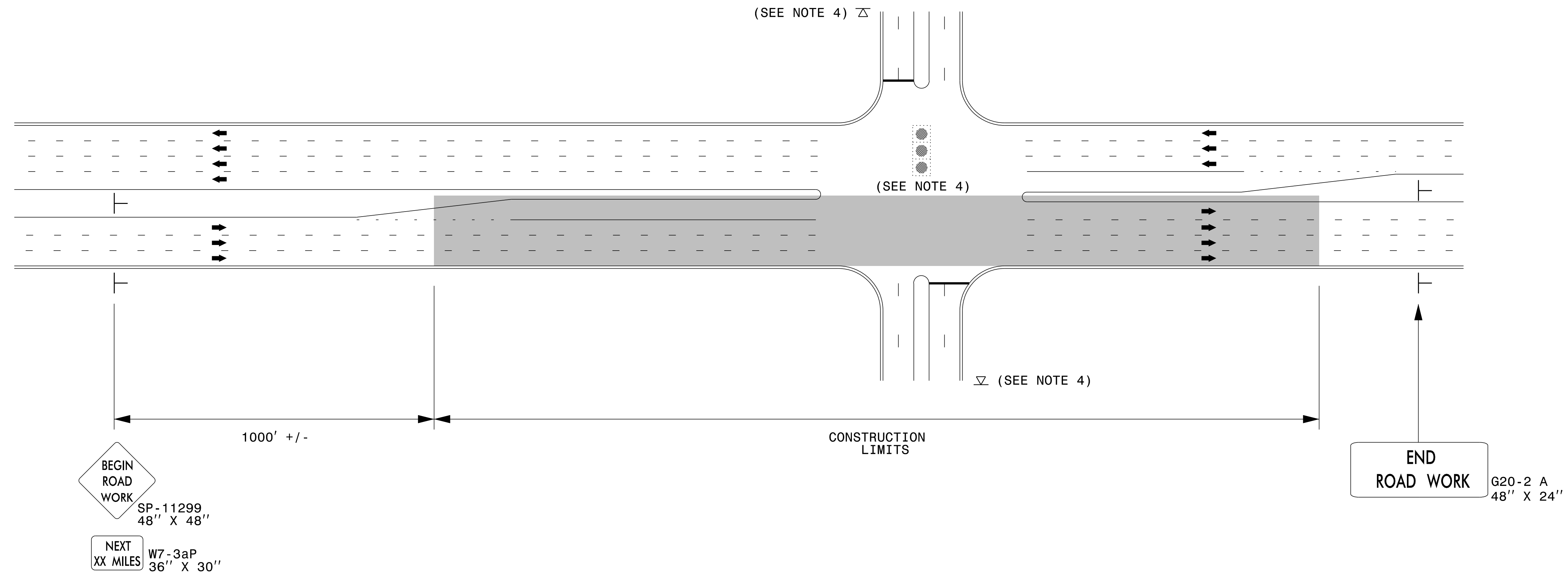
MAPS LESS THAN 2 MILES

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

URBAN / SUBURBAN WORKZONES

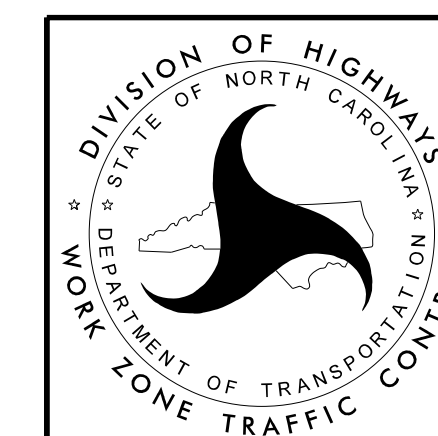


NOTES:

- 1) 48" x 48" SIZED SIGNS (SP- 11299) MAY BE REDUCED TO 36" X 36" ON ROADWAYS WITH SPEED LIMITS OF 40 MPH OR LESS.
- 2) MOUNT SIGNS THAT ARE LARGER THAN 10 SQUARE FEET IN AREA ON TWO OR MORE WOOD OR U-CHANNEL SUPPORTS. PERFORATED SQUARE TUBING SUPPORT SYSTEMS MAY SUPPORT LARGER AREAS ON A SINGLE SUPPORT. FOLLOW MANUFACTURER'S RECOMMENDATIONS. THESE SYSTEMS SHALL BE NCHRP 350 COMPLIANT AND NCDOT APPROVED.
- 3) ADVANCE WARNING SIGNS NOT REQUIRED ON NON-SIGNALIZED SIDE STREETS.
- 4) 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.
- 5) LATERAL CLEARANCE AT ALL SIGN LOCATIONS SHALL BE 2' AS MEASURED FROM THE EDGE OF PAVEMENT OR THE FACE OF THE CURB. WHEN UNABLE TO OBTAIN THE LATERAL CLEARANCE WITHIN THE MEDIAN AREA USE SHOULDER MOUNTS ONLY.
- 6) SIGN MOUNT LOCATIONS SHALL NOT BLOCK SIDEWALKS OR DRIVEWAYS.
- 7) IF STATIONARY GENERAL WARNING SIGNS ARE USED, THEY WILL BE PAID FOR PER SECTION 104 OF THE NCDOT STANDARD SPECIFICATIONS AS EXTRA WORK.
- 8) IF MILLED AREAS ARE NOT PAVED BACK BY THE END OF THE WORK DAY, PORTABLE SIGNS SHALL BE USED TO WARN DRIVERS OF THE PRESENT CONDITIONS. THESE ARE TO INCLUDE, BUT NOT LIMITED TO "ROUGH ROAD" W8-8, "UNEVEN LANES" W8-11, "GROOVED PAVEMENT" W8-15 w/MOTORCYCLE PLAQUE MOUNTED BELOW. THESE ARE TO BE DOUBLE INDICATED ON MULTI-LANE ROADWAYS WITH SPEED LIMITS 45 MPH AND GREATER WHERE LATERAL CLEARANCE CAN BE OBTAINED WITHIN THE MEDIAN AREAS. THESE PORTABLE SIGNS ARE INCIDENTAL TO THE OTHER ITEMS OF WORK INCLUDED IN THE TEMPORARY TRAFFIC CONTROL (LUMP SUM) PAY ITEM.

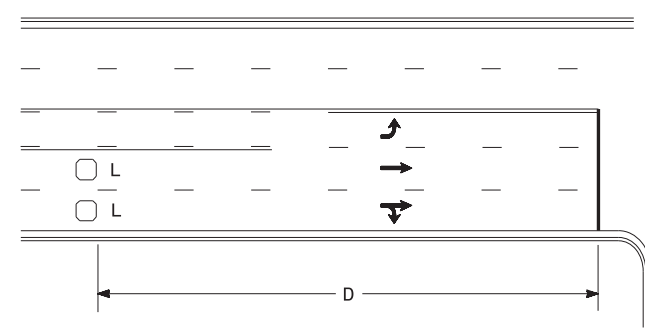
LEGEND

- ┆ STATIONARY SIGN
- ➔ DIRECTION OF TRAFFIC FLOW



**RESURFACING ADVANCE
WARNING SIGNS FOR
URBAN / SUBURBAN
FACILITIES**

High Speed Detection (≥40 mph)

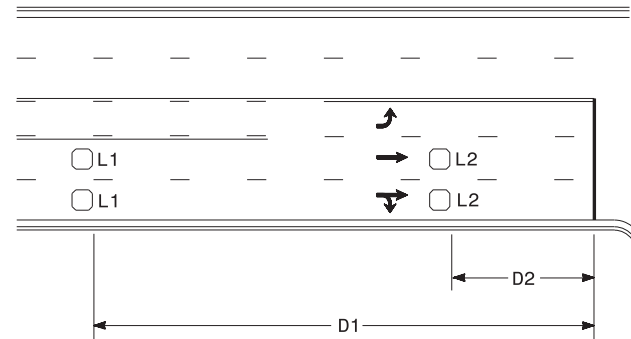


Speed Limit mph	D ft
40	250
45	300
50	355
55	420

L = 6ft X 6ft
Wired separately

Volume Density Operation

OR

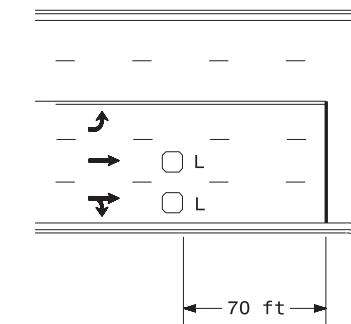


Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

L1 = 6ft X 6ft
Wired in series
L2 = 6ft X 6ft
Wired in series

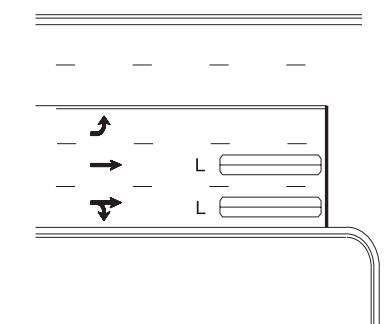
"Stretch" Operation

Low Speed Detection (≤35 mph)



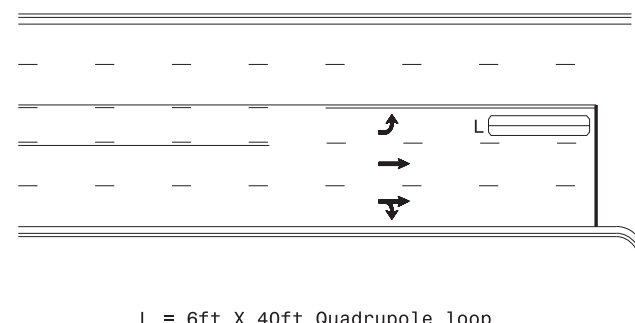
L = 6ft X 6ft
Wired in series

OR



L = 6ft X 40ft
Quadrupole loop, wired separately

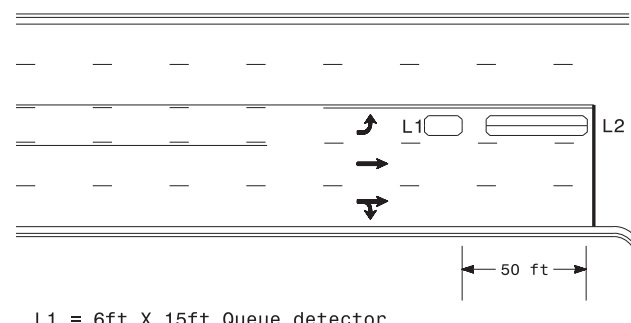
Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

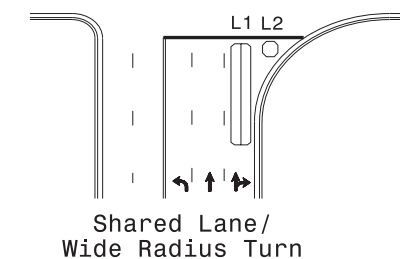
OR



L1 = 6ft X 15ft Queue detector
L2 = 6ft X 40ft Quadrupole loop

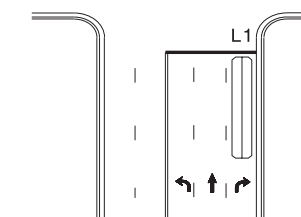
Queue Loop Detection

Right Turn Lane Detection

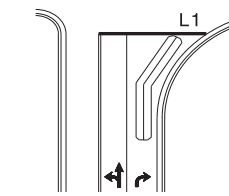


Shared Lane/
Wide Radius Turn

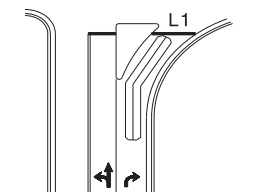
L1 = 6ft X 40ft Quadrupole loop
L2 = 6ft X 6ft [Minimum] Presence loop
Wired separately



Standard Turn

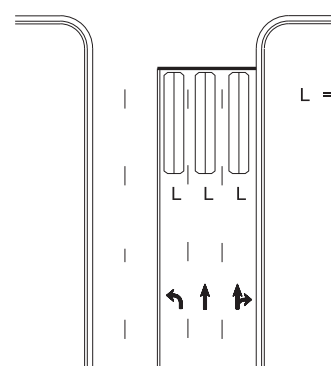


Wide Radius Turn



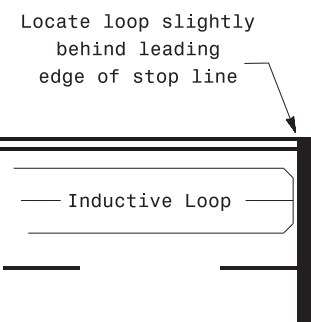
Channelized Turn

Side Street Detection



L = 6ft X 40ft
Quadrupole loop
Wired to separate
detectors/channels

Presence Loop Placement at Stop Lines



Note:
Loop may be located in advance of stop line under any of the following conditions:
1) stop line is greater than 15' from edge of intersecting roadway
2) loop detects a permissive or protected/permissive left turn
3) for an exclusive right turn lane

Recommended Number of Turns

Single 6' X 6' loop
(when wired separately):

Length of Lead-in ft	Number of Turns
< 250	3
250-375	4
375-525	5
> 525	6

Quadrupole loops: Use 2-4-2 turns

6' X 15' Loops:
Lead-in < 150', use 2 turns
Lead-in > 150', use 3 turns

750 N. Greenfield Pkwy, Garner, NC 27529

Prepared in the Offices of:

Typical Signal Loop Locations	
PLAN DATE: September 2020	REVIEWED BY: JPG
PREPARED BY: PLA	REVIEWED BY:
SCALE: N/A	REVISIONS: INIT. DATE

9/8/2020
DATE
SIG. INVENTORY NO.