

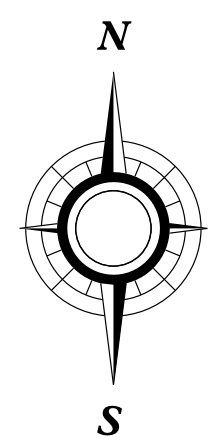
RICHMOND COUNTY RESURFACING

1 2 3
4 6 7

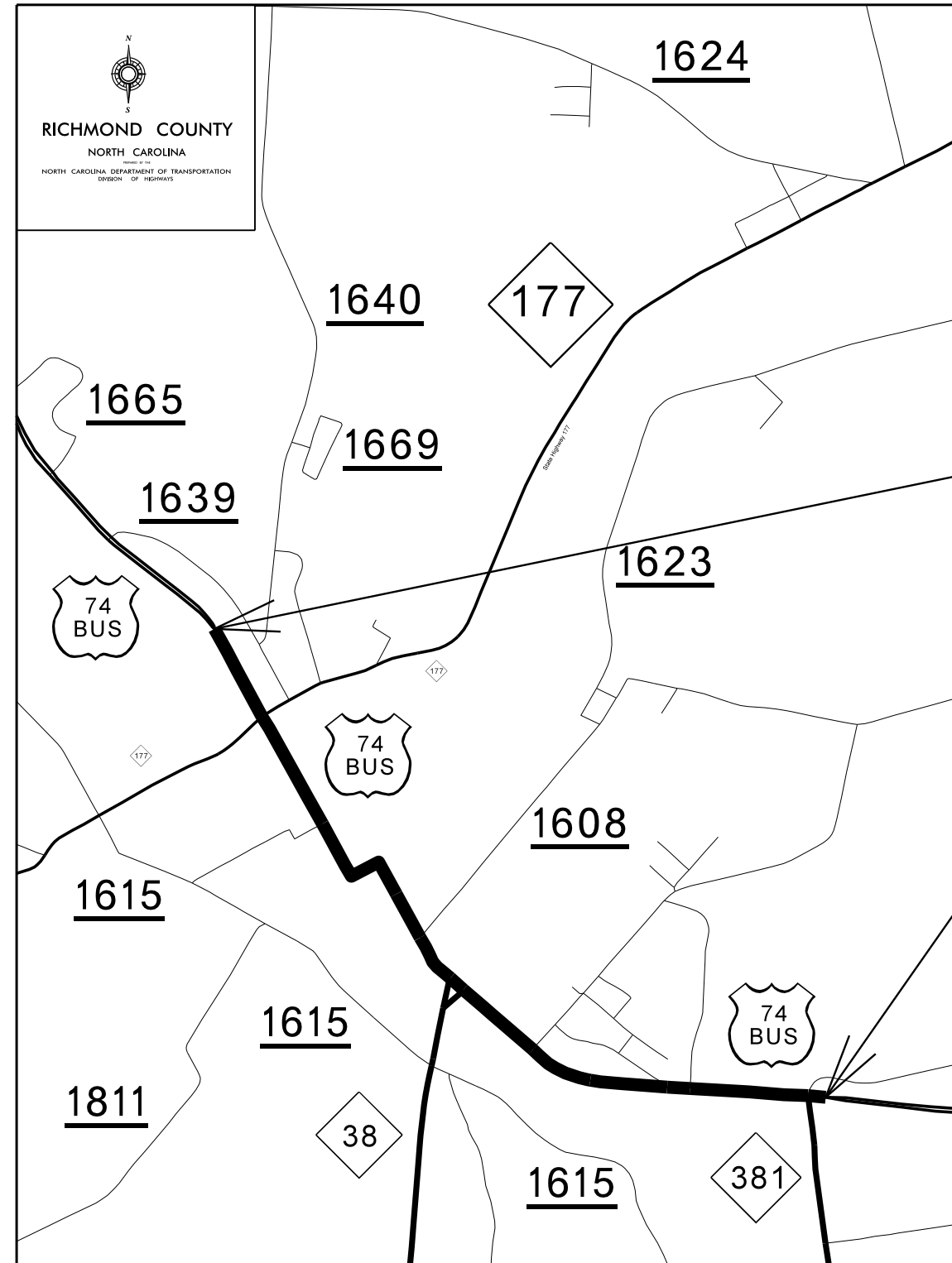
9

8

5

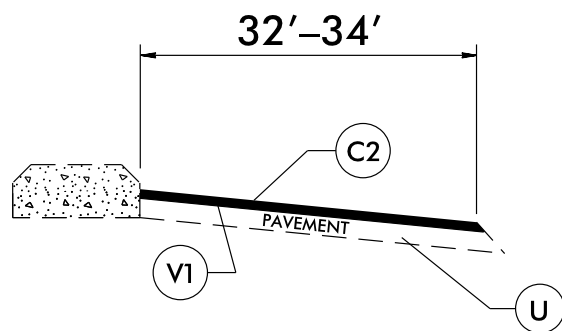
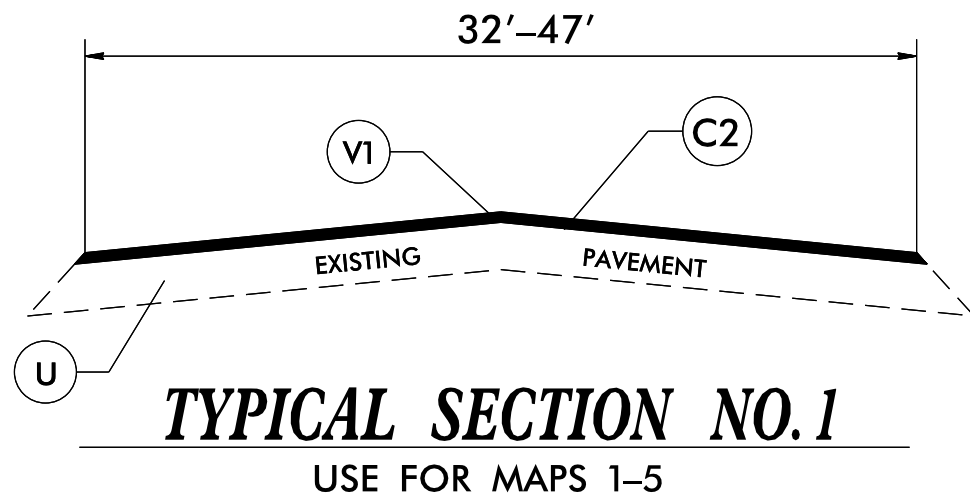


Map 5




 RICHMOND COUNTY
 NORTH CAROLINA
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

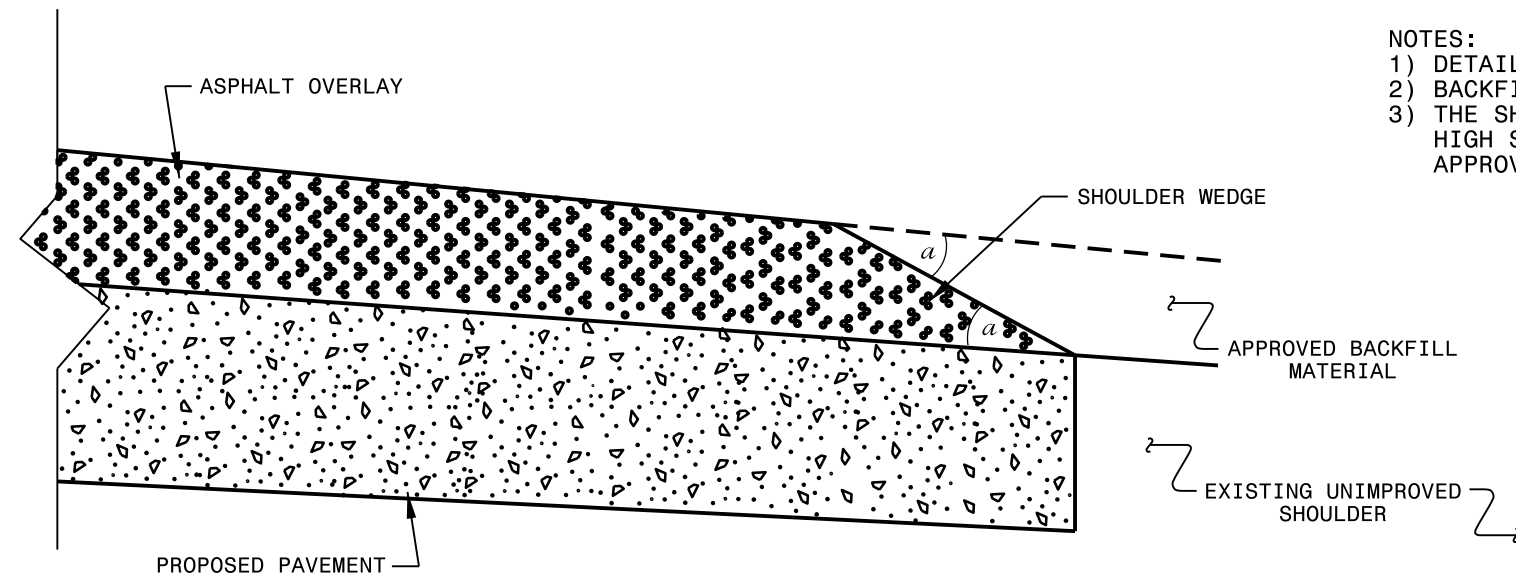
5



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.
S	AGGREGATE SHOULDER BORROW
U	EXISTING PAVEMENT
V1	MILLING 1.5" IN DEPTH

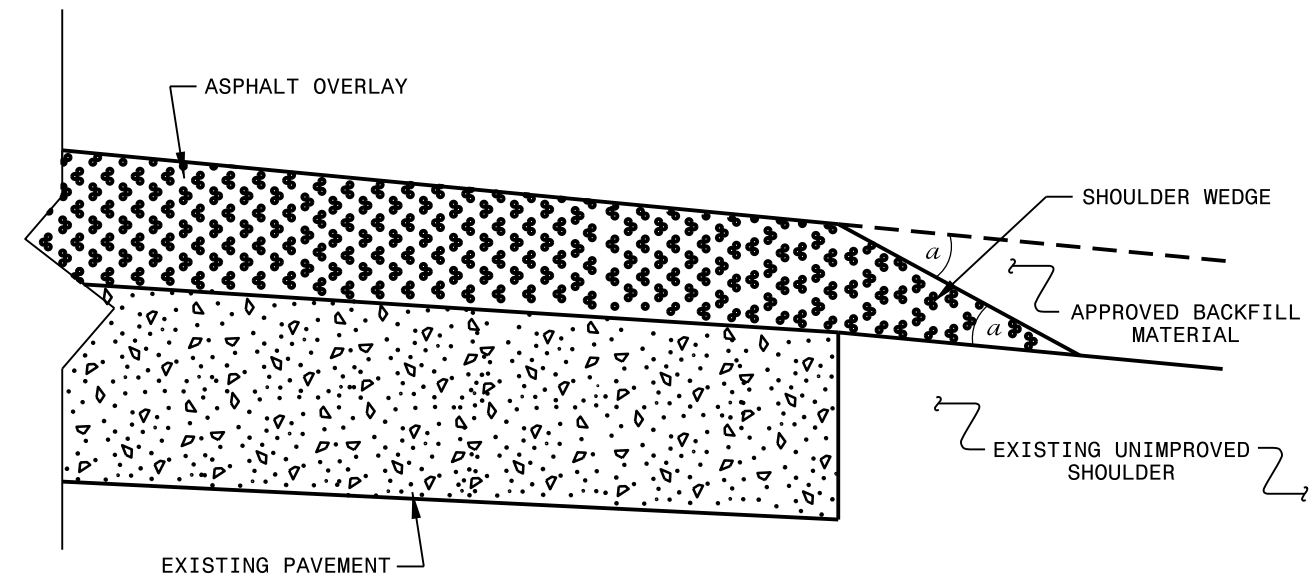
NOTES:

- 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.



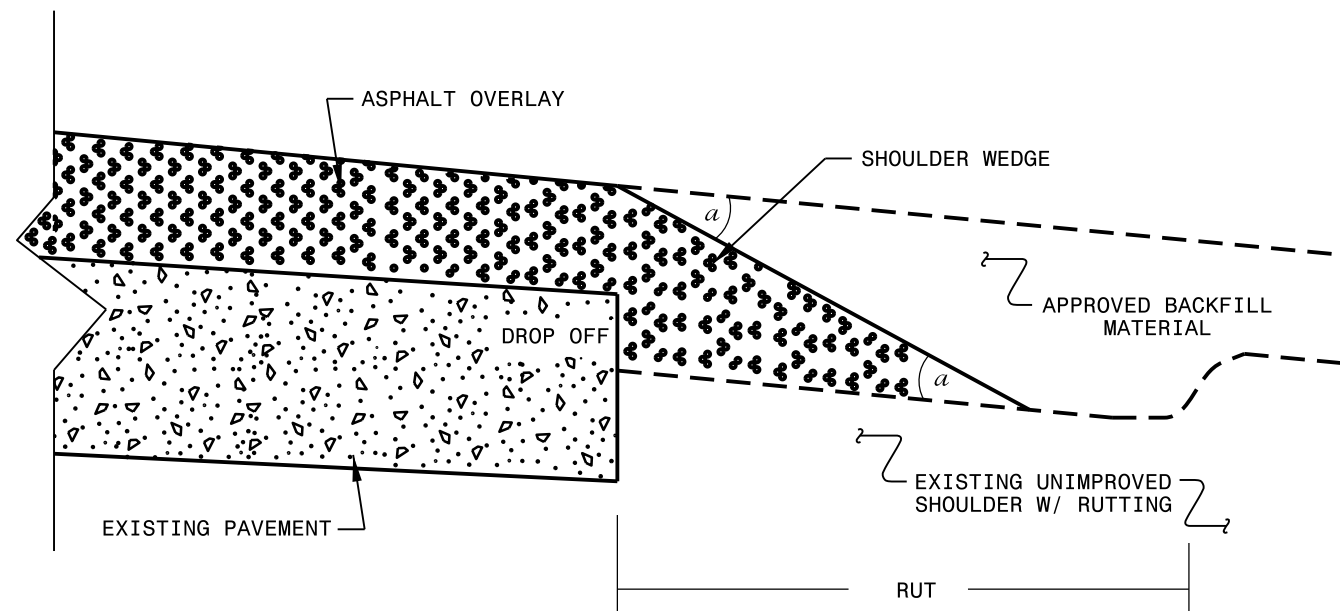
SHOULDER WEDGE DETAIL

(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		

PROJECT NO. 2024CPT.08.12.10771, 2024CPT.08.12.20771	SHEET NO. 12
--	-----------------

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	BEGIN MP	END MP	1245000000-E	1260000000-E	1297000000-E	1330000000-E	1519000000-E	1523000000-E	1575000000-E	2815000000-N	2830000000-N	2845000000-N	7444000000-E					
														SHOULDER RECON-STRUCTION SMI	AGGREGATE SHOULDER BORROW TON	1.5" MILLING SY	INCIDENTAL MILLING SY	SURFACE COURSE, S9.5B TONS	SURFACE COURSE, S9.5C TONS	ASPHALT BINDER FOR PLANT MIX TONS	ADJUST DROP INLET EA	ADJUST MANHOLES EA	ADJUST METER OR VALVE BOX EA	INDUCTIVE LOOP SAWCUT LF					
2024CPT.08.12.10771	Richmond	1	US-220	FROM START OF MEDIAN 200 FT NORTH OF SR 1419 (ASLINGTON ST) TO SR 1335 (ELLERBE RD)	1	2	MD	NO	NO	0.94	32	1.7	2.64			17,650	1,387		1,693	100									
TOTAL FOR MAP NO. 1										0.94						17,650	1,387		1,693	100									
2024CPT.08.12.10771	Richmond	2	US-220 S	FROM SR 1335 (ELLERBE RD) TO END OF MEDIAN 200 FT NORTH OF SR 1419 (ASLINGTON ST)	1	2	MD	NO	NO	1.05	32	16.18	17.23			19,715	1,238		1,718	101									
TOTAL FOR MAP NO. 2										1.05						19,715	1,238		1,718	101									
2024CPT.08.12.10771	Richmond	3	US-220	FROM US 74 BUS (W BROAD AVE) TO START OF MEDIAN 200 FT NORTH OF SR 1419 (ASLINGTON ST)	1,2	2	MU	NO	NO	0.78	32	0.92	1.7			14,108	2,715		1,554	92				784					
TOTAL FOR MAP NO. 3										0.78						14,108	2,715		1,554	92			784						
2024CPT.08.12.10771	Richmond	4	US-220 S	FROM END OF MEDIAN 200 FT NORTH OF SR 1419 (ASLINGTON ST) TO US 74 BUS (W BROAD AVE)	1,2	2	MU	NO	NO	0.77	32	17.23	18			14,028	2,652		1,541	91				784					
TOTAL FOR MAP NO. 4										0.77						14,028	2,652		1,541	91			784						
2024CPT.08.12.10771	Richmond	5	US-74 BUS	FROM END OF MEDIAN 0.3 MILES EAST OF SR 1639 (CIRCLEWOOD DR) TO C.J. AT NC 381	1,3,4	2	MU	NO	NO	2.43	50	10.95	13.38			65,960	9,763		6,997	413		45	32	3,852					
TOTAL FOR MAP NO. 5										2.43						65,960	9,763		6,997	413		45	32	3,852					
TOTAL FOR PROJ NO. 2024CPT.08.12.10771										5.97						131,461	17,755		13,503	797		45	32	5,420					
2024CPT.08.12.20771	Richmond	6	SR-1335 / ELLERBE RD	FROM SR 1405 (NORTH LEE ST.) TO US HWY 220	5	2	2WU	NO	NO	0.8	24	0	0.8			1.22	170		472	1,078		70	2	2					
TOTAL FOR MAP NO. 6										0.8						1.22	170		472	1,078		70	2	2					
2024CPT.08.12.20771	Richmond	7	SR-1300 / KEMBERLY ST	FROM SR 1005 (CARTLEDGE CREEK RD.) TO SR 1335 (ELLERBE RD.)	5	2	2WU	NO	NO	0.12	26	0	0.12			0.13	18		150	165		11							
TOTAL FOR MAP NO. 7										0.12						0.13	18		150	165		11							
2024CPT.08.12.20771	Richmond	8	SR-1608 / BOYD LAKE RD	FROM SR 1616 (5TH ST) TO SR 1613 (COLES STORE RD)	5	2	2WU	NO	NO	3.31	22	2.9	6.21			6.72	941		280	4,293		279							
TOTAL FOR MAP NO. 8										3.31						6.72	941		280	4,293		279							
2024CPT.08.12.20771	Richmond	9	SR-1646 / N LONG DR	FROM US HWY 1 (FAYETTEVILLE RD.) TO SR 1624 (COUNTY HOME RD.)	6,7	2	MU	NO	NO	1.25	38	0	1.25			33,400	1,800		3,256			11	4	2,595					
TOTAL FOR MAP NO. 9										1.25						33,400	1,800		3,256		11	4	2,595						
TOTAL FOR PROJ NO. 2024CPT.08.12.20771										5.48						8.07	1,129		33,400	2,702		8,792		572	2	13	4	2,595	
GRAND TOTAL										11.45						8.07	1,129		164,861	20,457		8,792		13,503	1,369	2	58	36	8,015

PROJECT NO.	SHEET NO.
2024CPT.08.12.10771,	13
2024CPT.08.12.20771	

THERMOPLASTIC AND PAINT QUANTITIES

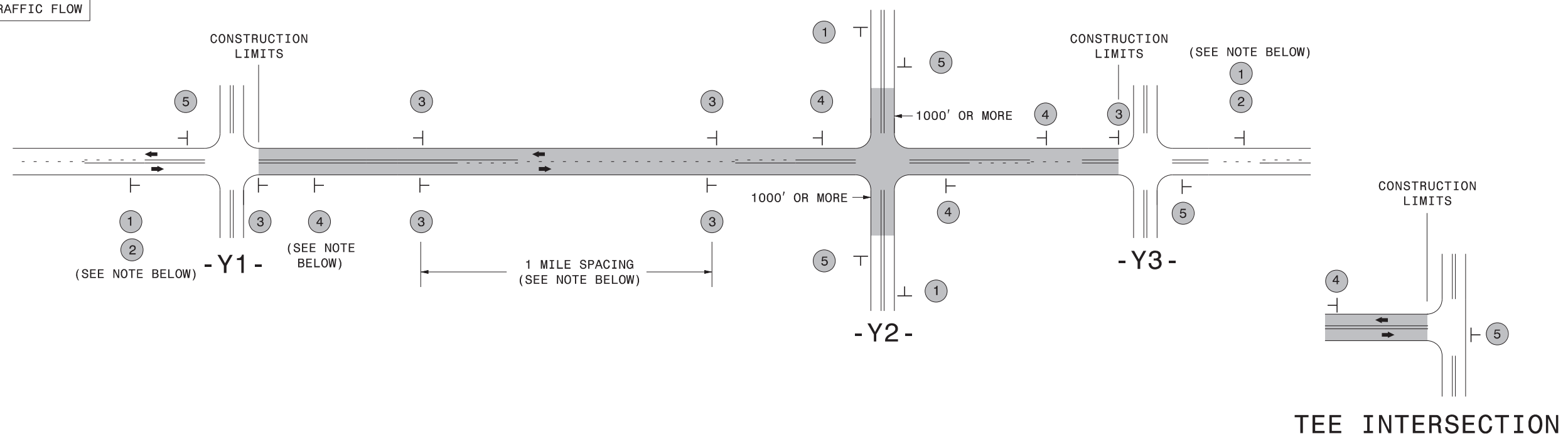
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	WIDTH	BEGIN MP	END MP	4413000000-E	4457000000-N	4510000000-N	4685000000-E		4695000000-E		4700000000-E		4709000000-E	4720000000-E	4725000000-E						4810000000-E		
												WORK ZONE ADVANCE/ GENERAL WARNING SIGNING	TEMPORARY TRAFFIC CONTROL	LAW ENFORCEMENT	4" X 90 M WHITE THERMO	4" X 90 M YELLOW THERMO	8" X 90 M WHITE THERMO	8" X 90 M YELLOW THERMO	12" X 90 M WHITE THERMO	12" X 90 M YELLOW THERMO	24" X 90 M WHITE THERMO	THERMO MSG ONLY 90 M	THERMO LT ARROW 90 M	THERMO RT ARROW 90 M	THERMO STR ARROW 90 M	THERMO STR & RT ARROW 90 M	THERMO STR & LT ARROW 90 M	THERMO 24" YIELD TRIANGLE	4" WHITE PAINT	4" YELLOW PAINT	
								MI	FT			SF	LS	HR	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA	LF	LF		
2024CPT.08.12.10771	Richmond	1	US-220	FROM START OF MEDIAN 200 FT NORTH OF SR 1419 (ASLINGTON ST) TO SR 1335 (ELLERBE RD)	1	2	MD	0.94	32	1.7	2.64	119			6,465	5,500						4							6,465	5,500	
TOTAL FOR MAP NO. 1								0.94				119			6,465	5,500						4							6,465	5,500	
2024CPT.08.12.10771	Richmond	2	US-220 S	FROM SR 1335 (ELLERBE RD) TO END OF MEDIAN 200 FT NORTH OF SR 1419 (ASLINGTON ST)	1	2	MD	1.05	32	16.18	17.23	118			6,921	5,081	305		35			5	2						6,921	5,081	
TOTAL FOR MAP NO. 2								1.05				118			6,921	5,081	305		35			5	2						6,921	5,081	
2024CPT.08.12.10771	Richmond	3	US-220	FROM US 74 BUS (W BROAD AVE) TO START OF MEDIAN 200 FT NORTH OF SR 1419 (ASLINGTON ST)	1,2	2	MU	0.78	32	0.92	1.7	87			40	4,933	3,950	522	51	93		72	7	3	4	2			5,429	4,346	
TOTAL FOR MAP NO. 3								0.78				87			40	4,933	3,950	522	51	93		72	7	3	4	2			5,429	4,346	
2024CPT.08.12.10771	Richmond	4	US-220 S	FROM END OF MEDIAN 200 FT NORTH OF SR 1419 (ASLINGTON ST) TO US 74 BUS (W BROAD AVE)	1,2	2	MU	0.77	32	17.23	18	84			40	5,031	3,532		46		92	63	16	8	3	5	4		5,476	3,934	
TOTAL FOR MAP NO. 4								0.77				84			40	5,031	3,532		46		92	63	16	8	3	5	4		5,476	3,934	
2024CPT.08.12.10771	Richmond	5	US-74 BUS	FROM END OF MEDIAN 0.3 MILES EAST OF SR 1639 (CIRCLEWOOD DR) TO C.J. AT NC 381	1,3,4	2	MU	2.43	50	10.95	13.38	126	*		160	10,701	28,332	1,027	302			306	12	56	12	13	10	9	11	10,701	28,332
TOTAL FOR MAP NO. 5								2.43				126			160	10,701	28,332	1,027	302			306	12	56	12	13	10	9	11	10,701	28,332
TOTAL FOR PROJ NO. 2024CPT.08.12.10771								5.97				534	1	240	34,051	46,395	1,854	399	128	92	441	28	80	20	22	16	9	11	34,992	47,193	
														80,446	2,253	220						158					82,185				
2024CPT.08.12.20771	Richmond	6	SR-1335 / ELLERBE RD	FROM SR 1405 (NORTH LEE ST.) TO US HWY 220	5	2	2WU	0.8	24	0	0.8	77																7,200	7,330		
TOTAL FOR MAP NO. 6								0.8				77																	7,200	7,330	
2024CPT.08.12.20771	Richmond	7	SR-1300 / KEMBERLY ST	FROM SR 1005 (CARTLEDGE CREEK RD.) TO SR 1335 (ELLERBE RD.)	5	2	2WU	0.12	26	0	0.12	11																900	1,000		
TOTAL FOR MAP NO. 7								0.12				11																	900	1,000	
2024CPT.08.12.20771	Richmond	8	SR-1608 / BOYD LAKE RD	FROM SR 1616 (5TH ST) TO SR 1613 (COLES STORE RD)	5	2	2WU	3.31	22	2.9	6.21	371	*															34,642	10,582		
TOTAL FOR MAP NO. 8								3.31				371																	34,642	10,582	
2024CPT.08.12.20771	Richmond	9	SR-1646 / N LONG DR	FROM US HWY 1 (FAYETTEVILLE RD.) TO SR 1624 (COUNTY HOME RD.)	6,7	2	MU	1.25	38	0	1.25	126			80	2,200	16,300	422	40			400	16	39	8	6	4	3	8	2,200	16,300
TOTAL FOR MAP NO. 9								1.25				126			80	2,200	16,300	422	40			400	16	39	8	6	4	3	8	2,200	16,300
TOTAL FOR PROJ NO. 2024CPT.08.12.20771								5.48				585	1	80	2,200	16,300	422	40			400	16	39	8	6	4	3	8	44,942	35,212	
														18,500	462										68			80,154			
GRAND TOTAL								11.45				1,119	1	320	36,251	62,695	2,276	439	128	92	841	44	119	28	28	20	12	19	79,934	82,405	
														98,946	2,715	220						226					162,339				

SIGNING FOR RESURFACING PROJECTS

LEGEND

┆ STATIONARY SIGN

← DIRECTION OF TRAFFIC FLOW



MAINLINE (-L-) SIGNING

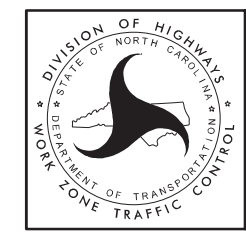
-Y- LINE SIGNING

SIGNING NOTES AND PLACEMENT PER DIRECTION		<p>PLACE 1000' PRIOR TO BEGINNING OF CONSTRUCTION LIMITS. ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000' ALONG -Y- LINE.</p> <p>#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)</p>	<p>NO REQUIRED STATIONARY SIGNING FOR THE FOLLOWING -Y- LINE CONDITIONS:</p> <ol style="list-style-type: none"> LESS THAN 1000' OF RESURFACING ALONG -Y- LINE SUBDIVISION ROADS DEAD END ROADS <p>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.</p> <div style="display: flex; justify-content: space-around;"> <div> <p>PLACED 500' IN ADVANCE OF FLAGGER.</p> </div> <div> <p>PLACED 250' IN ADVANCE OF FLAGGER.</p> </div> </div>
		<p>- PLACE INITIALLY AT THE CONSTRUCTION LIMITS AND SPACE 1 MILE APART THEREAFTER.</p> <p>- AT TEE INTERSECTIONS INSTALL INITIALLY 1/2 MILE FROM INTERSECTION AND SPACE 1 MILE APART THEREAFTER.</p>	
		<p>- THESE ARE FOR -Y- LINES THAT ARE "THROUGH" ROADWAYS.</p> <p>- DEAD END AND SUBDIVISION ROADS ARE NOT "THROUGH" ROADWAYS.</p> <p>- INSTALL 500' +/- FROM EACH -Y- LINE APPROACH AS SHOWN ABOVE.</p> <p>- 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.</p> <p>- A MAXIMUM OF 2 SIGN SETS PER MILE. DO NOT INSTALL WHEN -Y- LINES ARE WITHIN 0.5 MILES FROM "END ROAD WORK" SIGN.</p> <p>- FOR TEE INTERSECTIONS, INSTALL WITHIN 500' +/- OF THE INTERSECTION ALONG -L- LINE.</p>	
		<p>PLACE 500' FOLLOWING THE END OF CONSTRUCTION LIMITS OR AS SHOWN WHEN WORK ENDS AT A 3-WAY TEE INTERSECTION.</p>	

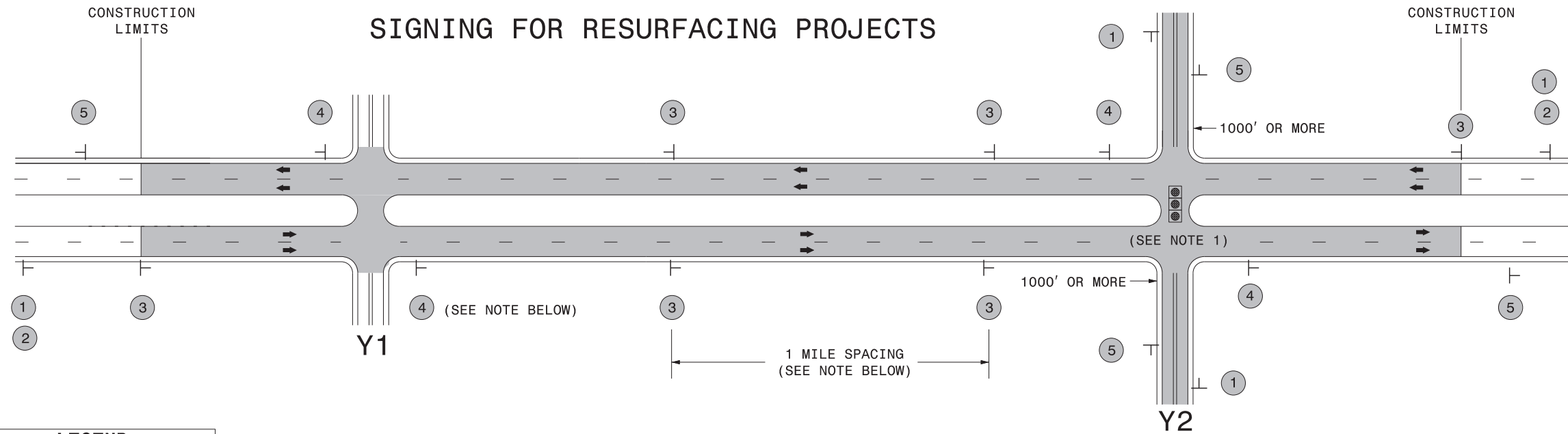
THE ABOVE SIGNS ARE ALL THAT ARE REQUIRED FOR A CONTRACTOR TO BEGIN A RESURFACING CONTRACT. ANY ADDITIONAL SIGNS REQUESTED BY NCDOT DIVISIONS SHALL BE INSTALLED WITHIN 7 BUSINESS DAYS OF THE START OF CONTRACT WORK.

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



LEGEND	
┆	STATIONARY SIGN
←	DIRECTION OF TRAFFIC FLOW

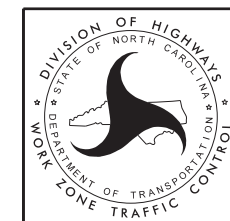
MAINLINE (-L-) SIGNING

-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.		

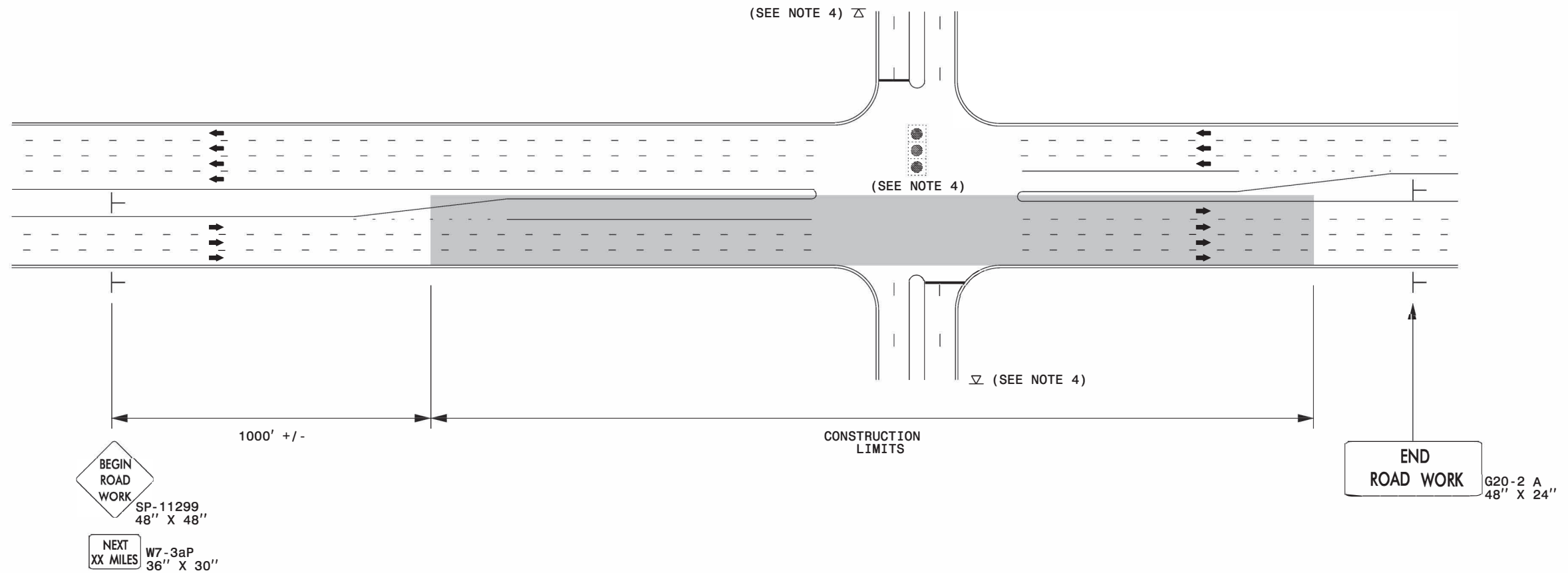
NOTES:

- 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

URBAN / SUBURBAN WORKZONES

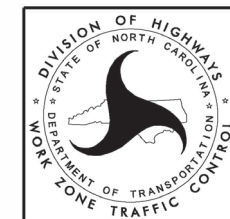


NOTES:

- 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.

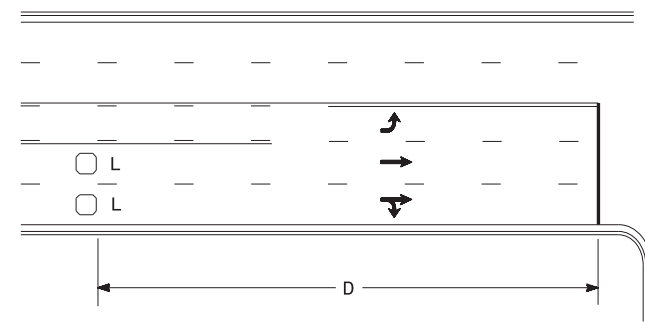
LEGEND

- ┆ STATIONARY SIGN
- ➔ DIRECTION OF TRAFFIC FLOW



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

High Speed Detection (≥40 mph)

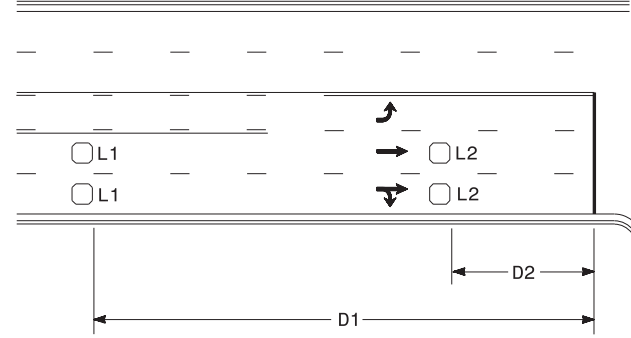


Speed Limit mph	D ft
40	250
45	300
50	355
55	420

L = 6ft X 6ft
Wired separately

Volume Density Operation

OR

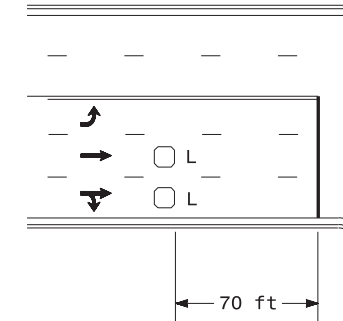


Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

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

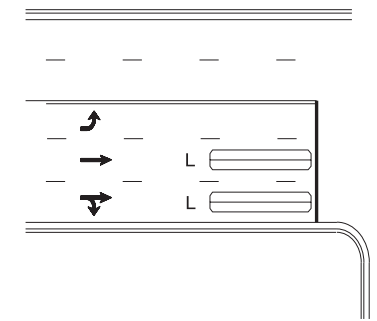
"Stretch" Operation

Low Speed Detection (≤35 mph)



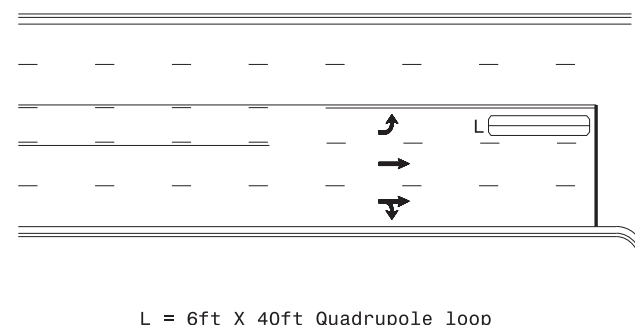
L = 6ft X 6ft
Wired in series

OR



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

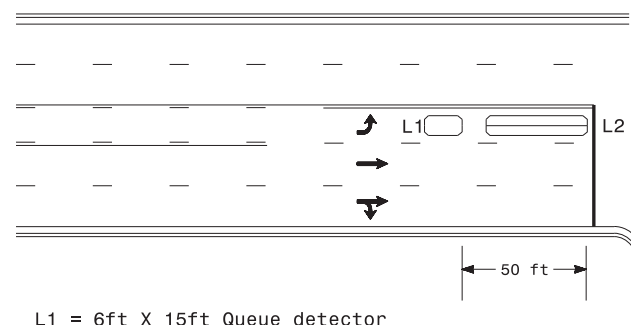
Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

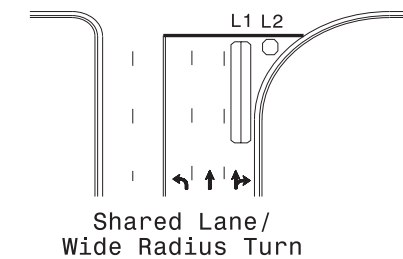
OR



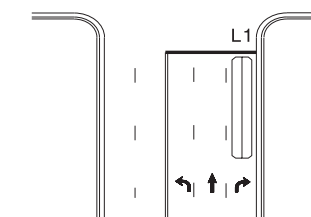
L1 = 6ft X 15ft Queue detector
L2 = 6ft X 40ft Quadrupole loop

Queue Loop Detection

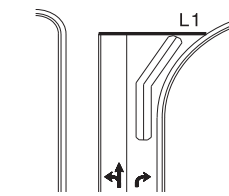
Right Turn Lane Detection



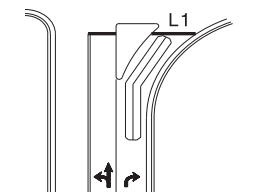
L1 = 6ft X 40ft Quadrupole loop
L2 = 6ft X 6ft [Minimum] Presence loop
Wired separately



Standard Turn

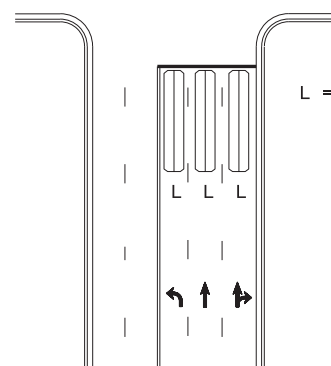


Wide Radius Turn



Channelized Turn

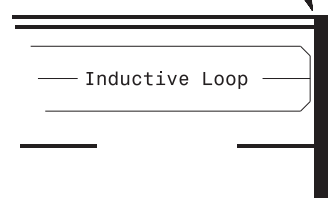
Side Street Detection



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

Presence Loop Placement at Stop Lines

Locate loop slightly
behind leading
edge of stop line



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

DATE: 9/8/2020
SIC. INVENTORY NO.