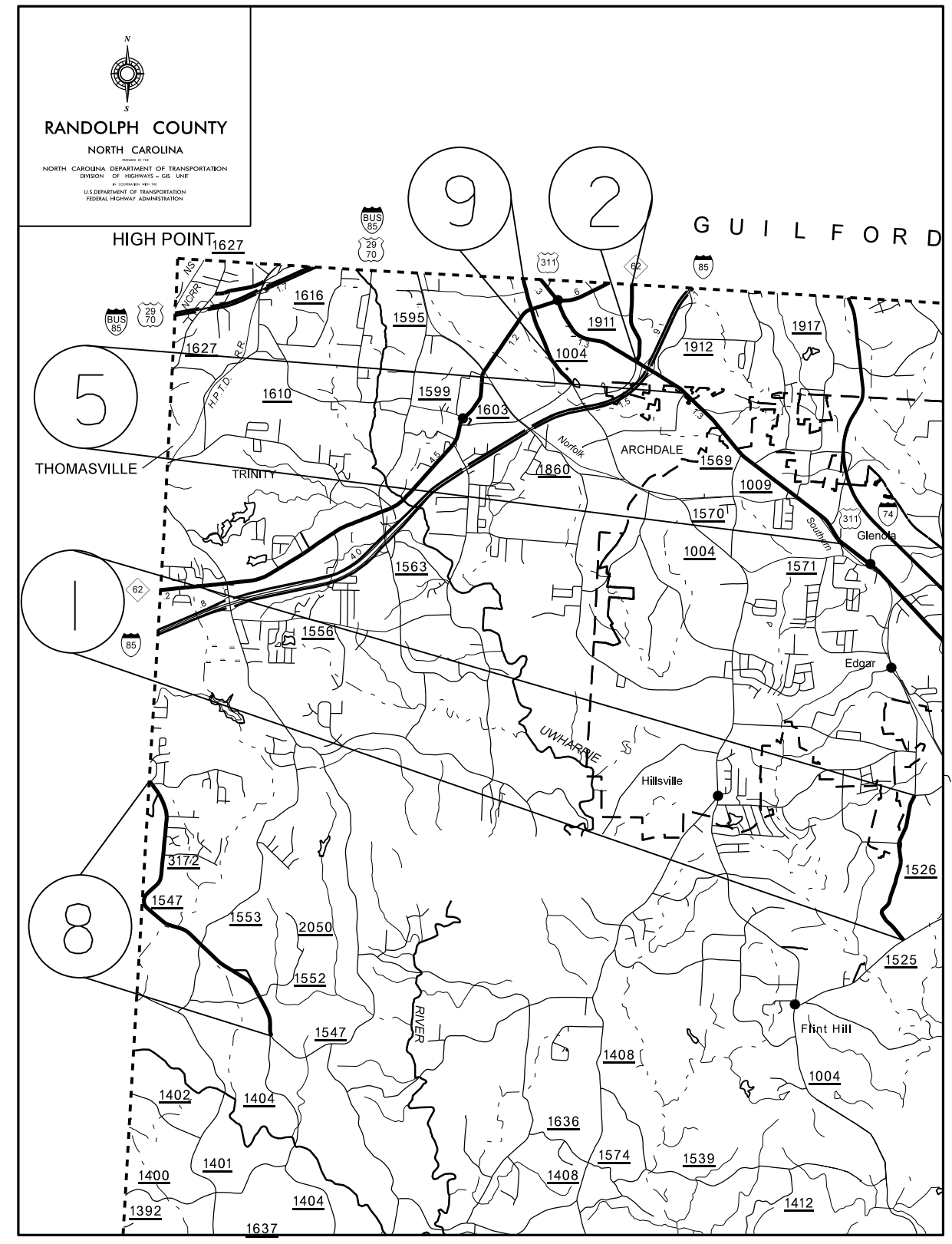


**RANDOLPH COUNTY**  
 PRIMARY AND SECONDARY RESURFACING MAP

040397  
 16-DEC-2020 17:55  
 c:\p\m\2021\2021-Contr-acts\Randolph\_Feb\_2021\_Map\_Tup.dgn

# MAPS #1,2,5,8,9

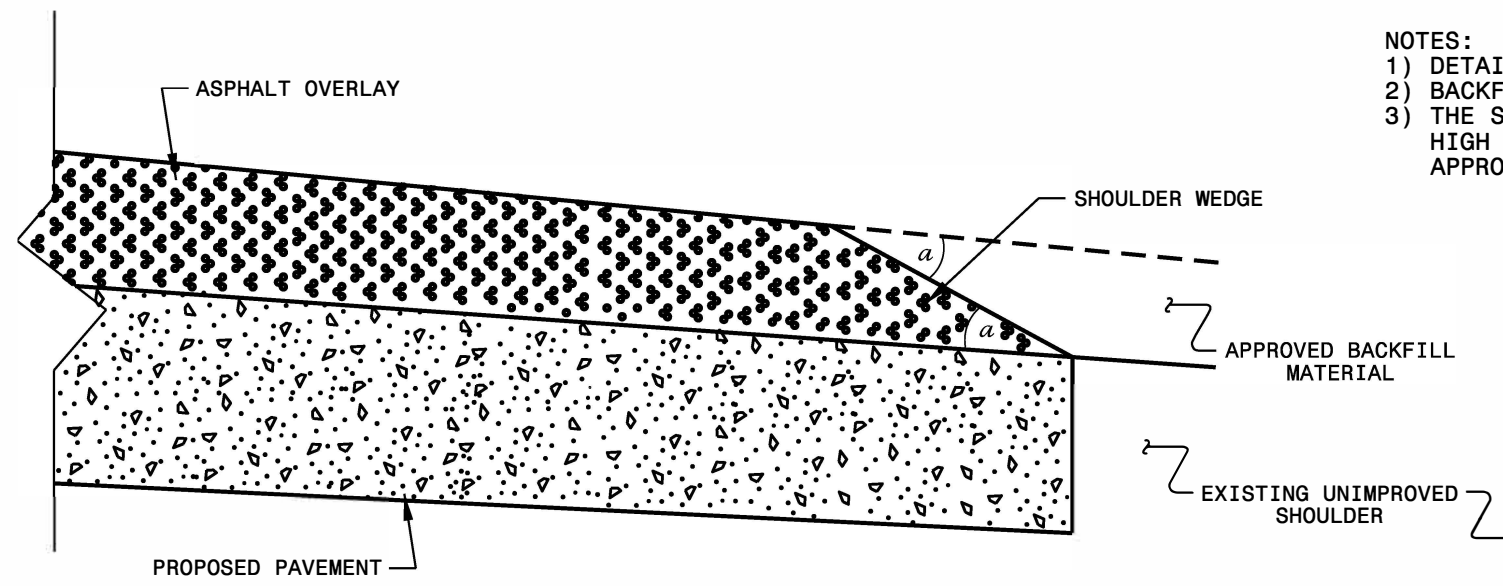




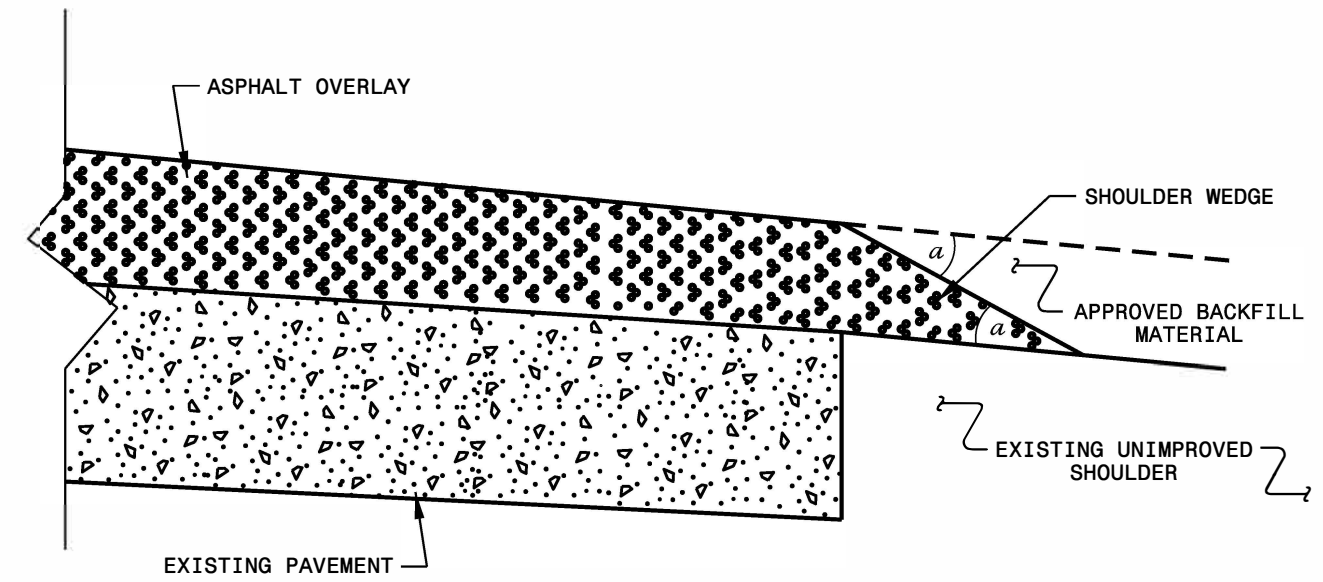




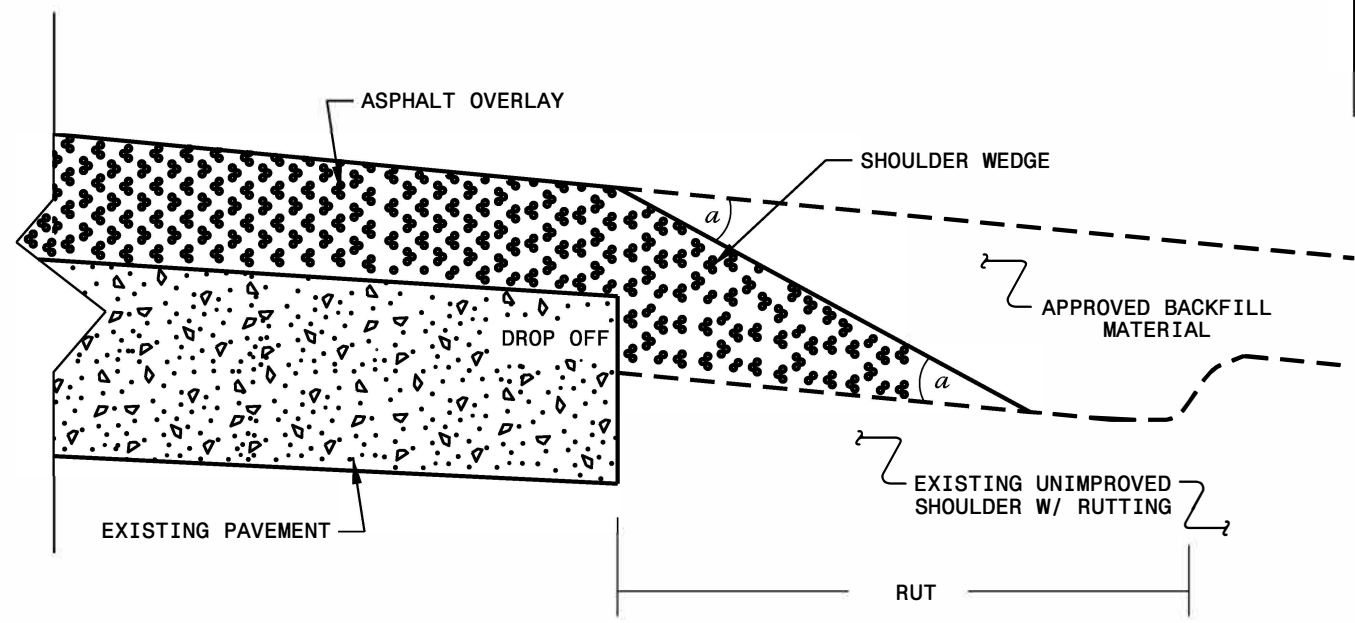
- NOTES:
- 1) DETAIL DOES NOT APPLY TO OGAFB AND ULTRA-THIN BONDED WEARING COURSE.
  - 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
  - 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS, SIDE STREETS, HIGH SHOULDERS, AND OTHER LOCATIONS NOT FEASIBLE TO CONSTRUCT AS APPROVED BY THE ENGINEER.



**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°

<b>CONTRACT STANDARDS AND DEVELOPMENT UNIT</b>	
Office 919-707-6950	FAX 919-250-4119
<b>SHOULDER WEDGE DETAILS</b>	
ORIGINAL BY: T. SPELL	DATE: 7-19-11
MODIFIED BY:	DATE: 2/2/16
CHECKED BY:	DATE:
FILE SPEC.: s:\usr\details\stand\shoulderwedgedetail.dgn	

22 JAN-2018 09:41  
 S:\Contracts\2018\Resurfacing Projects\Division 4\I-5937 Wilson March 2018\Revised Shoulder Wedge Detail.dgn  
 P:\piper\ar\USD\2018\

## SUMMARY OF QUANTITIES

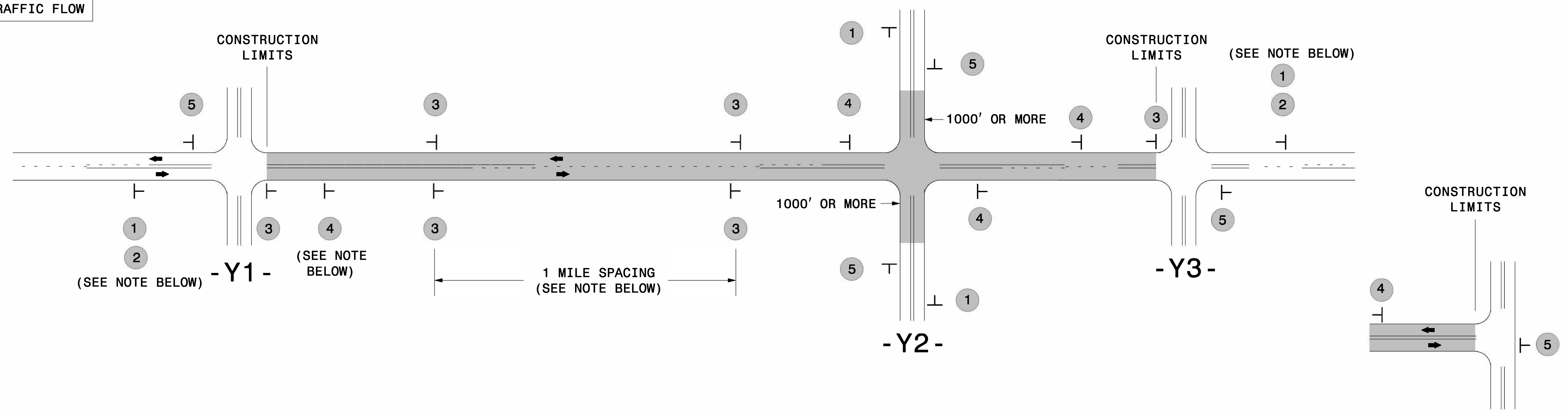
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LAN ES	FINAL SURFACE TEST. REQ'D	WARM MIX ASPHALT REQUIRED	LENGTH	WID TH	SHOULDER RECONSTRUCTION	ASB	0" TO 1.5" MILLING	INC. MILLING	S9.5B	S9.5C	ASPHALT BINDER FOR PLANT MIX	PATCHING EXI. PAV'T	BLOT-TING SAND	2'-6" CURB & GUT-TER	4" CONC SIDE-WALK	RETRO-FIT EXI. CURB RAMP	CONC CURB RAMP	REM & REPL CURB RAMPS	ADJ. OF MAN-HOLES	ADJ. OF METER OR VALVE BOX	PORT-ABLE LIGHT-ING	TEMP. SILT FENCE	SEED & MULCH-ING	RE-SPONSE FOR EC	LEAD-IN CABLE (14-2 PAIR)					
									MI	FT	SMI	TON	SY	SY	TONS	TONS	TONS	TONS	TONS	TONS	TONS	TONS	TONS	TONS	TONS	TONS	TONS	LF	SY	EA	EA	EA	EA	EA	EA	EA
2021CPT.08.07.20761	Randolph	1	SR1526 EDGAR RD.	(FROM: SR1525 BEESON FARM RD. TO: SR1527 MARLBORO CHURCH RD. )	1	2	NO	NO	1.76	20	3.52	500		390	1,874		126	220																		
		2	SR1911 ASH-LAND ST.	(FROM: PVMT JOINT NEAR SR 1009 MAIN ST. TO: GUILFORD CO. LINE.	1,2	2	NO	NO	0.87	20	1.74	244		265	1,953			131	257	20																
		3	SR 1955 S. STOUT ST.	(FROM: SR 1009 HIGHWAY 311 EXT. TO: SR 1950 W. ACADEMY ST.)	2,3	2	NO	NO	1.337	20	2.67	374		176	1,820		1,574	94	530									1								
		4	SR1938 HOCKETT DAIRY RD.	(FROM: SR2039 RIVER MILL RD TO: SR1007 RANDLEMAN RD.)	1	2	NO	NO	1.88	20	3.76	528			1,040	2,163		145	100																	
		5	SR1009 US HIGHWAY 311	(FROM: 10' S OF JOINT BELOW SR1747 LILLY FLOWER RD. TO: SR3182 COMANCHE DR.)	2,3	2	NO	NO	2.447	40-60	0.23	35		10,972	2,860		7,899	474	400		50	250	23	1	14	12	2	*	50	0.25	2	600				
		6	SR1944 BRANSON DAVIS RD.	(FROM: BRIDGE 526 I-74 NORTH JOINT TO:SR1926 DAVIS COUNTRY RD.)	1	2	NO	NO	3.08	22	6.16	865			3,560	3,872			260	700																
		7	SR1004 FLINT HILL RD.	(FROM:SR1525 BEESON FARM RD. TO:SR1539 EARNHARDT RD.)	1	2	NO	NO	1.7	22	3.40	812.6			780	2,111			142	250																
		8	SR1547 FULLER MILL RD N.	(FROM: DAVIDSON COUNTY TO: SR1547 FINCH FARM RD.)	1	2	NO	NO	3.61	21	7.22	1,014			2,600	4,436			297	1,500																
		9	SR1577 ARCHDALE RD.	(FROM:GUILFORD COUNTY LINE TO:SR1603 SCHOOL RD.)	1,2	2	NO	NO	1.3	26	3.02	424		500	2,484	2,944			197	378							5	2								
		10	SR1504 W. CENTRAL AVE.	(FROM:SR1502 W. BALFOUR AVE.TO:BUS 220 N. FAYETTEVILLE ST.)	1,2	2	NO	NO	0.93	29.5	1.75	245		700	2,210	1,588			106	100							4								300	
<b>GRAND TOTAL FOR PROJ NO. 2021CPT.08.07.20761</b>									<b>18.914</b>		<b>33.47</b>	<b>5,041.6</b>	<b>12,613</b>	<b>17,744</b>	<b>20,941</b>	<b>9,473</b>	<b>1,972</b>	<b>4,435</b>	<b>20</b>	<b>50</b>	<b>250</b>	<b>23</b>	<b>1</b>	<b>14</b>	<b>21</b>	<b>5</b>	<b>1</b>	<b>50</b>	<b>0.25</b>	<b>2</b>	<b>900</b>					





# SIGNING FOR RESURFACING PROJECTS

**LEGEND**  
 ┆ STATIONARY SIGN  
 ← DIRECTION OF TRAFFIC FLOW



## MAINLINE (-L-) SIGNING

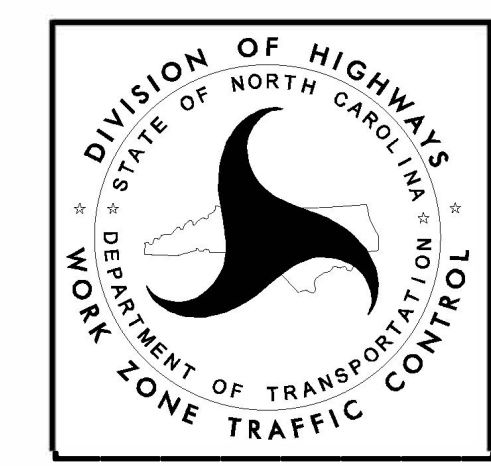
## -Y- LINE SIGNING

SIGNING NOTES AND PLACEMENT PER DIRECTION	1		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"> <li>1) LESS THAN 1000' OF RESURFACING ALONG -Y- LINE</li> <li>2) SUBDIVISION ROADS</li> <li>3) DEAD END ROADS</li> </ol> <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 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		#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		- 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		- 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		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

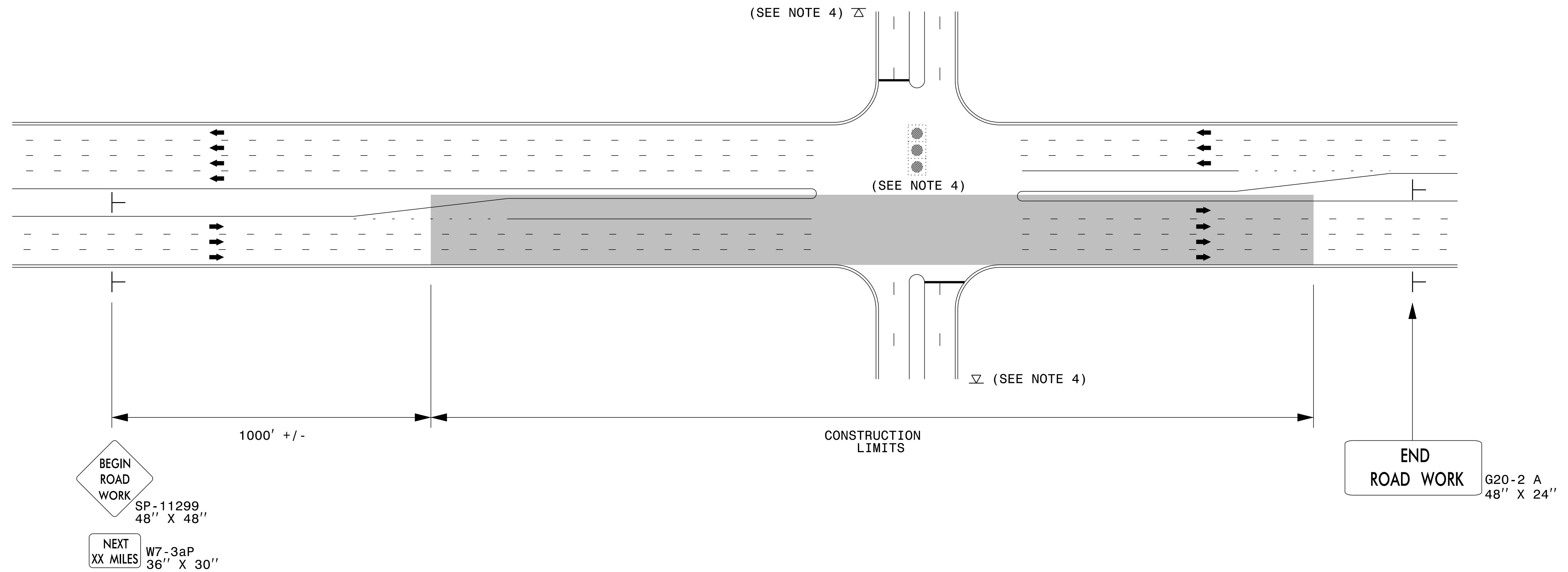
FOR RESURFACING MAPS WITH CONSTRUCTION LIMITS LESS THAN 2 MILES IN LENGTH, NO STATIONARY SIGNS ARE REQUIRED. USE PORTABLE "ROAD UNDER CONSTRUCTION" OR "ROAD WORK AHEAD" SIGNS IN LIEU OF STATIONARY ADVANCE WARNINGS SIGNS.



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

5/4/5/2017 S:\TMD\WZTC\Resurfacing\2L2W & AST Resurfacing Details\Resurfacing\_AdvWarn\_2L.dgn User:kddis

## URBAN / SUBURBAN WORKZONES

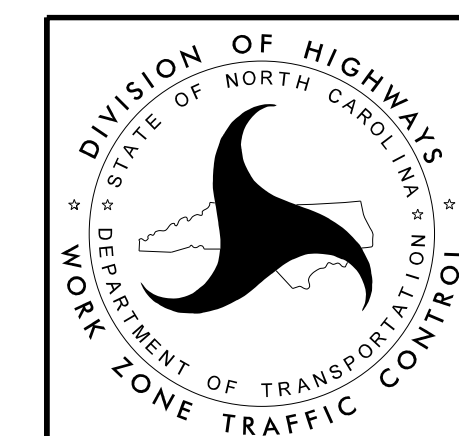


### NOTES:

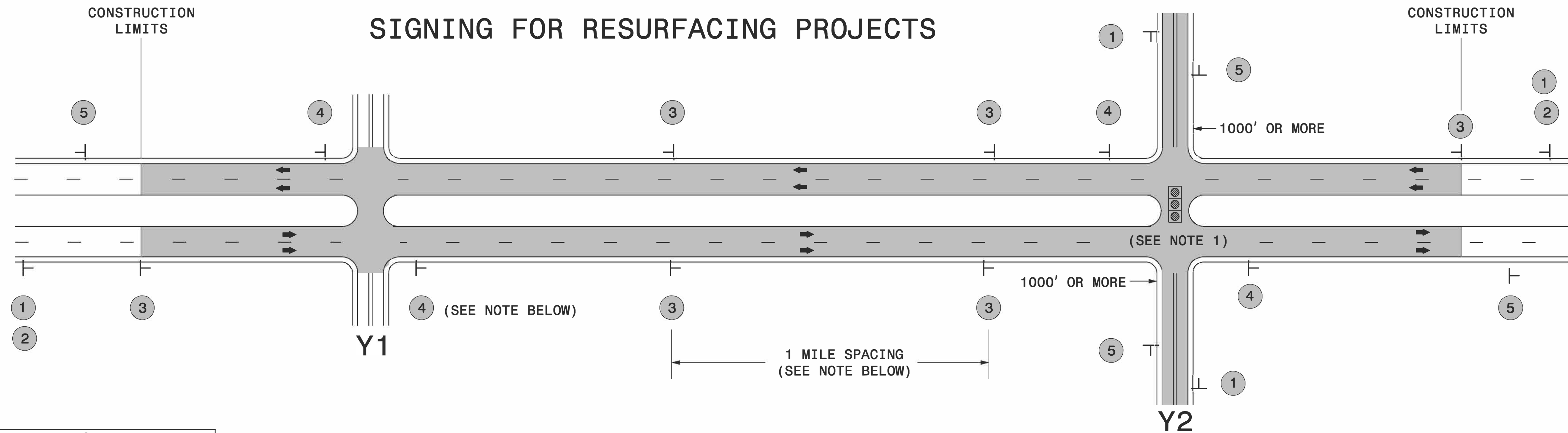
- 1) 48" x 48" SIZED SIGNS (SP- 11299) MAY BE REDUCED TO 36" X 36" ON ROADWAYS WITH SPEED LIMITS OF 40 MPH OR LESS.
- 2) MOUNT SIGNS THAT ARE LARGER THAN 10 SQUARE FEET IN AREA ON TWO OR MORE WOOD OR U-CHANNEL SUPPORTS. PERFORATED SQUARE TUBING SUPPORT SYSTEMS MAY SUPPORT LARGER AREAS ON A SINGLE SUPPORT. 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**



LEGEND	
—	STATIONARY SIGN
←	DIRECTION OF TRAFFIC FLOW

### MAINLINE (-L-) SIGNING

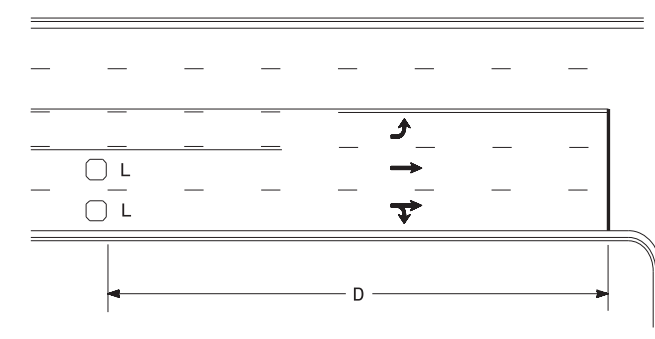
### -Y- LINE SIGNING

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"> <li>1) LESS THAN 1000' OF RESURFACING ALONG -Y- LINE</li> <li>2) SUBDIVISION ROADS</li> <li>3) DEAD END ROADS</li> </ol> <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.		
			<p>NOTES:</p> <ol style="list-style-type: none"> <li>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.</li> </ol>	



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

### High Speed Detection (≥40 mph)

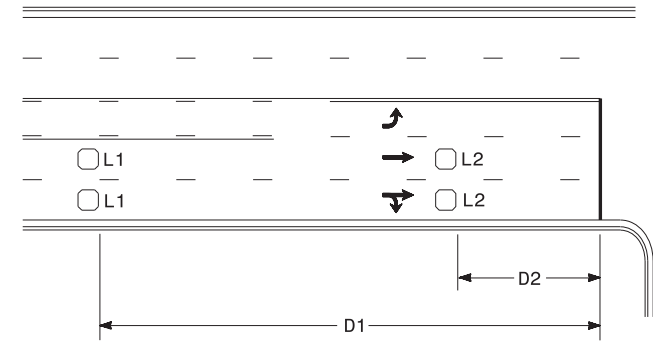


Speed Limit mph	D ft
40	250
45	300
50	355
55	420

L = 6ft X 6ft  
Wired separately

Volume Density Operation

OR

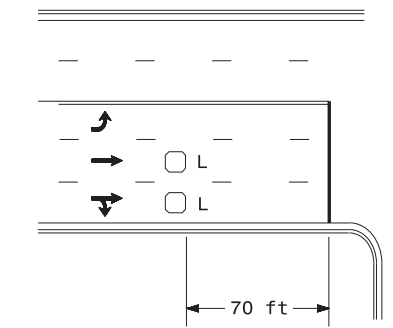


Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

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

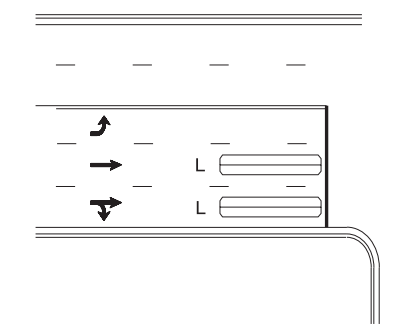
"Stretch" Operation

### Low Speed Detection (≤35 mph)



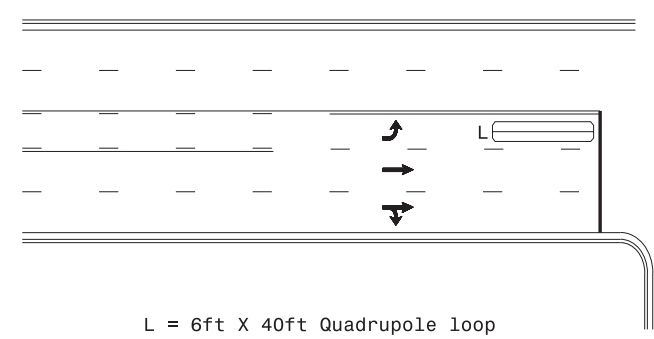
L = 6ft X 6ft  
Wired in series

OR



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

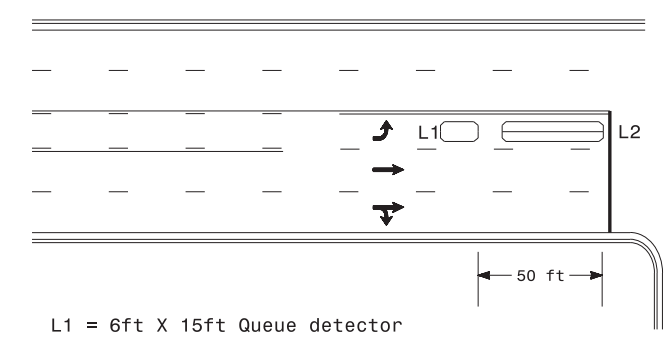
### Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

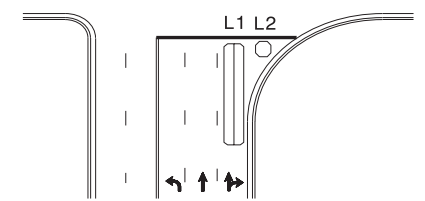
OR



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

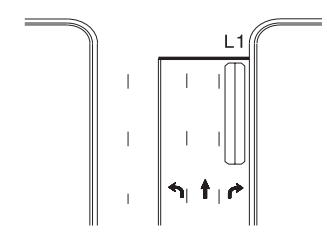
Queue Loop Detection

### Right Turn Lane Detection

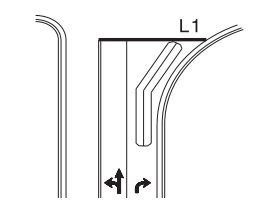


L1 = 6ft X 40ft Quadrupole loop  
L2 = 6ft X 6ft [Minimum] Presence loop  
Wired separately

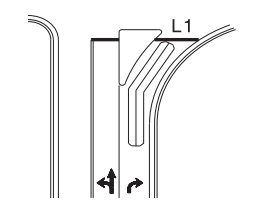
Shared Lane/  
Wide Radius Turn



Standard Turn

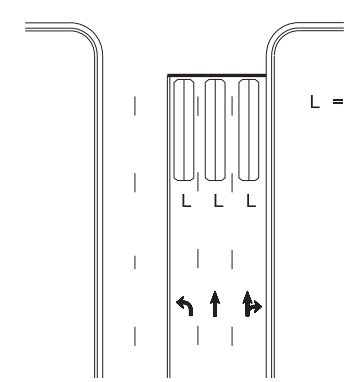


Wide Radius Turn



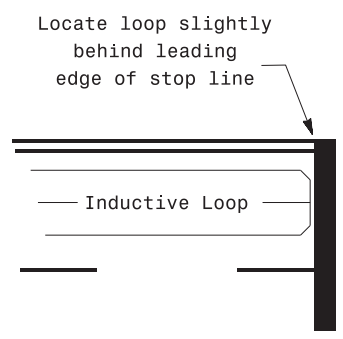
Channelized Turn

### 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

SCALE  
N/A

Prepared in the Offices of:

Typical Signal Loop Locations

PLAN DATE: September 2020	REVIEWED BY: JPG
PREPARED BY: PLA	REVIEWED BY:
REVISIONS	INIT. DATE

9/8/2020

SIG. INVENTORY NO.