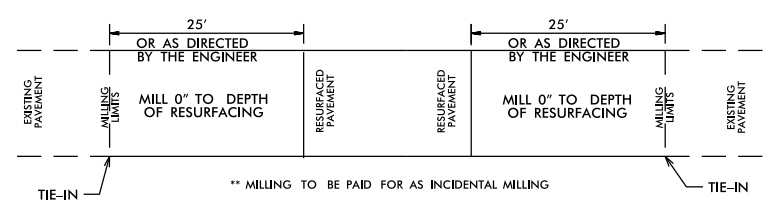
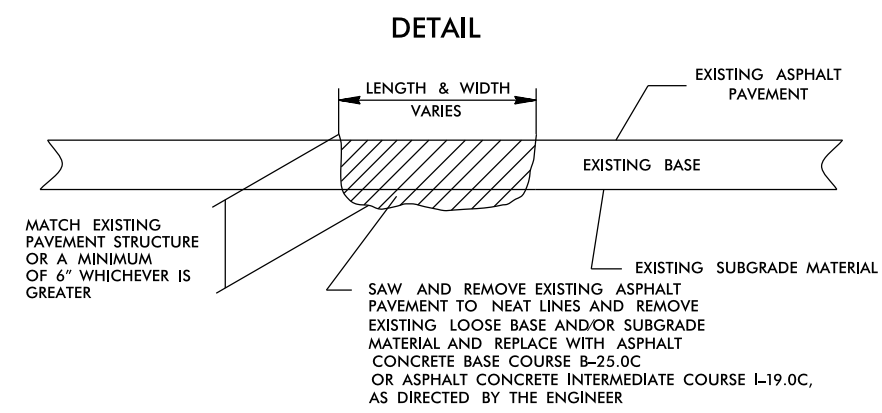


DETAILS OF PATCHING EXISTING PAVEMENT PRIOR TO RESURFACING



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. 1.0" ASPHALT CONCRETE LEVELING COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD.
D1	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
F1	PROPOSED ASPHALT SURFACE TREATMENT, DOUBLE SEAL
U	EXISTING PAVEMENT.
V1	MILLING 1.5" IN DEPTH

PROJECT NO.	SHEET NO.	TOTAL NO.
2021CPT.08.02.20531	6	

SUMMARY OF QUANTITIES

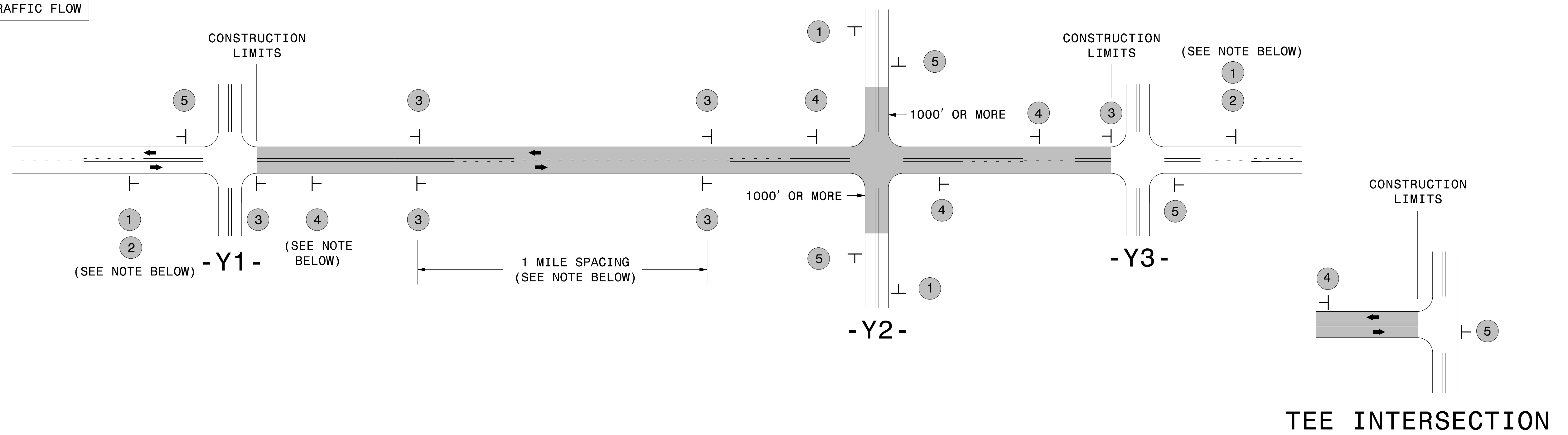
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH	WID TH	1.5" MILLING	INC. MILLING	I19.0C	S9.5B	LEVELING COURSE, S9.5B	ASPHALT BINDER FOR PLANT MIX	PATCHING EXI. PAVEMENT	AST, DOUBLE SEAL	EMULSION FOR AST	ADJ. OF MAN-HOLES	ADJ. OF METER OR VALVE BOX	IND. LOOP SAW-CUT	LEAD-IN CABLE (14-2 PAIR)	WZ ADV/ GEN. WARN. SIGNING	TEMP. TRAFFIC CONTROL	LAW ENFORCEMENT
										MI	FT	SY	SY	TONS	TONS	TONS	TONS	TONS	SY	GAL	EA	EA	LF	LF	SF	LS	HR
		1	SR 1133 (LEE AVE)	FROM NC 78 TO PVMNT JOINT AT RAND ST	1	2	MU	NO	NO	0.51	43	12,866	865		1,280		86				3	4	1,200	1,200	126		40
		2	SR 1117 (GARDEN ST)	FROM SR 1152 (FIRETOWER RD) TO SR 1298 (W GARDEN ST)	2	2	2WU	NO	NO	1.04	20	12,203	400		1,105		74	100							224		
		3	SR 1420 (AMOS BRIDGES RD)	FROM US 1 BUS (HAWKINS AVE) TO SR 1415 (COLON RD)	3	2	2WU	NO	NO	1.72	24				2,240	1,475	249	325							192		
		4	SR 1001 (LEMON SPRINGS RD)	FROM NC 78 TO SR 1245 (MEADOW DR)	2	2	2WU	NO	NO	1.52	21	20,251	1,242		1,840		123					2			170		
		5	SR 1303 (CENTER CHURCH RD)	FROM US 1 TO SR 1302 (ARTHUR MADDOX RD)	4	2	2WU	NO	NO	1.93	22				2,475		166	200							217		
		6	SR 1530 (PEPPERMILL RD)	FROM US 421 BUS TO SR 1531 (SWANNS STATION RD)	4	2	2WU	NO	NO	1.39	19				1,410		94	125							150		
		7	SR 1747 (WILD FOREST RD)	FROM SR 1325 (VALLEY RD) TO END STATE MAINT.	4	2	2WU	NO	NO	0.13	18				125		8	85							15		
		8	SR 1719 (WILDWOOD DR)	FROM SR 1747 (WILD FOREST DR) TO SR 1720 (PALMETTO PATH)	4	2	2WU	NO	NO	0.47	18				450		30	125							53		
		9	SR 1724 (LONGLEAF LN)	FROM SR 1719 (WILDWOOD DR) TO SR 1723 (DEBRA LN)	4	2	2WU	NO	NO	0.15	18				150		10	100							17		
		10	SR 1723 (DEBRA LN)	FROM SR 1724 (LONGLEAF LN) TO SR 1720 (PALMETTO PATH)	4	2	2WU	NO	NO	0.16	18				155		10	75							18		
		11	SR 1720 (PALMETTO PATH)	FROM SR 1721 (SMOKEY PATH) TO SR 1723 (DEBRA LN)	4	2	2WU	NO	NO	0.23	18				220		15	85							26		
		12	SR 1721 (SMOKEY PATH)	FROM SR 1720 (PALMETTO PATH) TO SR 1722 (WILD FOREST RD)	4	2	2WU	NO	NO	0.09	18				90		6	30							19		
		13	SR 1538 (BUCKHORN RD)	FROM NC 42 TO PVMNT JOINT 0.28 MILES FROM SR 1539 (LANIER FARM	5	2	2WU	NO	NO	2.7	23			5,195			249	110	36,455	18,228					302	*	
GRAND TOTAL FOR PROJ NO. 2021CPT.08.02.20531										12.04		45,320	2,507	5,195	11,540	1,475	1,120	1,360	36,455	18,228	3	6	1,200	1,200	1,529		40

SIGNING FOR RESURFACING PROJECTS

LEGEND

┃ STATIONARY SIGN

← DIRECTION OF TRAFFIC FLOW



MAINLINE (-L-) SIGNING

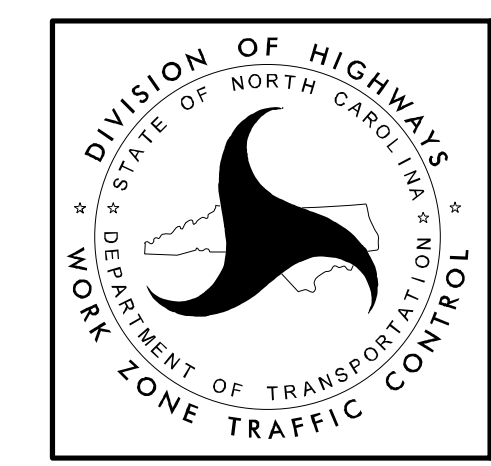
-Y- LINE SIGNING

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"> 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, 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.

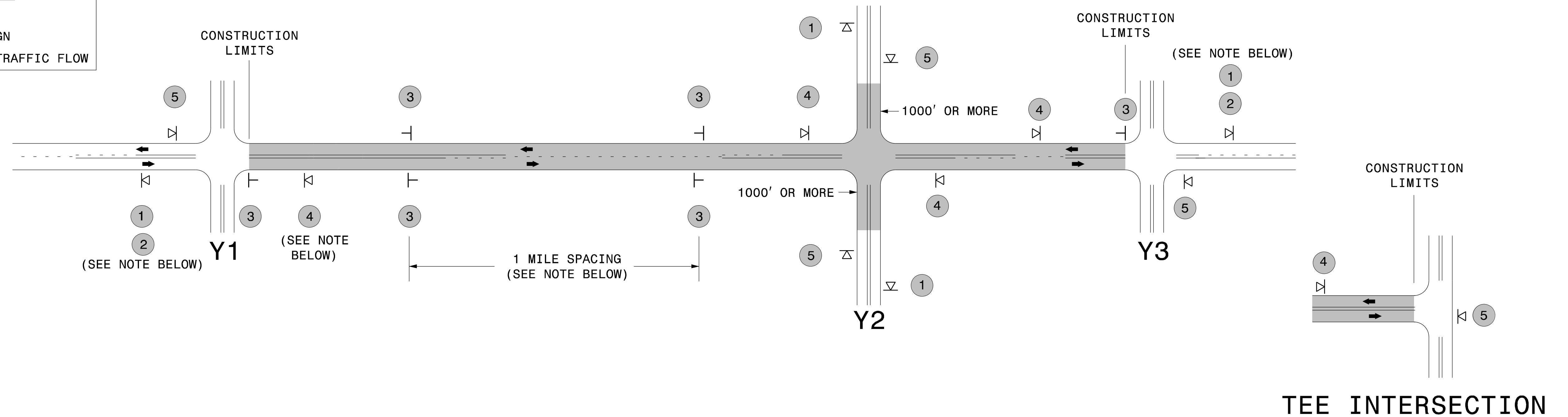


ADVANCE WARNING SIGNS FOR RURAL AND SUBURBAN 2-LANE ROADWAY RESURFACING

SIGNING FOR ASPHALT SURFACE TREATMENT

LEGEND

- ▷ PORTABLE SIGN
- └ STATIONARY SIGN
- ← DIRECTION OF TRAFFIC FLOW



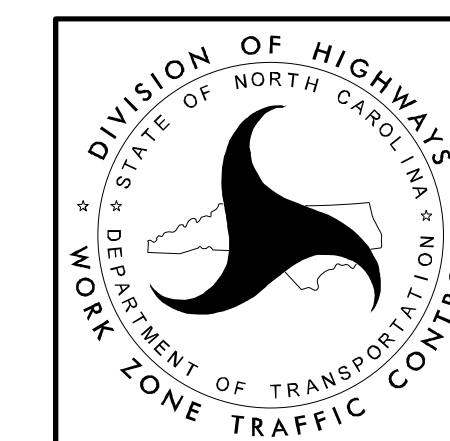
MAINLINE (-L-) SIGNING

-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>- SIGN #2 ONLY USED WHEN RESURFACING LIMITS ARE 2 OR MORE MILES IN LENGTH. ROUND UP TO THE NEAREST WHOLE NUMBER. DO NOT USE FRACTIONAL OR DECIMAL NUMBERS.</p>	<p>STATIONARY SIGNING NOT REQUIRED 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, 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>
	 	<p>- ALTERNATE THE FOLLOWING TWO SIGNS:</p> <p>- STARTING WITH "LOOSE GRAVEL" (W8-7) FOLLOWED BY "UNMARKED PAVEMENT".</p> <p>- PLACE INITIALLY AT THE CONSTRUCTION LIMITS AND SPACED 1 MILE APART THEREAFTER.</p> <p>- AT TEE INTERSECTIONS INSTALL INITIALLY 0.5 MILE FROM INTERSECTION AND SPACE 1 MILE APART THEREAFTER.</p>	
		<p>- THESE ARE FOR -Y- LINES THAT ARE "THROUGH" ROADWAYS. 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>PLACE 500' FOLLOWING THE END OF CONSTRUCTION LIMITS OR AS SHOWN WHEN WORK ENDS AT A 3-WAY TEE INTERSECTION.</p>	
	<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.</p>		

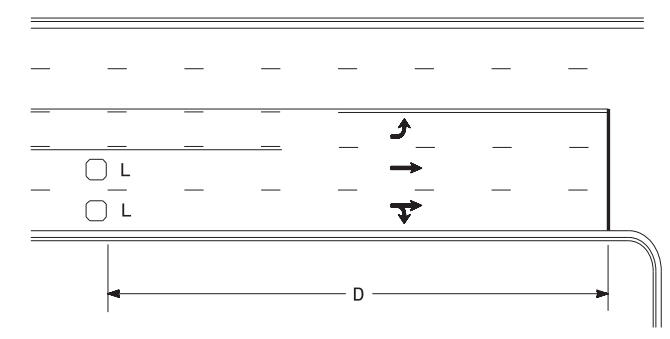
MAPS LESS THAN 2 MILES

FOR AST RESURFACING MAPS WITH CONSTRUCTION LIMITS LESS THAN 2 MILES IN LENGTH, USE A STATIONARY "LOOSE GRAVEL" SIGN AT THE BEGINNING CONSTRUCTION LIMIT FOLLOWED BY AN "UNMARKED PAVEMENT" SIGN MIDWAY THROUGH AND AN "END ROAD WORK" SIGN AT THE END CONSTRUCTION LIMIT.



ADVANCE WARNING SIGNS FOR 2-LANE ROADWAY ASPHALT SURFACE TREATMENT

High Speed Detection (≥40 mph)

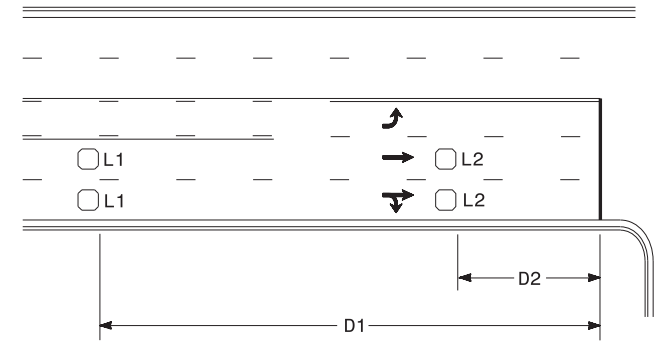


Speed Limit mph	D ft
40	250
45	300
50	355
55	420

L = 6ft X 6ft
Wired separately

Volume Density Operation

OR



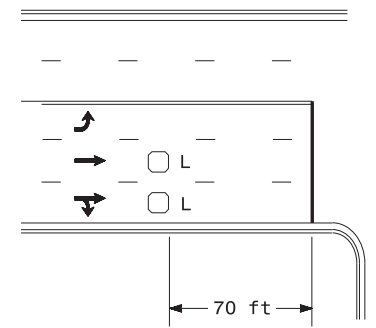
Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

L1 = 6ft X 6ft
Wired in series

L2 = 6ft X 6ft
Wired in series

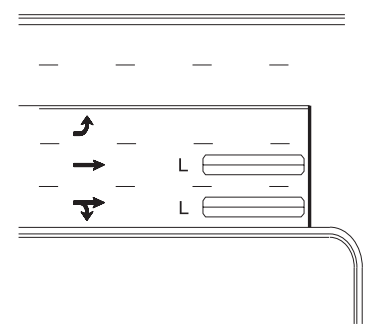
"Stretch" Operation

Low Speed Detection (≤35 mph)



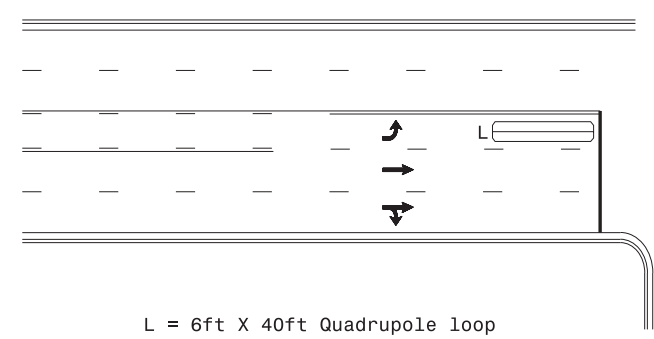
L = 6ft X 6ft
Wired in series

OR



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

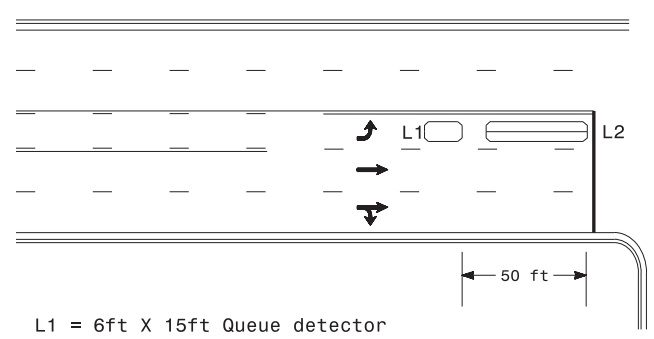
Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

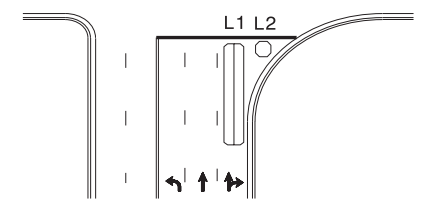
OR



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

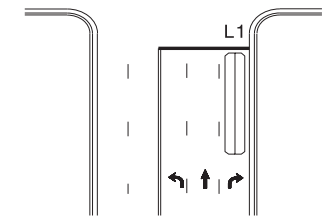
Queue Loop Detection

Right Turn Lane Detection

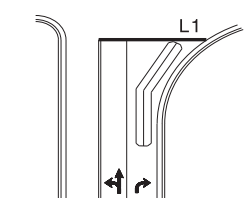


Shared Lane/
Wide Radius Turn

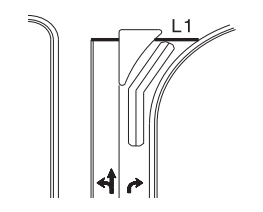
L1 = 6ft X 40ft Quadrupole loop
L2 = 6ft X 6ft [Minimum] Presence loop
Wired separately



Standard Turn

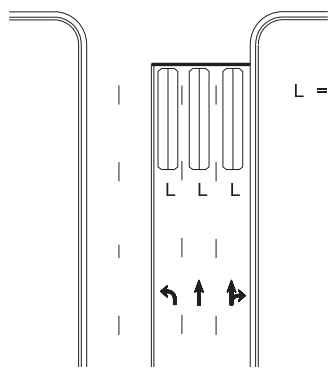


Wide Radius Turn



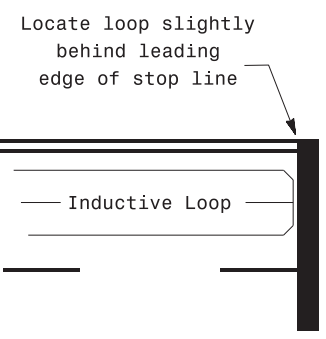
Channelized Turn

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:

PLANNING, MOBILITY AND SAFETY DIVISION
STATE OF NORTH CAROLINA
SIGNAL DESIGN SECTION

SCALE: N/A

Typical Signal Loop Locations

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

9/8/2020