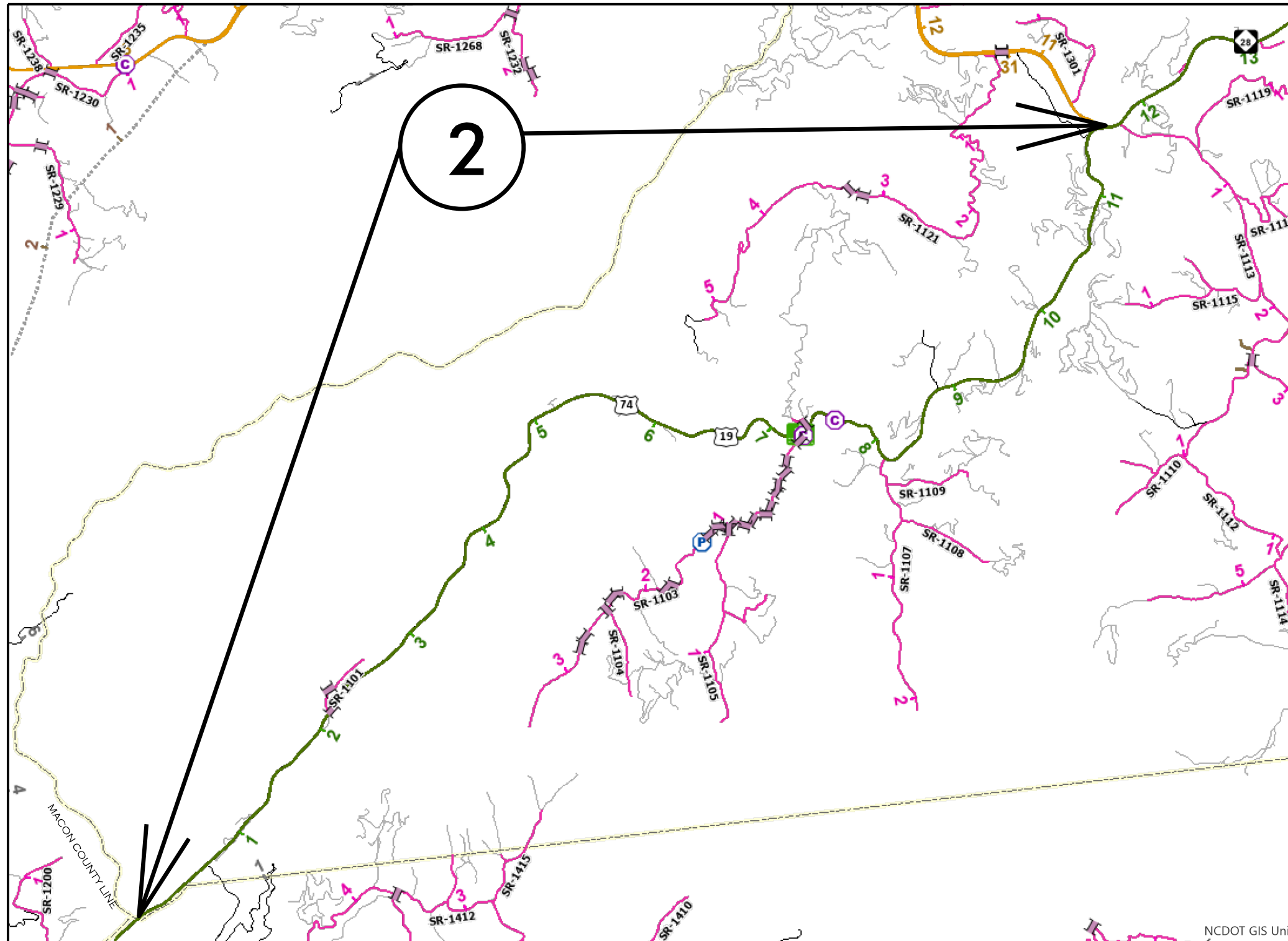




# SWAIN COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	2025CPT.14.08.10201, etc.	2	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	



## MAP 2



BEG

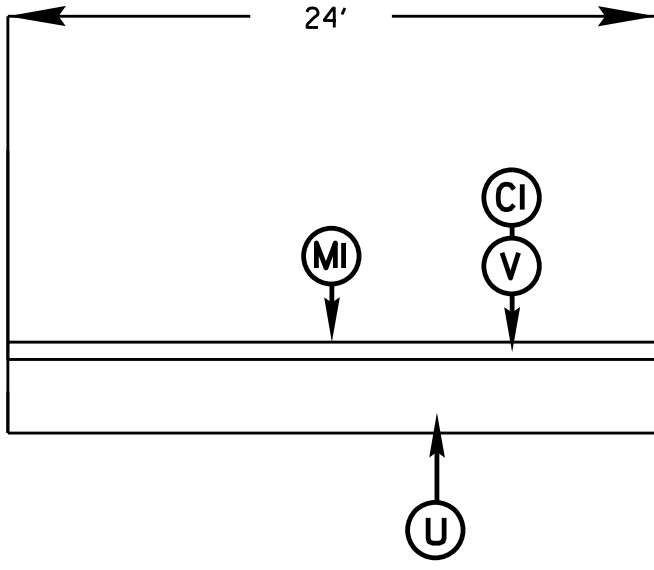


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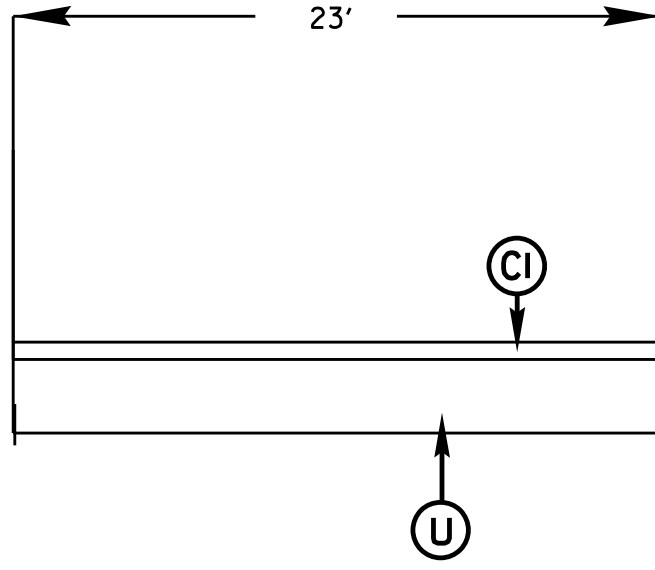
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	2025CPT.14.08.10201, etc.	3	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 165LBS. PER SQ. YD.
U	EXISTING PAVEMENT
V	MILLED ASPHALT PAVEMENT 1 1/2" IN DEPTH IN LOCATIONS AS DIRECTED BY PROJECT ENGINEER
M1	MILLED RUMBLE STRIPS, CENTERLINE

TYPICAL 1



TYPICAL 2





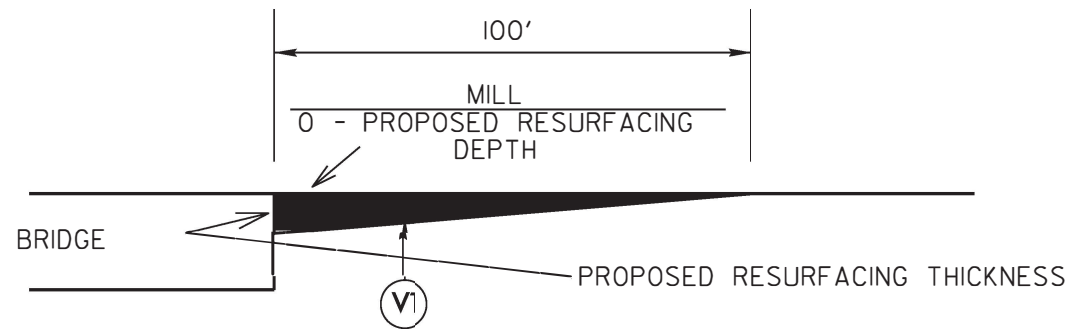
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	2025CPT.14.08.10201, etc.	5	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	

**Bridge Structure Table**

Map #	Route No.	Road Name	County	Structure No.	Posted SV (Tons)	Posted TTST (Tons)	Paving Across Bridge
2	US 17/74	US 19/74	Swain	860003	99	99	No

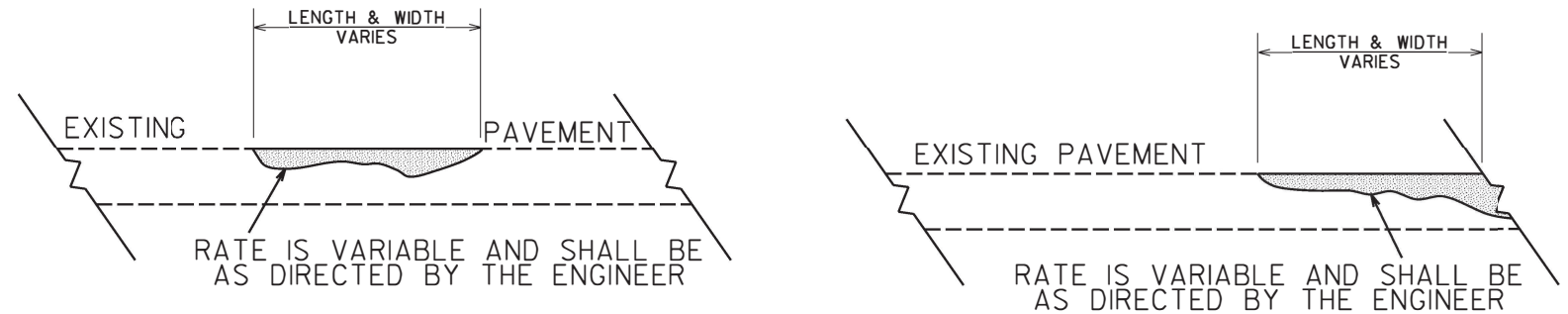
6/8/2025

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	2025CPT.14.08.10201, etc.	6	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	



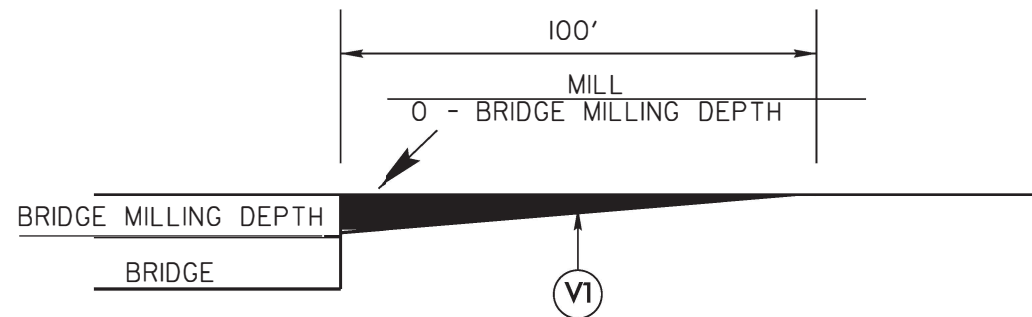
**MILLING DETAIL AT BRIDGE APPROACHES**

**WHERE BRIDGES WILL NOT BE RESURFACED. THIS WILL BE PAID FOR AS "INCIDENTAL" MILLING.**



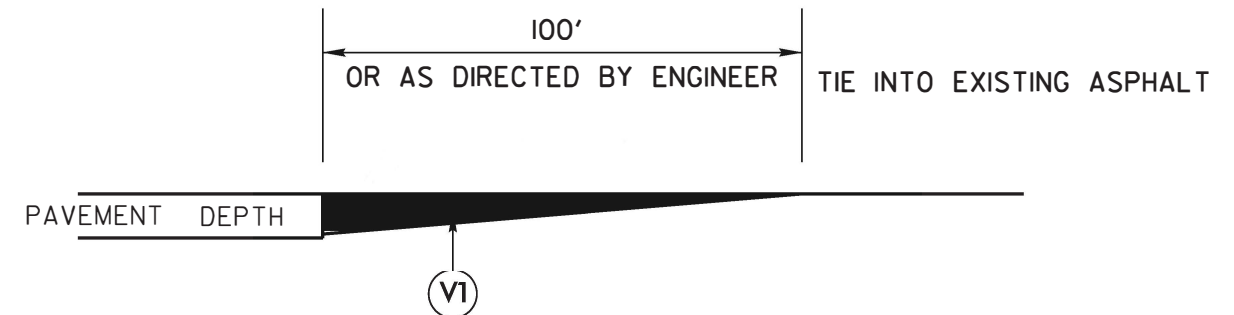
**DETAIL SHOWING METHOD OF WEDGING**

**\*PROPOSED WEDGE COURSE\* ( 114 LBS PER SQ YARD PER 1" DEPTH)**



**MILLING DETAIL AT BRIDGE APPROACHES**

**WHERE BRIDGES WILL BE MILLED THEN RESURFACED. THIS WILL BE PAID FOR AS "INCIDENTAL" MILLING.**



**DETAIL TO TIE INTO EXIST PAVEMENT**

**THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE FACT THAT HE WILL BE REQUIRED TO MILL THE EXISTING ASPHALT PAVEMENT TO ENSURE A PROPER TIE-IN WITH THE EXISTING SURFACE AT THE BEGINNING, END AND Y LINES OF EACH MAP. THIS WILL BE PAID FOR AS 1 1/2" MILLING.**

STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

2-23

ENGLISH DETAIL DRAWING FOR  
**RUMBLE STRIPS / STRIPES**  
TRADITIONAL CENTERLINE RUMBLE STRIPE WITH SNOWPLOWABLE MARKERS

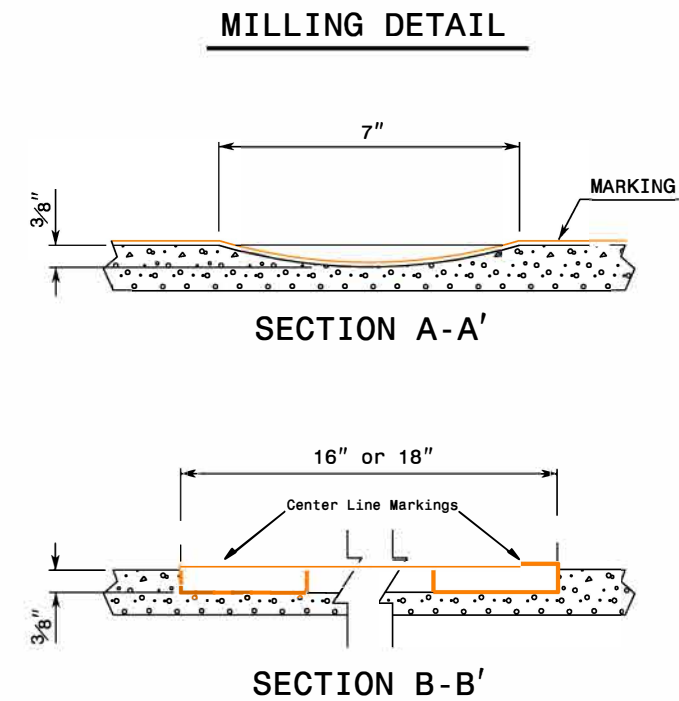
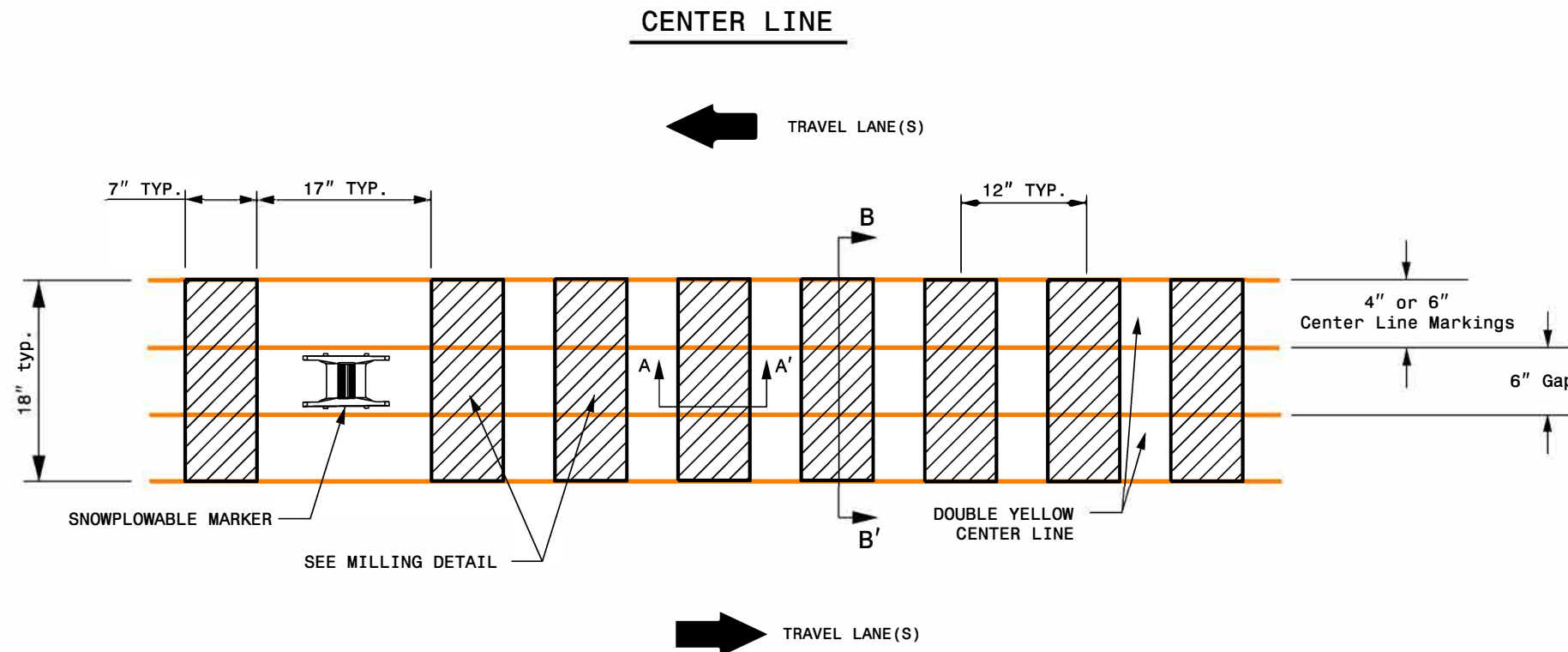
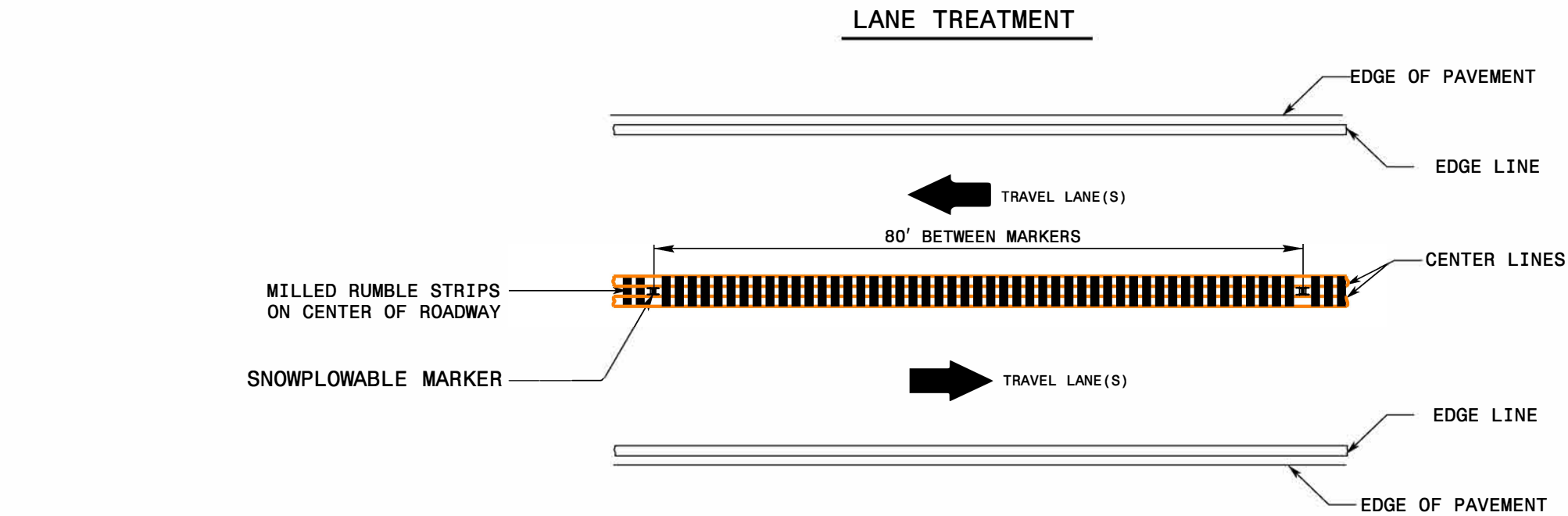
See Table 2 within Rumble Strip Policy for Design Guidance

STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

2-23

ENGLISH DETAIL DRAWING FOR  
**RUMBLE STRIPS / STRIPES**  
TRADITIONAL CENTERLINE RUMBLE STRIPE WITH SNOWPLOWABLE MARKERS

SHEET OF



REFERENCE DRAWING ID: Trad.CL with Snowplowable Markers

NOTES:

- 1) USING A VACUUM, REMOVE ALL DEBRIS FROM THE MILLINGS JUST PRIOR TO PLACING ANY PAVEMENT MARKINGS.
- 2) ENSURE GLASS BEADS ARE SPREAD UNIFORMLY OVER THE ENTIRE SURFACE OF THE PAVEMENT MARKING MATERIAL.
- 3) INSTALL SNOWPLOWABLE MARKERS AT APPROXIMATELY 80' INCREMENTS. DO NOT MILL RUMBLE STRIPS IN SECTION WHERE SNOWPLOWABLE MARKERS ARE INSTALLED.

SHEET OF

SHEET OF

PROJECT NO.	SHEET NO.	TOTAL NO.
2025CPT.14.08.10201	8	
2025CPT.14.08.10871		

### SUMMARY OF QUANTITIES

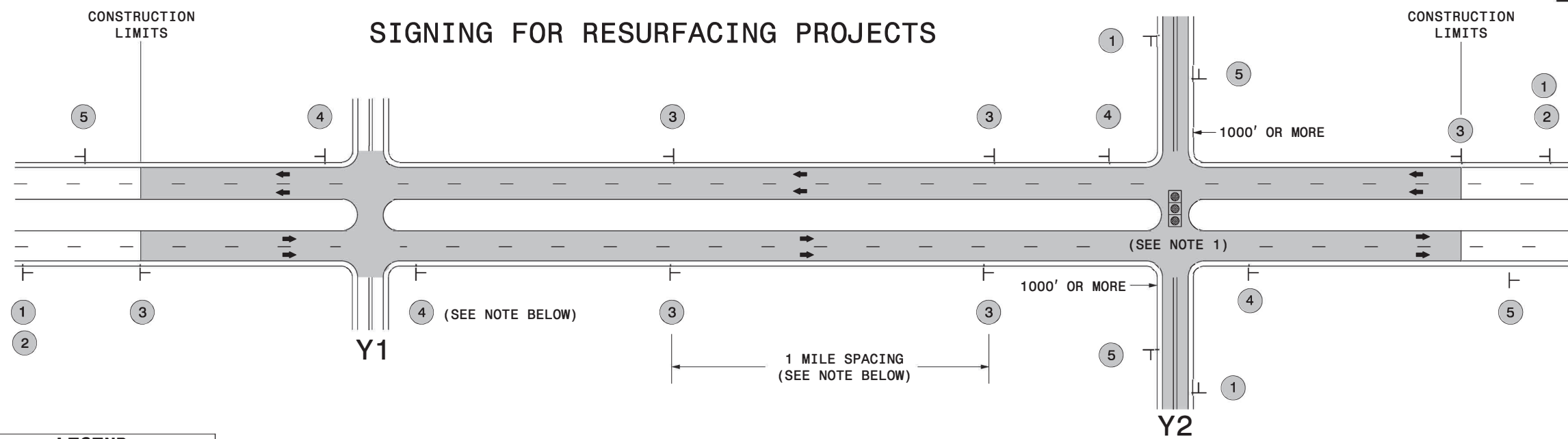
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	WIDTH	BEGIN MP	END MP	1297000000-E	1330000000-E	1523000000-E	1575000000-E	1704000000-E	1841000000-E	7444000000-E	
												1½" MILLING	INCIDENTAL MILLING	SURFACE COURSE, S9.5C	ASPHALT BINDER FOR PLANT MIX	PATCHING EXISTING PAVEMENT	CENTERLINE MILLED RUMBLE STRIPS(ASPHALT CONCRETE), 18"	INDUCTIVE LOOP SAWCUT	
								MI	FT			SY	SY	TONS	TONS	TONS	LF	LF	
2025CPT.14.08.10201	Cherokee	1	US-19	END OF DIVIDED HWY TO MACON CL	1	2	2WU	6.6	24	26.9	33.5	95,257		8,400	568	1,500	35,000	125.00	
<b>TOTAL FOR MAP NO. 1</b>								<b>6.6</b>				<b>95,257</b>		<b>8,400</b>	<b>568</b>	<b>1,500</b>	<b>35,000</b>	<b>125.00</b>	
<b>TOTAL FOR PROJ NO. 2025CPT.14.08.10201</b>								<b>6.6</b>				<b>95,257</b>		<b>8,400</b>	<b>568</b>	<b>1,500</b>	<b>35,000</b>	<b>125.00</b>	
2025CPT.14.08.10871	Swain	2	US-19	FROM MACON CL TO NC 28	2	2		11.59	23	0	11.59		3,100	14,030	876	1,000			
<b>TOTAL FOR MAP NO. 2</b>								<b>11.59</b>					<b>3,100</b>	<b>14,030</b>	<b>876</b>	<b>1,000</b>			
<b>TOTAL FOR PROJ NO. 2025CPT.14.08.10871</b>								<b>11.59</b>					<b>3,100</b>	<b>14,030</b>	<b>876</b>	<b>1,000</b>			
<b>GRAND TOTAL</b>								<b>18.19</b>					<b>95,257</b>	<b>3,100</b>	<b>22,430</b>	<b>1,444</b>	<b>2,500</b>	<b>35,000</b>	<b>125.00</b>



PROJECT NO.	SHEET NO.	TOTAL NO.
2025CPT.14.08.10201	9	
2025CPT.14.08.10871		

## 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	4688000000-E		4709000000-E	4725000000-E			4895000000-N
												WORK ZONE ADVANCE/GENERAL WARNING SIGNING	TEMPORARY TRAFFIC CONTROL	6" X 90 M WHITE THERMO	6" X 90 M YELLOW THERMO	THERMOPLASTIC PAVEMENT MARKING LINES (24", 90 MILS)	THERMO LT ARROW 90 M	THERMO STR ARROW 90 M	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)	SNOWPLOWABLE DELINEATION (POLYCARBONATE H-SHAPED MARKER)
												MI	FT	SF	LS	LF	LF	LF	EA	EA
2025CPT.14.08.10201	Cherokee	1	US-19	END OF DIVIDED HWY TO MACON CL	1	2	2WU	6.6	24	26.9	33.5	784	*	69,700	69,700	100				500.00
<b>TOTAL FOR MAP NO. 1</b>							<b>6.6</b>					<b>784</b>		<b>69,700</b>	<b>69,700</b>	<b>100</b>				<b>500.00</b>
<b>TOTAL FOR PROJ NO. 2025CPT.14.08.10201</b>							<b>6.6</b>					<b>784</b>	*	<b>69,700</b>	<b>69,700</b>	<b>100</b>				<b>500.00</b>
														<b>139,400</b>						
2025CPT.14.08.10871	Swain	2	US-19	FROM MACON CL TO NC 28	2	2	2WU	11.59	23	0	11.59	1,344	*	122,390	123,406	315	10	5	12	1,466.00
<b>TOTAL FOR MAP NO. 2</b>							<b>11.59</b>					<b>1,344</b>		<b>122,390</b>	<b>123,406</b>	<b>315</b>	<b>10.00</b>	<b>5</b>	<b>12</b>	<b>1,466.00</b>
<b>TOTAL FOR PROJ NO. 2025CPT.14.08.10871</b>							<b>11.59</b>					<b>1,344</b>	*	<b>122,390</b>	<b>123,406</b>	<b>315</b>	<b>10.00</b>	<b>5</b>	<b>12</b>	<b>1,466.00</b>
														<b>245,796</b>		<b>27.00</b>				
<b>GRAND TOTAL</b>								<b>18.19</b>				<b>2,128</b>	<b>1.000</b>	<b>192,090</b>	<b>193,106</b>	<b>415</b>	<b>10.00</b>	<b>5</b>	<b>12</b>	<b>1,966.00</b>
														<b>385,196</b>		<b>27</b>				



LEGEND	
┆	STATIONARY SIGN
←	DIRECTION OF TRAFFIC FLOW

### MAINLINE (-L-) SIGNING

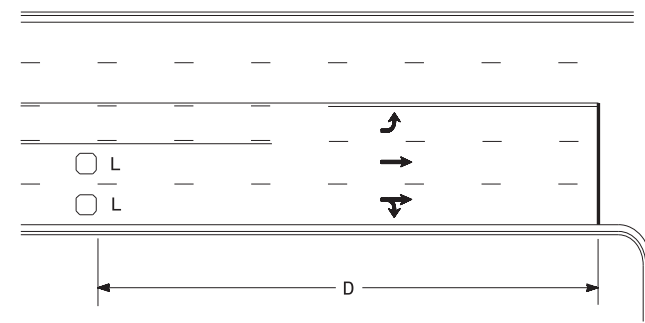
### -Y- LINE SIGNING

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 RESURFACING LIMITS ARE 2 OR MORE MILES IN LENGTH. ROUND UP TO NEXT WHOLE NUMBER. (NO FRACTIONAL OR DECIMAL NUMBERS)</p>	<p><b>NO REQUIRED STATIONARY SIGNING FOR THE FOLLOWING -Y- LINE CONDITIONS:</b></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;">   <small>W20-1 48" X 48"</small> </div> <div style="text-align: center;">   <small>W20-7 A 48" X 48"</small> </div> </div> <p>PLACED 500' IN ADVANCE OF FLAGGER. PLACED 250' IN ADVANCE OF FLAGGER.</p> <p><b>NOTES:</b></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>
		<p>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.</p>	
		<p>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.</p>	
		<p>PLACE 500' FOLLOWING THE END OF CONSTRUCTION LIMITS.</p>	

3/23/2015  
C:\Users\rmgarrett\Downloads\Resurfacing\_AdvWarn\_LrSu\_Snldr.dgn  
User:rmgarrett

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

### High Speed Detection (≥40 mph)

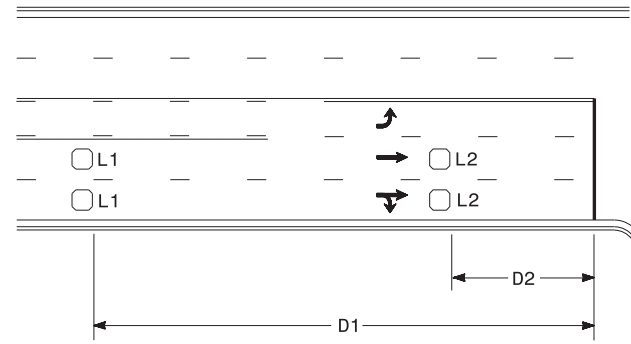


Speed Limit mph	D ft
40	250
45	300
50	355
55	420

L = 6ft X 6ft  
Wired separately

Volume Density Operation

OR

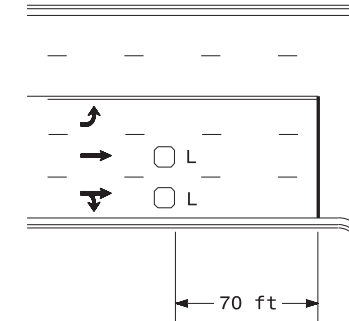


Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

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

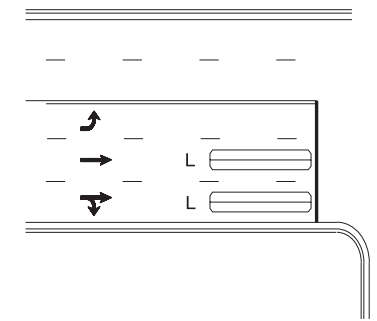
"Stretch" Operation

### Low Speed Detection (≤35 mph)



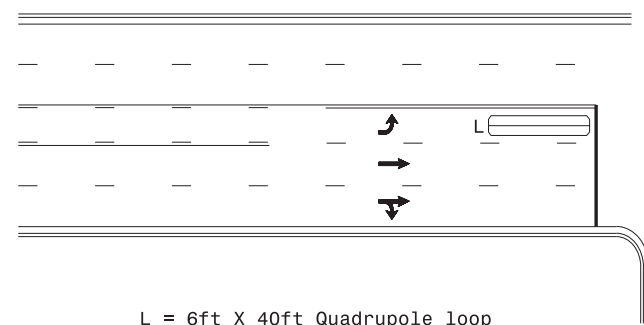
L = 6ft X 6ft  
Wired in series

OR



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

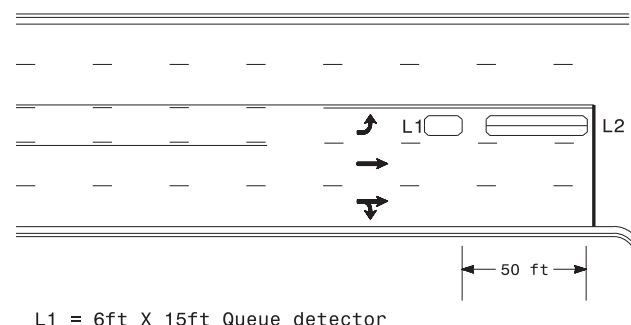
### Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

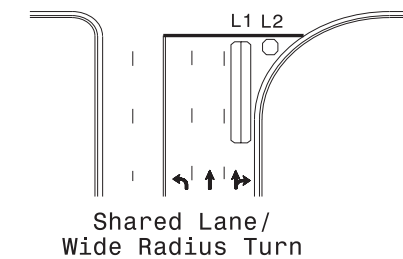
OR



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

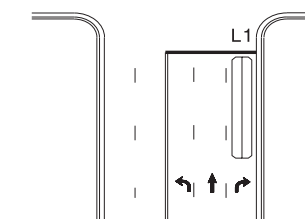
Queue Loop Detection

### Right Turn Lane Detection

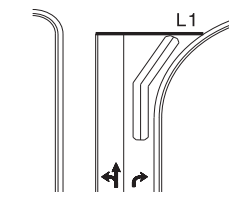


Shared Lane/  
Wide Radius Turn

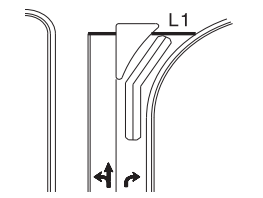
L1 = 6ft X 40ft Quadrupole loop  
L2 = 6ft X 6ft [Minimum] Presence loop  
Wired separately



Standard Turn

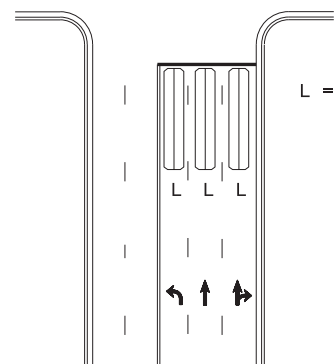


Wide Radius Turn



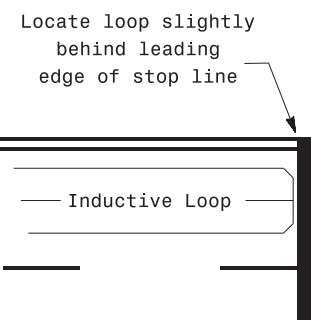
Channelized Turn

### 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:

TRANSPORTATION MOBILITY AND SAFETY DIVISION  
STATE OF NORTH CAROLINA  
STATE OF TRANSPORTATION  
Signal Design Section

SEAL  
NORTH CAROLINA  
PROFESSIONAL ENGINEER  
029904  
JASON P. GALLOWAY

Typical Signal Loop Locations	
PLAN DATE: February 2025	REVIEWED BY: JPG
PREPARED BY: PLA	REVIEWED BY:
SCALE: N/A	REVISIONS: INIT. DATE
DATE: 1/16/2025	
SIG. INVENTORY NO.:	

09-SEP-2020 11:54 S:\17525\17525\SIGNAL\Signal Design Section\Eastern Region\Loop Typo\cal\looptypo\cal2015.dgn JGallaway