

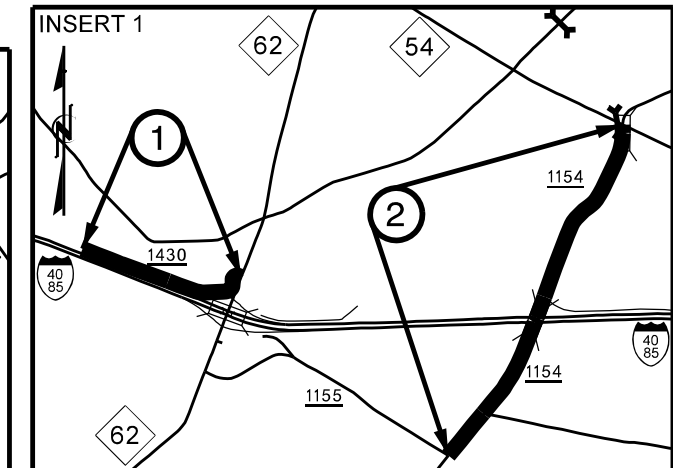
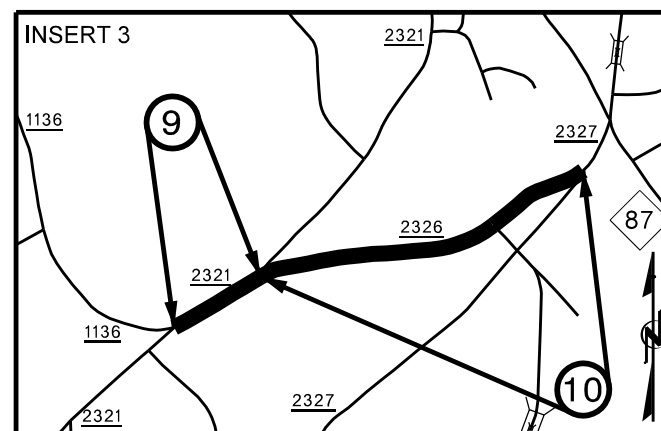
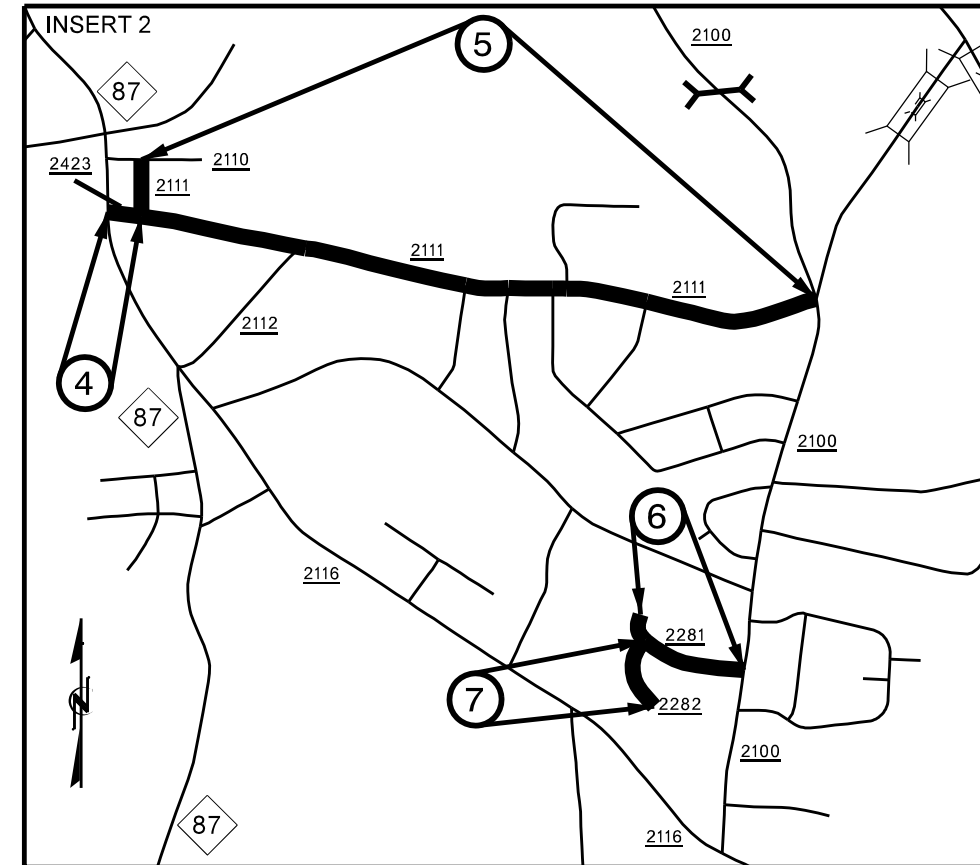
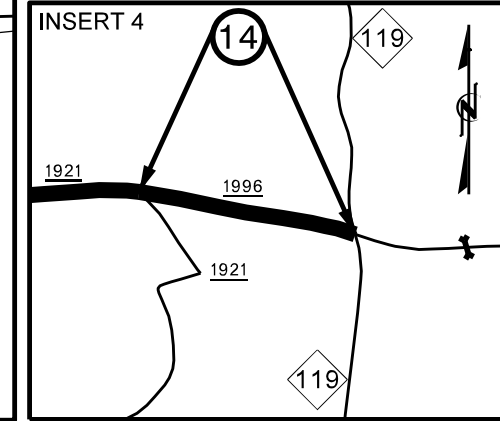
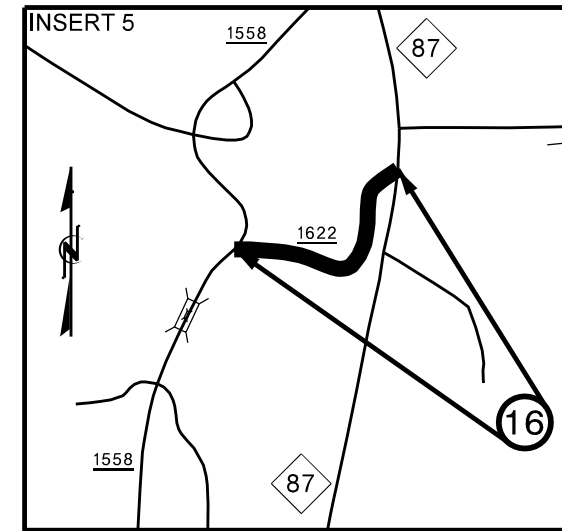
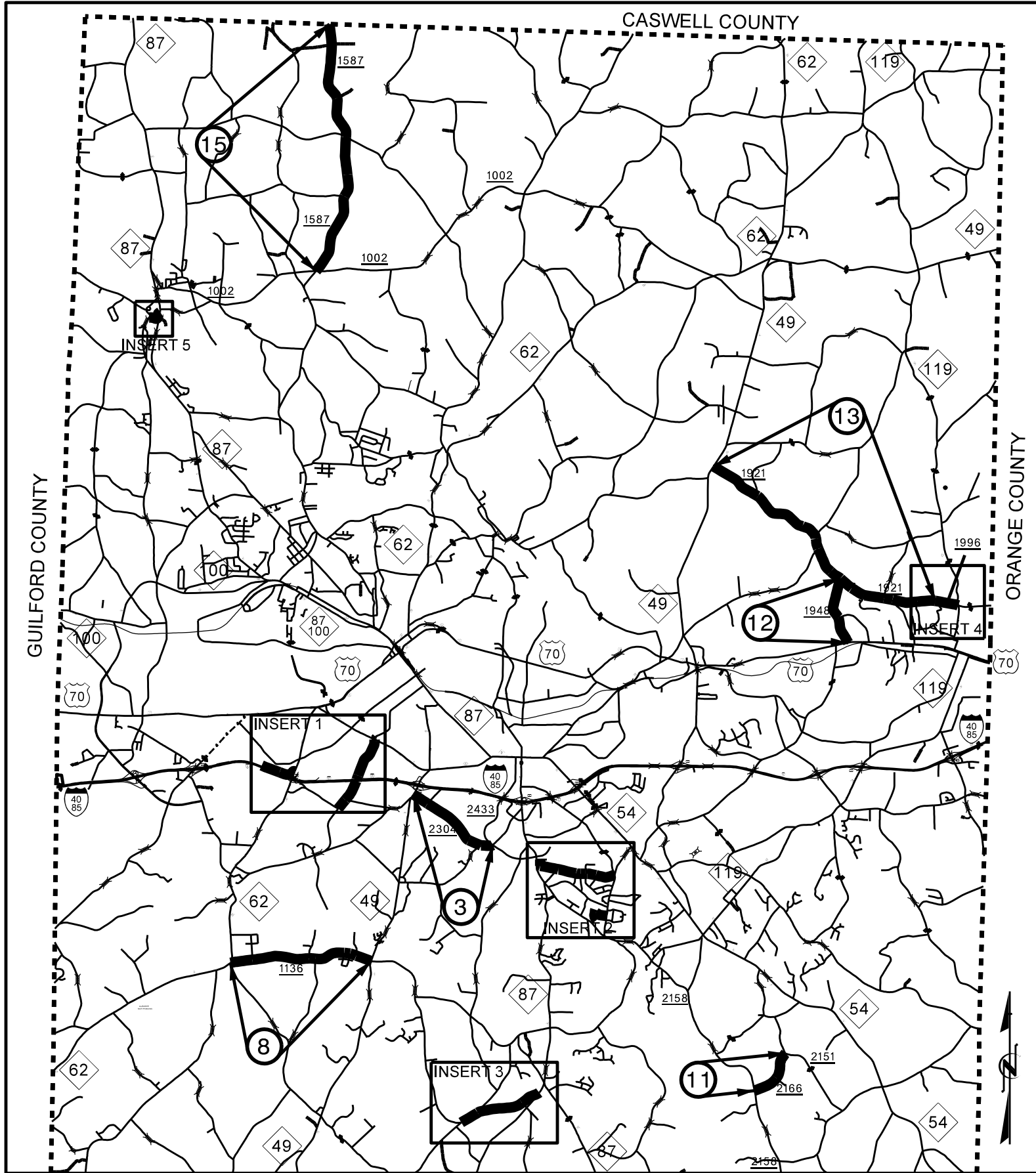
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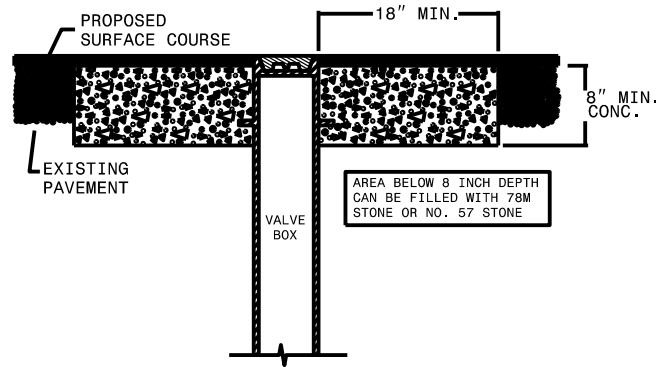
2016 ALAMANCE COUNTY

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	2016CPT.07.01.20011	1	
F.A. PROJ. NO.			

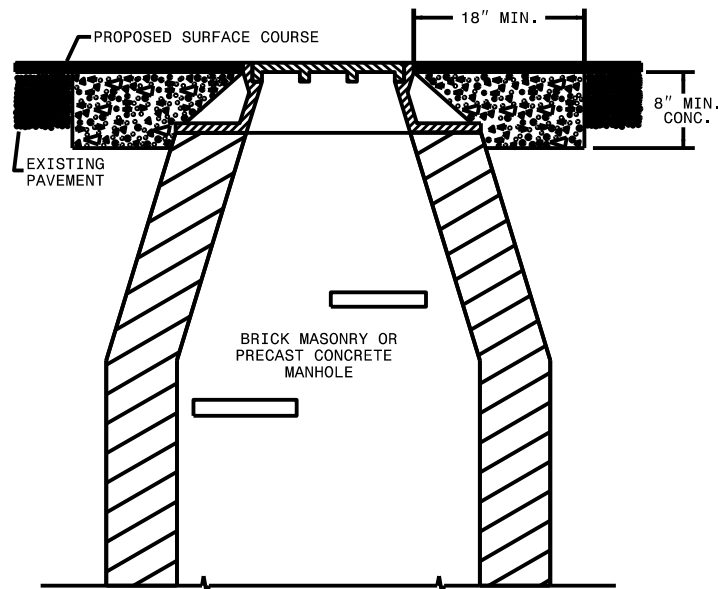


\$\$\$\$\$SYTIME\$\$\$\$\$
 \$\$\$DCN\$\$\$\$\$
 \$\$\$BRNAME\$\$\$\$\$

STANDARD CONCRETE ENCASEMENT FOR MANHOLE & VALVE CASTINGS IN PAVEMENT
 DETAIL DRAWING NO. 858.01

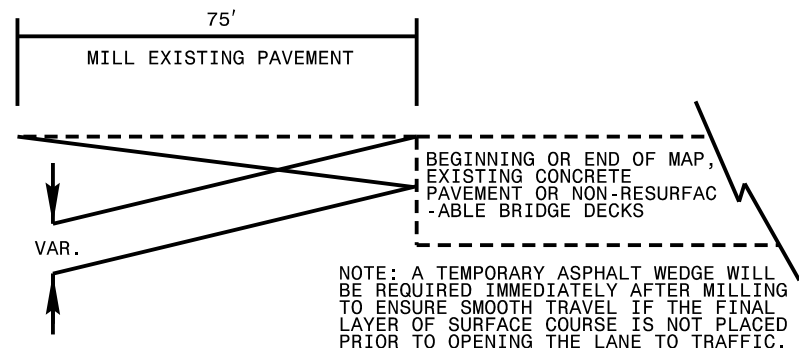


USE RAPID SET GROUT, MORTAR, OR CONCRETE CLASS B CONCRETE MAY BE USED WHEN ADJUSTMENTS ARE NOT IN THE TRAVEL LANE.

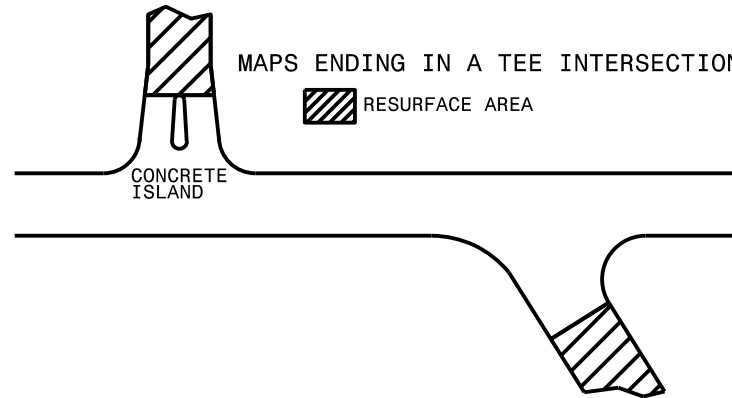


- NOTES:
1. MORTAR SHALL BE MIXED TO NCDOT SPECIFICATIONS.
 2. ALL FAULTY EXISTING BRICKWORK TO BE REMOVED AND REPLACED WITH NEW BRICK MASONRY.
 3. EXCAVATION FOR THE ADJUSTMENT SHALL BE SHEER CUT ON ALL SIDES.
 4. RAPID SET GROUT, MORTAR, OR CONCRETE SHALL BE USED

INCIDENTAL MILLING DETAIL

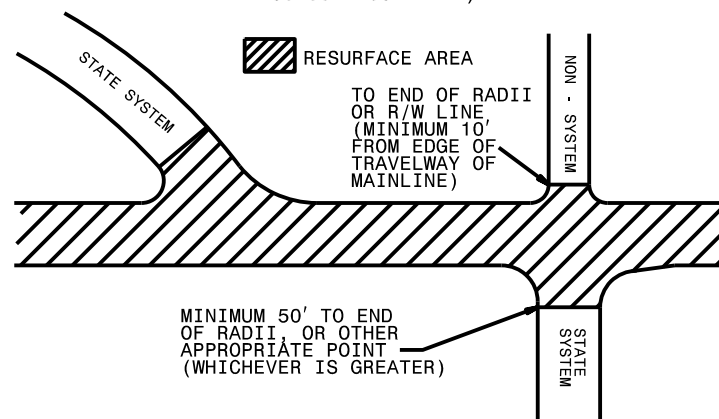


PAVING DETAIL 1
 MAIN LINE IS NOT BEING RESURFACED



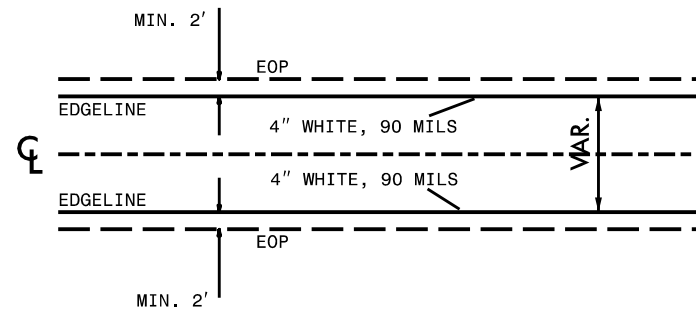
PAVING DETAIL 2
 MAIN LINE IS BEING RESURFACED

NOTE: NON-SYSTEM (CITY STREET, PRIVATE DRIVE, SCHOOL BUS DRIVE)



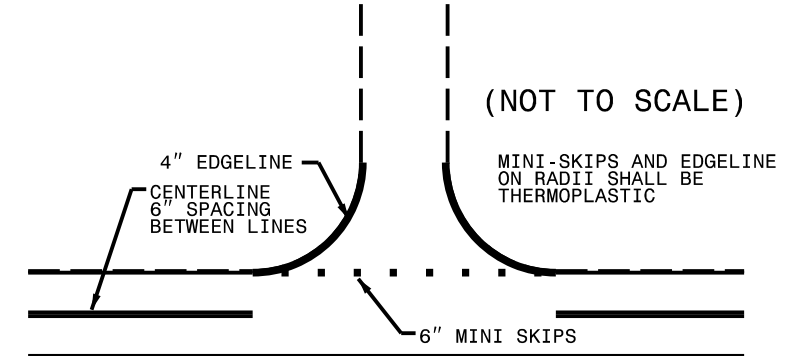
STRIPING DETAIL 1

GENERAL STRIPING DETAIL FOR ENTIRE PROJECT



- NOTE:
1. TO BE USED IN CONJUNCTION WITH TYPICAL SECTION NO. 9
 2. USE IN CONJUNCTION WITH THE EXISTING PAVEMENT MARKINGS TO ESTABLISH THE STRIPING.
 3. USE IN CONJUNCTION WITH THE NCDOT STANDARD DRAWINGS.

TO BE USED AT ALL
 NON-SIGNALIZED INTERSECTIONS



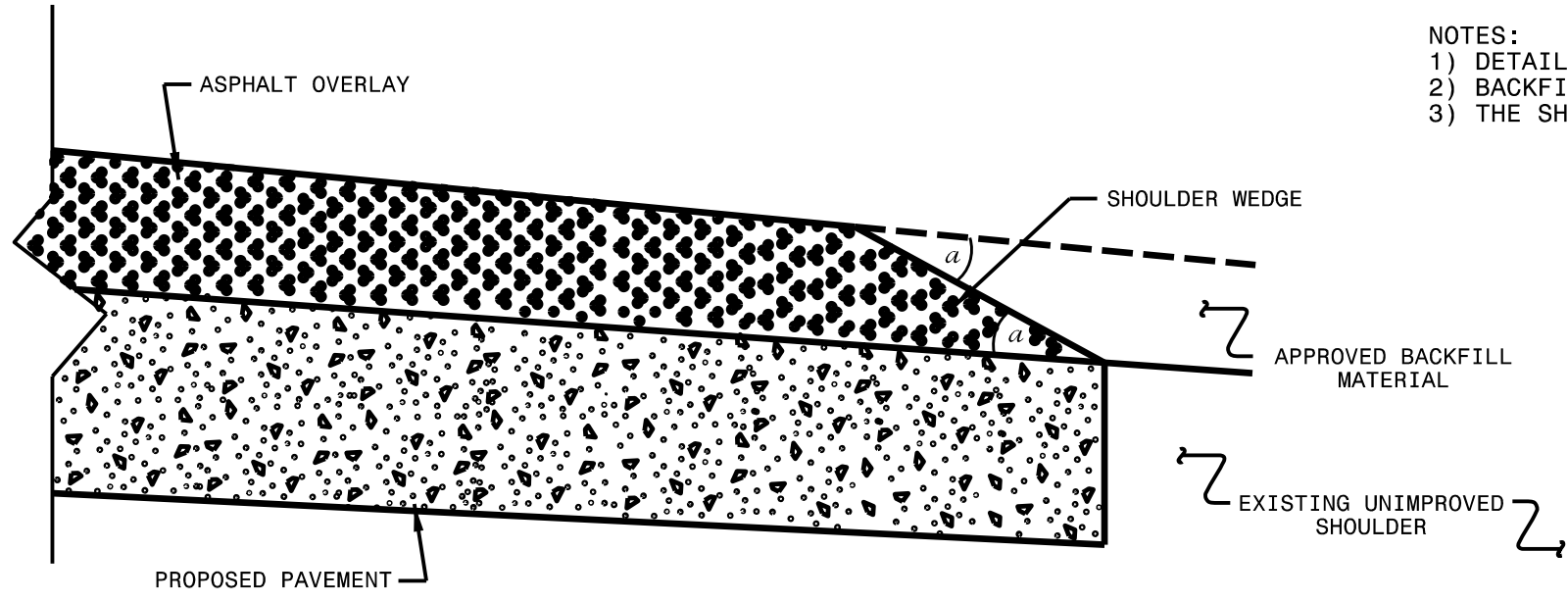
NOTE: MINI SKIPS SHALL BE PLACED ON A 8' CYCLE, CONTAINING A 6' AND 2' SKIP, THE WIDTH OF THE SKIP SHALL BE 6".

PAVEMENT SCHEDULE

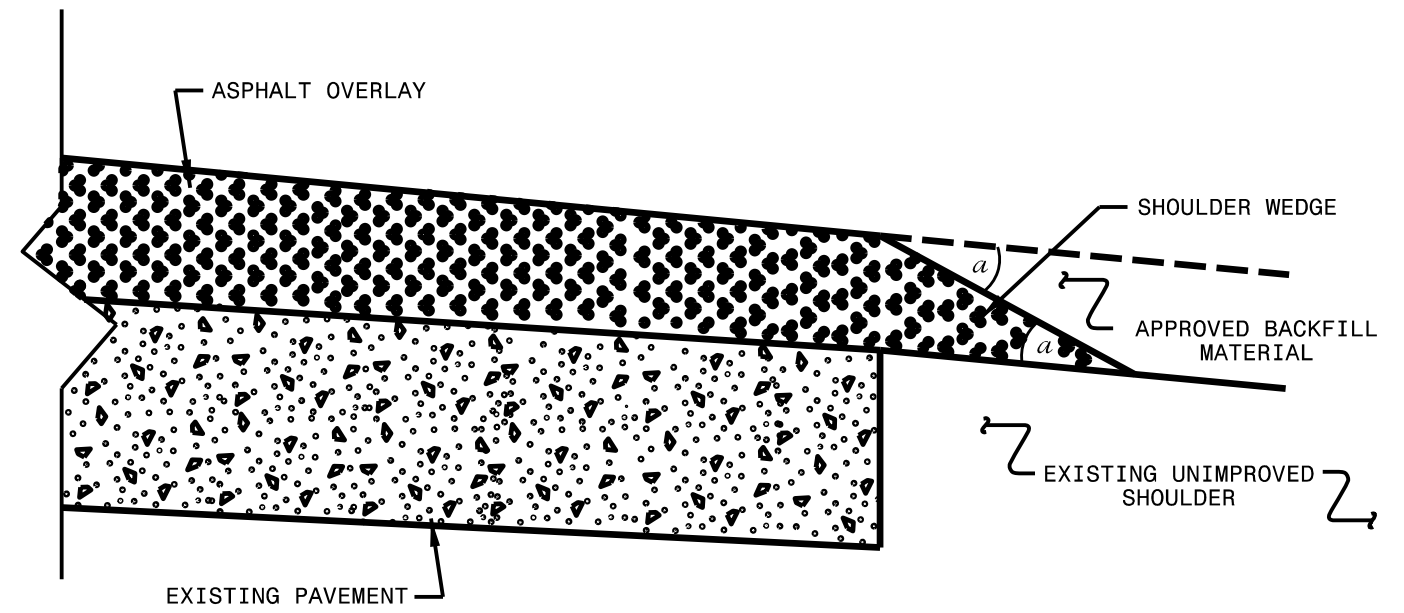
C1	PROP. APPROX. 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.
C2	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C4	PROP. APPROX. 1" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD.
E	PROP. APPROX. 7" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
F1	AST MAT COAT #78M STONE
F2	AST MAT COAT, #67 STONE
R	CONCRETE CURB AND GUTTER
T	SHOULDER RECONSTRUCTION, AS DIRECTED BY THE ENGINEER.
U	EXISTING PAVEMENT.
V1	0 - 1 1/2" MILLING
V2	0" - 1 1/4" MILLING

\$\$\$SYTIME\$\$\$DCN\$\$\$USERNAME\$\$\$

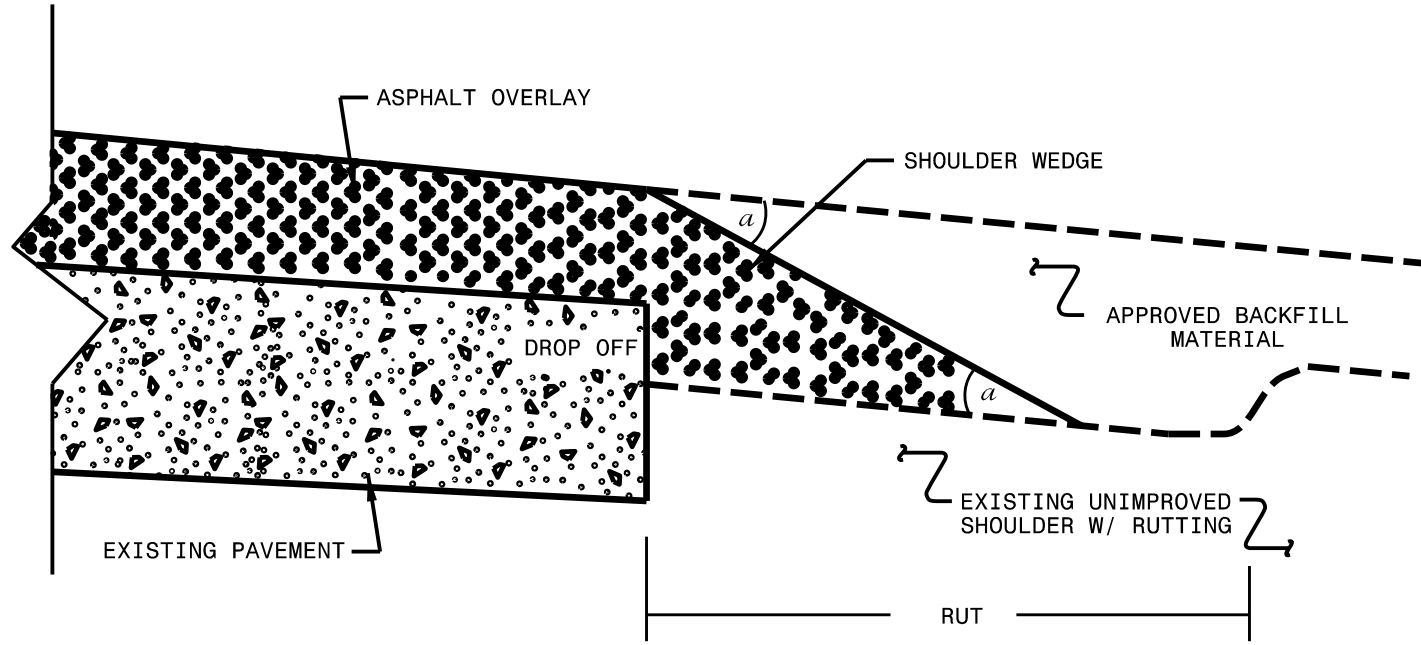
- NOTES:
 1) DETAIL DOES NOT APPLY TO OGAFIC AND ULTRA-THIN BONDED WEARING COURSE.
 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS AND SIDE STREETS.



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: 10/16/12		
CHECKED BY:	DATE:		
FILE SPEC.: s:\usr\details\stand\shoulderwedgedetail.dgn			

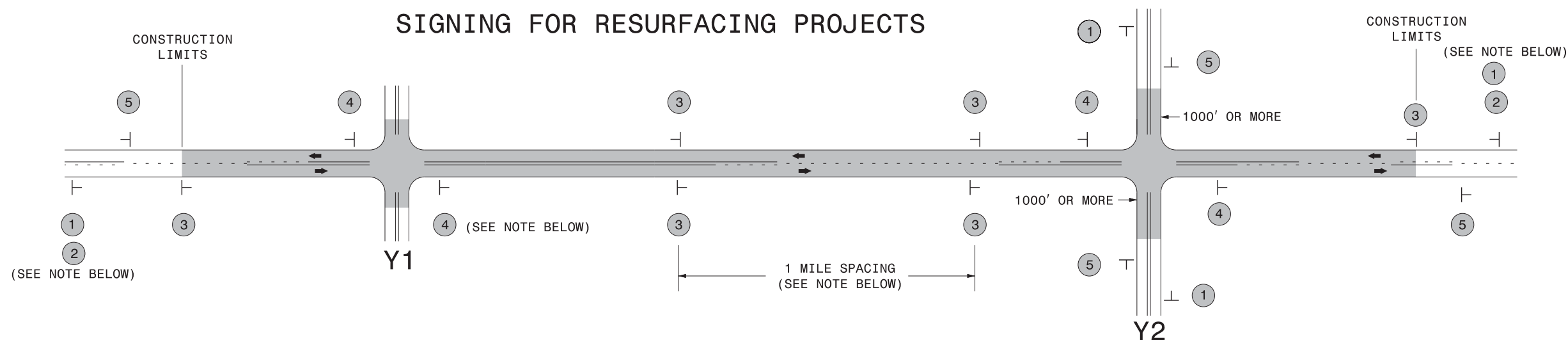
SYSTEM: \$\$\$\$\$\$
 USER: \$\$\$\$\$\$
 DATE: \$\$\$\$\$\$

PROJECT NO.	SHEET NO.	TOTAL NO.
2016CPT.07.01.20011	7	

THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	WIDTH	4413000000-E	4457000000-N	4685000000-E	4686000000-E			4690000000-E			4695000000-E			4710000000-E		4721000000-E					4725000000-E		4810000000-E				
										WORK ZONE ADVANCE/GENERAL WARNING SIGNING SF	TEMPORARY TRAFFIC CONTROL LS	4" X 90 M WHITE THERMO LF	4" X 120 M WHITE THERMO LF	4" X 120 M YELLOW THERMO LF	6" X 120 M WHITE THERMO LF	8" X 90 M WHITE THERMO LF	8" X 90 M YELLOW THERMO LF	24" X 120 M WHITE THERMO LF	THERMO MSG ONLY 120 M EA	THERMO MSG SCHOOL 120 M EA	THERMO LT ARROW 90 M EA	THERMO STR ARROW 90 M EA	THERMO RT ARROW 90 M EA	THERMO STR & RT ARROW 90 M EA	THERMO MERGE LEFT ARROW 90 M EA	4" WHITE PAINT LF	4" YELLOW PAINT LF								
2016CPT.07.01.20011	Alamance	1	SR 1430 (RAMADA ROAD)	FROM END OF MAINTENANCE - 0.56 TO NC 62 - 0.00	1	2	2WU	0.564	20	63	1	225				60														10,510	11,900				
		TOTAL FOR MAP NO. 1									63	1	225				60													10,510	11,900				
		2	SR 1154 (TUCKER STREET)	FROM JOINT JUST SOUTH OF SR 1155 (HATCHERY ROAD) - 0.77 TO NC 54 (CHAPEL HILL ROAD) - 2.12	2-3	2	2WU	1.348	22	152			14,240	1,105	15,135		180	975	185	124	4			3	6	8	5	3							
		TOTAL FOR MAP NO. 2									152		14,240	1,105	15,135		180	975	185	124	4			3	6	8	5	3							
		3	SR 2304 (HANFORD ROAD)	FROM NC 49 (MAPLE AVENUE) - 0.00 TO JOINT 370' WEST OF SR 2433 (MORE STREET) - 1.55	4-5	2	2WU	1.544	28	174			14,290	100	14,576		108							3											
		TOTAL FOR MAP NO. 3									174		14,290	100	14,576		108						3												
		4	SR 2423 (HORTENCE STREET)	FROM NC 87 - 0.00 TO SR 2111 (CHEEKS LANE) - 0.05	6	2	2WU	0.045	33												50												960		
		TOTAL FOR MAP NO. 4									0.045										50			6										960	
		5	SR 2111 (CHEEKS LANE)	FROM SR 2110 (ANDREWS AVENUE) - 0.00 TO SR 2100 (COOPER ROAD/GILBREATH STREET) - 1.37	1	2	2WU	1.368	20	154				525				116														27,430	24,995		
		TOTAL FOR MAP NO. 5									154		525				116			140			6									27,430	24,995		
		6	SR 2281 (JAMES GRIFFIN DRIVE)	FROM SR 2100 (COOPER ROAD) - 0.00 TO END OF CUL-DE-SAC - 0.24	7	2	2WU	0.244	19	27																									
		TOTAL FOR MAP NO. 6									27																								
		7	SR 2282 (ERIN COURT)	FROM SR 2281 (JAMES GRIFFIN DRIVE) - 0.00 TO END OF CUL-DE-SAC - 0.15	7	2	2WU	0.147	19	17																									
		TOTAL FOR MAP NO. 7									17																								
		8	SR 1136 (BELLEMONT-ALAMANCE ROAD)	FROM NC 62 - 5.97 TO NC 49 - 3.58	1,8	2	2WU	2.37	29	266				25,020		23,145		108																	
		TOTAL FOR MAP NO. 8									266		25,020		23,145		108																		
9	SR 2321 (MT HERMON ROCK CREEK ROAD)	FROM SR 1136 (BELLEMONT MT HERMON ROAD) - 2.42 TO SR 2326 (MT HERMON ROCK CREEK ROAD) - 2.07	2	2	2WU	0.352	22	40				150				62														7,140	4,875				
TOTAL FOR MAP NO. 9									40		150				62																7,140	4,875			
10	SR 2326 (MT HERMON ROCK CREEK ROAD)	FROM SR 2321 (SOUTHERN HIGH MT HERMON ROAD) - 0.00 TO SR 2327 (BASS MOUNTAIN ROAD) - 1.12	2	2	2WU	1.115	22	126				150				44														23,240	23,540				
TOTAL FOR MAP NO. 10									126		150				44																23,240	23,540			
11	SR 2166 (DAVIS ROAD)	FROM SR 2158 (SWEPSONVILLE SAXAPAHAW ROAD) - 0.00 TO SR 2151 (PHILLIPS CHAPEL ROAD) - 0.86	1	2	2WU	0.862	20	97				75				14														18,050	17,605				
TOTAL FOR MAP NO. 11									97		75				14																18,050	17,605			
12	SR 1948 (DODSON ROAD)	FROM US 70 - 0.00 TO SR 1920 (MEBANE RODGERS ROAD) - 1.12	9	2	2WU	1.116	19	126				150				28														23,260	18,695				
TOTAL FOR MAP NO. 12									126		150				28																23,260	18,695			
13	SR 1921 (MEBANE RODGERS ROAD)	FROM NC 49 - 0.00 TO SR 1996 (WEST STAGECOACH ROAD) - 4.69	4,10	2	2WU	4.669	21	524				49,290	295	46,321		210																			
TOTAL FOR MAP NO. 13									524		49,290	295	46,321		210				226			12	4						4						
14	SR 1996 (WEST STAGECOACH ROAD)	FROM SR 1921 (WOODLAWN DRIVE) - 0.00 TO JOINT 150' WEST OF NC 119 - 0.38	4	2	2WU	0.377	21	43				3,980		3,980		92																			
TOTAL FOR MAP NO. 14									43		3,980		3,980		92																				
15	SR 1587 (PAGETOWN ROAD)	FROM SR 1002 (ALTAMAHAW UNION RIDGE ROAD) - 4.38 TO CASWELL COUNTY LINE - 0.00	1	2	2WU	4.378	21-27	491				300				76														90,520	78,433				
TOTAL FOR MAP NO. 15									491		300				76																90,520	78,433			
16	SR 1622 (LAUNDRY ROAD)	FROM SR 1558 (OLD NC 87) - 0.24 TO NC 87 - 0.00	1	2	2WU	0.242	20	27																						5,120	5,120				
TOTAL FOR MAP NO. 16									27																						5,120	5,120			
TOTAL FOR PROJ NO. 2016CPT.07.01.20011									2,327	1	108,395	1,500	103,157	1,098	975	245	540	4	24	10	6	8	10	3	205,270	186,123									
												104,657			1,220			28			37			391,393											
GRAND TOTAL									2,327	1	108,395	1,500	103,157	1,098	975	245	540	4	24	10	6	8	10	3	205,270	186,123									
												104,657			1,220			28			37			391,393											

SIGNING FOR RESURFACING PROJECTS



LEGEND
 ┆ STATIONARY SIGN
 ← DIRECTION OF TRAFFIC FLOW

MAINLINE (-L-) SIGNING

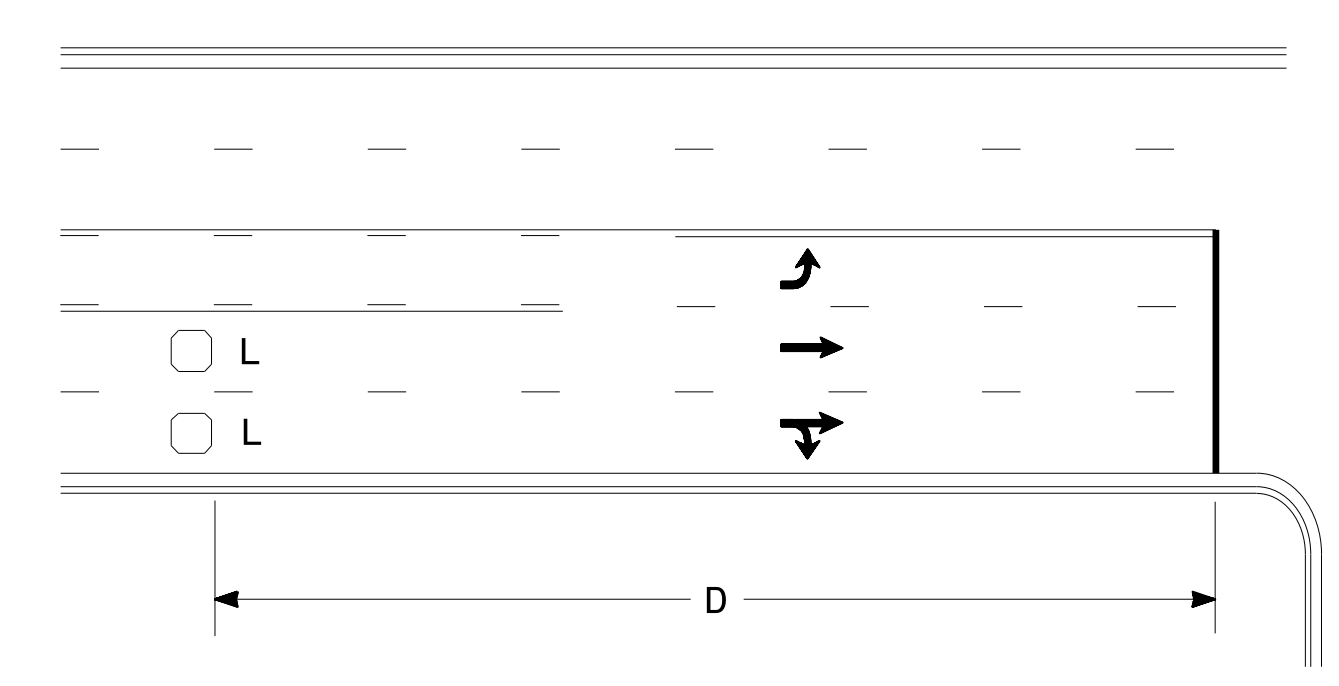
-Y- LINE SIGNING

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 RESURFACING 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"> 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;"> W20-1 48" X 48" </div> <div style="display: flex; justify-content: space-around;"> W20-7 A 48" X 48" </div> <p>PLACED 500' IN ADVANCE OF FLAGGER. PLACED 250' IN ADVANCE OF FLAGGER.</p>
		<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>	



RESURFACING
 ADVANCE WARNING SIGNS
 FOR
 RURAL AND SUBURBAN
 2 LANE ROADWAYS

High Speed Detection (≥40 mph)

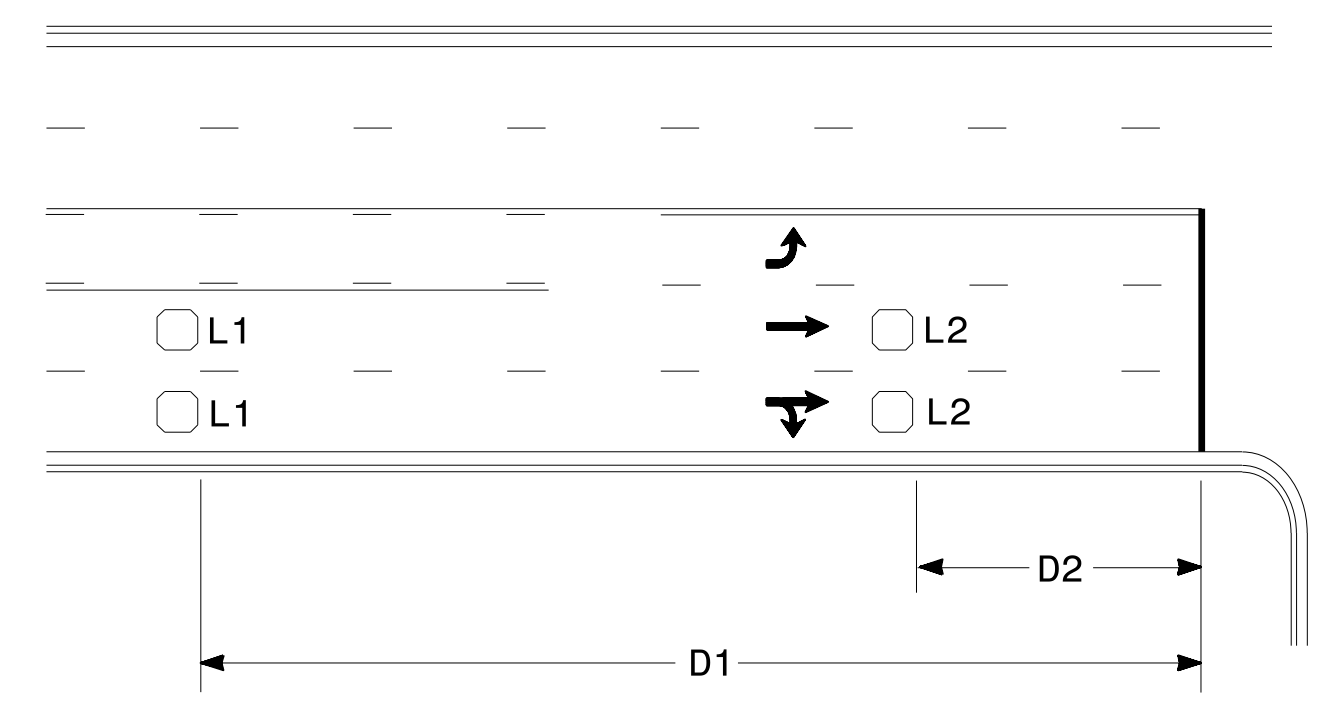


Speed Limit mph	D ft
40	250
45	300
50	355
55	420

L = 6ft X 6ft
 Wired in series for TS1
 Controllers
 Wired separately for TS2,
 170, and 2070L Controllers

Volume Density Operation

OR

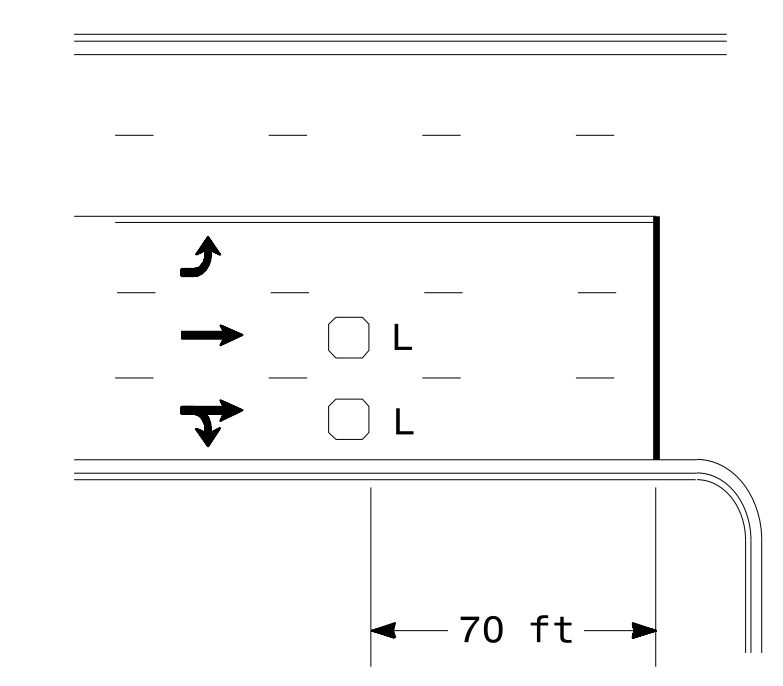


Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

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

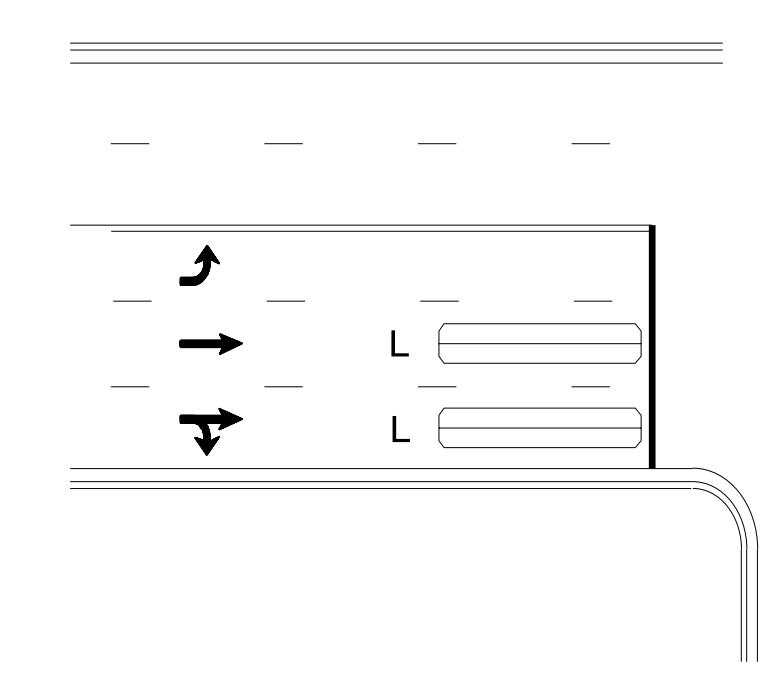
"Stretch" Operation

Low Speed Detection (≤35 mph)



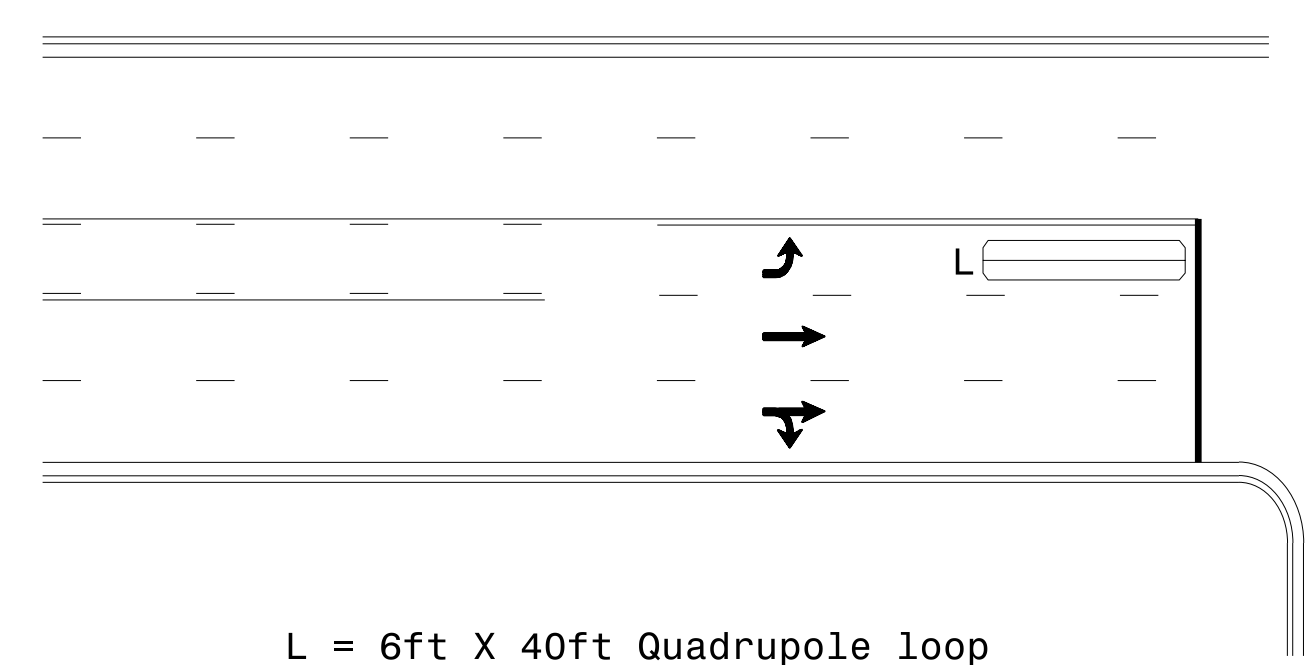
L = 6ft X 6ft
 Wired in series

OR



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

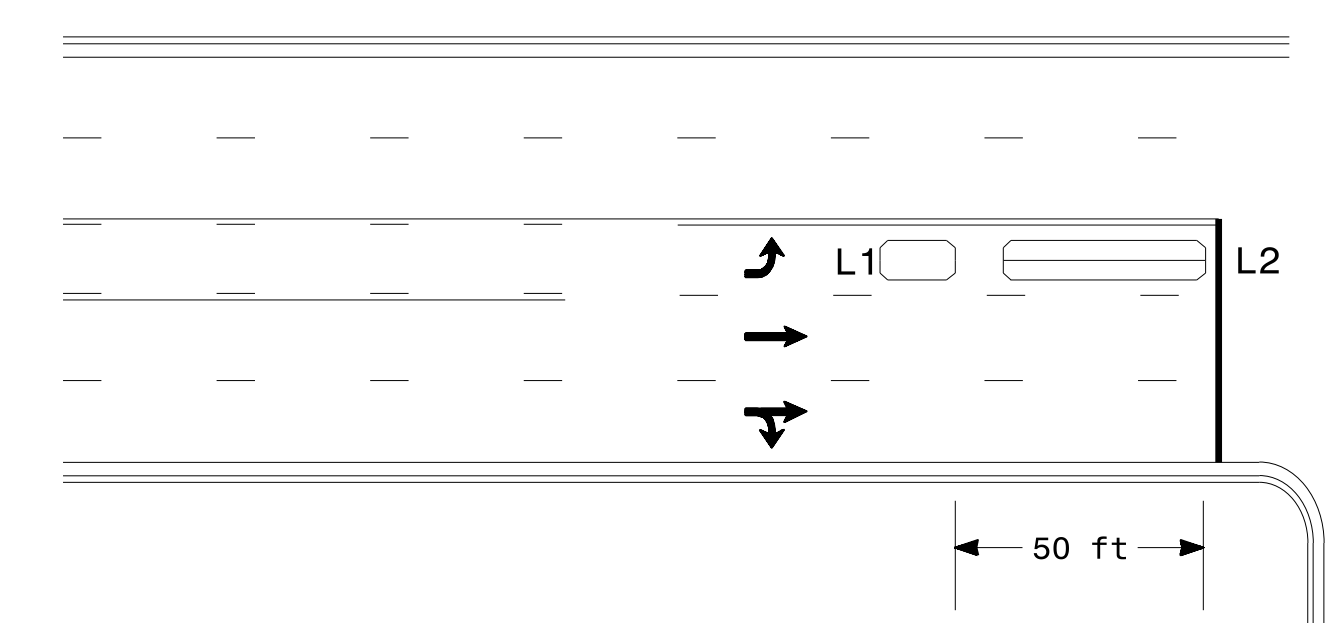
Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

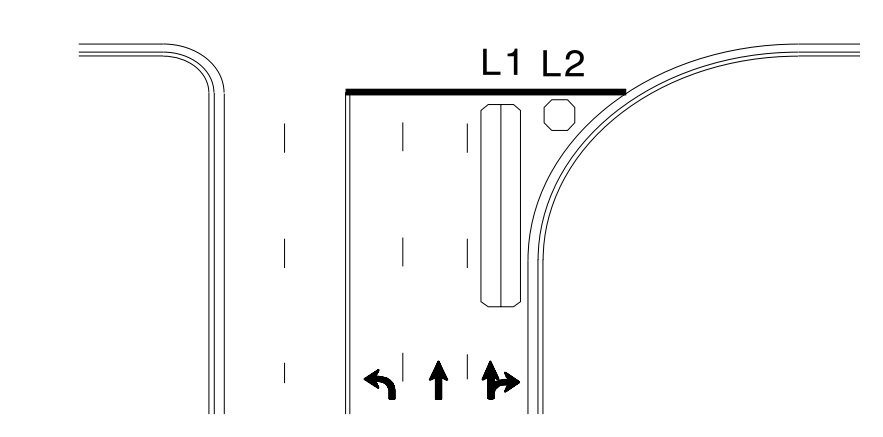
OR



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

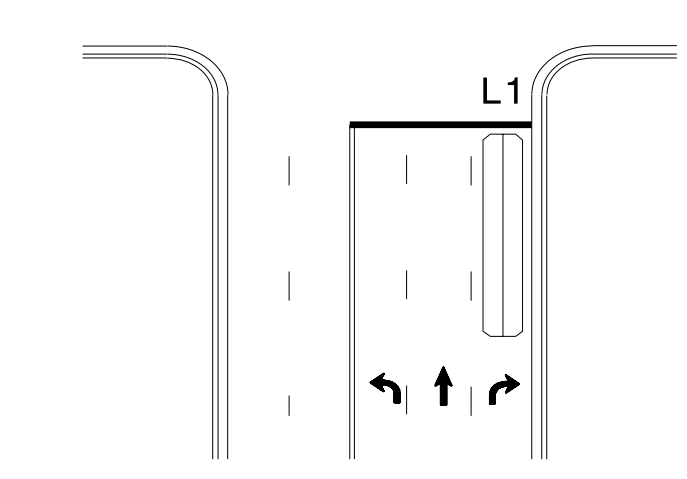
Queue Loop Detection

Right Turn Lane Detection

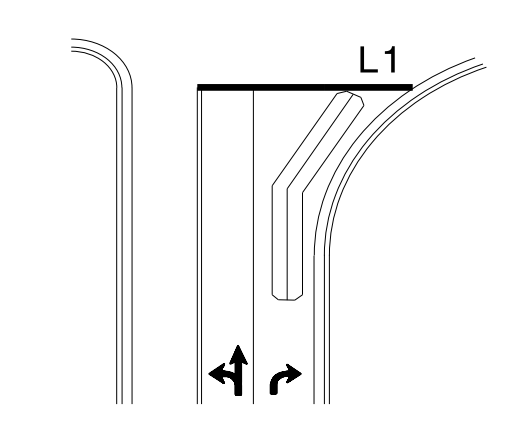


Shared Lane/
Wide Radius Turn

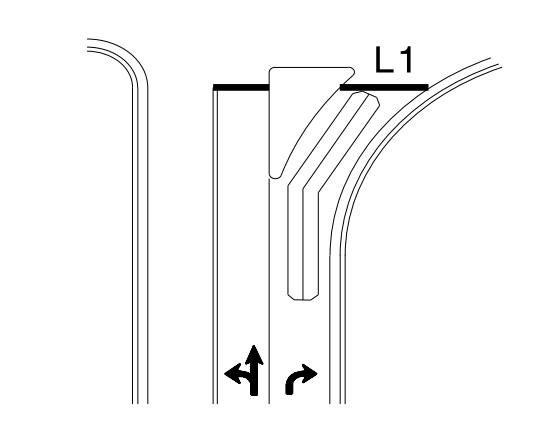
L1 = 6ft X 40ft Quadrupole loop
 L2 = 6ft X 6ft [Minimum] Presence loop
 Wired separately



Standard Turn

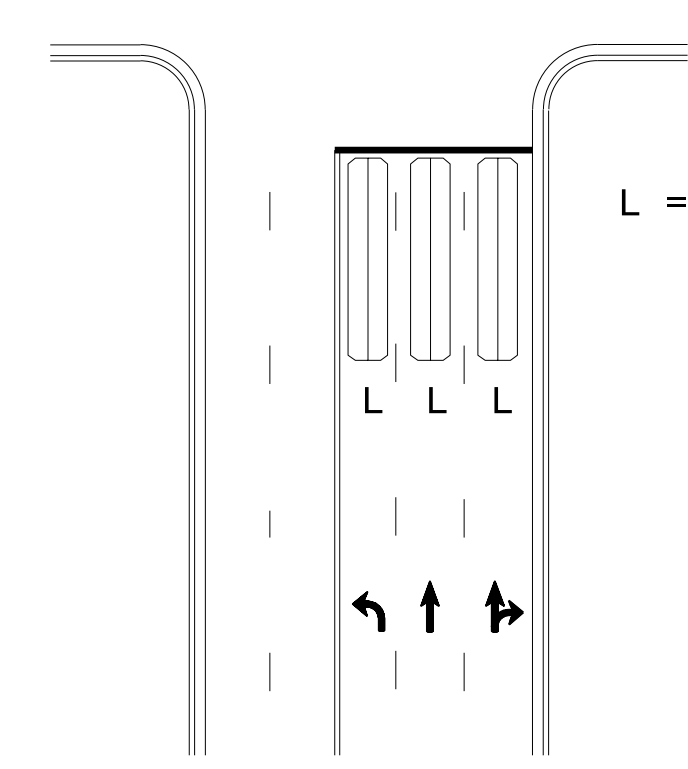


Wide Radius Turn



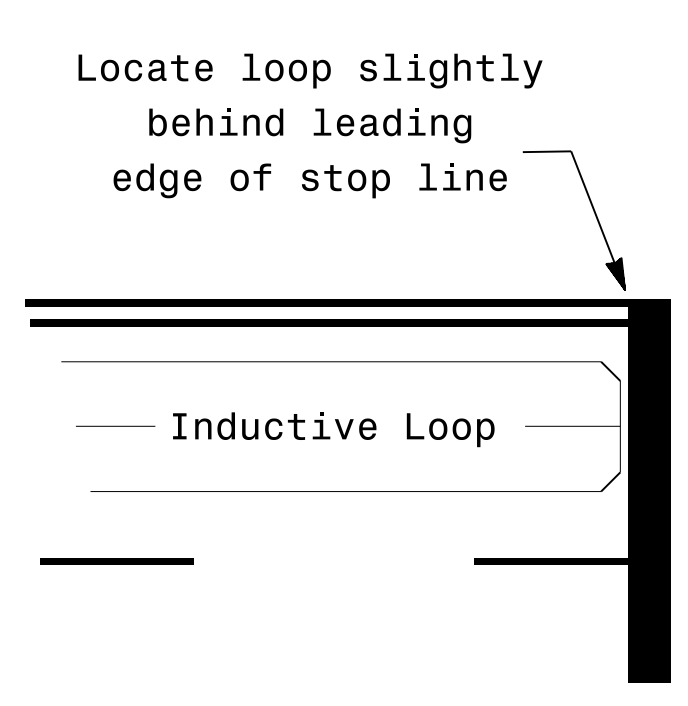
Channelized Turn

Side Street Detection



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

Presence Loop Placement at Stop Lines



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

Typical Signal Loop Locations

PLAN DATE: January 2015	REVIEWED BY: JPG
PREPARED BY: PLA	REVIEWED BY:
REVISIONS	INIT. DATE

SEAL
 NORTH CAROLINA
 PROFESSIONAL ENGINEER
 PAMELA L. ALEXANDER
 23489

DocuSigned by:
 P. Alexander
 1/30/2015 10:44:44 AM
 DATE

3D:\146-2015-12-29-SIGNALS\SIG-1\SIGNAL\SIG-1_Signal Loop\Signal Design Section\Eastern Region\loop\ypj\ca\2015.dgn
 paalexander