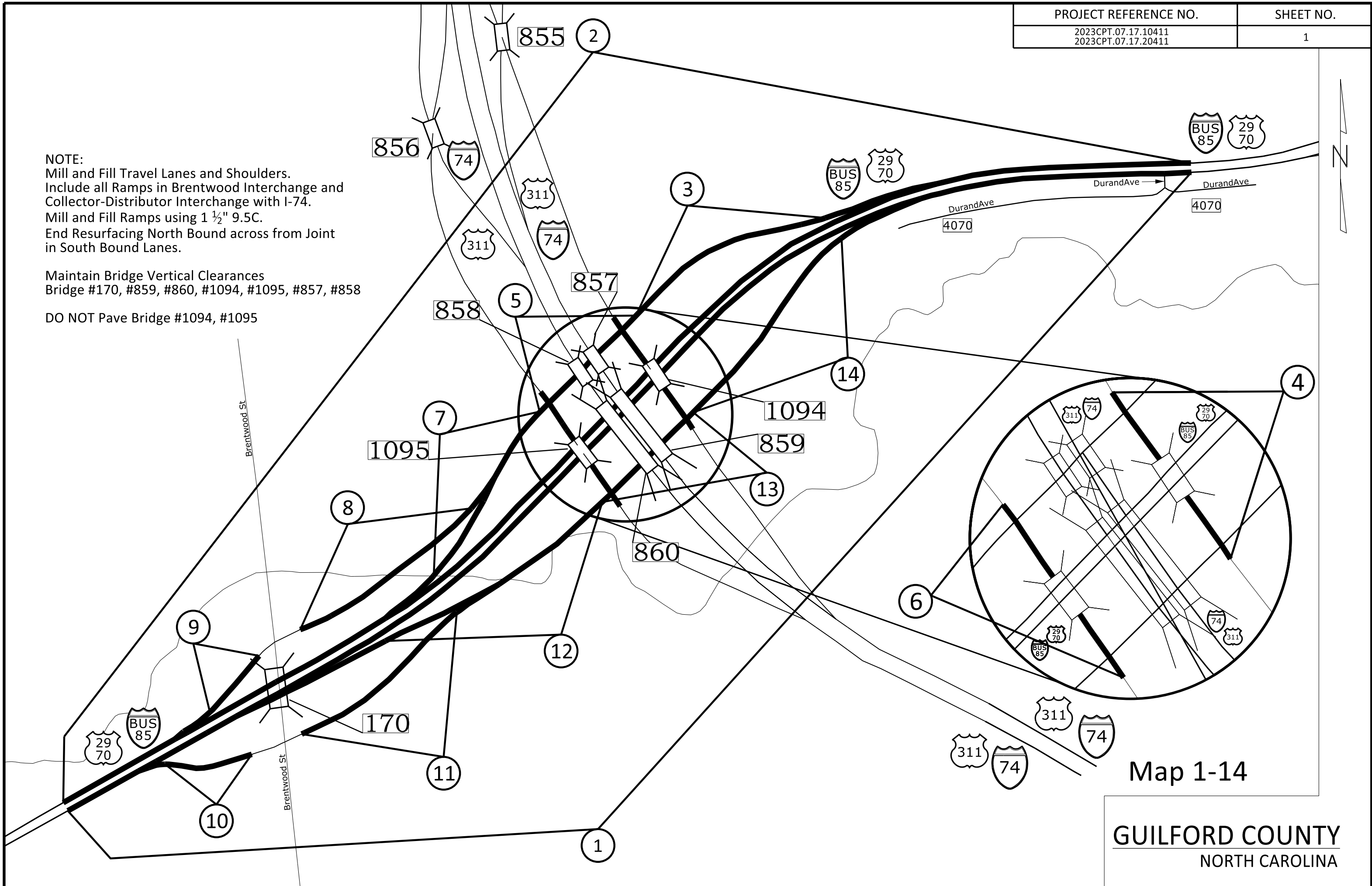


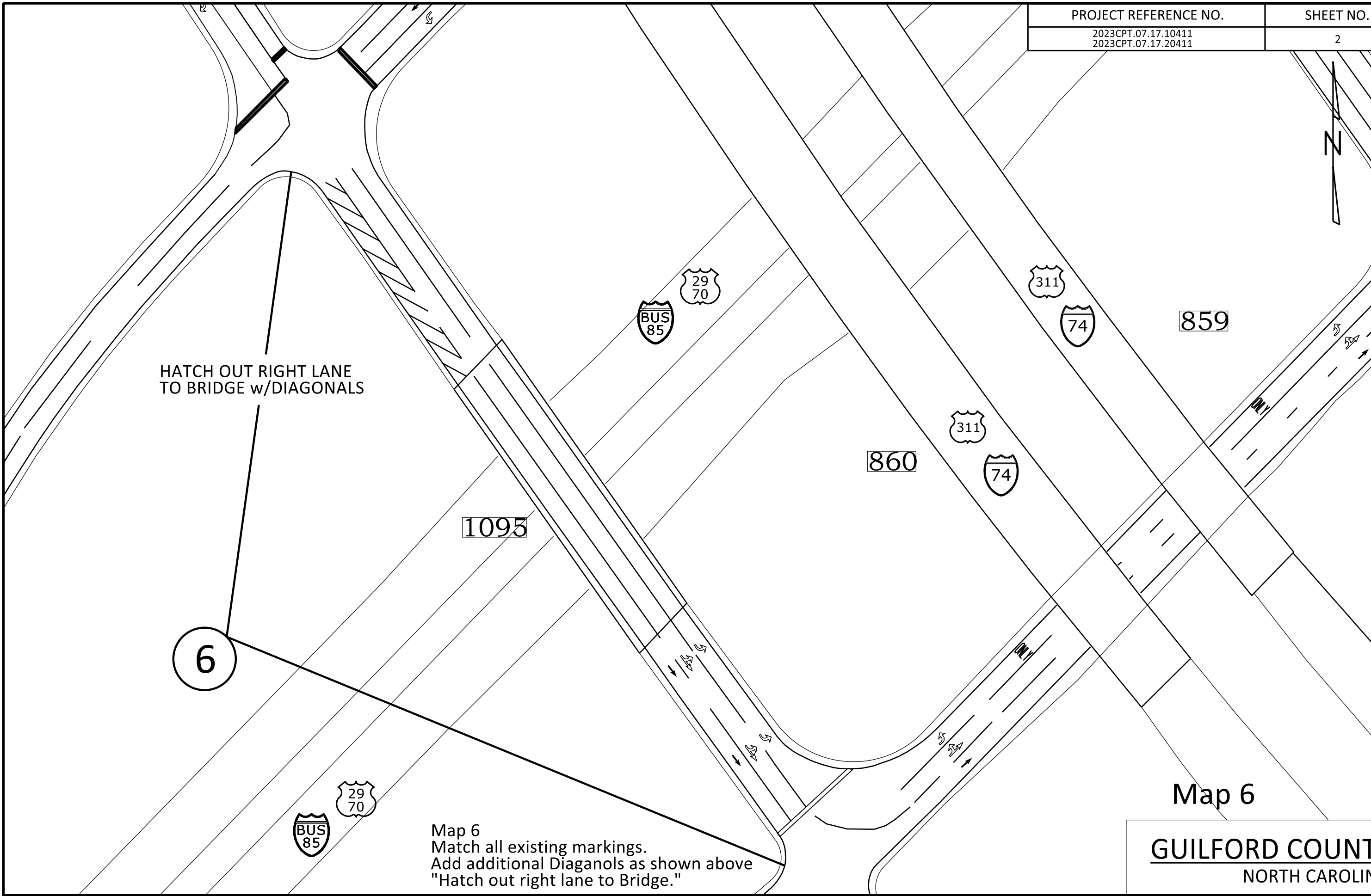
NOTE:
 Mill and Fill Travel Lanes and Shoulders.
 Include all Ramps in Brentwood Interchange and
 Collector-Distributor Interchange with I-74.
 Mill and Fill Ramps using 1 1/2" 9.5C.
 End Resurfacing North Bound across from Joint
 in South Bound Lanes.

Maintain Bridge Vertical Clearances
 Bridge #170, #859, #860, #1094, #1095, #857, #858

DO NOT Pave Bridge #1094, #1095



Map 1-14

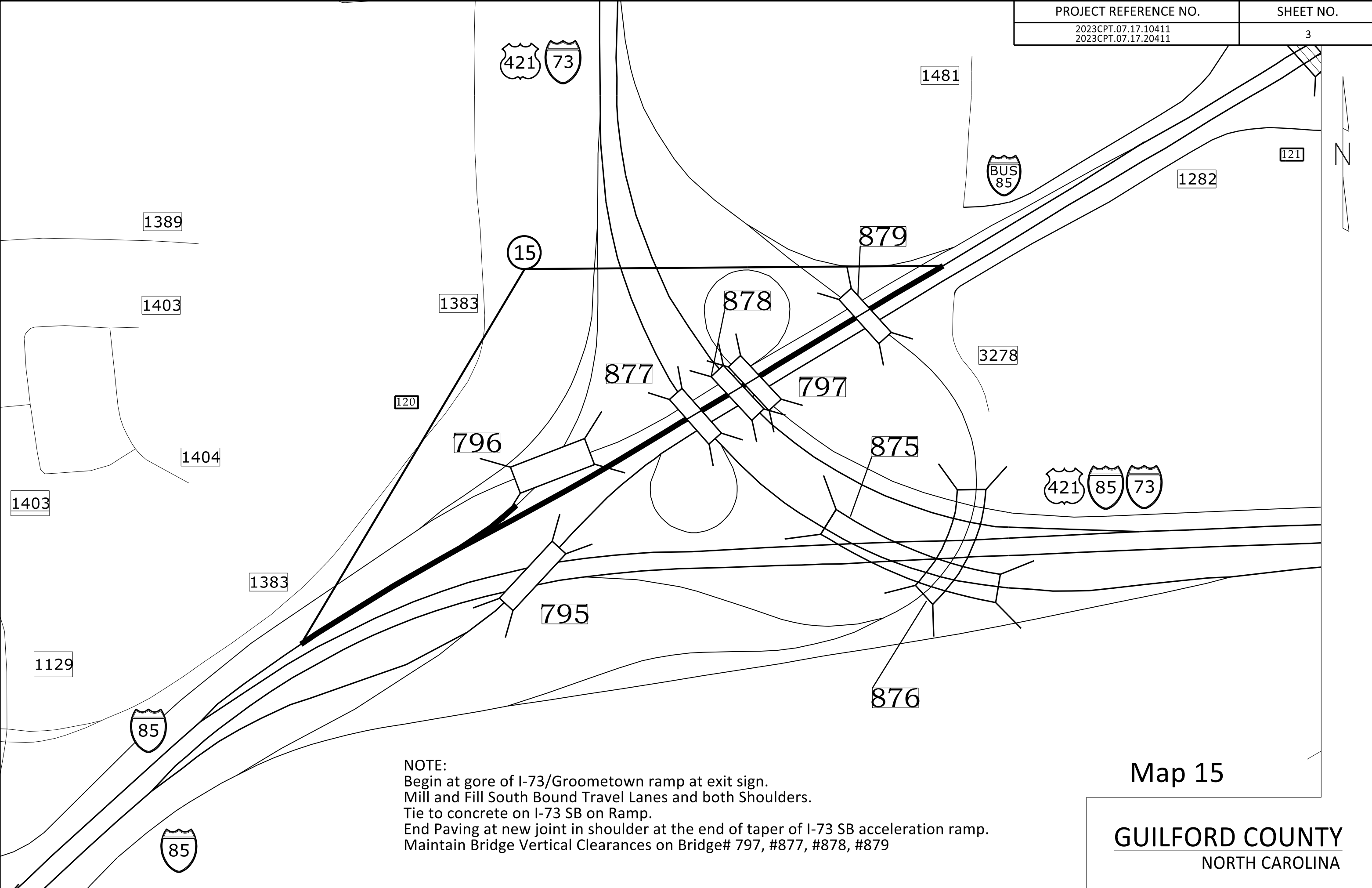


HATCH OUT RIGHT LANE
TO BRIDGE w/DIAGONALS

6

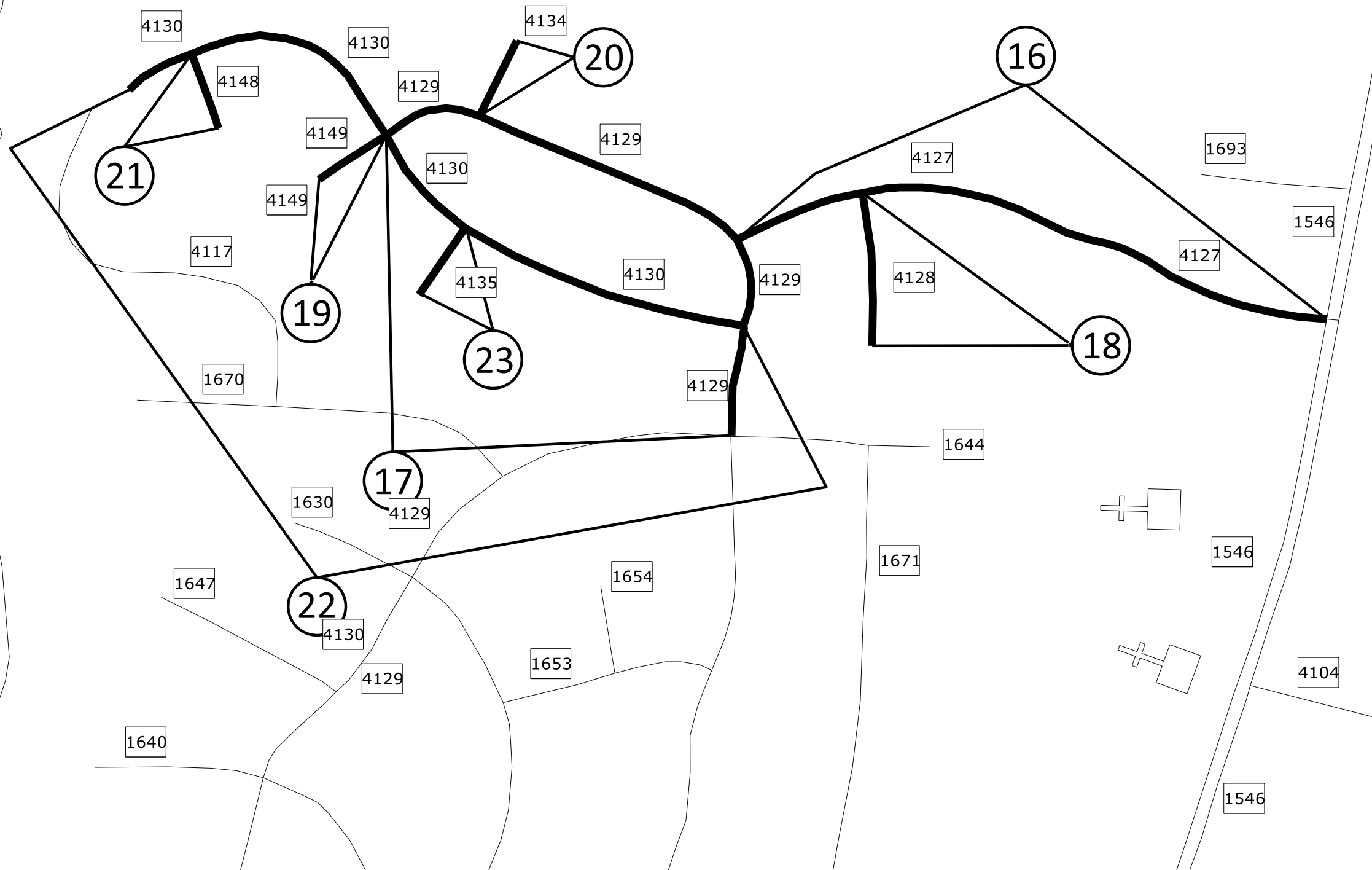
Map 6
Match all existing markings.
Add additional Diaganols as shown above
"Hatch out right lane to Bridge."

Map 6
GUILFORD COUNTY
NORTH CAROLINA

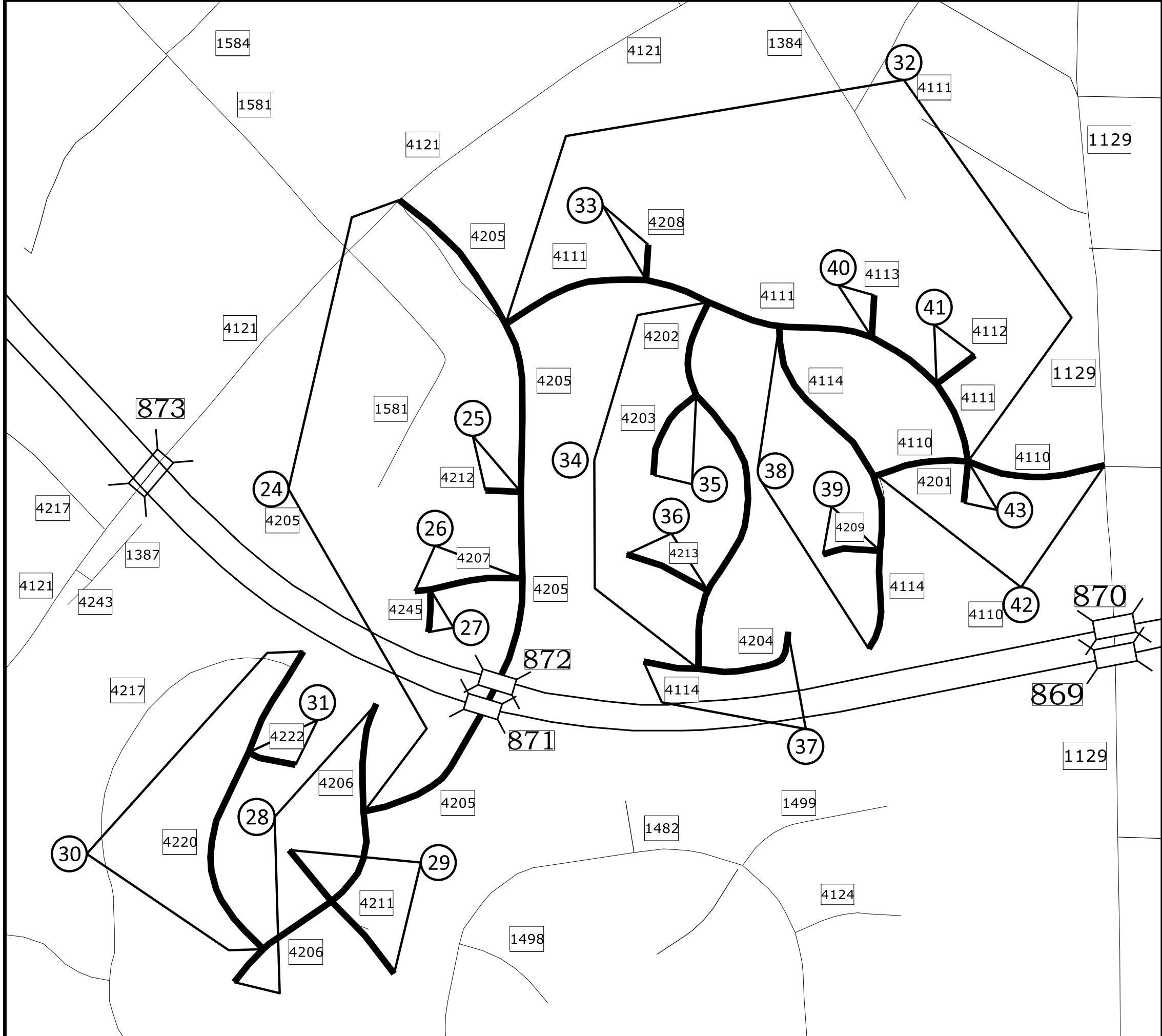


NOTE:
 Begin at gore of I-73/Groometown ramp at exit sign.
 Mill and Fill South Bound Travel Lanes and both Shoulders.
 Tie to concrete on I-73 SB on Ramp.
 End Paving at new joint in shoulder at the end of taper of I-73 SB acceleration ramp.
 Maintain Bridge Vertical Clearances on Bridge# 797, #877, #878, #879

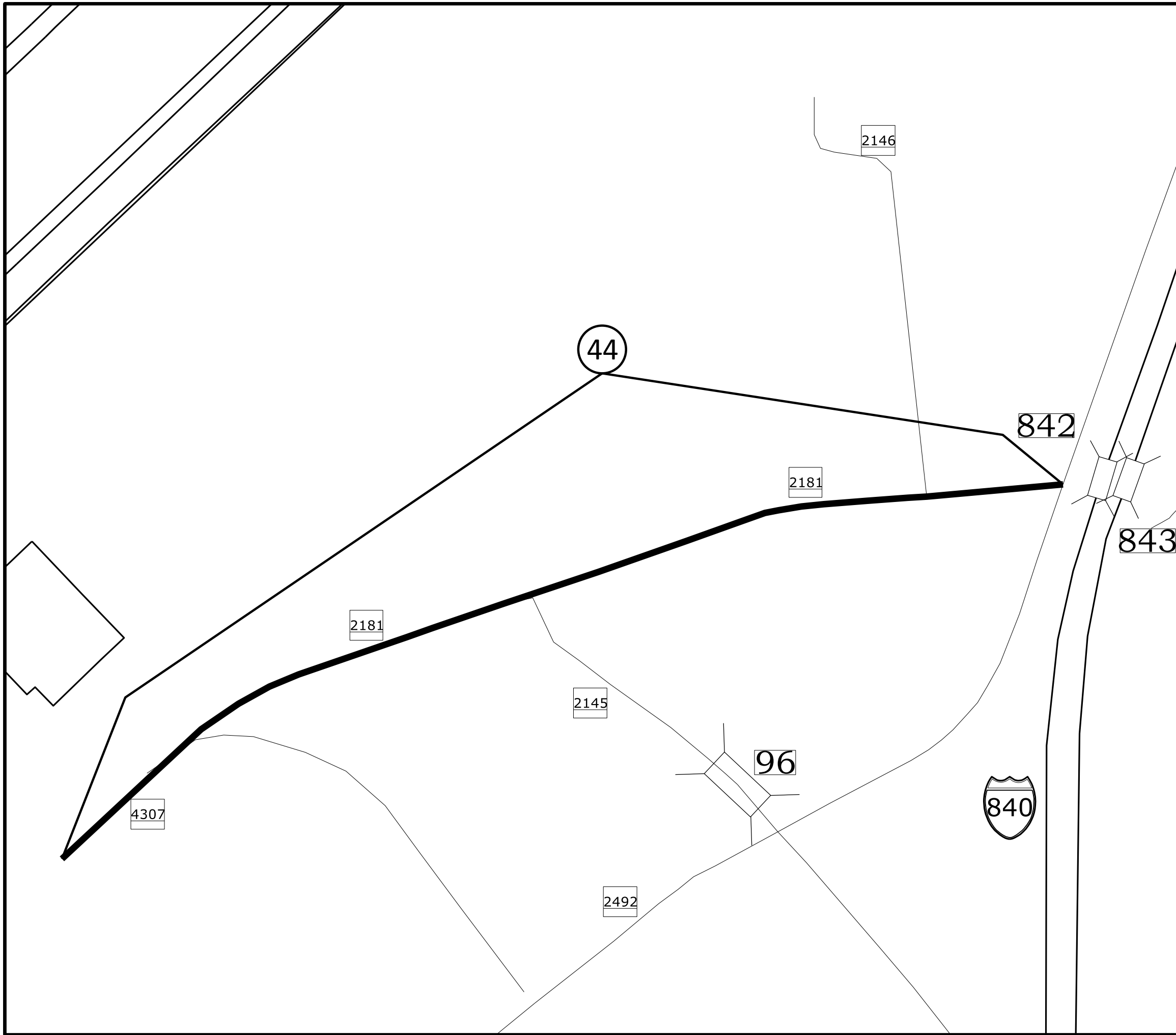
Map 15
GUILFORD COUNTY
 NORTH CAROLINA



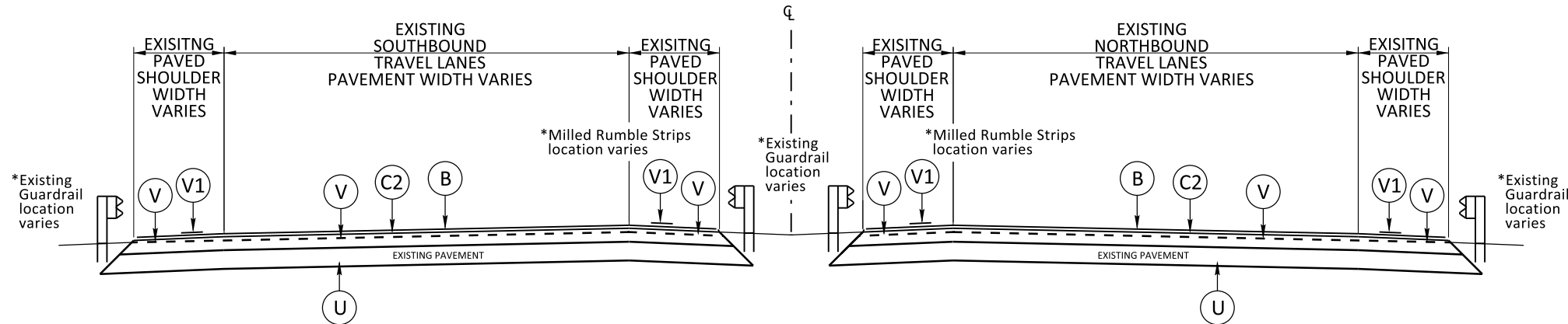
- Map 16 SR 4127 - Stonewick Dr
- Map 17 SR 4129 - Woodmont Rd
- Map 18 SR 4128 - Stonewick Ct
- Map 19 SR 4149 - Woodmont Ct
- Map 20 SR 4134 - Liverpool Ct
- Map 21 SR 4148 - Kingsberry Ct
- Map 22 SR 4130 - Ivystone Dr
- Map 23 SR 4135 - Ivystone Ct



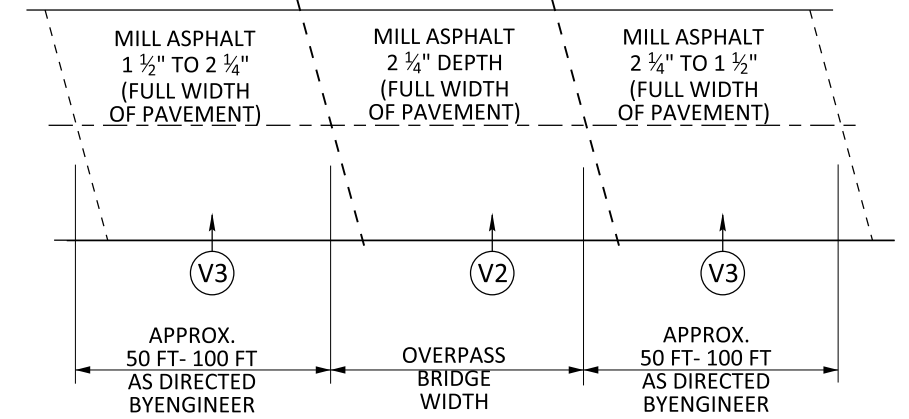
- Map 24 SR 4205 - Kings Mill Rd
Maintain Vertical Clearance
for Bridges# 871 and #872
- Map 25 SR 4212 - Kings Mill Ct
- Map 26 SR 4207 - N Danby Castle Rd
- Map 27 SR 4245 - Pickering Rd
- Map 28 SR 4206 - Pickering Rd
- Map 29 SR 4211 - Landsberg Ct S/
SR 4211 - Landsberg Ct N
- Map 30 SR 4220 - S Danby Castle Rd
- Map 31 SR 4222 - Dublin Castle Ct
- Map 32 SR 4111 - Kings Pond Rd
- Map 33 SR 4208 - Old Scotney Ct
- Map 34 SR 4202 - Castle Croft Rd
- Map 35 SR 4203 - Harleck Ct
- Map 36 SR 4213 - Bewcastle Ct
- Map 37 SR 4204 - York House Dr/Chillon Ct
- Map 38 SR 4114 - York House Dr
- Map 39 SR 4209 - Ludlow Ct
- Map 40 SR 4113 - Manor House Ct
- Map 41 SR 4112 - Coxtan Tower Ct
- Map 42 SR 4110 - Broadacres Dr
- Map 43 SR 4201 - Kings Pond Ct



Map 44 SR 2181 - Ballinger Rd
Tie to new pavement across drive
at 6420 Ballinger Rd.

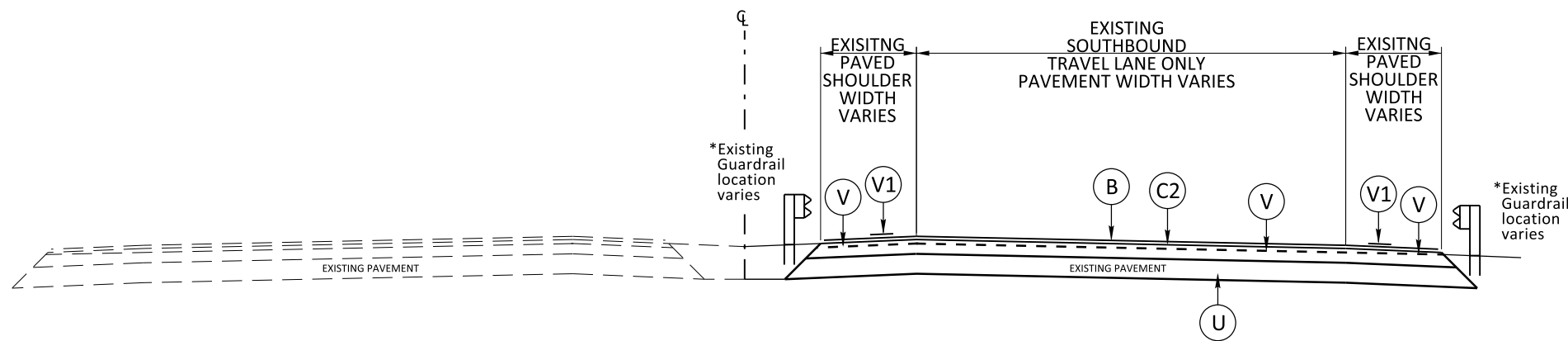


TYPICAL SECTION NO. 1
 Map 1 I-85 Bus N/US 29 N/US 70 E
 Map 2 I-85 Bus S/US 29 S/US 70 W
 Maintain Bridge Vertical Clearances Bridge #170, #859, #860, #1094, #1095
 DO NOT Pave Bridge #1094, #1095

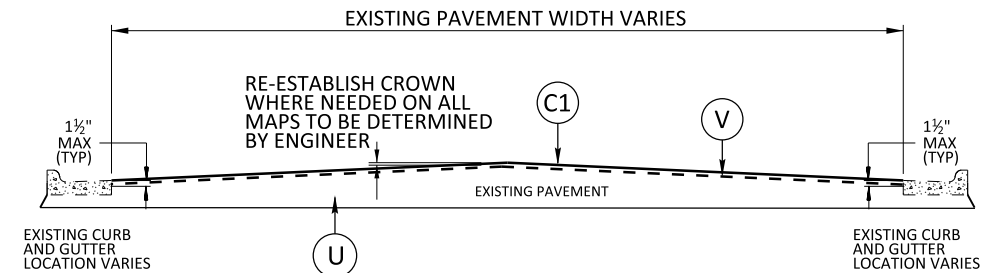


**PLAN VIEW-
MILLING ASPHALT PAVEMENT UNDER OVERPASS**

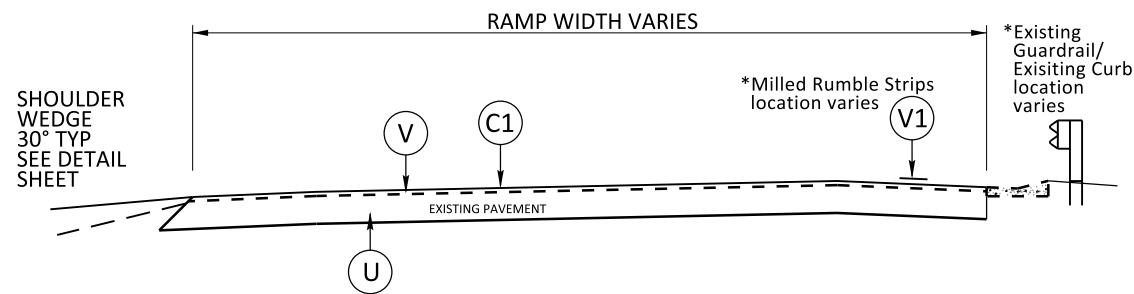
Map 1 I-85 Bus N/US 29 N/US 70 E
 Map 2 I-85 Bus S/US 29 S/US 70 W
 at Bridge #1095, #860, #859, #1094
 after transitioning from 1 1/2" to 2 1/4" continue 2 1/4" depth under all Bridges.
 Map 15 I-85 Bus S/US 29 S/US 70 W
 at Bridge #877, #878, #797
 after transitioning from 1 1/2" to 2 1/4" continue 2 1/4" depth under all Bridges.



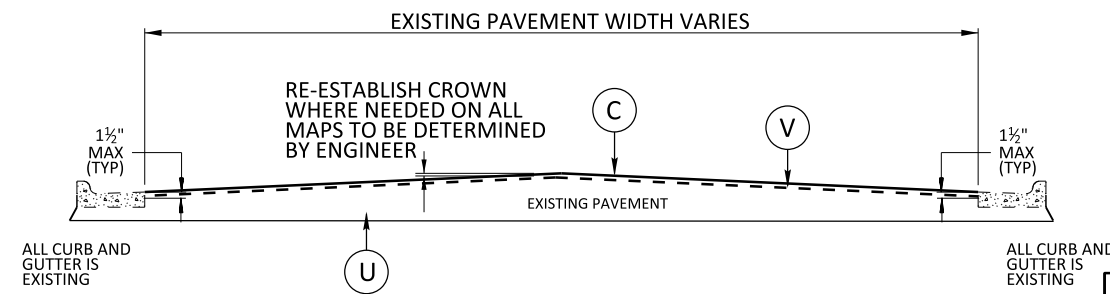
TYPICAL SECTION NO. 2
 Map 15 I-85 Bus S/US 29 S/US 70 W
 Maintain Bridge Vertical Clearances Bridge # 797, #877, #878, #879



TYPICAL SECTION NO. 5
 Map 44 SR 2181 - Ballinger Rd

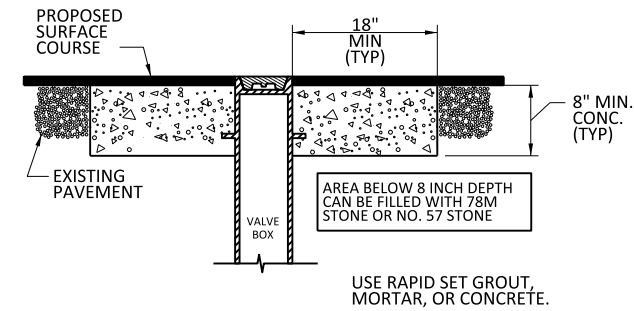


TYPICAL SECTION NO. 3
 Map 3 I-85 Bus S/US 29 S/US 70 W Off Ramp to I-74/US 311
 Map 4 I-74 W/US 311 N Collector
 Map 5 I-85 Bus S/US 29 S/US 70 W Collector
 Maintain Bridge Vertical Clearances Bridge #857, #858
 Map 6 I-74 E/US 311 S Collector
 Map 7 I-85 Bus S/US 29 S/US 70 W On Ramp
 Map 8 Ramp from I-85 Bus S/US 29 S/US 70 W On Ramp to Brentwood St
 Map 9 I-85 Bus S/US 29 S/US 70 S On Ramp from Brentwood St
 Map 10 I-85 Bus N/US 29 N/US 70 E Off Ramp to Brentwood St
 Map 11 Ramp from Brentwood St to I-85 Bus N/US 29 N/US 70 E Off Ramp
 Map 12 I-85 Bus N/US 29 N/US 70 E Off Ramp to I-74/US 311
 Map 13 I-85 Bus N/US 29 N/US 70 E Collector
 Maintain Bridge Vertical Clearances Bridge #859, #860
 Map 14 I-85 Bus N/US 29 N/US 70 E On Ramp

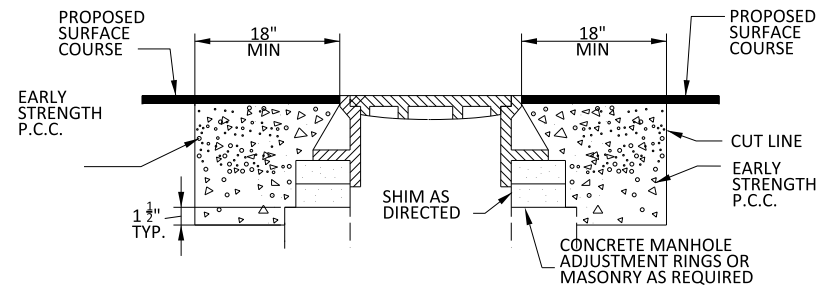


TYPICAL SECTION NO. 4
 Map 16 SR 4127 - Stonewick Dr
 Map 17 SR 4129 - Woodmont Rd
 Map 18 SR 4128 - Stonewick Ct
 Map 19 SR 4149 - Woodmont Ct
 Map 20 SR 4134 - Liverpool Ct
 Map 21 SR 4148 - Kingsberry Ct
 Map 22 SR 4130 - Ivystone Dr
 Map 23 SR 4135 - Ivystone Ct
 Map 24 SR 4205 - Kings Mill Rd
 Maintain Bridge Vertical Clearances for Bridges# 871 and #872
 Map 25 SR 4212 - Kings Mill Ct
 Map 26 SR 4207 - N Danby Castle Rd
 Map 27 SR 4245 - Pickering Rd
 Map 28 SR 4206 - Pickering Rd (South)
 Map 29 SR 4211 - Landsberg Ct S / SR 4211 - Landsberg Ct N
 Map 30 SR 4220 - S Danby Castle Rd
 Map 31 SR 4222 - Dublin Castle Ct
 Map 32 SR 4111 - Kings Pond Rd
 Map 33 SR 4208 - Old Scotney Ct
 Map 34 SR 4202 - Castle Croft Rd
 Map 35 SR 4203 - Harleck Ct
 Map 36 SR 4213 - Bewcastle Ct
 Map 37 SR 4204 - Chillon Ct / York House Dr
 Map 38 SR 4114 - York House Dr
 Map 39 SR 4209 - Ludlow Ct
 Map 40 SR 4113 - Manor House Ct
 Map 14 SR 4112 - Coxtan Tower Ct
 Map 42 SR 4110 - Broadacres Dr
 Map 43 SR 4201 - Kings Pond Ct

PAVEMENT SCHEDULE	
B	PROP. APPROX. 3/4" OGAFC Type FC-1 Modified
C	PROP. APPROX. 1 1/2" ASPHALT. CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C1	PROP. APPROX. 1 1/2" ASPHALT. CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 1 1/2" ASPHALT. CONC. SURFACE COURSE, TYPE S9.5D, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
U	EXISTING PAVEMENT
V	MILLING, 1 1/2" DEPTH
V1	MILLED RUMBLE STRIPS, USE IN CONJUNCTION WITH STANDARD DRAWING NO. 665.01
V2	MILLING, 2 1/4" DEPTH
V3	MILLING, 1 1/2" - 2 1/4" DEPTH

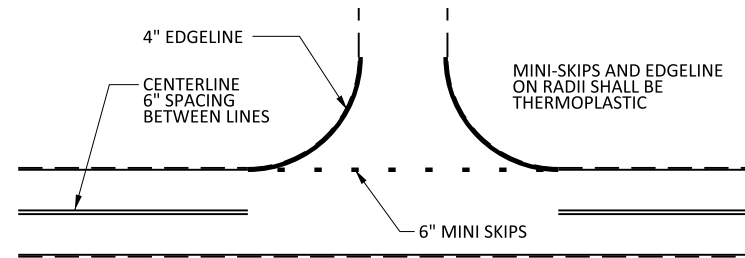


STANDARD CONCRETE ENCASEMENT FOR VALVE CASTINGS IN PAVEMENT



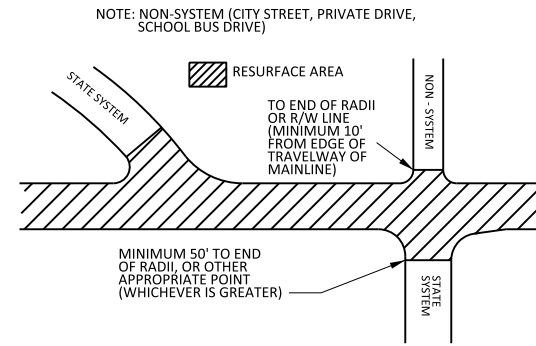
- NOTES:
1. MORTAR SHALL BE MIXED TO NCDOT SPECIFICATIONS.
 2. ALL FAULTY EXISTING BRICKWORK TO BE REMOVED AND REPLACED WITH NEW BRICK MASONRY.
 3. EXCAVATION FOR THE ADJUSTMENT SHALL BE SHEER CUT ON ALL SIDES.
 4. RAPID SET GROUT, MORTAR, OR CONCRETE SHALL BE USED. CLASS B CONCRETE MAY BE USED WHEN ADJUSTMENTS ARE NOT IN THE TRAVEL LANE.

STANDARD CONCRETE ENCASEMENT FOR MANHOLE CASTINGS IN PAVEMENT

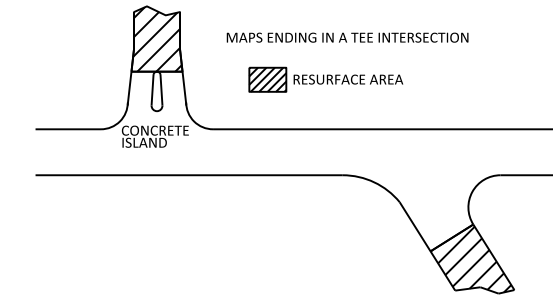


NOTE: MINI SKIPS SHALL BE PLACED ON A 8' CYCLE, CONTAINING A 6" AND 2" SKIP, THE WIDTH OF THE SKIP SHALL BE 6".

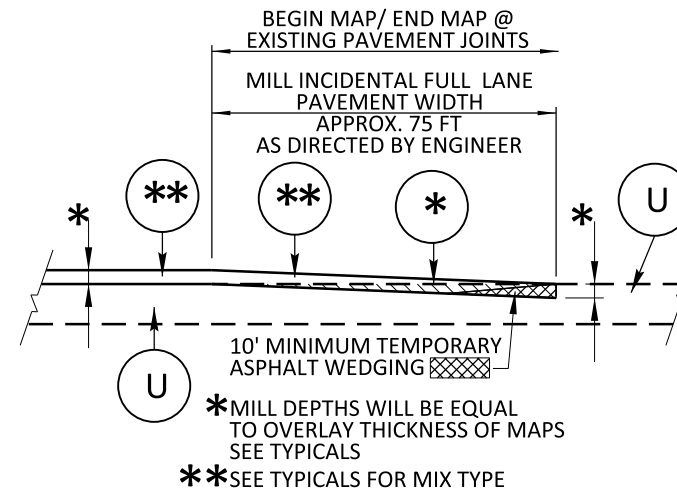
TO BE USED AT ALL NON-SIGNALIZED INTERSECTIONS (NOT TO SCALE)



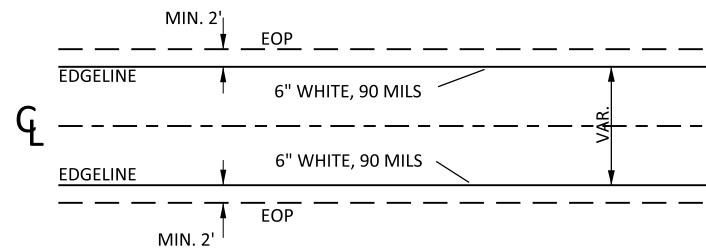
PAVING DETAIL 1 MAIN LINE IS BEING RESURFACED



PAVING DETAIL 2 MAIN LINE NOT BEING RESURFACED



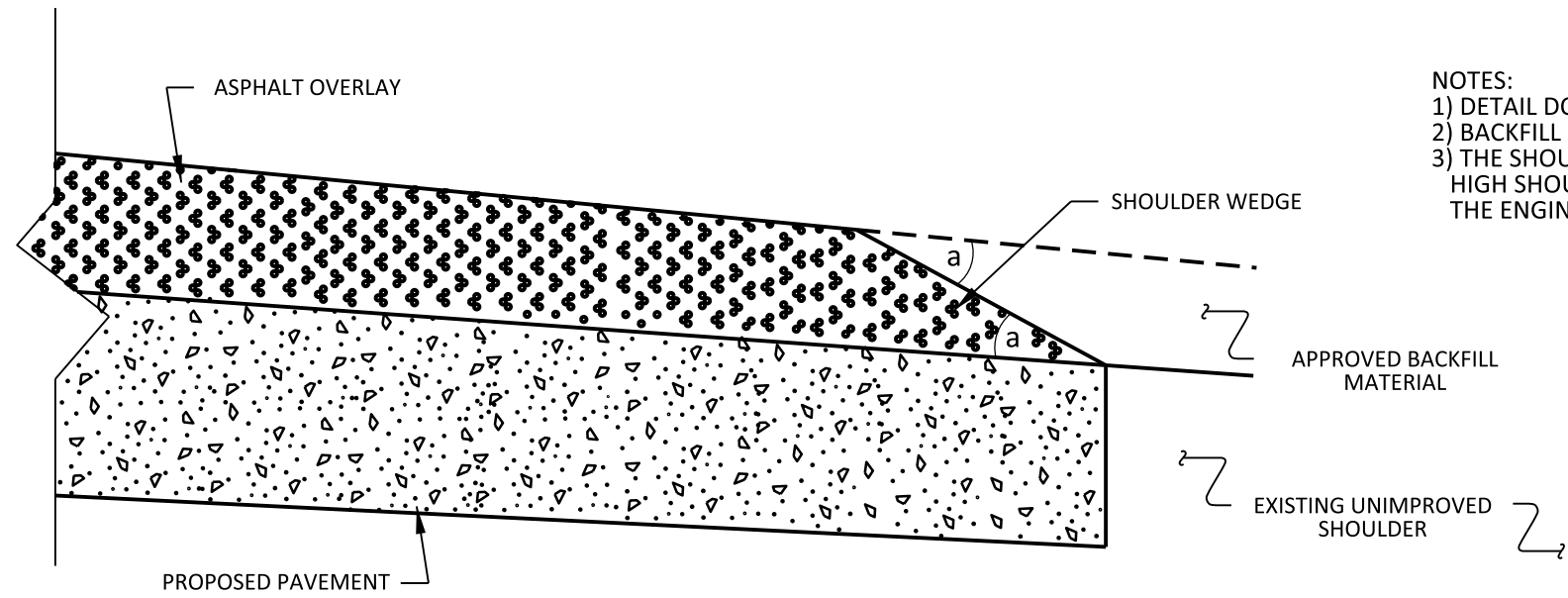
INCIDENTAL MILLING AT TIE-IN DETAIL



NOTE:
USE IN CONJUNCTION WITH THE EXISTING PAVEMENT MARKINGS TO ESTABLISH THE STRIPING.
USE IN CONJUNCTION WITH THE NCDOT STANDARD DRAWINGS.

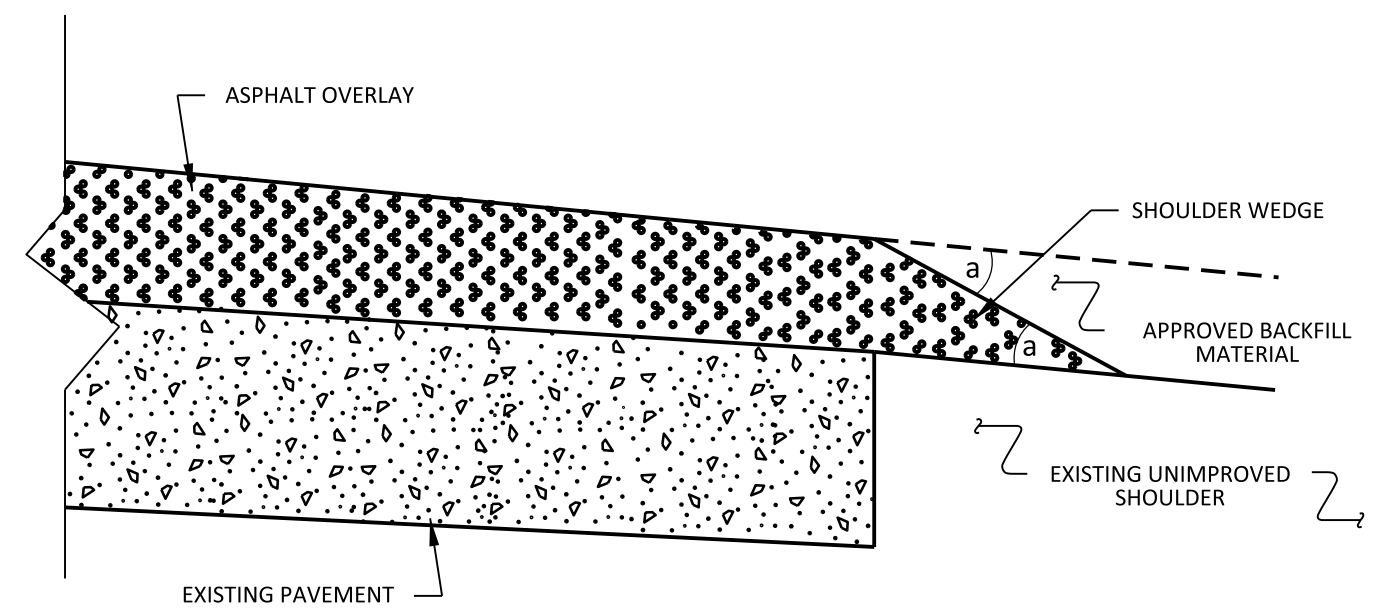
STRIPING DETAIL 1 GENERAL STRIPING DETAIL FOR ENTIRE PROJECT

PAVEMENT SCHEDULE	
B	PROP. APPROX. 3/4" OGAFC Type FC-1 Modified
C	PROP. APPROX. 1 1/2" ASPHALT. CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C1	PROP. APPROX. 1 1/2" ASPHALT. CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 1 1/2" ASPHALT. CONC. SURFACE COURSE, TYPE S9.5D, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
U	EXISTING PAVEMENT
V	MILLING, 1 1/2" DEPTH
V1	MILLED RUMBLE STRIPS, USE IN CONJUNCTION WITH STANDARD DRAWING NO. 665.01
V2	MILLING, 2 1/4" DEPTH
V3	MILLING, 1 1/2"-2 1/4" DEPTH

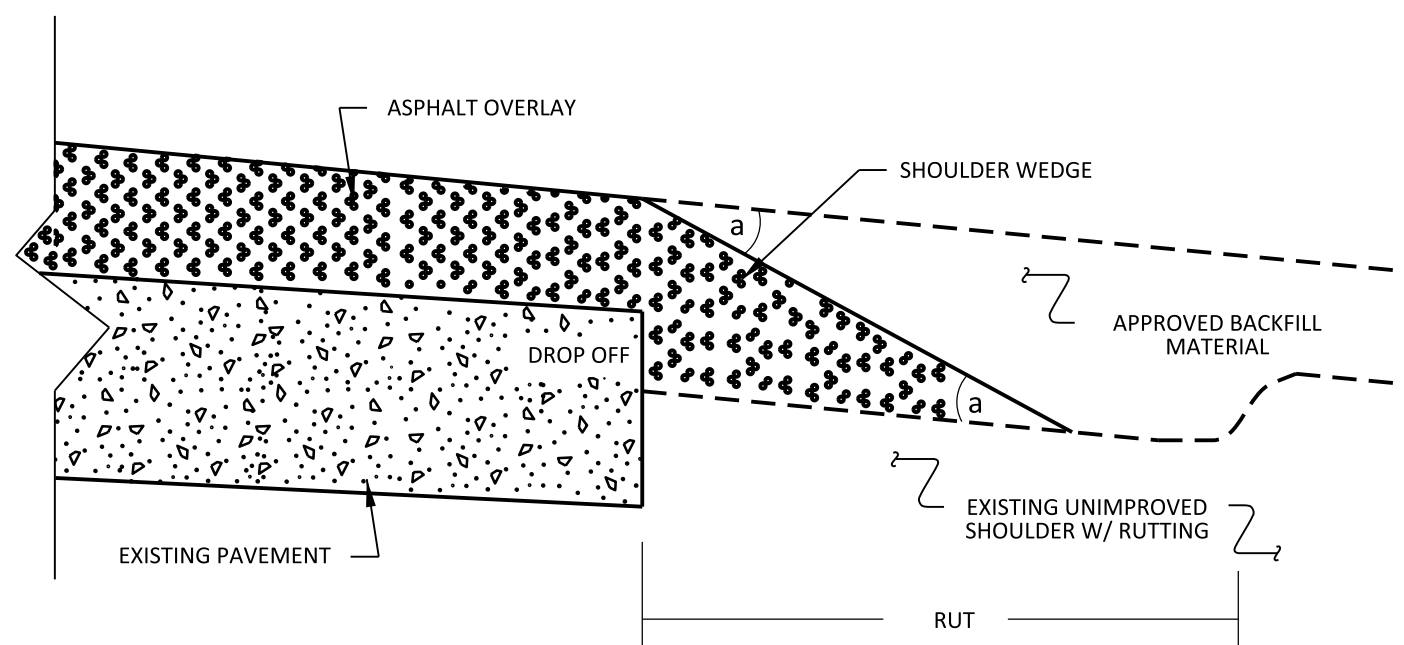


NOTES:
 1) DETAIL DOES NOT APPLY TO OGAFc AND ULTRA-THIN BONDED WEARING COURSE.
 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS AND SIDE STREETS, HIGH SHOULDERS, AND OTHER LOCATIONS NOT FEASIBLE TO CONSTRUCT AS DIRECTED BY THE ENGINEER.

SHOULDER WEDGE DETAIL
 (Resurfacing Projects w/ Widening or with Existing Paved Shoulder having no dropoffs)



SHOULDER WEDGE DETAIL
 (Resurfacing Projects w/ NO Widening)



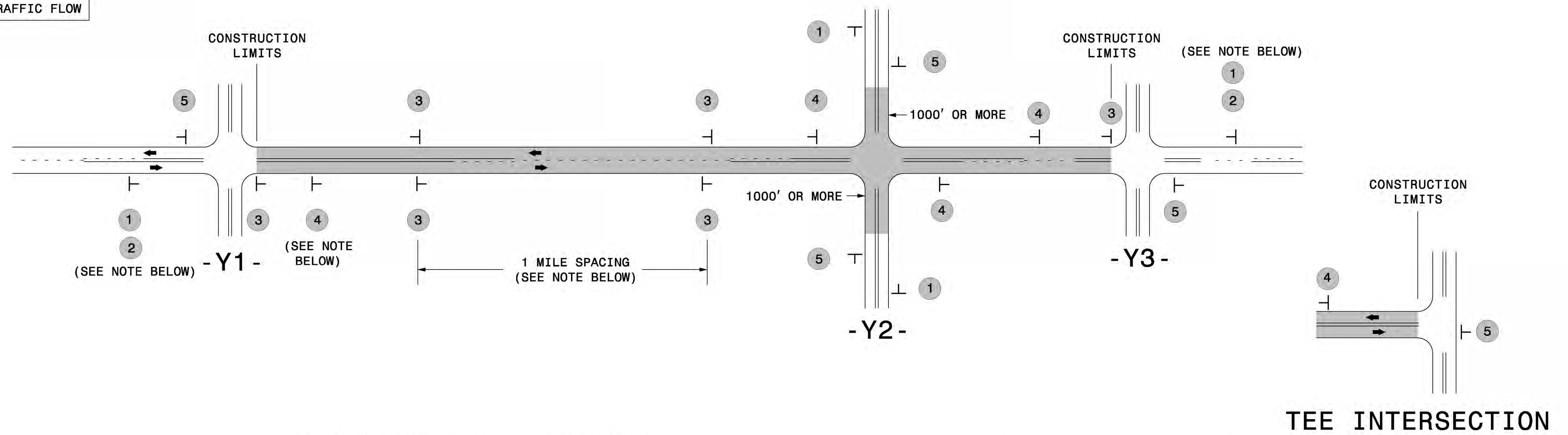
SHOULDER WEDGE DETAIL
 (Resurfacing Adjacent to Rutted Shoulder)

- 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:	10/16/12
CHECKED BY:		DATE:	
FILE SPEC.:	susr/details/stand/shoulderwedge/detail.dgn		

SIGNING FOR RESURFACING PROJECTS

LEGEND
 ┆ STATIONARY SIGN
 ← DIRECTION OF TRAFFIC FLOW



MAINLINE (-L-) SIGNING

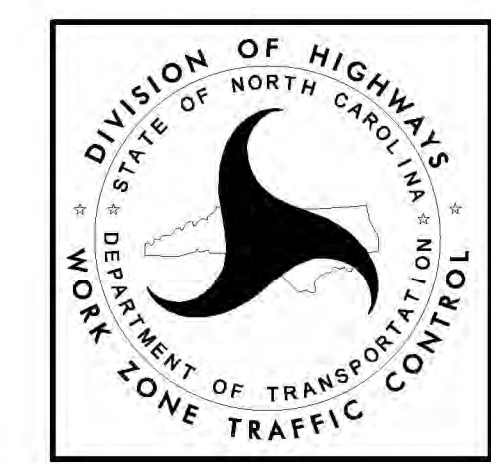
-Y- LINE SIGNING

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;"> PLACED 500' IN ADVANCE OF FLAGGER. </div> <div style="text-align: center;"> 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.

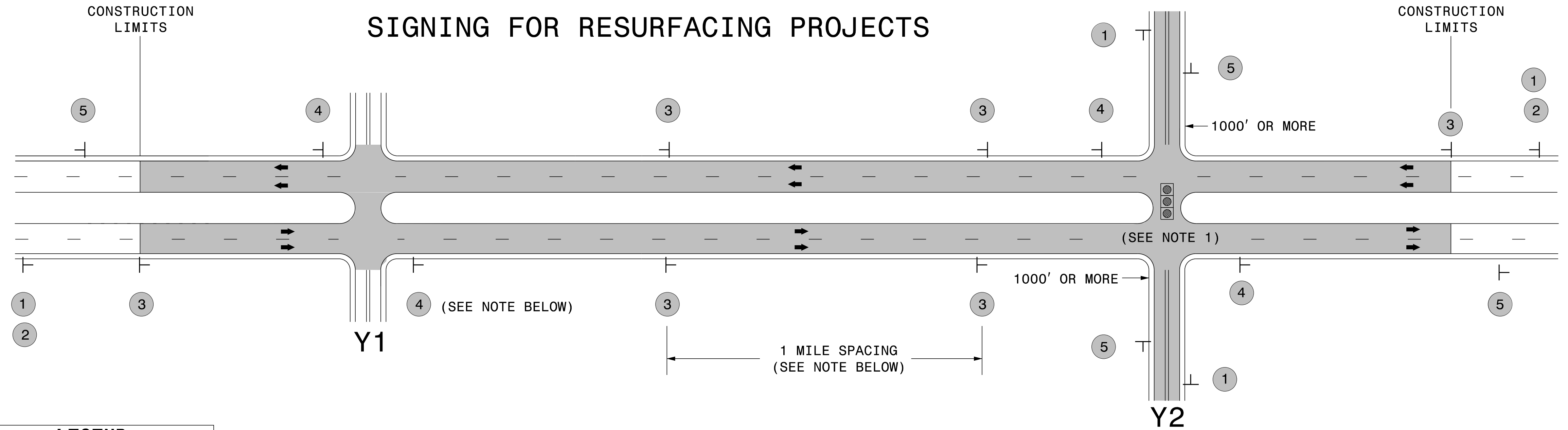
MAPS LESS THAN 2 MILES

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

5/15/2017 SAT:MUWZTC:\Resurfacing\Details\Resurfacing_AdvWarn_2Ln.dgn User:keads



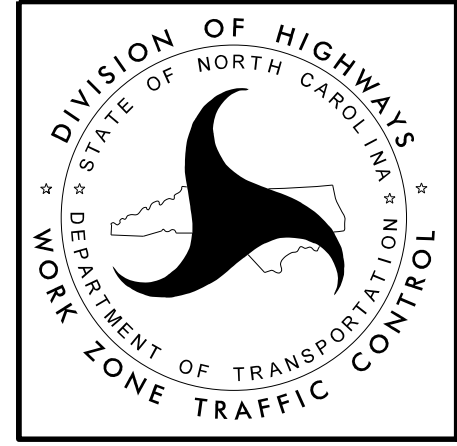
LEGEND
 ┆ STATIONARY SIGN
 ← DIRECTION OF TRAFFIC FLOW

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; align-items: center;"> <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>NOTES:</p> <ol style="list-style-type: none"> 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.
		<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\rmgarrrett\Downloads\Resurfacing_AdvWarn_Ltr-Su_Shldr.dgn
 User:rmgarrrett



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

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

ENGLISH STANDARD DRAWING FOR
DEEP-CUT INDUCTIVE DETECTION LOOPS
(FOR INSTALLATION PRIOR TO MILLING)

SHEET 1 OF 1

NOTES

- OVERLAP SAW CUTS AT CORNERS AND INTERSECTION POINTS TO ENSURE UNIFORM SAW SLOT DEPTH.
- MAINTAIN 12" SPACING BETWEEN LOOP WIRE TAIL SECTIONS.
- WIRE LOOPS CONNECTED TO THE SAME DETECTOR IN SERIES.
- LOCATE LOOPS IN CENTER OF LANES UNLESS OTHERWISE SHOWN ON PLANS.
- USE A SERIES OF ONE INCH PIECES OF BACKER ROD SPACED ONE FOOT APART ALONG THE ENTIRE LENGTH OF THE FEEDER SLOT AND LOOP SAW SLOT.
- CONSULT LOOP SEALANT MANUFACTURER TO DETERMINE CURING TIME REQUIRED PRIOR TO MILLING.
- REFER TO STANDARD DRAWING 1725.01 SHEETS 2 AND 3 FOR ADDITIONAL REQUIREMENTS.

SAW SLOT DEPTH CHART
ASSUMING 2" MILLING DEPTH

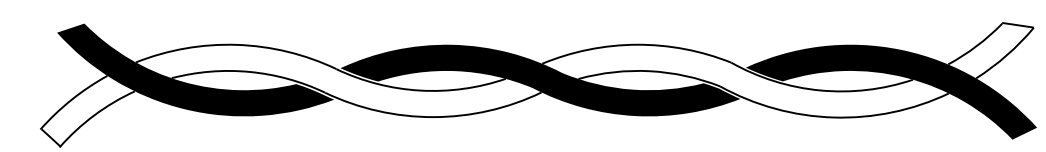
DEPTH (IN)	MAX NO. OF WIRE LAYERS				
	2	3	4	5	6
SAW SLOT DEPTH	4.0	4.5	5.0	5.0	5.0
MINIMUM TOTAL ASPHALT DEPTH REQUIRED	5.0	5.5	6.0	6.0	6.0

LOOP WIRE TWISTING METHOD

INCORRECT WAY TO TWIST WIRE

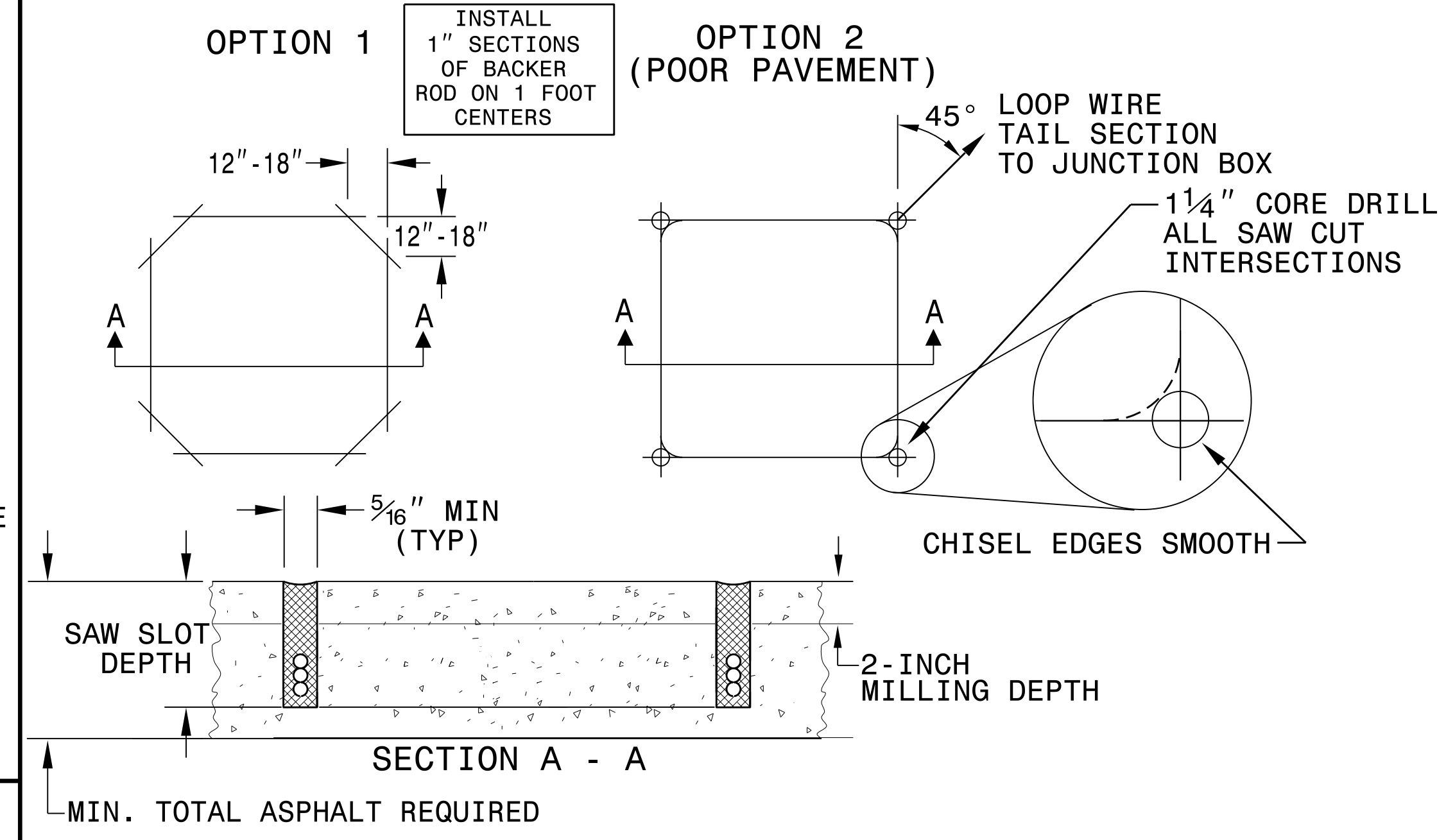


CORRECT WAY TO TWIST WIRE

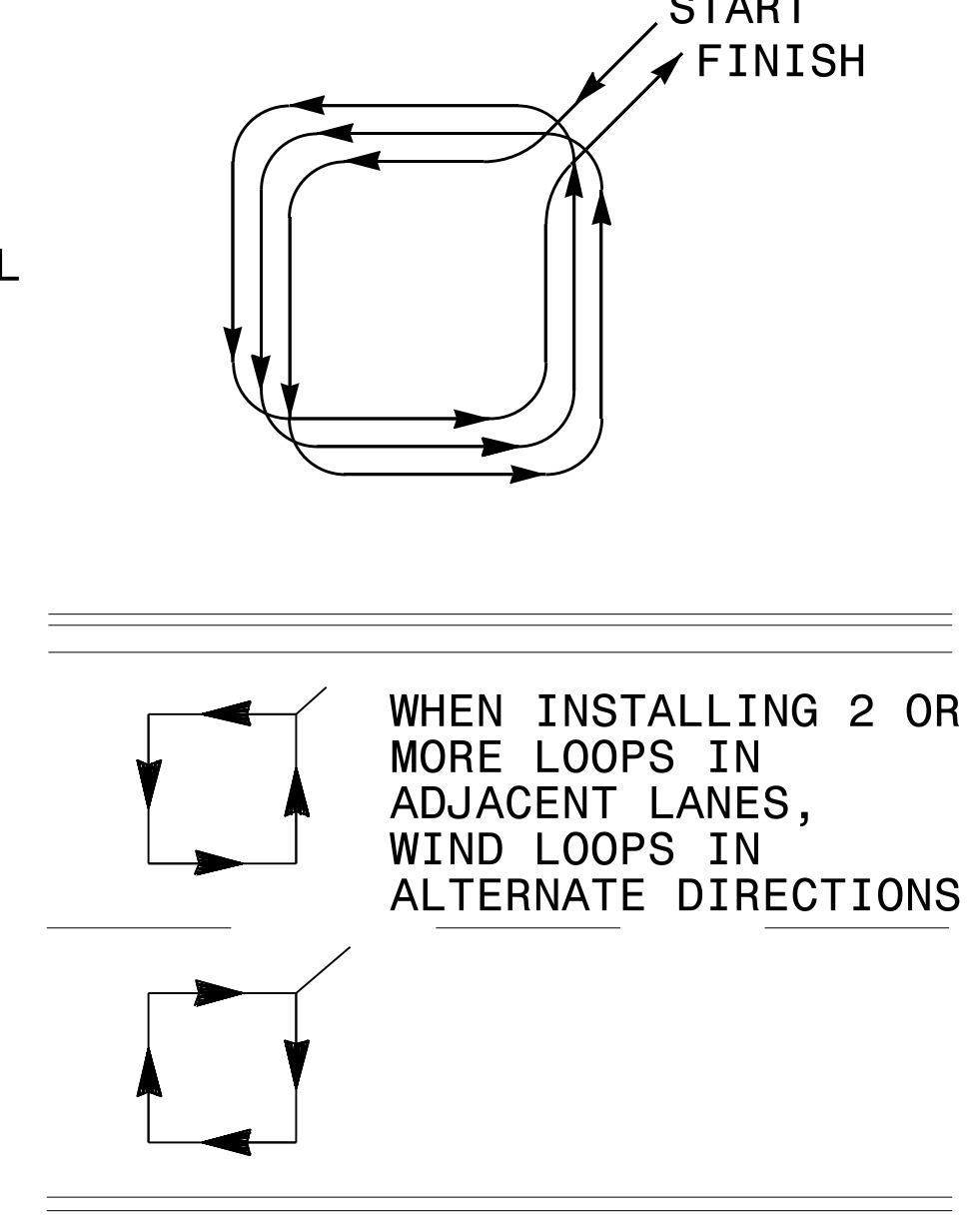


CONVENTIONAL 4-SIDED LOOP

SAW CUT OPTIONS

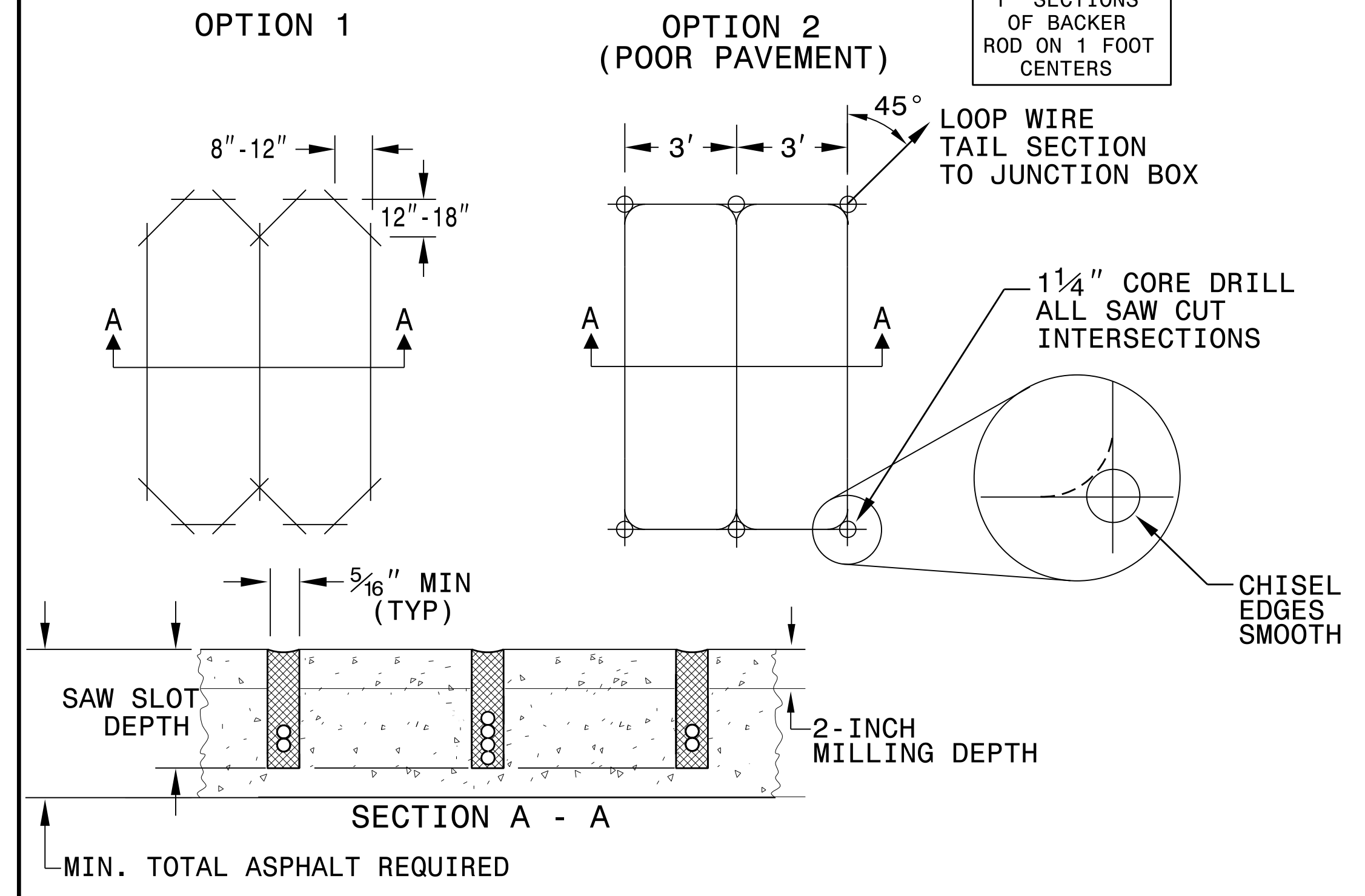


LOOP WINDING METHOD

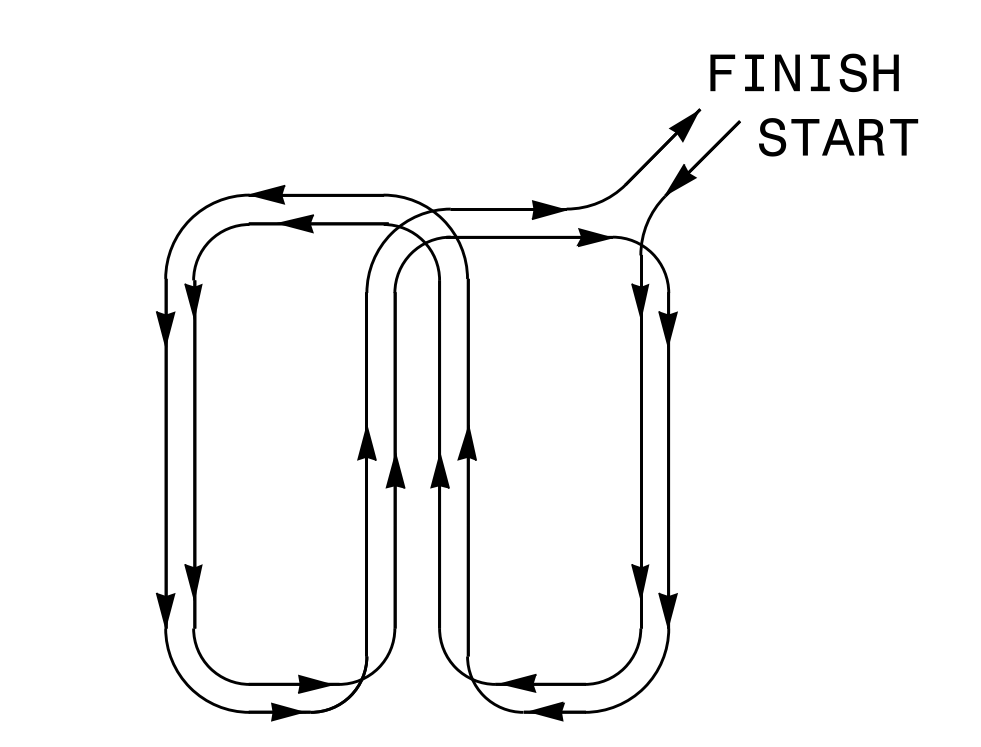


QUADRUPOLE LOOP

SAW CUT OPTIONS

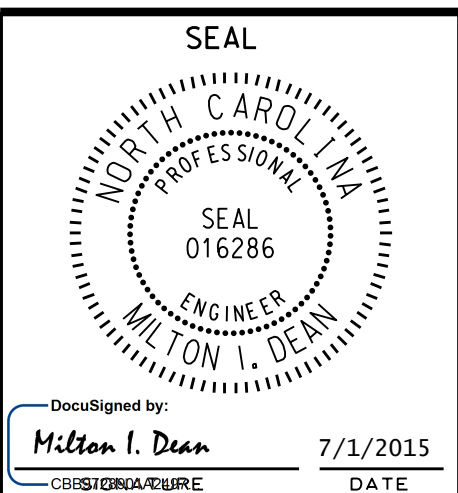
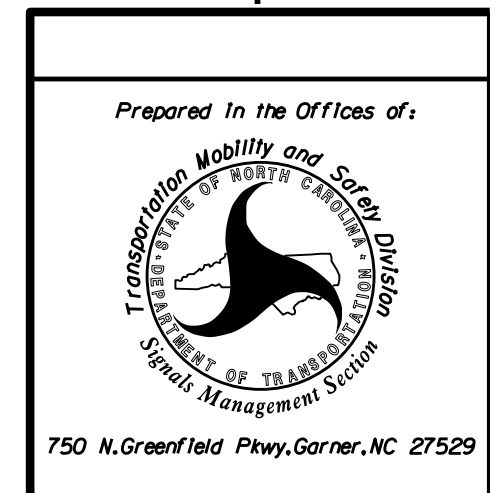


LOOP WINDING METHOD



REVISIONS

1. REMOVED TWISTING NOTES FROM TAIL SECT. TO JUNCTION BOX. 2/26/08 MWH
2. REVISED SECTION A - A DETAILS. 6/29/15 JTP



SHEET OF

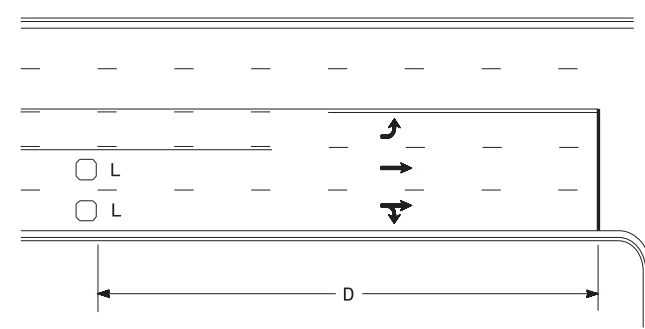
ENGLISH STANDARD DRAWING FOR
DEEP-CUT INDUCTIVE DETECTION LOOPS
(FOR INSTALLATION PRIOR TO MILLING)

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

PROJECT REFERENCE NO.
2023CPT.07.17.10411
2023CPT.07.17.20411

SHEET NO.
12

High Speed Detection (≥40 mph)

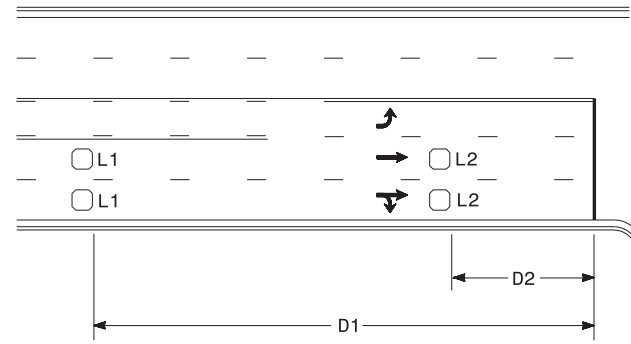


Speed Limit mph	D ft
40	250
45	300
50	355
55	420

L = 6ft X 6ft
Wired separately

Volume Density Operation

OR



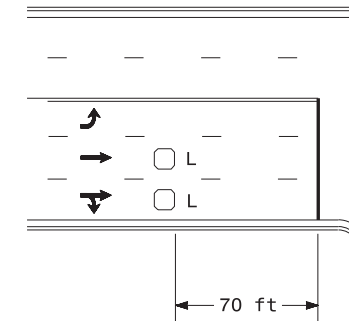
Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

L1 = 6ft X 6ft
Wired in series

L2 = 6ft X 6ft
Wired in series

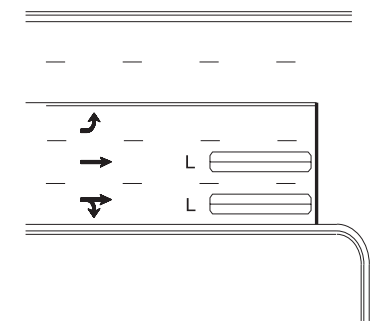
"Stretch" Operation

Low Speed Detection (≤35 mph)



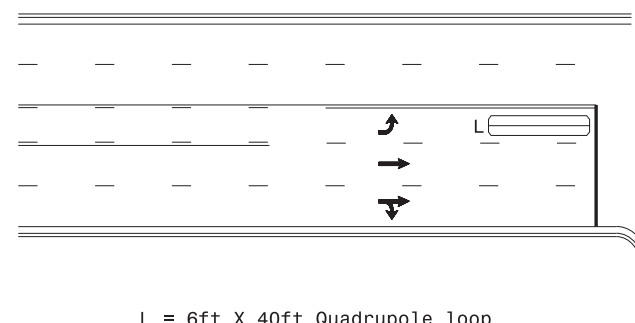
L = 6ft X 6ft
Wired in series

OR



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

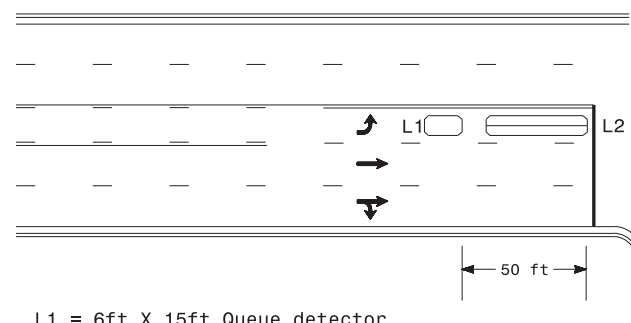
Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

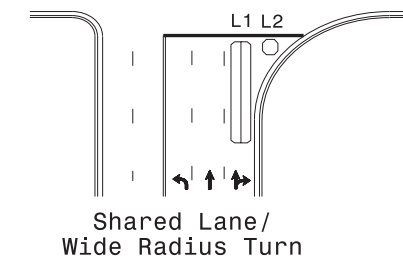
OR



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

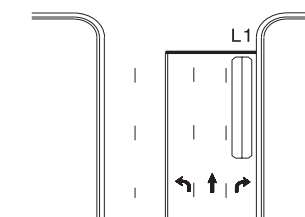
Queue Loop Detection

Right Turn Lane Detection

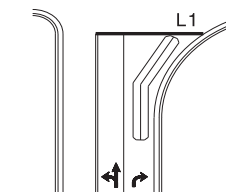


L1 = 6ft X 40ft Quadrupole loop
L2 = 6ft X 6ft [Minimum] Presence loop
Wired separately

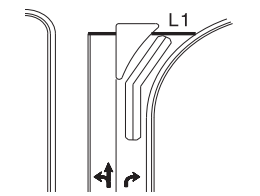
Shared Lane/
Wide Radius Turn



Standard Turn

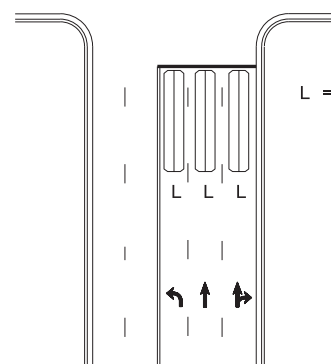


Wide Radius Turn



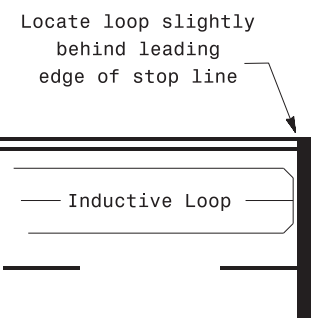
Channelized Turn

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

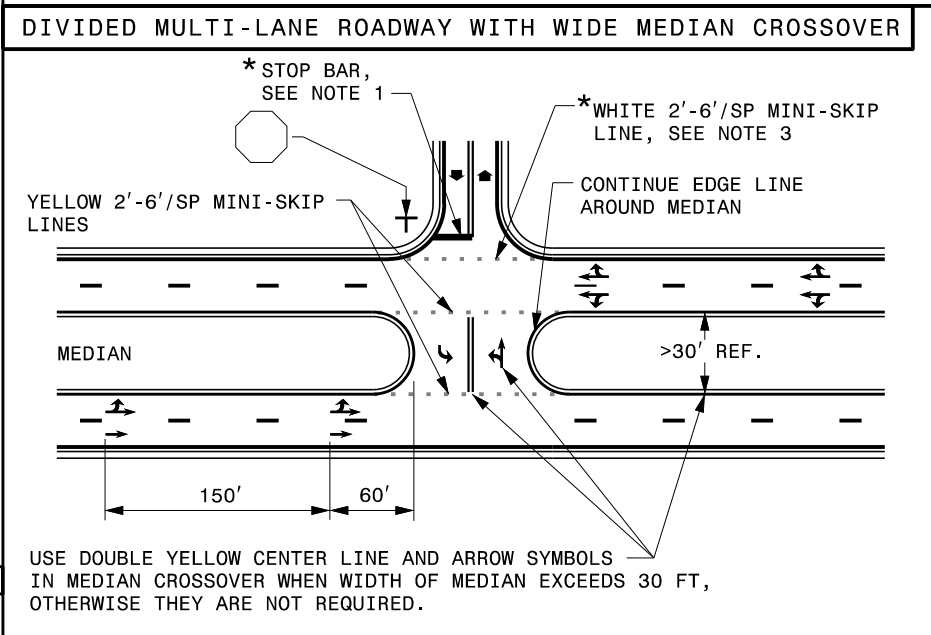
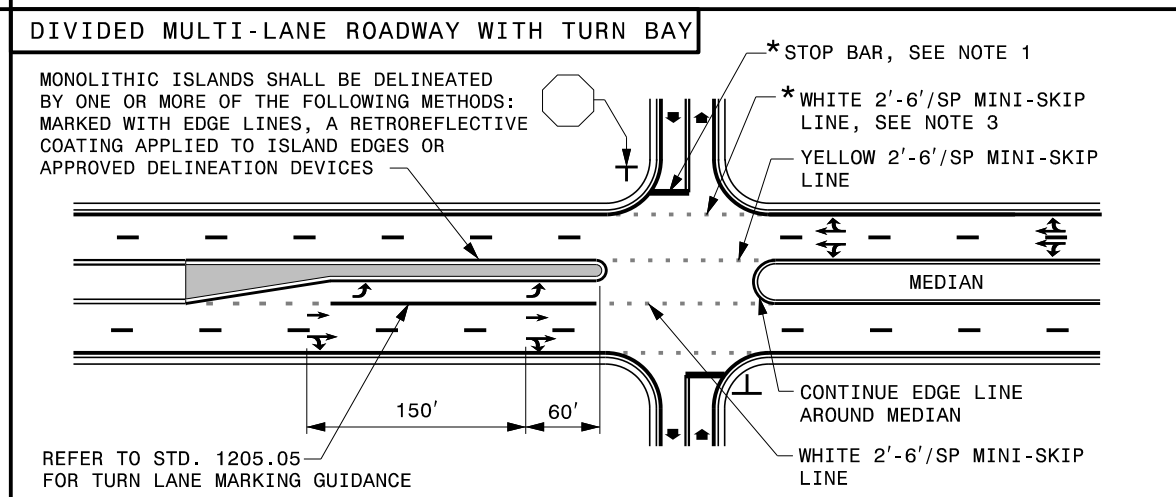
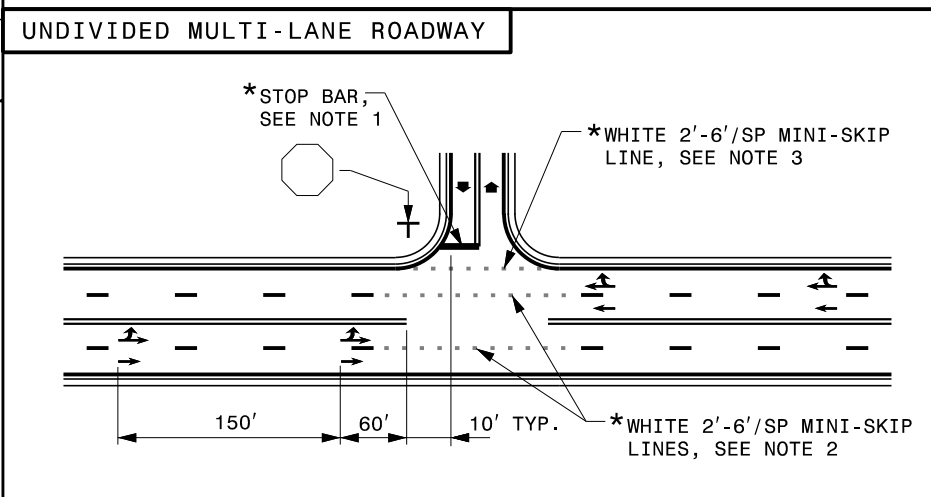
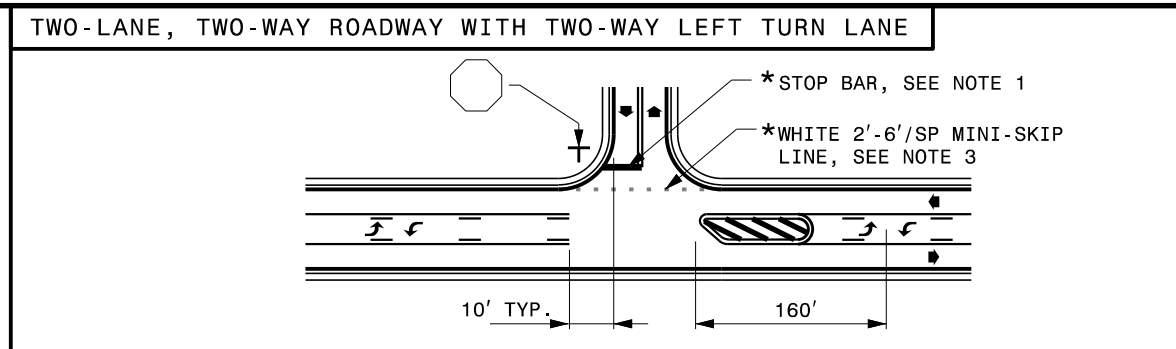
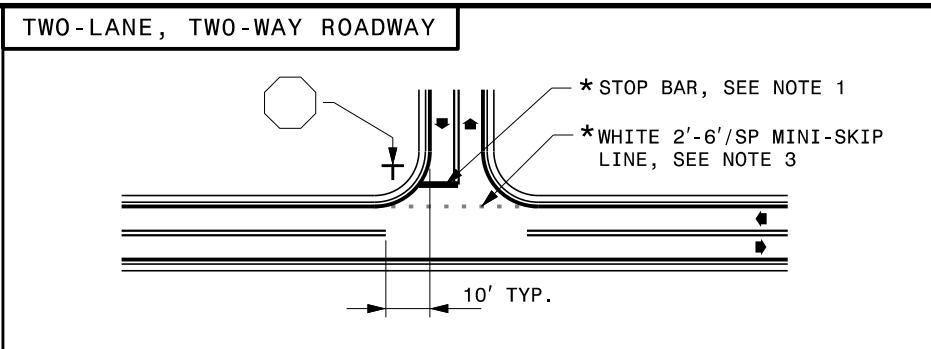
Quadrupole loops: Use 2-4-2 turns

6' X 15' Loops:
Lead-in < 150', use 2 turns
Lead-in > 150', use 3 turns

	<p>Prepared In the Offices of:</p> <p>750 N. Greenfield Pkwy, Garner, NC 27529</p>		<p>SEAL NORTH CAROLINA PROFESSIONAL ENGINEER 029904 JASON P. GALLOWAY</p>	
	<p>PLAN DATE: September 2020</p>		<p>REVIEWED BY: JPG</p>	
<p>PREPARED BY: PLA</p>		<p>REVIEWED BY:</p>		
<p>SCALE N/A</p>		<p>REVISIONS</p>	<p>INIT.</p>	<p>DATE</p>
				<p>9/8/2020</p>
<p>SIG. INVENTORY NO.</p>				



STATE OF NORTH CAROLINA
 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.
 8-19
 ENGLISH DETAIL DRAWING FOR
 PAVEMENT MARKINGS
 INTERSECTIONS
 SHEET 2 OF 2
 1205D04



GENERAL NOTES:

- 1- PLACEMENT OF STOP BARS AT NON-SIGNALIZED INTERSECTIONS IS OPTIONAL AND USED WHERE IT IS IMPORTANT TO INDICATE THE POINT WHICH VEHICLES ARE REQUIRED TO STOP. PLACE STOP BARS NO LESS THAN 4 FEET AND NO MORE THAN 30 FEET FROM THE NEAREST EDGE OF THE INTERSECTING ROADWAY. USE 10 FEET AS THE TYPICAL SETBACK DISTANCE OR AS DIRECTED BY THE ENGINEER.
- 2- MINI-SKIP LANE LINE EXTENSIONS SHOULD BE USED AT INTERSECTIONS THAT HAVE REDUCED VISIBILITY CONDITIONS SUCH AS OFFSET, SKEWED, OR CURVED ROADWAYS.
- 3- MINI-SKIP EDGE LINE EXTENSIONS MAY BE PLACED THROUGH INTERSECTIONS AND MAJOR DRIVEWAYS.
- 4- REFER TO ROADWAY STANDARD DRAWINGS 1205.01, 1205.02, 1205.05, 1205.08 AND 1205.09 FOR ADDITIONAL PAVEMENT MARKING GUIDANCE.

LEGEND	
	STOP SIGN
	STATIONARY SIGN
	DIRECTION OF TRAFFIC FLOW
	PAVEMENT MARKING SYMBOLS
*	OPTIONAL

SHEET 2 OF 2
1205D04

STATE OF NORTH CAROLINA
 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.
 8-19
 ENGLISH DETAIL DRAWING FOR
 PAVEMENT MARKINGS
 INTERSECTIONS
 SHEET 2 OF 2
 1205D04

REVISED PAVEMENT MARKING ROADWAY STANDARD DRAWING

SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LENGTH	WIDTH	1297000000-E		1330000000-E	1519000000-E	1523000000-E	1524200000-E	1575000000-E	1577000000-E	1662000000-E	1840000000-E	2830000000-N	2845000000-N	4600000000-N										5255000000-N	7990000000-E								
								MILLING ASPHALT PAVEMENT, 1 1/2" DEPTH	MILLING ASPHALT PAVEMENT, 2 1/4" DEPTH											INCIDENTAL MILLING	ASPHALT CONC SURFACE COURSE, TYPE S9.5B	ASPHALT CONC SURFACE COURSE, TYPE S9.5C	ASPHALT CONC SURFACE COURSE, TYPE S9.5D	ASPHALT BINDER FOR PLANT MIX	POLYMER MODIFIED ASPHALT BINDER FOR PLANT MIX	OPEN-GRADED ASPHALT FRICTION	MILLED RUMBLE STRIPS	ADI. OF MANHOLES	ADJUSTMENT OF METER BOXES OR VALVE BOXES			SINGLE LANE CLOSURE	DOUBLE LANE CLOSURE	RAMP/LOOP CLOSURES	RAMP/LOOP TRAFFIC CONTROL	SEQUENTIAL FLASHING WARNING LIGHTS	WORK ZONE PRESENCE LIGHTING	CONNECTED LANE CLOSURE DEVICE	PORTABLE LIGHTING
						MI	FT	SY	SY	SY	TONS	TONS	TON	TON	TONS	TON	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA				
2023CPT.07.17.10411	Guilford	1	I-85 BUS N/US 29 N/US 70 E	FROM JOINT 1350' SOUTH OF BRENTWOOD ST TO JOINT 130' NORTH OF DURAND AVE (PAVE CROSSOVER TO DURAND AVE)	1	1.444	35-85	30,584	6,000	1,575			3,390		197	1,280	7,700																						
TOTAL FOR MAP NO. 1						1.444		30,584	6,000	1,575			3,390		197	1,280	7,700																						
2023CPT.07.17.10411	Guilford	2	I-85 BUS S/US 29 S/US 70 W	FROM JOINT 130' NORTH OF DURAND AVE (PAVE CROSSOVER TO DURAND AVE) TO JOINT 1350' SOUTH OF BRENTWOOD ST	1	1.439	34-75	30,371	5,714	1,617			3,344		194	1,290	7,700																						
TOTAL FOR MAP NO. 2						1.439		30,371	5,714	1,617			3,344		194	1,290	7,700																						
2023CPT.07.17.10411	Guilford	3	I-85 BUS S/US 29 S/US 70 W OFF RAMP TO I-74/US 311	FROM BACK OF GORE TO I-74 W/US 311 N COLLECTOR	3	0.236	26-44	5,162				479		28																									
TOTAL FOR MAP NO. 3						0.236		5,162				479		28																									
2023CPT.07.17.10411	Guilford	4	I-74 W/US 311 N COLLECTOR	FROM I-74 W/US 311 N OFF RAMP TO I-74 W/US 311 N ON RAMP (SKIP BRIDGE #1094)	3	0.112	37-46	2,873				266		16																							2,250.00		
TOTAL FOR MAP NO. 4						0.112		2,873				266		16																						2,250.00			
2023CPT.07.17.10411	Guilford	5	I-85 BUS S/US 29 S/US 70 W COLLECTOR	FROM I-74 W/US 311 N COLLECTOR TO I-74 E/US 311 S COLLECTOR	3	0.08	44-54	2,335				216		13																									
TOTAL FOR MAP NO. 5						0.08		2,335				216		13																									
2023CPT.07.17.10411	Guilford	6	I-74 E/US 311 S COLLECTOR	FROM I-74 E/US 311 S OFF RAMP TO I-74 E/US 311 S ON RAMP (SKIP BRIDGE #1095)	3	0.114	36-49	3,013				279		16																							2,100.00		
TOTAL FOR MAP NO. 6						0.114		3,013				279		16																						2,100.00			
2023CPT.07.17.10411	Guilford	7	I-85 BUS S/US 29 S/US 70 W ON RAMP	FROM I-74 E/US 311 S COLLECTOR TO BACK OF GORE	3	0.211	26-70	4,353				404		24																									
TOTAL FOR MAP NO. 7						0.211		4,353				404		24																									
2023CPT.07.17.10411	Guilford	8	RAMP FROM I-85 BUS S/US 29 S/US 70 W ON RAMP TO BRENTWOOD ST	FROM BACK OF GORE TO BRENTWOOD ST	3	0.229	23-26	3,236				301		18																							325.00		
TOTAL FOR MAP NO. 8						0.229		3,236				301		18																						325.00			
2023CPT.07.17.10411	Guilford	9	I-85 BUS S/US 29 S/US 70 S ON RAMP FROM BRENTWOOD ST	FROM BRENTWOOD ST TO BACK OF GORE	3	0.081	18-24	951				88		5																									
TOTAL FOR MAP NO. 9						0.081		951				88		5																									
2023CPT.07.17.10411	Guilford	10	I-85 BUS N/US 29 N/US 70 E OFF RAMP TO BRENTWOOD ST	FROM BACK OF GORE TO BRENTWOOD ST (TIE AT END OF C&G)	3	0.109	18-23	1,223				114		7																						325.00			
TOTAL FOR MAP NO. 10						0.109		1,223				114		7																						325.00			
2023CPT.07.17.10411	Guilford	11	RAMP FROM BRENTWOOD ST TO I-85 BUS N/US 29 N/US 70 E OFF RAMP	FROM BRENTWOOD ST TO BACK OF GORE	3	0.217	23-30	3,202				297		18																									
TOTAL FOR MAP NO. 11						0.217		3,202				297		18																									
2023CPT.07.17.10411	Guilford	12	I-85 BUS N/US 29 N/US 70 E OFF RAMP TO I-74/US 311	FROM BACK OF GORE TO I-74 E/US 311 S COLLECTOR	3	0.277	27-63	6,532				605		36																									
TOTAL FOR MAP NO. 12						0.277		6,532				605		36																									
2023CPT.07.17.10411	Guilford	13	I-85 BUS N/US 29 N/US 70 E COLLECTOR	FROM I-74 E/US 311 S COLLECTOR TO I-74 W/US 311 N COLLECTOR	3	0.084	45-51	1,749				218		13																									
TOTAL FOR MAP NO. 13						0.084		1,749				218		13																									
2023CPT.07.17.10411	Guilford	14	I-85 BUS N/US 29 N/US 70 E ON RAMP	FROM I-74 W/US 311 N COLLECTOR TO BACK OF GORE	3	0.248	27-36	4,663				433		26																									
TOTAL FOR MAP NO. 14						0.248		4,663				433		26																									
2023CPT.07.17.10411	Guilford	15	I-85 BUS S/US 29 S/US 70 W	FROM GORE OF I-73 N (EXIT 33) TO JOINT AT GORE OF I-85 S	2	0.822	55-75	23,646	6,485	1,208			2,789		162	982	8,350																						
TOTAL FOR MAP NO. 15						0.822		23,646	6,485	1,208			2,789		162	982	8,350																						
TOTAL FOR PROJ NO. 2023CPT.07.17.10411						5.703		123,893	18,199	4,400			3,700		9,523		220	553	3,552	23,750			19	7	12	6	24	28	4	1				5,000.00					

THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LENGTH	WIDTH	4413000000-E WORK ZONE ADVANCE/GENERAL WARNING SIGNING	4457000000-N TEMPORARY TRAFFIC CONTROL	4510000000-N LAW ENFORCEMENT	4685000000-E 4" X 90 M WHITE THERMO	4685000000-E 4" X 90 M YELLOW THERMO	4688000000-E 6" X 90 M WHITE THERMO	4688000000-E 6" X 90 M YELLOW THERMO	4695000000-E 8" X 90 M WHITE THERMO	4695000000-E 8" X 90 M YELLOW THERMO	4700000000-E 12" X 90 M WHITE THERMO	4700000000-E 12" X 90 M YELLOW THERMO	4709000000-E 24" X 90 M WHITE THERMO	4720000000-E THERMO MSG SIGNAL 90 M	4720000000-E THERMO MSG AHEAD 90 M	4720000000-E THERMO MSG ONLY 90 M	THERMO MERGE LEFT ARROW 90 M	THERMO STR ARROW 90 M	THERMO STR & RT ARROW 90 M	THERMO LT ARROW 90 M	THERMO STR & LT ARROW 90 M	THERMO RT ARROW 90 M	4815000000-E 6" WHITE PAINT	4815000000-E 6" YELLOW PAINT	4825000000-E 12" WHITE PAINT	4845000000-N PAINT MERGE LEFT ARROW	4890000000-E GENERIC MARKING, 4" 50 MILS HOT SPRAY THERMO (YELLOW)	4905100000-N NON-CAST IRON SNOWPLOWABLE PAVEMENT MARKERS CRYSTAL/RED		
																																			MI	FT
2023CPT.07.17.10411	Guilford	1	I-85 BUS N/US 29 N/US 70 E	FROM JOINT 1350' SOUTH OF BRENTWOOD ST TO JOINT 130' NORTH OF DURAND AVE (PAVE CROSSOVER TO DURAND AVE)	1	1.444	varies 35-85	170					10,239	7,629			1,863							4						10,239	7,629	1,863	4			195
TOTAL FOR MAP NO. 1						1.444		170					10,239	7,629			1,863						4						10,239	7,629	1,863	4			195	
2023CPT.07.17.10411	Guilford	2	I-85 BUS S/US 29 S/US 70 W	FROM JOINT 130' NORTH OF DURAND AVE (PAVE CROSSOVER TO DURAND AVE) TO JOINT 1350' SOUTH OF BRENTWOOD ST	1	1.439	varies 34-75	170					10,066	7,617			1,825												10,066	7,617	1,825				205	
TOTAL FOR MAP NO. 2						1.439		170					10,066	7,617			1,825												10,066	7,617	1,825				205	
2023CPT.07.17.10411	Guilford	3	I-85 BUS S/US 29 S/US 70 W OFF RAMP TO I-74/US 311	FROM BACK OF GORE TO I-74 W/US 311 N COLLECTOR	3	0.236	varies 26-44	27					1,617	985			260							4	2										16	
TOTAL FOR MAP NO. 3						0.236		27					1,617	985			260							4	2										16	
2023CPT.07.17.10411	Guilford	4	I-74 W/US 311 N COLLECTOR	FROM I-74 W/US 311 N OFF RAMP TO I-74 W/US 311 N ON RAMP (SKIP BRIDGE #1094)	3	0.112	varies 37-46	13					1,127	665					280					6	2	2									12	
TOTAL FOR MAP NO. 4						0.112		13					1,127	665					280					6	2	2									12	
2023CPT.07.17.10411	Guilford	5	I-85 BUS S/US 29 S/US 70 W COLLECTOR	FROM I-74 W/US 311 N COLLECTOR TO I-74 E/US 311 S COLLECTOR	3	0.08	varies 44-54	9					675	430						12	10			2		3									20	
TOTAL FOR MAP NO. 5						0.08		9					675	430						12	10			2		3									20	
2023CPT.07.17.10411	Guilford	6	I-74 E/US 311 S COLLECTOR	FROM I-74 E/US 311 S OFF RAMP TO I-74 E/US 311 S ON RAMP (SKIP BRIDGE #1095)	3	0.114	varies 36-49	13					937	600					231					4	1	2	2								13	
TOTAL FOR MAP NO. 6						0.114		13					937	600					231					4	1	2	2								13	
2023CPT.07.17.10411	Guilford	7	I-85 BUS S/US 29 S/US 70 W ON RAMP	FROM I-74 E/US 311 S COLLECTOR TO BACK OF GORE	3	0.211	varies 26-70	24					1,250	1,150			620																		40	
TOTAL FOR MAP NO. 7						0.211		24					1,250	1,150			620																		40	
2023CPT.07.17.10411	Guilford	8	RAMP FROM I-85 BUS S/US 29 S/US 70 W ON RAMP TO BRENTWOOD ST	FROM BACK OF GORE TO BRENTWOOD ST	3	0.229	varies 23-26	26		679			1,200	1,200																						
TOTAL FOR MAP NO. 8						0.229		26		679			1,200	1,200																						
2023CPT.07.17.10411	Guilford	9	I-85 BUS S/US 29 S/US 70 S ON RAMP FROM BRENTWOOD ST	FROM BRENTWOOD ST TO BACK OF GORE	3	0.081	varies 18-24	10					425	425																						
TOTAL FOR MAP NO. 9						0.081		10					425	425																						
2023CPT.07.17.10411	Guilford	10	I-85 BUS N/US 29 N/US 70 E OFF RAMP TO BRENTWOOD ST	FROM BACK OF GORE TO BRENTWOOD ST (TIE AT END OF C&G)	3	0.109	varies 18-23	13					600	600																						
TOTAL FOR MAP NO. 10						0.109		13					600	600																						
2023CPT.07.17.10411	Guilford	11	RAMP FROM BRENTWOOD ST TO I-85 BUS N/US 29 N/US 70 E OFF RAMP	FROM BRENTWOOD ST TO BACK OF GORE	3	0.217	varies 23-30	25					1,165	1,165																						
TOTAL FOR MAP NO. 11						0.217		25					1,165	1,165																						
2023CPT.07.17.10411	Guilford	12	I-85 BUS N/US 29 N/US 70 E OFF RAMP TO I-74/US 311	FROM BACK OF GORE TO I-74 E/US 311 S COLLECTOR	3	0.277	varies 27-63	31					1,836	1,480			490	270																	50	
TOTAL FOR MAP NO. 12						0.277		31					1,836	1,480			490	270																	50	
2023CPT.07.17.10411	Guilford	13	I-85 BUS N/US 29 N/US 70 E COLLECTOR	FROM I-74 E/US 311 S COLLECTOR TO I-74 W/US 311 N COLLECTOR	3	0.084	varies 45-51	10					715	445								8		2		4	2								20	
TOTAL FOR MAP NO. 13						0.084		10					715	445								8		2		4	2								20	
2023CPT.07.17.10411	Guilford	14	I-85 BUS N/US 29 N/US 70 E ON RAMP	FROM I-74 W/US 311 N COLLECTOR TO BACK OF GORE	3	0.248	varies 27-36	28					1,583	1,320			140						3												10	
TOTAL FOR MAP NO. 14						0.248		28					1,583	1,320			140						3												10	
2023CPT.07.17.10411	Guilford	15	I-85 BUS S/US 29 S/US 70 W	FROM GORE OF I-73 N (EXIT 33) TO JOINT AT GORE OF I-85 S	2	0.822	varies 55-75	97					6,800	4,500			800						5						6,800	4,500	800	5			170	
TOTAL FOR MAP NO. 15						0.822		97					6,800	4,500			800						5						6,800	4,500	800	5			170	
TOTAL FOR PROJ NO. 2023CPT.07.17.10411						5.703		666		679				40,235	30,211			5,998	270	511	12	10	8	12	18	5	11	4	6,800	4,500	800	9			751	
												70,446				6,268	270	511	30			50			46,851											

