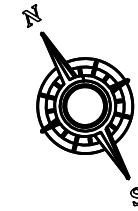
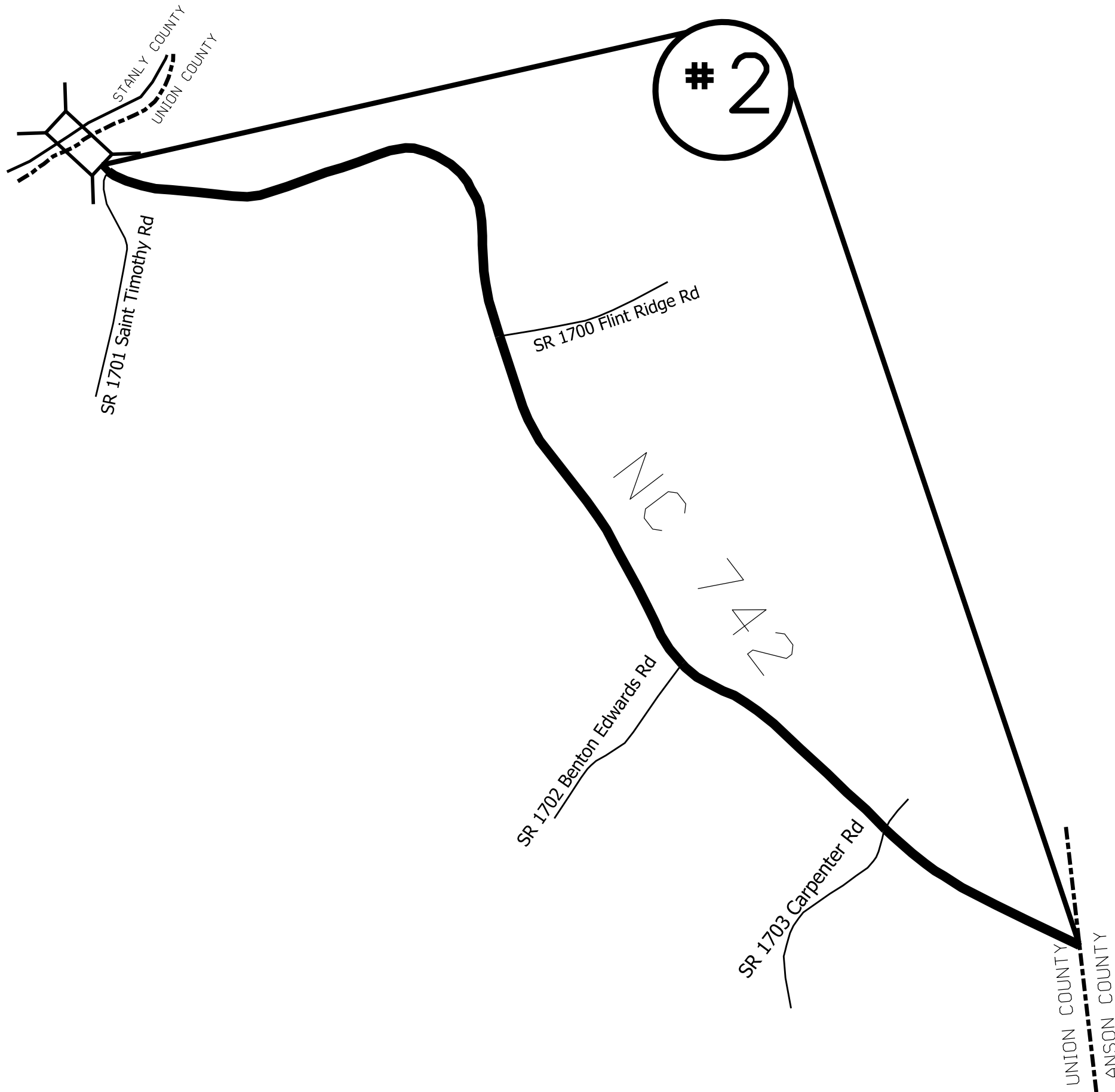


STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	2025CPT.10.13.10901 2025CPT.10.13.20901	2	
F.A. PROJECT NO.			



ENLARGED MUNICIPAL AND SUBURBAN AREAS
 UNION COUNTY
 NORTH CAROLINA
PREPARED BY THE
 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS - DIVISION 10 DISTRICT 3

MAP #2 NC 742
 2.6 MILES
 FROM ANSON COUNTY LINE
 TO STANLY COUNTY LINE

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	2025CPT.10.13.10901 2025CPT.10.13.20901	3	
F.A. PROJECT NO.			



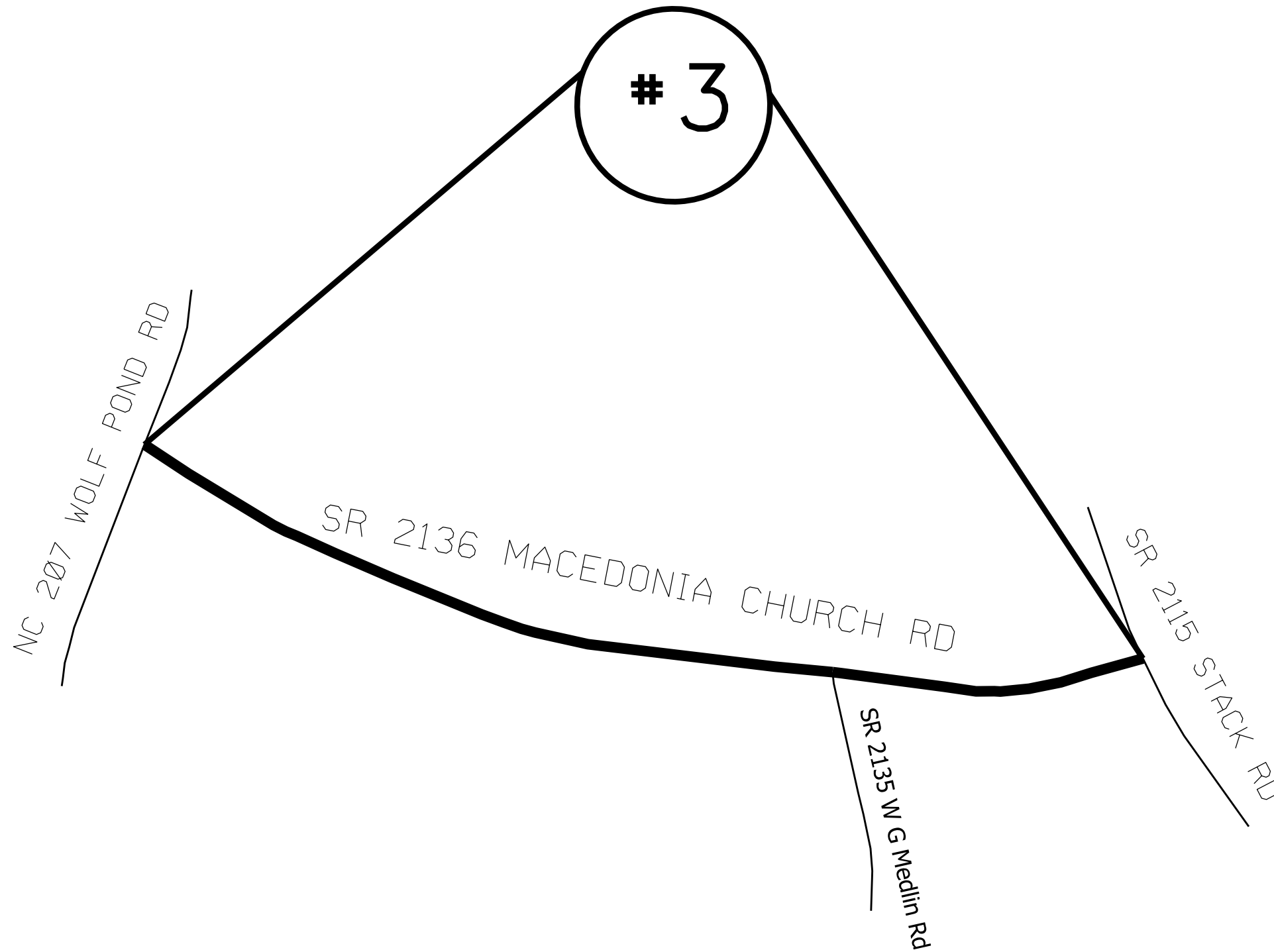
ENLARGED MUNICIPAL AND SUBURBAN AREAS

UNION COUNTY

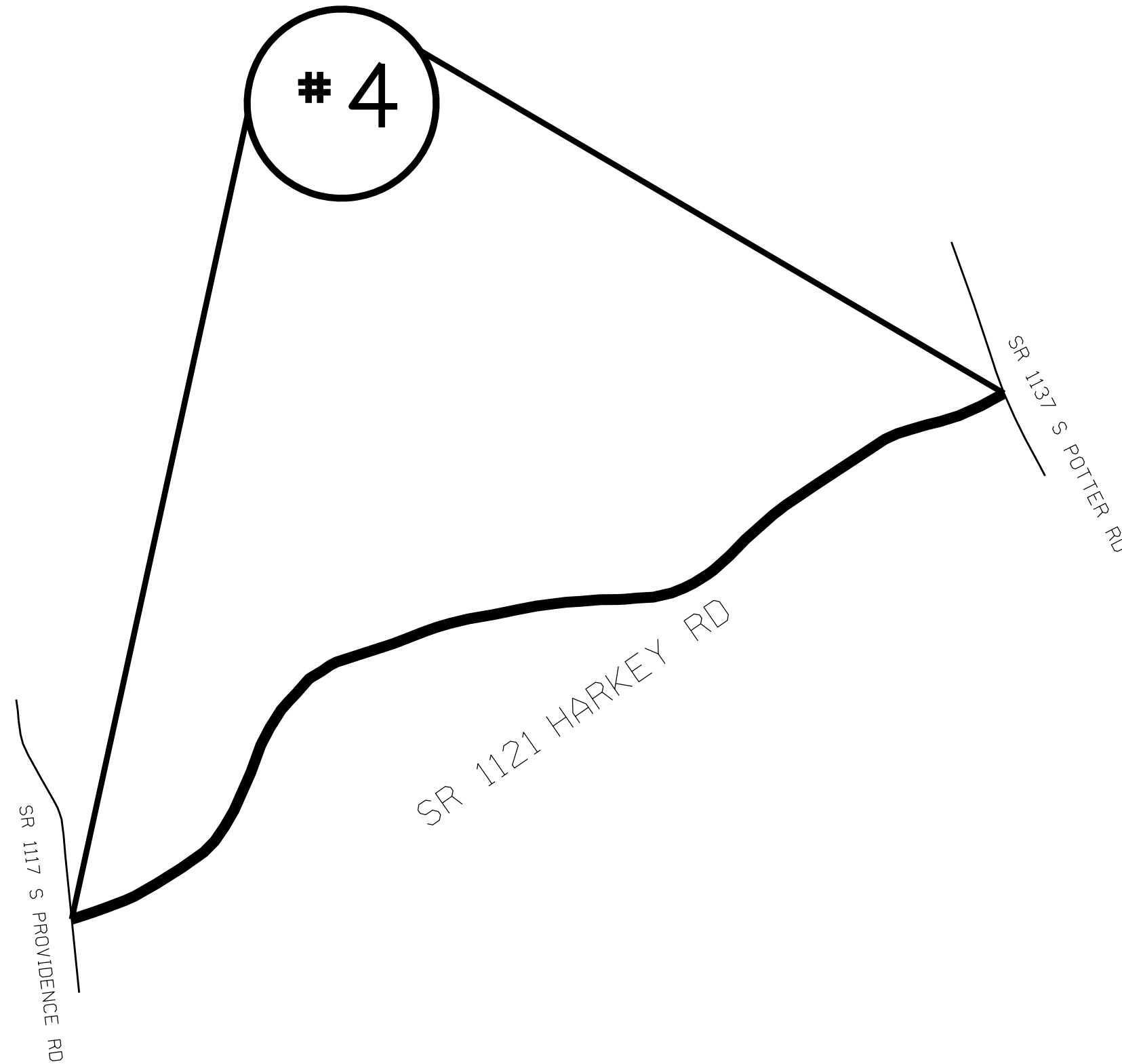
NORTH CAROLINA

PREPARED BY THE
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS - DIVISION 10 DISTRICT 3

MAP #3 SR 2136 MACEDONIA CHURCH RD
1.09 MILES
FROM NC 207
TO SR 2115 STACK RD



STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	2025CPT.10.13.10901 2025CPT.10.13.20901	4	
F.A. PROJECT NO.			



ENLARGED MUNICIPAL AND SUBURBAN AREAS

UNION COUNTY

NORTH CAROLINA

PREPARED BY THE

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS - DIVISION 10 DISTRICT 3

MAP #4 SR 1121 HARKEY RD
2.32 MILES
FROM SR 1117 S PROVIDENCE RD
TO SR 1137 S POTTERS RD

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	2025CPT.10.13.10901 2025CPT.10.13.20901	5	
F.A. PROJECT NO.			



ENLARGED MUNICIPAL AND SUBURBAN AREAS

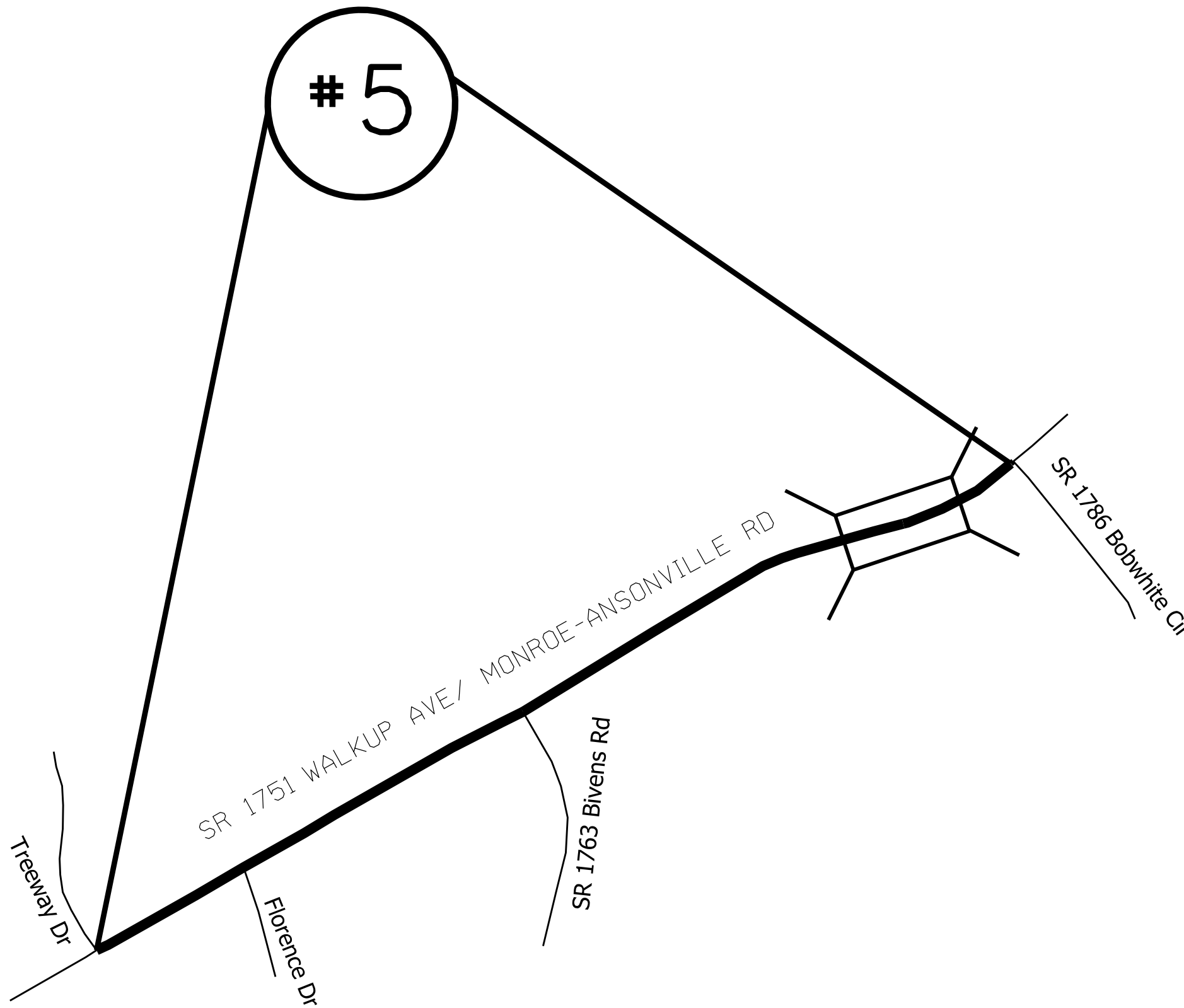
UNION COUNTY

NORTH CAROLINA

PREPARED BY THE

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS - DIVISION 10 DISTRICT 3

MAP #5 SR 1751 WALKUP AVE/MONRE-ANSONVILLE RD
.92 MILES
FROM TREEWAY DR
TO SR 1786 BOBWHITE CIR



STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	2025CPT.10.13.10901 2025CPT.10.13.20901	6	
F.A. PROJECT NO.			

#6



ENLARGED MUNICIPAL AND SUBURBAN AREAS

UNION COUNTY

NORTH CAROLINA

PREPARED BY THE
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS - DIVISION 10 DISTRICT 3

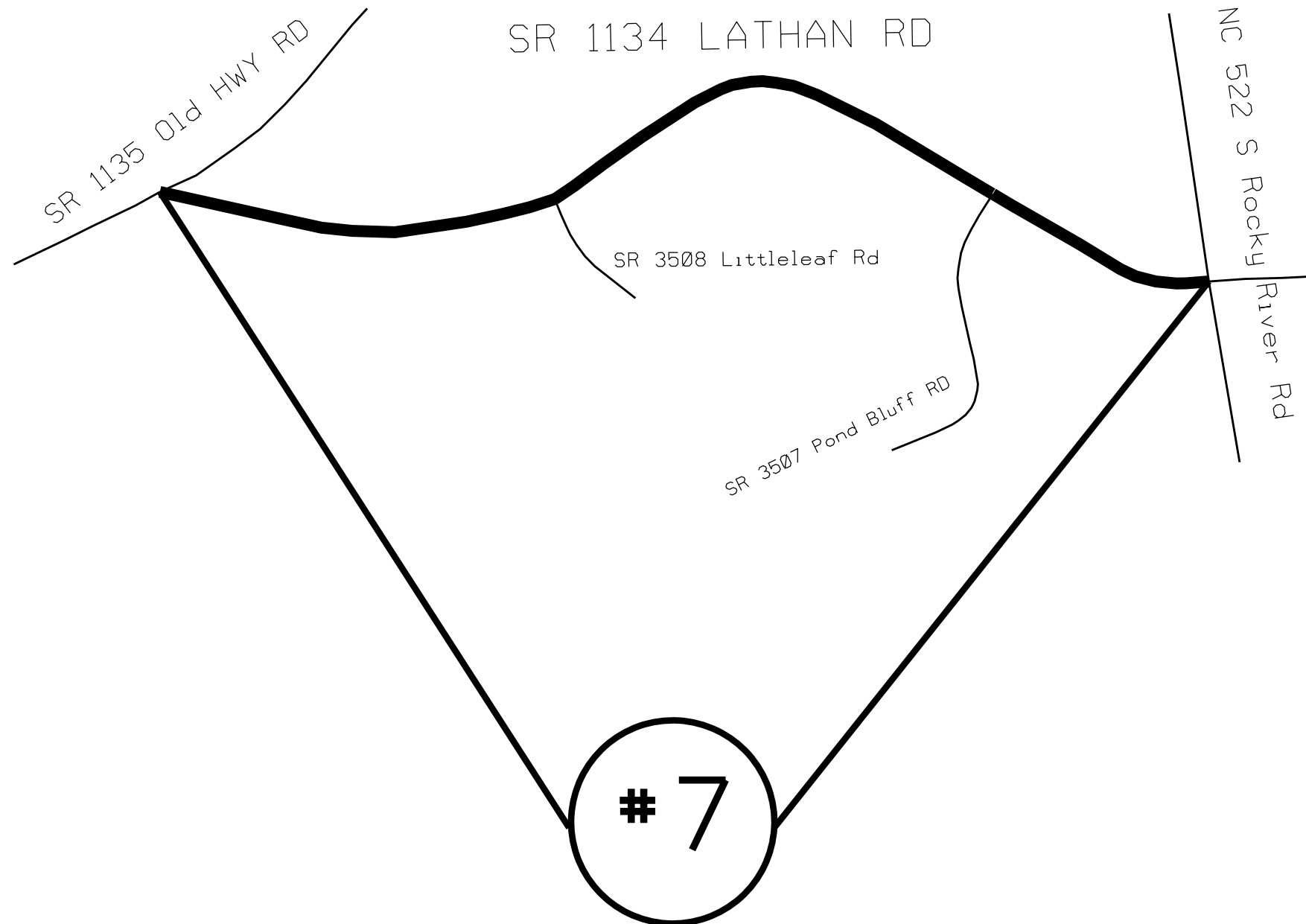
MAP #6 SR 1003 WHITE STORE RD
2.45 MILES
FROM SR 1911 LEONARD MORGAN RD
TO SR 1005 LANDSFORD RD

SR 1929 Philadelphia Church Rd
SR 1911 Leonard Morgan Rd

SR 1003 WHITE STORE RD

SR 1005 Landsford Rd

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	2025CPT.10.13.10901 2025CPT.10.13.20901	7	
F.A. PROJECT NO.			



ENLARGED MUNICIPAL AND SUBURBAN AREAS

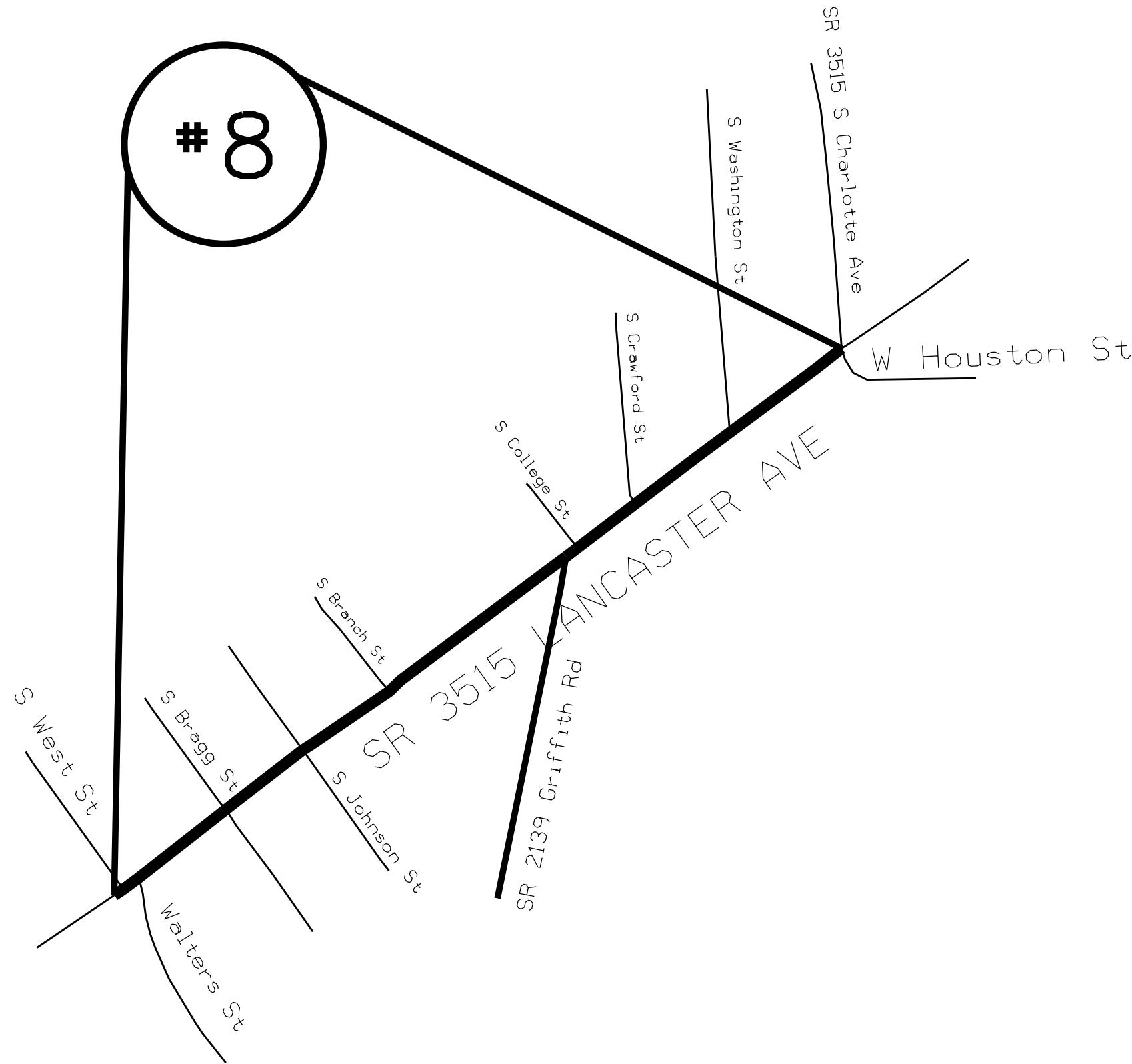
UNION COUNTY

NORTH CAROLINA

PREPARED BY THE
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS - DIVISION 10 DISTRICT 3

MAP #7 SR 1134 LATHAN RD
.73 MILES
FROM SR 1135 OLD HIGHWAY RD
TO NC 522 S ROCKY RIVER RD

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	2025CPT.10.13.10901 2025CPT.10.13.20901	8	
F.A. PROJECT NO.			

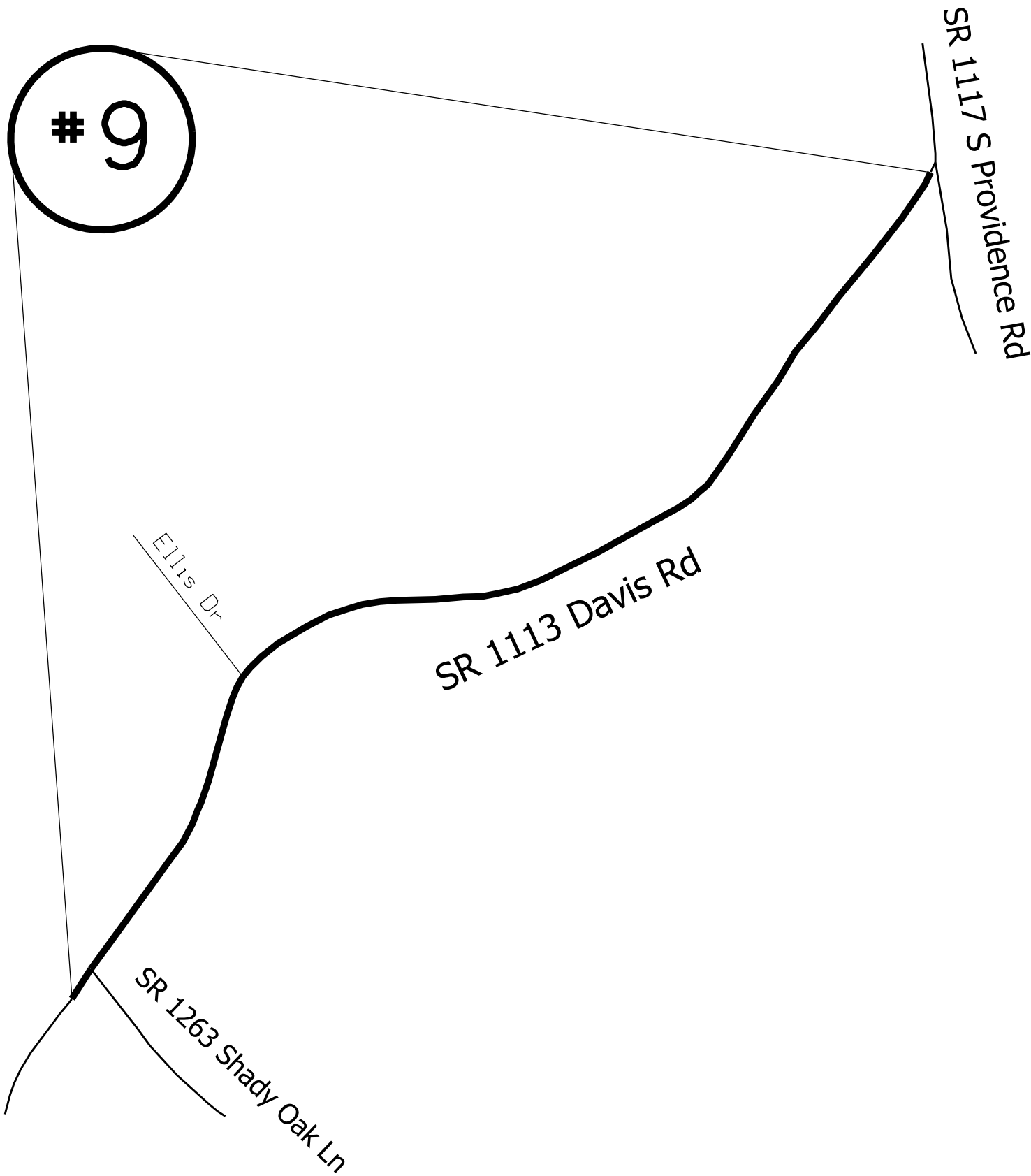


ENLARGED MUNICIPAL AND SUBURBAN AREAS
UNION COUNTY
 NORTH CAROLINA
PREPARED BY THE
 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS - DIVISION 10 DISTRICT 3

MAP #8 SR 3515 LANCASTER AVE
 .49 MILES
 FROM SR 3515 S CHARLOTTE AVE
 TO WEST ST

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	2025CPT.10.13.10901 2025CPT.10.13.20901	8A	
F.A. PROJECT NO.			

#9



ENLARGED MUNICIPAL AND SUBURBAN AREAS

UNION COUNTY

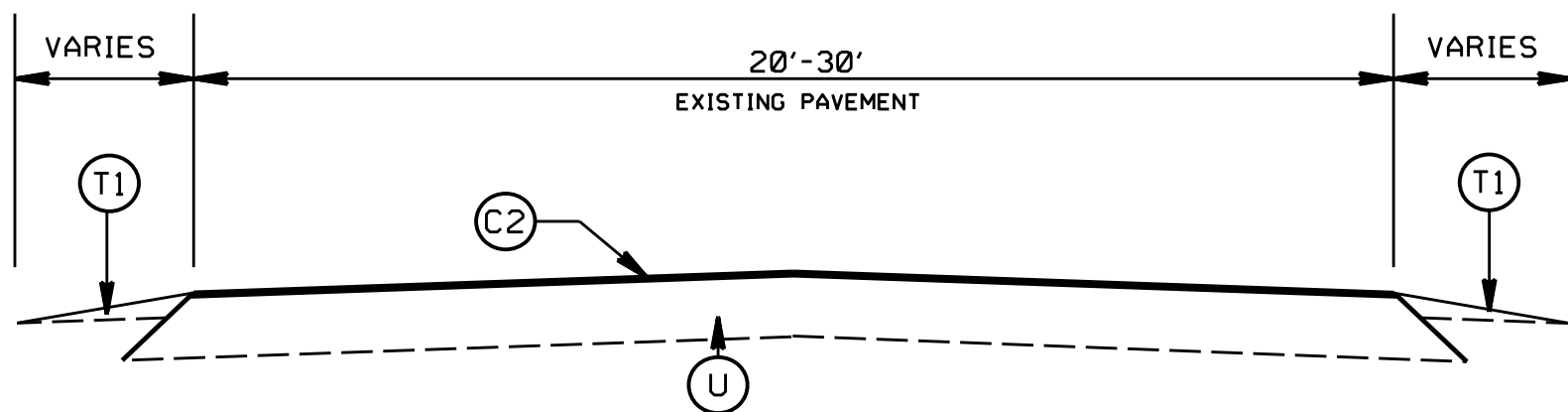
NORTH CAROLINA

PREPARED BY THE

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS - DIVISION 10 DISTRICT 3

MAP #9 SR 1113 Davis Rd
1.42 MILES
FROM SR 1117 S PROVIDENCE RD
TO SR 1263 SHADY OAK LN

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	2025CPT.10.13.10901 2025CPT.10.13.20901	9	
F.A. PROJECT NO.			



TYPICAL SECTION NO. 1

NC 742 (MAP 2)

SR 2136 MACEDONIA CHRUCH RD (MAP 3)

SR 1121 HARKEY RD (MAP 4)

SR 1751 WALKUP AVE/MONROE-ANSONVILLE RD (MAP 5)

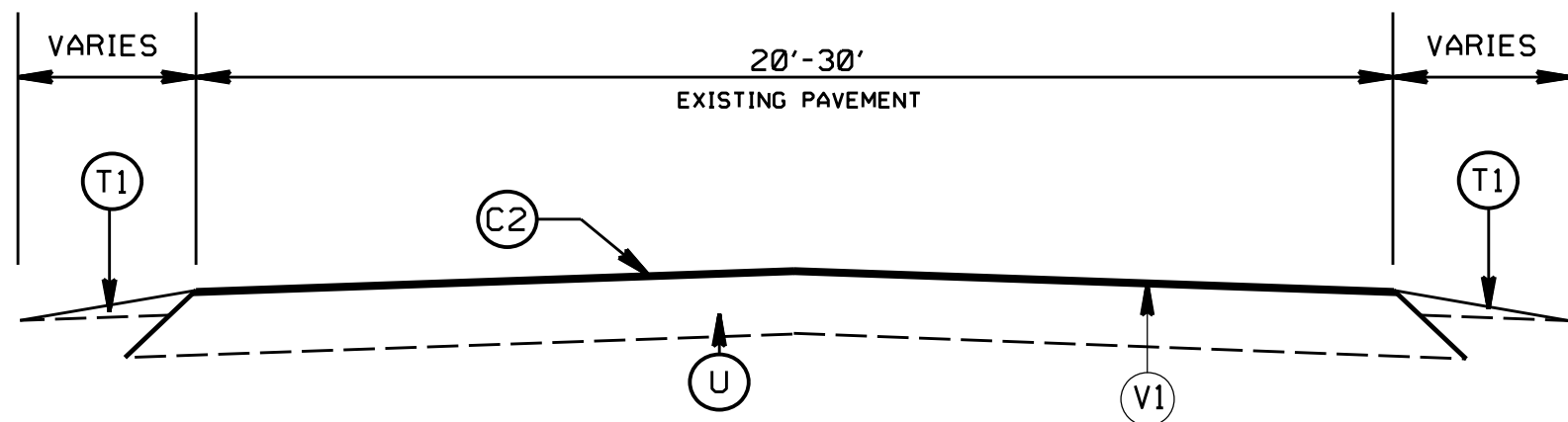
APPROX STA 10+00 TO 53+15

SR 1003 WHITE STROE RD (MAP 6)

SR 1134 LATHAN RD (MAP 7)

PAVEMENT SCHEDULE

(C1)	PROP. APPROX. 2.0" ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 220 LBS. PER SQ. YD.
(C2)	PROP. APPROX. 1.5" ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
(F1)	ASPHALT SURFACE TREATMENT, MAT COAT = 78
(T1)	SHOULDER RECONSTRUCTION
(U)	EXISTING PAVEMENT
(V1)	MILLING OF EXISTING PAVEMENT, 1.5" DEPTH.



TYPICAL SECTION NO. 2

SR 1751 WALKUP AVE/MONROE-ANSONVILLE RD (MAP 5)

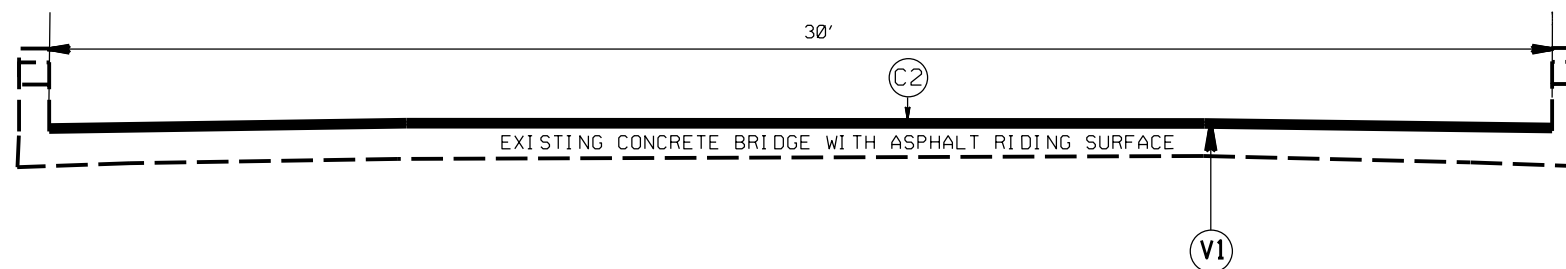
APPROX STA 53+15 TO 54+72

APPROX STA 55+87 TO 58+00

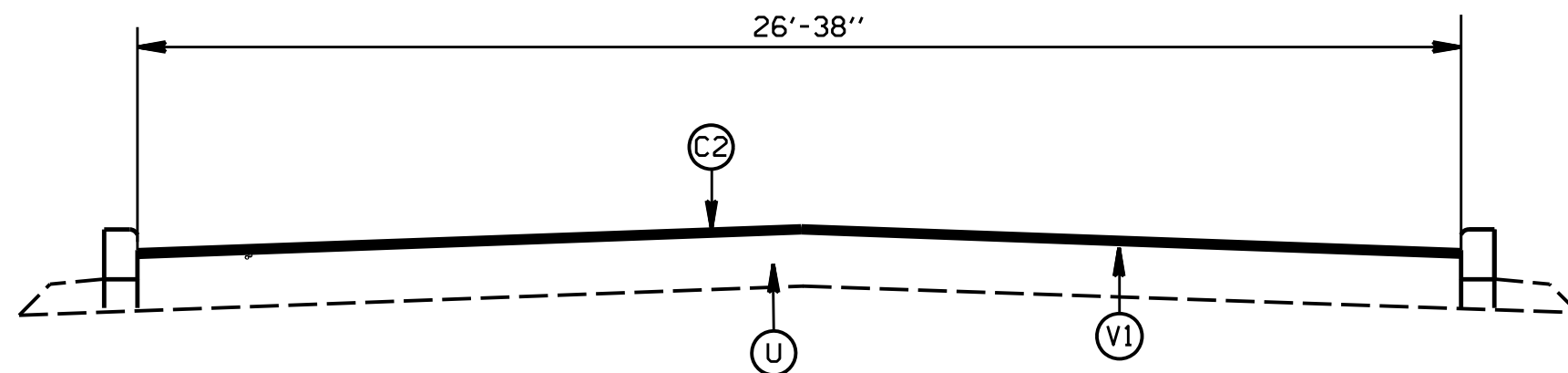
2025
UNION COUNTY RESURFACING

SCALE	-NA-		REVISIONS
DATE	11/23		
DWG. BY	AJB		
DESIGN BY	AJB		
APPROVED	CLA		

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	2025CPT.10.13.10901 2025CPT.10.13.20901	10	
F.A. PROJECT NO.			



TYPICAL SECTION NO. 3
SR 1751 WALKUP AVE/MONROE-ANSONVILLE RD (MAP 5)
APPROX STA 54+72 TO 55+87



TYPICAL SECTION NO. 4
SR 3515 LANCASTER AVE (MAP 8)

PAVEMENT SCHEDULE

(C1)	PROP. APPROX. 2.0" ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 220 LBS. PER SQ. YD.
(C2)	PROP. APPROX. 1.5" ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
(F1)	ASPHALT SURFACE TREATMENT, MAT COAT = 78
(T1)	SHOULDER RECONSTRUCTION
(U)	EXISTING PAVEMENT
(V1)	MILLING OF EXISTING PAVEMENT, 1.5" DEPTH.

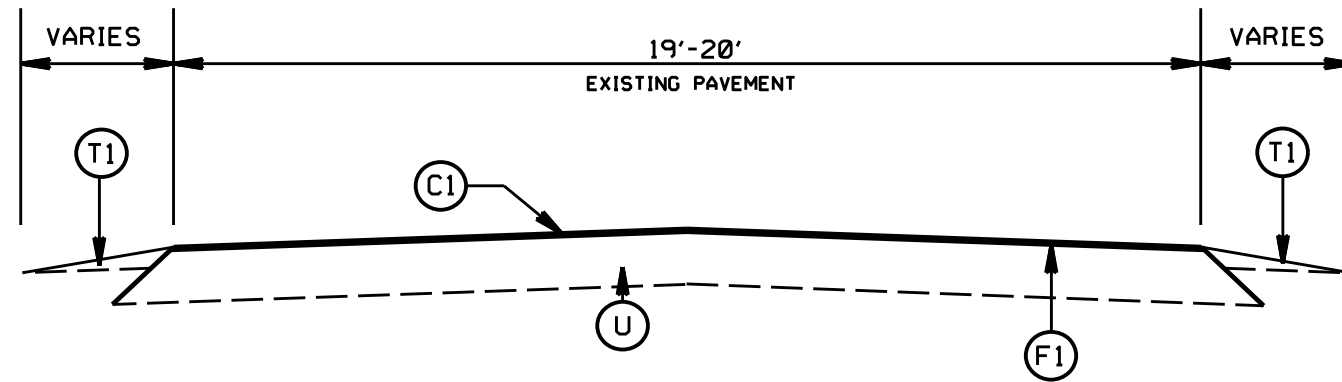
2025
UNION COUNTY RESURFACING

SCALE	-NA-
DATE	11/23
DWG. BY	AJB
DESIGN BY	AJB
APPROVED	CLA



REVISIONS	

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	2025CPT.10.13.10901 2025CPT.10.13.20901	11	
F.A. PROJECT NO.			



TYPICAL SECTION NO. 5
SR 1113 DAVIS RD (MAP 9)

PAVEMENT SCHEDULE

(C1)	PROP. APPROX. 2.0" ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 220 LBS. PER SQ. YD.
(C2)	PROP. APPROX. 1.5" ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
(F1)	ASPHALT SURFACE TREATMENT, MAT COAT = 78
(T1)	SHOULDER RECONSTRUCTION
(U)	EXISTING PAVEMENT
(V1)	MILLING OF EXISTING PAVEMENT, 1.5" DEPTH.


2025
UNION COUNTY RESURFACING

SCALE	-NA-		REVISIONS
DATE	11/23		
DWG. BY	AJB		
DESIGN BY	AJB		
APPROVED	CLA		

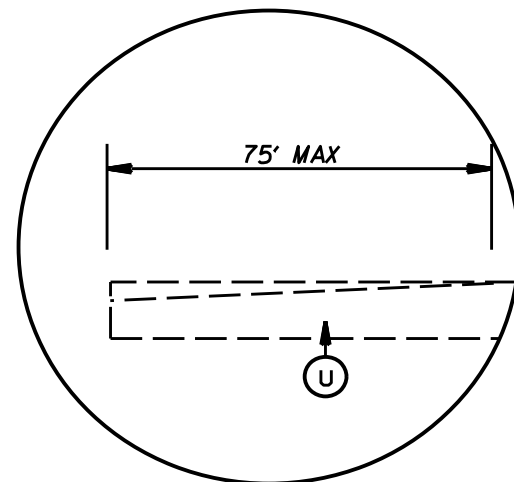
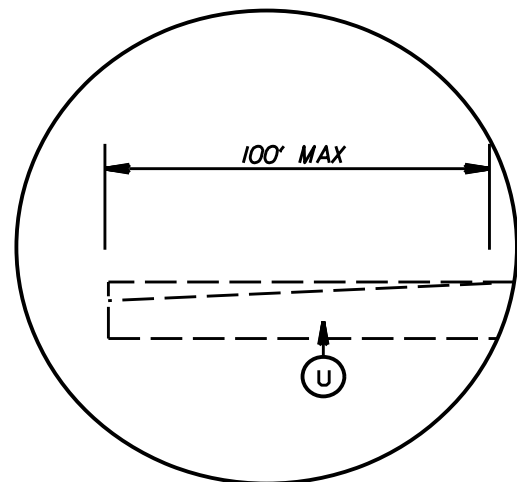
STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	2025CPT.10.13.10901 2025CPT.10.13.20901	12	
F.A. PROJECT NO.			

NOTES:

1. DEPTH OF PATCHING WILL BE AS DIRECTED BY THE ENGINEER.
2. SHOULDER RECONSTRUCTION WILL BE AS DIRECTED BY THE ENGINEER.
3. MAP 5 (WALKUP AVE/ MONROE-ANSONVILLE RD), INCIDENTAL MILLING WILL NOT BE PAID FOR TAPERS TO 1.5" FOR MILLING OF THE BRIDGE. MILLING SHOWN ON TYPICALS 3, 4 AND 5 WILL BE PAID AS 1.5" MILLING.
4. MAP 8 (LANCASTER AVE), MILL AND FILL ASHPLAT CONNECTION BETWEEN GRIFFITH RD AND LANCASTER AVE MAY BE REQUIRED IF ASPHALT SECTION IS NOT RESURFACED WITH GRIFFITH RD. SEE INTERSECTION DETIAL TYPICAL SHEET MAP 8 COMMENTS.
5. MAP 8 (LANCASTER AVE) REMOVE AND REPLACE CURB RAMP AT CORNER OF S BRAGG ST AND LANCASTER AVE, HEADING TOWARD S JOHNSON ST..

2025 UNION COUNTY RESURFACING		
SCALE	-/A-	
DATE	01/20	
DWG. BY	AMD	
DESIGN BY	AMD	
APPROVED	CLA	
		REVISIONS

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	2025CPT.10.13.10901 2025CPT.10.13.20901	13	
F.A. PROJECT NO.			



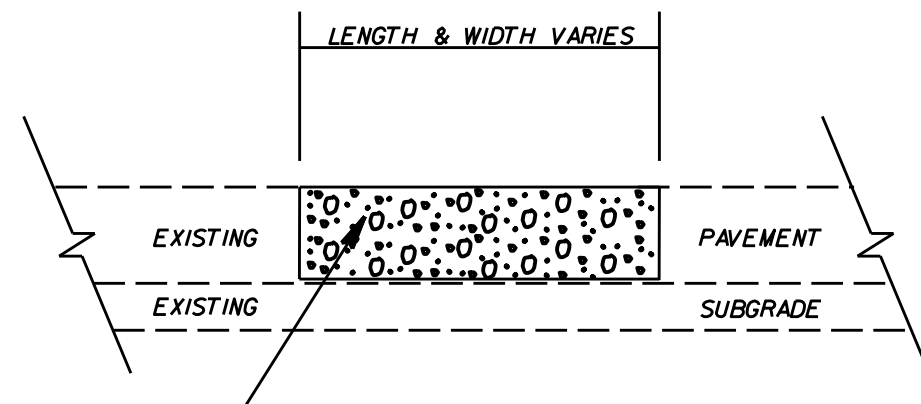
DETAIL FOR INCIDENTAL MILLING (0" TO 2.0")

DETAIL FOR INCIDENTAL MILLING (0" TO 1.5")

PAVEMENT SCHEDULE

(C1)	PROP. APPROX. 2.0" ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 220 LBS. PER SQ. YD.
(C2)	PROP. APPROX. 1.5" ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
(F1)	ASPHALT SURFACE TREATMENT, MAT COAT = 78
(T1)	SHOULDER RECONSTRUCTION
(U)	EXISTING PAVEMENT
(V1)	MILLING OF EXISTING PAVEMENT, 1.5" DEPTH.

PATCHING DETAIL



RATE IS VARIABLE AND SHALL BE AS DIRECTED BY THE ENGINEER. ASPHALT TYPE 119.0C SHALL BE PLACED.

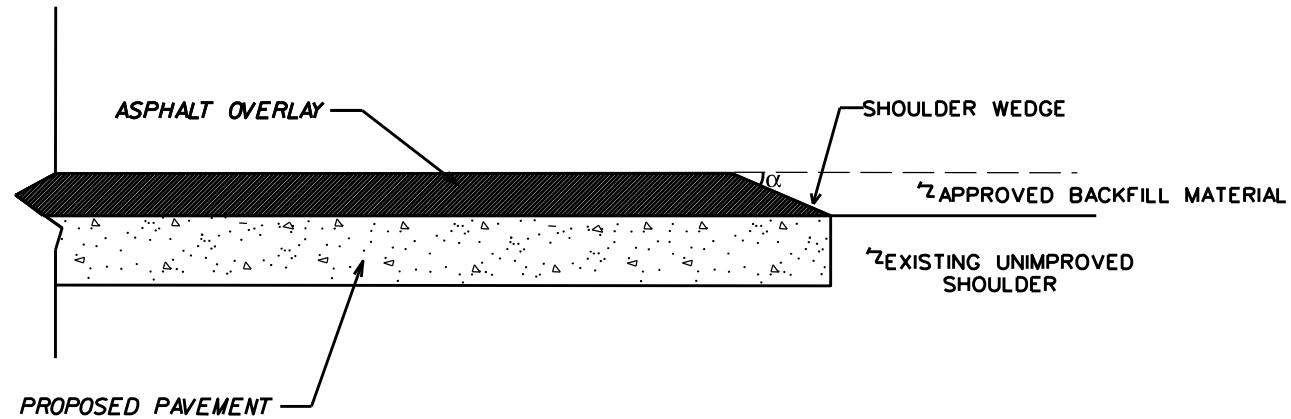
2025
UNION COUNTY RESURFACING

SCALE	-NA-		REVISIONS
DATE	1/20		
DWG. BY	AMO		
DESIGN BY	AMO		
APPROVED	CLA		

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	2025CPT.10.13.10901 2025CPT.10.13.20901	14	
F.A. PROJECT NO.			

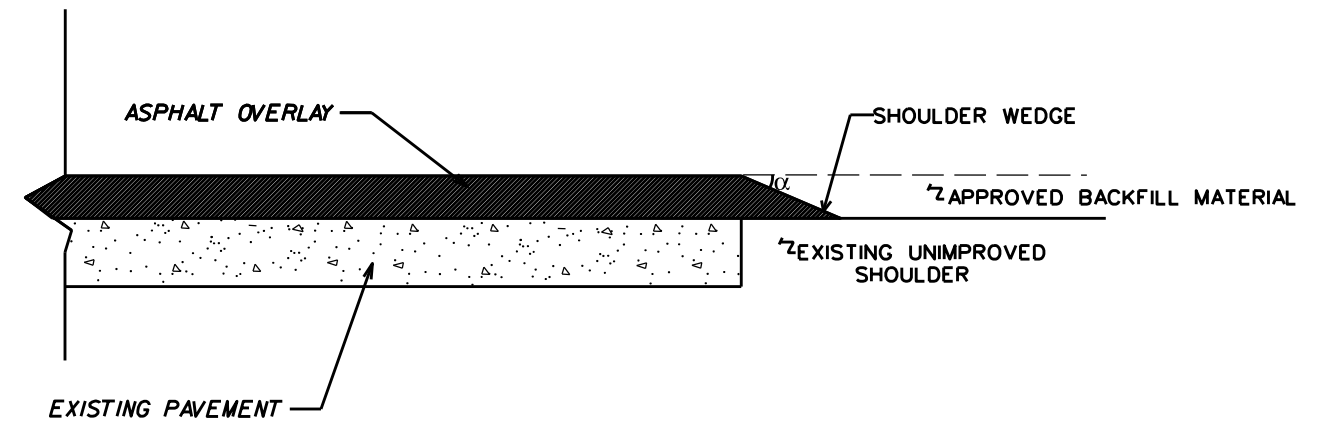
NOTES:

- 1) DETAIL DOES NOT APPLY TO OGAFCC 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.



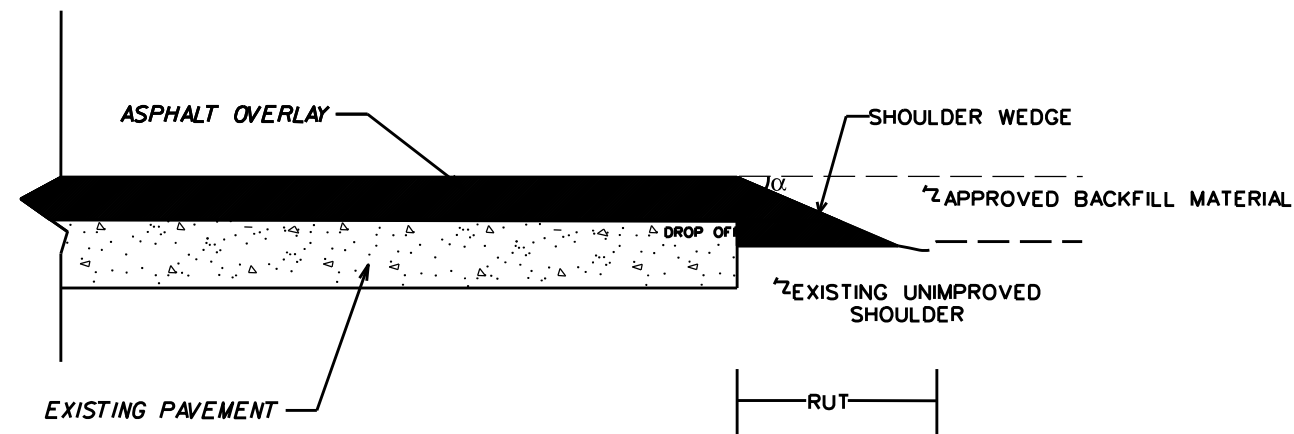
SHOULDER WEDGE DETAIL

(RESURFACING PROJECTS W/ WIDENING OR WITH EXISTING PAVED SHOULDER HAVING NO DROPOFFS)




SHOULDER WEDGE DETAIL

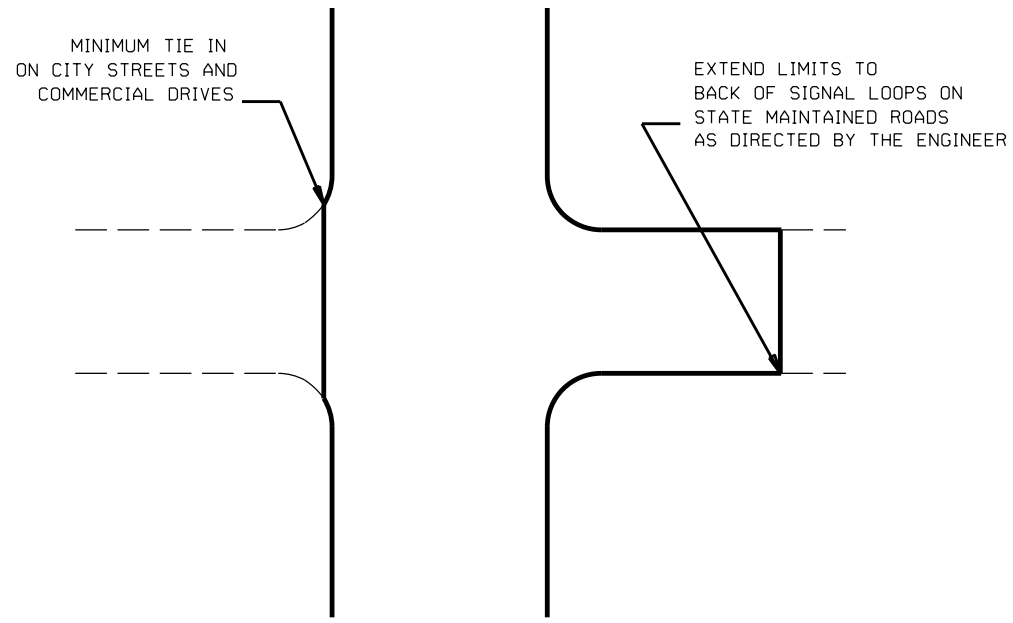
(RESURFACING PROJECTS W/ NO WIDENING)



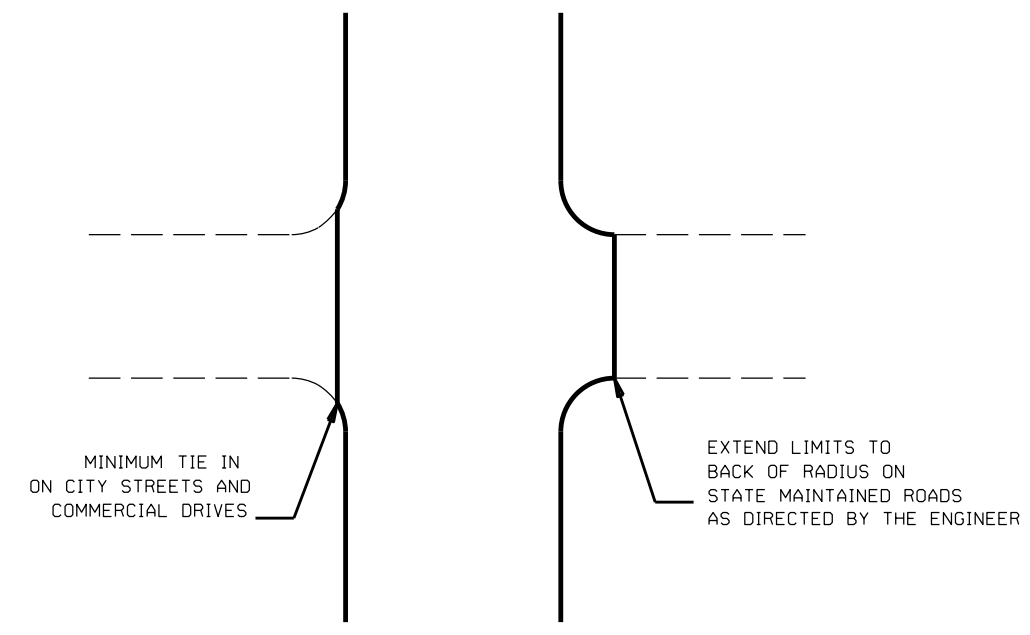
SHOULDER WEDGE DETAIL
(RESURFACING ADJACENT TO RUTTED SHOULDER)

$\alpha = 30$ DEGREES

SHOULDER WEDGE DETAILS			
SCALE	NA		REVISIONS
DATE	08/18		
DWG. BY	AMO		
DESIGN BY	AMO		
APPROVED	CLA		



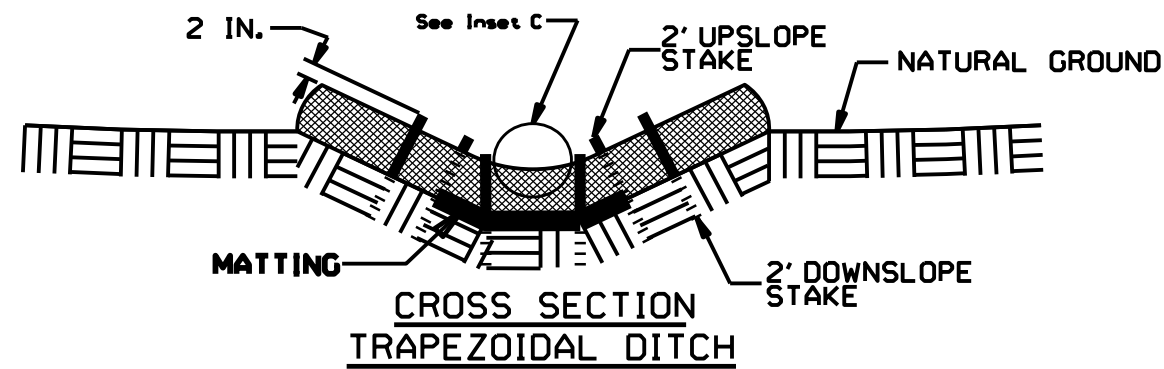
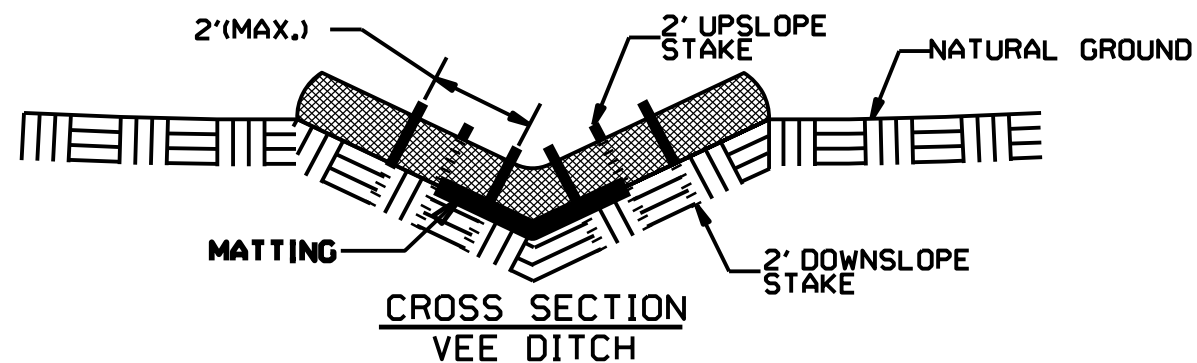
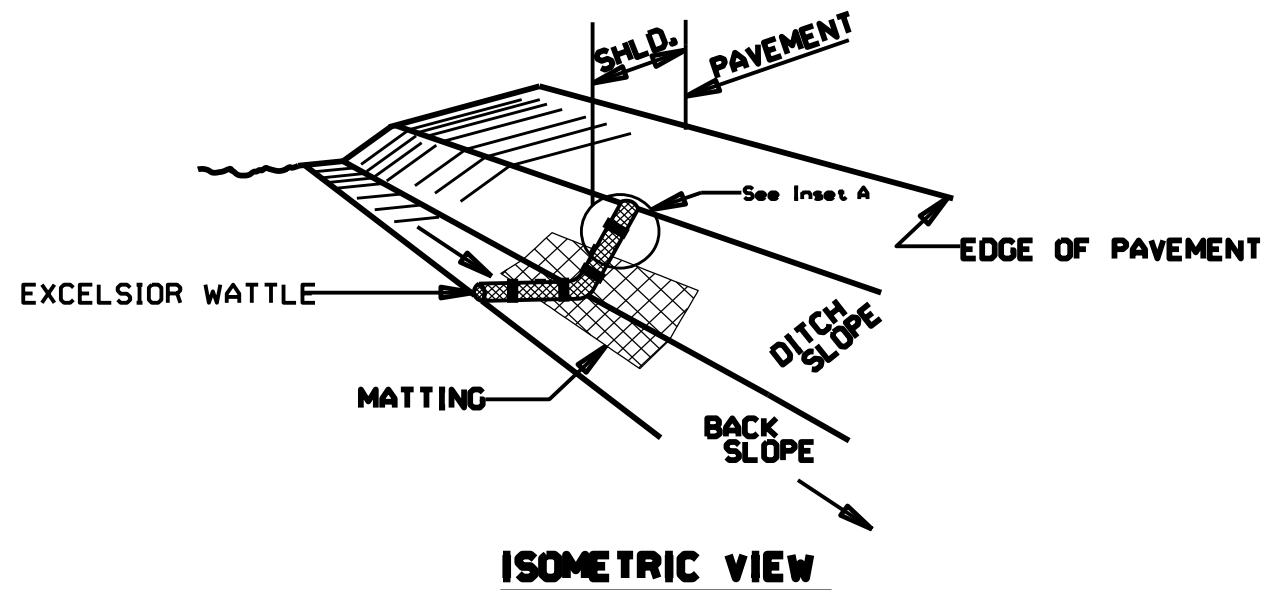
TYPICAL DETAIL OF PROJECT LIMITS AT SIGNALIZED Y LINES



TYPICAL DETAIL OF PROJECT LIMITS AT UNSIGNALIZED Y LINES

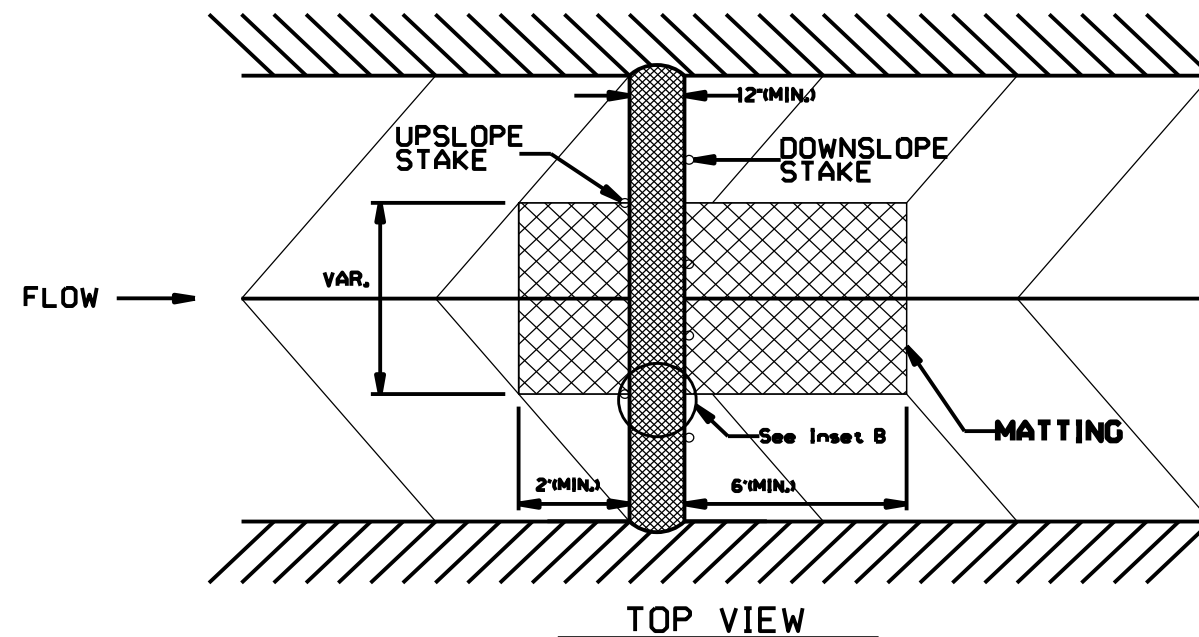
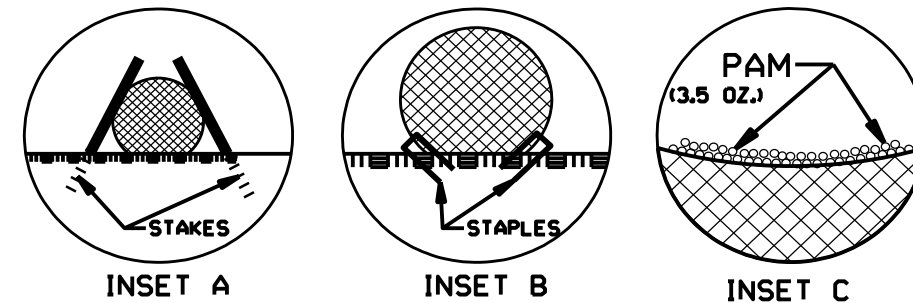
ADDITIONAL INTERSECTIONS (NON-TYPICAL)		
Extend paving limits to back of radius or loop on the following intersections:		
MAP#	STREET NAME	COMMENTS
MAP 2	SR 1703 CARPENTER RD	
MAP 2	SR 1702 BENTON EDWARDS RD	
MAP 2	SR 1700 FLINT RIDGE RD	TO PVMT JOINT
MAP 2	SR 1103 ROCKY RIVER RD	TO PVMT JOINT AT END OF ISLAND
MAP 3	SR 2135 WG MEDLIN RD	
MAP 5	SR 1763 BIVENS RD	
MAP 6	SR 1929 PHILADELPHIA CHURCH RD	
MAP 6	SR 1911 LENORD MORGAN RD	
MAP 7	SR 3507 POND BLUFF DR	
MAP 7	SR 3508 LITTLELEAF LN	
MAP 8	SR 3515 LANCASTER AVE	MILL/FILL TO PVMT JOINT IN INTERSECTION
MAP 8	SR 2139 GRIFFITH RD	MILL/FILL PVMT BETWEEN ISLAND AND SW
MAP 9	SR 1263 SHADY OAK LN	

WATTLE WITH POLYACRYLAMIDE DETAIL



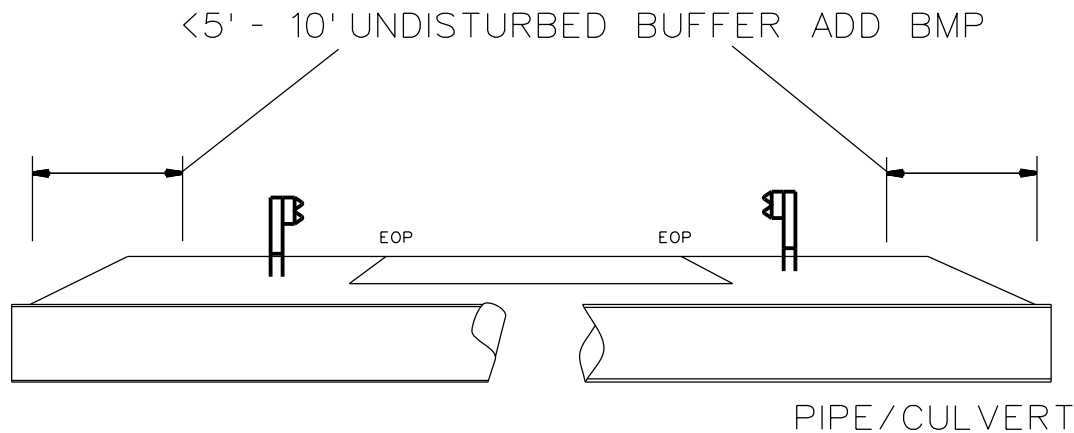
NOTES:

- USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.
- USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. CROSS SECTION.
- INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.
- PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12' IN LENGTH.
- INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.
- INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.
- PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.
- INITIALLY APPLY 3.5 OUNCES OF ANIONIC OR NEUTRALLY CHARGED POLYACRYLAMIDE (PAM) OVER WATTLE WHERE WATER WILL FLOW AND AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.



NOTES: LESS THAN 5' - 10' UNDISTURBED BUFFER FROM ROW, DITCHLINE, WATER FEATURE, OR DRAINAGE INLET, ADD BMP.

BMP OPTIONS: WATTLE OR SILT FENCE

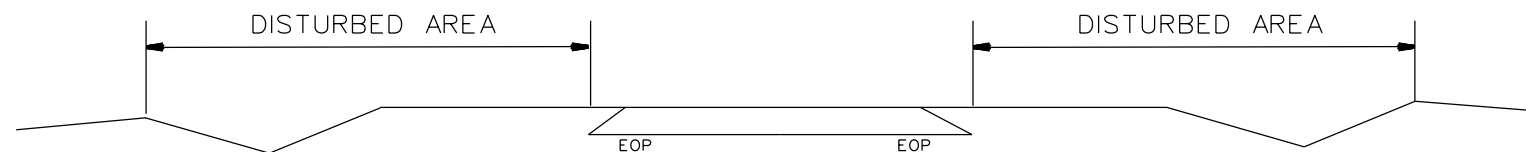


STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	2025CPT.10.13.10901 2025CPT.10.13.20901	EC2	
F.A. PROJECT NO.			

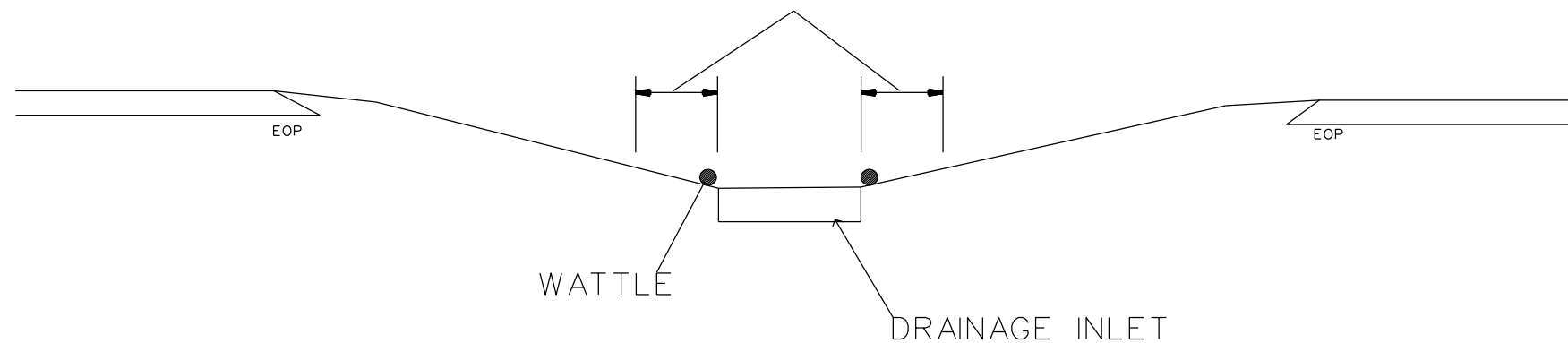
<5' - 10' UNDISTURBED BUFFER FROM JURISDICTIONAL FEATURE ADD BMP




USE BMP'S IF SHOULDERS AND/OR FRONTSLOPES AND/OR DITCHLINE AND/OR BACKSLOPES ARE DISTURBED






<5' - 10' UNDISTURBED BUFFER FROM INLET, ADD WATTLE

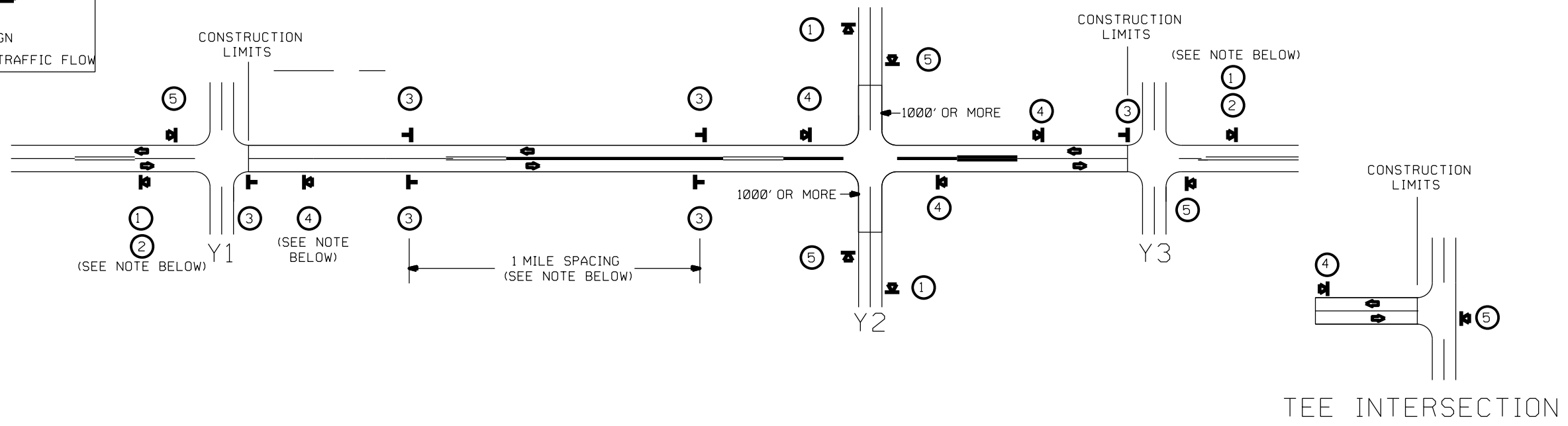


EROSION CONTROL DETAIL		
SCALE	-1/4"	
DATE	1/20	
DWG. BY	AMD	
DESIGN BY	AMD	
APPROVED	CLA	
REVISIONS		

SIGNING FOR ASPHALT SURFACE TREATMENT

LEGEND


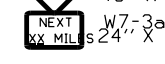





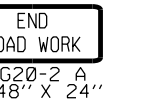
-  PORTABLE SIGN
-  STATIONARY SIGN
-  DIRECTION OF TRAFFIC FLOW



MAINLINE (-L-) SIGNING

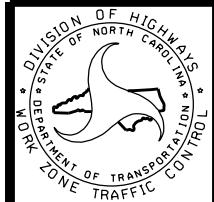
-Y- LINE SIGNING

TEE INTERSECTION

SIGNING NOTES AND PLACEMENT PER DIRECTION	<p>①  W20-1 48" X 48"</p> <p>②  W7-3aP 24" X 18"</p>	<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> <p>1) LESS THAN 1000' OF RESURFACING ALONG -Y- LINE 2) SUBDIVISION ROADS 3) DEAD END ROADS</p>
	<p>③  W8-7 48" X 48"</p> <p> SP 48" X 48"</p>	<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>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>
	<p>④  SP 13106 48" X 48"</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> W20-1 48" X 48"</p> <p>PLACED 500' IN ADVANCE OF FLAGGER.</p> <p> W20-7 A 48" X 48"</p> <p>PLACED 250' IN ADVANCE OF FLAGGER.</p>
	<p>⑤  G20-2 A 48" X 24"</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>		

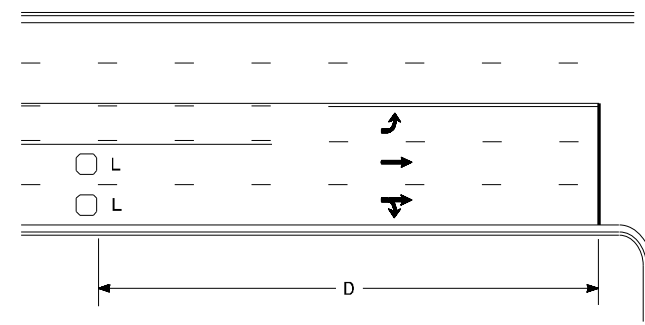
MAPS LESS THAN 2 MILES

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)

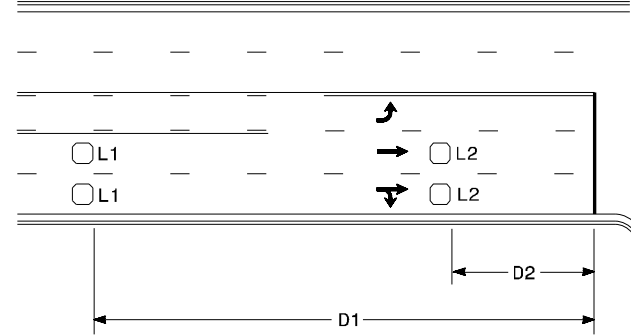


Speed Limit mph	D ft
40	250
45	300
50	355
55	420

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

Volume Density Operation

OR

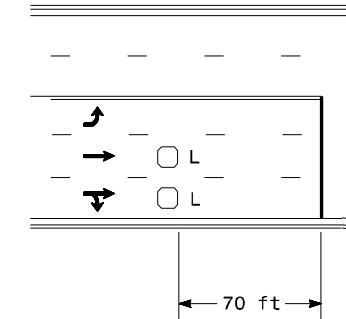


Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

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

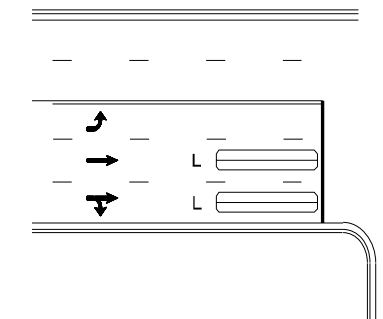
"Stretch" Operation

Low Speed Detection (≤35 mph)



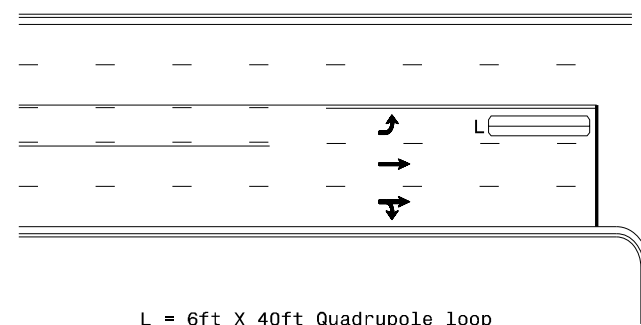
L = 6ft X 6ft
 Wired in series

OR



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

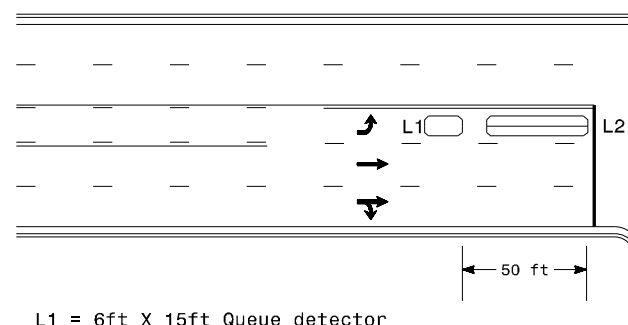
Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

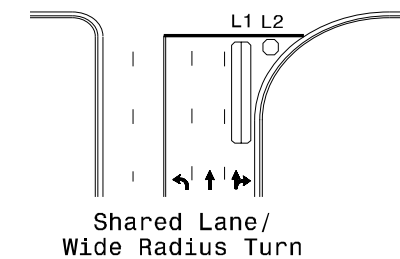
OR



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

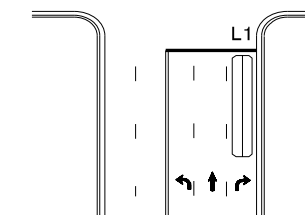
Queue Loop Detection

Right Turn Lane Detection

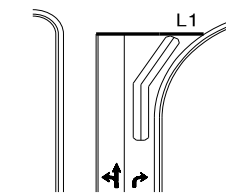


Shared Lane/
 Wide Radius Turn

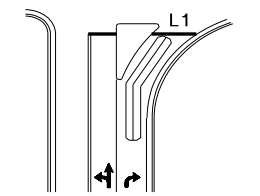
L1 = 6ft X 40ft Quadrupole loop
 L2 = 6ft X 6ft [Minimum] Presence loop
 Wired separately



Standard Turn

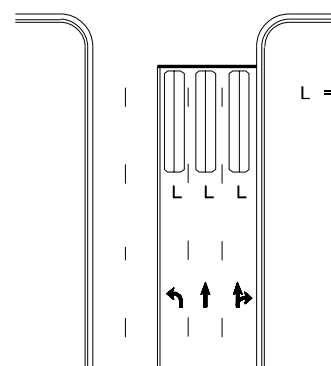


Wide Radius Turn



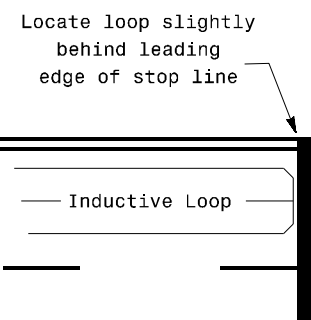
Channelized Turn

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

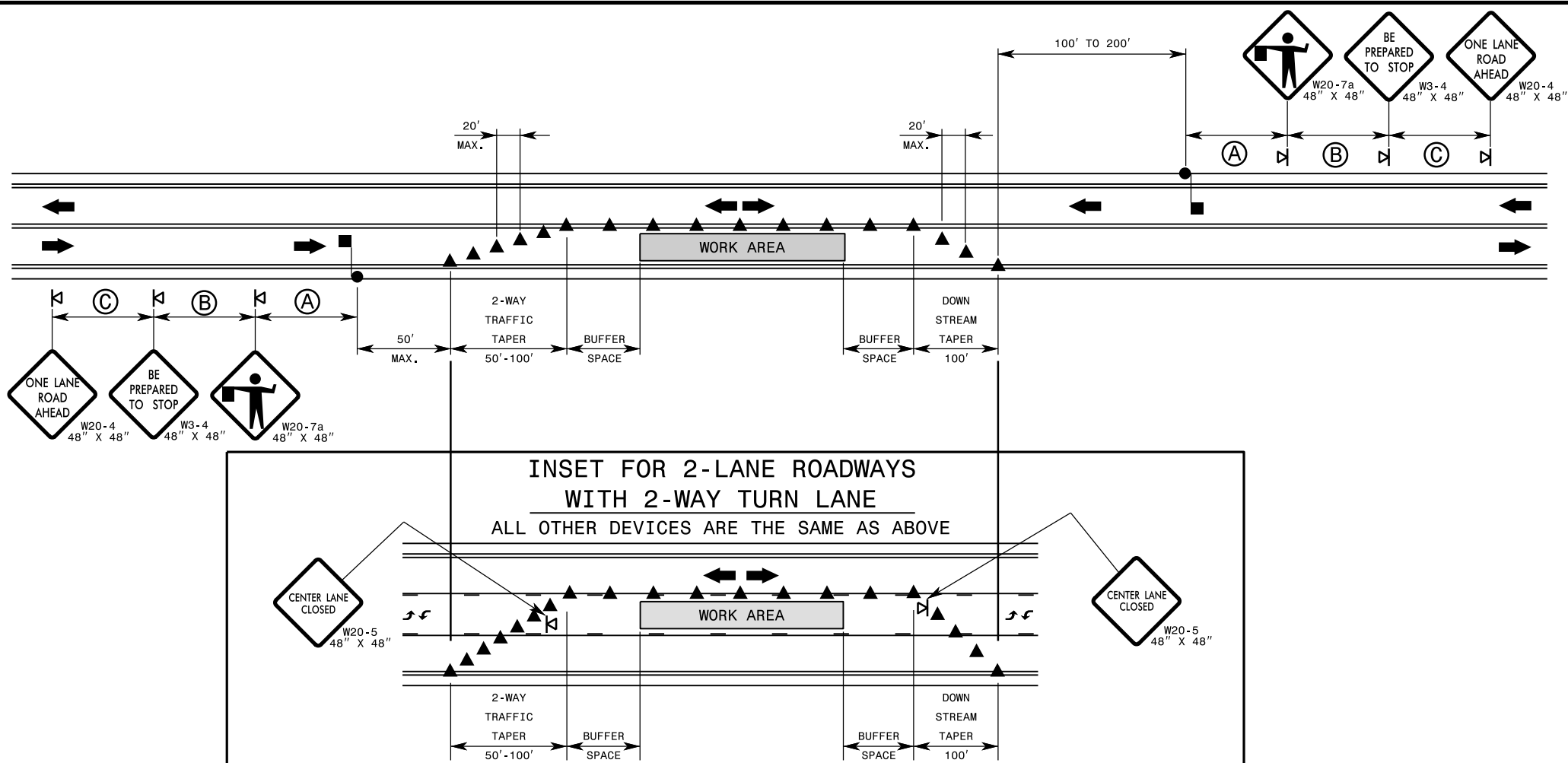
6' X 15' Loops:
 Lead-in < 150', use 2 turns
 Lead-in > 150', use 3 turns

750 N. Greenfield Pkwy, Garner, NC 27529

Typical Signal Loop Locations

PLAN DATE: January 2015	REVIEWED BY: JPG
PREPARED BY: PLA	REVIEWED BY:
SCALE: N/A	DATE: 1/30/2015

SEAL
 NORTH CAROLINA
 PROFESSIONAL ENGINEER
 SEAL 23489
 ALEXANDER



1-24

ROADWAY STANDARD DRAWING FOR
TEMPORARY LANE CLOSURES
2-LANE, 2-WAY ROADWAY - 1 LANE CLOSED

GENERAL NOTES FOR FLAGGING OPERATIONS

- REFER TO RSD. 1101.11, SHEETS 1 & 4, FOR "L" DISTANCE AND SIGN SPACING.
- INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC.
- REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
- FOR POSTED SPEED LIMITS BELOW 45 MPH, CHANNELIZING DEVICE SPACING SHALL BE 20 FEET IN THE TAPERS AND THE SHIFTS AND 40 FEET IN THE TANGENTS. FOR POSTED SPEED LIMITS GREATER THAN OR EQUAL TO 45 MPH, CHANNELIZING DEVICE SPACING SHALL BE 40 FEET IN THE TAPERS AND THE SHIFTS AND 80 FEET IN THE TANGENTS.
- EXTEND LANE CLOSURES AT THE BUFFER SPACE SUCH THAT STOPPING SIGHT DISTANCE IS PROVIDED TO THE FLAGGER (REFER TO RSD. 1101.11, SHEET 2).
- DO NOT STOP ALL DIRECTIONS OF TRAFFIC FOR MORE THAN 5 MINUTES AT A TIME.
- DRUMS OR SKINNY DRUMS MAY BE USED IN LIEU OF CONES. REFER TO RSD. 1180.01 FOR SKINNY DRUM REQUIREMENTS.
- USE FLAGGERS TO CONTROL TRAFFIC AT INTERSECTIONS AFFECTED BY THE LANE CLOSURE. SUPPLEMENT FLAGGERS LOCATED AT INTERSECTIONS WITH FLAGGER AHEAD SIGNS (W20-7A) PLACED APPROXIMATELY 250 FT. IN ADVANCE OF THE FLAGGER. FOR SIGNALIZED INTERSECTIONS PLACE SIGNALS IN THE FLASH MODE AND USE LAW ENFORCEMENT.
- REFER TO THE CURRENT MUTCD FOR FLAGGER CONTROL, REQUIREMENTS, AND PROCEDURES.
- DO NOT EXCEED A 1 MILE LANE CLOSURE LENGTH UNLESS OTHERWISE SHOWN IN THE TMP OR AS DIRECTED BY THE ENGINEER.

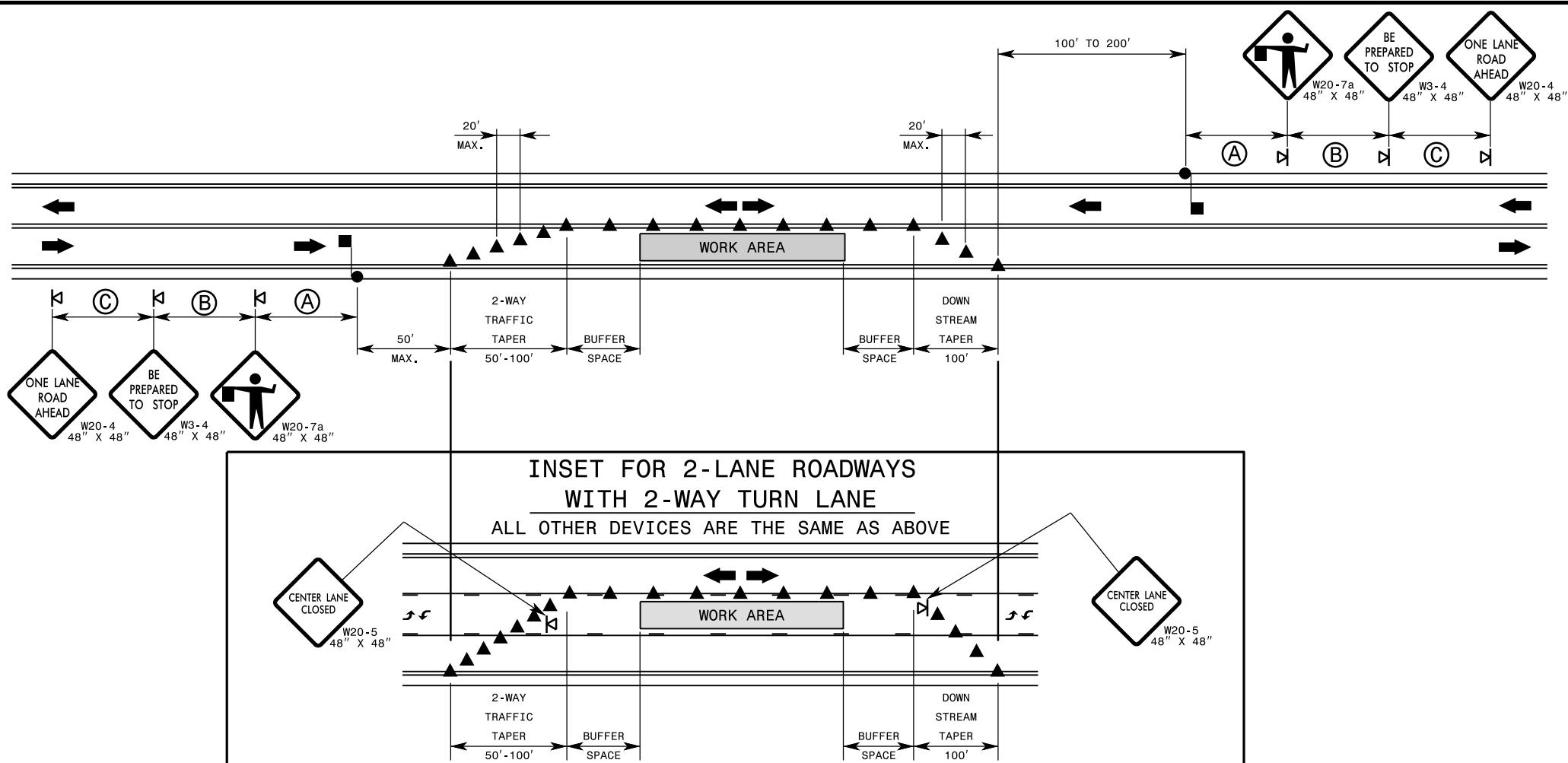
- IF VEHICLE QUEUES WILL REACH WITHIN 100' OF EITHER SIDE OF ACTIVE RAILROAD TRACKS, PROVIDE A UNIFORMED LAW ENFORCEMENT OFFICER OR FLAGGER TO PREVENT VEHICLES FROM STOPPING WITHIN THE GRADE CROSSING. PROVIDE OFFICER OR FLAGGER EVEN IF AUTOMATIC WARNING MEASURES ALREADY EXIST.
- THIS DETAIL IS APPLICABLE FOR OPERATIONS IN PLACE FOR 72 HOURS OR LESS. FOR LONGER DURATION OPERATIONS, SIGNING AND PAVEMENT MARKINGS MAY NEED TO BE ALTERED.

GENERAL NOTES FOR PILOT CAR OPERATIONS

- USE PILOT CARS WHEN DIRECTED BY THE ENGINEER.
- IF ROADWAY WIDTH IS LESS THAN 22 FEET (EOP TO EOP), CONES MAY NOT BE REQUIRED ALONG WORK AREA, AND AT THE DISCRETION OF THE ENGINEER, CONES MAY BE OMITTED ALONG THE WORK AREA IF USING A PILOT CAR.
- CONES ARE ALWAYS REQUIRED IN THE UPSTREAM AND DOWNSTREAM TAPERS.
- MOUNT SIGN G20-4 "PILOT CAR FOLLOW ME" AT A CONSPICUOUS POSITION ON THE REAR OF THE PILOT VEHICLE.
- UNLESS APPROVED BY THE ENGINEER, DO NOT INSTALL MORE THAN ONE (1) MILE OF LANE CLOSURE, MEASURED FROM THE BEGINNING OF THE MERGE TAPER TO THE END OF THE LANE CLOSURE.
- ADVISE RESIDENTS AND BUSINESSES WITHIN THE LANE CLOSURE LIMITS ABOUT METHODS OF SAFE EGRESS AND INGRESS FROM DRIVEWAYS DURING FLAGGING AND PILOT CAR OPERATIONS.

LEGEND

- FLAGGER
- CONE
- PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW



1-24

ROADWAY STANDARD DRAWING FOR
TEMPORARY LANE CLOSURES
2-LANE, 2-WAY ROADWAY - 1 LANE CLOSED

GENERAL NOTES FOR FLAGGING OPERATIONS

- 1- REFER TO RSD. 1101.11, SHEETS 1 & 4, FOR "L" DISTANCE AND SIGN SPACING.
- 2- INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC.
- 3- REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
- 4- FOR POSTED SPEED LIMITS BELOW 45 MPH, CHANNELIZING DEVICE SPACING SHALL BE 20 FEET IN THE TAPERS AND THE SHIFTS AND 40 FEET IN THE TANGENTS. FOR POSTED SPEED LIMITS GREATER THAN OR EQUAL TO 45 MPH, CHANNELIZING DEVICE SPACING SHALL BE 40 FEET IN THE TAPERS AND THE SHIFTS AND 80 FEET IN THE TANGENTS.
- 5- EXTEND LANE CLOSURES AT THE BUFFER SPACE SUCH THAT STOPPING SIGHT DISTANCE IS PROVIDED TO THE FLAGGER (REFER TO RSD. 1101.11, SHEET 2).
- 6- DO NOT STOP ALL DIRECTIONS OF TRAFFIC FOR MORE THAN 5 MINUTES AT A TIME.
- 7- DRUMS OR SKINNY DRUMS MAY BE USED IN LIEU OF CONES. REFER TO RSD. 1180.01 FOR SKINNY DRUM REQUIREMENTS.
- 8- USE FLAGGERS TO CONTROL TRAFFIC AT INTERSECTIONS AFFECTED BY THE LANE CLOSURE. SUPPLEMENT FLAGGERS LOCATED AT INTERSECTIONS WITH FLAGGER AHEAD SIGNS (W20-7A) PLACED APPROXIMATELY 250 FT. IN ADVANCE OF THE FLAGGER. FOR SIGNALIZED INTERSECTIONS PLACE SIGNALS IN THE FLASH MODE AND USE LAW ENFORCEMENT.
- 9- REFER TO THE CURRENT MUTCD FOR FLAGGER CONTROL, REQUIREMENTS, AND PROCEDURES.
- 10- DO NOT EXCEED A 1 MILE LANE CLOSURE LENGTH UNLESS OTHERWISE SHOWN IN THE TMP OR AS DIRECTED BY THE ENGINEER.

- 11- IF VEHICLE QUEUES WILL REACH WITHIN 100' OF EITHER SIDE OF ACTIVE RAILROAD TRACKS, PROVIDE A UNIFORMED LAW ENFORCEMENT OFFICER OR FLAGGER TO PREVENT VEHICLES FROM STOPPING WITHIN THE GRADE CROSSING. PROVIDE OFFICER OR FLAGGER EVEN IF AUTOMATIC WARNING MEASURES ALREADY EXIST.
- 12- THIS DETAIL IS APPLICABLE FOR OPERATIONS IN PLACE FOR 72 HOURS OR LESS. FOR LONGER DURATION OPERATIONS, SIGNING AND PAVEMENT MARKINGS MAY NEED TO BE ALTERED.

GENERAL NOTES FOR PILOT CAR OPERATIONS

- 1- USE PILOT CARS WHEN DIRECTED BY THE ENGINEER.
- 2- IF ROADWAY WIDTH IS LESS THAN 22 FEET (EOP TO EOP), CONES MAY NOT BE REQUIRED ALONG WORK AREA, AND AT THE DISCRETION OF THE ENGINEER, CONES MAY BE OMITTED ALONG THE WORK AREA IF USING A PILOT CAR.
- 3- CONES ARE ALWAYS REQUIRED IN THE UPSTREAM AND DOWNSTREAM TAPERS.
- 4- MOUNT SIGN G20-4 "PILOT CAR FOLLOW ME" AT A CONSPICUOUS POSITION ON THE REAR OF THE PILOT VEHICLE.
- 5- UNLESS APPROVED BY THE ENGINEER, DO NOT INSTALL MORE THAN ONE (1) MILE OF LANE CLOSURE, MEASURED FROM THE BEGINNING OF THE MERGE TAPER TO THE END OF THE LANE CLOSURE.
- 6- ADVISE RESIDENTS AND BUSINESSES WITHIN THE LANE CLOSURE LIMITS ABOUT METHODS OF SAFE EGRESS AND INGRESS FROM DRIVEWAYS DURING FLAGGING AND PILOT CAR OPERATIONS.

LEGEND

- FLAGGER
- CONE
- PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW

PROJECT NO. 2025CPT. 10. 13. 10901 2025. CPT. 10. 13. 20901	SHEET NO. SOQ 1	TOTAL NO.
---	--------------------	-----------

SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH	WIDTH	BEGIN MP	END MP	1220000000-E	1245000000-E	1260000000-E	1297000000-E	1330000000-E	1519000000-E	1520000000-E	1575000000-E	1704000000-E	1775000000-E	1838000000-E	1839000000-N	2605000000-N	2612000000-E	2830000000-N	2845000000-N	6000000000-E	6071002000-E	6071010000-E	7444000000-E			
														INCIDENTAL STONE BASE	SHOULDER RECONSTRUCTION	AGGREGATE SHOULDER BORROW	1 1/2" MILLING	INCIDENTAL MILLING	SURFACE COURSE, 59.58	LEVELING COURSE, 59.58	ASPHALT BINDER FOR PLANT MIX	PATCHING EXISTING PAYMENT	ASPHALT SURFACE TREATMENT, MATCOAT, #78M STONE	EMULSION FOR ASPHALT SURFACE TREATMENT	VACUUM TRUCK	WHEELCHAIR RAMPS	6" DRIVEWAYS	ADJ. OF MANHOLES	ADJ. OF METER OR VALVE BOX	TEMPORARY SILT FENCE	FLOCCULANT	WATTLE	INDUCTIVE LOOP			
														MI	FT	TONS	SMI	TON	SY	SY	TONS	TONS	TONS	TONS	TONS	TONS	SY	GAL	WK	BA	SY	BA	BA	LF	LB	LF
2025CPT. 10. 13. 10901	Union	2	NC-742 ROUTE ID 30000742090	FROM STANLY COUNTY LINE TO ANSON COUNTY LINE MP 2.6 TO MP 0.0	1	2	2RU	NO	NO	2.6	24	0	2.6	150	5.20	721		800	3,452	650	323	1,170										390	1	390		
TOTAL FOR MAP NO. 2										2.6				150	5.20	721		800	3,452	650	323	1,170									390	1	390			
TOTAL FOR PROJ. NO. 2025CPT. 10. 13. 10901										2.6				150	5.20	721		800	3,452	650	323	1,170									390	1	390			
2025. CPT. 10. 13. 20901	Union	3	SR-2136 MACEDONIA CHURCH RD ROUTE ID 40002136090	FROM NC 207 TO SR 2115 STACK RD MP 1.1 TO MP 0.01	1	2	2RU	NO	NO	1.09	18	0.01	1.1	50	2.18	302		341	1,104	275	113	495											163		163	
TOTAL FOR MAP NO. 3										1.09				50	2.18	302		341	1,104	275	113	495									163		163			
2025. CPT. 10. 13. 20901	Union	4	SR-1121 HARKEY RD ROUTE ID 40001121090	FROM SR 1117 S PROVIDENCE RD TO SR 1137 S POTTERS RD MP 0.00 TO MP 2.32	1	2	2RU	NO	NO	2.32	20	0	2.32	125	4.54	629		333	2,418	1,022	273	1,022										340	1	340		
TOTAL FOR MAP NO. 4										2.32				125	4.54	629		333	2,418	1,022	273	1,022								340	1	340				
2025. CPT. 10. 13. 20901	Union	5	SR-1751 WALAUP AVE/ MONROE-ANSONVILLE RD ROUTE ID 40001751090	FROM TREEWAY DR TO SR 1786 BOBWHITE CIR MP 2.38 TO MP 3.30	1,2,3	2	2RU	NO	NO	0.92	20	2.38	3.3	10	1.82	252	1,254	247	1,014	410	126	700										137		137		
TOTAL FOR MAP NO. 5										0.92				10	1.82	252	1,254	247	1,014	410	126	700								137		137				
2025. CPT. 10. 13. 20901	Union	6	SR-1003 WHITE STORE RD ROUTE ID 40001003090	FROM SR 1911 LEONARD MORGAN RD TO SR 1005 LANDSFORD RD MP 3.47 TO MP 1.02	1	2	2RU	NO	NO	2.45	20	1.02	3.47	140	4.90	679		556	2,706	858	302	1,470										233	1	233		
TOTAL FOR MAP NO. 6										2.45				140	4.90	679		556	2,706	858	302	1,470								233	1	233				
2025. CPT. 10. 13. 20901	Union	7	SR-1134 LATHAN RD ROUTE ID 40001134090	FROM SR 1135 OLD HWY RD TO NC 522 MP 0.55 TO MP 1.28	1	2	2RU	NO	NO	0.73	20	0.55	1.28	20	1.46	202		317	1,603	183	140	500										110		110		
TOTAL FOR MAP NO. 7										0.73				20	1.46	202		317	1,603	183	140	500								110		110				
2025. CPT. 10. 13. 20901	Union	8	SR-3515 LANCASTER AVE ROUTE ID 40003515090	FROM SR 3515 S CHARLOTTE AVE TO WEST ST MP 2.07 TO MP 1.58	4	2	2RU	NO	NO	0.49	20	1.58	2.07		0.05	7	9,105		907		78	400										74		74	175	
TOTAL FOR MAP NO. 8										0.49					0.05	7	9,105		907		78	400									74		74	175		
2025. CPT. 10. 13. 20901	Union	9	SR-1113 / DAVIS RD ROUTE ID # 40001113090	FROM SR 1117 S PROVIDENCE RD PAST SR 1263 SHADY OAK LN MP 0.01 TO MP 1.43	5	2	2RU	NO	NO	1.42	19.5	0.01	1.43	115	2.84	524		685	1,961	497	194	710	15,878	3,970	1.00						213		213			
TOTAL FOR MAP NO. 9										1.42				115	2.84	524		685	1,961	497	194	710	15,878	3,970	1.00					213		213				
TOTAL FOR PROJ. NO. 2025. CPT. 10. 13. 20901										9.42				460	17.79	2,595	10,359	2,479	11,713	3,245	1,226	5,297	15,878	3,970	1.00	1	126	11	12	213	2	1,270	175	176		
GRAND TOTAL										12.02				610	22.99	3,316	10,359	3,279	15,165	3,895	1,549	6,467	15,878	3,970	1.00	1	126	11	12	1,660	3	1,660	176			

PROJECT NO.	SHEET NO.	TOTAL NO.
2025CPT.10.13.10901	SQ 2	
2025.CPT.10.13.20901		

THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNT	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	WIDTH	BEGIN MP	END MP	4413000000-E	4457000000-N	4685000000-E		4695000000-E	4709000000-E	4720000000-E			4725000000-E	4810000000-E		4905100000-N		
												WORK ZONE ADVANCE/GENERAL WARNING SIGNING	TEMPORARY TRAFFIC CONTROL	4" X 90 M WHITE THERMO	4" X 90 M YELLOW THERMO	8" X 90 M WHITE THERMO	THERMOPLASTIC PAVEMENT MARKING LINES (24", 90 MILS)	THERMO MSG STOP 90 M	THERMO MSG AHEAD 90 M	THERMO MSG SCHOOL 90 M	THERMO LT ARROW 90 M	4" YELLOW PAINT	4" WHITE PAINT	NON-CAST IRON SNOWPLOWABLE PAVEMENT MARKER		
								MI	FT			SF	LS	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA		
2025CPT.10.13.10901	Union	2	NC-742 ROUTE ID 30000742090	FROM STANLY COUNTY LINE TO ANSON COUNTY LINE MP 2.6 TO MP 0.0	1	2	2WU	2.6	24	0	2.6	291	0.20	27,456	25,330									173		
TOTAL FOR MAP NO. 2								2.6				291	0.20	27,456	25,330									173		
TOTAL FOR PROJ NO. 2025CPT.10.13.10901								2.6				291	0.20	27,456	25,330										173	
														52,786												
2025.CPT.10.13.20901	Union	3	SR-2136 MACEDONIA CHURCH RD ROUTE ID 40002136090	FROM NC 207 TO SR 2115 STACK RD MP 1.1 TO MP 0.01	1	2	2WU	1.09	18	0.01	1.1	122	0.10						4	5			20,800	23,020		
TOTAL FOR MAP NO. 3								1.09				122	0.10							4	5			20,800	23,020	
2025.CPT.10.13.20901	Union	4	SR-1121 HARKEY RD ROUTE ID 40001121090	FROM SR 1117 S PROVIDENCE RD TO SR 1137 S POTTERS RD MP 0.00 TO MP 2.32	1	2	2WU	2.32	20	0	2.32	254	0.20										47,968	47,968		
TOTAL FOR MAP NO. 4								2.32				254	0.20											47,968	47,968	
2025.CPT.10.13.20901	Union	5	SR-1751 WALKUP AVE/ MONROE-ANSONVILLE RD ROUTE ID 40001751090	FROM TREEWAY DR TO SR 1786 BOBWHITE CIR MP 2.38 TO MP 3.30	1,2,3	2	2WU	0.92	20	2.38	3.3	102	0.10	9,610	9,610											
TOTAL FOR MAP NO. 5								0.92				102	0.10	9,610	9,610											
2025.CPT.10.13.20901	Union	6	SR-1003 WHITE STORE RD ROUTE ID 40001003090	FROM SR 1911 LEONARD MORGAN RD TO SR 1005 LANDSFORD RD MP 3.47 TO MP 1.02	1	2	2WU	2.45	20	1.02	3.47	274	0.20										46,602	51,692		
TOTAL FOR MAP NO. 6								2.45				274	0.20												46,602	51,692
2025.CPT.10.13.20901	Union	7	SR-1134 LATHAN RD ROUTE ID 40001134090	FROM SR 1135 OLD HWY RD TO NC 522 MP 0.55 TO MP 1.28	1	2	2WU	0.73	20	0.55	1.28	82	0.05										32,736	32,736		
TOTAL FOR MAP NO. 7								0.73				82	0.05												32,736	32,736
2025.CPT.10.13.20901	Union	8	SR-3515 LANCASTER AVE ROUTE ID 40003515090	FROM SR 3515 S CHARLOTTE AVE TO WEST ST MP 2.07 TO MP 1.58	4	2	2WU	0.49	20	1.58	2.07	55	0.05	943	5,150	396	254				12	1				
TOTAL FOR MAP NO. 8								0.49				55	0.05	943	5,150	396	254				12	1				
2025.CPT.10.13.20901	Union	9	SR-1113 / DAVIS RD ROUTE ID # 40001113090	FROM SR 1117 S PROVIDENCE RD PAST SR 1263 SHADY OAK LN MP 0.01 TO MP 1.43	5	2	2WU	1.42	19.5	0.01	1.43	159	0.10	14,996	13,445											
TOTAL FOR MAP NO. 9								1.42				159	0.100	14,996	13,445											
TOTAL FOR PROJ NO. 2025.CPT.10.13.20901								9.42				1,048	0.800	25,549	28,205	396	254	4	5	12	1	148,106	155,416			
														53,754					21			303,522				
GRAND TOTAL								12.02				1,339	1.000	53,005	53,535	396	254	4	5	12	1	148,106	155,416	173		
														106,540					21			303,522				