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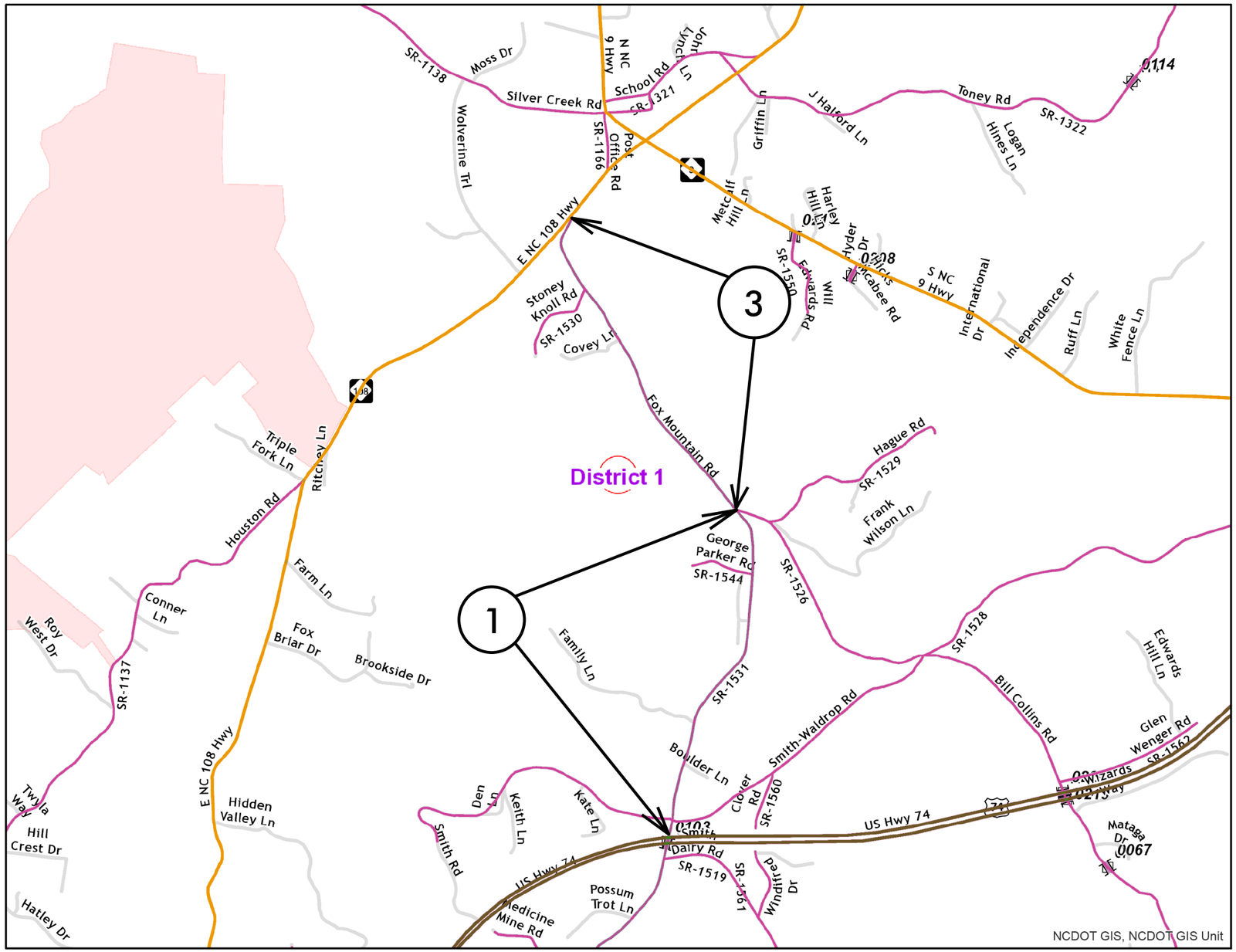
PROJECT REFERENCE NO.		SHEET NO.
2019CPT.14.04.20751		1
STATE PROJECT	F.A. PROJECT NO.	DESCRIPTION

POLK COUNTY



MAP 1

BEG END

MAP 3

BEG END

TIP PROJECT: N/A

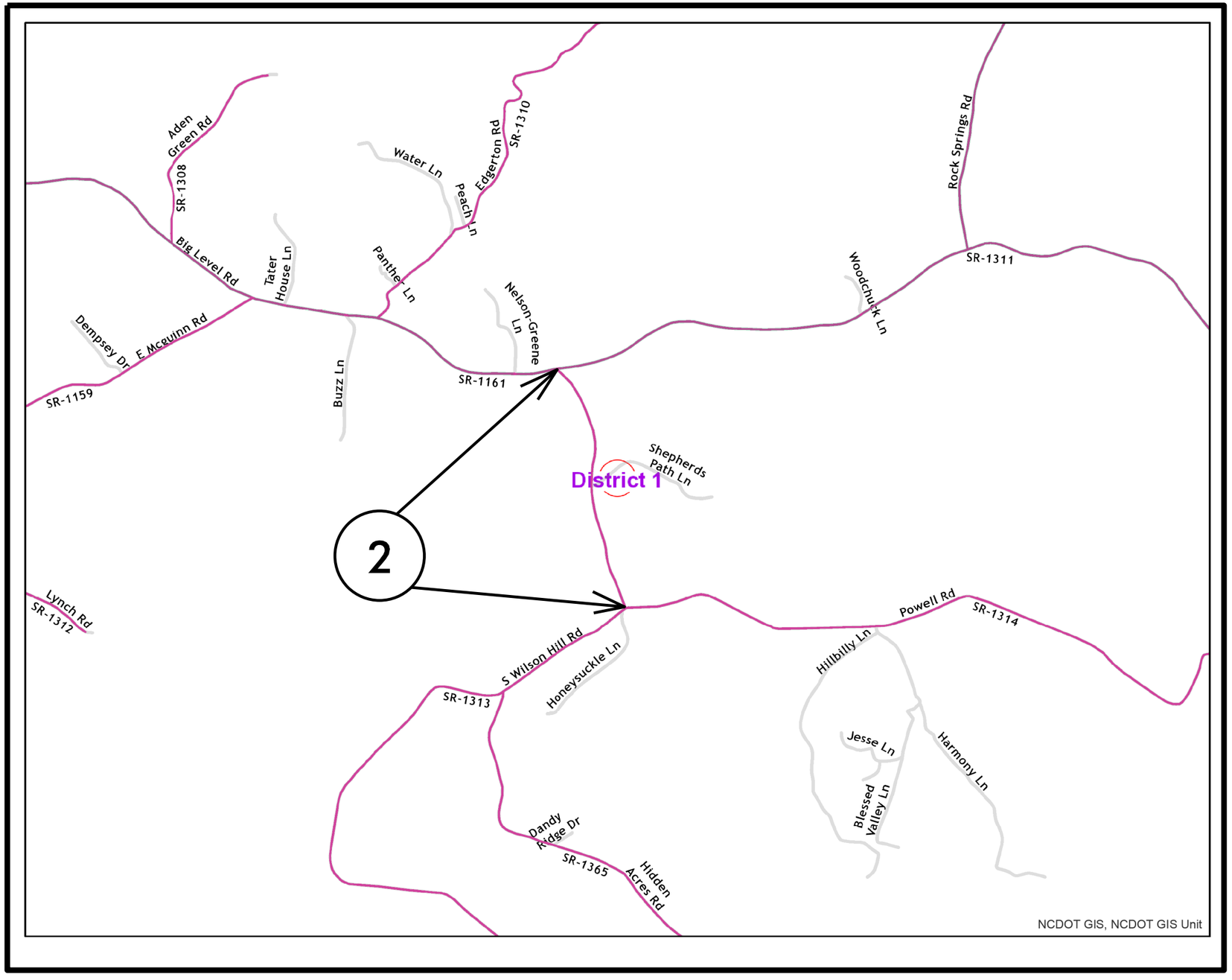
CONTRACT: DN00643

PROJECT REFERENCE NO.		SHEET NO.
2019CPT.14.04.20751		2
STATE PROJECT	F.A. PROJECT NO.	DESCRIPTION

POLK COUNTY

TIP PROJECT: N/A

CONTRACT: DN00643



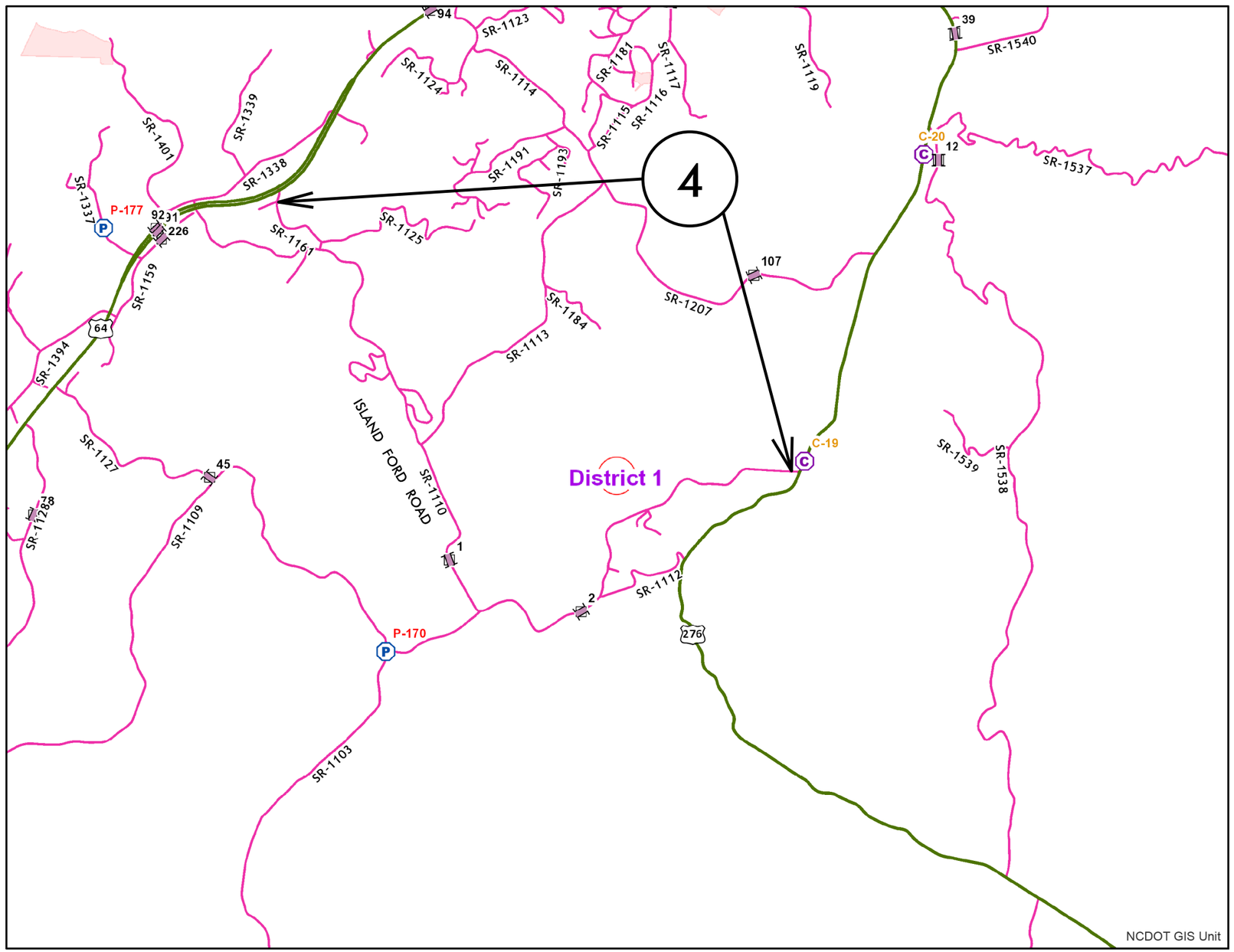
MAP 2

BEG

END

PROJECT REFERENCE NO.		SHEET NO.
2019CPT.14.04.20881		3
STATE PROJECT	F.A. PROJECT NO.	DESCRIPTION

TRANSLYVANIA COUNTY



MAP 4

BEG

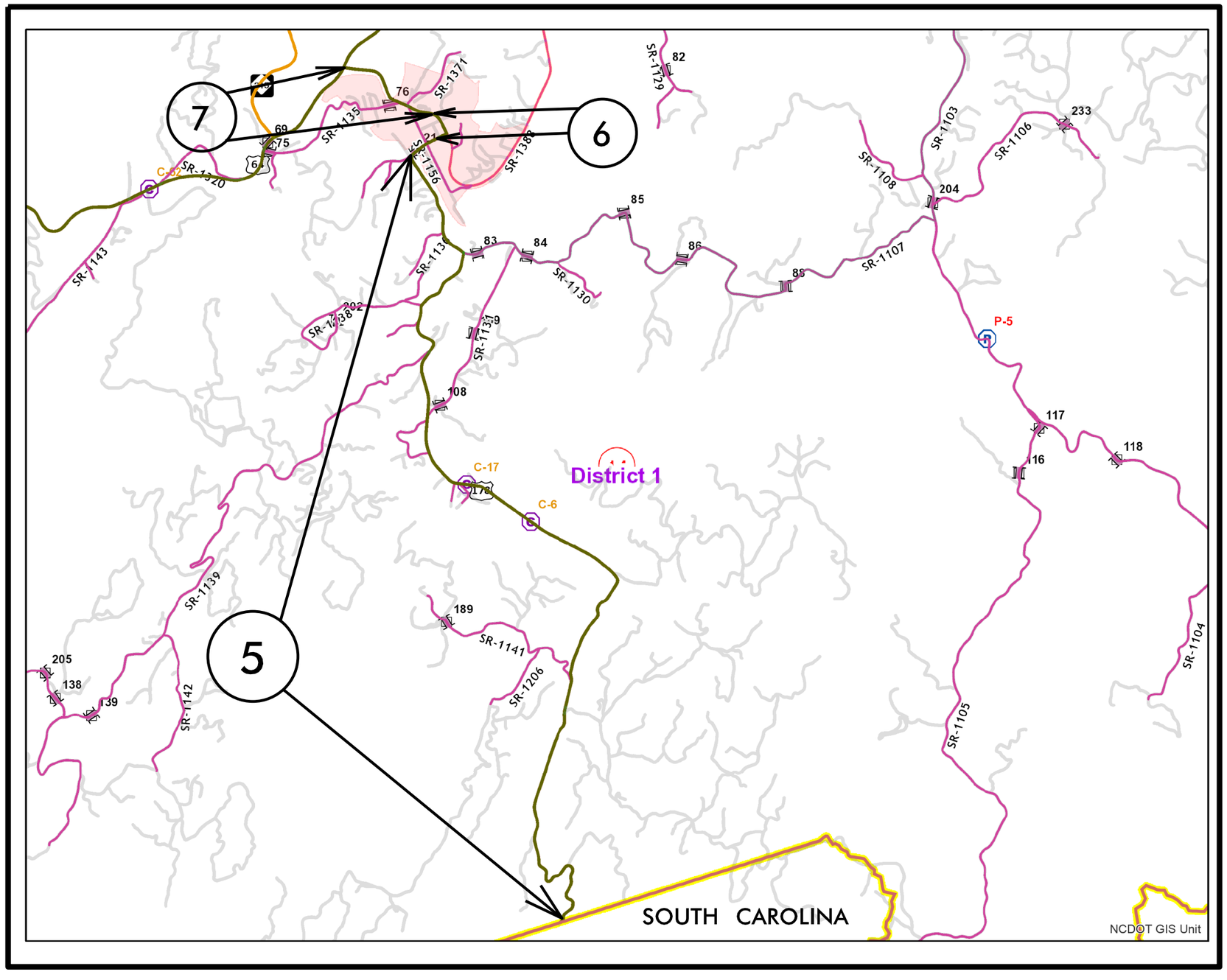
END

TIP PROJECT: N/A

CONTRACT: DN00643

PROJECT REFERENCE NO.		SHEET NO.
2020CPT.14.01.10881		4
STATE PROJECT	F.A. PROJECT NO.	DESCRIPTION

TRANSLYVANIA COUNTY



MAP 5

BEG END

MAP 6

BEG END

MAP 7

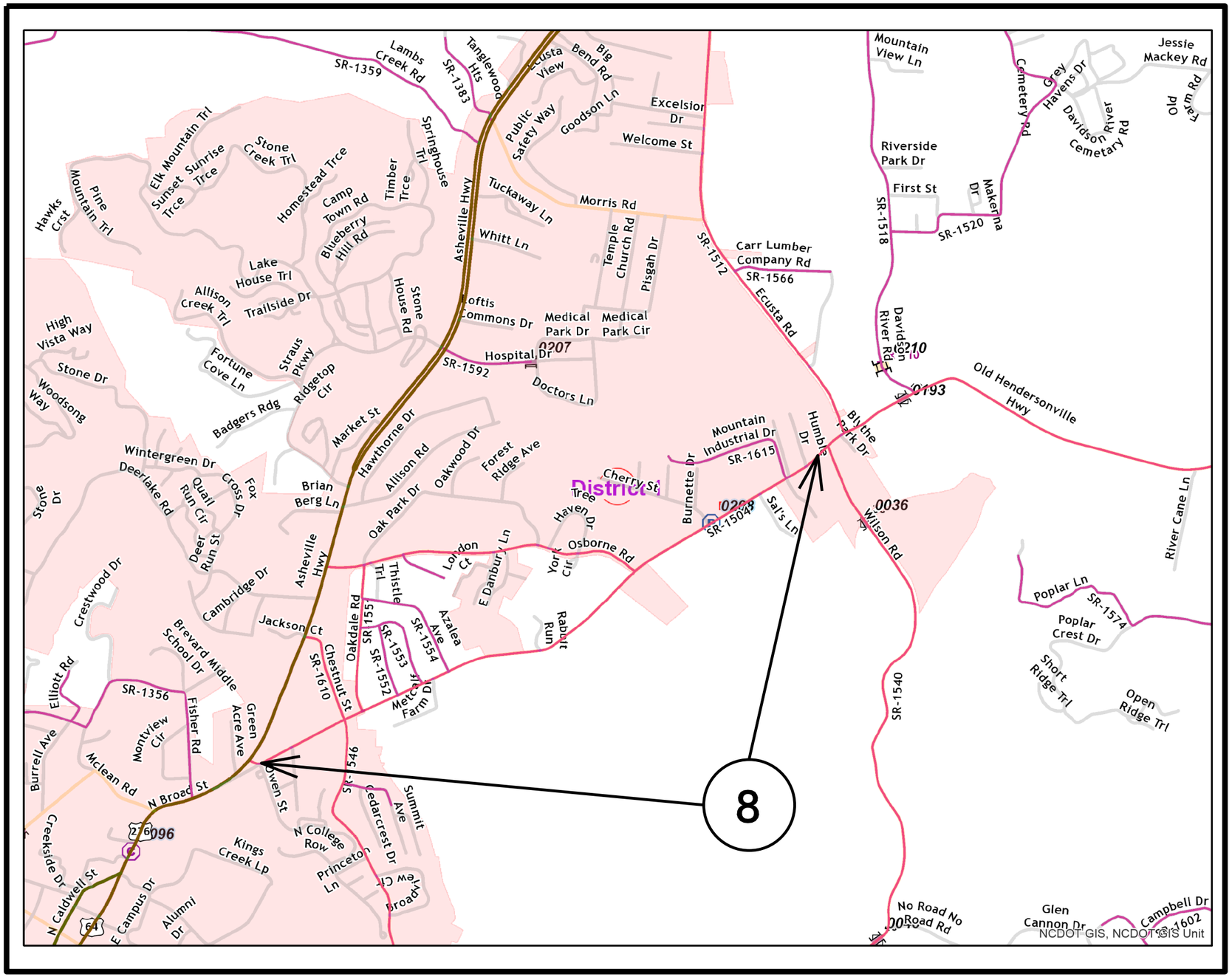
BEG END

TIP PROJECT: N/A

CONTRACT: DN00643

PROJECT REFERENCE NO.		SHEET NO.
2020CPT.14.01.20881		5
STATE PROJECT	F.A. PROJECT NO.	DESCRIPTION

TRANSYLVANIA COUNTY



MAP 8

BEG

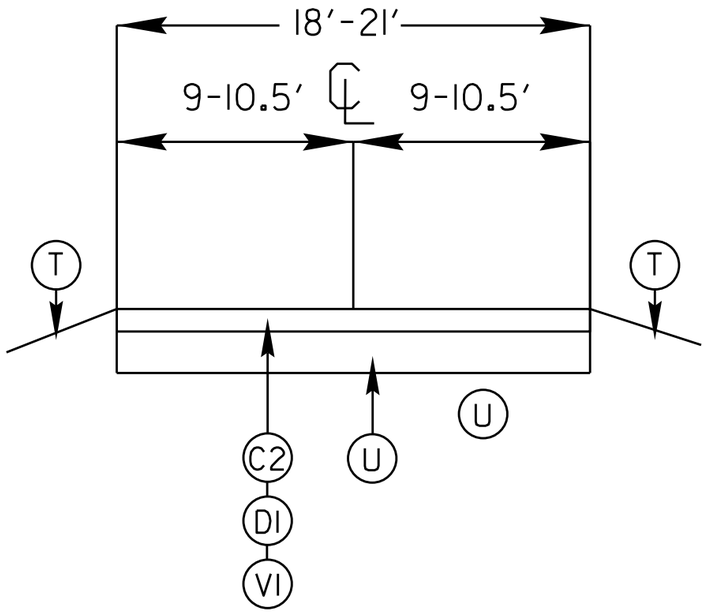
END

TIP PROJECT: N/A

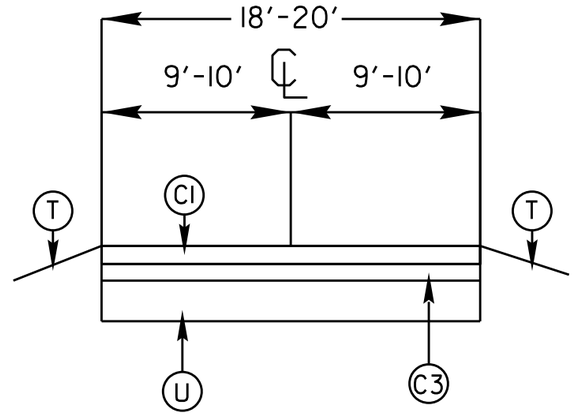
CONTRACT: DN00643

PROJECT REFERENCE NO.		SHEET NO.
2019CPT.14.04.20751		6
STATE PROJECT	F.A. PROJECT NO.	DESCRIPTION
2020CPT.14.01.10881		
2020CPT.14.01.20881		

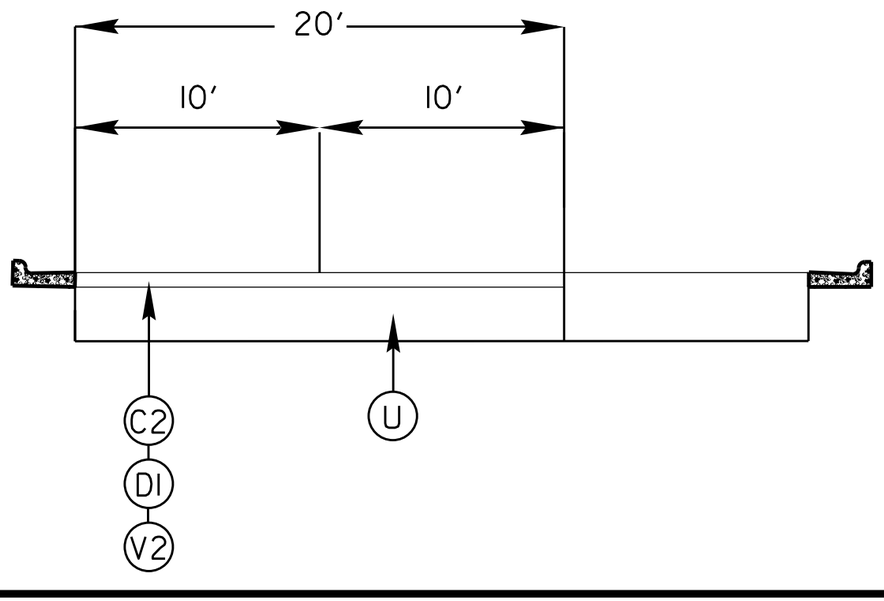
TYPICAL 1



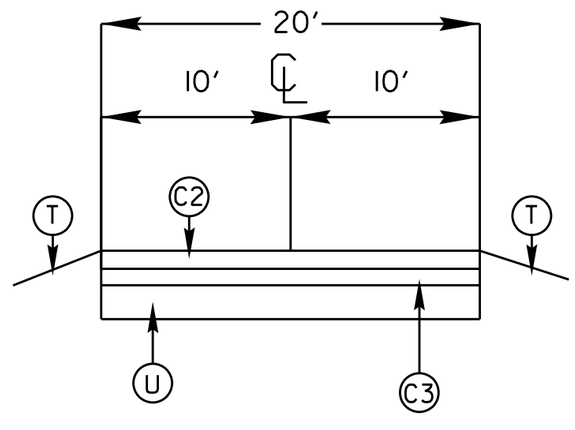
TYPICAL 3



TYPICAL 2



TYPICAL 4



SURFACING SCHEDULE

ITEM NO	DESCRIPTION
C1	PROP. APPROX. 1 1/4" ASPHALT CONCRETE SURFACE COURCE, TYPE SF9.5B AT AN AVERAGE RATE OF 137.5 LBS.PER.SQ.YD
C2	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C AT AN AVERAGE RATE OF 168 .PER.SQ.YD
C3	PROP. APPROX. 3/4" ASPHALT CONCRETE SURFACE COURSE, (LEVELING)TYPE S9.5B AT AN AVERAGE RATE OF 82.5 .PER.SQ.YD
D1	PROP. APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE I19.OC AT AN AVERAGE RATE OF 285 LBS.PER.SQ.YD
T	SHOULDER RECSONSTRUSTION WITH ASB- SEE PROJECT SPECIAL PROVISIONS
U	EXISTING ASPHALT
V1	MILLED ASPHALT PAVEMENT 3" IN DEPTH IN CONTENIOUS LANE WIDTH AS DIRECTED BY PROJECT ENGINEER
V2	MILLED ASPHALT PAVEMENT 4" IN DEPTH IN CONTENIOUS LANE WIDTH AS DIRECTED BY PROJECT ENGINEER
	*NOTE 1 1/2" MILLING REQUIRED AT SIGNALIZED INTERSECTION AND CURB AND CUTTER INTERSECTIONS USE FOR MAP 8 *

PROJECT NO.	SHEET NO.	TOTAL NO.
2019CPT.14.04.20751, 2019CPT.14.04.20881	7	
2020CPT.14.01.10881, ETC.		

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	1220000000-E INCIDENTAL STONE BASE	1245000000-E SHOULDER RECONSTRUCTION	1297000000-E 3" MILLING	1297000000-E 4" MILLING	1297000000-E 1½" MILLING	1330000000-E INCIDENTAL MILLING	1503000000-E INTERMEDIATE COURSE, I19.0C	1519000000-E SURFACE COURSE, S9.5B	1520000000-E SURFACE COURSE,LEVELING , S9.5B	1523000000-E SURFACE COURSE, S9.5C	1575000000-E ASPHALT BINDER FOR PLANT MIX	1704000000-E PATCHING EXISTING PAVEMENT	2830000000-N ADJ. OF MANHOLES	2845000000-N ADJ. OF METER OR VALVE BOX	7444000000-E INDUCTIVE LOOP (STANDARD DEPTH)	7456000000-E LEAD-IN CABLE 14-2
										MI	FT	TONS	SMI	SY	SY	SY	SY	TONS	TONS	TON	TONS	TONS	TONS	EA	EA	LF	LF
2019CPT.14.04.20751	Polk	1	SR-1531 (FOX MTN RD)	FROM SR-1526 (BILL COLLINS RD) TO US-74 BRIDGE	3	2	2WD	NO	NO	0.93	19	50	1.96				223		928	437		85	150				
TOTAL FOR MAP NO. 1										**0.93**		**50**	**1.96**				**223**		**928**	**437**		**85**	**150**				
2019CPT.14.04.20751	Polk	2	SR-1313 (S. WILSON HILL RD)	FROM SR-1161 (BIG LEVEL RD) TO SR-1314 (POWELL RD)	3	2	2WD	NO	NO	0.6	18	25	1.23						552	267		51	75				
TOTAL FOR MAP NO. 2										**0.6**		**25**	**1.23**						**552**	**267**		**51**	**75**				
2019CPT.14.04.20751	Polk	3	SR-1526 (FOX MTN RD)	FROM NC-108 TO SR-1531 (BILL COLLINS RD)	3	2	2WD	NO	NO	0.98	19	50	2.10						1,091	483		98	125				
TOTAL FOR MAP NO. 3										**0.98**		**50**	**2.10**						**1,091**	**483**		**98**	**125**				
TOTAL FOR PROJ NO. 2019CPT.14.04.20751										**2.51**		**125**	**5.29**				**223**		**2,571**	**1,187**		**234**	**350**				
2019CPT.14.04.20881	Transylvania	4	SR-1110 (ISLAND FORD RD)	FROM US-64 TO US-276	3	2	2WD	NO	NO	4.77	20	100	9.60				1,000		5,035	1,183		381	300				
TOTAL FOR MAP NO. 4										**4.77**		**100**	**9.60**				**1,000**		**5,035**	**1,183**		**381**	**300**				
TOTAL FOR PROJ NO. 2019CPT.14.04.20881										**4.77**		**100**	**9.60**				**1,000**		**5,035**	**1,183**		**381**	**300**				
2020CPT.14.01.10881	Transylvania	5	US-178	FROM SC LINE TO BRIDGE #21	1	2	2WU	NO	NO	5.74	21		11.48	70,717				11,195			6,573	932					
TOTAL FOR MAP NO. 5										**5.74**			**11.48**	**70,717**				**11,195**			**6,573**	**932**					
2020CPT.14.01.10881	Transylvania	6	US-178	FROM BRIDGE #21 TO CHURCH ST	2	2	2WU	NO	NO	0.28	20				2,957			469			275	39				580	250
TOTAL FOR MAP NO. 6										**0.28**					**2,957**			**469**			**275**	**39**				**580**	**250**
2020CPT.14.01.10881	Transylvania	7	US-178	FROM CHURCH ST TO US-64	1	2	2WU	NO	NO	0.67	18		1.34	7,075				1,122			658	93					
TOTAL FOR MAP NO. 7										**0.67**			**1.34**	**7,075**				**1,122**			**658**	**93**					
TOTAL FOR PROJ NO. 2020CPT.14.01.10881										**6.69**			**12.82**	**77,792**	**2,957**			**12,786**			**7,506**	**1,064**				**580**	**250**
															80,749												
2020CPT.14.01.20881	Transylvania	8	SR-1504 (OLD HENDERSONVILLE HWY.)	FROM .001 MILES WEST OF SR-1540 TO .001 MILES EAST OWEN STREET	4	2	2WU	NO	NO	1.54	20		3.36			1,200	450			863	1,680	152	200	9	4	600	600
TOTAL FOR MAP NO. 8										**1.54**			**3.36**			**1,200**	**450**			**863**	**1,680**	**152**	**200**	**9**	**4**	**600**	**600**
TOTAL FOR PROJ NO. 2020CPT.14.01.20881										**1.54**			**3.36**			**1,200**	**450**			**863**	**1,680**	**152**	**200**	**9**	**4**	**600**	**600**
															1,200												
GRAND TOTAL										**15.51**		**225**	**31.07**	**77,792**	**2,957**	**1,200**	**1,673**	**12,786**	**7,606**	**3,233**	**9,186**	**1,831**	**850**	**9**	**4**	**1,180**	**850**
															81,949												

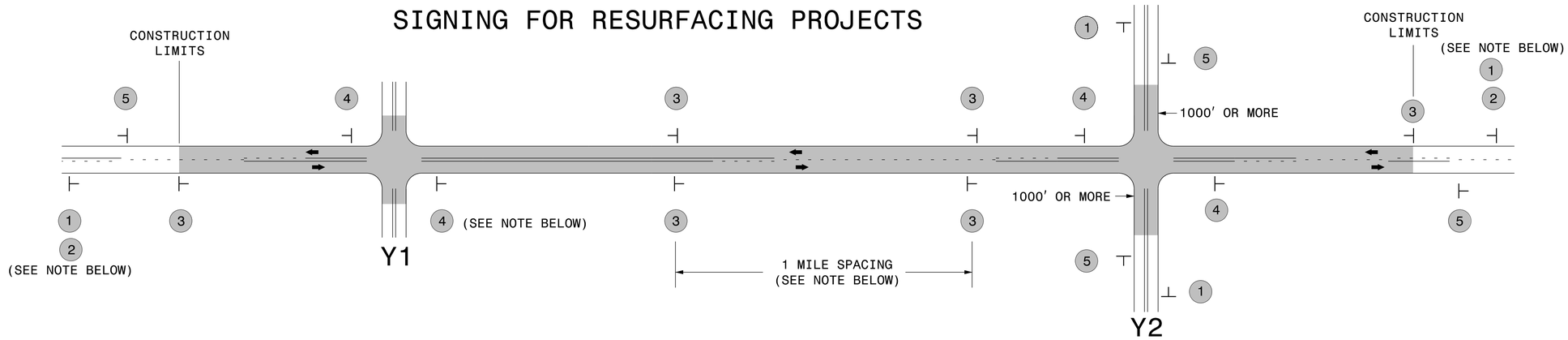
PROJECT NO.	SHEET NO.	TOTAL NO.
CPT.14.04.20751, 2019CPT.14.04.2	8	
2020CPT.14.01.10881, ETC.		

THERMOPLASTIC AND PAINT QUANTITIES

										4413000000-E	4457000000-N	4710000000-E	4721000000-E	4725000000-E			4810000000-E		4835000000-E	4890000000-E		4905000000-N
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	WIDTH	WORK ZONE ADVANCE/ GENERAL WARNING SIGNING	TEMPORARY TRAFFIC CONTROL	24" X 120 M WHITE THERMO	THERMO MSG SCHOOL 120 M	THERMO STR ARROW 90 M	THERMO LT ARROW 90 M	THERMO RT ARROW 90 M	4" WHITE PAINT	4" YELLOW PAINT	24" WHITE PAINT	GENERIC PAVEMENT MARKING ITEM (50 MIL YELLOW)	GENERIC PAVEMENT MARKING ITEM(50 MIL WHITE)	SNOW PLOWABLE MARKERS
								MI	FT	SF	LS	LF	EA	EA	EA	EA	LF	LF	LF	LF	LF	EA
2019CPT.14.04.20751	Polk	1	SR-1531 (FOX MTN RD)	FROM SR-1526 (BILL COLLINS RD) TO US-74 BRIDGE	3	2	2WD	0.93	19	150							19,950	19,950				
TOTAL FOR MAP NO. 1								**0.93**		**150**							**19,950**	**19,950**				
2019CPT.14.04.20751	Polk	2	SR-1313 (S. WILSON HILL RD)	FROM SR-1161 (BIG LEVEL RD) TO SR-1314 (POWELL RD)	3	2	2WD	0.6	18	150							12,806	12,464				
TOTAL FOR MAP NO. 2								**0.6**		**150**							**12,806**	**12,464**				
2019CPT.14.04.20751	Polk	3	SR-1526 (FOX MTN RD)	FROM NC-108 TO SR-1531 (BILL COLLINS RD)	3	2	2WD	0.98	19	150							21,392	18,650				
TOTAL FOR MAP NO. 3								**0.98**		**150**							**21,392**	**18,650**				
TOTAL FOR PROJ NO. 2019CPT.14.04.20751								**2.51**		**450**							**54,148**	**51,064**				
														105,212								
2019CPT.14.04.20881	Transylvania	4	SR-1110 (ISLAND FORD RD)	FROM US-64 TO US-276	3	2	2WD	4.77	20	342							101,490	94,310				
TOTAL FOR MAP NO. 4								**4.77**		**342**							**101,490**	**94,310**				
TOTAL FOR PROJ NO. 2019CPT.14.04.20881								**4.77**		**342**							**101,490**	**94,310**				
														195,800								
2020CPT.14.01.10881	Transylvania	5	US-178	FROM SC LINE TO BRIDGE #21	1	2	2WU	5.74	21	643	1.0	50	6				61,762	61,762		60,620	60,620	380
TOTAL FOR MAP NO. 5								**5.74**		**643**	**1**	**50**	**6**				**61,762**	**61,762**		**60,620**	**60,620**	**380**
2020CPT.14.01.10881	Transylvania	6	US-178	FROM BRIDGE #21 TO CHURCH ST	2	2	2WU	0.28	20	31		302	6	3			2,481	2,957		500	2,957	20
TOTAL FOR MAP NO. 6								**0.28**		**31**		**302**	**6**	**3**			**2,481**	**2,957**		**500**	**2,957**	**20**
2020CPT.14.01.10881	Transylvania	7	US-178	FROM CHURCH ST TO US-64	1	2	2WU	0.67	18	31		72	6		2	2	7,075	7,075		14,150	14,150	45
TOTAL FOR MAP NO. 7								**0.67**		**31**		**72**	**6**		**2**	**2**	**7,075**	**7,075**		**14,150**	**14,150**	**45**
TOTAL FOR PROJ NO. 2020CPT.14.01.10881								**6.69**		**705**	**1**	**424**	**18**	**3**	**2**	**2**	**71,318**	**71,794**		**75,270**	**77,727**	**445**
															7		**143,112**			**152,997**		
2020CPT.14.01.20881	Transylvania	8	SR-1504 (OLD HENDERSONVILLE HWY.)	FROM .001 MILES WEST OF SR-1540 TO .001 MILES EAST OWEN STREET	4	2	2WU	1.54	20	200							36,154	22,176	100			120
TOTAL FOR MAP NO. 8								**1.54**		**200**							**36,154**	**22,176**	**100**			**120**
TOTAL FOR PROJ NO. 2020CPT.14.01.20881								**1.54**		**200**							**36,154**	**22,176**	**100**			**120**
														58,330								
GRAND TOTAL								**15.51**		**1,697**	**1**	**424**	**18**	**3**	**2**	**2**	**263,110**	**239,344**	**100**	**75,270**	**77,727**	**565**
															7		**502,454**			**152,997**		

PROJ. REFERENCE NO.	SHEET NO.

SIGNING FOR RESURFACING PROJECTS



LEGEND

- ⊢ STATIONARY SIGN
- ⬅ DIRECTION OF TRAFFIC FLOW

SIGNING NOTES AND PLACEMENT PER DIRECTION

MAINLINE (-L-) SIGNING

1	ROAD WORK AHEAD W20-1 48″ X 48″	PLACE 1000′ PRIOR TO BEGINNING OF CONSTRUCTION LIMITS. ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000′ ALONG -Y- LINE.
2	NEXT XX MILES W7-3aP 24″ X 18″	#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)
3	LOW/SOFT SHOULDER SP 13107 48″ X 48″	PLACE INITIALLY AT THE CONSTRUCTION LIMITS AND SPACED 1 MILE APART THEREAFTER. IF NO -Y- LINES EXIST, PLACE 2ND SET ½ MILE FROM THE CONSTRUCTION LIMITS AND THEN SPACE 1 MILE THEREAFTER.
4	ROAD UNDER CONST SP 13106 48″ X 48″	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.
5	END ROAD WORK G20-2 A 48″ X 24″	PLACE 500′ FOLLOWING THE END OF CONSTRUCTION LIMITS.

-Y- LINE SIGNING

NO REQUIRED STATIONARY SIGNING FOR THE FOLLOWING -Y- LINE CONDITIONS:

1) LESS THAN 1000′ OF RESURFACING ALONG -Y- LINE
2) SUBDIVISION ROADS
3) DEAD END ROADS

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.

ROAD WORK AHEAD
W20-1
48″ X 48″

PLACED 500′ IN ADVANCE OF FLAGGER.

W20-7 A
48″ X 48″

PLACED 250′ IN ADVANCE OF FLAGGER.

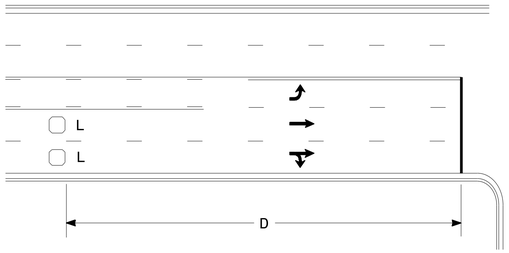
DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

RESURFACING
ADVANCE WARNING SIGNS
FOR
RURAL AND SUBURBAN
2 LANE ROADWAYS

3/19/2015
C:\Users\rmgarrett\Downloads\Resurfacing_AdvWarn_2Ln (2).dgn
User:rmgarrett

PROJECT REFERENCE NO.	SHEET NO.

High Speed Detection
(≥40 mph)



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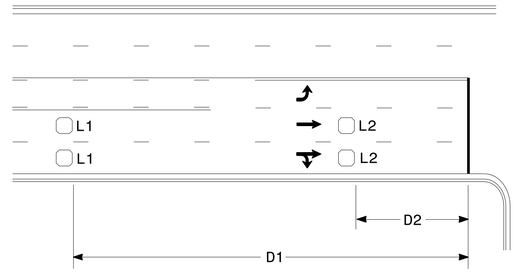


Speed Limit mph	D ft
40	250
45	300
50	355
55	420

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

Volume Density Operation

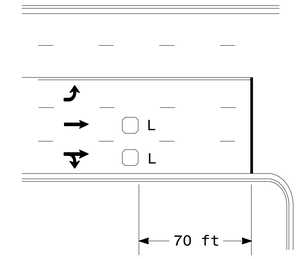
Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

L1 = 6ft X 6ft
Wired in series

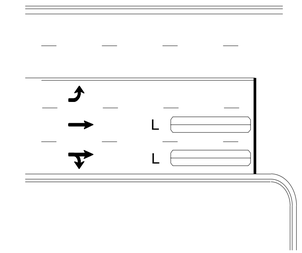
L2 = 6ft X 6ft
Wired in series

"Stretch" Operation

Low Speed Detection
(≤35 mph)



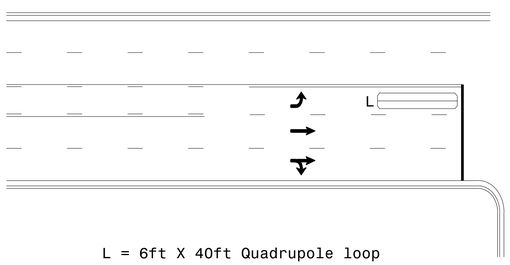
OR



L = 6ft X 6ft
Wired in series

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

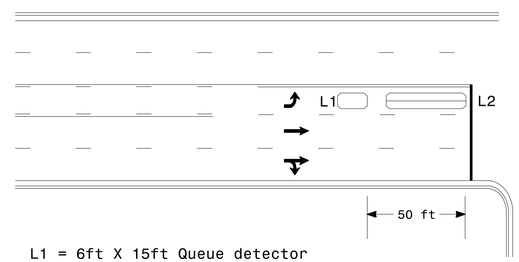
Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

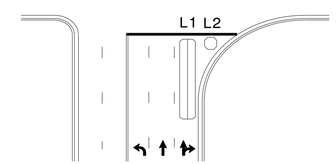
OR



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

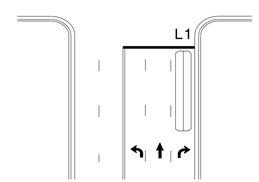
Queue Loop Detection

Right Turn Lane Detection

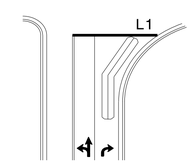


Shared Lane/
Wide Radius Turn

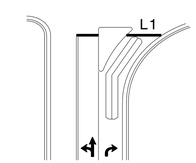
L1 = 6ft X 40ft Quadrupole loop
L2 = 6ft X 6ft [Minimum] Presence loop
Wired separately



Standard Turn

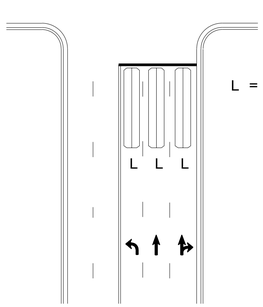


Wide Radius Turn



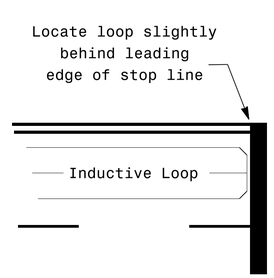
Channelized Turn

Side Street Detection



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

Presence Loop Placement at Stop Lines



Note:
Loop may be located in advance of stop line under any of the following conditions:
1) stop line is greater than 15′ from edge of intersecting roadway
2) loop detects a permissive or protected/permissive left turn
3) for an exclusive right turn lane

Recommended Number of Turns

Single 6′ X 6′ loop
(when wired separately):

Length of Lead-in ft	Number of Turns
< 250	3
250-375	4
375-525	5
> 525	6

Quadrupole loops: Use 2-4-2 turns

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

Prepared in the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signal Design Section
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

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 23489 ENGINEER PAMELA L. ALEXANDER

DocuSigned by: P L Alexander
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1/30/2015
DATE

SIG. INVENTORY NO.

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