Catawba County

2019CPT.12.05.10181, 2019CPT.12.05.20181

1

Map 1
NC 127

Map 2
NC 10

Map 3
NC 16 Bus.

Map 4
NC 16 Bus.

Map 5
NC 16 Bus.

Map 6
SR 1132
Huffman Farm Rd

Map 7
SR 1131
Pittstown Rd

Map 8
SR 1133
Sain Rd

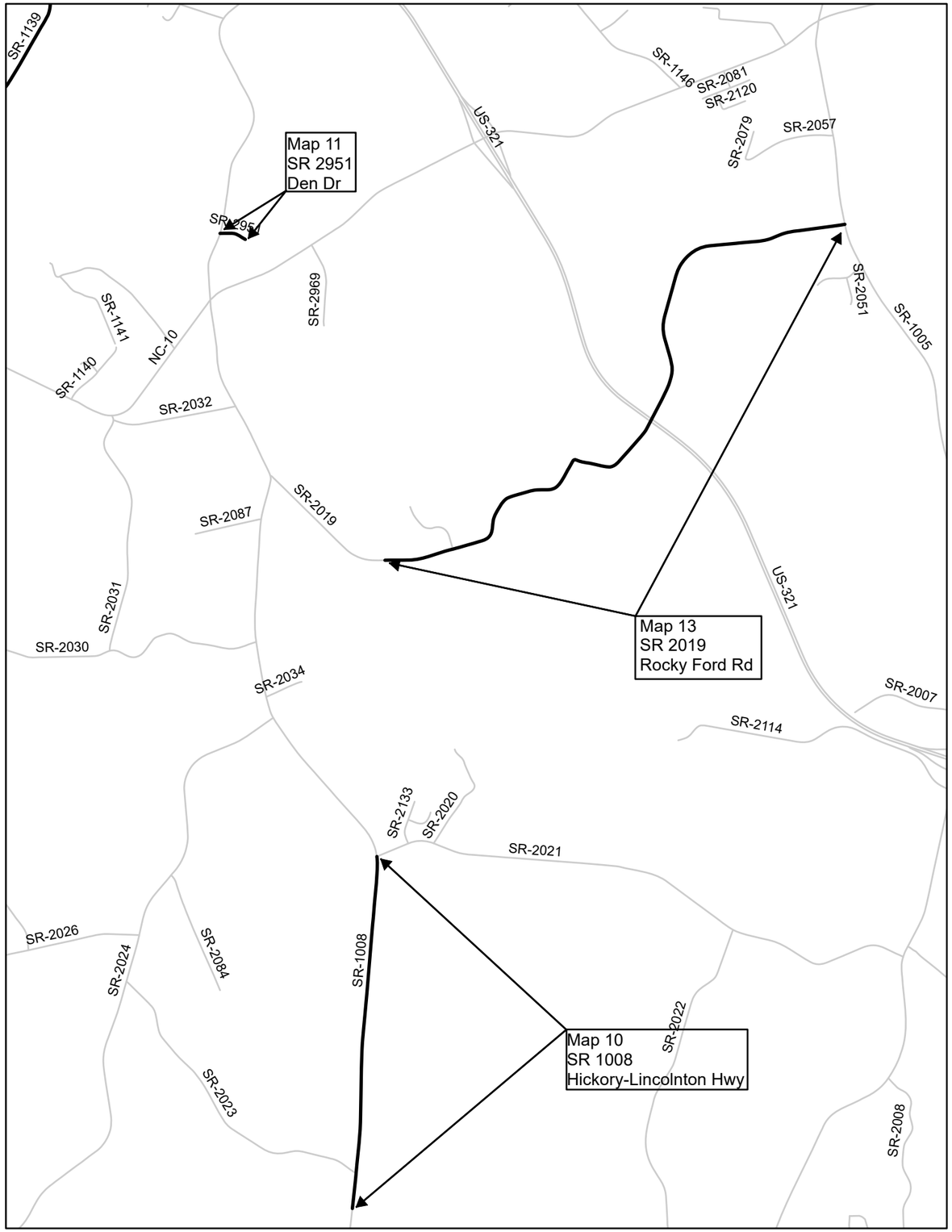
Map 9
SR 1139
Finger Bridge Rd

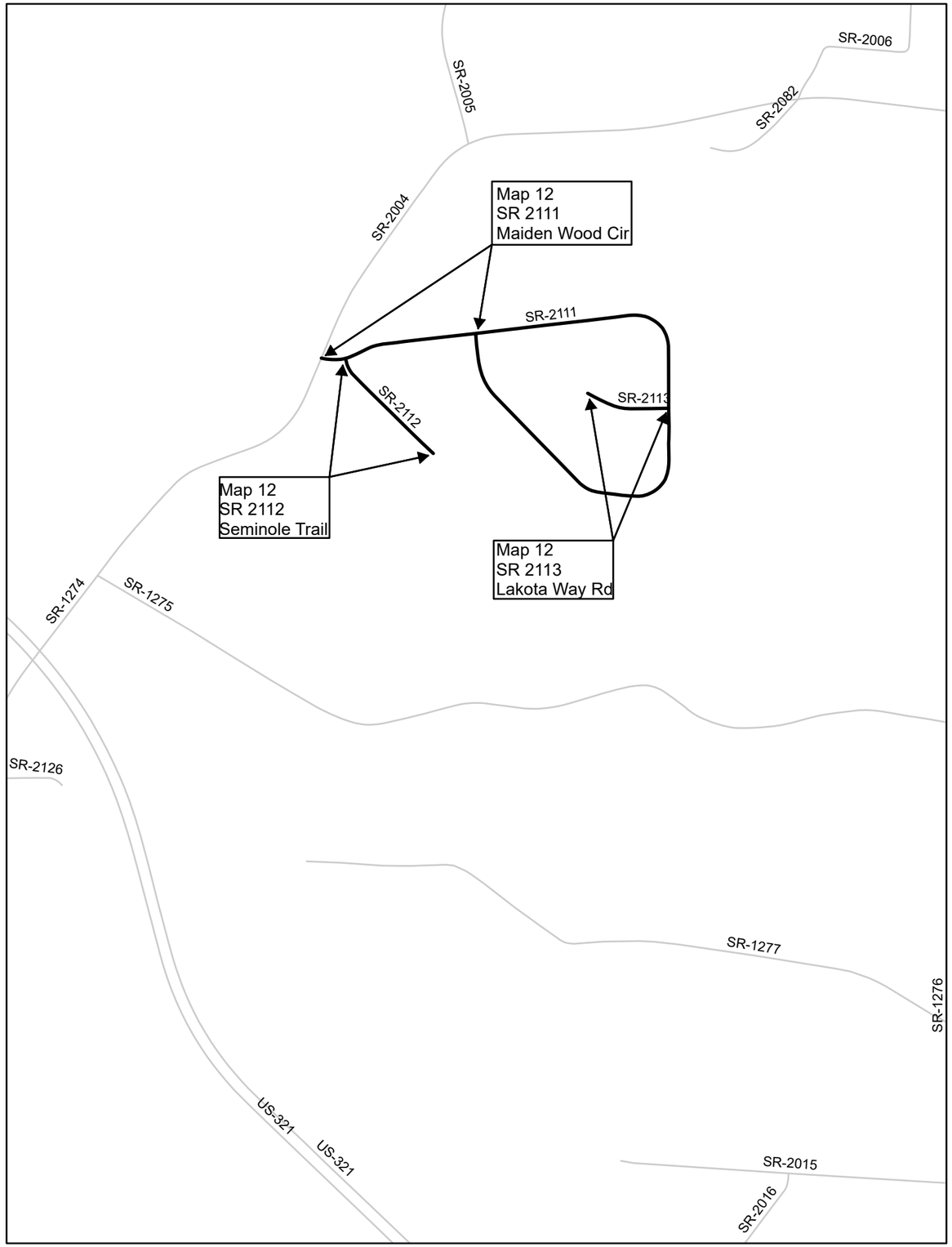
N

Catawba County

2019CPT.12.05.10181, 2019CPT.12.05.20181

2



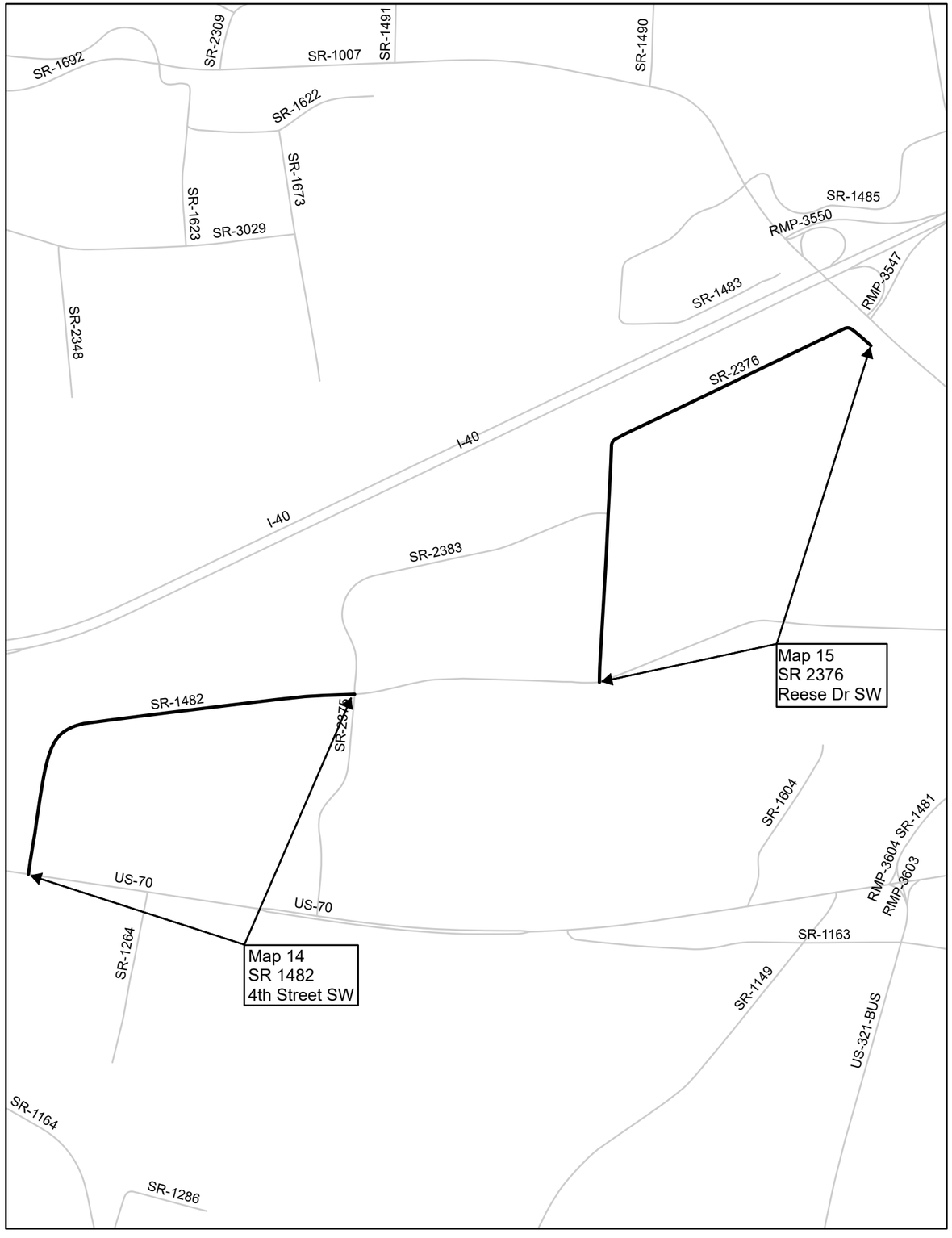


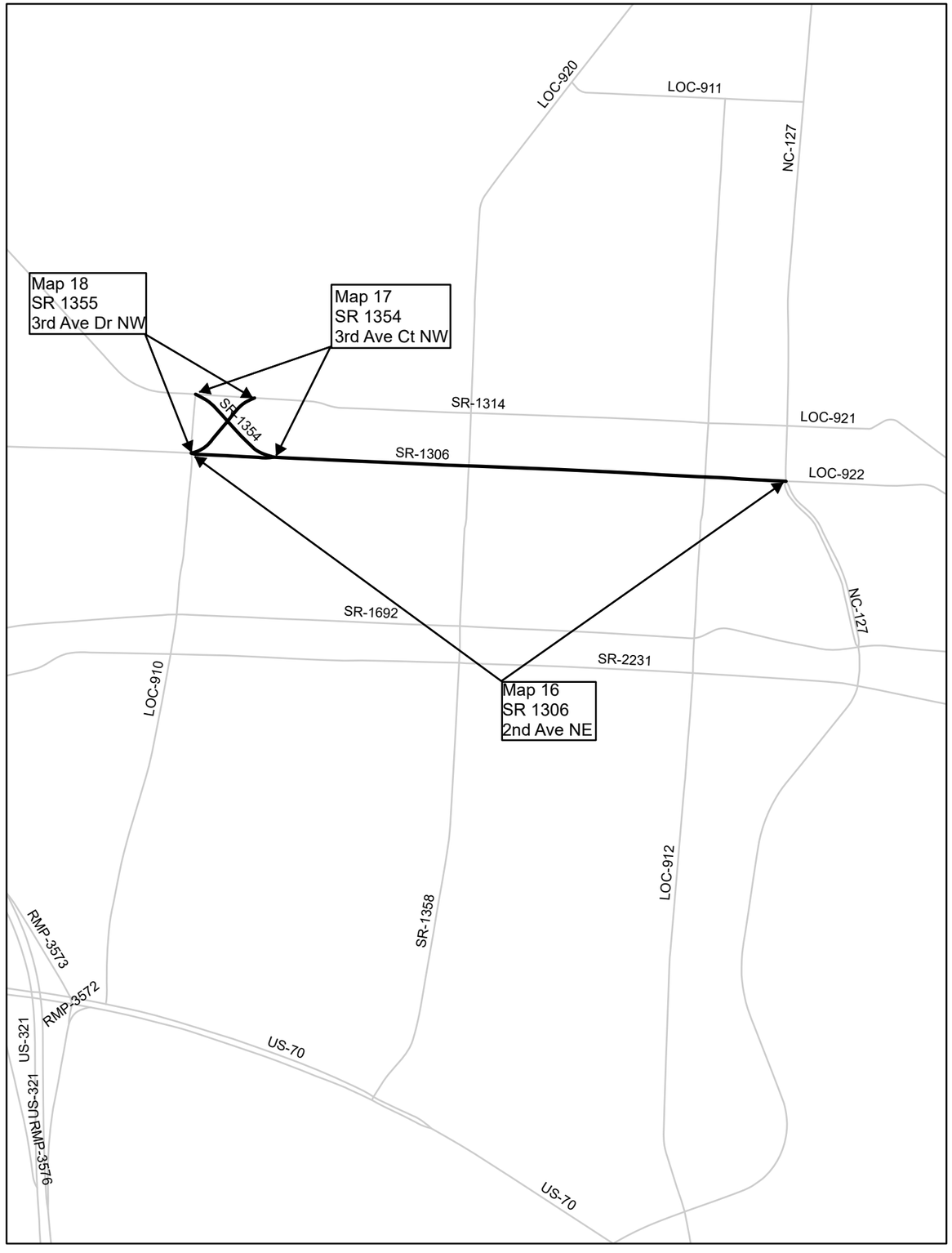
N

Catawba County

2019CPT.12.05.10181, 2019CPT.12.05.20181

3





Catawba County

2019CPT.12.05.10181, 2019CPT.12.05.20181

4

Map 22
SR 1507
Snow Creek Rd

Map 20
SR 1401
16th St NE

Map 21
SR 1500
31st Ave Dr NE

Map 19
SR 1453
Springs Road NE

Map 24
SR 1550
Wedge Wood Dr

Map 23
SR 1519
Valwood Rd

N

Catawba County

2019CPT.12.05.10181, 2019CPT.12.05.20181

5

Map 25
SR 1711
Shook Rd

Map 26
SR 1929
Heart Dr

Map 27
SR 2759
Kestre Valley Ln

N

Catawba County

2019CPT.12.05.10181, 2019CPT.12.05.20181

6

Map 28
SR 2685
Energy Ln

Map 28
SR 2686
Red Cook Rd

SR-2685

SR-2686

SR-1835

SR-2772

SR-3109

SR-1837

Map 29
SR 2738
Caribou Dr

SR-2738

SR-1815

SR-2736

SR-1851

SR-1846

SR-2790

NC-16-BUS

NC-16

NC-16

SR-2729

SR-1888

NC-150

SR-1853

SR-1849

N

Catawba County

2019CPT.12.05.10181, 2019CPT.12.05.20181

7

Map 30
SR 1942
Right Angle St

Map 31
SR 2775
Mundy Ln

Map 31
SR 2773
Lineberger Loop Rd

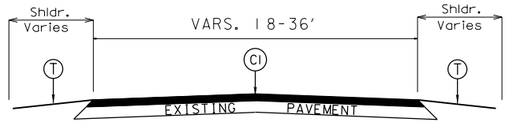
Map 31
SR 2774
Lineberger Rd

N

STATE	PROJECT WBS	SHEET NUMBER
NC	2019CPT.12.05.10181	8
	2019CPT.12.05.20181	

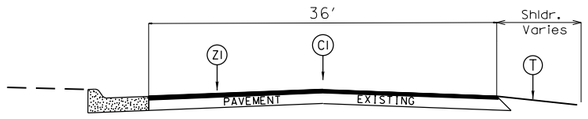
Checked by:

Drawn by: G.Brittain



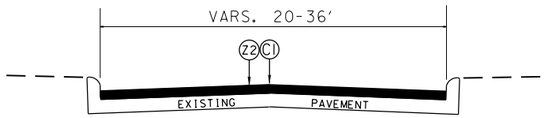
TYPICAL SECTION NO. 1

MAP # 1 - (entire map)
MAP # 2 - 53+33 to 69+70
MAP # 3 - 0+00 to 18+90
MAP # 14 - (entire map)
MAP # 26 - (entire map)



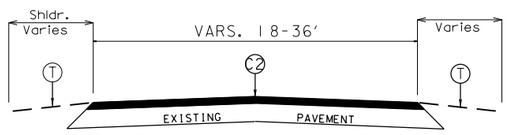
TYPICAL SECTION NO. 2

MAP # 2 - 49+20 to 53+33



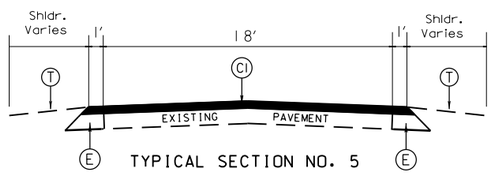
TYPICAL SECTION NO. 3

MAP # 2 - 11+25 to 49+20



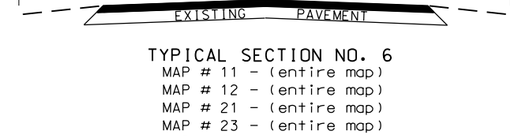
TYPICAL SECTION NO. 4

MAP # 6 - (entire map)
MAP # 7 - (entire map)
MAP # 8 - (entire map)
MAP # 9 - (entire map)
MAP # 10 - (entire map)
MAP # 13 - 97+60 to 122+50
MAP # 15 - (entire map)
MAP # 20 - (entire map)
MAP # 22 - (entire map)
MAP # 25 - (entire map)



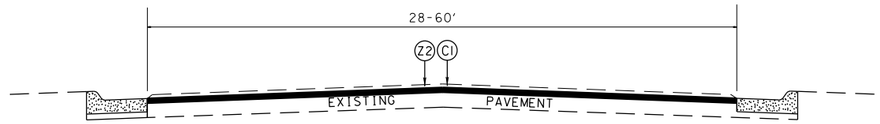
TYPICAL SECTION NO. 5

MAP # 13 - 0+00 to 97+60
MAP # 13 - 122+50 to 170+65



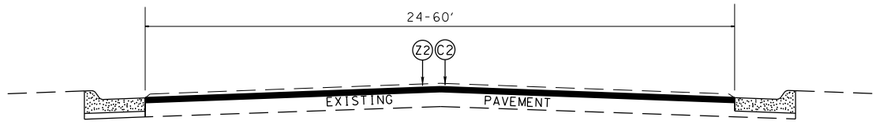
TYPICAL SECTION NO. 6

MAP # 11 - (entire map)
MAP # 12 - (entire map)
MAP # 21 - (entire map)
MAP # 23 - (entire map)
MAP # 24 - (entire map)
MAP # 27 - (entire map)
MAP # 28 - (entire map)
MAP # 29 - (entire map)
MAP # 30 - (entire map)
MAP # 31 - (entire map)



TYPICAL SECTION NO. 7

MAP # 2 - 0+00 TO 11+25
MAP # 3 - 18+90 to 23+76
MAP # 4 - (entire map)
MAP # 5 - (entire map)



TYPICAL SECTION NO. 8

MAP # 16 - (entire map)
MAP # 17 - (entire map)
MAP # 18 - (entire map)
MAP # 19 - (entire map)

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C3	PROP. APPROX. 1" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD.
E	PROP. APPROX. 8.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD., IN EACH OF TWO LIFTS.
T	AGGREGATE SHOULDER BORROW (SHOULDER RECONSTRUCTION, WIDTH VARIES 2'-6')
Z1	MILL ASPHALT PAVEMENT APPROXIMATELY 0" TO 1.5" DEPTH, 0" ON CENTER AND 1.5" AT CURB
Z2	MILL ASPHALT PAVEMENT APPROXIMATELY 1.5" DEPTH
Y1	INCIDENTAL MILLING

2019-2020
Resurfacing Program
Typical Sections
Catawba County NC

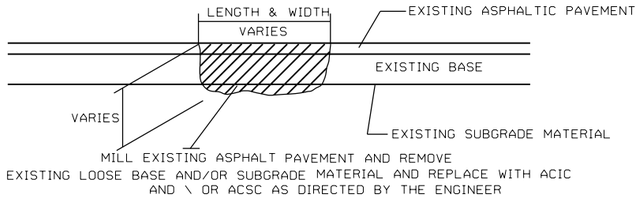
STATE	PROJECT WBS	SHEET NUMBER
NC	2019CPT.12.05.10181	9
	2019CPT.12.05.20181	

Checked by:

Drawn by: G.Brittain

DETAIL A

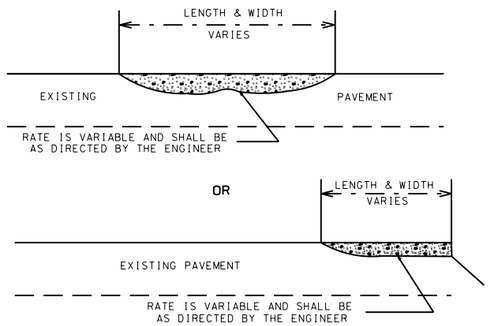
PATCHING EXISTING PAVEMENT



MILL EXISTING ASPHALT PAVEMENT AND REMOVE
EXISTING LOOSE BASE AND/OR SUBGRADE MATERIAL AND REPLACE WITH ACIC
AND \ OR ACSC AS DIRECTED BY THE ENGINEER

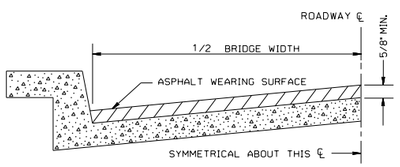
DETAIL B

ASPHALT CONCRETE SURFACE COURSE
TYPE S9.5B OR S9.5C (LEVELING COURSE)



DETAIL C

BRIDGE HALF TYPICAL SECTION



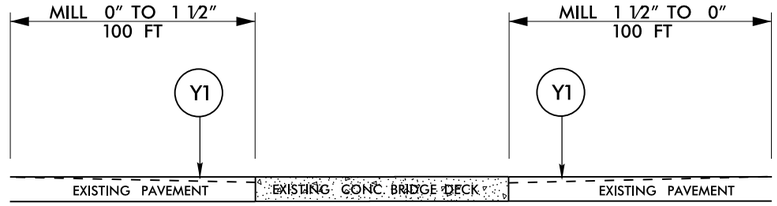
FOR BRIDGES WITH FLOOR DRAINS, CARE SHALL BE EXERCISED IN PLACING THE WEARING SURFACE AROUND FLOOR DRAINS SO AS NOT TO HINDER EFFECTIVE DRAINAGE. ALL DRAINS SHALL BE LEFT OPEN.

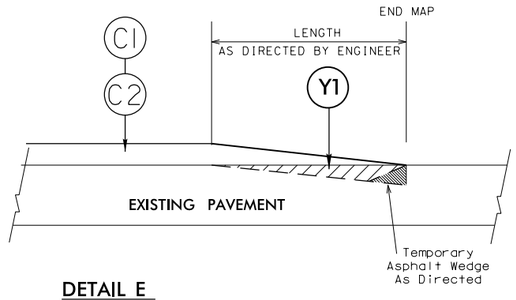
THE PROPOSED WEARING SURFACE SHALL VARY IN THICKNESS AS NECESSARY TO PROVIDE A SMOOTH RIDING SURFACE. A THICKNESS OF NOT LESS THAN 5/8" SHALL BE PROVIDED. THE MAXIMUM THICKNESS SHALL PREFERABLY BE 1-1/2" UNLESS IT IS IMPRACTICAL TO PROVIDE A SMOOTH RIDING SURFACE OTHERWISE.

NOTES

ALL UNPAVED S.R. ROADS TO BE SURFACED 50' FROM EDGE OF PAVEMENT OF MAIN PROJECT.
ALL PAVED S.R. ROADS TO BE RESURFACED TO THE ENDS OF THE RADII, OR AS DIRECTED BY THE ENGINEER.
EDGES, PAVEMENT WIDENING, INTERSECTIONS AND BRIDGE FLARES ARE INCLUDED IN THE TABLE OF QUANTITIES.
SHOULDERS AND DITCHES ARE TO BE CONSTRUCTED BY OTHERS UNLESS OTHERWISE NOTED.
BRIDGES TO BE RESURFACED AT LOCATIONS AND TO DEPTH AS DIRECTED BY THE ENGINEER.

DETAIL D
MILLING BRIDGE APPROACHES





DETAIL E
TIE–IN (INCIDENTAL) MILLING DETAIL

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C3	PROP. APPROX. 1" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD.
E	PROP. APPROX. 8.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD., IN EACH OF TWO LIFTS.
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Z1	MILL ASPHALT PAVEMENT APPROXIMATELY 0" TO 1.5" DEPTH, 0" ON CENTER AND 1.5" AT CURB
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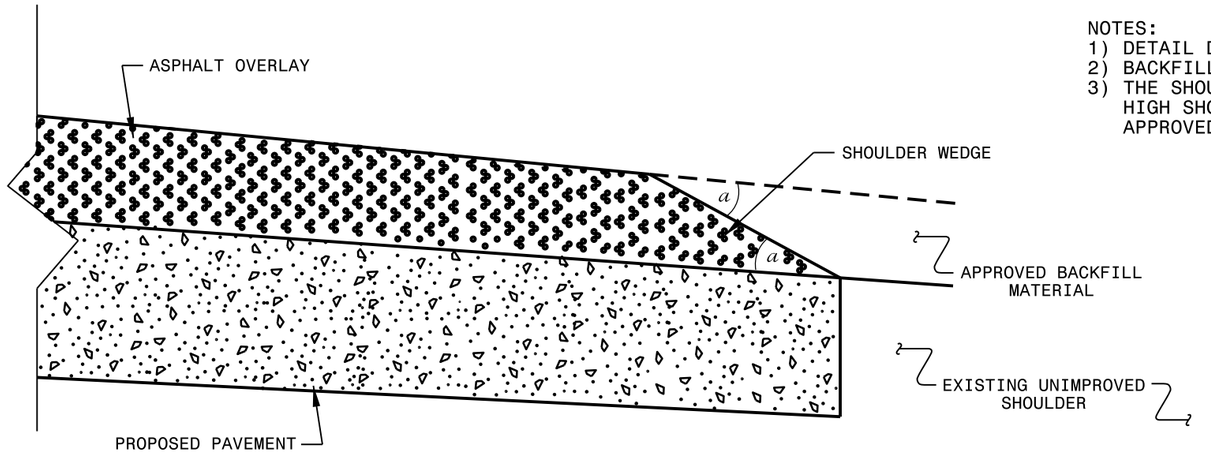
Y1	INCIDENTAL MILLING

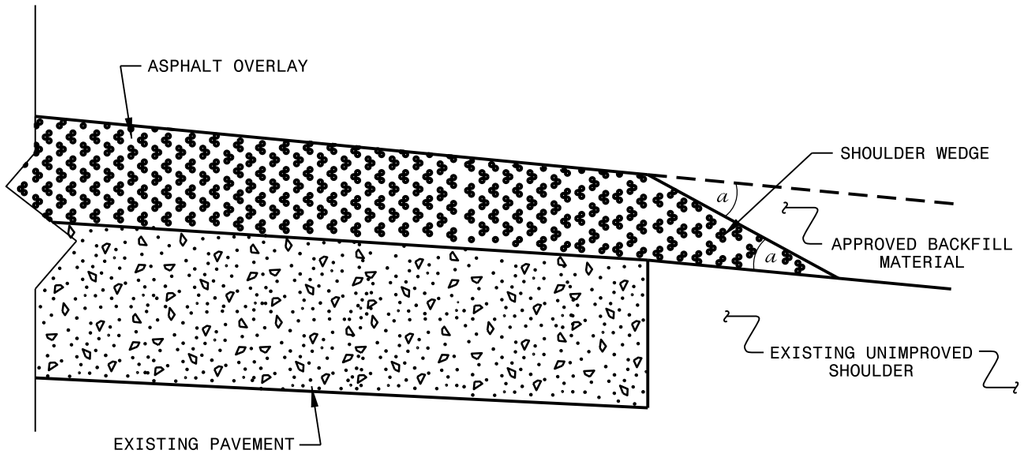
2019–2020
Resurfacing Program
Typical Sections
Catawba County NC



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, SIDE STREETS, HIGH SHOULDERS, AND OTHER LOCATIONS NOT FEASIBLE TO CONSTRUCT AS APPROVED BY THE ENGINEER.

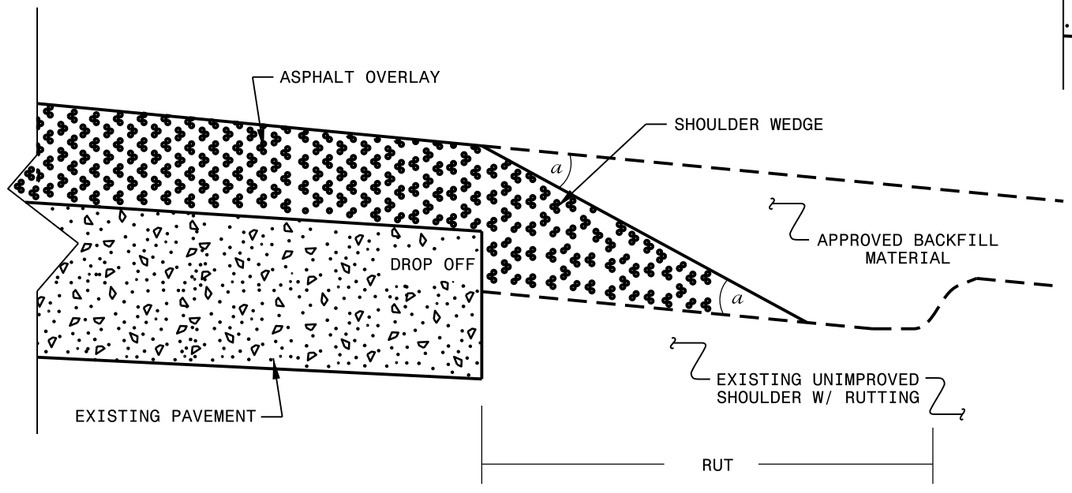
SHOULDER WEDGE DETAIL

(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: 2/2/16
CHECKED BY: DATE:
FILE SPEC.: sjusr/details/stand/shoulderwedgedetail.dgn

22-JAN-2018 09:41
S:\Contracts\Contracts\Resurfacing Projects\Division 4\I-5937 Wilson March 2018\Revised Shoulder Wedge Detail.dgn
pporter AI CSD-2925/2

PROJECT NO.	SHEET NO.	TOTAL NO.
2019CPT.12.05.10181, etc	11	

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	INC. STONE BASE	SH. RECONSTRUCTION	ASB	1½" MILLING	0" TO 1.5" MILLING	INC. MILLING	B25.0C	S9.5C	S9.5B	S9.5B (LEVELING COURSE)	S9.5C (LEVELING COURSE)	ASPHALT BINDER FOR PLANT MIX	PATCHING EXISTING PAVEMENT	RETRO-FIT EXI. CURB RAMP	REM. & REPLACE CONC RAMPS	ADJ. OF MAN-HOLES	ADJ. OF METER/ VALVE BOXES	PORTABLE LIGHTING	JUNCTION BOX (STANDARD SIZE)	INDUCTIVE LOOP	LEAD-IN CABLE (14-2)
										MI	FT	TON	SMI	TON	SY	SY	SY	TON	TONS	TON	TON	TONS	TONS	TONS	EA	EA	EA	EA	LS	EA	LF	LF
2019CPT.12.05.10181	Catawba	1	NC 127	FROM NC 10 TO PROJECT LIMITS OF U-2530A NEAR SR 1132 (HUFFMAN FARM RD)	1	2	2WD	NO	NO	2.32	24-36		4.64	232			1,000		3,600			10	217	200						3	250	100
		2	NC 10	FROM US 321 BUS TO NC 16 BUS	1, 2, 3, 7	2	2WD	NO	NO	1.32	24-60		0.70	45	18,614	2,250	540		2,447				147		6	3	10	12	*		500	750
		3	NC 16 BUS	FROM NC 10 TO NC 16	1, 7	2	2WD	NO	NO	0.81	24-48		1.44	72	2,250				1,166				70						*		250	100
		4	NC 16 BUS (N/S MAIN ST)	FROM NC 10 TO SR 1481(7TH ST PL SW)	7	2	2WD	NO	NO	2.92	24-45				28,000				4,800				288		6	7	30	11	*		3,000	1,200
			*Note Section between A Street and 2nd Street to be omitted due to City Street Scape Project: Contractor to tie into either end of project limits																													
		5	NC 16 BUS(N/S COLLEGE AVE)	FROM NC 10 TO NC 16 BUS	7	2	2WD	NO	NO	0.53	36-40				8,810				777				47			8	11	8	*	2	900	1,500
			*Note Section between A Street and 2nd Street to be omitted due to City Street Scape Project: Contractor to tie into either end of project limits																													
TOTAL FOR PROJ NO. 2019CPT.12.05.10181										**7.9**			**6.78**	**349**	**57,674**	**2,250**	**1,540**		**12,790**			**10**	**769**	**200**	**12**	**18**	**51**	**31**	**1**	**5**	**4,900**	**3,650**
		6	SR 1132 (HUFFMAN FARM RD)	FROM PROJECT LIMITS OF U-2530A NEAR NC 127 TO SR 1131 (PITTSTOWN RD)	4	2	2WD	NO	NO	0.98	18	10	1.96	100						914	305		82	75									
		7	SR 1131 (PITTSTOWN RD)	FROM SR 1176 (BETHEL CH RD) TO SR 1008 (ZION CH RD)	4	2	2WD	NO	NO	3.87	18	50	7.74	390			90			3,607	1,202		322	90									
		8	SR 1133 (SAIN RD)	FROM SR 1176 (BETHEL CH RD) TO SR 1131 (PITTSTOWN RD)	4	2	2WD	NO	NO	1.78	18	10	3.56	180						1,658			111	200									
		9	SR 1139 (FINGER BRIDGE RD)	FROM SR 1131 (PITTSTOWN RD) TO NC 10	4	2	2WD	NO	NO	3.09	18	20	6.18	310						2,878	960		257	70									
		10	SR 1008 (HICKORY-LINCOLNTON HWY)	FROM SR 2021 (BLACKBURN BRIDGE RD) TO LINCOLN CO	4	2	2WD	NO	NO	1.73	19	10	6.92	350						1,701			114	40									
		11	SR 2951 (DEN DR)	FROM SR 1008 (ZION CH RD) TO CUL-DE-SAC	6	2	2WD	NO	NO	0.131	19									110			7	20									
		12	SR 2111 (MAIDEN WOOD CIR)	FROM SR 2004 (SALEM CH RD) TO SR 2111 (MAIDEN WOOD CIR)	6	2	2WD	NO	NO	0.925	20									641			43	150									
		"	SR 2113 (LAKOTA WAY RD)	FROM SR 2111 (MAIDEN WOOD CIR) TO CUL-DE-SAC	6	2	2WD	NO	NO	0.099	19									121			8	20									
		"	SR 2112 (SEMINOLE TRAIL RD)	FROM SR 2111 (MAIDEN WOOD CIR) TO CUL-DE-SAC	6	2	2WD	NO	NO	0.154	19									121			8	10									
		13	SR 2019 (ROCKY FORD RD)	FROM SR 1005 (STARTOWN RD) TO PVMT CHANGE	4, 5	2	2WD	NO	NO	3.24	20	20	6.48	325			1,350	2,960	4,027					375									
		14	SR 1482 (4TH STREET SW)	FROM US 70 TO SR 2375 (BUMGARNER INDUSTRIAL DR SW)	1	2	2WU	NO	NO	0.87	24		1.74	90					1,171				70	200									
		15	SR 2376 (REESE DR SW)	FROM SR 1482 (4TH ST SW) TO END MAINT	4	2	2WD	NO	NO	1.04	24		2.08	105						1,292			87	350									
		16	SR 1306 (2ND AVE NE)	FROM NC 127 TO 9TH ST NW	8	2	2WD	NO	NO	0.94	30				16,545					1,390			93	20	10		30	7				
		17	SR 1354 (3RD AVE CT NW)	FROM SR 1314 (3ND AVE NW) TO SR 1306 (2ND AVE NE)	8	2	2WD	NO	NO	0.14	24				1,971					174			12			2						
		18	SR 1355 (3RD AVE DR NW)	SR 1314 (3ND AVE NW) TO SR 1306 (2ND AVE NW)	8	2	2WD	NO	NO	0.14	24				1,971					174			12	50		4						
		19	SR 1453 (SPRINGS ROAD NE)	FROM SR 1491 (SECTION HOUSE RD) TO SR 1007 (HIGHLAND AVE NE)	8	2	2WD	NO	NO	2.8	60				98,560					8,694			582				20	24				
		20	SR 1401 (16TH ST NE)	FROM SR 1400 (KOOL PARK RD NE) TO SR 1402 (29TH AVE DR NE)	4	2	2WD	NO	NO	1.3	24		2.60	130						1,594			107	450			4					
		21	SR 1500 (31ST AVE DR NE)	FROM SR 1401 (16TH ST NE) TO END MAINT	6	2	2WD	NO	NO	0.77	18									472			32	20								
		22	SR 1507 (SNOW CREEK RD NE)	FROM SR 1401 (16TH ST NE) TO SR 1529 (SULFER SPRINGS RD NE)	4	2	2WD	NO	NO	1.85	24	20	3.70	200						2,268			152	150								
		23	SR 1519 (VALWOOD RD)	FROM SR 1453 (ST PETERS CH RD) TO END MAINT	6	2	2WD	NO	NO	1.11	20	10								755			51	300								
		24	SR 1550 (WEDGE WOOD DR)	FROM SR 1519 (VALWOOD RD) TO END MAINT	6	2	2WD	NO	NO	0.43	20	10								293			20	100								
		25	SR 1711 (SHOOK RD)	FROM NC 16 TO SR 1709 (ROCK BARN RD)	4	2	2WD	NO	NO	1.52	20	20	3.04	152						1,555			104									
		26	SR 1929 (HEART DR)	FROM US 70 TO END MAINT	1	2	2WD	NO	NO	0.3	24		0.60	30					368				22	50								
		27	SR 2759 (KESTRE VALLEY LN)	FROM SR 1848 (SHERRILLS FORD RD) TO CUL-DE-SAC	6	2	2WD	NO	NO	0.33	20									225			15	80								
		28	SR 2685 (ENERGY LN)	FROM SR 1835 (MOLLY'S BACKBONE RD) TO SR 2686 (RED COOK RD)	6	2	2WD	NO	NO	0.32	20									218			15	75								
		"	SR 2686 (RED COOK RD)	FROM END MAINT TO END MAINT	6	2	2WD	NO	NO	0.13	18									80			5	40								
		29	SR 2738 (CARIBOU DR)	FROM SR 1851 (LINEBERGER RD) TO CUL-DE-SAC	6	2	2WD	NO	NO	0.52	20									354			24	80								
		30	SR 1942 (RIGHT ANGLE ST)	FROM SR 1815 (LITTLE MOUNTAIN RD) TO END MAINT	6	2	2WD	NO	NO	0.49	18									300			20	20								
		31	SR 2773 (LINEBERGER LOOP RD)	FROM SR 1852 (BURRIS RD) TO SR 2774 (LINEBERGER RD)	6	2	2WD	NO	NO	0.63	20									429			29	40								
		"	SR 2774 (LINEBERGER RD)	FROM SR 2773 (LINEBERGER LOOP RD) TO END MAINT	6	2	2WD	NO	NO	0.45	20									306			21	60				1				
		"	SR 2775 (MUNDY RD)	FROM SR 2774 (LINEBERGER RD) TO END MAINT	6	2	2WD	NO	NO	0.31	18									190			13	125								
TOTAL FOR PROJ NO. 2019CPT.12.05.20181										**32.389**		**180**	**46.60**	**2,362**	**119,047**		**1,440**	**2,960**	**5,566**	**32,514**	**2,467**		**2,811**	**2,885**	**10**	**6**	**54**	**32**				
GRAND TOTAL										**40.289**		**180**	**53.38**	**2,711**	**176,721**	**2,250**	**2,980**	**2,960**	**18,356**	**32,514**	**2,467**	**10**	**3,580**	**3,085**	**22**	**24**	**105**	**63**	**1**	**5**	**4,900**	**3,650**

PROJECT NO.	SHEET NO.	TOTAL NO.
2019CPT.12.05.10181, etc	12	

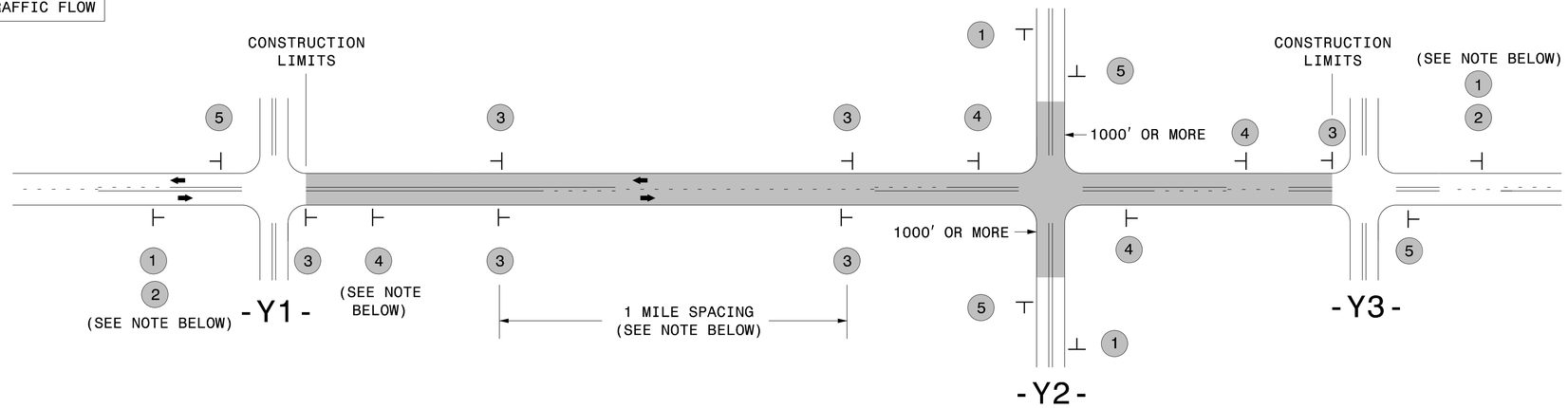
THERMOPLASTIC AND PAINT QUANTITIES

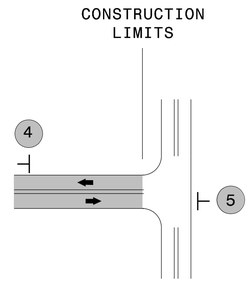
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	WIDTH	4413000(WZ ADV. GEN. WARN. SIGNING	445700 TEMP TRAFFIC CONTROL	4695000000-E 8" X 90 MILS YELLOW THERMO	8" X 90 M WHITE THERMO	47050 16" X 120 M WHITE THER	4710000 24" X 120 M WHITE THERMO	4721000000-E THERMO MSG ONLY 120 M	THERMO MSG SCHOOL 120 M	THE RMO RXR 120 M	4725000000-E THERMO LT ARROW 90 M	THERMO STR & RT ARROW 90	THERMO MERGE ARROW (90	THERMO RT ARROW 90 M	THERMO STR ARROW 90 M	THERMO STR & LT ARROW 90	4810000000-E 4" WHITE PAINT	4" YELLOW PAINT	4835000 24" WHITE PAINT	4845000000-N PAINT LT ARROW	PAINT STR ARROW	PAINT RT ARROW	PAINT STR & RT ARROW	PAINT STR & LT ARROW	4905.. SNOW PLOWABLE MARKERS
								MI	FT	SF	LS	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	LF	LF	LF	EA	EA	EA	EA	EA	EA
2019CPT.12.05.10181	Catawba	1	NC 127	FROM NC 10 TO PROJECT LIMITS OF U-2530A NEAR SR 1132 (HUFFMAN FARM RD)	1	2	2WD	2.32	24-36	96	1				28				2	1	2				49,000	49,000	28	2					160
		2	NC 10	FROM US 321 BUS TO NC 16 BUS	1, 2, 3, 7	2	2WD	1.32	24-60	288		100			177	20			14		3	2	3		9,500	27,900	177	14	3	2			150
		3	NC 16 BUS	FROM NC 10 TO NC 16	1, 7	2	2WD	0.81	24-48	48		25			44				7	2			2		17,150	25,660	44	7	2		2		90
		4	NC 16 BUS (N/S MAIN ST)	FROM NC 10 TO SR 1481(7TH ST PL SW)	7	2	2WD	2.92		240					310	4			41	5			1	2	11,000	61,700	220	41	1		5	2	250
			*Note Section between A Street and 2nd Street to be omitted due to City Street Scape Project: Contractor to tie into either end of project limits																														
		5	NC 16 BUS (N/S COLLEGE AVE)	FROM NC 10 TO NC 16 BUS	7	2	2WD	0.53	36-40	120			108		275				2	2		2		3	6,900		170	2		2	2	2	35
			*Note Section between A Street and 2nd Street to be omitted due to City Street Scape Project: Contractor to tie into either end of project limits																														
			TOTAL FOR PROJ NO. 2019CPT.12.05.10181					**7.9**		**792**	**1**	**125**	**108**		**834**	**24**			**66**	**10**	**5**	**4**	**6**	**5**	**93,550**	**164,260**	**639**	**66**	**6**	**4**	**9**	**4**	**685**
												233				**24**			**96**						**257,810**			**89**				
2019CPT.12.05.20181	Catawba	6	SR 1132 (HUFFMAN FARM RD)	FROM PROJECT LIMITS OF U-2530A NEAR NC 127 TO SR 1131 (PITTSTOWN RD)	4	2	2WD	0.98	18	48															20,700	20,700							
		7	SR 1131 (PITTSTOWN RD)	FROM SR 1176 (BETHEL CH RD) TO SR 1008 (ZION CH RD)	4	2	2WD	3.87	18	120															81,750	81,750							
		8	SR 1133 (SAIN RD)	FROM SR 1176 (BETHEL CH RD) TO SR 1131 (PITTSTOWN RD)	4	2	2WD	1.78	18	48															37,600	37,600							
		9	SR 1139 (FINGER BRIDGE RD)	FROM SR 1131 (PITTSTOWN RD) TO NC 10	4	2	2WD	3.09	18	96															65,275	65,275							
		10	SR 1008 (HICKORY-LINCOLNTON HWY)	FROM SR 2021 (BLACKBURN BRIDGE RD) TO LINCOLN CO	4	2	2WD	1.73	19	72															36,550	36,550							
		11	SR 2951 (DEN DR)	FROM SR 1008 (ZION CH RD) TO CUL-DE-SAC	6	2	2WD	0.131	19	24																							
		12	SR 2111 (MAIDEN WOOD CIR)	FROM SR 2004 (SALEM CH RD) TO SR 2111 (MAIDEN WOOD CIR)	6	2	2WD	0.925	20	24																							
		"	SR 2113 (LAKOTA WAY RD)	FROM SR 2111 (MAIDEN WOOD CIR) TO CUL-DE-SAC	6	2	2WD	0.099	19																								
		"	SR 2112 (SEMINOLE TRAIL RD)	FROM SR 2111 (MAIDEN WOOD CIR) TO CUL-DE-SAC	6	2	2WD	0.154	19																								
		13	SR 2019 (ROCKY FORD RD)	FROM SR 1005 (STARTOWN RD) TO PVMT CHANGE	4, 5	2	2WD	3.24	20	48															68,450	68,450							
		14	SR 1482 (4TH STREET SW)	FROM US 70 TO SR 2375 (BUMGARNER INDUSTRIAL DR SW)	1	2	2WU	0.87	24	120									4			3			18,380	18,380		4		3			
		15	SR 2376 (REESE DR SW)	FROM SR 1482 (4TH ST SW) TO END MAINT	4	2	2WD	1.04	24	60															21,975	21,975							
		16	SR 1306 (2ND AVE NE)	FROM NC 127 TO 9TH ST NW	8	2	2WD	0.94	30	240			445		160					10				10	4,200		290				7	7	75
		17	SR 1354 (3RD AVE CT NW)	FROM SR 1314 (3ND AVE NW) TO SR 1306 (2ND AVE NE)	8	2	2WD	0.14	24	24					60				2	1			6	2	1,500		60	2	6		1	2	12
		18	SR 1355 (3RD AVE DR NW)	SR 1314 (3ND AVE NW) TO SR 1306 (2ND AVE NW)	8	2	2WD	0.14	24	24					30						2		5		1,500		30		5				12
		19	SR 1453 (SPRINGS ROAD NE)	FROM SR 1491 (SECTION HOUSE RD) TO SR 1007 (HIGHLAND AVE NE)	8	2	2WD	2.8	60	240					525		18		97	16		7	36	3	15,000	59,750	525	97	36	7	16	3	750
		20	SR 1401 (16TH ST NE)	FROM SR 1400 (KOOL PARK RD NE) TO SR 1402 (29TH AVE DR NE)	4	2	2WD	1.3	24	96		100	100		90				7	2					27,500	27,500	90	7			2		90
		21	SR 1500 (31ST AVE DR NE)	FROM SR 1401 (16TH ST NE) TO END MAINT	6	2	2WD	0.77	18	24															16,300	16,300							
		22	SR 1507 (SNOW CREEK RD NE)	FROM SR 1401 (16TH ST NE) TO SR 1529 (SULFER SPRINGS RD NE)	4	2	2WD	1.85	24	48					100		12								39,100	39,100							
		23	SR 1519 (VALWOOD RD)	FROM SR 1453 (ST PETERS CH RD) TO END MAINT	6	2	2WD	1.11	20	24															23,500	23,500							
		24	SR 1550 (WEDGE WOOD DR)	FROM SR 1519 (VALWOOD RD) TO END MAINT	6	2	2WD	0.43	20	24																							
		25	SR 1711 (SHOOK RD)	FROM NC 16 TO SR 1709 (ROCK BARN RD)	4	2	2WD	1.52	20	72															32,110	32,110							
		26	SR 1929 (HEART DR)	FROM US 70 TO END MAINT	1	2	2WD	0.3	24	24				100	50			4															
		27	SR 2759 (KESTRE VALLEY LN)	FROM SR 1848 (SHERRILLS FORD RD) TO CUL-DE-SAC	6	2	2WD	0.33	20	24																							
		28	SR 2685 (ENERGY LN)	FROM SR 1835 (MOLLY'S BACKBONE RD) TO SR 2686 (RED COOK RD)	6	2	2WD	0.32	20	24																							
		"	SR 2686 (RED COOK RD)	FROM END MAINT TO END MAINT	6	2	2WD	0.13	18																								
		29	SR 2738 (CARIBOU DR)	FROM SR 1851 (LINEBERGER RD) TO CUL-DE-SAC	6	2	2WD	0.52	20	24																							
		30	SR 1942 (RIGHT ANGLE ST)	FROM SR 1815 (LITTLE MOUNTAIN RD) TO END MAINT	6	2	2WD	0.49	18	24																							
		31	SR 2773 (LINEBERGER LOOP RD)	FROM SR 1852 (BURRIS RD) TO SR 2774 (LINEBERGER RD)	6	2	2WD	0.63	20	24																							
		"	SR 2774 (LINEBERGER RD)	FROM SR 2773 (LINEBERGER LOOP RD) TO END MAINT	6	2	2WD	0.45	20																								
		"	SR 2775 (MUNDY RD)	FROM SR 2774 (LINEBERGER RD) TO END MAINT	6	2	2WD	0.31	18																								
			TOTAL FOR PROJ NO. 2019CPT.12.05.20181					**32.389**		**1,620**		**100**	**545**	**100**	**1,015**		**30**	**4**	**110**	**29**	**2**	**10**	**47**	**15**	**511,390**	**548,940**	**995**	**110**	**47**	**10**	**26**	**12**	**939**
												645				**34**			**213**						**1,060,330**			**205**				
			GRAND TOTAL					**40.289**		**2,412**	**1**	**225**	**653**	**100**	**1,849**	**24**	**30**	**4**	**176**	**39**	**7**	**14**	**53**	**20**	**604,940**	**713,200**	**1,634**	**176**	**53**	**14**	**35**	**16**	**1,624**
												878				**58**			**309**						**1,318,140**			**294**				

PROJ. REFERENCE NO.	SHEET NO.
2019CPT.12.05.10181, etc	TMP-1

SIGNING FOR RESURFACING PROJECTS

LEGEND
- ⊢ STATIONARY SIGN
- ⬅ DIRECTION OF TRAFFIC FLOW





TEE INTERSECTION

MAINLINE (-L-) SIGNING

SIGNING NOTES AND PLACEMENT PER DIRECTION

1 — ROAD WORK AHEAD — W20-1, 48″ X 48″
2 — NEXT XX MILES — W7-3aP, 24″ X 18″

PLACE 1000′ PRIOR TO BEGINNING OF CONSTRUCTION LIMITS.
ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000′ ALONG -Y- LINE.

#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 — LOW SOFT SHOULDER — SP 13107, 48″ X 48″

- PLACE INITIALLY AT THE CONSTRUCTION LIMITS AND SPACE 1 MILE APART THEREAFTER.
- AT TEE INTERSECTIONS INSTALL INITIALLY ½ MILE FROM INTERSECTION AND SPACE 1 MILE APART 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.
- FOR TEE INTERSECTIONS, INSTALL WITHIN 500′ +/- OF THE INTERSECTION ALONG -L- LINE.

5 — END ROAD WORK — G20-2 A, 48″ X 24″

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.

-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, PORTABLE ADVANCE WARNING SIGNS SHALL BE USED ALONG THE -Y- LINE AS SHOWN BELOW. REMOVE UPON COMPLETION OF WORK.

PLACED 500′ IN ADVANCE OF FLAGGER.

PLACED 250′ IN ADVANCE OF FLAGGER.

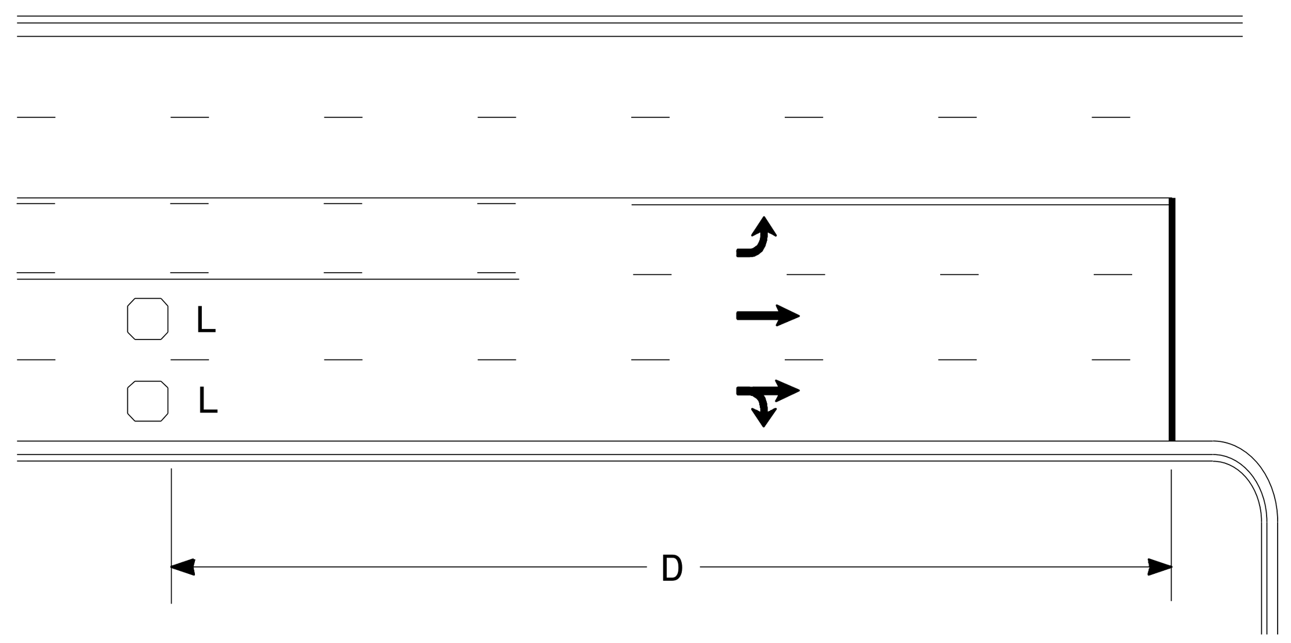
DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

ADVANCE WARNING SIGNS FOR RURAL AND SUBURBAN 2-LANE ROADWAY RESURFACING

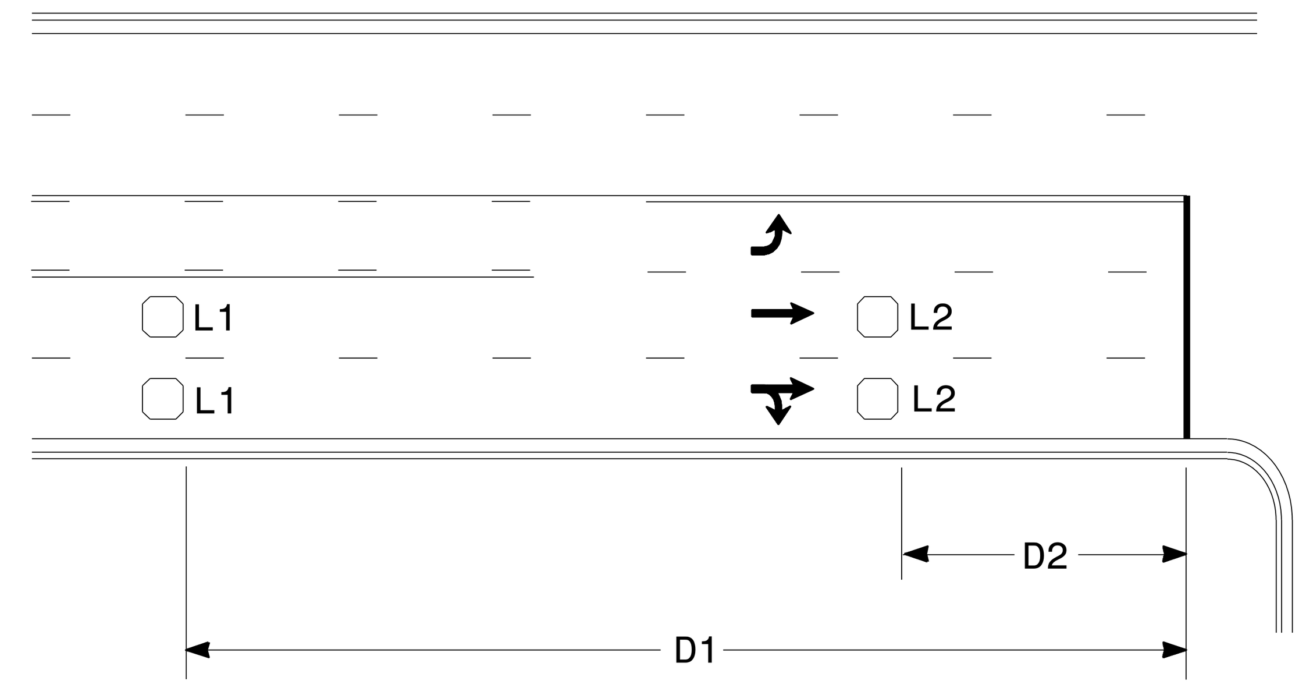
5/15/2017
SATMU\WZTC\Resurfacing\2L2W & AST Resurfacing Details\Resurfacing_AdvWarn_2Ln.dgn
User:keddis

PROJECT REFERENCE NO.	SHEET NO.
2019CPT.12.05.10181, etc	SIG-1

High Speed Detection
(≥40 mph)



OR



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

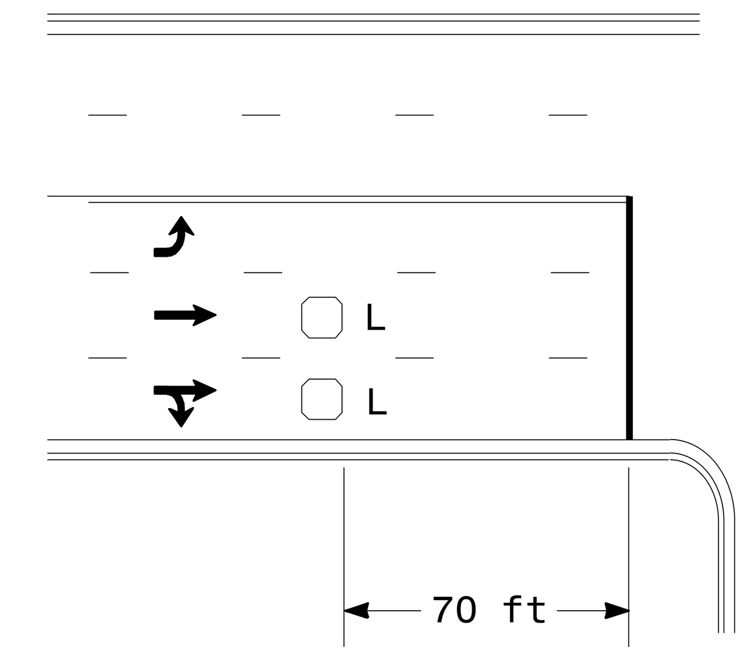
Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

L1 = 6ft X 6ft
Wired in series

L2 = 6ft X 6ft
Wired in series

"Stretch" Operation

Low Speed Detection
(≤35 mph)



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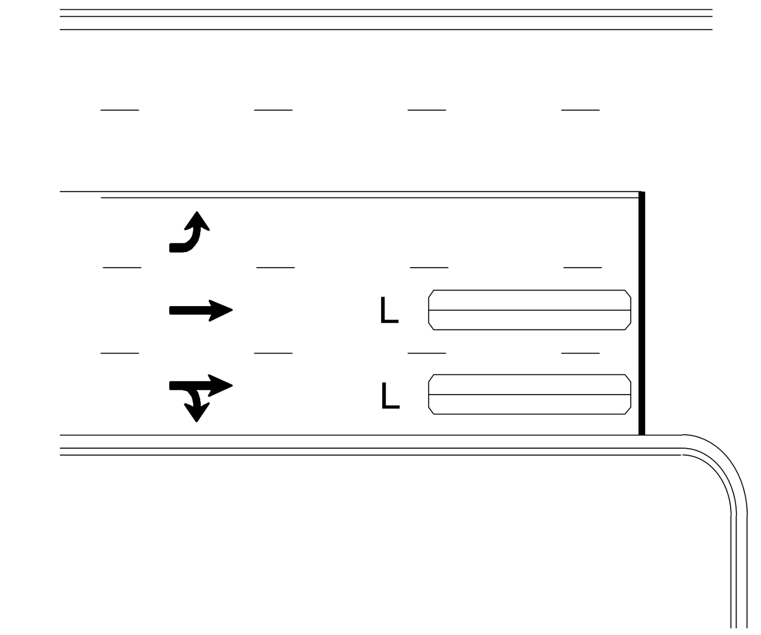
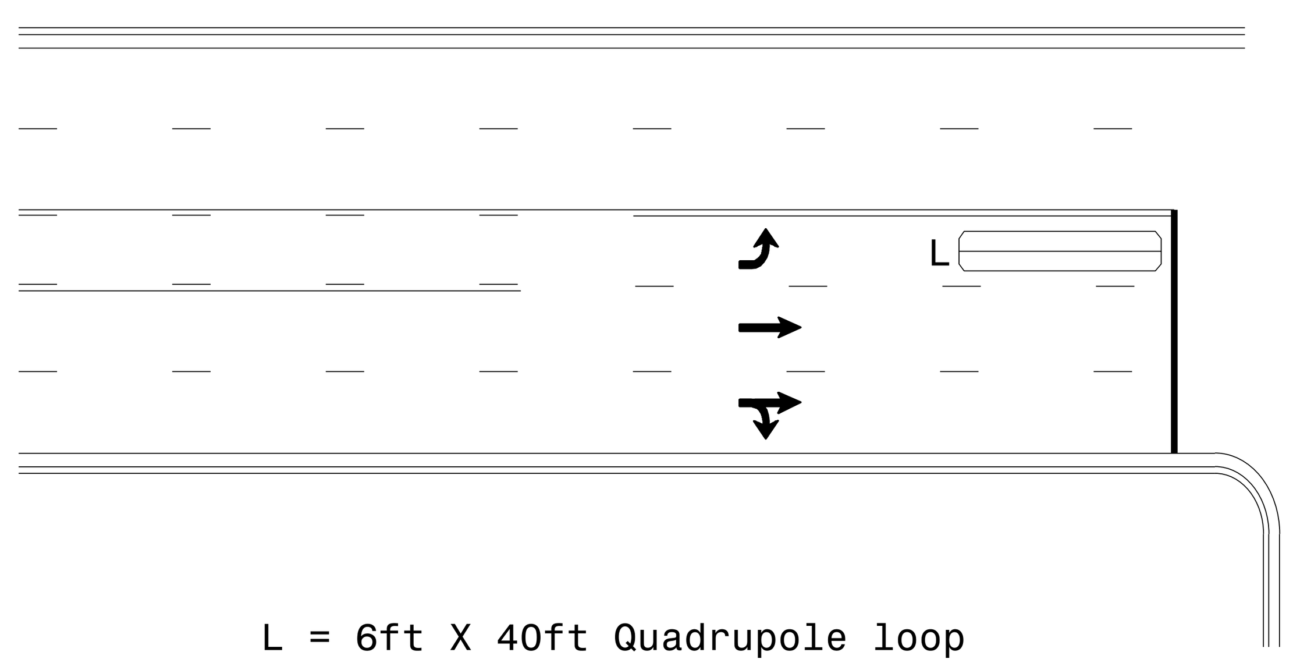


L = 6ft X 6ft
Wired in series

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

Left Turn Lane Detection



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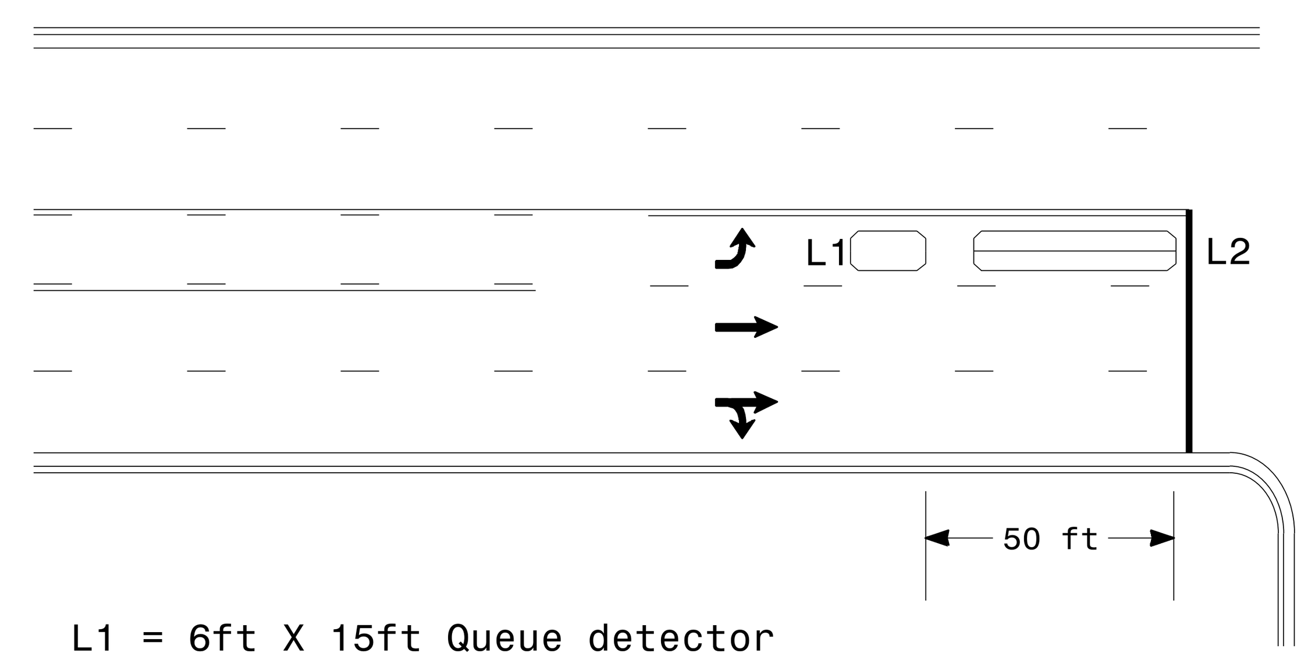


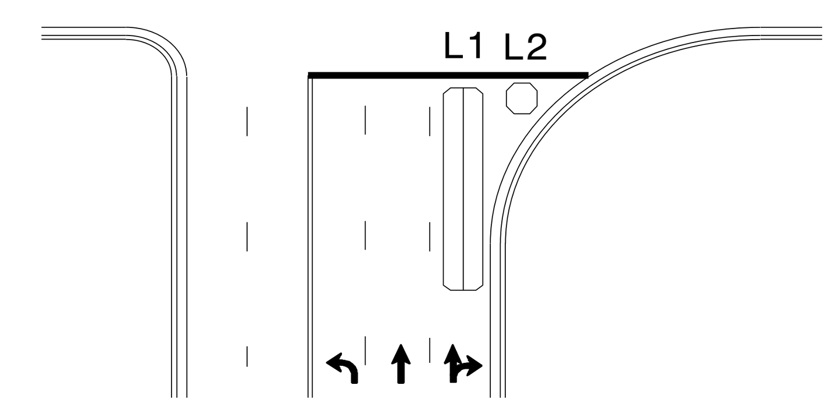
L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

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

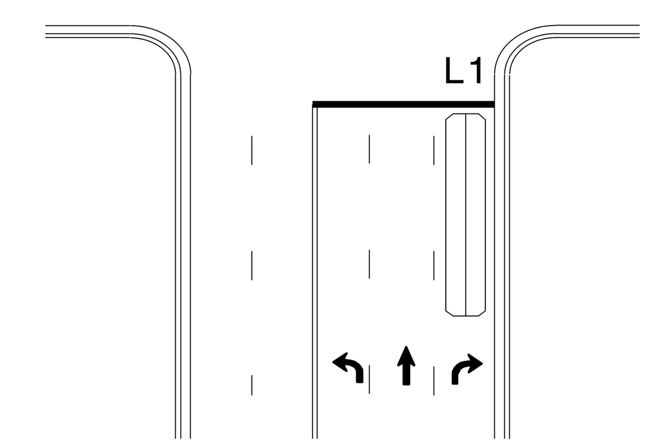
Queue Loop Detection

Right Turn Lane Detection

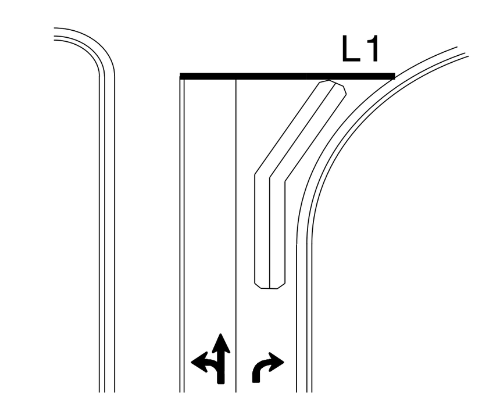


Shared Lane/
Wide Radius Turn

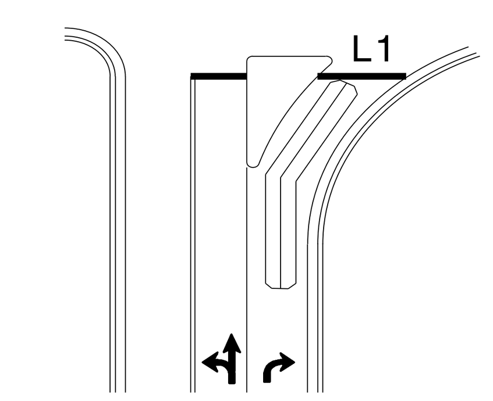
L1 = 6ft X 40ft Quadrupole loop
L2 = 6ft X 6ft [Minimum] Presence loop
Wired separately



Standard Turn

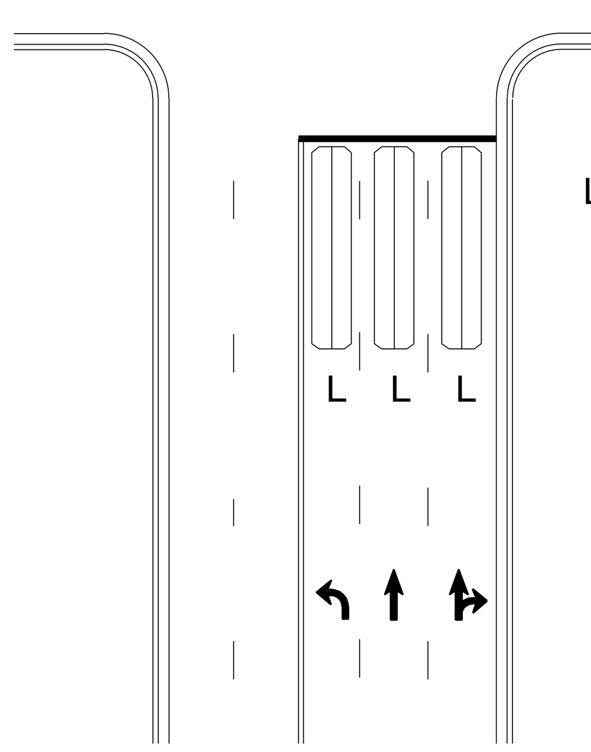


Wide Radius Turn



Channelized Turn

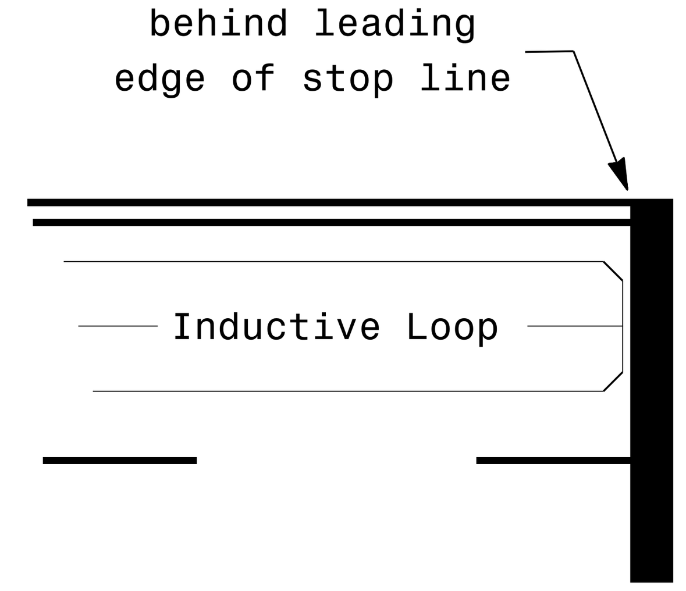
Side Street Detection



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

Prepared in the Offices of:
Transportation Mobility and Safety Division
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
1/30/2015
DATE

SIG. INVENTORY NO.

30-JAN-2015 12:39
S:\ITS&SU\ITS Signals\Signal Design Section\Eastern Region\looptypical2015.dgn
palexander