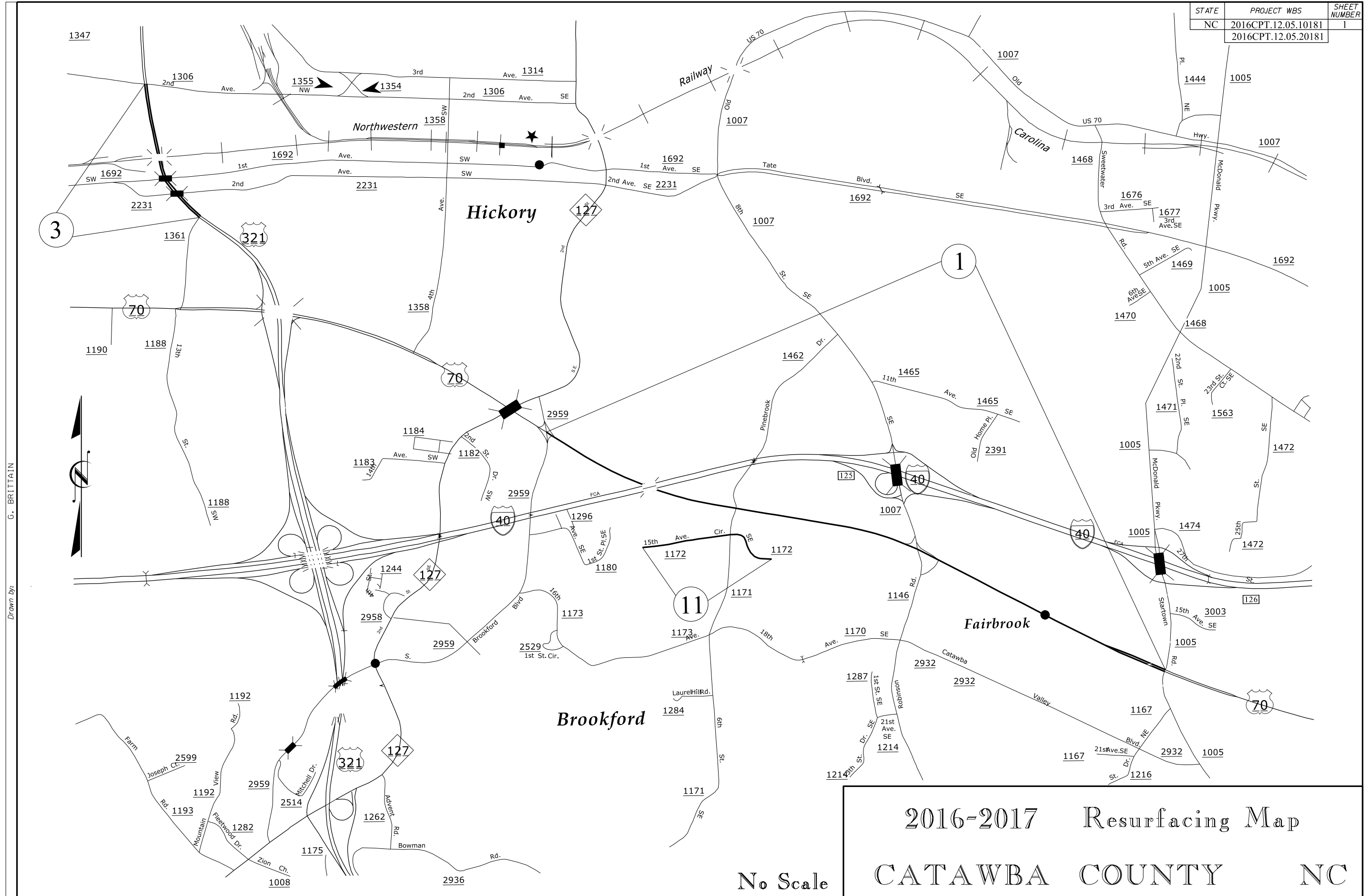


STATE	PROJECT WBS	SHEET NUMBER
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	2016CPT.12.05.20181	

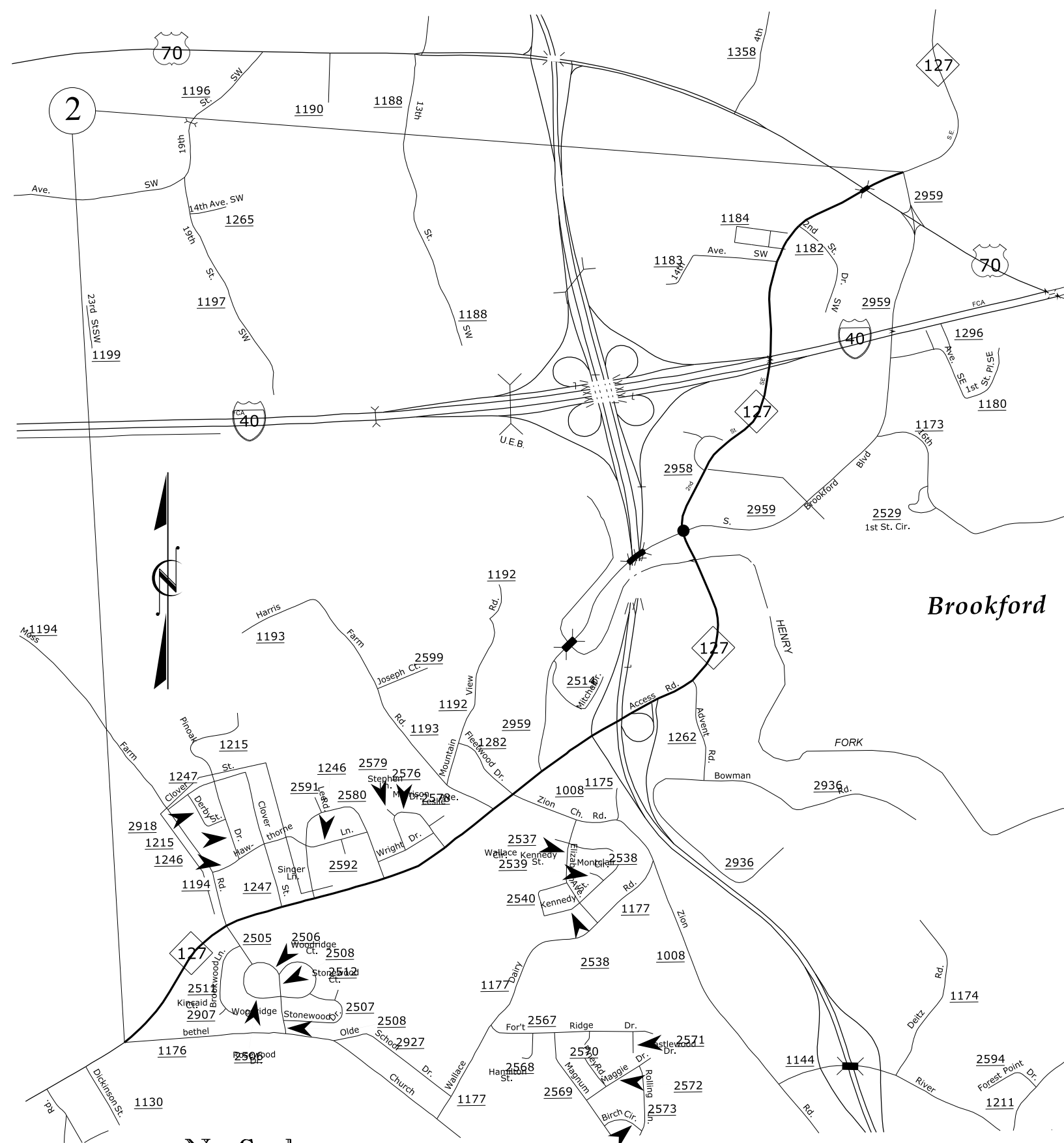


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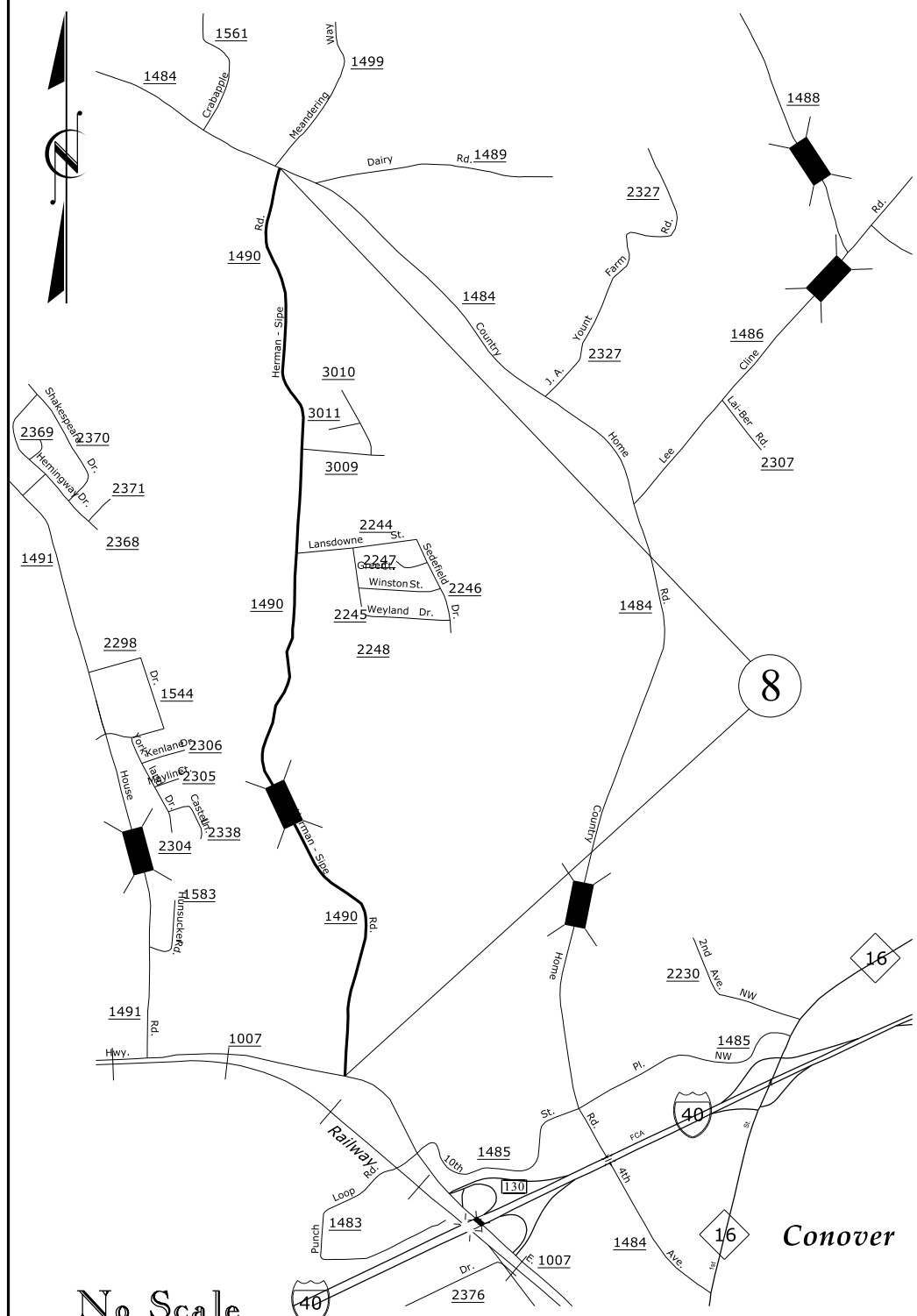
No Scale

2016-2017 Resurfacing Map
CATAWBA COUNTY NC

STATE	PROJECT WBS	SHEET NUMBER
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	2016CPT.12.05.20181	



No Scale

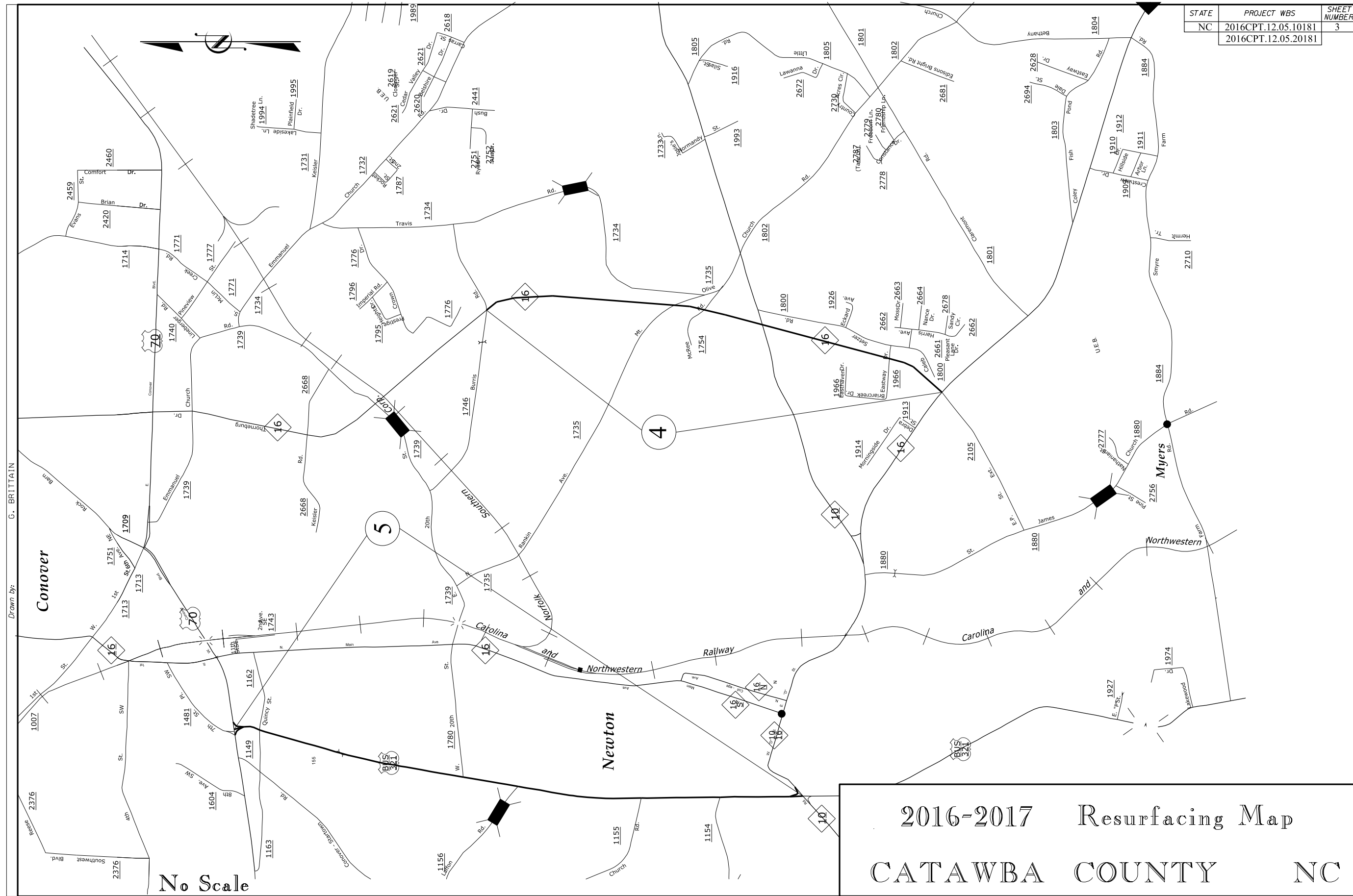


No Scale

2016-2017 Resurfacing Map CATAWBA COUNTY NC

G. BRITAIN
Drawn by:

STATE	PROJECT WBS	SHEET NUMBER
NC	2016CPT.12.05.10181	3
	2016CPT.12.05.20181	



Drawn by: G. BRITTAIN

Conover

Newton

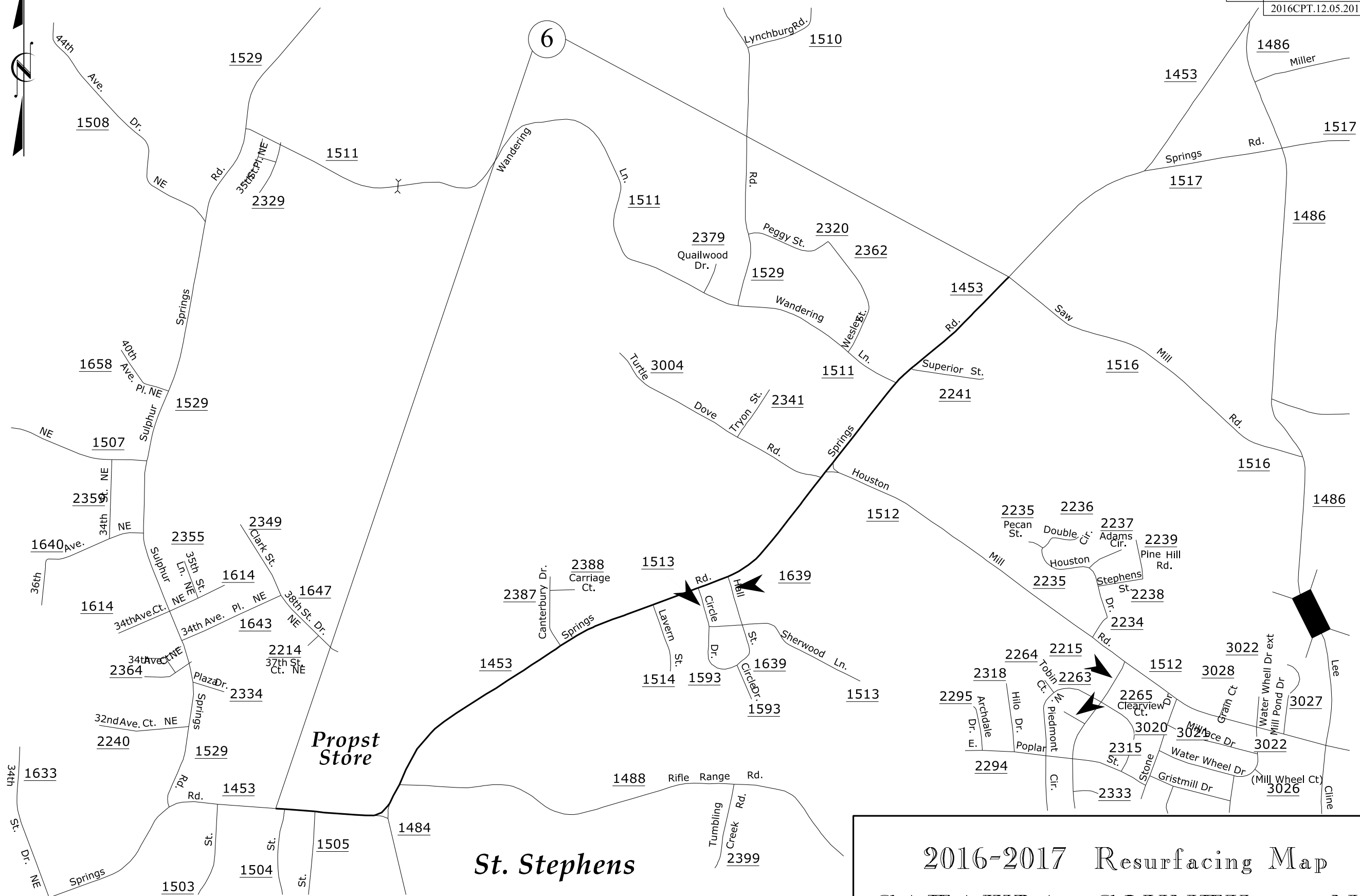
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2016-2017 Resurfacing Map
CATAWBA COUNTY NC

STATE	PROJECT WBS	SHEET NUMBER
NC	2016CPT.12.05.10181	4
	2016CPT.12.05.20181	



G. BRITTAIN
Drawn by:

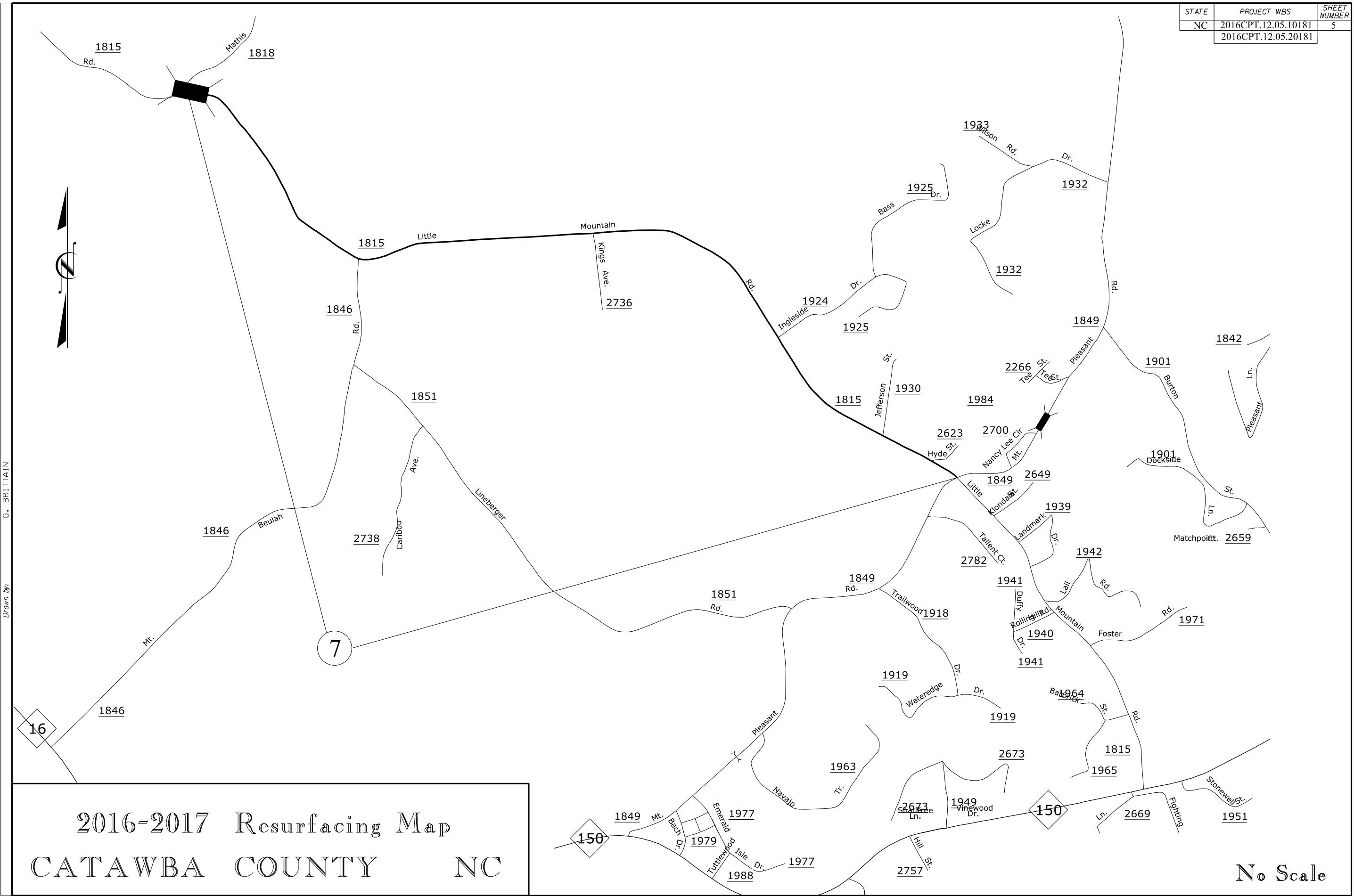


No Scale

St. Stephens

2016-2017 Resurfacing Map
CATAWBA COUNTY NC

STATE	PROJECT WBS	SHEET NUMBER
NC	2016CPT.12.05.10181	5
	2016CPT.12.05.20181	



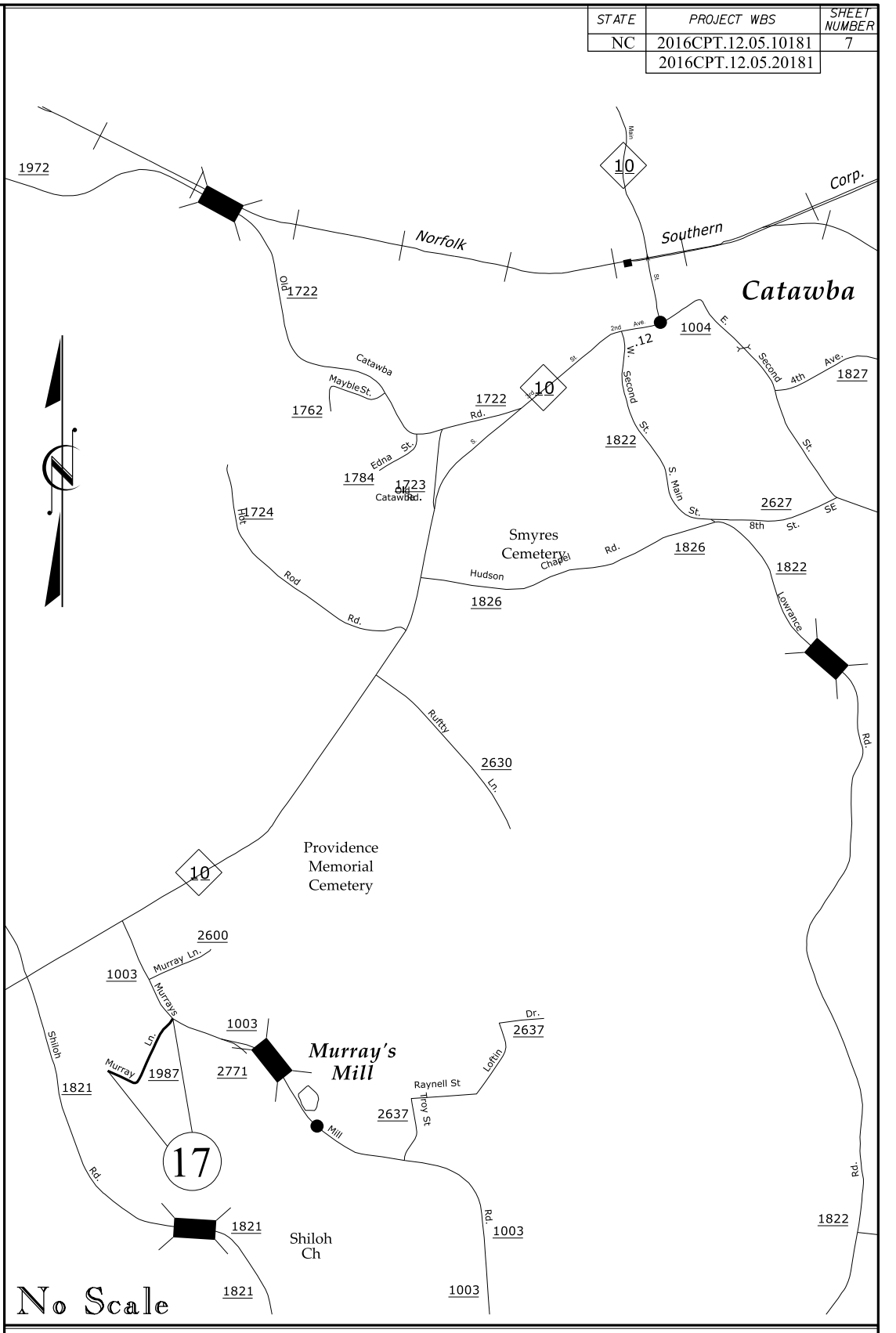
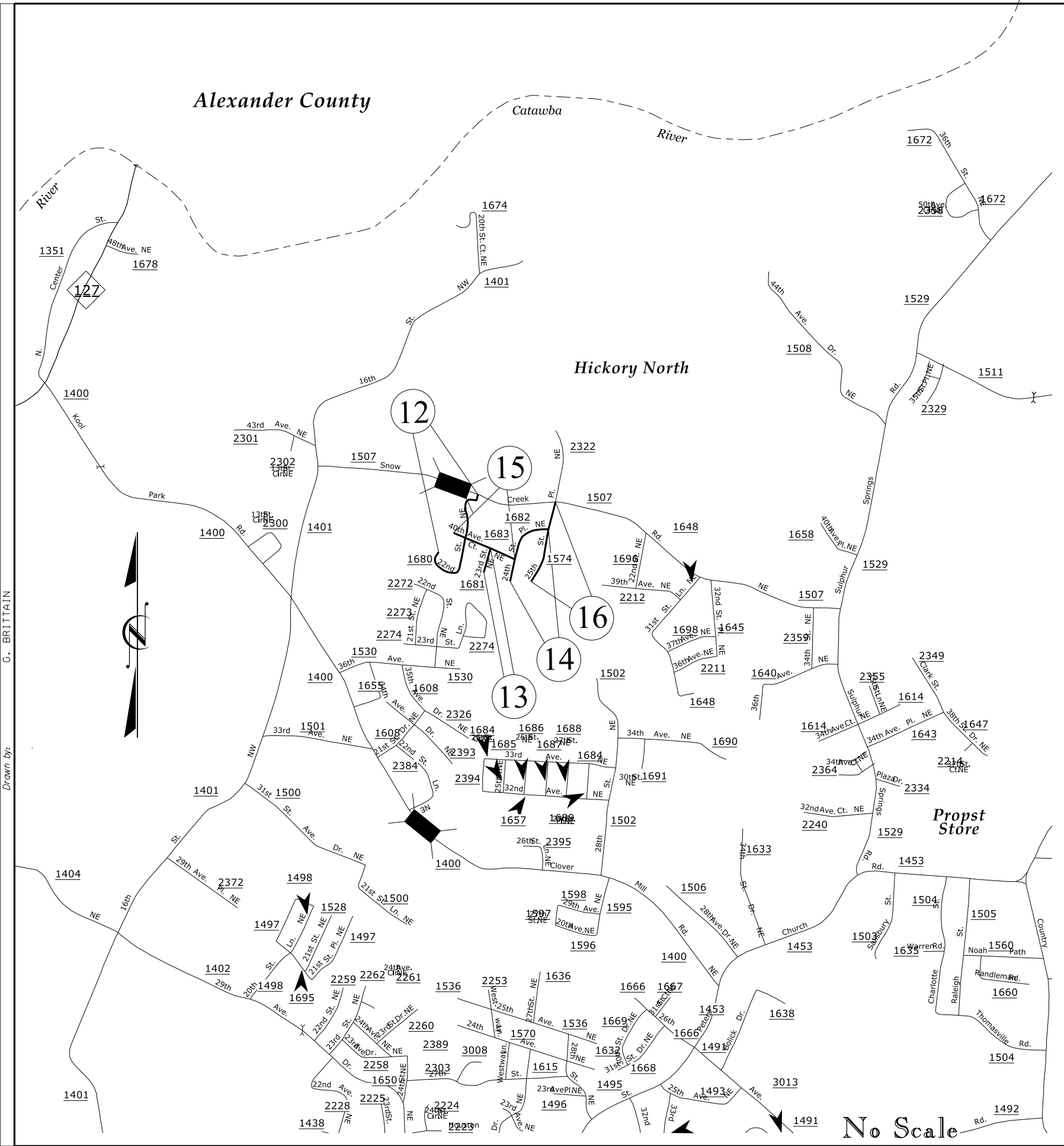
2016-2017 Resurfacing Map
 CATAWBA COUNTY NC

No Scale

G. BRITTAIN

Drawn by:

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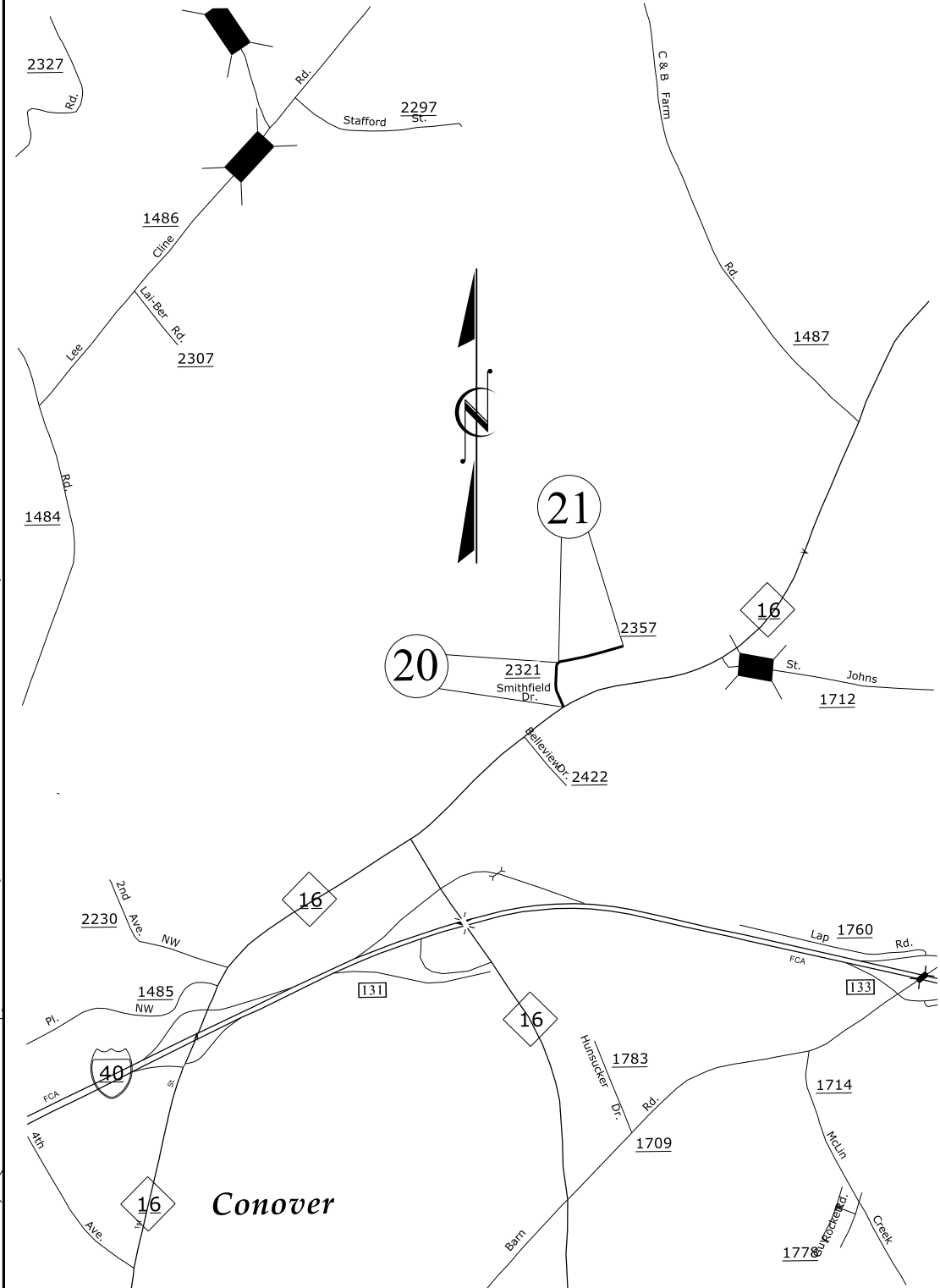
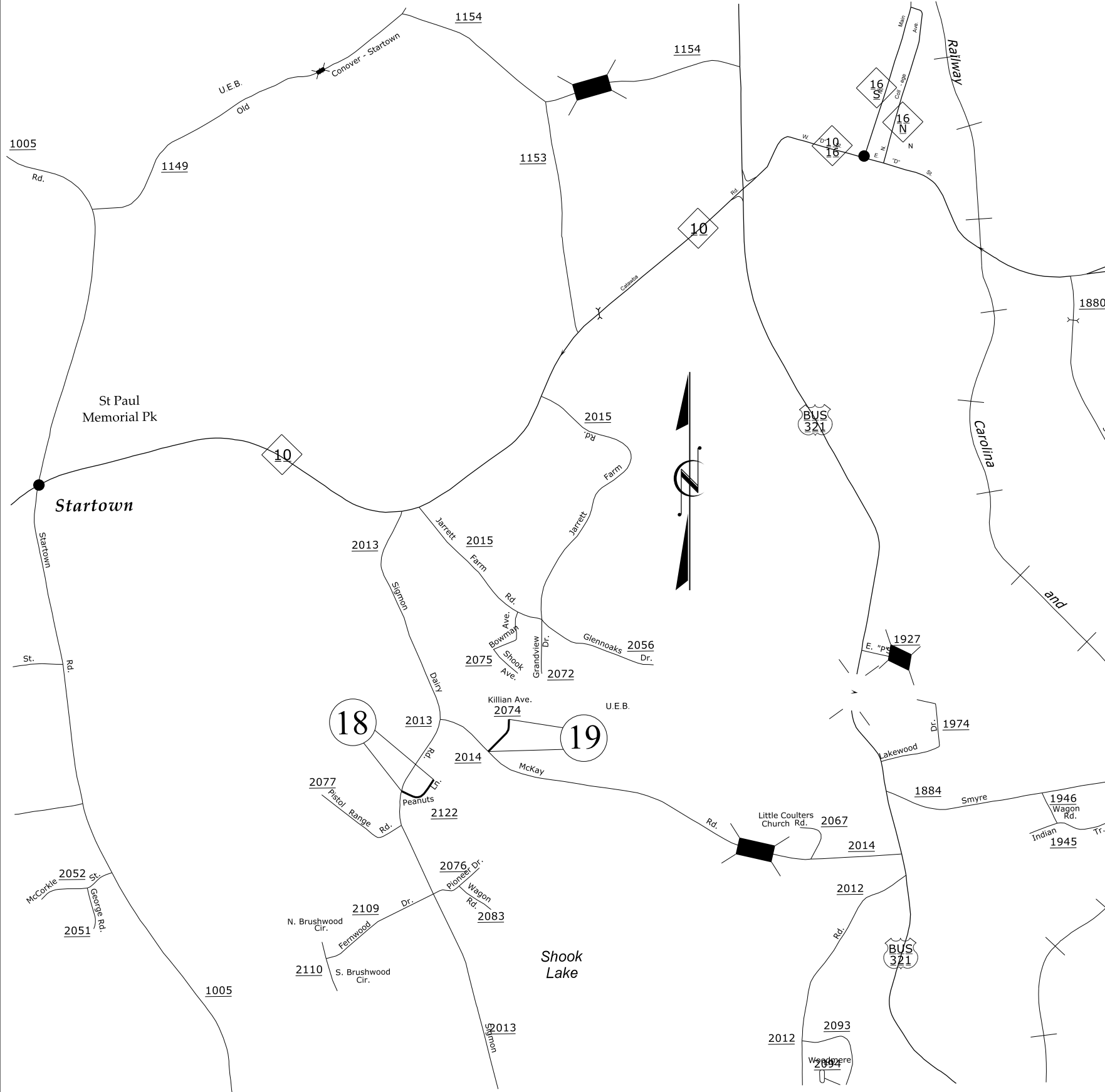


2016-2017 Resurfacing Map

CATAWBA COUNTY NC

Drawn by: G. BRITAIN

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NC	2016CPT.12.05.10181	8
	2016CPT.12.05.20181	



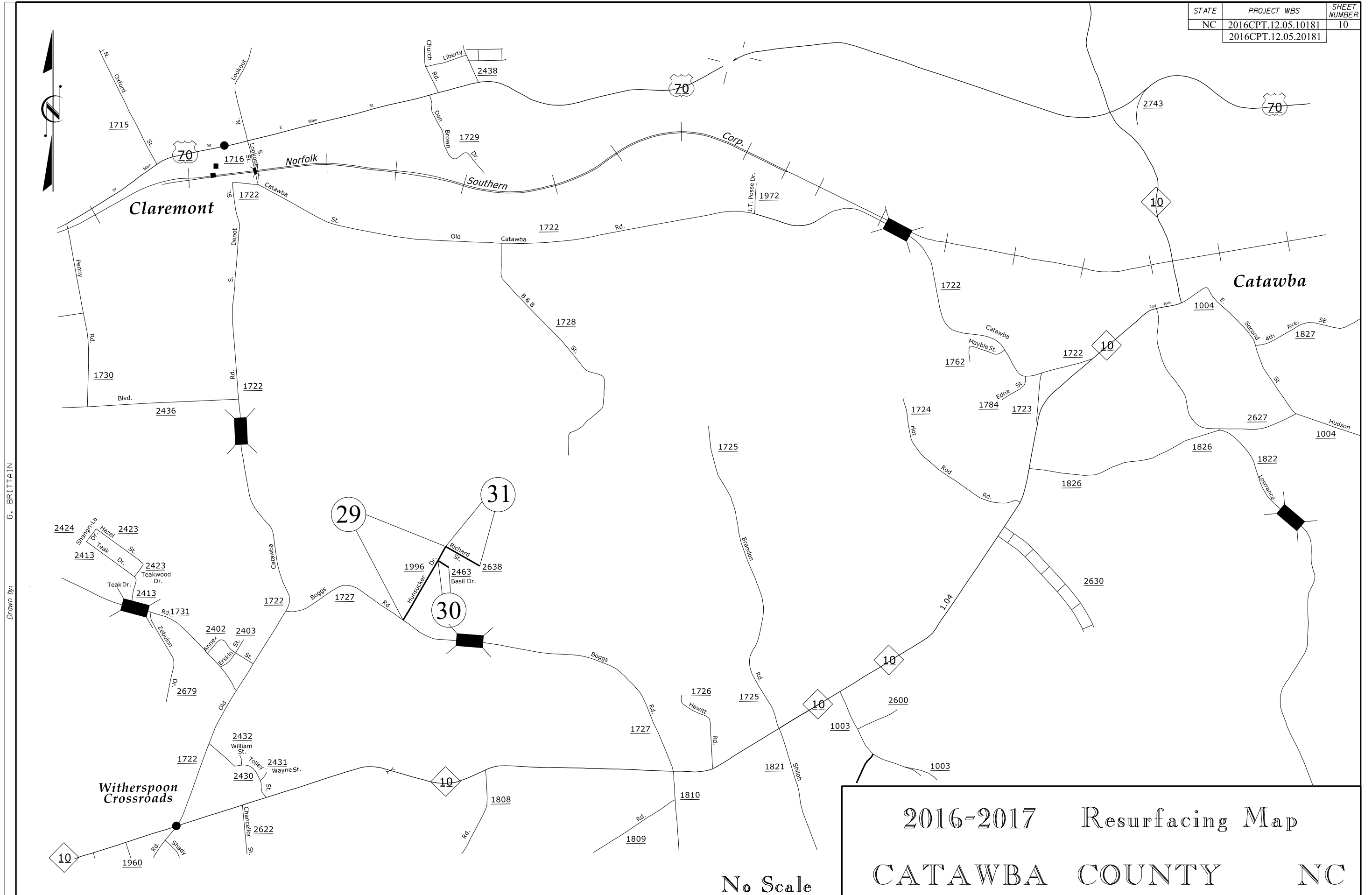
G. BRITTAIN
Drawn by:

No Scale

No Scale

2016-2017 Resurfacing Map
CATAWBA COUNTY NC

STATE	PROJECT WBS	SHEET NUMBER
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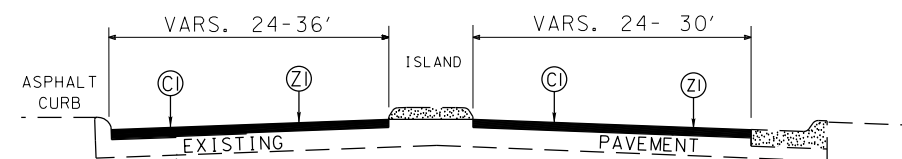


G. BRITAIN

Drawn by:

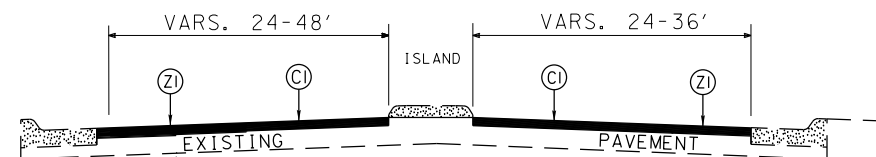
2016-2017 Resurfacing Map
CATAWBA COUNTY NC

No Scale



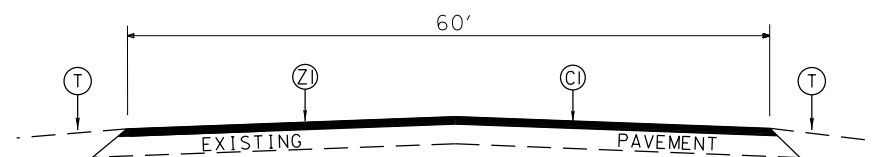
TYPICAL SECTION NO. 1

MAP # 1 - 0+00 TO 3+60
(SR 2959)



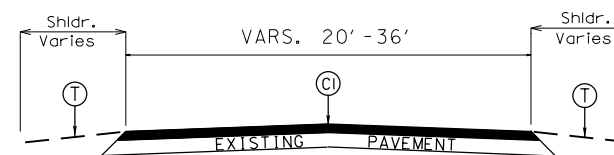
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MAP # 1 - 81+00 TO 86+75
MAP # 1 - 124+00 TO 140+00
(SR1005)
MAP # 2 - 84+50 TO 106+00



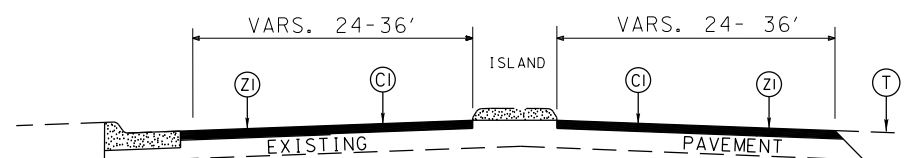
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MAP # 1 - 3+60 TO 37+00
MAP # 1 - 65+00 TO 75+00



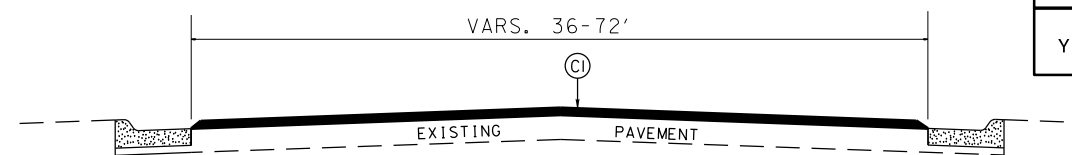
TYPICAL SECTION NO. 7

MAP # 2 - 0+00 TO 60+00
MAP # 9 - entire map
MAP # 10 - entire map



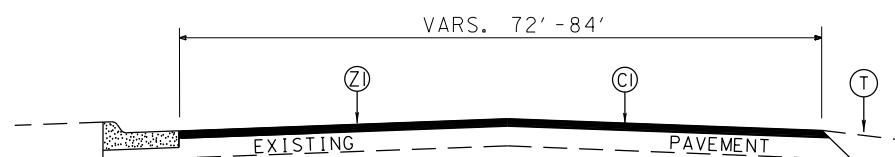
TYPICAL SECTION NO. 3

MAP # 1 - 37+00 TO 48+50



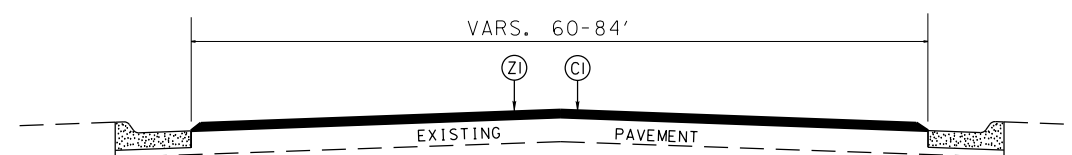
TYPICAL SECTION NO. 8

MAP # 2 - 106+00 TO 199+00
MAP # 5 - entire map
MAP # 8 - 0+00 TO 2+50



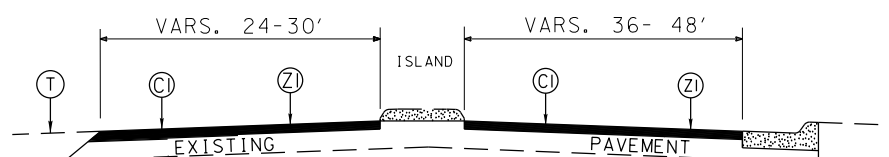
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MAP # 1 - 48+50 TO 65+00



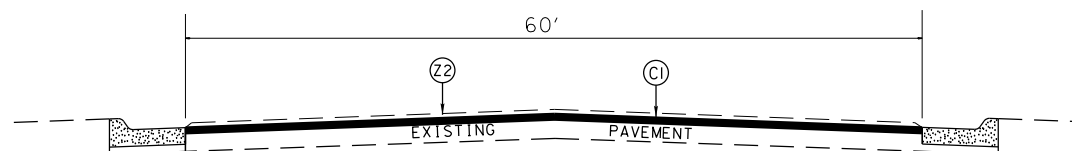
TYPICAL SECTION NO. 9

MAP # 1 - 86+75 TO 124+00



TYPICAL SECTION NO. 5

MAP # 1 - 75+00 TO 81+00
(SR1007)



TYPICAL SECTION NO. 10

MAP # 2 - 60+00 TO 84+50

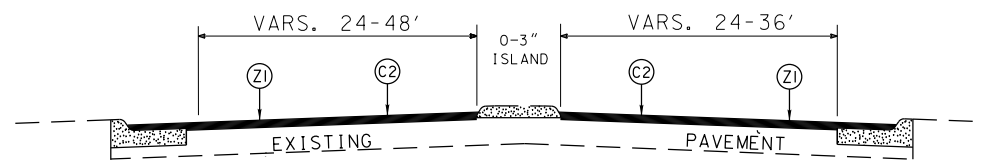
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. APPROX. 1" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD.
E	PROP. APPROX. 8.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD., IN EACH OF TWO LIFTS.
F1	ASPHALT SURFACT TREATMENT, MATCOAT #67 STONE
F2	ASPHALT SURFACT TREATMENT, MATCOAT #78M STONE
T	AGGREGATE SHOULDER BORROW (SHOULDER RECONSTRUCTION)
Z1	MILL ASPHALT PAVEMENT APPROXIMATELY 1.5" DEPTH
Z2	MILL ASPHALT PAVEMENT APPROXIMATELY 3.0" DEPTH
Y1	INCIDENTAL MILLING

2016-2017
Resurfacing Program
Typical Sections
Catawba County NC

Checked by:

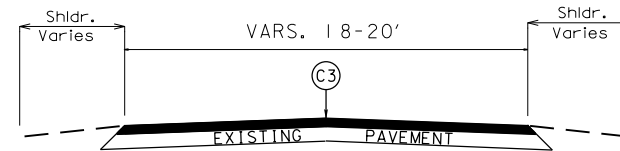
Drawn by: G. Brittain

STATE	PROJECT WBS	SHEET NUMBER
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	2016CPT.12.05.20181	



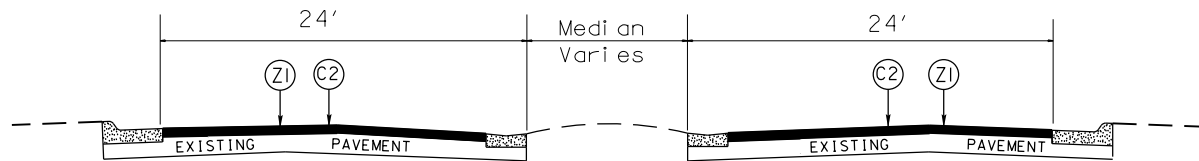
TYPICAL SECTION NO. 11

MAP # 3 - entire map



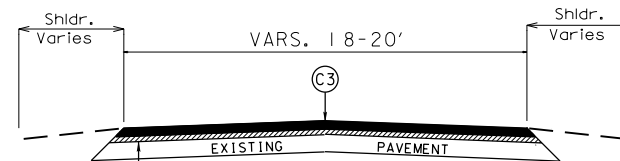
TYPICAL SECTION NO. 16

MAP # 11 - 20+00 to 30+50
 MAP # 12 - (entire map)
 MAP # 13 - (entire map)
 MAP # 14 - (entire map)
 MAP # 15 - (entire map)
 MAP # 16 - (entire map)
 MAP # 17 - (entire map)
 MAP # 19 - (entire map)
 MAP # 20 - (entire map)
 MAP # 21 - (entire map)
 MAP # 25 - (entire map)
 MAP # 29 - (entire map)
 MAP # 30 - (entire map)
 MAP # 31 - (entire map)
 MAP # 32 - 6+00 to 12+00
 MAP # 36 - (entire map)



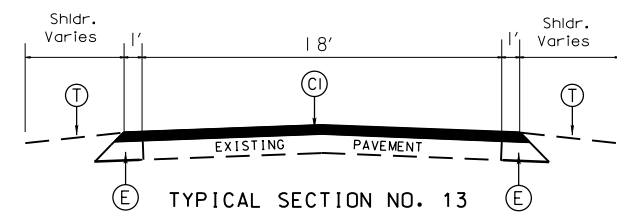
TYPICAL SECTION NO. 12

MAP # 4 - (entire map)



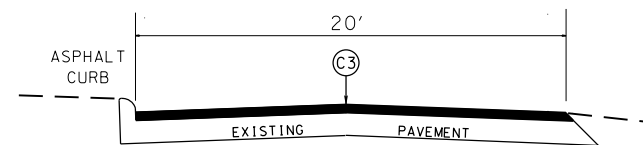
TYPICAL SECTION NO. 17

MAP # 18 - (entire map)
 MAP # 23 - (entire map)
 MAP # 24 - (entire map)
 MAP # 26 - (entire map)
 MAP # 27 - (entire map)
 MAP # 28 - (entire map)
 MAP # 35 - 2+50 to 12+25



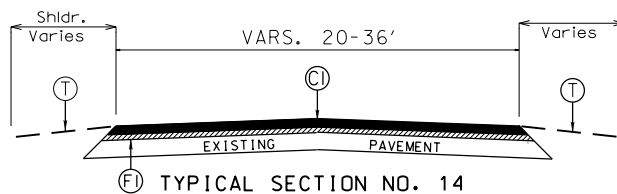
TYPICAL SECTION NO. 13

MAP # 7 - (entire map)



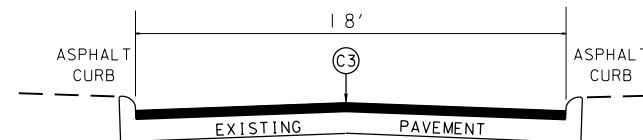
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MAP # 11 - 0+00 to 20+00



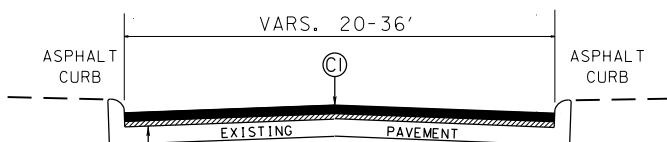
TYPICAL SECTION NO. 14

MAP # 6 - entire map
 MAP # 8 - 12+00 to 128+25



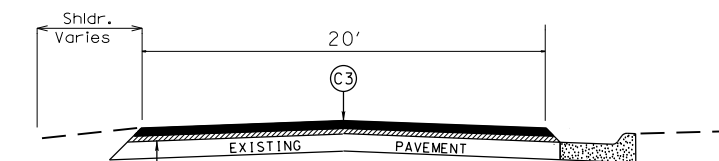
TYPICAL SECTION NO. 19

MAP # 22 - (entire map)
 MAP # 32 - 0+00 to 6+00
 MAP # 33 - (entire map)
 MAP # 34 - (entire map)



TYPICAL SECTION NO. 15

MAP # 8 - 2+50 to 12+00



TYPICAL SECTION NO. 20

MAP # 35 - 0+00 to 2+50

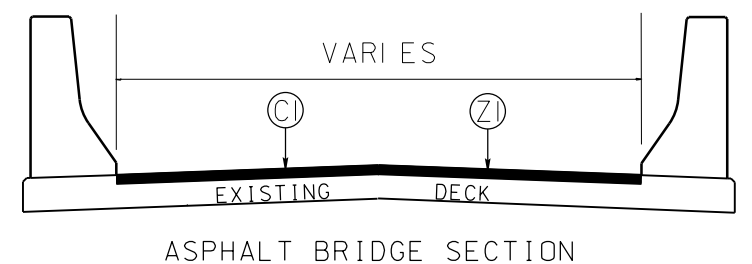
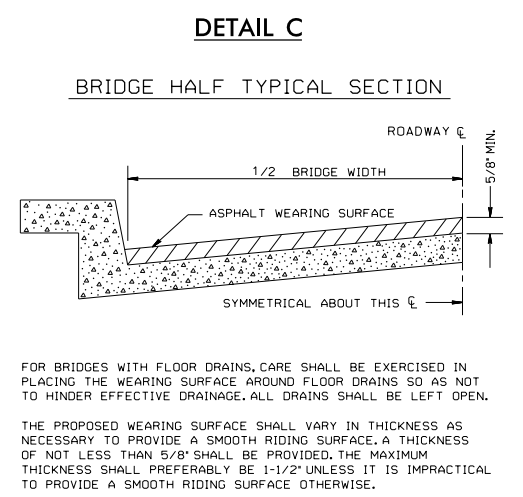
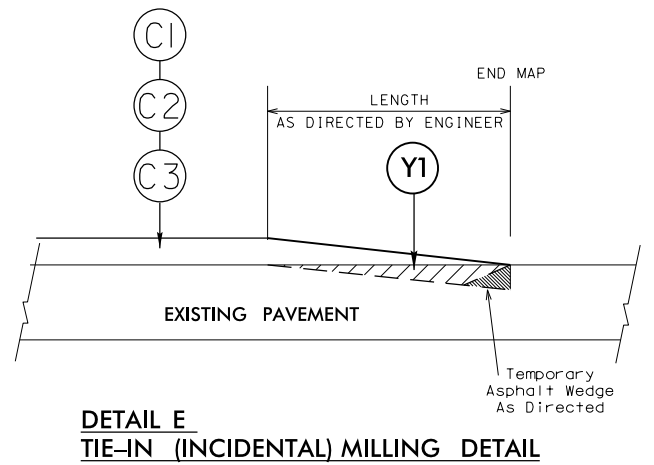
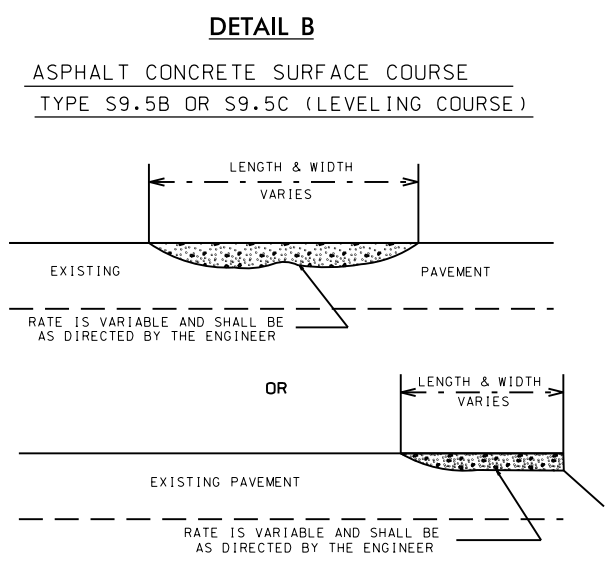
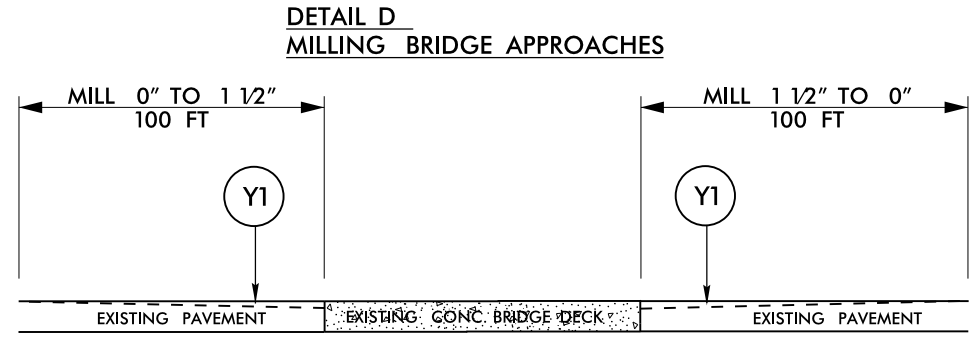
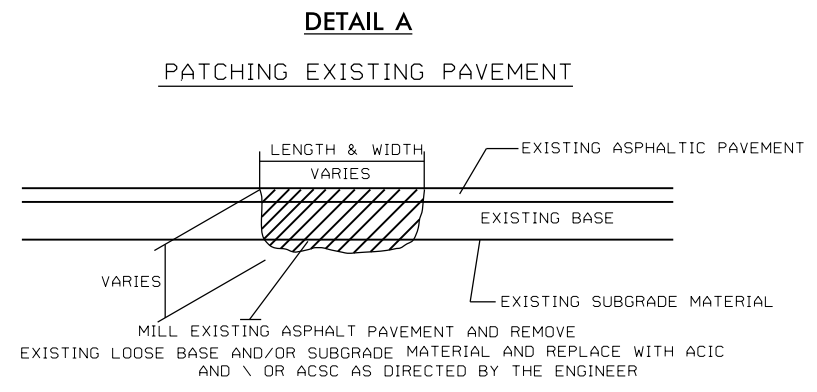
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. APPROX. 1" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD.
E	PROP. APPROX. 8.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD., IN EACH OF TWO LIFTS.
F1	ASPHALT SURFACT TREATMENT, MATCOAT #67 STONE
F2	ASPHALT SURFACT TREATMENT, MATCOAT #78M STONE
T	AGGREGATE SHOULDER BORROW (SHOULDER RECONSTRUCTION)
Z1	MILL ASPHALT PAVEMENT APPROXIMATELY 1.5" DEPTH
Z2	MILL ASPHALT PAVEMENT APPROXIMATELY 3.0" DEPTH
Y1	INCIDENTAL MILLING

2016-2017
 Resurfacing Program
 Typical Sections
 Catawba County NC

Checked by:

Drawn by: G. Brittain

STATE	PROJECT WBS	SHEET NUMBER
NC	2016CPT.12.05.10181	13
	2016CPT.12.05.20181	

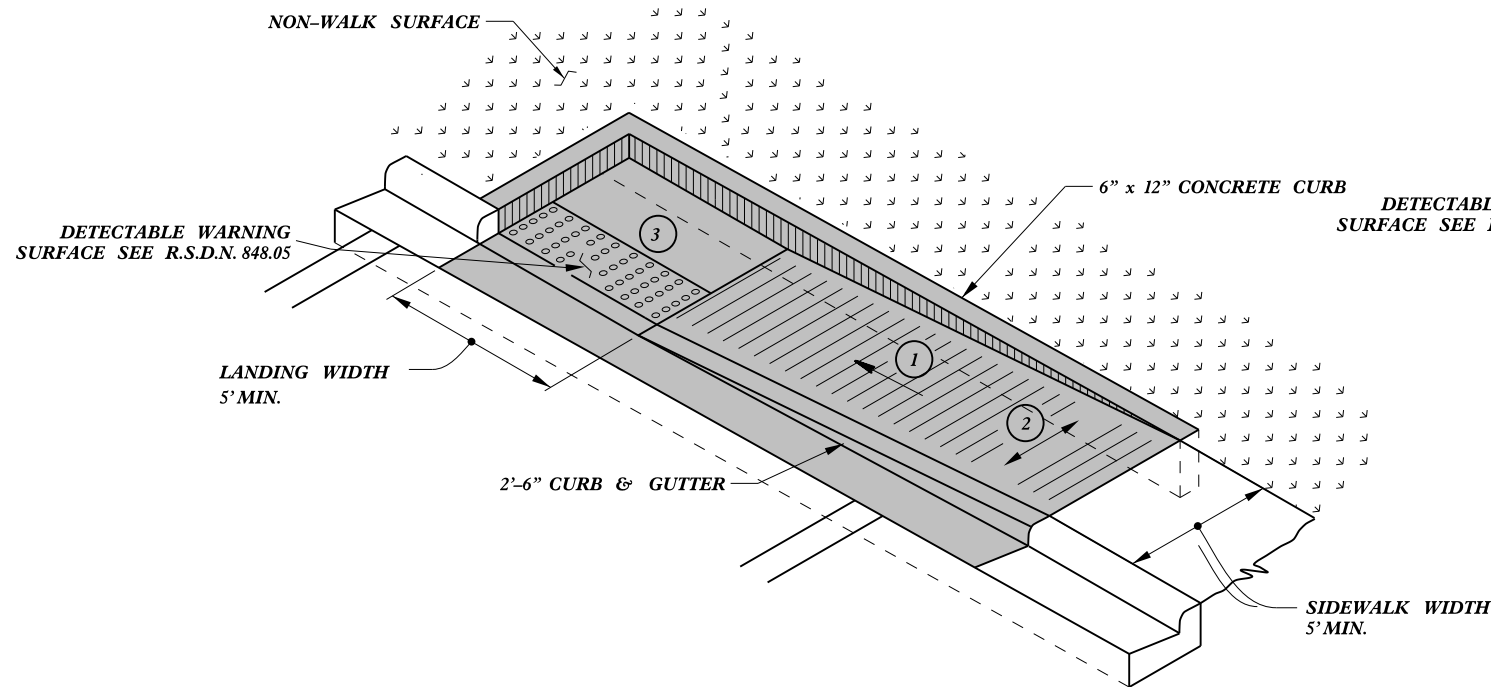


PAVEMENT SCHEDULE

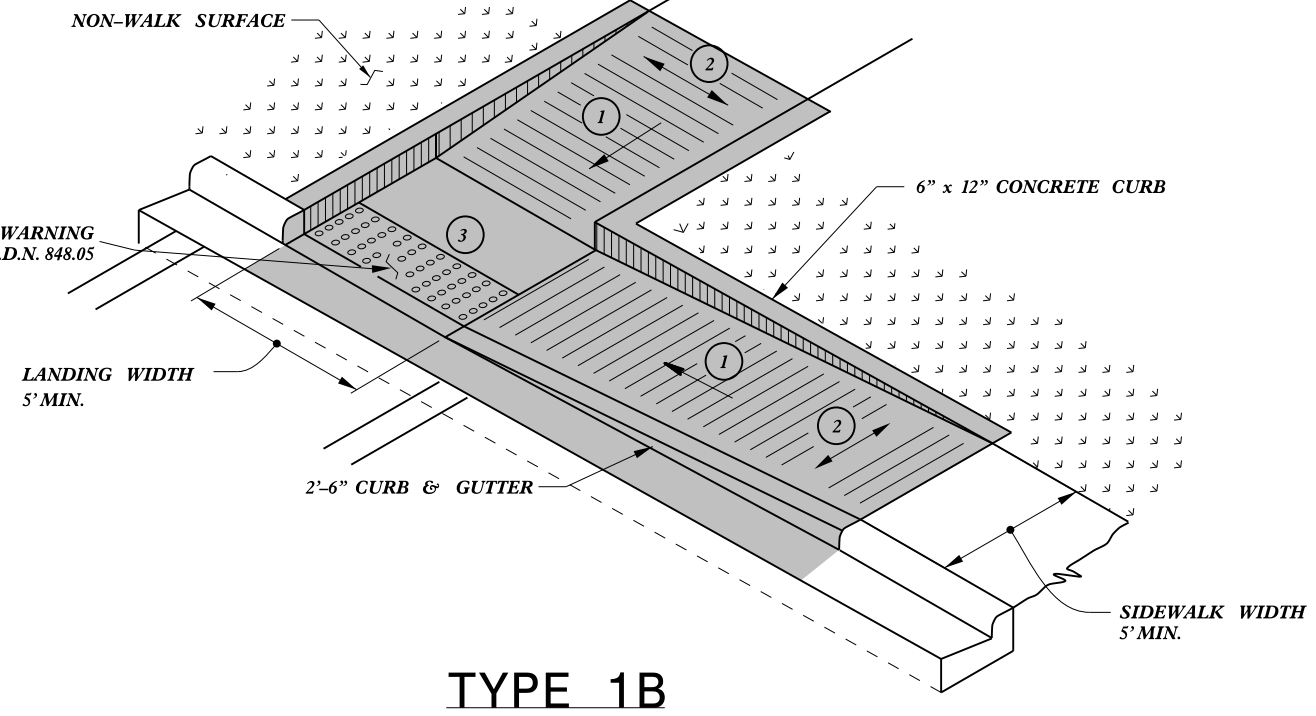
C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. APPROX. 1" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD.
E	PROP. APPROX. 8.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD., IN EACH OF TWO LIFTS.
F1	ASPHALT SURFACT TREATMENT, MATCOAT #67 STONE
F2	ASPHALT SURFACT TREATMENT, MATCOAT #78M STONE
T	AGGREGATE SHOULDER BORROW (SHOULDER RECONSTRUCTION)
Z1	MILL ASPHALT PAVEMENT APPROXIMATELY 1.5" DEPTH
Z2	MILL ASPHALT PAVEMENT APPROXIMATELY 3.0" DEPTH
Y1	INCIDENTAL MILLING

2016-2017
Resurfacing Program
Typical Sections
Catawba County NC

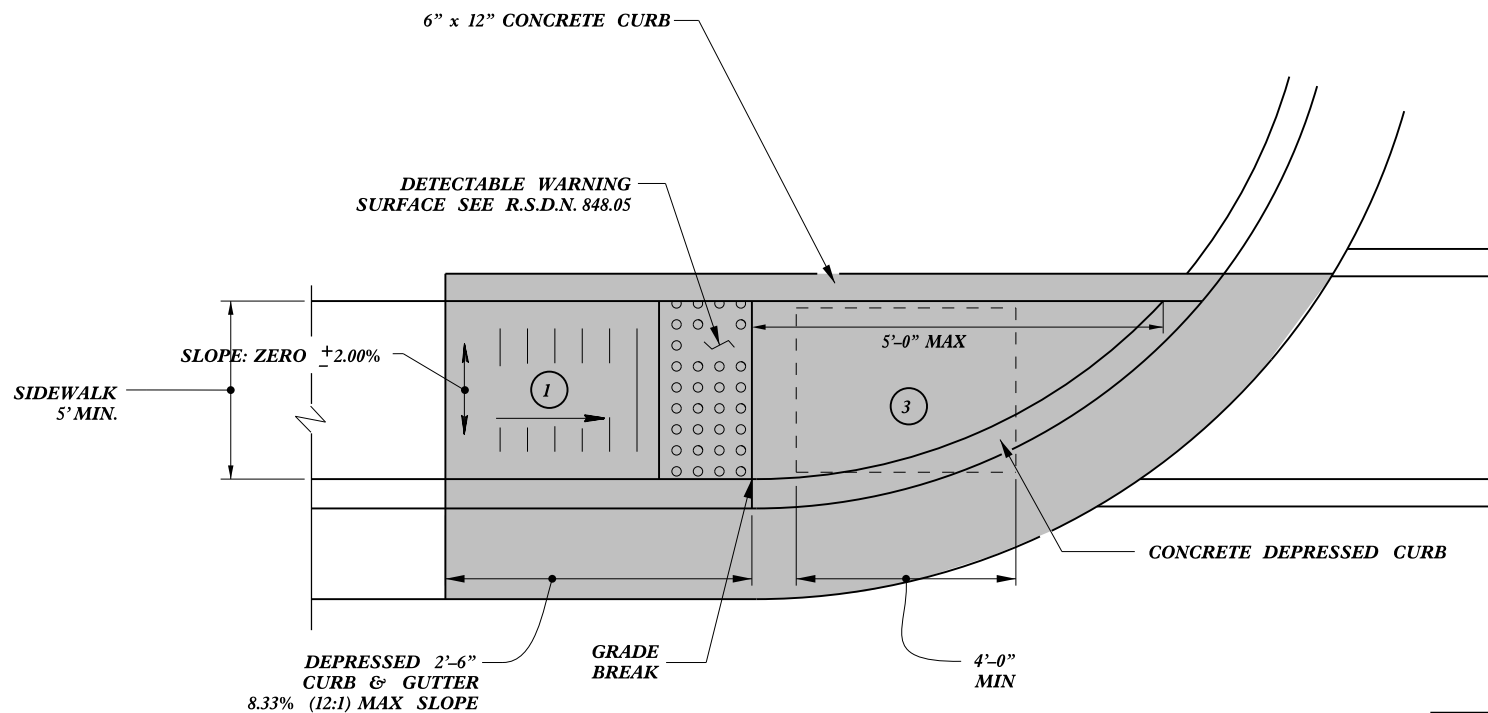
Checked by: _____
Drawn by: G. Brittain



TYPE 1A



TYPE 1B

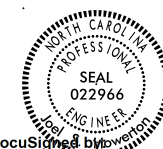


TYPE 1

PAY LIMITS FOR 1 CURB RAMP

- 1 8.33% (12:1) MAX RAMP SLOPE
- 2 CROSS SLOPE: 2.00%
- 3 CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.

REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES



DocuSigned by:
Joel S. Howerton

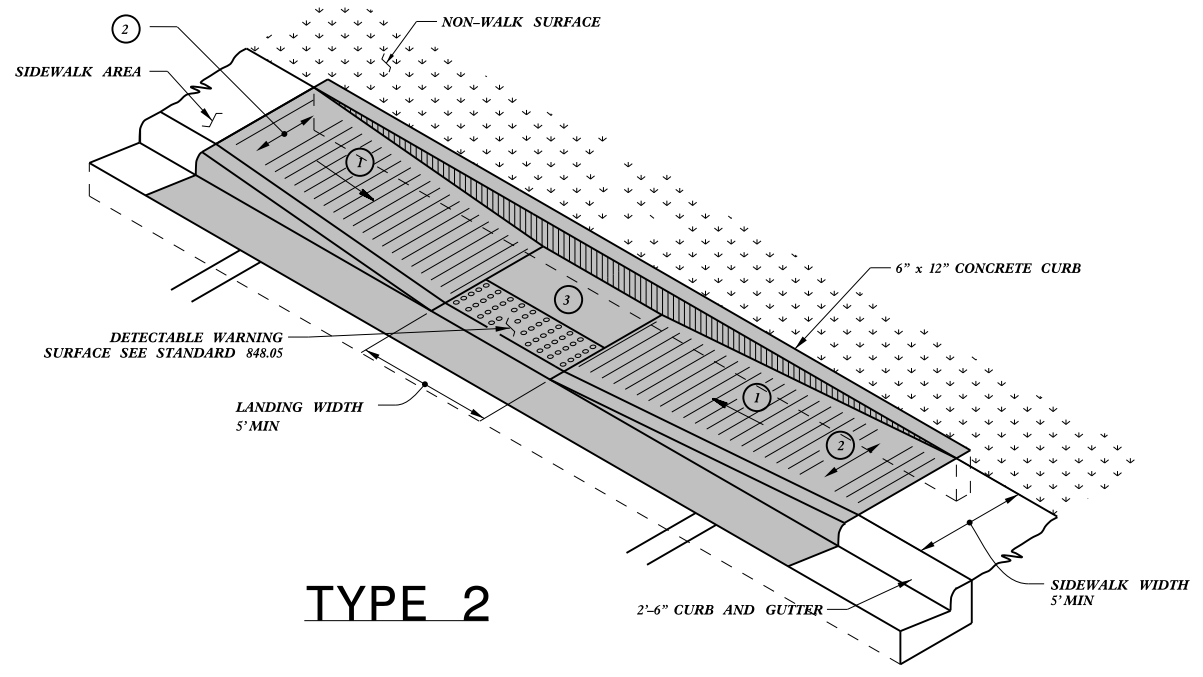
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11/18/2015

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950	FAX 919-250-4119
CURB RAMPS	
Directional Ramps	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC: stds/2012CurbRamp/CurbRampDetails.dwg	

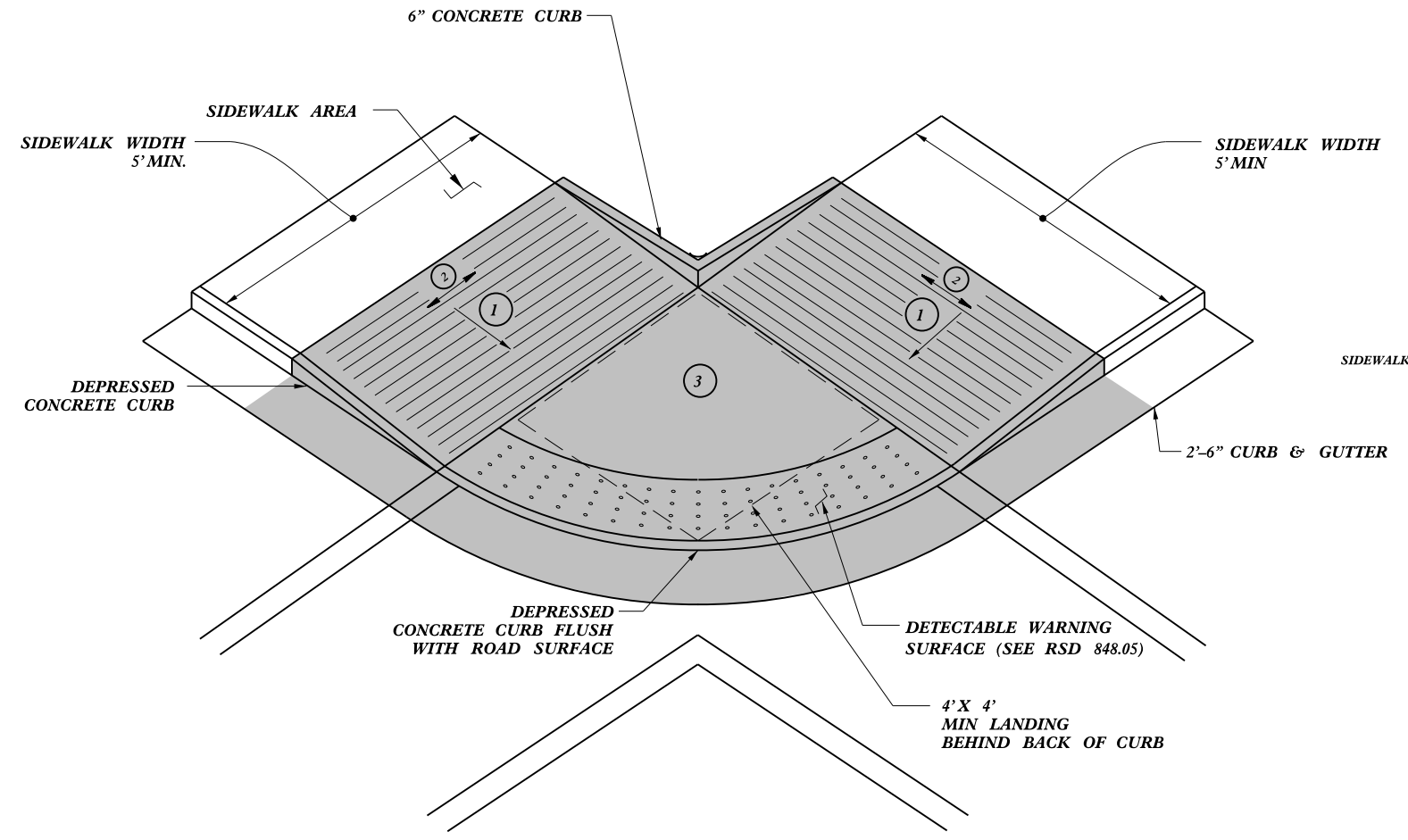
5/14/99
CONSTRUCTION USER NAME
DATE



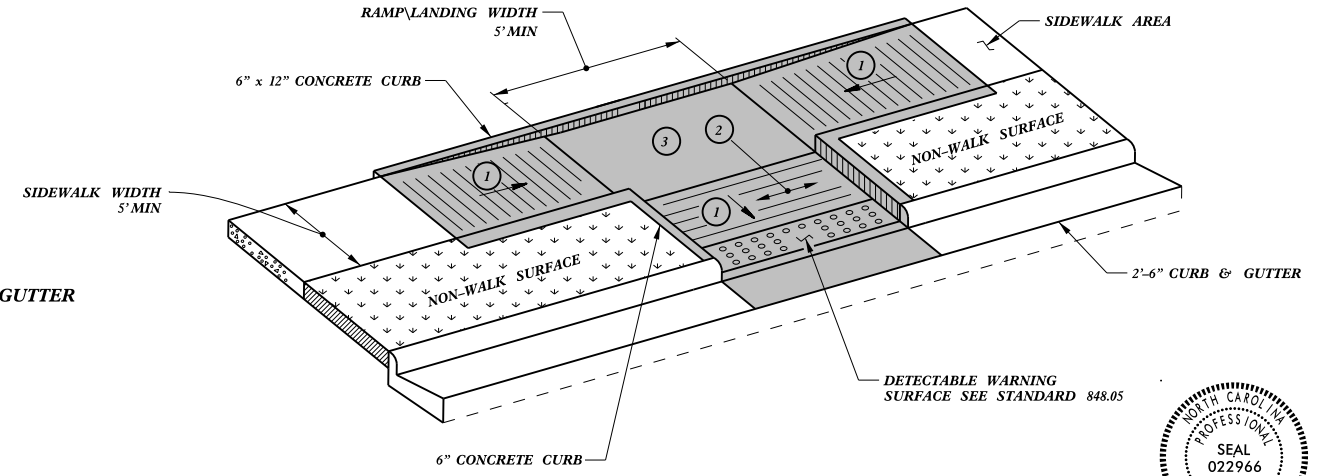
TYPE 2

PAY LIMITS FOR 1 CURB RAMP

- 1 8.33% (12:1) MAX RAMP SLOPE
- 2 CROSS SLOPE: 2.00%
- 3 CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.



TYPE 2A



TYPE 3

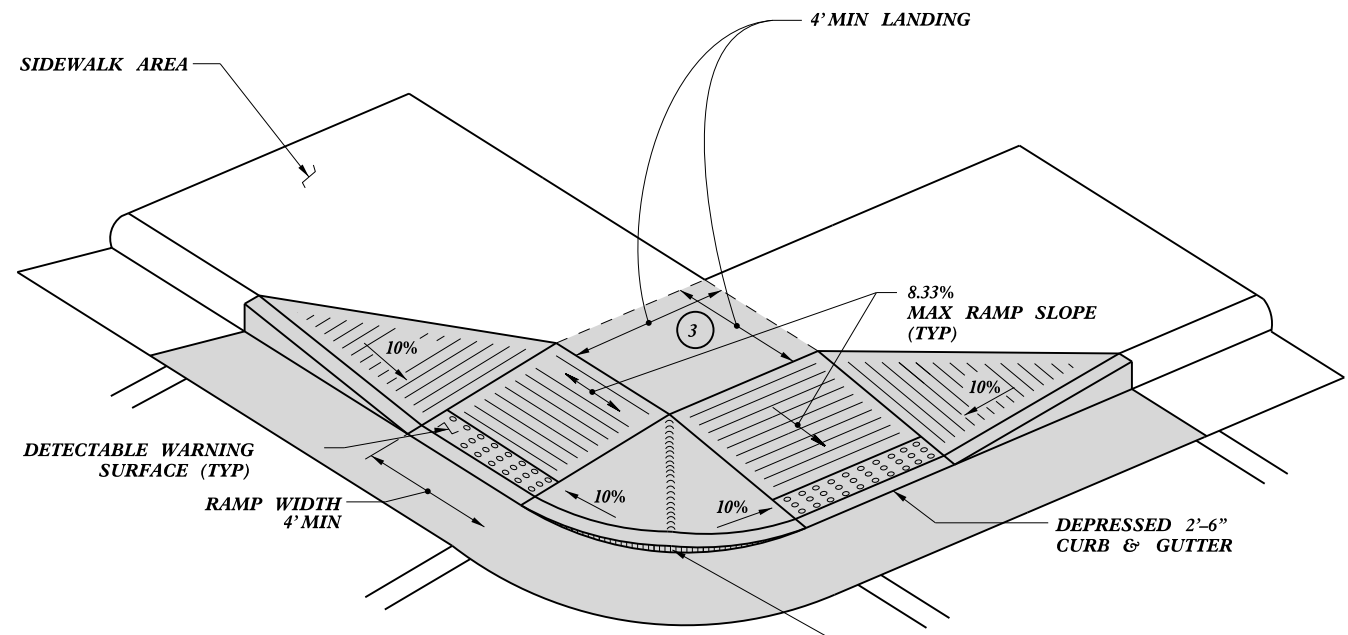


11/18/2015

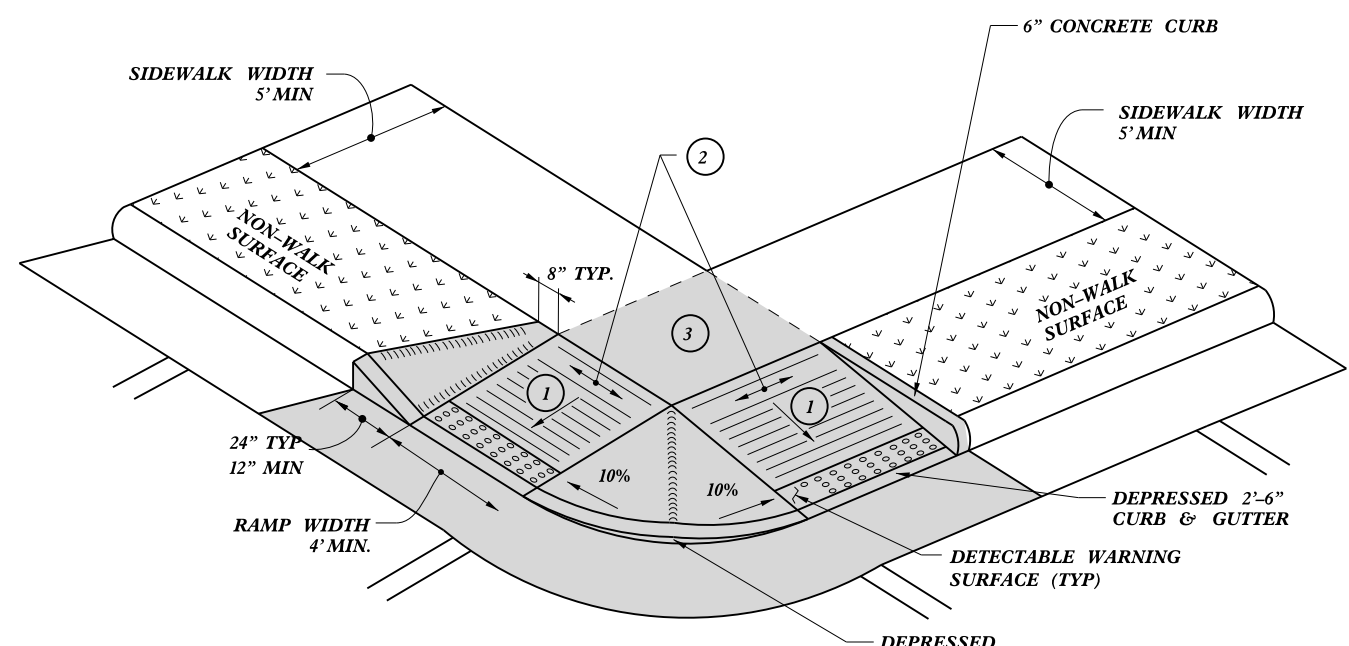
CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950 FAX 919-250-4119	
CURB RAMPS	
Parallel Ramps	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC: stds/2012CurbRamp/CurbRampDetails.dwg	

REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

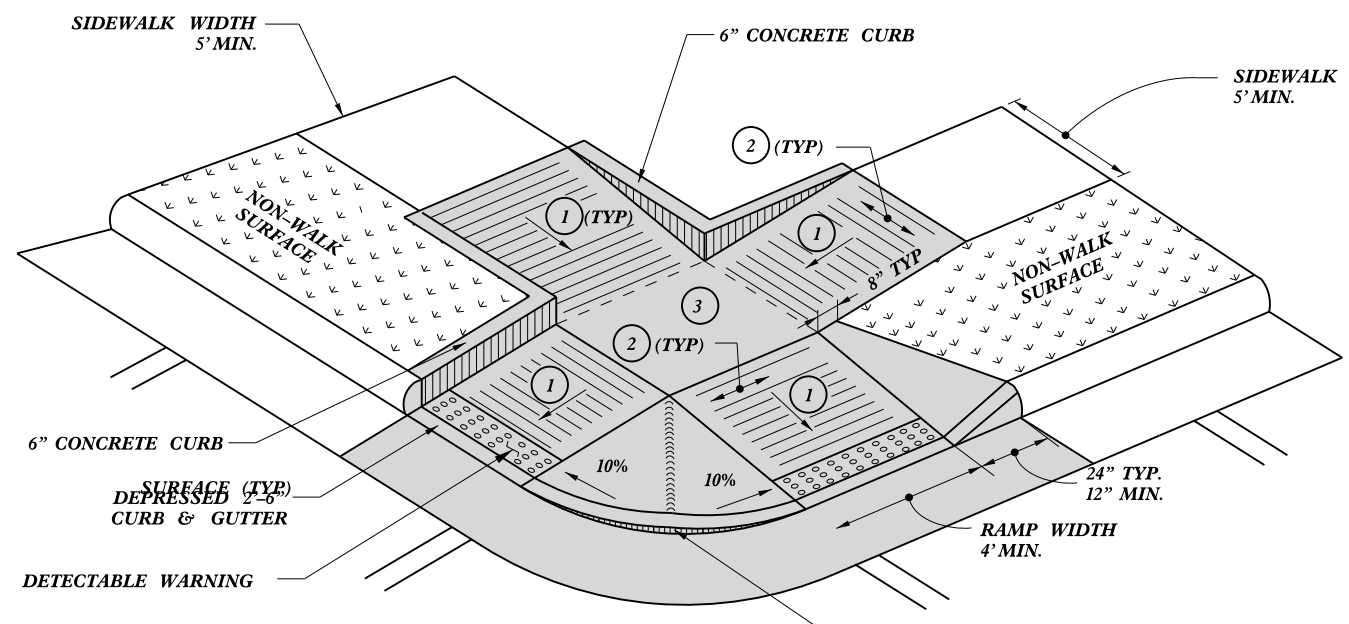
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TYPE 4



TYPE 4A

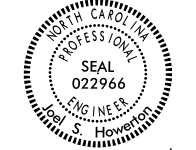


TYPE 5

PAY LIMITS FOR 2 CURB RAMPS

- 1 8.33% (12:1) MAX RAMP SLOPE
- 2 CROSS SLOPE: 2.00%
- 3 CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.

DocuSigned by:
Joel S Howerton
449E8E25522144F...



11/18/2015

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

CURB RAMPS
Shared Landing

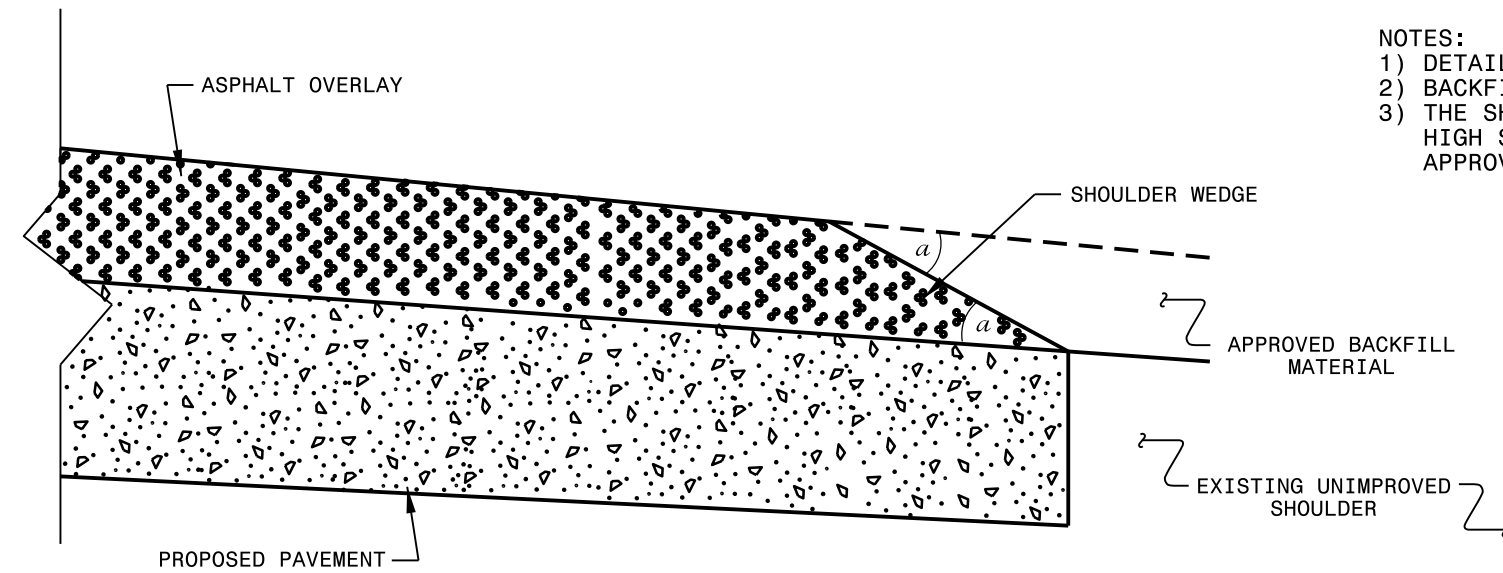
ORIGINAL BY: J.S. HOWERTON DATE: 7/7/11
MODIFIED BY: DATE:
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REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

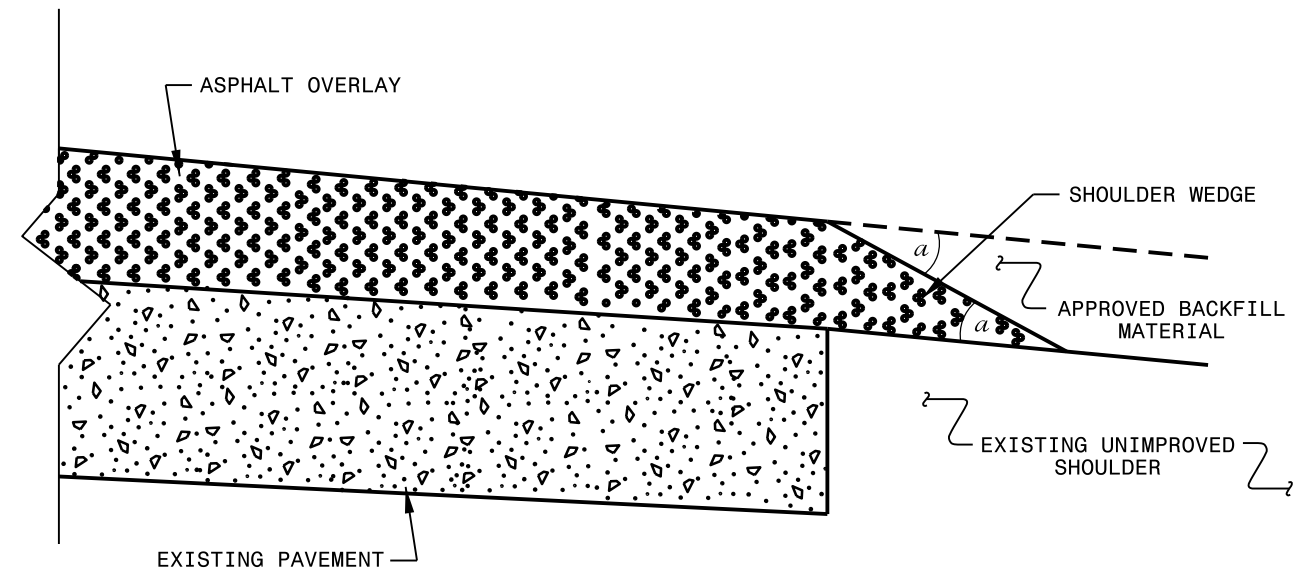
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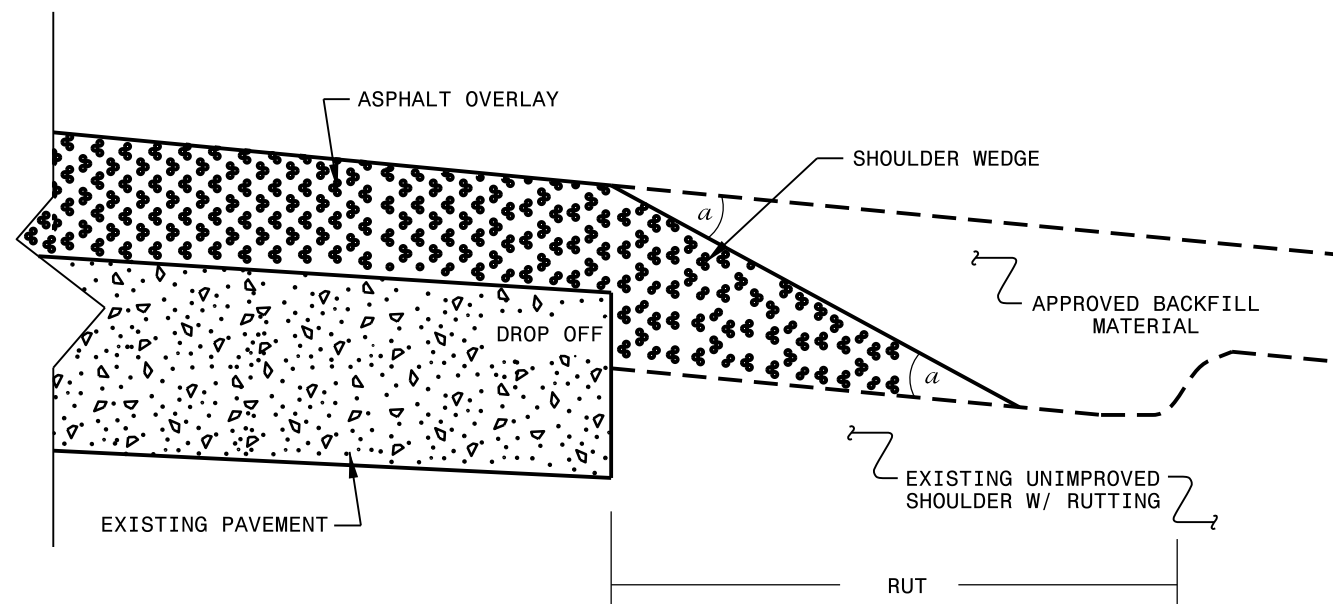
- 1) DETAIL DOES NOT APPLY TO OGAFB AND ULTRA-THIN BONDED WEARING COURSE.
- 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
- 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS, SIDE STREETS, HIGH SHOULDERS, AND OTHER LOCATIONS NOT FEASIBLE TO CONSTRUCT AS APPROVED BY THE ENGINEER.



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.: szusr/details/stand/shoulderwedgedetail.dgn	

04-APR-2016 13:03
 S:\Contracts\Resurfacing Projects\Shoulder Wedge Details\Revised Shoulder Wedge Detail.dgn
 *****USERNAME*****

PROJECT NO.	SHEET NO.	TOTAL NO.
2016CPT.12.05.10181	18	
2016CPT.12.05.20181		

SUMMARY OF QUANTITIES

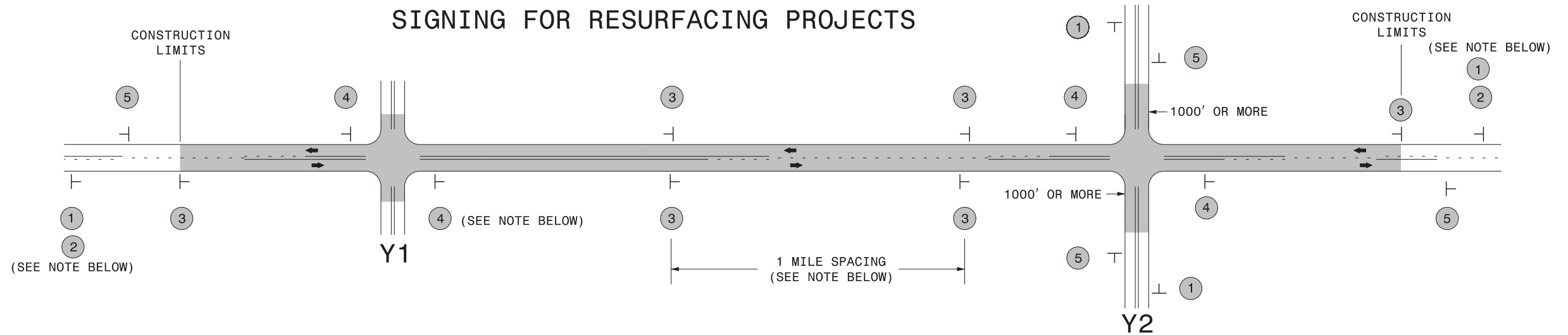
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP	LANES	LANE TYPE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH MI	WIDTH FT	AGGREGATE TON	INCIDENTAL STONE BASE TONS	SHOULDER RECONSTRUCTION SMI	1 1/2" MILLING SY	3" MILLING SY	INCIDENTAL MILLING SY	BASE COURSE, B25.0B TONS	SURFACE COURSE, S9.5B TONS	LEVELING COURSE, S9.5B TONS	SURFACE COURSE, S9.5C TONS	LEVELING COURSE, S9.5C TONS	SURFACE COURSE, SF9.5A TONS	LEVELING COURSE, SF9.5A TONS	ASPHALT BINDER FOR PLANT MIX TONS	PATCHING EXISTING PAVEMENT TONS	AST MAT COAT #67 STONE SY	AST MAT COAT #78M STONE SY	EMULSION FOR ASPHALT SURFACE TREATMENT GAL	RETROFIT EXST. CONC. CURB RAMP EA.	CONC. CURB RAMPS EA	DROP INLET EA	MANHOLES EA	METER OR VALVE BOX EA	PORTABLE LIGHTING LS	INDUCTIVE LOOP LF	LEAD-IN CABLE (14-2) LF				
2016CPT.12.05.10181	Catawba	1	US70	FROM SR 2959 TO SR 1005		2	MU	NO	NO	1-6.9	2	200		2.30	117,177		500		10,352	800					673	1,200				2			1	10	11	1	7,500	500			
2016CPT.12.05.10181	Catawba	2	NC 127	FROM SR 1176 TO SR 2959		2	MU	NO	NO	6-8,10	2	200	80	2.30	12,000	16,750	5,400		9,710	500					615	1,850				30	1	1	6	7			2,500	250			
2016CPT.12.05.10181	Catawba	3	US 321	FROM SR 1361 TO SR 1306		2	MD	NO	NO	11	2	40		0.57	23,732						2,097	100			130	200				2	3				*		1,000	100			
2016CPT.12.05.10181	Catawba	4	NC 16	FROM NC 16 BUS. TO SR 1746		2	MD	NO	NO	12	2	48		2.28								6,924	300		428	500									1			4,000	400		
2016CPT.12.05.10181	Catawba	5	US 321 BUS.	FROM NC 10 TO US 70		2	MU	NO	NO	8	2			2.70			200		8,920	400					561	600								20							
TOTAL FOR PROJ NO. 2016CPT.12.05.10181											11.97		400	120	4.60	231,251	16,750	6,100		28,982	1,700	9,021	400				2,407	4,350				34	4	2	36	39	1	15,000	1,250		
2016CPT.12.05.20181	Catawba	6	SR 1453 (SPRINGS RD NE)	FROM SR 1516 TO PAVING JT. 150' W. OF SR 1504		2	ZWU	NO	NO	2.45	24	375	100	4.90			250		3,204	300					212	200	34,496														
2016CPT.12.05.20181	Catawba	7	SR 1815 (LITTLE MTN. RD)	FROM SR 1849 TO SR 1818		2	ZWU	NO	NO	3.10	20	475	120	6.20			525	2,950	3,382	775					383	175															
2016CPT.12.05.20181	Catawba	8	SR 1490 (HERMAN SIPE RD)	FROM SR 1007 TO SR 1484		2	ZWU	NO	NO	8,14,15	2	375	80	4.88			625		3,157	150					199	325	33,991														
2016CPT.12.05.20181	Catawba	9	SR 1128 (MTN. GROVE RD)	FROM NC 127 TO SR 1124		2	ZWU	NO	NO	1.86	20	275	80	3.72			200		2,029	200					135	650															
2016CPT.12.05.20181	Catawba	10	SR 1814 (CALDWELL RD)	FROM NC 16 TO SR 1003		2	ZWU	NO	NO	2.11	20	325	80	4.22			200		2,130	650					170	200															
2016CPT.12.05.20181	Catawba	11	SR 1172 (15TH AVE SE)	FROM CULDESAC TO EOM		2	ZWU	NO	NO	0.58	vars. 18-20	40										375	20	26	50																
2016CPT.12.05.20181	Catawba	12	SR 1680 (22ND ST NE)	FROM SR 1507 TO CUL-DE-SAC		2	ZWU	NO	NO	0.42	18	40										294	25	21	75																
2016CPT.12.05.20181	Catawba	13	SR 1681 (23RD ST NE)	FROM SR 1683 TO CUL-DE-SAC		2	ZWU	NO	NO	0.08	18	10										76	5	5	10																
2016CPT.12.05.20181	Catawba	14	SR 1682 (24 ST PL NE)	FROM SR 1574 TO EOM		2	ZWU	NO	NO	0.22	18	20										141	10	10	25																
2016CPT.12.05.20181	Catawba	15	SR 1683 (40TH AVE CT)	FROM SR 1682 TO CUL-DE-SAC		2	ZWU	NO	NO	0.22	18	20										165	10	12	25																
2016CPT.12.05.20181	Catawba	16	SR 1574 (25TH ST NE)	FROM SR 1507 TO EOM		2	ZWU	NO	NO	0.28	19	20										190	10	13	20																
2016CPT.12.05.20181	Catawba	17	SR 1987 (MURRAY LN)	FROM SR 1003 TO EOM		2	ZWU	NO	NO	0.29	18	20										186	40	15	20																
2016CPT.12.05.20181	Catawba	18	SR 2122 (PEANUTS LN)	FROM SR 2013 TO EOM		2	ZWU	NO	NO	0.13	18	10										83	10	6	35			1,373	549												
2016CPT.12.05.20181	Catawba	19	SR 2074 (KILLIAN AVE)	FROM SR 2014 TO EOM		2	ZWU	NO	NO	0.12	20	10										86	20	7	10																
2016CPT.12.05.20181	Catawba	20	SR 2321 (SMITHFIELD DR)	FROM NC 16 TO SR 2357		2	ZWU	NO	NO	0.10	18	10										64	5	5	10																
2016CPT.12.05.20181	Catawba	21	SR 2357 (SMITHFIELD DR)	FROM SR 2321 TO CUL-DE-SAC		2	ZWU	NO	NO	0.16	18	10										103	20	8	10																
2016CPT.12.05.20181	Catawba	22	SR 1130 (DICKINSON RD)	FROM NC 127 TO EOM		2	ZWU	NO	NO	0.22	18	10										141	5	10	5																
2016CPT.12.05.20181	Catawba	23	SR 2952 (PINEWINDS DR)	FROM NC 127 TO SR 2953		2	ZWU	NO	NO	0.32	18	20										205	35	16	80			3,379	1,351												
2016CPT.12.05.20181	Catawba	24	SR 2953 (SWEETBRIAR LN)	FROM CUL-DE-SAC TO CUL-DE-SAC		2	ZWU	NO	NO	0.34	18	20										267	35	20	80			4,390	1,756												
2016CPT.12.05.20181	Catawba	25	SR 2964 (GREENFIELD CT)	FROM SR 2953 TO CULDESAC		2	ZWU	NO	NO	0.05	18	5										54	5	4	5																
2016CPT.12.05.20181	Catawba	26	SR 2397 (THOREAU RD)	FROM SR 1515 TO CUL-DE-SAC		2	ZWU	NO	NO	0.40	19	20										295	5	20	30			4,859	1,944												
2016CPT.12.05.20181	Catawba	27	SR 2398 (WORDSWORTH RD)	FROM SR 2397 TO SR 2397		2	ZWU	NO	NO	0.30	18	20										193	20	14	50			3,168	1,267												
2016CPT.12.05.20181	Catawba	28	SR 1557 (WINEBARGER ST)	FROM SR 1517 TO EOM		2	ZWU	NO	NO	0.37	20	20										264	40	20	100			4,341	1,737												
2016CPT.12.05.20181	Catawba	29	SR 1996 (HUNSUCKER RD)	FROM SR 1729 TO SR 2638		2	ZWU	NO	NO	0.36	19	20										244	10	17	30																
2016CPT.12.05.20181	Catawba	30	SR 2463 (BASIL DR)	FROM SR 1996 TO EOM		2	ZWU	NO	NO	0.05	18	5										32	5	2	5																
2016CPT.12.05.20181	Catawba	31	SR 2638 (RICHARD ST)	FROM SR 1996 TO EOM		2	ZWU	NO	NO	0.17	18	10										109	5	8	10																
2016CPT.12.05.20181	Catawba	32	SR 1676 (3RD AVE SE)	FROM SR 1468 TO EOM		2	ZWU	NO	NO	0.23	18	10										148	10	10	25																
2016CPT.12.05.20181	Catawba	33	SR 1677 (22ND ST CT SE)	FROM SR 1676 TO EOM		2	ZWU	NO	NO	0.05	18	5										32	5	2	5																
2016CPT.12.05.20181	Catawba	34	SR 1469 (5TH AVE SE)	FROM SR 1468 TO EOM		2	ZWU	NO	NO	0.15	18	10										96	10	7	15																
2016CPT.12.05.20181	Catawba	35	SR 2269 (14TH AVE CIR SE)	FROM SR 1468 TO SR 1468		2	ZWU	NO	NO	0.23	20	20										156	20	12	50			2,669	1,080												
2016CPT.12.05.20181	Catawba	36	SR 2377 (COUNTRY HOLLOW RD)	FROM NC 16 TO CUL-DE-SAC		2	ZWU	NO	NO	0.08	18	10										76	10	6	20																
TOTAL FOR PROJ NO. 2016CPT.12.05.20181											17.87		1,825	875	23.92			1,800	2,950	13,902	2,075			4,075	395	1,395	2,350	68,487	24,179	37,080				3	10						

PROJECT NO.	SHEET NO.	TOTAL NO.
2016CPT.12.05.10181	19	
2016CPT.12.05.20181		

THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	WIDTH	4413000000-E	4457000000-N	4510000000-N	4695000000-E	4695000000-E	4710000000-E	4721000000-E	4725000000-E				4810000000-E			4835000000-E			4845000000-N			4847000000-E	4850000000-E	4905000000-N	
										WORK ZONE ADVANCE/GENERAL WARNING SIGNING	TEMPORARY TRAFFIC CONTROL	LAW ENFORCEMENT	8" x 90 M WHITE THERMO LINES	8" x 90 M YELLOW THERMO LINES	24" X 120 M WHITE THERMO	THERMO MSG ONLY 120 M	THERMO LT ARROW 90 M	THERMO RT ARROW 90 M	THERMO STR & RT ARROW 90 M	THERMO STR ARROW 90 M	4" WHITE PAINT	4" YELLOW PAINT	24" WHITE PAINT	PAINT LT ARROW	PAINT RT ARROW	PAINT STR & RT ARROW	POLYUREA PAVEMENT MARKING LINES (4", *****) (HIGHLY REFLECTIVE ELEMENTS)	REMOVAL OF PAVEMENT MARKING LINES, 4"	SNOW PLOWABLE MARKERS				
								FT		SF	LS	HR	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
2016CPT.12.05.10181	Catawba	1	US70	FROM SR 2959 TO SR 1005	1-6,9	2	MU	2.65	vars 60-84	284	1	75			850	8	83	23	15	80	28,500	30,000	850	83	23	15	58,500			650			
2016CPT.12.05.10181	Catawba	2	NC 127	FROM SR 1176 TO SR 2959	6-8,10	2	MU	3.77	vars. 36-60	448	*			250	450	8	103	5	7	31	10,800	7,200	200	20			57,500	6,000		875			
2016CPT.12.05.10181	Catawba	3	US 321	FROM SR 1361 TO SR 1306	11	2	MD	0.57	vars. 60-72	280	*	25			120	8	10	4			8,750	6,000	100	10			14,750			155			
2016CPT.12.05.10181	Catawba	4	NC 16	FROM NC 16 BUS. TO SR 1746	12	2	MD	2.28	48	374	*				350		45	18		56	13,250		350	45	18			13,250			625		
2016CPT.12.05.10181	Catawba	5	US 321 BUS.	FROM NC 10 TO US 70	8	2	MU	2.70	vars. 60-72	675	*		375		660	64	98	6	35	44							36,000			750			
TOTAL FOR PROJ NO. 2016CPT.12.05.10181										2,061	1	100	375	250	2,430	88	339	56	57	211	61,300	43,200	1,500	158	41	15	180,000	6,000	3,055				
													625		2,430		339	56	57	211	104,500		214										
2016CPT.12.05.20181	Catawba	6	SR 1453 (SPRINGS RD NE)	FROM SR 1516 TO PAVING JT. 150' W. OF SR 1504	14	2	2WU	2.45	24	270	*																				165		
2016CPT.12.05.20181	Catawba	7	SR 1815 (LITTLE MTN. RD)	FROM SR 1849 TO SR 1818	13	2	2WU	3.10	20	225	*										66,500	65,250					51,500						
2016CPT.12.05.20181	Catawba	8	SR 1490 (HERMAN SIPE RD)	FROM SR 1007 TO SR 1484	8,14,15	2	2WU	2.43	vars. 22-36	300	*				55		2	7			52,000	51,000											
2016CPT.12.05.20181	Catawba	9	SR 1128 (MTN. GROVE RD)	FROM NC 127 TO SR 1124	7	2	2WU	1.86	20	225	*				16						40,000	39,250											
2016CPT.12.05.20181	Catawba	10	SR 1814 (CALDWELL RD)	FROM NC 16 TO SR 1003	7	2	2WU	2.11	20	225	*										45,000	40,000											
2016CPT.12.05.20181	Catawba	11	SR 1172 (15TH AVE SE)	FROM CULDESAC TO EOM	16,18	2	2WU	0.58	vars. 18-20	125	*																						
2016CPT.12.05.20181	Catawba	12	SR 1680 (22ND ST NE)	FROM SR 1507 TO CUL-DE-SAC	16	2	2WU	0.42	18	125	*																						
2016CPT.12.05.20181	Catawba	13	SR 1681 (23RD ST NE)	FROM SR 1683 TO CUL-DE-SAC	16	2	2WU	0.08	18		*																						
2016CPT.12.05.20181	Catawba	14	SR 1682 (24 ST PL NE)	FROM SR 1574 TO EOM	16	2	2WU	0.22	18		*																						
2016CPT.12.05.20181	Catawba	15	SR 1683 (40TH AVE CT)	FROM SR 1682 TO CUL-DE-SAC	16	2	2WU	0.22	18		*																						
2016CPT.12.05.20181	Catawba	16	SR 1574 (25TH ST NE)	FROM SR 1507 TO EOM	16	2	2WU	0.28	19	125	*																						
2016CPT.12.05.20181	Catawba	17	SR 1987 (MURRAY LN)	FROM SR 1003 TO EOM	16	2	2WU	0.29	18	125	*																						
2016CPT.12.05.20181	Catawba	18	SR 2122 (PEANUTS LN)	FROM SR 2013 TO EOM	17	2	2WU	0.13	18	125	*																						
2016CPT.12.05.20181	Catawba	19	SR 2074 (KILLIAN AVE)	FROM SR 2014 TO EOM	16	2	2WU	0.12	20	125	*																						
2016CPT.12.05.20181	Catawba	20	SR 2321 (SMITHFIELD DR)	FROM NC 16 TO SR 2357	16	2	2WU	0.10	18	125	*																						
2016CPT.12.05.20181	Catawba	21	SR 2357 (SMITHFIELD DR)	FROM SR 2321 TO CUL-DE-SAC	16	2	2WU	0.16	18		*																						
2016CPT.12.05.20181	Catawba	22	SR 1130 (DICKINSON RD)	FROM NC 127 TO EOM	19	2	2WU	0.22	18	125	*																						
2016CPT.12.05.20181	Catawba	23	SR 2952 (PINEWINDS DR)	FROM NC 127 TO SR 2953	17	2	2WU	0.32	18	125	*																						
2016CPT.12.05.20181	Catawba	24	SR 2953 (SWEETBRIAR LN)	FROM CUL-DE-SAC TO CUL-DE-SAC	17	2	2WU	0.34	18		*																						
2016CPT.12.05.20181	Catawba	25	SR 2964 (GREENFIELD CT)	FROM SR 2953 TO CULDESAC	16	2	2WU	0.05	18		*																						
2016CPT.12.05.20181	Catawba	26	SR 2397 (THOREAU RD)	FROM SR 1515 TO CUL-DE-SAC	17	2	2WU	0.40	19	125	*																						
2016CPT.12.05.20181	Catawba	27	SR 2398 (WORDSWORTH RD)	FROM SR 2397 TO SR 2397	17	2	2WU	0.30	18		*																						
2016CPT.12.05.20181	Catawba	28	SR 1557 (WINEBARGER ST)	FROM SR 1517 TO EOM	17	2	2WU	0.37	20	125	*																						
2016CPT.12.05.20181	Catawba	29	SR 1996 (HUNSUCKER RD)	FROM SR 1729 TO SR 2638	16	2	2WU	0.36	19	125	*																						
2016CPT.12.05.20181	Catawba	30	SR 2463 (BASIL DR)	FROM SR 1996 TO EOM	16	2	2WU	0.05	18		*																						
2016CPT.12.05.20181	Catawba	31	SR 2638 (RICHARD ST)	FROM SR 1996 TO EOM	16	2	2WU	0.17	18		*																						
2016CPT.12.05.20181	Catawba	32	SR 1676 (3RD AVE SE)	FROM SR 1468 TO EOM	16,19	2	2WU	0.23	18	125	*																						
2016CPT.12.05.20181	Catawba	33	SR 1677 (22ND ST CT SE)	FROM SR 1676 TO EOM	19	2	2WU	0.05	18		*																						
2016CPT.12.05.20181	Catawba	34	SR 1469 (5TH AVE SE)	FROM SR 1468 TO EOM	19	2	2WU	0.15	18	125	*																						
2016CPT.12.05.20181	Catawba	35	SR 2269 (14TH AVE CIR SE)	FROM SR 1468 TO SR 1468	17,20	2	2WU	0.23	20	175	*																						
2016CPT.12.05.20181	Catawba	36	SR 2377 (COUNTRY HOLLOW RD)	FROM NC 16 TO CUL-DE-SAC	16	2	2WU	0.08	18	125	*																						
TOTAL FOR PROJ NO. 2016CPT.12.05.20181										3,295					71		2	7			203,500	195,500				51,500			165				
GRAND TOTAL										5,356	1	100	375	250	2,501	88	341	63	57	211	264,800	238,700	1,500	158	41	15	231,500	6,000	3,220				
													625		2,501		341	63	57	211	503,500		214										

SIGNING FOR RESURFACING PROJECTS

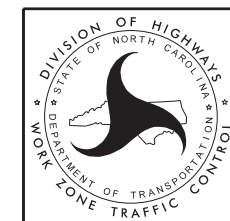


LEGEND	
⊥	STATIONARY SIGN
←	DIRECTION OF TRAFFIC FLOW

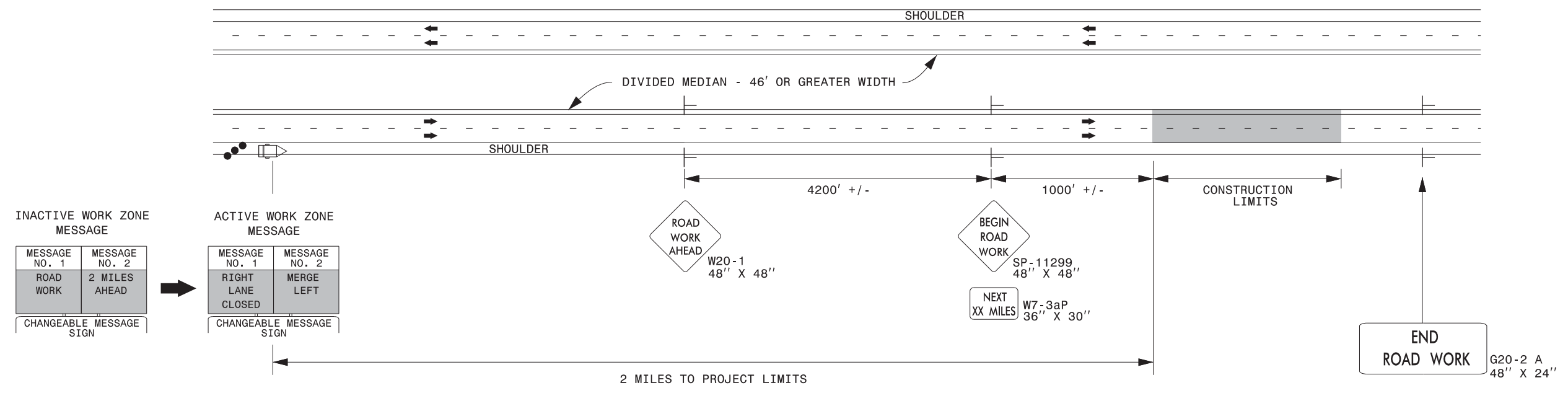
MAINLINE (-L-) SIGNING

-Y- LINE SIGNING

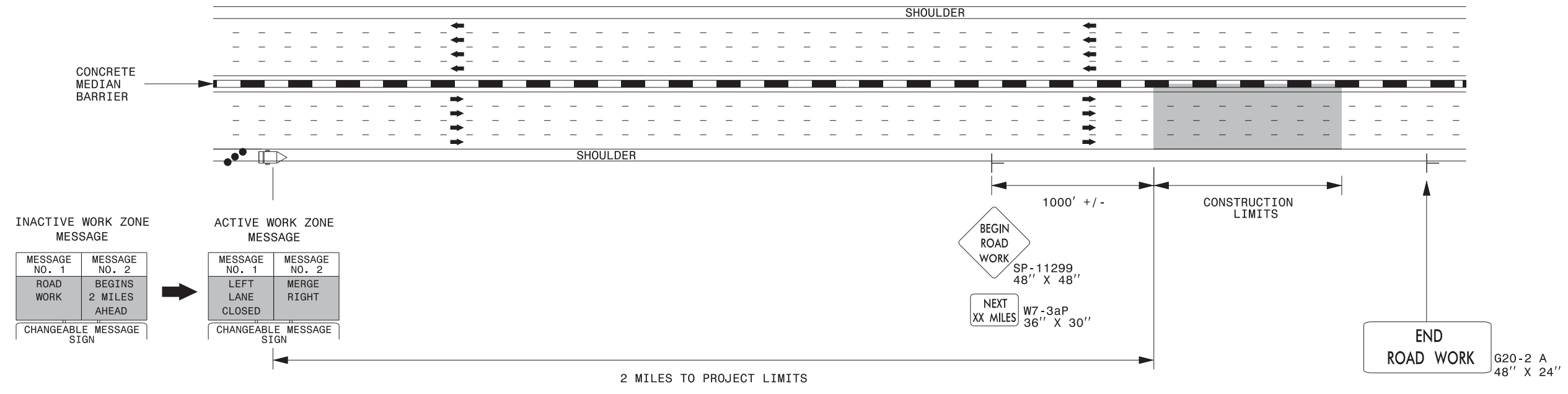
SIGNING NOTES AND PLACEMENT PER DIRECTION	MAINLINE (-L-) SIGNING		-Y- LINE SIGNING	
	1	 W20-1 48" X 48"	PLACE 1000' PRIOR TO BEGINNING OF CONSTRUCTION LIMITS. ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000' ALONG -Y- LINE.	<p>NO REQUIRED STATIONARY SIGNING FOR THE FOLLOWING -Y- LINE CONDITIONS:</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;"> <div style="text-align: center;"> W20-1 48" X 48" </div> <div style="text-align: center;"> W20-7 A 48" X 48" </div> </div> <p>PLACED 500' IN ADVANCE OF FLAGGER. PLACED 250' IN ADVANCE OF FLAGGER.</p>
	2	 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	 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 1/2 MILE FROM THE CONSTRUCTION LIMITS AND THEN SPACE 1 MILE THEREAFTER.	
	4	 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	 G20-2 A 48" X 24"	PLACE 500' FOLLOWING THE END OF CONSTRUCTION LIMITS.		



DIVIDED MEDIANS WITH WIDTHS 46' OR GREATER



DIVIDED MEDIANS WITH WIDTHS LESS THAN 46' OR WITH PERMANENT MEDIAN BARRIER

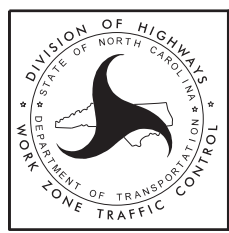


NOTES:

- 1) LATERAL CLEARANCE AT ALL SIGN LOCATIONS SHALL BE 6' AS MEASURED FROM THE EDGE OF PAVEMENT.
- 2) MOUNT SIGNS THAT ARE LARGER THAN 10 SQUARE FEET IN AREA ON TWO OR MORE WOOD OR U-CHANNEL SUPPORTS. PERFORATED SQUARE TUBING SUPPORT SYSTEMS MAY SUPPORT LARGER AREAS ON A SINGLE SUPPORT. FOLLOW MANUFACTURER'S RECOMMENDATIONS. THESE SYSTEMS SHALL BE NCHRP 350 COMPLIANT AND NCDOT APPROVED.
- 3) FOR MEDIAN WIDTHS LESS THAN 46' (MEASURED EDGELINE TO EDGELINE) USE THE BOTTOM DRAWING.
- 4) IF STATIONARY GENERAL WARNING SIGNS ARE USED, THEY WILL BE PAID FOR PER SECTION 104 OF THE NCDOT STANDARD SPECIFICATIONS AS EXTRA WORK.
- 5) INSTALL "ROAD WORK AHEAD" (W20-1) ALONG ENTRANCE RAMP 500' PRIOR TO RAMP TERMINAL, AND "END ROAD WORK" (G20-2a) AT THE END OF EXIT RAMP WITHIN THE WORK ZONE.
- 6) IF MILLED AREAS ARE NOT PAVED BACK BY THE END OF THE WORK DAY, PORTABLE SIGNS SHALL BE USED TO WARN DRIVERS OF THE PRESENT CONDITIONS. THESE ARE TO INCLUDE, BUT NOT LIMITED TO "ROUGH ROAD" W8-8, "UNEVEN LANES" W8-11, "GROOVED PAVEMENT" W8-15 w/MOTORCYCLE PLAQUE MOUNTED BELOW. THESE ARE TO BE DOUBLE INDICATED ON MULTI-LANE ROADWAYS WITH SPEED LIMITS 45 MPH AND GREATER AND WITH DIVIDED MEDIANS OF 46' OR GREATER. THESE PORTABLE SIGNS ARE INCIDENTAL TO THE OTHER ITEMS OF WORK INCLUDED IN THE TEMPORARY TRAFFIC CONTROL (LUMP SUM) PAY ITEM.

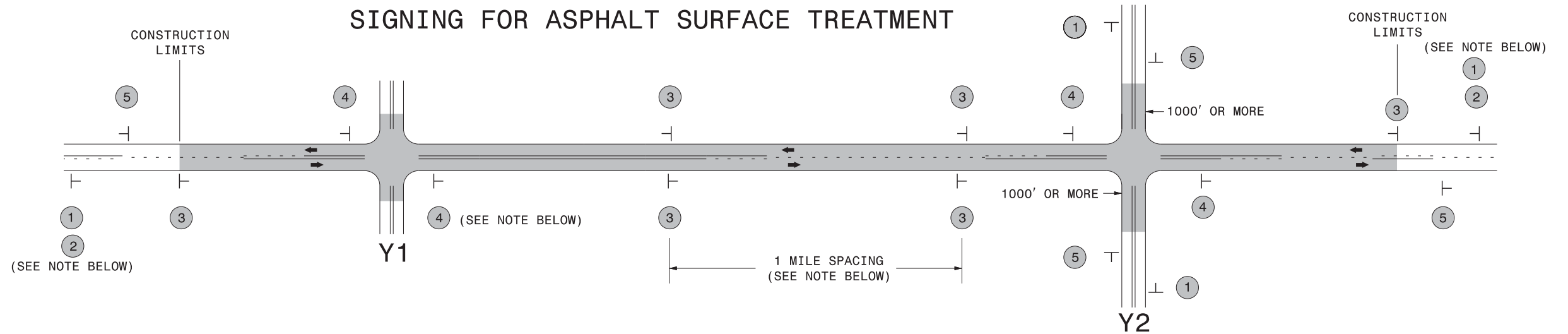
LEGEND

- CHANGEABLE MESSAGE SIGN (CMS)
- STATIONARY SIGN
- DIRECTION OF TRAFFIC FLOW
- TRAFFIC DRUM



**RESURFACING ADVANCE
WARNING SIGNS FOR
HIGH SPEED FACILITIES
≥ 60 MPH**

SIGNING FOR ASPHALT SURFACE TREATMENT



LEGEND	
	STATIONARY SIGN
←	DIRECTION OF TRAFFIC FLOW

MAINLINE (-L-) SIGNING

-Y- LINE SIGNING

SIGNING NOTES AND PLACEMENT PER DIRECTION	1	 <small>W20-1 48" X 48"</small>	PLACE 1000' PRIOR TO BEGINNING OF CONSTRUCTION LIMITS. ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000' ALONG -Y- LINE.		
	2	 <small>W7-3aP 24" X 18"</small>	#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	 <small>W8-7 48" X 48"</small> <small>SP 48" X 48"</small>	ALTERNATE THE FOLLOWING TWO SIGNS: STARTING WITH "LOOSE GRAVEL" (W8-7) FOLLOWED BY "UNMARKED PAVEMENT". 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.		
	4	 <small>SP 13106 48" X 48"</small>	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	 <small>G20-2 A 48" X 24"</small>	PLACE 500' FOLLOWING THE END OF CONSTRUCTION LIMITS.		

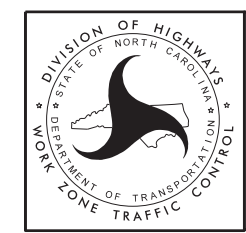
NO REQUIRED STATIONARY SIGNING FOR THE FOLLOWING -Y- LINE CONDITIONS:

- 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.



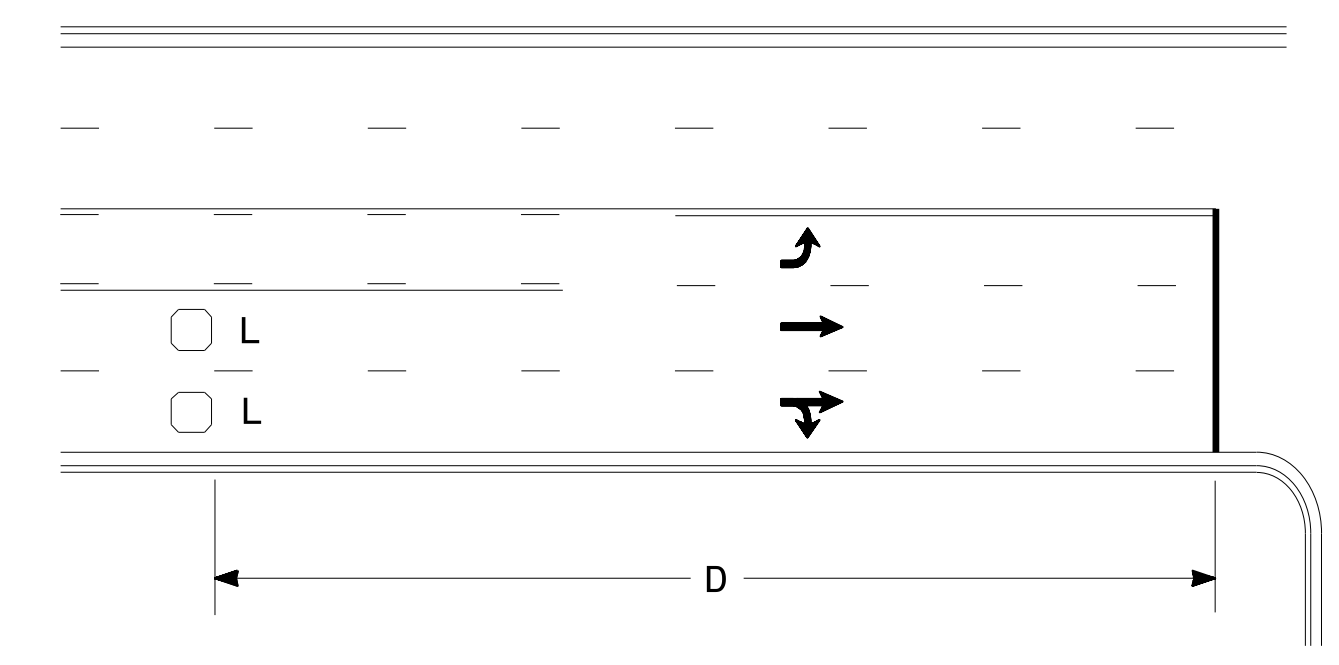
PLACED 500' IN ADVANCE OF FLAGGER. PLACED 250' IN ADVANCE OF FLAGGER.



**ADVANCE WARNING SIGNS
FOR
ASPHALT SURFACE TREATMENTS
2 LANE ROADWAYS**

12/22/2014 S:\TMU\WZTC\apps\work\zonegeneral\external\map\page\DesRes\Resurfacing\Resurfacing_AdvWarn_2Ln - AST.dgn User:rmgarratt

High Speed Detection (≥40 mph)

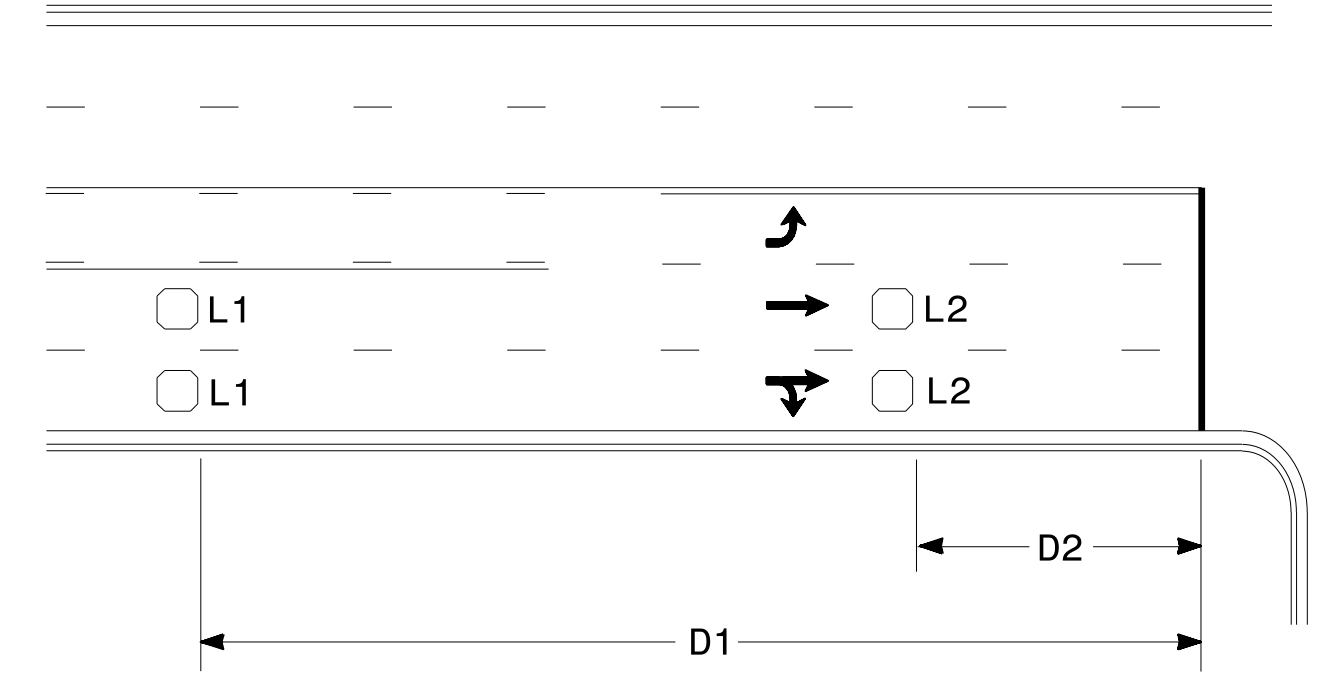


Speed Limit mph	D ft
40	250
45	300
50	355
55	420

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

Volume Density Operation

OR

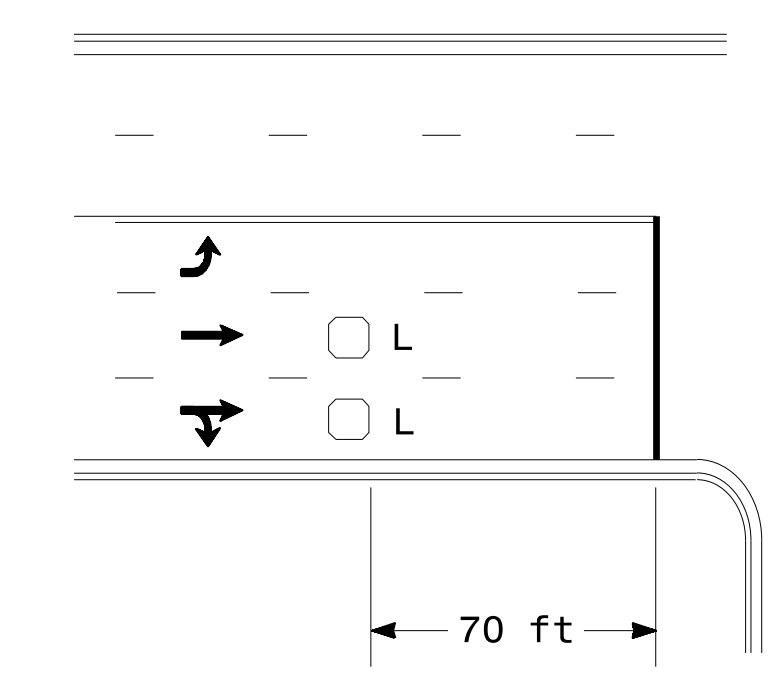


Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

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

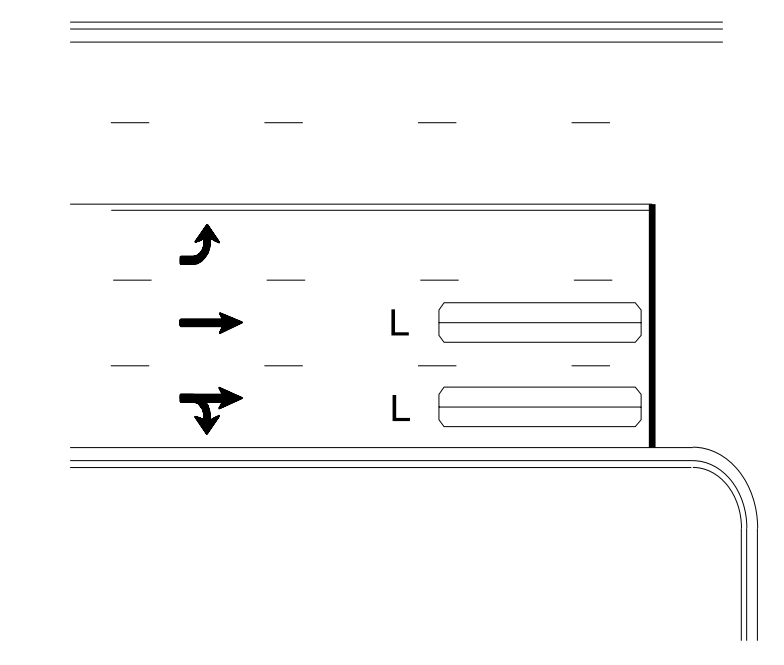
"Stretch" Operation

Low Speed Detection (≤35 mph)



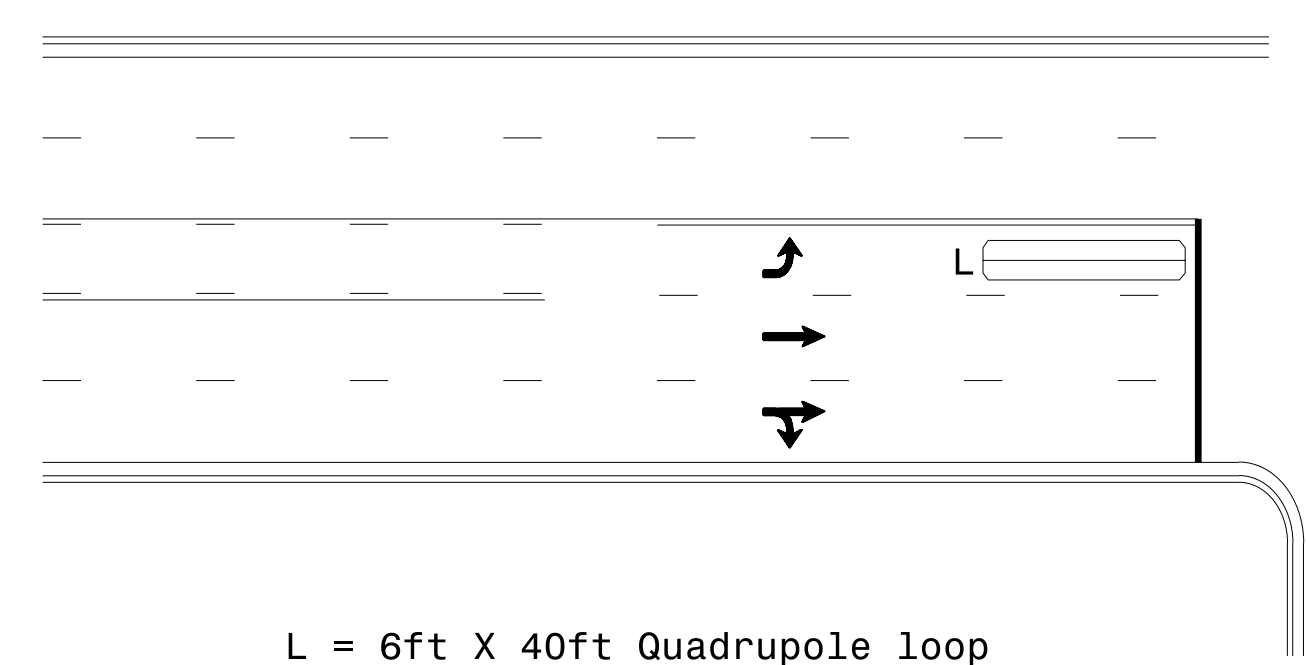
L = 6ft X 6ft
Wired in series

OR



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

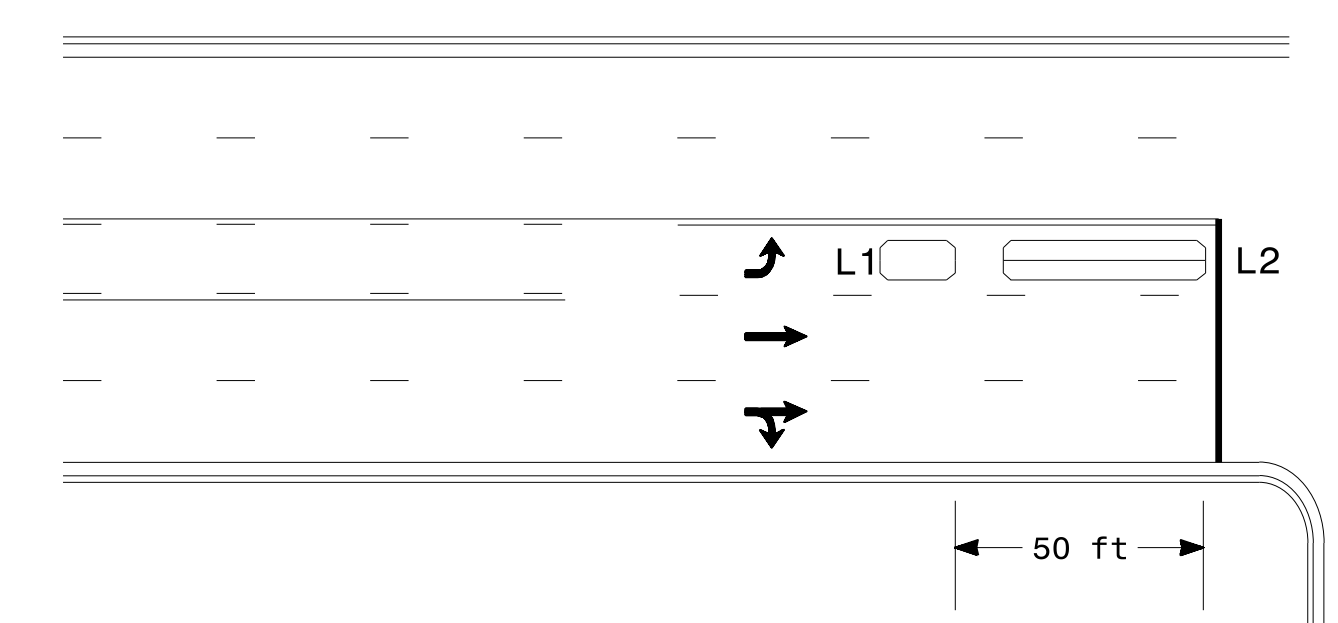
Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

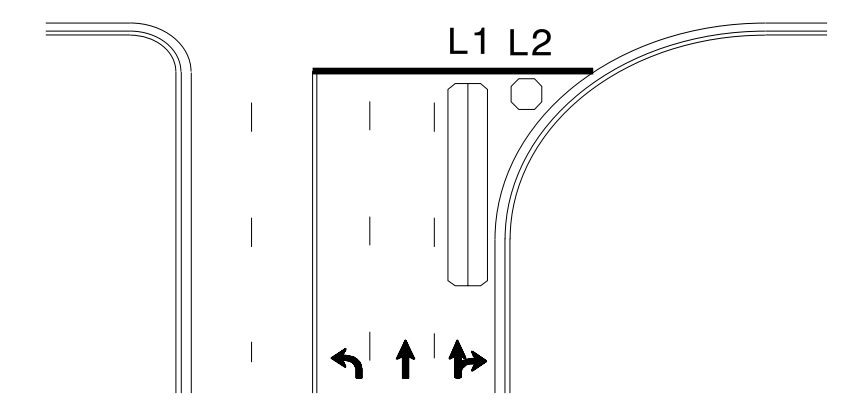
OR



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

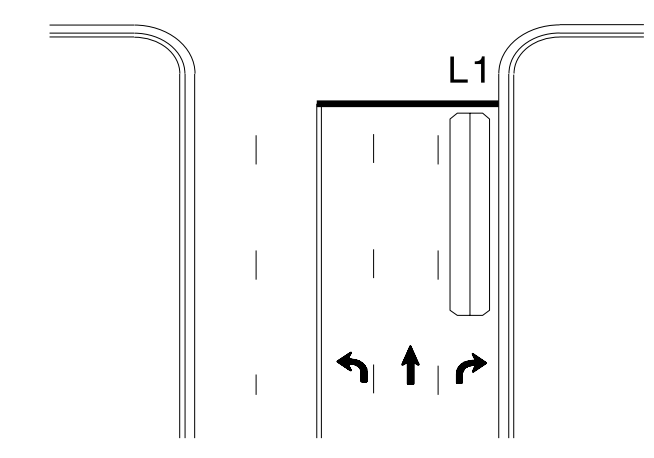
Queue Loop Detection

Right Turn Lane Detection

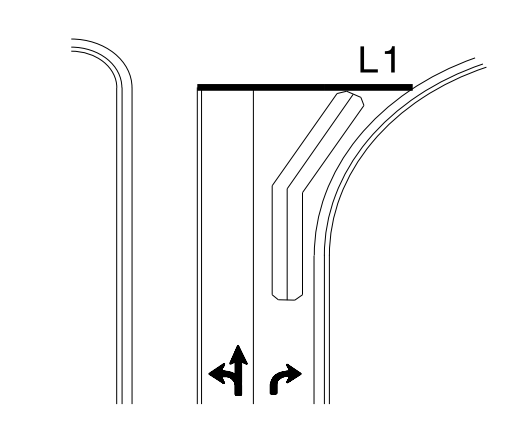


Shared Lane/
Wide Radius Turn

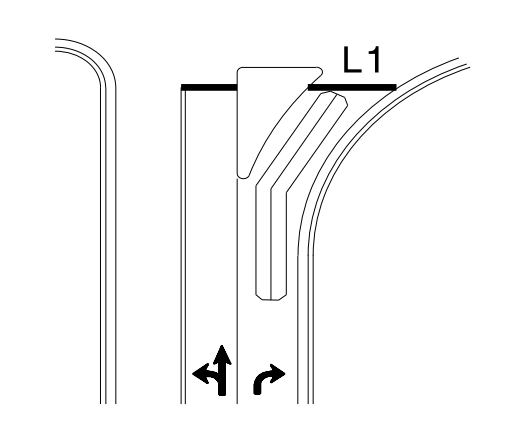
L1 = 6ft X 40ft Quadrupole loop
L2 = 6ft X 6ft [Minimum] Presence loop
Wired separately



Standard Turn

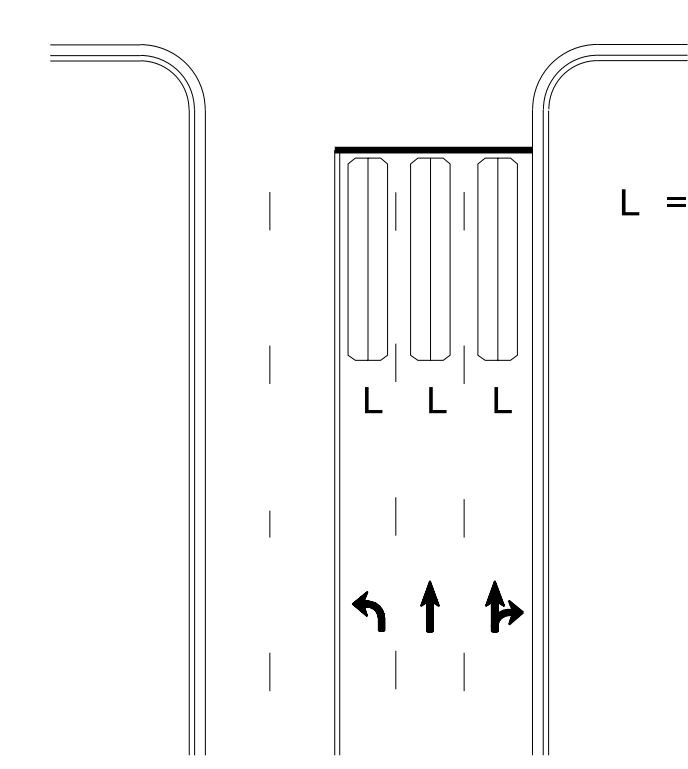


Wide Radius Turn



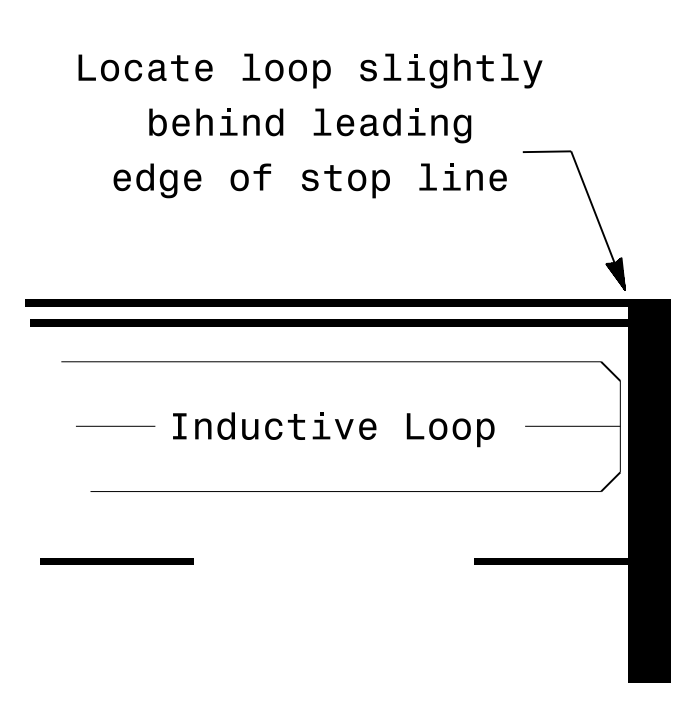
Channelized Turn

Side Street Detection



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

Presence Loop Placement at Stop Lines



Locate loop slightly
behind leading
edge of stop line

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

Recommended Number of Turns

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

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

Quadrupole loops: Use 2-4-2 turns

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

750 N. Greenfield Pkwy, Garner, NC 27529

Typical Signal Loop Locations

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

SEAL
NORTH CAROLINA
PROFESSIONAL ENGINEER
PAMELA L. ALEXANDER
23489

DocuSigned by:
P. Alexander
1/30/2015 11:00:00 AM
DATE

SIG. INVENTORY NO.

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