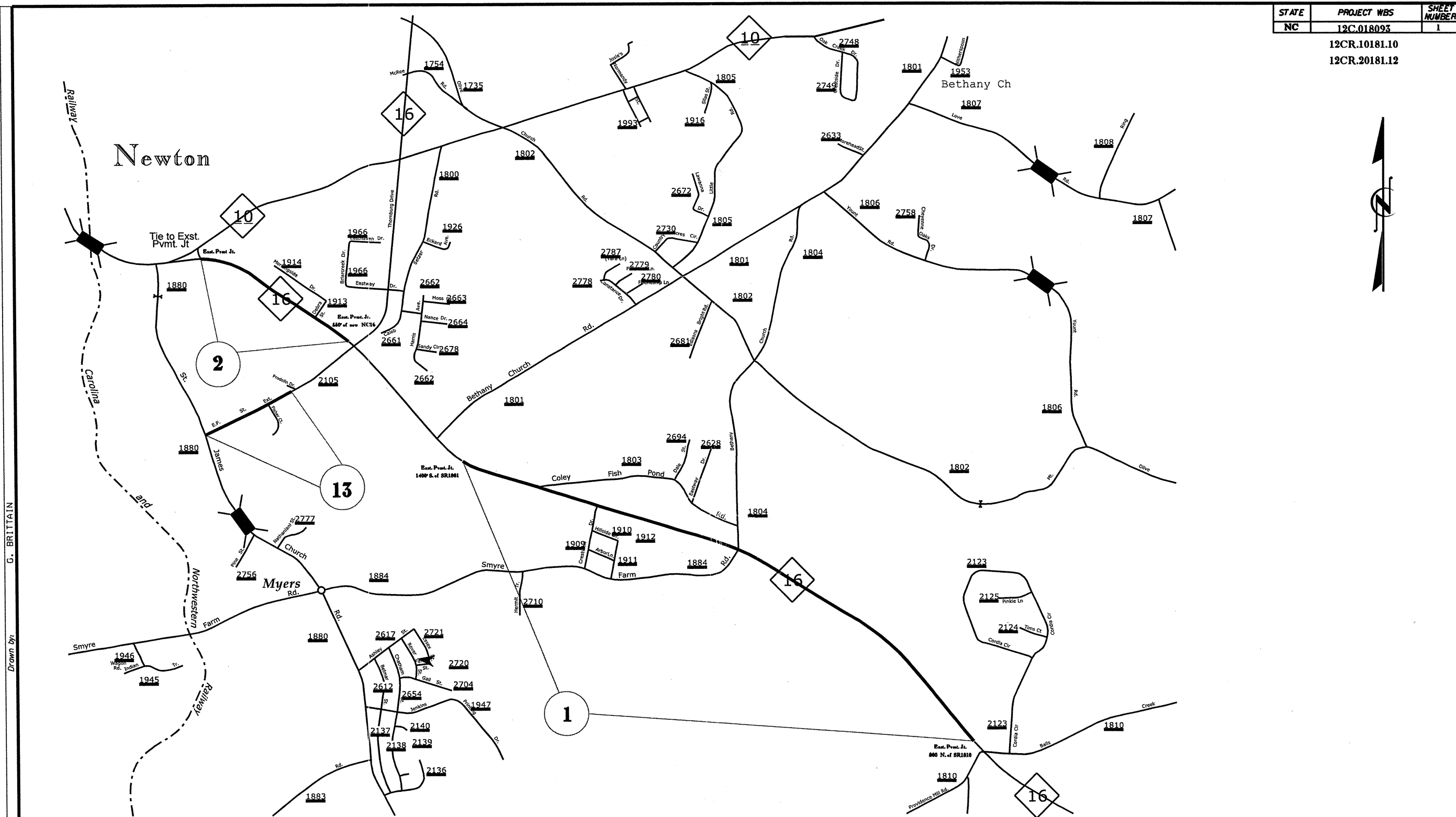


STATE	PROJECT WBS	SHEET NUMBER
NC	12C.018093	1
	12CR.10181.10	
	12CR.20181.12	



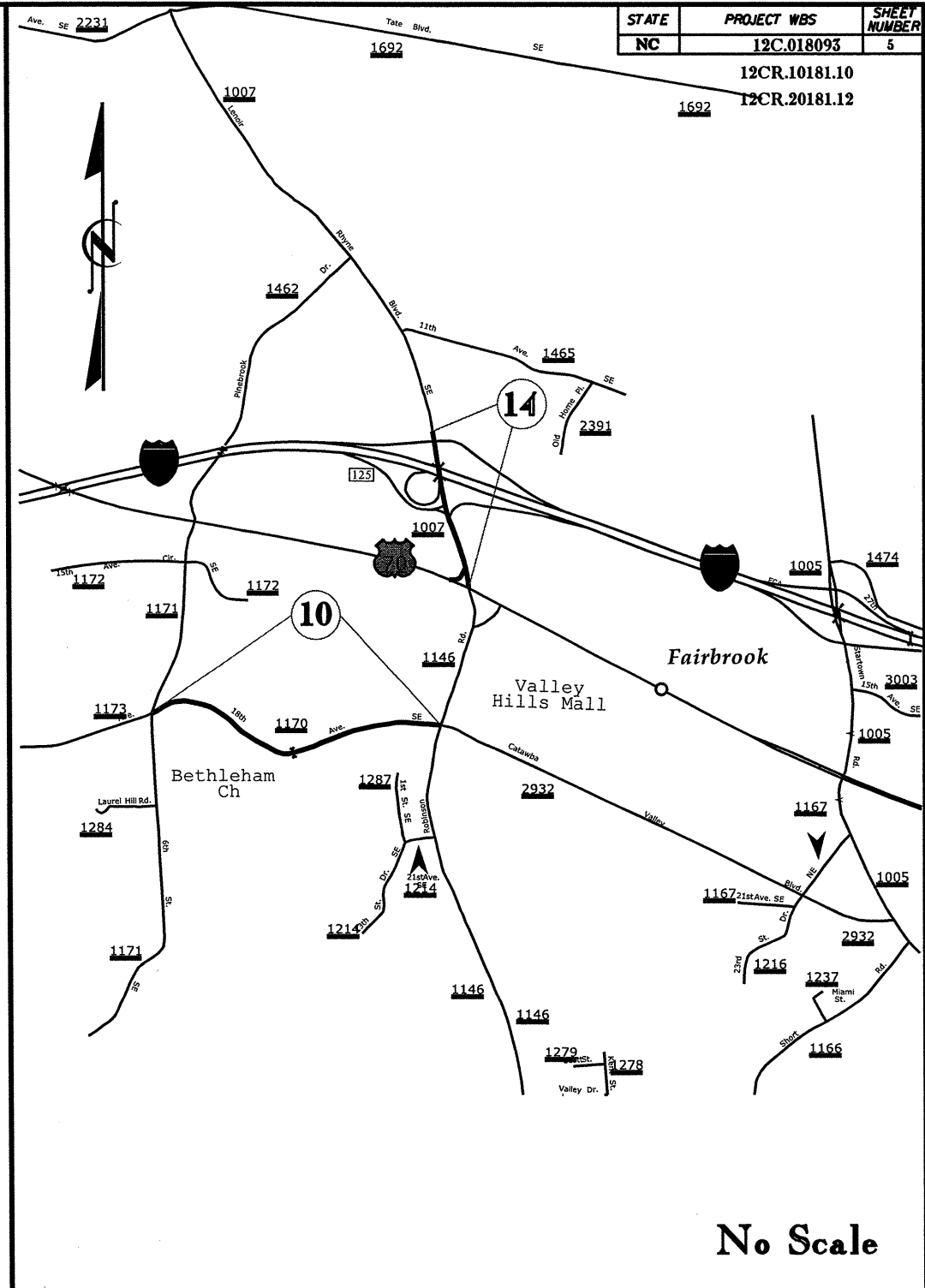
G. BRITAIN
Drawn by

No Scale

2010-2011
Resurfacing Map
CATAWBA COUNTY NC

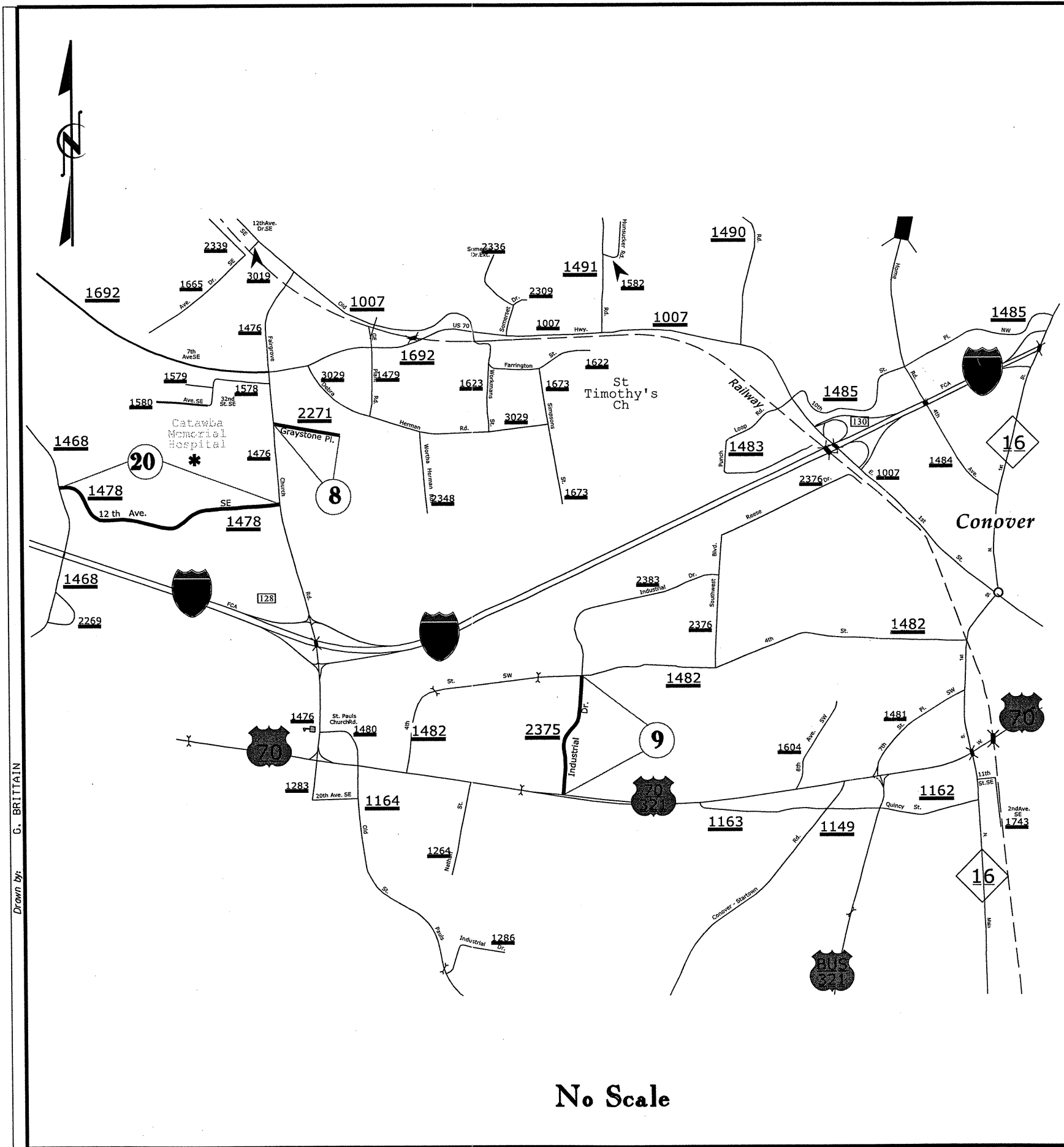
STATE	PROJECT WBS	SHEET NUMBER
NC	12C.018093	5

12CR.10181.10
12CR.20181.12



No Scale

2010-2011
Resurfacing Map
CATAWBA COUNTY NC

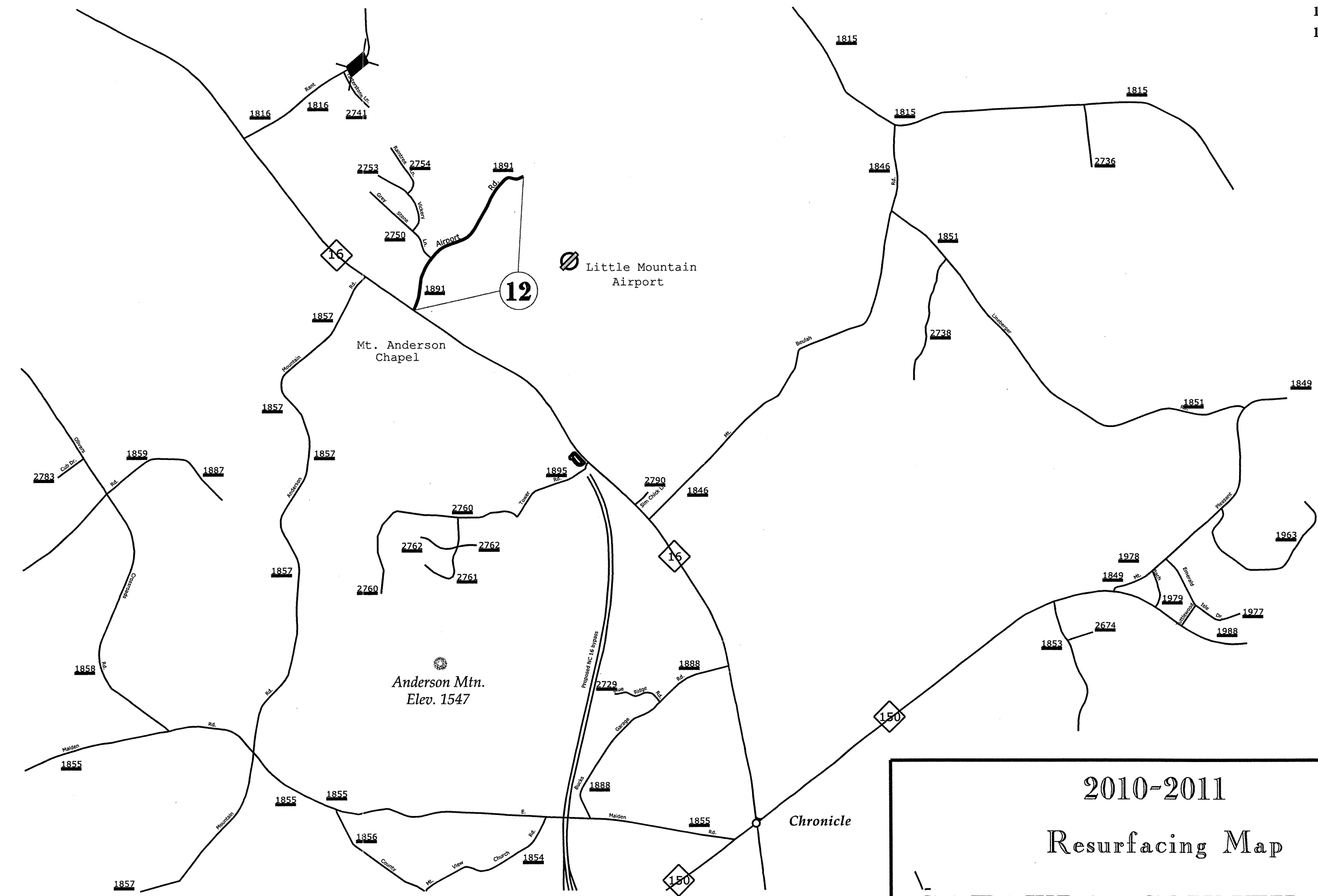


No Scale

Drawn by: G. BRITAIN

STATE	PROJECT WBS	SHEET NUMBER
NC	12C.018093	7

12CR.10181.10
12CR.20181.12

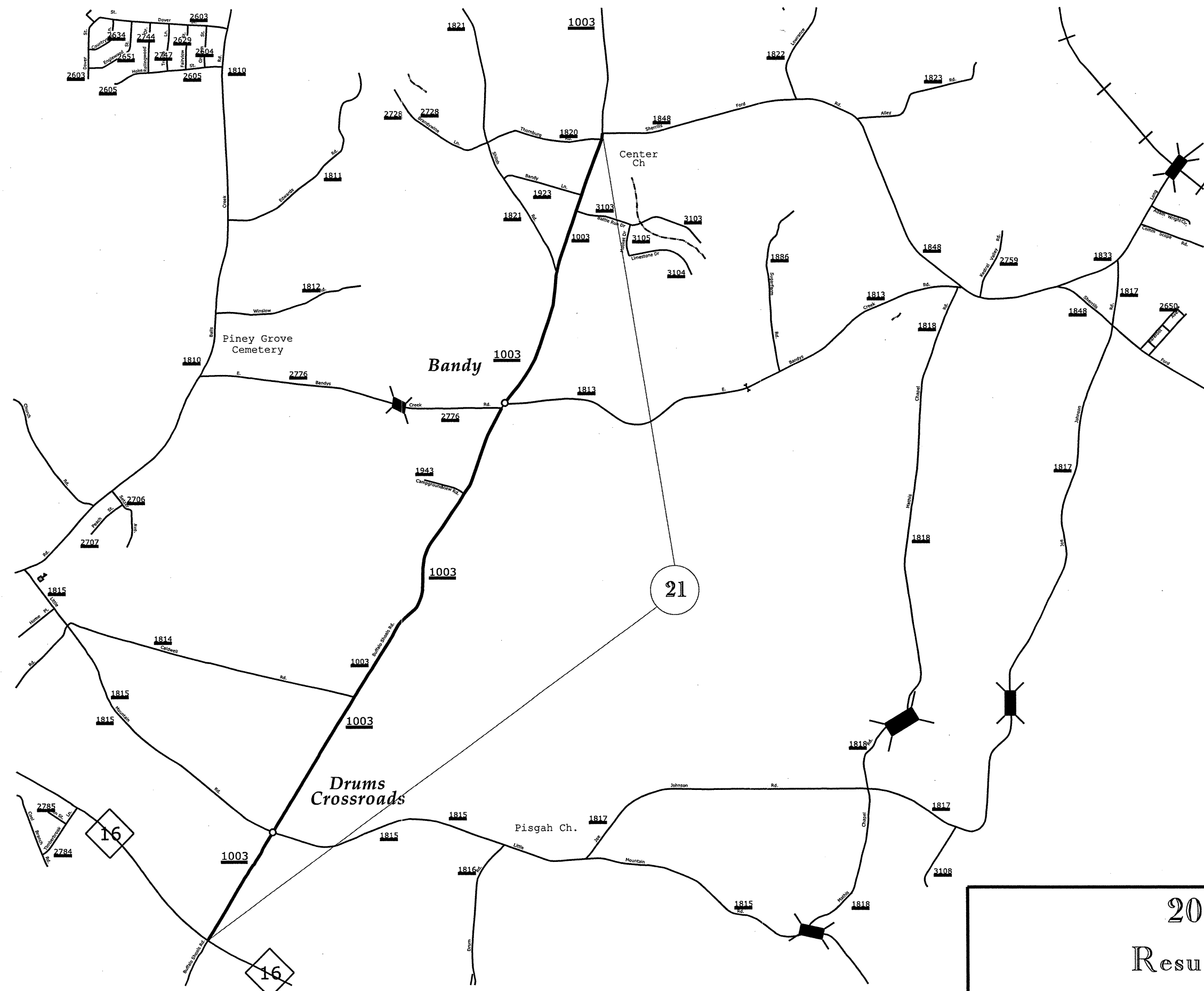


No Scale

2010-2011
Resurfacing Map
CATAWBA COUNTY NC

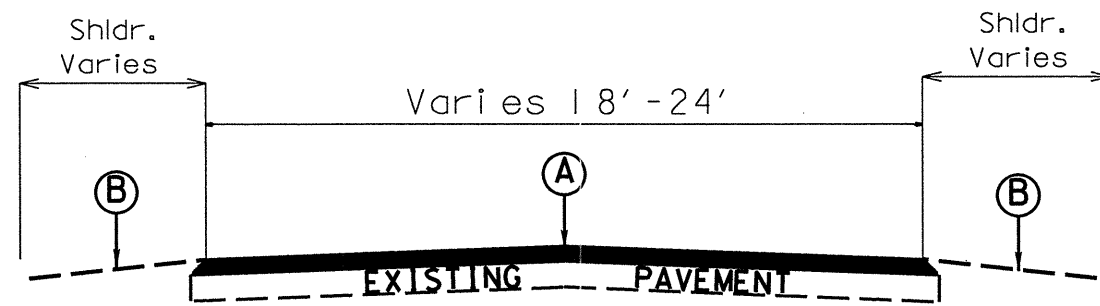
STATE	PROJECT WBS	SHEET NUMBER
NC	12C.018093	10

12CR.10181.10
12CR.20181.12



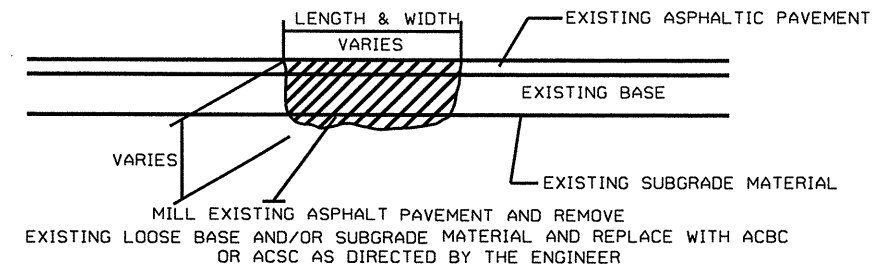
No Scale

2010-2011
Resurfacing Map
CATAWBA COUNTY NC

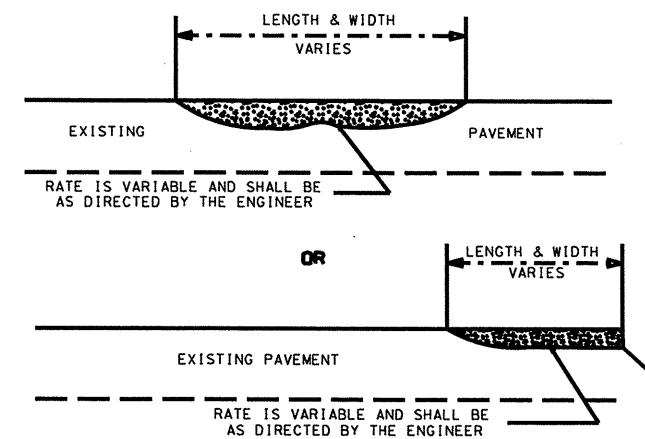


TYPICAL SECTION NO. 1

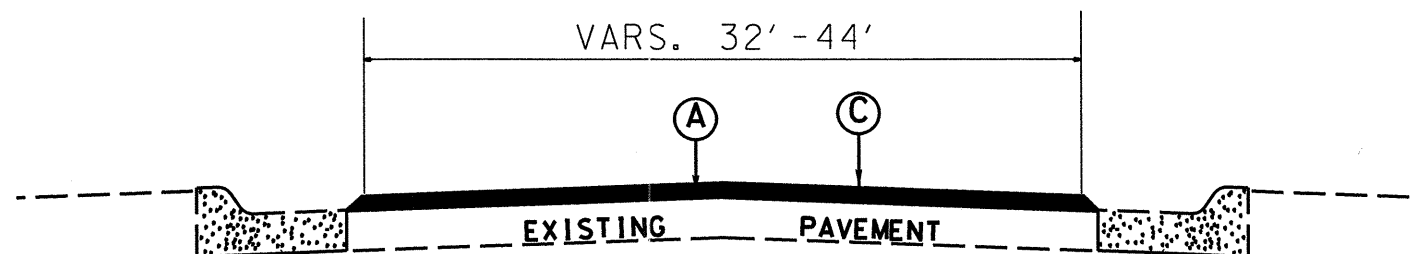
- MAPS # 1 - 3 (entire map)
- MAPS # 6 - 0+00 TO 15+50
- MAPS # 7 - 9 (entire map)
- MAP #10 - 0+00 to 33+75
- MAPS # 11 - 13 (entire map)
- MAPS # 15 - 18 (entire map)
- MAP # 19 - 0+00 to 293+00
- MAP # 20 - 0+00 to 26+50
 39+50 to 46+00
- MAP #21 - (entire map)



PATCHING EXISTING PAVEMENT



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



TYPICAL SECTION NO. 2

- MAP # 5 - 88+50 TO 101+50
- MAP # 6 - 15+50 TO 91+50

PAVEMENT SCHEDULE	
A	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
B	AGGREGATE SHOULDER BORROW (SHOULDER RECONSTRUCTION)
C	MILL ASPHALT PVMT. APPROX. 3.0" DEPTH

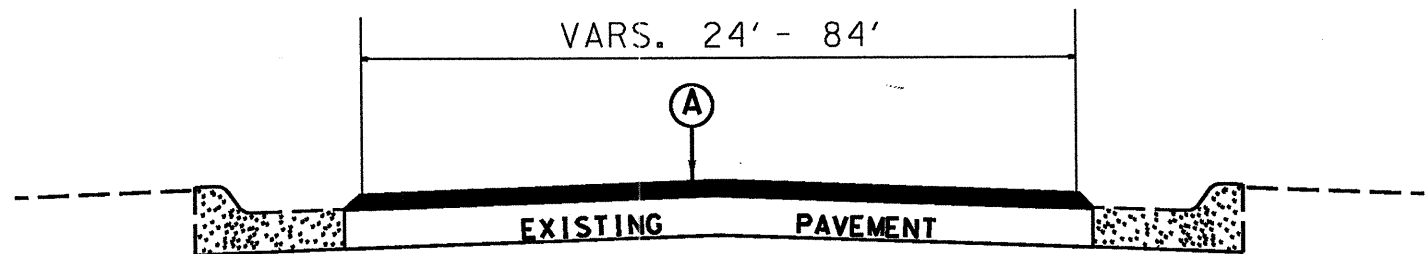
General Notes:

- * Pavement edge slopes are 1:1 unless specified otherwise.
- * Mill bridge approaches 100' to provide a smooth transition or as directed by the Engineer.

** All Stations increase to the N & E except Map #6 which increase to the west.

2010 - 2011
Resurfacing Program
Typical Sections
Catawba County NC

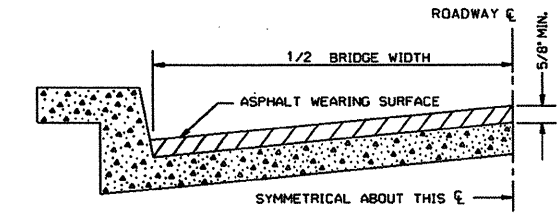
Checked by: G. Briffain



TYPICAL SECTION NO. 3

MAP # 14 - 2+00 to 8+80
 11+00 to 14+00
 17+90 to 20+00

MAP # 19 - 297+50 TO 302+40
 MAP # 20 - 26+50 TO 31+20



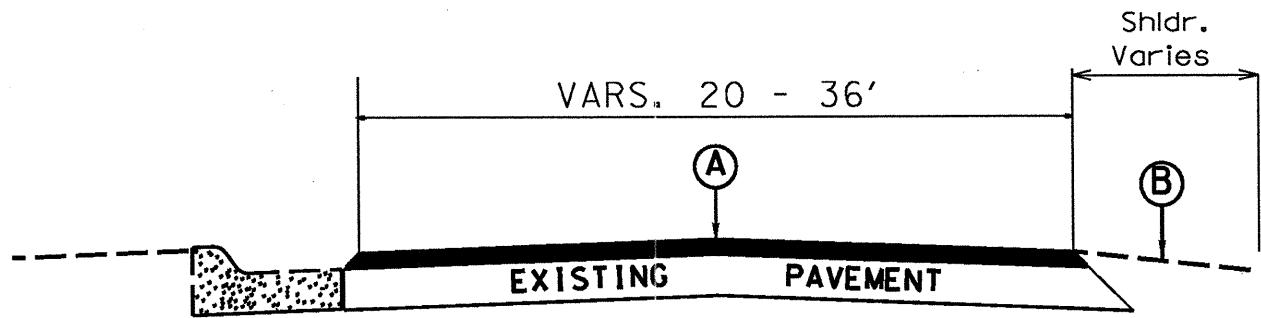
BRIDGE HALF TYPICAL SECTION

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.

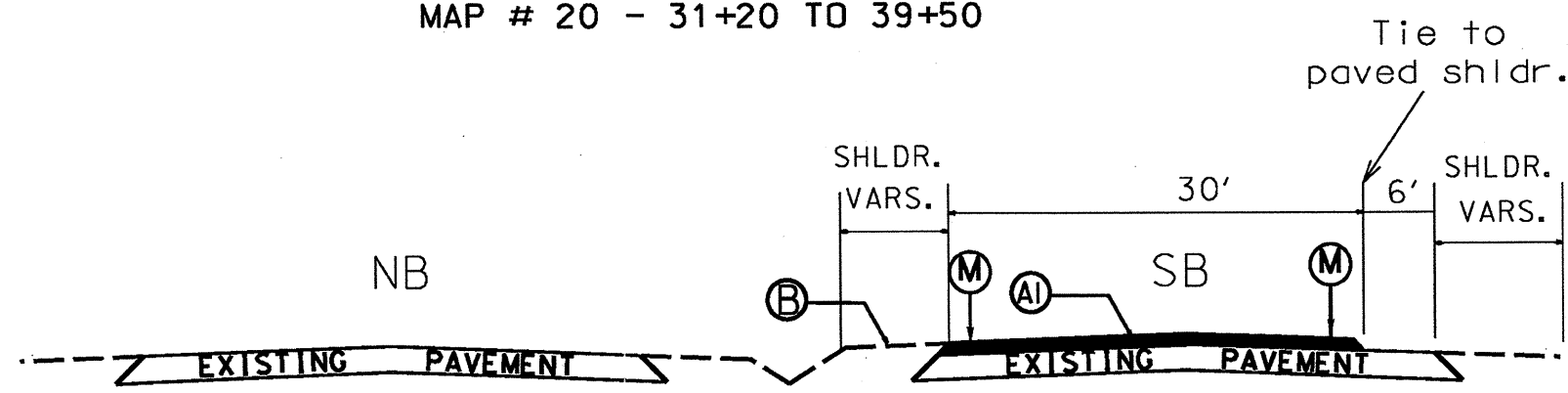
NOTES

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.



TYPICAL SECTION NO. 4

MAP # 10 - 33+75 TO 42+75
 MAP # 19 - 293+00 TO 297+50
 MAP # 20 - 31+20 TO 39+50



TYPICAL SECTION NO. 5

MAP # 4 (ENTIRE MAP)

PAVEMENT SCHEDULE	
A	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
B	AGGREGATE SHOULDER BORROW (SHOULDER RECONSTRUCTION)
C	MILL ASPHALT PVMT. APPROX. 3.0" DEPTH
A1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
M	MILLED RUMBLE STRIPS

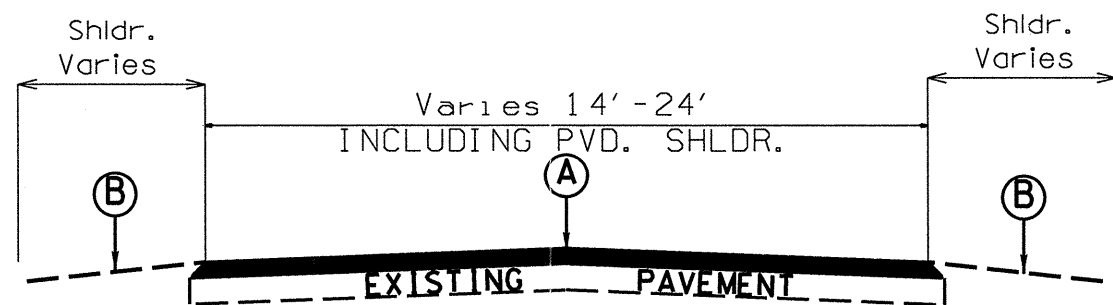
General Notes:

- * Pavement edge slopes are 1:1 unless specified otherwise.
- * Mill bridge approaches 100' to provide a smooth transition or as directed by the Engineer.

** All Stations increase to the N & E except Map #20 which increase to the west.

2010 - 2011
 Resurfacing Program
 Typical Sections
 Catawba County NC

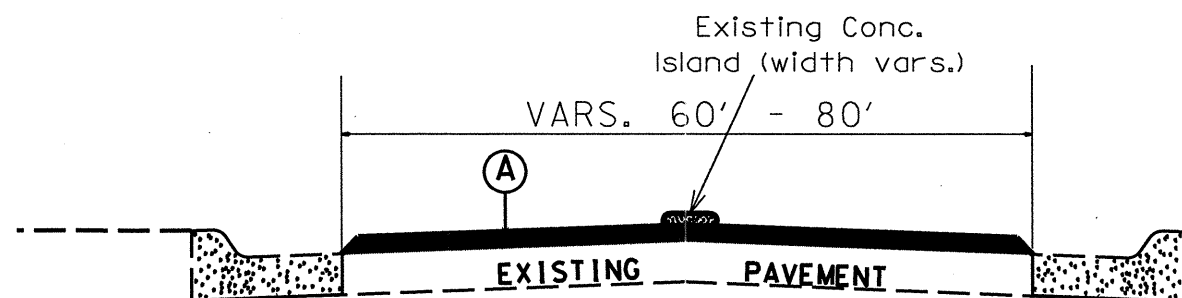
Checked by: Drawn by: G. Brittain



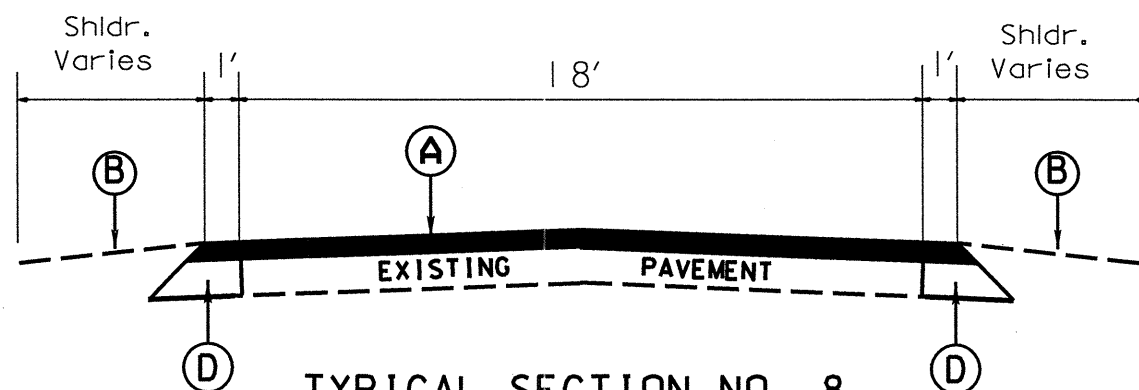
US 321 (MAP 4) SB
RAMPS TYPICAL SECTION NO. 6



DETAIL A
MILLING BRIDGE APPROACHES



TYPICAL SECTION NO. 7
MAP # 14 - 0+00 TO 2+00
8+80 TO 11+00
20+00 TO 21+50



TYPICAL SECTION NO. 8
MAP # 5 - 0+00 to 88+50

PAVEMENT SCHEDULE	
A	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
B	AGGREGATE SHOULDER BORROW (SHOULDER RECONSTRUCTION)
C	MILL ASPHALT PVT. APPROX. 3.0" DEPTH
D	PROP. APPROX 8" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, PLACED IN TWO 4" LIFTS AT AN AVERAGE RATE OF 456 LBS PER SQ. YD.
Y1	MILL ASPHALT PVT. APPROX. 0 - 1.5" FOR INCIDENTAL MILLING

General Notes:

- * Pavement edge slopes are 1:1 unless specified otherwise.
- * Mill bridge approaches 100' to provide a smooth transition or as directed by the Engineer.

** All Stations increase to the N & E except Map #6 which increase to the west.

2010 - 2011
Resurfacing Program
Typical Sections
Catawba County NC

Checked by: _____
Drawn by: G. Brittain

PROJECT NO.	SHEET NO.	TOTAL NO.
12C.018093	14	
12CR.10181.10 12CR.20181.12		

SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP	LENGTH MI	WIDTH FT	INCIDENTAL STONE BASE TONS	SHOULDER RECONSTRUCTION SMI	AGGR SHLDR BORROW TON	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	PG 64-22 PLANT MIX TONS	PG 70-22 PLANT MIX TONS	PATCHING EXISTING PAVEMENT TONS	ADJUSTMENT OF CATCH BASIN EA	ADJUSTMENT OF DROP INLET EA	ADJUSTMENT OF MANHOLES EA	ADJUSTMENT OF METER OR VALVE BOX EA	MILLED RUMBLLED STRIPS LF	PORTABLE LIGHTING LS
12CR.10181.10	Catawba	1	NC 16	FROM PVMT JT 800' N OF SR 1810 TO PVMT JT. 1400' S. OF SR 1801	1	2.43	24	100	4.86	185				3,459	300			227		750						
12CR.10181.10	Catawba	2	NC16	FROM PVMT JOINT 550' N. OF NEW NC16 TO PVMT JOINT AT NC 10	1	0.64	24	40	1.28	49				943	100			63		200			1			
12CR.10181.10	Catawba	3	NC10	FROM SR 1005 TO US 321-B	1	2.71	24	140	5.42	206		550		3,747	240			240		450			3	3		
12CR.10181.10	Catawba	4	US321 (SB LANES & RAMPS)	FROM N. END OF BRDG. #324 TO THE S. END OF BRDG. 5	5,6	4.86	30	100	5.75	219		850				10,855	1,100			3,200					51,300	
TOTAL FOR PROJ NO. 12CR.10181.10						10.64		380	17.31	659		1400		8,149	640	10,855	1,100	530	723	4,600			4	3	51,300	1
12C.018093	Catawba	5	SR 1735 (MT. OLIVE RD)	FROM NC 10 TO SR 1739	2,8	1.93	vars.20-32'	60	3.35	128	4750		1475	2,308	240			217		500			5	5		
TOTAL FOR PROJ NO. 12C.018093																										
12CR.20181.12	Catawba	6	SR 1739 & SR 1780 (E. 20TH ST.)	FROM NEW PVMT. E. OF THORNBURG DR. (NC 16) TO US 321-B	1,2	1.73	vars. 24-44'	40	0.59	23	33500	500		3,556	350			236		1,000			24	15		
12CR.20181.12	Catawba	7	SR 1801 & SR 1804 (BETHANY CH RD)	FROM OLD NC 16 TO NC 10	1	2.80	20	100	5.60	213				3,111	450			216		450						
12CR.20181.12	Catawba	8	SR 2271 (GREYSTONE PL)	FROM SR 1476 TO END MAINT.	1	0.23	19	20						243	50			18		80				2		
12CR.20181.12	Catawba	9	SR 2375 (BUMG. INDUSTRIAL DR)	FROM US 70 TO SR 1482	1	0.45	24	20						599	80			41		225				4		
12CR.20181.12	Catawba	10	SR 1170 (CAT VALLEY BLVD SE)	FROM SR 1146 TO SR 1171	1,4	0.81	vars. 20-36	20						1,044	150			72		250			6			
12CR.20181.12	Catawba	11	SR 1124 (OLD SHELBY RD)	FROM SR 1002 TO SR 1128	1	1.22	18	60	2.44	93				1,279	130			85		250						
12CR.20181.12	Catawba	12	SR 1891 (AIRPORT RD)	FROM NC 16 TO END OF MAINT.	1	0.68	20	40						756	80			51		250						
12CR.20181.12	Catawba	13	SR 2105 (EAST P. ST.)	FROM SR 1880 TO PVMT. JT. 100' W. OF PRODELIN DR. (private)	1	0.40	24	30	0.80	31				533	60			36		150			2			
12CR.20181.12	Catawba	14	SR 1007 (L-R BLVD)	FROM US 70 TO PVMT. JOINT 150' N. OF WB RAMPS)	3,7	0.34	vars. 60-84'	20				1750		1,569	160			105		300			5	2		
12CR.20181.12	Catawba	15	SR 2581 (CORRAL DR)	FROM SR 1144 TO CULDESAC	1	0.23	20	20						296	40			20		100						
12CR.20181.12	Catawba	16	SR 2582 (CARSON DR)	FROM SR 2581 TO CULDESAC	1	0.06	20							107	15			7		20						
12CR.20181.12	Catawba	17	SR 1810 (BALLS CRK)	FROM NC10 TO NC 16	1	4.72	20	250	9.44	359				5,245	500			347		600		1	1	1		
12CR.20181.12	Catawba	18	SR 1869 (BOST NURSERY RD)	FROM LINCOLN CO. LINE TO US 321-B	1	0.91	21	40						1,061	120			71		160			1	2		
12CR.20181.12	Catawba	19	SR 1008 (ZION CH RD)	FROM NC10 TO NC 127	1,3,4	5.73	vars. 22-44	240	11.46	436		500		7,139	1,000			493		1,000			4	1		
12CR.20181.12	Catawba	20	SR1478 (12TH AVE SE HKY)	FROM SR 1476 TO SR 1468	1,3,4	0.87	vars. 18-22'	40						925	80			61		180		1		1		
12CR.20181.12	Catawba	21	SR 1003 (BUFFALO SHOALS RD)	FROM NC 16 TO SR 1848	1	4.22	22	200	8.44	321				5,155	500			342		500						
TOTAL FOR PROJ NO. 12CR.20181.12 & 12C.018093						27.33		1200	42.12	1604	38250	2750	1475	34,926	4,006			2,418		6,015	1	1	48	33		
GRAND TOTAL						37.97		1580	59.43	2263	38250	4150	1475	43,075	4,645	10,855	1,100	2,948	723	10,615	1	1	52	36	51,300	1

PROJECT NO. 12C.018093 12CR.10181.10 12CR.20181.12	SHEET NO. 15	TOTAL NO.
---	-----------------	-----------






THERMOPLASTIC AND PAINT QUANTITIES

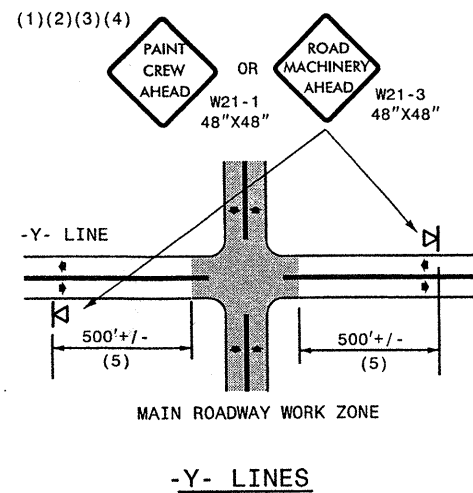
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	4685000000-E		4686000000-E		4688000000-E		4680000000-E	4700000000-E	4705000000-E	4710000000-E	4721000000-E			4725000000-E			4810000000-E		4905000000-N	
					4" X 90 M WHITE THERMO	4" X 90 M YELLOW THERMO	4" X 120 M YELLOW THERMO	4" X 120 M WHITE THERMO	6" X 90M WHITE THERMO	6" X 90M YELLOW THERMO	6" X 120M WHITE THERMO	12" X 90 M WHITE THERMO	16" X 120 M WHITE THERMO	24" X 120 M WHITE THERMO	THERMO MSG ONLY 120 M	THERMO RXR 120 M	THERMO MSG SCHOOL 120 M EA	THERMO LT ARROW 90 M	THERMO RT ARROW 90 M	THERMO STR & RT ARROW 90 M	THERMO STR ARROW 90 M	THERMO STR & LT ARROW 90 M	4" WHITE PAINT	4" YELLOW PAINT
					LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	
12CR.10181.10	Catawba	1	NC 16	FROM PVMT JT 800' N OF SR 1810 TO PVMT JT. 1400' S. OF SR 1801	25,750		20,500	750									8	2					230	
12CR.10181.10	Catawba	2	NC16	FROM PVMT JOINT 550' N. OF NEW NC16 TO PVMT JOINT AT NC 10	6,750		7,150	150									4						65	
12CR.10181.10	Catawba	3	NC10	FROM SR 1005 TO US 321-B	29,500		28,750	750									4	2	2	4			195	
12CR.10181.10	Catawba	4	US321 (SB LANES & RAMPS)	FROM S. END OF BRDG. #5 TO THE N. END OF BRDG. #324					31,750	31,750	7,250	3,850					3	3		6			560	
TOTAL FOR PROJ NO. 12CR.10181.10					62,000		56,400	1,650	31,750	31,750	7,250	3,850		140	16		19	7	2	10			1,050	
					62,000		58,050		63,500						38									
12CR.20181.12	Catawba	5	SR 1735 (MT. OLIVE RD)	FROM NC 10 TO SR 1739 FROM NEW PVMT. E. OF THORNBERG DR. (NC 16) TO US 321-B																			140	
12CR.20181.12	Catawba	6	SR 1739 (E. 20TH ST.)		3,250		18,300	2,250															240	
12CR.20181.12	Catawba	7	SR 1801 & SR 1804 (BETHANY CH RD)	FROM OLD NC 16 TO NC 10										4		12	6	1		2				
12CR.20181.12	Catawba	8	SR 2271 (GREYSTONE PL)	FROM SR 1476 TO END MAINT.																			60,000	
12CR.20181.12	Catawba	9	SR 2375 (BUMG. INDUSTRIAL DR)	FROM US 70 TO SR 1482																			4,750	
12CR.20181.12	Catawba	10	SR 1170 (CAT VALLEY BLVD SE)	FROM SR 1146 TO SR 1171																			9,250	
12CR.20181.12	Catawba	11	SR 1124 (OLD SHELBY RD)	FROM SR 1002 TO SR 1128													6		3				18,300	
12CR.20181.12	Catawba	12	SR 1891 (AIRPORT RD)	FROM NC 16 TO END CF MAINT.																			25,500	
12CR.20181.12	Catawba	13	SR 2105 (EAST P ST.)	FROM SR 1880 TO PVMT. JT. 100' W. OF PRODELIN DR.																			14,250	
12CR.20181.12	Catawba	14	SR 1007 (L-R BLVD)	FROM US 70 TO PVMT. JOINT 150' N. OF WB RAMPS)	500	500	5,250	3,750									32	8	4	24			8,750	
12CR.20181.12	Catawba	15	SR 2581 (CORRAL DR)	FROM SR 1144 TO CULDESAC																			8,500	
12CR.20181.12	Catawba	16	SR 2582 (CARSON DR)	FROM SR 2581 TO CULDESAC																			75	
12CR.20181.12	Catawba	17	SR 1810 (BALLS CRK)	FROM NC10 TO NC 16																			100,500	
12CR.20181.12	Catawba	18	SR 1869 (BOST NURSERY RD)	FROM LINCOLN CO. LINE TO US 321-B																			99,750	
12CR.20181.12	Catawba	19	SR 1008 (ZION CH RD)	FROM NC10 TO NC 127													12						19,500	
12CR.20181.12	Catawba	20	SR1478 (12TH AVE SE HKY)	FROM SR 1476 TO SR 1468																			122,500	
12CR.20181.12	Catawba	21	SR 1003 (BUFFALO SHOALS RD)	FROM NC 16 TO SR 1848																			18,500	
TOTAL FOR PROJ NO. 12CR.20181.12					3,750	500	23,550	6,000						100	807	4	4	36	44	11	7	26	2	527,050
					4,250		29,550								44									1,055,350
GRAND TOTAL					65,750	500	79,950	7,650	31,750	31,750	7,250	3,850		100	947	20	4	36	63	18	9	36	2	527,050
					66,250		87,600		63,500						60									2,050

GENERAL NOTES

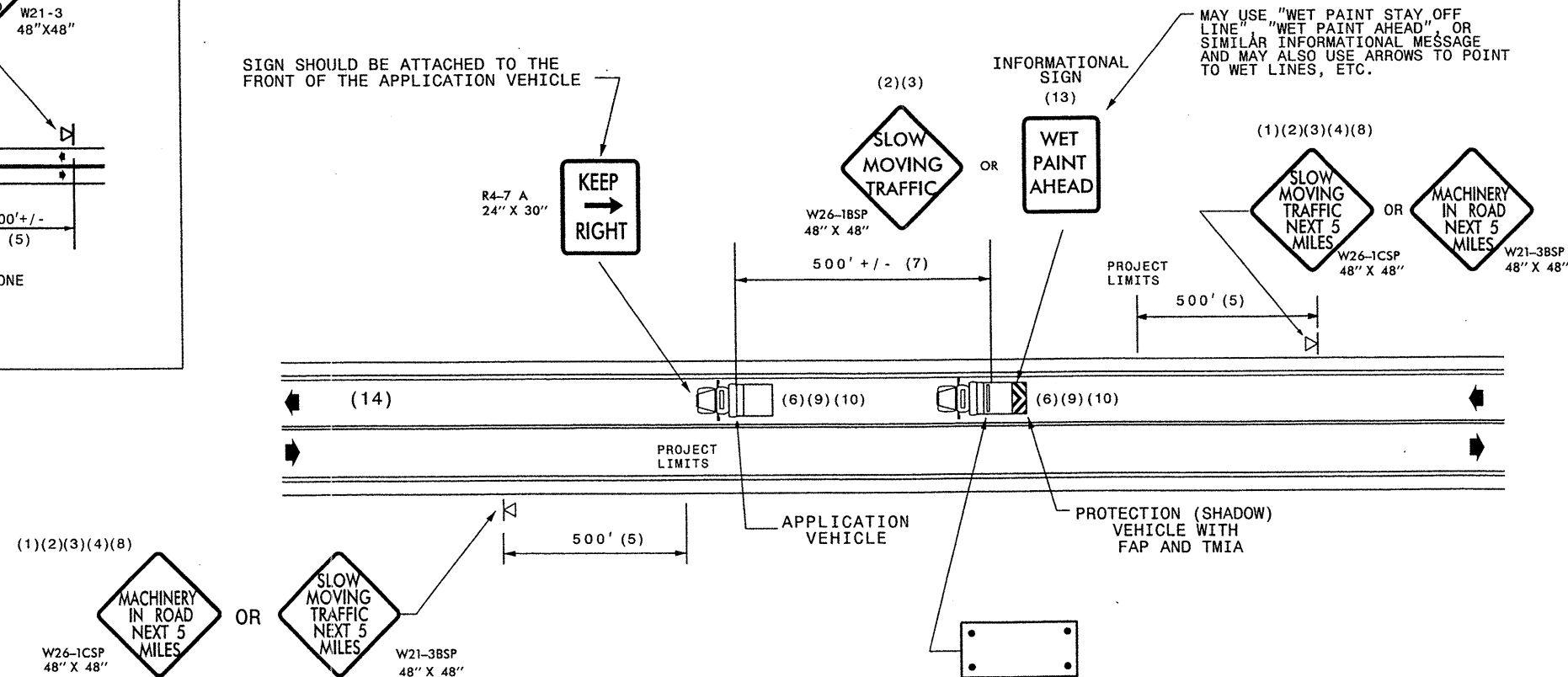
- (1) THE FOLLOWING OPTIONS MAY BE USED FOR ADVANCE WARNING SIGNS:
 - A. TRUCK MOUNTED SIGNS
 - B. TRUCK MOUNTED CHANGEABLE MESSAGE SIGN (CMS)
 - C. GROUND MOUNTED ADVANCE WARNING SIGNS (MUST CIRCLE TO PICK UP SIGNS)
 - D. GROUND MOUNTED CHANGEABLE MESSAGE SIGN (CMS) (MUST USE CIRCLE TO PICK UP SIGNS)
- (2) ALL ADVANCE WARNING SIGNS MUST BE 48" X 48" WITH FLUORESCENT ORANGE TYPE VII, VIII OR IX SHEETING. IF SPACE LIMITATIONS ON SHOULDER PROHIBIT A 48" X 48" SIGN, A SMALLER SIGN CAN BE USED WITH APPROVAL FROM ENGINEER.
- (3) SIGNS ON VEHICLES SHOULD BE MOUNTED A MINIMUM OF ONE (1) FOOT FROM THE GROUND AND SHOULD NOT BLOCK THE MOTORIST'S SIGHT OF THE FLASHING ARROW PANEL AND/OR LIGHTBAR.
- (4) GROUND MOUNTED ADVANCED WARNING SIGNS SHOULD BE MOUNTED A MINIMUM OF ONE (1) FOOT FROM THE GROUND TO BOTTOM OF SIGN.
- (5) SIGN SPACING SHOULD BE ADJUSTED FOR HORIZONTAL AND VERTICAL CURVES, ETC. TO IMPROVE SIGHT DISTANCES.
- (6) ADDITIONAL VEHICLES SHOULD BE USED IN WORK CARAVAN TO FACILITATE DRYING OF PAVEMENT MARKING MATERIAL (TMIA'S ARE OPTIONAL ON THESE ADDITIONAL VEHICLES). HOWEVER, THE FIRST VEHICLE MOTORISTS SEE IN THE TRAVEL LANE SHALL HAVE A TMIA.
- (7) ADJUST DISTANCE AS NEEDED TO PREVENT MOTORISTS FROM ENTERING SPACE BETWEEN THE APPLICATION AND PROTECTION VEHICLE. DISTANCE CAN BE LENGTHENED TO ACCOMODATE SIGHT DISTANCE NEEDS.
- (8) ROUND UP MILEAGE TO NEXT WHOLE MILE. WORK ZONE SHOULD NOT EXCEED FIVE (5) MILES IN LENGTH.
- (9) RADIO COMMUNICATION BETWEEN VEHICLES IS REQUIRED.
- (10) USE OF A LIGHT BAR ON ALL VEHICLES IS PREFERRED, BUT A ROTATING BEACON MAY BE USED INSTEAD.
- (11) IF WORK IS PERFORMED AT NIGHT, THE WORK AREA MUST BE ILLUMINATED WITH MACHINE AND/OR TOWER LIGHTS AS APPROVED BY THE ENGINEER.
- (12) ALL TRAFFIC CONTROL DEVICES WILL BE CONSIDERED INCIDENTAL TO THE PAY ITEMS FOR PAVEMENT MARKING AND MARKERS.
- (13) INFORMATIONAL SIGNS SHOULD BE ACTIVITY SPECIFIC, i.e. "PAINT CREW IN ROAD". SIGNS MAY BE RECTANGULAR OR DIAMOND SHAPE. SIGN SIZE SHOULD BE BASED ON THE MOTORIST ABILITY TO RECOGNIZE SIGN WHEN TRAVELING FIVE (5) MILES ABOVE POSTED SPEED LIMIT.
- (14) IF A LEAD VEHICLE IS ADDED TO OPERATION, IT SHOULD HAVE THE SAME ADVANCE WARNING SIGNS AS THE APPLICATION VEHICLE SHOWN BELOW.

LEGEND

-  PORTABLE SIGN. SIGNS MUST BE NCHRP-350 AND NCDOT APPROVED.
-  DIRECTION OF TRAFFIC FLOW
-  APPLICATION VEHICLE WITH LIGHT BAR
-  PROTECTION VEHICLE WITH TRUCK MOUNTED IMPACT ATTENUATOR (TMIA) AND LIGHT BAR (SEE ROADWAY STANDARD NO. 1165.01). TMIA MUST BE NCHRP-350 TEST LEVEL 3 (60+MPH) APPROVED.
-  FLASHING ARROW PANEL, TYPE "B" (60"X30" MIN.), "CAUTION MODE"



SIGN SHOULD BE ATTACHED TO THE FRONT OF THE APPLICATION VEHICLE



MOVING OPERATION CARAVAN








(OPERATIONS TRAVELING 3 MPH OR FASTER)
PLACING PAVEMENT MARKING OR MARKERS
ON TWO-LANE TWO-WAY ROADWAYS

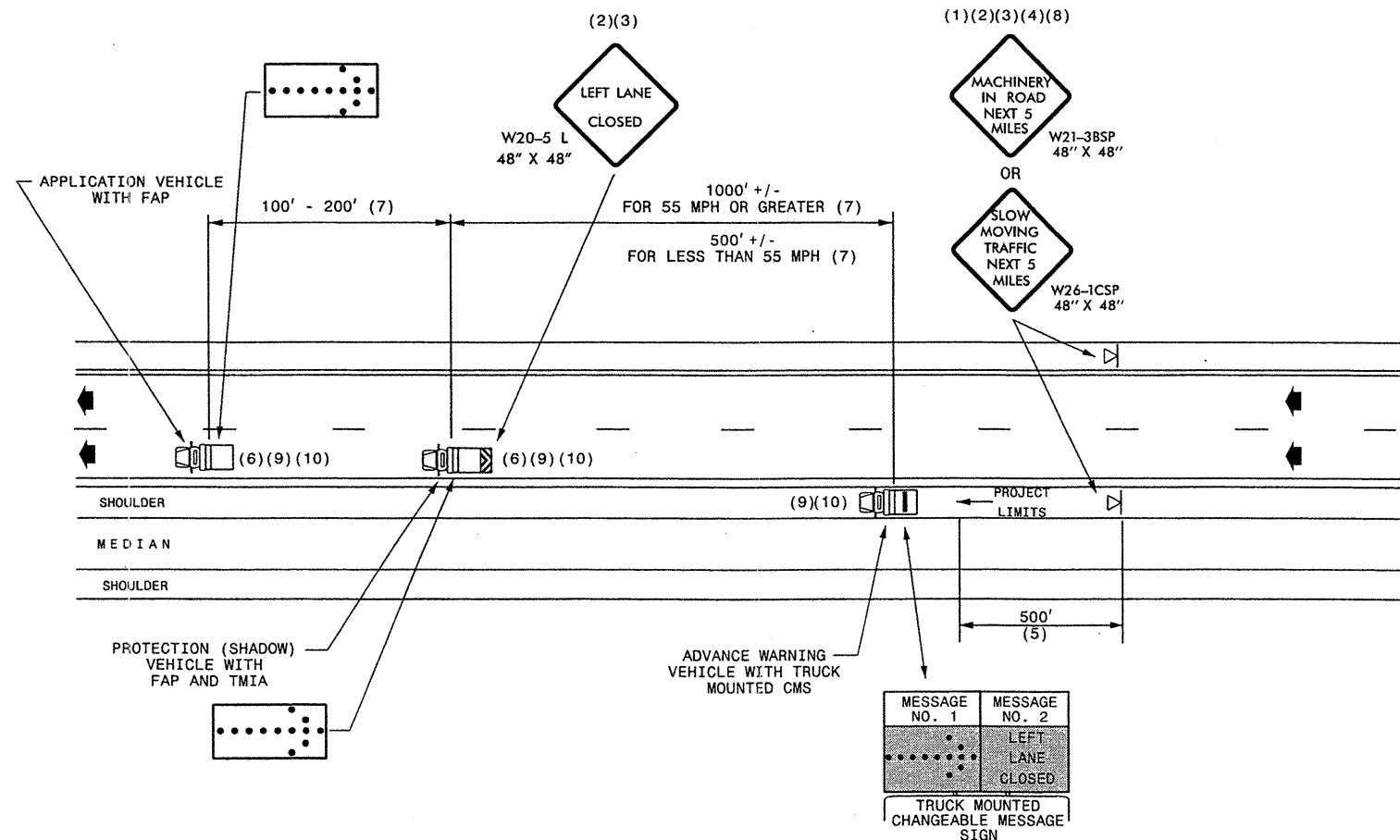
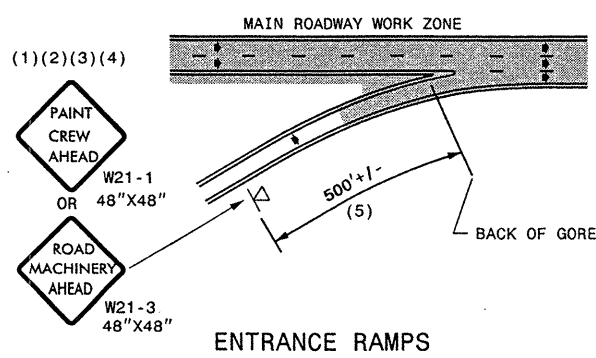
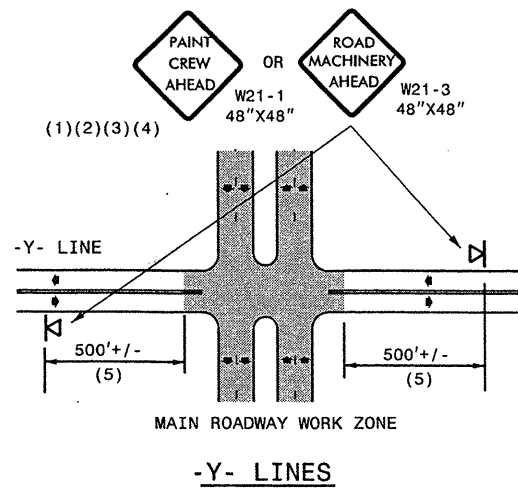
DRAWING NUMBER 6
IMPLEMENTATION DATE: 07/01/97
REVISED: 11/03/04

GENERAL NOTES

- (1) THE FOLLOWING OPTIONS MAY BE USED FOR ADVANCE WARNING SIGNS:
 - A. TRUCK MOUNTED SIGNS
 - B. TRUCK MOUNTED CHANGEABLE MESSAGE SIGN (CMS)
 - C. GROUND MOUNTED ADVANCE WARNING SIGNS (MUST CIRCLE TO PICK UP SIGNS)
 - D. GROUND MOUNTED CHANGEABLE MESSAGE SIGN (CMS) (MUST USE CIRCLE TO PICK UP SIGNS)
- (2) ALL ADVANCE WARNING SIGNS MUST BE 48" X 48" WITH FLUORESCENT ORANGE TYPE VII, VIII OR IX SHEETING. IF SPACE LIMITATIONS ON SHOULDER PROHIBIT A 48" X 48" SIGN, A SMALLER SIGN CAN BE USED WITH APPROVAL FROM ENGINEER.
- (3) SIGNS ON VEHICLES SHOULD BE MOUNTED A MINIMUM OF ONE (1) FOOT FROM THE GROUND AND SHOULD NOT BLOCK THE MOTORIST'S SIGHT OF THE FLASHING ARROW PANEL AND/OR LIGHTBAR.
- (4) GROUND MOUNTED ADVANCED WARNING SIGNS SHOULD BE MOUNTED A MINIMUM OF FIVE (5) FEET FROM THE GROUND TO BOTTOM OF SIGN.
- (5) SIGN SPACING SHOULD BE ADJUSTED FOR HORIZONTAL AND VERTICAL CURVES, ETC. TO IMPROVE SIGHT DISTANCES.
- (6) ADDITIONAL VEHICLES SHOULD BE USED IN WORK CARAVAN TO FACILITATE DRYING OF PAVEMENT MARKING MATERIAL (TMIA'S ARE OPTIONAL ON THESE ADDITIONAL VEHICLES). HOWEVER, THE FIRST VEHICLE MOTORISTS SEE IN THE TRAVEL LANE SHALL HAVE A TMIA.
- (7) ADJUST DISTANCE AS NEEDED TO PREVENT MOTORISTS FROM ENTERING SPACE BETWEEN THE APPLICATION AND PROTECTION VEHICLE. DISTANCE CAN BE LENGTHENED TO ACCOMMODATE SIGHT DISTANCE NEEDS.
- (8) ROUND UP MILEAGE TO NEXT WHOLE MILE. WORK ZONE SHOULD NOT EXCEED FIVE (5) MILES IN LENGTH.
- (9) RADIO COMMUNICATION BETWEEN VEHICLES IS REQUIRED.
- (10) USE OF A LIGHT BAR ON ALL VEHICLES IS PREFERRED, BUT A ROTATING BEACON MAY BE USED INSTEAD.
- (11) IF WORK IS PERFORMED AT NIGHT, THE WORK AREA MUST BE ILLUMINATED WITH MACHINE AND/OR TOWER LIGHTS AS APPROVED BY THE ENGINEER.
- (12) ALL TRAFFIC CONTROL DEVICES WILL BE CONSIDERED INCIDENTAL TO THE PAY ITEMS FOR PAVEMENT MARKING AND MARKERS.

LEGEND

-  PORTABLE SIGN. SIGNS MUST BE NCHRP-350 AND NCDOT APPROVED.
-  DIRECTION OF TRAFFIC FLOW
-  APPLICATION VEHICLE WITH LIGHT BAR
-  PROTECTION VEHICLE WITH TRUCK MOUNTED IMPACT ATTENUATOR (TMIA) AND LIGHT BAR (SEE ROADWAY STANDARD NO. 1165.01). TMIA MUST BE NCHRP-350 TEST LEVEL 3 (60+MPH) APPROVED.
-  ADVANCE WARNING VEHICLE WITH TRUCK MOUNTED CHANGEABLE MESSAGE SIGN (CMS) AND LIGHT BAR. MESSAGE SIGN LETTER HEIGHT SHOULD BE A MINIMUM OF 10 INCHES.
-  FLASHING ARROW PANEL, TYPE "B" (60"X30" MIN.), APPROPRIATE DIRECTION INDICATED
-  CHANGEABLE MESSAGE SIGN



MOVING OPERATION CARAVAN

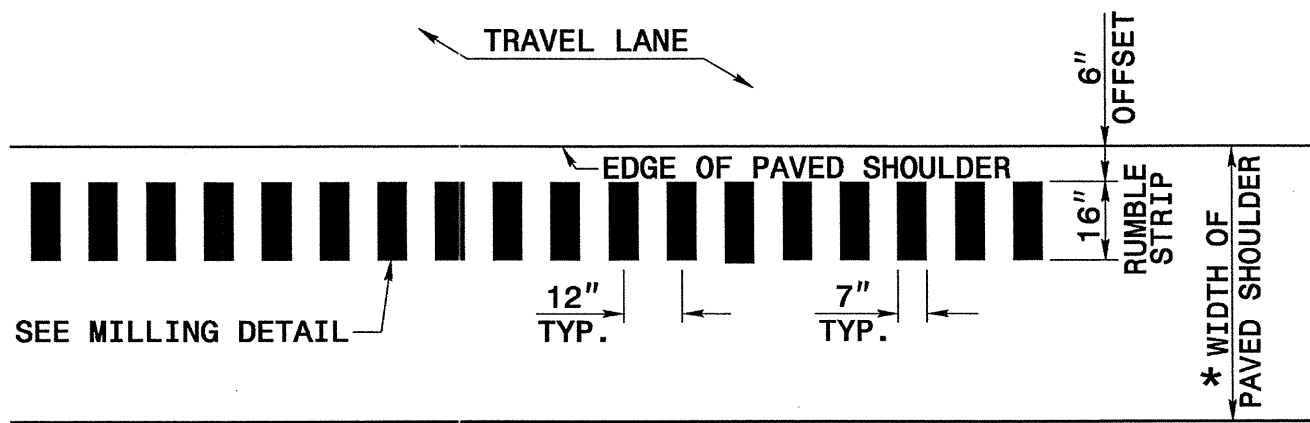
(OPERATIONS TRAVELING 3 MPH OR FASTER)
PLACING PAVEMENT MARKING OR MARKERS
ON NON-INTERSTATE MULTILANE DIVIDED ROADWAYS

DRAWING NUMBER 7
IMPLEMENTATION DATE: 07/01/97
REVISED: 11/03/04

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

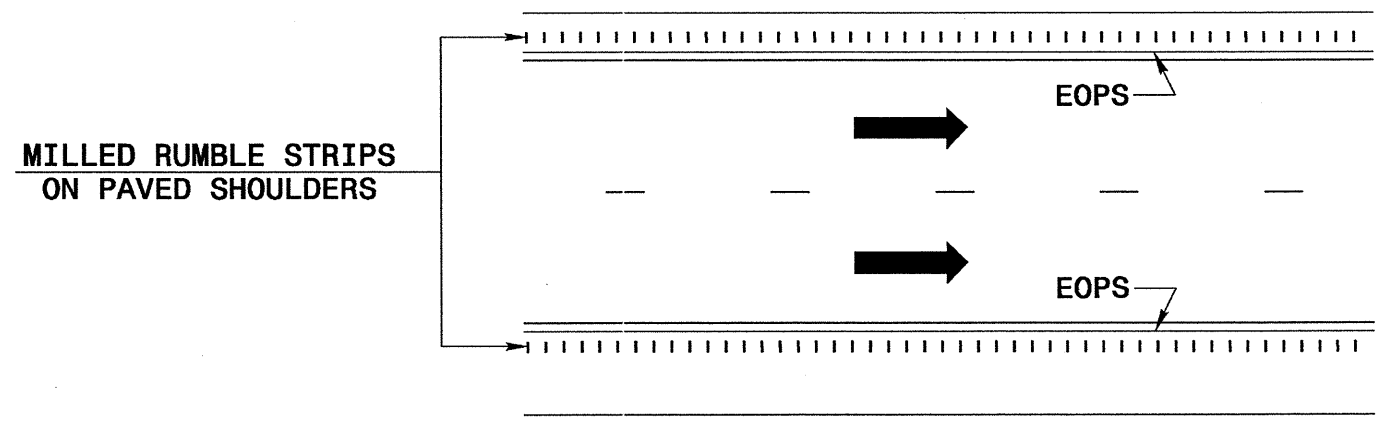
7-06

ENGLISH STANDARD DRAWING FOR
ASPHALT SHOULDERS
MILLED RUMBLE STRIPS

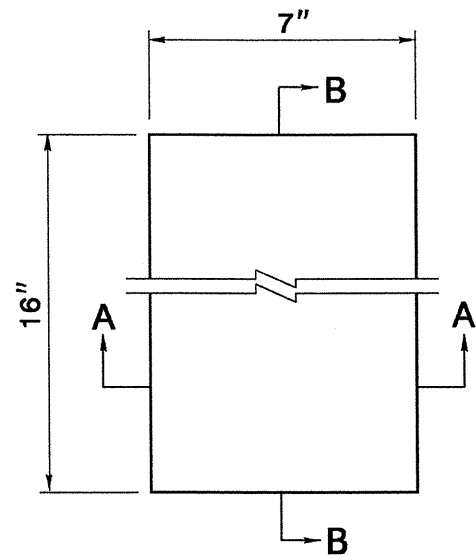


* FOR WIDTHS SEE TYPICAL SECTIONS AND PLAN SHEETS

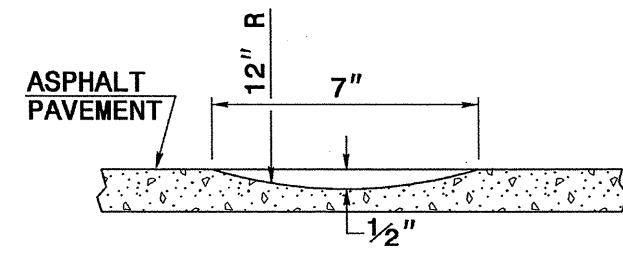
**PLAN VIEW
 PAVED SHOULDER**



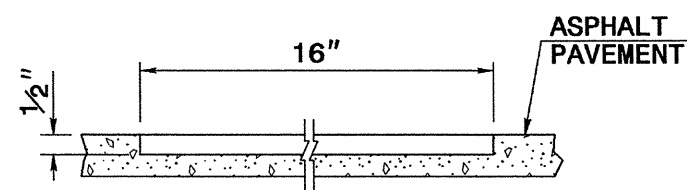
LANE TREATMENT



**PLAN VIEW
 MILLING DETAIL**



SECTION A-A



SECTION B-B

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

7-06

ENGLISH STANDARD DRAWING FOR
ASPHALT SHOULDERS
MILLED RUMBLE STRIPS

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

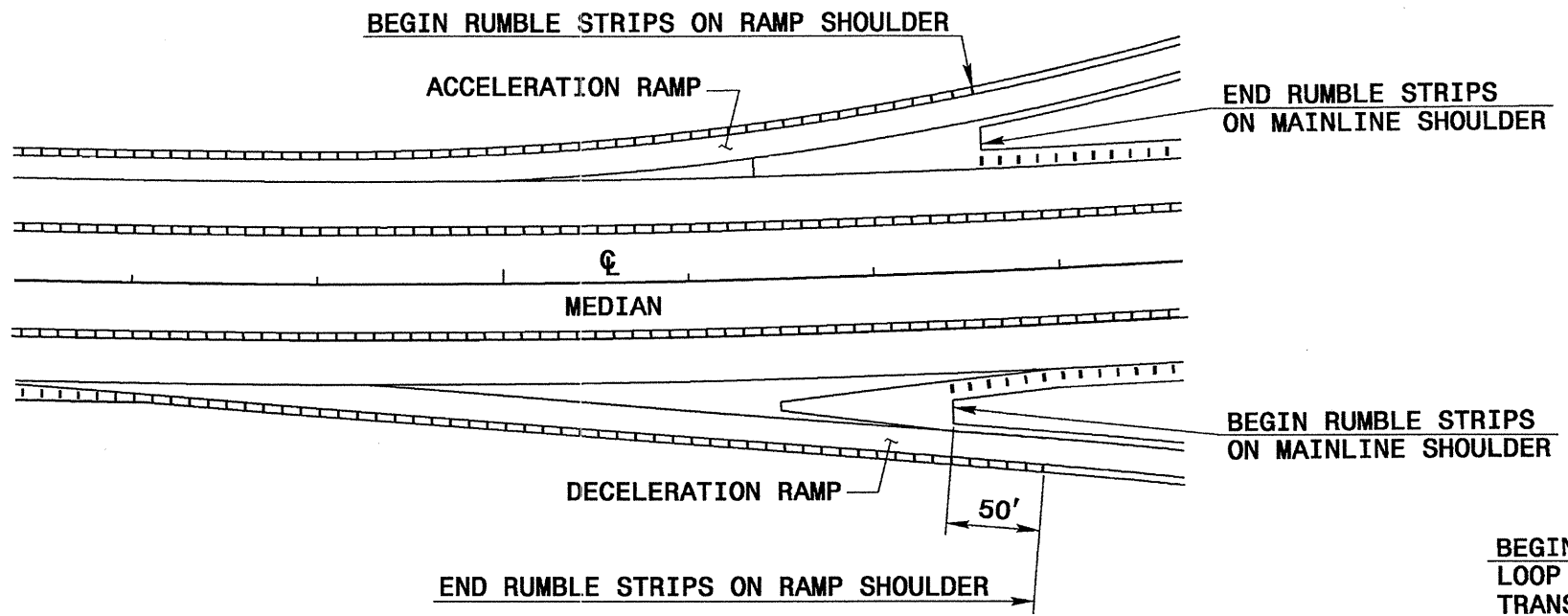
7-06

ENGLISH STANDARD DRAWING FOR
ASPHALT SHOULDERS
MILLED RUMBLE STRIPS

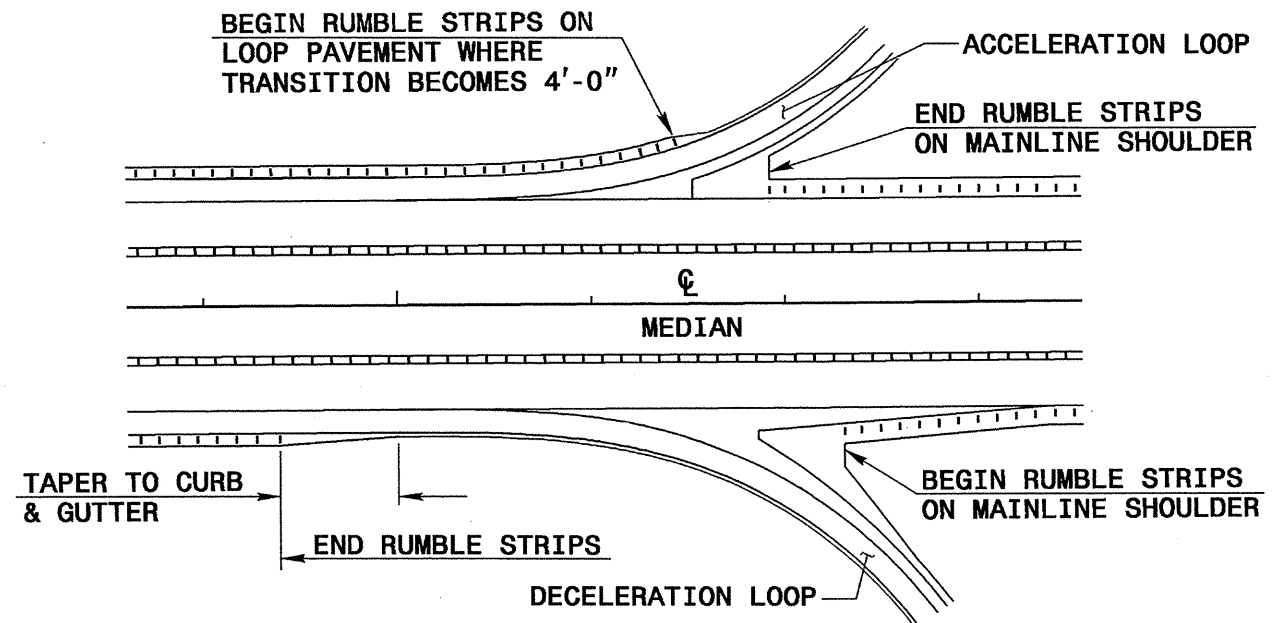
STATE OF NORTH CAROLINA
 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

7-06

ENGLISH STANDARD DRAWING FOR
ASPHALT SHOULDERS
MILLED RUMBLE STRIPS

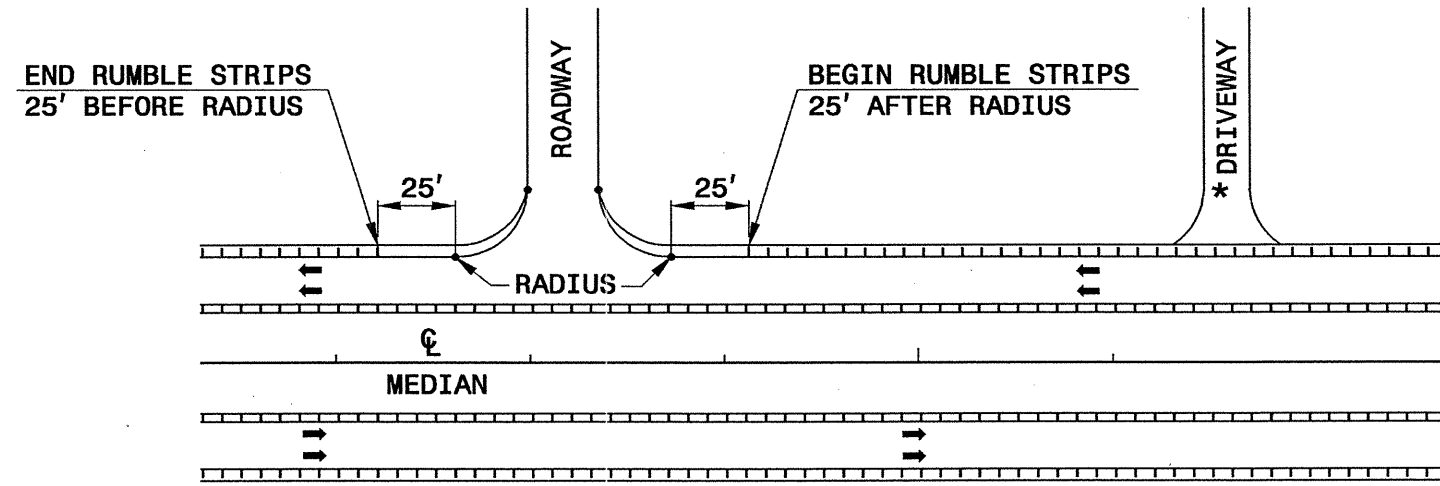


TREATMENT AT RAMP TERMINALS



TREATMENT AT LOOP TERMINALS

* TERMINATE AT DRIVEWAYS AS DIRECTED BY THE ENGINEER.



TREATMENT AT INTERSECTIONS
 (ROADWAY OR DRIVEWAY)