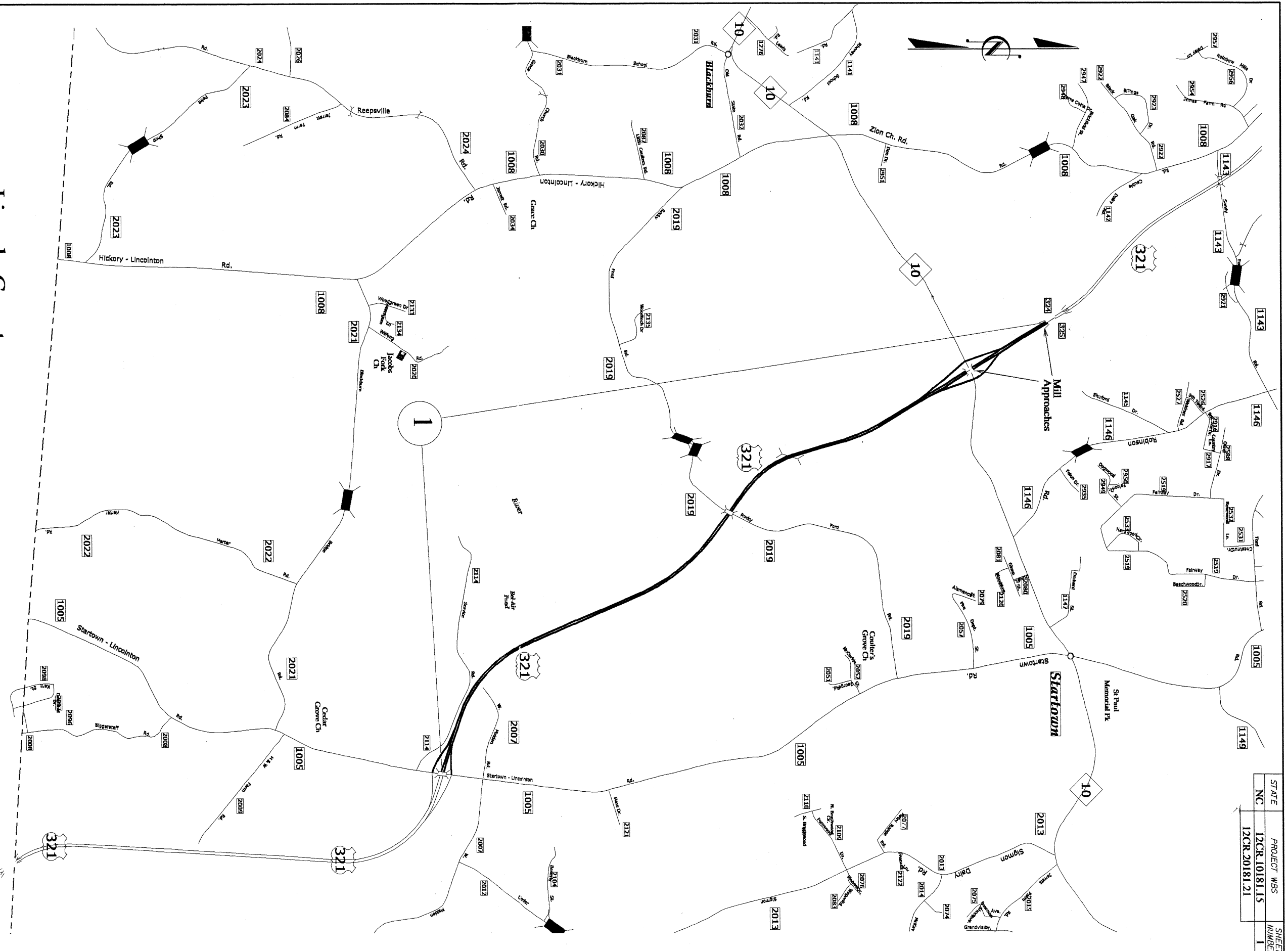


STATE	PROJECT WBS	SHEET
NC	12CR.10181.15	NUMBER
	12CR.20181.21	1



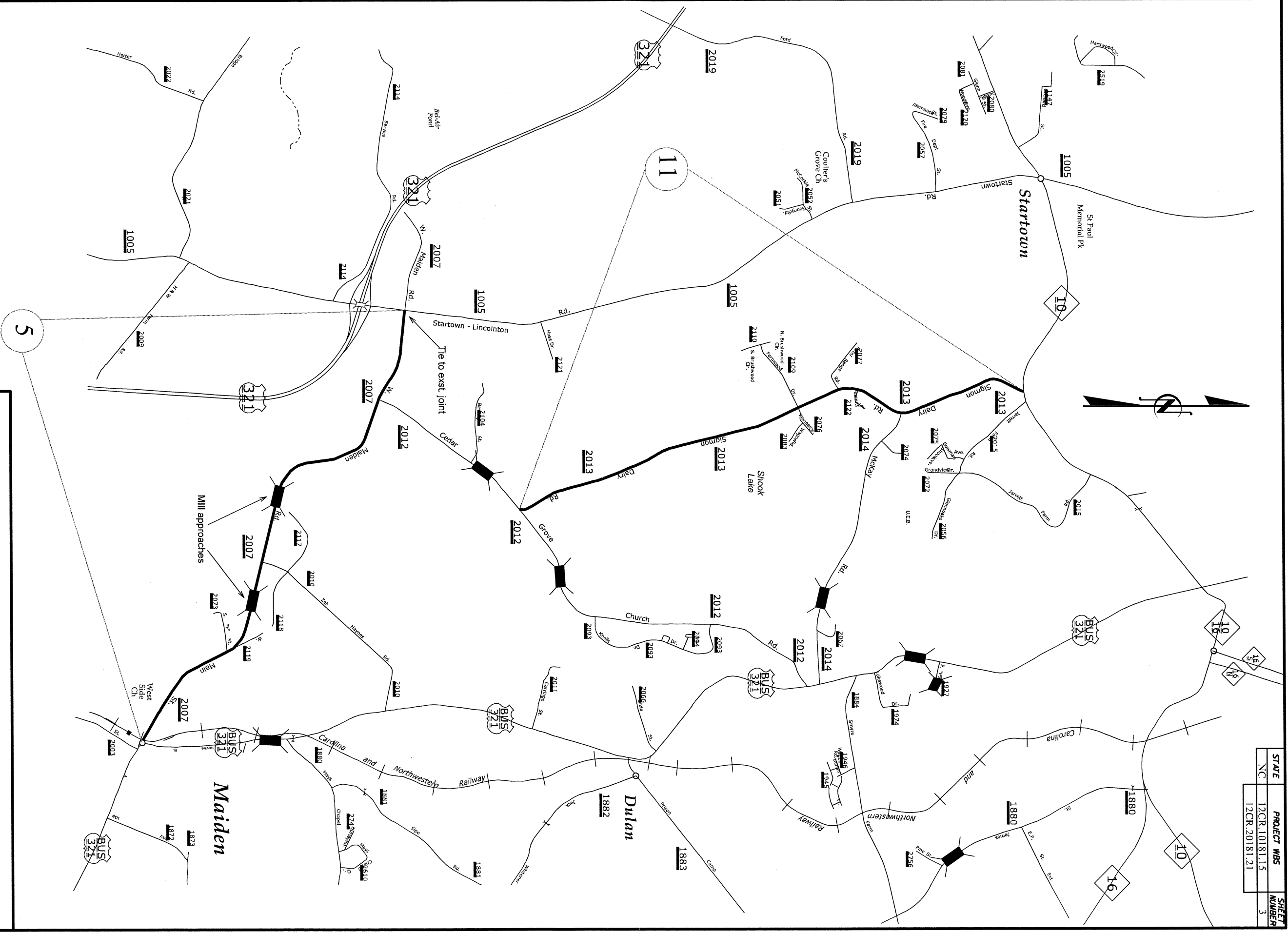
Lincoln County

No Scale

2014-2015 Resurfacing Map  
**CATAWBA COUNTY NC**



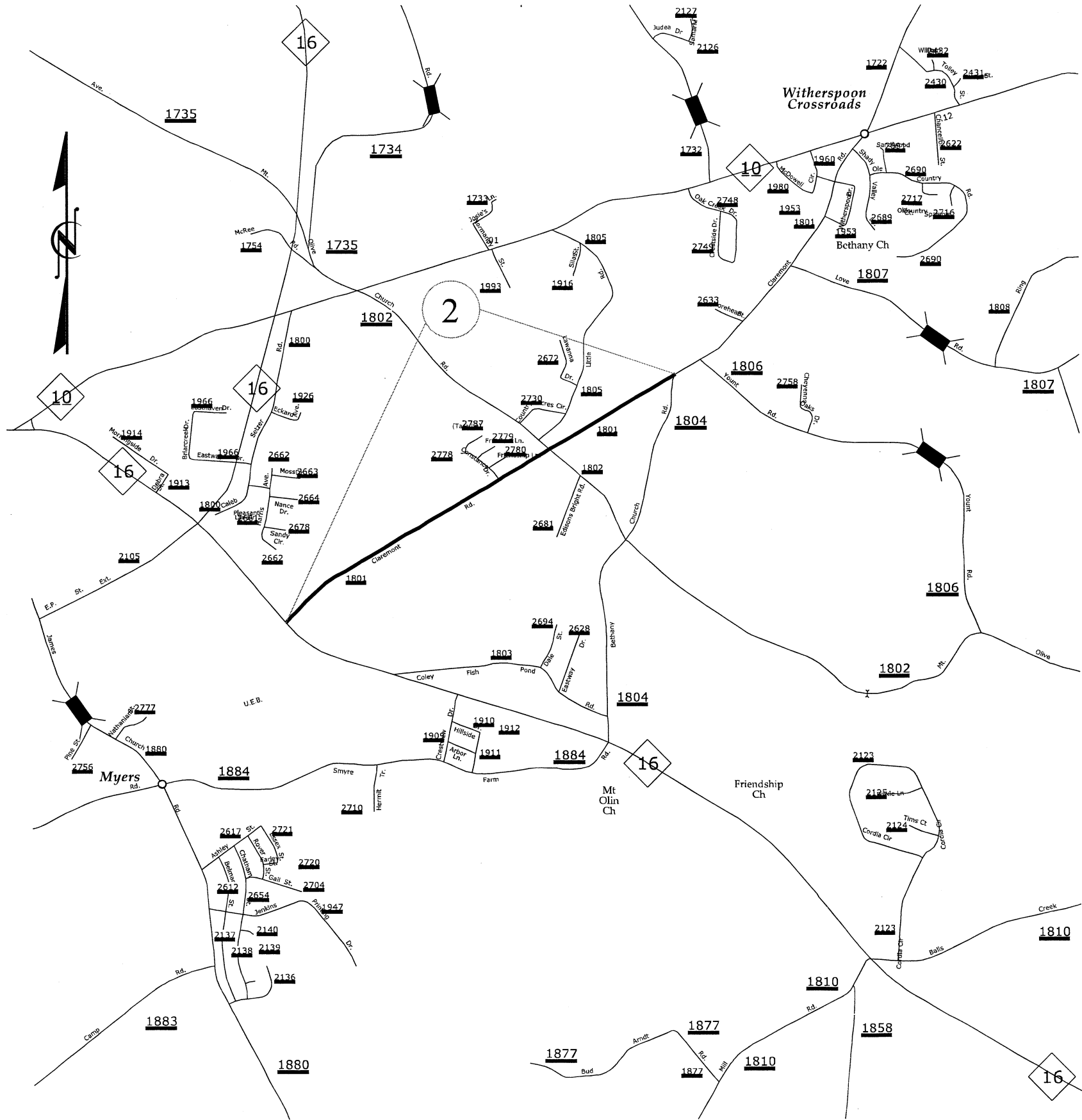
STATE	PROJECT WBS	SHEET NUMBER
NC	12CR.101.81.1.5	3
	12CR.201.81.2.1	



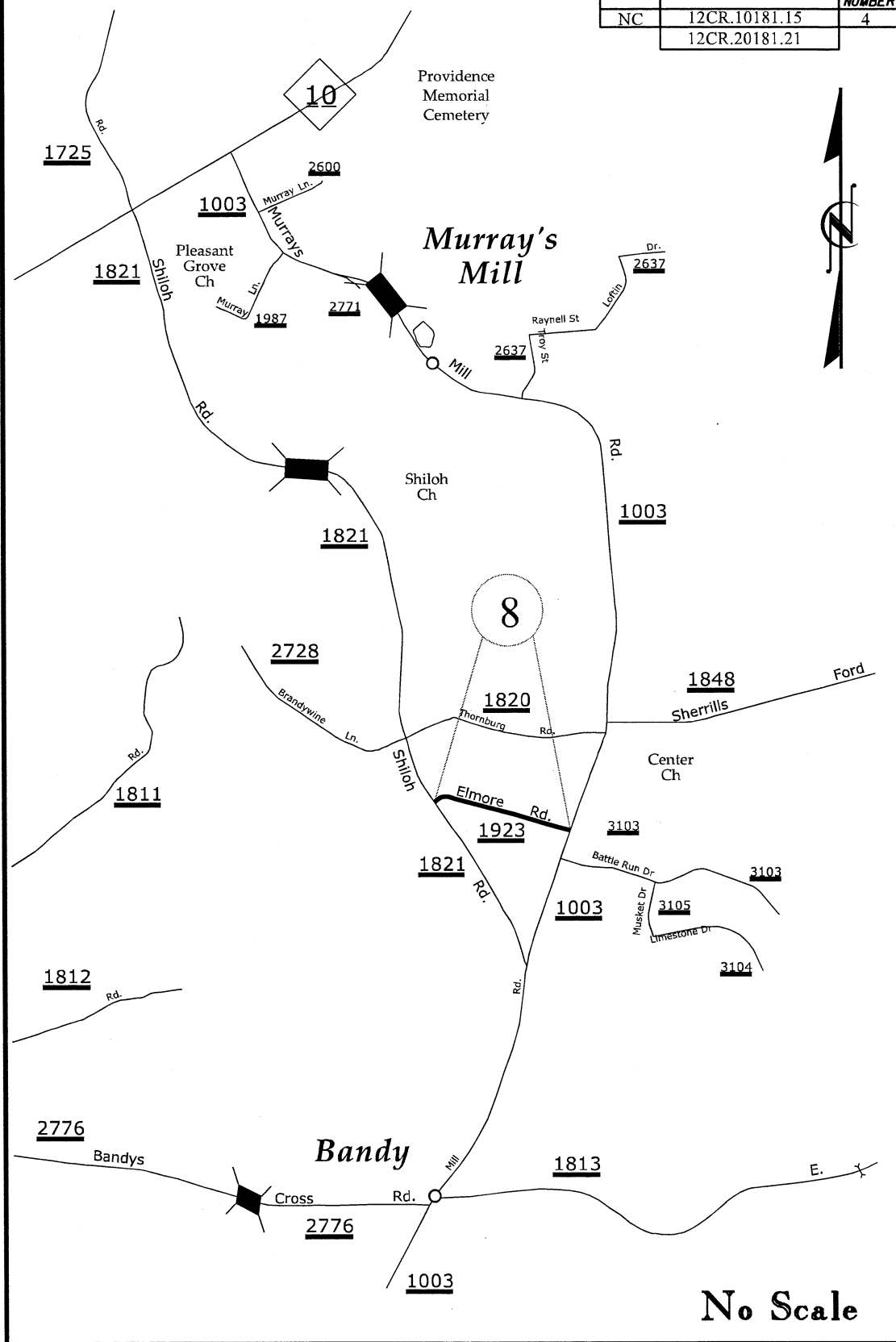
No Scale

2014-2015 Resurfacing Map  
 CATAWBA COUNTY NC

STATE	PROJECT WBS	SHEET NUMBER
NC	12CR.10181.15	4
	12CR.20181.21	



No Scale

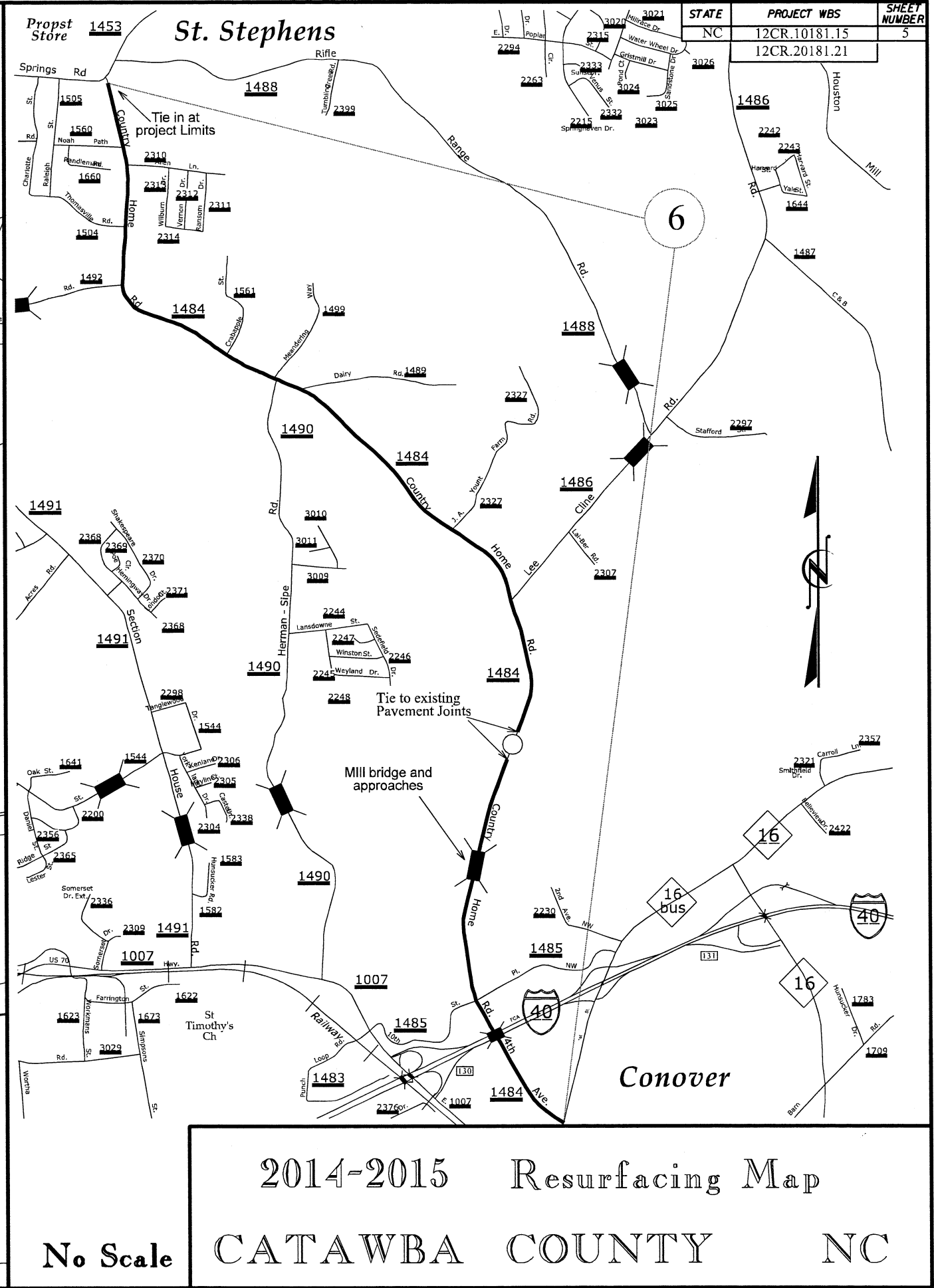
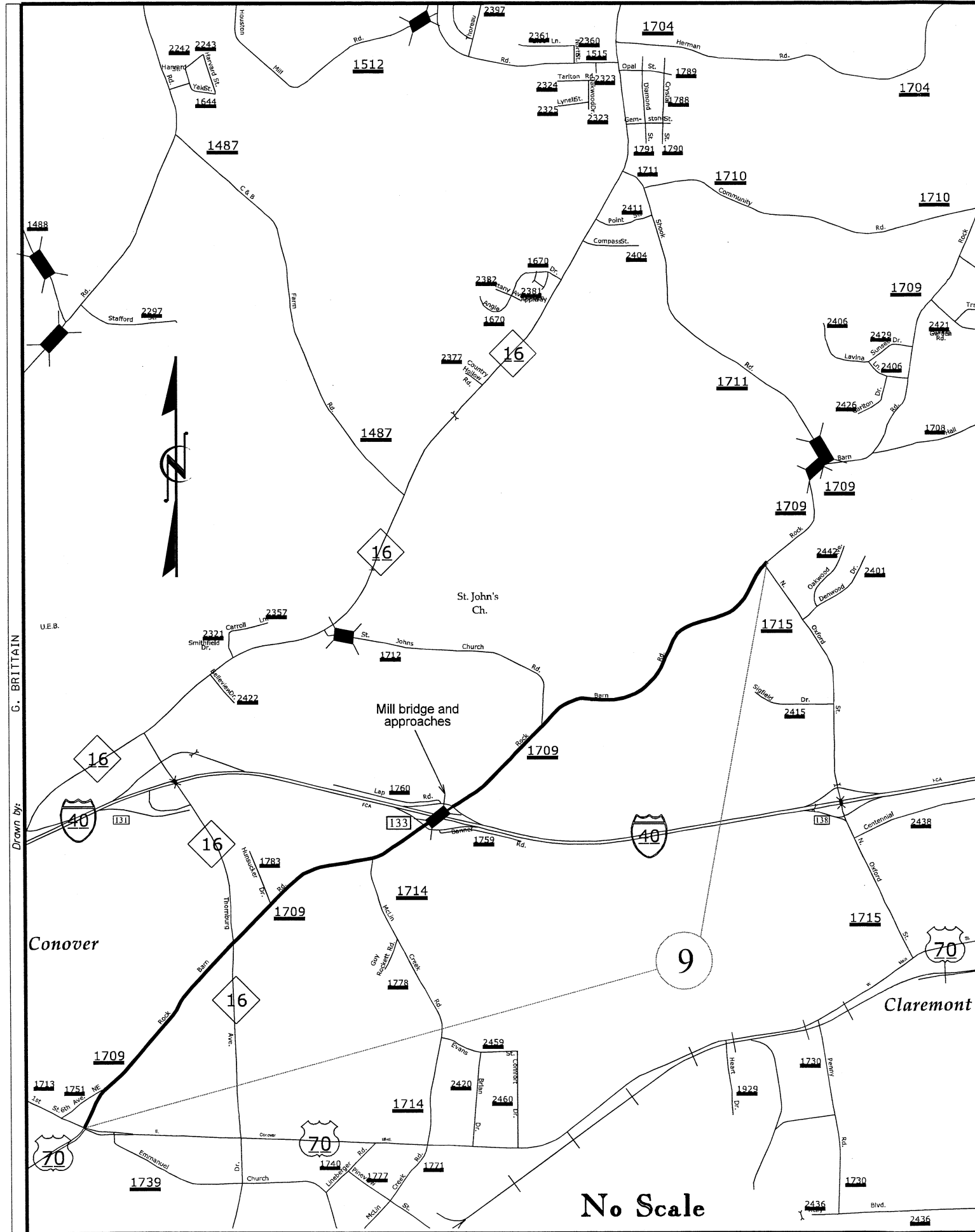


No Scale

2014-2015 Resurfacing Map  
 CATAWBA COUNTY NC

Drawn by: G. BRITTAIN

STATE	PROJECT WBS	SHEET NUMBER
NC	12CR.10181.15	5
	12CR.20181.21	



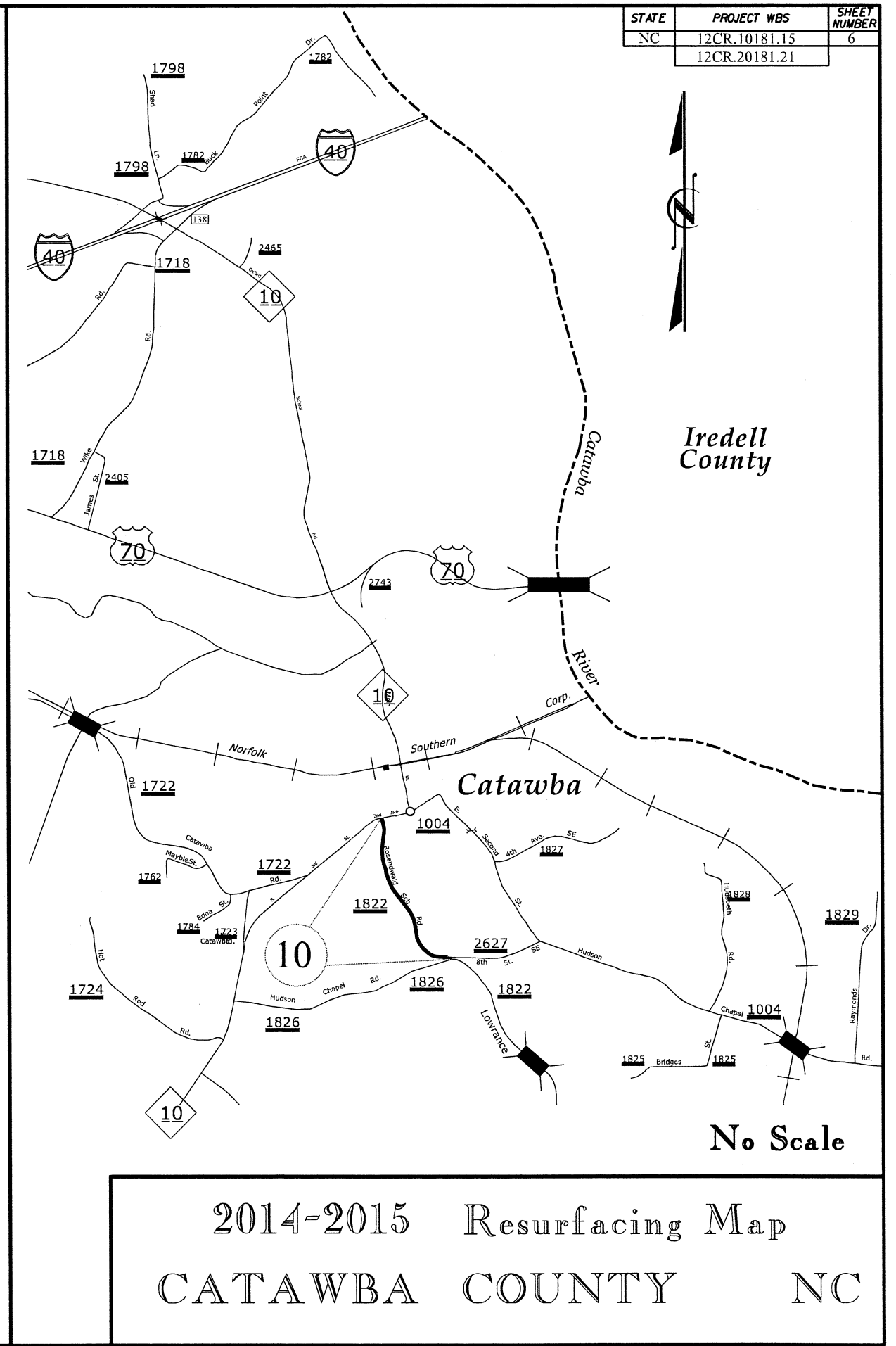
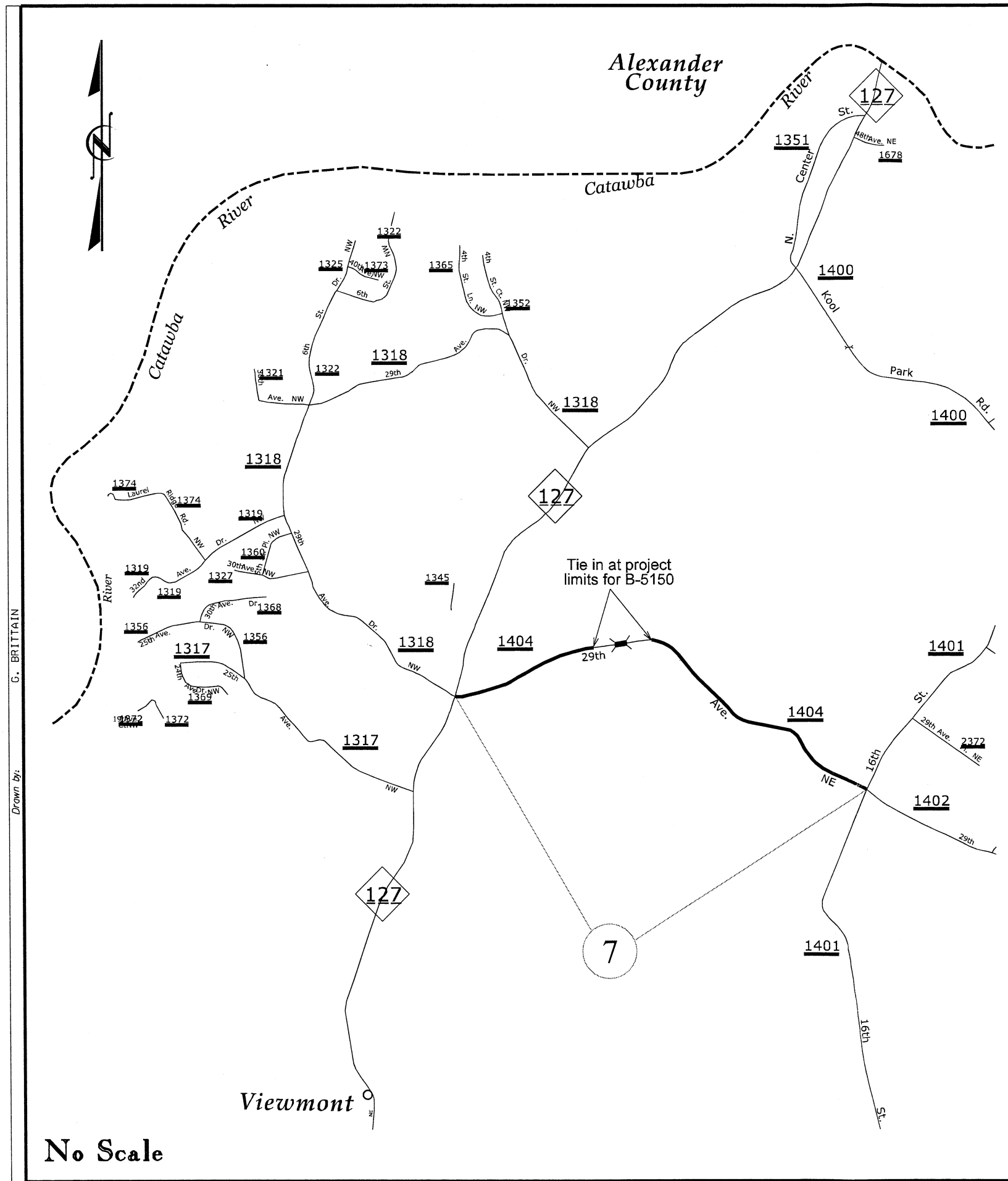
Drawn by: G. BRITAIN

No Scale

No Scale

2014-2015 Resurfacing Map  
 CATAWBA COUNTY NC

STATE	PROJECT WBS	SHEET NUMBER
NC	12CR.10181.15	6
	12CR.20181.21	



G. BRITAIN  
Drawn by:

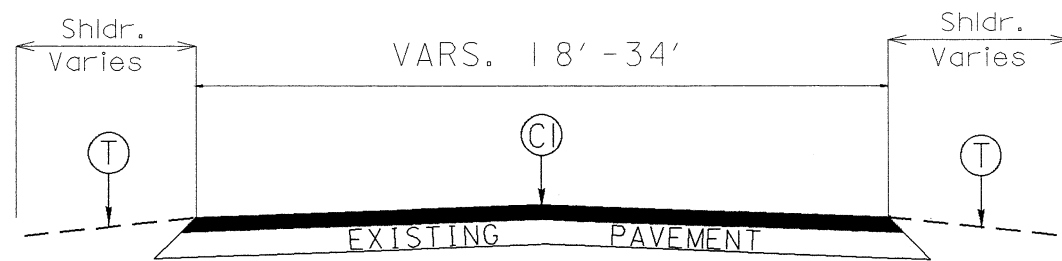
No Scale

Viewmont

Tie in at project limits for B-5150

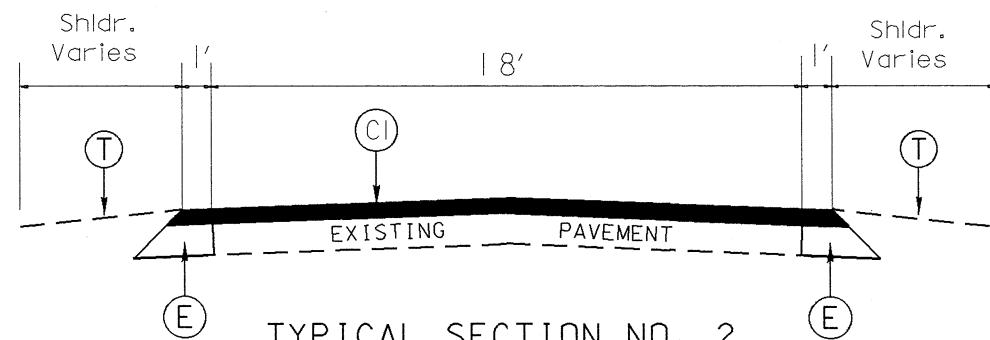
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2014-2015 Resurfacing Map  
CATAWBA COUNTY NC



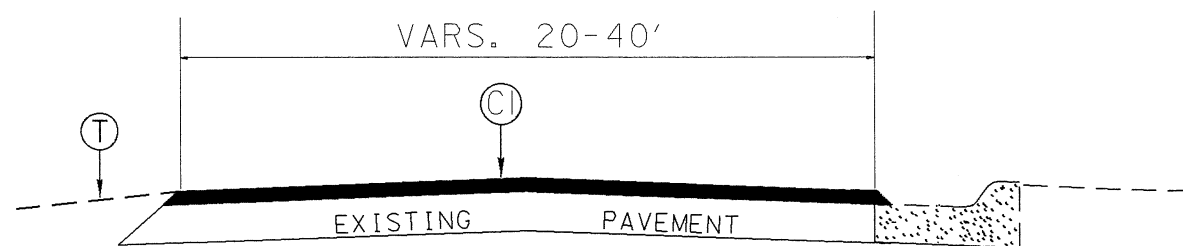
TYPICAL SECTION NO. 1

- MAP # 3 - (entire map)
- MAP # 4 - (entire map)
- MAP # 5 - 40+00 to 163+50
- MAP # 7 - 0+00 to 1+00  
11+00 TO 82+00
- MAP # 8 - (entire map)
- MAP # 9 - (entire map)
- MAP #10 - (entire map)
- MAP #11 - (entire map)
- MAP #12 - (entire map)



TYPICAL SECTION NO. 2

MAP # 2 - (entire map)

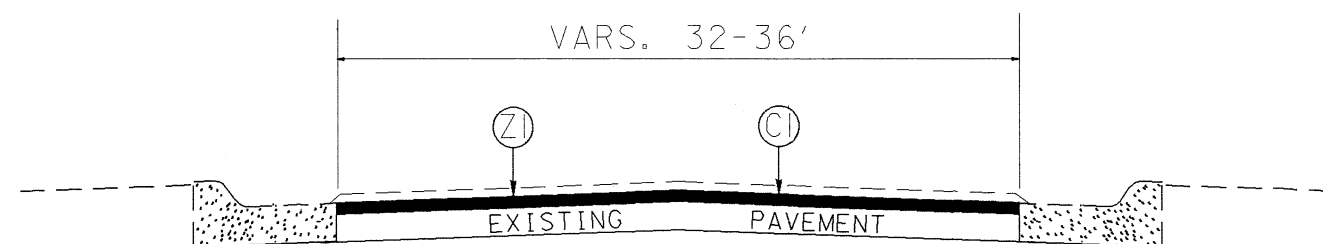


TYPICAL SECTION NO. 3

MAP #7 - 1+00 TO 11+00

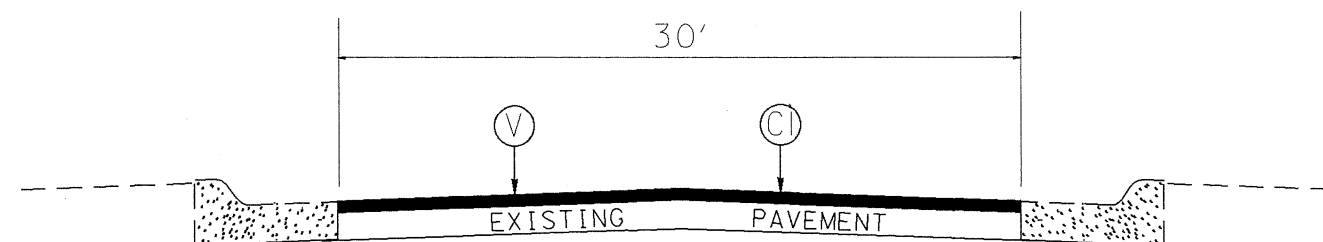
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
E	PROP. APPROX. 8.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD., IN EACH OF TWO LIFTS.
T	AGGREGATE SHOULDER BORROW (SHOULDER RECONSTRUCTION)
V	MILL ASPHALT PVMT. APPROX. 1.5" DEPTH
Z1	MILL ASPHALT PVMT. APPROX. 3.0" DEPTH
F	ASPHALT SURFACE TREATMENT (AST) MATCOAT #78M STONE
Y1	INCIDENTAL MILLING
Y2	MILLED RUMBLE STRIP

2014-2015  
Resurfacing Program  
Typical Sections  
Catawba County NC



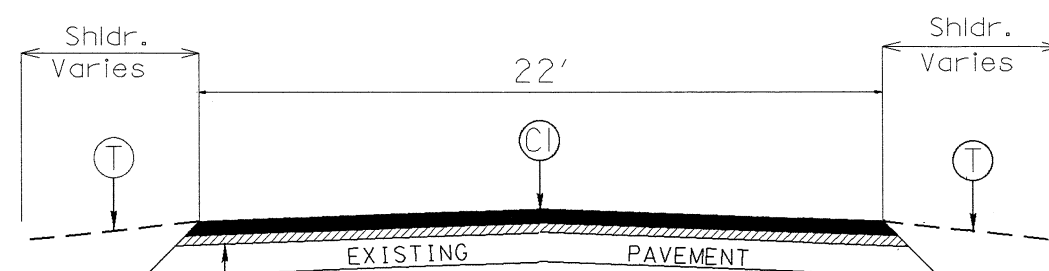
TYPICAL SECTION NO. 4

MAP # 5 - 0+00 to 16+00



TYPICAL SECTION NO. 5

MAP # 5 - 16+00 to 40+00



TYPICAL SECTION NO. 6

MAP # 6 - 0+00 to 32+00  
39+00 to 258+50

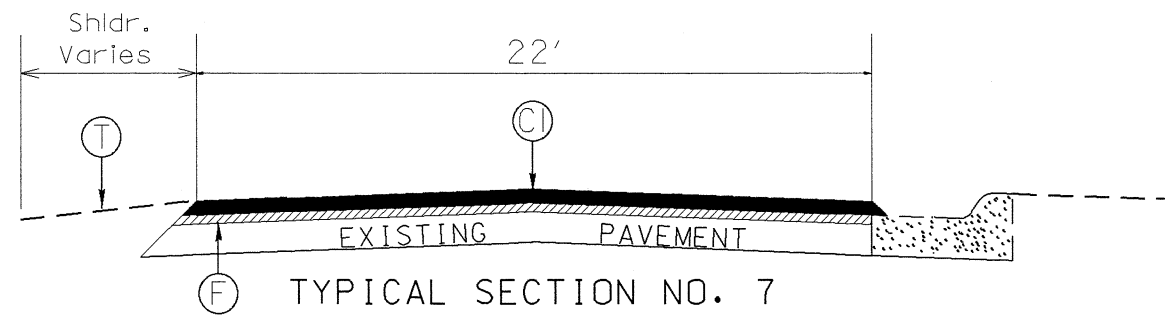
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 188 LBS. PER SQ. YD.
C2	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 188 LBS. PER SQ. YD.
E	PROP. APPROX. 8.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B AT AN AVERAGE RATE OF 488 LBS. PER SQ. YD., IN EACH OF TWO LIFTS.
T	AGGREGATE SHOULDER BORROW (SHOULDER RECONSTRUCTION)
V	MILL ASPHALT PVMT. APPROX. 1.5" DEPTH
Z1	MILL ASPHALT PVMT. APPROX. 3.0" DEPTH
F	ASPHALT SURFACE TREATMENT (AST) MATCOAT #78M STONE
Y1	INCIDENTAL MILLING
Y2	MILLED RUMBLE STRIP

2014-2015  
Resurfacing Program  
Typical Sections  
Catawba County NC

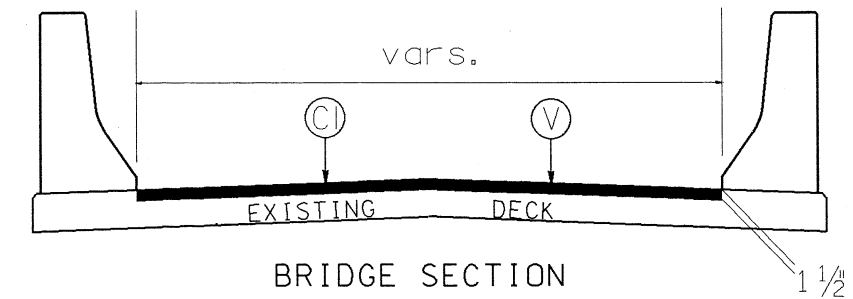
Checked by:

Drawn by: G. Brittain

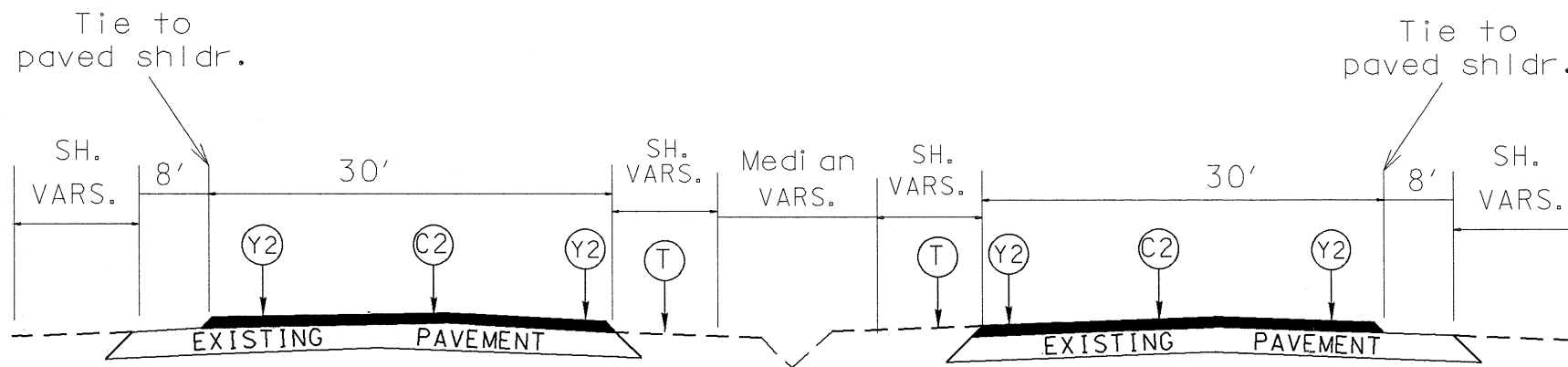




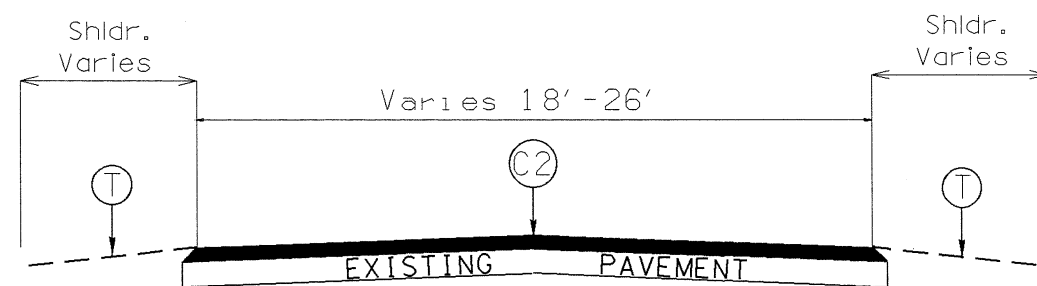
TYPICAL SECTION NO. 7  
MAP # 6 - 32+00 TO 39+00



BRIDGE SECTION  
MAP # 6 - Brdg. 21  
MAP # 9 - Brdg. 173



TYPICAL SECTION NO. 8  
MAP # 1 - (entire map)



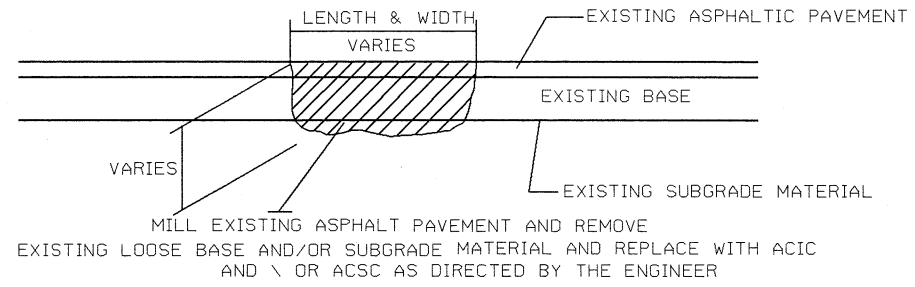
TYPICAL SECTION NO. 9  
MAP # 1 (RAMPS ONLY)

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.
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.
T	AGGREGATE SHOULDER BORROW (SHOULDER RECONSTRUCTION)
V	MILL ASPHALT PVMT. APPROX. 1.5" DEPTH
Z1	MILL ASPHALT PVMT. APPROX. 3.0" DEPTH
F	ASPHALT SURFACE TREATMENT (AST) MATCOAT #78M STONE
Y1	INCIDENTAL MILLING
Y2	MILLED RUMBLE STRIP

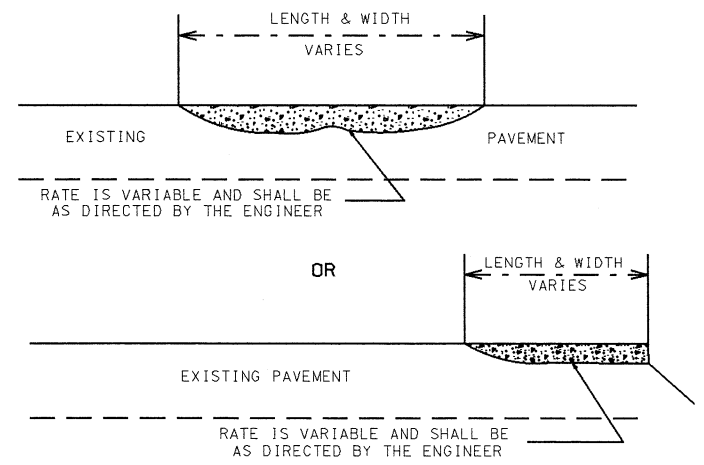
2014-2015  
Resurfacing Program  
Typical Sections  
Catawba County NC

Checked by: \_\_\_\_\_  
Drawn by: G. Brittain

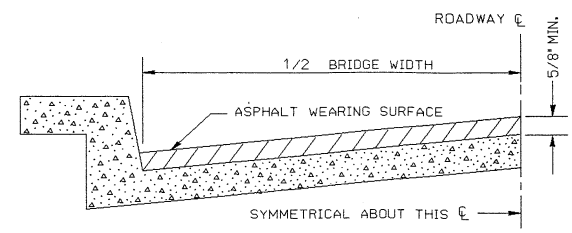
**DETAIL A**  
**PATCHING EXISTING PAVEMENT**



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



**DETAIL C**  
**BRIDGE HALF TYPICAL SECTION**

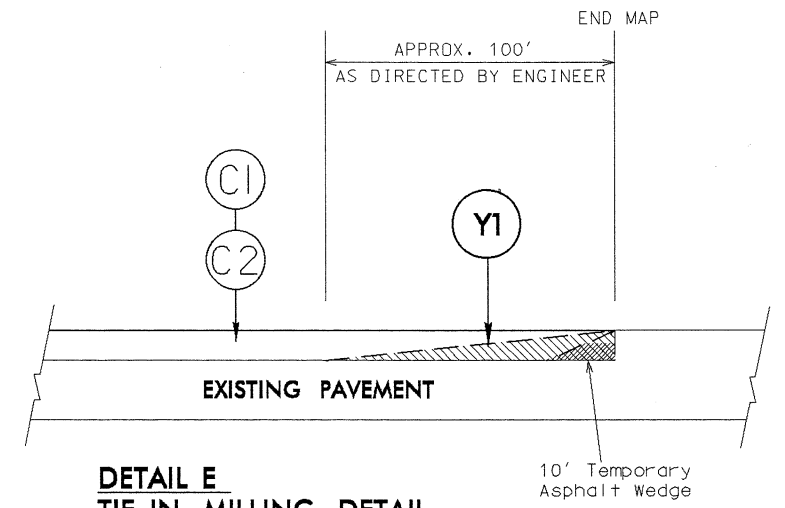


FOR BRIDGES WITH FLOOR DRAINS, CARE SHALL BE EXERCISED IN PLACING THE WEARING SURFACE AROUND FLOOR DRAINS SO AS NOT TO HINDER EFFECTIVE DRAINAGE. ALL DRAINS SHALL BE LEFT OPEN.

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**

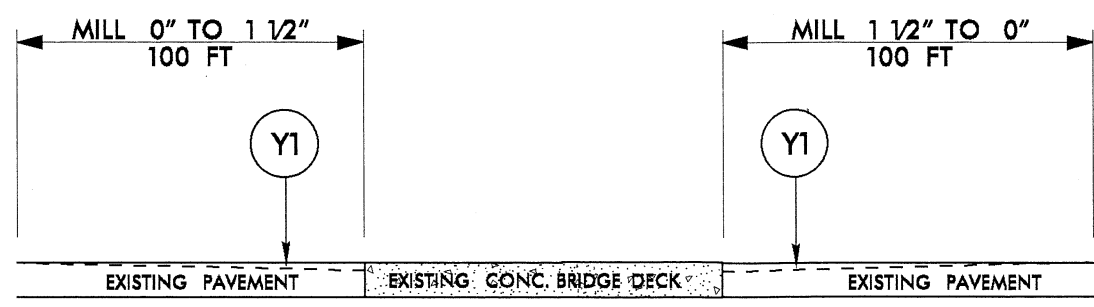
ALL UNPAVED S.R. ROADS TO BE SURFACED 50' FROM EDGE OF PAVEMENT OF MAIN PROJECT.  
ALL PAVED S.R. ROADS TO BE RESURFACED TO THE ENDS OF THE RADII, OR AS DIRECTED BY THE ENGINEER.  
EDGES, PAVEMENT WIDENING, INTERSECTIONS AND BRIDGE FLARES ARE INCLUDED IN THE TABLE OF QUANTITIES.  
SHOULDERS AND DITCHES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



**DETAIL E**  
**TIE-IN MILLING DETAIL**

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.
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.
T	AGGREGATE SHOULDER BORROW (SHOULDER RECONSTRUCTION)
V	MILL ASPHALT PVMT. APPROX. 1.5" DEPTH
Z1	MILL ASPHALT PVMT. APPROX. 3.0" DEPTH
F	ASPHALT SURFACE TREATMENT (AST) MATCOAT #78M STONE
Y1	INCIDENTAL MILLING

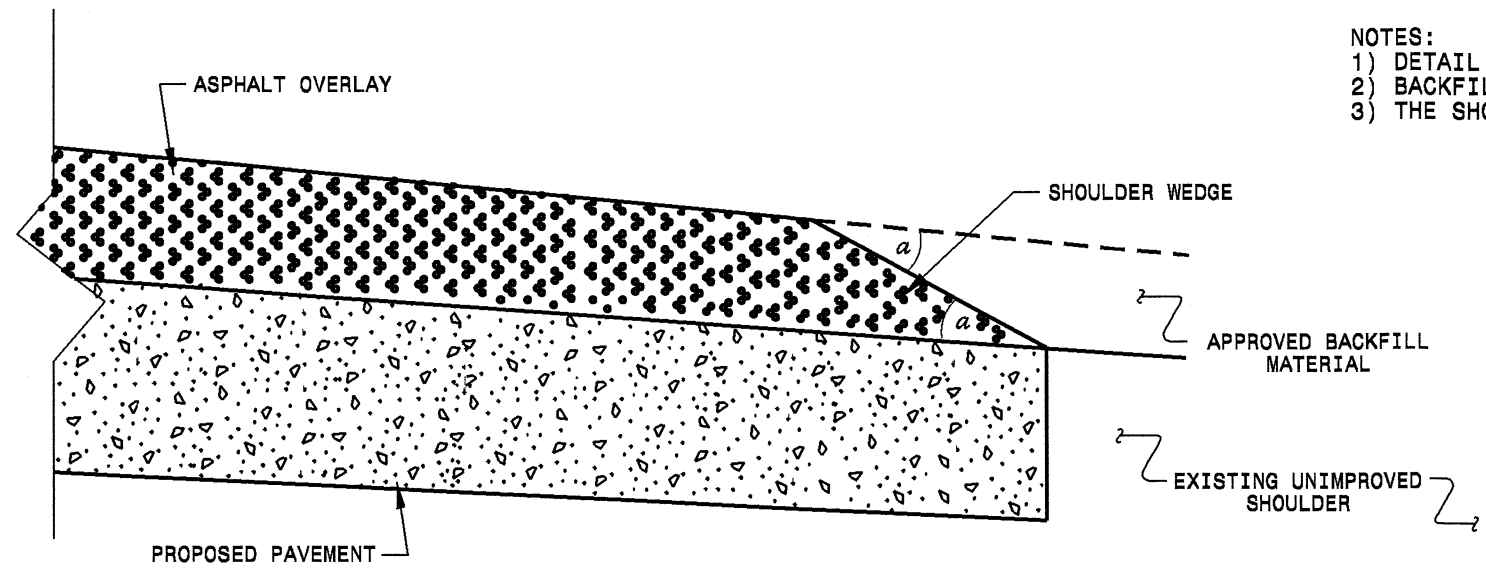
**DETAIL D**  
**MILLING BRIDGE APPROACHES**



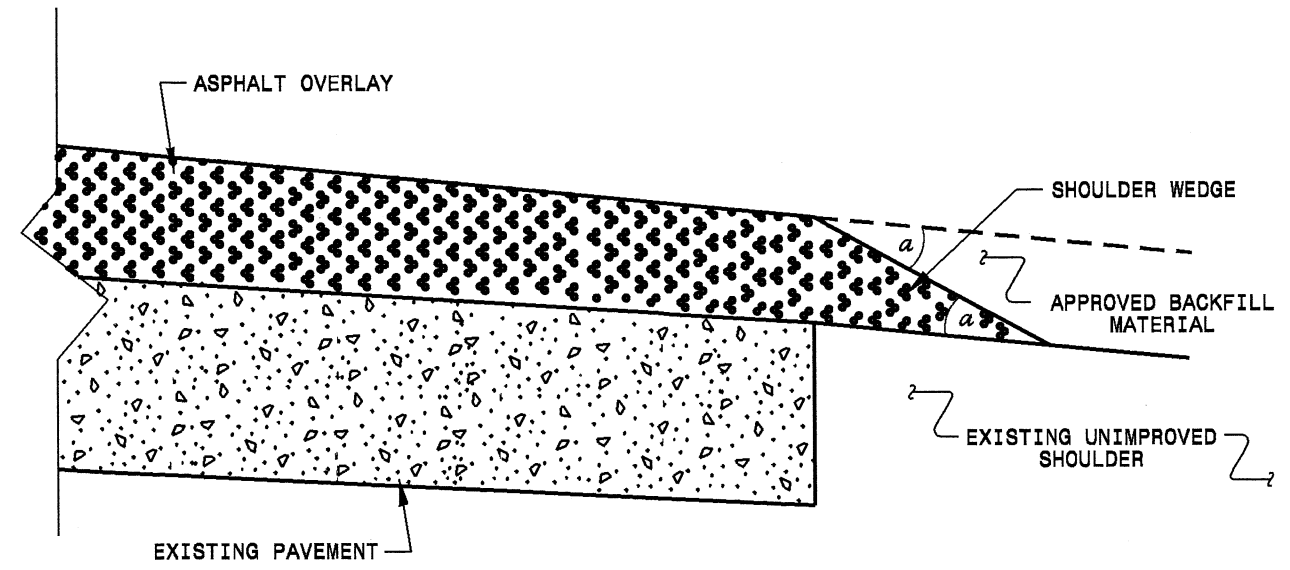
2014-2015  
Resurfacing Program  
Typical Sections  
Catawba County NC

Checked by: \_\_\_\_\_  
Drawn by: G. Brittain

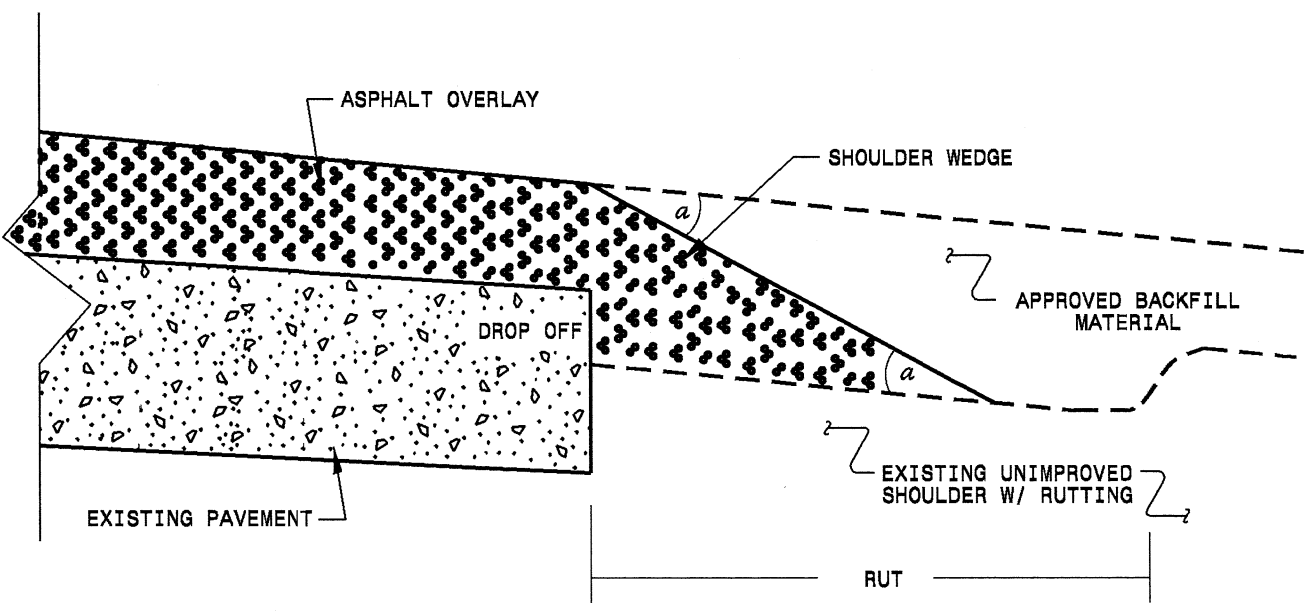
- NOTES:  
 1) DETAIL DOES NOT APPLY TO OGAFB AND ULTRA-THIN BONDED WEARING COURSE.  
 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.  
 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS AND SIDE STREETS.



**SHOULDER WEDGE DETAIL**  
 (Resurfacing Projects w/ Widening or  
 with Existing Paved Shoulder having no dropoffs)



**SHOULDER WEDGE DETAIL**  
 (Resurfacing Projects w/ NO Widening)

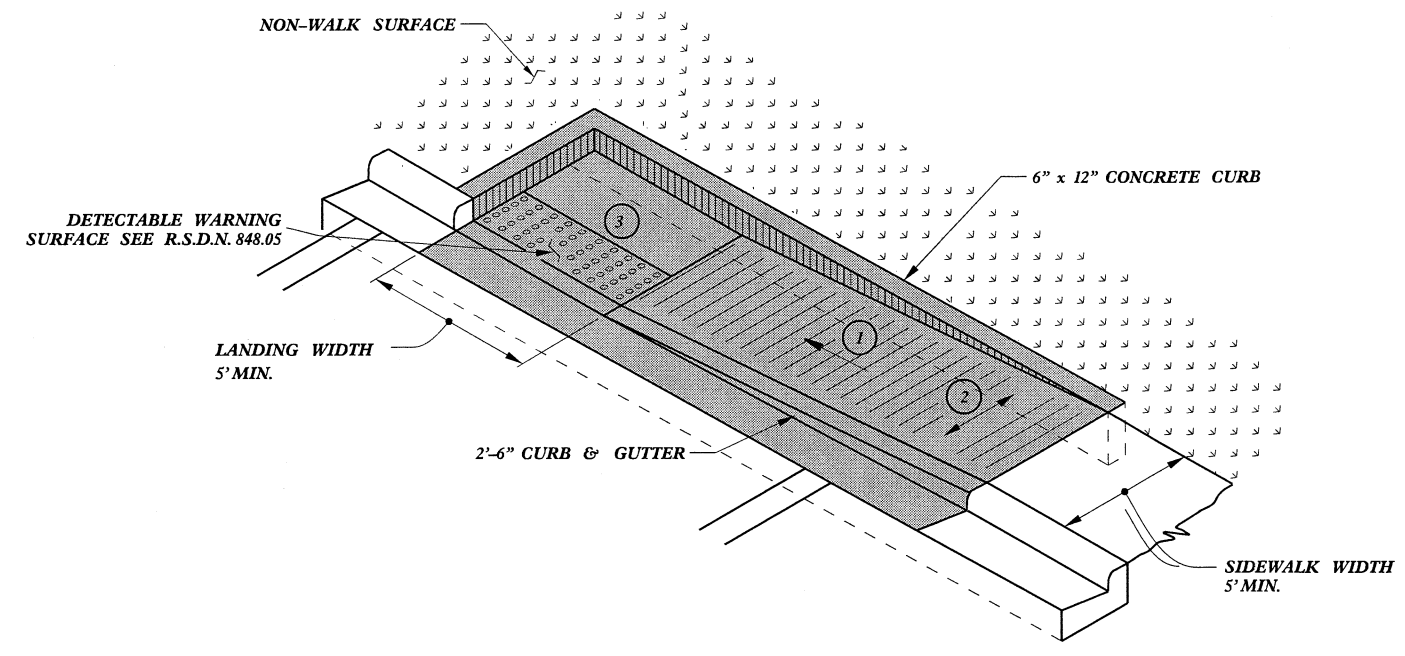


**SHOULDER WEDGE DETAIL**  
 (Resurfacing Adjacent to  
 Rutted Shoulder)

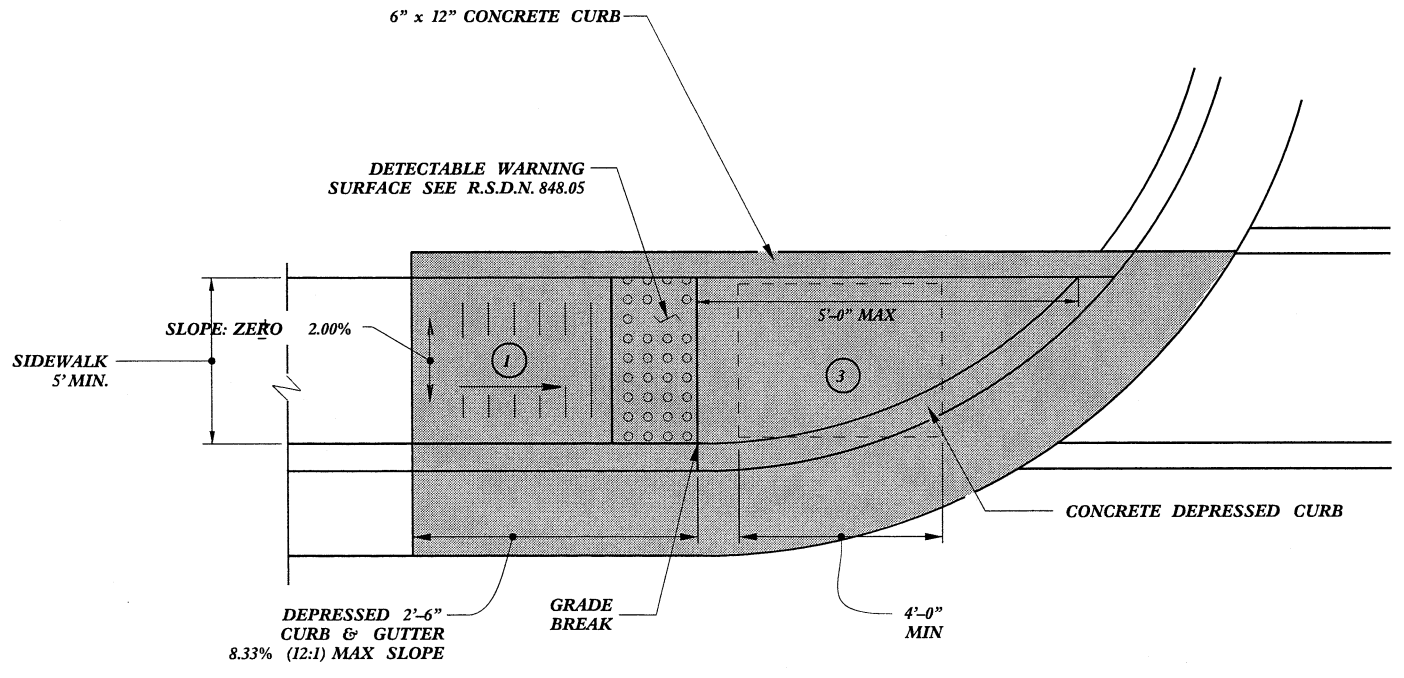
- SHOULDER WEDGE ANGLE = 30°

<b>CONTRACT STANDARDS AND DEVELOPMENT UNIT</b>	
Office 919-707-6950	FAX 919-280-4119
<b>SHOULDER WEDGE DETAILS</b>	
ORIGINAL BY: T. SPELL	DATE: 7-19-11
MODIFIED BY:	DATE: 10/18/12
CHECKED BY:	DATE:
FILE SPEC.: s:\usr\details\stand\shouderwedgedetail.dgn	

8-JUN-2014 10:40  
 C:\Users\pporter\Documents\smac\REVISED Shoulder Wedge Detail.dgn  
 p:\porter  
 650261658



**TYPE 1A**



**TYPE 1**

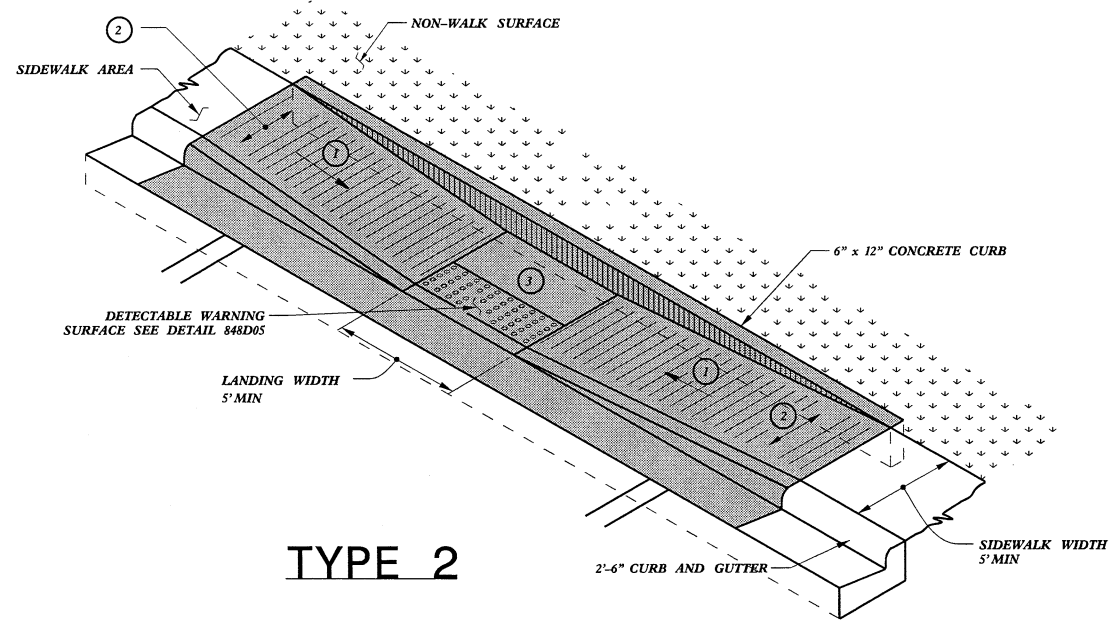
- ① 8.33% (12:1) MAX RAMP SLOPE
- ② CROSS SLOPE: 2.00%
- ③ CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.

PAY LIMITS FOR CURB RAMP

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

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

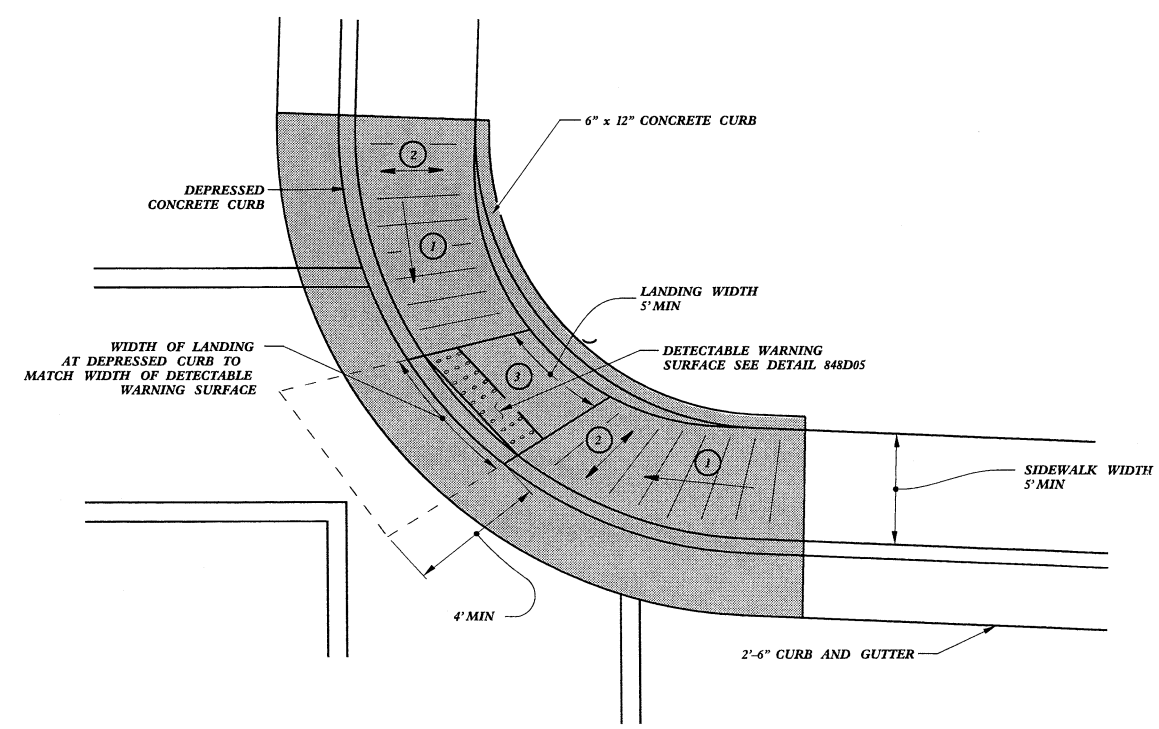
5/14/99  
22-MAP-2012 (5/06)  
S:\Contracts\2012\Standard Drawings\2012 Curb Ramp Special Details\Curb Ramp Details.dgn  
J.Howerton



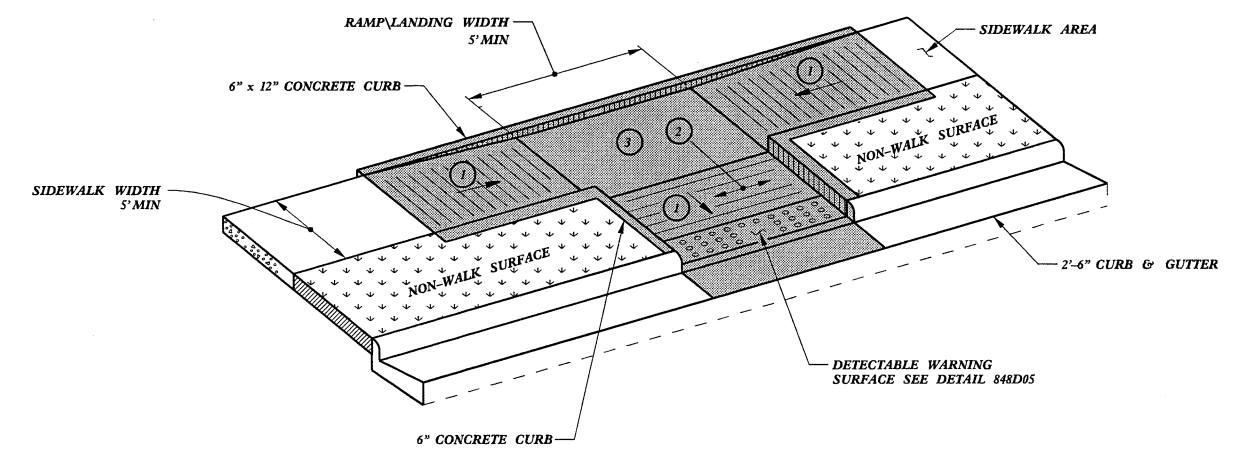
**TYPE 2**

PAY LIMITS FOR 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**

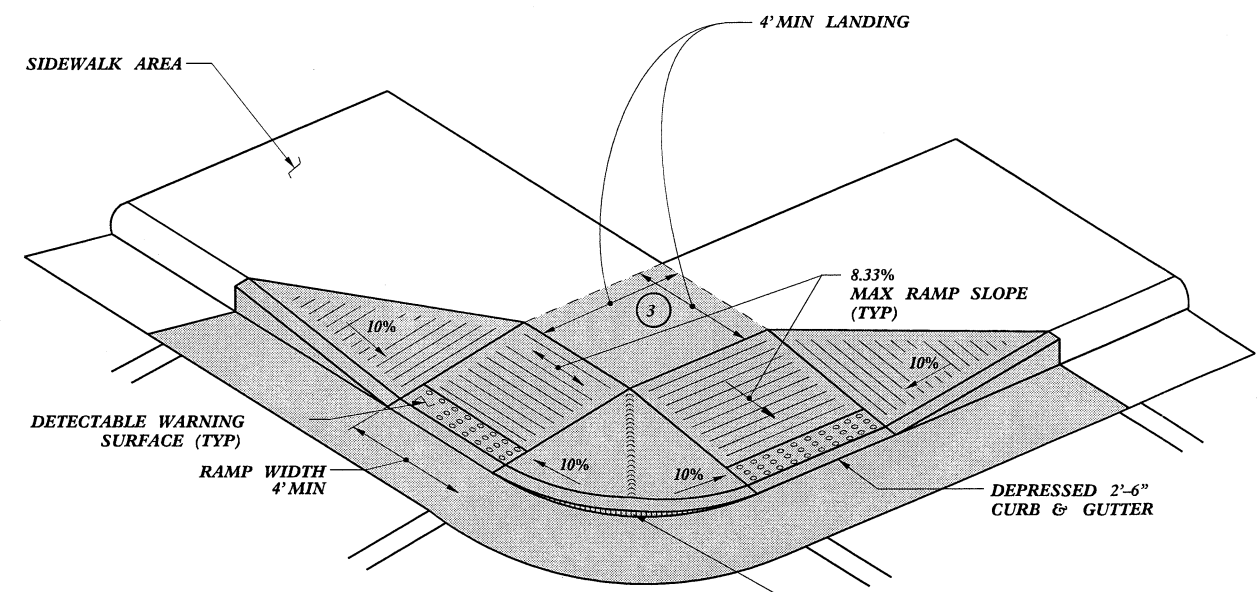


**TYPE 3**

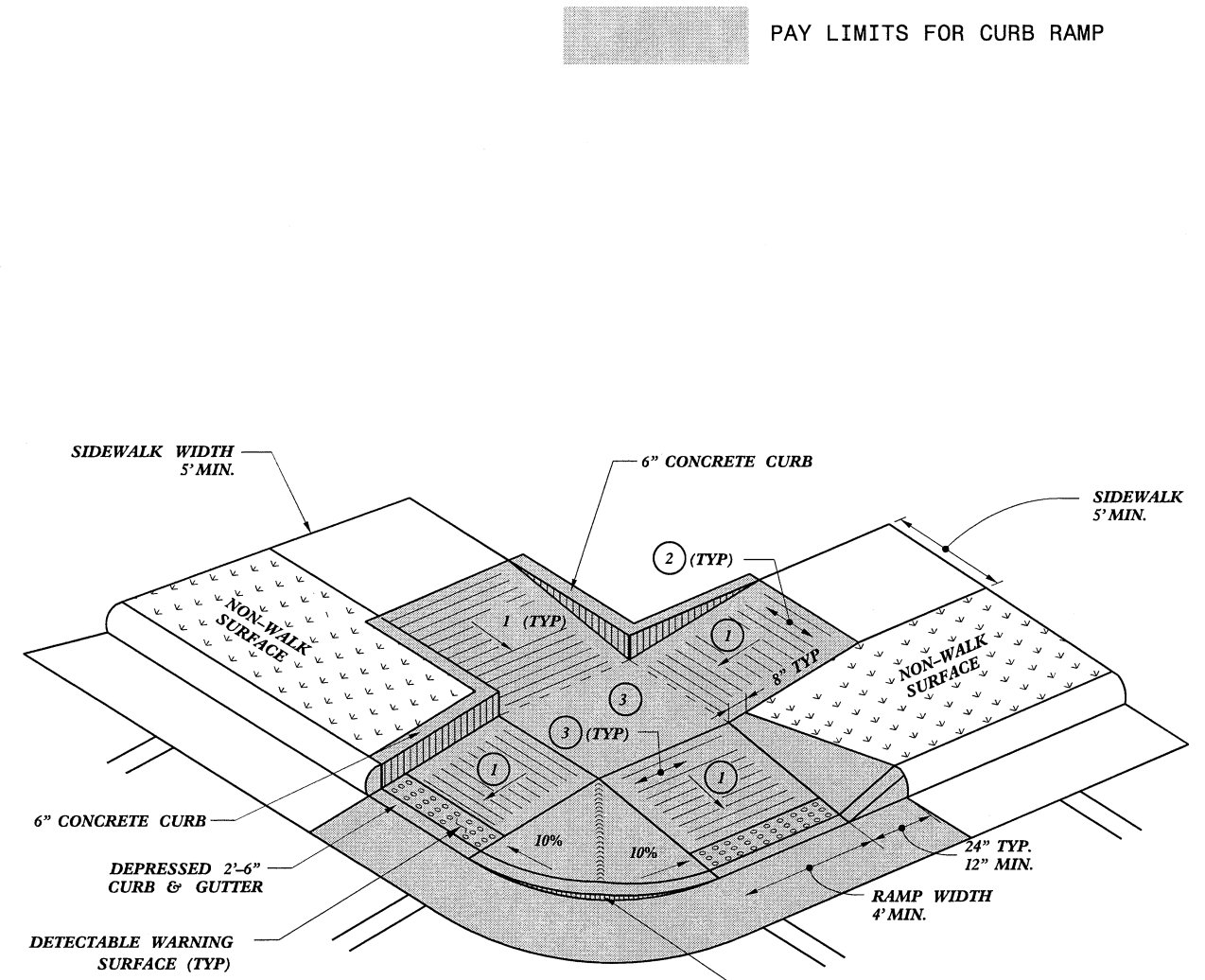
REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

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

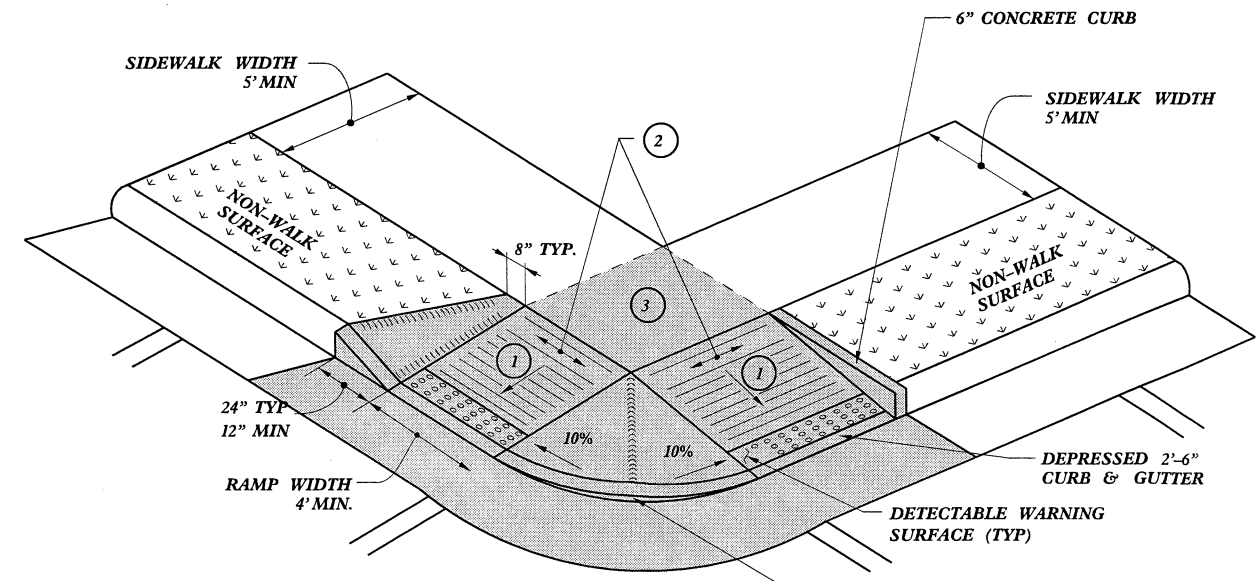
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 J.Howerton AT CSD237581



**TYPE 4**



**TYPE 5**



**TYPE 4A**

- 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.

PAY LIMITS FOR CURB RAMP

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

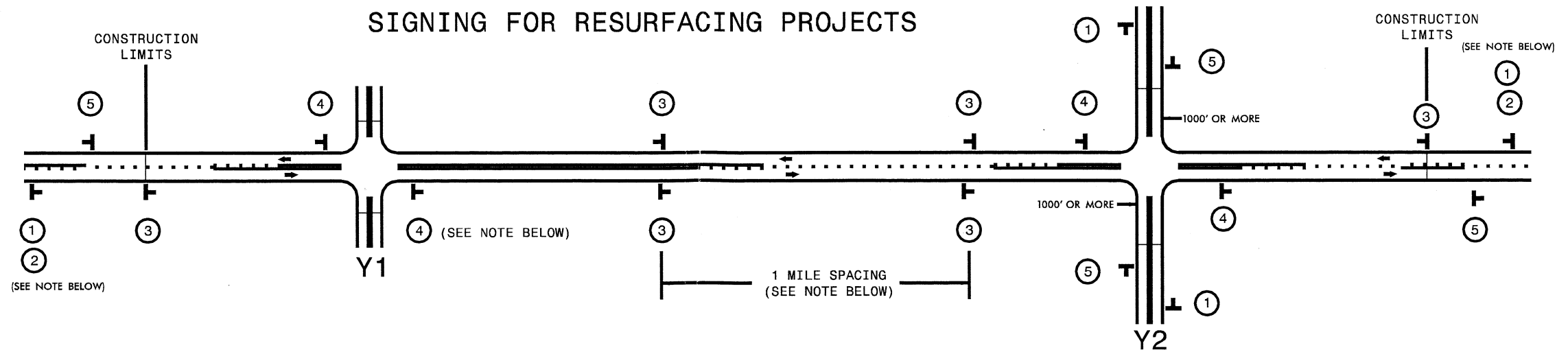
<b>CONTRACT STANDARDS AND DEVELOPMENT UNIT</b>	
Office 919-707-6950	FAX 919-250-4119
<b>CURB RAMPS</b>	
Shared Landing	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC: stds/2012CurbRamp/CurbRampDetails.dwg	

5/14/99  
22-MAR-2012 15:08  
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J.Howerton AT CS0237501





## SIGNING FOR RESURFACING PROJECTS



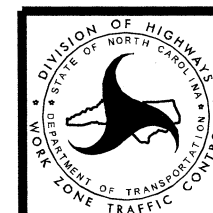
LEGEND	
T	STATIONARY SIGN
←	DIRECTION OF TRAFFIC FLOW

### 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.	<p style="text-align: center;">NO REQUIRED STATIONARY SIGNING FOR THE FOLLOWING -Y- LINE CONDITIONS:</p> <ol style="list-style-type: none"> <li>1) LESS THAN 1000' OF RESURFACING ALONG -Y- LINE</li> <li>2) SUBDIVISION ROADS</li> <li>3) DEAD END ROADS</li> </ol> <p style="text-align: center;">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; align-items: center;"> <div style="text-align: center;">   <small>W20-1 48" X 48"</small> </div> <div style="text-align: center;">   <small>W20-7 A 48" X 48"</small> </div> </div> <p style="text-align: center;">PLACED 500' IN ADVANCE OF FLAGGER. PLACED 250' IN ADVANCE OF FLAGGER.</p>
	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>SP 13107 48" X 48"</small>	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.	

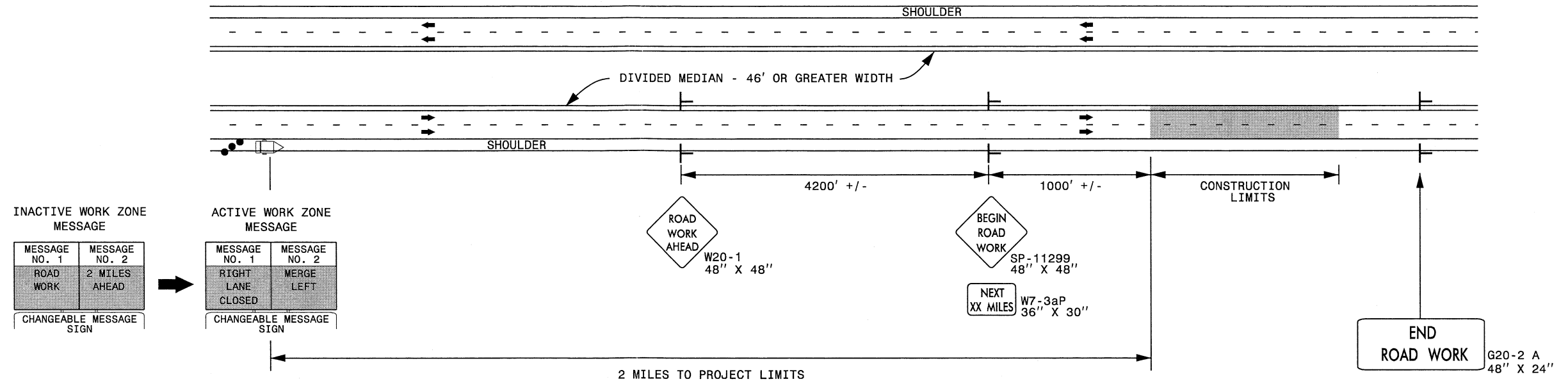
\*\*\*\*\*  
 SYSTEMS  
 \*\*\*\*\*



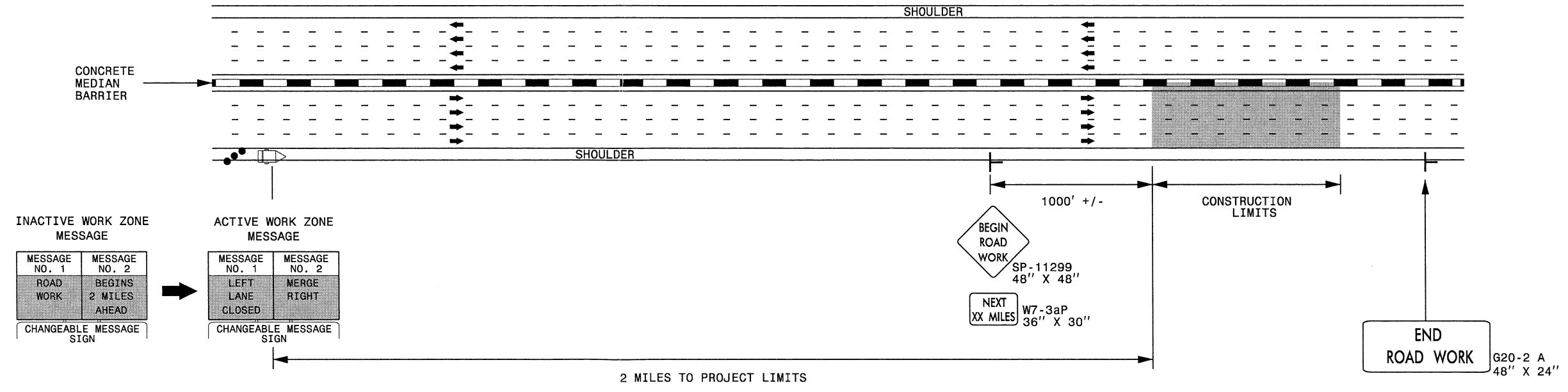
**RESURFACING  
 ADVANCE WARNING SIGNS  
 FOR  
 RURAL AND SUBURBAN  
 2 LANE ROADWAYS**



## 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

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

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

10/3/2013 8:11:10 AM WZTC:Resurfacing\2013\Documents\New\_Procedures\_05\_09\_2013\Resurfacing\_AdvWarn\_HSpa.dgn  
 User: rmgarrrett