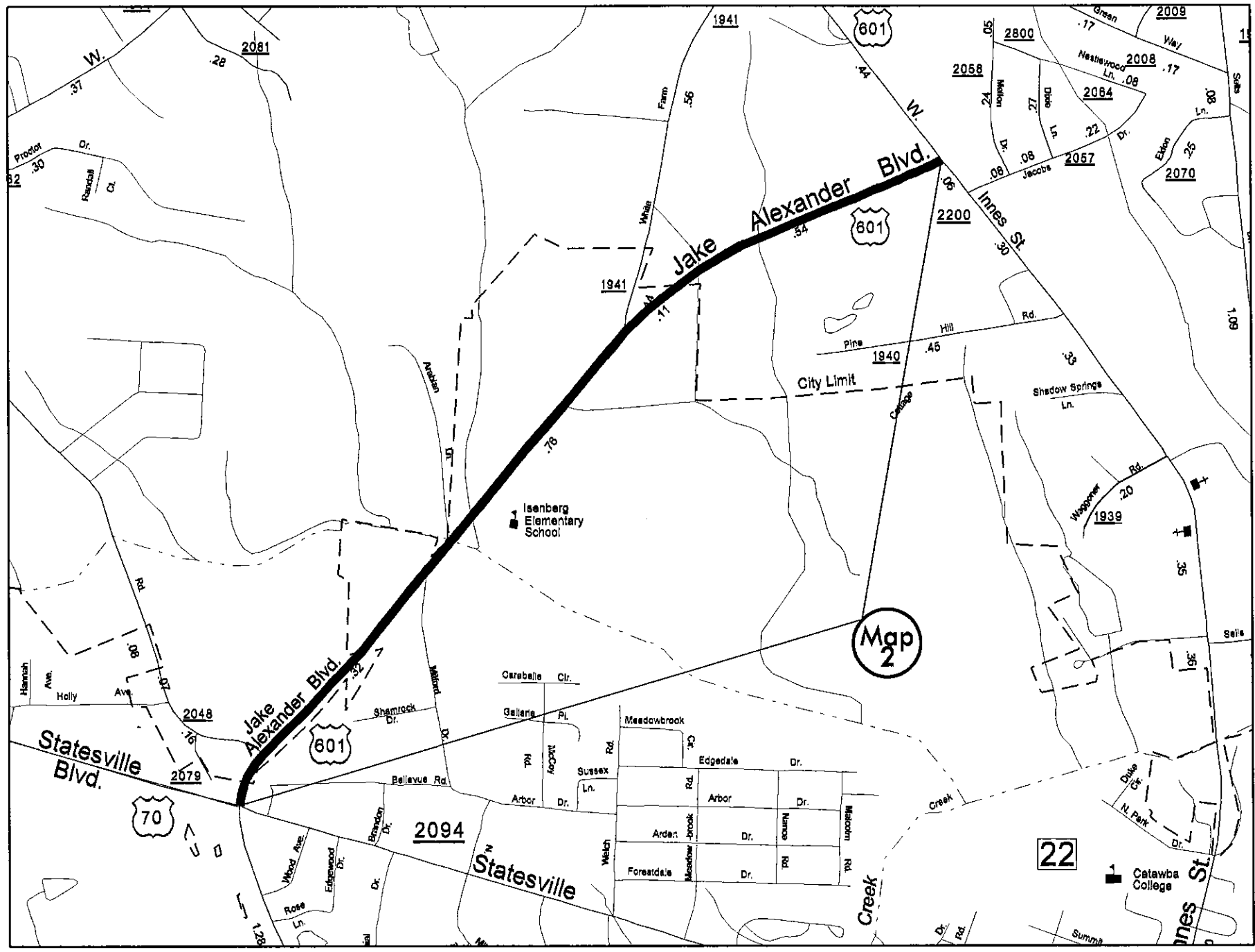
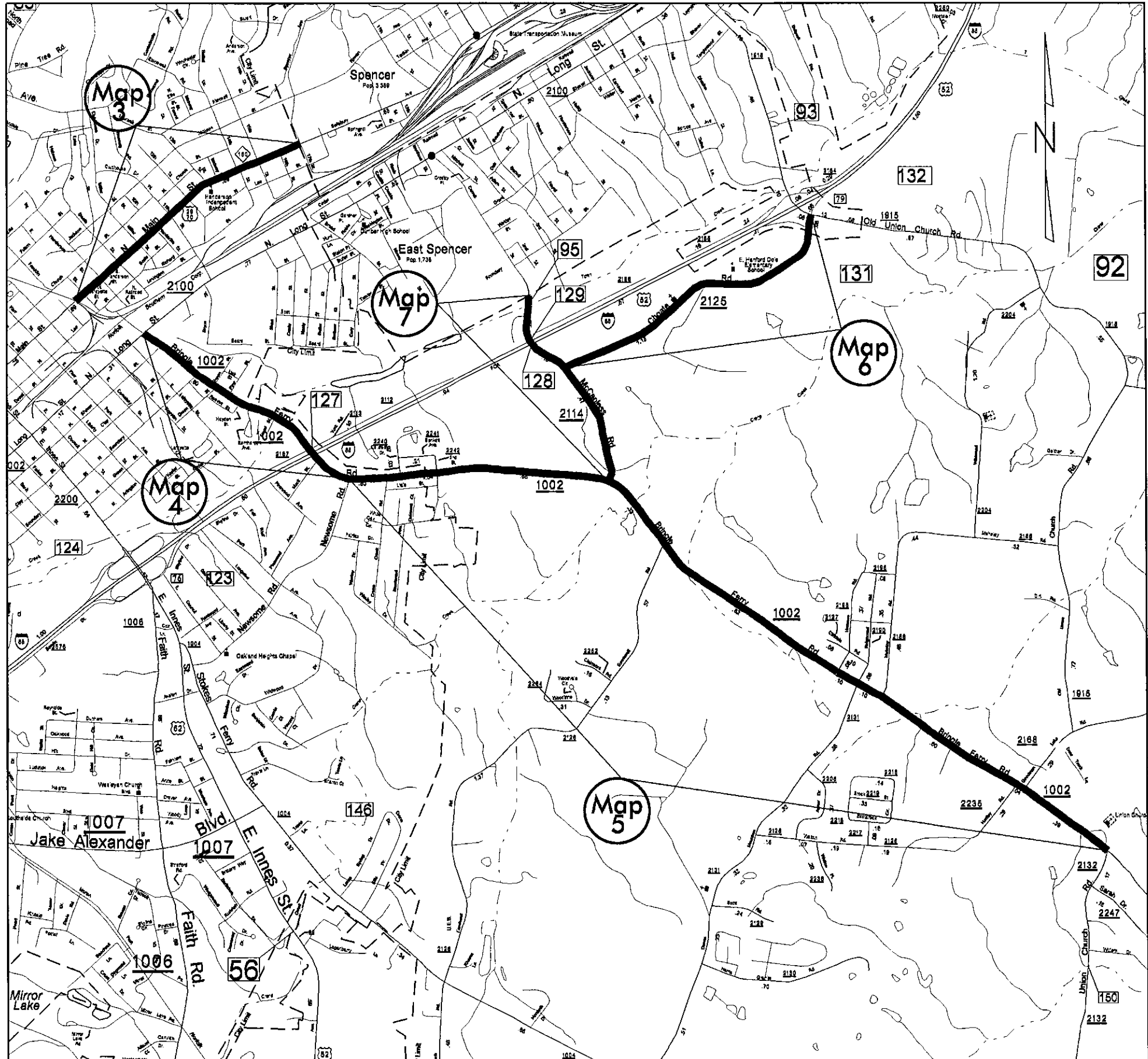


MAP 1  
 US 52 Main St..  
 Patching by NCDOT forces.  
 Butt Mill ends of Map.  
 Pave 1 1/2" S9.5B

**ROWAN COUNTY**  
 NORTH CAROLINA



MAP 2  
 US 601 Jake Alexander Blvd.  
 Mill 0-1½" 12 foot width to expose Gutter at Curb.  
 Pave back with 1½" S9.5C  
 Patching by Contract.



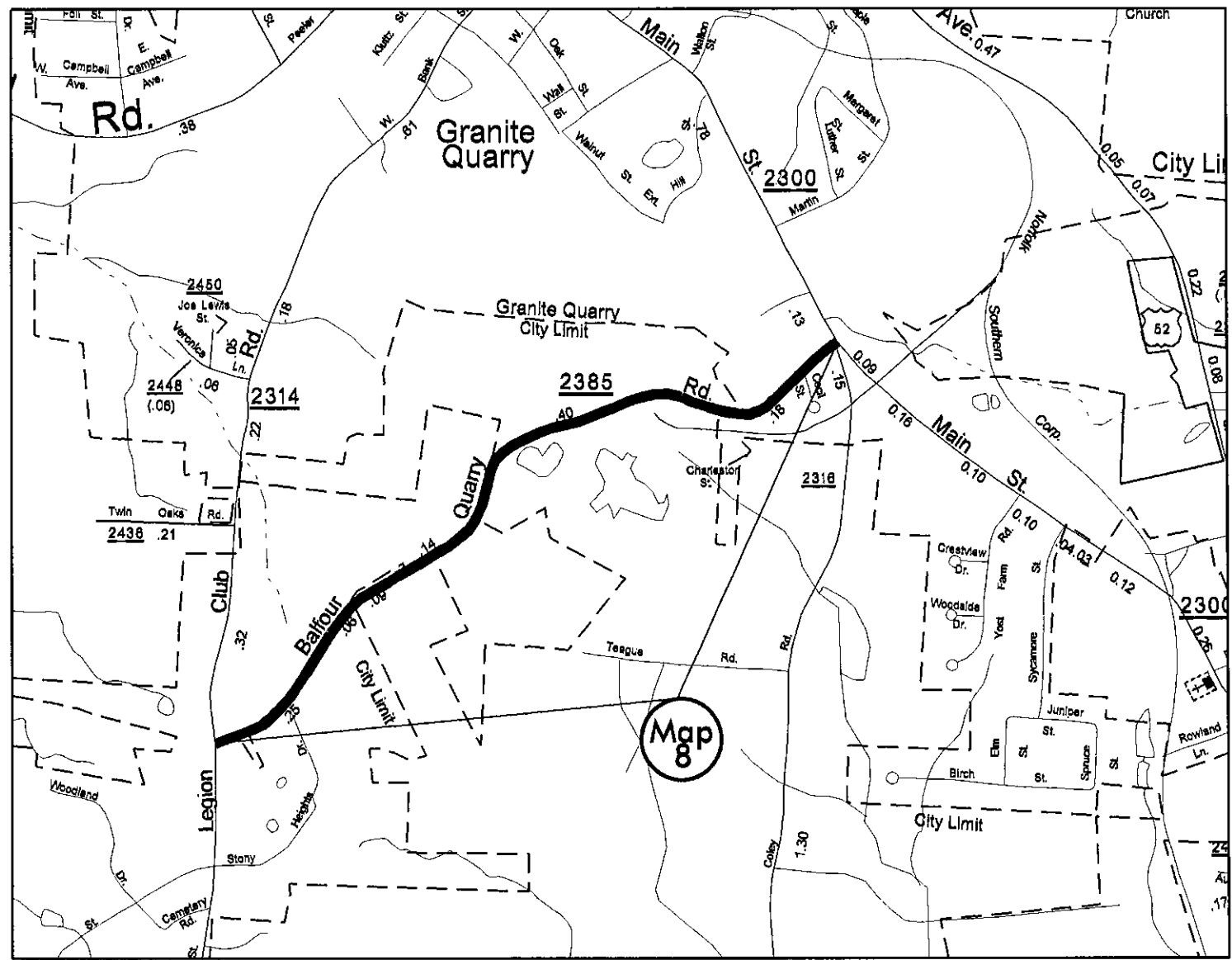
**MAP 3**  
 US 29/70NC 150 N. MAIN ST.  
 Mill 0-1/2" to expose gutter a 12 foot width.  
 Then Mill entire width between gutters a  
 1/2" depth.  
 Pave back with 1/2" S9.5C

**MAP 4**  
 Bringle Ferry Rd. SR 1002  
 Mill 1/2" depth from Long St. SR 2100  
 to Newsome Rd. (NS).  
 Pave back with 1/2" S9.5B

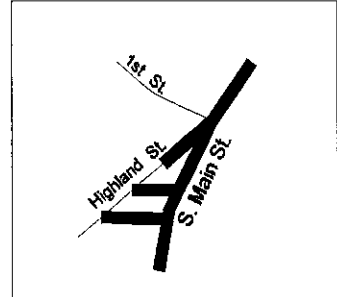
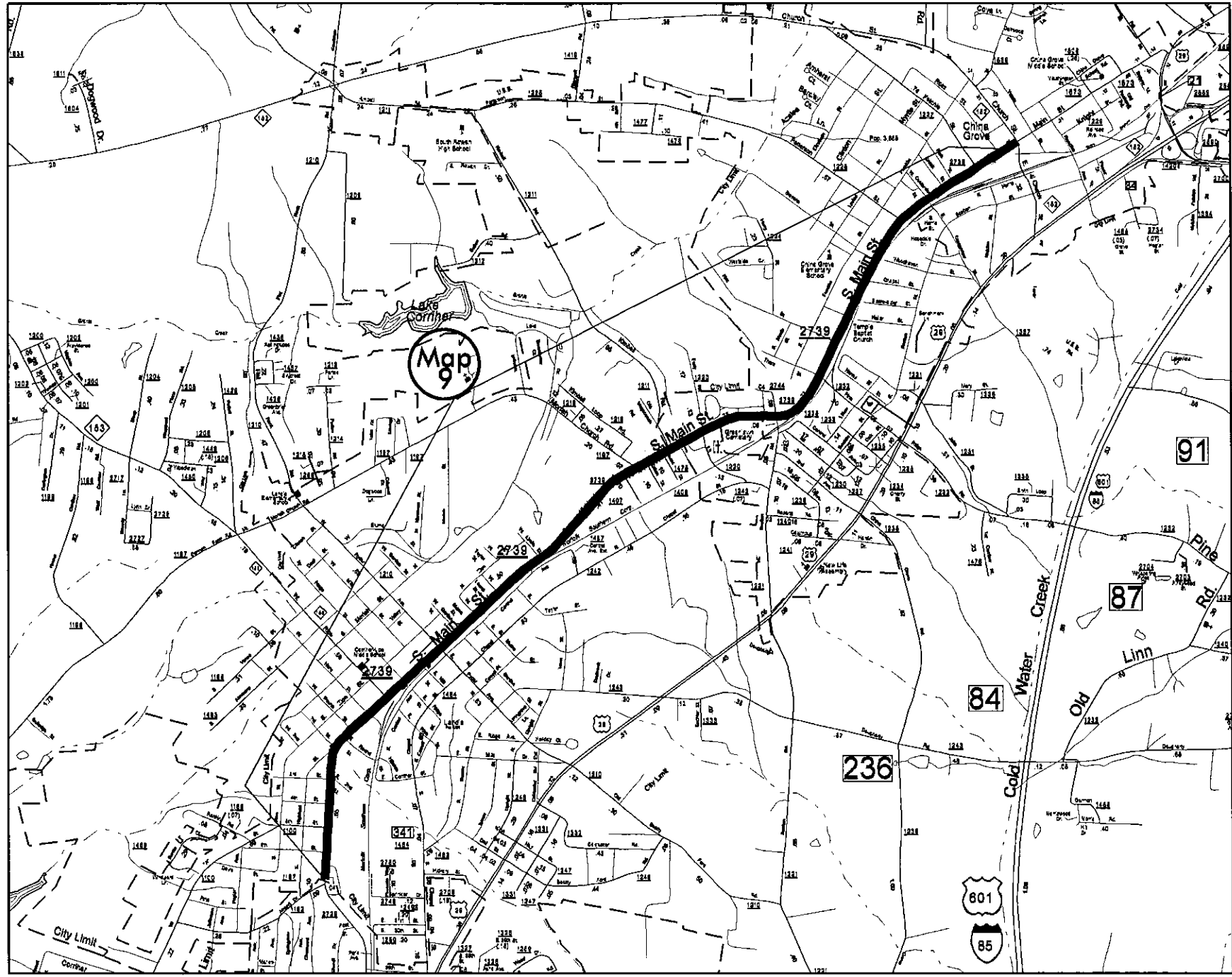
**MAP 5**  
 Bringle Ferry Rd. SR 1002  
 From Newsome Rd.(NS) to  
 Union Church Rd. SR 2132  
 NO MILLING.  
 Tie into new surface at Newsome Rd.  
 Tie In Mill at Union Church Rd..  
 Pave back with 1/2" S9.5B.

**MAP 6**  
 Choate Rd. SR 2125  
 Mill 2 foot width out of existing pavement both sides  
 and widen beyond EXISTING PAVEMENT 1 foot.  
 Pave back 3 Feet with 5/2" B25.0B  
 Overlay entire width with 2" S9.5B  
 Patching by NCDOT forces.

**MAP 7**  
 McCanless Rd. SR 2114  
 NO MILLING.  
 Pave 1/2" S9.5B  
 Patching by NCDOT forces.



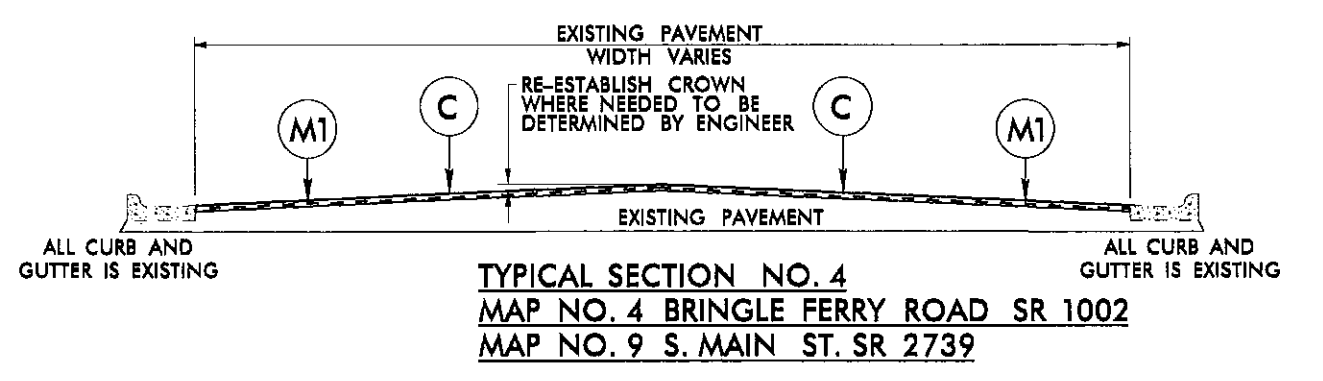
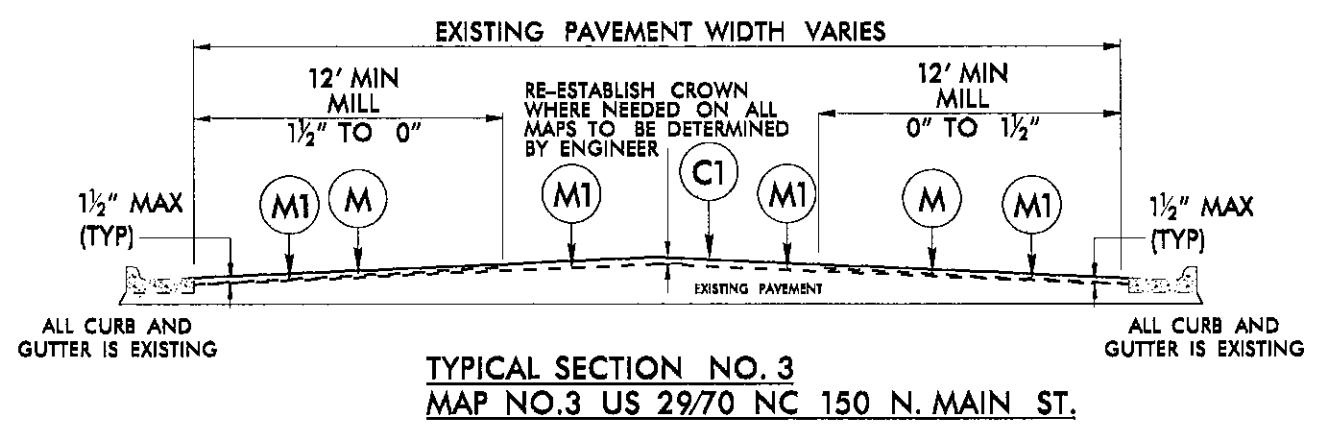
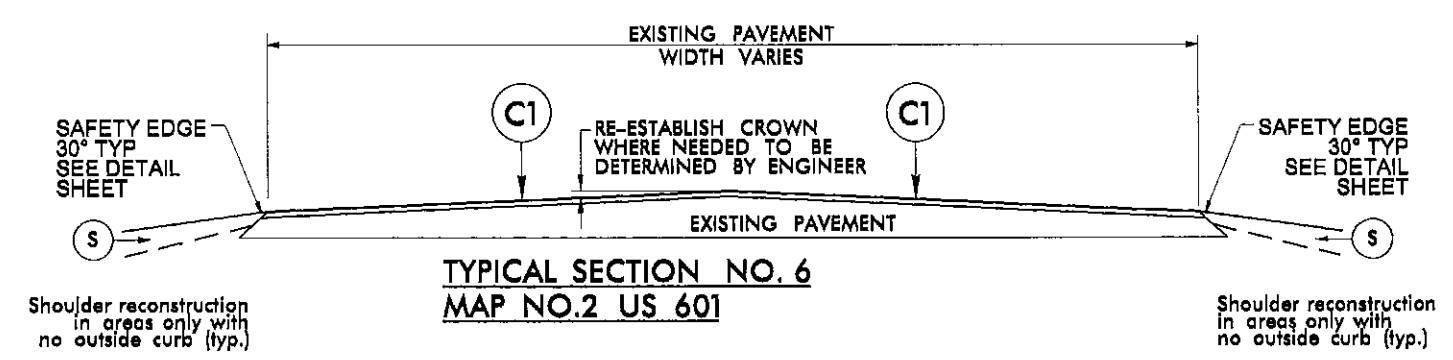
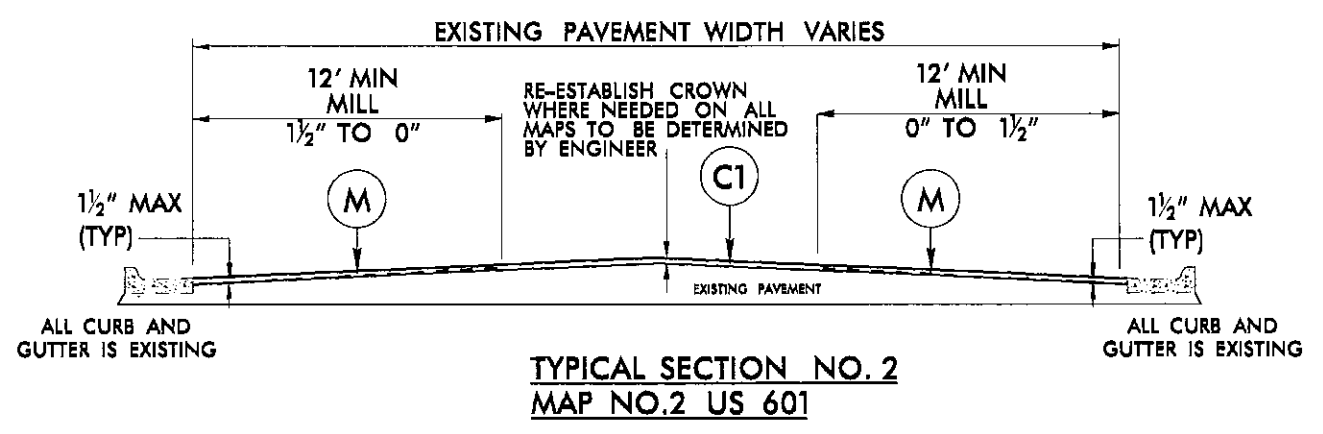
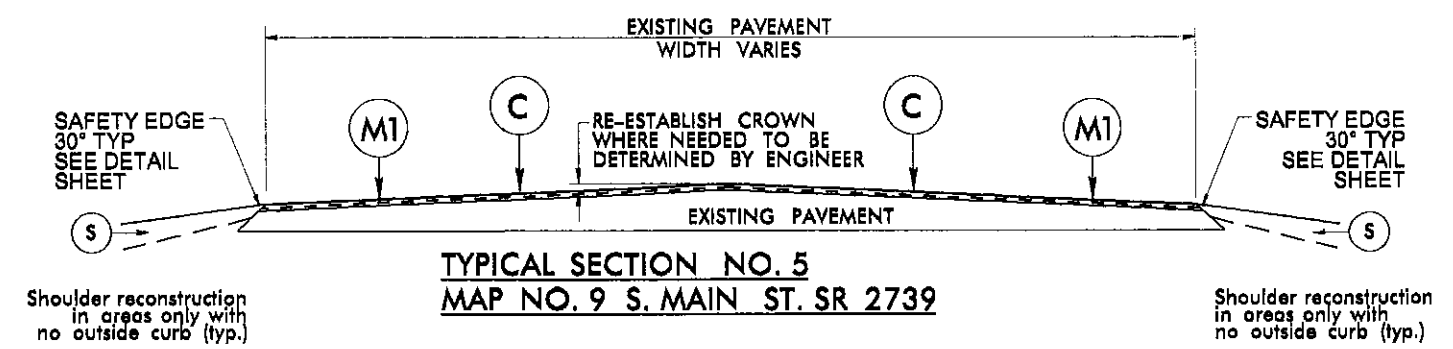
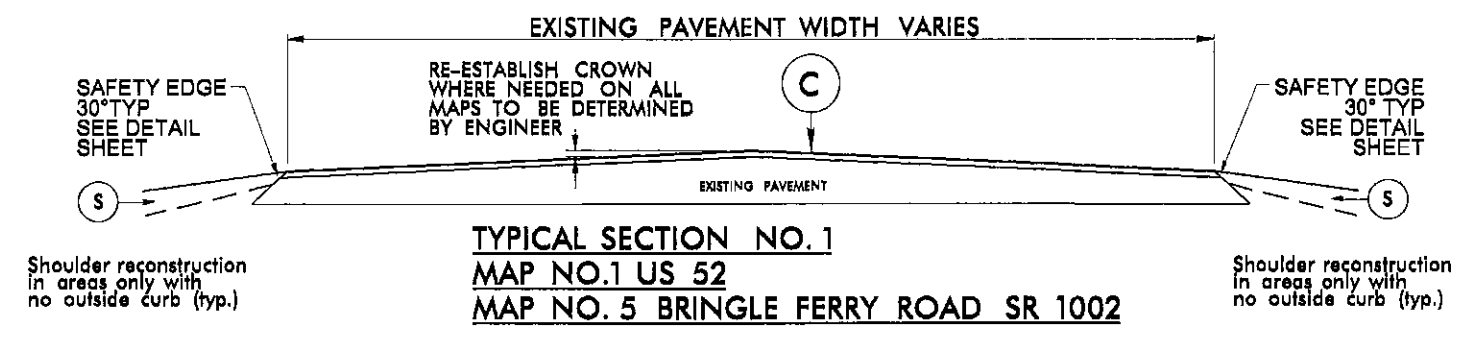
**MAP 8**  
**Balfour Quarry SR 2385**  
 Mill 2 foot width out of existing pavement both sides  
 and widen beyond EXISTING PAVEMENT 1 foot.  
 Pave back 3 Feet each side of pavement with 5½" B25.0B  
 then Overlay entire width with 2" S9.5B  
 Patching by NCDOT forces.



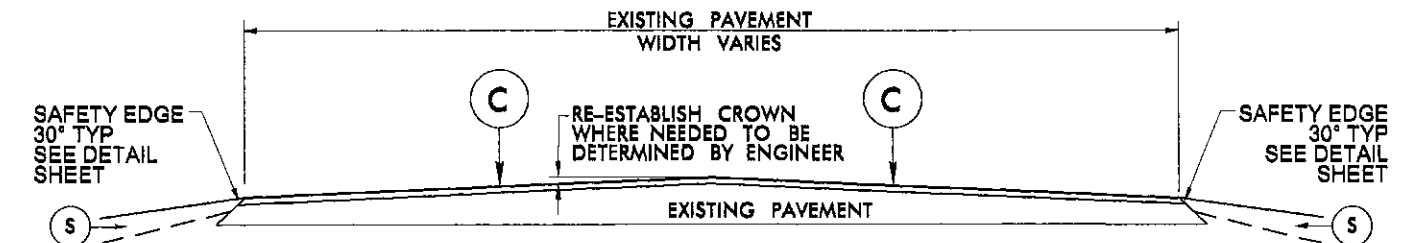
LIMITS OF PAVING  
AT HIGHLAND ST.

MAP 9  
S. Main St. SR 2739  
Mill 1 1/2" Depth  
Pave 1 1/2" S9.5B

**ROWAN COUNTY**  
NORTH CAROLINA



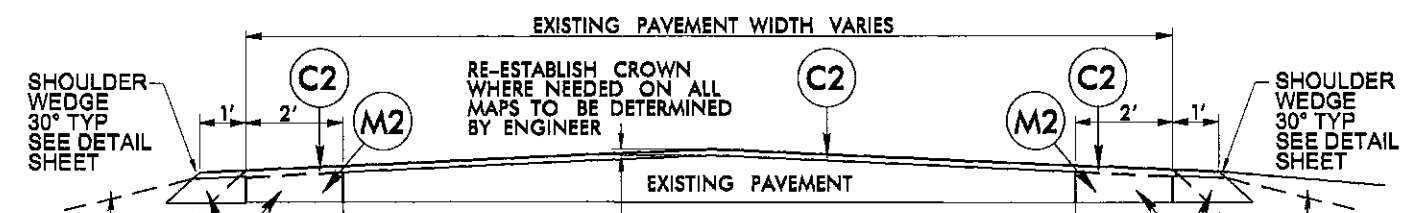
PAVEMENT SCHEDULE	
C	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, TO BE APPLIED AT AN AVERAGE RATE OF 168 LBS PER SQ YD
C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, TO BE APPLIED AT AN AVERAGE RATE OF 168 LBS PER SQ YD
C2	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, TO BE APPLIED AT AN AVERAGE RATE OF 224 LBS PER SQ YD
E	PROP. APPROX. 5/2" ASPHALT CONCRETE SURFACE COURSE, TYPE B25.0B, TO BE APPLIED AT AN AVERAGE RATE OF 627 LBS PER SQ YD
M	MILL ASPHALT PAVEMENT, 0 TO 1/2" DEPTH
M1	MILL ASPHALT PAVEMENT, 1/2" DEPTH
M2	MILL ASPHALT PAVEMENT, 7" DEPTH
S	SHOULDER RECONSTRUCTION (SEE DETAIL)
U	EXISTING PAVEMENT



**TYPICAL SECTION NO. 7**  
**MAP NO. 7 MCCANLESS ROAD SR 2186**

Shoulder reconstruction in areas only with no outside curb (typ.)

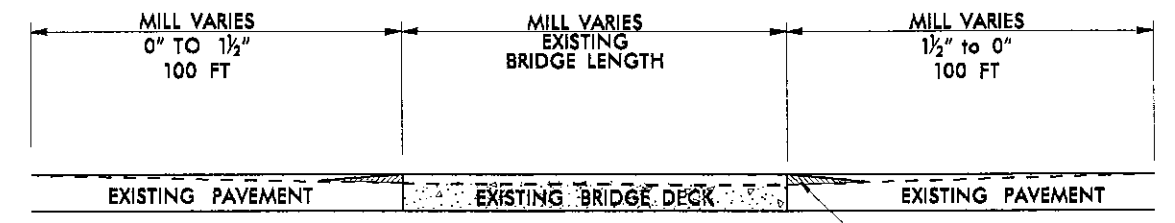
Shoulder reconstruction in areas only with no outside curb (typ.)



**TYPICAL SECTION NO. 8**  
**MAP NO. 6 Choate Rd. (SR 2125)**  
**MAP NO. 8 Balfour Quarry Rd. (SR 2385)**

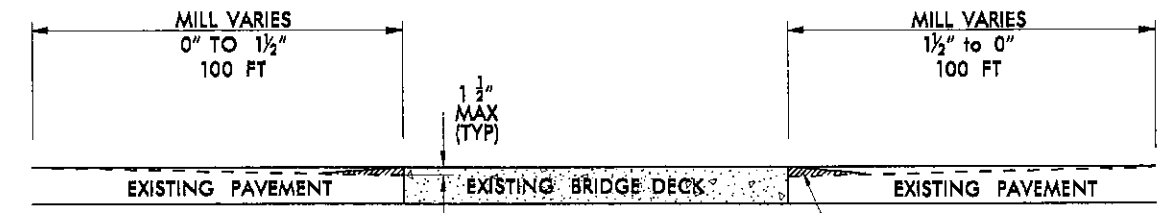
Shoulder reconstruction in areas only with no outside curb (typ.)

Shoulder reconstruction in areas only with no outside curb (typ.)



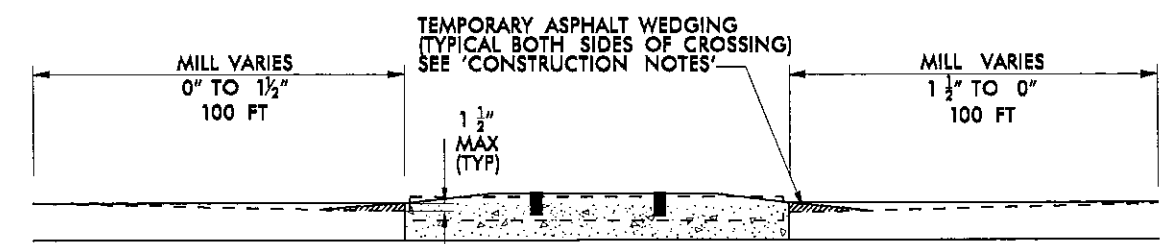
**MILLING BRIDGE DECK AND APPROACHES**  
 (SEE BRIDGE DATA SHEET)

TEMPORARY ASPHALT WEDGING (TYPICAL BOTH SIDES OF BRIDGE) IF APPROACHES ARE MILLED PRIOR TO MILLING BRIDGE DECK

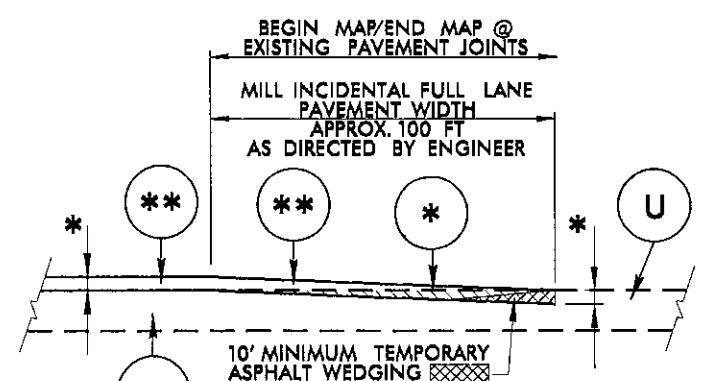


**INCIDENTAL MILLING BRIDGE APPROACHES**  
 (SEE BRIDGE DATA SHEET)

TEMPORARY ASPHALT WEDGING (TYPICAL BOTH SIDES OF BRIDGE)



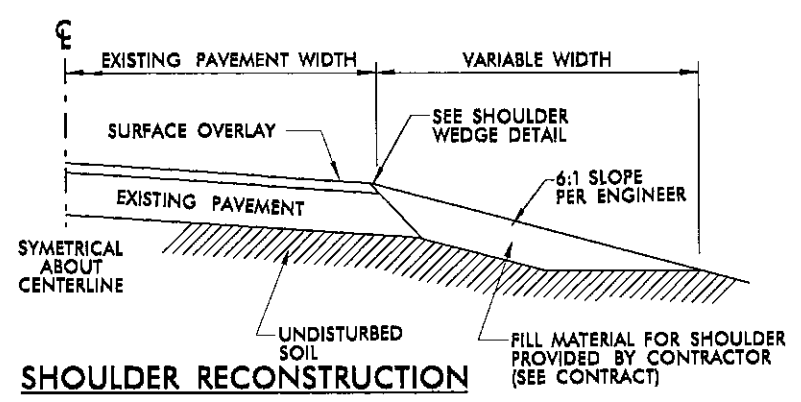
**INCIDENTAL MILLING RAILROAD CROSSING APPROACHES**



\* MILL DEPTHS WILL BE EQUAL TO OVERLAY THICKNESS OF MAPS SEE TYPICALS AND BRIDGE DATA SHEETS

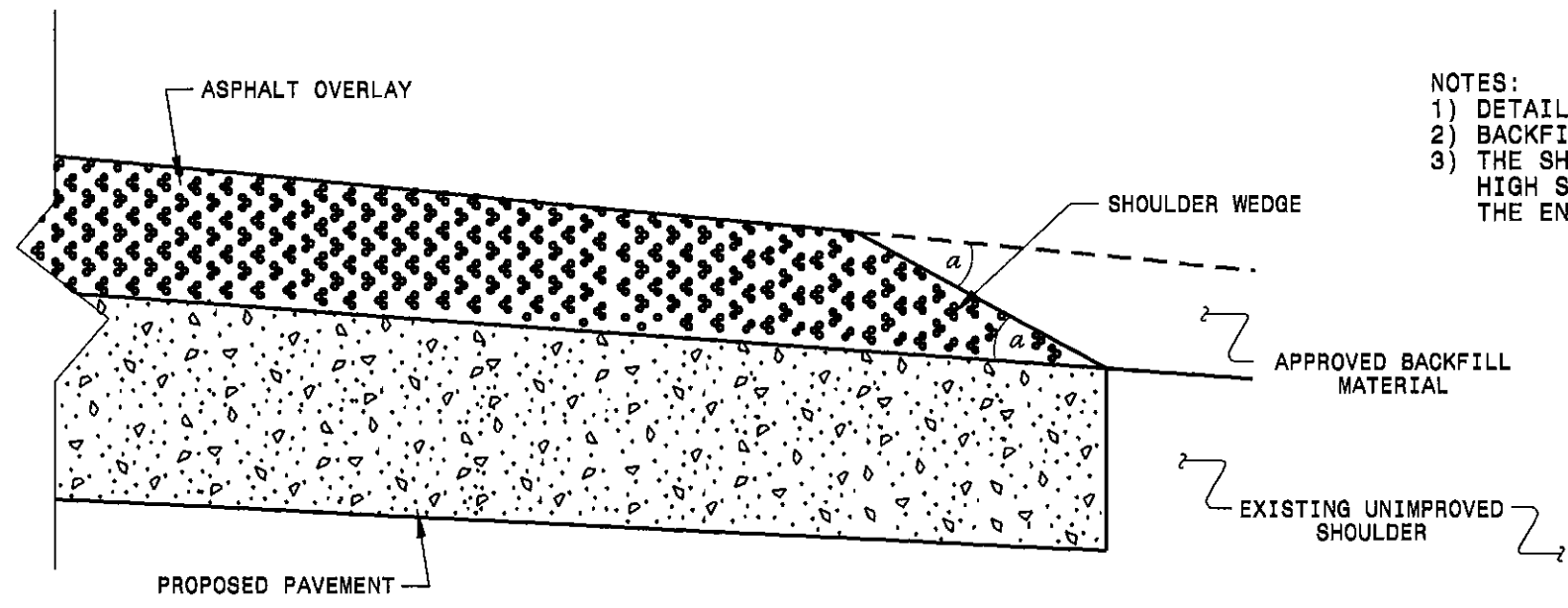
\*\* SEE TYPICALS FOR MIX TYPE

**INCIDENTAL MILLING AT TIE-IN DETAIL**



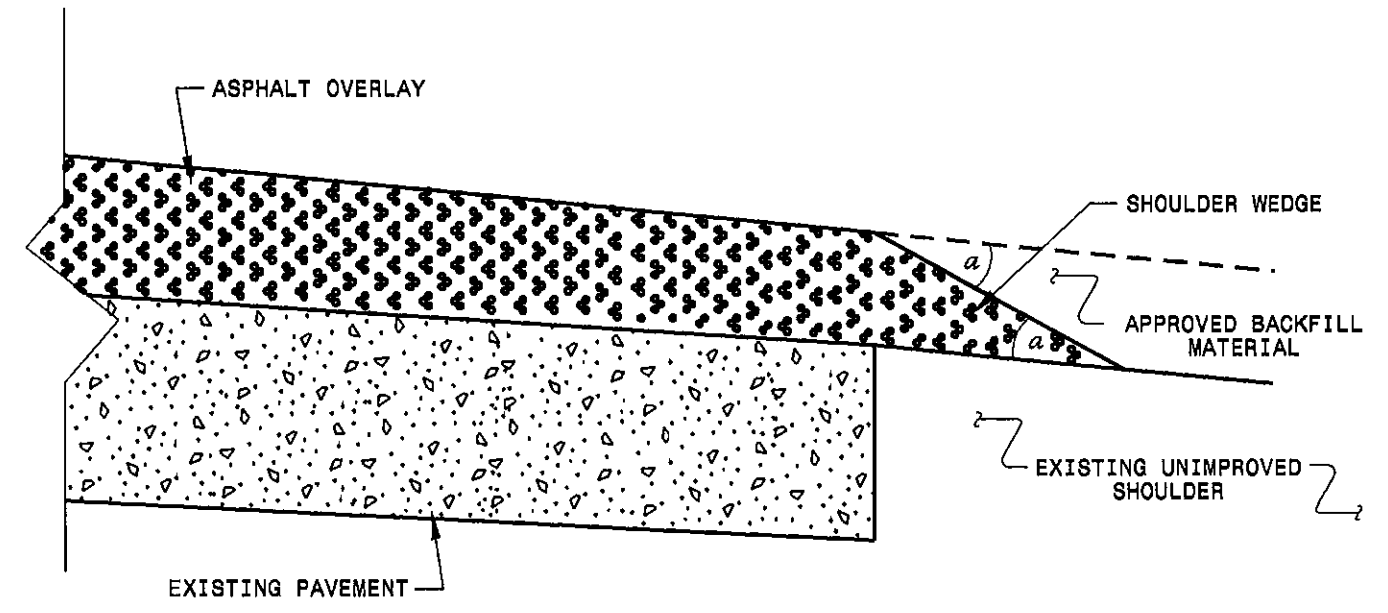
**SHOULDER RECONSTRUCTION**

PAVEMENT SCHEDULE	
C	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, TO BE APPLIED AT AN AVERAGE RATE OF 168 LBS PER SQ YD
C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, TO BE APPLIED AT AN AVERAGE RATE OF 168 LBS PER SQ YD
C2	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, TO BE APPLIED AT AN AVERAGE RATE OF 224 LBS PER SQ YD
E	PROP. APPROX. 5 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE B25.0B, TO BE APPLIED AT AN AVERAGE RATE OF 627 LBS PER SQ YD
M	MILL ASPHALT PAVEMENT, 0 TO 1 1/2" DEPTH
M1	MILL ASPHALT PAVEMENT, 1 1/2" DEPTH
M2	MILL ASPHALT PAVEMENT, 7" DEPTH
S	SHOULDER RECONSTRUCTION (SEE DETAIL)
U	EXISTING PAVEMENT

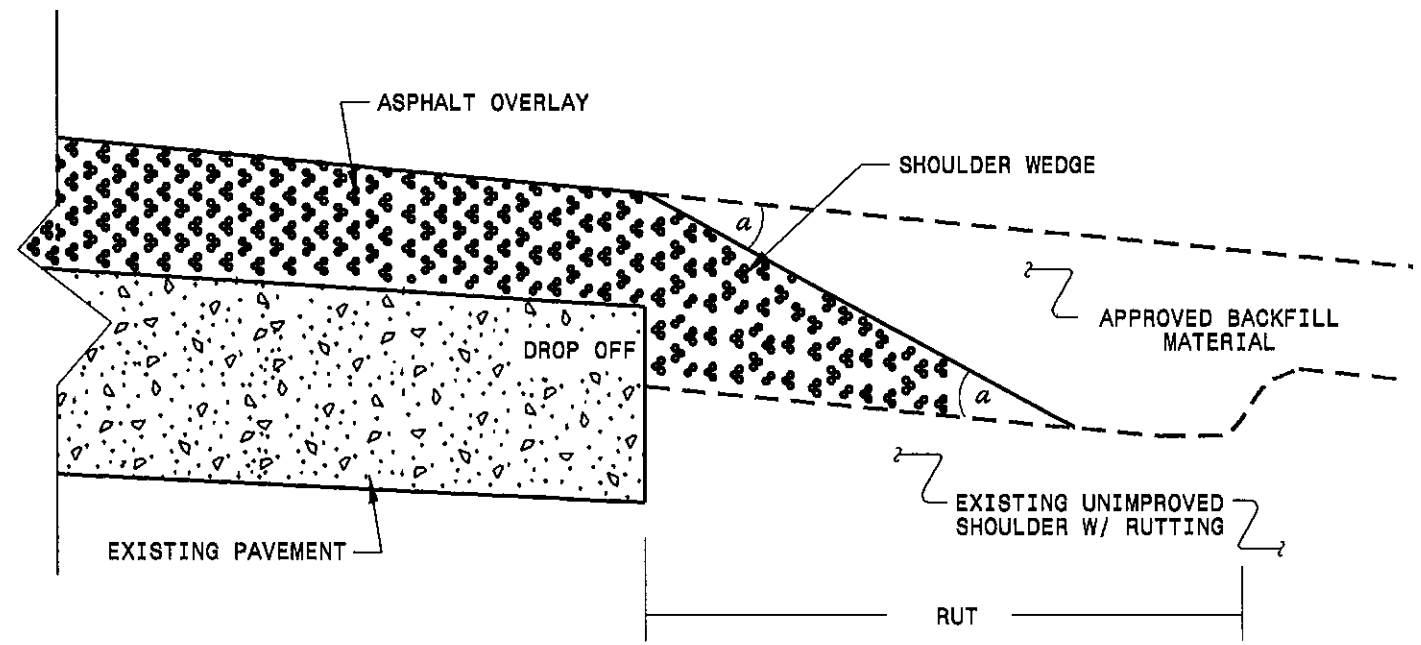


- NOTES:
- 1) DETAIL DOES NOT APPLY TO OGAFB AND ULTRA-THIN BONDED WEARING COURSE.
  - 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
  - 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS AND SIDE STREETS, HIGH SHOULDERS, AND OTHER LOCATIONS NOT FEASIBLE TO CONSTRUCT AS DIRECTED BY THE 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
<b>SHOULDER WEDGE DETAILS</b>	
ORIGINAL BY: T. SPELL	DATE: 7-18-11
MODIFIED BY:	DATE: 10/18/12
CHECKED BY:	DATE:
FILE SPEC: s:\user\gates\gates\proj\104\cstds\stds\11.dgn	



## CONSTRUCTION NOTES:

1. ALL QUANTITIES ARE "ESTIMATED" AS INDICATED IN THE "SUMMARY OF QUANTITIES".

2. CONSTRUCTION SHALL PROGRESS IN PHASES, IN THE ORDER INDICATED BELOW:

- PHASE 1 - MILLING AND PATCHING (WHEN REQUIRED)
- PHASE 2 - SURFACE OVERLAY
- PHASE 3 - SHOULDER DROP-OFF REPAIR (AS NEEDED AND DIRECTED BY ENGINEER)
- PHASE 4 - UTILITY ADJUSTMENTS (MANHOLE RING/COVER, VALVE/METER BOX RING/COVER, CATCH BASIN GRATE/COVER, DROP INLET GRATE/COVER, ETC.) WHEN REQUIRED.

3. BRIDGES THAT HAVE FLOOR DRAINS, SHALL HAVE ALL FLOOR DRAINS LEFT OPEN. EXTRA CARE SHALL BE EXERCISED IN MILLING (IF REQUIRED) AND IN PLACING THE WEARING SURFACE AROUND FLOOR DRAINS SO AS NOT TO HINDER EFFECTIVE DRAINAGE.

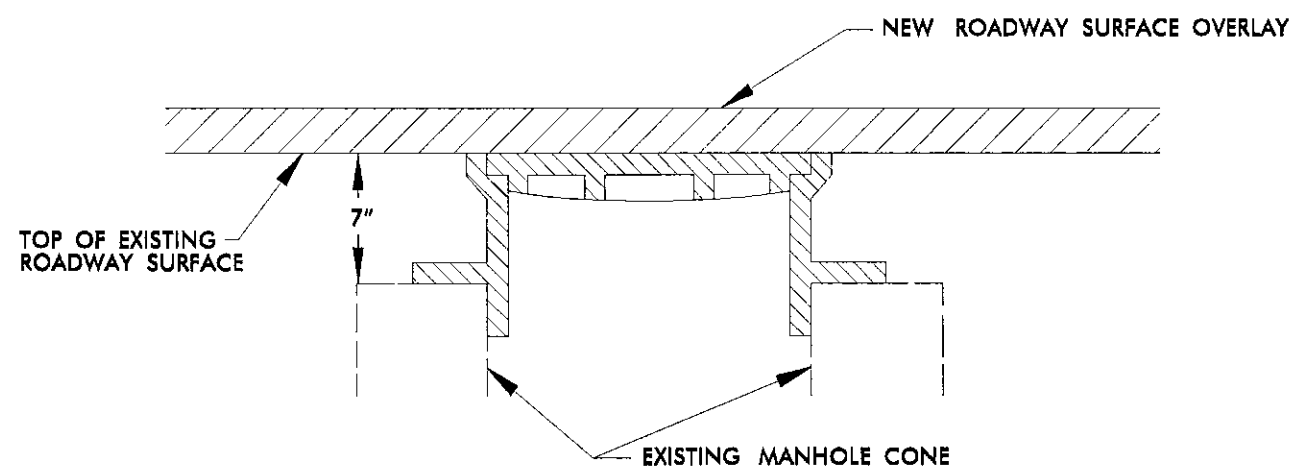
4. TEMPORARY ASPHALT WEDGING SHALL BE PLACED ON THE SAME DAY THAT BRIDGE AND/OR RAILROAD APPROACHES ARE MILLED (AND IF APPROACHES ARE MILLED PRIOR TO BRIDGE DECK).

5. FOR TWO-LANE ROADWAYS - IT SHALL BE UNDERSTOOD THAT TYPICALLY ON A ROADWAY MEASURING 20 FEET OR LESS IN WIDTH, THE CENTER OF THE WHITE EDGELINE SHALL BE LOCATED SIX INCHES FROM THE EDGE OF PAVEMENT ON EITHER SIDE OF THE ROADWAY; ON A ROADWAY MEASURING 22 FEET IN WIDTH, TRAVEL LANES SHALL MEASURE 10 FEET AND THE WHITE EDGELINE SHALL BE LOCATED ONE FOOT FROM THE EDGE OF PAVEMENT ON EITHER SIDE; ON A ROADWAY MEASURING 24 FEET IN WIDTH, TRAVEL LANES SHALL MEASURE 11 FEET AND THE WHITE EDGELINE SHALL BE LOCATED ONE FOOT FROM THE EDGE OF PAVEMENT ON EITHER SIDE; ON A ROADWAY MEASURING 26 FEET OR MORE IN WIDTH, TRAVEL LANES SHALL MEASURE 12 FEET AND THE WHITE EDGELINE SHALL BE LOCATED NO LESS THAN ONE FOOT FROM THE EDGE OF PAVEMENT ON EITHER SIDE. THIS SHALL BE STANDARD PRACTICE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

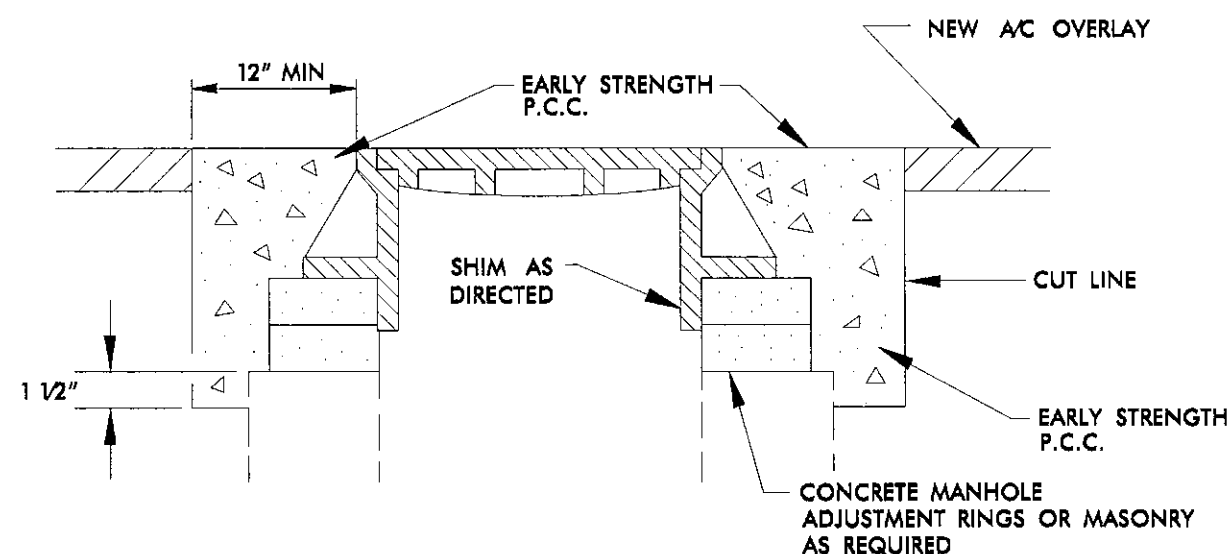
6. PAPER JOINTS ARE TO BE PLACED BETWEEN DAYS OF PAVING OPERATIONS AS SPECIFIED IN THE STANDARD SPECIFICATIONS SECTION 610-11.

7. ALL MILLED AREAS WILL BE PAVED WITHIN 72 HOURS UNLESS APPROVED BY THE ENGINEER.

8. REPLACE ANY PORTION OF STOP BARS AND OTHER PAVEMENT MARKINGS AT ANY INTERSECTION INCLUDING Y-LINES NOT ACTUALLY BEING PAVED OVER, THAT ARE OBLITERATED BY THE PAVING OPERATION EITHER BY HAULING WHEEL TRACKS OR TACK TRUCK BY THE END OF EACH RESURFACING OPERATION



STEP 1



STEPS 2,3, &amp; 4

- STEP 1 COVER EXISTING MANHOLE WITH APPROVED MATERIAL AND CONSTRUCT OVERLAY ACROSS TOP OF MANHOLE
- STEP 2 SAW CUT EXCAVATION AROUND MANHOLE 12" MIN. FROM MANHOLE FRAME.
- STEP 3 RAISE MANHOLE FRAME RINGS TO FINISH PAVEMENT PROFILE AND CROSS SLOPE.
- STEP 4 BACKFILL WITH EARLY STRENGTH P.C.C. TO DEPTHS AS DIRECTED.

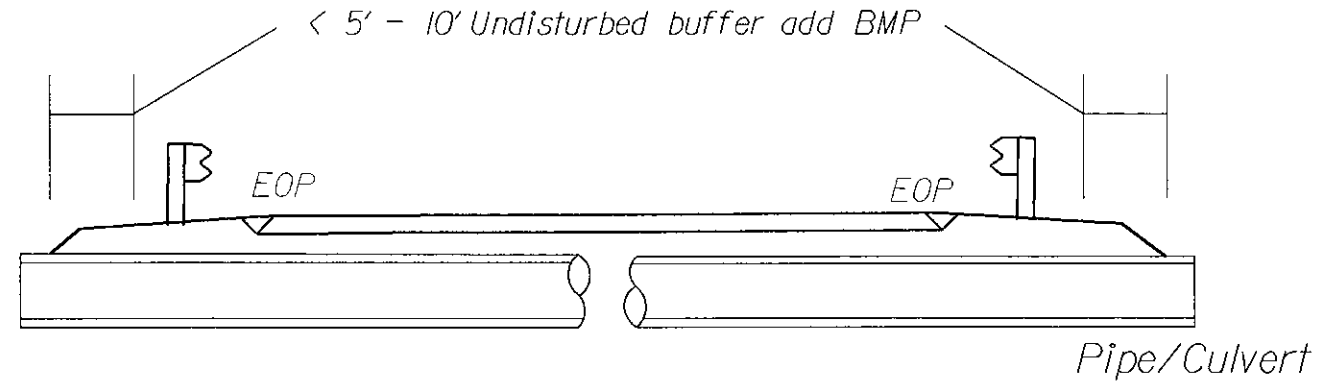
**MANHOLE ADJUSTMENT DETAIL**

NOTES: Less than 5' - 10' undisturbed buffer from ROW, ditchline, water feature, or drainage inlet, add BMP.

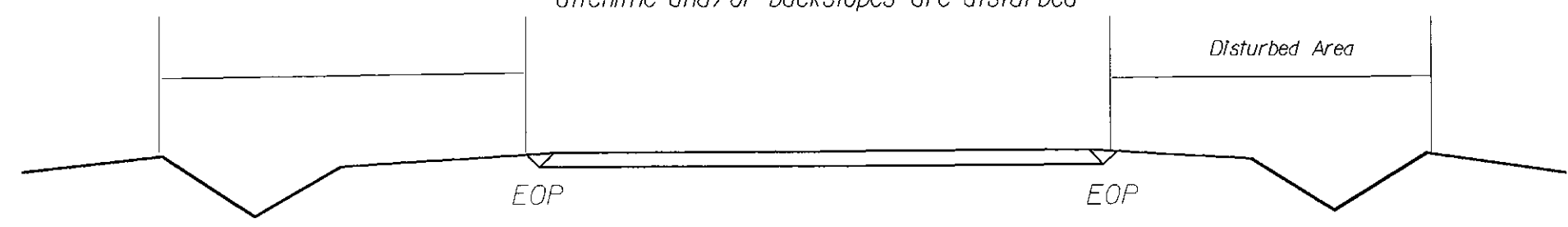
BMP Options: Wattle or Silt Fence

# EROSION CONTROL DETAIL

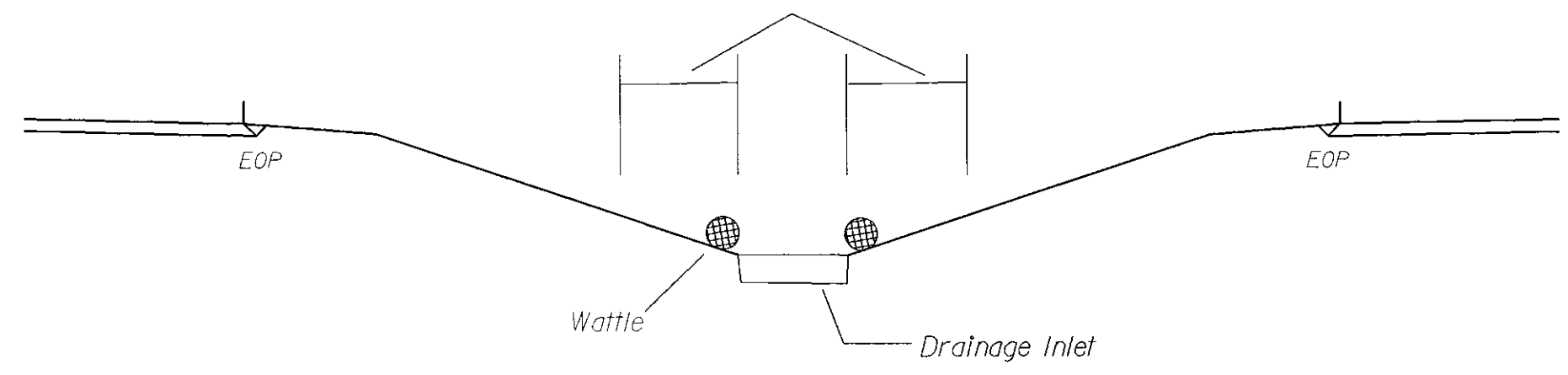
PROJECT REFERENCE NO.	SHEET NO.
2017CPT.09.32.10801 2017CPT.09.33.20801	10



Use BMP's if shoulders and/or frontslopes and/or ditchline and/or backslopes are disturbed



< 5' - 10' Undisturbed buffer from inlet, add wattle



NOT TO SCALE

## Rowan County Resurfacing Bridge List

								PROJECT NO.	SHEET NO.	TOTAL NO.	
								2017CPT.09.32.10801, 2017CPT.09.33.20801	11		
Map No.	Route No.	Route Name	Bridge No.	Feature Intersected	Floor Construction	Clear Roadway Width (Ft)	Horizontal Clearance Under (Ft.)	Vertical Clearance Under	Length (Ft)	Posting	Recommended Treatment, From Bridge Maintenance
1	US 52	US 52	20	SOUTH SECOND CREEK	12 RC, 5.5 AWS	28	NA	NA	112	NA	Mill approaches; MILL BRIDGE DECK 1 1/2" PAVE BACK 1 1/2"
5	SR 1002	BRINGLE FERRY RD.	127	I-85	7.5 RC SLAB	34	NA	NA	210	NA	Mill approaches; DO NOT MILL DECK DO NOT PAVE
7	SR 2114	McCANLESS RD.	95	TOWN CREEK	PPCCS, 1.5" AWS	30.1	NA	NA	88	NA	Mill approaches; MILL BRIDGE DECK 1 1/2" PAVE BACK 1 1/2"
7	SR 2114	McCANLESS RD.	128	I-85 NBL	6.75" RC SLAB	NA	38.0 FT	15 FT 04 IN	112	NA	MAINTAIN CLEARANCE
7	SR 2114	McCANLESS RD.	129	I-85 SBL	9 RC SLAB	NA	44.3 FT	17 FT 01 IN	110	NA	MAINTAIN CLEARANCE

PROJECT NO.	SHEET NO.	TOTAL NO.
2017CPT.09.32.10801,	12	
2017CPT.09.33.20801		

## SUMMARY OF QUANTITIES

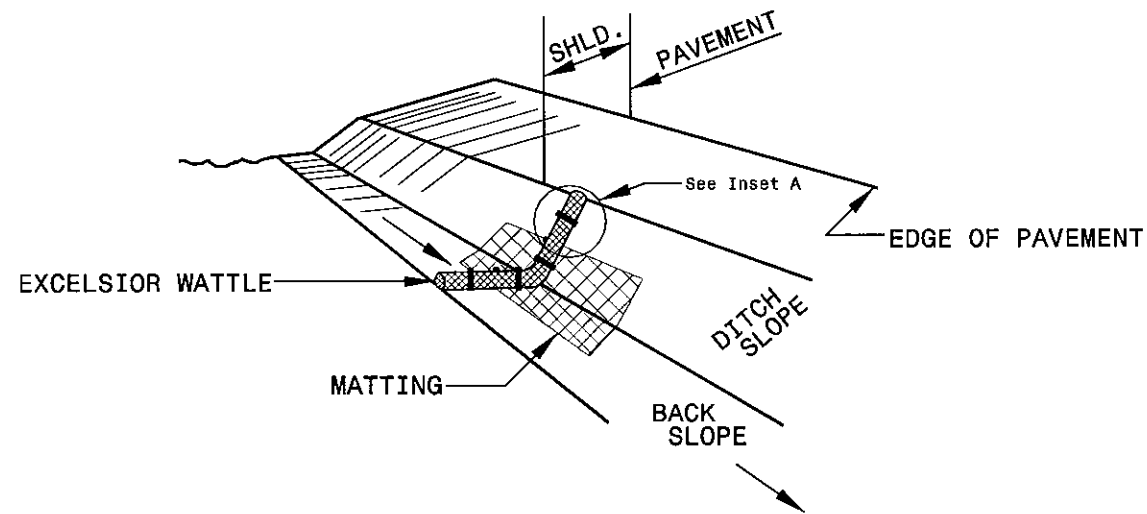
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP	LANES	LANE TYPE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH MI	WIDTH FT	BORROW EXCAVATION CY	INCIDENTAL STONE BASE TONS	SHOULDER RECONSTRUCTION SMI	MILLING ASPHALT PAVEMENT, 1 1/2" DEPTH SY	MILLING ASPHALT PAVEMENT, 7" DEPTH SY	MILLING ASPHALT PAVEMENT, 0" TO 1 1/2" DEPTH SY	INCIDENTAL MILLING SY	BASE COURSE, B25.0B TONS	SURFACE COURSE, S9.5B TONS	SURFACE COURSE, S9.5C TONS	ASPHALT BINDER FOR PLANT MIX TONS	PATCHING EXISTING PAVEMENT TONS	ADJ. OF DROP INLET EA	ADJ. OF MANHOLES EA	ADJ. OF METER OR VALVE BOX EA	TEMPORARY SILT FENCE LF	WATTLE LF
2017CPT.09.32.10801	Rowan	1	US 52	FROM PAVEMENT JT AT ROCKWELL CITY LIMIT TO JUST SOUTH OF MOST SOUTHERN SHIPTON LOOP RD. SR 2367	1	2	2WU	NO	NO	1.94	28	233	459	3.88	348			1,240		2,958		177	100				776	78
TOTAL FOR MAP NO. 1										1.94		233	459	3.88	348			1,240		2,958		177	100				776	78
2017CPT.09.32.10801	Rowan	2	NC 601	FROM PVMT. JT. AT STATESVILLE BLVD. SR 2094 TO PVMT. JT AT W. INNES ST. SR 2200	2,6	2	MD	NO	NO	1.747	23	210	170	3.49		3,628	1,600				3,511	207	200		2	2	699	70
TOTAL FOR MAP NO. 2										1.747		210	170	3.49		3,628	1,600				3,511	207	200		2	2	699	70
2017CPT.09.32.10801	Rowan	3	US 29/70 NC150 N. MAIN ST.	FROM RXR CROSSING NEAR E. LAFAYETTE ST. TO E. 17TH ST.	3	4	M2	NO	NO	1.061	50				31,108		14,932				2,882	170	20	17	20	20		
TOTAL FOR MAP NO. 3										1.061					31,108		14,932				2,882	170	20	17	20	20		
TOTAL FOR PROJ NO. 2017CPT.09.32.10801										4.748		443	629	7.37	31,456		18,560	2,840		2,958	6,393	554	320	17	22	22	1,475	148
2017CPT.09.33.20801	Rowan	4	BRINGLE FERRY ROAD SR 1002	FROM N. LONG ST (SR 2100) TO PAVEMENT JT. NEAR NEWSOME RD. (NS)	4	2	M2	NO	NO	0.938	24				13,291					1,356		81	20		15	8		
TOTAL FOR MAP NO. 4										0.938					13,291					1,356		81	20		15	8		
2017CPT.09.33.20801	Rowan	5	BRINGLE FERRY ROAD SR 1002	FROM PAVEMENT JT. NEAR NEWSOME RD. (NS) TO PAVEMENT JT. NEAR UNION CHURCH RD. SR 2132	1	2	2WU	NO	NO	3.4	28	408	375	6.80				311		5,556		333	20		1		1,360	136
TOTAL FOR MAP NO. 5										3.4		408	375	6.80				311		5,556		333	20		1		1,360	136
2017CPT.09.33.20801	Rowan	6	CHOATE RD SR 2125	FROM OLD UNION CHURCH RD. SR 1915 TO MCCANLESS RD. SR 2114	8	2	2WU	NO	NO	1.318	21	158	138	2.64		4,640		467	2,032	2,699		251					527	53
TOTAL FOR MAP NO. 6										1.318		158	138	2.64		4,640		467	2,032	2,699		251					527	53
2017CPT.09.33.20801	Rowan	7	MCCANLESS RD SR 2114	FROM BRINGLE FERRY RD. SR 1002 TO EAST SPENCER CITY LIMIT	7	2	2WU	NO	NO	0.886	22	106	63	1.77				244		1,156		69			2		354	35
TOTAL FOR MAP NO. 7										0.886		106	63	1.77				244		1,156		69			2		354	35
2017CPT.09.33.20801	Rowan	8	BALFOUR QUARRY RD. SR 2385	FROM E.O.P. AT S. MAIN ST. SR 2300 TO E.O.P. AT LEGION CLUB RD. SR 2314	8	2	2WU	NO	NO	1.221	20	147	192	2.44		4,298		444	1,647	2,416		217			1		488	49
TOTAL FOR MAP NO. 8										1.221		147	192	2.44		4,298		444	1,647	2,416		217			1		488	49
2017CPT.09.33.20801	Rowan	9	S. MAIN ST. SR 2739	FROM PAVEMENT JT. NEAR ROSS ST. TO LANDIS CITY LIMIT NEAR AIRPORT RD. SR 1182	5	2	M2	NO	NO	3.761	23	82	186	1.37	72,258					6,702		402		4	31	17	274	27
TOTAL FOR MAP NO. 9										3.761		82	186	1.37	72,258					6,702		402		4	31	17	274	27
TOTAL FOR PROJ NO. 2017CPT.09.33.20801										11.524		901	954	15.02	85,549	8,938		1,466	3,679	19,885		1,353	40	4	50	25	3,003	300
GRAND TOTAL										16.272		1,344	1,583	22.39	117,005	8,938	18,560	4,306	3,679	22,843	6,393	1,907	360	21	72	47	4,478	448

**NOTE: All Quantities listed include turn lanes and are estimates; Payment will be based on actual field measurements and quantities received.**

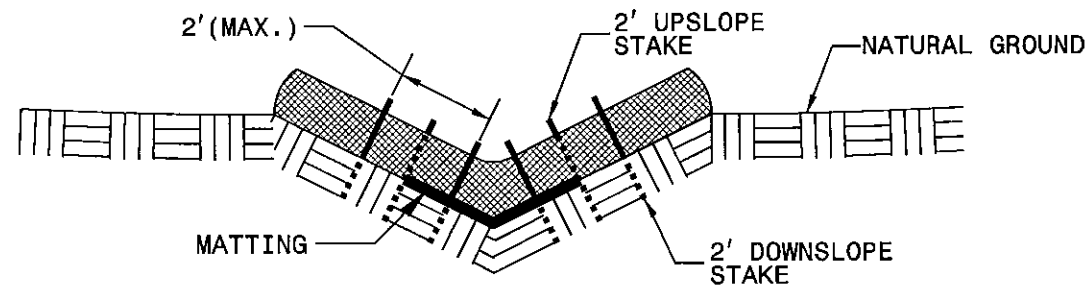


PROJECT REFERENCE NO. X-XXXX	SHEET NO. EC-26
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

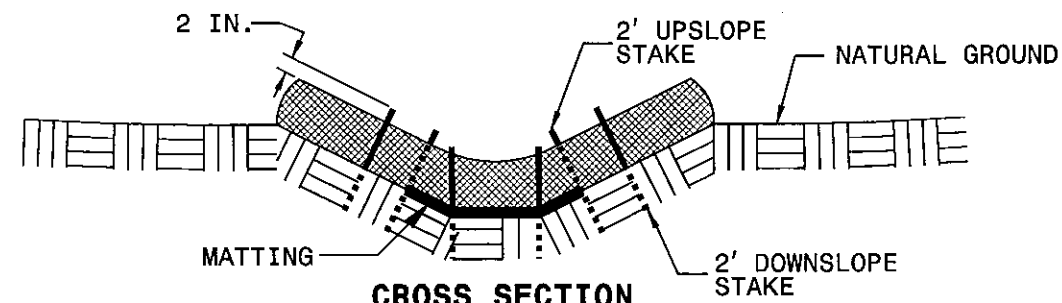
# WATTLE DETAIL



**ISOMETRIC VIEW**



**CROSS SECTION VEE DITCH**



**CROSS SECTION TRAPEZOIDAL DITCH**

**NOTES:**

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

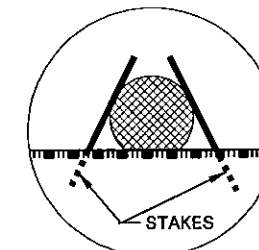
ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

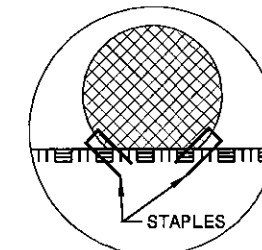
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

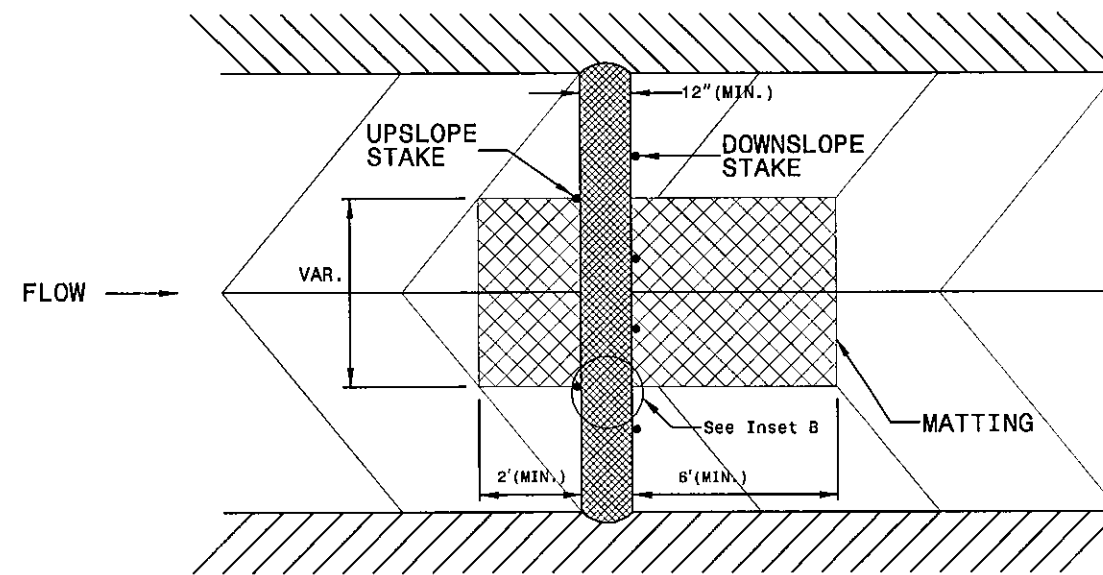
INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.



**INSET A**

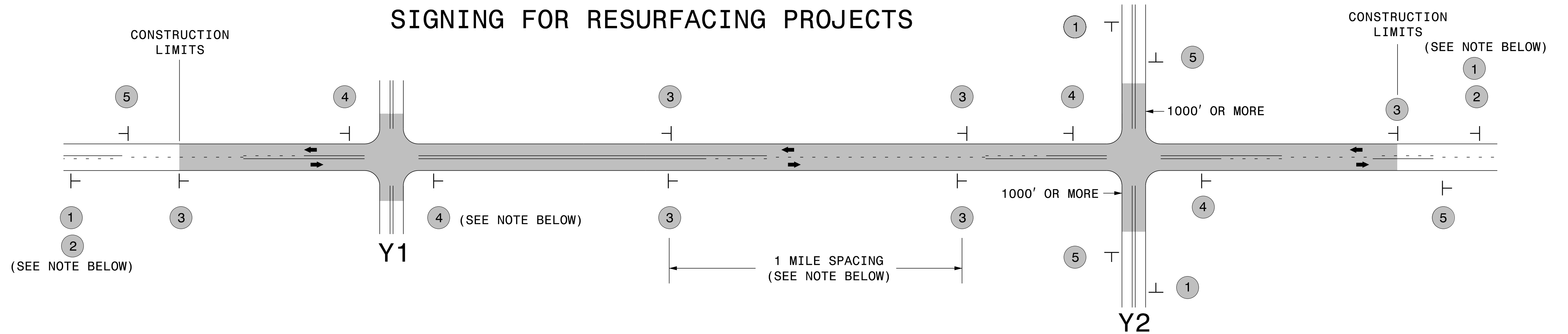


**INSET B**



**TOP VIEW**

# SIGNING FOR RESURFACING PROJECTS



LEGEND	
T	STATIONARY SIGN
←	DIRECTION OF TRAFFIC FLOW

## MAINLINE (-L-) SIGNING

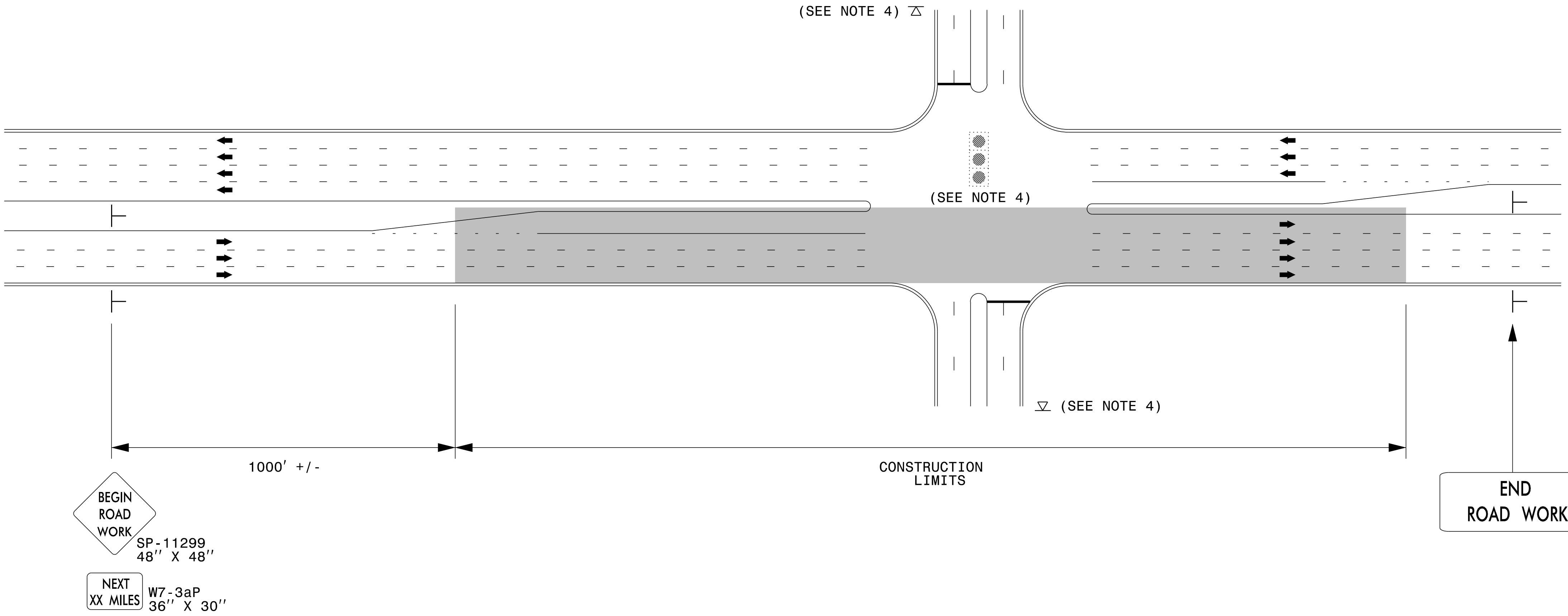
## -Y- LINE SIGNING

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"> <li>1) LESS THAN 1000' OF RESURFACING ALONG -Y- LINE</li> <li>2) SUBDIVISION ROADS</li> <li>3) DEAD END ROADS</li> </ol> <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.		

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

# URBAN / SUBURBAN WORKZONES



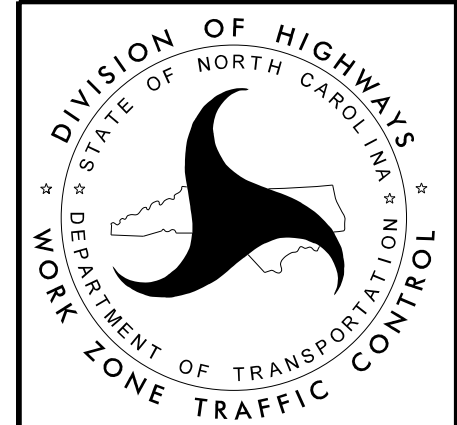
**NOTES:**

- 1) 48" x 48" SIZED SIGNS (SP- 11299) MAY BE REDUCED TO 36" X 36" ON ROADWAYS WITH SPEED LIMITS OF 40 MPH OR LESS.
- 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) ADVANCE WARNING SIGNS NOT REQUIRED ON NON-SIGNALIZED SIDE STREETS.
- 4) MAY USE LAW ENFORCEMENT TO CONTROL TRAFFIC AT SIGNALIZED INTERSECTIONS AS DIRECTED BY THE ENGINEER. PROVIDE PORTABLE "ROAD WORK AHEAD" (W20-1) SIGNS 500' IN ADVANCE ALONG BOTH APPROACHES FROM THE SIDE STREETS WHEN PAVING PROCEEDS THROUGH THE INTERSECTION.
- 5) LATERAL CLEARANCE AT ALL SIGN LOCATIONS SHALL BE 2' AS MEASURED FROM THE EDGE OF PAVEMENT OR THE FACE OF THE CURB. WHEN UNABLE TO OBTAIN THE LATERAL CLEARANCE WITHIN THE MEDIAN AREA USE SHOULDER MOUNTS ONLY.
- 6) SIGN MOUNT LOCATIONS SHALL NOT BLOCK SIDEWALKS OR DRIVEWAYS.
- 7) IF STATIONARY GENERAL WARNING SIGNS ARE USED, THEY WILL BE PAID FOR PER SECTION 104 OF THE NCDOT STANDARD SPECIFICATIONS AS EXTRA WORK.
- 8) 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 WHERE LATERAL CLEARANCE CAN BE OBTAINED WITHIN THE MEDIAN AREAS. THESE PORTABLE SIGNS ARE INCIDENTAL TO THE OTHER ITEMS OF WORK INCLUDED IN THE TEMPORARY TRAFFIC CONTROL (LUMP SUM) PAY ITEM.

**LEGEND**

┆ STATIONARY SIGN

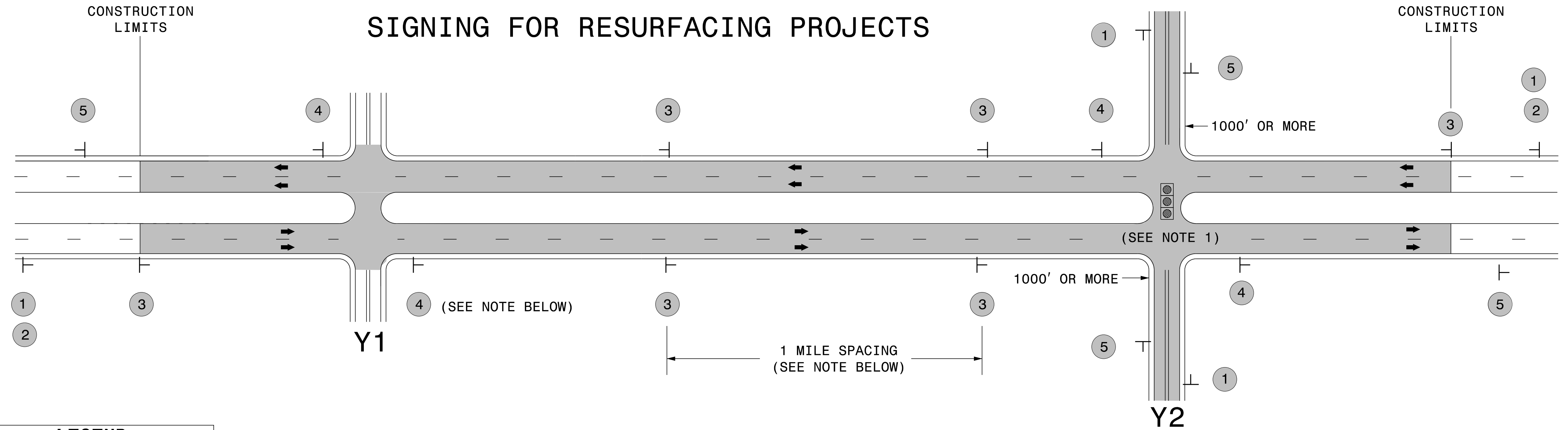
➔ DIRECTION OF TRAFFIC FLOW



**RESURFACING ADVANCE  
WARNING SIGNS FOR  
URBAN / SUBURBAN  
FACILITIES**

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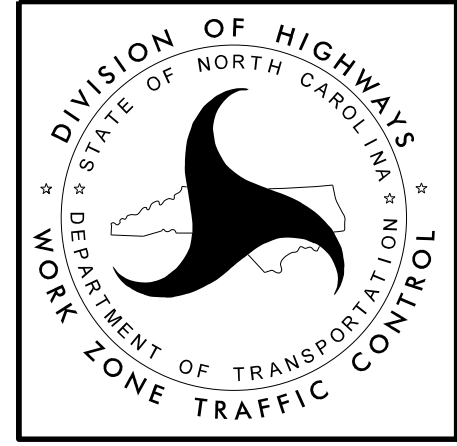
**LEGEND**  
 ┆ STATIONARY SIGN  
 ← DIRECTION OF TRAFFIC FLOW

**MAINLINE (-L-) SIGNING**

**-Y- LINE SIGNING**

SIGNING NOTES AND PLACEMENT PER DIRECTION	 	<p>PLACE 1000' PRIOR TO BEGINNING OF CONSTRUCTION LIMITS. ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000' ALONG -Y- LINE.</p> <p>#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)</p>	<p><b>NO REQUIRED STATIONARY SIGNING FOR THE FOLLOWING -Y- LINE CONDITIONS:</b></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>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;">   <small>W20-1 48" X 48"</small> </div> <div style="text-align: center;">   <small>W20-7 A 48" X 48"</small> </div> </div> <p>PLACED 500' IN ADVANCE OF FLAGGER. PLACED 250' IN ADVANCE OF FLAGGER.</p> <p><b>NOTES:</b></p> <ol style="list-style-type: none"> <li>1) MAY USE LAW ENFORCEMENT TO CONTROL TRAFFIC AT SIGNALIZED INTERSECTIONS AS DIRECTED BY THE ENGINEER. PROVIDE PORTABLE "ROAD WORK AHEAD" (W20-1) SIGNS 500' IN ADVANCE ALONG BOTH APPROACHES FROM THE SIDE STREETS WHEN PAVING PROCEEDS THROUGH THE INTERSECTION.</li> </ol>
		<p>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.</p>	
		<p>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.</p>	
		<p>PLACE 500' FOLLOWING THE END OF CONSTRUCTION LIMITS.</p>	

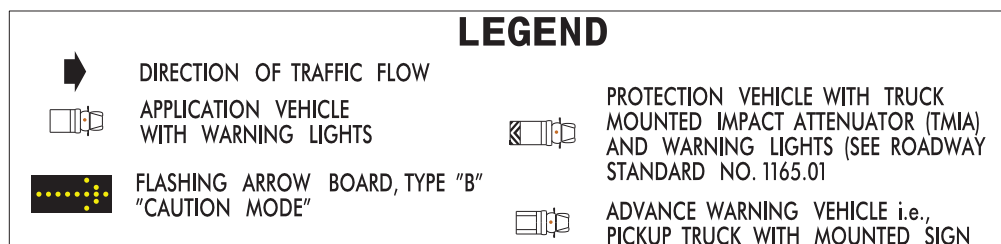
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**RESURFACING  
 ADVANCE WARNING SIGNS  
 FOR RURAL AND SUBURBAN  
 MULTI-LANE ROADWAYS  
 W/ SHOULDER SECTIONS**

## Notes on Moving Operation Caravan for Placing Pavement Marking or Markers on Four Lanes or More of a Multi-Lane Roadway

- (1) The following options may be used as the first advance warning the motorists see:
  - a. Truck mounted advance warning 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 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 foot from the ground and should not block the motorist's sight of the flashing arrow board and/or warning lights.
- (4) Ground mounted advanced warning signs should be mounted a minimum of five feet from the ground to the bottom of the 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 (TMA's are optional on these additional vehicles). However, the first vehicle motorists see in the travel lane shall have a TMA.
- (7) Adjust distances 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 miles in length.
- (9) Radio communication between vehicles is required.
- (10) Use of warning lights on all vehicles if 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 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 miles above posted speed limit.



# Moving Operation Caravan

(Operations Traveling 3 mph or Faster)  
 Placing Pavement Marking or Markers  
 On Four Lanes or More of a Multi-Lane Roadway

