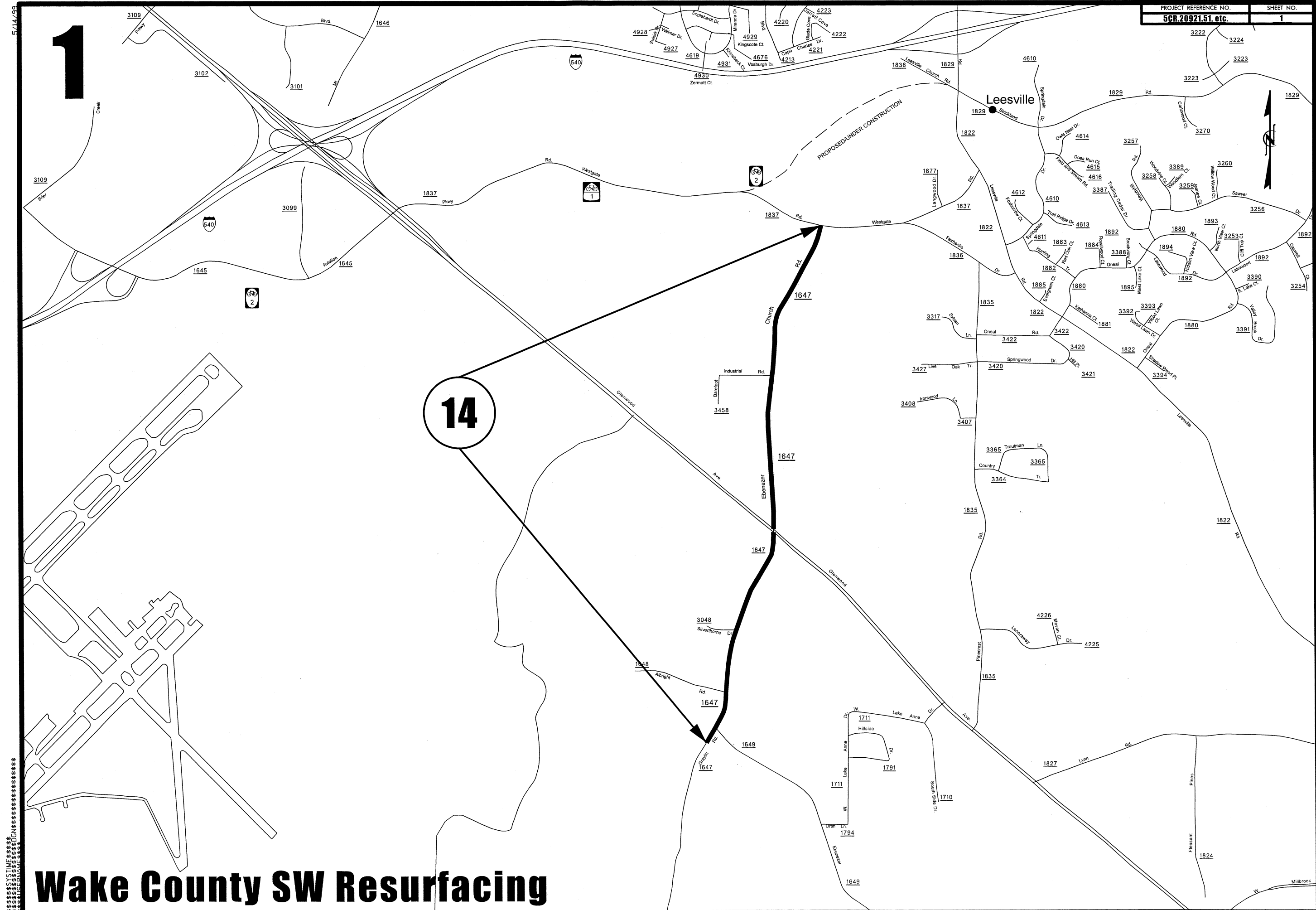


1



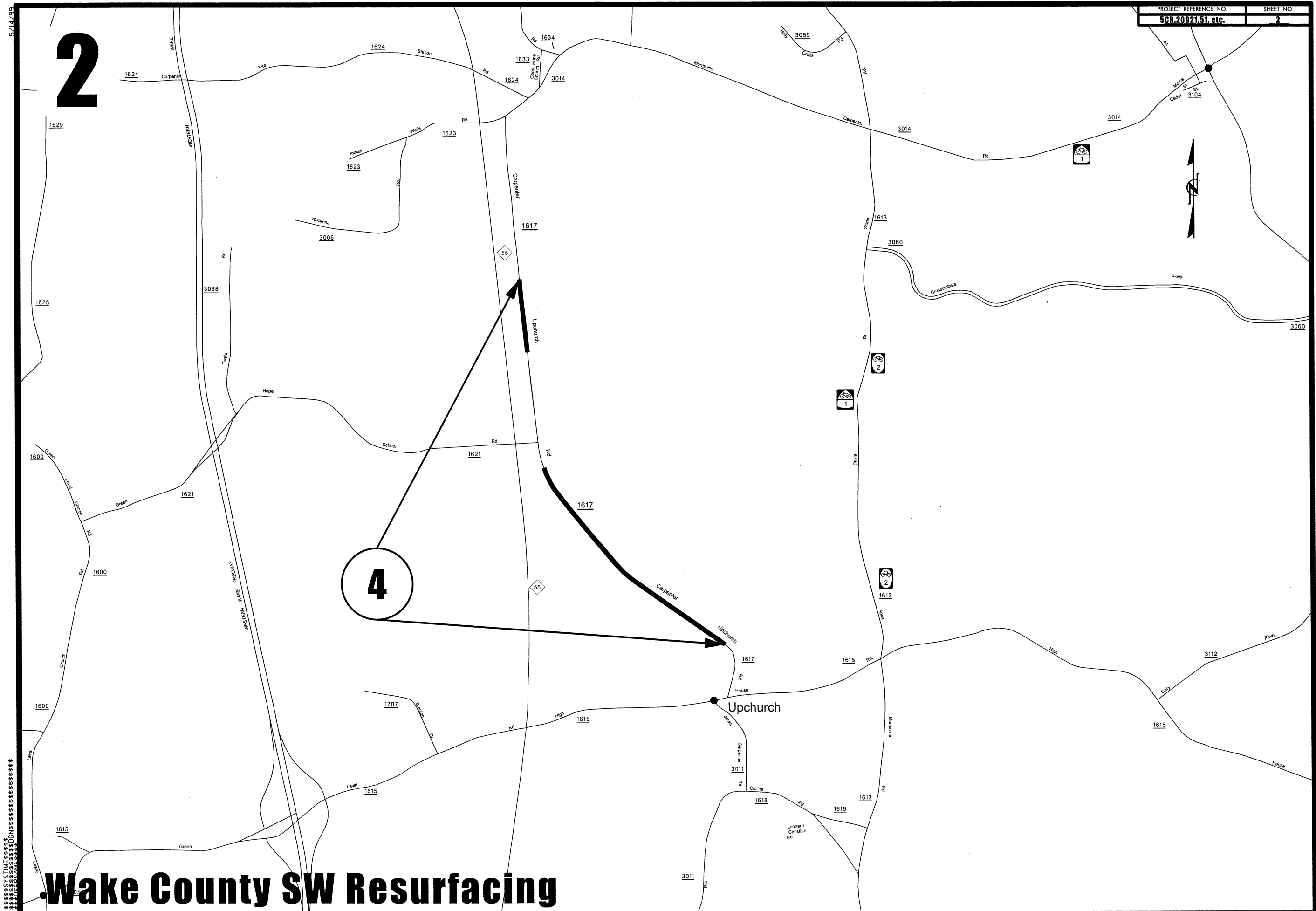
14

Wake County SW Resurfacing

5/14/99

5/14/09

2



Wake County SW Resurfacing

3

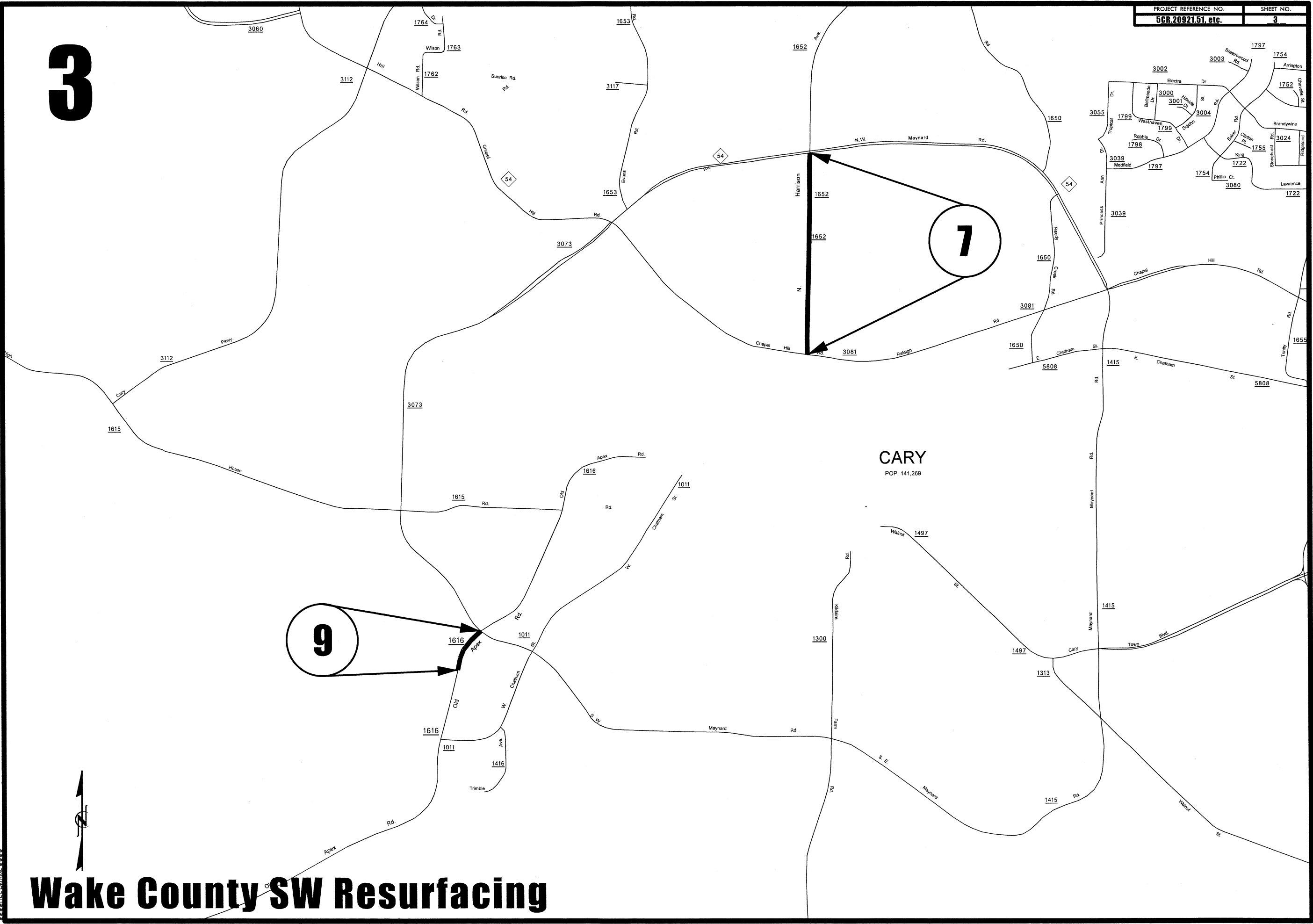
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9

CARY
POP. 141,269

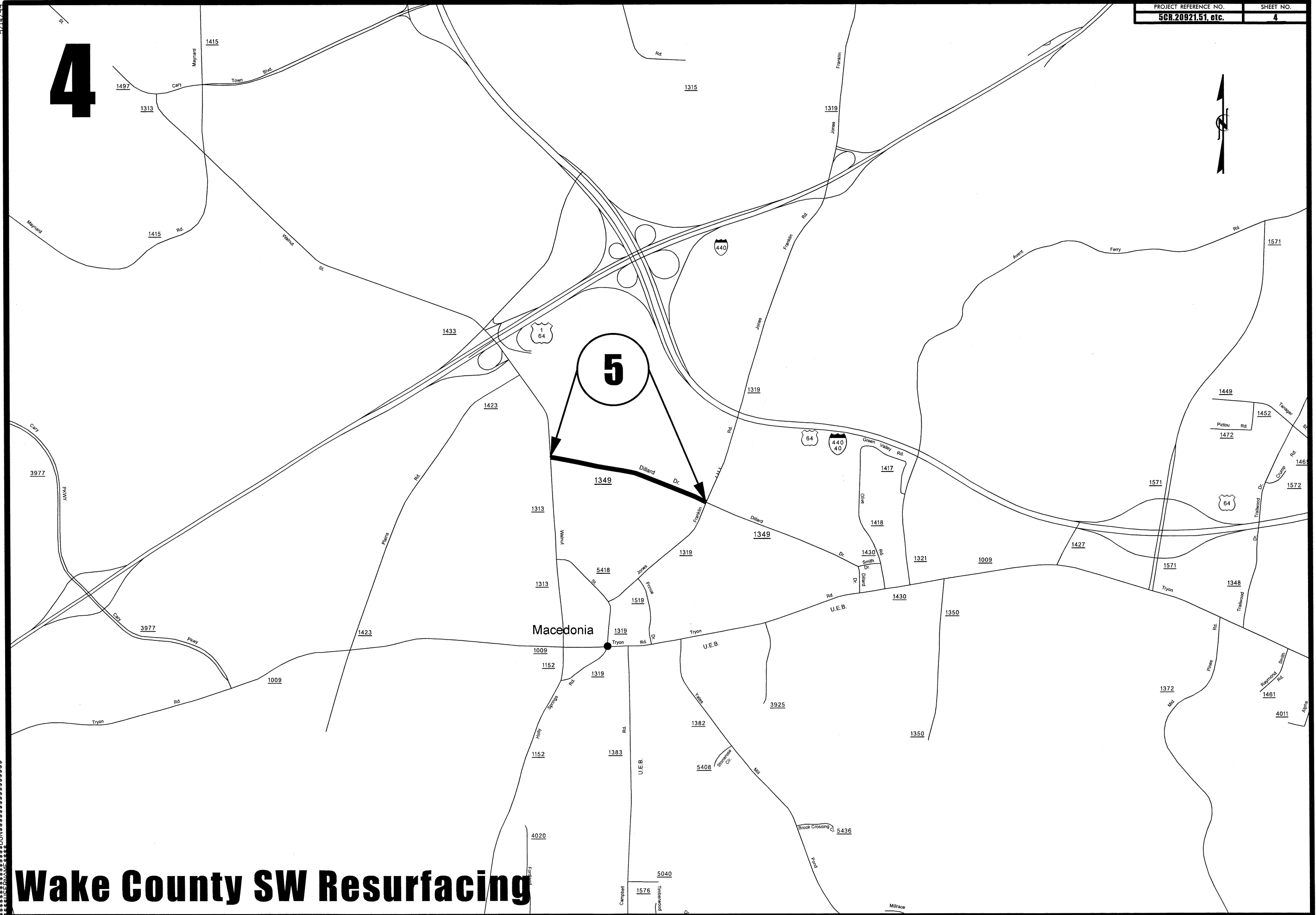
Wake County SW Resurfacing

 WAKE COUNTY
 PLANNING AND
 DEVELOPMENT
 DEPARTMENT
 101 W. GAITHER
 R.D. #1
 CARY, N.C. 27513



4

5



Wake County SW Resurfacing

5

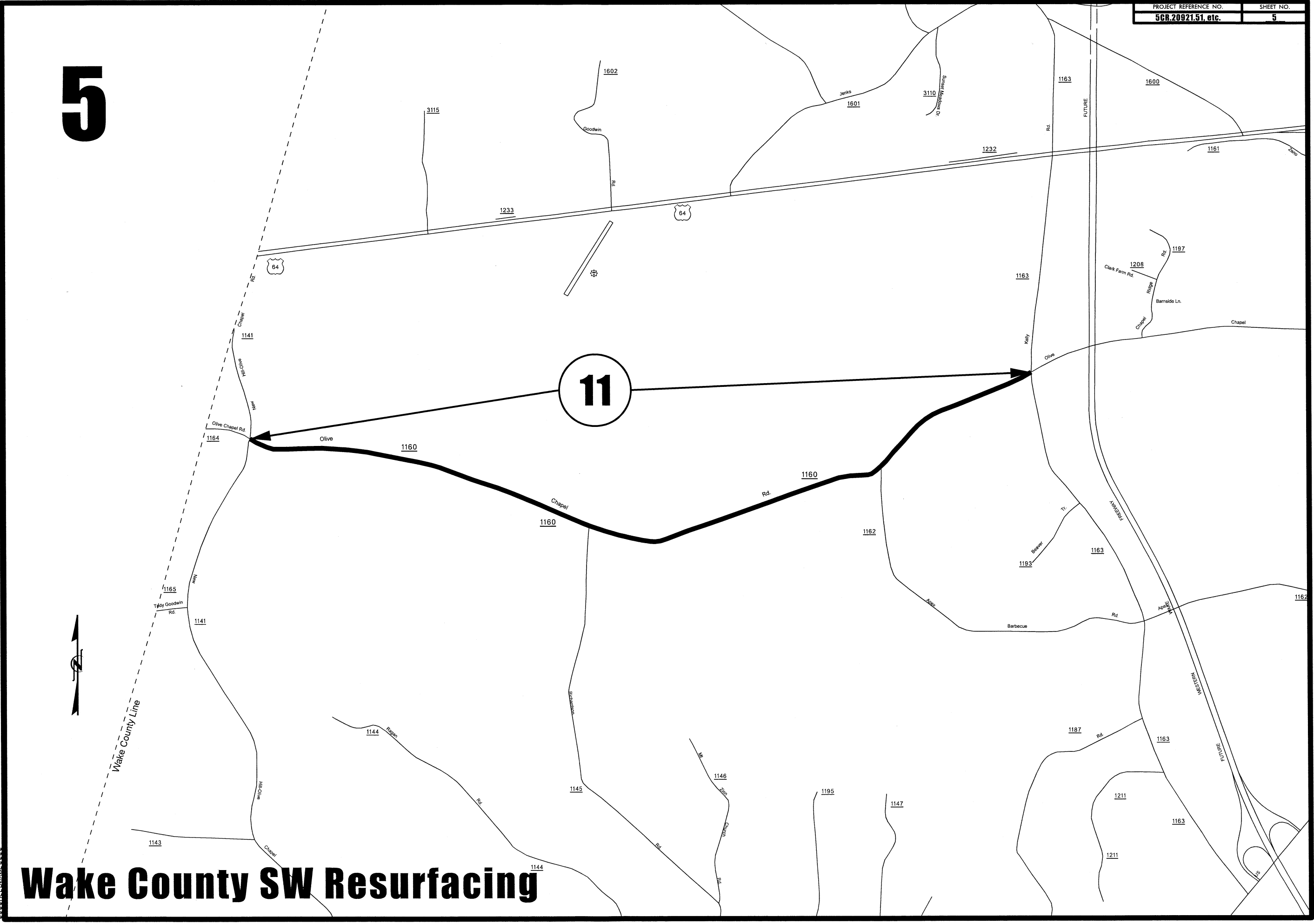
11

Wake County SW Resurfacing



Wake County Line

5/14/98
CUSTOMER'S USE ONLY
NO CHANGES TO BE MADE
AFTER THE DATE OF ISSUE
ALL DIMENSIONS TO FACE UNLESS NOTED OTHERWISE
ALL DISTANCES IN FEET UNLESS NOTED OTHERWISE
ALL ANGLES IN DEGREES UNLESS NOTED OTHERWISE
ALL CURVES TO BE ROUNDED UNLESS NOTED OTHERWISE
ALL SPACES TO BE FILL UNLESS NOTED OTHERWISE
ALL DIMENSIONS TO FACE UNLESS NOTED OTHERWISE
ALL DISTANCES IN FEET UNLESS NOTED OTHERWISE
ALL ANGLES IN DEGREES UNLESS NOTED OTHERWISE
ALL CURVES TO BE ROUNDED UNLESS NOTED OTHERWISE
ALL SPACES TO BE FILL UNLESS NOTED OTHERWISE



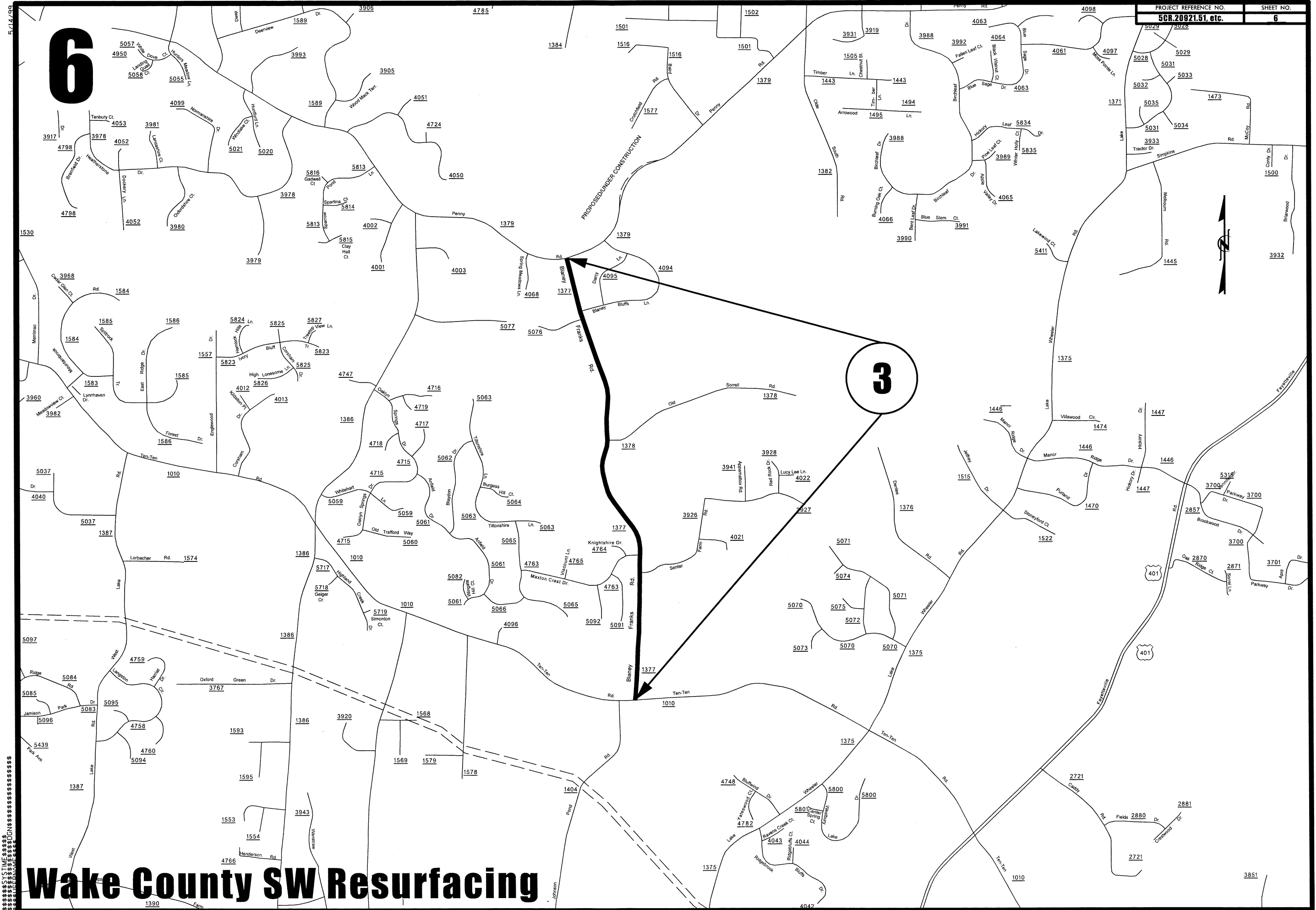
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3

PROPOSED UNDER CONSTRUCTION



Wake County SW Resurfacing



5.714/39

7

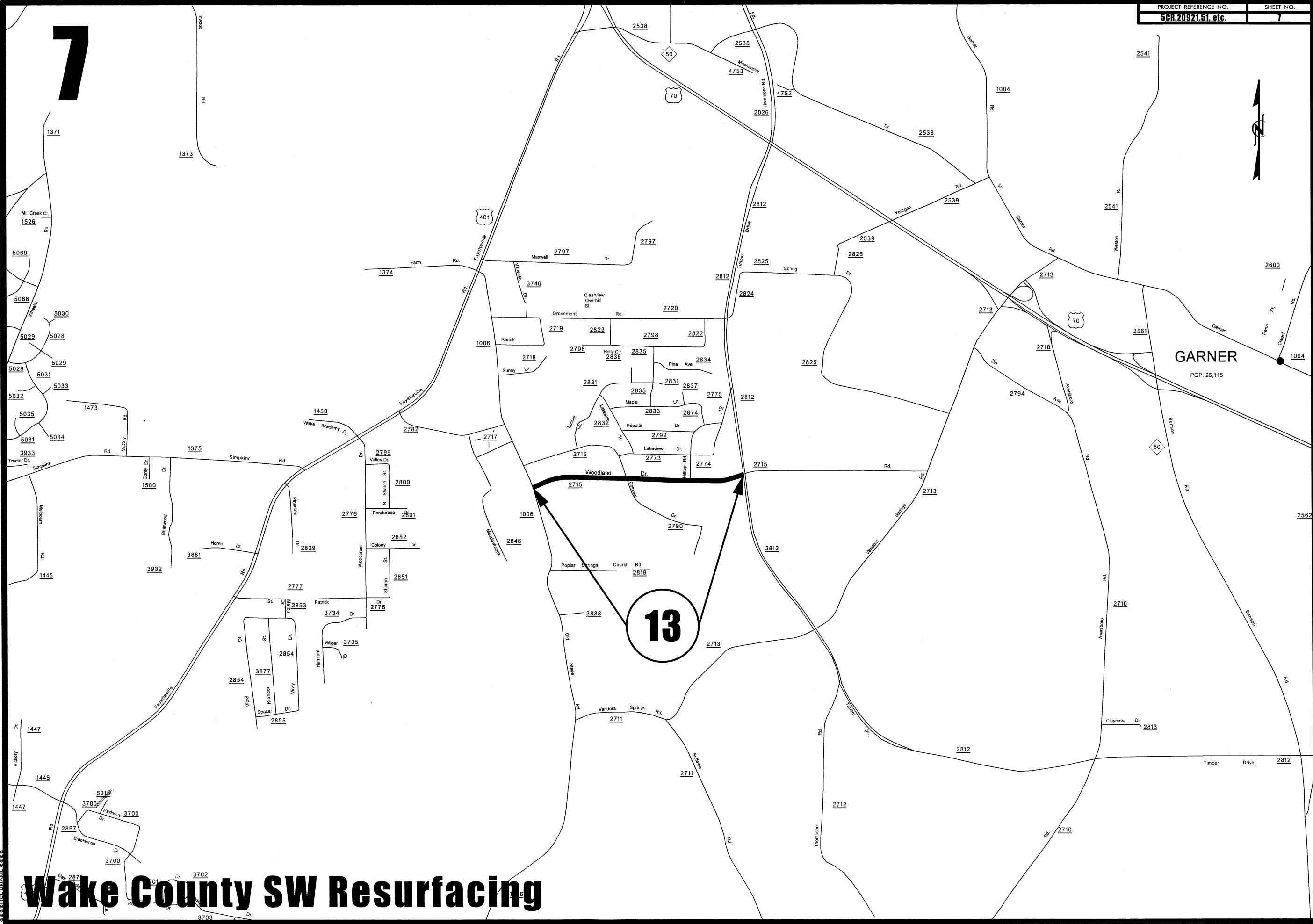


GARNER
POP. 26,115

13

Wake County SW Resurfacing

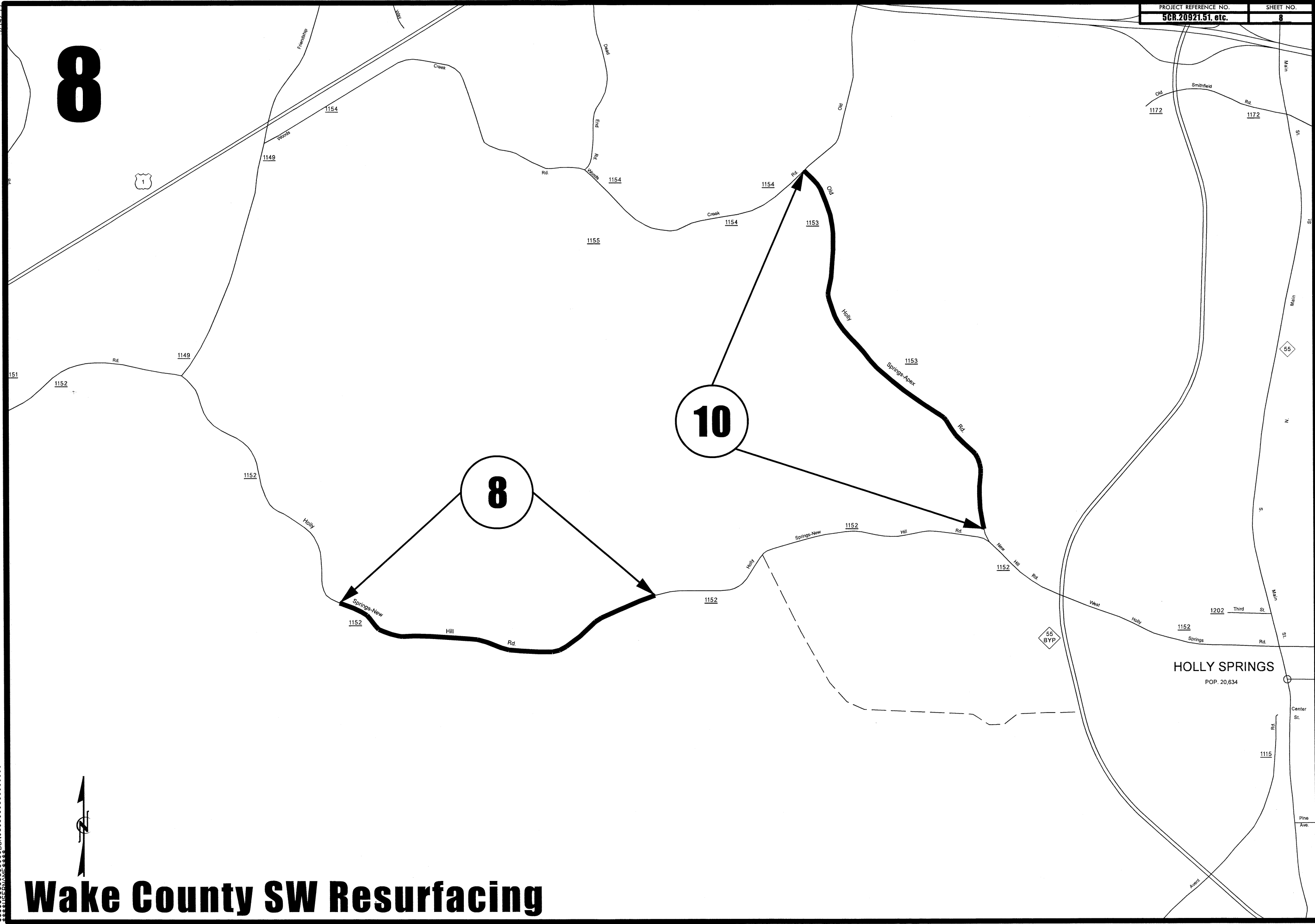
5.14.99



8

10

8

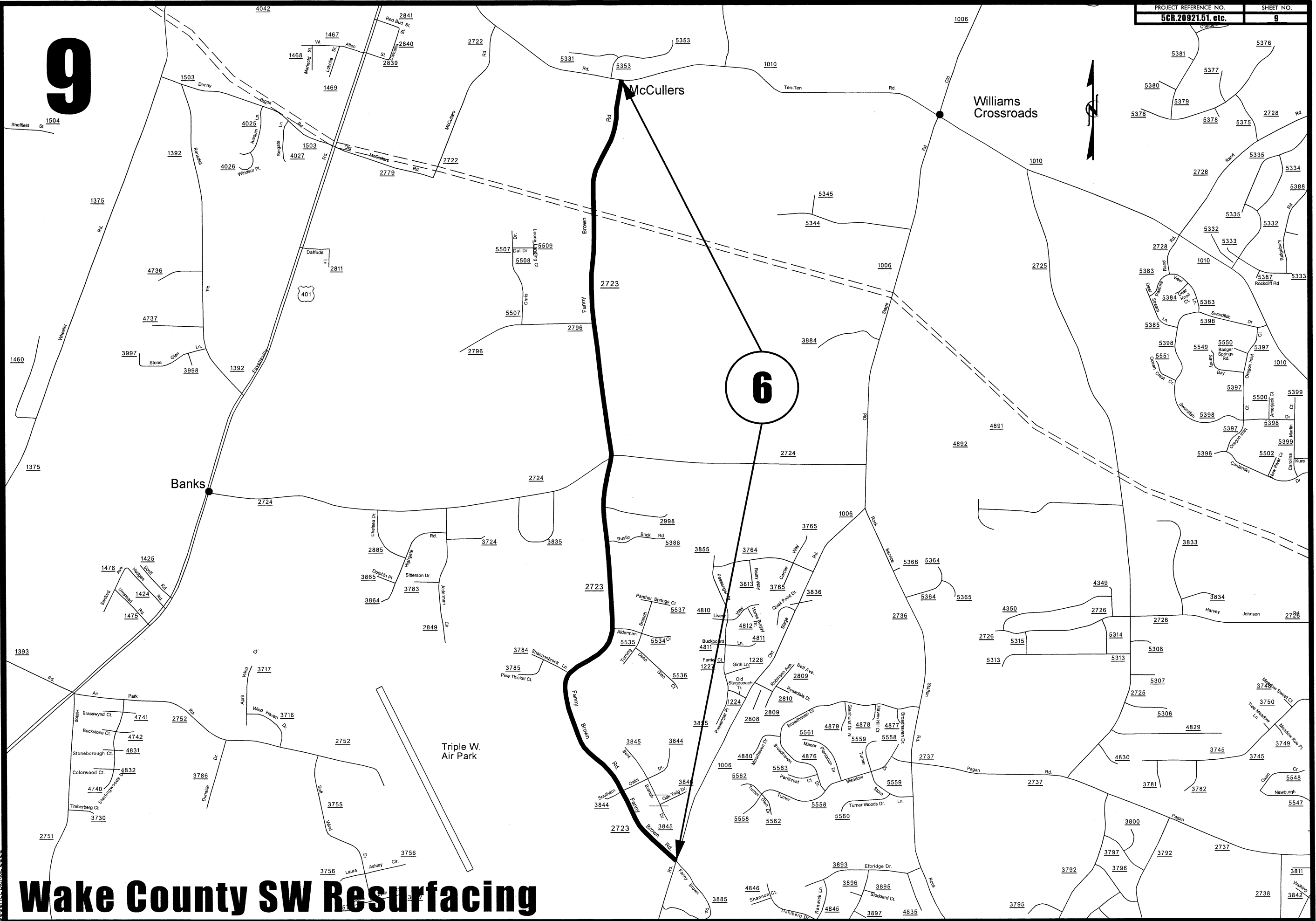


Wake County SW Resurfacing

5/14/99
SUN
MAY 1999

9

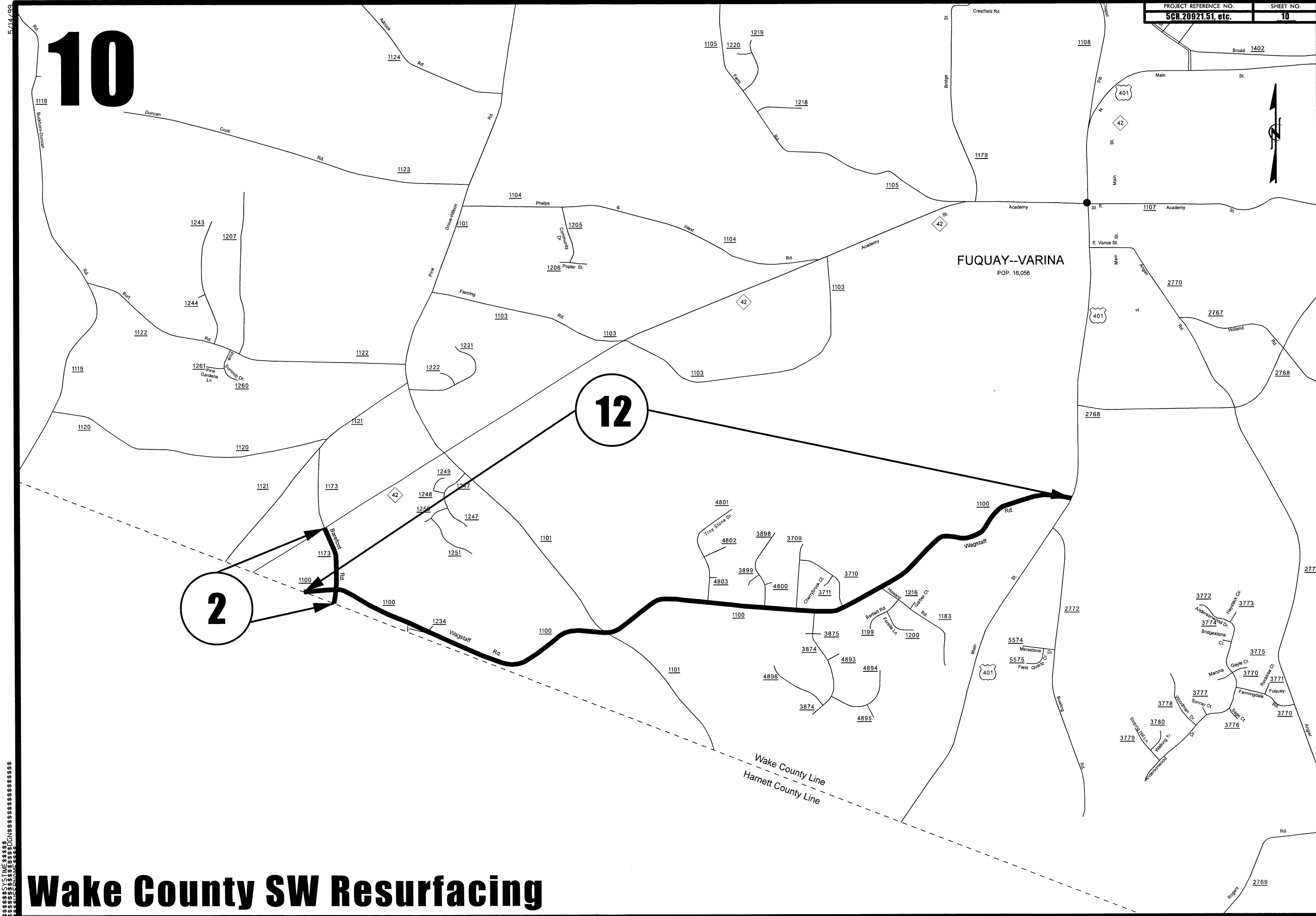
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Wake County SW Resurfacing

5/14/99
DATE PLOTTED: 5/14/99
DRAWN BY: J. H. HARRIS
CHECKED BY: J. H. HARRIS
SCALE: AS SHOWN
SHEET NO.: 9 OF 9
PROJECT NO.: 5CR.20921.51, etc.

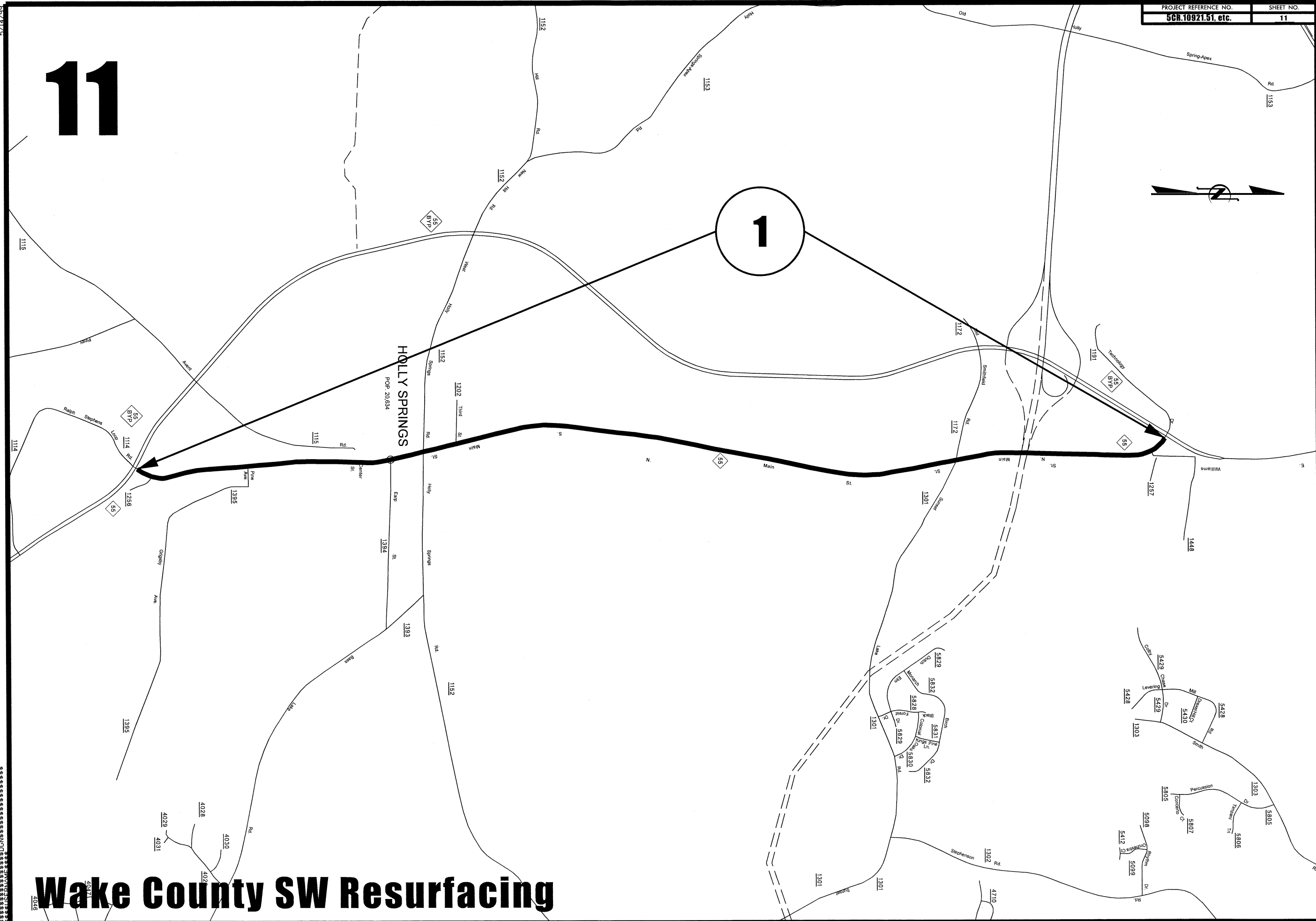
10



DATE: 5/14/99
 TIME: 10:00 AM
 DRAWN BY: J. S. DUNN
 CHECKED BY: J. S. DUNN
 PROJECT: WAKE COUNTY SW RESURFACING

Wake County SW Resurfacing

11



1

HOLLY SPRINGS
POP 20,634

Wake County SW Resurfacing

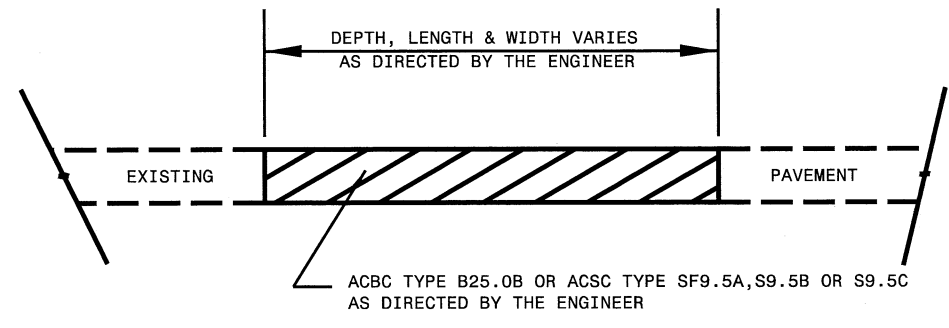
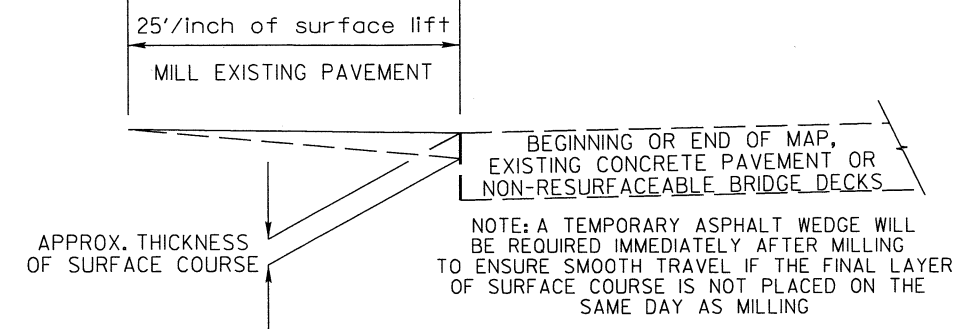
5/14/99
*****MEMBERSHIP*****

PAVEMENT SCHEDULE

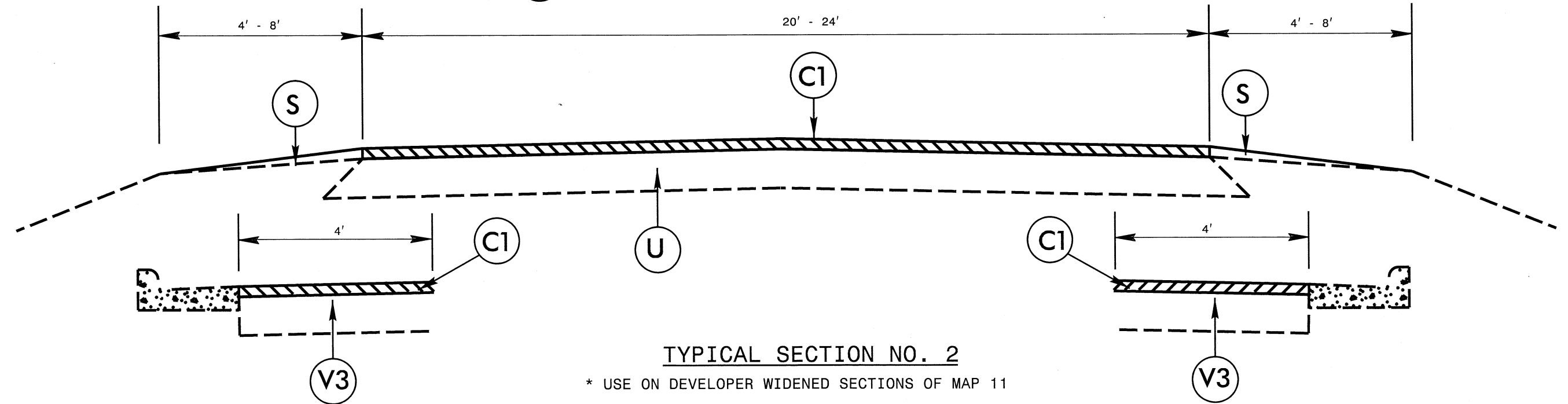
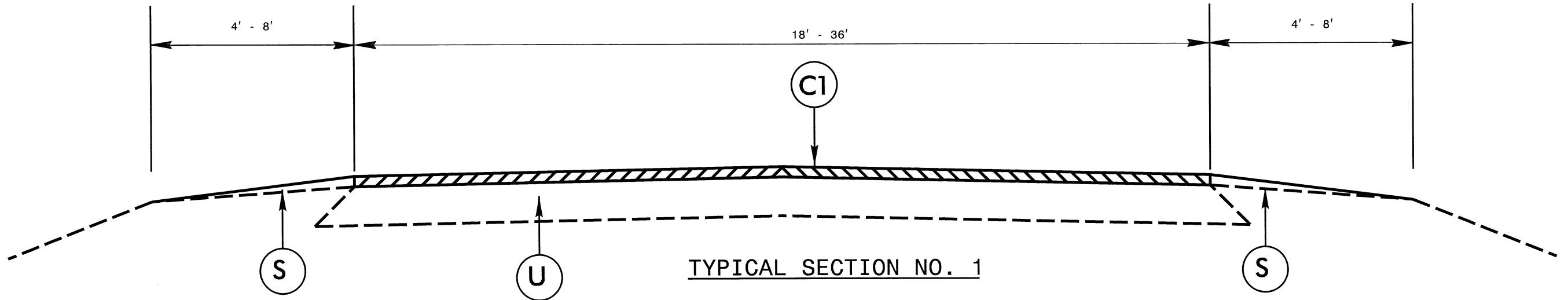
C1	1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
D	2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
S	PROP. SHOULDER GRADING
U	EXISTING PAVEMENT
V1	1½" MILLING
V2	2½" MILLING
V3	0" - 1½" MILLING NEW ASPHALT TO BE PAVED BACK FLUSH
V4	2" MILLING

NOTES

ALL UNPAVED S.R. ROADS TO BE RESURFACED 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.
 BRIDGES TO BE RESURFACED AT LOCATIONS AND TO DEPTH AS DIRECTED BY THE ENGINEER.



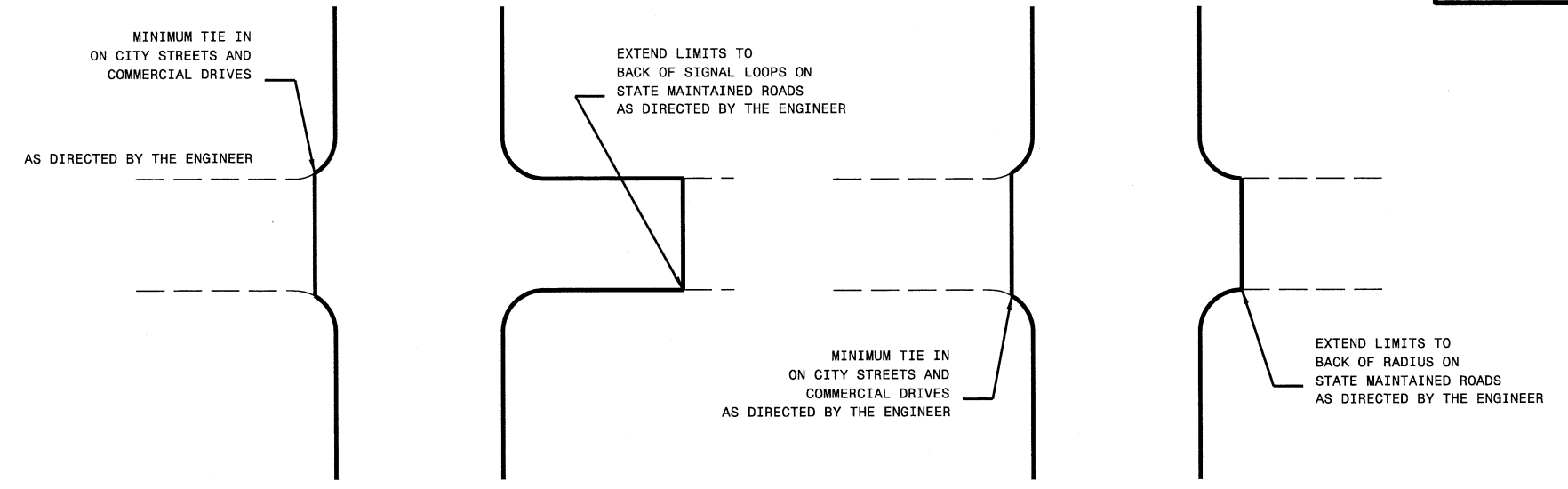
PATCHING EXISTING PAVEMENT
 PATCHING TO BE PERFORMED PRIOR TO MILL AND FILL OPERATION



* USE ON DEVELOPER WIDENED SECTIONS OF MAP 11

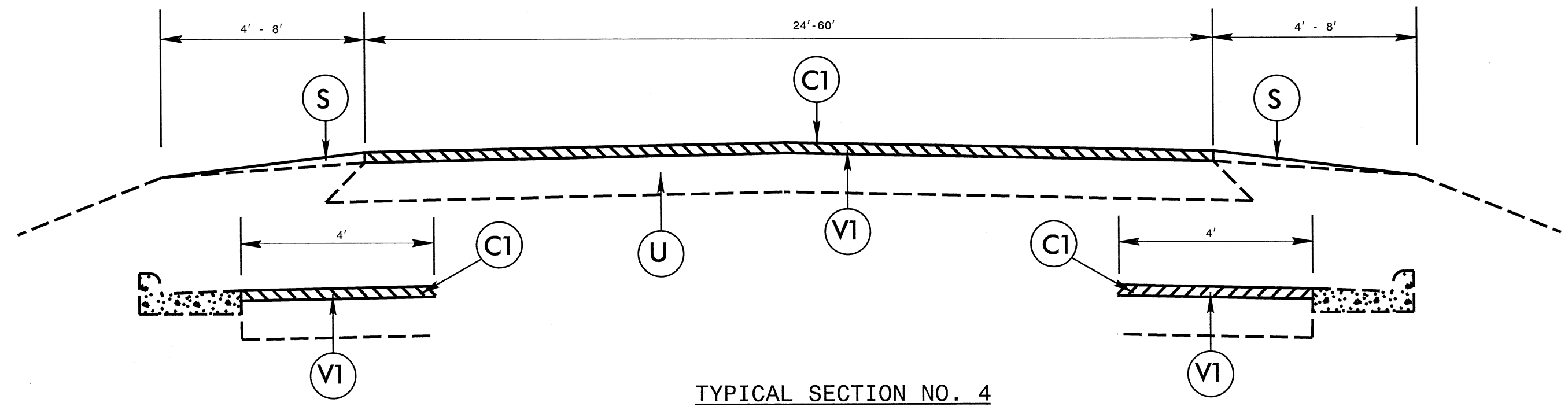
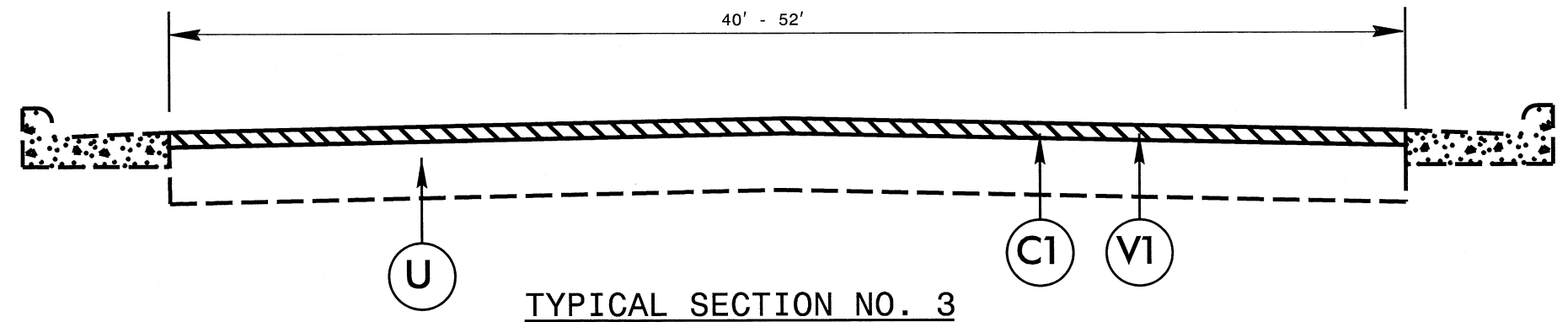
PAVEMENT SCHEDULE

C1	1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
D	2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
S	PROP. SHOULDER GRADING
U	EXISTING PAVEMENT
V1	1½" MILLING
V2	2½" MILLING
V3	0" - 1½" MILLING NEW ASPHALT TO BE PAVED BACK FLUSH
V4	2" MILLING

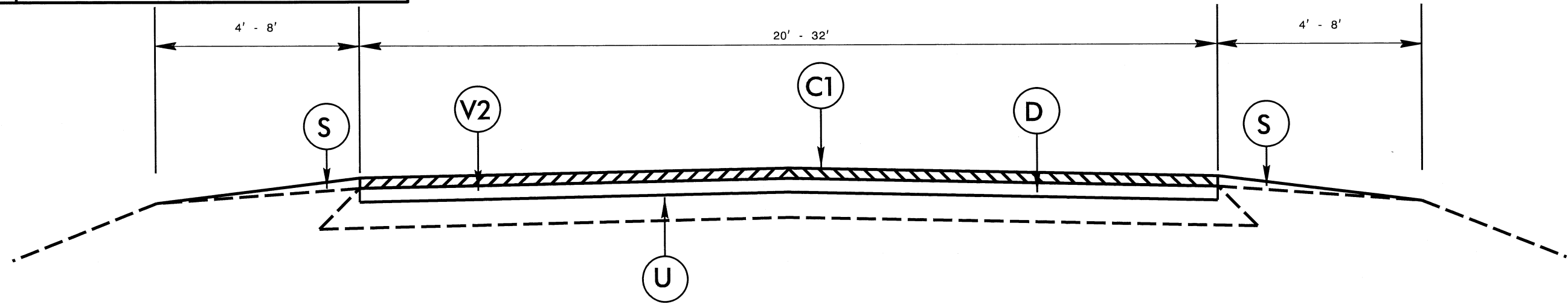


DETAIL OF PROJECT LIMITS AT SIGNALIZED Y LINES

DETAIL OF PROJECT LIMITS AT UNSIGNALIZED Y LINES

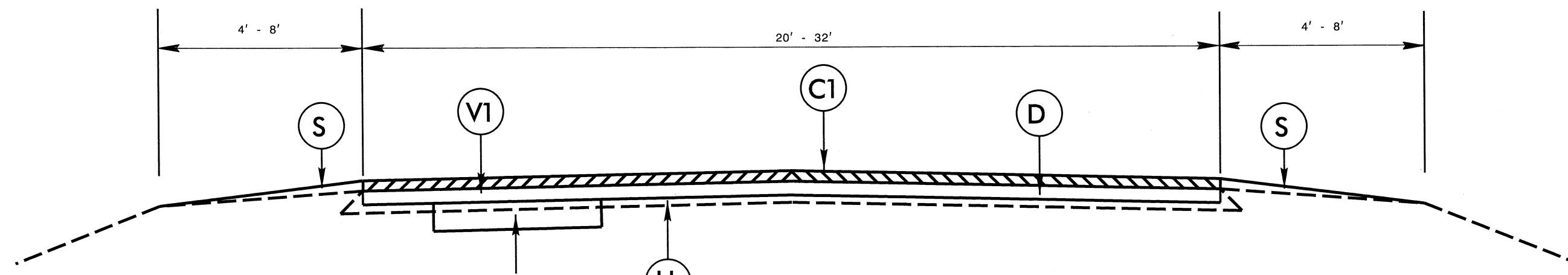


PAVEMENT SCHEDULE	
C1	1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
D	2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
S	PROP. SHOULDER GRADING
U	EXISTING PAVEMENT
V1	1½" MILLING
V2	2½" MILLING
V3	0" - 1½" MILLING NEW ASPHALT TO BE PAVED BACK FLUSH
V4	2" MILLING



TYPICAL SECTION NO. 5

* USE ON NON-DEVELOPER WIDENED SECTIONS OF MAP 11

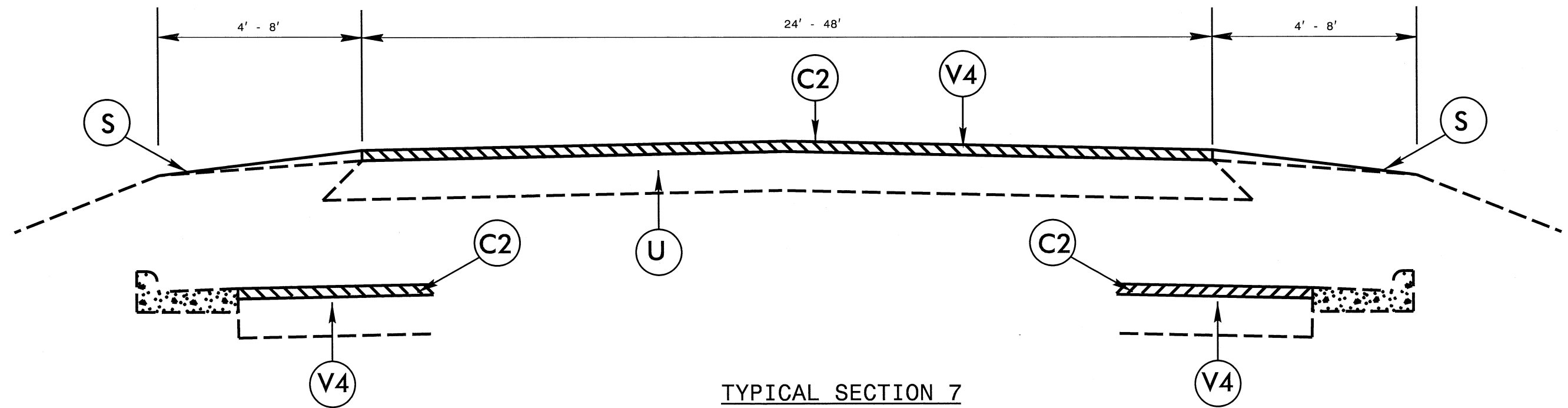


TYPICAL SECTION NO. 6

UNDERCUT
AND BLACK BASE,
AS DIRECTED BY THE ENGINEER

PAVEMENT SCHEDULE

C1	1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
D	2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
S	PROP. SHOULDER GRADING
U	EXISTING PAVEMENT
V1	1½" MILLING
V2	2½" MILLING
V3	0" - 1½" MILLING NEW ASPHALT TO BE PAVED BACK FLUSH
V4	2" MILLING



PROJECT NO.	SHEET NO.	TOTAL NO.
5CR.10921.51, 5CR.20921.51	17	

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 CY	SHOULDER GRADING SMI	UNDERCUT CY	INCIDENTAL STONE BASE TONS	2" MILLING SY	1 1/2" MILLING SY	2.5" MILLING SY	0" TO 1.5" MILLING SY	INCIDENTAL MILLING SY	BASE COURSE, B25.0B TONS	INTERMEDIATE COURSE, I19.0B TONS	SURFACE COURSE, S9.5B TONS	SURFACE COURSE, S9.5C TONS	ASPHALT BINDER FOR PLANT MIX TON	PATCHING EXISTING PAVEMENT TONS	ADJUST MANHOLES EA	ADJUST METER OR VALVE BOX EA	TEMPORARY SILT FENCE LF	WATTLE LF	SEED & MULCHING AC	INDUCTIVE LOOP LF				
5CR.10921.51	Wake	1	NC 55 BUS	NC 55 BYP TO NC 55 BYP	7	2		NO	NO	3.83	24-48	177	1.77		89	90,474							11,193	660	383	9	35	129	330	1.29	1,554					
TOTAL FOR MAP NO. 1										3.83		177	1.77		89	90,474						11,193	660	383	9	35	129	330	1.29	1,554						
TOTAL FOR PROJ NO. 5CR.10921.51										3.83		177	1.77		89	90,474						11,193	660	383	9	35	129	330	1.29	1,554						
5CR.20921.51	Wake	2	SR 1173 - BAREFOOT RD	NC 42 TO COUNTY LINE	1	2		NO	NO	0.28	18	56	0.56		28					360			363		22	56			41	110	0.41	200				
TOTAL FOR MAP NO. 2										0.28		56	0.56		28							363		22	56			41	110	0.41	200					
5CR.20921.51	Wake	3	SR 1377 - BLANEY FRANKS RD	SR 1379 - PENNY RD TO SR 1010 - TEN TEN RD	1	2		NO	NO	1.7	20	340	3.40		170					1,440			1,988		119	510			246	620	2.47					
TOTAL FOR MAP NO. 3										1.7		340	3.40		170				1,440			1,988		119	510			246	620	2.47						
5CR.20921.51	Wake	4	SR 1617 - CARPENTER UPCHURCH RD	JT 1200' N OF SR 1615 - HIGH HOUSE RD TO JT 600' S OF MORRISVILLE PARKWAY	2	2		NO	NO	1.2	24	219	2.19		110				505	970			1,737		104	360			159	400	1.59					
TOTAL FOR MAP NO. 4										1.2		219	2.19		110				505	970			1,737		104	360			159	400	1.59					
5CR.20921.51	Wake	5	SR 1349 - DILLARD DR	SR 1009 - TRYON RD TO	3	3		NO	NO	0.59	40									19,342			1,710		103	207	1	6				1,225				
TOTAL FOR MAP NO. 5										0.59												1,710		103	207	1	6					1,225				
5CR.20921.51	Wake	6	SR 3885 - FANNY BROWN RD	SR 1006 - OLD STAGE RD TO SR 1006 - OLD STAGE RD	1	2		NO	NO	3.12	20	624	6.24		312					1,555			3,722		223	312			452	1,130	4.52					
TOTAL FOR MAP NO. 6										3.12		624	6.24		312				1,555			3,722		223	312			452	1,130	4.52						
5CR.20921.51	Wake	7	SR 1652 - N HARRISON AVE	NC 54 - NW MAYNARD RD TO SR 3081 - RALEIGH RD	3	4		NO	NO	0.731	45									20,057			1,774		106	146	7	12				630				
TOTAL FOR MAP NO. 7										0.731													1,774		106	146	7	12					630			
5CR.20921.51	Wake	8	SR 1152 - HOLLY SPRINGS NEW HILL RD	1.65 MI W OF 55 BYP TO 1.11 MI S OF SR 1149 - FRIENDSHIP RD	6	2		NO	NO	1.22	20	405	2.44	1,193	122					14,315		1,224	2,164	1,331		238			177	450	1.77					
TOTAL FOR MAP NO. 8										1.22		405	2.44	1,193	122				14,315		1,224	2,164	1,331		238			177	450	1.77						
5CR.20921.51	Wake	9	SR 1616 - OLD APEX RD	SR 1011 - W CHATHAM ST TO SR 1415 - MAYNARD RD	3	3		NO	NO	0.2	45									7,103			628		38	30	2	8				2,345				
TOTAL FOR MAP NO. 9										0.2									7,103			628		38	30	2	8					2,345				
5CR.20921.51	Wake	10	SR 1153 - OLD HOLLY SPRINGS-APEX RD	US 1 TO SR 1152 - HOLLY SPRINGS-NEW HILL RD	2	2		NO	NO	1.58	21	282	2.82		141					782	378		2,306		138	158		2	205	520	2.05					
TOTAL FOR MAP NO. 10										1.58		282	2.82		141				782	378		2,306		138	158		2	205	520	2.05						
5CR.20921.51	Wake	11	SR 1160 - OLIVE CHAPEL RD	SR 1141 - NEW HILL-OLIVE CHAPEL RD TO SR 1163 - KELLY RD	5,2	2		NO	NO	3.09	23	553	5.53		275					28,783	1,504	1,073	4,306	4,510	477	50	2	5	402	1,010	4.02	252				
TOTAL FOR MAP NO. 11										3.09		553	5.53		275				28,783	1,504	1,073	4,306	4,510	477	50	2	5	402	1,010	4.02	252					
5CR.20921.51	Wake	12	SR 1100 - WAGSTAFF RD	US 401 - MAIN ST TO HARNETT CO	2	2		NO	NO	3.14	20	620	6.20		310					177	3,360		3,802		228	942			451	1,130	4.51					
TOTAL FOR MAP NO. 12										3.14		620	6.20		310				177	3,360		3,802		228	942			451	1,130	4.51						
5CR.20921.51	Wake	13	SR 2715 - WOODLAND RD	SR 1006 - OLD STAGE RD TO SR 2812 - TIMBER DR	2	2		NO	NO	0.78	21	144	1.44							177	653		1,010		61	117	1	5	104	260	1.04					
TOTAL FOR MAP NO. 13										0.78		144	1.44						177	653		1,010		61	117	1	5	104	260	1.04						
5CR.20921.51	Wake	14	SR 1647 - EBENEZER CHURCH RD	JT 300' WEST OF SR 1647 - GRAYLIN TO SR 1387 - WESTGATE RD	4	2		NO	NO	1.95	24-60	273	2.73		136								4,320		259	235	5	37	198	500	1.98	2,125				
TOTAL FOR MAP NO. 14										1.95		273	2.73		136							4,320		259	235	5	37	198	500	1.98	2,125					
TOTAL FOR PROJ NO. 5CR.20921.51										19.581		3,516	33.55	1,193	1,604				107,428	28,783	3,145	10,179	1,224	6,470	29,201		2,116	3,123	18	75	2,435	6,130	24.36	6,777		
GRAND TOTAL										23.411		3,693	35.32	1,193	1,693				90,474	107,428	28,783	3,145	10,179	1,224	6,470	29,201		11,193	2,776	3,506	27	110	2,564	6,460	25.65	8,331

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. SHEET NO.
S.C.R. 10921.51 19
S.C.R. 20921.51

SOIL STABILIZATION TIMEFRAMES

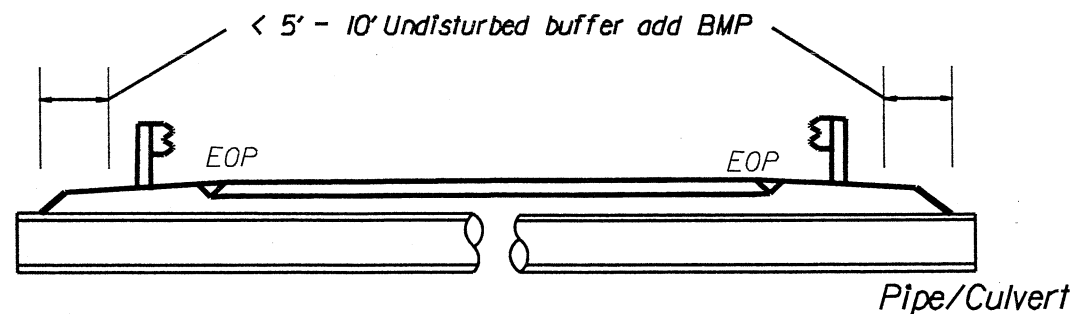
<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HOW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HOW ZONES.

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

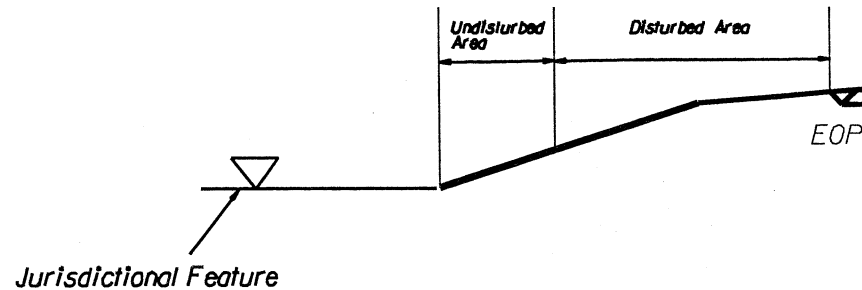
BMP Options: Wattle, Silt Fence, or Hardened Aggregate.

EROSION CONTROL DETAIL

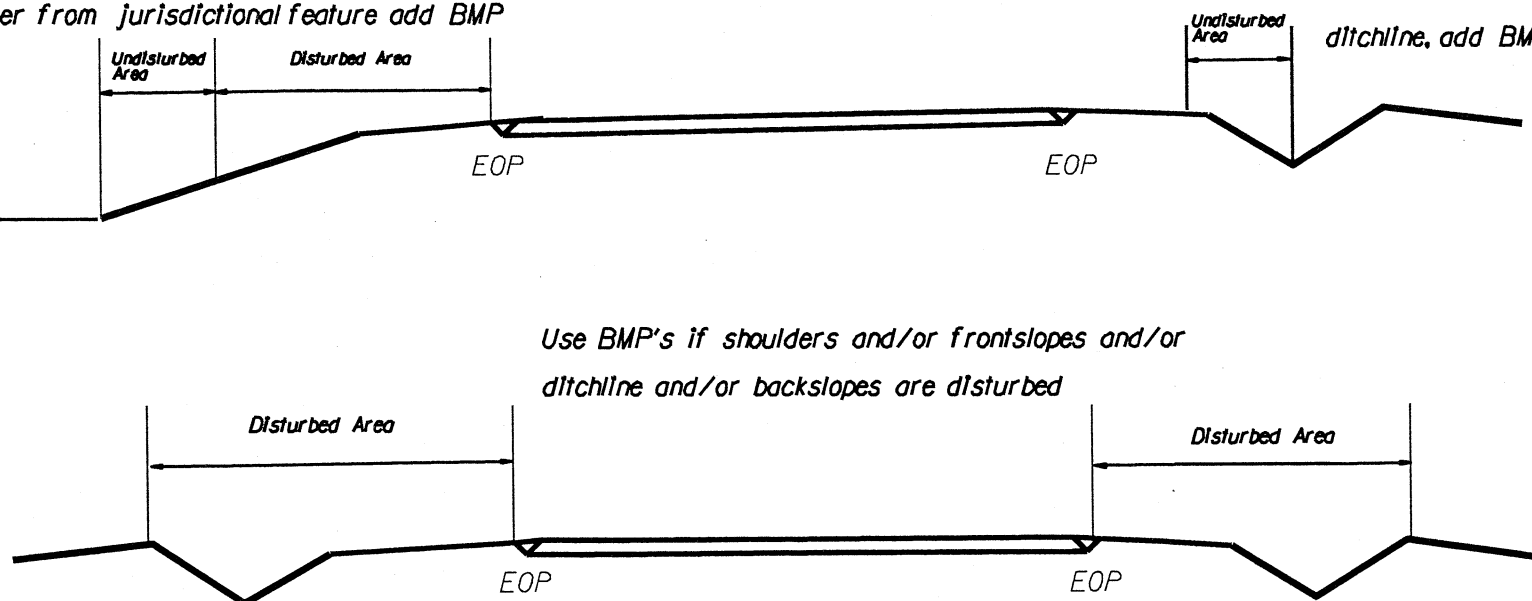
SCR. 10921.51
SCR. 20921.51



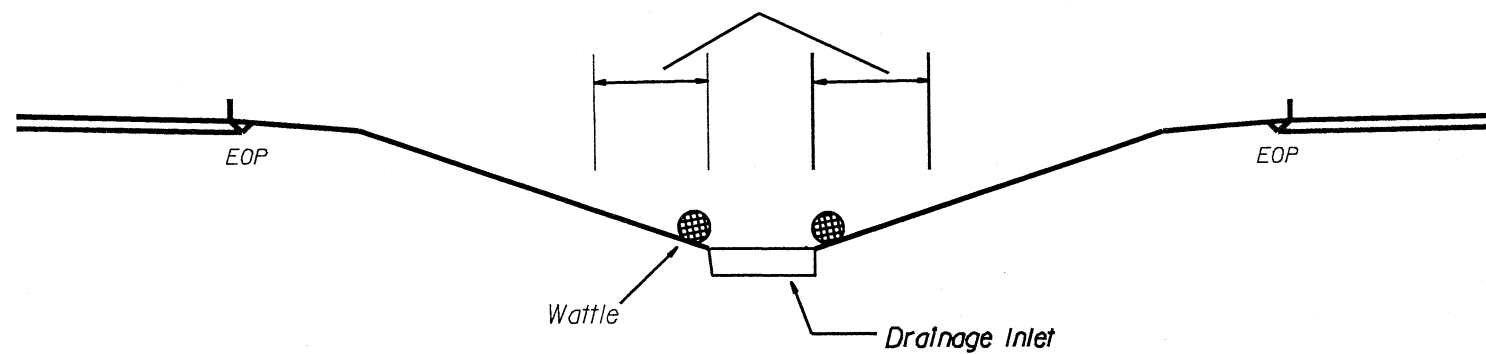
< 5' - 10' Undisturbed buffer from jurisdictional feature add BMP



< 5' - 10' Undisturbed buffer from ditchline, add BMP

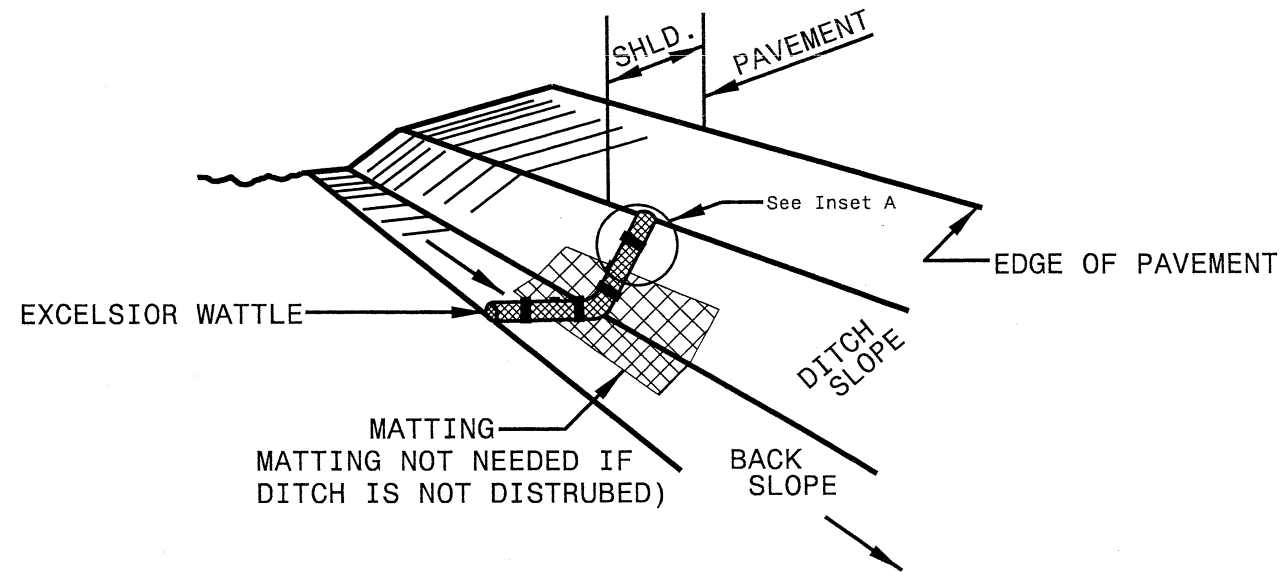


< 5' - 10' Undisturbed buffer from Inlet, add wattle

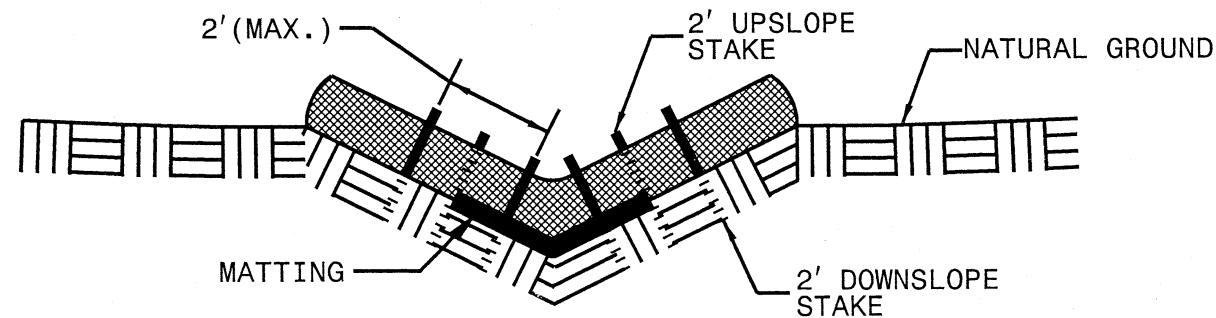


NOT TO SCALE

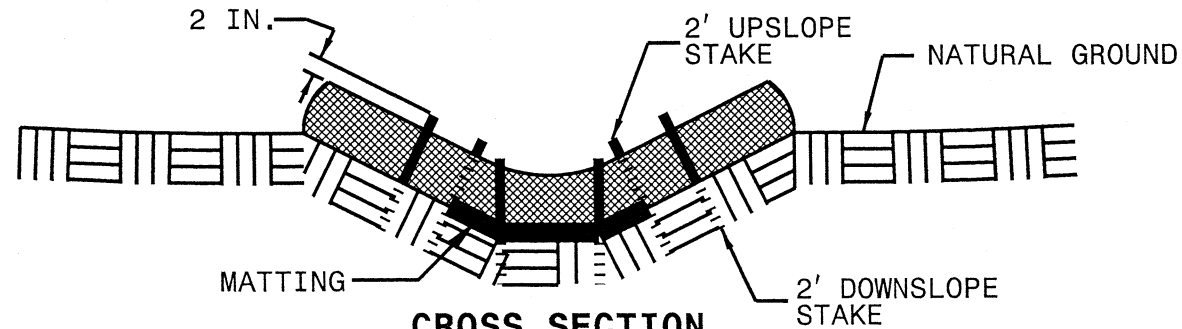
WATTLE DETAIL



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.

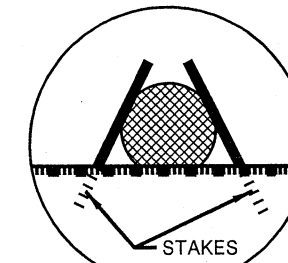
ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

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

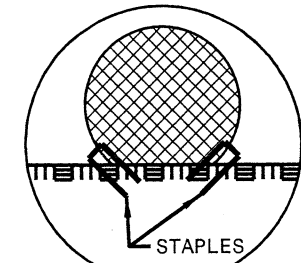
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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

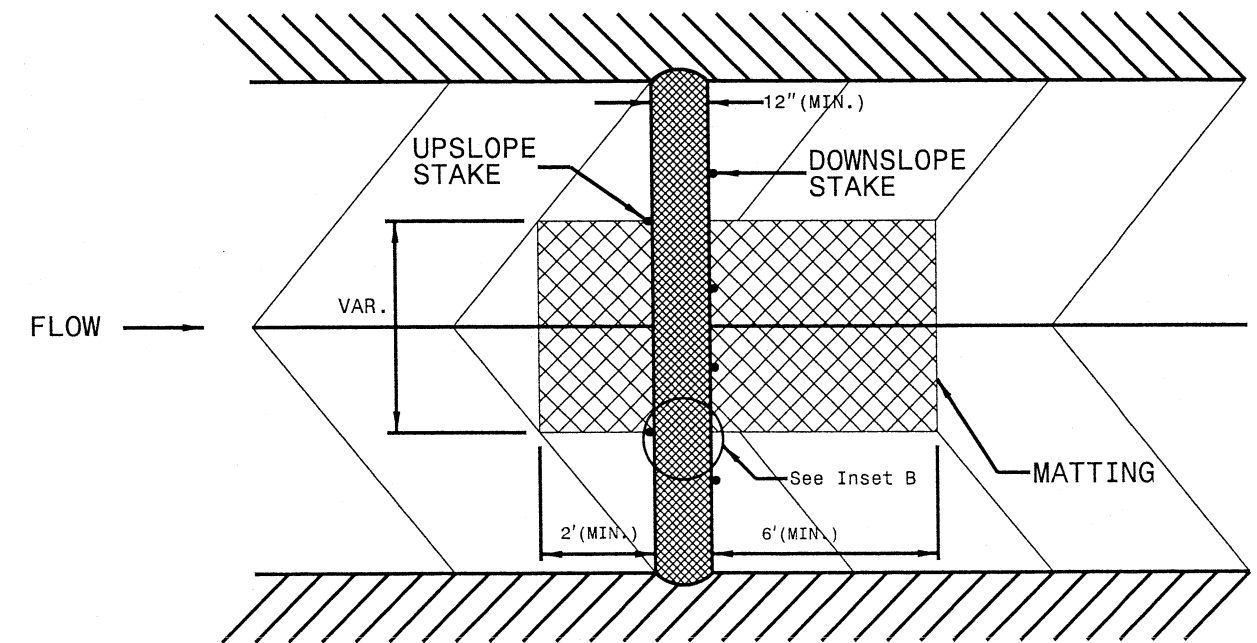
IF DITCH WILL BE DISTURBED, INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.



INSET A

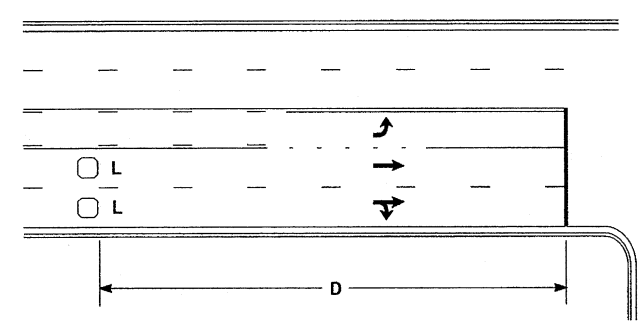


INSET B



TOP VIEW

High Speed Detection [≥40 mph (64 km/hr)]

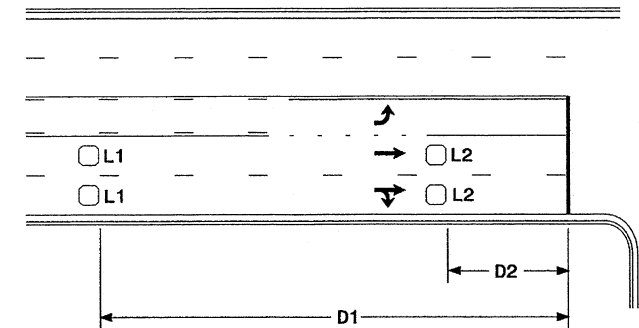


Speed Limit mph (km/hr)	D ft (m)
40 (64)	250 (75)
45 (72)	300 (90)
50 (80)	355 (110)
55 (88)	420 (130)

L = 6ft X 6ft (1.8m X 1.8m)
Wired in series for TS1
Controllers
Wired separately for TS2,
170, and 2070L Controllers

Volume Density Operation

OR

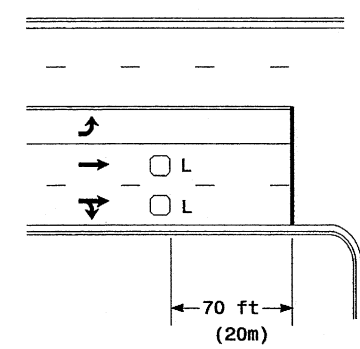


Speed Limit mph (km/hr)	D1 ft (m)	D2 ft (m)
40 (64)	250 (75)	80 (25)
45 (72)	300 (90)	90 (27)
50 (80)	355 (110)	100 (30)
55 (88)	420 (130)	110 (35)

L1 = 6ft X 6ft
(1.8m X 1.8m)
Wired in series
L2 = 6ft X 6ft
(1.8m X 1.8m)
Wired in series

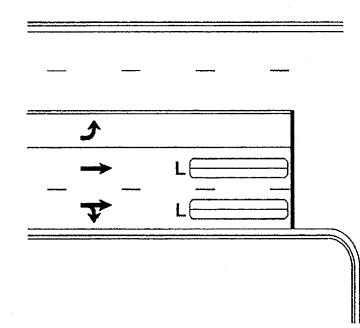
"Stretch" Operation

Low Speed Detection [≤35 mph (56 km/hr)]



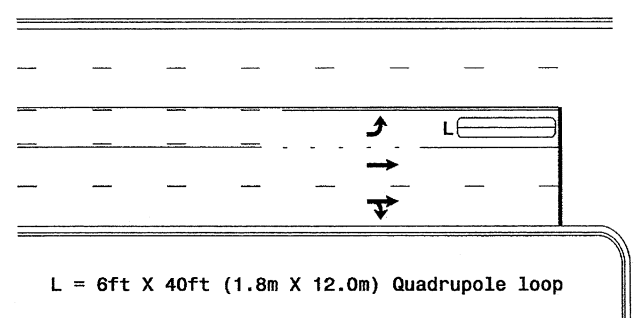
L = 6ft X 6ft (1.8m X 1.8m)
Wired in series

OR



L = 6ft X 40ft (1.8m X 12.0m)
Quadrupole loop, wired separately

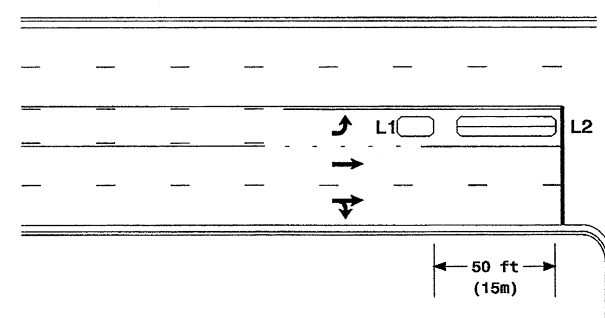
Left Turn Lane Detection



L = 6ft X 40ft (1.8m X 12.0m) Quadrupole loop

Presence Loop Detection

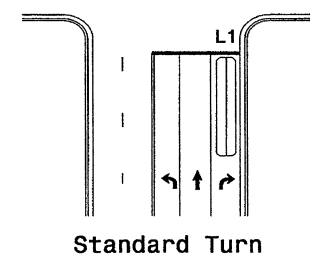
OR



L1 = 6ft X 15ft (1.8m X 4.6m) Queue detector
L2 = 6ft X 40ft (1.8m X 12.0m) Quadrupole loop

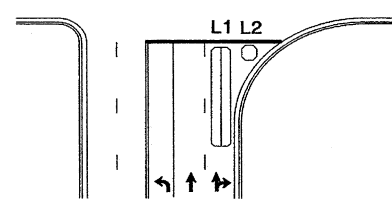
Queue Loop Detection

Right Turn Lane Detection

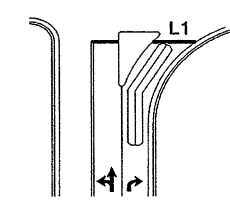


Standard Turn

L1 = 6ft X 40ft (1.8m X 12.0m) Quadrupole loop
L2 = 6ft X 6ft (1.8m X 1.8m) [Minimum] Presence loop
Wired separately
L3 = 6ft X 20ft (1.8m X 6.0m) Quadrupole loop
Wired in series



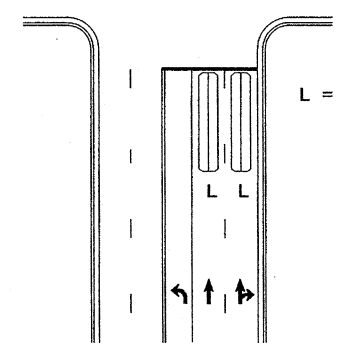
Wide Radius Turn



Channelized Turn

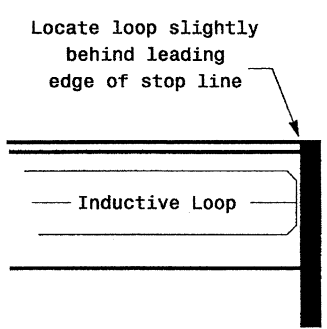
Seal of P. L. Alexander, Professional Engineer, State of North Carolina, License No. 23488.

Side Street Detection



L = 6ft X 40ft (1.8m X 12.0m)
Quadrupole loop
Wired to separate
detectors/channels

Presence Loop Placement at Stop Lines



Note:
Loop may be located in advance
of stop line when stop line is
greater than 15' (4.5m) from edge
of intersecting roadway; or, when
loop detects a permissive or
protected/permissive left turn.

Recommended Number of Turns

Single 6' X 6' (1.8m X 1.8m)
loop (wired separately):

Length of Lead-in ft (m)	Number of Turns
< 250 (75)	3
250-375 (75-115)	4
375-525 (115-160)	5
> 525 (160)	6

Quadrupole loops: Use 2-4-2 turns

6' X 15' (1.8m X 4.6m) Loops:
Lead-in < 150' (45 m), use 2 turns
Lead-in > 150' (45 m), use 3 turns

Typical Loop Locations

Prepared in the Office of: STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION and Geometric Station

122 N. McDowell St., Raleigh, NC 27603

PLAN DATE: June 2006 REVISIONS: *Revise pavement markings*

PREPARED BY: P. L. Alexander REVISIONS: *PL*

SCALE: N/A

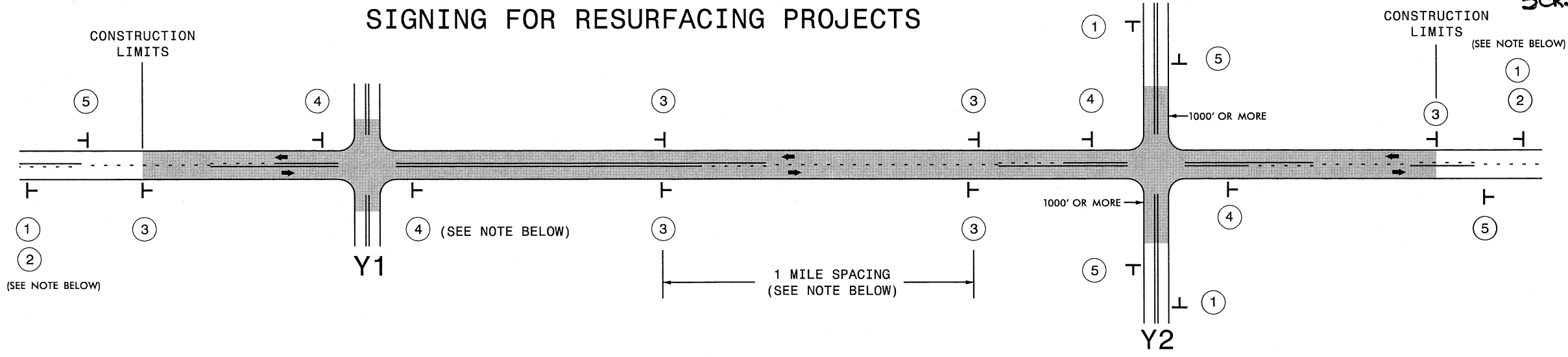
INITIALS: *PL* DATE: 12/17/06

SIGNATURE: *P. L. Alexander* DATE: 12/17/06

SIG. INVENTORY NO.

15-DEC-2006 14:28
c:\pwork\10921\51\turn_inm\scdloop\typical\2006.dgn
pl alexander

SIGNING FOR RESURFACING PROJECTS

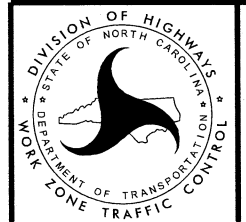


LEGEND	
⊥	STATIONARY SIGN
←	DIRECTION OF TRAFFIC FLOW

MAINLINE (-L-) SIGNING

-Y- LINE SIGNING

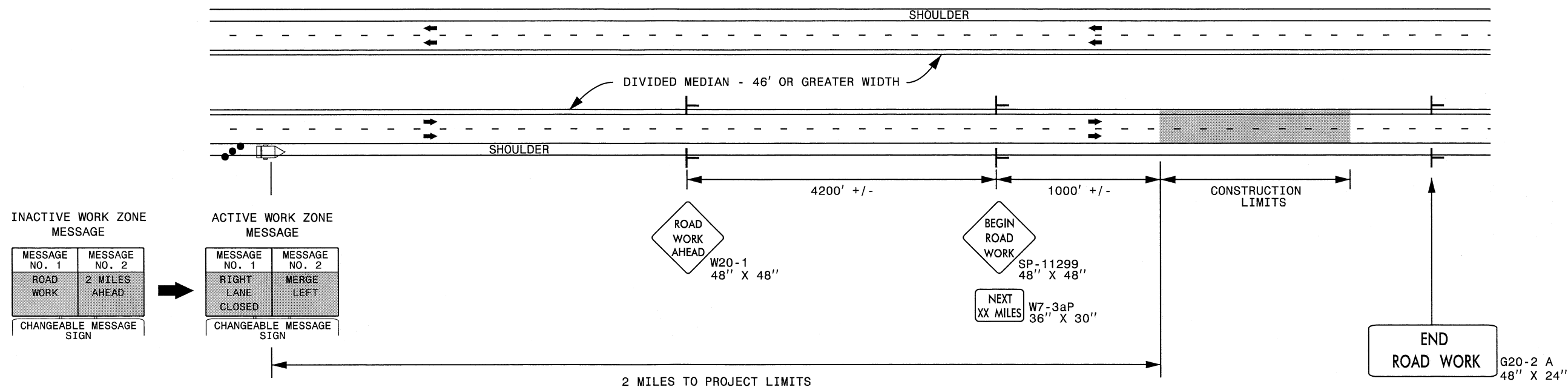
SIGNING NOTES AND PLACEMENT PER DIRECTION	1	<p>PLACE 1000' PRIOR TO BEGINNING OF CONSTRUCTION LIMITS. ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000' ALONG -Y- LINE.</p>	NO REQUIRED STATIONARY SIGNING FOR THE FOLLOWING -Y- LINE CONDITIONS:	
	2	<p>#2 SIGN ONLY USED WHEN RESURFACING LIMITS ARE 2 OR MORE MILES IN LENGTH. ROUND UP TO NEXT WHOLE NUMBER. (NO FRACTIONAL OR DECIMAL NUMBERS)</p>		<p>1) LESS THAN 1000' OF RESURFACING ALONG -Y- LINE 2) SUBDIVISION ROADS 3) DEAD END ROADS</p>
	3	<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>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>
	4	<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>PLACED 500' IN ADVANCE OF FLAGGER. PLACED 250' IN ADVANCE OF FLAGGER.</p>
	5	<p>PLACE 500' FOLLOWING THE END OF CONSTRUCTION LIMITS.</p>		



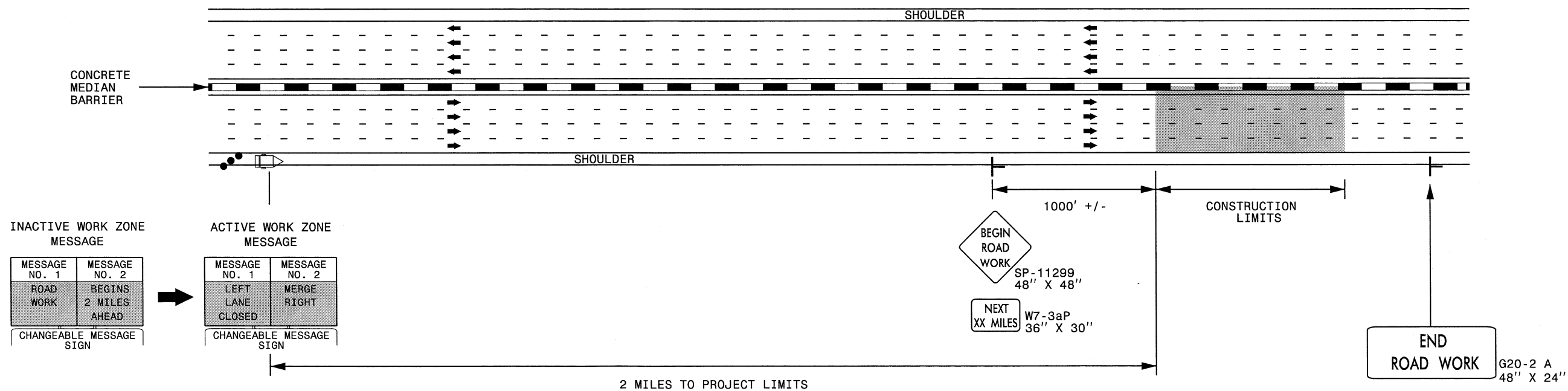
RESURFACING
 ADVANCE WARNING SIGNS
 FOR
 RURAL AND SUBURBAN
 2 LANE ROADWAYS

1/8/2013
 T:\MU\WZTC\Resurfacing\2013\Resurfacing\New_Procedures_05_09_2013\Resurfacing_AdvWarn_2Ln.dgn
 User: rmgarrrett

DIVIDED MEDIANS WITH WIDTHS 46' OR GREATER



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

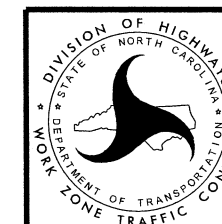


NOTES:

- 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.

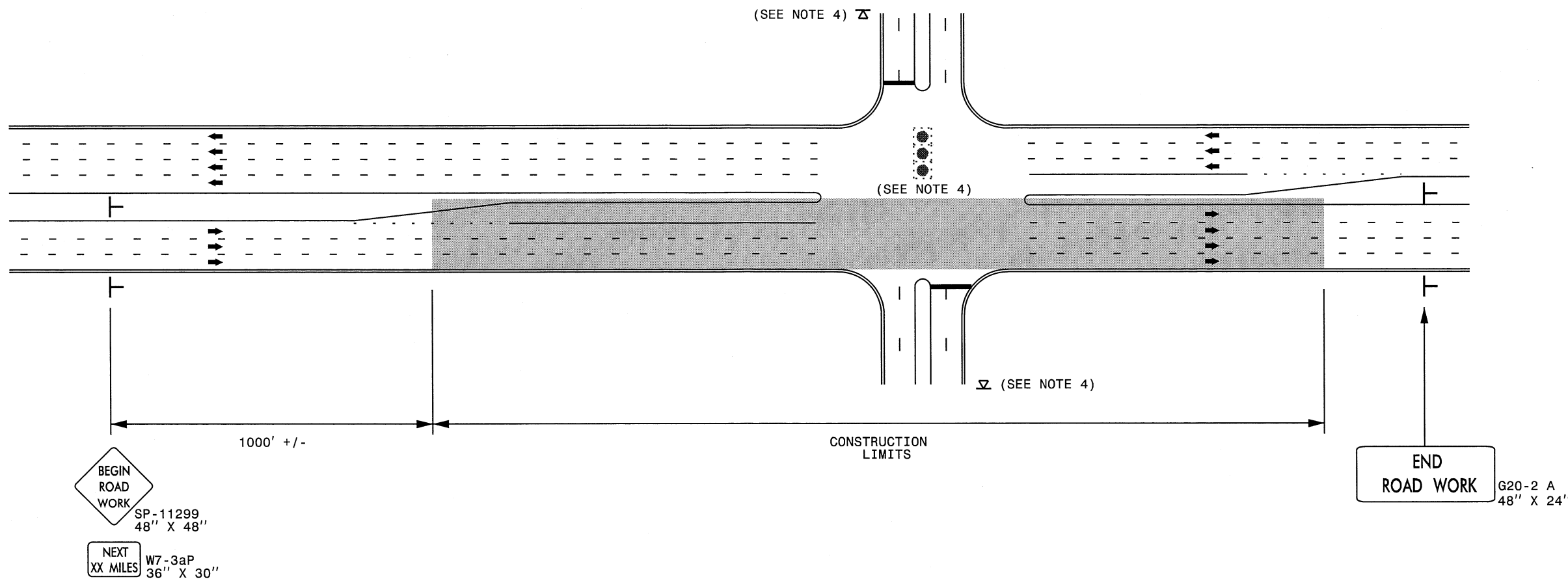
LEGEND

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



RESURFACING ADVANCE
 WARNING SIGNS FOR
 HIGH SPEED FACILITIES
 ≥ 60 MPH

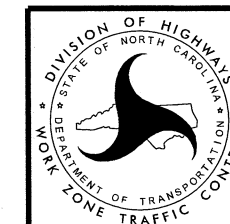
URBAN / SUBURBAN WORKZONES



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.

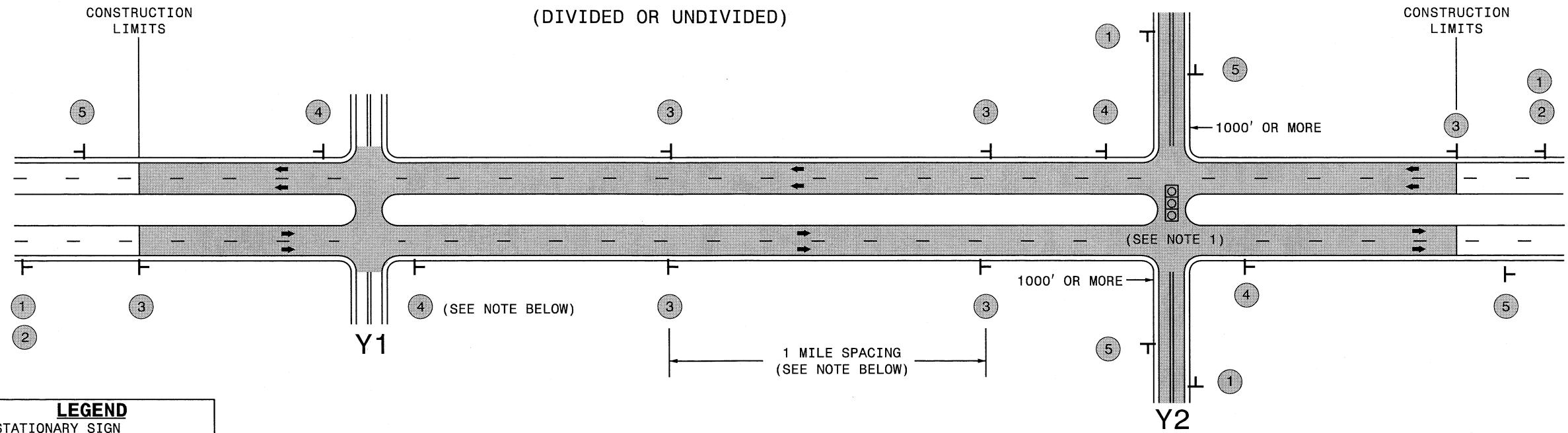
LEGEND	
└	STATIONARY SIGN
➔	DIRECTION OF TRAFFIC FLOW



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

SIGNING FOR RURAL AND SUBURBAN MULTI-LANE ROADWAYS WITH SHOULDER SECTIONS

(DIVIDED OR UNDIVIDED)

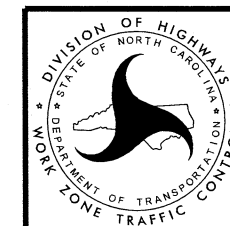


LEGEND	
T	STATIONARY SIGN
←	DIRECTION OF TRAFFIC FLOW

MAINLINE (-L-) SIGNING

-Y- LINE SIGNING

SIGNING NOTES AND PLACEMENT PER DIRECTION	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.			
	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.			
			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.			
			 W20-1 48" X 48"	 W20-7 A 48" X 48"		
			PLACED 500' IN ADVANCE OF FLAGGER. PLACED 250' IN ADVANCE OF FLAGGER.			
			NOTES: 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.			



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