



PROJECT NO.	SHEET NO.	TOTAL NO.
2020CPT.11.07.10951	2	2
2020CPT.11.07.20951		

**THERMOPLASTIC AND PAINT QUANTITIES**

Project No.	County	Map No.	Route	Route Name	From Description	To Description	Milepost From	Milepost To	TYP NO	LANES	LANE TYPE	LENGTH	WIDTH	441300000-E	445700000-N	451000000-N	525500000-N	481000000-E		482000000-E		483500000-E	484500000-N		490500000-N							
														WORK ZONE ADVANCE/GENERAL WARNING SIGNING	TEMPORARY TRAFFIC CONTROL	LAW ENFORCEMENT	PORTABLE LIGHTING	4" WHITE PAINT	4" YELLOW PAINT	8" WHITE PAINT	8" YELLOW PAINT	24" WHITE PAINT	PAINT STR. ARROW	PAINT LT. ARROW	SNOW PLOWABLE MARKERS							
														SF	LS	HR	LS	LF	LF	LF	LF	LF	EA	EA	EA							
2020CPT.11.07.10951	Watauga	1A	US 321	KING STREET	US 321 /Hardin Street	SR 1180	9.19	10.17	1	2	2WU	0.98	45	214	1	500	1	20,698	20,698	2,000	1,000	600	8	12	65							
2020CPT.11.07.10951	Watauga	1B	US 321	US 321	SR 1180	SR 1381	10.17	10.95	1	2	2WU	0.78	28	64				16,474	16,474	100		24			51							
2020CPT.11.07.10951	Watauga	2	US 421	US 421	US 321	SR 1420	19.81	25.04	2	2	2WU	5.23	32	430				110,458	110,458		800		18	2	345							
TOTAL FOR PROJECT NO. 2020CPT.11.07.10951																		6.99		708	1	500	1	247,629	247,629	2,100	1,800	624	26	14	461	
																				295,358		3,900				40						
2020CPT.11.07.20951	Watauga	3	SR 1508	Elk Creek Rd	SR 1672	SR 1510	0.01	2.74	3	2	2WU	2.73	18	246				57,658	57,658													
TOTAL FOR PROJECT NO. 2020CPT.11.07.20951																		2.73		246	0	0	0	57,658	57,658	0	0	0	0	0	0	0
																												0				
																												0				
GRAND TOTAL																		9.72		954	1	500	1	205,286	205,286	2,100	1,800	624	26	14	461	
																													40			

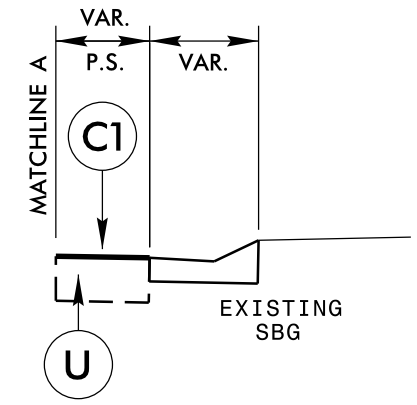
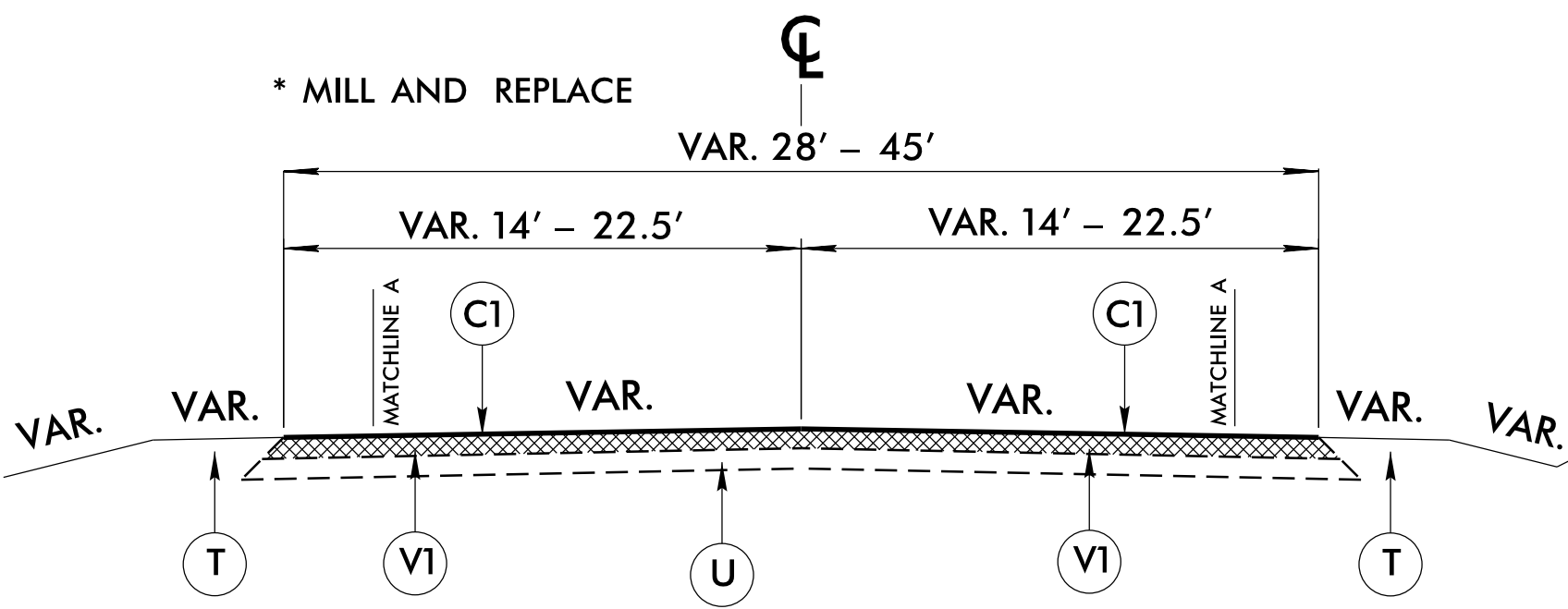
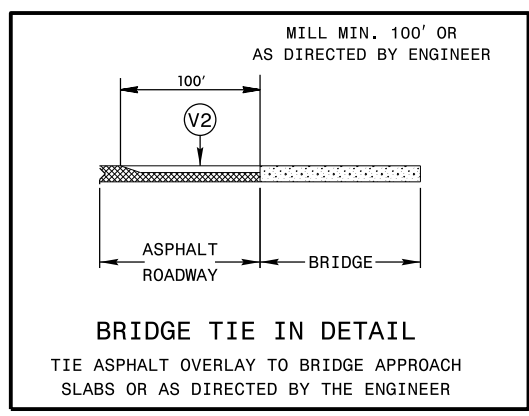
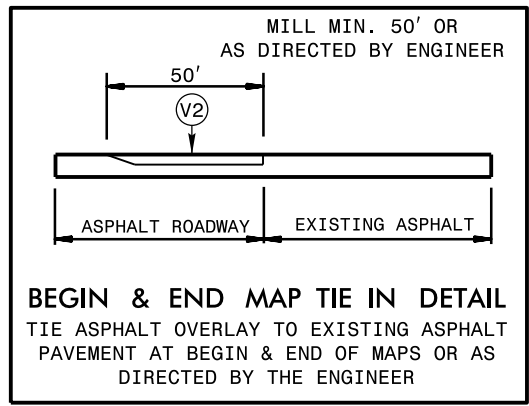
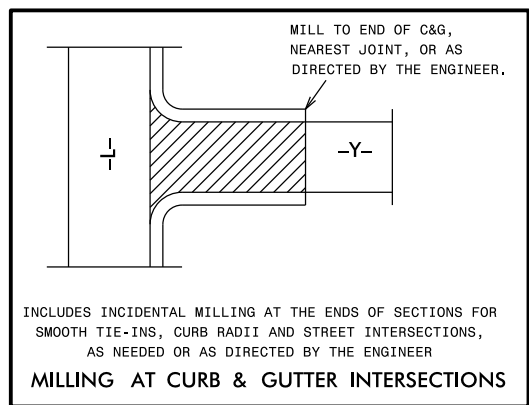
For mileposting information, please visit [ncdotmaps.sarcgis.com](http://ncdotmaps.sarcgis.com), then select NCDOT Distance Hatches & Structures Map

8/17/99

\* "PATCHING EXISTING PAVEMENT" AND LEVELING HAVE BOTH BEEN INCLUDED AS A PAY ITEM ON MAPS. PATCHING MAY OR MAY NOT BE NEEDED DEPENDING ON CONDITION OF MAP SURFACE AT TIME THAT PAVING SEASON BEGINS. AREAS TO BE DELINIATED BY THE ENGINEER.

\* INCIDENTAL MILLING AT LOCATIONS AS DIRECTED BY THE ENGINEER

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
T	SHOULDER RECONSTRUCTION
U	EXISTING PAVEMENT
V1	MILLING OF EXISTING ASPHALT PAVEMENT AT DEPTH OF 1½"
V2	INCIDENTAL MILLING (See Tie in Detail)



**INSET NO. 1A \***  
\* INSET NO. 1A IS MIRRORED THE SAME ON BOTH LEFT AND RIGHT SIDES

**TYPICAL SECTION NO. 1**

MAP 1A - US 321 FROM US 321 /HARDIN ST. TO SR 1180  
MAP 1B - US 321 FROM SR 1180 TO SR 1381

03 NOV 2020 13:58 C:\Users\jgibson\OneDrive\Documents\Watauga\Watauga\_2020\_r-esurfacing-typtcoals.dgn

**WATAUGA COUNTY  
PRIMARY AND SECONDARY  
ROADS ASPHALT RESURFACING**

REVISIONS	INIT.	DATE

SCALE: N/A DATE: 02/2020  
PREPARED BY: D. NANCE  
REVIEWED BY:   
REVIEWED BY:   
N.C. DEPARTMENT of TRANSPORTATION  
DIVISION of HIGHWAYS  
DIVISION ELEVEN

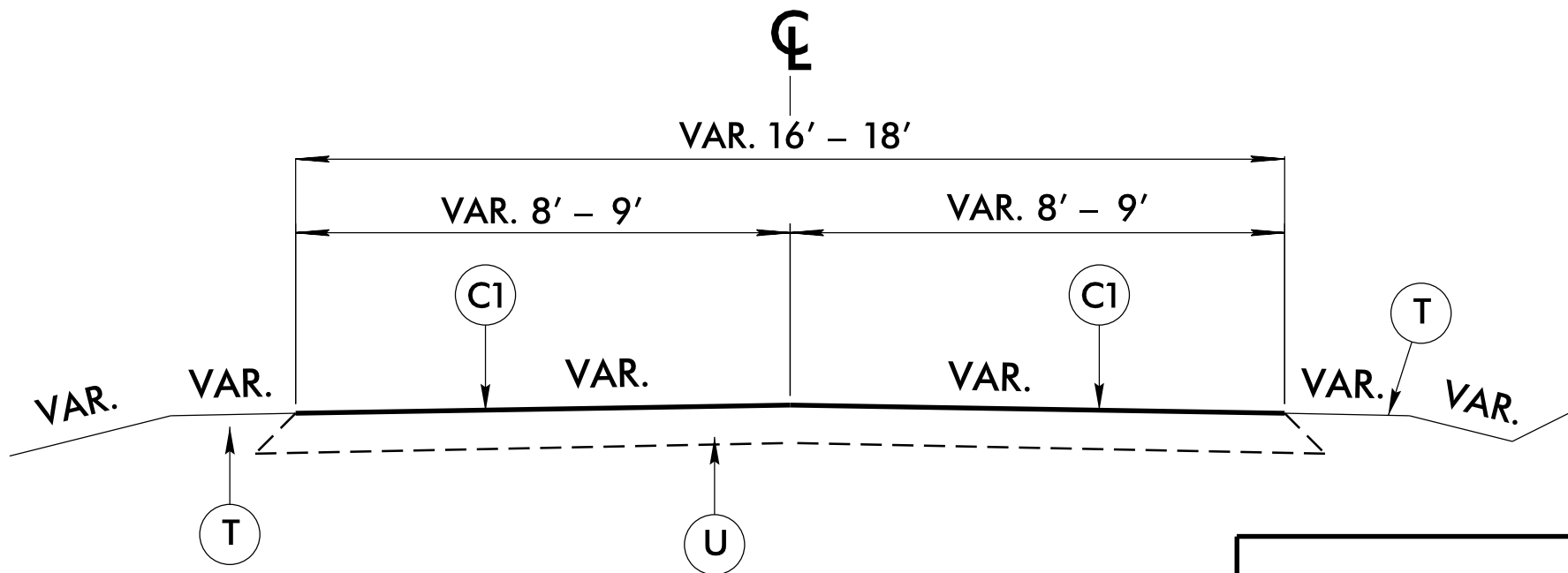
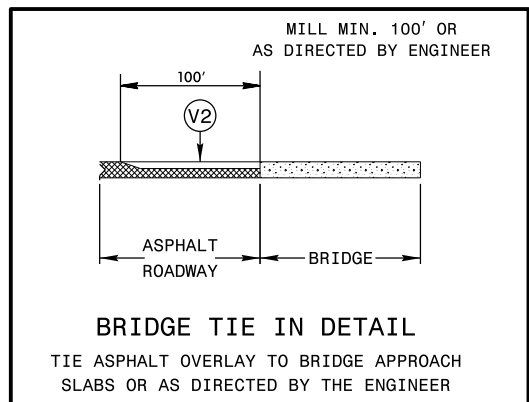
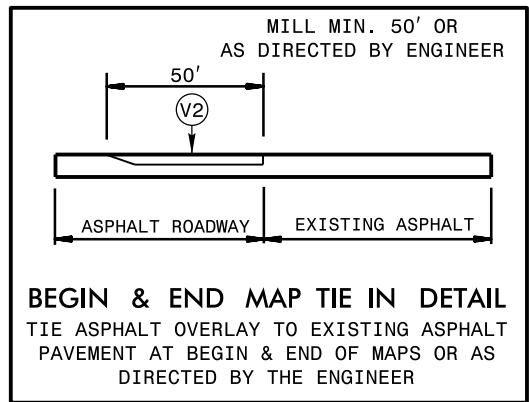
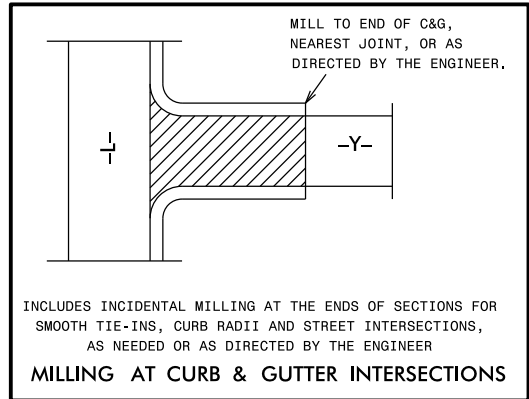
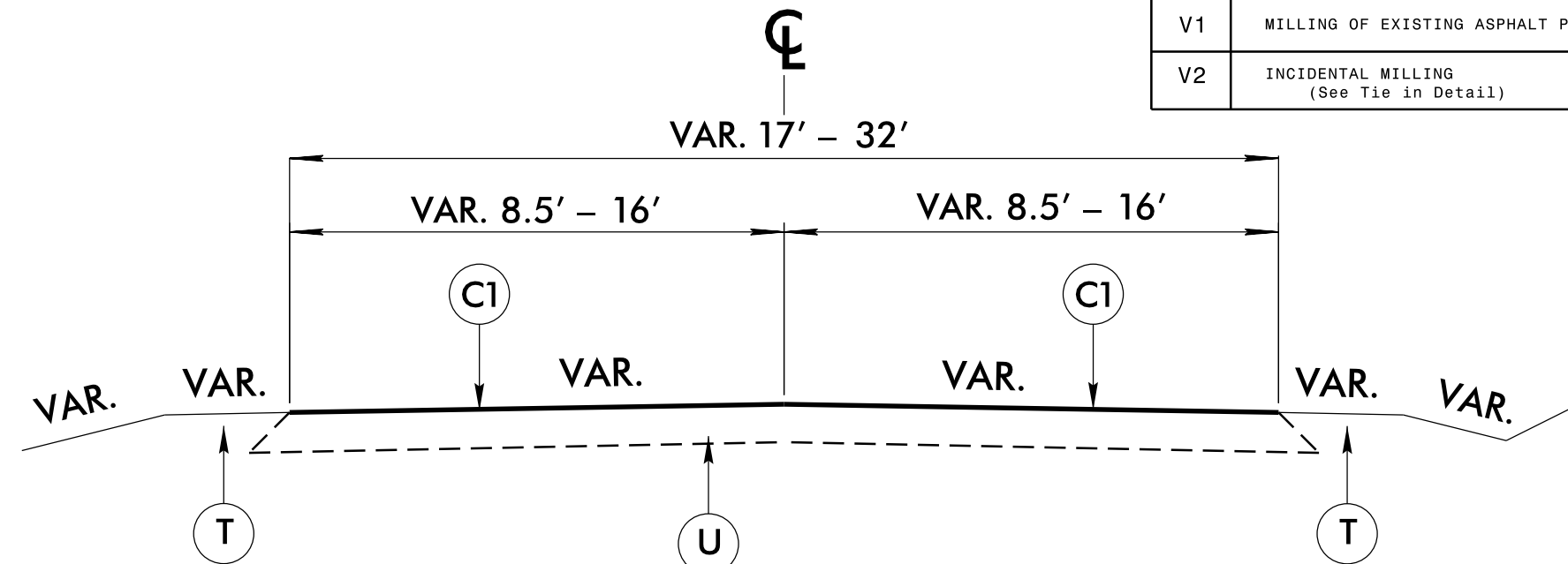
8/17/99

- \* "PATCHING EXISTING PAVEMENT" AND LEVELING HAVE BOTH BEEN INCLUDED AS A PAY ITEM ON MAPS. PATCHING MAY OR MAY NOT BE NEEDED DEPENDING ON CONDITION OF MAP SURFACE AT TIME THAT PAVING SEASON BEGINS. AREAS TO BE DELINIATED BY THE ENGINEER.
- \* INCIDENTAL MILLING AT LOCATIONS AS DIRECTED BY THE ENGINEER

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
T	SHOULDER RECONSTRUCTION
U	EXISTING PAVEMENT
V1	MILLING OF EXISTING ASPHALT PAVEMENT AT DEPTH OF 1½"
V2	INCIDENTAL MILLING (See Tie in Detail)

## TYPICAL SECTION NO. 2

MAP 2 - US 421 FROM US 321 TO SR 1420



## TYPICAL SECTION NO. 3

MAP 3 - SR 1508 FROM SR 1672 TO SR 1510

**WATAUGA COUNTY  
PRIMARY AND SECONDARY  
ROADS ASPHALT RESURFACING**

REVISIONS	INIT.	DATE

N.C. DEPARTMENT of TRANSPORTATION  
DIVISION of HIGHWAYS  
DIVISION ELEVEN

SCALE: N/A      DATE: 02/2020

PREPARED BY: **D. NANCE**

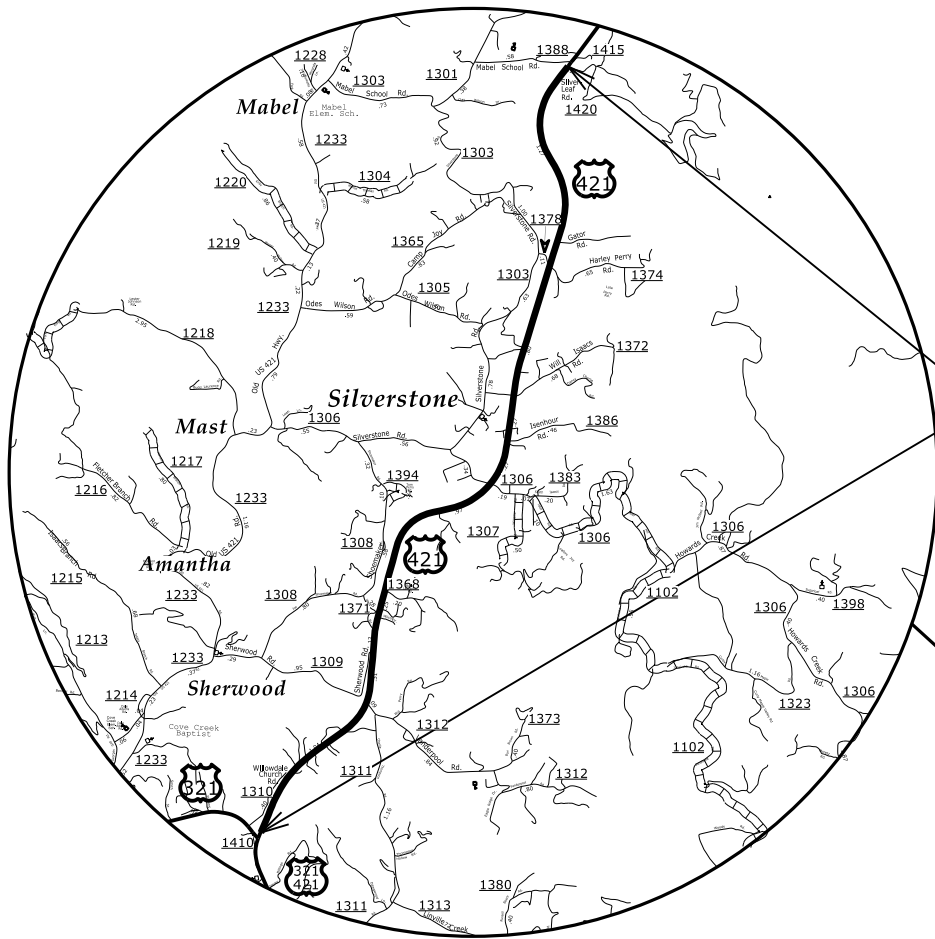
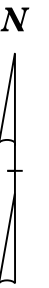
REVIEWED BY:

REVIEWED BY:

03-NOV-2020 13454 \$\$\$SURFACING-TYPICALS.DGN

# WATAUGA COUNTY

2020 RESURFACING  
MAP # 1A , # 1B , # 2 , # 3

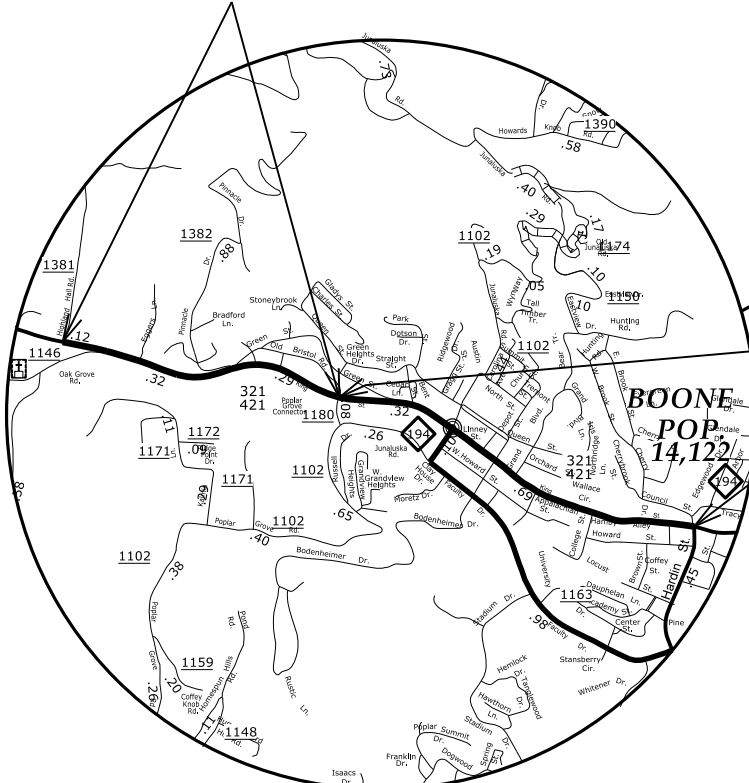


MAP #2

★ US 421 – (5.23mi.)  
(FROM US 321 TO SR 1420)

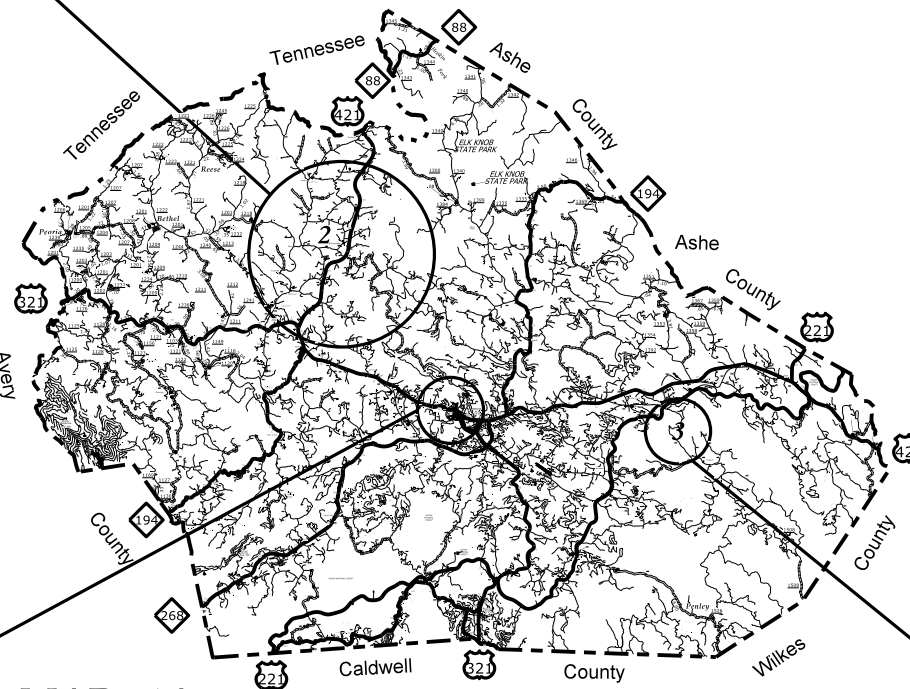
MAP #1B

★ US 321 – (0.78mi.)  
(FROM SR 1180 TO SR 1381)



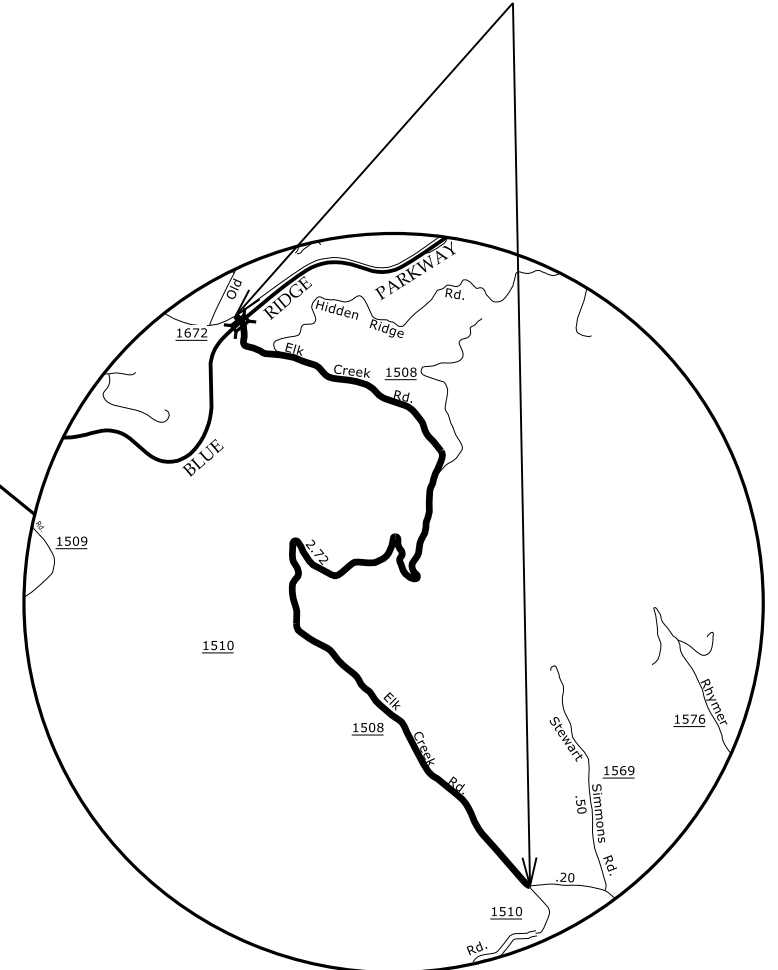
MAP #1A

★ US 321 – (0.98mi.)  
(FROM HARDIN ST TO SR 1180)



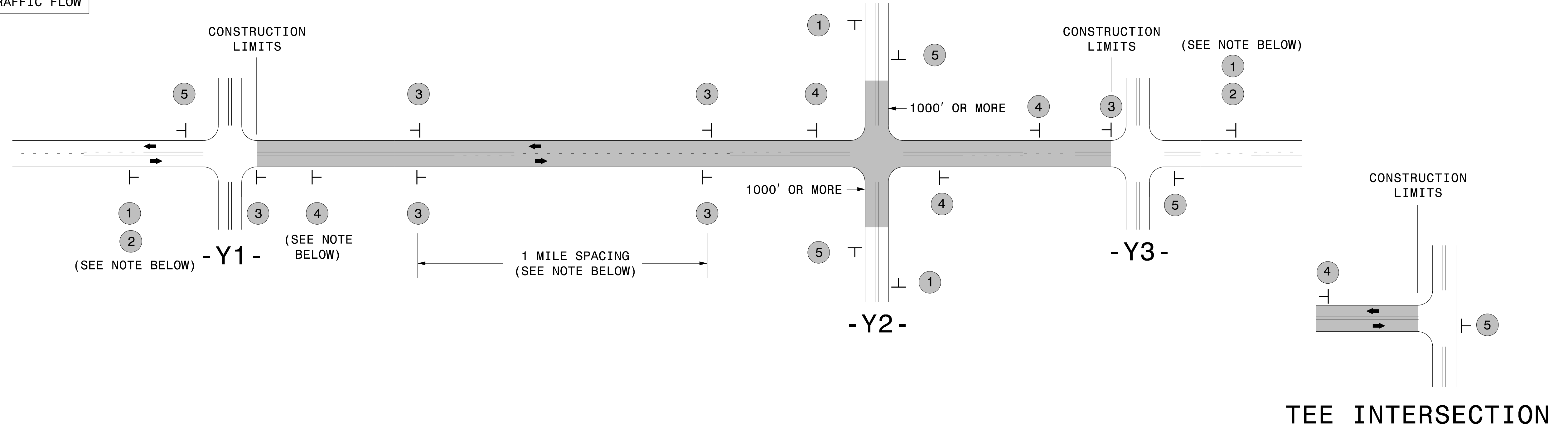
MAP #3

★ SR 1508 ELK CREEK RD. – (2.73mi.)  
(FROM SR 1672 TO SR 1510)



# SIGNING FOR RESURFACING PROJECTS

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



## MAINLINE (-L-) SIGNING

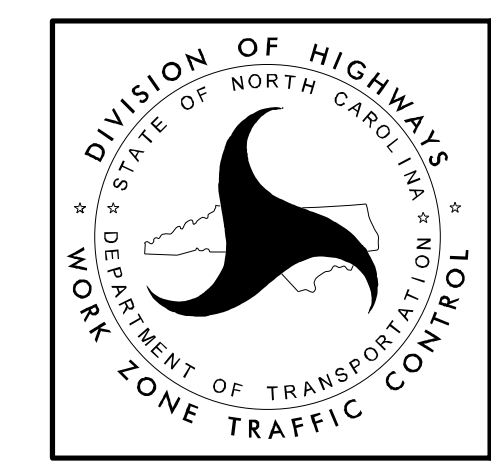
## -Y- LINE SIGNING

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.	<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, PORTABLE ADVANCE WARNING 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.</p> <p>PLACED 250' IN ADVANCE OF FLAGGER.</p>
	2	 W7-3aP 24" X 18"	#2 SIGN ONLY USED WHEN CONSTRUCTION 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"	<ul style="list-style-type: none"> <li>- PLACE INITIALLY AT THE CONSTRUCTION LIMITS AND SPACE 1 MILE APART THEREAFTER.</li> <li>- AT TEE INTERSECTIONS INSTALL INITIALLY 1/2 MILE FROM INTERSECTION AND SPACE 1 MILE APART THEREAFTER.</li> </ul>	
	4	 SP 13106 48" X 48"	<ul style="list-style-type: none"> <li>- THESE ARE FOR -Y- LINES THAT ARE "THROUGH" ROADWAYS.</li> <li>- DEAD END AND SUBDIVISION ROADS ARE NOT "THROUGH" ROADWAYS.</li> <li>- INSTALL 500' +/- FROM EACH -Y- LINE APPROACH AS SHOWN ABOVE.</li> <li>- 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.</li> <li>- A MAXIMUM OF 2 SIGN SETS PER MILE. DO NOT INSTALL WHEN -Y- LINES ARE WITHIN 0.5 MILES FROM "END ROAD WORK" SIGN.</li> <li>- FOR TEE INTERSECTIONS, INSTALL WITHIN 500' +/- OF THE INTERSECTION ALONG -L- LINE.</li> </ul>	
	5	 G20-2 A 48" X 24"	PLACE 500' FOLLOWING THE END OF CONSTRUCTION LIMITS OR AS SHOWN WHEN WORK ENDS AT A 3-WAY TEE INTERSECTION.	

THE ABOVE SIGNS ARE ALL THAT ARE REQUIRED FOR A CONTRACTOR TO BEGIN A RESURFACING CONTRACT. ANY ADDITIONAL SIGNS REQUESTED BY NCDOT DIVISIONS SHALL BE INSTALLED WITHIN 7 BUSINESS DAYS OF THE START OF CONTRACT WORK.

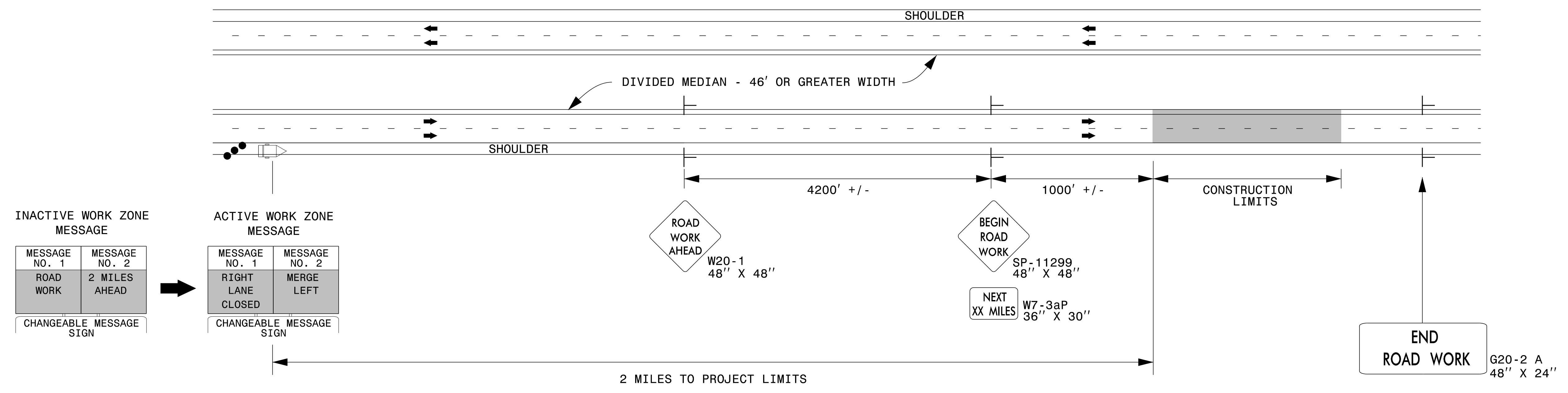
### MAPS LESS THAN 2 MILES

FOR RESURFACING MAPS WITH CONSTRUCTION LIMITS LESS THAN 2 MILES IN LENGTH, NO STATIONARY SIGNS ARE REQUIRED. USE PORTABLE "ROAD UNDER CONSTRUCTION" OR "ROAD WORK AHEAD" SIGNS IN LIEU OF STATIONARY ADVANCE WARNINGS SIGNS.

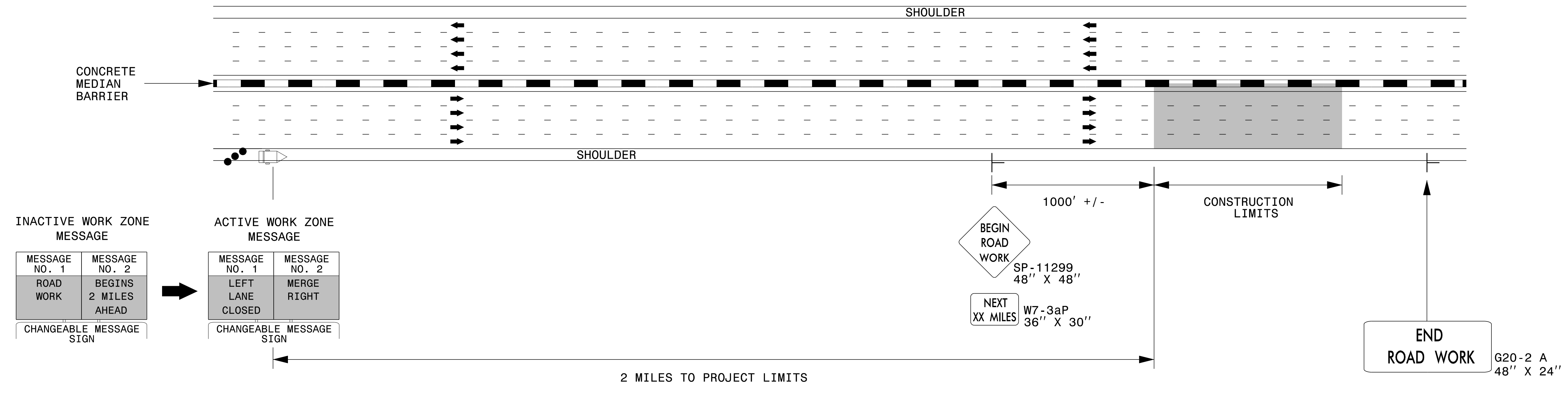


ADVANCE WARNING SIGNS FOR RURAL AND SUBURBAN 2-LANE ROADWAY RESURFACING

## DIVIDED MEDIANS WITH WIDTHS 46' OR GREATER



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



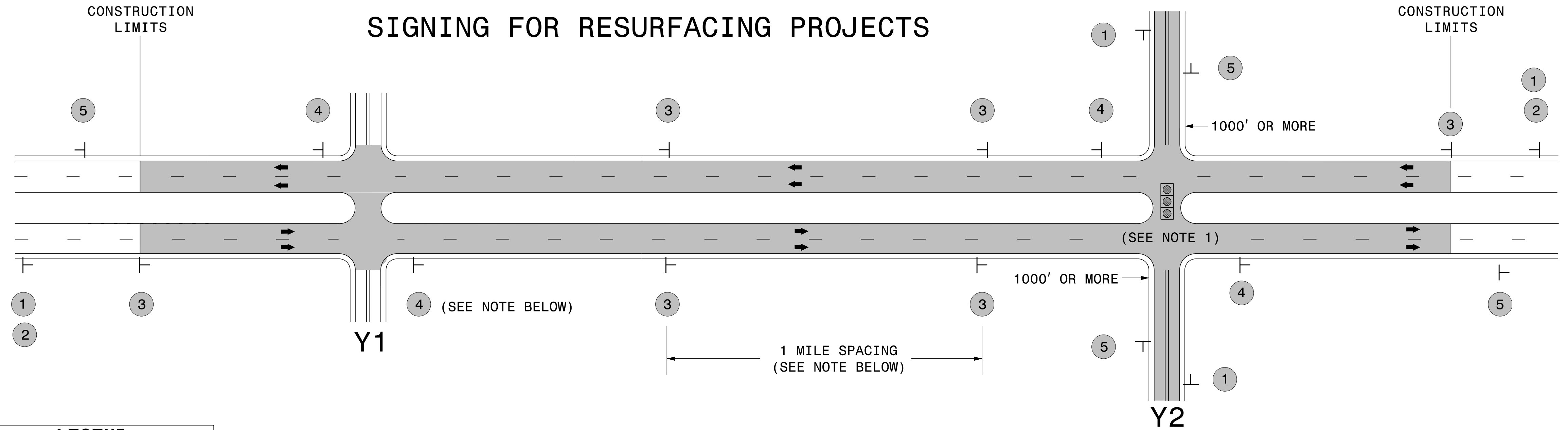
**NOTES:**

- 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**

3/23/2015 C:\Users\rmgarrrett\Downloads\Resurfacing\_AdvWarn\_HSpd.dgn User:rmgarrrett



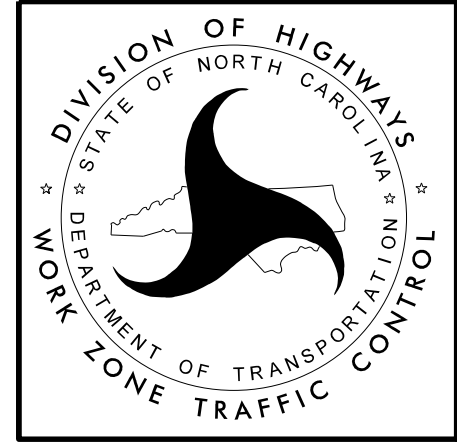
**LEGEND**  
 ┆ STATIONARY SIGN  
 ← DIRECTION OF TRAFFIC FLOW

**MAINLINE (-L-) SIGNING**

**-Y- LINE SIGNING**

<b>SIGNING NOTES AND PLACEMENT PER DIRECTION</b>	 	<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; 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>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>	

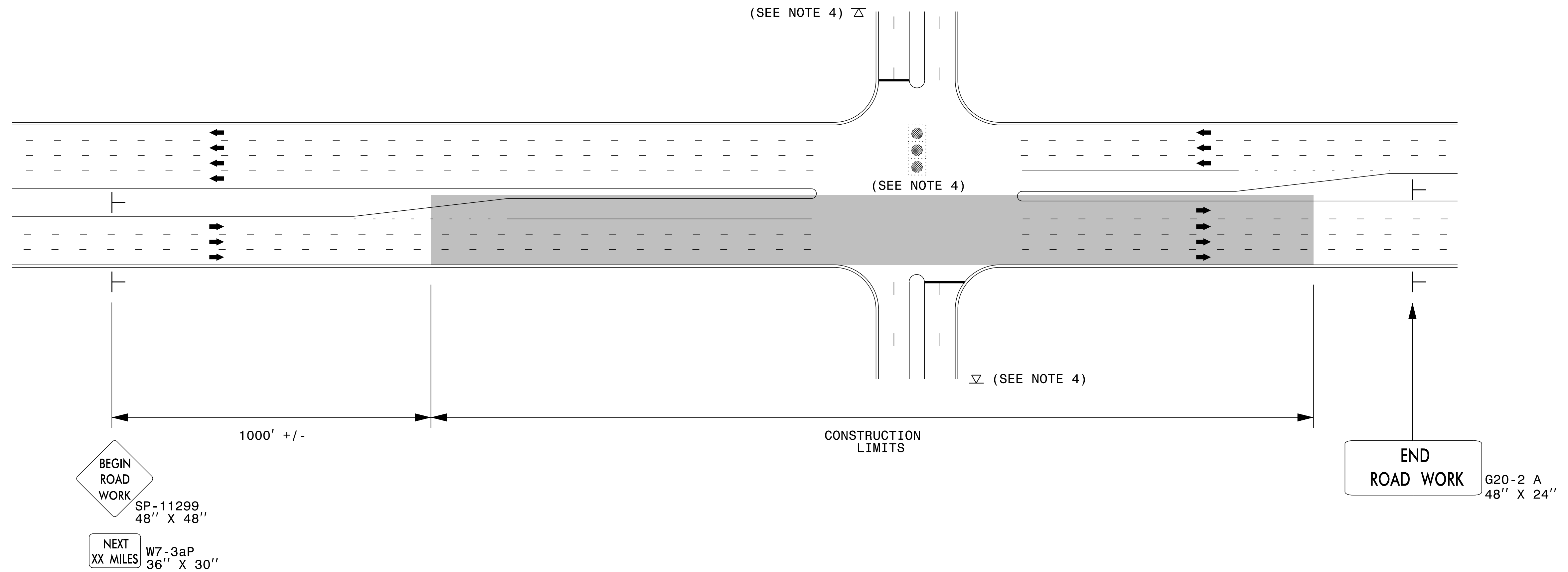
3/23/2015  
 C:\Users\rmgarrrett\Downloads\Resurfacing\_AdvWarn\_Ltr-Su\_Shldr.dgn  
 User:rmgarrrett



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



## URBAN / SUBURBAN WORKZONES

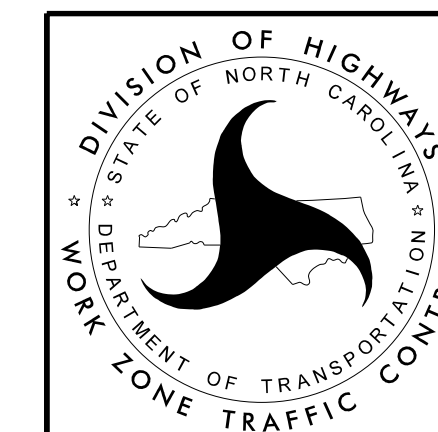


### NOTES:

- 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.

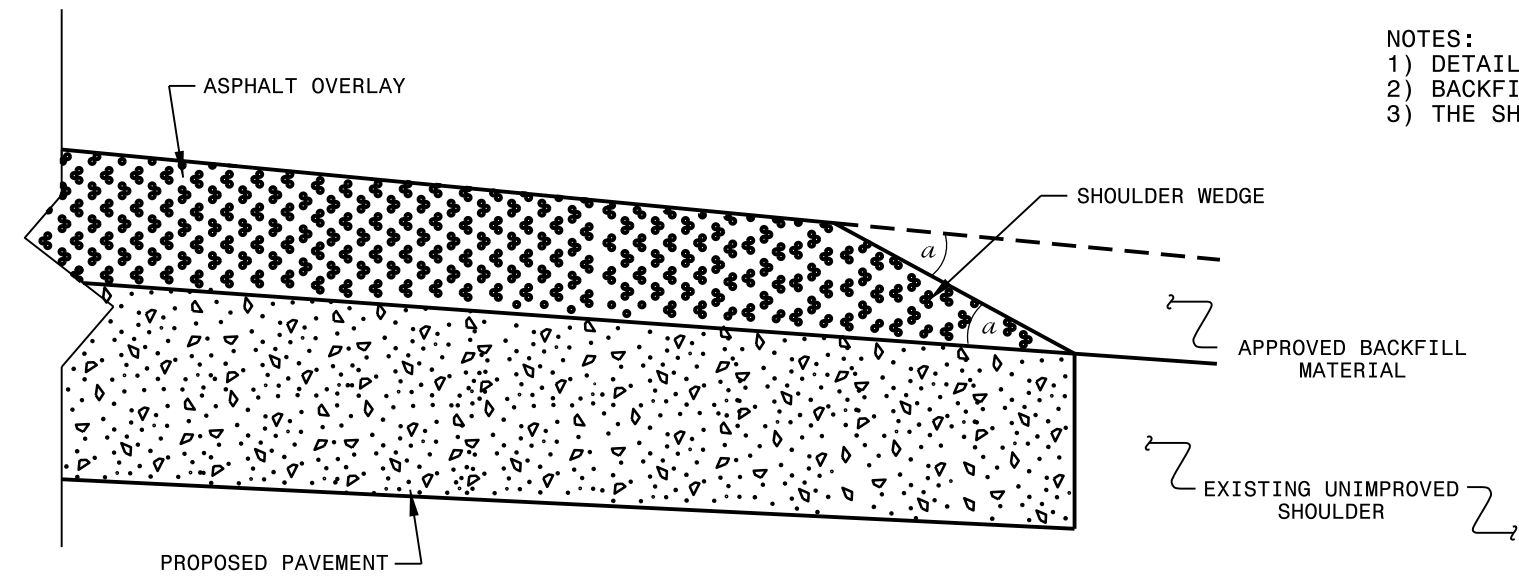
### LEGEND

- ├ STATIONARY SIGN
- ➔ DIRECTION OF TRAFFIC FLOW

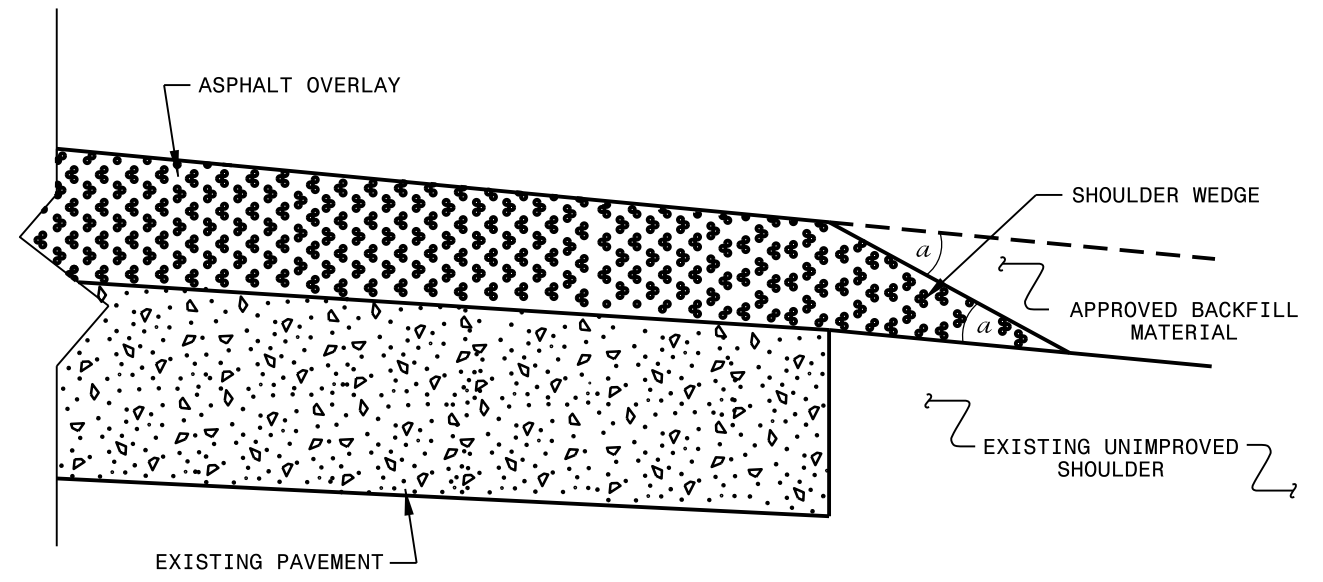


**RESURFACING ADVANCE  
WARNING SIGNS FOR  
URBAN / SUBURBAN  
FACILITIES**

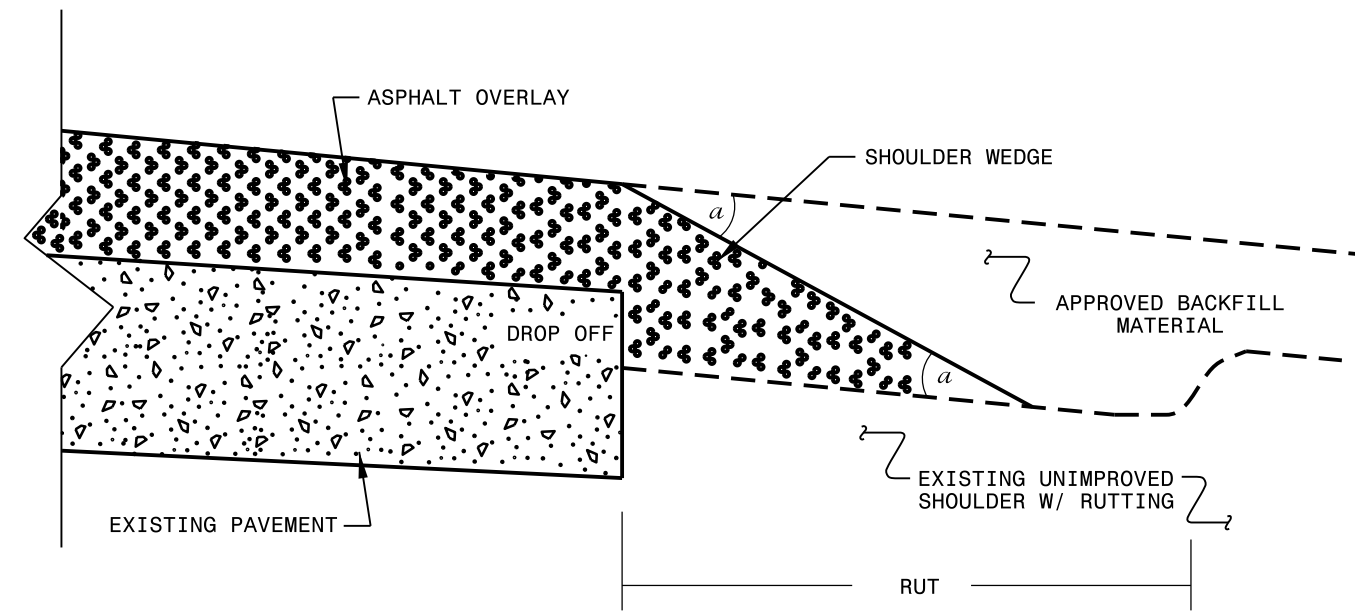
- NOTES:
- 1) DETAIL DOES NOT APPLY TO OGAFD AND ULTRA-THIN BONDED WEARING COURSE.
  - 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
  - 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS AND SIDE STREETS.



**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°

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

**SHOULDER WEDGE  
 DETAILS**

ORIGINAL BY: T.SPELL DATE: 7-19-11  
 MODIFIED BY: DATE: 10/16/12  
 CHECKED BY: DATE:  
 FILE SPEC.: susr/details/stand/shoulderwedgedetail.dgn

SYSTEMS DESIGN  
 USER NAME