

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION 6

PLANS

Letting Date: November 1, 2023

CONTRACT ID: DF00454

TIP NO.: -----

FEDERAL AID NO.: STATE FUNDED

WBS ELEMENT NO.: 2024CPT.06.06.10091.1

ROUTE NO.: VARIES

LOCATION: VARIES

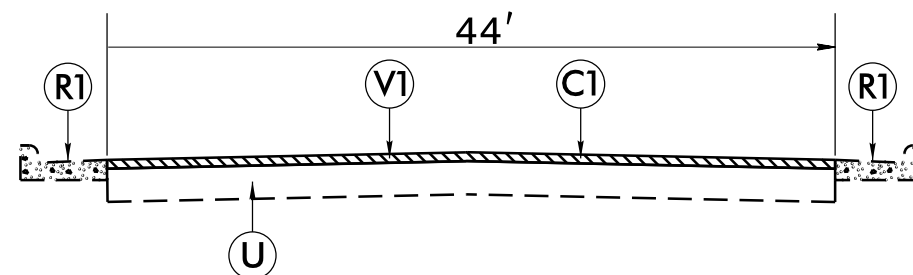
COUNTY: BLADEN

LENGTH OF PROJECT: 7.05 MILES

TYPE OF WORK: RESURFACING, MILLING & PAVEMENT MARKINGS

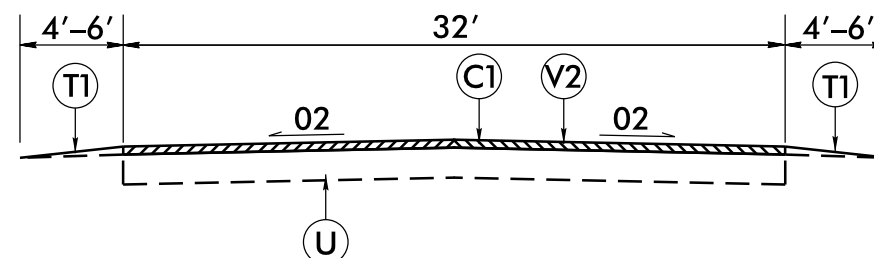
PAVEMENT SCHEDULE

C1	1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
R1	EXISTING CURB AND GUTTER
T1	SHOULDER RECONSTRUCTION WITH AGGREGATE SHOULDER BORROW
U	EXISTING ASPHALT PAVEMENT
V1	1½" MILLING
V2	0"-3" MILLING



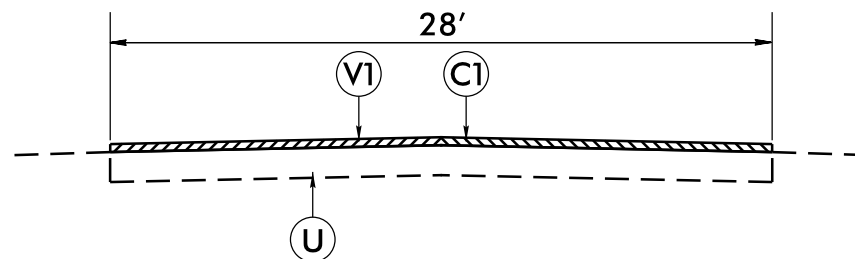
TYPICAL SECTION NO. 1

*MATERIAL TRANSFER VEHICLE SHALL BE USED ON MAPS 1 & 2 (NC 211).

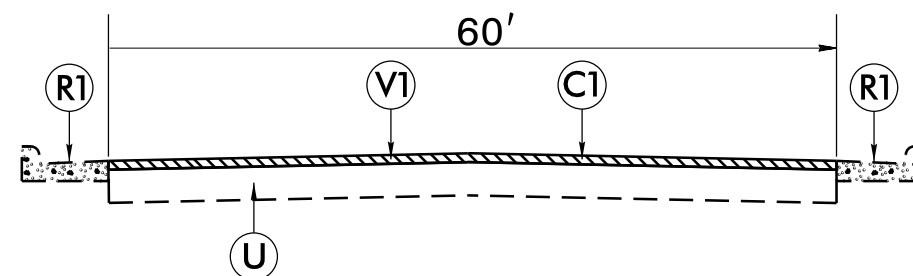


TYPICAL SECTION NO. 2

*USE LEVELING COARSE (S9.5C) IN PAVED SHOULDER AS DIRECTED BY ENGINEER

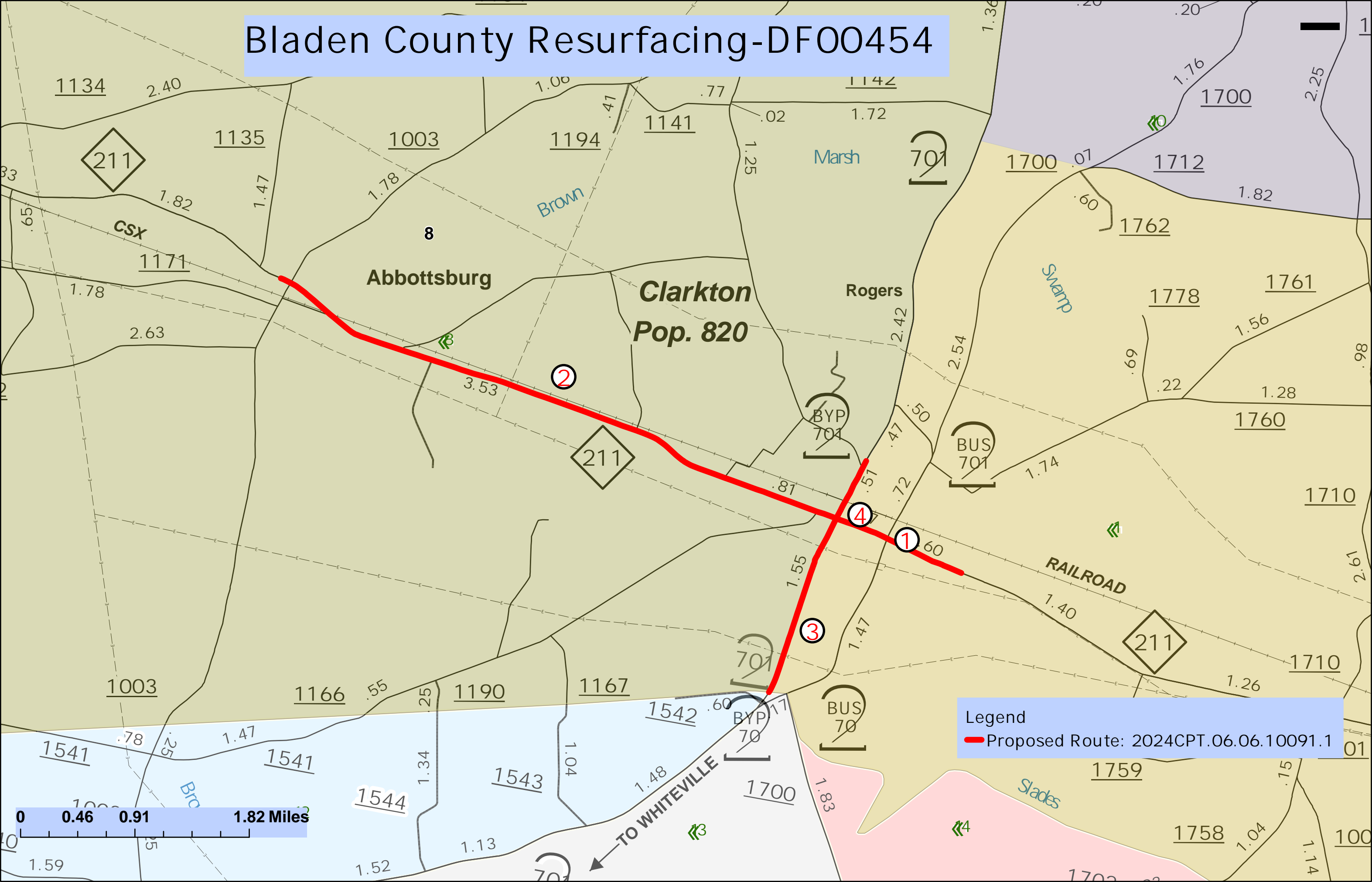


TYPICAL SECTION NO. 3



TYPICAL SECTION NO. 4

Bladen County Resurfacing-DF00454



Abbottsburg

Clarkton
Pop. 820

Rogers

Swamp

RAILROAD

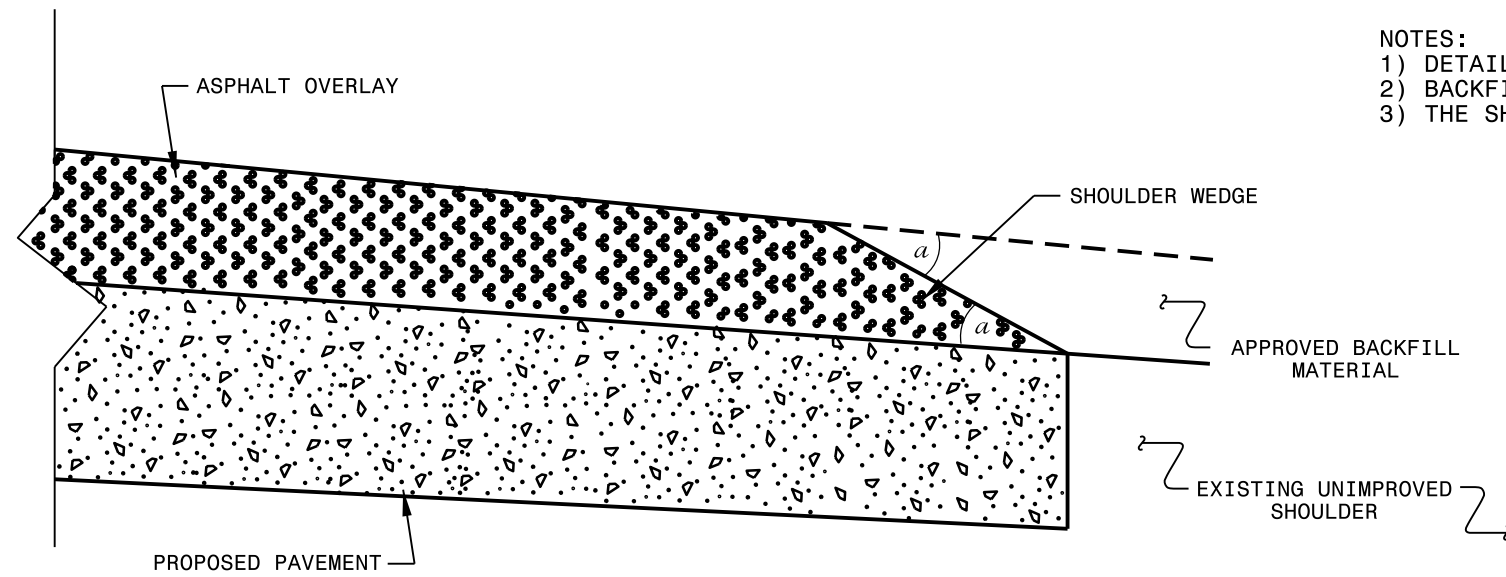
Slades

Legend
Proposed Route: 2024CPT.06.06.10091.1

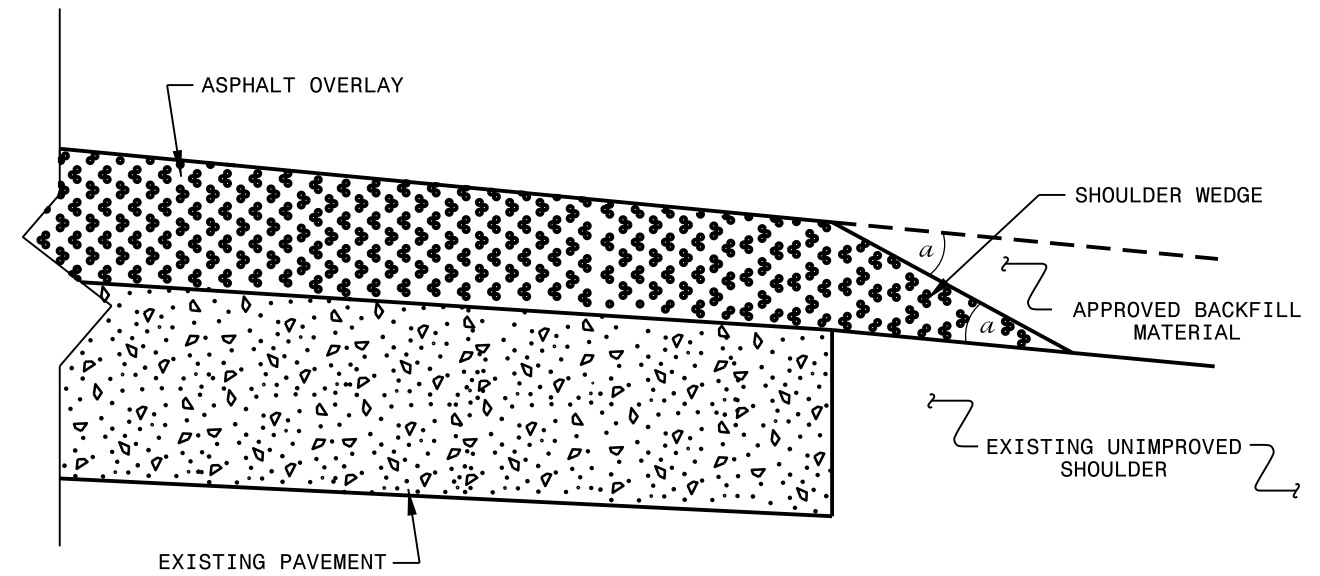
0 0.46 0.91 1.82 Miles

TO WHITEVILLE

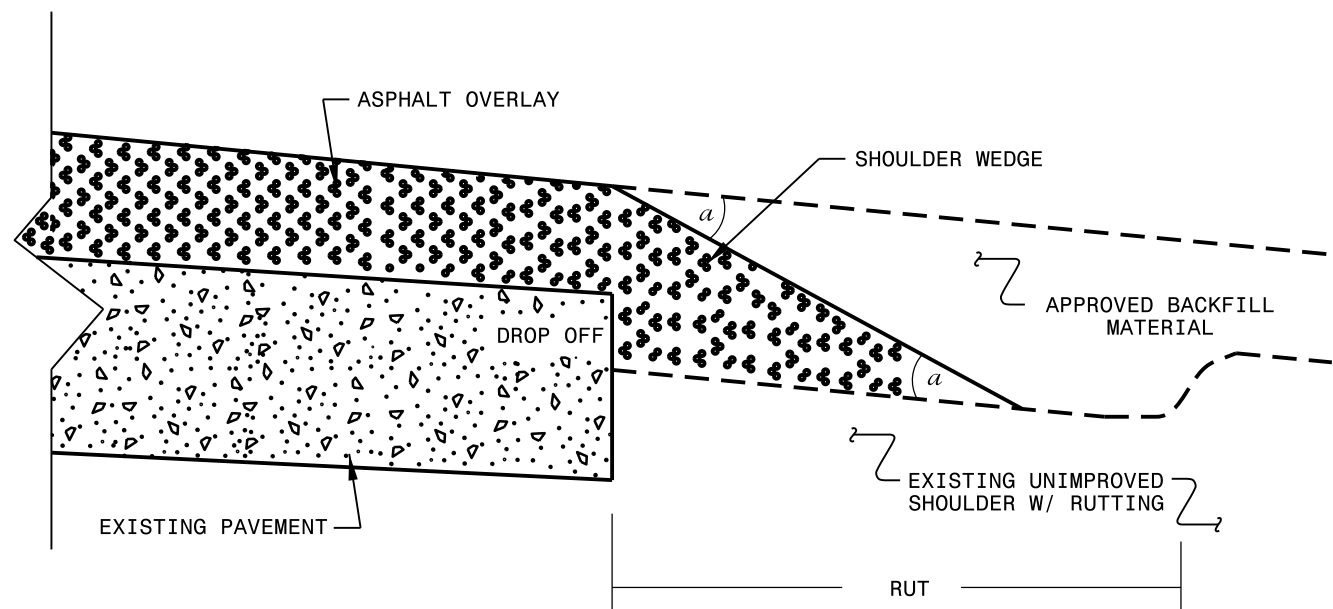
- NOTES:
- 1) DETAIL DOES NOT APPLY TO OGAFD AND ULTRA-THIN BONDED WEARING COURSE.
 - 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
 - 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS AND SIDE STREETS.



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			

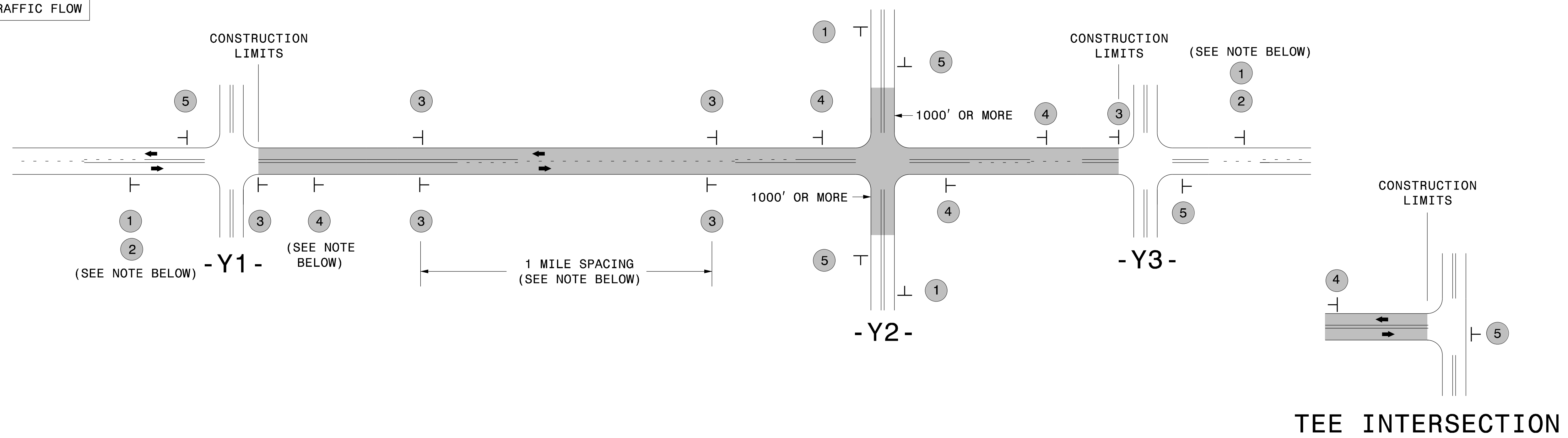
SYSTEMS DESIGN
USER NAME

SIGNING FOR RESURFACING PROJECTS

LEGEND

┃ STATIONARY SIGN

← DIRECTION OF TRAFFIC FLOW



MAINLINE (-L-) SIGNING

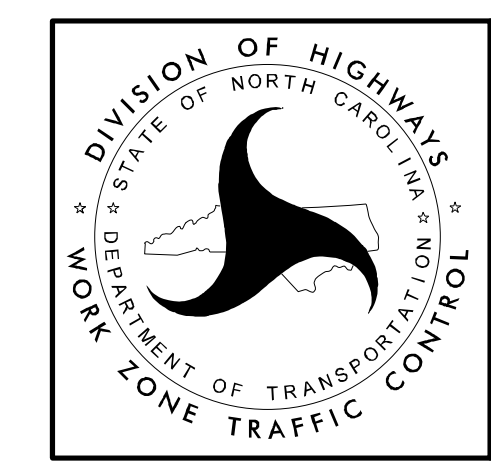
-Y- LINE SIGNING

SIGNING NOTES AND PLACEMENT PER DIRECTION	1		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"> LESS THAN 1000' OF RESURFACING ALONG -Y- LINE SUBDIVISION ROADS DEAD END ROADS <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" PLACED 500' IN ADVANCE OF FLAGGER. </div> <div style="text-align: center;"> W20-7 A 48" X 48" PLACED 250' IN ADVANCE OF FLAGGER. </div> </div>
	2		#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		- PLACE INITIALLY AT THE CONSTRUCTION LIMITS AND SPACE 1 MILE APART THEREAFTER. - AT TEE INTERSECTIONS INSTALL INITIALLY 1/2 MILE FROM INTERSECTION AND SPACE 1 MILE APART THEREAFTER.	
	4		- 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. - FOR TEE INTERSECTIONS, INSTALL WITHIN 500' +/- OF THE INTERSECTION ALONG -L- LINE.	
	5		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.

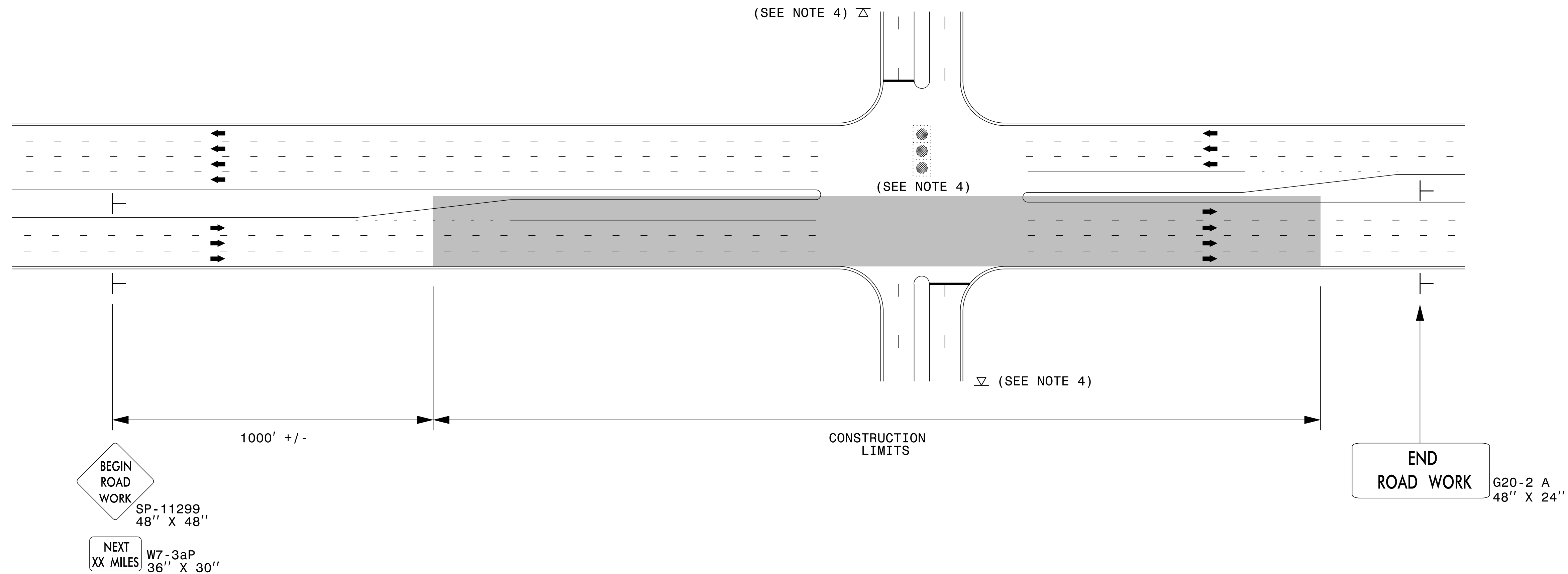
MAPS LESS THAN 2 MILES

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

URBAN / SUBURBAN WORKZONES

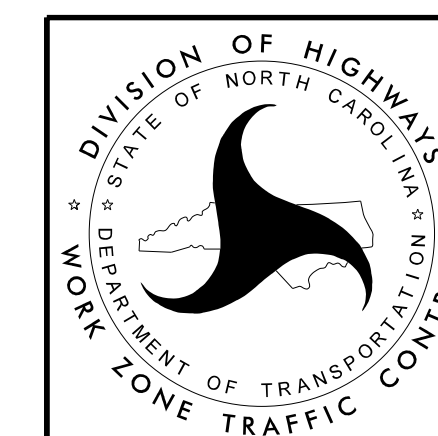


NOTES:

- 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.

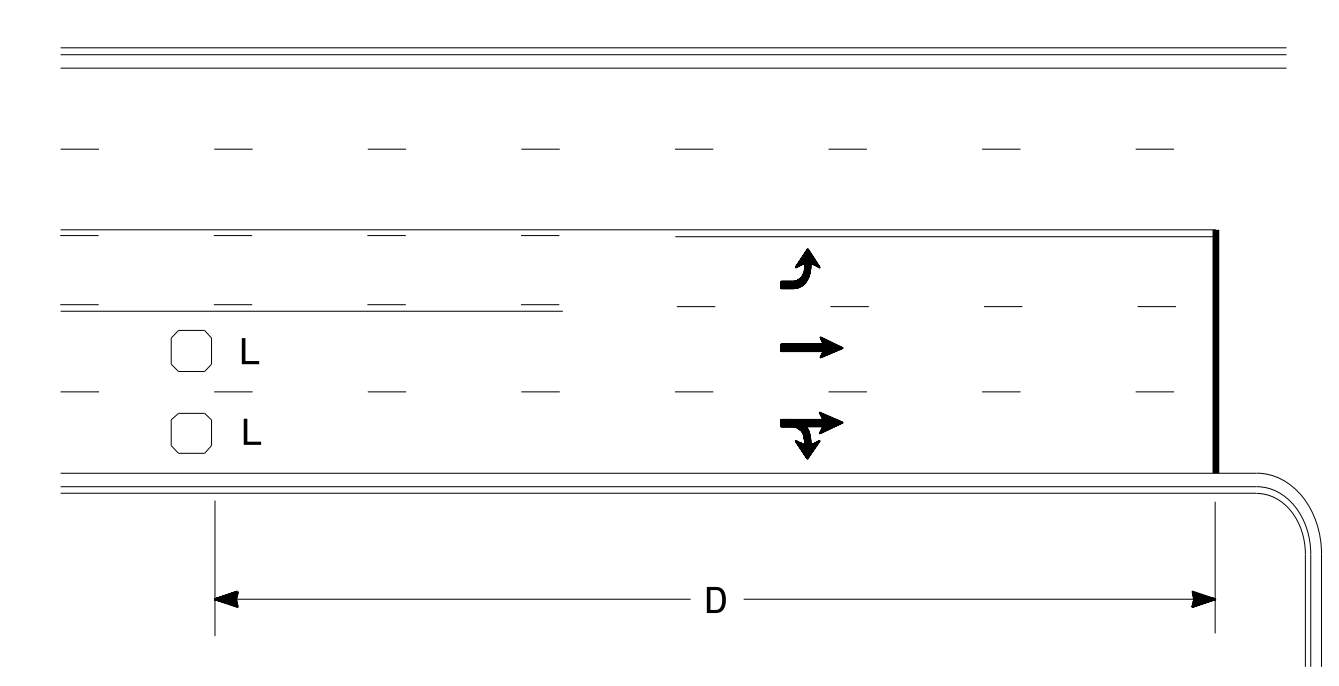
LEGEND

- ┆ STATIONARY SIGN
- ➔ DIRECTION OF TRAFFIC FLOW



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

High Speed Detection (≥40 mph)

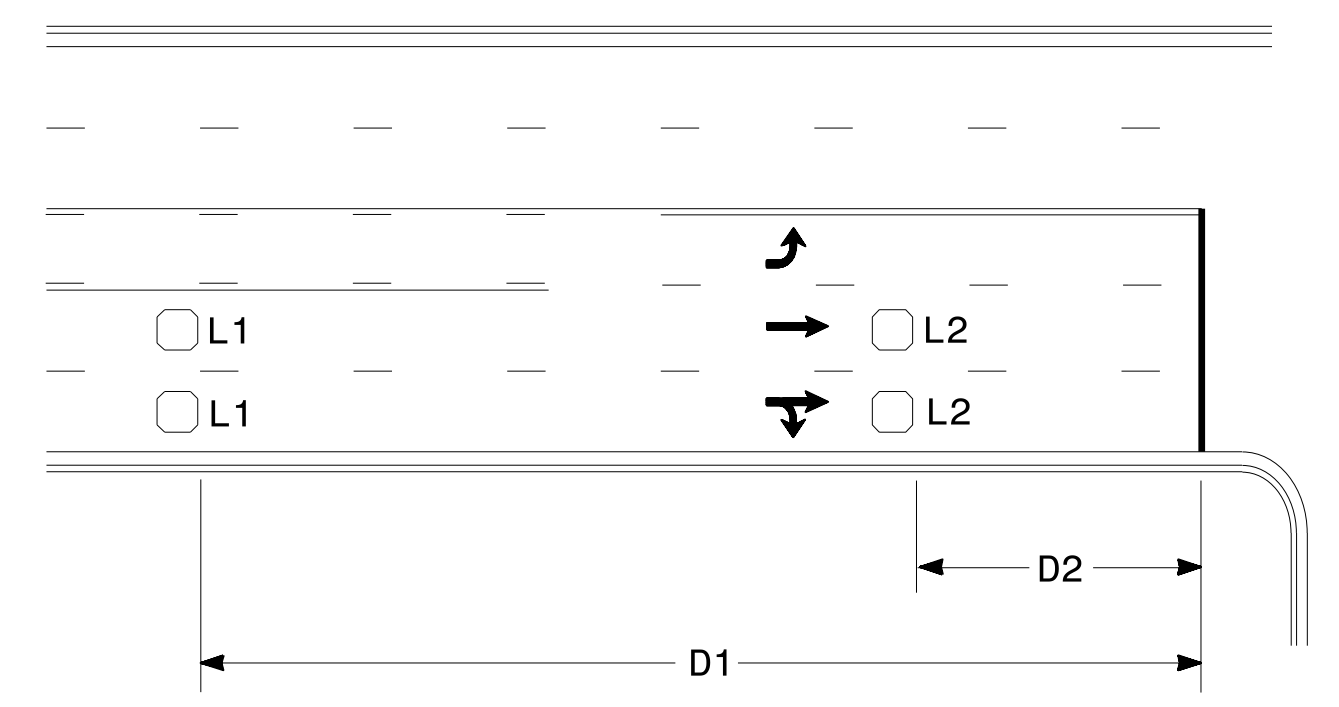


Speed Limit mph	D ft
40	250
45	300
50	355
55	420

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

Volume Density Operation

OR

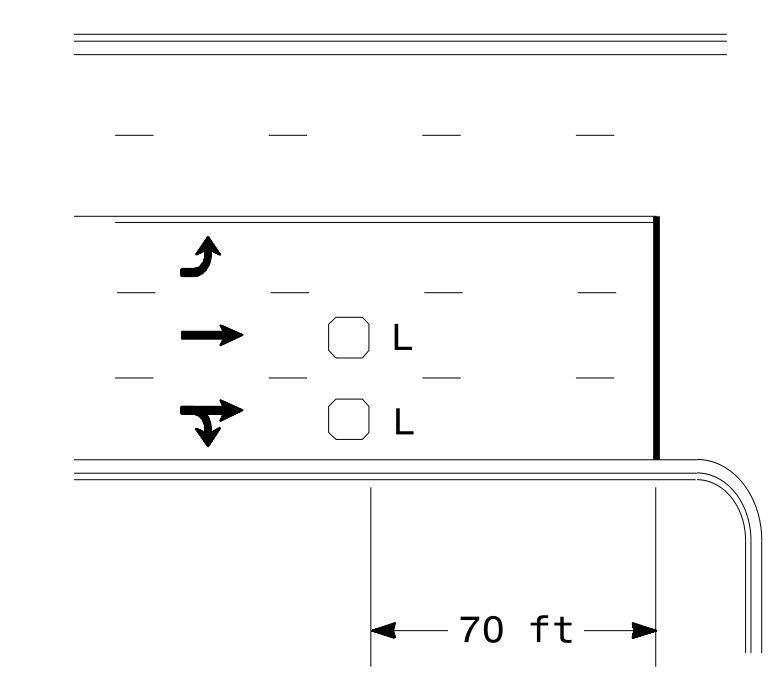


Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

L1 = 6ft X 6ft
Wired in series
L2 = 6ft X 6ft
Wired in series

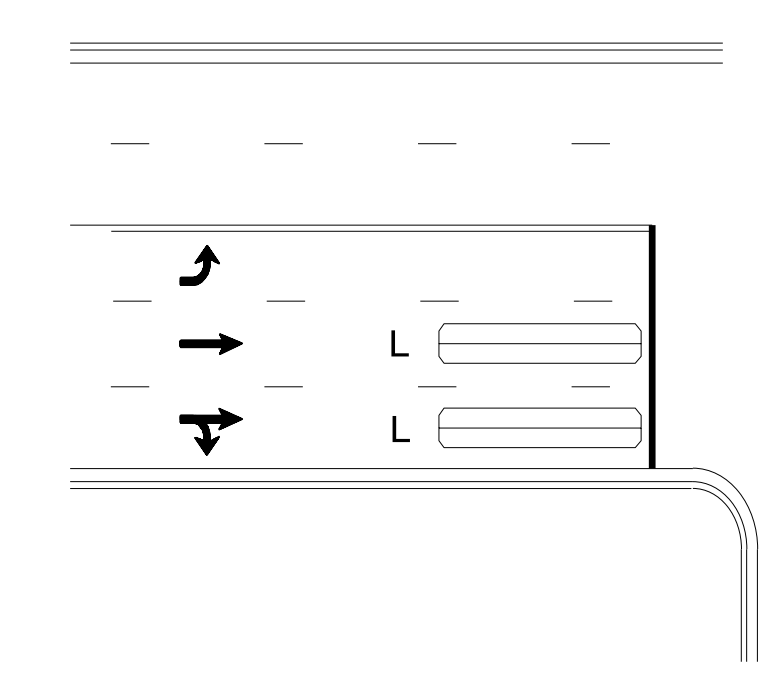
"Stretch" Operation

Low Speed Detection (≤35 mph)



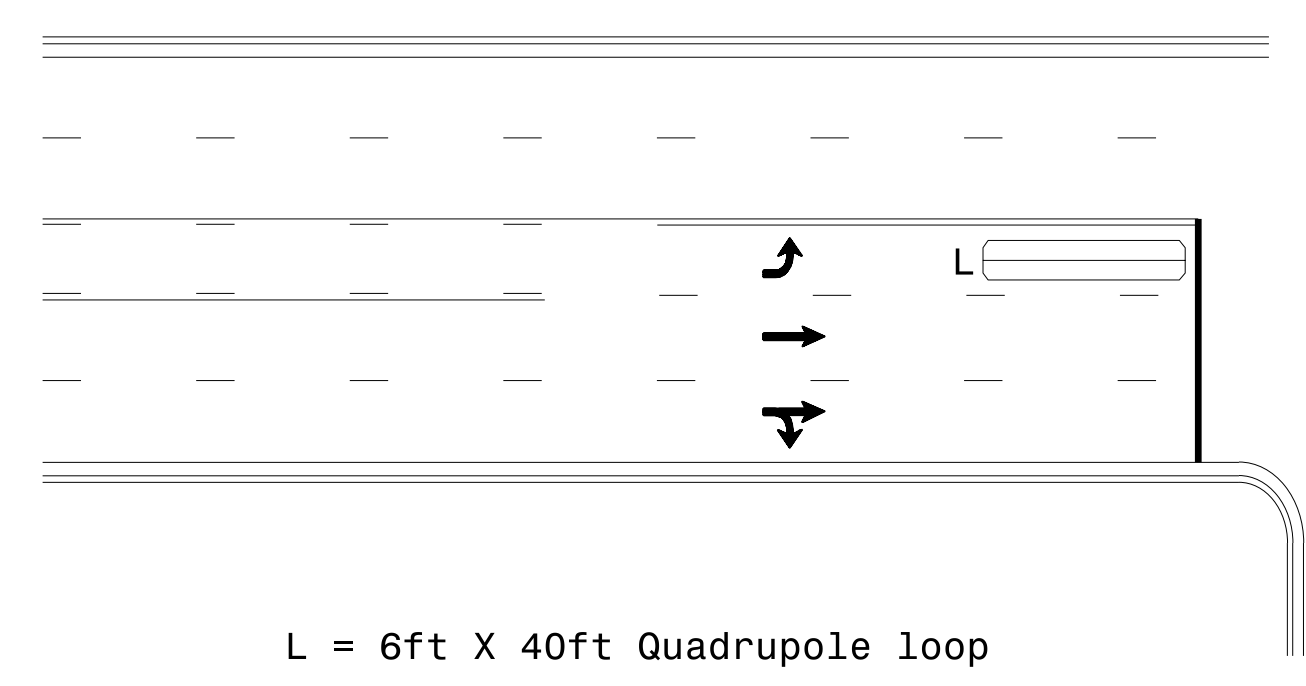
L = 6ft X 6ft
Wired in series

OR



L = 6ft X 40ft
Quadrupole loop, wired separately

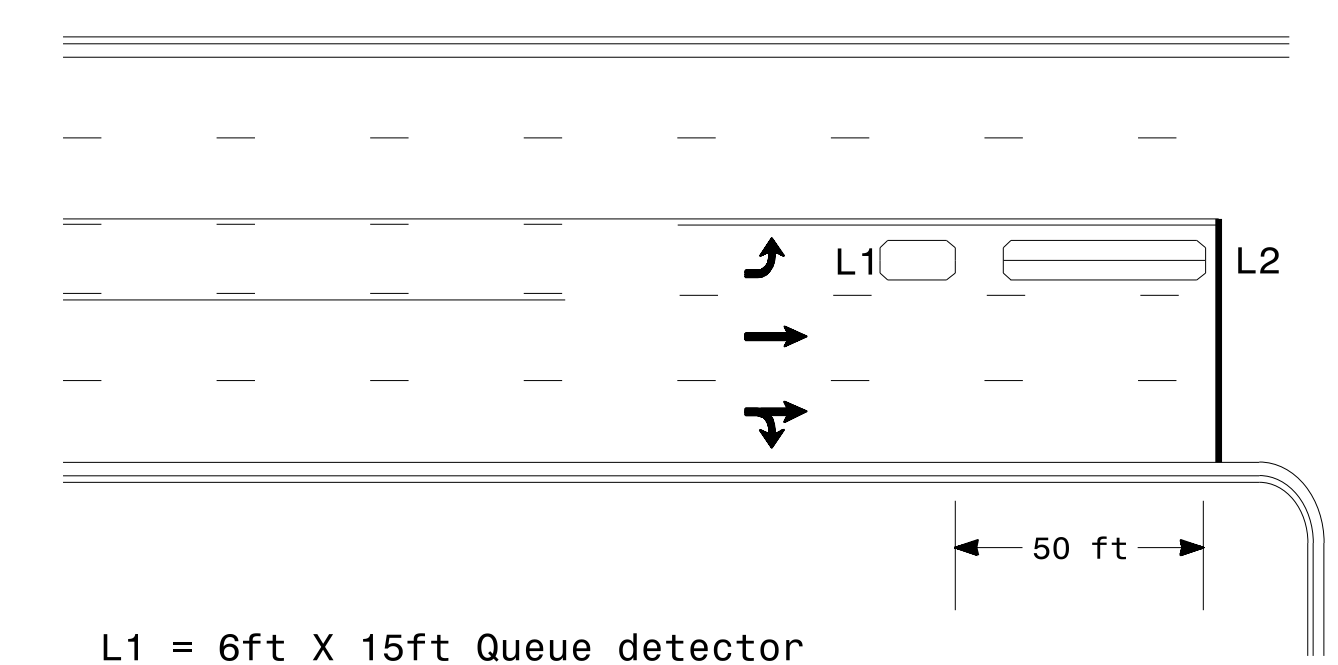
Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

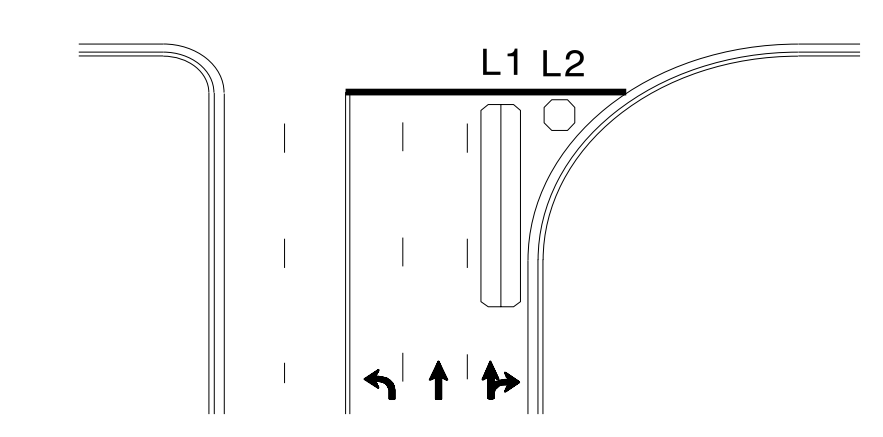
OR



L1 = 6ft X 15ft Queue detector
L2 = 6ft X 40ft Quadrupole loop

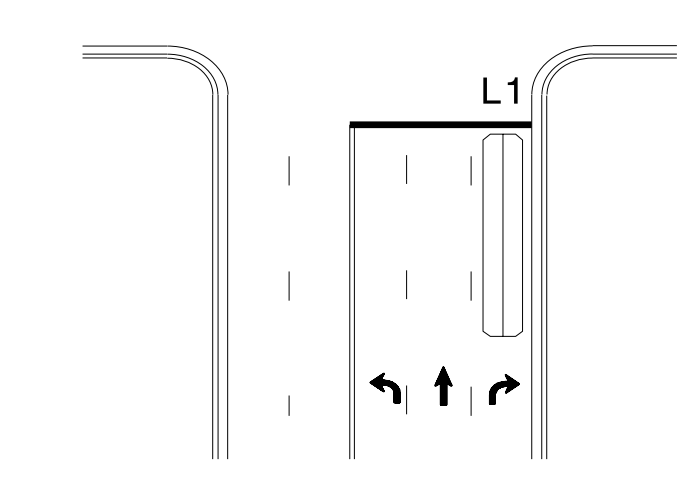
Queue Loop Detection

Right Turn Lane Detection

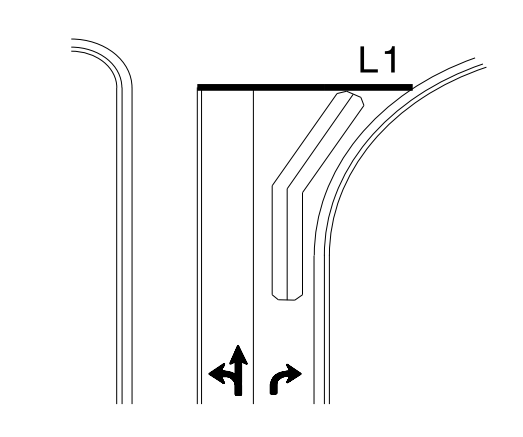


Shared Lane/
Wide Radius Turn

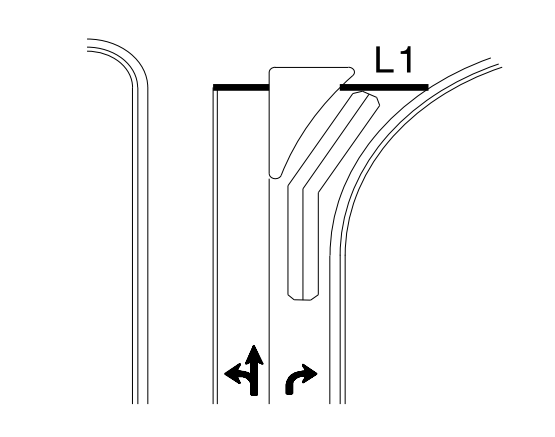
L1 = 6ft X 40ft Quadrupole loop
L2 = 6ft X 6ft [Minimum] Presence loop
Wired separately



Standard Turn

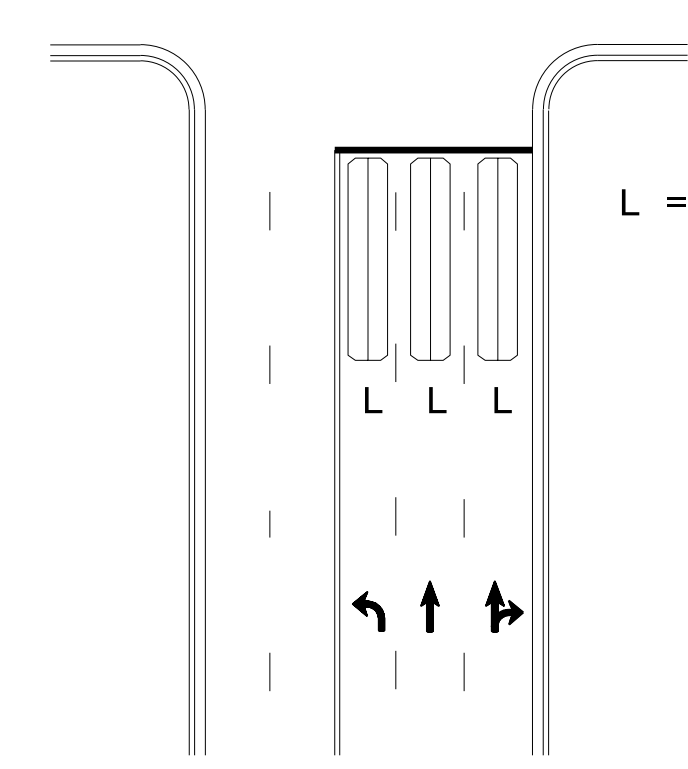


Wide Radius Turn



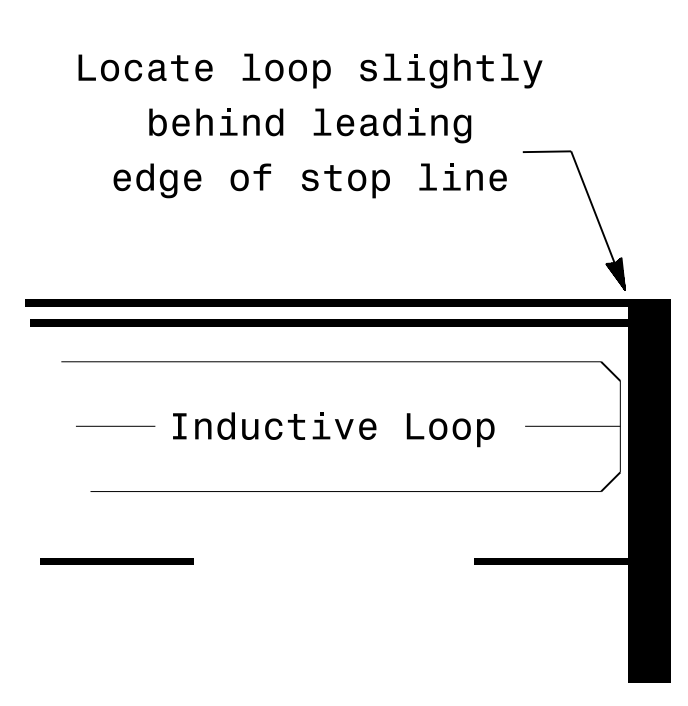
Channelized Turn

Side Street Detection



L = 6ft X 40ft
Quadrupole loop
Wired to separate
detectors/channels

Presence Loop Placement at Stop Lines



Locate loop slightly
behind leading
edge of stop line

Note:
Loop may be located in advance
of stop line under any of the
following conditions:
1) stop line is greater than 15'
from edge of intersecting
roadway
2) loop detects a permissive or
protected/permissive left turn
3) for an exclusive right turn
lane

Recommended Number of Turns

Single 6' X 6' loop
(when wired separately):

Length of Lead-in ft	Number of Turns
< 250	3
250-375	4
375-525	5
> 525	6

Quadrupole loops: Use 2-4-2 turns
6' X 15' Loops:
Lead-in < 150', use 2 turns
Lead-in > 150', use 3 turns

750 N. Greenfield Pkwy, Garner, NC 27529

Typical Signal Loop Locations

PLAN DATE: January 2015	REVIEWED BY: JPG
PREPARED BY: PLA	REVIEWED BY:
REVISIONS	INIT. DATE

SEAL
NORTH CAROLINA
PROFESSIONAL ENGINEER
PAMELA L. ALEXANDER
23489

1/30/2015

3D:\146-2015-12-29
 S:\146\2015-12-29\Signal Design Section\Eastern Region\loop\loop\ypl\ca\2015.dgn
 paalexander

GUIDELINES FOR LANE WIDTHS ON RESURFACING PROJECTS

Contractor shall place the new pavement markings in accordance with this table and detail unless otherwise directed by the Engineer.

TWO LANE - TWO WAY ROADWAY - 55 MPH		
ROADWAY WIDTH	LANE WIDTH	SHOULDER WIDTH
18'	9' *	0'
20'	10' *	0'
22'	10'	1'
24'	10'	2'
26'	11'	2'
28'	12'	2'
32'	12'	4'

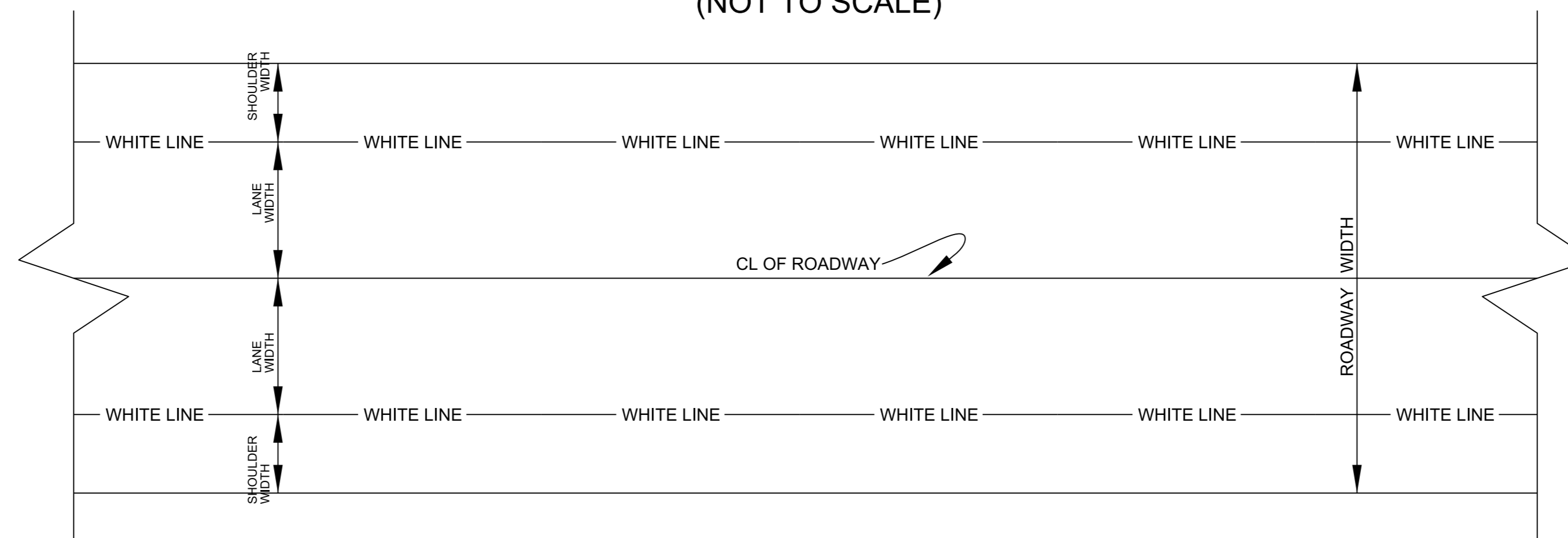
* May vary due to pavement width

TWO LANE - TWO WAY ROADWAY		50
MPH OR LESS		
ROADWAY WIDTH	LANE WIDTH	SHOULDER WIDTH
18'	9' *	0'
20'	10' *	0'
22'	10'	1'
24'	10'	2'
26'	11'	2'
28'	11'	3'
32'	11'	5'

* May vary due to pavement width

SCHEMATIC OF ROADWAY

(NOT TO SCALE)



PROJECT NO.	SHEET NO.	TOTAL NO.
2024CPT.06.06.10091.1		

SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH	WIDTH	BEGIN MP	END MP	1220000000-E	1245000000-E	1260000000-E	1297000000-E	1308000000-E	1330000000-E	1523000000-E	1524000000-E	1575000000-E	1704000000-E	2830000000-N	2845000000-N	7444000000-E	
														INCIDENTAL STONE BASE	SHOULDER RECONSTRUCTION	AGGREGATE SHOULDER BORROW	1½" MILLING	0" TO 3" MILLING	INCIDENTAL MILLING	SURFACE COURSE, S9.5C	LEVELING COURSE, S9.5C	ASPHALT BINDER FOR PLANT MIX	PATCHING EXISTING PAVEMENT	ADJ. OF MANHOLES	ADJ. OF METER OR VALVE BOX	INDUCTIVE LOOP	
														TONS	SMI	TON	SY	SY	SY	TONS	TONS	TONS	TONS	EA	EA	LF	
2024CPT.06.06.10091.1	Bladen	1	NC-211 N / W GREEN ST/E GREEN ST/NC 211 HWY W	FROM BEG C&G (CLARKTON) TO END C&G (CLARKTON)	1	4	MU	NO	NO	1.14	44	14.39	15.53				29,427		1,980	2,769		164	10	32	16	1,200	
TOTAL FOR MAP NO. 1										1.14							29,427		1,980	2,769		164	10	32	16	1,200	
2024CPT.06.06.10091.1	Bladen	2	NC-211	CLARKTON WEST CITY LIMITS TO TWISTED HICKORY RD	2	2	2WU	NO	NO	3.97	32	15.52	19.49	10	7.94	1,310		74,530	6,092	7,112	280	436					
TOTAL FOR MAP NO. 2										3.97				10	7.94	1,310		74,530	6,092	7,112	280	436					
2024CPT.06.06.10091.1	Bladen	3	US-701	COLUMBUS COUNTY LINE TO PERMETER RD	3	2	2WU	NO	NO	0.97	28	0	0.97				16,606		523	1,567		92					
TOTAL FOR MAP NO. 3										0.97							16,606		523	1,567		92					
2024CPT.06.06.10091.1	Bladen	4	US-701	BEG C&G LT TO N. CITY LIMITS OF CLARKTON END C&G	4	5		NO	NO	0.97	60	1.05	2.02				34,144		3,451	3,283		194		14	6	1,200	
TOTAL FOR MAP NO. 4										0.97							34,144		3,451	3,283		194		14	6	1,200	
TOTAL FOR PROJ NO. 2024CPT.06.06.10091.1										7.05				10	7.94	1,310		80,177	74,530	12,046	14,731	280	886	10	46	22	2,400
GRAND TOTAL										7.05				10	7.94	1,310		80,177	74,530	12,046	14,731	280	886	10	46	22	2,400

PROJECT NO.	SHEET NO.	TOTAL NO.
2024CPT.06.06.10091.1		

THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	WIDTH	BEGIN MP	END MP	4413000000-E	4457000000-N	4685000000-E		4688000000-E	4695000000-E	4709000000-E	4720000000-E	4725000000-E								
												WORK ZONE ADVANCE/GENERAL WARNING SIGNING	TEMPORARY TRAFFIC CONTROL	4" X 90 M YELLOW THERMO	4" X 90 M WHITE THERMO	6" X 90 M YELLOW THERMO	8" X 90 M YELLOW THERMO	24" X 90 M WHITE THERMO	THERMO MSG RXR 90 M	THERMO STR & RT ARROW 90 M	THERMO STR & LT ARROW 90 M	THERMO MERGE ARROW (90 MILS)	THERMO RT ARROW 90 M	THERMO LT ARROW 90 M	THERMO STR ARROW 90 M			
												MI	FT			LS	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA
2024CPT.06.06.10091.1	Bladen	1	NC-211 N / W GREEN ST/E GREEN ST/NC 211 HWY W	FROM BEG C&G (CLARKTON) TO END C&G (CLARKTON)	1	4	MU	1.14	44	14.39	15.53	112	1.00	12,038	3,078			130		8	8	6						
TOTAL FOR MAP NO. 1								1.14				112	1	12,038	3,078			130		8	8	6						
2024CPT.06.06.10091.1	Bladen	2	NC-211	CLARKTON WEST CITY LIMITS TO TWISTED HICKORY RD	2	2	2WU	3.97	32	15.52	19.49	304		25,805	42,717			75	8				4					
TOTAL FOR MAP NO. 2								3.97				304		25,805	42,717			75	8			4						
2024CPT.06.06.10091.1	Bladen	3	US-701	COLUMBUS COUNTY LINE TO PERMETER RD	3	2	2WU	0.97	28	0	0.97	112		9,000	12,980													
TOTAL FOR MAP NO. 3								0.97				112		9,000	12,980													
2024CPT.06.06.10091.1	Bladen	4	US-701	BEG C&G LT TO N. CITY LIMITS OF CLARKTON END C&G	4	5		0.97	60	1.05	2.02	110		12,804	3,395	200	330	420	8	3			11	18	10			
TOTAL FOR MAP NO. 4								0.97				110		12,804	3,395	200	330	420	8	3			11	18	10			
TOTAL FOR PROJ NO. 2024CPT.06.06.10091.1								7.05				638	1.000	59,647	62,170	200	330	625	16	11	8	6	15	18	10			
GRAND TOTAL								7.05				638	1.000	59,647	62,170	200	330	625	16	11	8	6	15	18	10			

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	WIDTH	BEGIN MP	END MP	4810000000-E		4815000000-E	4820000000-E	4830000000-E	4835000000-E	4840000000-N	4845000000-N						4891000000-E	4892000000-N	4900000000-N			
												4" YELLOW PAINT	4" WHITE PAINT	6" YELLOW PAINT	8" YELLOW PAINT	16" WHITE PAINT (RXR CROSSBUCK)	24" WHITE PAINT	PAINT MSG RXR	PAINT STR & RT ARROW	PAINT STR & LT ARROW	PAINT STR ARROW	PAINT RT ARROW	PAINT LT ARROW	16" X 90 M WHITE THERMO(RXR CROSSBUCK)	THERMO RXR CHARACTERS 90 M	YELLOW & YELLOW MARKERS	CRYSTAL & RED MARKERS			
												LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
2024CPT.06.06.10091.1	Bladen	1	NC-211 N / W GREEN ST/E GREEN ST/NC 211 HWY W	FROM BEG C&G (CLARKTON) TO END C&G (CLARKTON)	1	4	MU	1.14	44	14.39	15.53	12,038	3,078					130		8	8	6					80	160		
TOTAL FOR MAP NO. 1								1.14				12,038	3,078					130		8	8	6					80	160		
2024CPT.06.06.10091.1	Bladen	2	NC-211	CLARKTON WEST CITY LIMITS TO TWISTED HICKORY RD	2	2	2WU	3.97	32	15.52	19.49	25,805	42,717			80	75	8					3			80	8	278	20	
TOTAL FOR MAP NO. 2								3.97				25,805	42,717			80	75	8					3			80	8	278	20	
2024CPT.06.06.10091.1	Bladen	3	US-701	COLUMBUS COUNTY LINE TO PERMETER RD	3	2	2WU	0.97	28	0	0.97	9,000	12,980														87			
TOTAL FOR MAP NO. 3								0.97				9,000	12,980															87		
2024CPT.06.06.10091.1	Bladen	4	US-701	BEG C&G LT TO N. CITY LIMITS OF CLARKTON END C&G	4	5		0.97	60	1.05	2.02	12,804	3,395	200	330	80	420	8	3			10	11	18	80	8	118	155		
TOTAL FOR MAP NO. 4								0.97				12,804	3,395	200	330	80	420	8	3			10	11	18	80	8	118	155		
TOTAL FOR PROJ NO. 2024CPT.06.06.10091.1								7.05				59,647	62,170	200	330	160	625	16	11	8	16	14	18	160	16	563	335			
GRAND TOTAL								7.05				59,647	62,170	200	330	160	625	16	11	8	16	14	18	160	16	563	335			