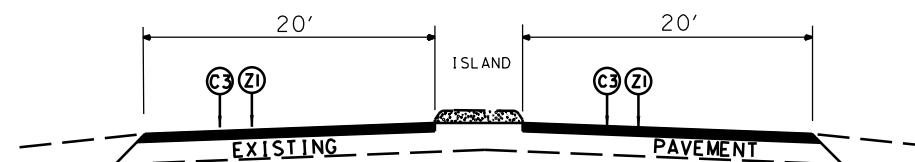


TYPICAL SECTION NO. 1

Map 1 - 0+00 to 133+50
 Map 3 - Entire Map
 Map 4 - Entire Map
 Maps 41 thru 46 Entire Map

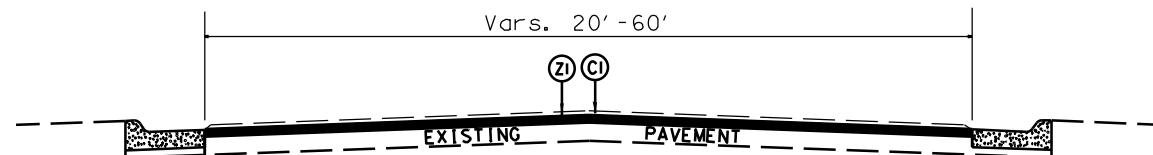
** Note: Map 4 Section between 17+65 to 40+15 to be skipped due to widening by devel. ops.



TYPICAL SECTION NO. 4

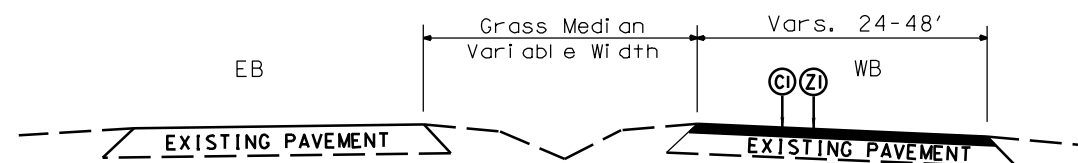
MAP 48 - 0+00 to 3+25

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 1" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD.
C3	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
Z1	MILL EXST. ASPHALT PAVEMENT APPROX. 1 1/2" IN DEPTH
T	SHOULDER RECONSTRUCTION, WIDTH VARIES 2'-6'
Y1	INCIDENTAL MILLING



TYPICAL SECTION NO. 2

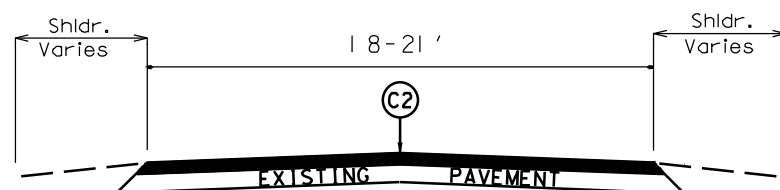
Map 1 - 133+50 to 138+50
 Map 2 - Entire Map
 Maps 6 thru 34 - Entire Map
 Map 39 - Entire Map
 Map 40 - Entire Map
 Map 47 - Entire Map



TYPICAL SECTION NO. 5

MAP 54 - Entire Map

** No work proposed for EB Lanes



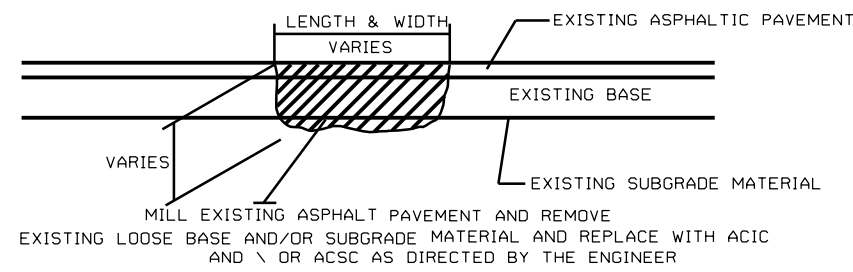
TYPICAL SECTION NO. 3

Map 5 - Entire Map
 Maps 35 thru 38 - Entire Map
 Map 48 - 3+25 to 27+46
 Maps 49 thru 53 - Entire Map

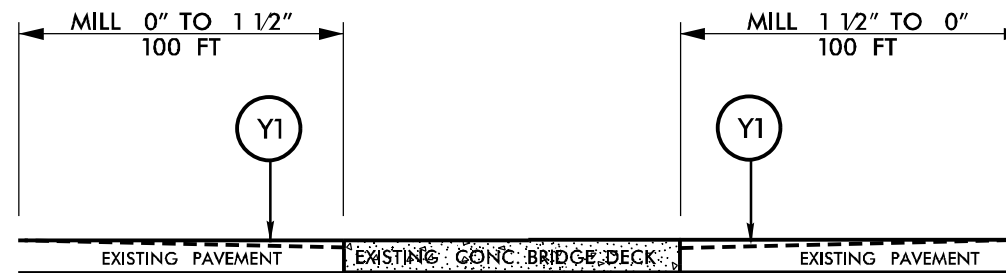
Checked by:

Drawn by: G. Brittain

DETAIL A
PATCHING EXISTING PAVEMENT



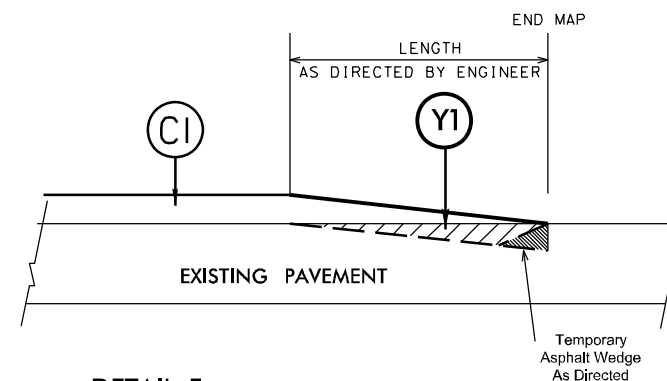
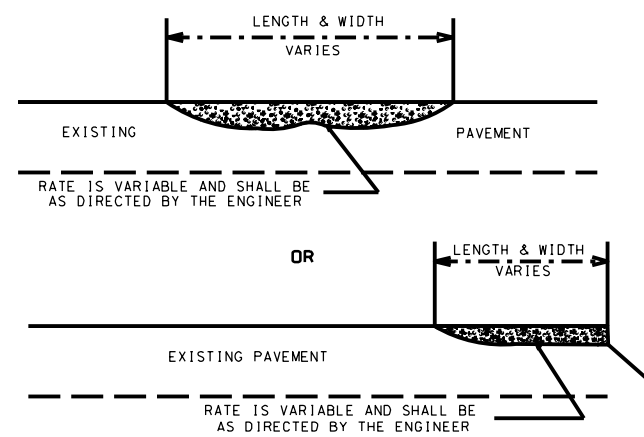
DETAIL D
MILLING BRIDGE APPROACHES



PAVEMENT SCHEDULE

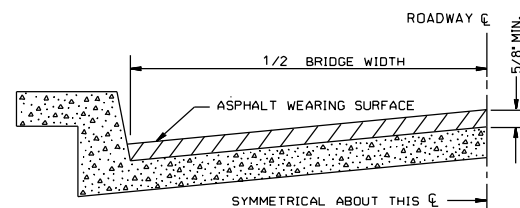
C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 1" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD.
C3	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
Z1	MILL EXST. ASPHALT PAVEMENT APPROX. 1 1/2" IN DEPTH
T	SHOULDER RECONSTRUCTION, WIDTH VARIES 2'-6"
Y1	INCIDENTAL MILLING

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



DETAIL E
TIE-IN (INCIDENTAL) MILLING DETAIL

DETAIL C
BRIDGE HALF TYPICAL SECTION

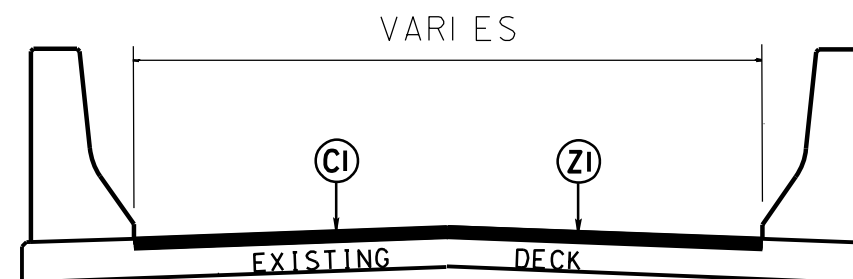


FOR BRIDGES WITH FLOOR DRAINS, CARE SHALL BE EXERCISED IN PLACING THE WEARING SURFACE AROUND FLOOR DRAINS SO AS NOT TO HINDER EFFECTIVE DRAINAGE. ALL DRAINS SHALL BE LEFT OPEN.

THE PROPOSED WEARING SURFACE SHALL VARY IN THICKNESS AS NECESSARY TO PROVIDE A SMOOTH RIDING SURFACE. A THICKNESS OF NOT LESS THAN 5/8" SHALL BE PROVIDED. THE MAXIMUM THICKNESS SHALL PREFERABLY BE 1-1/2" UNLESS IT IS IMPRACTICAL TO PROVIDE A SMOOTH RIDING SURFACE OTHERWISE.

NOTES

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



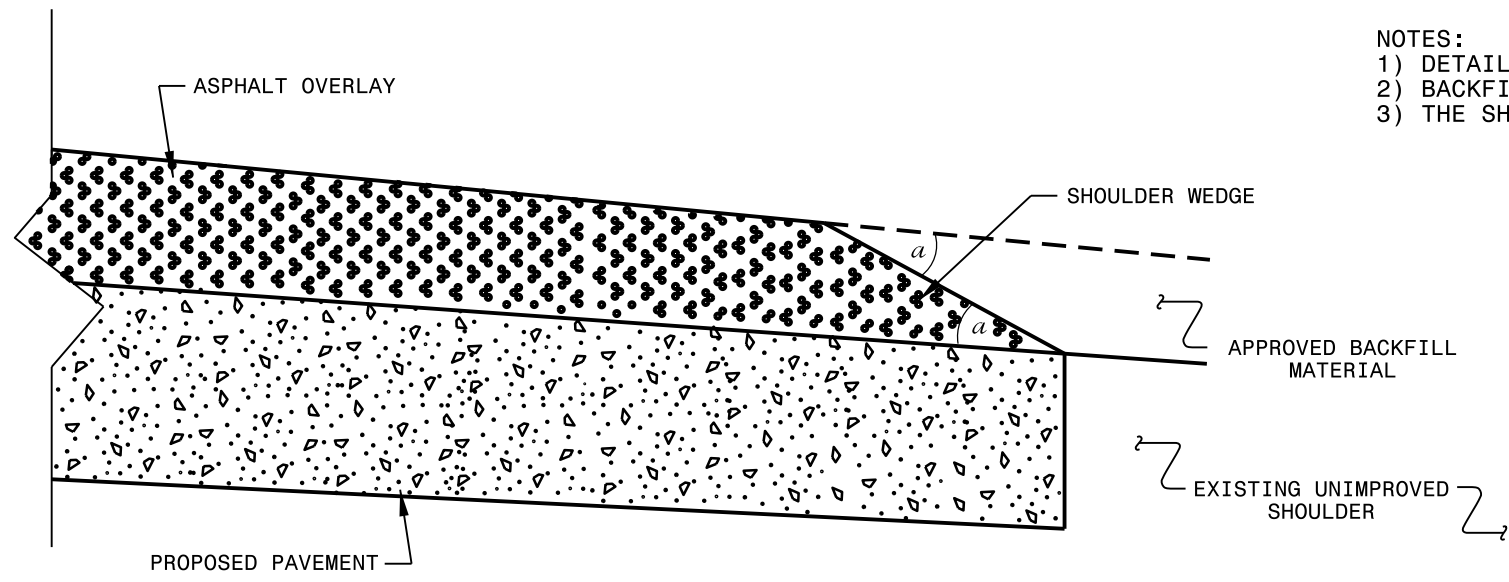
ASPHALT BRIDGE SECTION

Use for all asphalt bridges

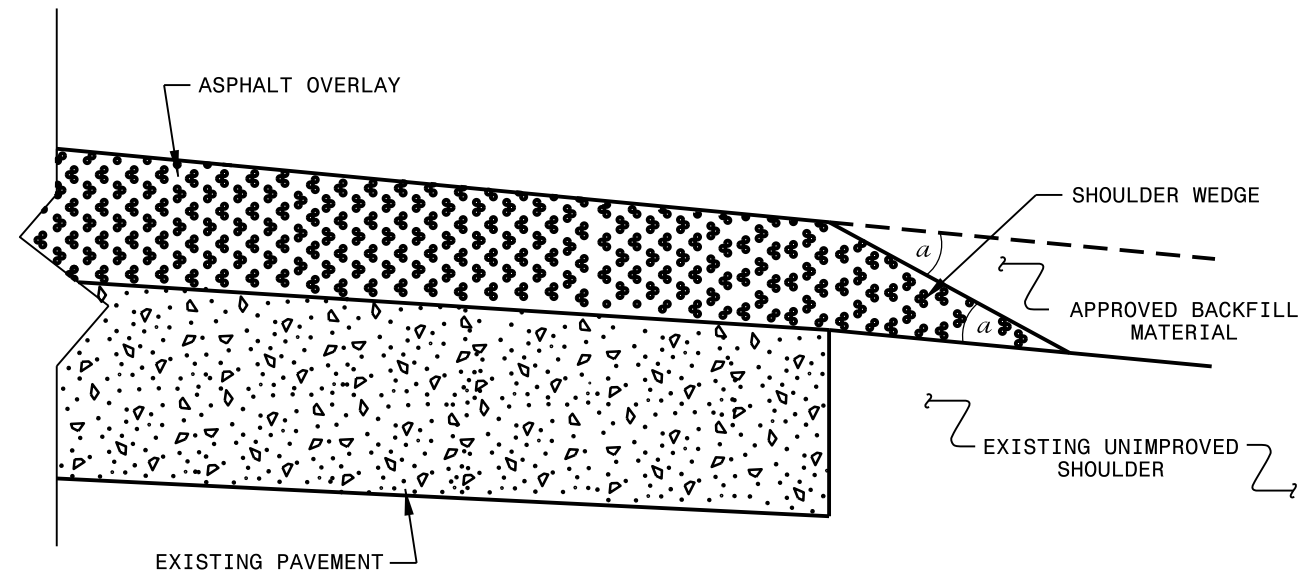
Checked by:

Drawn by: G. Brittain

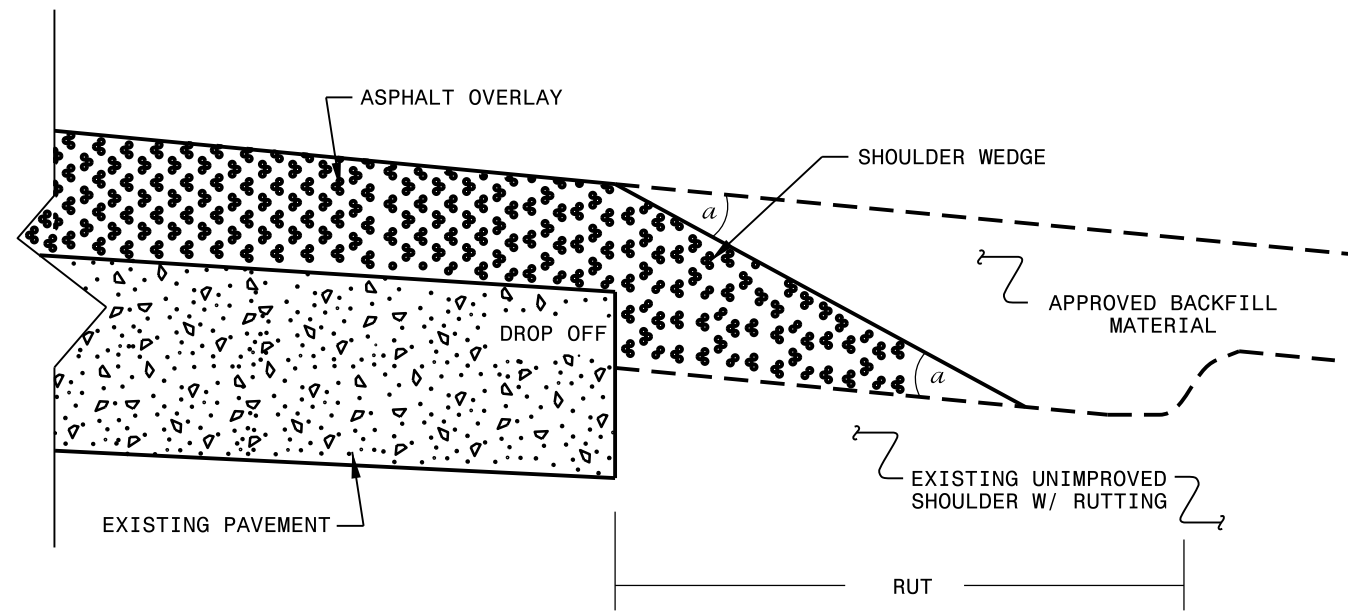
- NOTES:
 1) DETAIL DOES NOT APPLY TO OGAFB AND ULTRA-THIN BONDED WEARING COURSE.
 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS AND SIDE STREETS.



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



SHOULDER WEDGE DETAIL
 (Resurfacing Projects w/ NO Widening)



SHOULDER WEDGE DETAIL
 (Resurfacing Adjacent to
 Rutted Shoulder)

- SHOULDER WEDGE ANGLE = 30°

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

PROJECT NO.	SHEET NO.	TOTAL NO.
2025CPT.12.02.10181, 2025CPT.12.02.20181	16	

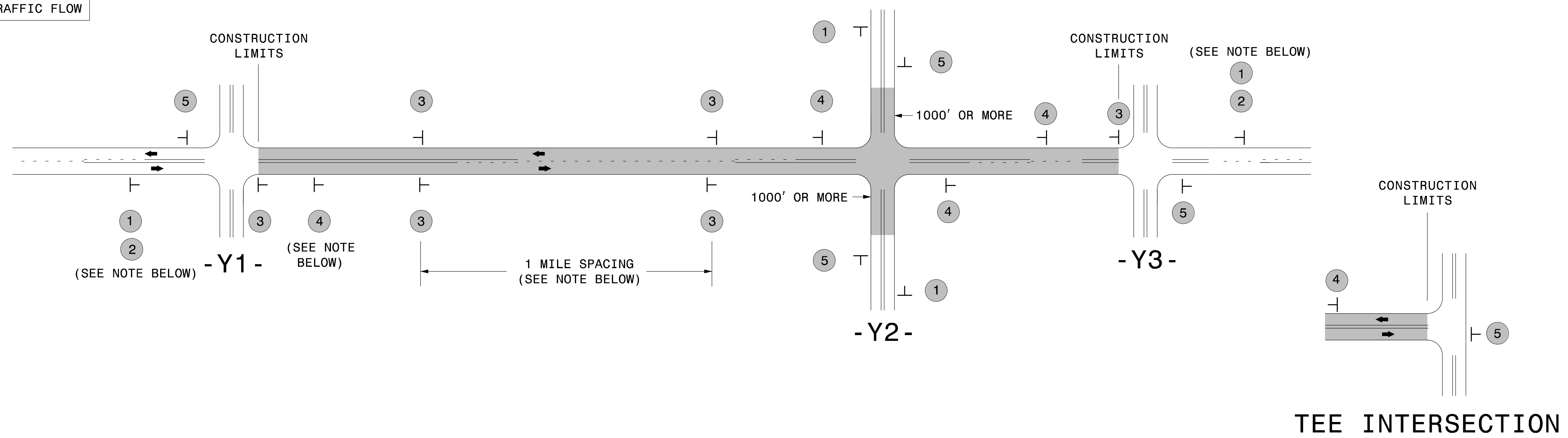
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	WIDTH	BEGIN MP	END MP	481000000-E		483500000-E		484500000-N			487000000-E	487500000-N	489500000-N
												4" YELLOW PAINT	4" WHITE PAINT	24" WHITE PAINT	PAINT LT ARROW	PAINT RT ARROW	PAINT STR ARROW	24" LINE REMOVAL	REMOVAL OF PAVEMENT MARKING SYMBOLS & CHARACTERS	POLY-CARBONATE H-SHAPED PAVEMENT MARKERS	
								MI	FT												
2025CPT.12.02.20181	Catawba	31	SR-2796 / CAMDEN POINTE DR	FROM SR 1838 (ISLAND POINTE RD) TO CUL-DE-SAC	2	2	2WU	0.35	22	0	0.35										
2025CPT.12.02.20181	Catawba	32	SR-2797 / BELLE PINES CT	FROM SR 2796 (CAMDEN POINTE DR) TO CUL-DE-SAC	2	2	2WU	0.12	22	0	0.12										
2025CPT.12.02.20181	Catawba	33	SR-2795 / TRENT PINES CT	FROM SR 1838 (ISLAND POINTE DR) TO CUL-DE-SAC	2	2	2WU	0.15	22	0	0.15										
2025CPT.12.02.20181	Catawba	34	SR-2763 / HARBOUR POINTE CT	FROM SR 1838 (ISLAND POINTE RD) TO CUL-DE-SAC	2	2	2WU	0.09	22	0	0.09										
2025CPT.12.02.20181	Catawba	35	SR-2711 / FLAT ROCK RD	FROM SR 1848 (SHERRILLS FORD RD) TO SR 2712 (SLATE ST)	3	2	2WU	0.2	19	0	0.2										
2025CPT.12.02.20181	Catawba	36	SR-2712 / SLATE ST	FROM CUL-DE-SAC TO END PVMT	3	2	2WU	0.14	18	0	0.14										
2025CPT.12.02.20181	Catawba	37	SR-2764 / GRANITE ST	FROM SR 1848 (SHERRILLS FORD RD) TO CUL-DE-SAC	3	2	2WU	0.46	21	0	0.46										
2025CPT.12.02.20181	Catawba	38	SR-2799 / MAYFLOWER CT	FROM SR 2764 (GRANITE ST) TO CUL-DE-SAC	3	2	2WU	0.09	20	0	0.09										
2025CPT.12.02.20181	Catawba	39	SR-2793 / KISER COMMONS DR	FROM SR 1841 (KISER ISLAND RD) TO SR 2794 (KISER COVE LN)	2	2	2WU	0.14	20	0	0.14										
2025CPT.12.02.20181	Catawba	40	SR-2794 / KISER COVE LN	FROM END MAINT TO END MAINT	2	2	2WU	0.07	20	0	0.07										
2025CPT.12.02.20181	Catawba	41	SR-1956 / GREGORY RD	FROM SR 1848 (SHERRILLS FORD RD) TO END MAINT	1	2	2WU	0.4	19	0	0.4										
2025CPT.12.02.20181	Catawba	42	SR-2644 / WINALDA AV	FROM SR 1956 (GREGORY RD) TO END MAINT	1	2		0.13	21	0	0.13										
2025CPT.12.02.20181	Catawba	43	SR-2103 / STILLWATER DR	FROM SR 1844 (SLANTING BRIDGE RD) TO END MAINT	1	2	2WU	0.31	20	0	0.31							152	4		
2025CPT.12.02.20181	Catawba	44	SR-1781 / STEWART RD/ OVERLOOK DR	FROM SR 1706 (BOLICK RD) TO CUL-DE-SAC	1	2	2WU	1.11	20	0	1.11	23,450	23,450								
2025CPT.12.02.20181	Catawba	45	SR-1785 / CRESTSIDE ST	FROM SR 1781 (STEWART RD) TO DEAD END	1	2	2WU	0.83	20	0	0.83	17,550	17,550								
2025CPT.12.02.20181	Catawba	46	SR-1786 / LONGFIELD ST	FROM SR 1785 (CRESTSIDE ST) TO DEAD END	1	2	2WU	0.2	20	0	0.2										
2025CPT.12.02.20181	Catawba	47	SR-2777 / NATHANIAL ST	FROM SR 1880 (ST JAMES CHURCH RD) TO CUL-DE-SAC	2	2	2WU	0.17	20	0	0.17										
2025CPT.12.02.20181	Catawba	48	SR-2131 / OVERBROOK DR	FROM SR 1544 (ADAMS ST) TO SR 2129 (SUGAR MAPLE LN)	3,4	2	2WU	0.52	20	0	0.52										
2025CPT.12.02.20181	Catawba	49	SR-2129 / SUGAR MAPLE LN	FROM SR 2131 (OVERBROOK DR) TO CUL-DE-SAC	3	2	2WU	0.17	20	0	0.17										
2025CPT.12.02.20181	Catawba	50	SR-2130 / SPRING BRANCH CT	FROM SR 2129 (SUGAR MAPLE LN) TO CUL-DE-SAC	3	2	2WU	0.08	20	0	0.08										
2025CPT.12.02.20181	Catawba	51	SR-2356 /2366/2200/ DANIAL ST	FROM SR 1544 (ADAMS ST) TO CUL-DE-SAC	3	2	2WU	0.4	20	0	0.4										
2025CPT.12.02.20181	Catawba	52	SR-2200 / LESTER ST	FROM SR 1544 (ADAMS ST) TO SR 2356 (DANIAL ST)	3	2	2WU	0.27	20	0	0.27										
2025CPT.12.02.20181	Catawba	53	SR-2365 / WILLOW RIDGE ST	FROM SR 2200 (LESTER ST) TO SR 2131 (OVERBROOK DR)	3	2	2WU	0.37	20	0	0.37										
2025CPT.12.02.20181	Catawba	54	SR-1692 / TATE BLVD SE	FROM SR 1468 (21ST ST SE) TO SR 1007 (LR BLVD)	5	2	2WU	1.54	24-48	0	1.54										150
TOTAL FOR PROJ NO. 2025CPT.12.02.20181								18.13				93,200	93,200	40	2	2	2	260	8	250	
												186,400			6						
GRAND TOTAL								20.75				93,200	93,200	40	2	2	2	330	19	450	
												186,400			6						

SIGNING FOR RESURFACING PROJECTS

LEGEND

┆ STATIONARY SIGN

← DIRECTION OF TRAFFIC FLOW



MAINLINE (-L-) SIGNING

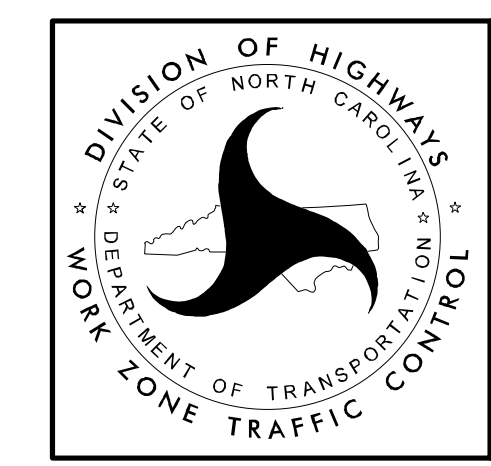
-Y- LINE SIGNING

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.	

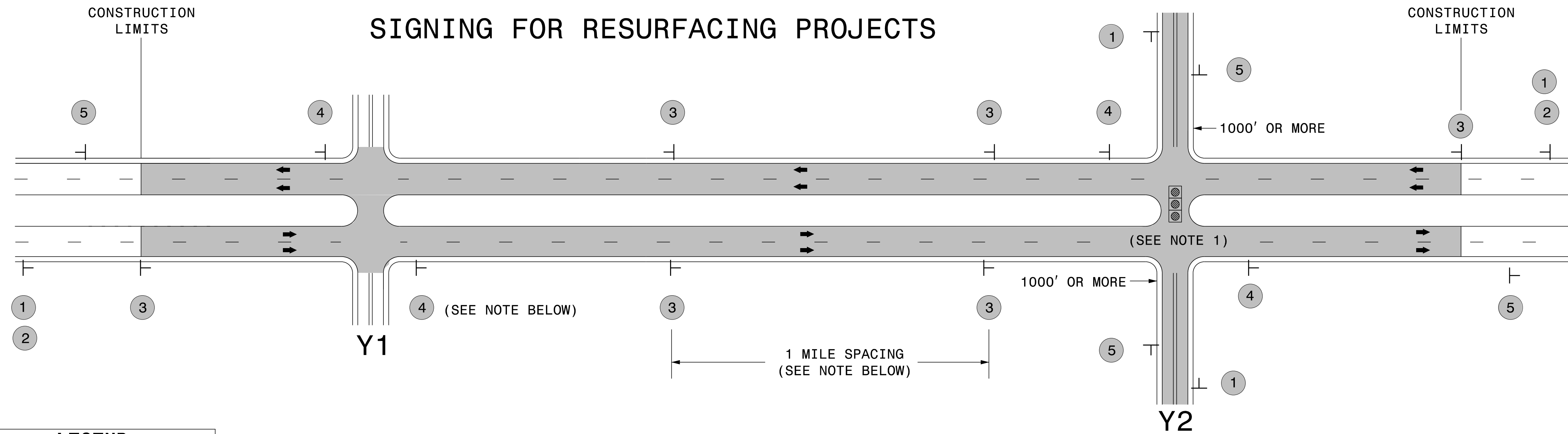
THE ABOVE SIGNS ARE ALL THAT ARE REQUIRED FOR A CONTRACTOR TO BEGIN A RESURFACING CONTRACT. ANY ADDITIONAL SIGNS REQUESTED BY NCDOT DIVISIONS SHALL BE INSTALLED WITHIN 7 BUSINESS DAYS OF THE START OF CONTRACT WORK.

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

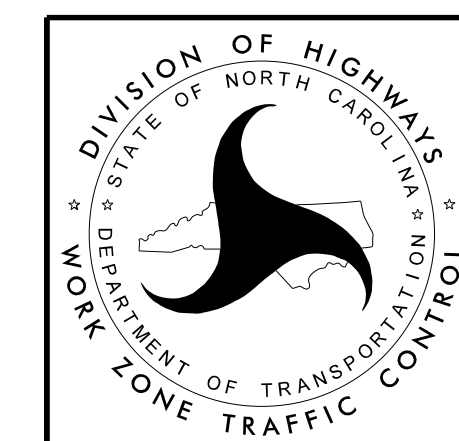


LEGEND	
┆	STATIONARY SIGN
←	DIRECTION OF TRAFFIC FLOW

MAINLINE (-L-) SIGNING

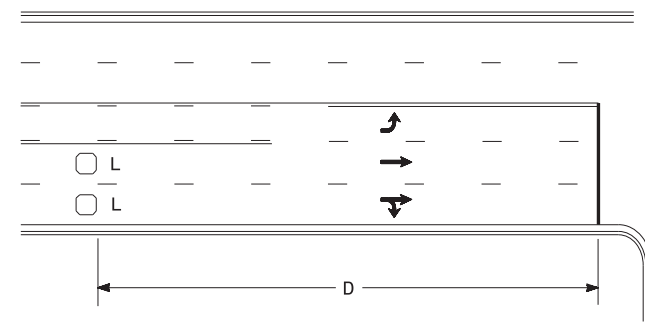
-Y- LINE SIGNING

SIGNING NOTES AND PLACEMENT PER DIRECTION	MAINLINE (-L-) SIGNING		-Y- LINE SIGNING	
	1	 <small>W20-1 48" X 48"</small>	<p>PLACE 1000' PRIOR TO BEGINNING OF CONSTRUCTION LIMITS. ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000' ALONG -Y- LINE.</p>	<p>NO REQUIRED STATIONARY SIGNING FOR THE FOLLOWING -Y- LINE CONDITIONS:</p> <ol style="list-style-type: none"> 1) LESS THAN 1000' OF RESURFACING ALONG -Y- LINE 2) SUBDIVISION ROADS 3) DEAD END ROADS <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>
	2	 <small>W7-3aP 24" X 18"</small>	<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>	
	3	 <small>SP 13107 48" X 48"</small>	<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>	
	4	 <small>SP 13106 48" X 48"</small>	<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>	
5	 <small>G20-2 A 48" X 24"</small>	<p>PLACE 500' FOLLOWING THE END OF CONSTRUCTION LIMITS.</p>		
			<p>NOTES:</p> <ol style="list-style-type: none"> 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**

High Speed Detection (≥40 mph)

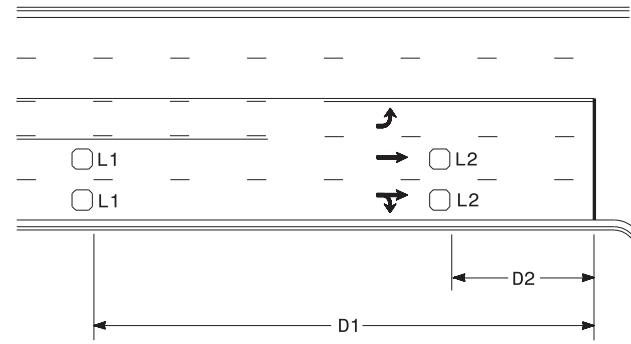


Speed Limit mph	D ft
40	250
45	300
50	355
55	420

L = 6ft X 6ft
Wired separately

Volume Density Operation

OR

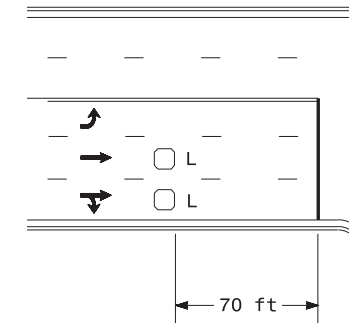


Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

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

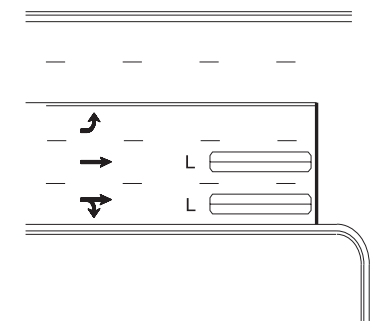
"Stretch" Operation

Low Speed Detection (≤35 mph)



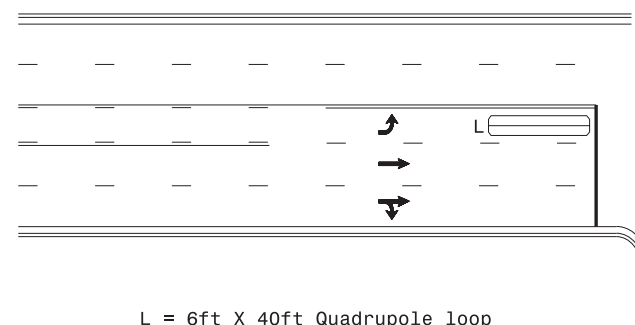
L = 6ft X 6ft
Wired in series

OR



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

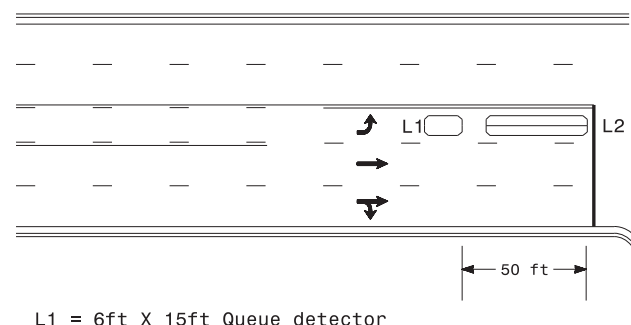
Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

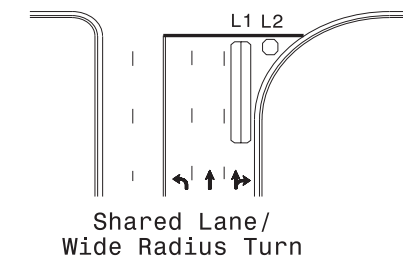
OR



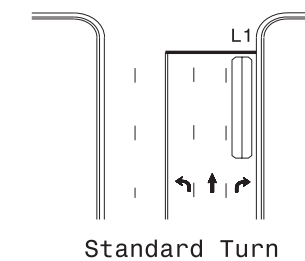
L1 = 6ft X 15ft Queue detector
L2 = 6ft X 40ft Quadrupole loop

Queue Loop Detection

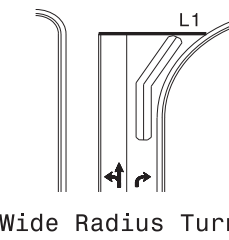
Right Turn Lane Detection



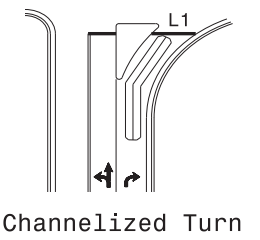
L1 = 6ft X 40ft Quadrupole loop
L2 = 6ft X 6ft [Minimum] Presence loop
Wired separately



Standard Turn

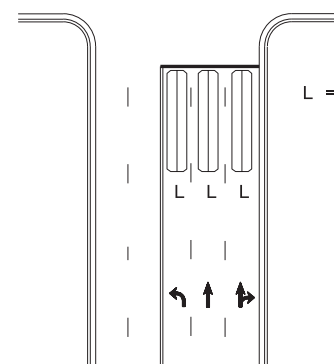


Wide Radius Turn



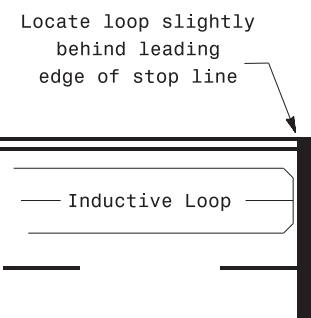
Channelized Turn

Side Street Detection



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

Presence Loop Placement at Stop Lines



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

	Typical Signal Loop Locations		
	PLAN DATE: September 2020 PREPARED BY: PLA	REVIEWED BY: JPG REVIEWED BY:	
REVISIONS		INIT. DATE	DATE: 9/8/2020 SIG. INVENTORY NO.