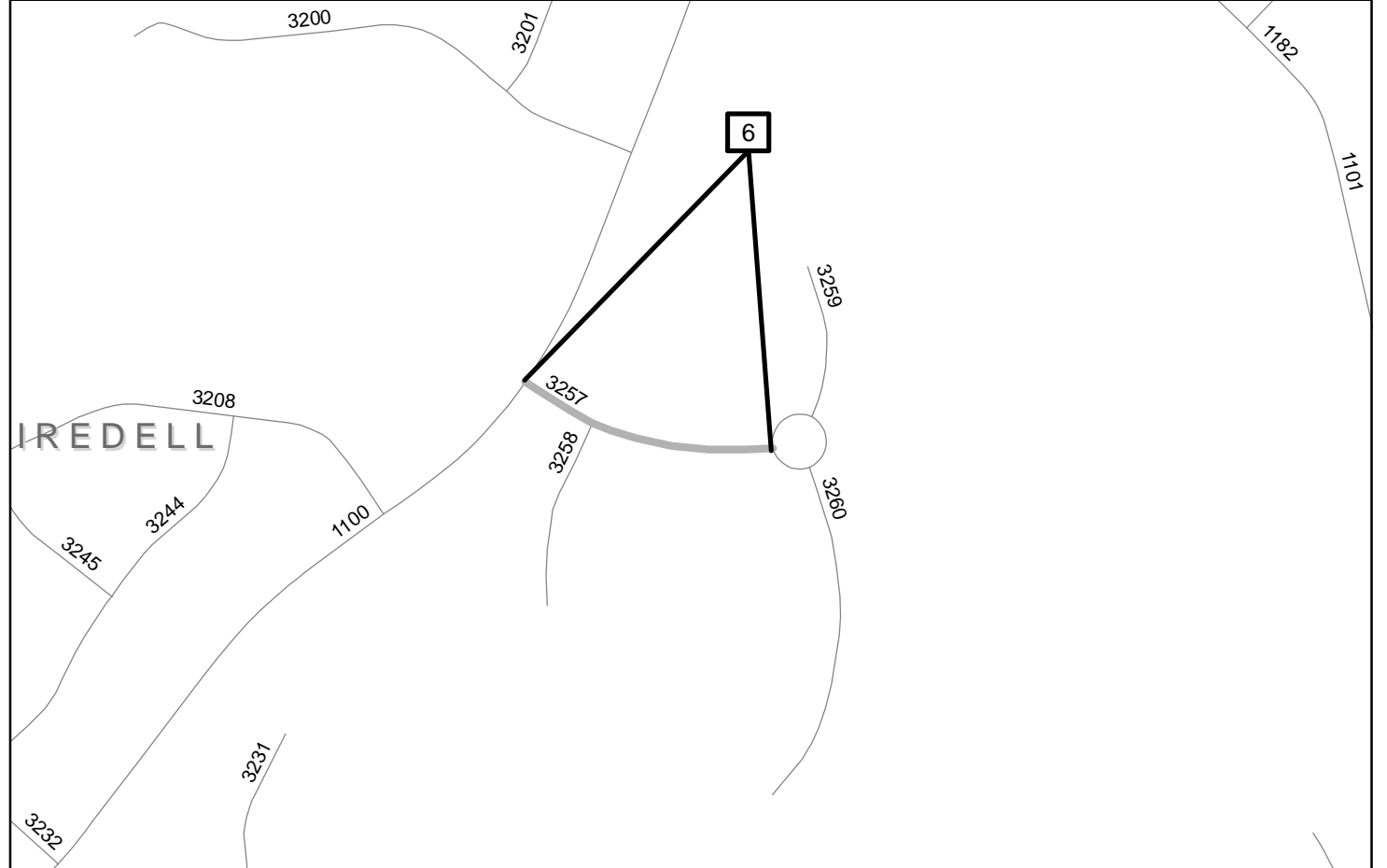
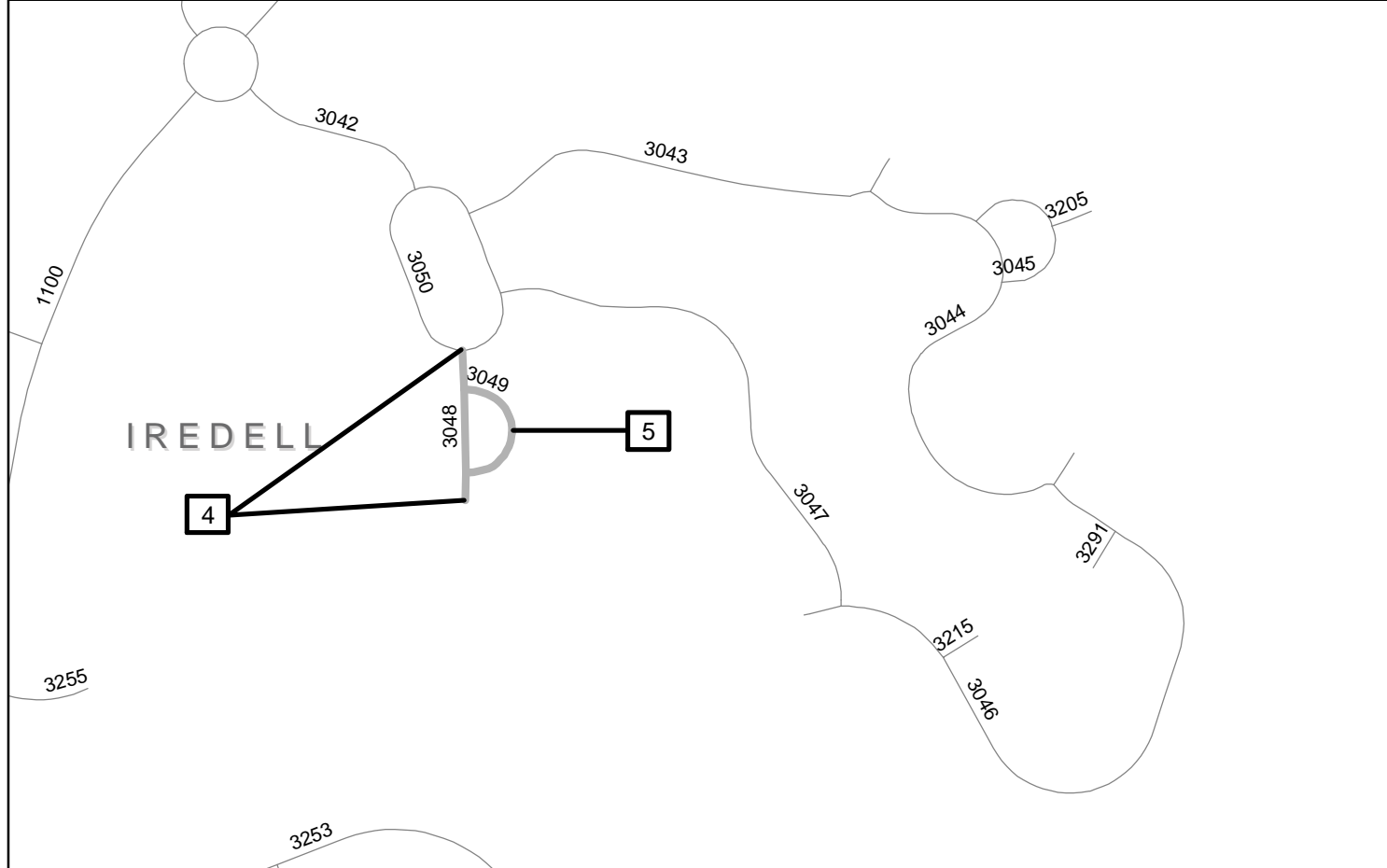
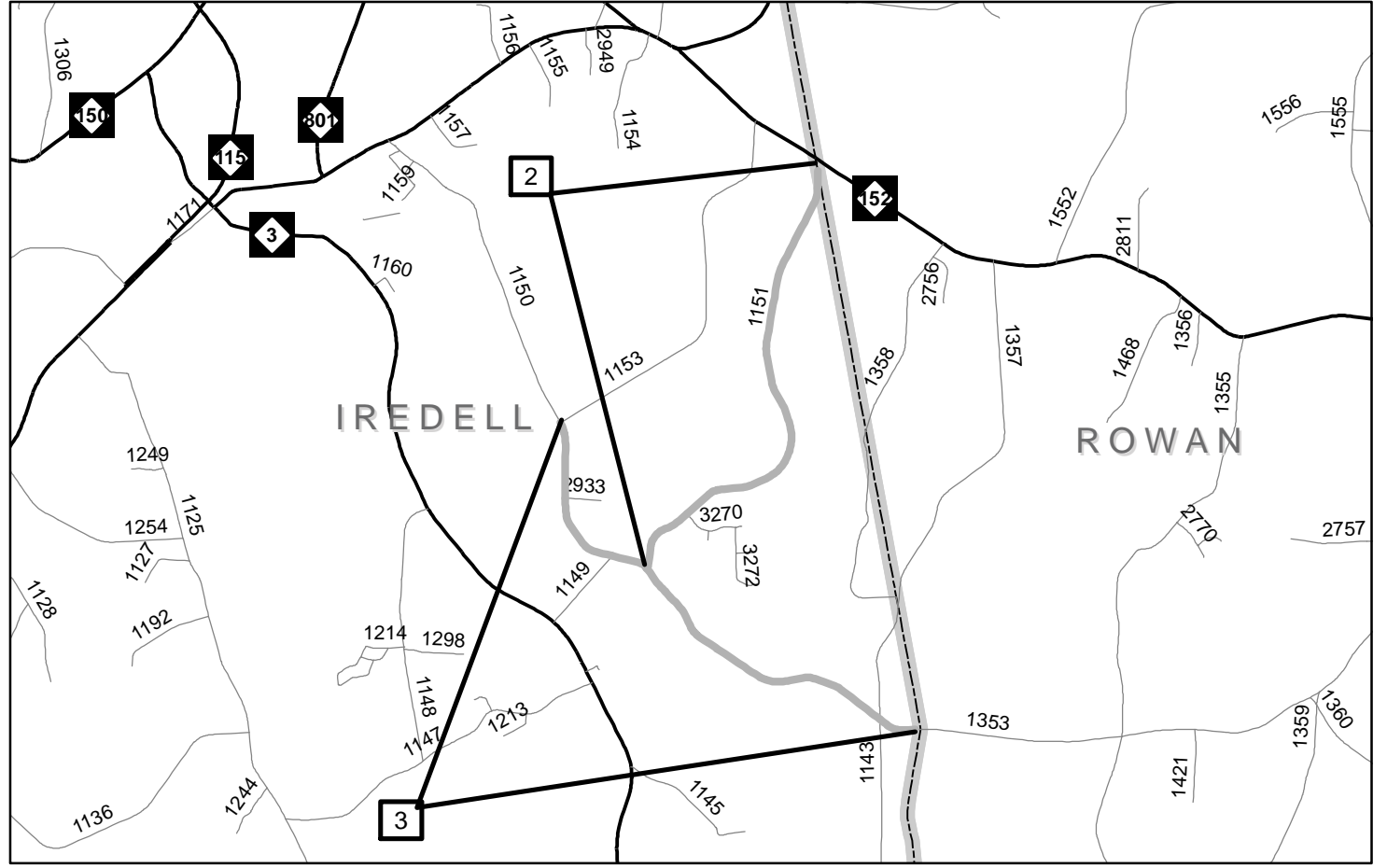
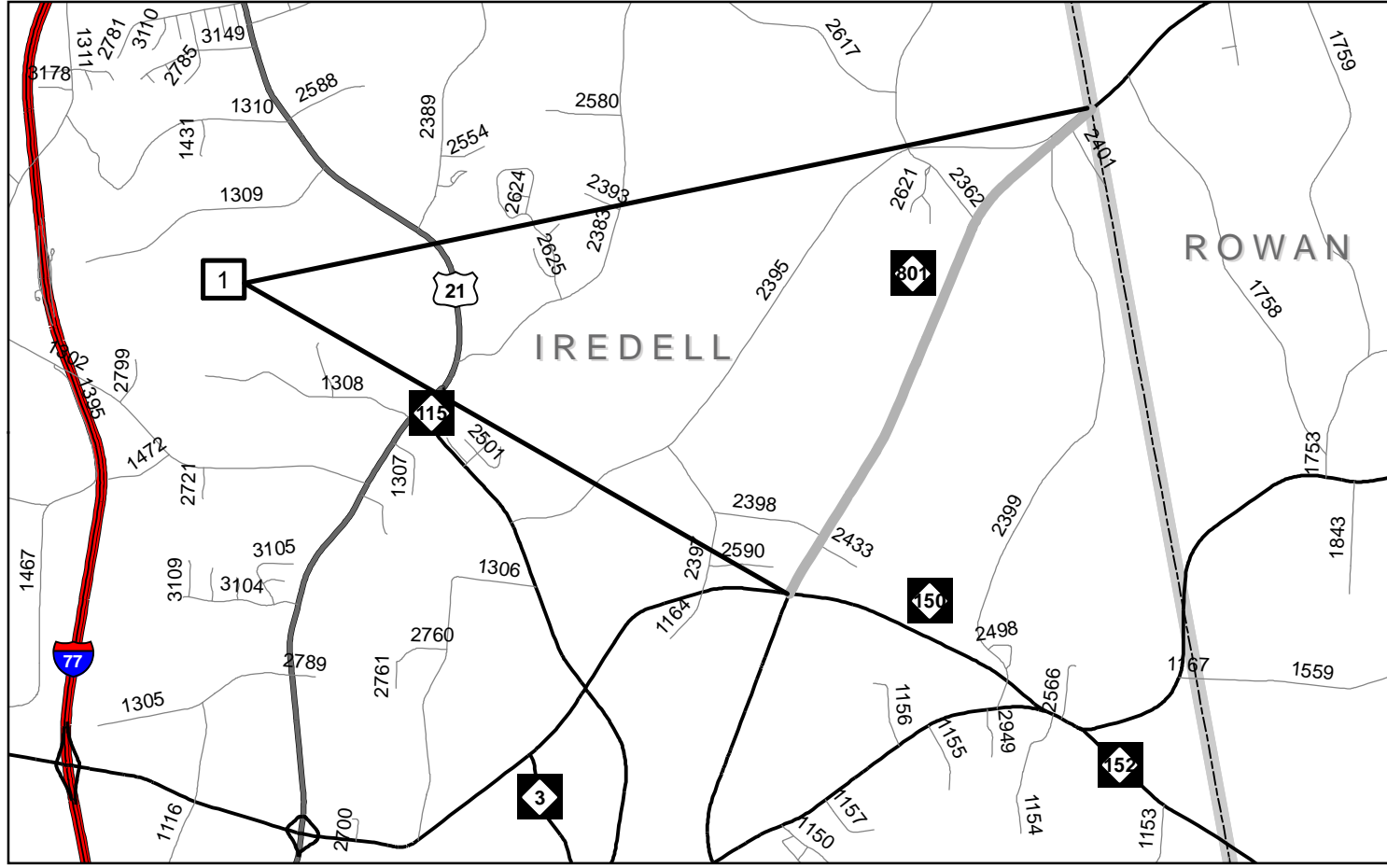


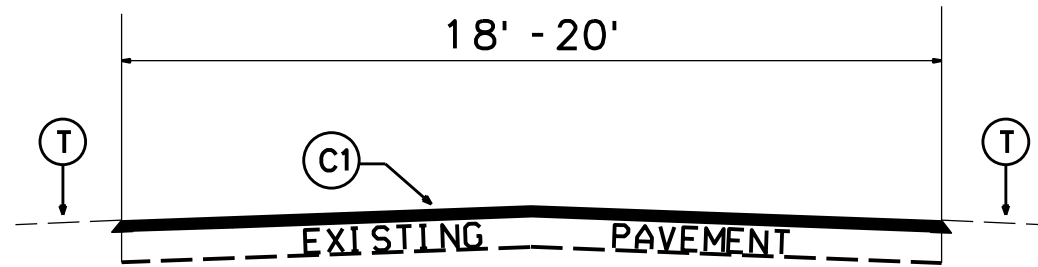
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and sealed by the individuals whose names and license
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with their signature on that page.**

**This file or an individual page
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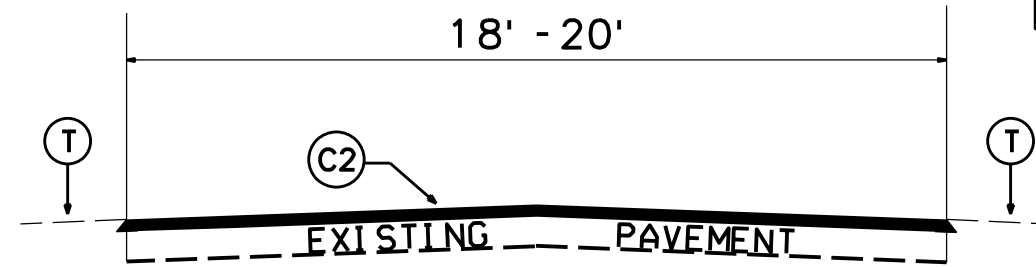


PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
IREDELL COUNTY	5	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
2022CPT. 12.14.10491		PRIMARY RESURFACING
2022CPT. 12.14.20491		SECONDARY RESURFACING



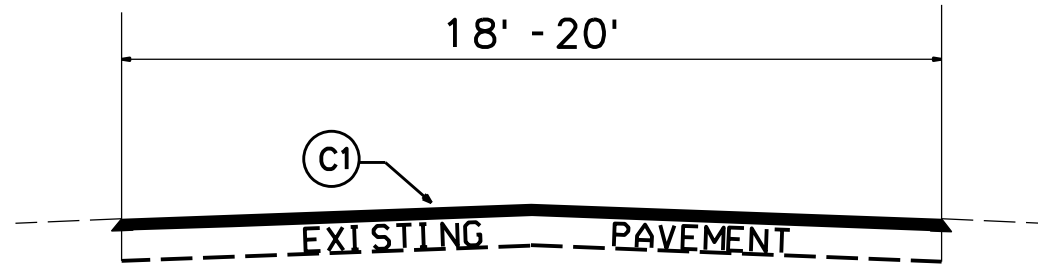
TYPICAL SECTION NO. 1

Maps: 7, 13, 14 (ALL)



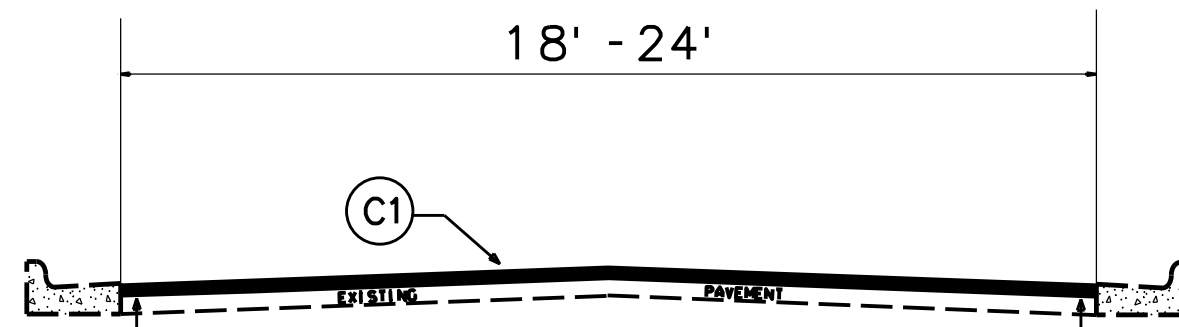
TYPICAL SECTION NO. 3

Maps: 1, 2, 3, 11, 12 (ALL)



TYPICAL SECTION NO. 2

Maps: 8, 9, 10 (ALL)



TYPICAL SECTION NO. 4

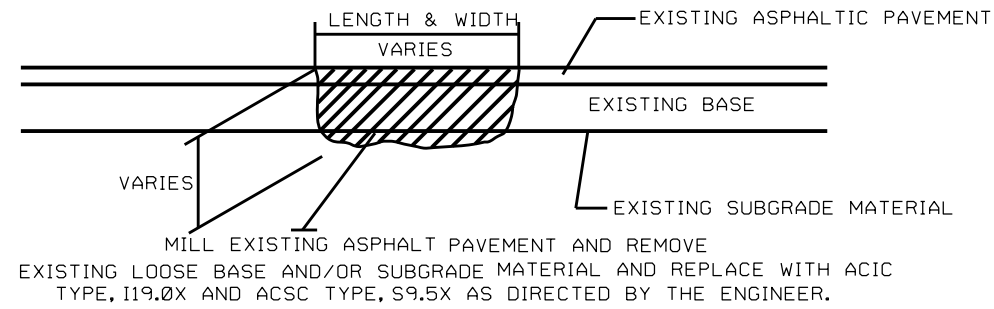
Maps: 4, 5, 6 (ALL)

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD.
C2	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
T	AGGREGATE SHOULDER BORROW (SHOULDER RECONSTRUCTION)
V1	MILL EXISTING ASPHALT PAVEMENT APPROX. 1" IN DEPTH

2022-2023
Resurfacing Program
Typical Sections
Iredell County

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
IREDELL COUNTY	6	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
2022CPT. 12.14.10491		PRIMARY RESURFACING
2022CPT. 12.14.20491		SECONDARY RESURFACING

DETAIL A
PATCHING EXISTING PAVEMENT

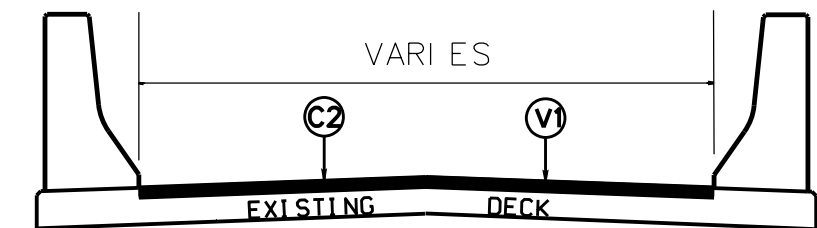
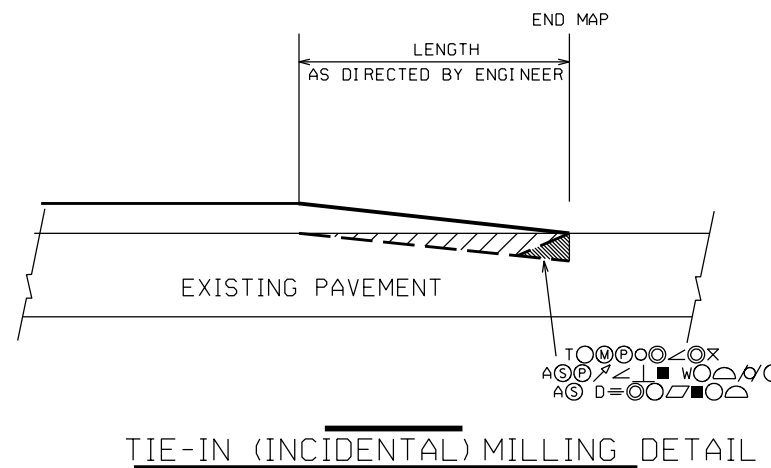
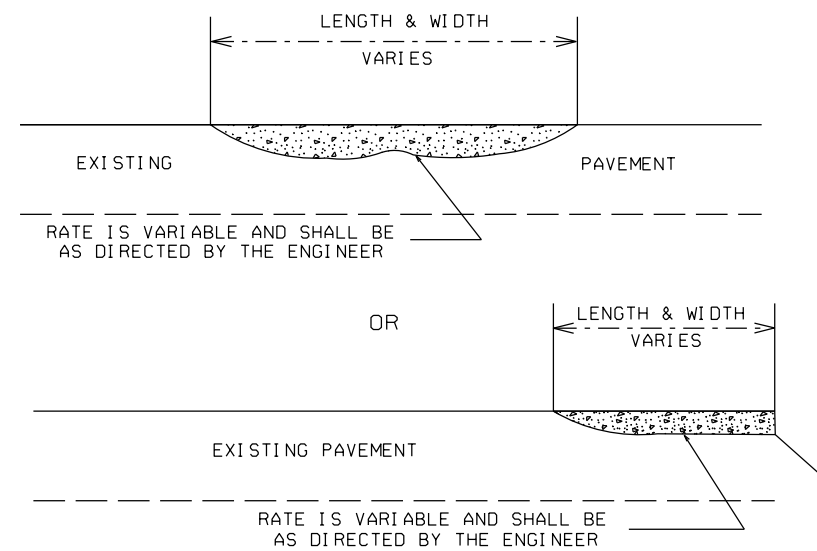


DETAIL C
MILLING BRIDGE APPROACHES



DETAIL B

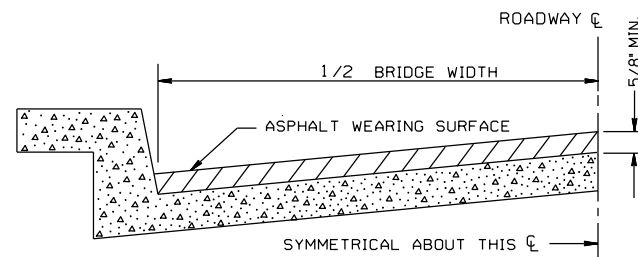
ASPHALT CONCRETE SURFACE COURSE
TYPE S9.5B & S9.5C (LEVELING COURSE)



ASPHALT BRIDGE SECTION
Use for all asphalt bridges

DETAIL E

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

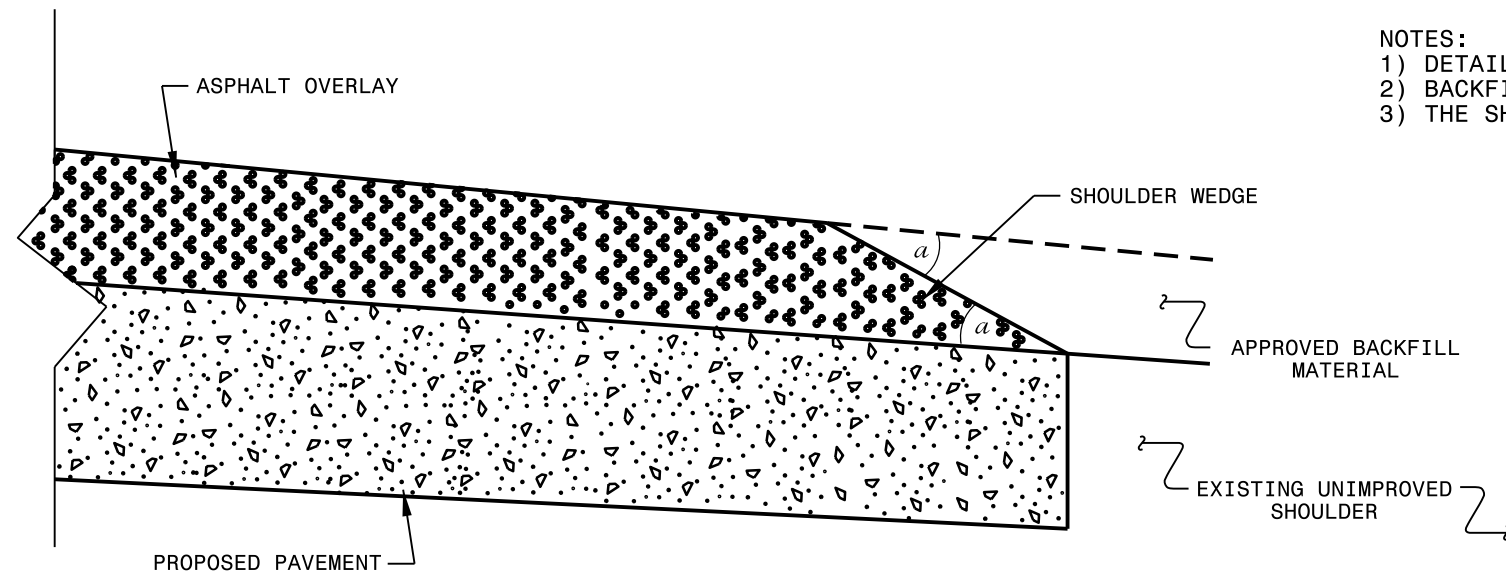
ALL UNPAVED S.R. ROADS TO BE SURFACED 50' FROM EDGE OF PAVEMENT OF MAIN PROJECT.
ALL PAVED S.R. ROADS TO BE RESURFACED TO THE ENDS OF THE RADII, OR AS DIRECTED BY THE ENGINEER.
EDGES, PAVEMENT WIDENING, INTERSECTIONS AND BRIDGE FLARES ARE INCLUDED IN THE TABLE OF QUANTITIES.
SHOULDERS AND DITCHES ARE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

PAVEMENT SCHEDULE

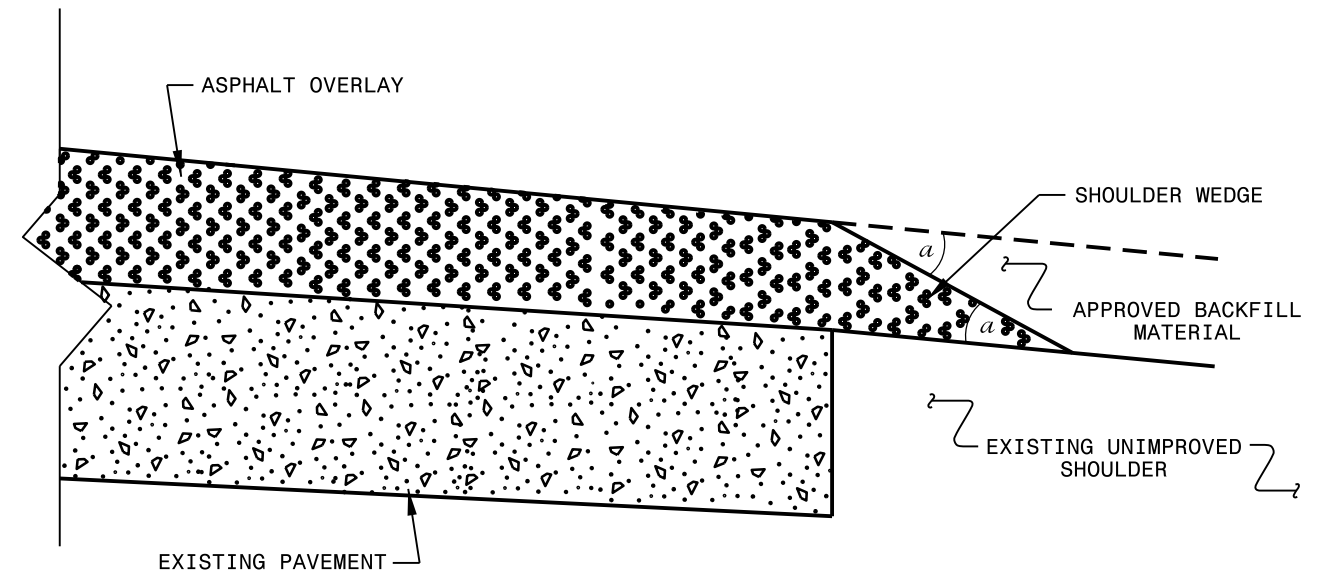
C1	PROP. APPROX. 1.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD.
C2	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
T	AGGREGATE SHOULDER BORROW (SHOULDER RECONSTRUCTION)
V1	MILL EXISTING ASPHALT PAVEMENT APPROX. 1" IN DEPTH

2022 - 2023
Resurfacing Program
Typical Sections
Iredell County

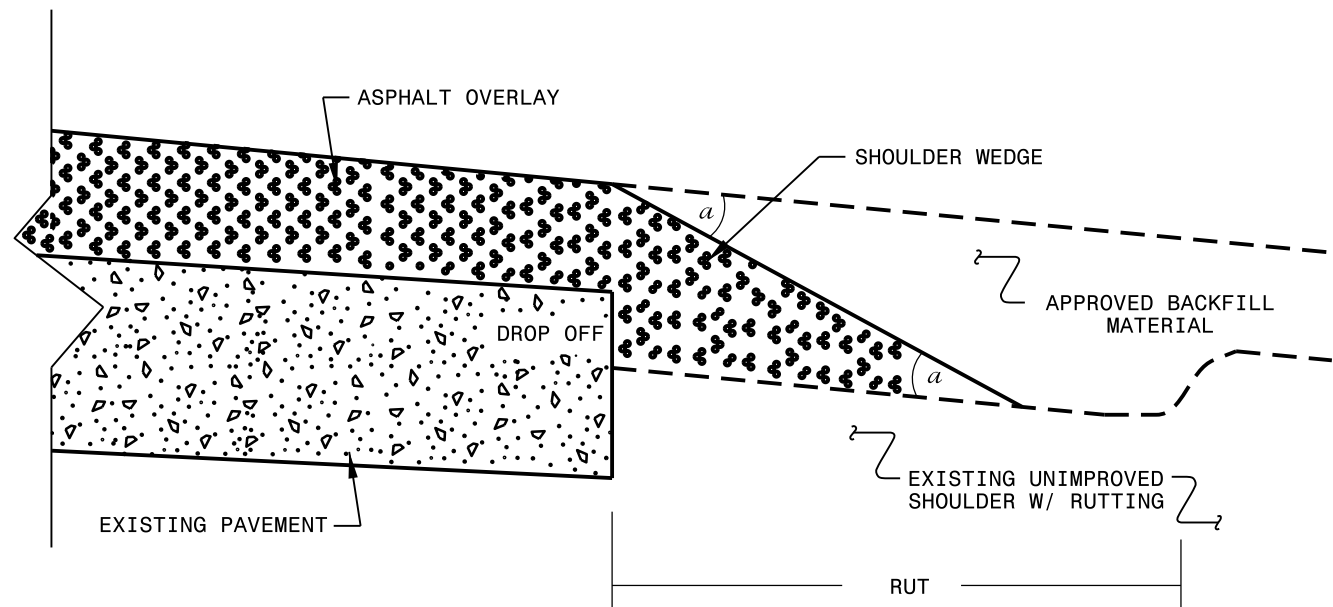
- NOTES:
- 1) DETAIL DOES NOT APPLY TO OGAFc AND ULTRA-THIN BONDED WEARING COURSE.
 - 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
 - 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS AND SIDE STREETS.



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



SHOULDER WEDGE DETAIL
(Resurfacing Projects w/ NO Widening)



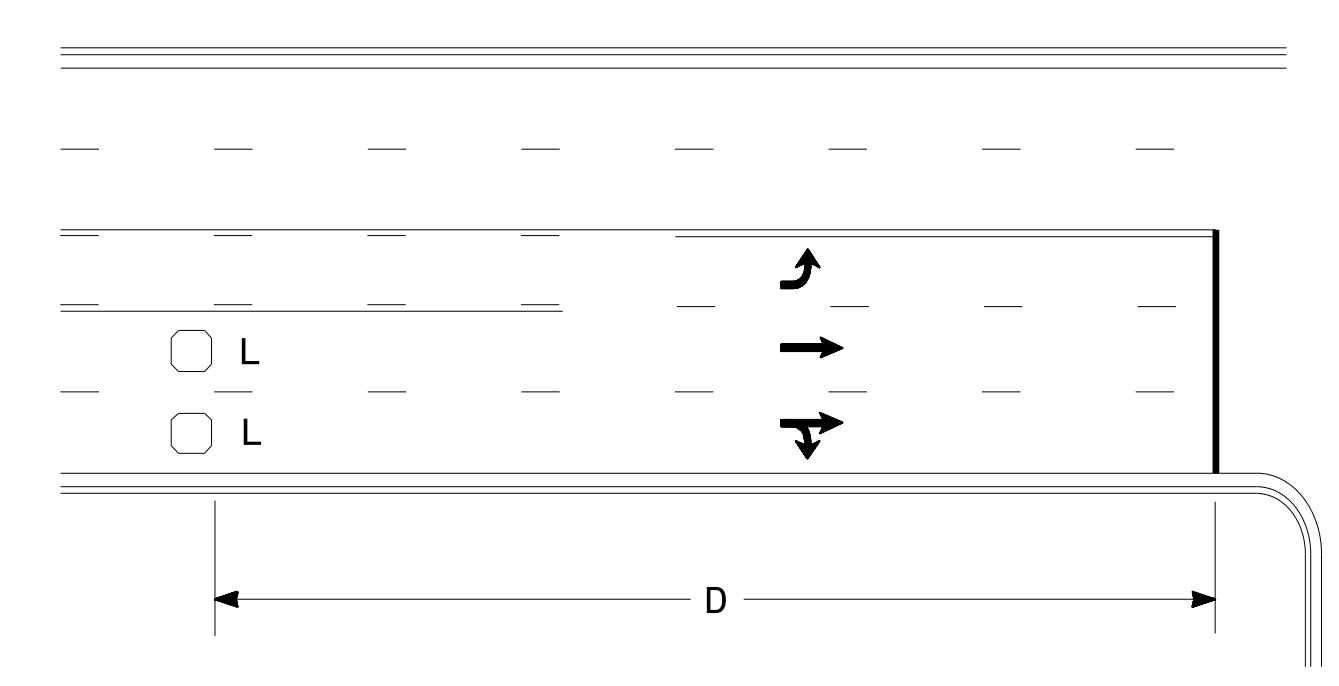
SHOULDER WEDGE DETAIL
(Resurfacing Adjacent to
Rutted Shoulder)

- 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

High Speed Detection (≥40 mph)

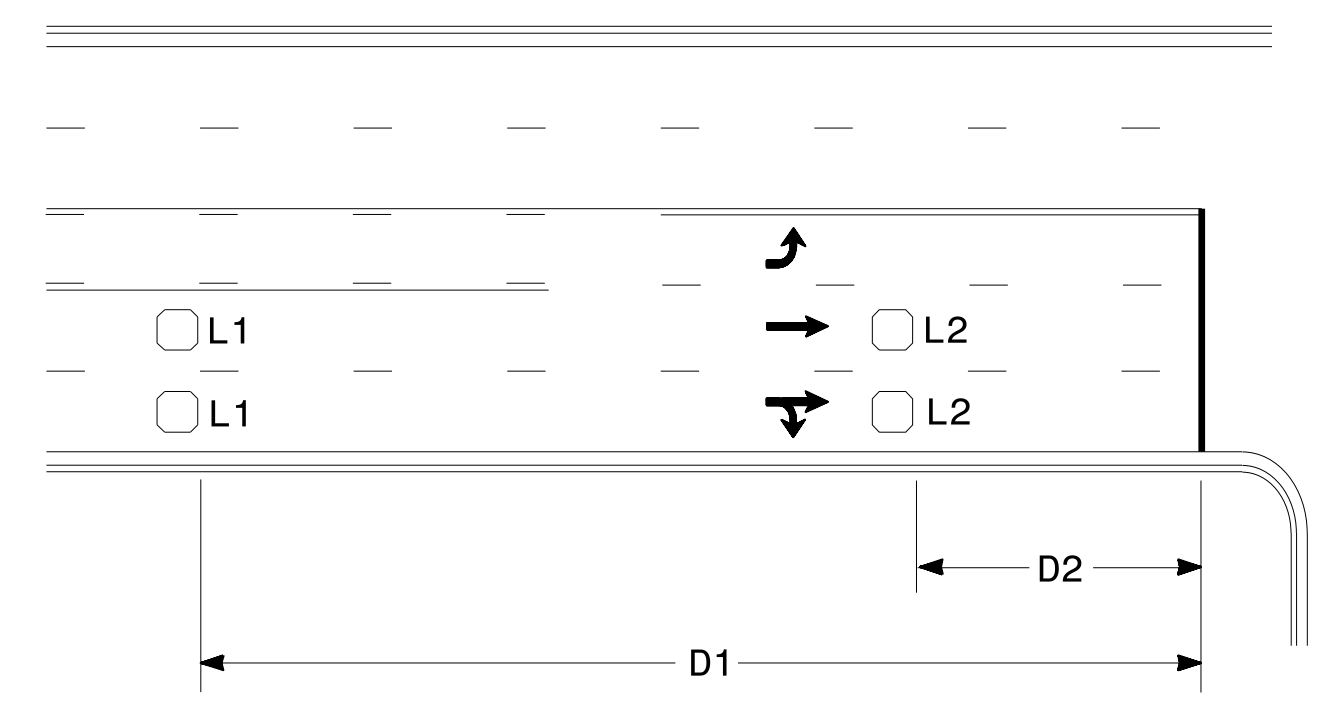


Speed Limit mph	D ft
40	250
45	300
50	355
55	420

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

Volume Density Operation

OR

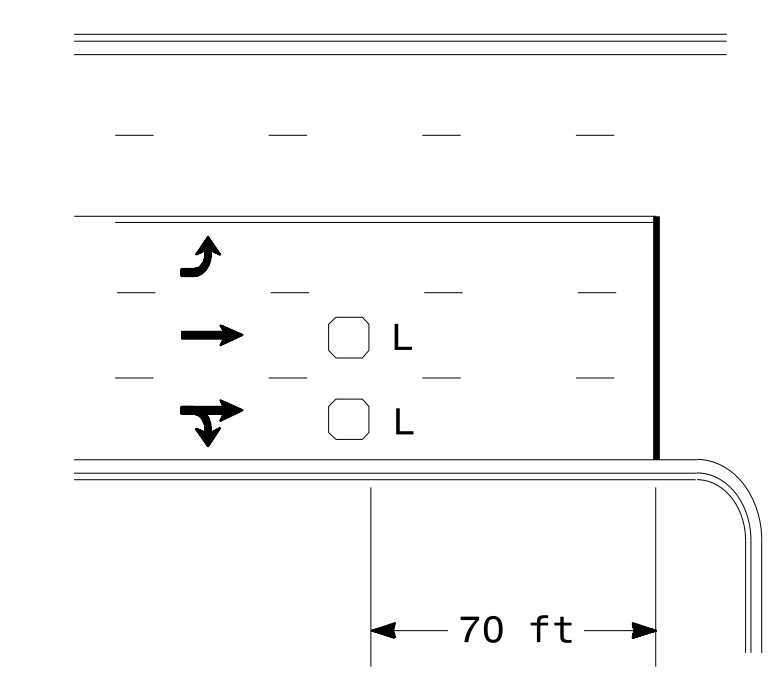


Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

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

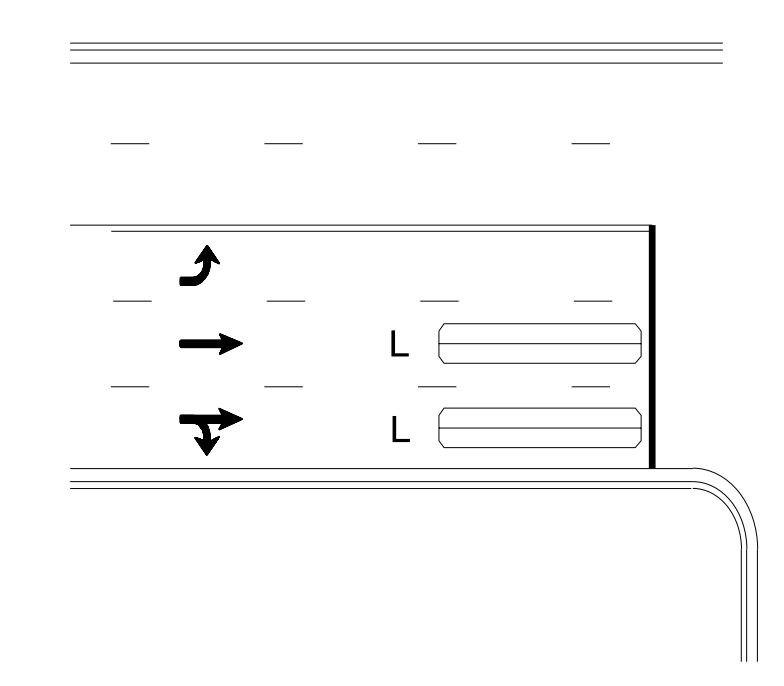
"Stretch" Operation

Low Speed Detection (≤35 mph)



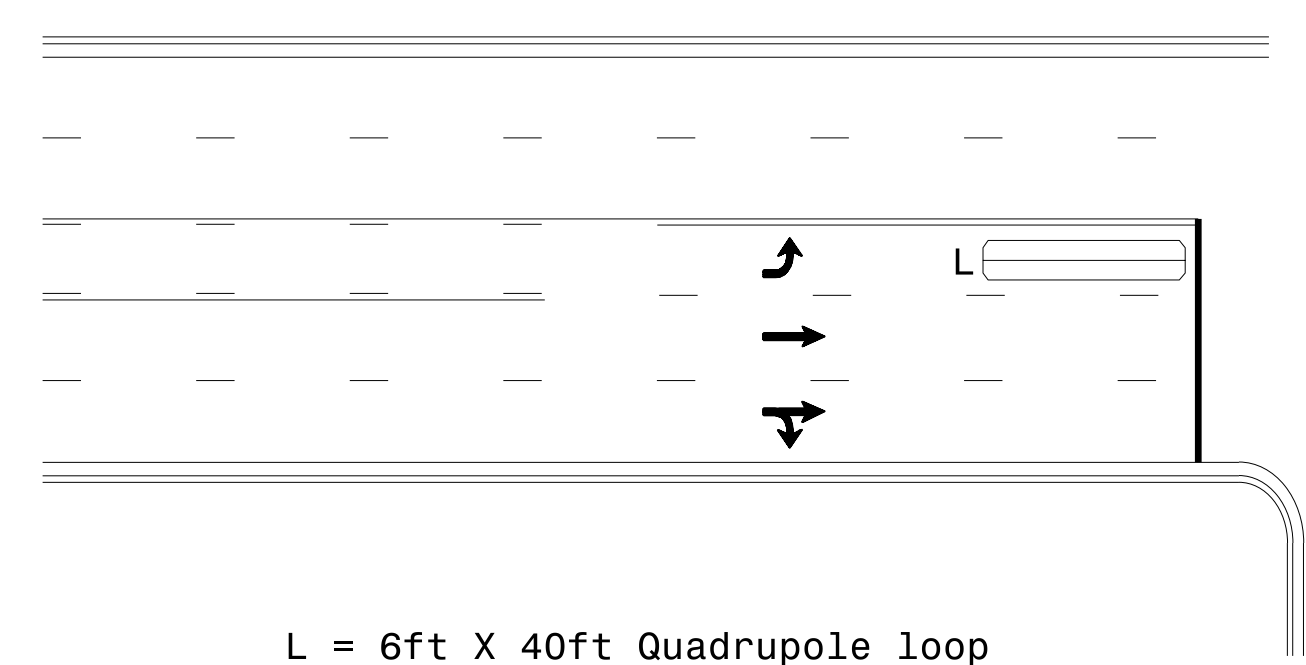
L = 6ft X 6ft
Wired in series

OR



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

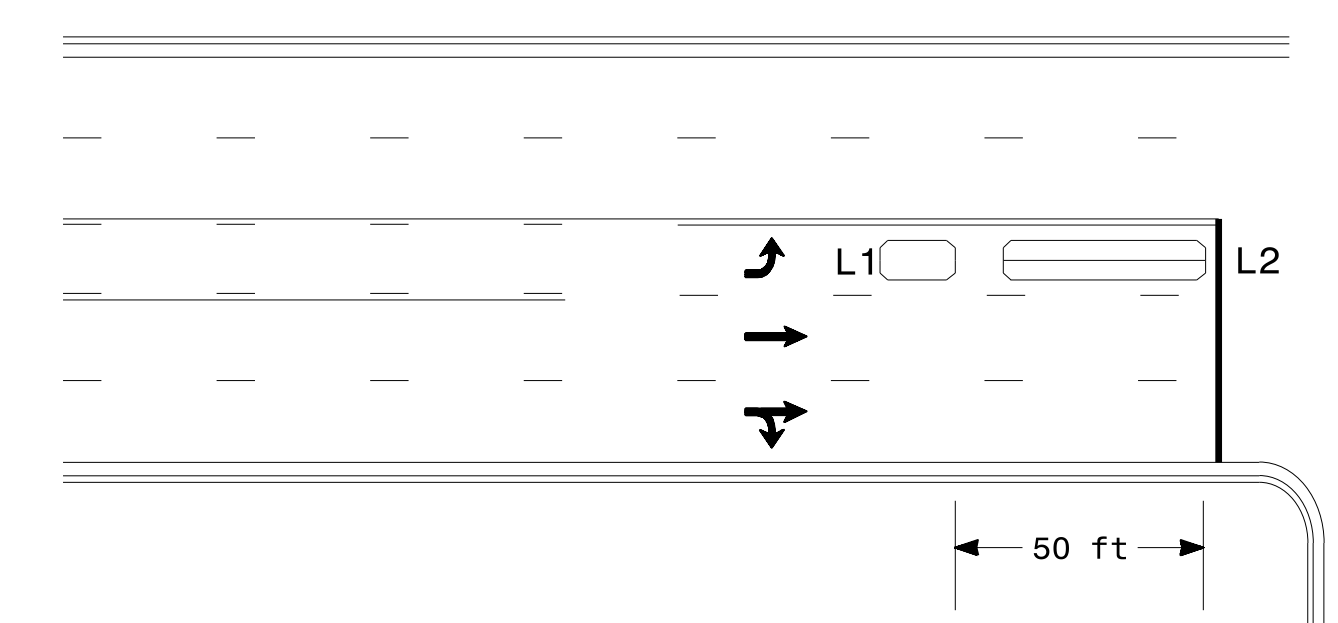
Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

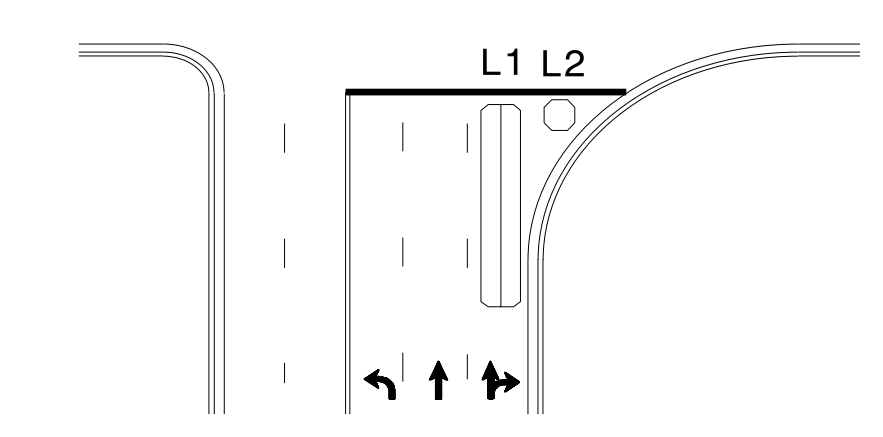
OR



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

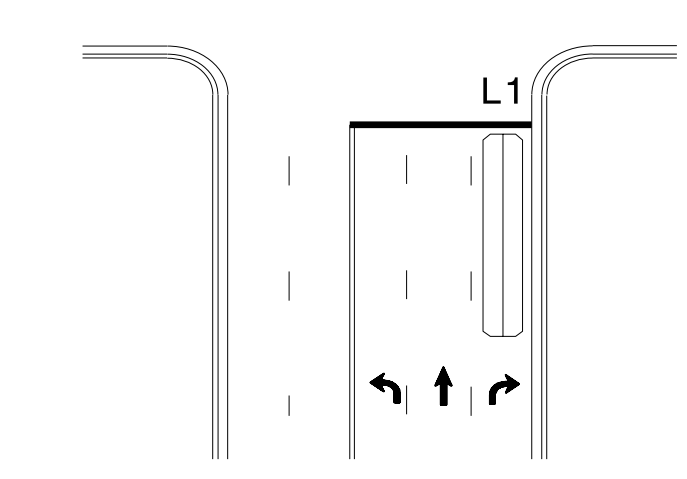
Queue Loop Detection

Right Turn Lane Detection

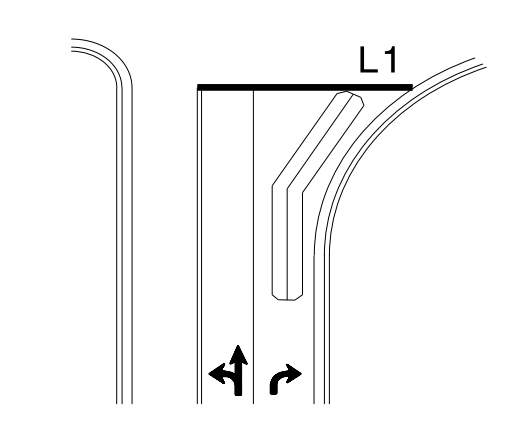


Shared Lane/
Wide Radius Turn

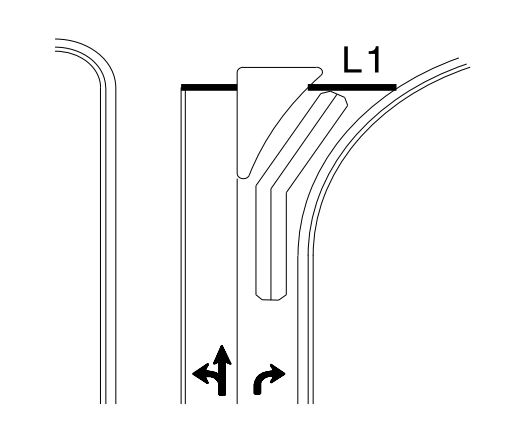
L1 = 6ft X 40ft Quadrupole loop
L2 = 6ft X 6ft [Minimum] Presence loop
Wired separately



Standard Turn

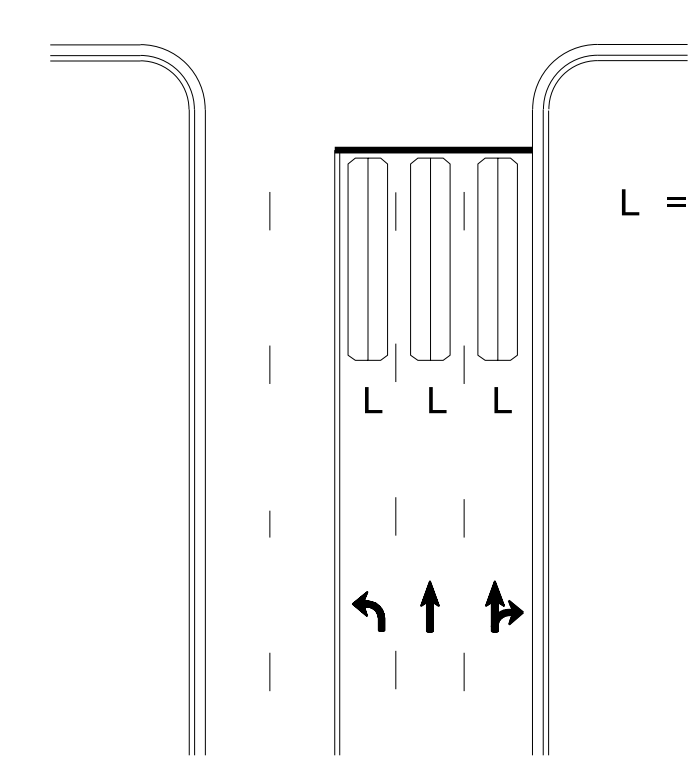


Wide Radius Turn



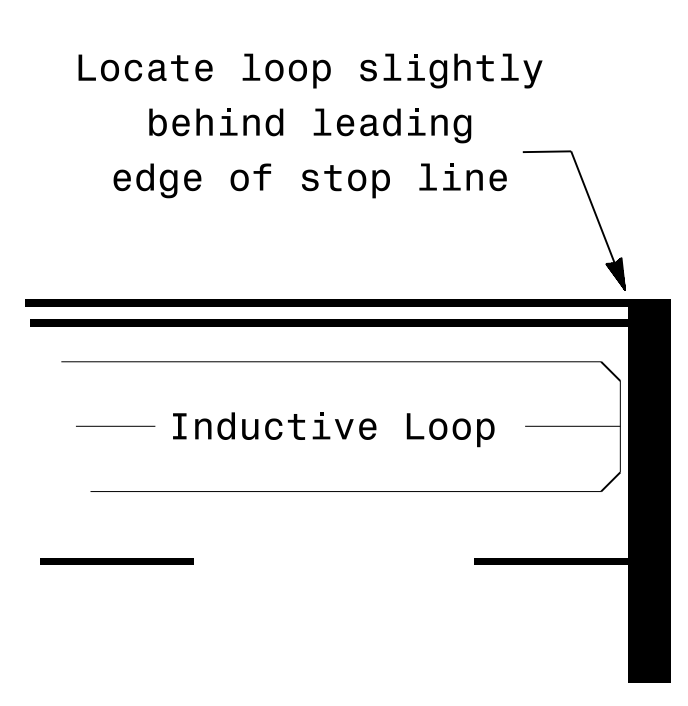
Channelized Turn

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

PROJECT NO.	SHEET NO.	TOTAL NO.
2022CPT.12.14.10491		
2022CPT.12.14.20491		

SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH	WIDTH	0255000000-E	1220000000-E	1245000000-E	1297000000-E	1308000000-E	1330000000-E	1519000000-E	1520000000-E	1523000000-E	1524000000-E	1575000000-E	1704000000-E	2600000000-N	2830000000-N	2845000000-N	7324000000-N	7444000000-E	7456000000-E				
											AGGREGATE SHOULDER BORROW	INCIDENTAL STONE BASE	SHOULDER RECONSTRUCTION	1" MILLING	0" TO 1.5" MILLING	INCIDENTAL MILLING	SURFACE COURSE, \$9.5B	LEVELING COURSE, \$9.5B	SURFACE COURSE, \$9.5C	LEVELING COURSE, \$9.5C	ASPHALT BINDER FOR PLANT MIX	PATCHING EXISTING PAVEMENT	RETROFIT EXISTING CURB RAMP	ADJ. OF MANHOLES	ADJ. OF METER OR VALVE BOX	JUNCTION BOX (STANDARD SIZE)	INDUCTIVE LOOP	LEAD-IN CABLE				
											MI	FT	TON	TONS	SMI	SY	SY	SY	TONS	TONS	TONS	TONS	TONS	EA	EA	EA	EA	LF	LF			
2022CPT.12.14.10491	Iredell	1	NC 801	FROM NC 150 TO ROWAN COUNTY LINE	3	2	NO	NO	3.06	20	300	100	6.12						3,800	100	253	125			1	1	200	100				
TOTAL FOR PROJ NO. 2022CPT.12.14.10491											3.06		300	100	6.12					3,800	100	253	125			1	1	200	100			
2022CPT.12.14.20491	Iredell	2	SR 1151 (TEETER RD)	FROM SR 1150 (LINWOOD RD) TO ROWAN COUNTY LINE	3	2	NO	NO	2.72	20	1,100	100	5.44		575	200			3,300	450	243	700										
2022CPT.12.14.20491	Iredell	3	SR 1150 (LINWOOD RD)	FROM ROWAN COUNTY LINE TO SR 1153 (BRUMLEY RD)	3	2	NO	NO	2.94	18	575	40	5.88						3,200	175	220	575				60	100					
2022CPT.12.14.20491	Iredell	4	SR 3048 (VESTAL DR)	FROM SR 3050 (MEETING HOUSE CIRCLE) TO END OF MAINTENANCE	4	2	NO	NO	0.11	24				1,550			100				7	5	1									
2022CPT.12.14.20491	Iredell	5	SR 3049 (MYSTIC LAKE LP)	FROM SR 3048 (VESTAL DR) TO SR 3048 (VESTAL DR)	4	2	NO	NO	0.10	18				1,060			75				5	5	2									
2022CPT.12.14.20491	Iredell	6	SR 3257 (NEW HAVEN DR)	FROM SR 1100 (BRAWLEY SCHOOL RD) TO SR 3260 (S LONGFELLOW LN)	4	2	NO	NO	0.21	24				2,960			200				13	10	9									
2022CPT.12.14.20491	Iredell	7	SR 1113 (ISLE OF PINES RD)	FROM SR 1100 (BRAWLEY SCHOOL RD) TO CUL-DE-SAC	1	2	NO	NO	2.51	18	500	15	5.02			225	1,750	200			141	375		1								
2022CPT.12.14.20491	Iredell	8	SR 1271 (SUNSET RD)	FROM SR 1113 (ISLE OF PINES RD) TO CUL-DE-SAC	2	2	NO	NO	0.03	20							25				2	5										
2022CPT.12.14.20491	Iredell	9	SR 2946 (BREEZE VIEW PL)	FROM SR 1113 (ISLE OF PINES RD) TO CUL-DE-SAC	2	2	NO	NO	0.03	20							25				2	5										
2022CPT.12.14.20491	Iredell	10	SR 2950 (BEACHVIEW DR)	FROM SR 1113 (ISLE OF PINES RD) TO CUL-DE-SAC	2	2	NO	NO	0.04	18							30				2	5										
2022CPT.12.14.20491	Iredell	11	SR 2383 (SHINNVILLE RD)	FROM SR 1001 (OSWALT AMITY RD) TO US 21	3	2	NO	NO	6.30	18	1,200	250	12.60			425			7,500	375	510	300		1		120	100					
2022CPT.12.14.20491	Iredell	12	SR 1890 (TOMLIN MILL RD)	FROM SR 1845 (TABOR RD) TO SR 1888 (RASH RD) + 1.196 MILES	3	2	NO	NO	2.36	20	460	15	4.72		1,000	30			3,000	200	208	275										
2022CPT.12.14.20491	Iredell	13	SR 2813 (FLOWERING CHERRY LN)	FROM SR 1303 (PERTH RD) TO SR 2814 (ORCHARD FARM LN)	1	2	NO	NO	0.07	20	10		0.14			20	70	10			5	50										
2022CPT.12.14.20491	Iredell	14	SR 2814 (ORCHARD FARM LN)	FROM SR 2813 (FLOWERING CHERRY LN) TO CUL-DE-SAC	1	2	NO	NO	0.20	20	30		0.40				200	30			15	60				180	200					
TOTAL FOR PROJ NO. 2022CPT.12.14.20491											17.62		3,875	420	34.20	5,570	1,575	960	2,475	240	17,000	1,200	1,373	2,370	12	2			1	1	380	300
GRAND TOTAL											20.68		4,175	520	40.32	5,570	1,575	1,160	2,475	240	20,800	1,300	1,626	2,495	12	2	1	1	380	300		

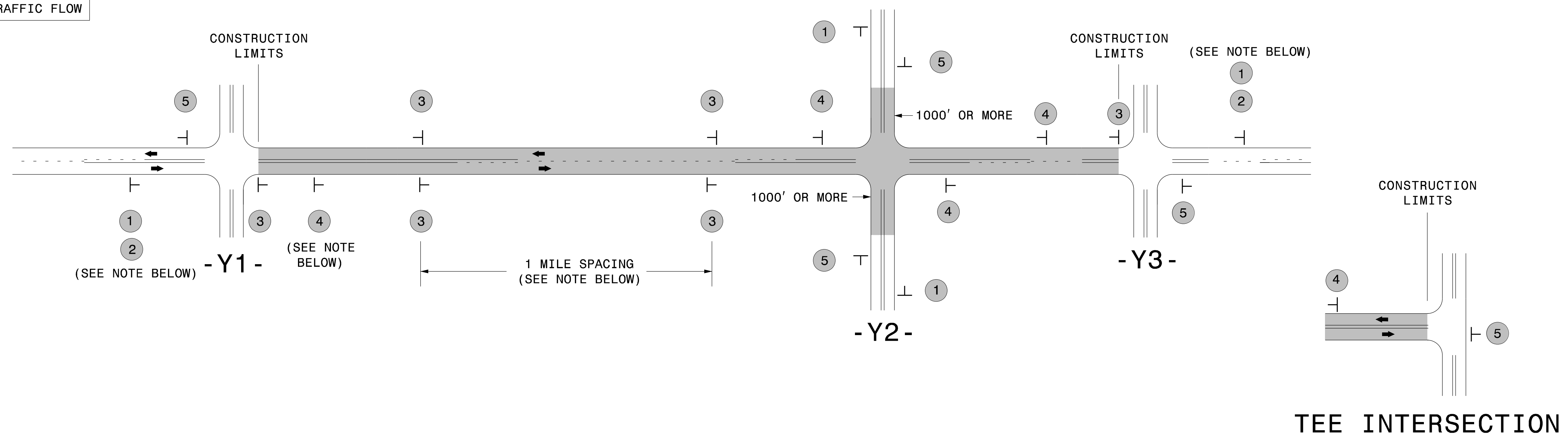
PROJECT NO.	SHEET NO.	TOTAL NO.
2022CPT.12.14.10491		
2022CPT.12.14.20491		

THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LENGTH		WIDTH	4400000000-E	4447000000-E	4457000000-N	4700000000-E	4891000000-E	4891000000-E	4891000000-E	4725000000-E				4810000000-E		4890000000-E		4905000000-N
							MI	FT		WORK ZONE ADVANCE / GENERAL WARNING SIGNING	PEDESTRIAN CHANNELIZING DEVICES	TEMPORARY TRAFFIC CONTROL	12" X 90 M YELLOW THERMO	16" X 90 M WHITE THERMO	24" X 90 M WHITE THERMO	THERMO RXR 90 M	THERMO LT ARROW 90 M	THERMO RT ARROW 90 M	THERMO STR ARROW 90 M	4" WHITE PAINT	4" YELLOW PAINT	WHITE THERMO HOTSPRAY 4", 50 MILS	YELLOW THERMO HOTSPRAY 4", 50 MILS	SNOW PLOWABLE MARKERS	
2022CPT.12.14.10491	Iredell	1	NC 801	FROM NC 150 TO ROWAN COUNTY LINE	3	2	3.06	20		350		*	180	40	113	2	7	4	2	34,000	34,000	34,000	34,000	320	
TOTAL FOR PROJ NO. 2022CPT.12.14.10491							3.06			350		*	180	40	113	2	7	4	2	34,000	34,000	34,000	34,000	320	
										13				68,000		68,000									
2022CPT.12.14.20491	Iredell	2	SR 1151 (TEETER RD)	FROM SR 1150 (LINWOOD RD) TO ROWAN COUNTY LINE	3	2	2.72	20		305		*								57,500	57,500				
2022CPT.12.14.20491	Iredell	3	SR 1150 (LINWOOD RD)	FROM ROWAN COUNTY LINE TO SR 1153 (BRUMLEY RD)	3	2	2.94	18		330		*								62,100	62,100				
2022CPT.12.14.20491	Iredell	4	SR 3048 (VESTAL DR)	FROM SR 3050 (MEETING HOUSE CIRCLE) TO END OF MAINTENANCE	4	2	0.11	24		16	20	*													
2022CPT.12.14.20491	Iredell	5	SR 3049 (MYSTIC LAKE LP)	FROM SR 3048 (VESTAL DR) TO SR 3048 (VESTAL DR)	4	2	0.10	18		16	20	*													
2022CPT.12.14.20491	Iredell	6	SR 3257 (NEW HAVEN DR)	FROM SR 1100 (BRAWLEY SCHOOL RD) TO SR 3260 (S LONGFELLOW LN)	4	2	0.21	24		25	40	*													
2022CPT.12.14.20491	Iredell	7	SR 1113 (ISLE OF PINES RD)	FROM SR 1100 (BRAWLEY SCHOOL RD) TO CUL-DE-SAC	1	2	2.51	18		285		*		36			2	2		53,100	53,100				
2022CPT.12.14.20491	Iredell	8	SR 1271 (SUNSET RD)	FROM SR 1113 (ISLE OF PINES RD) TO CUL-DE-SAC	2	2	0.03	20		16		*													
2022CPT.12.14.20491	Iredell	9	SR 2946 (BREEZE VIEW PL)	FROM SR 1113 (ISLE OF PINES RD) TO CUL-DE-SAC	2	2	0.03	20		16		*													
2022CPT.12.14.20491	Iredell	10	SR 2950 (BEACHVIEW DR)	FROM SR 1113 (ISLE OF PINES RD) TO CUL-DE-SAC	2	2	0.04	18		16		*													
2022CPT.12.14.20491	Iredell	11	SR 2383 (SHINNVILLE RD)	FROM SR 1001 (OSWALT AMITY RD) TO US 21	3	2	6.30	18		710		*	100		40		8	2		133,100	133,100				
2022CPT.12.14.20491	Iredell	12	SR 1890 (TOMLIN MILL RD)	FROM SR 1845 (TABOR RD) TO SR 1888 (RASH RD) + 1.196 MILES	3	2	2.36	20		265		*								49,850	49,850				
2022CPT.12.14.20491	Iredell	13	SR 2813 (FLOWERING CHERRY LN)	FROM SR 1303 (PERTH RD) TO SR 2814 (ORCHARD FARM LN)	1	2	0.07	20		16		*													
2022CPT.12.14.20491	Iredell	14	SR 2814 (ORCHARD FARM LN)	FROM SR 2813 (FLOWERING CHERRY LN) TO CUL-DE-SAC	1	2	0.20	20		25		*													
TOTAL FOR PROJ NO. 2022CPT.12.14.20491							17.62			2,041	80	*	100		76		10	4		355,650	355,650				
										14				711,300											
GRAND TOTAL							20.68			2,391	80	1	280	40	189	2	17	8	2	389,650	389,650	34,000	34,000	320	
										27				779,300		68,000									

SIGNING FOR RESURFACING PROJECTS

LEGEND
 ┆ STATIONARY SIGN
 ← DIRECTION OF TRAFFIC FLOW



MAINLINE (-L-) SIGNING

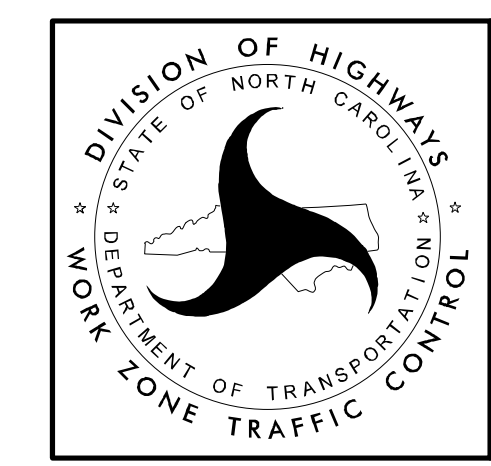
-Y- LINE SIGNING

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"> 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, 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