

# CHEROKEE COUNTY

PROJECT REFERENCE NO.		SHEET NO.
2018CPT.14.07.10201.1		1
STATE PROJECT	F.A. PROJECT NO.	DESCRIPTION



MAP 1



BEG

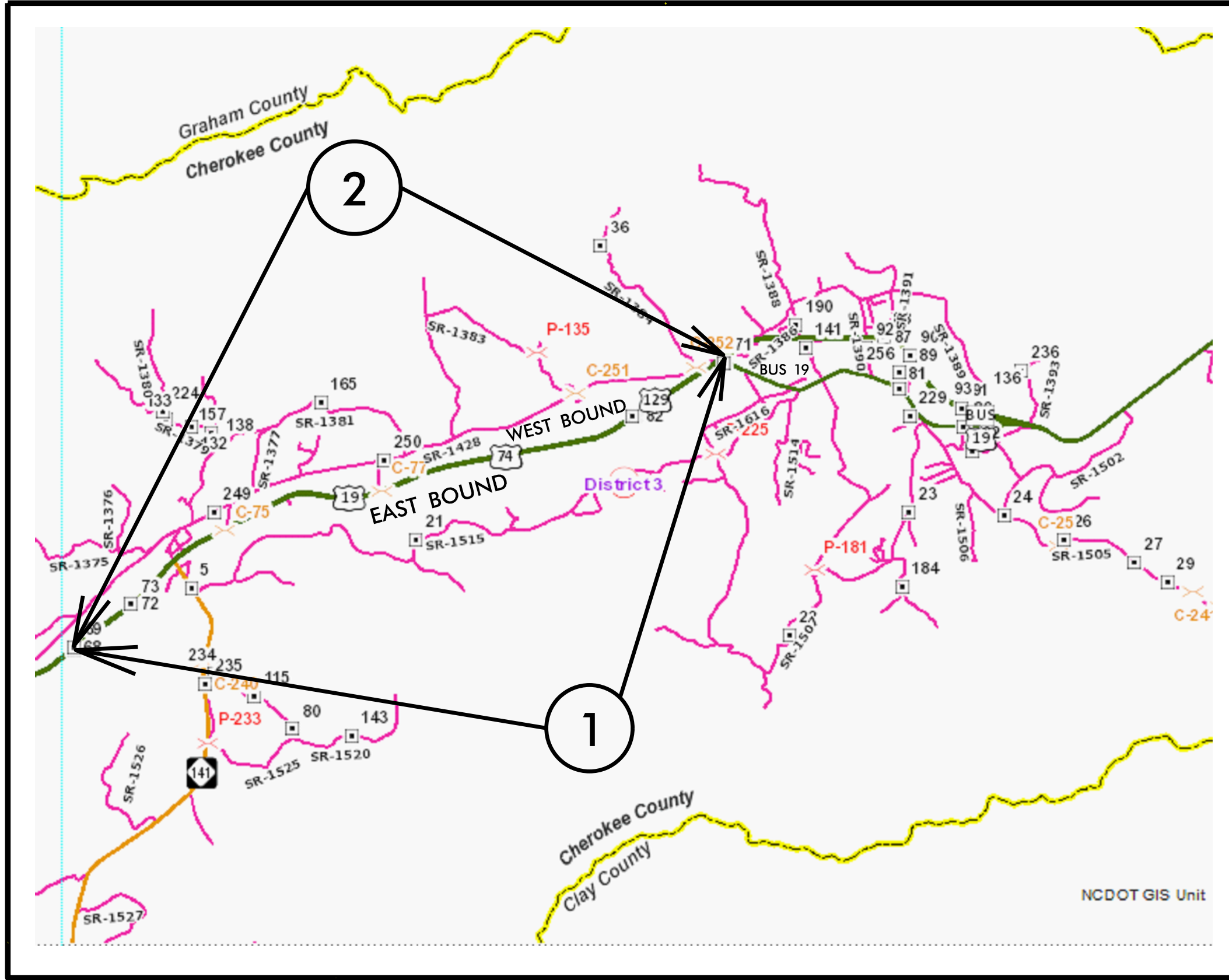
END

MAP 2



BEG

END



NCDOT GIS Unit

TIP PROJECT: N/A

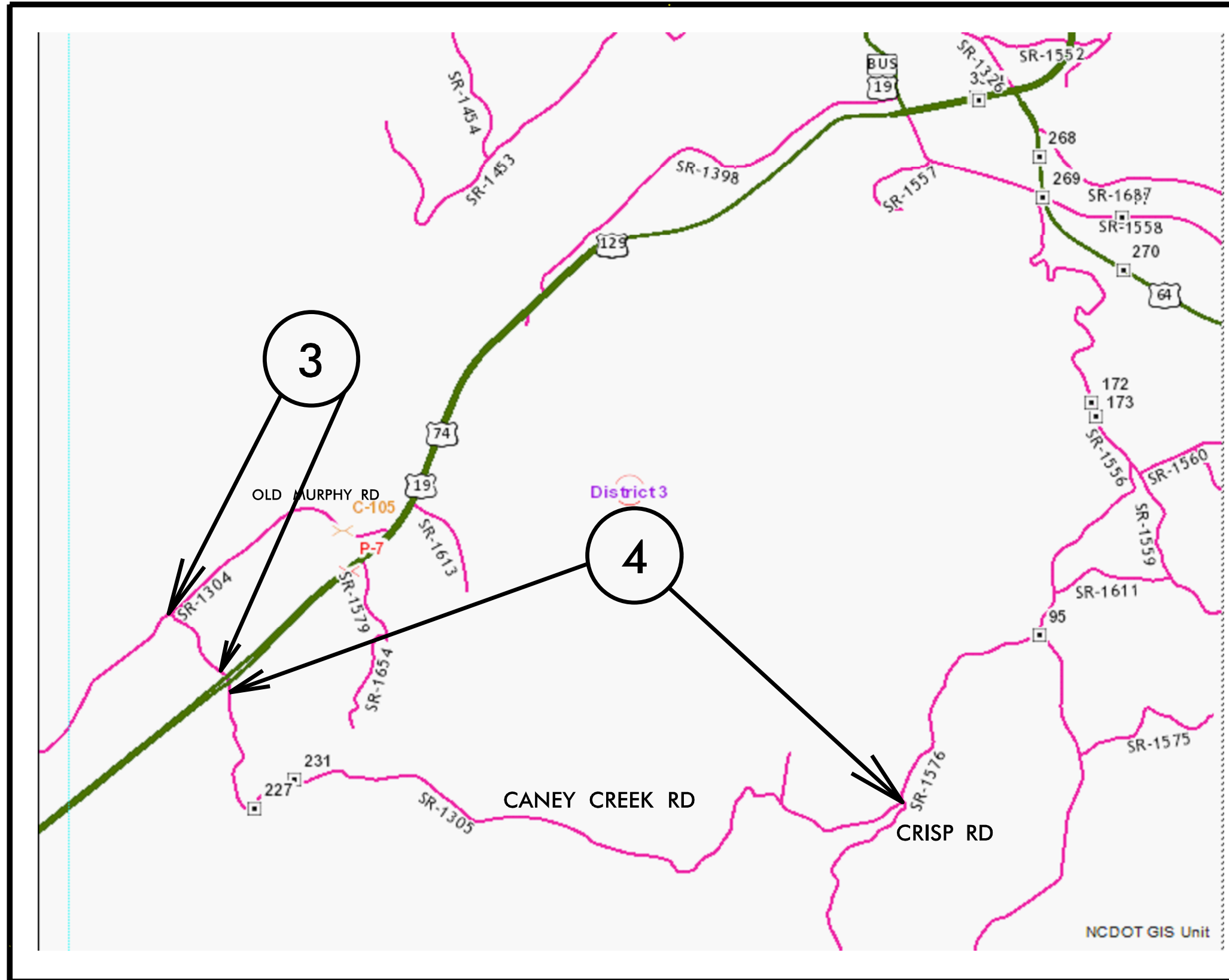
CONTRACT:

# CHEROKEE COUNTY

PROJECT REFERENCE NO.		SHEET NO.
2018CPT 14.07.20201.1		2
STATE PROJECT	F.A. PROJECT NO.	DESCRIPTION

TIP PROJECT: N/A

CONTRACT:



MAP 3



BEG END  
MAP 4



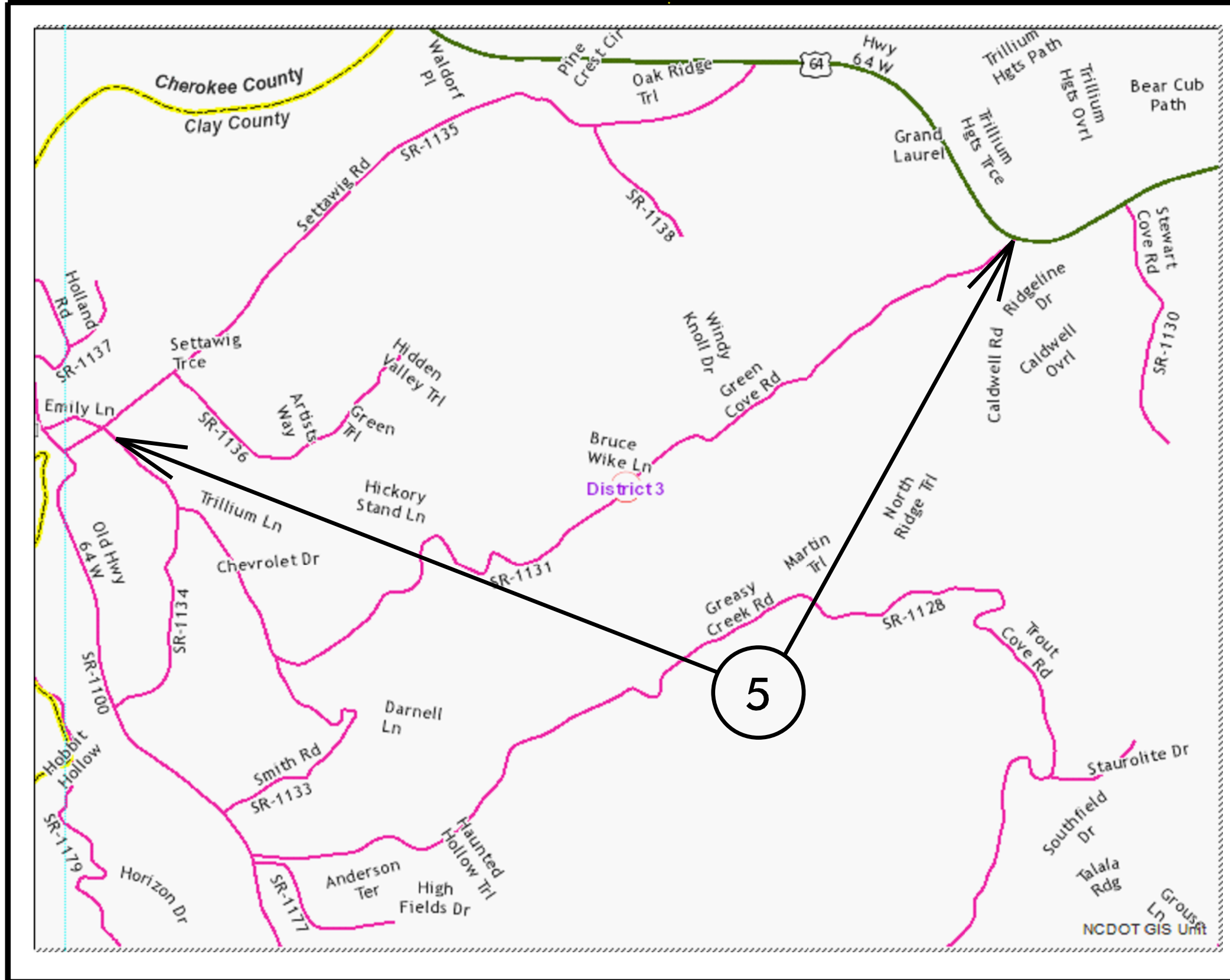
BEG END

# CLAY COUNTY

PROJECT REFERENCE NO.	SHEET NO.	
2018CPT.14.07.20221.1	3	
STATE PROJECT	F.A. PROJECT NO.	DESCRIPTION

TIP PROJECT: N/A

CONTRACT:



MAP 5

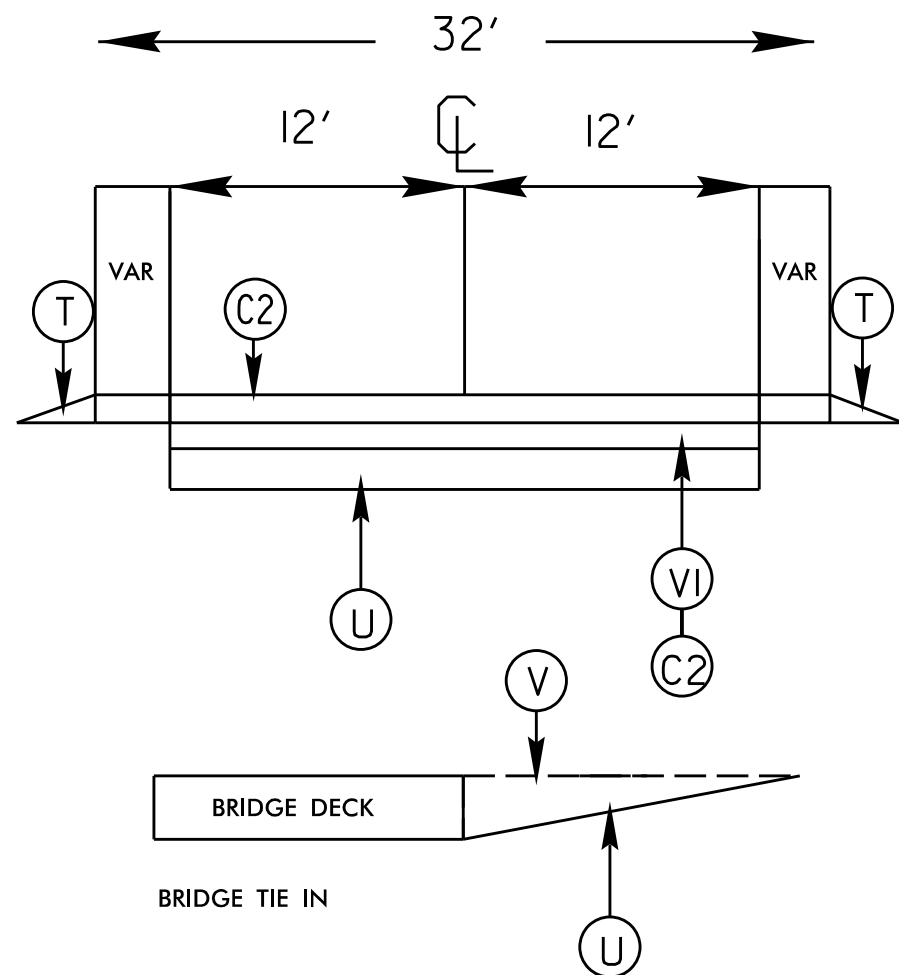


BEG

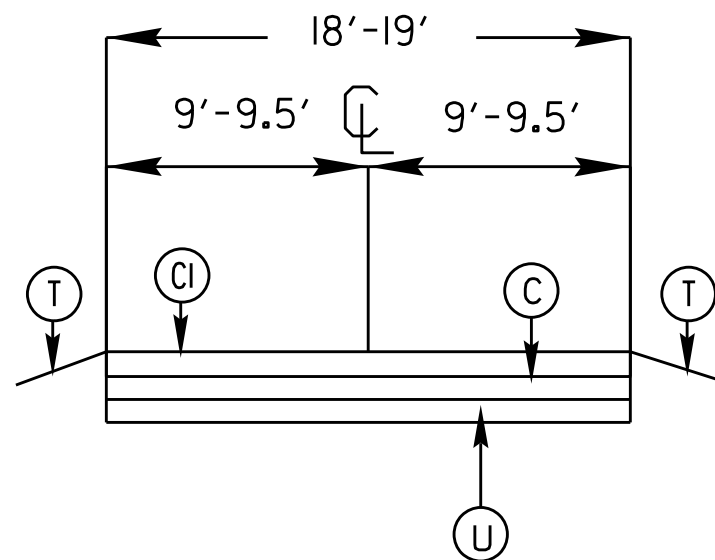
END

PROJECT REFERENCE NO.		SHEET NO.	
2018CPT.14.07.10201.		4	
STATE PROJECT	F.A. PROJECT NO.	DESCRIPTION	
2018CPT.14.07.20201.1			

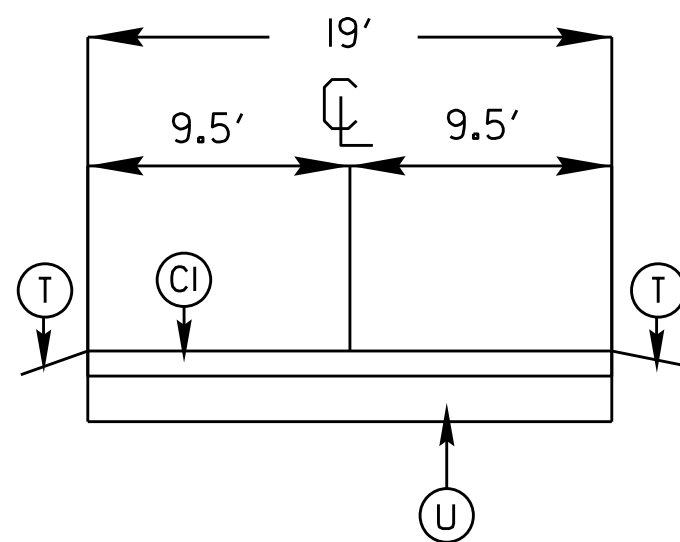
### TYPICAL 1



### TYPICAL 2



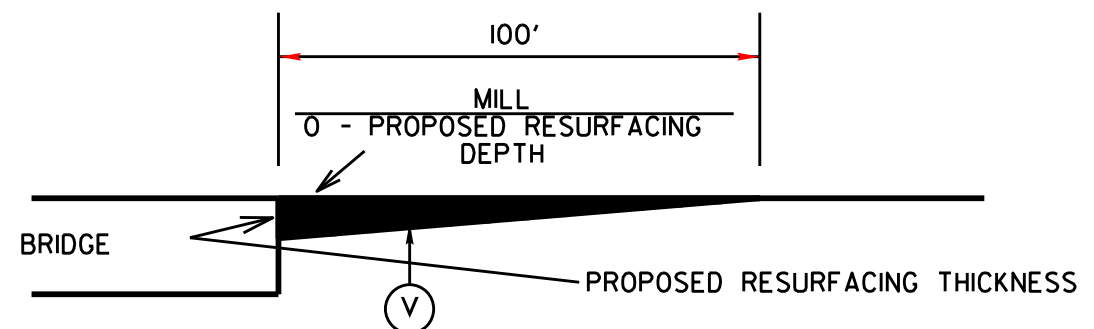
### TYPICAL 3



## SURFACING SCHEDULE

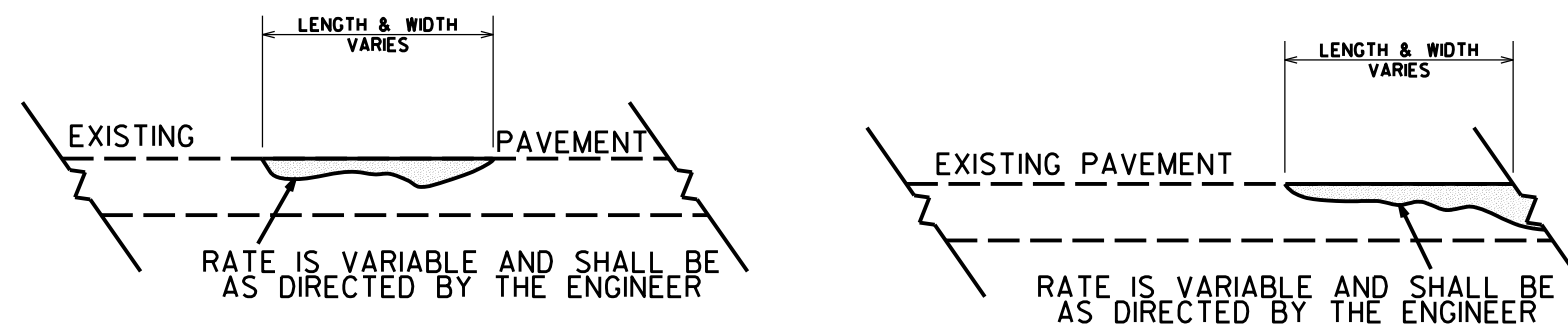
ITEM NO	DESCRIPTION
C	PROP. APPROX. 3/4" ASPHALT CONCRETE SURFACE COURSE, (LEVELING) TYPE SF9.5A AT AN AVERAGE RATE OF 82.5 LBS.PER.SQ.YD
C1	PROP. APPROX. 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A AT AN AVERAGE RATE OF 137.5 LBS.PER.SQ.YD
C2	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B AT AN AVERAGE RATE OF 168 LBS.PER.SQ.YD
T	SHOULDER RECONSTRUCTION
V	MILLED ASPHALT PAVEMENT 0 TO 1 1/2" IN DEPTH IN LOCATIONS AS DIRECTED BY PROJECT ENGINEER
VI	MILLED ASPHALT PAVEMENT 1 1/2" IN DEPTH IN LOCATIONS AS DIRECTED BY PROJECT ENGINEER
U	EXISTING ASPHALT

PROJECT REFERENCE NO.		SHEET NO.
2018CPT.14.07.10201.1		5
STATE PROJECT	F.A. PROJECT NO.	DESCRIPTION
2018CPT.14.07.20201.1		



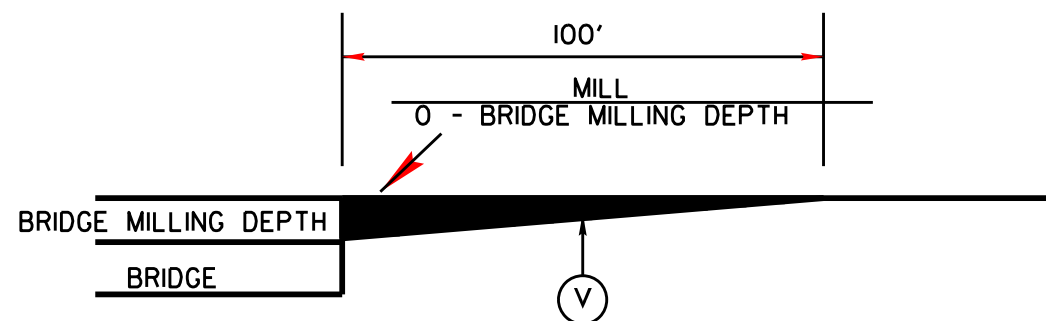
**MILLING DETAIL AT BRIDGE APPROACHES**

*WHERE BRIDGES WILL NOT BE RESURFACED. THIS WILL BE PAID FOR AS 0"- 1 1/2" MILLING.*



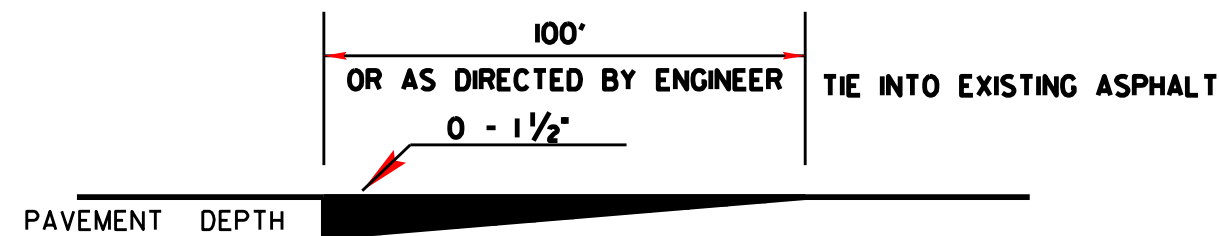
**DETAIL SHOWING METHOD OF WEDGING**

*\*PROPOSED WEDGE COURSE\* (114 LBS PER SQ YARD PER 1" DEPTH)*



**MILLING DETAIL AT BRIDGE APPROACHES**

*WHERE BRIDGES WILL BE MILLED THEN RESURFACED. THIS WILL BE PAID FOR AS 0"- 1 1/2" MILLING.*

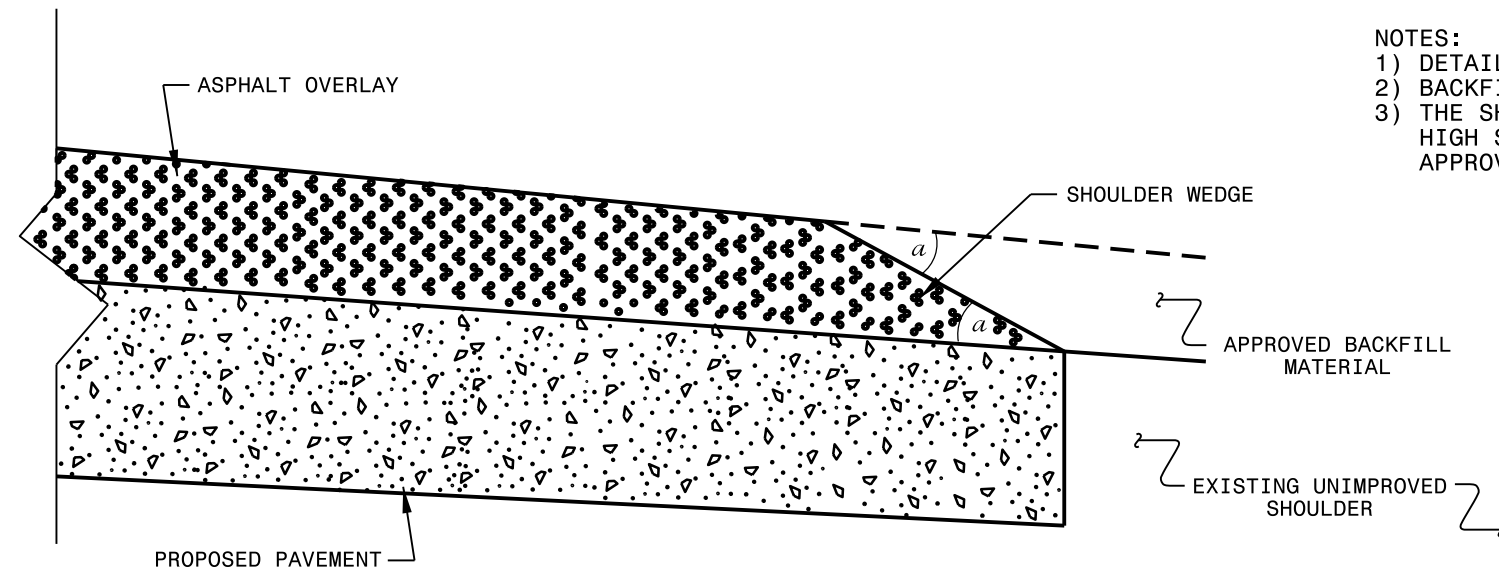


**DETAIL TO TIE INTO EXIST PAVEMENT**

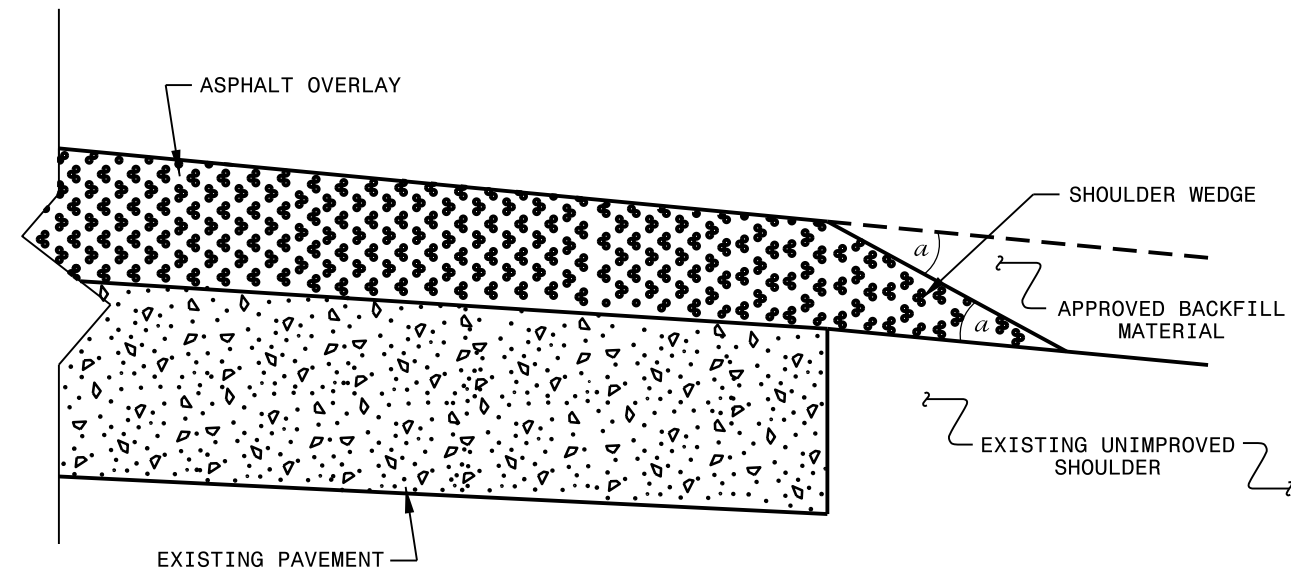
*THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE FACT THAT HE WILL BE REQUIRED TO MILL THE EXISTING ASPHALT PAVEMENT TO ENSURE A PROPER TIE-IN WITH THE EXISTING SURFACE AT THE BEGINNING, END AND Y LINES OF EACH MAP. THIS WILL BE PAID FOR AS INCIDENTAL MILLING.*

NOTES:

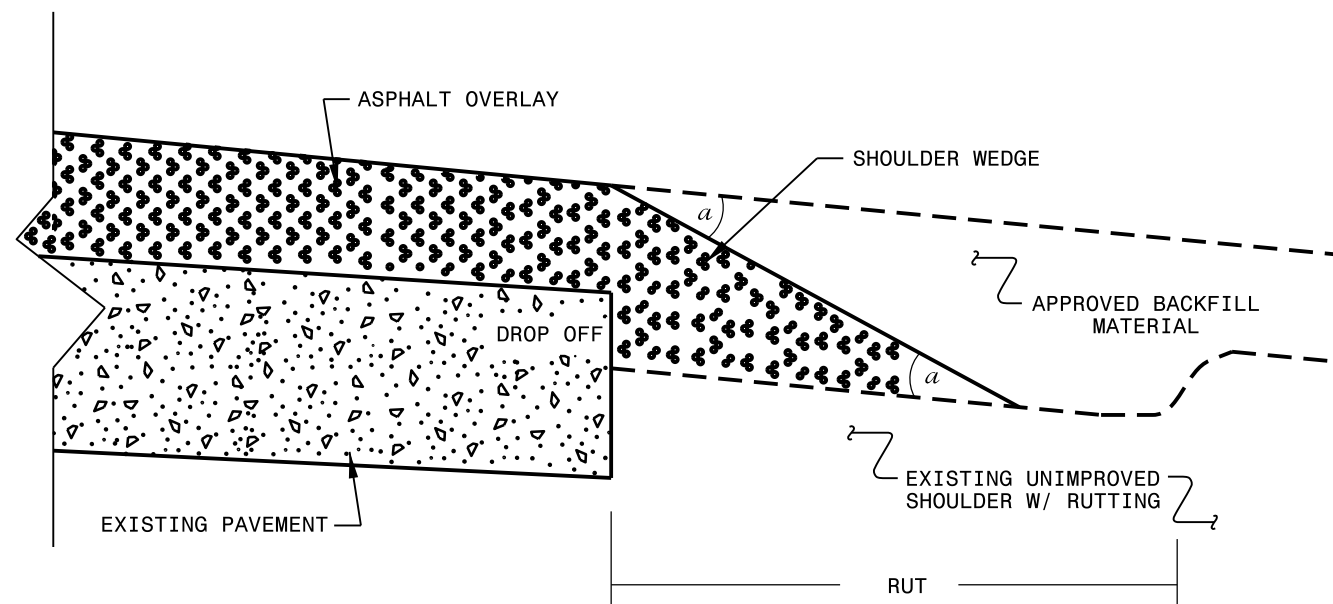
- 1) DETAIL DOES NOT APPLY TO OGAFB AND ULTRA-THIN BONDED WEARING COURSE.
- 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
- 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS, SIDE STREETS, HIGH SHOULDERS, AND OTHER LOCATIONS NOT FEASIBLE TO CONSTRUCT AS APPROVED BY THE ENGINEER.



**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°

<b>CONTRACT STANDARDS AND DEVELOPMENT UNIT</b>			
Office 919-707-6950		FAX 919-250-4119	
<b>SHOULDER WEDGE DETAILS</b>			
ORIGINAL BY: T.SPELL	DATE: 7-19-11		
MODIFIED BY:	DATE: 2/2/16		
CHECKED BY:	DATE:		
FILE SPEC.: szusr/details/stand/shoulderwedgedetail.dgn			

24-MAR-2016 11:45  
 S:\Contracts\Resurfacing Projects\Shoulder Wedge Details\Revised Shoulder Wedge Detail.dgn  
 \*\*\*\*\*USERNAME\*\*\*\*\*

PROJECT NO.	SHEET NO.	TOTAL NO.
2018CPT.14.07.10201.1, etc.	7	

### SUMMARY OF QUANTITIES

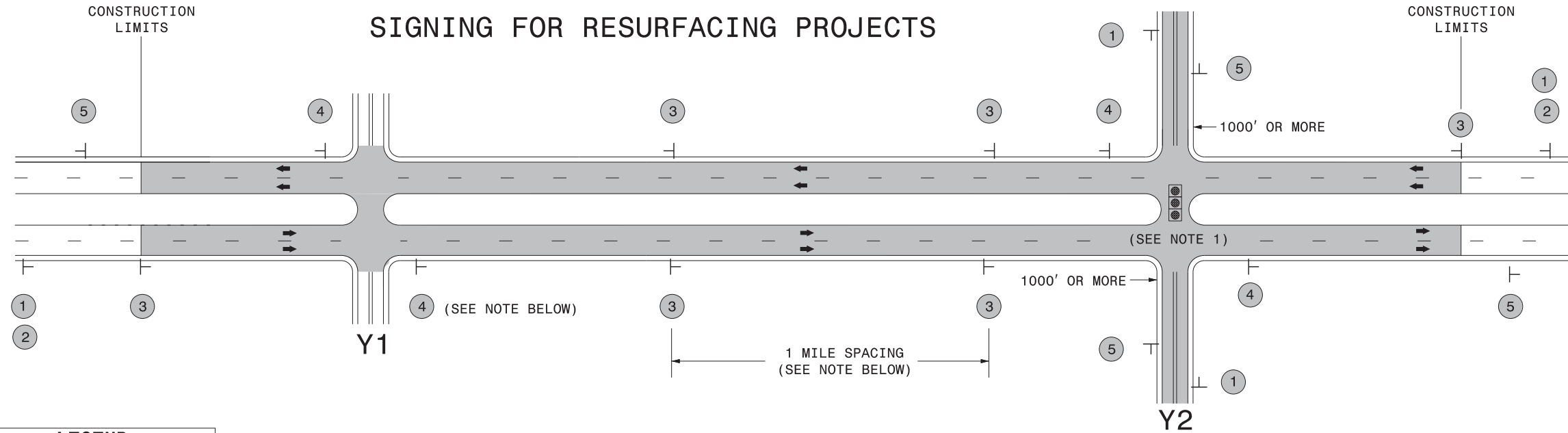
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP	LANES	LANE TYPE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH MI	WIDTH FT	SHOULDER RECONSTRUCTION SMI	1½" MILLING SY	0" TO 1.5" MILLING SY	INCIDENTAL MILLING SY	ASPHALT CONCRETE WEDGE COURSE, TYPE I19.0B TONS	SURFACE COURSE, S9.5B TONS	SURFACE COURSE, SF9.5A TONS	LEVELING COURSE, SF9.5A TON	ASPHALT BINDER FOR PLANT MIX TONS	PATCHING EXISTING PAVEMENT TONS	INDUCTIVE LOOP LF	LEAD-IN CABLE 14-2 LF	ASPHALT PLUG JOINT REPAIR/ REPLACEMENT (18" TO 24" WIDE W/PLATE) LF
2018CPT.14.07.10201.1	Cherokee	1	US 19/74 EAST	FROM BRIDGE #68 TO .01 MI EAST OF US 19 BUS	1	2		YES	NO	6.57	32	13.14	92,506	1,600	300		20,385			1,223		350	150	186
		2	US 19/74 WEST	FROM .01 MILES EAST OF US 19 BUS TO BRIDGE # 69	1	2	MD	YES	NO	6.57	32	13.14	92,506	1,600	300		20,385			1,223		350	150	186
<b>TOTAL FOR PROJ NO. 2018CPT.14.07.10201.1</b>										<b>13.14</b>		<b>26.28</b>	<b>185,012</b>	<b>3,200</b>	<b>600</b>		<b>40,770</b>			<b>2,446</b>		<b>700</b>	<b>300</b>	<b>372</b>
2018CPT.14.07.20201.1	Cherokee	3	SR-1305 (CANEY CREEK RD)	FROM SR-1304 TO US 19/64	3	2	2WU	NO	NO	0.29	19	0.58						246		16	100			
		4	SR 1305 (CANEY CREEK RD)	FROM US 64 TO SR 1576	2	2	2WU	NO	NO	3.28	19	6.56				100		2,780	1,438	277	275			
<b>TOTAL FOR PROJ NO. 2018CPT.14.07.20201.1</b>										<b>3.57</b>		<b>7.14</b>				<b>100</b>		<b>3,026</b>	<b>1,438</b>	<b>293</b>	<b>375</b>			
2018CPT.14.07.20221.1	Clay	5	SR 1131 (GREEN COVE RD)	FROM US 64 TO SR-1135	3	2	2WU	NO	NO	3.6	18	7.20						2,892		194	500			
<b>TOTAL FOR PROJ NO. 2018CPT.14.07.20221.1</b>										<b>3.6</b>		<b>7.20</b>						<b>2,892</b>		<b>194</b>	<b>500</b>			
<b>GRAND TOTAL</b>										<b>20.31</b>		<b>40.62</b>	<b>185,012</b>	<b>3,200</b>	<b>600</b>	<b>100</b>	<b>40,770</b>	<b>5,918</b>	<b>1,438</b>	<b>2,933</b>	<b>875</b>	<b>700</b>	<b>300</b>	<b>372</b>

PROJECT NO.	SHEET NO.	TOTAL NO.
2018CPT.14.07.10201.1, etc.	8	

**THERMOPLASTIC AND PAINT QUANTITIES**

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	WIDTH	4413000000-E	4457000000-N	4710000000-E	4725000000-E				4810000000-E		4835000000-E	4845000000-N				4890000000-E		4905000000-N				
										WORK ZONE ADVANCE/ GENERAL WARNING SIGNING SF	TEMPORARY TRAFFIC CONTROL LS	24" X 120 M WHITE THERMO LF	THERMO LT ARROW 90 M EA	THERMO STR ARROW 90 M EA	THERMO RT ARROW 90 M EA	THERMO STR & LT ARROW 90 M EA	4" YELLOW PAINT LF	4" WHITE PAINT LF	24" WHITE PAINT LF	PAINT RT ARROW EA	PAINT STR & LT ARROW EA	PAINT LT ARROW EA	PAINT STR ARROW EA	THERMO PAVEMENT MARKING LINES (4", 50 MIL) YELLOW LF	THERMO PAVEMENT MARKING LINES (4", 50 MIL) WHITE LF	SNOW PLOWABLE MARKERS EA				
2018CPT.14.07.10201.1	Cherokee	1	US 19/74 EAST	FROM BRIDGE #68 TO .01 MI EAST OF US 19 BUS	1	2		6.57	32	736	*	200	30	8			31,733	60,000		3	1			31,733	60,000	320				
		2	US 19/74 WEST	FROM .01 MILES EAST OF US 19 BUS TO BRIDGE # 69	1	2	MD	6.57	32	736	*	200	20	8	6	1	34,690	70,654		6	1	20	8	34,690	70,654	320				
<b>TOTAL FOR PROJ NO. 2018CPT.14.07.10201.1</b>													<b>73</b>			<b>197,077</b>			<b>39</b>			<b>197,077</b>		<b>640</b>						
2018CPT.14.07.20201.1	Cherokee	3	SR-1305 (CANEY CREEK RD)	FROM SR-1304 TO US 19/64	3	2	2WU	0.29	19	32	*					6,125	6,125	60												
		4	SR 1305 (CANEY CREEK RD)	FROM US 64 TO SR 1576	2	2	2WU	3.28	19	367	*						70,586	70,586	40											
<b>TOTAL FOR PROJ NO. 2018CPT.14.07.20201.1</b>																<b>76,711</b>	<b>76,711</b>	<b>100</b>												
<b>TOTAL FOR PROJ NO. 2018CPT.14.07.20201.1</b>																<b>153,422</b>														
2018CPT.14.07.20221.1	Clay	5	SR 1131 (GREEN COVE RD)	FROM US 64 TO SR-1135	3	2	2WU	3.6	18	403	*					77,472	77,472	40												
<b>TOTAL FOR PROJ NO. 2018CPT.14.07.20221.1</b>																	<b>77,472</b>	<b>77,472</b>	<b>40</b>											
<b>TOTAL FOR PROJ NO. 2018CPT.14.07.20221.1</b>																<b>154,944</b>														
<b>GRAND TOTAL</b>												<b>20.31</b>		<b>2,274</b>	<b>1</b>	<b>400</b>	<b>50</b>	<b>16</b>	<b>6</b>	<b>1</b>	<b>220,606</b>	<b>284,837</b>	<b>140</b>	<b>9</b>	<b>2</b>	<b>20</b>	<b>8</b>	<b>66,423</b>	<b>130,654</b>	<b>640</b>
<b>GRAND TOTAL</b>																<b>73</b>			<b>505,443</b>		<b>39</b>			<b>197,077</b>						





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

**MAINLINE (-L-) SIGNING**

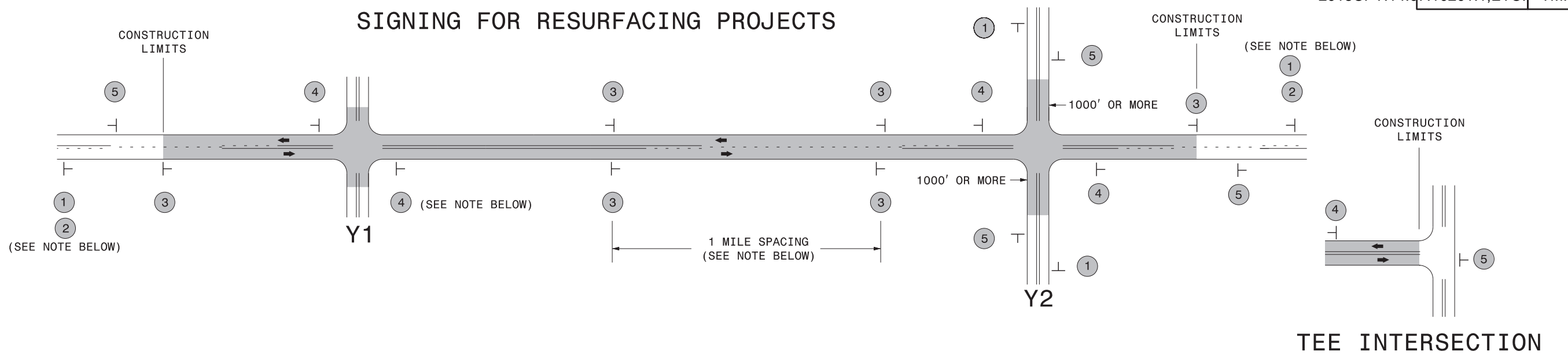
**-Y- LINE SIGNING**

SIGNING NOTES AND PLACEMENT PER DIRECTION	 	<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;"> <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. 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\_LrSu\_Shldr.dgn User:rmgarrrett

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

# SIGNING FOR RESURFACING PROJECTS



## MAINLINE (-L-) SIGNING

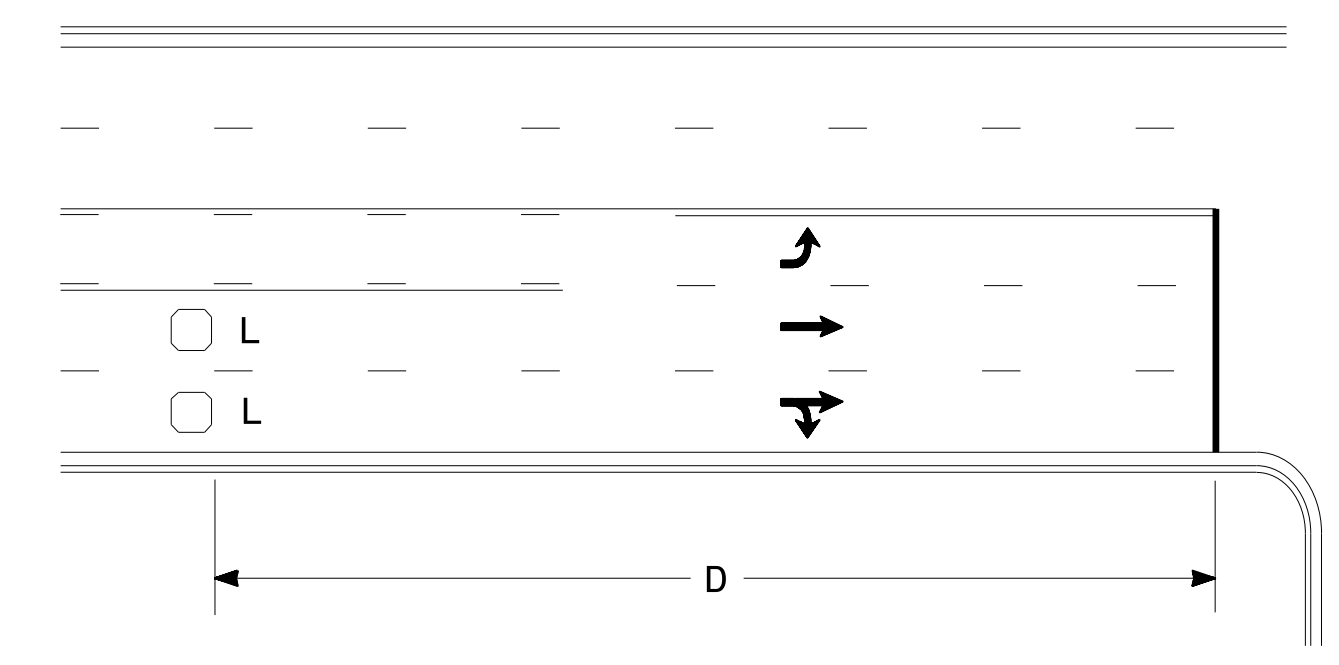
## -Y- LINE SIGNING

SIGNING NOTES AND PLACEMENT PER DIRECTION	MAINLINE (-L-) SIGNING		-Y- LINE SIGNING		
	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.	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	
	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)	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.	
	3	 SP 13107 48" X 48"	- PLACE INITIALLY AT THE CONSTRUCTION LIMITS AND SPACE 1 MILE APART THEREAFTER. - AT TEE INTERSECTIONS INSTALL INITIALLY 0.5 MILE FROM INTERSECTION AND SPACE 1 MILE APART THEREAFTER.	 W20-1 48" X 48"	 W20-7 A 48" X 48"
	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. - FOR TEE INTERSECTIONS, INSTALL WITHIN 500' +/- OF THE INTERSECTION ALONG -L- LINE.	PLACED 500' IN ADVANCE OF FLAGGER. PLACED 250' IN ADVANCE OF FLAGGER.	
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.			

RESURFACING ADVANCE WARNING SIGNS FOR RURAL AND SUBURBAN 2 LANE ROADWAYS

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### High Speed Detection (≥40 mph)

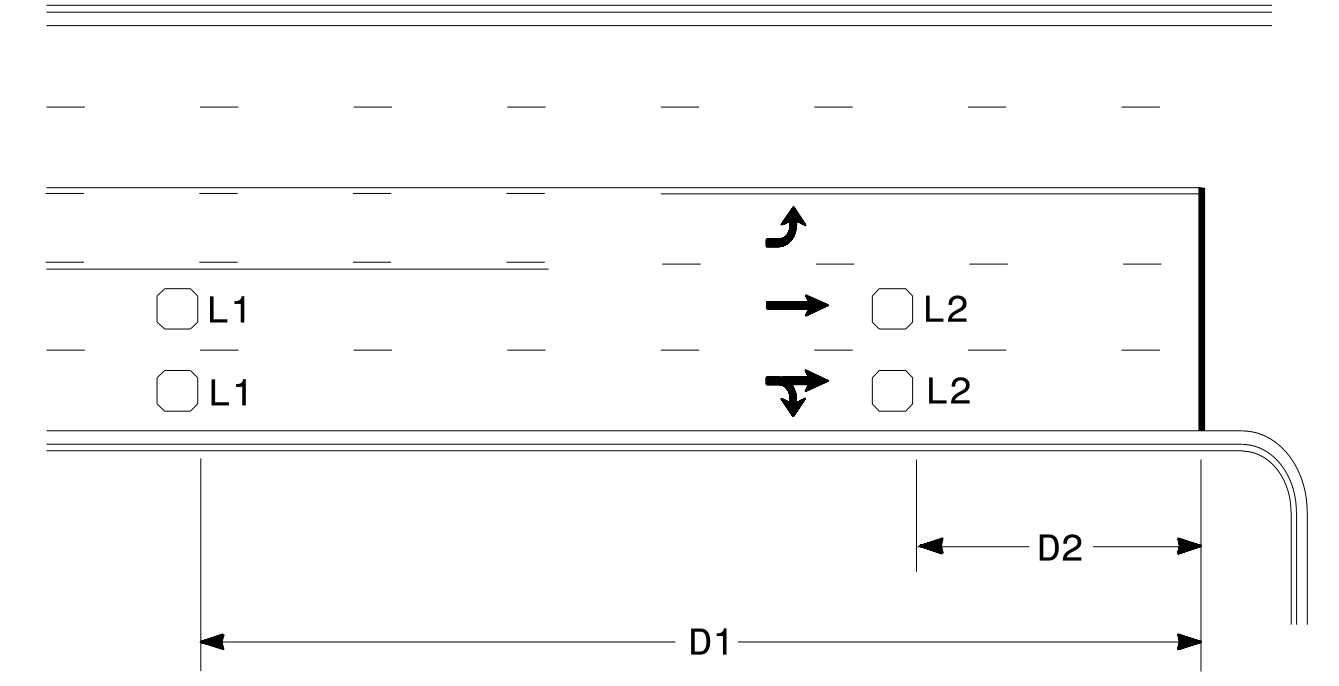


Speed Limit mph	D ft
40	250
45	300
50	355
55	420

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

Volume Density Operation

OR

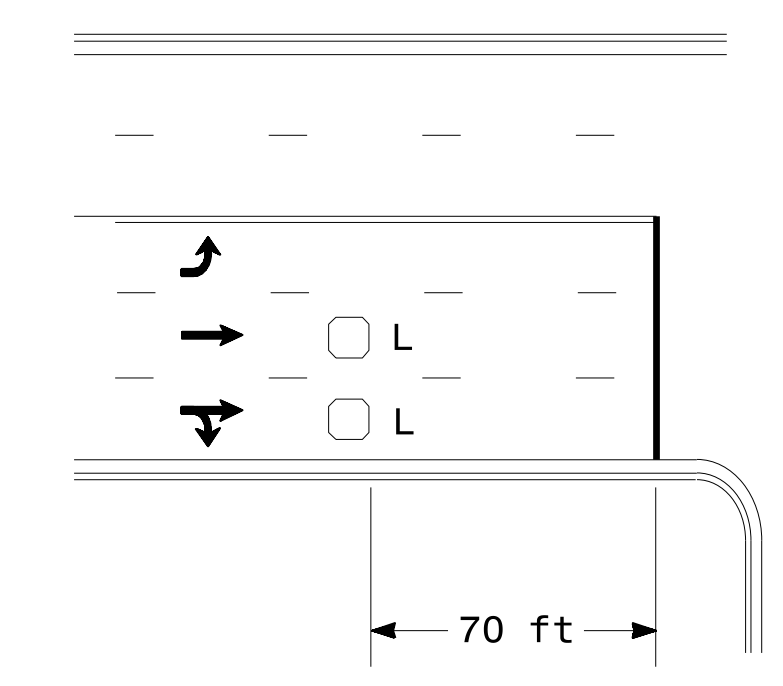


Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

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

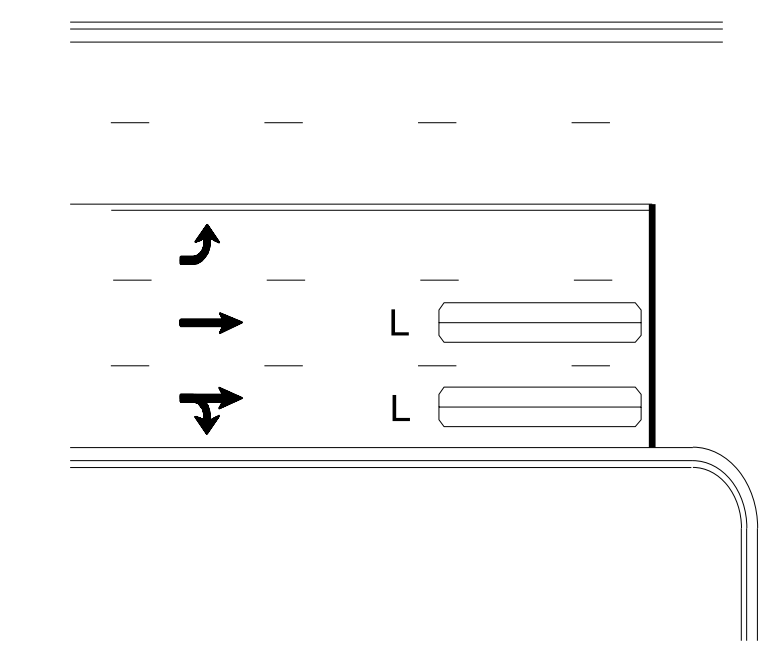
"Stretch" Operation

### Low Speed Detection (≤35 mph)



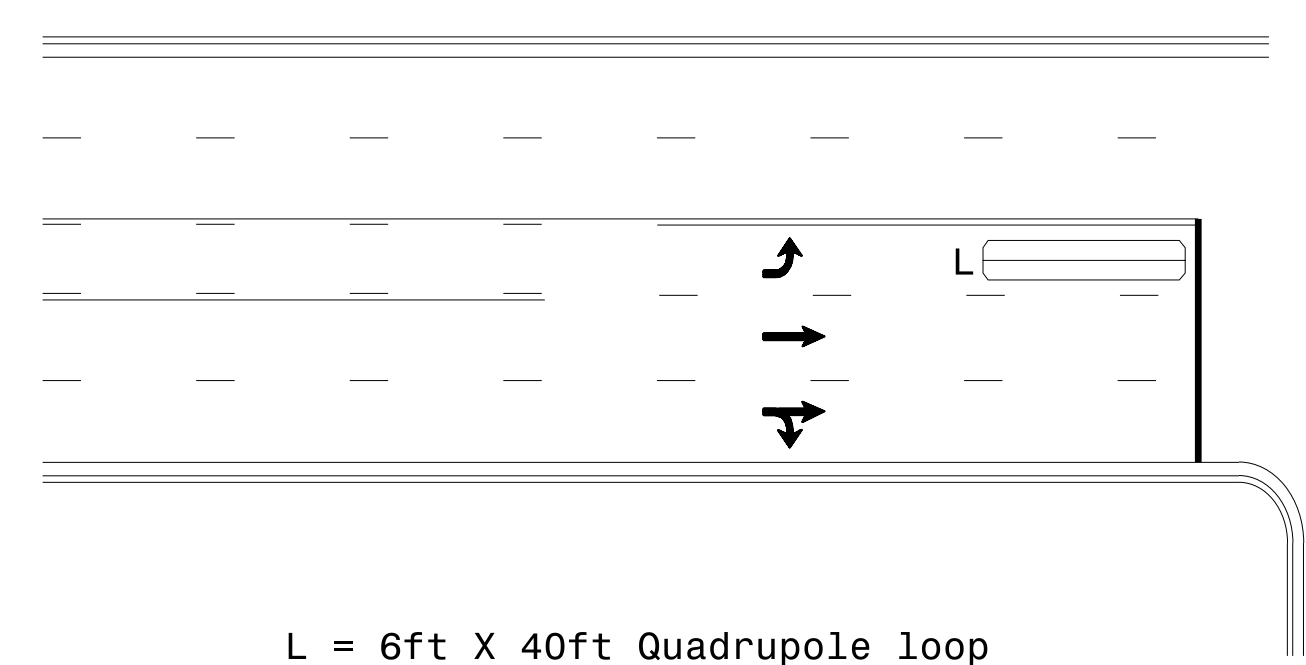
L = 6ft X 6ft  
Wired in series

OR



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

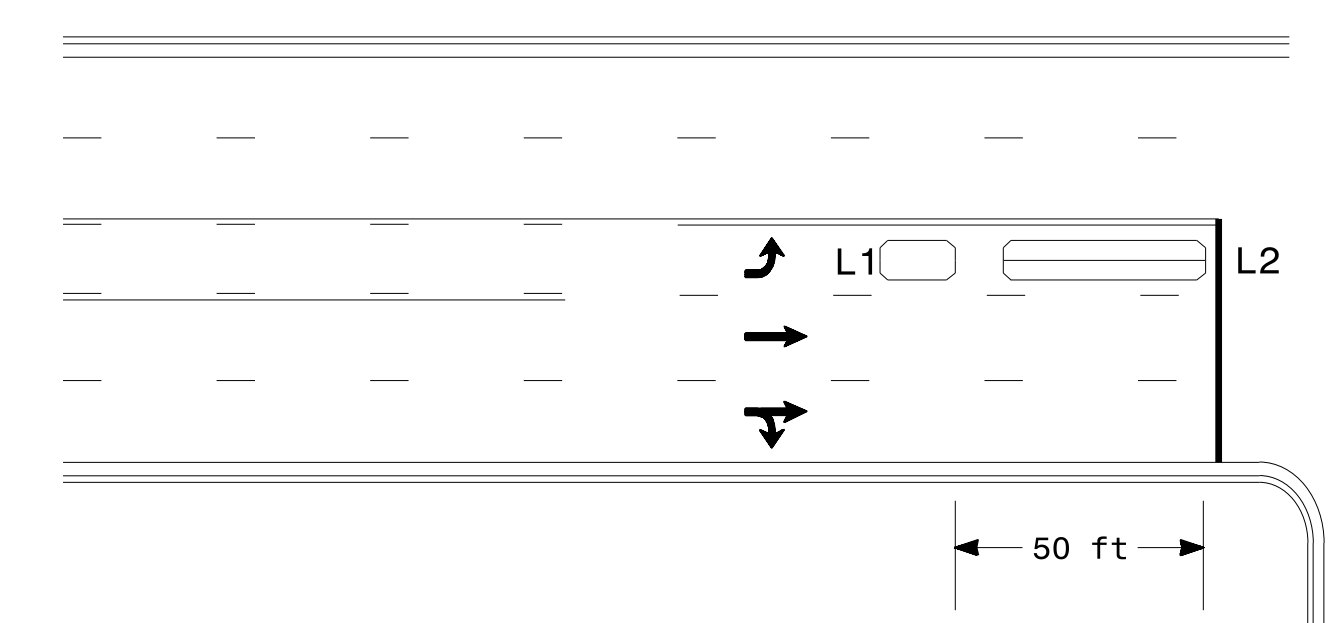
### Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

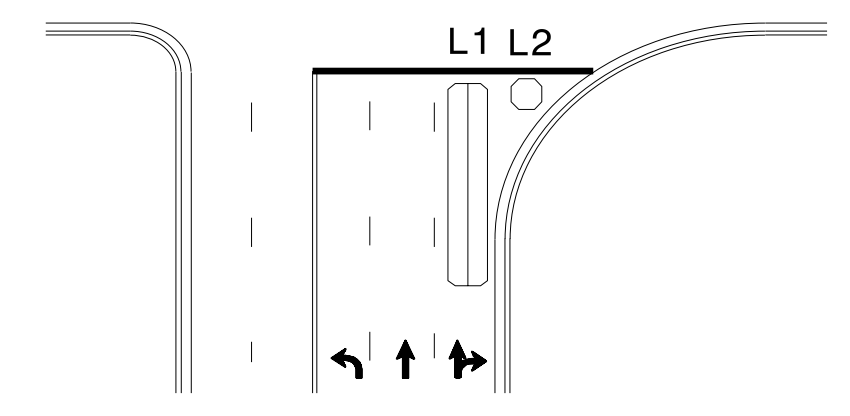
OR



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

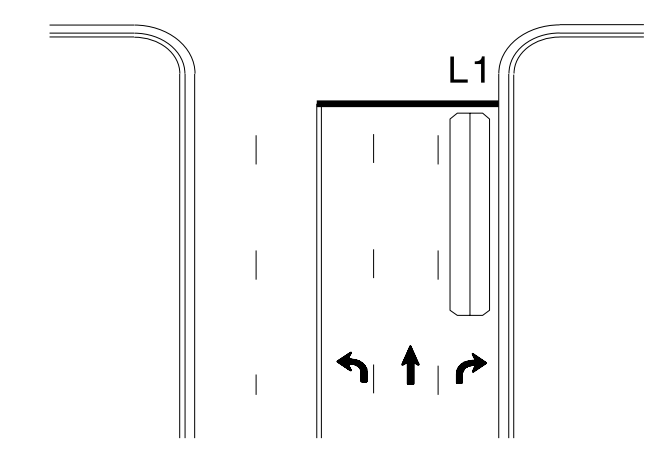
Queue Loop Detection

### Right Turn Lane Detection

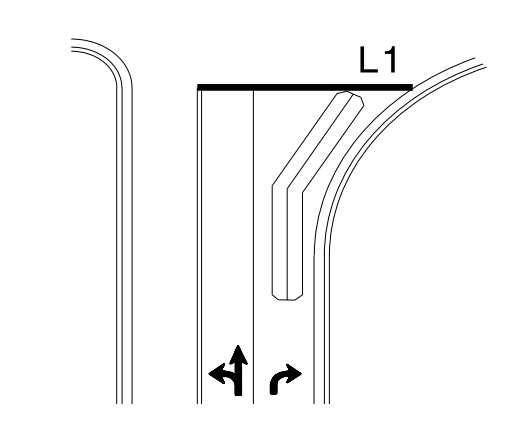


Shared Lane/  
Wide Radius Turn

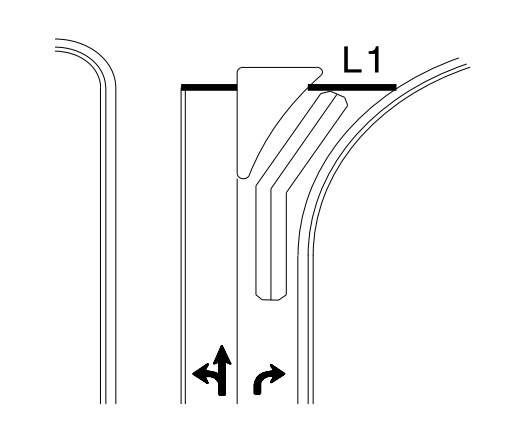
L1 = 6ft X 40ft Quadrupole loop  
L2 = 6ft X 6ft [Minimum] Presence loop  
Wired separately



Standard Turn

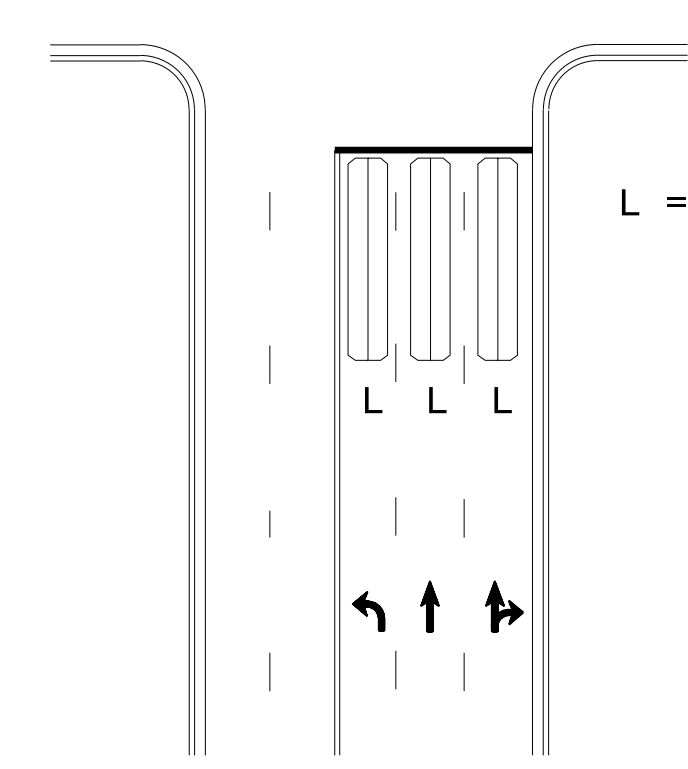


Wide Radius Turn



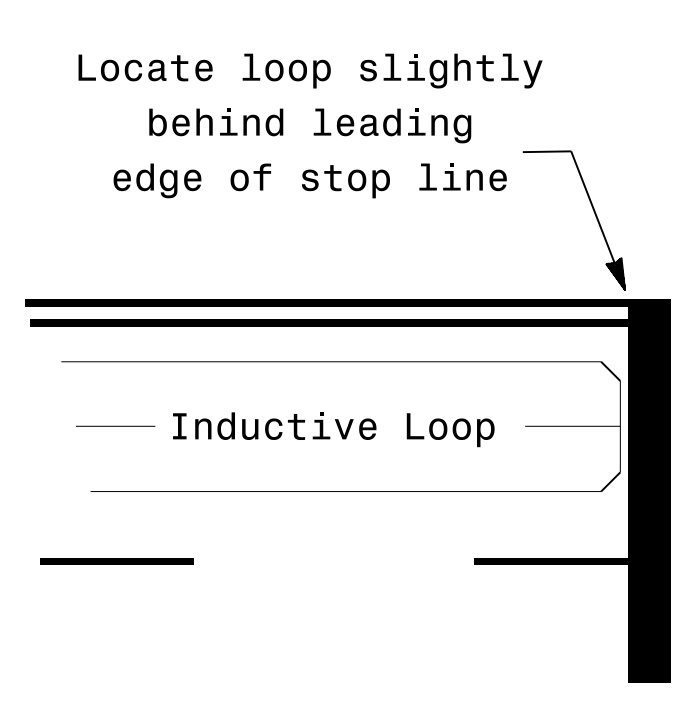
Channelized Turn

### 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:

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1/30/2015

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paalexander