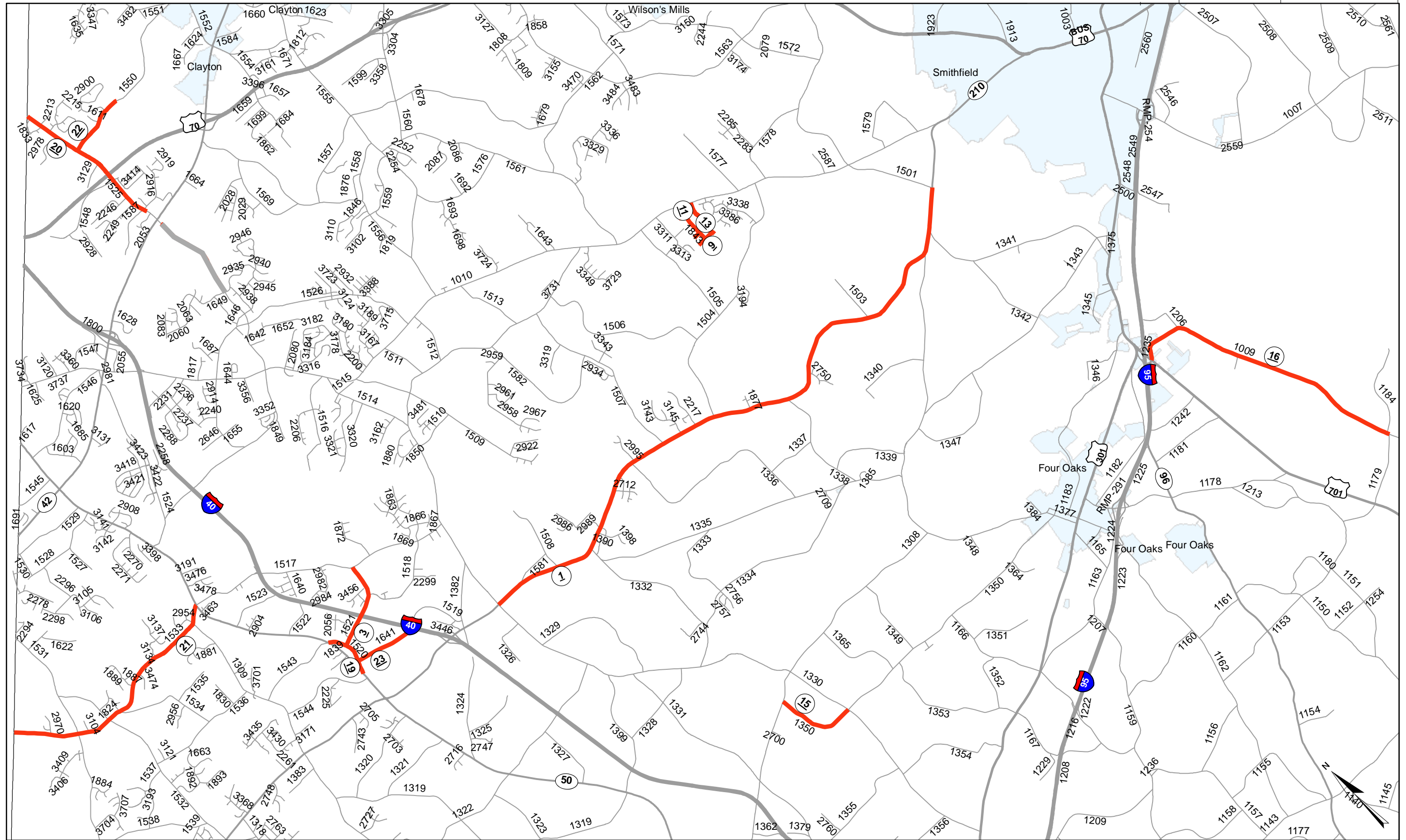
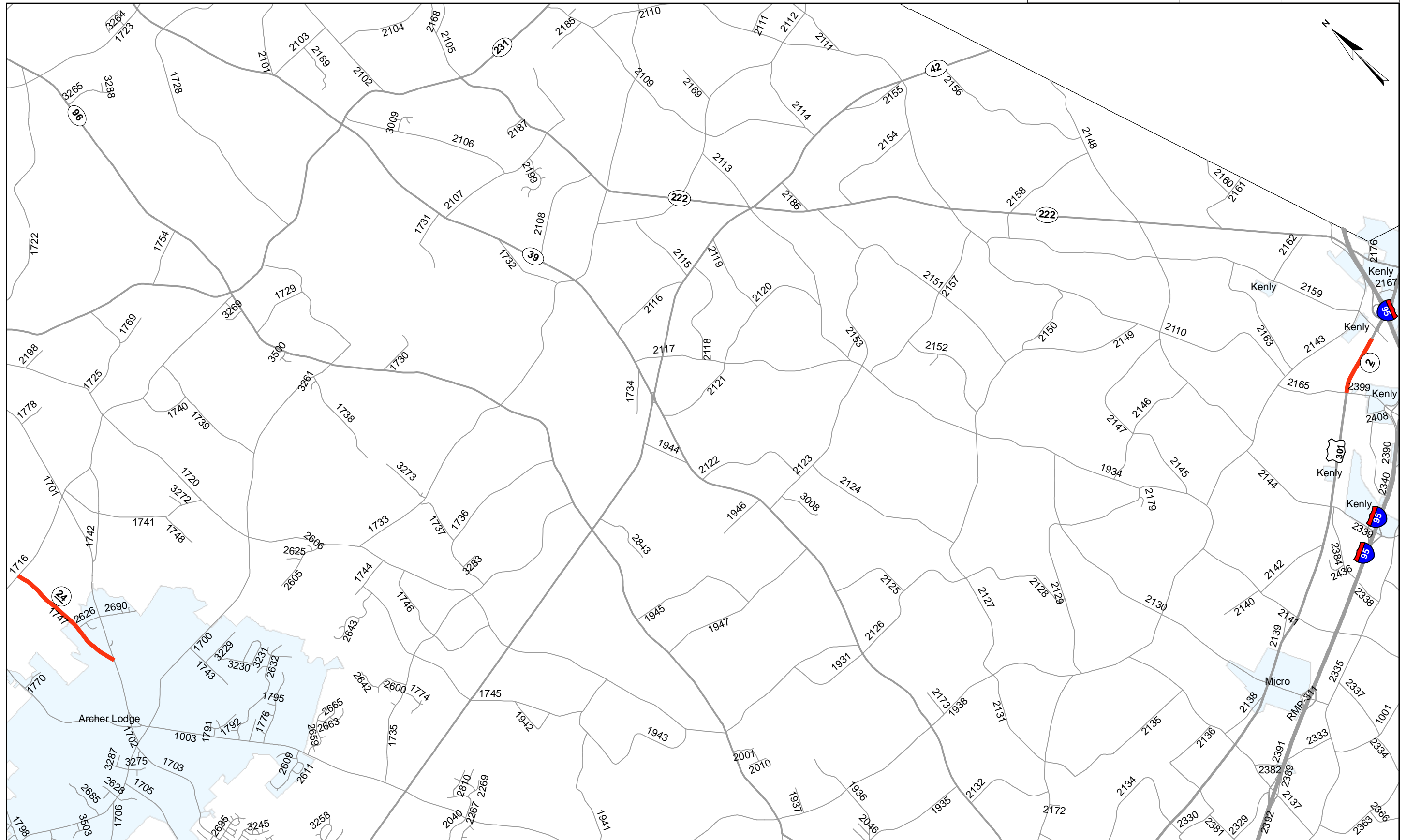


# Johnston County



# Johnston County

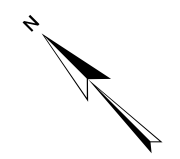
PROJECT NO.	SHEET NO.	TOTAL SHEETS
2021CPT.04.06.10511, 2021CPT.04.06.20511,	2	



# Johnston County

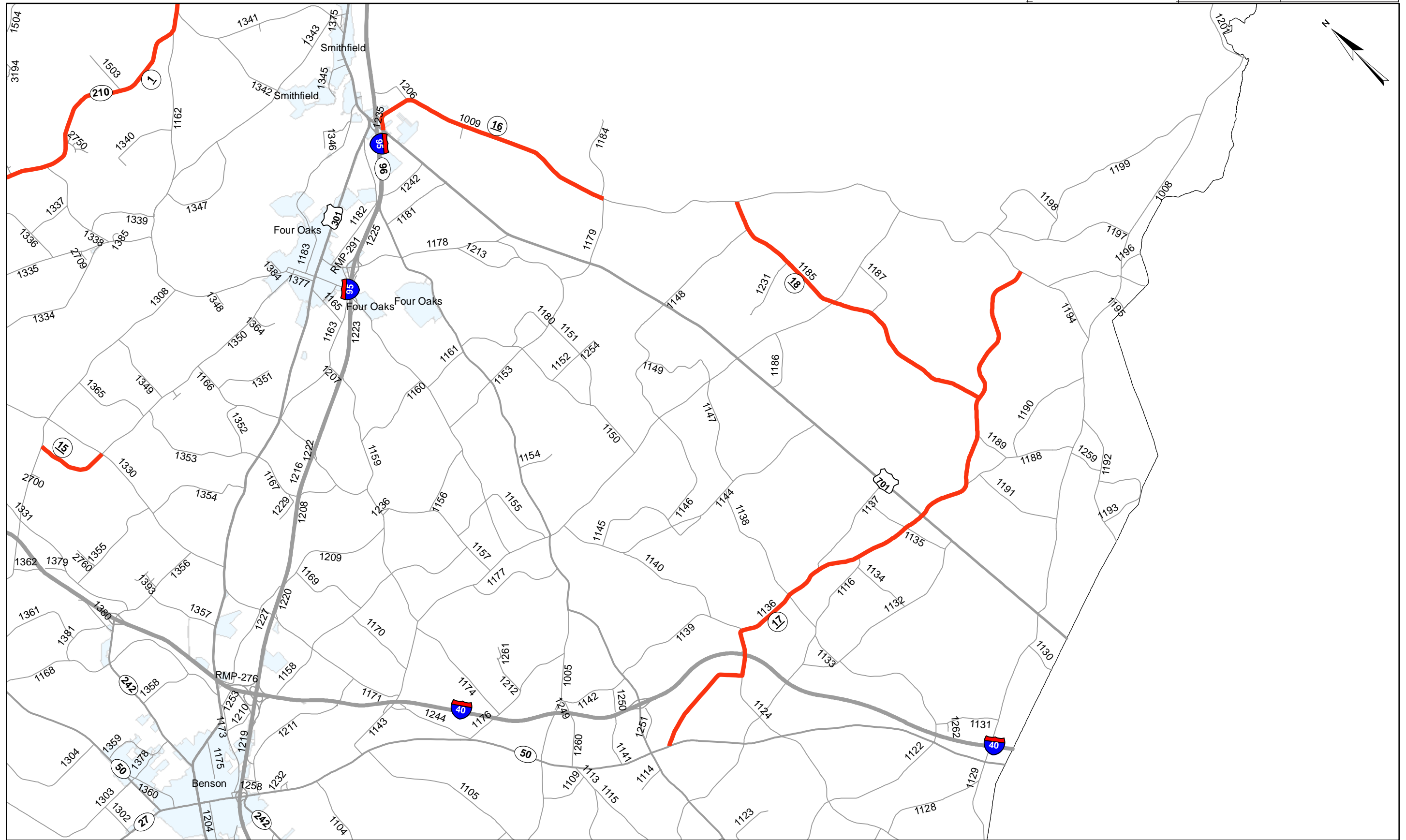
PROJECT NO.	SHEET NO.	TOTAL SHEETS
2021CPT.04.06.10511, 2021CPT.04.06.20511,	3	

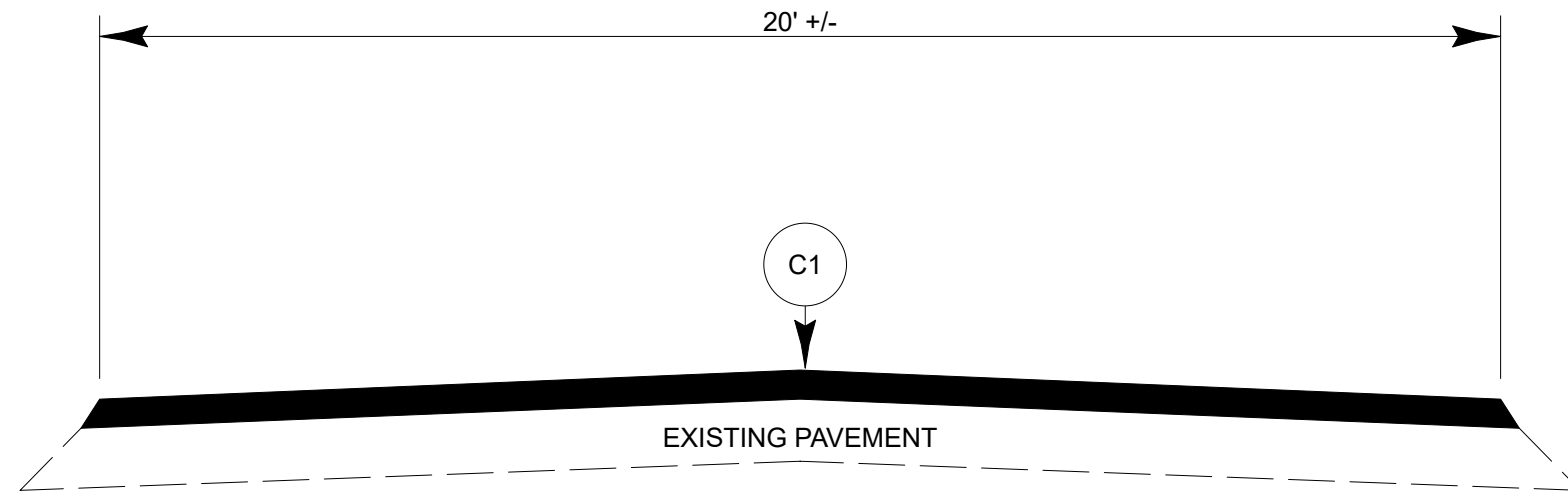




# Johnston County

PROJECT NO.	SHEET NO.	TOTAL SHEETS
2021CPT.04.06.10511, 2021CPT.04.06.20511,	5	

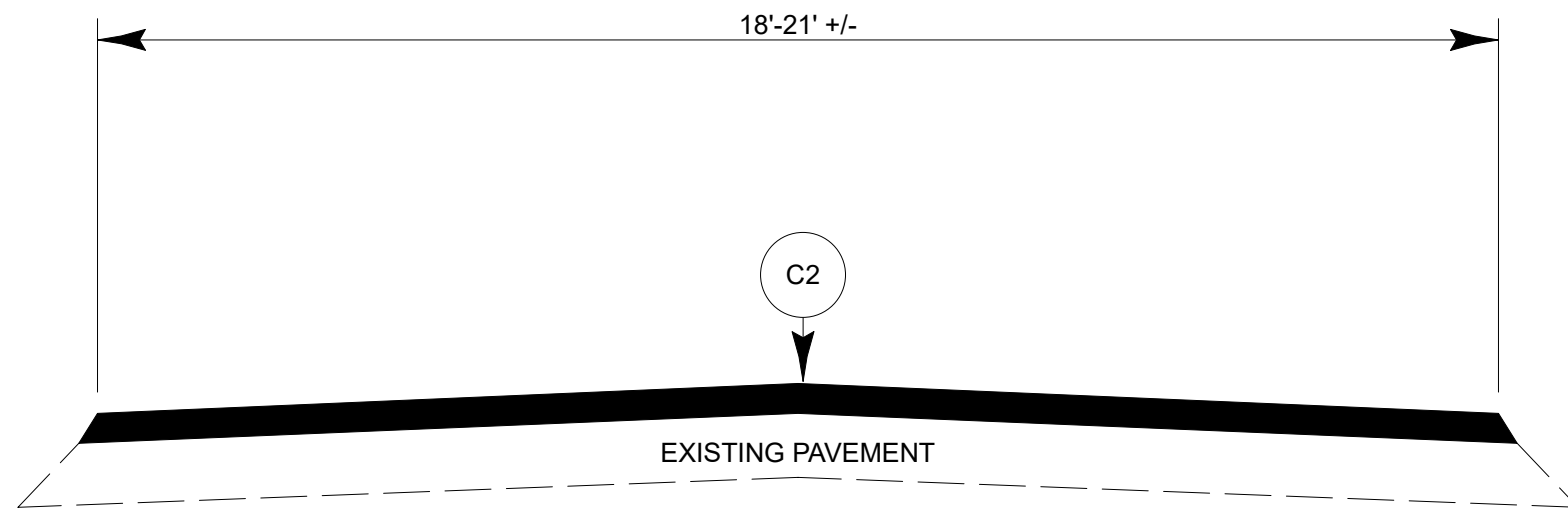




TYPICAL SECTION NO. 1

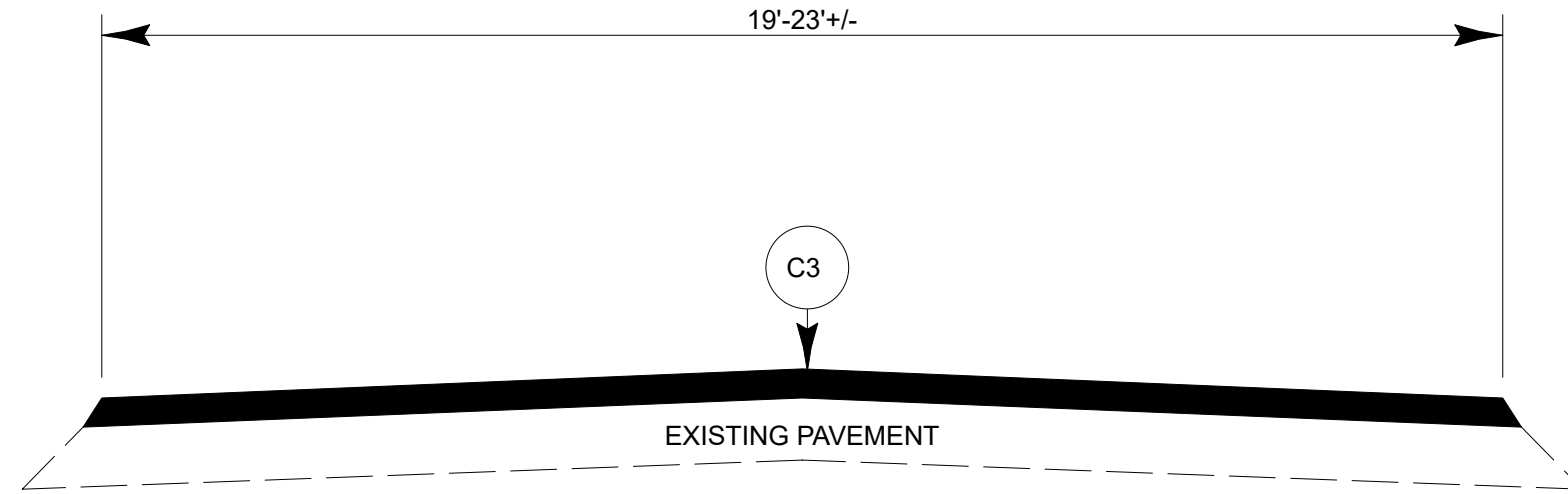
**Note:**

1. Some SR Routes are less than 20'. Contractor is responsible for appropriate size paving equipment.
2. Shoulder Reconstruction will be by State Forces except for Map # 2.

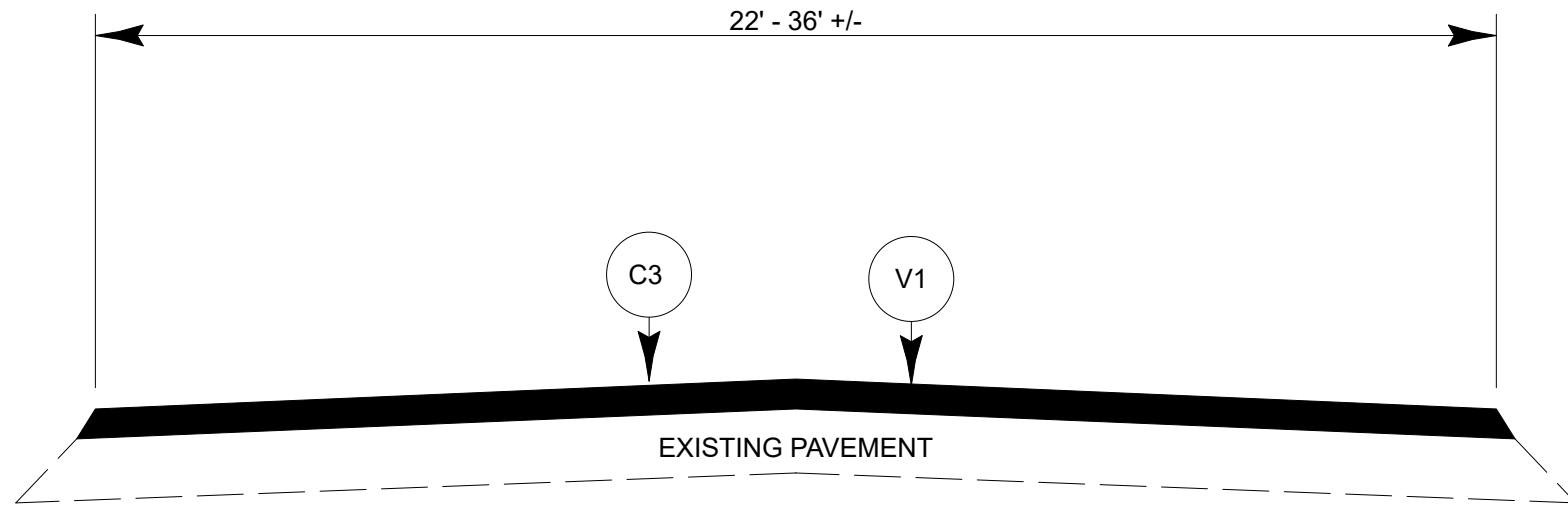


TYPICAL SECTION NO. 2

PAVEMENT SCHEDULE	
C1	PROP. APPROX 1.25" OF S9.5B AT AN AVERAGE RATE OF 138 LBS PER SQ YARD
C2	PROP. APPROX 1.5" OF S9.5B AT AN AVERAGE RATE OF 165 LBS PER SQ YARD
C3	PROP. APPROX 1.5" OF S9.5C AT AN AVERAGE RATE OF 168 LBS PER SQ YARD
D1	PROP. APPROX 3" OF I-19.0C AT AN AVERAGE RATE OF 342 LBS PER SQ YARD.
D2	PROP. APPROX. 2.5" OF I-19.0C AT AN AVERAGE RATE OF 285 LBS PER SQ YARD.
T	SHOULDER RECONSTRUCTION
V1	MILL ASPHALT PAVEMENT, 1-1/2" DEPTH
V2	MILL ASPHALT PAVEMENT, 2 " DEPTH
V3	MILL ASPHALT PAVEMENT, 2.5" DEPTH



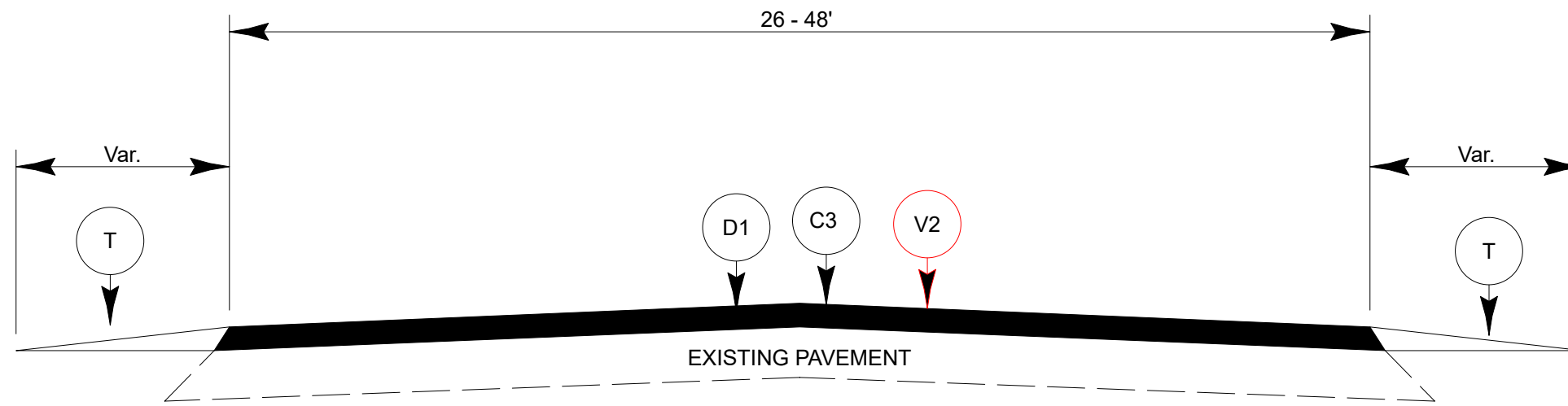
TYPICAL SECTION NO. 3



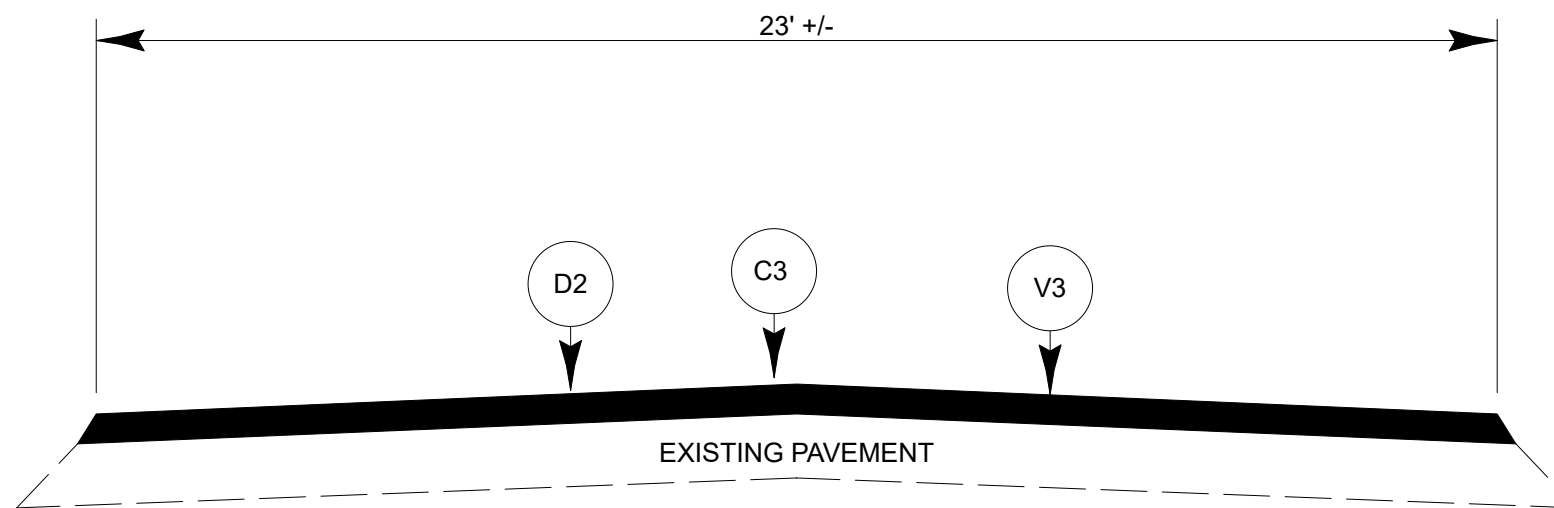
TYPICAL SECTION NO. 4

Note: Map # 1 - Mill 1.5" & replace on Bridge # 0050

PAVEMENT SCHEDULE	
C1	PROP. APPROX 1.25" OF S9.5B AT AN AVERAGE RATE OF 138 LBS PER SQ YARD
C2	PROP. APPROX 1.5" OF S9.5B AT AN AVERAGE RATE OF 165 LBS PER SQ YARD
C3	PROP. APPROX 1.5" OF S9.5C AT AN AVERAGE RATE OF 168 LBS PER SQ YARD
D1	PROP. APPROX 3" OF I-19.0C AT AN AVERAGE RATE OF 342 LBS PER SQ YARD.
D2	PROP. APPROX. 2.5" OF I-19.0C AT AN AVERAGE RATE OF 285 LBS PER SQ YARD.
T	SHOULDER RECONSTRUCTION
V1	MILL ASPHALT PAVEMENT, 1-1/2" DEPTH
V2	MILL ASPHALT PAVEMENT, 2 " DEPTH
V3	MILL ASPHALT PAVEMENT, 2.5" DEPTH



TYPICAL SECTION NO. 5

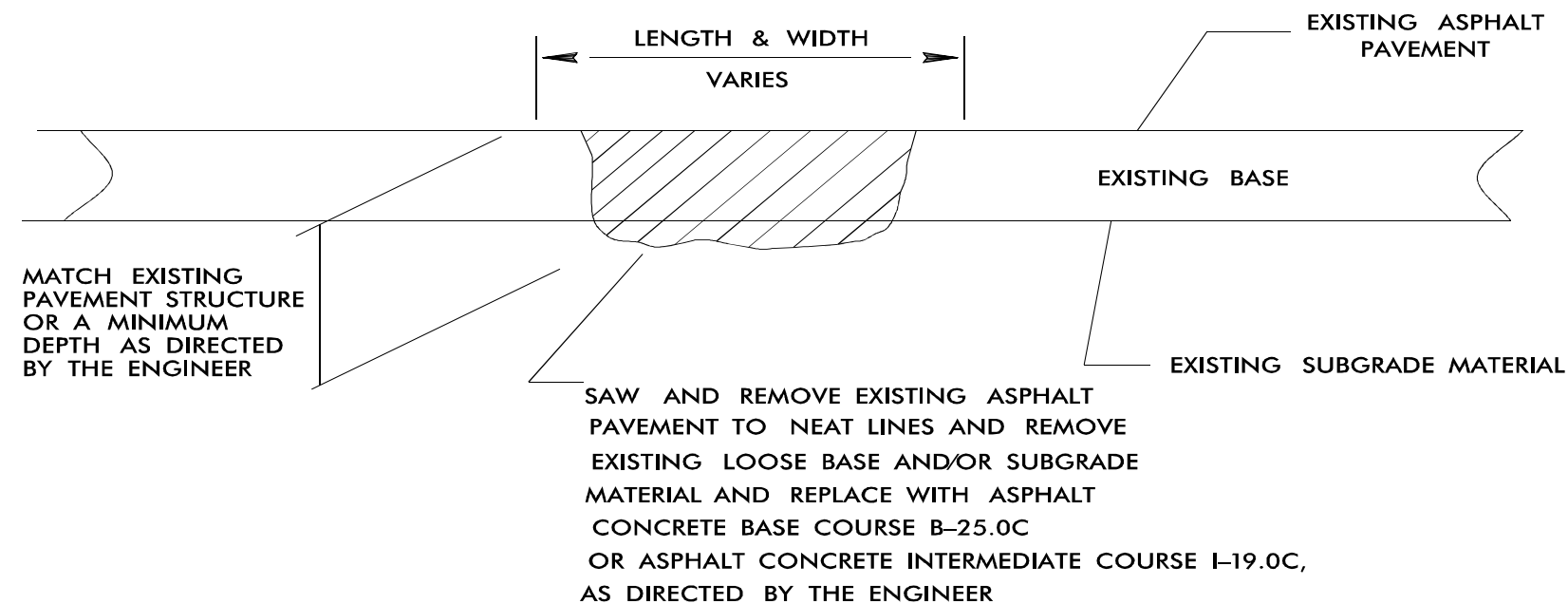


TYPICAL SECTION NO. 6

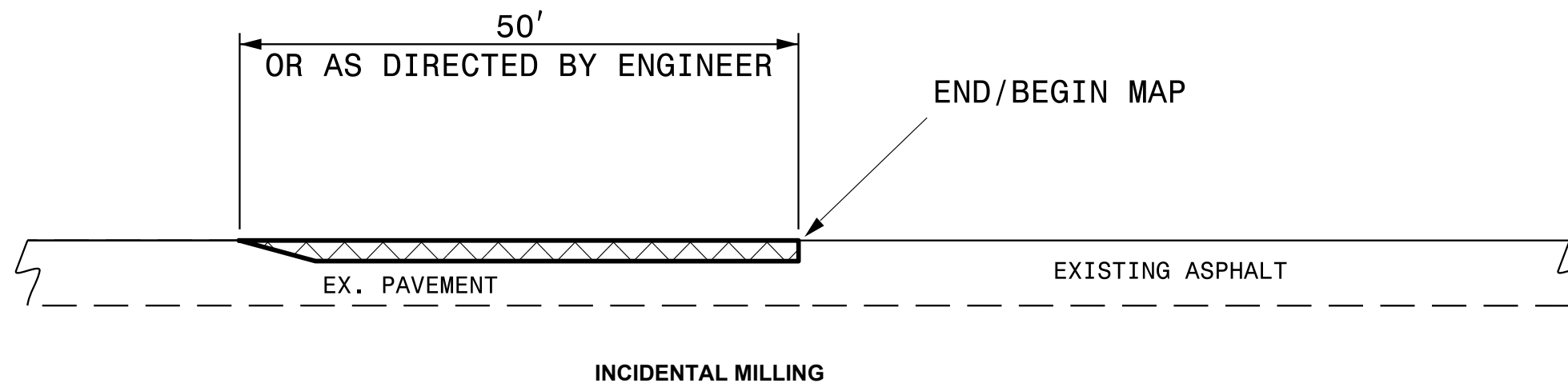
PAVEMENT SCHEDULE	
C1	PROP. APPROX 1.25" OF S9.5B AT AN AVERAGE RATE OF 138 LBS PER SQ YARD
C2	PROP. APPROX 1.5" OF S9.5B AT AN AVERAGE RATE OF 165 LBS PER SQ YARD
C3	PROP. APPROX 1.5" OF S9.5C AT AN AVERAGE RATE OF 168 LBS PER SQ YARD
D1	PROP. APPROX 3" OF I-19.0C AT AN AVERAGE RATE OF 342 LBS PER SQ YARD.
D2	PROP. APPROX. 2.5" OF I-19.0C AT AN AVERAGE RATE OF 285 LBS PER SQ YARD.
T	SHOULDER RECONSTRUCTION
V1	MILL ASPHALT PAVEMENT, 1-1/2" DEPTH
V2	MILL ASPHALT PAVEMENT, 2 " DEPTH
V3	MILL ASPHALT PAVEMENT, 2.5" DEPTH



## DETAILS OF PATCHING EXISTING PAVEMENT PRIOR TO RESURFACING DETAIL



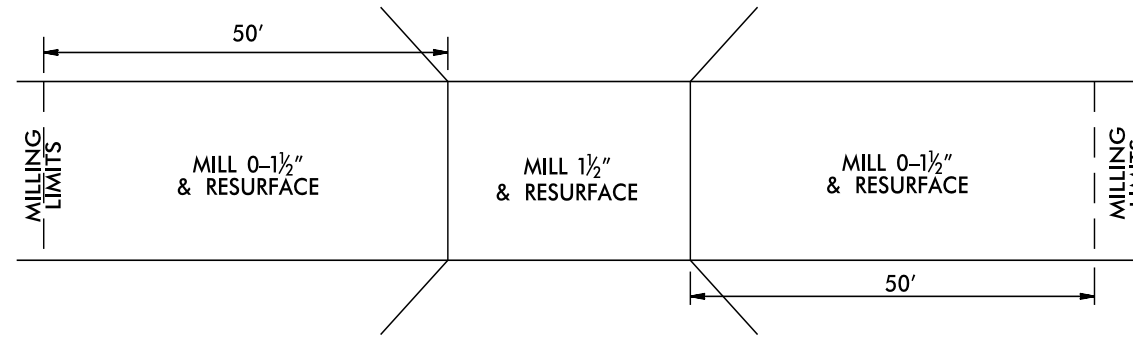
## INCIDENTAL MILLING DETAIL



**NOTE:**

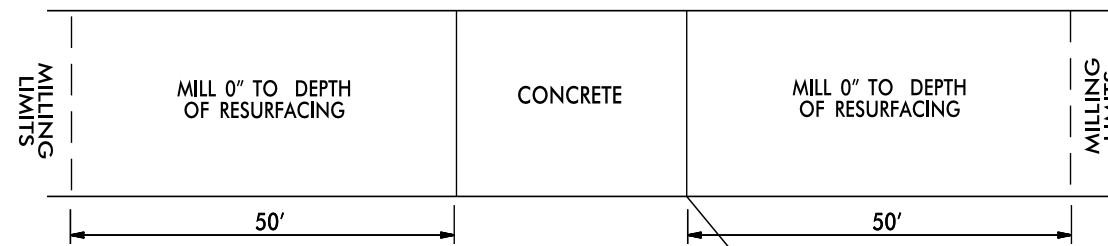
1. PERFORM INCIDENTAL MILLING AT THE TIE INS, RAILROADS, BRIDGE DECKS AND APPROACHES AT THE DIRECTION OF THE ENGINEER.

## PAVEMENT TIE-IN DETAIL



**DRAWING FOR BRIDGE #39  
USE FOR MAP #17**

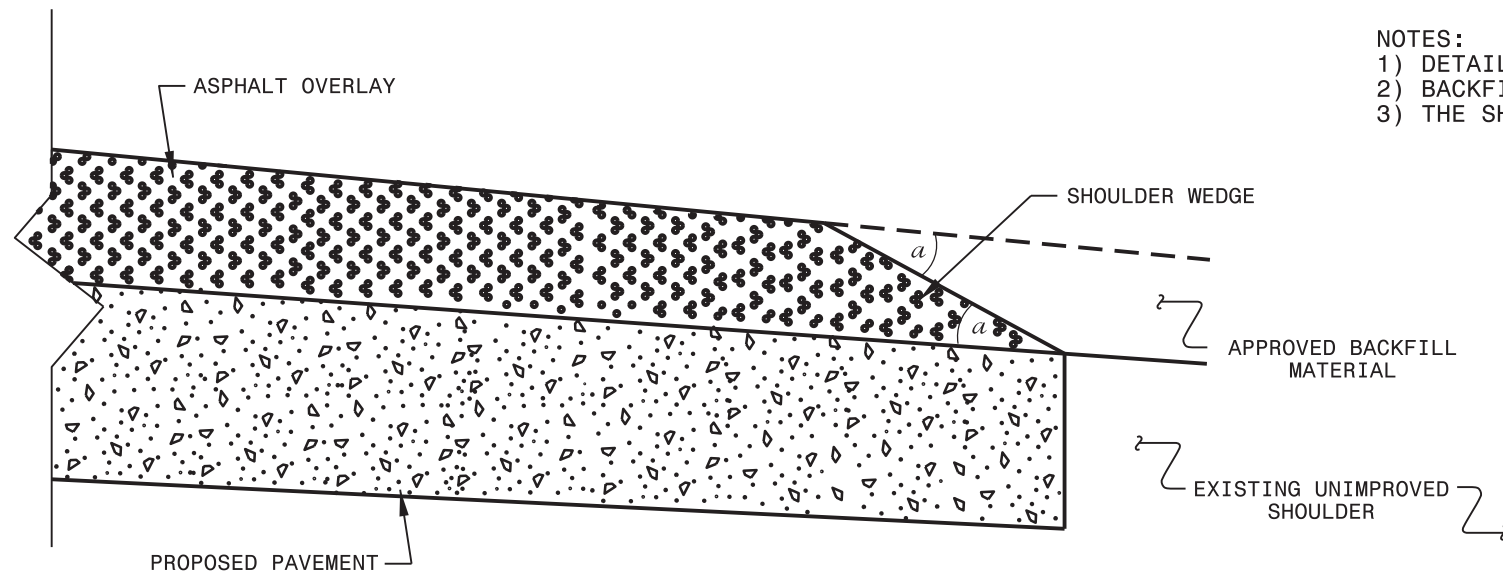
\* MILLING SHALL BE PAID FOR UNDER INCIDENTAL MILLING



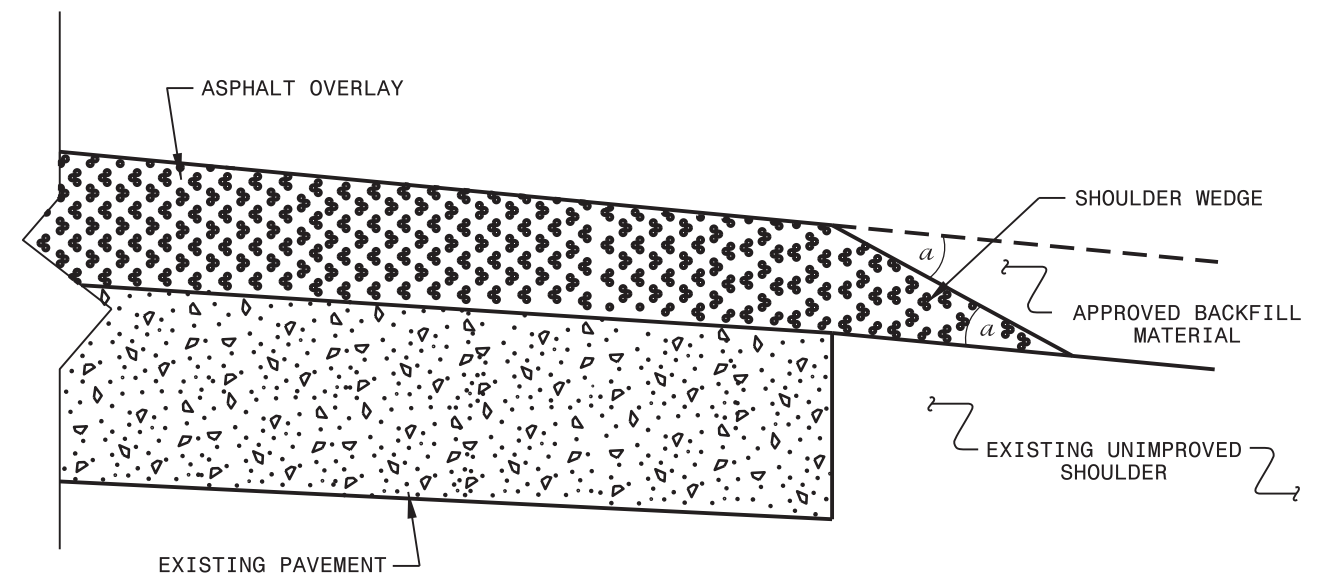
**DRAWING FOR BRIDGE #495 #472 #599  
USE FOR MAP #3 #17 #20**

\* MILLING SHALL BE PAID FOR UNDER INCIDENTAL MILLING

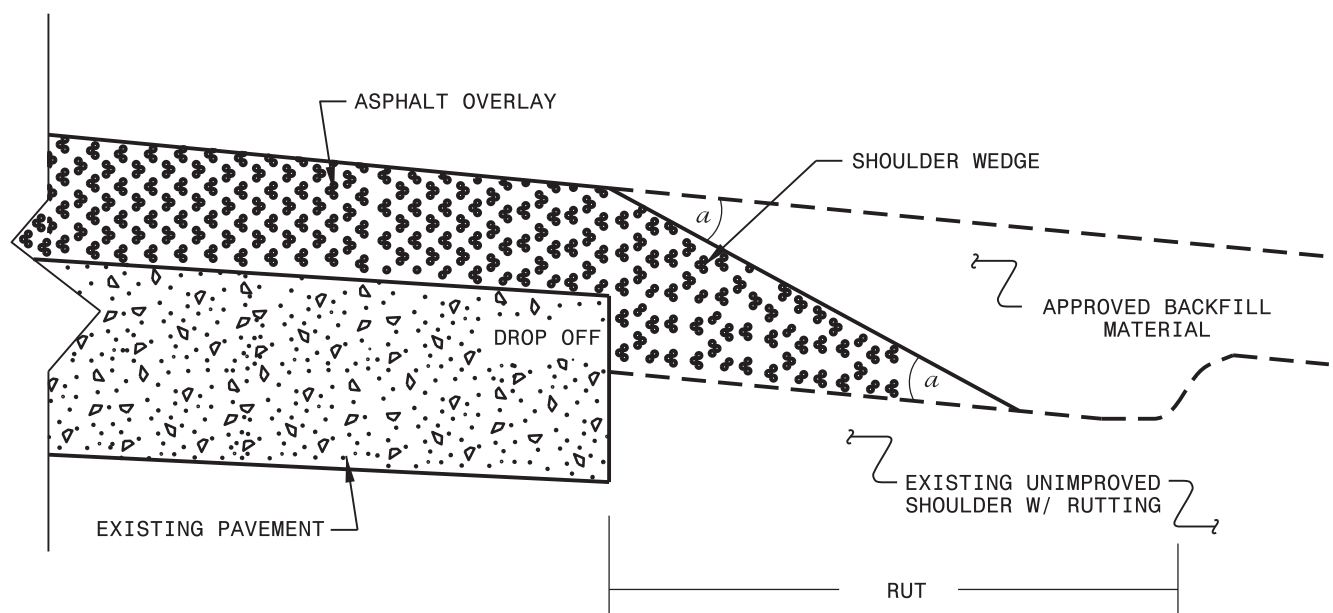
- NOTES:
- 1) DETAIL DOES NOT APPLY TO OGAFD AND ULTRA-THIN BONDED WEARING COURSE.
  - 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
  - 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS AND SIDE STREETS.



**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°

<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: 10/16/12
CHECKED BY:	DATE:
FILE SPEC.: susr/details/stand/shoulderwedgedetail.dgn	

SYSTEM: 04/06/11  
 USER: T.SPELL  
 FILE: susr/details/stand/shoulderwedgedetail.dgn



### THERMOPLASTIC AND PAINT QUANTITIES

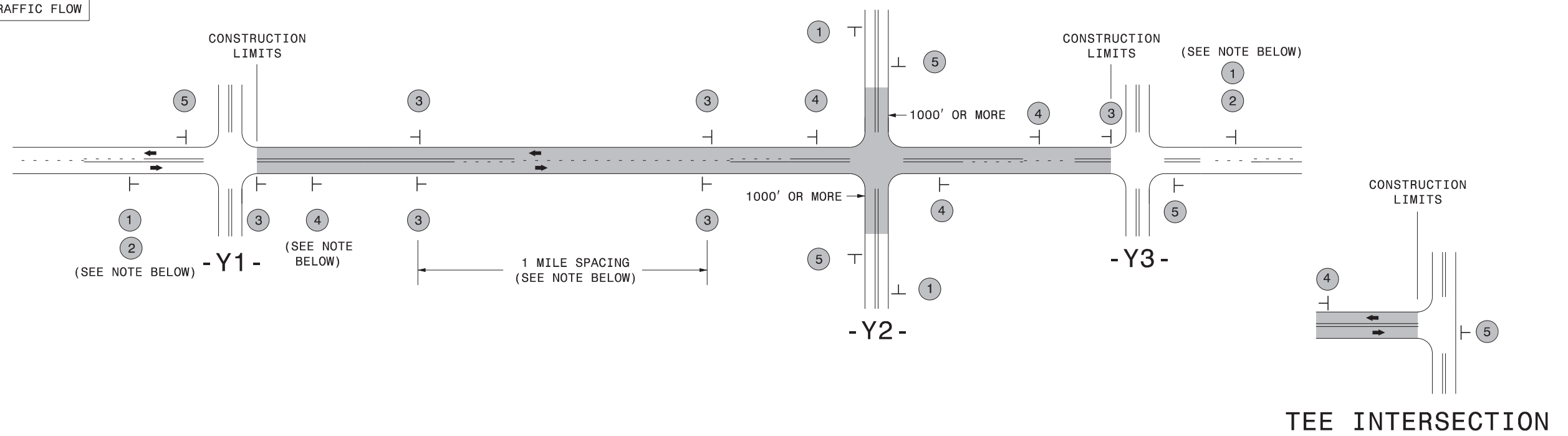
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	WIDTH	4413000000-E	4420000000-N	4457000000-N	4685000000-E		4688000000-E		4695000000-E	4725000000-E				4770000000-E		4850000000-E	4890000000-E			4891000000-E	4900000000-N				
										WORK ZONE ADVANCE/GENERAL WARNING SIGNING	PORTABLE CHANGEABLE MESSAGE SIGN	TEMPORARY TRAFFIC CONTROL	4" X 90 M WHITE THERMO	4" X 90 M YELLOW THERMO	6" X 90 M WHITE THERMO	6" X 90 M YELLOW THERMO	8" X 90 M YELLOW THERMO	THERMO LT ARROW 90 M	THERMO RT ARROW 90 M	THERMO STR & RT ARROW 90 M	THERMO STR ARROW 90 M	4" WHITE COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE II	4" YELLOW COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE II	4" LINE REMOVAL	4" WHITE HOT SPRAY THERMOPLAS TIC PAVEMENT MARKINGS, 50 MILS	4" YELLOW HOT SPRAY THERMOPLAS TIC PAVEMENT MARKINGS, 50 MILS	8" YELLOW HOT SPRAY THERMOPLAS TIC PAVEMENT MARKINGS, 50 MILS	24" X 90 M WHITE THERMO	YELLOW & YELLOW MARKERS	CRYSTAL & RED MARKERS			
										SF	EA	LS	LF	LF	LF	LF	LF	EA	EA	EA	EA	LF	LF	LF	LF	LF	LF	EA	EA				
2021CPT.04.06.10511	Johnston	1	NC 210	FROM SR 1330 TO SR 1501	5	2	2WU	8.8	22-36	1,000	2	*	94,678	79,635			850	15	3	2									765	100			
		2	US 301 (KENLY)	FROM SR 2399 (TRUCK STOP RD) INCLUDE INTERSECTION TO JOINT 500' +/- WEST OF SR 2159	7	2	2WU	0.7	26-48	80				7,800	9,400			130	3	1	2	2							120	25			
		<b>TOTAL FOR PROJ NO. 2021CPT.04.06.10511</b>							9.5		1,080	2	*	102,478	89,035			980	18	4	4	2							120	885	125		
													191,513		28														1,010				
2021CPT.04.06.20511	Johnston	3	SR 1521 - B H PARRISH RD.	FROM SR 1520 TO SR 1517	2	2	2WU	1.1	19	128	2											400	400	800	11,616	10,600							
		4	SR 2537 - HOLT RD.	FROM SR 2535 TO SR 2372	2	2	2WU	0.84	20	96															8,875	7,565							
		5	SR 2583 - BONNIE AVE.	FROM SR 2545 TO CUL DE SAC	1	2	2WU	0.6	20	80																							
		6	SR 2584 - LAKE VISTA DR.	FROM SR 2583 TO CUL DE SAC	1	2	2WU	0.17	20	32																							
		7	SR 2585 - PARTRIDGE DR.	FROM SR 2583 TO CUL DE SAC	1	2	2WU	0.19	20	32																							
		8	SR 2586 - DEER DR.	FROM SR 2583 TO CUL DE SAC	1	2	2WU	0.11	20	16																							
		9	SR 1898 - ALEXANDER LANE	FROM SR 1897 TO CUL DE SAC	1	2	2WU	0.25	20	32																							
		10	SR 1899 - RUSS RD.	FROM SR 1843 TO CUL DE SAC	1	2	2WU	0.12	20	16																							
		11	SR 1897 - SERENITY DR.	FROM SR 1010 TO DEAD END	1	2	2WU	0.56	20	64																							
		12	SR 1844 - HOBSON RD.	FROM SR 1843 TO CUL DE SAC	1	2	2WU	0.11	20	16																							
		13	SR 1843 - HARRIS RD	FROM SR 1010 TO SR 1898	1	2	2WU	0.57	20	64																							
		14	SR 2528 - QUARTERHORSE RD.	FROM SR 2526 TO SR 2530	2	2	2WU	1.14	20	128																12,040	10,820						
		15	SR 1350 - JOHNSON'S CHAPEL RD.	FROM SR 1308 TO SR 1330	2	2	2WU	1.1	20-21	123																11,566	11,562						
		16	SR 1009 - DEVIL'S RACETRACK RD.	FROM US 701 TO SR 1179	3	2	2WU	3.96	21	448																							
		17	SR 1136 - MEADOWBROOK RD.	FROM SR 1009 TO NC 50	2	2	2WU	9.99	20-21	1,120																							
		18	SR 1185 - JOYNER BRIDGE RD.	FROM SR 1009 TO SR 1136	2	2	2WU	4.85	20	544																							
		19	SR 1520 - CHURCH RD.	FROM NC 50 TO NC 50	2	2	2WU	0.73	18	96																							
		20	SR 1525 - CORNWALLIS RD.	FROM JOINT 960 FT. NORTH OF NC 42 TO SR 2246	8	2	2WU	0.22	23	32																							
		"	"	FROM SR 2246 TO WAKE COUNTY LINE	3	2	2WU	1.9	23	224																							
		<b>TOTAL FOR MAP NO. 20</b>							2.12	256																							
		21	SR 1533 - MT. PLEASANT RD.	FROM NC 50 TO WAKE COUNTY LINE	2	2	2WU	3.47	21	384																							
		22	DR 1550 - WINSTON RD.	FROM SR 1525 TO JOINT AT NEW BRIDGE (MP 1.68)	2	2	2WU	0.88	21	96																							
		23	SR 1641 - MCGEE RD.	FROM SR 1520 TO DEAD END	2	2	2WU	0.83	19	80																							
		24	SR 1747 - WALL RD.	FROM SR 1716 TO SR 1701	3	2	2WU	1.5	19-20	160																							
<b>TOTAL FOR PROJ NO. 2021CPT.04.06.20511</b>							35.19	4,011	2	*			22,730	20,030	42,000	26,200	100	8	2				1,440	1,440	2,880	279,667	210,997	80					
													42,760		68,200												490,664						
													125,208	109,065	42,000	26,200	1,080	26	6	4	2	1,440	1,440	2,880	279,667	210,997	80	120	885	125			
													234,273		68,200		38				2,880		490,664			1,010							
<b>GRAND TOTAL</b>							44.69	5,091	4	1			125,208	109,065	42,000	26,200	1,080	26	6	4	2	1,440	1,440	2,880	279,667	210,997	80	120	885	125			

# SIGNING FOR RESURFACING PROJECTS

**LEGEND**

┃ STATIONARY SIGN

← DIRECTION OF TRAFFIC FLOW



## MAINLINE (-L-) SIGNING

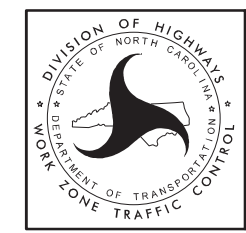
## -Y- LINE SIGNING

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"> <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;">               PLACED 500' IN ADVANCE OF FLAGGER.         </div> <div style="text-align: center;">               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**

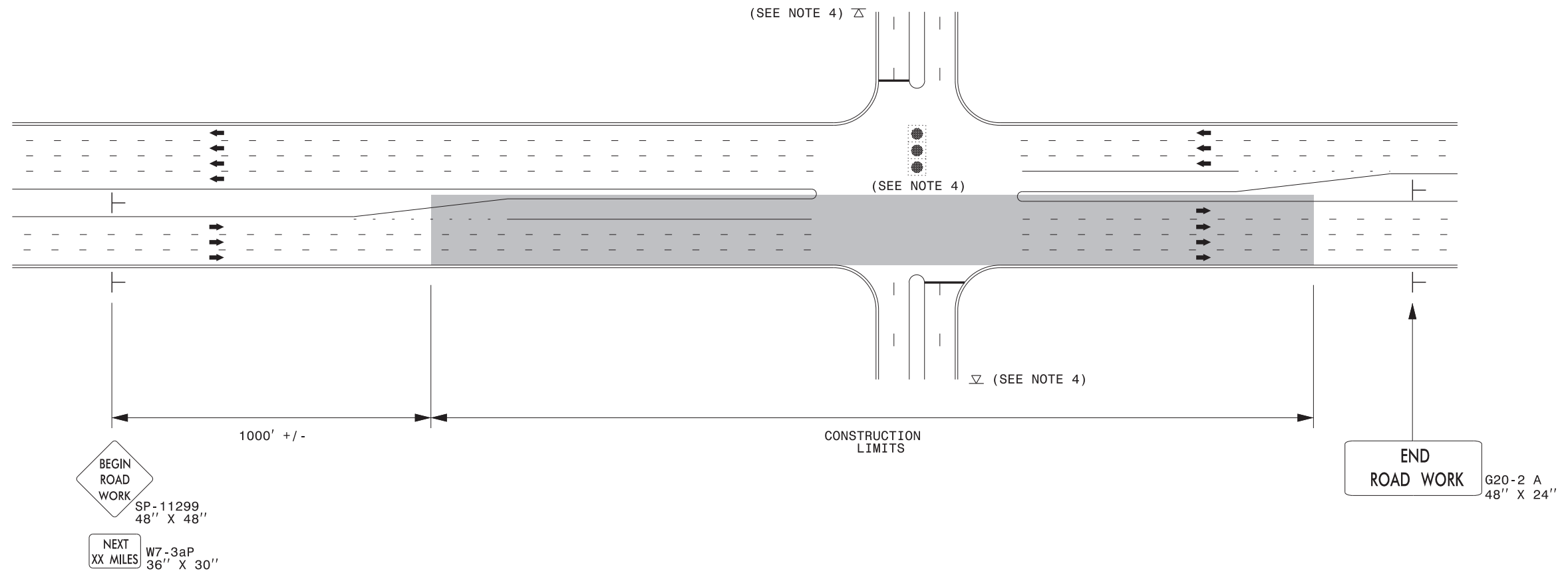
FOR RESURFACING MAPS WITH CONSTRUCTION LIMITS LESS THAN 2 MILES IN LENGTH, NO STATIONARY SIGNS ARE REQUIRED. USE PORTABLE "ROAD UNDER CONSTRUCTION" OR "ROAD WORK AHEAD" SIGNS IN LIEU OF STATIONARY ADVANCE WARNINGS SIGNS.



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

5/15/2017 S:\TMU\WZTC\Resurfacing\2L2W & AST Resurfacing Details\Resurfacing\_AdvWarn\_2Ln.dgn User:kedais

## 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

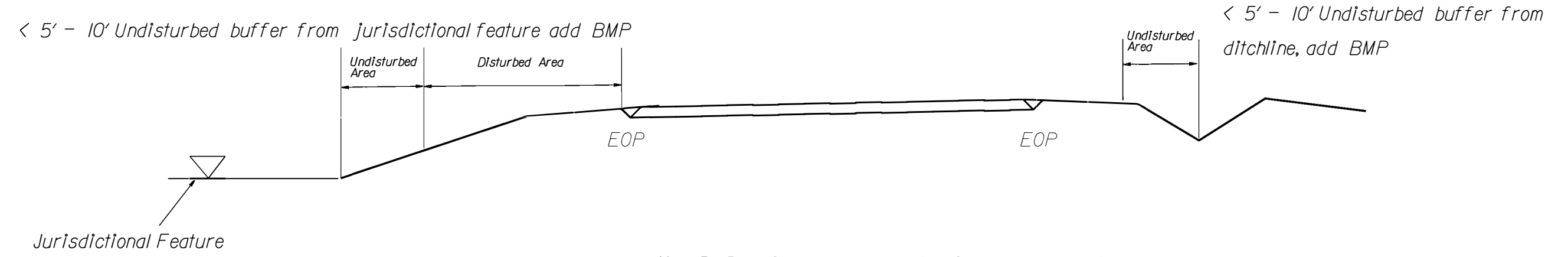
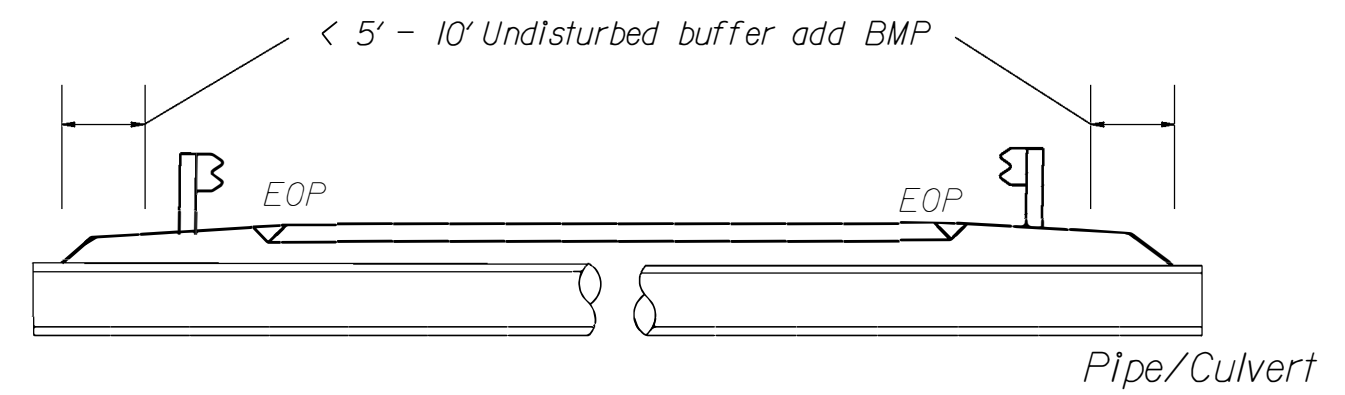


**RESURFACING ADVANCE  
WARNING SIGNS FOR  
URBAN / SUBURBAN  
FACILITIES**

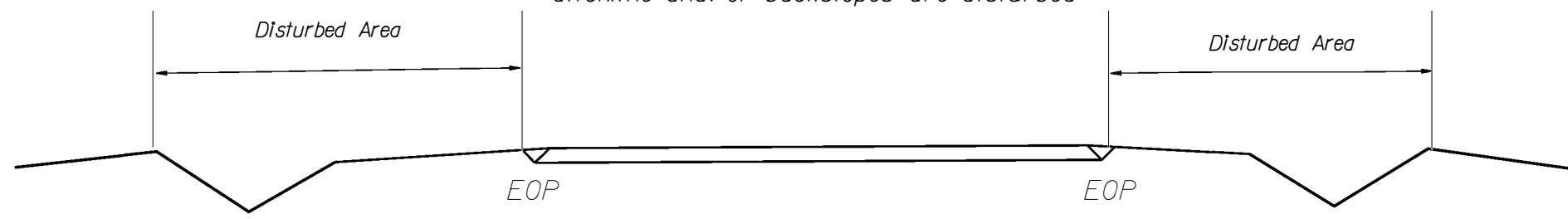
NOTES: Less than 5' - 10' undisturbed buffer from ROW, ditchline, water feature, or drainage inlet, add BMP.

BMP Options: Wattle or Silt Fence

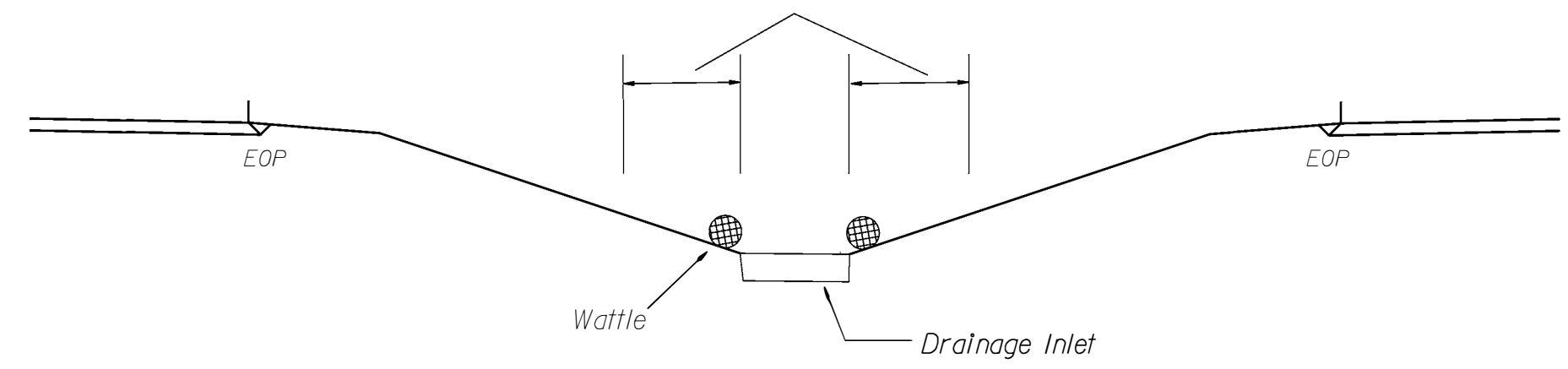
# EROSION CONTROL DETAIL



Use BMP's if shoulders and/or frontslopes and/or ditchline and/or backslopes are disturbed



< 5' - 10' Undisturbed buffer from inlet, add wattle



NOT TO SCALE



DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

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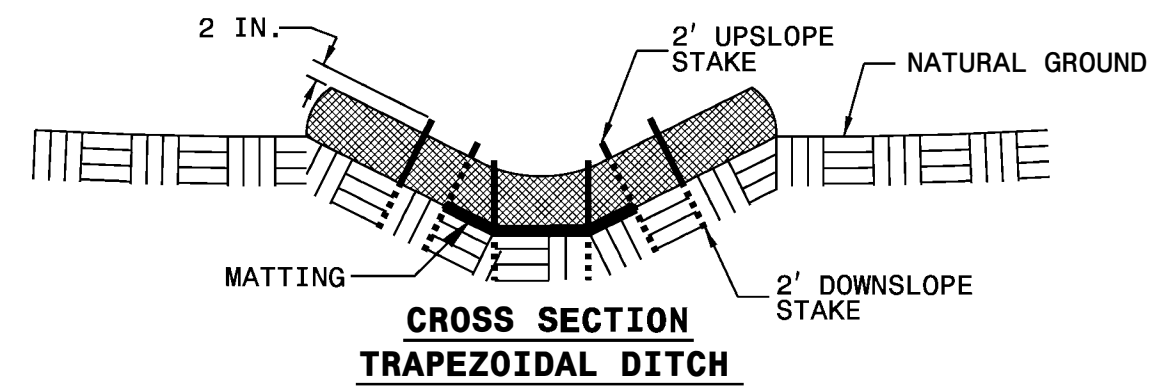
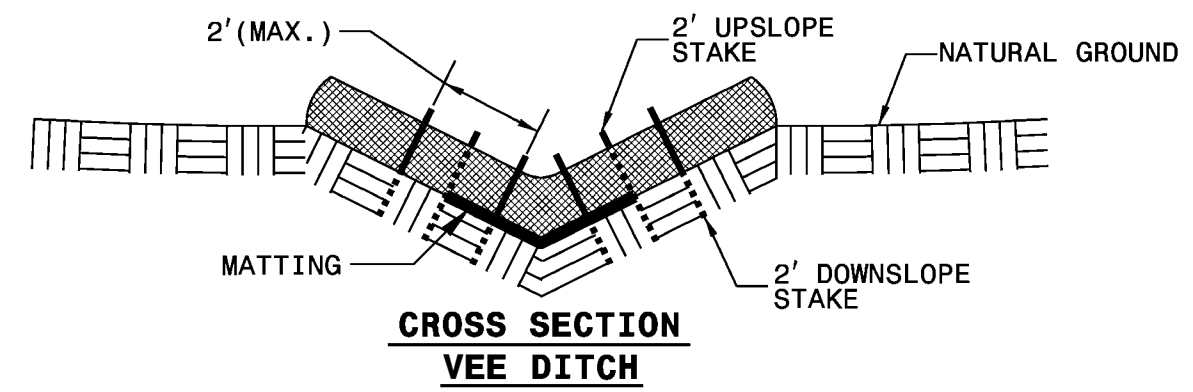
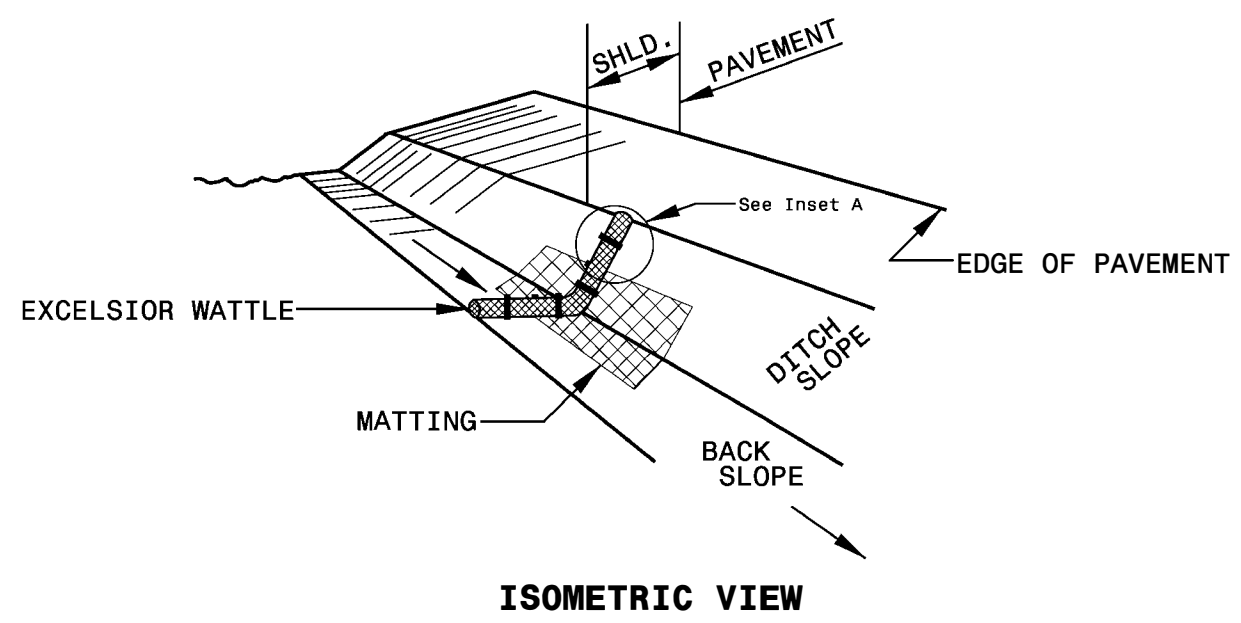
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PROJECT REFERENCE NO. 2020CPT.04.06.10511, ETC.	SHEET NO. EC - 2
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

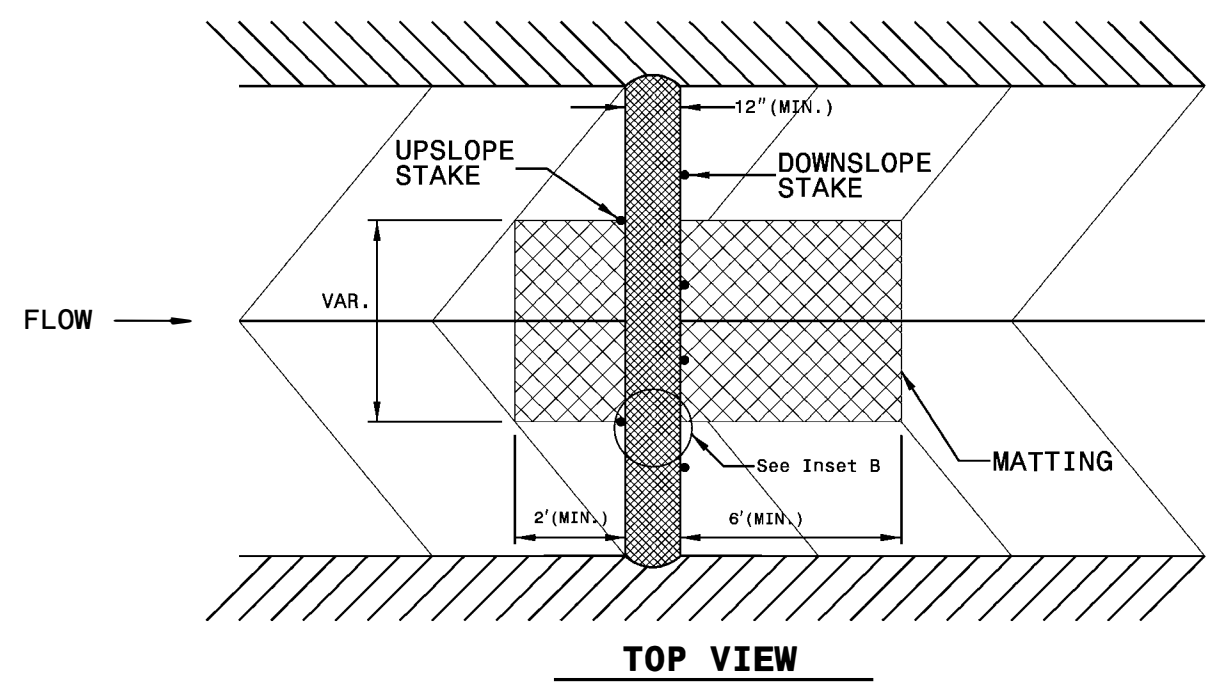
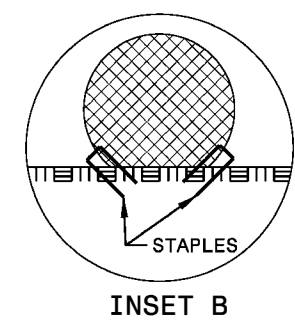
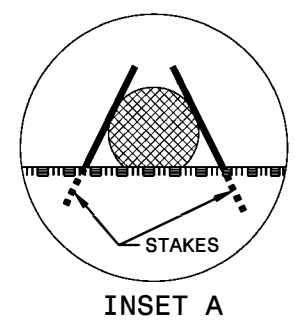
# ***SOIL STABILIZATION TIMEFRAMES***

<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

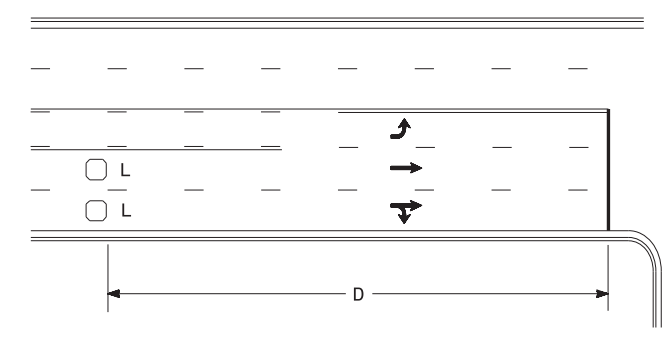
# WATTLE DETAIL



- NOTES:**
- USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.
  - USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
  - ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.
  - INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.
  - PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.
  - INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.
  - INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.



### High Speed Detection (≥40 mph)

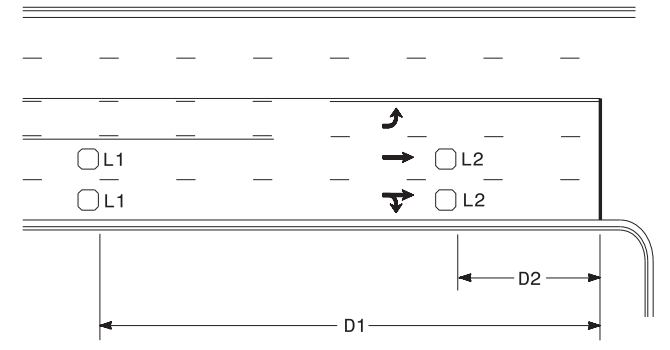


Speed Limit mph	D ft
40	250
45	300
50	355
55	420

L = 6ft X 6ft  
Wired separately

Volume Density Operation

OR

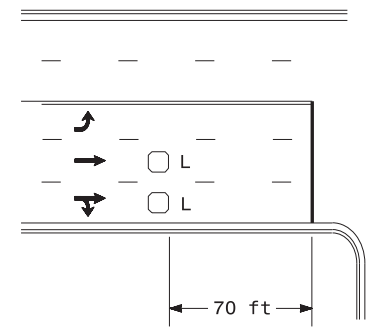


Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

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

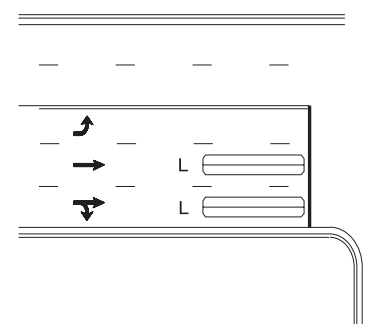
"Stretch" Operation

### Low Speed Detection (≤35 mph)



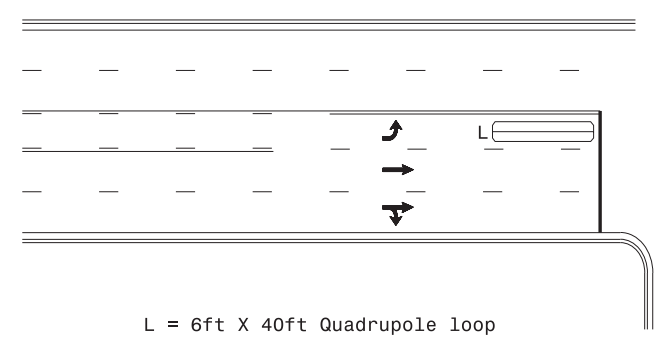
L = 6ft X 6ft  
Wired in series

OR



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

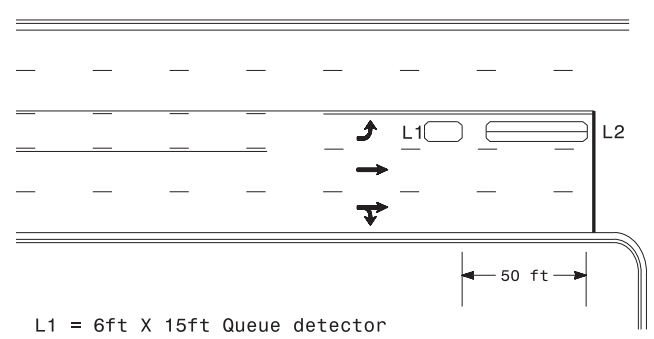
### Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

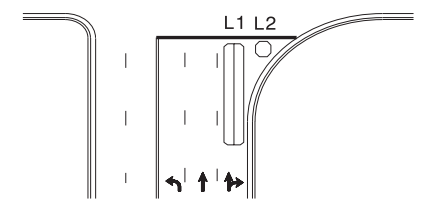
OR



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

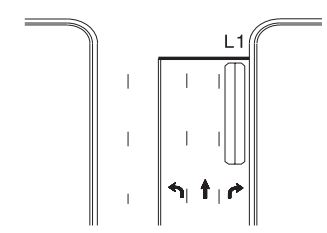
Queue Loop Detection

### Right Turn Lane Detection

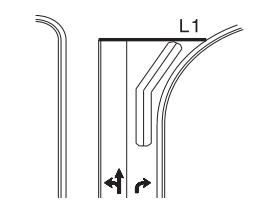


Shared Lane/  
Wide Radius Turn

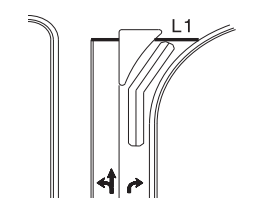
L1 = 6ft X 40ft Quadrupole loop  
L2 = 6ft X 6ft [Minimum] Presence loop  
Wired separately



Standard Turn

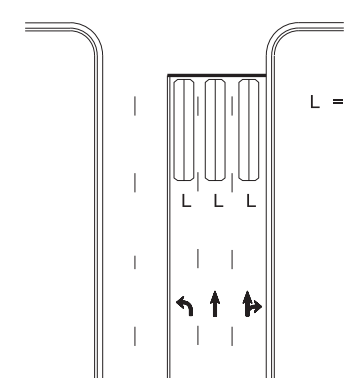


Wide Radius Turn



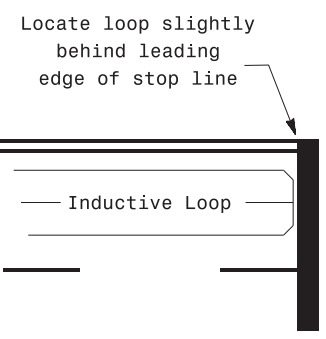
Channelized Turn

### Side Street Detection



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

### Presence Loop Placement at Stop Lines



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	REVIEWED BY: JPG
PREPARED BY: PLA	REVIEWED BY:
REVISIONS	INIT. DATE

750 N. Greenfield Pkwy, Garner, NC 27529

SCALE: N/A

9/8/2020