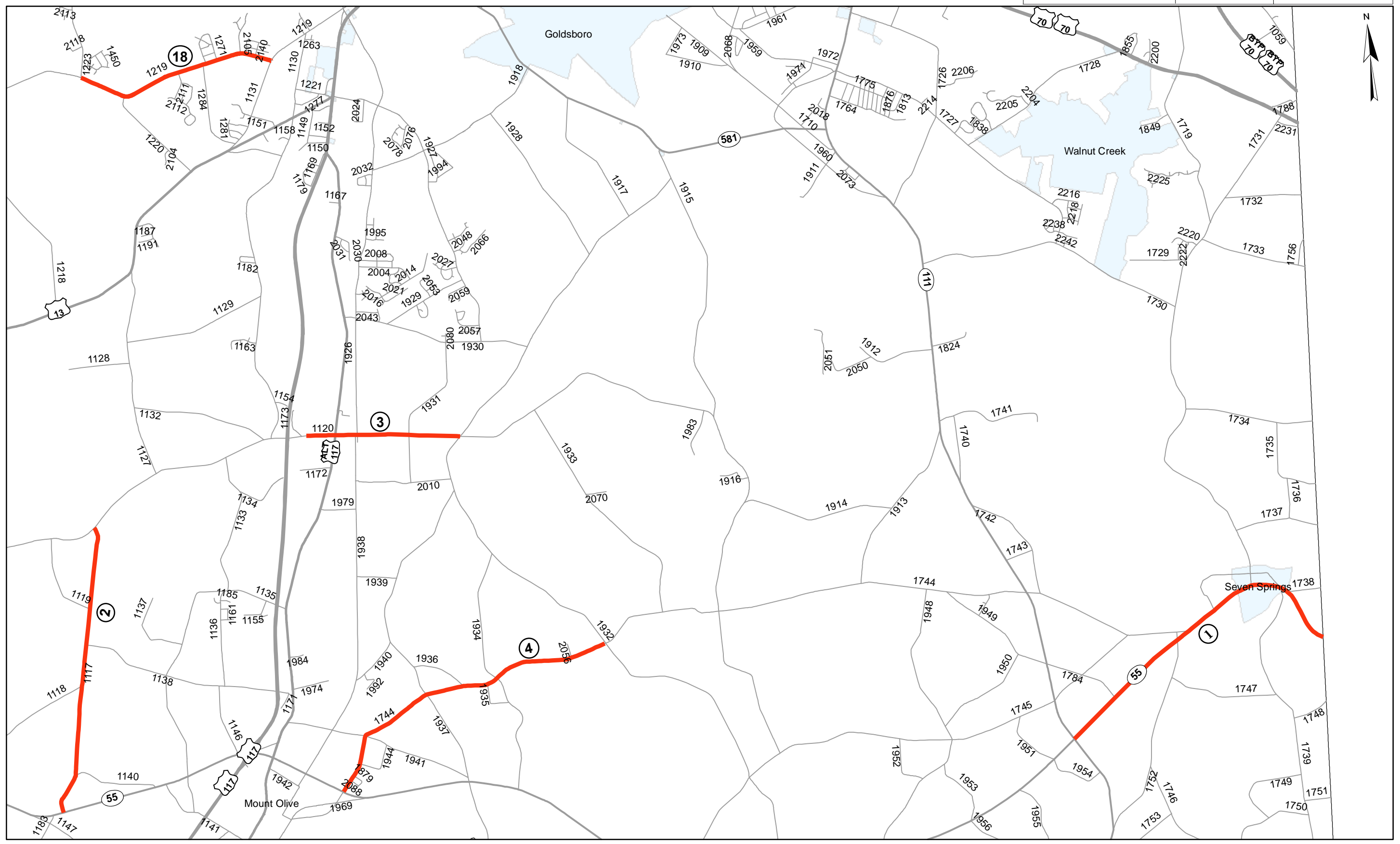


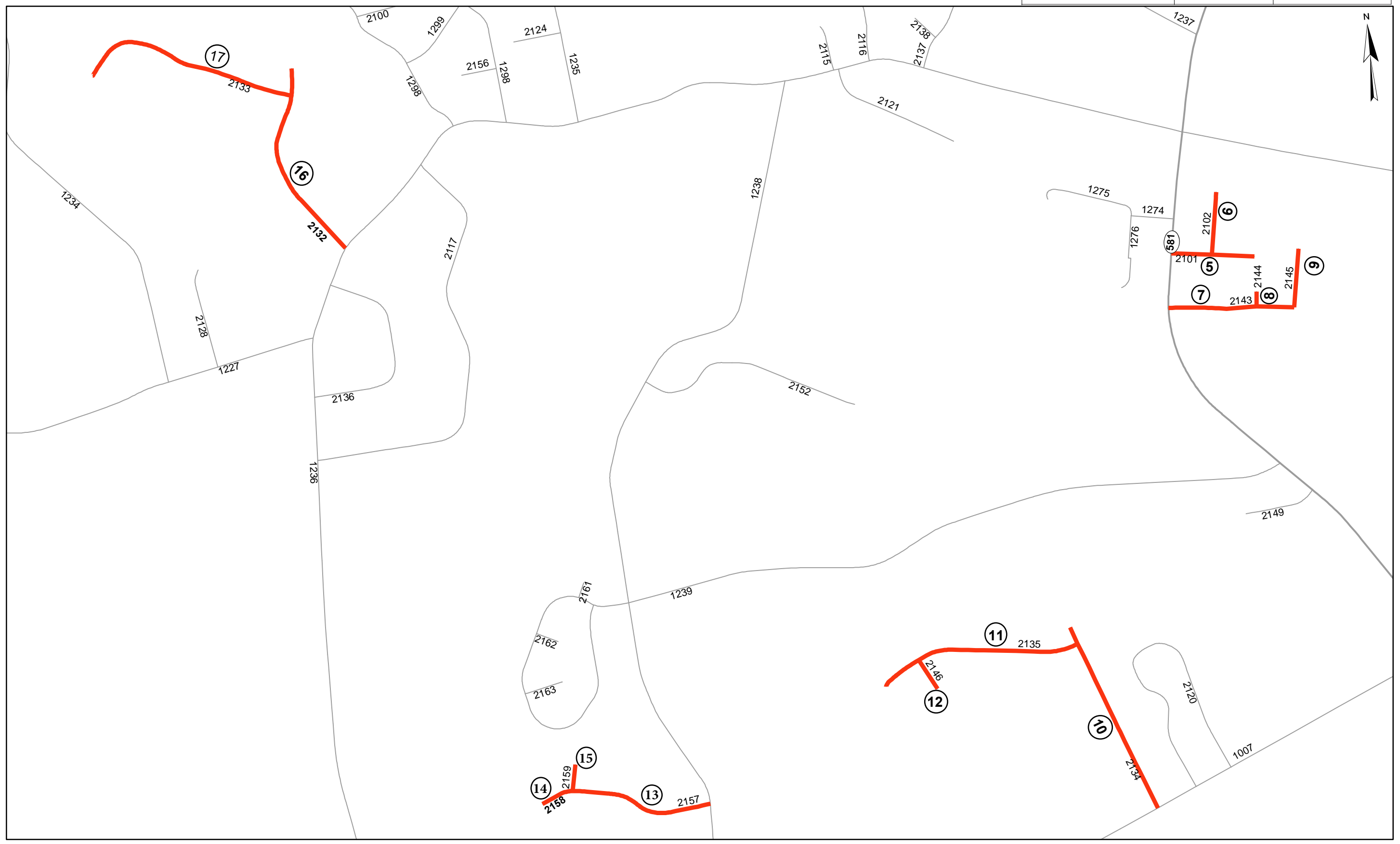
Wayne County

PROJECT NO.	SHEET NO.	TOTAL SHEETS
2021CPT.04.06.10961, 2021CPT.04.06.20961	1	



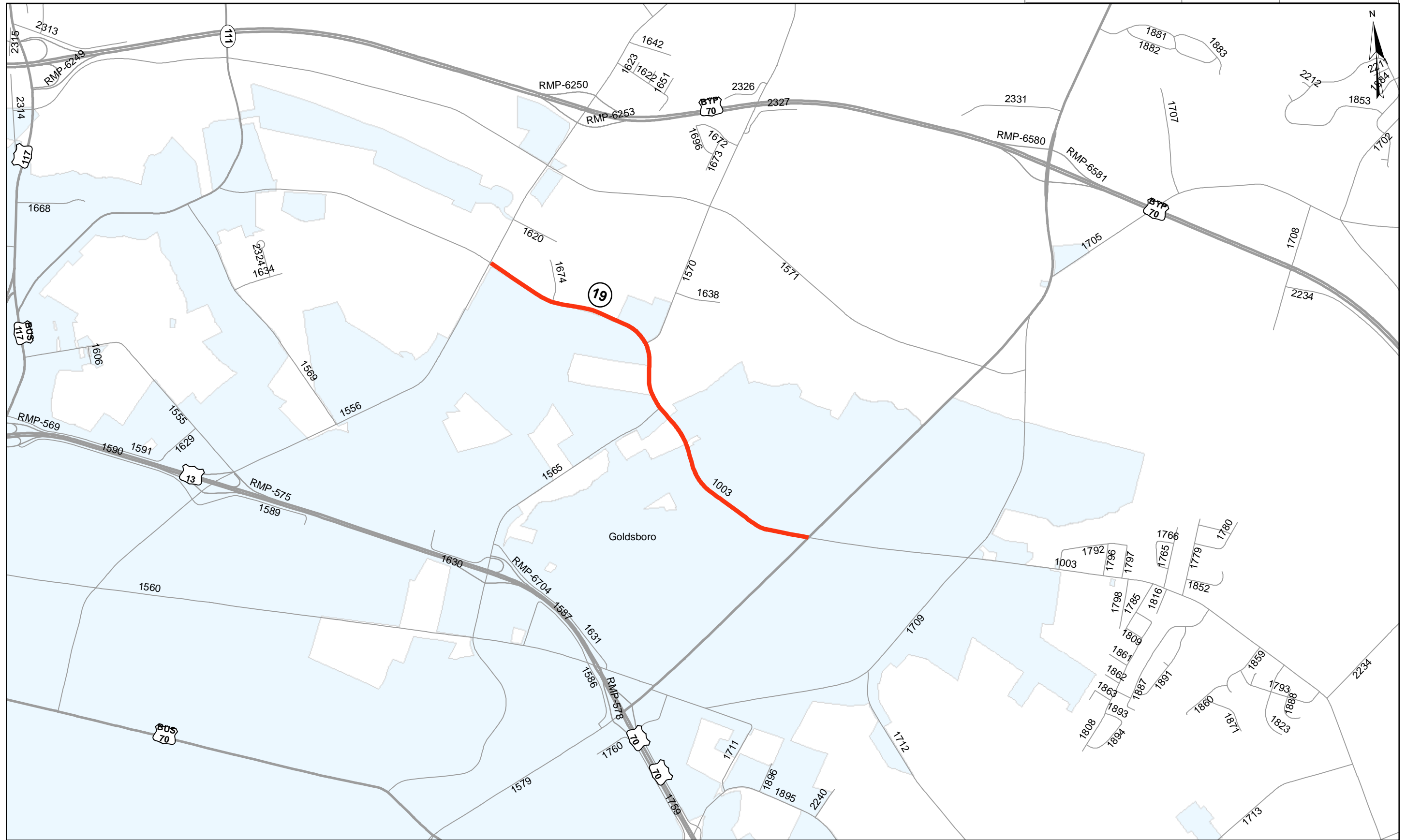
Wayne County

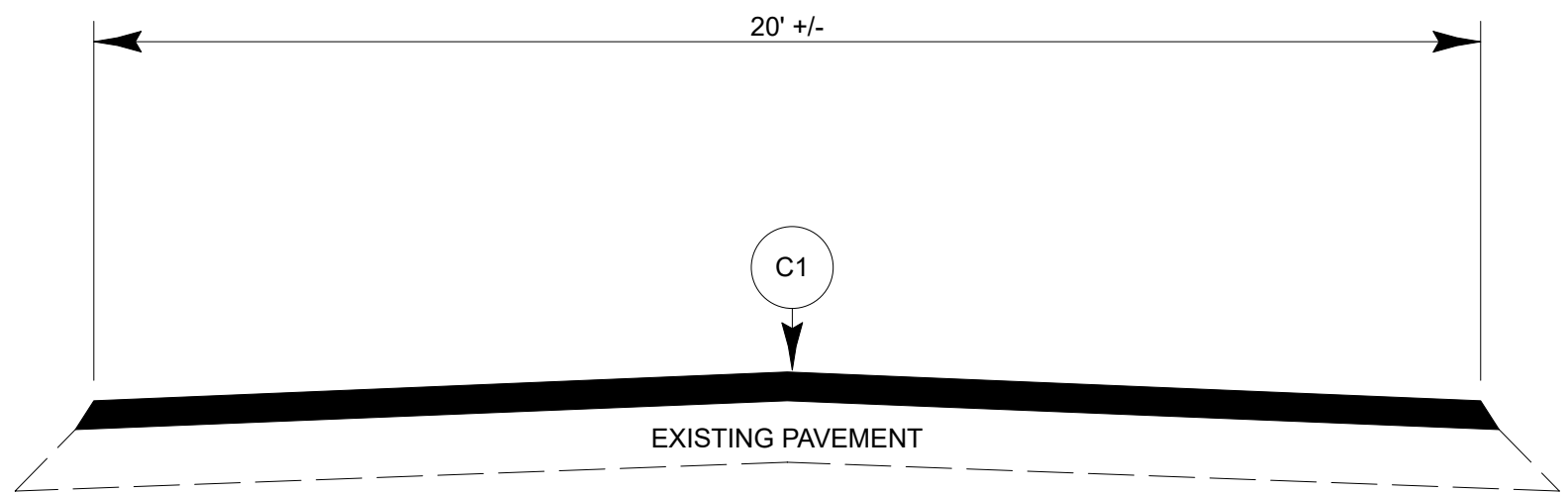
PROJECT NO.	SHEET NO.	TOTAL SHEETS
2021CPT.04.06.10961, 2021CPT.04.06.20961	2	



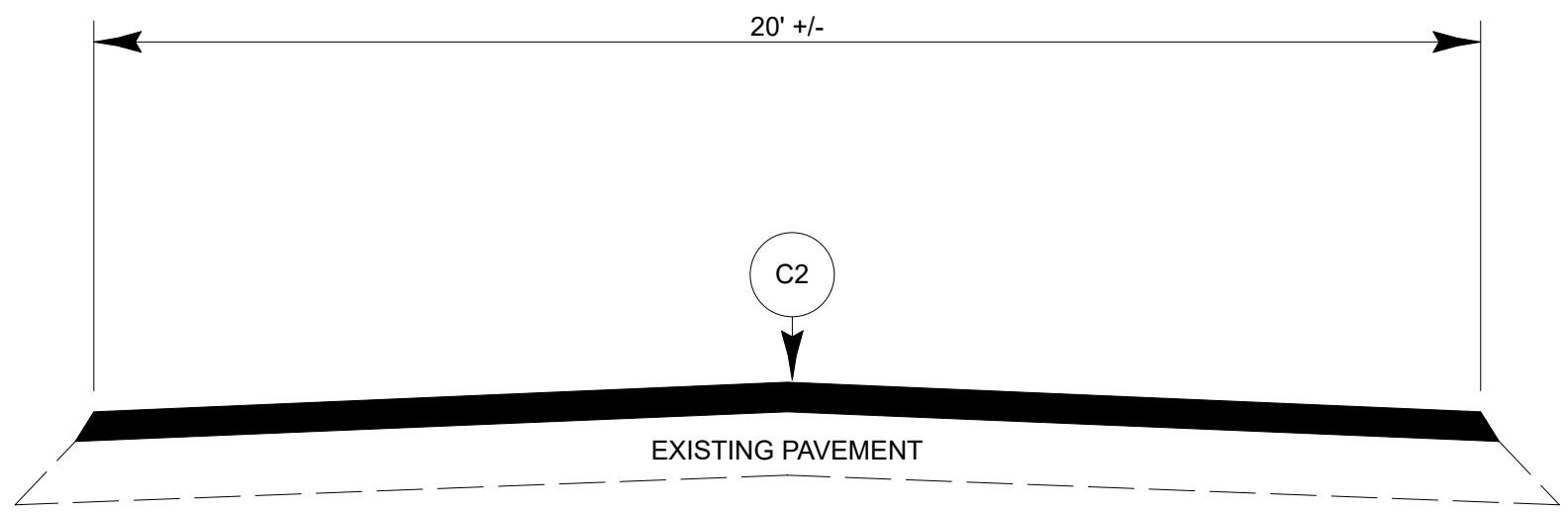
Wayne County

PROJECT NO.	SHEET NO.	TOTAL SHEETS
2021CPT.04.06.10961, 2021CPT.04.06.20961	3	





TYPICAL SECTION NO. 1

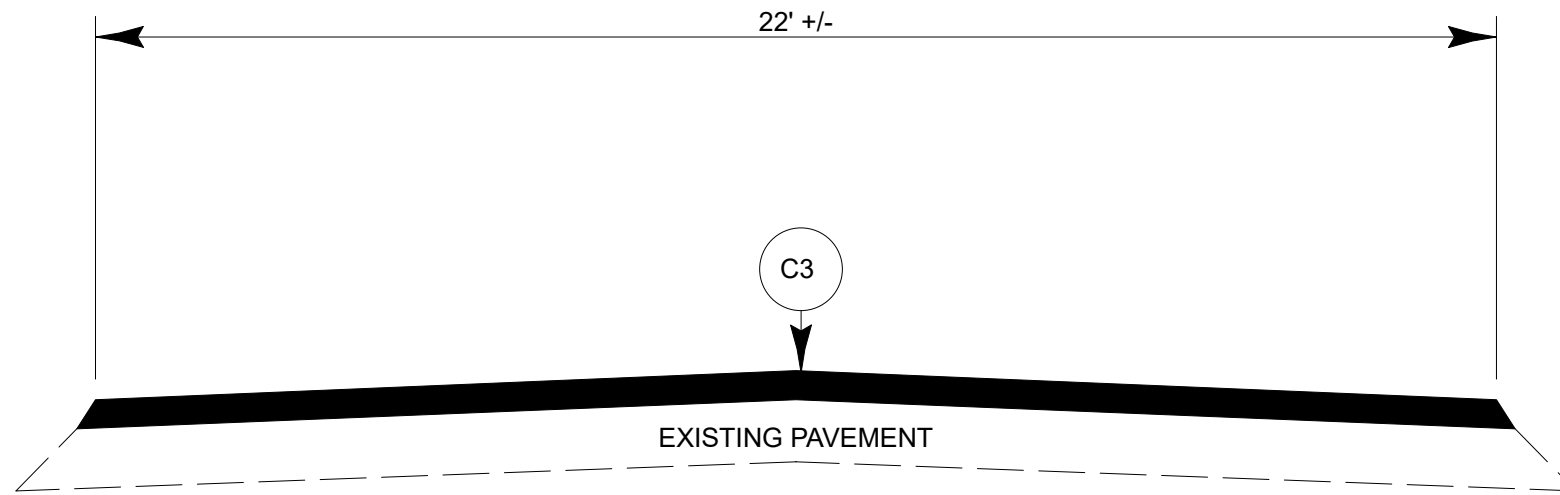


TYPICAL SECTION NO. 2

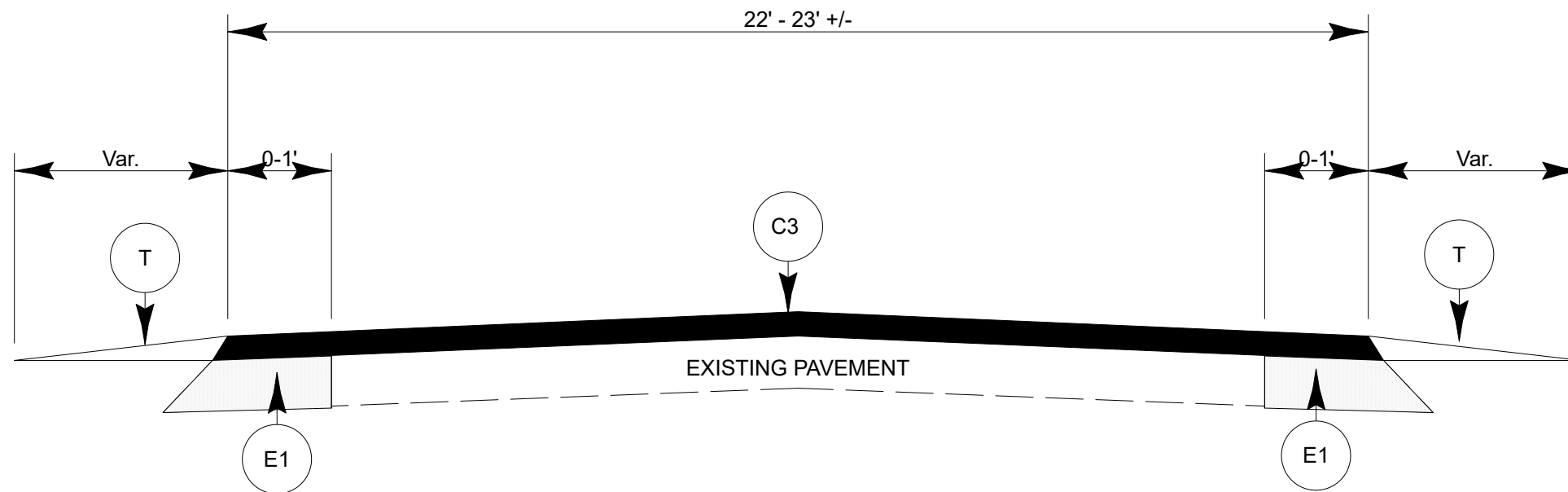
Note:

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 # 4 and 18.

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
E1	PROP. APPROX 5" OF ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 LBS PER SQ YARD
T	SHOULDER RECONSTRUCTION
V1	MILL ASPHALT PAVEMENT, 1-1/2" DEPTH

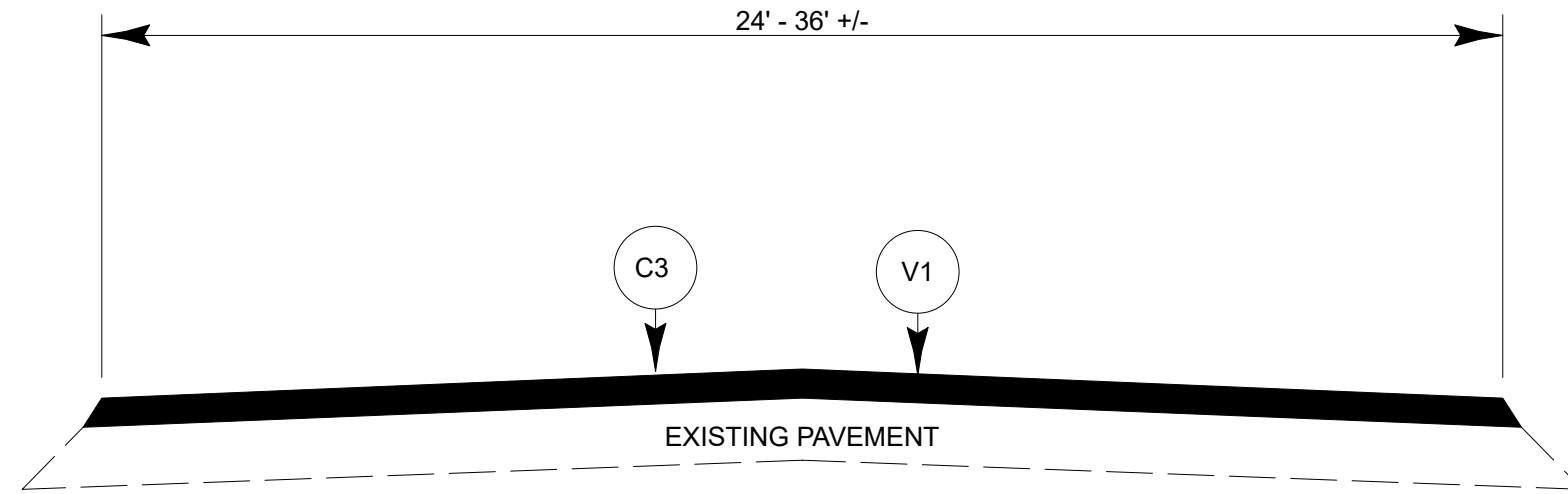


TYPICAL SECTION NO. 3

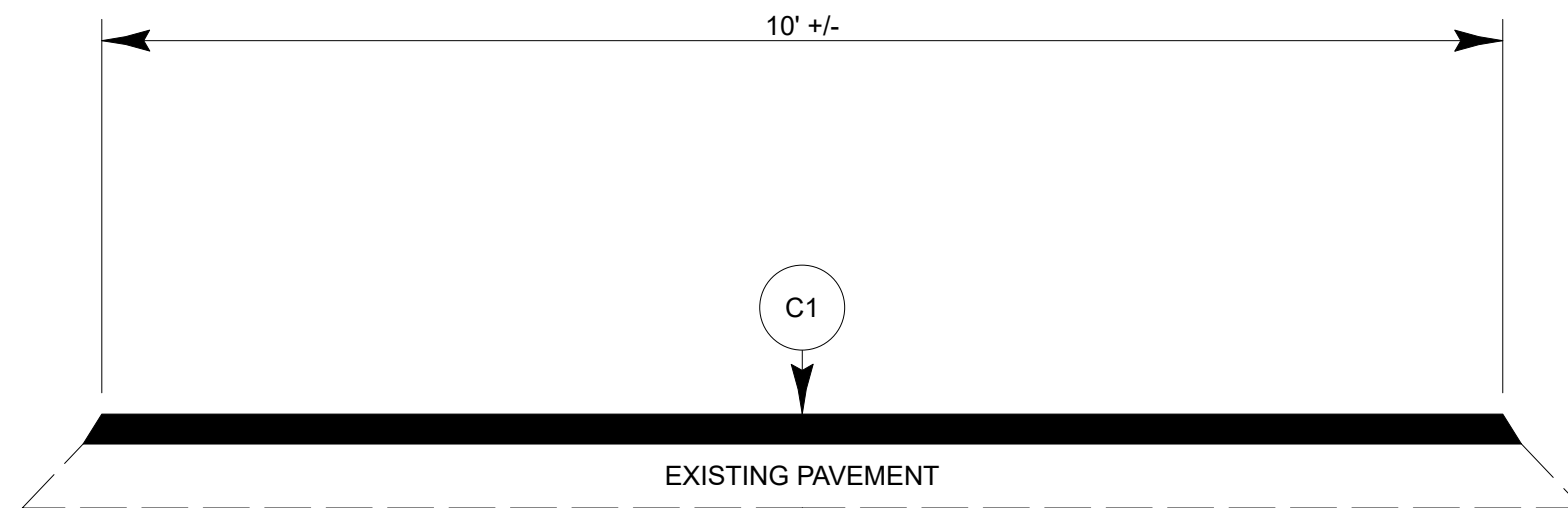


TYPICAL SECTION NO. 4

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
E1	PROP. APPROX 5" OF ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 LBS PER SQ YARD
T	SHOULDER RECONSTRUCTION
V1	MILL ASPHALT PAVEMENT, 1-1/2" DEPTH



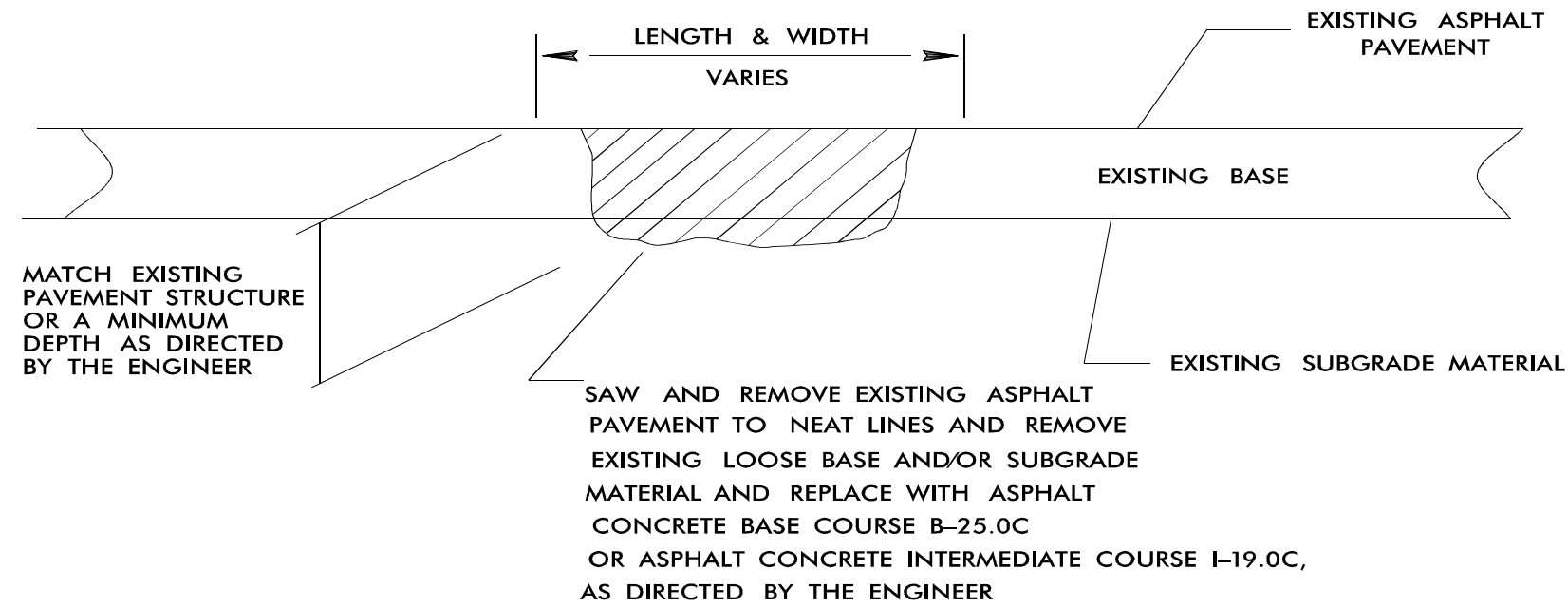
TYPICAL SECTION NO. 5



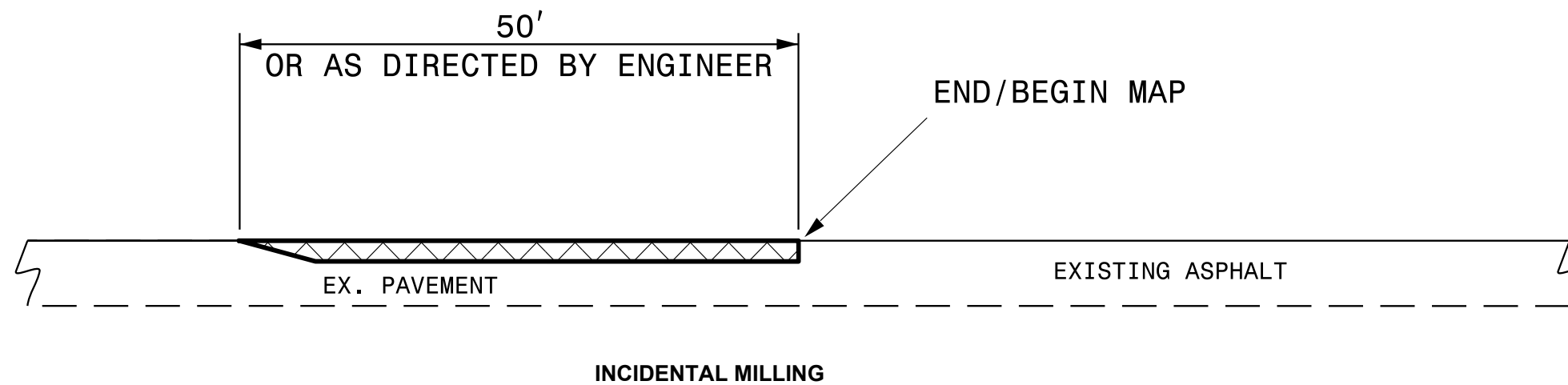
TYPICAL SECTION NO. 6

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
E1	PROP. APPROX 5" OF ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 LBS PER SQ YARD
T	SHOULDER RECONSTRUCTION
V1	MILL ASPHALT PAVEMENT, 1-1/2" DEPTH

DETAILS OF PATCHING EXISTING PAVEMENT PRIOR TO RESURFACING DETAIL



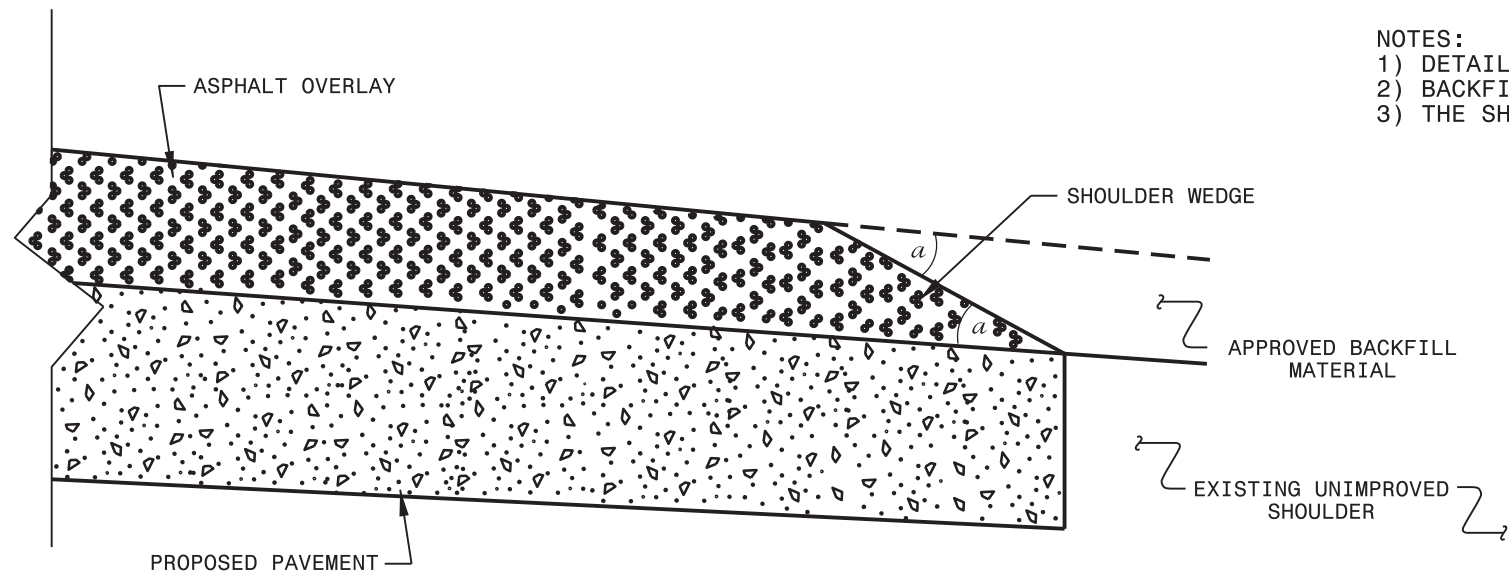
INCIDENTAL MILLING DETAIL



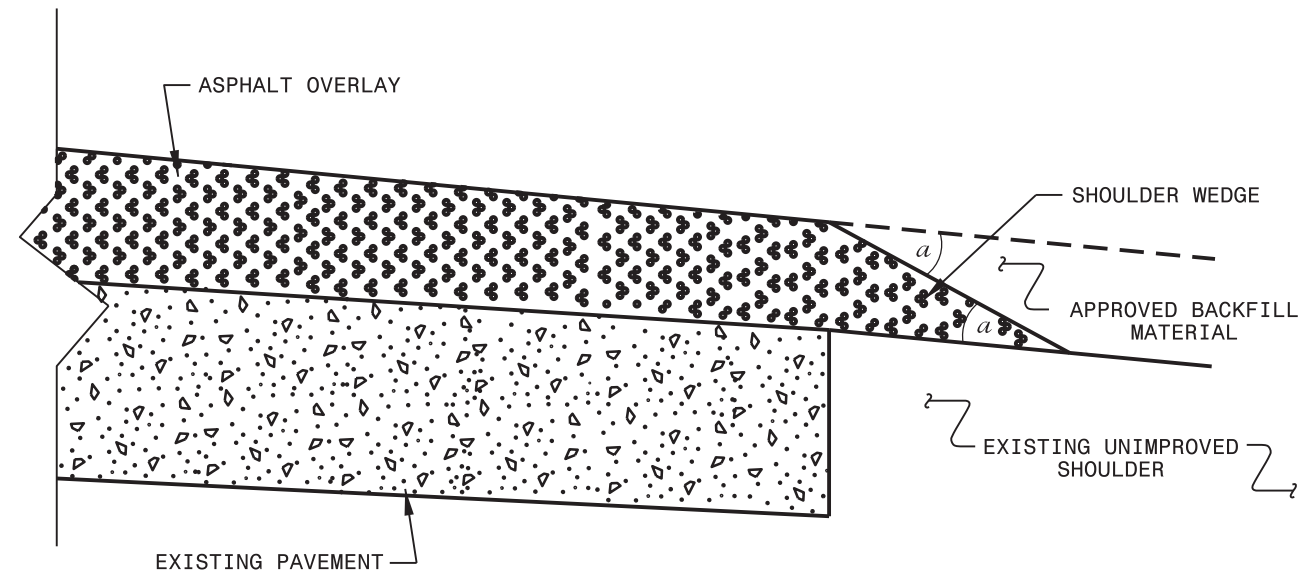
NOTE:

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

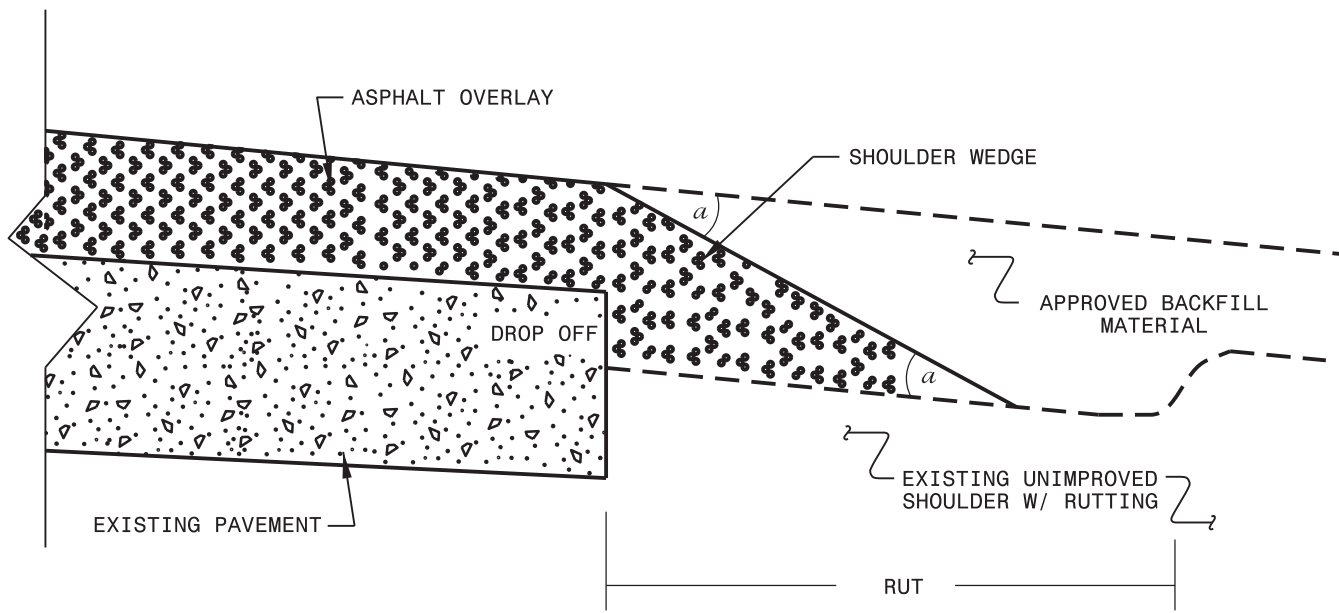
- NOTES:
 1) DETAIL DOES NOT APPLY TO OGAFB AND ULTRA-THIN BONDED WEARING COURSE.
 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS AND SIDE STREETS.



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

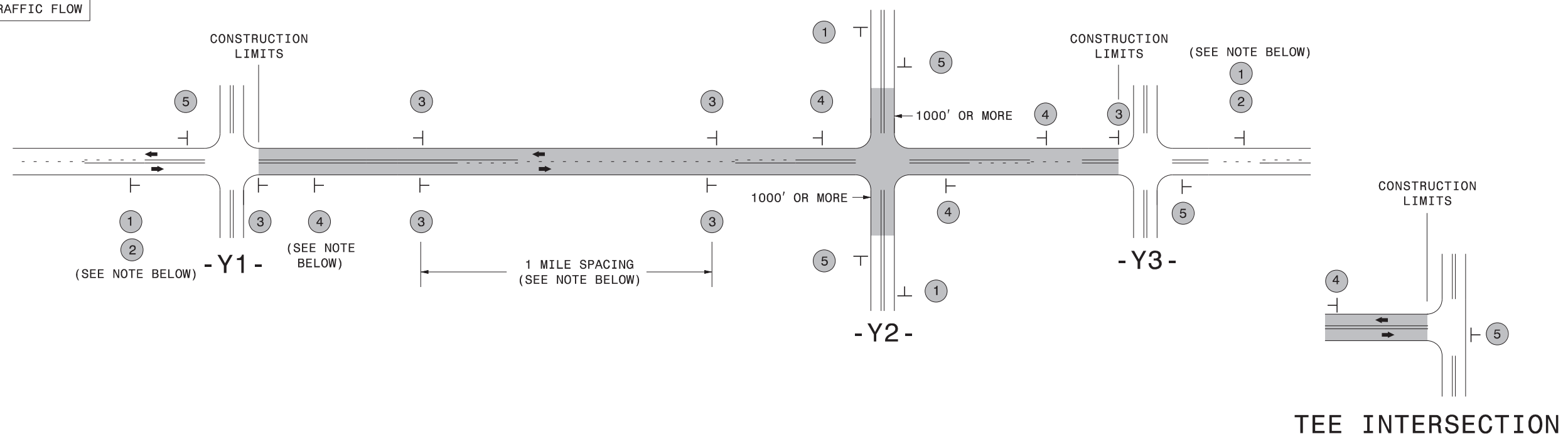
PROJECT NO.	SHEET NO.	TOTAL NO.
2021CPT.04.06.10961, 2021CPT.04.06.20961	10	

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		4695000000-E	4720000000-E			4725000000-E			4890000000-E		4891000000-E		4895000000-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	8" X 90 M YELLOW THERMO	THERMO MSG AHEAD 90 M	THERMO MSG STOP 90 M	THERMO RXR 90 M	THERMO LT ARROW 90 M	THERMO STR & RT ARROW 90 M	THERMO STR ARROW 90 M	4" WHITE HOT SPRAY THERMOPLASTIC PAVEMENT MARKINGS, 50 MILS	4" YELLOW HOT SPRAY THERMOPLASTIC PAVEMENT MARKINGS, 50 MILS	24" X 90 M WHITE THERMO	16" X 90 M WHITE THERMO	NON-CAST IRON SNOW FLOWABLE MARKERS				
								MI	FT	SF	EA	LS	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA				
2021CPT.04.06.10961	Wayne	1	NC 55	FROM LENOIR COUNTY LINE TO NC 111	5	2	2WU	4	24-25	448	2	0.10	42,240	26,400		5	4									265				
			TOTAL FOR PROJ NO. 2021CPT.04.06.10961						4		448	2	0.10	42,240	26,400		5	4									265			
													68,640												9					
2021CPT.04.06.20961	Wayne	2	SR 1117 - THUNDER SWAMP RD.	FROM NC 55 TO SR 1120 (OMIT NEW BRIDGE PROJECT LIMITS)	2	2	2WU	3.38	20	416	2	0.10																		
				FROM JOINT 1200 FT. EAST US 117 BYPASS TO SR 1932	3	2	2WU	2.03	22	224			0.10	21,843	16,315			4												
		4	SR 1744 - INDIAN SPRINGS RD.	FROM SR 1932 TO NC 55	4	2	2WU	4	22	448			0.10	43,040	30,360															
		5	SR 2101 - MURIEL HOOKS DR.	FROM NC 581 TO CUL-DE-SAC	1	2	2WU	0.17	20	32			0.01																	
		6	SR 2102 - MEREDITH DR.	FROM SR 2101 TO DEAD END	1	2	2WU	0.13	20	16			0.01																	
		7	SR2143 - TRAPPERS WOOD DR.	FROM NC 581 TO DEAD END	1	2	2WU	0.26	20	32			0.01																	
		8	SR 2144 - SILVER FOX CIR	FROM SR 2143 TO CUL-DE-SAC	1	2	2WU	0.03	20	16			0.01																	
		9	SR 2145 - WOOD COCK DR.	FROM SR 2143 TO CUL-DE-SAC	1	2	2WU	0.12	20	16			0.01																	
		10	SR 2134 - NEAL DR.	FROM SR 1007 TO DEAD END	1	2	2WU	0.41	20	48			0.01																	
		11	SR 2135 - RADFORD DR.	FROM SR 2134 TO CUL-DE-SAC	1	2	2WU	0.42	20	48			0.01																	
		12	SR 2146 - MACK RD.	FROM SR 2135 TO DEAD END	1	2	2WU	0.07	20	16			0.01																	
		13	SR 2157 - PERKINS ST.	FROM SR 1238 TO SR 2159	1	2	2WU	0.29	20	48			0.01																	
		14	SR 2158 - WENDY CIR.	FROM SR 2157 TO SR 2157	6	2	2WU	0.07	10	16			0.01																	
		15	SR 2159 - HILL CT	FROM SR 2157 TO CUL-DE-SAC	1	2	2WU	0.05	20	16			0.01																	
		16	SR 2132 - SASSER DR.	FROM SR 1236 TO CUL-DE-SAC	1	2	2WU	0.42	20	48			0.05																	
		17	SR 2133 - BECTON CIR.	FROM SR 2132 TO CUL-DE-SAC	1	2	2WU	0.46	20	64			0.05																	
		18	SR 1219 - OLD GRANTHAM RD.	FROM SR 1223 TO SR 1131	4	2	2WU	2.52	23	288			0.10	27,115	25,700															
		19	SR 1003 - NEW HOPE RD.	FROM SR 1556 TO US 13	5	2	2WU	2.11	24-36	240			0.29	23,462	24,980	600				26	2	2				170				
		TOTAL FOR PROJ NO. 2021CPT.04.06.20961						16.94		2,032	4	0.90	115,460	97,355	600		4	4	26	2	2	35,700	22,350	220	80					
													212,815												30					
GRAND TOTAL									20.94	2,480	4	1	157,700	123,755	600	5	4	4	26	2	2	35,700	22,350	220	80	265				
													281,455												13					







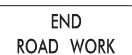
SIGNING FOR RESURFACING PROJECTS

LEGEND
 STATIONARY SIGN
 DIRECTION OF TRAFFIC FLOW



MAINLINE (-L-) SIGNING

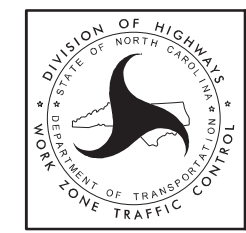
-Y- LINE SIGNING

SIGNING NOTES AND PLACEMENT PER DIRECTION	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.	<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</div> <div style="text-align: center;">  W20-7 A 48" X 48" PLACED 250' IN ADVANCE OF FLAGGER.</div> </div>
	2	 W7-3aP 24" X 18"	#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	 SP 13107 48" X 48"	- 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	 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.	
	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.	

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.

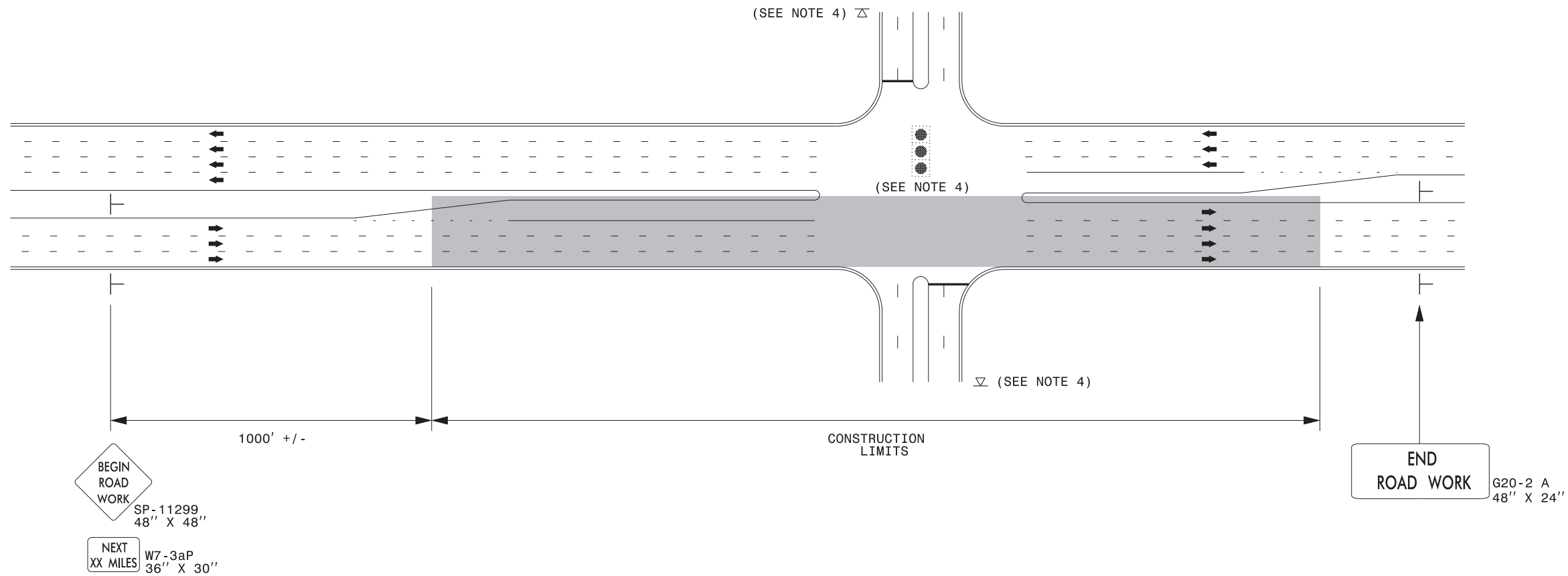
MAPS LESS THAN 2 MILES

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

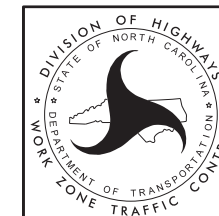


NOTES:

- 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

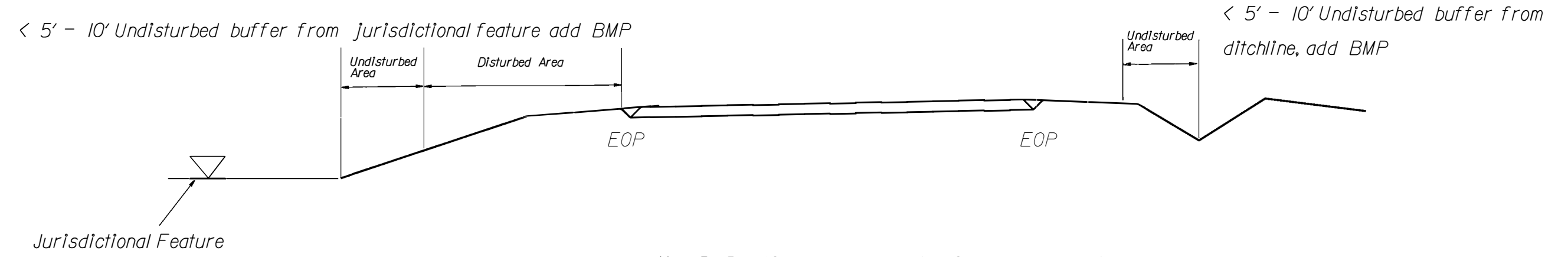
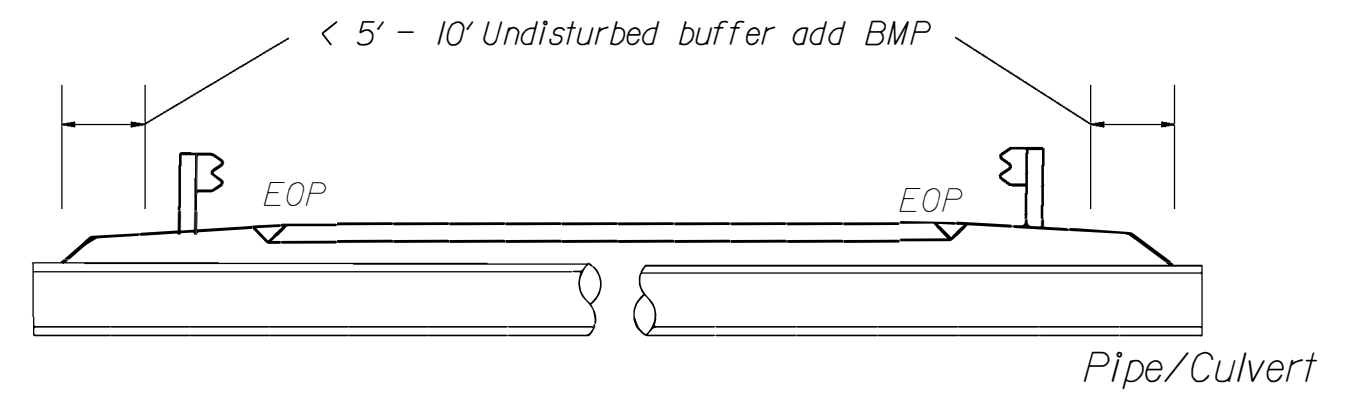


RESURFACING ADVANCE
WARNING SIGNS FOR
URBAN / SUBURBAN
FACILITIES

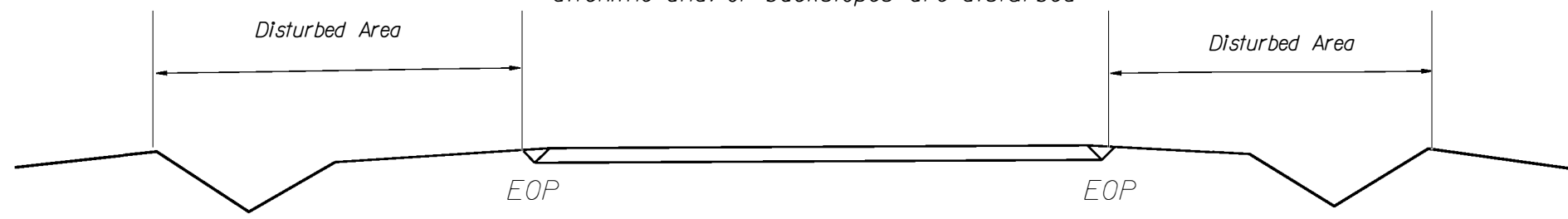
NOTES: Less than 5' - 10' undisturbed buffer from ROW, ditchline, water feature, or drainage inlet, add BMP.

BMP Options: Wattle or Silt Fence

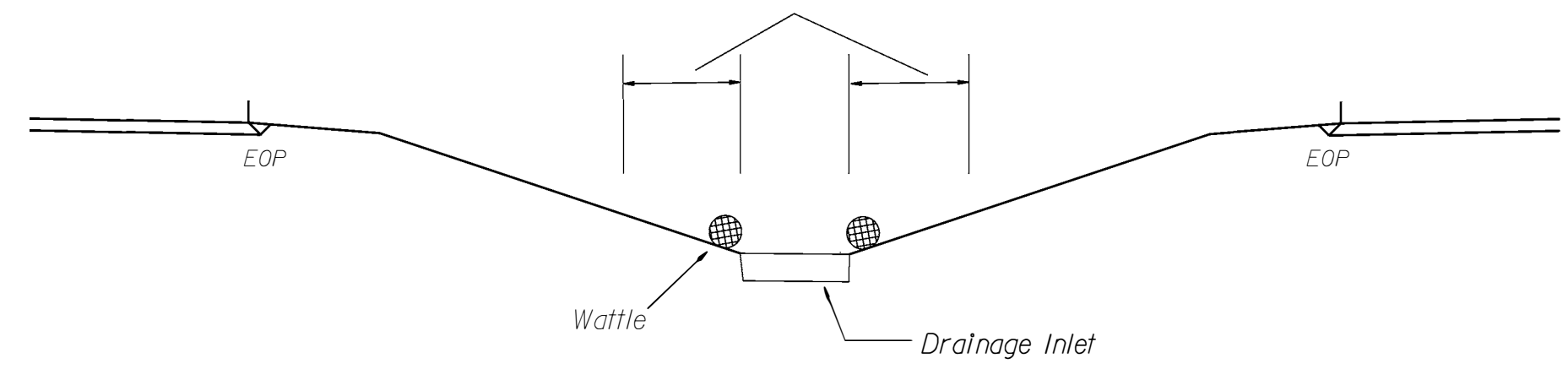
EROSION CONTROL DETAIL



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

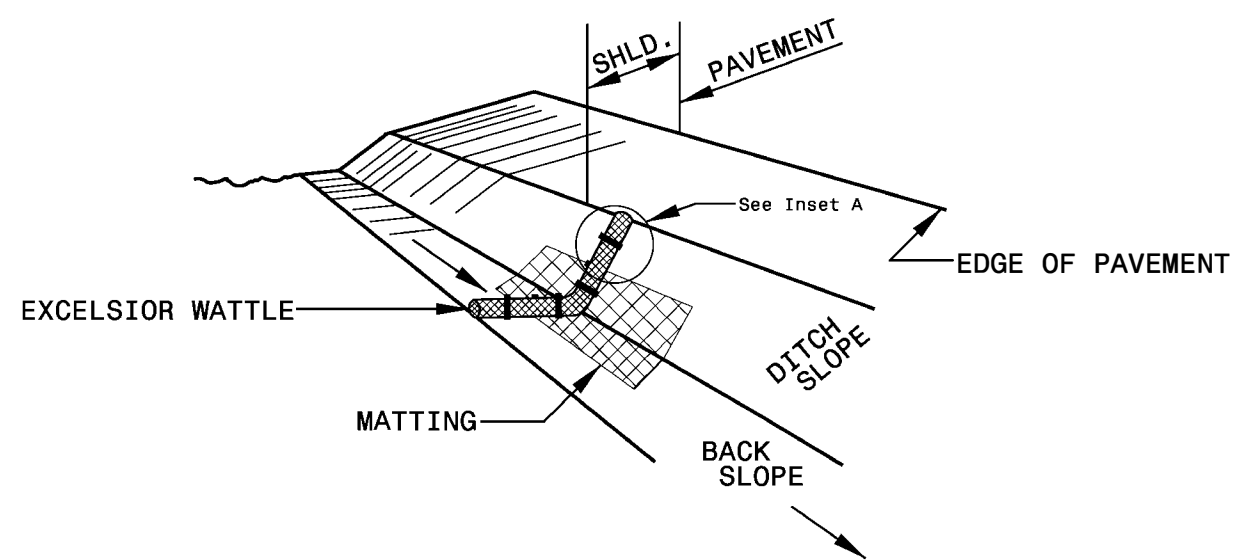
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

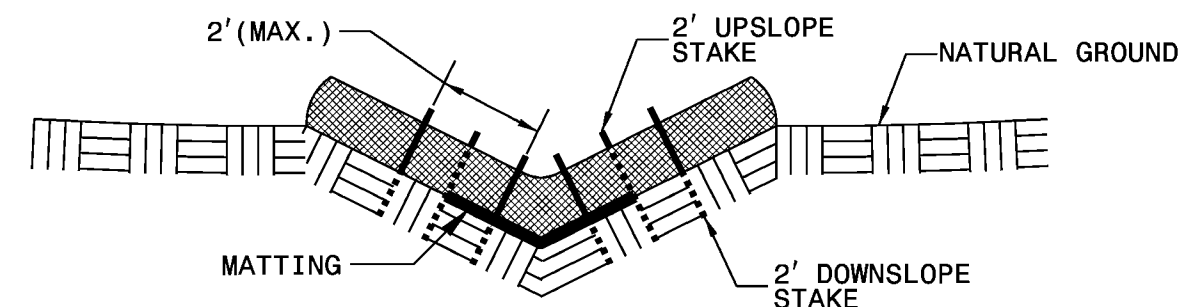
PROJECT REFERENCE NO. 2021CPT.04.06.10961, ETC.	SHEET NO. EC - 2
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

<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.

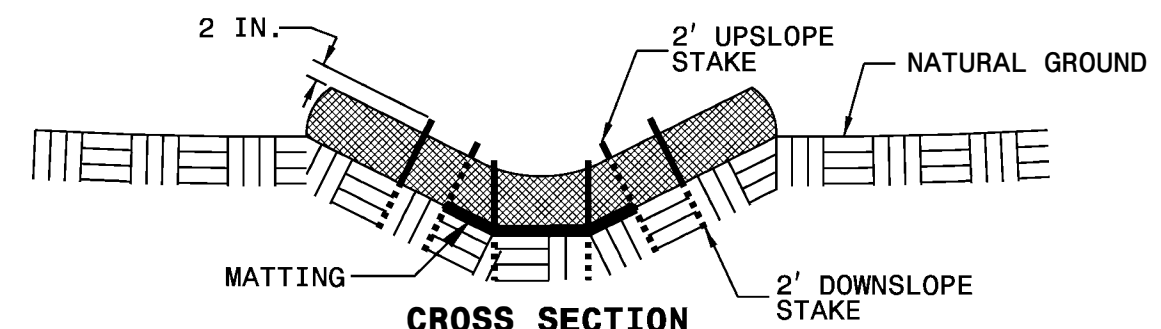
WATTLE DETAIL



ISOMETRIC VIEW



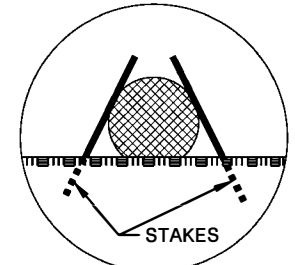
**CROSS SECTION
VEE DITCH**



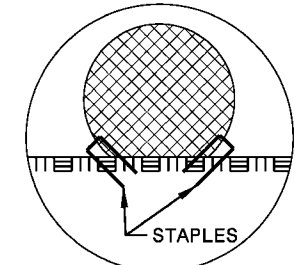
**CROSS SECTION
TRAPEZOIDAL DITCH**

NOTES:

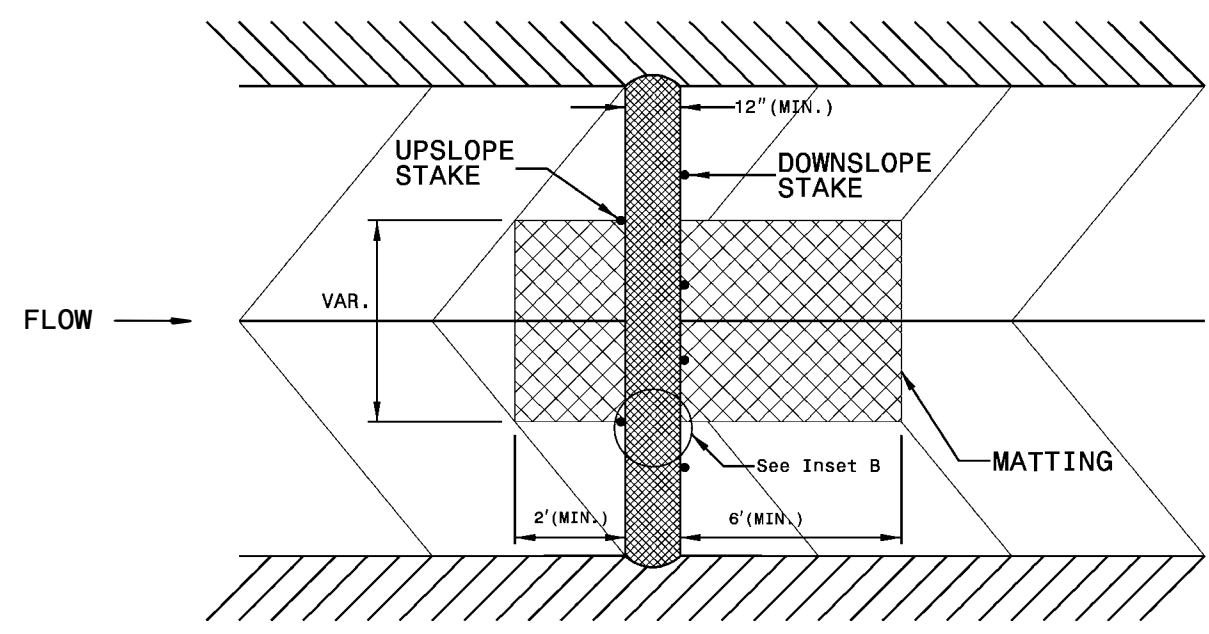
- USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.
- USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
- ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.
- INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES 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.



INSET A

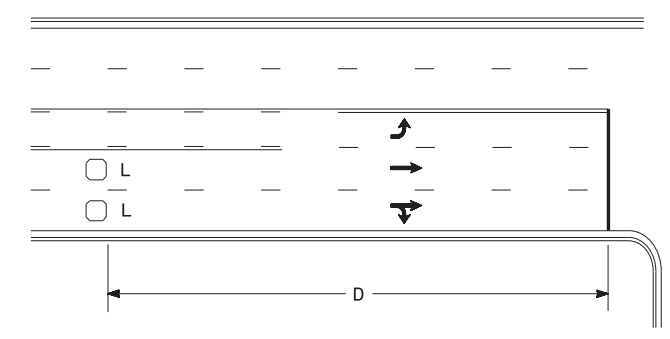


INSET B



TOP VIEW

High Speed Detection (≥40 mph)

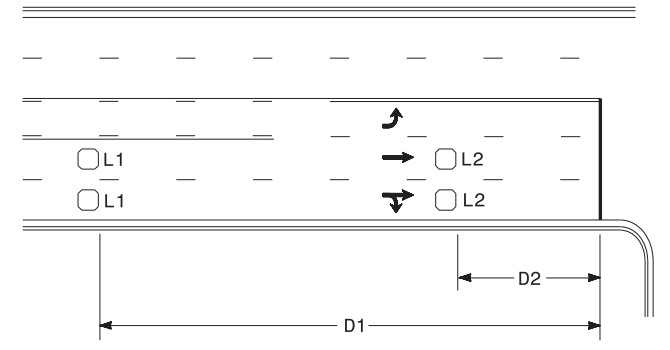


Speed Limit mph	D ft
40	250
45	300
50	355
55	420

L = 6ft X 6ft
Wired separately

Volume Density Operation

OR



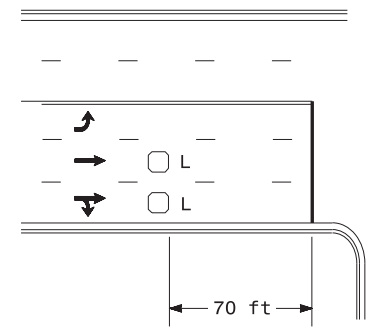
Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

L1 = 6ft X 6ft
Wired in series

L2 = 6ft X 6ft
Wired in series

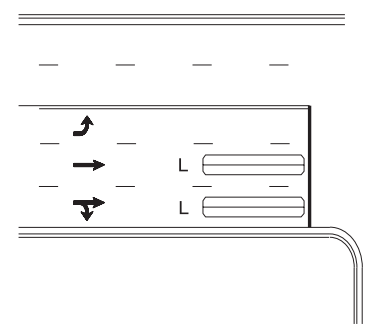
"Stretch" Operation

Low Speed Detection (≤35 mph)



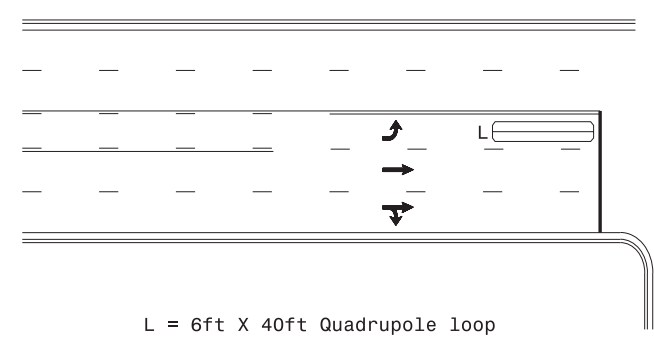
L = 6ft X 6ft
Wired in series

OR



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

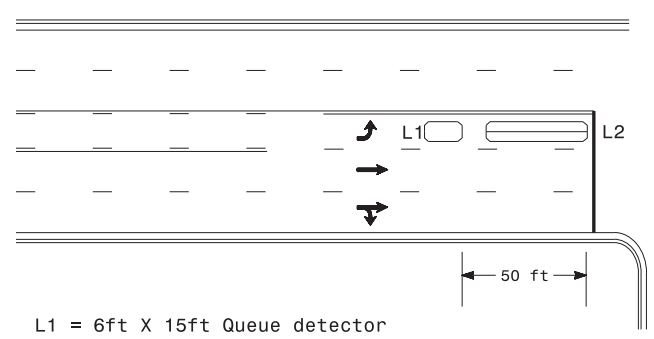
Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

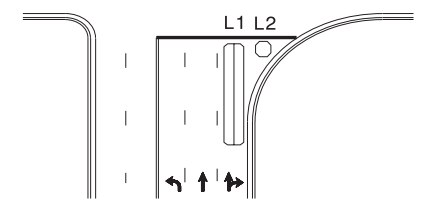
OR



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

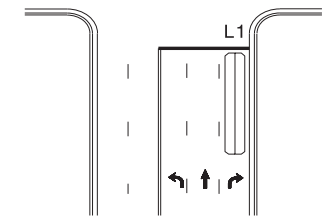
Queue Loop Detection

Right Turn Lane Detection

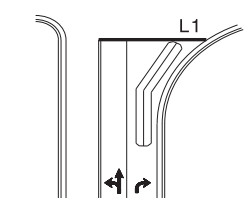


Shared Lane/
Wide Radius Turn

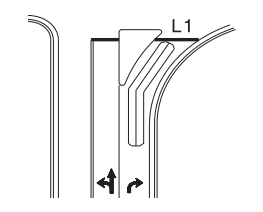
L1 = 6ft X 40ft Quadrupole loop
L2 = 6ft X 6ft [Minimum] Presence loop
Wired separately



Standard Turn

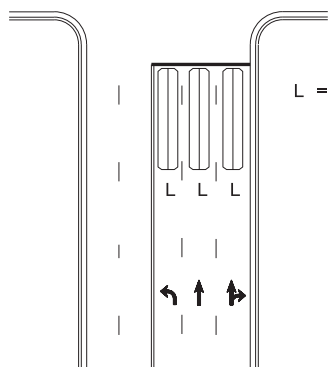


Wide Radius Turn



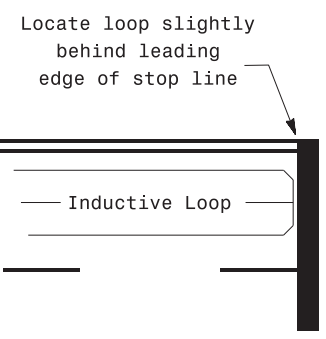
Channelized Turn

Side Street Detection



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

Presence Loop Placement at Stop Lines



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

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