

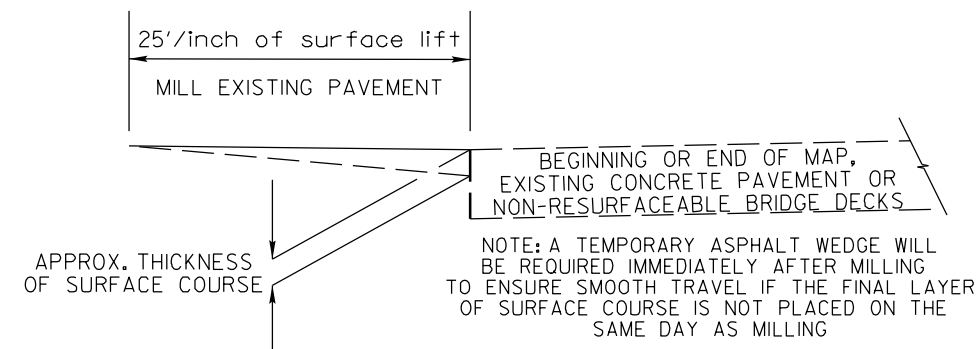
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PAVEMENT SCHEDULE

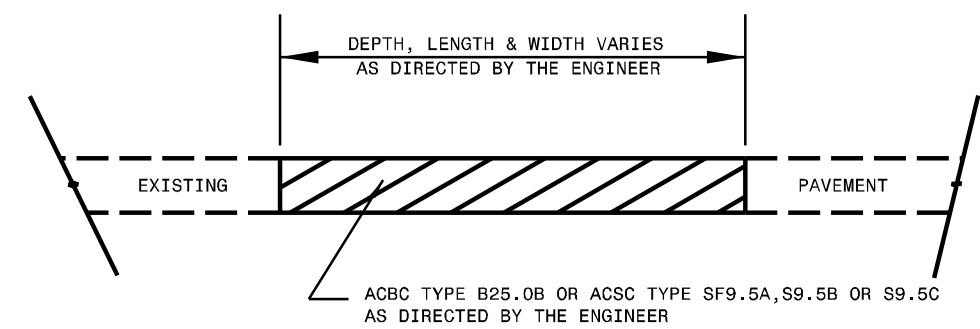
C1	1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
U	EXISTING PAVEMENT
V1	1½" MILLING
V2	2" MILLING



INCIDENTAL MILLING

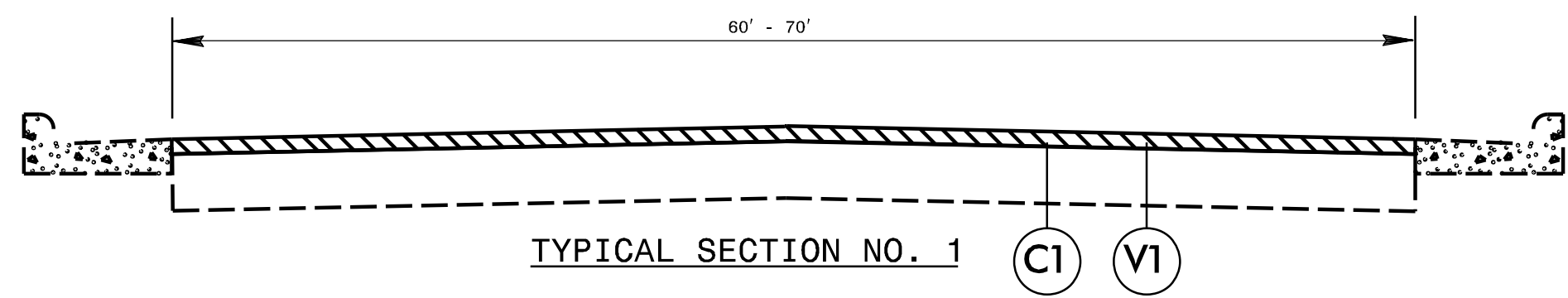
NOTES

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



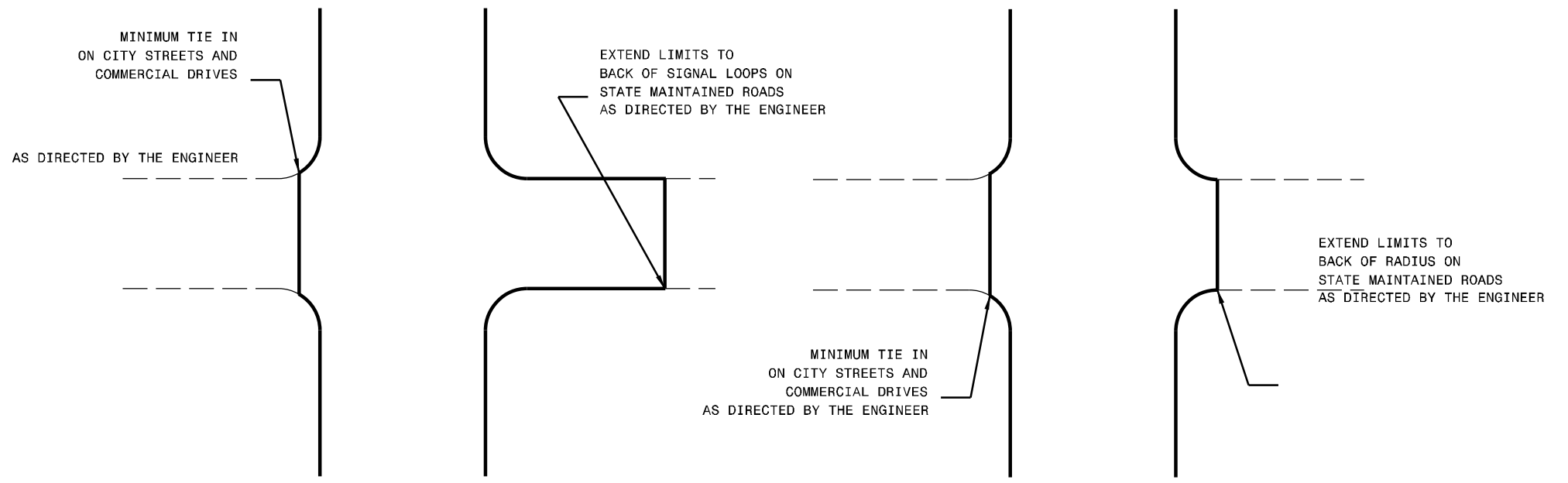
PATCHING EXISTING PAVEMENT

MILLING (IF REQUIRED BY TYPICAL) TO BE PERFORMED PRIOR TO PATCHING



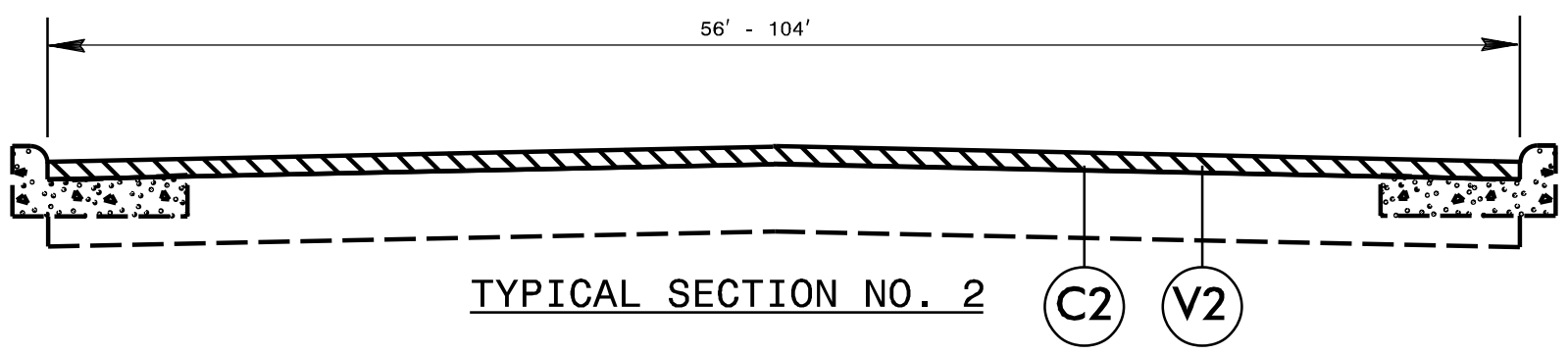
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V1	1½" MILLING
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DETAIL OF PROJECT LIMITS AT SIGNALIZED Y LINES

DETAIL OF PROJECT LIMITS AT UNSIGNALIZED Y LINES



PROJECT NO.	SHEET NO.	TOTAL NO.
2017CPT.05.01.20921.1		

SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP	LANES	LANE TYPE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH M	WIDTH FT	1½" MLLING SY	2" MLLING SY	INCIDENTAL MLLING SY	SURFACE COURSE, S9.5B TONS	ASPHALT BINDER FOR PLANT MX TON	PATCHING EXISTING PAVEMENT TONS	PORTABLE LIGHTING LS	INDUCTIVE LOOP LF
2017CPT.05.01.20921.1	Wake	1	SR 1829 - STRICKLAND RD	SR 1005 - SIX FORKS RD TO SR 2000 - FALLS OF NEUSE RD	1	5	MU	NO	NO	1.62	60-70	57,612		6,914	5,691	341	180	0.13	444
TOTAL FOR MAP NO. 1										1.62		57,612		6,914	5,691	341	180	0.13	444
2017CPT.05.01.20921.1	Wake	2	SR 2000 - FALLS OF NEUSE RD/WAKE FOREST RD	PVT JT 0.1 MI N. OF I-440 WB RAMPS TO PVT JT 0.14 MI S. OF SR 2015 - SPRING FOREST RD AND FROM PVT JT 0.12 MI N. OF SR 2015 - SPRING FOREST RD TO 0.01 S. OF FALLS VALLEY DR	2	5	MU	NO	NO	5.99	56-104		245,989	15,022	29,519	1,771	320	0.82	80,040
TOTAL FOR MAP NO. 2										5.99			245,989	15,022	29,519	1,771	320	0.82	80,040
2017CPT.05.01.20921.1	Wake	3	SR 2000 - FALLS OF NEUSE RD	.14 MI NORTH OF SR 2006 - DURANT RD TO .11 MI S OF SR 2002 - RAVEN RIDGE RD	2	5	MU	NO	NO	0.45	60-70		18,869	444	2,272	136	50	0.05	
TOTAL FOR MAP NO. 3										0.45			18,869	444	2,272	136	50	0.05	
TOTAL FOR PROJ NO. 2017CPT.05.01.20921.1										8.06		57,612	264,858	22,380	37,482	2,248	550	1.00	80,484
GRANDTOTAL										8.06		57,612	264,858	22,380	37,482	2,248	550	1.00	80,484

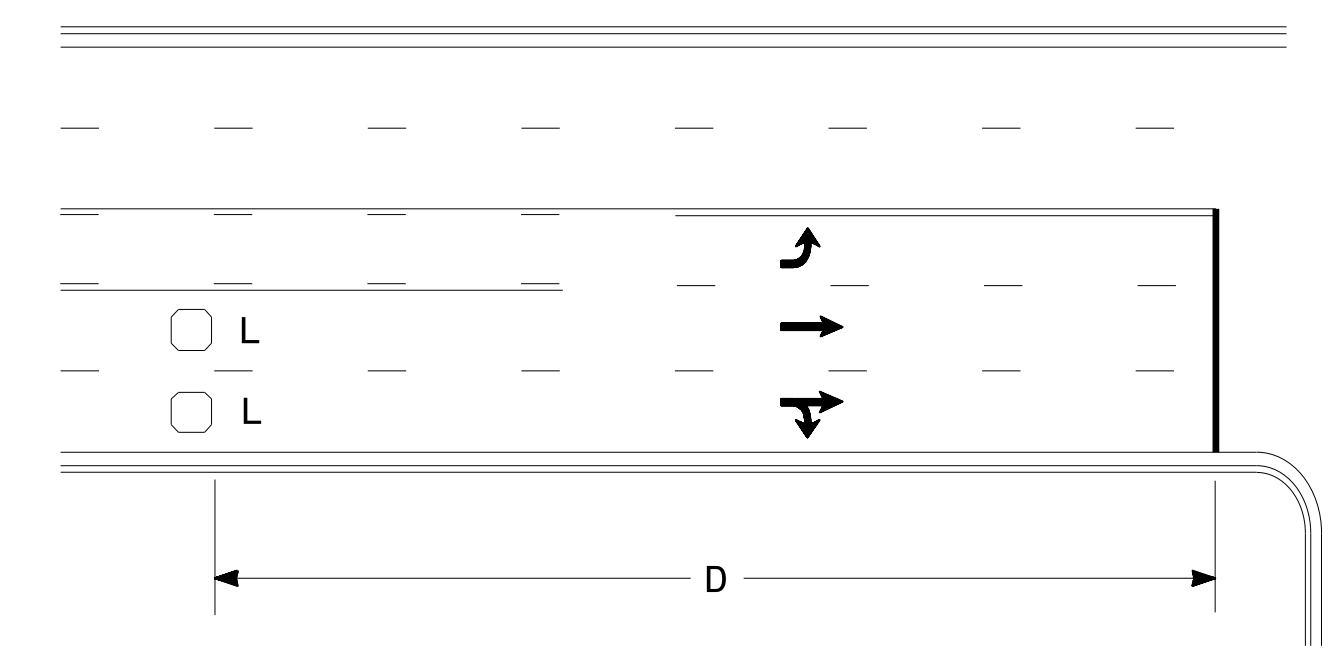
PROJECT NO.	SHEET NO.	TOTAL NO.
2017CPT.05.01.20921.1		

THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	WIDTH	4399000000-N	4413000000-E	4510000000-N	4685000000-E	4686000000-E		4695000000-E	4697000000-E	4700000000-E		4710000000-E	4721000000-E			
										TEMPORARY TRAFFIC CONTROL LS	WORK ZONE ADVANCE/GENERAL WARNING SIGNING SF	LAW ENFORCEMENT HR	4" X 90 M WHITE THERMO LF	4" X 120 M WHITE THERMO LF	4" X 120 M YELLOW THERMO LF	8" X 90 M WHITE THERMO LF	8" X 120 M WHITE THERMO LF	12" X 90 M YELLOW THERMO LF	12" X 90 M WHITE THERMO LF	24" X 120 M WHITE THERMO LF	THERMO MSG SCHOOL 120 M EA	THERMO MSG ONLY 120 M EA	THERMO MSG EAST EA	THERMO MSG I-440 120 M EA
2017CPT.05.01.20921.1	Wake	1	SR 1829 - STRICKLAND RD	SR 1005 - SIX FORKS RD TO SR 2000 - FALLS OF NEUSE RD	1	5	MU	1.62	60-70	0.13	126	40	17,107	6,378	17,825		110			348	18	16		
TOTAL FOR MAP NO. 1									1.62	126	40	17,107	6,378	17,825		110			348	18	16			
2017CPT.05.01.20921.1	Wake	2	SR 2000 - FALLS OF NEUSE RD/WAKE FOREST RD	PVT JT 0.1 MI N. OF I-440 WB RAMPS TO PVT JT 0.14 MI S. OF SR 2015 - SPRING FOREST RD AND FROM PVT JT 0.12 MI N. OF SR 2015 - SPRING FOREST RD TO 0.01 S. OF FALLS VALLEY DR	2	5	MU	5.99	56-104	0.82	126	720	3,670	46,734	53,889	42	5,822	1,027	2,393	3,440	30	20	4	4
TOTAL FOR MAP NO. 2									5.99	126	720	3,670	46,734	53,889	42	5,822	1,027	2,393	3,440	30	20	4	4	
2017CPT.05.01.20921.1	Wake	3	SR 2000 - FALLS OF NEUSE RD	.14 MI NORTH OF SR 2006 - DURANT RD TO .11 MI S OF SR 2002 - RAVEN RIDGE RD	2	5	MU	0.45	60-70	0.05	126													
TOTAL FOR MAP NO. 3									0.45	126												4	4	
TOTAL FOR PROJ NO. 2017CPT.05.01.20921.1									8.06	378	760	20,777	54,415	77,654	42	5,932	1,027	2,393	3,788	48	40	4	4	
GRAND TOTAL									8.06	378	760	20,777	54,415	77,654	42	5,932	1,027	2,393	3,788	48	40	4	4	

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	WIDTH	4725000000-E							4770000000-E	4800000000-N	4805000000-N		4850000000-E	4875000000-N	4900000000-N	4905000000-N	
										THERMO LT ARROW 90 M EA	THERMO RT ARROW 90 M EA	THERMO STR & LT ARROW 90 M EA	THERMO YIELD TRIANGLE 90M EA	THERMO STR & RT ARROW 90 M EA	THERMO MERGE ARROW 90 M EA	THERMO STR ARROW 90 M EA	THERMO LT & RT ARROW 90 M EA	4" WHITE COLD APPLIED PLASTIC, TYPE II LF	COLD APPLIED MSG ONLY, TYPE II EA	COLD APPLIED PLASTIC LEFT ARROW, TYPE II EA	COLD APPLIED PLASTIC RT ARROW, TYPE II EA	4" LINE REMOVAL LF	REML OF PVMT MRKG SYMBOLS & CHARACTERS EA	CRYSTAL & RED MARKERS EA	SNOW PLOWABLE MARKERS EA
2017CPT.05.01.20921.1	Wake	1	SR 1829 - STRICKLAND RD	SR 1005 - SIX FORKS RD TO SR 2000 - FALLS OF NEUSE RD	1	5	MU	1.62	60-70	52	17	3	25											749	
TOTAL FOR MAP NO. 1									1.62	52	17	3	25												749
2017CPT.05.01.20921.1	Wake	2	SR 2000 - FALLS OF NEUSE RD/WAKE FOREST RD	PVT JT 0.1 MI N. OF I-440 WB RAMPS TO PVT JT 0.14 MI S. OF SR 2015 - SPRING FOREST RD AND FROM PVT JT 0.12 MI N. OF SR 2015 - SPRING FOREST RD TO 0.01 S. OF FALLS VALLEY DR	2	5	MU	5.99	56-104	198	55			44	2	123	1	939	4	2	2	939	9	36	1,888
TOTAL FOR MAP NO. 2									5.99	198	55		44	2	123	1	939	4	2	2	939	9	36	1,888	
2017CPT.05.01.20921.1	Wake	3	SR 2000 - FALLS OF NEUSE RD	.14 MI NORTH OF SR 2006 - DURANT RD TO .11 MI S OF SR 2002 - RAVEN RIDGE RD	2	5	MU	0.45	60-70	14	2													89	
TOTAL FOR MAP NO. 3									0.45	14	2													89	
TOTAL FOR PROJ NO. 2017CPT.05.01.20921.1									8.06	264	74	3	25	44	2	123	1	939	4	2	2	939	9	36	2,726
GRAND TOTAL									8.06	264	74	3	25	44	2	123	1	939	4	2	2	939	9	36	2,726

High Speed Detection (≥40 mph)

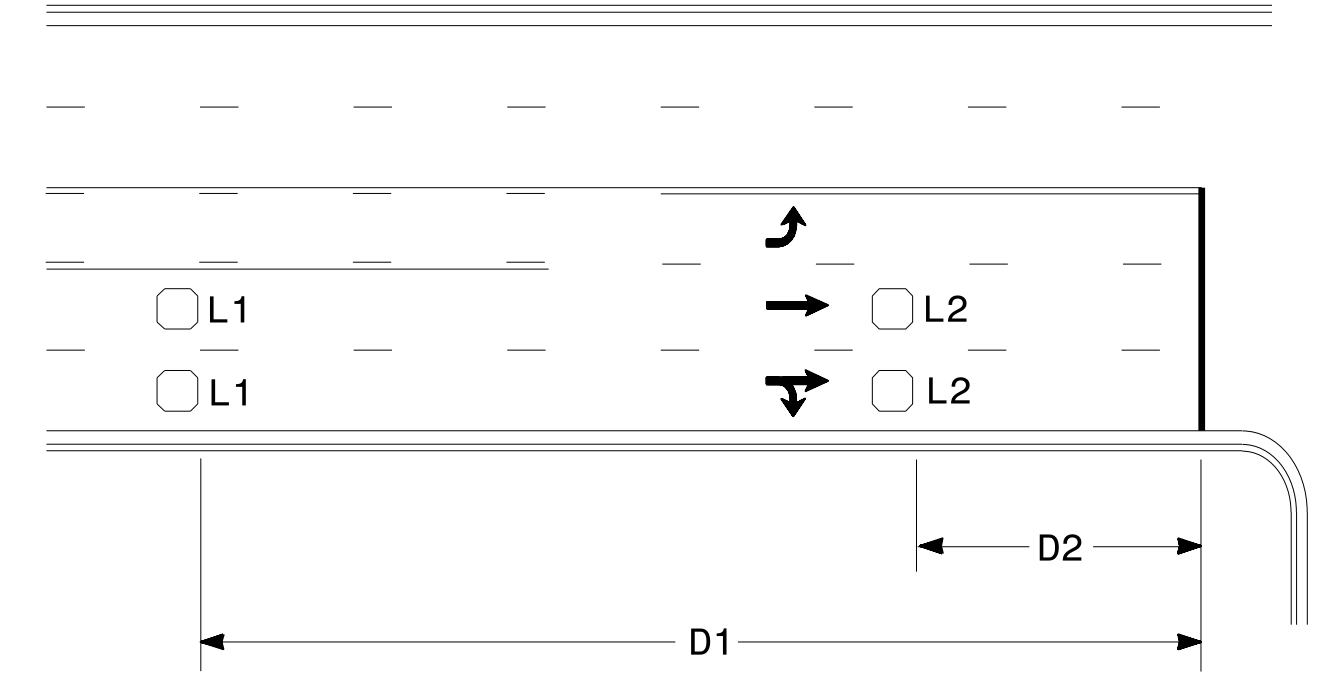


Speed Limit mph	D ft
40	250
45	300
50	355
55	420

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

Volume Density Operation

OR

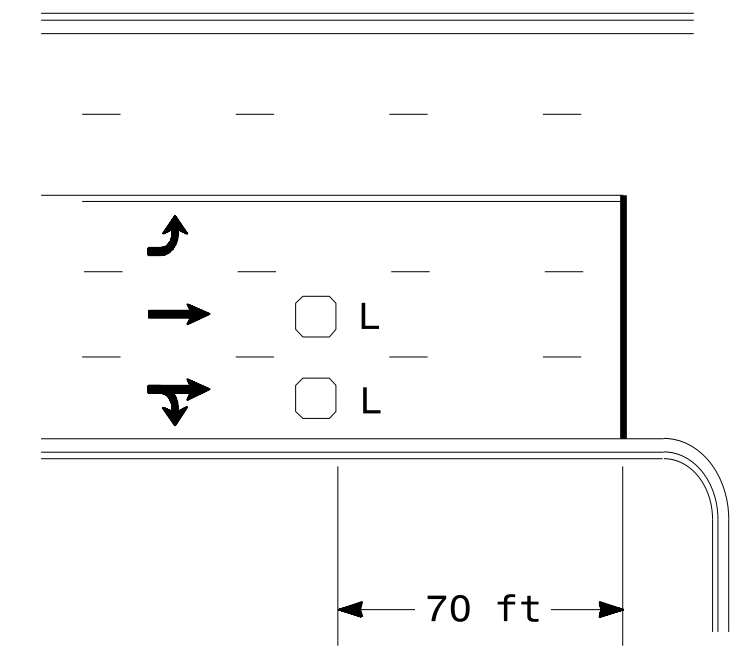


Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

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

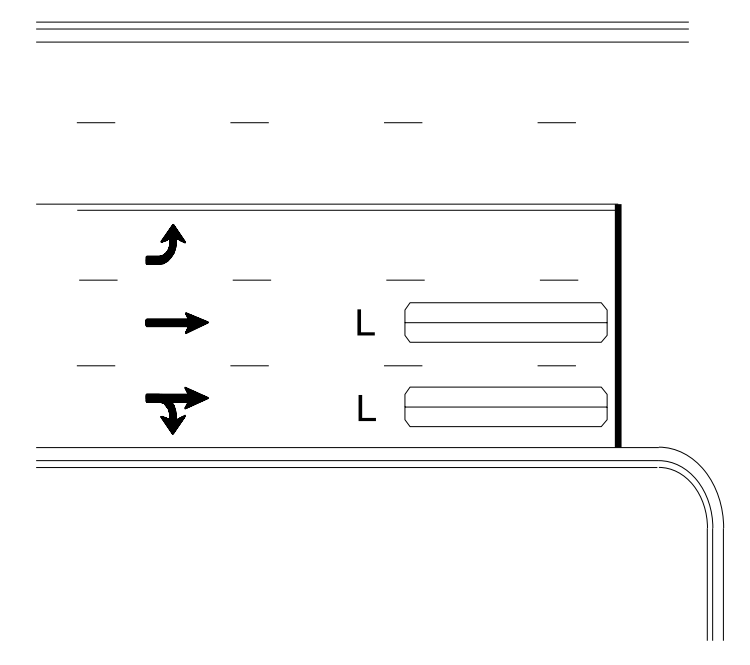
"Stretch" Operation

Low Speed Detection (≤35 mph)



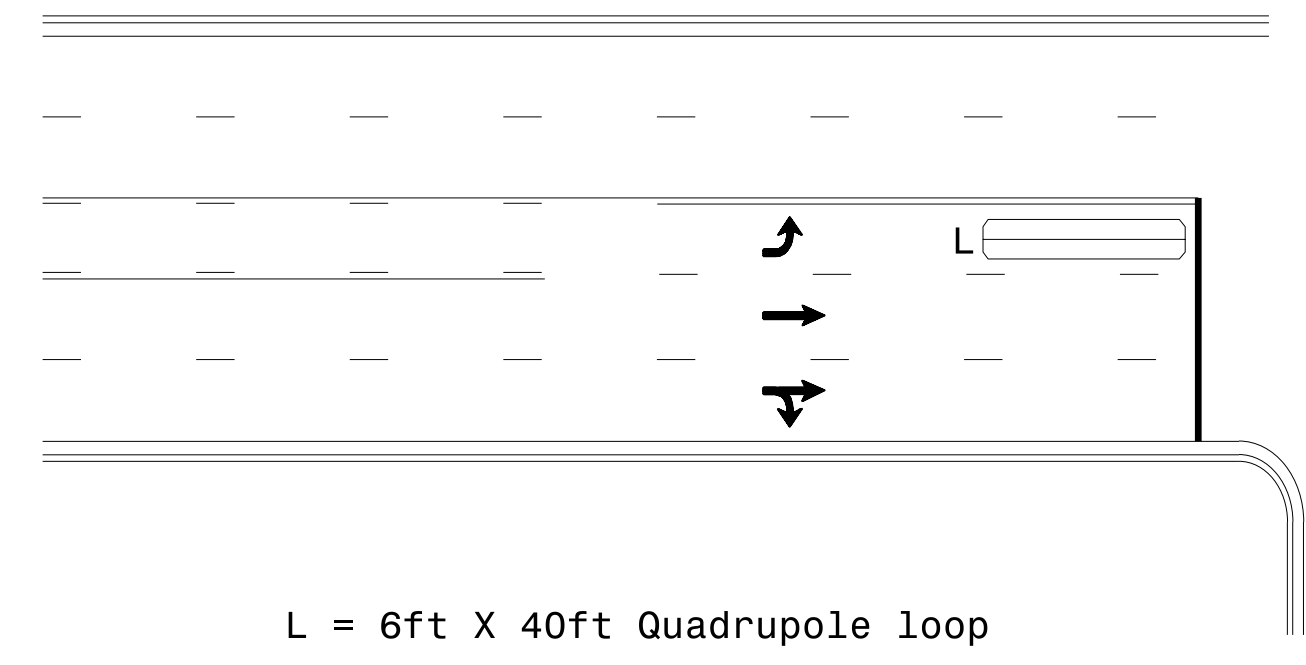
L = 6ft X 6ft
Wired in series

OR



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

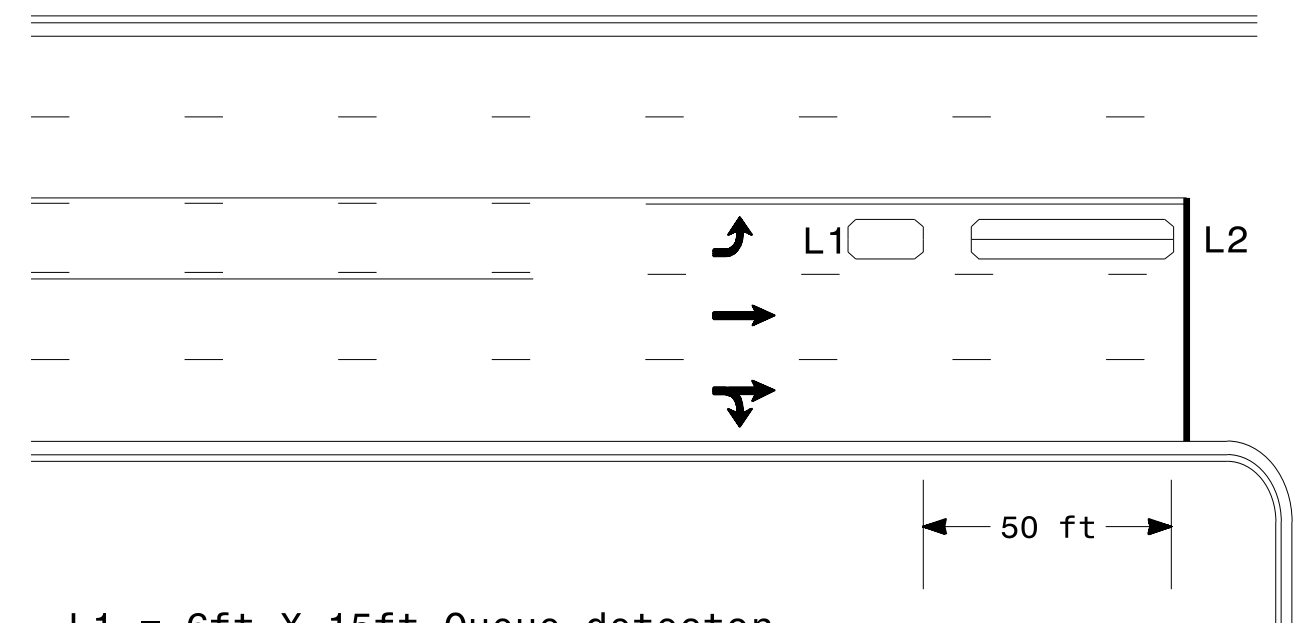
Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

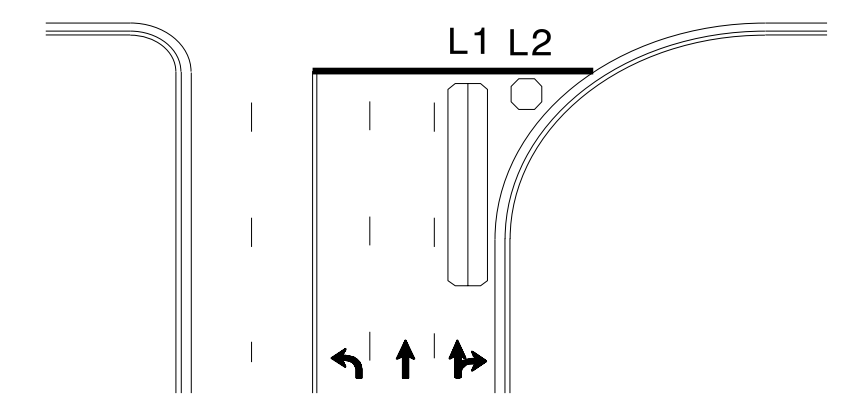
OR



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

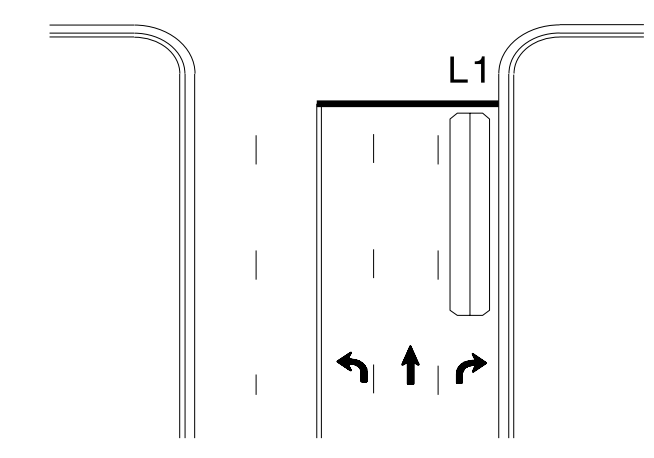
Queue Loop Detection

Right Turn Lane Detection

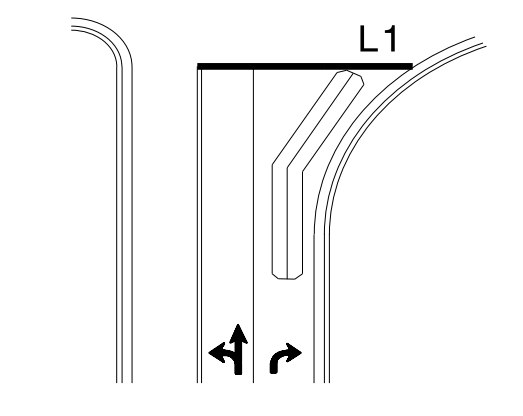


Shared Lane/
Wide Radius Turn

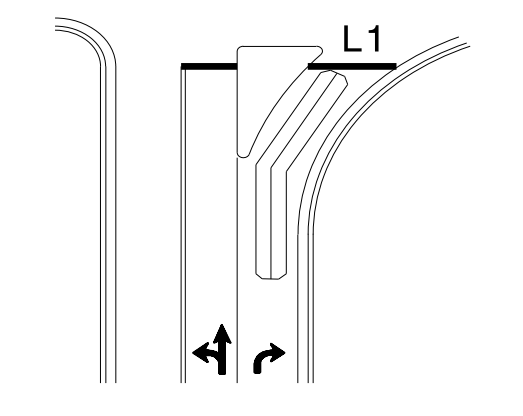
L1 = 6ft X 40ft Quadrupole loop
L2 = 6ft X 6ft [Minimum] Presence loop
Wired separately



Standard Turn

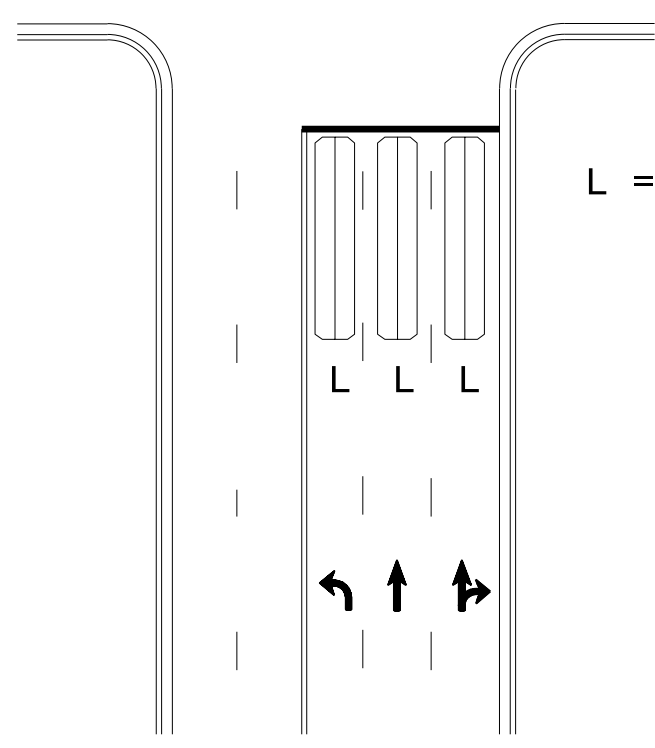


Wide Radius Turn



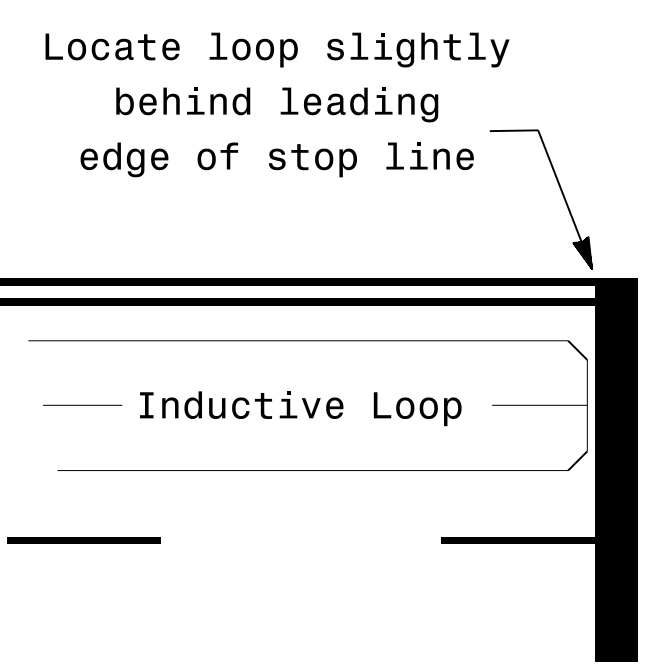
Channelized Turn

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

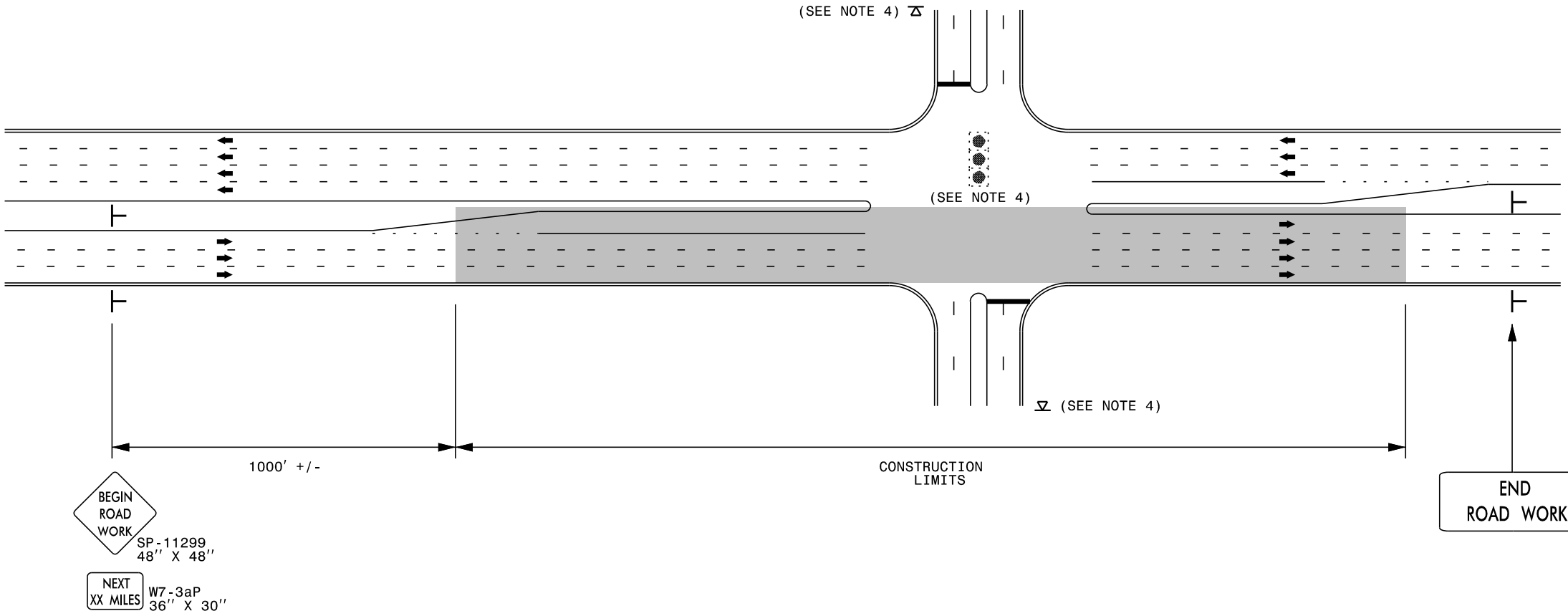
PLAN DATE: January 2015	REVIEWED BY: JPG
PREPARED BY: PLA	REVIEWED BY:
REVISIONS	INIT. DATE

SEAL
NORTH CAROLINA
PROFESSIONAL ENGINEER
PAMELA L. ALEXANDER
23489

1/30/2015

3D:\146-2015-12-29
 S:\146\2015-12-29\Signal Design\Section\Eastern\Region\loop\yp\lca\2015.dgn
 paalexander

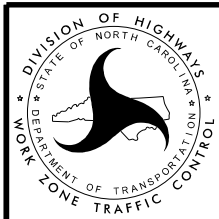
URBAN / SUBURBAN WORKZONES



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**

2/24/2014 S:\TMD\WZTC\Resurfacing\2013Documents\New_Procedures_05_09_2013\Resurfacing_AdvWarn_UrSub.dgn