09/08/99

CONTRACT NO.: DA00279 WBS ELEMENT: 2016CPT.01.19.20081.1, ETC.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

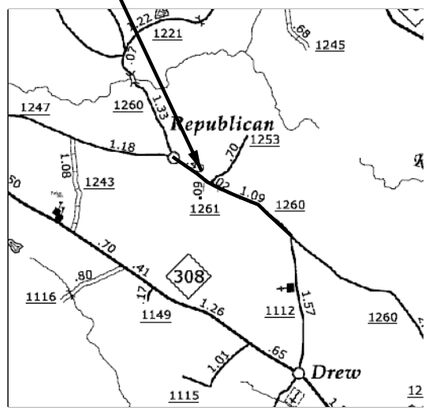
BERTIE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	2016CPT.01.19.20081.1, ETC.	1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
2016CPT.01.19.20081.1		MAPS 1 – 5	

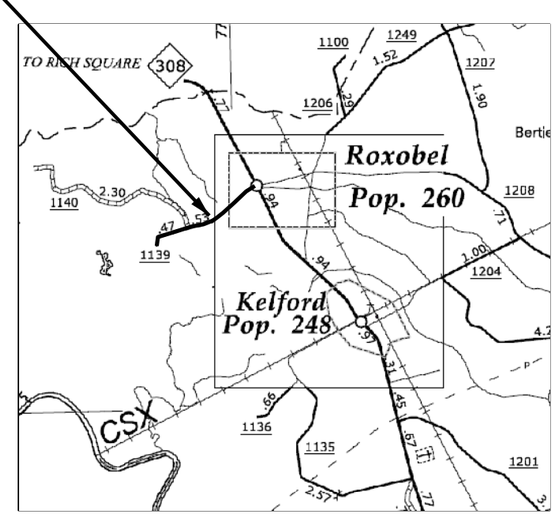
LOCATION: *MAP 1 SR 1260 FROM SR 1247 TO SR 1112*
MAP 2 SR 1139 FROM NC 308 TO END C&G
MAP 3 SR 1139 FROM END C&G TO DEAD END
MAP 4 SR 1300 FROM SR 1001 TO PAVEMENT CHANGE
MAP 5 SR 1355 FROM SR 1354 TO NC 45

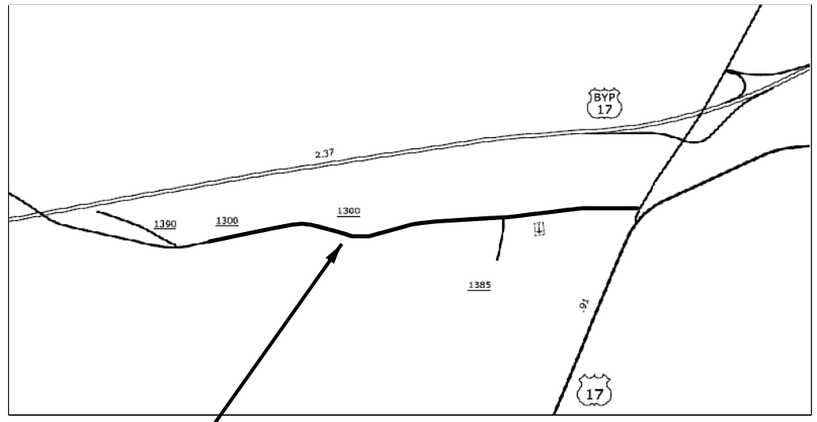
TYPE OF WORK: MILLING & RESURFACING

MAP 1



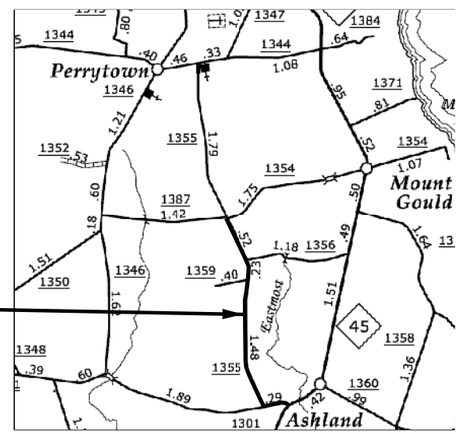
MAP 2 & 3





MAP 4

MAP 5



NTS

PROJECT LENGTH

MAP LENGTHS:

LENGTH OF ROADWAY PROJECT MAP 1 = 1.60 MI.
LENGTH OF ROADWAY PROJECT MAP 2 = 0.14 MI.
LENGTH OF ROADWAY PROJECT MAP 3 = 1.24 MI.
LENGTH OF ROADWAY PROJECT MAP 4 = 1.65 MI.
LENGTH OF ROADWAY PROJECT MAP 5 = 2.47 MI.

Prepared In the Office of:
DIVISION OF HIGHWAYS
113 Airport Dr., Edenton NC, 27932

2012 STANDARD SPECIFICATIONS

LETTING DATE:

W.B. HOBBS, P.E.
DIVISION PROJECT MANAGER

C.E. SLACHTA
DIVISION PROPOSALS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

09/08/99

CONTRACT NO.: DA00279 WBS ELEMENT: 2016CPT.01.19.20081.1, ETC.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

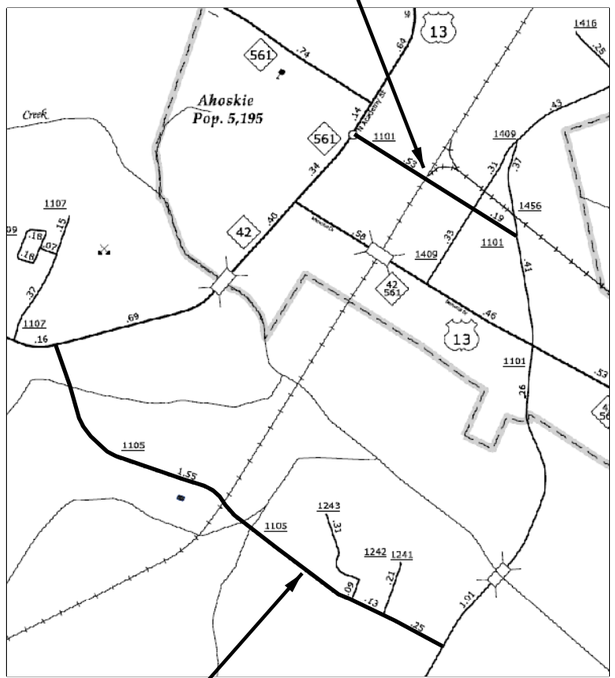
HERTFORD COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	2016CPT.01.19.20081.1, ETC.	2	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
2016CPT.01.19.20461.1		MAPS 6 – 9	

LOCATION: *MAP 6 SR 1101 FROM US 13 TO SR 1456*
MAP 7 SR 1105 FROM NC 42 TO SR 1101
MAP 8 SR 1303 FROM SR 1305 TO US 158 BUS.
MAP 9 SR 1108 FROM SR 1189 TO SR 1174

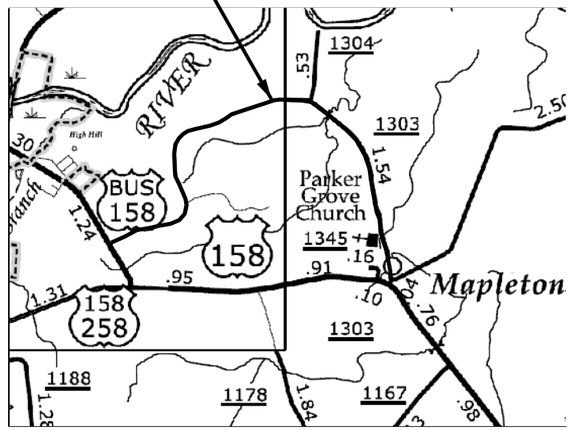
TYPE OF WORK: *MILLING & RESURFACING*

MAP 6

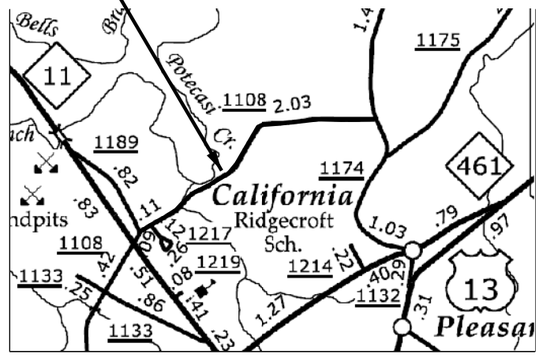


MAP 7

MAP 8



MAP 9



N

NTS	PROJECT LENGTH MAP LENGTHS: LENGTH OF ROADWAY PROJECT MAP 6 = 0.71 MI. LENGTH OF ROADWAY PROJECT MAP 7 = 1.90 MI. LENGTH OF ROADWAY PROJECT MAP 8 = 3.77 MI. LENGTH OF ROADWAY PROJECT MAP 9 = 2.08 MI.	Prepared In the Office of: DIVISION OF HIGHWAYS 113 Airport Dr., Edenton NC, 27932 2012 STANDARD SPECIFICATIONS LETTING DATE: W.B. HOBBS, P.E. DIVISION PROJECT MANAGER C.E. SLACHTA DIVISION PROPOSALS ENGINEER	DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION ·

09/08/99

CONTRACT NO.: DA00279 WBS ELEMENT: 2016CPT.01.19.20081.1, ETC.

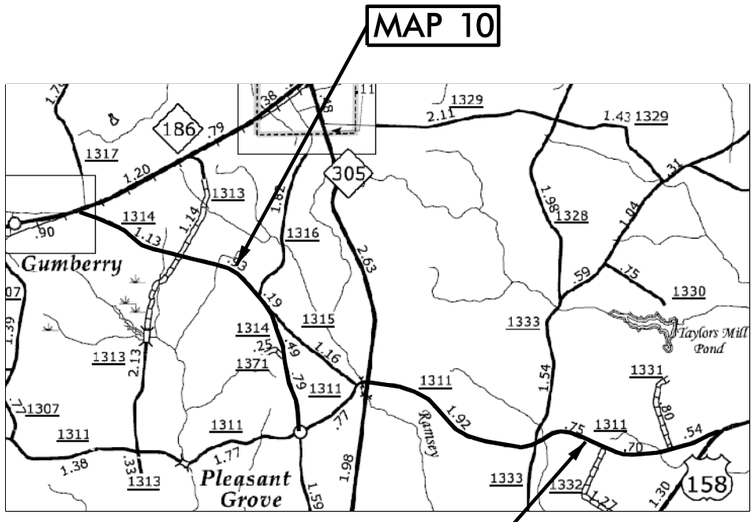
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

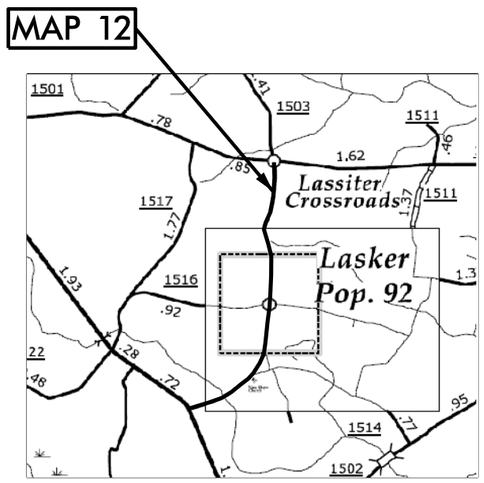
NORTHAMPTON COUNTY

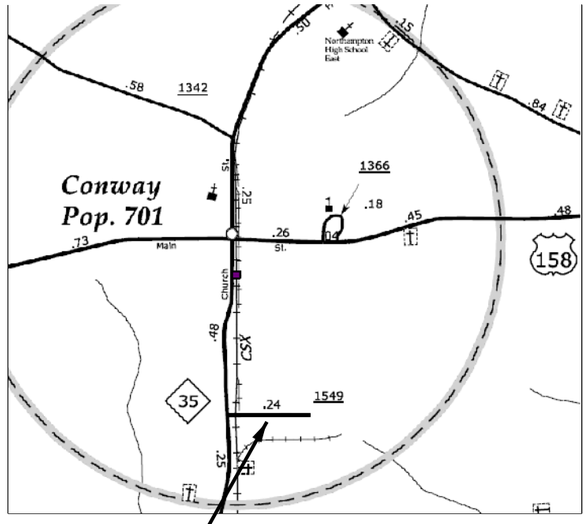
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	2016CPT.01.19.20081.1, ETC.	3	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
2016CPT.01.19.20661.1		MAPS 10 – 13	

LOCATION: *MAP 10 SR 1314 FROM NC 186 TO SR 1311*
MAP 11 SR 1311 FROM NC 305 TO US 158 (EAST SECTION)
MAP 12 SR 1503 FROM SR 1501 TO NC 305
MAP 13 SR 1549 FROM NC 35 TO END MAINT.

TYPE OF WORK: RESURFACING







NTS

PROJECT LENGTH

MAP LENGTHS:

LENGTH OF ROADWAY PROJECT MAP 10 = 3.52 MI.
LENGTH OF ROADWAY PROJECT MAP 11 = 3.85 MI.
LENGTH OF ROADWAY PROJECT MAP 12 = 2.91 MI.
LENGTH OF ROADWAY PROJECT MAP 13 = 0.17 MI.

Prepared In the Office of:
DIVISION OF HIGHWAYS
113 Airport Dr., Edenton NC, 27932

2012 STANDARD SPECIFICATIONS

LETTING DATE:

W.B. HOBBS, P.E.
DIVISION PROJECT MANAGER

C.E. SLACHTA
DIVISION PROPOSALS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
2016CPT.01.19.20081.1, ETC.	4

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1.5″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
U	EXISTING PAVEMENT.

NOTES:

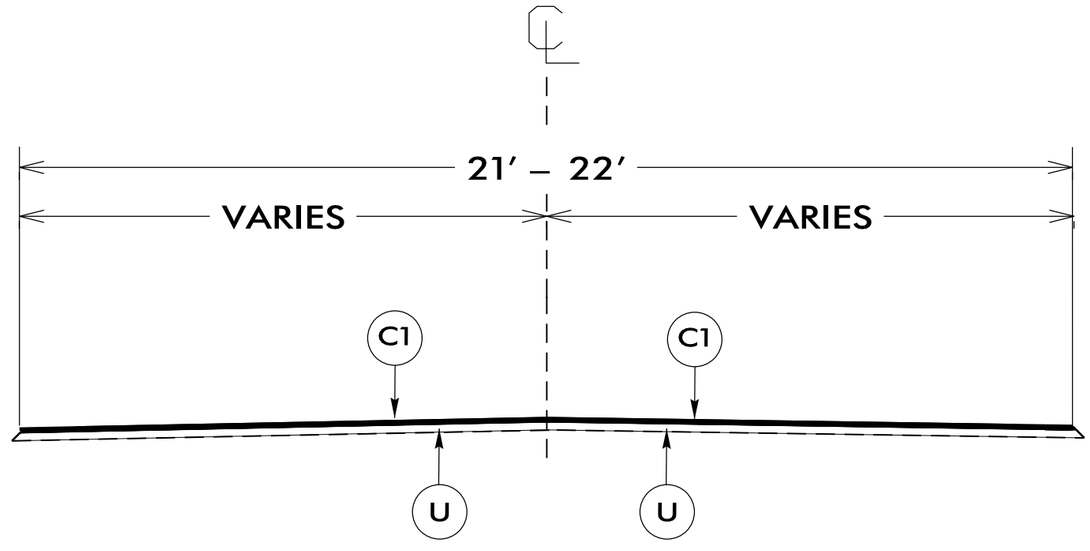
*ALL PAVED S.R. ROADS TO BE RESURFACED TO THE ENDS OF THE RADII, OR AS DIRECTED BY THE ENGINEER

*EDGES, PAVEMENT WIDENING, INTERSECTIONS, AND BRIDGE FLARES ARE INCLUDED IN THE SUMMARY OF QUANTITIES

*PAVEMENT MARKINGS TO BE PERFORMED BY OTHERS

*SHOULDER RECONSTRUCTION TO BE PERFORMED BY OTHERS

*WARM MIX SHALL BE USED ON MAP 7 (SR 1105)



TYPICAL SECTION NO. 1

USE WITH MAPS 1, 7, & 13

NTS

PROJECT REFERENCE NO.	SHEET NO.
2016CPT.01.19.20081.1, ETC.	5

PAVEMENT SCHEDULE

C2	PROP. APPROX. 1.25″ ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.
V1	MILLING BITUMINOUS PAVEMENT. 1.25″ IN DEPTH.
U	EXISTING PAVEMENT.

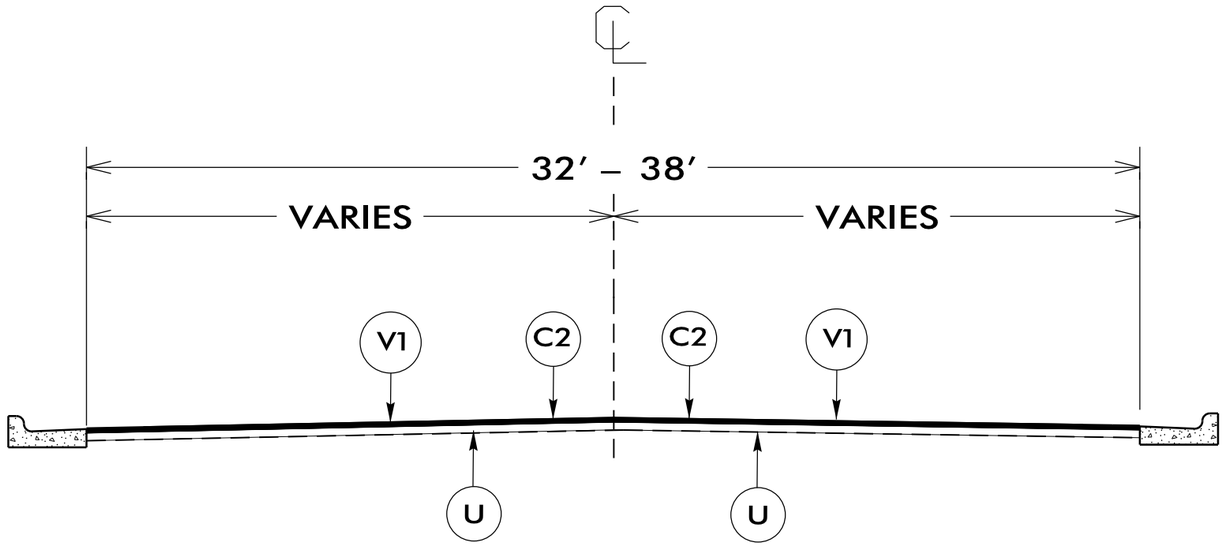
NOTES:

*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 SUMMARY OF QUANTITIES

*CONTRACTOR SHALL MILL 1.25" BELOW EXISTING EDGE OF CONC. CURB & GUTTER WHERE APPLICABLE

*PAVEMENT MARKINGS TO BE PERFORMED BY OTHERS



TYPICAL SECTION NO. 2

USE WITH MAPS 2 & 6

NTS

PROJECT REFERENCE NO.	SHEET NO.
2016CPT.01.19.20081.1	6

PAVEMENT SCHEDULE

C2	PROP. APPROX. 1.25″ ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.
U	EXISTING PAVEMENT.

NOTES:

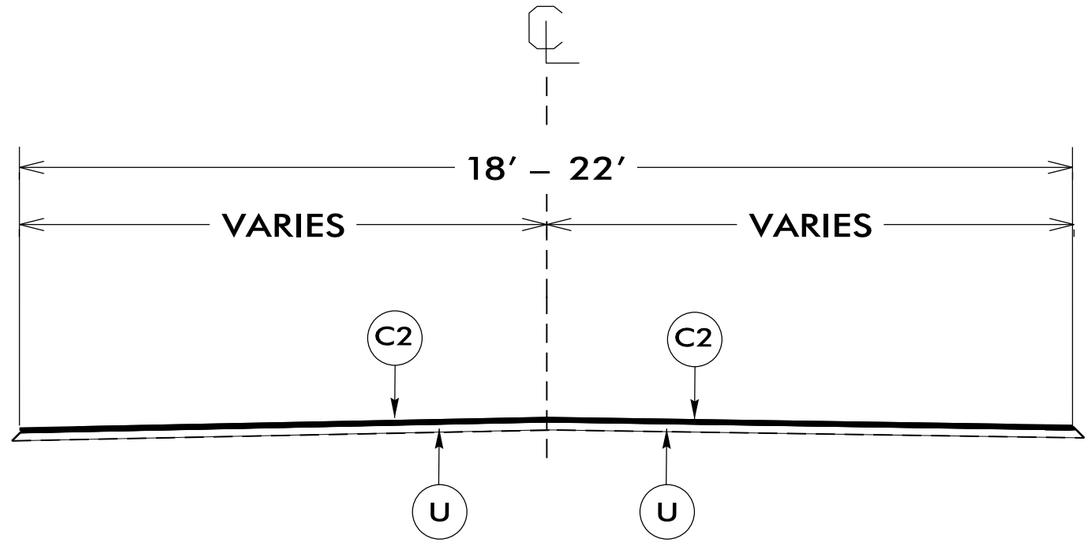
*ALL PAVED S.R. ROADS TO BE RESURFACED TO THE ENDS OF THE RADII, OR AS DIRECTED BY THE ENGINEER

*EDGES, PAVEMENT WIDENING, INTERSECTIONS, AND BRIDGE FLARES ARE INCLUDED IN THE SUMMARY OF QUANTITIES

*PAVEMENT MARKINGS TO BE PERFORMED BY OTHERS

*SHOULDER RECONSTRUCTION TO BE PERFORMED BY OTHERS

*WARM MIX SHALL BE USED ON MAP 10 (SR 1314), MAP 11 (SR 1311), & MAP 12 (SR 1503)



TYPICAL SECTION NO. 3

USE WITH MAPS 3 - 5 & 8 - 12

NTS

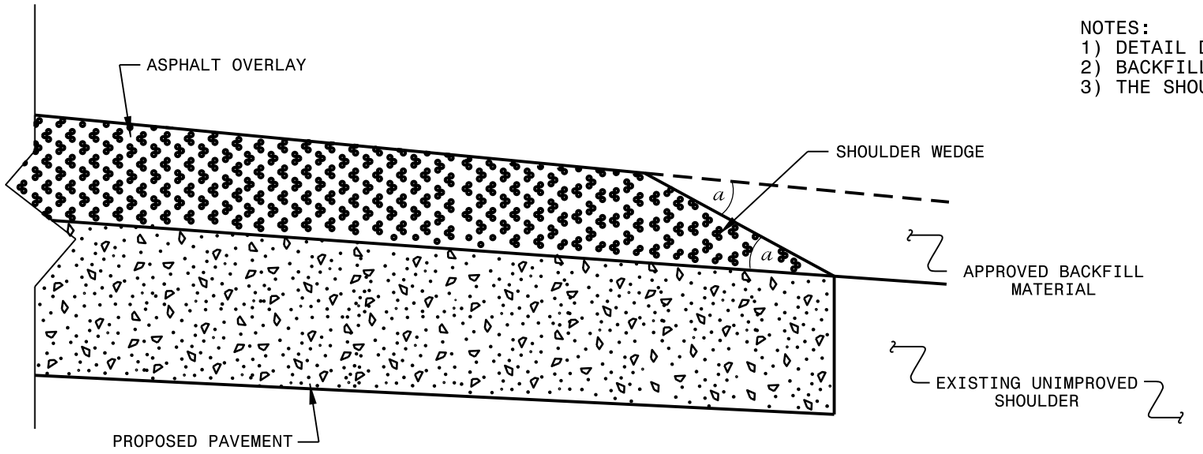
PROJECT NO.	SHEET NO.
2016CPT.01.19.20081.1, ETC.	7

SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH MI	WIDTH FT	MOBILIZATION LS	1.25" MILLING SY	INCIDENTAL MILLING SY	SURFACE COURSE, S9.5B TONS	SURFACE COURSE, SF9.5A TONS	ASPHALT BINDER FOR PLANT MIX TONS	AC PLANT MIX (REPAIR) TONS	ADJ. OF MANHOLES EA	ADJ. OF METER OR VALVE BOX EA	WORK ZONE ADVANCE/ GENERAL WARNING SIGNING SF	TEMPORARY TRAFFIC CONTROL LS	INDUCTIVE LOOP SAWCUT LF	LEAD-IN CABLE (14-2) LF
2016CPT.01.19.20081.1	Bertie	1	SR 1260	FOM SR 1247 TO SR SR 1112	1	2	2WU	NO	NO	1.60	21	1	-	150	1,696	-	102	-	-	-	86	1	-	-
2016CPT.01.19.20081.1	Bertie	2	SR 1139	FROM NC 308 TO END C&G	2	2	2WU	NO	NO	0.14	32	*	2,600	-	-	181	12	5	-	3	27	*	-	-
2016CPT.01.19.20081.1	Bertie	3	SR 1139	END C&G TO DEAD END	3	2	2WU	NO	NO	1.24	20	*	-	-	-	1,040	70	-	-	-	32	*	-	-
2016CPT.01.19.20081.1	Bertie	4	SR 1300	SR 1001 TO PAVEMENT CHANGE	3	2	2WU	NO	NO	1.65	20	*	-	120	-	1,385	93	-	-	-	86	*	-	-
2016CPT.01.19.20081.1	Bertie	5	SR 1355	FROM SR 1354 TO NC 45	3	2	2WU	NO	NO	2.47	18	*	-	250	-	1,899	127	-	-	-	118	*	-	-
2016CPT.01.19.20461.1	Hertford	6	SR 1101	FROM US 13 TO SR 1456	2	2	2WU	NO	NO	0.71	38	*	17,000	-	-	1,278	86	60	16	10	86	*	2,000	200
2016CPT.01.19.20461.1	Hertford	7	SR 1105	FROM NC 42 TO SR 1101	1	2	2WU	NO	**YES**	1.90	22	*	-	200	2,273	-	136	-	-	1	86	*	-	-
2016CPT.01.19.20461.1	Hertford	8	SR 1303	FROM SR 1305 TO US 158 BUS	3	2	2WU	NO	NO	3.77	18	*	-	250	-	2,845	191	-	-	-	150	*	-	-
2016CPT.01.19.20461.1	Hertford	9	SR 1108	FROM SR 1189 TO SR 1174	3	2	2WU	NO	NO	2.08	18	*	-	150	-	1,636	110	-	-	-	118	*	-	-
2016CPT.01.19.20661.1	Northampton	10	SR 1314	FROM NC 186 TO SR 1311	3	2	2WU	NO	**YES**	3.52	21	*	-	200	-	3,144	211	-	-	-	118	*	-	-
2016CPT.01.19.20661.1	Northampton	11	SR 1311	FROM NC 305 TO US 158 (EAST SECTION)	3	2	2WU	NO	**YES**	3.85	22	*	-	200	-	3,565	239	-	-	-	150	*	-	-
2016CPT.01.19.20661.1	Northampton	12	SR 1503	FROM SR 1501 TO NC 305	3	2	2WU	NO	**YES**	2.91	19	*	-	250	-	2,415	162	-	-	-	150	*	-	-
2016CPT.01.19.20661.1	Northampton	13	SR 1549	FROM NC 35 TO END MAINT.	1	2	2WU	NO	NO	0.17	22	*	-	50	191	-	11	-	-	-	48	*	-	-
TOTAL										**25.99**		**1**	**19,600**	**1,820**	**4,160**	**19,388**	**1,550**	**65**	**16**	**14**	**1,255**	**1**	**2,000**	**200**

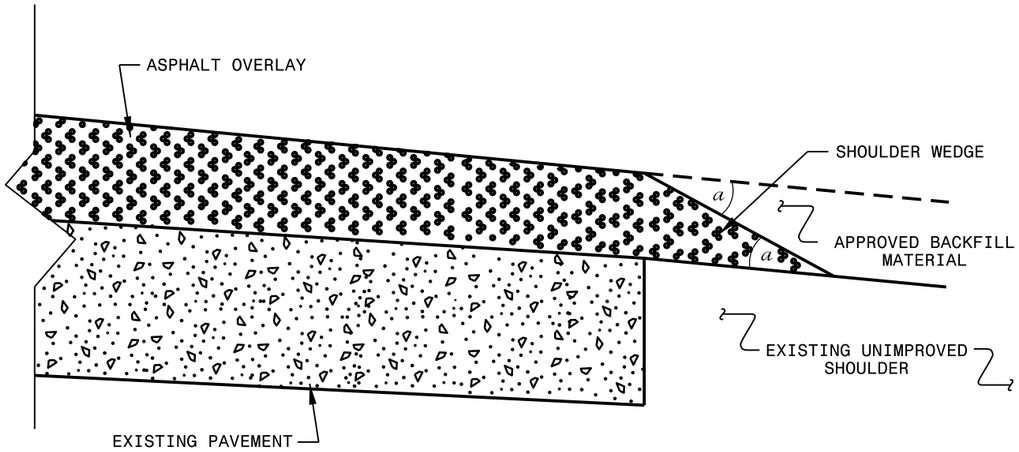
PROJECT REFERENCE NO.	SHEET NO.
2016CPT.01.19.20081.1, etc.	8 of 10

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.



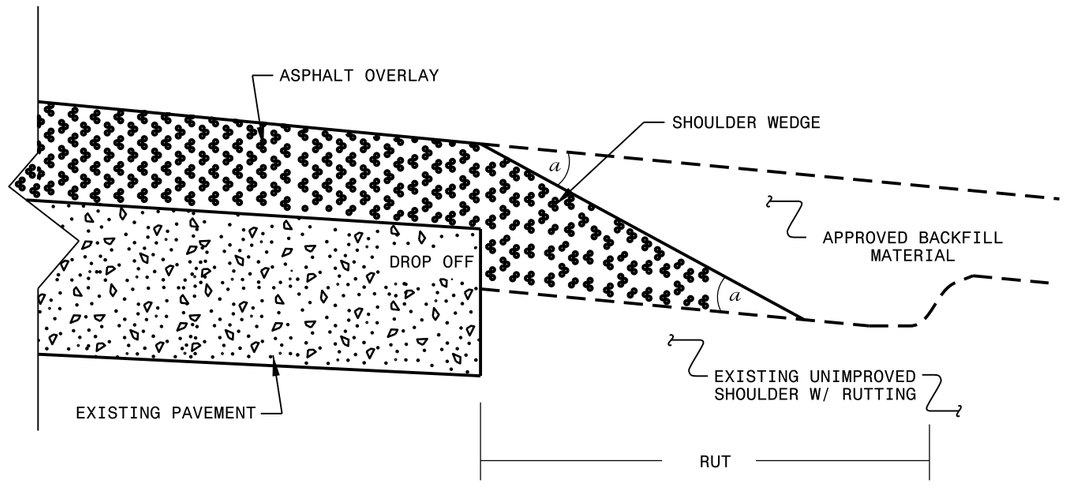
SHOULDER WEDGE DETAIL

(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

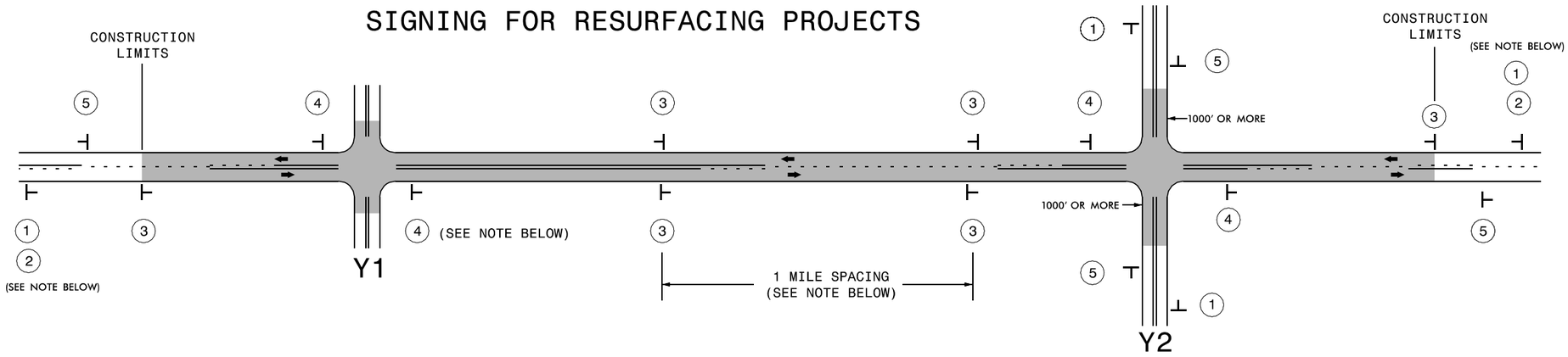
SHOULDER WEDGE DETAILS

ORIGINAL BY:	T.SPELL	DATE:	7-19-11
MODIFIED BY:		DATE:	10/16/12
CHECKED BY:		DATE:	
FILE SPEC.:	s:usr/details/stand/shoulderwedgedetail.dgn		

$$$$$$SYSTIME$$$$$
$$$$$$USERNAME$$$$$DGN$$$$$$$$$$$$$$$$$$$$

PROJ. REFERENCE NO.	SHEET NO.
2016CPT.01.19.20081.1, etc.	9 of 10

SIGNING FOR RESURFACING PROJECTS



LEGEND

⊢ STATIONARY SIGN

⬅ DIRECTION OF TRAFFIC FLOW

MAINLINE (-L-) SIGNING

SIGNING NOTES AND PLACEMENT PER DIRECTION

1	ROAD WORK AHEAD 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.
2	NEXT XX MILES 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)
3	LOW/SOFT SHOULDER SP 13107 48" X 48"	PLACE INITIALLY AT THE CONSTRUCTION LIMITS AND SPACED 1 MILE APART THEREAFTER. IF NO -Y- LINES EXIST, PLACE 2ND SET ½ MILE FROM THE CONSTRUCTION LIMITS AND THEN SPACE 1 MILE THEREAFTER.
4	ROAD UNDER CONST. 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.
5	END ROAD WORK G20-2 A 48" X 24"	PLACE 500' FOLLOWING THE END OF CONSTRUCTION LIMITS.

-Y- LINE SIGNING

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

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.

ROAD WORK AHEAD W20-1 48" X 48"

PLACED 500' IN ADVANCE OF FLAGGER.

W20-7 A 48" X 48"

PLACED 250' IN ADVANCE OF FLAGGER.

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

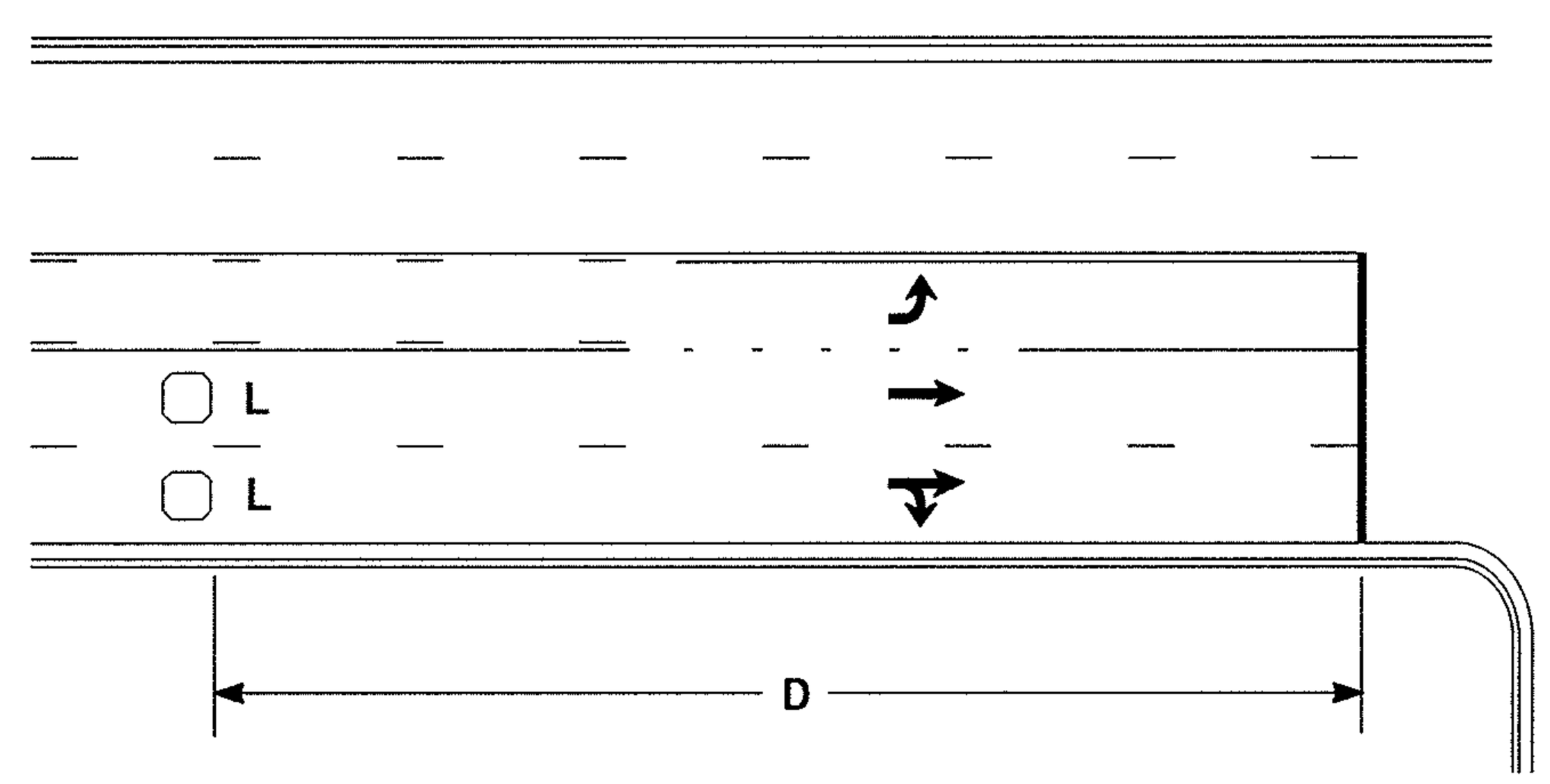
RESURFACING
ADVANCE WARNING SIGNS
FOR
RURAL AND SUBURBAN
2 LANE ROADWAYS

8/8/2013
S:\TMU\WZTC\Resurfacing\2013Resurfacing\2013Documents\New_Procedures_05_09_2013\Resurfacing_AdvWarn_2Ln.dgn
User:rmgarrett

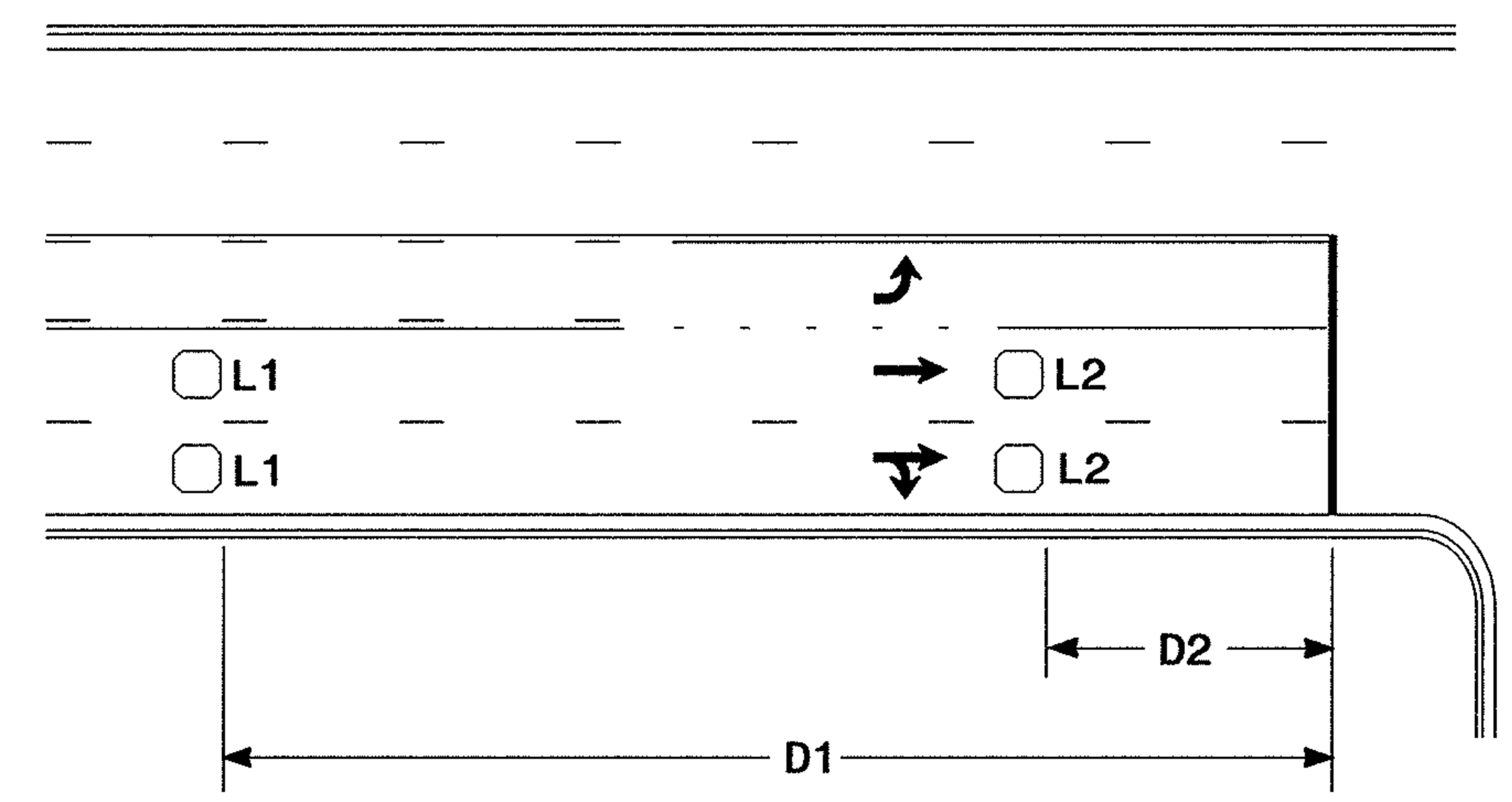
PROJECT REFERENCE NO.	SHEET NO.
2016CPT.01.19.20081.1, etc.	SIG 1

High Speed Detection

[≥40 mph (64 km/hr)]



OR



Speed Limit mph (km/hr)	D ft (m)
40 (64)	250 (75)
45 (72)	300 (90)
50 (80)	355 (110)
55 (88)	420 (130)

L = 6ft X 6ft (1.8m X 1.8m)
Wired in series for TS1 Controllers
Wired separately for TS2, 170, and 2070L Controllers

Volume Density Operation

Speed Limit mph (km/hr)	D1 ft (m)	D2 ft (m)
40 (64)	250 (75)	80 (25)
45 (72)	300 (90)	90 (27)
50 (80)	355 (110)	100 (30)
55 (88)	420 (130)	110 (35)

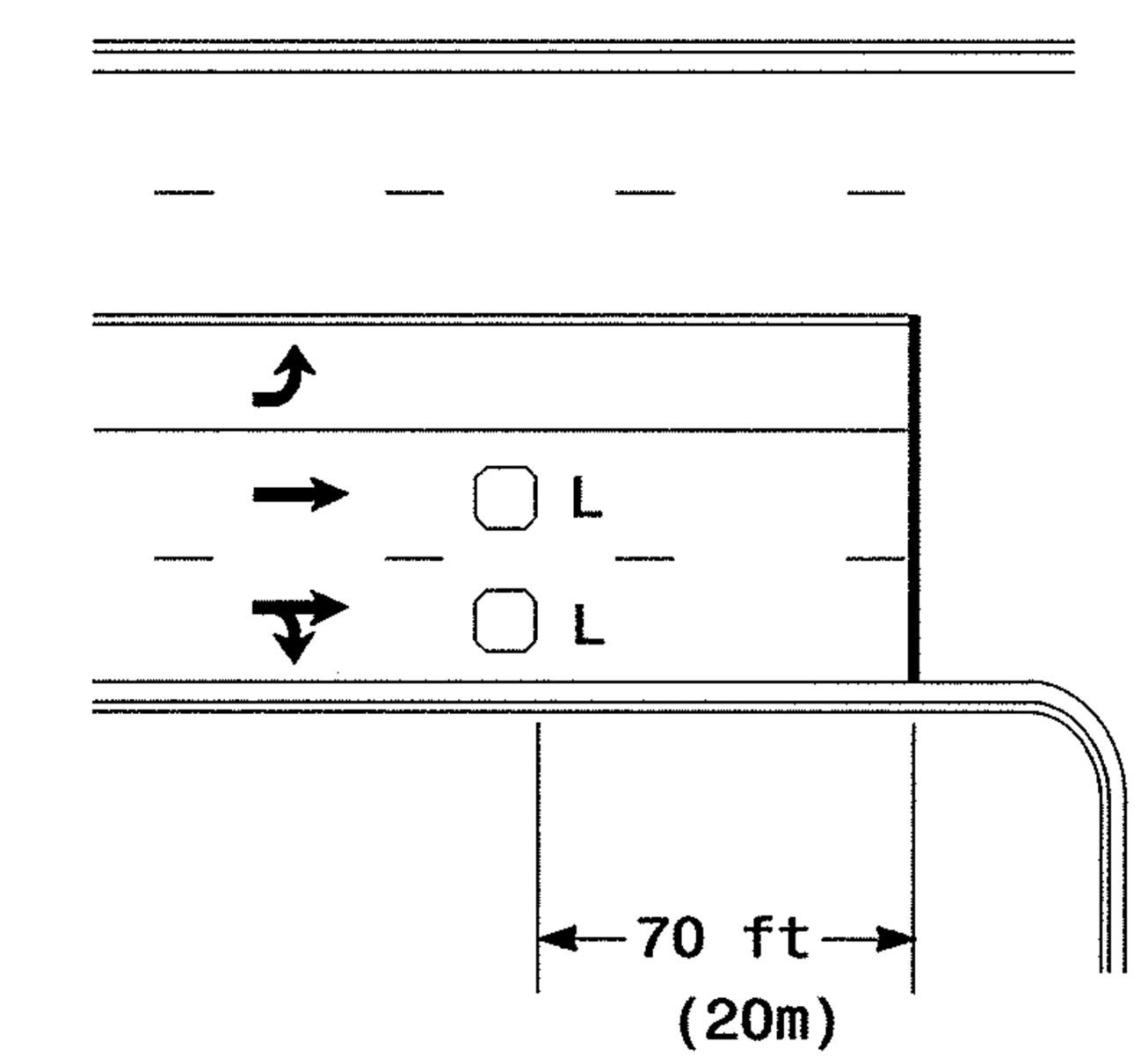
L1 = 6ft X 6ft (1.8m X 1.8m) Wired in series

L2 = 6ft X 6ft (1.8m X 1.8m) Wired in series

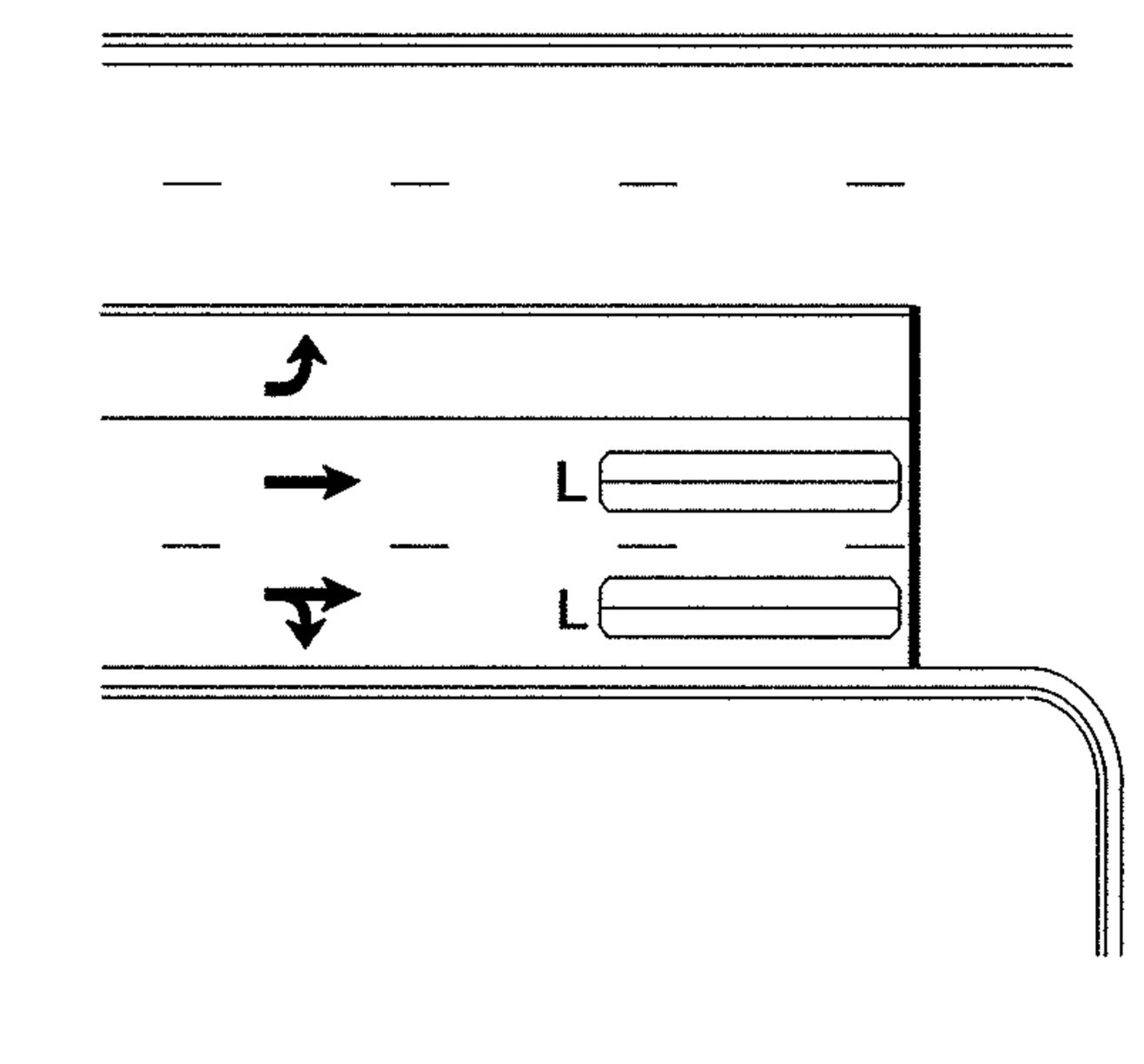
"Stretch" Operation

Low Speed Detection

[≤35 mph (56 km/hr)]



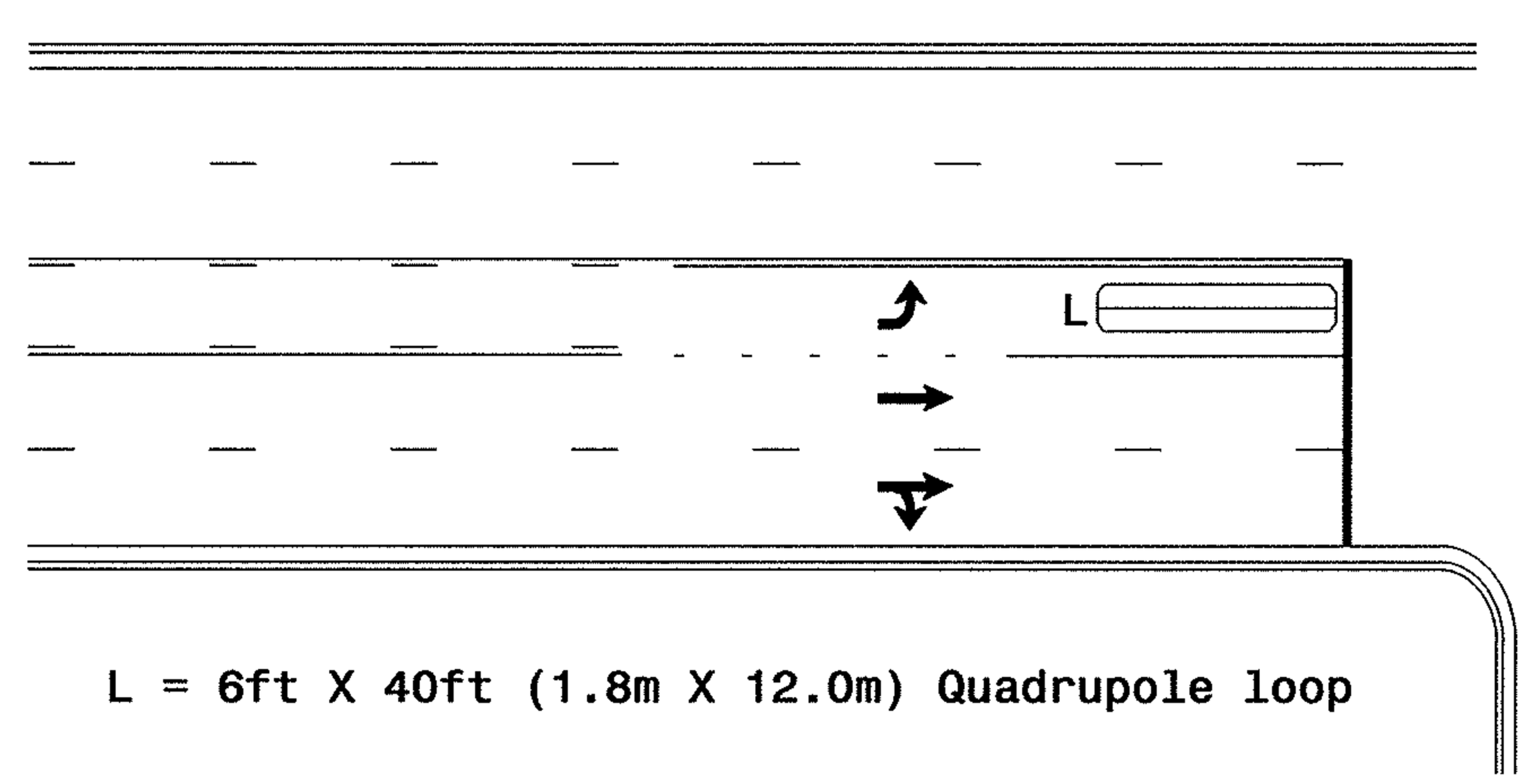
OR



L = 6ft X 6ft (1.8m X 1.8m)
Wired in series

L = 6ft X 40ft (1.8m X 12.0m)
Quadrupole loop, wired separately

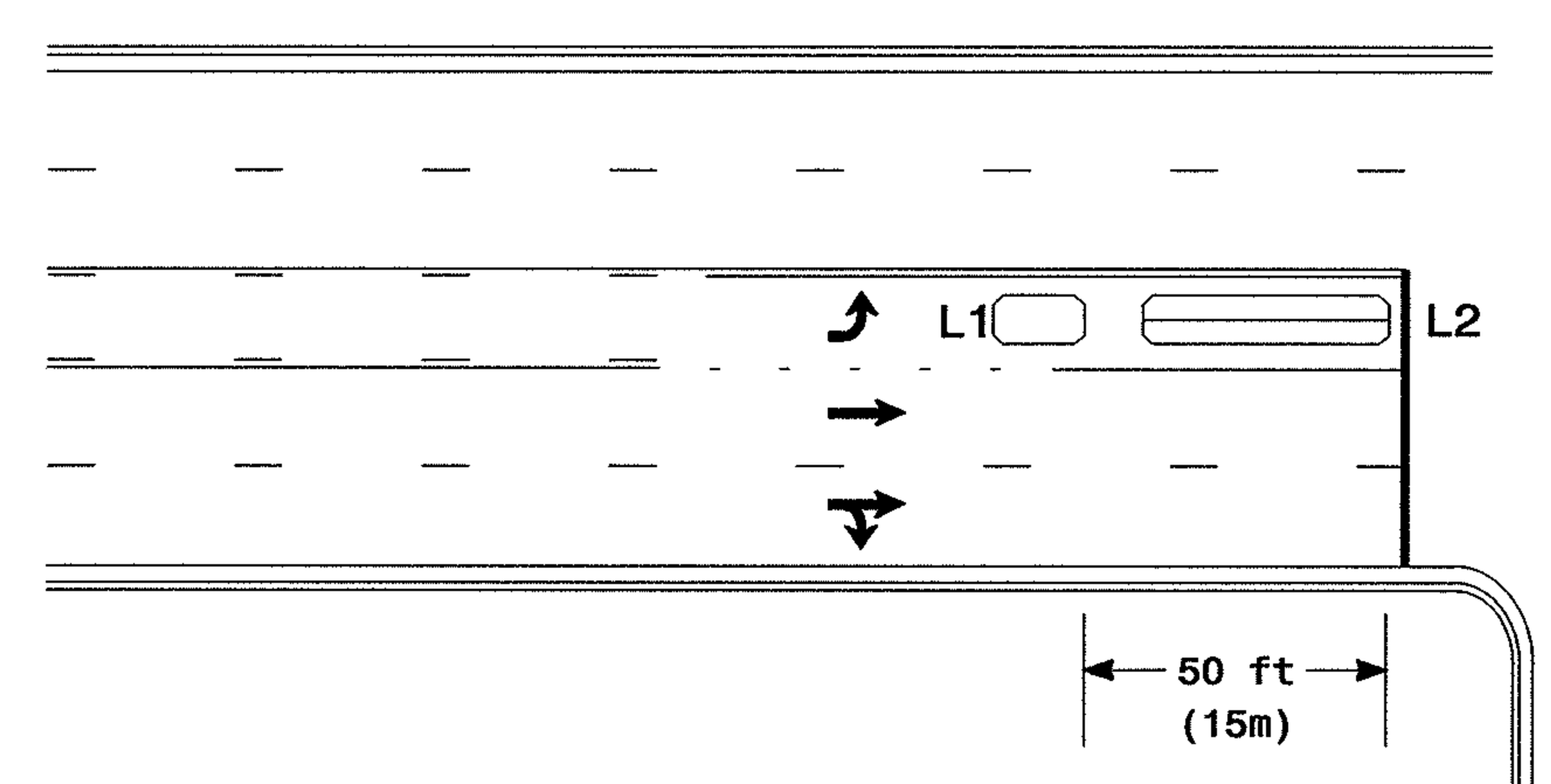
Left Turn Lane Detection



L = 6ft X 40ft (1.8m X 12.0m) Quadrupole loop

Presence Loop Detection

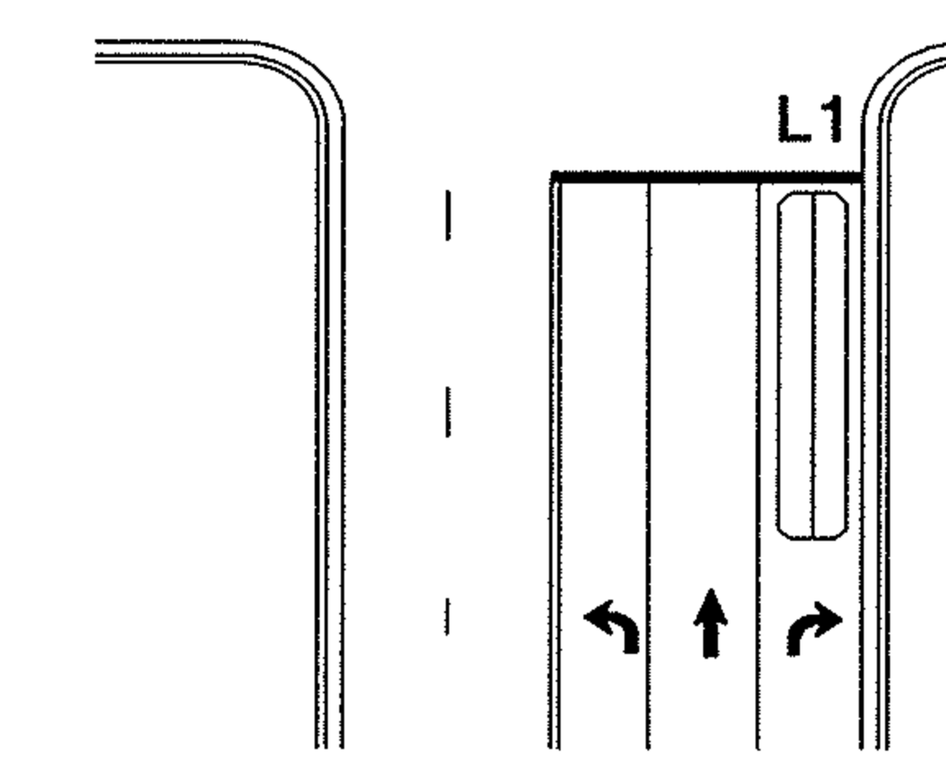
OR



L1 = 6ft X 15ft (1.8m X 4.6m) Queue detector
L2 = 6ft X 40ft (1.8m X 12.0m) Quadrupole loop

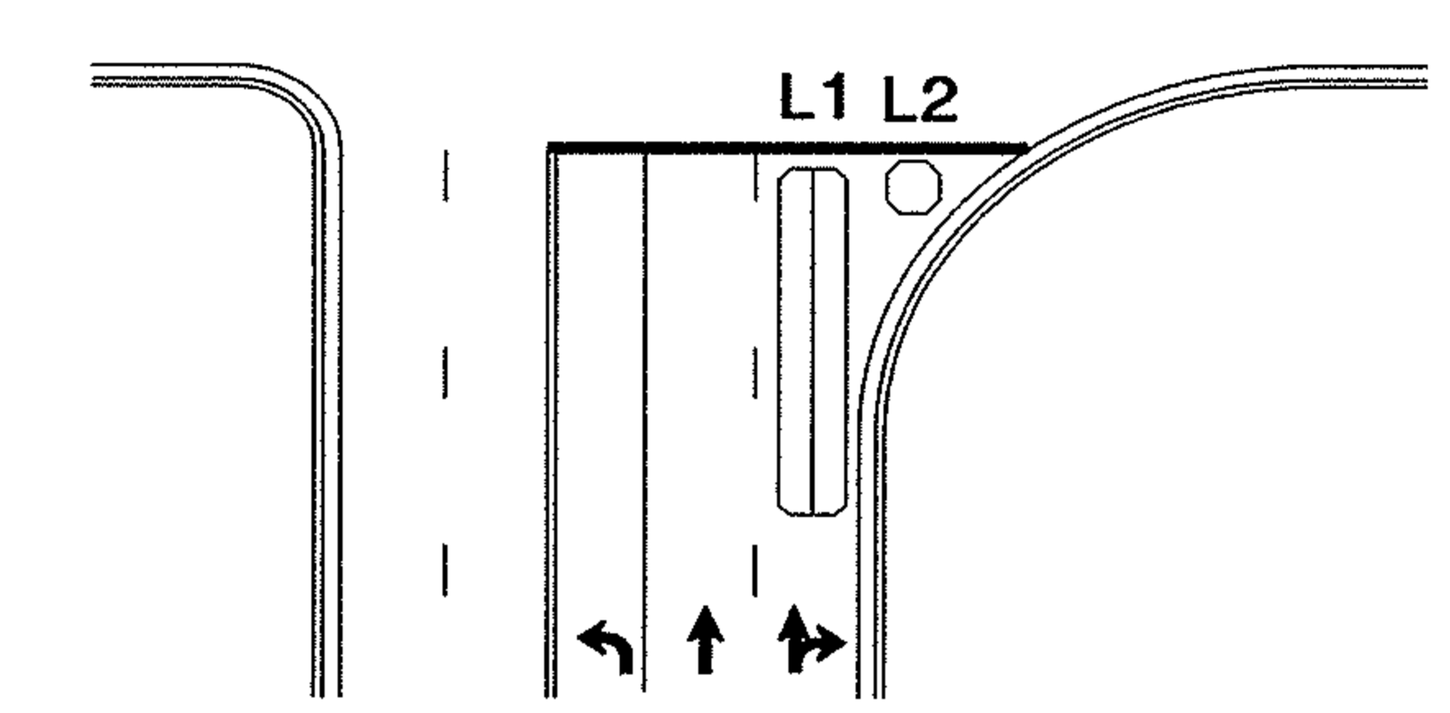
Queue Loop Detection

Right Turn Lane Detection

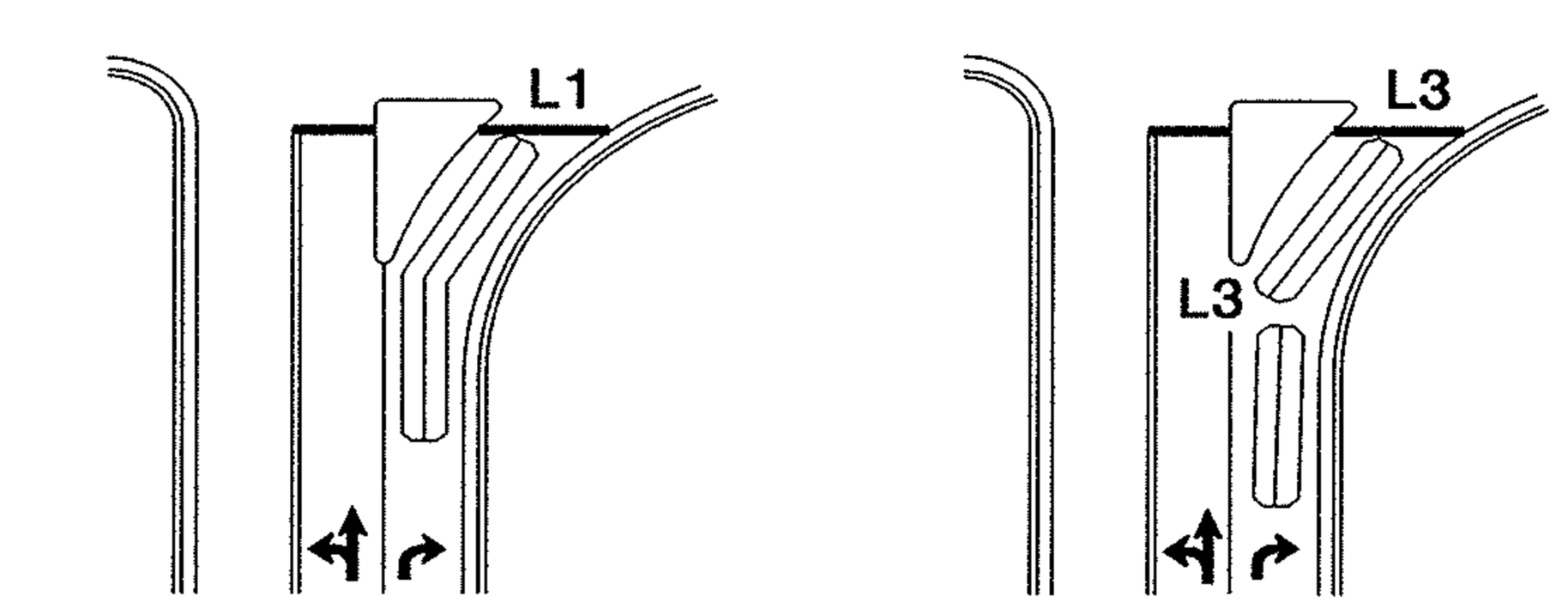


Standard Turn

L1 = 6ft X 40ft (1.8m X 12.0m) Quadrupole loop
L2 = 6ft X 6ft (1.8m X 1.8m) [Minimum] Presence loop
Wired separately
L3 = 6ft X 20ft (1.8m X 6.0m) Quadrupole loop
Wired in series

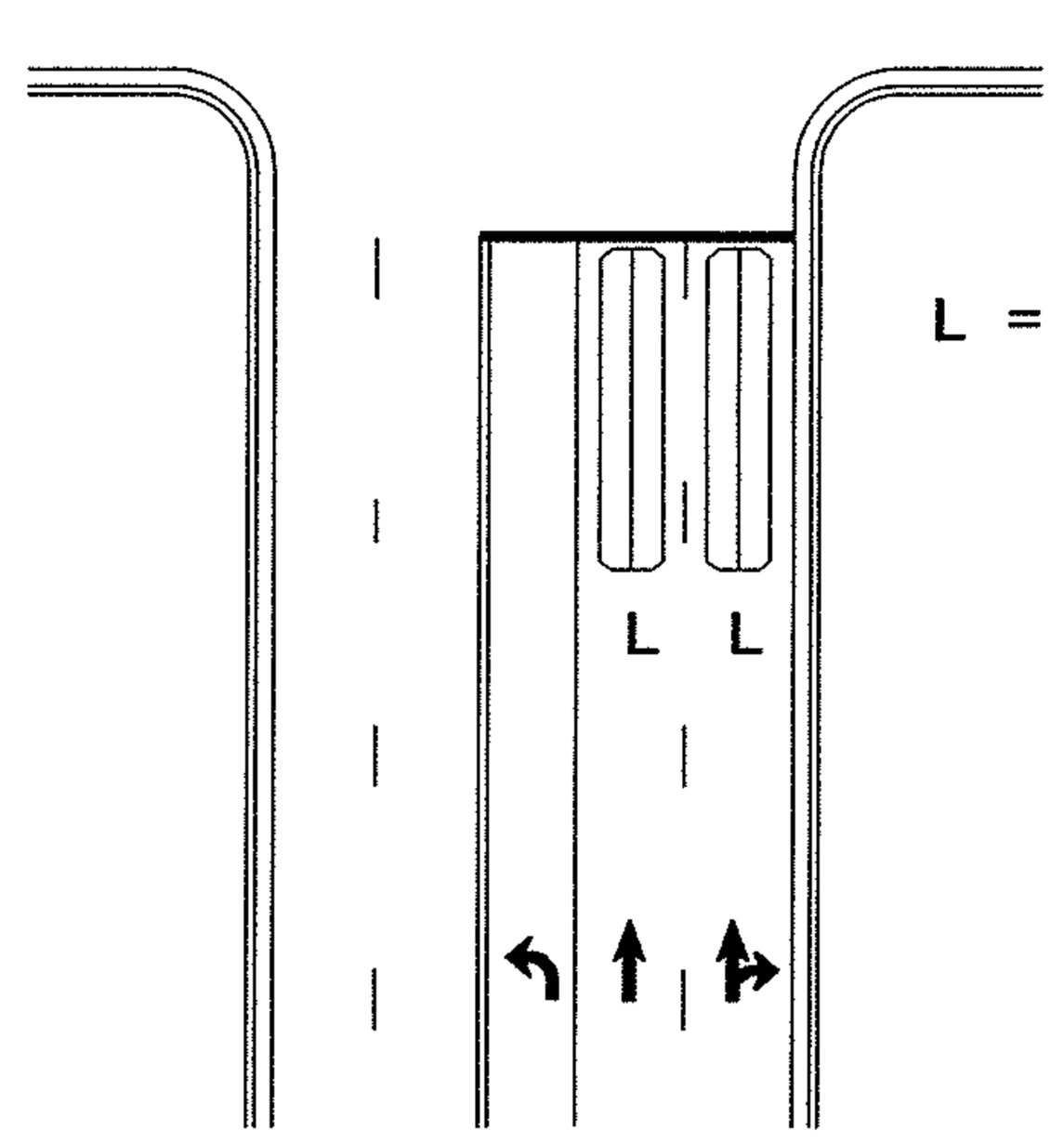


Wide Radius Turn



Channelized Turn

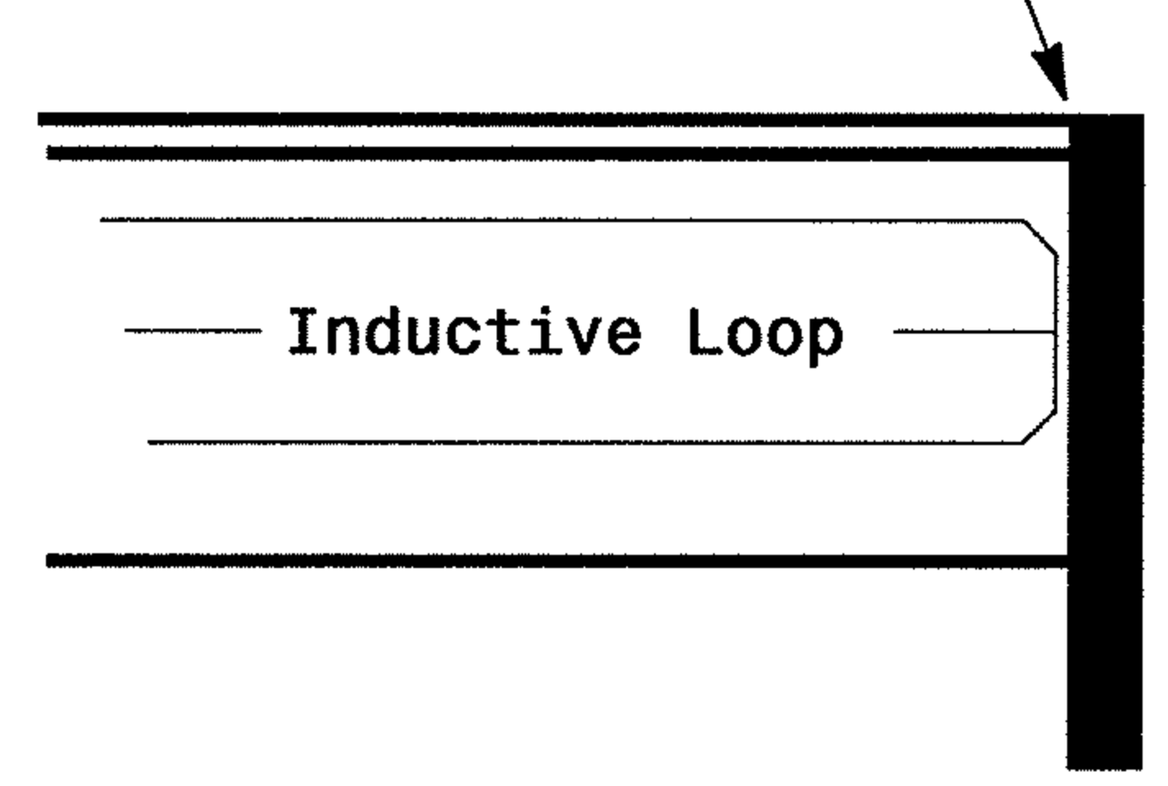
Side Street Detection



L = 6ft X 40ft (1.8m X 12.0m)
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 when stop line is greater than 15' (4.5m) from edge of intersecting roadway; or, when loop detects a permissive or protected/permissive left turn.

Recommended Number of Turns

Single 6' X 6' (1.8m X 1.8m) loop (wired separately):

Length of Lead-in ft (m)	Number of Turns
< 250 (75)	3
250-375 (75-115)	4
375-525 (115-160)	5
> 525 (160)	6

Quadrupole loops: Use 2-4-2 turns

6' X 15' (1.8m X 4.6m) Loops:
Lead-in < 150' (45 m), use 2 turns
Lead-in > 150' (45 m), use 3 turns

Prepared in the Offices of:
Traffic Engineering and Safety Systems Branch
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Typical Loop Locations

PLAN DATE: June 2006 REVIEWED BY:
PREPARED BY: P L Alexander REVIEWED BY:

SCALE N/A

REVISIONS	INIT.	DATE
Revise pavement markings	[illegible]	12/1/06

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23489 PAMELA L. ALEXANDER
6/6/06
SIGNATURE DATE
SIG. INVENTORY NO.

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