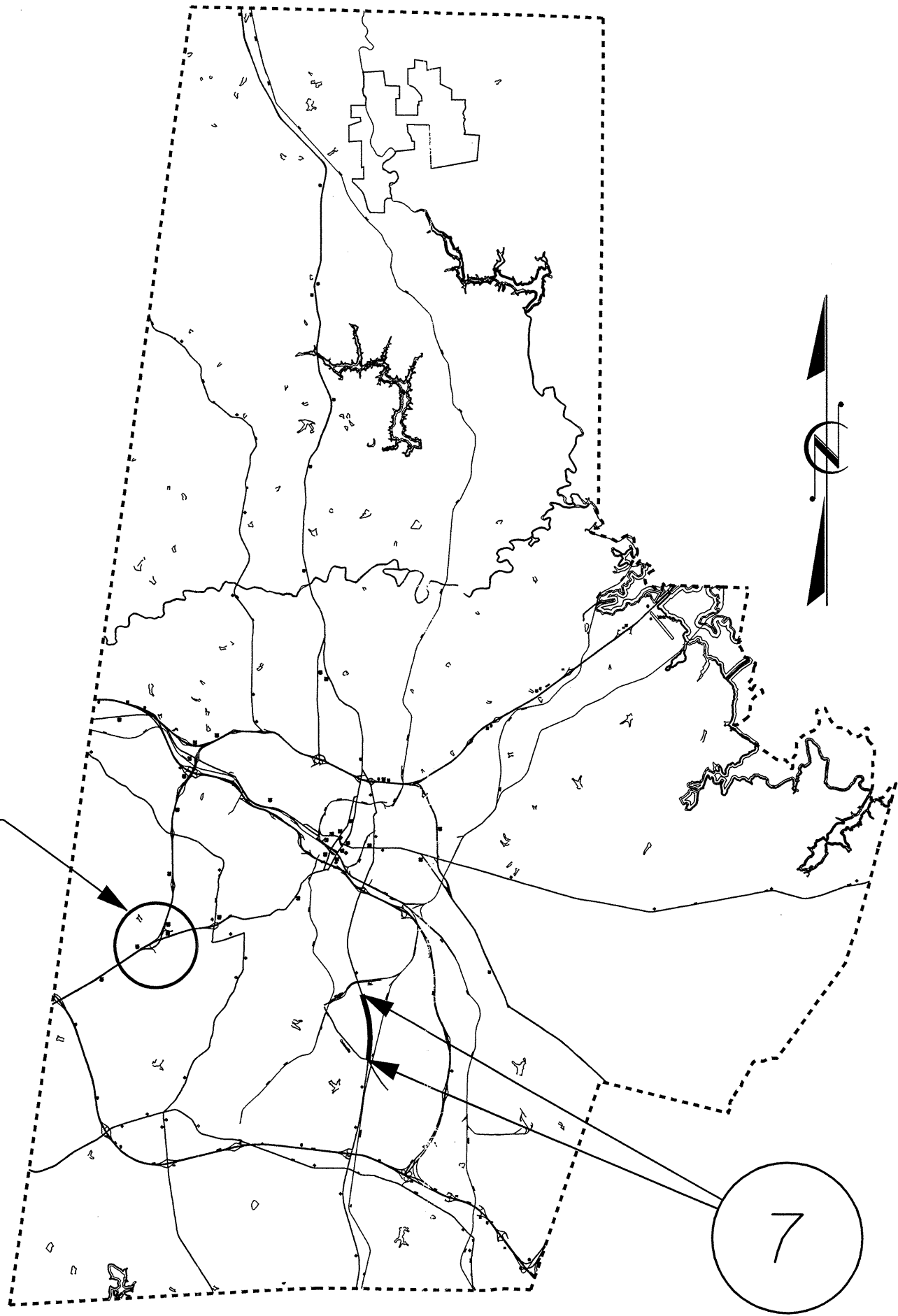
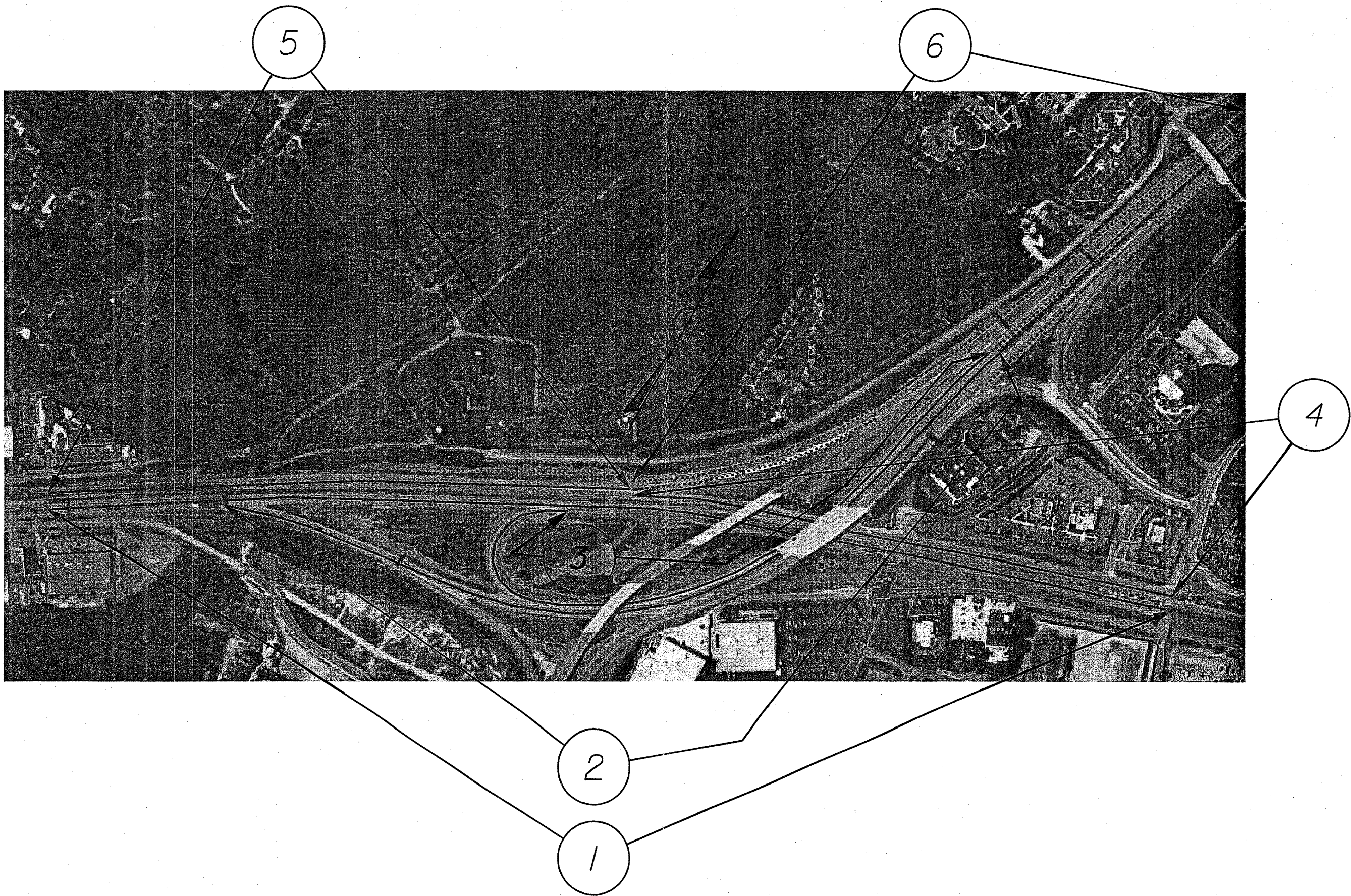


201759

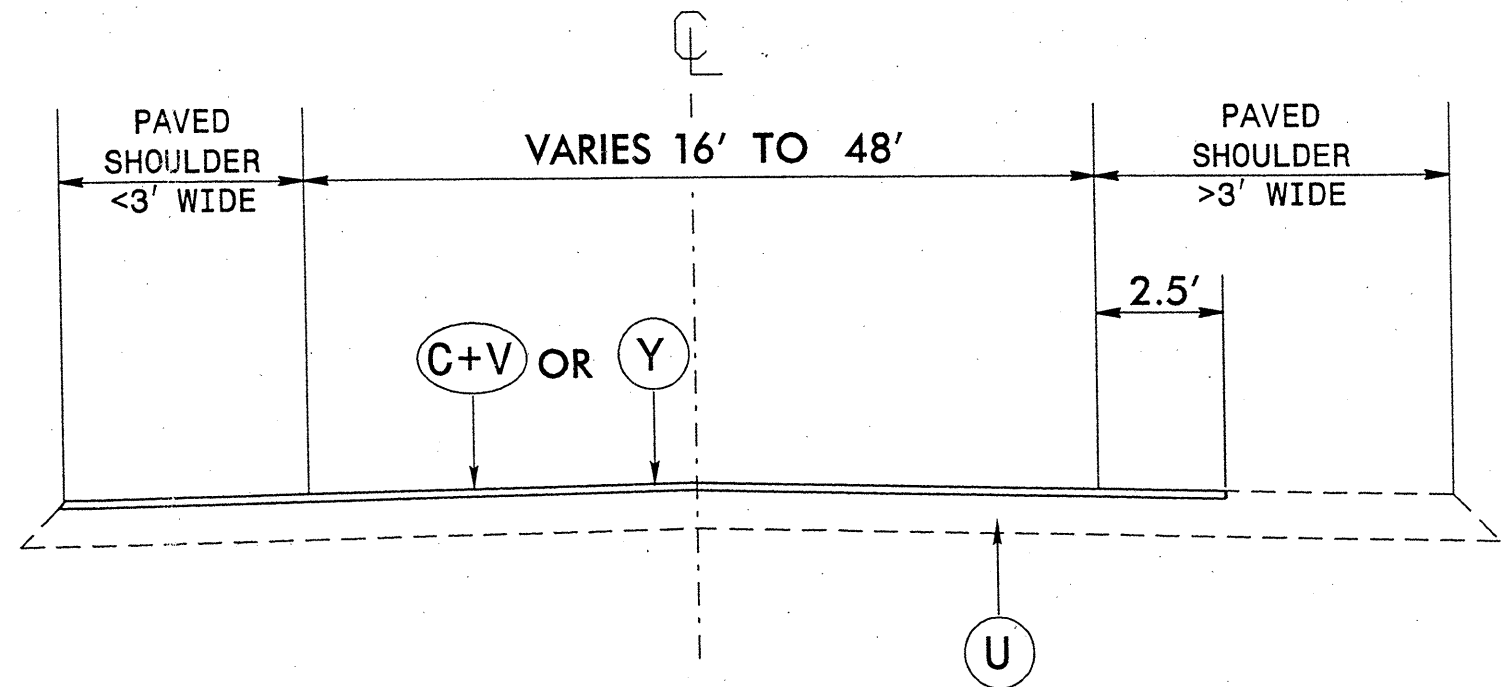
MAPS
1-6



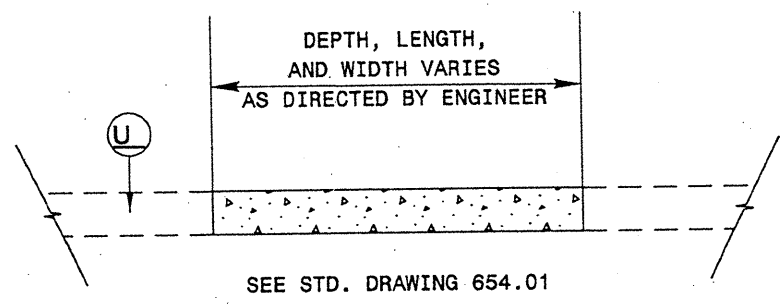
7



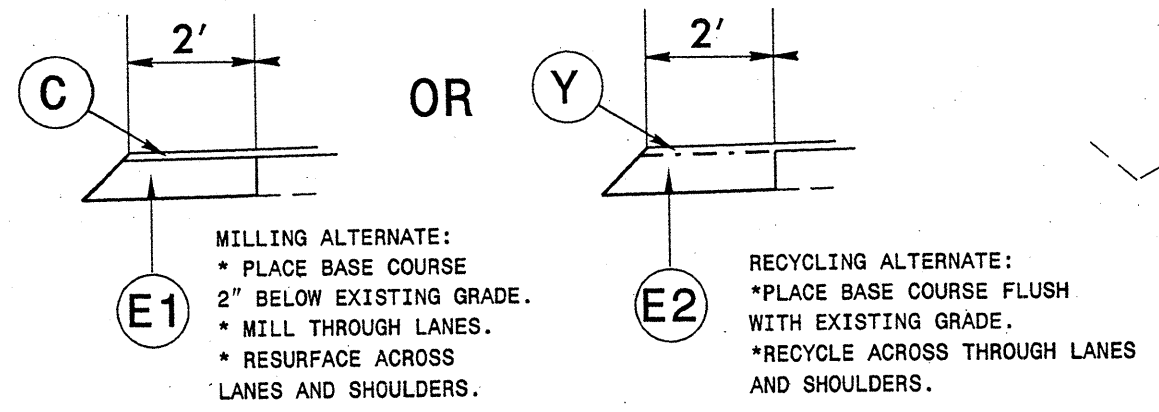
PAVEMENT SCHEDULE	
C	PROP. APPROX. 2.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
E1	PROP. APPROX. 9.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
E2	PROP. APPROX. 11.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
S	SHOULDER RECONSTRUCTION.
U	EXISTING PAVEMENT.
V	MILL EXISTING PAVEMENT, 2.0" DEPTH.
Y	PROP. APPROX. 2.0" HOT IN-PLACE ASPHALT RECYCLING, TYPE S9.5C



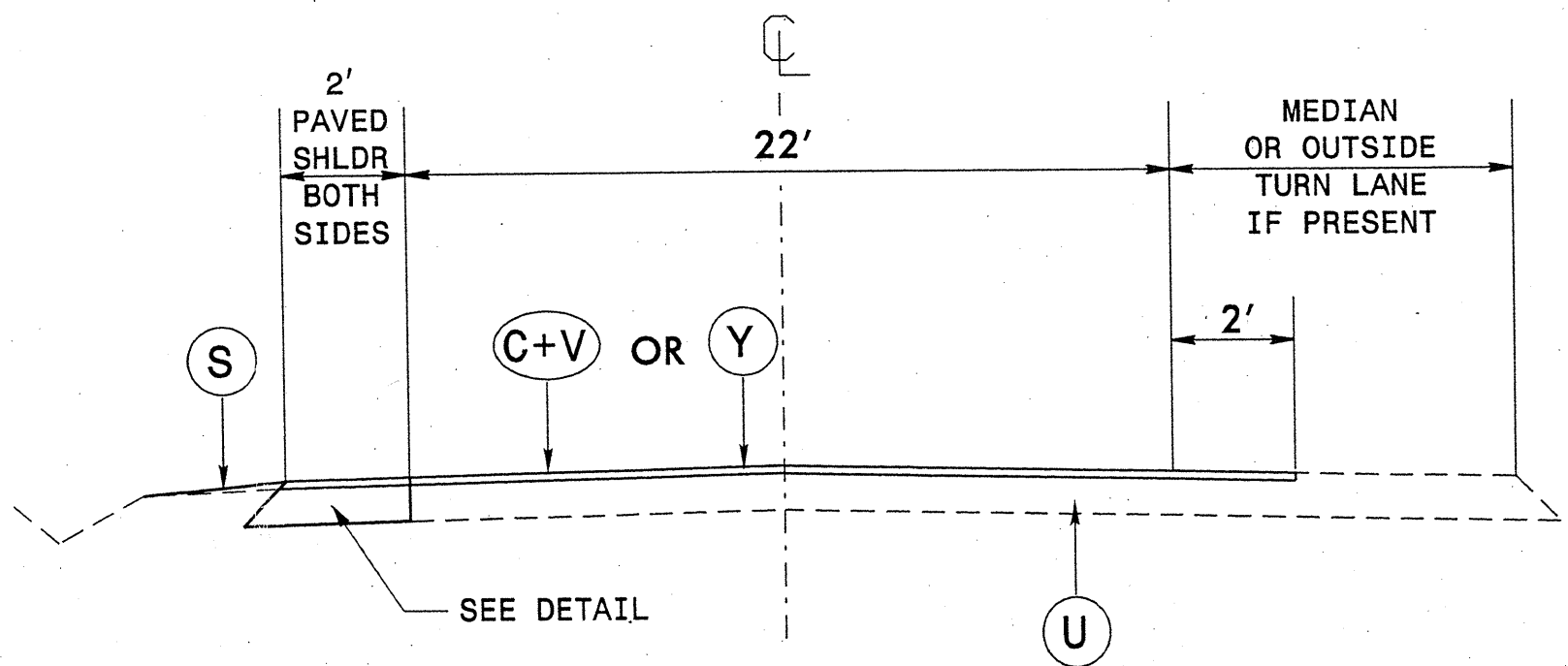
TYPICAL NO. 1



PATCHING EXISTING PAVEMENT



SHOULDER WIDENING ALTERNATE
USE ON NC 55 SB



TYPICAL NO. 2

PROJECT NO.	SHEET NO.	SHEET NO.
5CR.10321.6, 39891.3.1 37670	4	4

SUMMARY OF QUANTITIES

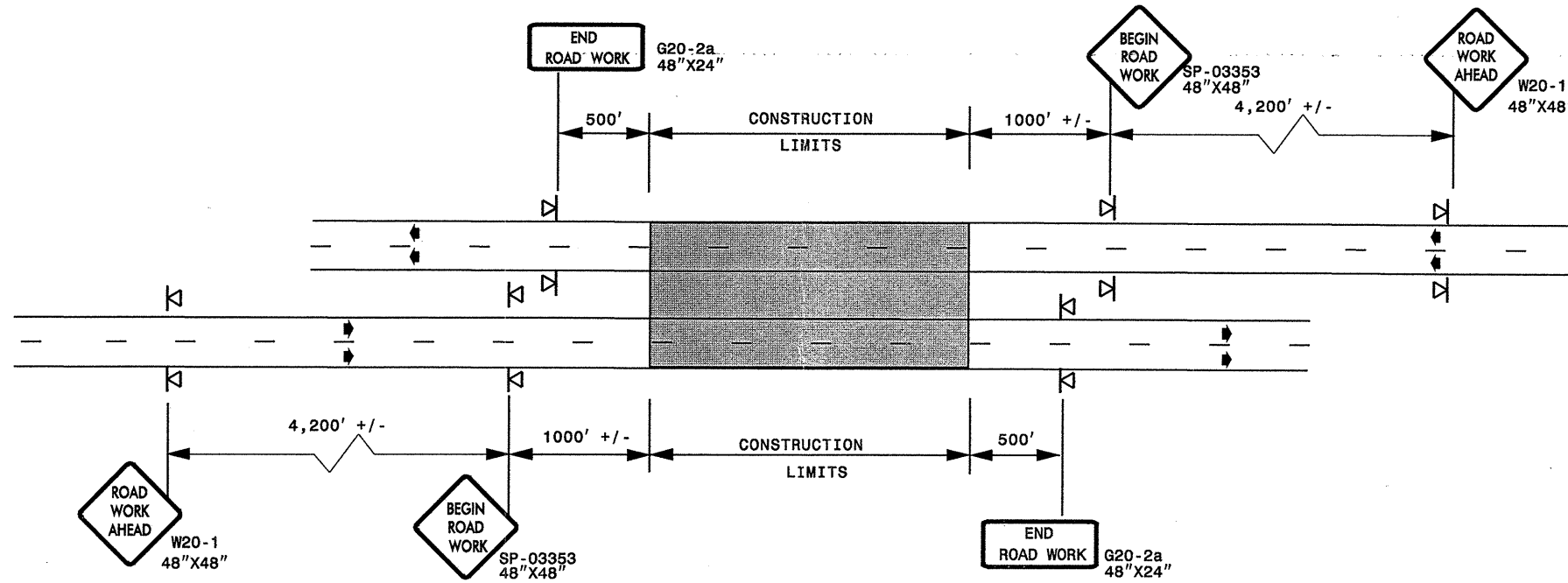
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LENGTH MI	WIDTH FT	BASE QUANTITIES					ALTERNATE A					ALTERNATE B						
								INCIDENTAL STONE BASE TONS	PATCHING EXISTING PAVEMENT TONS	SHOULDER RECONSTRUCTION SMI	SEED & MULCHING AC	MILLED RUMBLE STRIPS LF	INDUCTIVE LOOP LF	2" MILLING SY	SURFACE COURSE, S9.5C TONS	BASE COURSE, B25.0B TONS	PG 64-22 PLANT MIX TONS	PG 70-22 PLANT MIX TONS	HIP RECYCLED ASPHALT, S9.5C SY	EMULSIFIED ASPH. REJUVINATING AGT GAL	HOT MIX ASPHALT ADMIXTURE TON	BASE COURSE, B25.0B TONS	PG 64-22 PLANT MIX TONS	
5CR.10321.6	Durham	1	15-501 NB	FROM LEFTOVER TO TOWER BLVD	1	0.89	28		50			8900	1,200	14620	2,309			139	14,620	1,460	366		22	
				FROM BUSINESS/BYPASS SPLIT TO BEGINNING OF PATCH EXIT LOOP TO NB 15-501 BUSINESS	1	0.83	28		25			6650		10349	1,191			71	10,349	1,035	259		16	
				FROM TOWER BLVD TO END OF GORE	1	0.5	22					5280		6453	728			44	6,453	645	161		10	
				FROM TOWER BLVD TO END OF GORE	1	0.5	28		25			5000	600	8213	1,180			71	8,213	820	205		13	
				FROM END OF GORE TO BEGINNING OF LEFTOVER ISLAND	1	0.44	52		100			4646		13423	1,508			90	13,423	1,340	336		20	
TOTAL FOR PROJ NO. 5CR.10321.6						2.96					200	1,800	53058	6,916			415	53,058	5,300	1,327		81		
39891.3.1	Durham	6	15-501 BYPASS	FROM NORTH END OF OF MAPS 2, 3, AND 5 TO END OF JERSEY BARRIER	0	1	48																	
TOTAL FOR PROJ NO. 39891.3.1							1							15840			0							
37670	Durham	7	NC 55 SB	FROM END OF C&G TO SR 1121 (CORNWALLIS RD)	2	1.2	26	48	100	2.4	2			17000	1,904	1715	74	128	18,304	1,830	458	2400	131	
TOTAL FOR PROJ NO. 37670							1.2		48	100	2.4	2	0	17000	1,904	1715	74	128	18,304	1,830	458	2400	131	
GRAND TOTAL							5.16		48	300	2.4	2	46316	1,800	70058	8,820	1715	74	543	71,362	7,130	1,785	2400	212

THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	4685000000-E				4686000000-E		4695000000-E		4697000000-E		4710000000-E		4725000000-E			4850000000-E	4900000000-N		
					4" X 90 M WHITE THERMO LF	4" X 90 M YELLOW THERMO LF	4" X 120 M YELLOW THERMO LF	4" X 120 M WHITE THERMO LF	8" X 90 M WHITE THERMO LF	8" X 120 M WHITE THERMO LF	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	4" LINE REMOVAL LF	CRYSTAL & RED MARKERS EA							
5CR.10321.6	Durham	1	15-501 NB	FROM LEFTOVER TO TOWER BLVD	4,699		4,699	2,670			400	120		9	15	6				126			
				FROM BUSINESS/BYPASS SPLIT TO BEGINNING OF PATCH EXIT LOOP TO NB 15-501 BUSINESS	3,326	3,326		832														42	
				FROM TOWER BLVD TO END OF GORE	2,640	2,640																	
				FROM TOWER BLVD TO END OF GORE	2,640	2,640		1,320	200		50	3	6	3									66
				FROM END OF GORE TO BEGINNING OF LEFTOVER ISLAND	2,323	2,323		1,760										3					
TOTAL FOR PROJ NO. 5CR.10321.6					15,629	10,930	4,699	6,582	200	400	170	12	24	9	3	9	6	3	600	300			
					26,558		11,281							45									
39891.3.1	Durham	6	15-501 BYPASS	FROM NORTH END OF OF MAPS 2, 3, AND 5 TO END OF JERSEY BARRIER		600												600					
TOTAL FOR PROJ NO. 39891.3.1						600												600					
37670	Durham	7	NC 55 SB	FROM END OF C&G TO SR 1121 (CORNWALLIS RD)	6,576	6,336		2,400					7	6	3					120			
TOTAL FOR PROJ NO. 37670					6,576	6,336		2,400					7	6	3					120			
GRAND TOTAL					22,205	17,966	4,699	8,982	200	400	170	19	30	12	600	420							
					40,070		13,681						61										

ADVANCED WORK ZONE WARNING SIGNING FOR FREEWAYS (4 LANES OR GREATER)

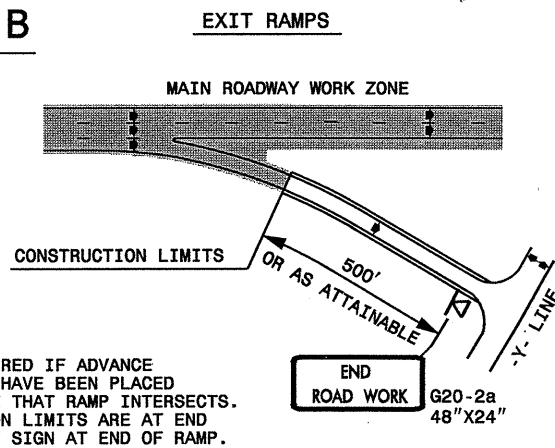
DETAIL A



STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

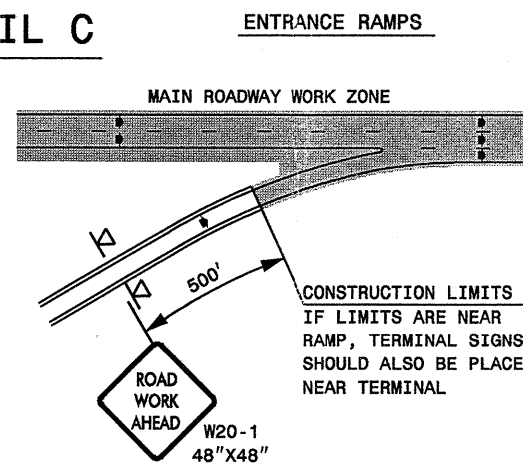
ROADWAYS INTERSECTING ALONG FREEWAY WORK ZONE (Y-LINES)

DETAIL B



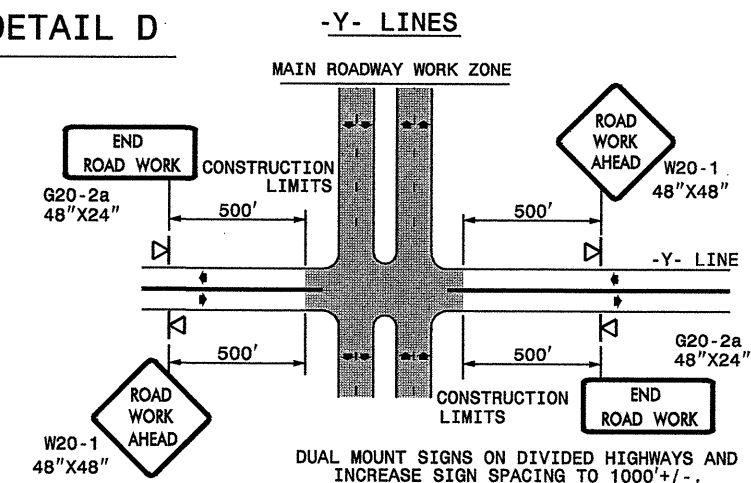
NOTE:
SIGN NOT REQUIRED IF ADVANCE
WARNING SIGNS HAVE BEEN PLACED
ALONG -Y- LINE THAT RAMP INTERSECTS.
IF CONSTRUCTION LIMITS ARE AT END
OF RAMP, PLACE SIGN AT END OF RAMP.

DETAIL C



CONSTRUCTION LIMITS
IF LIMITS ARE NEAR
RAMP, TERMINAL SIGNS
SHOULD ALSO BE PLACED
NEAR TERMINAL

DETAIL D



DUAL MOUNT SIGNS ON DIVIDED HIGHWAYS AND
INCREASE SIGN SPACING TO 1000' +/-.

GENERAL NOTES

- USE FLUORESCENT ORANGE SHEETING (TYPE VII OR HIGHER) ON ALL ADVANCED WORK ZONE SIGNS.
- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK.
- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED.
- USE PORTABLE WORK ZONE SIGNS ONLY WITH PORTABLE WORK ZONE SIGN STANDS SPECIFICALLY DESIGNED FOR ONE ANOTHER. PORTABLE WORK ZONE SIGNS MAY BE ROLL UP OR APPROVED COMPOSITE.
- PROVIDE PORTABLE WORK ZONE SIGN STANDS, PORTABLE SIGNS AND SIGN SHEETING WHICH ARE LISTED ON THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION'S APPROVED PRODUCT LIST OR ACCEPTED AS TRAFFIC QUALIFIED BY THE TRAFFIC CONTROL UNIT.
- ** TWO-WAY UNDIVIDED ADVANCE WARNING SIGN CONFIGURATION MAY BE USED ON MULTI-LANE FACILITIES WHERE CONDITIONS LIMIT THE USE OF DUAL MOUNTED SIGNS AS DETERMINED BY THE ENGINEER.

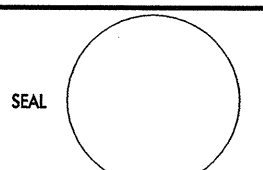
LEGEND

◁ PORTABLE SIGN

➡ DIRECTION OF TRAFFIC FLOW

**DETAIL DRAWING
FOR FREEWAYS
WORK ZONE WARNING SIGNS
(SHORT-DURATION LANE CLOSURES)**

SHEET 1 OF 1

APPROVED: _____	DATE: _____	DETAIL DRAWING FOR FREEWAYS WORK ZONE WARNING SIGNS	
			
SCALE: NONE	REVISIONS	7-98	10/01
DATE:	10-98	03/04	
DWG. BY:	01/01	11/04	
DESIGN BY:			
REVIEWED BY:			

05-FEB-2007 19:25
 \DOT\DP\SR0070\WORKGROUPS\WZ\TCCC\designgroup4\resurfacing\resurfacing2006\div05\37670\freewayworkzone\july2006.dgn
 pseyamore AT WZTCCC

SP 03353

SIGN NUMBER: SP-03353 TYPE: A QUANTITY: 1 SIGN WIDTH: 4'-0" HEIGHT: 4'-0" TOTAL AREA: 16.0 Sq.Ft. BORDER TYPE: FLUSH RECESS: 0.59" WIDTH: 0.75" RADII: 1.38" NO. Z BARS: N/A LENGTH: N/A	BACKG COLOR: Fluorescent Orange COPY COLOR: Black	DESIGN BY: CL DOWNEY PROJECT ID: ALL PROJECTS	CHECKED BY: CHECKED DIV: DIV	STD #: W20-1 DATE: Aug 20, 2003
---	--	--	---------------------------------	------------------------------------

BORDER
R=1.38"
TH=0.75"
IN=0.59"

LETTER POSITIONS

Letter spacings are to start of next letter		Series/Size
		Text Length
22.4	B 5.3 4.8 5.4 2.5 3.8 22.4	C7 21.6
23.4	R 5 5.2 5.8 3.8 23.4	C7 19.6
22.6	W 6.4 5.6 5.2 4 22.6	C7 21.2

Spacing Factor is 1 unless specified otherwise

FILENAME: SPECISMAX

NORTH CAROLINA D.O.T. SIGN DETAIL

STATE OF NORTH CAROLINA
 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

DETAIL DRAWING FOR
 WORK ZONE SIGNS
 BEGIN ROAD WORK

SHEET 1 OF 1

GENERAL NOTES FOR SIGN SP-03353 "BEGIN ROAD WORK"

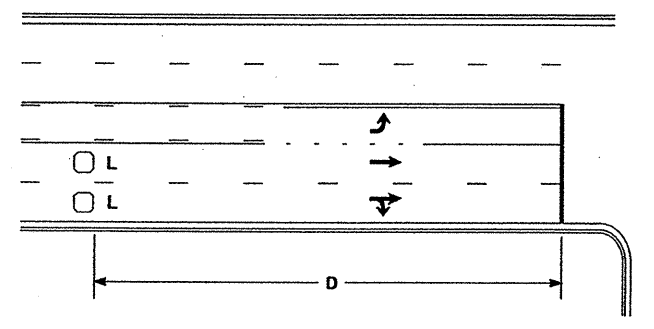
- SIGN SP-03353 "BEGIN ROAD WORK" ONLY APPLIES TO FULL CONTROL AND PARTIAL CONTROL OF ACCESS ROADWAYS
- WHEN USED, INSTALL SIGN SP-03353 "BEGIN ROAD WORK" ACCORDING TO DETAIL FOR FREEWAY WORK ZONE SIGNS

APPROVED: _____ DATE: _____	DETAIL DRAWING FOR ADVANCED WORK ZONE WARNING SIGN DESIGNS	
SEAL		
SCALE: NONE	DATE: 08/03	REVISIONS
DWG. BY:	DESIGN BY:	04/04
REVIEWED BY:		11/04



05-FEB-2007 19:27
 C:\DOT\DESIGN\GROUPS-WZITCCC\design\group4\resur\facimg\resur\facimg2006\div05\37670\sign\designs\july2006.dgn
 psee/moe AT WZITCCC

High Speed Detection [≥40 mph (64 km/hr)]

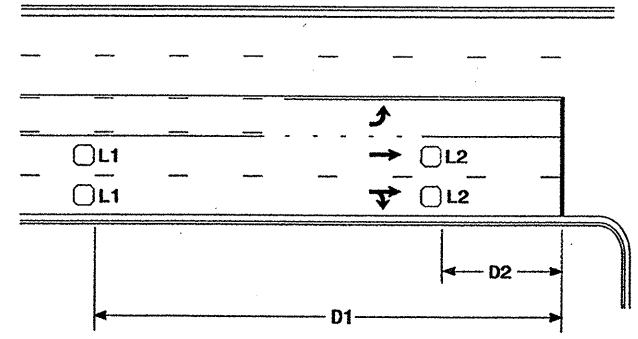


Speed Limit mph (km/hr)	D ft (m)
40 (64)	250 (75)
45 (72)	300 (90)
50 (80)	355 (110)
55 (88)	420 (130)

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

OR

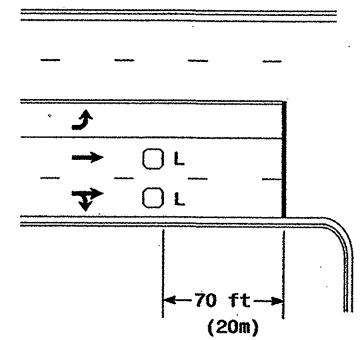


Speed Limit mph (km/hr)	D1 ft (m)	D2 ft (m)
40 (64)	250 (75)	80 (25)
45 (72)	300 (90)	90 (27)
50 (80)	355 (110)	100 (30)
55 (88)	420 (130)	110 (35)

L1 = 6ft X 6ft
(1.8m X 1.8m)
Wired in series
L2 = 6ft X 6ft
(1.8m X 1.8m)
Wired in series

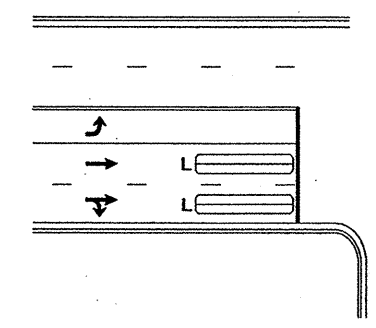
"Stretch" Operation

Low Speed Detection [≤35 mph (56 km/hr)]



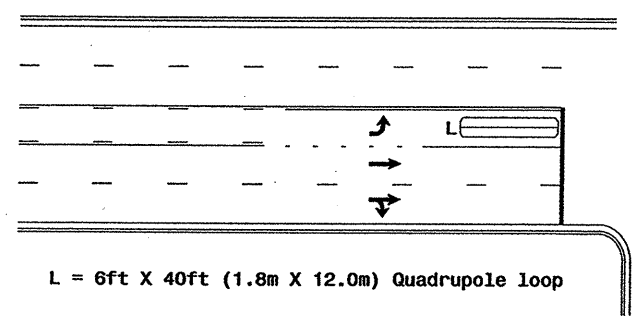
L = 6ft X 6ft (1.8m X 1.8m)
Wired in series

OR



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

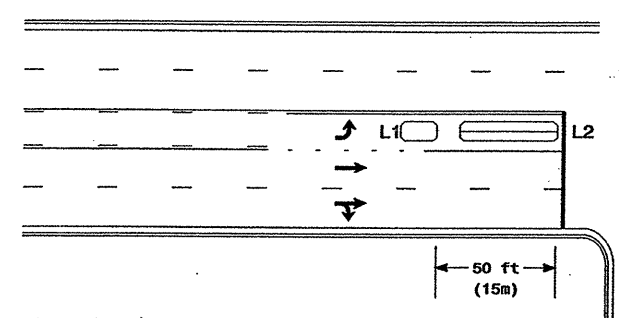
Left Turn Lane Detection



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

Presence Loop Detection

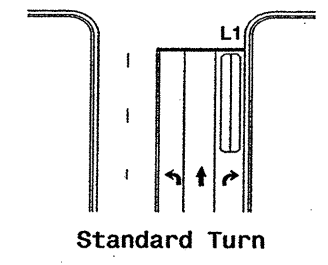
OR



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

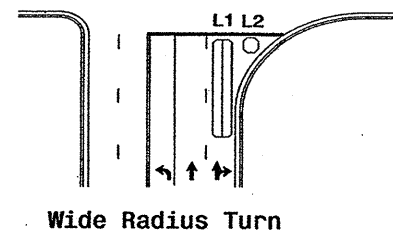
Queue Loop Detection

Right Turn Lane Detection

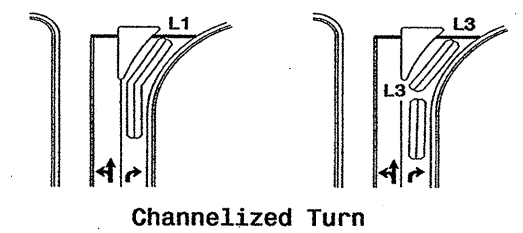


Standard Turn

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

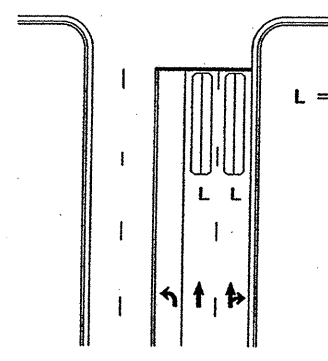


Wide Radius Turn



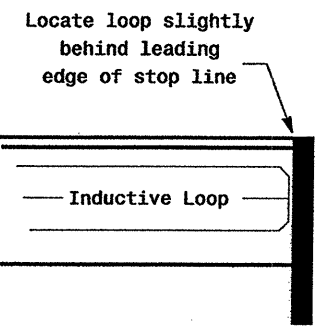
Channelized Turn

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

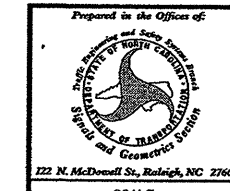
Note:
Loop may be located in advance
of stop line when stop line is
greater than 15' (4.5m) from edge
of intersecting roadway; or, when
loop detects a permissive or
protected/permissive left turn.

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



Typical Loop Locations

PLAN DATE: June 2006	REVIEWED BY:
PREPARED BY: P L Alexander	REVIEWED BY:
SCALE: N/A	REVISIONS:
	INIT. DATE

