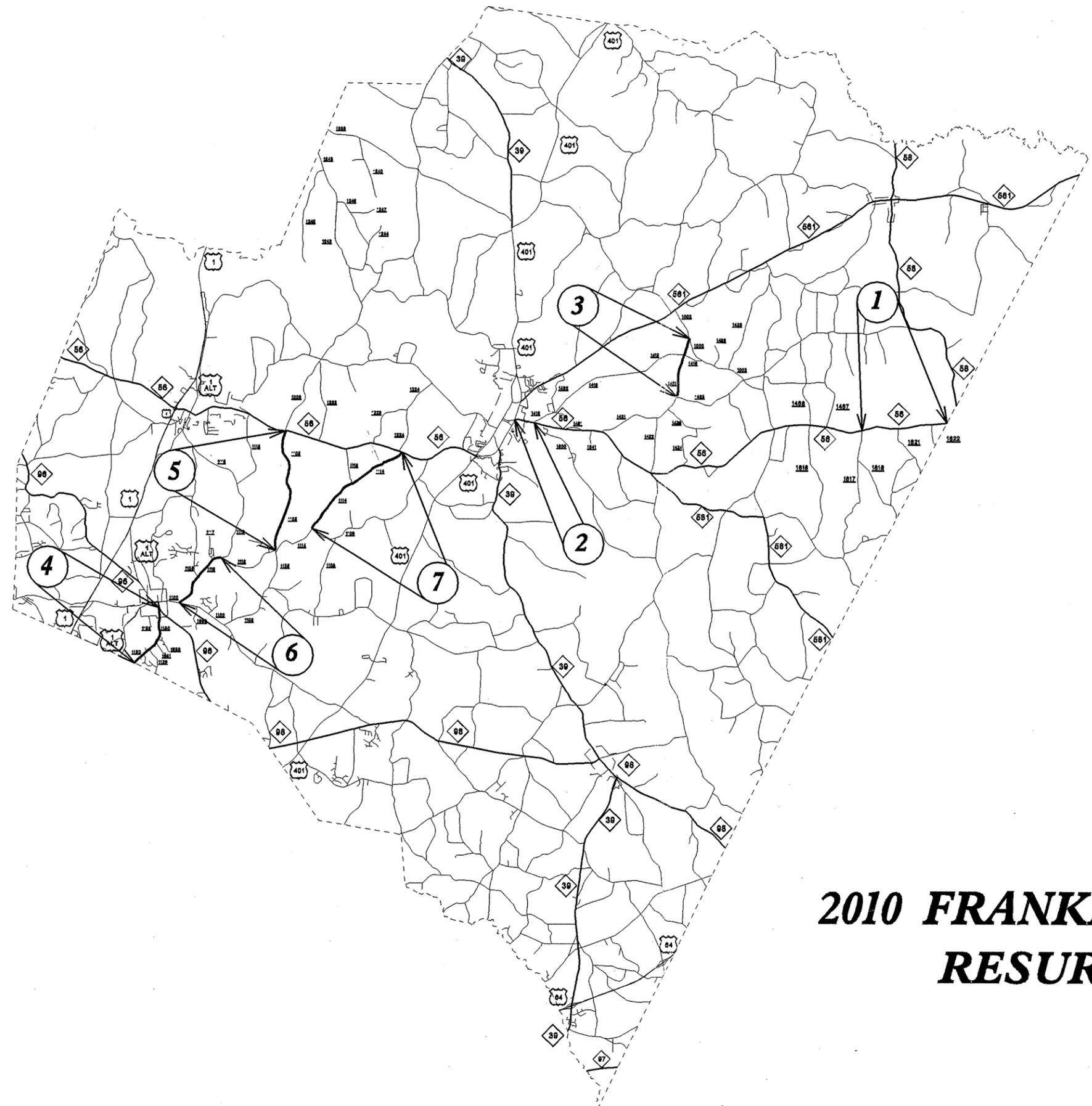
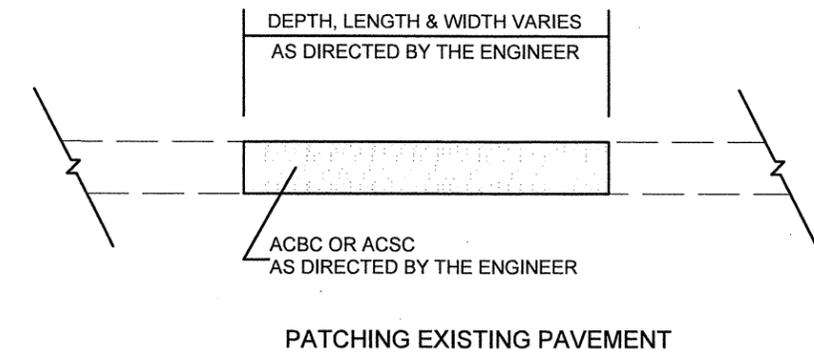
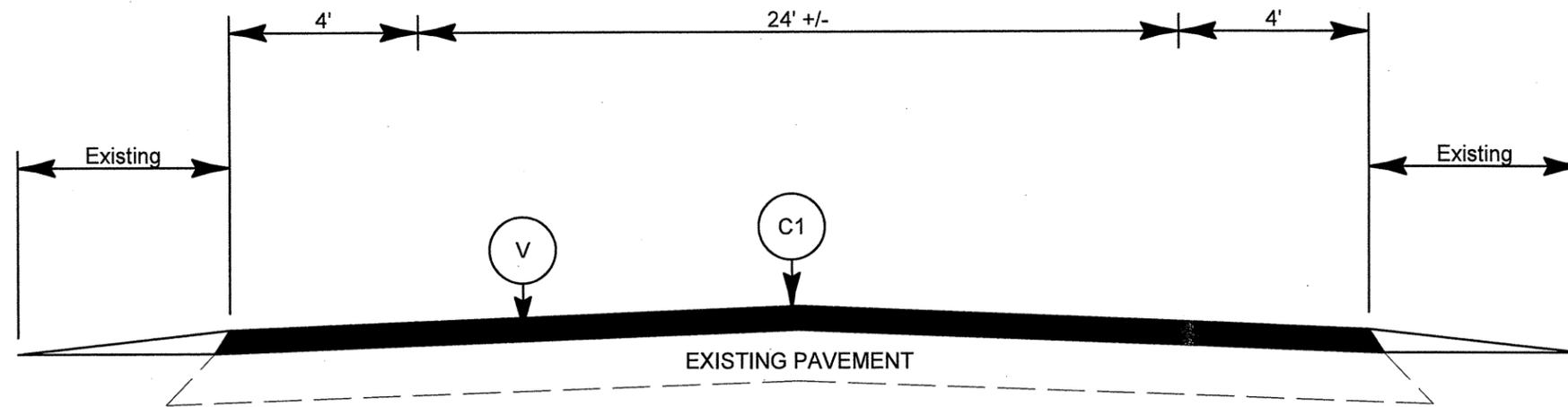


PROJECT NO.	SHEET NO.
SCR.10351.9	1
SCR.20351.9	

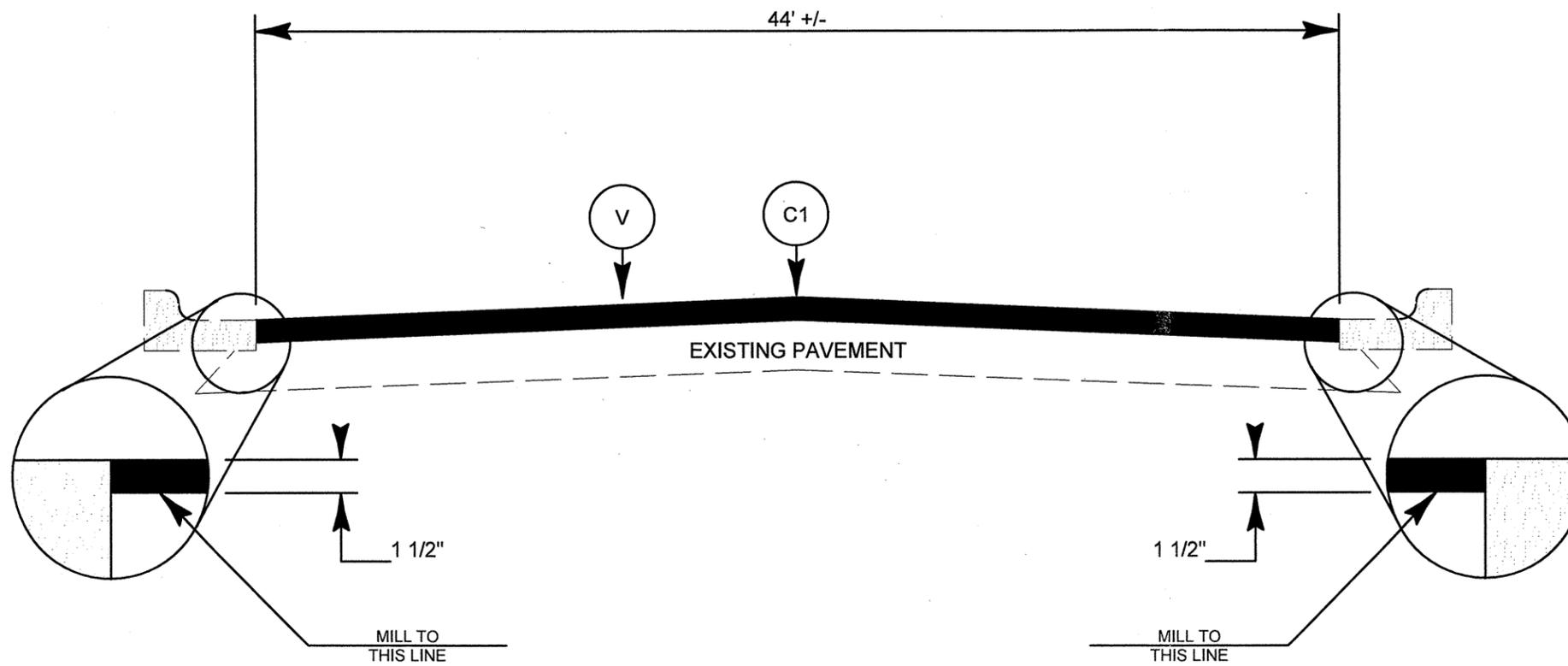


2010 FRANKLIN COUNTY RESURFACING

PROJECT NO. 5CR.10351.9, 5CR.20351.9	SHEET NO. 2	TOTAL SHEETS
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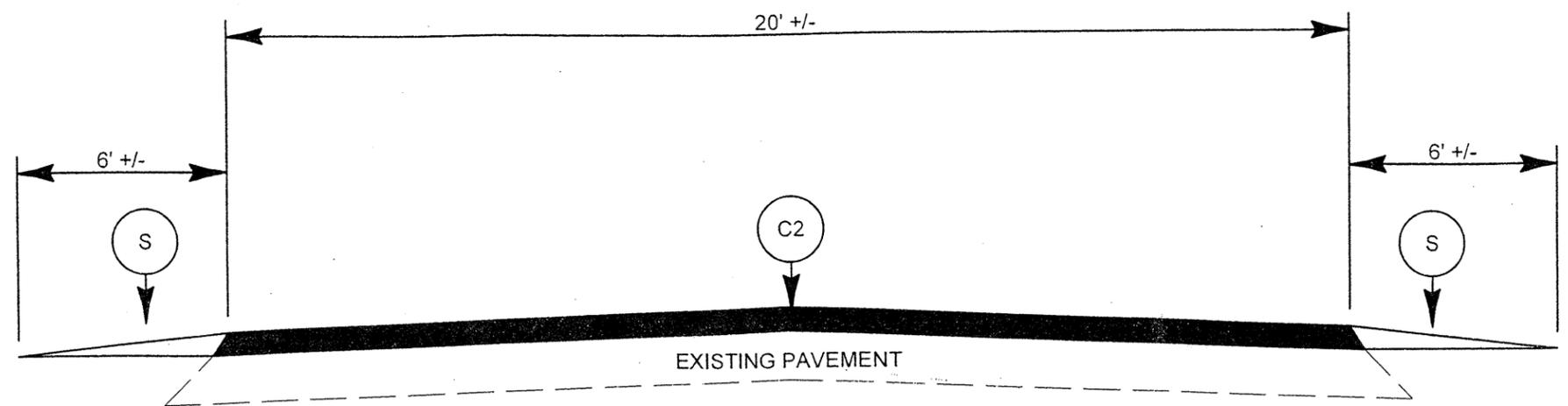


TYPICAL SECTION NO. 1

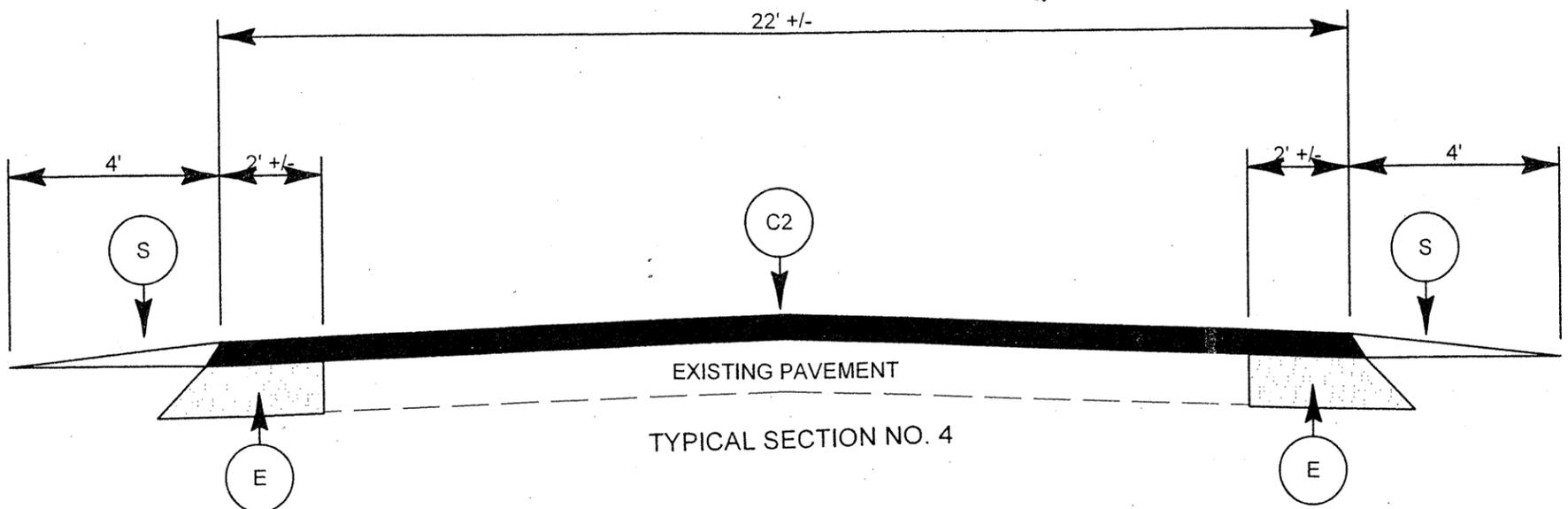


TYPICAL SECTION NO. 2

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS PER SQUARE YARD
C2	PROP. APPROX. 1.25" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 138 LBS. PER SQUARE YARD
E	PROP. APPROX. 7" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B AT AN AVERAGE RATE OF 399 LBS PER SQUARE YD., IN EACH OF TWO LAYERS
S	SHOULDER RECONSTRUCTION/SEEDING AND MULCHING BY CONTRACTOR
V	MILL 1 1/2" DEPTH



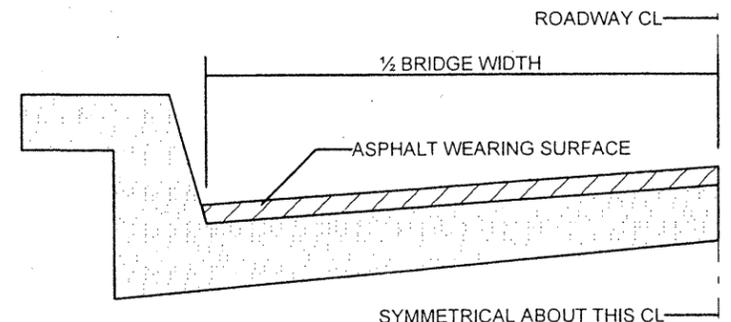
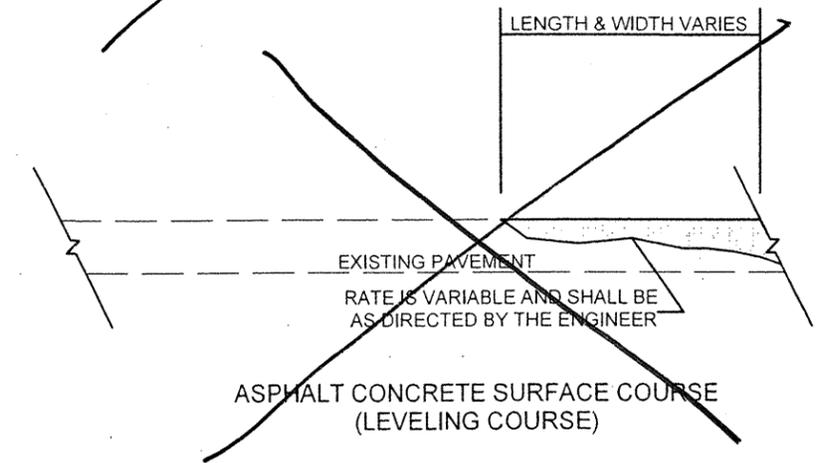
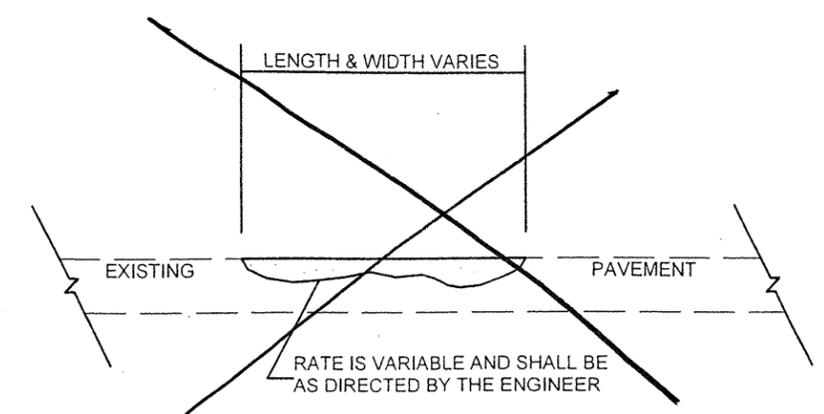
TYPICAL SECTION NO. 3



TYPICAL SECTION NO. 4

Note for Typical Section #4 on Map 5: 1 1/2" milling to be used for asphalt wearing surface on bridge as directed by the Engineer.

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS PER SQUARE YARD
C2	PROP. APPROX. 1.25" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 138 LBS. PER SQUARE YARD
E	PROP. APPROX. 7" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B AT AN AVERAGE RATE OF 399 LBS PER SQUARE YD., IN EACH OF TWO LAYERS
S	SHOULDER RECONSTRUCTION/SEEDING AND MULCHING BY CONTRACTOR
V	MILL 1 1/2" DEPTH



BRIDGE HALF TYPICAL SECTION

FOR BRIDGES WITH FLOOR DRAINS, CARE SHALL BE EXERCISED IN PLACING THE WEARING SURFACE AROUND FLOOR DRAINS SO AS NOT TO HINDER EFFECTIVE DRAINAGE. ALL DRAINS SHALL BE LEFT OPEN

THE PROPOSED WEARING SURFACE SHALL VARY IN THICKNESS AS NECESSARY TO PROVIDE A SMOOTH RIDING SURFACE. THE MINIMUM THICKNESS SHOULD DEPEND ON PAVEMENT TYPE AS FOLLOWS: S4.75A 1/2", SF9.5A 1.0", S9.5X 1.5", S12.5X 2.0", ULTRATHIN HOT MIX ASPHALT-TYPE A 1/2", ULTRATHIN HOT MIX ASPHALT-TYPE B 5/8", ULTRATHIN HOT MIX ASPHALT-TYPE C 1/2". THE MAXIMUM THICKNESS SHOULD DEPEND ON PAVEMENT TYPE AS FOLLOWS: S4.75A 1.0", SF9.5A 1.5", S9.5X 2.0", S12.5X 2.0", ULTRATHIN HOT MIX ASPHALT-TYPE A 1/2", ULTRATHIN HOT MIX ASPHALT-TYPE B 5/8", ULTRATHIN HOT MIX ASPHALT-TYPE C 1/2".

NOTES

ALL UNPAVED 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 RADII, OR AS DIRECTED BY THE ENGINEER.

EDGES, PAVEMENT WIDENING, INTERSECTIONS AND BRIDGE FLARES ARE INCLUDED IN THE TABLE OF QUANTITIES.

SHOULDERS AND DITCHES ARE TO BE CONSTRUCTED BY OTHERS UNLESS OTHERWISE INDICATED. BRIDGES ARE TO BE RESURFACED AT LOCATIONS AND TO DEPTH AS DIRECTED BY THE ENGINEER.

PROJECT NO.	SHEET NO.	TOTAL NO.
5CR.10351.9, 5CR.20351.9	7	

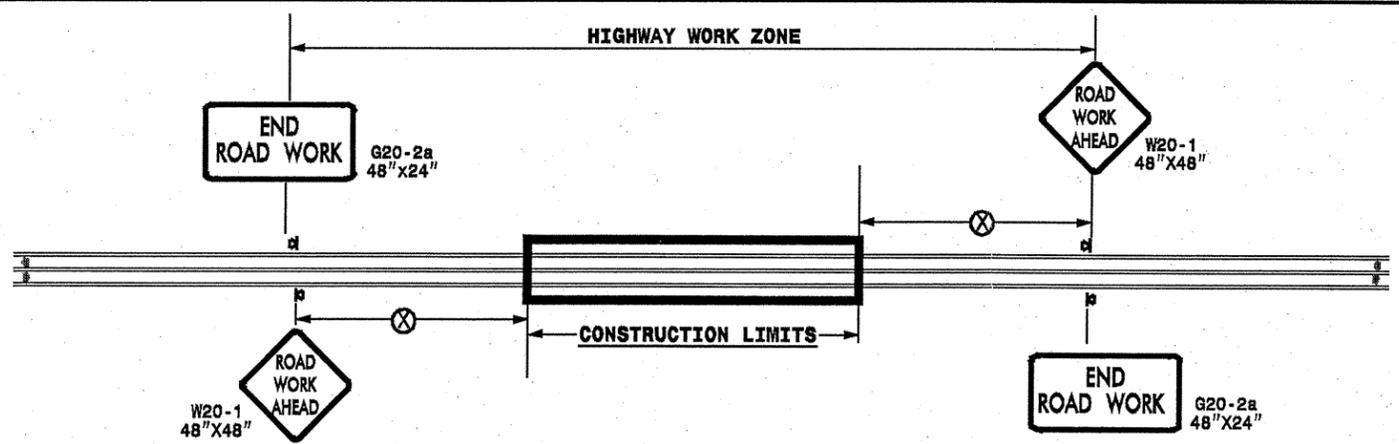
SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	FINAL SURFACE TESTING REQUIRED	LENGTH MI	WIDTH FT	INCIDENTAL STONE BASE TONS	SHOULDER RECONSTRUCTION SMI	1 1/2" MILLING SY	INCIDENTAL MILLING SY	BASE COURSE, B25.0B TONS	SURFACE COURSE, S9.5B TONS	SURFACE COURSE, SF9.5A TON	PG 64-22 PLANT MIX TONS	PATCHING EXISTING PAVEMENT TONS	SEED & MULCHING AC	INDUCTIVE LOOP LF	LEAD-IN CABLE (14-2) LF
5CR.10351.9	Franklin	1	NC 56	FROM SR 1617 (GARDNER RD) TO NASH CO. LINE	1	NO	2.5	32	60		48341			4,077		245	1,500			
TOTAL FOR MAP NO. 1							2.5		60		48341			4,077		245	1,500			
		2	NC 56	FROM US 401 TO END CURB AND GUTTER	2	NO	1.2	44			30976			2,740		164	200		200	200
TOTAL FOR MAP NO. 2							1.2		0		30976			2,740		164	200		200	200
TOTAL FOR PROJ NO. 5CR.10351.9							3.7		60		79317			6,817		409	1,700		200	200
5CR.20351.9	Franklin	3	SR 1421 (HICKORY ROCK RD.)	FROM SR 1425 (WHITE LEVEL) TO SR 1002 (EDWARDS BEST)	3	NO	1.8	18	43	3.6		150			1,354	88	20	2		
TOTAL FOR MAP NO. 3							1.8		43	3.6	0	150			1,354	88	20	2		
		4	SR 1130 (OLD WAKE FOREST RD)	FROM NC 96 TO WAKE CO. LINE	3	NO	1.9	25	46	3.8		270			1,982	129	600	6		
TOTAL FOR MAP NO. 4							1.9		46	3.8	0	270			1,982	129	600	6		
		5	SR 1105 (MAYS CROSSROADS)	FROM SR 1113 (HILL RD) TO NC 56	4	NO	3.6	22	86	7.2	500	230	3862		3,306	381	200	4		
TOTAL FOR MAP NO. 5							3.6		86	7.2	500	230	3862		3,306	381	200	4		
		6	SR 1116 (CEDAR CREEK RD)	FROM SR 1100 (TARBORO) TO SR 1113 (HILL RD.)	3	NO	1.8	24	43	3.6		200			1,802	117	500	2		
TOTAL FOR MAP NO. 6							1.8		43	3.6	0	200			1,802	117	500	2		
		7	SR 1114 (PEACH ORCHARD RD)	FROM NC 56 TO SR 1109 (TIMBERLAKE)	4	NO	3.5	22	84	7		150	3755		3,214	370	250	3		
TOTAL FOR MAP NO. 7							3.5		84	7	0	150	3755		3,214	370	250	3		
TOTAL FOR PROJ NO. 5CR.20351.9							12.6		302	25.2	500	1000	7617		11,658	1,085	1,570	16		
GRAND TOTAL							16.3		362	25.2	79817	1000	7617	6,817	11,658	1,494	3,270	16	200	200

THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	4685000000-E	4686000000-E			4710000000-E	4721000000-E	4725000000-E		4810000000-E		4835000000-E	4845000000-N			4900000000-N	4900000000-N	
					4" X 90 M WHITE THERMO LF	4" X 120 M YELLOW THERMO LF	4" X 120 M WHITE THERMO LF	24" X 120 M WHITE THERMO LF	THERMO MSG SCHOOL 120 M EA	THERMO STR & RT ARROW 90 M EA	THERMO LT ARROW 90 M EA	THERMO STR ARROW 90 M EA	4" WHITE PAINT LF	4" YELLOW PAINT LF	24" WHITE PAINT LF	PAINT STR & RT ARROW EA	PAINT STR ARROW EA	PAINT LT ARROW EA	YELLOW & YELLOW MARKERS EA	CRYSTAL & RED MARKERS EA	
5CR.10351.9	Franklin	1	NC 56	FROM SR 1617 (GARDNER RD) TO NASH CO. LINE	26,900	19,500								8,608	6,825				165		
TOTAL FOR MAP NO. 1					26,900	19,500								8,608	6,825				165		
		2	NC 56	FROM US 401 TO END CURB AND GUTTER		12,672	3,168	40		2	2	3	3,168	12,672	40	2	3	2	79	158	
TOTAL FOR MAP NO. 2						12,672	3,168	40		2	2	3	3,168	12,672	40	2	3	2	79	158	
TOTAL FOR PROJ NO. 5CR.10351.9					26,900	32,172	3,168	40		2	2	3	11,776	19,497	40	2	3	2	244	158	
						35,340					7		31,273			7					
5CR.20351.9	Franklin	3	SR 1421 (HICKORY ROCK RD.)	FROM SR 1425 (WHITE LEVEL) TO SR 1002 (EDWARDS BEST)	19,368	11,880															
TOTAL FOR MAP NO. 3					19,368	11,880															
		4	SR 1130 (OLD WAKE FOREST RD)	FROM NC 96 TO WAKE CO. LINE	20,444	12,540															
TOTAL FOR MAP NO. 4					20,444	12,540															
		5	SR 1105 (MAYS CROSSROADS)	FROM SR 1113 (HILL RD) TO NC 56	38,736	23,760													238		
TOTAL FOR MAP NO. 5					38,736	23,760													238		
		6	SR 1116 (CEDAR CREEK RD)	FROM SR 1100 (TARBORO) TO SR 1113 (HILL RD.)	19,368	11,880		100	12										119		
TOTAL FOR MAP NO. 6					19,368	11,880		100	12										119		
		7	SR 1114 (PEACH ORCHARD RD)	FROM NC 56 TO SR 1109 (TIMBERLAKE)	37,660	23,100															
TOTAL FOR MAP NO. 7					37,660	23,100															
TOTAL FOR PROJ NO. 5CR.20351.9					135,576	83,160		100	12											356	
						83,160					7		31,273			7					
GRAND TOTAL					162,476	115,332	3,168	140	12	2	2	3	11,776	19,497	40	2	3	2	601	158	
						118,500					7		31,273			7				759	

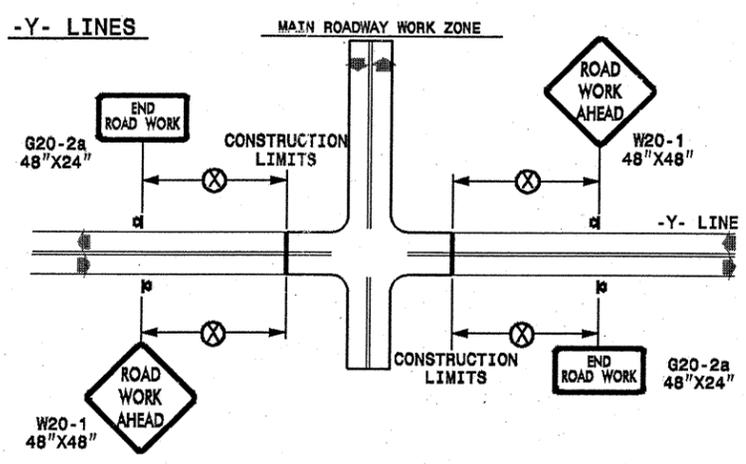
TWO-WAY UNDIVIDED ** (L-LINES)



POSTED SPEED LIMIT (M.P.H.)	RECOMMENDED MINIMUM SIGN SPACING
≤ 50	500'
≥ 55	1000'

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

ROADWAYS INTERSECTING ALONG 2 WAY UNDIVIDED WORK ZONE (Y-LINES)



DETAIL DRAWING
FOR TWO-WAY UNDIVIDED
WORK ZONE WARNING SIGNS

GENERAL NOTES

- USE FLUORESCENT ORANGE SHEETING (TYPE VII OR HIGHER) ON ALL ADVANCE 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 URBAN MULTI-LANE FACILITIES WHERE CONDITIONS LIMIT THE USE OF DUAL MOUNTED SIGNS AS DETERMINED BY THE ENGINEER.

LEGEND

◀ PORTABLE SIGN

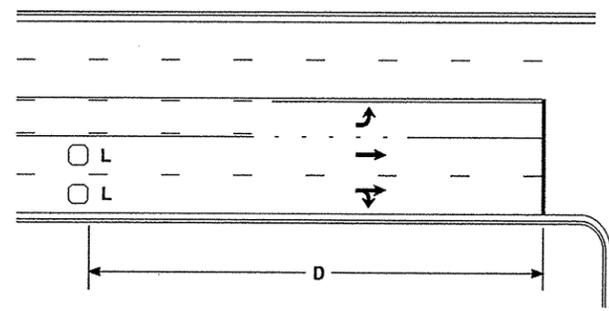
➡ DIRECTION OF TRAFFIC FLOW

SHEET 1 OF 1

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

09-OCT-2009 12:14
signing\resurfacing_030509\resurfacing_030509\div05\c2024790-b-5cr103519x2-franklin.nc56nc58sr-x5\c2024790-b-5cr103519x2-2wayundivurbfwwysjuly2006.portable.dgn
pseymore AT WZTC237502

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

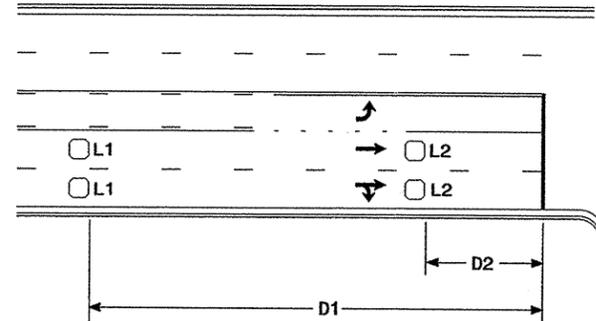


Speed Limit mph (km/hr)	D ft (m)
40 (64)	250 (75)
45 (72)	300 (90)
50 (80)	355 (110)
55 (88)	420 (130)

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

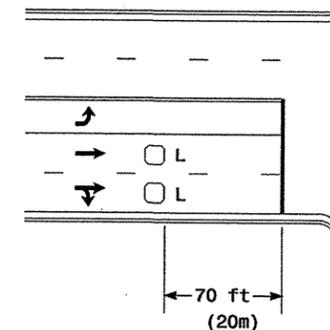


Speed Limit mph (km/hr)	D1 ft (m)	D2 ft (m)
40 (64)	250 (75)	80 (25)
45 (72)	300 (90)	90 (27)
50 (80)	355 (110)	100 (30)
55 (88)	420 (130)	110 (35)

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

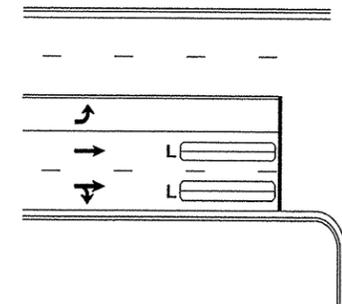
"Stretch" Operation

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



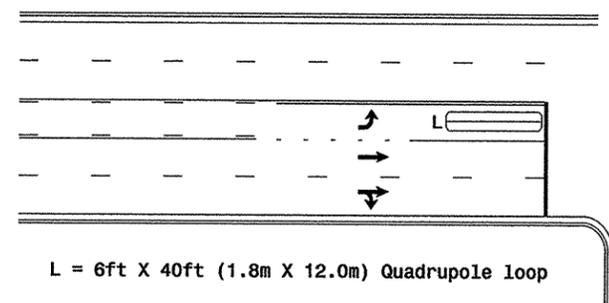
L = 6ft X 6ft (1.8m X 1.8m)
Wired in series

OR



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

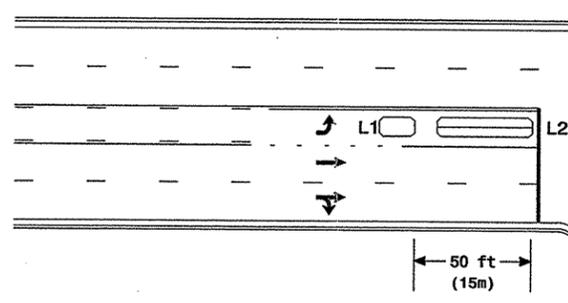
Left Turn Lane Detection



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

Presence Loop Detection

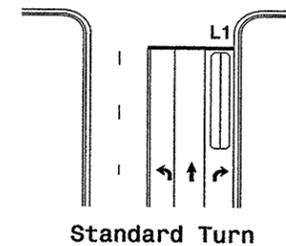
OR



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

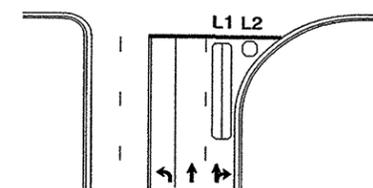
Queue Loop Detection

Right Turn Lane Detection

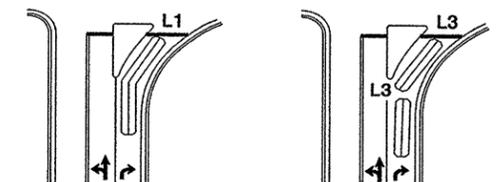


Standard Turn

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

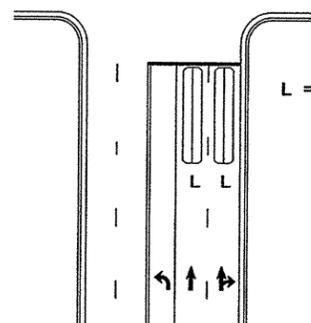


Wide Radius Turn



Channelized Turn

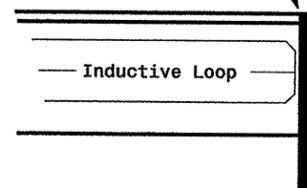
Side Street Detection



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 PREPARED BY: P. L. Alexander	REVIEWED BY:	
SCALE: N/A	REVISIONS:	INT. DATE:	SIG. INVENTORY NO.:

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

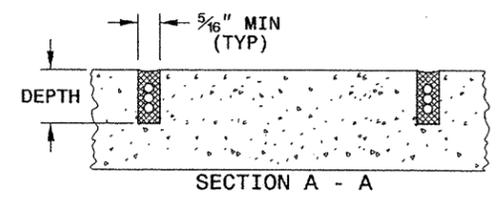
11-08

INDUCTIVE DETECTION LOOPS
ENGLISH DETAIL DRAWING FOR

SHEET 1 OF 3
1725D01

SAW SLOT DEPTH CHART

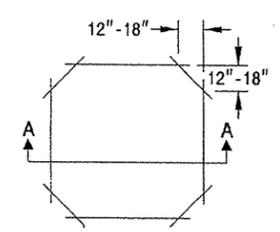
DEPTH (IN)	NO. OF WIRE TURNS				
	2	3	4	5	6
CONCRETE	2.0	2.0	2.5	2.5	3.0
ASPHALT	2.0	2.5	3.0	3.0	3.0



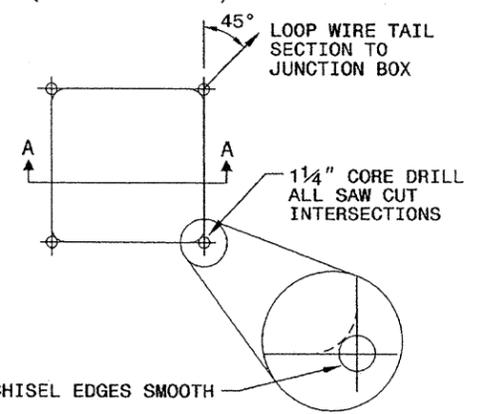
CONVENTIONAL 4-SIDED LOOP

SAW CUT OPTIONS

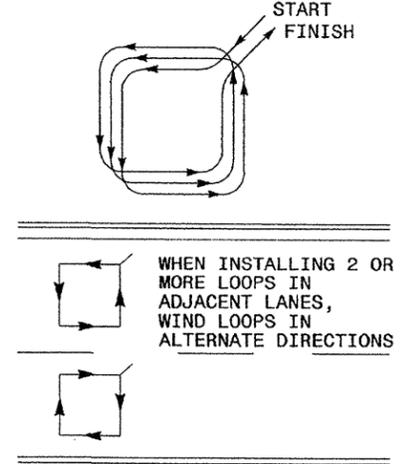
OPTION 1



OPTION 2 (POOR PAVEMENT)



LOOP WINDING METHOD



LOOP WIRE TWISTING METHOD

INCORRECT WAY TO TWIST WIRE



CORRECT WAY TO TWIST WIRE



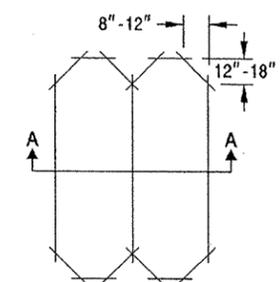
NOTES

1. OVERLAP SAW CUTS AT CORNERS AND INTERSECTION POINTS TO ENSURE UNIFORM SAW SLOT DEPTH.
2. MAINTAIN 12" SPACING BETWEEN LOOP WIRE TAIL SECTIONS.
3. WIRE LOOPS CONNECTED TO THE SAME DETECTOR CHANNEL IN SERIES.
4. LOCATE LOOPS IN CENTER OF LANES UNLESS OTHERWISE SHOWN ON PLANS OR APPROVED BY ENGINEER.

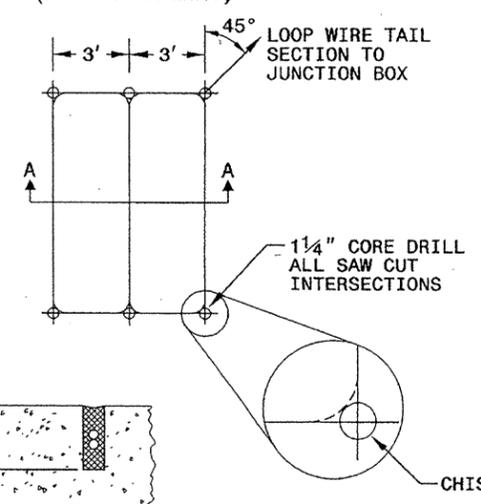
QUADRUPOLE LOOP

SAW CUT OPTIONS

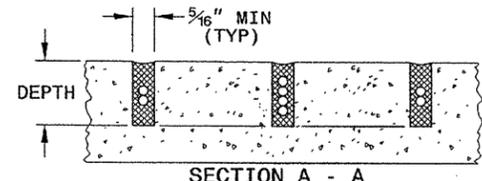
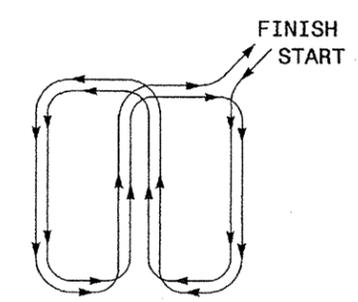
OPTION 1



OPTION 2 (POOR PAVEMENT)



LOOP WINDING METHOD



SECTION A - A

DEPTH IS 2.5" FOR CONCRETE AND 3.0" FOR ASPHALT

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

11-08

INDUCTIVE DETECTION LOOPS
ENGLISH DETAIL DRAWING FOR

SHEET 1 OF 3
1725D01

See Plate for Title

Prepared in the Offices of:

750 N. Greenfield Parkway
Garner, NC 27529

SEAL

Milton I. Dean 4/24/08
SIGNATURE DATE

24-nov-2008 09:28
d:\work_files\standard plate sheets\1725D01_may2307.dgn
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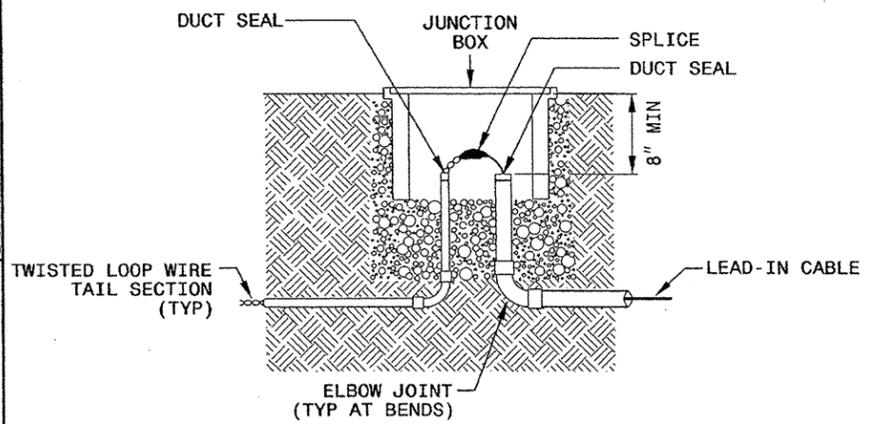
STATE OF NORTH CAROLINA
 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
 LOOP WIRE DETAILS

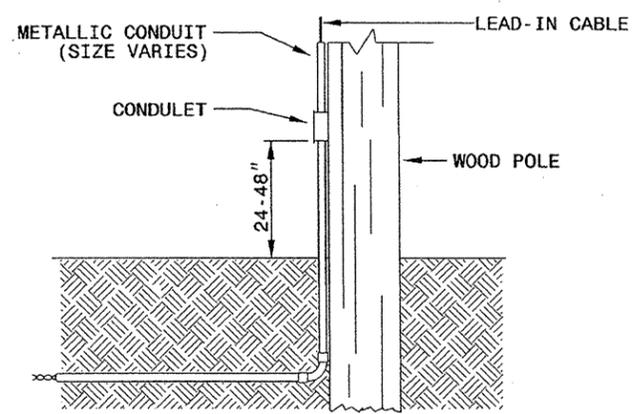
SHEET 2 OF 3
1725D01

LOOP WIRE SPLICE POINT DETAILS

LOOP WIRE AT JUNCTION BOX



LOOP WIRE AT POLE

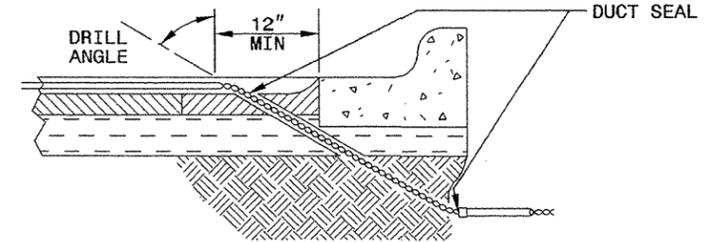


NOTE

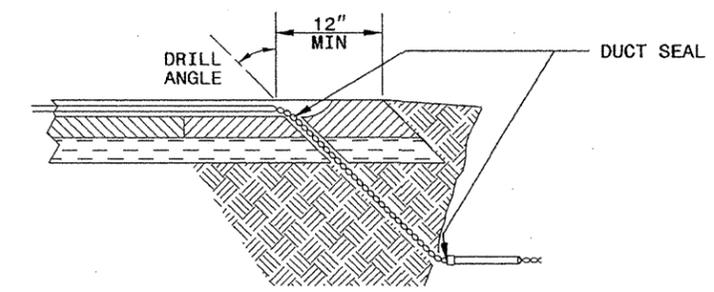
SPLICE ALL LOOP WIRE TAIL SECTIONS/LEAD-IN CABLE IN JUNCTION BOXES OR APPROVED CONDULETS.

LOOP WIRE PAVEMENT EDGE DETAILS

LOOP WIRE AT CURB & GUTTER SECTION



LOOP WIRE AT PAVEMENT SECTION



NOTES

- DO NOT EXCAVATE UNDER CURB AND GUTTER SECTIONS FOR CONDUIT INSTALLATION.
- TWIST LOOP WIRE TAIL SECTIONS FROM WHERE LOOP WIRE TAIL LEAVES SAW CUT TO JUNCTION BOX, INCLUDING THROUGH CONDUIT.
- BEFORE SEALING LOOPS, INSTALL DUCT SEAL WHERE LOOP WIRE TAIL SECTION LEAVES SAW CUT IN PAVEMENT AND AT ENTRANCE OF CONDUIT TO JUNCTION BOX.

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 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
 LOOP WIRE DETAILS

SHEET 2 OF 3
1725D01

See Plate for Title

Prepared in the Offices of:

750 N. Greenfield Parkway
Garner, NC 27529

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Milton J. Dean 11/24/08
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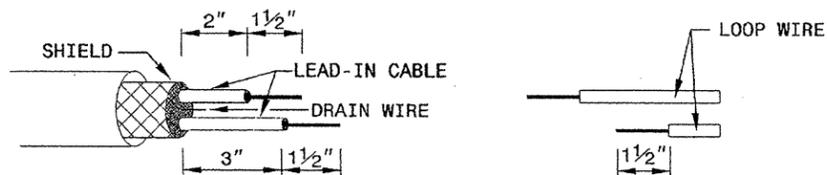
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 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

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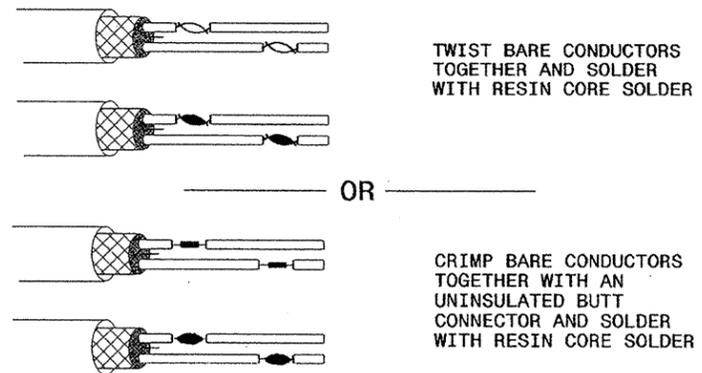
ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
 SPlicing FOR LEAD-IN CABLE AND LOOP WIRE

SHEET 3 OF 3
1725D01

STEP 1. STRIP LOOP WIRE AND LEAD-IN CABLE

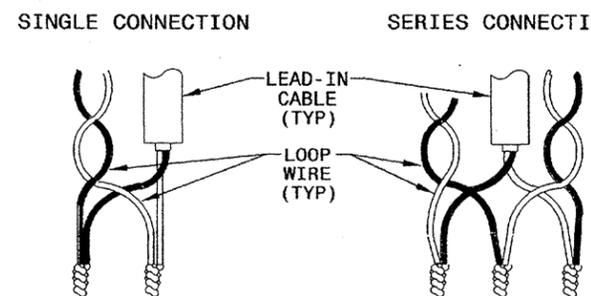


STEP 2. CONNECT AND SOLDER

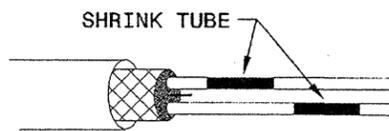


BOND SHIELD DRAIN WIRE AT SPLICE SECTIONS (DO NOT GROUND)

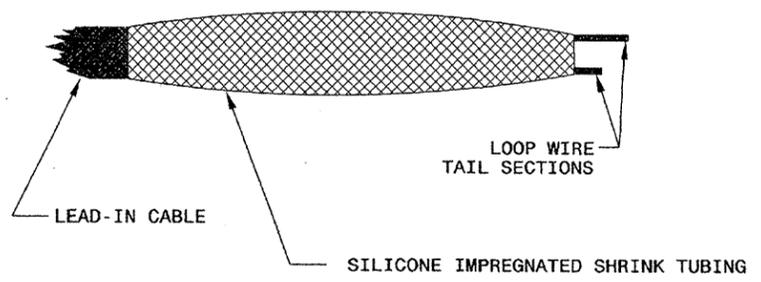
LOOP WIRE AND LEAD-IN CABLE CONNECTION DETAILS



STEP 3. INSULATE EACH SOLDER JOINT SEPARATELY



STEP 4. ENVIRONMENTALLY PROTECT SPLICE



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ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
 SPlicing FOR LEAD-IN CABLE AND LOOP WIRE

SHEET 3 OF 3
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