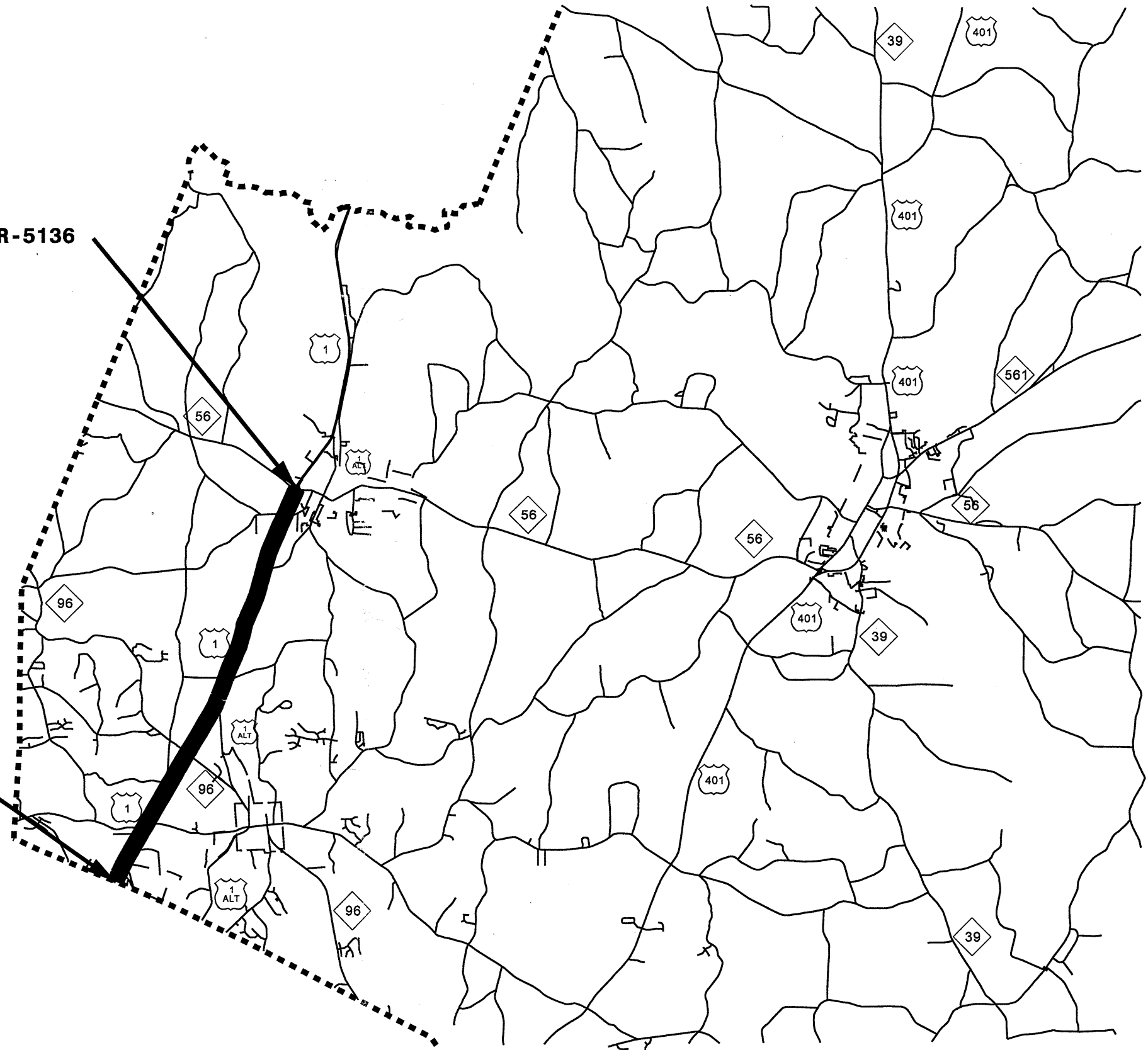




R-5136 FRANKLIN COUNTY

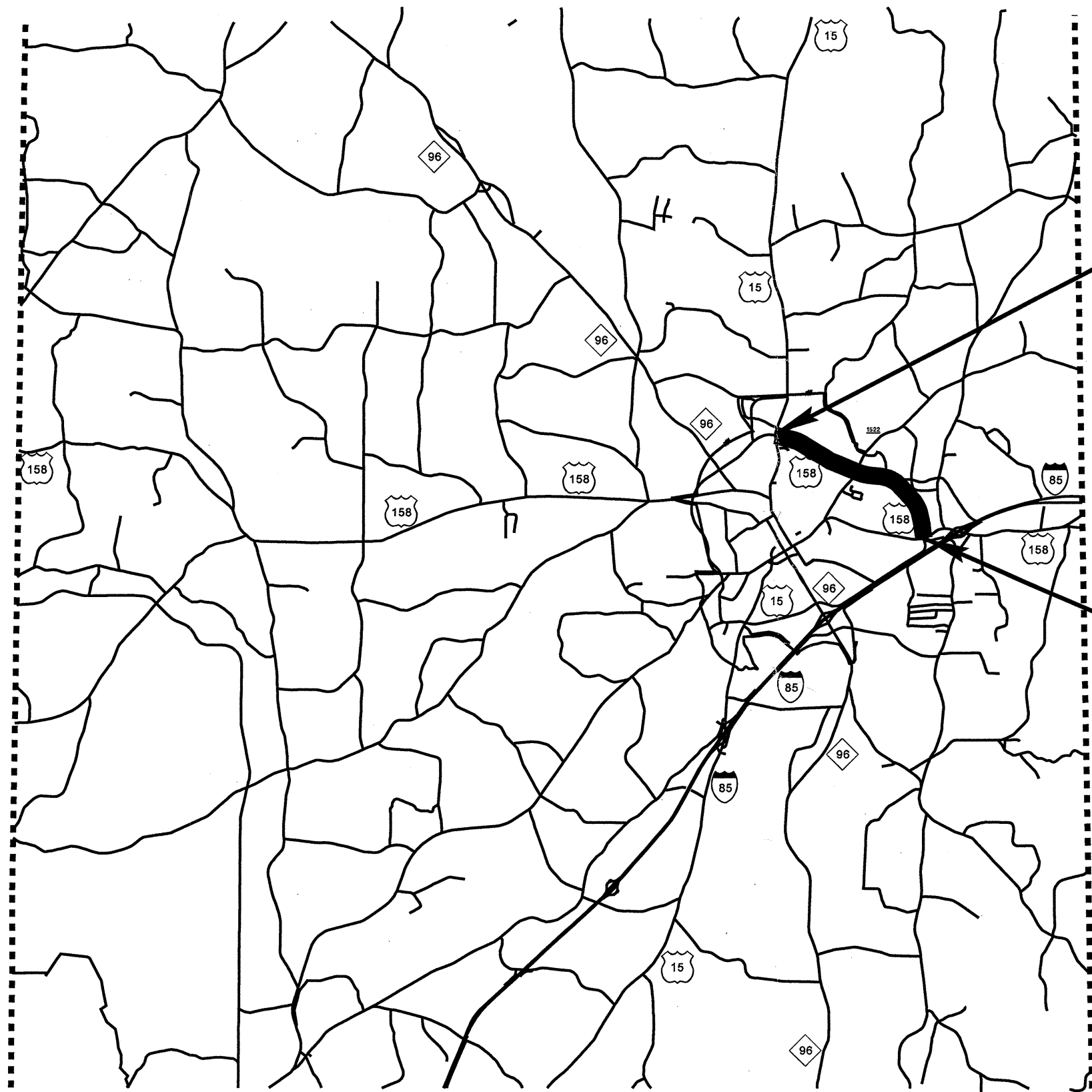
BEGIN R-5136

END R-5136



PROJECT REFERENCE NO.
R-5135.U-5125

SHEET NO.
2 of 4



BEGIN U-5125

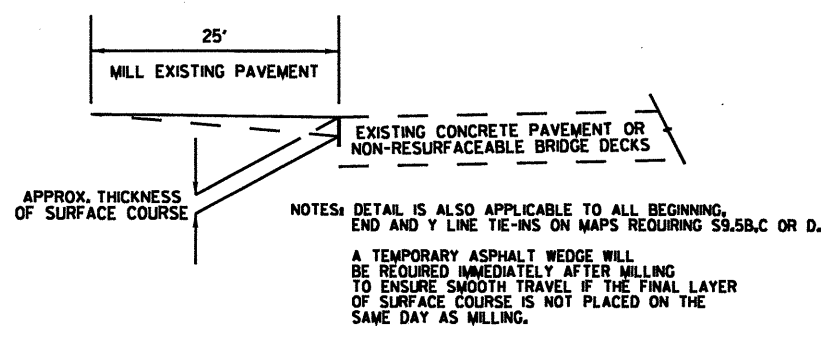
END U-5125

***U-5125
GRANVILLE
COUNTY***

PAVEMENT SCHEDULE

(C1)	PROP. APPROX. 1.5" ASPH. CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
(C2)	PROP. APPROX. 1.5" ASPH. CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
(C3)	PROP. ASPH. CONC. LEVELING COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER INCH OF DEPTH, AS DIRECTED BY THE ENGINEER
(C4)	PROP. ASPH. CONC. LEVELING COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER INCH OF DEPTH, AS DIRECTED BY THE ENGINEER
(S)	SHOULDER RECONSTRUCTION/SEEDING AND MULCHING BY CONTRACTOR

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
R-5136, U-5125	3	4



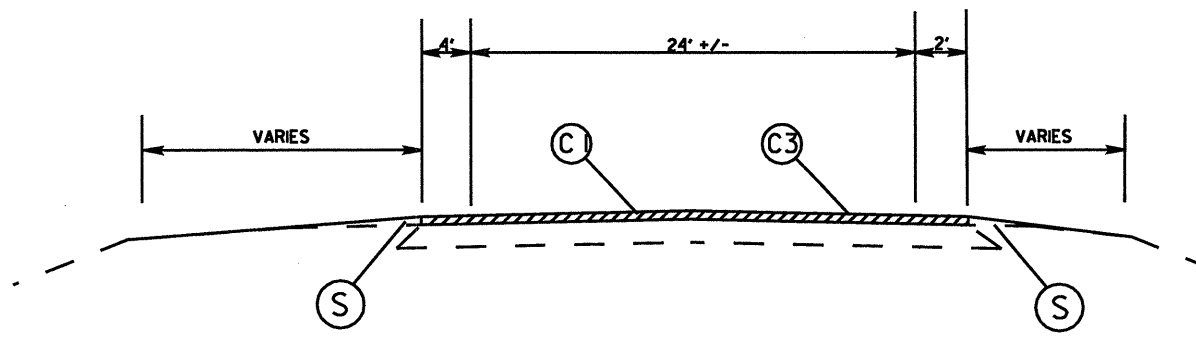
NOTES

ALL UNPAVED S.R. ROADS TO BE RESURFACED 50' FROM EDGE OF PAVEMENT OF MAIN PROJECT

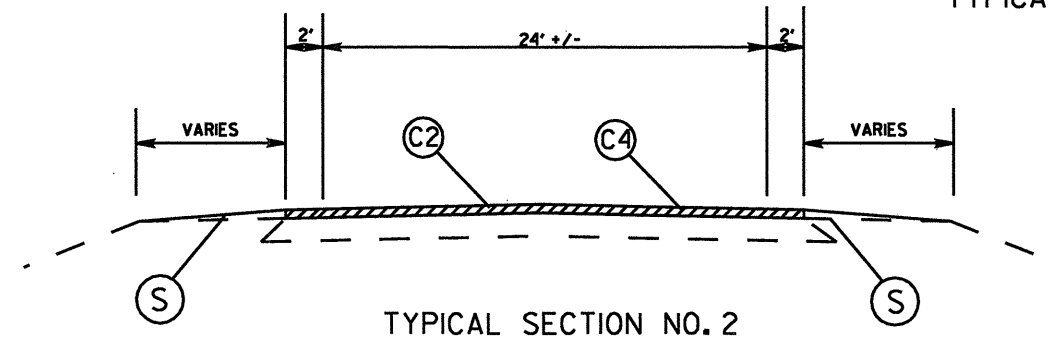
ALL PAVED S.R. ROADS TO BE RESURFACED TO THE ENDS OF THE RADI, OR AS DIRECTED BY THE ENGINEER.

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

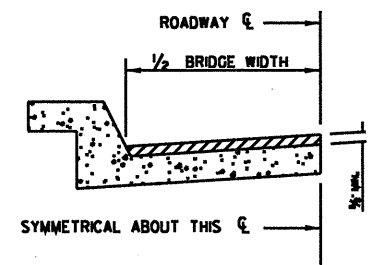
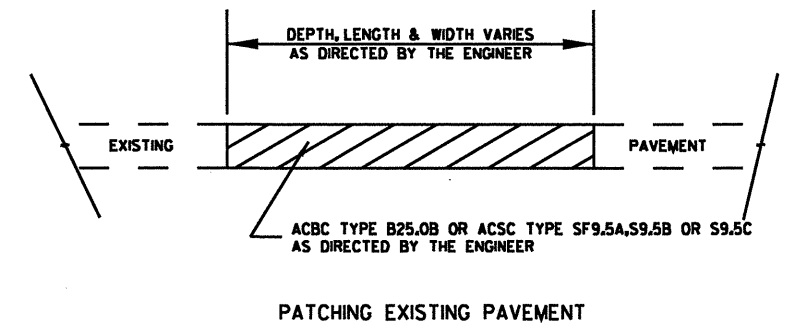
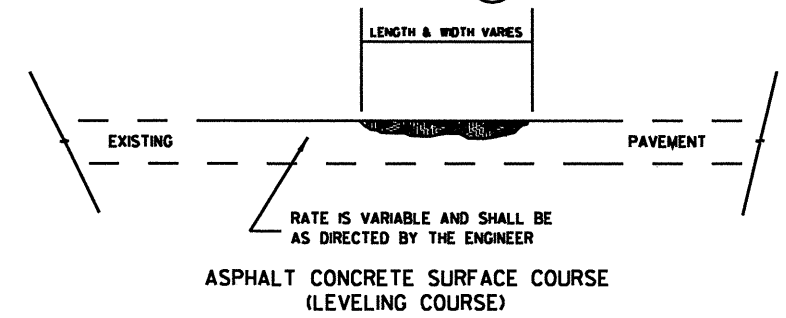
BRIDGES TO BE RESURFACED AT LOCATIONS AND TO DEPTH AS DIRECTED BY THE ENGINEER.



TYPICAL SECTION NO. 1



TYPICAL SECTION NO. 2



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. A THICKNESS OF NOT LESS THAN 3/4" SHALL BE PROVIDED. THE MAXIMUM THICKNESS SHALL PREFERABLY BE 1 1/2" UNLESS IT IS IMPRACTICAL TO PROVIDE A SMOOTH RIDING SURFACE OTHERWISE.

PROJECT NO.	SHEET NO.	TOTAL NO.
R-5136, U-5125	4	4

SUMMARY OF QUANTITIES

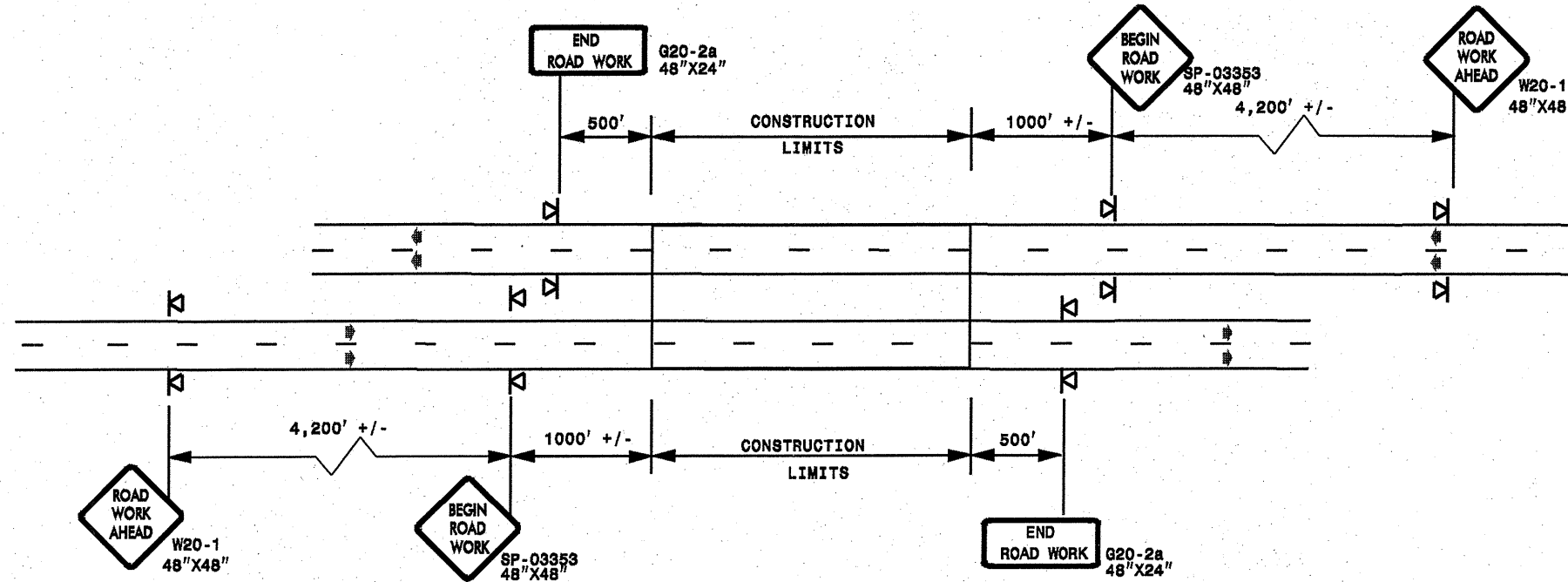
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP	LENGTH MI	WIDTH FT	FINAL SURFACE TESTING REQUIRED	INCIDENTAL STONE BASE TONS	SHOULDER RECONSTRUCTION SMI	INCIDENTAL MILLING SY	SURFACE COURSE, S9.5B TONS	LEVELING COURSE, TYPE S9.5B TON	SURFACE COURSE, S9.5C TONS	LEVELING COURSE, TYPE S9.5C TON	PG 64-22 PLANT MIX TONS	PG 70-22 PLANT MIX TONS	PATCHING EXISTING PAVEMENT TONS	ADJUST MANHOLES EA	ADJUST METER OR VALVE BOX EA	SEED & MULCHING AC	INDUCTIVE LOOP LF	LEAD-IN CABLE (14-2) LF
R-5136, 45036.3.ST1	Franklin	1	US 1	FROM NC 56 TO WAKE COUNTY LINE	1	7	30	No	170	28.5	1,200			26,800	200		1,621	800	1	1	21	400	400
TOTAL FOR PROJ NO. R-5136, 45036.3.ST1						7	30		170	28.5	1,200			26,800	200		1,621	800	1	1	21	400	400
U-5125, 45072.3.ST1	Granville	2	US 158 BYPASS	FROM US 15 TO US 158 BUS	2	3	28	No	180	6	300	4,574	363			298		400			4	2,400	
TOTAL FOR PROJ NO. U-5125, 45072.3.ST1						3	28		180	6	300	4,574	363			298		400			4	2,400	
GRAND TOTAL						10			350	34.5	1,500	4,574	363	26,800	200	298	1,621	1,200	1	1	25	2,800	400

THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	4589000000-N	4685000000-E		4686000000-E		4695000000-E	4697000000-E	4705000000-E	4710000000-E	4721000000-E	4725000000-E					4905000000-N
					TRAFFIC CONTROL LS	4" X 90 M YELLOW THERMO LF	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 YELLOW THERMO LF	16" X 120 M WHITE THERMO LF	24" X 120 M WHITE THERMO LF	THERMO RXR 120 M EA	THERMO STR ARROW 90 M EA	THERMO LT ARROW 90 M EA	THERMO RT ARROW 90 M EA	THERMO STR & LT ARROW 90 M EA	THERMO STR & RT ARROW 90 M EA	SNOW PLOWABLE MARKERS EA
R-5136, 45036.3.ST1	Franklin	1	US 1	FROM NC 56 TO WAKE COUNTY LINE	1	75,000	75,000	19,000		6,800			950		50	105	60	3	8	1,155
TOTAL FOR PROJ NO. R-5136, 45036.3.ST1					1	75,000	75,000	19,000		6,800			950		50	105	60	3	8	1,155
						150,000		19,000							226					
U-5125, 45072.3.ST1	Granville	2	US 158 BYPASS	FROM US 15 TO US 158 BUS	*		32,280		32,280		400	400	150	8	8	14	3	1	6	248
TOTAL FOR PROJ NO. U-5125, 45072.3.ST1							32,280		32,280		400	400	150	8	8	14	3	1	6	248
						32,280		32,280							32					
GRAND TOTAL					1	75,000	107,280	19,000	32,280	6,800	400	400	1,100	8	58	119	63	4	14	1,403
						182,280		51,280							258					

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

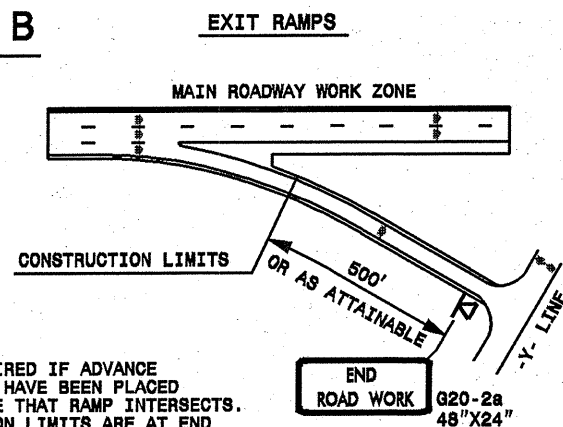
DETAIL A



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

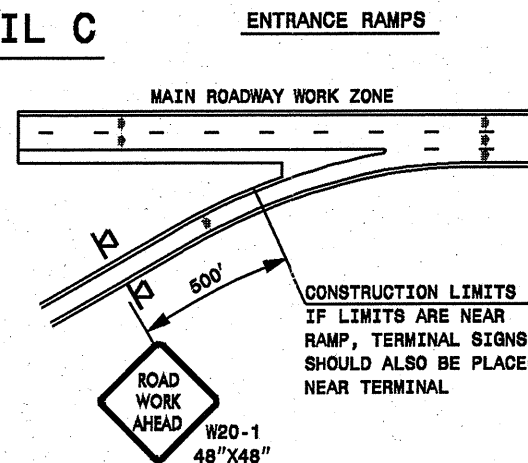
ROADWAYS INTERSECTING ALONG FREEWAY WORK ZONE (Y-LINES)

DETAIL B



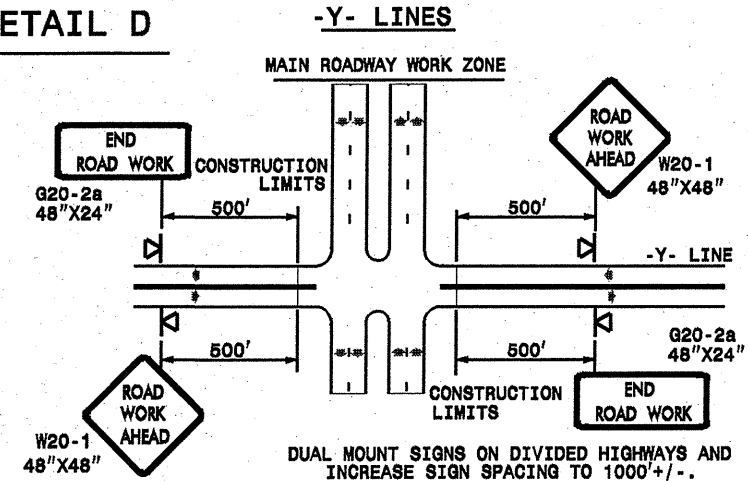
NOTE:
SIGN NOT REQUIRED IF ADVANCE WARNING SIGNS HAVE BEEN PLACED ALONG -Y- LINE THAT RAMP INTERSECTS. IF CONSTRUCTION LIMITS ARE AT END OF RAMP, PLACE SIGN AT END OF RAMP.

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' +/-.

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

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 MULTI-LANE FACILITIES WHERE CONDITIONS LIMIT THE USE OF DUAL MOUNTED SIGNS AS DETERMINED BY THE ENGINEER.

LEGEND

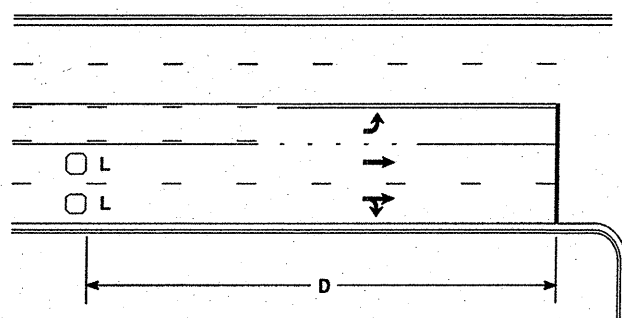
- PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW

SHEET 1 OF 1

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

20-APR-2009 19:20 s:\signing\resurfacing\030509\resurfacing2009\div05\c202314-c202314-r-5136-u-5125-franklin\anville\c202314-c202314-r-5136-u-5125-free4lanesgreat\july2006.portable.dgn

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

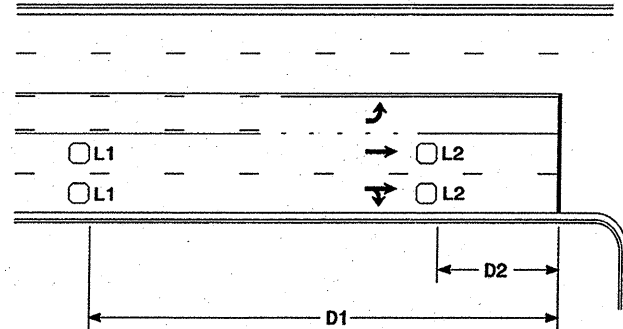


Speed Limit mph (km/hr)	D ft (m)
40 (64)	250 (75)
45 (72)	300 (90)
50 (80)	355 (110)
55 (88)	420 (130)

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



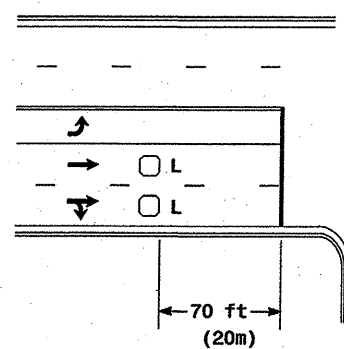
Speed Limit mph (km/hr)	D1 ft (m)	D2 ft (m)
40 (64)	250 (75)	80 (25)
45 (72)	300 (90)	90 (27)
50 (80)	355 (110)	100 (30)
55 (88)	420 (130)	110 (35)

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

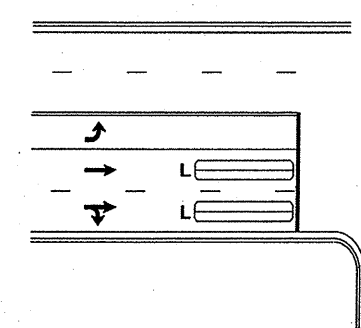
Low Speed Detection [≤35 mph (56 km/hr)]

45036.3.ST1 (R-5136) &
45072.3.ST1 (U-5125)



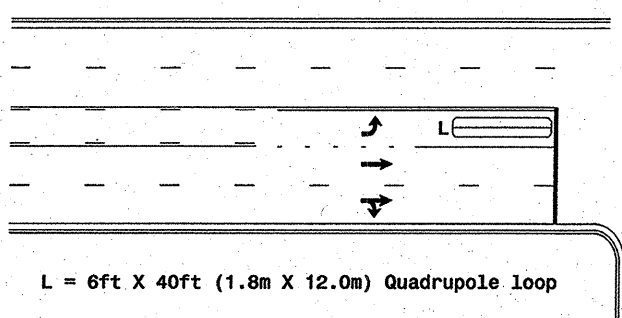
L = 6ft X 6ft (1.8m X 1.8m)
Wired in series

OR



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

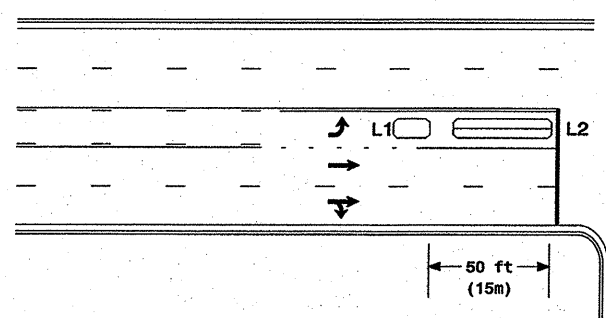
Left Turn Lane Detection



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

Presence Loop Detection

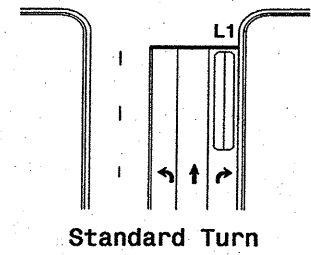
OR



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

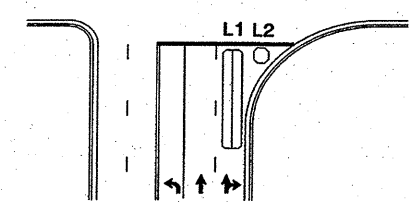
Queue Loop Detection

Right Turn Lane Detection

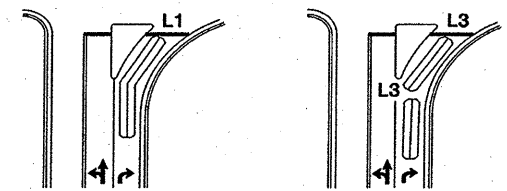


Standard Turn

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

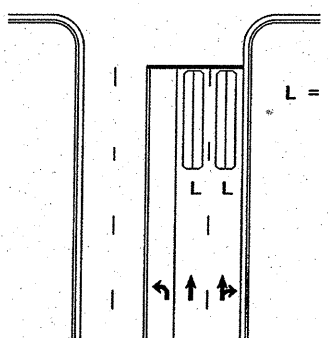


Wide Radius Turn



Channelized Turn

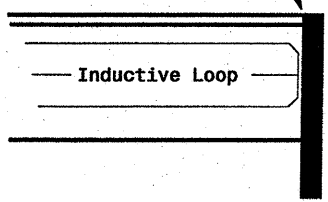
Side Street Detection



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

	<p>Typical Loop Locations</p>		
	<p>PLAN DATE: June 2006</p> <p>PREPARED BY: P. L. Alexander</p> <p>SCALE: N/A</p>	<p>REVIEWED BY:</p> <p>REVISIONS:</p> <p>INIT. DATE</p>	

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

5-07

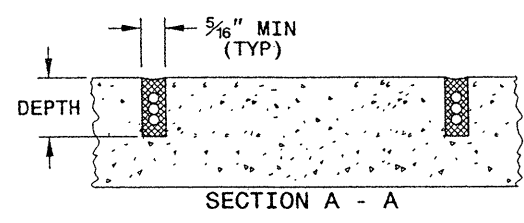
ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS

SHEET 1 OF 3
1725D01

CONVENTIONAL 4-SIDED LOOP

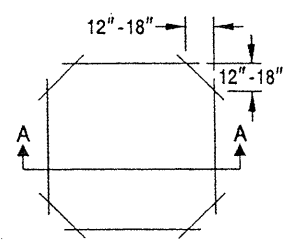
SAW SLOT DEPTH CHART

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

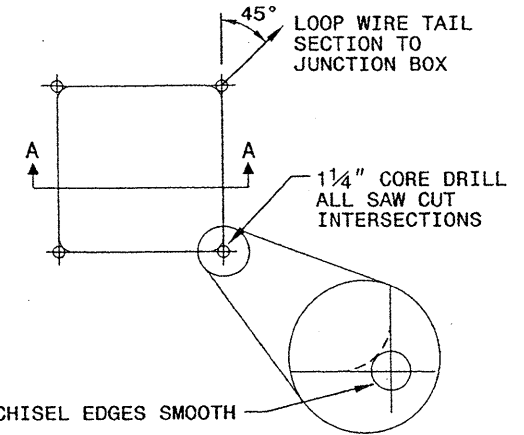


SAW CUT OPTIONS

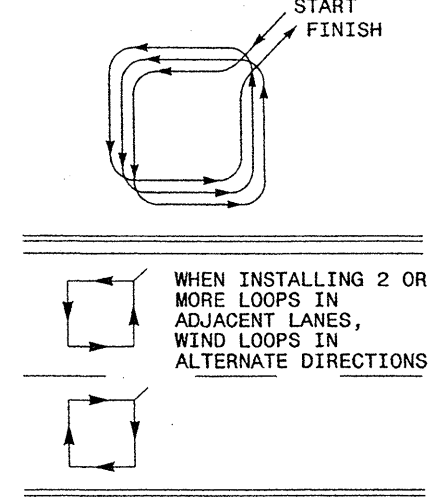
OPTION 1



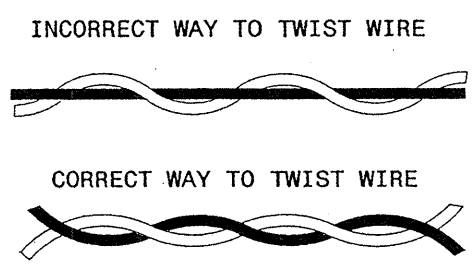
OPTION 2 (POOR PAVEMENT)



LOOP WINDING METHOD



LOOP WIRE TWISTING METHOD



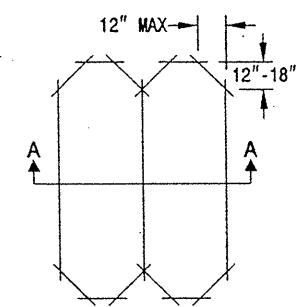
NOTES

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.

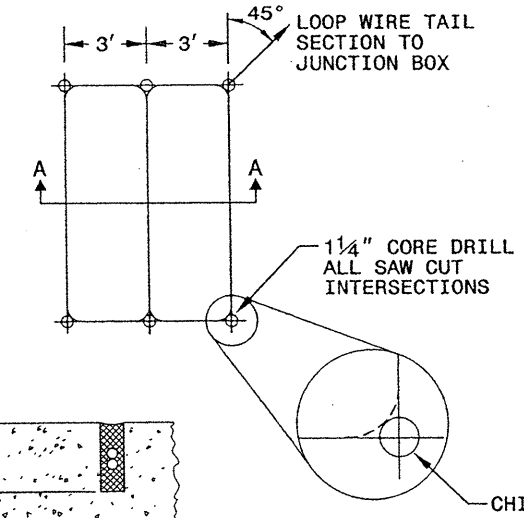
QUADRUPOLE LOOP

SAW CUT OPTIONS

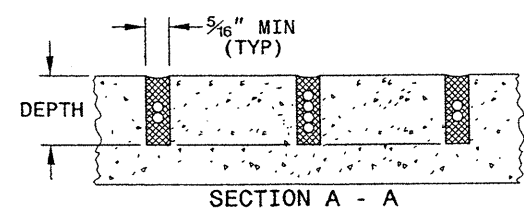
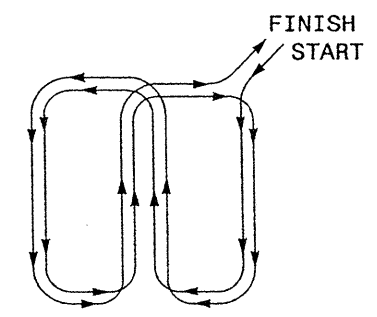
OPTION 1



OPTION 2 (POOR PAVEMENT)



LOOP WINDING METHOD



DEPTH IS 2.5" FOR CONCRETE AND 3.0" FOR ASPHALT

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

5-07

ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS

SHEET 1 OF 3
1725D01

See Plate for Title

Prepared in the Offices of:

750 N. Greenfield Parkway
Garner, NC 27529

SEAL

ENGINEER
MILTON I. DEAN

Milton I. Dean 9/5/07
SIGNATURE DATE

06-SEP-2007 14:05
C:\projects\1725D01\1725D01.dwg
C:\projects\1725D01\1725D01.dwg
ZML/ljl

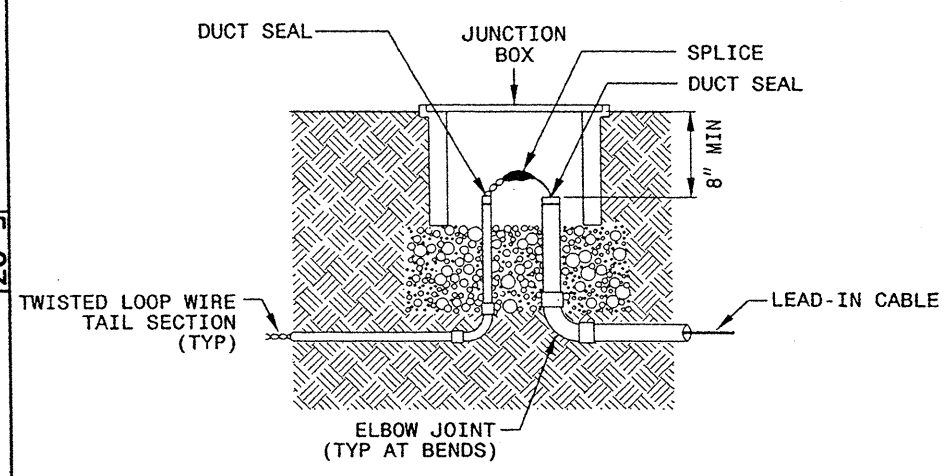
STATE OF NORTH CAROLINA
 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
 LOOP WIRE DETAILS

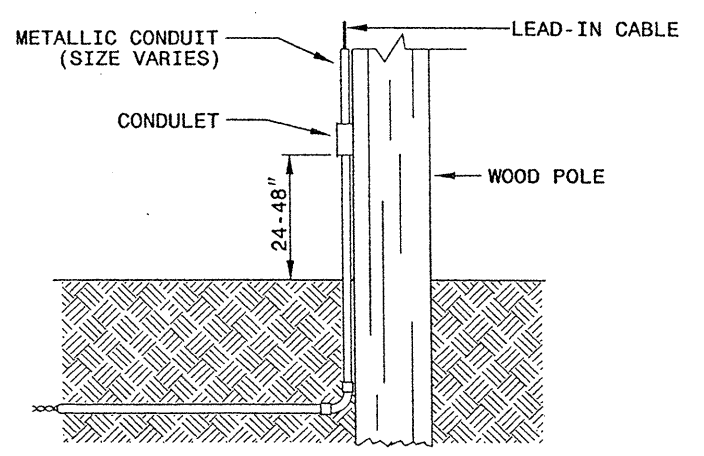
SHEET 2 OF 3
1725D01

LOOP WIRE SPLICE POINT DETAILS

LOOP WIRE AT JUNCTION BOX



LOOP WIRE AT POLE

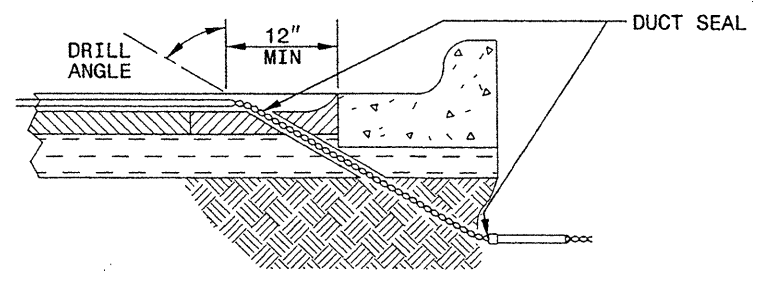


NOTE

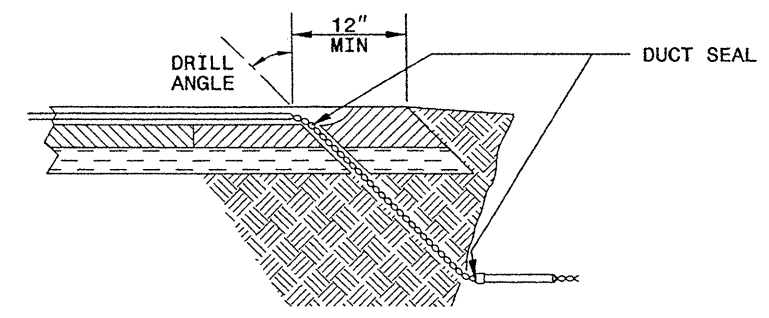
SPLICE ALL LOOP WIRE TAIL SECTIONS/LEAD-IN CABLE IN JUNCTION BOXES OR APPROVED CONDULETS.

LOOP WIRE PAVEMENT EDGE DETAILS

LOOP WIRE AT CURB & GUTTER SECTION



LOOP WIRE AT PAVEMENT SECTION



NOTES

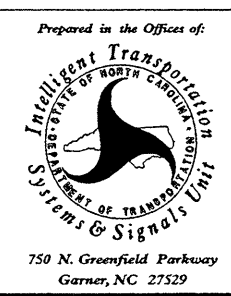
- DO NOT EXCAVATE UNDER CURB AND GUTTER SECTIONS FOR CONDUIT INSTALLATION.
- TWIST LOOP WIRE TAIL SECTIONS FROM WHERE LOOP WIRE TAIL LEAVES SAW CUT TO JUNCTION BOX, INCLUDING THROUGH CONDUIT.
- BEFORE SEALING LOOPS, INSTALL DUCT SEAL WHERE LOOP WIRE TAIL SECTION LEAVES SAW CUT IN PAVEMENT AND AT ENTRANCE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

STATE OF NORTH CAROLINA
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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



SEAL

MILTON I. DEAN
 ENGINEER
 SEAL 016286
 NORTH CAROLINA PROFESSIONAL SEAL

Signature: *Milton I. Dean*
 DATE: 9/5/07

05-SEP-2007 14:00
 c:\documents and settings\smil111\ie.dot\desk\loopstondard metal pole sheets\1725D01.dwg

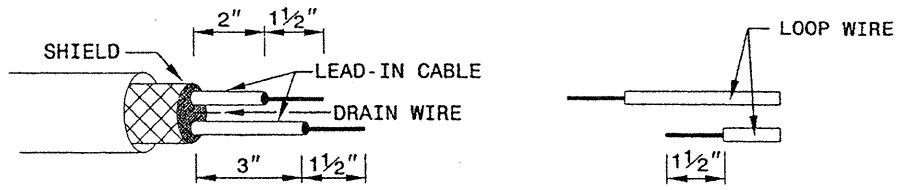
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

5-07

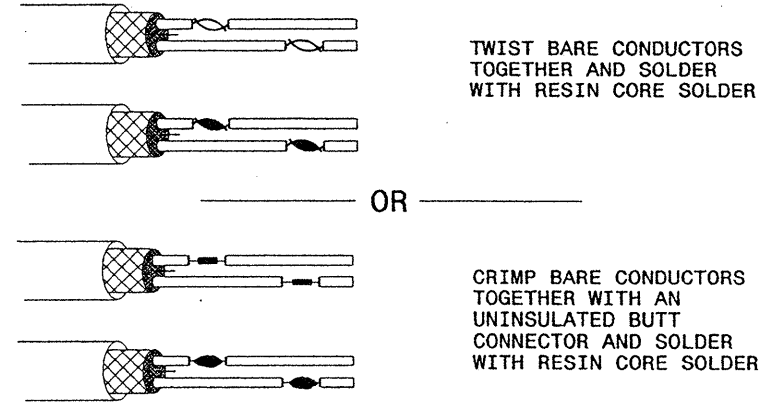
ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
SPlicing FOR LEAD-IN CABLE AND LOOP WIRE

SHEET 3 OF 3
1725D01

STEP 1. STRIP LOOP WIRE AND LEAD-IN CABLE

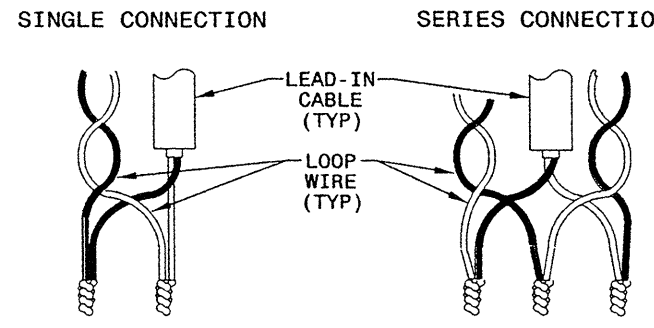


STEP 2. CONNECT AND SOLDER

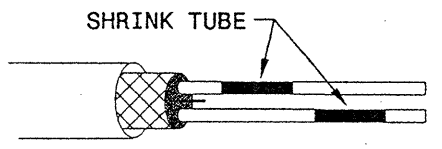


BOND SHIELD DRAIN WIRE AT SPLICE SECTIONS (DO NOT GROUND)

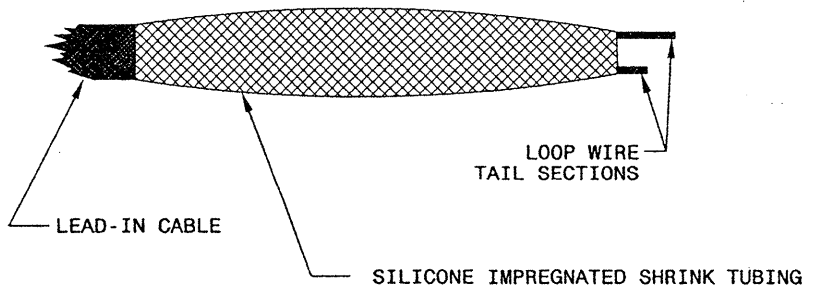
LOOP WIRE AND LEAD-IN CABLE CONNECTION DETAILS



STEP 3. INSULATE EACH SOLDER JOINT SEPARATELY



STEP 4. ENVIRONMENTALLY PROTECT SPLICE



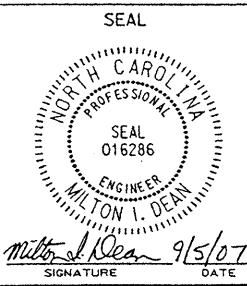
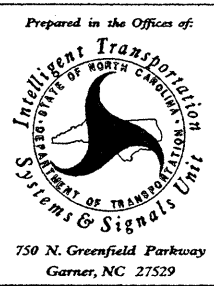
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

5-07

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

SHEET 3 OF 3
1725D01

See Plate for Title



750 N. Greenfield Parkway
Garner, NC 27529

Milton I. Deen 9/5/07
SIGNATURE DATE