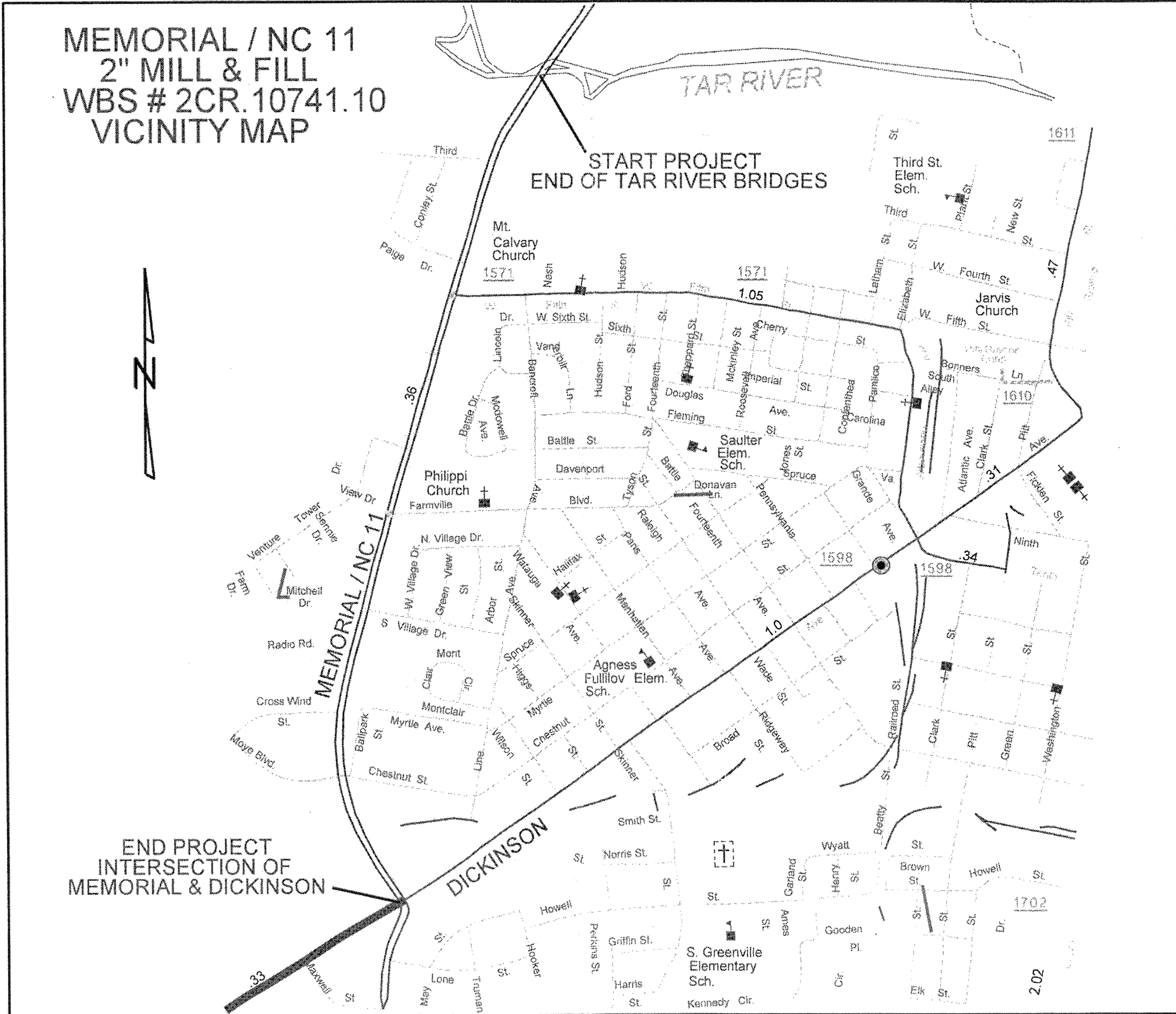


MEMORIAL / NC 11
2" MILL & FILL
WBS # 2CR.10741.10
VICINITY MAP



START PROJECT
END OF TAR RIVER BRIDGES

END PROJECT
INTERSECTION OF
MEMORIAL & DICKINSON

TAR RIVER

MEMORIAL / NC 11

DICKINSON

S. Greenville
Elementary
Sch.

Third St.
Elem.
Sch.

Jarvis
Church

Philippi
Church

Sautler
Elem.
Sch.

Agness
Fullilov Elem.
Sch.

S. Greenville
Elementary
Sch.

PROJECT NO.	SHEET NO.	TOTAL NO.
2CR.10741.10	3	

SUMMARY OF QUANTITIES

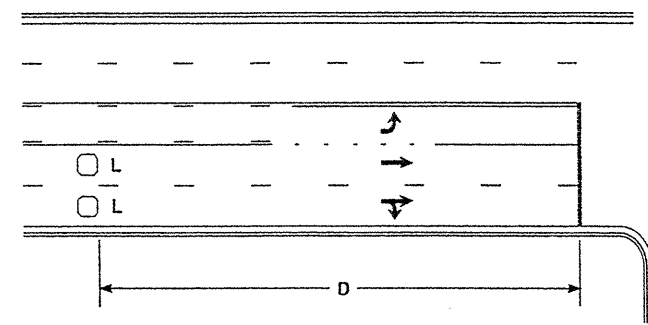
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP	FINAL SURFACE TESTING REQUIRED	LENGTH MI	WIDTH FT	2" MILLING SY	SURFACE COURSE, S9.5B TONS	ASPHALT BINDER FOR PLANT MIX TONS	INDUCTIVE LOOP LF
2CR.10741.10	Pitt	1	NC 11 MEMORIAL DRIVE	FROM END OF TAR RIVER BRIDGE TO US 13 (DICKINSON)	1	NO	1.34	80	62,891	7,411	445	3,528
TOTAL FOR MAP NO. 1							1.34		62,891	7,411	445	3,528
GRAND TOTAL							1.34		62891	7411	445	3528

THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	LENGTH	WIDTH	4399000000-N	4685000000-E	4686000000-E	46970000-E	4705000000-E	4710000000-E	4721000000-E		4725000000-E			
							TEMP. TRAFFIC CONTROL	4" X 90 M WHITE THERMO	4" X 120 M YELLOW THERMO	8" X 120 M WHITE THERMO	16" X 120 M WHITE THERMO	24" X 120 M WHITE THERMO	THERMO RXR 120 M	THERMO MSG ONLY 120 M	THERMO LT ARROW 90 M	THERMO RT ARROW 90 M	THERMO STR ARROW 90 M	THERMO STR & RT ARROW 90 M
NO		NO					LS	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA
2CR.10741.10	Pitt	1	NC 11 MEMORIAL DRIVE	FROM END OF TAR RIVER BRIDGE TO US 13 (DICKINSON)	1.34	80	1	14,418	8,844	1,458	260	290	12	8	50	8	41	16
TOTAL FOR PROJ NO. 1					1.34		1	14,418	8,844	1,458	260	290	12	8	50	8	41	16
GRAND TOTAL					1.34		1	14,418	8,844	1,458	260	290	12	8	50	8	41	16

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	LENGTH	WIDTH	4810000000-E		4820000000-E	4830000000-E	4835000000-E	4840000000-N		4845000000-N				4905000000-N
							4" WHITE PAINT	4" YELLOW PAINT	8" WHITE PAINT	16" WHITE PAINT	24" WHITE PAINT	PAINT MSG ONLY	PAINT MSG RXR	PAINT LT ARROW	PAINT STR ARROW	PAINT RT ARROW	PAINT STR & RT ARROW	SNOW PLOWABLE MARKERS
NO		NO					LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA
2CR.10741.10	Pitt	1	NC 11 MEMORIAL DRIVE	FROM END OF TAR RIVER BRIDGE TO US 13 (DICKINSON)	1.34	80	14,418	8,844	1,458	360	340	4	4	50	41	8	16	550
TOTAL FOR PROJ NO. 1					1.34		14,418	8,844	1,458	360	340	4	4	50	41	8	16	550
GRAND TOTAL					1.34		14,418	8,844	1,458	360	340	4	4	50	41	8	16	550

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

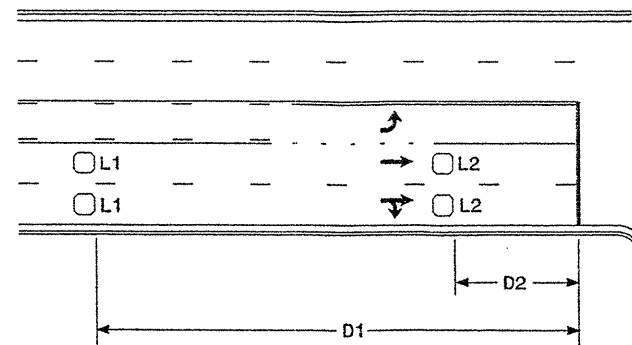


Speed Limit mph (km/hr)	D ft (m)
40 (64)	250 (75)
45 (72)	300 (90)
50 (80)	355 (110)
55 (88)	420 (130)

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

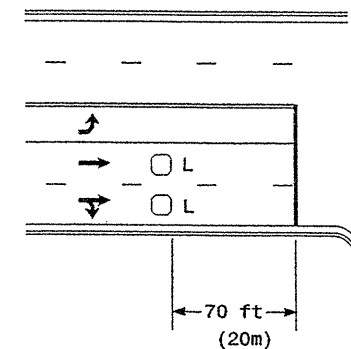


Speed Limit mph (km/hr)	D1 ft (m)	D2 ft (m)
40 (64)	250 (75)	80 (25)
45 (72)	300 (90)	90 (27)
50 (80)	355 (110)	100 (30)
55 (88)	420 (130)	110 (35)

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

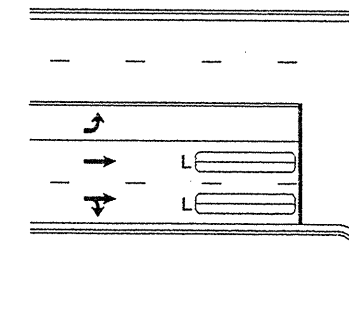
"Stretch" Operation

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



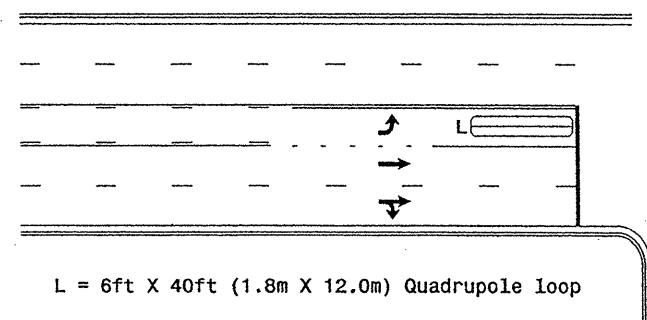
L = 6ft X 6ft (1.8m X 1.8m)
Wired in series

OR



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

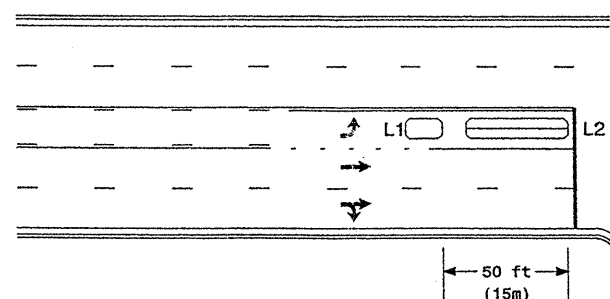
Left Turn Lane Detection



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

Presence Loop Detection

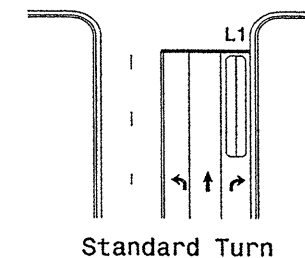
OR



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

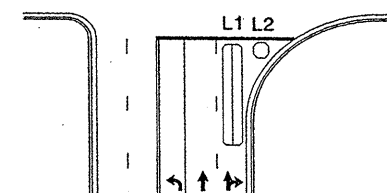
Queue Loop Detection

Right Turn Lane Detection

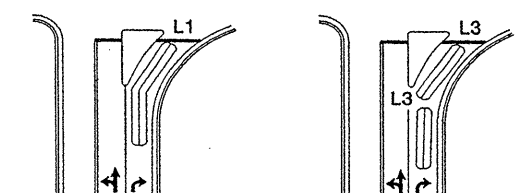


Standard Turn

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

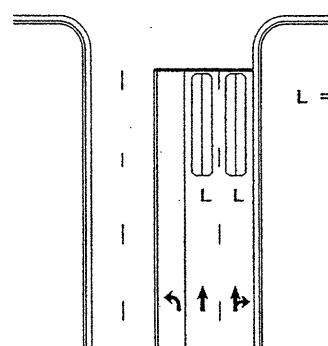


Wide Radius Turn



Channelized Turn

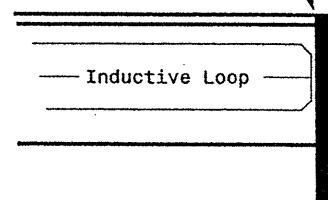
Side Street Detection



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

Prepared in the Office of:

 122 N. McDowell St., Raleigh, NC 27603

Typical Loop Locations

SEAL
 NORTH CAROLINA
 PROFESSIONAL ENGINEER
 SEAL
 23488
 P. L. ALEXANDER

PLAN DATE: June 2006 REVIEWED BY:
 PREPARED BY: P. L. Alexander REVIEWED BY:
 REVISIONS
 ✓ Revise pavement markings
 DATE: 12/14/06
 INITIALS: ac

SCALE: N/A
 DATE: 6/6/06
 SIGNATURE: [Signature]
 DATE: 6/6/06
 SIG. INVENTORY NO.

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

11-08

ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS

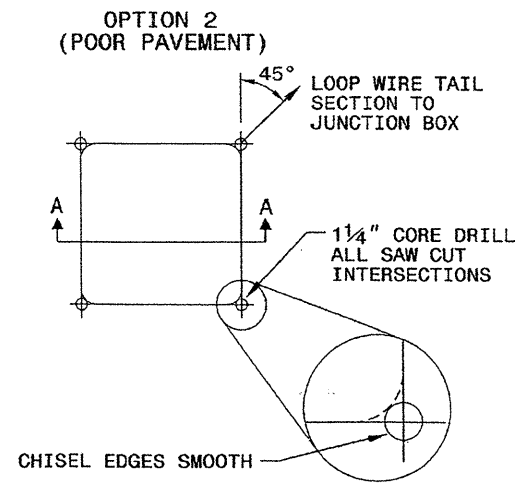
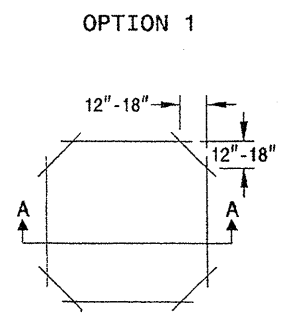
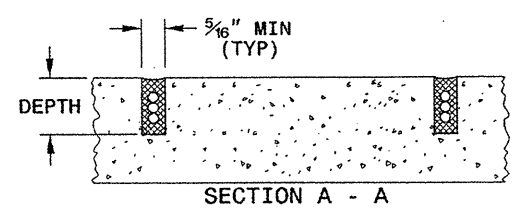
SHEET 1 OF 3
1725D01

CONVENTIONAL 4-SIDED LOOP

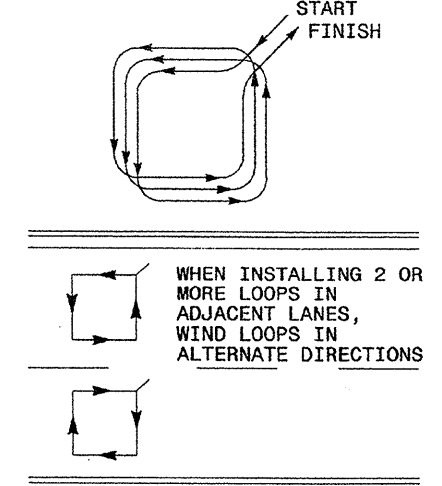
SAW CUT OPTIONS

SAW SLOT DEPTH CHART

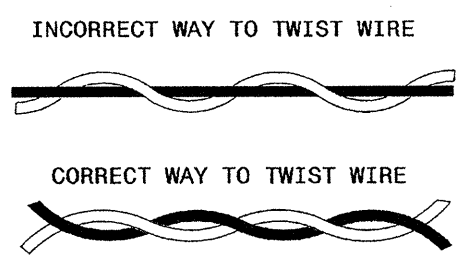
DEPTH (IN)	NO. OF WIRE TURNS				
	2	3	4	5	6
CONCRETE	2.0	2.0	2.5	2.5	3.0
ASPHALT	2.0	2.5	3.0	3.0	3.0



LOOP WINDING METHOD



LOOP WIRE TWISTING METHOD

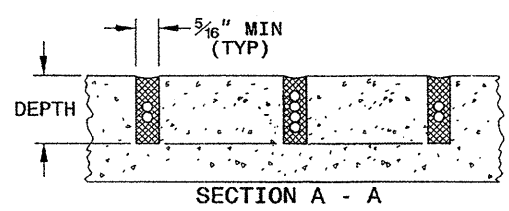
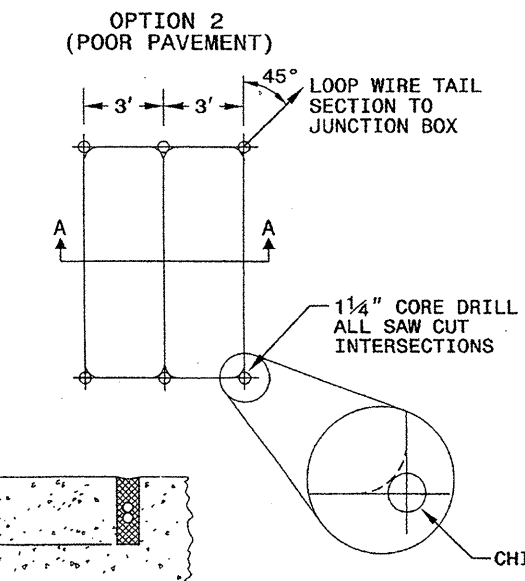
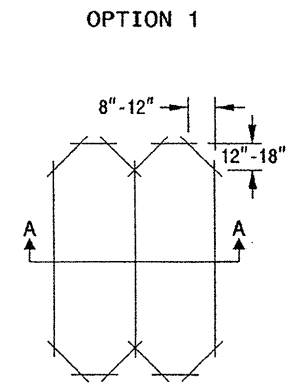


NOTES

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.

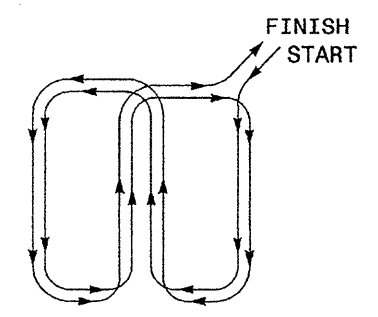
QUADRUPOLE LOOP

SAW CUT OPTIONS



DEPTH IS 2.5" FOR CONCRETE AND 3.0" FOR ASPHALT

LOOP WINDING METHOD



ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS

SHEET 1 OF 3
1725D01

See Plate for Title

Prepared in the Office of:

750 N. Greenfield Parkway
Garner, NC 27529

SEAL

Wilton Dean
11/24/08
SIGNATURE DATE

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 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

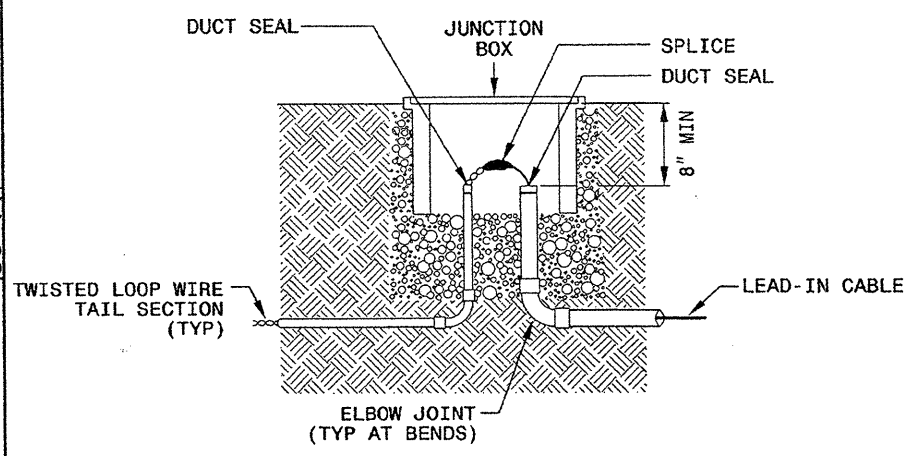
11-08

ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
 LOOP WIRE DETAILS

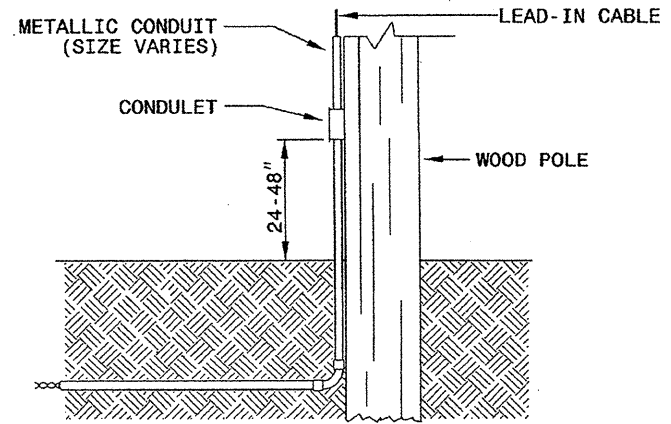
SHEET 2 OF 3
1725D01

LOOP WIRE SPLICE POINT DETAILS

LOOP WIRE AT JUNCTION BOX



LOOP WIRE AT POLE

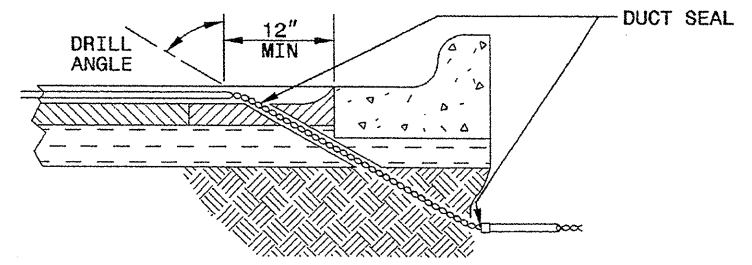


NOTE

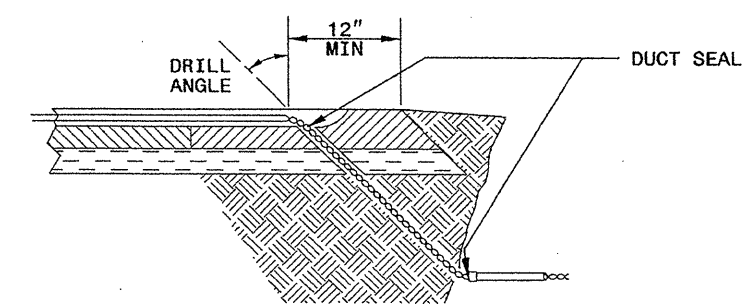
SPLICE ALL LOOP WIRE TAIL SECTIONS/LEAD-IN CABLE IN JUNCTION BOXES OR APPROVED CONDULETS.

LOOP WIRE PAVEMENT EDGE DETAILS

LOOP WIRE AT CURB & GUTTER SECTION



LOOP WIRE AT PAVEMENT SECTION



NOTES

1. DO NOT EXCAVATE UNDER CURB AND GUTTER SECTIONS FOR CONDUIT INSTALLATION.
2. TWIST LOOP WIRE TAIL SECTIONS FROM WHERE LOOP WIRE TAIL LEAVES SAW CUT TO JUNCTION BOX, INCLUDING THROUGH CONDUIT.
3. 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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ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
 LOOP WIRE DETAILS

SHEET 2 OF 3
1725D01

See Plate for Title

Prepared in the Offices of:

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Milton J. Dean 11/24/08
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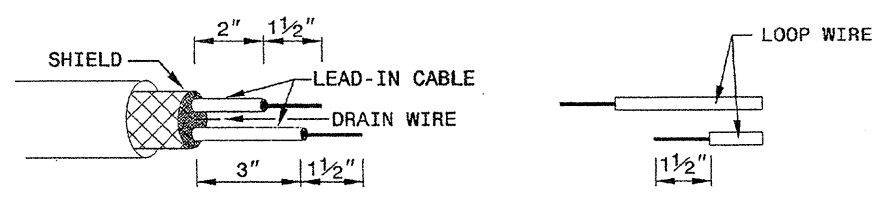
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STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

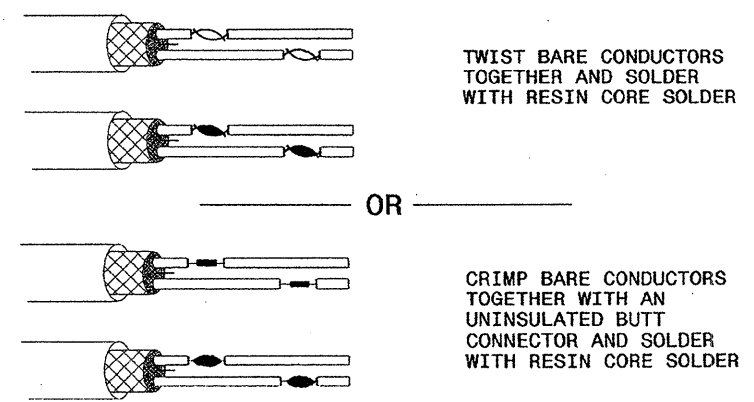
11-08
ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
SPlicing FOR LEAD-IN CABLE AND LOOP WIRE

SHEET 3 OF 3
1725D01

STEP 1. STRIP LOOP WIRE AND LEAD-IN CABLE

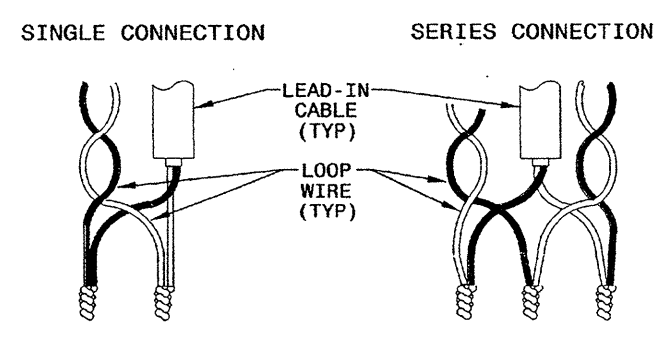


STEP 2. CONNECT AND SOLDER

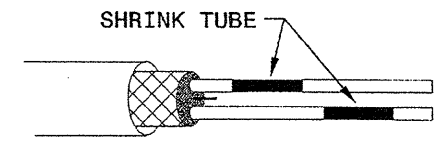


BOND SHIELD DRAIN WIRE AT SPLICE SECTIONS (DO NOT GROUND)

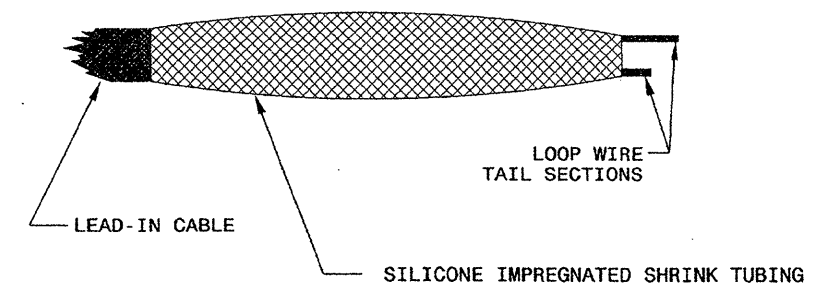
LOOP WIRE AND LEAD-IN CABLE CONNECTION DETAILS



STEP 3. INSULATE EACH SOLDER JOINT SEPARATELY



STEP 4. ENVIRONMENTALLY PROTECT SPLICE



11-08
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RALEIGH, N.C.

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

SHEET 3 OF 3
1725D01

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