

WBS ELEMENT: 41157.3.ST1 TIP PROJECT: R-5001

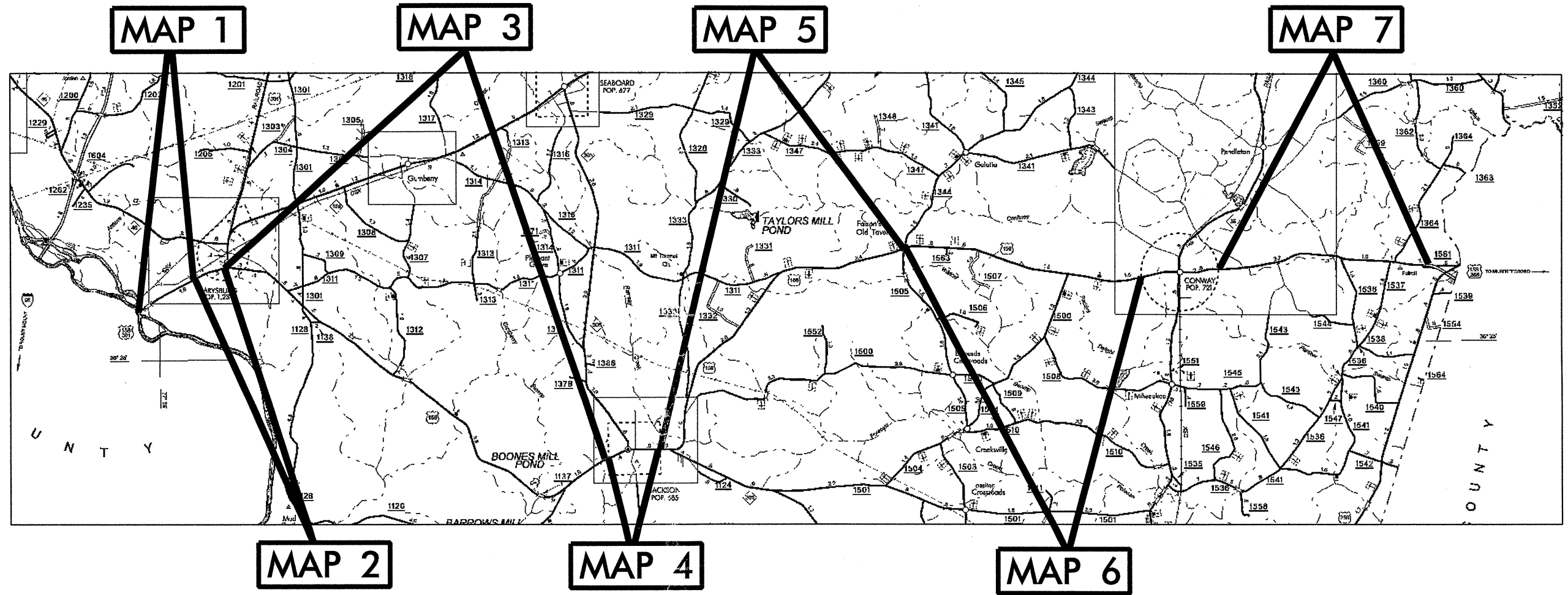
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NORTHAMPTON COUNTY

LOCATION: US 158 - FROM HALIFAX COUNTY LINE (NEAR WELDON, NC)
TO BEGIN DIVIDED HIGHWAY (NEAR MURFREESBORO, NC)

TYPE OF WORK: MILLING, CURB & GUTTER, RESURFACING, STEEL BEAM GUARDRAIL
AND LONG LIFE PAVEMENT MARKINGS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5001	1	6
STATE PROGRAM	F.A. PROGRAM	DESCRIPTION	



NTS

PROJECT LENGTH

LENGTH ROADWAY STATE PROJECT = 28.18 MILES

TOTAL LENGTH STATE PROJECT = 28.18 MILES

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

2006 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.
R-5001	2 OF 6

(C)	PROP. APPROX. 1.5" ACSC TYPE S9.5C AT AN AVERAGE RATE OF 168.0 LBS. PER SQ. YD.
(D)	PROP. APPROX. 2.5" ACIC 119.0C AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
(U)	EXISTING PAVEMENT
(V)	MILLING ASPHALT PAVEMENT: 1.5" DEPTH
(T)	EARTH MATERIAL

ASPHALT PLANT MIX FOR PAVEMENT REPAIR WILL BE REQUIRED AS DIRECTED BY THE ENGINEER

THE FOLLOWING PAVEMENT DESIGN SHALL BE USED FOR ASPHALT PLANT MIX FOR PAVEMENT REPAIR:

5 1/2" ACBC, TYPE B25.0C
1 1/2" ACSC, TYPE S9.5C

PRIOR TO PAVEMENT REPAIR, EXISTING PAVEMENT SHALL BE SAW CUT AND REMOVED

REPAIRED AREAS WILL RECEIVE AN ADDITIONAL 1 1/2" OF S9.5C WHEN FINAL LAYER OF SURFACE IS APPLIED

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 TABLE OF QUANTITIES

BRIDGES TO BE SURFACED AT LOCATIONS AND TO DEPTH AS DIRECTED BY ENGINEER

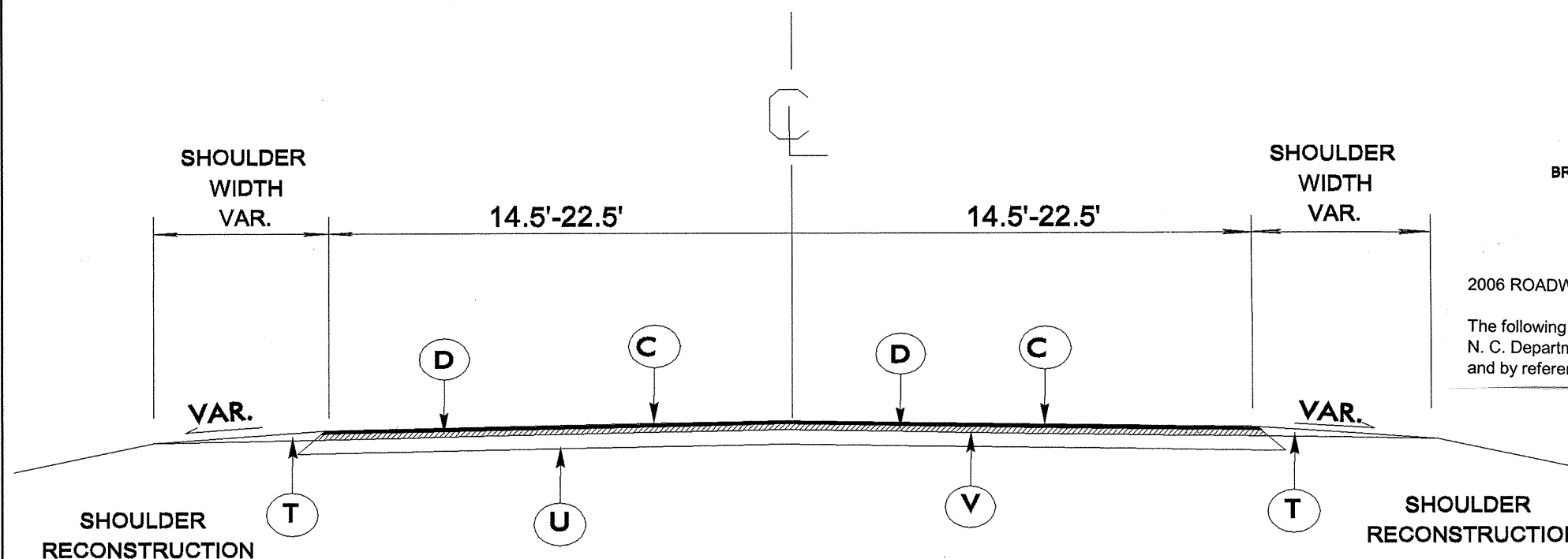
PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE

2006 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated July 18, 2006 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO. TITLE
DIVISION 6 - ASPHALT BASES AND PAVEMENTS
654.01 Pavement Repairs

DIVISION 8 - INCIDENTALS
846.01 Concrete Curb, Gutter and Curb & Gutter
848.05 Wheelchair Ramp - Curb Cut
848.06 Wheelchair Ramp - Retrofitting of Existing Curb
862.01 Guardrail Placement
862.02 Guardrail Installation



TYPICAL SECTION #1

USE WITH US 158 MAPS 1, 3 AND 5-7

SHOULDER RECONSTRUCTION TO BE PERFORMED AS DIRECTED BY THE ENGINEER

PROJECT REFERENCE NO.	SHEET NO.
R-5001	3 OF 6

ASPHALT PLANT MIX FOR PAVEMENT REPAIR WILL BE REQUIRED AS DIRECTED BY THE ENGINEER

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C	PROP. APPROX. 1.5" ACSC TYPE S9.5C AT AN AVERAGE RATE OF 168.0 LBS. PER SQ. YD.
U	EXISTING PAVEMENT
T	EARTH MATERIAL

NOTES:

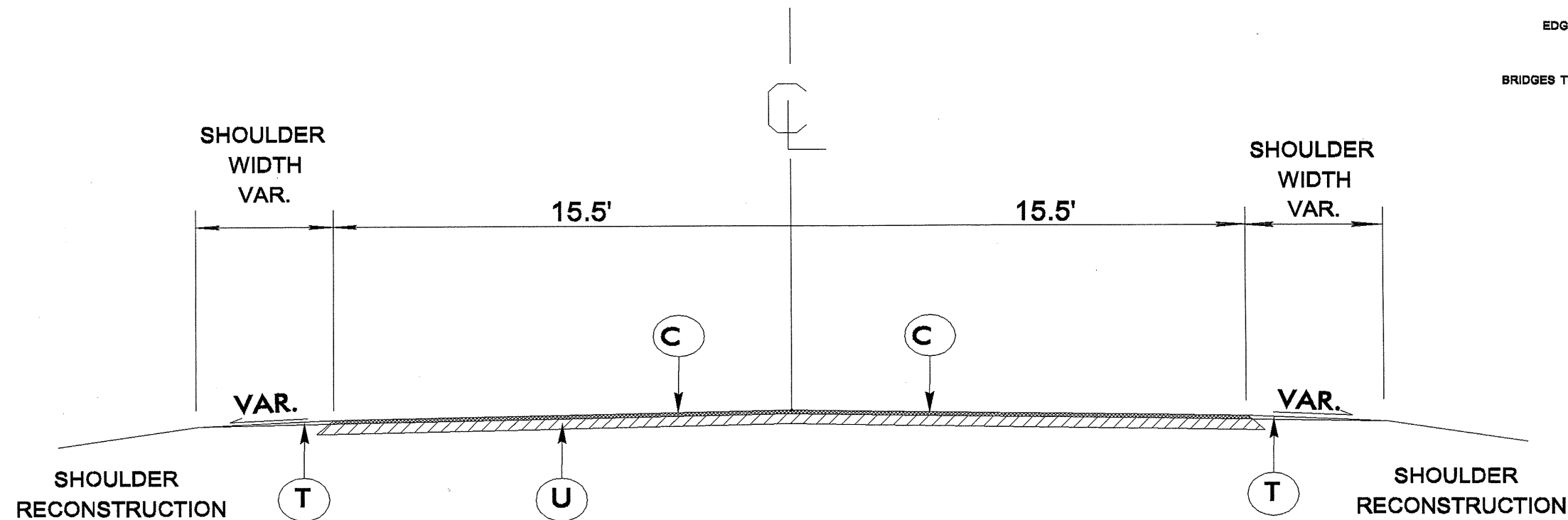
ALL PAVED S.R. ROADS TO BE RESURFACED TO THE ENDS OF THE RADII, OR AS DIRECTED BY THE ENGINEER

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

BRIDGES TO BE SURFACED AT LOCATIONS AND TO DEPTH AS DIRECTED BY ENGINEER

PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE

SHOULDERS AND DITCHES ARE TO BE CONSTRUCTED BY OTHERS

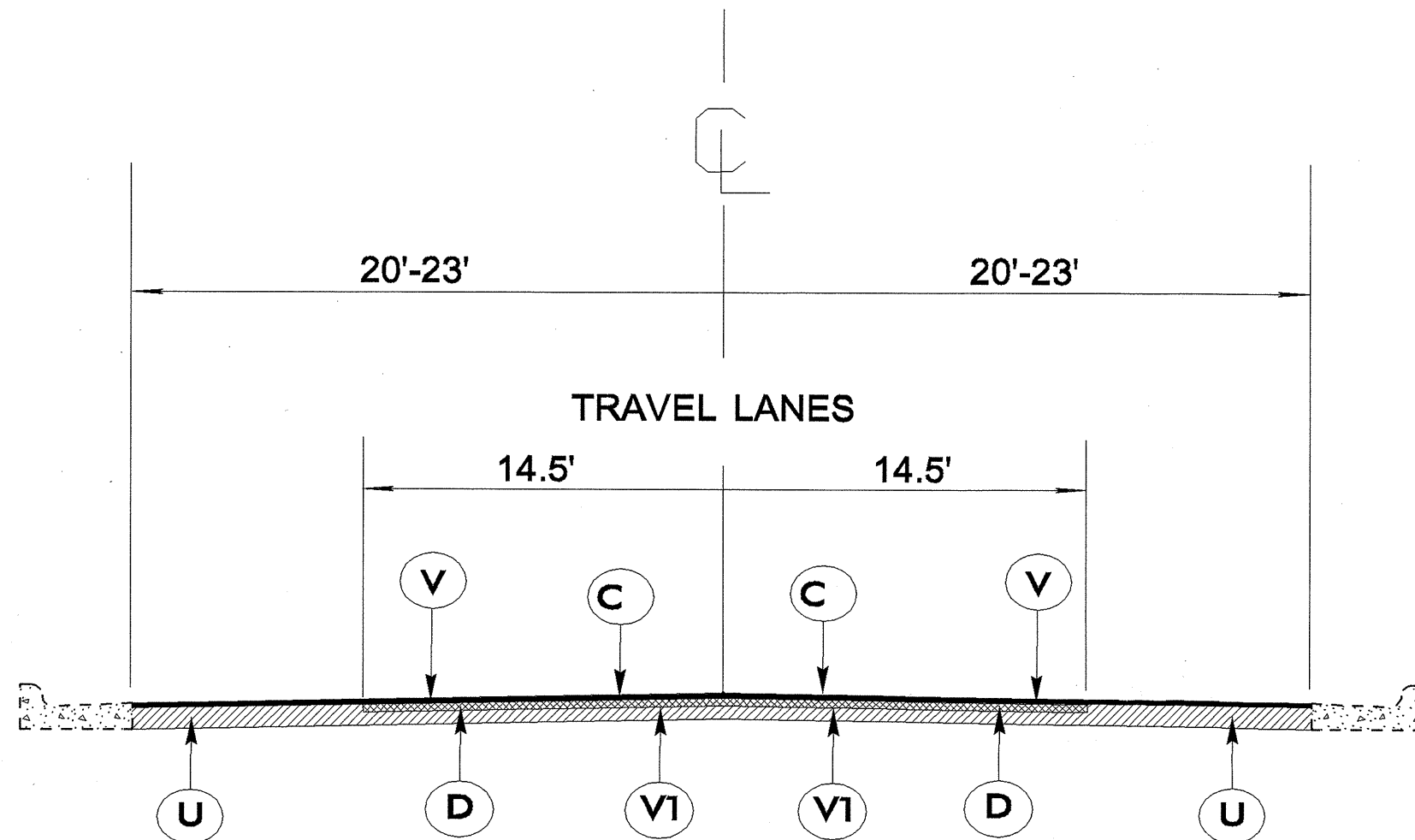


TYPICAL SECTION #2

USE WITH US 158 MAP 2

SHOULDER RECONSTRUCTION TO BE PERFORMED AS DIRECTED BY THE ENGINEER

PROJECT REFERENCE NO.	SHEET NO.
R-5001	4 OF 6



C	PROP. APPROX. 1.5" ACSC TYPE S9.5C AT AN AVERAGE RATE OF 168 LBS PER SQ. YD.
D	PROP. APPROX. 2.5" ACIC TYPE I19.0C AT AN AVERAGE RATE OF 285 LBS PER SQ. YD. PAVE IN TRAVEL LANES ONLY
U	EXISTING PAVEMENT
V	MILLING ASPHALT PAVEMENT: 1.5" DEPTH
V1	MILLING ASPHALT PAVEMENT 2.5" DEPTH MILL TRAVEL LANES ONLY

CONSTRUCTION SEQUENCE:

1. MILL APPROXIMATELY 1.5" OVER ENTIRE SURFACE CURB TO CURB.
2. MILL TRAVEL LANES (APPROX. 29' WIDE) DOWN AN ADDITIONAL 2.5".
3. PLACE APPROX. 2.5" OF I19.0C IN TRAVEL LANES TO REFILL TRENCH.
4. INSTALL INDUCTIVE LOOPS AT INTERSECTION OF US 158 & NC 305.
5. OVERLAY THE ENTIRE ROADWAY WITH APPROX. 1.5" OF S9.5C.
6. APPLY THERMOPLASTIC PAVEMENT MARKINGS AND RAISED PAVEMENT MARKERS.

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 TABLE OF QUANTITIES

PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE

ALL ASPHALT TO BE REMOVED FROM EXISTING CURB AND GUTTER

TYPICAL SECTION #3

USE WITH US 158 MAP 4

PROJECT NO.	SHEET NO.	TOTAL NO.
R-5001	6	6

SUMMARY OF QUANTITIES

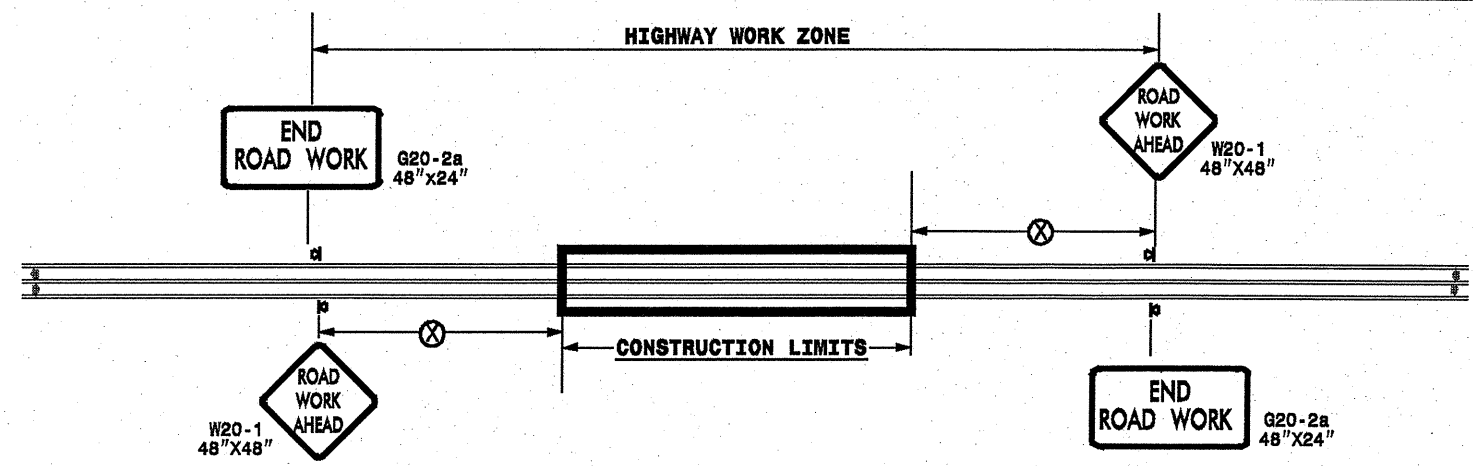
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	FINAL SURFACE TESTING REQUIRED	LENGTH MI	WIDTH FT	0000100000-N	1220000000-E	1245000000-E	1297000000-E	1297000000-E	1308000000-E	1503000000-E	1523000000-E	1560000000-E	1565000000-E	1693000000-E	2549000000-E	2600000000-N	2605000000-N
									MOBILIZATION LS	INCIDENTAL STONE BASE TONS	SHOULDER RECONSTRUCTION SMI	MILLING ASPHALT PAVEMENT, 1.5" DEPTH SY	MILLING ASPHALT PAVEMENT, 2.5" DEPTH SY	MILLING ASPHALT PAVEMENT, 2" TO 4" DEPTH SY	ASPHALT CONC. INTERMEDIATE COURSE, TYPE 119.0C TONS	ASPHALT CONC. SURFACE COURSE, TYPE S9.5C TONS	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22 TONS	ASPHALT BINDER FOR PLANT MIX, GRADE PG 70-22 TONS	ASPHALT PLANT MIX, PAVEMENT REPAIR TONS	2'-6" CONC. CURB & GUTTER LF	RETROFIT EXISTING WHEELCHAIR RAMPS EA	CONC. WHEELCHAIR RAMPS EA
R-5001	Northampton	1	US 158	FROM ROANOKE RIVER TO HILLTOP DRIVE	1	Yes	1.20	32	1	100	2.4	23,500		800	3,582	2,090	168	125	150			
R-5001	Northampton	2	US 158	HILLTOP DRIVE TO US 301	2	No	0.58	31	1	50	1.16				1,050		63					
R-5001	Northampton	3	US 158	FROM US 301 TO WCL JACKSON	1	Yes	9.52	29	1	250	19.04	171,000		800	25,789	15,100	1,212	906	1,350			
R-5001	Northampton	4	US 158	FROM WCL JACKSON TO END CURBING	3	No	1.00	41	1			26,500	17,013		2,686	2,400	126	144		450	1	18
R-5001	Northampton	5	US 158	FROM ECL JACKSON TO SR SR 1344	1	Yes	7.16	29	1	500	14.32	131,400			19,396	11,600	912	696	1,000			
R-5001	Northampton	6	US 158	SR 1344 TO WCL CONWAY	1	Yes	4.59	29	1	200	9.18	83,000			12,434	7,400	584	444	800			
R-5001	Northampton	7	US 158	FROM ECL CONWAY TO BEGIN DIVIDED HIGHWAY	1	Yes	4.14	29		250	8.28	76,000			11,215	6,800	527	408	700			
TOTAL FOR PROJ NO. R-5001									1	1,350	54.38	511,400	17,013	1,600	75,102	46,440	3,529	2,786	4,000	450	1	18

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LENGTH MI	WIDTH FT	2655000000-E	2815000000-N	2830000000-N	2845000000-N	3030000000-E	3270000000-N	3345000000-E	3360000000-E	4589000000-N	6084000000-E	7444000000-E	7456000000-E	
								5" MONOLITHIC CONCRETE ISLAND (KEYED-IN) SY	ADJUSTMENTS OF DROP INLET EA	ADJUSTMENTS OF MANHOLES EA	ADJUSTMENT OF METER BOXES OR VALVE BOXES EA	STEEL BEAM GUARDRAIL LF	GUARDRAIL ANCHOR UNITS, TYPE 350 EA	REMOVE & RESET OF EXISTING GUARDRAIL LF	REMOVE EXISTING GUARDRAIL LF	TRAFFIC CONTROL LS	SEED & MULCHING AC	INDUCTIVE LOOP LF	LEAD-IN CABLE, 14-2 LF	
R-5001	Northampton	1	US 158	FROM ROANOKE RIVER TO HILLTOP DRIVE	1	1.20	32			1			2	100	225	*	1.80			
R-5001	Northampton	2	US 158	HILLTOP DRIVE TO US 301	2	0.58	31									*	0.90			
R-5001	Northampton	3	US 158	FROM US 301 TO WCL JACKSON	1	9.52	29	250		3	3	100	8	425	650	*	13.90			
R-5001	Northampton	4	US 158	FROM WCL JACKSON TO END CURBING	3	1.00	41			20	22					*		300	100	
R-5001	Northampton	5	US 158	FROM ECL JACKSON TO SR SR 1344	1	7.16	29		1				4	100	100	*	10.50			
R-5001	Northampton	6	US 158	SR 1344 TO WCL CONWAY	1	4.59	29				3					*	6.70			
R-5001	Northampton	7	US 158	FROM ECL CONWAY TO BEGIN DIVIDED HIGHWAY	1	4.14	29					300	4				6.10			
TOTAL FOR PROJ NO. R-5001									250	1	24	28	400	18	625	975	1	39.90	300	100

THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LENGTH MI	WIDTH FT	4685000000-E	4686000000-E	4697000000-E	4710000000-E	4725000000-E	4810000000-E	4835000000-E	4900000000-N				
								4" X 90 M WHITE THERMO LF	4" X 120 M WHITE THERMO LF	4" X 120 M YELLOW THERMO LF	8" X 120 M YELLOW THERMO LF	24" X 120 M WHITE THERMO LF	THERMO LT ARROW 90 M EA	THERMO RT ARROW 90 M EA	4" YELLOW PAINT LF	24" WHITE PAINT LF	CRYSTAL & RED MARKERS EA	YELLOW & YELLOW MARKERS EA	
R-5001	Northampton	1	US 158	FROM ROANOKE RIVER TO HILLTOP DRIVE	1	1.20	32	12,912	125	9,025	250		2		23,760	8	105		
R-5001	Northampton	2	US 158	HILLTOP DRIVE TO US 301	2	0.58	31	6,241		3,828				3,828			40		
R-5001	Northampton	3	US 158	FROM US 301 TO WCL JACKSON	1	9.52	29	102,435	1,000	65,012	500		4	6	22,000	50	680		
R-5001	Northampton	4	US 158	FROM WCL JACKSON TO END CURBING	3	1.00	41			10,530		75			21,120	75	100		
R-5001	Northampton	5	US 158	FROM ECL JACKSON TO SR SR 1344	1	7.16	29	77,042	1,200	48,100	250		4	8	20,600	60	515		
R-5001	Northampton	6	US 158	SR 1344 TO WCL CONWAY	1	4.59	29	49,388	500	33,924	500		6	1	94,540	10	390		
R-5001	Northampton	7	US 158	FROM ECL CONWAY TO BEGIN DIVIDED HIGHWAY	1	4.14	29	44,546	600	27,825	300			4	82,450	35	300		
TOTAL FOR PROJ NO. R-5001									292,564	3,425	198,244	1,800	75	16	19	268,298	75	163	2,130
									201,669			35			2,293				

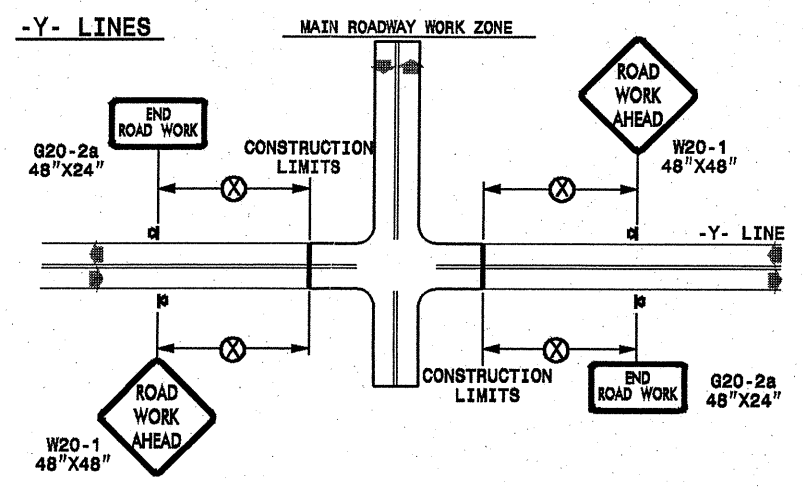
TWO-WAY UNDIVIDED ** (L-LINES)



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)



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.

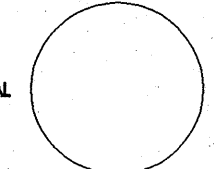
LEGEND

⊗ PORTABLE SIGN

➔ DIRECTION OF TRAFFIC FLOW

DETAIL DRAWING
FOR TWO-WAY UNDIVIDED
WORK ZONE WARNING SIGNS

SHEET 1 OF 1

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

06-JUL-2009 18:24
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STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

5-07

INDUCTIVE DETECTION LOOPS
ENGLISH DETAIL DRAWING FOR

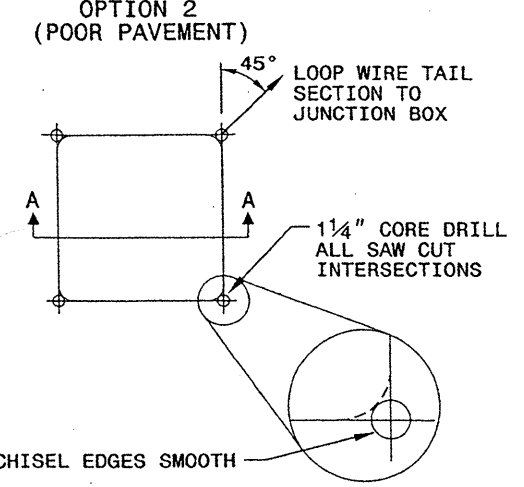
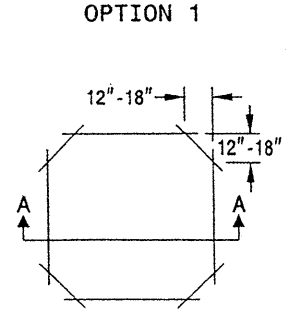
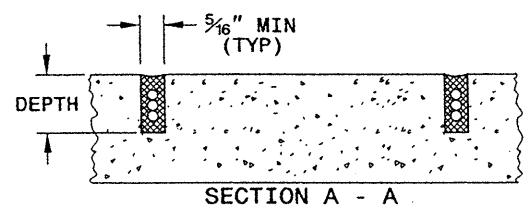
SHEET 1 OF 3
1725D01

CONVENTIONAL 4-SIDED LOOP

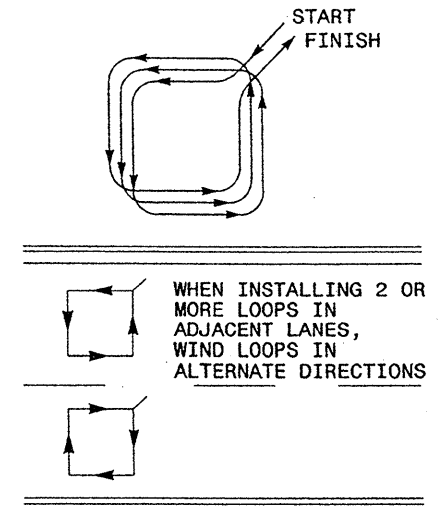
SAW CUT OPTIONS

SAW SLOT DEPTH CHART

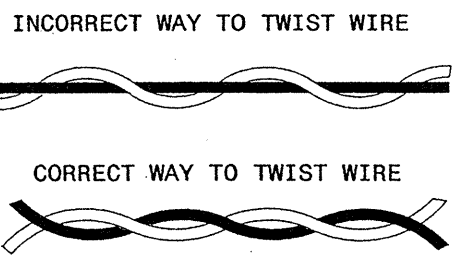
DEPTH (IN)	NO. OF WIRE TURNS				
	2	3	4	5	6
CONCRETE	2.0	2.0	2.5	2.5	3.0
ASPHALT	2.0	2.5	3.0	3.0	3.0



LOOP WINDING METHOD



LOOP WIRE TWISTING METHOD

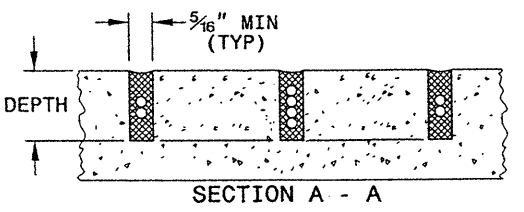
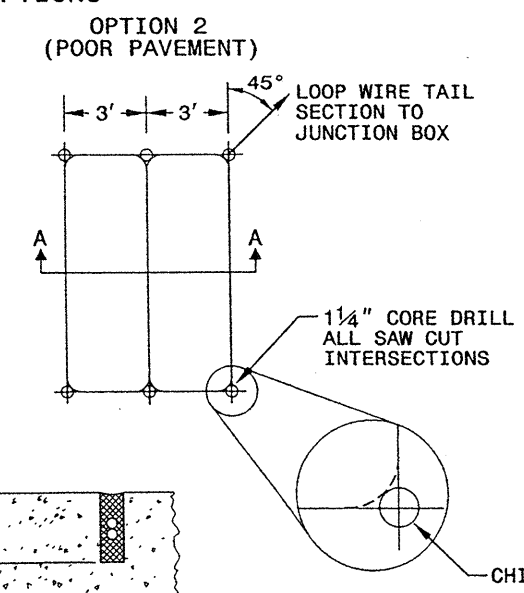
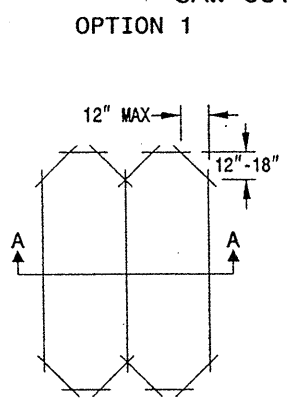


NOTES

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

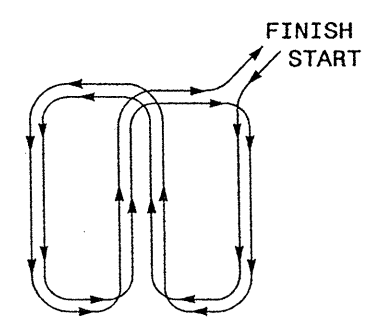
QUADRUPOLE LOOP

SAW CUT OPTIONS



DEPTH IS 2.5" FOR CONCRETE AND 3.0" FOR ASPHALT

LOOP WINDING METHOD



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

5-07

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
 ENGINEER
 SIGNATURE DATE 9/5/07

05-456-2001 (11/00) c:\documents and settings\miller\little.dot\asktop\standard metal pole sheets\1725D01.mxd(2/07) zmlittle

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

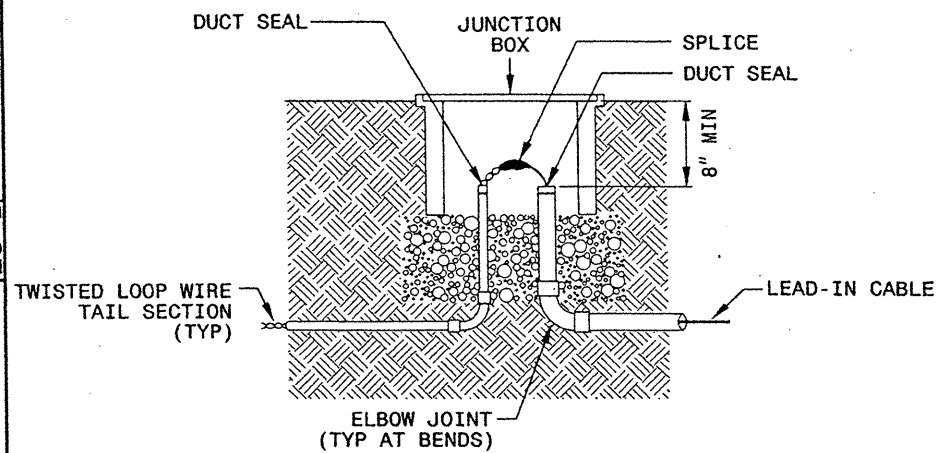
5-07

ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
LOOP WIRE DETAILS

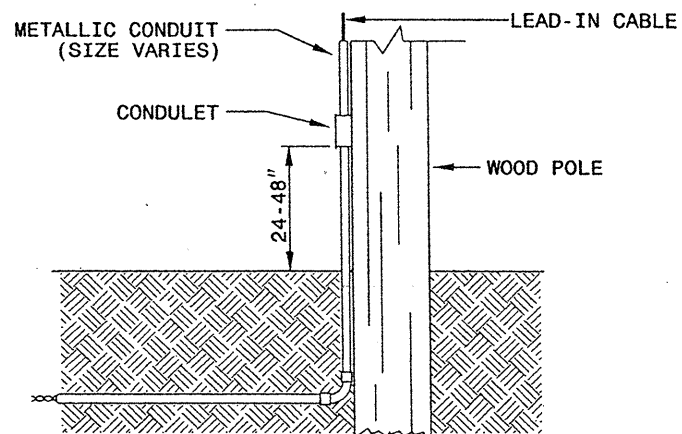
SHEET 2 OF 3
1725D01

LOOP WIRE SPLICE POINT DETAILS

LOOP WIRE AT JUNCTION BOX



LOOP WIRE AT POLE

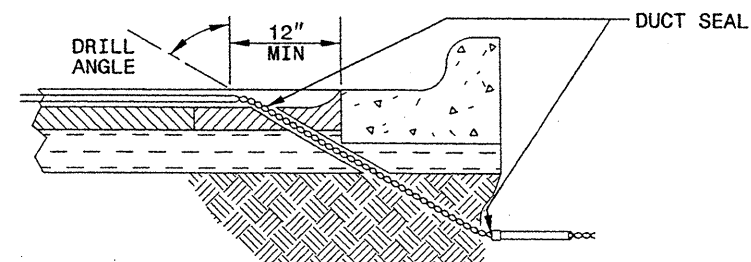


NOTE

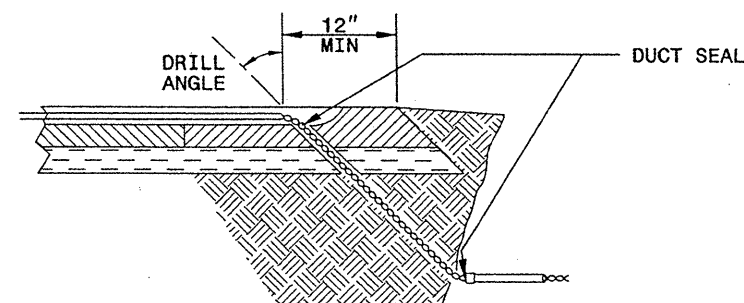
SPLICE ALL LOOP WIRE TAIL SECTIONS/LEAD-IN CABLE IN JUNCTION BOXES OR APPROVED CONDULETS.

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.

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

5-07

ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
LOOP WIRE DETAILS

SHEET 2 OF 3
1725D01

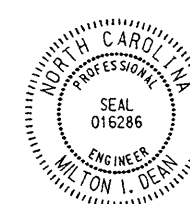
See Plate for Title

Prepared in the Offices of:



750 N. Greenfield Parkway
Garner, NC 27529

SEAL



Milton I. Dean 9/5/07
SIGNATURE DATE

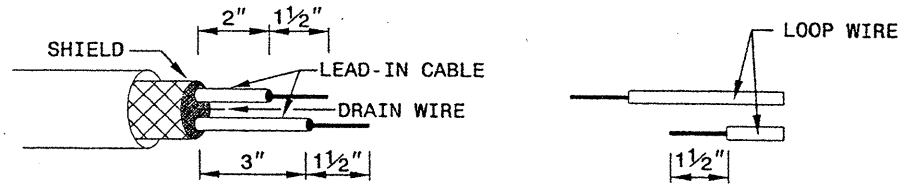
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

5-07

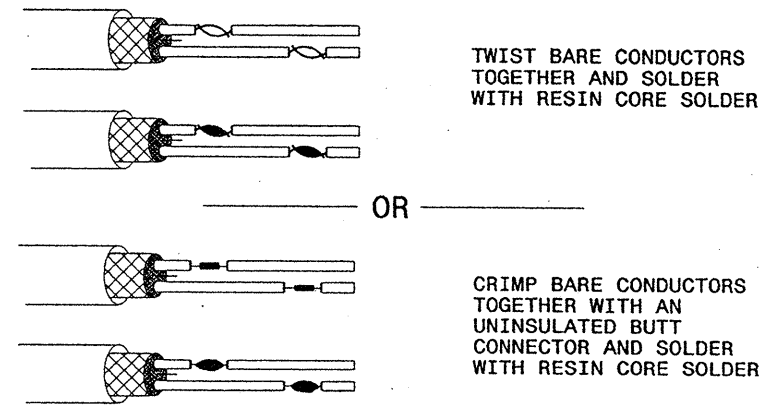
ENGLISH DETAIL DRAWING FOR
INDUCTION DETECTION LOOPS
SPlicing FOR LEAD-IN CABLE AND LOOP WIRE

SHEET 3 OF 3
1725D01

STEP 1. STRIP LOOP WIRE AND LEAD-IN CABLE

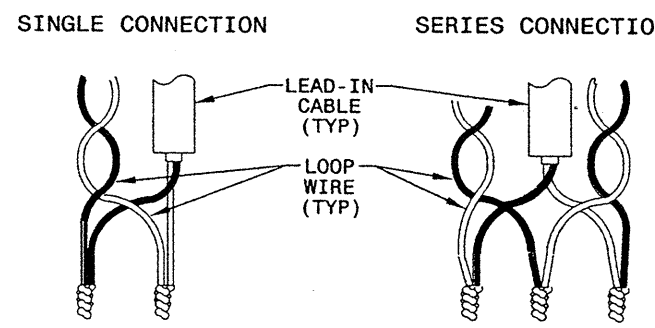


STEP 2. CONNECT AND SOLDER

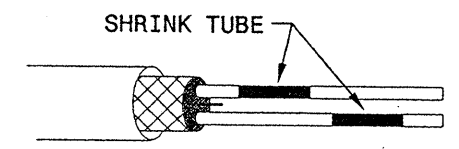


BOND SHIELD DRAIN WIRE AT SPLICE SECTIONS (DO NOT GROUND)

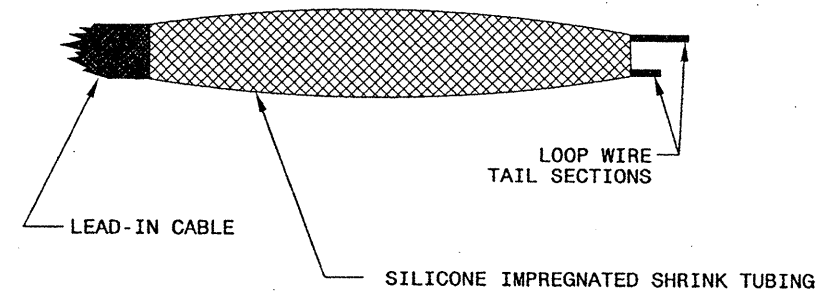
LOOP WIRE AND LEAD-IN CABLE CONNECTION DETAILS



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
INDUCTION DETECTION LOOPS
SPlicing FOR LEAD-IN CABLE AND LOOP WIRE

SHEET 3 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

05-SEP-2003 14:01
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