WBS ELEMENT: 1CR.10081.18, ETC.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

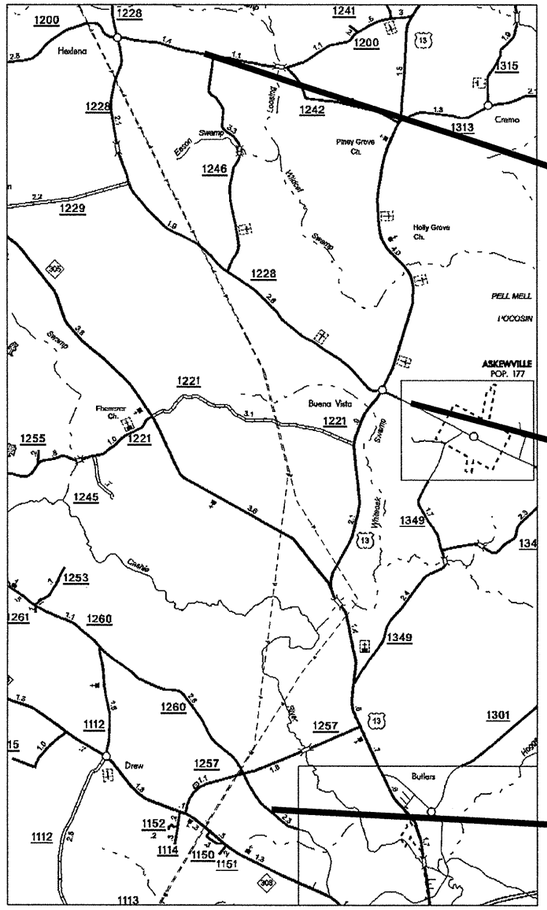
BERTIE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	1CR.10081.18, ETC.	1	15

STATE PROJ. NO.	MAP NO.	DESCRIPTION
1CR.10081.18	10	NC 42
1CR.10461.16	11	NC 461
1CR.20081.38	2	SR 1304
1CR.20081.39	3	SR 1335
1CR.20081.40	4	SR 1200
1CR.20081.41	5	SR 1260
1CR.20081.42	1	SR 1312
1CR.20461.33	9	SR 1101
1CR.20461.34	7	SR 1403
1CR.20461.35	8	SR 1185
1CR.20461.36	6	SR 1419

LOCATION: *Bertie County SR 1200 – From SR 1242 to SR 1228*
Bertie County SR 1304 – From US 13 to WCL Askewville
Bertie County SR 1260 – From NC 308 to SR 1257

TYPE OF WORK: *Resurfacing and Paint Pavement Markings*



MAP 4

MAP 2

MAP 5

NOT TO SCALE

PROJECT LENGTH

1CR.20081.40 – MAP 4	*2.46 MILES*
1CR.20081.38 – MAP 2	*1.10 MILES*
1CR.20081.41 – MAP 5	*2.31 MILES*

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

2006 STANDARD SPECIFICATIONS

LETTING DATE:
Nov. 16, 2010

W. B. HOBBS, P.E.
DIVISION PROJECT MANAGER

C. E. SLACHTA
DIVISION PROPOSALS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION • STATE OF NORTH CAROLINA

WBS ELEMENT: 1CR.10081.18, ETC.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

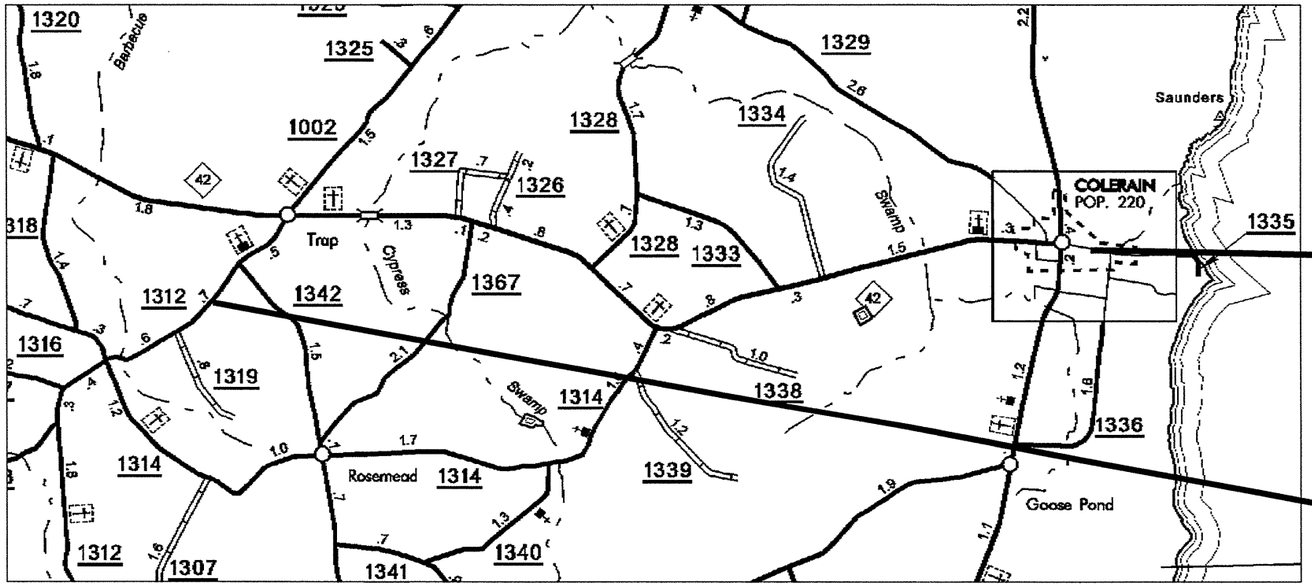
BERTIE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	1CR.10081.18, ETC.	2	15

STATE PROJ. NO.	MAP NO.	DESCRIPTION
1CR.10081.18	10	NC 42
1CR.10461.16	11	NC 461
1CR.20081.38	2	SR 1304
1CR.20081.39	3	SR 1335
1CR.20081.40	4	SR 1200
1CR.20081.41	5	SR 1260
1CR.20081.42	1	SR 1312
1CR.20461.33	9	SR 1101
1CR.20461.34	7	SR 1403
1CR.20461.35	8	SR 1185
1CR.20461.36	6	SR 1419

LOCATION: Bertie County SR 1335 – From NC 45 to Dead End
Bertie County SR 1312 – From SR 1316 to NC 42

TYPE OF WORK: Milling, Resurfacing, Utility Adjustments, and Paint Pavement Markings



MAP 3

MAP 1

NOT TO SCALE

PROJECT LENGTH

1CR.20081.39 – MAP 3 ..... 1.16 MILES
1CR.20081.42 – MAP 1 ..... 1.78 MILES

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

2006 STANDARD SPECIFICATIONS

LETTING DATE:

W. B. HOBBS, P.E.
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DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION • STATE OF NORTH CAROLINA •

WBS ELEMENT: 1CR.10081.18, ETC.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

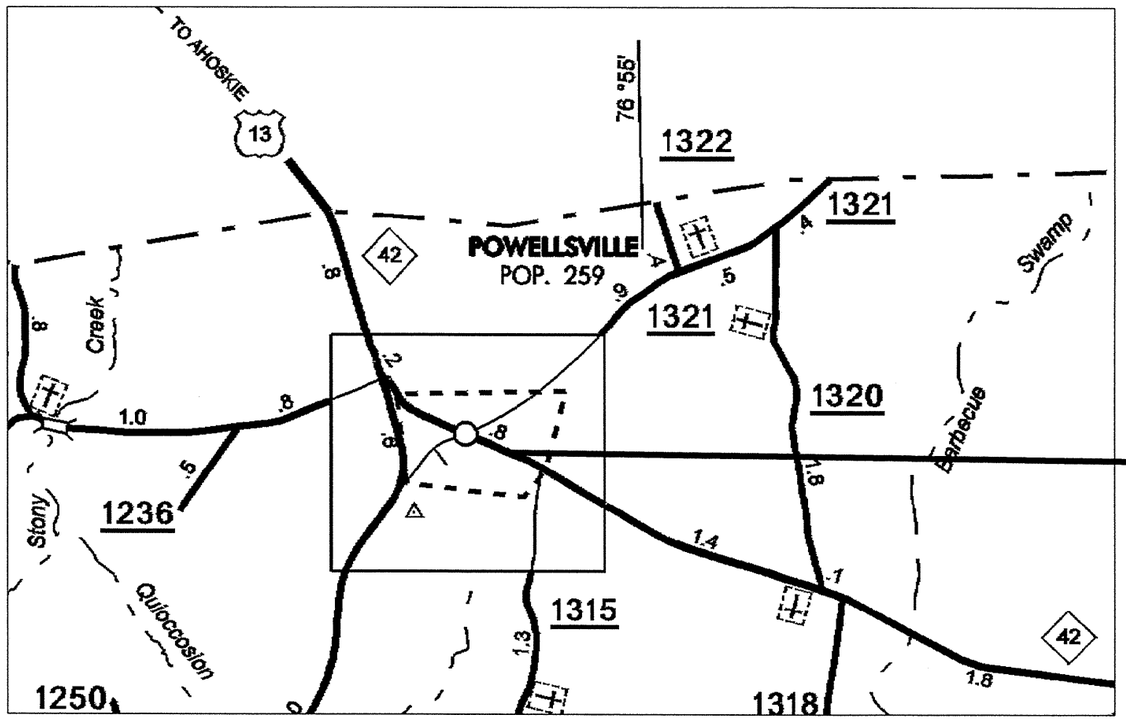
BERTIE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	1CR.10081.18, ETC.	3	15

STATE PROJ.NO.	MAP NO.	DESCRIPTION
1CR.10081.18	10	NC 42
1CR.10461.16	11	NC 461
1CR.20081.38	2	SR 1304
1CR.20081.39	3	SR 1335
1CR.20081.40	4	SR 1200
1CR.20081.41	5	SR 1260
1CR.20081.42	1	SR 1312
1CR.20461.33	9	SR 1101
1CR.20461.34	7	SR 1403
1CR.20461.35	8	SR 1185
1CR.20461.36	6	SR 1419

LOCATION: Bertie County NC 42 – From US 13 to ECL Powellsville

TYPE OF WORK: Milling, Resurfacing, Utility Adjustments, and Paint Pavement Markings



MAP 10

NOT TO SCALE

PROJECT LENGTH

1CR.10081.18 – MAP 10 .....

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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

WBS ELEMENT: 1CR.10081.18, ETC.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

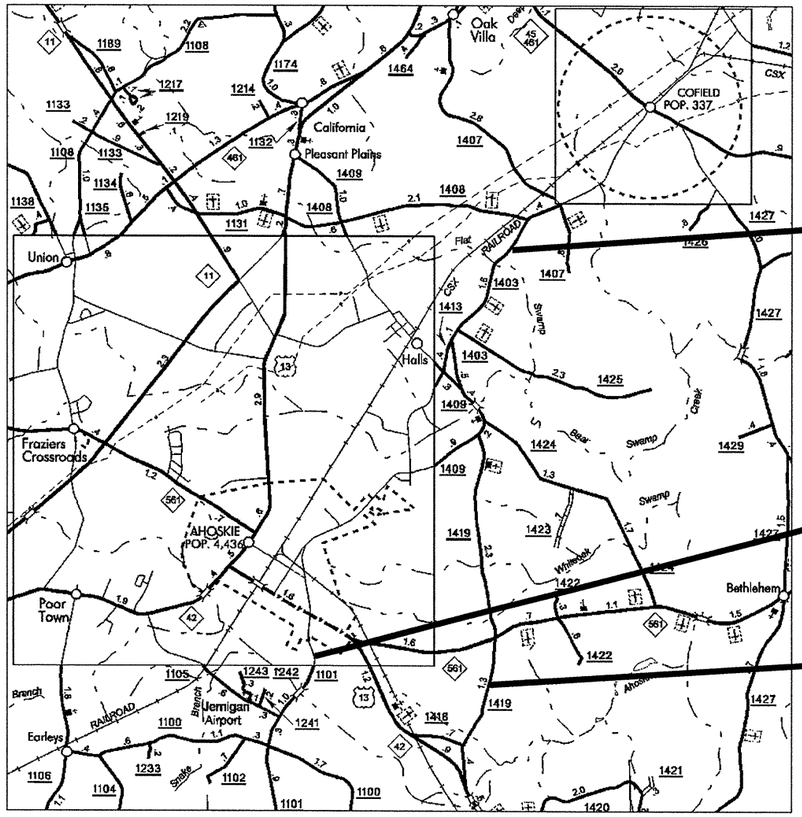
HERTFORD COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	1CR.10081.18, ETC.	4	15

STATE PROJ. NO.	MAP NO.	DESCRIPTION
1CR.10081.18	10	NC 42
1CR.10461.16	11	NC 461
1CR.20081.38	2	SR 1304
1CR.20081.39	3	SR 1335
1CR.20081.40	4	SR 1200
1CR.20081.41	5	SR 1260
1CR.20081.42	1	SR 1312
1CR.20461.33	9	SR 1101
1CR.20461.34	7	SR 1403
1CR.20461.35	8	SR 1185
1CR.20461.36	6	SR 1419

LOCATION: *Hertford County SR 1403 – From SCL Cofield to SR 1409*
Hertford County SR 1101 – From US 13 to SCL Ahoskie
Hertford County SR 1419 – From US 13 to NC 561

TYPE OF WORK: *Milling, Resurfacing, Utility Adjustments, Inductive Loops, and Long–Life Pavement Markings*



MAP 7

MAP 9

MAP 6

NOT TO SCALE

PROJECT LENGTH

1CR.20461.34 – MAP 7 ..... 3.04 MILES
1CR.20461.33 – MAP 9 ..... 0.30 MILES
1CR.20461.36 – MAP 6 ..... 1.70 MILES

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113 Airport Dr., Edenton NC, 27932

2006 STANDARD SPECIFICATIONS

LETTING DATE:

W. B. HOBBS, P.E.
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C. E. SLACHTA
DIVISION PROPOSALS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

WBS ELEMENT: 1CR.10081.18, ETC.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

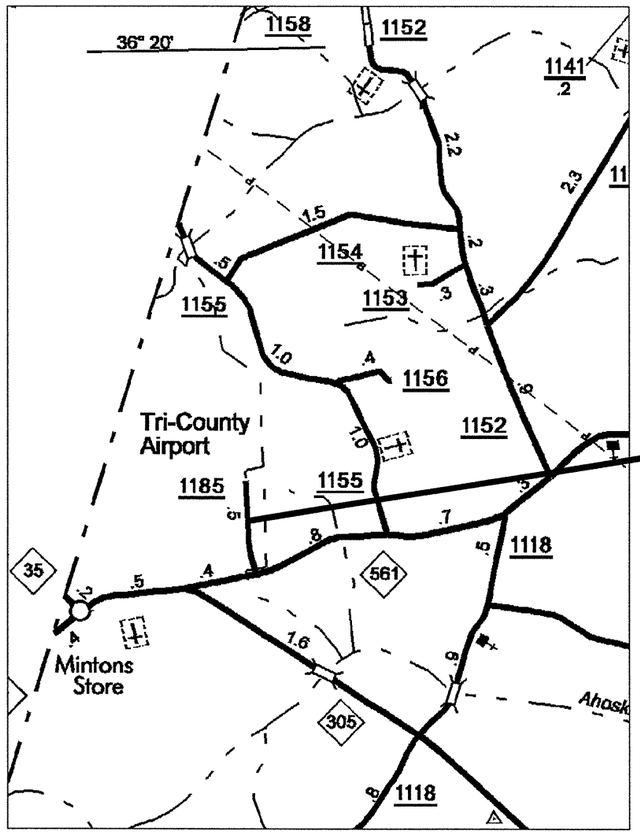
HERTFORD COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	1CR.10081.18, ETC.	5	15

STATE PROJ.NO.	MAP NO.	DESCRIPTION
1CR.10081.18	10	NC 42
1CR.10461.16	11	NC 461
1CR.20081.38	2	SR 1304
1CR.20081.39	3	SR 1335
1CR.20081.40	4	SR 1200
1CR.20081.41	5	SR 1260
1CR.20081.42	1	SR 1312
1CR.20461.33	9	SR 1101
1CR.20461.34	7	SR 1403
1CR.20461.35	8	SR 1185
1CR.20461.36	6	SR 1419

LOCATION: Hertford County SR 1185 – From NC 561 to Dead End

TYPE OF WORK: Resurfacing, and Paint Pavement Markings



MAP 8

NOT TO SCALE

PROJECT LENGTH

1CR.20461.35 – MAP 8 ..... 0.57 MILES

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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

WBS ELEMENT: 1CR.10081.18, ETC.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

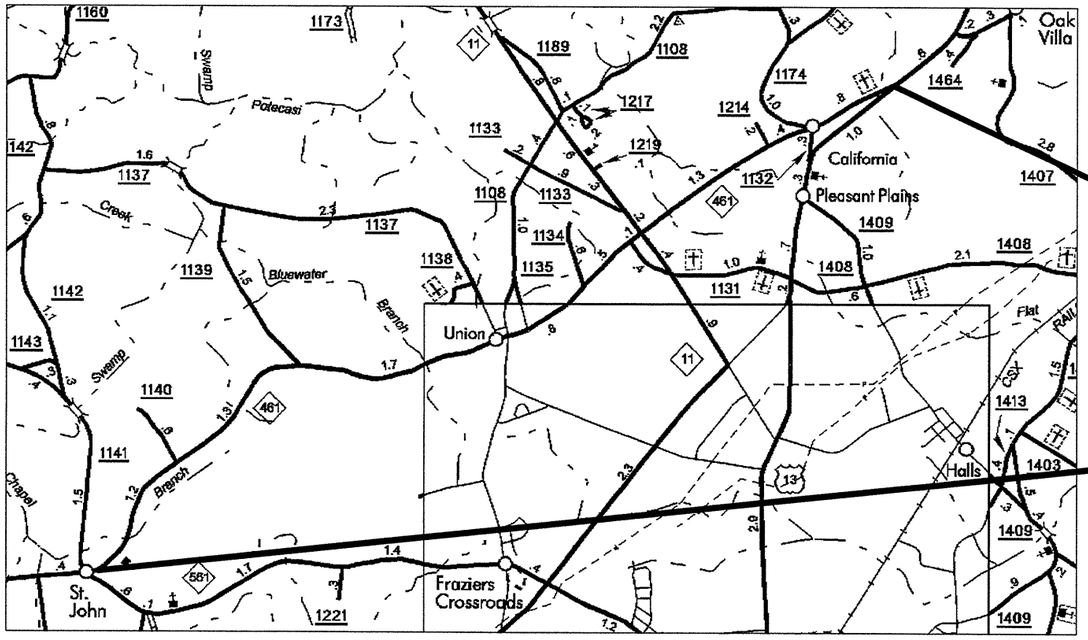
HERTFORD COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	1CR.10081.18, ETC.	6	15

STATE PROJ. NO.	MAP NO.	DESCRIPTION
1CR.10081.18	10	NC 42
1CR.10461.16	11	NC 461
1CR.20081.38	2	SR 1304
1CR.20081.39	3	SR 1335
1CR.20081.40	4	SR 1200
1CR.20081.41	5	SR 1260
1CR.20081.42	1	SR 1312
1CR.20461.33	9	SR 1101
1CR.20461.34	7	SR 1403
1CR.20461.35	8	SR 1185
1CR.20461.36	6	SR 1419

LOCATION: Hertford County NC 461 – From NC 561 to US 13

TYPE OF WORK: Leveling, Resurfacing, and Paint Pavement Markings



MAP 11

NOT TO SCALE

PROJECT LENGTH

1CR.10461.16 – MAP 11 ..... 8.19 MILES

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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.
1CR.10081.18, ETC.	7 OF 15

C	PROP. APPROX. 1.25" ACSC TYPE SF9.5A AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.
U	EXISTING PAVEMENT

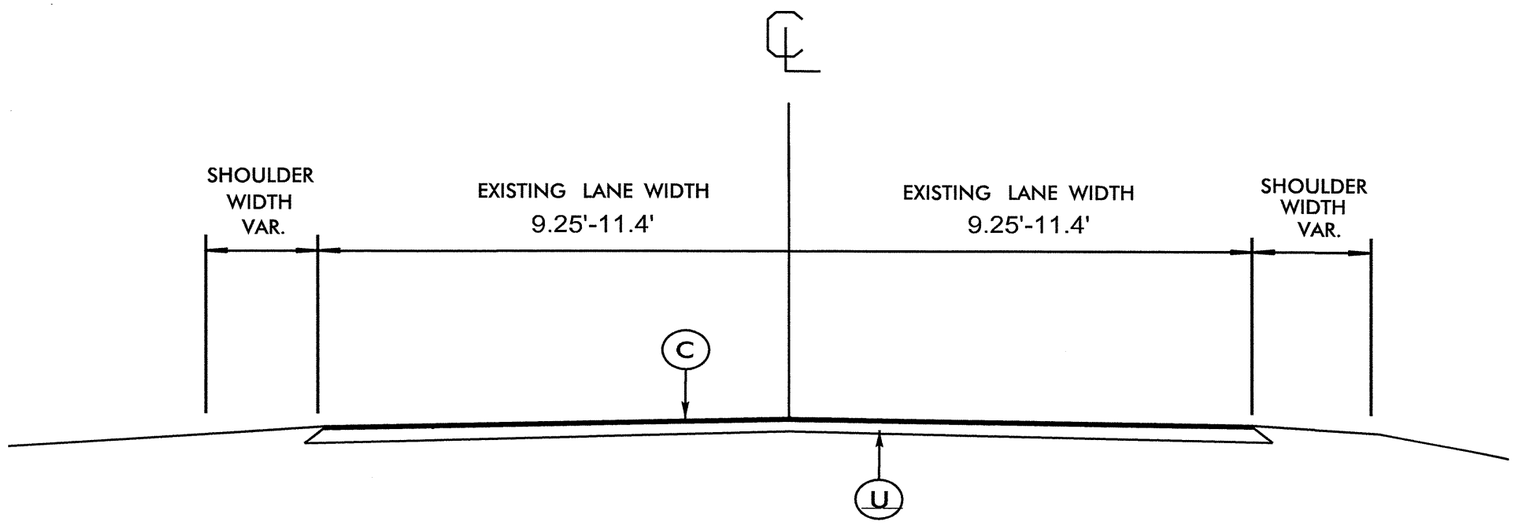
NOTES:

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

SHOULDER RECONSTRUCTION TO BE PERFORMED BY OTHERS



TYPICAL SECTION #1

USE WITH MAP 1–8

SHOULDER SECTIONS

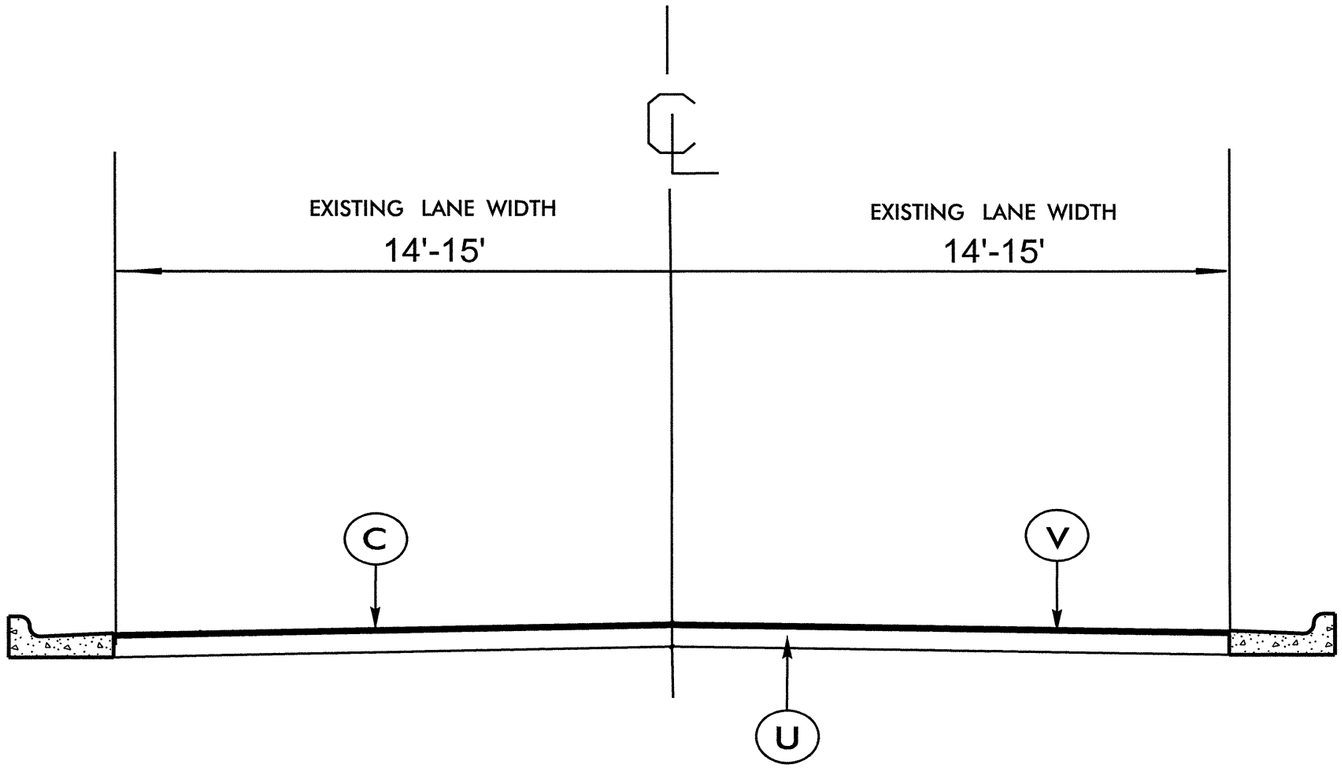
PROJECT REFERENCE NO.	SHEET NO.
1CR.10081.18, ETC.	8 OF 15

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

C	PROP. APPROX. 1.25" ACSC TYPE SF9.5A AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.
U	EXISTING PAVEMENT
V	MILLING BITUMINOUS PAVEMENT 1" TO 1.5" DEPTH



TYPICAL SECTION #2

USE WITH MAP 3
CURB SECTION

PROJECT REFERENCE NO.	SHEET NO.
1CR.10081.18, ETC.	9 OF 15

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

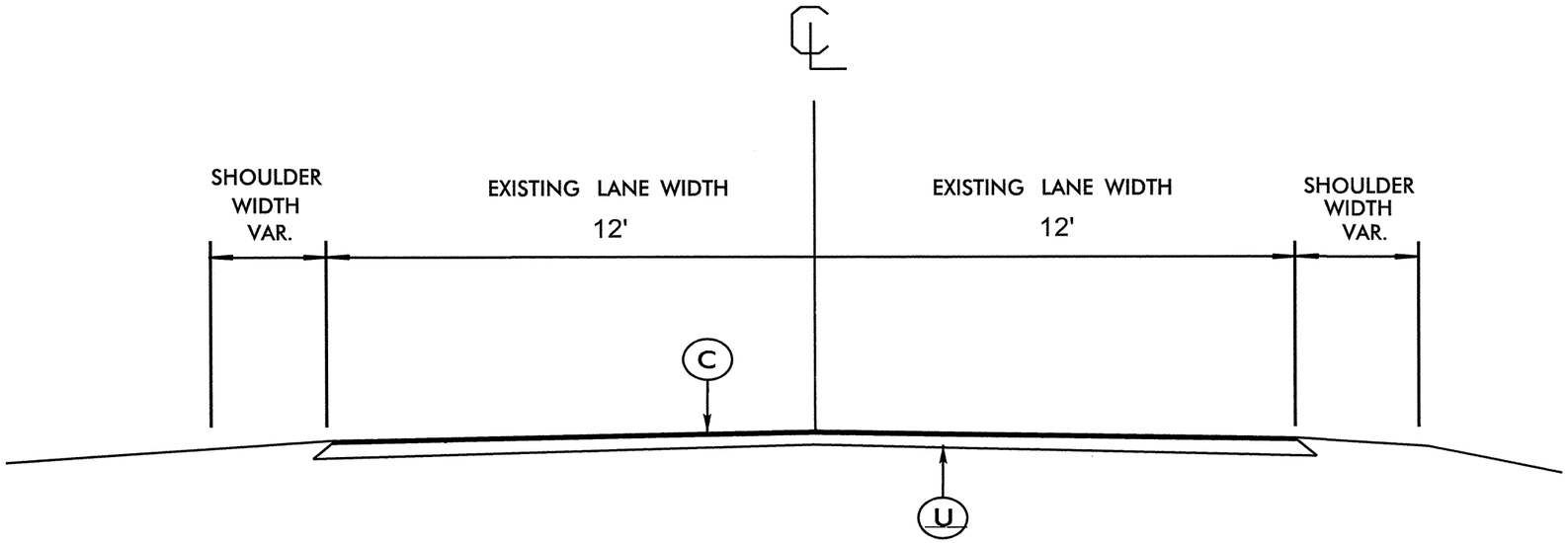
NOTES:

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

SHOULDER RECONSTRUCTION TO BE PERFORMED BY OTHERS



TYPICAL SECTION #3

USE WITH MAP 9
SHOULDER SECTION

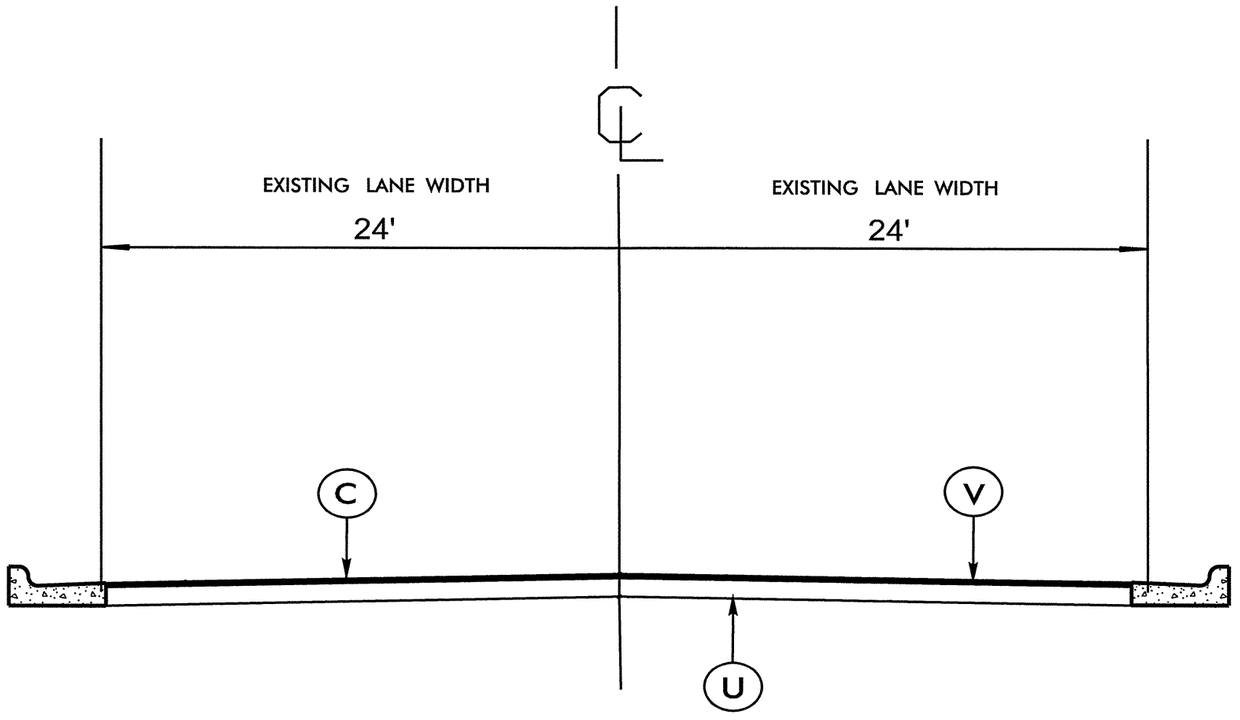
PROJECT REFERENCE NO.	SHEET NO.
1CR.10081.18, ETC.	10 OF 15

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

C	PROP. APPROX. 1.5" ACSC TYPE S9.5B AT AN AVERAGE RATE OF 168.0 LBS. PER SQ. YD.
U	EXISTING PAVEMENT
V	MILLING BITUMINOUS PAVEMENT 1.5" DEPTH



TYPICAL SECTION #4

USE WITH MAP 9

CURB SECTION

PROJECT REFERENCE NO.	SHEET NO.
1CR.10081.18, ETC.	11 OF 15

NOTES:

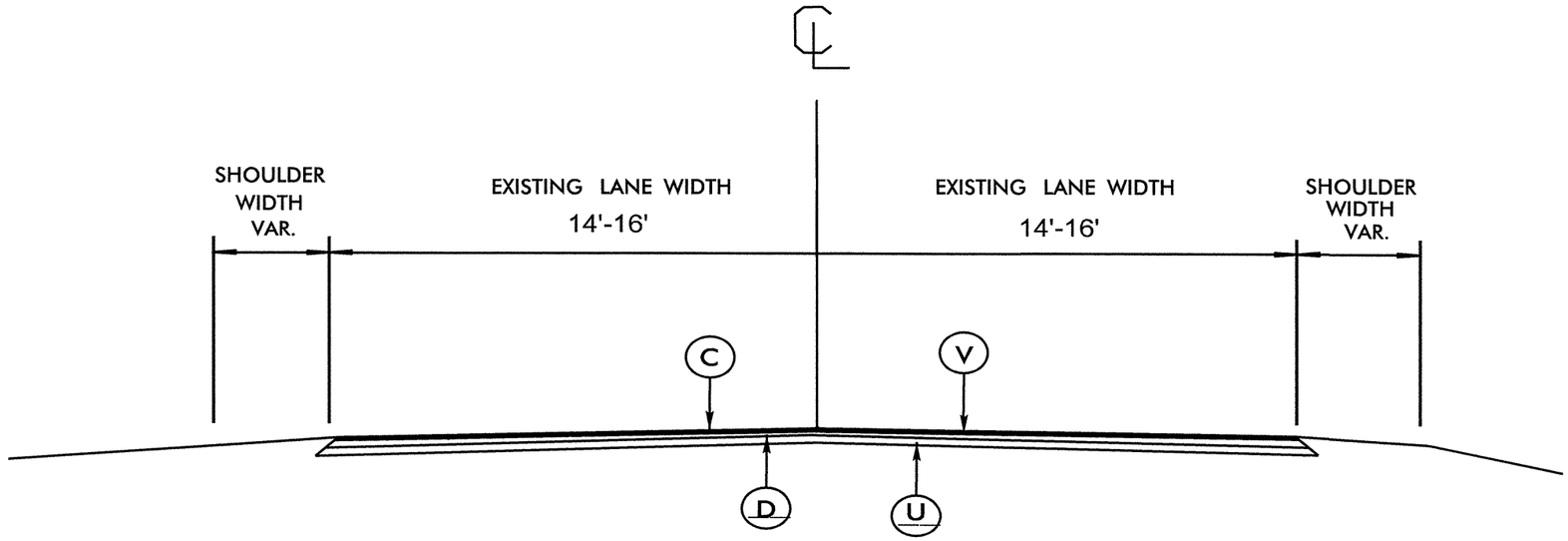
ALL PAVED S.R. ROADS TO BE RESURFACED TO THE ENDS OF THE RADII, OR AS DIRECTED BY THE ENGINEER

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

PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE

SHOULDER RECONSTRUCTION TO BE PERFORMED BY OTHERS

C	PROP. APPROX. 1.5" ACSC TYPE S9.5B AT AN AVERAGE RATE OF 168.0 LBS. PER SQ. YD.
D	PROP. APPROX. 2.5" ACSC TYPE I19.0B AT AN AVERAGE RATE OF 285.0 LBS. PER SQ. YD.
U	EXISTING PAVEMENT
V	MILLING BITUMINOUS PAVEMENT 1.5"–3.5" DEPTH



TYPICAL SECTION #5

USE WITH MAP 10

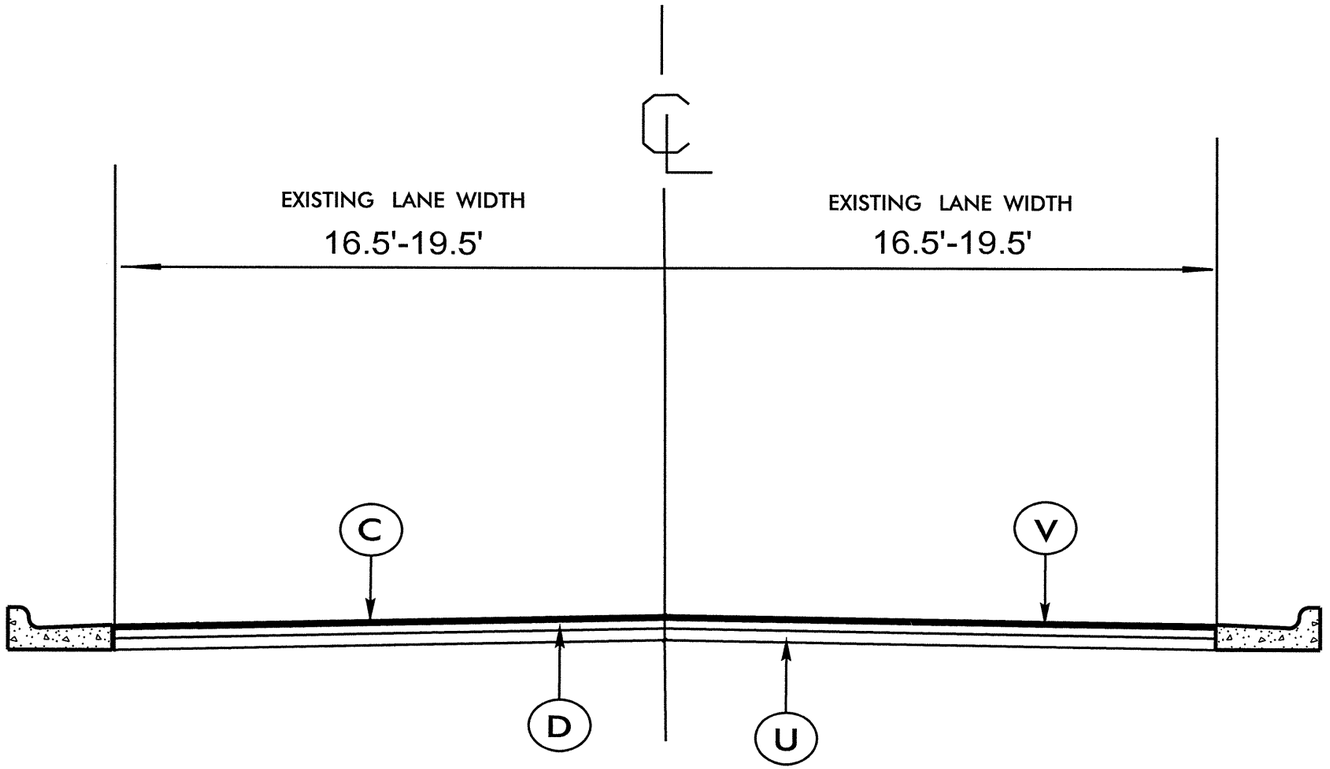
SHOULDER SECTION

PROJECT REFERENCE NO.	SHEET NO.
1CR.10081.18, ETC.	12 OF 15

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



C	PROP. APPROX. 1.5" ACSC TYPE S9.5B AT AN AVERAGE RATE OF 168.0 LBS. PER SQ. YD.
D	PROP. APPROX. 2.5" ACSC TYPE I19.0B AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
U	EXISTING PAVEMENT
V	MILLING BITUMINOUS PAVEMENT 1.5"–3.5" DEPTH

TYPICAL SECTION #6

USE WITH MAP 10
CURB SECTION

PROJECT REFERENCE NO.	SHEET NO.
1CR.10081.18, ETC.	13 OF 15

LEVELING COURSE :

*PROPOSED APPROXIMATE 1.5" ASPHALT CONCRETE LEVELING COURSE, TYPE S9.5B AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.

*LEVELING COURSE, S9.5B SHALL BE PLACED ACROSS ENTIRE WIDTH OF ROADWAY AT THE FOLLOWING APPROXIMATE LOCATIONS:

25+00 - 36+75 FULL WIDTH OF ROADWAY
49+40 - 52+40 FULL WIDTH OF ROADWAY
68+80 - 72+80 FULL WIDTH OF ROADWAY
78+30 - 81+80 FULL WIDTH OF ROADWAY
84+60 - 92+40 FULL WIDTH OF ROADWAY
197+00 - 203+75 FULL WIDTH OF ROADWAY
264+25 - 275+75 FULL WIDTH OF ROADWAY
285+95 - 292+55 FULL WIDTH OF ROADWAY
300+75 - 304+75 FULL WIDTH OF ROADWAY

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

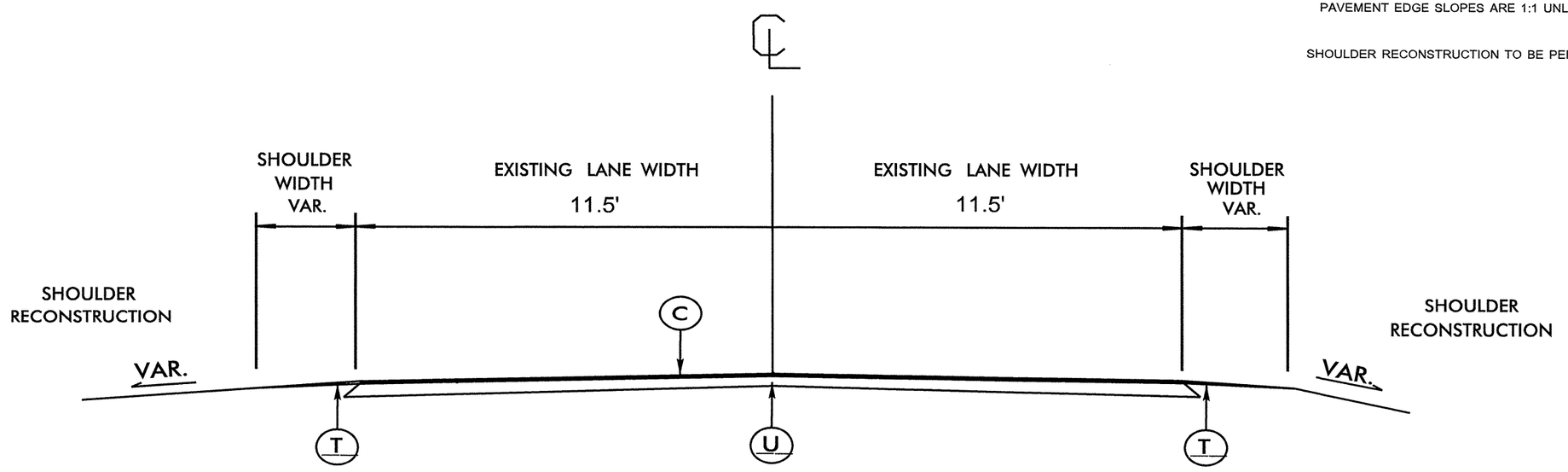
NOTES:

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

PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE

SHOULDER RECONSTRUCTION TO BE PERFORMED BY CONTRACTOR



TYPICAL SECTION #7

USE WITH MAP 11

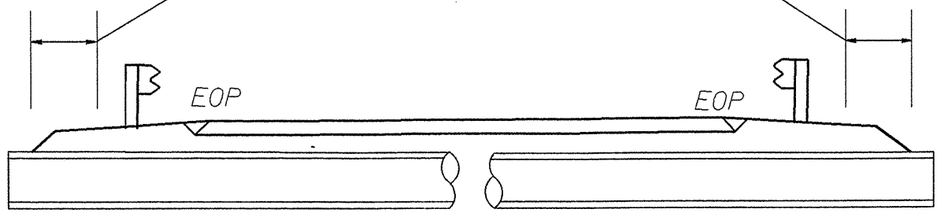
PROJECT REFERENCE NO.	SHEET NO.
X-XXXX	EC-XX/CONST.XX
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NOTES: Less than 5' – 10' undisturbed buffer from ROW, ditchline, water feature, or drainage inlet, add BMP.

BMP Options: Wattle or Silt Fence

EROSION CONTROL DETAIL

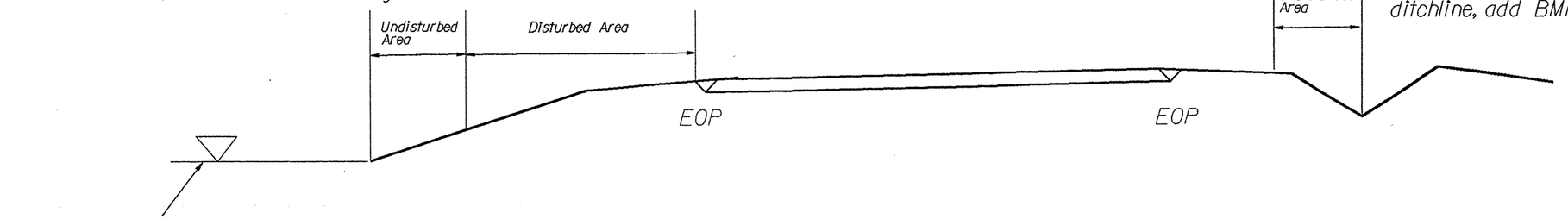
< 5' – 10' Undisturbed buffer add BMP



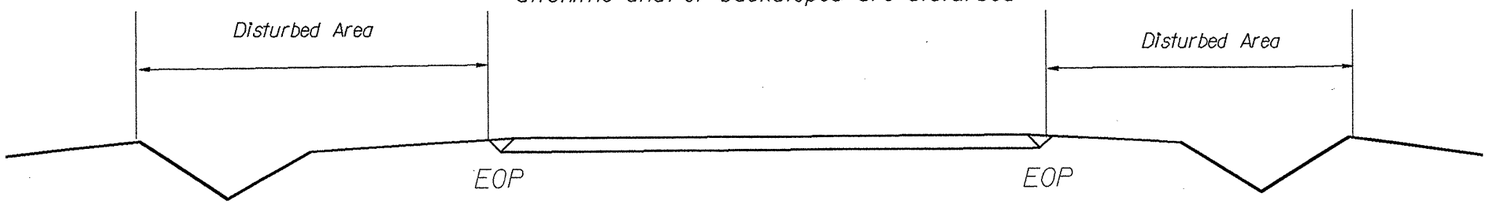
Pipe/Culvert

< 5' – 10' Undisturbed buffer from jurisdictional feature add BMP

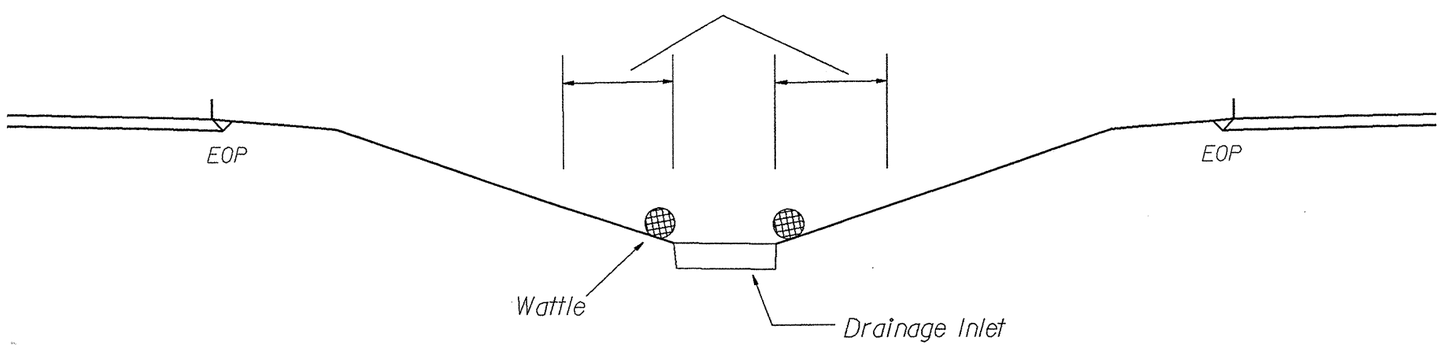
< 5' – 10' Undisturbed buffer from ditchline, add BMP



Use BMP's if shoulders and/or frontslopes and/or ditchline and/or backslopes are disturbed



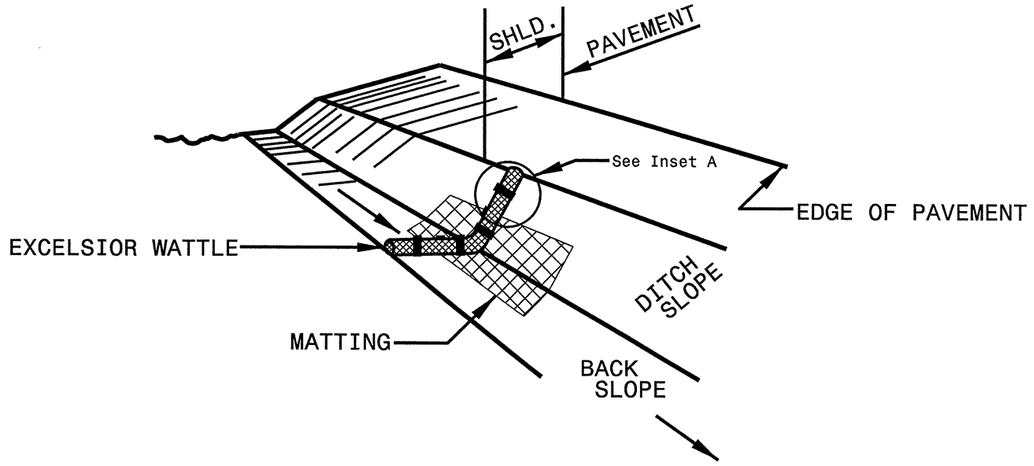
< 5' – 10' Undisturbed buffer from inlet, add wattle



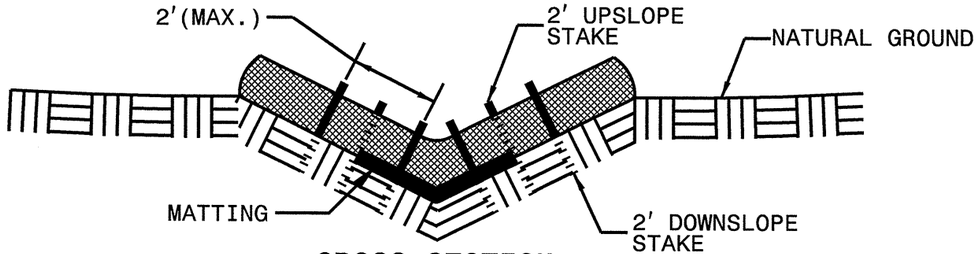
NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
ICRJ008IJ8	14 OF 15
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

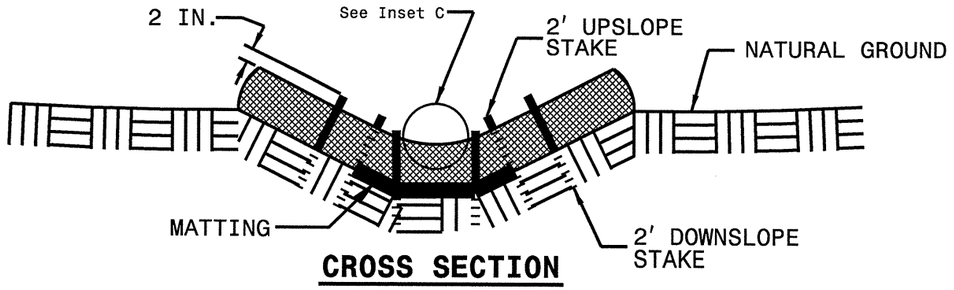
WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



ISOMETRIC VIEW



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH

NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

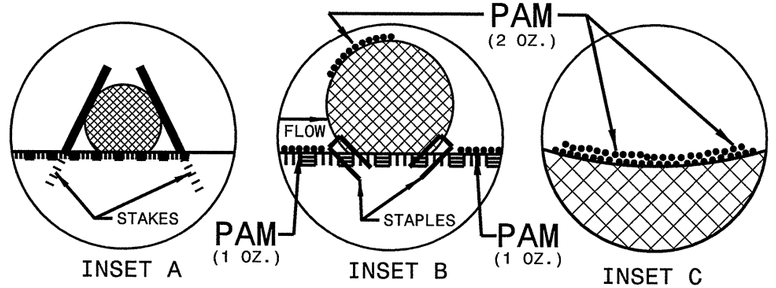
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

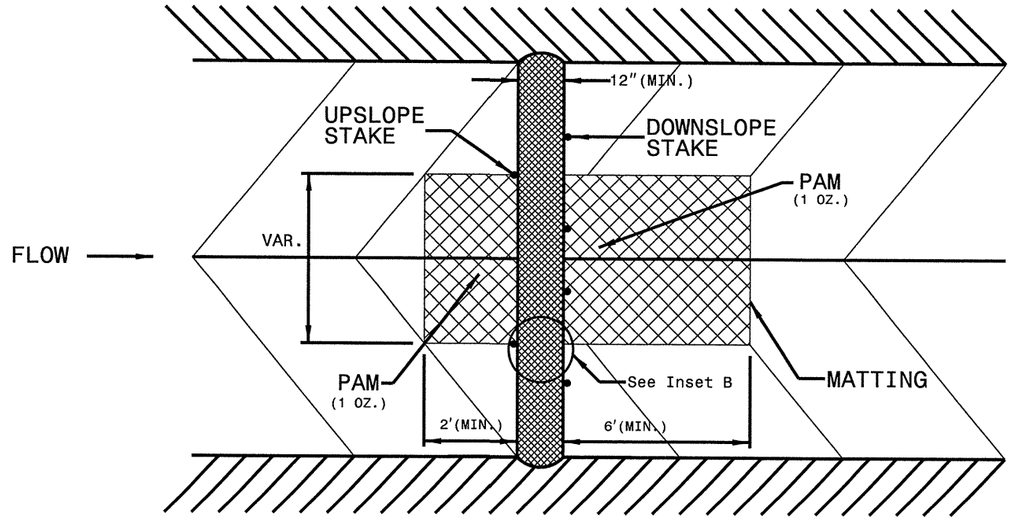
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.





TOP VIEW

PROJECT NO.	SHEET NO.	TOTAL NO.
1CR.10081.18, ETC.	15	15

SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	ROAD NAME	DESCRIPTION	TYPICAL NO	FINAL SURFACE TESTING REQUIRED	LENGTH MI	WIDTH FT	MOBILIZATION LS	1½" MILLING SY	1" TO 1.5" MILLING SY	1.5" TO 3.5" MILLING SY	INCIDENTAL MILLING SY	INTERMEDIATE COURSE, I19.0B TONS	SURFACE COURSE, S9.5B TONS	LEVELING COURSE, S9.5B TONS	SURFACE COURSE, SF9.5A TONS	PG 64-22 PLANT MIX TONS	AC PLANT MIX (REPAIR) TONS	ADJ. OF MANHOLES EA	ADJ. OF METER OR VALVE BOX EA	INDUCTIVE LOOP SAWCUT LF	LEAD-IN CABLE (14 2) LF
1CR.10081.18	Bertie	10	NC 42	MAIN ST	FROM US 13 TO ECL OF POWELLSVILLE	5 & 6	NO	0.90	28' - 39'	1			17,750		2,024	1,750			200	250	1	1		
1CR.10461.16	Hertford	11	NC 461	NC HWY 461	FROM NC 561 TO US 13	7	NO	8.19	23'	*						9,950	1,530		688					
1CR.20081.38	Bertie	2	SR 1304	ASKEWVILLE RD	FROM US 13 TO ASKEWVILLE	1	NO	1.10	20.5'	*								1,025	67					
1CR.20081.39	Bertie	3	SR 1335	RIVER RD	FROM NC 45 TO DEAD END	1 & 2	NO	1.16	20.5'-30'	*		9,335						1,350	88	100	4			
1CR.20081.40	Bertie	4	SR 1200	HEXLENA RD	FROM SR 1242 TO SR 1228	1	NO	2.46	21'	*				475				2,450	160					
1CR.20081.41	Bertie	5	SR 1260	REPUBLICAN RD	FROM NC 308 TO SR 1257	1	NO	2.31	20'	*				150				1,863	121					
1CR.20081.42	Bertie	1	SR 1312	MEADOW RD	FROM SR 1316 TO NC 42	1	NO	1.78	20'	*								1,700	111					
1CR.20461.33	Hertford	9	SR 1101	LEE JERNIGAN RD	FROM US 13 TO SCL AHOSKIE	3 & 4	NO	0.30	24'-48'	*	2,400					550			33		1	3	520	100
1CR.20461.34	Hertford	7	SR 1403	AHOSKIE-COFIELD RD	SCL COFIELD TO SR 1409	1	NO	3.04	22.8'	*								3,350	218					
1CR.20461.35	Hertford	8	SR 1185	TRI-COUNTY AIRPORT RD	FROM NC 561 TO DEAD END	1	NO	0.57	18.5'	*								525	35					
1CR.20461.36	Hertford	6	SR 1419	DT RD	FROM US 13 TO NC 561	1	NO	1.70	20.5'	*								1,600	104					
GRAND TOTAL								**23.51**		**1**	**2,400**	**9,335**	**17,750**	**625**	**2,024**	**12,250**	**1,530**	**13,863**	**1,825**	**350**	**6**	**4**	**520**	**100**

SHOULDER RECONSTRUCTION AND EROSION CONTROL QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	ROAD NAME	DESCRIPTION	BORROW CY	INCIDENTAL STONE BASE TONS	SHOULDER RECONSTRUCTION SMI	TEMPORARY SILT FENCE LF	MATTING FOR EROSION CONTROL SY	WATTLE LF	POLYACRYLAMIDE (PAM) LB	SEEDING & MULCHING AC
1CR.10461.16	Hertford	11	NC 461	NC HWY 461	FROM NC 561 TO US 13	360	605	16.38	500	64	160	14	12
GRAND TOTAL						**360**	**605**	**16.38**	**500**	**64**	**160**	**14**	**12**

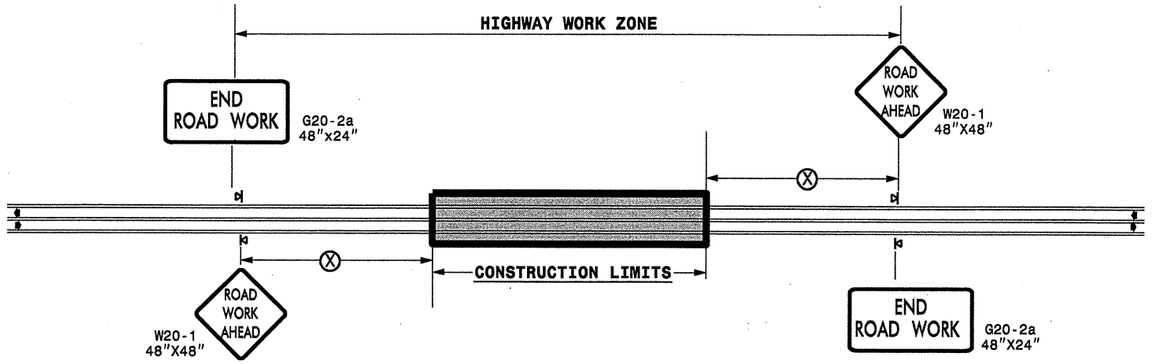
THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE		DESCRIPTION	4589000000-N TRAFFIC CONTROL LS	4685000000-E 4" X 90 M WHITE THERMO LF	4686000000-E 4" X 120 M YELLOW THERMO LF	4686000000-E 4" X 120 M WHITE THERMO LF	4697000000-E 8" X 120 M YELLOW THERMO LF	4721000000-E THERMO CHARACTERS 120 M EA	4725000000-E THERMO LT ARROW 90 M EA	4725000000-E THERMO STR & RT ARROW 90 M EA	4810000000-E 4" WHITE PAINT LF	4810000000-E 4" YELLOW PAINT LF	4900000000-N YELLOW & YELLOW MARKERS EA	4770000000-E COLD APPLID PLASTIC PAV'T MARKING LINES, TYPE II (4"0) YELLOW LF	4770000000-E COLD APPLID PLASTIC PAV'T MARKING LINES, TYPE II (4"0) WHITE LF
1CR.10081.18	Bertie	10	NC 42	MAIN ST	FROM US 13 TO ECL OF POWELLSVILLE	1								4,600	19,000			
1CR.10461.16	Hertford	11	NC 461	NC HWY 461	FROM NC 561 TO US 13	*	90,364	55,176							54,076	565		
1CR.20081.38	Bertie	2	SR 1304	ASKEWVILLE RD	FROM US 13 TO ASKEWVILLE	*								11,836	7,260			
1CR.20081.39	Bertie	3	SR 1335	RIVER RD	FROM NC 45 TO DEAD END	*								12,250	12,250			
1CR.20081.40	Bertie	4	SR 1200	HEXLENA RD	FROM SR 1242 TO SR 1228	*								26,470	16,236			
1CR.20081.41	Bertie	5	SR 1260	REPUBLICAN RD	FROM NC 308 TO SR 1257	*								24,856	15,246		52	52
1CR.20081.42	Bertie	1	SR 1312	MEADOW RD	FROM SR 1316 TO NC 42	*								19,153	11,748			
1CR.20461.33	Hertford	9	SR 1101	LEE JERNIGAN RD	FROM US 13 TO SCL AHOSKIE	*	2,300	3,350	300	150	4	7	7	2,600	3,350			
1CR.20461.34	Hertford	7	SR 1403	AHOSKIE-COFIELD RD	SCL COFIELD TO SR 1409	*								32,710	20,064			
1CR.20461.35	Hertford	8	SR 1185	TRI-COUNTY AIRPORT RD	FROM NC 561 TO DEAD END	*								6,133	3,762			
1CR.20461.36	Hertford	6	SR 1419	DT RD	FROM US 13 TO NC 561	*								18,292	11,220			
GRAND TOTAL								**58,526**	**300**			**7**	**7**	**158,900**	**174,212**		**52**	**52**
						1	**92,664**	**58,826**		**150**	**4**	**14**		**333,112**		**565**	**104**	

WBS ELEMENTS: 1CR.10081.18, 1CR.10461.16,
1CR.20081.38, 1CR.20081.39, 1CR.20081.40,
1CR.20081.41, 1CR.20081.42, 1CR.20461.33,
1CR.20461.34, 1CR.20461.35 & 1CR.20461.36

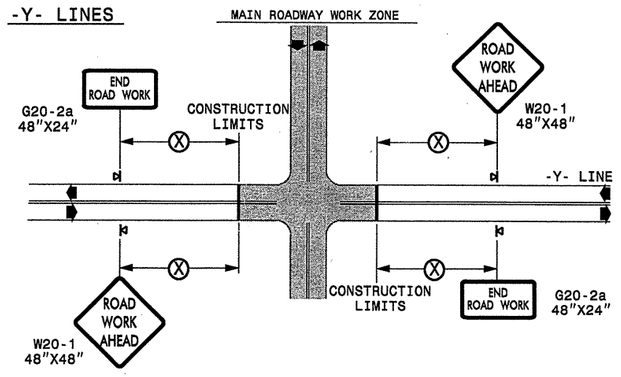
PROJ. REFERENCE NO.	SHEET NO.
SEE TO THE LEFT	TCP-1

TWO-WAY UNDIVIDED ** (L-LINES)



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

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

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

DETAIL DRAWING FOR TWO-WAY UNDIVIDED WORK ZONE WARNING SIGNS

SHEET 1 OF 1

APPROVED:_____ DATE:_____

SEAL

DETAIL DRAWING
FOR TWO-WAY UNDIVIDED
ADVANCED WORK ZONE WARNING SIGNS

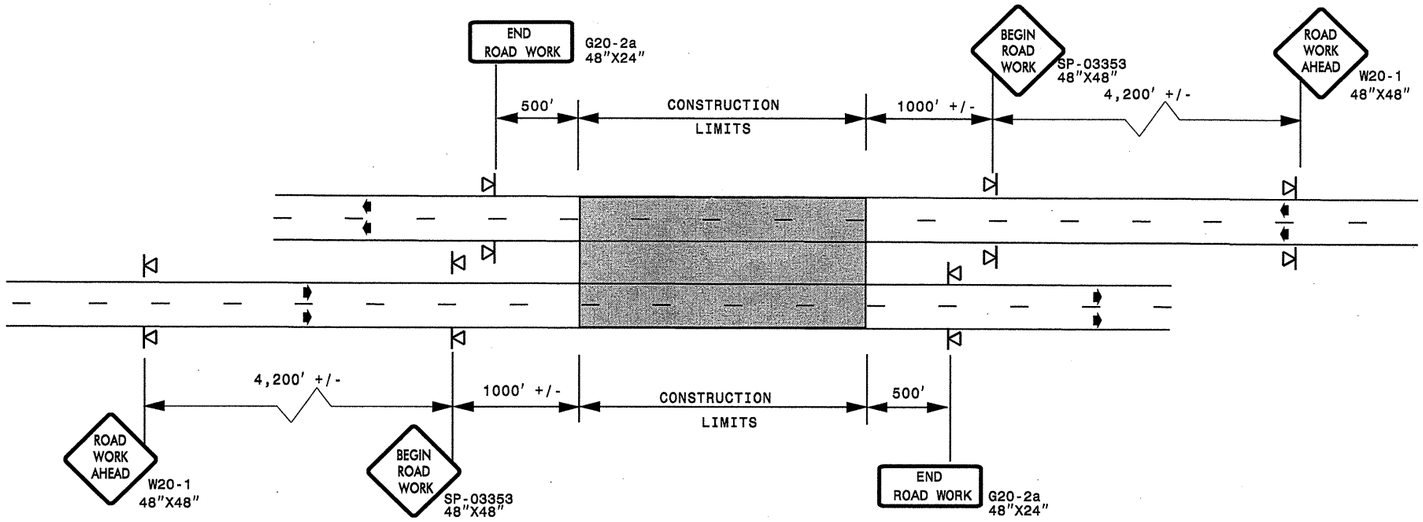
SCALE: NONE	REVISIONS	
DATE:	7-98	10/01
DWG. BY:	10-98	03/04
DESIGN BY:	01/01	11/04
REVIEWED BY:	CADD FILE	

WBS ELEMENTS: 1CR.10081.18, 1CR.10461.16, 1CR.20081.38, 1CR.20081.39, 1CR.20081.40, 1CR.20081.41, 1CR.20081.42, 1CR.20461.33, 1CR.20461.34, 1CR.20461.35 & 1CR.20461.36

PROJ. REFERENCE NO.	SHEET NO.
SEE TO THE LEFT	TCP-2

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

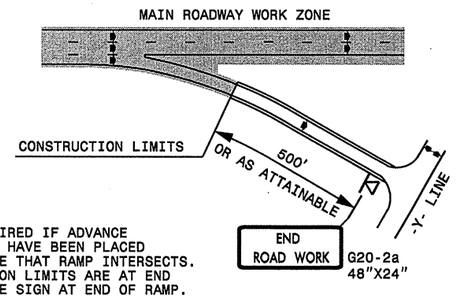
DETAIL A



ROADWAYS INTERSECTING ALONG FREEWAY WORK ZONE (Y-LINES)

DETAIL B

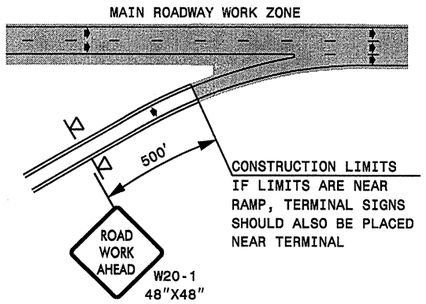
EXIT RAMPS



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.

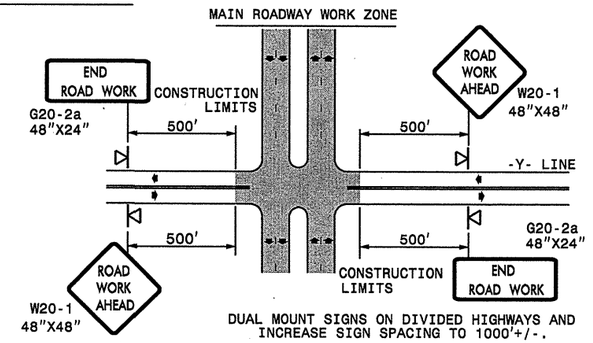
DETAIL C

ENTRANCE RAMPS



DETAIL D

-Y- LINES



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

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

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

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

SHEET 1 OF 1

APPROVED:_____ DATE:_____

SEAL

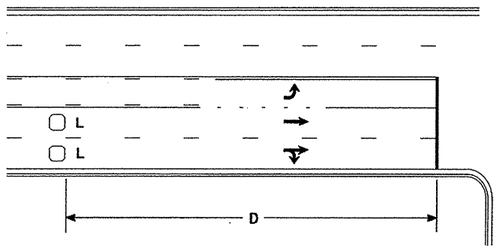
DETAIL DRAWING
FOR FREEWAYS
WORK ZONE WARNING SIGNS

SCALE:	NONE
DATE:	09/10
DWG. BY:	AKP
DESIGN BY:	AKP
REVIEWED BY:	DAP

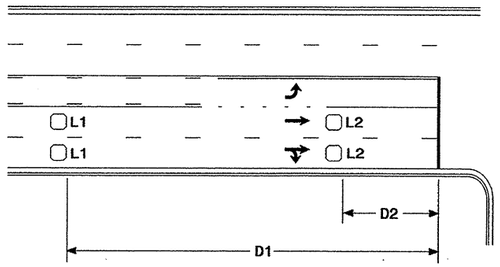
REVISIONS	
7-98	10/01
10-98	03/04
01/01	11/04
CADD FILE	

PROJECT REFERENCE NO.	SHEET NO.
	SIG 1

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



OR



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

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)

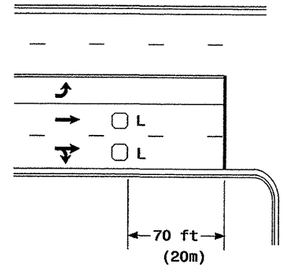
L1 = 6ft X 6ft (1.8m X 1.8m) Wired in series

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

"Stretch" Operation

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

1CR.10081.18, 1CR10461.16, 1CR.20081.38, 1CR.20081.39, 1CR.20081.40, 1CR.20081.41, 1CR.20081.42, 1CR.20461.33, 1CR.20461.34, 1CR.20461.35 & 1CR.20461.36



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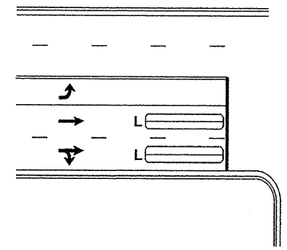
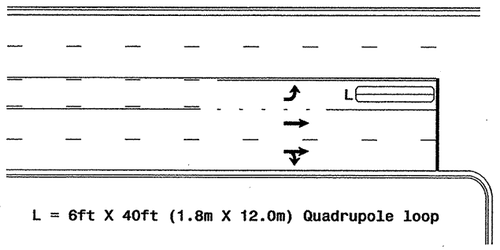


L = 6ft X 6ft (1.8m X 1.8m)
Wired in series

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

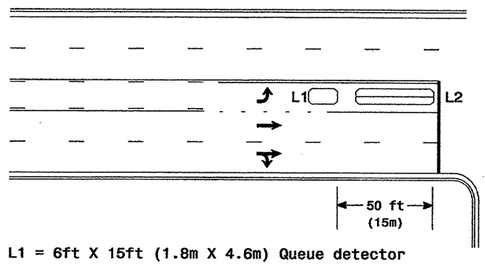
Left Turn Lane Detection



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

Presence Loop Detection

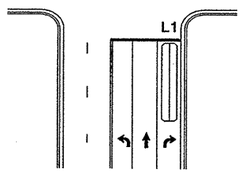
OR



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

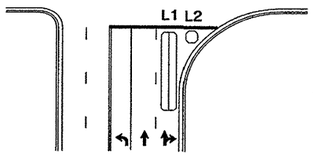
Queue Loop Detection

Right Turn Lane Detection

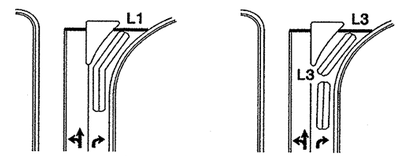


L1 = 6ft X 40ft (1.8m X 12.0m) Quadrupole loop
L2 = 6ft X 6ft (1.8m X 1.8m) [Minimum] Presence loop Wired separately
L3 = 6ft X 20ft (1.8m X 6.0m) Quadrupole loop Wired in series

Standard Turn

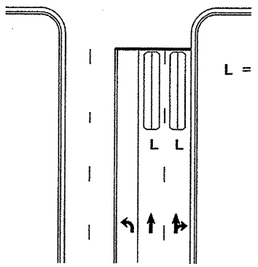


Wide Radius Turn



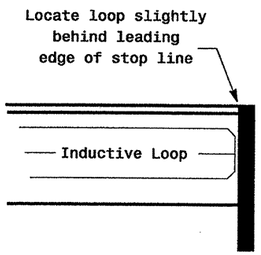
Channelized Turn

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



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 Offices of:
Traffic Engineering and Safety Systems Branch
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signal and Geometrics Section
322 N. McDowell St., Raleigh, NC 27603

Typical Loop Locations

PLAN DATE:	June 2006	REVIEWED BY:	
PREPARED BY:	P L Alexander	REVIEWED BY:	

REVISIONS	INIT.	DATE
Revise pavement markings		

SCALE: N/A

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 23486 ENGINEER PHILIP L ALEXANDER
SIGNATURE
DATE
SIG. INVENTORY NO.

19-DEC-2006 14:29
s:#ts_signals#lb turn inmts#loop#typloc12006.dgn
palexander

PROJECT REFERENCE NO.	SHEET NO.
	Sig. 2

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

11-08

ENGLISH DETAIL DRAWING FOR

INDUCTIVE DETECTION LOOPS

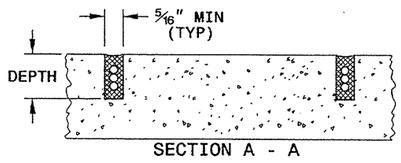
SHEET 1 OF 3

1725D01

CONVENTIONAL 4-SIDED LOOP

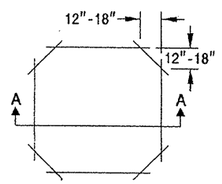
SAW SLOT DEPTH CHART

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

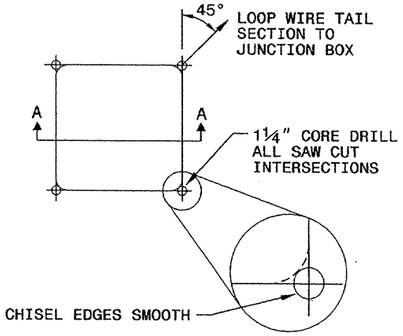


SAW CUT OPTIONS

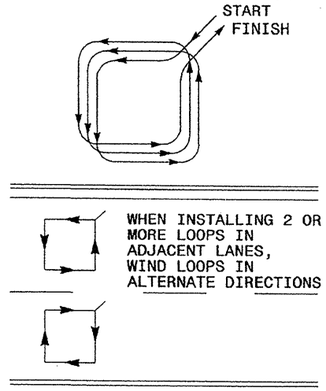
OPTION 1



OPTION 2 (POOR PAVEMENT)

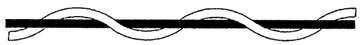


LOOP WINDING METHOD



LOOP WIRE TWISTING METHOD

INCORRECT WAY TO TWIST WIRE



CORRECT WAY TO TWIST WIRE

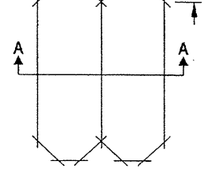
NOTES

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.

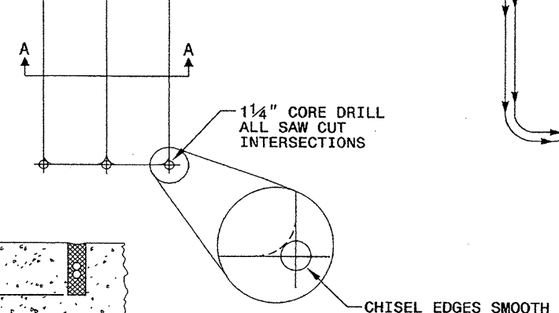
QUADRUPOLE LOOP

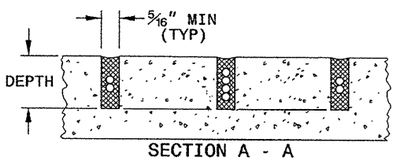
SAW CUT OPTIONS

OPTION 1



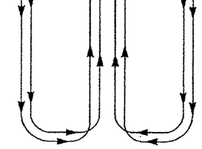
OPTION 2 (POOR PAVEMENT)





DEPTH IS 2.5" FOR CONCRETE AND 3.0" FOR ASPHALT

LOOP WINDING METHOD



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ENGLISH DETAIL DRAWING FOR

INDUCTIVE DETECTION LOOPS

SHEET 1 OF 3

1725D01

See Plate for Title

Prepared in the Offices of:
Intelligent Transportation Systems & Signals Unit
750 N. Greenfield Parkway
Garner, NC 27529

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 16286 ENGINEER MILTON I DEAN

SIGNATURE

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DATE

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PROJECT REFERENCE NO.	SHEET NO.
	Sig. 3

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ENGLISH DETAIL DRAWING FOR

INDUCTIVE DETECTION LOOPS

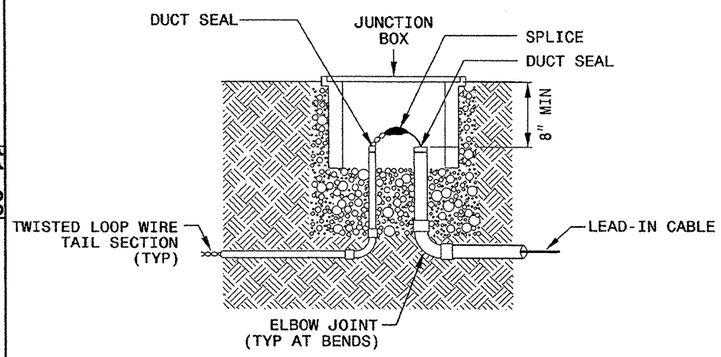
LOOP WIRE DETAILS

SHEET 2 OF 3

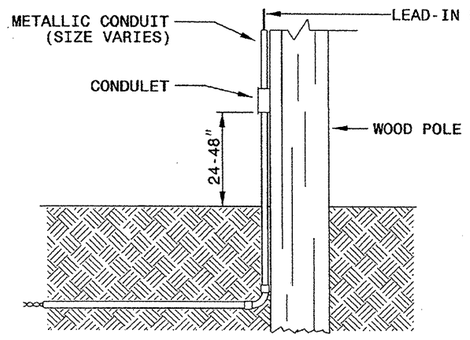
1725D01

LOOP WIRE SPLICE POINT DETAILS

LOOP WIRE AT JUNCTION BOX



LOOP WIRE AT POLE

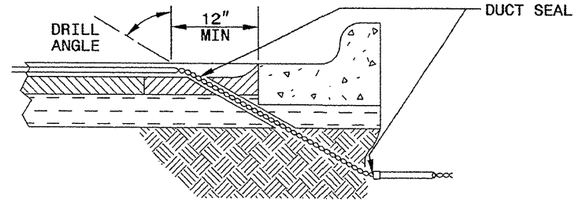


NOTE

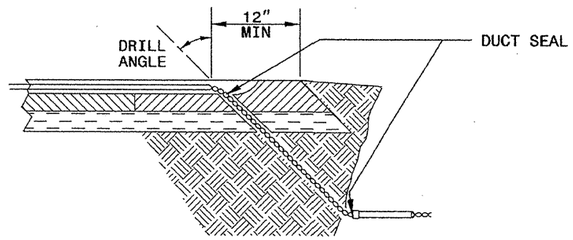
SPLICE ALL LOOP WIRE TAIL SECTIONS/LEAD-IN CABLE IN JUNCTION BOXES OR APPROVED CONDULETS.

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

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750 N. Greenfield Parkway
Garner, NC 27529

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 16286 ENGINEER MILTON I. DEAN

Milton I. Dean 11/24/08
SIGNATURE DATE

PROJECT REFERENCE NO.	SHEET NO.
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ENGLISH DETAIL DRAWING FOR

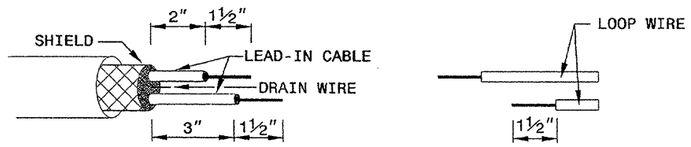
INDUCTIVE DETECTION LOOPS

SPLICING FOR LEAD-IN CABLE AND LOOP WIRE

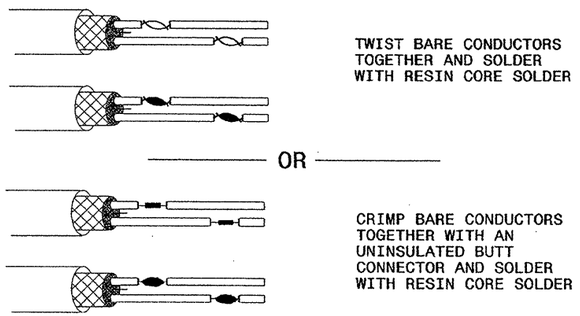
SHEET 3 OF 3

1725D01

STEP 1. STRIP LOOP WIRE AND LEAD-IN CABLE



STEP 2. CONNECT AND SOLDER



TWIST BARE CONDUCTORS TOGETHER AND SOLDER WITH RESIN CORE SOLDER

OR

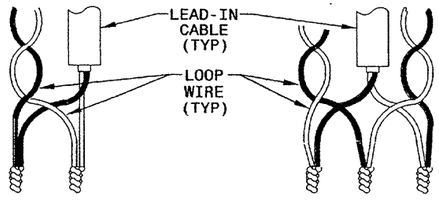
CRIMP BARE CONDUCTORS TOGETHER WITH AN UNINSULATED BUTT CONNECTOR AND SOLDER WITH RESIN CORE SOLDER

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

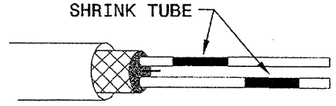
LOOP WIRE AND LEAD-IN CABLE CONNECTION DETAILS

SINGLE CONNECTION

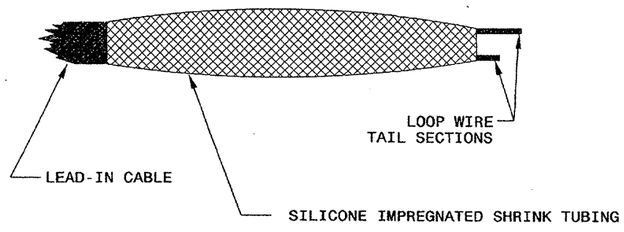
SERIES CONNECTION



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

1725D01

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Milton J. Dean 11/24/08
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