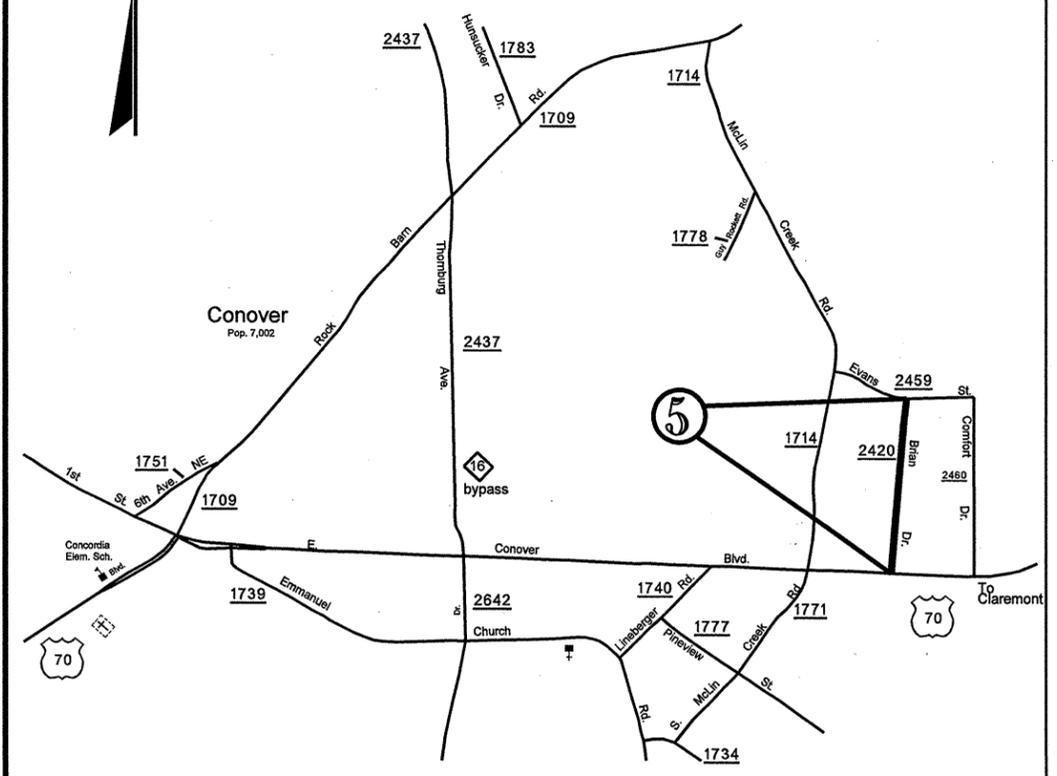


No Scale

Lincoln County

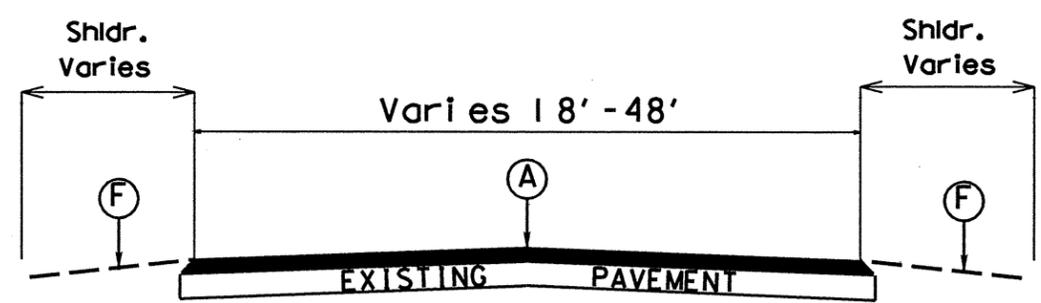
Drawn by: C Brittain 11-7-08



No Scale

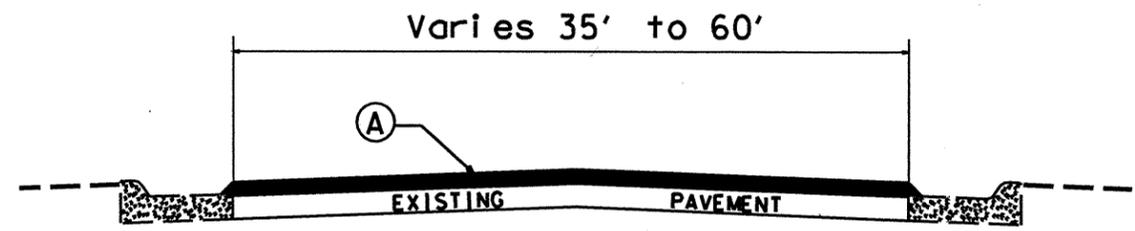
Resurfacing Map
 2008-2009 Resurfacing Program
 CATAWBA COUNTY NC

STATE	PROJECT	SHEET NUMBER
NC	12CR.10181.7 & 12CR.20181.9	7



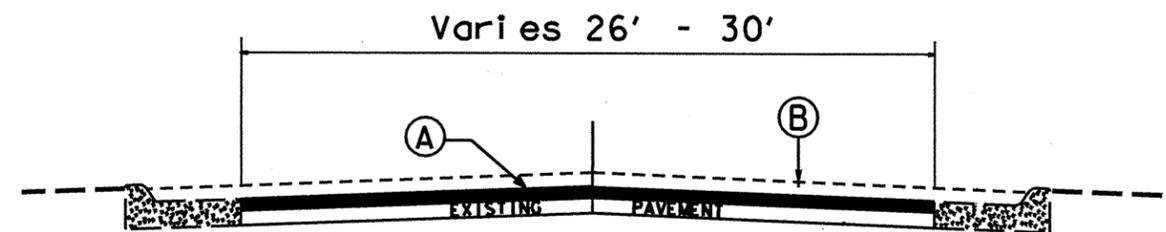
TYPICAL SECTION NO. 1

- Map #1 54+00 to 104+00
- Map #2 thru Map #3 (entire map)
- Map #5 thru Map #11 (entire map)
- Map #4 24+00 to 29+00
- Map #12 0+00 to 37+80



TYPICAL SECTION NO. 2

- Map #1 0+00 to 5+00
- Map #4 0+00 to 20+50
- Map #12 37+80 to 50+30

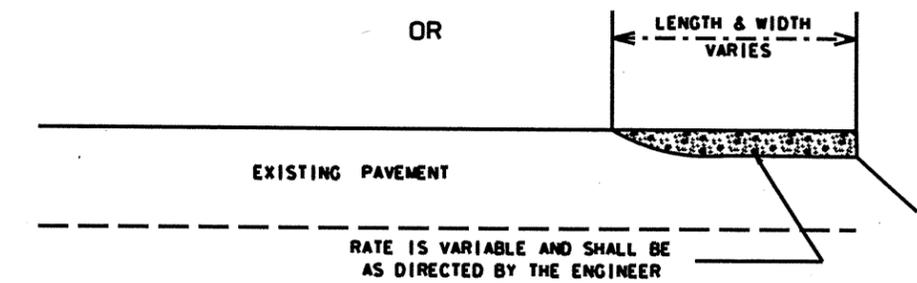
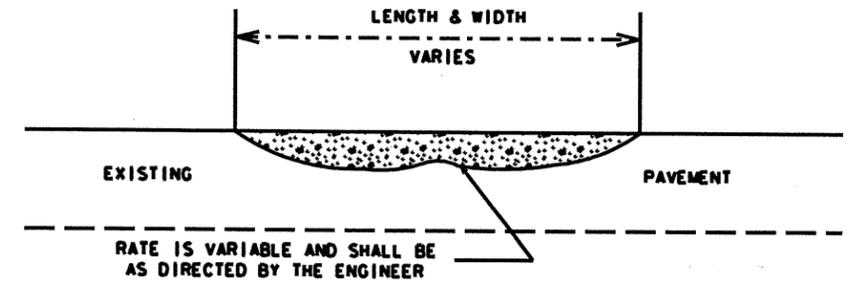


TYPICAL SECTION NO. 3

- Map #1 5+00 to 12+00
- Map #1 15+50 to 18+00
- Map #1 26+00 to 30+75

General Notes:

- * Pavement edge slopes are 1:1 unless specified otherwise.
- * Mill bridge approaches at a depth of 1.5" to 0" over a distance of 100' to provide a smooth transition or as directed by the Engineer.
- * Stations begin at 0+00 and increase to the North and or to the East from the map start point as listed on the Summary of Quantities sheet.

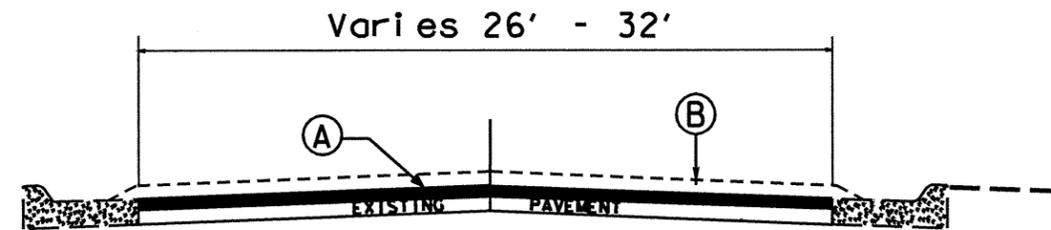


**ASPHALT CONCRETE SURFACE COURSE
TYPE S9.5B. (LEVELING COURSE)**

PAVEMENT SCHEDULE	
A	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
B	MILL ASPHALT PAVEMENT APPROX. 3.0 to 4.5"
C	MILL ASPHALT PAVEMENT APPROX. 3"
F	SHOULDER RECONSTRUCTION

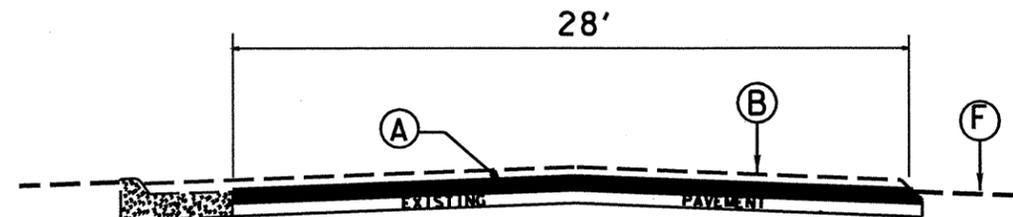
Typicals
Resurfacing Program 2008-2009
Catawba County NC

11-14-08
Designed by: CHB



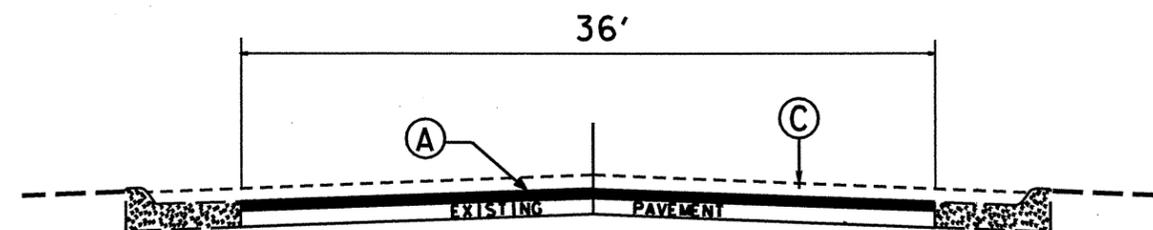
TYPICAL SECTION NO. 4

Map #1 12+00 to 15+50
 Map #1 18+00 to 26+00
 Map #1 30+75 to 49+40



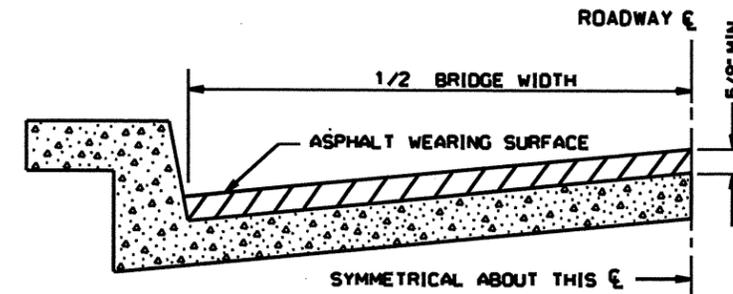
TYPICAL SECTION NO. 5

Map #1 51+40 to 54+00



TYPICAL SECTION NO. 6

Map #4 29+00 to 68+75



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 5/8" SHALL BE PROVIDED. THE MAXIMUM THICKNESS SHALL PREFERABLY BE 1-1/2" UNLESS IT IS IMPRACTICAL TO PROVIDE A SMOOTH RIDING SURFACE OTHERWISE.

NOTES

ALL UNPAVED S.R. ROADS TO BE SURFACED 50' FROM EDGE OF PAVEMENT OF MAIN PROJECT.
 ALL PAVED S.R. ROADS TO BE RESURFACED TO THE ENDS OF THE RADII, OR AS DIRECTED BY THE ENGINEER.
 EDGES, PAVEMENT WIDENING, INTERSECTIONS AND BRIDGE FLARES ARE INCLUDED IN THE TABLE OF QUANTITIES.
 SHOULDERS AND DITCHES ARE TO BE CONSTRUCTED BY OTHERS UNLESS OTHERWISE NOTED.
 BRIDGES TO BE RESURFACED AT LOCATIONS AND TO DEPTH AS DIRECTED BY THE ENGINEER.

PAVEMENT SCHEDULE	
A	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
B	MILL ASPHALT PAVEMENT APPROX. 3.0" to 4.5"
C	MILL ASPHALT PAVEMENT APPROX. 3"
F	SHOULDER RECONSTRUCTION

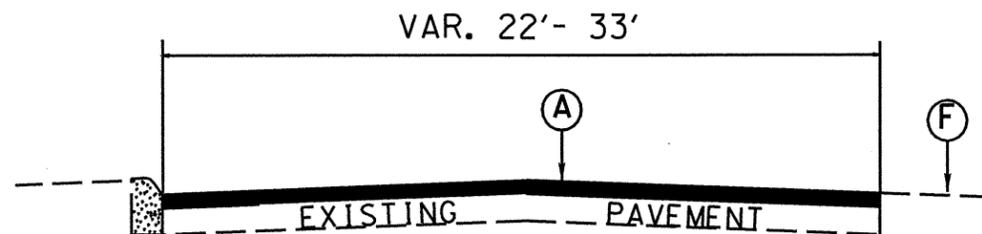
General Notes:

- Pavement edge slopes are 1:1 unless specified otherwise.
- Mill bridge approaches at a depth of 1.5" to 0" over a distance of 100' to provide a smooth transition or as directed by the Engineer.
- Stations begin at 0+00 and increase to the North and or to the East from the map start point as listed on the Summary of Quantities sheet.

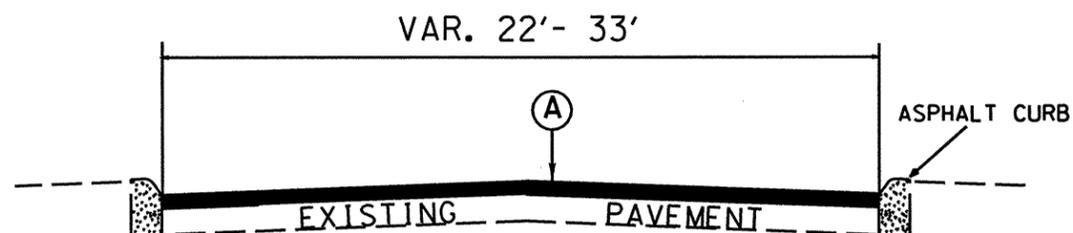
Typicals
 Resurfacing Program 2008-2009
 Catawba County NC

17-14-08
Designed by GHB

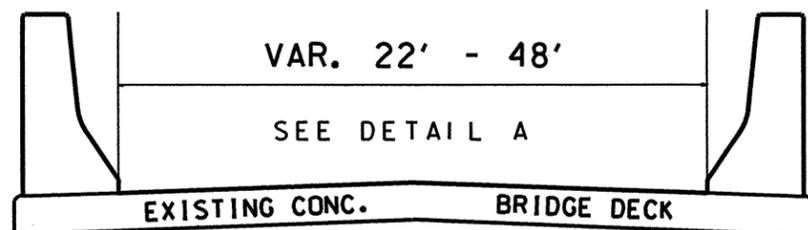
STATE	PROJECT	SHEET NUMBER
NC	WBS 12CR.20181.8	9



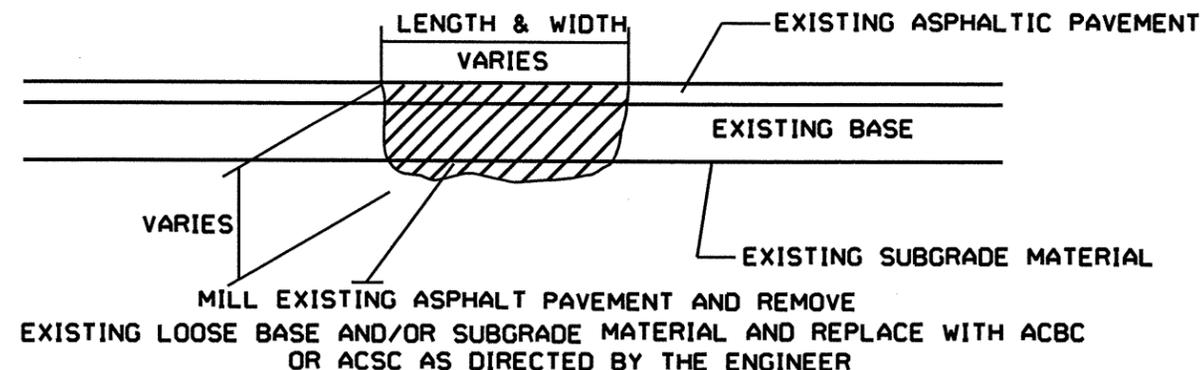
TYPICAL SECTION NO. 7
Map #12 50+30 to 54+60



TYPICAL SECTION NO. 8
Map #12 54+60 to 58+25



BRIDGE SECTION
Map #1 49+40 to 51+40
Map #4 20+50 to 24+00



PATCHING EXISTING PAVEMENT



DETAIL A
MILLING BRIDGE APPROACHES

PAVEMENT SCHEDULE	
A	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
B	MILL ASPHALT PAVEMENT APPROX. 3.0" to 4.5"
C	MILL ASPHALT PAVEMENT APPROX. 3"
F	SHOULDER RECONSTRUCTION

General Notes:

- * Pavement edge slopes are 1:1 unless specified otherwise.
- * Mill bridge approaches at a depth of 1.5" to 0" over a distance of 100' to provide a smooth transition or as directed by the Engineer.
- * Stations begin at 0+00 and increase to the North and or to the East from the map start point as listed on the Summary of Quantities sheet.

Typicals
Resurfacing Program 2008-2009
Catawba County NC

Checked by: 8-13-07
Designed by: GHB

PROJECT NO.	SHEET NO.	TOTAL NO.
12CR.10181.7 and 12CR.20181.9	10	

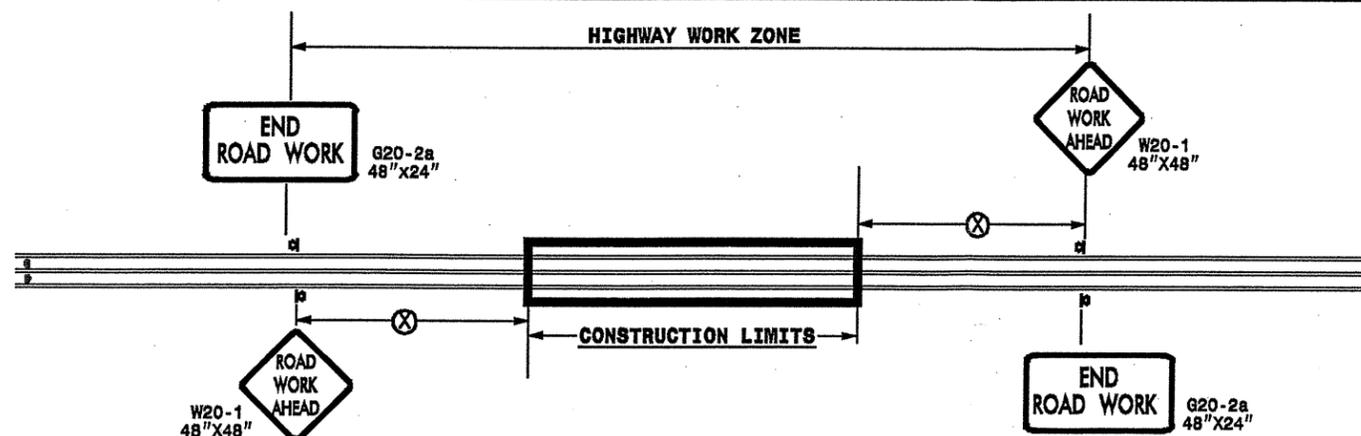
SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LENGTH MI	WIDTH FT	INCIDENTAL STONE BASE TONS	SHOULDER RECONSTRUCTION SMI	3.0" TO 4.5" MILLING SY	3" MILLING SY	0" TO 1.5" MILLING SY	SURFACE COURSE, S9.5B TONS	LEVELING COURSE, S9.5B TONS	PG 64-22 PLANT MIX TONS	PATCHING EXISTING PAVEMENT TONS	ADJ. OF DROP INLET EA	ADJ. OF MANHOLES EA	ADJ. OF METER OR VALVE BOX EA	PORTABLE LIGHTING LS	INDUCTIVE LOOP SAWCUT LF	FINAL SURFACE TESTING REQUIRED
12CR.10181.7	Catawba	1	NC10	FROM 321B TO NEW PAVEMENT NEAR NW CITY LIMITS	1 thru 5	1.97	Vars. 26-35'	60	1.9	15250			3,056	600	222	600	1	11	14	*	1250	NO
12CR.10181.7	Catawba	2	NC 16	FROM THE ALEXANDER COUNTY BRIDGE TO 500' N. OF SR 1453	1	0.55	24	40	1.1			270	756	100	52	100						NO
12CR.10181.7	Catawba	3	NC 16	FROM LINCOLN COUNTY LINE TO SR 1810	1	7.5	24	200	15			500	10,059	1,005	669	1,005	1	11	2	1	1250	NO
TOTAL FOR PRIMARY RD RESURFACING						10.02		300	18	15250		770	13,871	1,705	943	1,705	1	11	16	1	1250	
12CR.20181.9	Catawba	4	SR 1476 (FAIRGROVE CH. RD.)	FROM US 70 TO NEW PVMT 600 S. OF SR1692	1,2 & 6	1.21	Vars. 36-60'	20	0.19		17000	1200	2,992	300	199	450			7	*	2850	NO
12CR.20181.9	Catawba	5	SR 2420 (BRIAN DRIVE)	FROM US 70 TO SR 2459	1	0.38	24	40	0.76				497	100	36	150		3				NO
12CR.20181.9	Catawba	6	SR 1264 (NATHAN LN)	FROM US 70 TO END OF PVMT	1	0.29	24.5	20	0.58				387	80	28	80						NO
12CR.20181.9	Catawba	7	SR1501 (33RD AVE NE)	FROM SR 1400 TO SR 1401	1	0.36	18	30	0.72				354	60	25	60						NO
12CR.20181.9	Catawba	8	SR 1188 (13TH ST. SW)	FROM US 70 TO END OF DOT MAINT.	1	0.95	22.5		1.9				1,190	200	84	200		4	4			NO
12CR.20181.9	Catawba	9	SR 1265 (14TH AVE. SW)	FROM SR 1197 TO EOP	1	0.11	18	20	0.23				112	30	9	30		1				NO
12CR.20181.9	Catawba	10	SR 1722 (BETHANY CH. RD.)	FROM NC 10 TO SR 1722(OLD CATAWBA RD.)	1	2.9	22.5	60	5.8		550		3,557	500	246	750	1	12	6			NO
12CR.20181.9	Catawba	11	SR 1163 (BOUNDARY ST.)	FROM US 70 TO BEG C & G 150' W. OF US 321B	1	0.63	20	20	1.26				687	100	48	150						NO
12CR.20181.9	Catawba	12	SR 2959 (CENTER ST.)	FROM PVMT JOINT 550' N. OF NC 127 TO US 70	1,2,7,8	1.15	Vars. 24-44'	40	1.43			975	1,994	300	139	400		3	3			NO
TOTAL FOR SECONDARY RD RESURFACING						7.98		250	12.87		17000	2725	11,770	1,670	814	2,270	1	23	20	1	2850	
GRAND TOTAL						18		550	30.87	15250	17000	3495	25,641	3,375	1,757	3,975	2	34	36	1	4,100	

THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	4685000000-E		4686000000-E		4710000000-E	4721000000-E	4725000000-E			4810000000-E		4905000000-N	
					4" X 90 M WHITE THERMO LF	4" X 90 M YELLOW THERMO LF	4" X 120 M YELLOW THERMO LF	4" X 120 M WHITE THERMO LF	24" X 120 M WHITE THERMO LF	THERMO MSG ONLY 120 M EA	THERMO LT ARROW 90 M EA	THERMO RT ARROW 90 M EA	THERMO STR. ARROW EA	THERMO STR & RT ARROW 90 M EA	4" WHITE PAINT LF	4" YELLOW PAINT LF	SNOW PLOWABLE MARKERS EA
12CR.10181.7	Catawba	1	NC 10	FROM 321B TO NEW PAVEMENT NEAR NW CITY LIMITS	11,700	500	21,500	1,250	230	8	12	3	7		12,950	22,000	225
12CR.10181.7	Catawba	2	NC 16	FROM THE ALEXANDER COUNTY BRIDGE TO 500' N. OF SR 1453											11,600	11,600	40
12CR.10181.7	Catawba	3	NC 16	FROM LINCOLN COUNTY LINE TO SR 1810	78,650		77,500	1,200	168		13						400
TOTAL FOR PRIMARY RD RESURFACING					90,350	500	99,000	2,450	398	8	25	3	7		24,550	33,600	665
					90,850		101,450					35			58,150		
12CR.20181.9	Catawba	4	SR 1476 (FAIRGROVE CH. RD.)	FROM US 70 TO NEW PVMT 600 S. OF SR1692	2,800		17,500	4,600	240	16	50	6	6	4	7,400	17,500	300
12CR.20181.9	Catawba	5	SR 2420 (BRIAN DRIVE)	FROM US 70 TO SR 2459											8,500	8,200	
12CR.20181.9	Catawba	6	SR1264 (NATHAN LN)	FROM US 7 TO END PVMT											6,150	6,150	
12CR.20181.9	Catawba	7	SR1501 (33RD AVE NE)	FROM SR 1400 TO SR 1401											8,500	8,250	
12CR.20181.9	Catawba	8	SR 1188 (13TH ST. SW)	FROM US 70 TO END OF DOT MAINT.					24		2			2	20,500	20,500	
12CR.20181.9	Catawba	9	SR 1265 (14TH AVE. SW)	FROM SR 1197 TO EOP													
12CR.20181.9	Catawba	10	SR 1722 (BETHANY CH. RD.)	FROM NC 16 TO SR 1722(OLD CATAWBA RD.)											61,000	60,000	
12CR.20181.9	Catawba	11	SR 1163 (BOUNDARY ST.)	FROM US 70 TO BEG C & G 150' FROM US 321B											13,350	13,300	
12CR.20181.9	Catawba	12	SR 2959 (CENTER ST.)	FROM PVMT. JOINT 550' N. OF NC 127 TO US 70					30		2		1	1	19,750	24,000	135
TOTAL FOR SECONDARY RD RESURFACING					2,800		17,500	4,600	294	16	54	6	7	7	145,150	157,900	435
					2,800		22,100					74			303,050		
GRAND TOTAL					93,150	500	116,500	7,050	692	24	79	9	14	7	169,700	191,500	1,100
					93,650		123,550					109			361,200		

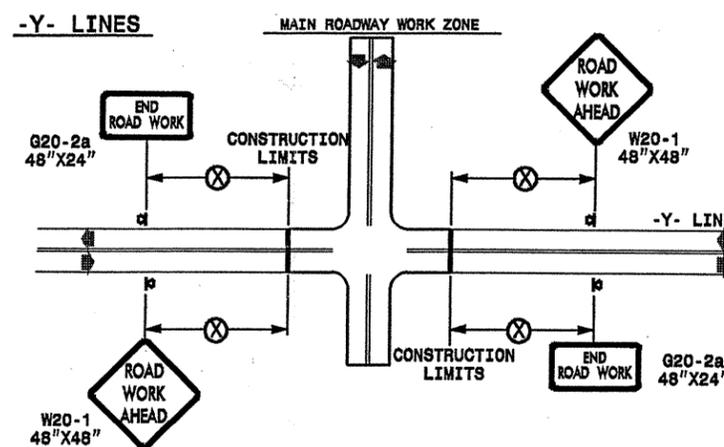
TWO-WAY UNDIVIDED ** (L-LINES)



POSTED SPEED LIMIT (M.P.H.)	RECOMMENDED MINIMUM SIGN SPACING
≤ 50	800'
≥ 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.

DETAIL DRAWING
FOR TWO-WAY UNDIVIDED
WORK ZONE WARNING SIGNS

LEGEND

	PORTABLE SIGN
	DIRECTION OF TRAFFIC FLOW

SHEET 1 OF 1

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

30-APR-2009 10:06
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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

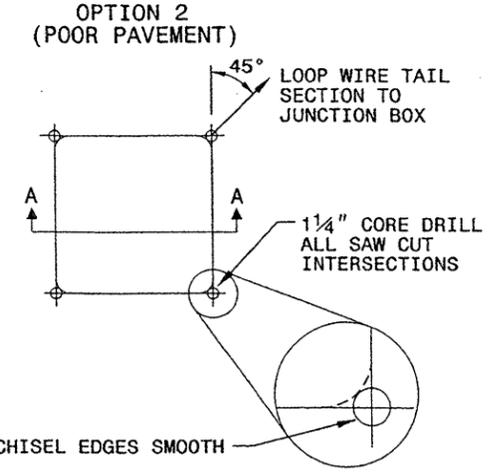
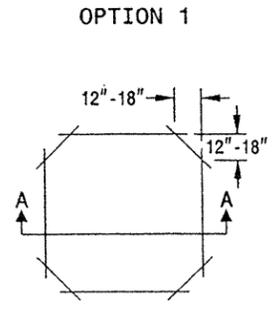
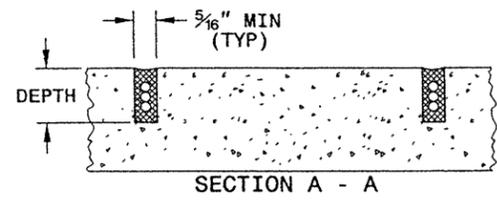
SHEET 1 OF 3
1725D01

CONVENTIONAL 4-SIDED LOOP

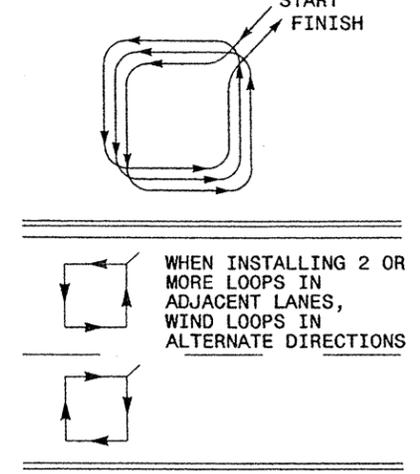
SAW CUT OPTIONS

SAW SLOT DEPTH CHART

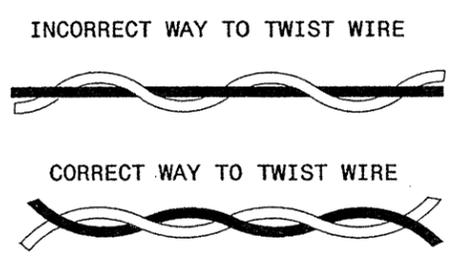
DEPTH (IN)	NO. OF WIRE TURNS				
	2	3	4	5	6
CONCRETE	2.0	2.0	2.5	2.5	3.0
ASPHALT	2.0	2.5	3.0	3.0	3.0



LOOP WINDING METHOD



LOOP WIRE TWISTING METHOD

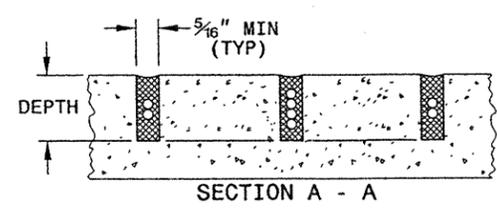
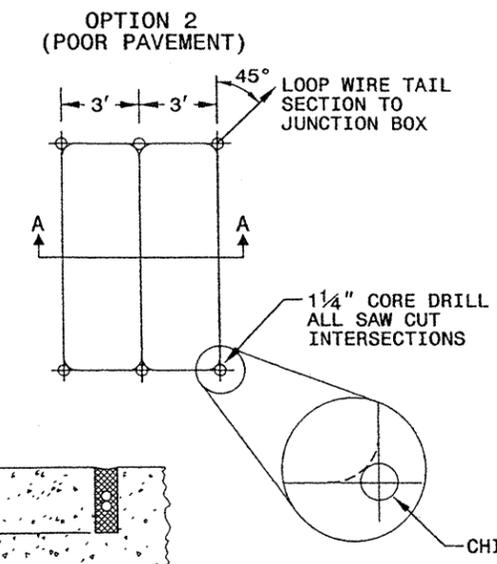
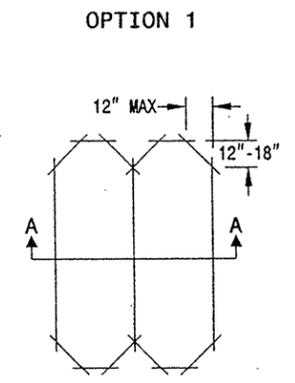


NOTES

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.

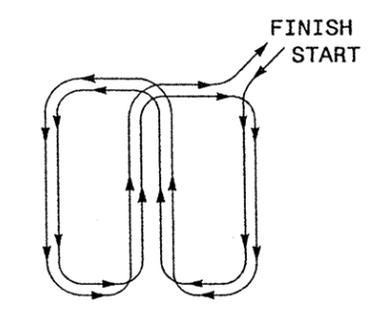
QUADRUPOLE LOOP

SAW CUT OPTIONS



DEPTH IS 2.5" FOR CONCRETE AND 3.0" FOR ASPHALT

LOOP WINDING METHOD



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

ENGINEER
MILTON I. DEAN
9/5/07
SIGNATURE DATE

05-SEP-2007 14:00
c:\p1\work\1725D01.dwg
zml:tlf

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

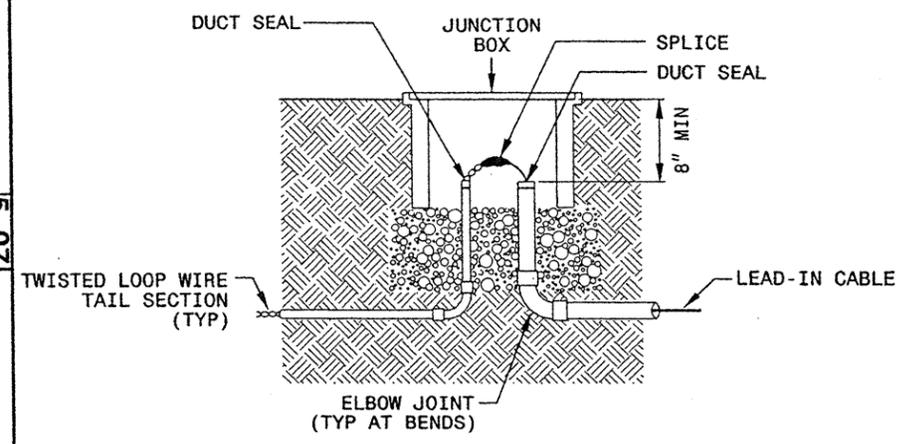
5-07

ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
 LOOP WIRE DETAILS

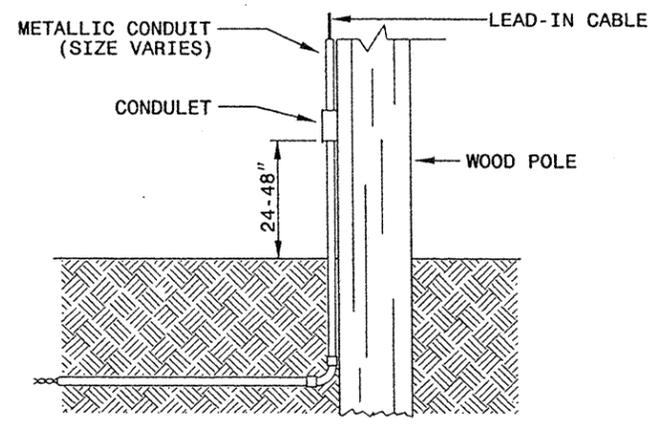
SHEET 2 OF 3
1725D01

LOOP WIRE SPLICE POINT DETAILS

LOOP WIRE AT JUNCTION BOX



LOOP WIRE AT POLE

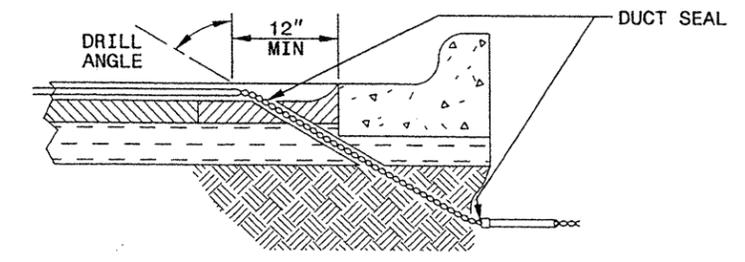


NOTE

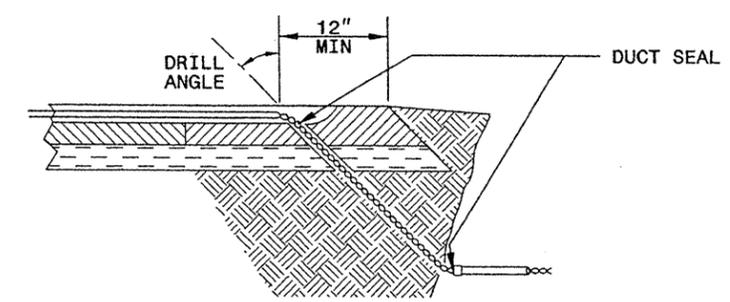
SPLICE ALL LOOP WIRE TAIL SECTIONS/LEAD-IN CABLE IN JUNCTION BOXES OR APPROVED CONDULETS.

LOOP WIRE PAVEMENT EDGE DETAILS

LOOP WIRE AT CURB & GUTTER SECTION



LOOP WIRE AT PAVEMENT SECTION



NOTES

- 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
 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

See Plate for Title

Prepared in the Offices of:

750 N. Greenfield Parkway
 Garner, NC 27529

SEAL

Milton I. Dean
 SIGNATURE

9/5/07
 DATE

05-SEP-2003 14:50
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 zmlittle

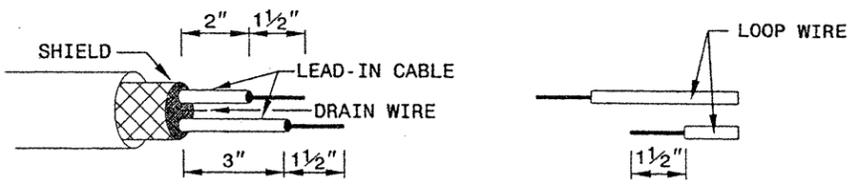
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

5-07

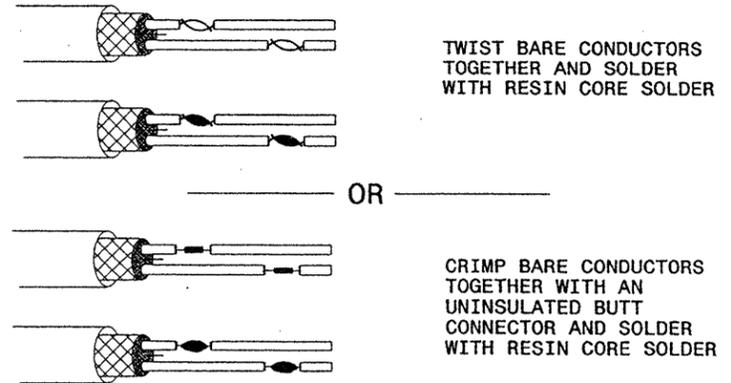
ENGLISH DETAIL DRAWING FOR
INDUCTION DETECTION LOOPS
SPlicing FOR LEAD-IN CABLE AND LOOP WIRE

SHEET 3 OF 3
1725D01

STEP 1. STRIP LOOP WIRE AND LEAD-IN CABLE

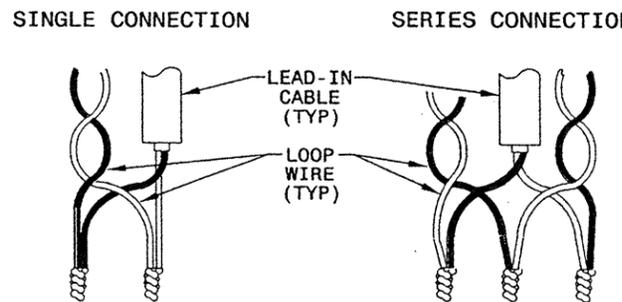


STEP 2. CONNECT AND SOLDER

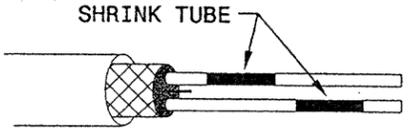


BOND SHIELD DRAIN WIRE AT SPLICE SECTIONS (DO NOT GROUND)

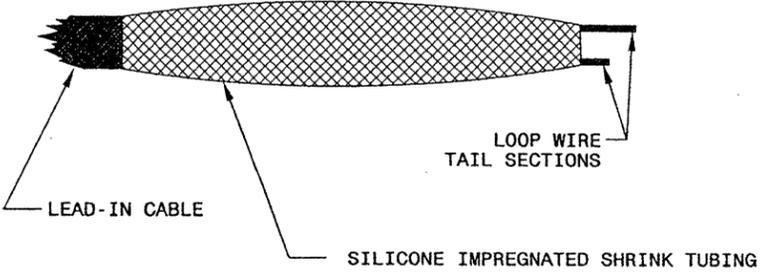
LOOP WIRE AND LEAD-IN CABLE CONNECTION DETAILS



STEP 3. INSULATE EACH SOLDER JOINT SEPARATELY



STEP 4. ENVIRONMENTALLY PROTECT SPLICE



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ENGLISH DETAIL DRAWING FOR
INDUCTIVE 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

Milton I. Dean 9/15/07
SIGNATURE DATE

CS-SEP-2007 1451
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