

09/08/99

CONTRACT: WBS NO: 3CR.10101.114 & 3CR.20101.114

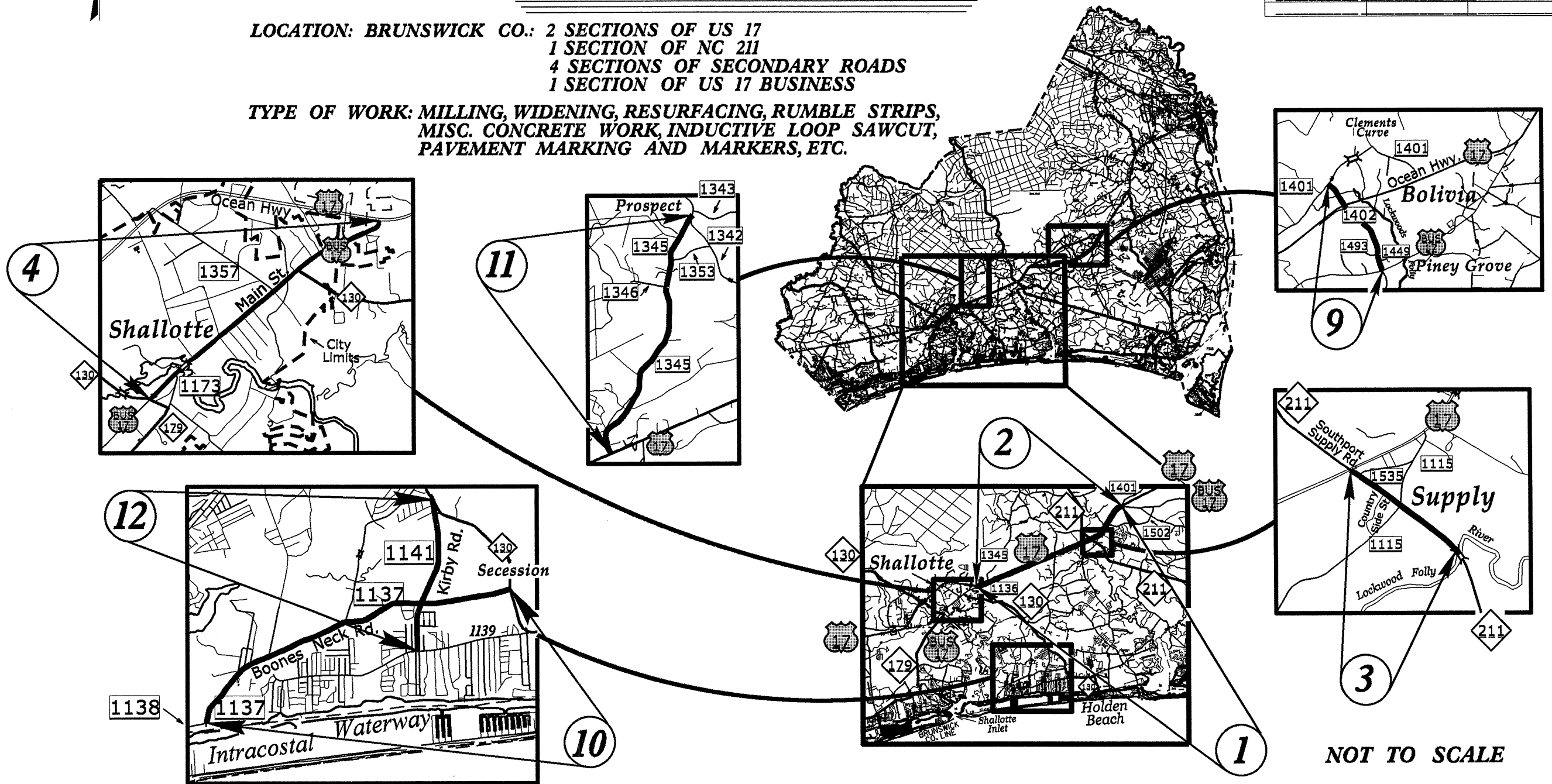
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BRUNSWICK COUNTY

**LOCATION: BRUNSWICK CO.: 2 SECTIONS OF US 17
1 SECTION OF NC 211
4 SECTIONS OF SECONDARY ROADS
1 SECTION OF US 17 BUSINESS**

**TYPE OF WORK: MILLING, WIDENING, RESURFACING, RUMBLE STRIPS,
MISC. CONCRETE WORK, INDUCTIVE LOOP SAWCUT,
PAVEMENT MARKING AND MARKERS, ETC.**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	3CR.10101.114, Etc.	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	



NOT TO SCALE

PROJECT LENGTH	
PRIMARY	SECONDARY
MAP NO. 1 = 7.79 MI.	MAP NO. 9 = 2.07 MI.
MAP NO. 2 = 7.75 MI.	MAP NO. 10 = 3.57 MI.
MAP NO. 3 = 0.68 MI.	MAP NO. 11 = 4.50 MI.
MAP NO. 4 = 2.01 MI.	MAP NO. 12 = 1.57 MI.
SUB-TOTAL = 18.23 MI.	SUB-TOTAL = 11.71 MI.
TOTAL = 29.94 MI.	

Prepared In the Office of:
DIVISION OF HIGHWAYS
5501 Barbados Blvd., Castle Hayne, NC 28429

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: _____

LETTING DATE: _____

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN TECHNICIAN

DNL

SIGNATURE: MPK

SIGNATURE:

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$DON\$\$\$\$\$
\$\$\$\$\$USERNAMES\$\$\$\$\$

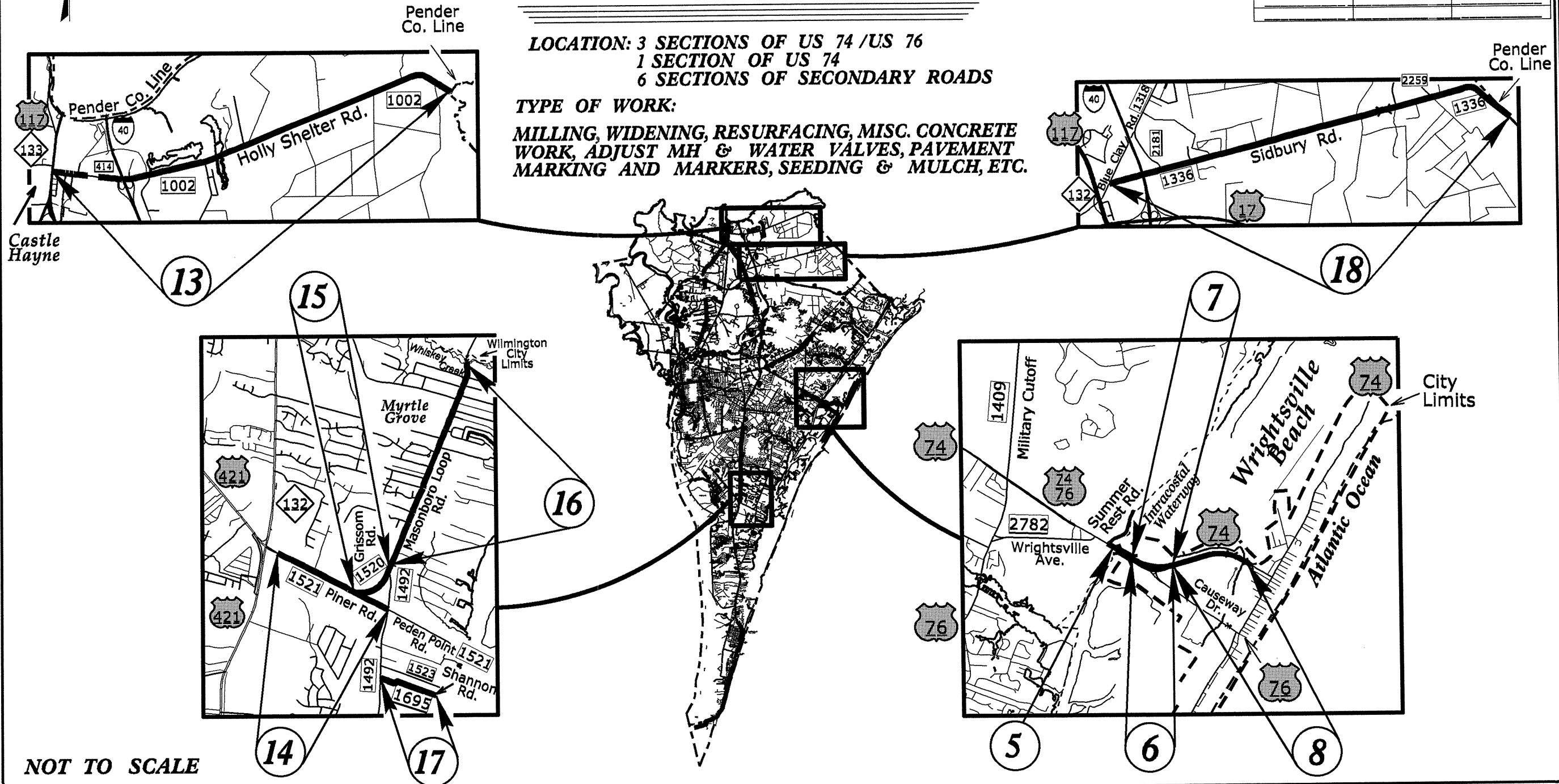
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	3CR.10101.114, Etc.	2	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NEW HANOVER COUNTY

LOCATION: 3 SECTIONS OF US 74 /US 76
1 SECTION OF US 74
6 SECTIONS OF SECONDARY ROADS

TYPE OF WORK:
MILLING, WIDENING, RESURFACING, MISC. CONCRETE WORK, ADJUST MH & WATER VALVES, PAVEMENT MARKING AND MARKERS, SEEDING & MULCH, ETC.



CONTRACT: WBS NO: 3CR.10651.114 & 3CR.20651.114

NOT TO SCALE

PROJECT LENGTH	
PRIMARY	SECONDARY
MAP NO. 5 = 0.06 MI.	MAP NO. 13 = 4.93 MI.
MAP NO. 6 = 0.36 MI.	MAP NO. 14 = 0.93 MI.
MAP NO. 7 = 0.34 MI.	MAP NO. 15 = 0.35 MI.
MAP NO. 8 = 0.66 MI.	MAP NO. 16 = 1.65 MI.
	MAP NO. 17 = 0.49 MI.
	MAP NO. 18 = 5.62 MI.
SUB-TOTAL = 1.42 MI.	SUB-TOTAL = 13.97 MI.
TOTAL = 15.39 MI.	

Prepared in the Office of:
DIVISION OF HIGHWAYS
5501 Barbados Blvd., Castle Hayne, NC 28429

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: _____

LETTING DATE: _____

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN TECHNICIAN

DNL

SIGNATURE: _____

MPK

SIGNATURE: _____

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$DGN\$\$\$\$\$
\$\$\$\$\$USERNAME\$\$\$\$\$

04/16/11

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○
Property Corner	→
Property Monument	□
Parcel/Sequence Number	②③
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	-o-o-o-
Proposed Chain Link Fence	-□-□-□-
Proposed Barbed Wire Fence	-◇-◇-◇-
Existing Wetland Boundary	-----
Proposed Wetland Boundary	-----
Existing Endangered Animal Boundary	-----
Existing Endangered Plant Boundary	-----
Known Soil Contamination: Area or Site	☠ ☠
Potential Soil Contamination: Area or Site	☠ ☠

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○
Well	○
Small Mine	⊗
Foundation	□
Area Outline	□
Cemetery	⊕
Building	□
School	□
Church	⊕
Dam	▬

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	□
Jurisdictional Stream	-----
Buffer Zone 1	-----
Buffer Zone 2	-----
Flow Arrow	←
Disappearing Stream	-----
Spring	○
Wetland	-----
Proposed Lateral, Tail, Head Ditch	-----
False Sump	▽

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○
Switch	□
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	-----
Proposed Right of Way Line with Concrete or Granite Marker	-----
Existing Control of Access	○
Proposed Control of Access	○
Existing Easement Line	-----
Proposed Temporary Construction Easement	-----
Proposed Temporary Drainage Easement	-----
Proposed Permanent Drainage Easement	-----
Proposed Permanent Drainage / Utility Easement	-----
Proposed Permanent Utility Easement	-----
Proposed Temporary Utility Easement	-----
Proposed Aerial Utility Easement	-----

ROADS AND RELATED FEATURES:

Proposed Permanent Easement with Iron Pin and Cap Marker	◆
Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	-----
Proposed Slope Stakes Fill	-----
Proposed Curb Ramp	-----
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	▨

VEGETATION:

Single Tree	○
Single Shrub	○
Hedge	-----
Woods Line	-----

Orchard	-----
Vineyard	-----

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	-----
Bridge Wing Wall, Head Wall and End Wall	-----
MINOR:	
Head and End Wall	-----
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	□
Paved Ditch Gutter	-----
Storm Sewer Manhole	○
Storm Sewer	-----

UTILITIES:

POWER:	
Existing Power Pole	○
Proposed Power Pole	○
Existing Joint Use Pole	○
Proposed Joint Use Pole	○
Power Manhole	○
Power Line Tower	⊗
Power Transformer	⊗
U/G Power Cable Hand Hole	○
H-Frame Pole	○
Recorded U/G Power Line	-----
Designated U/G Power Line (S.U.E.*)	-----

TELEPHONE:

Existing Telephone Pole	○
Proposed Telephone Pole	○
Telephone Manhole	○
Telephone Booth	□
Telephone Pedestal	□
Telephone Cell Tower	⊗
U/G Telephone Cable Hand Hole	○
Recorded U/G Telephone Cable	-----
Designated U/G Telephone Cable (S.U.E.*)	-----
Recorded U/G Telephone Conduit	-----
Designated U/G Telephone Conduit (S.U.E.*)	-----
Recorded U/G Fiber Optics Cable	-----
Designated U/G Fiber Optics Cable (S.U.E.*)	-----

WATER:

Water Manhole	○
Water Meter	○
Water Valve	○
Water Hydrant	○
Recorded U/G Water Line	-----
Designated U/G Water Line (S.U.E.*)	-----
Above Ground Water Line	-----

TV:

TV Satellite Dish	⊗
TV Pedestal	□
TV Tower	⊗
U/G TV Cable Hand Hole	○
Recorded U/G TV Cable	-----
Designated U/G TV Cable (S.U.E.*)	-----
Recorded U/G Fiber Optic Cable	-----
Designated U/G Fiber Optic Cable (S.U.E.*)	-----

GAS:

Gas Valve	◇
Gas Meter	◇
Recorded U/G Gas Line	-----
Designated U/G Gas Line (S.U.E.*)	-----
Above Ground Gas Line	-----

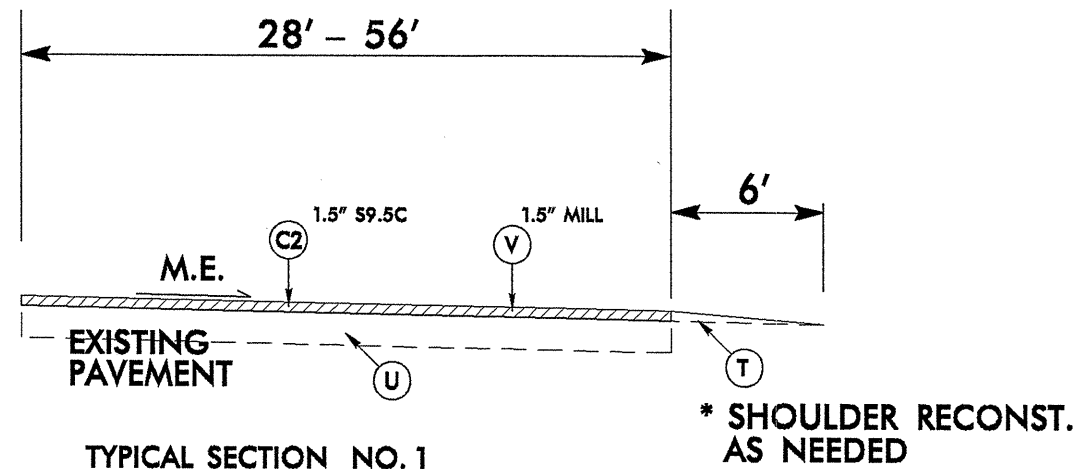
SANITARY SEWER:

Sanitary Sewer Manhole	○
Sanitary Sewer Cleanout	○
U/G Sanitary Sewer Line	-----
Above Ground Sanitary Sewer	-----
Recorded SS Forced Main Line	-----
Designated SS Forced Main Line (S.U.E.*)	-----

MISCELLANEOUS:

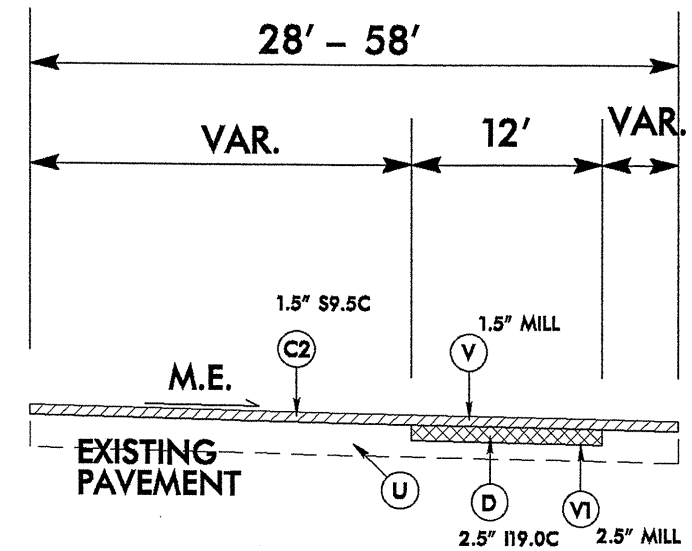
Utility Pole	○
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	□
Utility Unknown U/G Line	-----
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	⊕
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊕
U/G Test Hole (S.U.E.*)	○
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

PROJECT REFERENCE NO.		SHEET NO.	
3CR.10101.114, ETC.		5	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

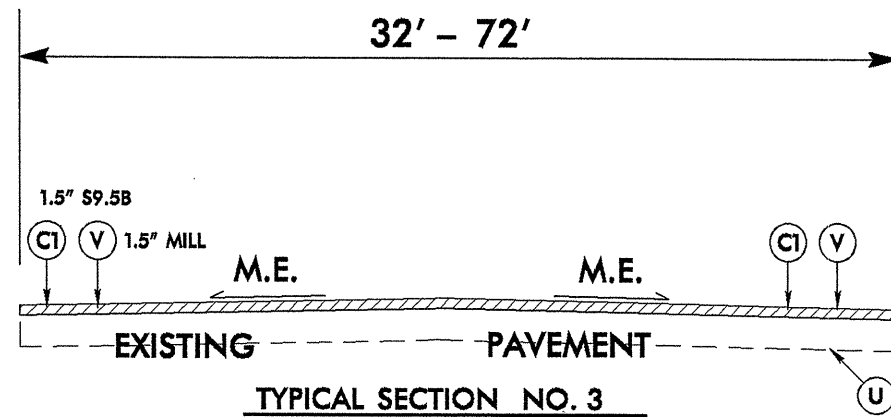


TYPICAL SECTION NO. 1
MAP NO. 1
US 17 NBL
MP 0.00 TO MP 7.79

* SHOULDER RECONST. AS NEEDED



TYPICAL SECTION NO. 2
MAP NO. 2
US 17 SBL
MP 0.00 TO MP 7.75



TYPICAL SECTION NO. 3
MAP NO. 3
NC 211
MP 0.00 TO MP 0.68

PAVEMENT SCHEDULE			
		R	EXISTING CURB & GUTTER
C	PROP. APPROX. 1 1/2" DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE 9F8.8A, AT AN AVERAGE RATE OF 188 LBS. PER SQ. YD.	R1	EXISTING ASPHALT CURB
C1	PROP. APPROX. 1 1/2" DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE 89.5B, AT AN AVERAGE RATE OF 188 LBS. PER SQ. YD.	R2	EXISTING CONC. ISLAND
C2	PROP. APPROX. 1 1/2" DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE 89.5C, AT AN AVERAGE RATE OF 188 LBS. PER SQ. YD.	T	EARTH MATERIAL (SHOULDER RECONSTRUCTION)
D	PROP. APPROX. 2 1/2" DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 119.0C, AT AN AVERAGE RATE OF 288 LBS. PER SQ. YD.	U	EXISTING PAVEMENT.
E	PROP. APPROX. 4" DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B26.0B, AT AN AVERAGE RATE OF 488 LBS. PER SQ. YD.	V	MILLING BITUMINOUS PAVEMENT. 1 1/2" DEPTH.
F	ASPHALT SURFACE TREATMENT, MAT COAT, #8 STONE.	V1	MILLING BITUMINOUS PAVEMENT. 2 1/2" DEPTH.

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.
SEE STD. DRAWING 1206.01, SHEET 2 OF 2, TABLE 1 FOR EDGE LINE OFFSETS.
M.E. = MATCH EXISTING

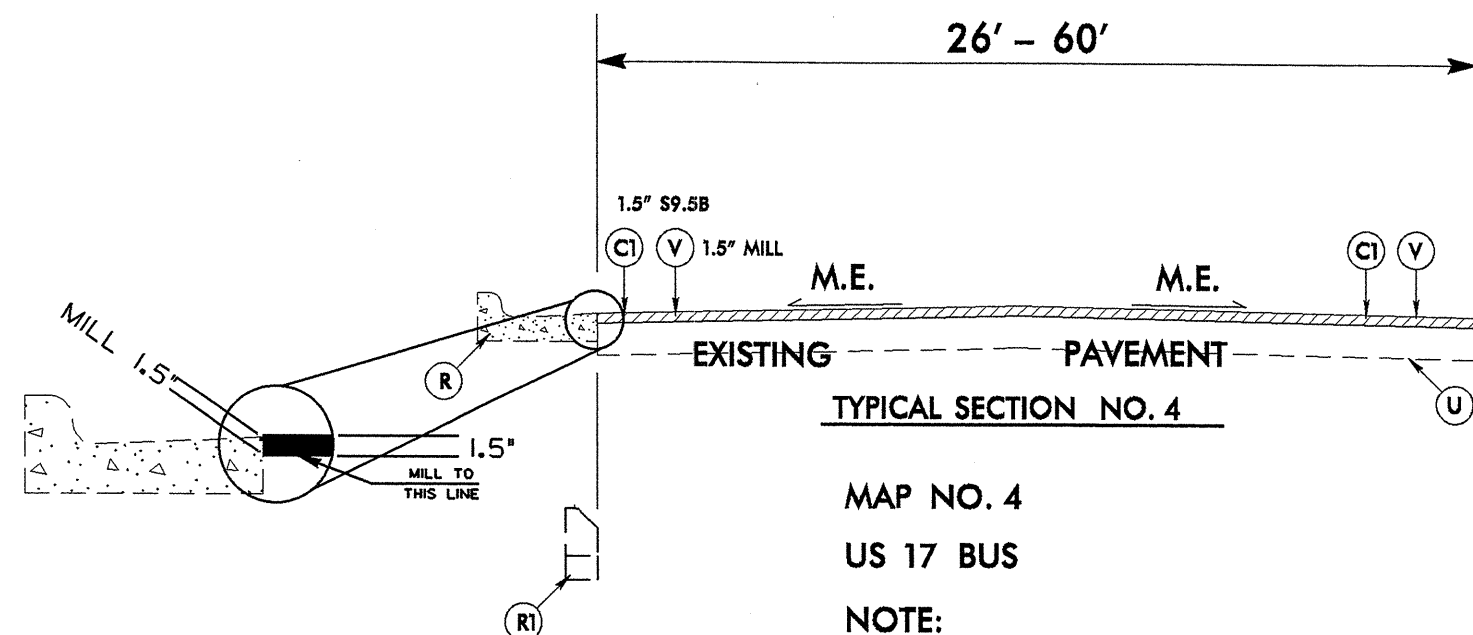
REVISIONS

8/17/99

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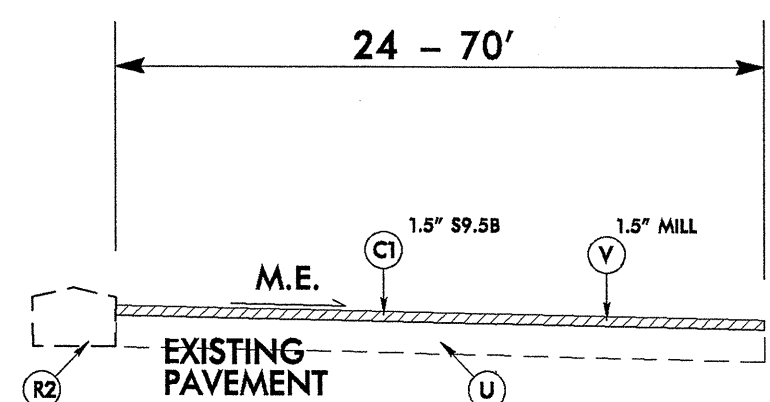
PROJECT REFERENCE NO.	SHEET NO.
3CR.10101.114, ETC.	6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/99
 REVISIONS
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 3CR.10101.114



MAP NO. 4
US 17 BUS

- NOTE:**
- MP 0.00 TO MP 0.56 = EARTH SHOULDER LT & RT
 - MP 0.56 TO MP 0.61 = EARTH SHOULDER LT, 1'-6" C&G RT
 - MP 0.61 TO MP 0.68 = EARTH SHOULDER LT & RT
 - MP 0.68 TO MP 1.05 = NO WORK
 - MP 1.05 TO MP 1.74 = 2'-6" C&G LT & RT
 - MP 1.74 TO MP 1.96 = 6" ASPHALT CURB LT & RT
 - MP 1.96 TO MP 2.01 = EARTH SHOULDER RT, 6" ASPHALT CURB LT



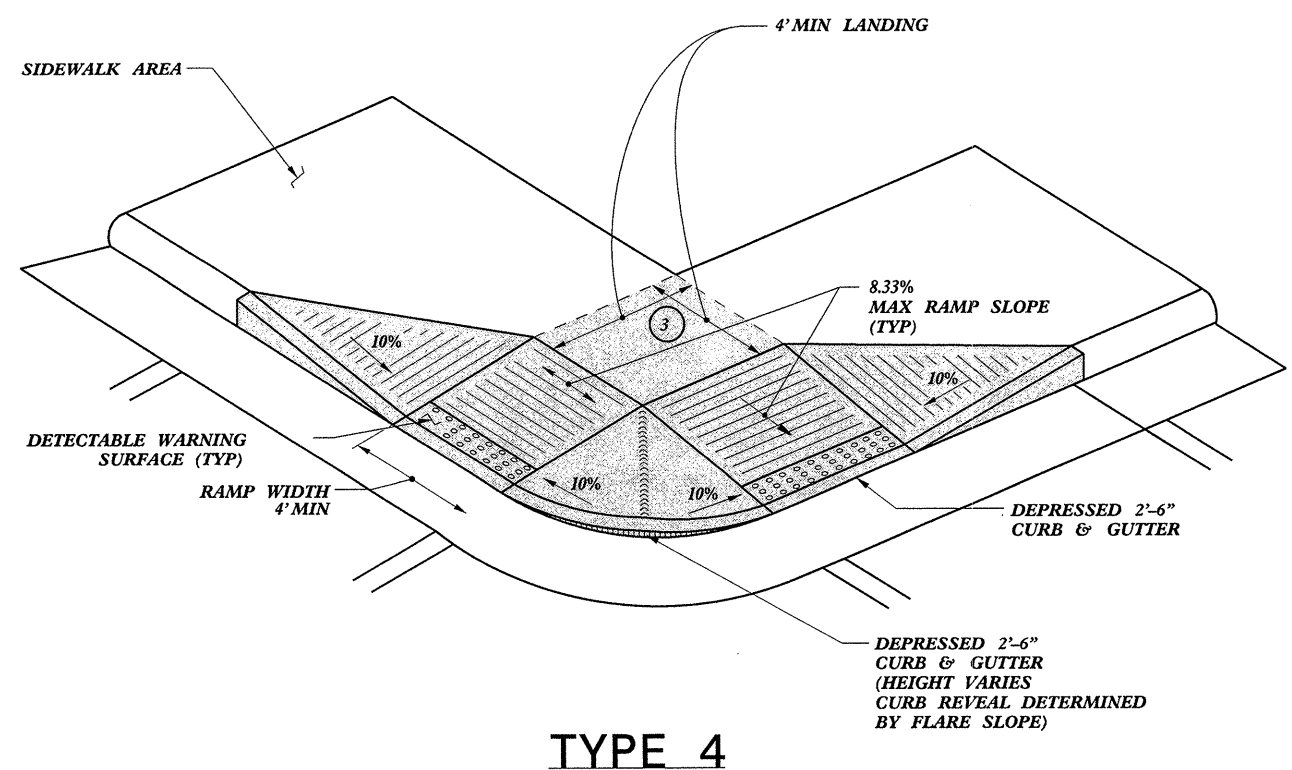
TYPICAL SECTION NO. 5

MAP NO. 6
US 74 /76 EBL
MP 0.20 TO MP 0.30
MP 0.30 TO MP 0.56 = EARTH SHOULDER LT.

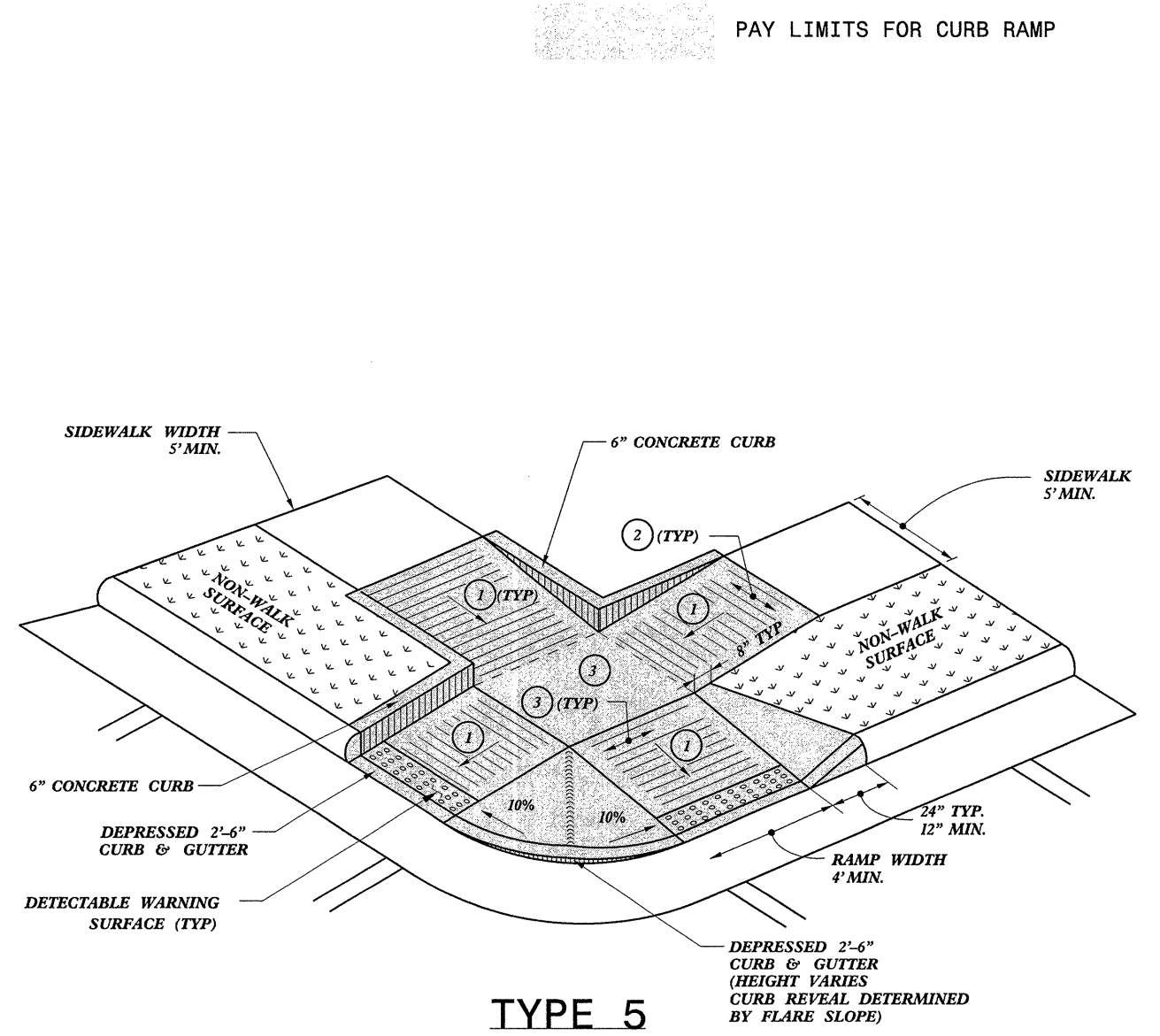
MAP NO. 7
US 74 /76 WBL
MP 0.22 TO MP 0.32
MP 0.32 TO MP 0.56 = EARTH SHOULDER LT.

PAVEMENT SCHEDULE			
		R	EXISTING CURB & GUTTER
C	PROP. APPROX. 1 1/2" DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE 6F9.5A, AT AN AVERAGE RATE OF 188 LBS. PER SQ. YD.	R1	EXISTING ASPHALT CURB
C1	PROP. APPROX. 1 1/2" DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE 69.5B, AT AN AVERAGE RATE OF 188 LBS. PER SQ. YD.	R2	EXISTING CONC. ISLAND
C2	PROP. APPROX. 1 1/2" DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE 69.80, AT AN AVERAGE RATE OF 188 LBS. PER SQ. YD.	T	EARTH MATERIAL (SHOULDER RECONSTRUCTION)
D	PROP. APPROX. 2 1/2" DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 110.00, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	U	EXISTING PAVEMENT.
E	PROP. APPROX. 4" DEPTH ASPHALT CONCRETE BASE COURSE, TYPE 825.0B, AT AN AVERAGE RATE OF 488 LBS. PER SQ. YD.	V	MILLING BITUMINOUS PAVEMENT. 1 1/2" DEPTH.
F	ASPHALT SURFACE TREATMENT, MAT COAT, #6 STONE.	V1	MILLING BITUMINOUS PAVEMENT. 2 1/2" DEPTH.

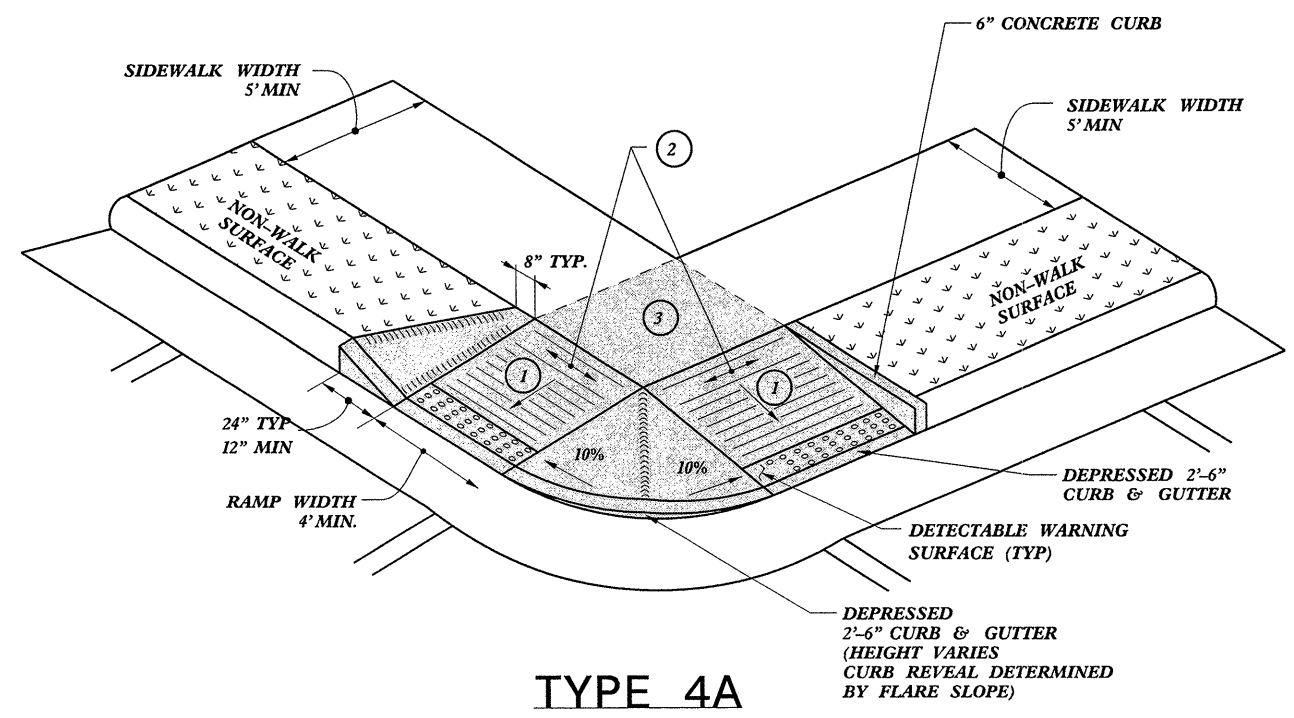
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.
SEE STD. DRAWING 1205.01, SHEET 2 OF 2, TABLE 1 FOR EDGE LINE OFFSETS.
M.E. = MATCH EXISTING



TYPE 4



TYPE 5



TYPE 4A

- ① 8.33% (12:1) MAX RAMP SLOPE
- ② CROSS SLOPE: 2.00%
- ③ CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.

PAY LIMITS FOR CURB RAMP

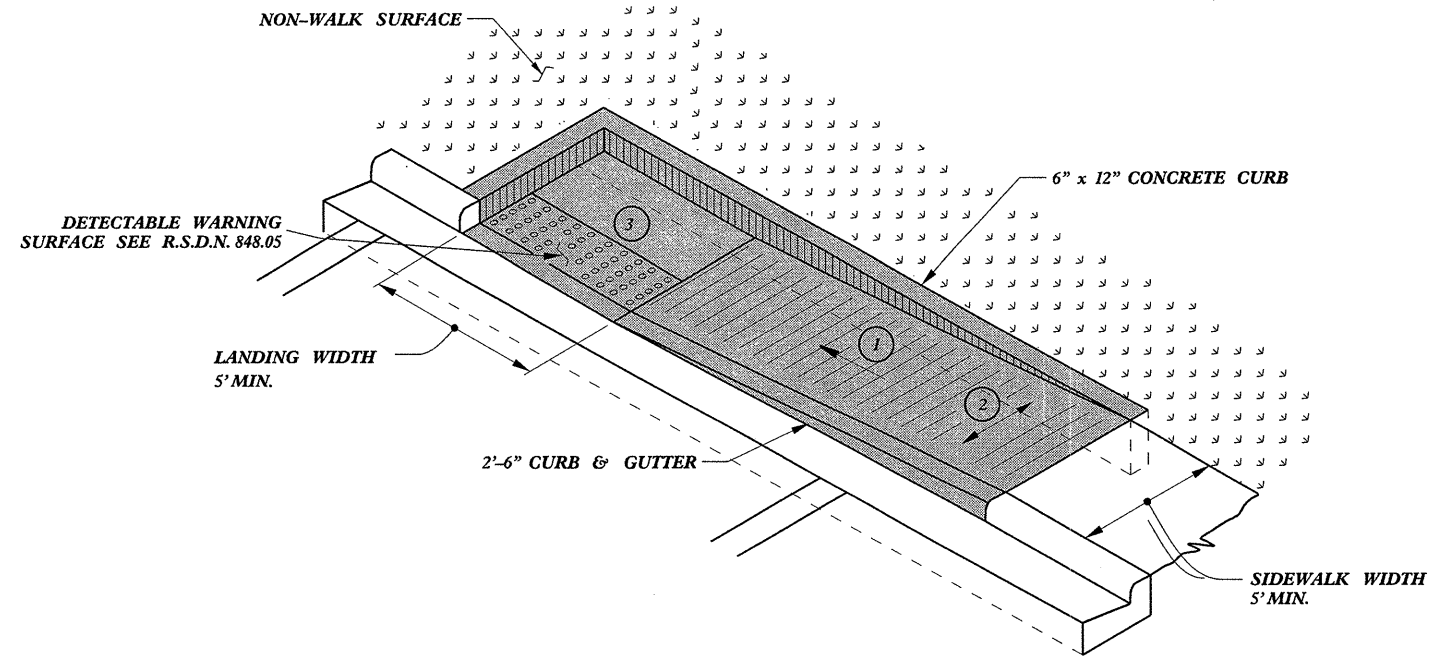
5/14/99
16-SEP-2011 15:06
S:\Contracts\Special Details\Howerton\Standard Drawings\2012 Curb Ramp Special Details\Curb Ramp Details.dgn
Howerton

REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

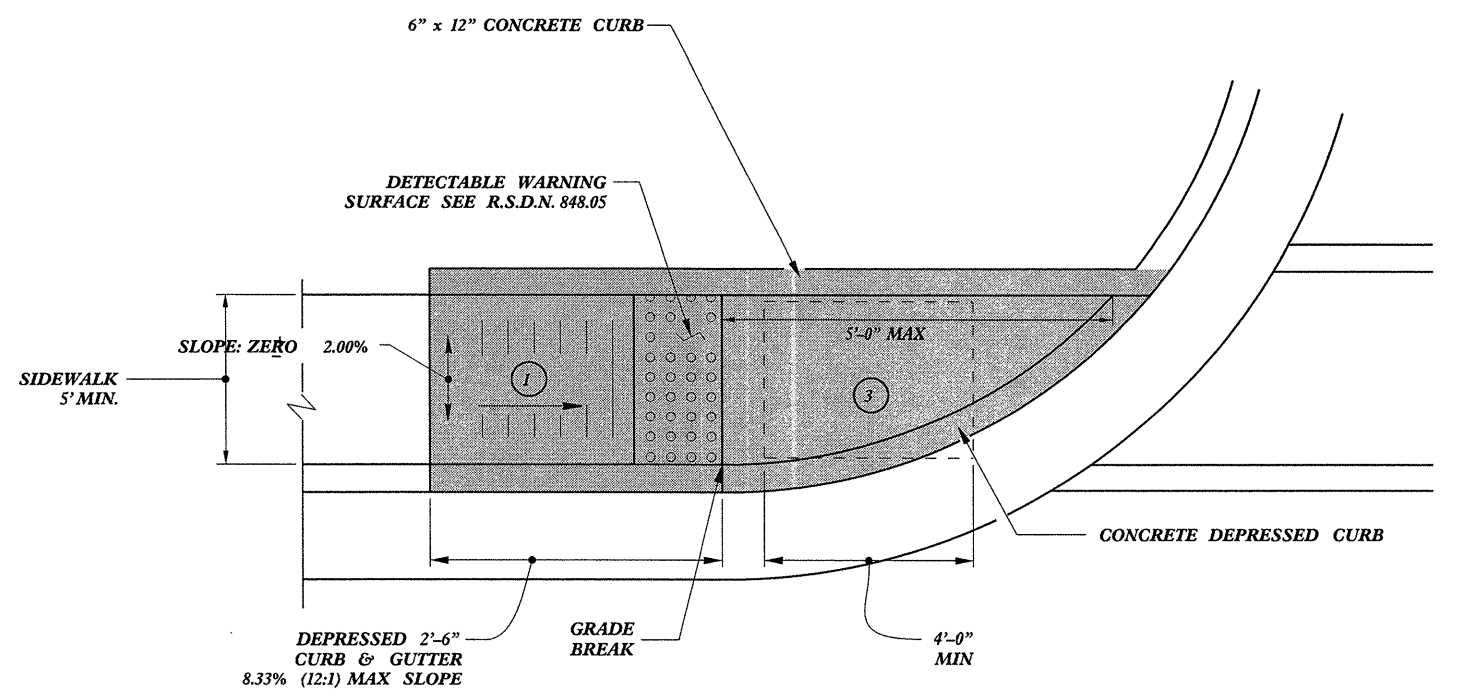
CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950 FAX 919-250-4119	
CURB RAMPS	
Shared Landing	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC: stds/2012CurbRamp/CurbRampDetails.dgn	

5/14/99
 I:\SEP-2011\08103\JHowerton\Special Details\Curb Ramp Details.dgn
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PAY LIMITS FOR CURB RAMP



TYPE 1A

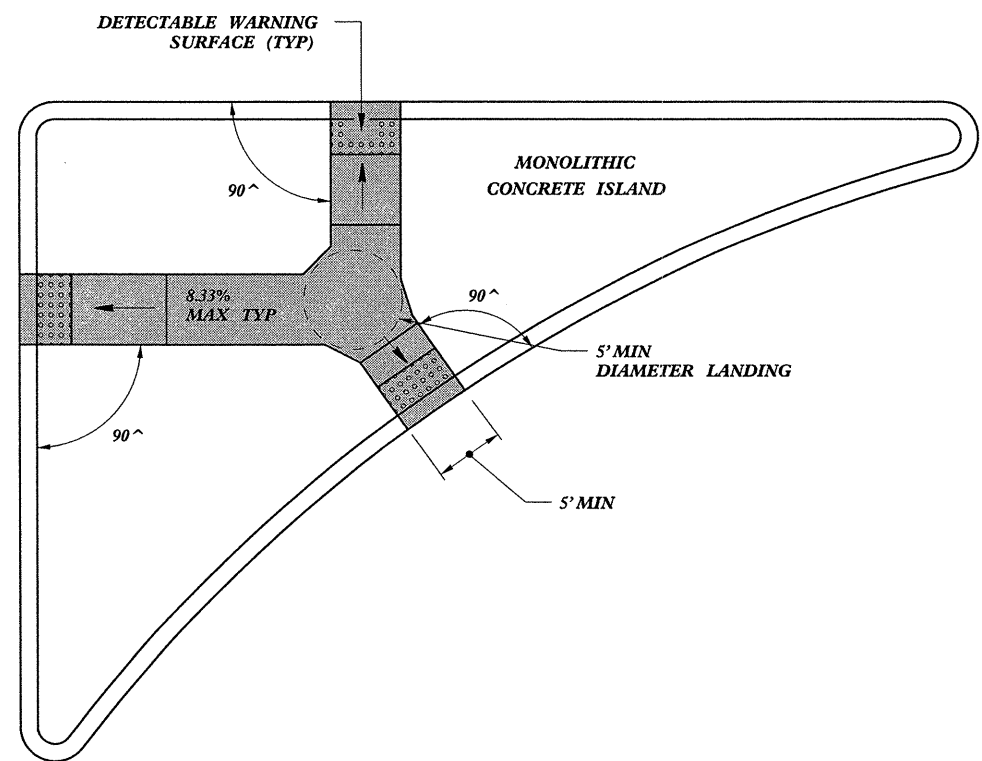


TYPE 1

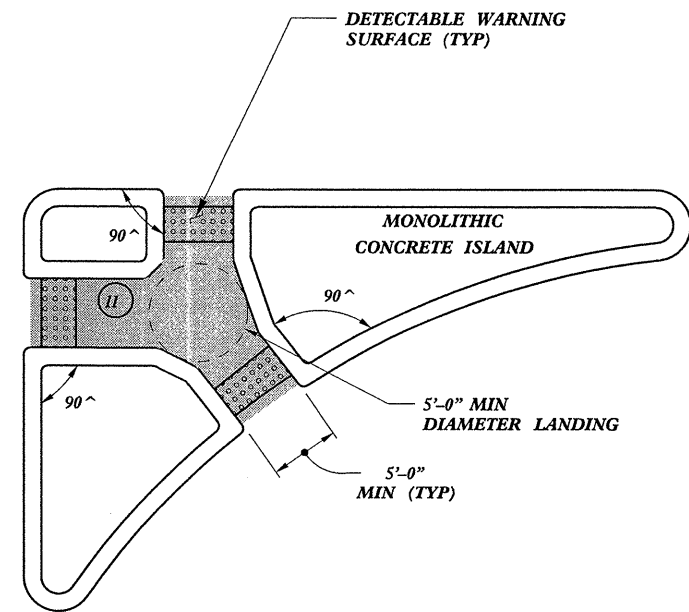
- ① 8.33% (12:1) MAX RAMP SLOPE
- ② CROSS SLOPE: 2.00%
- ③ CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.

REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

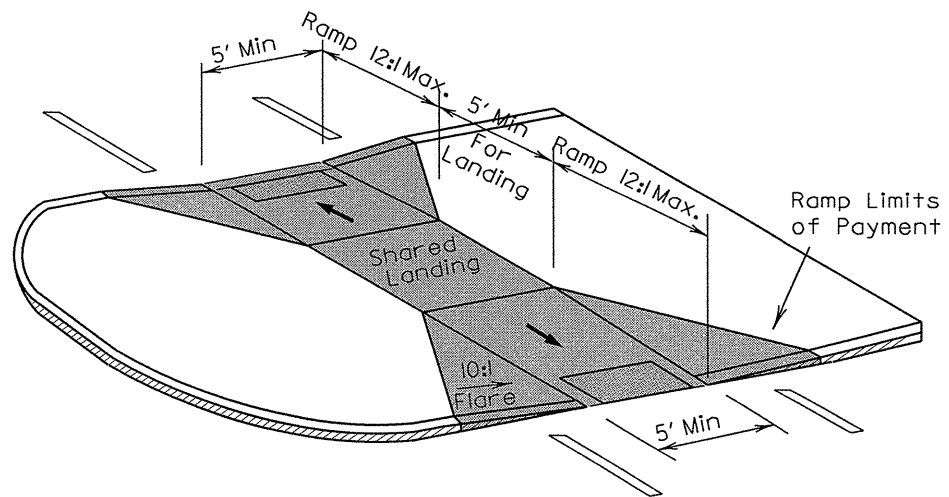
CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950	FAX 919-250-4119
CURB RAMPS	
Directional Ramps	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC: stds/2012CurbRamp/CurbRampDetails.dgn	



**LARGE ISLAND
CURB RAMPS**



**SMALL ISLAND
WITH CUT THROUGH**



**MEDIAN ISLAND
CURB RAMPS**

-SEE ROADWAY DETAIL DRAWING 848D05 FOR DETECTABLE WARNING SURFACE AND FOR RAMP NOTES.
-SEE ROADWAY STANDARD DRAWING 852.01 FOR CONCRETE ISLAND DIMENSIONS.

CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950	FAX 919-250-4119
CURB RAMPS	
Median or Turn Lane Islands	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC: stds/2012CurbRamp/CurbRampDetails.dgn	

20-OCT-2011 14:24
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 J.Howerton

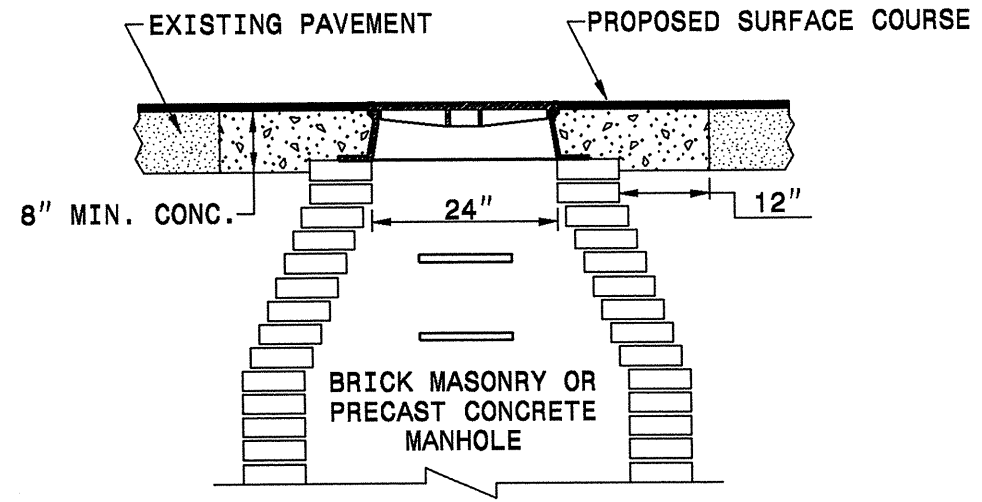
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
MANHOLE AND VALVE BOX ADJUSTMENTS

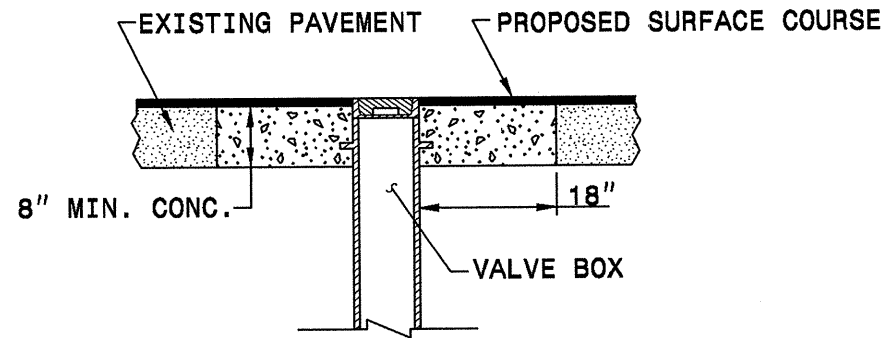
SHEET 1 OF 1
840D55

GENERAL NOTES:

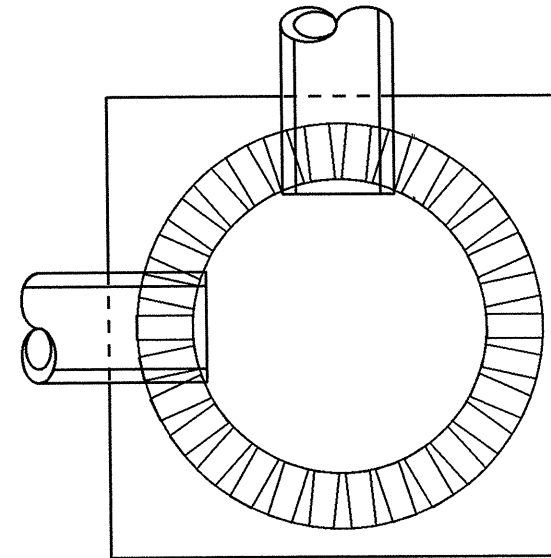
1. USE RAPID SET GROUT, MORTAR, OR CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI.
2. REMOVE ALL FAULTY EXISTING BRICKWORK AND REPLACE WITH NEW BRICK MASONRY.
3. SHEER CUT EXCAVATION FOR THE ADJUSTMENT ON ALL SIDES.
4. FILL AREA BELOW 8" DEPTH WITH 78M OR NO. 57 CLEAN STONE.
5. MIX MORTAR TO NCDOT SPECIFICATIONS.
6. MORTAR JOINTS 1/2" +/- 1/8"



MANHOLE CONCRETE ENCASEMENT



VALVE BOX CONCRETE ENCASEMENT



ELEVATION VIEW

PLACE BRICK ACCORDING TO ELEVATION VIEW

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

ENGLISH DETAIL DRAWING FOR
MANHOLE AND VALVE BOX ADJUSTMENTS

SHEET 1 OF 1
840D55

**CONTRACT STANDARDS
AND DEVELOPMENT UNIT**
Office 919-707-8950 FAX 919-250-4119

SEE PLATE FOR TITLE

ORIGINAL BY:	DATE:
MODIFIED BY: E.E. WARD	DATE:
CHECKED BY:	DATE:
FILE SPEC.: s:\usr\details\stand\840d55.dgn	

PROJECT NO.	SHEET NO.	TOTAL NO.
3CR.10101.114, etc.	15	

SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	FINAL SURFACE TESTING REQUIRED	LENGTH MI	WIDTH FT	BORROW EXC. CY	INC. STONE BASE TONS	SHOULDER RECONST. SMI	1 1/2" MILLING SY	2 1/2" MILLING SY	INC. MILLING SY	BASE COURSE, B25.0B TONS	INT. COURSE, I19.0C TONS	SURFACE COURSE, S9.5B TONS	SURFACE COURSE, S9.5C TONS	SURFACE COURSE, SF9.5A TONS	ASPHALT BINDER FOR PLANT MIX TON	PATCHING EXISTING PAVEMENT (MILL) TON	MILLED RUMBLE STRIPS - 12" LF	PATCHING EXISTING PAVEMENT (FULL DEPTH) TON	CONCRETE APRON EA	RETROFIT EXISTING CURB RAMPS EA	CONCRETE CURB RAMPS EA	ADJ. OF MANHOLES EA	ADJ. OF METER OR VALVE BOX EA		
3CR.10101.114	Brunswick	1	US 17 NBL	US 17 BUS. (NORTH END OF SHALLOTTE) TO US 17 BUS. (SOUTH END OF BOLIVIA), MP 0.00-7.79		NO	0	1		225											60		10							
				MILL & FILL FULL WIDTH 52'	1	NO	0.58	52			0.58	17,694						1,713		101		6,125								
				MILL & FILL FULL WIDTH 28'	1	NO	3.8	28	279		3.80	62,421						6,057		357		40,128								
				NO WORK, MP 6.39-6.42	1	NO	0.03	24																						
				MILL & FILL IN TAPERS 28'-52'	1	NO	1.21	40	89		1.21	28,395						2,751		162		12,778								
				MILL & FILL IN TAPERS 28'-40'	1	NO	1.03	34	76		1.03	20,545						1,992		118		10,877								
				MILL & FILL FULL WIDTH 40'	1	NO	0.97	40	12		0.97	22,763						2,206		130		10,243								
				MILL & FILL IN TAPERS 40'-50'	1	NO	0.03	45	2		0.03	792						77		5		317								
				MILL & FILL IN TAPERS 28'-56'	1	NO	0.14	42	10		0.14	3,450						334		20		1,478								
TOTAL FOR MAP NO. 1							7.79		468	225	7.76	156,060						15,130		893	60	81,946	10							
3CR.10101.114	Brunswick	2	US 17 SBL	US 17 BUS. (SOUTH END OF BOLIVIA) TO US 17 BUS. (NORTH END OF SHALLOTTE), MP 0.00-7.75		NO	0	1		150											50		10	19						
				MILL & FILL FULL WIDTH 40'	2	NO	1.52	40				35,669	10,701			1,706		3,456		286		16,051								
				MILL & FILL FULL WIDTH 28'	2	NO	4.04	28				66,364	28,442			4,536		6,439		598		42,662								
				NO WORK, MP 1.36-1.39		NO	0.03	28																						
				MILL & FILL FULL WIDTH 52'	2	NO	0.31	52				9,457	2,182			348		916		71		3,274								
				MILL & FILL IN TAPERS 28'-40'	2	NO	1.2	34				23,936	8,448			1,347		2,321		202		12,672								
				MILL & FILL IN TAPERS 28'-52'	2	NO	0.3	40				7,040	2,112			337		682		56		3,168								
				MILL & FILL IN TAPERS 28'-58'	2	NO	0.16	43				4,036	1,126			180		391		32		1,690								
				MILL & FILL FULL WIDTH 58'	2	NO	0.06	58				2,042	422			67		198		15		634								
				MILL & FILL IN TAPERS 40'-52'	2	NO	0.13	46				3,508	915			146		340		27		1,373								
TOTAL FOR MAP NO. 2							7.75			150		152,052	54,348			8,667		14,743		1,287	50	81,524	10		19					
3CR.10101.114	Brunswick	3	NC 211	LOCKWOOD FOLLY RIVER BRIDGE TO US 17		NO	0	1		50											75		10							
				MILL & FILL FULL WIDTH 32', MP 0.00-0.24	3	NO	0.24	32				4,506					437		26											
				MILL & FILL IN TAPERS 32'-48', MP 0.24-0.34	3	NO	0.1	40				2,347					227		14											
				MILL & FILL FULL WIDTH 48', MP 0.34-0.40, 0.43-0.46	3	NO	0.09	48				2,534					245		15											
				MILL & FILL IN TAPERS 48'-57', MP 0.40-0.43	3	NO	0.03	52.5				924					89		5											
				MILL & FILL FULL WIDTH 36', MP 0.46-0.63	3	NO	0.17	36				3,590					348		21											
				MILL & FILL IN TAPERS 36'-72', MP 0.63-0.68	3	NO	0.05	54				1,584					153		9											
TOTAL FOR MAP NO. 3							0.68			50		15,485				1,499		90	75		10									
3CR.10101.114	Brunswick	4	US 17 BUS	US 17 TO NC 179, 11 NON-SYSTEM INTERSECTIONS		NO	0	1		125				500			165		10	50		10		5	10	1	1			
				MILL & FILL IN TAPERS 60'-26' & 48'-36', MP 0.00-0.05, 0.49-0.52	4	NO	0.08	43				2,018					196		12											
				MILL & FILL FULL WIDTH 26', MP 0.05-0.17	4	NO	0.12	26				1,830					178		11											
				MILL & FILL IN TAPERS 26'-36', MP 0.17-0.21	4	NO	0.04	31				728					71		4											
				MILL & FILL FULL WIDTH 36', MP 0.21-0.27, 0.38-0.46	4	NO	0.14	36				2,957					287		17											
				MILL & FILL FULL WIDTH 48', & IN TAPERS 41'-53', MP 0.27-0.38, 0.46-0.49, 0.58-0.61, 0.61-0.68, 1.98-2.01	4	NO	0.27	48				7,603					736		44											
				NO WORK, MP 0.68-1.05		NO	0.37	40																						
				MILL & FILL IN TAPERS 45'-48', MP 1.96-1.98	4	NO	0.02	46.5				546					53		3											
				MILL & FILL FULL WIDTH 41', MP 0.57-0.58, 1.05-1.74	4	NO	0.7	41				16,837					1,631		98											
				MILL & FILL FULL WIDTH 53', MP 0.56-0.57	4	NO	0.01	53				311					30		2											
				MILL & FILL IN TAPERS 36'-53' & FULL WIDTH 45', MP 0.52-0.56, 1.74-1.96	4	NO	0.26	45				6,864					665		40											
TOTAL FOR MAP NO. 4							2.01			125		39,694		500			4,012		241	50		10		5	10	1	1			
TOTAL FOR PROJ NO. 3CR.10101.114							18.23		468	550	7.76	363,291	54,348	500		8,667	5,511	29,873	2,511	235	163,470	40	19	5	10	1	1			

PROJECT NO.	SHEET NO.	TOTAL NO.
3CR.10101.114, etc.	16	

SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP	FINAL SURFACE TESTING REQUIRED	LENGTH MI	WIDTH FT	PORTABLE LIGHTING LS	TEMP. SILT FENCE LF	STONE FOR EC CLASS B TON	SEDIMENT CONTROL STONE TON	TEMP. MULCHING ACR	MATTING (EROSION CONTROL) SY	1/4" HARDWARE CLOTH LF	WATTLE LF	SEED & MULCHING AC	SEED FOR REPAIR SEEDING LB	FERTILIZER FOR REPAIR SEEDING TON	INDUCTIVE LOOP LF	LEAD-IN CABLE (14-2) LF
3CR.10101.114	Brunswick	1	US 17 NBL	US 17 BUS. (NORTH END OF SHALLOTTE) TO US 17 BUS. (SOUTH END OF BOLIVIA), MP 0.00-7.79		NO	0	1		390	98	98	3.90	25	195	60		195	0.98	850	200
		"	"	MILL & FILL FULL WIDTH 52'	1	NO	0.58	52									0.44				
		"	"	MILL & FILL FULL WIDTH 28'	1	NO	3.8	28									2.85				
		"	"	NO WORK, MP 6.39-6.42	1	NO	0.03	24													
		"	"	MILL & FILL IN TAPERS 28'-52'	1	NO	1.21	40									0.91				
		"	"	MILL & FILL IN TAPERS 28'-40'	1	NO	1.03	34									0.77				
		"	"	MILL & FILL FULL WIDTH 40'	1	NO	0.97	40									0.73				
		"	"	MILL & FILL IN TAPERS 40'-50'	1	NO	0.03	45									0.02				
		"	"	MILL & FILL IN TAPERS 28'-56'	1	NO	0.14	42									0.11				
TOTAL FOR MAP NO. 1							7.79			390	98	98	3.90	25	195	60	5.82	195	0.98	850	200
3CR.10101.114	Brunswick	2	US 17 SBL	US 17 BUS. (SOUTH END OF BOLIVIA) TO US 17 BUS. (NORTH END OF SHALLOTTE), MP 0.00-7.75		NO	0	1												850	200
		"	"	MILL & FILL FULL WIDTH 40'	2	NO	1.52	40													
		"	"	MILL & FILL FULL WIDTH 28'	2	NO	4.04	28													
		"	"	NO WORK, MP 1.36-1.39		NO	0.03	28													
		"	"	MILL & FILL FULL WIDTH 52'	2	NO	0.31	52													
		"	"	MILL & FILL IN TAPERS 28'-40'	2	NO	1.2	34													
		"	"	MILL & FILL IN TAPERS 28'-52'	2	NO	0.3	40													
		"	"	MILL & FILL IN TAPERS 28'-58'	2	NO	0.16	43													
		"	"	MILL & FILL FULL WIDTH 58'	2	NO	0.06	58													
		"	"	MILL & FILL IN TAPERS 40'-52'	2	NO	0.13	46													
TOTAL FOR MAP NO. 2							7.75													850	200
3CR.10101.114	Brunswick	3	NC 211	LOCKWOOD FOLLY RIVER BRIDGE TO US 17		NO	0	1												1,100	200
		"	"	MILL & FILL FULL WIDTH 32', MP 0.00-0.24	3	NO	0.24	32													
		"	"	MILL & FILL IN TAPERS 32'-48', MP 0.24-0.34	3	NO	0.1	40													
		"	"	MILL & FILL FULL WIDTH 48', MP 0.34-0.40, 0.43-0.46	3	NO	0.09	48													
		"	"	MILL & FILL IN TAPERS 48'-57', MP 0.40-0.43	3	NO	0.03	52.5													
		"	"	MILL & FILL FULL WIDTH 36', MP 0.46-0.63	3	NO	0.17	36													
		"	"	MILL & FILL IN TAPERS 36'-72', MP 0.63-0.68	3	NO	0.05	54													
TOTAL FOR MAP NO. 3							0.68													1,100	200
3CR.10101.114	Brunswick	4	US 17 BUS	US 17 TO NC 179, 11 NON-SYSTEM INTERSECTIONS		NO	0	1	1.00											1,100	250
		"	"	MILL & FILL IN TAPERS 60'-26' & 48'-36', MP 0.00-0.05, 0.49-0.52	4	NO	0.08	43													
		"	"	MILL & FILL FULL WIDTH 26', MP 0.05-0.17	4	NO	0.12	26													
		"	"	MILL & FILL IN TAPERS 26'-36', MP 0.17-0.21	4	NO	0.04	31													
		"	"	MILL & FILL FULL WIDTH 36', MP 0.21-0.27, 0.38-0.46	4	NO	0.14	36													
		"	"	MILL & FILL FULL WIDTH 48', & IN TAPERS 41'-53', MP 0.27-0.38, 0.46-0.49, 0.58-0.61, 0.61-0.68, 1.98-2.01	4	NO	0.27	48													
		"	"	NO WORK, MP 0.68-1.05		NO	0.37	40													
		"	"	MILL & FILL IN TAPERS 45'-48', MP 1.96-1.98	4	NO	0.02	46.5													
		"	"	MILL & FILL FULL WIDTH 41', MP 0.57-0.58, 1.05-1.74	4	NO	0.7	41													
		"	"	MILL & FILL FULL WIDTH 53', MP 0.56-0.57	4	NO	0.01	53													
		"	"	MILL & FILL IN TAPERS 36'-53' & FULL WIDTH 45', MP 0.52-0.56, 1.74-1.96	4	NO	0.26	45													
TOTAL FOR MAP NO. 4							2.01		1.00											1,100	250
TOTAL FOR PROJ NO. 3CR.10101.114							18.23		1.00	390	98	98	3.90	25	195	60	5.82	195	0.98	3,900	850

PROJECT NO.	SHEET NO.	TOTAL NO.
3CR.10101.114, etc.	17	

SUMMARY OF QUANTITIES

PROJECT NO.	COUNTY	MAP NO.	ROUTE	DESCRIPTION	TYP	FINAL SURFACE TESTING REQUIRED	LENGTH MI	WIDTH FT	BORROW EXC. CY	INC. STONE BASE TONS	SHOULDER RECONST. SMI	1 1/2" MILLING SY	2 1/2" MILLING SY	INC. MILLING SY	BASE COURSE, B25.0B TONS	INT. COURSE, I19.0C TONS	SURFACE COURSE, S9.5B TONS	SURFACE COURSE, S9.5C TONS	SURFACE COURSE, SF9.5A TONS	ASPHALT BINDER FOR PLANT MIX TON	PATCHING EXISTING PAVEMENT (MILL) TON	MILLED RUMBLE STRIPS - 12" LF	PATCHING EXISTING PAVEMENT (FULL DEPTH) TON	CONCRETE APRON EA	RETROFIT EXISTING CURB RAMPS EA	CONCRETE CURB RAMPS EA	ADJ. OF MANHOLES EA	ADJ. OF METER OR VALVE BOX EA		
3CR.10651.114	NewHanover	5	US 74 / 76 (UNDIVIDED) (6-78)	0.04 MI. EAST OF SUMMER REST RD. TO I.C.W. BRIDGE NO. 12, MILL & FILL FULL WIDTH 78', MP 0.00-0.06	6	NO	0.06	78				2,746		800			266			16	50		20							
TOTAL FOR MAP NO. 5							0.06					2,746		800			266			16	50		20							
3CR.10651.114	NewHanover	6	US 74 / 76 EBL	I.C.W. BRIDGE N O. 12 TO 0.36 MI. EAST OF I.C.W. BRIDGE N O. 22 (END DIVIDED HWY.)		NO	0	1						200							50		20							
		"	"	MILL & FILL FULL WIDTH 27', MP 0.20-0.23, 0.38-0.45, 0.47-0.56	5	NO	0.19	27				3,010					292			18										
		"	"	MILL & FILL IN TAPER 27'-48', MP 0.23-0.26, 0.45-0.47	5	NO	0.05	37.5				1,100					107			6										
		"	"	MILL & FILL FULL WIDTH 48', MP 0.26-0.30	5	NO	0.04	48				1,126					109			7										
		"	"	MILL & FILL IN TAPERS 30'-38', MP 0.30-0.33	5	NO	0.03	34				598					58			3										
		"	"	MILL & FILL FULL WIDTH 38', MP 0.33-0.34	5	NO	0.01	38				223					22			1										
		"	"	MILL & FILL IN TAPERS 38-70', MP 0.34-0.38	5	NO	0.04	54				1,267					123			7										
TOTAL FOR MAP NO. 6							0.36					7,324		200			711			42	50		20							
3CR.10651.114	NewHanover	7	US 74 / 76 WBL	0.34 MI. EAST OF I.C.W. BRIDGE N O. 22 (BEG. DIVIDED HWY.) TO 0.16 MI. WEST OF SR 1409 (EN D DIVIDED HWY.), 2 NON-SYSTEM INTERSECTIONS		NO	0	1						400			30			2	50		20							
		"	"	MILL & FILL FULL WIDTH 24', MP 0.56-0.54, 0.46-0.39	5	NO	0.09	24				1,267					123			7										
		"	"	MILL & FILL IN TAPERS 24'-35', MP 0.54-0.49	5	NO	0.05	29.5				865					84			5										
		"	"	MILL & FILL FULL WIDTH 35', MP 0.49-0.46	5	NO	0.03	35				616					60			4										
		"	"	MILL & FILL IN TAPERS 48'-40', MP 0.39-0.37, 0.37-0.34	5	NO	0.05	44				1,291					125			8										
		"	"	MILL & FILL FULL WIDTH 48', MP 0.34-0.32	5	NO	0.02	48				563					55			3										
		"	"	MILL & FILL FULL WIDTH 28', MP 0.32-0.22	5	NO	0.1	28				1,643					159			10										
TOTAL FOR MAP NO. 7							0.34					6,245		400			636			39	50		20							
3CR.10651.114	NewHanover	8	US 74 (UNDIVIDED)	END DIVIDED HWY TO WEST SIDE OF BANKS CHANNEL BRIDGE N O. 24, 4 NON-SYSTEM INTERSECTIONS		NO	0	1						800			60			4	50		20							
		"	"	MILL & FILL IN TAPERS 46'-32', MP 0.56-0.59	7	NO	0.03	39				686					67			4										
		"	"	MILL & FILL FULL WIDTH 32', MP 0.59-1.09, 1.11-1.22	7	NO	0.61	32				11,452					1,111			67										
		"	"	NO WORK, MP 1.09-1.11		NO	0.02	32																						
TOTAL FOR MAP NO. 8							0.66					12,138		800			1,238			75	50		20							
TOTAL FOR PROJ NO. 3CR.10651.114							1.42					28,453		2,200			2,851			172	200		80							
3CR.20101.114	Brunswick	9	SR 1402	US 17 BUS. TO SR 1401	8	NO	2.07	20		50				560			2,361			142	575		80							
TOTAL FOR MAP NO. 9							2.07				50				560			2,361			142	575		80						
3CR.20101.114	Brunswick	10	SR 1137	NC 130 TO DEAD EN D, WIDEN FROM 18.5 TO 22.5', 24 SYSTEM OR NON-SYSTEM INTERSECTIONS	9	NO	3.57	22.5	525	75	7.14				2,173			4,496	397				300							
TOTAL FOR MAP NO. 10							3.57			525	75	7.14				2,173			4,496	397				300						
3CR.20101.114	Brunswick	11	SR 1345	US 17 TO SR 1342	8	NO	4.5	20						250			5,132			308	450		45							
TOTAL FOR MAP NO. 11							4.5								250			5,132			308	450		45						
3CR.20101.114	Brunswick	12	SR 1141	SR 1139 TO NC 130, WIDEN FROM 18' TO 22'	9	NO	1.57	22	250	30	3.14			350	956			1,933	172	340		50								
TOTAL FOR MAP NO. 12							1.57			250	30	3.14			350	956			1,933	172	340		50							
TOTAL FOR PROJ NO. 3CR.20101.114							11.71			775	155	10.28			1,160	3,129			7,493			1,019	1,365		475					

PROJECT NO.	SHEET NO.	TOTAL NO.
3CR.10101.114, etc.	18	

SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP	FINAL SURFACE TESTING REQUIRED	LENGTH MI	WIDTH FT	PORTABLE LIGHTING LS	TEMP. SILT FENCE LF	STONE FOR EC CLASS B TON	SEDIMENT CONTROL STONE TON	TEMP. MULCHING ACR	MATTING (EROSION CONTROL) SY	1/4" HARDWARE CLOTH LF	WATTLE LF	SEED & MULCHING AC	SEED FOR REPAIR SEEDING LB	FERTILIZER FOR REPAIR SEEDING TON	INDUCTIVE LOOP LF	LEAD-IN CABLE (14-2) LF		
3CR.10651.114	NewHanover	5	US 74 / 76 (UNDIVIDED) (6-78)	0.04 MI. EAST OF SUMMER REST RD. TO I.C.W. BRIDGE NO. 12, MILL & FILL FULL WIDTH 78', MP 0.00-0.06	6	NO	0.06	78															
TOTAL FOR MAP NO. 5								0.06															
3CR.10651.114	NewHanover	6	US 74 / 76 EBL	I.C.W. BRIDGE NO. 12 TO 0.36 MI. EAST OF I.C.W. BRIDGE NO. 22 (END DIVIDED HWY.)		NO	0	1															
		"	"	MILL & FILL FULL WIDTH 27', MP 0.20-0.23, 0.38-0.45, 0.47-0.56	5	NO	0.19	27															
		"	"	MILL & FILL IN TAPER 27'-48', MP 0.23-0.26, 0.45-0.47	5	NO	0.05	37.5															
		"	"	MILL & FILL FULL WIDTH 48', MP 0.26-0.30	5	NO	0.04	48															
		"	"	MILL & FILL IN TAPERS 30'-38', MP 0.30-0.33	5	NO	0.03	34															
		"	"	MILL & FILL FULL WIDTH 38', MP 0.33-0.34	5	NO	0.01	38															
		"	"	MILL & FILL IN TAPERS 38-70', MP 0.34-0.38	5	NO	0.04	54															
TOTAL FOR MAP NO. 6								0.36															
3CR.10651.114	NewHanover	7	US 74 / 76 WBL	0.34 MI. EAST OF I.C.W. BRIDGE N O. 22 (BEG. DIVIDED HWY.) TO 0.16 MI. WEST OF SR 1409 (EN D DIVIDED HWY.), 2 NON-SYSTEM INTERSECTIONS		NO	0	1															
		"	"	MILL & FILL FULL WIDTH 24', MP 0.56-0.54, 0.46-0.39	5	NO	0.09	24															
		"	"	MILL & FILL IN TAPERS 24'-35', MP 0.54-0.49	5	NO	0.05	29.5															
		"	"	MILL & FILL FULL WIDTH 35', MP 0.49-0.46	5	NO	0.03	35															
		"	"	MILL & FILL IN TAPERS 48'-40', MP 0.39-0.37, 0.37-0.34	5	NO	0.05	44															
		"	"	MILL & FILL FULL WIDTH 48', MP 0.34-0.32	5	NO	0.02	48															
		"	"	MILL & FILL FULL WIDTH 28', MP 0.32-0.22	5	NO	0.1	28															
TOTAL FOR MAP NO. 7								0.34															
3CR.10651.114	NewHanover	8	US 74 (UNDIVIDED)	END DIVIDED HWY TO WEST SIDE OF BANKS CHANNEL BRIDGE NO. 24, 4 NON-SYSTEM INTERSECTIONS		NO	0	1															
		"	"	MILL & FILL IN TAPERS 46'-32', MP 0.56-0.59	7	NO	0.03	39															
		"	"	MILL & FILL FULL WIDTH 32', MP 0.59-1.09, 1.11-1.22	7	NO	0.61	32															
		"	"	NO WORK, MP 1.09-1.11		NO	0.02	32															
TOTAL FOR MAP NO. 8								0.66															
TOTAL FOR PROJ NO. 3CR.10651.114								1.42															
3CR.20101.114	Brunswick	9	SR 1402	US 17 BUS. TO SR 1401	8	NO	2.07	20															
TOTAL FOR MAP NO. 9								2.07															
3CR.20101.114	Brunswick	10	SR 1137	NC 130 TO DEAD EN D, WIDEN FROM 18.5 TO 22.5', 24 SYSTEM OR N ON-SYSTEM INTERSECTIONS	9	NO	3.57	22.5		357	90	90	3.57	30	179	60	5.20	179	0.89				
TOTAL FOR MAP NO. 10								3.57			357	90	90	3.57	30	179	60	5.20	179	0.89			
3CR.20101.114	Brunswick	11	SR 1345	US 17 TO SR 1342	8	NO	4.5	20															
TOTAL FOR MAP NO. 11								4.5															
3CR.20101.114	Brunswick	12	SR 1141	SR 1139 TO NC 130, WIDEN FROM 18' TO 22'	9	NO	1.57	22		157	40	40	1.57	20	79	30	2.28	79	0.39				
TOTAL FOR MAP NO. 12								1.57			157	40	40	1.57	20	79	30	2.28	79	0.39			
TOTAL FOR PROJ NO. 3CR.20101.114								11.71			514	130	130	5.14	50	258	90	7.48	258	1.28			

PROJECT NO.	SHEET NO.	TOTAL NO.
3CR.10101.114, etc.	19	

SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP	FINAL SURFACE TESTING REQUIRED	LENGTH MI	WIDTH FT	BORROW EXC. CY	INC. STONE BASE TONS	SHOULDER RECONST. SMI	1 1/2" MILLING SY	2 1/2" MILLING SY	INC. MILLING SY	BASE COURSE, B25.0B TONS	INT. COURSE, I19.0C TONS	SURFACE COURSE, S9.5B TONS	SURFACE COURSE, S9.5C TONS	SURFACE COURSE, SF9.5A TONS	ASPHALT BINDER FOR PLANT MIX TON	PATCHING EXISTING PAVEMENT (MILL) TON	MILLED RUMBLE STRIPS - 12" LF	PATCHING EXISTING PAVEMENT (FULL DEPTH) TON	CONCRETE APRON EA	RETROFIT EXISTING CURB RAMPS EA	CONCRETE CURB RAMPS EA	ADJ. OF MANHOLES EA	ADJ. OF METER OR VALVE BOX EA	
3CR.20651.114	NewHanover	13	SR 1002	US 117 TO 0.17 MI. WEST OF PENDER COUNTY LINE		NO	0	1	125					830															
		"	"	TAPERS 36'-48', MP 0.00-0.04	8	NO	0.04	42	17		0.08						95			6									
		"	"	FULL WIDTH 48', MP 0.04-0.06	8	NO	0.02	48	8		0.04						55			3									
		"	"	FULL WIDTH 36', MP 0.06-0.10	8	NO	0.04	36	17		0.08						82			5									
		"	"	TAPERS 36'-28', MP 0.10-0.14	8	NO	0.04	32	17		0.08						73			4									
		"	"	FULL WIDTH 28', MP 0.14-0.42, 0.67-0.71, 0.95-3.40	8	NO	2.77	28	1,174		5.54						4,415			265									
		"	"	NO WORK, MP 0.42 TO MP 0.67		NO	0.25	28																					
		"	"	FULL WIDTH 52', MP 0.71-0.83	8	NO	0.12	52	51		0.24						354			21									
		"	"	FULL WIDTH 56', MP 0.83-0.95	8	NO	0.12	56	51		0.24						382			23									
		"	"	WIDEN TO 28', MP 3.40-4.93	10	NO	1.53	28	725		3.06				932		2,439			187									
TOTAL FOR MAP NO. 13							4.93		2,060	125	9.36			830	932		7,895			514									
3CR.20651.114	NewHanover	14	SR 1521	0.13 MI. EAST OF US 421 TO SR 1492, RESURFACE FULL WIDTH 24', MP 0.00-0.38, 0.65-0.93	8	NO	0.66	24						400			902			54	50						1	1	
		"	"	RESURFACE IN TAPERS 24' - 55', MP 0.38-0.52, 0.59-0.65	8	NO	0.2	39.5									449			27									
		"	"	RESURFACE IN TAPERS 55'-43', MP 0.52-0.56	8	NO	0.04	49									111			7									
		"	"	RESURFACE FULL WIDTH 43', MP 0.56-0.59	8	NO	0.03	43									73			4									
TOTAL FOR MAP NO. 14							0.93							400		1,535		92	50		10						1	1	
3CR.20651.114	NewHanover	15	SR 1520	SR 1521 TO SR 1492	8	NO	0.35	24									479			29	200								
TOTAL FOR MAP NO. 15							0.35										479		29	200		20							
3CR.20651.114	NewHanover	16	SR 1492	SR 1520 TO WILMINGTON CITY LIMITS (BRIDGE NO. 5), RESURFACE FULL WIDTH 22', MP 0.00-0.93, 1.16-1.65	8	NO	1.42	22						125			1,780			107	100						3	4	
		"	"	RESURFACE IN TAPERS 22' - 36', MP 0.93-1.01, 1.08-1.16	8	NO	0.16	29									264			16									
		"	"	RESURFACE FULL WIDTH 36', MP 1.01-1.08	8	NO	0.07	36									143			9									
TOTAL FOR MAP NO. 16							1.65							125		2,187		132	100		10						3	4	
3CR.20651.114	NewHanover	17	SR 1695	SR 1492 TO DEAD END	8	NO	0.49	20						120			555			33	300								
TOTAL FOR MAP NO. 17							0.49							120		555		33	300		50								
3CR.20651.114	NewHanover	18	SR 1336	SR 1318 TO PENDER COUNTY LINE		NO	0	1	340					300							1,300		250						
		"	"	FULL WIDTH 24', MP 0.00-0.72	8	NO	0.72	24	305		1.44						984			59									
		"	"	WIDEN TO 24', MP 0.72-5.62	10	NO	4.9	24	500		9.80				2,982		6,699			533									
TOTAL FOR MAP NO. 18							5.62		805	340	11.24			300	2,982		7,683		592	1,300		250							
TOTAL FOR PROJ NO. 3CR.20651.114							13.97		2,865	465	20.60			1,775	3,914		20,334		1,392	1,950		340					4	5	
GRAND TOTAL							45.33		4,108	1,170	38.64	391,744	54,348	5,635	7,043	8,667	36,189	29,873	6,429	5,094	3,750	163,470	935	19	5	10	5	6	

PROJECT NO.	SHEET NO.	TOTAL NO.
3CR.10101.114, etc.	20	

SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP	FINAL SURFACE TESTING REQUIRED	LENGTH MI	WIDTH FT	PORTABLE LIGHTING LS	TEMP. SILT FENCE LF	STONE FOR EC CLASS B TON	SEDIMENT CONTROL STONE TON	TEMP. MULCHING ACR	MATTING (EROSION CONTROL) SY	1/4" HARDWARE CLOTH LF	WATTLE LF	SEED & MULCHING AC	SEED FOR REPAIR SEEDING LB	FERTILIZER FOR REPAIR SEEDING TON	INDUCTIVE LOOP LF	LEAD-IN CABLE (14-2) LF	
3CR.20651.114	NewHanover	13	SR 1002	US 117 TO 0.17 MI. WEST OF PENDER COUNTY LINE		NO	0	1		485	122	122	4.85	40	243	80		243	1.21			
		"	"	TAPERS 36'-48', MP 0.00-0.04	8	NO	0.04	42									0.06					
		"	"	FULL WIDTH 48', MP 0.04-0.06	8	NO	0.02	48									0.03					
		"	"	FULL WIDTH 36', MP 0.06-0.10	8	NO	0.04	36									0.06					
		"	"	TAPERS 36'-28', MP 0.10-0.14	8	NO	0.04	32									0.06					
		"	"	FULL WIDTH 28', MP 0.14-0.42, 0.67-0.71, 0.95-3.40	8	NO	2.77	28									4.16					
		"	"	NO WORK, MP 0.42 TO MP 0.67		NO	0.25	28														
		"	"	FULL WIDTH 52', MP 0.71-0.83	8	NO	0.12	52									0.18					
		"	"	FULL WIDTH 56', MP 0.83-0.95	8	NO	0.12	56									0.18					
		"	"	WIDEN TO 28', MP 3.40-4.93	10	NO	1.53	28									2.23					
TOTAL FOR MAP NO. 13							4.93			485	122	122	4.85	40	243	80	6.96	243	1.21			
3CR.20651.114	NewHanover	14	SR 1521	0.13 MI. EAST OF US 421 TO SR 1492, RESURFACE FULL WIDTH 24', MP 0.00-0.38, 0.65-0.93	8	NO	0.66	24														
		"	"	RESURFACE IN TAPERS 24' - 55', MP 0.38-0.52, 0.59-0.65	8	NO	0.2	39.5														
		"	"	RESURFACE IN TAPERS 55'-43', MP 0.52-0.56	8	NO	0.04	49														
		"	"	RESURFACE FULL WIDTH 43', MP 0.56-0.59	8	NO	0.03	43														
TOTAL FOR MAP NO. 14							0.93															
3CR.20651.114	NewHanover	15	SR 1520	SR 1521 TO SR 1492	8	NO	0.35	24														
TOTAL FOR MAP NO. 15							0.35															
3CR.20651.114	NewHanover	16	SR 1492	SR 1520 TO WILMINGTON CITY LIMITS (BRIDGE NO. 5), RESURFACE FULL WIDTH 22', MP 0.00-0.93, 1.16-1.65	8	NO	1.42	22														
		"	"	RESURFACE IN TAPERS 22' - 36', MP 0.93-1.01, 1.08-1.16	8	NO	0.16	29														
		"	"	RESURFACE FULL WIDTH 36', MP 1.01-1.08	8	NO	0.07	36														
TOTAL FOR MAP NO. 16							1.65															
3CR.20651.114	NewHanover	17	SR 1695	SR 1492 TO DEAD END	8	NO	0.49	20														
TOTAL FOR MAP NO. 17							0.49															
3CR.20651.114	NewHanover	18	SR 1336	SR 1318 TO PENDER COUNTY LINE		NO	0	1		561	141	141	5.61	40	281	90		281	1.40			
		"	"	FULL WIDTH 24', MP 0.00-0.72	8	NO	0.72	24									1.08					
		"	"	WIDEN TO 24', MP 0.72-5.62	10	NO	4.9	24									7.35					
TOTAL FOR MAP NO. 18							5.62			561	141	141	5.61	40	281	90	8.43	281	1.40			
TOTAL FOR PROJ NO. 3CR.20651.114							13.97			1,046	263	263	10.46	80	524	170	15.39	524	2.61			
GRAND TOTAL							45.33			1.00	1,950	491	491	19.50	155	977	320	28.69	977	4.87	3,900	850

PROJECT NO.	SHEET NO.	TOTAL NO.
3CR.10101.114, etc.	21	

THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	LENGTH	WIDTH	4415000000-N	4420000000-N	4480000000-N	4726110000-N		4726100000-N	4685000000-E		4686000000-E		4695000000-E		4710000000-E	4721000000-E	4725000000-E							
							FLASHING ARROW BOARD	PORTABLE CHANGEABLE MESSAGE SIGNS	TMIA	HEATED-IN- PLACE THERMO- PLASTIC SYMBOL (HELMETED BICYCLIST) 90 M	HEATED-IN- PLACE THERMO- PLASTIC SYMBOL (MINI STR. ARROW) 90 M	HEATED-IN- PLACE THERMO- PLASTIC CHARACTER 120 M	4" X 90 M WHITE THERMO	4" X 90 M YELLOW THERMO	4" X 120 M WHITE THERMO	4" X 120 M YELLOW THERMO	8" X 90 M WHITE THERMO	8" X 90 M YELLOW THERMO	24" X 120 M WHITE THERMO	THERMO MSG ONLY 120 M	THERMO LT ARROW 90 M	THERMO STR ARROW 90 M	THERMO RT ARROW 90 M	THERMO STR & LT ARROW 90 M	THERMO STR & RT ARROW 90 M	MERGE ARROW 90 M		
EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA				
3CR.10101.114	Brunswick	1	US 17 NBL	US 17 BUS. (NORTH END OF SHALLOTTE) TO US 17 BUS. (SOUTH END OF BOLIVIA), MP 0.00-7.79	0	1	1	1	1																			
				MILL & FILL FULL WIDTH 52'	0.58	52							3,062	3,062	6,890		3,000						39	78	26			
				MILL & FILL FULL WIDTH 28'	3.8	28							20,064	20,064	5,016									54				
				NO WORK, MP 6.39-6.42	0.03	24																						
				MILL & FILL IN TAPERS 28'-52'	1.21	40							6,389	6,389	4,898													
				MILL & FILL IN TAPERS 28'-40'	1.03	34							5,438	5,438	2,085													
				MILL & FILL FULL WIDTH 40'	0.97	40							5,122	5,122	6,402								39	78	12			
				MILL & FILL IN TAPERS 40'-50'	0.03	45							158	158	121													
				MILL & FILL IN TAPERS 28'-56'	0.14	42							739	739	567													
TOTAL FOR MAP NO. 1					7.79		1	1	1				40,972	40,972	25,979		3,000				120	78	210	38				
3CR.10101.114	Brunswick	2	US 17 SBL	US 17 BUS. (SOUTH END OF BOLIVIA) TO US 17 BUS. (NORTH END OF SHALLOTTE), MP 0.00-7.75	0	1	1	1	1																			
				MILL & FILL FULL WIDTH 40'	1.52	40							8,026	8,026	10,032								66	132	12			
				MILL & FILL FULL WIDTH 28'	4.04	28							21,331	21,331	5,333									54				
				NO WORK, MP 1.36-1.39	0.03	28																						
				MILL & FILL FULL WIDTH 52'	0.31	52							1,637	1,637	3,683								12	24	8			
				MILL & FILL IN TAPERS 28'-40'	1.2	34							6,336	6,336	2,429													
				MILL & FILL IN TAPERS 28'-52'	0.3	40							1,584	1,584	1,214													
				MILL & FILL IN TAPERS 28'-58'	0.16	43							845	845	648													
				MILL & FILL FULL WIDTH 58'	0.06	58							317	317			713						6	12	12			
				MILL & FILL IN TAPERS 40'-52'	0.13	46							686	686	526													
TOTAL FOR MAP NO. 2					7.75		1	1	1				40,762	40,762	23,865		713				84	222	32					
3CR.10101.114	Brunswick	3	NC 211	LOCKWOOD FOLLY RIVER BRIDGE TO US 17	0	1																						
				MILL & FILL FULL WIDTH 32', MP 0.00-0.24	0.24	32							2,534				2,534											
				MILL & FILL IN TAPERS 32'-48', MP 0.24-0.34	0.1	40							1,056			2,112		528										
				MILL & FILL FULL WIDTH 48', MP 0.34-0.40, 0.43-0.46	0.09	48							950		1,077	1,901			36			4	4	4				
				MILL & FILL IN TAPERS 48'-57', MP 0.40-0.43	0.03	52.5							317		359	634												
				MILL & FILL FULL WIDTH 36', MP 0.46-0.63	0.17	36							1,795			2,244							6					
				MILL & FILL IN TAPERS 36'-72', MP 0.63-0.68	0.05	54							528		528	528	528		36	4		5	2	2				
TOTAL FOR MAP NO. 3					0.68								7,180		1,964	9,953	528	528	72	4	15	6	6					
3CR.10101.114	Brunswick	4	US 17 BUS	US 17 TO NC 179, 11 NON-SYSTEM ITERSECTIONS	0	1																						
				MILL & FILL IN TAPERS 60'-26' & 48'-36', MP 0.00-0.05, 0.49-0.52	0.08	43							845		845	1,056							3	4				
				MILL & FILL FULL WIDTH 26', MP 0.05-0.17	0.12	26							1,267			1,584												
				MILL & FILL IN TAPERS 26'-36', MP 0.17-0.21	0.04	31							422			845												
				MILL & FILL FULL WIDTH 36', MP 0.21-0.27, 0.38-0.46	0.14	36							1,478			1,848							35		3			
				MILL & FILL FULL WIDTH 48', & IN TAPERS 41'-53', MP 0.27-0.38, 0.46-0.49, 0.58-0.61, 0.61-0.68, 1.98-2.01	0.27	48							2,534		1,616	3,564					160		16	6	20			
				NO WORK, MP 0.68-1.05	0.37	40																						
				MILL & FILL IN TAPERS 45'-48', MP 1.96-1.98	0.02	46.5							106			120	264											
				MILL & FILL FULL WITDH 41', MP 0.57-0.58, 1.05-1.74	0.7	41							53			9,240												
				MILL & FILL FULL WITDH 53', MP 0.56-0.57	0.01	53							53		132	106							3	3	2			
				MILL & FILL IN TAPERS 36'-53' & FULL WIDTH 45', MP 0.52-0.56, 1.74-1.96	0.26	45							422		183	3,432							3	2	1			
TOTAL FOR MAP NO. 4					2.01								7,180		2,896	21,939					172	57	11	26	4	3		
TOTAL FOR PROJ NO. 3CR.10101.114					18.23		2	2	2				96,094	81,734	54,704	31,892	4,241	528	364	4	234	449	102	4	3			
													177,828	86,596		4,769												792

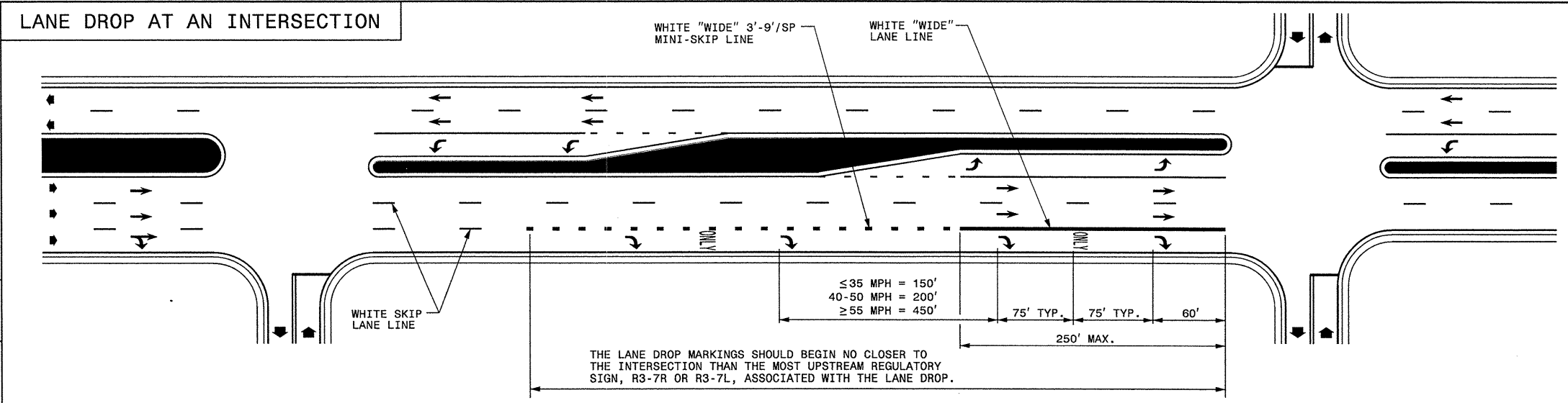
PROJECT NO.	SHEET NO.	TOTAL NO.
3CR.10101.114, etc.	26	

THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	LENGTH	WIDTH	4810000000-E		4820000000-E		4830000000-E	4835000000-E	4840000000-N			4845000000-N				4900000000-N		4905000000-N		
							4" WHITE PAINT	4" YELLOW PAINT	8" YELLOW PAINT	8" WHITE PAINT	16" WHITE PAINT	24" WHITE PAINT	PAINT MSG ONLY	PAINT MSG RXR	PAINT MSG SCHOOL	PAINT LT ARROW	PAINT STR ARROW	PAINT RT ARROW	PAINT STR & LT ARROW	PAINT STR & RT ARROW	YELLOW & YELLOW MARKERS	CYAN & RED MARKERS	SNOW PLOWABLE MARKERS (C/R)	SNOW PLOWABLE MARKERS (Y/Y)
							LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	
3CR.20651.114	NewHanover	13	SR 1002	US 117 TO 0.17 MI. WEST OF PENDER COUNTY LINE	0	1																		
		"	"	TAPERS 36'-48', MP 0.00-0.04	0.04	42	1,267	845								2		2			3	11		
		"	"	FULL WIDTH 48', MP 0.04-0.06	0.02	48	634	422		100	50		4				6	2			1	5		
		"	"	FULL WIDTH 36', MP 0.06-0.10	0.04	36	845	1,056							4						11			
		"	"	TAPERS 36'-28', MP 0.10-0.14	0.04	32	845	1,690	250												5			
		"	"	FULL WIDTH 28', MP 0.14-0.42, 0.67-0.71, 0.95-3.40	2.77	28	58,502	43,877		200	100		8								183			
		"	"	NO WORK, MP 0.42 TO MP 0.67	0.25	28																		
		"	"	FULL WIDTH 52', MP 0.71-0.83	0.12	52	2,703	5,069	400	1,267							4	2				53	16	
		"	"	FULL WIDTH 56', MP 0.83-0.95	0.12	56	3,168	5,069	300	500					10	18	12				16	16		
		"	"	WIDEN TO 28', MP 3.40-4.93	1.53	28	35,904	26,928													112			
TOTAL FOR MAP NO. 13					4.93		103,868	84,956	950	1,767	300	150	12		14	24	20	4		331	85	16		
3CR.20651.114	NewHanover	14	SR 1521	0.13 MI. EAST OF US 421 TO SR 1492, RESURFACE FULL WIDTH 24', MP 0.00-0.38, 0.65-0.93	0.66	24	13,939	10,454			200						24				44			
		"	"	RESURFACE IN TAPERS 24' - 55', MP 0.38-0.52, 0.59-0.65	0.2	39.5	6,336	8,448	500						20	10	20				26	13		
		"	"	RESURFACE IN TAPERS 55'-43', MP 0.52-0.56	0.04	49	1,056	1,690	250												5	3		
		"	"	RESURFACE FULL WIDTH 43', MP 0.56-0.59	0.03	43	950	1,267													4	2		
TOTAL FOR MAP NO. 14					0.93		22,281	21,859	750		200				20	10	20				79	18		
3CR.20651.114	NewHanover	15	SR 1520	SR 1521 TO SR 1492	0.35	24	7,392	5,544		100	50		4								23			
TOTAL FOR MAP NO. 15					0.35		7,392	5,544		100	50		4								23			
3CR.20651.114	NewHanover	16	SR 1492	SR 1520 TO WILMINGTON CITY LIMITS (BRIDGE NO. 5), RESURFACE FULL WIDTH 22', MP 0.00-0.93, 1.16-1.65	1.42	22	29,990	22,493													94			
		"	"	RESURFACE IN TAPERS 22' - 36', MP 0.93-1.01, 1.08-1.16	0.16	29	5,069	6,758	500												11			
		"	"	RESURFACE FULL WIDTH 36', MP 1.01-1.08	0.07	36	2,218	1,478							8						5	18		
TOTAL FOR MAP NO. 16					1.65		37,277	30,729	500						8						110	18		
3CR.20651.114	NewHanover	17	SR 1695	SR 1492 TO DEAD END	0.49	20	10,349	7,762													32			
TOTAL FOR MAP NO. 17					0.49		10,349	7,762														32		
3CR.20651.114	NewHanover	18	SR 1336	SR 1318 TO PENDER COUNTY LINE	0	1																		
		"	"	FULL WIDTH 24', MP 0.00-0.72	0.72	24	15,206	11,405													48			
		"	"	WIDEN TO 24', MP 0.72-5.62	4.9	24	103,488	77,616													323			
TOTAL FOR MAP NO. 18					5.62		118,694	89,021														371		
TOTAL FOR PROJ NO. 3CR.20651.114					13.97		299,861	239,871	2,201,767	400	400		16	24	42	34	40	4			946	121	16	
							539,732	3,967				40			120					1,067		16		
GRAND TOTAL					45.33		713,219	547,010	2,788,318	400	720	8	16	24	118	60	76	8	6		1,720	121	3,865	361
							1,260,229	8,106				48			268					1,841		4,226		

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

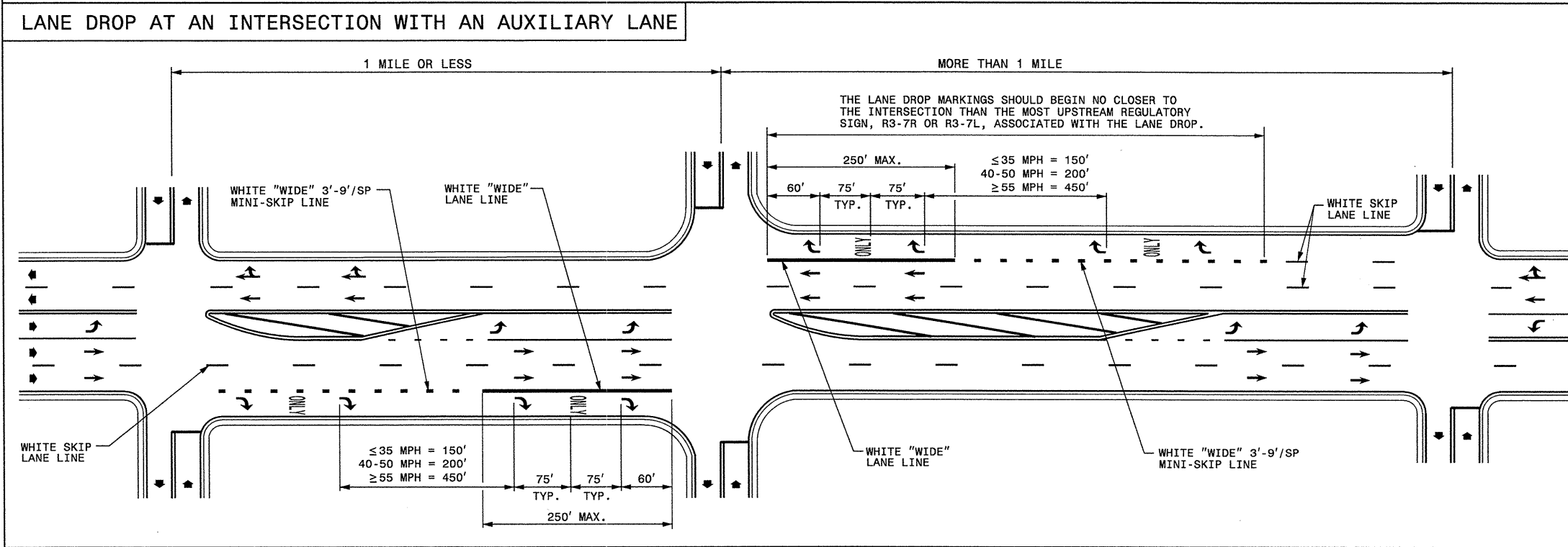
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STATE OF NORTH CAROLINA
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DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-12

ENGLISH DETAIL DRAWING FOR
PAVEMENT MARKINGS
LANE DROPS



ENGLISH DETAIL DRAWING FOR
PAVEMENT MARKINGS
LANE DROPS

GENERAL NOTES:

- 1- USE THE GUIDANCE SHOWN ON THE ABOVE DETAILS IN CONJUNCTION WITH INTERSECTION GUIDANCE SHOWN ON ROADWAY STANDARD DRAWING 1205.04.
- 2- LANE LINES INDICATED AS "WIDE" SHALL BE AT LEAST TWICE THE WIDTH OF THE NORMAL LINE.

LEGEND	
W = WIDTH OF TRAVEL LANE	ONLY PAVEMENT MARKING SYMBOLS & CHARACTERS
◆ DIRECTION OF TRAFFIC FLOW	

REVISED 9/14/11
SHEET 1 OF 3
1205D06

REVISED 9/14/11
SHEET 1 OF 3
1205D06

CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

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

1-12

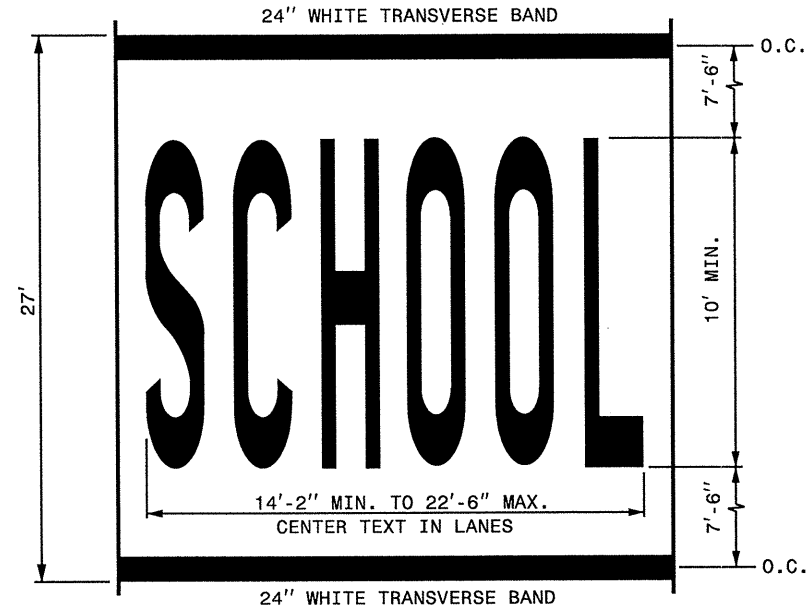
ENGLISH DETAIL DRAWING FOR
PAVEMENT MARKINGS
SYMBOLS AND WORD MESSAGES

REVISED
9/14/11

SHEET 3 OF 8

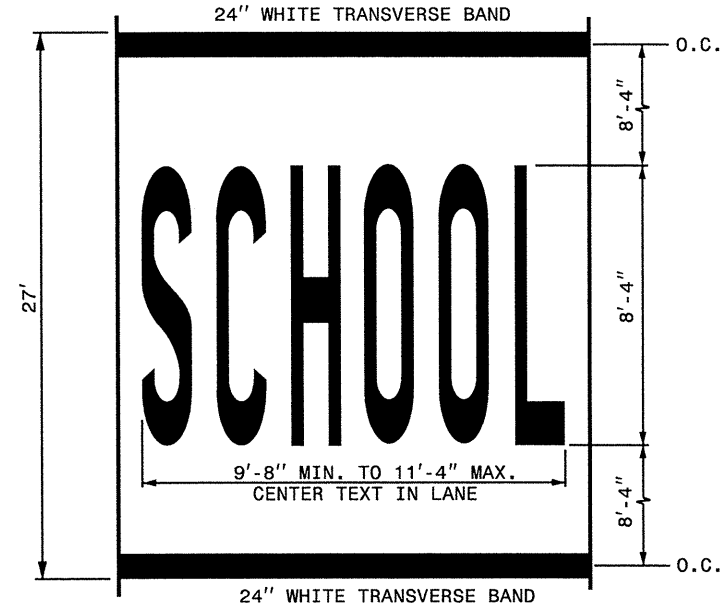
1205D08

MULTI-LANE WIDTH "SCHOOL"

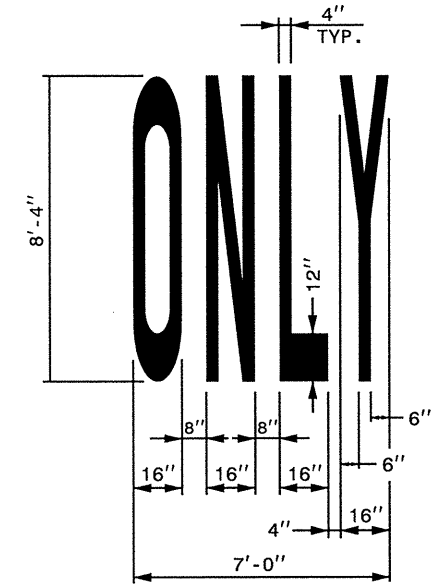


LETTER HEIGHT = 10' MIN.
LETTER WIDTH = 20"
SPACING = 10" MIN./30" MAX. (USE EQUAL SPACING BETWEEN LETTERS)
NOTE: THE TWO-LANE PAVEMENT MARKING DIMENSIONS OF "SCHOOL" SHOWN IN PART 7 OF THE MUTCD MAY ALSO BE USED.

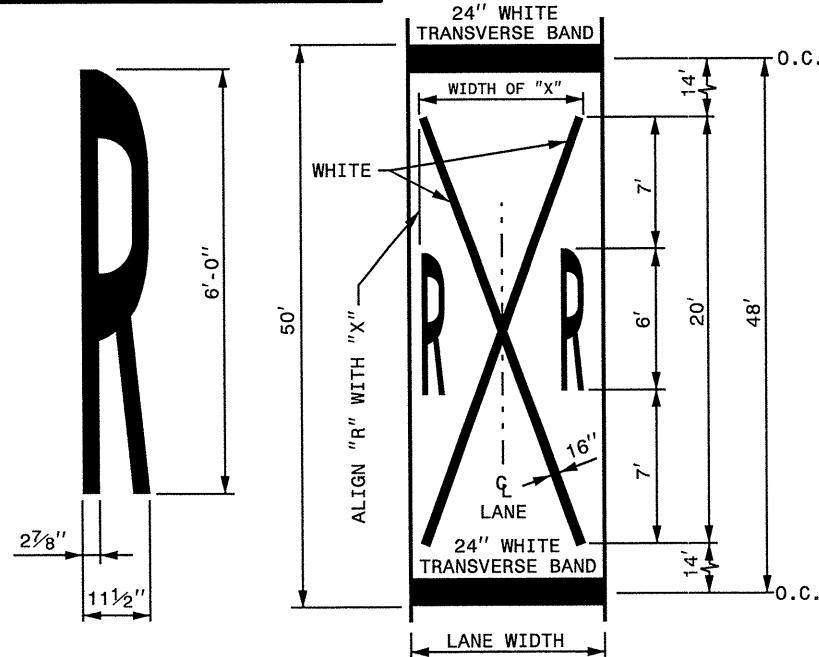
SINGLE LANE WIDTH "SCHOOL"



LETTER HEIGHT = 8'-4"
LETTER WIDTH = 16"
SPACING = 4" MIN./8" MAX. (USE EQUAL SPACING BETWEEN LETTERS)



RAILROAD RXR SYMBOL



LANE WIDTH (FEET)	WIDTH OF "X" (FEET)
8' ≤ W ≤ 9'	7'
9' < W ≤ 12'	8'
W > 12'	10'

GENERAL NOTES:

- 1- THE SCHOOL PAVEMENT MARKING CONSISTS OF SIX (6) CHARACTERS. THE TWO (2) 24" TRANSVERSE BANDS WILL BE PAID FOR UNDER A SEPARATE PAY ITEM. REFER TO ROADWAY STANDARD DRAWING 1205.10 FOR ADDITIONAL PAVEMENT MARKING GUIDANCE.
- 2- PAVEMENT MARKING ADVANCE OF A HIGHWAY-RAIL CROSSING SHALL CONSIST OF TWO (2) CHARACTERS AND TWO (2) 16" LINES (FORMING AN X) WHICH ARE PAID FOR UNDER TWO SEPARATE PAY ITEMS. THE TWO (2) 24" TRANSVERSE BANDS WILL BE PAID FOR UNDER A SEPARATE PAY ITEM. REFER TO ROADWAY STANDARD DRAWING 1205.11 FOR ADDITIONAL PAVEMENT MARKING GUIDANCE.

ENGLISH DETAIL DRAWING FOR
PAVEMENT MARKINGS
SYMBOLS AND WORD MESSAGES

REVISED
9/14/11

SHEET 3 OF 8

1205D08

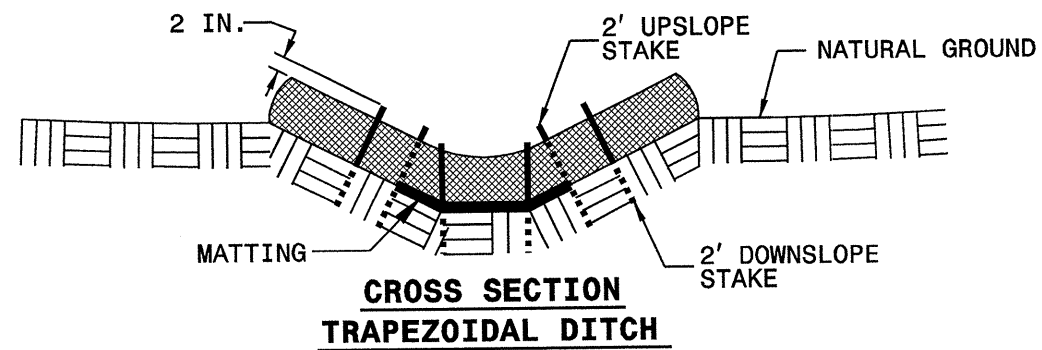
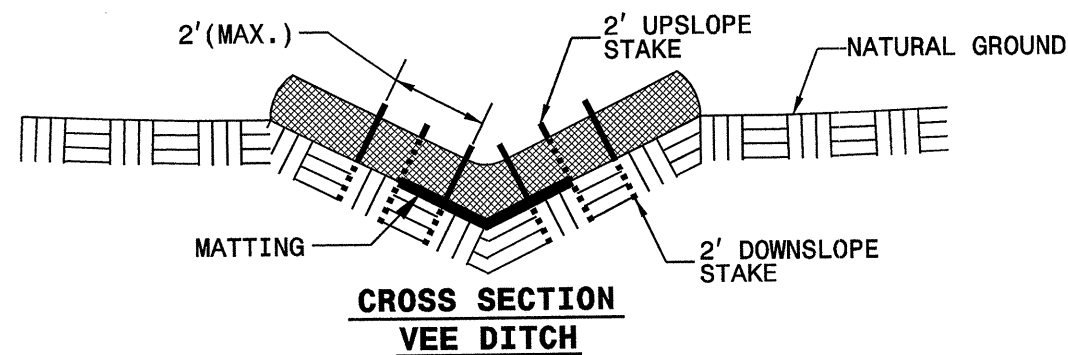
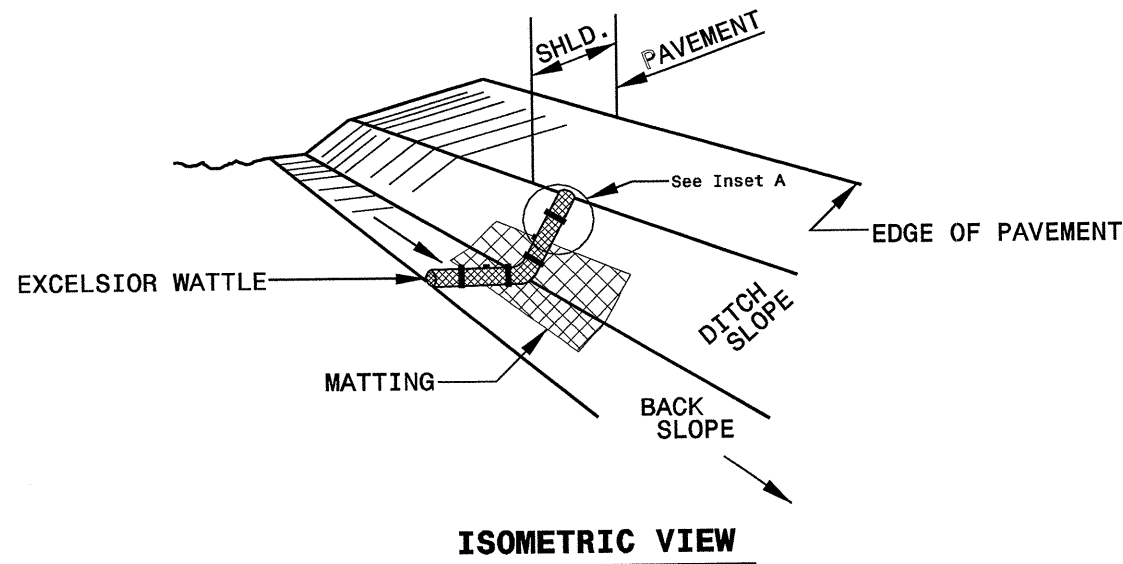
CONTRACT STANDARDS
AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

ORIGINAL BY: J. HOWERTON DATE: 10/9/11
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: s:\pe1\12 Stds to Special Details\58001

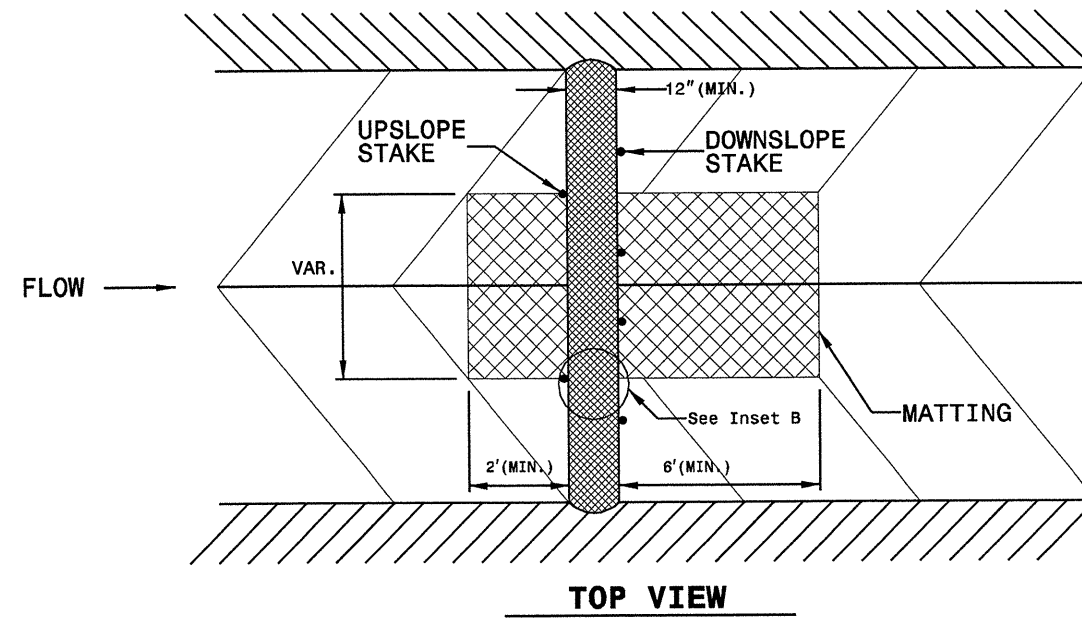
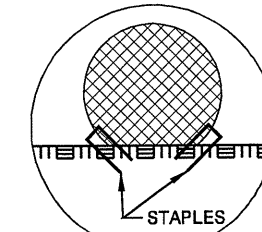
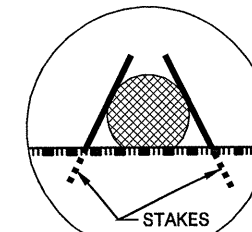
PROJECT REFERENCE NO. 3CR.10101.114	SHEET NO. EC-2
HW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

WATTLE DETAIL

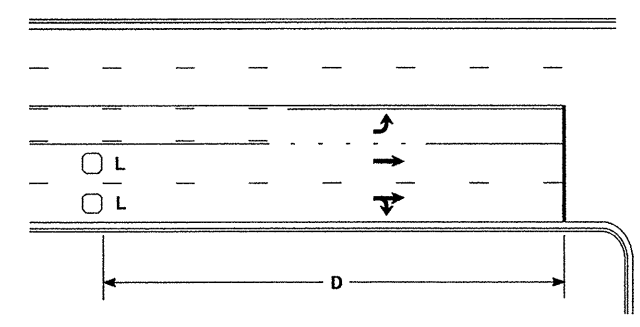


NOTES:

- 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.



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

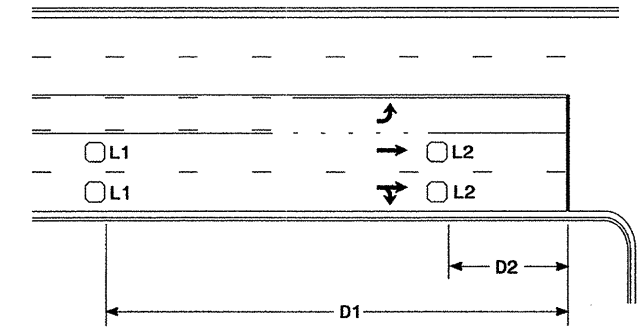


Speed Limit mph (km/hr)	D ft (m)
40 (64)	250 (75)
45 (72)	300 (90)
50 (80)	355 (110)
55 (88)	420 (130)

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

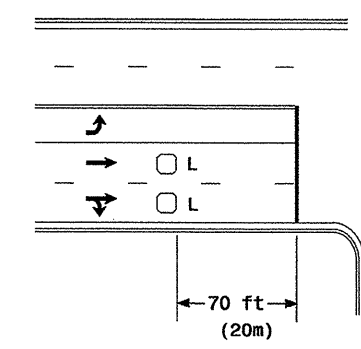


Speed Limit mph (km/hr)	D1 ft (m)	D2 ft (m)
40 (64)	250 (75)	80 (25)
45 (72)	300 (90)	90 (27)
50 (80)	355 (110)	100 (30)
55 (88)	420 (130)	110 (35)

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

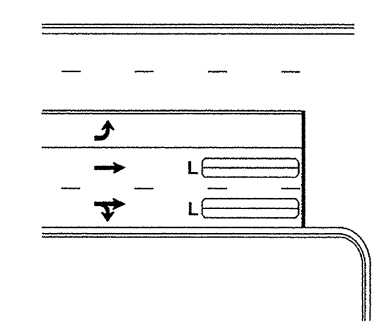
"Stretch" Operation

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



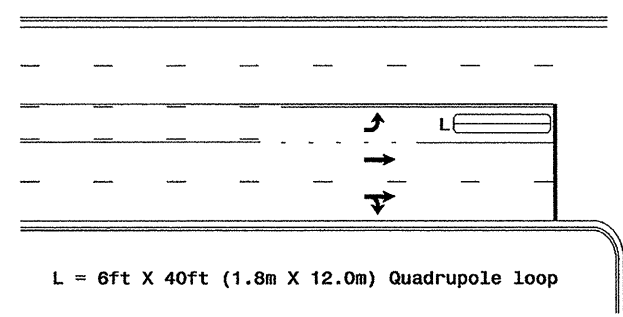
L = 6ft X 6ft (1.8m X 1.8m)
Wired in series

OR



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

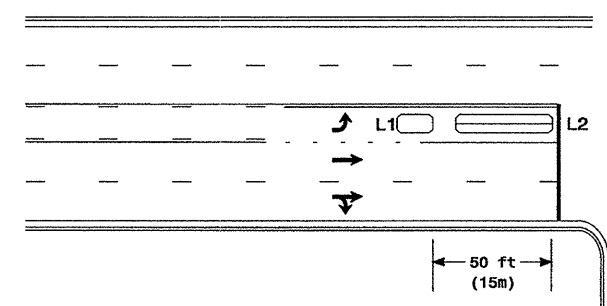
Left Turn Lane Detection



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

Presence Loop Detection

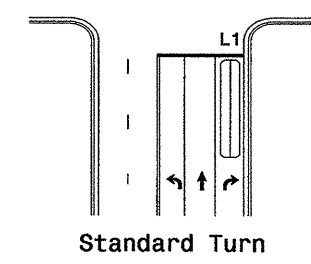
OR



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

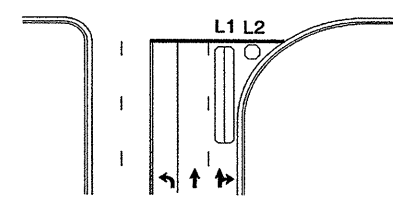
Queue Loop Detection

Right Turn Lane Detection

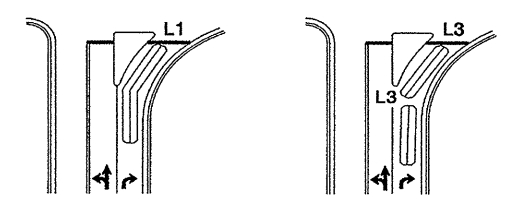


Standard Turn

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

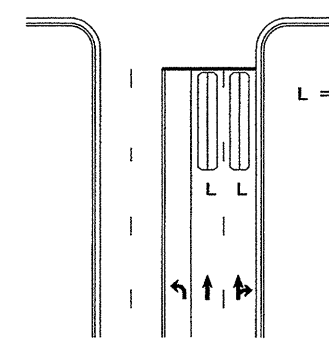


Wide Radius Turn



Channelized Turn

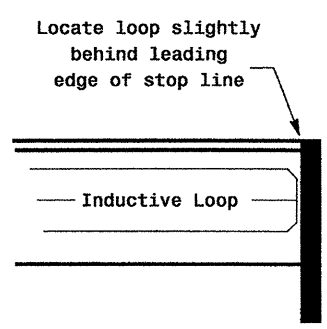
Side Street Detection



L = 6ft X 40ft (1.8m X 12.0m)
Quadrupole loop
Wired to separate
detectors/channels

Presence Loop Detection

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

	Typical Loop Locations		
	PLAN DATE: June 2006 PREPARED BY: P L Alexander	REVIEWED BY: REVIEWED BY:	
222 N. McDowell St., Raleigh, NC 27603		INTL. DATE: 12/19/06 SIGNATURE: [Signature] DATE: 6/6/06	SEAL: [Seal]

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RALEIGH, N.C.

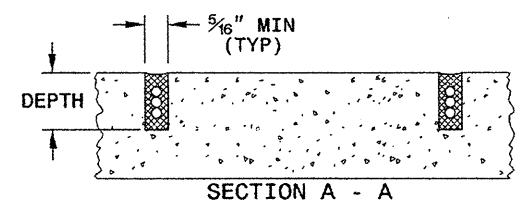
11-08

INDUCTIVE DETECTION LOOPS
ENGLISH DETAIL DRAWING FOR

SHEET 1 OF 3
1725D01

SAW SLOT DEPTH CHART

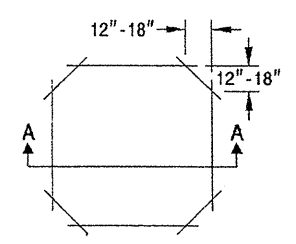
DEPTH (IN)	NO. OF WIRE TURNS				
	2	3	4	5	6
CONCRETE	2.0	2.0	2.5	2.5	3.0
ASPHALT	2.0	2.5	3.0	3.0	3.0



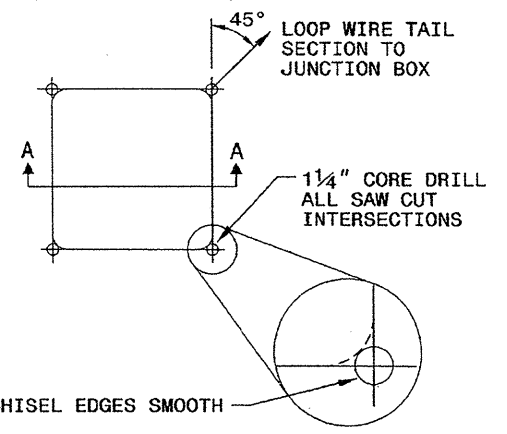
CONVENTIONAL 4-SIDED LOOP

SAW CUT OPTIONS

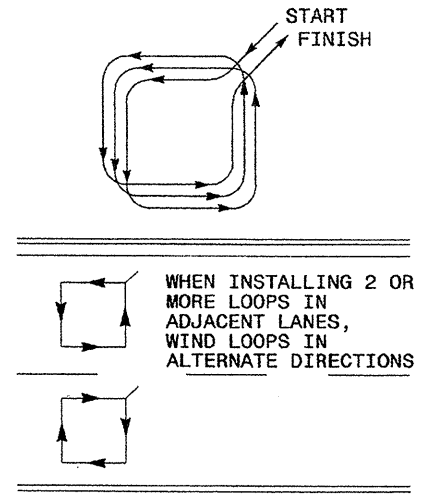
OPTION 1



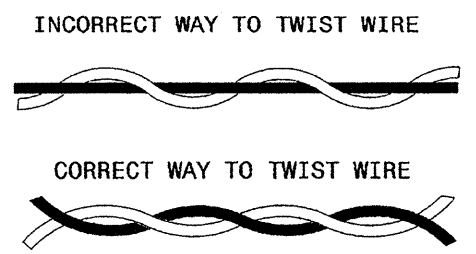
OPTION 2 (POOR PAVEMENT)



LOOP WINDING METHOD



LOOP WIRE TWISTING METHOD



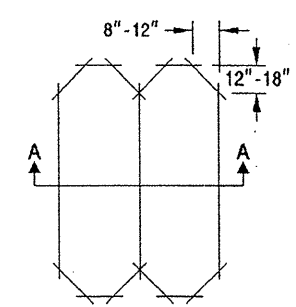
NOTES

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

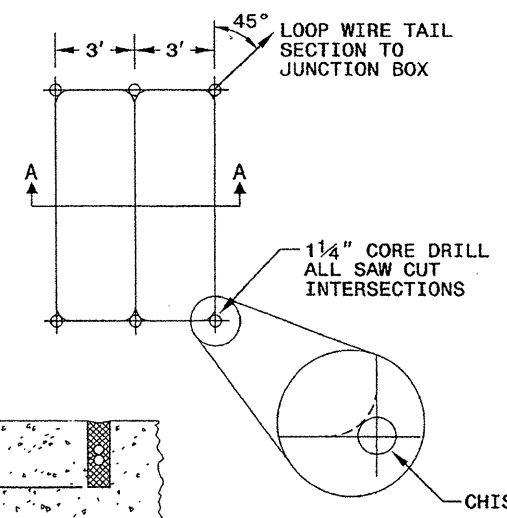
QUADRUPOLE LOOP

SAW CUT OPTIONS

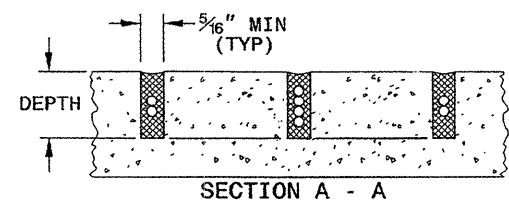
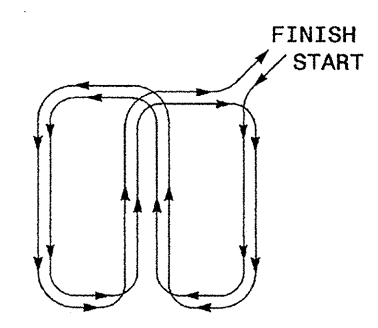
OPTION 1



OPTION 2 (POOR PAVEMENT)



LOOP WINDING METHOD



DEPTH IS 2.5" FOR CONCRETE AND 3.0" FOR ASPHALT

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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 Dean 1/24/08
SIGNATURE DATE

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

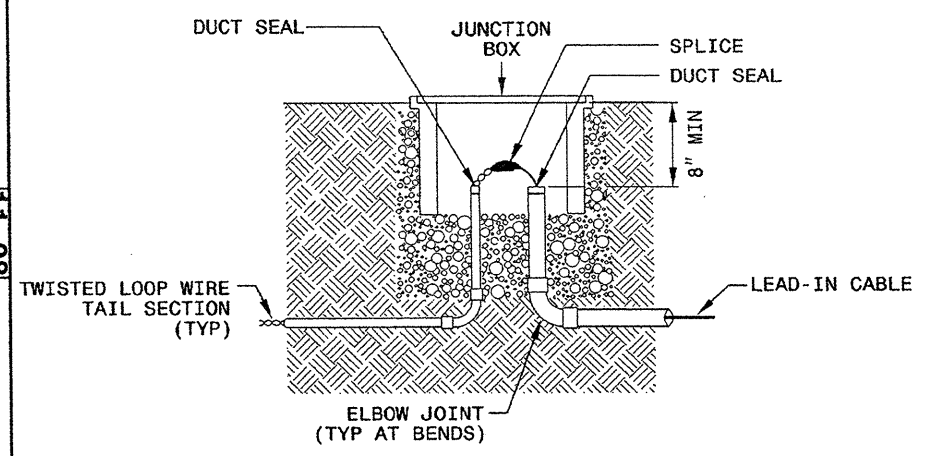
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ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
LOOP WIRE DETAILS

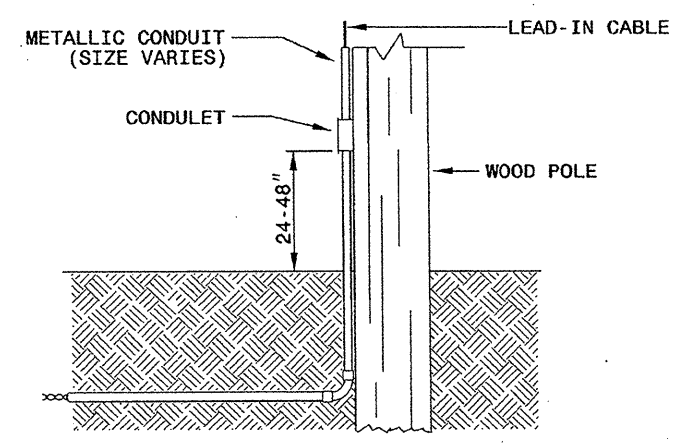
SHEET 2 OF 3
1725D01

LOOP WIRE SPLICE POINT DETAILS

LOOP WIRE AT JUNCTION BOX



LOOP WIRE AT POLE

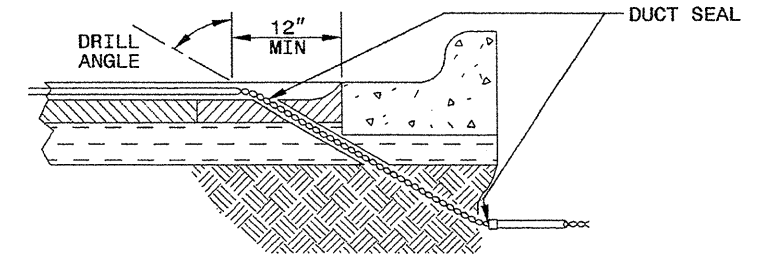


NOTE

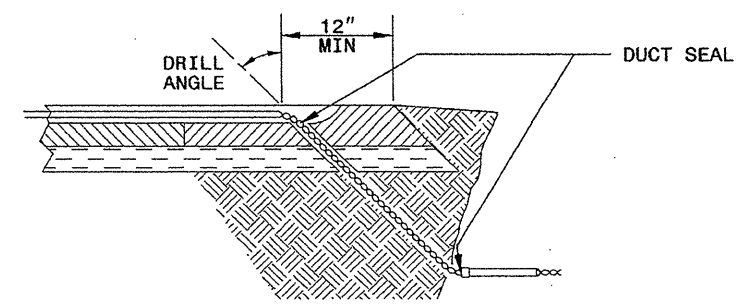
SPLICE ALL LOOP WIRE TAIL SECTIONS/LEAD-IN CABLE IN JUNCTION BOXES OR APPROVED CONDULETS.

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.

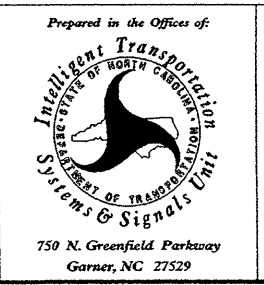
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DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

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ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
LOOP WIRE DETAILS

SHEET 2 OF 3
1725D01

See Plate for Title



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Milton I. Dean 11/24/08
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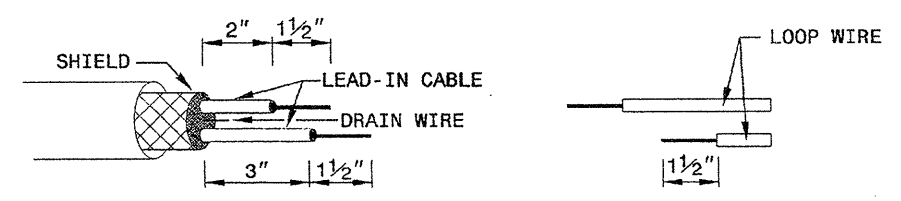
STATE OF NORTH CAROLINA
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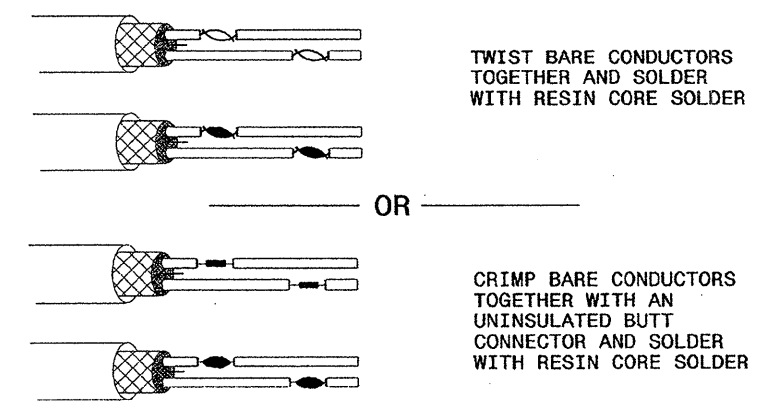
ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
SPlicing FOR LEAD-IN CABLE AND LOOP WIRE

SHEET 3 OF 3
1725D01

STEP 1. STRIP LOOP WIRE AND LEAD-IN CABLE

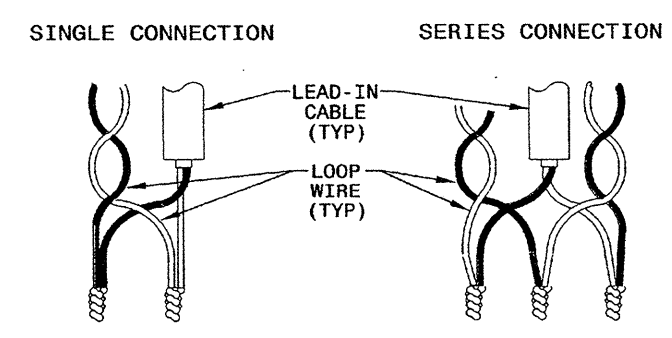


STEP 2. CONNECT AND SOLDER

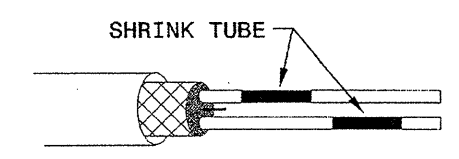


BOND SHIELD DRAIN WIRE AT SPLICE SECTIONS (DO NOT GROUND)

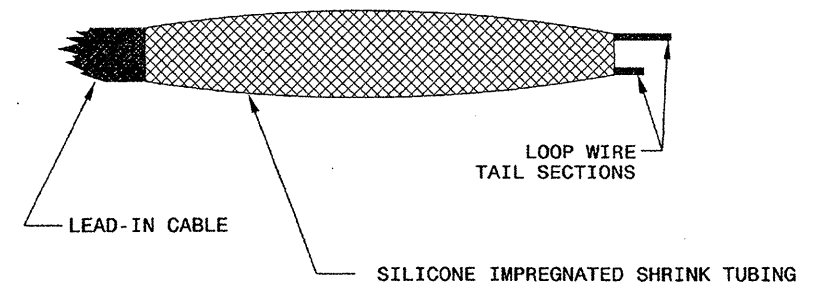
LOOP WIRE AND LEAD-IN CABLE CONNECTION DETAILS



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

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