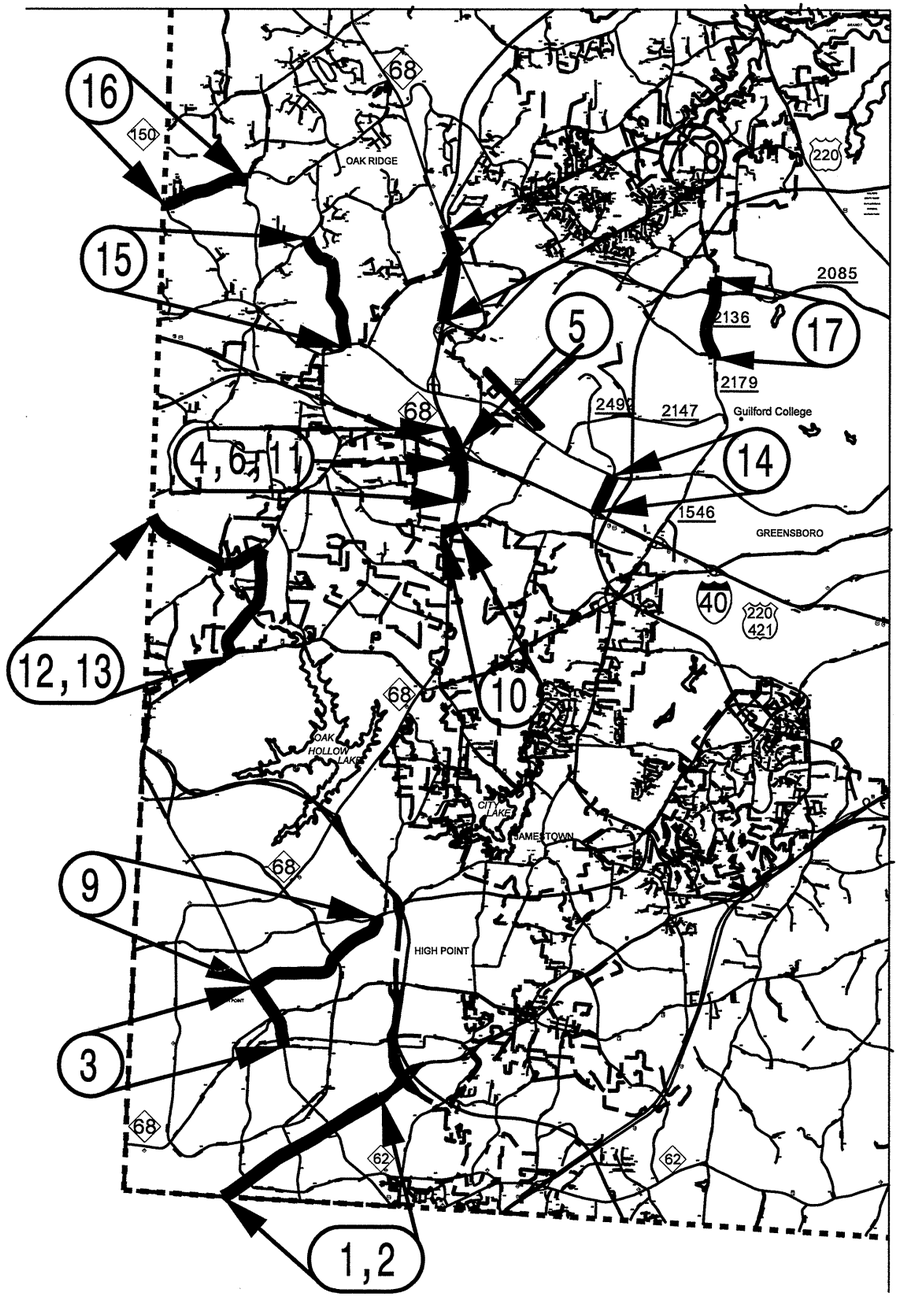
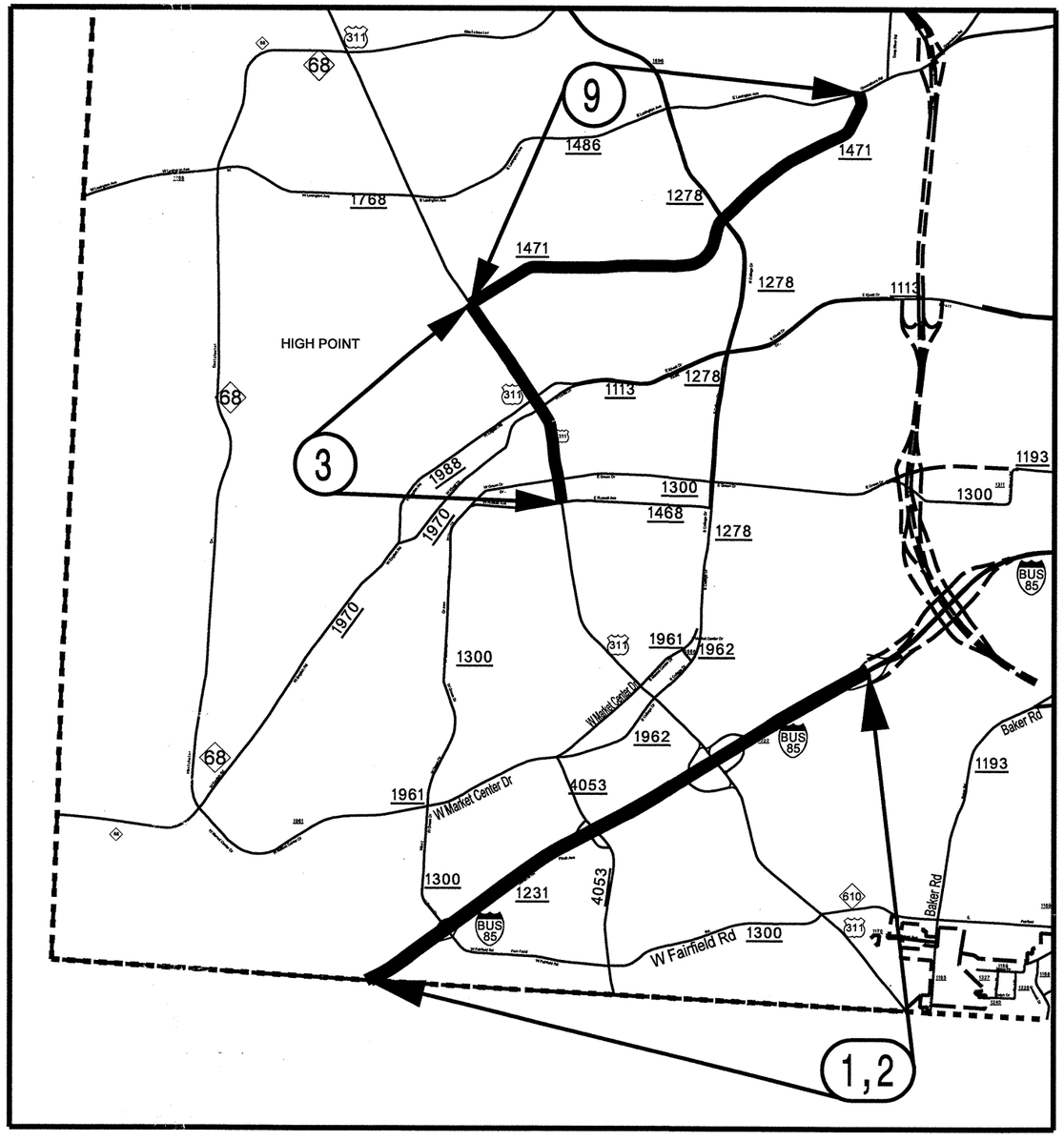
GUILFORD COUNTY

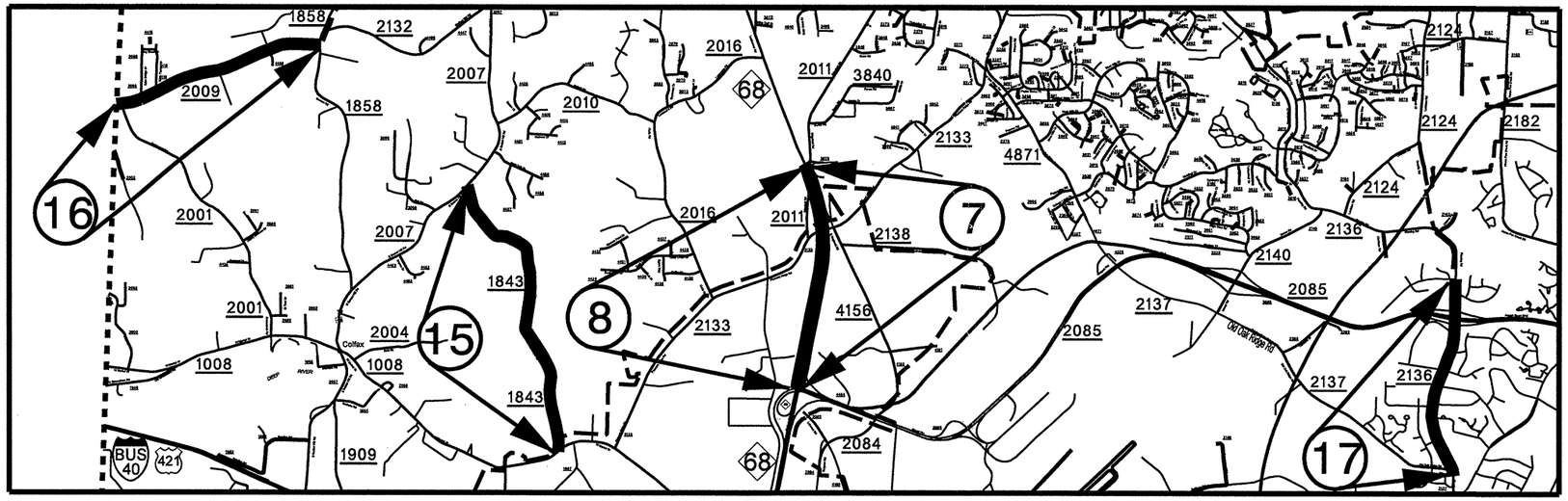
STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	7CR.10411.19, 7CR.20411.19	1	

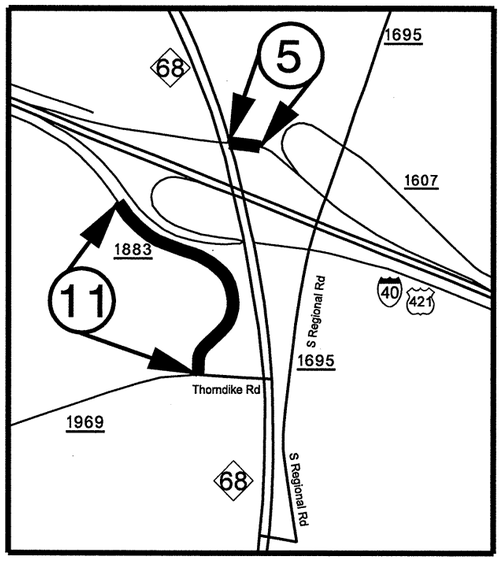


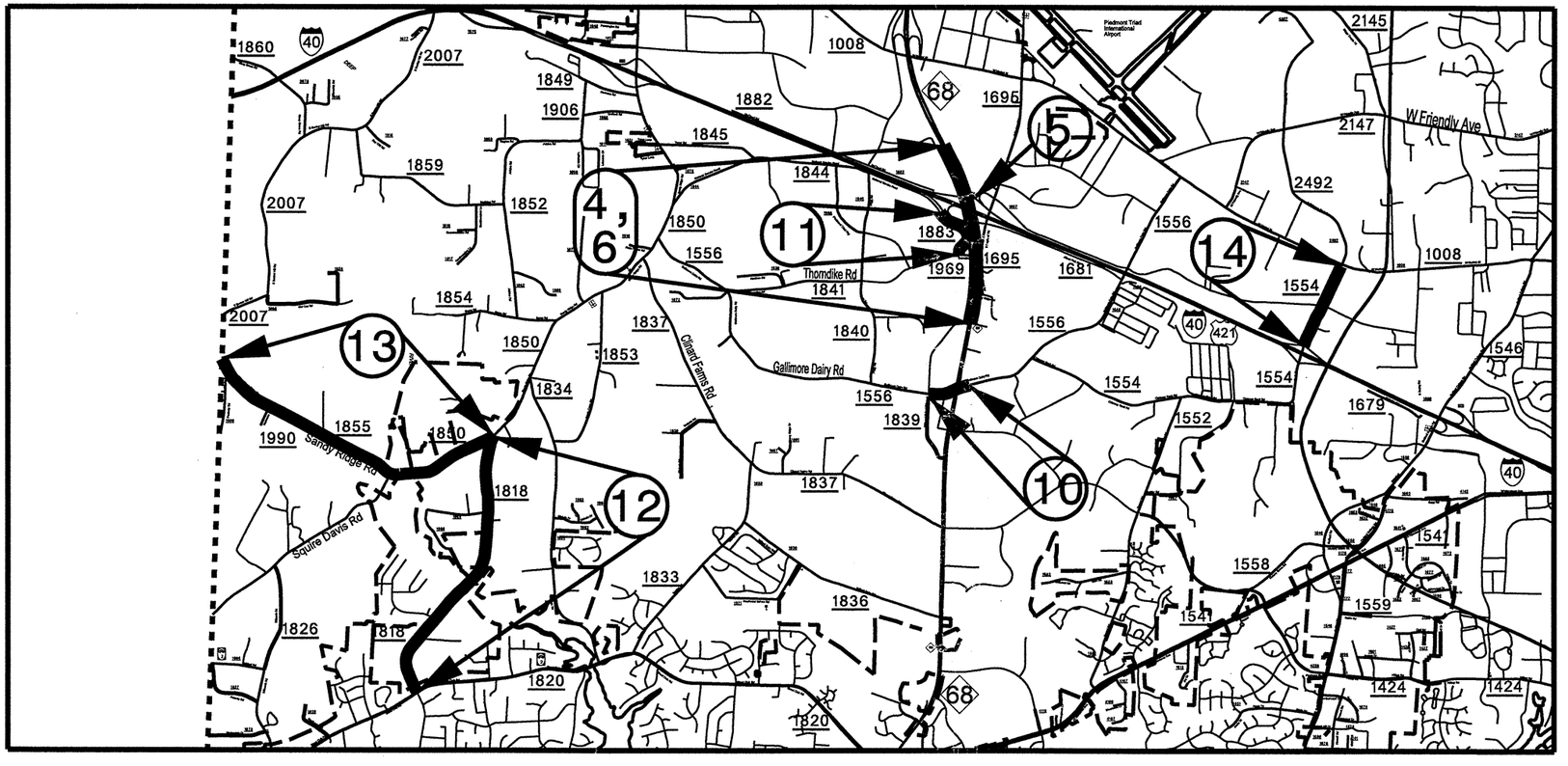


guilf_2_vicinity1.dgn 10/26/2007 3:42:07 PM

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	7CR.10411.19, 7CR.20411.19	2	





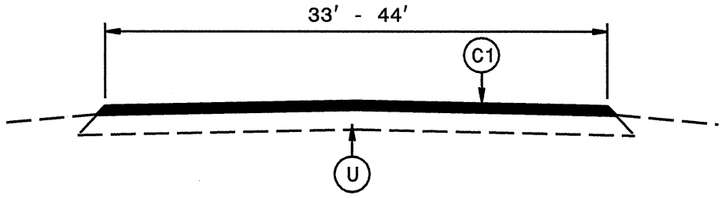


GUILFORD COUNTY

guilf_2_vicinity2.dgn 10/26/2007 3:42:54 PM

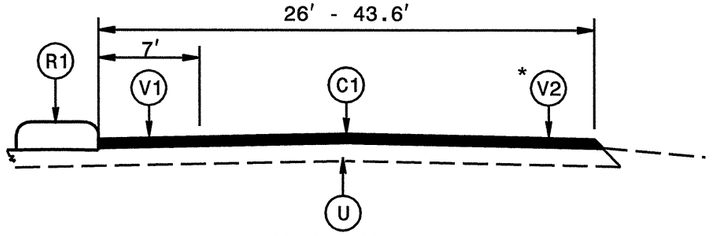
5/28/99

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	7CR.10411.19,7CR.20411.19	3	



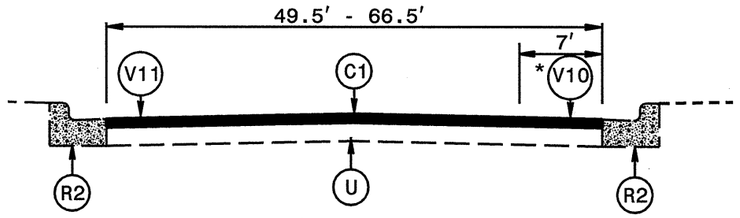
USED ON MAPS 1,2

TYPICAL SECTION NO. 1



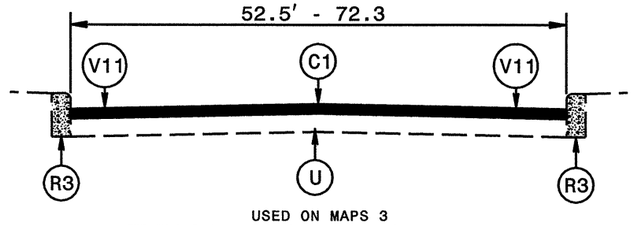
USED ON MAPS 1, 2
* NOTE: APPLIES TO MAP 1 ONLY

TYPICAL SECTION NO. 2



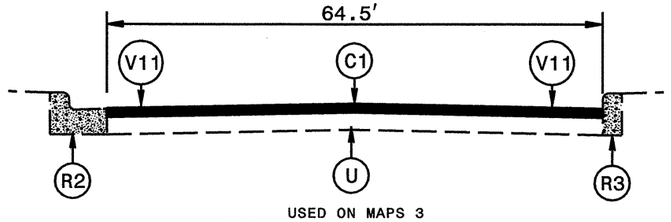
USED ON MAPS 3
* NOTE: ASPHALT VARIES BETWEEN FRONT OF GUTTER & FACE OF CURB

TYPICAL SECTION NO. 3



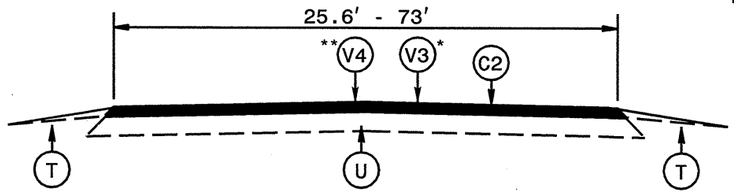
USED ON MAPS 3

TYPICAL SECTION NO. 4



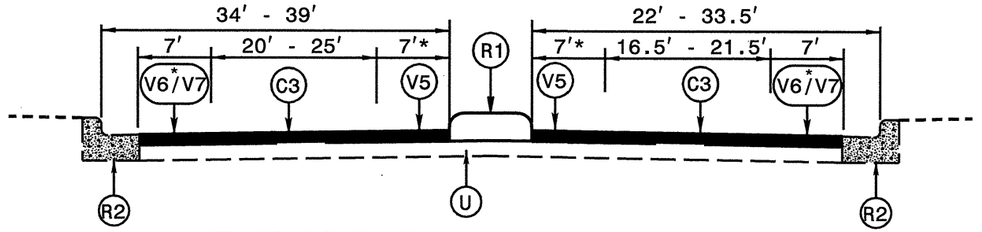
USED ON MAPS 3

TYPICAL SECTION NO. 5



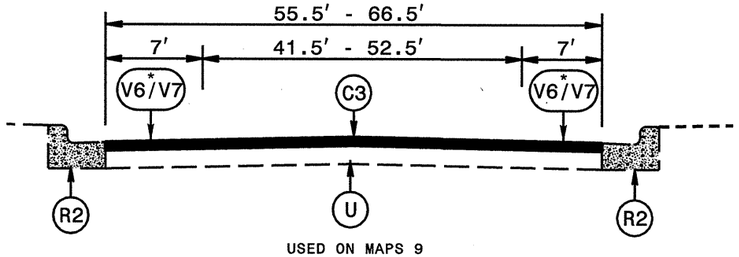
USED ON MAPS 4, 5, 6, 7, 8
* NOTE: APPLIES TO MAP 4 ONLY
** NOTE: APPLIES TO MAP 6 & 8

TYPICAL SECTION NO. 6



* NOTE: USE V6 OR V7 WHERE APPLICABLE. EXISTING ASPHALT VARIES BETWEEN FRONT OF GUTTER AND FACE OF CURB
USED ON MAPS 9

TYPICAL SECTION NO. 7



USED ON MAPS 9

TYPICAL SECTION NO. 8

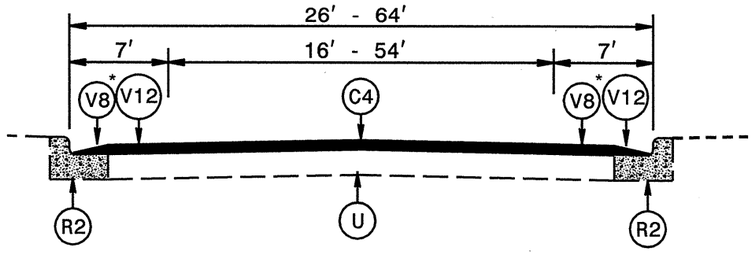
* NOTE: USE V6 OR V7 WHERE APPLICABLE. EXISTING ASPHALT VARIES BETWEEN FRONT OF GUTTER AND FACE OF CURB

PAVEMENT SCHEDULE

C1	PROP. APPROX. 5/8" ULTRATHIN HOT MIX ASPHALT, TYPE B, AT AN AVERAGE RATE OF 70 LBS. PER SQ. YD.	F	AST MAT COAT, 78M STONE	V1	0-5/8" MILLING FOR 7′ FROM EDGE OF THE CONCRETE ISLAND	V7	0-1½" MILLING FOR 7′ FROM FRONT OF GUTTER TO ROADWAY	V13	3" MILLING FOR 11′ DIRECTED BY THE ENGINEER, USE W/ C3
C2	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	R1	EXISTING CONCRETE ISLAND	V2	3" MILLING FOR 12′ DIRECTED BY THE ENGINEER, USE W/ C1	V8	0-1¼" MILLING FOR 7′ FROM FRONT OF GUTTER TO ROADWAY	V14	1½" MILLING FOR 3′ DIRECTED BY THE ENGINEER
C3	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD..	R2	EXISTING 2-6 CURB AND GUTTER	V3	3" MILLING FOR 12′ DIRECTED BY THE ENGINEER, USE W/ C2	V9	3" MILLING FOR 11′-75′ DIRECTED BY THE ENGINEER, USE W/ C5	V15	1¼" MILLING FOR ENTIRE ROADWAY FROM GUTTER TO GUTTER
C4	PROP. APPROX. 1¼" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.	R3	EXISTING GRANITE CURB	V4	1½" MILLING FOR 12′ DIRECTED BY THE ENGINEER	V10	0-2½" MILLING FOR 7′ FROM FRONT OF GUTTER TO ROADWAY		
C5	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	T	SHOULDER RECONSTRUCTION, AS DIRECTED BY THE ENGINEER.	V5	0-1½" MILLING FOR 7′ FROM EDGE OF THE CONCRETE ISLAND	V11	1½" MILLING FOR 4′- 66.5′ DIRECTED BY THE ENGINEER, USE W/ C1		
D	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.	U	EXISTING PAVEMENT.	V6	0-1½" MILLING FOR 7′ FROM FACE OF CURB TO ROADWAY	V12	0-1¼" MILLING FOR 7′ FROM FACE OF CURB TO ROADWAY		

5/28/99

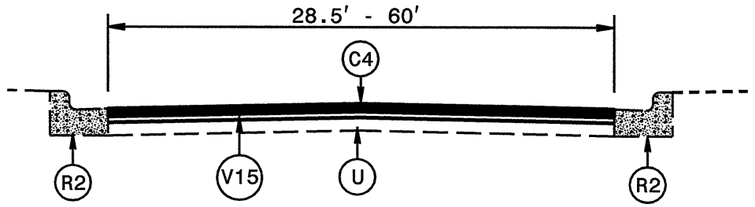
STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	7CR.10411.19,7CR.20411.19	4	



NOTE: USE V8 OR V12 WHERE APPLICABLE. EXISTING ASPHALT VARIES BETWEEN FRONT OF GUTTER AND FACE OF CURB.

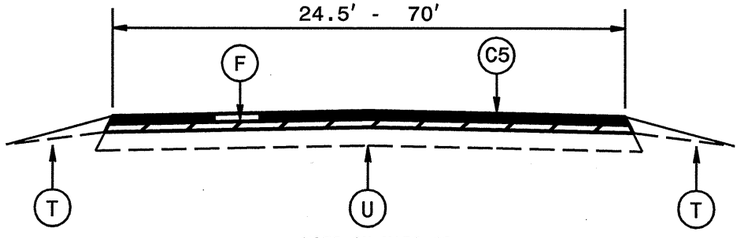
USED ON MAPS 9

TYPICAL SECTION NO. 9



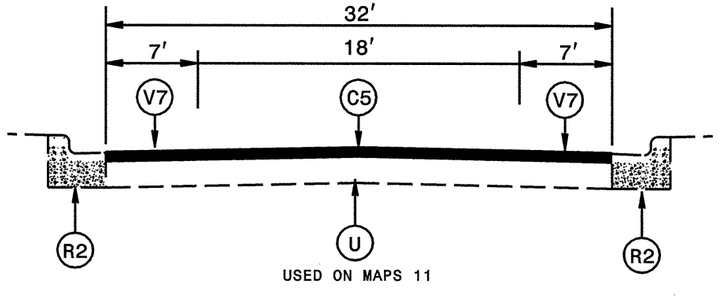
USED ON MAPS 9

TYPICAL SECTION NO. 10



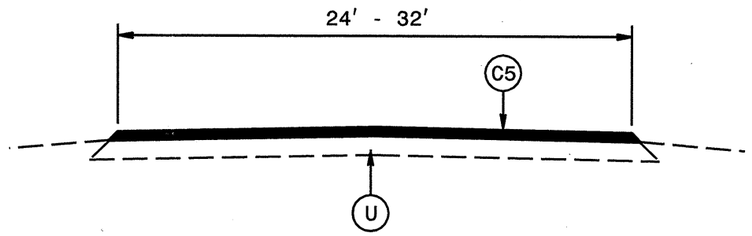
USED ON MAPS 10

TYPICAL SECTION NO. 11



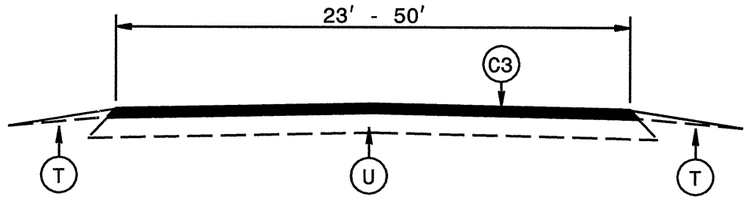
USED ON MAPS 11

TYPICAL SECTION NO. 12



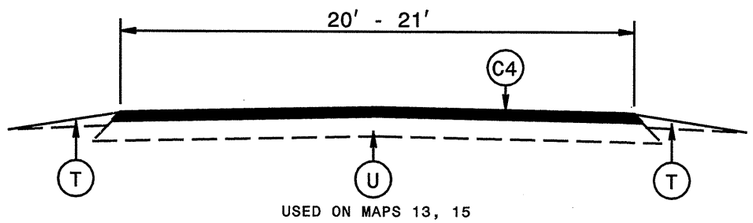
USED ON MAPS 11

TYPICAL SECTION NO. 13



USED ON MAPS 12

TYPICAL SECTION NO. 14



USED ON MAPS 13, 15

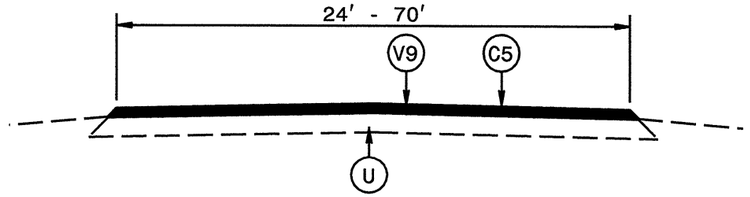
TYPICAL SECTION NO. 15

PAVEMENT SCHEDULE

C1	PROP. APPROX. 5/8" ULTRATHIN HOT MIX ASPHALT, TYPE B, AT AN AVERAGE RATE OF 70 LBS. PER SQ. YD.	F	AST MAT COAT, 78M STONE	V1	0-5/8" MILLING FOR 7' FROM EDGE OF THE CONCRETE ISLAND	V7	0-1½" MILLING FOR 7' FROM FRONT OF GUTTER TO ROADWAY	V13	3" MILLING FOR 11' DIRECTED BY THE ENGINEER, USE W/ C3
C2	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	R1	EXISTING CONCRETE ISLAND	V2	3" MILLING FOR 12' DIRECTED BY THE ENGINEER, USE W/ C1	V8	0-1¼" MILLING FOR 7' FROM FRONT OF GUTTER TO ROADWAY	V14	1½" MILLING FOR 3' DIRECTED BY THE ENGINEER
C3	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.	R2	EXISTING 2-6 CURB AND GUTTER	V3	3" MILLING FOR 12' DIRECTED BY THE ENGINEER, USE W/ C2	V9	3" MILLING FOR 11'-75' DIRECTED BY THE ENGINEER, USE W/ C5	V15	1¼" MILLING FOR ENTIRE ROADWAY FROM GUTTER TO GUTTER
C4	PROP. APPROX. 1¼" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.	R3	EXISTING GRANITE CURB	V4	1½" MILLING FOR 12' DIRECTED BY THE ENGINEER	V10	0-2½" MILLING FOR 7' FROM FRONT OF GUTTER TO ROADWAY		
C5	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	T	SHOULDER RECONSTRUCTION, AS DIRECTED BY THE ENGINEER.	V5	0-1½" MILLING FOR 7' FROM EDGE OF THE CONCRETE ISLAND	V11	1½" MILLING FOR 4'- 66.5' DIRECTED BY THE ENGINEER, USE W/ C1		
D	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.	U	EXISTING PAVEMENT.	V6	0-1½" MILLING FOR 7' FROM FACE OF CURB TO ROADWAY	V12	0-1¼" MILLING FOR 7' FROM FACE OF CURB TO ROADWAY		

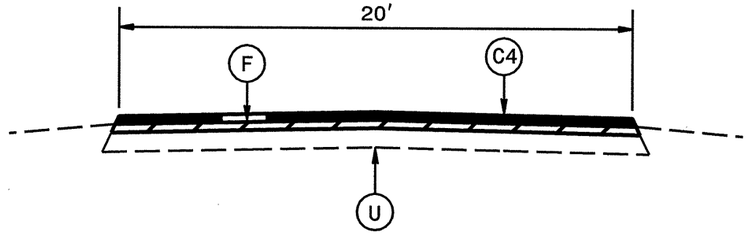
5/28/99

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	7CR.10411.19,7CR.20411.19	5	



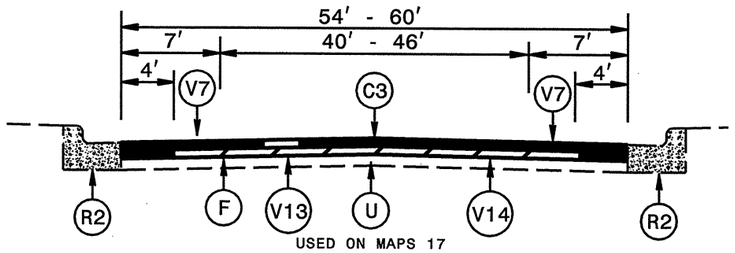
USED ON MAPS 14

TYPICAL SECTION NO. 16



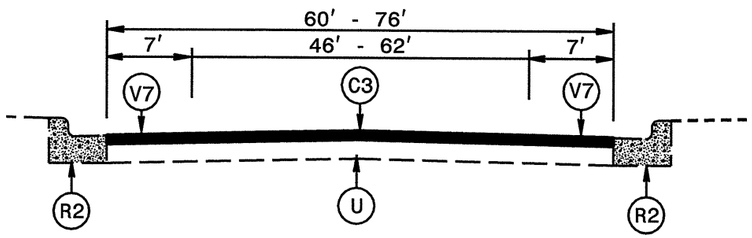
USED ON MAPS 16

TYPICAL SECTION NO. 17



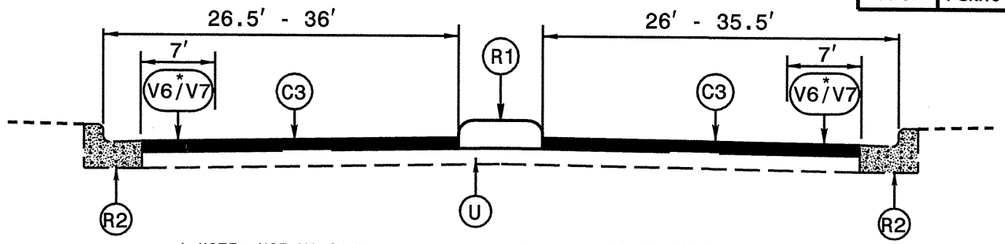
USED ON MAPS 17

TYPICAL SECTION NO. 18



USED ON MAPS 17

TYPICAL SECTION NO. 19

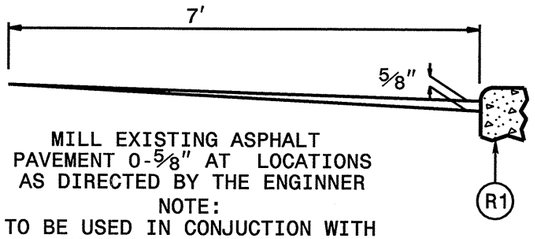


* NOTE: USE V6 OR V7 WHERE APPLICABLE. EXISTING ASPHALT VARIES BETWEEN FRONT OF GUTTER AND FACE OF CURB

USED ON MAPS 17

TYPICAL SECTION NO. 20

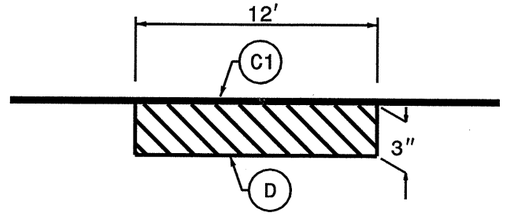
MILLING DETAIL FOR V1



MILL EXISTING ASPHALT PAVEMENT 0-5⁄8″ AT LOCATIONS AS DIRECTED BY THE ENGINNER

NOTE:
TO BE USED IN CONJUCTION WITH TS. NO. 2 ON MAPS 1,2

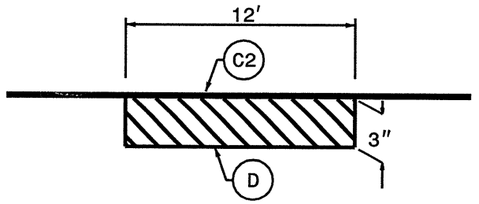
MILLING DETAIL FOR V2



MILL EXISTING ASPHALT PAVEMENT 3 ″ IN DEPTH, AT LOCATIONS AS DIRECTED BY THE ENGINEER.

NOTE:
TO BE USED IN CONJUCTION WITH TS. NO. 2 ON MAP 1

MILLING DETAIL FOR V3



MILL EXISTING ASPHALT PAVEMENT 3 ″ IN DEPTH, AT LOCATIONS AS DIRECTED BY THE ENGINEER.

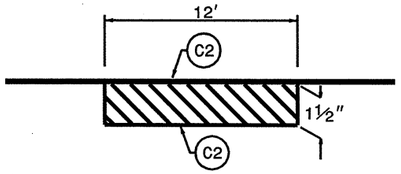
NOTE:
TO BE USED IN CONJUCTION WITH TS. NO. 6 ON MAPS 4

PAVEMENT SCHEDULE

C1	PROP. APPROX. 5⁄8″ ULTRATHIN HOT MIX ASPHALT, TYPE B, AT AN AVERAGE RATE OF 70 LBS. PER SQ. YD.	F	AST MAT COAT, 78M STONE	V1	0-5/8″ MILLING FOR 7′ FROM EDGE OF THE CONCRETE ISLAND	V7	0-1½″ MILLING FOR 7′ FROM FRONT OF GUTTER TO ROADWAY	V13	3″ MILLING FOR 11′ DIRECTED BY THE ENGINEER, USE W/ C3
C2	PROP. APPROX. 1½″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	R1	EXISTING CONCRETE ISLAND	V2	3″ MILLING FOR 12′ DIRECTED BY THE ENGINEER, USE W/ C1	V8	0-1¼″ MILLING FOR 7′ FROM FRONT OF GUTTER TO ROADWAY	V14	1½″ MILLING FOR 3′ DIRECTED BY THE ENGINEER
C3	PROP. APPROX. 1½″ ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.	R2	EXISTING 2-6 CURB AND GUTTER	V3	3″ MILLING FOR 12′ DIRECTED BY THE ENGINEER, USE W/ C2	V9	3″ MILLING FOR 11′-75′ DIRECTED BY THE ENGINEER, USE W/ C5	V15	1¼″ MILLING FOR ENTIRE ROADWAY, FROM GUTTER TO GUTTER
C4	PROP. APPROX. 1¼″ ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.	R3	EXISTING GRANITE CURB	V4	1½″ MILLING FOR 12′ DIRECTED BY THE ENGINEER	V10	0-2½″ MILLING FOR 7′ FROM FRONT OF GUTTER TO ROADWAY		
C5	PROP. APPROX. 1½″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	T	SHOULDER RECONSTRUCTION, AS DIRECTED BY THE ENGINEER.	V5	0-1½″ MILLING FOR 7′ FROM EDGE OF THE CONCRETE ISLAND	V11	1½″ MILLING FOR 4′- 66.5′ DIRECTED BY THE ENGINEER, USE W/ C1		
D	PROP. APPROX. 3″ ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.	U	EXISTING PAVEMENT.	V6	0-1½″ MILLING FOR 7′ FROM FACE OF CURB TO ROADWAY	V12	0-1¼″ MILLING FOR 7′ FROM FACE OF CURB TO ROADWAY		

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	7CR.10411.19,7CR.20411.19	6	

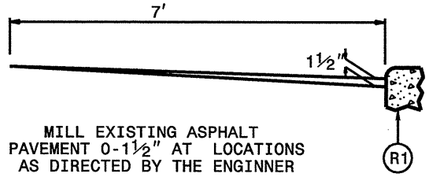
MILLING DETAIL FOR V4



MILL EXISTING ASPHALT PAVEMENT 1½" IN DEPTH,
AT LOCATIONS AS DIRECTED BY THE ENGINEER.

NOTE:
TO BE USED IN CONJUCTION WITH
TS. NO. 6 ON MAPS 6 & 8

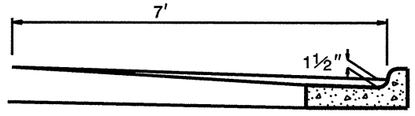
MILLING DETAIL FOR V5



MILL EXISTING ASPHALT
PAVEMENT 0-1½" AT LOCATIONS
AS DIRECTED BY THE ENGINNER

NOTE:
TO BE USED IN CONJUCTION WITH
TS. NO. 7 ON MAPS 9

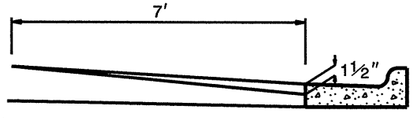
MILLING DETAIL FOR V6



MILL EXISTING ASPHALT PAVEMENT 0-1½" AT
LOCATIONS AS DIRECTED BY THE ENGINNER

NOTE:
TO BE USED IN CONJUCTION WITH
TS. NO. 7,8 ON MAP 9

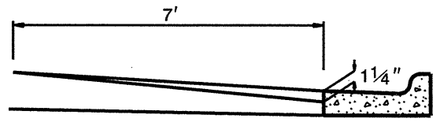
MILLING DETAIL FOR V7



MILL EXISTING ASPHALT PAVEMENT 0-1½" AT
LOCATIONS AS DIRECTED BY THE ENGINNER

NOTE:
TO BE USED IN CONJUCTION WITH
TS. NO. 7,8 ON MAP 9
TS. NO. 12 ON MAP 11
TS. NO. 18, 19 & 20 ON MAP 17

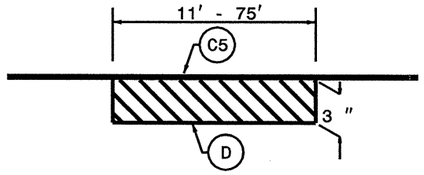
MILLING DETAIL FOR V8



MILL EXISTING ASPHALT PAVEMENT 0-1¼" AT
LOCATIONS AS DIRECTED BY THE ENGINNER

NOTE:
TO BE USED IN CONJUCTION WITH
TS. NO. 9 ON MAP 9

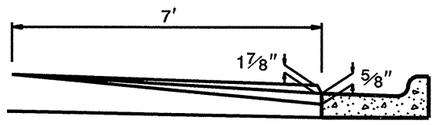
MILLING DETAIL FOR V9



MILL EXISTING ASPHALT PAVEMENT 3" IN DEPTH,
AT LOCATIONS AS DIRECTED BY THE ENGINEER.

NOTE:
TO BE USED IN CONJUCTION WITH
TS. NO. 16 ON MAPS 14

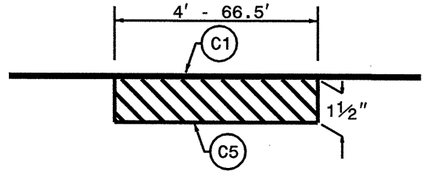
MILLING DETAIL FOR V10



MILL EXISTING ASPHALT PAVEMENT 0-2½" AT
LOCATIONS AS DIRECTED BY THE ENGINNER

NOTE:
TO BE USED IN CONJUCTION WITH
TS. NO. 3 ON MAP 3
BETWEEN STATIONS 6+60 AND 19+00

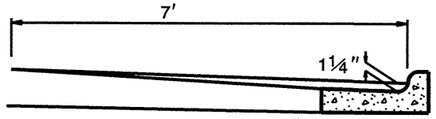
MILLING DETAIL FOR V11



MILL EXISTING ASPHALT PAVEMENT 1½" IN DEPTH,
AT LOCATIONS AS DIRECTED BY THE ENGINEER.

NOTE:
TO BE USED IN CONJUCTION WITH
TS. NO. 3,4 & 5 ON MAP 3

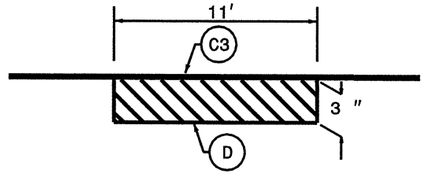
MILLING DETAIL FOR V12



MILL EXISTING ASPHALT PAVEMENT 0-1¼" AT
LOCATIONS AS DIRECTED BY THE ENGINNER

NOTE:
TO BE USED IN CONJUCTION WITH
TS. NO. 9 & 10 ON MAP 9

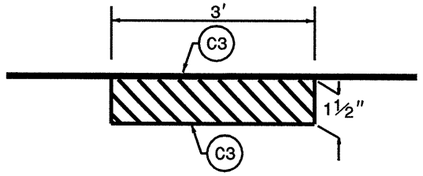
MILLING DETAIL FOR V13



MILL EXISTING ASPHALT PAVEMENT 3" IN DEPTH,
AT LOCATIONS AS DIRECTED BY THE ENGINEER.

NOTE:
TO BE USED IN CONJUCTION WITH
TS. NO. 18 ON MAP 17

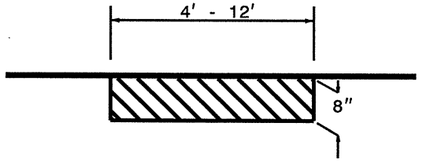
MILLING DETAIL FOR V14



MILL EXISTING ASPHALT PAVEMENT 1½" IN DEPTH,
AT LOCATIONS AS DIRECTED BY THE ENGINEER.

NOTE:
TO BE USED IN CONJUCTION WITH
TS. NO. 18 ON MAP 17

PATCHING DETAIL 1



DIG OUT ASPHALT PAVEMENT 8" IN DEPTH,
REPLACE WITH ASPHALT CONCRETE BASE
COURSE B25.0B, AT LOCATIONS AS
DIRECTED BY THE ENGINEER.

NOTE:
TO BE USED IN CONJUCTION WITH MAP 1

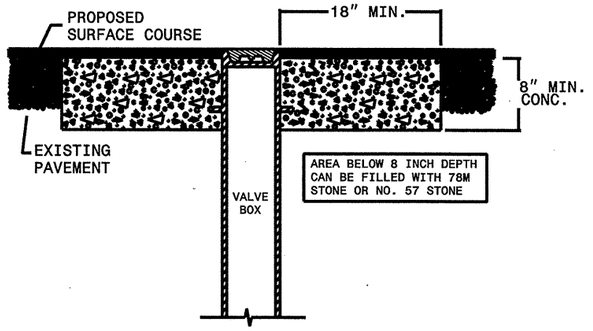
PAVEMENT SCHEDULE

C1	PROP. APPROX. ⅝" ULTRATHIN HOT MIX ASPHALT, TYPE B, AT AN AVERAGE RATE OF 70 LBS. PER SQ. YD.	F	AST MAT COAT, 78M STONE	V1	0-5/8" MILLING FOR 7' FROM EDGE OF THE CONCRETE ISLAND	V7	0-1½" MILLING FOR 7' FROM FRONT OF GUTTER TO ROADWAY	V13	3" MILLING FOR 11' DIRECTED BY THE ENGINEER, USE W/ C3
C2	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	R1	EXISTING CONCRETE ISLAND	V2	3" MILLING FOR 12' DIRECTED BY THE ENGINEER, USE W/ C1	V8	0-1¼" MILLING FOR 7' FROM FRONT OF GUTTER TO ROADWAY	V14	1½" MILLING FOR 3' DIRECTED BY THE ENGINEER
C3	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.	R2	EXISTING 2-6 CURB AND GUTTER	V3	3" MILLING FOR 12' DIRECTED BY THE ENGINEER, USE W/ C2	V9	3" MILLING FOR 11'-75' DIRECTED BY THE ENGINEER, USE W/ C5	V15	1¼" MILLING FOR ENTIRE ROADWAY, FROM GUTTER TO GUTTER
C4	PROP. APPROX. 1¼" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.	R3	EXISTING GRANITE CURB	V4	1½" MILLING FOR 12' DIRECTED BY THE ENGINEER	V10	0-2½" MILLING FOR 7' FROM FRONT OF GUTTER TO ROADWAY		
C5	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	T	SHOULDER RECONSTRUCTION, AS DIRECTED BY THE ENGINEER.	V5	0-1½" MILLING FOR 7' FROM EDGE OF THE CONCRETE ISLAND	V11	1½" MILLING FOR 4'- 66.5' DIRECTED BY THE ENGINEER, USE W/ C1		
D	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.	U	EXISTING PAVEMENT.	V6	0-1½" MILLING FOR 7' FROM FACE OF CURB TO ROADWAY	V12	0-1¼" MILLING FOR 7' FROM FACE OF CURB TO ROADWAY		

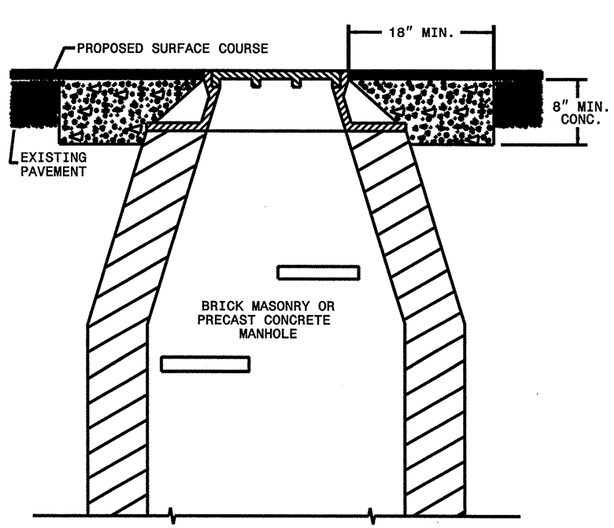
5/28/99

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	7CR.10411.19,7CR.20411.19	7	

STANDARD CONCRETE ENCASEMENT FOR MANHOLE & VALVE CASTINGS IN PAVEMENT
DETAIL DRAWING NO. 858.01

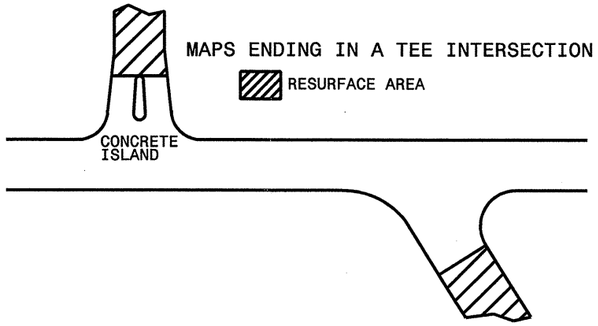


USE RAPID SET GROUT, MORTAR, OR CONCRETE CLASS B CONCRETE MAY BE USED WHEN ADJUSTMENTS ARE NOT IN THE TRAVEL LANE.

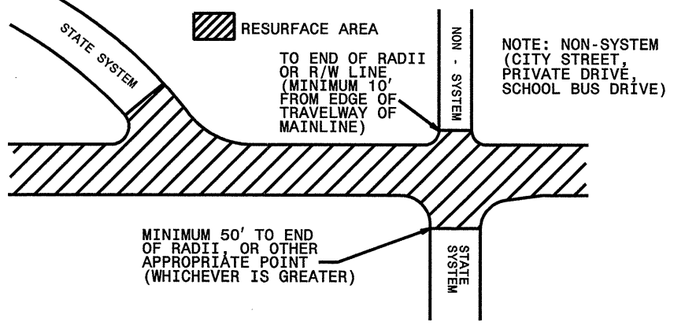


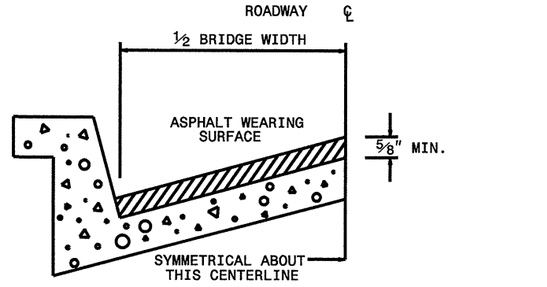
NOTES:
1. MORTAR SHALL BE MIXED TO NCDOT SPECIFICATIONS.
2. ALL FAULTY EXISTING BRICKWORK TO BE REMOVED AND REPLACED WITH NEW BRICK MASONRY.
3. EXCAVATION FOR THE ADJUSTMENT SHALL BE SHEER CUT ON ALL SIDES.
4. RAPID SET GROUT, MORTAR, OR CONCRETE SHALL BE USED

PAVING DETAIL 1
MAIN LINE IS NOT BEING RESURFACED



PAVING DETAIL 2
MAIN LINE IS BEING RESURFACED





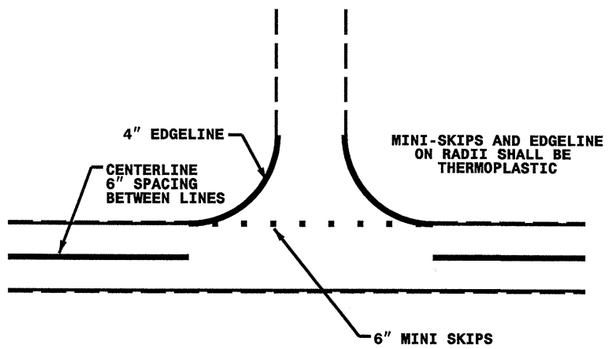
BRIDGE HALF TYPICAL SECTION

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. ROUTES TO BE SURFACED 50' FROM EDGE OF PAVEMENT OF MAIN PROJECT.
ALL PAVED S.R. ROUTES TO BE RESURFACED TO END OF RADDII, OR AS DIRECTED BY THE ENGINEER. EDGES, PAVEMENT WIDENING, INTERSECTIONS AND BRIDGE FLARES ARE INCLUDED IN THE SUMMARY OF QUANTITIES. BRIDGES TO BE RESURFACED AT LOCATIONS AND DEPTH AS DIRECTED BY THE ENGINEER.

TO BE USED AT ALL NON-SIGNALIZED INTERSECTIONS (NOT TO SCALE)



NOTE: MINI SKIPS SHALL BE PLACED ON A 10' CYCLE, CONTAINING AN 8' AND 2' SKIP, THE WIDTH OF THE SKIP SHALL BE 6".

PROJECT NO.	SHEET NO.	TOTAL NO.
7CR.10411.19 & 7CR.20411.19	8	

SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LENGTH MI	WIDTH FT	INCIDENTAL STONE BASE TONS	SHOULDER RECONSTRUCTION SMI	3" MILLING SY	1½" MILLING SY	1.25" MILLING SY	0" TO 5/8" MILLING SY	0" TO 2.5" MILLING SY	0" TO 1.25" MILLING SY	0" TO 1.5" MILLING SY	INCIDENTAL MILLING SY	INTERMEDIATE COURSE, I19.0B TONS	SURFACE COURSE, S9.5B TONS	SURFACE COURSE, S9.5C TONS	SURFACE COURSE, SF9.5A TONS	PG 64-22 PLANT MIX TONS	PG 70-22 PLANT MIX TONS	PATCHING EXISTING PAVEMENT TONS	AST MAT COAT 78M SY	PG 70-28 PLANT MIX TON	ULTRATHIN HOT MIX, TYPE B TON	APPLICATION OF ULTRATHIN BONDED WEARING COURSE SY	CONCRETE WHEELCHAIR RAMPS EA	RETROFITTING EXISTING WHEELCHAIR RAMPS EA	ADJ. OF MANHOLES EA	ADJ. OF METER OR VALVE BOX EA	SEED & MULCHING AC	RESIDENTIAL SEEDING AC	TRENCHING (UNPAVED) (1)(2") LF	PULL BOX (STANDARD) EA	INDUCTIVE LOOP SAW CUT LF	LEAD-IN CABLE (14-2) LF	PORTABLE LIGHTING LS
7CR.10411.19	Guilford	1	I-85 B US 29-70 EB	FROM THE RANDOLPH COUNTY LINE TO JOINT WEST OF BRENTWOOD ST (NON-SYSTEM)	1	0.540	33.5																			22	375	10,716										
					1	0.130	41																			7	113	3,127										
					1	0.060	34 - 41																			3	46	1,320										
					1	0.920	33 - 34										1,020									37	639	18,261										
					2	0.250	33 - 33.4			1,333			1,027					228				11		30		10	174	4,969										
					2	0.140	33.4 - 41.5			667			439					114				5				6	108	3,080										
					2	0.060	41.5 - 42						261													3	55	1,571										
					2	0.030	34						117													1	21	598										
					2	0.050	41						191													2	42	1,203										
					1,2	0.050	35.5 - 41						205													2	39	1,124										
					1	0.310	34 - 35.5																			13	221	6,329										
TOTAL FOR MAP NO. 1						2.540				2,000			2,240				1,020	342				16		30		**106**	**1,833**	**52,298**										*
"	"	2	I-85B US 29-70 WB	FROM JOINT WEST OF BRENTWOOD ST (NON-SYSTEM) TO RANDOLPH COUNTY LINE	1	0.310	34																			13	216	6,184										
					2	0.110	34 - 43.6						451													5	88	2,504										
					2	0.070	41 - 43.6						302													4	61	1,737										
					2	0.070	26 - 41						284													3	48	1,376										
					2	0.030	26						132													1	16	458										
					2	0.050	26 - 39						222													2	33	953										
					2	0.050	34 - 39						183													2	40	1,144										
					2	0.360	34.5						148													15	255	7,286										
					2	0.070	35 - 41						218													3	55	1,561										
					2	0.100	35						260													4	72	2,053										
					1	0.440	33.5 - 35										1,020									18	309	8,854										
					1	0.120	41.5																			6	102	2,922										
					1	0.060	34 - 41.5																			3	47	1,331										
					1	0.660	34										633									27	461	13,165										
					1	0.160	42 - 44																			8	141	4,036										
					1	0.060	34 - 42																			3	47	1,338										
					1	0.140	34																			6	98	2,793										
TOTAL FOR MAP NO. 2						2.860							2,200				1,653									**123**	**2,089**	**59,695**										*
"	"	3	US 311 (MAIN ST)	FROM SR 1468 (RUSSELL AVE) TO SR 1471 (MONTLIEU AVE)	3	0.010	64 - 66.5				403								34			2				1	21	588		60	72	57				5,130		
					4	0.070	66.5				33								3			0				6	96	2,731										
					5	0.250	64.5				44								4			0				19	331	9,460										
					3	0.020	55 - 64.5																			2	29	839										
					3	0.110	52 - 55				240			377					20			1				7	121	3,453										
					3	0.020	49.5 - 52							74												1	24	673										
					3	0.110	49.5 - 53.5				829			451					70			4				7	116	3,324										
					3	0.020	53 - 59																			1	24	688										
					3	0.020	59																			1	24	692										
					3	0.010	51 - 61																			1	13	367										
					3	0.070	51				167								14			1				4	73	2,094										
					3	0.040	51 - 53.5				14								167			10				2	43	1,227										
					3	0.060	53.5 - 54				272								23			1				4	73	2,074										
					4	0.060	71.5 - 72.3																			5	91	2,611										
					4	0.060	72.3																			5	91	2,608										
					4	0.020	69.5 - 72.3																			2	30	849										
					4	0.070	65 - 69.5				484								41			2				6	98	2,814										
					4	0.540	62.5																			40	693	19,800										
					4	0.150	52.5 - 62.5				1,036								87			5				10	177	5,060										
					4	0.020	52.6																			1	25	714										
					4	0.040	52.6 - 67.5				56								5							3	49	1,408										
					4	0.040	67.5																			3	55	1,584										
					4	0.020	60 - 67.5																			2	39	1,113										
TOTAL FOR MAP NO. 3						1.830					3,578			902					468			26				133	2,336	66,771		60	72	57				5,130		*
"	"	4	NC 68 NB	FROM AMERICHASE DR (NON-SYSTEM)/NORTH MILLWOOD SCHOOL RD (NON-SYSTEM) TO JUST NORTH OF TRIAD CENTER DR (NON-SYSTEM)	6	0.060	41		1.12											122			7										0.41			2,228		
					6	0.020	41 - 44.5													42			3															
					6	0.030	44.5 - 59													77			5															
					6	0.020	59 - 63													60			4															
					6	0.040	63													124			7															
					6	0.030	70													169			10															
					6	0.060	40.5													120			7															
					6	0.100	40.5 - 62													253			15															
					6	0.070	62													214			13															
					6	0.110	42.5													231			14															
					6	0.030	42.5 - 61													77			5															
					6	0.020	61 - 65													33			2															
					6	0.050	65													225			14															
					6	0.020	40.5													40			2															
					6	0.020	42.5 - 52													47			3															
					6	0.040	61													120			7															
					6	0.070	64.5													233			14															
					6	0.030	51.5 - 64.5			193								37		87		2	5															
					6	0.110	51.5 - 52.5			779								135		283		6	17															
					6	0.040	52.5 - 61			268								49		112		2	7															
					6	0.060	61 - 67			393								74		101		3	6															
					6	0.110	67			800								135		364		6	22															
					6	0.010	41			73								12		20		1	1															
TOTAL FOR MAP NO. 4						1.150			1.12	2,506								442		3,155		20	190									0.41			2,228		*

PROJECT NO.	SHEET NO.	TOTAL NO.
7CR.10411.19 & 7CR.20411.19	9	

SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LENGTH MI	WIDTH FT	INCIDENTAL STONE BASE TONS	SHOULDER RECONSTRUCTION SMI	3" MILLING SY	1½" MILLING SY	1.25" MILLING SY	0" TO 5/8" MILLING SY	0" TO 2.5" MILLING SY	0" TO 1.25" MILLING SY	0" TO 1.5" MILLING SY	INCIDENTAL MILLING SY	INTERMEDIATE COURSE, I19.0B TONS	SURFACE COURSE, S9.5B TONS	SURFACE COURSE, S9.5C TONS	SURFACE COURSE, SF9.5A TONS	PG 64-22 PLANT MIX TONS	PG 70-22 PLANT MIX TONS	PATCHING EXISTING PAVEMENT TONS	AST MAT COAT 78M SY	PG 70-28 PLANT MIX TON	ULTRATHIN HOT MIX, TYPE B TON	APPLICATION OF ULTRATHIN BONDED WEARING COURSE SY	CONCRETE WHEELCHAIR RAMPS EA	RETROFITTING EXISTING WHEELCHAIR RAMPS EA	ADJ. OF MANHOLES EA	ADJ. OF METER OR VALVE BOX EA	SEED & MULCHING AC	RESIDENTIAL SEEDING AC	TRENCHING (UNPAVED) (1)(2") LF	PULL BOX (STANDARD) EA	INDUCTIVE LOOP SAW CUT LF	LEAD-IN CABLE (14-2) LF	PORTABLE LIGHTING LS
"	"	5	I-40 WB OFF RAMP	FROM NEW PAVEMENT JOINT TO NC 68	6	0.030	36 - 49													63			4																	
					6	0.020	49 - 60													54			3																	
					6	0.010	56 - 58.5													28			2																	
TOTAL FOR MAP NO. 5						0.060														145			9																*
"	"	6	NC 68 SB	FROM TRIAD CENTER DR (NON-SYSTEM) TO N. MILLWOOD SCHOOL RD (NON-SYSTEM)	6	0.010	32		1.88												51			3								1	1	0.91				2,376			*
					6	0.020	64													63			4																	
					6	0.200	41				1,443									526			32																	
					6	0.060	41 - 53				400									173			10																	
					6	0.070	53				477									253			15																	
					6	0.050	41													101			6																	
					6	0.020	57 - 65													60			4																	
					6	0.020	65 - 67													65			4																	
					6	0.020	67 - 71													68			4																	
					6	0.060	71													275			17																	
					6	0.080	41				472									202			12																	
					6	0.040	41 - 50				247									111			7																	
					6	0.010	50 - 55				1,369									99			6																	
					6	0.060	55				400									197			12																	
					6	0.020	72													111			7																	
					6	0.100	41 - 51													227			14																	
					6	0.080	51 - 64													227			14																	
					6	0.040	64													161			10																	
					6	0.070	41													147			9																	
					6	0.060	41 - 53													139			8																	
					6	0.040	53													105			6																	
TOTAL FOR MAP NO. 6						1.130			1.88		4,808									3,364			204								1	1	0.91				2,376			*
"	"	7	NC 68 NB	FROM JOINT JUST NORTH OF SR 2085 (BRYAN BLVD) TO JUST NORTH OF SR 2011 (EDGEFIELD RD)	6	0.060	31.6		1.34												94			6										0.49				721			
					6	0.040	42 - 58.6													99			6																	
					6	0.140	42													291			17																	
					6	0.050	32 - 42													91			5																	
					6	0.510	32													807			48																	
					6	0.060	32 - 40													107			6																	
					6	0.030	40 - 44													62			4																	
					6	0.030	44 - 52													101			6																	
					6	0.020	52													51			3																	
					6	0.180	30.6													273			16																	
					6	0.090	25.6 - 30.6													125			8																	
					6	0.050	55 - 73													158			9																	
					6	0.040	55 - 58													112			7																	
					6	0.040	58 - 60													162			10																	
					6	0.006	50													15			1																	
TOTAL FOR MAP NO. 7						1.346			1.34											2,548			152										0.49				721			*
"	"	8	NC 68 SB	FROM WHERE DIVIDED HWY BEGINS TO SR 2085 (BRYAN BLVD)	6	0.030	27 - 31		1.19		1,600										177			11										0.43				851			
					6	0.150	31													230			14																	
					6	0.060	31 - 41													107			6																	
					6	0.030	41 - 50													67			4																	
					6	0.050	50 - 65													172			10																	
					6	0.890	32				6,133										1,924			115																
TOTAL FOR MAP NO. 8						**1.210**			**1.19**		**7,733**										**2,677**			**160**										**0.43**				**851**			*
TOTAL FOR PROJ NO. 7CR.10411.19						**12.126**			**5.53**	**4,506**	**16,119**		**4,440**	**902**				**2,673**	**784**	**468**	**11,890**		**62**	**715**	**30**		**362**	**6,258**	**178,764**		**60**	**73**	**58**	**2.24**				**11,306**			
7CR.20411.19	Guilford	9	SR 1471 (MONTLIEU AVE)	FROM US 311 (MAIN ST) TO SR 1486 (E LEXINGTON AVE)	7	0.010	56 - 72.5									94					31	2							1	4	7	3				3,567			
					7	0.010	56									62					27	2																
					7	0.010	56 - 62.5									190					29	2																
					8	0.010	66.5									120					32	2																
					8	0.070	55.5 - 56									660					189	12																
					8	0.020	55.5								148						80	5																
					9	0.010	55.5 - 58.6								101						23	1																
					9	0.020	26.5 - 58.6								179						34	2																
					10	0.370	30.5					6,621									537	35							9	6	23	8						
					10	0.003	28.5					50									3	0																
					9	0.070	28.5 - 54								580						117	8									1	1						
					9	0.006	54 - 56								50						13	1																
					9	0.020	56								170						45	3																
					9	0.040	56 - 56.4								311						91	6							12	3	23	8						
					9	0.030	32 - 56.4								249						54	3																
					9	0.010	28 - 32								47						12	1																
					9	0.040	30								345						49	3																
					9	0.070	26 - 32								538						82	5																
					9	0.180	32								1,453						233	15																
					9	0.020	32 - 36								148						28	2																
					9	0.210	36								1,734						316	21																
					9	0.050	36 - 46.5								428						84	5																
					9	0.020	46.5 - 64								124						45	3																
					9	0.010	59.5 - 64								101						25	2																
					9	0.010	51 - 59.5								93						22	1																
					9	0.020	60			167					194			29			48	5							1	10	21	15						
					9	0.040	31 - 60								302						74	5																
					10	0.140	31					2,546									176	11																
					10	0.550	30					9,680									668	43																
					10	0.040	42					986									68	4																
					9	0.090	44								754						160	10																
TOTAL FOR MAP NO. 9						2.199				167		19,882			8,049	1,126		29			3,395	220							23	23	75	35				3,567			

PROJECT NO.	SHEET NO.	TOTAL NO.
7CR.10411.19 & 7CR.20411.19	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" MILLING SY	1½" MILLING SY	1.25" MILLING SY	0" TO 5/8" MILLING SY	0" TO 2.5" MILLING SY	0" TO 1.25" MILLING SY	0" TO 1.5" MILLING SY	INCIDENTAL MILLING SY	INTERMEDIATE COURSE, I19.0B TONS	SURFACE COURSE, S9.5B TONS	SURFACE COURSE, S9.5C TONS	SURFACE COURSE, SF9.5A TONS	PG 64-22 PLANT MIX TONS	PG 70-22 PLANT MIX TONS	PATCHING EXISTING PAVEMENT TONS	AST MAT COAT 78M SY	PG 70-28 PLANT MIX TON	ULTRATHIN HOT MIX, TYPE B TON	APPLICATION OF ULTRATHIN BONDED WEARING COURSE SY	CONCRETE WHEELCHAIR RAMPS EA	RETROFITTING EXISTING WHEELCHAIR RAMPS EA	ADJ. OF MANHOLES EA	ADJ. OF METER OR VALVE BOX EA	SEED & MULCHING AC	RESIDENTIAL SEEDING AC	TRENCHING (UNPAVED) (1)(2") LF	PULL BOX (STANDARD) EA	INDUCTIVE LOOP SAW CUT LF	LEAD-IN CABLE (14-2) LF	PORTABLE LIGHTING LS
"	"	10	SR 1556 (GALLIMORE DAIRY RD)	FROM 0.1 MILES EAST OF NC 68 TO SR 1839 (MILLWOOD SCHOOL RD)	11	0.040	24.5 - 38		0.23										62			4			735						3	2		0.11			650		
					11	0.040	38 - 65												102			6			1,209														
					11	0.070	47 - 70												202			12			2,402														
					11	0.030	47 - 48												70			4			836														
					11	0.050	33 - 48												100			6			1,188														
					11	0.030	27 - 33												45			3			528														
TOTAL FOR MAP NO. 10						0.260			0.23										581			35			6,898						3	2		0.11			650		*
"	"	11	SR 1883 (NATIONAL SERVICE RD)	FROM PROJECT LIMITS TO THORNDIKE DR (NON-SYSTEM)	12	0.150	32									1,229			237			14									5	3							
					13	0.040	24 - 32												55			3																	
					13	0.310	24												369			22																	
TOTAL FOR MAP NO. 11						0.500										1,229			661			39									5	3							
"	"	12	SR 1818 (JOHNSON ST)	FROM SR 1820 (SKEET CLUB RD) TO SR 1850 (SANDY RIDGE RD)	14	0.560	24	10	0.34													674	44										2		0.17					
					14	0.100	24 - 36															146	9																	
					14	0.060	36															105	7																	
					14	0.090	23 - 36															129	8																	
					14	0.350	23															392	25																	
					14	0.030	23 - 32															39	3																	
					14	0.030	32 - 45															56	4																	
					14	0.020	45 - 50															46	3																	
					14	0.020	36															35	2																	
					14	0.070	23 - 36															100	7																	
					14	0.360	23															403	26																	
TOTAL FOR MAP NO. 12						1.690		10	0.34													2,125	138									2		0.17					
"	"	13	SR 1855 (SANDY RIDGE RD)	FROM SR 1818 (JOHNSON ST) TO FORSYTH COUNTY LINE	15	0.180	20.5	55	0.57													150	10												0.28					
					15	0.170	21															145	9																	
					15	0.170	21															145	9																	
					15	1.250	21															1,124	73																	
TOTAL FOR MAP NO. 13						1.770		55	0.57													1,563	101												0.28					
"	"	14	SR 1554 (CHIMNEY ROCK RD)	FROM SR 1008 (W. MARKET ST) TO EOM	16	0.120	24	20	0.5	73								280	143			22									2	4		0.15	370	5	2,508	450	
					16	0.030	24 - 37			1,276								218	45			13																	
					16	0.070	35 - 37												164			10																	
					16	0.010	31 - 35												16			1																	
					16	0.030	24 - 31												41			2																	
					16	0.090	24 - 24.5												108			6																	
					16	0.050	24.5 - 30												68			4																	
					16	0.030	30 - 35												48			3																	
					16	0.040	35 - 47			220								37	81			7																	
TOTAL FOR MAP NO. 14						0.470		20	0.5	1,569								535	714			68									2	4		0.15	370	5	2,508	450	
"	"	15	SR 1843 (MARSHALL-SMITH RD)	FROM SR 1008 (W. MARKET ST) TO SR 2007 (BUNKER HILL RD)	15	1.860	20	63	0.85													1,508	98											0.21	0.20					
"	"	16	SR 2009 (COUNTY LINE RD)	FROM FORSYTH COUNTY LINE TO SR 1858 (BEESON RD)	17	1.310	20	50	0.42													1,142	74			15,371									0.20					
"	"	17	SR 2136 (FLEMING RD)	FROM SR 2137 (OLD OAK RIDGE RD) TO JUST NORTH OF COUNTRY WOODS LANE (NON-SYSTEM)	18	0.670	54				1,333					5,497							1,867	121			18,081					15	24	21							
					18	0.040	54 - 60			244						289		34					111	9			1,150													
					18	0.140	60									1,120							407	26			4,271													
					19	0.050	60 - 75									436							164	11																	
					20	0.040	61									305							118	8																	
					19	0.010	75.5 - 98									96							42	3																	
					20	0.060	71.5									471							208	14																	
					19	0.010	76									103							37	2																	
					20	0.100	52.5									804							255	17																	
					19	0.110	61 - 68									913							344	22																	
TOTAL FOR MAP NO. 17						1.230				244	1,333					10,034							3,553	233			23,502					15	24	21							
TOTAL FOR PROJ NO. 7CR.20411.19						11.289		198	2.91	1,980	1,333	19,882	0	0	8,049	12,389	0	598	1,956	0	13,286	1,006	0	0	45,771	0	0	0	23	38	109	67	0.21	1.11	370	5	6,725	450	
GRAND TOTAL						23.415		198	8.44	6,486	17,452	19,882	4,440	902	8,049	12,389	2,673	1,382	2,424	11,890	13,286	1,068	715	30	45,771	362	6,258	178,764	23	98	182	125	2.45	1.11	370	5	18,031	450	1

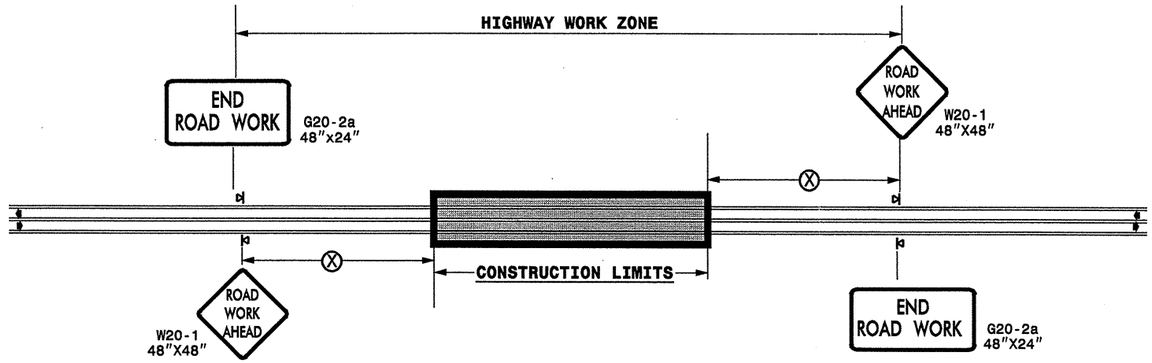
PROJECT NO.	SHEET NO.	TOTAL NO.
7CR.10411.19 & 7CR.20411.19	11	

THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	4" X 90 M WHITE THERMO LF	4" X 90 M YELLOW THERMO LF	4" X 120 M WHITE THERMO LF	4" X 120 M YELLOW THERMO LF	6" X 90 M WHITE THERMO LF	6" X 120 M WHITE THERMO LF	8" X 90 M WHITE THERMO LF	8" X 90 M YELLOW THERMO LF	8" X 120 M WHITE THERMO LF	12" X 90 M WHITE THERMO LF	12" X 120 M WHITE THERMO LF	16" X 120 M WHITE THERMO LF	24" X 120 M YELLOW THERMO LF	24" X 120 M WHITE THERMO LF	THERMO MSG SCHOOL 120 M EA	THERMO MSG ONLY 120 M EA	THERMO MSG R X R 120 M EA	THERMO STR ARROW 90 M EA	THERMO LT ARROW 90 M EA	THERMO RT ARROW 90 M EA	THERMO STR & RT ARROW 90 M EA	THERMO MERGE LEFT ARROW 90 M EA	THERMO MERGE RIGHT ARROW 90 M EA	THERMO STR & LT ARROW 90 M EA	4" WHITE PAINT LF	4" YELLOW PAINT LF	SNOW PLOWABLE MARKERS (CRYSTAL/RED) EA
7CR.10411.19	Guilford	1	I-85 B US 29-70 EB	FROM THE RANDOLPH COUNTY LINE TO JOINT WEST OF BRENTWOOD ST (NON-SYSTEM)	13,371	13,371	3,773				994																					167
"	"	2	I-85B US 29-70 WB	FROM JOINT WEST OF BRENTWOOD ST (NON-SYSTEM) TO RANDOLPH COUNTY LINE	13,356	13,356	3,993				1,304																					167
"	"	3	US 311 (MAIN ST)	FROM SR 1468 (RUSSELL AVE) TO SR 1471 (MONTLIEU AVE)	1,620	1,693	3,123	13,816			562	2,157	2,765		497		804					53	34	3	29						
"	"	4	NC 68 NB	FROM AMERICHASE DR (NON-SYSTEM)/NORTH MILLWOOD SCHOOL RD (NON-SYSTEM) TO JUST NORTH OF TRIAD CENTER DR (NON-SYSTEM)	5,831	5,831	5,011				1,235							367				22	17	4		3			500		112
"	"	5	I-40 WB OFF RAMP	FROM NEW PAVEMENT JOINT TO NC 68	650		182		380														4	2							
"	"	6	NC 68 SB	FROM TRIAD CENTER DR (NON-SYSTEM) TO N. MILLWOOD SCHOOL RD (NON-SYSTEM)	4,900	4,900	3,657				160	126						391				28	14	14	2				750		148
"	"	7	NC 68 NB	FROM JOINT JUST NORTH OF SR 2085 (BRYAN BLVD) TO JUST NORTH OF SR 2011 (EDGEFIELD RD)		8,481	4,631					160	440					276				7	7	4		3	4				88
"	"	8	NC 68 SB	FROM WHERE DIVIDED HWY BEGINS TO SR 2085 (BRYAN BLVD)	6,300	6,300		1,877										117				4	2	1					1,500		79
TOTAL FOR PROJ NO. 7CR.10411.19					**46,028**	**53,932**	**24,370**	**15,693**	**380**		**4,255**	**2,443**	**3,205**		**497**		**804**	**1,151**				**114**	**78**	**28**	**31**	**6**	**4**		2,750		761
					99,960		**40,063**				**6,698**						**1,955**					**261**							**2,750**		**761**
7CR.20411.19	Guilford	9	SR 1471 (MONTLIEU AVE)	FROM US 311 (MAIN ST) TO SR 1486 (E LEXINGTON AVE)			3,410	24,892				1,065	240		679			526	12	60		15	22	11	12	4		2			
"	"	10	SR 1556 (GALLIMORE DAIRY RD)	FROM 0.1 MILES EAST OF NC 68 TO SR 1839 (MILLWOOD SCHOOL RD)	2,700	50	634	2,980		155	50							138				3	8	7	2						
"	"	11	SR 1883 (NATIONAL SERVICE RD)	FROM PROJECT LIMITS TO THORNDIKE DR (NON-SYSTEM)	3,230		96	5,929		28						95							10	3							
"	"	12	SR 1818 (JOHNSON ST)	FROM SR 1820 (SKEET CLUB RD) TO SR 1850 (SANDY RIDGE RD)	17,660		305	17,645		42		264											4	1							
"	"	13	SR 1855 (SANDY RIDGE RD)	FROM SR 1818 (JOHNSON ST) TO FORSYTH COUNTY LINE	600					66																			32,472	42,236	
"	"	14	SR 1554 (CHIMNEY ROCK RD)	FROM SR 1008 (W. MARKET ST) TO EOM	5,650		689	5,650								50		244		2			8		4						
"	"	15	SR 1843 (MARSHALL-SMITH RD)	FROM SR 1008 (W. MARKET ST) TO SR 2007 (BUNKER HILL RD)																									39,340	39,340	
"	"	16	SR 2009 (COUNTY LINE RD)	FROM FORSYTH COUNTY LINE TO SR 1858 (BEESON RD)	750					330																			25,260	26,031	
"	"	17	SR 2136 (FLEMING RD)	FROM SR 2137 (OLD OAK RIDGE RD) TO JUST NORTH OF COUNTRY WOODS LANE (NON-SYSTEM)	270		4,161	12,846		48	469	530		148				156					13	1			2				
TOTAL FOR PROJ NO. 7CR.20411.19					**30,860**	**50**	**9,295**	**69,942**		**669**	**519**	**1,859**	**240**	**148**	**679**	**50**	**95**	**1,064**	**12**	**60**	**2**	**18**	**65**	**23**	**18**	**4**	**2**	**2**	**97,072**	**107,607**	
					30,910		**79,237**				**2,378**						**1,159**			**74**		**132**							**204,679**		
GRAND TOTAL					**76,888**	**53,982**	**33,665**	**85,635**	**380**	**669**	**4,774**	**4,302**	**3,445**	**148**	**1,176**	**50**	**899**	**2,215**	**12**	**60**	**2**	**132**	**143**	**51**	**49**	**10**	**6**	**2**	**99,822**	**107,607**	**761**
					130,870		**119,300**				**9,076**						**3,114**			**74**		**393**							**207,429**		

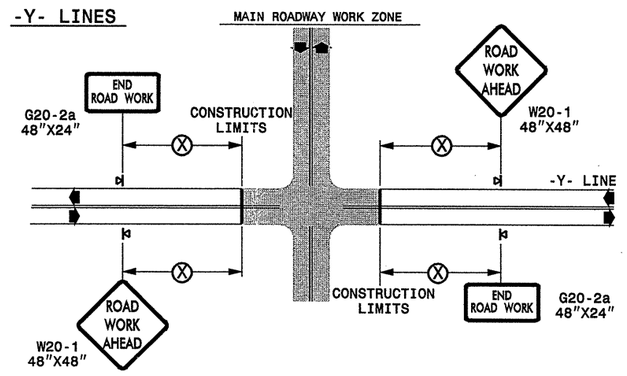
PROJ. REFERENCE NO.	SHEET NO.
7CR.10411.19 & 7CR.20411.19	TCP-1

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 ADVANCED 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

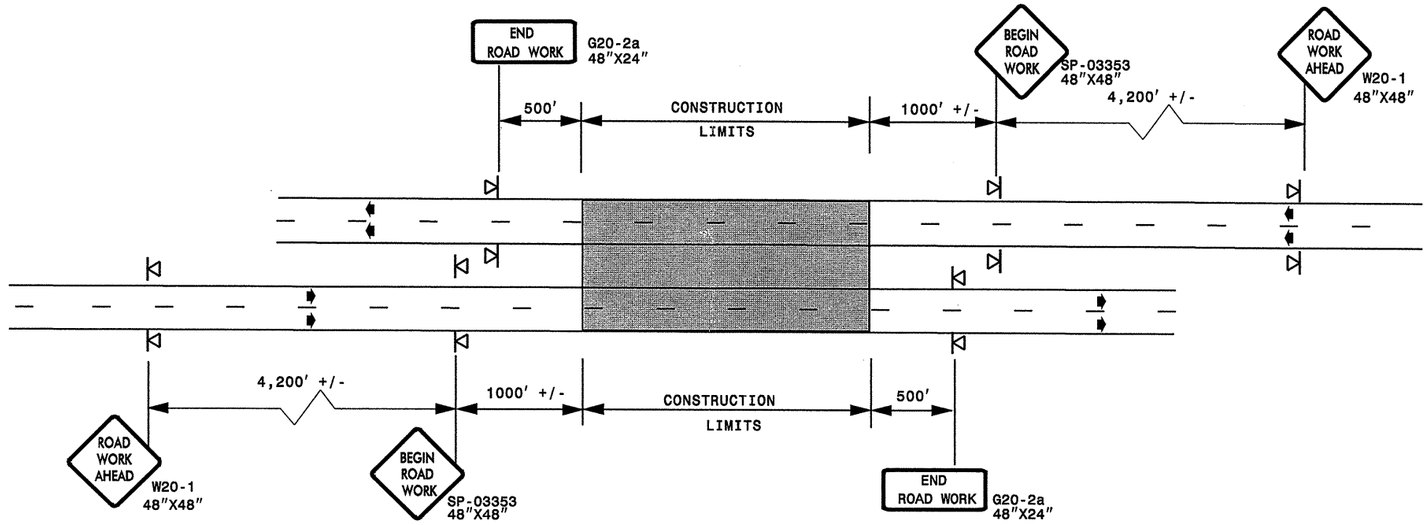
SCALE: NONE	REVISIONS	
DATE:	7-98	10/01
DWG. BY:	10-98	03/04
DESIGN BY:	01/01	11/04
REVIEWED BY:	CADD FILE	

31-OCT-2007 15:15
\\DOT\DFSROOT01\GROUPS-WZTCCC\designgroup4\resurfacing\resurfacing2007\div07\c201956_7cr104ll9etc_2wayundivurbfrwys1july2006.dgn
pseymore AT WZTC237502

PROJ. REFERENCE NO.	SHEET NO.
7CR.10411.19 & 7CR.20411.19	TCP-2

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

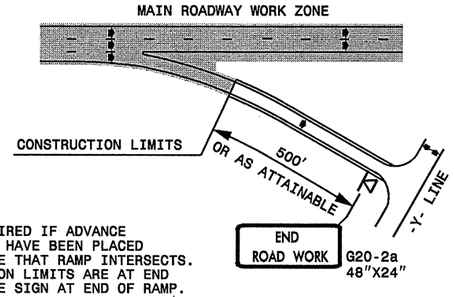
DETAIL A



ROADWAYS INTERSECTING ALONG FREEWAY WORK ZONE (Y-LINES)

DETAIL B

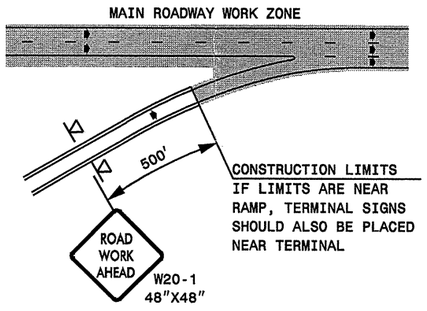
EXIT RAMPS



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.

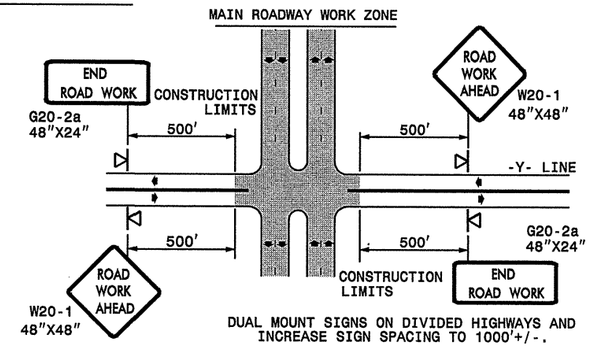
DETAIL C

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:	
DWG. BY:	
DESIGN BY:	
REVIEWED BY:	

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

SP 03353

SIGN NUMBER: SP-03353 — BACKG COLOR: Fluorescent Orange
TYPE: A — COPY COLOR: Black
QUANTITY: 1

SYMBOL	X	Y	WID	HT

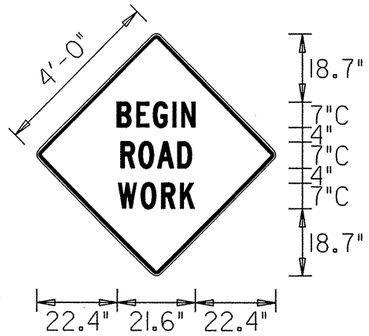
SIGN WIDTH: 4'-0"
HEIGHT: 4'-0"
TOTAL AREA: 16.0 Sq.Ft.

BORDER TYPE: FLUSH
RECESS: 0.59"
WIDTH: 0.75"
RADII: 1.38"

NO. Z BARS: N/A
LENGTH: N/A

MAT'L:

DESIGN BY: CL DOWNEY — CHECKED BY: CHECKED
PROJECT ID: ALL PROJECTS — DIV: DIV
STD #: W20-1
DATE: Aug 20,2003



BORDER
R=1.38"
TH=0.75"
IN=0.59"

USE NOTES: 2, 4
1. Legend and border shall be direct applied Type VII reflective sheeting.
2. Legend and border shall be direct applied non-reflective sheeting.
3. Shields shall be Type VII reflective sheeting on 0.032" (0.8mm) aluminum and demountable.
4. Background shall be Type VII reflective sheeting.
5. Background shall be Type I reflective sheeting.
6. Center arrow(s) vertically on sign.
7. Bottom panel shall be yellow Type III sheeting. Legend shall be direct applied black non-reflective sheeting. Yellow panel is:

LETTER POSITIONS

Letter spacings are to start of next letter

								Series/Size Text Length
	B	E	G	I	N			C7
22.4	5.3	4.6	5.4	2.5	3.8	22.4		21.6
	R	O	A	D				C7
23.4	5	5.2	5.6	3.8	23.4			19.6
	W	O	R	K				C7
22.6	6.4	5.6	5.2	4	22.6			21.2

Spacing Factor is 1 unless specified otherwise

FILENAME: SPECIBHAK

NORTH CAROLINA D.O.T. SIGN DETAIL

GENERAL NOTES FOR SIGN SP-03353 "BEGIN ROAD WORK"

-SIGN SP-03353 "BEGIN ROAD WORK" ONLY APPLIES TO FULL CONTROL AND PARTIAL CONTROL OF ACCESS ROADWAYS
-WHEN USED, INSTALL SIGN SP-03353 "BEGIN ROAD WORK" ACCORDING TO DETAIL FOR FREEWAY WORK ZONE SIGNS

PROJ. REFERENCE NO.	SHEET NO.
7CR.10411.19 & 7CR.20411.19	TCP-3

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

DETAIL DRAWING FOR
WORK ZONE SIGNS
BEGIN ROAD WORK

SHEET 1 OF 1

APPROVED:_____ DATE:_____

SEAL

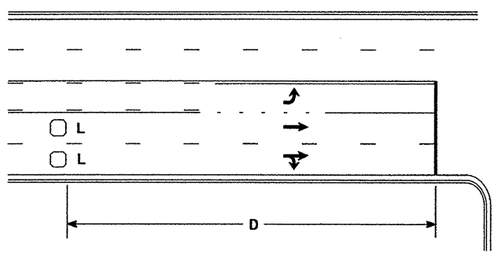
DETAIL DRAWING FOR
ADVANCED WORK ZONE WARNING
SIGN DESIGNS

SCALE:	NONE
DATE:	08/03
DWG. BY:	
DESIGN BY:	
REVIEWED BY:	

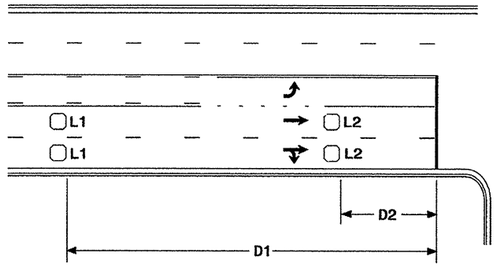
REVISIONS	
04/04	
11/04	
CADD FILE	

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)

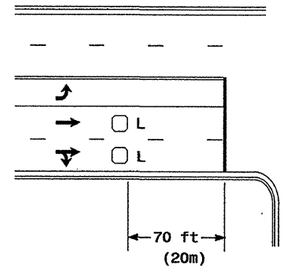
L1 = 6ft X 6ft (1.8m X 1.8m) Wired in series

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

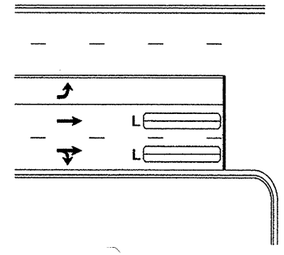
"Stretch" Operation

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

7CR.10411.19 & 7CR.20411.19



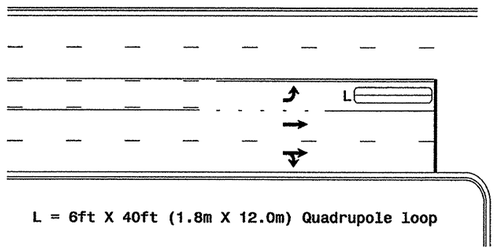
OR



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

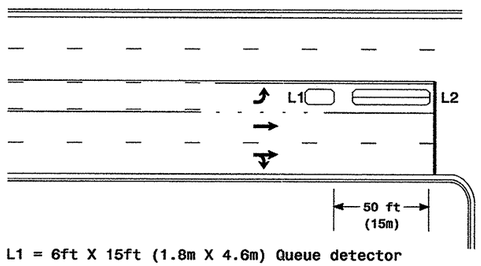
Left Turn Lane Detection



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

Presence Loop Detection

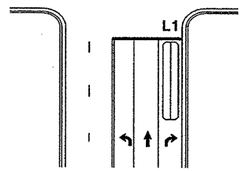
OR



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

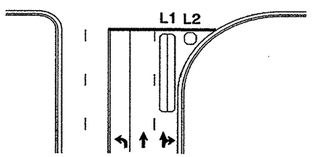
Queue Loop Detection

Right Turn Lane Detection

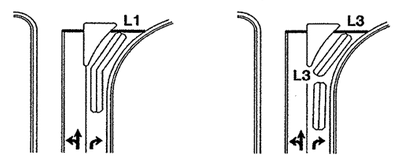


Standard Turn

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

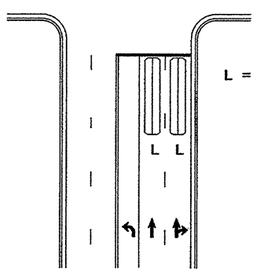


Wide Radius Turn



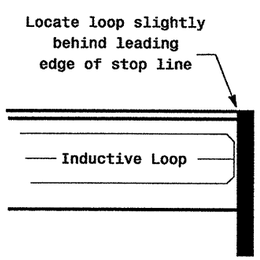
Channelized Turn

Side Street Detection



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

Presence Loop Placement at Stop Lines



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
Signals and Geometrics Section
1722 N. McDowell St., Raleigh, NC 27603

Typical Loop Locations

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

SCALE: N/A

REVISIONS	INIT.	DATE
Revise pavement markings	ac	12/19/06

SEAL
NORTH CAROLINA
PROFESSIONAL
SEAL
23486
ENGINEER
PAMELA L ALEXANDER

SIGNATURE 6/6/06 DATE

SIG. INVENTORY NO.

19-DEC-2006 14:29
$$sheets$$sig$$typicalloop$$typical2006.dgn
$$$$user

PROJECT REFERENCE NO.	SHEET NO.
	Sig. 2

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

5-07

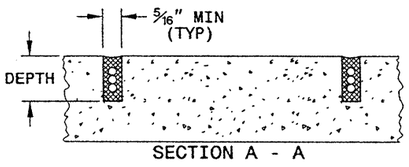
ENGLISH DETAIL DRAWING FOR

INDUCTIVE DETECTION LOOPS

CONVENTIONAL 4-SIDED LOOP

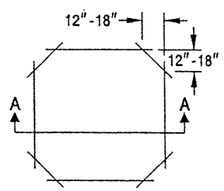
SAW SLOT DEPTH CHART

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

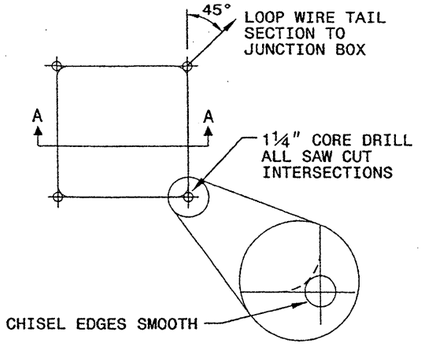


SAW CUT OPTIONS

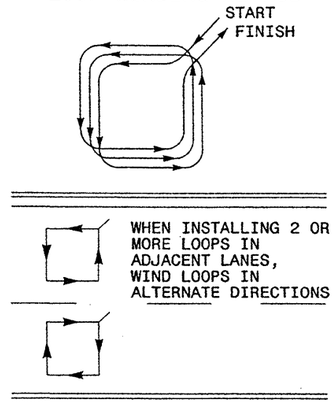
OPTION 1



OPTION 2 (POOR PAVEMENT)



LOOP WINDING METHOD



LOOP WIRE TWISTING METHOD

INCORRECT WAY TO TWIST WIRE

CORRECT WAY TO TWIST WIRE

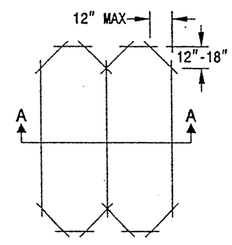
NOTES

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.

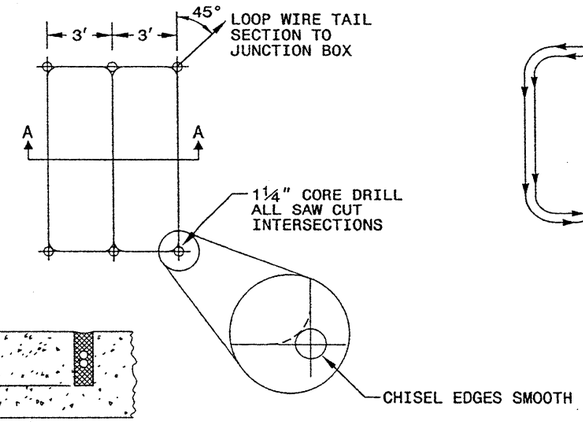
QUADRUPOLE LOOP

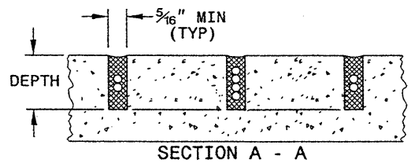
SAW CUT OPTIONS

OPTION 1



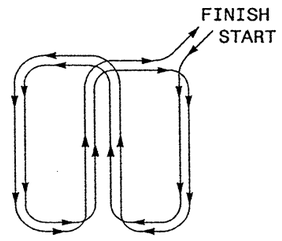
OPTION 2 (POOR PAVEMENT)





DEPTH IS 2.5" FOR CONCRETE AND 3.0" FOR ASPHALT

LOOP WINDING METHOD



SHEET 1 OF 3

1725D01

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

5-07

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
STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION
750 N. Greenfield Parkway
Garner, NC 27529

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 016286 ENGINEER MILTON I. DEAN

Milton I. Dean 9/5/07

SIGNATURE DATE

PROJECT REFERENCE NO.	SHEET NO.
	Sig. 3

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

5-07

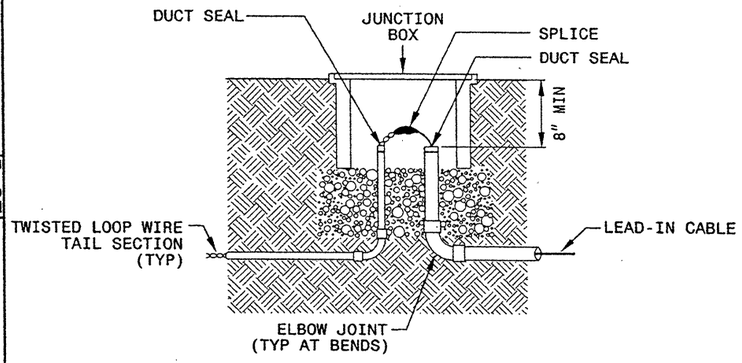
ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
LOOP WIRE DETAILS

SHEET 2 OF 3

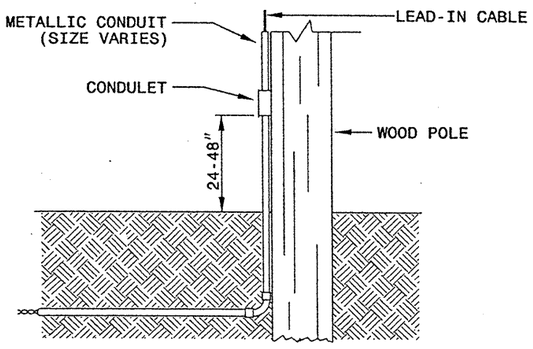
1725D01

LOOP WIRE SPLICE POINT DETAILS

LOOP WIRE AT JUNCTION BOX



LOOP WIRE AT POLE

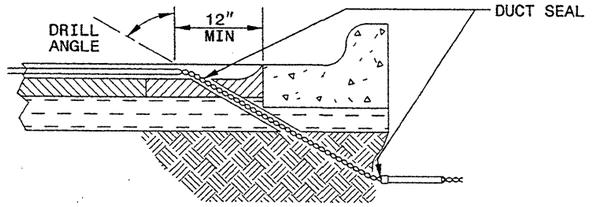


NOTE

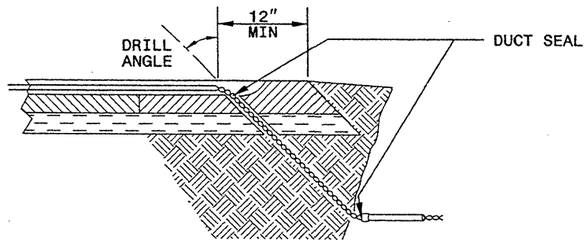
SPLICE ALL LOOP WIRE TAIL SECTIONS/LEAD-IN CABLE IN JUNCTION BOXES OR APPROVED CONDULETS.

LOOP WIRE PAVEMENT EDGE DETAILS

LOOP WIRE AT CURB & GUTTER SECTION



LOOP WIRE AT PAVEMENT SECTION



NOTES

1. DO NOT EXCAVATE UNDER CURB AND GUTTER SECTIONS FOR CONDUIT INSTALLATION.
2. TWIST LOOP WIRE TAIL SECTIONS FROM WHERE LOOP WIRE TAIL LEAVES SAW CUT TO JUNCTION BOX, INCLUDING THROUGH CONDUIT.
3. BEFORE SEALING LOOPS, INSTALL DUCT SEAL WHERE LOOP WIRE TAIL SECTION LEAVES SAW CUT IN PAVEMENT AND AT ENTRANCE OF CONDUIT TO JUNCTION BOX.

STATE OF NORTH CAROLINA
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:

Intelligent Transportation Systems & Signals Unit
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

750 N. Greenfield Parkway
Garner, NC 27529

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 016286 ENGINEER MILTON I. DEAN

Milton I. Dean 9/5/07
SIGNATURE DATE

05-SEP-2007 14:00
c:\projects\sig sets\ncmilitia.dot\default\opestandard metal pole sheets\1725102_mdy2307.dgn
ncmilitia

PROJECT REFERENCE NO.	SHEET NO.
	Sig. 4

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

5-07

ENGLISH DETAIL DRAWING FOR

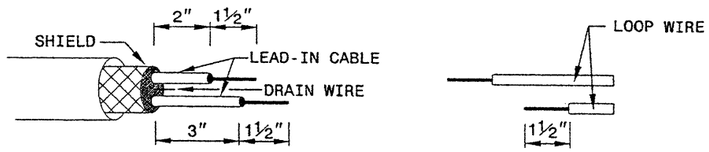
INDUCTION DETECTION LOOPS

SPLICING FOR LEAD-IN CABLE AND LOOP WIRE

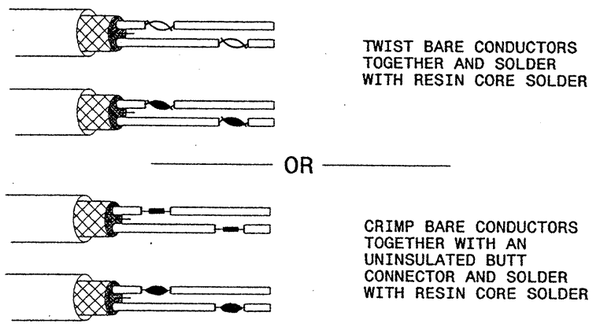
SHEET 3 OF 3

1725D01

STEP 1. STRIP LOOP WIRE AND LEAD-IN CABLE



STEP 2. CONNECT AND SOLDER



TWIST BARE CONDUCTORS TOGETHER AND SOLDER WITH RESIN CORE SOLDER

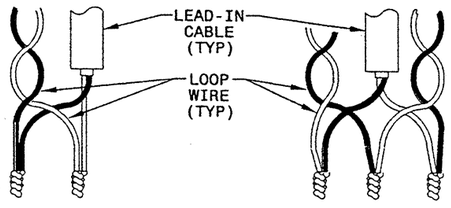
OR

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

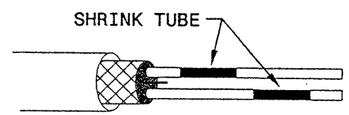
BOND SHIELD DRAIN WIRE AT SPLICE SECTIONS (DO NOT GROUND)

LOOP WIRE AND LEAD-IN CABLE CONNECTION DETAILS

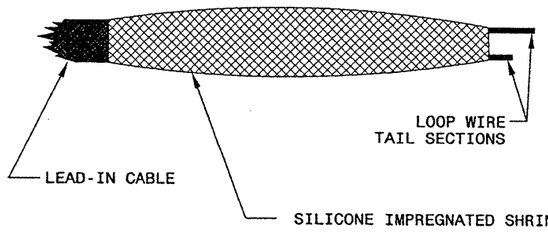
SINGLE CONNECTION SERIES CONNECTION



STEP 3. INSULATE EACH SOLDER JOINT SEPARATELY



STEP 4. ENVIRONMENTALLY PROTECT SPLICE



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

5-07

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:

Intelligent Transportation Systems & Signals Unit
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

750 N. Greenfield Parkway
Garner, NC 27529

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 016286 ENGINEER MILTON I. DEAN

Milton I. Dean 9/5/07
SIGNATURE DATE