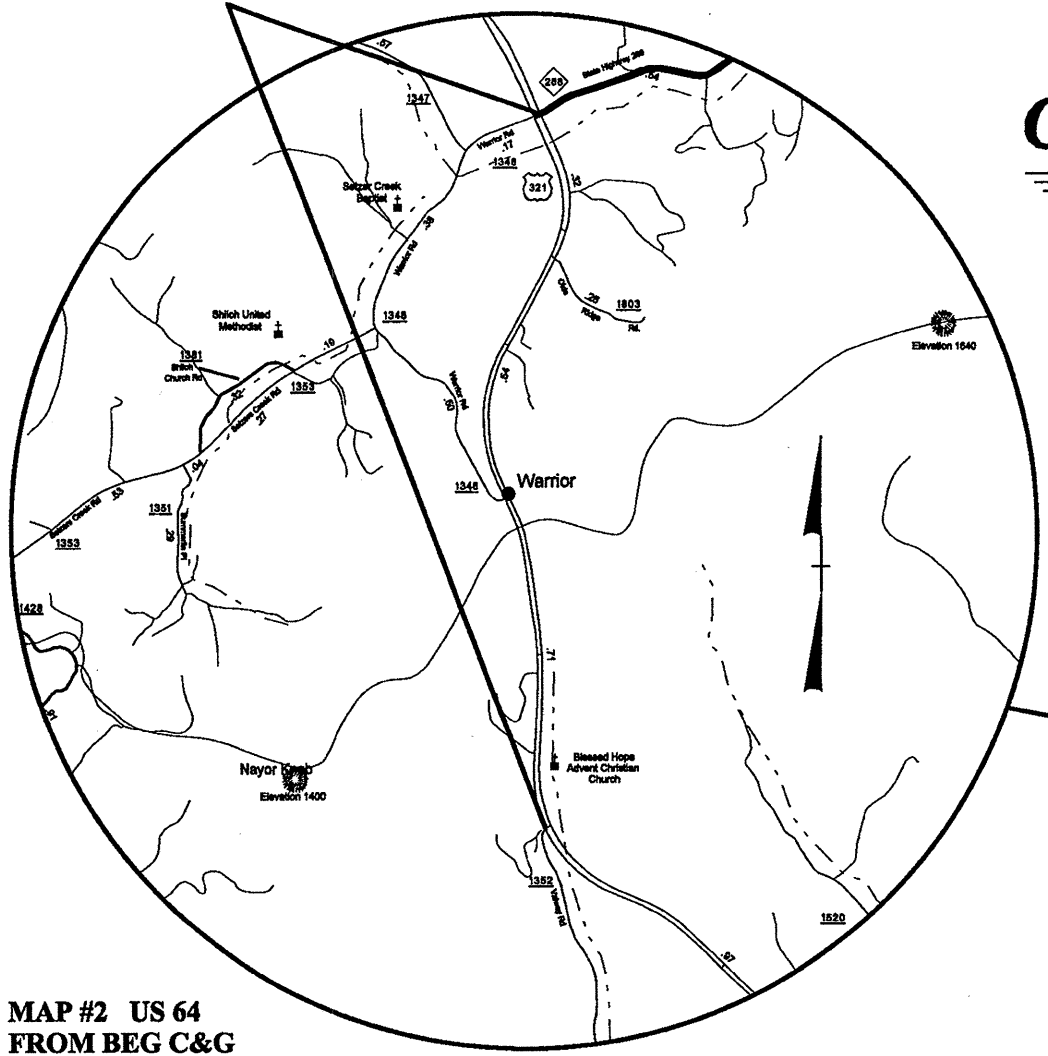
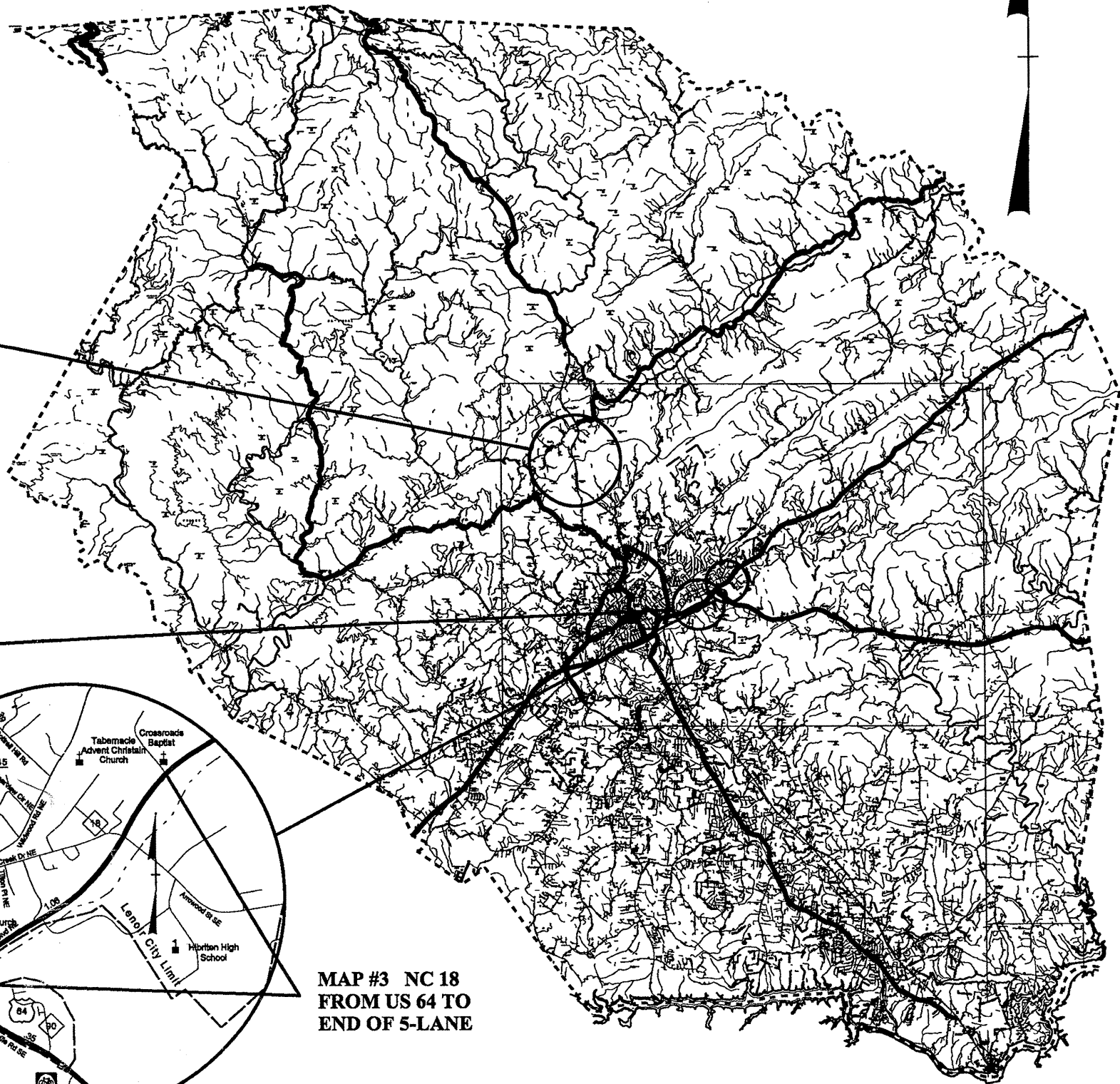


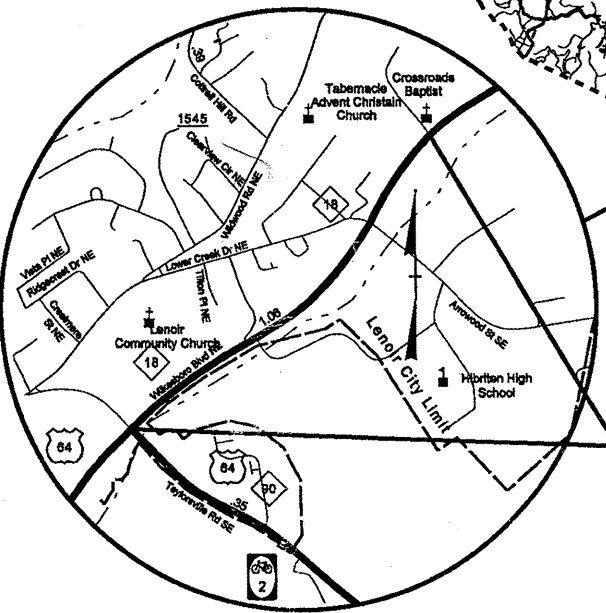
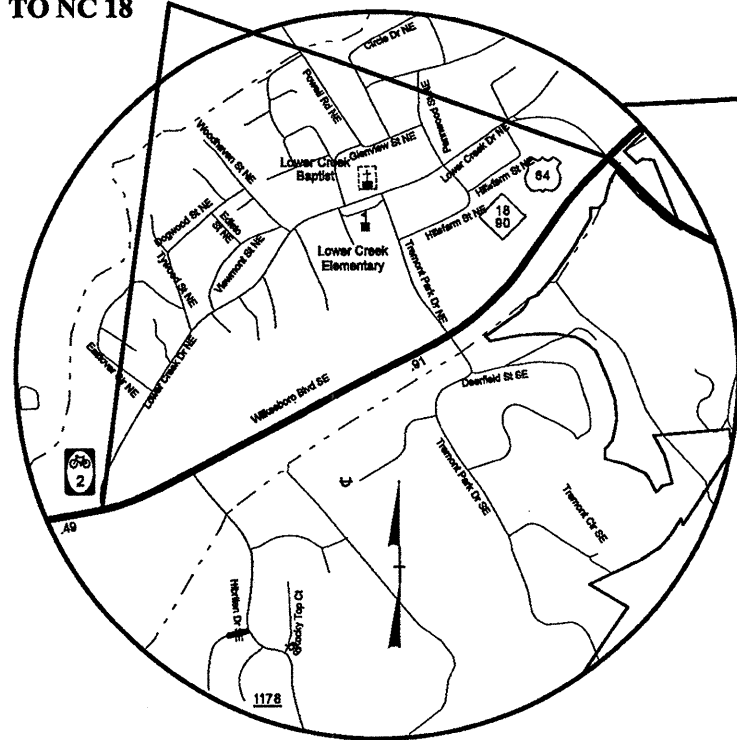
MAP #1 US 321 SBL FROM NC 268 TO SR 1352



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
**CALDWELL COUNTY**



MAP #2 US 64 FROM BEG C&G TO NC 18



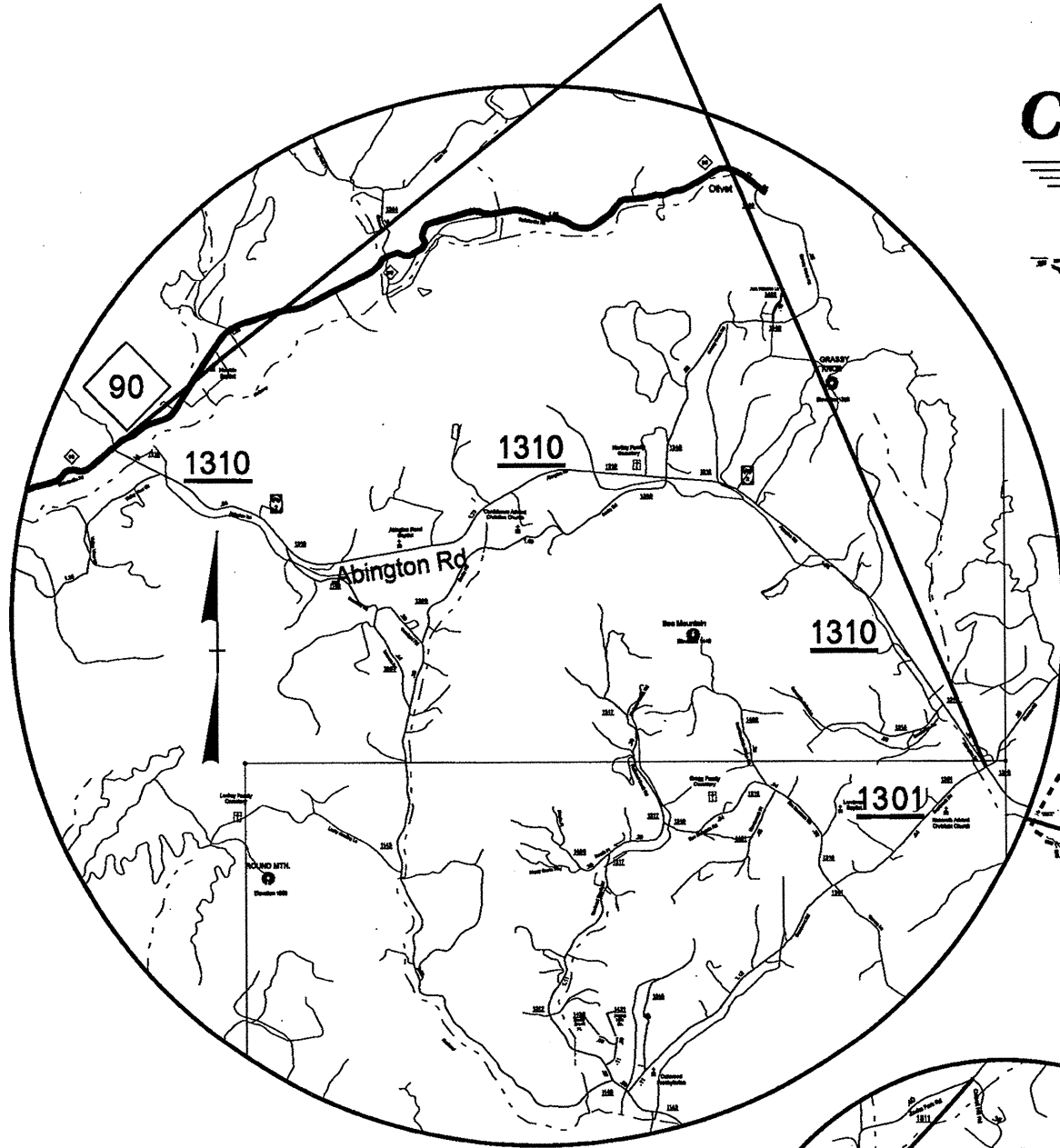
MAP #3 NC 18 FROM US 64 TO END OF 5-LANE

8/17/99  
14-OCT-2011 12:41  
C:\p\Documents\Projects\Manager\Contractors\Resurfacing\2012\Caldwell\1-Wilkes\CALD.Asphalt\_Resurfacing\_Maps2012\_Shtlor2.dgn  
Drawn by: HIRAL-561386

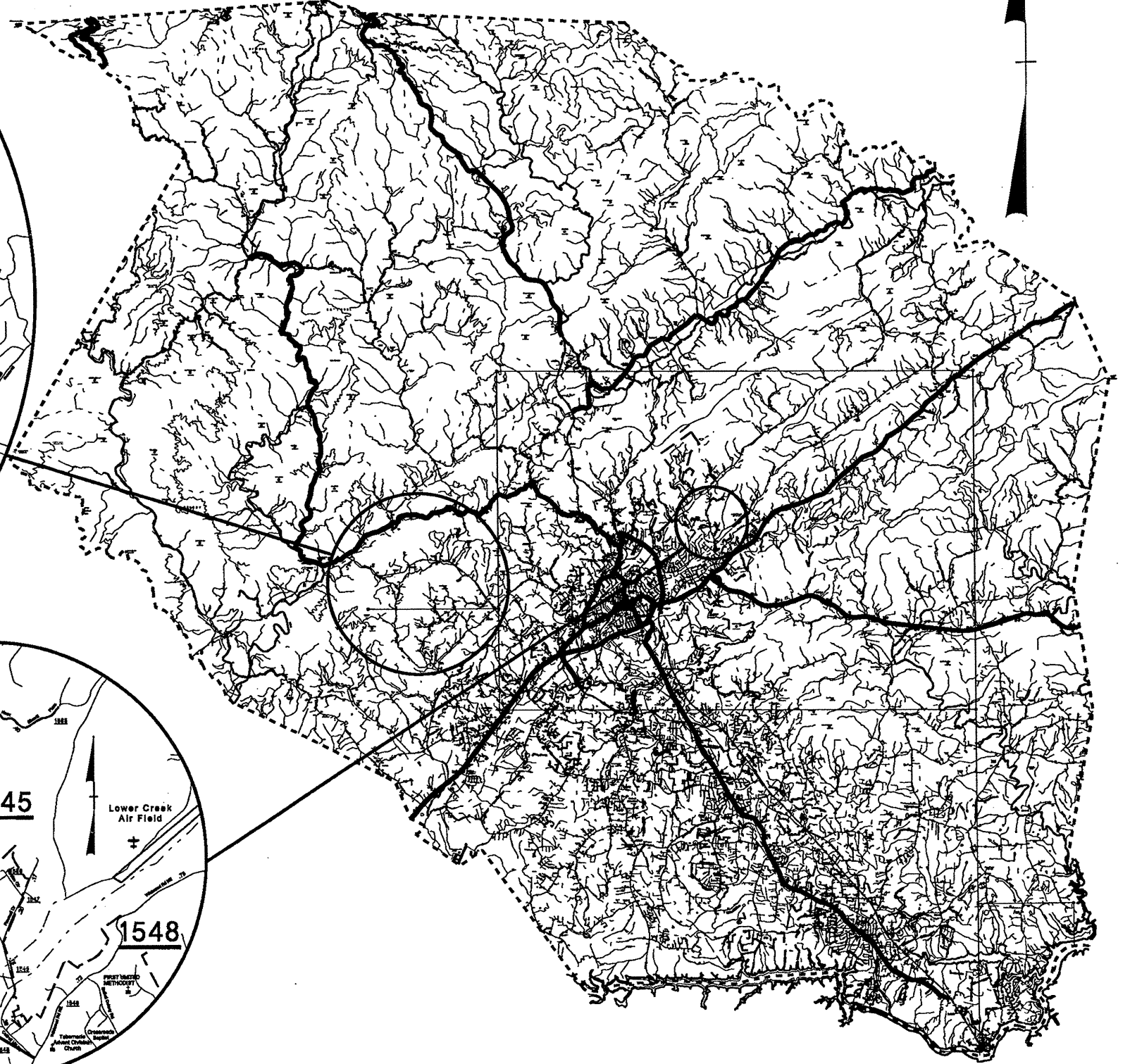
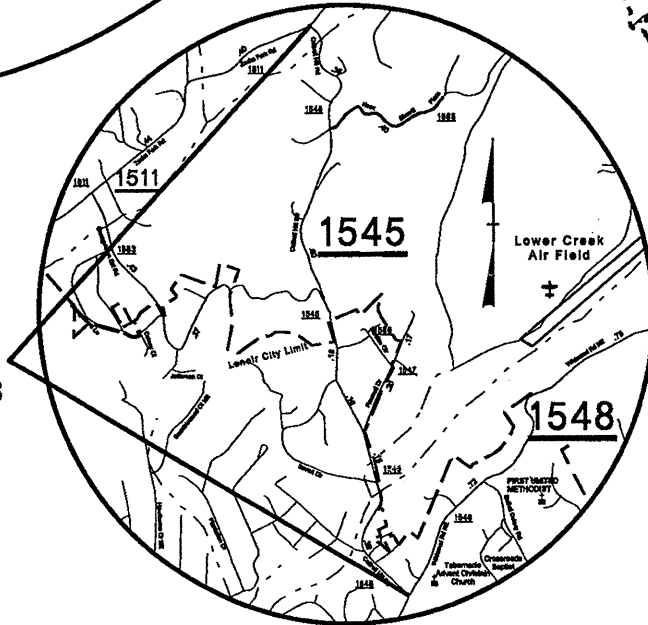
MAP #10 SR1310  
FROM SR 1301 TO NC 90

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**CALDWELL COUNTY**



MAP #11 SR 1545  
FROM SR 1511 TO NC SR 1548



8/17/99

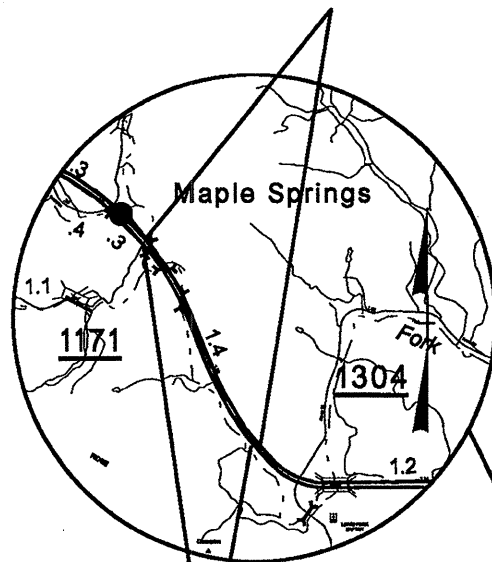
I:\OCT-2011\231  
 C:\Users\Documents\Project Manager\Projects\Resurfacing\2012\Caldwell-Wilkes\CALD.Asphalt\_Resurfacing\_Maps2012\_Sht1of2.dgn  
 10/11/2012 10:36 AM

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

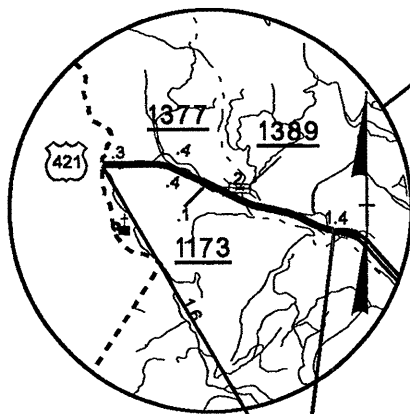
**WILKES COUNTY**

MAP #8 NC 268 FROM  
SR 1993 TO LANDFILL

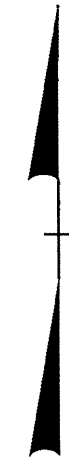
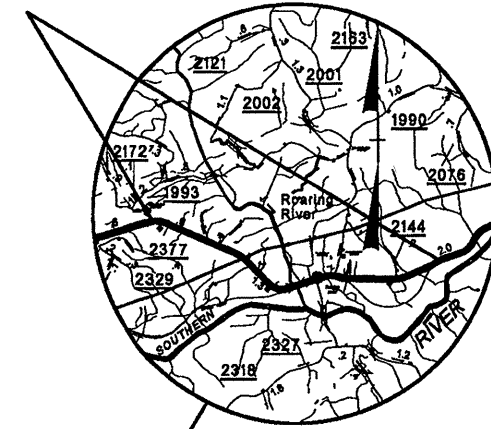
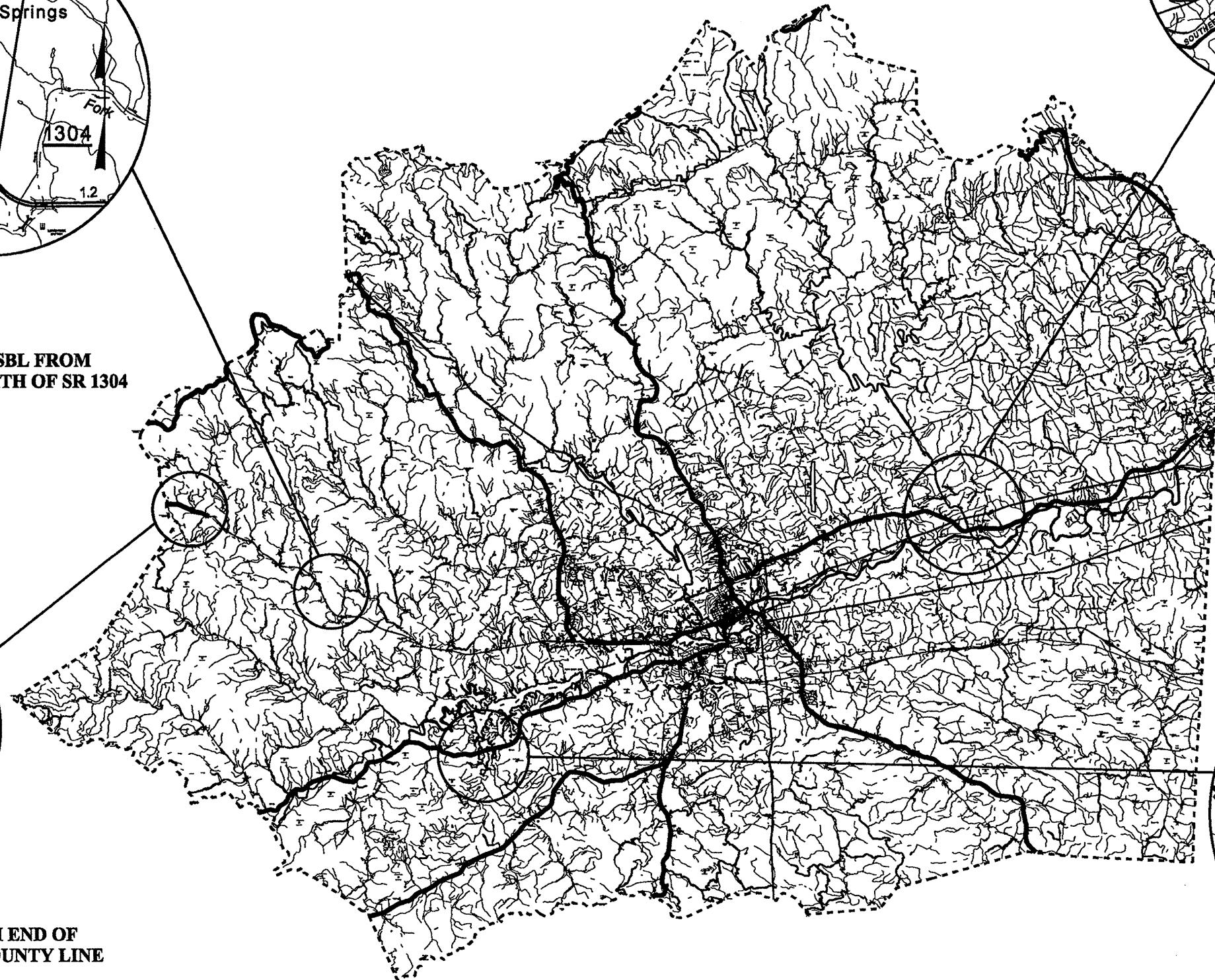
MAP #4 US 421 NBL FROM  
0.5 MI NORTH OF SR 1304 TO SR 1171



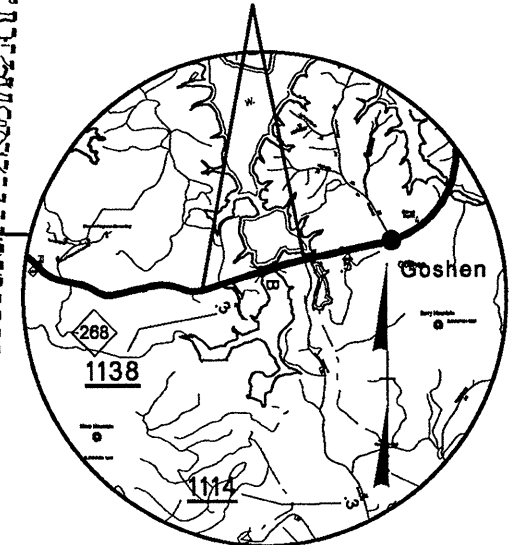
MAP #5 US 421 SBL FROM  
SR 1171 TO 0.6 MI NORTH OF SR 1304



MAP #6 US 421 FROM END OF  
4-LANE TO WATAUGA COUNTY LINE



MAP #7 NC 268 FROM SR 1114  
TO END OF 24' PAVEMENT



8/17/99

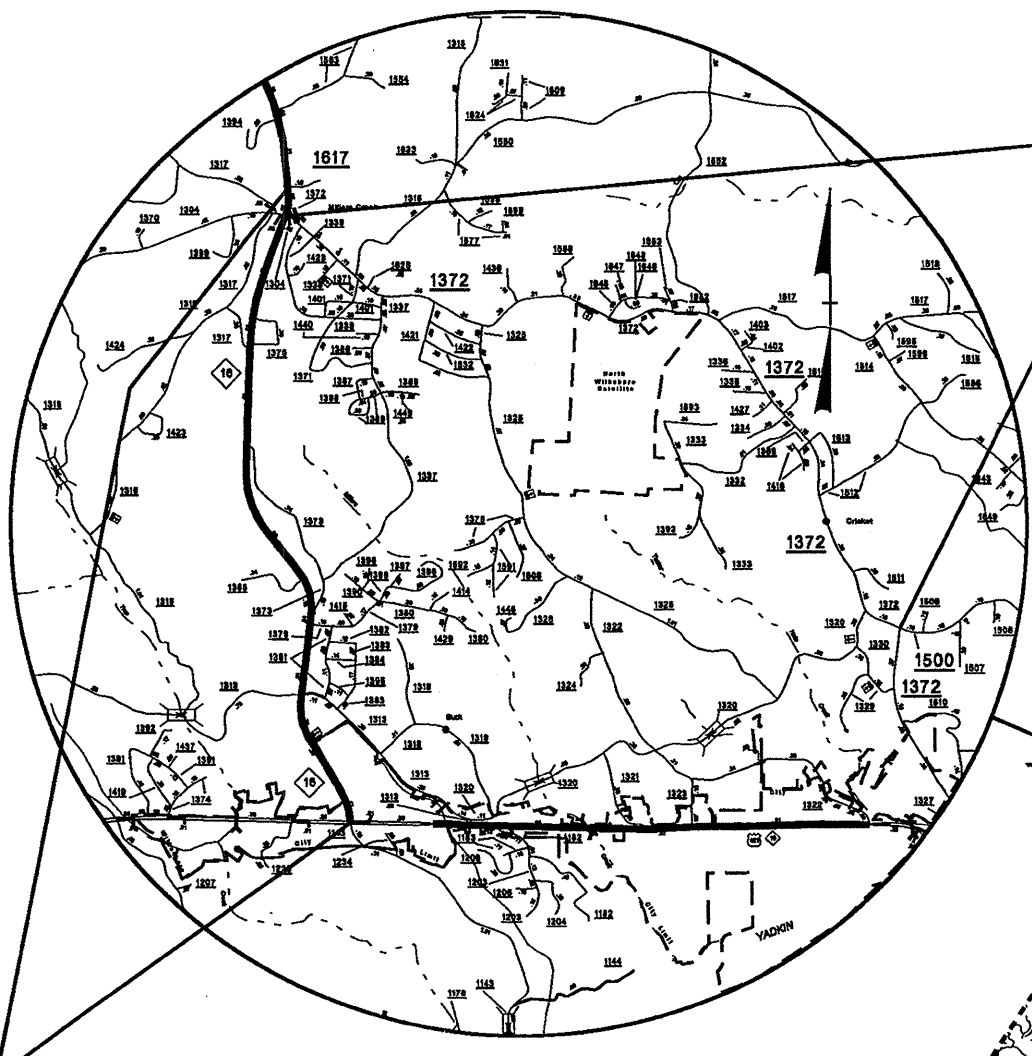
PROJECT REFERENCE NO.	SHEET NO.
IICR.J0971J9	4
IICR.20971J9	

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

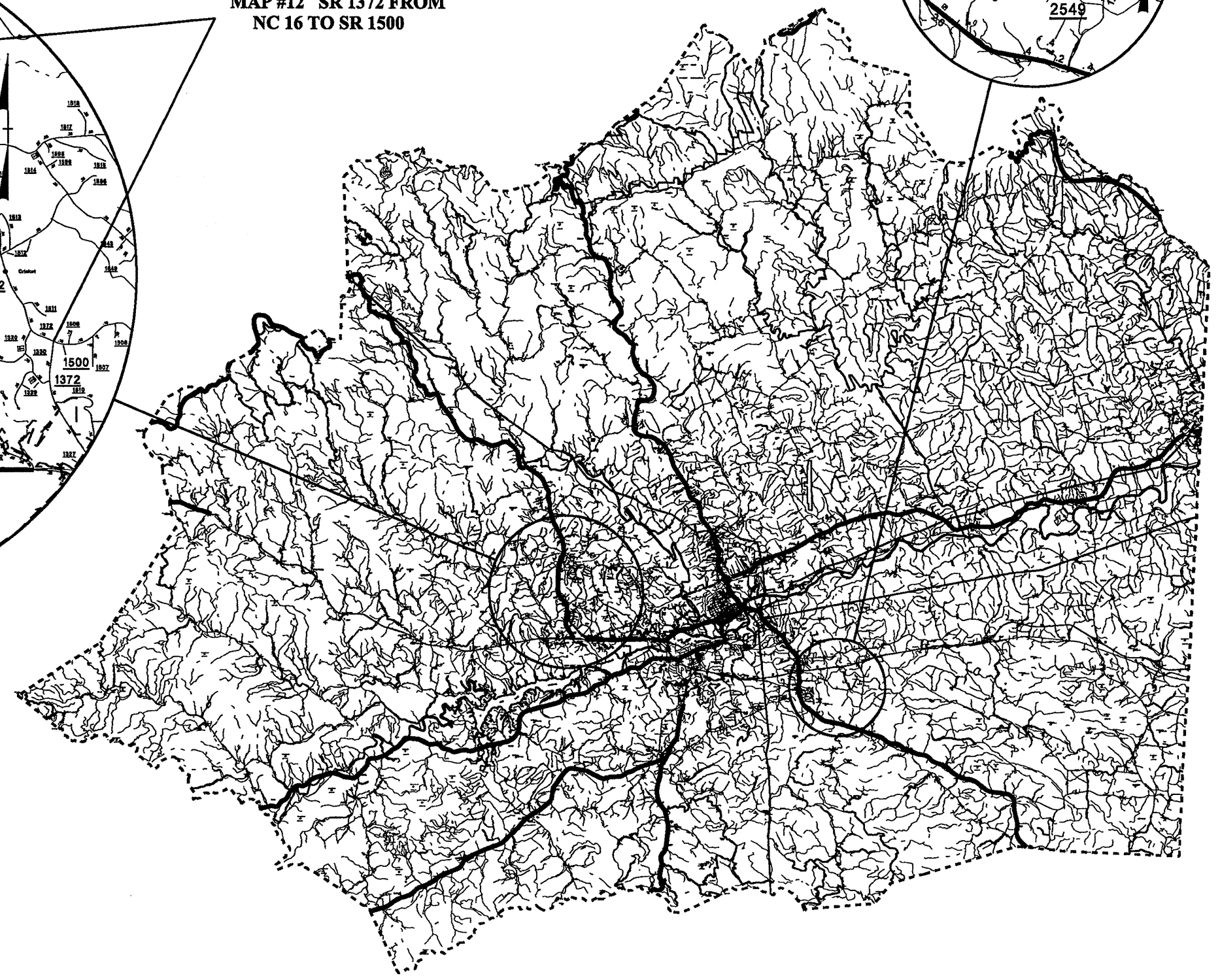
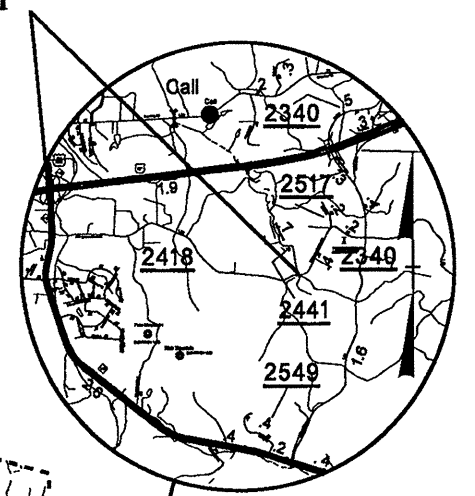
**WILKES COUNTY**

MAP #13 SR 2418 FROM  
NC 115 TO SR 2340

MAP #12 SR 1372 FROM  
NC 16 TO SR 1500



MAP #9 NC 16 NORTH FROM  
US 421 TO SR 1617

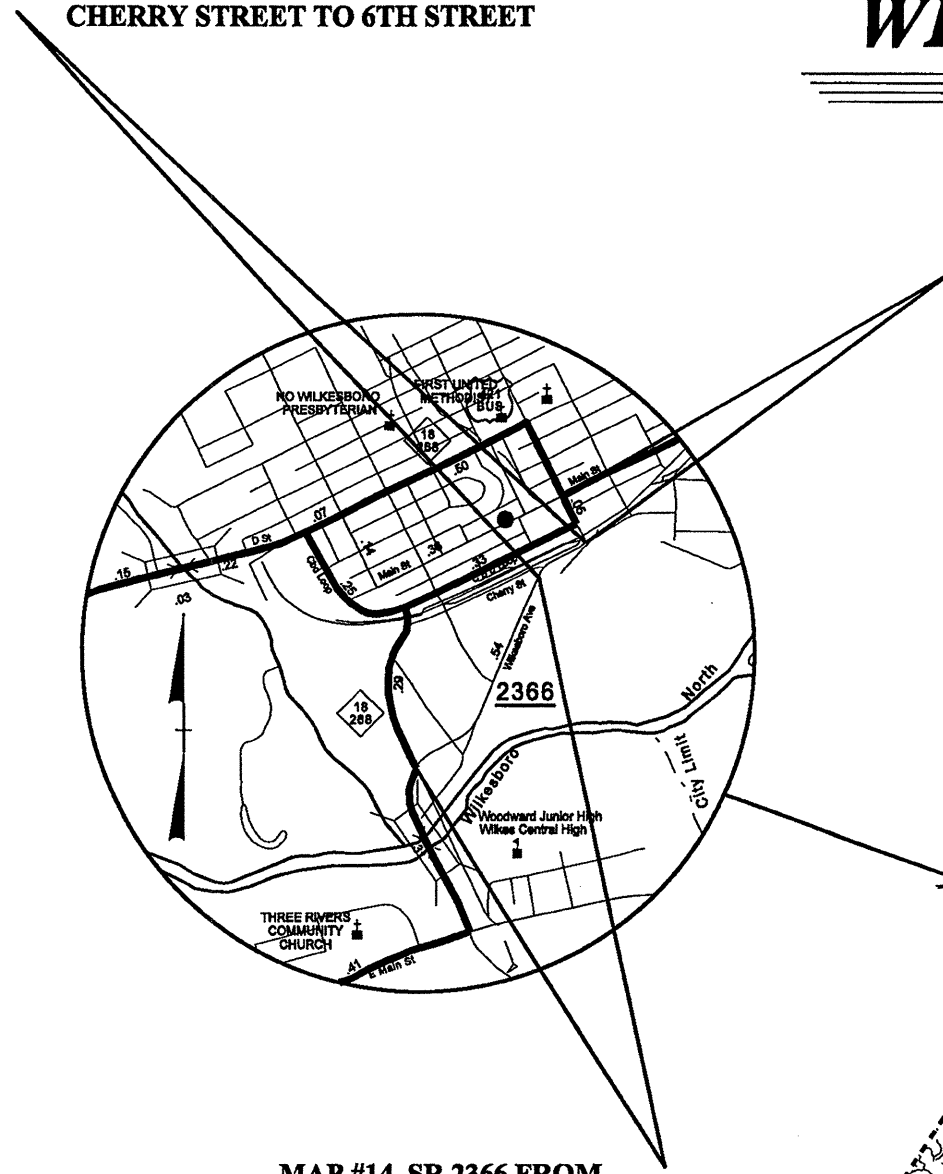


14-OCT-2011 14:19  
R:\GIS\PROJECTS\2012\Wilkes\Wilkes-ASPHALT-Resurfacing-Maps2012\_Sht.dgn  
\*\*\*ASTERISK\*\*\*

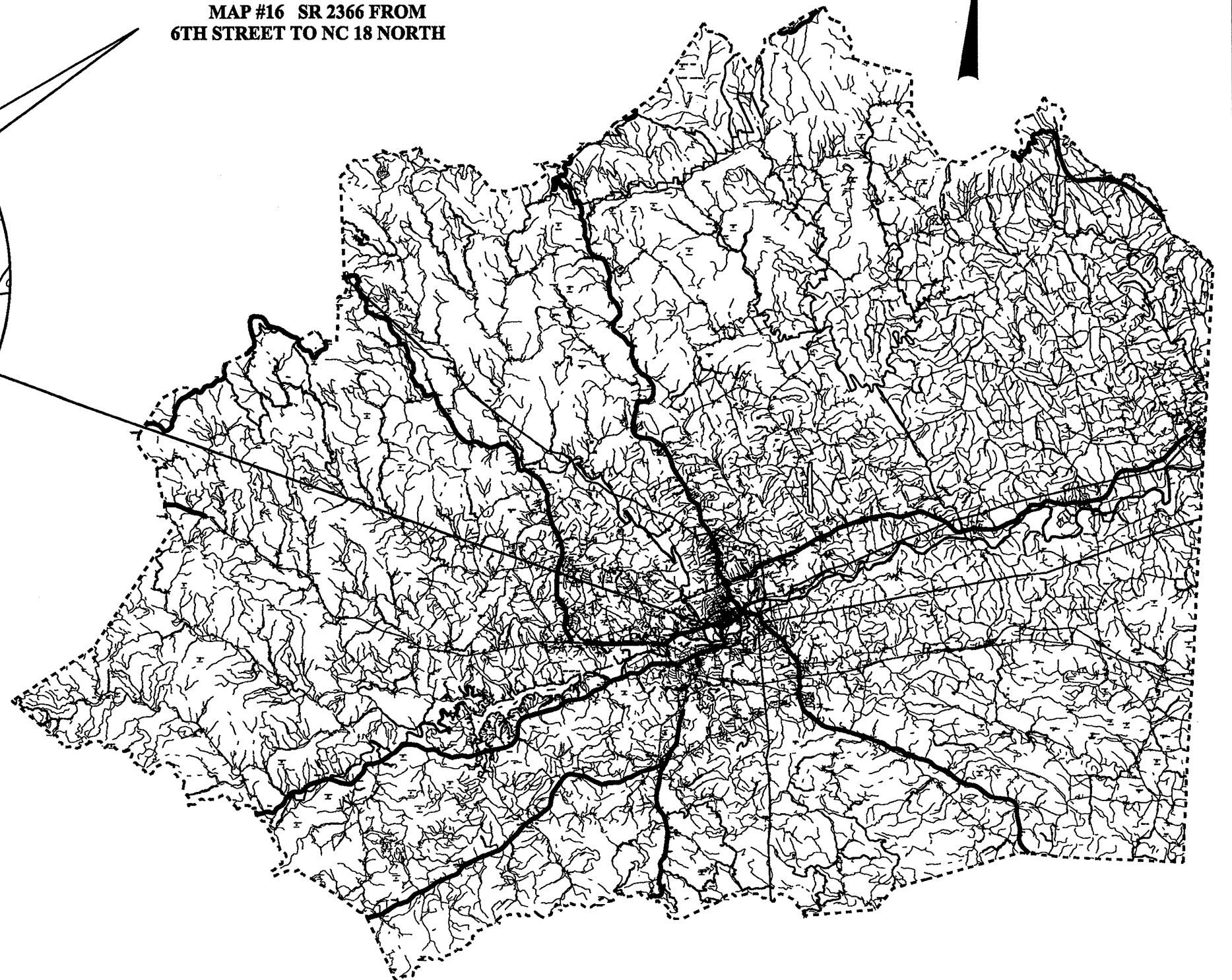
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**WILKES COUNTY**

**MAP #15 SR 2366 FROM  
CHERRY STREET TO 6TH STREET**

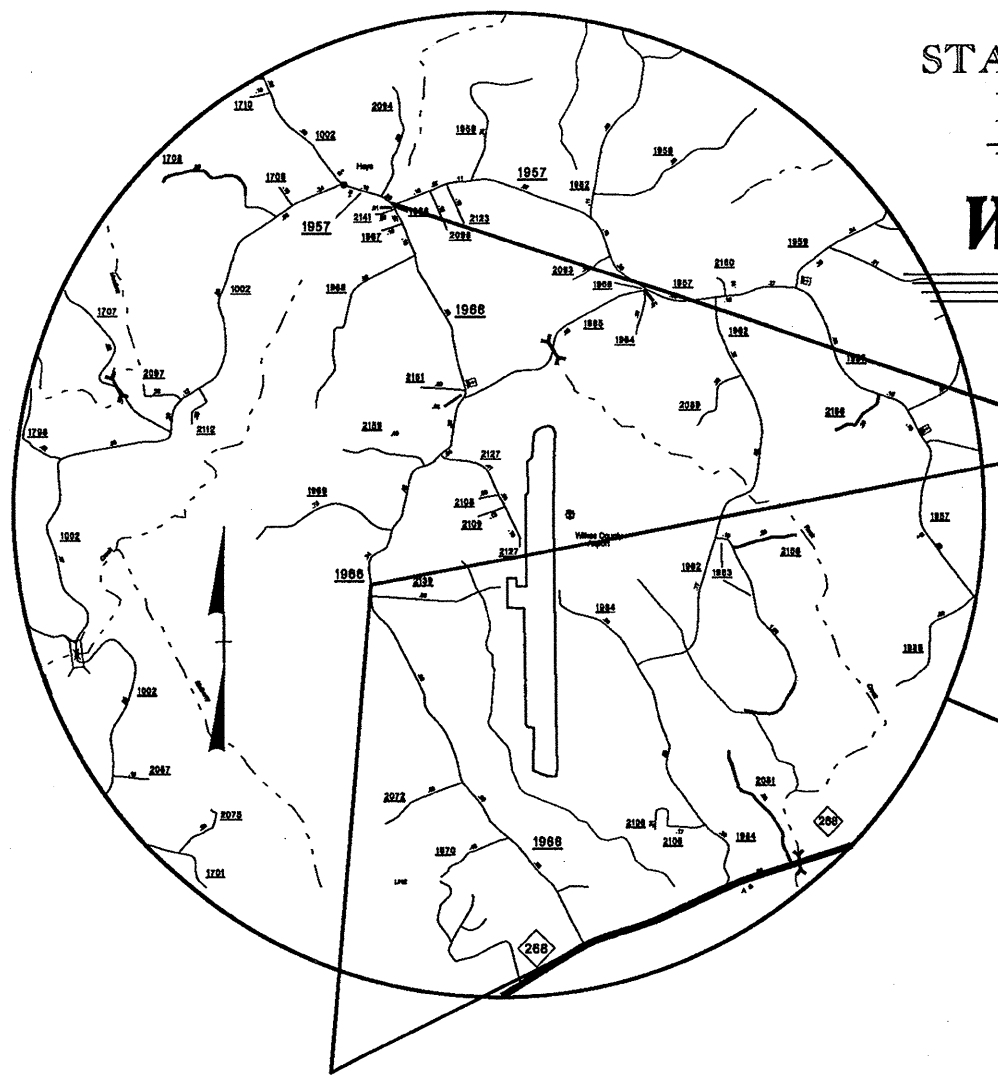


**MAP #16 SR 2366 FROM  
6TH STREET TO NC 18 NORTH**

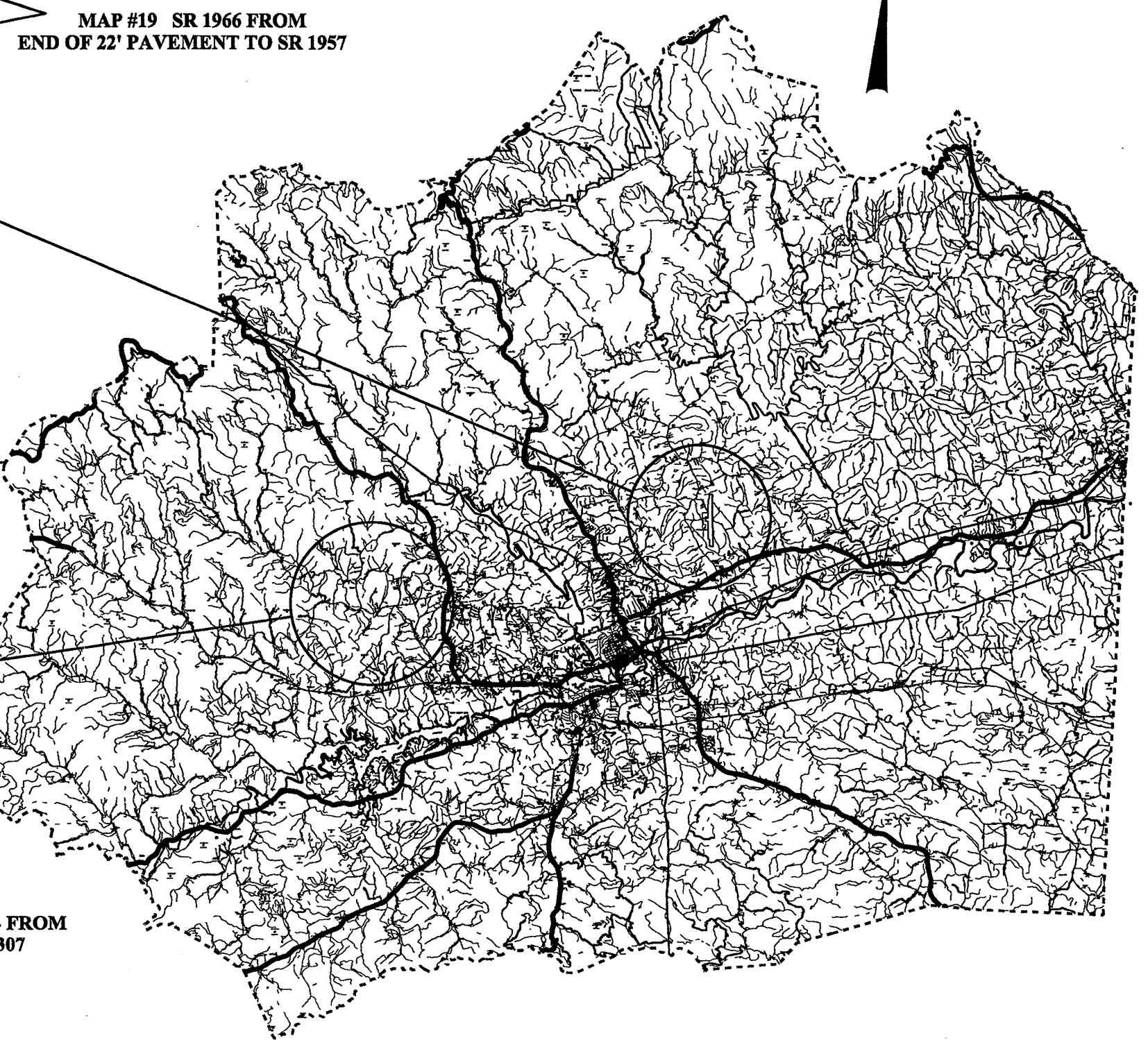


**MAP #14 SR 2366 FROM  
NC 18 TO CHERRY STREET**

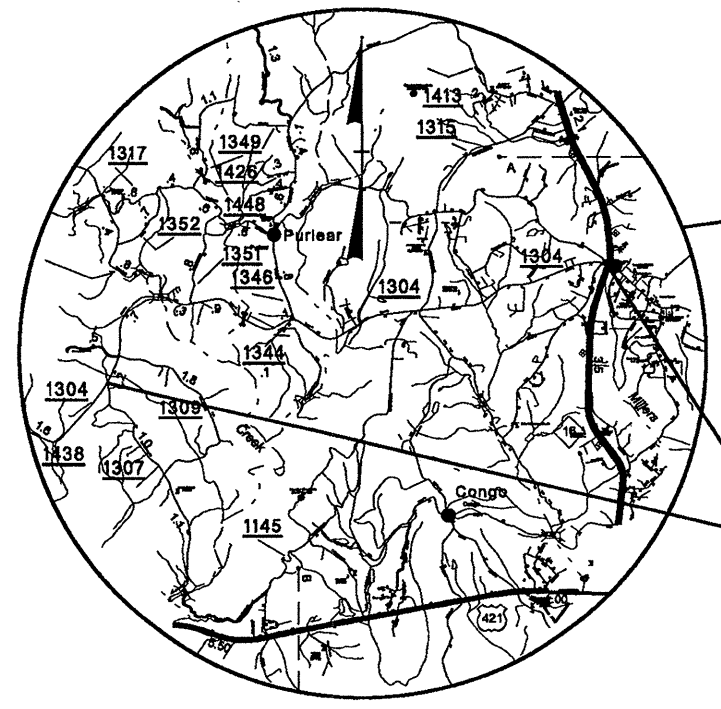
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
**WILKES COUNTY**



**MAP #18 SR 1966 FROM  
NC 268 TO END OF 22' PAVEMENT**



**MAP #19 SR 1966 FROM  
END OF 22' PAVEMENT TO SR 1957**



**MAP #17 SR 1304 FROM  
NC 16 TO SR 1307**

8/17/99  
14-OCT-2011 15:15  
C:\Users\ASPHALT.T.Resurfacing.Maps\2012.Sht.dgn  
WILKES COUNTY

8/17/99  
D:\CT\2011\5:54  
Project Manager\Projects\Resurfacing\2012\Caldwell\Wilkes\CALD.Asphalt-Resurfacing\_Maps2012\_Sht1of2.dgn

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**CALDWELL COUNTY**

ASPHALT RESURFACING  
AGGREGATE SHOULDER BORROW DETAILS

MAP #2 US 64  
FROM BEG C&G TO NC 18

AGGREGATE SHOULDER BORROW TO BE PLACED AS FOLLOWS:  
\* APPROX. STATION 57+00 400' (SEE DETAIL)

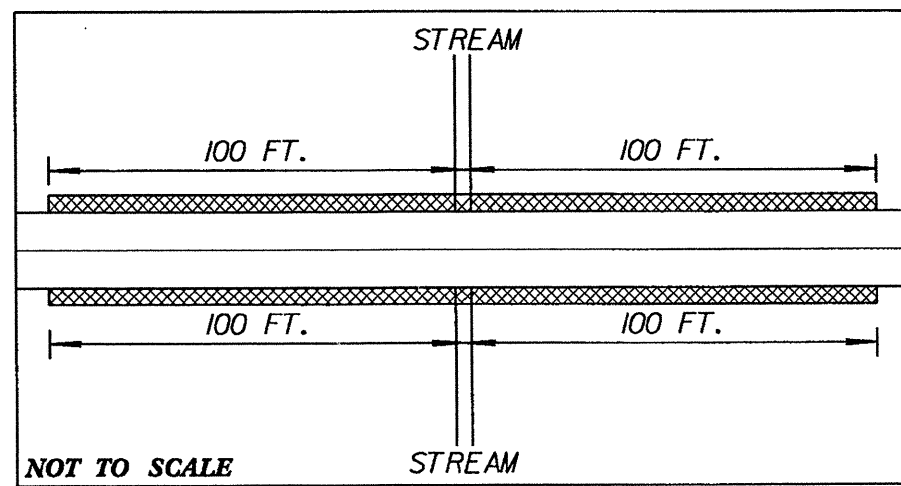
MAP #10 SR1310  
FROM SR 1301 TO NC 90


AGGREGATE SHOULDER BORROW TO BE PLACED AS FOLLOWS:  
\* APPROX. STATION 6+00 400' (SEE DETAIL)  
\* APPROX. STATION 57+00 400' (SEE DETAIL)  
\* APPROX. STATION 116+00 400' (SEE DETAIL)  
\* APPROX. STATION 230+00 400' (SEE DETAIL)

MAP #11 SR 1545  
FROM SR 1511 TO NC SR 1548

AGGREGATE SHOULDER BORROW TO BE PLACED AS FOLLOWS:  
\* APPROX. STATION 3+00 400' (SEE DETAIL)

**\*DETAIL FOR AGGREGATE SHOULDER BORROW  
AT STREAM CROSSING**



 HATCHED AREA SHOWS PLACEMENT  
OF AGGREGATE SHOULDER BORROW

8/17/99

# WILKES COUNTY

## PRIMARY AND SECONDARY ASPHALT RESURFACING AGGREGATE SHOULDER BORROW DETAILS

PRIMARY MAP #5 NC HWY 268  
FROM SR 1993 (ARBOR GROVE CH. RD.)  
TO LANDFILL

**AGGREGATE SHOULDER BORROW TO BE PLACED AS FOLLOWS:**

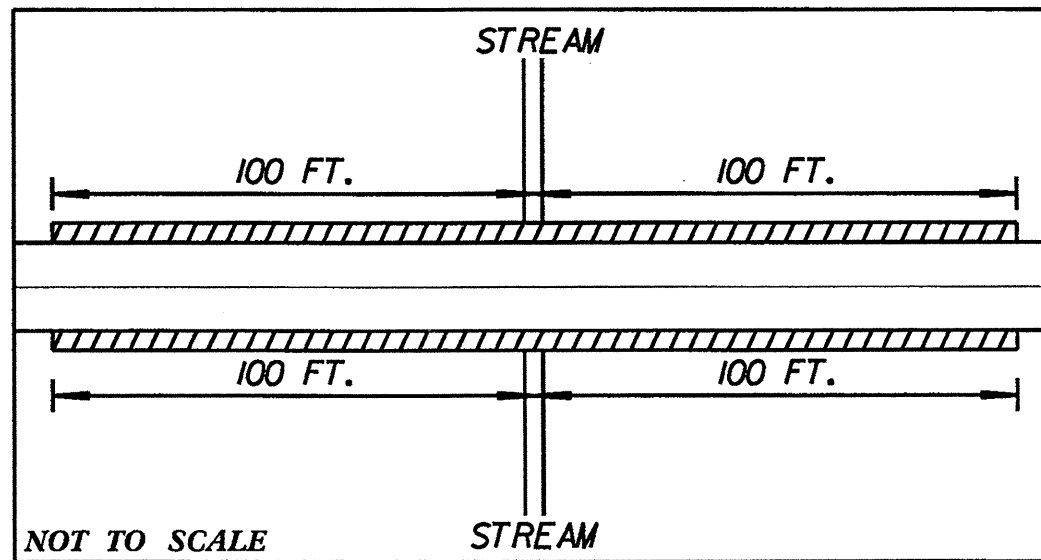
- \* APPROX. STATION 100+00 20 TONS (SEE DETAIL)
- \* APPROX. STATION 111+50 RT. 10 TONS (200 FT)
- \* APPROX. STATION 128+00 20 TONS (SEE DETAIL)
- \* APPROX. STATION 143+50 20 TONS (SEE DETAIL)

SECONDARY MAP #2 SR 2418  
(FISHING CREEK ARBOR)  
FROM NC HWY 115  
TO SR 2340  
(FISHING CREEK)

**AGGREGATE SHOULDER BORROW TO BE PLACED AS FOLLOWS:**

- \* APPROX. STATION 5+50 20 TONS (SEE DETAIL)
- \* APPROX. STATION 43+75 20 TONS (SEE DETAIL)
- \* APPROX. STATION 92+30 20 TONS (SEE DETAIL)

**\*DETAIL FOR AGGREGATE SHOULDER BORROW AT STREAM CROSSING**

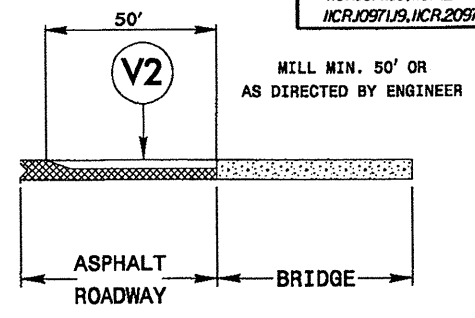
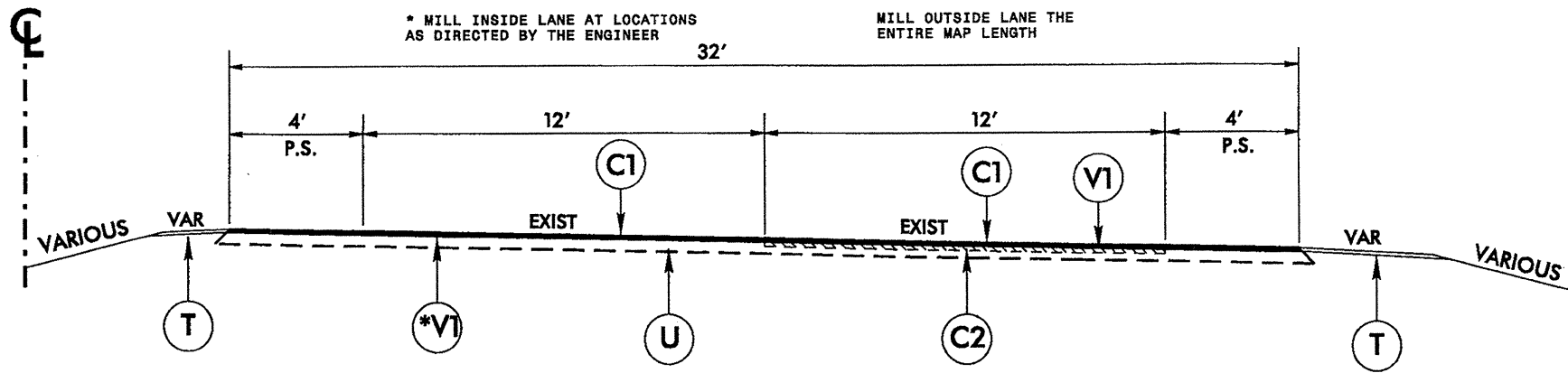


**/// HATCHED AREA SHOWS PLACEMENT  
OF AGGREGATE SHOULDER BORROW**

REVISIONS

\*\*\*\*\*SYTIME\*\*\*\*\*  
\*\*\*\*\*08/17/99\*\*\*\*\*  
\*\*\*\*\*D:\PROJECTS\11CR.10141.19\\*\*\*\*\*  
\*\*\*\*\*11CR.10141.19.DWG\*\*\*\*\*  
\*\*\*\*\*8/17/99\*\*\*\*\*

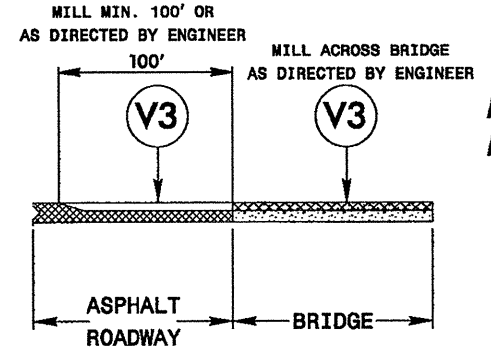
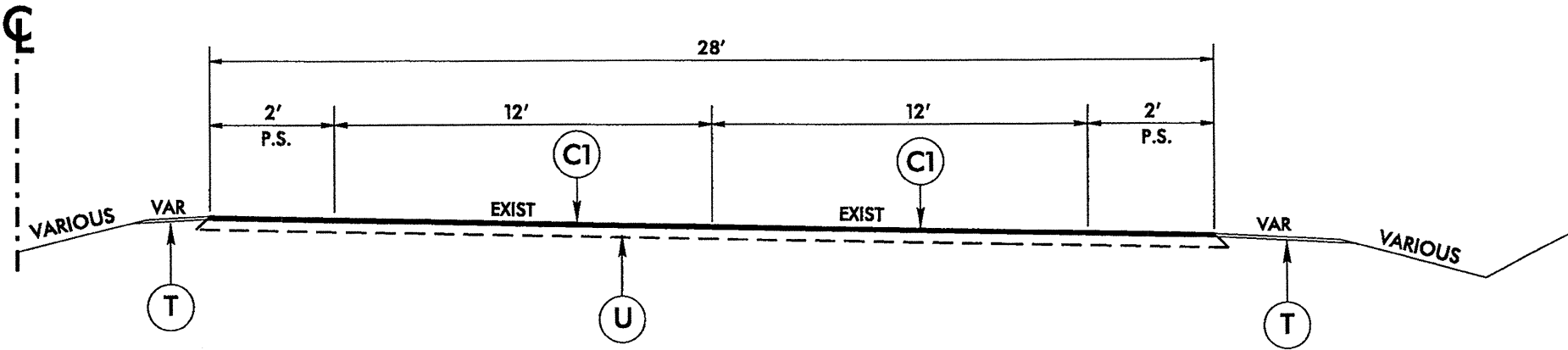




**\*\* BRIDGE TIE IN DETAIL**  
TIE ASPHALT OVERLAY TO BRIDGE APPROACH SLABS OR AS DIRECTED BY THE ENGINEER

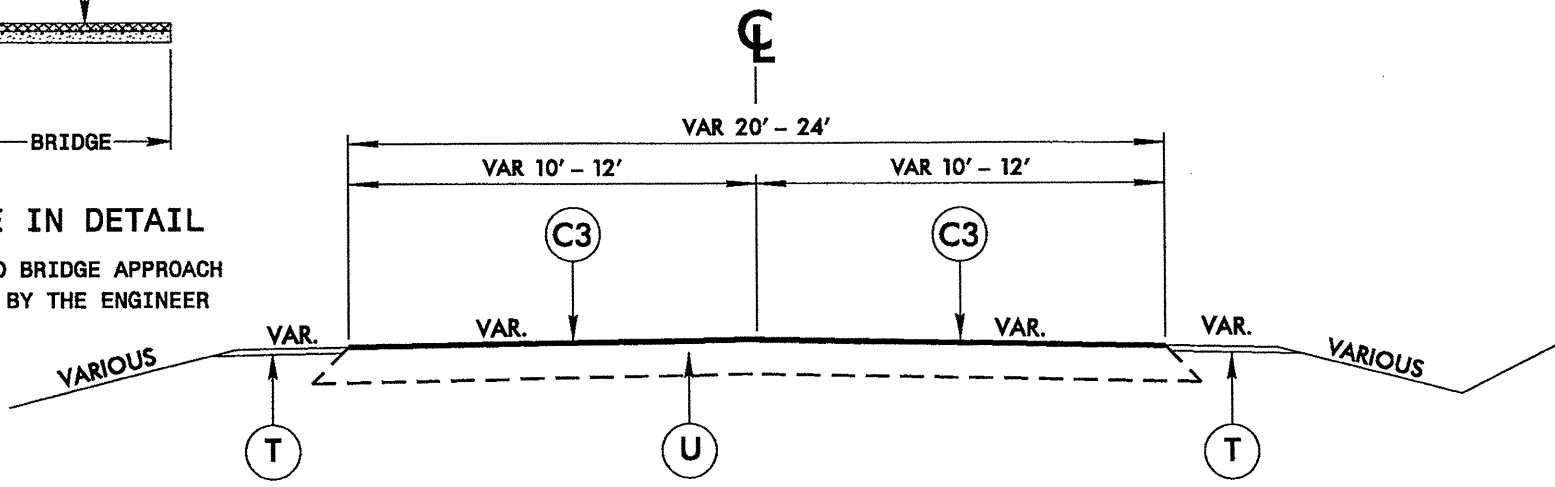
**TYPICAL SECTION NO. 1**  
MAP 1 - US 321 SBL FROM NC 268 TO SR 1352

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. (OVERLAY)
C2	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. (MILL AND FILL)
C3	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C4	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C5	PROP. APPROX. 1" THIN LIFT HOT MIX ASPHALT, AT AN AVERAGE RATE OF 100 LBS. PER SQ. YD.
C6	PROP. ASPHALT SURFACE COURSE, STRAIGHT SEAL W/NO. 78M & CRS-2P
T	SHOULDER RECONSTRUCTION
U	EXISTING PAVEMENT
V1	MILLING OF EXISTING ASPHALT PAVEMENT AT DEPTH OF 1½"
V2	MILLING OF EXISTING ASPHALT PAVEMENT AT DEPTH OF 0 - 1½"
V3	MILLING OF EXISTING ASPHALT PAVEMENT AT DEPTH OF 0 - 3"



**TYPICAL SECTION NO. 2**  
MAP 4 - US 421 NBL FROM 0.50 MI NORTH OF SR 1304 TO SR 1171  
MAP 5 - US 421 SBL FROM SR 1171 TO 0.60 MI NORTH OF SR 1304

**\*\*\* BRIDGE TIE IN DETAIL**  
TIE ASPHALT OVERLAY TO BRIDGE APPROACH SLABS OR AS DIRECTED BY THE ENGINEER

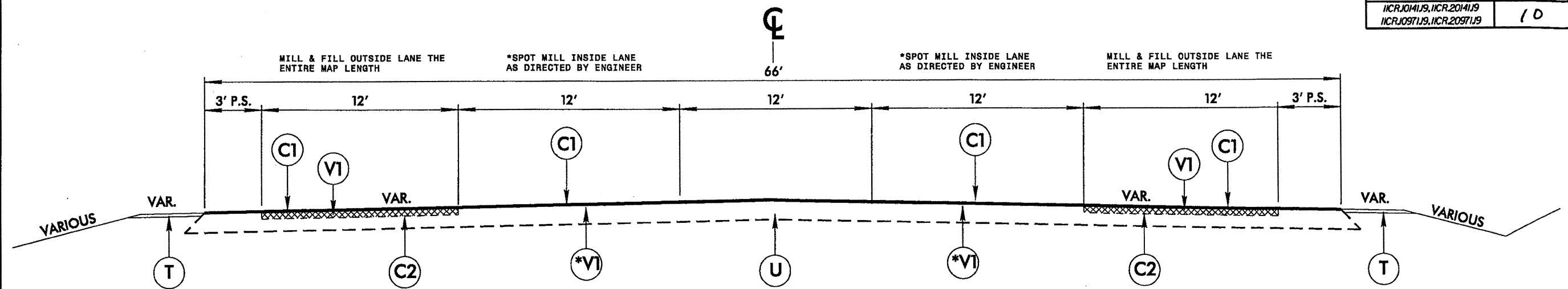


**TYPICAL SECTION NO. 3**

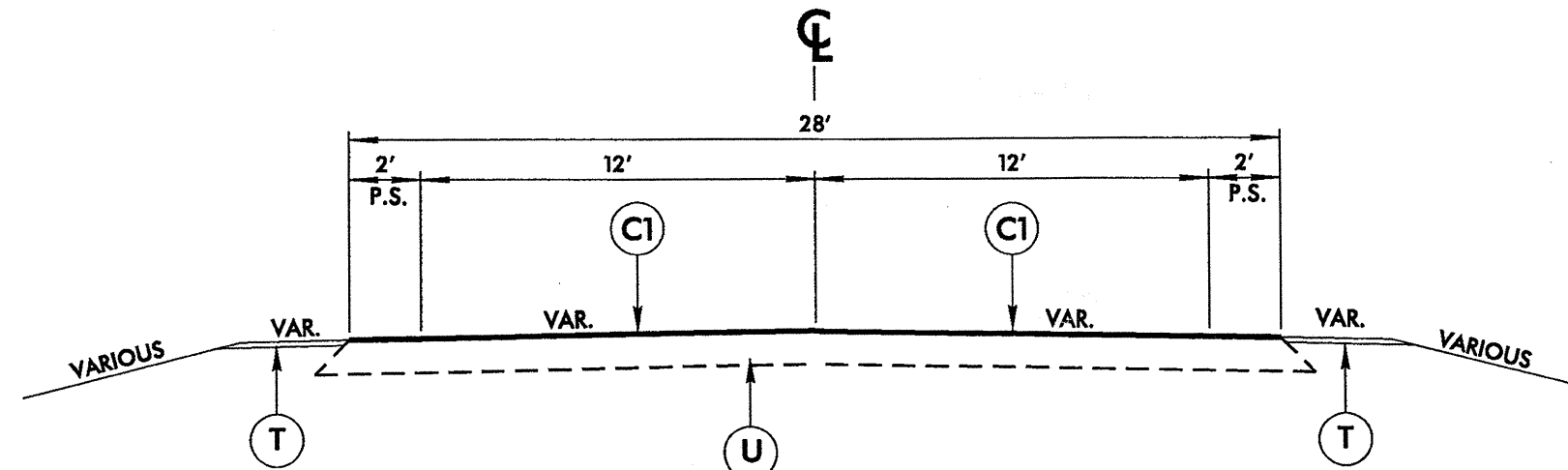
\*\* MAP 7 - NC 268 FROM SR 1114 TO END 24' PAVEMENT  
\*\*\* MAP 8 - NC 268 FROM SR 1993 TO LANDFILL  
MAP 12 - SR 1372 FROM NC 16 TO SR 1500

<b>CALDWELL AND WILKES COUNTIES</b> PRIMARY AND SECONDARY RESURFACING													
DIVISION II													
<table border="1"> <thead> <tr> <th>REVISIONS</th> <th>INT.</th> <th>DATE</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	REVISIONS	INT.	DATE										SCALE: N/A    DATE: 10/2011
REVISIONS	INT.	DATE											
N.C. DEPARTMENT of TRANSPORTATION DIVISION of HIGHWAYS DIVISION ELEVEN		PREPARED BY: R. A. SHAW REVIEWED BY: J. L. LAWS REVIEWED BY:											

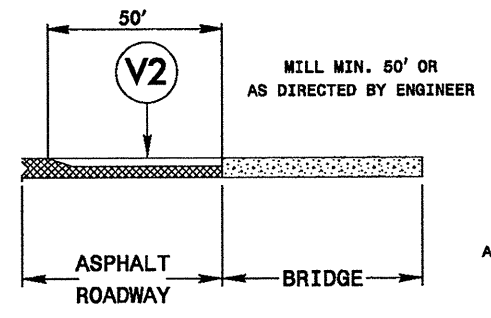
8/17/99



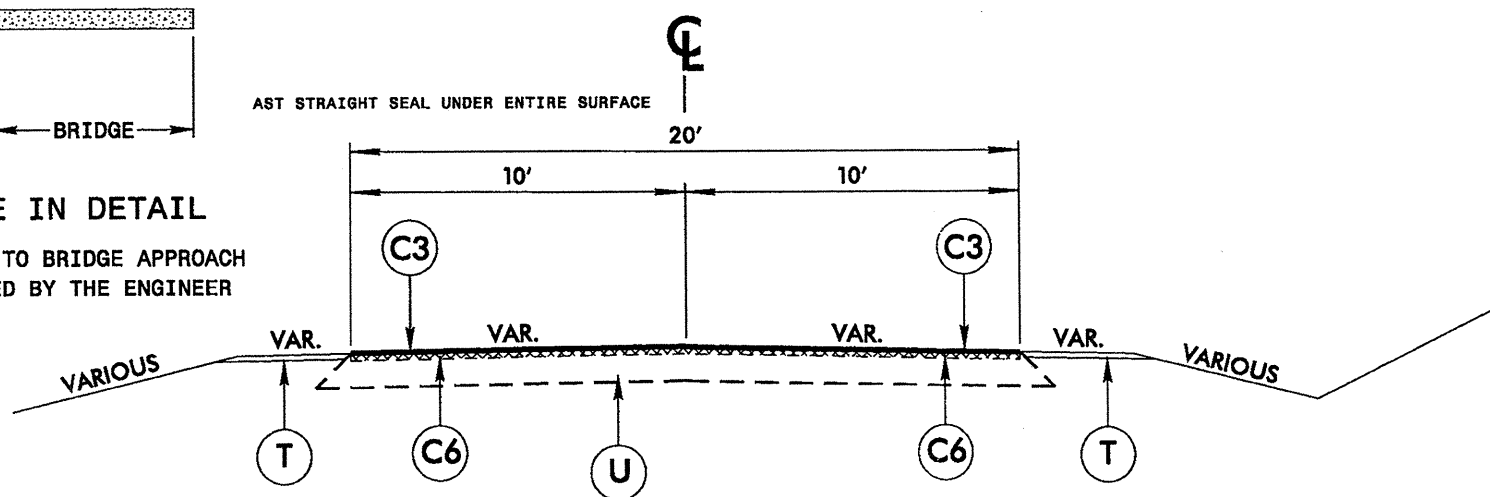
**TYPICAL SECTION NO. 4**  
MAP 2 - US 64 FROM BEGIN C&G TO NC 18



**TYPICAL SECTION NO. 5**  
MAP 9 - NC 16 NORTH FROM US 421 TO SR 1617



**\* BRIDGE TIE IN DETAIL**  
TIE ASPHALT OVERLAY TO BRIDGE APPROACH SLABS OR AS DIRECTED BY THE ENGINEER

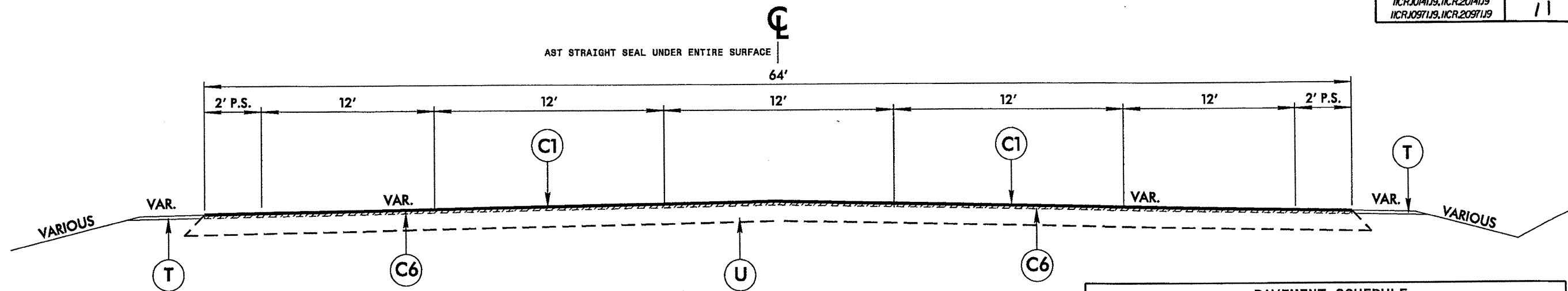


**TYPICAL SECTION NO. 6**  
\* MAP 10 - SR 1310 FROM SR 1301 TO NC 90

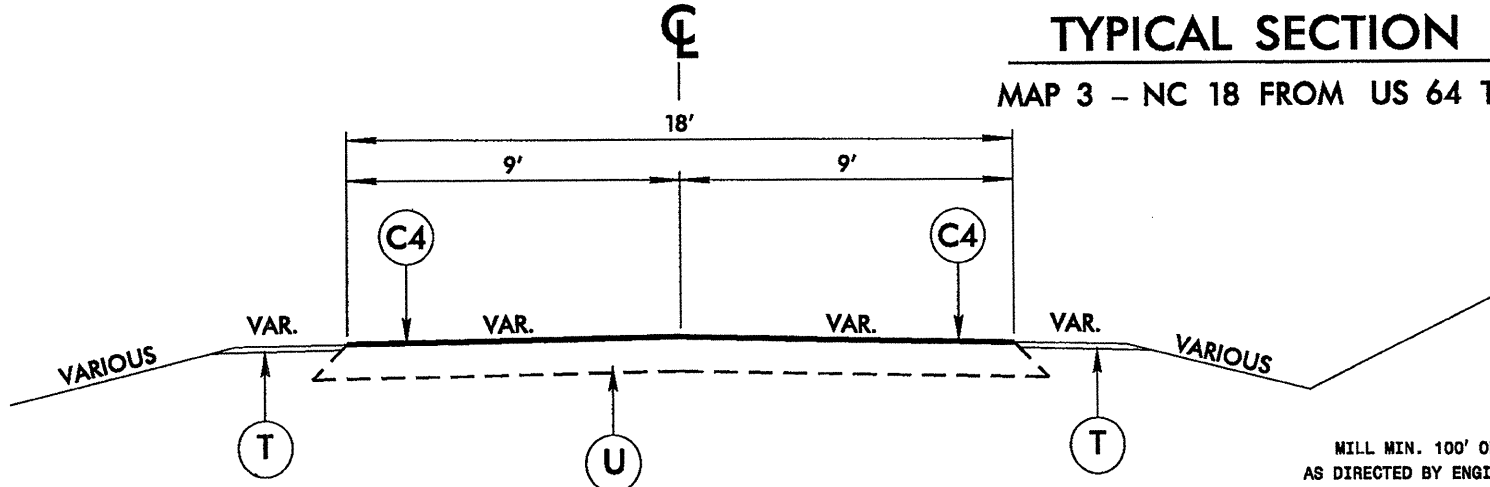
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. (OVERLAY)
C2	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. (MILL AND FILL)
C3	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C4	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C5	PROP. APPROX. 1" THIN LIFT HOT MIX ASPHALT, AT AN AVERAGE RATE OF 100 LBS. PER SQ. YD.
C6	PROP. ASPHALT SURFACE COURSE, STRAIGHT SEAL W/NO. 78M & CRS-2P
T	SHOULDER RECONSTRUCTION
U	EXISTING PAVEMENT
V1	MILLING OF EXISTING ASPHALT PAVEMENT AT DEPTH OF 1½"
V2	MILLING OF EXISTING ASPHALT PAVEMENT AT DEPTH OF 0 - 1½"
V3	MILLING OF EXISTING ASPHALT PAVEMENT AT DEPTH OF 0 - 3"

<b>CALDWELL AND WILKES COUNTIES PRIMARY AND SECONDARY RESURFACING</b>		
DIVISION II		
REVISIONS	INT.	DATE
SCALE: N/A		DATE: 10/2011
PREPARED BY: R. A. SHAW		REVIEWED BY: J. L. LAWS
REVIEWED BY:		
N.C. DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS DIVISION ELEVEN		

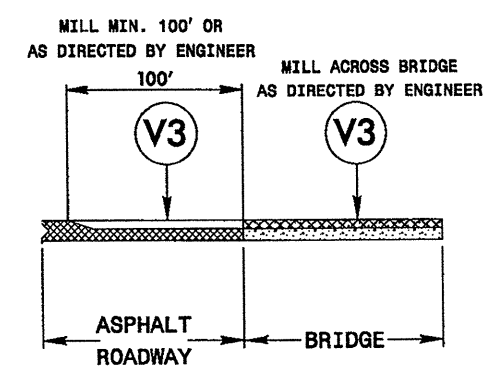
8/17/99



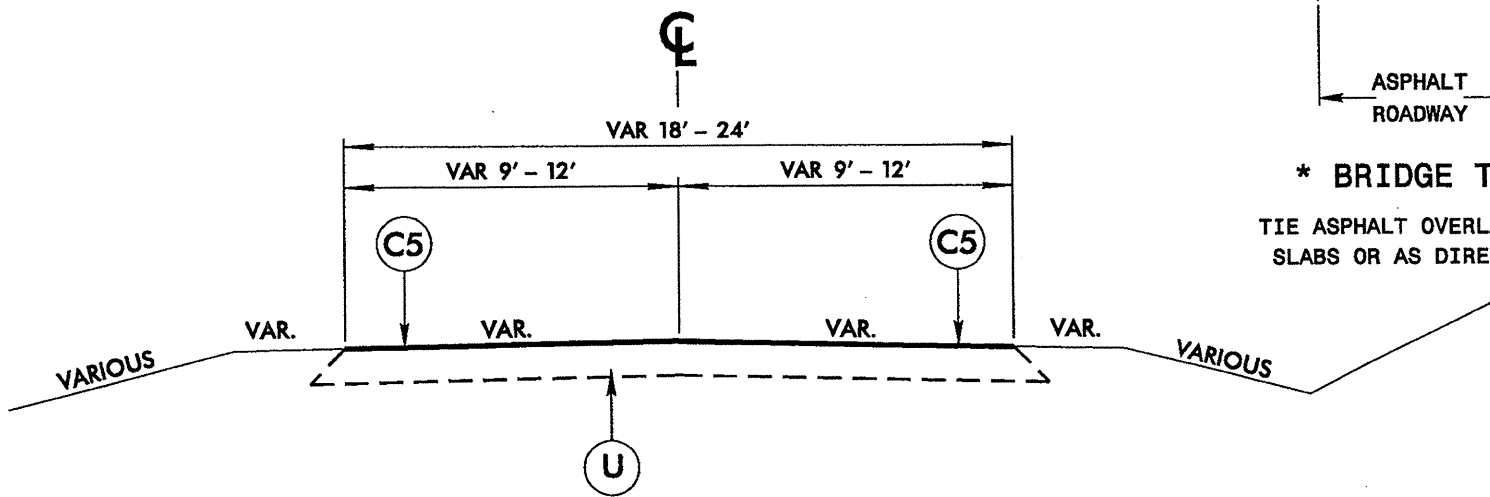
**TYPICAL SECTION NO. 7**  
MAP 3 - NC 18 FROM US 64 TO END 5 LANES



**TYPICAL SECTION NO. 8**  
MAP 11 - SR 1545 FROM SR 1511 TO SR 1548  
MAP 13 - SR 2418 FROM NC 115 TO SR 2340



**\* BRIDGE TIE IN DETAIL**  
TIE ASPHALT OVERLAY TO BRIDGE APPROACH SLABS OR AS DIRECTED BY THE ENGINEER

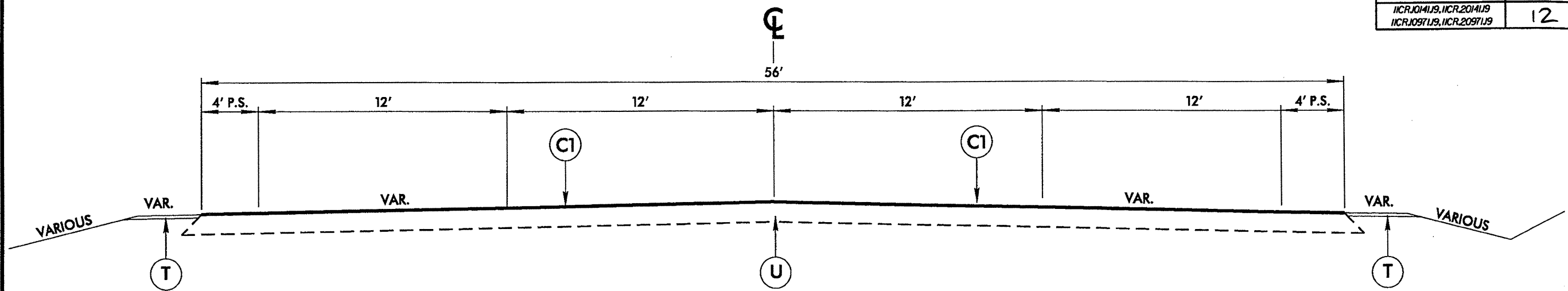


**TYPICAL SECTION NO. 9**  
MAP 14 - SR 2366 FROM NC 18 TO CHERRY STREET  
\* MAP 17 - SR 1304 FROM NC 16 TO SR 1307  
MAP 18 - SR 1966 FROM NC 268 TO END OF 22' PAVEMENT  
MAP 19 - SR 1966 FROM END OF 22' PAVEMENT TO SR 1957

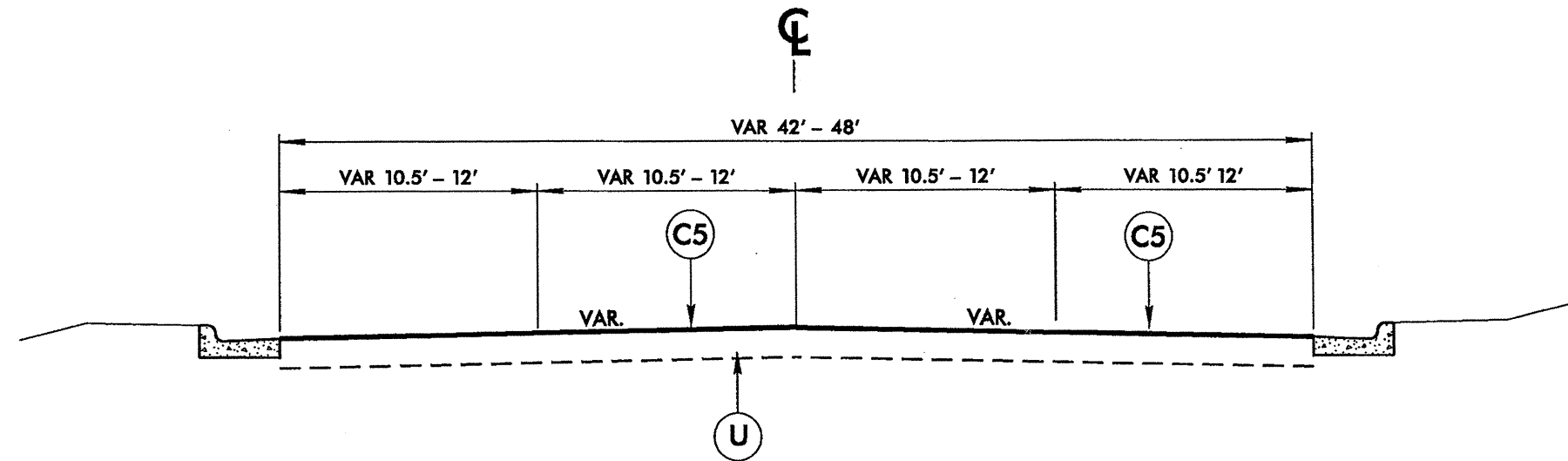
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. (OVERLAY)
C2	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. (MILL AND FILL)
C3	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C4	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C5	PROP. APPROX. 1" THIN LIFT HOT MIX ASPHALT, AT AN AVERAGE RATE OF 100 LBS. PER SQ. YD.
C6	PROP. ASPHALT SURFACE COURSE, STRAIGHT SEAL W/NO. 78M & CRS-2P
T	SHOULDER RECONSTRUCTION
U	EXISTING PAVEMENT
V1	MILLING OF EXISTING ASPHALT PAVEMENT AT DEPTH OF 1 1/2"
V2	MILLING OF EXISTING ASPHALT PAVEMENT AT DEPTH OF 0 - 1 1/2"
V3	MILLING OF EXISTING ASPHALT PAVEMENT AT DEPTH OF 0 - 3"

<b>CALDWELL AND WILKES COUNTIES PRIMARY AND SECONDARY RESURFACING</b>		
DIVISION II		
REVISIONS	INT.	DATE
N.C. DEPARTMENT of TRANSPORTATION DIVISION of HIGHWAYS DIVISION ELEVEN		SCALE: N/A    DATE: 10/2011 PREPARED BY: R. A. SHAW REVIEWED BY: J. L. LAWS REVIEWED BY:

8/17/99



**TYPICAL SECTION NO. 10**  
MAP 6 - US 421 FROM END 4 LANE TO WATAUGA CO.



**TYPICAL SECTION NO. 11**  
MAP 15 - SR 2366 FROM CHERRY STREET TO 6TH STREET  
MAP 16 - SR 2366 FROM 6TH STREET TO NC 18 NORTH

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. (OVERLAY)
C2	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. (MILL AND FILL)
C3	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C4	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C5	PROP. APPROX. 1" THIN LIFT HOT MIX ASPHALT, AT AN AVERAGE RATE OF 100 LBS. PER SQ. YD.
C6	PROP. ASPHALT SURFACE COURSE, STRAIGHT SEAL W/NO. 78M & CRS-2P
T	SHOULDER RECONSTRUCTION
U	EXISTING PAVEMENT
V1	MILLING OF EXISTING ASPHALT PAVEMENT AT DEPTH OF 1½"
V2	MILLING OF EXISTING ASPHALT PAVEMENT AT DEPTH OF 0 - 1½"
V3	MILLING OF EXISTING ASPHALT PAVEMENT AT DEPTH OF 0 - 3"

<b>CALDWELL AND WILKES COUNTIES</b> PRIMARY AND SECONDARY RESURFACING		
DIVISION II		
REVISIONS	INTL.	DATE
N.C. DEPARTMENT of TRANSPORTATION DIVISION of HIGHWAYS DIVISION ELEVEN		SCALE: N/A    DATE: 10/2011 PREPARED BY: R. A. SHAW REVIEWED BY: J. L. LAWS REVIEWED BY:

PROJECT NO.	SHEET NO.	TOTAL NO.
11CR.10141.19, 11CR.10971.19 11CR.20141.19, ETC.	13	

### SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	FINAL SURFACE TESTING REQUIRED	LENGTH MI	WIDTH FT	BORROW EXCAVATION CY	INCIDENTAL STONE BASE TONS	SHOULDER RECONSTRUCTION SMI	1 1/2" MILLING SY	0" TO 1.5" MILLING SY	0" TO 3" MILLING SY	SURFACE COURSE, S9.5B TONS	SURFACE COURSE, S9.5C TONS	SURFACE COURSE, SF9.5A TONS	ASPHALT BINDER FOR PLANT MIX TONS	PATCHING EXISTING PAVEMENT TONS	AST, STRAIGHT SEAL SY	THIN LIFT HMA SY	ADJ. OF CATCH BASIN EA	ADJ. OF MANHOLES EA	ADJ. OF METER OR VALVE BOX EA	SEED & MULCHING AC	UNPAVED TRENCHING (1.2") LF	INDUCTIVE LOOP LF	LEAD-IN CABLE (14-2) LF					
11CR.10141.19	Caldwell	1	US 321 SBL	FROM NC 268 TO SR 1352	1	NO	1.65	32	330		3.30	15,500				4,100		246															
		2	US 64	FROM BEGIN C & G TO NC 18	4	NO	1.09	66	218		2.18	20,500				5,300		318						7	3		0.80	100	1,400	100			
		3	NC 18	FROM US 64 TO END OF 5-LANE	7	NO	0.62	64	124	50		1.24				2,050		121			23,279.00			4	6		0.45	100	1,000	100			
TOTAL FOR PROJ NO. 11CR.10141.19							3.36		672	50	6.72	36,000			11,450		685		23,279.00			11	9		2.45	200	2,400	200					
11CR.10971.19	Wilkes	4	US 421 NBL	FROM 0.5 MILES NORTH OF SR 1304 TO SR 1171	2	NO	0.871	28	174		1.74				1,300		78									0.65							
		5	US 421 SBL	FROM SR 1171 TO 0.6 MILES NORTH OF SR 1304	2	NO	0.758	28	152		1.52					1,125		68									0.55						
		6	US 421	FROM END OF 4-LANE TO WATAUGA COUNTY LINE	10	NO	1.496	56	300		3.00					4,400		264									1.10						
		7	NC 268	FROM SR 1114 TO END OF 24' PAVEMENT	3	NO	0.739	24	148	20		1.48		275		925		56									0.55						
		8	NC 268	FROM SR 1993 TO LANDFILL	3	NO	2.955	20	591	60		5.91			970	3,175		191										2.15					
		9	NC 16 NORTH	FROM US 421 TO SR 1617	5	NO	3.025	28	605	50		6.05				4,400		264										2.20					
TOTAL FOR PROJ NO. 11CR.10971.19							9.844		1,970	130	19.70		275	970	4,100	11,225		921									7.20						
11CR.20141.19	Caldwell	10	SR 1310	FROM SR 1301 TO NC 90	6	NO	4.496	20	900	100	9.00		225		4,459		268	70	52,753.00							3.30							
		11	SR 1545	FROM SR 1511 TO SR 1548	8	NO	1.841	18	368	50	3.68					1,675	112	130	200	52,753.00							1.30						
TOTAL FOR PROJ NO. 11CR.20141.19							6.337		1,268	150	12.68		225		4,459		1,675	380	200	52,753.00							4.60						
11CR.20971.19	Wilkes	12	SR 1372	FROM NC 16 TO SR 1500	3	NO	3.902	22	780	100	7.80				4,500		270										2.80						
		13	SR 2418	FROM NC 115 TO SR 2340	8	NO	2.42	18	484	100	4.84					2,745	184										1.75						
		14	SR 2366	FROM NC 18 TO CHERRY STREET	9	NO	0.417	24									25																
		15	SR 2366	FROM CHERRY STREET TO 6TH STREET	11	NO	0.102	48									10																
		16	SR 2366	FROM 6TH STREET TO NC 18 NORTH	11	NO	0.076	42									7																
		17	SR 1304	FROM NC 16 TO SR 1307	9	NO	4.977	18		50				320			173																
		18	SR 1966	FROM NC 268 TO END OF 22' PAVEMENT	9	NO	1.97	22		50							76																
		19	SR 1966	FROM END OF 22' PAVEMENT TO SR 1957	9	NO	1.951	18									62																
TOTAL FOR PROJ NO. 11CR.20971.19							15.815		1,264	300	12.64		320	4,500		2,745	807										4.55						
GRAND TOTAL							35.356		5,174	630	51.74	36,000	500	1,290	13,059	22,675	4,420	2,793	200	76,032.00	115,685	1	14	13	18.80	200	2,400	200					

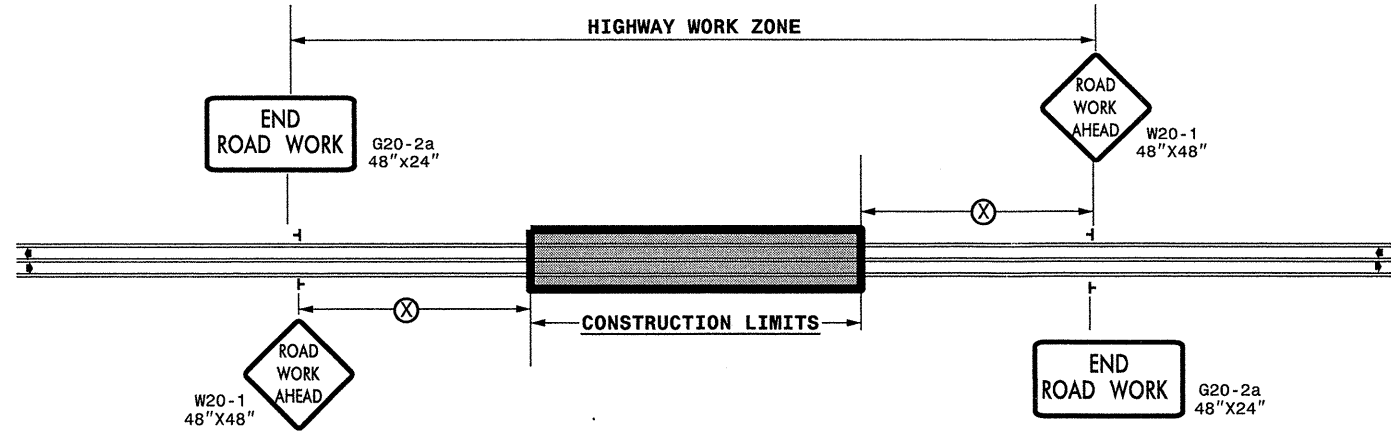
PROJECT NO.	SHEET NO.	TOTAL NO.
11CR.10141.19, 11CR.10971.19 11CR.20141.19, ETC.	14	

## THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	LENGTH	WIDTH	4810000000-E		4815000000-E		4820000000-E		4835000000-E	4840000000-N		4845000000-N			4905000000-N				
							4" WHITE PAINT LF	4" YELLOW PAINT LF	6" WHITE PAINT LF	6" YELLOW PAINT LF	8" YELLOW PAINT LF	8" WHITE PAINT LF	24" WHITE PAINT LF	PAINT MSG SCHOOL EA	PAINT MSG ONLY EA	PAINT LT ARROW EA	PAINT RT ARROW EA	PAINT STR ARROW EA	PAINT STR & RT ARROW EA	PAINT STR & LT ARROW EA	SNOW PLOWABLE MARKERS EA		
11CR.10141.19	Caldwell	1	US 321 SBL	FROM NC 268 TO SR 1352	1.65	32	21,780	17,430					100			18	2	24		130			
		2	US 64	FROM BEGIN C & G TO NC 18	1.09	66	28,775	28,775					320			44	2	18	11	4	288		
		3	NC 18	FROM US 64 TO END OF 5-LANE	0.62	64	16,800	16,800					260			25		6	10	1	175		
TOTAL FOR MAP NO. 3					0.62		16,800	16,800					260			25		6	10	1	175		
TOTAL FOR PROJ NO. 11CR.10141.19					3.36		67,355	63,005					680			87	4	48	21	5	593		
							130,360													165			
11CR.10971.19	Wilkes	4	US 421 NBL	FROM 0.5 MILES NORTH OF SR 1304 TO SR 1171	0.871	28			11,500	9,200								10			58		
		5	US 421 SBL	FROM SR 1171 TO 0.6 MILES NORTH OF SR 1304	0.758	28			10,005	8,005						2		2				52	
		6	US 421	FROM END OF 4-LANE TO WATAUGA COUNTY LINE	1.496	56			39,500	31,600												298	
		7	NC 268	FROM SR 1114 TO END OF 24' PAVEMENT	0.739	24	15,610	11,800														50	
		8	NC 268	FROM SR 1993 TO LANDFILL	2.955	20	62,410	60,100			200					2						195	
		9	NC 16 NORTH	FROM US 421 TO SR 1617	3.025	28	63,890	67,160			900				162	12	23	1		6		200	
		TOTAL FOR PROJ NO. 11CR.10971.19					9.844		141,910	139,060	61,005	48,805	1,100		162	12	27	1	12	6			853
									280,970		109,810		1,100		12		46						
		11CR.20141.19	Caldwell	10	SR 1310	FROM SR 1301 TO NC 90	4.496	20	94,955	94,955													298
11	SR 1545			FROM SR 1511 TO SR 1548	1.841	18	38,802	38,882														298	
TOTAL FOR PROJ NO. 11CR.20141.19					6.337		133,757	133,837													298		
							267,594																
11CR.20971.19	Wilkes	12	SR 1372	FROM NC 16 TO SR 1500	3.902	22	82,410	82,410			150		154	12		2		2			258		
		13	SR 2418	FROM NC 115 TO SR 2340	2.42	18	51,110	48,100															
		14	SR 2366	FROM NC 18 TO CHERRY STREET	0.417	24	8,810	8,920				124	26			1	1	3					
		15	SR 2366	FROM CHERRY STREET TO 6TH STREET	0.102	48	940	2,155								4	2		4	2			
		16	SR 2366	FROM 6TH STREET TO NC 18 NORTH	0.076	42	800	1,200					72			3	3	2	1				
		17	SR 1304	FROM NC 16 TO SR 1307	4.977	18	105,115	105,115			300		54	12		5			1			329	
		18	SR 1966	FROM NC 268 TO END OF 22' PAVEMENT	1.97	22	41,610	38,170					30									130	
		19	SR 1966	FROM END OF 22' PAVEMENT TO SR 1957	1.951	18	41,205	41,205														130	
		TOTAL FOR PROJ NO. 11CR.20971.19					15.815		332,000	327,275	450	124	336	24	4	13	4	11	4				847
							659,275		574		28		32										
GRAND TOTAL					35.356		675,022	663,177	61,005	48,805	1,550	124	1,178	36	4	127	9	71	31	5	2,591		
							1,338,199		109,810		1,674		40		243								

19-OCT-2011 09:27 C:\PROJES-WZTCCC\TMU\WZTC\Resur-facing\2011\Western\2011\Div\1\CR.10141.19x4\_Coldwell-Wikes\_US64etc.sg\C202895A-D\_11CR.10141.19x4\_Coldwell-Wikes\_US64etc.sg\C202895A-D\_11CR.10141.19x4\_Coldwell-Wikes\_stationary  
 01:24:13  
 signgen AT 1224133

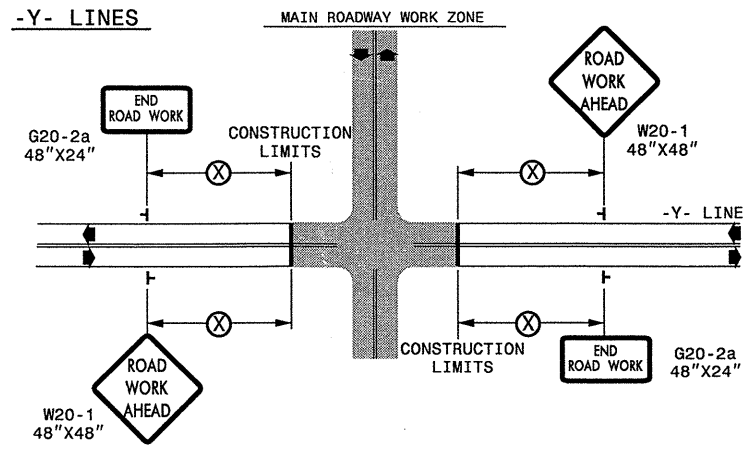
**TWO-WAY UNDIVIDED \*\* (L-LINES)**



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

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

**ROADWAYS INTERSECTING ALONG 2 WAY UNDIVIDED WORK ZONE (Y-LINES)**



**GENERAL NOTES**

- USE FLUORESCENT ORANGE SHEETING (TYPE VII OR HIGHER) ON ALL ADVANCED WORK ZONE SIGNS.
- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK.
- SIGNS SHOWN ARE REQUIRED FOR WORK ZONES THAT WILL REMAIN IN EFFECT OVERNIGHT. FOR SHORT-TERM DAILY MAINTENANCE TYPE OPERATIONS, THIS SIGNING APPLICATION IS OPTIONAL; MAY USE ONLY APPLICABLE ROADWAY STANDARD DRAWINGS INSTEAD. HOWEVER, IF THIS SIGNING APPLICATION IS USED, SIGNS MAY BE PORTABLE MOUNTED.
- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED.
- USE 3LB STEEL U-CHANNEL POST OR 4" X 4" WOOD POST FOR ALL WORK ZONE SIGNS. 3LB STEEL U-CHANNEL POSTS MUST MEET THE REQUIREMENTS OF STANDARD SPECIFICATION SECTION 1094-1(B), MAY BE GALVANIZED STEEL, OR MAY BE PAINTED GREEN BY THE POST MANUFACTURER. SQUARE STEEL TUBING POSTS HAVING EQUIVALENT STRENGTH OF THE 3 LB STEEL U-CHANNEL POST ARE ALSO ACCEPTABLE FOR USE. ERECT SIGNS PER ROADWAY STANDARD DRAWING 1110.01. PAYMENT FOR WOOD POSTS, 3LB STEEL U-CHANNEL AND SQUARE STEEL TUBING POSTS WITH SIGNS WILL BE MADE ACCORDING TO STANDARD SPECIFICATION "WORK ZONE SIGNS" SECTION 1110.
- WHEN NECESSARY, USE SPLICING IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1110.01. REMOVE ENTIRE POST WHEN REMOVING SIGNS WITH SPLICED POSTS.
- DO NOT BACK BRACE SIGN SUPPORTS.
- \*\* 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**

- ┆ STATIONARY SIGN
- ◀ DIRECTION OF TRAFFIC FLOW

DETAIL DRAWING FOR  
 TWO-WAY UNDIVIDED  
 WORK ZONE WARNING SIGNS

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

SEAL

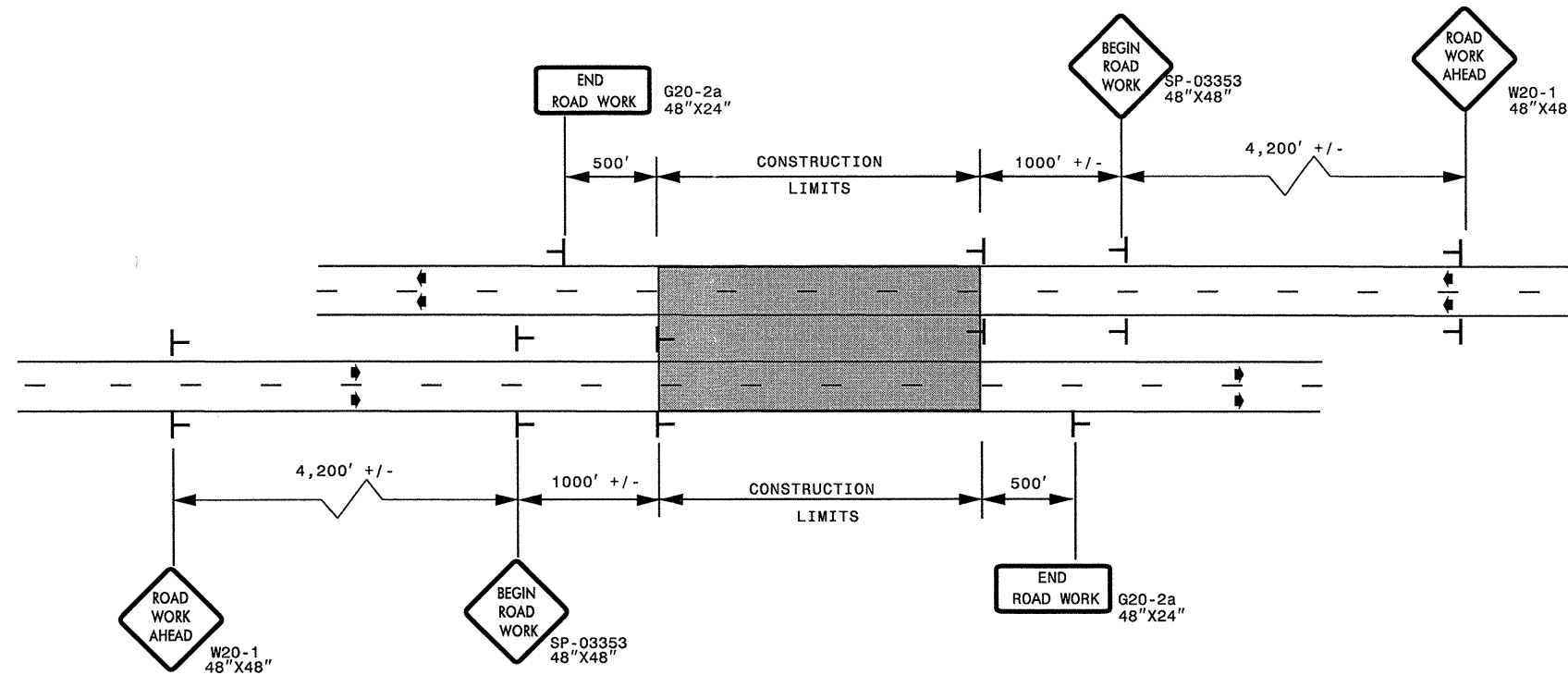
DETAIL DRAWING FOR TWO-WAY UNDIVIDED AND URBAN FREEWAYS ADVANCED WORK ZONE WARNING SIGNS

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

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

PROJ. REFERENCE NO. 11CR.10141.19, 11CR.20141.19 11CR.10971.19, 11CR.20971.19	SHEET NO. TCP-2
---	--------------------

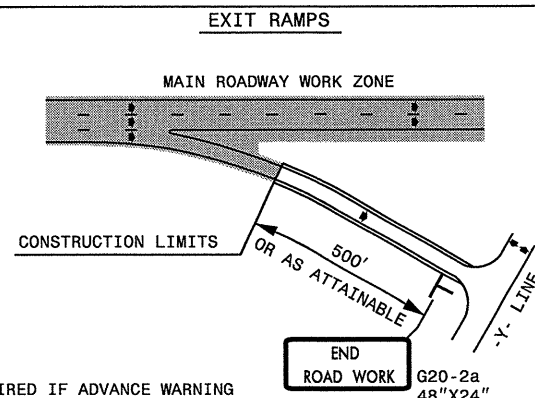
## DETAIL A



LEGEND	
	STATIONARY SIGN
→	DIRECTION OF TRAFFIC FLOW

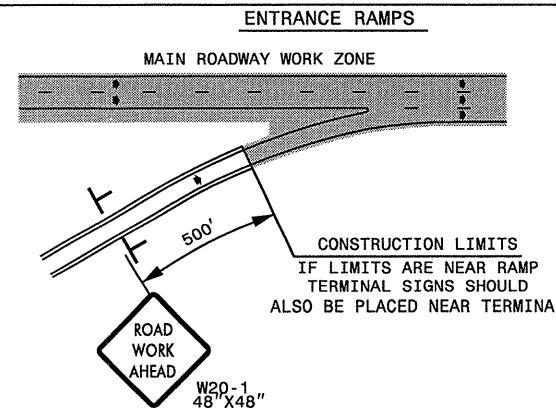
\* USE THE "\$250 SPEEDING PENALTY" SIGN, SPEED LIMIT SIGN, AND ORANGE PANEL; ONLY WHEN A "\$250 SPEEDING PENALTY" ORDINANCE HAS BEEN ISSUED BY THE REGIONAL TRAFFIC ENGINEER.

## DETAIL B

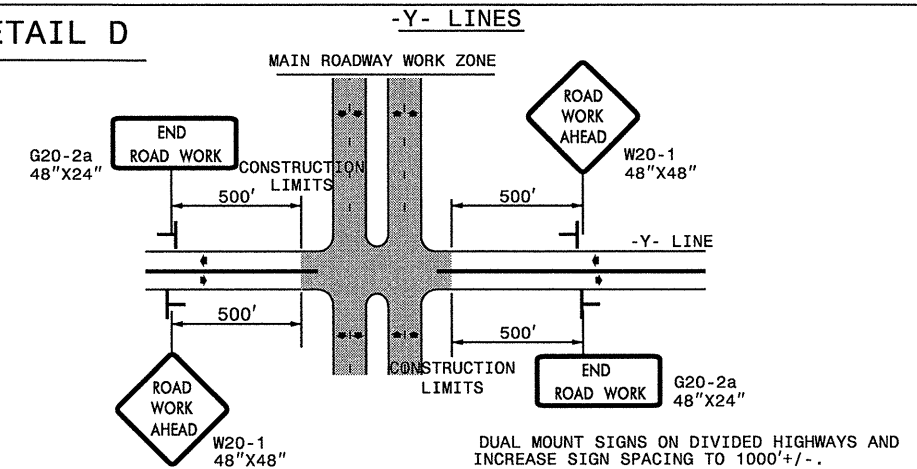


NOTE: SIGN NOT REQUIRED IF ADVANCE WARNING SIGNS HAVE BEEN PLACED ALONG -Y- LINE THAT RAMP INTERSECTS. IF CONSTRUCTION LIMITS ARE AT END OF RAMP, PLACE SIGN AT END OF RAMP.

## DETAIL C



## DETAIL D



## 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.
- SIGNS SHOWN ARE REQUIRED FOR WORK ZONES THAT WILL REMAIN IN EFFECT OVERNIGHT. FOR SHORT-TERM DAILY MAINTENANCE TYPE OPERATIONS, THIS SIGNING APPLICATION IS OPTIONAL; MAY USE ONLY APPLICABLE ROADWAY STANDARD DRAWINGS INSTEAD. HOWEVER, IF THIS SIGNING APPLICATION IS USED, SIGNS MAY BE PORTABLE MOUNTED.
- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED.
- USE 3LB STEEL U-CHANNEL POST OR 4" X 4" WOOD POST FOR ALL WORK ZONE SIGNS. 3LB STEEL U-CHANNEL POSTS MUST MEET THE REQUIREMENTS OF STANDARD SPECIFICATION SECTION 1094-1(B), MAY BE GALVANIZED STEEL, OR MAY BE PAINTED GREEN BY THE POST MANUFACTURER. SQUARE STEEL TUBING POSTS HAVING EQUIVALENT STRENGTH OF THE 3 LB STEEL U-CHANNEL POST ARE ALSO ACCEPTABLE FOR USE. ERECT SIGNS PER ROADWAY STANDARD DRAWING 1110.01. PAYMENT FOR WOOD POSTS, 3LB STEEL U-CHANNEL AND SQUARE STEEL TUBING POSTS WITH SIGNS WILL BE MADE ACCORDING TO STANDARD SPECIFICATION "WORK ZONE SIGNS" SECTION 1110.
- WHEN NECESSARY, USE SPLICING IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1110.01. REMOVE ENTIRE POST WHEN REMOVING SIGNS WITH SPLICED POSTS.
- DO NOT BACK BRACE SIGN SUPPORTS.

APPROVED: _____ DATE: _____	ADVANCED WORK ZONE WARNING SIGNS FOR FREEWAYS (4 LANES OR GREATER)	
SEAL	SCALE: NONE	
	DATE: 8/03	
	DWG. BY: JI	
	DESIGN BY: JI	
REVIEWED BY: _____	REVISIONS	03/04






I:\9-001-2010927\TOP\GROUPS-WZTC\TMU\WZTC\Resur\Resur\2010\western\2010\Div\1\202895A-D\ICR\10141\9x4\_Caldwell-Wilkes-freeways-4lanes-or-greater\_stationary\_signs.dwg

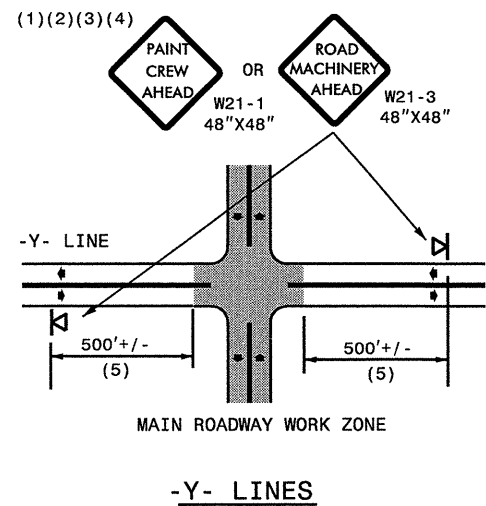


### GENERAL NOTES

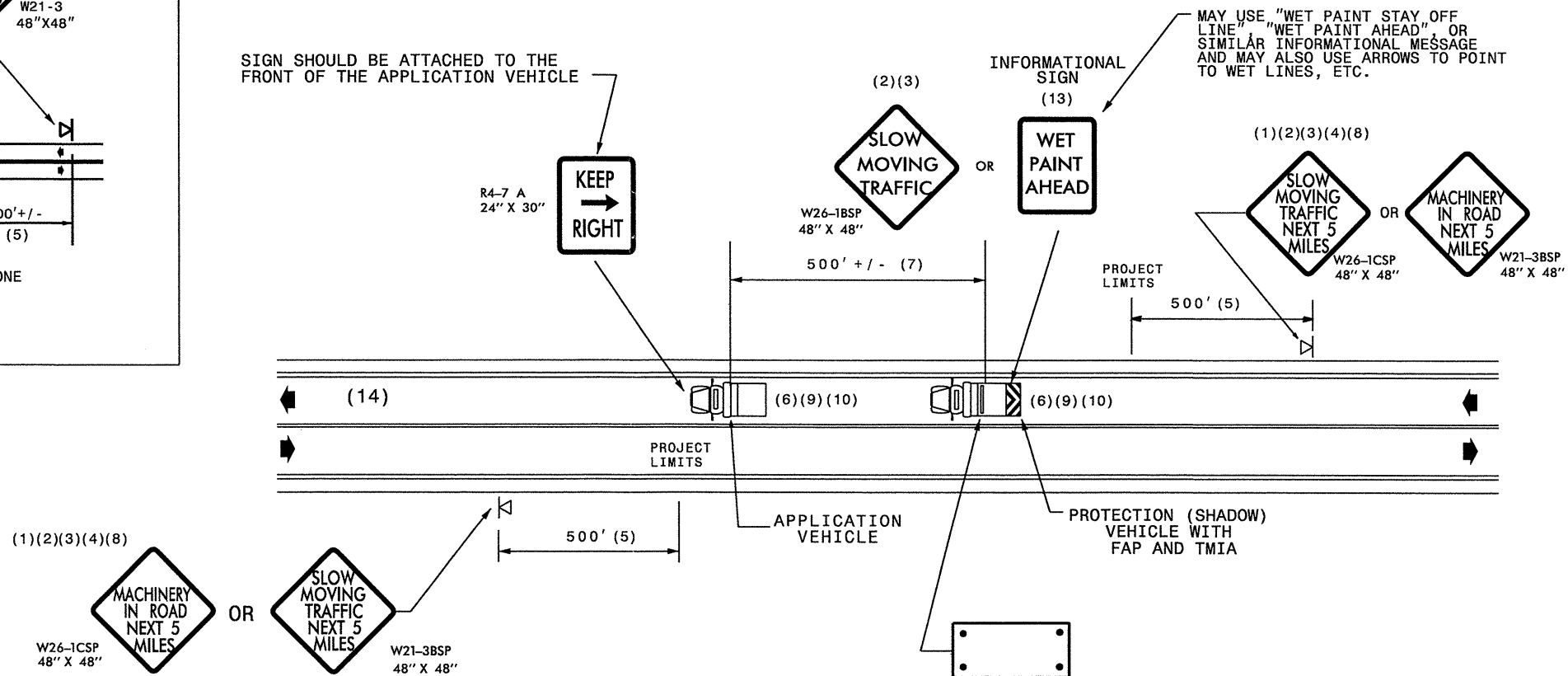
- (1) THE FOLLOWING OPTIONS MAY BE USED FOR ADVANCE WARNING SIGNS:
  - A. TRUCK MOUNTED SIGNS
  - B. TRUCK MOUNTED CHANGEABLE MESSAGE SIGN (CMS)
  - C. GROUND MOUNTED ADVANCE WARNING SIGNS (MUST CIRCLE TO PICK UP SIGNS)
  - D. GROUND MOUNTED CHANGEABLE MESSAGE SIGN (CMS) (MUST USE CIRCLE TO PICK UP SIGNS)
- (2) ALL ADVANCE WARNING SIGNS MUST BE 48" X 48" WITH FLUORESCENT ORANGE TYPE VII, VIII OR IX SHEETING. IF SPACE LIMITATIONS ON SHOULDER PROHIBIT A 48" X 48" SIGN, A SMALLER SIGN CAN BE USED WITH APPROVAL FROM ENGINEER.
- (3) SIGNS ON VEHICLES SHOULD BE MOUNTED A MINIMUM OF ONE (1) FOOT FROM THE GROUND AND SHOULD NOT BLOCK THE MOTORIST'S SIGHT OF THE FLASHING ARROW PANEL AND/OR LIGHTBAR.
- (4) GROUND MOUNTED ADVANCED WARNING SIGNS SHOULD BE MOUNTED A MINIMUM OF ONE (1) FOOT FROM THE GROUND TO BOTTOM OF SIGN.
- (5) SIGN SPACING SHOULD BE ADJUSTED FOR HORIZONTAL AND VERTICAL CURVES, ETC. TO IMPROVE SIGHT DISTANCES.
- (6) ADDITIONAL VEHICLES SHOULD BE USED IN WORK CARAVAN TO FACILITATE DRYING OF PAVEMENT MARKING MATERIAL (TMIA'S ARE OPTIONAL ON THESE ADDITIONAL VEHICLES). HOWEVER, THE FIRST VEHICLE MOTORISTS SEE IN THE TRAVEL LANE SHALL HAVE A TMIA.
- (7) ADJUST DISTANCE AS NEEDED TO PREVENT MOTORISTS FROM ENTERING SPACE BETWEEN THE APPLICATION AND PROTECTION VEHICLE. DISTANCE CAN BE LENGTHENED TO ACCOMODATE SIGHT DISTANCE NEEDS.
- (8) ROUND UP MILEAGE TO NEXT WHOLE MILE. WORK ZONE SHOULD NOT EXCEED FIVE (5) MILES IN LENGTH.
- (9) RADIO COMMUNICATION BETWEEN VEHICLES IS REQUIRED.
- (10) USE OF A LIGHT BAR ON ALL VEHICLES IS PREFERRED, BUT A ROTATING BEACON MAY BE USED INSTEAD.
- (11) IF WORK IS PERFORMED AT NIGHT, THE WORK AREA MUST BE ILLUMINATED WITH MACHINE AND/OR TOWER LIGHTS AS APPROVED BY THE ENGINEER.
- (12) ALL TRAFFIC CONTROL DEVICES WILL BE CONSIDERED INCIDENTAL TO THE PAY ITEMS FOR PAVEMENT MARKING AND MARKERS.
- (13) INFORMATIONAL SIGNS SHOULD BE ACTIVITY SPECIFIC, i.e. "PAINT CREW IN ROAD". SIGNS MAY BE RECTANGULAR OR DIAMOND SHAPE. SIGN SIZE SHOULD BE BASED ON THE MOTORIST ABILITY TO RECOGNIZE SIGN WHEN TRAVELING FIVE (5) MILES ABOVE POSTED SPEED LIMIT.
- (14) IF A LEAD VEHICLE IS ADDED TO OPERATION, IT SHOULD HAVE THE SAME ADVANCE WARNING SIGNS AS THE APPLICATION VEHICLE SHOWN BELOW.

### LEGEND

-  PORTABLE SIGN. SIGNS MUST BE NCHRP-350 AND NCDOT APPROVED.
-  DIRECTION OF TRAFFIC FLOW
-  APPLICATION VEHICLE WITH LIGHT BAR
-  PROTECTION VEHICLE WITH TRUCK MOUNTED IMPACT ATTENUATOR (TMIA) AND LIGHT BAR (SEE ROADWAY STANDARD NO. 1165.01). TMIA MUST BE NCHRP-350 TEST LEVEL 3 (60+MPH) APPROVED.
-  FLASHING ARROW PANEL, TYPE "B" (60"X30" MIN.), "CAUTION MODE"



SIGN SHOULD BE ATTACHED TO THE FRONT OF THE APPLICATION VEHICLE



## MOVING OPERATION CARAVAN








(OPERATIONS TRAVELING 3 MPH OR FASTER)  
PLACING PAVEMENT MARKING OR MARKERS  
ON TWO-LANE TWO-WAY ROADWAYS

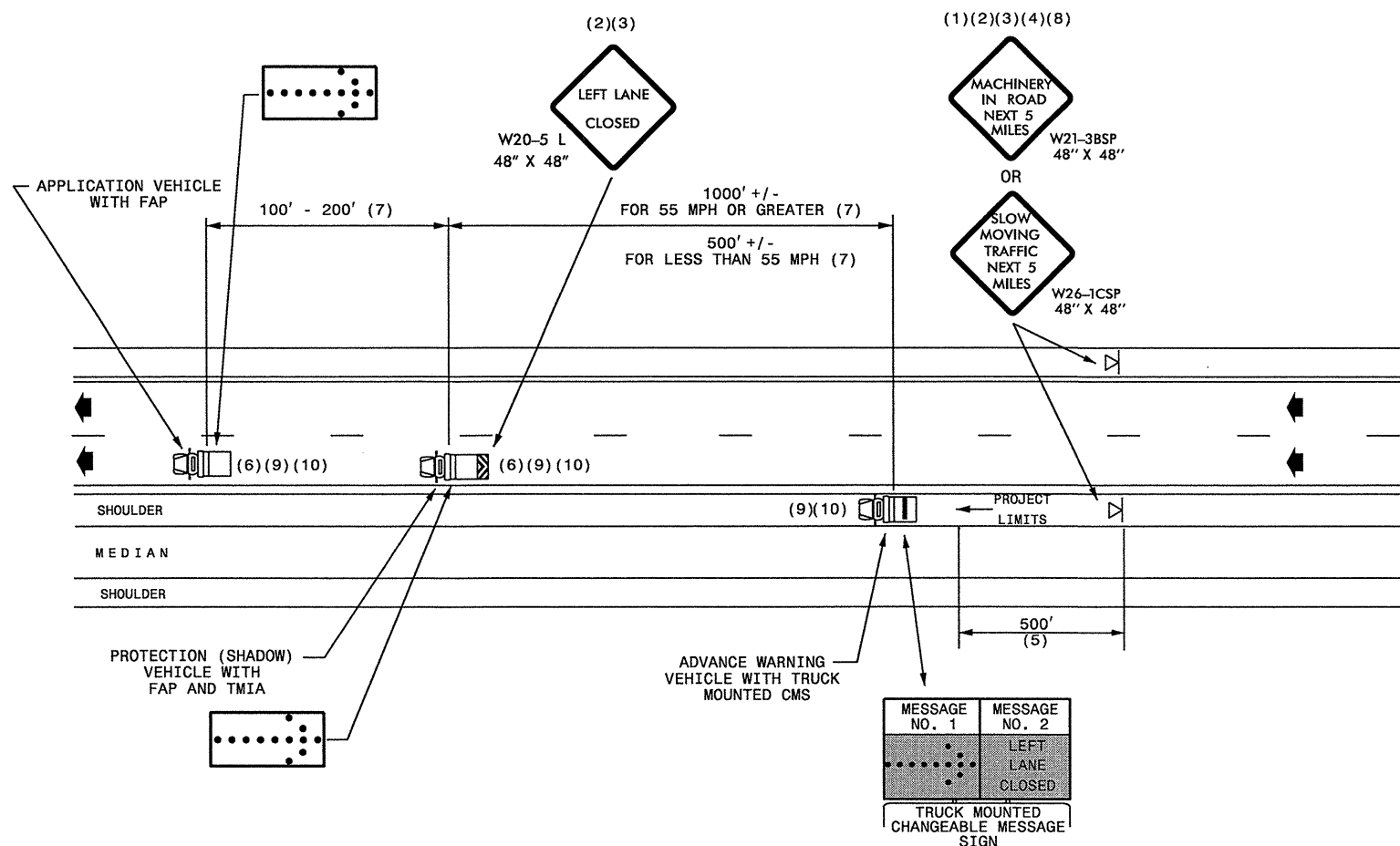
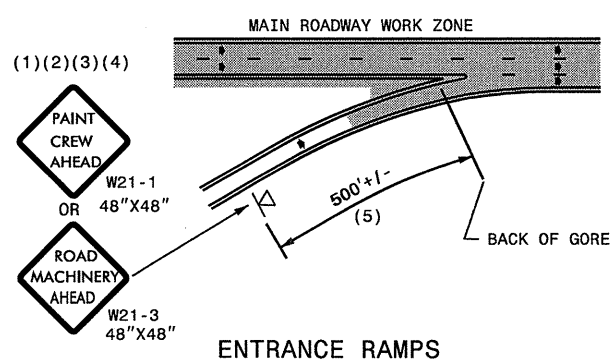
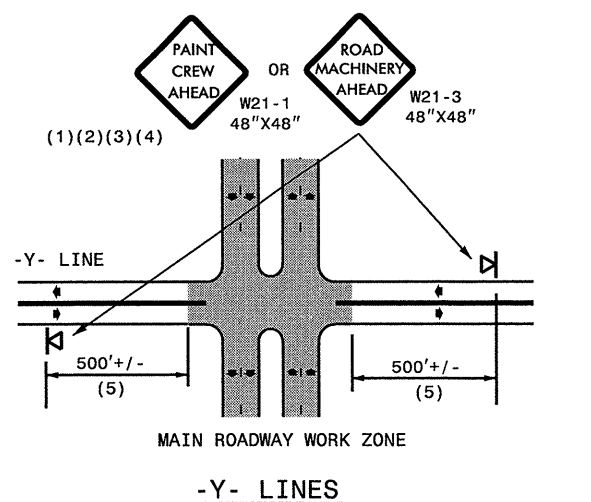
**DRAWING NUMBER 6**  
IMPLEMENTATION DATE: 07/01/97  
REVISED: 11/03/04

### GENERAL NOTES

- (1) THE FOLLOWING OPTIONS MAY BE USED FOR ADVANCE WARNING SIGNS:
  - A. TRUCK MOUNTED SIGNS
  - B. TRUCK MOUNTED CHANGEABLE MESSAGE SIGN (CMS)
  - C. GROUND MOUNTED ADVANCE WARNING SIGNS (MUST CIRCLE TO PICK UP SIGNS)
  - D. GROUND MOUNTED CHANGEABLE MESSAGE SIGN (CMS) (MUST USE CIRCLE TO PICK UP SIGNS)
- (2) ALL ADVANCE WARNING SIGNS MUST BE 48" X 48" WITH FLUORESCENT ORANGE TYPE VII, VIII OR IX SHEETING. IF SPACE LIMITATIONS ON SHOULDER PROHIBIT A 48" X 48" SIGN, A SMALLER SIGN CAN BE USED WITH APPROVAL FROM ENGINEER.
- (3) SIGNS ON VEHICLES SHOULD BE MOUNTED A MINIMUM OF ONE (1) FOOT FROM THE GROUND AND SHOULD NOT BLOCK THE MOTORIST'S SIGHT OF THE FLASHING ARROW PANEL AND/OR LIGHTBAR.
- (4) GROUND MOUNTED ADVANCED WARNING SIGNS SHOULD BE MOUNTED A MINIMUM OF FIVE (5) FEET FROM THE GROUND TO BOTTOM OF SIGN.
- (5) SIGN SPACING SHOULD BE ADJUSTED FOR HORIZONTAL AND VERTICAL CURVES, ETC. TO IMPROVE SIGHT DISTANCES.
- (6) ADDITIONAL VEHICLES SHOULD BE USED IN WORK CARAVAN TO FACILITATE DRYING OF PAVEMENT MARKING MATERIAL (TMIA'S ARE OPTIONAL ON THESE ADDITIONAL VEHICLES). HOWEVER, THE FIRST VEHICLE MOTORISTS SEE IN THE TRAVEL LANE SHALL HAVE A TMIA.
- (7) ADJUST DISTANCE AS NEEDED TO PREVENT MOTORISTS FROM ENTERING SPACE BETWEEN THE APPLICATION AND PROTECTION VEHICLE. DISTANCE CAN BE LENGTHENED TO ACCOMODATE SIGHT DISTANCE NEEDS.
- (8) ROUND UP MILEAGE TO NEXT WHOLE MILE. WORK ZONE SHOULD NOT EXCEED FIVE (5) MILES IN LENGTH.
- (9) RADIO COMMUNICATION BETWEEN VEHICLES IS REQUIRED.
- (10) USE OF A LIGHT BAR ON ALL VEHICLES IS PREFERRED, BUT A ROTATING BEACON MAY BE USED INSTEAD.
- (11) IF WORK IS PERFORMED AT NIGHT, THE WORK AREA MUST BE ILLUMINATED WITH MACHINE AND/OR TOWER LIGHTS AS APPROVED BY THE ENGINEER.
- (12) ALL TRAFFIC CONTROL DEVICES WILL BE CONSIDERED INCIDENTAL TO THE PAY ITEMS FOR PAVEMENT MARKING AND MARKERS.

### LEGEND

-  PORTABLE SIGN. SIGNS MUST BE NCHRP-350 AND NCDOT APPROVED.
-  DIRECTION OF TRAFFIC FLOW
-  APPLICATION VEHICLE WITH LIGHT BAR
-  PROTECTION VEHICLE WITH TRUCK MOUNTED IMPACT ATTENUATOR (TMIA) AND LIGHT BAR (SEE ROADWAY STANDARD NO. 1165.01). TMIA MUST BE NCHRP-350 TEST LEVEL 3 (60+MPH) APPROVED.
-  ADVANCE WARNING VEHICLE WITH TRUCK MOUNTED CHANGEABLE MESSAGE SIGN (CMS) AND LIGHT BAR. MESSAGE SIGN LETTER HEIGHT SHOULD BE A MINIMUM OF 10 INCHES.
-  FLASHING ARROW PANEL, TYPE "B" (60"X30" MIN.), APPROPRIATE DIRECTION INDICATED
-  CHANGEABLE MESSAGE SIGN

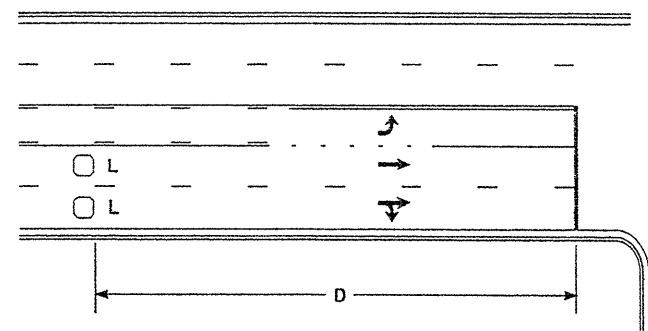


## MOVING OPERATION CARAVAN

(OPERATIONS TRAVELING 3 MPH OR FASTER)  
 PLACING PAVEMENT MARKING OR MARKERS  
 ON NON-INTERSTATE MULTILANE DIVIDED ROADWAYS

**DRAWING NUMBER 7**  
 IMPLEMENTATION DATE: 07/01/97  
 REVISED: 11/03/04

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

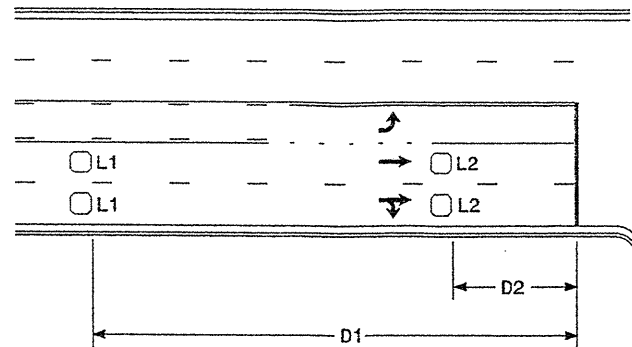


Speed Limit mph (km/hr)	D ft (m)
40 (64)	250 (75)
45 (72)	300 (90)
50 (80)	355 (110)
55 (88)	420 (130)

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

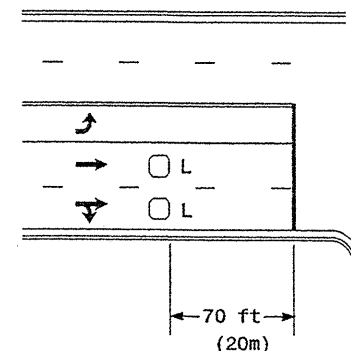


Speed Limit mph (km/hr)	D1 ft (m)	D2 ft (m)
40 (64)	250 (75)	80 (25)
45 (72)	300 (90)	90 (27)
50 (80)	355 (110)	100 (30)
55 (88)	420 (130)	110 (35)

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

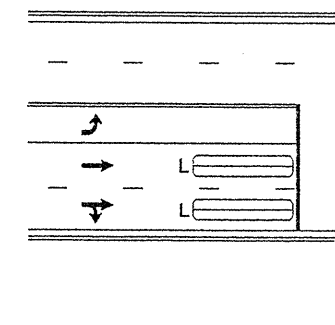
"Stretch" Operation

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



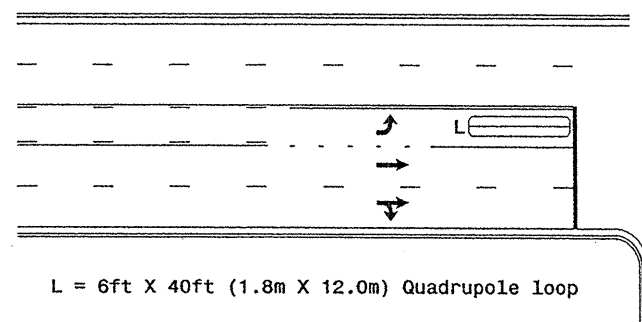
L = 6ft X 6ft (1.8m X 1.8m)  
Wired in series

OR



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

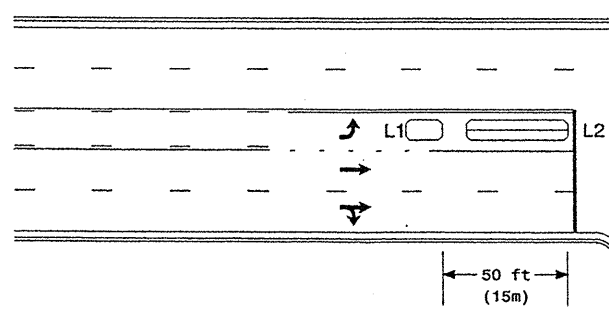
### Left Turn Lane Detection



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

Presence Loop Detection

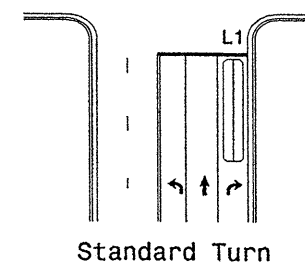
OR



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

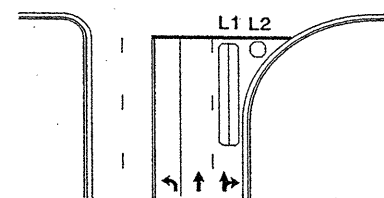
Queue Loop Detection

### Right Turn Lane Detection

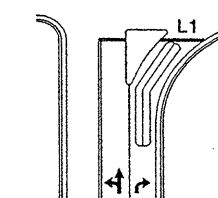


Standard Turn

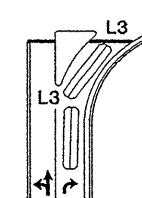
L1 = 6ft X 40ft (1.8m X 12.0m) Quadrupole loop  
L2 = 6ft X 6ft (1.8m X 1.8m) [Minimum] Presence loop  
Wired separately  
L3 = 6ft X 20ft (1.8m X 6.0m) Quadrupole loop  
Wired in series



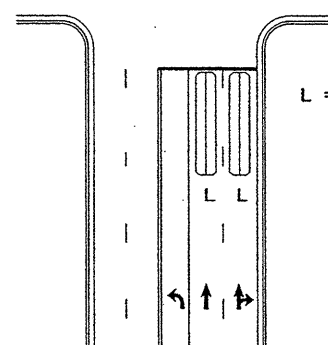
Wide Radius Turn



Channelized Turn



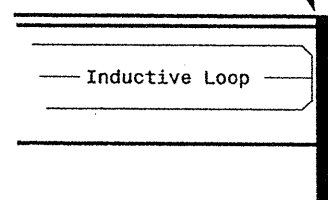
### Side Street Detection



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

### Presence Loop 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

19-DEC-2006 14:29 s:\kts\signalse\1b\turn\_in\misc\loop\typical\2006.dgn

Prepared in the Offices of:

Typical Loop Locations

PLAN DATE: June 2006	REVIEWED BY:
PREPARED BY: P. L. Alexander	REVIEWED BY:
REVISIONS	INIT. DATE
1. Revise pavement markings	PLA 12/11/06

SCALE: N/A

SIGNATURE: *P. L. Alexander* DATE: 12/11/06

SIG. INVENTORY NO.

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

11-08

ENGLISH DETAIL DRAWING FOR  
**INDUCTIVE DETECTION LOOPS**

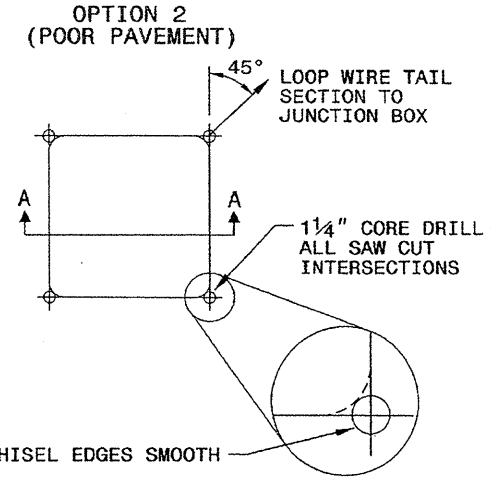
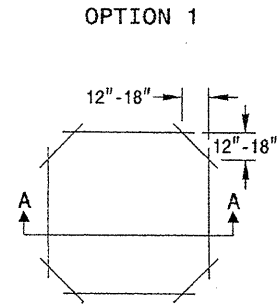
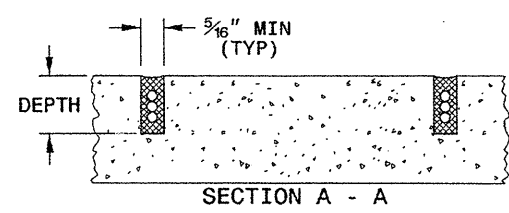
SHEET 1 OF 3  
**1725D01**

**CONVENTIONAL 4-SIDED LOOP**

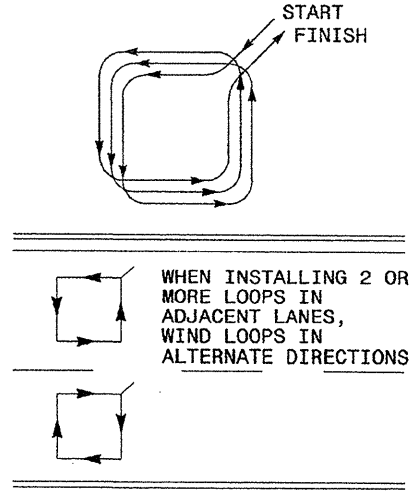
SAW CUT OPTIONS

SAW SLOT DEPTH CHART

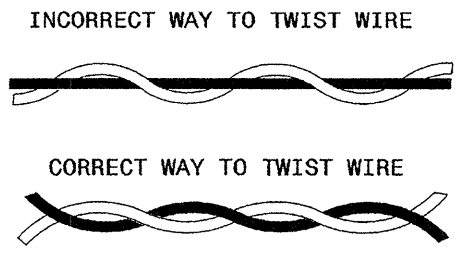
DEPTH (IN)	NO. OF WIRE TURNS				
	2	3	4	5	6
CONCRETE	2.0	2.0	2.5	2.5	3.0
ASPHALT	2.0	2.5	3.0	3.0	3.0



LOOP WINDING METHOD



LOOP WIRE TWISTING METHOD

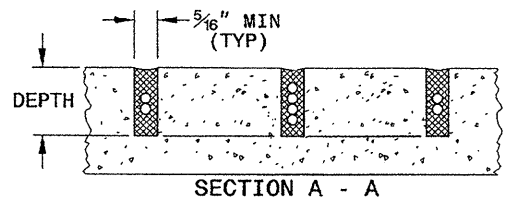
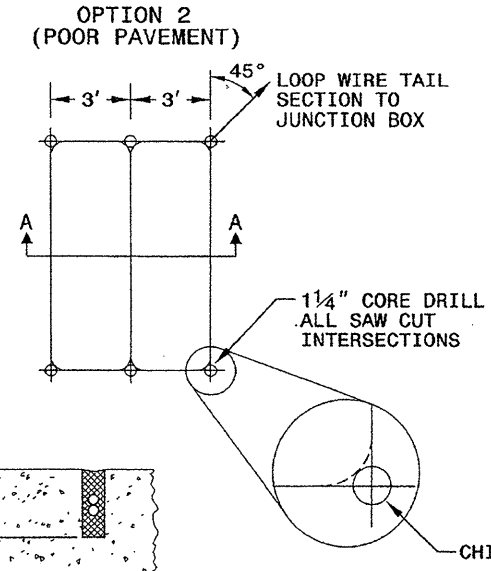
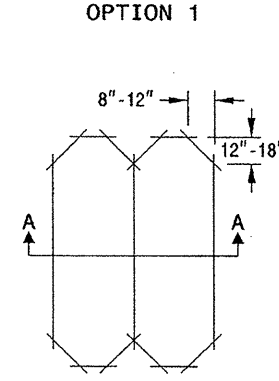


NOTES

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

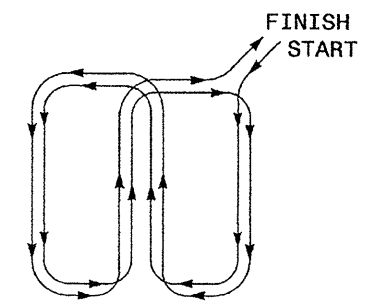
**QUADRUPOLE LOOP**

SAW CUT OPTIONS



DEPTH IS 2.5" FOR CONCRETE AND 3.0" FOR ASPHALT

LOOP WINDING METHOD



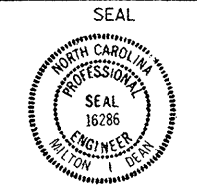
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

11-08

ENGLISH DETAIL DRAWING FOR  
**INDUCTIVE DETECTION LOOPS**

SHEET 1 OF 3  
**1725D01**

See Plate for Title



SIGNATURE *Milton D. Dean* DATE **11/24/08**

24-Nov-2008 09:28  
c:\work\_files\std\standard plate sheets\1725D01.dwg  
11/24/08

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

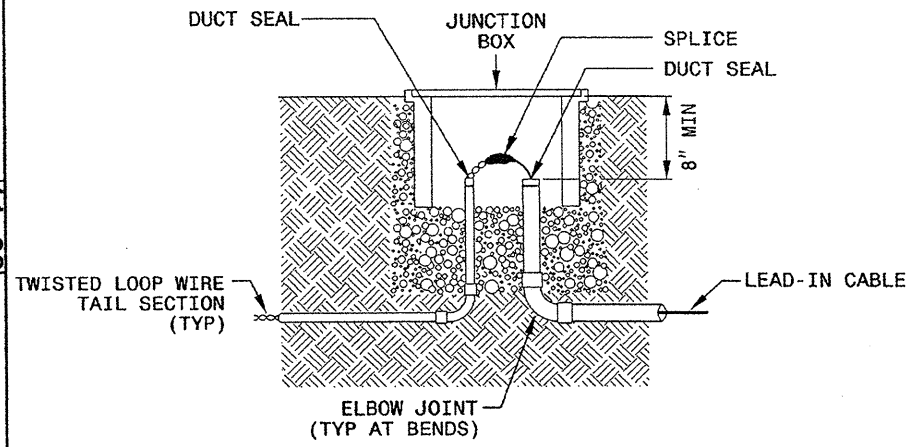
11-08

ENGLISH DETAIL DRAWING FOR  
**INDUCTIVE DETECTION LOOPS**  
LOOP WIRE DETAILS

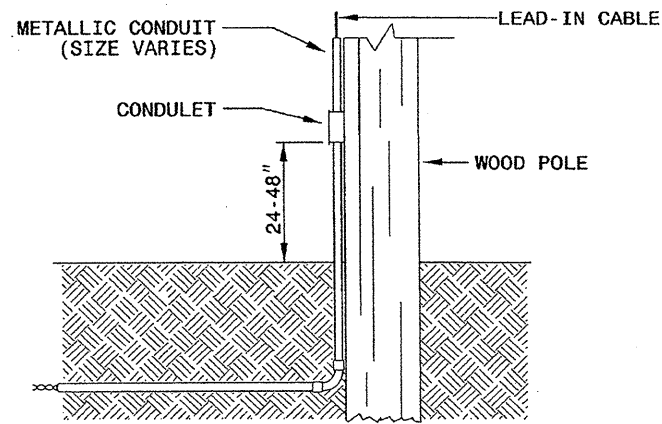
SHEET 2 OF 3  
**1725D01**

**LOOP WIRE SPLICE POINT DETAILS**

**LOOP WIRE AT JUNCTION BOX**



**LOOP WIRE AT POLE**

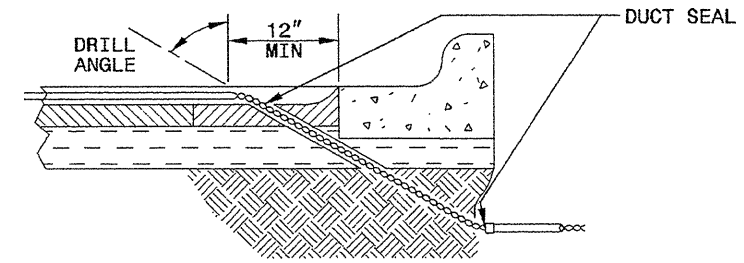


**NOTE**

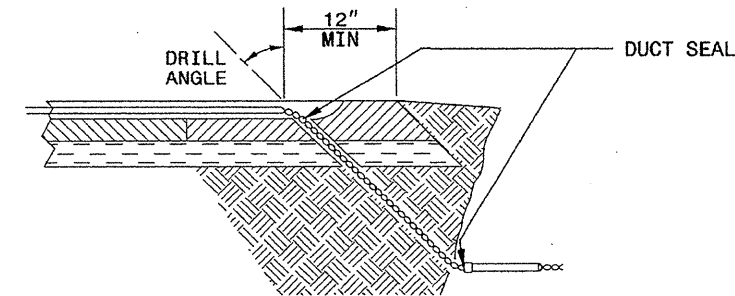
SPLICE ALL LOOP WIRE TAIL SECTIONS/LEAD-IN CABLE IN JUNCTION BOXES OR APPROVED CONDULETS.

**LOOP WIRE PAVEMENT EDGE DETAILS**

**LOOP WIRE AT CURB & GUTTER SECTION**



**LOOP WIRE AT PAVEMENT SECTION**



**NOTES**

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

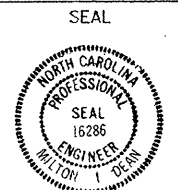
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

11-08

ENGLISH DETAIL DRAWING FOR  
**INDUCTIVE DETECTION LOOPS**  
LOOP WIRE DETAILS

SHEET 2 OF 3  
**1725D01**

See Plate for Title



*Milton I. Dean* 11/24/08  
SIGNATURE DATE

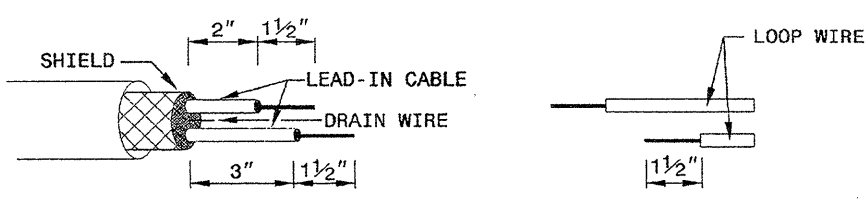
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

11-08

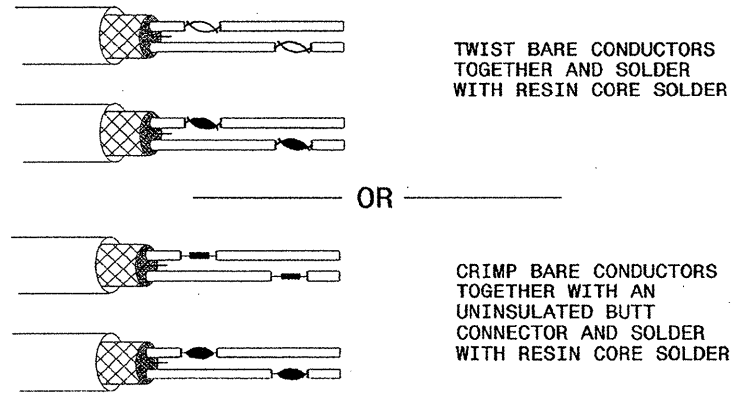
ENGLISH DETAIL DRAWING FOR  
**INDUCTIVE DETECTION LOOPS**  
SPlicing FOR LEAD-IN CABLE AND LOOP WIRE

SHEET 3 OF 3  
**1725D01**

**STEP 1. STRIP LOOP WIRE AND LEAD-IN CABLE**

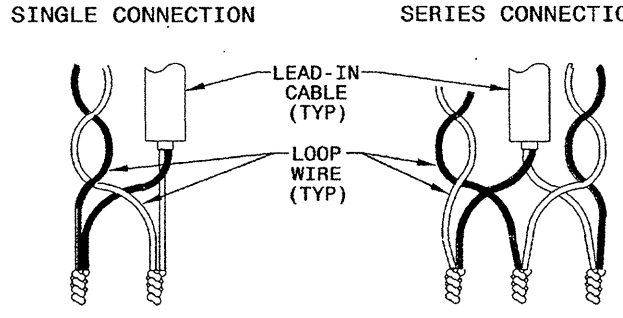


**STEP 2. CONNECT AND SOLDER**

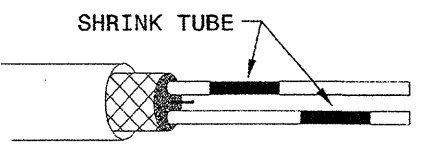


BOND SHIELD DRAIN WIRE AT SPLICE SECTIONS (DO NOT GROUND)

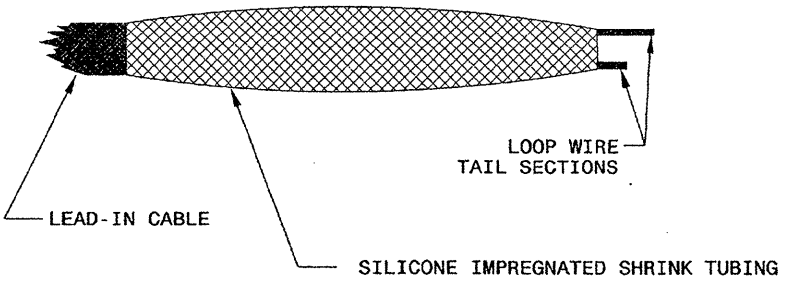
**LOOP WIRE AND LEAD-IN CABLE CONNECTION DETAILS**



**STEP 3. INSULATE EACH SOLDER JOINT SEPARATELY**



**STEP 4. ENVIRONMENTALLY PROTECT SPLICE**



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

11-08

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

SHEET 3 OF 3  
**1725D01**

See Plate for Title

Prepared in the Offices of:

750 N. Greenfield Parkway  
Garner, NC 27529

SEAL

Milton I. Dean 11/24/08  
SIGNATURE DATE

24-Nov-2008 09:35  
d:\work\files\1725D01\1725D01.dwg  
20111118