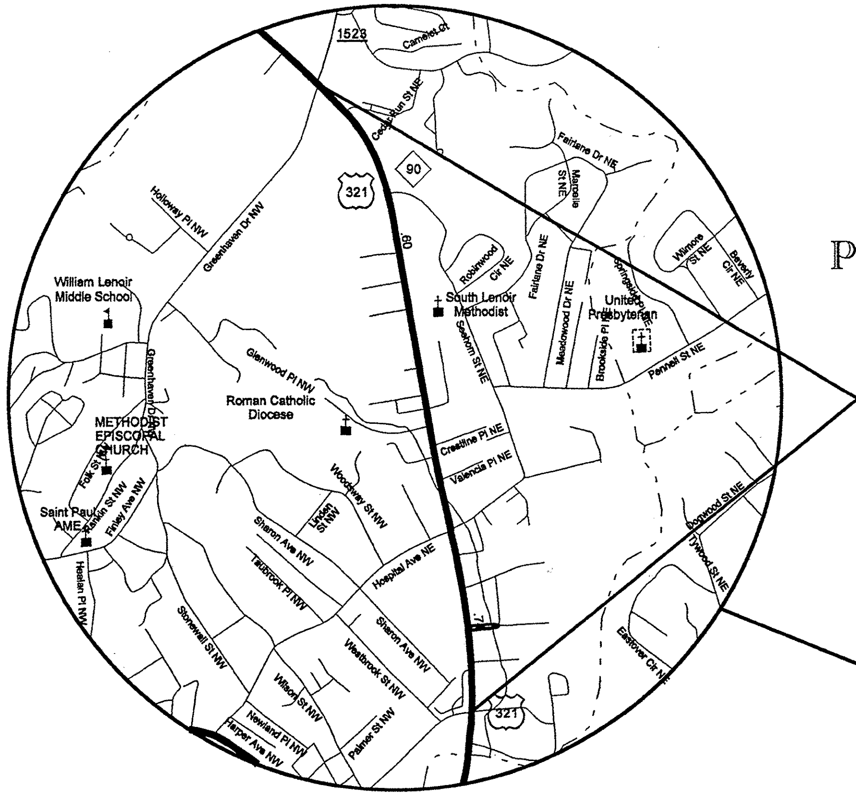
PROJECT REFERENCE NO.	SHEET NO.
11CRJ014121	1

8/17/99

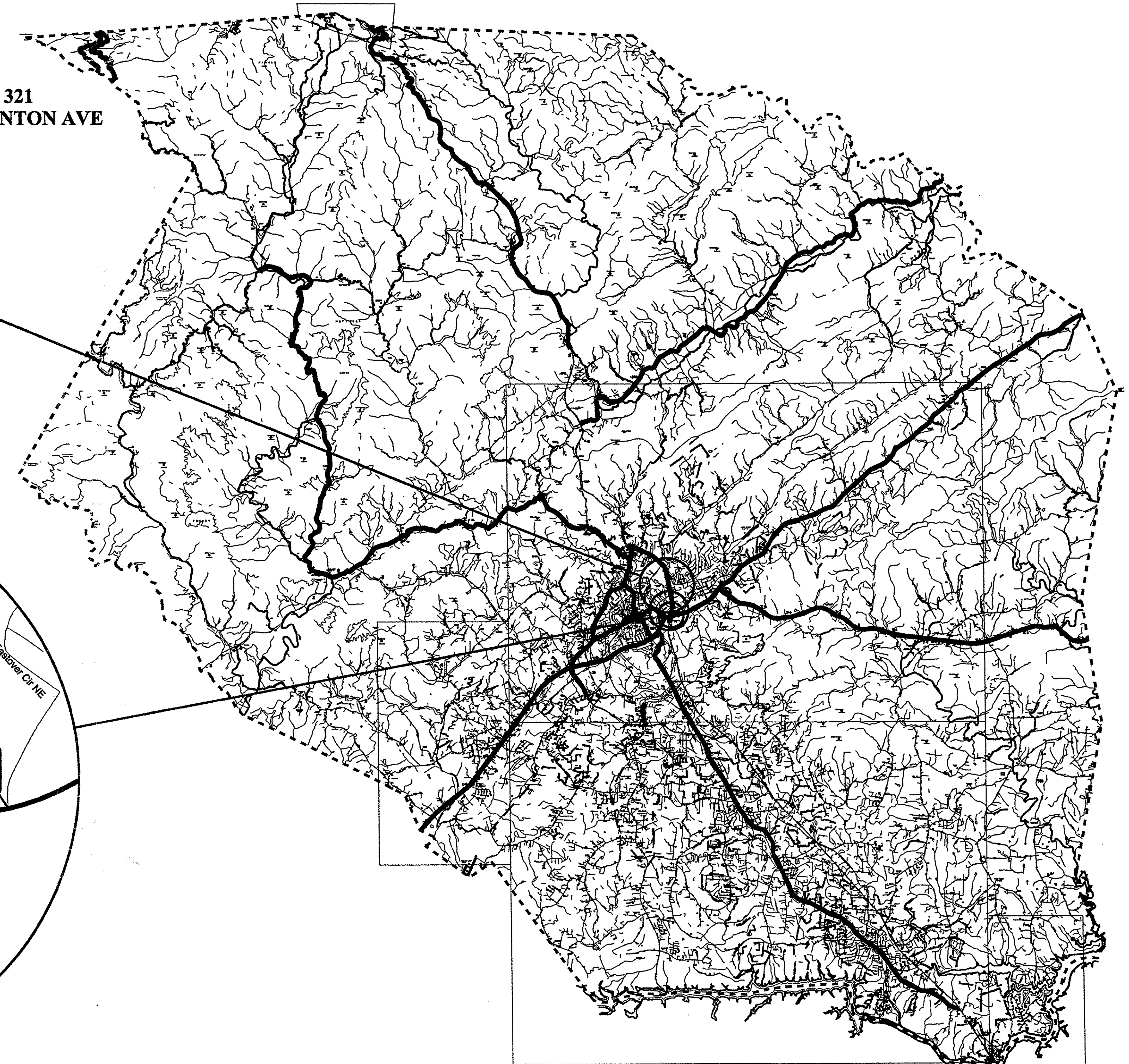
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CALDWELL COUNTY

PRIMARY ASPHALT RESURFACING

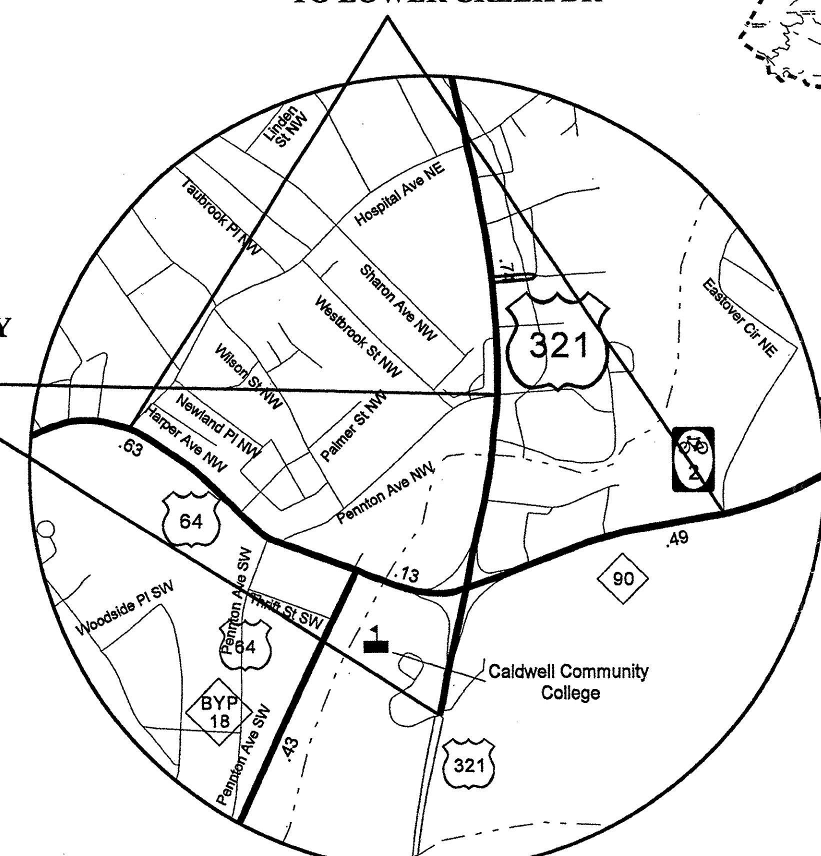


MAP #3 US 321
FROM PENNTON AVE
TO SR 1523



MAP #2 US 64
FROM HARPER AVE
TO LOWER CREEK DR

MAP #1 US 321
FROM END DIVIDED HWY
TO PENNTON AVE



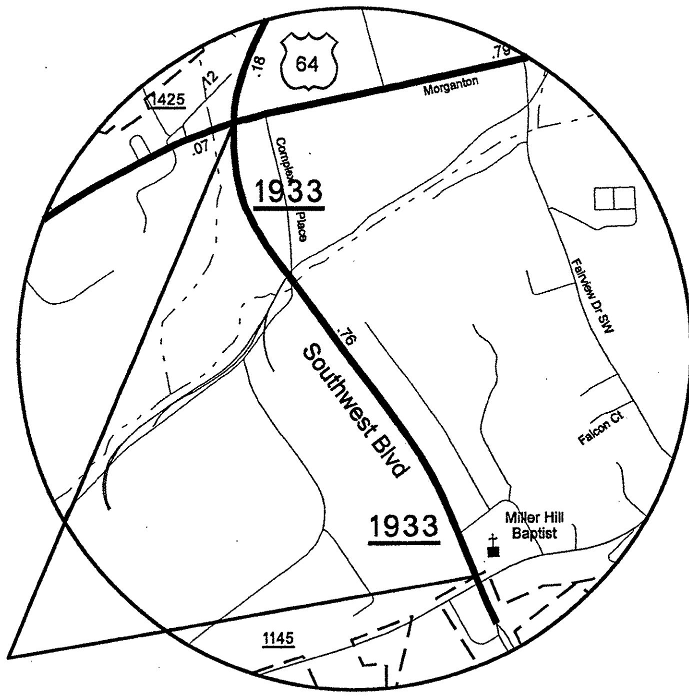
20-AUG-2013 15:23
C:\My Documents\Project Manager\Contracts\Resurfacing 2014\Caldwell-Wilkes\2014 Caldwell Resurfacing Maps.dgn

PROJECT REFERENCE NO.	SHEET NO.
11CR.20141.21	2

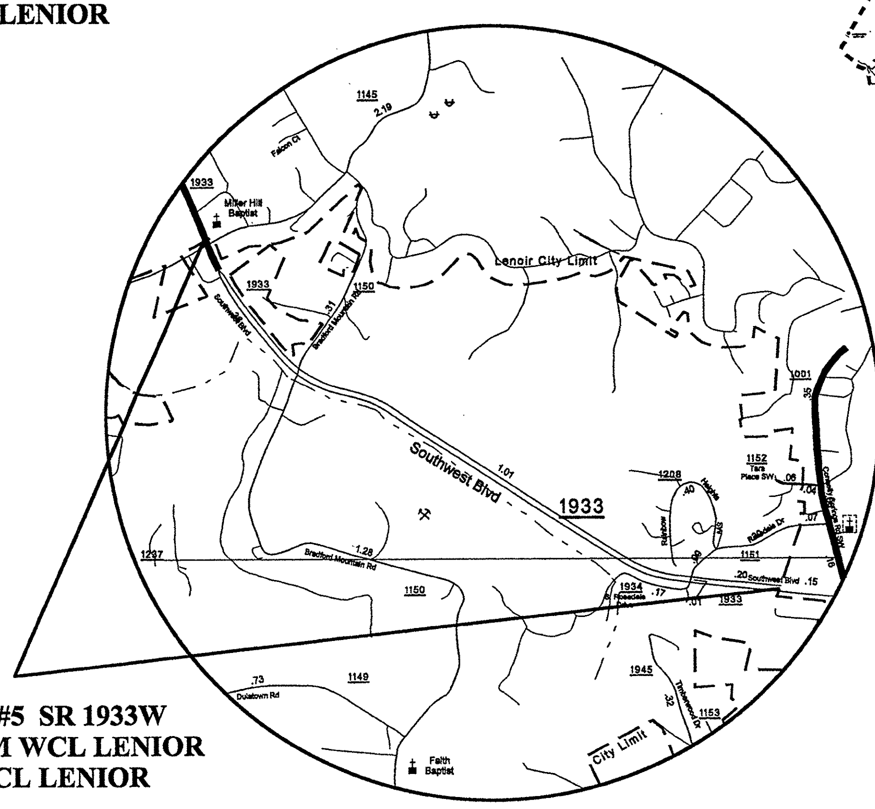
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CALDWELL COUNTY

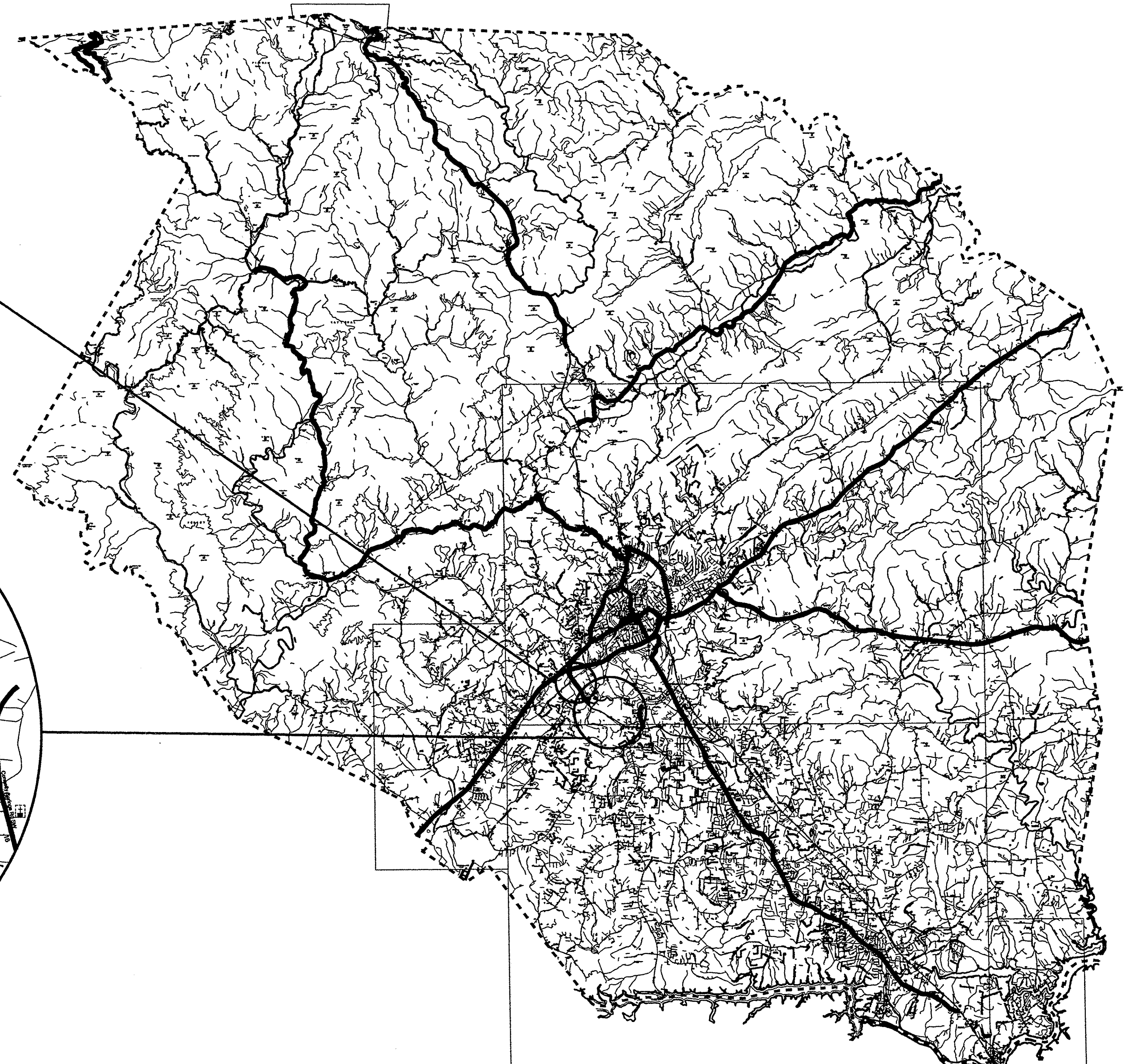
SECONDARY ASPHALT RESURFACING



MAP #4 SR 1933 W
FROM ECL LENIOR
TO US 64



MAP #5 SR 1933W
FROM WCL LENIOR
TO ECL LENIOR

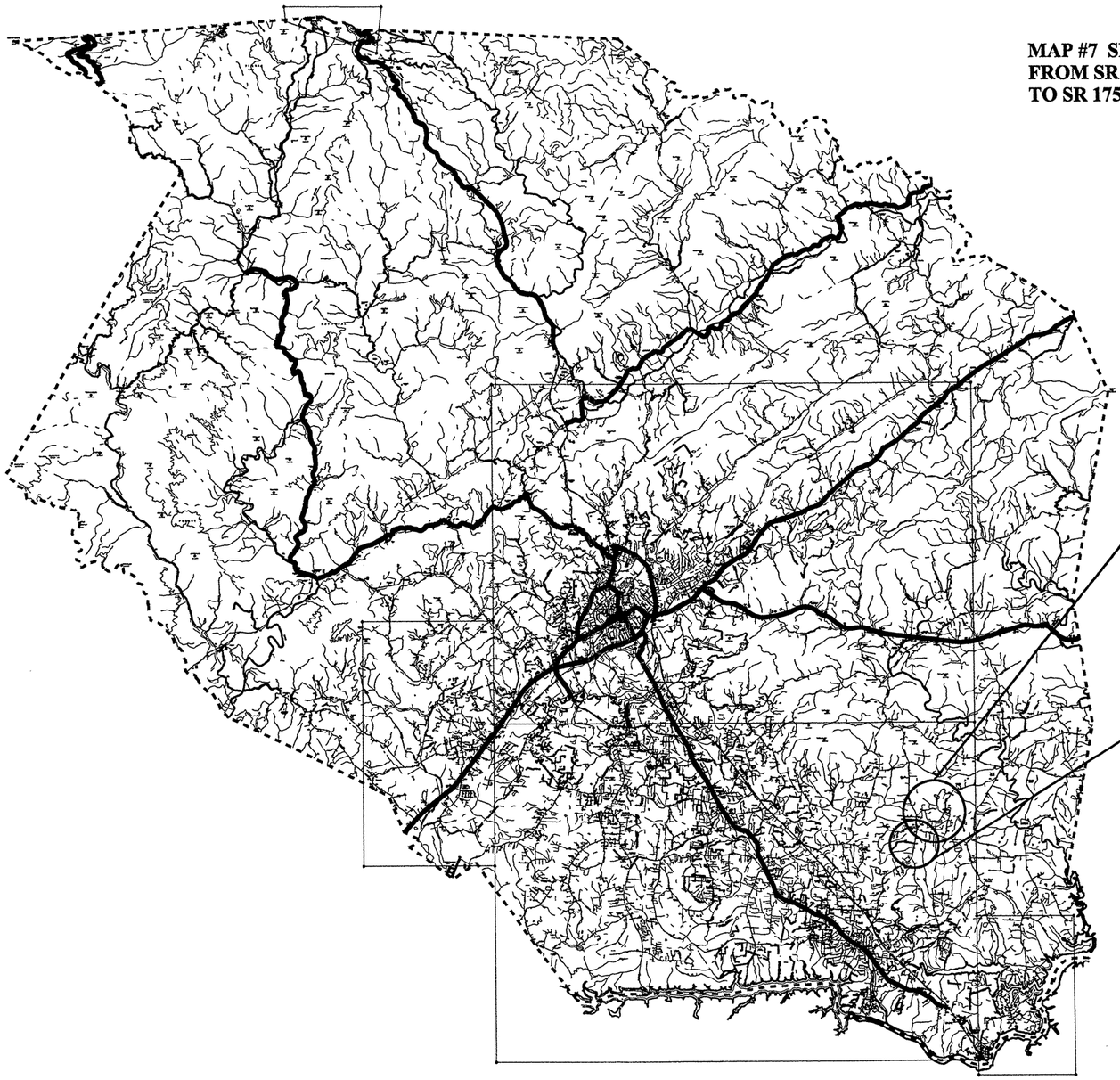


PROJECT REFERENCE NO.	SHEET NO.
11CR.20141.21	3

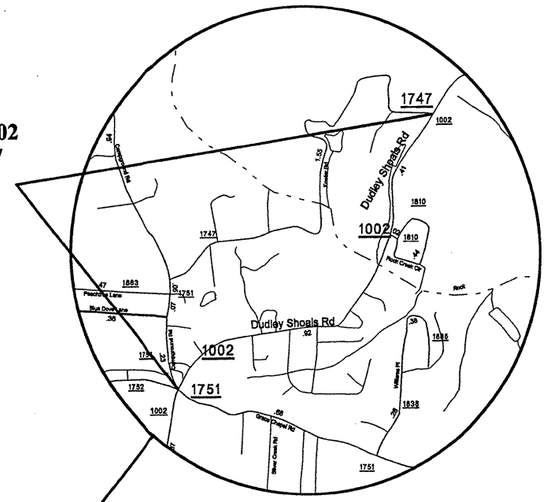
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

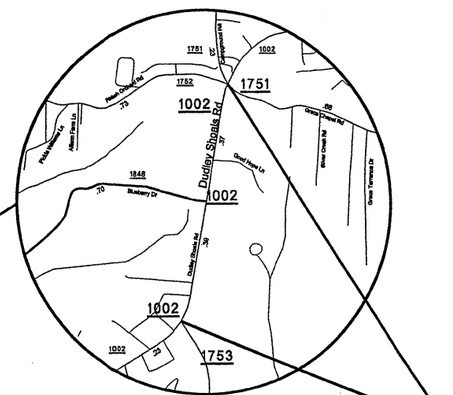
CALDWELL COUNTY

SECONDARY ASPHALT RESURFACING



MAP #7 SR 1002
FROM SR 1747
TO SR 1751





MAP #6 SR 1002
FROM SR 1753
TO SR 1751

8/17/99

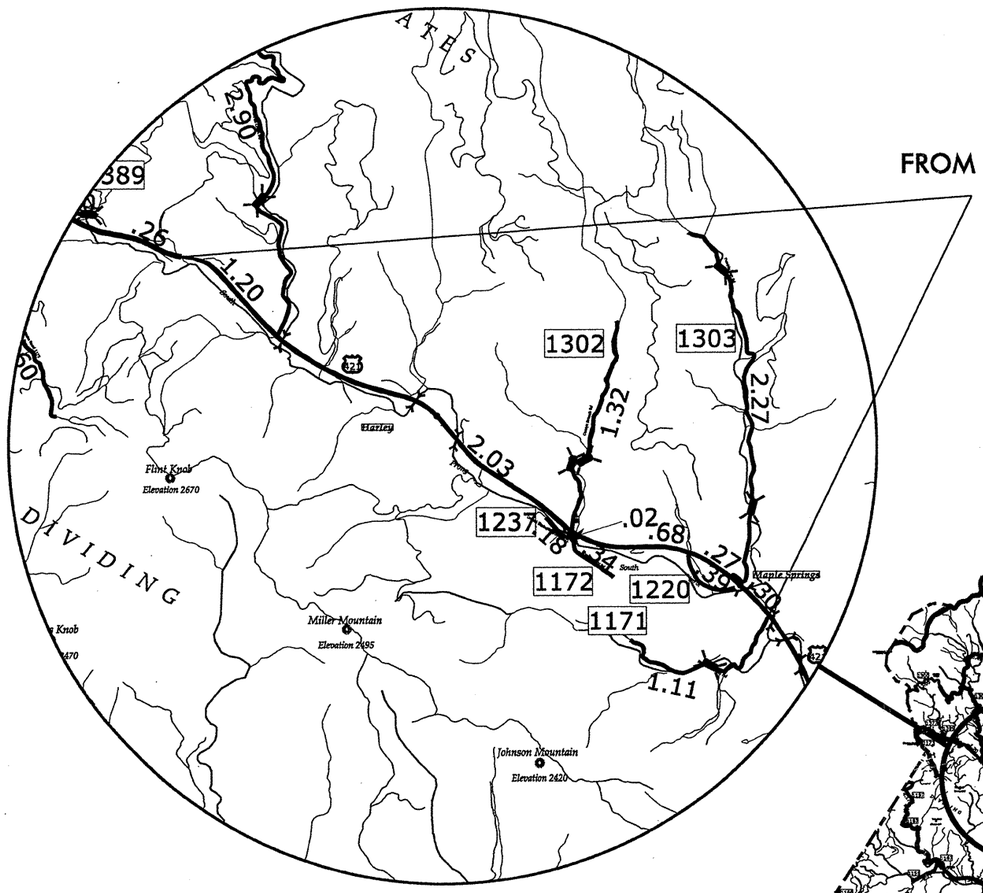
PROJECT REFERENCE NO.	SHEET NO.
IICRJ09712I	4

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

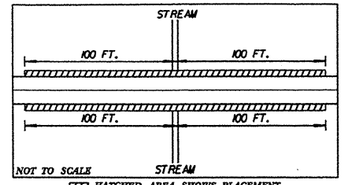
WILKES COUNTY

PRIMARY ASPHALT RESURFACING

MAPS #8 US 421 NBL
MAP #9 US 421 SBL
FROM SR 1171 TO END OF 4-LANE



**DETAIL FOR AGGREGATE SHOULDER BORROW AT STREAM CROSSING*

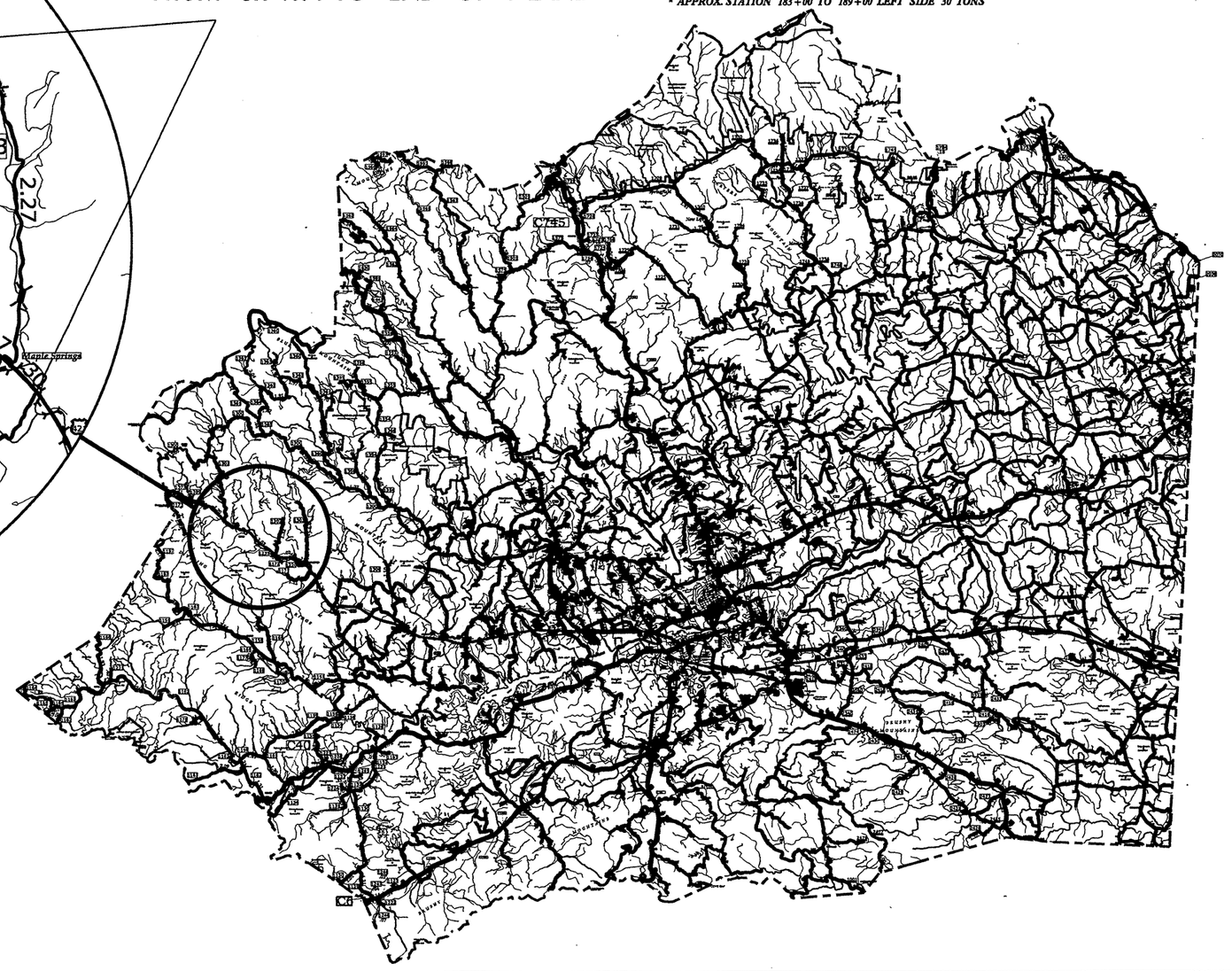


HATCHED AREA SHOWS PLACEMENT OF AGGREGATE SHOULDER BORROW

MAP #8 AND #9

AGGREGATE SHOULDER BORROW TO BE PLACED AS FOLLOWS:

- ** APPROX. STATION 10+00 20 TONS (SEE DETAIL)*
- ** APPROX. STATION 16+00 20 TONS (SEE DETAIL)*
- ** APPROX. STATION 31+00 20 TONS (SEE DETAIL)*
- ** APPROX. STATION 48+00 20 TONS (SEE DETAIL)*
- ** APPROX. STATION 54+00 TO 58+00 LEFT SIDE 20 TONS*
- ** APPROX. STATION 66+00 20 TONS (SEE DETAIL)*
- ** APPROX. STATION 77+00 TO 81+00 LEFT SIDE 20 TONS*
- ** APPROX. STATION 101+00 20 TONS (SEE DETAIL)*
- ** APPROX. STATION 111+00 20 TONS (SEE DETAIL)*
- ** APPROX. STATION 128+00 20 TONS (SEE DETAIL)*
- ** APPROX. STATION 136+00 TO 151+00 LEFT SIDE 75 TONS*
- ** APPROX. STATION 157+00 20 TONS (SEE DETAIL)*
- ** APPROX. STATION 172+00 20 TONS (SEE DETAIL)*
- ** APPROX. STATION 183+00 TO 189+00 LEFT SIDE 30 TONS*



8/17/99

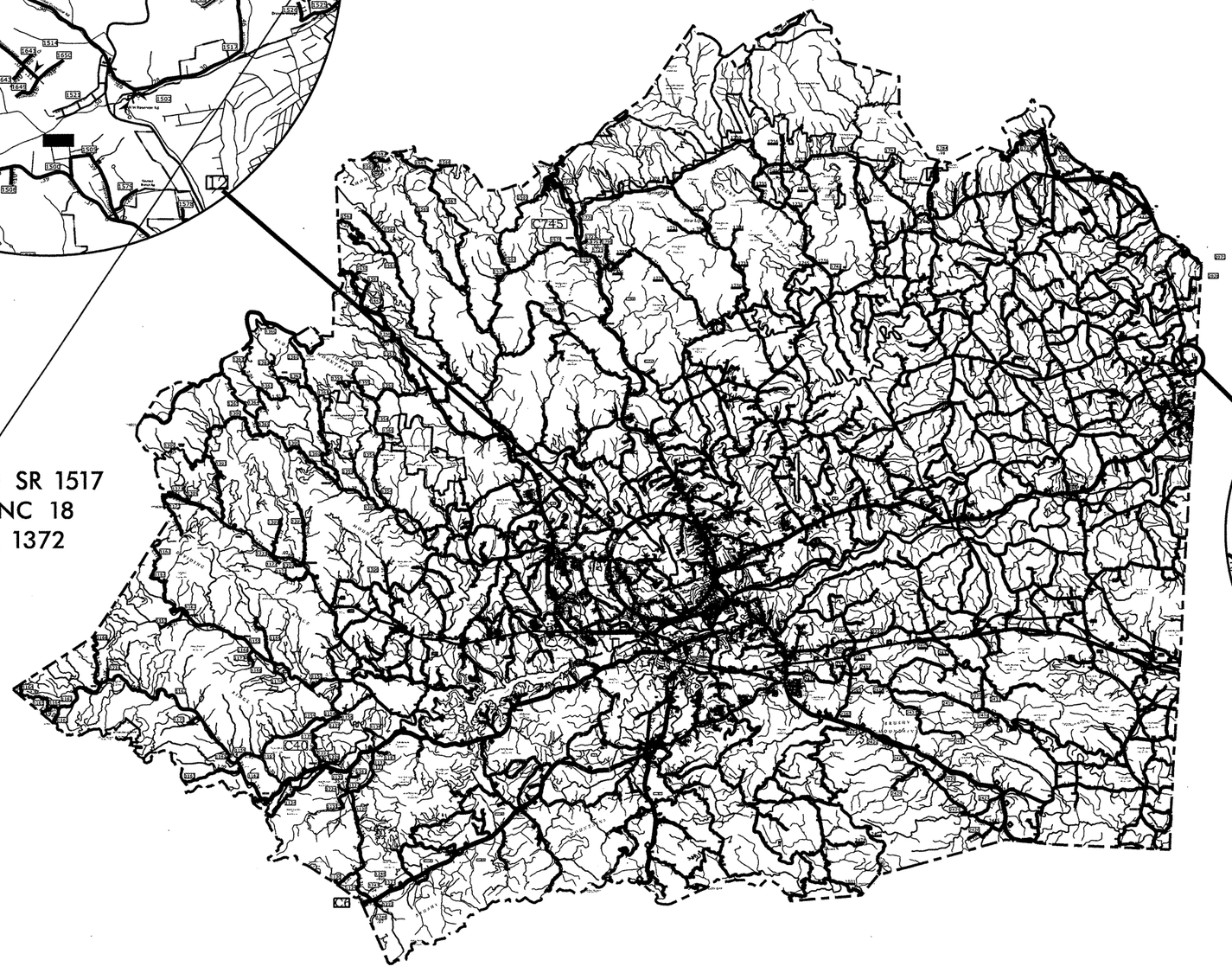
PROJECT REFERENCE NO.	SHEET NO.
IICR.20971.21	5

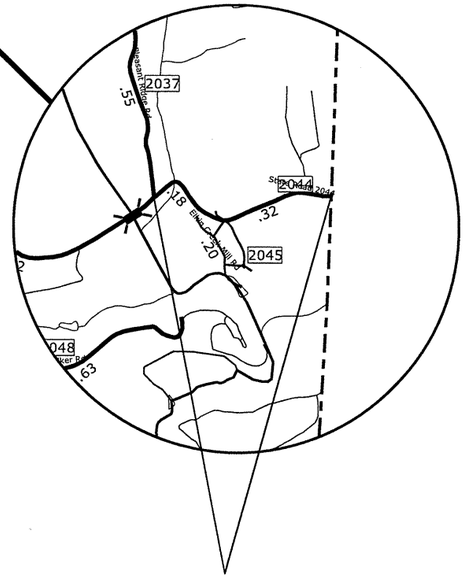
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

WILKES COUNTY

SECONDARY ASPHALT RESURFACING

MAP # 10 SR 1517
FROM NC 18
TO SR 1372





MAP # 11 SR 2044
FROM SR 2037 TO
SURRY CO LINE

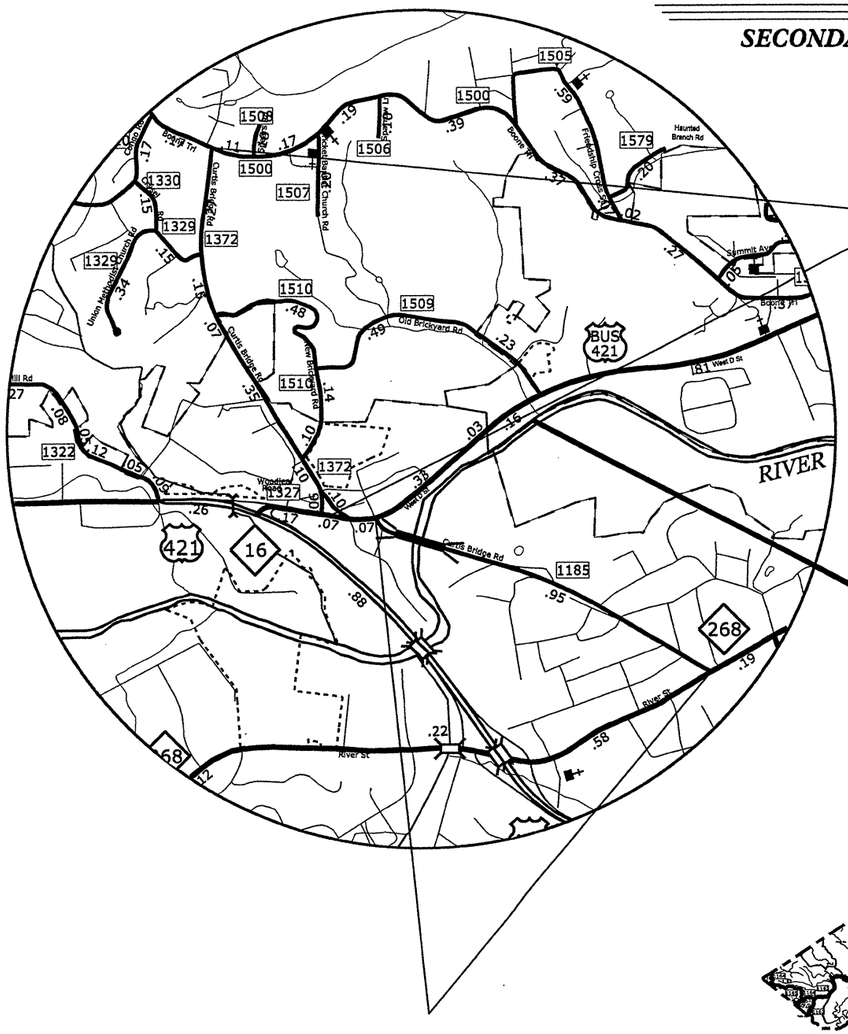
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
IICR.2097121	6

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

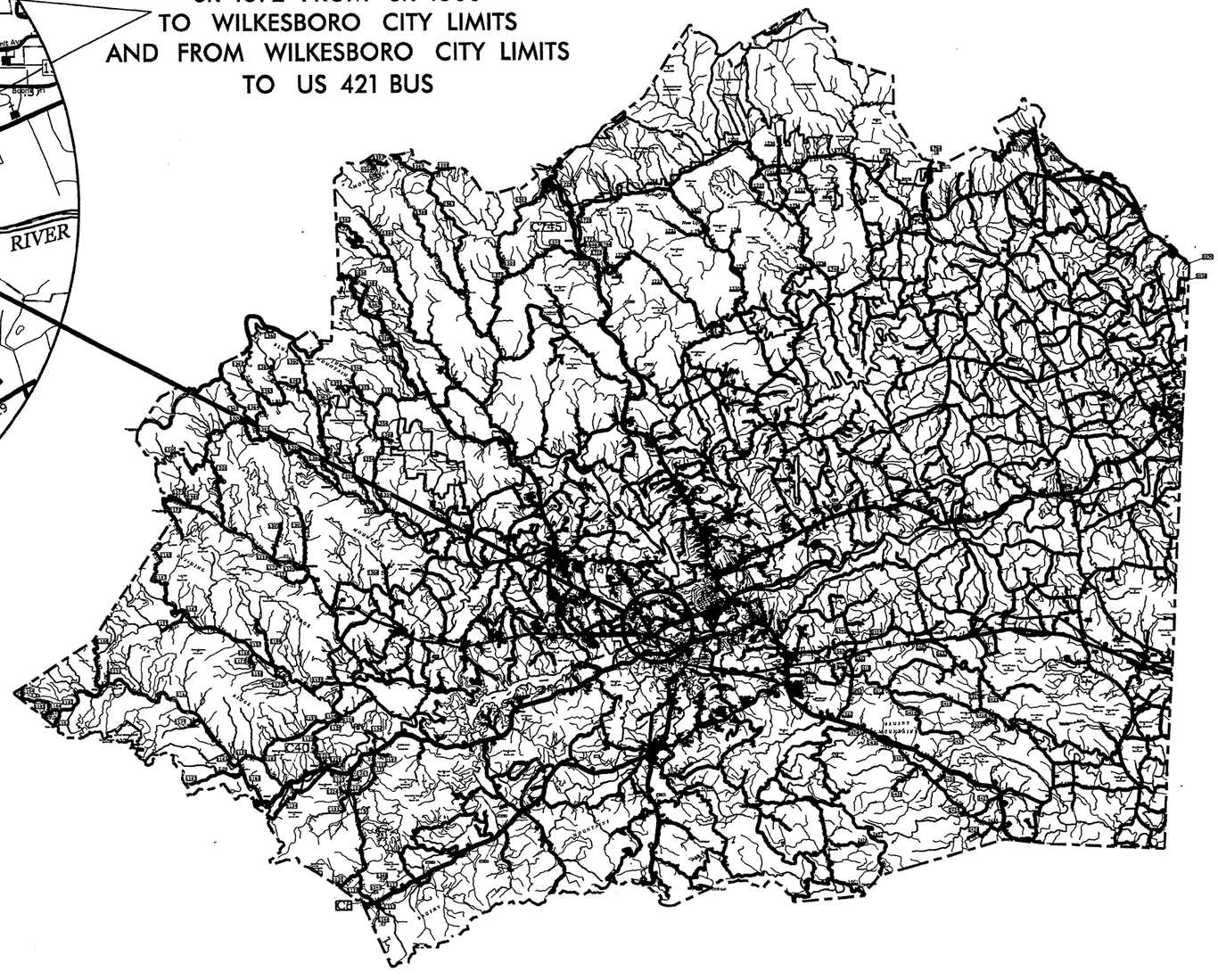
WILKES COUNTY

SECONDARY ASPHALT RESURFACING



MAPS # 12 AND # 13
SR 1372 FROM SR 1500
TO WILKESBORO CITY LIMITS
AND FROM WILKESBORO CITY LIMITS
TO US 421 BUS

MAP # 14 SR 1185
FROM US 421 BUS
TO NC 268



8/17/99

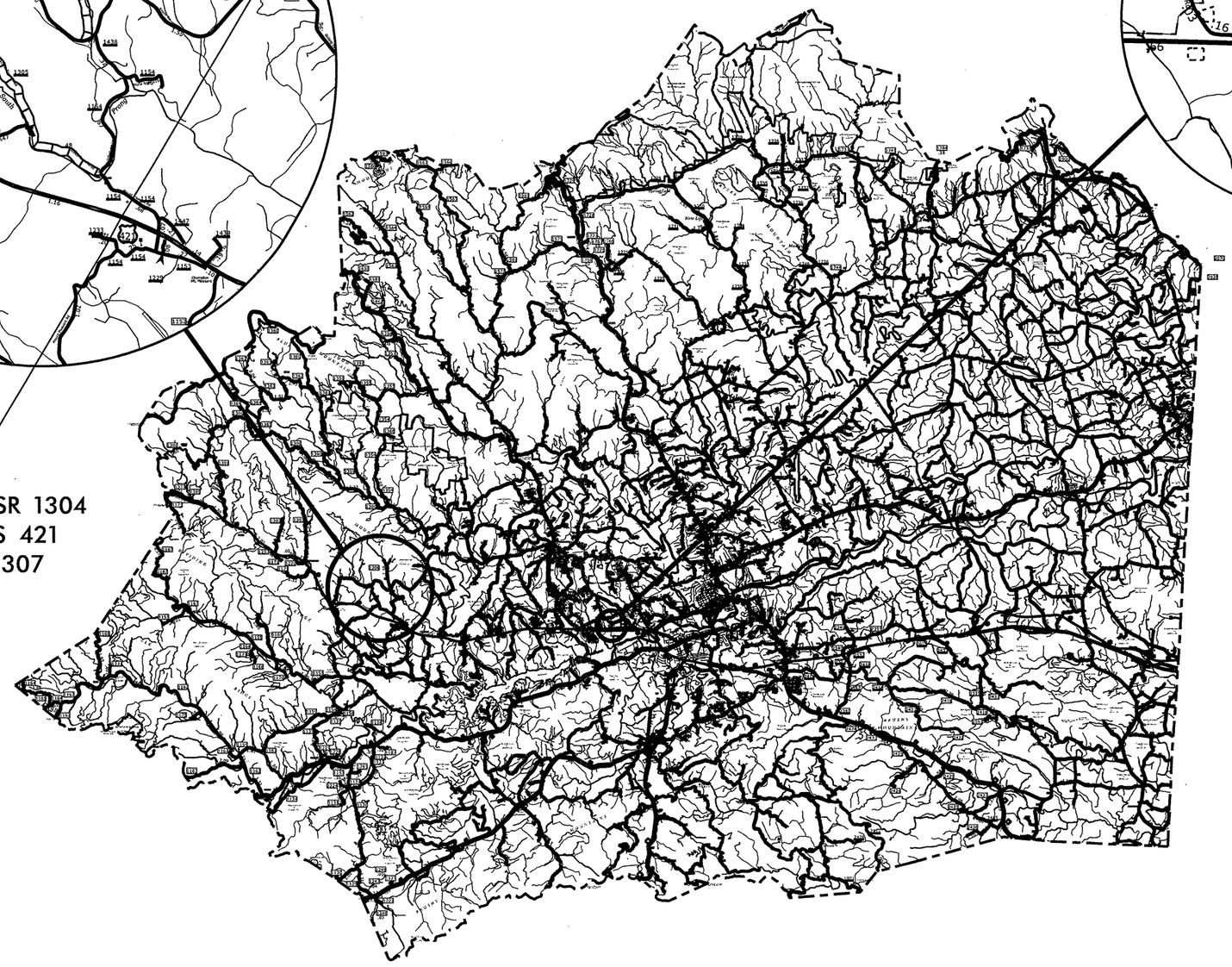
PROJECT REFERENCE NO.	SHEET NO.
IICR.20971.21	7

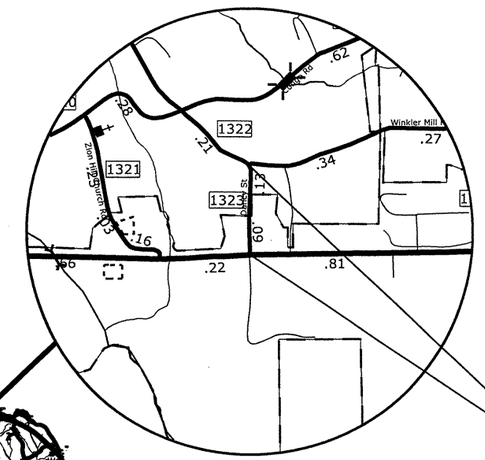
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

WILKES COUNTY

SECONDARY ASPHALT RESURFACING

MAP # 15 SR 1304
FROM US 421
TO SR 1307

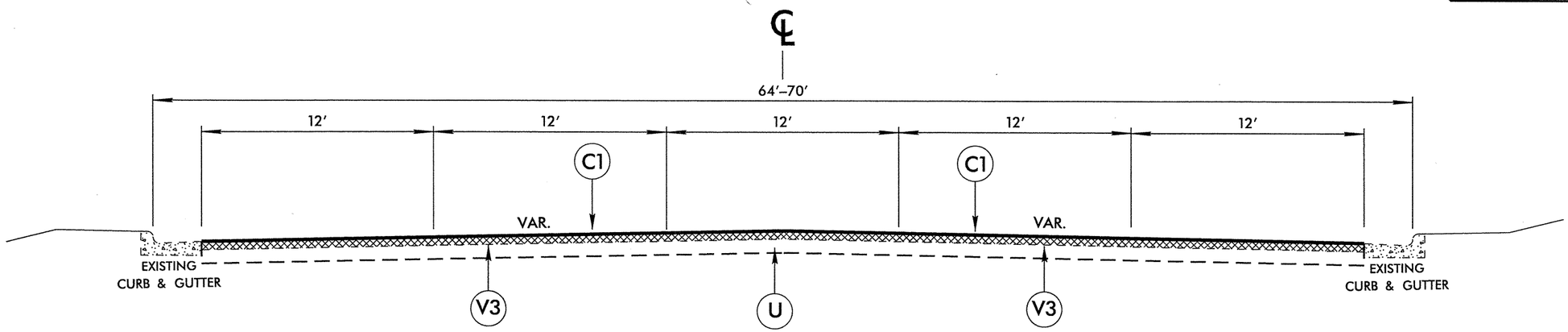




MAP # 16 SR 1323
FROM US 421
TO SR 1322

8/17/99

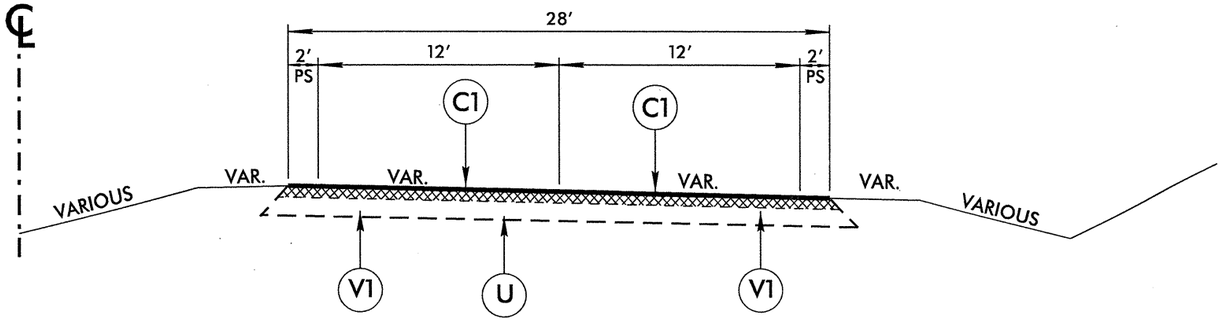
PROJECT REFERENCE NO.	SHEET NO.
11CRJ01141.21, 11CR.20141.21	8



TYPICAL SECTION NO. 1

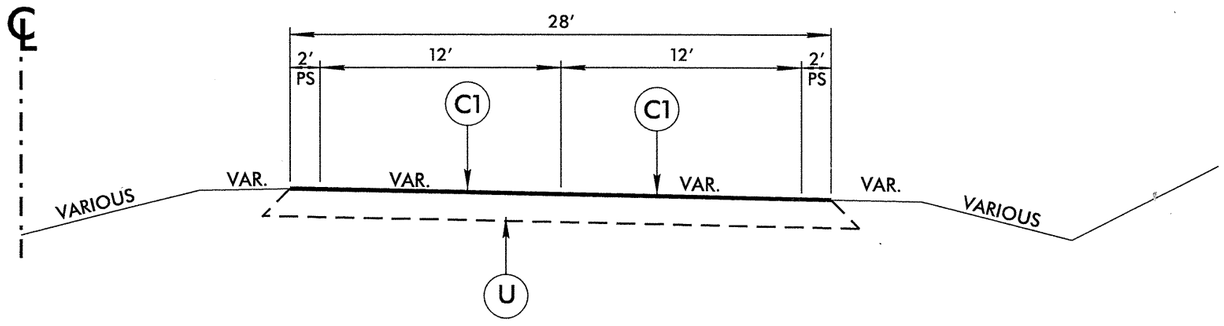
MAP 1 – US 321 FROM END DIV HWY TO PENNTON AVE

MAP 2 – US 64 FROM HARPER AVE TO LOWER CREEK DRIVE



TYPICAL SECTION NO. 3

MAP 4 – SR 1933 W FROM ECL LENOIR TO US 64



TYPICAL SECTION NO. 4

MAP 5 – SR 1933 W FROM WCL LENOIR TO ECL LENOIR

	PAVEMENT SCHEDULE
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C4	PROP. APPROX. 1" ASPHALT CONCRETE SURFACE COURSE, TYPE S4.75A, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD.
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 - 1", AS DIRECTED BY THE ENGINEER.
V3	MILLING OF EXISTING ASPHALT PAVEMENT AT DEPTH OF 0 - 3"
V4	INCIDENTAL MILLING

CALDWELL & WILKES COUNTIES
PRIMARY AND SECONDARY RESURFACING

DIVISION II

REVISIONS	INIT.	DATE

N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION ELEVEN

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

SCALE: N/A | DATE: 05/2013

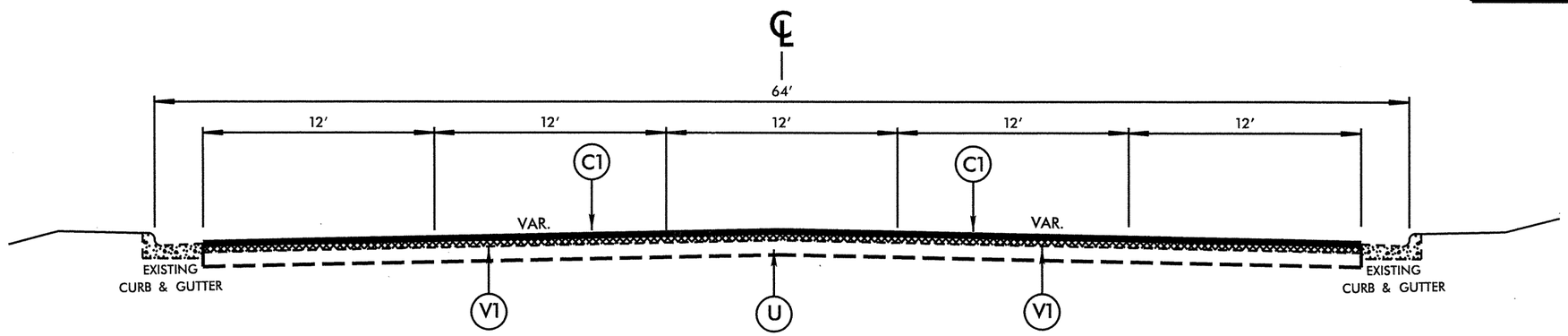
PREPARED BY: O.L. PILKINGTON

REVIEWED BY:

REVIEWED BY:

8/17/99

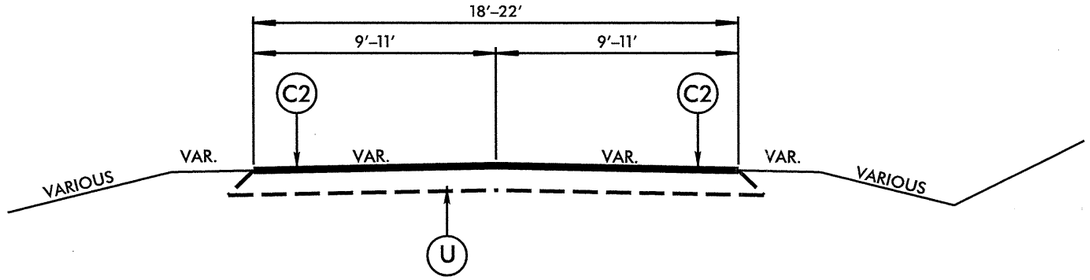
PROJECT REFERENCE NO.	SHEET NO.
NCR1014.21, NCR2014.21	9



TYPICAL SECTION NO. 2

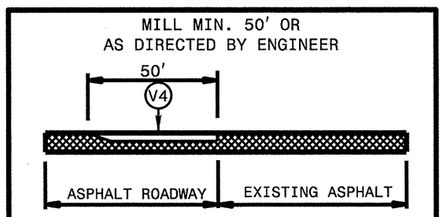
MAP 3 – US 321 FROM PENNTON AVE TO SR 1523

** PATCHING AT LOCATIONS AS DIRECTED BY ENGINEER



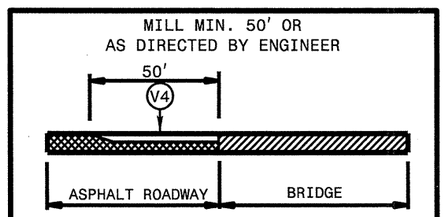
TYPICAL SECTION NO. 5

MAP 6 – SR 1002 FROM SR 1753 TO SR 1751
MAP 7 – SR 1002 FROM SR 1747 TO SR 1751**



BEGIN & END MAP TIE IN DETAIL

TIE ASPHALT OVERLAY TO EXISTING ASPHALT PAVEMENT AT BEGIN & END OF MAPS OR AS DIRECTED BY THE ENGINEER



BRIDGE TIE IN DETAIL

TIE ASPHALT OVERLAY TO BRIDGE APPROACH SLABS OR AS DIRECTED BY THE ENGINEER

	PAVEMENT SCHEDULE
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C4	PROP. APPROX. 1" ASPHALT CONCRETE SURFACE COURSE, TYPE S4.75A, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD.
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 - 1", AS DIRECTED BY THE ENGINEER.
V3	MILLING OF EXISTING ASPHALT PAVEMENT AT DEPTH OF 0 - 3"
V4	INCIDENTAL MILLING

CALDWELL & WILKES COUNTIES
PRIMARY AND SECONDARY RESURFACING

DIVISION 11

REVISIONS	INIT.	DATE

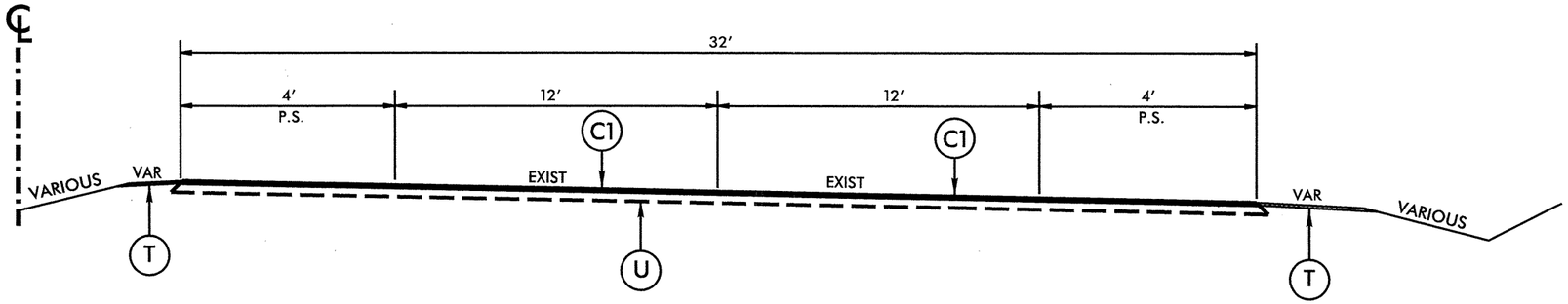
N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION ELEVEN

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

SCALE: N/A | DATE: 05/2013
PREPARED BY: O.L. PILKINGTON
REVIEWED BY:
REVIEWED BY:

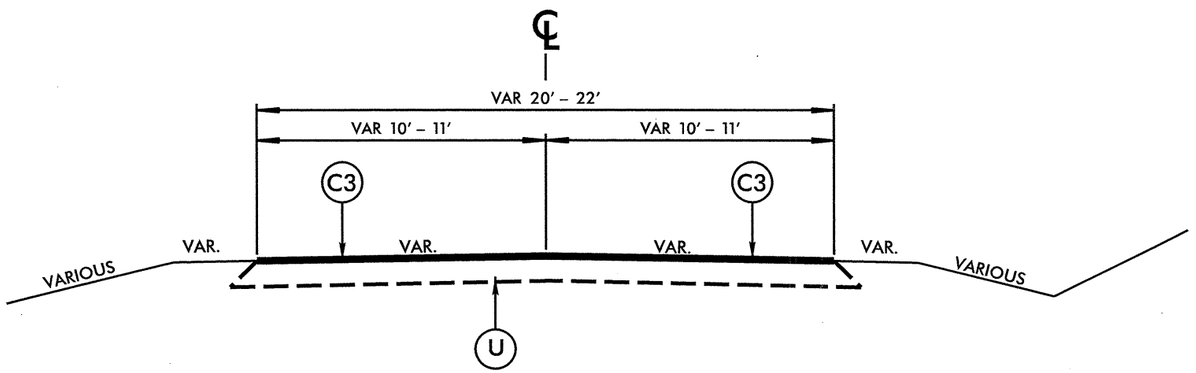
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
NCR.1097 2I, NCR.2097 L2I	10



TYPICAL SECTION NO. 6

MAP 8 – US 421 NBL FROM SR 1171 TO END OF 4–LANE
MAP 9 – US 421 SBL FROM END OF DIVIDED 4–LANE TO SR 1171



TYPICAL SECTION NO. 7

MAP 10 – SR 1517 FROM NC 18 TO SR 1372
MAP 11 – SR 2044 FROM SR 2037 TO SURRY CO LINE

	PAVEMENT SCHEDULE
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C4	PROP. APPROX. 1" ASPHALT CONCRETE SURFACE COURSE, TYPE S4.75A, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD.
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 - 1", AS DIRECTED BY THE ENGINEER.
V3	MILLING OF EXISTING ASPHALT PAVEMENT AT DEPTH OF 0 - 3"
V4	INCIDENTAL MILLING

CALDWELL & WILKES COUNTIES
PRIMARY AND SECONDARY RESURFACING

DIVISION 11

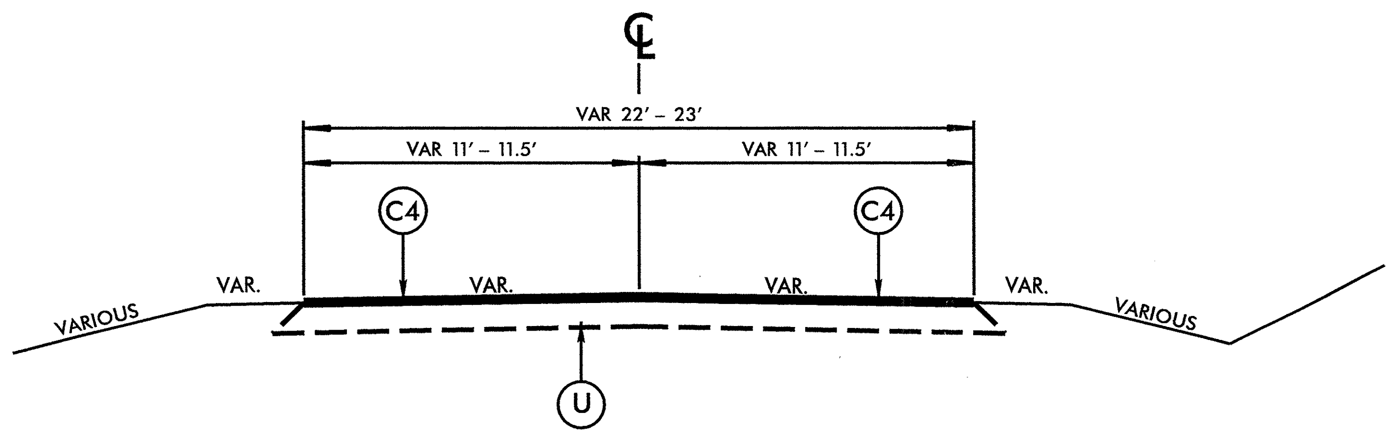
REVISIONS	NO.	DATE

N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION ELEVEN

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

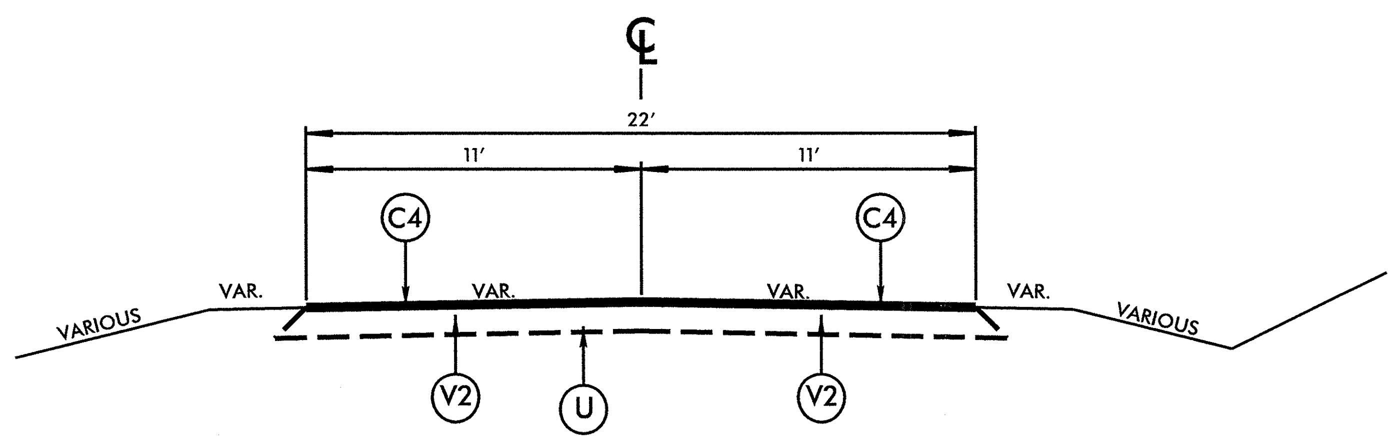
SCALE: N/A	DATE: 07/2013
PREPARED BY:	J.L. LAWS
REVIEWED BY:	
REVIEWED BY:	

PROJECT REFERENCE NO.	SHEET NO.
[illegible]	11



TYPICAL SECTION NO. 8

MAP 12 – SR 1372 FROM SR 1500 TO NCL WILKESBORO
MAP 13 – SR 1372 FROM NCL WILKESBORO TO US 421 BUS
MAP 15 – SR 1304 FROM US 421 TO SR 1307
MAP 16 – SR 1323 FROM US 421 TO SR 1322



TYPICAL SECTION NO. 9

MAP 14 – SR 1185 FROM US 421 BUS TO NC 268

	PAVEMENT SCHEDULE
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C4	PROP. APPROX. 1" ASPHALT CONCRETE SURFACE COURSE, TYPE S4.75A, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD.
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 - 1", AS DIRECTED BY THE ENGINEER.
V3	MILLING OF EXISTING ASPHALT PAVEMENT AT DEPTH OF 0 - 3"
V4	INCIDENTAL MILLING

CALDWELL & WILKES COUNTIES
PRIMARY AND SECONDARY RESURFACING

DIVISION 11

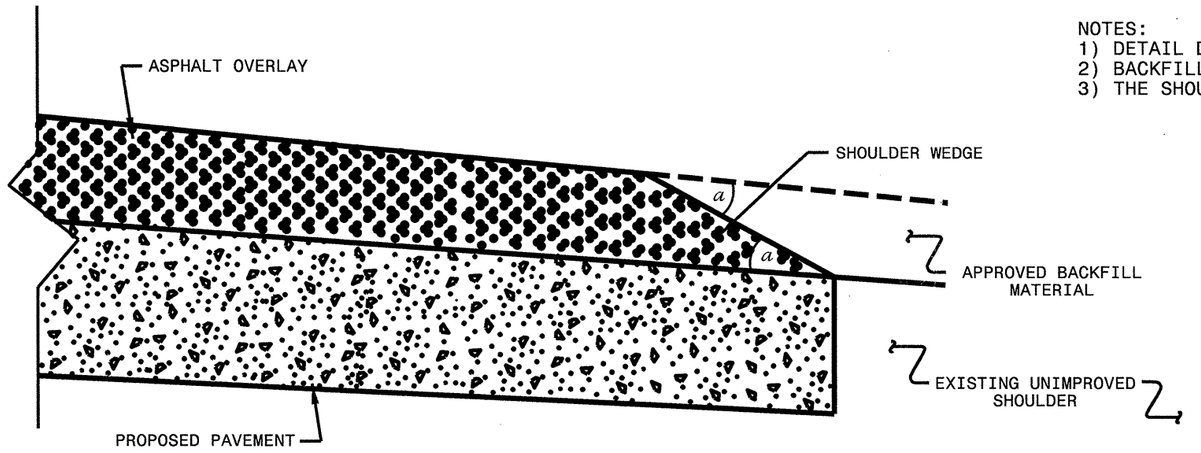
REVISIONS	INIT.	DATE

N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION ELEVEN

SCALE: N/A	DATE: 07/2013
PREPARED BY: J.L. LAWS	
REVIEWED BY:	
REVIEWED BY:	

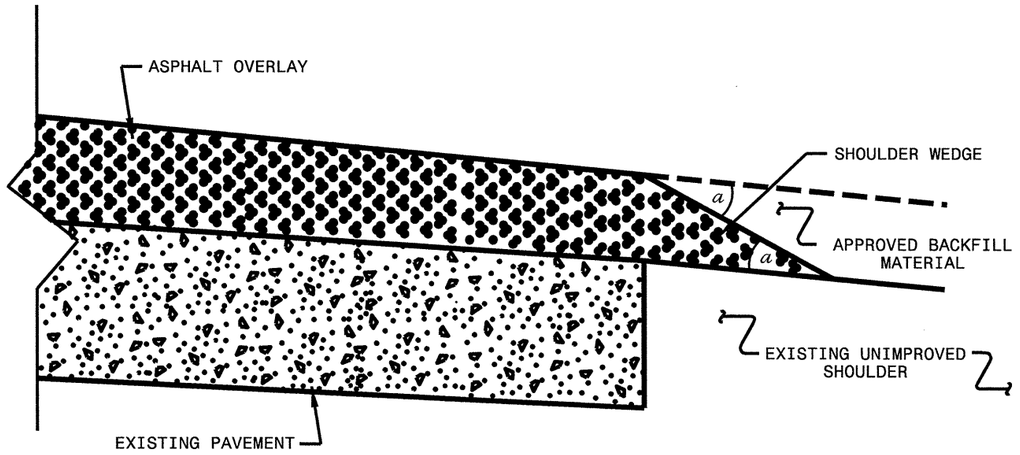
PROJECT REFERENCE NO.	SHEET NO.
11CR.10141.21, ETC.	12

NOTES:
1) DETAIL DOES NOT APPLY TO OGAFC AND ULTRA-THIN BONDED WEARING COURSE.
2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS AND SIDE STREETS.



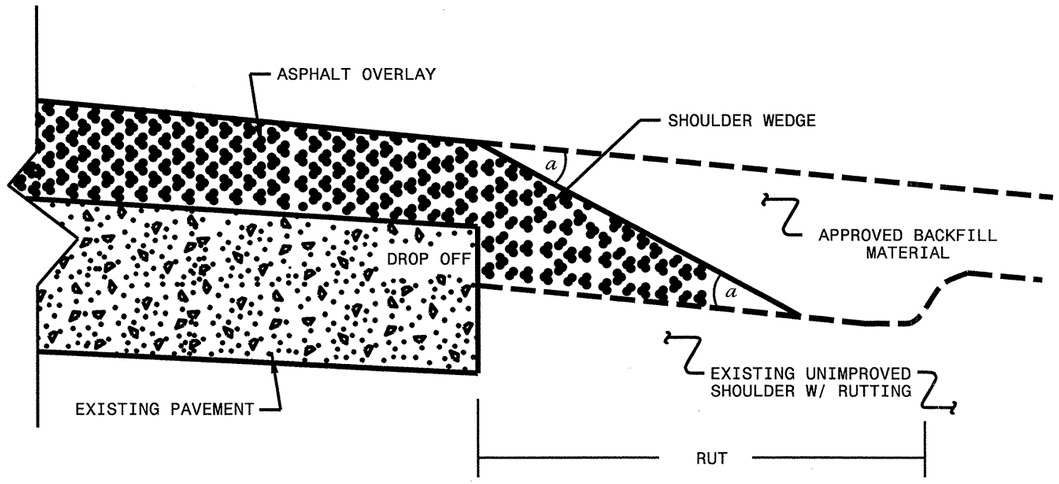
SHOULDER WEDGE DETAIL

(Resurfacing Projects w/ Widening or with Existing Paved Shoulder having no dropoffs)



SHOULDER WEDGE DETAIL

(Resurfacing Projects w/ NO Widening)



SHOULDER WEDGE DETAIL

(Resurfacing Adjacent to Rutted Shoulder)

- SHOULDER WEDGE ANGLE = 30°

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

SHOULDER WEDGE DETAILS

ORIGINAL BY:	T.SPELL	DATE:	7-19-11
MODIFIED BY:		DATE:	10/16/12
CHECKED BY:		DATE:	
FILE SPEC.:	s:\ugr/details/stand/shoulderwedgedetail.dgn		

$$$$SYSTEMNAME$$$$
$$$$DGNFILE$$$$
$$$$USERNAME$$$$

PROJECT NO.	SHEET NO.	TOTAL NO.
11CR.10141.21, 11CR.20141.20	13	
11CR.10971.21, ETC.		

SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH MI	WIDTH FT	BORROW EXCAVATION CY	INCIDENTAL STONE BASE TONS	SHOULDER RECONSTRUCTION SMI	1½" MILLING SY	0" TO 3" MILLING SY	0" TO 1" MILLING SY	INCIDENTAL MILLING SY	SURFACE COURSE, S9.5B TONS	SURFACE COURSE, S9.5C TONS	SURFACE COURSE, SF9.5A TONS	SURFACE COURSE, S4.75A TONS	ASPHALT BINDER FOR PLANT MIX TONS	PATCHING EXISTING PAVEMENT TONS	ADJ. OF MANHOLES EA	ADJ. OF METER OR VALVE BOX EA	PORTABLE LIGHTING LS	SEED & MULCHING AC	PAVED TRENCHING (2 - 2") LF	UNPAVED TRENCHING (2 - 2") LF	JUNCTION BOX (STANDARD SIZE) EA	INDUCTIVE LOOP SAWCUT LF	LEAD-IN CABLE (14-2) LF
11CR.10141.21	Caldwell	1	US 321	FROM END OF DIVIDED HWY TO PENNTON AVE	1	5	MU	NO	NO	0.4	60					15,580				1,340			79		10	5	1		50	50	1	400	100
11CR.10141.21	Caldwell	2	US 64	FROM HARPER AVE TO LOWER CREEK DR	1	5	MU	NO	NO	0.41	64					21,712				1,800			106		7	1	*		50	50	1	1,420	100
11CR.10141.21	Caldwell	3	US 321	FROM PENNTON AVE TO SR 1523	2	5	MU	NO	NO	1.1	64				42,820					3,610			213		10	5	*		200	100	4	992	500
TOTAL FOR PROJ NO. 11CR.10141.21										**1.91**					**42,820**	**37,292**				**6,750**			**398**		**27**	**11**	**1**		**300**	**200**	**6**	**2,812**	**700**
11CR.20141.21	Caldwell	4	SR 1933 (WEST)	FROM ECL LENOIR TO US 64	3	2	MD	NO	NO	0.76	28				15,357					1,295			76											
11CR.20141.21	Caldwell	5	SR 1933 (WEST)	FROM WCL LENOIR TO ECL LENOIR	4	2	MD	NO	NO	1.55	28							315		2,390			141											
11CR.20141.21	Caldwell	6	SR 1002	FROM SR 1753 TO SR 1751	5	2	2WU	NO	NO	0.76	20		50					200	770				46											
11CR.20141.21	Caldwell	7	SR 1002	FROM SR 1747 TO SR 1751	5	2	2WU	NO	NO	1.33	18		100					100	1,225				73	200										
TOTAL FOR PROJ NO. 11CR.20141.20										**4.4**			**150**		**15,357**			**615**	**1,995**	**3,685**			**336**	**200**										
11CR.10971.21	Wilkes	8	US 421 NBL	FROM 1171 TO END OF 4-LANE	6	2	MD	NO	NO	3.92	32	784	50	7.84				360		6,800			401					2.85						
11CR.10971.21	Wilkes	9	US 421 SBL	FROM END OF 4-LANE TO SR 1171	6	2	MD	NO	NO	3.92	32	784	50	7.84				360		6,825			403					2.85						
TOTAL FOR PROJ NO. 11CR.10971.21										**7.84**		**1,568**	**100**	**15.68**				**720**		**13,625**			**804**					**5.70**						
11CR.20971.21	Wilkes	10	SR 1517	FROM NC 18 TO SR 1372	7	2	2WU	NO	NO	3.95	22		50					500			4,400		295			3								
11CR.20971.21	Wilkes	11	SR 2044	FROM SR 2037 TO SURRY CO LINE	7	2	2WU	NO	NO	0.48	20		25					250			470		31											
11CR.20971.21	Wilkes	12	SR 1372	FROM SR 1500 TO NCL WILKESBORO	8	2	2WU	NO	NO	0.5	22		15					150				370	25											
11CR.20971.21	Wilkes	13	SR 1372	FROM NCL WILKESBORO TO US 421 BUS	8	3	2WU	NO	NO	0.53	22							330				740	50		4	5								
11CR.20971.21	Wilkes	14	SR 1185	FROM US 421 BUS TO NC 268	9	2	2WU	NO	NO	0.78	22						800	250				650	44											
11CR.20971.21	Wilkes	15	SR 1304	FROM US 421 TO SR 1307	8	2	2WU	NO	NO	4.35	22		50					250				3,060	208											
11CR.20971.21	Wilkes	16	SR 1323	FROM US 421 TO SR 1322	8	2	2WU	NO	NO	0.12	23		5					260				90	6											
TOTAL FOR PROJ NO. 11CR.20971.21										**10.71**			**145**				**800**	**1,990**			**4,870**	**4,910**	**659**		**4**	**8**								
GRAND TOTAL										**24.86**		**1,568**	**395**	**15.68**	**58,177**	**37,292**	**800**	**3,325**	**1,995**	**24,060**	**4,870**	**4,910**	**2,197**	**200**	**31**	**19**	**1.00**	**5.70**	**300**	**200**	**6**	**2,812**	**700**

PROJECT NO.	SHEET NO.	TOTAL NO.
11CR.10141.21, 11CR.20141.20	14	
11CR.10971.21, ETC.		

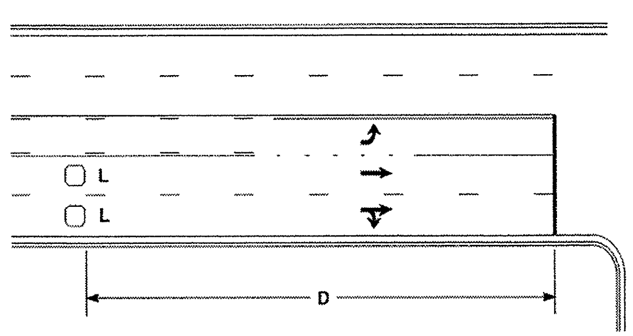
THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	WIDTH	4510000000-N LAW ENFORCEMENT LS	4589000000-N GENERIC TRAF. TEMP. TRAFFIC CONTROL. LS	4595000000-E GENERIC TRAF. CONTR. WORK ZONE ADV./GEN.WARN. SIGING SF	4810000000-E 4" WHITE PAINT LF	4810000000-E 4" YELLOW PAINT LF	4815000000-E 6" WHITE PAINT LF	4815000000-E 6" YELLOW PAINT LF	4820000000-E 8" WHITE PAINT LF	4820000000-E 8" YELLOW PAINT LF	4835000000-E 24" WHITE PAINT LF	4840000000-N PAINT MSG ONLY EA	4845000000-N PAINT LT ARROW EA	4845000000-N PAINT STR ARROW EA	4845000000-N PAINT RT ARROW EA	4845000000-N PAINT STR & RT ARROW EA	4845000000-N PAINT MERGE ARROW EA	4845000000-N PAINT STR & LT ARROW EA	4900000000-N PERM. RAISED PAVEMENT MARKERS (YELLOW & YELLOW) EA	4905000000-N SNOW PLOWABLE MARKERS EA
11CR.10141.21	Caldwell	1	US 321	FROM END OF DIVIDED HWY TO PENNTON AVE	1	5	MU	0.4	60	300	1	279	15,489	20,966			704		144		24	16	8	4	6			135
11CR.10141.21	Caldwell	2	US 64	FROM HARPER AVE TO LOWER CREEK DR	1	5	MU	0.41	64	*	*	*	4,812	13,827			1,410		440	16	46	16	14	8		2		147
11CR.10141.21	Caldwell	3	US 321	FROM PENNTON AVE TO SR 1523	2	5	MU	1.1	64	*	*	*	12,162	43,560					456		84	48	8	12				358
TOTAL FOR PROJ NO. 11CR.10141.21								**1.91**		300	*	279	32,463	**78,353**			**2,114**		**1,040**	**16**	**154**	**80**	**30**	**24**	**6**	**2**		**640**
													110,816				**2,114**				**296**							
11CR.20141.21	Caldwell	4	SR 1933 (WEST)	FROM ECL LENOIR TO US 64	3	2	MD	0.76	28		*	373	18,594	14,138							8	8	4					50
11CR.20141.21	Caldwell	5	SR 1933 (WEST)	FROM WCL LENOIR TO ECL LENOIR	4	2	MD	1.55	28		*	*	22,820	16,368							5	8	4					102
11CR.20141.21	Caldwell	6	SR 1002	FROM SR 1753 TO SR 1751	5	2	2WU	0.76	20		*	*	16,051	12,030														
11CR.20141.21	Caldwell	7	SR 1002	FROM SR 1747 TO SR 1751	5	2	2WU	1.33	18		*	*	28,090	28,090														
TOTAL FOR PROJ NO. 11CR.20141.20								**4.4**			*	373	**85,555**	**70,626**							**13**	**16**	**8**					**152**
													156,181								**37**							
11CR.10971.21	Wilkes	8	US 421 NBL	FROM 1171 TO END OF 4-LANE	6	2	MD	3.92	32	300	*	186			63,661	41,787					40	36		6				274
11CR.10971.21	Wilkes	9	US 421 SBL	FROM END OF 4-LANE TO SR 1171	6	2	MD	3.92	32	*	*	*			63,661	41,787					44	38		6				274
TOTAL FOR PROJ NO. 11CR.10971.21								**7.84**		300	*	**186**			**127,322**	**83,574**					**84**	**74**		**12**				**548**
															210,896						**170**							
11CR.20971.21	Wilkes	10	SR 1517	FROM NC 18 TO SR 1372	7	2	2WU	3.95	22		*	656	85,004	83,424					84				4			2	250	75
11CR.20971.21	Wilkes	11	SR 2044	FROM SR 2037 TO SURRY CO LINE	7	2	2WU	0.48	20		*	*	10,138	10,138														
11CR.20971.21	Wilkes	12	SR 1372	FROM SR 1500 TO NCL WILKESBORO	8	2	2WU	0.5	22		*	*	10,560	10,560														
11CR.20971.21	Wilkes	13	SR 1372	FROM NCL WILKESBORO TO US 421 BUS	8	3	2WU	0.53	22		*	*	11,406	11,406			812	90	75	16	26	12	20	4				
11CR.20971.21	Wilkes	14	SR 1185	FROM US 421 BUS TO NC 268	9	2	2WU	0.78	22		*	*	16,474	16,474							4		6			2		
11CR.20971.21	Wilkes	15	SR 1304	FROM US 421 TO SR 1307	8	2	2WU	4.35	22		*	*	93,612	57,420														290
11CR.20971.21	Wilkes	16	SR 1323	FROM US 421 TO SR 1322	8	2	2WU	0.12	23		*	*	2,582	2,582					68		2			4				
TOTAL FOR PROJ NO. 11CR.20971.21								**10.71**			*	656	229,776	192,004			812	90	227	16	32	12	30	8		4	250	365
													421,780				902				86							
GRAND TOTAL								**24.86**		600	1	1494	347,794	340,983	127,322	83,574	2,926	90	1,267	32	283	182	68	44	6	6	250	1,705
													688,777		210,896		3,016				589							

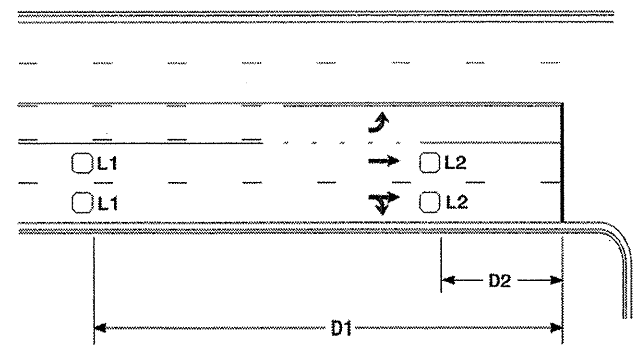
PROJECT REFERENCE NO.	SHEET NO.
SEE BELOW	SIG 1

11CR.10141.21
11CR.20141.21
11CR.10971.21
11CR.20971.21

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

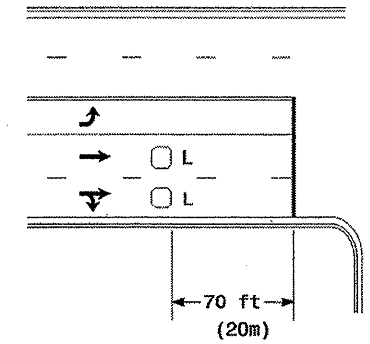
Speed Limit mph (km/hr)	D1 ft	(m)	D2 ft	(m)
40 (64)	250	(75)	80	(25)
45 (72)	300	(90)	90	(27)
50 (80)	355	(110)	100	(30)
55 (88)	420	(130)	110	(35)

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

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

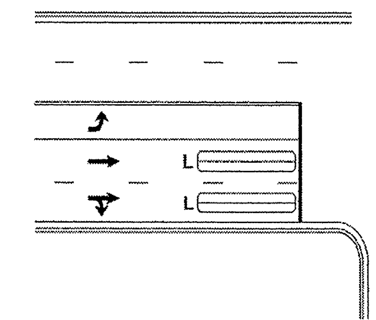
"Stretch" Operation

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



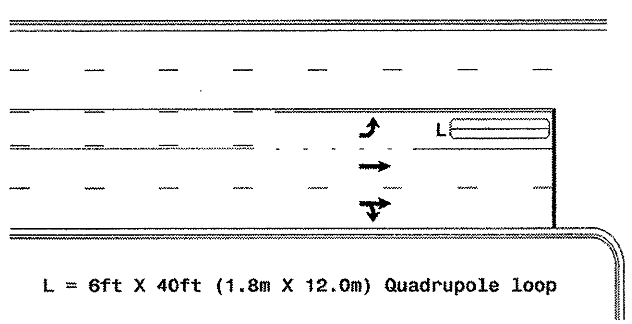
L = 6ft X 6ft (1.8m X 1.8m)
Wired in series

OR



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

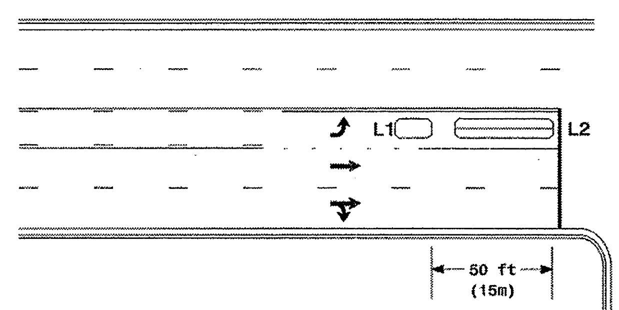
Left Turn Lane Detection



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

Presence Loop Detection

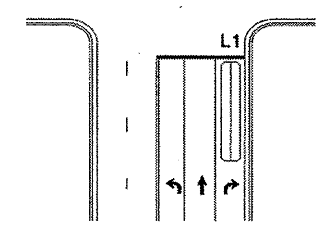
OR



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

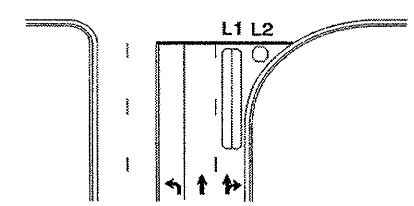
Queue Loop Detection

Right Turn Lane Detection

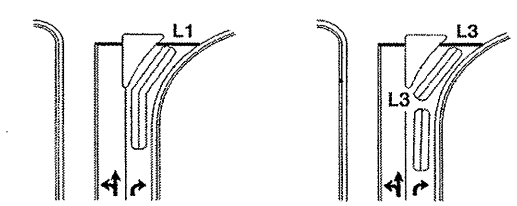


Standard Turn

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

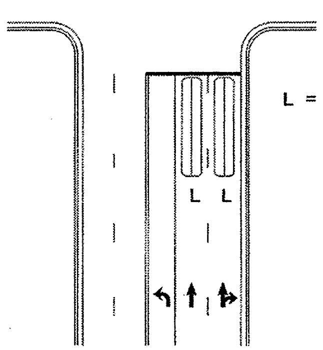


Wide Radius Turn



Channelized Turn

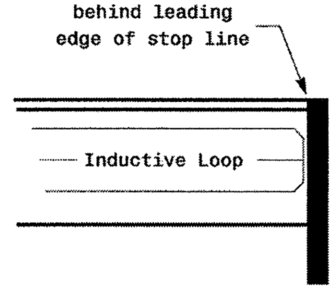
Side Street Detection



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

Prepared in the Offices of: Signals and Geometrics Section, Department of Transportation, State of North Carolina
122 N. McDowell St., Raleigh, NC 27601

SCALE
N/A

Typical Loop Locations

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

REVISIONS	INIT.	DATE
Revise pavement markings		

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23486 P. L. ALEXANDER

SIGNATURE 6/6/06 DATE
SIG. INVENTORY NO.

19-DEC-2006 14:29
s:\eis signals\lb turn inmssc\looptypical2006.dgn
palexander