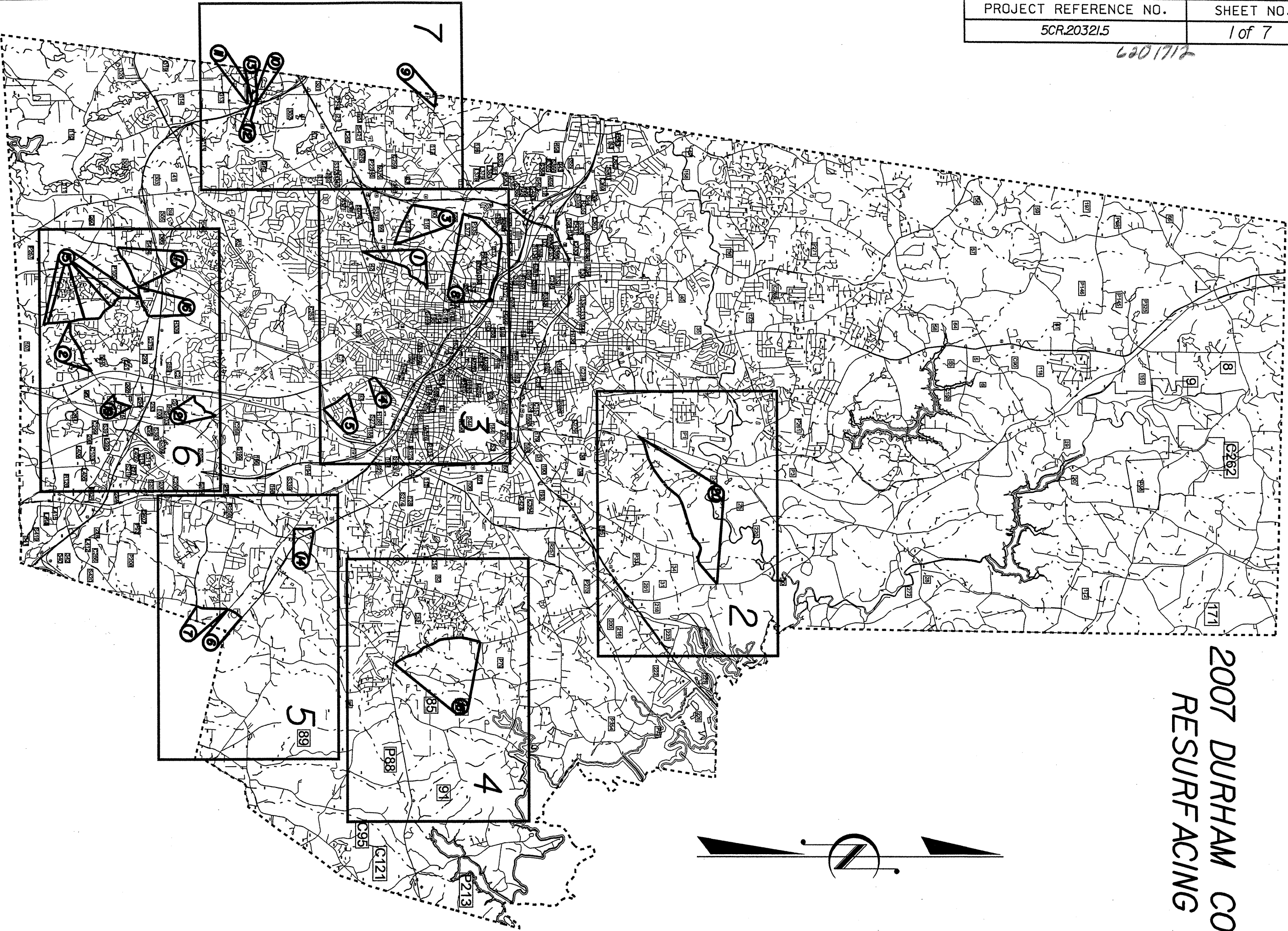
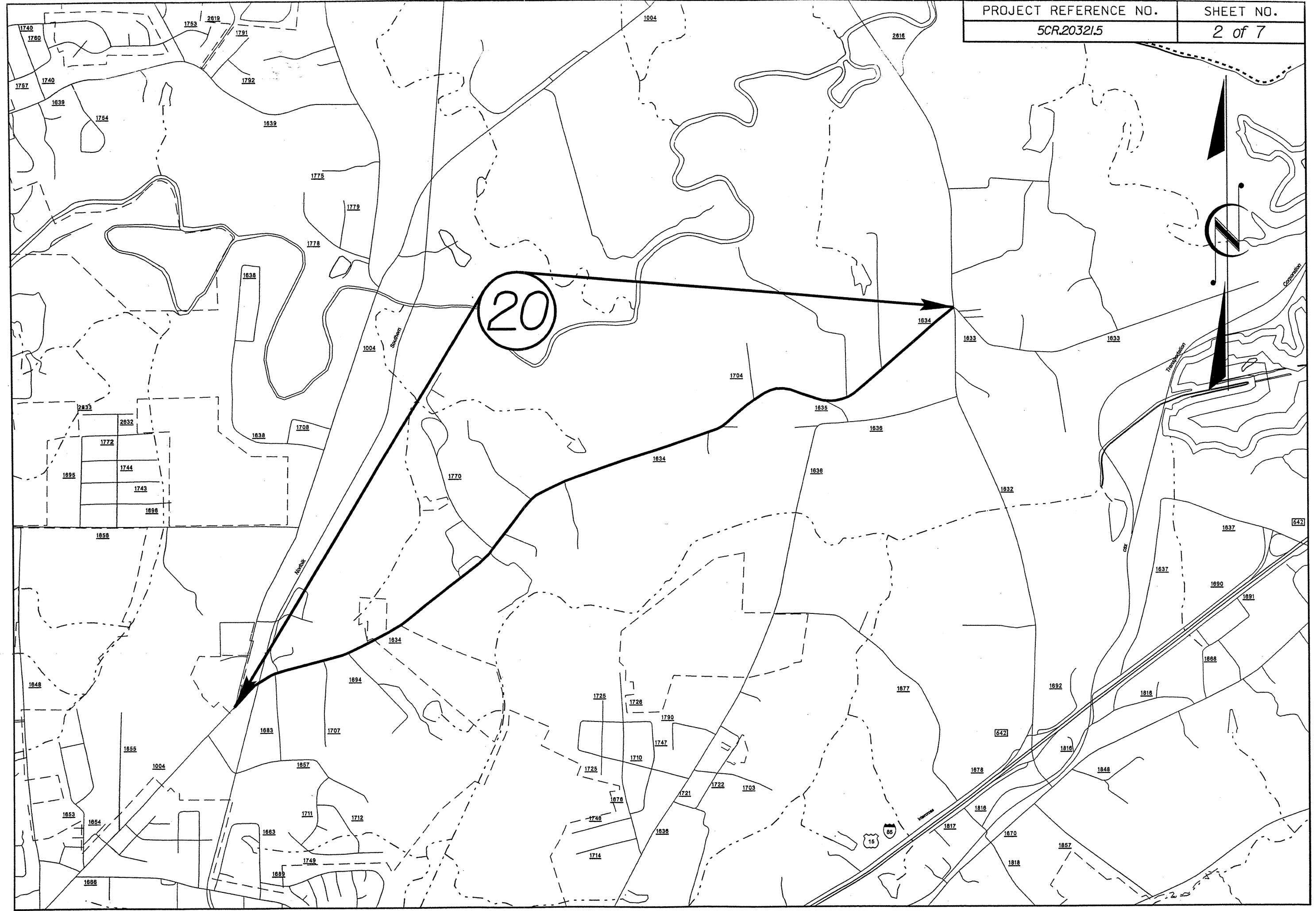


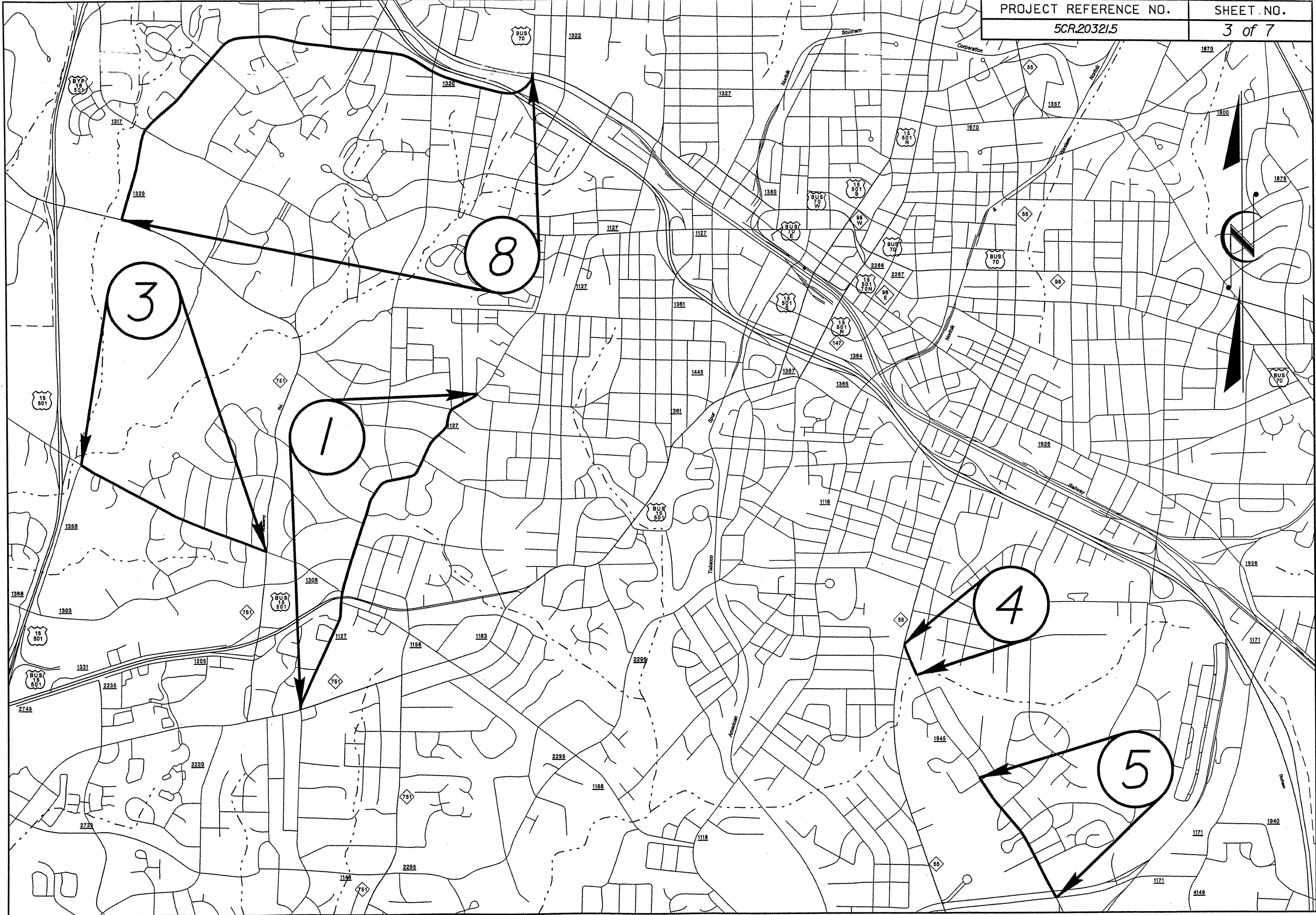
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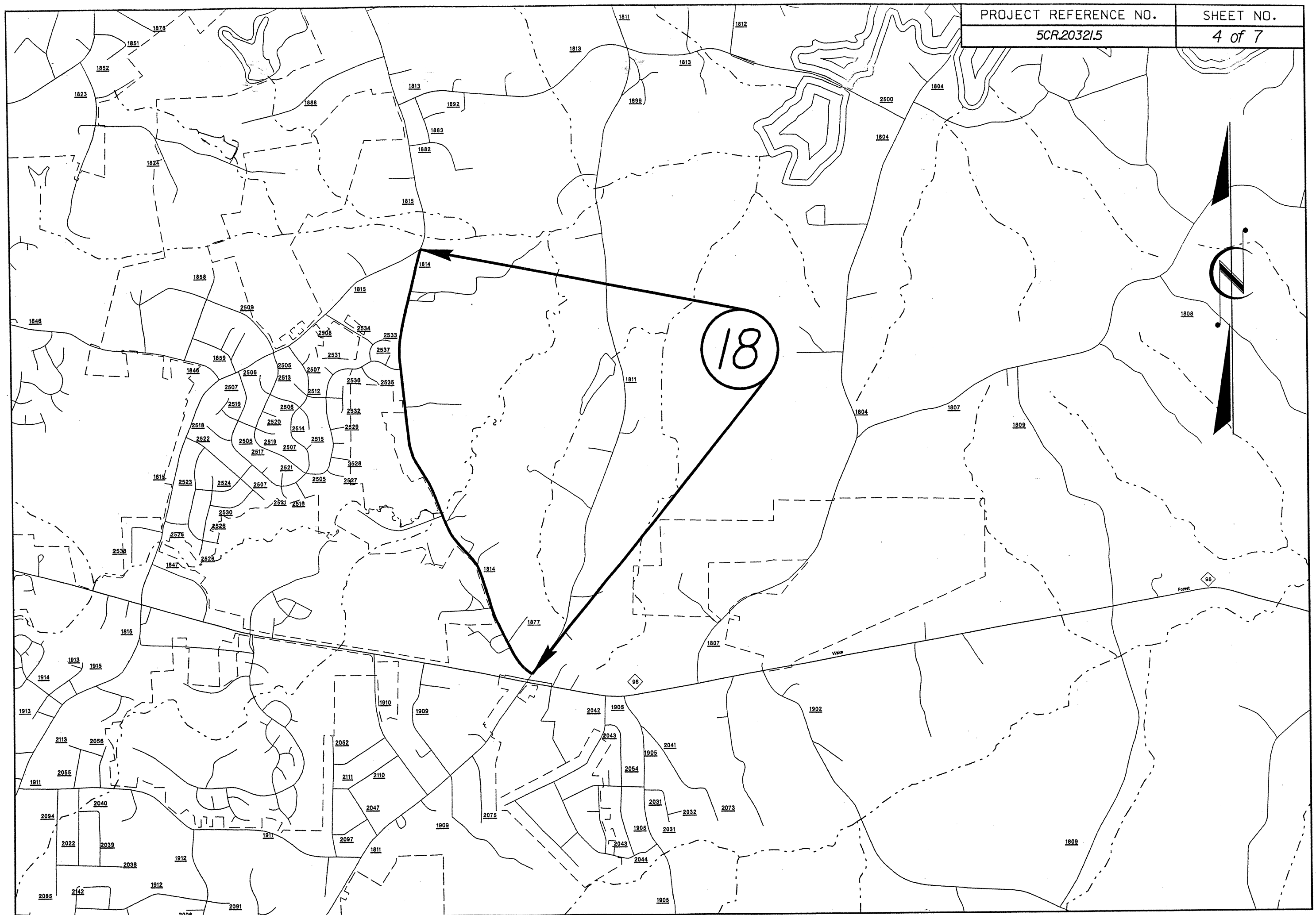


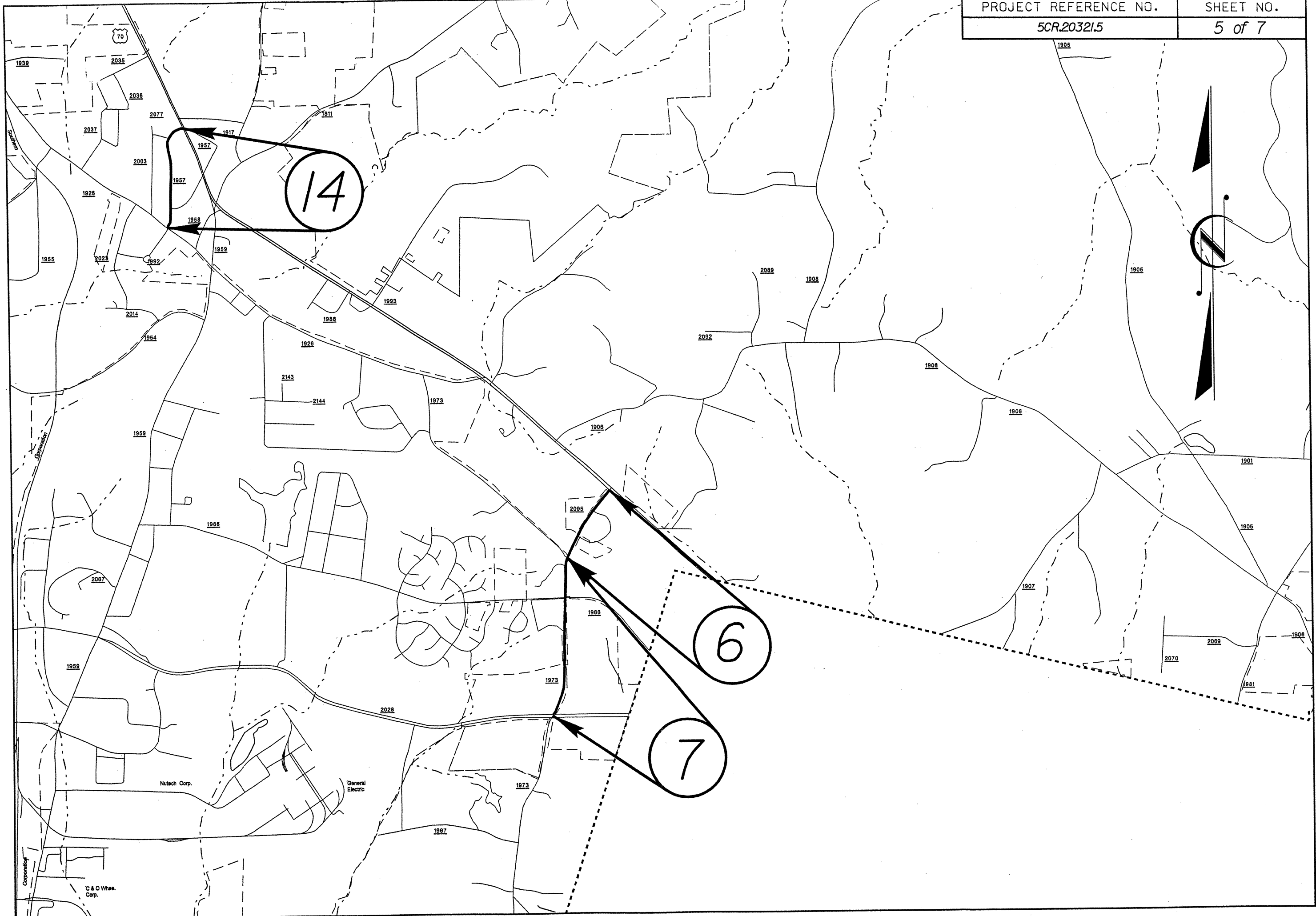
2007 DURHAM CO.
RESURFACING

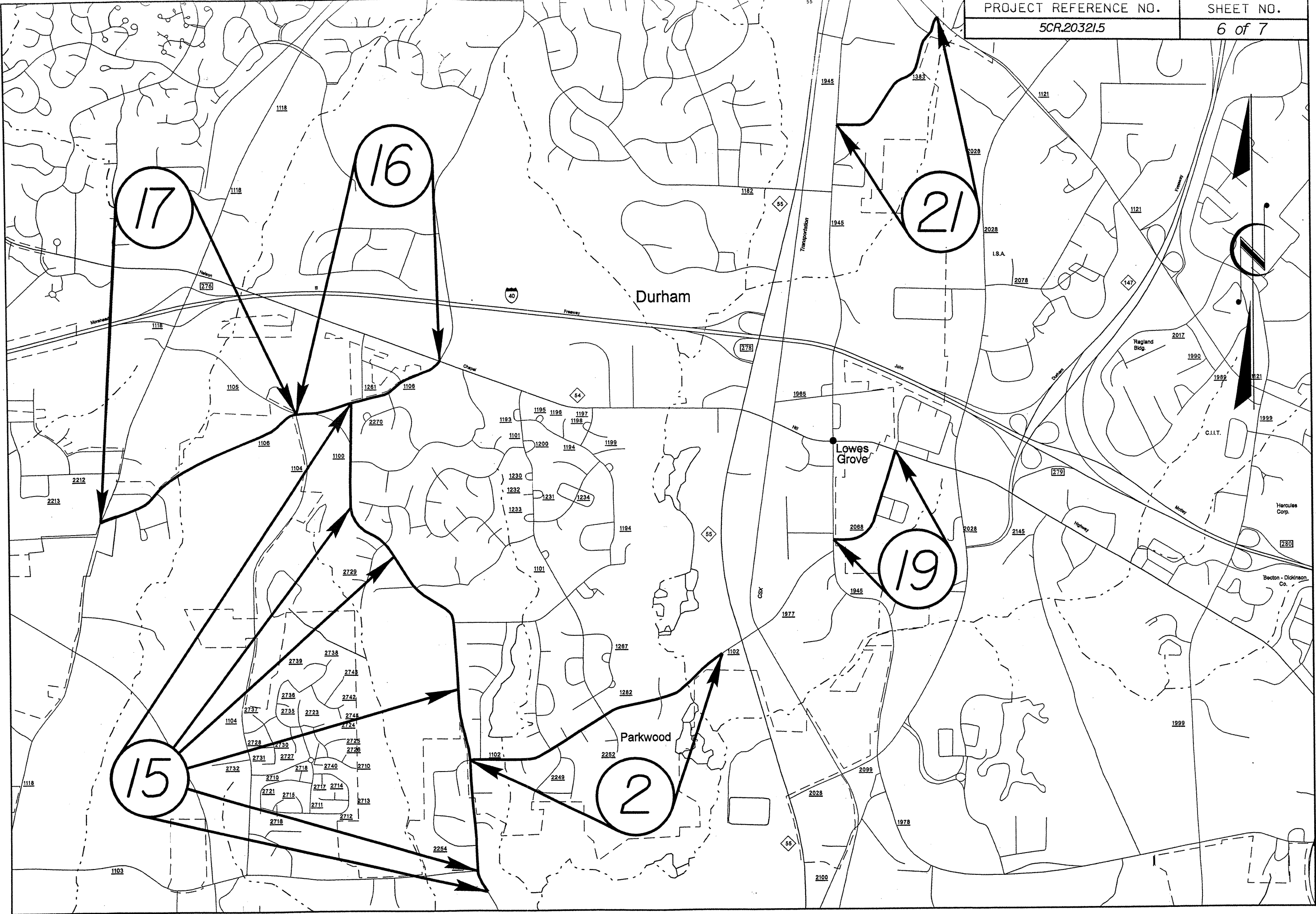
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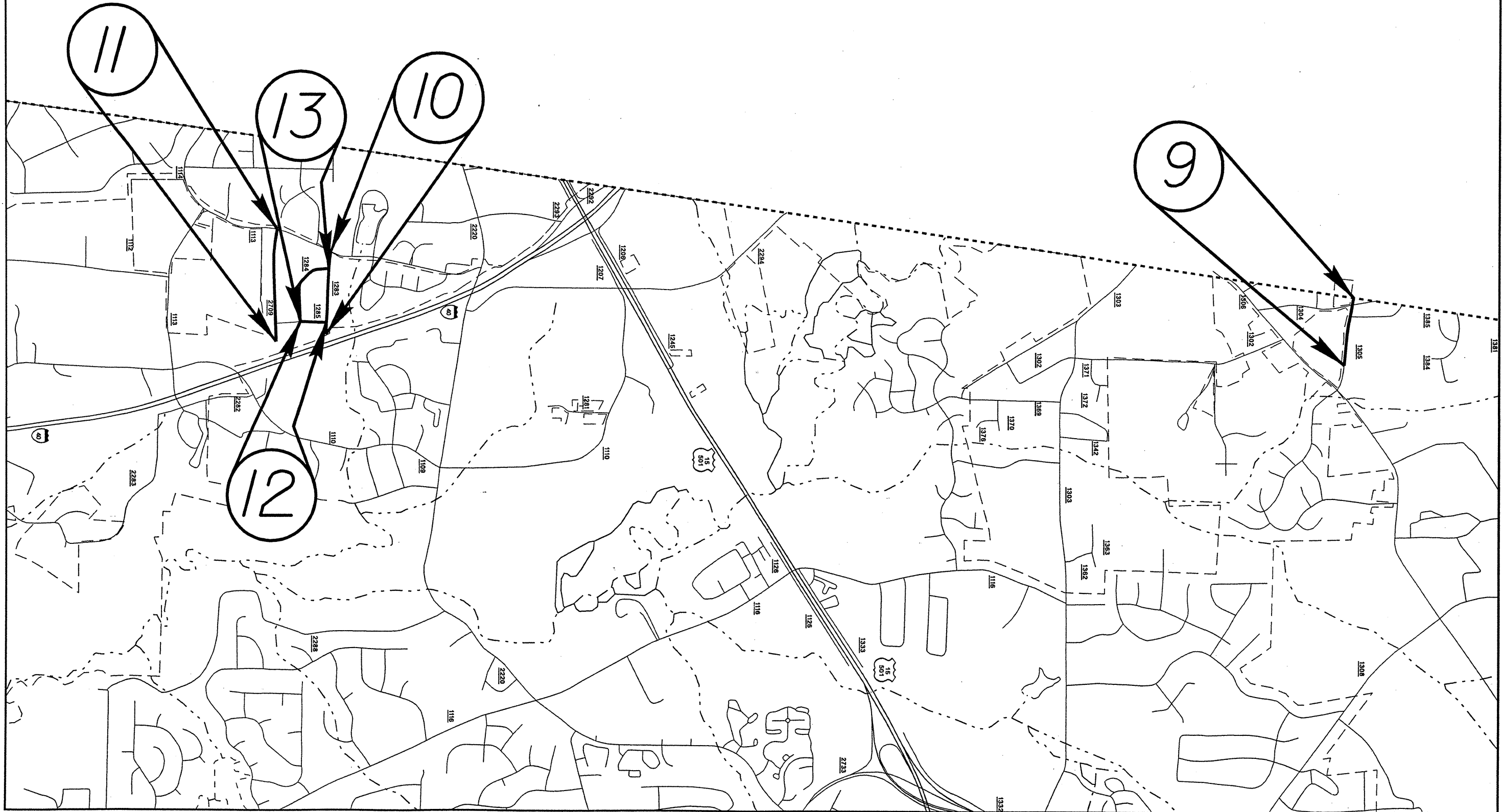








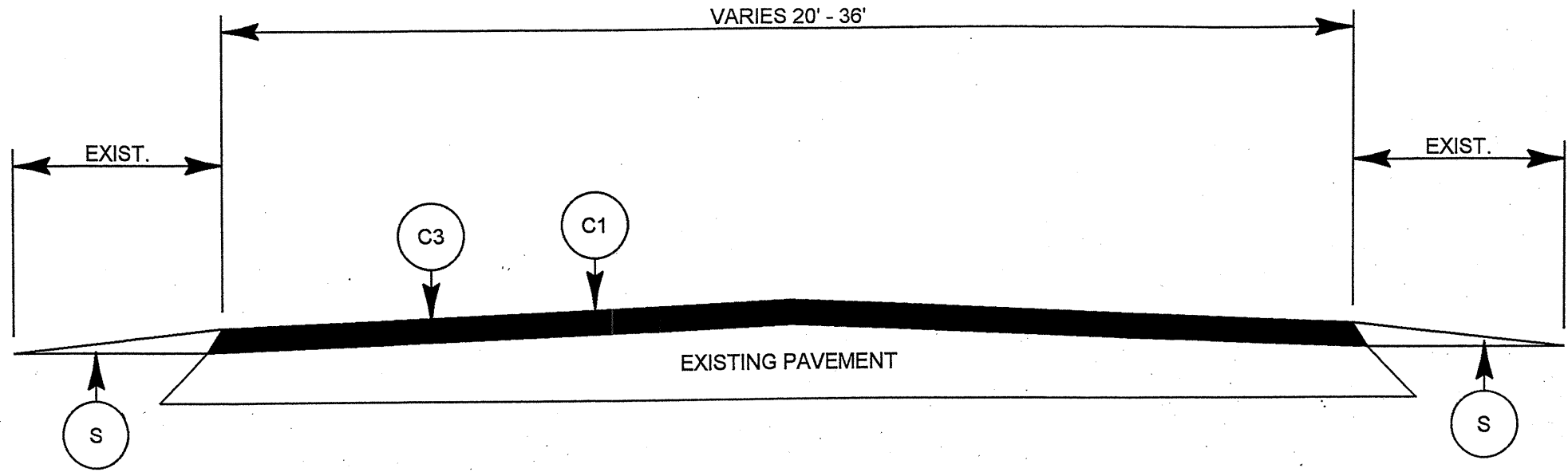




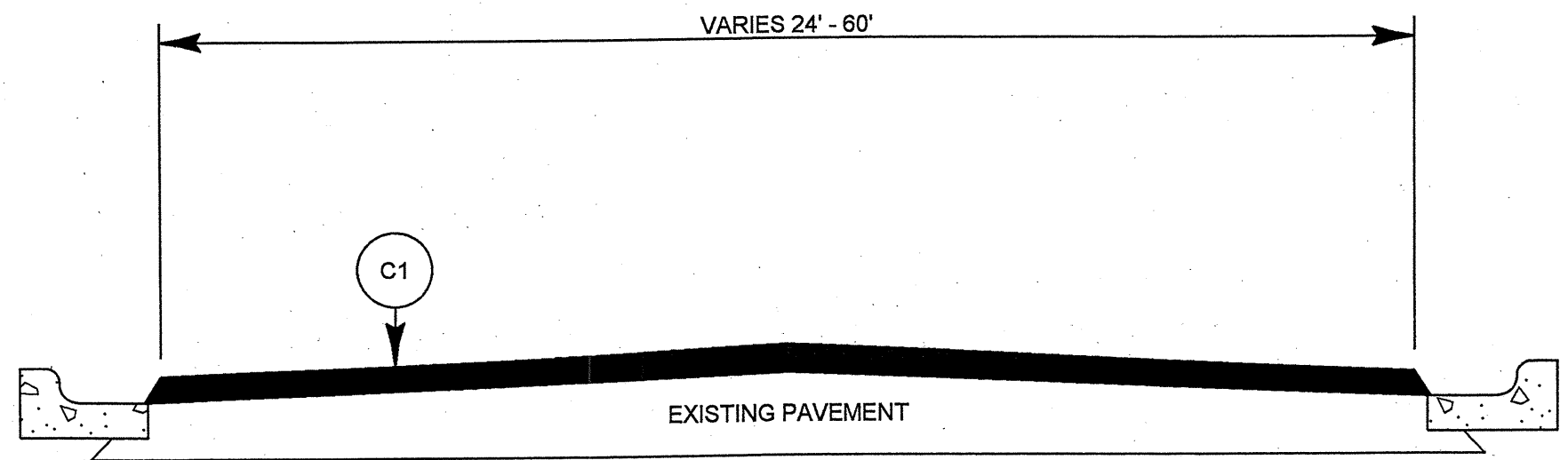
PROJECT NO. 5CR.20321.5	SHEET NO. 8	TOTAL NO.
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SUMMARY OF QUANTITIES

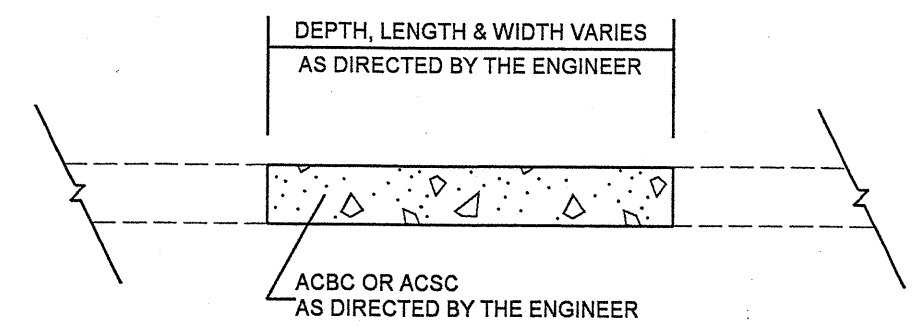
PROJECT NO.	COUNTY	MAP NO.	ROUTE	DESCRIPTION	TYP	LENGTH	WIDTH	REMOVAL OF EXIST. ASPHALT P.V.M.T. SY	INCIDENTAL STONE BASE TONS	SHOULDER RECONSTRUCTION SMI	1" TO 3" MILLING SY	INCIDENTAL MILLING SY	BASE COURSE, B25.0B TONS	INTERMEDIATE COURSE, I19.0B TONS	SURFACE COURSE, S9.5B TONS	SURFACE COURSE, SF9.5A TONS	PG 64-22 PLANT MIX TONS	PATCHING EXISTING PAVEMENT TONS	LEVELING COURSE, TYPE SF9.5A TONS	LEVELING COURSE, TYPE S 9.5B TONS	ADJUST. OF CATCH BASIN EA	ADJUST. OF DROP INLET EA	ADJUST. OF MANHOLES EA	ADJUST. OF METER OR VALVE BOX	SEED & MULCHING AC	INDUCTIVE LOOP LF	LEAD-IN CABLE (18-4) LF
5CR.20321.5	Durham	1	SR 1127 (CHAPEL HILL RD)	FROM LAKEWOOD AVENUE TO NEW PVMT	3	1	40				32853				2175		131	100					38	24		1,200	
		"	"	FROM NEW PVMT TO NC 751 (UNIVERSITY DRIVE)	1	0.3	24		9	0.6		100			392		24	85			1	2	1	0		1,000	
TOTAL FOR MAP NO. 1						1.3			9	0.6	32853	100			2567		155	185			1	40	25	0	1,200	1,000	
		2	SR 1102 (SEDWICK ROAD)	FROM SR 1100 (GRANDALE DR) TO BEGIN C&G	1	0.15	24		11	0.3		500			187		11	20					2		0		1,000
		"	"	FROM BEGIN C&G TO END C&G	2	0.5	40					300			1038		62	100					14				
		"	"	FROM C&G TO 500' WEST OF NC 55	1	0.5	24		25	1		80			633		38	70						2			
TOTAL FOR MAP NO. 2						1.15			36	1.3	0	880			1858		111	190					16		2		1,000
		3	SR 1308 (CORNWALLIS ROAD)	FROM NC 751 (ACADEMY ROAD) TO NEW PAVEMENT 500' EAST OF US 15-501	1,4	0.97	24		64	1.94		800			1220		73	175							1		
		4	SR 1945 (ALSTON AVENUE)	FROM NC 55 TO BRIDGE	2	0.13	36					40			243		15	10					1				
		5	SR 1945 (ALSTON AVENUE)	FROM NEW PVMT TO END C&G	4	0.1	32		3	0.1		250			166		10	50					1		0		
		"	"	FROM END C&G TO SR 1171 (RIDDLE ROAD)	1	0.5	24		10	1		950			624		37	50					4	2	1		
TOTAL FOR MAP NO. 5						0.6			13	1.1	0	1200			790		47	100					5	2	1		
		6	SR 2095 (PAGE ROAD EXT.)	FROM SR 1978 (PAGE RD.) TO US 70	2	0.3	60					200			933		56	20					1				1,200
		7	SR 1973 (PAGE ROAD)	FROM SR 1966 (LUMLEY RD.) TO SR 2095 (PAGE ROAD EXT.)	1	0.1	22		3	0.2		100			114		7	20					2		0		
		"	"	FROM C&G TO SR 1966 (LUMLEY RD.)	2	0.2	40								415		25	20					1	1			
		"	"	FROM SR 2028 (TW ALEXANDER DRIVE) TO C&G	4	0.3	60		9	0.3		200			978		59	30					3	1	0		
TOTAL FOR MAP NO. 7						0.6			12	0.5	0	300			1507		91	70					6	2	0		
		8	SR 1320 (ERWIN ROAD)	FROM NC 751 TO OREGON STREET	2	2.1	51					700			6027		362	325			1		40	10			7,000
		"	"	FROM OREGON ST TO US 70 B (MAIN ST)	3	0.2	33				3872				372		22										7,000
TOTAL FOR MAP NO. 9						2.3			0	0	3872	700			6399		384	325			1		40	10			7,000
		9	SR 1305 (MT. SINAI RD)	FROM 500' NORTH OF SR 1306 (ERWIN RD.) TO ORANGE COUNTY LINE	1	0.34	36		17	0.68		100			636		38	40							0		
		10	SR 1283 (BEAUMONT ROAD)	FROM SR 1113 (POPE RD.) TO DEAD END	6	0.29	25				4253					308	18	50					7	6			
		11	SR 2709 (BAKER'S MILL ROAD)	FROM SR 1113 (POPE RD.) TO DEAD END	5	0.39	22		16	0.78					365	24	85	36					10		1		
		12	SR 1285 (RANDALL ROAD)	FROM SR 2709 (BAKER'S MILL RD.) TO SR 1284 (YARDLEY TERRACE)	5	0.09	25			0.18						96	6	15	10					7	5	0	
		13	SR 1284 (YARDLEY TERRACE)	FROM SR 1283 (BEAUMONT RD.) TO SR 1285 (RANDALL RD.)	5	0.25	25		13	0.5					266	18	25	25					5	3	0		
		14	SR 1957 (MARLY DRIVE)	FROM SR 1926 (ANGIER AVE) TO US 70	1	0.34	22		34	0.68		100			389		23	165							1		
		15	SR 1100 (GRANDALE DRIVE)	FROM SR 1106 (BARBEE RD) TO SHALIMAR DR	1	0.39	22		16	0.78		1380			501		30	25							1		
		"	"	FROM SHALIMAR DR TO MILLSTONE DR	7	0.31	22	4001		0.62		180	926	576	338		87										
		"	"	RESURFACE FROM MILLSTONE DR TO NEW PAVEMENT IN 3 LANE SECTION, RESTRIPE ONLY ON NEW PAVEMENT	1,4	0.56	22			0.84		450			753		50	75		75			3		1		
		"	"	FROM PAVEMENT JOINT @ END OF 3 LANE SECTION TO SR 1103 (SCOTT KING RD)	1	0.53	22		21	1.06		240			578		35	25							1		
		"	"	FROM SR 1103 (SCOTT KING RD) TO PAVEMENT JOINT 500' SOUTH	7	0.1	22	1291		0.2		60	299	186	109		28									2	
TOTAL FOR MAP NO. 15						1.89		5292	37	3.5	0	2310	1225	762	2279	0	230	125					3		2		
		16	SR 1106 (BARBEE ROAD)	FROM SR 1104 (HERNDON RD.) TO NC 54	1	0.6	22		24	1.2		70			687		41	135							1		
		17	SR 1106 (MASSEY CHAPEL ROAD)	FROM SR 1118 (FAYETTEVILLE ST.) TO SR 1104 (HERNDON RD.)	1	0.9	22		90	1.8		100			1030		62	70							1		
		18	SR 1814 (STALLINGS ROAD)	FROM SR 1811 (PATTERSON RD.) TO SR 1815 (FLETCHER CHAPEL RD.)	1	1.85	24		93	3.7		800			2312		139	70					1		3		
		19	SR 2068 (TRIANGLE DRIVE)	FROM SR 1945 (S. ALSTON AVE.) TO NC 54	2	0.49	24					70			612		37	130									
		20	SR 1634 (HAMLIN ROAD)	FROM SR 1004 (OLD OXFORD) TO SR 1632 (RED MILL RD.)	1	3.47	20		243	6.94		100			3613		217	275							5		
		21	SR 1383 (TRI-CENTER BLVD)	FROM SR 1945 (S. ALSTON AVE.) TO SR 1121 (CORNWALLIS RD.)	2	0.65	36				40978	200	1225	762	1215		73	110			1	1	1	53	19	9,400	2,000
TOTAL FOR PROJ NO. 5CR.20321.5						18.9		5292	701	25.4	40978	8070	1225	762	28290	1035	1858	2,370	71	75	1	1	143	53	19	9,400	2,000
GRAND TOTAL						18.9		5292	701	25.4	40978	8070	1225	762	28290	1035	1858	2,370	71	75	1	1	143	53	19	9,400	2,000



TYPICAL SECTION NO. 1



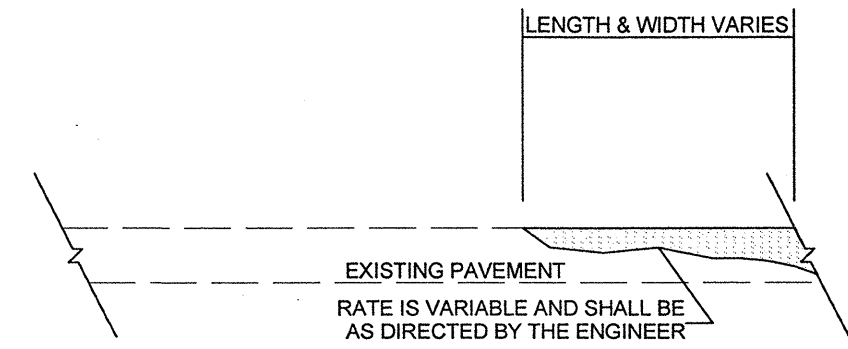
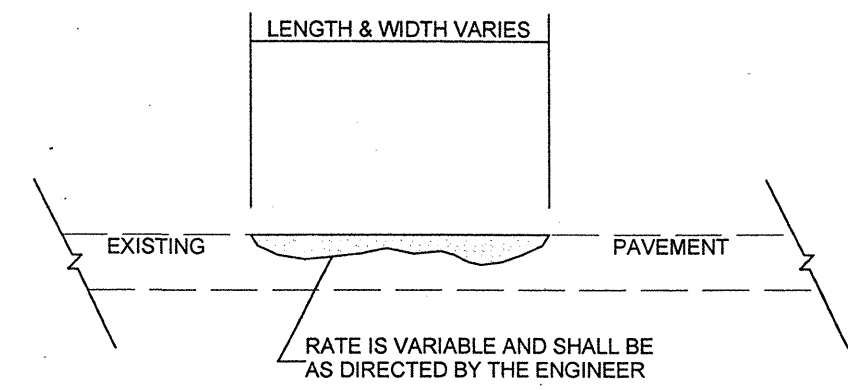
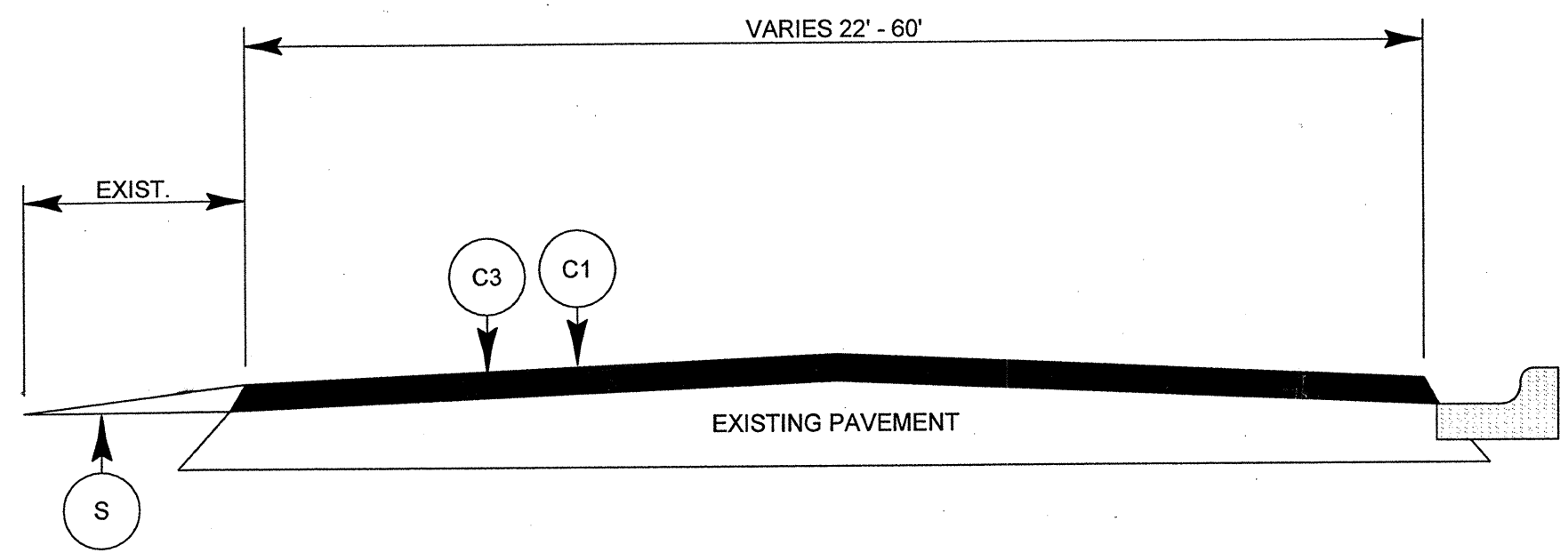
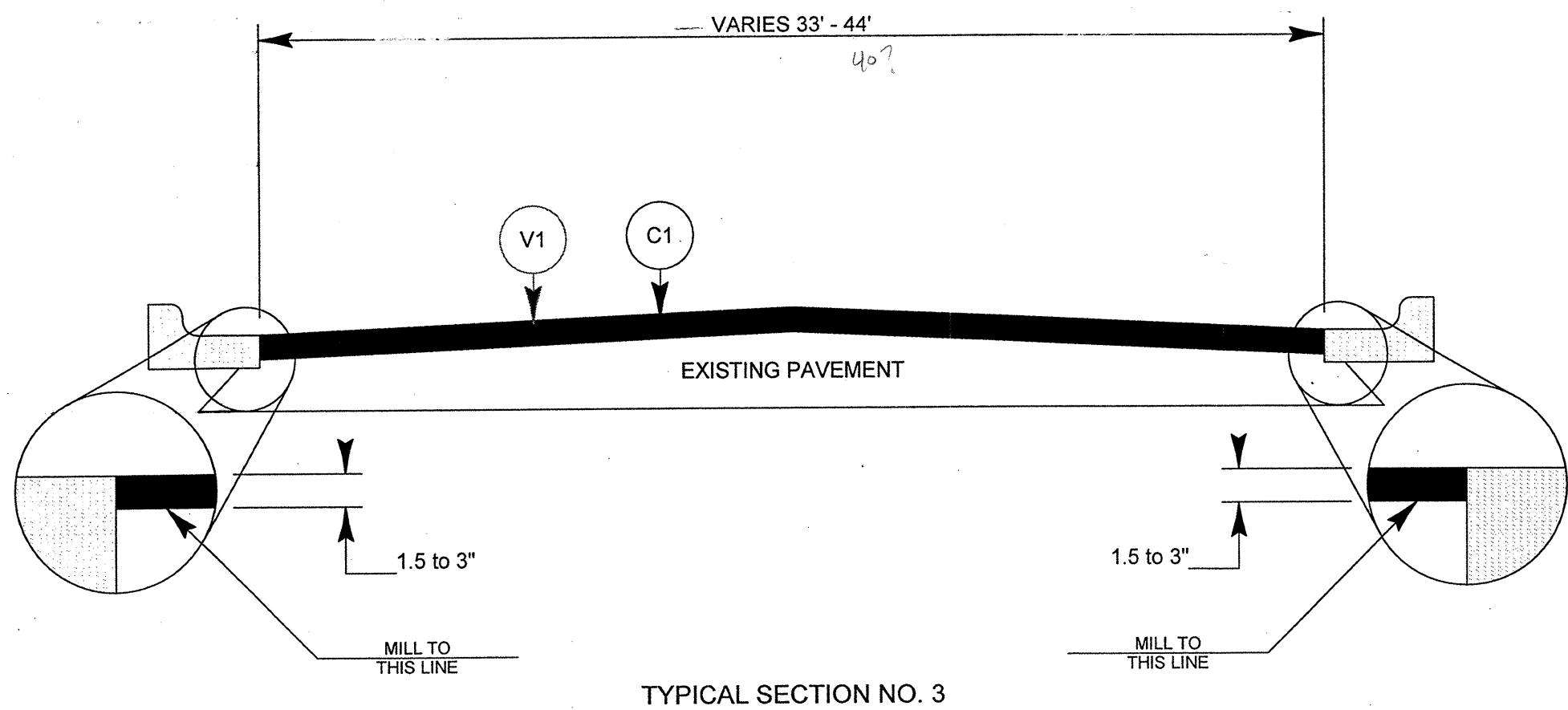
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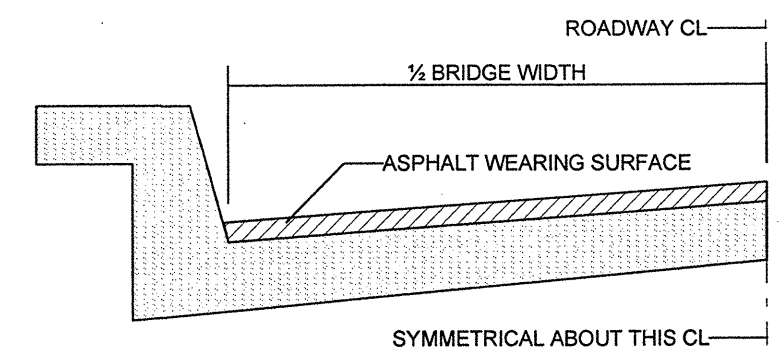
PATCHING EXISTING PAVEMENT

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT THE AVERAGE RATE OF 168 LBS PER SQ YD.
C2	PROP. APPROX. 1.25" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT THE AVERAGE RATE OF 137.5 LBS PER SQ YD.
C3	LEVELING COURSE, S9.5B. SEE SUMMARY OF QUANTITIES FOR SPECIFIC MAPS.
C4	LEVELING COURSE, SF9.5A. SEE SUMMARY OF QUANTITIES FOR SPECIFIC MAPS.
D	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT THE AVERAGE RATE OF 280 LBS PER SQ YD.
E	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT THE AVERAGE RATE OF 448 LBS PER SQ YD.
S	SHOULDER RECONSTRUCTION.
V1	MILLING, 1" TO 3"
V2	REMOVAL OF EXISTING FULL DEPTH ASPHALT PAVEMENT

PROJECT NO. 5CR.20321.5	SHEET NO. 11	TOTAL SHEETS
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ASPHALT CONCRETE SURFACE COURSE (LEVELING COURSE)



BRIDGE HALF TYPICAL SECTION

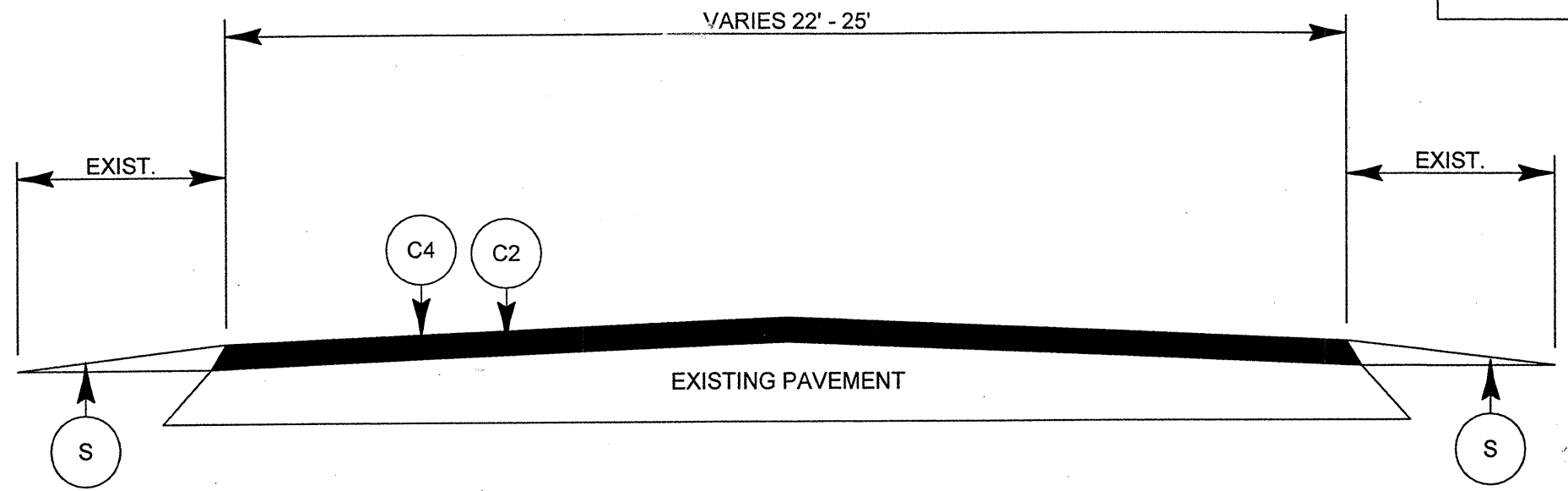
FOR BRIDGES WITH FLOOR DRAINS, CARE SHALL BE EXERCISED IN PLACING THE WEARING SURFACE AROUND FLOOR DRAINS SO AS NOT TO HINDER EFFECTIVE DRAINAGE. ALL DRAINS SHALL BE LEFT OPEN

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.

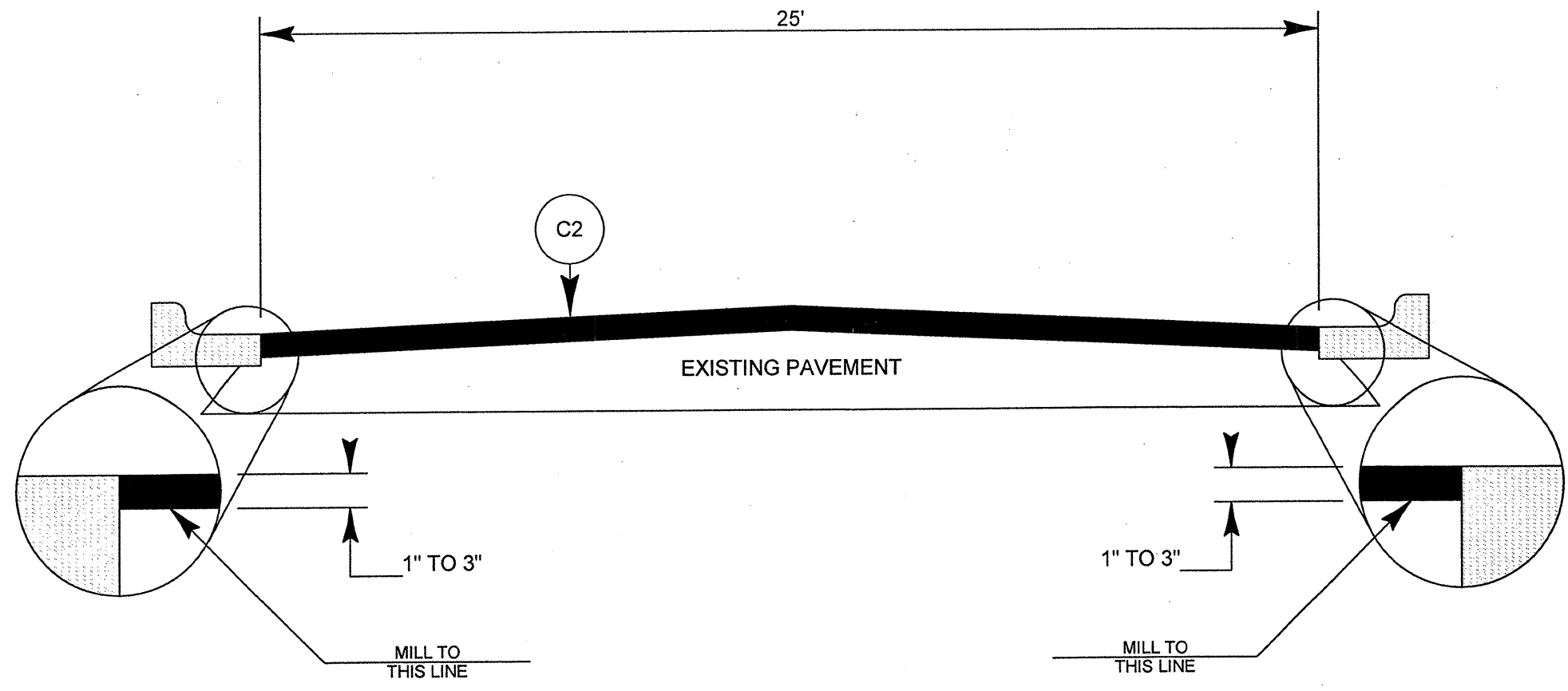
NOTES

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

PROJECT NO. 5CR.20321.5	SHEET NO. 12	TOTAL SHEETS
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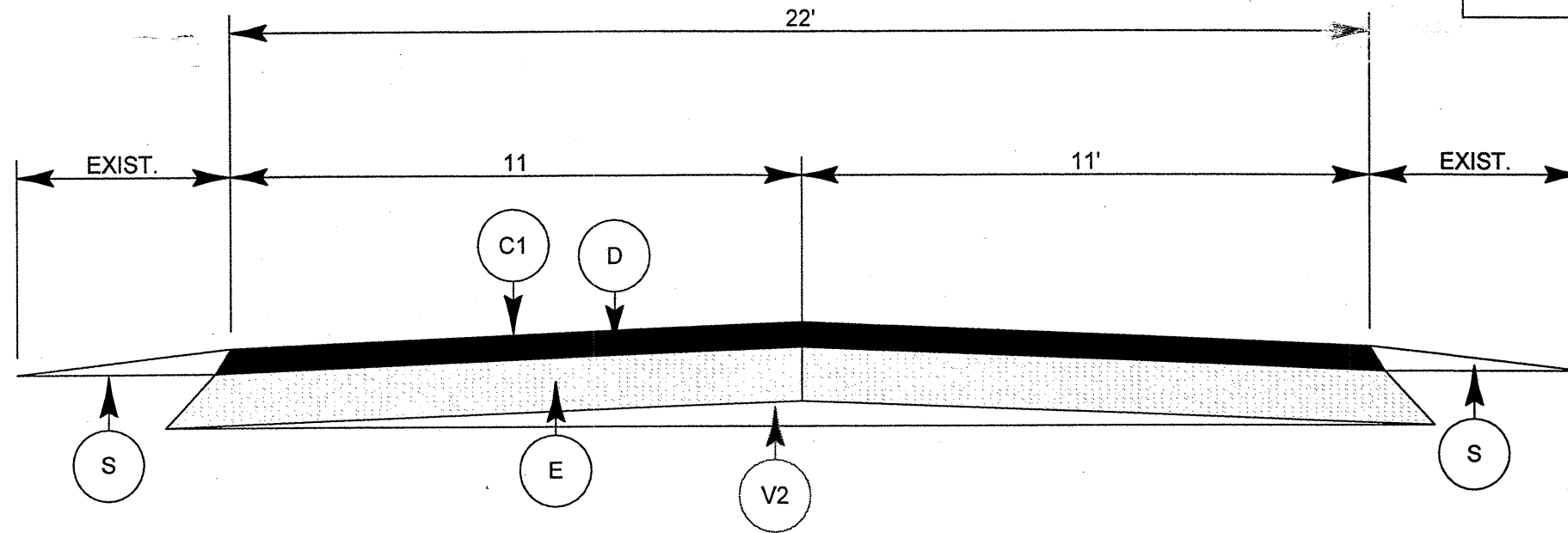


TYPICAL SECTION NO. 5



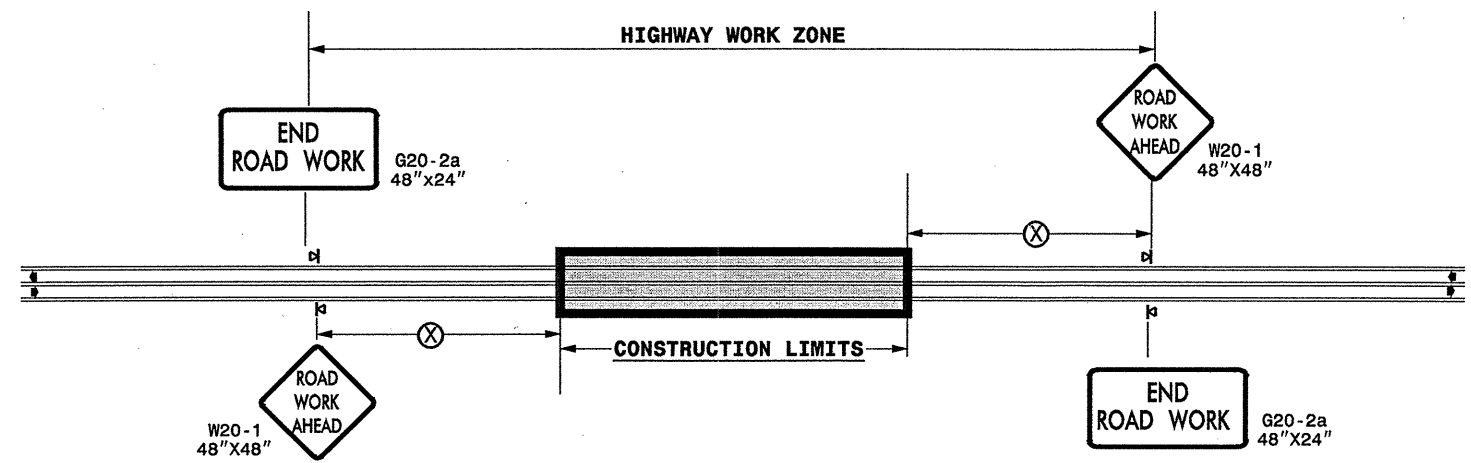
TYPICAL SECTION NO. 6

PROJECT NO. 5CR.20321.5	SHEET NO. 13	TOTAL SHEETS



TYPICAL SECTION NO. 7

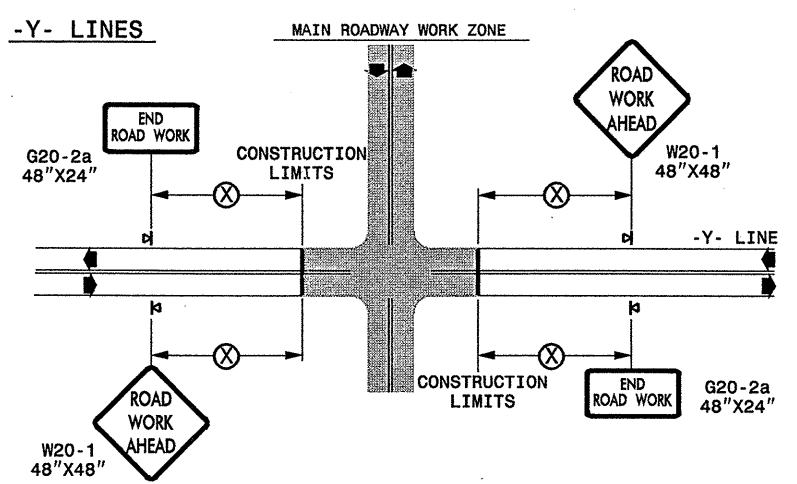
TWO-WAY UNDIVIDED ** (L-LINES)



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)



DETAIL DRAWING
FOR TWO-WAY UNDIVIDED
WORK ZONE WARNING SIGNS

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

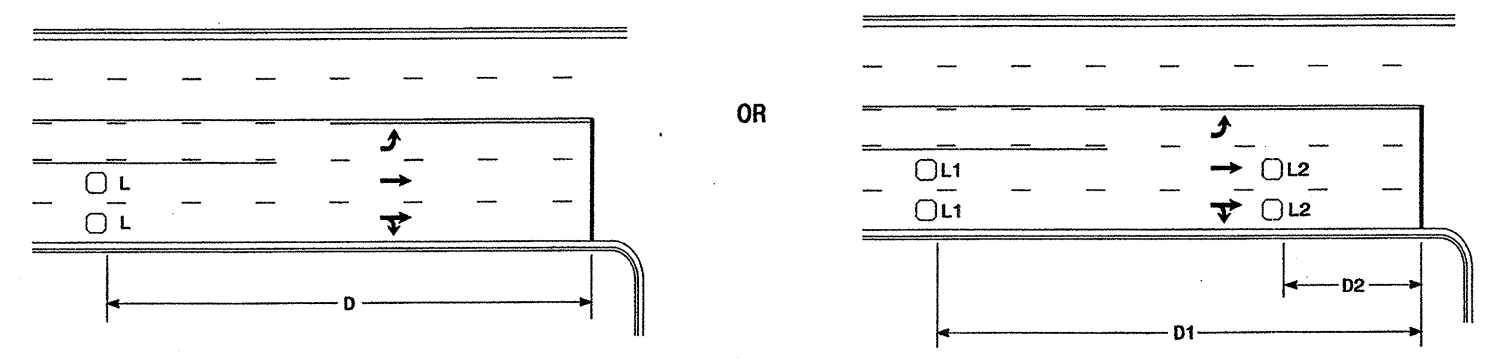
◀ DIRECTION OF TRAFFIC FLOW

SHEET 1 OF 1

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

04-DEC-2006 16:22
 \LD01\DF\SR001\GROUPS-W\TCCC\design\group4\resurfacing\resurfacing2006\div05\5cr203215durham\5cr203215_2wayundivurbfrwysjuly2006.dgn
 psey/mor e AT 11/12/06 4:47

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

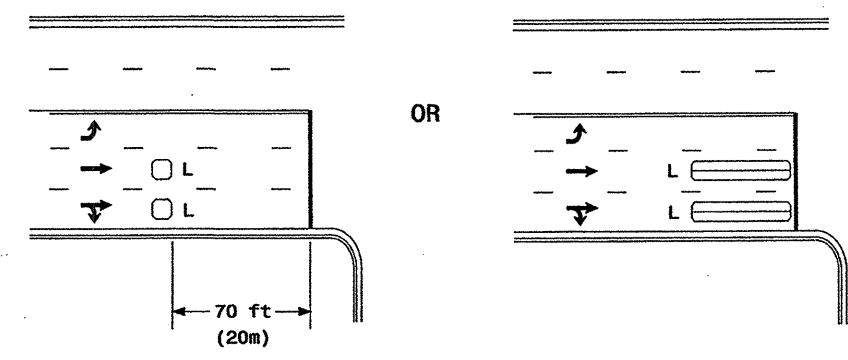
Speed Limit mph (km/hr)	D1 ft (m)	D2 ft (m)
40 (64)	250 (75)	80 (25)
45 (72)	300 (90)	90 (27)
50 (80)	355 (110)	100 (30)
55 (88)	420 (130)	110 (35)

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

Volume Density Operation

"Stretch" Operation

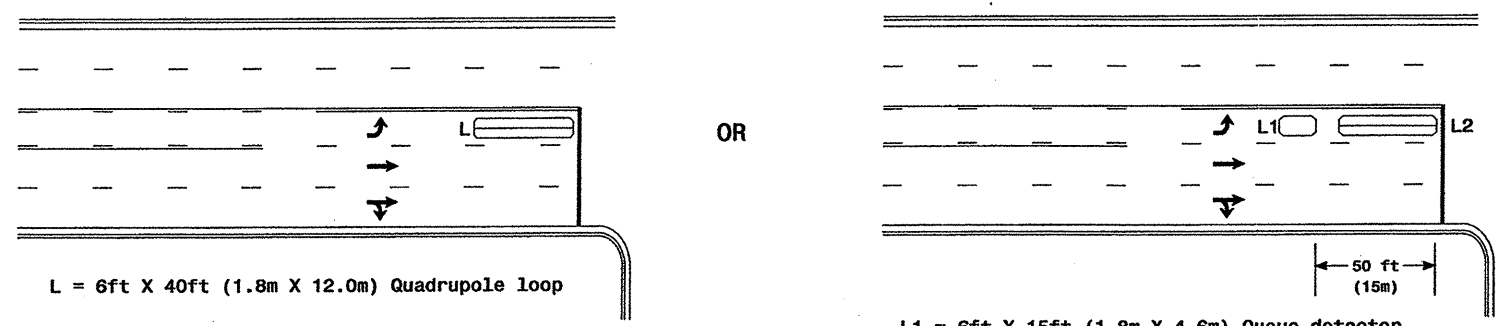
Low Speed Detection [≤35 mph (56 km/hr)]



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



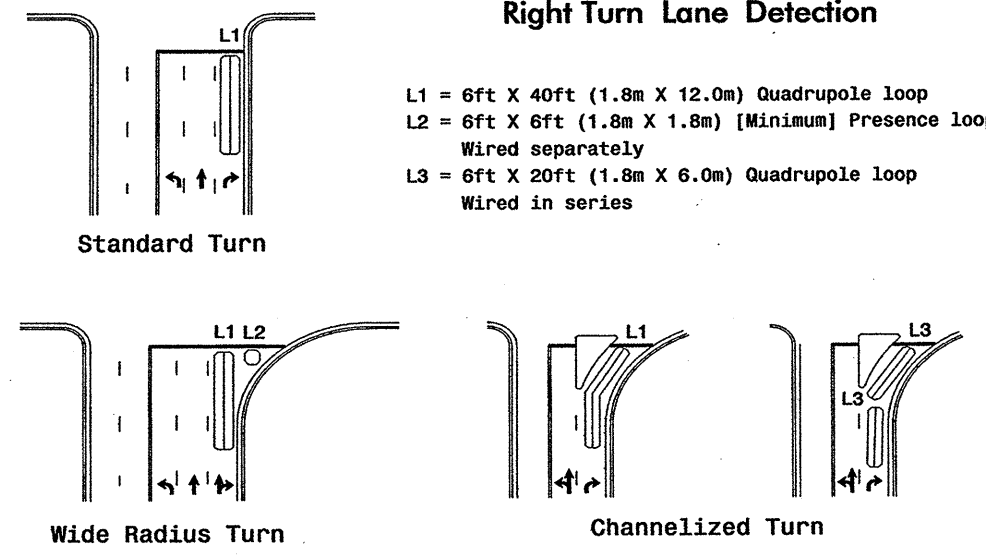
L = 6ft X 40ft (1.8m X 12.0m) Quadrupole loop

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

Presence Loop Detection

Queue Loop Detection

Right Turn Lane Detection



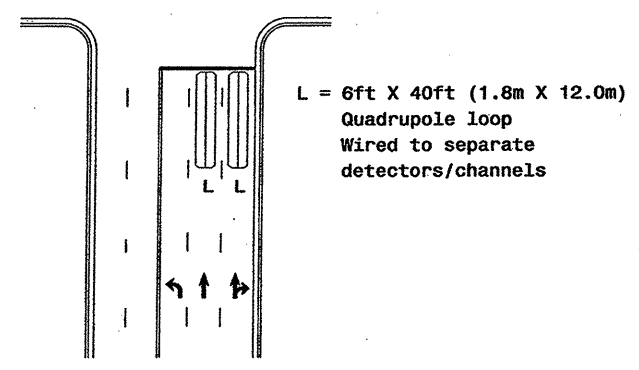
L1 = 6ft X 40ft (1.8m X 12.0m) Quadrupole loop
L2 = 6ft X 6ft (1.8m X 1.8m) [Minimum] Presence loop
Wired separately
L3 = 6ft X 20ft (1.8m X 6.0m) Quadrupole loop
Wired in series

Standard Turn

Wide Radius Turn

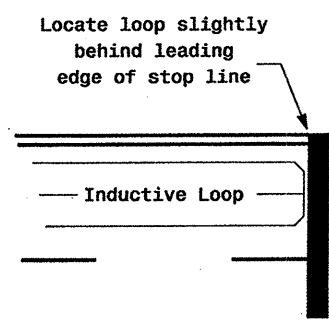
Channelized Turn

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

Typical Loop Locations

PLAN DATE: June 2006	REVIEWED BY:
PREPARED BY: P. L. Alexander	REVIEWED BY:
REVISIONS:	INIT. DATE
SIGNATURE: <i>P. L. Alexander</i>	DATE: 6/6/06
SIG. INVENTORY NO.	