



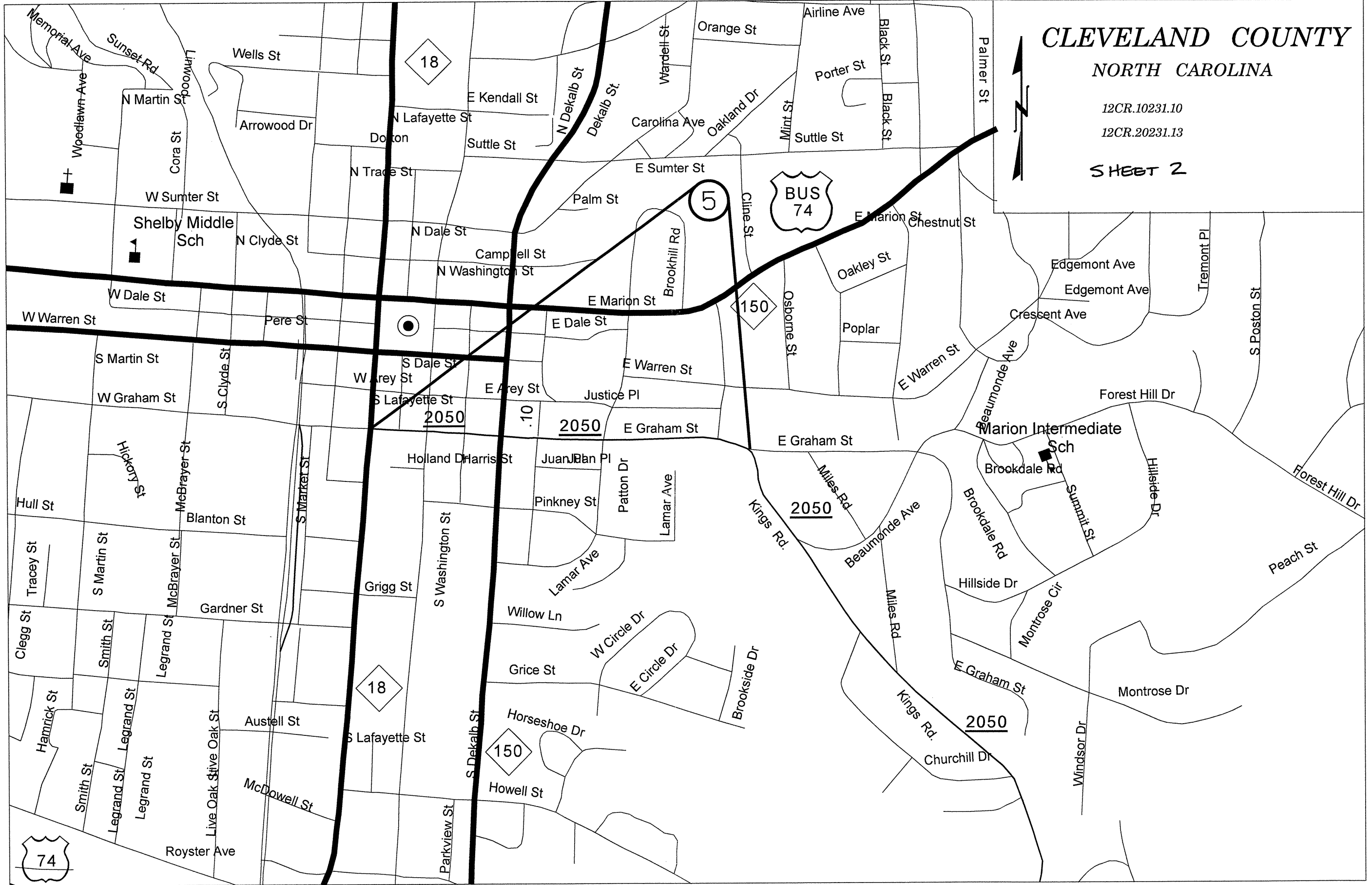
# CLEVELAND COUNTY

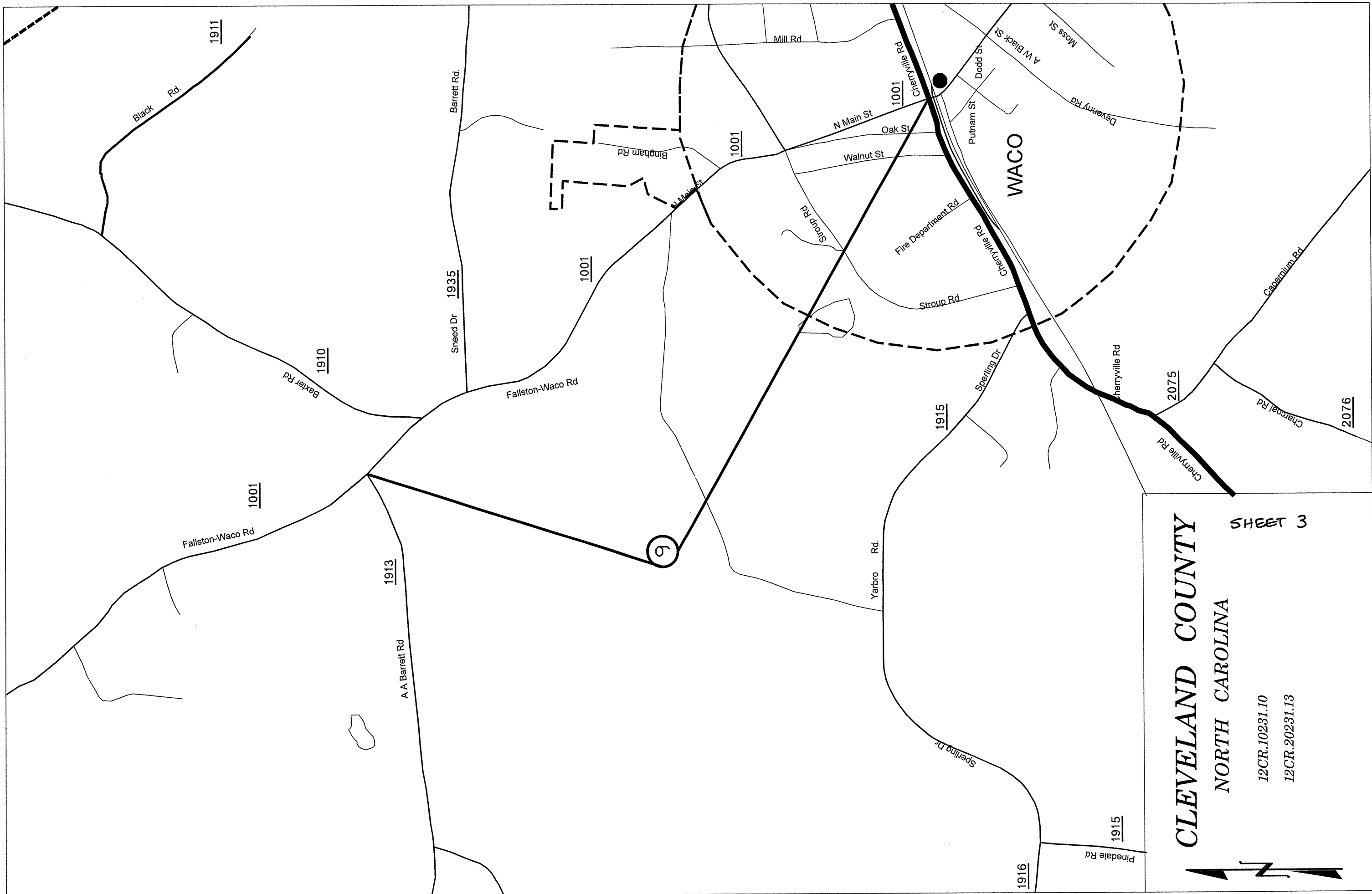
NORTH CAROLINA

12CR.10231.10

12CR.20231.13

SHEET 2

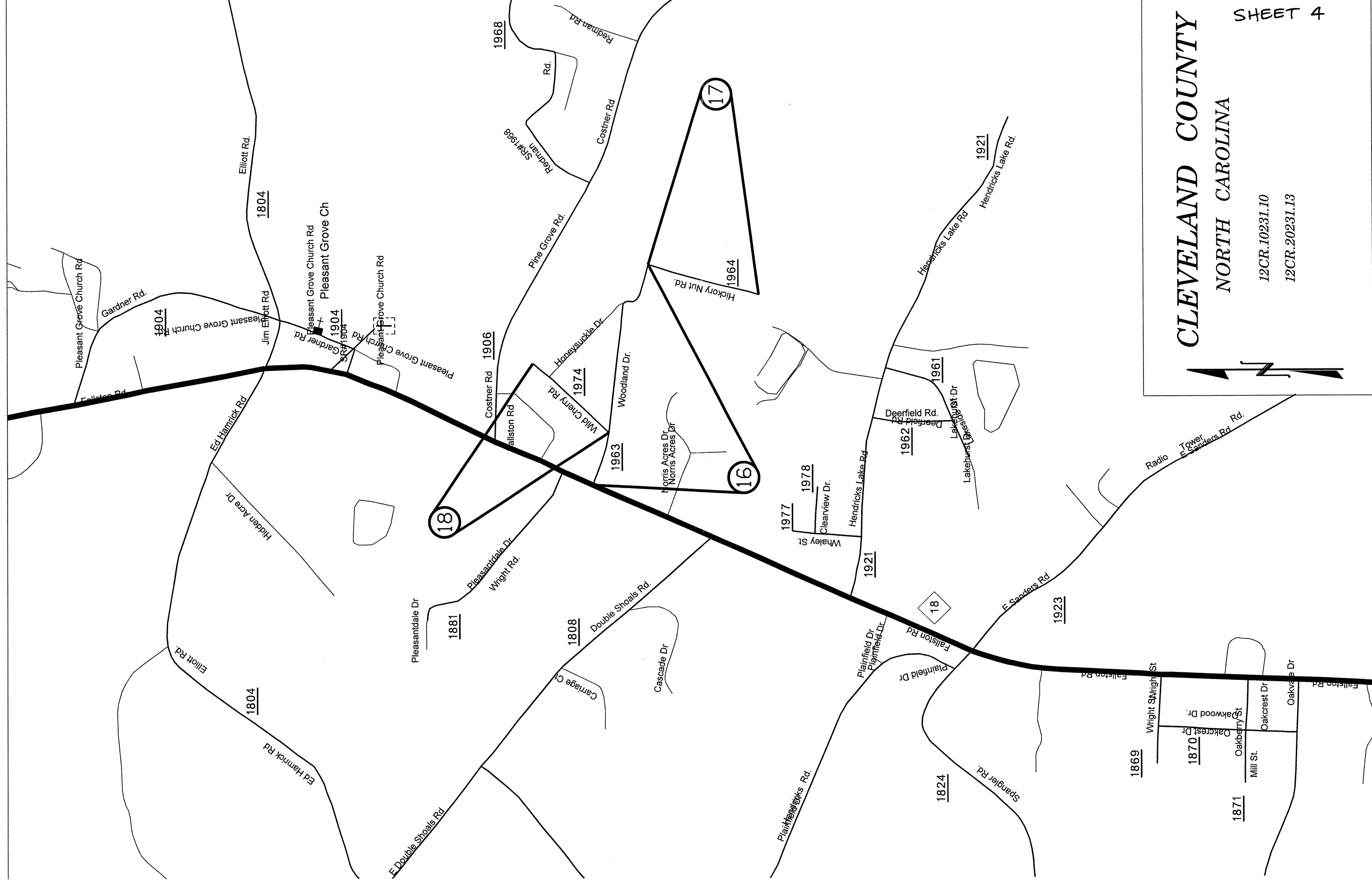




**CLEVELAND COUNTY**  
**NORTH CAROLINA**  
 12CR.10231.10  
 12CR.20231.13

SHEET 3





**CLEVELAND COUNTY**  
**NORTH CAROLINA**

12CR.10231.10  
 12CR.20231.13



1869 Wright SpWright St

1870 Oakcrest Dr

1871 Mill St

Oakberry St

Oakcrest Dr

Oakvale Dr

18

18

17

16

1804

1804

1904

1904

1881

1808

1968

1906

1974

1963

1964

1977

1978

1921

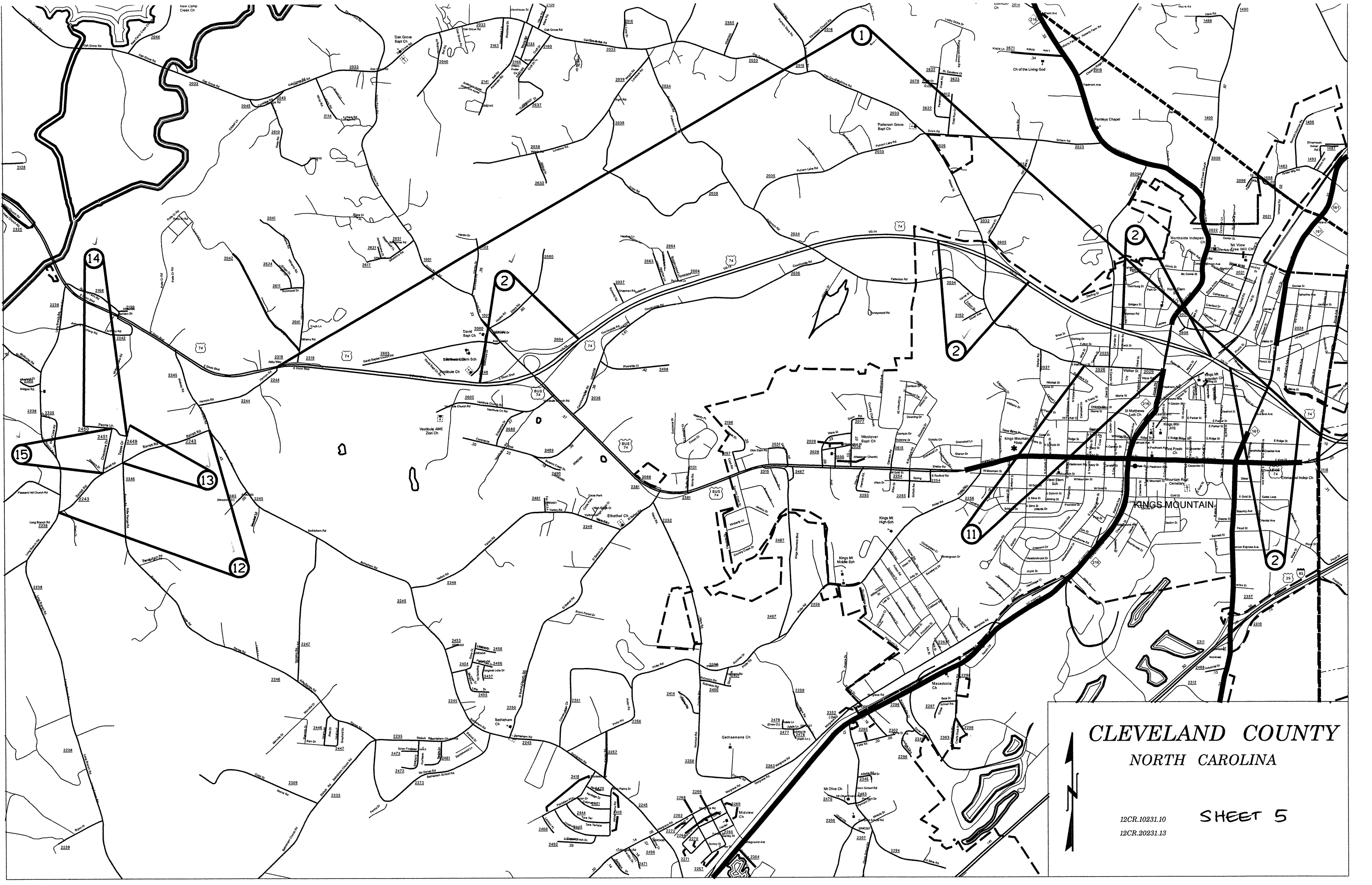
1962

1824

1961

1923

1921



**CLEVELAND COUNTY**  
NORTH CAROLINA

12CR.10231.10  
12CR.20231.13

**SHEET 5**

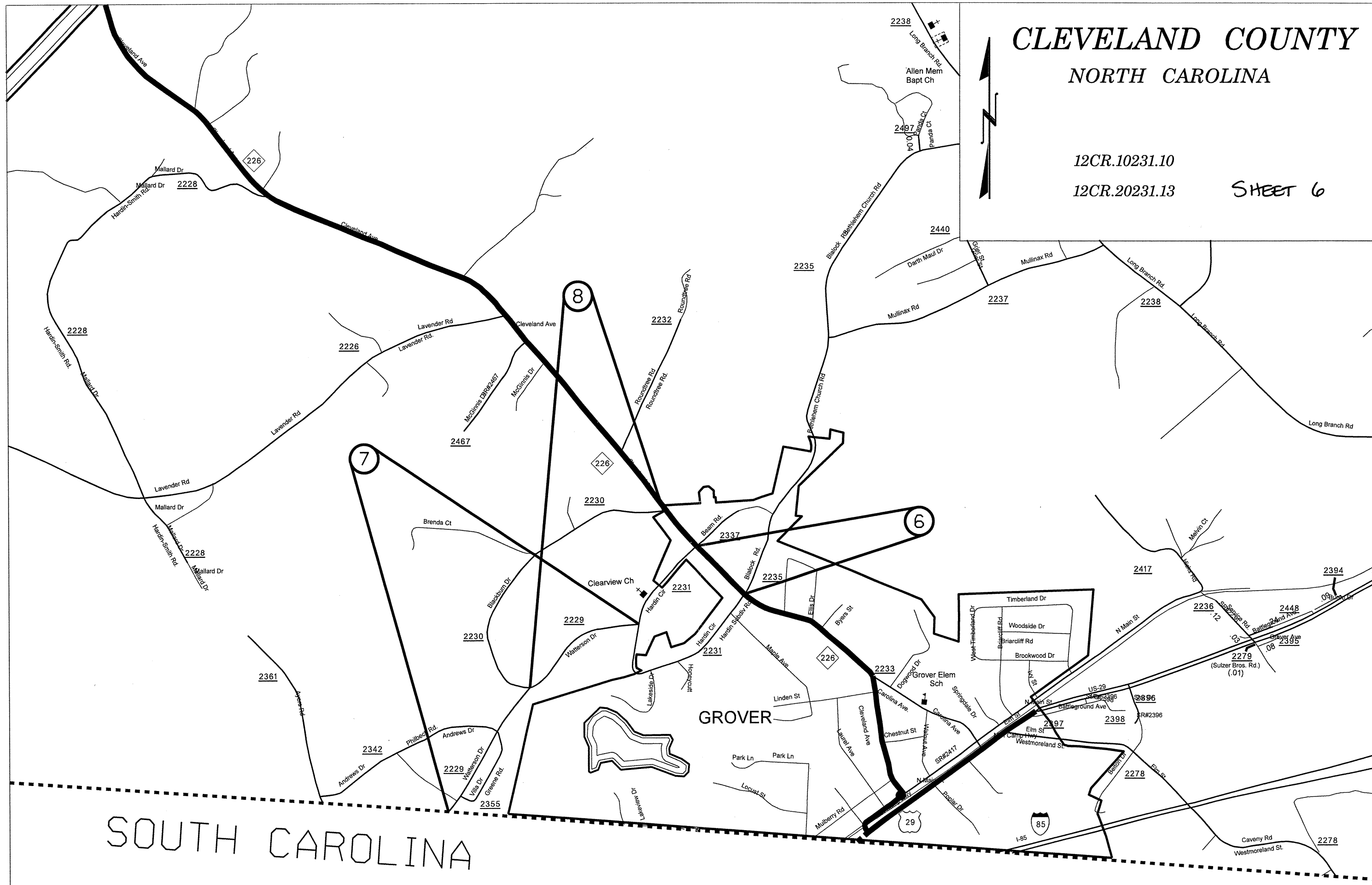


# CLEVELAND COUNTY NORTH CAROLINA

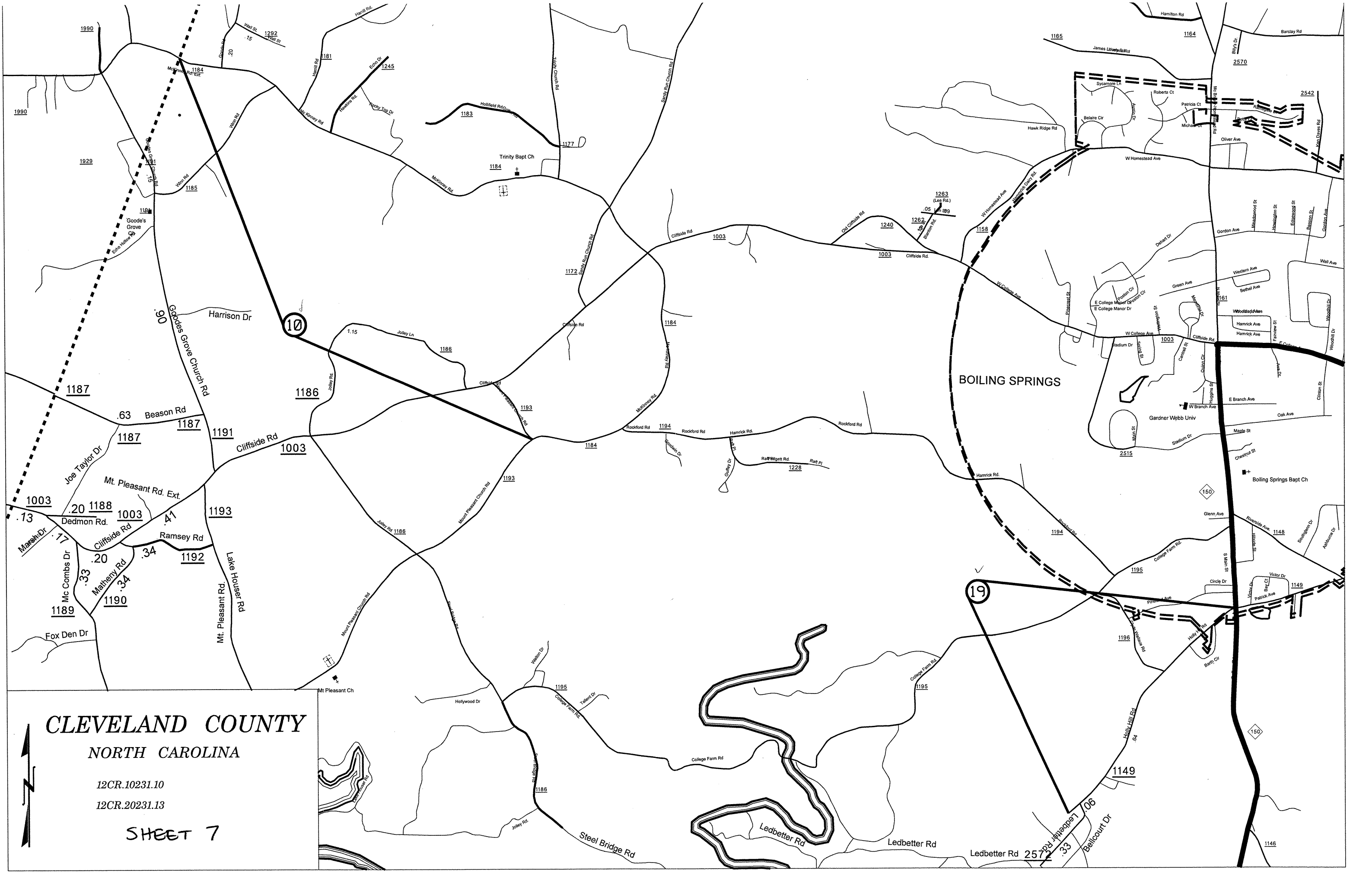
12CR.10231.10

12CR.20231.13

SHEET 6



SOUTH CAROLINA



**CLEVELAND COUNTY**  
NORTH CAROLINA

12CR.10231.10  
12CR.20231.13

SHEET 7



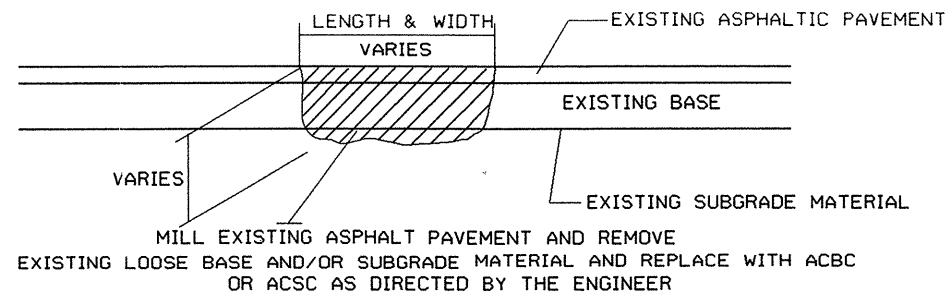
PAVEMENT SCHEDULE	
Y	SHOULDER RECONSTRUCTION
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
E1	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
V1	MILL ASPHALT PAVEMENT APPROX. 1½" (HALF LANE WIDTH FROM C & G)
V2	MILL ASPHALT PAVEMENT APPROX. 1½" - 3" (HALF LANE WIDTH FROM C & G)

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

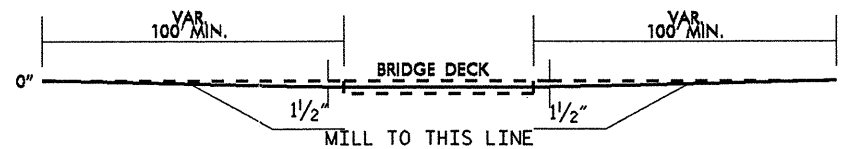
MILL PRIMARY BRIDGE APPROACHES 200' TO PROVIDE A SMOOTH TRANSITION AS DIRECTED.

MILL SECONDARY BRIDGE APPROACHES 100' TO PROVIDE A SMOOTH TRANSITION AS DIRECTED.

MILL INTO GUTTER LINE WHERE SHOWN AND AS DIRECTED.



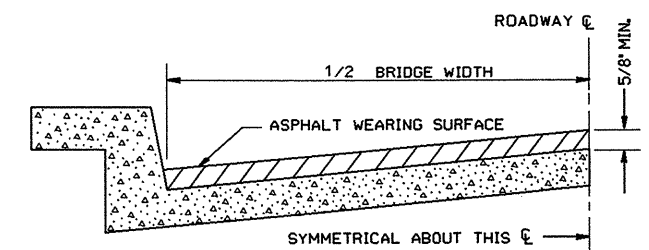
**PATCHING EXISTING PAVEMENT**



**BRIDGE PROFILE**

MILL BRIDGE TO CONCRETE DECK AND RESURFACE WITH SURFACE COURSE S9.5B or C AS DIRECTED BY THE ENGINEER

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
CLEVELAND COUNTY 2012	3	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
12CR.10231.10		
12CR.20231.13		



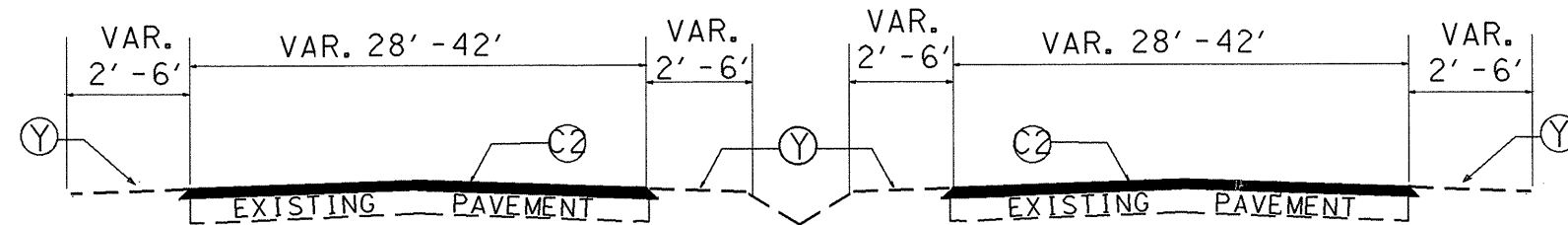
**BRIDGE HALF TYPICAL SECTION**

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

THE PROPOSED WEARING SURFACE SHALL VARY IN THICKNESS AS NECESSARY TO PROVIDE A SMOOTH RIDING SURFACE. A THICKNESS OF NOT LESS THAN 5/8" SHALL BE PROVIDED. THE MAXIMUM THICKNESS SHALL PREFERABLY BE 1-1/2" UNLESS IT IS IMPRACTICAL TO PROVIDE A SMOOTH RIDING SURFACE OTHERWISE.

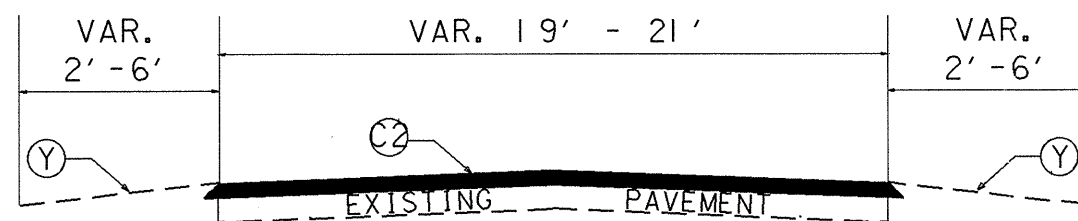
**NOTES**

ALL UNPAVED S.R. ROADS TO BE SURFACED 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 NOTED.  
 BRIDGES TO BE RESURFACED AT LOCATIONS AND TO DEPTH AS DIRECTED BY THE ENGINEER.



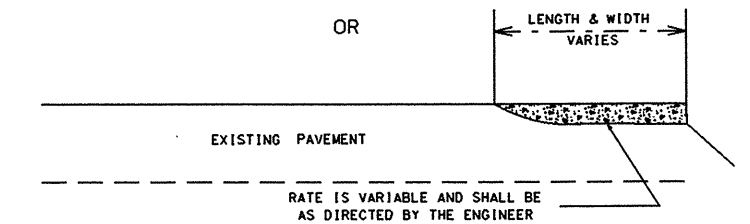
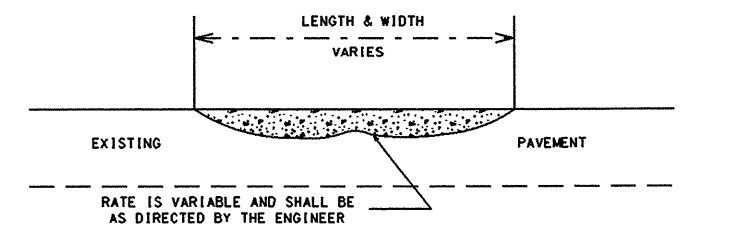
**TYPICAL SECTION NO. 1**

(MAP 1)



**TYPICAL SECTION NO. 2**

(MAP 2)



ASPHALT CONCRETE SURFACE COURSE  
 TYPE S9.5B. and S9.5C (LEVELING COURSE)



PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
CLEVELAND COUNTY 2012	9	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
12CR.10231.10		
12CR.20231.13		

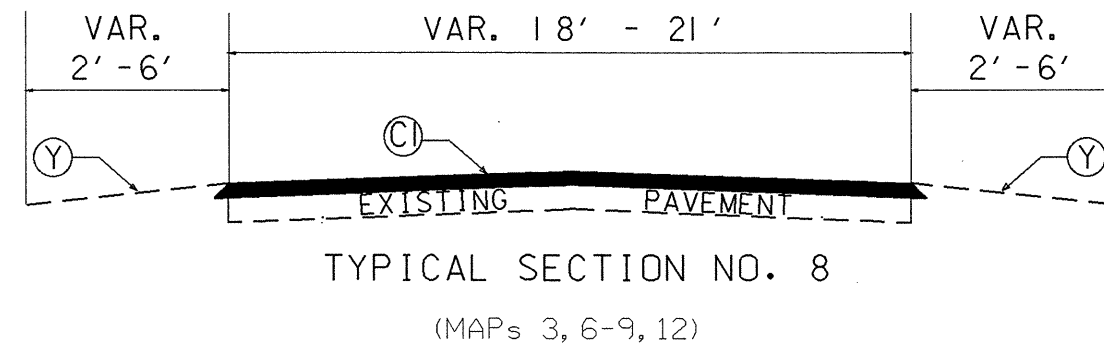
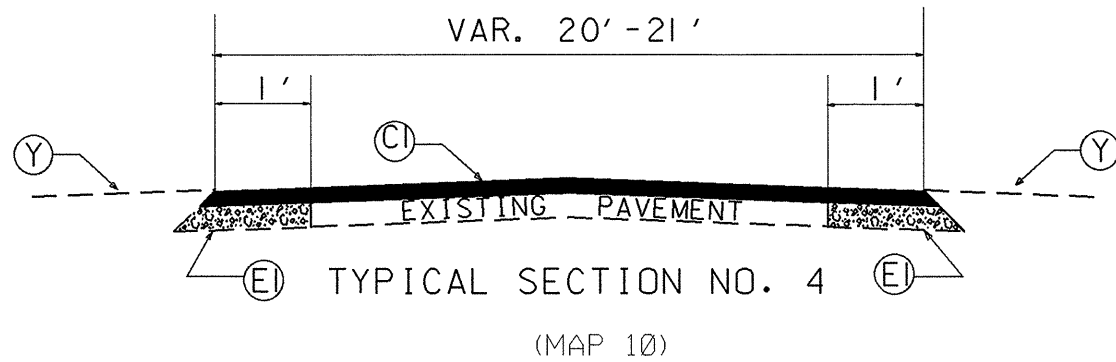
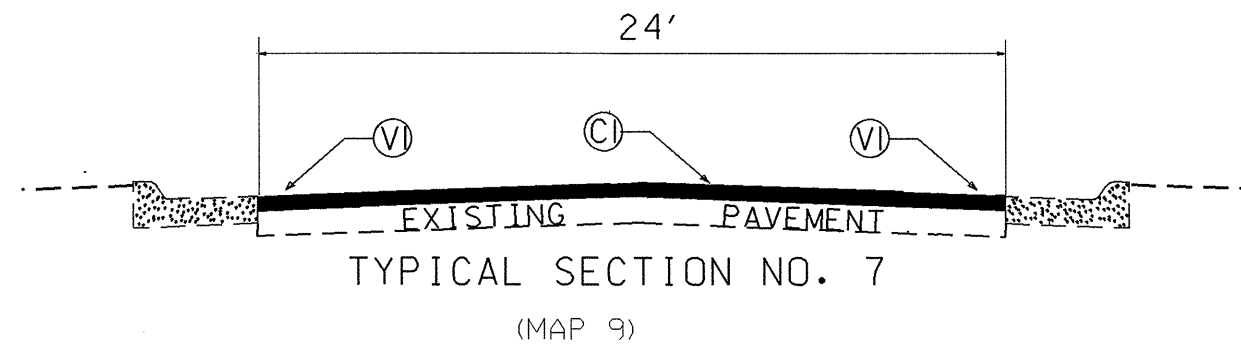
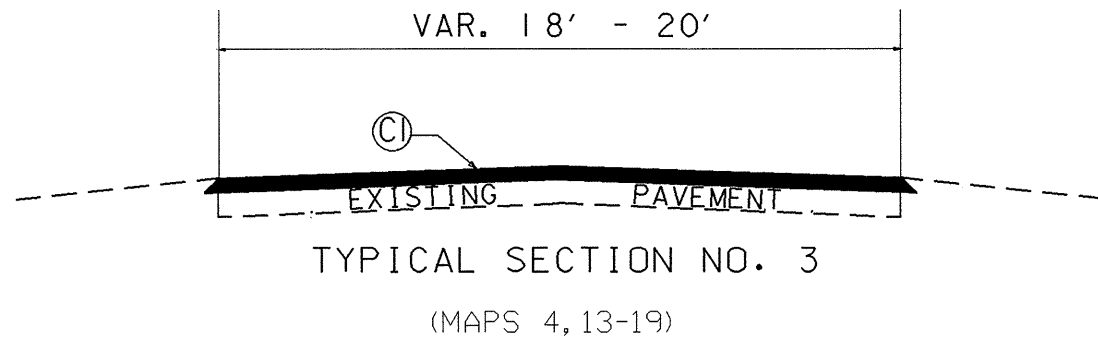
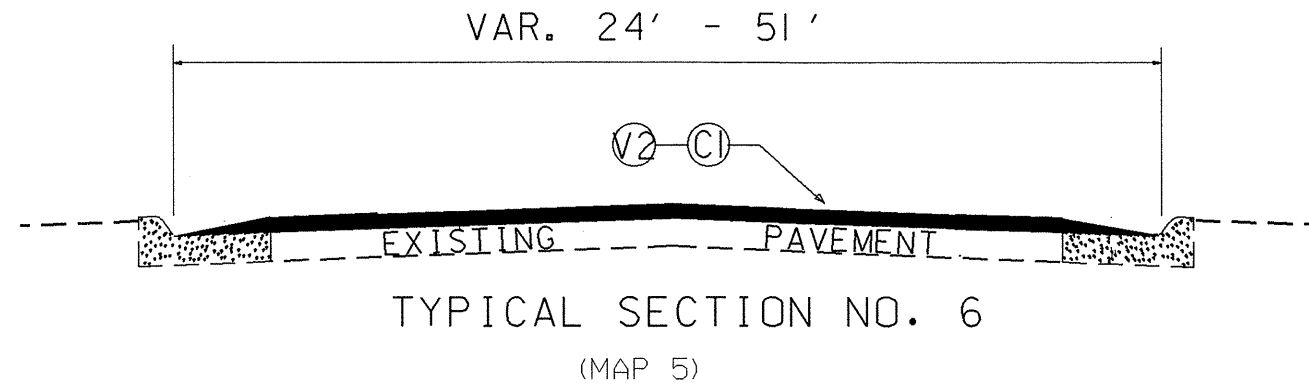
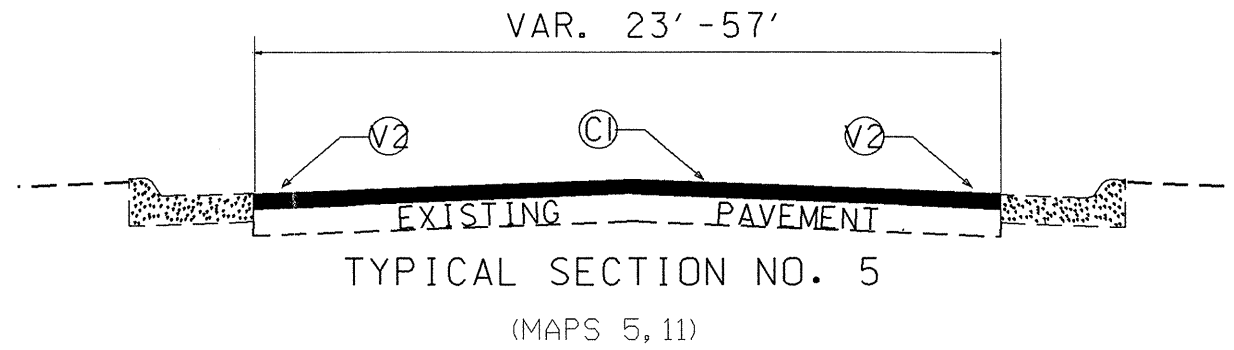
PAVEMENT SCHEDULE	
Y	SHOULDER RECONSTRUCTION
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
E1	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
V1	MILL ASPHALT PAVEMENT APPROX. 1½" (HALF LANE WIDTH FROM C & G)
V2	MILL ASPHALT PAVEMENT APPROX. 1½" - 3" (HALF LANE WIDTH FROM C & G)

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

MILL PRIMARY BRIDGE APPROACHES 200' TO PROVIDE A SMOOTH TRANSITION AS DIRECTED.

MILL SECONDARY BRIDGE APPROACHES 100' TO PROVIDE A SMOOTH TRANSITION AS DIRECTED.

MILL INTO GUTTER LINE WHERE SHOWN AND AS DIRECTED.



PROJECT NO.	SHEET NO.	TOTAL NO.
12CR.10231.10	10	
12CR.20231.13		

### SUMMARY OF QUANTITIES

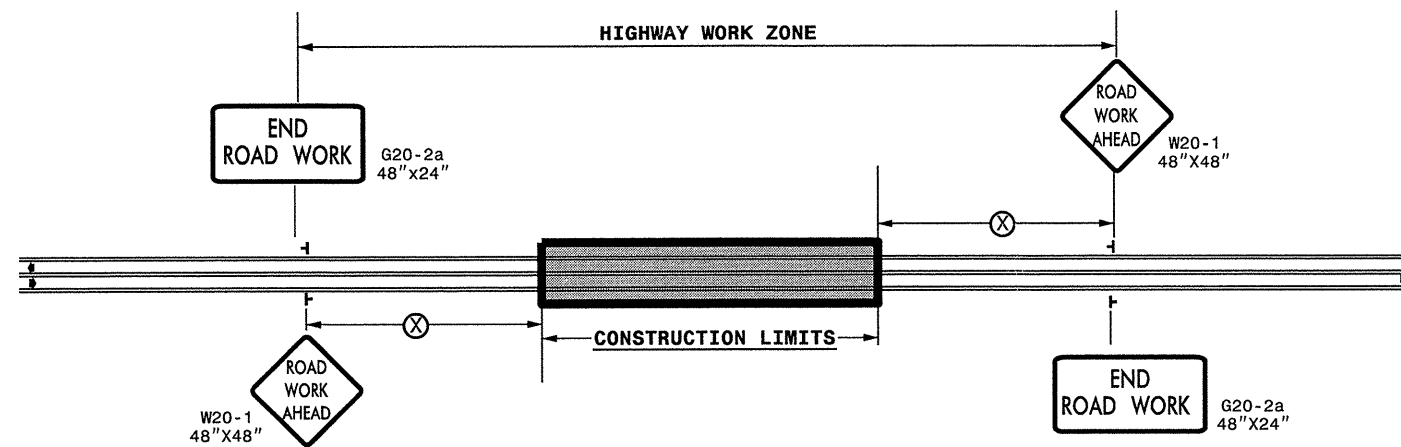
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	FINAL SURFACE TESTING REQUIRED	LENGTH MI	WIDTH FT	PORTABLE LIGHTING LS	AGGREGATE SHOULDER BORROW TONS	INCIDENTAL STONE BASE TONS	SHOULDER RECONSTRUCTION SMI	INCIDENTAL MILLING (FROM EXISTING PVMT) SY	INCIDENTAL MILLING (AT BRIDGE APPROACH) SY	INCIDENTAL MILLING AT RXR SY	1.5" TO 3" MILLING (HALF LANE WIDTH FROM C&G) SY	1 1/2" MILLING (HALF LANE WIDTH FROM C&G) SY	MILLED RUMBLE STRIPS LF	BASE COURSE, B25.0B TONS	SURFACE COURSE, S9.5B TONS	LEVELING COURSE, S9.5B TONS	SURFACE COURSE, S9.5C TONS	LEVELING COURSE, S9.5C TONS	PG 64-22 PLANT MIX TONS	PG 70-22 PLANT MIX TONS	PATCHING EXISTING PAVEMENT TONS	ADJ CATCH BASIN EA	ADJ MANHOLES EA	ADJ METER OR VALVE BOX EA	WORK ZONE TRAFFIC CONTROL LS		
12CR.10231.10	Cleveland	1	US 74	SR 2244 TO GASTON CO. LINE	1	NO	6.9	VAR. 56-84	1	1822	320	27.6	2520					148000				29,664	1,454		1,874	5,814						
		2	US 74 ASSOCIATED RAMPS	US 74 ASSOCIATED RAMPS	2	NO	5.8	VAR. 19-21		383	1190	5.8	900									8370	418		529	836						
<b>TOTAL FOR PROJ NO. 12CR.10231.10</b>							<b>12.7</b>		<b>1</b>	<b>2205</b>	<b>1510</b>	<b>33.4</b>	<b>900</b>	<b>2,520</b>					<b>148,000</b>				<b>38,034</b>	<b>1,872</b>		<b>2,403</b>	<b>6,652</b>				<b>1</b>	
12CR.20231.13	Cleveland	3	SR 1314 (ARTEE RD)	SR 1323 (MAIN ST) TO SR 1315	8	NO	2.27	19		300	100	4.54	111	450							2,353	284		160		313						
		4	SR 1431 (JONES RD EXT.)	SR 1320 TO CULDESAC	3	NO	0.22	20			35										240	20		16		60						
		5	SR 2050 (GRAHAM ST)	NC 18 (LAFAYETTE ST) TO KINGS RD	5	NO	0.14	VAR. 24-57					130			4300				1,118	56		71		140	5	20	11				
		6	SR 2231 (HARDIN CIRCLE)	NC 226 TO NC 226	8	NO	0.8	VAR. 18-19		106	90	1.6	111								829	41		52		82						
		7	SR 2229 (WATTERSON RD)	SR 2231 (HARDIN CIR) TO SC STATE LINE	8	NO	0.8	VAR. 18-19		106	100	1.6									829	41		52		116						
		8	SR 2230 (BLACKBURN DR)	SR 2229 (WATTERSON RD) TO NC 226	8	NO	0.87	VAR. 18-19		115	105	1.74	55								902	45		57		97						
		9	SR 1001 (WACO-FALLSTON RD)	SR 1913 (AA BARRETT RD) TO NC 150	8	NO	1.02	21		175	100	2.64	150				2500				1,560	306		113		343						
		10	SR 1184 (MCKINNEY RD)	SR 1193 TO RUTHERFORD CO LINE	4	NO	3.4	VAR. 20-21		450	280	6.8	222	450					1537		3,709	425		316		375						
		11	SR 2026 (WALKER ST)	NC 216 TO WACO RD	5	NO	0.47	VAR. 23-24					250			3000					615	141		46		185		10	5			
		12	SR 2243 (BARRETT RD)	SR 2245 TO SR 2238	8	NO	1.06	VAR. 19-20		140	60	2.12	111								1,156	93		75		162						
		13	SR 2449 (TEPEE DR)	SR 2243 TO CULDESAC	3	NO	0.25	VAR. 19-20			50										273	33		19		77						
		14	SR 2450 (PEORIA LN)	SR 2449 TO CULDESAC	3	NO	0.3	VAR. 19-20			80										327	20		21		56						
		15	SR 2451 (CHEYENNE DR)	SR 2450 TO SR 2243	3	NO	0.28	VAR. 19-20			60										305	22		20		61						
		16	SR 1963 (WOODLAND DR)	NC 18 TO SR 1964	3	NO	0.44	19					200								456	25		29		50						
		17	SR 1964 (HICKORY NUT RD)	SR 1963 (WOODLAND DR) TO DE	3	NO	0.22	19													228	12		14		25						
		18	SR 1974 (WILD CHERRY LN)	SR 1963 (WOODLAND DR) TO DE	3	NO	0.19	18													187	10		12		20						
		19	SR 1149 (HOLLY HILL RD)	NC 150 TO DE	3	NO	1.1	VAR. 18-19			90		55								1,140	60		72		120						
<b>TOTAL FOR PROJ NO. 12CR.20231.13</b>							<b>14.51</b>		<b>0</b>	<b>1392</b>	<b>1150</b>	<b>21.04</b>	<b>1,395</b>	<b>900</b>	<b>450</b>	<b>7,300</b>	<b>2,500</b>		<b>1,537</b>	<b>16,227</b>	<b>1,634</b>		<b>1,145</b>		<b>2,282</b>	<b>5</b>	<b>30</b>	<b>16</b>				
<b>GRAND TOTAL</b>							<b>27.21</b>		<b>1</b>	<b>3597</b>	<b>2660</b>	<b>54.44</b>		<b>6,165</b>		<b>7,300</b>	<b>2,500</b>		<b>148,000</b>	<b>1,537</b>	<b>16,227</b>	<b>1,634</b>	<b>38,034</b>	<b>1,872</b>		<b>3,548</b>	<b>8,934</b>	<b>5</b>	<b>30</b>	<b>16</b>	<b>1</b>	

PROJECT NO.	SHEET NO.	TOTAL NO.
12CR.10231.10	11	
12CR.20231.13		

## THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	4" X 90 M	4" X 120 M	4" X 120 M	6" X 90 M	6" X 90 M	6" X 120 M	8" X 90 M	8" X 120 M	16" X 120 M	24" X 120 M	THERMO	THERMO LT	THERMO	THERMO	THERMO	4" WHITE	4" YELLOW	SNOW
					WHITE	YELLOW	WHITE	WHITE	YELLOW	WHITE	WHITE	WHITE	WHITE	RXR 120 M	ARROW	RT ARROW	STR & RT	STR & LT	PAINT	PAINT	PLOWABLE	
					LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	M EA	90 M EA	LF	LF	EA
12CR.10231.10	Cleveland	1	US 74	SR 2244 TO GASTON CO. LINE				74,000	74,000	23,500	7,000											1,320
		2	US 74 ASSOCIATED RAMPS	US 74 ASSOCIATED RAMPS				30,800	30,800													
<b>TOTAL FOR PROJ NO. 12CR.10231.10</b>								<b>104,800</b>	<b>104,800</b>	<b>23,500</b>	<b>7,000</b>						<b>2</b>					<b>1,320</b>
					<b>209,600</b>										<b>2</b>							
12CR.20231.13	Cleveland	3	SR 1314 (ARTEE RD)	SR 1323 (MAIN ST) TO SR 1315									100	70	4					48,000	48,000	
		4	SR 1431 (JONES RD EXT.)	SR 1320 TO CULDESAC																		
		5	SR 2050 (GRAHAM ST)	NC 18 (LAFAYETTE ST) TO KINGS RD	120	5,600	1,100					480		192		8	3	8	4	360	90	135
		6	SR 2231 (HARDIN CIRCLE)	NC 226 TO NC 226																17,216	17,216	
		7	SR 2229 (WATTERSON RD)	SR 2231 (HARDIN CIR) TO SC STATE LINE																17,216	17,216	
		8	SR 2230 (BLACKBURN DR)	SR 2229 (WATTERSON RD) TO NC 226																18,722	18,722	
		9	SR 1001 (WACO-FALLSTON RD)	SR 1913 (AA BARRETT RD) TO NC 150									15							22,070	28,406	120
		10	SR 1184 (MCKINNEY RD)	SR 1193 TO RUTHERFORD CO LINE																108,000	73,168	
		11	SR 2026 (WALKER ST)	NC 216 TO WACO RD																	10,114	
		12	SR 2243 (BARRETT RD)	SR 2245 TO SR 2238																22,811	22,811	
		13	SR 2449 (TEPEE DR)	SR 2243 TO CULDESAC																		
		14	SR 2450 (PEORIA LN)	SR 2449 TO CULDESAC																		
		15	SR 2451 (CHEYENNE DR)	SR 2450 TO SR 2243																		
		16	SR 1963 (WOODLAND DR)	NC 18 TO SR 1964																9,469	9,469	
		17	SR 1964 (HICKORY NUT RD)	SR 1963 (WOODLAND DR) TO DE																		
		18	SR 1974 (WILD CHERRY LN)	SR 1963 (WOODLAND DR) TO DE																		
		19	SR 1149 (HOLLY HILL RD)	NC 150 TO DE																23672	23672	
<b>TOTAL FOR PROJ NO. 12CR.20231.13</b>					<b>120</b>	<b>5,600</b>	<b>1,100</b>					<b>480</b>	<b>100</b>	<b>277</b>	<b>4</b>	<b>8</b>	<b>3</b>	<b>8</b>	<b>4</b>	<b>287,536</b>	<b>268,884</b>	<b>255</b>
					<b>6,700</b>								<b>23</b>		<b>556,420</b>							
<b>GRAND TOTAL</b>					<b>120</b>	<b>5,600</b>	<b>1,100</b>	<b>104,800</b>	<b>104,800</b>	<b>23,500</b>	<b>7,000</b>	<b>480</b>	<b>100</b>	<b>277</b>	<b>4</b>	<b>8</b>	<b>5</b>	<b>8</b>	<b>4</b>	<b>287,536</b>	<b>268,884</b>	<b>1,575</b>
					<b>6,700</b>			<b>209,600</b>					<b>25</b>		<b>556,420</b>							

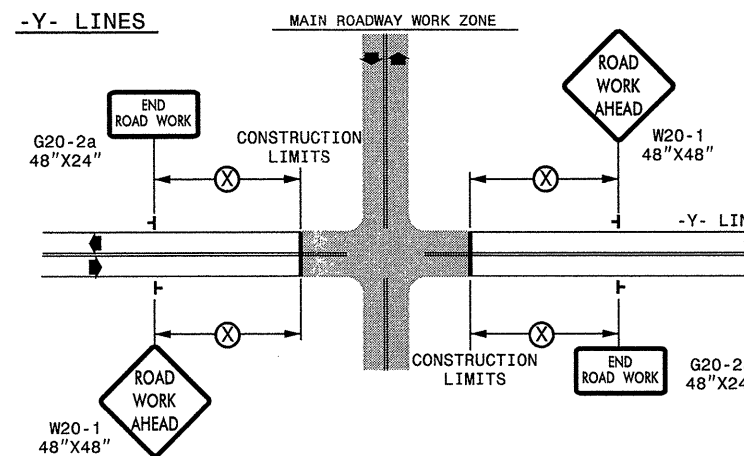
**TWO-WAY UNDIVIDED \*\* (L-LINES)**



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.
- 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

SHEET 1 OF 1

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

SEAL

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

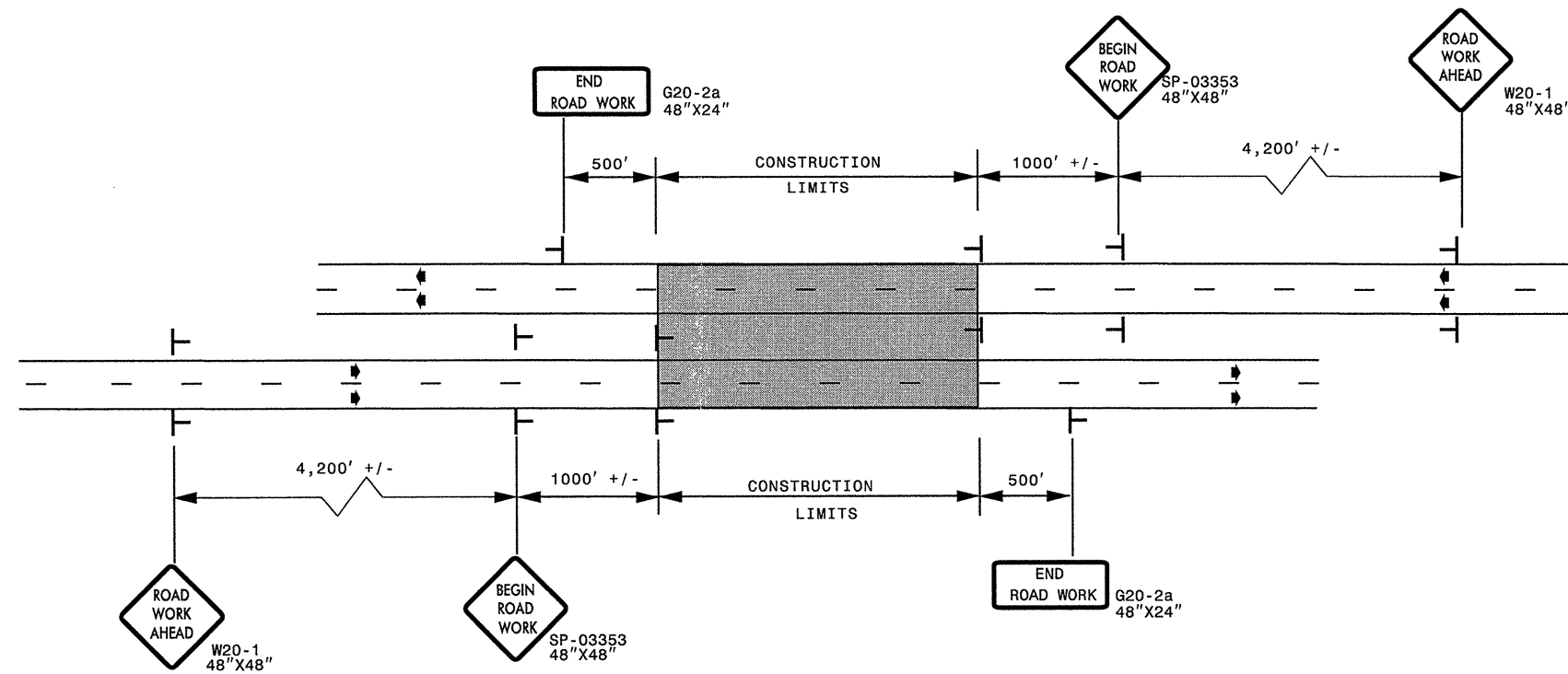
SCALE: NONE		REVISIONS	
DATE:		7-98	10/01
DWG. BY:		10-98	03/04
DESIGN BY:		01/01	11/04
REVIEWED BY:			

19-SEP-2011 14:09  
 \\DOT\DOT\GROUPS-WZTCC\TMU\WZTC\Resur-facing\2011\Div12\C202856A-B-12CR.10231.10x2-Cleveland-Gaston\_US-74(sq)\C202856A-B-12CR.10231.10x2-Cleveland-Gaston\_2way\_Undiv.&Urban\_Fr.wys.sta  
 sngr.een AT Te244733

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

PROJ. REFERENCE NO.	SHEET NO.

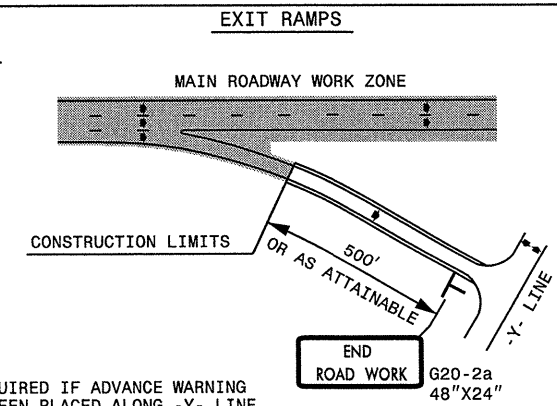
## DETAIL A



LEGEND	
	STATIONARY SIGN
▶	DIRECTION OF TRAFFIC FLOW

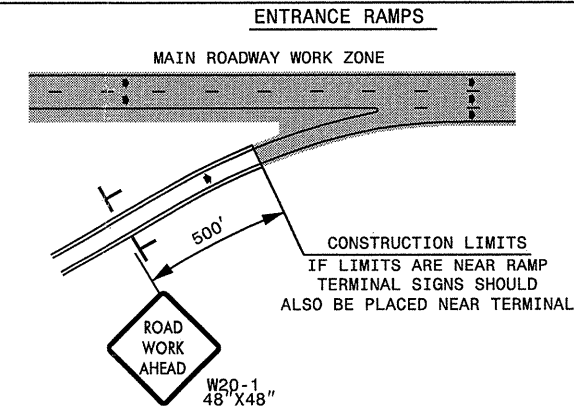
\* USE THE "\$250 SPEEDING PENALTY" SIGN, SPEED LIMIT SIGN, AND ORANGE PANEL; ONLY WHEN A "\$250 SPEEDING PENALTY" ORDINANCE HAS BEEN ISSUED BY THE REGIONAL TRAFFIC ENGINEER.

## DETAIL B

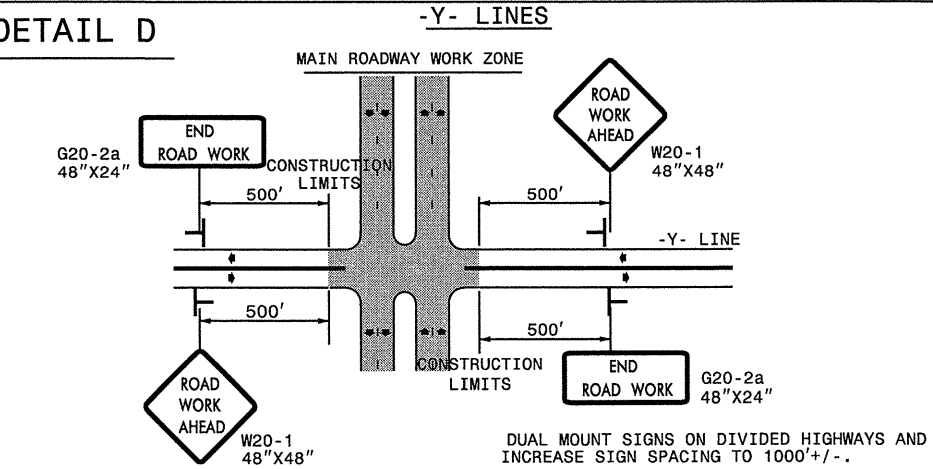


NOTE: SIGN NOT REQUIRED IF ADVANCE WARNING SIGNS HAVE BEEN PLACED ALONG -Y- LINE THAT RAMP INTERSECTS. IF CONSTRUCTION LIMITS ARE AT END OF RAMP, PLACE SIGN AT END OF RAMP.

## 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		REVISIONS
	DATE: 8/03		03/04
	DWG. BY: JI		
	DESIGN BY: JI		
	REVIEWED BY: _____		CARD FILE

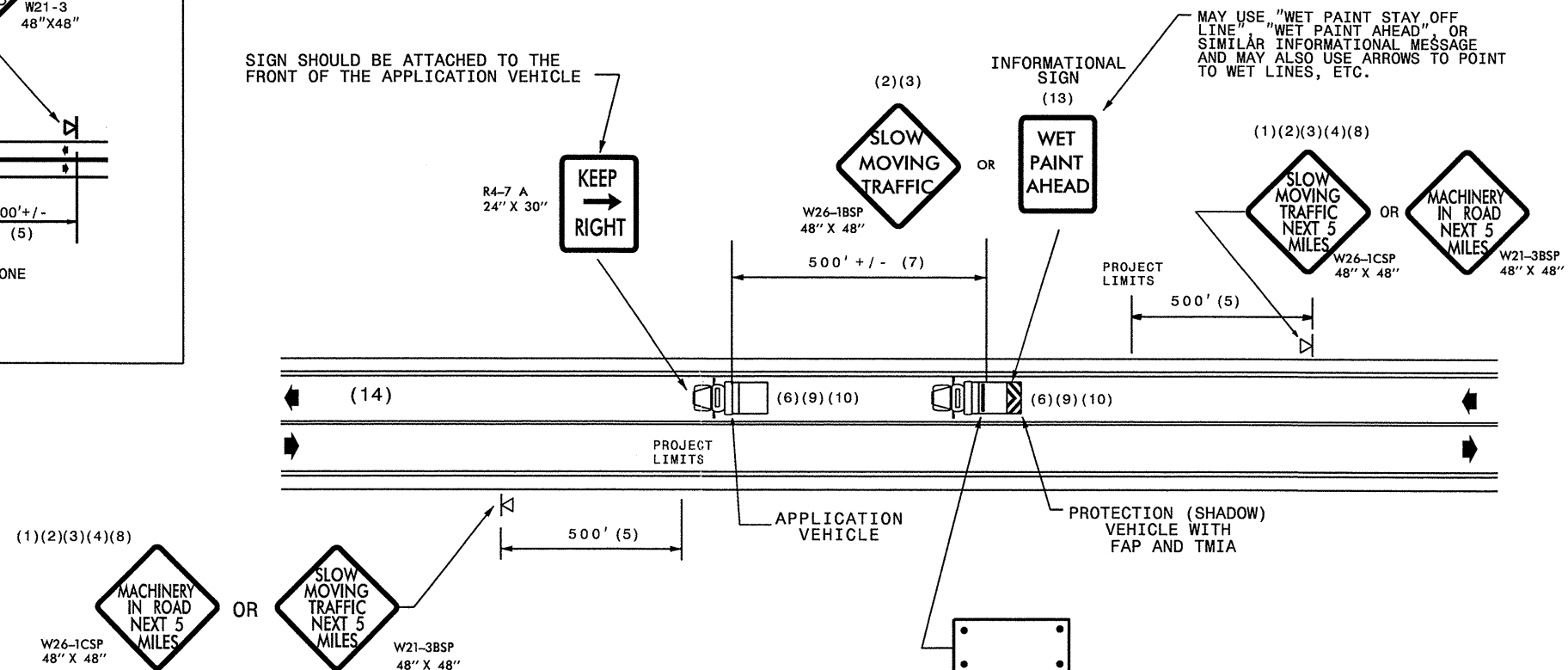
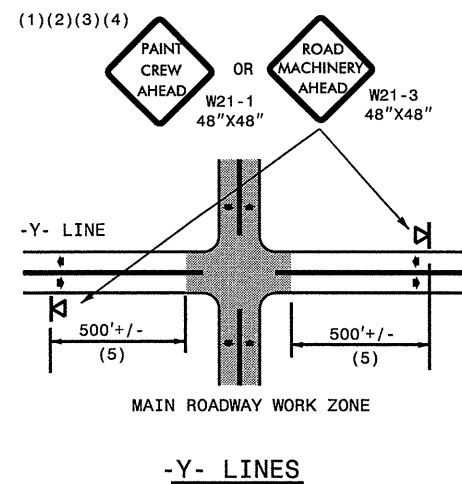
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### GENERAL NOTES

- (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 ACCOMMODATE 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"



## MOVING OPERATION CARAVAN








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

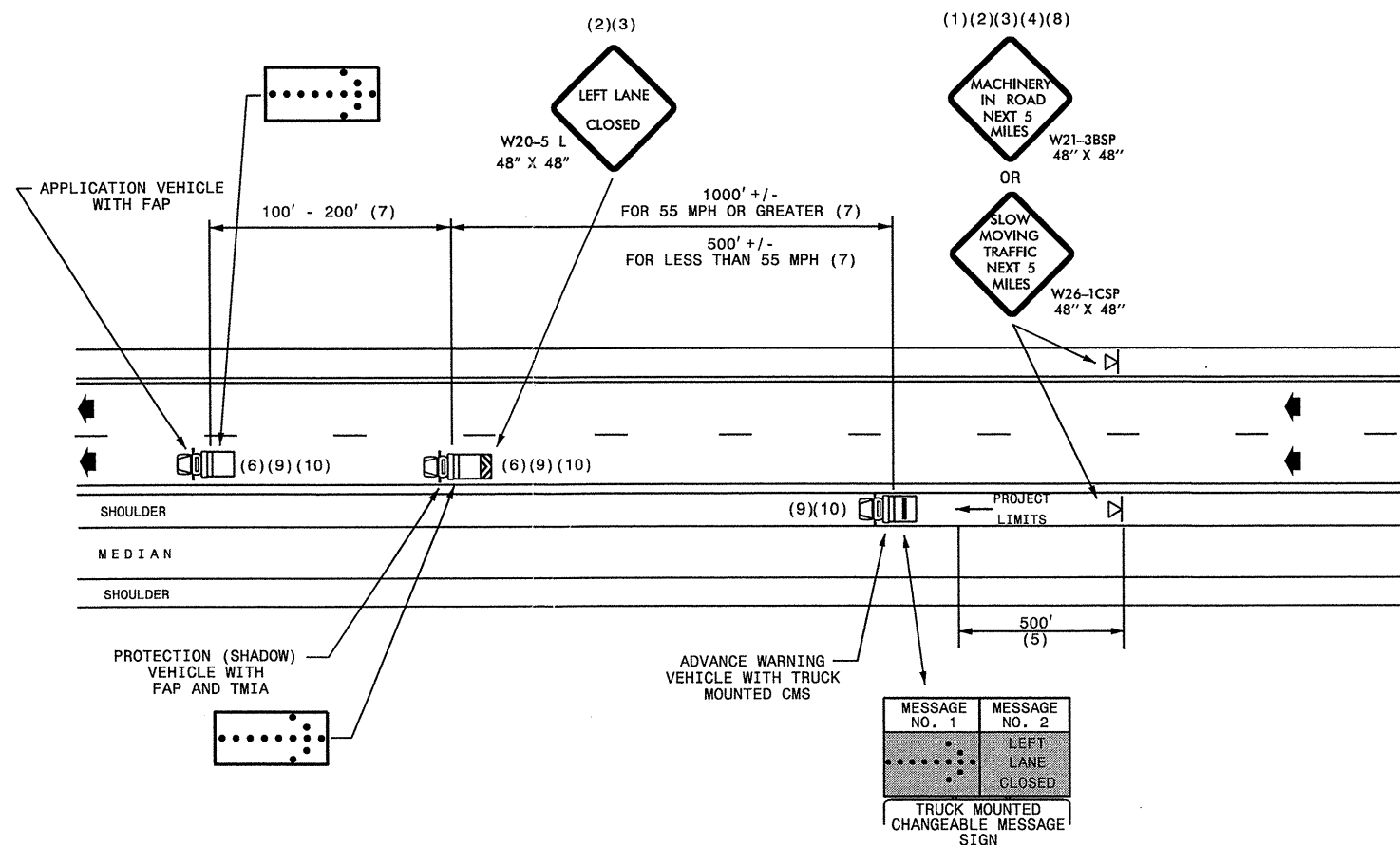
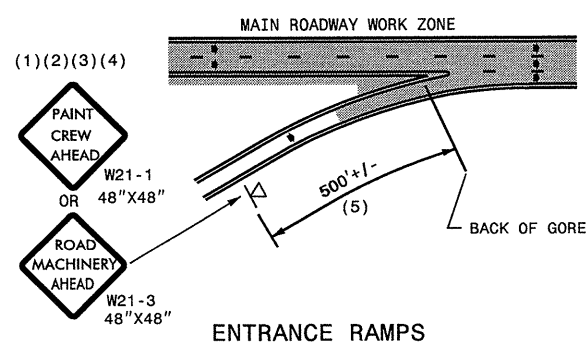
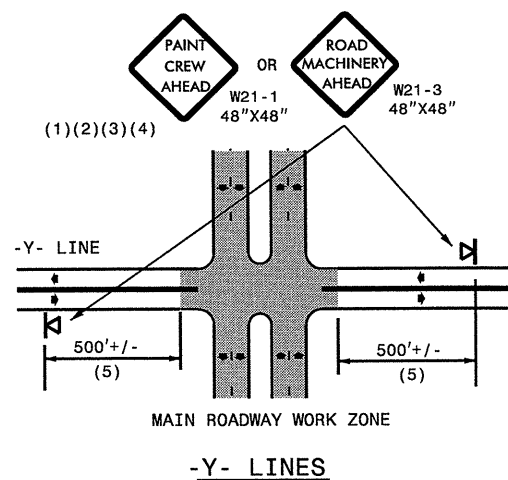
**DRAWING NUMBER 6**  
IMPLEMENTATION DATE: 07/01/97  
REVISED: 11/03/04

### 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)
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- (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