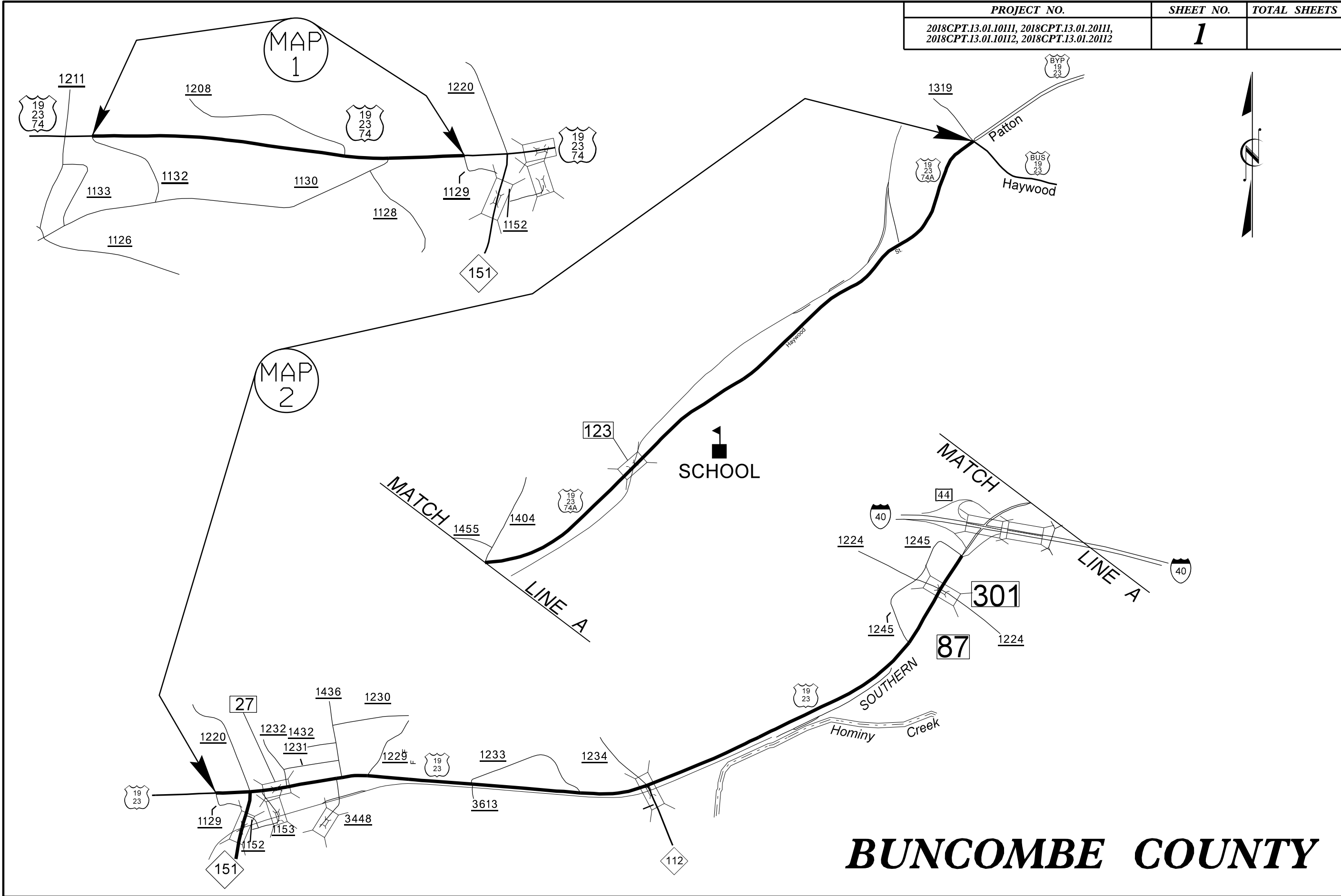
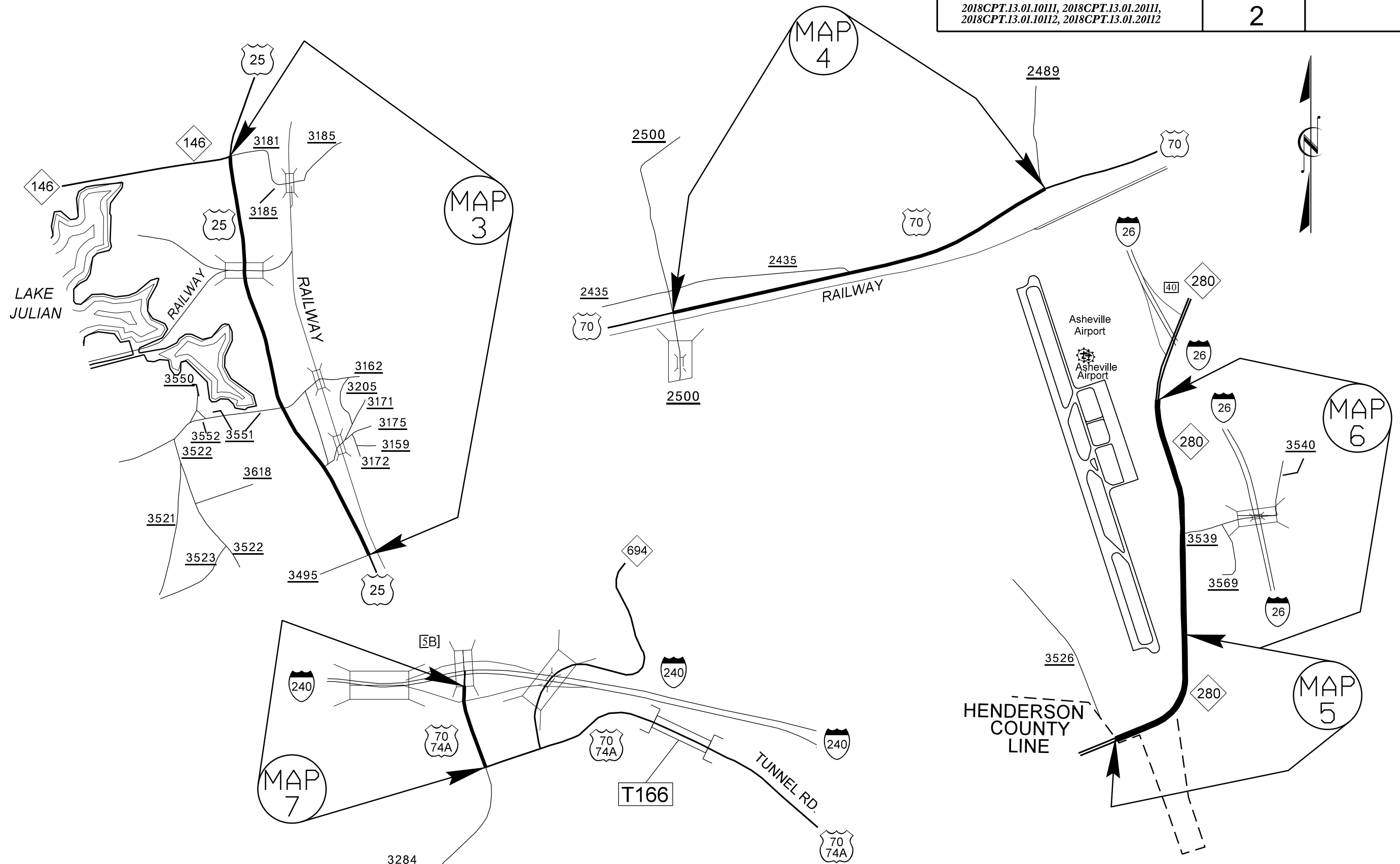


PROJECT NO.	SHEET NO.	TOTAL SHEETS
2018CPT.13.01.10111, 2018CPT.13.01.20111, 2018CPT.13.01.10112, 2018CPT.13.01.20112	1	

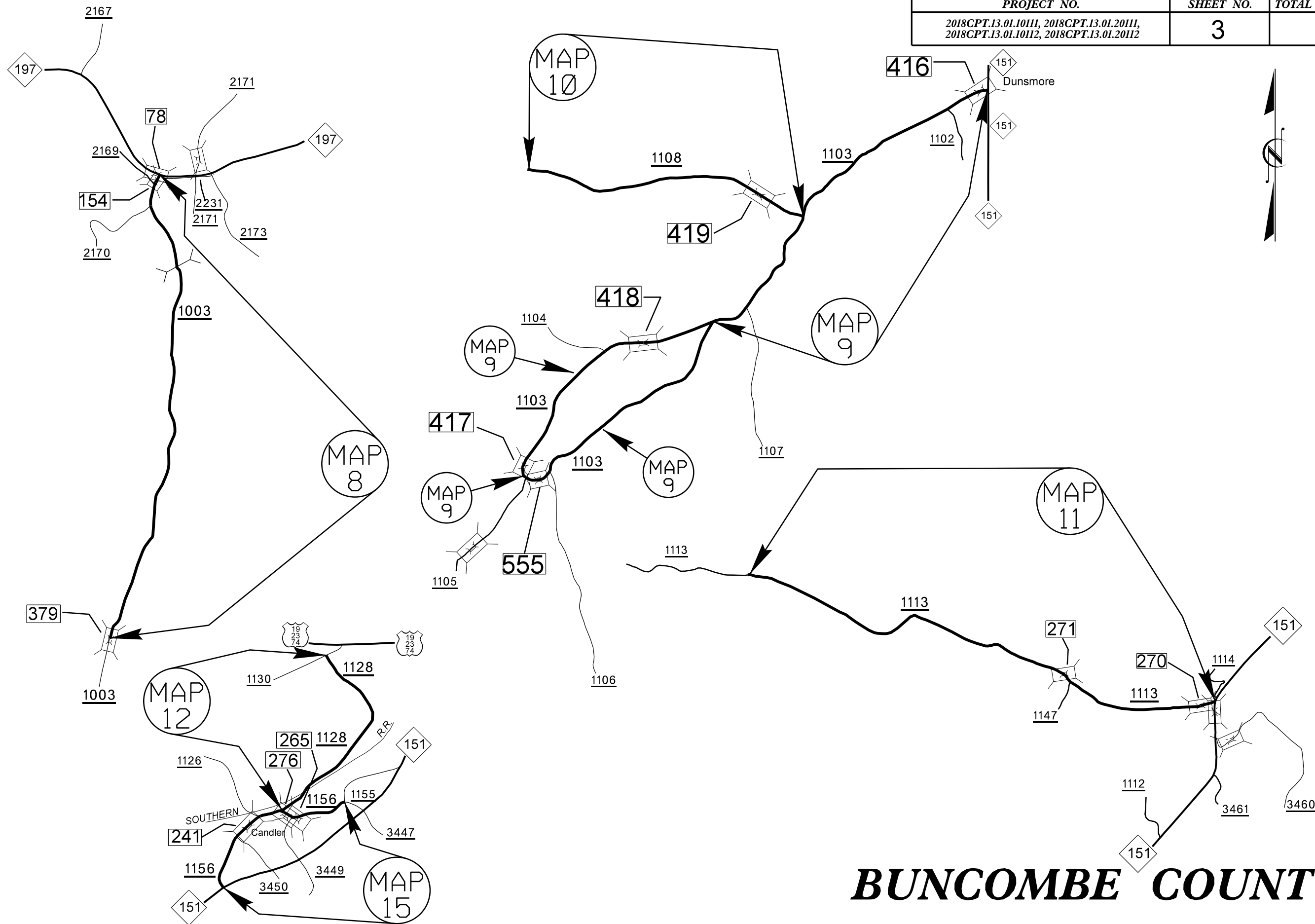


BUNCOMBE COUNTY

PROJECT NO.	SHEET NO.	TOTAL SHEETS
2018CPT.13.01.10111, 2018CPT.13.01.20111, 2018CPT.13.01.10112, 2018CPT.13.01.20112	2	

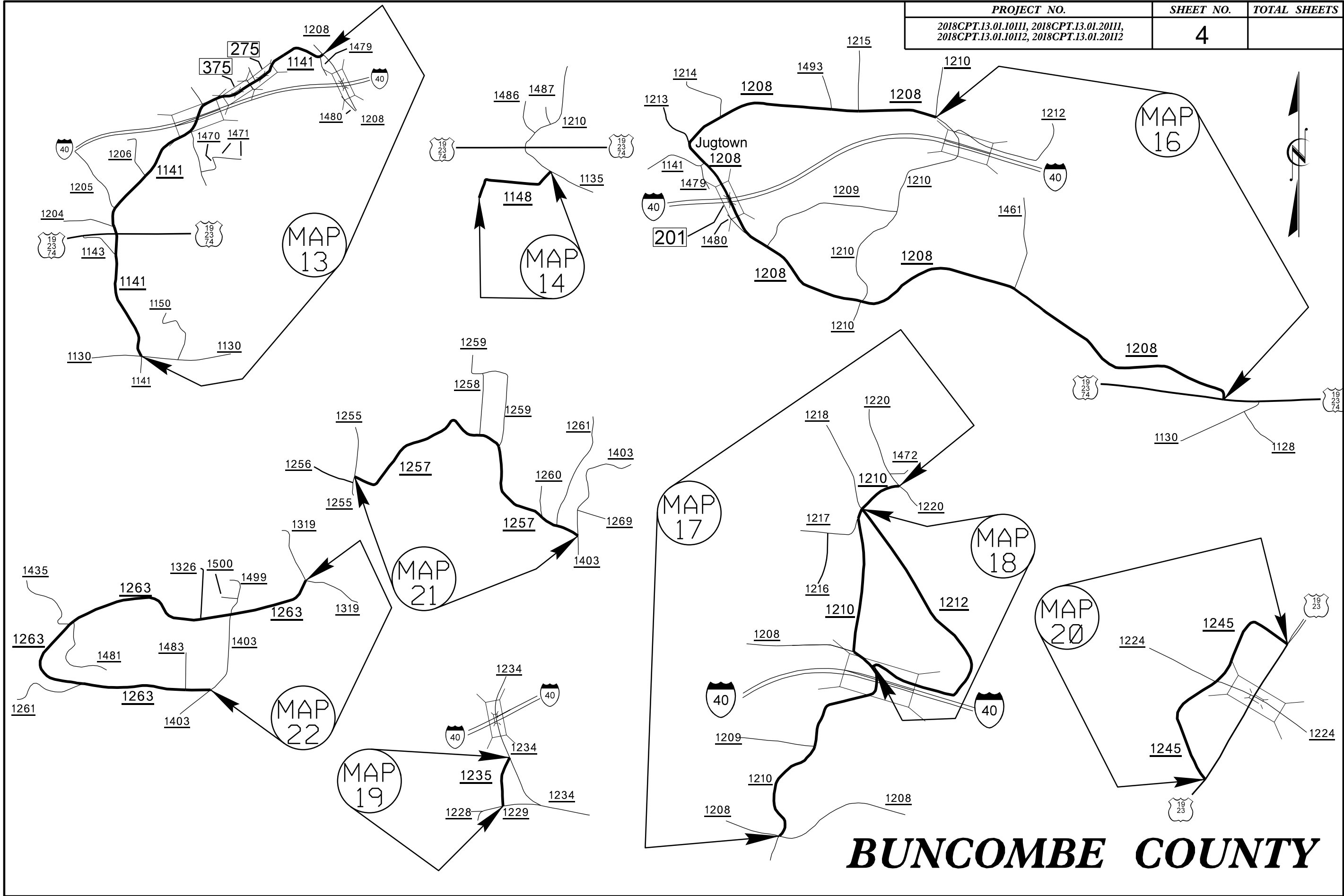


BUNCOMBE COUNTY



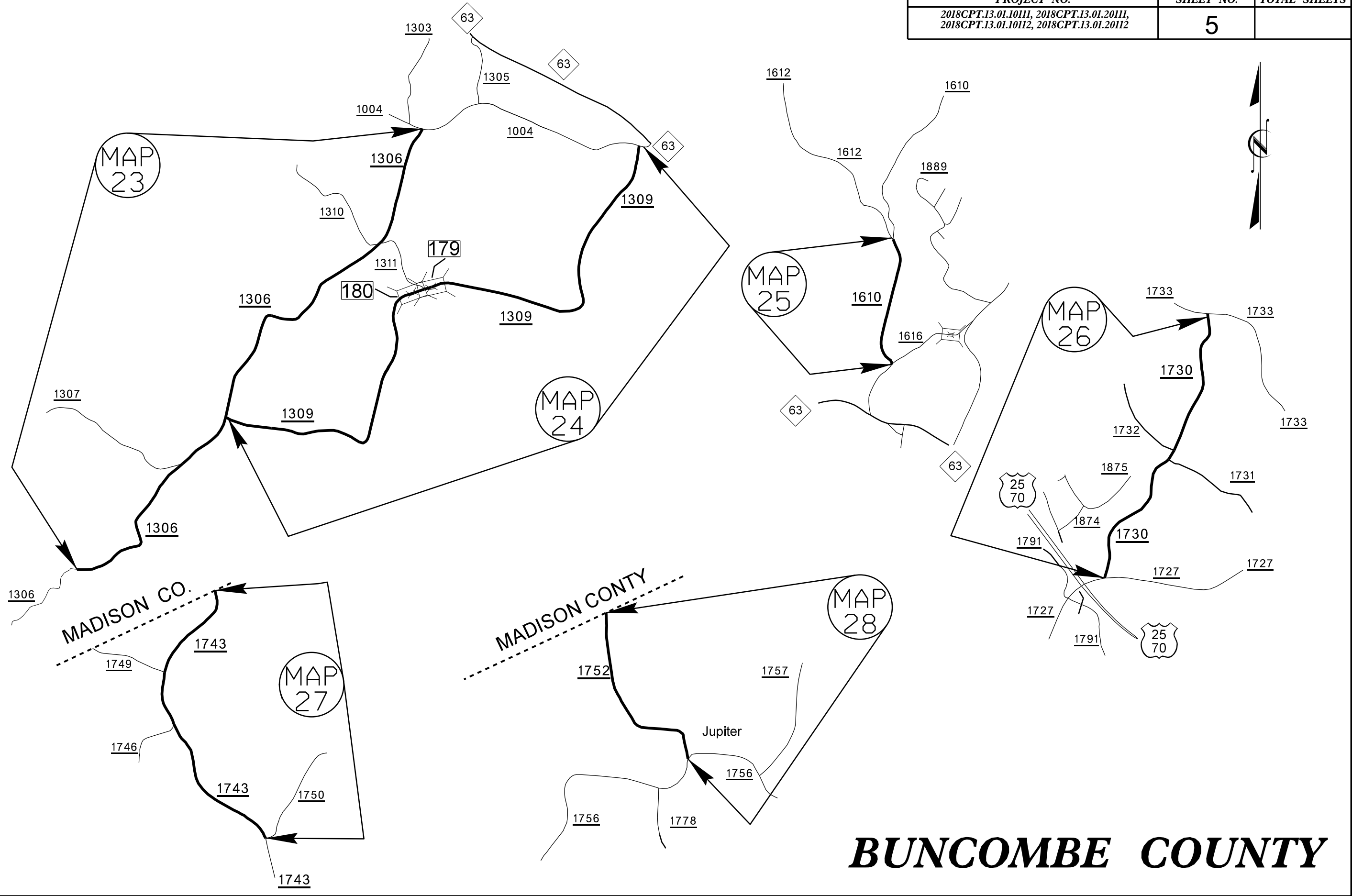
BUNCOMBE COUNTY

PROJECT NO.	SHEET NO.	TOTAL SHEETS
2018CPT.13.01.10111, 2018CPT.13.01.20111, 2018CPT.13.01.10112, 2018CPT.13.01.20112	4	



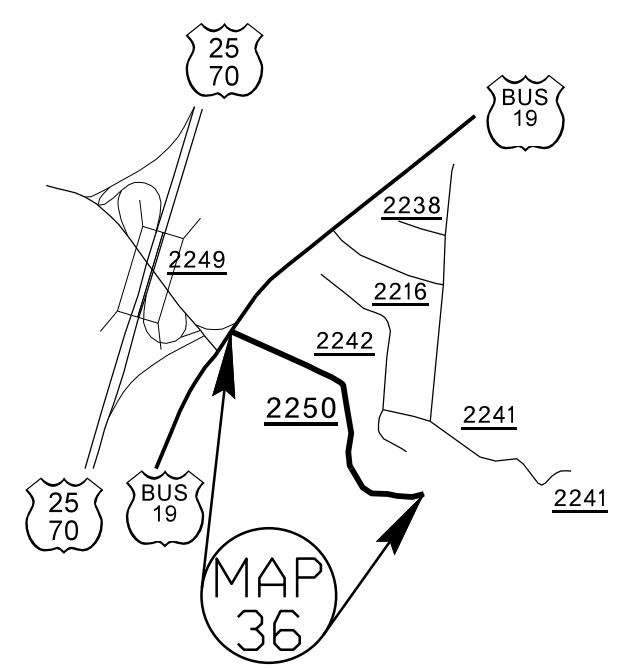
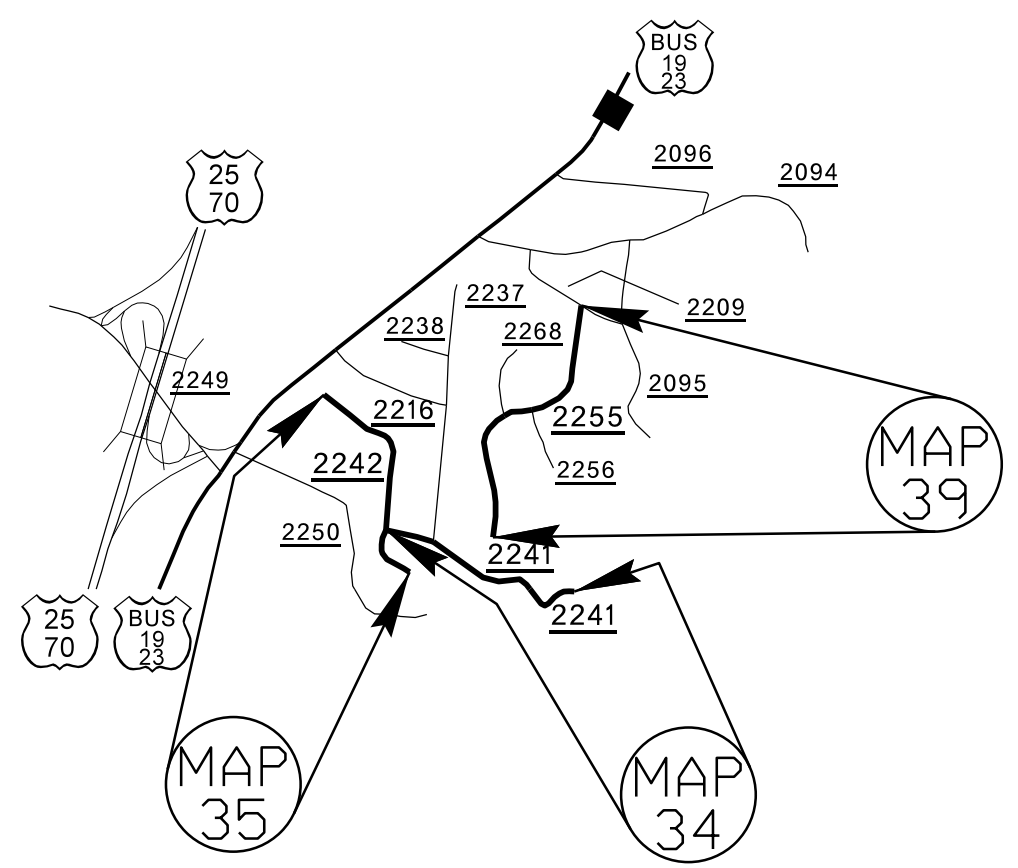
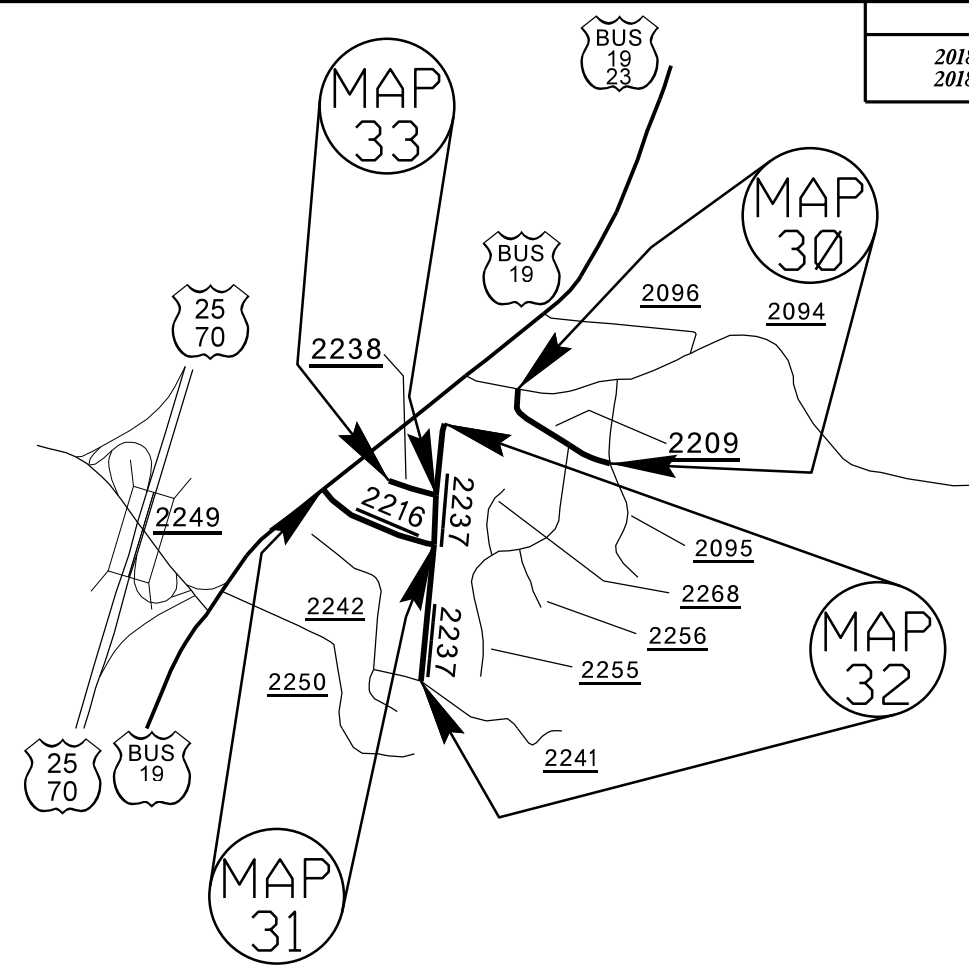
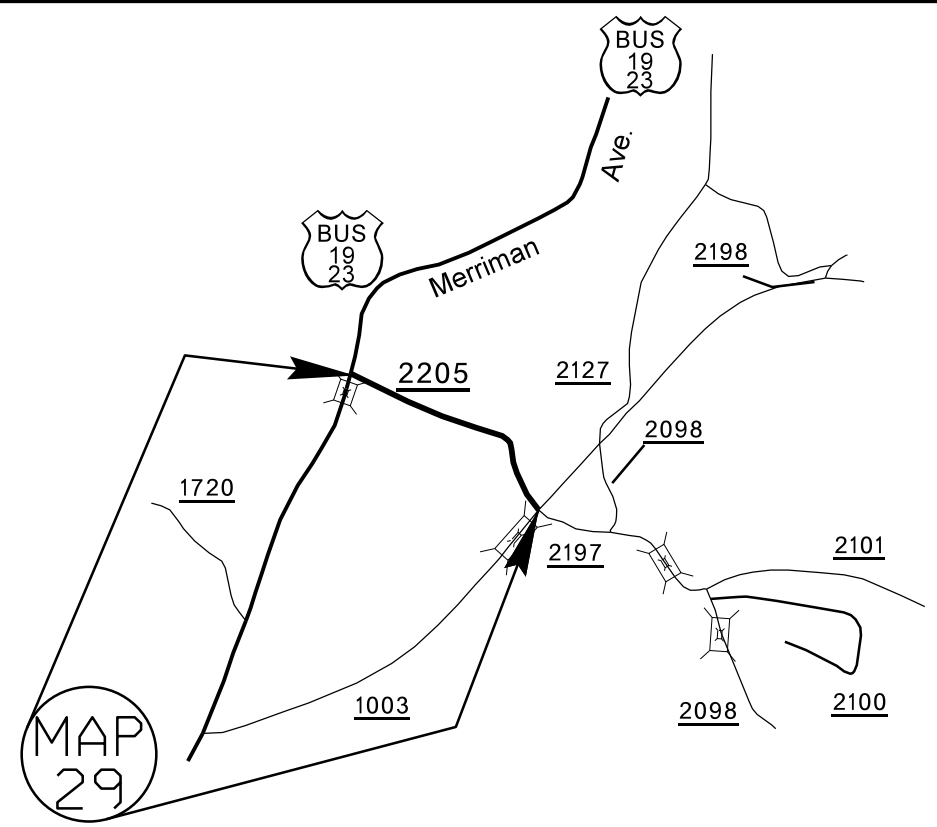
BUNCOMBE COUNTY

PROJECT NO.	SHEET NO.	TOTAL SHEETS
2018CPT.13.01.10111, 2018CPT.13.01.20111, 2018CPT.13.01.10112, 2018CPT.13.01.20112	5	



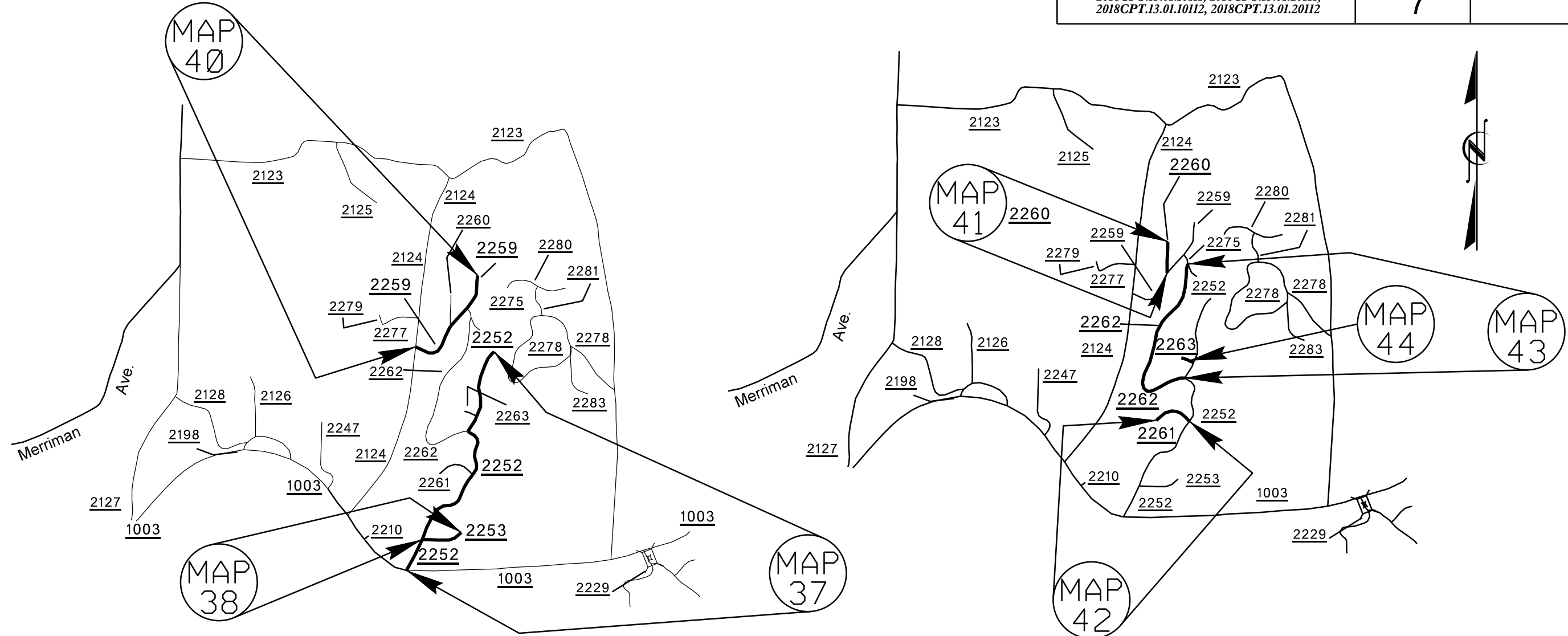
BUNCOMBE COUNTY

PROJECT NO.	SHEET NO.	TOTAL SHEETS
2018CPT.13.01.1011, 2018CPT.13.01.2011, 2018CPT.13.01.1012, 2018CPT.13.01.2012	6	



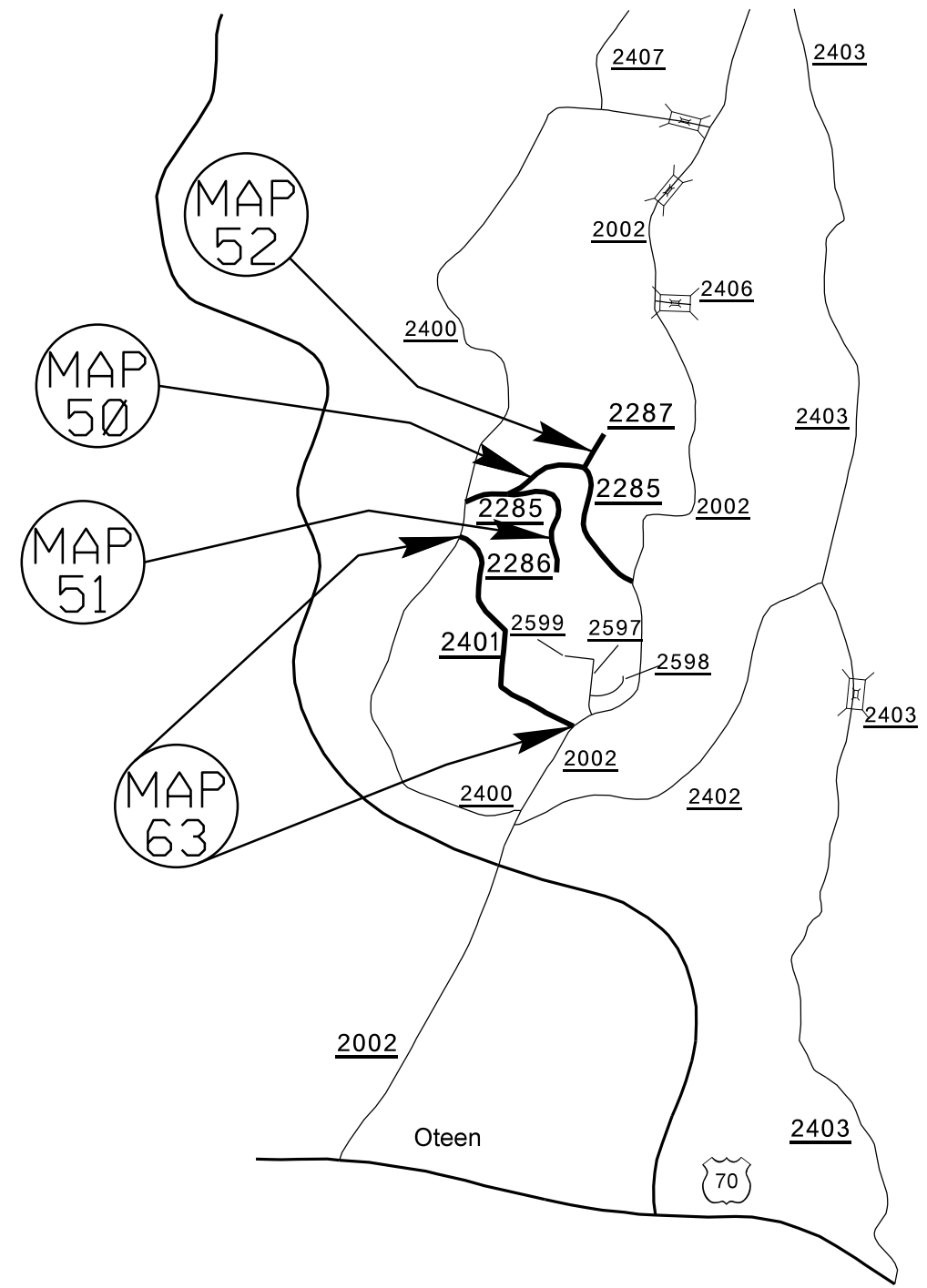
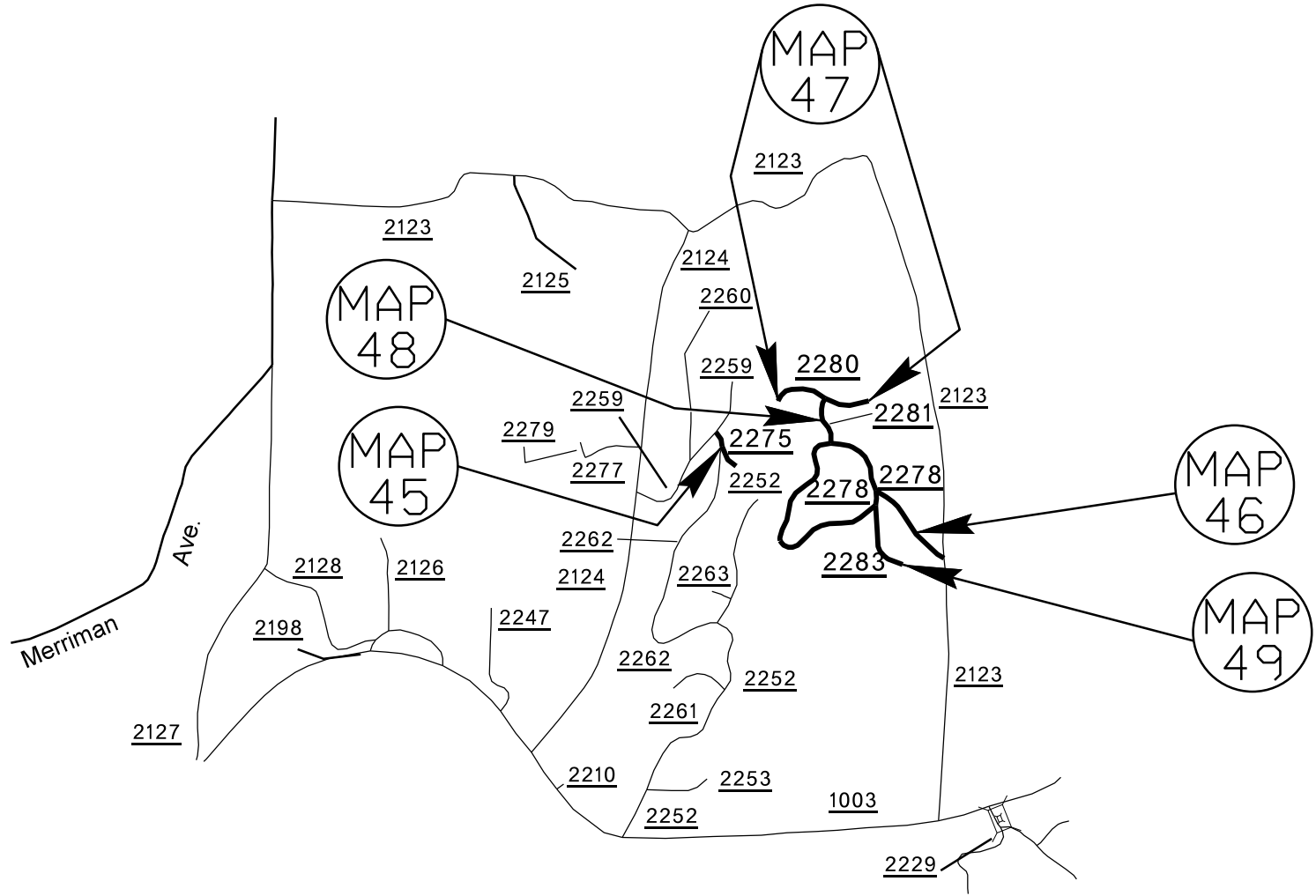
BUNCOMBE COUNTY

PROJECT NO.	SHEET NO.	TOTAL SHEETS
2018CPT.13.01.10111, 2018CPT.13.01.20111, 2018CPT.13.01.10112, 2018CPT.13.01.20112	7	



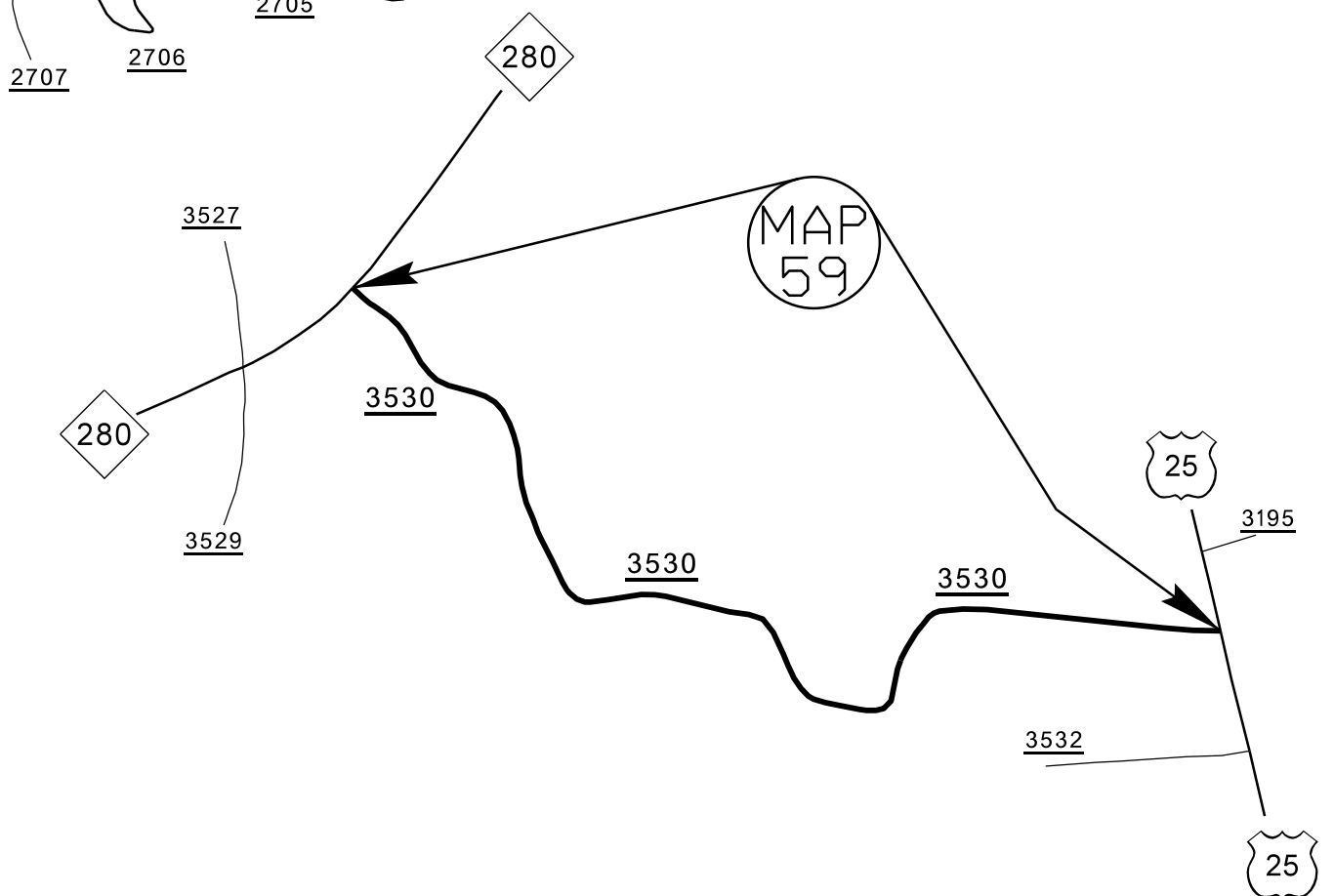
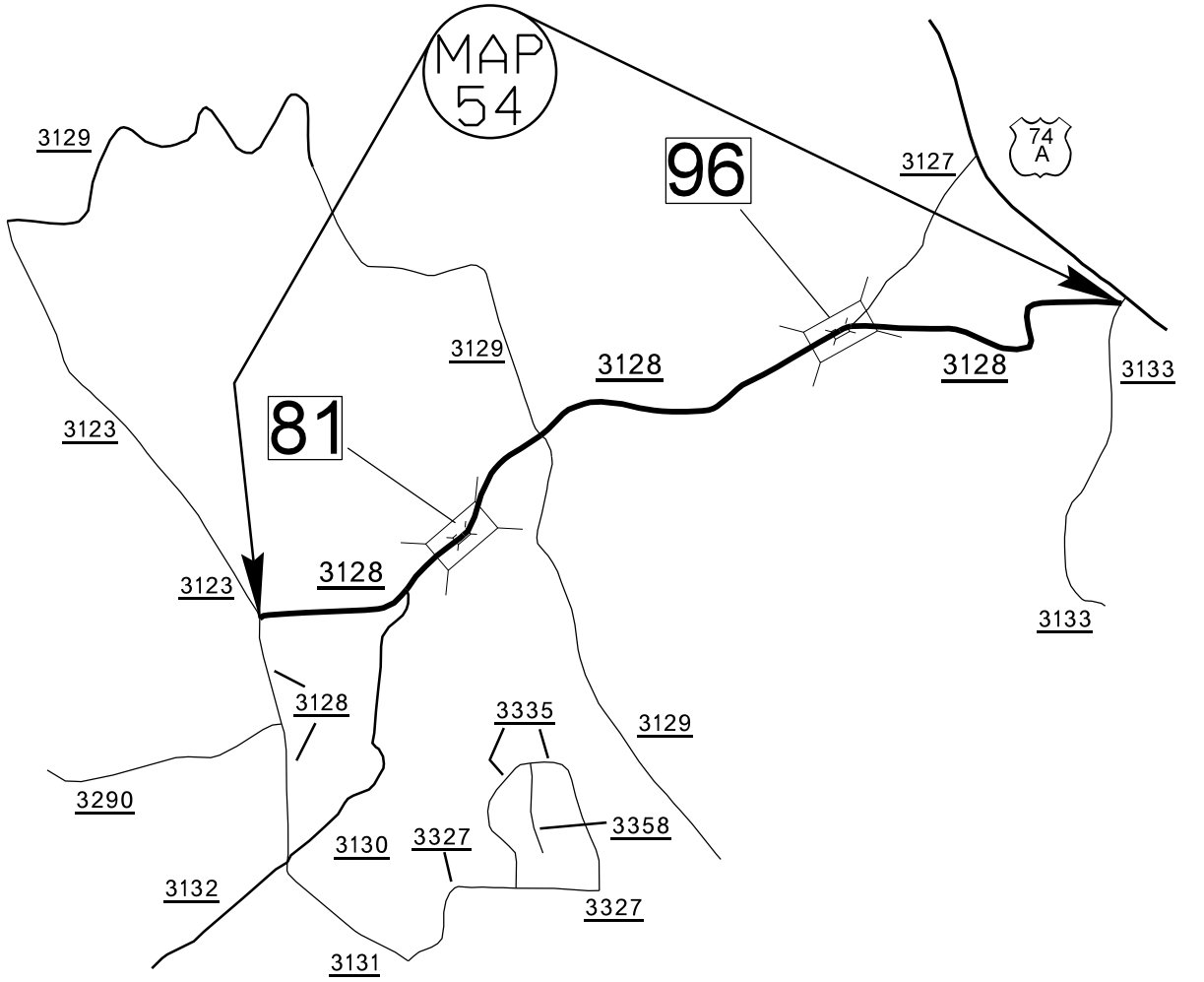
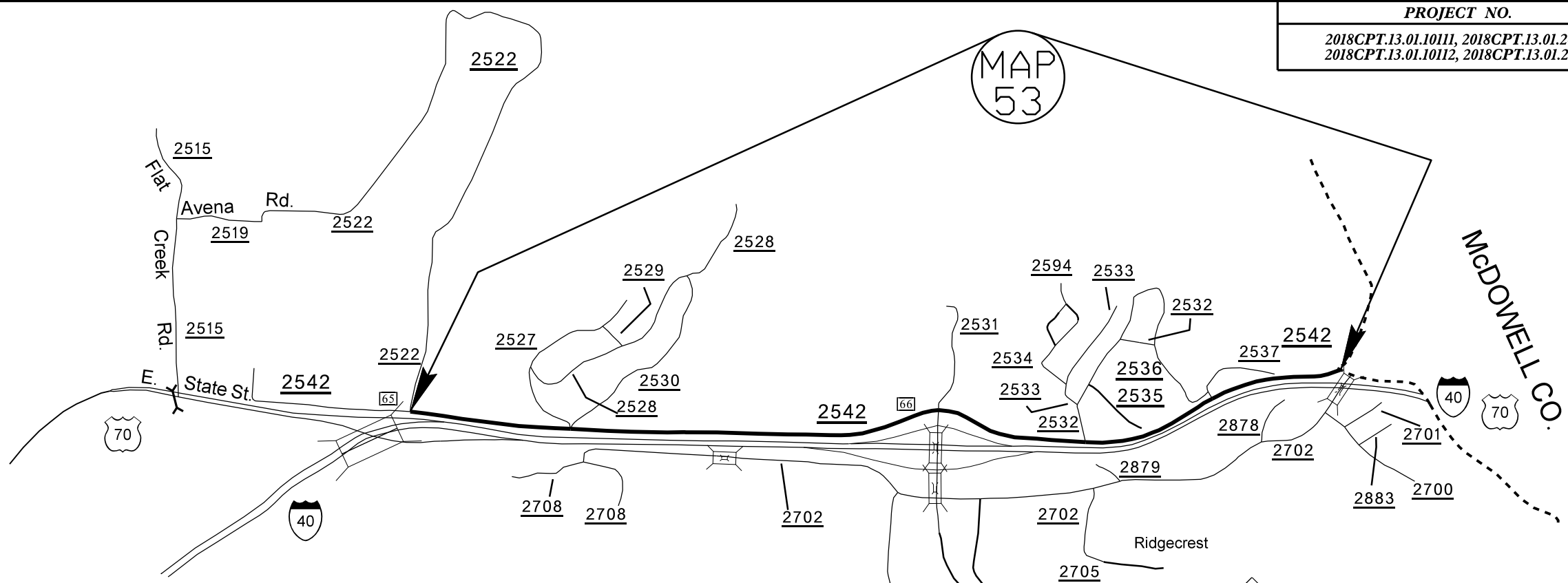
BUNCOMBE COUNTY

PROJECT NO.	SHEET NO.	TOTAL SHEETS
2018CPT.13.01.10111, 2018CPT.13.01.20111, 2018CPT.13.01.10112, 2018CPT.13.01.20112	8	



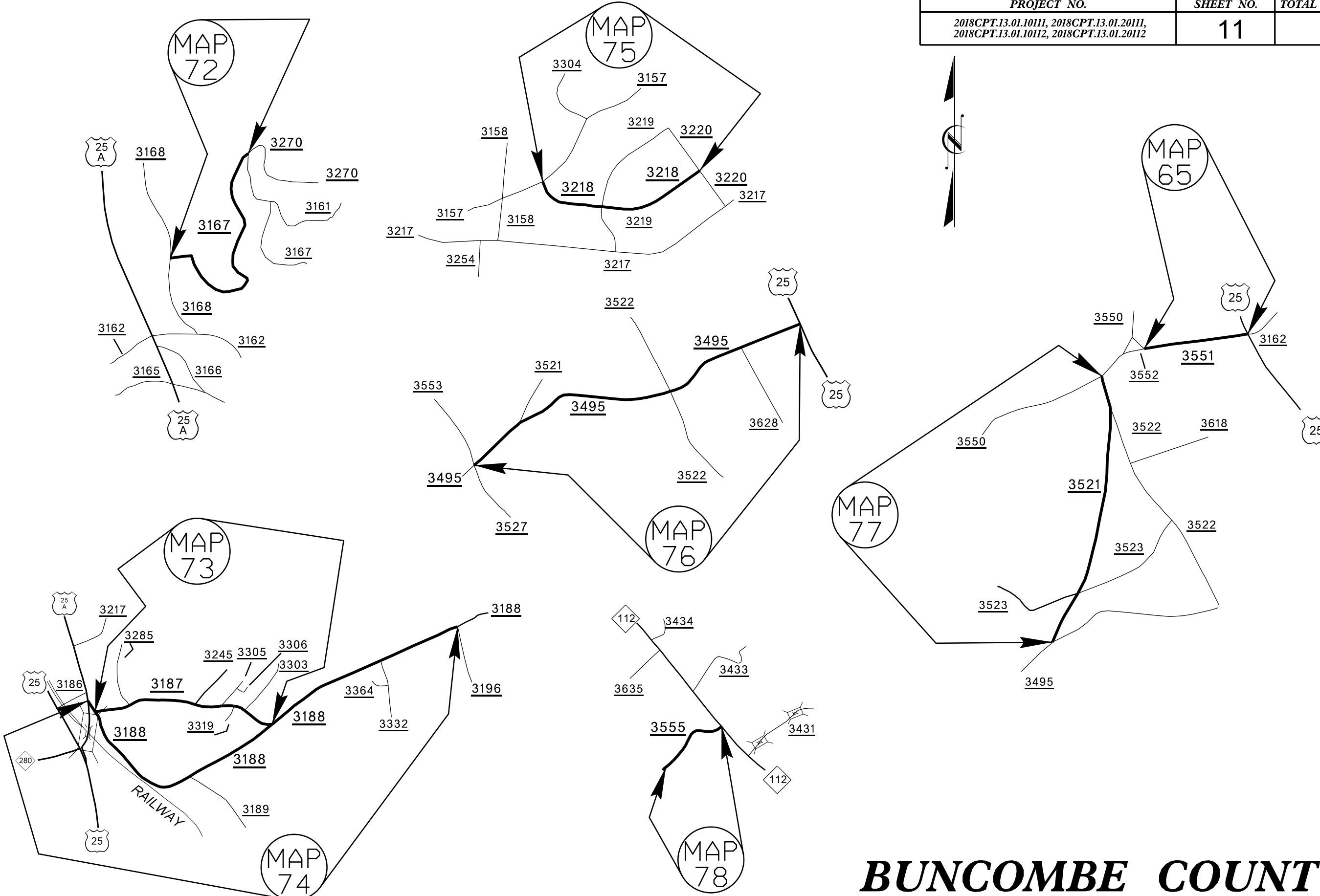
BUNCOMBE COUNTY

PROJECT NO.	SHEET NO.	TOTAL SHEETS
2018CPT.13.01.10111, 2018CPT.13.01.20111, 2018CPT.13.01.10112, 2018CPT.13.01.20112	9	



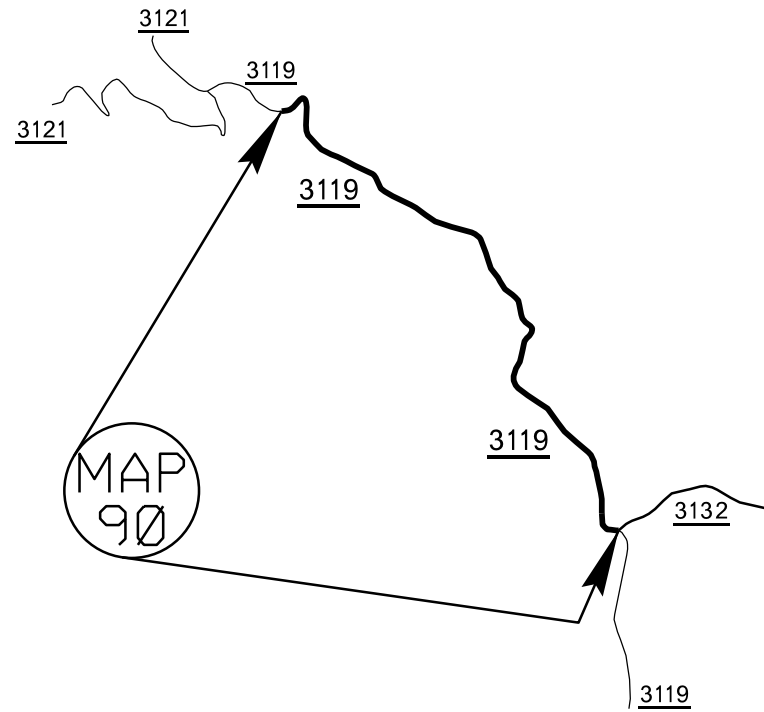
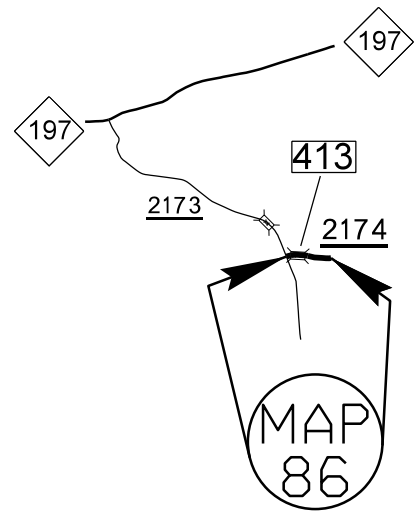
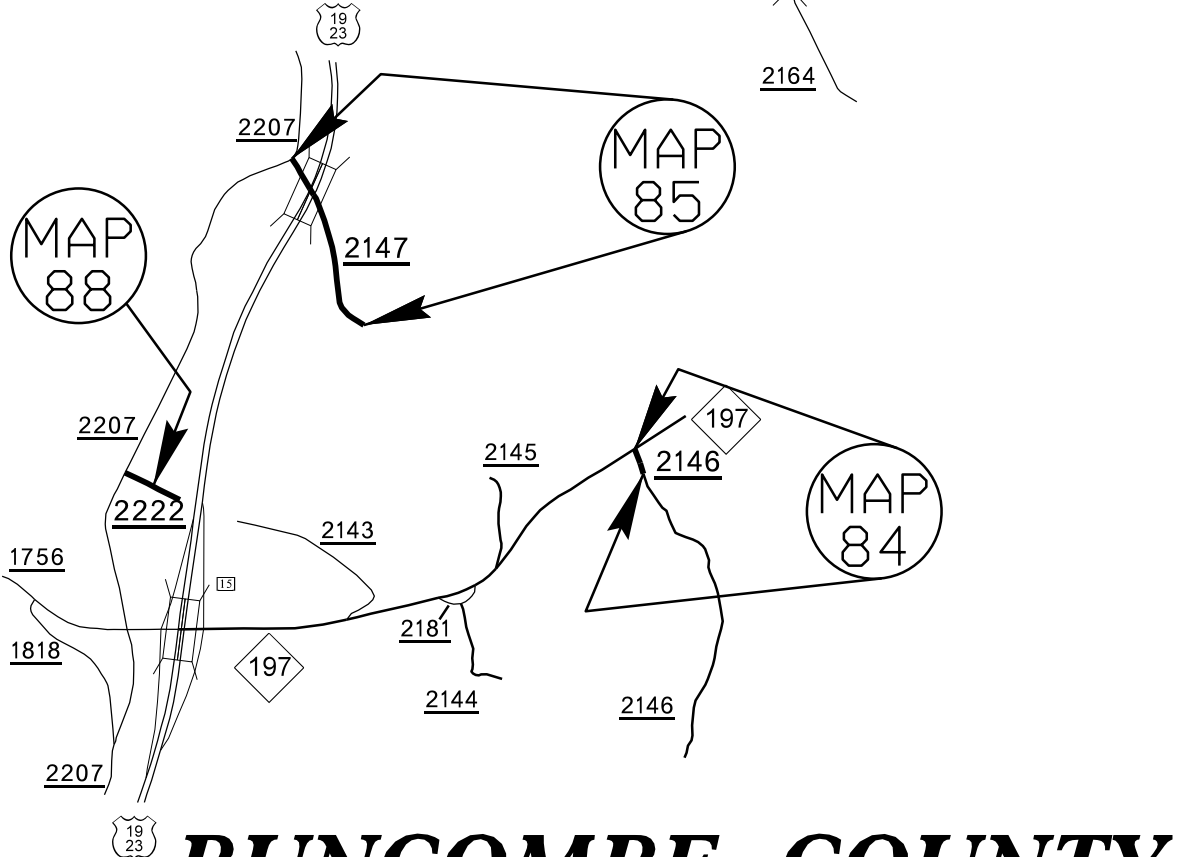
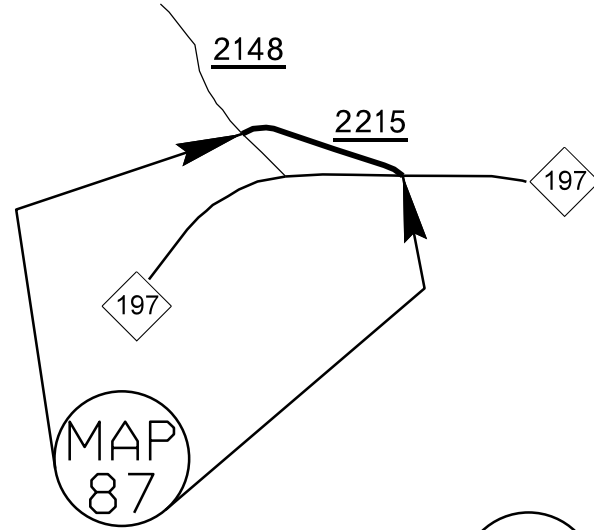
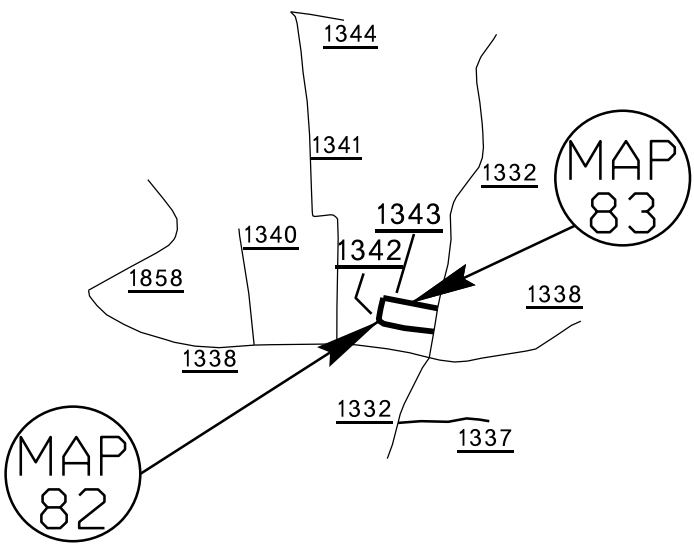
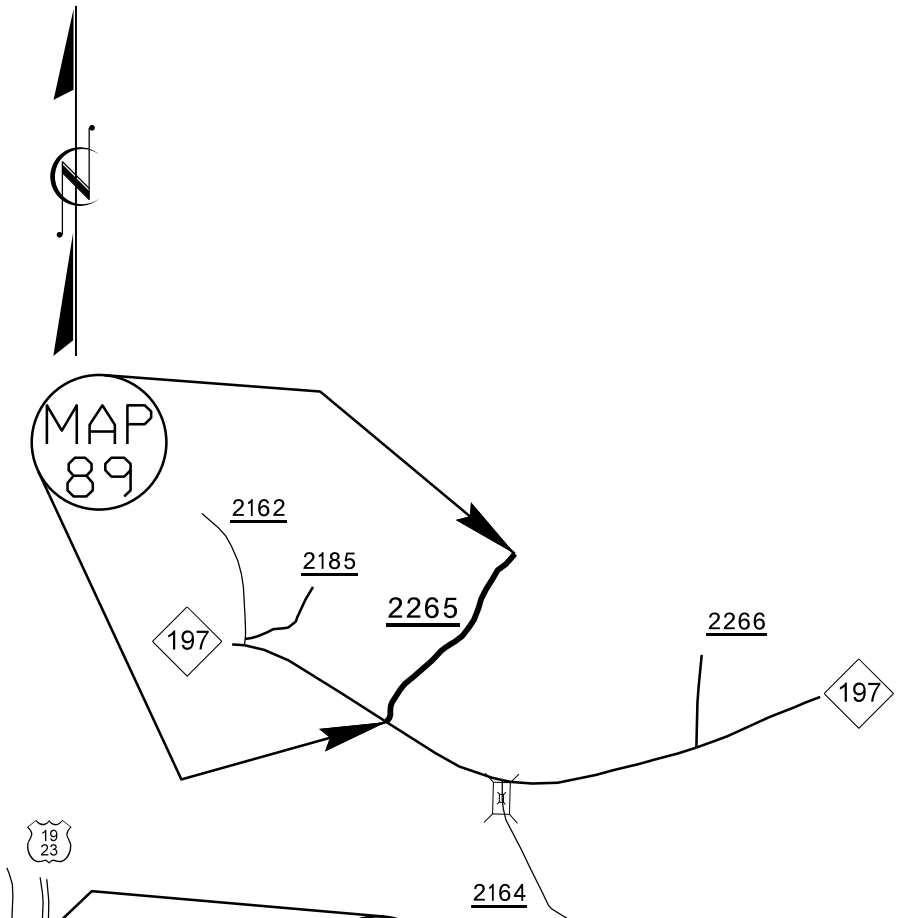
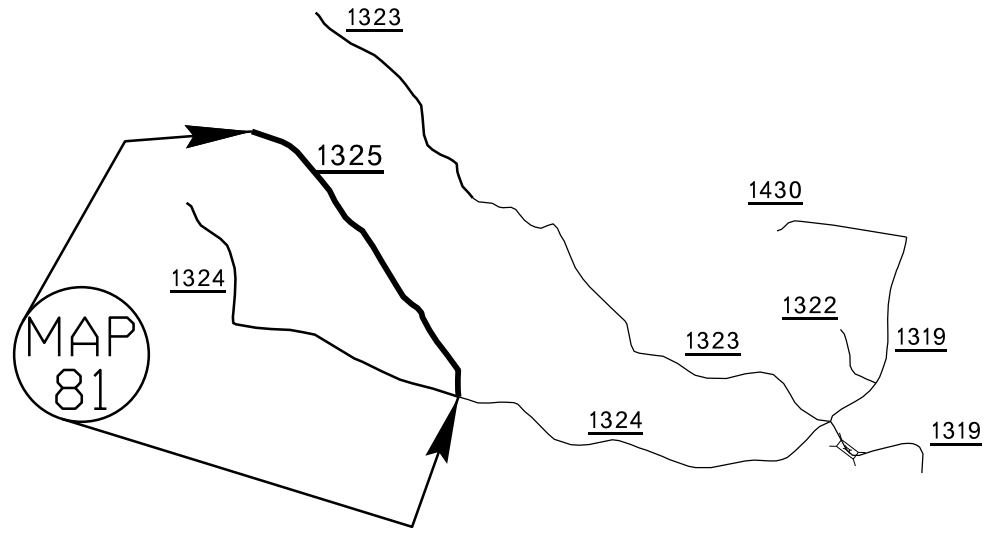
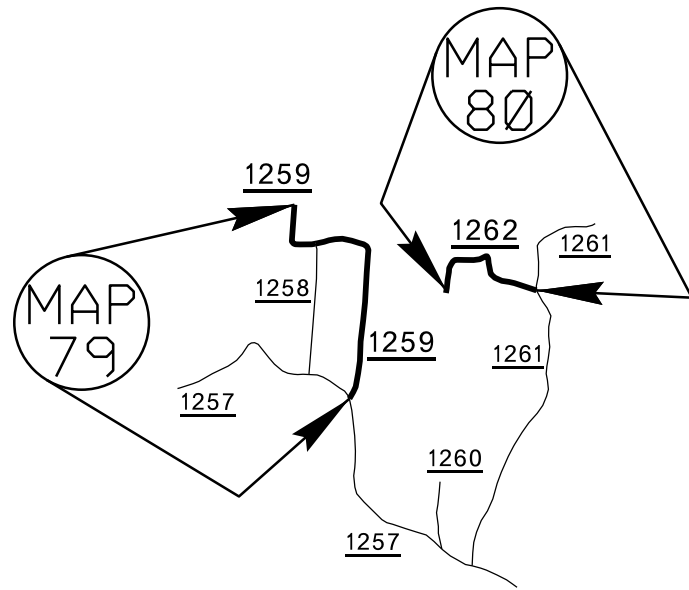
BUNCOMBE COUNTY

PROJECT NO.	SHEET NO.	TOTAL SHEETS
2018CPT.13.01.1011, 2018CPT.13.01.2011, 2018CPT.13.01.1012, 2018CPT.13.01.2012	11	



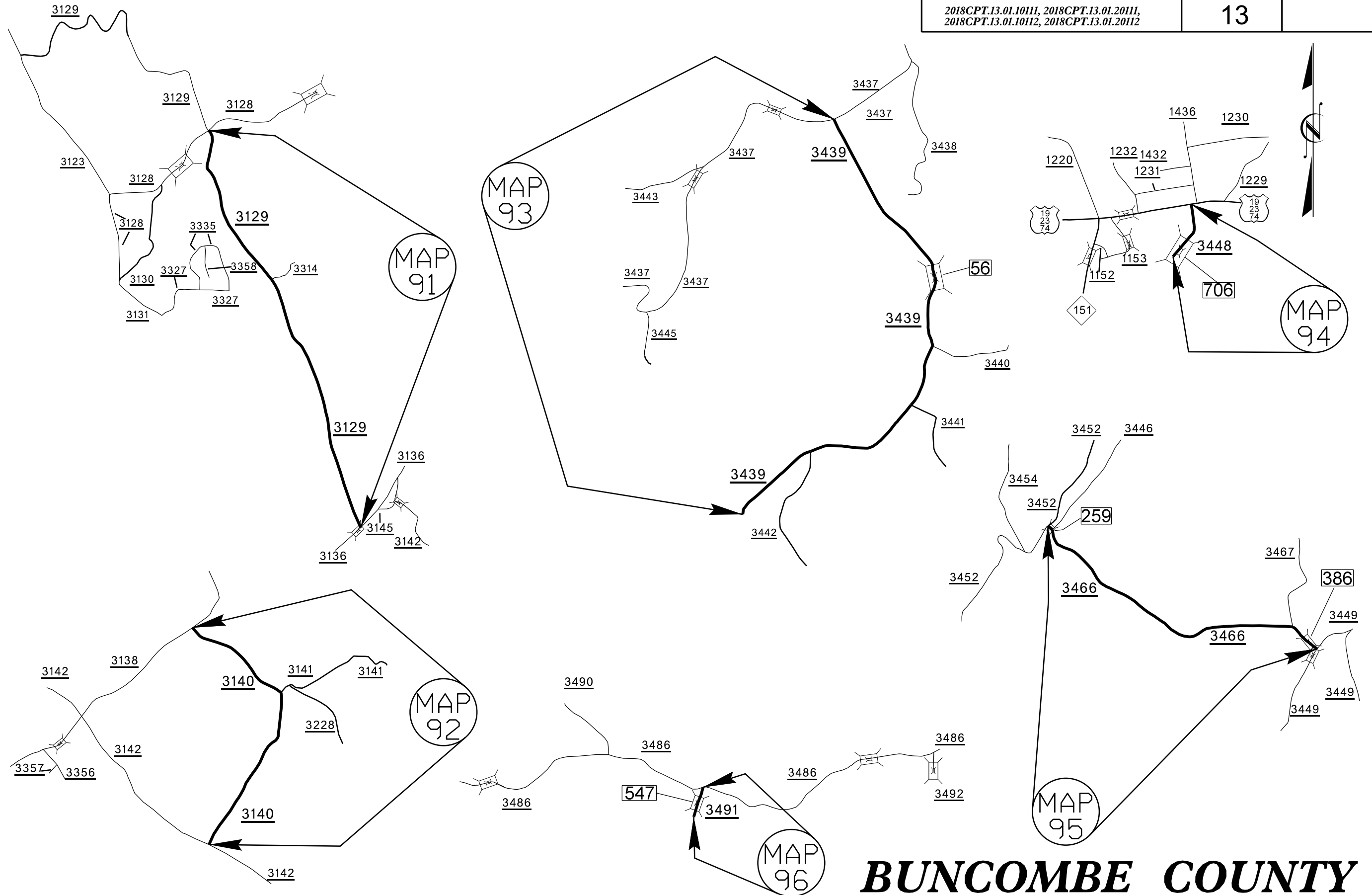
BUNCOMBE COUNTY

PROJECT NO.	SHEET NO.	TOTAL SHEETS
2018CPT.13.01.10111, 2018CPT.13.01.20111, 2018CPT.13.01.10112, 2018CPT.13.01.20112	12	



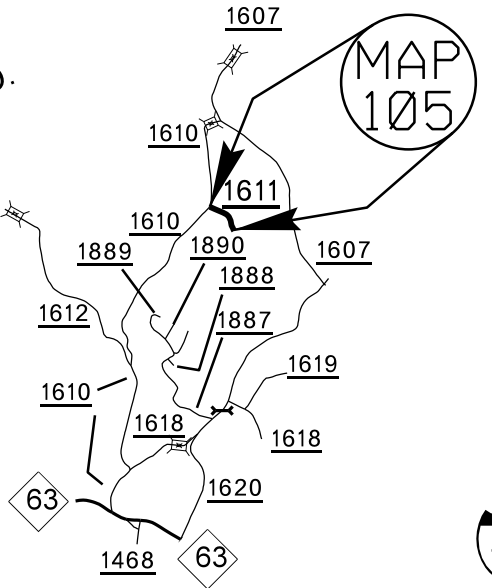
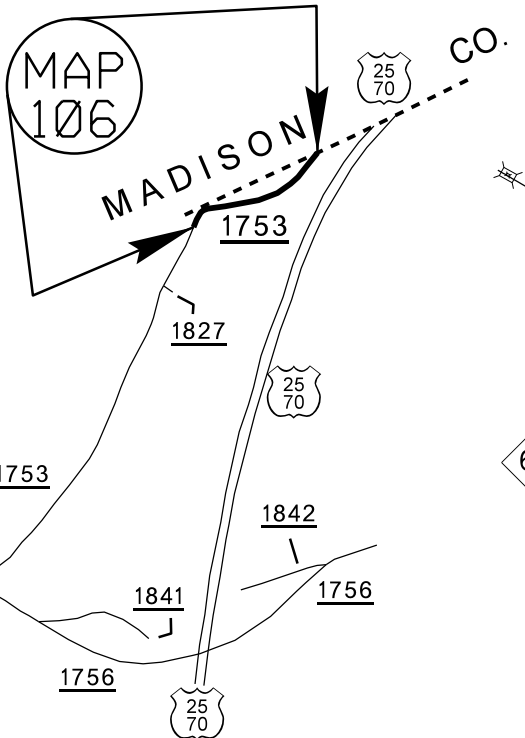
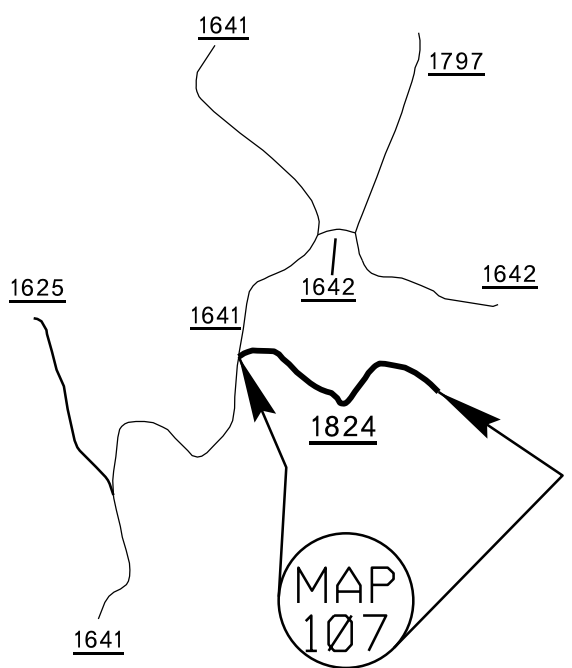
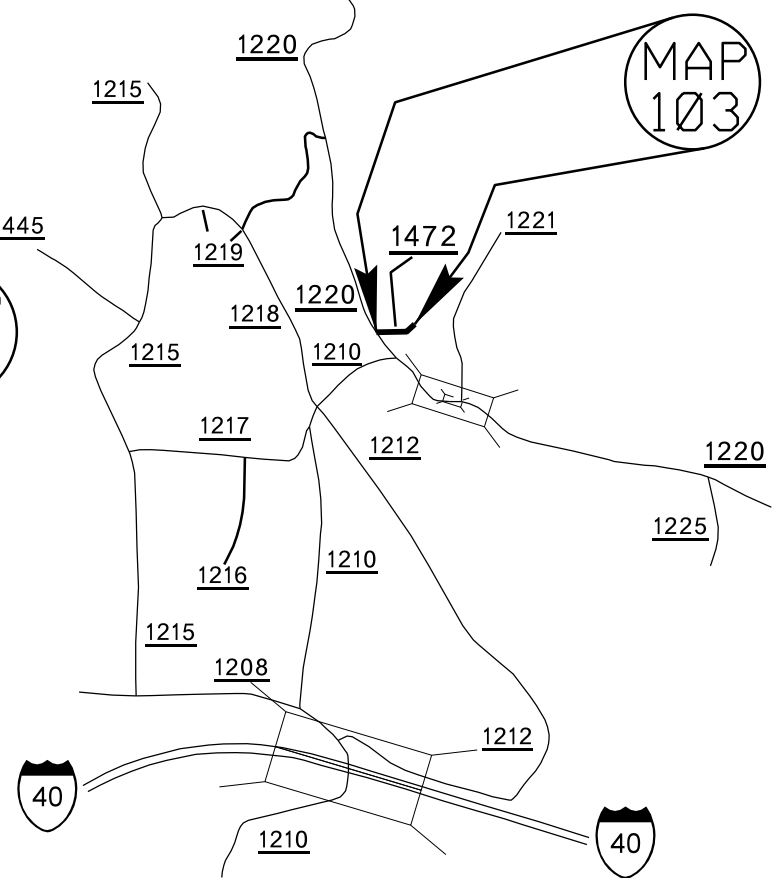
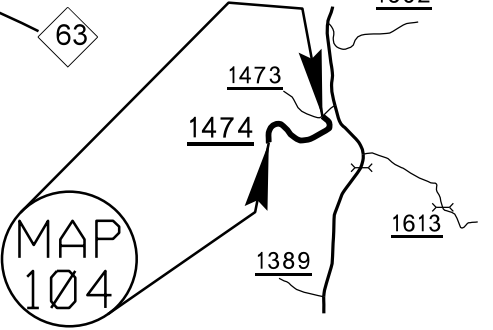
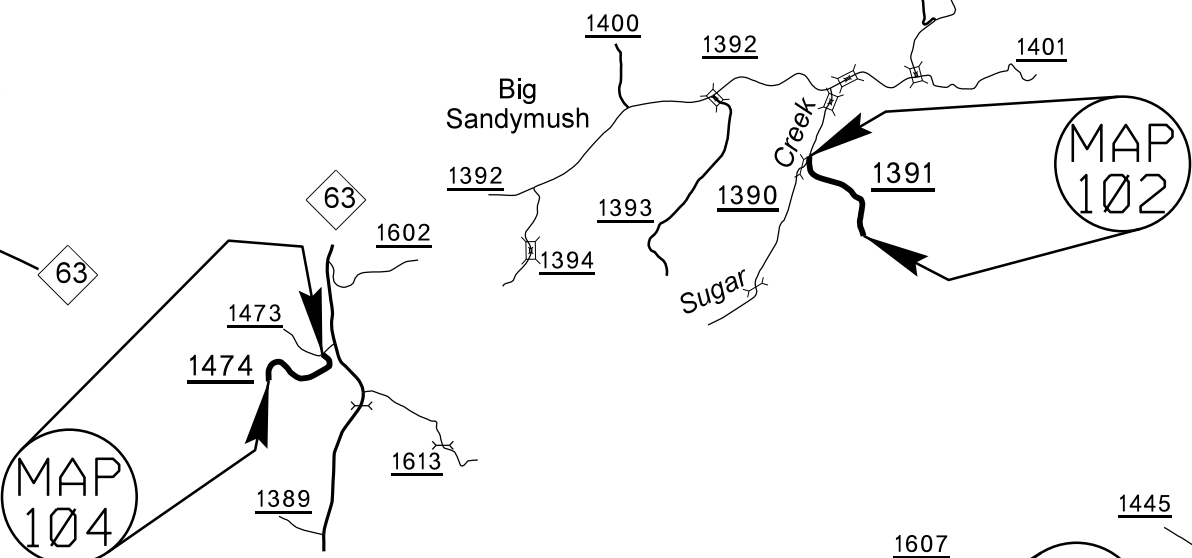
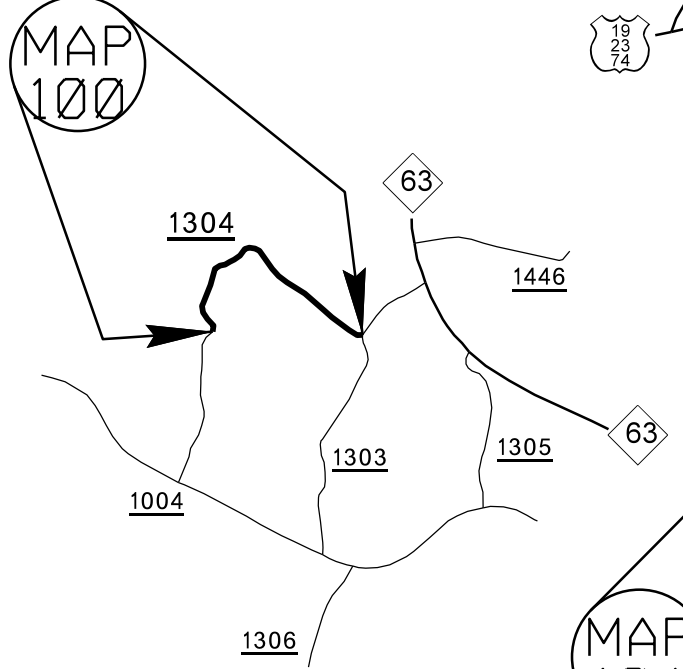
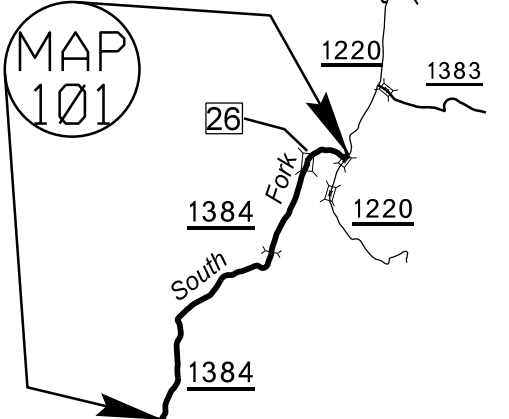
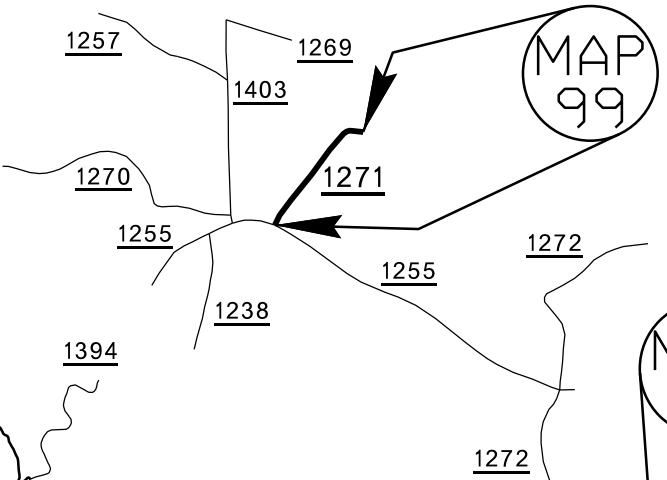
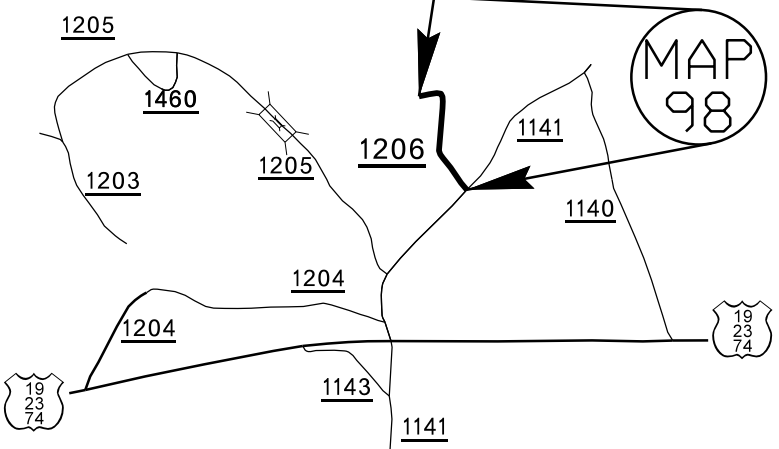
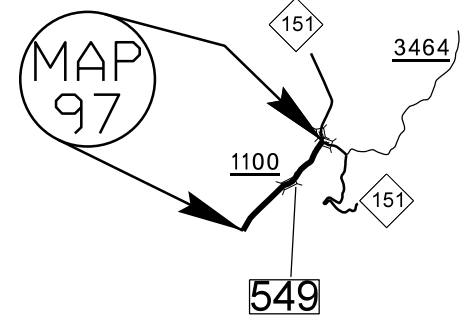
BUNCOMBE COUNTY

PROJECT NO.	SHEET NO.	TOTAL SHEETS
2018CPT.13.01.1011, 2018CPT.13.01.2011, 2018CPT.13.01.1012, 2018CPT.13.01.2012	13	



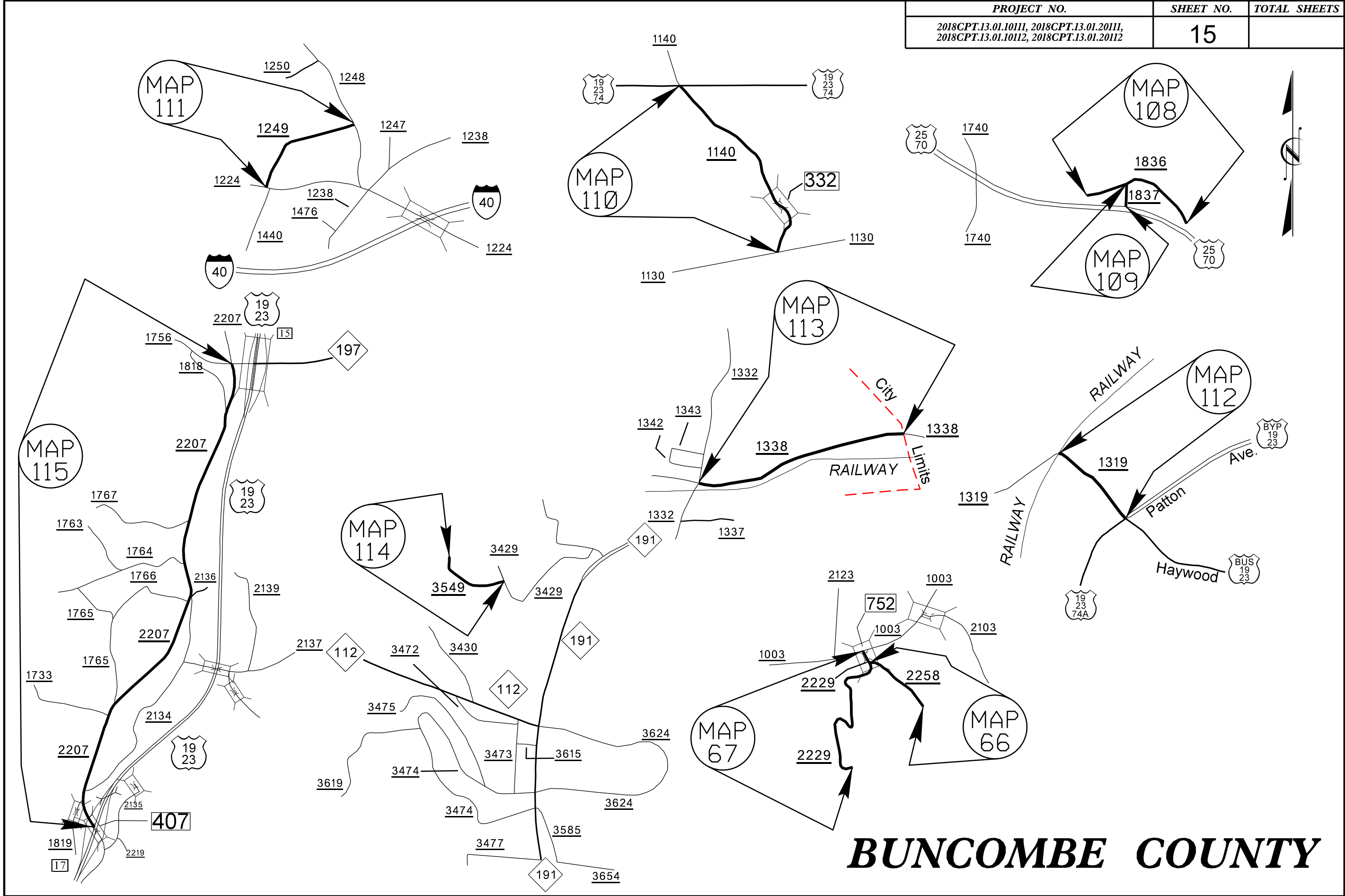
BUNCOMBE COUNTY

PROJECT NO.	SHEET NO.	TOTAL SHEETS
2018CPT.13.01.10111, 2018CPT.13.01.20111, 2018CPT.13.01.10112, 2018CPT.13.01.20112	14	



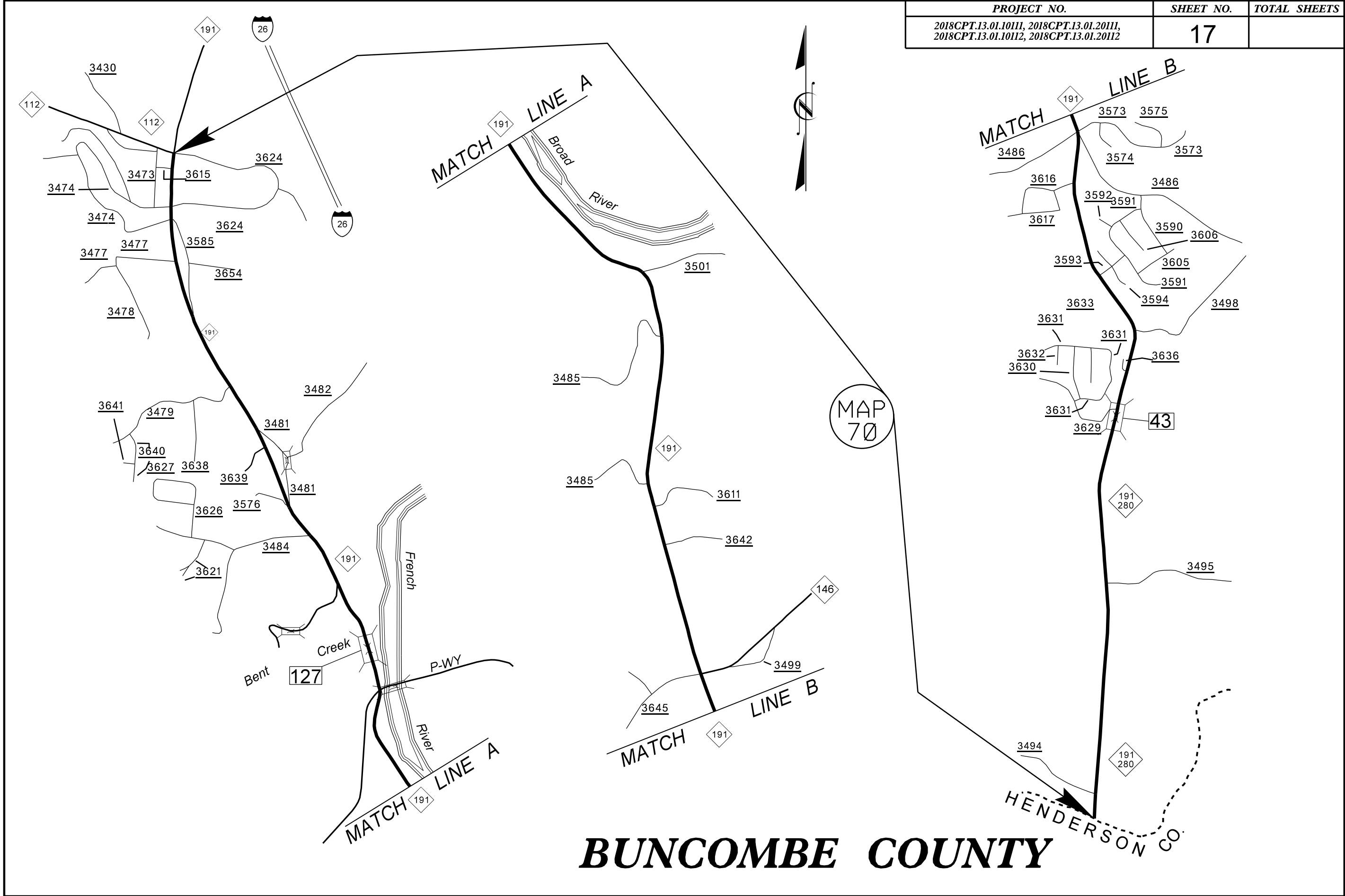
BUNCOMBE COUNTY

PROJECT NO.	SHEET NO.	TOTAL SHEETS
2018CPT.13.01.10111, 2018CPT.13.01.20111, 2018CPT.13.01.10112, 2018CPT.13.01.20112	15	



BUNCOMBE COUNTY

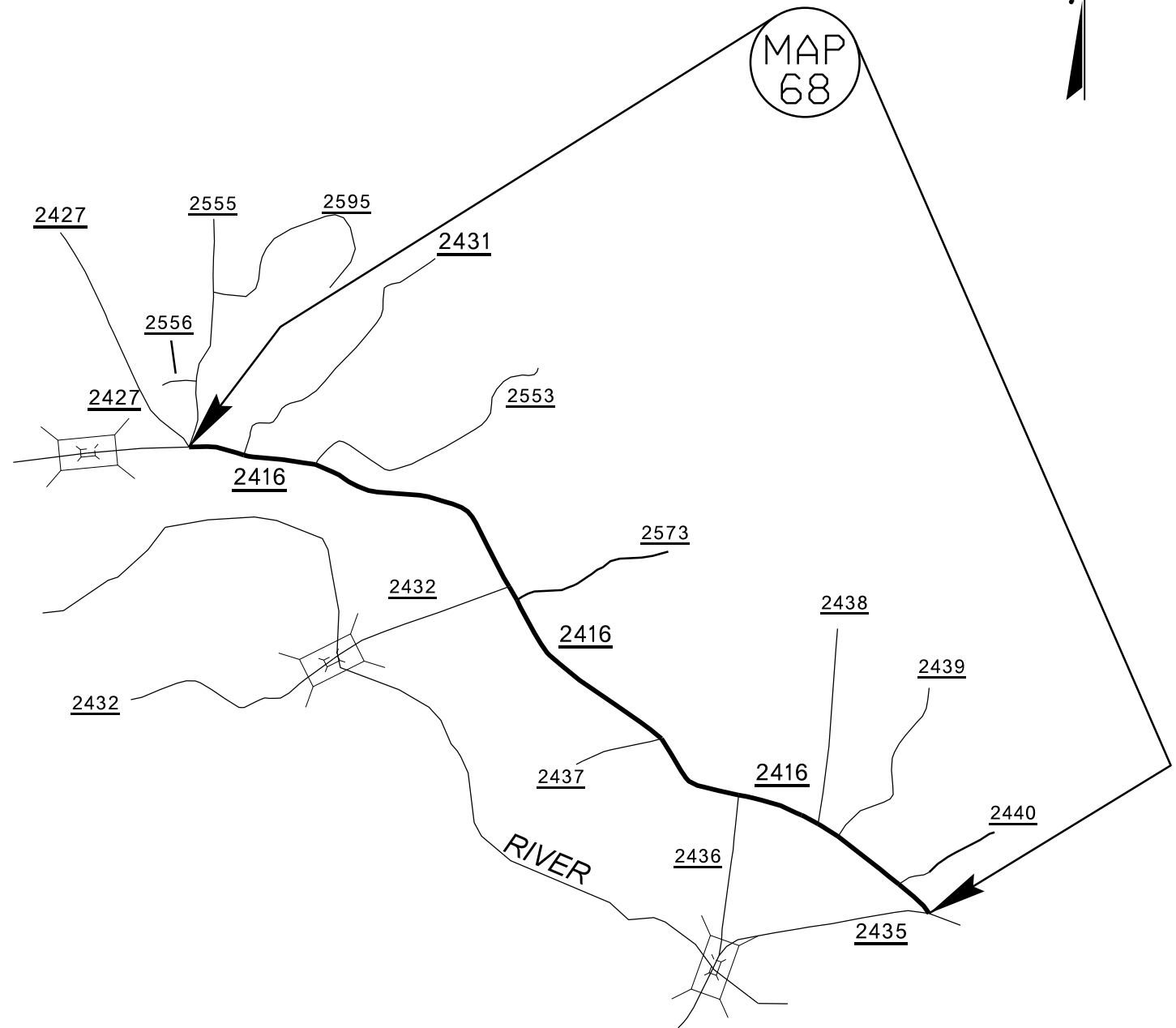
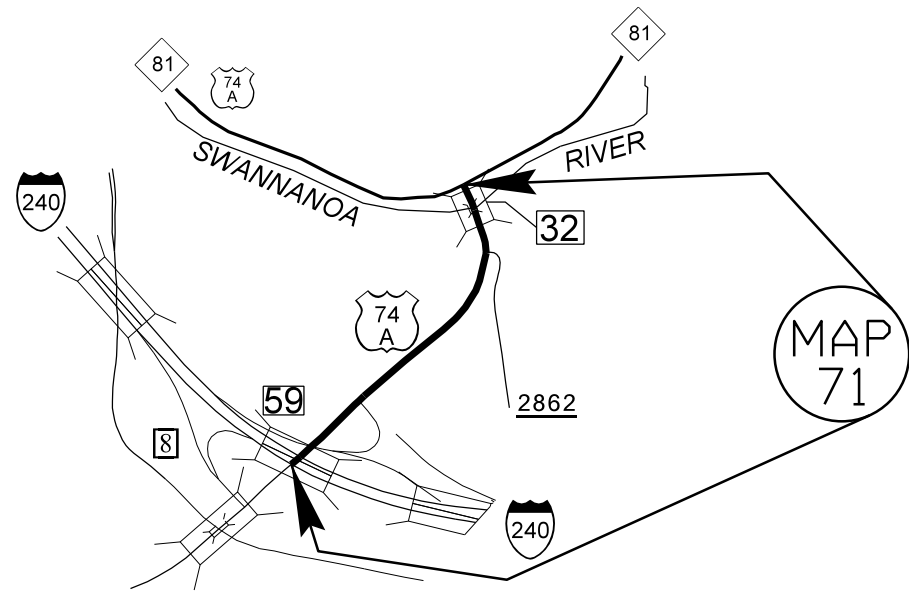
PROJECT NO.	SHEET NO.	TOTAL SHEETS
2018CPT.13.01.10111, 2018CPT.13.01.20111, 2018CPT.13.01.10112, 2018CPT.13.01.20112	17	



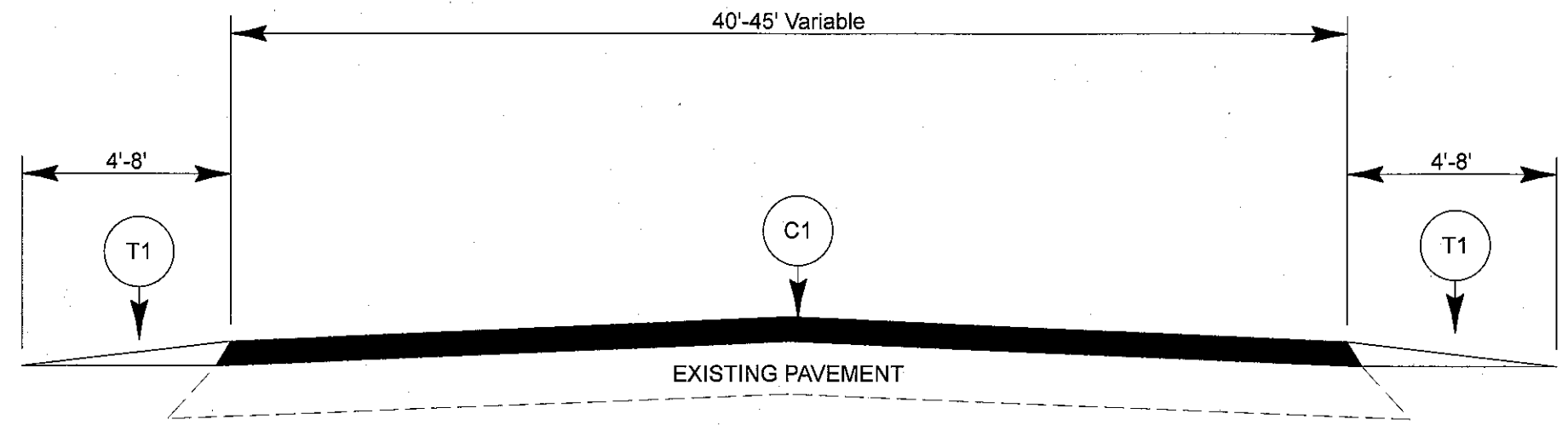
BUNCOMBE COUNTY

HENDERSON CO.

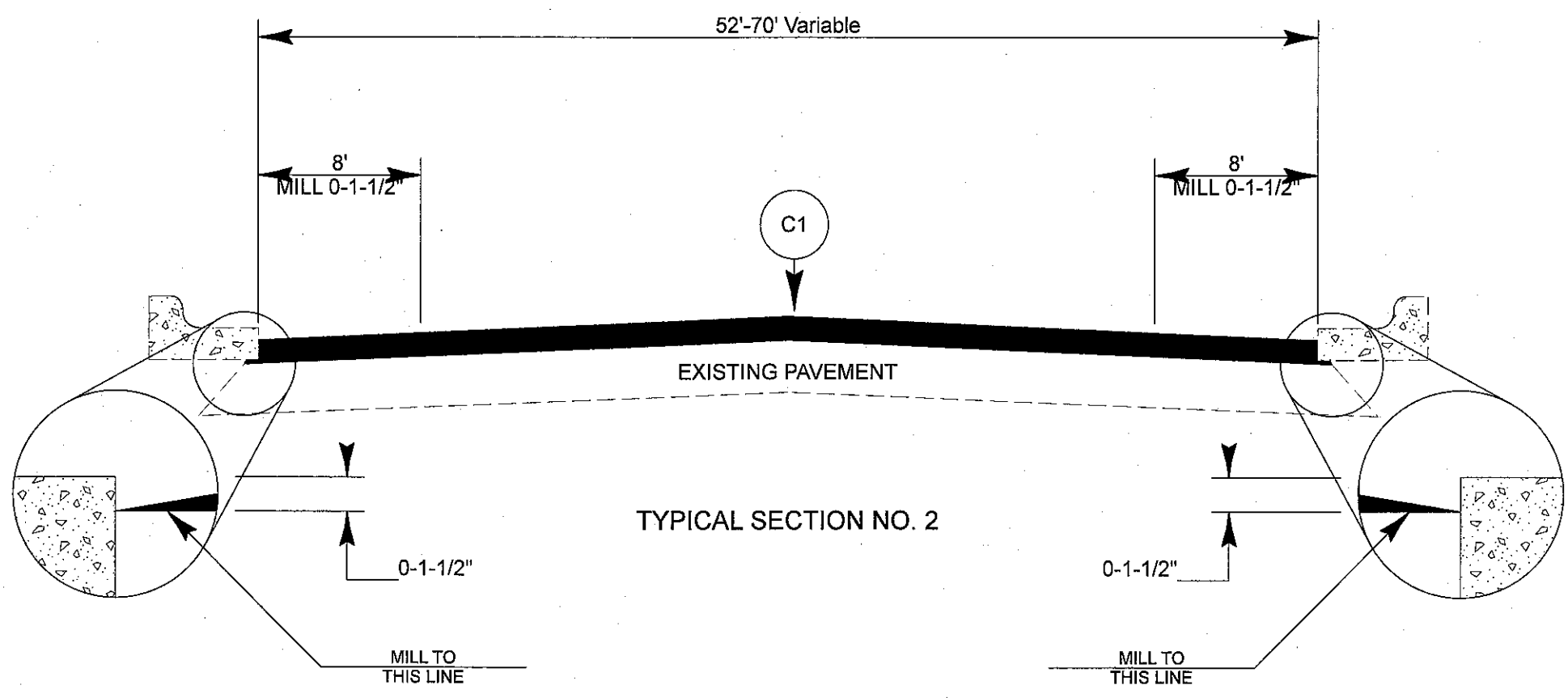
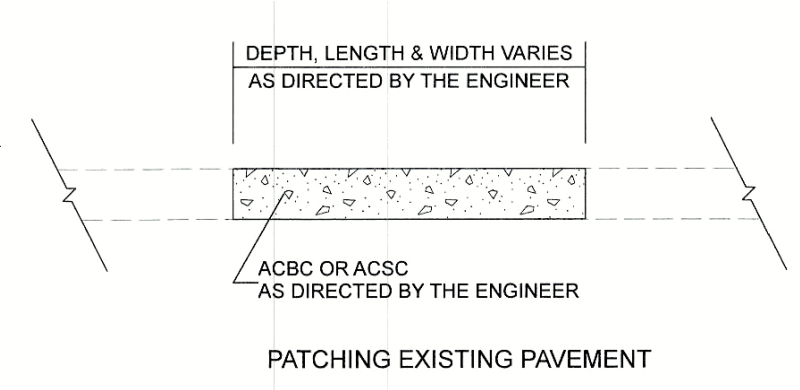
PROJECT NO.	SHEET NO.	TOTAL SHEETS
2018CPT.13.01.10111, 2018CPT.13.01.20111, 2018CPT.13.01.10112, 2018CPT.13.01.20112	18	



BUNCOMBE COUNTY



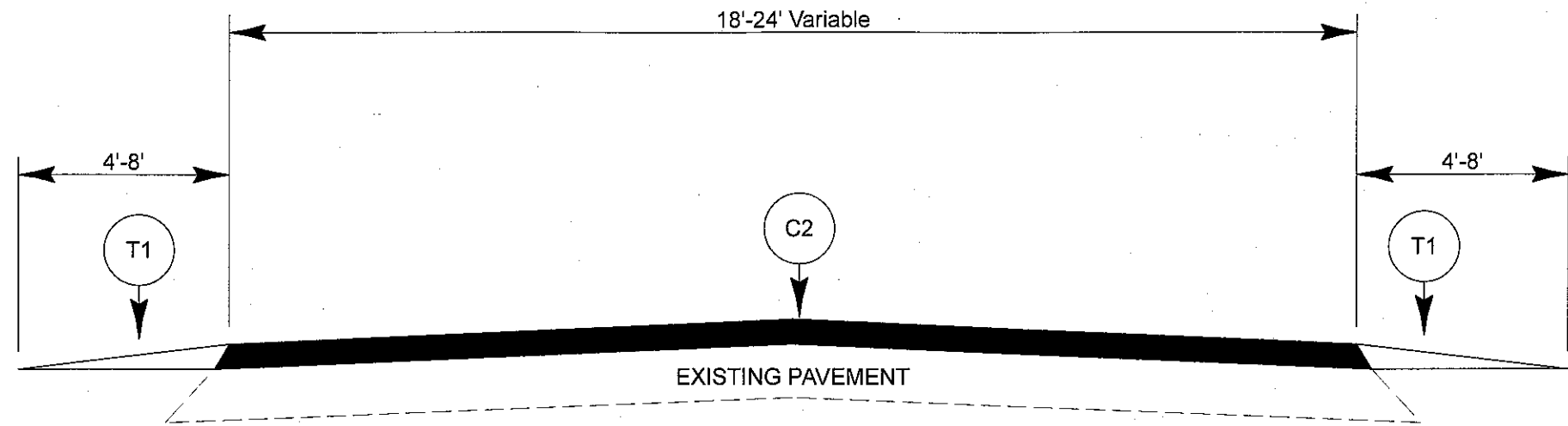
TYPICAL SECTION NO. 1



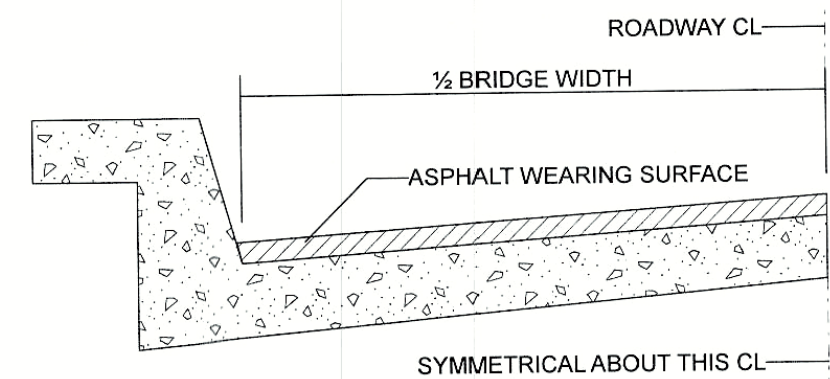
TYPICAL SECTION NO. 2

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1-1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YARD
C2	PROP. APPROX. 1-1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YARD
C3	PROP. APPROX. 1" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YARD
F1	ASPHALT SURFACE TREATMENT, DOUBLE SEAL
F2	ASPHALT SURFACE TREATMENT, FOG SEAL
T1	SHOULDER RECONSTRUCTION
V1	MILLING ASPHALT PAVEMENT, 0 TO 1-1/2" DEPTH
V2	MILLING ASPHALT PAVEMENT, 1-1/2" DEPTH TO BE USED ON BRIDGE DECKS ONLY. SEE BRIDGE MILLING DETAIL SHEET FOR SPECIFICS
V3	INCIDENTAL MILLING
V4	MILLING ASPHALT PAVEMENT, 0 TO 1" DEPTH
Y1	LATEX MODIFIED MICRO-SURFACING, TYPE III
Y2	SEALING EXISTING PAVEMENT CRACKS

PROJECT NO.	SHEET NO.	TOTAL SHEETS
2018CPT13.01.10111, 2018CPT.13.01.10112, 2018CPT.13.01.20111, ETC.	20	



TYPICAL SECTION NO. 3



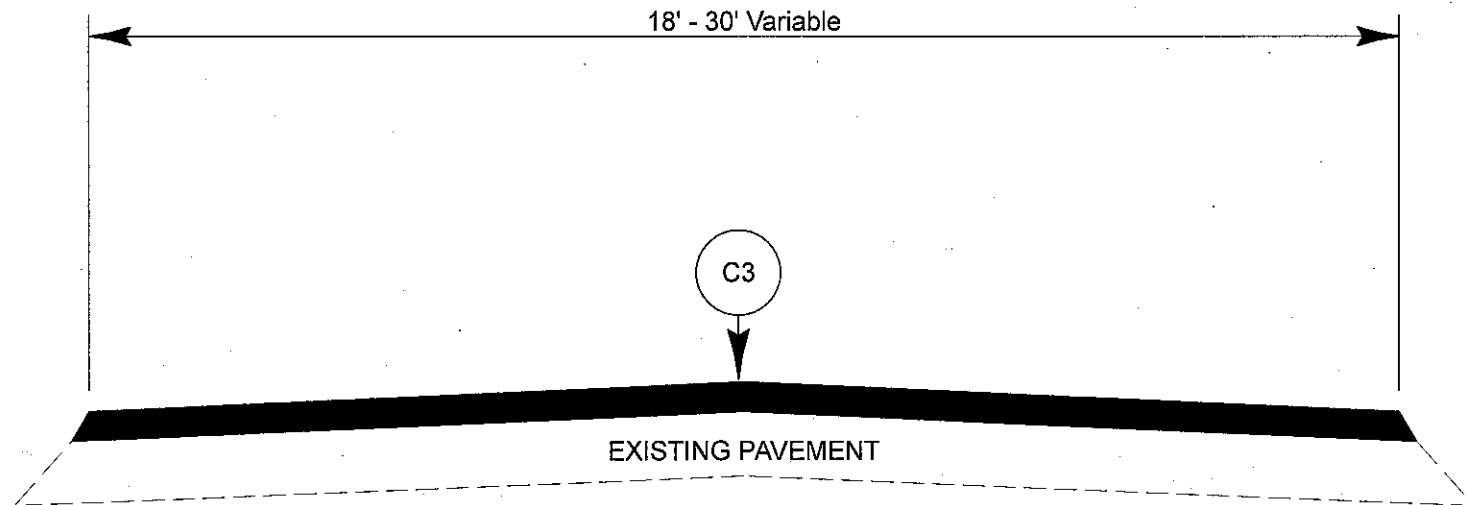
BRIDGE HALF TYPICAL SECTION

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. THE MINIMUM THICKNESS SHOULD DEPEND ON PAVEMENT TYPE AS FOLLOWS: S4.75A 1/2", SF9.5A 1.0", S9.5X 1.5", S12.5X 2.0", ULTRATHIN HOT MIX ASPHALT-TYPE A 3/4", ULTRATHIN HOT MIX ASPHALT-TYPE B 5/8", ULTRATHIN HOT MIX ASPHALT-TYPE C 1/2". THE MAXIMUM THICKNESS SHOULD DEPEND ON PAVEMENT TYPE AS FOLLOWS: S4.75A 1.0", SF9.5A 1.5", S9.5X 2.0", S12.5X 2.0", ULTRATHIN HOT MIX ASPHALT-TYPE A 3/4", ULTRATHIN HOT MIX ASPHALT-TYPE B 5/8", ULTRATHIN HOT MIX ASPHALT-TYPE C 1/2".

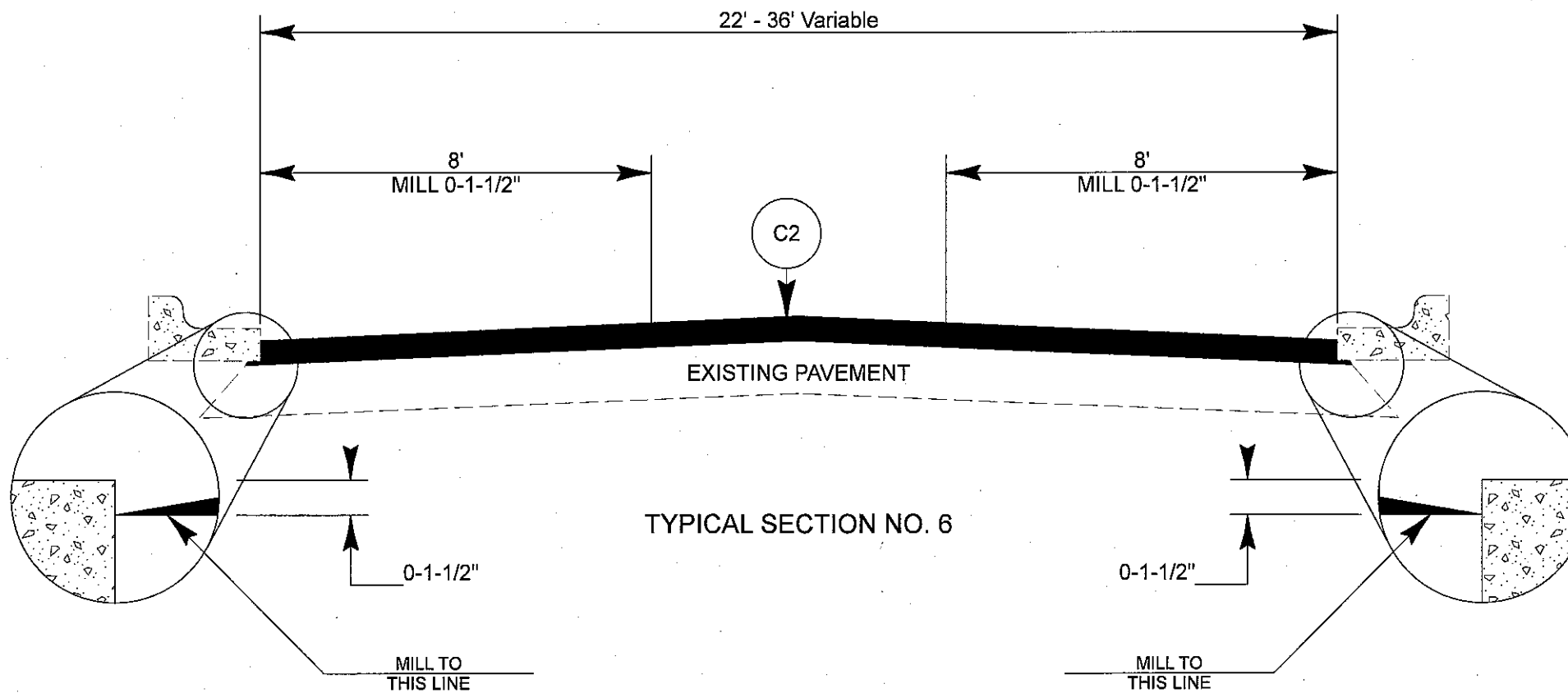
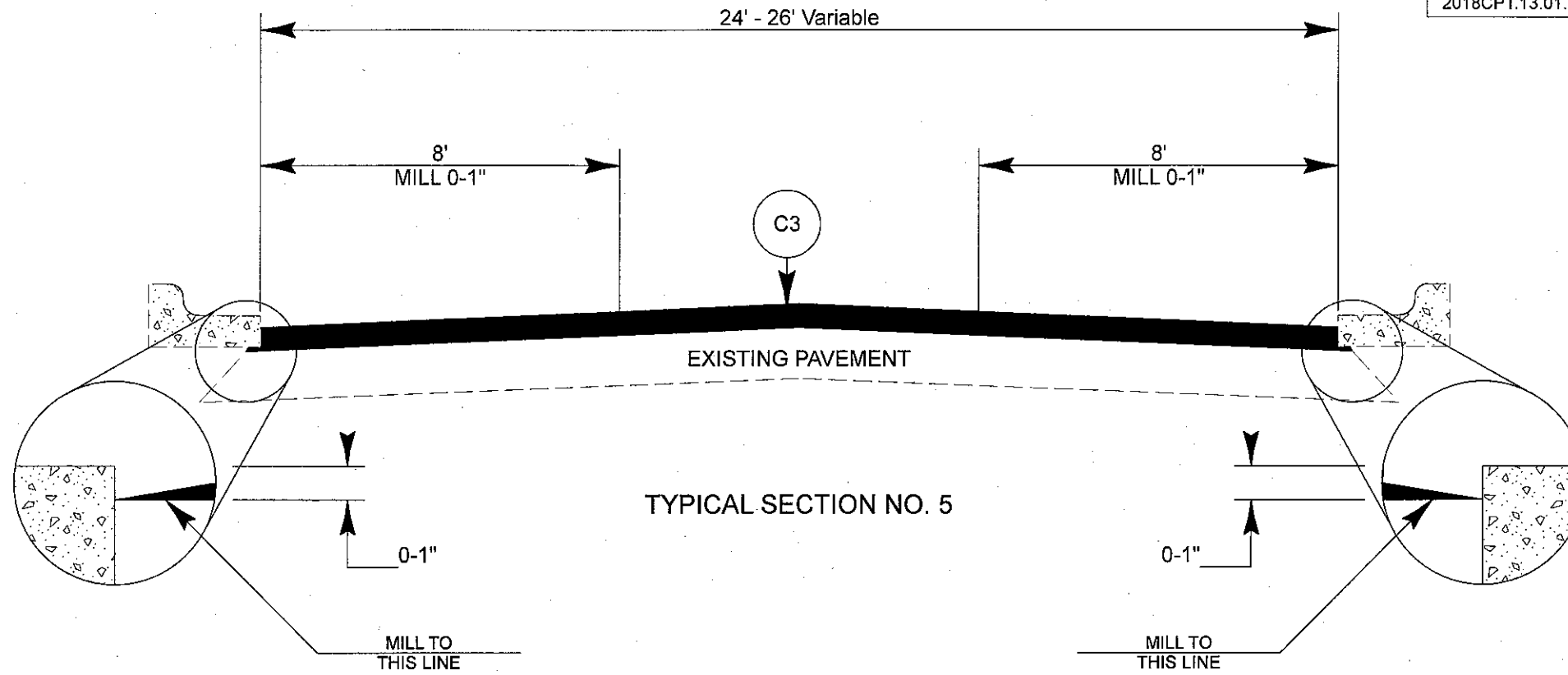
NOTES

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.

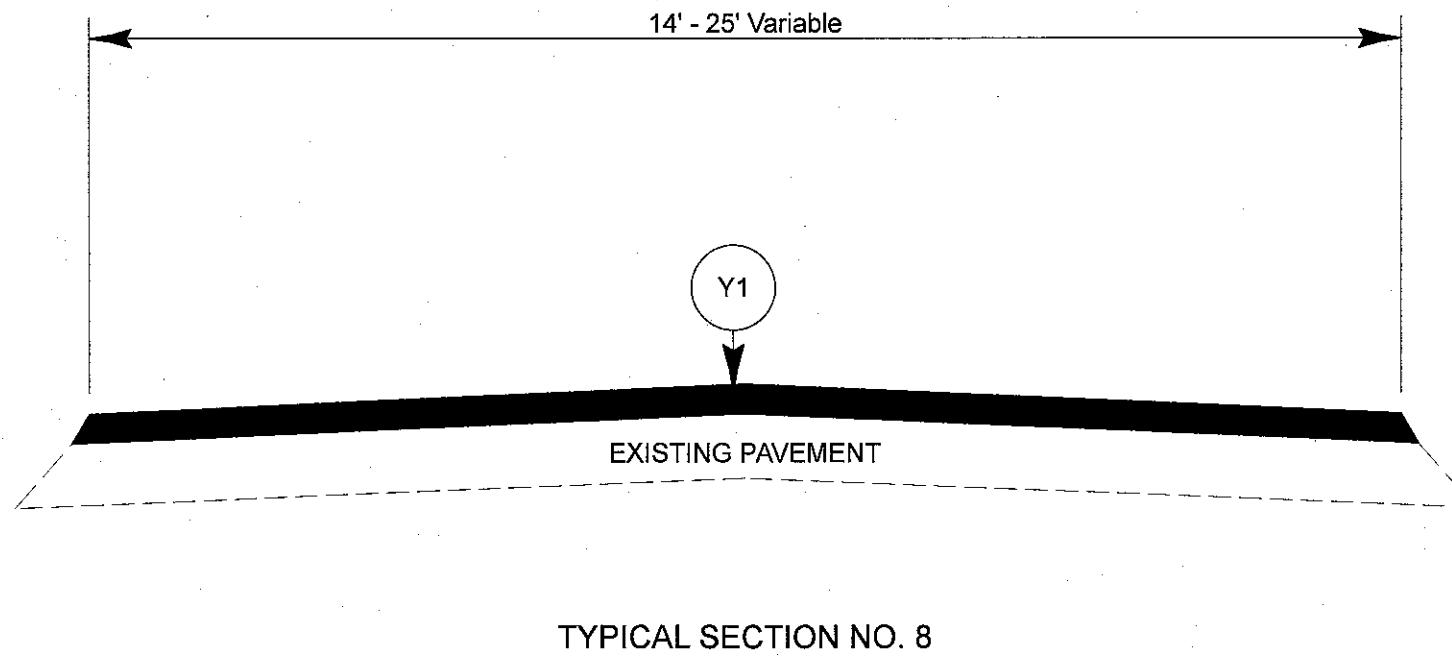
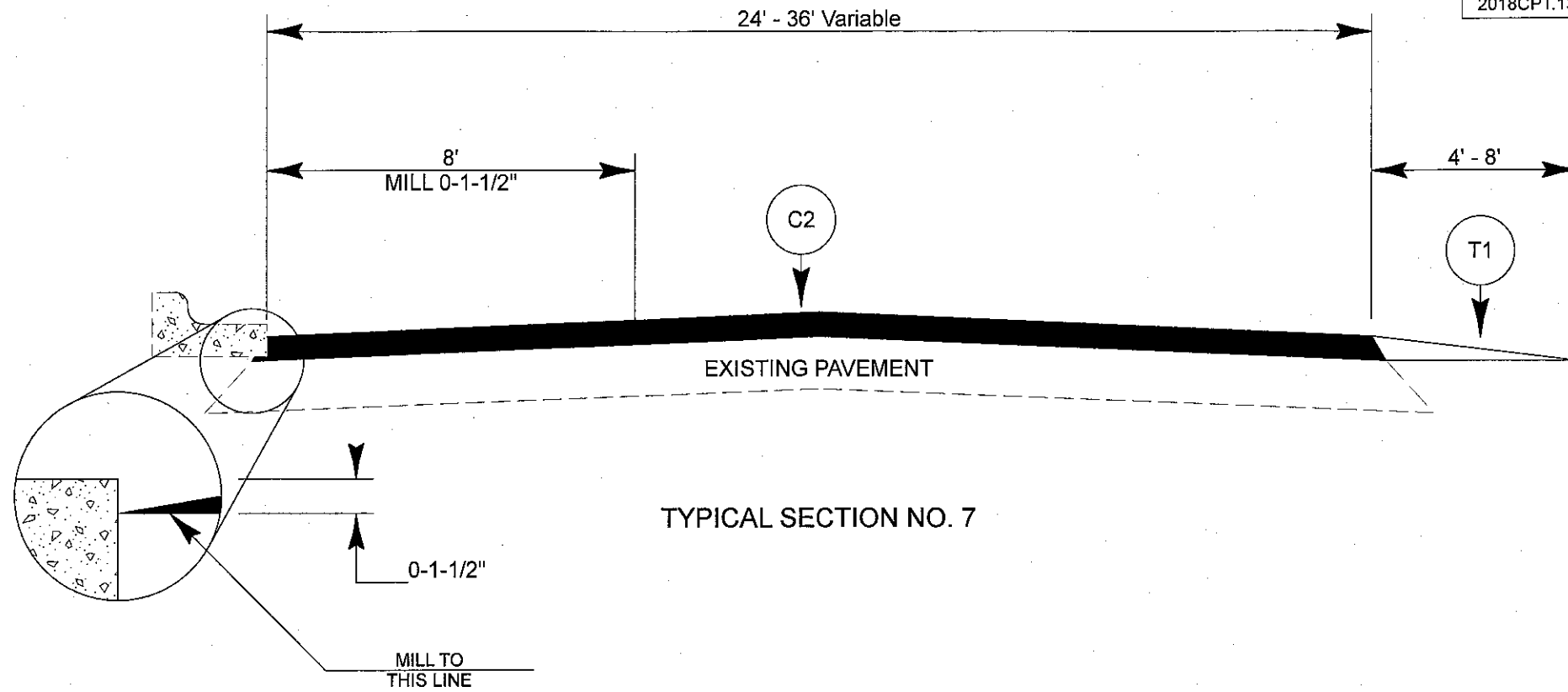


TYPICAL SECTION NO. 4

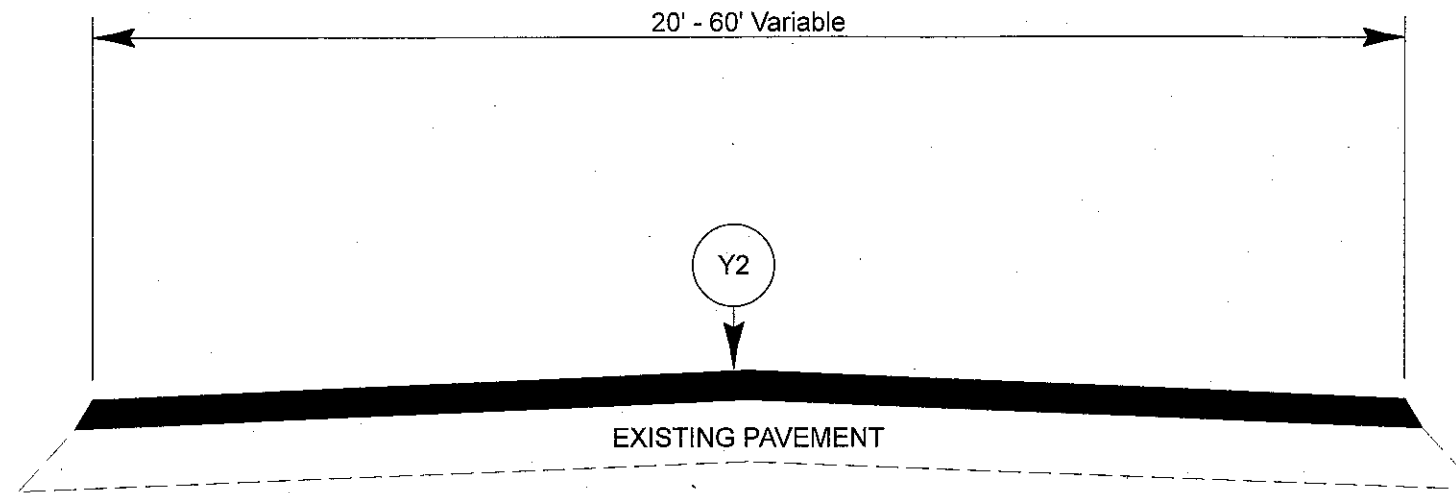
PROJECT NO.	SHEET NO.	TOTAL SHEETS
2018CPT.13.01.10111, 2018CPT.13.01.10112, 2018CPT.13.01.20111, ETC.	21	



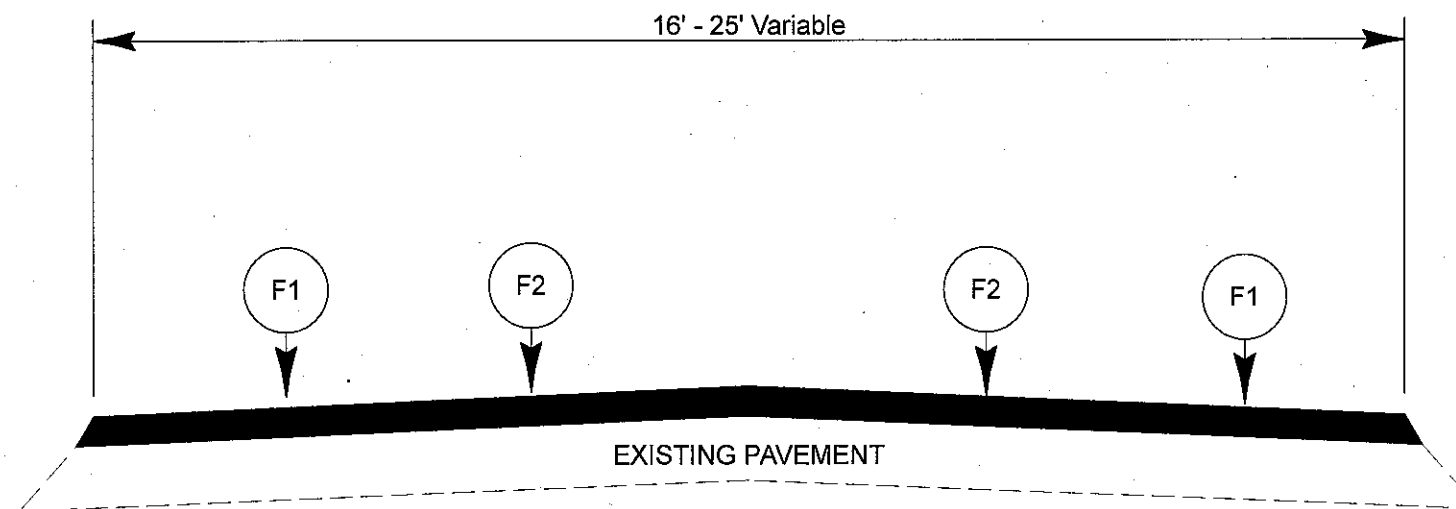
PROJECT NO.	SHEET NO.	TOTAL SHEETS
2018CPT.13.01.10111, 2018CPT.13.01.10112, 2018CPT.13.01.20111, ETC.	22	



PROJECT NO.	SHEET NO.	TOTAL SHEETS
2018CPT13.01.10111, 2018CPT.13.01.10112, 2018CPT.13.01.20111, ETC.	23	

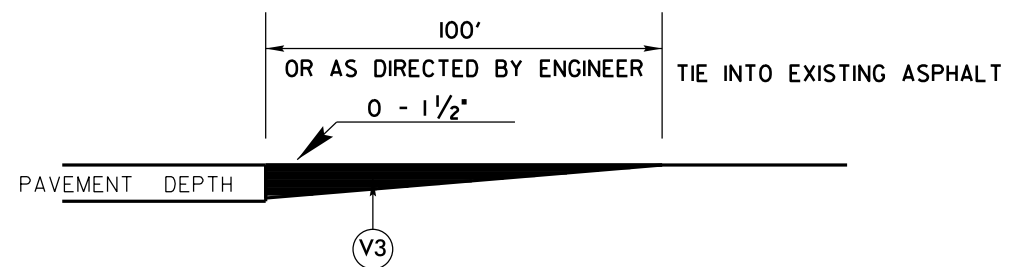


TYPICAL SECTION NO. 9



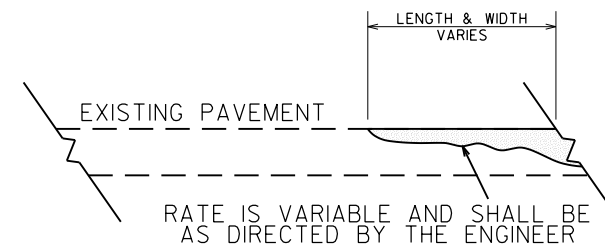
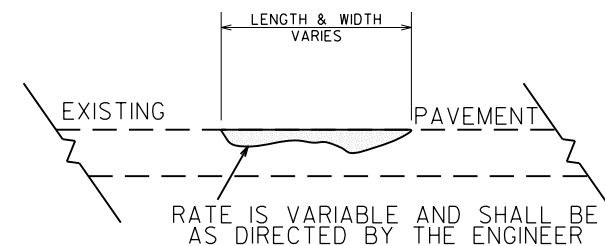
TYPICAL SECTION NO. 10

PROJECT NO.	SHEET NO.	TOTAL SHEETS
2018CPT.13.01.10111, 2018CPT.13.01.20111, 2018CPT.13.01.10112, 2018CPT.13.01.20112	24	



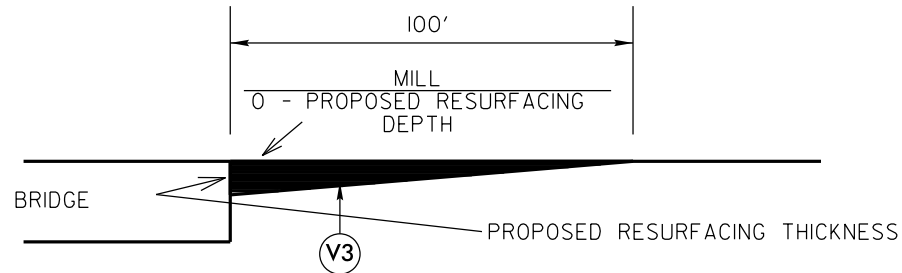
DETAIL TO TIE INTO EXIST PAVEMENT

THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE FACT THAT HE WILL BE REQUIRED TO MILL THE EXISTING ASPHALT PAVEMENT TO ENSURE A PROPER TIE-IN WITH THE EXISTING SURFACE AT THE BEGINNING, END AND Y LINES OF EACH MAP TO BE RESURFACED WITH ASPHALT CONC SURFACE COURSE, TYPE S9.5B. THIS WILL BE PAID FOR AS INCIDENTAL MILLING.



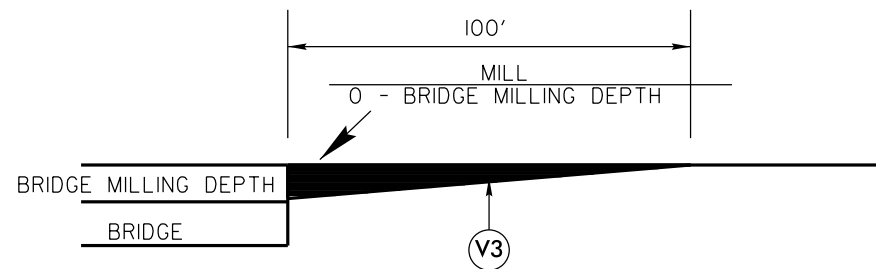
DETAIL SHOWING METHOD OF WEDGING

PROJECT NO.	SHEET NO.	TOTAL SHEETS
2018CPT.13.01.10111, 2018CPT.13.01.20111, 2018CPT.13.01.10112, 2018CPT.13.01.20112	25	



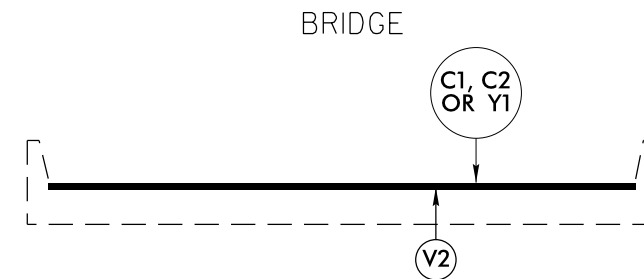
MILLING DETAIL AT BRIDGE APPROACHES

**WHERE BRIDGES WILL NOT BE RESURFACED.
THIS WILL BE PAID FOR AS INCIDENTAL MILLING.
USE AT BRIDGE NUMBER: 201 MAP 16.**



MILLING DETAIL AT BRIDGE APPROACHES

**WHERE BRIDGES WILL BE MILLED THEN RESURFACED.
THIS WILL BE PAID FOR AS INCIDENTAL MILLING.
USE AT BRIDGE NUMBERS: 418 MAP 9, 419 MAP 10,
270 AND 271 MAP 11, 375 MAP 13, 241 AND 265 MAP 15,
81 MAP 54, AND 58 MAP 55.**



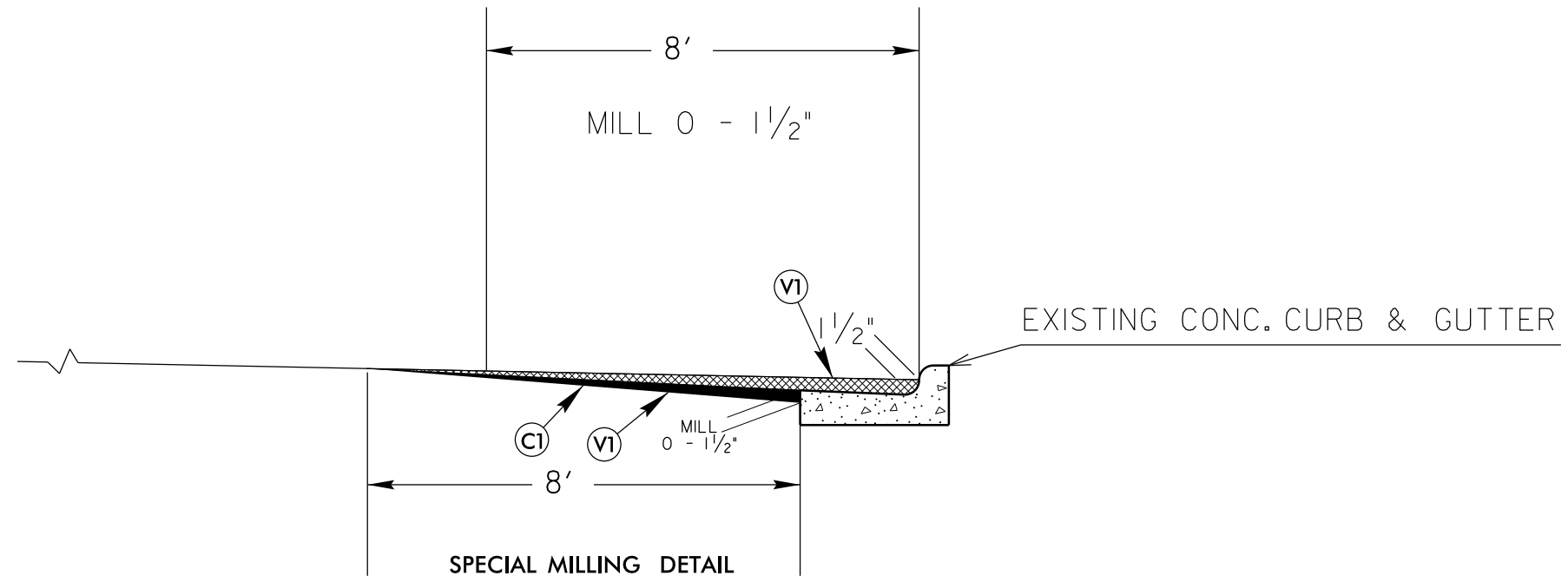
BRIDGE DETAIL

**BRIDGE NUMBER 418 MAP 9, 419 MAP 10,
270 AND 271 MAP 11, 375 MAP 13, 241 AND 265
MAP 15, 81 MAP 54, AND 58 MAP 55, 332 MAP 110.
MILL 1-1/2" OFF EXISTING PAVEMENT
SEE MAPS FOR BRIDGE LOCATION**

PROJECT NO.	SHEET NO.	TOTAL SHEETS
2018CPT.13.01.10111, 2018CPT.13.01.20111, 2018CPT.13.01.10112, 2018CPT.13.01.20112	26	

MILLING DETAIL

IN LOCATION WHERE
EXIST CURB IS OVERLAYED
WITH ASPHALT

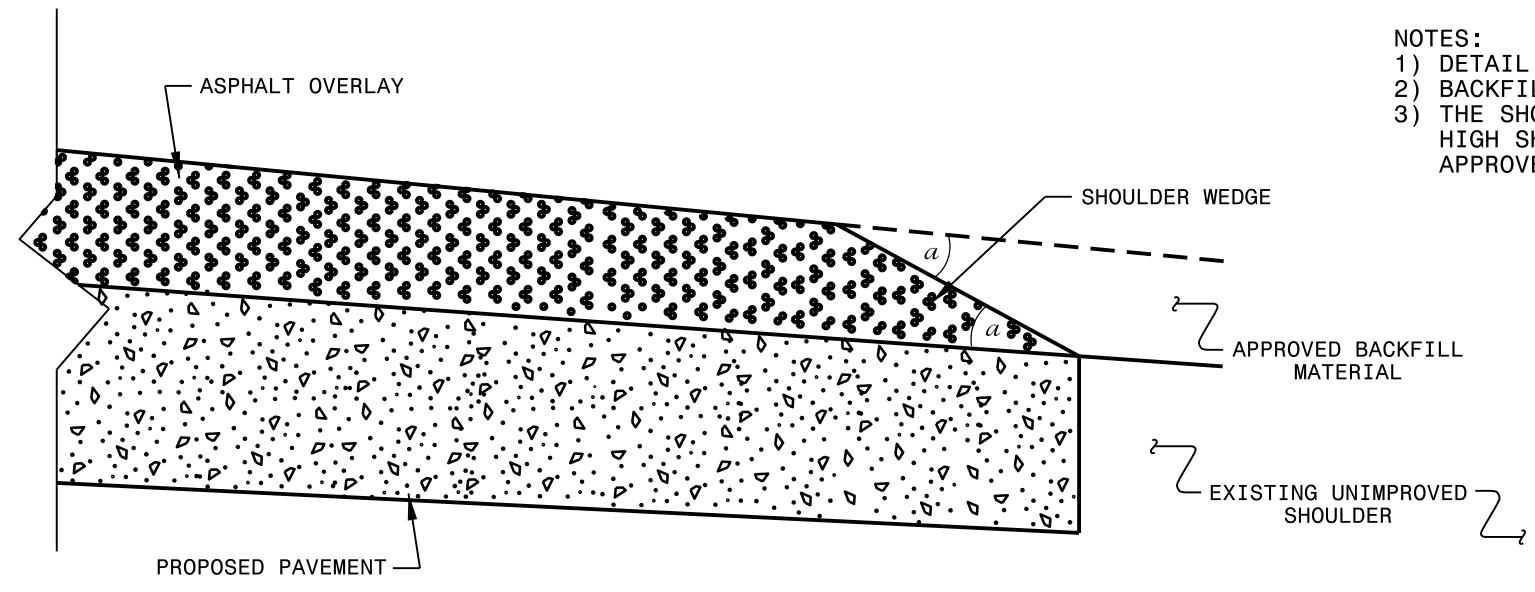


SPECIAL MILLING DETAIL
TO BE USED ON
MAP # 2
FROM NC 151 TO NC 112
M.P. 4.56 TO M.P. 6.085

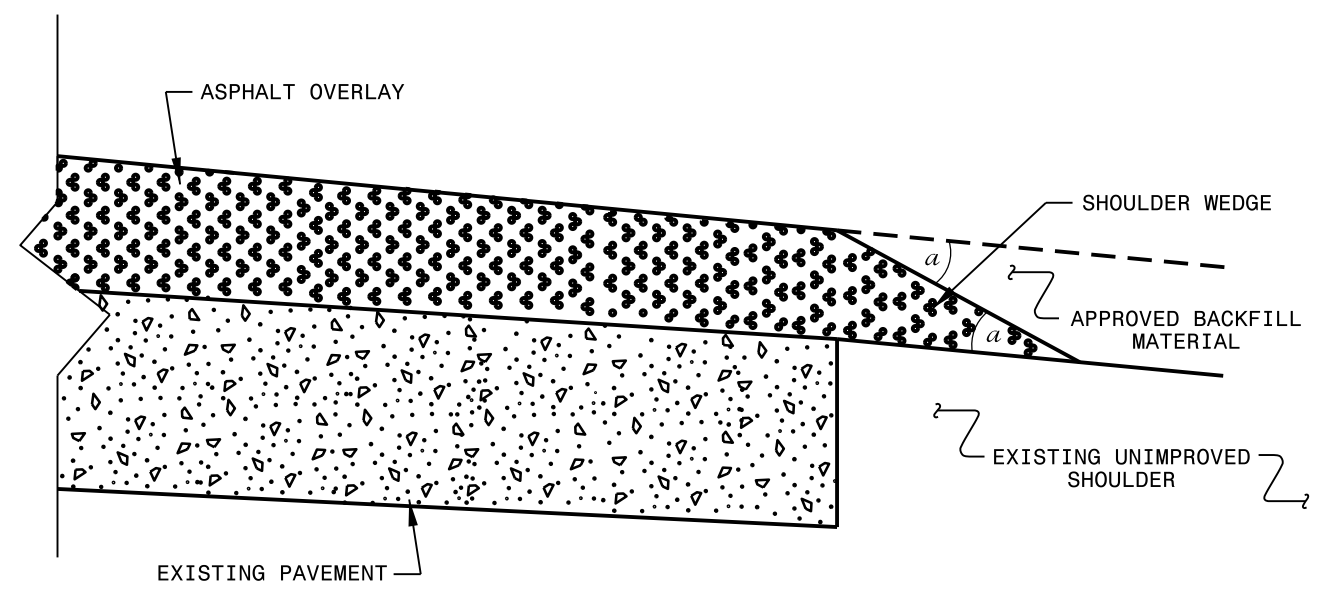
NOTE:

Multiple passes with the Milling Machine will be required to remove the existing Asphalt from the gutter and to remove the existing Asphalt in front of the Gutter as shown. The top of the resurfacing layer should match the gutter grade.

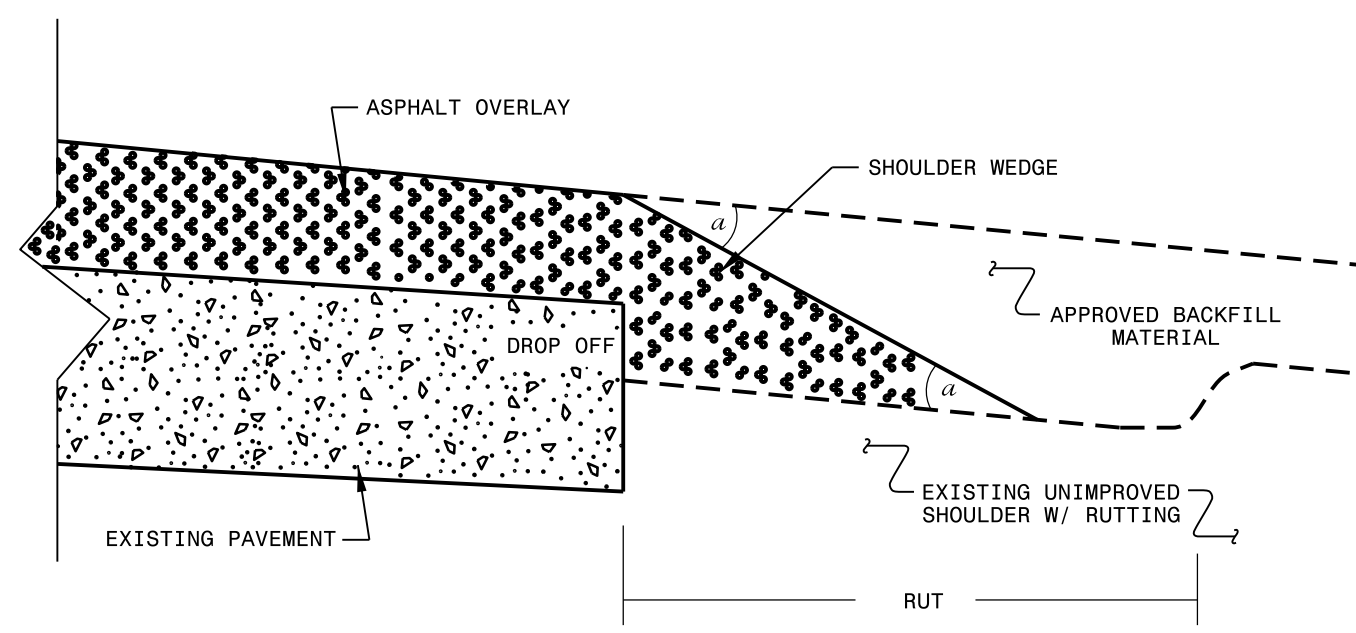
- NOTES:
- 1) DETAIL DOES NOT APPLY TO OGAFB AND ULTRA-THIN BONDED WEARING COURSE.
 - 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
 - 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS, SIDE STREETS, HIGH SHOULDERS, AND OTHER LOCATIONS NOT FEASIBLE TO CONSTRUCT AS APPROVED BY THE ENGINEER.



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)

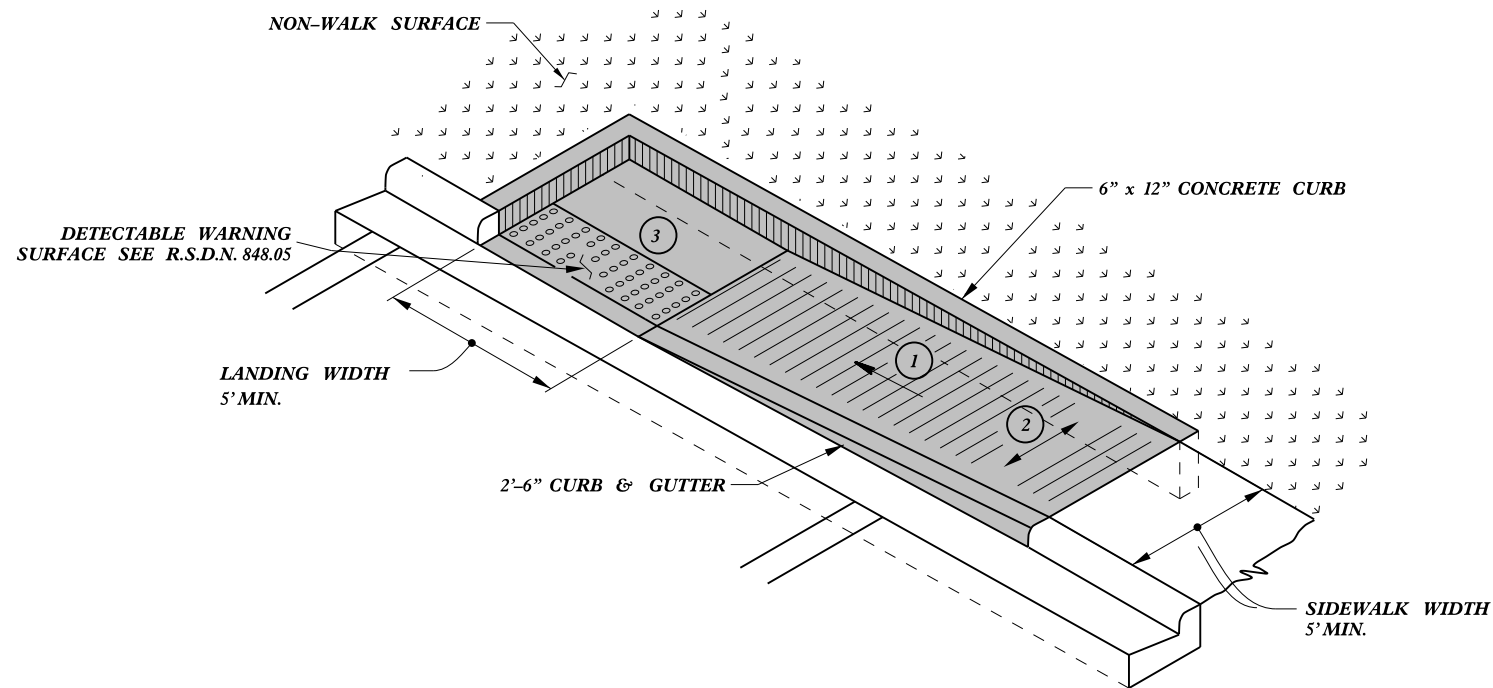
- SHOULDER WEDGE ANGLE = 30°

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: 2/2/16
CHECKED BY:	DATE:
FILE SPEC.: s:\usr\details\stand\shoulderwedgedetail.dgn	

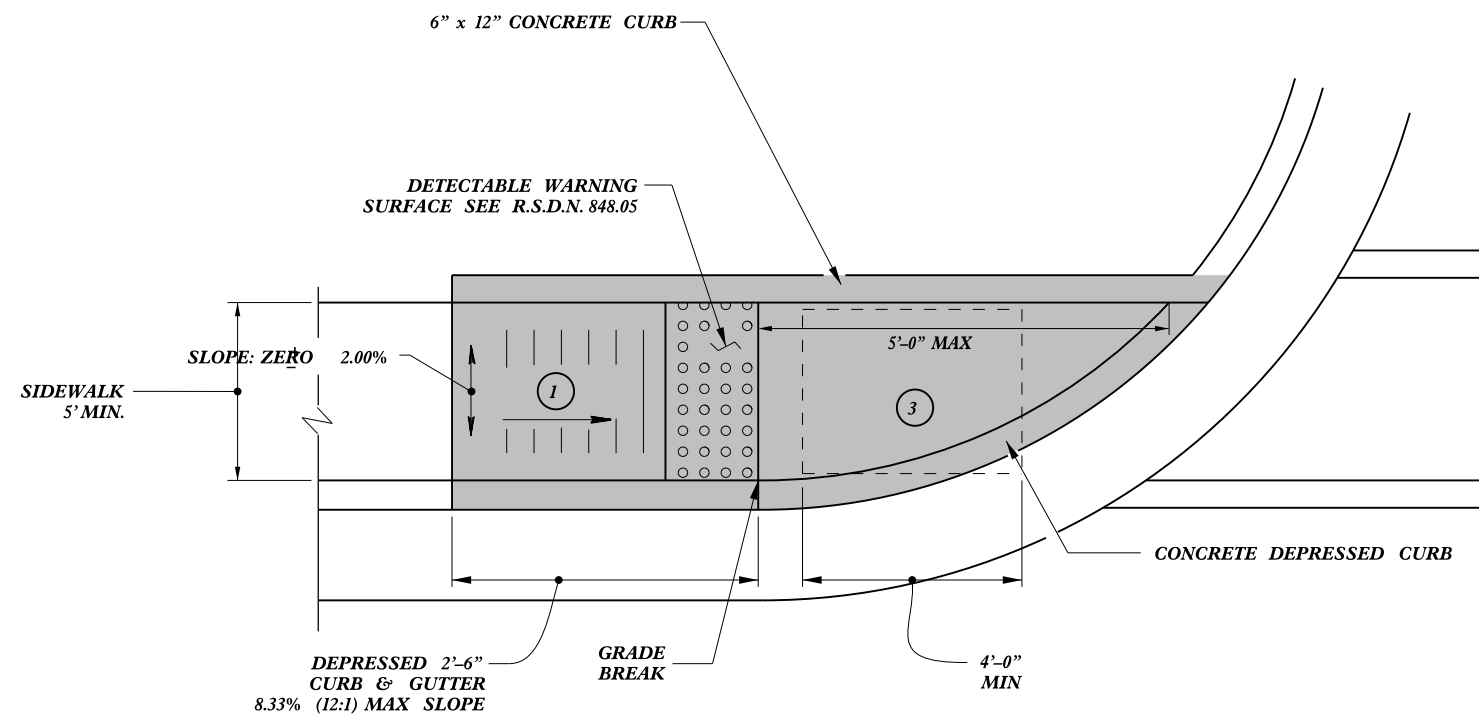
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etc

 PAY LIMITS FOR CURB RAMP



TYPE 1A



TYPE 1

- ① 8.33% (12:1) MAX RAMP SLOPE
- ② CROSS SLOPE: 2.00%
- ③ CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.

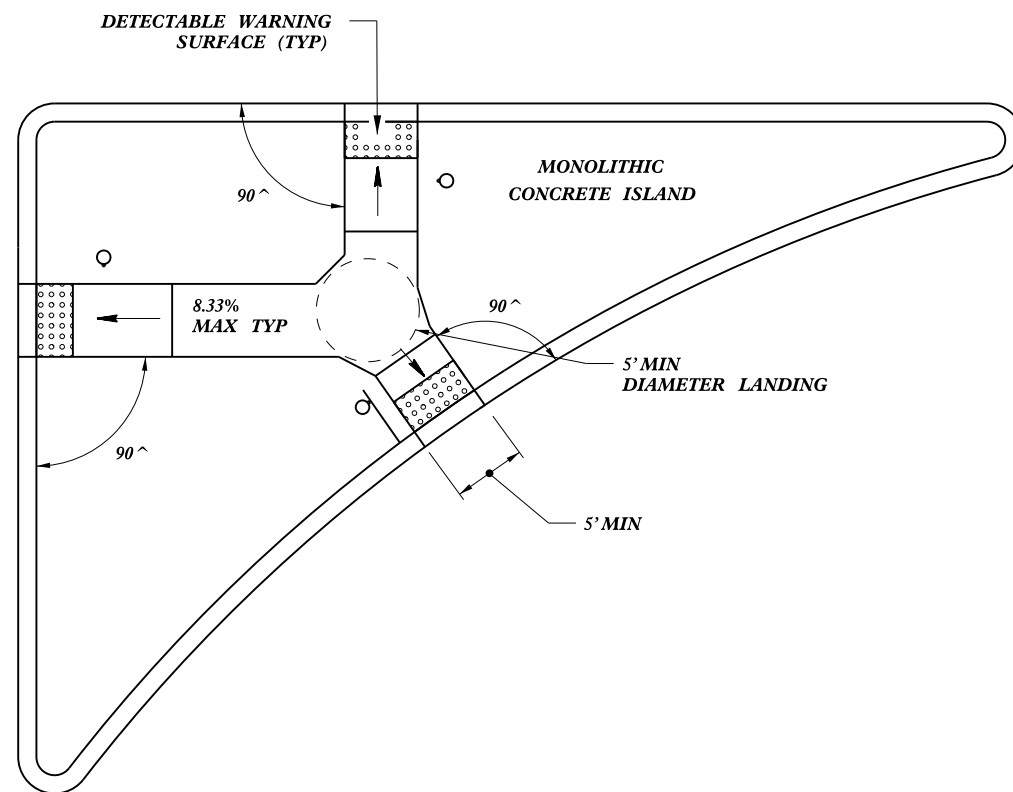
REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950	FAX 919-250-4119
CURB RAMPS	
Directional Ramps	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC. :stds/2012CurbRamp/CurbRampDetails.dgn	

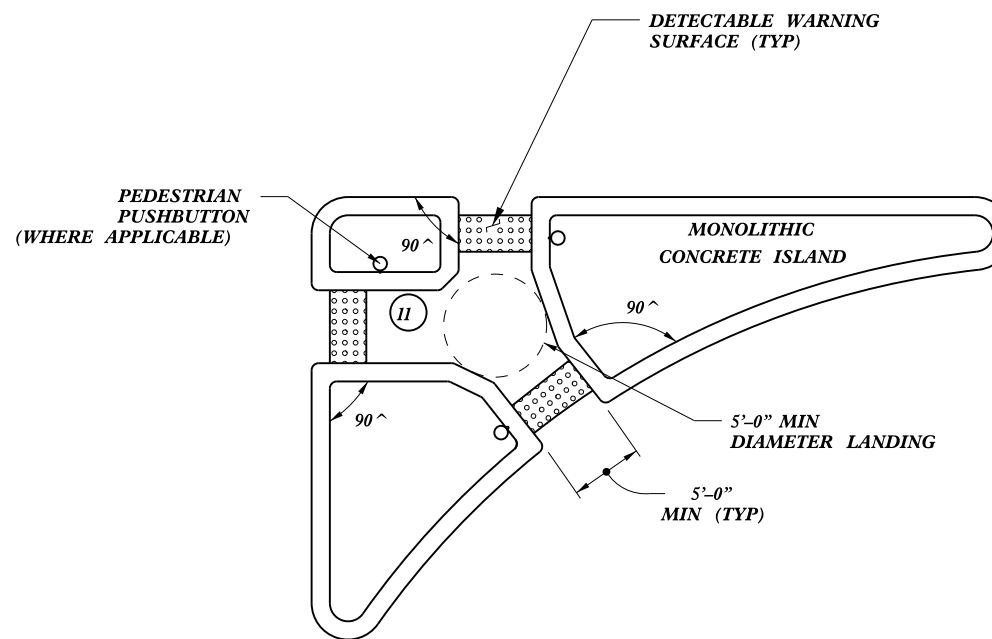
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 JHowerton AT CS0237501

5/14/99

etc



**LARGE ISLAND
CURB RAMPS**



**SMALL ISLAND
WITH CUT THROUGH**

-SEE ROADWAY DETAIL DRAWING 848D05 FOR DETECTABLE WARNING SURFACE AND FOR RAMP NOTES.

-SEE ROADWAY STANDARD DRAWING 852.01 FOR CONCRETE ISLAND DIMENSIONS.

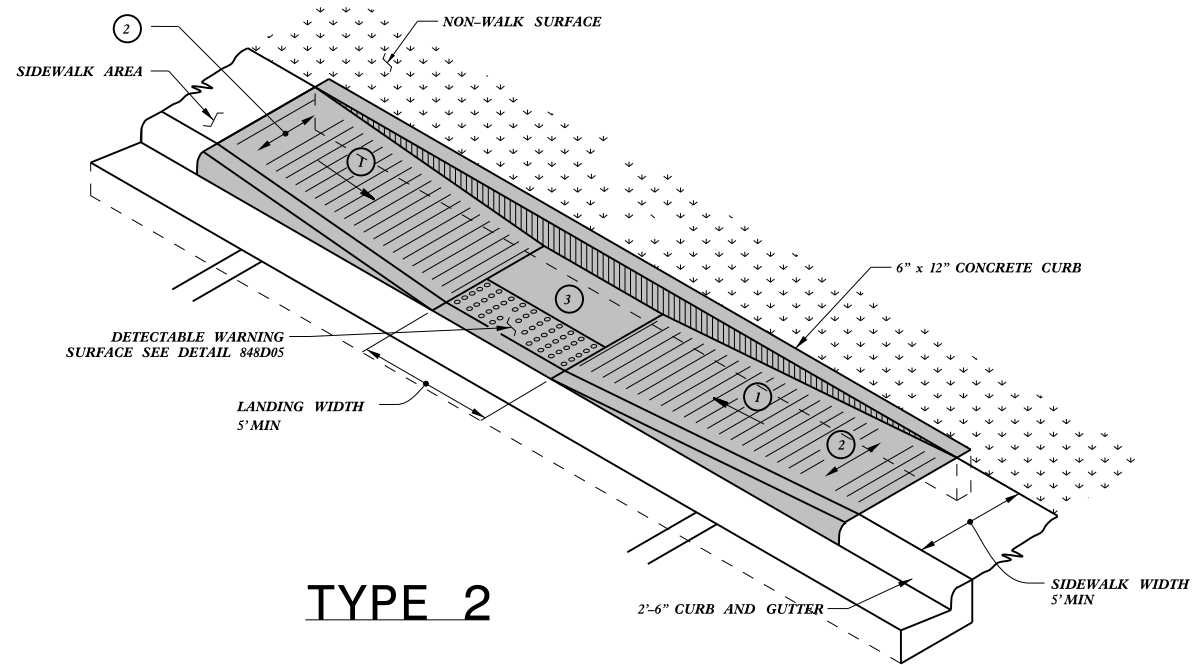
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 \$\$\$USERNAME\$\$\$

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

CURB RAMPS
 Median or Turn Lane Islands

ORIGINAL BY: J.S. HOWERTON DATE: 7/7/11
 MODIFIED BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____
 FILE SPEC: .stds/2012CurbRamp/CurbRampDetails.dgn

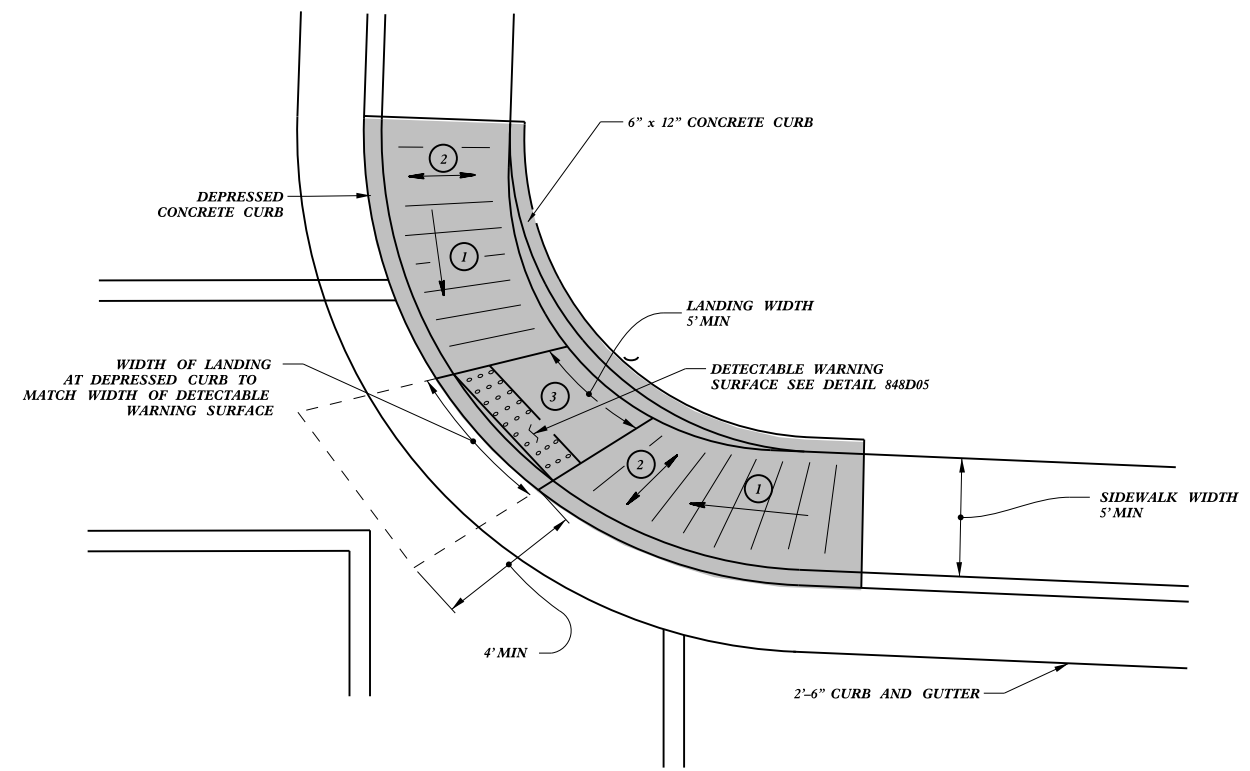
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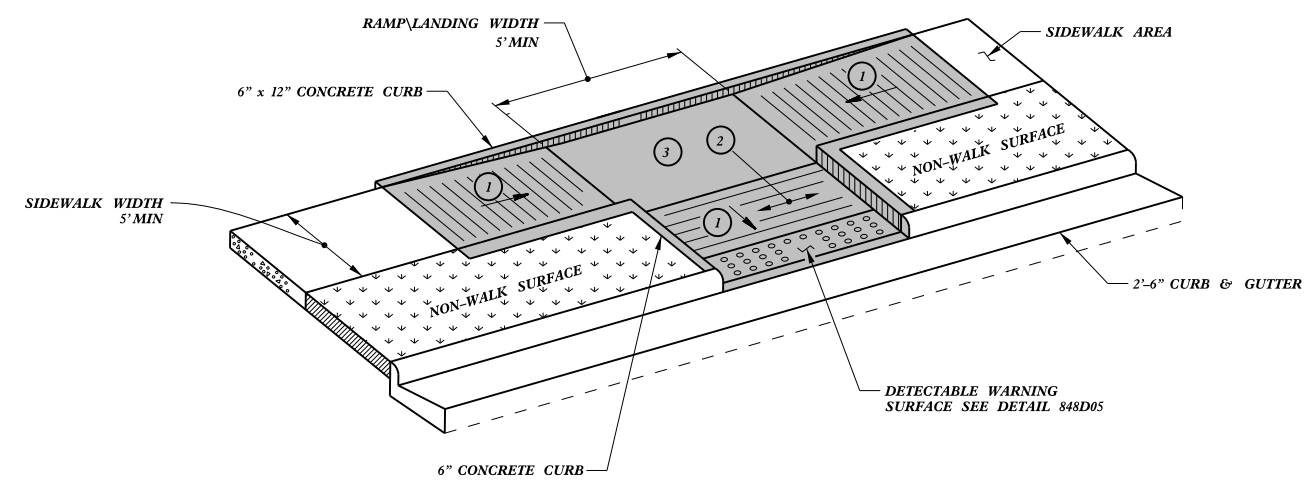
TYPE 2

PAY LIMITS FOR CURB RAMP

- 1 8.33% (12:1) MAX RAMP SLOPE
- 2 CROSS SLOPE: 2.00%
- 3 CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.



TYPE 2A




TYPE 3

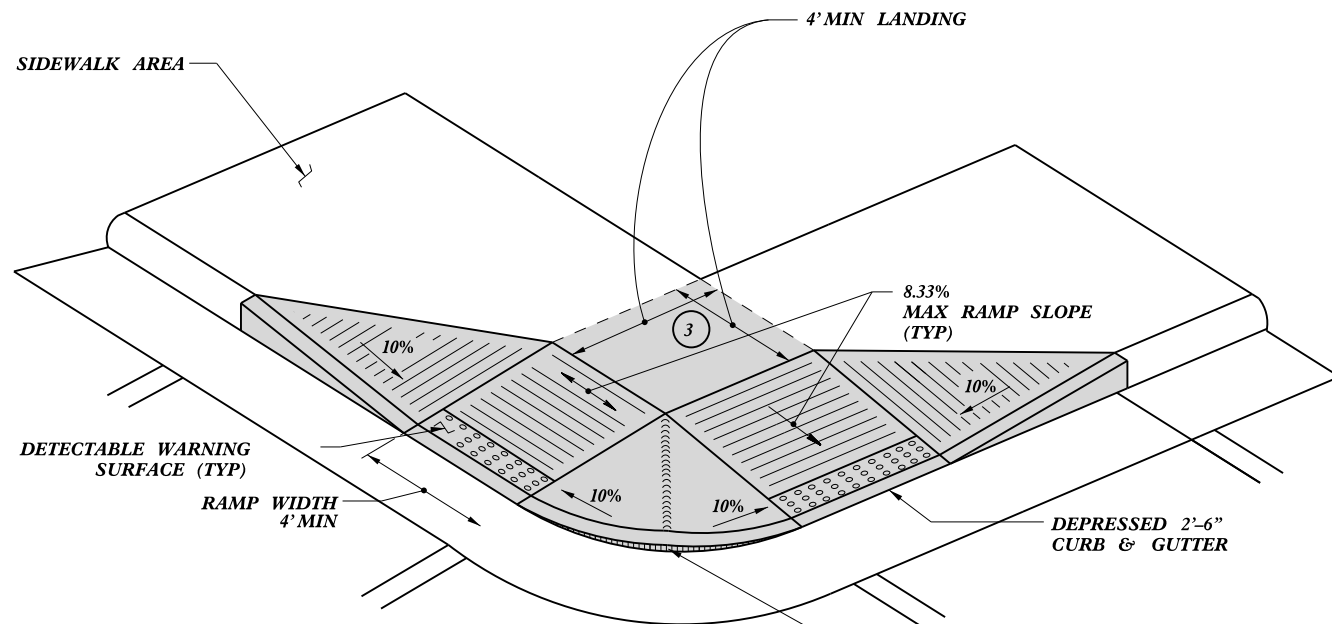
CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950 FAX 919-250-4119	
CURB RAMPS	
Parallel Ramps	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC: stds/2012CurbRamp/CurbRampDetails.dwg	

REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

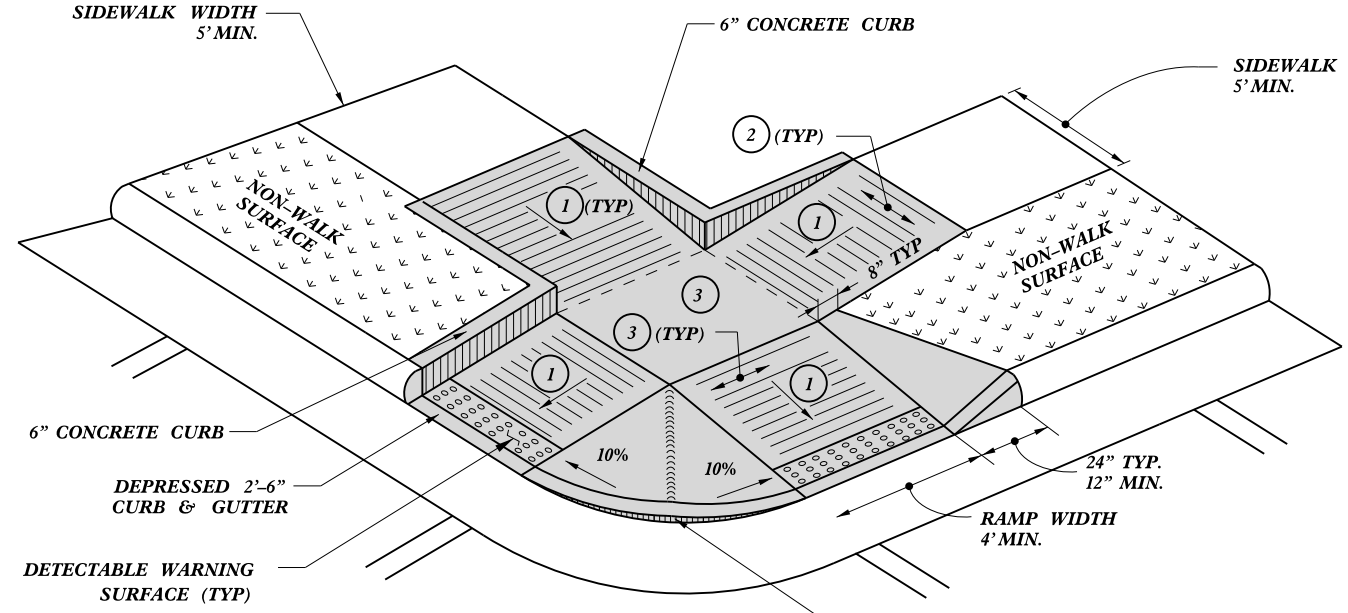
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etc

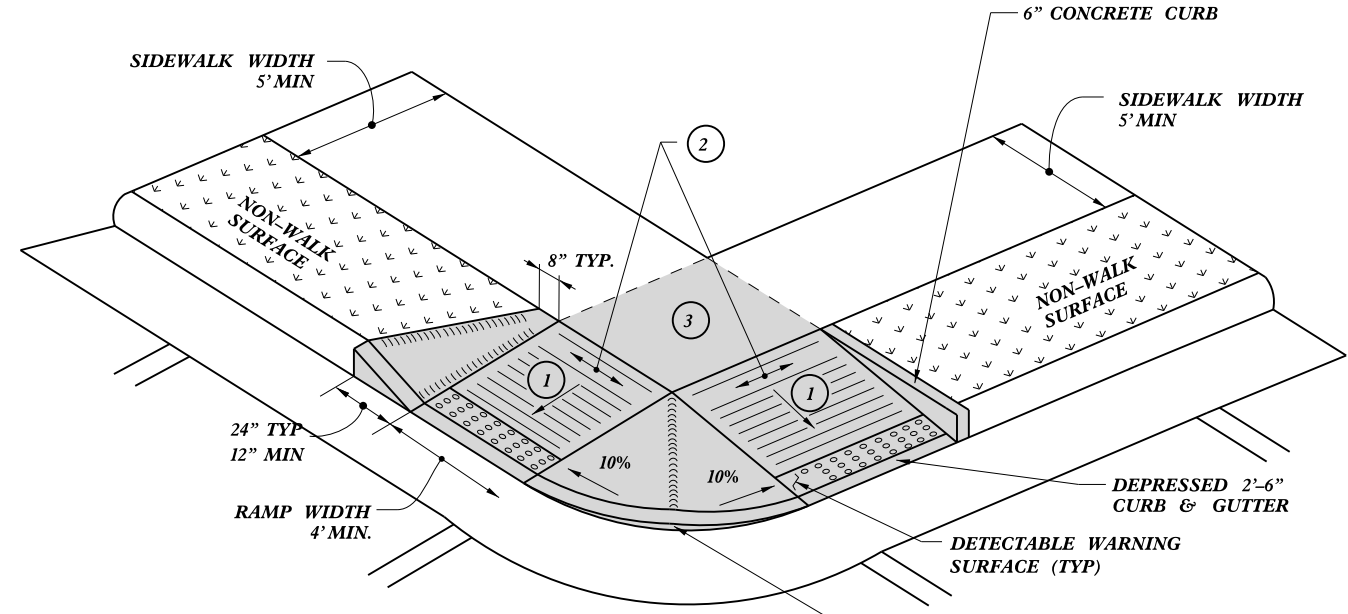
 PAY LIMITS FOR CURB RAMP



TYPE 4



TYPE 5



TYPE 4A

- 1 8.33% (12:1) MAX RAMP SLOPE
- 2 CROSS SLOPE: 2.00%
- 3 CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.

REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950	FAX 919-250-4119
CURB RAMPS	
Shared Landing	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
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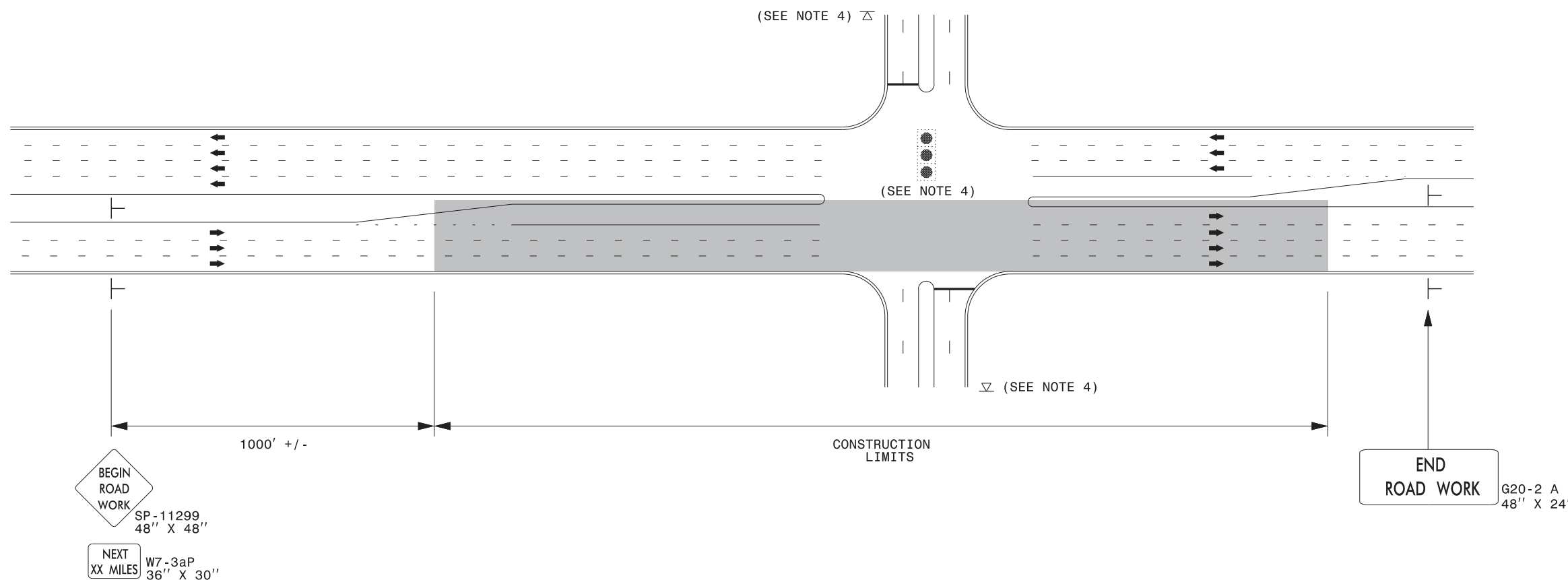
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5/14/99

SUMMARY OF QUANTITIES

PROJECT	COUNTY	MAP	ROUTE	DESCRIPTION	TYP	LANES	LANE TYPE	FINAL SURFACE TESTING REQUIRE D	WARM MIX ASPHALT REQUIRE D	LENGTH MI	WIDTH FT	SEALING EXISTING PAVEMENT CRACKS LB	INCIDENTAL STONE BASE TON	SHOULDER RECONSTR UCTION SMI	MILLING ASPHALT PAVEMENT, 1-1/2" DEPTH SY	MILLING ASPHALT PAVEMENT, 0" TO 1-1/2" DEPTH SY	MILLING ASPHALT PAVEMENT, 0" TO 1" SY	INCIDENTAL MILLING SY	ASPHALT CONC SURFACE COURSE, TYPE S9.5B TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5A TON	ASPHALT BINDER FOR PLANT MIX TON	PATCHING EXISTING PAVEMENT TON	ASPHALT SURFACE TREATMENT, DOUBLE SEAL SY	ASPHALT SURFACE TREATMENT, FOG SEAL SY	EMULSION FOR ASPHALT SURFACE TREATMENT GAL	VACUUM TRUCK WK	LATEX MODIFIED MICRO-SURFACING, TYPE III SY	CONCRETE CURB RAMP EA	ADJ. OF CATCH BASINS EA	ADJ. OF DROP INLETS EA	ADJ. OF MAN-HOLES EA	ADJ. OF METER BOXES OR VALVE BOXES EA	PORTABLE LIGHTING LS	INDUCTIVE LOOP SAWCUT LF			
2018CPT.13.01.20111	Buncombe	69	NC 151	FROM DEAD END TO SR 1100 (MP 0.00 - MP 4.32)	9	2	2WU	NO	NO	4.32	24	10,000																									
		70	NC 191	FROM HENDERSON COUNTY LINE TO NC 112 (MP 0.00 - MP 7.12)	9	2	2WU	NO	NO	7.12	24	15,000																									
		71	US 74A	FROM I-240 TO NC 81 (MP 9.92 - MP 10.51)	9	2	MU	NO	NO	0.59	60	5,000																									
TOTAL FOR PROJ NO. 2018CPT.13.01.20111										12.03		30,000																									
2018CPT.13.01.20112	Buncombe	72	SR 3167	FROM SR 3270 TO SR 3168 (MP 0.53 - MP 0.95)	8	2	2WU	NO	NO	0.42	14											100												3,450			
		73	SR 3187	FROM SR 3188 TO SR 3188 (MP 0.00 - MP 0.62)	8	2	2WU	NO	NO	0.62	20												100											7,275		3	
		74	SR 3188	FROM US 25A TO SR 3196 (MP 0.00 - MP 1.37)	8	2	2WU	NO	NO	1.37	20												150											16,075		3	
		75	SR 3218	FROM SR 3157 TO SR 3220 (MP 0.00 - MP 0.30)	8	2	2WU	NO	NO	0.3	25												15										4,400		5	5	
		76	SR 3495	FROM US 25 TO SR 3527 (MP 0.00 - MP 1.00)	8	2	2WU	NO	NO	1	23												20										13,493				
		77	SR 3521	FROM SR 3495 TO SR 3550 (MP 0.00 - MP 0.67)	8	2	2WU	NO	NO	0.67	24												50										9,435				
		78	SR 3555	FROM NC 112 TO END OF MAINTENANCE (MP 0.00 - MP 0.26)	8	2	2WU	NO	NO	0.26	19												15										2,981				
		79	SR 1259	FROM SR 1257 TO END OF MAINTENANCE (MP 0.00 - MP 0.44)	10	2	2WU	NO	NO	0.44	19													4,905	4,905	2,737	0.245										
		80	SR 1262	FROM SR 1261 TO END OF MAINTENANCE (MP 0.00 - MP 0.22)	10	2	2WU	NO	NO	0.22	18													2,323	2,323	659	0.116										
		81	SR 1325	FROM SR 1324 TO END OF MAINTENANCE (MP 0.00 - MP 0.52)	10	2	2WU	NO	NO	0.52	18													5,491	5,491	3,030	0.275										
		82	SR 1342	FROM SR 1332 TO SR 1343 (MP 0.00 - MP 0.13)	10	2	2WU	NO	NO	0.13	16													1,220	1,220	701	0.061										
		83	SR 1343	FROM SR 1332 TO SR 1342 (MP 0.00 - MP 0.09)	10	2	2WU	NO	NO	0.09	20													1,056	1,056	649	0.053										
		84	SR 2146	FROM NC 197 TO END OF PAVEMENT (MP 0.00 - MP 0.05)	10	2	2WU	NO	NO	0.05	18													528	528	296	0.026										
		85	SR 2147	FROM SR 2207 TO END OF MAINTENANCE (MP 0.00 - MP 0.40)	10	2	2WU	NO	NO	0.4	18													4,224	4,224	2,363	0.211										
		86	SR 2174	FROM SR 2173 TO END OF MAINTENANCE (MP 0.00 - MP 0.30)	10	2	2WU	NO	NO	0.3	16													2,816	2,816	1,590	0.141										
		87	SR 2215	FROM SR 2148 TO NC 197 (MP 0.00 - MP 0.20)	10	2	2WU	NO	NO	0.2	16													1,877	1,877	1,042	0.094										
		88	SR 2222	FROM SR 2207 TO DEAD END (MP 0.00 - MP 0.12)	10	2	2WU	NO	NO	0.12	16													1,126	1,126	637	0.056										
		89	SR 2265	FROM NC 197 TO END OF MAINTENANCE (MP 0.00 - MP 0.32)	10	2	2WU	NO	NO	0.32	18													3,379	3,379	1,908	0.169										
		90	SR 3119	FROM SR 3132 TO SR 3121 (MP 1.94 - MP 3.74)	8	2	2WU	NO	NO	1.8	20																						21,120				
		91	SR 3129	FROM SR 3136 TO SR 3128 (MP 0.00 - P 1.77)	10	2	2WU	NO	NO	1.77	18.5													19,210	19,210	7,695	0.961										
		92	SR 3140	FROM SR 3142 TO SR 3138 (MP 0.00 - MP 1.17)	10	2	2WU	NO	NO	1.17	18													12,355	12,355	6,925	0.618										
		93	SR 3439	FROM SR 3437 TO END OF MAINTENANCE (MP 0.00 - MP 1.98)	10	2	2WU	NO	NO	1.98	18													20,909	20,909	11,721	1.045										
		94	SR 3448	FROM US 19 / US 23 TO END OF MAINTENANCE (MP 0.00 - MP 0.20)	10	2	2WU	NO	NO	0.2	25													2,933	2,933	1,627	0.147										
		95	SR 3466	FROM SR 3449 TO SR 3452 (MP 0.00 - MP 1.07)	10	2	2WU	NO	NO	1.07	20													12,555	12,555	7,010	0.628										
		96	SR 3491	FROM SR 3486 TO END OF MAINTENANCE (MP 0.00 - MP 0.10)	10	2	2WU	NO	NO	0.1	17													997	997	555	0.050										
		97	SR 1100	FROM NC 151 TO END OF PAVEMENT (MP 0.00 - MP 0.46)	10	2	2WU	NO	NO	0.46	18													4,858	4,858	2,683	0.243										
		98	SR 1206	FROM SR 1141 TO END OF MAINTENANCE (MP 0.00 - MP 0.16)	10	2	2WU	NO	NO	0.16	16													1,502	1,502	842	0.075										
		99	SR 1271	FROM SR 1255 TO END OF MAINTENANCE (MP 0.00 - MP 0.20)	10	2	2WU	NO	NO	0.2	17													1,995	1,995	1,108	0.100										
		100	SR 1304	FROM BEGIN PAVEMENT TO SR 1303 (MP 0.25 - MP 0.62)	10	2	2WU	NO	NO	0.37	18													3,907	3,907	2,170	0.195										
		101	SR 1384	FROM SR 1220 TO DEAD END (MP 0.00 - MP 2.51)	10	2	2WU	NO	NO	2.51	18													26,506	26,506	14,798	1.325										
		102	SR 1391	FROM SR 1390 TO END OF MAINTENANCE (MP 0.00 - MP 0.59)	10	2	2WU	NO	NO	0.59	17													5,884	5,884	3,711	0.294										
		103	SR 1472	FROM SR 1220 TO END OF MAINTENANCE (MP 0.00 - MP 0.07)	10	2	2WU	NO	NO	0.07	18.5													760	760	424	0.038										
		104	SR 1474	FROM SR 1473 TO DEAD END (MP 0.00 - MP 0.53)	10	2	2WU	NO	NO	0.53	18													11,194		3,183	0.560										
		105	SR 1611	FROM SR 1610 TO END OF MAINTENANCE (MP 0.00 - MP 0.20)	10	2	2WU	NO	NO	0.2	18													2,112	2,112	1,172	0.106										
		106	SR 1753	FROM PAVEMENT CHANGE TO MADISON COUNTY LINE (MP 0.54 - MP 0.76)	10	2	2WU	NO	NO	0.22	18													2,323	2,323	1,298	0.116										
		107	SR 1824	FROM SR 1641 TO END OF MAINTENANCE (MP 0.00 - MP 0.41)	10	2	2WU	NO	NO	0.41	18													4,330	4,330	2,525	0.217										
		108	SR 1836	FROM END OF MAINTENANCE TO END OF MAINTENANCE (MP 0.00 - MP 0.35)	10	2	2WU	NO	NO	0.35	18													3,696	3,696	2,043	0.185										
		109	SR 1837	FROM US 25 TO SR 1836 (MP 0.00 - MP 0.07)	10	2	2WU	NO	NO	0.07	25													1,027	1,027	249	0.051										
		110	SR 1140	FROM US 19 / US 23 TO SR 1130 (MP 0.46 - MP 1.06)	8	2	2WU	NO	NO	0.6	19					45																	6,688				
		111	SR 1249	FROM SR 1248 TO SR 1224 (MP 0.00 - MP 0.33)	8	2	2WU	NO	NO	0.33	16.5													20									3,194				
		112	SR 1319	FROM R/R TRACKS TO US 19 (MP																																	

URBAN / SUBURBAN WORKZONES



NOTES:

- 1) 48" x 48" SIZED SIGNS (SP- 11299) MAY BE REDUCED TO 36" X 36" ON ROADWAYS WITH SPEED LIMITS OF 40 MPH OR LESS.
- 2) MOUNT SIGNS THAT ARE LARGER THAN 10 SQUARE FEET IN AREA ON TWO OR MORE WOOD OR U-CHANNEL SUPPORTS. PERFORATED SQUARE TUBING SUPPORT SYSTEMS MAY SUPPORT LARGER AREAS ON A SINGLE SUPPORT. FOLLOW MANUFACTURER'S RECOMMENDATIONS. THESE SYSTEMS SHALL BE NCHRP 350 COMPLIANT AND NCDOT APPROVED.
- 3) ADVANCE WARNING SIGNS NOT REQUIRED ON NON-SIGNALIZED SIDE STREETS.
- 4) MAY USE LAW ENFORCEMENT TO CONTROL TRAFFIC AT SIGNALIZED INTERSECTIONS AS DIRECTED BY THE ENGINEER. PROVIDE PORTABLE "ROAD WORK AHEAD" (W20-1) SIGNS 500' IN ADVANCE ALONG BOTH APPROACHES FROM THE SIDE STREETS WHEN PAVING PROCEEDS THROUGH THE INTERSECTION.
- 5) LATERAL CLEARANCE AT ALL SIGN LOCATIONS SHALL BE 2' AS MEASURED FROM THE EDGE OF PAVEMENT OR THE FACE OF THE CURB. WHEN UNABLE TO OBTAIN THE LATERAL CLEARANCE WITHIN THE MEDIAN AREA USE SHOULDER MOUNTS ONLY.
- 6) SIGN MOUNT LOCATIONS SHALL NOT BLOCK SIDEWALKS OR DRIVEWAYS.
- 7) IF STATIONARY GENERAL WARNING SIGNS ARE USED, THEY WILL BE PAID FOR PER SECTION 104 OF THE NCDOT STANDARD SPECIFICATIONS AS EXTRA WORK.
- 8) IF MILLED AREAS ARE NOT PAVED BACK BY THE END OF THE WORK DAY, PORTABLE SIGNS SHALL BE USED TO WARN DRIVERS OF THE PRESENT CONDITIONS. THESE ARE TO INCLUDE, BUT NOT LIMITED TO "ROUGH ROAD" W8-8, "UNEVEN LANES" W8-11, "GROOVED PAVEMENT" W8-15 w/MOTORCYCLE PLAQUE MOUNTED BELOW. THESE ARE TO BE DOUBLE INDICATED ON MULTI-LANE ROADWAYS WITH SPEED LIMITS 45 MPH AND GREATER WHERE LATERAL CLEARANCE CAN BE OBTAINED WITHIN THE MEDIAN AREAS. THESE PORTABLE SIGNS ARE INCIDENTAL TO THE OTHER ITEMS OF WORK INCLUDED IN THE TEMPORARY TRAFFIC CONTROL (LUMP SUM) PAY ITEM.

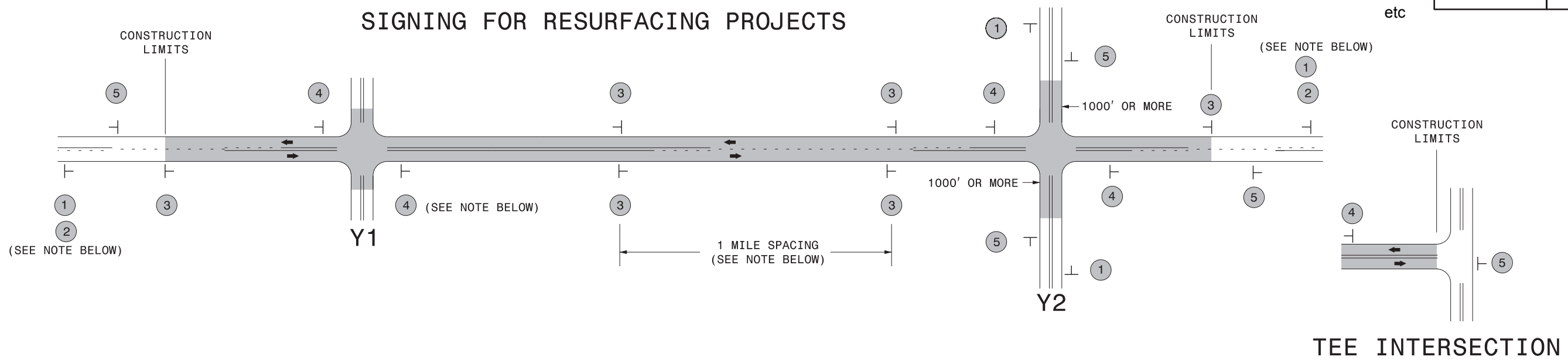
LEGEND

- ┆ STATIONARY SIGN
- ➔ DIRECTION OF TRAFFIC FLOW



**RESURFACING ADVANCE
WARNING SIGNS FOR
URBAN / SUBURBAN
FACILITIES**

SIGNING FOR RESURFACING PROJECTS



LEGEND	
—	STATIONARY SIGN
←	DIRECTION OF TRAFFIC FLOW

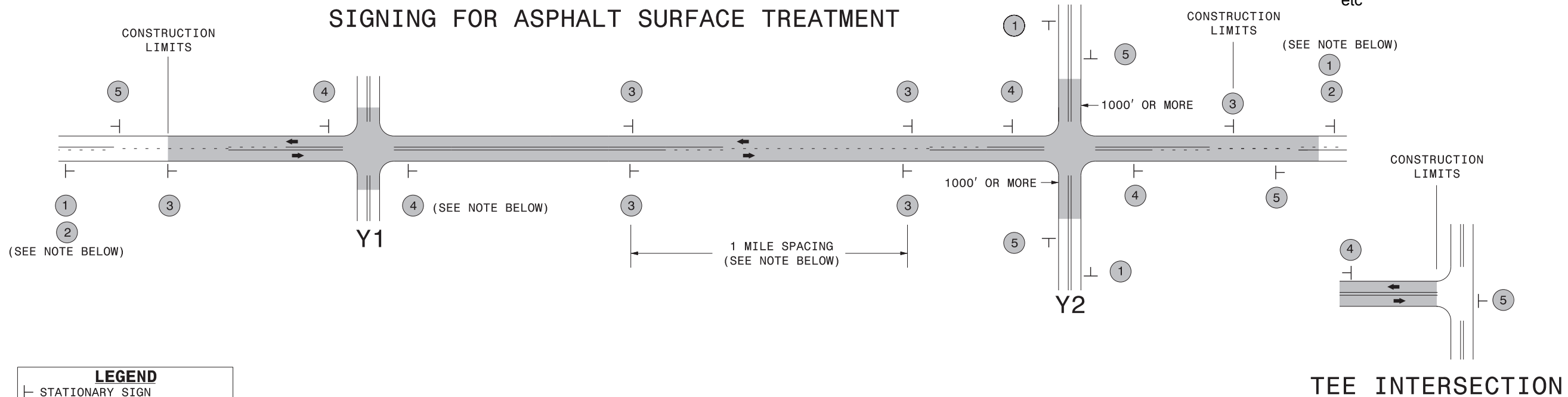
MAINLINE (-L-) SIGNING

-Y- LINE SIGNING

SIGNING NOTES AND PLACEMENT PER DIRECTION	1	2	3	4	5	
						<p>PLACE 1000' PRIOR TO BEGINNING OF CONSTRUCTION LIMITS. ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000' ALONG -Y- LINE.</p> <p>#2 SIGN ONLY USED WHEN RESURFACING LIMITS ARE 2 OR MORE MILES IN LENGTH. ROUND UP TO NEXT WHOLE NUMBER. (NO FRACTIONAL OR DECIMAL NUMBERS)</p>
						<p>NO REQUIRED STATIONARY SIGNING FOR THE FOLLOWING -Y- LINE CONDITIONS:</p> <ol style="list-style-type: none"> 1) LESS THAN 1000' OF RESURFACING ALONG -Y- LINE 2) SUBDIVISION ROADS 3) DEAD END ROADS <p>WHEN PAVING/CONSTRUCTION ACTIVITIES PROCEED ACROSS AN UNSIGNED -Y- LINE, ADVANCE WARNING PORTABLE SIGNS SHALL BE USED ALONG THE -Y- LINE AS SHOWN BELOW. REMOVE UPON COMPLETION OF WORK.</p>
						<p>PLACED 500' IN ADVANCE OF FLAGGER. PLACED 250' IN ADVANCE OF FLAGGER.</p>
						<p>PLACED 500' FOLLOWING THE END OF CONSTRUCTION LIMITS OR AS SHOWN WHEN WORK ENDS AT A 3-WAY TEE INTERSECTION.</p>

**RESURFACING
ADVANCE WARNING SIGNS
FOR
RURAL AND SUBURBAN
2 LANE ROADWAYS**

etc



LEGEND
 ┆ STATIONARY SIGN
 ← DIRECTION OF TRAFFIC FLOW

MAINLINE (-L-) SIGNING

-Y- LINE SIGNING

SIGNING NOTES AND PLACEMENT PER DIRECTION	1	 W20-1 48" X 48"	PLACE 1000' PRIOR TO BEGINNING OF CONSTRUCTION LIMITS. ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000' ALONG -Y- LINE.
	2	 W7-3aP 24" X 18"	#2 SIGN ONLY USED WHEN RESURFACING LIMITS ARE 2 OR MORE MILES IN LENGTH. ROUND UP TO NEXT WHOLE NUMBER. (NO FRACTIONAL OR DECIMAL NUMBERS)
	3	 W8-7 48" X 48"	- ALTERNATE THE FOLLOWING TWO SIGNS: - STARTING WITH "LOOSE GRAVEL" (W8-7) FOLLOWED BY "UNMARKED PAVEMENT". - PLACE INITIALLY AT THE CONSTRUCTION LIMITS AND SPACED 1 MILE APART THEREAFTER. - AT TEE INTERSECTIONS INSTALL INITIALLY 0.5 MILE FROM INTERSECTION AND SPACE 1 MILE APART THEREAFTER.
		 SP 48" X 48"	
	4	 SP 13106 48" X 48"	- THESE ARE FOR -Y- LINES THAT ARE "THROUGH" ROADWAYS. - DEAD END AND SUBDIVISION ROADS ARE NOT "THROUGH" ROADWAYS. - INSTALL 500' +/- FROM EACH -Y- LINE APPROACH AS SHOWN ABOVE. - FOR MULTIPLE -Y- LINES THAT ARE SEPARATED BY 0.25 MILES OR LESS, TREAT AS A SINGLE UNIT AND INSTALL WITHIN 500' OF EACH APPROACH. - A MAXIMUM OF 2 SIGN SETS PER MILE. DO NOT INSTALL WHEN -Y- LINES ARE WITHIN 0.5 MILES FROM "END ROAD WORK" SIGN. - FOR TEE INTERSECTIONS, INSTALL WITHIN 500' +/- OF THE INTERSECTION ALONG -L- LINE.
5	 G20-2 A 48" X 24"	PLACE 500' FOLLOWING THE END OF CONSTRUCTION LIMITS OR AS SHOWN WHEN WORK ENDS AT A 3-WAY TEE INTERSECTION.	

NO REQUIRED STATIONARY SIGNING FOR THE FOLLOWING -Y- LINE CONDITIONS:

- 1) LESS THAN 1000' OF RESURFACING ALONG -Y- LINE
- 2) SUBDIVISION ROADS
- 3) DEAD END ROADS

WHEN PAVING/CONSTRUCTION ACTIVITIES PROCEED ACROSS AN UNSIGNED -Y- LINE, ADVANCE WARNING PORTABLE SIGNS SHALL BE USED ALONG THE -Y- LINE AS SHOWN BELOW. REMOVE UPON COMPLETION OF WORK.

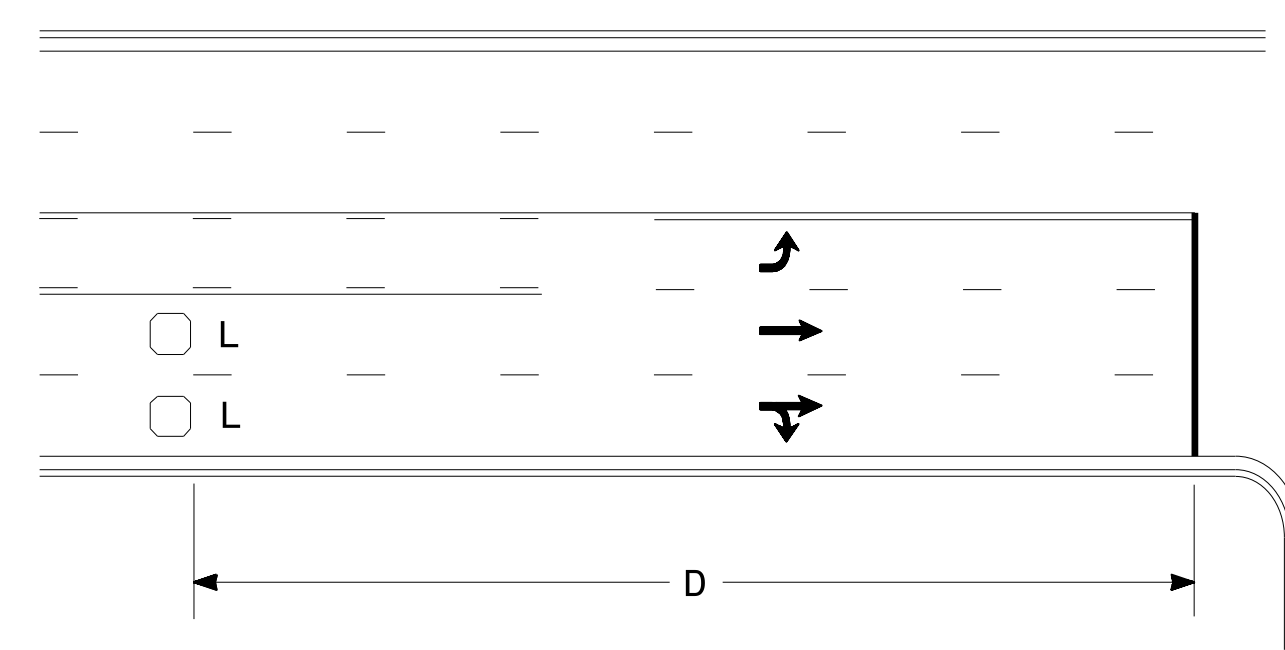
W20-1
 48" X 48"

W20-7 A
 48" X 48"

PLACED 500' IN ADVANCE OF FLAGGER. PLACED 250' IN ADVANCE OF FLAGGER.

**ADVANCE WARNING SIGNS
FOR
ASPHALT SURFACE TREATMENTS
2 LANE ROADWAYS**

High Speed Detection (≥40 mph)

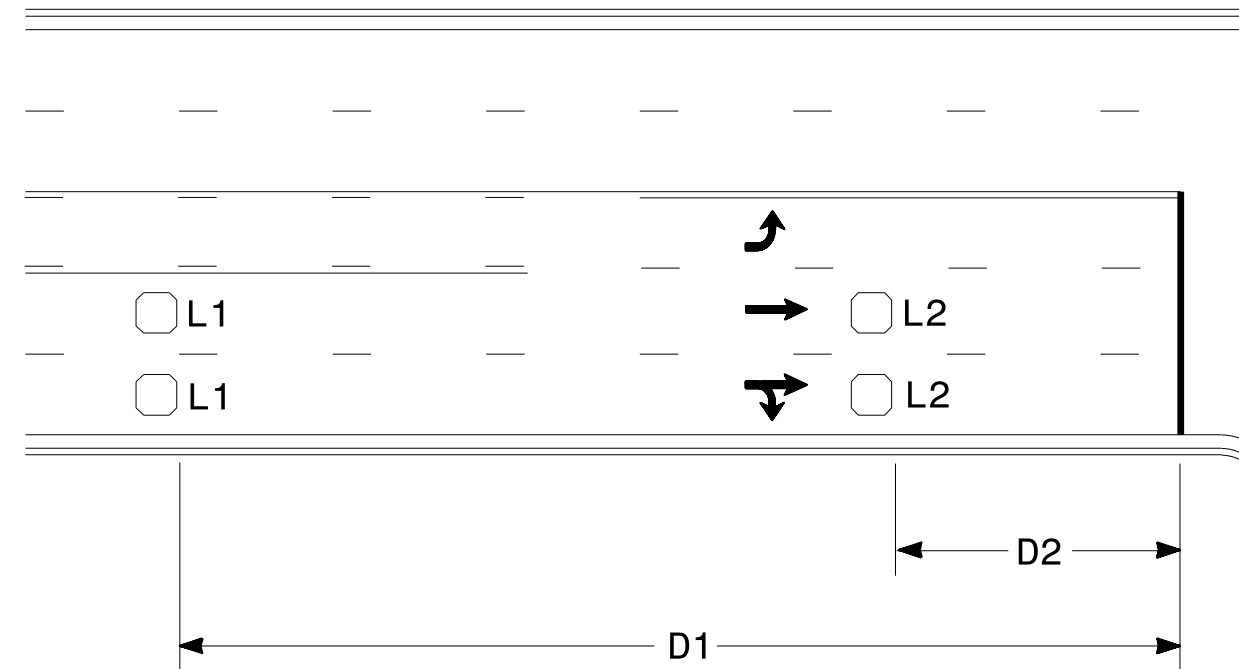


Speed Limit mph	D ft
40	250
45	300
50	355
55	420

L = 6ft X 6ft
Wired in series for TS1
Controllers
Wired separately for TS2,
170, and 2070L Controllers

Volume Density Operation

OR

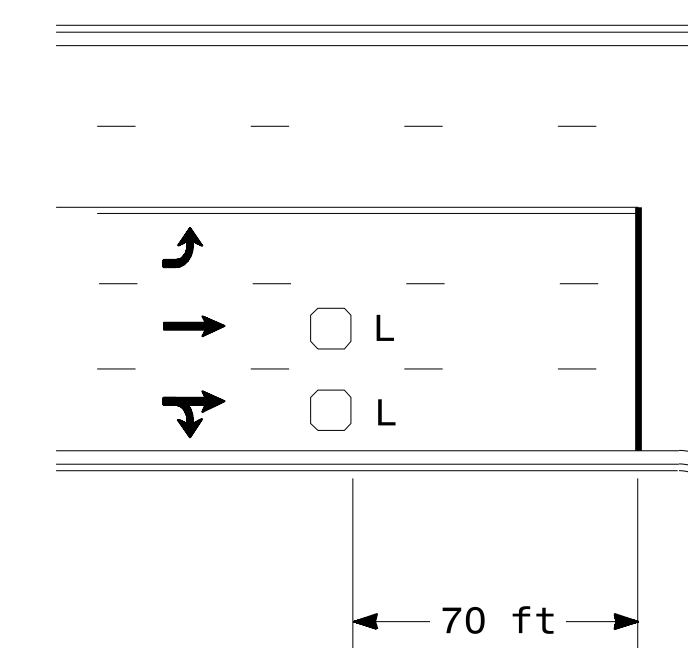


Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

L1 = 6ft X 6ft
Wired in series
L2 = 6ft X 6ft
Wired in series

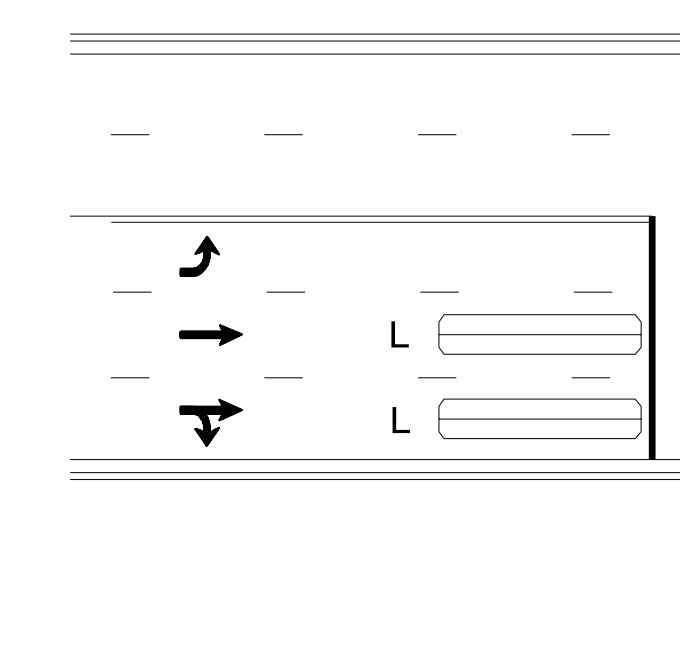
"Stretch" Operation

Low Speed Detection (≤35 mph)



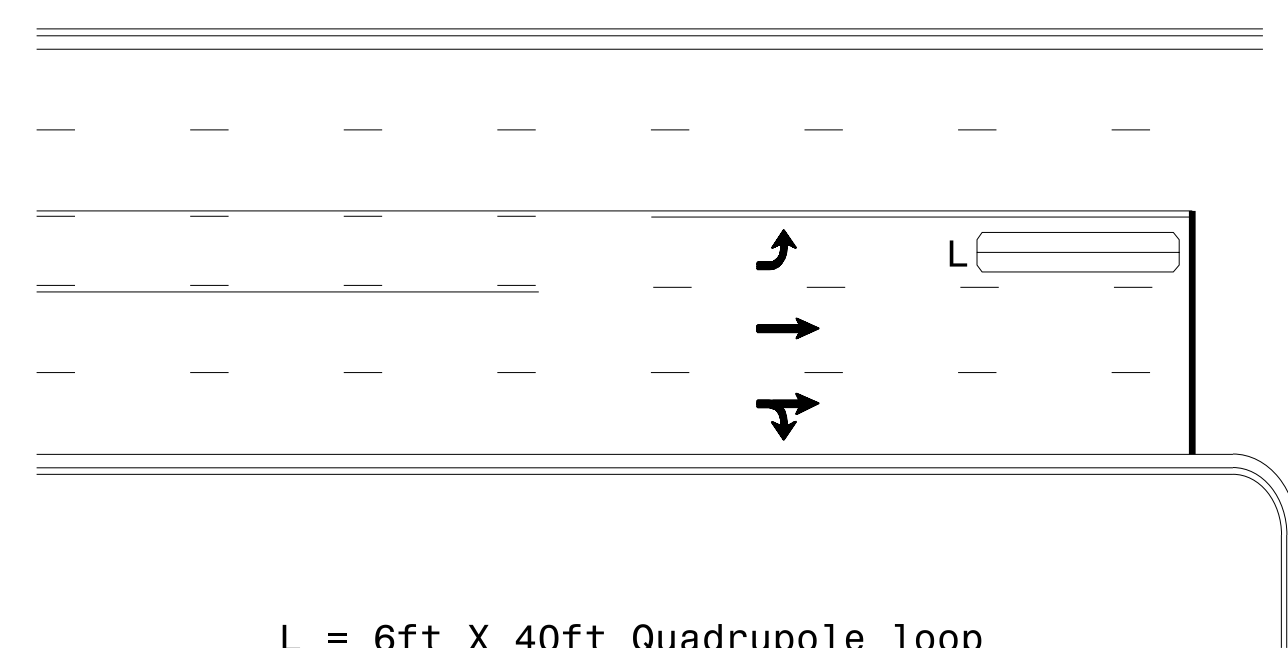
L = 6ft X 6ft
Wired in series

OR



L = 6ft X 40ft
Quadrupole loop, wired separately

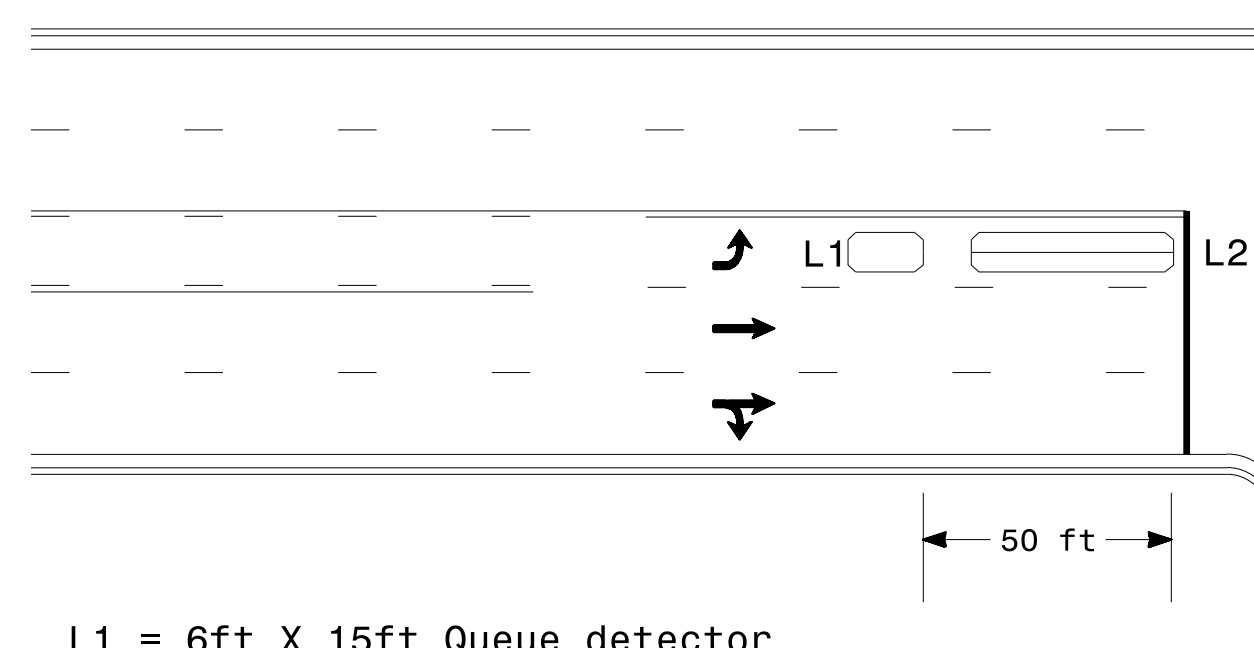
Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

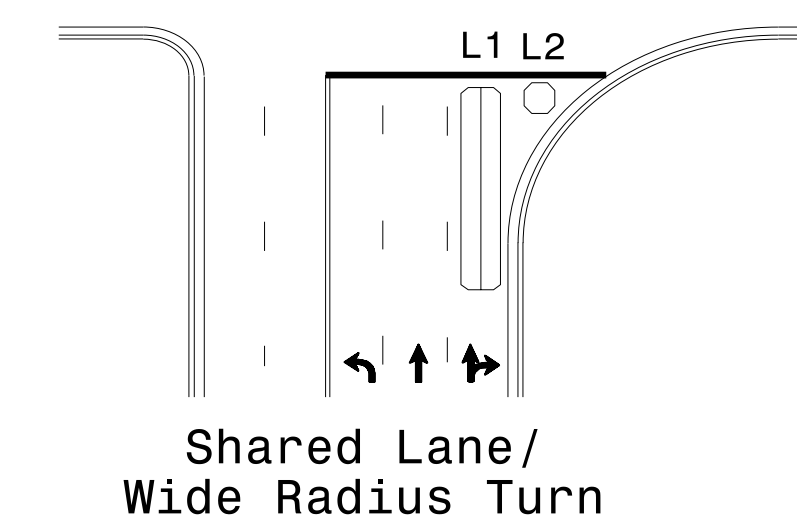
OR



L1 = 6ft X 15ft Queue detector
L2 = 6ft X 40ft Quadrupole loop

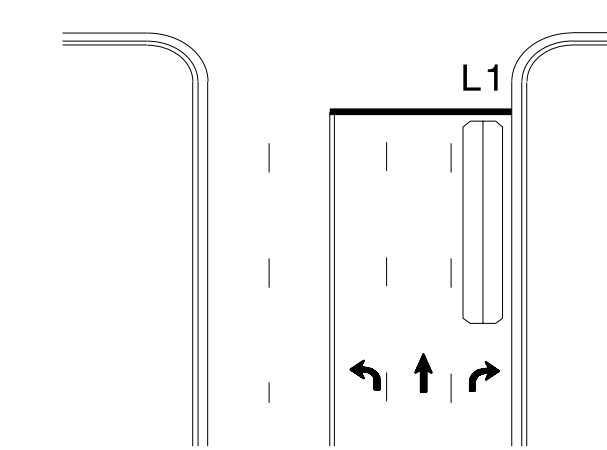
Queue Loop Detection

Right Turn Lane Detection

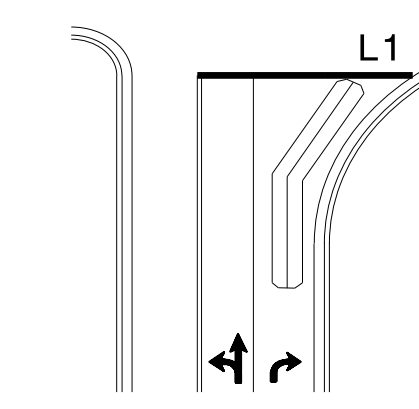


Shared Lane/
Wide Radius Turn

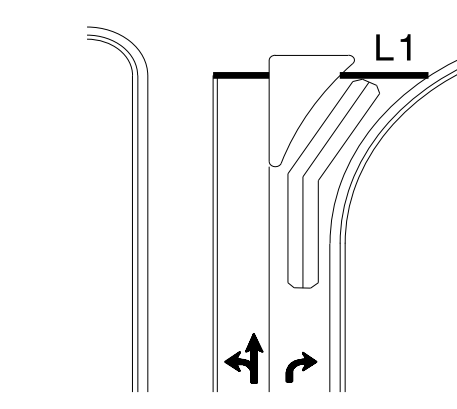
L1 = 6ft X 40ft Quadrupole loop
L2 = 6ft X 6ft [Minimum] Presence loop
Wired separately



Standard Turn

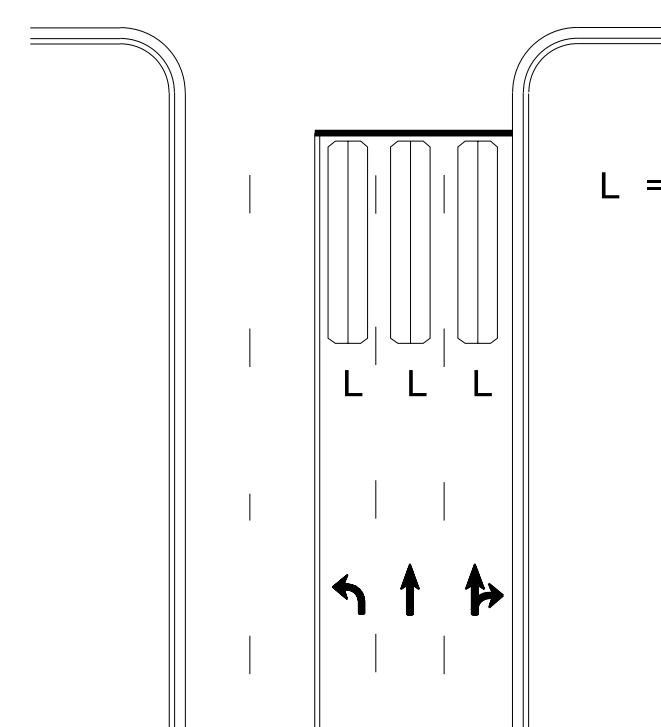


Wide Radius Turn



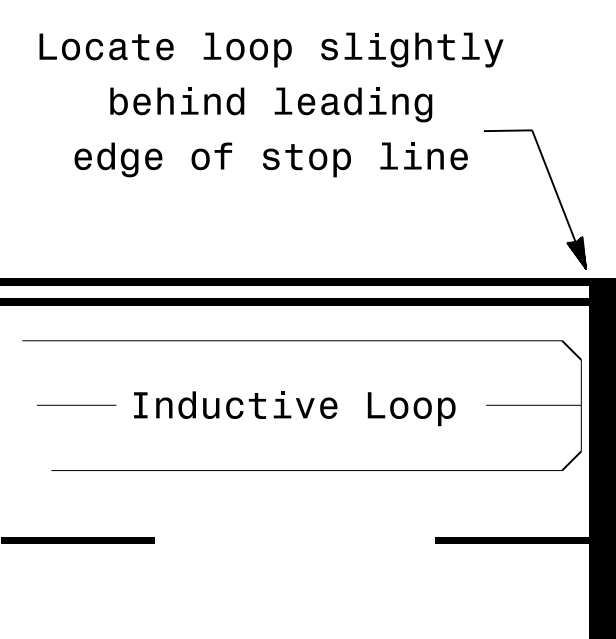
Channelized Turn

Side Street Detection



L = 6ft X 40ft
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 under any of the
following conditions:
1) stop line is greater than 15'
from edge of intersecting
roadway
2) loop detects a permissive or
protected/permissive left turn
3) for an exclusive right turn
lane

Recommended Number of Turns

Single 6' X 6' loop
(when wired separately):

Length of Lead-in ft	Number of Turns
< 250	3
250-375	4
375-525	5
> 525	6

Quadrupole loops: Use 2-4-2 turns

6' X 15' Loops:
Lead-in < 150', use 2 turns
Lead-in > 150', use 3 turns

<p>Prepared In the Offices of: TRANSPORTATION MOBILITY AND SAFETY SOLUTIONS, INC. SIGNAL DESIGN SECTION 750 N. Greenfield Pkwy, Garner, NC 27529</p>	<p>Typical Signal Loop Locations</p>		<p>SEAL NORTH CAROLINA PROFESSIONAL ENGINEER PAMELA L. ALEXANDER 23489</p>
	<p>PLAN DATE: January 2015</p>	<p>REVIEWED BY: JPG</p>	
<p>PREPARED BY: PLA</p>	<p>REVIEWED BY:</p>	<p>REVISIONS</p>	<p>INIT. DATE</p>
<p>DocuSigned by: P. Alexander 1/30/2015 10:44:44 AM</p>			<p>SIG. INVENTORY NO.</p>