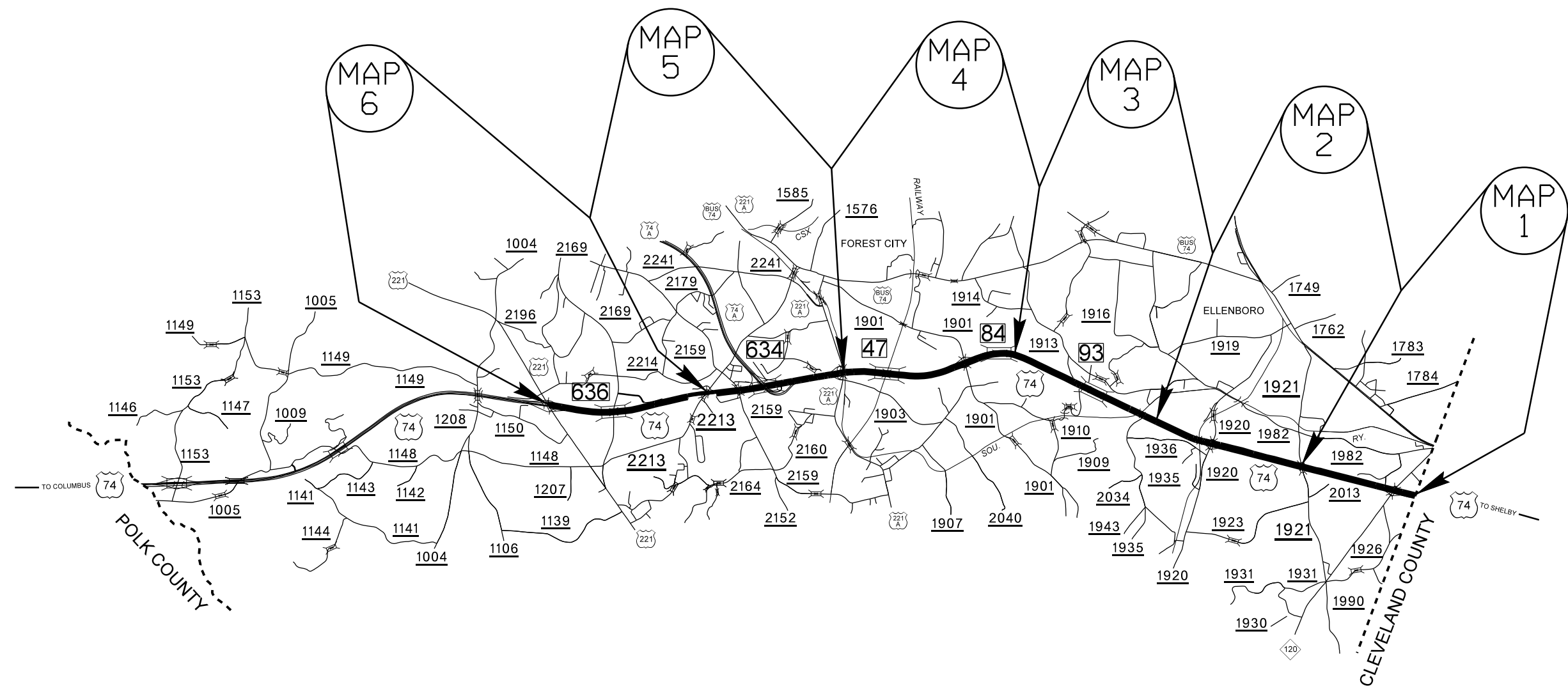
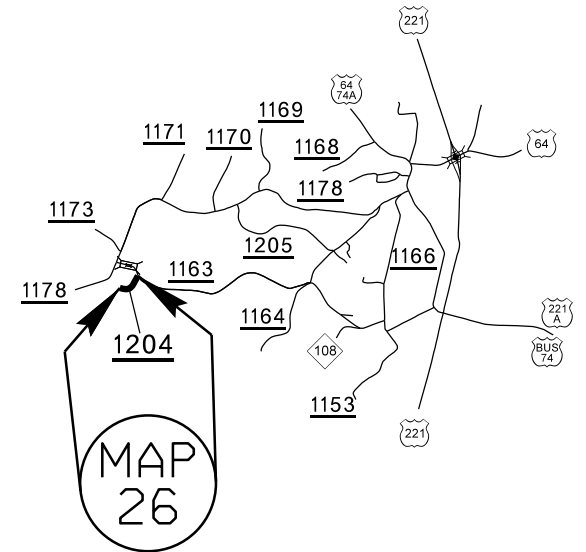
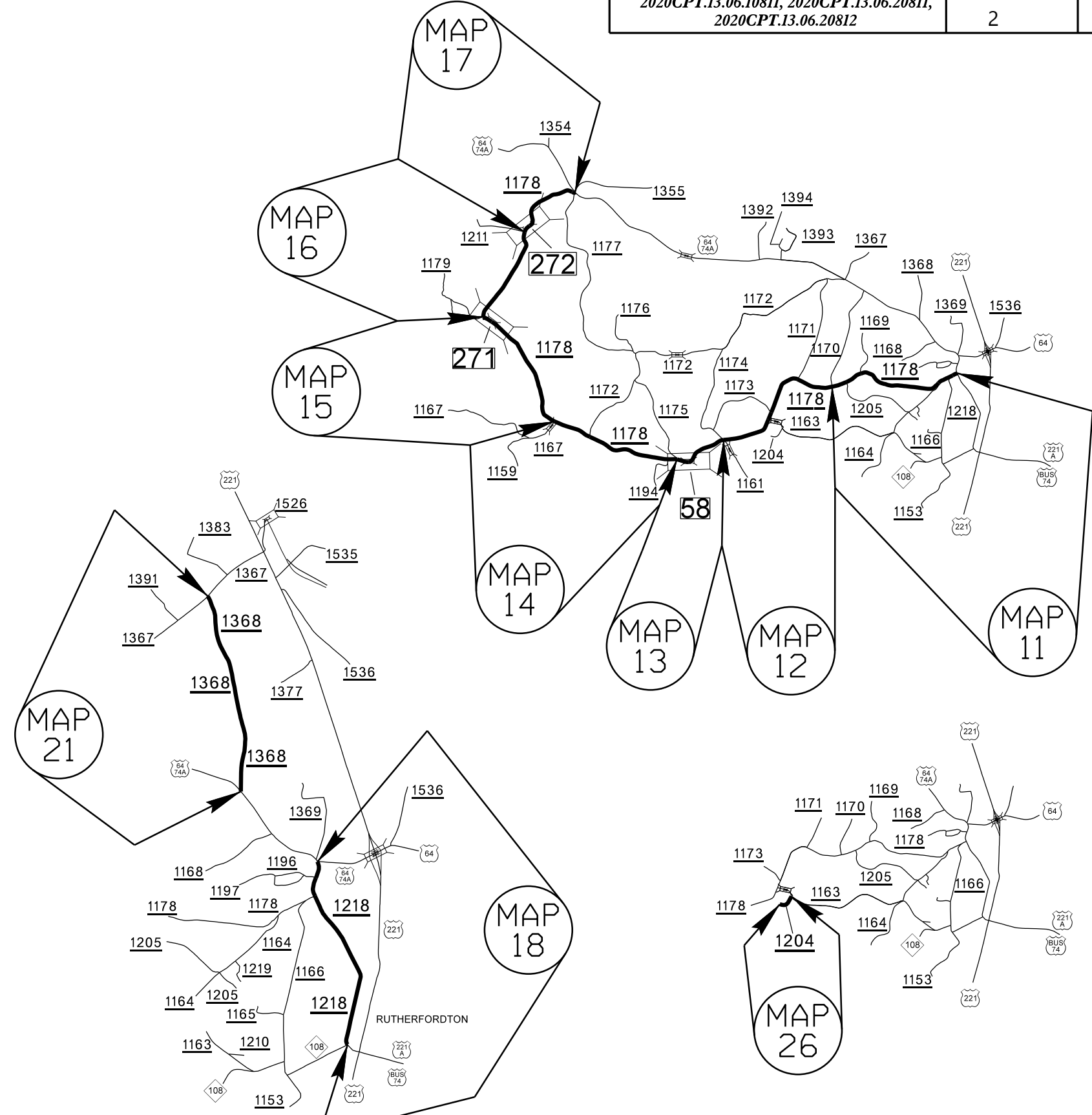
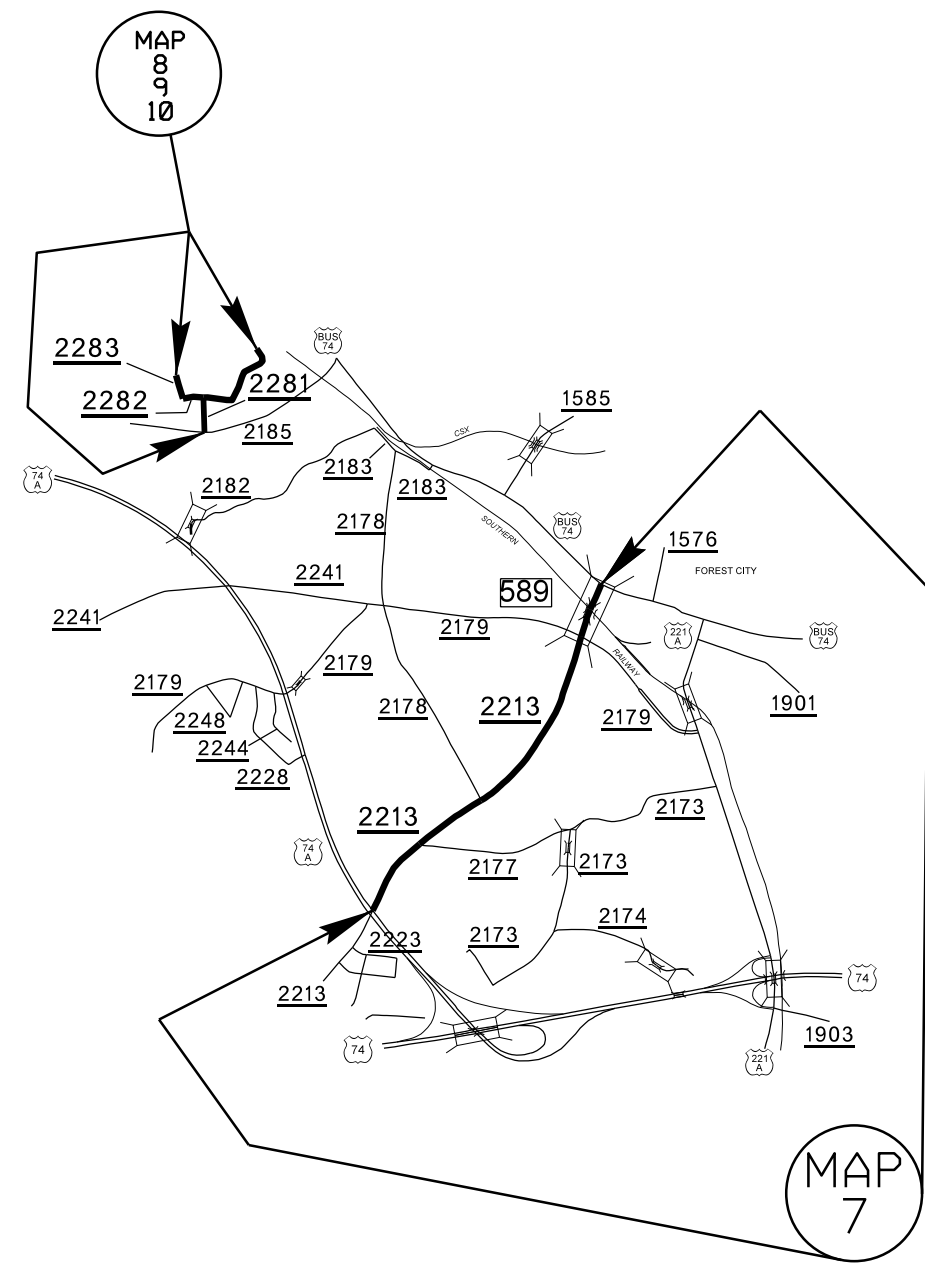


PROJECT NO.	SHEET NO.	TOTAL SHEETS
2020CPT.13.06.10811, 2020CPT.13.06.20811, 2020CPT.13.06.20812	1	



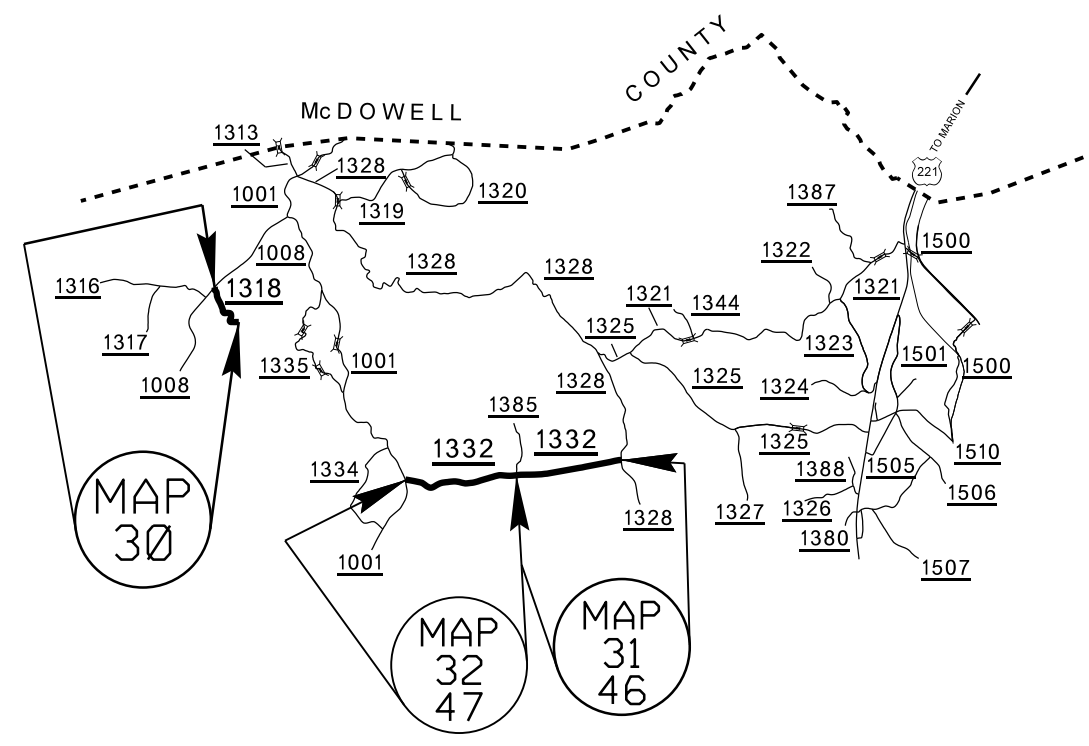
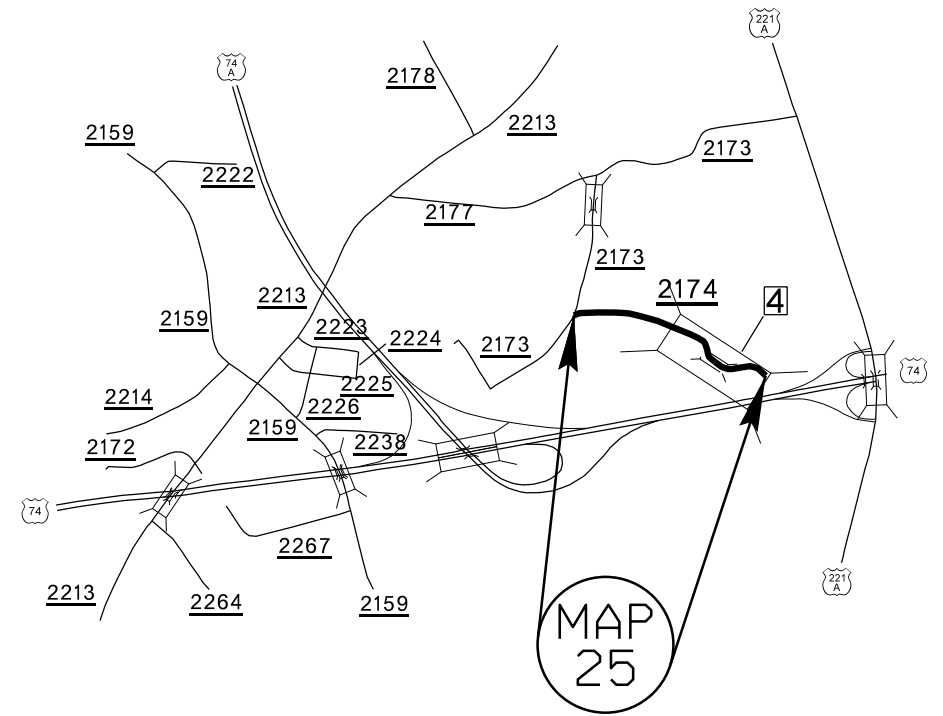
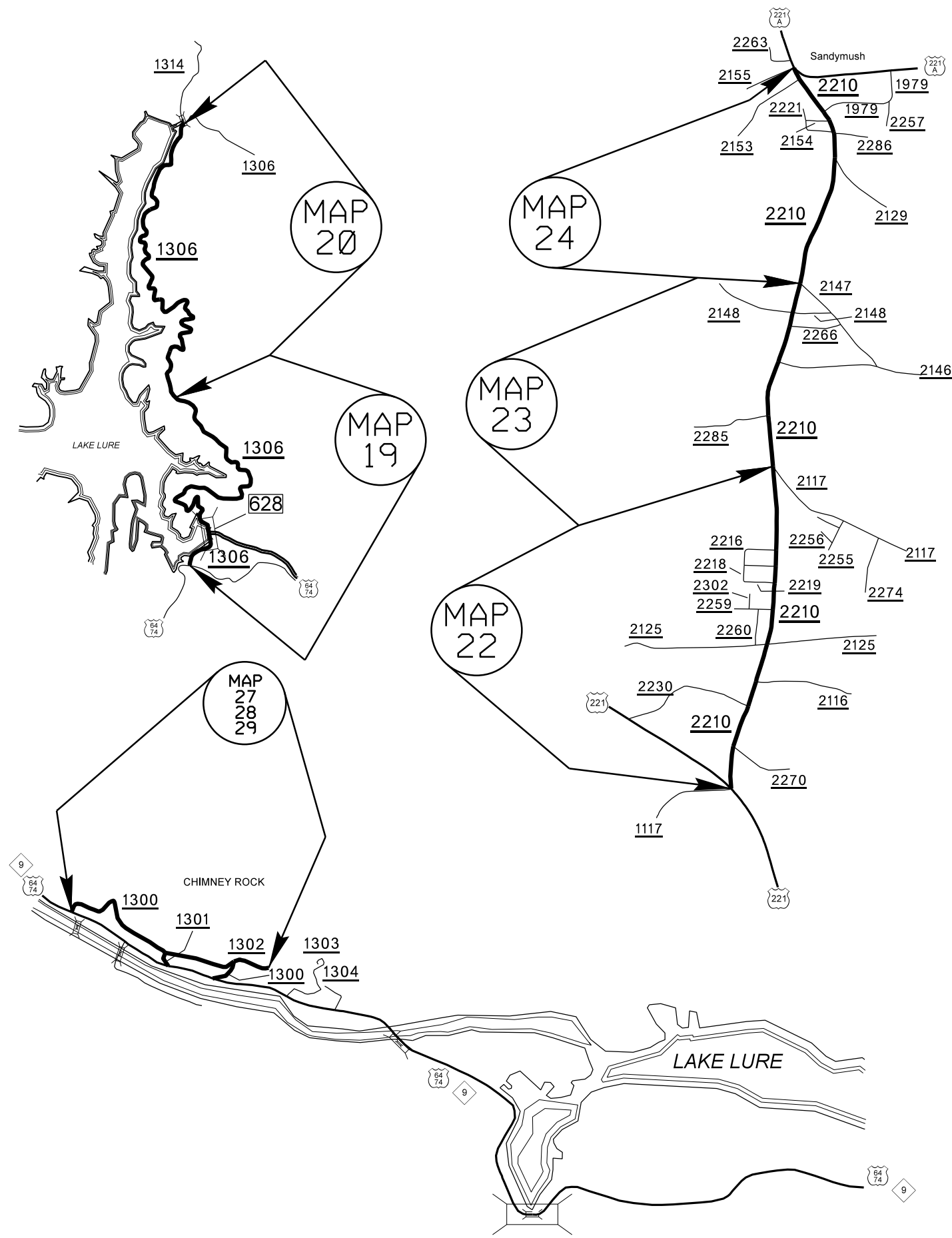
RUTHERFORD COUNTY

PROJECT NO.	SHEET NO.	TOTAL SHEETS
2020CPT.13.06.10811, 2020CPT.13.06.20811, 2020CPT.13.06.20812	2	



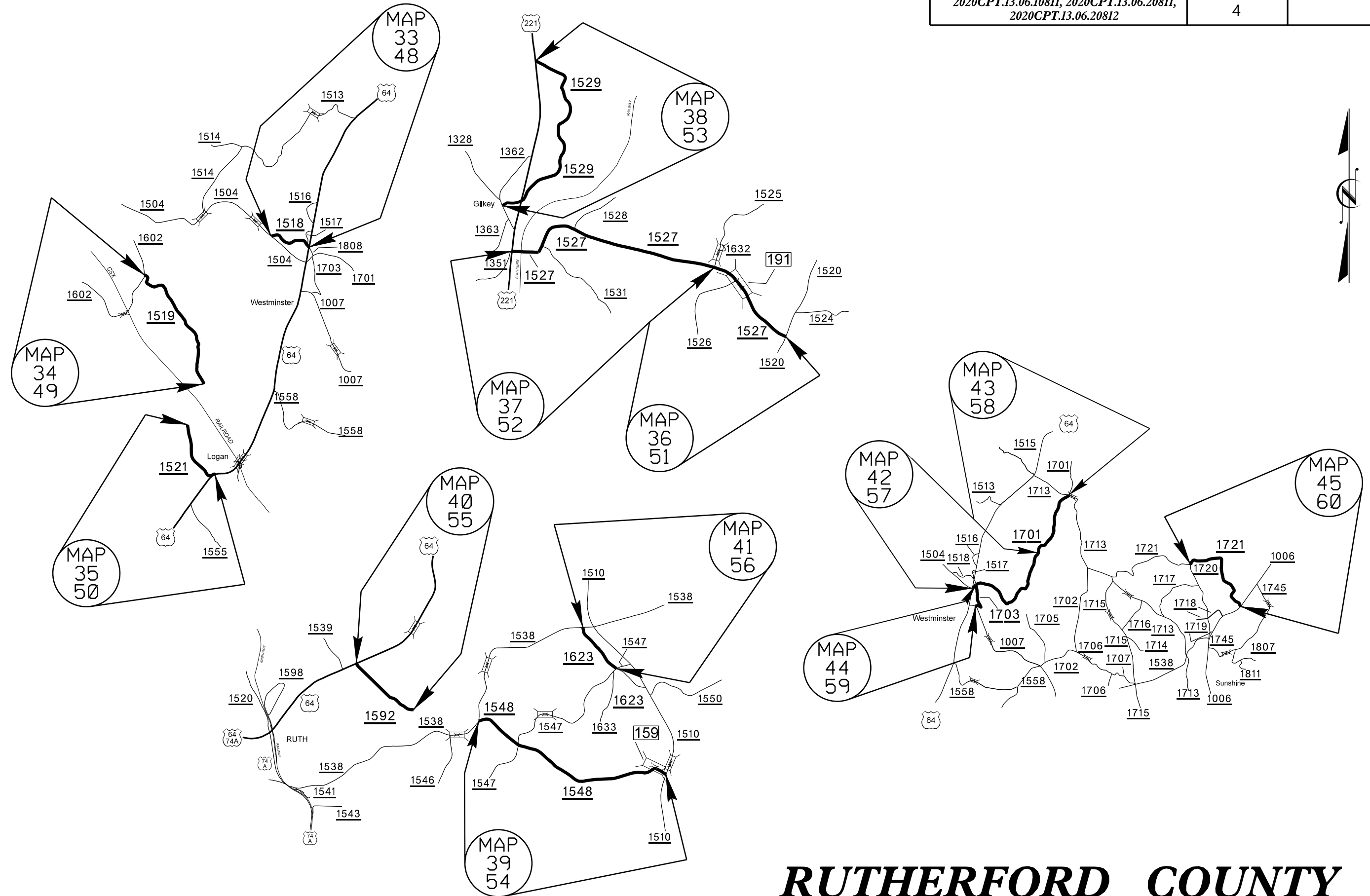
RUTHERFORD COUNTY

PROJECT NO.	SHEET NO.	TOTAL SHEETS
2020CPT.13.06.10811, 2020CPT.13.06.20811, 2020CPT.13.06.20812	3	

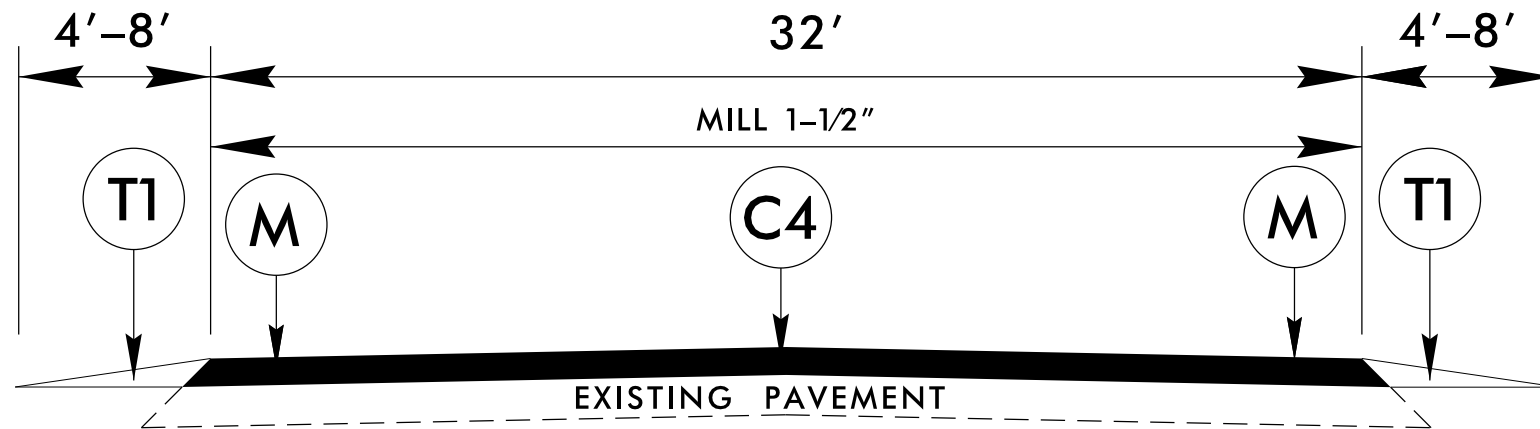


RUTHERFORD COUNTY

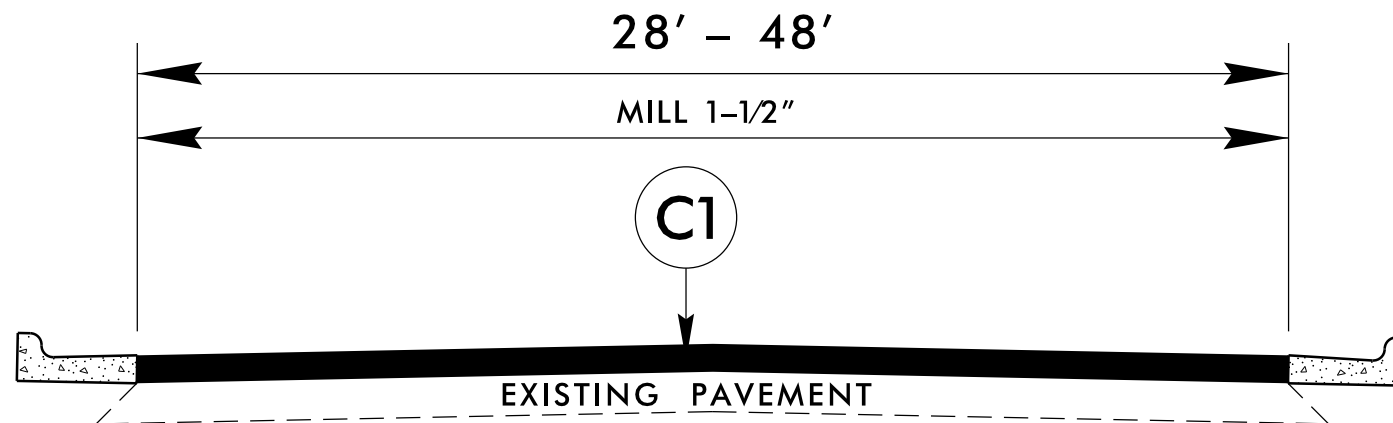
PROJECT NO.	SHEET NO.	TOTAL SHEETS
2020CPT.13.06.1081I, 2020CPT.13.06.2081I, 2020CPT.13.06.20812	4	



RUTHERFORD COUNTY



TYPICAL SECTION #1

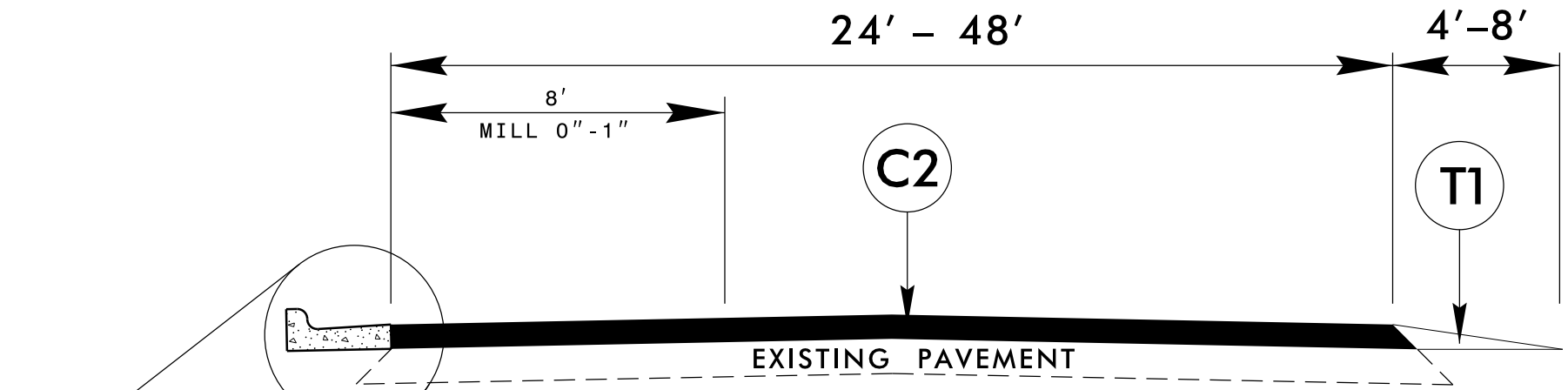


TYPICAL SECTION #2

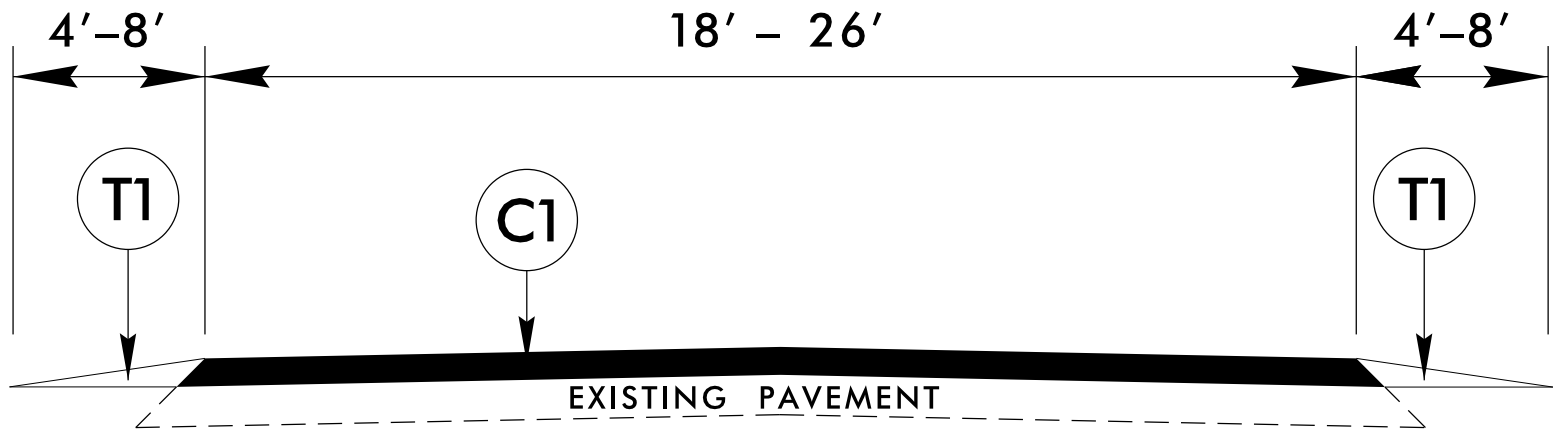
PAVEMENT SCHEDULE

C1	PROP. APPROX. 1-1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YARD
C2	PROP. APPROX. 1" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YARD
C3	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 220 LBS. PER SQ. YARD
C4	PROP. APPROX. 1-1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YARD
F1	ASPHALT SURFACE TREATMENT, DOUBLE SEAL
F2	ASPHALT SURFACE TREATMENT, FOG SEAL
M	MILLED RUMBLE STRIPS
T1	SHOULDER RECONSTRUCTION
V1	MILLING ASPHALT PAVEMENT, 0 TO 1 1/2" DEPTH
V2	MILLING ASPHALT PAVEMENT 1 1/2" DEPTH
V3	INCIDENTAL MILLING
V4	MILLING ASPHALT PAVEMENT, 1"

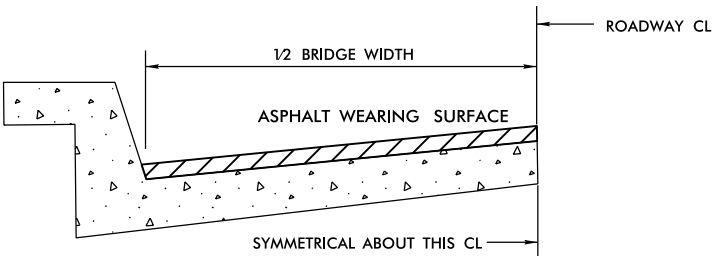
16-NOV-2018 10:38 AM
 2020 Resurfacing\Rutherford\2020 Rutherford Resurfacing Package\2020 Rutherford Resurfacing_TYP.dgn
 6/2/99



TYPICAL SECTION #3



TYPICAL SECTION #4



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", S9.5B 1", S9.5C,D 1.5" - 2". ULTRA-THIN HOT MIX ASPHALT - TYPE A 3/4". ULTRA-THIN HOT MIX ASPHALT - TYPE B 5/8". ULTRA-THIN HOT MIX ASPHALT - TYPE C 1/2". THE MAXIMUM THICKNESS SHOULD DEPEND ON PAVEMENT TYPE AS FOLLOWS: S4.75A 1", S9.5B 1.5", S9.5C,D 2". ULTRA-THIN HOT MIX ASPHALT - TYPE A 3/4", ULTRA-THIN HOT MIX ASPHALT - TYPE B 5/8", ULTRA-THIN HOT MIX ASPHALT - TYPE C 1/2".

NOTES

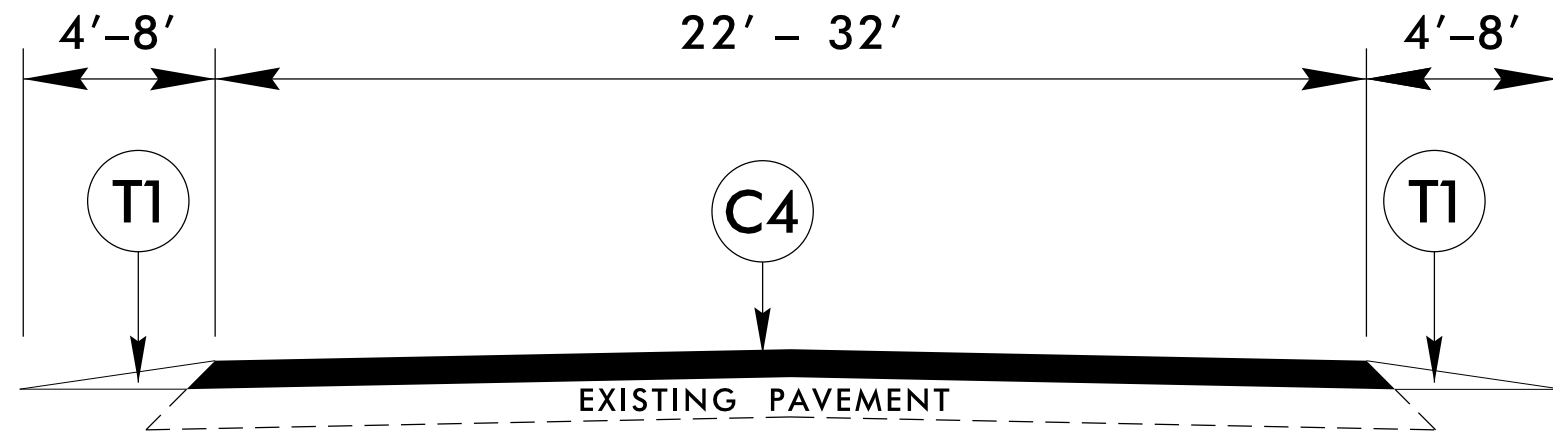
ALL UNPAVED ROADS TO BE RESURFACED 50' FROM EDGE OF PAVEMENT OF MAIN PROJECT. ALL PAVED S. R. ROADS TO BE RESURFACED TO THE ENDS OF THE RADII, OR AS DIRECTED BY THE ENGINEER.

EDGES, PAVEMENT WIDENING, INTERSECTIONS AND BRIDGE FLARES ARE INCLUDED IN THE TABLE OF QUANTITIES.

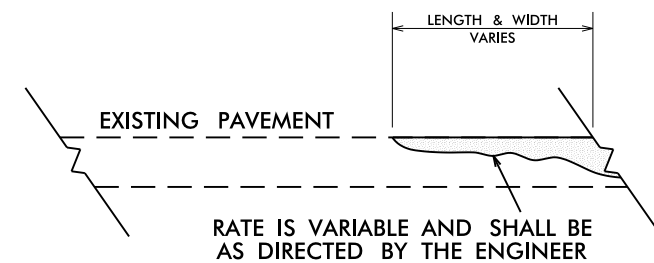
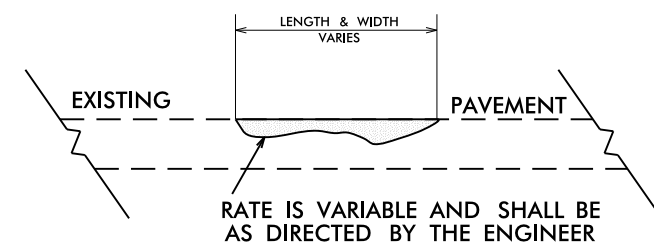
SHOULDERS AND DITCHES ARE TO BE CONSTRUCTED BY OTHERS UNLESS OTHERWISE INDICATED.

BRIDGES ARE TO BE RESURFACED AT LOCATIONS AND TO DEPTH AS DIRECTED BY THE ENGINEER.

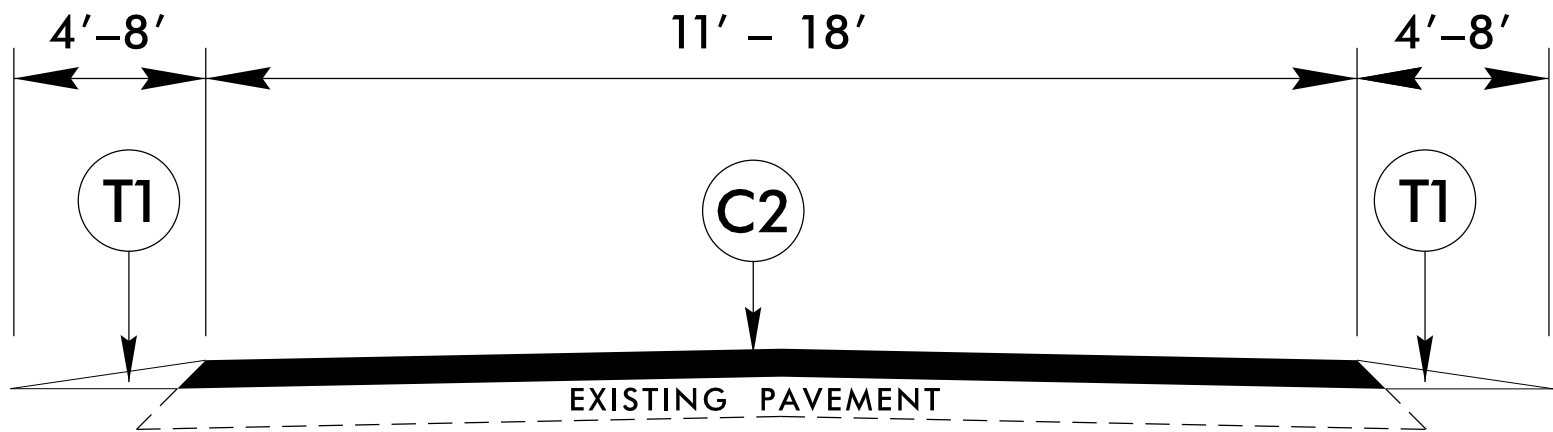
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1-1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YARD
C2	PROP. APPROX. 1" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YARD
T1	SHOULDER RECONSTRUCTION



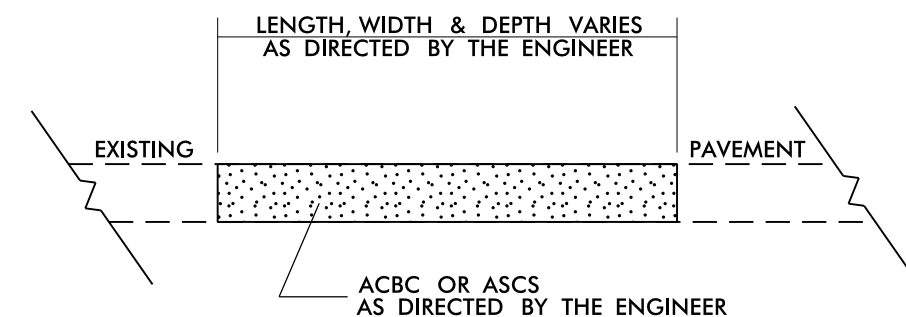
TYPICAL SECTION #5



DETAIL SHOWING METHOD OF WEDGING/LEVELING COURSE



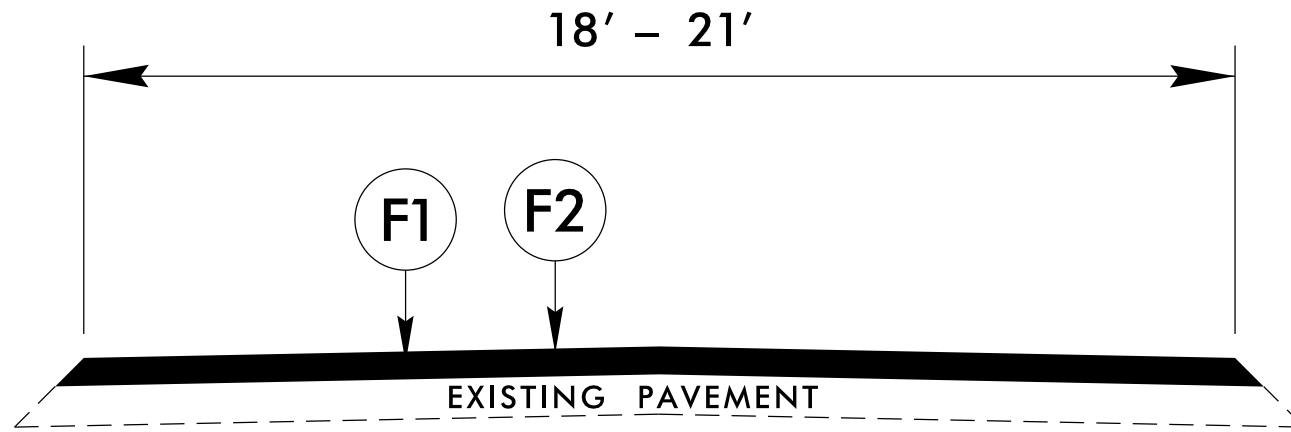
TYPICAL SECTION #6



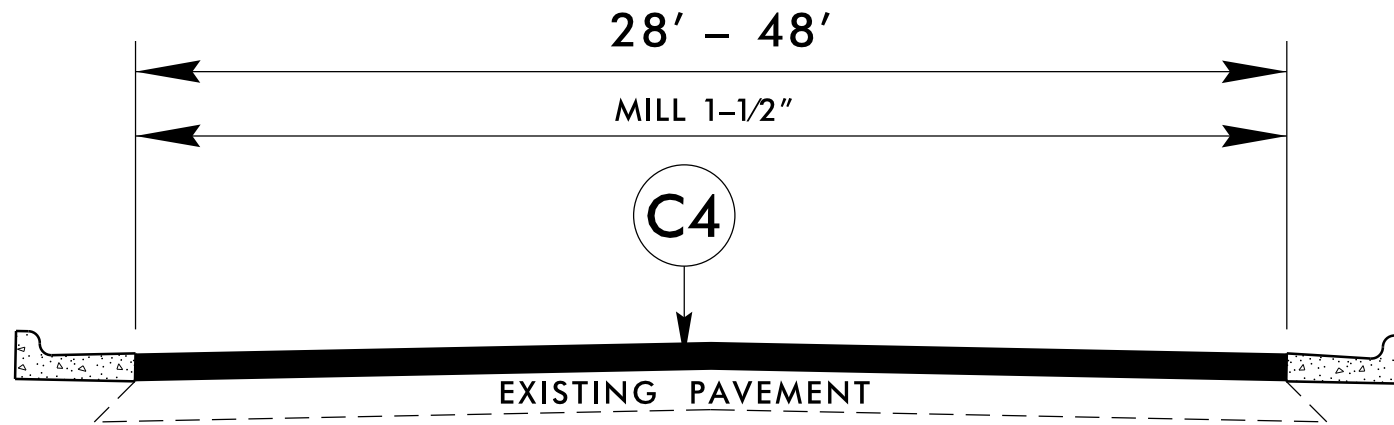
PATCHING EXISTING PAVEMENT

PAVEMENT SCHEDULE	
C2	PROP. APPROX. 1" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YARD
C4	PROP. APPROX. 1-1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YARD
T1	SHOULDER RECONSTRUCTION

PROJECT NO.	SHEET NO.	TOTAL SHEETS
2020CPT.13.06.10811, 2020CPT.13.06.20811, 2020CPT.13.06.20812	8	

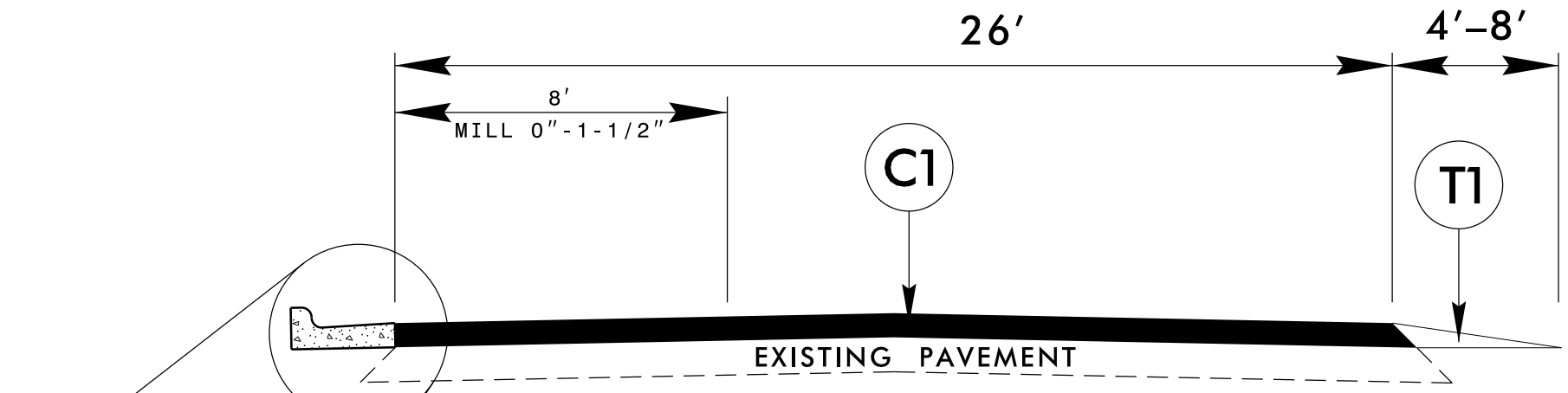


TYPICAL SECTION #7

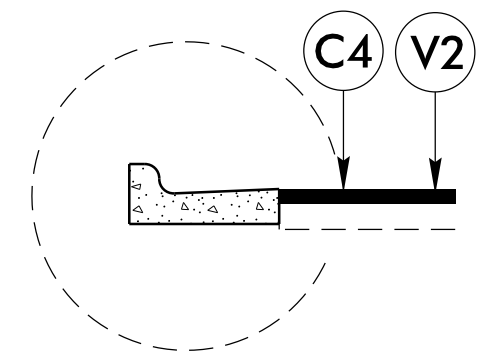
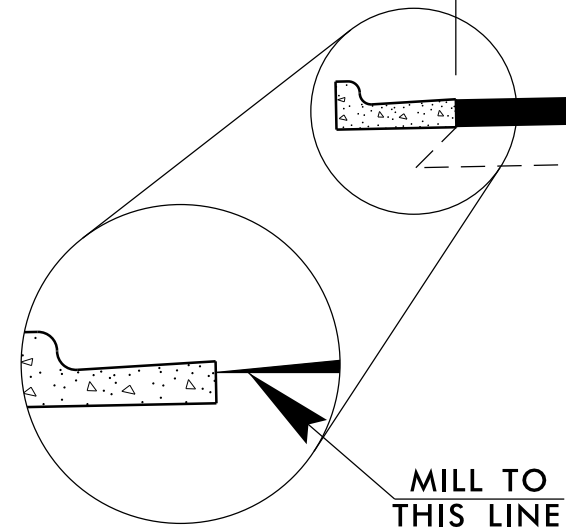


TYPICAL SECTION #8

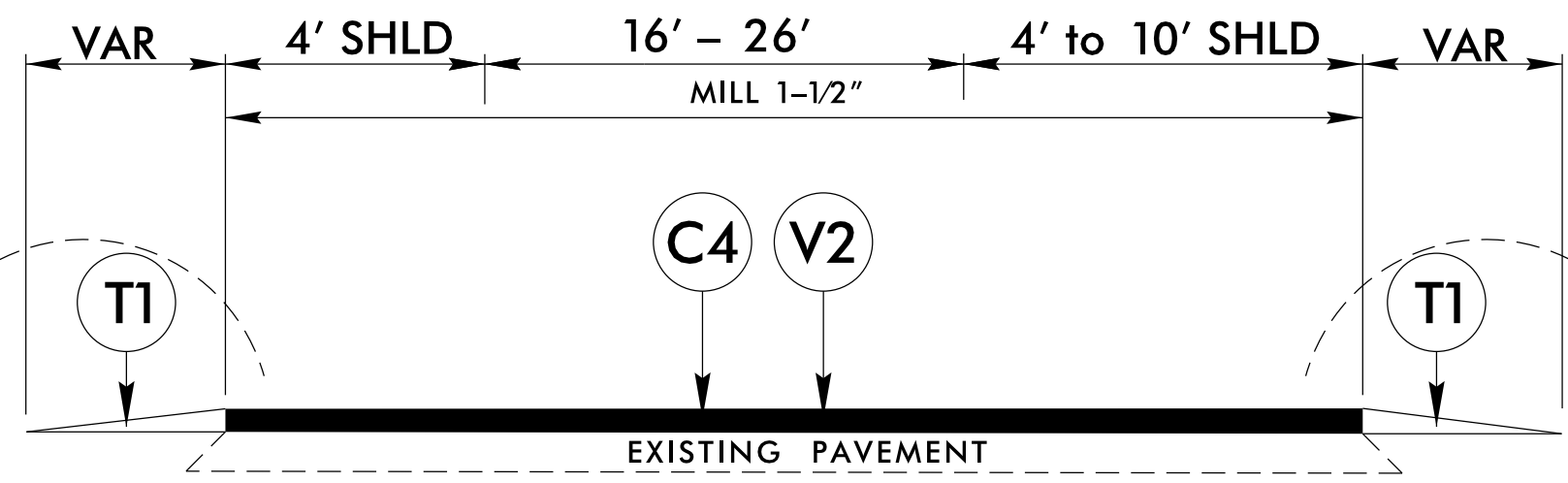
PAVEMENT SCHEDULE	
C4	PROP. APPROX. 1-1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YARD
F1	ASPHALT SURFACE TREATMENT, DOUBLE SEAL
F2	ASPHALT SURFACE TREATMENT, FOG SEAL



TYPICAL SECTION #9



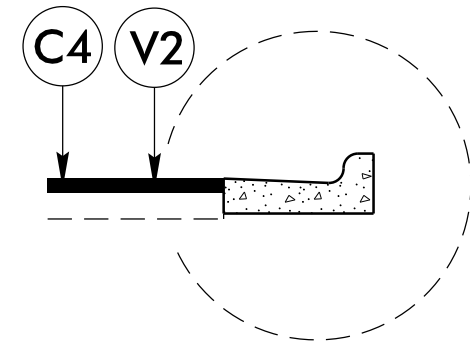
DETAIL A



TYPICAL SECTION #10
(US 74W RAMPS)

AT VARIOUS LOCATIONS
SEE DETAIL A

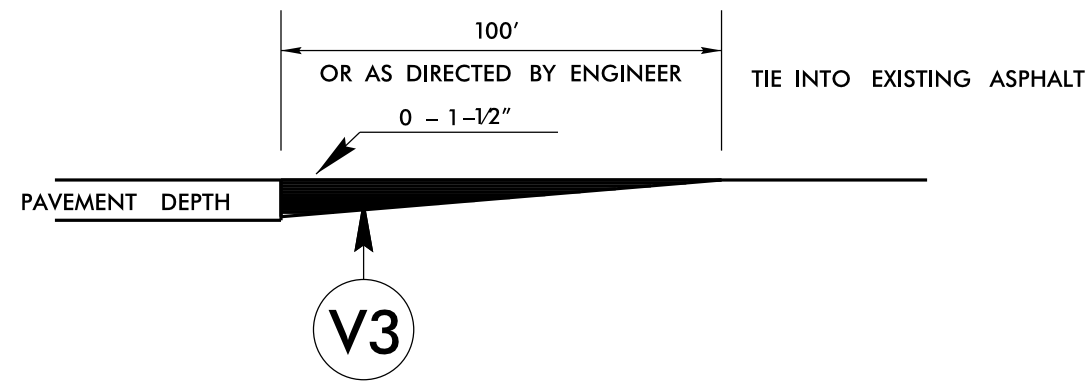
AT VARIOUS LOCATIONS
SEE DETAIL B



DETAIL B

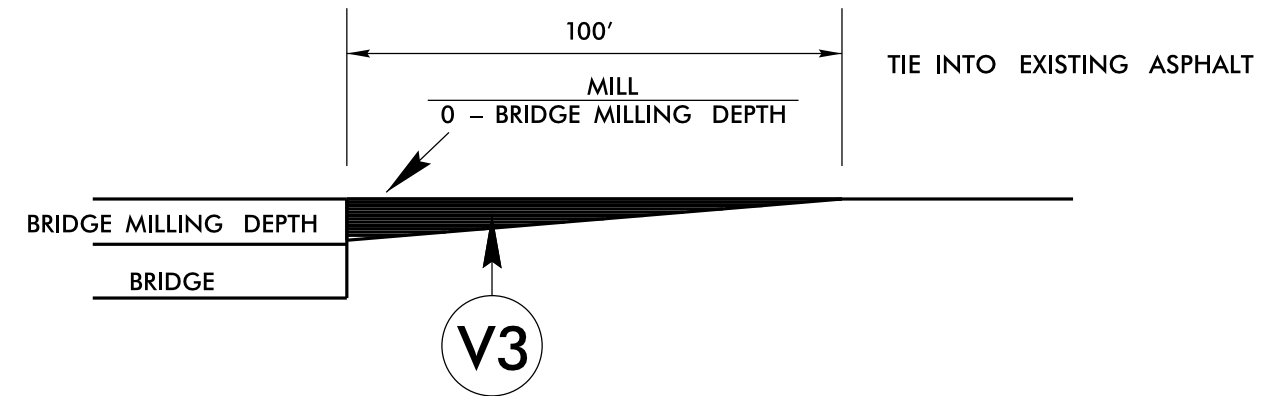
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1-1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YARD
C4	PROP. APPROX. 1-1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YARD
T1	SHOULDER RECONSTRUCTION
V2	MILLING ASPHALT PAVEMENT 1-1/2" DEPTH

6/2/99
 14-NOV-2018 09:57
 2020 Resurfacing\Rutherford\2020 Rutherford Resurfacing Package\2020 Rutherford Resurfacing Package\2020 Rutherford Resurfacing Package\TYP.dgn



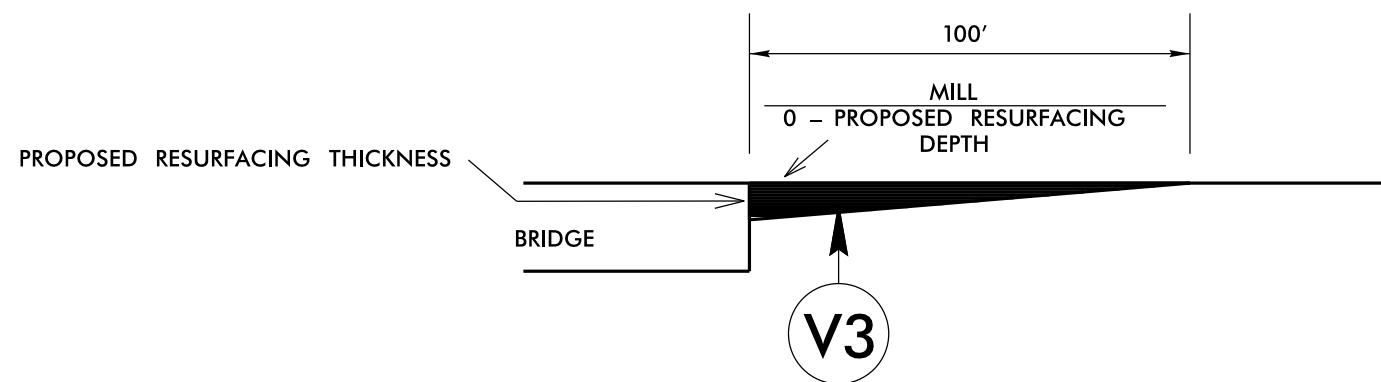
DETAIL TO TIE INTO EXIST PAVEMENT

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 S9.5C. THIS WILL BE PAID FOR AS INCIDENTAL MILLING.



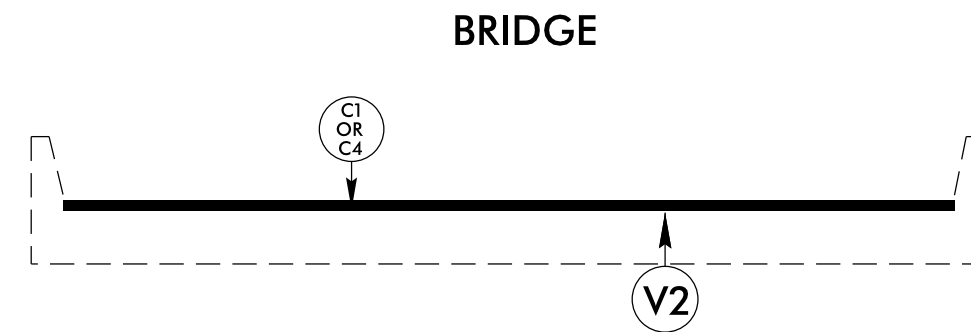
MILLING DETAIL AT BRIDGE APPROACHES

WHERE BRIDGES WILL BE MILLED THEN RESURFACED. THIS WILL BE PAID FOR AS INCIDENTAL MILLING. USE AT BRIDGE NUMBER: 93 MAP 3, 47 AND 84 MAP 4, 58 MAP 13, AND 271 MAP 15.



MILLING DETAIL AT BRIDGE APPROACHES

WHERE BRIDGES WILL NOT BE RESURFACED. THIS WILL BE PAID FOR AS INCIDENTAL MILLING. USE AT BRIDGE NUMBER: 634 MAP 5, 636 MAP 6, 589 MAP 7, AND 628 MAP 19.

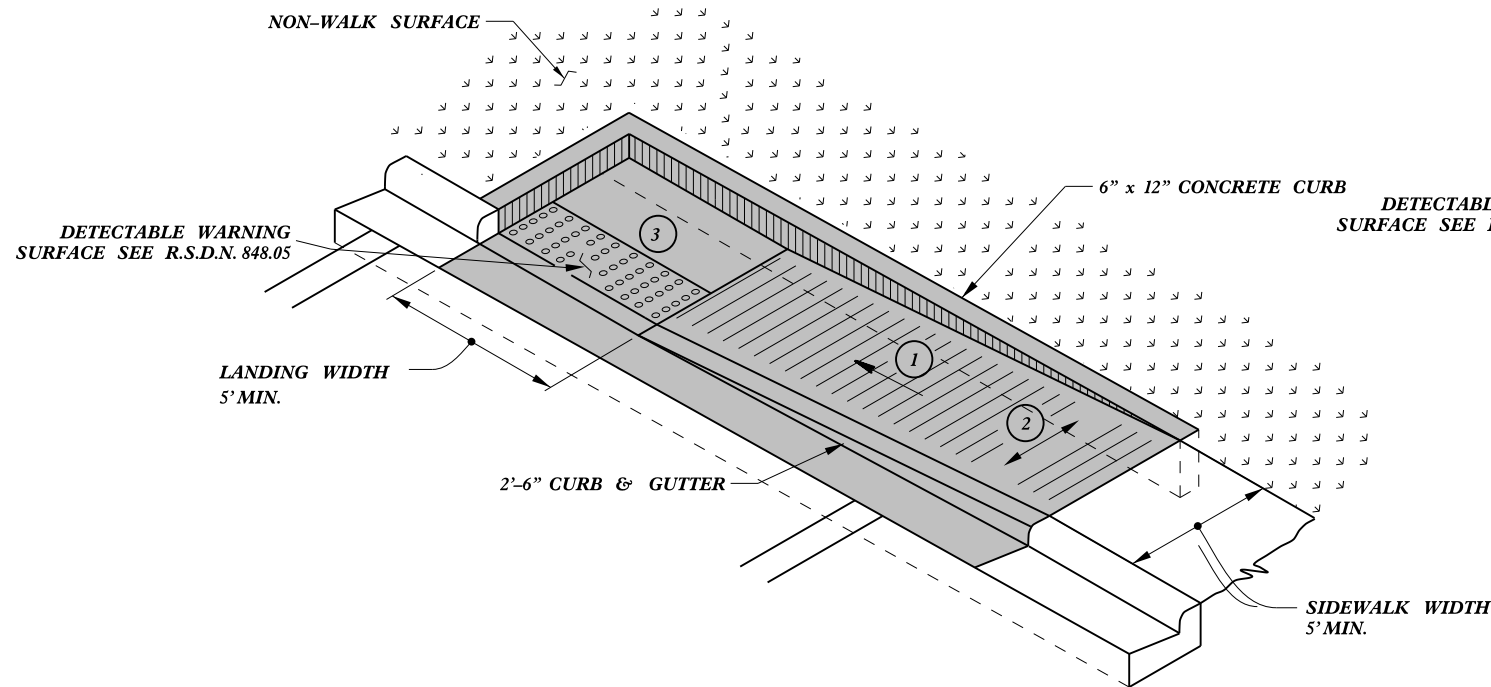


BRIDGE DETAIL

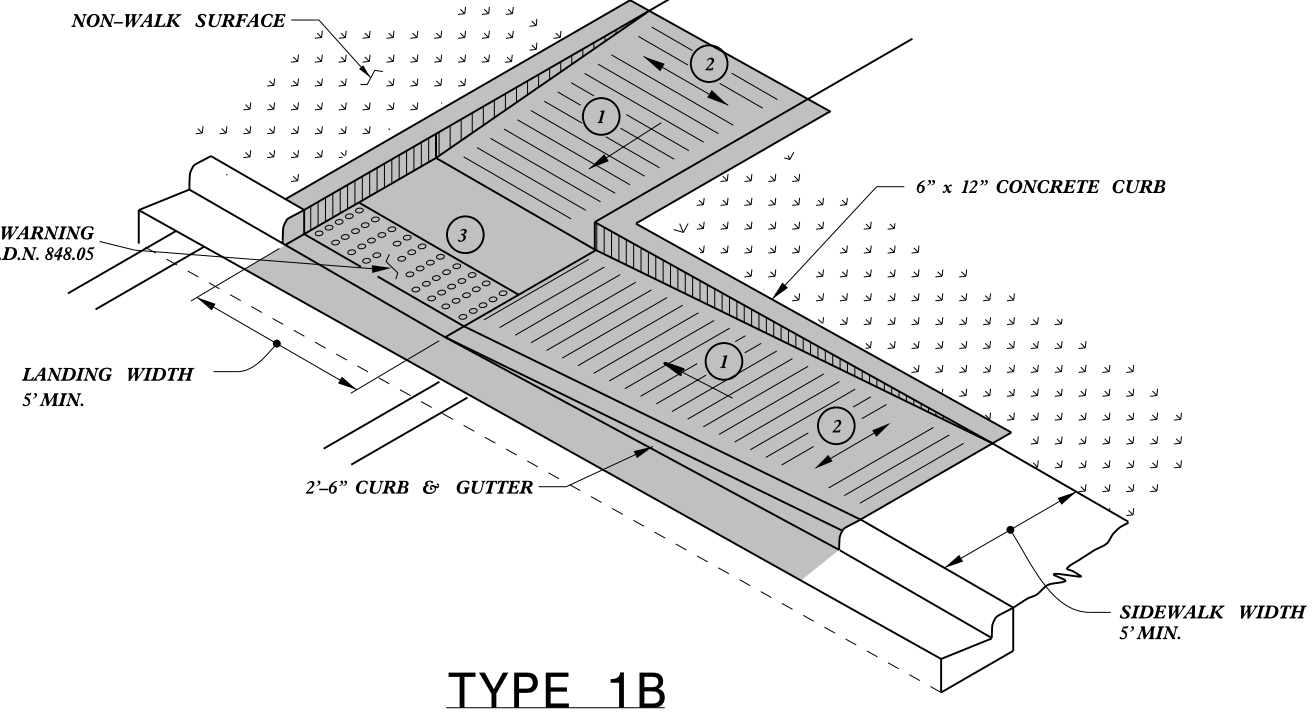
BRIDGE NUMBER 93 MAP 3, 47 AND 84 MAP 4, 58 MAP 13, AND 271 MAP 15. MILL 1-1/2" OFF EXISTING PAVEMENT SEE MAP FOR BRIDGE LOCATION.

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1-1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YARD
C3	PROP. APPROX. 1-1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YARD
V2	MILLING ASPHALT PAVEMENT 1 1/2" DEPTH
V3	INCIDENTAL MILLING

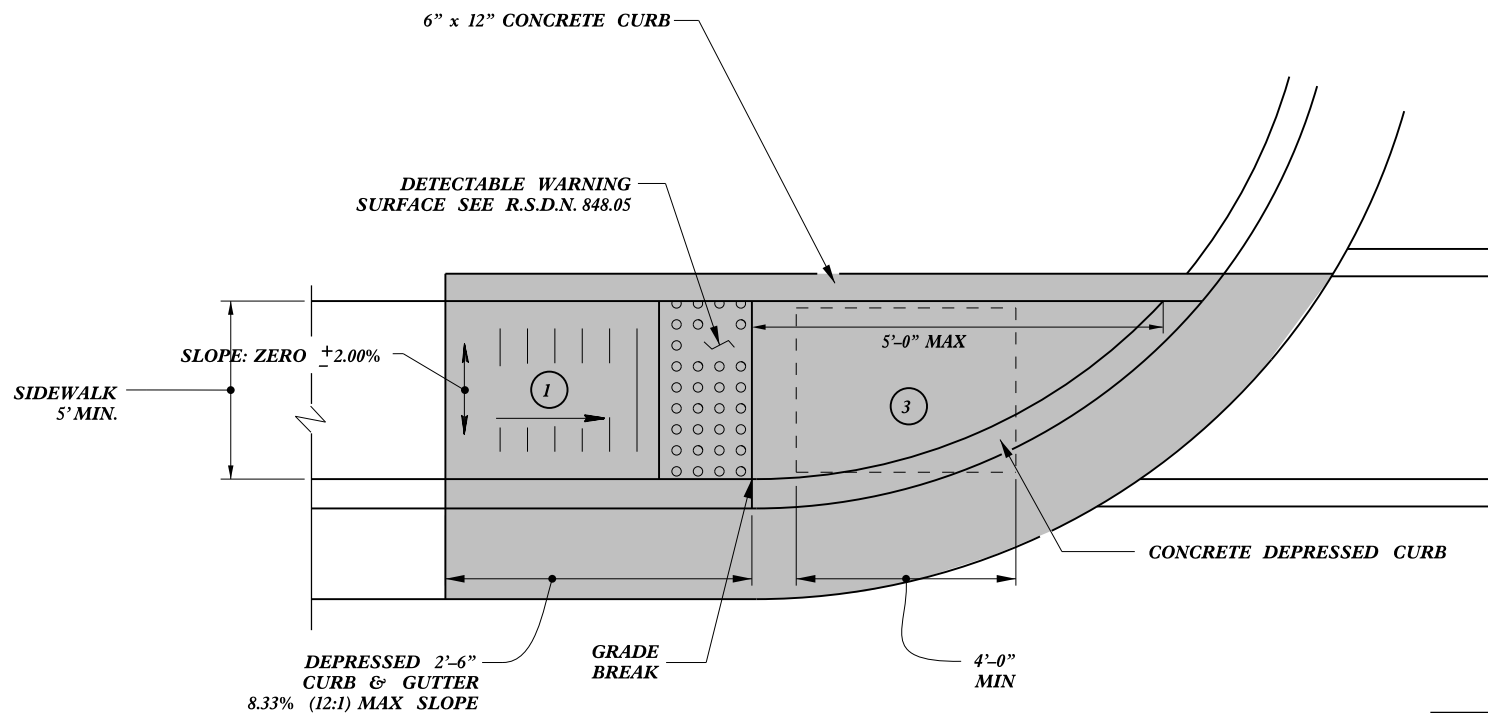
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TYPE 1A



TYPE 1B

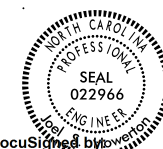


TYPE 1

PAY LIMITS FOR 1 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.

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




DocuSign by
Joel S. Howerton

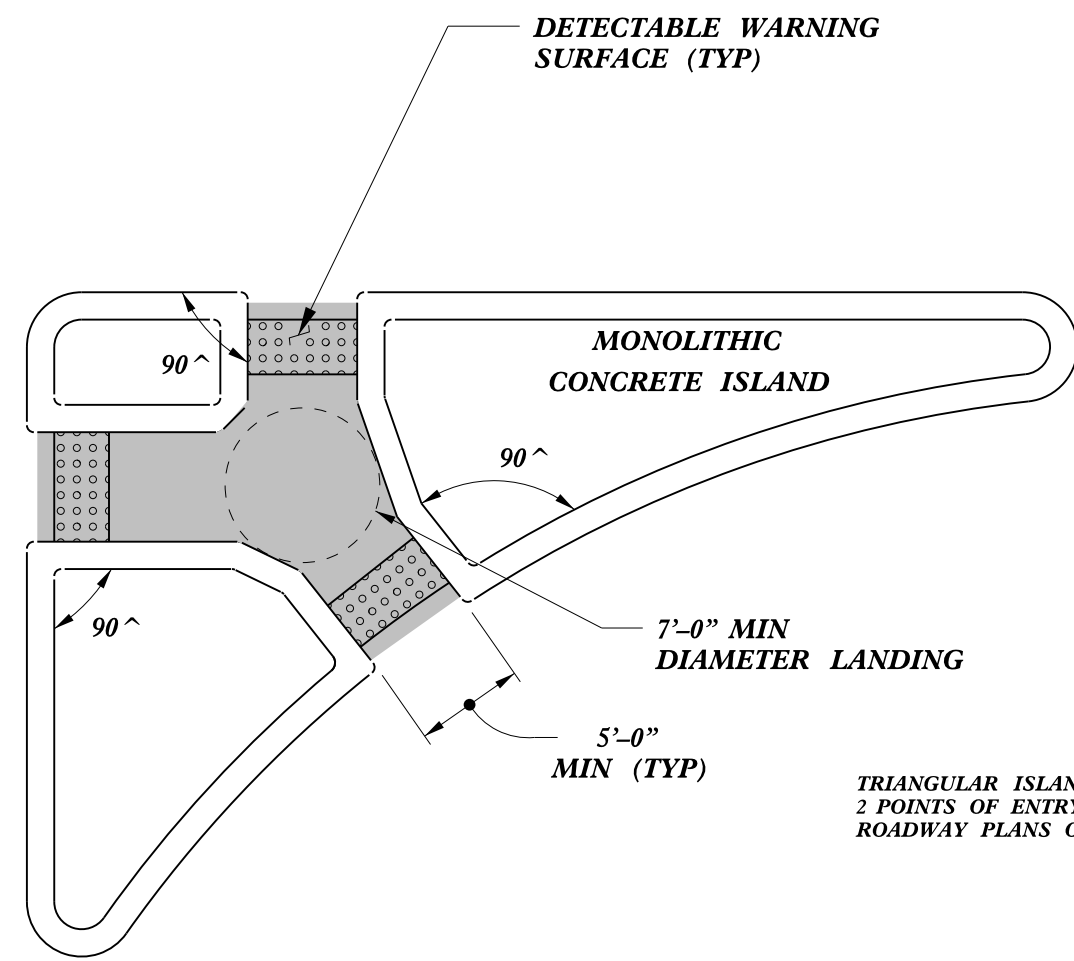
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11/18/2015

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

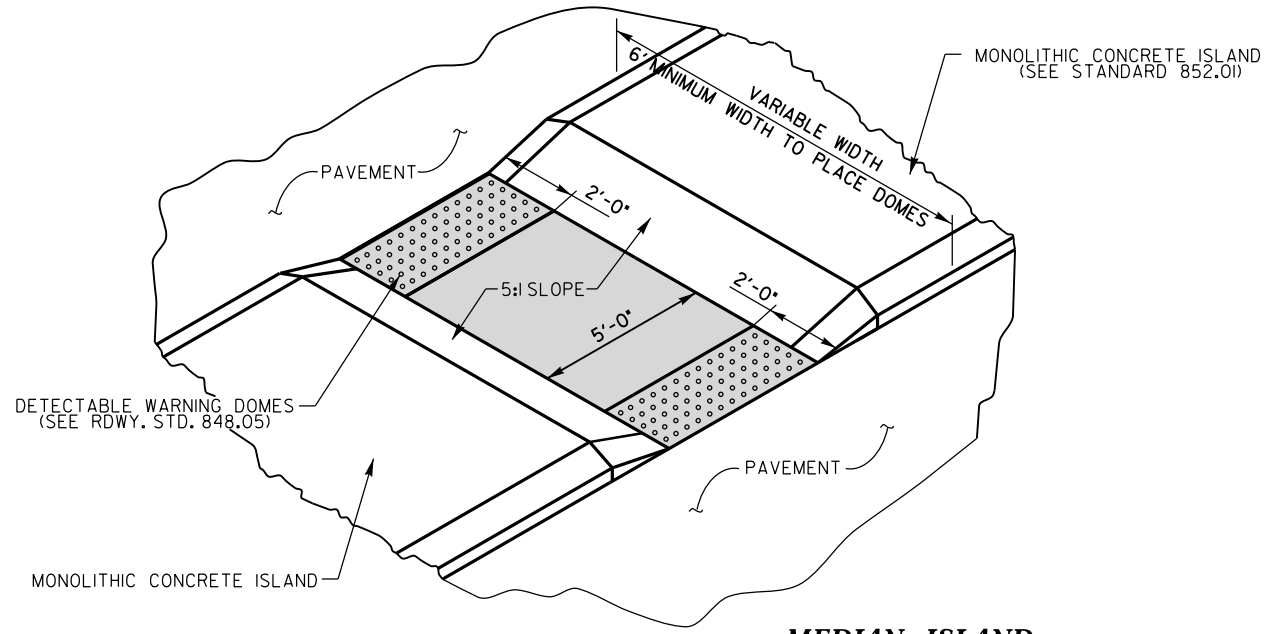
CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950	FAX 919-250-4119
CURB RAMPS	
Directional Ramps	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC: stds/2012CurbRamp/CurbRampDetails.dwg	

 PAY LIMITS FOR 2 OR 3 CURB RAMPS
(CALCULATE BASED ON NUMBER OF
SETS OF TRUNCATED DOMES)

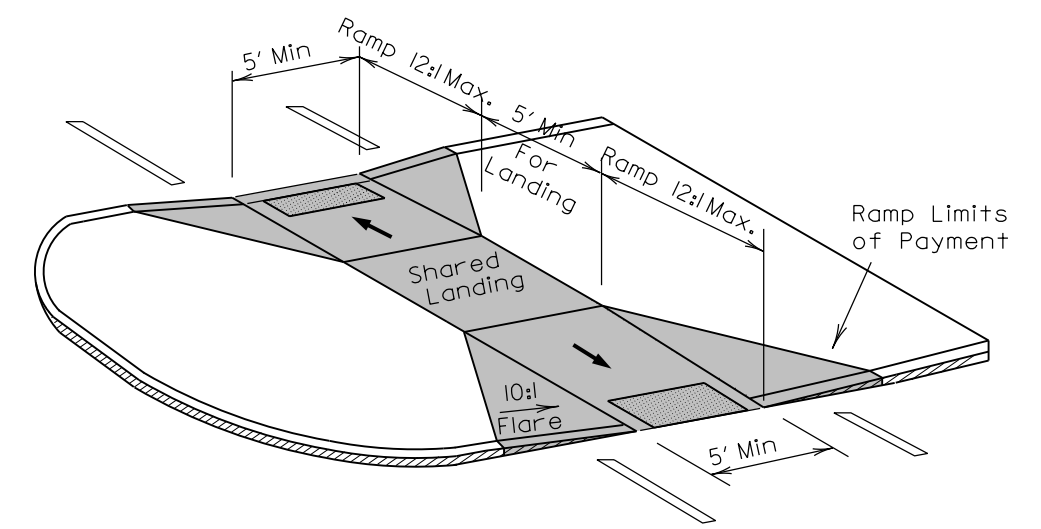


TRIANGULAR ISLANDS MAY BE CONSTRUCTED WITH ONLY
2 POINTS OF ENTRY AND EXIT AS SHOWN IN THE
ROADWAY PLANS OR AS DIRECTED BY THE ENGINEER.

**TRIANGULAR ISLAND
WITH CUT THROUGH**



**MEDIAN ISLAND
WITH CUT THROUGH**



**MEDIAN ISLAND
CURB RAMPS**

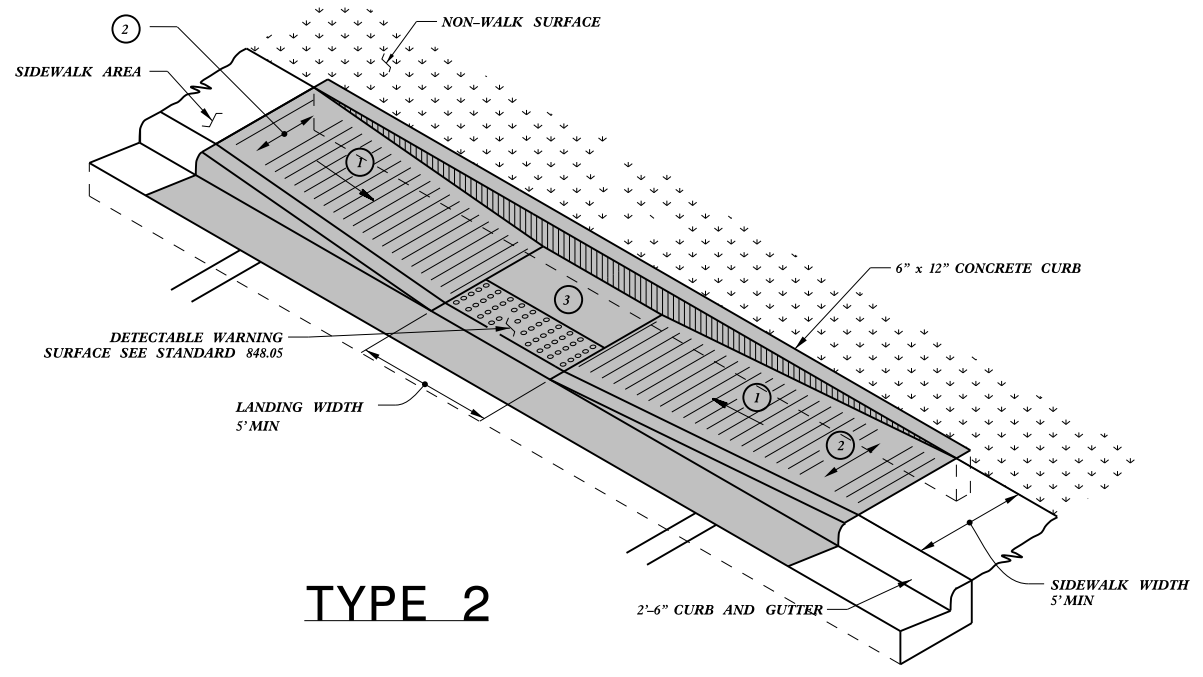
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DATE: 11/18/2015 11:18:21 AM
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11/18/2015


DocuSign
Joel S. Howerton
449E8E25522144F...

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UNLESS ALL SIGNATURES COMPLETED

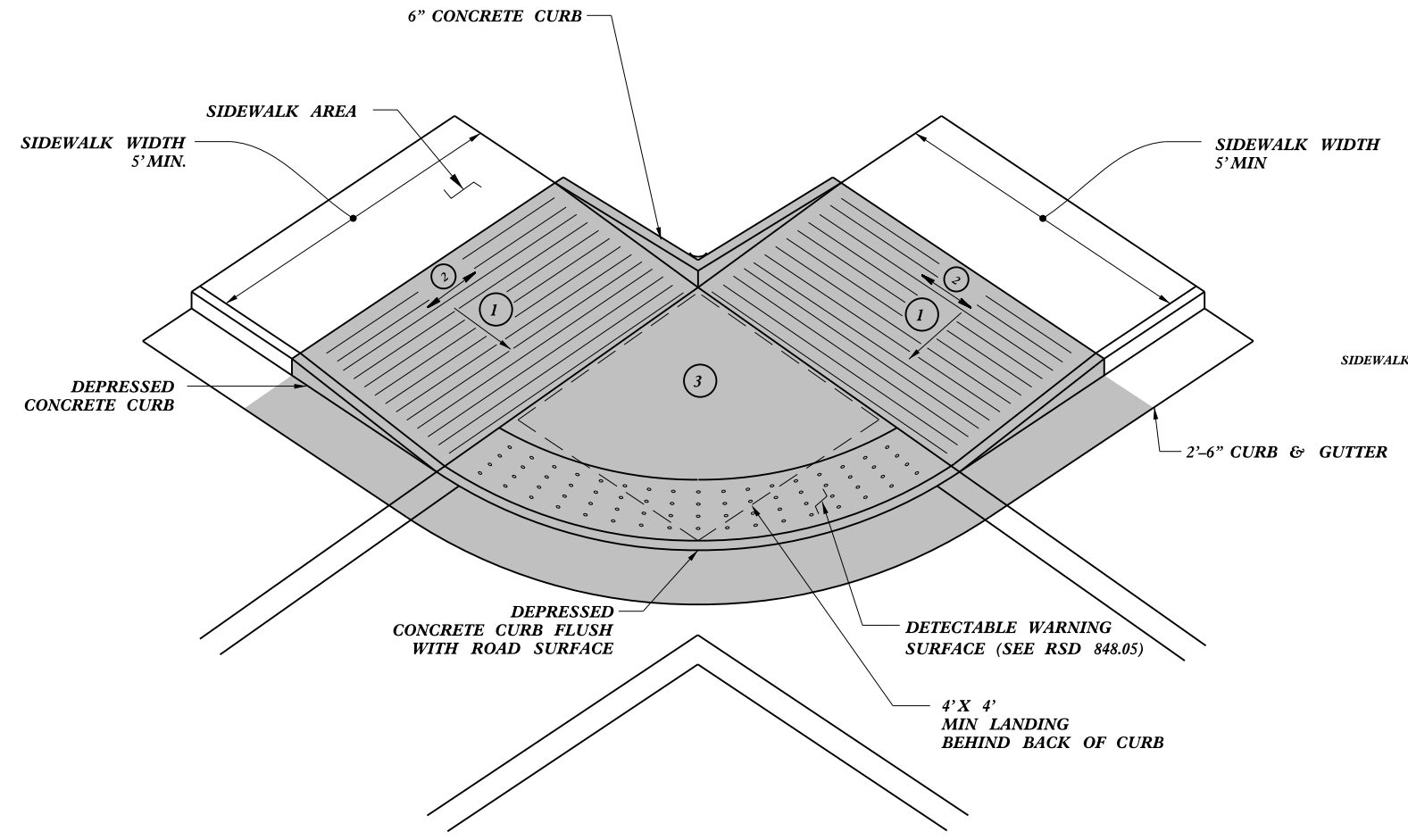
CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950	FAX 919-250-4119
CURB RAMPS	
Median or Turn Lane Islands	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY: _____	DATE: _____
CHECKED BY: _____	DATE: _____
FILE SPEC: stds/2012CurbRamp/CurbRampDetails.dwg	



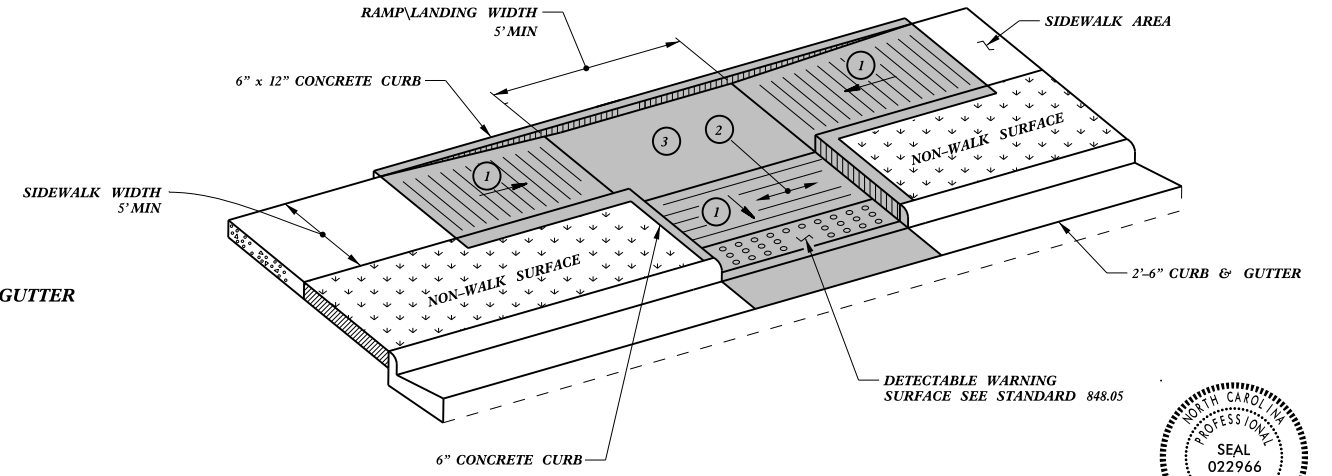
TYPE 2

PAY LIMITS FOR 1 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



DocuSign
 Joel S. Howerton
 449E8E25522144E

11/18/2015

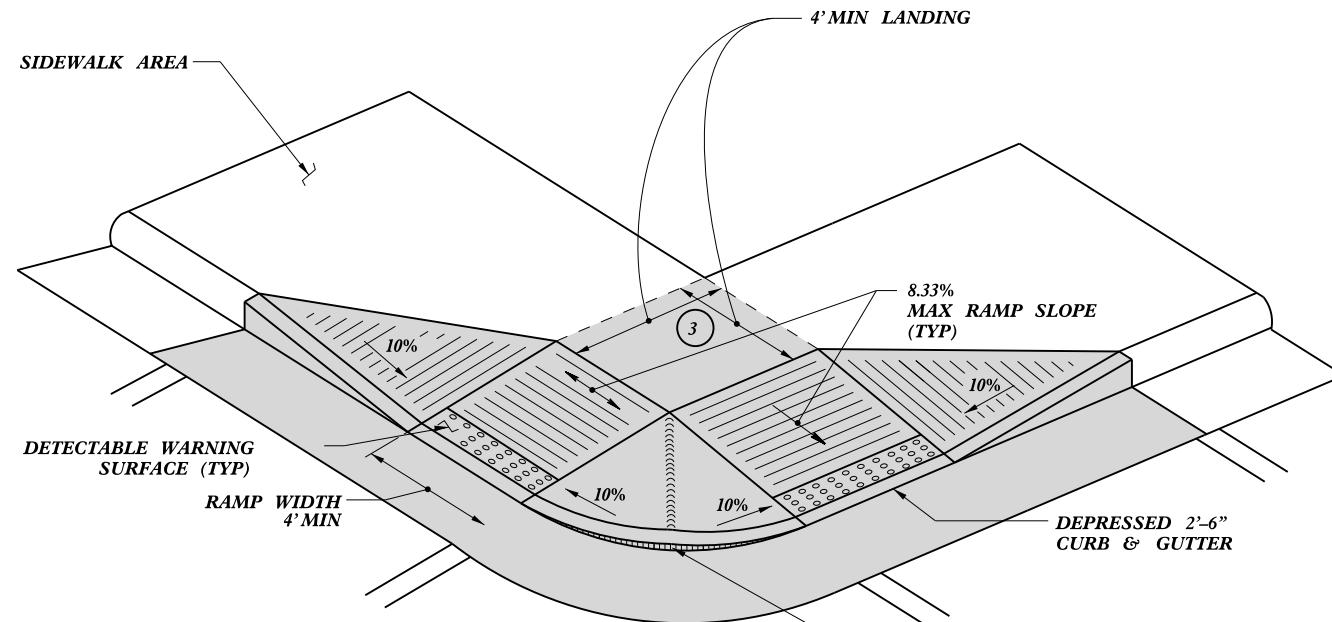
CONTRACT STANDARDS AND DEVELOPMENT UNIT
 Office 919-707-6950 FAX 919-250-4119

CURB RAMPS
 Parallel Ramps

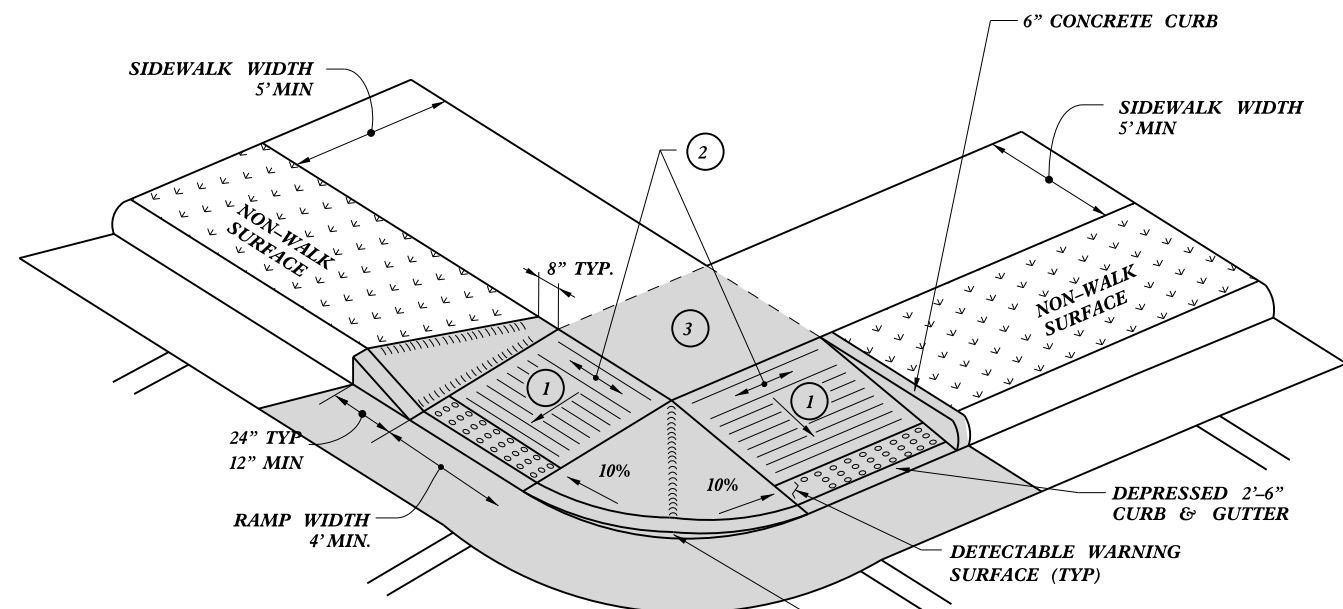
ORIGINAL BY: J.S. HOWERTON DATE: 7/7/11
 MODIFIED BY: DATE:
 CHECKED BY: DATE:
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REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

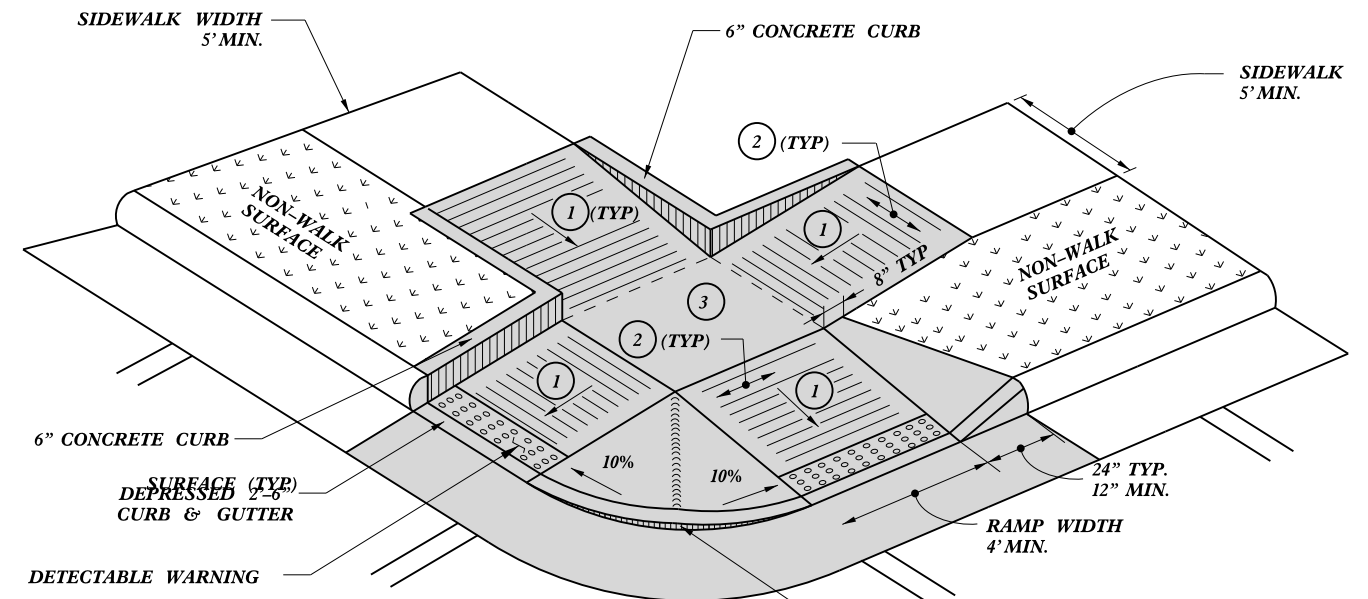
5/14/99



TYPE 4



TYPE 4A



TYPE 5

PAY LIMITS FOR 2 CURB RAMPS

- 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.

DocuSigned by:
Joel S Howerton
449E8E25522144F...



11/18/2015

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

CURB RAMPS
Shared Landing

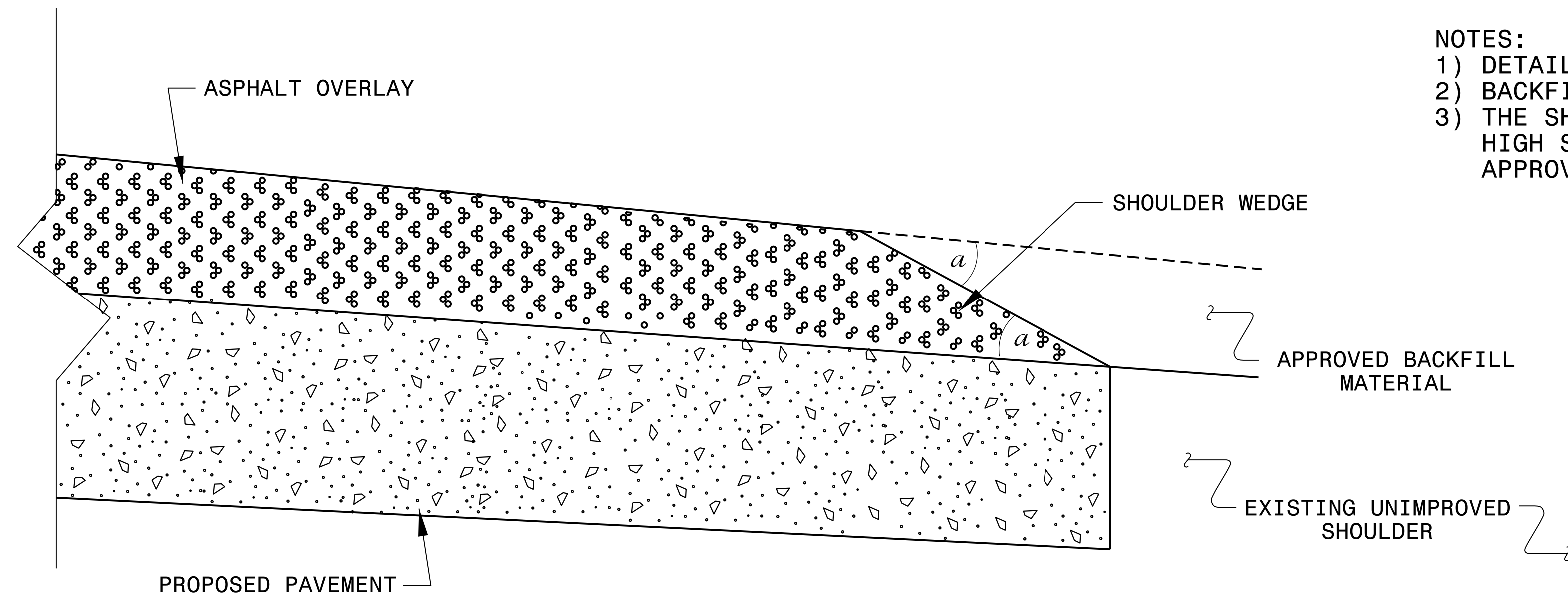
ORIGINAL BY: J.S. HOWERTON DATE: 7/7/11
MODIFIED BY: DATE:
CHECKED BY: DATE:
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REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

5/14/199

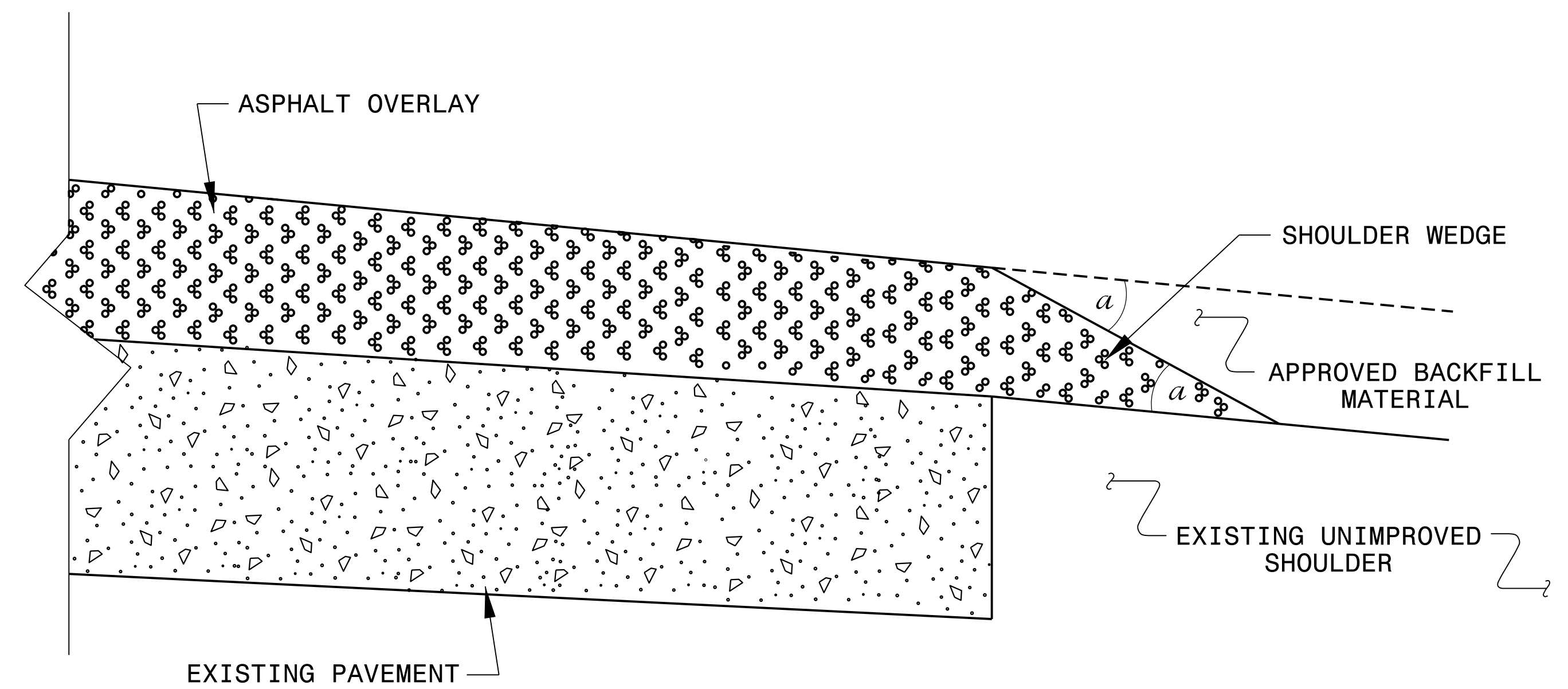
NOTES:

- 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.



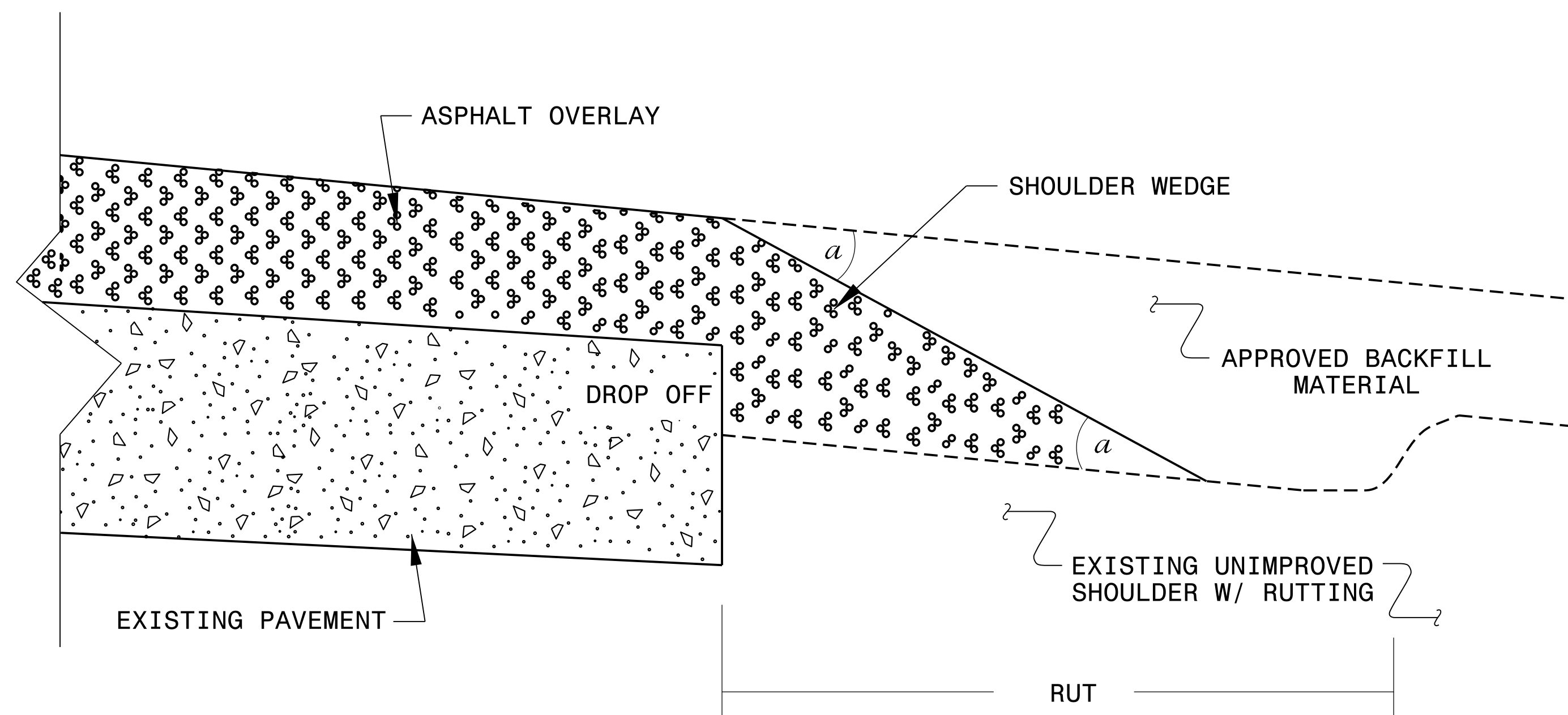
SHOULDER WEDGE DETAIL

(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

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH	WIDTH	1220000000-E	1245000000-E	1260000000-E	1297000000-E		1308000000-E		1330000000-E	1519000000-E	1520000000-E	1523000000-E	1575000000-E	1704000000-E	
												INCIDENTAL STONE BASE	SHOULDER RECONSTRUCTION	AGGREGATE SHOULDER BORROW	MILLING ASPHALT PAVEMENT, 1-1/2" DEPTH	1" MILLING	MILLING ASPHALT PAVEMENT, 0" TO 1-1/2" DEPTH	MILLING ASPHALT PAVEMENT, 0" TO 1"	INCIDENTAL MILLING	ASPHALT CONC SURFACE COURSE TYPE S9.5B	ASPHALT CONC SURFACE COURSE TYPE S9.5B (LEVELING COURSE)	ASPHALT CONC SURFACE COURSE TYPE S9.5C	ASPHALT BINDER FOR PLANT MIX	PATCHING EXISTING PAVEMENT	
											MI	FT	TON	SMI	TON	SY	SY	SY	SY	SY	TON	TON	TON	TON	
2020CPT.13.06.10811	Rutherford	1	US 74 W	FROM CLEVELAND COUNTY TO SR 1921 (MP 0.00 - MP 1.480) INCLUDES RAMP	1,10	2	MD	NO	NO	1.48	32	74	2.96	385	36,702							3,392	204	375	
2020CPT.13.06.10811	Rutherford	2	US 74 W	FROM SR 1921 TO 0.821 MILES WEST OF SR 1920 (MP 1.48 - MP 3.48) INCLUDES RAMP	1,10	2	MD	NO	NO	2	32	100	4.00	520	45,547							4,209	253	400	
2020CPT.13.06.10811	Rutherford	3	US 74 W	FROM 0.821 MILES WEST OF SR 1920 TO 1.221 MILES WEST OF BRIDGE 93 (MP 3.48 - MP 5.48)	1	2	MD	NO	NO	2	32	100	4.00	520	37,547							3,483	209	400	
2020CPT.13.06.10811	Rutherford	4	US 74 W	FROM 1.221 MILES WEST OF BRIDGE 93 TO US 221 ALT (MP 5.48 - MP 7.62) INCLUDES RAMP	1,10	2	MU	NO	NO	2.14	32	107	4.28	556	48,614							4,492	270	450	
2020CPT.13.06.10811	Rutherford	5	US 74 W	FROM US 221 ALT TO SR 2213 (MP 7.62 - MP 9.37) INCLUDES RAMP	1,10	2	MD	NO	NO	1.75	32	88	3.50	455	58,675							5,422	325	350	
2020CPT.13.06.10811	Rutherford	6	US 74 W	FROM SR 2213 TO US 221 (MP 9.37 - MP 11.394) INCLUDES RAMP	1,10	2	MD	NO	NO	2.02	32	101	4.04	525	42,152							3,895	234	400	
TOTAL FOR PROJ NO. 2020CPT.13.06.10811											11.39		570	22.78	2,961	269,237							24,893	1,495	2,375
																269,237									
2020CPT.13.06.20811	Rutherford	7	SR 2213	FROM US 74 BUSINESS TO US 74 ALT (MP 0.00 - MP 1.412)	2,4	2	2WU	NO	NO	1.412	27.5	71	2.82	367	8,400					2,077			139	620	
2020CPT.13.06.20811	Rutherford	8	SR 2281	FROM SR 2185 TO SR 2282 (MP 0.00 - MP 0.12)	4	2	MD	NO	NO	0.12	24	6	0.24	31						154			10	35	
2020CPT.13.06.20811	Rutherford	9	SR 2282	FROM 2283 TO END OF MAINT (MP 0.00 - MP 0.39)	4	2	2WU	NO	NO	0.39	19	20	0.78	101						397			27	250	
2020CPT.13.06.20811	Rutherford	10	SR 2283	FROM SR 2282 TO END OF MAINT. (MP 0.00 - MP 0.08)	4	2	2WU	NO	NO	0.08	20	4	0.16	21						86			6	55	
2020CPT.13.06.20811	Rutherford	11	SR 1178	FROM SR 1218 TO SR 1170 (MP 0.00 - MP 1.57)	5	2	2WU	NO	NO	1.57	22	79	3.14	408				1,020				1,883	113	1,217	
2020CPT.13.06.20811	Rutherford	12	SR 1178	FROM SR 1170 TO SR 1161 (MP 1.57 - MP 3.24)	5	2	2WU	NO	NO	1.67	22	84	3.34	434				850				2,003	120	1,294	
2020CPT.13.06.20811	Rutherford	13	SR 1178	FROM SR 1161 TO SR 1175 (MP 3.24 - MP 3.88)	5	2	2WU	NO	NO	0.64	22	32	1.28	166	227			932				768	46	496	
2020CPT.13.06.20811	Rutherford	14	SR 1178	FROM SR 1175 TO SR 1167 (MP 3.88 - MP 5.39)	5	2	2WU	NO	NO	1.51	22	76	3.02	393				510				1,811	109	1,170	
2020CPT.13.06.20811	Rutherford	15	SR 1178	FROM SR 1167 TO SR 1179 (MP 5.39 - MP 6.92)	5	2	2WU	NO	NO	1.53	22	77	3.06	398	269			592				1,835	110	1,186	
2020CPT.13.06.20811	Rutherford	16	SR 1178	FROM SR 1179 TO SR 1211 (MP 6.92 - MP 8.05)	5	2	2WU	NO	NO	1.13	22	56	2.26	294				170				1,355	81	876	
2020CPT.13.06.20811	Rutherford	17	SR 1178	FROM SR 1211 TO US 64 (MP 8.05 - MP 8.92)	5	2	2WU	NO	NO	0.87	22	44	1.74	226				170				1,043	63	674	
2020CPT.13.06.20811	Rutherford	18	SR 1218	FROM US 64 TO NC 108 (MP 0.00 - MP 1.16)	5,8	2	2WU	NO	YES	1.16	28.6	58	0.23	60	16,533			200				1,806	108	160	
2020CPT.13.06.20811	Rutherford	19	SR 1306	FROM US 64 TO MP 2.00 (MP 0.00 - MP 2.00)	4	2	2WU	NO	NO	2	19	100	4.00	520				422		2,036			136	200	
2020CPT.13.06.20811	Rutherford	20	SR 1306	FROM MP 2.0 TO SR 1314 (MP 2.00 - MP 4.39)	4	2	2WU	NO	NO	2.39	19	120	4.78	621						2,434			163	250	

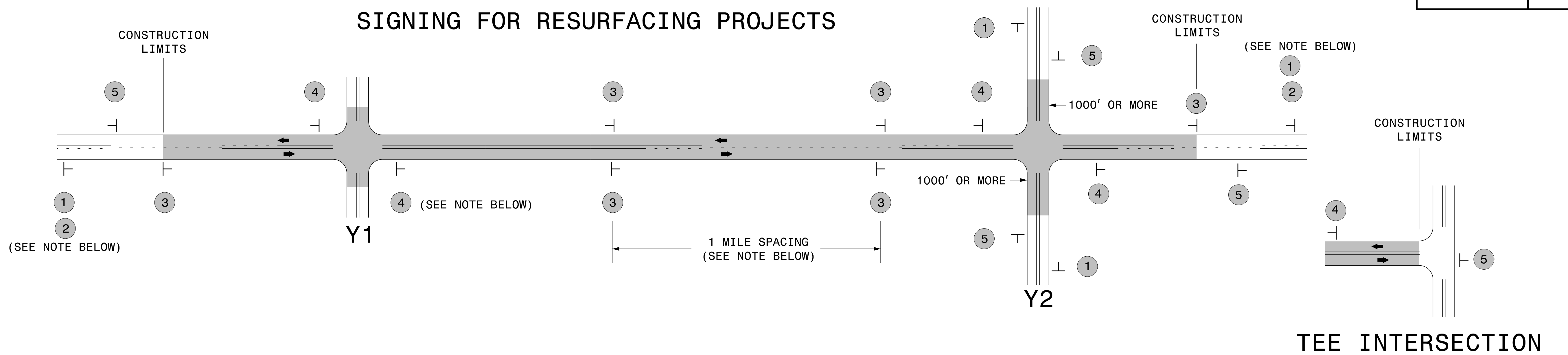
SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH	WIDTH	122000000-E	124500000-E	126000000-E	129700000-E		130800000-E		133000000-E	151900000-E	152000000-E	152300000-E	157500000-E	170400000-E		
												INCIDENTAL STONE BASE	SHOULDER RECONSTRUCTIO	AGGREGATE SHOULDER BORROW	MILLING ASPHALT PAVEMENT, 1-1/2" DEPTH	1" MILLING	MILLING ASPHALT PAVEMENT, 0" TO 1-1/2" DEPTH	MILLING ASPHALT PAVEMENT, 0" TO 1"	INCIDENTAL MILLING	ASPHALT CONC SURFACE COURSE TYPE S9.5B	ASPHALT CONC SURFACE COURSE TYPE S9.5B (LEVELING COURSE)	ASPHALT CONC SURFACE COURSE TYPE S9.5C	ASPHALT BINDER FOR PLANT MIX	PATCHING EXISTING PAVEMENT		
											MI	FT	TON	SMI	TON	SY	SY	SY	SY	SY	TON	TON	TON	TON		
2020CPT.13.06.20812	Rutherford	46	SR 1332	FROM SR 1328 TO SR 1385 (MP 0.00 - MP 1.17)	7	2	2WU	NO	NO	1.17	21	59														
2020CPT.13.06.20812	Rutherford	47	SR 1332	FROM SR 1385 TO SR 1001 (MP 1.17 - MP 2.44)	7	2	2WU	NO	NO	1.27	21	64														
2020CPT.13.06.20812	Rutherford	48	SR 1518	FROM US 64 TO SR 1504 (MP 0.00 - MP 0.48)	7	2	2WU	NO	NO	0.48	18	24														
2020CPT.13.06.20812	Rutherford	49	SR 1519	FROM SR 1602 TO END OF PAVEMENT (MP 0.00 - MP 0.76)	7	2	2WU	NO	NO	0.76	18	38														
2020CPT.13.06.20812	Rutherford	50	SR 1521	FROM US 64 TO END OF PAVEMENT (MP 0.00 - MP 0.57)	7	2	2WU	NO	NO	0.57	19	28									75		5			
2020CPT.13.06.20812	Rutherford	51	SR 1527	FROM SR 1520 TO SR 1525 (MP 0.00 - MP 0.78)	7	2	2WU	NO	NO	0.78	18	39									20		1			
2020CPT.13.06.20812	Rutherford	52	SR 1527	FROM SR 1525 TO US 221 (MP 0.78 - MP 2.48)	7	2	2WU	NO	NO	1.7	18	85									60		4			
2020CPT.13.06.20812	Rutherford	53	SR 1529	FROM SR 1328 TO US 221 (MP 0.00 - MP 1.60)	7	2	2WU	NO	NO	1.6	20	80									75		5			
2020CPT.13.06.20812	Rutherford	54	SR 1548	FROM SR 1538 TO SR 1510 (MP 0.00 - MP 1.796)	7	2	2WU	NO	NO	1.8	20	90									300		20			
2020CPT.13.06.20812	Rutherford	55	SR 1592	FROM US 64 TO DEAD END (MP 0.00 - MP 0.30)	7	2	MD	NO	NO	0.51	20	26									50		3			
2020CPT.13.06.20812	Rutherford	56	SR 1623	FROM SR 1547 TO SR 1538 (MP 0.30 - MP 0.76)	7	2	2WU	NO	NO	0.46	18	23														
2020CPT.13.06.20812	Rutherford	57	SR 1701	FROM US 64 TO MP 2.00 (MP 0.00 - MP 2.00)	7	2	2WU	NO	NO	2	18	100									100		7			
2020CPT.13.06.20812	Rutherford	58	SR 1701	FROM MP 2.00 TO SR 1713 (MP 2.00 - MP 3.28)	7	2	2WU	NO	NO	1.28	18	64									60		4			
2020CPT.13.06.20812	Rutherford	59	SR 1703	FROM SR 1701 TO SR 1007 (MP 0.00 - MP 0.53)	7	2	2WU	NO	NO	0.53	18	27									160		11			
2020CPT.13.06.20812	Rutherford	60	SR 1721	FROM SR 1006 TO SR 1720 (MP 0.00 - MP 1.67)	7	2	2WU	NO	NO	1.67	20	84														
TOTAL FOR PROJ NO. 2020CPT.13.06.20812											16.58		831									900		60		
GRAND TOTAL											67.93		2,574	67.45	8,797	294,666	86	1,500	50	5,294	15,258	900	37,397	3,327	16,743	

PROJECT NO.	SHEET NO.	TOTAL NO.
2020CPT.13.06.10811, 2020CPT.13.06.20811, 2020CPT.13.06.20812	21	

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH	WIDTH	1803500000-E	1820000000-E	1838000000-E	1838500000-N	1840000000-E	2613000000-N	2815000000-N	2830000000-N	2845000000-N	7444000000-E		
												ASPHALT SURFACE TREATMENT, DOUBLE SEAL	ASPHALT SURFACE TREATMENT, FOG SEAL	EMULSION FOR ASPHALT SURFACE TREATMENT	VACUUM TRUCK	MILLED RUMBLE STRIPS (ASPHALT CONCRETE)	REMOVE AND REPLACE CURB RAMPS	ADJUSTMENT OF DROP INLET	ADJUSTMENT OF MANHOLES	ADJUSTMENT OF METER BOXES OR VALVE BOXES	INDUCTIVE LOOP		
												MI	FT	SY	SY	GAL	WK	LF	EA	EA	EA	EA	LF
2020CPT.13.06.20811	Rutherford	21	SR 1368	FROM SR 1367 TO US 64 (MP 0.00 - MP 1.18)	4	2	2WU	NO	NO	1.18	18												
2020CPT.13.06.20811	Rutherford	22	SR 2210	FROM US 221 TO SR 2117 (MP 0.00 - MP 1.68)	4	2	2WU	NO	YES	1.68	26												
2020CPT.13.06.20811	Rutherford	23	SR 2210	FROM SR 2117 TO SR 2147 (MP 1.68 - MP 2.63)	4,9	2	2WU	NO	YES	0.95	26										520		
2020CPT.13.06.20811	Rutherford	24	SR 2210	FROM SR 2147 TO US 221 ALT (MP 2.63 - MP 3.82)	4	2	2WU	NO	YES	1.19	26												
2020CPT.13.06.20811	Rutherford	25	SR 2174	FROM SR 2173 TO END OF MAINT. (MP 0.00 - MP 0.53)	4	2	2WU	NO	NO	0.53	18												
2020CPT.13.06.20811	Rutherford	26	SR 1204	FROM SR 1163 TO DEAD END (MP 0.00 - MP 0.19)	6	2	2WU	NO	NO	0.19	16												
2020CPT.13.06.20811	Rutherford	27	SR 1300	FROM US 64 TO US 64 (MP 0.00 - MP 0.572)	3,6	2	2WU	NO	NO	0.57	15							1		6			
2020CPT.13.06.20811	Rutherford	28	SR 1301	FROM US 64 TO SR 1300 (MP 0.00 - MP 0.046)	6	2	2WU	NO	NO	0.046	15												
2020CPT.13.06.20811	Rutherford	29	SR 1302	FROM SR 1300 TO END OF MAINT. (MP 0.00 - MP 0.088)	6	2	2WU	NO	NO	0.088	11												
2020CPT.13.06.20811	Rutherford	30	SR 1318	FROM SR 1008 TO END OF MAINT. (MP 0.00 - MP 0.48)	6	2	2WU	NO	NO	0.484	18												
2020CPT.13.06.20811	Rutherford	31	SR 1332	FROM SR 1328 TO SR 1385 (MP 0.00 - MP 1.17)		2	2WU	NO	NO	1.17	21												
2020CPT.13.06.20811	Rutherford	32	SR 1332	FROM SR 1385 TO SR 1001 (MP 1.17 - MP 2.44)		2	2WU	NO	NO	1.27	21												
2020CPT.13.06.20811	Rutherford	33	SR 1518	FROM US 64 TO SR 1504 (MP 0.00 - MP 0.48)		2	2WU	NO	NO	0.48	18												
2020CPT.13.06.20811	Rutherford	34	SR 1519	FROM SR 1602 TO END OF PAVEMENT (MP 0.00 - MP 0.76)		2	2WU	NO	NO	0.76	18												
2020CPT.13.06.20811	Rutherford	35	SR 1521	FROM US 64 TO END OF PAVEMENT (MP 0.00 - MP 0.57)		2	2WU	NO	NO	0.57	19												
2020CPT.13.06.20811	Rutherford	36	SR 1527	FROM SR 1520 TO SR 1525 (MP 0.00 - MP 0.78)		2	2WU	NO	NO	0.78	18												
2020CPT.13.06.20811	Rutherford	37	SR 1527	FROM SR 1525 TO US 221 (MP 0.78 - MP 2.48)		2	2WU	NO	NO	1.7	18												
2020CPT.13.06.20811	Rutherford	38	SR 1529	FROM SR 1328 TO US 221 (MP 0.00 - MP 1.60)		2	2WU	NO	NO	1.6	20												
2020CPT.13.06.20811	Rutherford	39	SR 1548	FROM SR 1538 TO SR 1510 (MP 0.00 - MP 1.796)		2	2WU	NO	NO	1.8	20												
2020CPT.13.06.20811	Rutherford	40	SR 1592	FROM US 64 TO DEAD END (MP 0.00 - MP 0.51)		2	MD	NO	NO	0.51	20												
2020CPT.13.06.20811	Rutherford	41	SR 1623	FROM SR 1547 TO SR 1538 (MP 0.30 - MP 0.76)		2	2WU	NO	NO	0.46	18												
2020CPT.13.06.20811	Rutherford	42	SR 1701	FROM US 64 TO MP 2.00 (MP 0.00 - MP 2.00)		2	2WU	NO	NO	2	18												
2020CPT.13.06.20811	Rutherford	43	SR 1701	FROM MP 2.00 TO SR 1713 (MP 2.00 - MP 3.28)		2	2WU	NO	NO	1.28	18												
2020CPT.13.06.20811	Rutherford	44	SR 1703	FROM SR 1701 TO SR 1007 (MP 0.00 - MP 0.53)		2	2WU	NO	NO	0.53	18												
2020CPT.13.06.20811	Rutherford	45	SR 1721	FROM SR 1006 TO SR 1720 (MP 0.00 - MP 1.67)		2	2WU	NO	NO	1.67	20												
TOTAL FOR PROJ NO. 2020CPT.13.06.20811										39.96							58	4	28	30	650		

SIGNING FOR RESURFACING PROJECTS



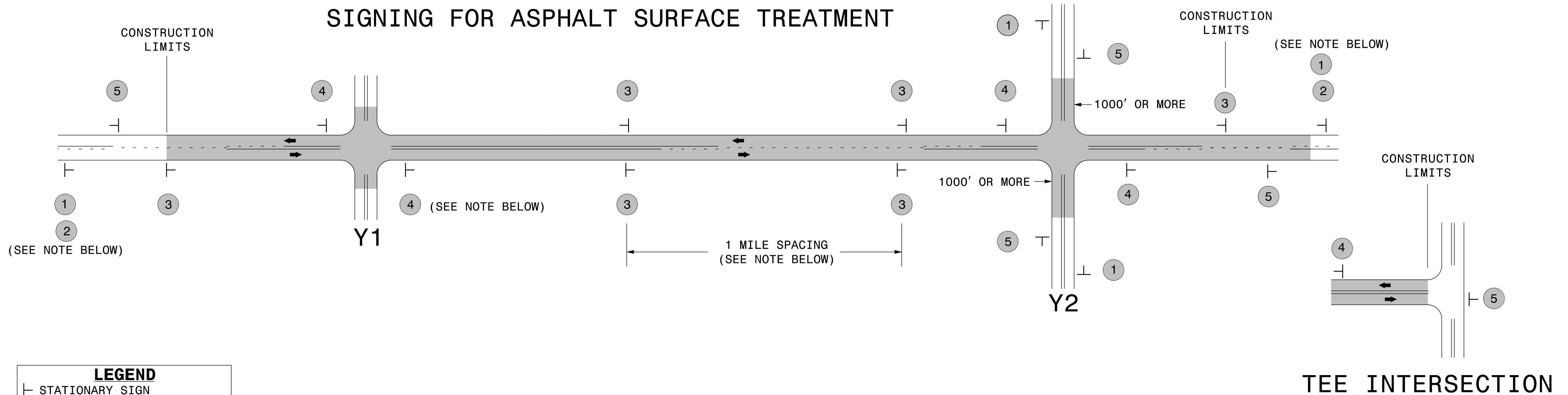
MAINLINE (-L-) SIGNING

-Y- LINE SIGNING

SIGNING NOTES AND PLACEMENT PER DIRECTION	MAINLINE (-L-) SIGNING		-Y- LINE SIGNING	
	1	 W20-1 48" X 48"	<p>PLACE 1000' PRIOR TO BEGINNING OF CONSTRUCTION LIMITS. ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000' ALONG -Y- LINE.</p>	<p>NO REQUIRED STATIONARY SIGNING FOR THE FOLLOWING -Y- LINE CONDITIONS:</p> <ol style="list-style-type: none"> LESS THAN 1000' OF RESURFACING ALONG -Y- LINE SUBDIVISION ROADS 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> W20-1 48" X 48" W20-7 A 48" X 48" <p>PLACED 500' IN ADVANCE OF FLAGGER. PLACED 250' IN ADVANCE OF FLAGGER.</p>
	2	 W7-3aP 24" X 18"	<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>	
	3	 SP 13107 48" X 48"	<ul style="list-style-type: none"> PLACE INITIALLY AT THE CONSTRUCTION LIMITS AND SPACE 1 MILE APART THEREAFTER. AT TEE INTERSECTIONS INSTALL INITIALLY 0.5 MILE FROM INTERSECTION AND SPACE 1 MILE APART THEREAFTER. 	
	4	 SP 13106 48" X 48"	<ul style="list-style-type: none"> 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"	<p>PLACE 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

SIGNING FOR ASPHALT SURFACE TREATMENT



LEGEND	
	STATIONARY SIGN
←	DIRECTION OF TRAFFIC FLOW

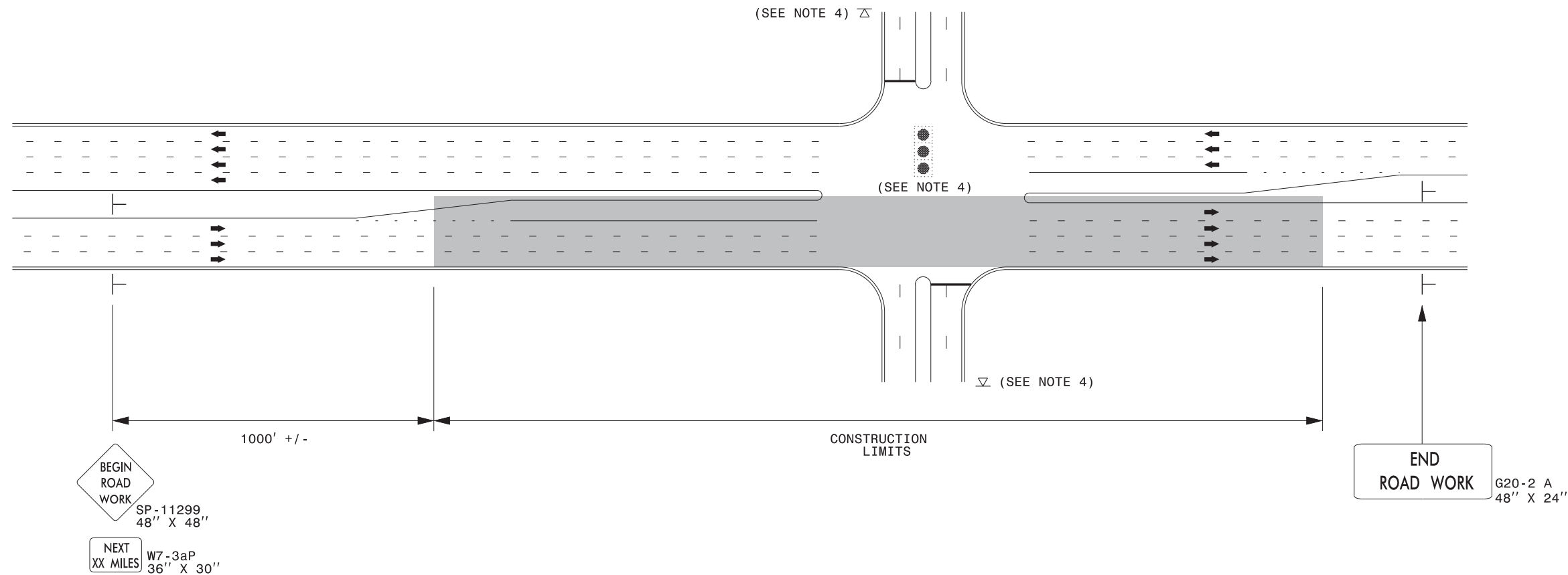
MAINLINE (-L-) SIGNING

-Y- LINE SIGNING

SIGNING NOTES AND PLACEMENT PER DIRECTION	1	 <small>W20-1 48" X 48"</small>	PLACE 1000' PRIOR TO BEGINNING OF CONSTRUCTION LIMITS. ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000' ALONG -Y- LINE.	<p style="text-align: center;">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 style="text-align: center;">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> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <small>W20-1 48" X 48"</small> </div> <div style="text-align: center;"> <small>W20-7 A 48" X 48"</small> </div> </div> <p style="text-align: center;">PLACED 500' IN ADVANCE OF FLAGGER. PLACED 250' IN ADVANCE OF FLAGGER.</p>
	2	 <small>W7-3aP 24" X 18"</small>	#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	 <small>W8-7 48" X 48"</small> <small>SP 48" X 48"</small>	<ul style="list-style-type: none"> - 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. 	
	4	 <small>SP 13106 48" X 48"</small>	<ul style="list-style-type: none"> - 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	 <small>G20-2 A 48" X 24"</small>	PLACE 500' FOLLOWING THE END OF CONSTRUCTION LIMITS OR AS SHOWN WHEN WORK ENDS AT A 3-WAY TEE INTERSECTION.	

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

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**

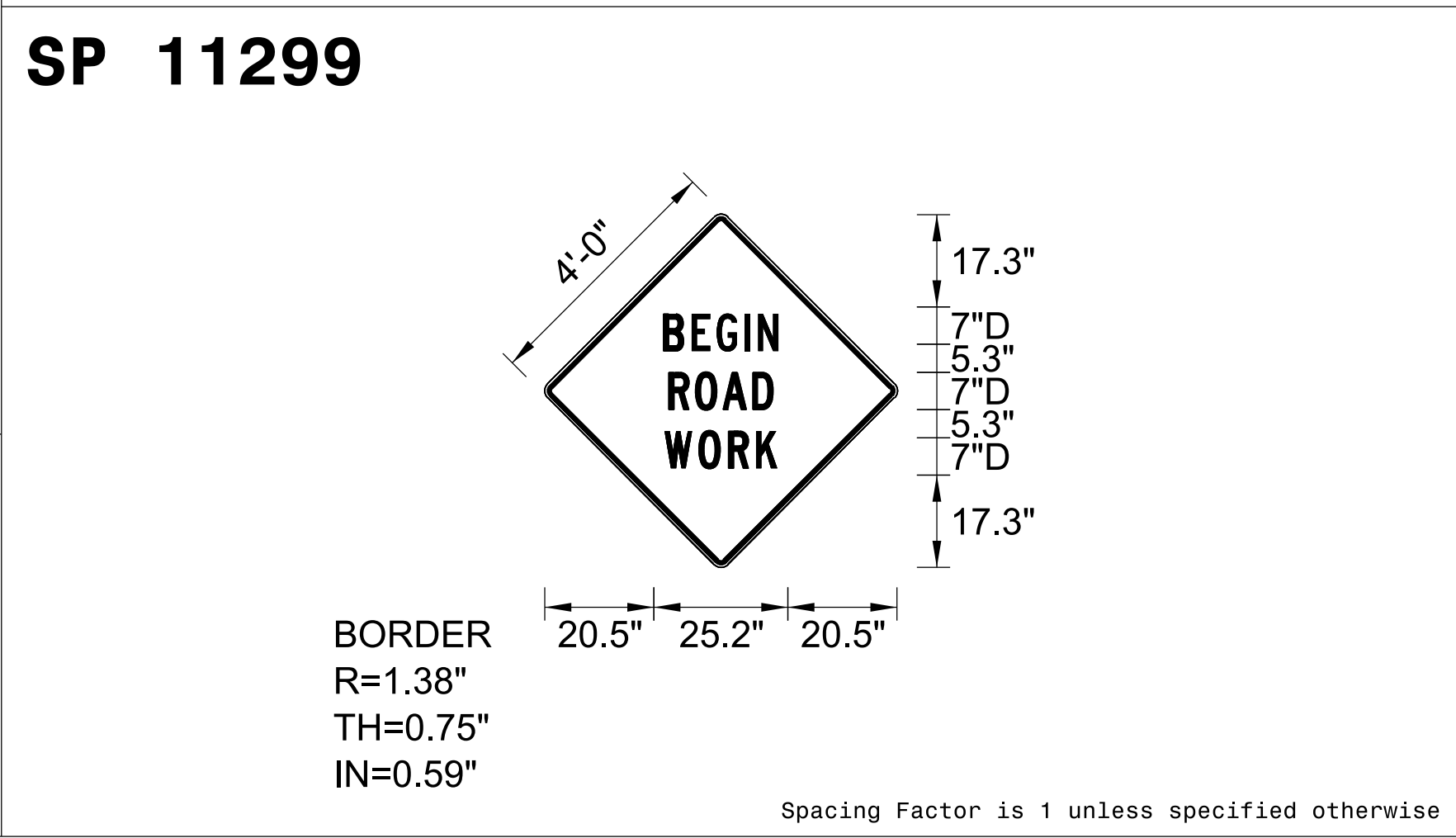
SIGN NUMBER: 11299
TYPE: B
QUANTITY: SEE PLANS
SIGN WIDTH: 5'-6"
HEIGHT: 5'-6"
TOTAL AREA: 30.5 Sq.Ft.
BORDER TYPE: INSET
RECESS: 0.59"
WIDTH: 0.75"
RADII: 1.38"
NO. Z BARS: N/A
LENGTH: N/A

BACKG COLOR: Fluorescent Orange
COPY COLOR: Black

SYMBOL	X	Y	WID	HT

MAT'L: 0.125" (3.2 mm) ALUMINUM

DESIGN BY: WJ
PROJECT ID: ALL
CHECKED BY:
DIV: ALL
DATE: Jun 22, 2011



USE NOTES: 1,2

- Legend and border shall be direct applied black non-reflective sheeting.
- Background shall be Type VII, VIII, or IX (prismatic) fluorescent orange retroreflective sheeting.

LETTER POSITIONS

Letter spacings are to start of next letter																	Series/Size Text Length
		B	E	G	I	N											D 2000 25.2
	20.5	6	5.4	6.3	2.8	4.8	20.5										
		R	O	A	D												D 2000 23.5
	21.4	5.8	5.9	7	4.8	21.4											
		W	O	R	K												D 2000 24.5
	20.9	7.1	6.5	5.9	4.9	20.9											

SIGN NUMBER: SP13106
 TYPE: STATIONARY
 QUANTITY: SEE PLANS

BACKG COLOR: Fluorescent Orange
 COPY COLOR: Black

DESIGN BY: B. RASHID
 PROJECT ID:

CHECKED BY: AIA
 DIV:

DATE: Apr 26, 2013

SYMBOL	X	Y	WID	HT

SIGN WIDTH: 4'-0"
 HEIGHT: 4'-0"
 TOTAL AREA: 16.00 Sq.Ft.

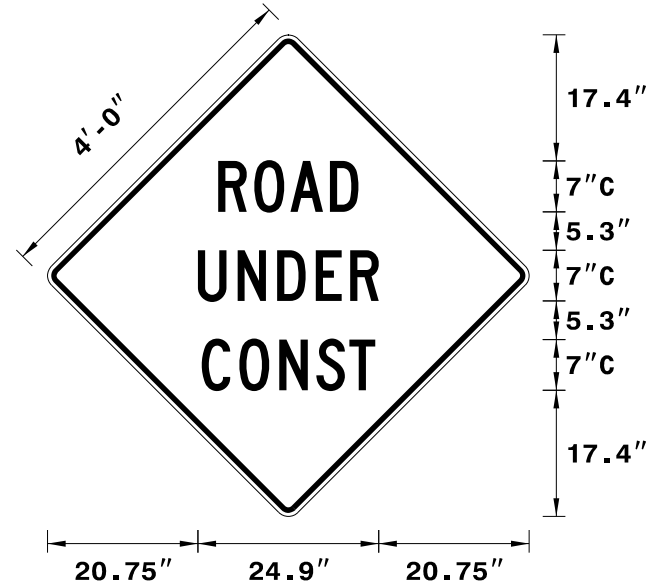
BORDER TYPE: INSET
 RECESS: 0.75"
 WIDTH: 1.25"
 RADII: 3"

NO. Z BARS:
 LENGTH:

MAT'L: 0.080" (2.0 mm) ALUMINUM

USE NOTES: 1,2

- Legend and border shall be direct applied black non-reflective sheeting.
- Background shall be NC GRADE B fluorescent orange retroreflective sheeting.



Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

Letter spacings are to start of next letter																	Series/Size Text Length	
		R	O	A	D													C 2000
	23.5	5	5	5.5	3.9	23.5												19.3
		U	N	D	E	R												C 2000
	20.7	5.5	5.5	5.3	4.8	3.9	20.7											24.9
		C	O	N	S	T												C 2000
	21.2	5.2	5.5	5.1	4.6	3.6	21.2											23.9

SIGN NUMBER: SP13107
TYPE: STATIONARY
QUANTITY: SEE PLANS

BACKG COLOR: Fluorescent Orange
COPY COLOR: Black

DESIGN BY: B. RASHID
PROJECT ID:

CHECKED BY: AIA
DIV:

DATE: Apr 26, 2013

SIGN WIDTH: 4'-0"
HEIGHT: 4'-0"
TOTAL AREA: 16.00 Sq.Ft.

SYMBOL	X	Y	WID	HT

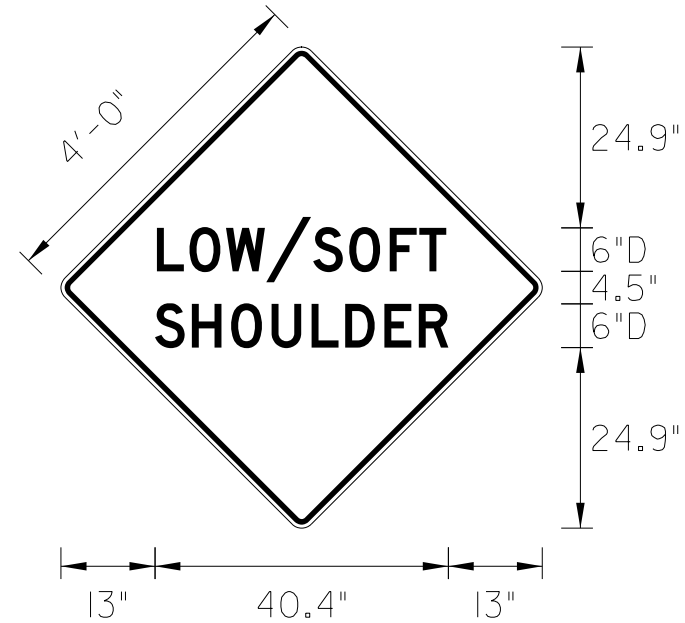
BORDER TYPE: INSET
RECESS: 0.75"
WIDTH: 1.25"
RADII: 3"

NO. Z BARS:
LENGTH:

MAT'L: 0.080" (2.0 mm) ALUMINUM

USE NOTES: 1,2

- 1. Legend and border shall be direct applied black non-reflective sheeting.
- 2. Background shall be NC GRADE B fluorescent orange retroreflective sheeting.

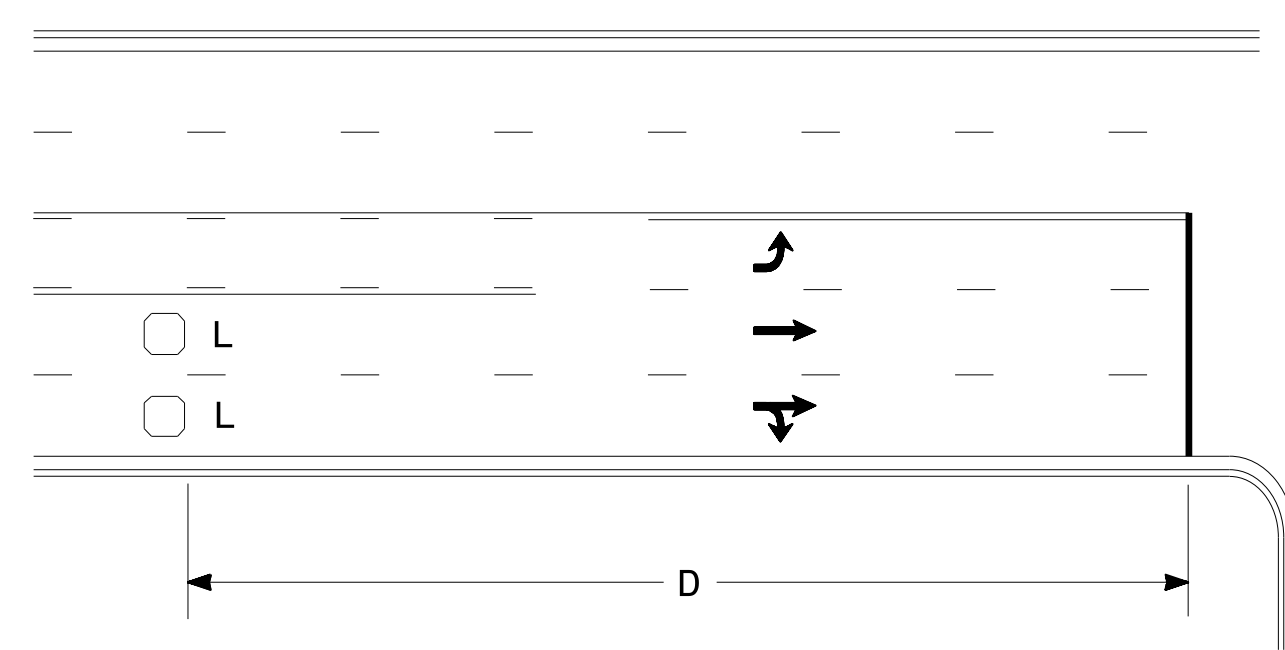


Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter											Series/Size
	L	O	W	/	S	O	F	T			Text Length
	13.2	4.5	5	5.5	6.5	5	5.6	4.1	3.7	13.2	D 2000
											39.9
	S	H	O	U	L	D	E	R			D 2000
	13	5.1	5.4	5.6	5.5	4.6	5.4	4.7	4.1	13	40.4

High Speed Detection (≥40 mph)

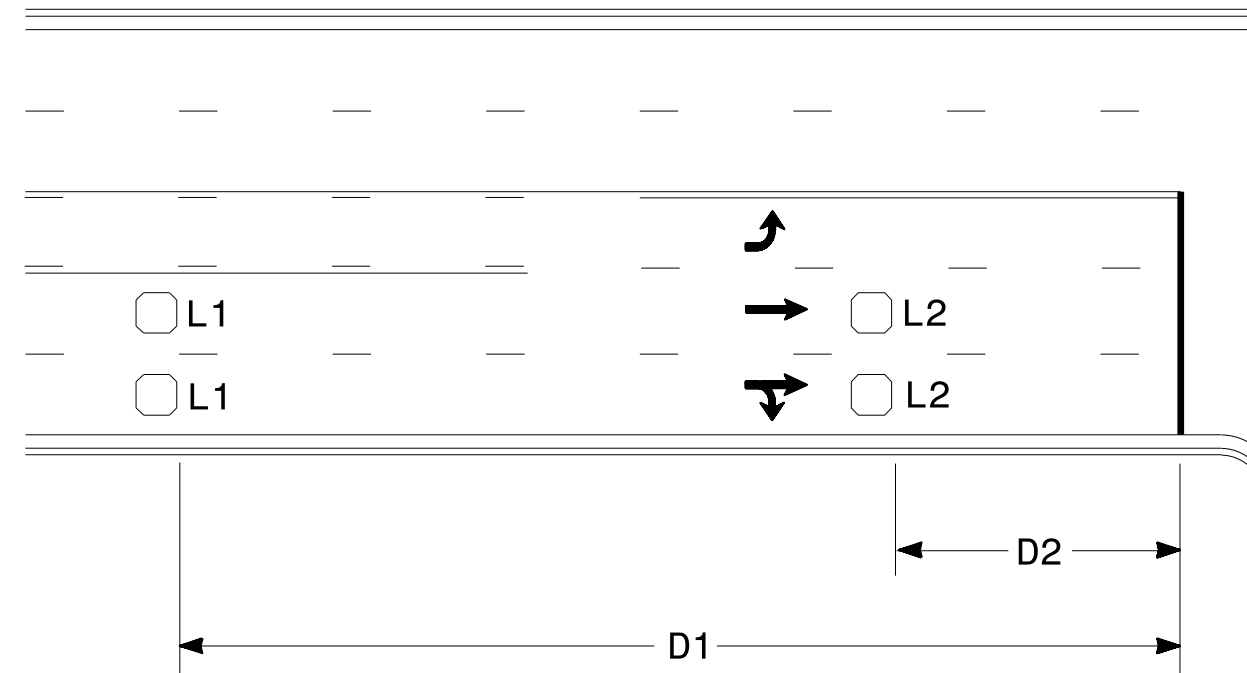


Speed Limit mph	D ft
40	250
45	300
50	355
55	420

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

Volume Density Operation

OR

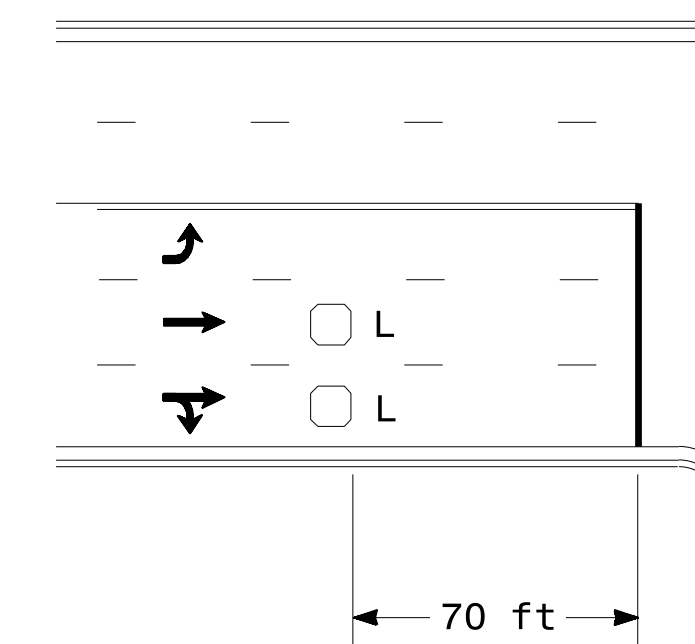


Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

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

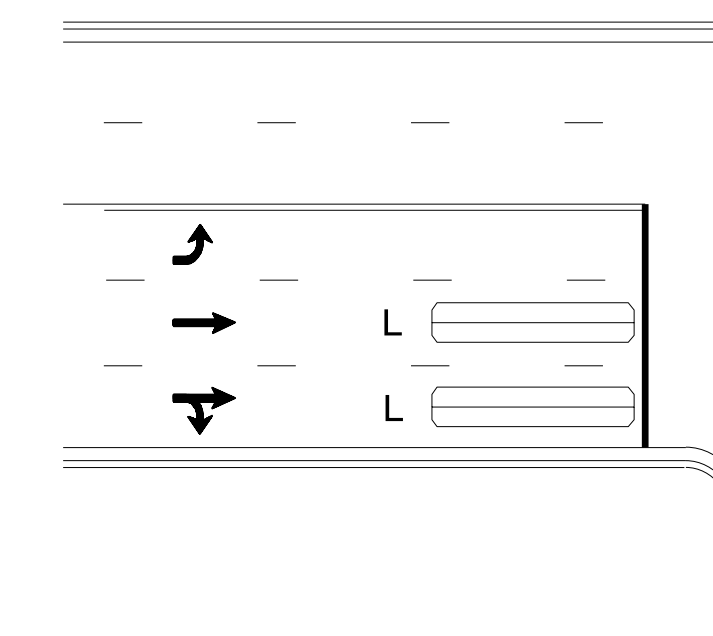
"Stretch" Operation

Low Speed Detection (≤35 mph)



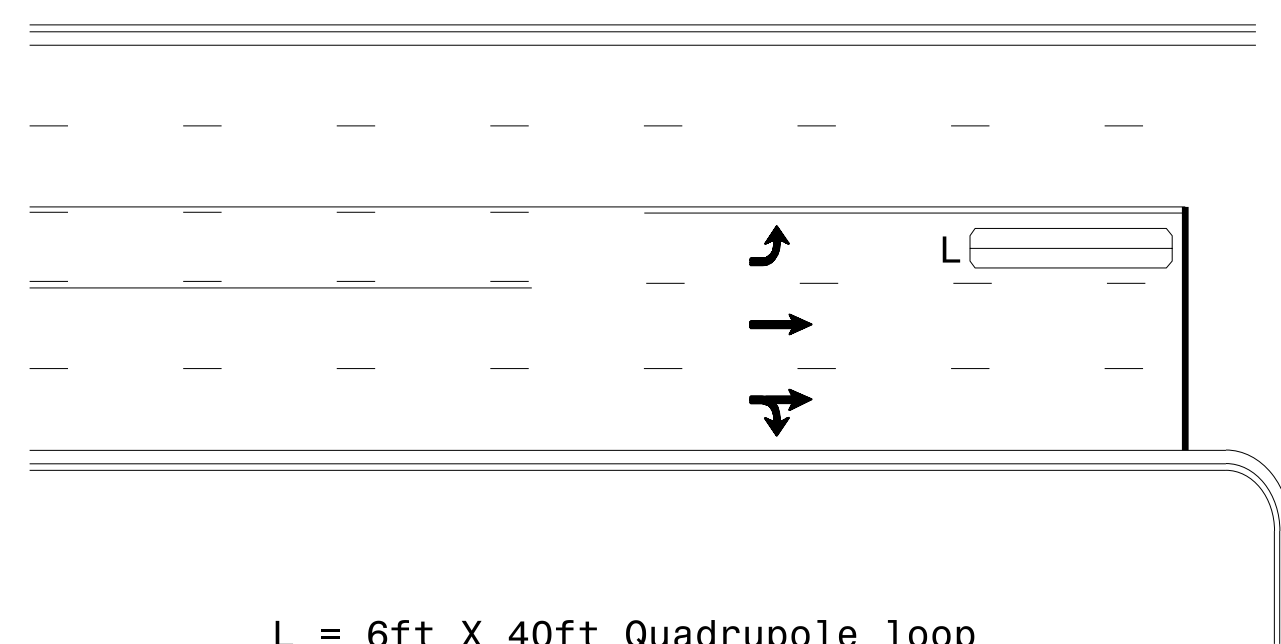
L = 6ft X 6ft
 Wired in series

OR



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

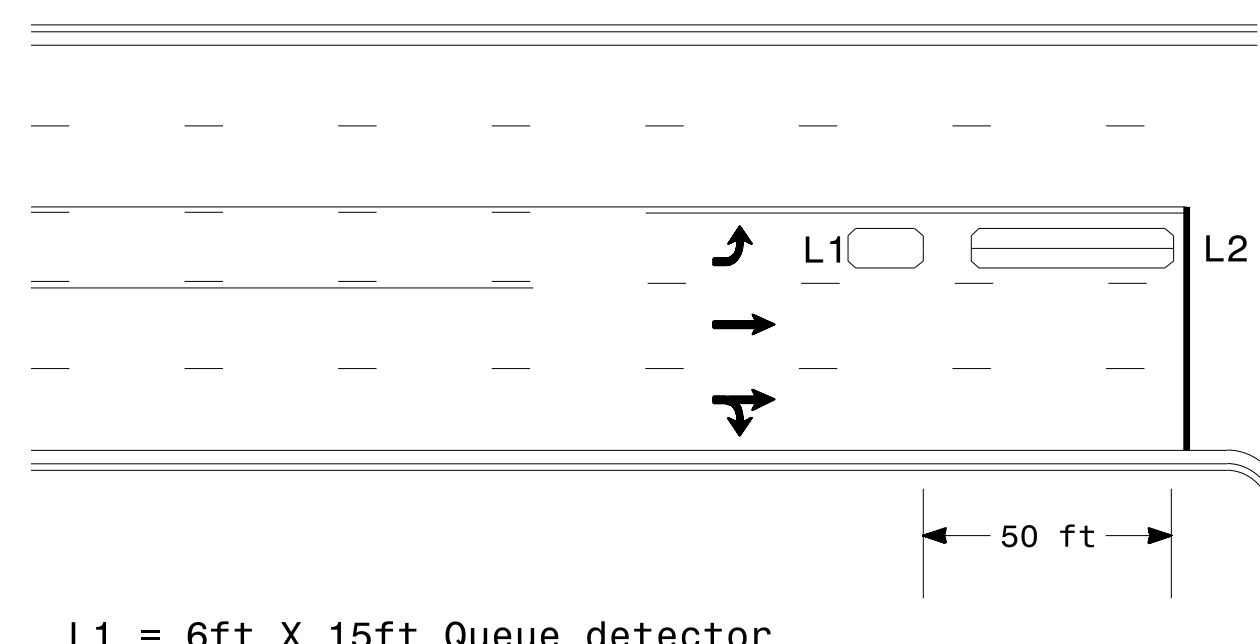
Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

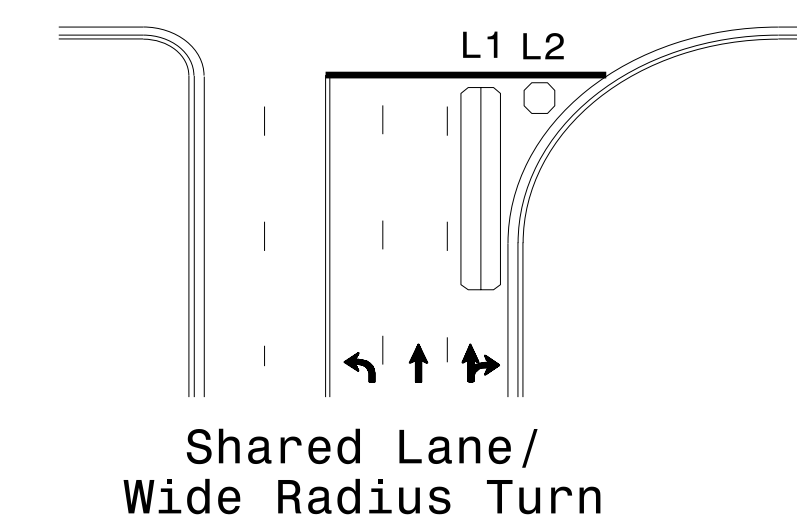
OR



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

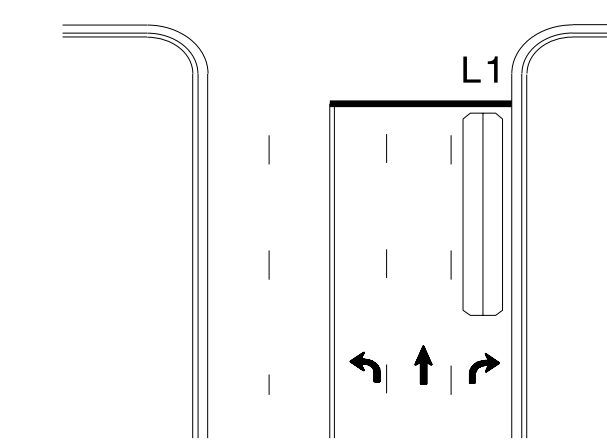
Queue Loop Detection

Right Turn Lane Detection

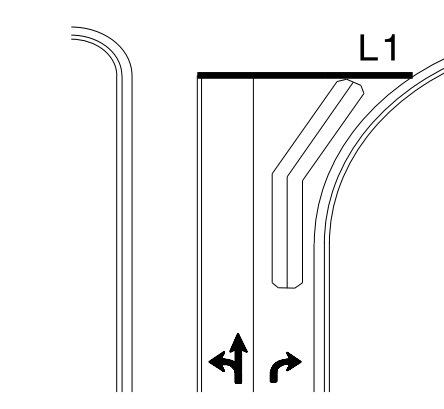


Shared Lane/
 Wide Radius Turn

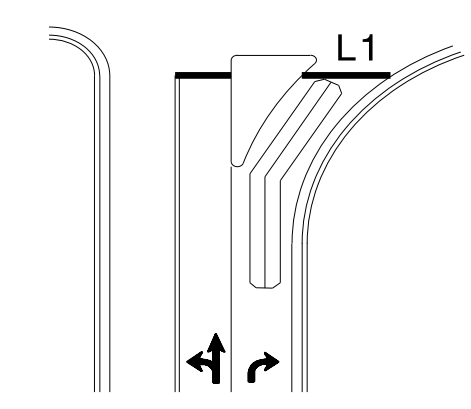
L1 = 6ft X 40ft Quadrupole loop
 L2 = 6ft X 6ft [Minimum] Presence loop
 Wired separately



Standard Turn

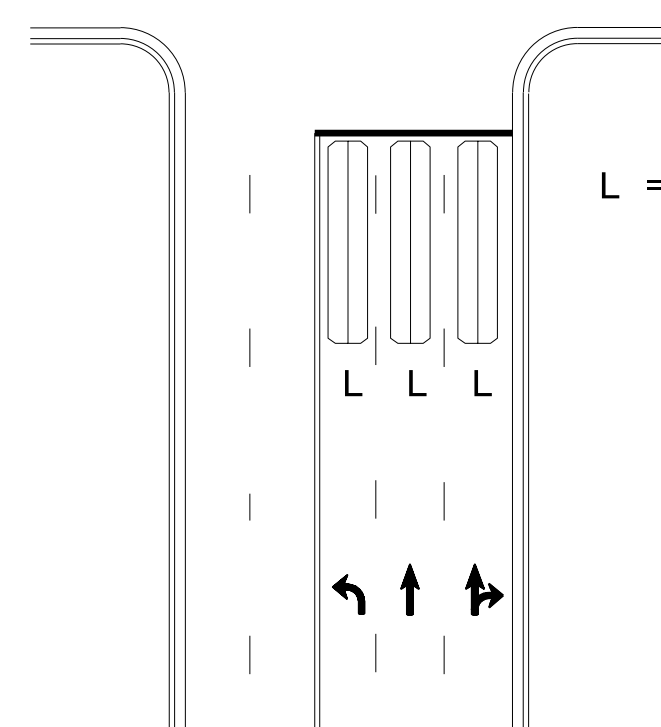


Wide Radius Turn



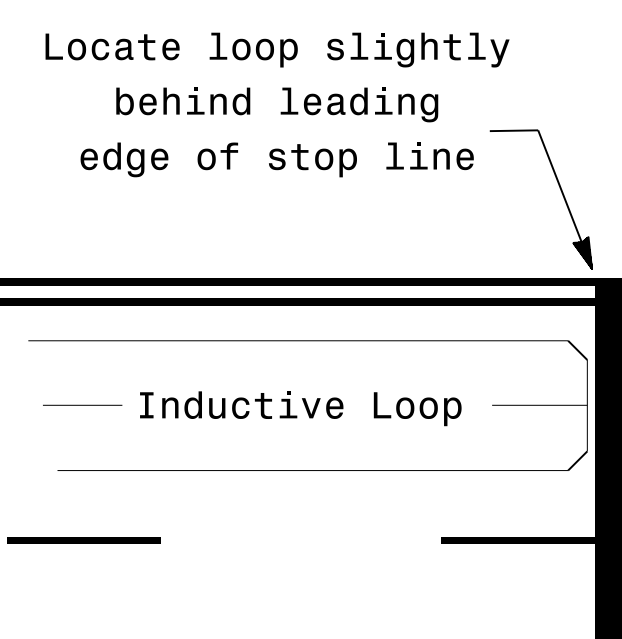
Channelized Turn

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

Prepared In the Offices of:
 TRANSPORTATION MOBILITY AND SAFETY DIVISION
 DEPARTMENT OF TRANSPORTATION
 SIGNAL DESIGN SECTION
 750 N. Greenfield Pkwy, Garner, NC 27529

Typical Signal Loop Locations

PLAN DATE: January 2015	REVIEWED BY: JPG
PREPARED BY: PLA	REVIEWED BY:
REVISIONS	INIT. DATE

SCALE: N/A

SEAL
 NORTH CAROLINA
 PROFESSIONAL ENGINEER
 PAMELA L. ALEXANDER
 23489

DocuSigned by:
 P. Alexander
 1/30/2015 11:30 AM
 DATE

SIG. INVENTORY NO.