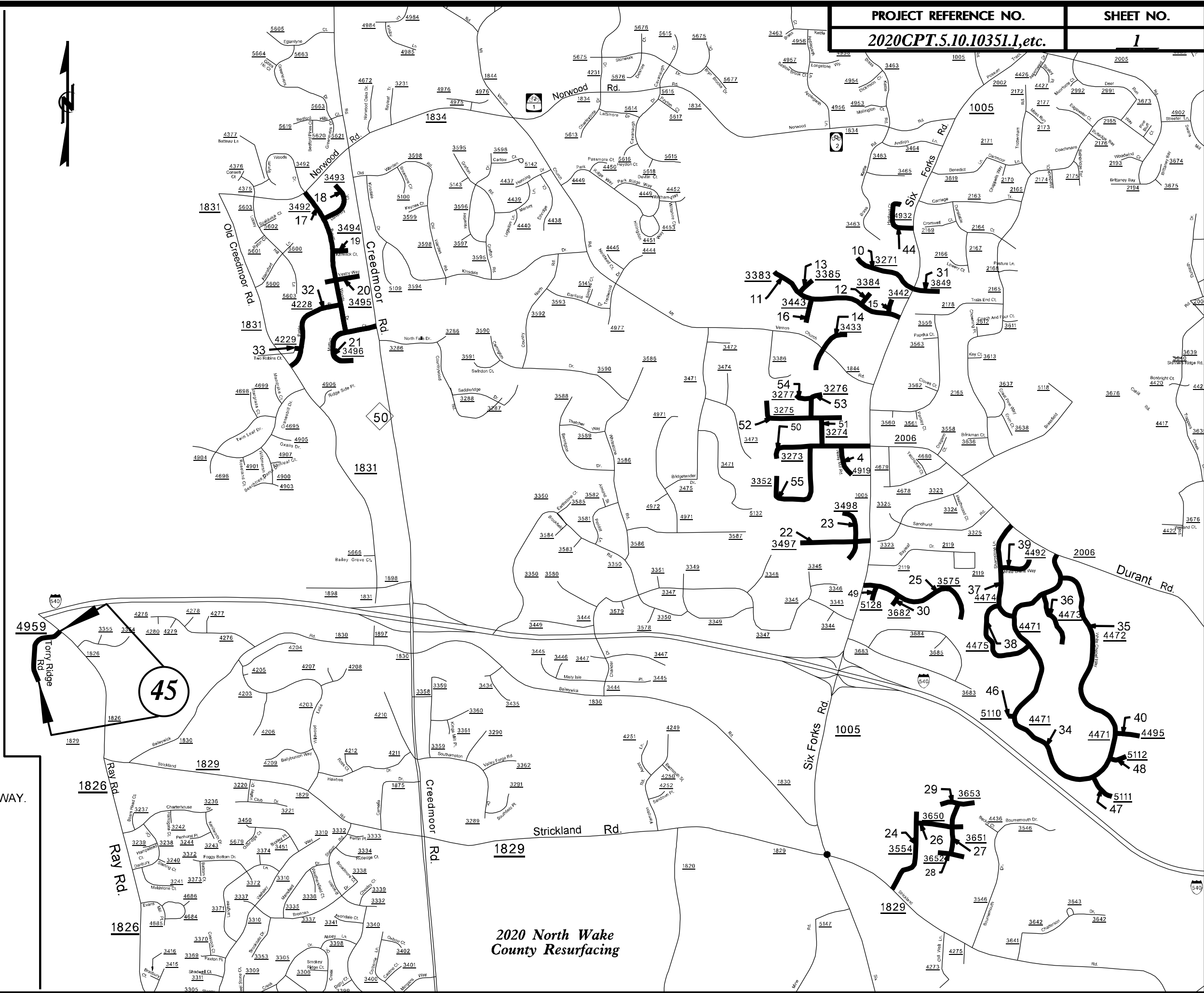
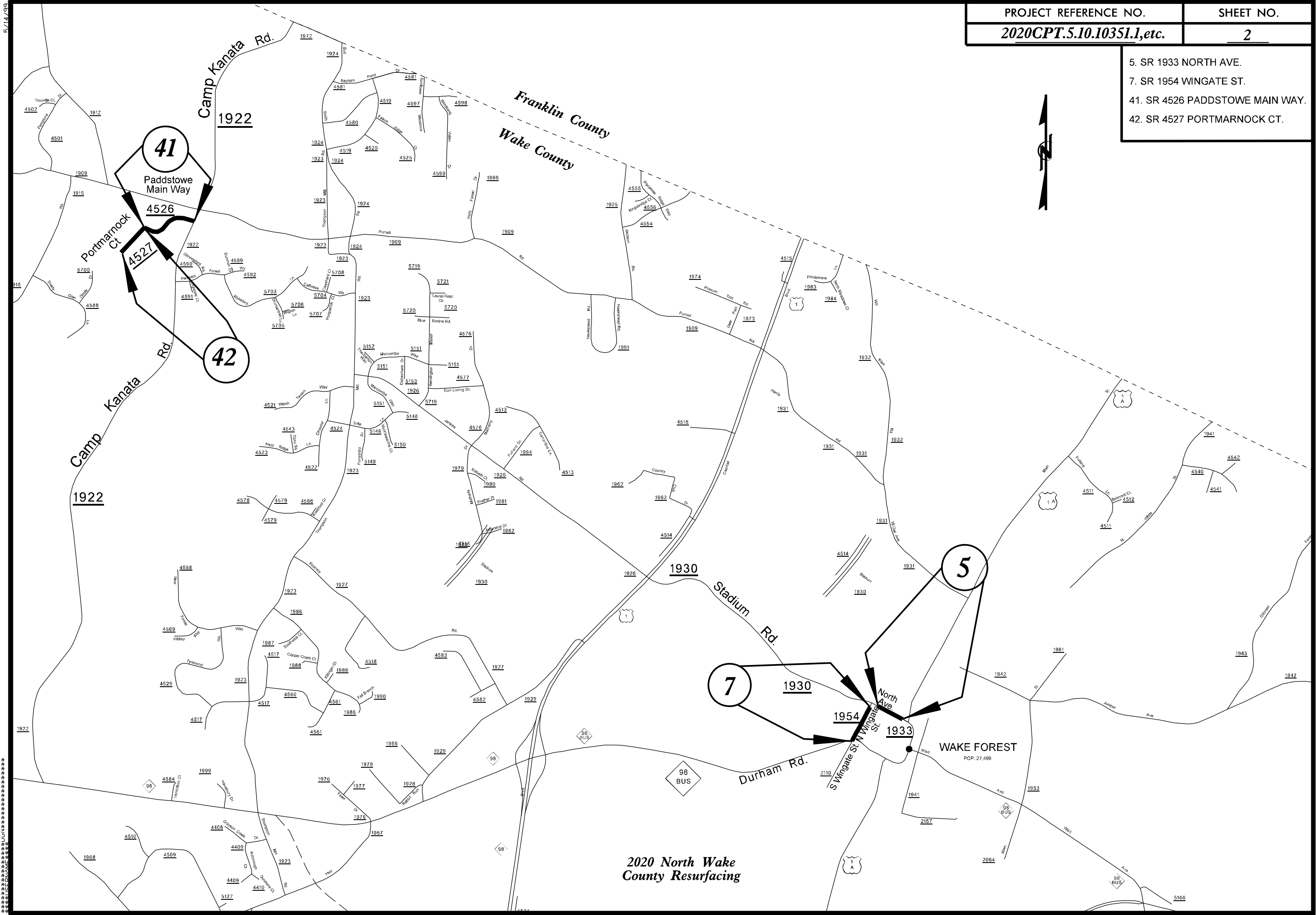


- 4. SR 4919 VEASEY MILL RD.
- 10. 3271 MARTINDALE DR.
- 11. SR 3383 TROTTERS RIDGE.
- 12. SR 3384 PACER CT.
- 13. SR 3385 HARNESS CIR.
- 14. SR 3433 MARTHAS WAY.
- 15. SR 3442 GALLOP CT.
- 16. SR 3443 BRIDLE LN.
- 17. SR 3492 BRYUM WOODS DR.
- 18. SR 3493 DAVENTRY LN.
- 19. SR 3494 KENWICK CT.
- 20. SR 3495 VESTRY WAY.
- 21. SR 3496 MATTLYN CT.
- 22. SR 3497 JANSMITH LN.
- 23. SR 3498 CLAIRBOURNE PL.
- 24. SR 3554 KINGS ARMS WAY.
- 25. SR 3575 CARPATHIAN WAY.
- 26. SR 3650 TAYLOE CT.
- 27. SR 3651 HIGHHILL RD.
- 28. SR 3652 JELLISON CT.
- 29. SR 3653 BERRY HILL DR.
- 30. SR 3682 ST STEPHAN CT.
- 31. SR 3849 MARTINDALE DR.
- 32. SR 4228 PATRIE PL.
- 33. SR 4229 TWO ROBINS CT.
- 34. SR 4471 WHITE CHAPEL WAY.
- 35. SR 4472 WHITE CHAPEL WAY.
- 36. SR 4473 HIDDEN HARBOR LN.
- 37. SR 4474 SHARPSTONE LN.
- 38. SR 4475 BEARGLADES LN.
- 39. SR 4492 WHITE CRANE WAY.
- 40. SR 4495 BROKEN SOUND WAY.
- 44. SR 4932 HARTLAND CT.
- 45. SR 4959 TORRY RIDGE RD.
- 46. SR 5110 DENFIELD CT.
- 47. SR 5111 OLD MEETINGHOUSE WAY.
- 48. SR 5112 THREE NOTCH RD.
- 49. SR 5128 FRANZ LISZT CT.
- 50. SR 3273 WYNDFIELD CIR.
- 51. SR 3274 CENTER LN.
- 52. SR 3275 ALLISON DR.
- 53. SR 3276 CROSS CREEK RD.
- 54. SR 3277 CROSS CREEK WEST.
- 55. SR 3352 WYNDFIELD CIR.



2020 North Wake County Resurfacing

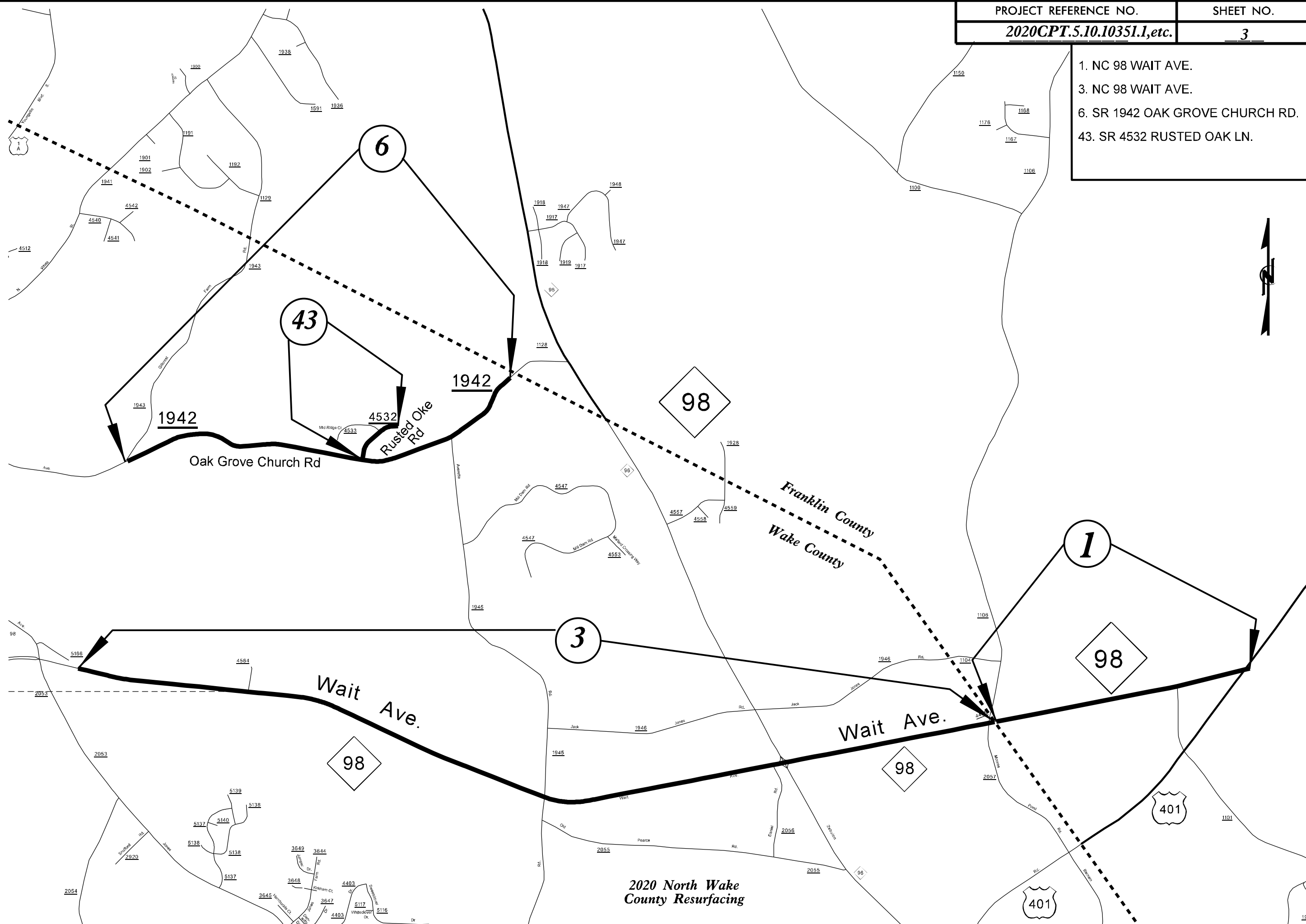
- 5. SR 1933 NORTH AVE.
- 7. SR 1954 WINGATE ST.
- 41. SR 4526 PADDSTOWE MAIN WAY.
- 42. SR 4527 PORTMARNOCK CT.



2020 North Wake  
County Resurfacing

5/14/20  
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- 1. NC 98 WAIT AVE.
- 3. NC 98 WAIT AVE.
- 6. SR 1942 OAK GROVE CHURCH RD.
- 43. SR 4532 RUSTED OAK LN.



2020 North Wake  
County Resurfacing

5/14/20

5/14/20

8. SR 2042 FOX RD.

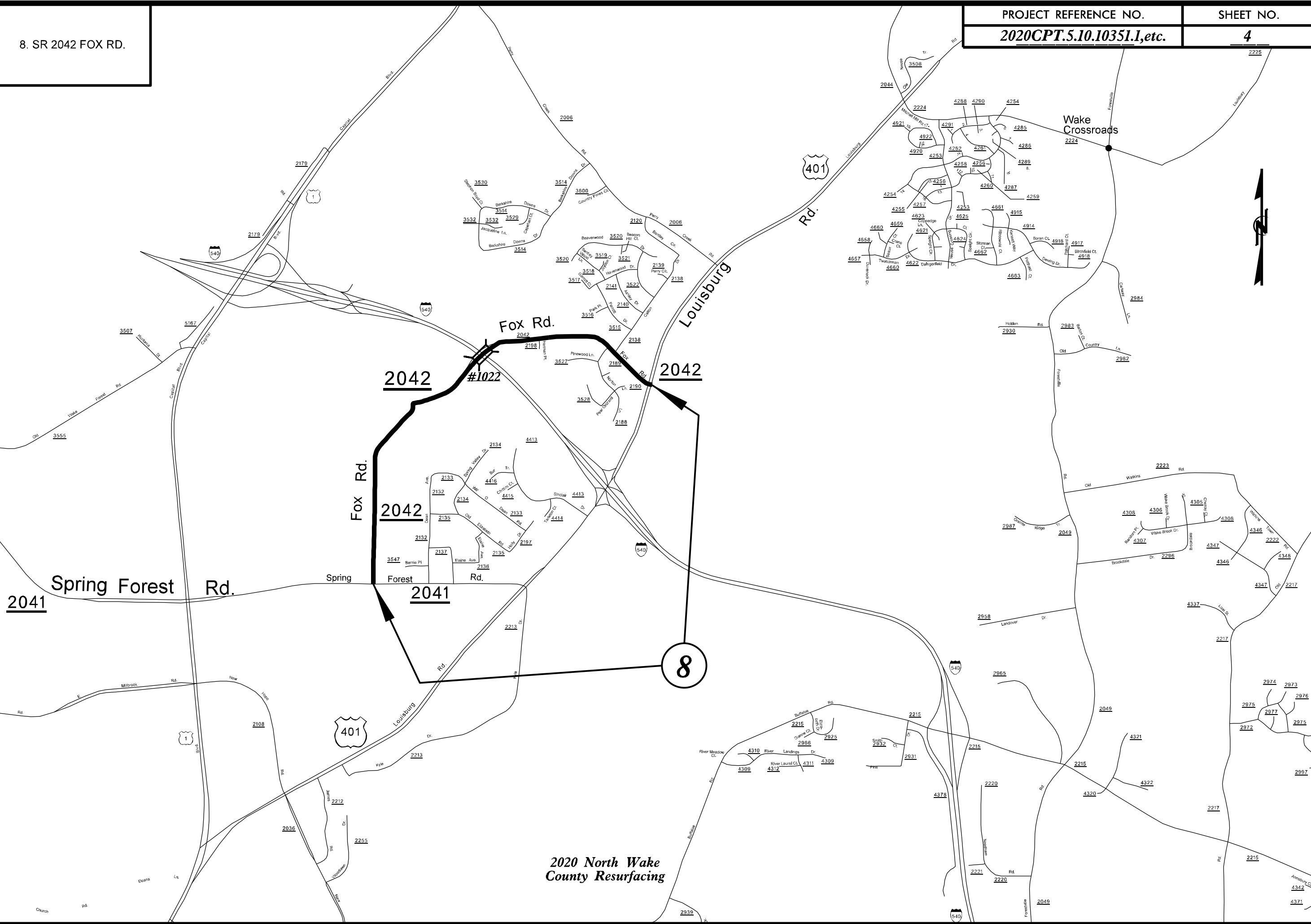
PROJECT REFERENCE NO.  
**2020CPT.5.10.10351.1,etc.**

SHEET NO.  
**4**

Wake Crossroads



**2020 North Wake  
County Resurfacing**



5/14/2020 10:00 AM

5/14/99

9. SR 2181 PONDEROSA SERVICE RD.

PROJECT REFERENCE NO.

2020CPT.5.10.10351.1,etc.

SHEET NO.

5



Falls

2001

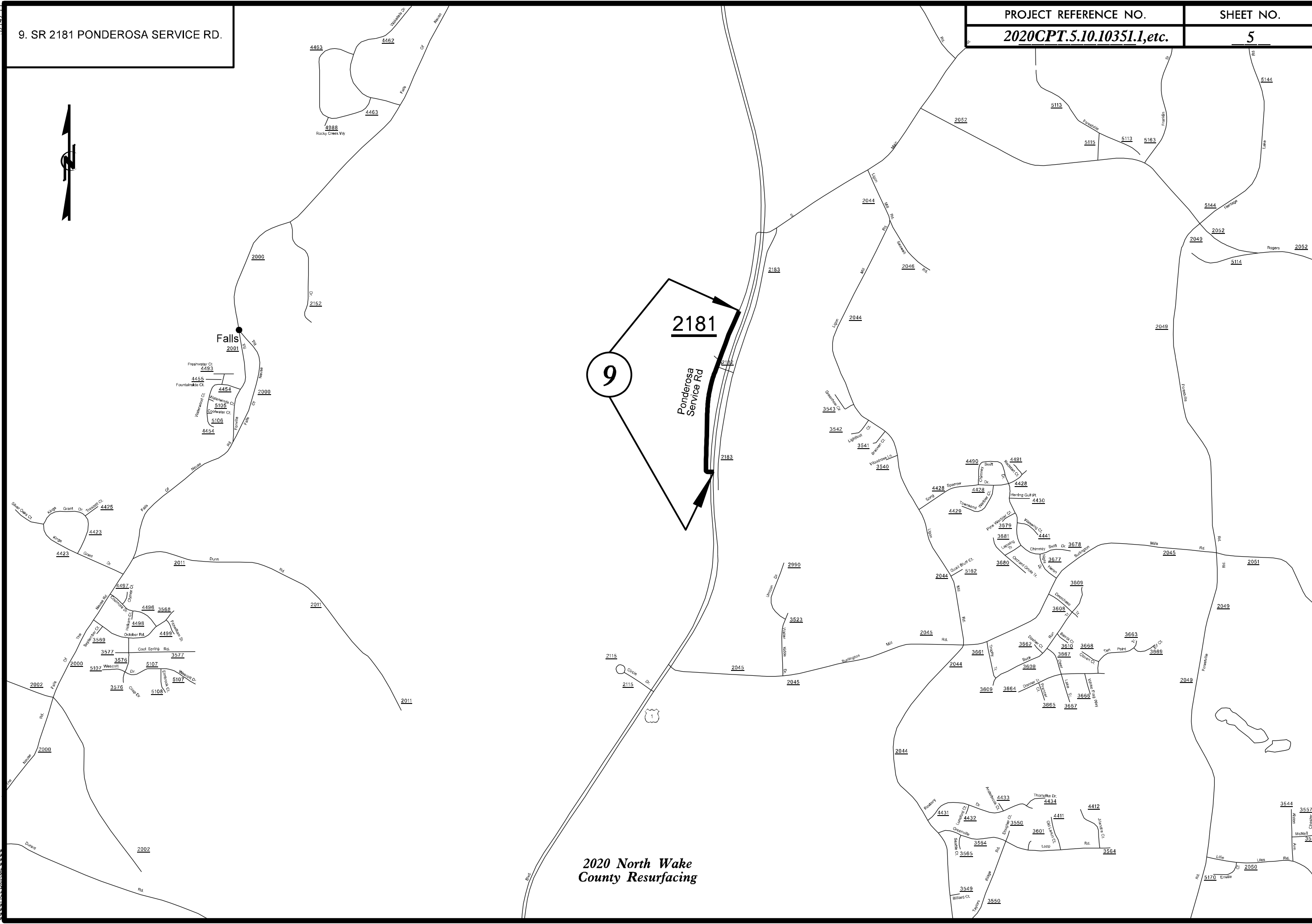
2181

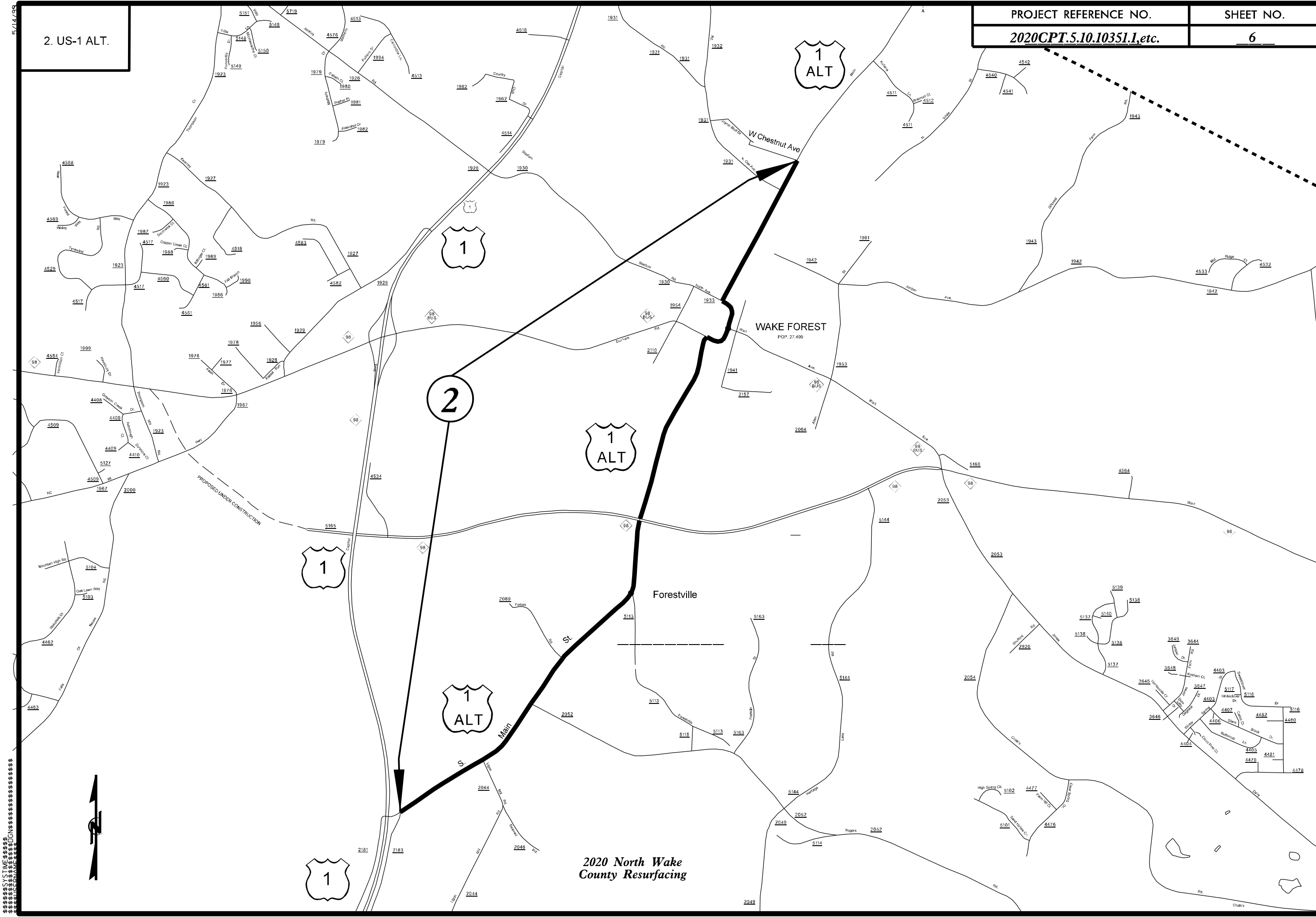
9

Ponderosa Service Rd

2020 North Wake County Resurfacing

SECTION 5.10.10351.1, etc.





2020 North Wake County Resurfacing

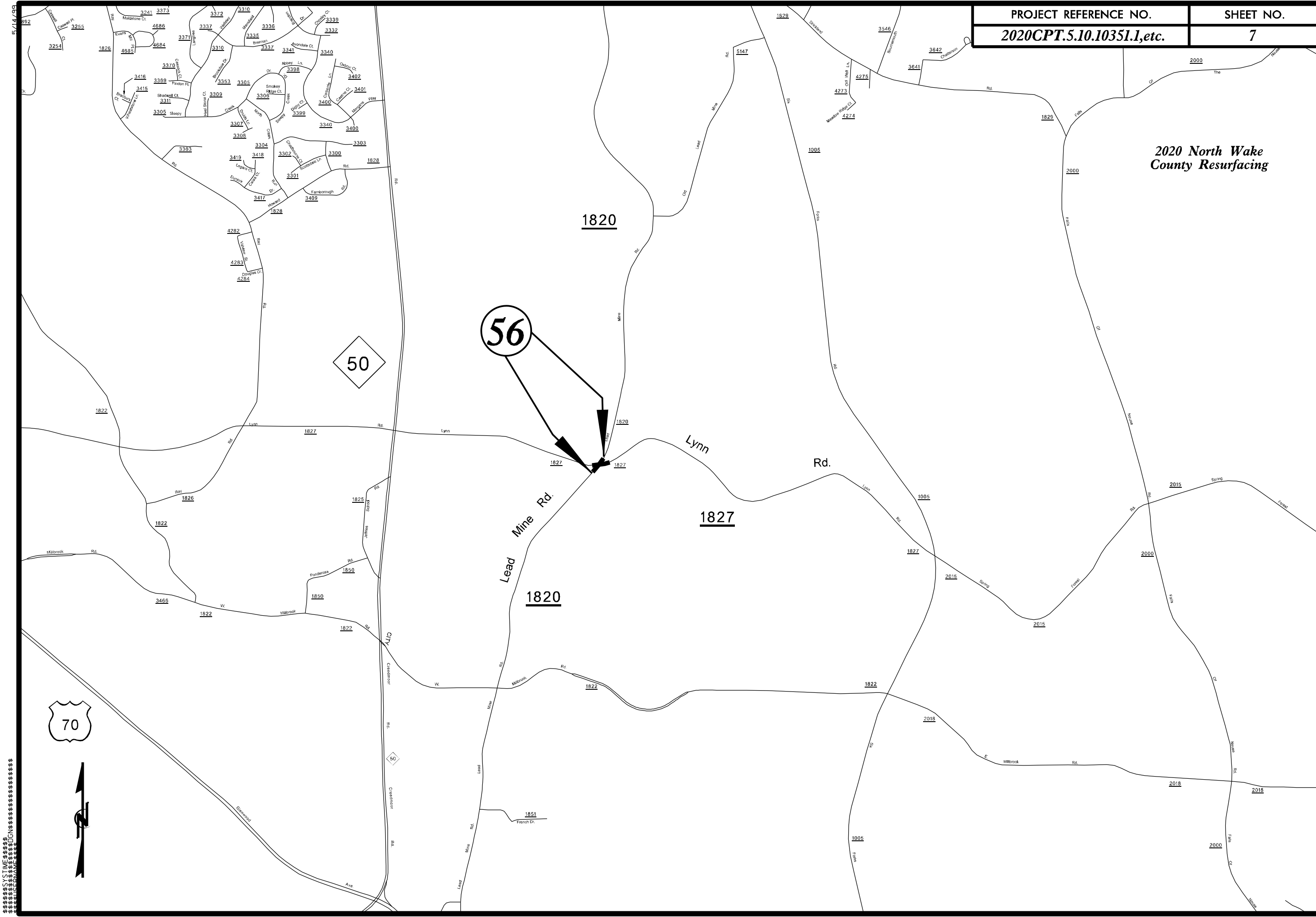
SECTION 5.10.10351.1, etc.

**2020 North Wake County Resurfacing**

**56**

**50**

**70**



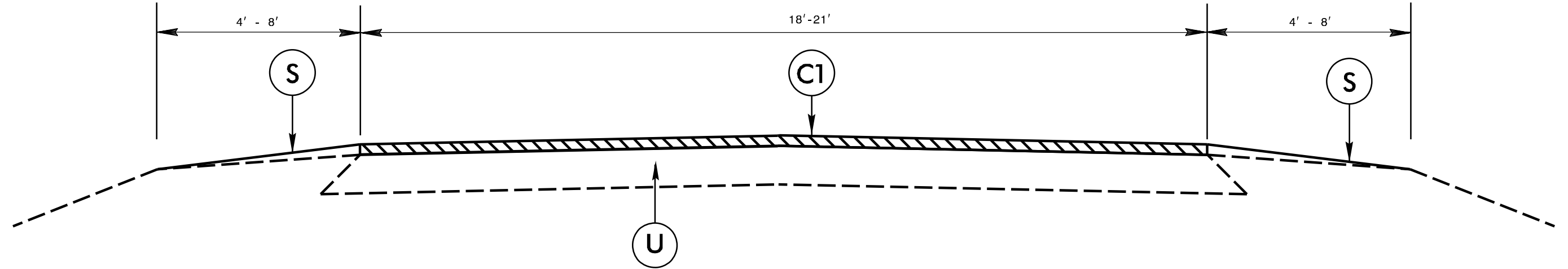
SECTION 5.10.10351.1, etc.

**PAVEMENT SCHEDULE**

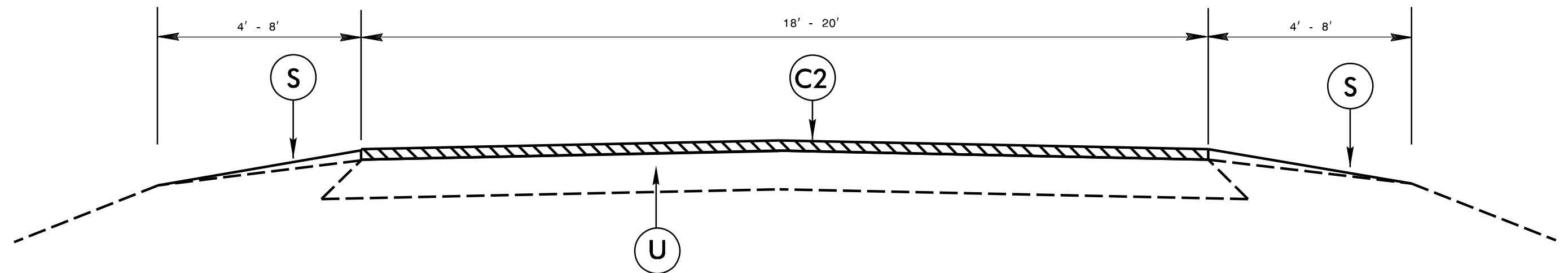
PROJECT REFERENCE NO.  
2020CPT.05.10.10351.1, etc.

SHEET NO.  
8

		S	SHOULDER GRADING ASB REQUIRED (EXCEPT AT RESIDENTIAL AREAS)
C1	1" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD.	U	EXISTING PAVEMENT
C2	1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.	V1	1 1/2" MILLING
C3	1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.	V2	0"-1 1/2" MILLING
C4	1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	V3	1 1/4" MILLING



TYPICAL SECTION NO. 1



TYPICAL SECTION NO. 2



**PAVEMENT SCHEDULE**

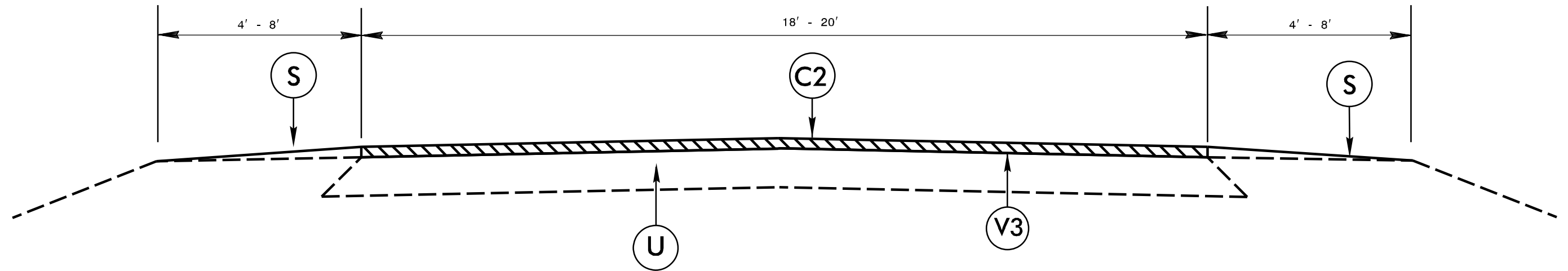
PROJECT REFERENCE NO.

SHEET NO.

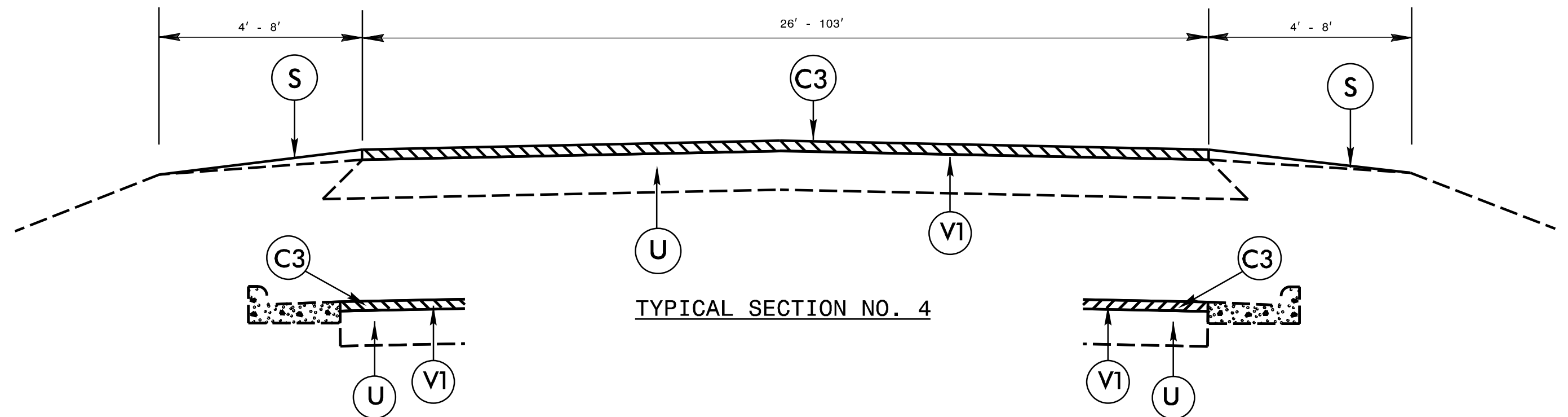
2020CPT.05.10.10351.1, etc.

9

		S	SHOULDER GRADING ASB REQUIRED (EXCEPT AT RESIDENTIAL AREAS)
C1	1" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD.	U	EXISTING PAVEMENT
C2	1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.	V1	1 1/2" MILLING
C3	1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.	V2	0"-1 1/2" MILLING
C4	1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	V3	1 1/4" MILLING



TYPICAL SECTION NO. 3



TYPICAL SECTION NO. 4

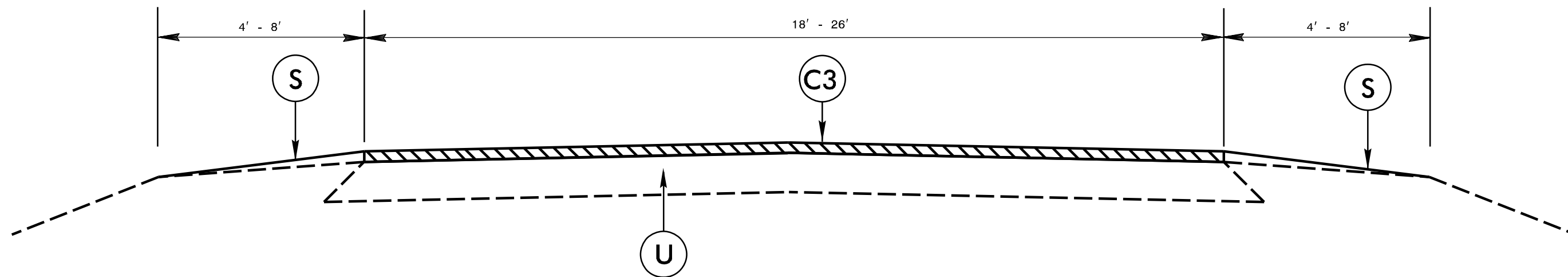
PAVEMENT SCHEDULE

S SHOULDER GRADING  
ASB REQUIRED (EXCEPT AT RESIDENTIAL AREAS)

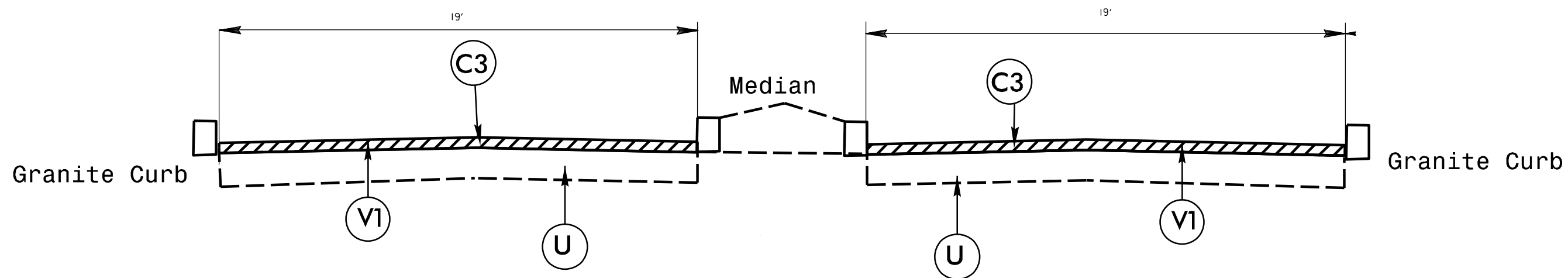
PROJECT REFERENCE NO.  
2020CPT.05.10.10351.1, etc.

SHEET NO.  
10

C1	1" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD.	U	EXISTING PAVEMENT
C2	1¼" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.	V1	1½" MILLING
C3	1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.	V2	0"-1½" MILLING
C4	1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	V3	1 1/4" MILLING



TYPICAL SECTION NO. 5



TYPICAL SECTION NO. 6

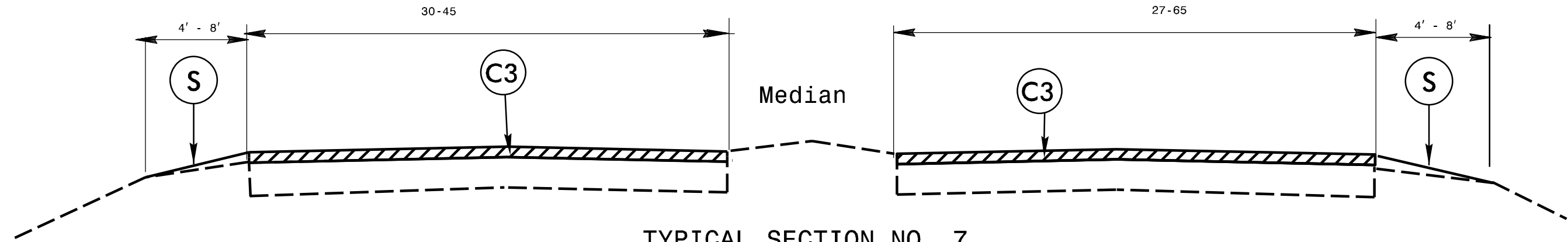
only for map 2

**PAVEMENT SCHEDULE**

PROJECT REFERENCE NO.  
2020CPT.05.10.10351.1, etc.

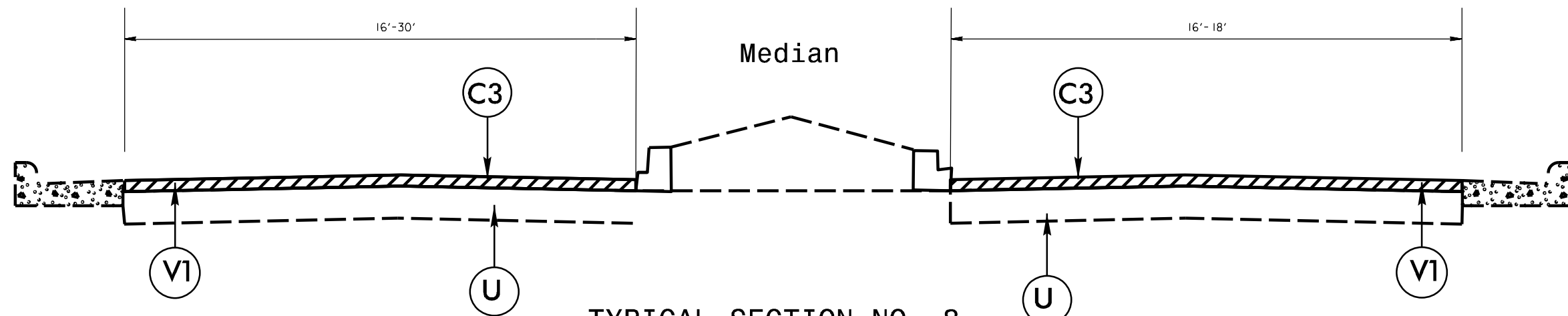
SHEET NO.  
11

	S	SHOULDER GRADING ASB REQUIRED (EXCEPT AT RESIDENTIAL AREAS)
C1	U	EXISTING PAVEMENT
C2	V1	1½" MILLING
C3	V2	0"-1½" MILLING
C4	V3	1 1/4" MILLING



TYPICAL SECTION NO. 7

only for map 3



TYPICAL SECTION NO. 8

Mill & Fill 0.08 Mile only, from map 34

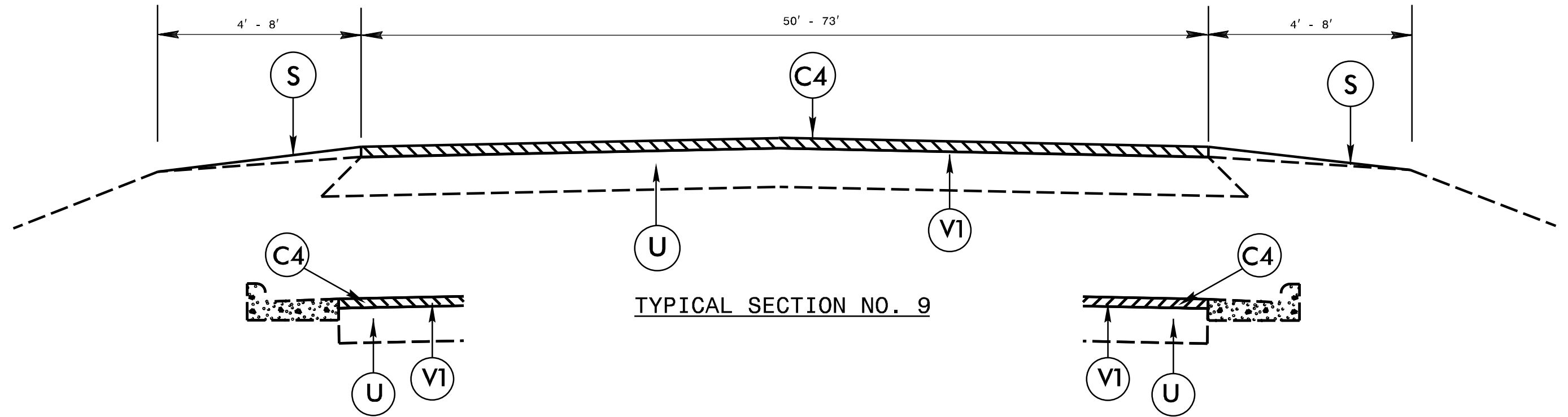
PAVEMENT SCHEDULE

S SHOULDER GRADING  
ASB REQUIRED (EXCEPT AT RESIDENTIAL AREAS)

PROJECT REFERENCE NO.  
2020CPT.05.10.10351.1, etc.

SHEET NO.  
12

C1	1" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD.	U	EXISTING PAVEMENT
C2	1¼" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.	V1	1½" MILLING
C3	1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.	V2	0"-1½" MILLING
C4	1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	V3	1 1/4" MILLING



**PAVEMENT SCHEDULE**

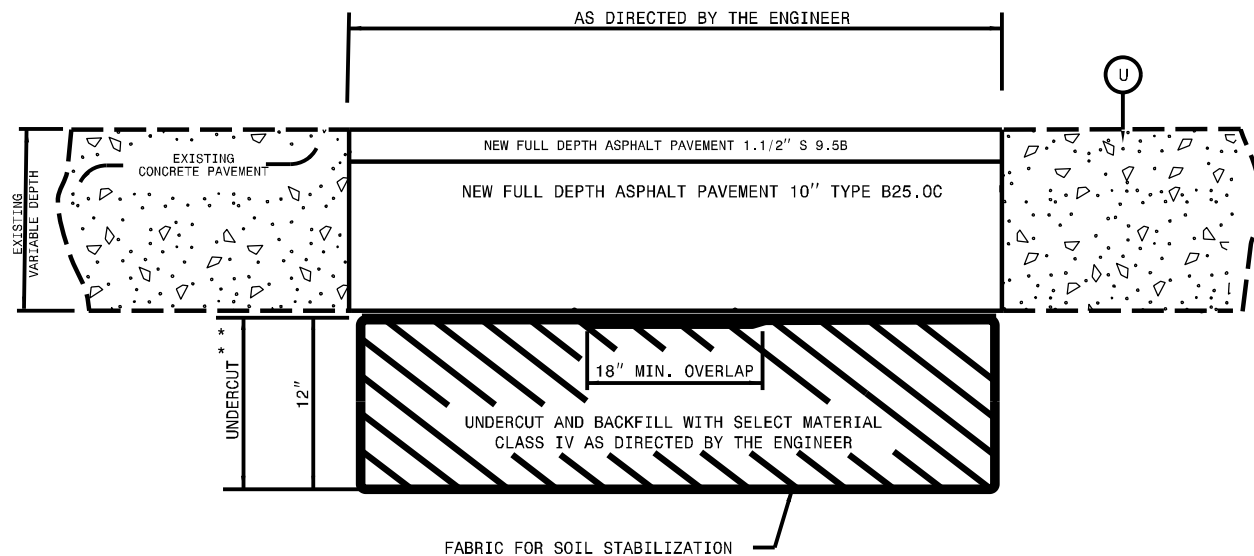
		S	SHOULDER GRADING ASB REQUIRED (EXCEPT AT RESIDENTIAL AREAS)
C1	1" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD.	U	EXISTING PAVEMENT
C2	1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.	V1	1 1/2" MILLING
C3	1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.	V2	0"-1 1/2" MILLING
C4	1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	V3	1 1/4" MILLING

PROJECT REFERENCE NO.  
*2020CPT.05.10.10351.1, etc.*

SHEET NO.  
*13*

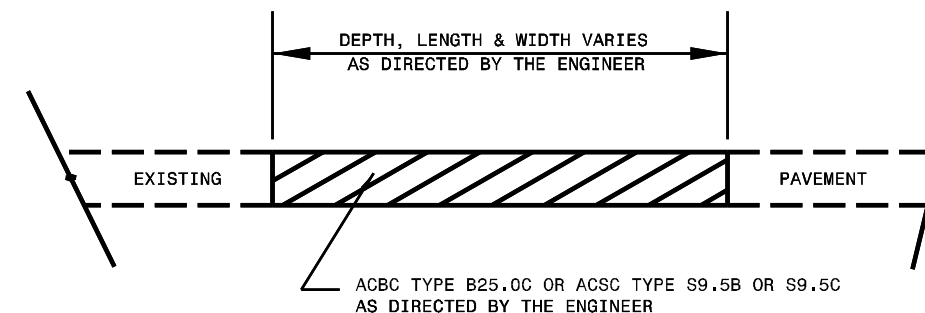
NOTES

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

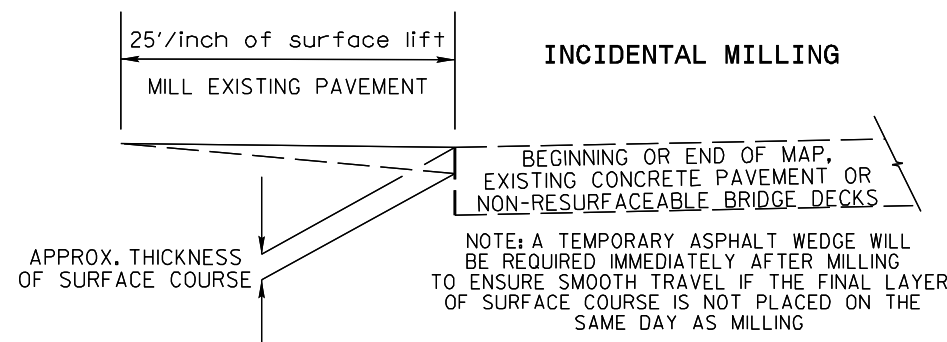


**CROSS SECTION OF EXISTING CONCRETE SLAB REPAIR**  
only for map # 5 & 7

\* DIMENSIONS ARE APPROXIMATE AND SHOULD BE FIELD VERIFIED  
\*\* UNDERCUT REQUIRED IN AREAS AS DIRECTED BY THE ENGINEER

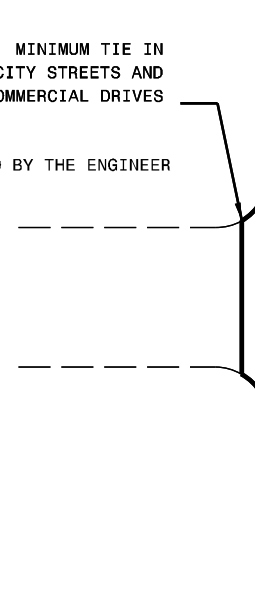


**PATCHING EXISTING PAVEMENT**  
MILLING TO BE PERFORMED PRIOR TO PATCHING



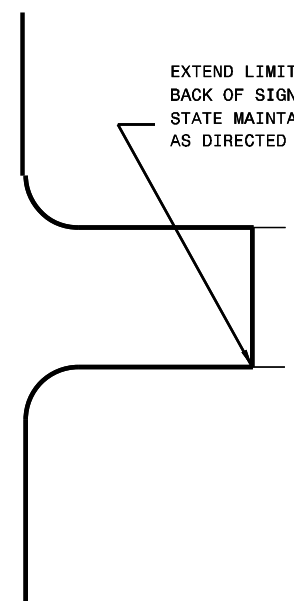
**INCIDENTAL MILLING**

MINIMUM TIE IN  
ON CITY STREETS AND  
COMMERCIAL DRIVES  
AS DIRECTED BY THE ENGINEER



**DETAIL OF PROJECT LIMITS AT  
SIGNALIZED Y LINES**

EXTEND LIMITS TO  
BACK OF SIGNAL LOOPS ON  
STATE MAINTAINED ROADS  
AS DIRECTED BY THE ENGINEER

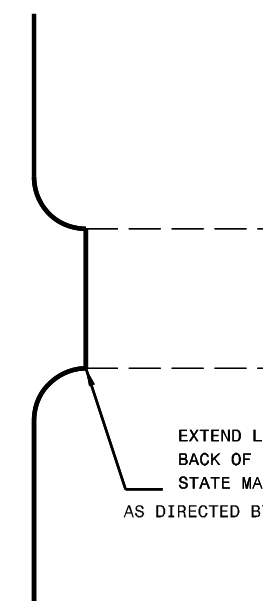


MINIMUM TIE IN  
ON CITY STREETS AND  
COMMERCIAL DRIVES  
AS DIRECTED BY THE ENGINEER



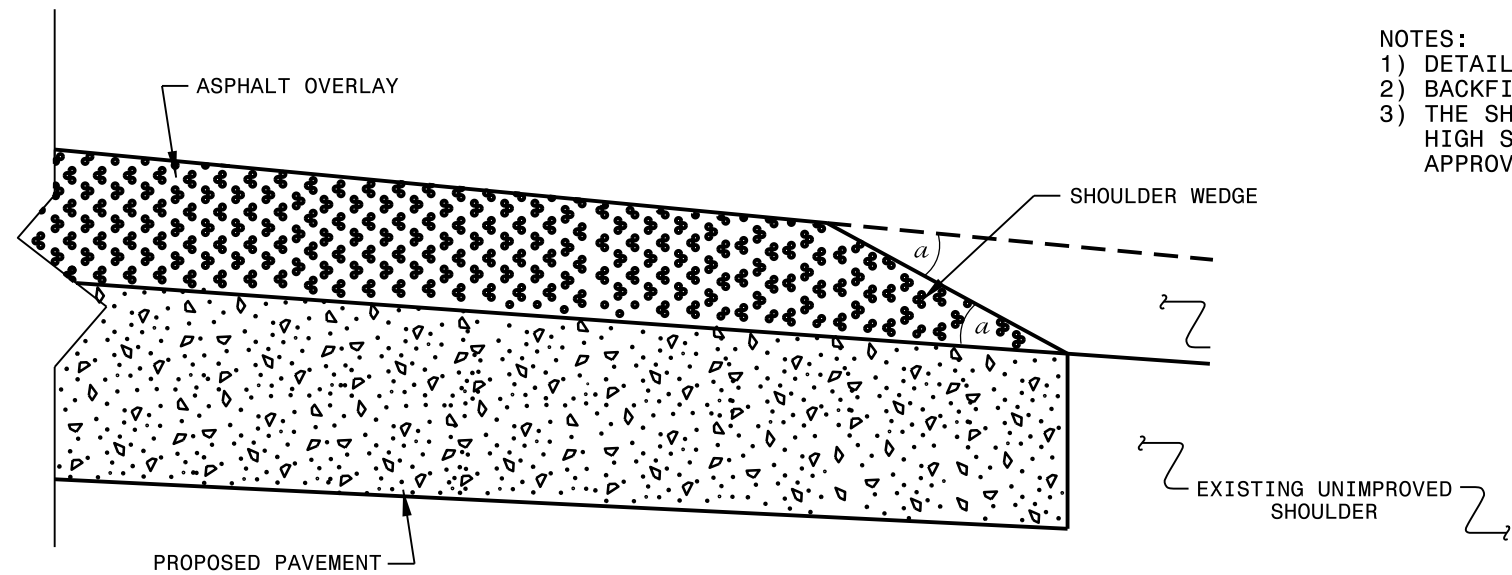
**DETAIL OF PROJECT LIMITS AT  
UNSIGNALIZED Y LINES**

EXTEND LIMITS TO  
BACK OF RADIUS ON  
STATE MAINTAINED ROADS  
AS DIRECTED BY THE ENGINEER

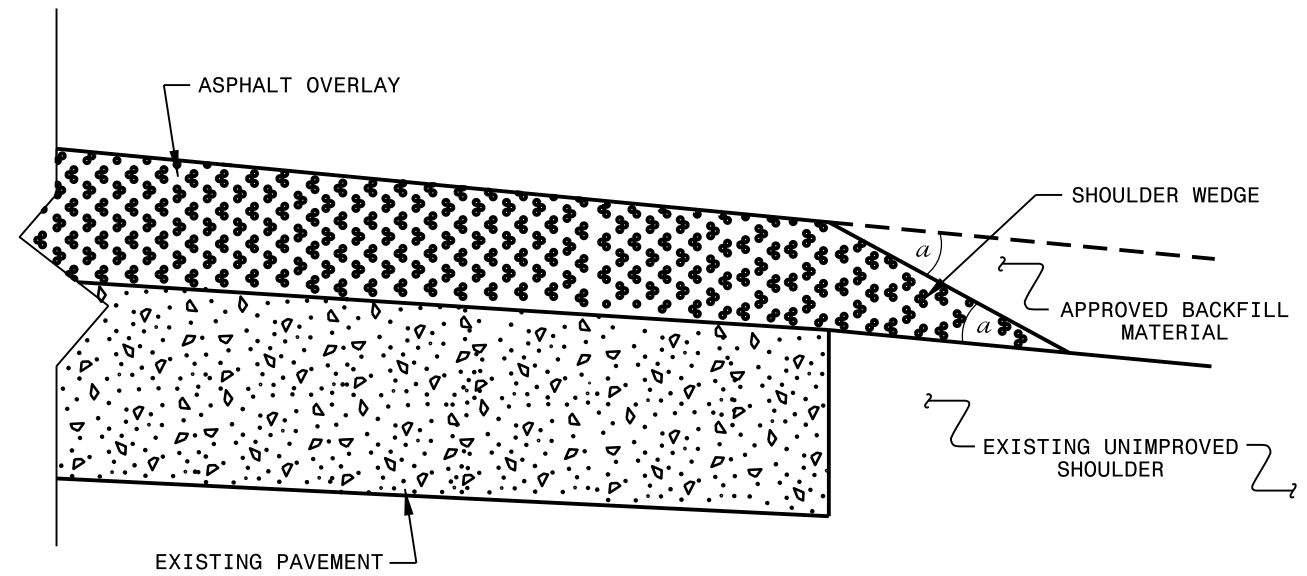


**NOTES:**

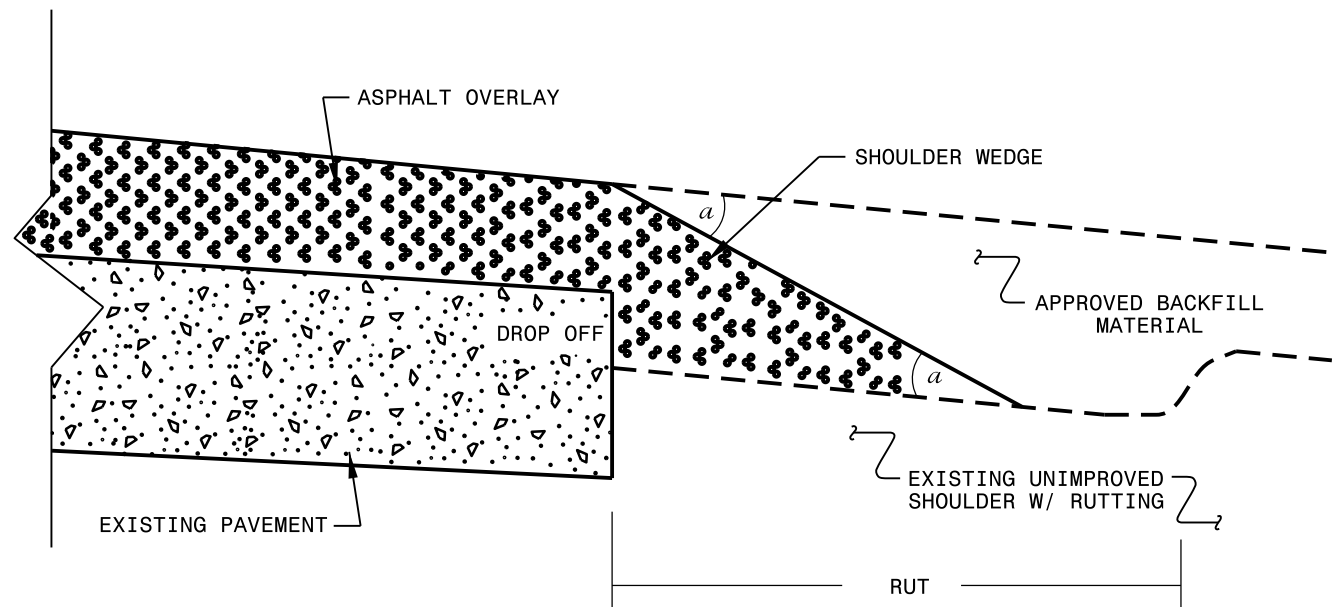
- 1) DETAIL DOES NOT APPLY TO OGAFB AND ULTRA-THIN BONDED WEARING COURSE.
- 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
- 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS, SIDE STREETS, HIGH SHOULDERS, AND OTHER LOCATIONS NOT FEASIBLE TO CONSTRUCT AS APPROVED BY THE ENGINEER.



**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°

<b>CONTRACT STANDARDS AND DEVELOPMENT UNIT</b>			
Office 919-707-6950		FAX 919-250-4119	
<b>SHOULDER WEDGE DETAILS</b>			
ORIGINAL BY: T.SPELL	DATE: 7-19-11		
MODIFIED BY:	DATE: 2/2/16		
CHECKED BY:	DATE:		
FILE SPEC.: susr/details/stand/shoulderwedgedetail.dgn			

SYSTEMS DESIGN  
USER NAME

### SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH	WIDTH	010600000-E	017000000-E	019600000-E	026400000-E	109950000-E	109970000-E	122000000-E	126000000-E	129700000-E	130800000-E	133000000-E	149100000-E	151900000-E	152300000-E	157500000-E	170400000-E	189100000-E	275200000-E	276200000-E	281500000-N	283000000-N	284500000-N	525500000-N	600000000-E	607101000-E	608400000-E	744400000-E	611700000-N				
											BORROW	REMOVAL OF EXISTING CONCRETE PAVEMENT SLABS	GEOTEXTILE FOR SOIL STABILIZATION	SHOULDER GRADING	SHALLOW UNDERCUT	CLASS IV SUBGRADE STABILIZATION	INCIDENTAL STONE BASE	AGGREGATE SHOULDER BORROW	1 1/2" MILLING	1.25" MILLING	0" TO 1.5" MILLING	INCIDENTAL MILLING	BASE COURSE B25.0C	SURFACE COURSE, S9.5B	SURFACE COURSE, S9.5C	ASPHALT BINDER FOR PLANT MIX	PATCHING EXISTING PAVEMENT	PATCHING CONCRETE PAVEMENT SPALLS	REMOVE AND REPLACE 2' - 6" CURB & GUTTER	HOT POURED RUBBER ASPHALT JOINT SEALER, TYPE 1	ADJUST DROP INLET	ADJUST MANHOLES	ADJUST METER OR VALVE BOX	PORTABLE LIGHTING	TEMPORARY SILT FENCE	WATTLE	SEED & MULCHING	INDUCTIVE LOOP SAWCUT	RESPONSE FOR EROSION CONTROL			
									MI	FT	CY	SY	SY	SMI	CY	TON	TONS	TON	SY	SY	SY	SY	TONS	TONS	TONS	TON	TONS	SY	LF	LB	EA	EA	EA	LS	LF	LF	AC	LF	EA			
2020CPT.05.10.10351.1	Franklin	1	NC 98 - WAIT AVE	WAKE COUNTY TO US 401	4	2	NO	NO	1.11	26				2.22			56	205	17,925			75			1,624		109	70														
<b>TOTAL FOR PROJ NO. 2020CPT.05.10.10351.1</b>									<b>1.11</b>					<b>2.22</b>		<b>56</b>	<b>205</b>	<b>17,925</b>			<b>75</b>			<b>1,624</b>		<b>109</b>	<b>70</b>															
2020CPT.05.10.10921.1	Wake	2	US - ALT1	US 1 TO W. CHESTNUT AVE	4	8	2	NO	NO	3.72	30	372		0.19			5		100,784			125			8,754		587	175					11	11	*	14	40	0.14				
		3	NC 98 - WAIT AVE	913' FROM SR 2053 JONES DAIRY RD TO FRANKLIN CO	5	8	2	NO	NO	3.945	26	45		8.12			203	421				217			6,453		432	500								295	740	2.95	818	1		
		<b>TOTAL FOR PROJ NO. 2020CPT.05.10.10921.1</b>									<b>7.665</b>		<b>417</b>		<b>8.31</b>		<b>208</b>	<b>421</b>	<b>100,784</b>			<b>342</b>			<b>15,207</b>		<b>1,019</b>	<b>675</b>					<b>11</b>	<b>11</b>	<b>*</b>	<b>309</b>	<b>780</b>	<b>3.09</b>	<b>818</b>	<b>1</b>		
2020CPT.05.10.10921.1	Wake	4	SR 4919 - VEASEY MILL RD	SR 3273 - WYNDFIELD CIR TO DEAD END	3	2	NO	NO	0.13	20	13			0.26			7			1,937					140		9	6								19	50	0.19				
		6	SR 1942 - OAK GROVE CHURCH RD	FRANKLIN CO TO SR 1943 - GILLCREST FARM RD	3	2	NO	NO	1.82	20	45			3.63				91	45		21,864		224			1,586		106	1,200							66	170	0.66				
		8	SR 2042 - FOX RD	US 401 - N MAIN ST	4	2	NO	NO	2.05	23	58			2.30				58	106	47,019			109			4,180		280	600				3	14			84	210	0.84			
		9	SR 2181 - PONDEROSA SERVICE RD	US 1 TO END MAINT	4	2	NO	NO	0.75	24				1.49				37	138	11,025			434			997		67	20													
		10	SR 3271 - MARTINDALE DR	SR 1005 - SIX FORKS RD TO CUL-DE-SAC	3	2	NO	NO	0.27	20	27			0.54				14									241		16							39	100	0.39				
		11	SR 3383 - TROTTERS RIDGE	SR 1005 - SIX FORKS RD TO CUL-DE-SAC	3	2	NO	NO	0.57	20	57			1.14				29									535		36	6			3		83	210	0.83					
		12	SR 3384 - PACER CT	SR 3383 - TROTTERS RIDGE TO CUL-DE-SAC	4	2	NO	NO	0.06	20	6			0.12				3		1,103			81				96		6				1		9	30	0.09					
		13	SR 3385 - HARNESS CI	SR 3383 - TROTTERS RIDGE TO CUL-DE-SAC	2	2	NO	NO	0.07	20	7			0.14				4					85				89		6	18			1		10	30	0.10					
		14	SR 3433 - MARTHAS WAY	DEAD END TO DEAD END	3	2	NO	NO	0.21	18	21			0.42				11			2,924					212		14							31	80	0.31					
		15	SR 3442 - GALLOP CT	SR 3383 - TROTTERS RIDGE TO CUL-DE-SAC	4	2	NO	NO	0.06	18	6			0.12				3		1,169			93				96		6						9	30	0.09					
		16	SR 3443 - BRIDLE LN	SR 3383 - TROTTERS RIDGE TO CUL-DE-SAC	4	2	NO	NO	0.1	20	10			0.20				5		1,674			125				146		10	4					15	40	0.15					
		17	SR 3492 - BYRUM WOODS DR	SR 1834 - NORWOOD RD TO SR 3496 - MATTLYN CT	4	2	NO	NO	0.6	20	60			1.20				30		7,079			263				617		41						87	220	0.87					
		18	SR 3493 - DAVENTRY LN	SR 3492 - BYRUM WOODS DR TO CUL-DE-SAC	4	2	NO	NO	0.19	18	19			0.38				10		2,338			44				170		11	20			4		28	70	0.28					
		19	SR 3494 - KENWICK CT	SR 3492 - BYRUM WOODS DR TO CUL-DE-SAC	4	2	NO	NO	0.06	20	6			0.11				3		1,001			44				87		6	6					8	30	0.08					
		20	SR 3495 - VESTRY WAY	CUL-DE-SAC TO CUL-DE-SAC	4	2	NO	NO	0.14	20	14			0.28				7		2,009			102				175		12				3		21	60	0.21					
		21	SR 3496 - MATTLYN CT	NC 50 TO CUL-DE-SAC	4	2	NO	NO	0.34	20	34			0.67				17		4,343			187				378		25					49	130	0.49						
		22	SR 3497 - JANSMITH LN	SR 1005 - SIX FORKS RD TO CUL-DE-SAC	4	2	NO	NO	0.28	20	28			0.56				14		3,619							315		21	6				41	110	0.41						
		23	SR 3498 - CLAIRBOURNE PL	CUL-DE-SAC TO CUL-DE-SAC	5	2	NO	NO	0.23	20	23			0.46				12					184				330		22					33	90	0.33						
		24	SR 3554 - KINGS ARMS WAY	SR 1829 - STRICKLAND RD TO CUL-DE-SAC	4	2	NO	NO	0.36	20	36			0.72				18		4,684			211				408		27	100				52	140	0.52						
		25	SR 3575 - CARPATHIAN WAY	SR 1005 - SIX FORKS RD TO CUL-DE-SAC	2	2	NO	NO	0.51	20	51			1.02				26									465		31	165				74	190	0.74						
		26	SR 3650 - TAYLOE CT	SR 3554 - KINGS ARMS WAY TO CUL-DE-SAC	4	2	NO	NO	0.2	20	20			0.40				10		2,768							241		16					29	80	0.29						
		27	SR 3651 - HIGHHILL RD	SR 3652 - JELLISSON CT TO SR 3653 - BERRY HILL CT	4	2	NO	NO	0.21	20	21			0.42				11		3,287							286		19					31	80	0.31						
		28	SR 3652 - JELLISSON CT	CUL-DE-SAC TO CUL-DE-SAC	4	2	NO	NO	0.1	20	10			0.20				5		2,148							187		13					15	40	0.15						
		29	SR 3653 - BERRY HILL CT	CUL-DE-SAC TO END OF MAINT	4	2	NO	NO	0.14	20	14			0.28				7		2,096							182		12					20	60	0.20						
		30	SR 3682 - ST STEPHAN CT	SR 3575 - CARPATHIAN WAY TO CUL-DE-SAC	4	2	NO	NO	0.05	20	5			0.10				3		963							84		6					7	20	0.07						
		31	SR 3849 - MARTINDALE DR	SR 1005 - SIX FORKS RD TO CUL-DE-SAC	3	2	NO	NO	0.11	18	22			0.22				6			1,556						113		8				1		16	40	0.16					

### SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH	WIDTH	0106000000-E	0170000000-E	0196000000-E	0264000000-E	1099500000-E	1099700000-E	1220000000-E	1260000000-E	1297000000-E	1308000000-E	1330000000-E	1491000000-E	1519000000-E	1523000000-E	1575000000-E	1704000000-E	1891000000-E	2752000000-E	2762000000-E	2815000000-N	2830000000-N	2845000000-N	5255000000-N	6000000000-E	6071010000-E	6084000000-E	7444000000-E	6117000000-N			
											BORROW	REMOVAL OF EXISTING CONCRETE PAVEMENT SLABS	GEOTEXTILE FOR SOIL STABILIZATION	SHOULDER GRADING	SHALLOW UNDERCUT	CLASS IV SUBGRADE STABILIZATION	INCIDENTAL STONE BASE	AGGREGATE SHOULDER BORROW	1 1/2" MILLING	1.25" MILLING	0" TO 1.5" MILLING	INCIDENTAL MILLING	BASE COURSE B25.0C	SURFACE COURSE, S9.5B	SURFACE COURSE, S9.5C	ASPHALT BINDER FOR PLANT MIX	PATCHING EXISTING PAVEMENT	PATCHING CONCRETE PAVEMENT SPALLS	REMOVE AND REPLACE 2' - 6" CURB & GUTTER	HOT POURED RUBBER ASPHALT JOINT SEALER, TYPE 1	ADJUST DROP INLET	ADJUST MANHOLES	ADJUST METER OR VALVE BOX	PORTABLE LIGHTING	TEMPORARY SILT FENCE	WATTLE	SEED & MULCHING	INDUCTIVE LOOP SAWCUT	RESPONSE FOR EROSION CONTROL		
											MI	FT	CY	SY	SY	SMI	CY	TON	TONS	TON	SY	SY	SY	SY	TONS	TONS	TONS	TON	TONS	SY	LF	LB	EA	EA	EA	LS	LF	LF	AC	LF	EA
				SR 3492 - BYRUM WOODS DR TO SR 1831 - OLD CREEDMOOR RD	4	2	NO	NO	0.37	20				0.74			18		4,719					411		28	65								54	140	0.54				
				SR 4228 - PATRIE PL TO SR 4229 - TWO ROBINS CT	4	2	NO	NO	0.03	20				0.05			1		752				65		4									4	10	0.04					
				SR 2006 DURANT RD TO SR 4495 BROKEN SOUND WAY	1&8	2	NO	NO	1.49	20				2.98			75		567				1,665		112	405								217	550	2.17			1		
				SR 4471 - WHITE CHAPEL WAY TO SR 4495 BROKEN SOUND WAY	3	2	NO	NO	0.76	20				1.52			38		8,949				649		44	170								111	280	1.11					
				SR 4471 - WHITE CHAPEL WAY TO CUL-DE-SAC	1	2	NO	NO	0.23	18				0.46			12						173		12	26								33	90	0.33					
				SR 4471 - WHITE CHAPEL WAY TO SR 2006 - DURANT RD	1	2	NO	NO	0.42	18				0.84			21						264		18	125								61	160	0.61					
				SR 4471 - WHITE CHAPEL WAY TO SR 4471 - WHITE CHAPEL WAY	1	2	NO	NO	0.39	20				0.78			39						269		18	20								57	150	0.57					
				SR 4474 - SHARPSTONE LN TO CUL-DE-SAC	5	2	NO	NO	0.14	18				0.28			7						159		11	50								20	60	0.20					
				SR 4472 - WHITE CHAPEL WAY TO CUL-DE-SAC	1	2	NO	NO	0.1	20				0.20			5						92		6	8								15	40	0.15					
				SR 1922 - CAMP KANATA RD TO SR 4527 - PORTMAROCK CT	3	2	NO	NO	0.25	20				0.50			12			3,034			181		15	5								36	100	0.36					
				SR 4527 - PORTMAROCK CT	3	2	NO	NO	0.15	20				0.29			7			1,760			128		9	5								31	60	0.21					
				SR 1942 - OAK GROVE CHURCH RD TO CUL-DE-SAC	4	2	NO	NO	0.23	20				0.46			12						224		15	24								34	90	0.34					
				SR 1005 - SIX FORKS RD TO CUL-DE-SAC	3	2	NO	NO	0.2	20				0.40			10						220		15									29	80	0.29					
				SR 1826 - RAY RD TO DEAD END	2	2	NO	NO	0.27	18				0.54			14						209		14	70								39	100	0.39					
				SR 4471 - WHITE CHAPEL WAY TO CUL-DE-SAC	1	2	NO	NO	0.03	20				0.06			2						38		3									4	20	0.04					
				SR 4471 - WHITE CHAPEL WAY TO CUL-DE-SAC	1	2	NO	NO	0.11	18				0.22			6						89		6	18								16	40	0.16					
				SR 4471 - WHITE CHAPEL WAY TO CUL-DE-SAC	1	2	NO	NO	0.07	18				0.14			4						65		4	10								10	30	0.10					
				SR 3575 - CARPATHIAN WAY TO CUL-DE-SAC	1	2	NO	NO	0.06	21				0.12			3						64		4	6								9	30	0.09					
				SR 1005 - SIX FORKS RD TO CUL-DE-SAC	3	2	NO	NO	0.42	20				0.84			21			5,489			222		398		27	6						61	160	0.61					
				SR 3273 - WYNDFIELD CIR TO SR 3275 - ALLISON DR	3	2	NO	NO	0.11	20				0.22			6			1,361			99		7									16	40	0.16					
				CUL-DE-SAC TO CUL-DE-SAC	3	2	NO	NO	0.36	20				0.72			18			4,640			337		23									52	140	0.52					
				SR 3275 - ALLISON DR TO CUL-DE-SAC	3	2	NO	NO	0.13	20				0.26			7			1,850			134		9									19	50	0.19					
				SR 3276 - CROSS CREEK RD TO CUL-DE-SAC	3	2	NO	NO	0.07	20				0.14			4			1,104			80		5									10	30	0.10					
				SR 3273 - WYNDFIELD CIR TO CUL-DE-SAC	3	2	NO	NO	0.43	20				0.86			22			5,501			399		27	6								63	160	0.63					
				AT SR 2015 - LYNN RD FROM BACK OF LOOPS TO BACK OF LOOPS ALL DIRECTIONS	9	2	NO	NO	0.066	50				0.08			1		2,266					454	27	82								*			0.05	2,260			
<b>TOTAL FOR PROJ NO. 2020CPT.05.10.20921.1</b>											<b>16.496</b>	<b>1,260</b>			<b>31.08</b>			<b>806</b>	<b>289</b>	<b>109,723</b>	<b>75,702</b>			<b>6,073</b>		<b>18,807</b>	<b>454</b>	<b>1,289</b>	<b>3,252</b>				<b>1</b>	<b>3</b>	<b>29</b>	<b>*</b>	<b>1,877</b>	<b>4,920</b>	<b>18.72</b>	<b>2,260</b>	<b>1</b>
				SR 1933 - NORTH AVE	2	NO	NO	0.15	32	15	1,103	1,103.10	0.02	339	678					641	167	570	263	60	615	4	47	1,080			2	1		1	10	0.01		1			
				SR 1954 - WINGATE ST	2	NO	NO	0.18	42		620	619.80	0.05	227	459	1	34			735		380	398	45	80			1,885			1	5									
<b>TOTAL FOR PROJ NO. 2020CPT.05.10.20922.1</b>											<b>0.33</b>	<b>15</b>	<b>1,723</b>	<b>1,722.90</b>	<b>0.07</b>	<b>566</b>	<b>1,137</b>	<b>1</b>	<b>34</b>			<b>1,376</b>	<b>167</b>	<b>950</b>	<b>661</b>	<b>105</b>	<b>695</b>	<b>4</b>	<b>47</b>	<b>2,965</b>			<b>3</b>	<b>6</b>		<b>1</b>	<b>10</b>	<b>0.01</b>		<b>1</b>	
<b>GRAND TOTAL</b>											<b>25.601</b>	<b>1,692</b>	<b>1,723</b>	<b>1,722.90</b>	<b>41.68</b>	<b>566</b>	<b>1,137</b>	<b>1,071</b>	<b>949</b>	<b>228,432</b>	<b>75,702</b>	<b>1,376</b>	<b>6,657</b>	<b>950</b>	<b>36,299</b>	<b>454</b>	<b>2,522</b>	<b>4,692</b>	<b>4</b>	<b>47</b>	<b>2,965</b>	<b>1</b>	<b>17</b>	<b>46</b>	<b>1</b>	<b>2,187</b>	<b>5,710</b>	<b>21.82</b>	<b>3,078</b>	<b>3</b>	





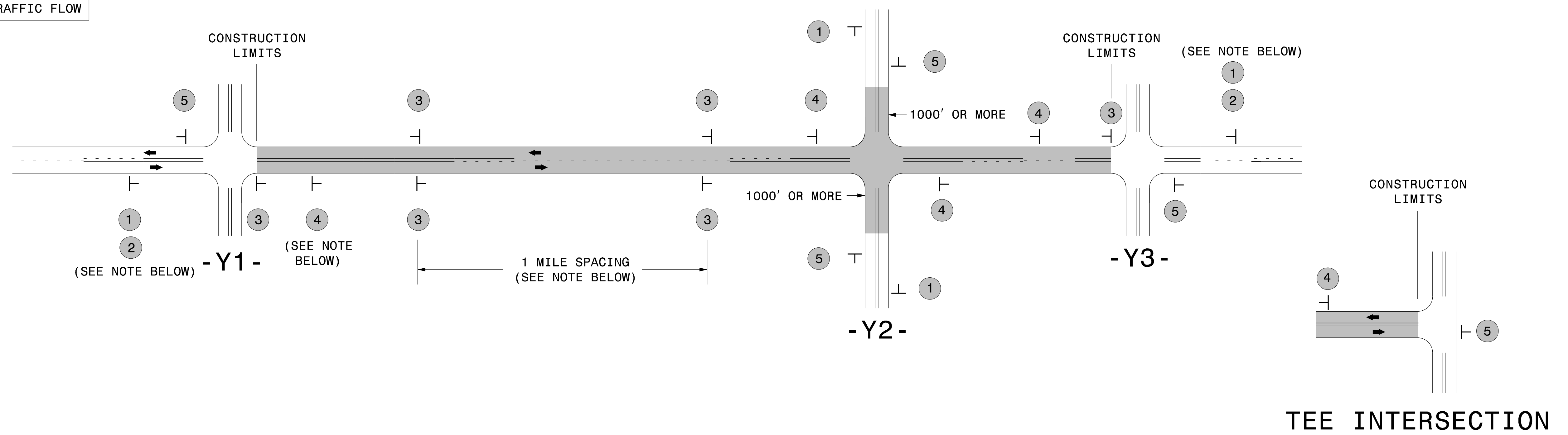


# SIGNING FOR RESURFACING PROJECTS

**LEGEND**

┆ STATIONARY SIGN

← DIRECTION OF TRAFFIC FLOW



## MAINLINE (-L-) SIGNING

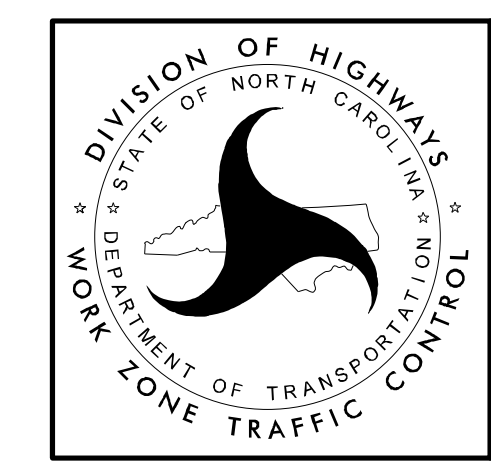
## -Y- LINE SIGNING

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

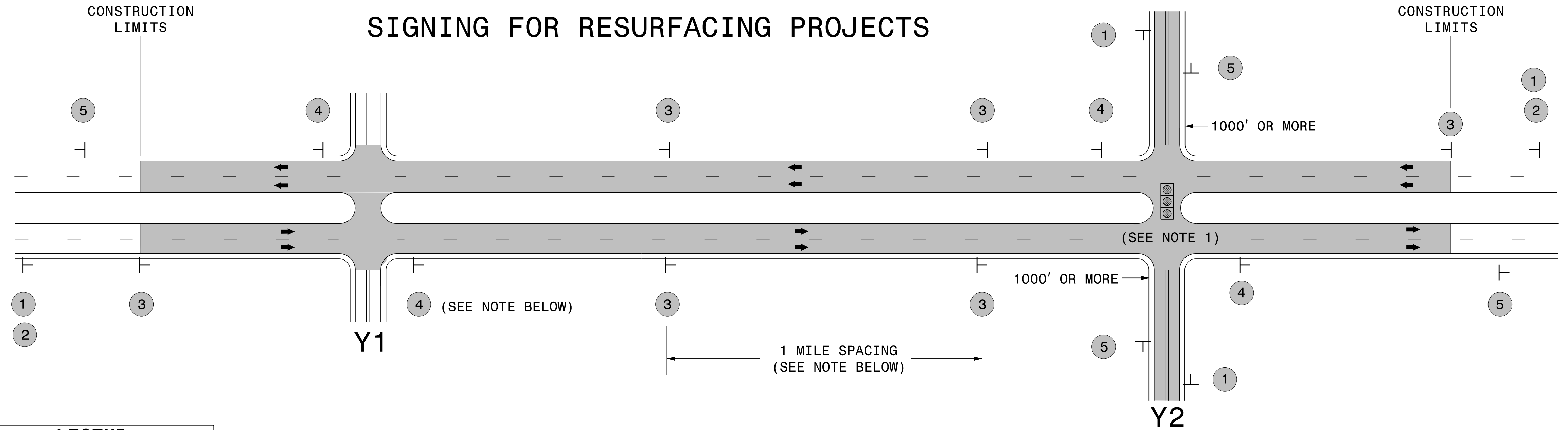
THE ABOVE SIGNS ARE ALL THAT ARE REQUIRED FOR A CONTRACTOR TO BEGIN A RESURFACING CONTRACT. ANY ADDITIONAL SIGNS REQUESTED BY NCDOT DIVISIONS SHALL BE INSTALLED WITHIN 7 BUSINESS DAYS OF THE START OF CONTRACT WORK.

### MAPS LESS THAN 2 MILES

FOR RESURFACING MAPS WITH CONSTRUCTION LIMITS LESS THAN 2 MILES IN LENGTH, NO STATIONARY SIGNS ARE REQUIRED. USE PORTABLE "ROAD UNDER CONSTRUCTION" OR "ROAD WORK AHEAD" SIGNS IN LIEU OF STATIONARY ADVANCE WARNINGS SIGNS.



ADVANCE WARNING SIGNS FOR RURAL AND SUBURBAN 2-LANE ROADWAY RESURFACING



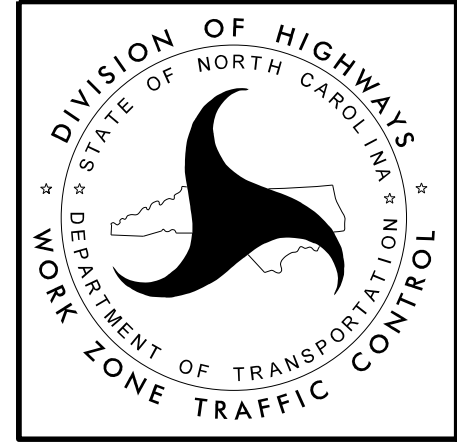
**LEGEND**  
 ┆ STATIONARY SIGN  
 ← DIRECTION OF TRAFFIC FLOW

**MAINLINE (-L-) SIGNING**

**-Y- LINE SIGNING**

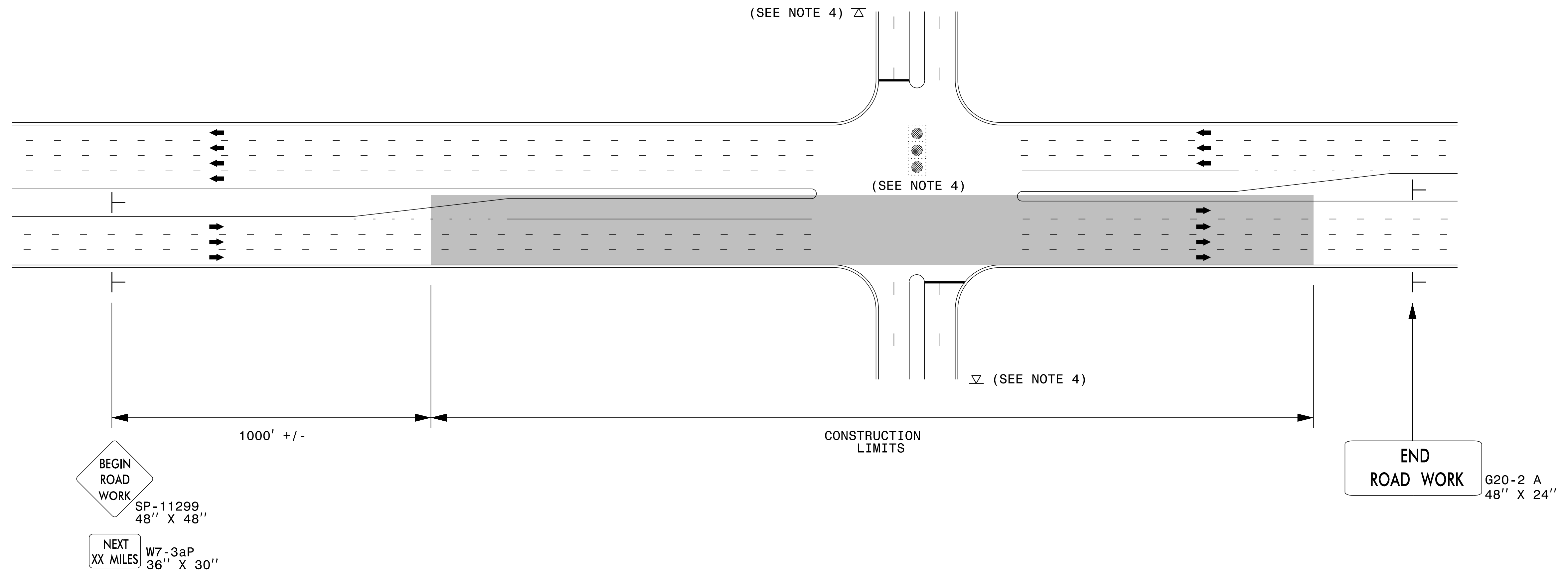
SIGNING NOTES AND PLACEMENT PER DIRECTION	1	 W20-1 48" X 48"	PLACE 1000' PRIOR TO BEGINNING OF CONSTRUCTION LIMITS. ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000' ALONG -Y- LINE.	<p><b>NO REQUIRED STATIONARY SIGNING FOR THE FOLLOWING -Y- LINE CONDITIONS:</b></p> <ol style="list-style-type: none"> <li>1) LESS THAN 1000' OF RESURFACING ALONG -Y- LINE</li> <li>2) SUBDIVISION ROADS</li> <li>3) DEAD END ROADS</li> </ol> <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> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">           W20-1          48" X 48"       </div> <div style="text-align: center;">           W20-7 A          48" X 48"       </div> </div> <p>PLACED 500' IN ADVANCE OF FLAGGER. PLACED 250' IN ADVANCE OF FLAGGER.</p> <p><b>NOTES:</b></p> <ol style="list-style-type: none"> <li>1) 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.</li> </ol>
	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	 SP 13107 48" X 48"	PLACE INITIALLY AT THE CONSTRUCTION LIMITS AND SPACED 1 MILE APART THEREAFTER. IF NO -Y- LINES EXIST, PLACE 2ND SET 1/2 MILE FROM THE CONSTRUCTION LIMITS AND THEN SPACE 1 MILE THEREAFTER.	
	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.	
	5	 G20-2 A 48" X 24"	PLACE 500' FOLLOWING THE END OF CONSTRUCTION LIMITS.	

3/23/2015  
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 User:rmgarrrett



**RESURFACING  
 ADVANCE WARNING SIGNS  
 FOR RURAL AND SUBURBAN  
 MULTI-LANE ROADWAYS  
 W/ SHOULDER SECTIONS**

## URBAN / SUBURBAN WORKZONES

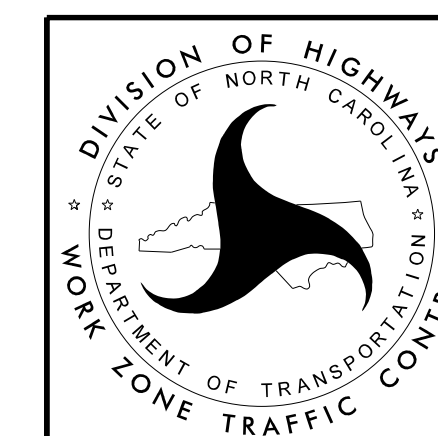


### NOTES:

- 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**

**DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA**

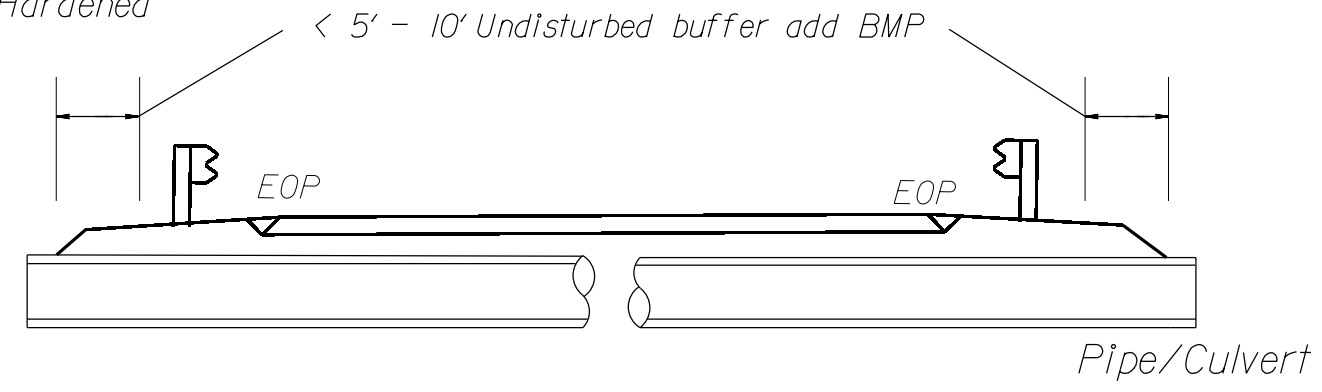
***SOIL STABILIZATION TIMEFRAMES***

<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
<b>PERIMETER DIKES, SWALES, DITCHES AND SLOPES</b>	<b>7 DAYS</b>	<b>NONE</b>
<b>HIGH QUALITY WATER (HOW) ZONES</b>	<b>7 DAYS</b>	<b>NONE</b>
<b>SLOPES STEEPER THAN 3:1</b>	<b>7 DAYS</b>	<b>IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.</b>
<b>SLOPES 3:1 OR FLATTER</b>	<b>14 DAYS</b>	<b>7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.</b>
<b>ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1</b>	<b>14 DAYS</b>	<b>NONE, EXCEPT FOR PERIMETERS AND HOW ZONES.</b>

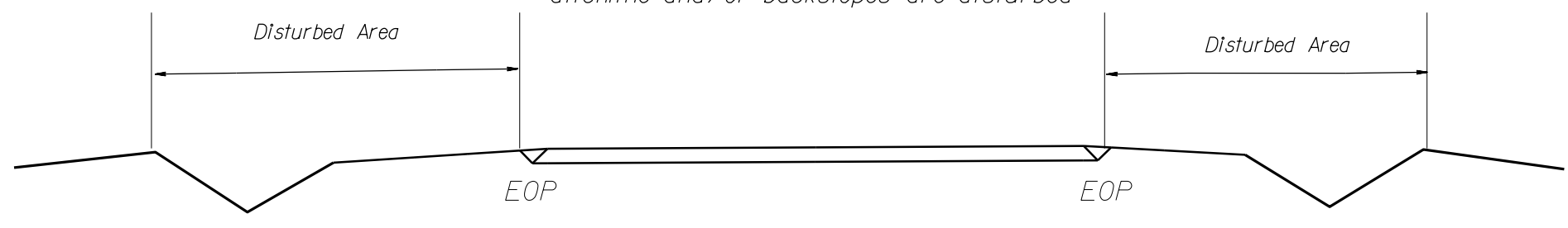
NOTES: Less than 5' - 10' undisturbed buffer from ROW, ditchline, water feature, or drainage inlet, add BMP.

# EROSION CONTROL DETAIL

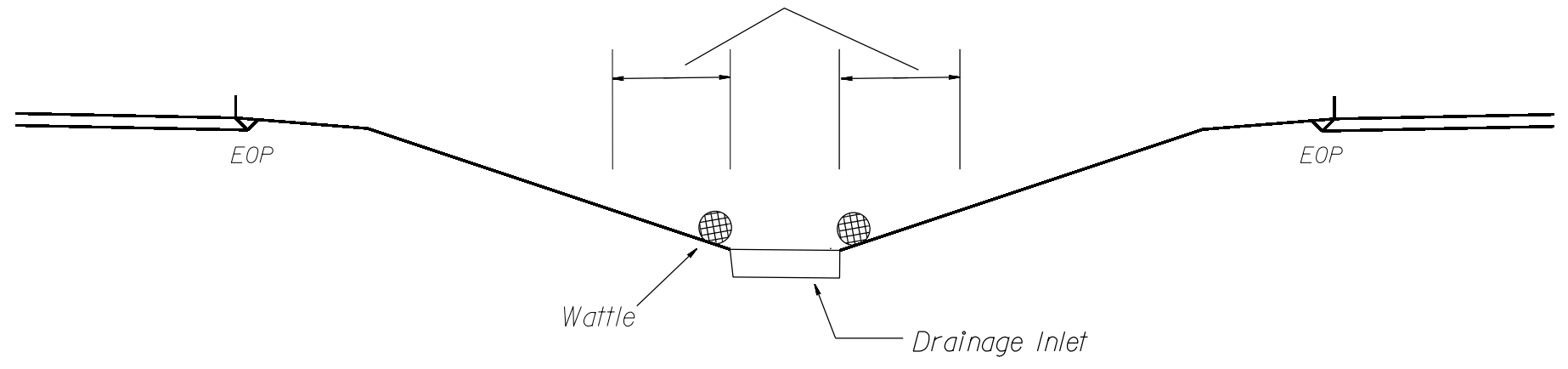
BMP Options: Wattle, Silt Fence or Hardened Aggregate.



Use BMP's if shoulders and/or front slopes and/or ditchline and/or backslopes are disturbed

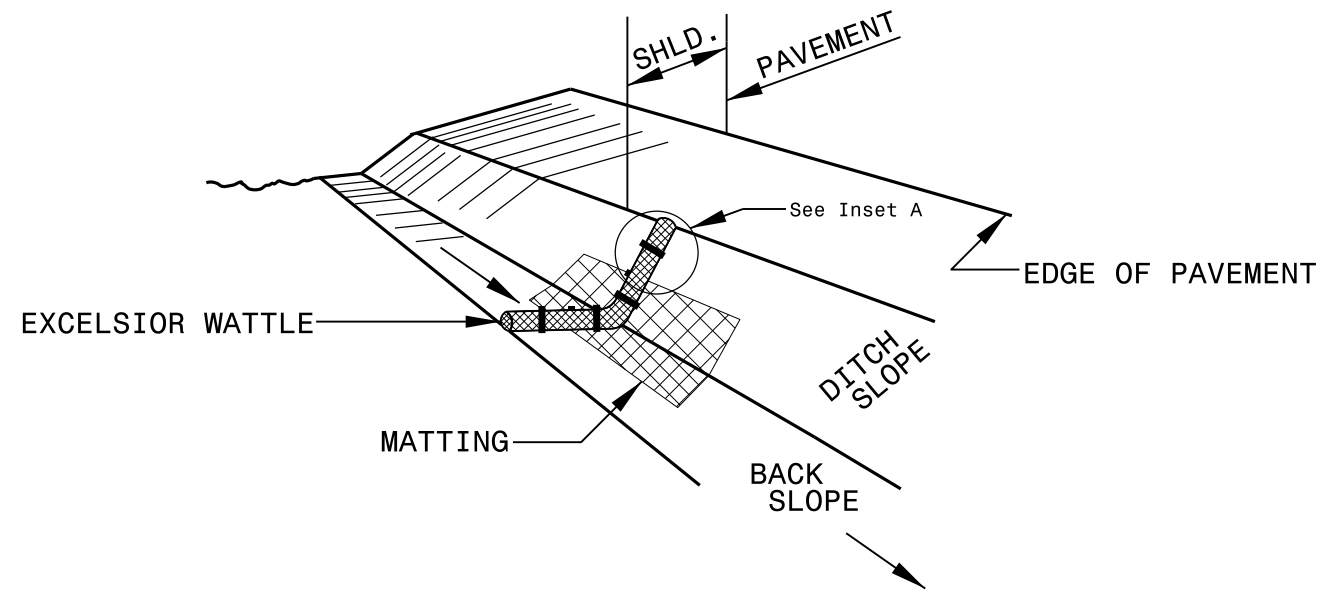


< 5' - 10' Undisturbed buffer from inlet, add wattle

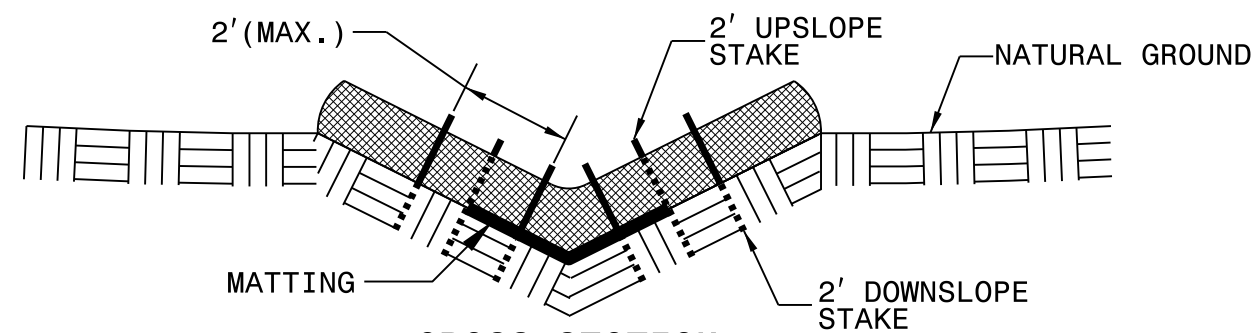


NOT TO SCALE

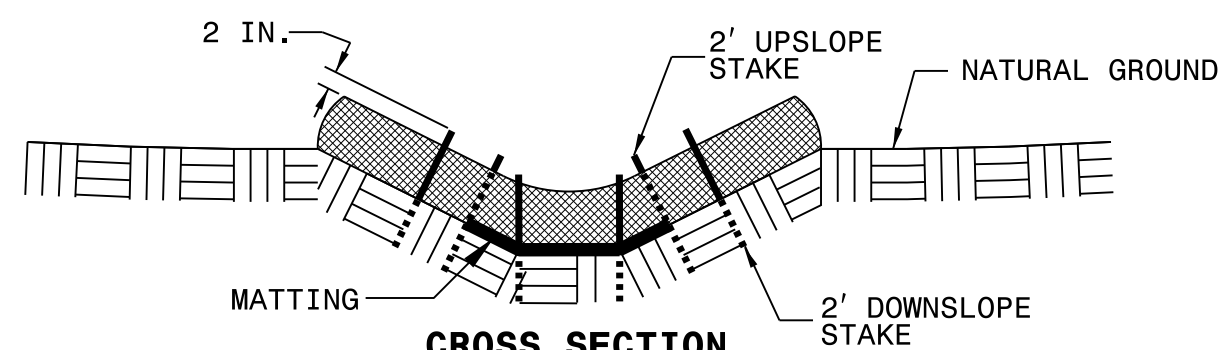
# WATTLE DETAIL



**ISOMETRIC VIEW**



**CROSS SECTION VEE DITCH**



**CROSS SECTION TRAPEZOIDAL DITCH**

**NOTES:**

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

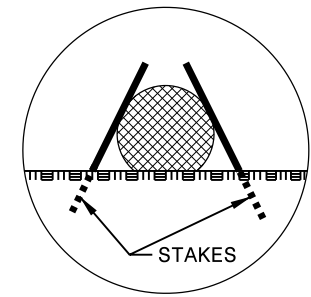
ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

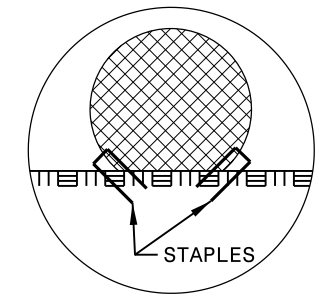
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

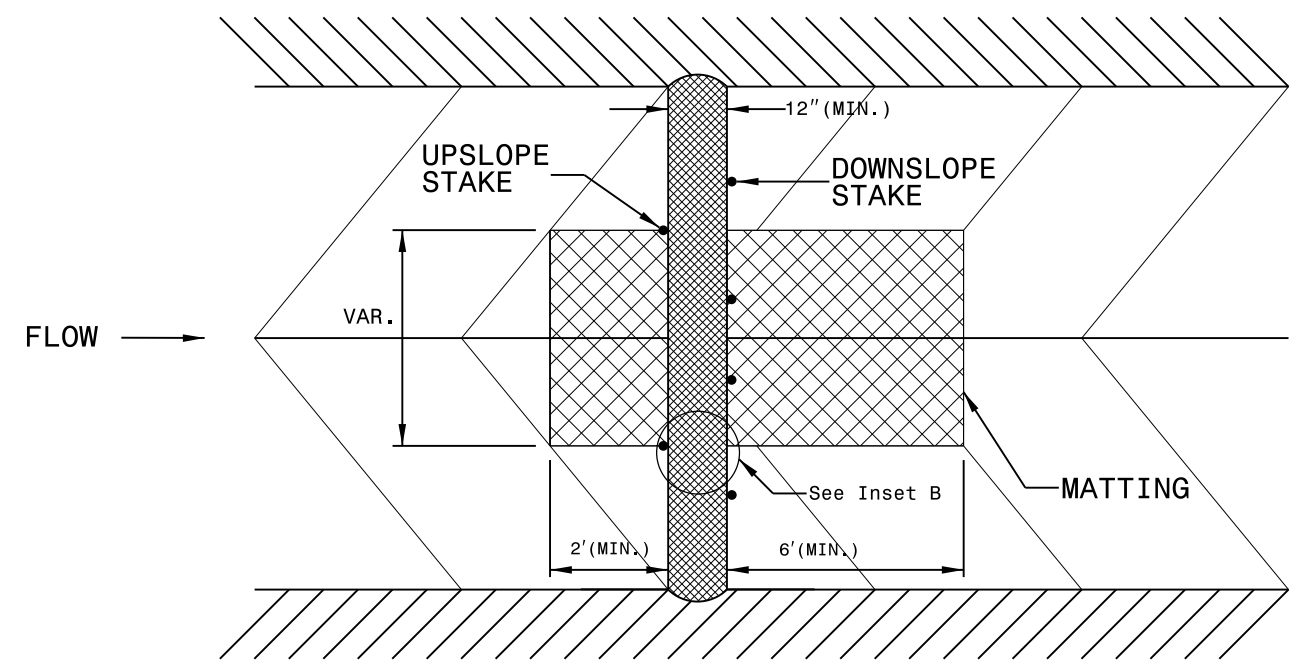
INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.



**INSET A**



**INSET B**



**TOP VIEW**



### 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)



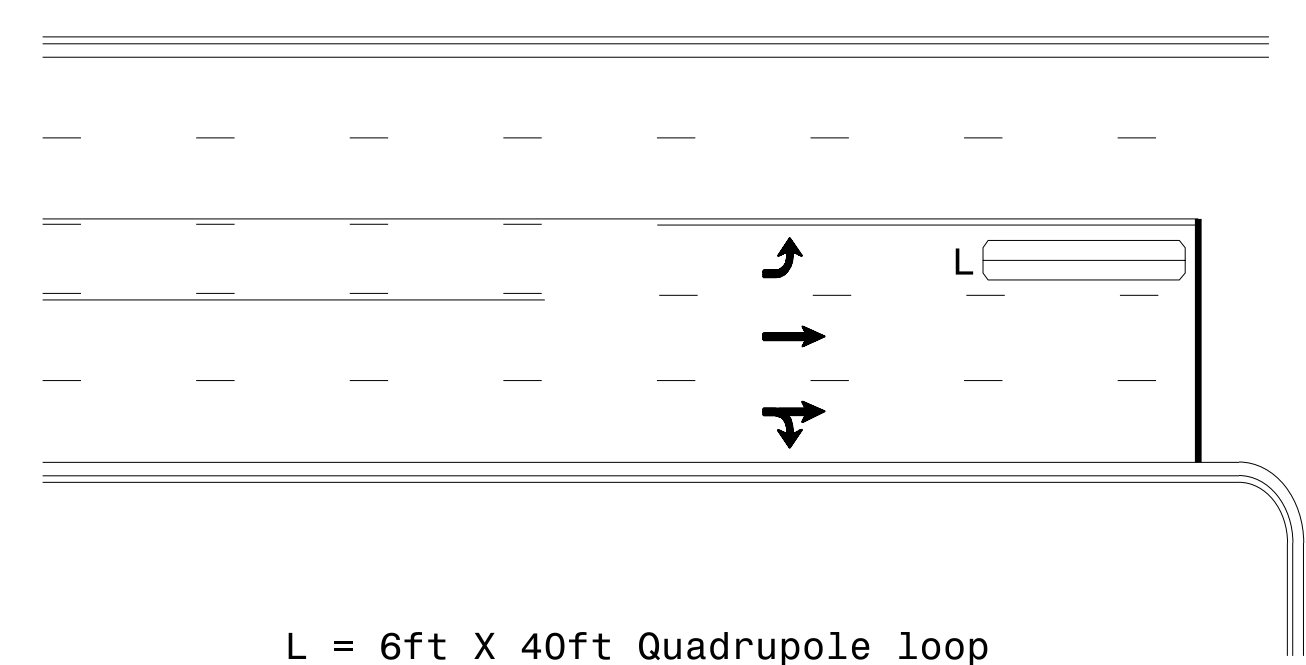
L = 6ft X 6ft  
Wired in series

OR



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

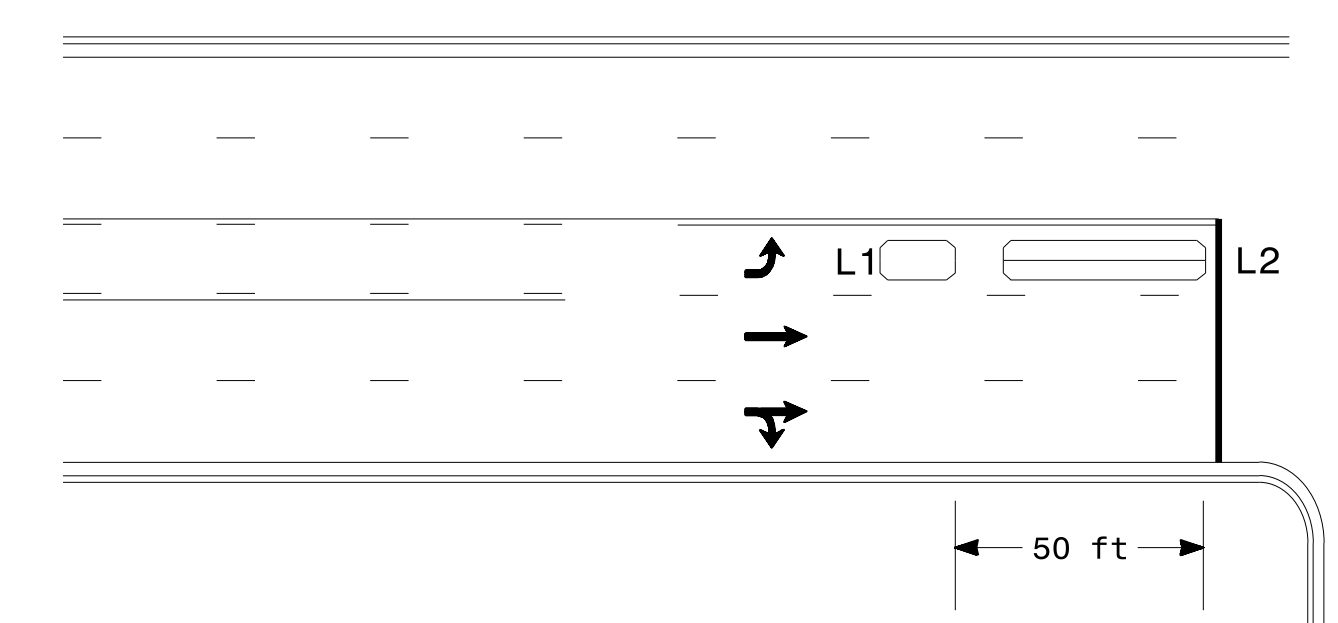
### Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

OR



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

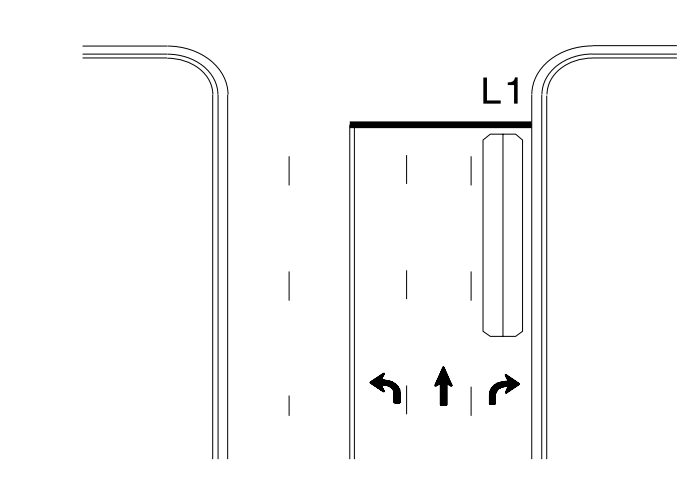
Queue Loop Detection

### Right Turn Lane Detection



Shared Lane/  
Wide Radius Turn

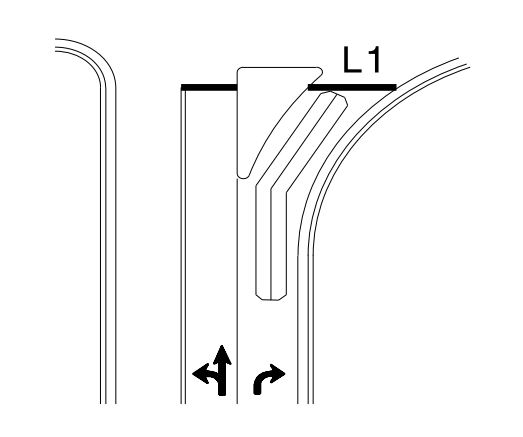
L1 = 6ft X 40ft Quadrupole loop  
L2 = 6ft X 6ft [Minimum] Presence loop  
Wired separately



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

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

SEAL  
NORTH CAROLINA  
PROFESSIONAL ENGINEER  
PAMELA L. ALEXANDER  
23489

DocuSigned by:  
*P. Alexander*  
1/30/2015 10:44:44 AM  
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SIG. INVENTORY NO.

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 paalexander