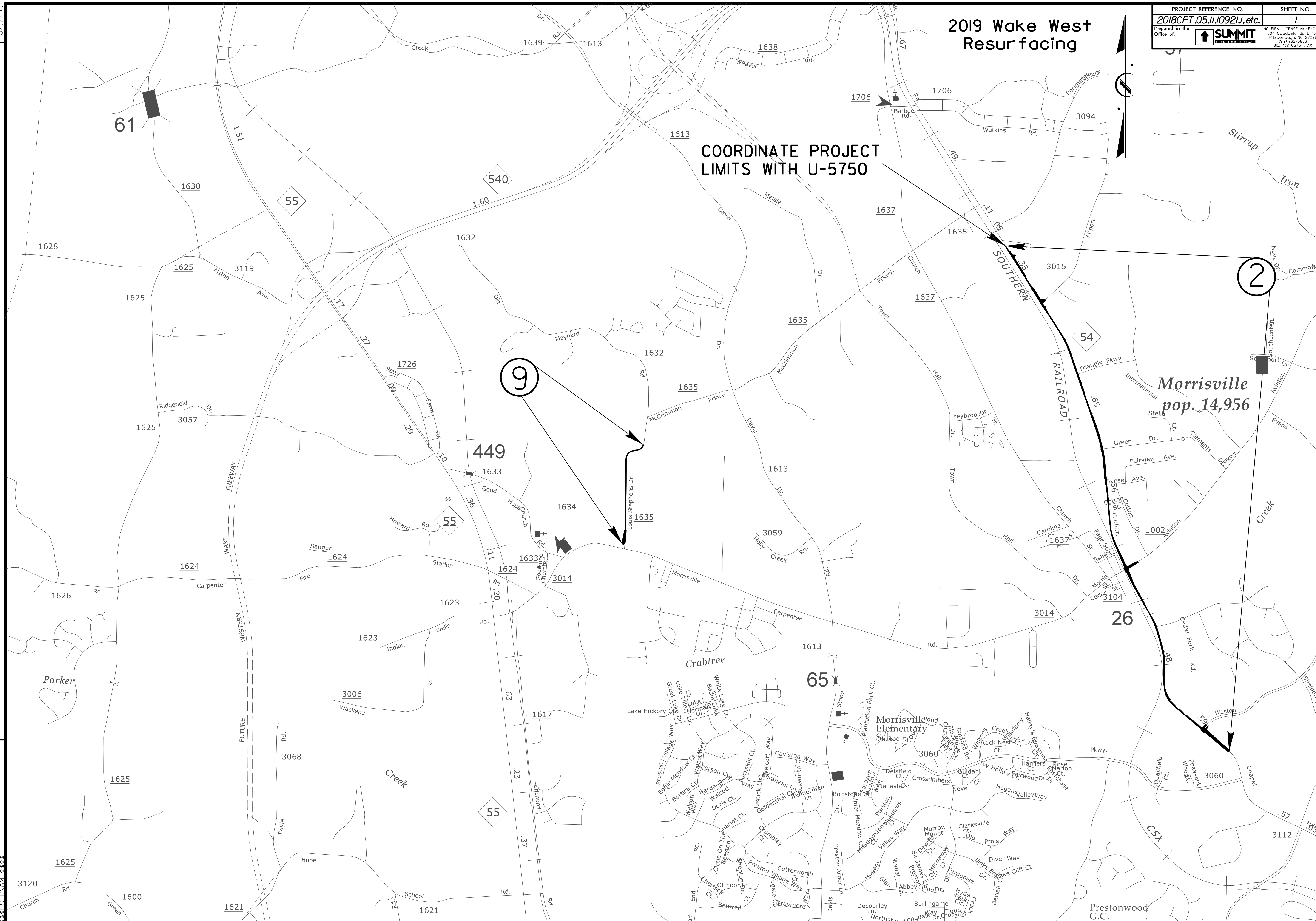
PROJECT REFERENCE NO.	SHEET NO.
2018CPT.05.11.10921.1, etc.	1

Prepared in the Office of: SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

2019 Wake West Resurfacing



2019 Wake West Resurfacing

PROJECT REFERENCE NO.	SHEET NO.
2018CPT.05.11.09211.etc.	2

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REVISIONS

8/17/99

07-DEC-2017 08:14
N:\Infrastructure Jobs\2017 Projects\17-0111.03 Wake West Resurfacing Design Roadway Proj\2019 Wake West Rdy.psh2.dgn
$$$$STRIPMAP$$$$

CARY
pop. 141,269

Weatherstone Site Sch.
Northwoods Elem.
West Cary Middle Sch.
Kingswood Elementary Sch.
Cary Elementary Sch.
Briarcliff Elementary Sch.
East Cary Middle Sch.
Adams Elementary Sch.
Cary High Sch.
Farmington Woods
Asbury
Richland
Mt. Vernon Redirection Sch.
LAKE JOHNSON

TRANSPORTATION CORPORATION
NORFOLK SOUTHERN RAILROAD
CXS TRANSPORTATION

PROJECT REFERENCE NO.	SHEET NO.
2018CPT.05.11.10921.1, etc.	3

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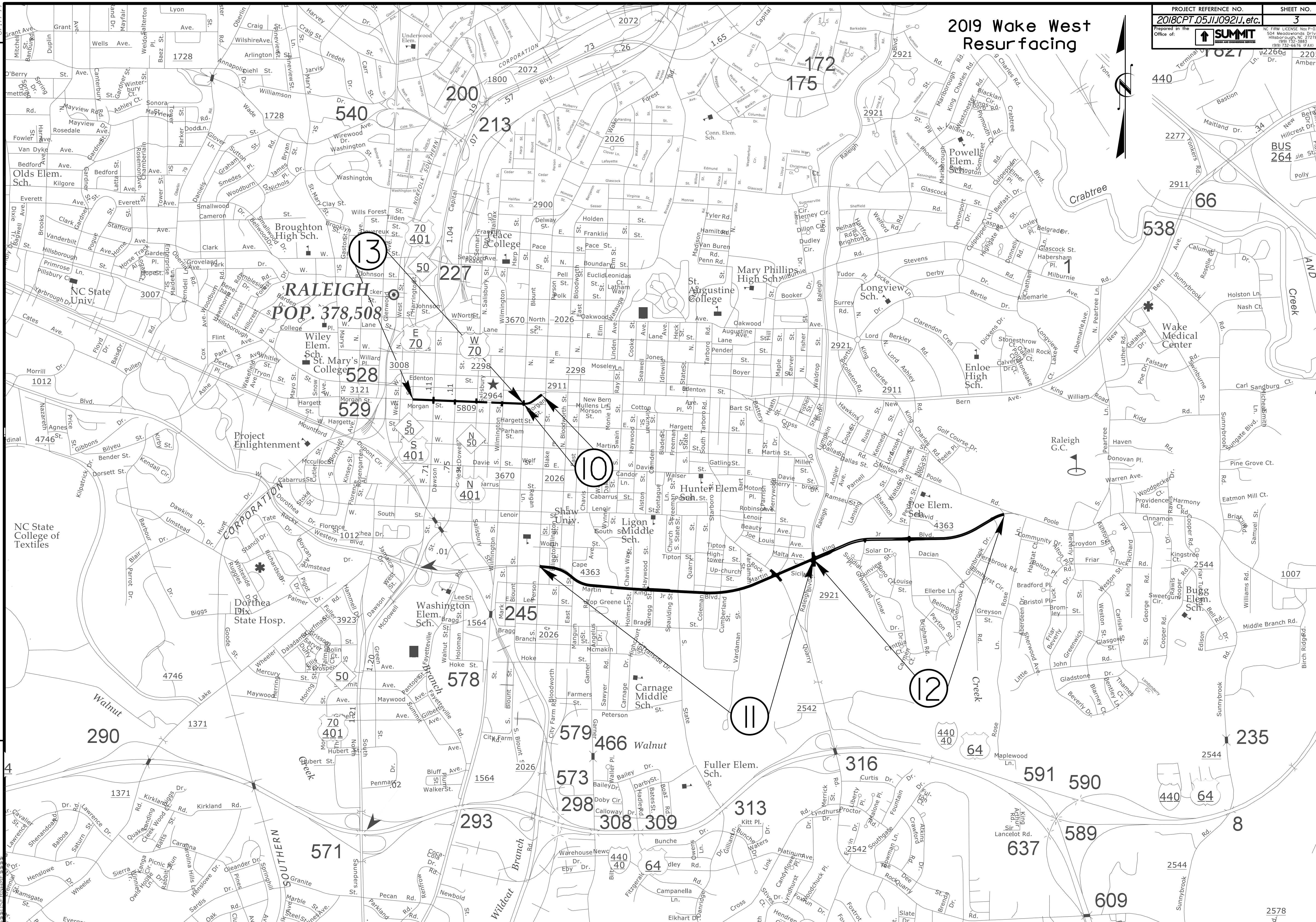
2019 Wake West Resurfacing



PROJECT REFERENCE NO.	SHEET NO.
2018CPT.05.11.09211, etc.	4

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504 Meadowlands Drive
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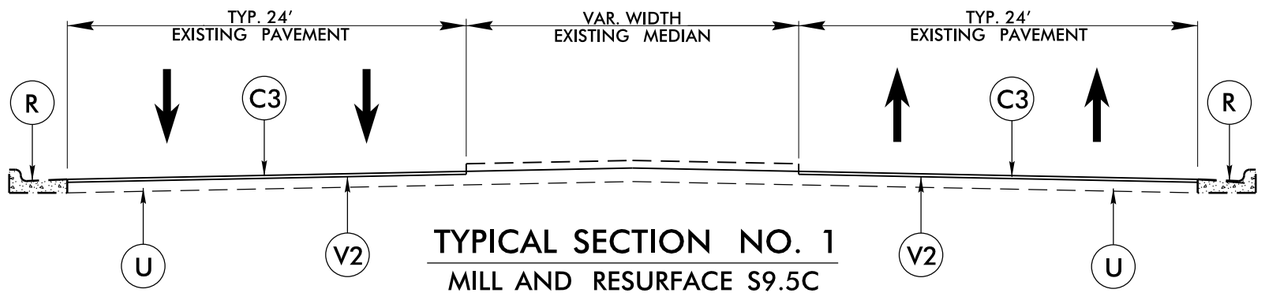
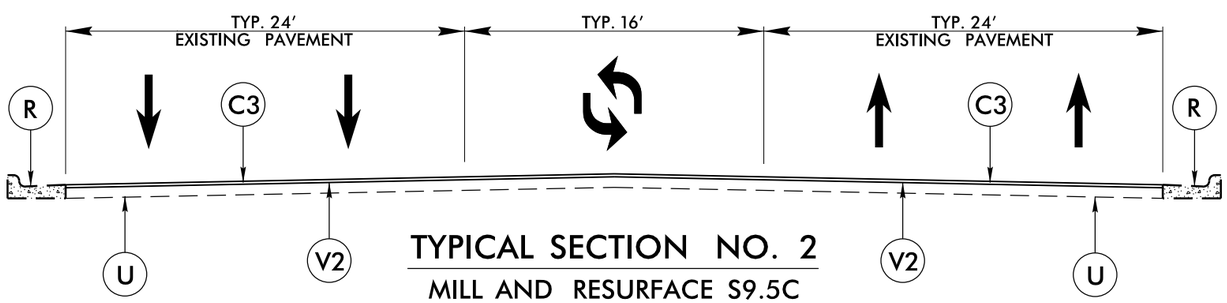
PAVEMENT SCHEDULE

C1	PROP. APPROX. 1 ½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	D2	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.	V1	0 - 1½" MILLING NEW ASPHALT TO BE PAVED BACK FLUSH.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS	D3	PROP. APPROX. 2 ½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	V2	MILL ASPHALT PAVEMENT, 1 ½" DEPTH
C3	PROP. APPROX. 1 ½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	R	EXISTING CURB AND GUTTER	V3	MILL ASPHALT PAVEMENT, 3" DEPTH
C4	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS	S	SHOULDER GRADING, ASB REQUIRED (EXCEPT AT RESIDENTIAL AREAS)	V4	MILL ASPHALT PAVEMENT, 4" DEPTH
D1	PROP. APPROX. 2 ½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	U	EXISTING PAVEMENT	V5	MILL ASPHALT PAVEMENT, 4½" DEPTH



TYPICAL SECTION NO. 1
MILL AND RESURFACE S9.5C

MAP NO. 1 (NC 54)
–from Chapel Hill Rd to Reedy Creek Rd
–from Grande Heights Dr to Chapel Hill Rd

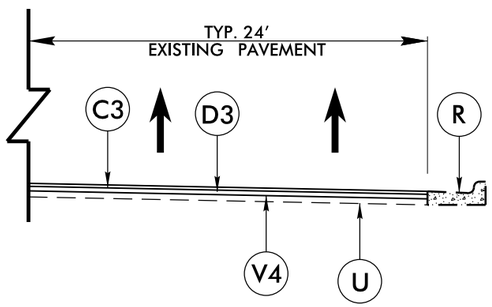


TYPICAL SECTION NO. 2
MILL AND RESURFACE S9.5C

MAP NO. 1 (NC 54)
–from Reedy Creek Rd to Grande Heights Dr

MAP NO. 5 (Maynard Rd)

MAP NO. 7 (Maynard Rd)



PARTIAL TYPICAL SECTION
MILL AND RESURFACE S9.5C, I19.0C

Use in conjunction with T.S. No,. 2 on Map No. 5 (Maynard Rd)
– from 300' south of Chatham St intersection to Chatham St.

PROJECT REFERENCE NO.	SHEET NO.
2018CPT.05.11.092IJ,etc.	5

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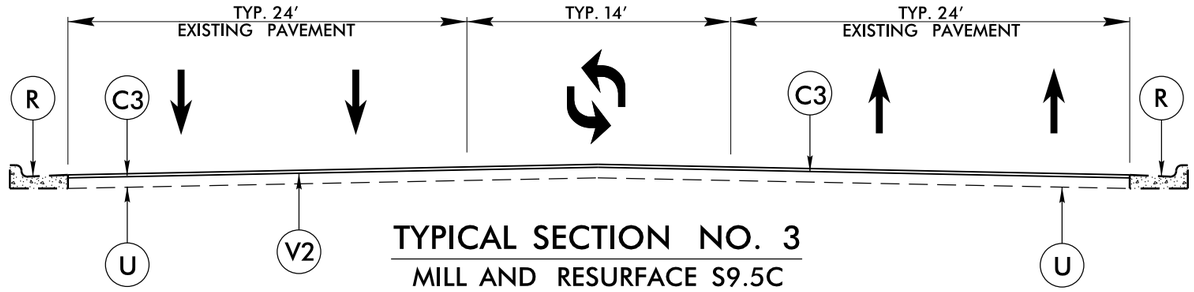
(919) 732-3883 - (919) 732-6676 (FAX)

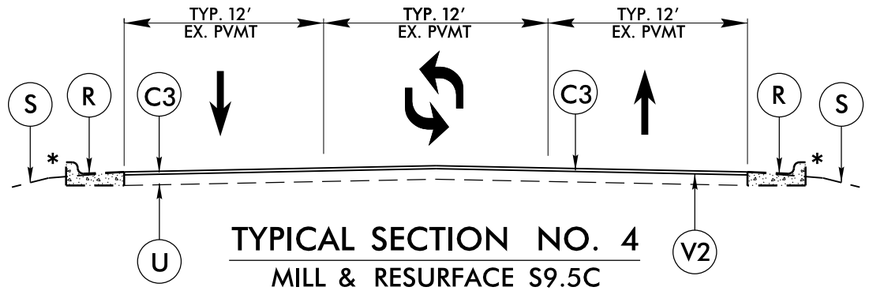
PAVEMENT SCHEDULE	
C1	1½" S9.5B
C2	3" S9.5B
C3	1½" S9.5C
C4	3" S9.5C
D1	2½" I19.0B
D2	3" I19.0B
D3	2½" I19.0C
R	EX C & G
S	SHLD GRADING
U	EXIST. PAVEMENT
V1	0-1½" MILLING
V2	1½" MILLING
V3	3" MILLING
V4	4" MILLING
V5	4½" MILLING

* VARIABLE OUTSIDE SHOULDER – PARTIAL C&G, PARTIAL EARTH SHOULDER



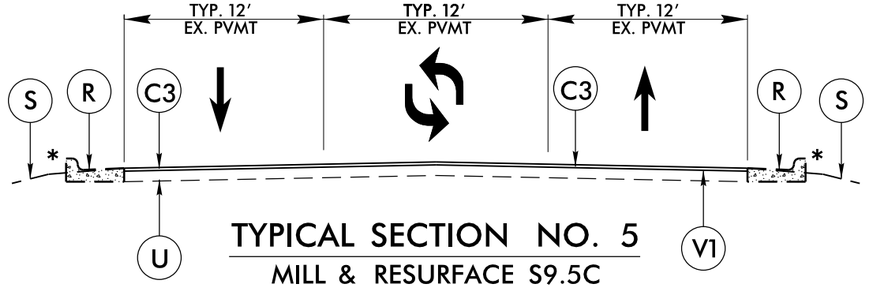
TYPICAL SECTION NO. 3
MILL AND RESURFACE S9.5C

MAP NO. 2 (MAYNARD RD)
–from pvmt joint .15 miles W of SR 3060 (Morrisville Pkwy) to Rise Drive
(Only mill & fill older pavement)



TYPICAL SECTION NO. 4
MILL & RESURFACE S9.5C

MAP NO. 2 (MAYNARD RD)
–from Rise Drive to .04 miles S of Aviation Pkwy
(Only mill & fill older pavement)



TYPICAL SECTION NO. 5
MILL & RESURFACE S9.5C

MAP NO. 2 (MAYNARD RD)
–from .04 miles S of Aviation Pkwy to U–5750 Construction Limits

PROJECT REFERENCE NO.	SHEET NO.
2018CPT.05.11.10921J, etc.	6

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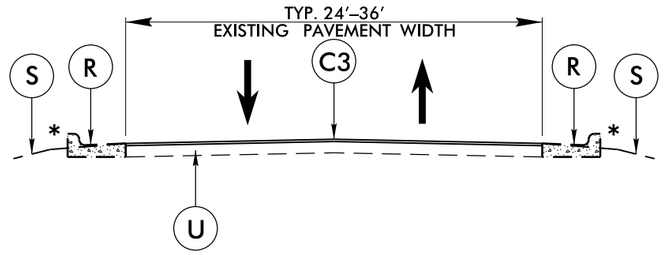
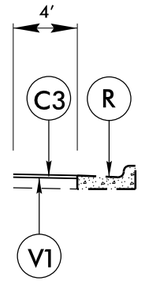
PAVEMENT SCHEDULE	
C1	1½" S9.5B
C2	3" S9.5B
C3	1½" S9.5C
C4	3" S9.5C
D1	2½" I19.0B
D2	3" I19.0B
D3	2½" I19.0C
R	EX C & G
S	SHLD GRADING
U	EXIST. PAVEMENT
V1	0-1½" MILLING
V2	1½" MILLING
V3	3" MILLING
V4	4" MILLING
V5	4½" MILLING



TYPICAL SECTION NO. 6

RESURFACE S9.5C

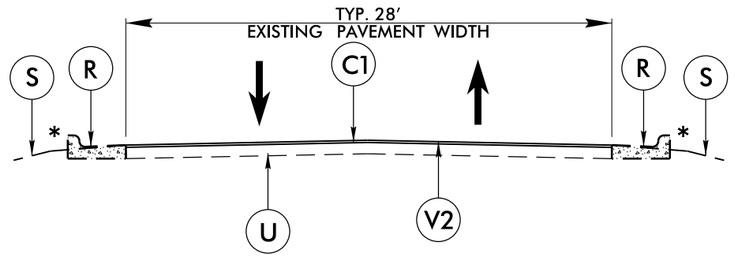
MAP NO. 3 (NC 54)



PARTIAL TYPICAL SECTION

MILL AND RESURFACE S9.5C

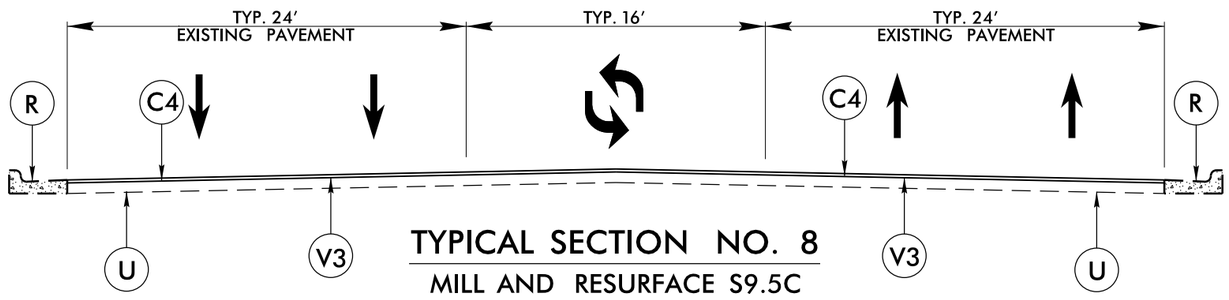
Use in conjunction with Typical No. 6 at locations with C&G



TYPICAL SECTION NO. 7

MILL AND RESURFACE S9.5B

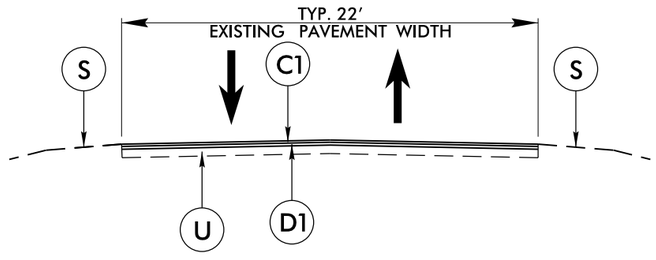
MAP NO. 4 (BASHFORD RD)



TYPICAL SECTION NO. 8

MILL AND RESURFACE S9.5C

MAP NO. 6 (Maynard Rd)



TYPICAL SECTION NO. 9

RESURFACE S9.5C, I19.0C

MAP NO. 9 (LOUIS STEPHENS RD)

PROJECT REFERENCE NO.	SHEET NO.
2018CPT.05.11.09211, etc.	7

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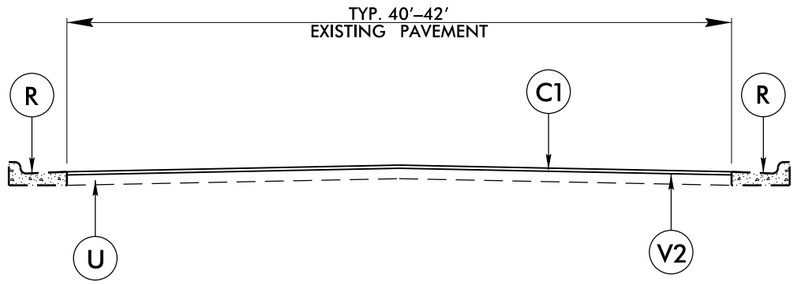
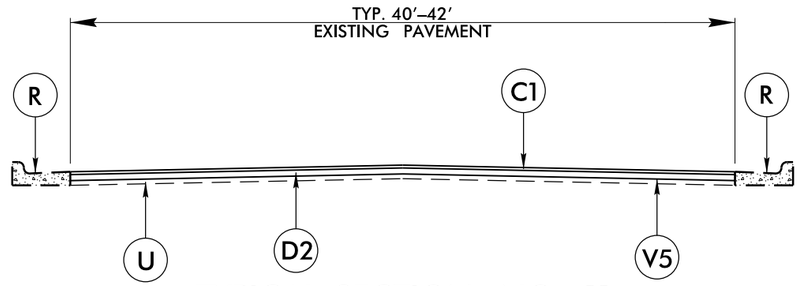
PAVEMENT SCHEDULE	
C1	1½" S9.5B
C2	3" S9.5B
C3	1½" S9.5C
C4	3" S9.5C
D1	2½" I19.0B
D2	3" I19.0B
D3	2½" I19.0C
R	EX C & G
S	SHLD GRADING
U	EXIST. PAVEMENT
V1	0-1½" MILLING
V2	1½" MILLING
V3	3" MILLING
V4	4" MILLING
V5	4½" MILLING



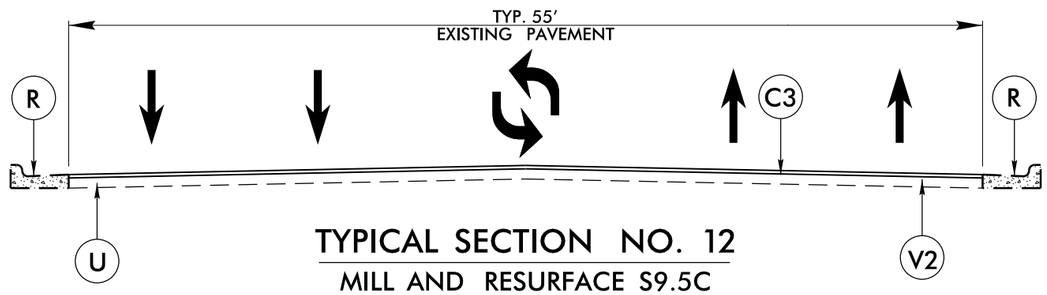
TYPICAL SECTION NO. 10
MILL AND RESURFACE S9.5B

MAP NO. 13 – MORGAN ST
–from S Harrington St to Blount St



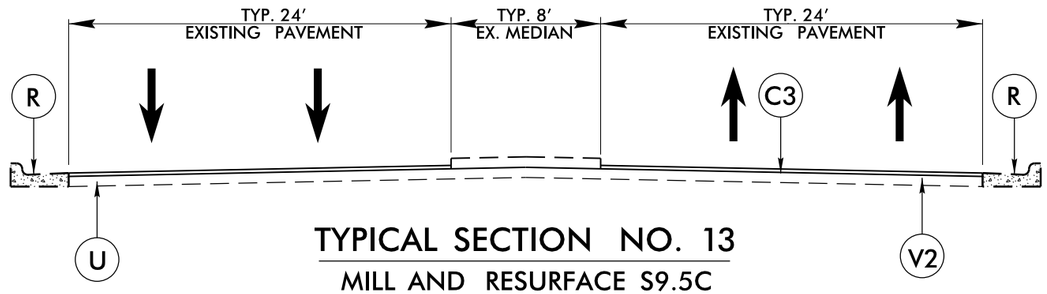
TYPICAL SECTION NO. 11
MILL AND RESURFACE S9.5B, I19.0B

MAP NO. 10 – MORGAN ST
–from Blount St to pvmt jt 80' west of Person St.



TYPICAL SECTION NO. 12
MILL AND RESURFACE S9.5C

MAP NO. 11 (MLK Jr Blvd)
–from Person St to Raleigh Blvd



TYPICAL SECTION NO. 13
MILL AND RESURFACE S9.5C

MAP NO. 12 (MLK Jr Blvd)
–from Raleigh Blvd to Poole Rd

6/2/99

08-NOV-2017 10:59
N:\Infrastructure Jobs\2017 Projects\17-0111.103 Wake West Resurfacing\Design\Roadway\Proj\2019 Wake West_Rdy_Typ_7.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
2018CPT.05.11.10921J, etc.	8

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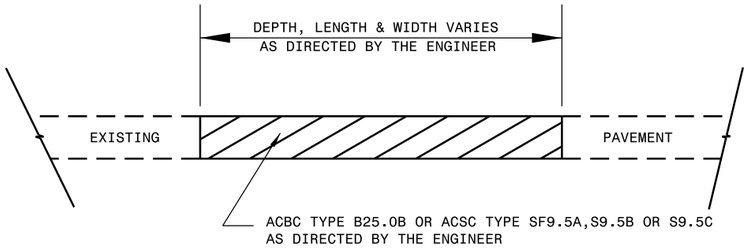
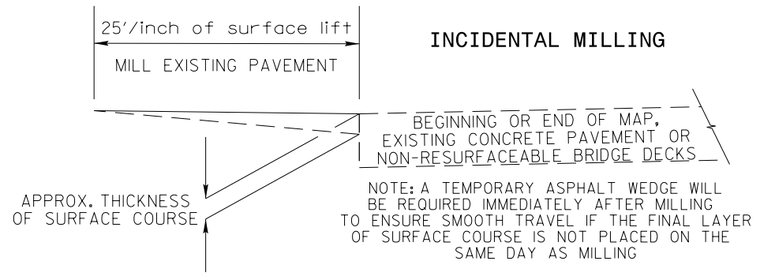
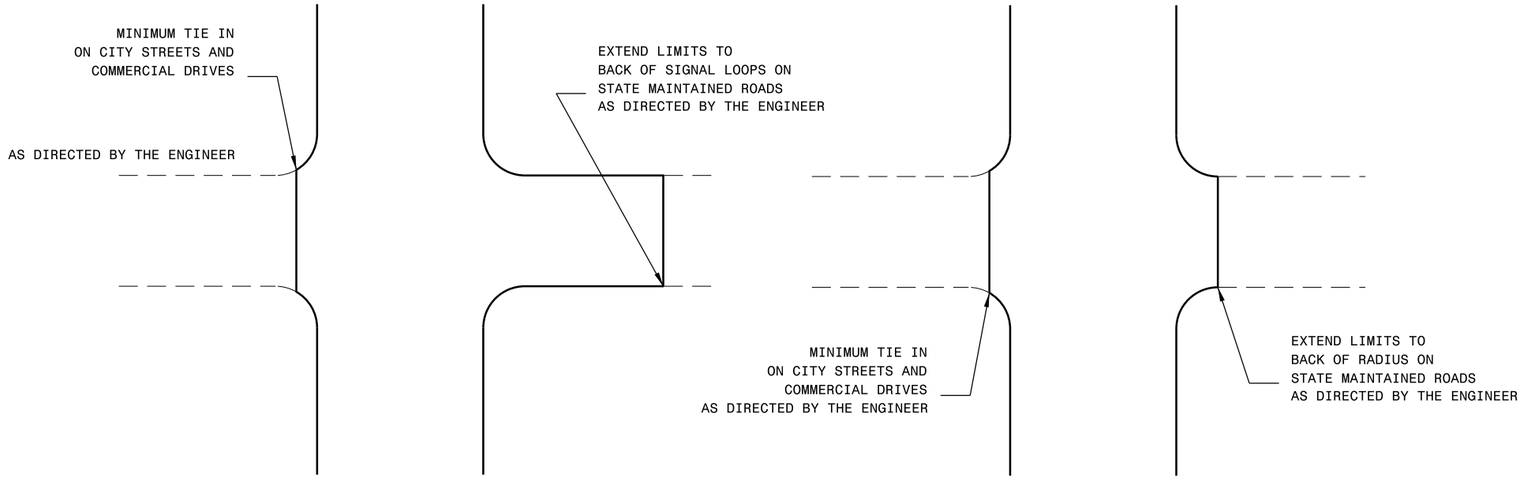
PAVEMENT SCHEDULE	
C1	1½" S9.5B
C2	3" S9.5B
C3	1½" S9.5C
C4	3" S9.5C
D1	2½" I19.0B
D2	3" I19.0B
D3	2½" I19.0C
R	EX C & G
S	SHLD GRADING
U	EXIST. PAVEMENT
V1	0-1½" MILLING
V2	1½" MILLING
V3	3" MILLING
V4	4" MILLING
V5	4½" MILLING



PATCHING EXISTING PAVEMENT

MILLING TO BE PERFORMED PRIOR TO PATCHING

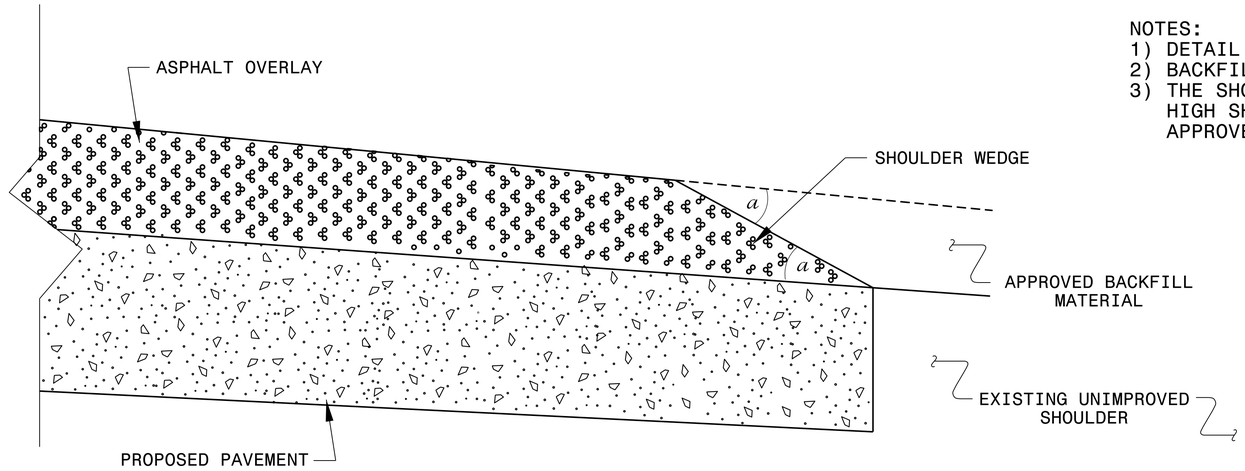




DETAIL OF PROJECT LIMITS AT SIGNALIZED Y LINES

DETAIL OF PROJECT LIMITS AT UNSIGNALIZED Y LINES

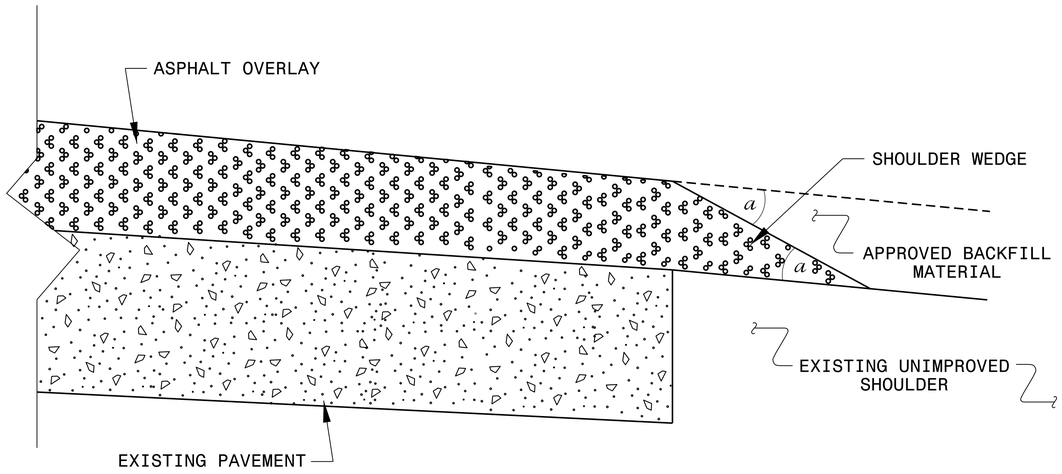
PROJECT REFERENCE NO.	SHEET NO.
2018CPT.05.11.10921, Etc.	9



NOTES:
1) DETAIL DOES NOT APPLY TO OGAFC 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.

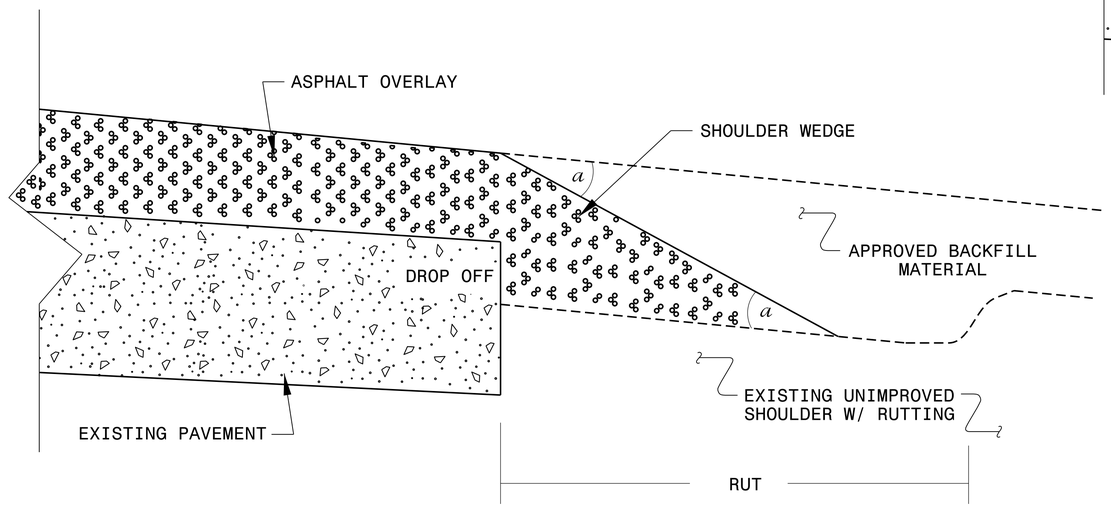
SHOULDER WEDGE DETAIL

(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°

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

07-DEC-2017 08:11
S:\Contracts\Resurfacing Projects\Shoulder Wedge Details\Revised Shoulder Wedge Detail.dgn
jhowerton AT CSD-292995

PROJECT NO.	SHEET NO.	TOTAL NO.
2018CPT.05.11.10921.1, 2018CPT.05.11.20921.1	10	

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 BORROW	0255000000-E AGGREGATE SHOULDER BORROW (ASB)	0264000000-E SHOULDER GRADING	0220000000-E INCIDENTAL STONE BASE	1297000000-E 1.5" MILLING	1297000000-E 4" MILLING	1297000000-E 3" MILLING	1297000000-E 4.5" MILLING	1308000000-E 0" TO 1.5" MILLING	1330000000-E INCIDENTAL MILLING	1498000000-E INTERMEDIATE COURSE, I19.0B	1503000000-E INTERMEDIATE COURSE, I19.0C	1519000000-E SURFACE COURSE, S9.5B	1523000000-E SURFACE COURSE, S9.5C	1575000000-E ASPHALT BINDER FOR PLANT MIX	1704000000-E PATCHING EXISTING PAVEMENT	2655000000-E 5" MONOLITHIC CONCRETE ISLANDS(KEYED IN)	2752000000-E GENERIC PAVING ITEM, REMOVE AND REPLACE 2'-6" CURB & GUTTER	2830000000-N ADJUST MANHOLES	2845000000-N ADJUST METER OR VALVE BOX	6000000000-E TEMPORARY SILT FENCE	6071010000-E WATTLE	6084000000-E SEED & MULCHING	7444000000-E INDUCTIVE LOOP SAWCUT
									MI	FT	CY	TONS	SMI	TONS	SY	SY	SY	SY	SY	SY	TONS	TONS	TONS	TONS	TON	TONS	SY	LF	EA	EA	LF	LF	AC	LF
2018CPT.05.11.10921.1	Wake	1	NC 54	FROM/TO SR 3081 - CHAPEL HILL RD	1,2	4	NO	NO	2.31	74					100,285					7,295				8,438	498	4,410			24	41				9,740
TOTAL FOR MAP NO. 1									**2.31**						**100,285**					**7,295**				**8,438**	**498**	**4,410**			**24**	**41**				**9,740**
2018CPT.05.11.10921.1	Wake	2	NC 54	FROM U-5750 CONST. LIMITS TO PVMT JT .15 MI WEST OF SR 3060-MORRISVILLE PKWY	3,4,5	5	NO	NO	2.7	44	170	310	3.35	168	17,500				3,074	4,203				5,871	346	2,240			10	33	680	125	15.00	3,610
TOTAL FOR MAP NO. 2									**2.7**		**170**	**310**	**3.35**	**168**	**17,500**				**3,074**	**4,203**				**5,871**	**346**	**2,240**			**10**	**33**	**680**	**125**	**15.00**	**3,610**
2018CPT.05.11.10921.1	Wake	3	NC 54	FROM PVMT JT .23 MILES EAST OF SR 3112 - NW CARY PKWY TO SR 3081 - CHAPEL HILL RD (SKIP SECTIONS OF NEW ASPHALT)	6	2	NO	NO	0.99	40	40	70	0.74	67						1,125				1,958	115	780			2	11	80	20	10.00	
TOTAL FOR MAP NO. 3									**0.99**		**40**	**70**	**0.74**	**67**						**1,125**				**1,958**	**115**	**780**			**2**	**11**	**80**	**20**	**10.00**	
TOTAL FOR PROJ NO. 2018CPT.05.11.10921.1									**6**		**210**	**380**	**4.09**	**235**	**117,785**				**3,074**	**12,623**				**16,267**	**959**	**7,430**			**36**	**85**	**760**	**145**	**25.00**	**13,350**
2018CPT.05.11.20921.1	Wake	4	SR 1314 - BASHFORD RD	FROM BUCK JONES RD TO SR 5808 - HILLSBOROUGH ST	7	2	NO	NO	1.12	32	10	15	1.23	56	21,026					2,818			1,773		106	2,100			1	15	130	25	5.00	
TOTAL FOR MAP NO. 4									**1.12**		**10**	**15**	**1.23**	**56**	**21,026**					**2,818**			**1,773**		**106**	**2,100**			**1**	**15**	**130**	**25**	**5.00**	
2018CPT.05.11.20921.1	Wake	5	SR 1415 - MAYNARD RD	FROM NC 54 TO SR 5878 - OLD APEX RD	2	5	NO	NO	4.4	74					191,019	2,475				23,111		354		16,062	17	5,140	145	40	85	93				10,640
TOTAL FOR MAP NO. 5									**4.4**						**191,019**	**2,475**				**23,111**		**354**		**16,062**	**17**	**5,140**	**145**	**40**	**85**	**93**				**10,640**
2018CPT.05.11.20921.1	Wake	6	SR 1415 - MAYNARD RD	FROM SR 5878 - OLD APEX RD TO CASTALIA DR	8	5	NO	NO	0.25	68							9,973			1,267				1,682	99	1,160			6	4				
TOTAL FOR MAP NO. 6									**0.25**								**9,973**			**1,267**				**1,682**	**99**	**1,160**			**6**	**4**				
2018CPT.05.11.20921.1	Wake	7	SR 1415 - MAYNARD RD	FROM CASTALIA DR TO SR 1615 - HIGH HOUSE RD	2	5	NO	NO	0.32	68					12,766					1,184				1,074	63	150			3	1				1,360
TOTAL FOR MAP NO. 7									**0.32**						**12,766**					**1,184**				**1,074**	**63**	**150**			**3**	**1**				**1,360**
2018CPT.05.11.20921.1	Wake	8	SR 3073 - NW MAYNARD RD	FROM SR 3081 - CHAPEL HILL RD TO 150' S OF RR BRIDGE (SKIP BRIDGE)	1	4	NO	NO	0.28	75					12,320					2,608				1,037	61	180				5				
TOTAL FOR MAP NO. 8									**0.28**						**12,320**					**2,608**				**1,037**	**61**	**180**				**5**				
2018CPT.05.11.20921.1	Wake	9	SR 1635 - LOUIS STEPHENS RD	FROM .07 MI N OF SR 3014 - MORRISVILLE CARPENTER RD TO SCOTLOW WAY	9	2	NO	NO	0.473	23	50	80	0.82	24						210	918		539		76	980					90	25	5.00	
TOTAL FOR MAP NO. 9									**0.473**		**50**	**80**	**0.82**	**24**						**210**	**918**		**539**		**76**	**980**					**90**	**25**	**5.00**	
2018CPT.05.11.20921.1	Wake	10	SR 2911 - MORGAN ST	FROM SR 3670 - BLOUNT ST TO SR 2026 - PERSON ST	10	3	NO	NO	0.09	45								2,508		280	409		200		32	80								400
TOTAL FOR MAP NO. 10									**0.09**									**2,508**		**280**	**409**		**200**		**32**	**80**								**400**
2018CPT.05.11.20921.1	Wake	11	SR 4363 - MLK JR BLVD	FROM SR 2026 - PERSON ST TO SR 2921 - RALEIGH BLVD	11	5	NO	NO	1.27	60					44,704					3,810				3,763	222	4,350			22	26				6,600
TOTAL FOR MAP NO. 11									**1.27**						**44,704**					**3,810**				**3,763**	**222**	**4,350**			**22**	**26**				**6,600**
2018CPT.05.11.20921.1	Wake	12	SR 4363 - MLK JR BLVD	FROM SR 2921 - RALEIGH BLVD TO SR 1007 - POOLE RD	12	4	NO	NO	0.85	58					28,923					1,649				2,435	144	1,260			6	4				1,210
TOTAL FOR MAP NO. 12									**0.85**						**28,923**					**1,649**				**2,435**	**144**	**1,260**			**6**	**4**				**1,210**
2018CPT.05.11.20921.1	Wake	13	SR 5809 - MORGAN ST	FROM S HARRINGTON ST TO SR 3670 - BLOUNT ST	13	4	NO	NO	0.477	45					12,593					3,132			1,061		64	600			37	22				3,800
TOTAL FOR MAP NO. 13									**0.477**						**12,593**					**3,132**			**1,061**		**64**	**600**			**37**	**22**				**3,800**
TOTAL FOR PROJ NO. 2018CPT.05.11.20921.1									**9.53**		**60**	**95**	**2.05**	**80**	**323,351**	**2,475**	**9,973**	**2,508**		**40,069**	**1,327**	**354**	**3,573**	**26,053**	**884**	**16,000**	**145**	**40**	**160**	**170**	**220**	**50**	**10.00**	**24,010**
GRAND TOTAL									**15.53**		**270**	**475**	**6.14**	**315**	**441,136**	**2,475**	**9,973**	**2,508**	**3,074**	**52,692**	**1,327**	**354**	**3,573**	**42,320**	**1,843**	**23,430**	**145**	**40**	**196**	**255**	**980**	**195**	**35.00**	**37,360**

PROJECT NO.	SHEET NO.	TOTAL NO.
2018CPT.05.11.10921.1, 2018CPT.05.11.20921.1	11	

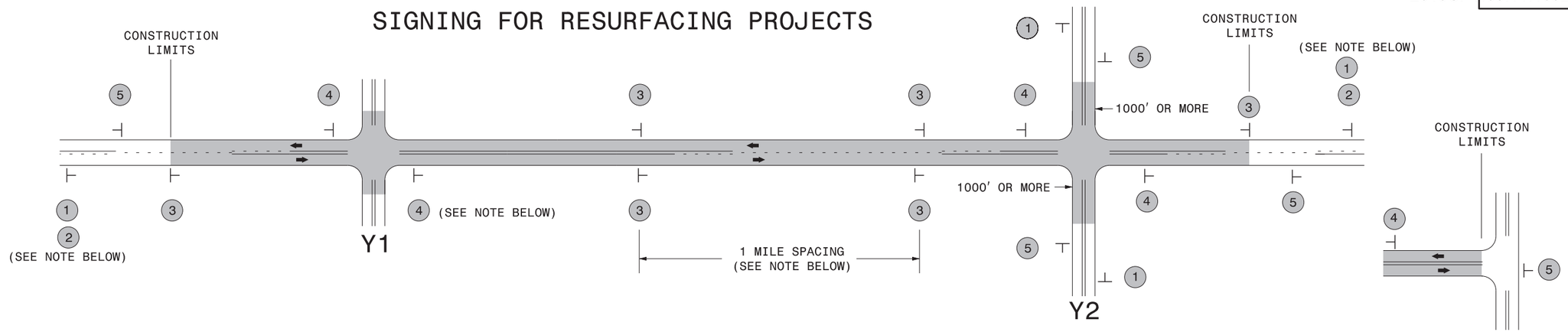
THERMOPLASTIC AND PAINT QUANTITIES

											4413000000-E	4457000000-N	4510000000-N	4685000000-E		4686000000-E		4695000000-E		4697000000-E	4700000000-E	4705000000-E	4710000000-E	4721000000-E				4725000000-E						4726110000-E	
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	WIDTH	WORK ZONE ADVANCE/GENERAL WARNING SIGNING	TEMPORARY TRAFFIC CONTROL	LAW ENFORCEMENT	4" X 90 M WHITE THERMO	4" X 90 M YELLOW THERMO	4" X 120 M YELLOW THERMO	4" X 120 M WHITE THERMO	8" X 90 M WHITE THERMO	8" X 90 M YELLOW THERMO	8" X 120 M WHITE THERMO	12" X 90 M WHITE THERMO	16" X 120 M WHITE THERMO	24" X 120 M WHITE THERMO	THERMO MSG ONLY 120 M	THERMO MSG SCHOOL 120 M	THERMO RXR 120 M	THERMO MSG LANE 120 M	THERMO LT ARROW 90 M	THERMO RT ARROW 90 M	THERMO STR ARROW 90 M	THERMO STR & RT ARROW 90 M	THERMO YIELD TRIANGLE 90M	THERMO STR & LT ARROW 90 M	THERMO SYMBOL (SHARROW)	HEATED-IN-PLACE THERMO SYMBOL 90 MIL (BIKE STR ARROW)	HEATED-IN-PLACE THERMO SYMBOL 90 M (HELMETED BICYCLIST)
								MI	FT	SF	LS	HR	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
2018CPT.05.11.10921.1	Wake	1	NC 54	FROM/TO SR 3081 - CHAPEL HILL RD	1,2	4		2.31	74	126	0.08	280	1,900	450	12,000	10,000	250		6,050	300		1,300	16	12			66	27	49	17	19					
TOTAL FOR MAP NO. 1								**2.31**		**126**	**0.08**	**280**	**1,900**	**450**	**12,000**	**10,000**	**250**		**6,050**	**300**		**1,300**	**16**	**12**			**66**	**27**	**49**	**17**	**19**					
2018CPT.05.11.10921.1	Wake	2	NC 54	FROM U-5750 CONST. LIMITS TO PVMT JT .15 MI WEST OF SR 3060-MORRISVILLE PKWY	3,4,5	5		2.7	44	292	0.08	160	17,800		29,400	4,900			200	700		400					36	17	21	3		1				
TOTAL FOR MAP NO. 2								**2.7**		**292**	**0.08**	**160**	**17,800**		**29,400**	**4,900**			**200**	**700**		**400**					**36**	**17**	**21**	**3**		**1**				
2018CPT.05.11.10921.1	Wake	3	NC 54	FROM PVMT JT .23 MILES EAST OF SR 3112 - NW CARY PKWY TO SR 3081 - CHAPEL HILL RD (SKIP SECTIONS OF NEW ASPHALT)	6	2		0.99	40	198	0.08	40		500	10,100	500	200	75	1,000			175					5	6	4							
TOTAL FOR MAP NO. 3								**0.99**		**198**	**0.08**	**40**		**500**	**10,100**	**500**	**200**	**75**	**1,000**			**175**					**5**	**6**	**4**							
TOTAL FOR PROJ NO. 2018CPT.05.11.10921.1								**6**		**616**	**0.25**	**480**	**19,700**	**950**	**51,500**	**15,400**	**450**	**75**	**7,250**	**1,000**		**1,875**	**16**	**12**			**107**	**50**	**74**	**20**	**19**	**1**			**5**	**4**
													20,650		**66,900**		**525**						**28**				**271**								
2018CPT.05.11.20921.1	Wake	4	SR 1314 - BASHFORD RD	FROM BUCK JONES RD TO SR 5808 - HILLSBOROUGH ST	7	2		1.12	32	136	0.08																								
TOTAL FOR MAP NO. 4								**1.12**		**136**	**0.08**																								
2018CPT.05.11.20921.1	Wake	5	SR 1415 - MAYNARD RD	FROM NC 54 TO SR 5878 - OLD APEX RD	2	5		4.4	74	126	0.08	400			46,000	18,000	2,175	1,625	40,000		450	2,650	16	30	18	20	174	19	66	38		3	52	5	4
TOTAL FOR MAP NO. 5								**4.4**		**126**	**0.08**	**400**			**46,000**	**18,000**	**2,175**	**1,625**	**40,000**		**450**	**2,650**	**16**	**30**	**18**	**20**	**174**	**19**	**66**	**38**		**3**	**52**	**5**	**4**
2018CPT.05.11.20921.1	Wake	6	SR 1415 - MAYNARD RD	FROM SR 5878 - OLD APEX RD TO CASTALIA DR	8	5		0.25	68	126	0.08	40			2,500	1,000			650			350										11			
TOTAL FOR MAP NO. 6								**0.25**		**126**	**0.08**	**40**			**2,500**	**1,000**			**650**			**350**										**11**			
2018CPT.05.11.20921.1	Wake	7	SR 1415 - MAYNARD RD	FROM CASTALIA DR TO SR 1615 - HIGH HOUSE RD	2	5		0.32	68	126	0.08	40			4,000	1,050	375		200			125					15	2	8	6			11			
TOTAL FOR MAP NO. 7								**0.32**		**126**	**0.08**	**40**			**4,000**	**1,050**	**375**		**200**			**125**					**15**	**2**	**8**	**6**			**11**			
2018CPT.05.11.20921.1	Wake	8	SR 3073 - NW MAYNARD RD	FROM SR 3081 - CHAPEL HILL RD TO 150' S OF RR BRIDGE (SKIP BRIDGE)	1	4		0.28	75	126	0.08	40			1,800	2,100			1,000			1,225					3	3	8							
TOTAL FOR MAP NO. 8								**0.28**		**126**	**0.08**	**40**			**1,800**	**2,100**			**1,000**			**1,225**					**3**	**3**	**8**							
2018CPT.05.11.20921.1	Wake	9	SR 1635 - LOUIS STEPHENS RD	FROM .07 MI N OF SR 3014 - MORRISVILLE CARPENTER RD TO SCOTLOW WAY	9	2		0.473	23	46	0.08	40																								
TOTAL FOR MAP NO. 9								**0.473**		**46**	**0.08**	**40**																								
2018CPT.05.11.20921.1	Wake	10	SR 2911 - MORGAN ST	FROM SR 3670 - BLOUNT ST TO SR 2026 - PERSON ST	10	3		0.09	45	126	0.08	40				400			100								2		2			1				
TOTAL FOR MAP NO. 10								**0.09**		**126**	**0.08**	**40**				**400**			**100**								**2**		**2**			**1**				
2018CPT.05.11.20921.1	Wake	11	SR 4363 - MLK JR BLVD	FROM SR 2026 - PERSON ST TO SR 2921 - RALEIGH BLVD	11	5		1.27	60	126	0.08	280			8,400	3,200			2,400			5,000						3							
TOTAL FOR MAP NO. 11								**1.27**		**126**	**0.08**	**280**			**8,400**	**3,200**			**2,400**			**5,000**						**3**							
2018CPT.05.11.20921.1	Wake	12	SR 4363 - MLK JR BLVD	FROM SR 2921 - RALEIGH BLVD TO SR 1007 - POOLE RD	12	4		0.85	58	126	0.06	120			400	3,000	20		900			1,250													
TOTAL FOR MAP NO. 12								**0.85**		**126**	**0.06**	**120**			**400**	**3,000**	**20**		**900**			**1,250**													
2018CPT.05.11.20921.1	Wake	13	SR 5809 - MORGAN ST	FROM S HARRINGTON ST TO SR 3670 - BLOUNT ST	13	4		0.477	45	126	0	320																								
TOTAL FOR MAP NO. 13								**0.477**		**126**	**0**	**320**																								
TOTAL FOR PROJ NO. 2018CPT.05.11.20921.1								**9.53**		**1,190**	**1**	**1,320**			**63,100**	**28,750**	**2,570**	**1,625**	**45,250**		**450**	**10,600**	**16**	**30**	**18**	**20**	**194**	**27**	**84**	**44**		**4**	**74**	**5**	**4**
															91,850		**4,195**						**84**				**427**							**9**	
GRAND TOTAL								**15.53**		**1,806**	**1**	**1,800**	**19,700**	**950**	**114,600**	**44,150**	**3,020**	**1,700**	**52,500**	**1,000**	**450**	**12,475**	**32**	**42**	**18**	**20**	**301**	**77**	**158**	**64**	**19**	**5**	**74**	**5**	**4**
													20,650		**158,750**		**4,720**						**112**				**698**							**9**	

											4770000000-E		4780000000-E	4795000000-E	4800000000-N	4805000000-N							4810000000-E		4820000000-E	4830000000-E	4835000000-E	4840000000-N				4845000000-N					4850000000-E	4905000000-N
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	WIDTH	4" YELLOW COLD APPLIED PLASTIC, TYPE III	4" WHITE COLD APPLIED PLASTIC, TYPE III	8" WHITE COLD APPLIED PLASTIC, TYPE III	24" WHITE COLD APPLIED PLASTIC, TYPE 2	COLD APPLIED MSG ONLY, TYPE III	COLD APPLIED PLASTIC STRAIGHT RIGHT ARROW, TYPE 2	COLD APPLIED PLASTIC STR LEFT ARROW, TYPE 2	COLD APPLIED PLASTIC STR ARROW, TYPE III	COLD APPLIED PLASTIC RT ARROW, TYPE III	COLD APPLIED PLASTIC LEFT ARROW, TYPE III	4" WHITE PAINT	4" YELLOW PAINT	8" WHITE PAINT	16" WHITE PAINT	24" WHITE PAINT	PAINT MSG ONLY	PAINT MSG SCHOOL	PAINT MSG RXR	PAINT MSG LANE	PAINT LT ARROW	PAINT RT ARROW	PAINT STR ARROW	PAINT STR & RT ARROW	PAINT YIELD TRIANGLE	PAINT STR & LT ARROW	4" LINE REMOVAL	SNOW PLOWABLE MARKERS
								MI	FT	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	LF	EA
2018CPT.05.11.10921.1	Wake	1	NC 54	FROM/TO SR 3081 - CHAPEL HILL RD	1,2	4		2.31	74											13,900	12,550			1,400	16	12			66	27	49	17	19				1,170
TOTAL FOR MAP NO. 1								**2.31**												**13,900**	**12,550**			**1,400**	**16**	**12**			**66**	**27**	**49**	**17**	**19**				**1,170**
2018CPT.05.11.10921.1	Wake	2	NC 54	FROM U-5750 CONST. LIMITS TO PVMT JT .15 MI WEST OF SR 3060-MORRISVILLE PKWY	3,4,5	5		2.7	44											22,700	29,400			400					36	17	21	3		1			570
TOTAL FOR MAP NO. 2								**2.7**												**22,700**	**29,400**			**400**					**36**	**17**	**21**	**3**		**1**			**570**
2018CPT.05.11.10921.1	Wake	3	NC 54	FROM PVMT JT .23 MILES EAST OF SR 3112 - NW CARY PKWY TO SR 3081 - CHAPEL HILL RD (SKIP SECTIONS OF NEW ASPHALT)	6	2		0.99	40											1,000	10,600			175													380
TOTAL FOR MAP NO. 3								**0.99**												**1,000**	**10,600**			**175**													**380**
TOTAL FOR PROJ NO. 2018CPT.05.11.10921.1								**6**												**37,600**	**52,550**			**1,975**	**16**	**12**			**102**	**44**	**70**	**20**	**19**	**1**			**2,120**
																				90,150					**28**				**256**								
2018CPT.05.11.20921.1	Wake	4	SR 1314 - BASHFORD RD	FROM BUCK JONES RD TO SR 5808 - HILLSBOROUGH ST	7	2		1.12	32											14,600	22,600																
TOTAL FOR MAP NO. 4								**1.12**												**14,600**	**22,600**																
2018CPT.05.11.20921.1	Wake	5	SR 1415 - MAYNARD RD	FROM NC 54 TO SR 5878 - OLD APEX RD	2	5		4.4	74											19,800	46,000		300.00	3,250	16	30	18	20	174	19	66	38		3			2,100
TOTAL FOR MAP NO. 5								**4.4**												**19,800**	**46,000**		**300**	**3,250**	**16**	**30**	**18**	**20**	**174**	**19**	**66**	**38**		**3**			**2,100**
2018CPT.05.11.20921.1	Wake	6	SR 1415 - MAYNARD RD	FROM SR 5878 - OLD APEX RD TO CASTALIA DR	8	5		0.25	68											1,000	2,500			350													140
TOTAL FOR MAP NO. 6								**0.25**												**1,000**	**2,500**			**350**													**140**
2018CPT.05.11.20921.1	Wake	7	SR 1415 - MAYNARD RD	FROM CASTALIA DR TO SR 1615 - HIGH HOUSE RD	2	5		0.32	68											1,050	4,000			125					15	2	8	6					140
TOTAL FOR MAP NO. 7								**0.32**												**1,050**	**4,000**			**125**					**15**	**2**	**8**	**6**					**140**
2018CPT.05.11.20921.1	Wake	8	SR 3073 - NW MAYNARD RD	FROM SR 3081 - CHAPEL HILL RD TO 150' S OF RR BRIDGE (SKIP BRIDGE)	1	4		0.28	75											2,100	1,800			1,225					3	3	8					3,900	180
TOTAL FOR MAP NO. 8								**0.28**												**2,100**	**1,800**			**1,225**					**3**	**3**	**8**					**3,900**	**180**
2018CPT.05.11.20921.1	Wake	9	SR 1635 - LOUIS STEPHENS RD	FROM .07 MI N OF SR 3014 - MORRISVILLE CARPENTER RD TO SCOTLOW WAY	9	2		0.473	23											9,550	6,650	100															
TOTAL FOR MAP NO. 9								**0.473**												**9,550**	**6,650**	**100**															
2018CPT.05.11.20921.1	Wake	10	SR 2911 - MORGAN ST	FROM SR 3670 - BLOUNT ST TO SR 2026 - PERSON ST	10	3		0.09	45											400									2		2			1			
TOTAL FOR MAP NO. 10								**0.09**												**400**									**2**		**2**			**1**			
2018CPT.05.11.20921.1	Wake	11	SR 4363 - MLK JR BLVD	FROM SR 2026 - PERSON ST TO SR 2921 - RALEIGH BLVD	11	5		1.27	60											3,500	8,400			5,000						3						450
TOTAL FOR MAP NO. 11								**1.27**												**3,500**	**8,400**			**5,000**						**3**						**450**
2018CPT.05.11.20921.1	Wake	12	SR 4363 - MLK JR BLVD	FROM SR 2921 - RALEIGH BLVD TO SR 1007 - POOLE RD	12	4		0.85	58											3,200	400			1,250													320
TOTAL FOR MAP NO. 12								**0.85**												**3,200**	**400**			**1,250**													**320**
2018CPT.05.11.20921.1	Wake	13	SR 5809 - MORGAN ST	FROM S HARRINGTON ST TO SR 3670 - BLOUNT ST	13	4		0.477	45	830	1,150	2,100	600	5	5	3	9	5	5	1,150	830			600													
TOTAL FOR MAP NO. 13								**0.477**		**830**	**1,150**	**2,100**	**600**	**5**	**5**	**3**	**9**	**5**	**5**	**1,150**	**830**			**600**													
TOTAL FOR PROJ NO. 2018CPT.05.11.20921.1								**9.53**		**830**	**1,150**	**2,100**	**600**	**5**	**5**	**3**	**9**	**5**	**5**	**56,350**	**93,180**	**100**	**300**	**11,800**	**16**	**30**	**18**	**20**	**194**	**27**	**84**	**44**		**4**	**3,900**	**3,330**
										1,980					**8**			**19**		**149,530**				**84**				**353**								
GRAND TOTAL								**15.53**		**830**	**1,150**	**2,100**	**600**	**5**	**5**	**3**	**9**	**5**	**5**	**93,950**	**145,730**	**100**	**300**	**13,775**	**32**	**42**	**18**	**20**	**296**	**71**	**154**	**64**	**19**	**5**	**3,900**	**5,450**
										1,980					**8**			**19**		**239,680**				**112**				**609**							

PROJ. REFERENCE NO.	SHEET NO.
2018CPT.05.11.10921.1	TMP-1

SIGNING FOR RESURFACING PROJECTS



TEE INTERSECTION

LEGEND
- ⊢ STATIONARY SIGN
- ⬅ DIRECTION OF TRAFFIC FLOW

MAINLINE (-L-) SIGNING

SIGNING NOTES AND PLACEMENT PER DIRECTION

1 — ROAD WORK AHEAD, 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 — NEXT XX MILES, 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 — LOW/SOFT SHOULDER, SP 13107, 48″ X 48″

- 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 — ROAD UNDER CONST, 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 — END ROAD WORK, 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.

-Y- LINE SIGNING

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.

ROAD WORK AHEAD, W20-1, 48″ X 48″ — PLACED 500′ IN ADVANCE OF FLAGGER.

W20-7 A, 48″ X 48″ — PLACED 250′ IN ADVANCE OF FLAGGER.

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

RESURFACING
ADVANCE WARNING SIGNS
FOR
RURAL AND SUBURBAN
2 LANE ROADWAYS

4/20/2016
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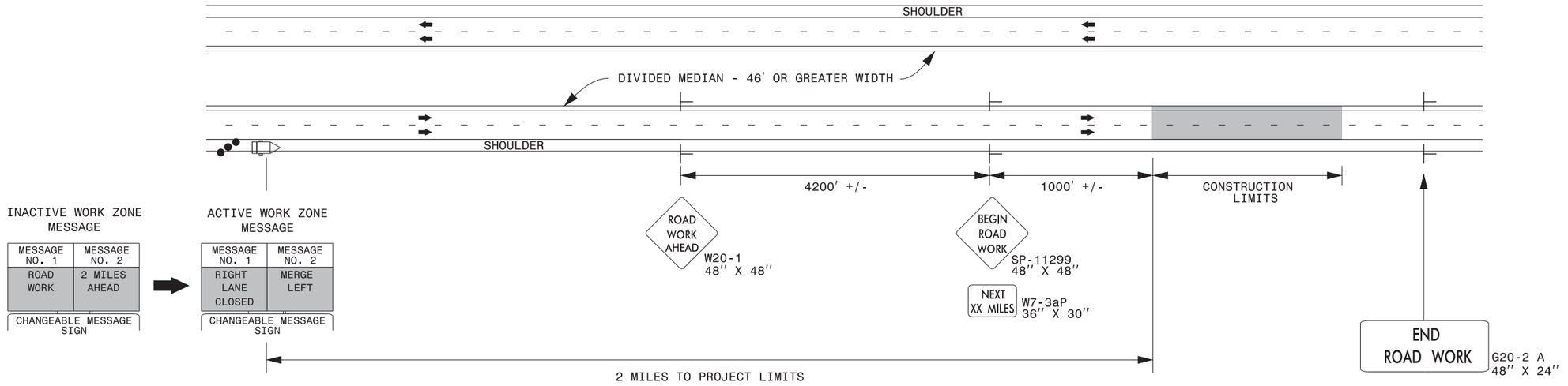
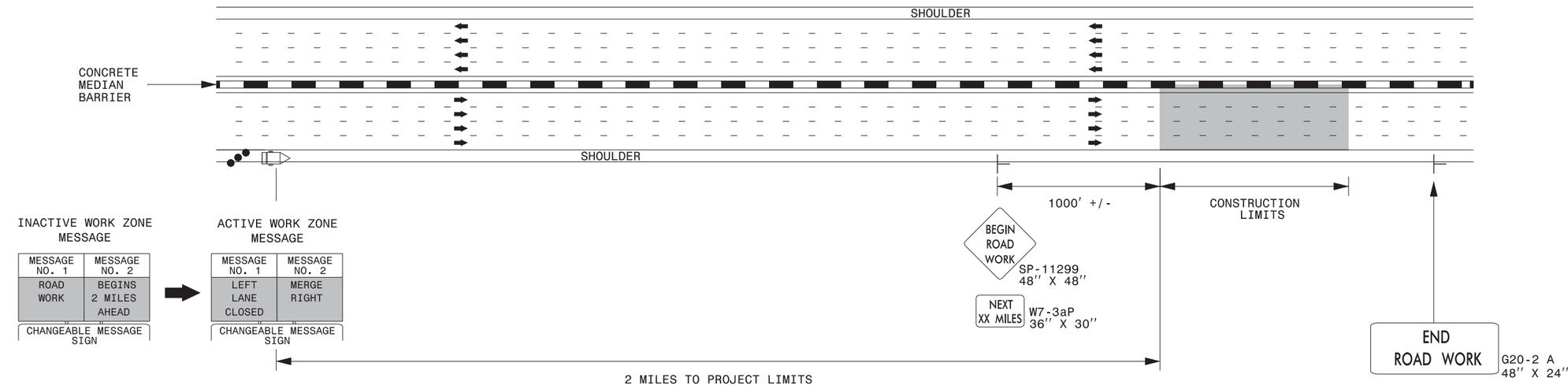
User:rmgarrett

PROJ. REFERENCE NO.	SHEET NO.
2018CPT.05.11.10921	TMP-2

DIVIDED MEDIANS WITH WIDTHS 46′ OR GREATER



DIVIDED MEDIANS WITH WIDTHS LESS THAN 46′ OR WITH PERMANENT MEDIAN BARRIER



NOTES:

1) LATERAL CLEARANCE AT ALL SIGN LOCATIONS SHALL BE 6′ AS MEASURED FROM THE EDGE OF PAVEMENT.
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) FOR MEDIAN WIDTHS LESS THAN 46′ (MEASURED EDGELINE TO EDGELINE) USE THE BOTTOM DRAWING.
4) IF STATIONARY GENERAL WARNING SIGNS ARE USED, THEY WILL BE PAID FOR PER SECTION 104 OF THE NCDOT STANDARD SPECIFICATIONS AS EXTRA WORK.
5) INSTALL "ROAD WORK AHEAD"(W20-1) ALONG ENTRANCE RAMPS 500′ PRIOR TO RAMP TERMINAL, AND "END ROAD WORK" (G20-2a) AT THE END OF EXIT RAMPS WITHIN THE WORK ZONE.
6) 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 AND WITH DIVIDED MEDIANS OF 46′ OR GREATER. THESE PORTABLE SIGNS ARE INCIDENTAL TO THE OTHER ITEMS OF WORK INCLUDED IN THE TEMPORARY TRAFFIC CONTROL (LUMP SUM) PAY ITEM.

LEGEND

- CHANGEABLE MESSAGE SIGN (CMS)
- STATIONARY SIGN
- DIRECTION OF TRAFFIC FLOW
- TRAFFIC DRUM

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

RESURFACING ADVANCE WARNING SIGNS FOR HIGH SPEED FACILITIES ≥ 60 MPH

3/23/2015
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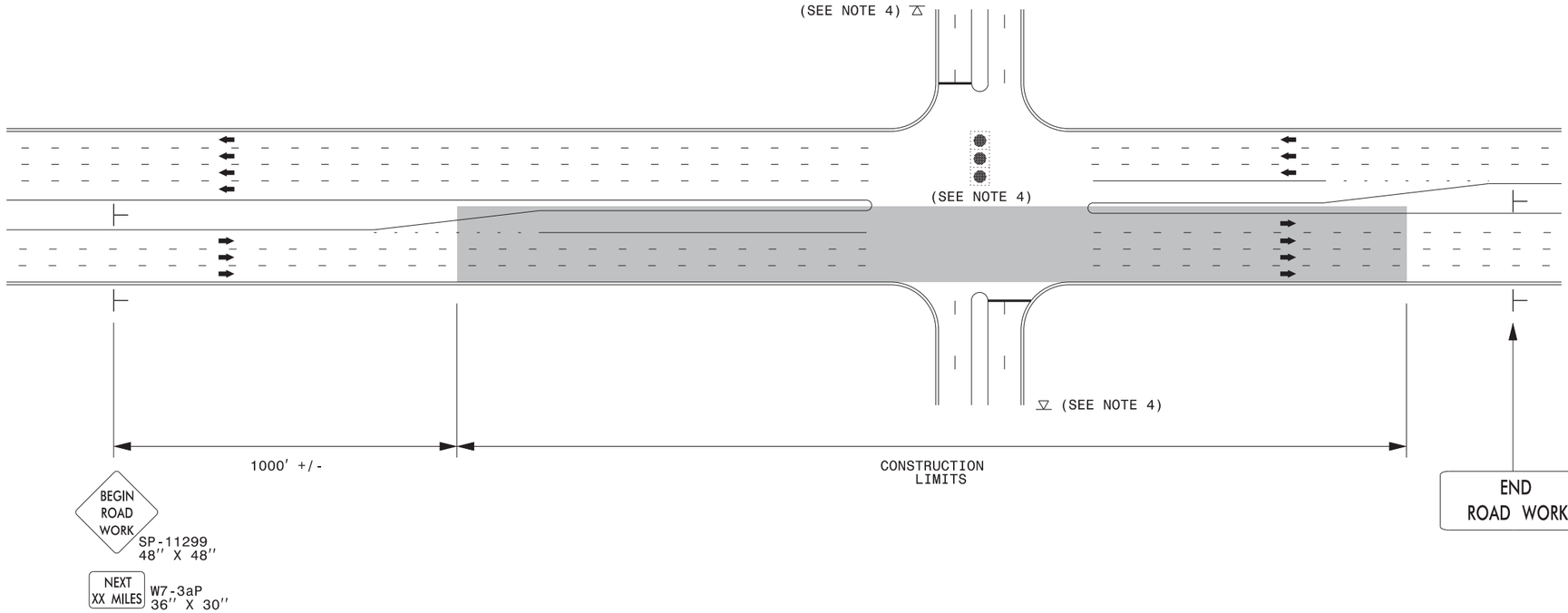
User:rmgarrett

PROJ. REFERENCE NO.	SHEET NO.
2018CPT 05.11.10921.1	TMP-3

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

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

RESURFACING ADVANCE WARNING SIGNS FOR URBAN / SUBURBAN FACILITIES

4/8/2015
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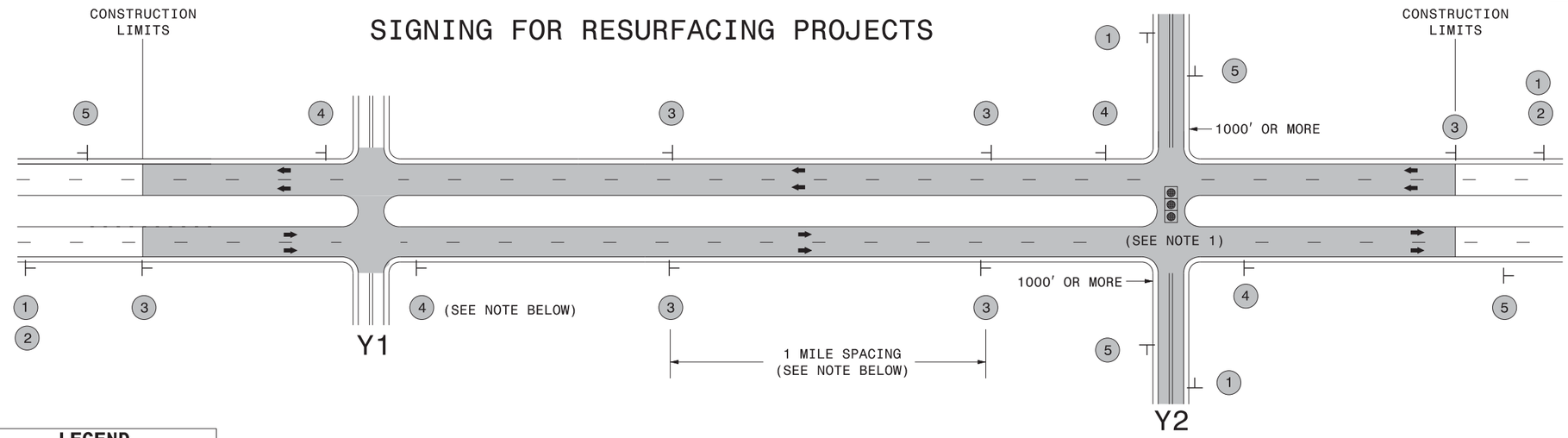
User:rmgarrett

PROJ. REFERENCE NO.	SHEET NO.
2018.CPT.05.11.10921.1	TMP-4

SIGNING FOR RESURFACING PROJECTS



LEGEND
- ⊢ STATIONARY SIGN
- ⬅ DIRECTION OF TRAFFIC FLOW

MAINLINE (-L-) SIGNING

SIGNING NOTES AND PLACEMENT PER DIRECTION

1 — ROAD WORK AHEAD (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 — NEXT XX MILES (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 — LOW/SOFT SHOULDER (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 ½ MILE FROM THE CONSTRUCTION LIMITS AND THEN SPACE 1 MILE THEREAFTER.

4 — ROAD UNDER CONST (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 — END ROAD WORK (G20-2 A, 48″ X 24″)
PLACE 500′ FOLLOWING THE END OF CONSTRUCTION LIMITS.

-Y- LINE SIGNING

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.

ROAD WORK AHEAD (W20-1, 48″ X 48″) — PLACED 500′ IN ADVANCE OF FLAGGER.

W20-7 A (48″ X 48″) — PLACED 250′ IN ADVANCE OF FLAGGER.

NOTES:

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.

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

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

3/23/2015
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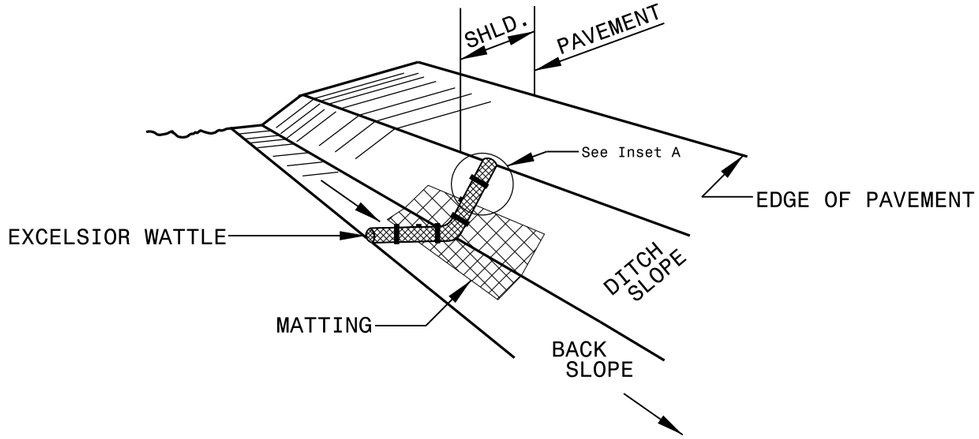
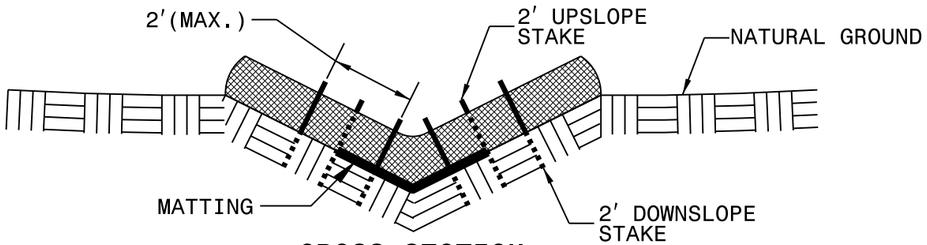
User:rmgarrett

PROJECT REFERENCE NO.	SHEET NO.
2018CPT.05J1J092IJ	EC-1

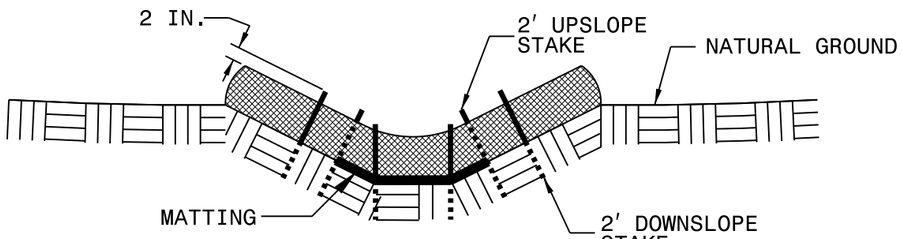
WATTLE DETAIL



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.

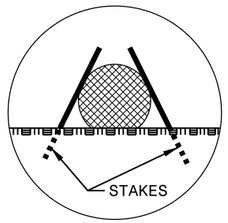
ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

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

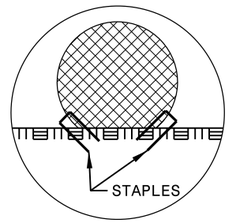
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

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

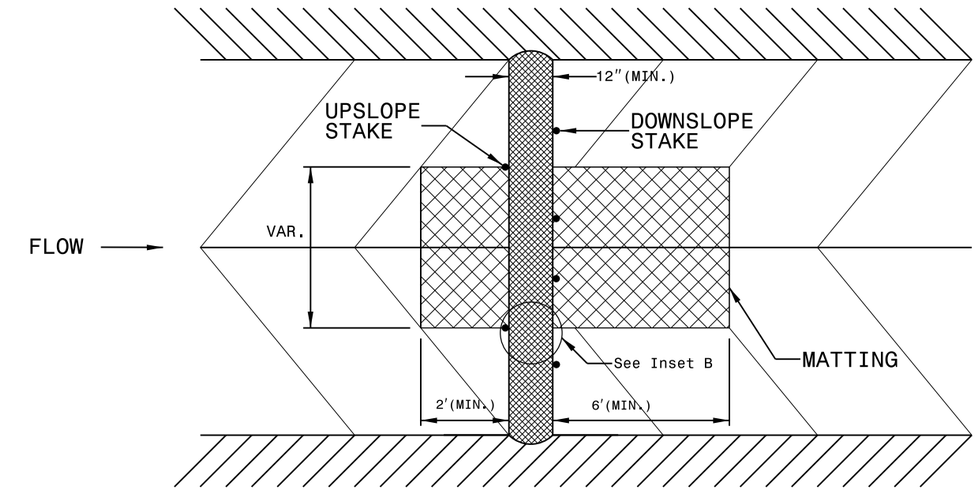
INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.



INSET A



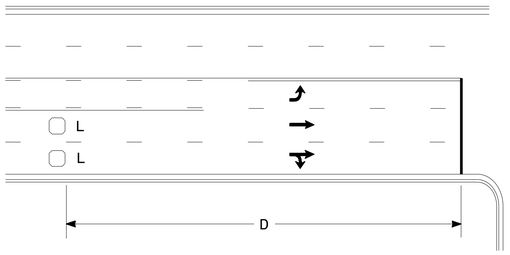
INSET B



TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.

High Speed Detection
(≥40 mph)



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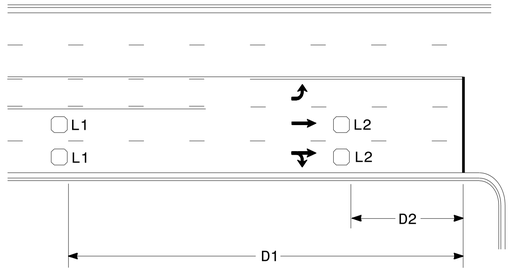


Speed Limit mph	D ft
40	250
45	300
50	355
55	420

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

Volume Density Operation

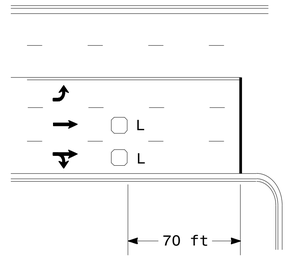
Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

L1 = 6ft X 6ft
Wired in series

L2 = 6ft X 6ft
Wired in series

"Stretch" Operation

Low Speed Detection
(≤35 mph)



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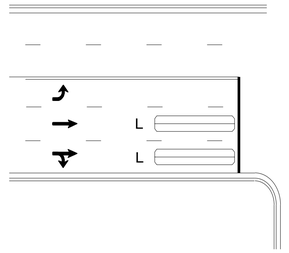
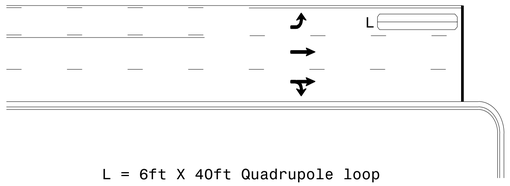


L = 6ft X 6ft
Wired in series

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

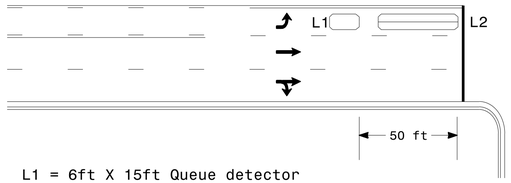
Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

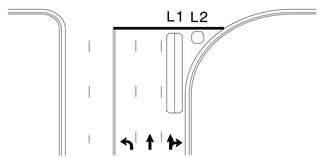
OR



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

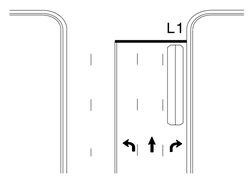
Queue Loop Detection

Right Turn Lane Detection

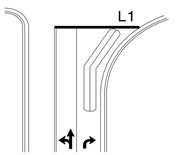


Shared Lane/
Wide Radius Turn

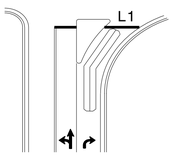
L1 = 6ft X 40ft Quadrupole loop
L2 = 6ft X 6ft [Minimum] Presence loop
Wired separately



Standard Turn

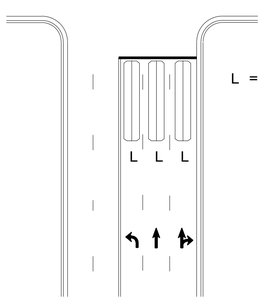


Wide Radius Turn



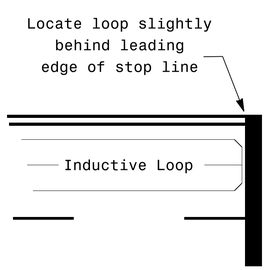
Channelized Turn

Side Street Detection



L = 6ft X 40ft
Quadrupole loop
Wired to separate detectors/channels

Presence Loop Placement at Stop Lines



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
NORTH CAROLINA 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:

SCALE
N/A

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 23489 ENGINEER PAMELA L. ALEXANDER

DocuSigned by: P L Alexander B4756E00CE4E46D...
1/30/2015
DATE

SIG. INVENTORY NO.

30-JAN-2015 12:39
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palexander