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09/08/99

CONTRACT NO: C203795 WBS ELEMENT: 2016CPT.01.03.10081.1, ETC.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

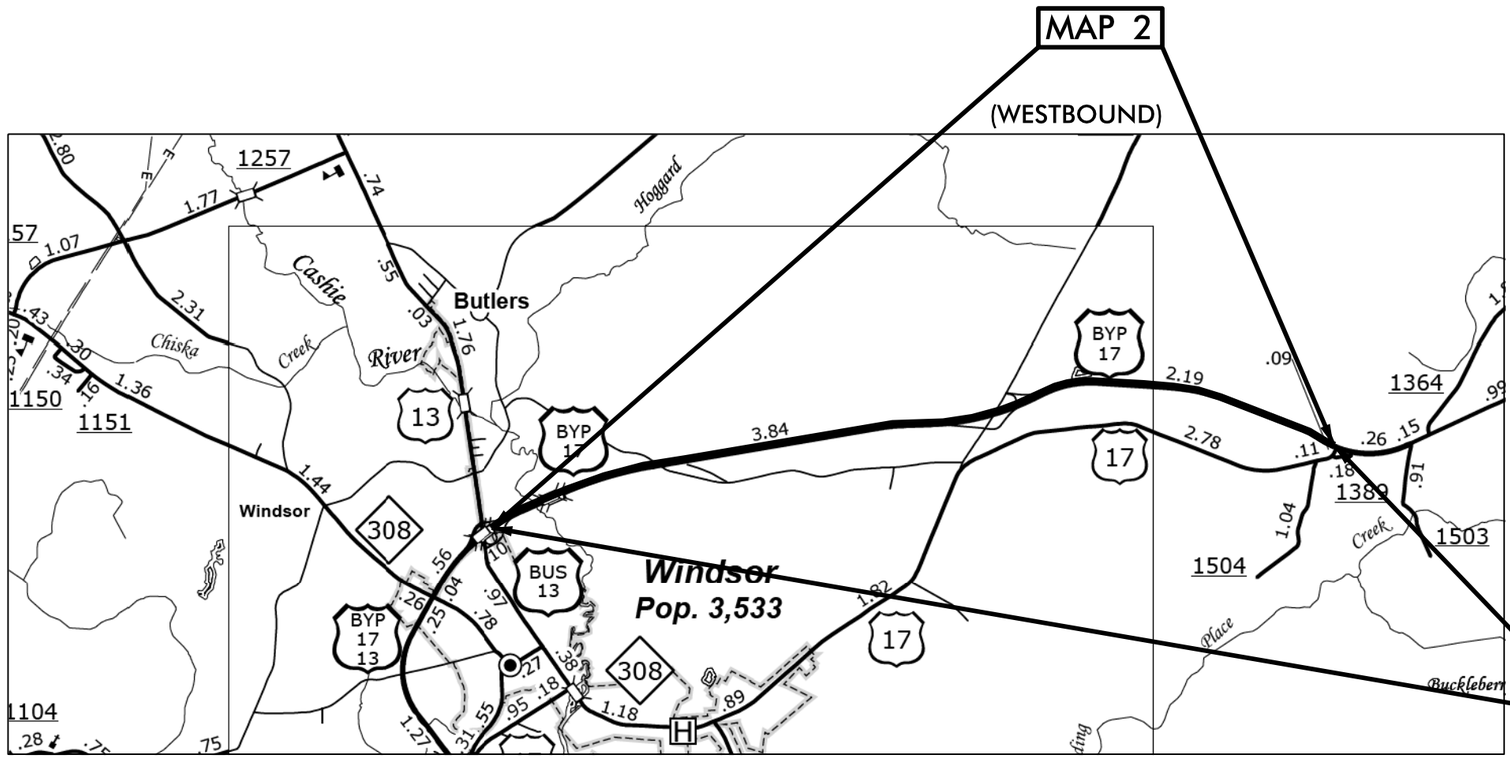
BERTIE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	2016CPT.01.03.10081.1, ETC.	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
2016CPT.01.03.10081.1		MAP 1
2016CPT.01.03.10081.1		MAP 2

LOCATION: *MAP 1 US 17 BYP EASTBOUND FROM US 13 TO US 17*
MAP 2 US 17 BYP WESTBOUND FROM US 17 TO US 13

TYPE OF WORK: MILLING, RESURFACING, AND PAVEMENT MARKINGS



NTS

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT MAP 1 = 7.07 MI.
LENGTH OF ROADWAY PROJECT MAP 2 = 7.07 MI.

Prepared in the Office of:
DIVISION OF HIGHWAYS
113 Airport Dr., Edenton NC, 27932

2012 STANDARD SPECIFICATIONS

LETTING DATE:
DECEMBER 2015

W.B. HOBBS, P.E.
DIVISION PROJECT MANAGER

C.E. SLACHTA
DIVISION PROPOSALS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

09/08/99

CONTRACT NO: C203795 WBS ELEMENT: 2016CPT.01.03.10081.1, ETC.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

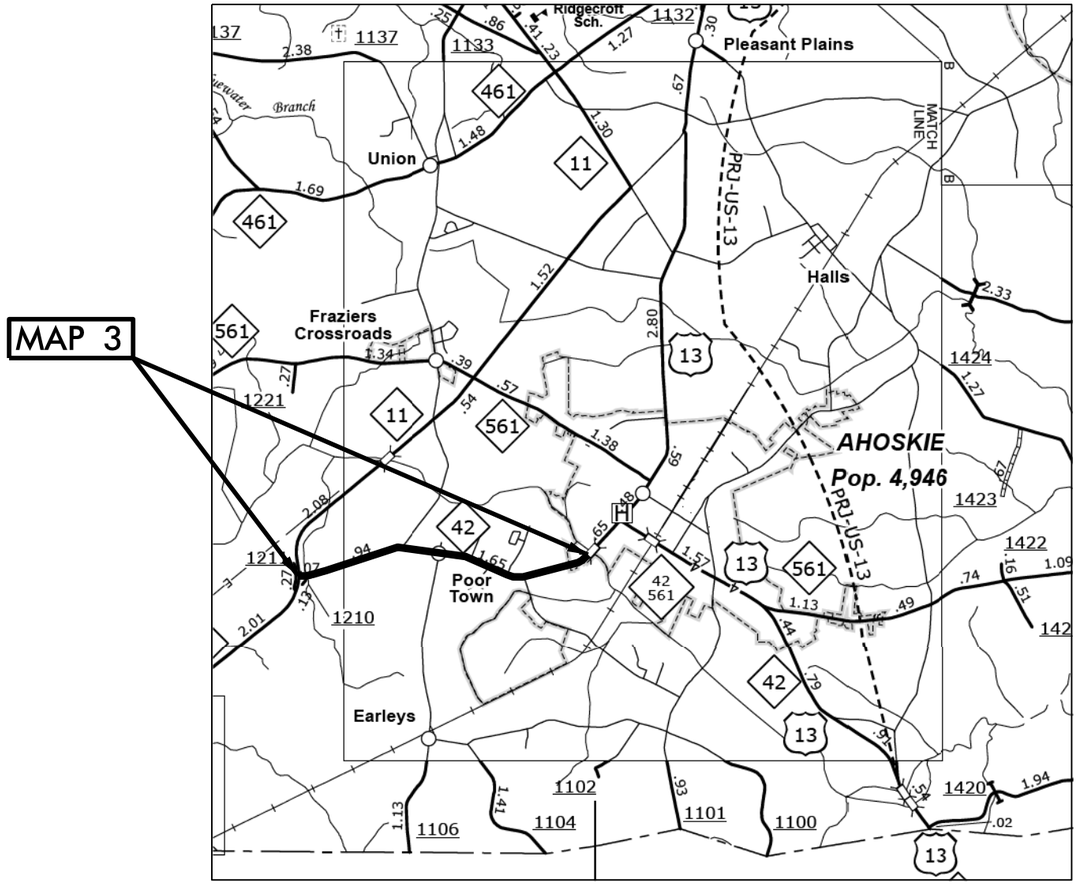
HERTFORD COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	2016CPT.01.03.10081.1, ETC.	2	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
2016CPT.01.03.10461.1		MAP 3

LOCATION: MAP 3 NC 42 FROM NC 11 TO AHOSKIE CREEK BRIDGE

TYPE OF WORK: MILLING, RESURFACING, AND PAVEMENT MARKINGS



NTS	PROJECT LENGTH	Prepared In the Office of: DIVISION OF HIGHWAYS, 113 Airport Dr., Edenton NC, 27932	DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA
	LENGTH OF ROADWAY PROJECT MAP 3 = 3.13 MI.	2012 STANDARD SPECIFICATIONS LETTING DATE: December 2015	W.B. HOBBS, P.E. — DIVISION PROJECT MANAGER C.E. SLACHTA — DIVISION PROPOSALS ENGINEER

09/08/99

CONTRACT NO: C203795 WBS ELEMENT: 2016CPT.01.03.10081.1, ETC.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

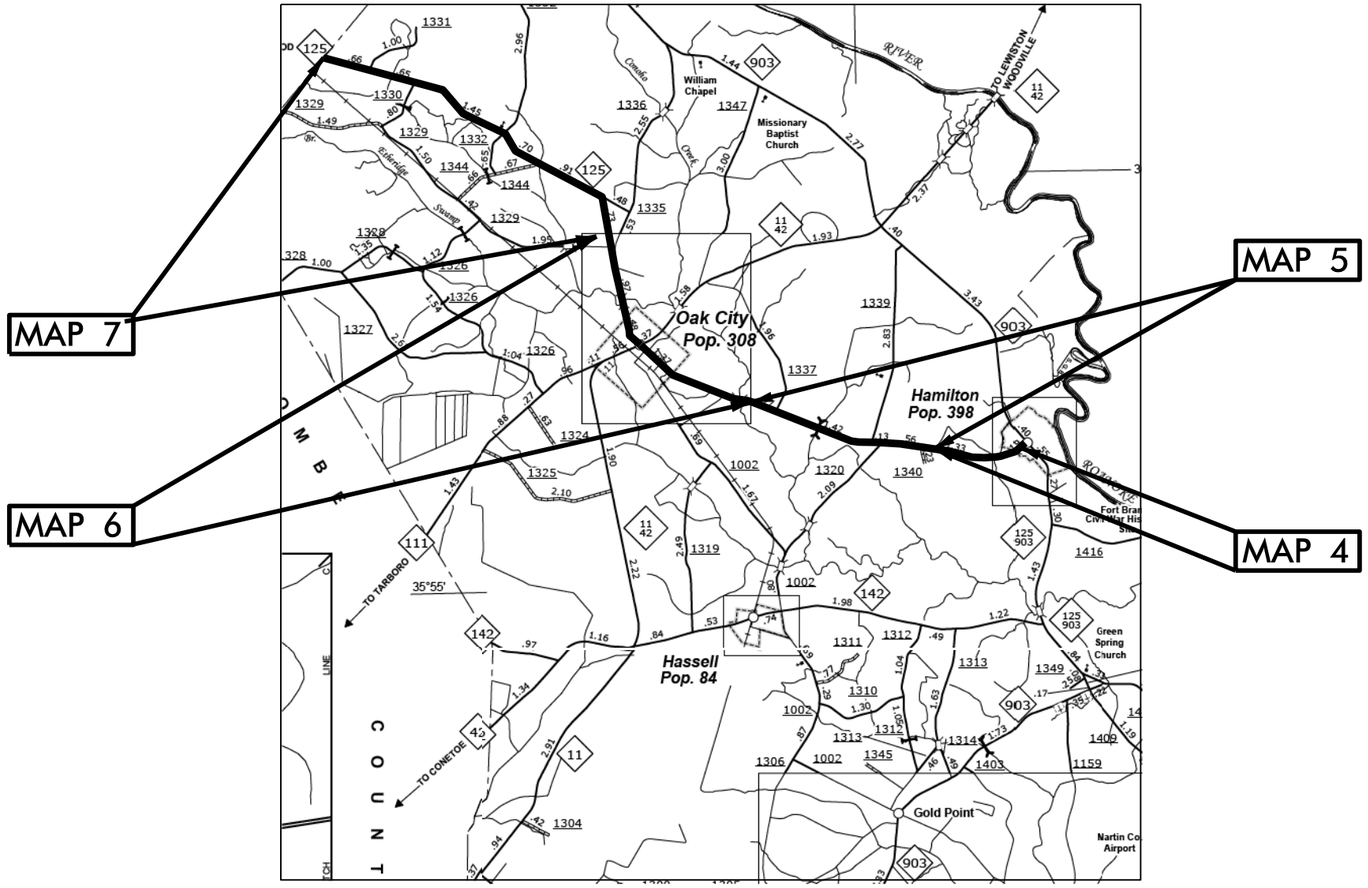
MARTIN COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	2016CPT.01.03.10081.1, ETC.	3	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
2016CPT.01.03.10581.1		MAP 4
2016CPT.01.03.10581.1		MAP 5
2016CPT.01.03.10581.1		MAP 6
2016CPT.01.03.10581.1		MAP 7

LOCATION: *MAP 4 NC 125 FROM NC 903 TO END CURB & GUTTER*
MAP 5 NC 125 FROM HAMILTON WCL TO OAK CITY SCL
MAP 6 NC 125 FROM OAK CITY SCL TO OAK CITY NCL
MAP 7 NC 125 FROM OAK CITY NCL TO HALIFAX COUNTY

TYPE OF WORK: *MILLING, RESURFACING, AND PAVEMENT MARKINGS*



NTS

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT MAP 4 = 0.38 MI.
LENGTH OF ROADWAY PROJECT MAP 5 = 5.23 MI.
LENGTH OF ROADWAY PROJECT MAP 6 = 0.34 MI.
LENGTH OF ROADWAY PROJECT MAP 7 = 6.47 MI.

Prepared In the Office of:
DIVISION OF HIGHWAYS
113 Airport Dr., Edenton NC, 27932

2012 STANDARD SPECIFICATIONS

LETTING DATE:
December 2015

W.B. HOBBS, P.E.
DIVISION PROJECT MANAGER

C.E. SLACHTA
DIVISION PROPOSALS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION

PROJECT REFERENCE NO.	SHEET NO.
2016CPT.01.03.10081.1, ETC.	4

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 0.75" OPEN GRADE ASPHALT FRICTION COURSE, TYPE FC-2 MODIFIED, AT AN AVERAGE RATE OF 90 LBS. PER SQ. YD.
V1	MILLING BITUMINOUS PAVEMENT. 1.5" IN DEPTH.
U	EXISTING PAVEMENT.

NOTES:

*ALL PAVED S.R. ROADS OR RAMPS 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 SUMMARY OF QUANTITIES

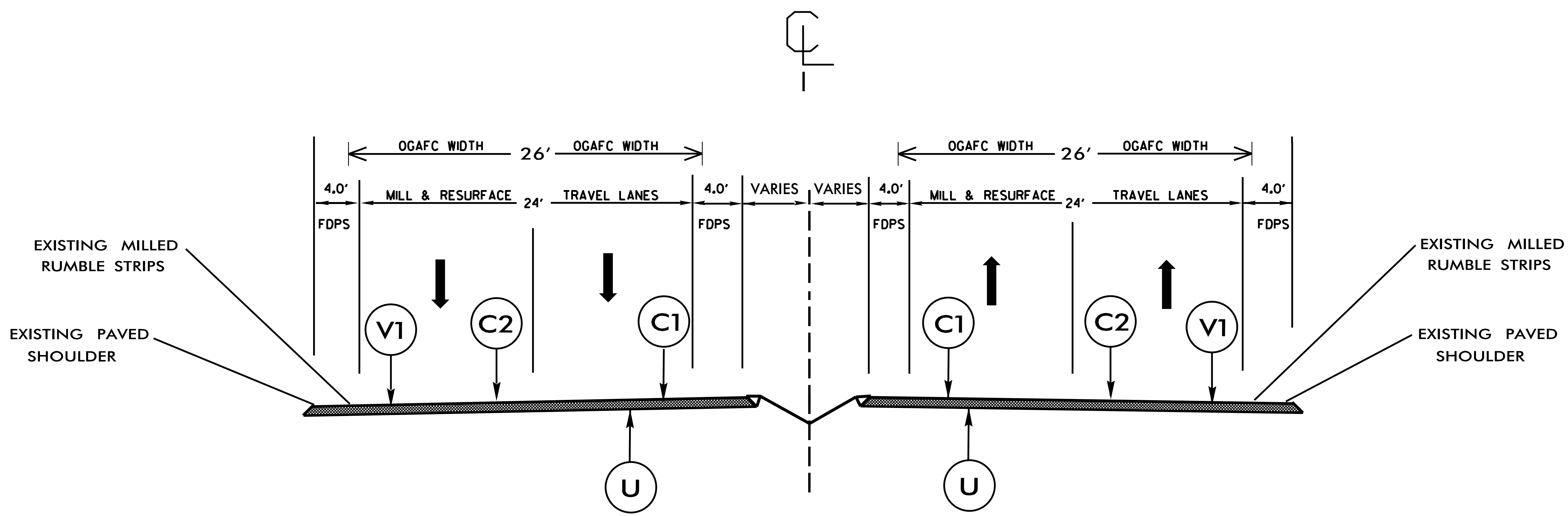
*EXISTING PAVED SHOULDERS NOT TO BE MILLED

*1½ MILLING AND 1.5" OF S9.5B TO BE APPLIED IN TRAVEL LANES ONLY

*OPEN GRADE ASPHALT FRICTION COURSE TO BE APPLIED ± 26' WIDE OR ONE FOOT BEYOND TRAVEL LANES ON EACH SIDE OF TRAVELWAY

*EXISTING MILLED RUMBLE STRIPS NOT TO BE DISTURBED

*SHOULDER RECONSTRUCTION AND SEEDING & MULCHING WILL BE PERFORMED ON RAMP PORTIONS OF THIS PROJECT ONLY



TYPICAL SECTION NO. 1

USE WITH MAPS 1 - 2

NTS

$$$$$SYSTIME$$$$$
$$$$$DGN$$$$$
$$$$$USERNAME$$$$$

PROJECT REFERENCE NO.	SHEET NO.
2016CPT.01.03.10081.1, ETC.	5

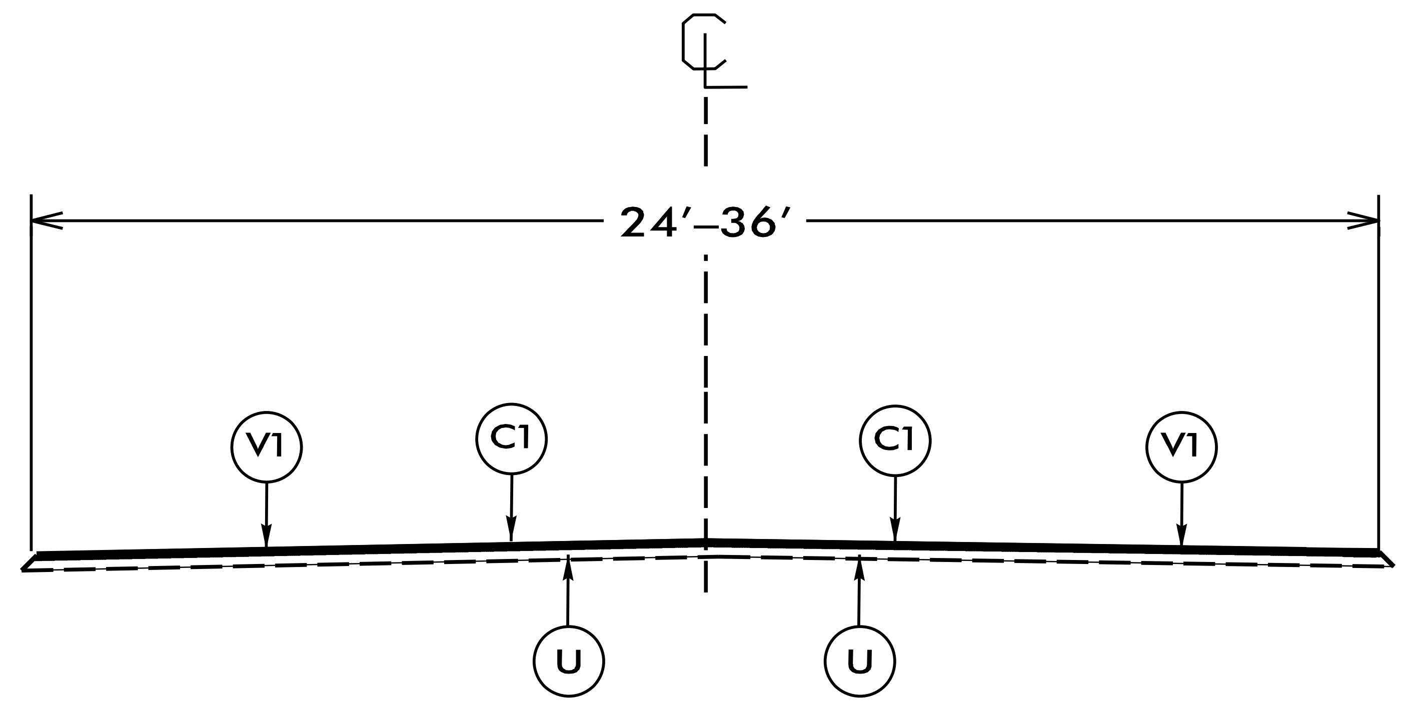
PAVEMENT SCHEDULE

C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
V1	MILLING BITUMINOUS PAVEMENT. 1.5" IN DEPTH.
U	EXISTING PAVEMENT.

NOTES:

*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 SUMMARY OF QUANTITIES



TYPICAL SECTION NO. 2

USE WITH MAP 3, 5, & 7

NTS

$$$$$$SYSTIME$$$$$ $$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$ $$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
2016CPT.01.03.10081.1, ETC.	6

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1.5″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
V1	MILLING BITUMINOUS PAVEMENT. 1.5″ IN DEPTH.
U	EXISTING PAVEMENT.

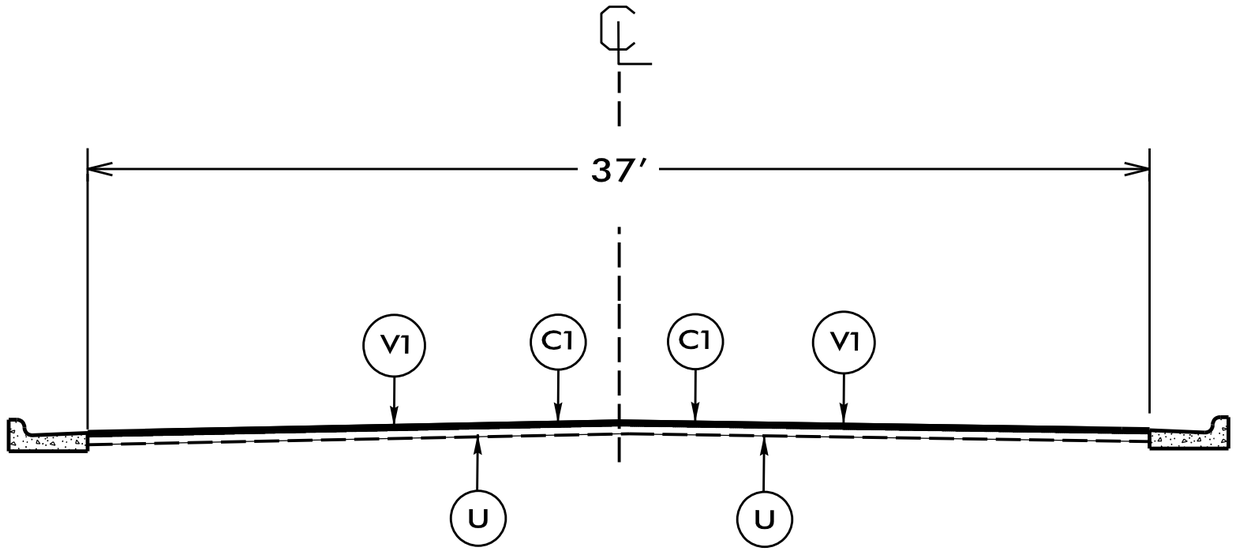
NOTES:

*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 SUMMARY OF QUANTITIES

*CONTRACTOR SHALL MILL 1.5" BELOW EXISTING EDGE OF CONC. CURB & GUTTER.

LOOP INSTALLATION SHALL OCCUR PRIOR TO INSTALLATION OF THE FINAL SURFACE.



TYPICAL SECTION NO. 3

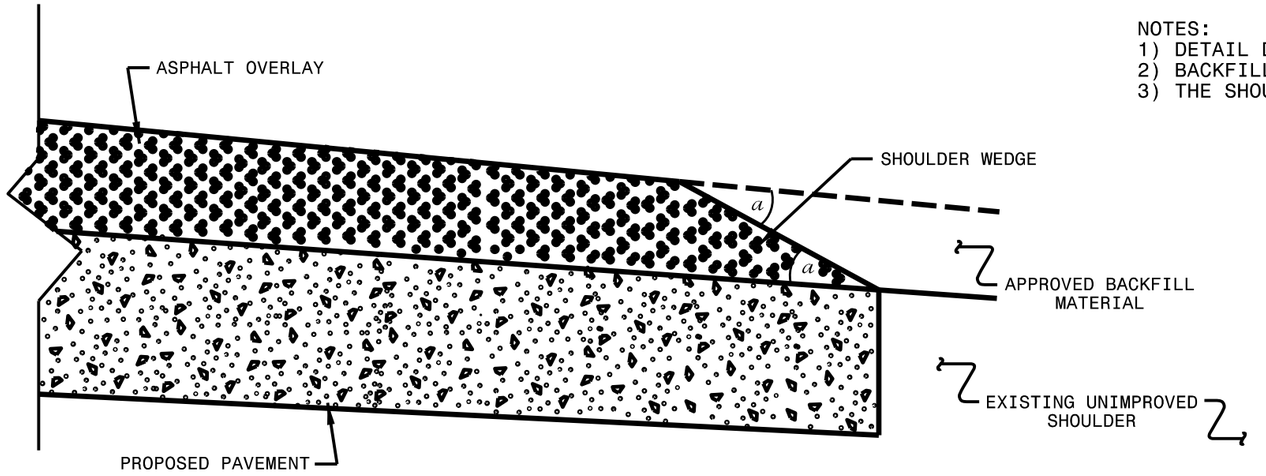
USE WITH MAP 4 & 6

NTS

$$$$$SYSTIME$$$$$
$$$$$LOGIN$$$$$

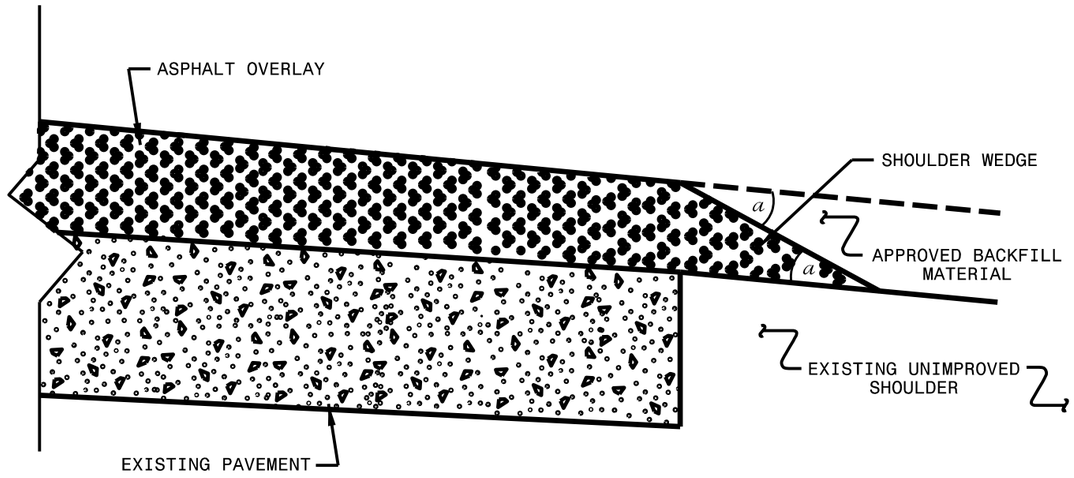
PROJECT REFERENCE NO.	SHEET NO.
2016CPT.01.03.10081.1,ETC.	7

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 AND SIDE STREETS.



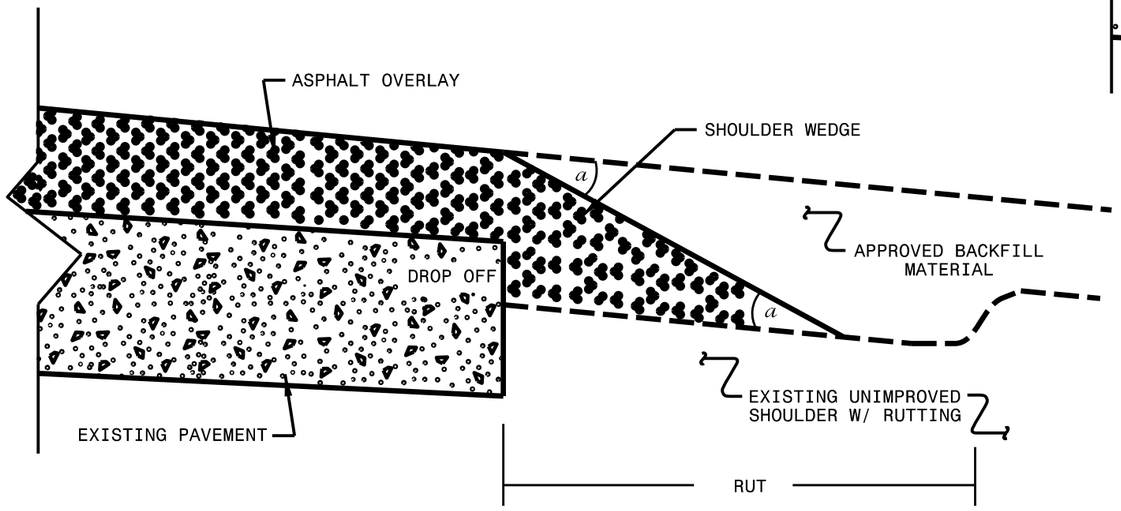
SHOULDER WEDGE DETAIL

(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:	10/16/12
CHECKED BY:		DATE:	
FILE SPEC.:	s:\usr\details\stand\shoulderwedgedetail.dgn		

$$$$SYSTIME$$$$
$$$$SYSTIME$$$$
$$$$USERNAME$$$$
$$$$USERNAME$$$$

PROJECT NO.	SHEET NO.	TOTAL NO.
2016CPT.01.03.10081.1, ETC.	8	

SUMMARY OF QUANTITIES

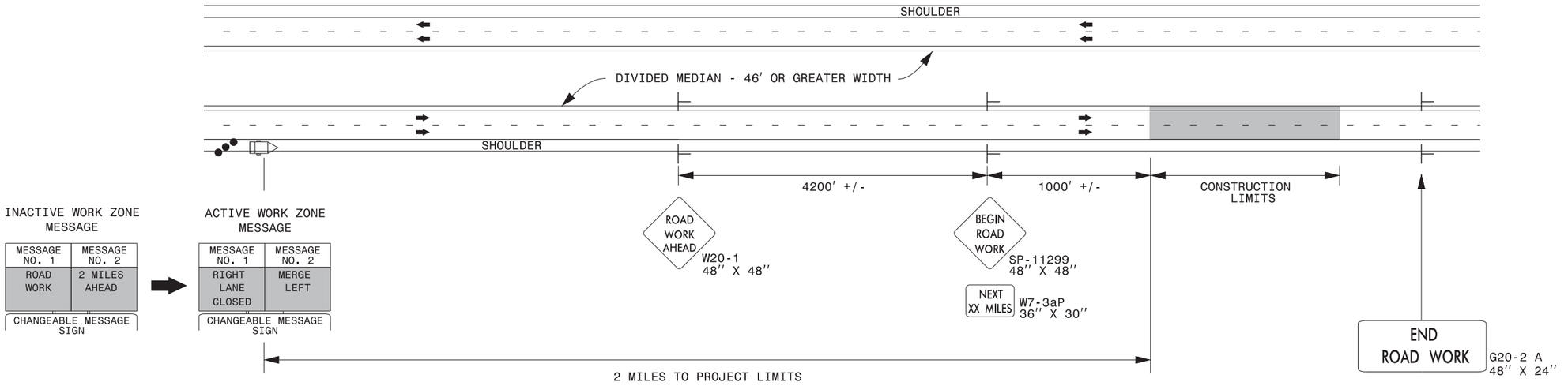
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LENGTH MI	WIDTH FT	MOBILIZATION	BORROW EXCAVATION CY	INCIDENTAL STONE BASE TONS	SHOULDER RECONSTRUCTION SMI	1½" MILLING SY	INCIDENTAL MILLING SY	SURFACE COURSE, S9.5B TONS	ASPHALT BINDER FOR PLANT MIX TONS	POLYMER MODIFIED ASPHALT BINDER FOR PLANT MIX TONS	OGAFC, TYPE FC-2 MOD TONS	ADJ. OF MANHOLES EA	ADJ. OF METER OR VALVE BOX EA	TEMPORARY SILT FENCE LF	COIR FIBER WATTLE LF	SEEDING & MULCHING ACR	RESPONSE FOR EROSION CONTROL EA	INDUCTIVE LOOP SAWCUT LF	LEAD-IN CABLE (14-2) LF
2016CPT.01.03.10081.1	Bertie	1	US 17 BYPASS-EB	FROM US 13 TO US 17	1	2	7.07	26	1	60		2.70	100,000	2,500	10,400	624	296	4,860			200	100	1.6	3		
2016CPT.01.03.10081.1	Bertie	2	US 17 BYPASS-WB	FROM US 17 TO US 13	1	2	7.07	26	*	50		2.20	100,000	2,500	10,150	609	296	4,860			200	100	1.4	3		
2016CPT.01.03.10461.1	Hertford	3	NC 42	FROM NC 11 AHOSKIE CREEK BRIDGE	2	2	3.13	24	*		175		55,000	150	5,100	306					300	150		3		
2016CPT.01.03.10581.1	Martin	4	NC 125	FROM NC 903 TO END CURB & GUTTER	3	2	0.38	37	*				9,100	200	850	51			5	4					300	25
2016CPT.01.03.10581.1	Martin	5	NC 125	FROM HAMILTON CL TO OAK CITY LIMITS	2	2	5.23	24	*		300		80,000	150	7,000	420					500	150		3		
2016CPT.01.03.10581.1	Martin	6	NC 125	OAK CITY SCL TO OAK CITY NCL	3	2	0.34	37	*				8,400	200	800	48			5	5					600	50
2016CPT.01.03.10581.1	Martin	7	NC 125	FROM OAK CITY LIMIT TO HALIFAX CO.	2	2	6.47	24	*		350		97,000	150	8,800	528					500	150		3		
GRAND TOTAL							**22.61**		**1**	**110**	**825**	**4.90**	**449,500**	**5,850**	**43,100**	**2,586**	**592**	**9,720**	**10**	**9**	**1,700**	**650**	**3.00**	**15**	**900**	**75**

THERMOPLASTIC AND PAINT QUANTITIES

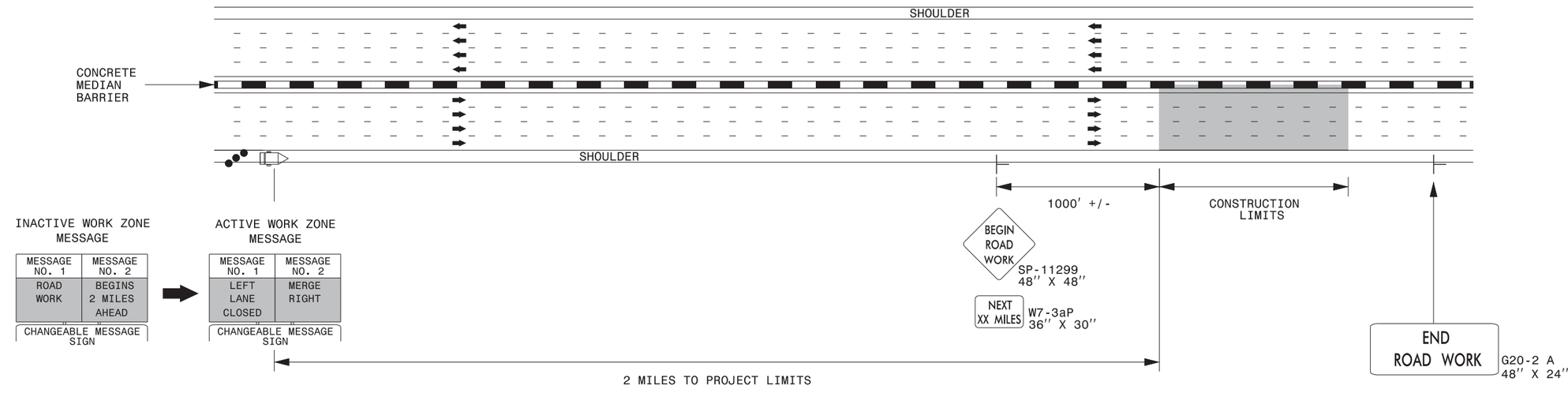
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LENGTH	WIDTH	WORK ZONE ADVANCE GENERAL WARNING SIGNING SF	TEMPORARY TRAFFIC CONTROL LS	4" X 90 M WHITE THERMO LF	4" X 120 M WHITE THERMO LF	4" X 120 M YELLOW THERMO LF	6" X 90 M WHITE THERMO LF	6" X 90 M YELLOW THERMO LF	6" X 120 M WHITE THERMO LF	8" X 90 M WHITE THERMO LF	8" X 90 M YELLOW THERMO LF	12" X 90 M WHITE THERMO LF	24" X 120M WHITE THERMO LF	THERMO LT ARROW-90 M EA	THERMO STR ARROW-90M EA	THERMO RT ARROW-90M EA	4" TEMPORARY PAINT LF	8" WHITE PAINT LF	12" WHITE PAINT LF	24" WHITE PAINT LF	PAINT LT ARROW EA	PAINT STR ARROW EA	PAINT RT ARROW EA	CRYSTAL & RED MARKERS EA	YELLOW & YELLOW MARKERS EA
2016CPT.01.03.10081.1	Bertie	1	US 17 BYPASS-EB	FROM US 17 TO US 13	1	2	7.07	24	72	1				54,000	37,500	10,000	137		250	100	2	8		85,000	137	250	100	2	8		514	
2016CPT.01.03.10081.1	Bertie	2	US 17 BYPASS-WB	FROM US 17 TO US 13	1	2	7.07	24	72	*				54,000	37,500	10,000	274		250	100		5		85,000	274	250	100		5		528	
2016CPT.01.03.10461.1	Hertford	3	NC 42	FROM NC 11 AHOSKIE CREEK BRIDGE	2	2	3.13	24	240	*	34,000	500	27,000					500			21			42,000				21			25	250
2016CPT.01.03.10581.1	Martin	4	NC 125	FROM NC 903 TO END CURB & GUTTER	3	2	0.38	37	48	*			4,000											8,000								30
2016CPT.01.03.10581.1	Martin	5	NC 125	FROM HAMILTON CL TO OAK CITY LIMITS	2	2	5.23	24	240	*	57,000		36,000											70,000								340
2016CPT.01.03.10581.1	Martin	6	NC 125	OAK CITY CURB & GUTTER	3	2	0.34	37	96	*		500	3,550							100	10	2	2	7,100			100	10	2	2	20	30
2016CPT.01.03.10581.1	Martin	7	NC 125	FROM OAK CITY LIMIT TO HALIFAX CO.	2	2	6.47	24	384	*	71,000	500	45,000											90,000								430
GRAND TOTAL							**22.61**		**1152**	**1**	**162,000**	**1,500**	**115,550**	**108,000**	**75,000**	**20,000**	**411**	**500**	**500**	**300**	**33**	**15**	**2**	**387,100**	**411**	**500**	**300**	**33**	**15**	**2**	**1,087**	**1,080**
												117,050		**183,000**			**911**				**50**							**50**			**2,167**	

PROJ. REFERENCE NO.	SHEET NO.
2016CPT.01.03.10081.1,ETC.	TMP-1

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

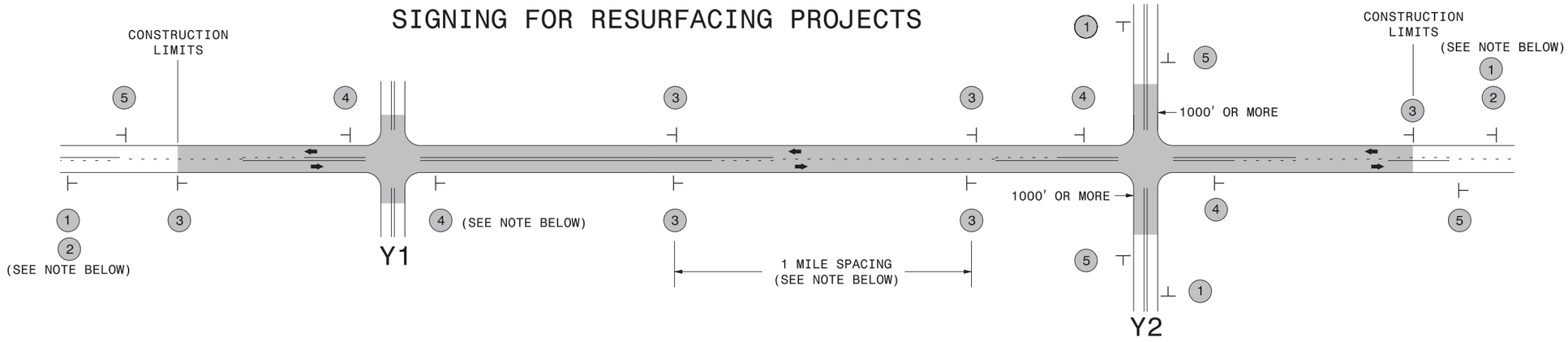
DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

RESURFACING ADVANCE WARNING SIGNS FOR HIGH SPEED FACILITIES ≥ 60 MPH

3/23/2015
C:\Users\rmgarrett\Downloads\Resurfacing_AdvWarn_HSpd.dgn
User:rmgarrett

PROJ. REFERENCE NO.	SHEET NO.
2016CPT.01.03.10081.1,ETC.	TMP-2

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.

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

3/9/2015
C:\Users\rmgarrett\Downloads\Resurfacing_AdvWarn_2Ln (2).dgn
User:rmgarrett

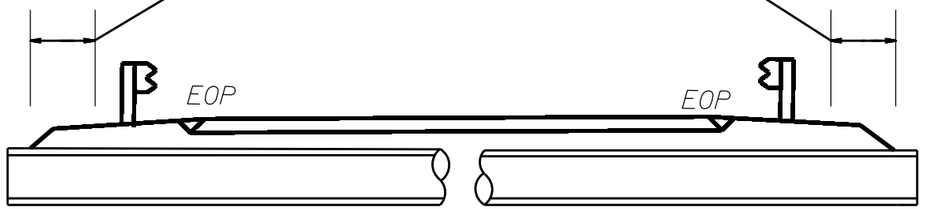
PROJECT REFERENCE NO.	SHEET NO.
2016CPT.01.03.10081J,etc.	EC-1

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

BMP Options: Wattle, Silt Fence or Hardened Aggregate.

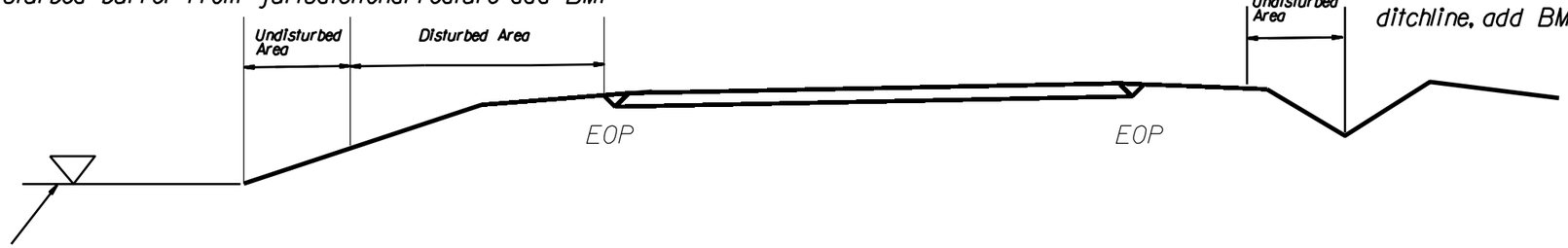
EROSION CONTROL DETAIL

< 5' - 10' Undisturbed buffer add BMP



Pipe/Culvert

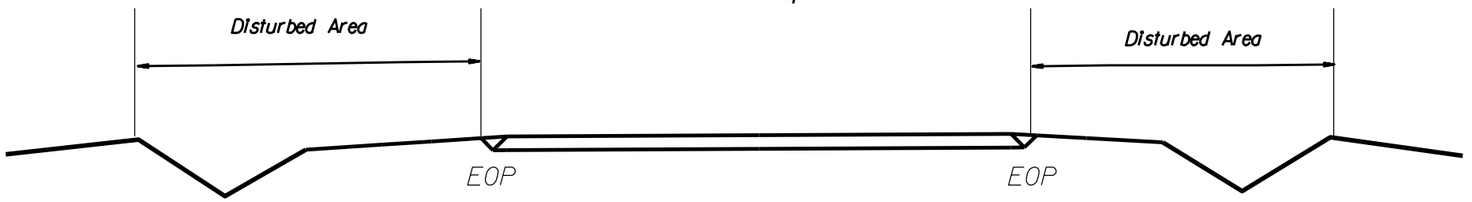
< 5' - 10' Undisturbed buffer from jurisdictional feature add BMP



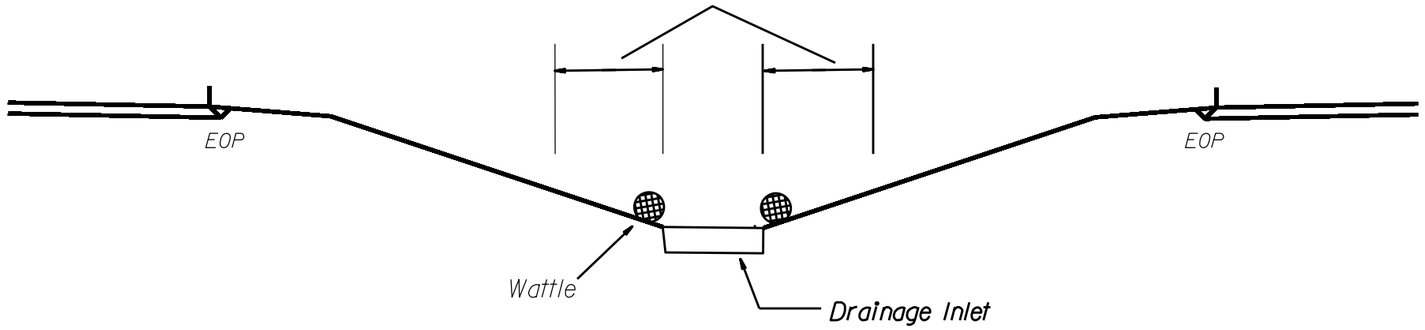
< 5' - 10' Undisturbed buffer from ditchline, add BMP

Jurisdictional Feature

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

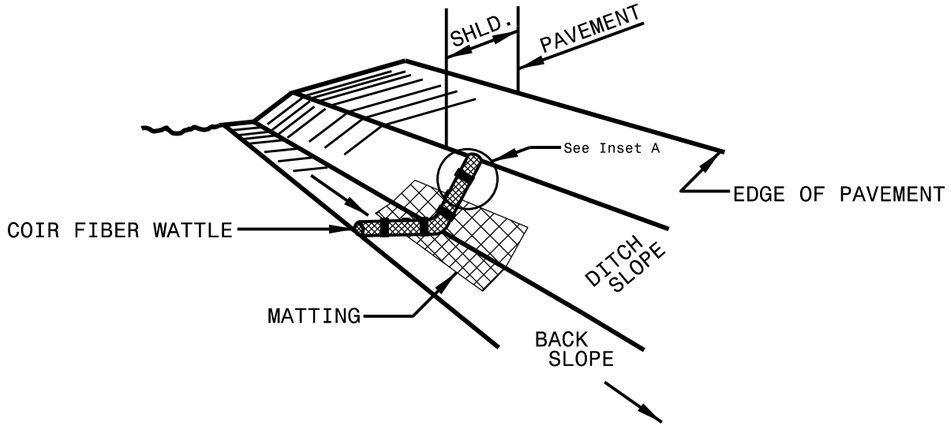


< 5' - 10' Undisturbed buffer from inlet, add wattle

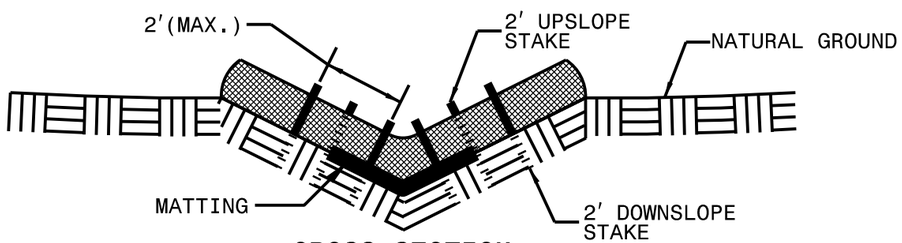


NOT TO SCALE

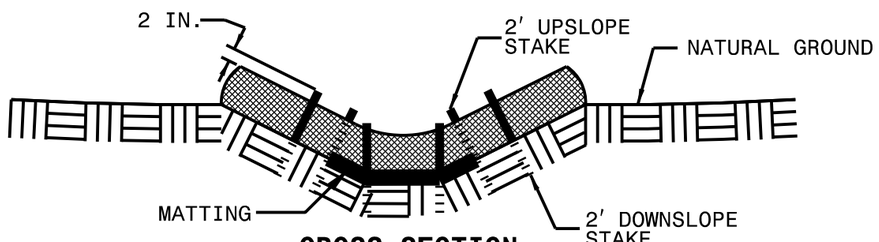
COIR FIBER WATTLE DETAIL



ISOMETRIC VIEW



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH

NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) 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.

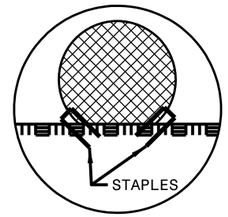
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

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

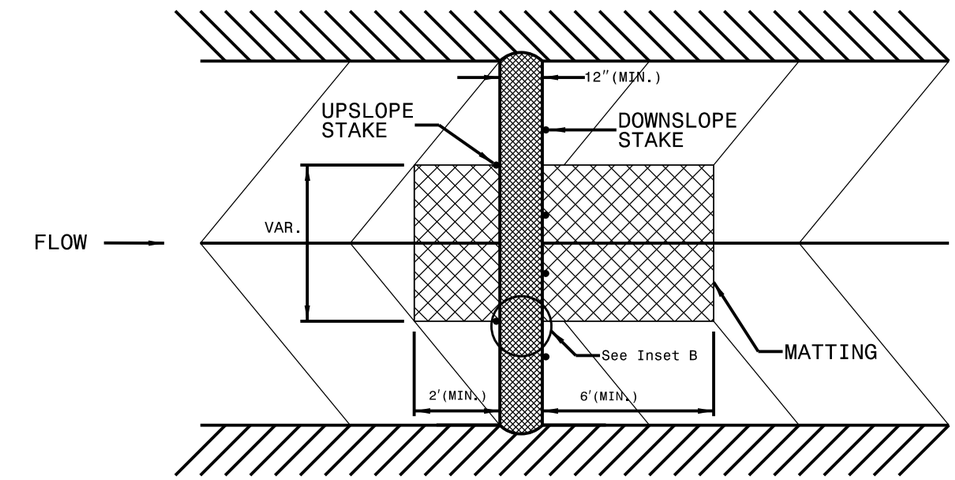
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

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

INSET A



INSET B



TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
2015CPT.01.03.10081.1, ETC.	EC-3

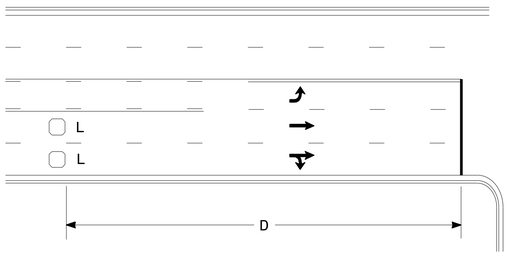
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

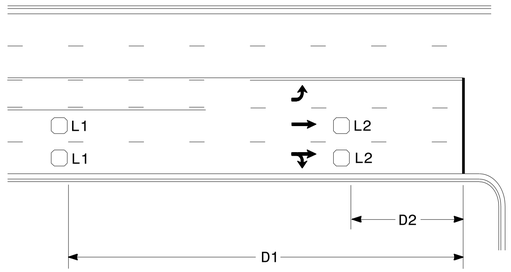
SITE DESCRIPTION	*STABILIZATION TIME*	*TIMEFRAME EXCEPTIONS*
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14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

PROJECT REFERENCE NO.	SHEET NO.
2016.CPT.01.03.10081.1, ETC	SIG-1

High Speed Detection
(≥40 mph)



OR



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

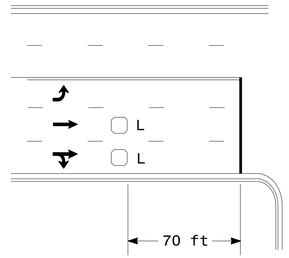
Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

L1 = 6ft X 6ft
Wired in series

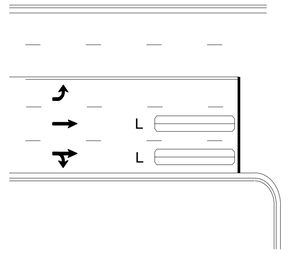
L2 = 6ft X 6ft
Wired in series

"Stretch" Operation

Low Speed Detection
(≤35 mph)



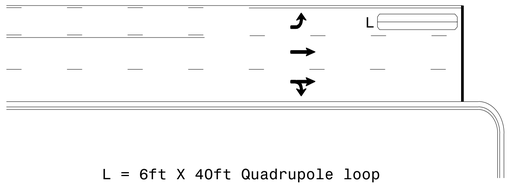
OR



L = 6ft X 6ft
Wired in series

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

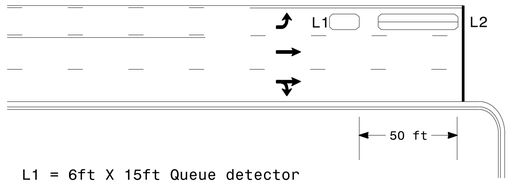
Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

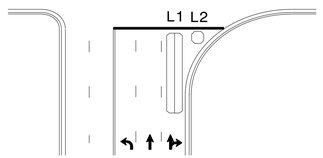
OR



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

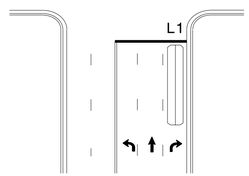
Queue Loop Detection

Right Turn Lane Detection

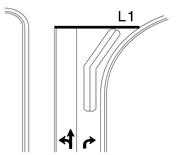


Shared Lane/
Wide Radius Turn

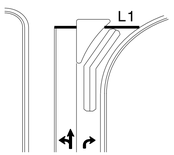
L1 = 6ft X 40ft Quadrupole loop
L2 = 6ft X 6ft [Minimum] Presence loop
Wired separately



Standard Turn

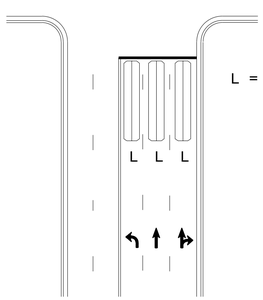


Wide Radius Turn



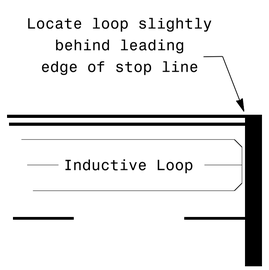
Channelized Turn

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