

**This electronic collection of documents is provided
for the convenience of the user
and is Not a Certified Document –**

**The documents contained herein were originally issued
and sealed by the individuals whose names and license
numbers appear on each page, on the dates appearing
with their signature on that page.**

**This file or an individual page
shall not be considered a certified document.**

15-OCT-2015 09:31
 C:\D\CURRENT\PROJECTS\DIVISION PROJECT WORKING FILES\DISTRICT ONE\2016CPT.01.04.10281.I Dare & Hyde Primary Resurfacing (2016 -2017)\N\ Pre-Bid Documents\Plan Sheets\2016.CPT.01.04.10281.Plans.09/08/15
 AT C:\D\CURRENT\PROJECTS\DIVISION PROJECT WORKING FILES\DISTRICT ONE\2016CPT.01.04.10281.I Dare & Hyde Primary Resurfacing (2016 -2017)\N\ Pre-Bid Documents\Plan Sheets\2016.CPT.01.04.10281.Plans.09/08/15

CONTRACT: 203794 **WBS ELEMENT: 2016CPT.01.04.10281.1, ETC.**

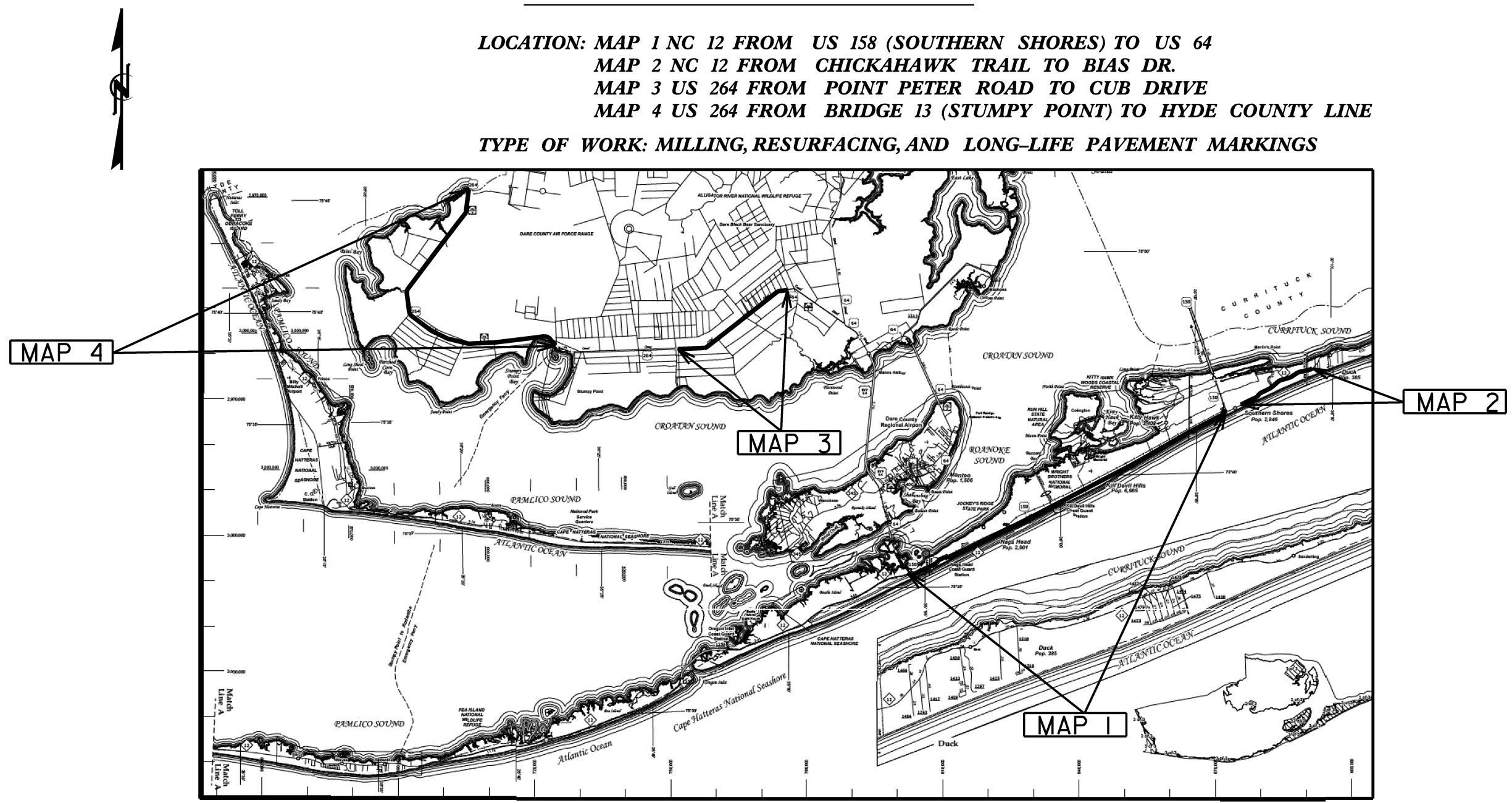
STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

DARE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	2016CPT.01.04.10281.1, ETC.	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
2016CPT.01.04.10281.1		MAP 1	
2016CPT.01.04.10281.1		MAP 2	
2016CPT.01.04.10281.1		MAP 3	
2016CPT.01.04.10281.1		MAP 4	

LOCATION: MAP 1 NC 12 FROM US 158 (SOUTHERN SHORES) TO US 64
MAP 2 NC 12 FROM CHICKAHAWK TRAIL TO BIAS DR.
MAP 3 US 264 FROM POINT PETER ROAD TO CUB DRIVE
MAP 4 US 264 FROM BRIDGE 13 (STUMPY POINT) TO HYDE COUNTY LINE

TYPE OF WORK: MILLING, RESURFACING, AND LONG-LIFE PAVEMENT MARKINGS



NTS

PROJECT LENGTH

- LENGTH OF ROADWAY PROJECT MAP 1 = 15.00 MI.
- LENGTH OF ROADWAY PROJECT MAP 2 = 2.95 MI.
- LENGTH OF ROADWAY PROJECT MAP 3 = 5.23 MI.
- LENGTH OF ROADWAY PROJECT MAP 4 = 12.65 MI.

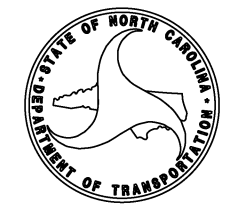
Prepared In the Office of:
DIVISION OF HIGHWAYS
 113 Airport Dr., Edenton NC, 27932

2012 STANDARD SPECIFICATIONS

LETTING DATE:
 December 2015

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

C.E. SLACHTA
 DIVISION PROPOSALS ENGINEER



15-OCT-2015 09:38
 C:\D\CurrentProjects\DIVISION PROJECT WORKING FILES\DistRICT One\2016CPT.01.04.10281.1 Dare & Hyde Primary Resurfacing (2016 -2017)\N\ Pre-Bid Documents\Plan Sheets\2016.CPT.01.04.10281.Plans_09/08/15
 AT DICAD28235L
 cslachta

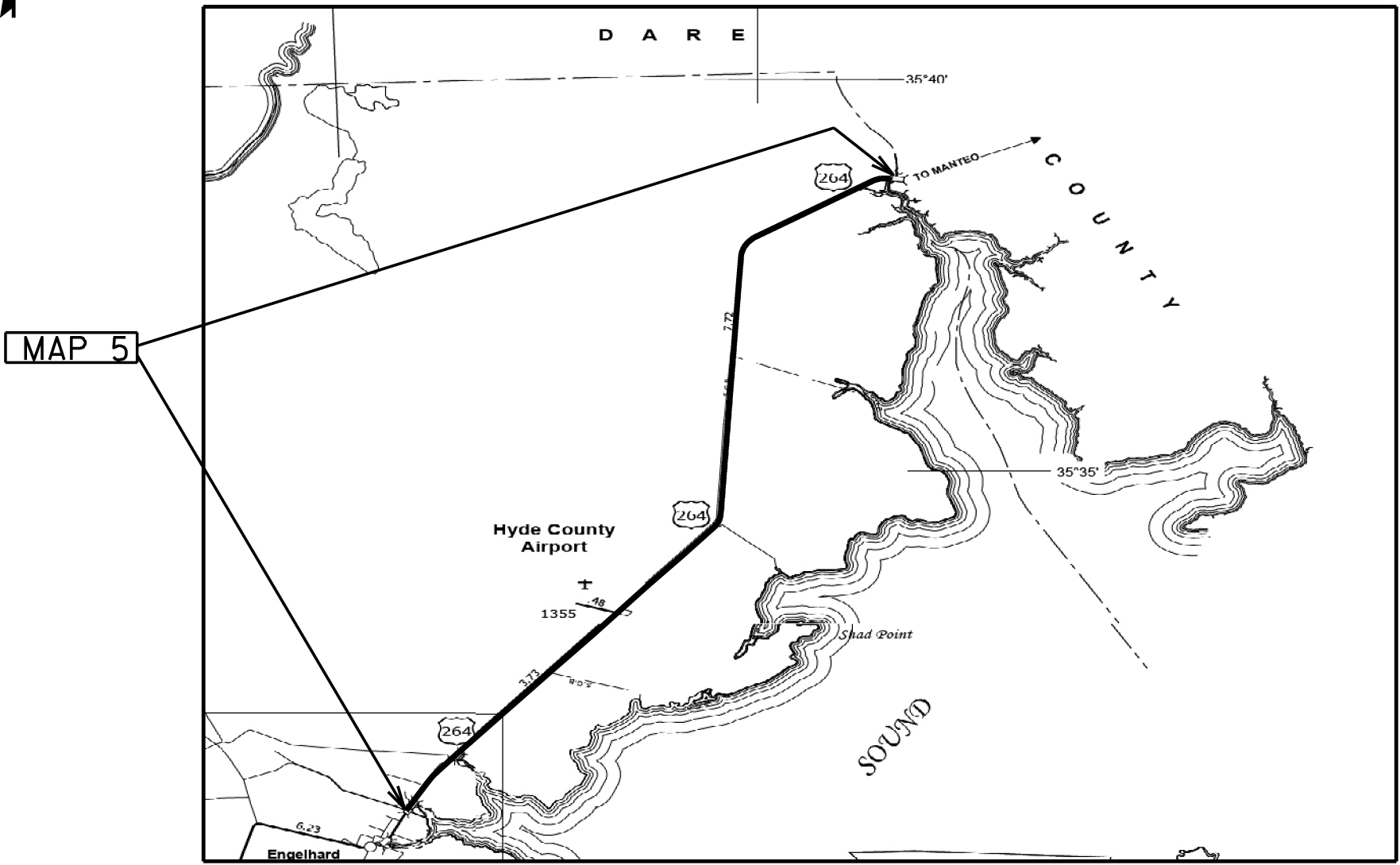
CONTRACT: 203794 WBS ELEMENT: 2016CPT.01.04.10281.1, ETC.

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

HYDE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	2016CPT.01.04.10281.1, ETC.	2	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
2016CPT.01.04.10481.1		MAP 5	

LOCATION: MAP 5 US 264 FROM DARE COUNTY LINE TO SR 1315 (SWAMP RD)
TYPE OF WORK: MILLING, RESURFACING, AND LONG-LIFE PAVEMENT MARKINGS

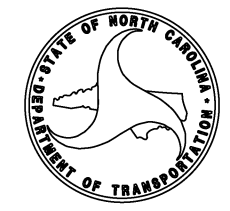


NTS

PROJECT LENGTH
 LENGTH OF ROADWAY PROJECT MAP 5 = 11.42 MI.

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

2012 STANDARD SPECIFICATIONS LETTING DATE: <i>December 2015</i>	W.B. HOBBS, P.E. <small>DIVISION PROJECT MANAGER</small> C.E. SLACHTA <small>DIVISION PROPOSALS ENGINEER</small>
---	---

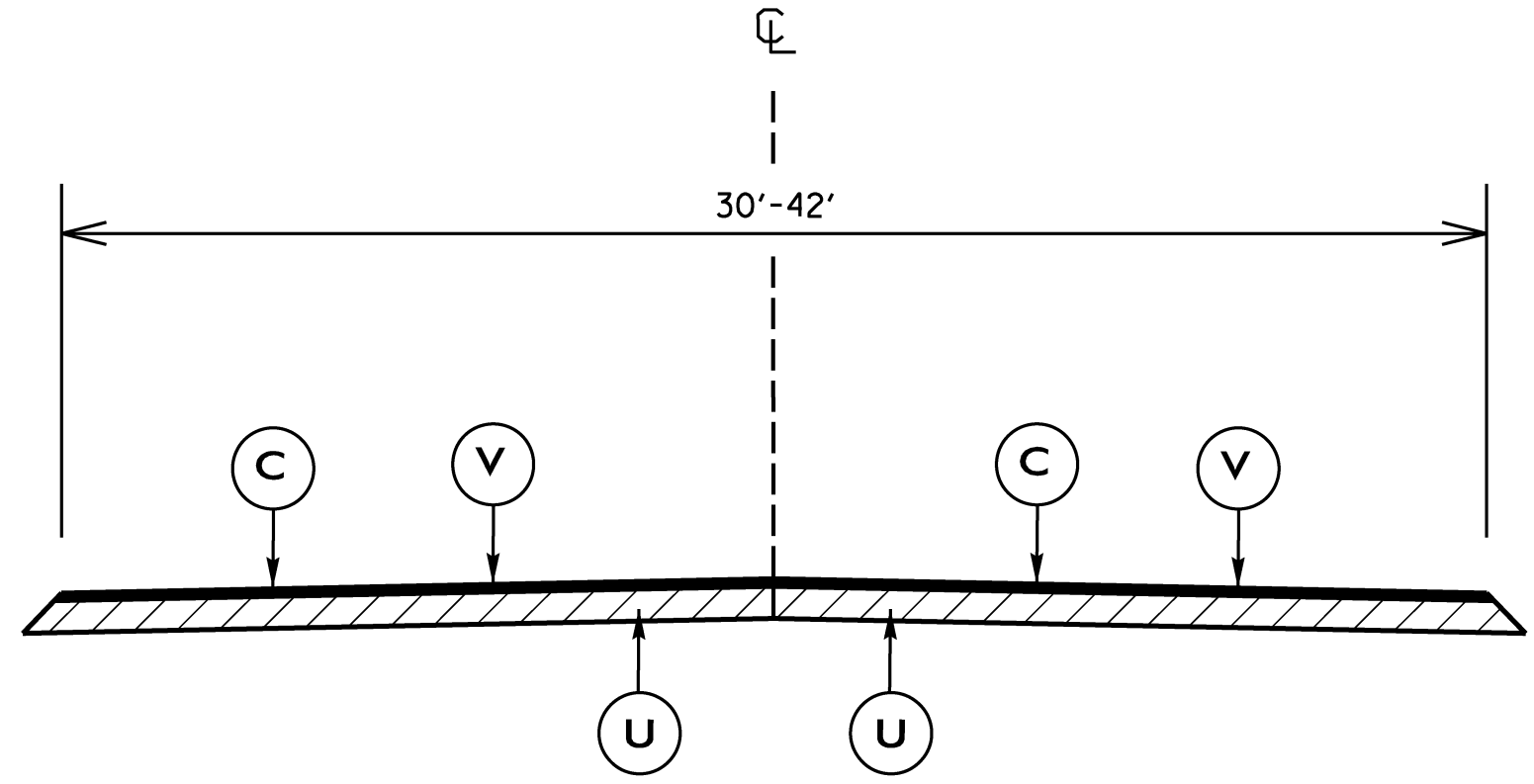


P A V E M E N T S C H E D U L E

C	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
U	EXISTING PAVEMENT.
V	MILLING BITUMINOUS PAVEMENT. 1½" DEPTH.
T	EARTH MATERIAL.

NOTES:

- *ALL PAVED S.R. ROADS TO BE RESURFACED TO THE ENDS OF THE RADII., OR AS DIRECTED BY THE ENGINEER.
- *SHOULDERS TO BE RECONSTRUCTED BY STATE FORCES



TYPICAL SECTION NO. 1
USE WITH MAP 1

SYSTEMS DESIGN

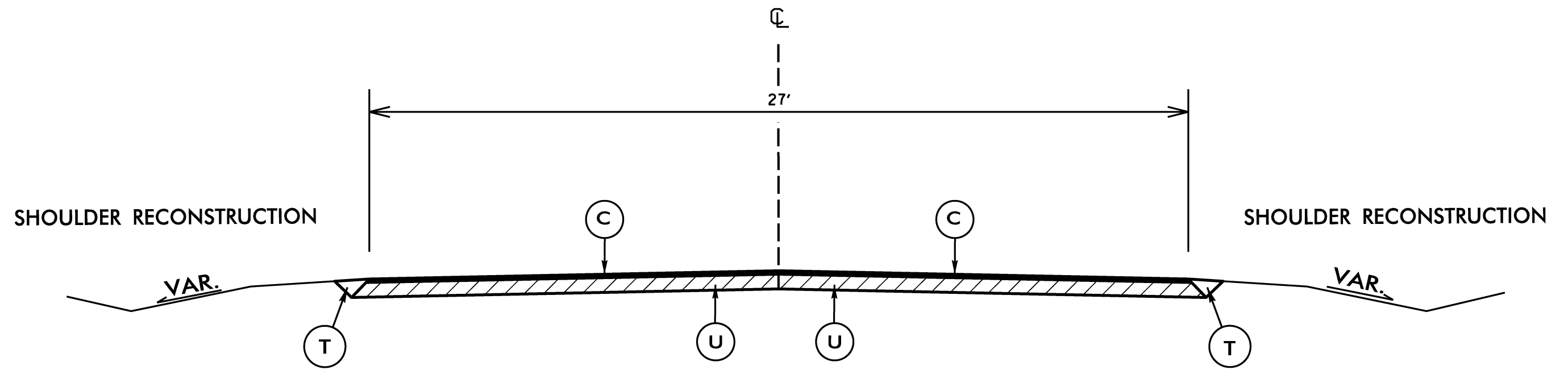
NTS

P A V E M E N T S C H E D U L E

C	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
U	EXISTING PAVEMENT.
T	EARTH MATERIAL.

NOTES:

*ALL PAVED S.R. ROADS TO BE RESURFACED TO THE ENDS OF THE RADII., OR AS DIRECTED BY THE ENGINEER.



TYPICAL SECTION NO. 2
USE WITH MAP 2

NTS

PLANNING & DESIGN SERVICES, INC.

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
U	EXISTING PAVEMENT.
T	EARTH MATERIAL.

NOTES:

*ALL PAVED S.R. ROADS TO BE RESURFACED TO THE ENDS OF THE RADII., OR AS DIRECTED BY THE ENGINEER.

MAPS 3-4

*LEVELING COURSE (S4.75A) SHALL BE APPLIED AT A RATE OF 75 LBS PER SQ. YD. ACROSS ENTIRE MAP.

MAP 5

*LEVELING COURSE (S4.75A) SHALL BE APPLIED AT A RATE OF 75 LBS PER SQ. YD. ACROSS ENTIRE WIDTH OF ROADWAY AT FOLLOWING STATIONS:

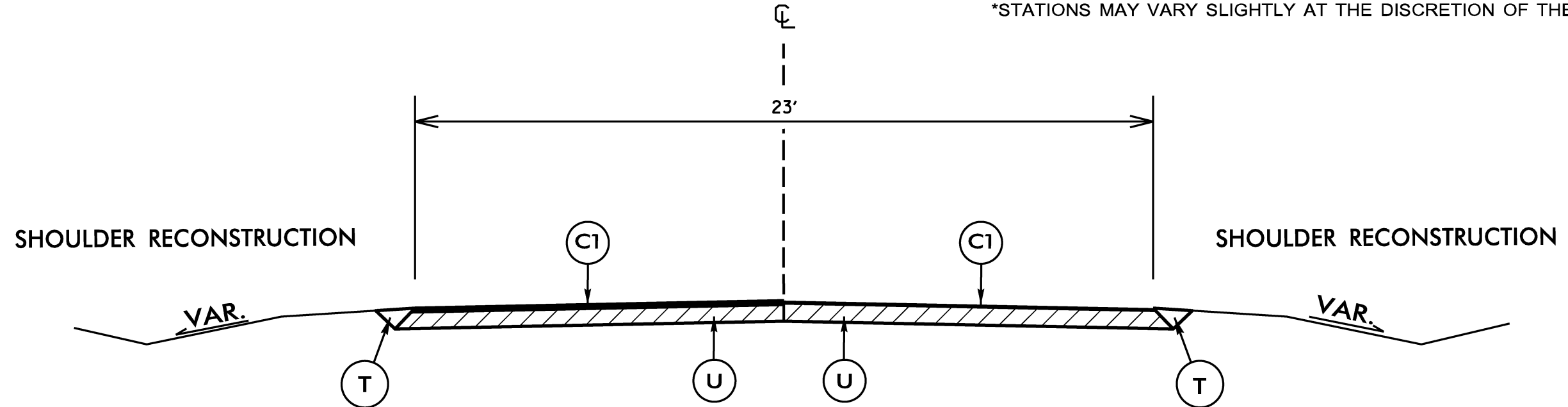
*20+00 - 47+00

*240+00 - 293+00

*356+00 - 380+00

*498+00 - 550+00

*STATIONS MAY VARY SLIGHTLY AT THE DISCRETION OF THE ENGINEER.



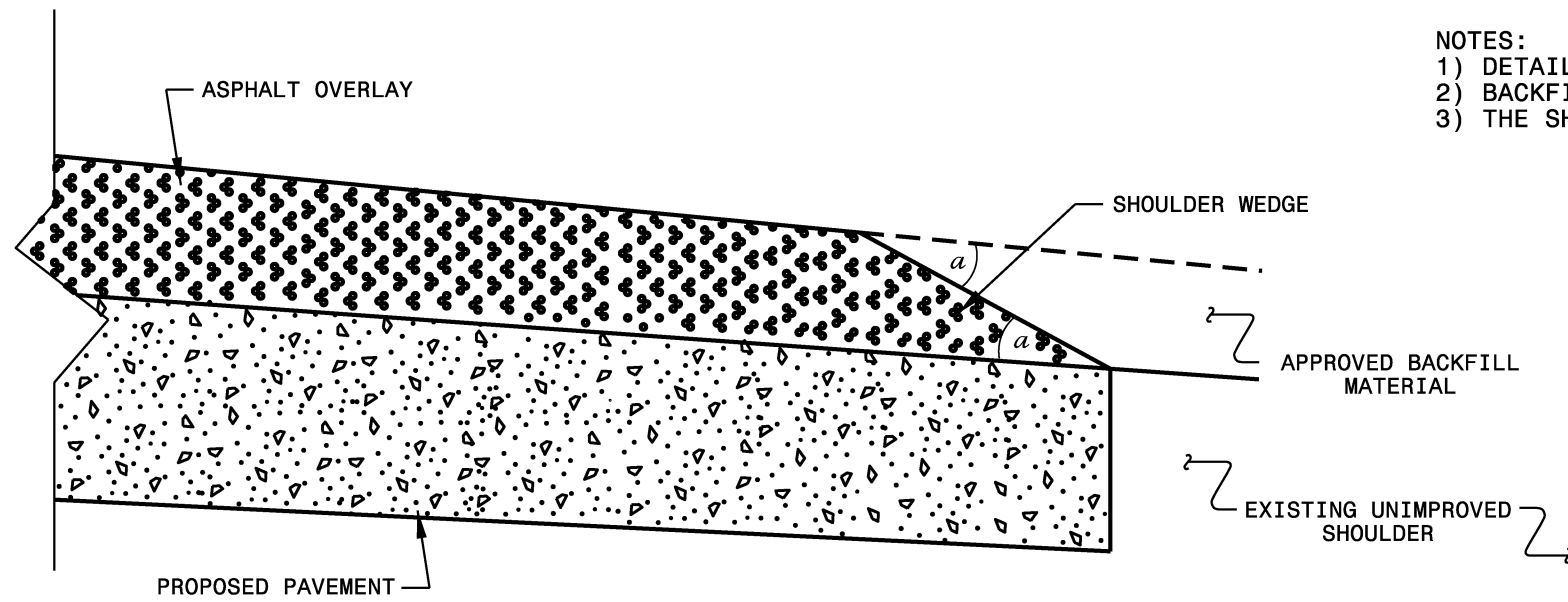
TYPICAL SECTION NO. 3

USE WITH MAPS 3-5

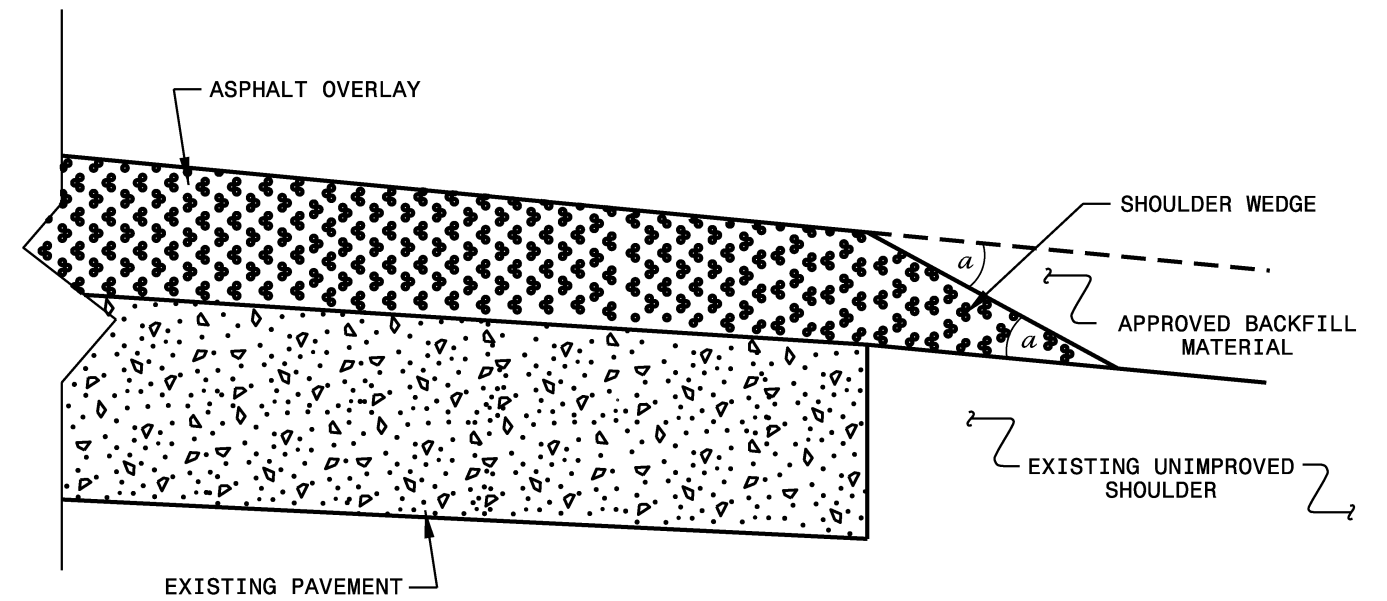
NTS

SYSTEMS DESIGN & CONSTRUCTION
 11000 S. DODD AVE.
 SUITE 200
 DENVER, CO 80231
 TEL: 303.733.1000
 FAX: 303.733.1001
 WWW.SDCON.COM

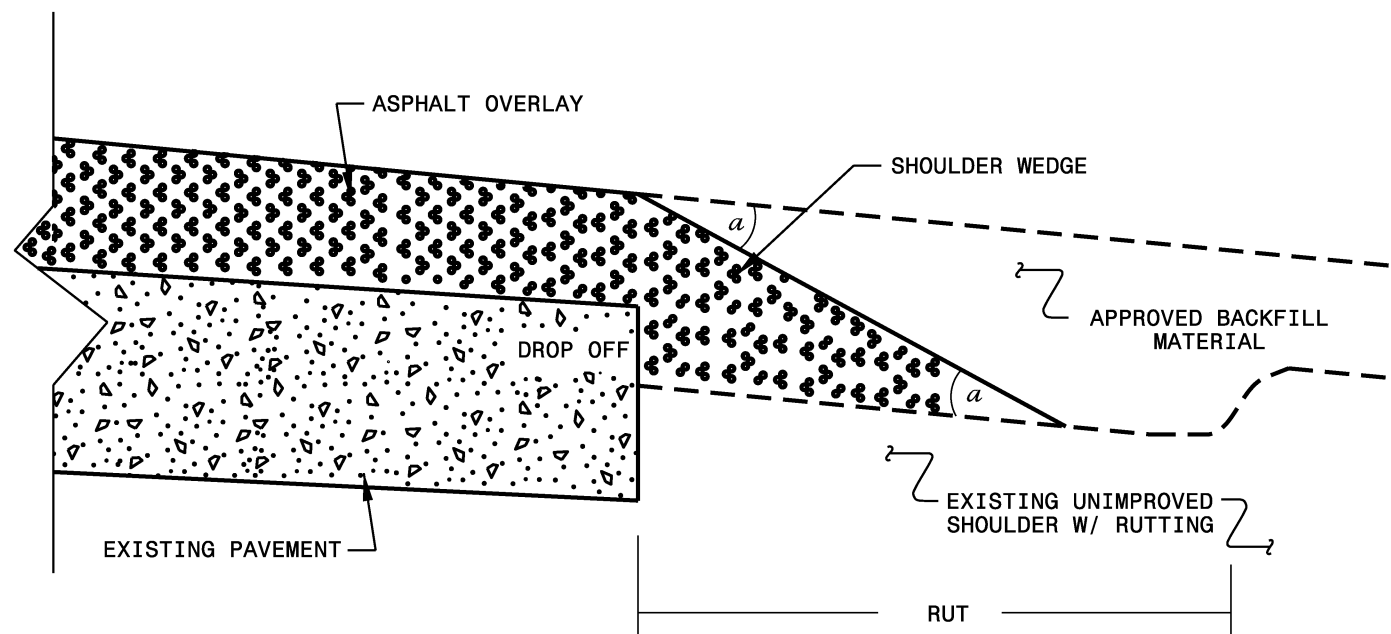
- NOTES:
 1) DETAIL DOES NOT APPLY TO OGAFB AND ULTRA-THIN BONDED WEARING COURSE.
 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS AND SIDE STREETS.



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	

Q:\FEB-2015\01556\at\stat\paving Maps\Shoulder detail\Revised Shoulder Wedge Detail.dgn
 01/16/12 10:51:56
 .bstatum At DICAD270261

PROJECT NO.	SHEET NO.	TOTAL NO.
2016CPT.01.04.10281.1	7	
2016CPT.01.04.10481.1		

SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LENGTH MI	WIDTH FT	MOBILIZATION LS	BORROW EXCAVATION CY	INCIDENTAL STONE BASE TONS	SHOULDER RECONSTRUCTION SMI	1½" MILLING SY	INCIDENTAL MILLING SY	SURFACE COURSE, S9.5B TONS	SURFACE COURSE, SF9.5A TONS	SURFACE COURSE, S4.75A TONS	ASPHALT BINDER FOR PLANT MIX TONS
2016CPT.01.04.10281.1	Dare	1	NC 12	US 158 SOUTHERN SHORES TO US 64	1	15.00	30-42	1		200		285,200	500	25,500			1,530
2016CPT.01.04.10281.1	Dare	2	NC 12	CHICAHAUK TRAIL TO BIAS DRIVE	2	2.95	27	*	125	100	5.90		500	5,100			306
2016CPT.01.04.10281.1	Dare	3	US 264	POINT PETER ROAD TO CUB DRIVE	3	5.23	23	*	225	150	10.46		128		6,000	2,650	582
2016CPT.01.04.10281.1	Dare	4	US 264	BRIDGE 13 TO HYDE COUNTY LINE	3	12.65	23	*	525	250	25.30		128		14,500	6,400	1,407
2016CPT.01.04.10481.1	Hyde	5	US 264	DARE COUNTY LINE TO SR 1315	3	11.42	23	*	475	250	22.84		128		13,150	1,500	983
GRAND TOTAL						47.25		1	1350	950	64.50	285,200	1,384	30,600	33,650	10,550	4,808

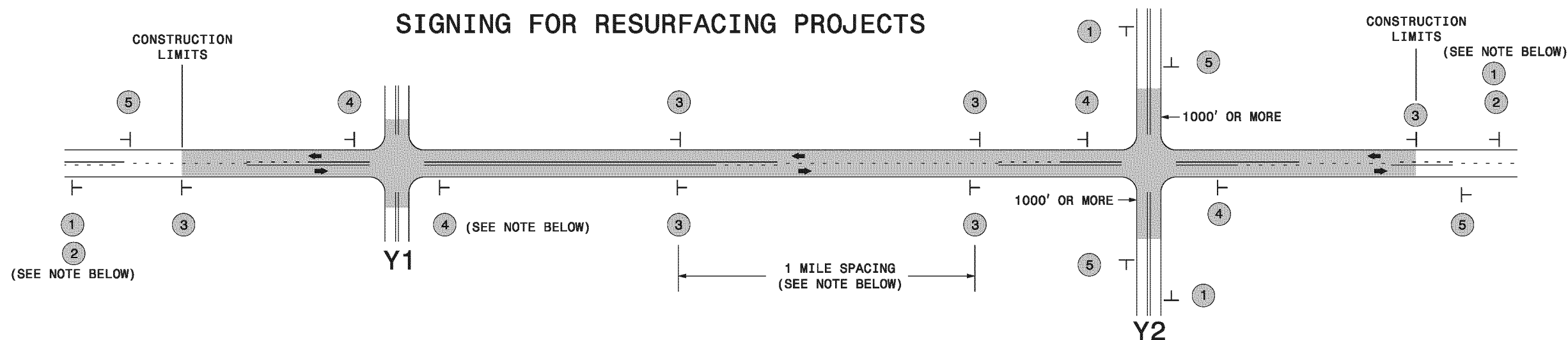
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LENGTH MI	WIDTH FT	RETROFIT EXISTING CURB RAMPS EA	6" CONCRETE DRIVEWAY SY	ADJ. OF MANHOLES EA	ADJ. OF METER OR VALVE BOX EA	TEMPORARY SILT FENCE LF	COIR FIBER WATTLE LF	SEEDING & MULCHING ACR	RESPONSE FOR EROSION CONTROL EA	INDUCTIVE LOOP LF	LEAD-IN CABLE LF
2016CPT.01.04.10281.1	Dare	1	NC 12	US 158 SOUTHERN SHORES TO US 64	1	15.00	30-42	5	250	5	60	500	500		15	2,000	500
2016CPT.01.04.10281.1	Dare	2	NC 12	CHICAHAUK TRAIL TO BIAS DRIVE	2	2.95	27					300	250	3.6	3		
2016CPT.01.04.10281.1	Dare	3	US 264	POINT PETER ROAD TO CUB DRIVE	3	5.23	23					520		5.0	3		
2016CPT.01.04.10281.1	Dare	4	US 264	BRIDGE 13 TO HYDE COUNTY LINE	3	12.65	23					1,200		12.3	6		
2016CPT.01.04.10481.1	Hyde	5	US 264	DARE COUNTY LINE TO SR 1315	3	11.42	23					1,000		11.0	6		
GRAND TOTAL						47.25		5	250	5	60	3,520	750	31.90	33	2,000	500

PROJECT NO.	SHEET NO.	TOTAL NO.
2016CPT.01.04.10281.1	8	
2016CPT.01.04.10481.1		

THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LENGTH	WIDTH	STATIONARY WORK ZONE SIGNS SF	TEMPORARY TRAFFIC CONTROL LS	4" X 90 M WHITE THERMO LF	4" X 120 M YELLOW THERMO LF	4" X 120 M WHITE THERMO LF	8" X 120 M YELLOW THERMO LF	24" X 120 M WHITE THERMO LF	THERMO LT ARROW 90 M EA	4" TEMPORARY PAINT LF	24" WHITE PAINT LF	PAINT LT ARROW EA	YELLOW & YELLOW MARKERS EA	CRYSTAL & RED MARKERS EA			
2016CPT.01.04.10281.1	Dare	1	NC 12	US 158 SOUTHERN SHORES TO US 64	1	15.00	30-42	48	1	161,400	160,000	2,500	1,200	15,000	40	260,400	15,000	40	1,000	75			
2016CPT.01.04.10281.1	Dare	2	NC 12	CHICAHAWK TRAIL TO BIAS DRIVE	2	2.95	27	48	*	32,000	32,000	800	500	2,100	20	32,000		20	200	50			
2016CPT.01.04.10281.1	Dare	3	US 264	POINT PETER ROAD TO CUB DRIVE	3	5.23	23	48	*	56,500	35,000					70,000			350				
2016CPT.01.04.10281.1	Dare	4	US 264	BRIDGE 13 TO HYDE COUNTY LINE	3	12.65	23	96	*	136,500	83,750					167,000			850				
2016CPT.01.04.10481.1	Hyde	5	US 264	DARE COUNTY LINE TO SR 1315	3	11.42	23	96	*	125,000	82,000					100,000			775				
GRAND TOTAL						47.25		336	1	511,400	392,750	3,300	1,700	17,100	60	629,400	15,000	60	3,175	125			
											396,050											3,300	

SIGNING FOR RESURFACING PROJECTS

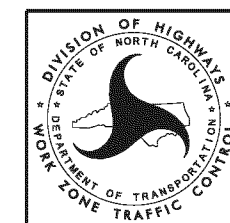


LEGEND	
┆	STATIONARY SIGN
←	DIRECTION OF TRAFFIC FLOW

MAINLINE (-L-) SIGNING

-Y- LINE SIGNING

SIGNING NOTES AND PLACEMENT PER DIRECTION		
1 2		<p style="text-align: center;">NO REQUIRED STATIONARY SIGNING FOR THE FOLLOWING -Y- LINE CONDITIONS:</p> <ol style="list-style-type: none"> 1) LESS THAN 1000' OF RESURFACING ALONG -Y- LINE 2) SUBDIVISION ROADS 3) DEAD END ROADS <p style="text-align: center;">WHEN PAVING/CONSTRUCTION ACTIVITIES PROCEED ACROSS AN UNSIGNED -Y- LINE, ADVANCE WARNING PORTABLE SIGNS SHALL BE USED ALONG THE -Y- LINE AS SHOWN BELOW. REMOVE UPON COMPLETION OF WORK.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <small>W20-1 48" X 48"</small> </div> <div style="text-align: center;"> <small>W20-7 A 48" X 48"</small> </div> </div> <p style="text-align: center;">PLACED 500' IN ADVANCE OF FLAGGER. PLACED 250' IN ADVANCE OF FLAGGER.</p>
3		
4		
5		

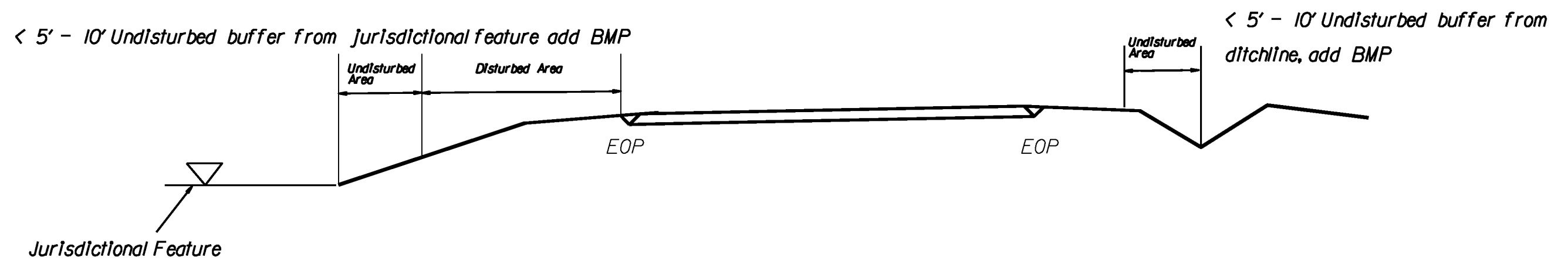
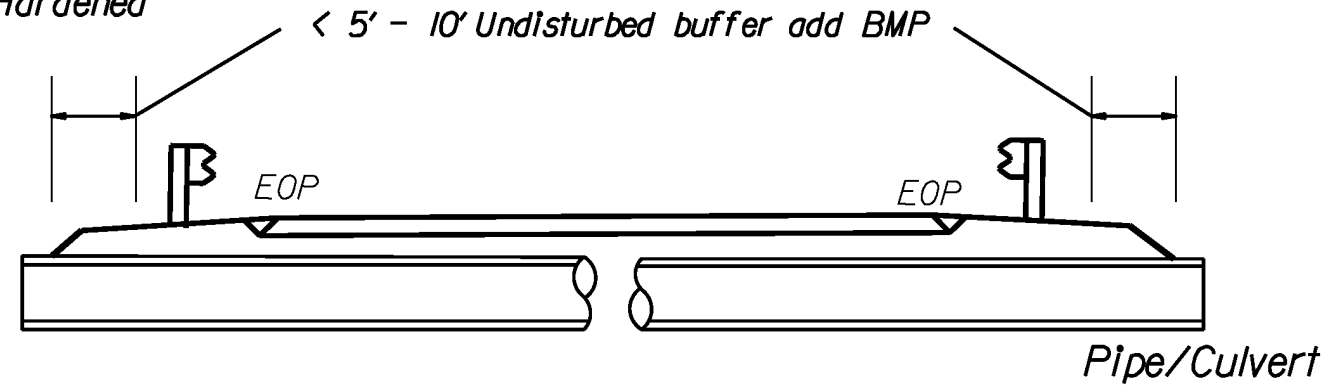


**RESURFACING
ADVANCE WARNING SIGNS
FOR
RURAL AND SUBURBAN
2 LANE ROADWAYS**

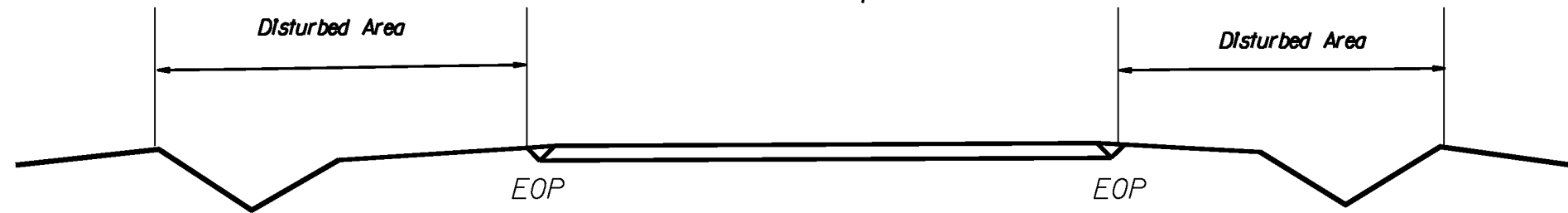
NOTES: Less than 5' - 10' undisturbed buffer from ROW, ditchline, water feature, or drainage inlet, add BMP.

BMP Options: Wattle, Silt Fence or Hardened Aggregate.

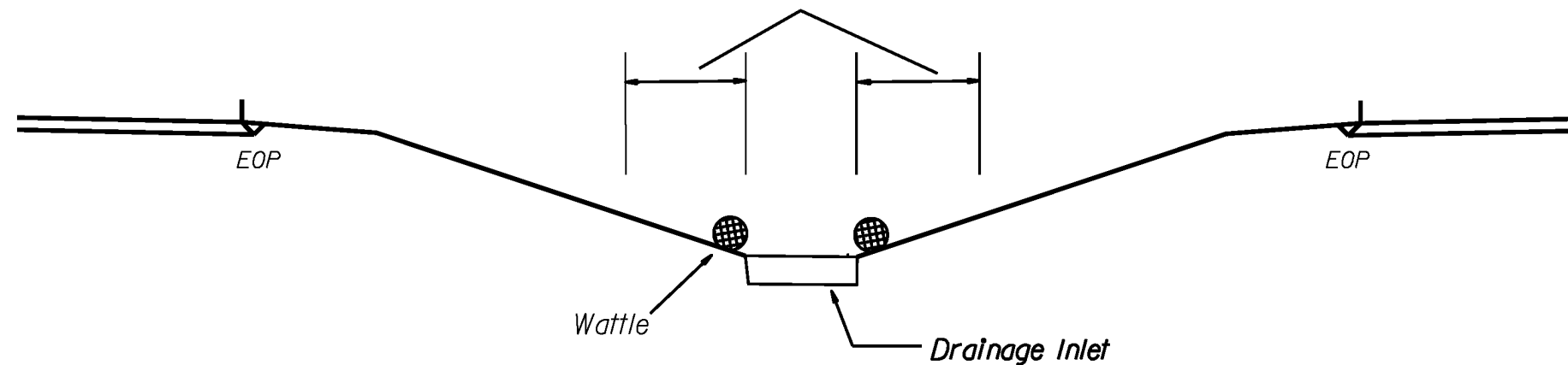
EROSION CONTROL DETAIL



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

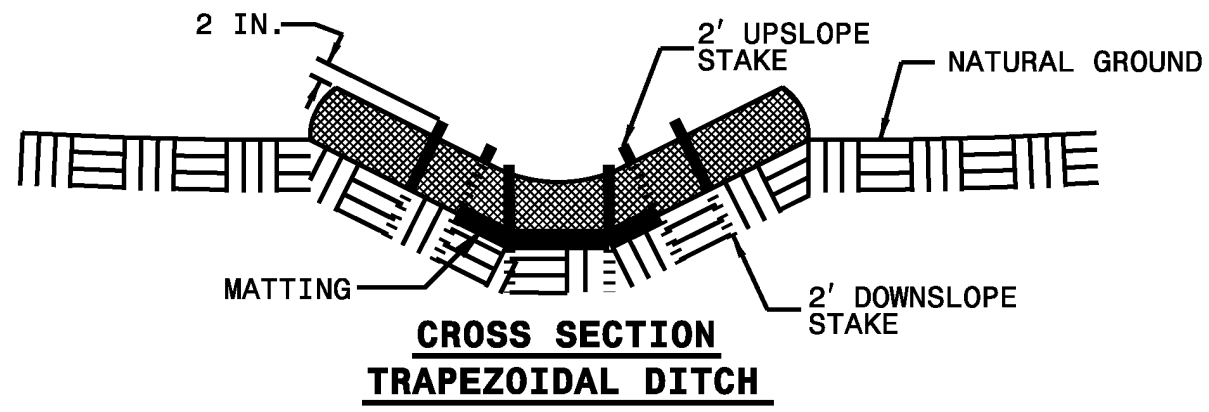
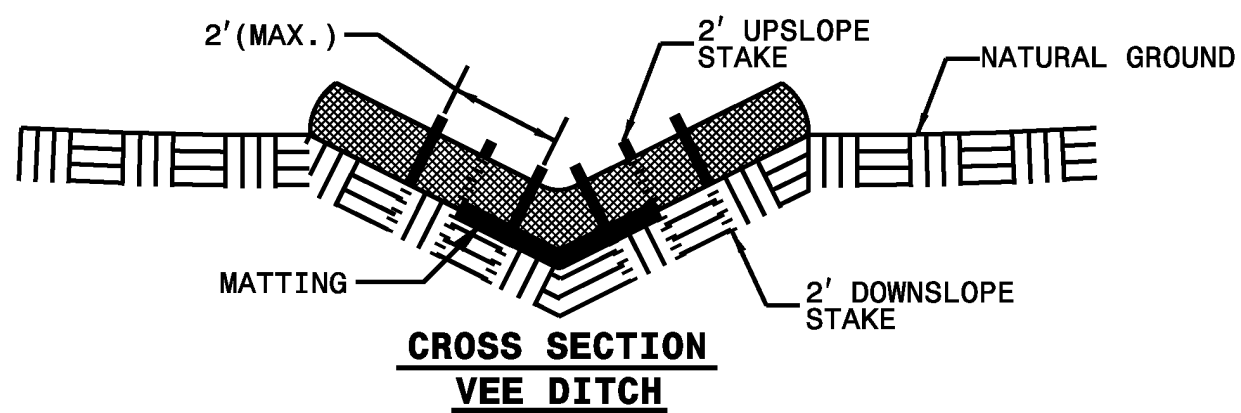
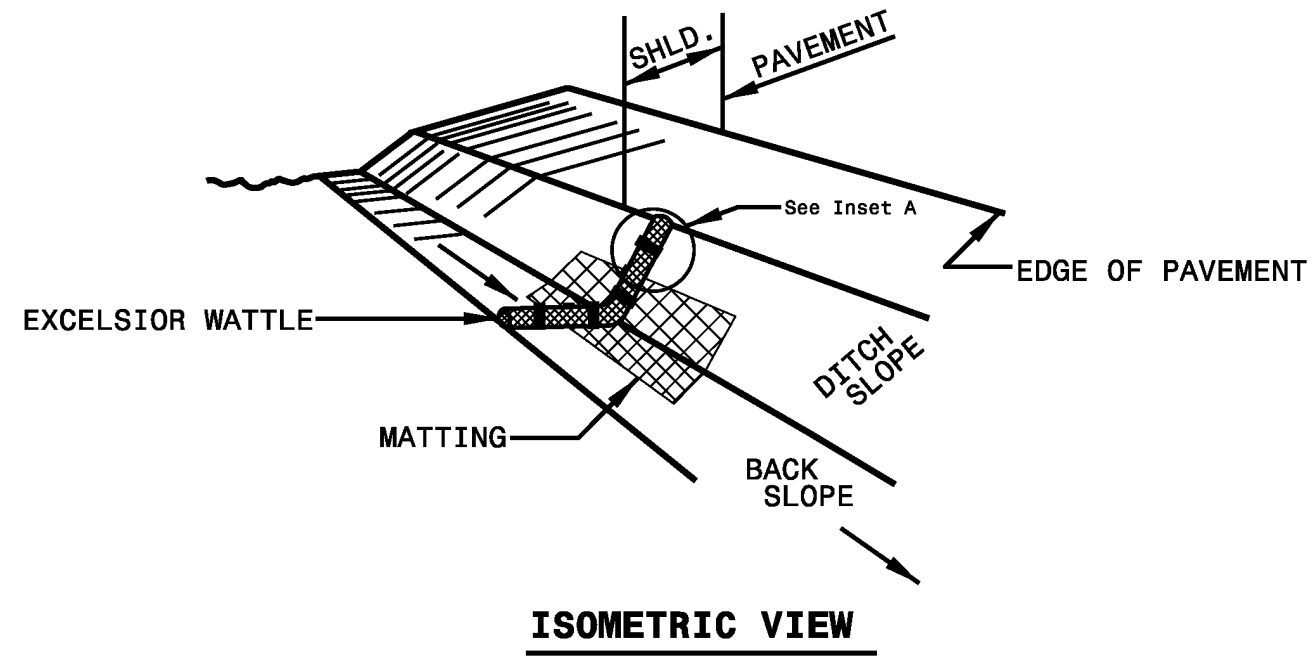


< 5' - 10' Undisturbed buffer from inlet, add wattle



NOT TO SCALE

WATTLE DETAIL



NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

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

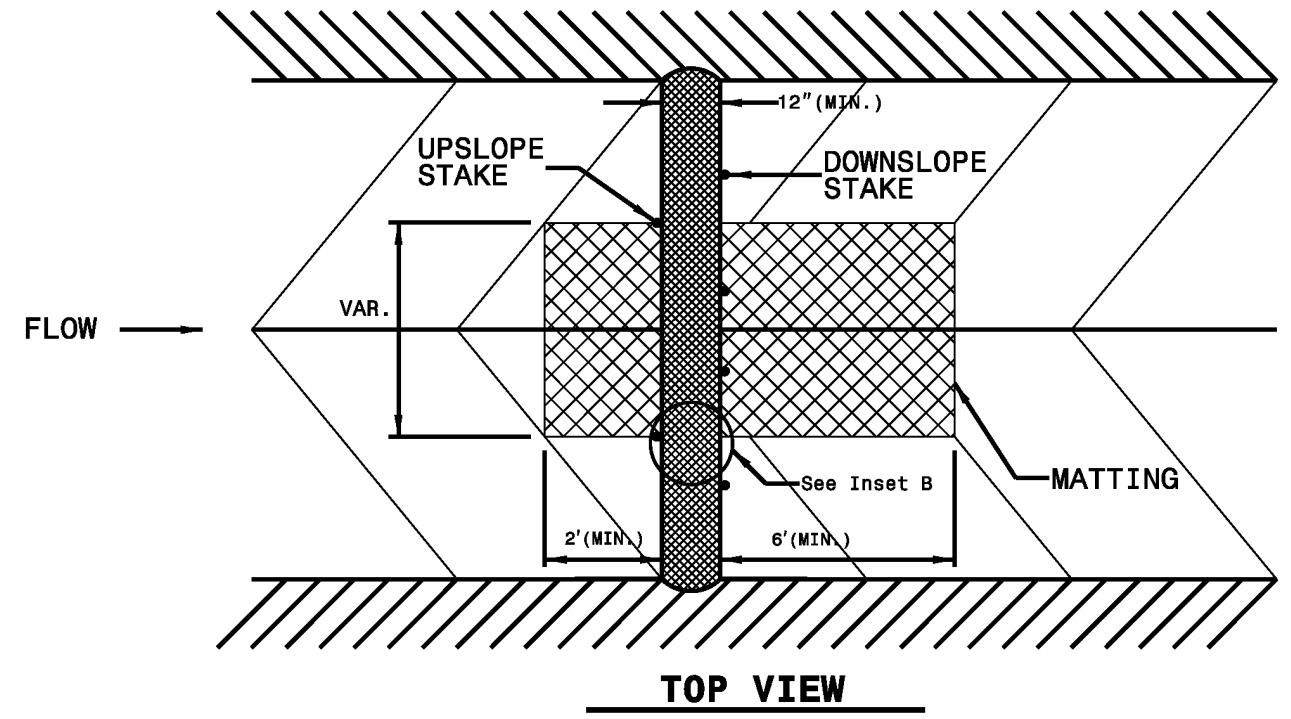
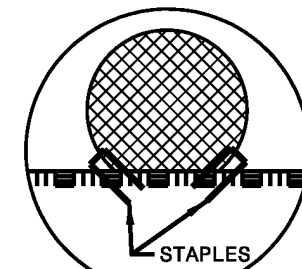
ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

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

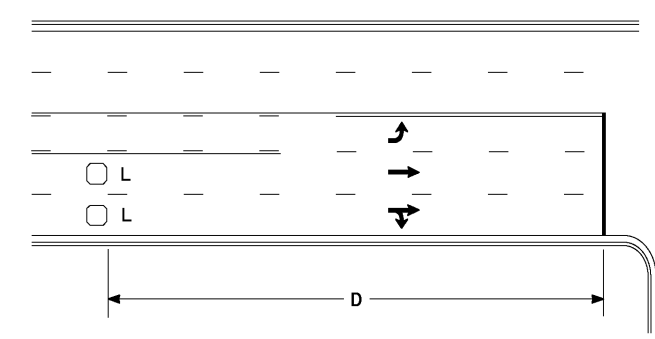
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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.



High Speed Detection (≥40 mph)

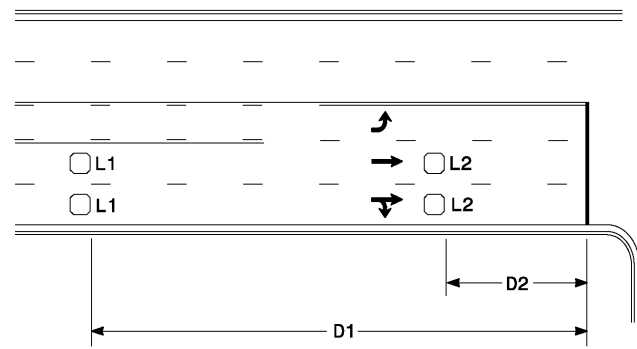


Speed Limit mph	D ft
40	250
45	300
50	355
55	420

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

Volume Density Operation

OR



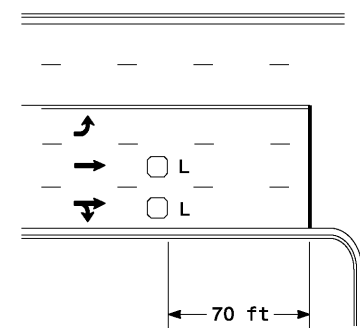
Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

L1 = 6ft X 6ft
Wired in series

L2 = 6ft X 6ft
Wired in series

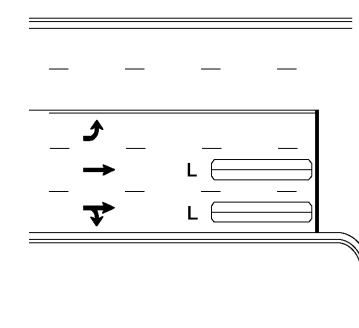
"Stretch" Operation

Low Speed Detection (≤35 mph)



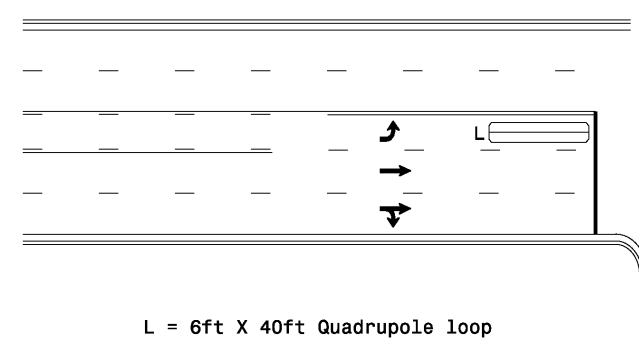
L = 6ft X 6ft
Wired in series

OR



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

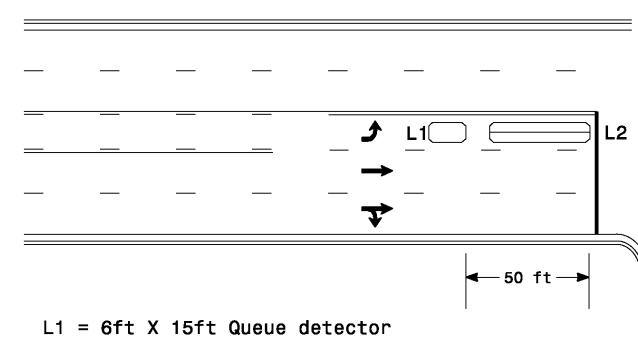
Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

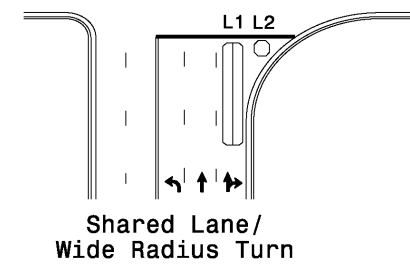
OR



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

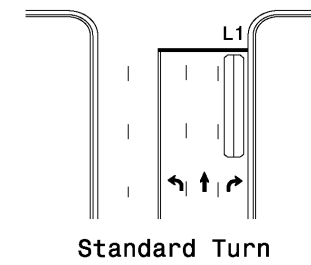
Queue Loop Detection

Right Turn Lane Detection

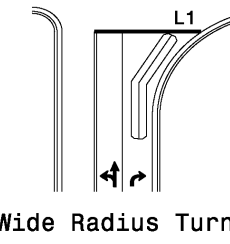


Shared Lane/
Wide Radius Turn

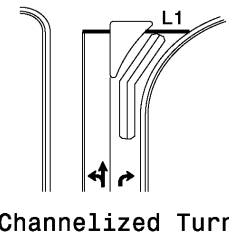
L1 = 6ft X 40ft Quadrupole loop
L2 = 6ft X 6ft [Minimum] Presence loop
Wired separately



Standard Turn

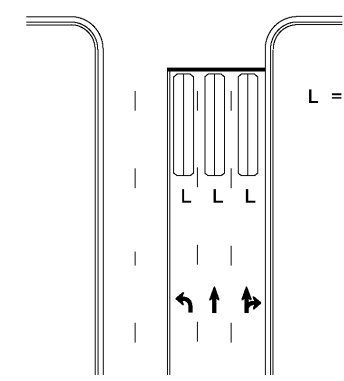


Wide Radius Turn



Channelized Turn

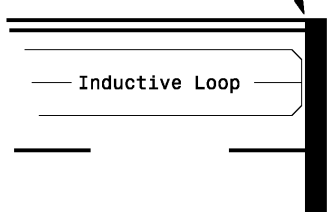
Side Street Detection



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

	Typical Signal Loop Locations	
	PLAN DATE: January 2015 PREPARED BY: PLA	REVIEWED BY: JPG REVIEWED BY:
SCALE: N/A	REVISIONS:	INIT. DATE:
750 N. Greenfield Phyllis Corner, NC 27529		1/30/2015