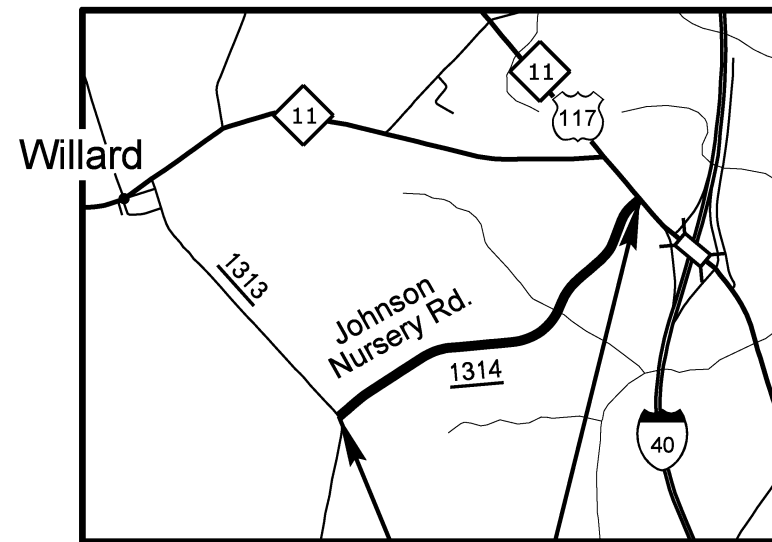


**This electronic collection of documents is provided
for the convenience of the user
and is Not a Certified Document –**

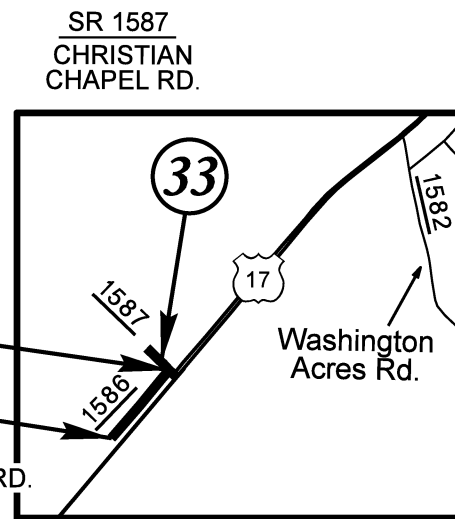
**The documents contained herein were originally issued
and sealed by the individuals whose names and license
numbers appear on each page, on the dates appearing
with their signature on that page.**

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



SR 1314
JOHNSON
NURSERY RD.

5



SR 1586
BROWNTOWN RD.

34

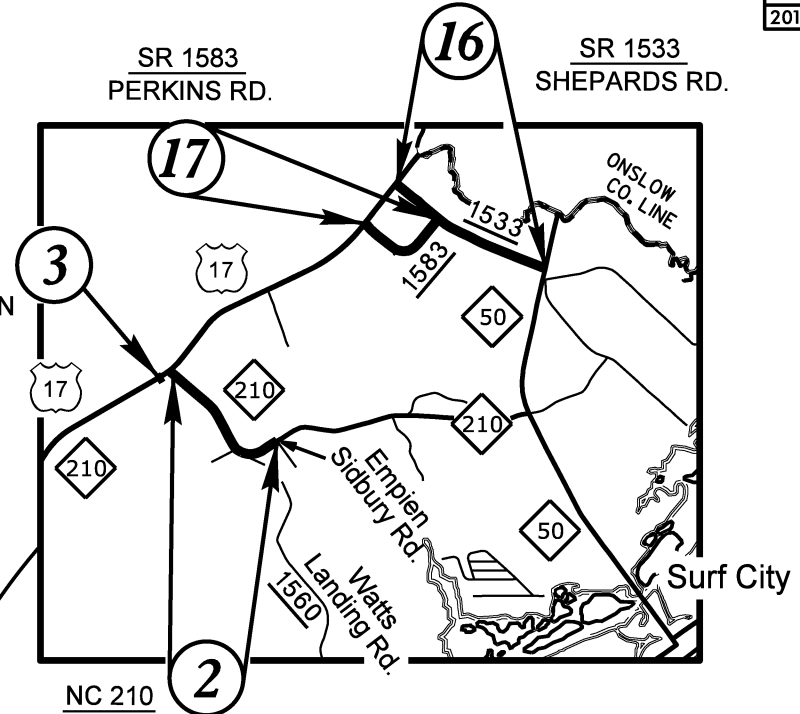
33

PENDER COUNTY



PENDER COUNTY

US 17
RT. LANE TURN
EXTENSION



NC 210

17

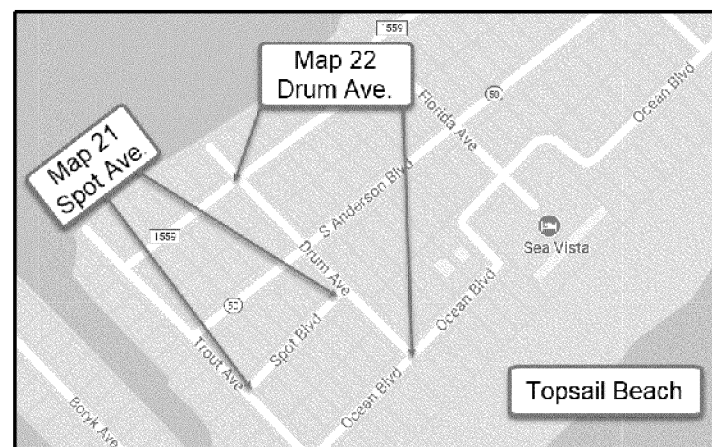
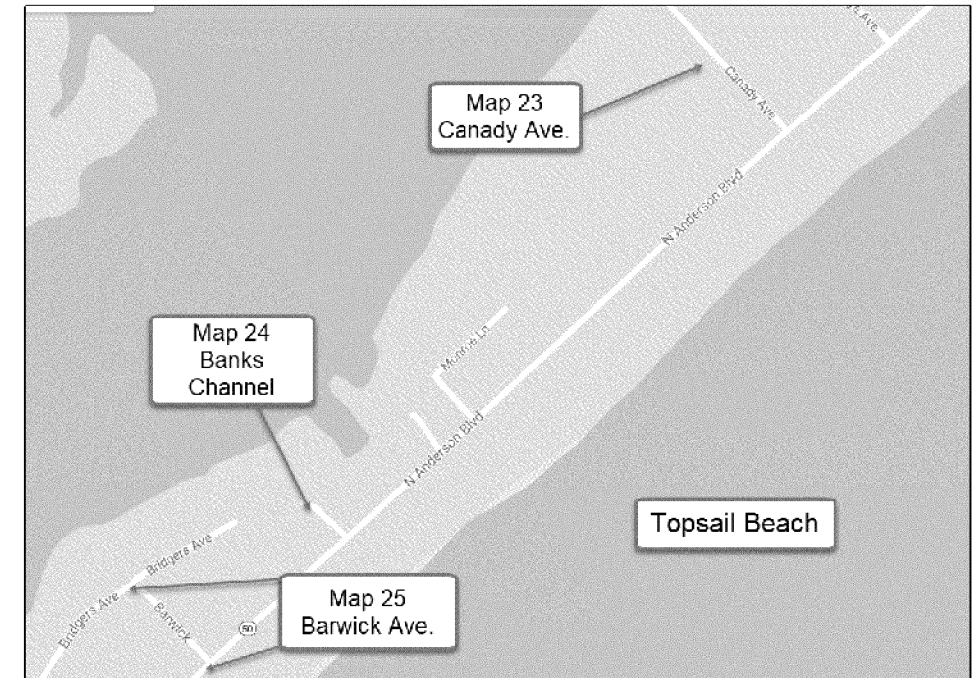
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17

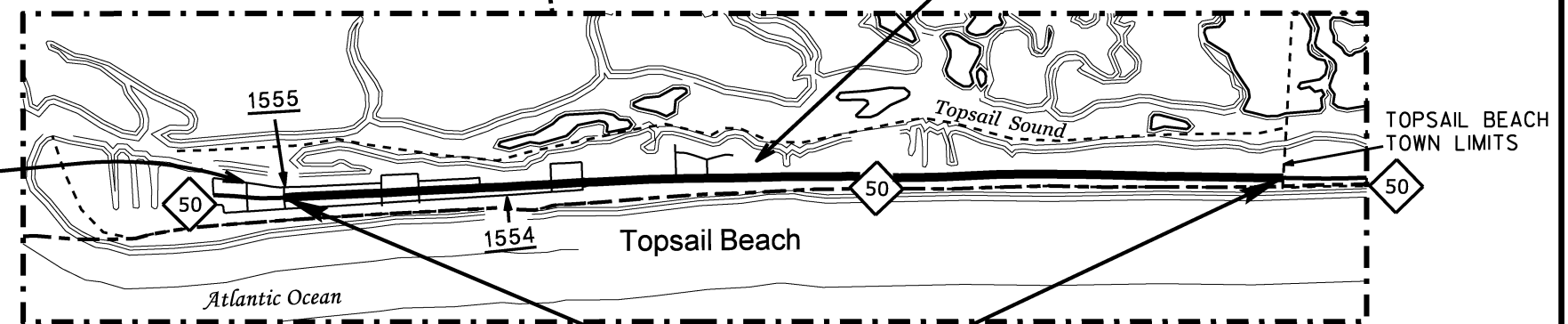
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2

MAPS 23 - 25



MAPS 21 - 22

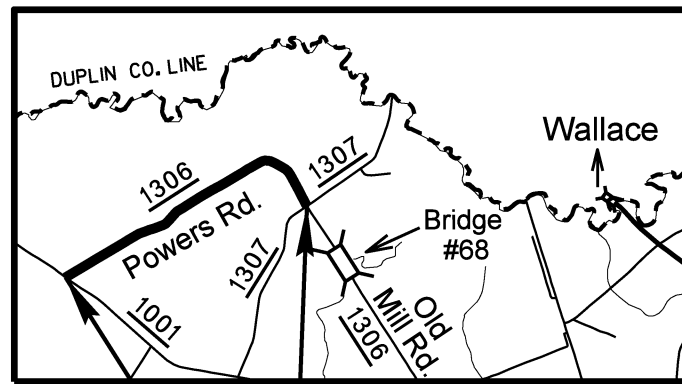


MAPS N.T.S.

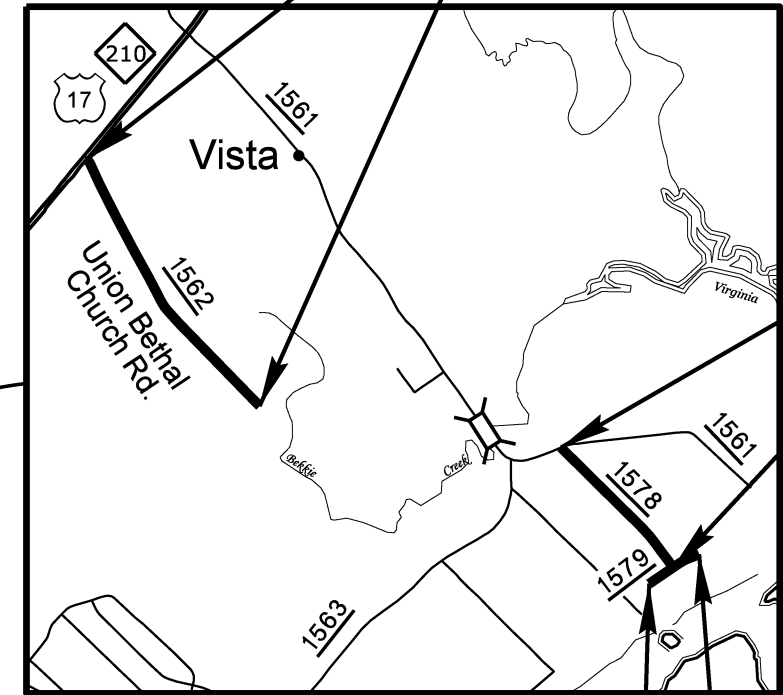
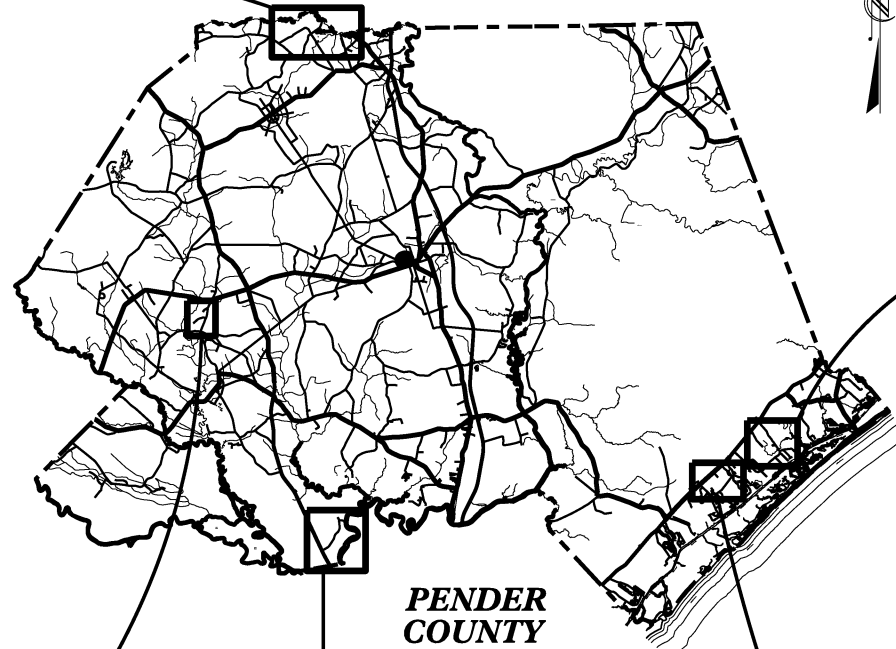
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NC 50
NORTH ANDERSON BLVD. &
SOUTH ANDERSON BLVD.

PENDER COUNTY - CONT.

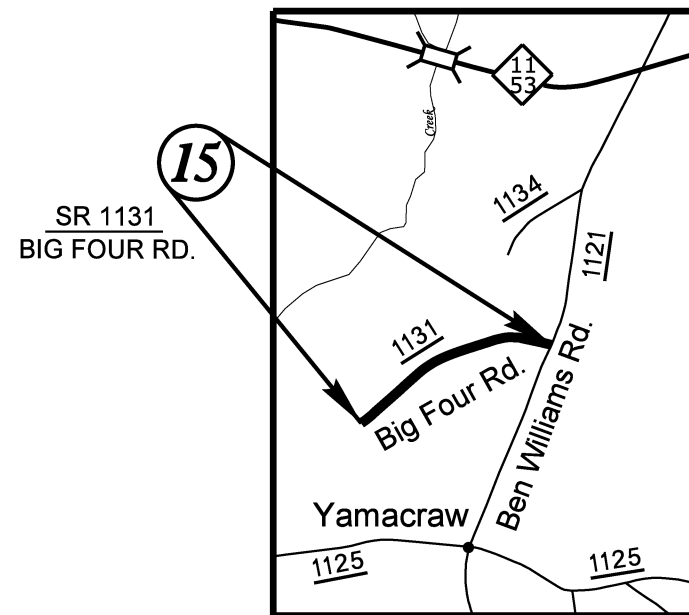


8 SR 1306
POWERS RD.

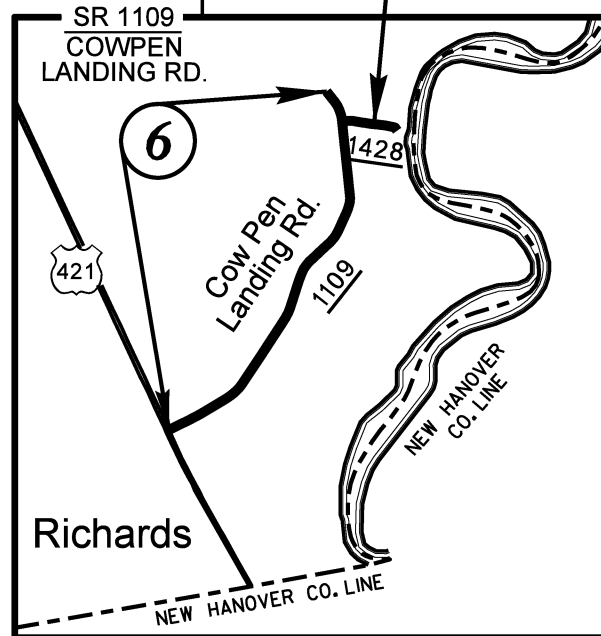


14 SR 1562
UNION BETHAL CHURCH RD.

10 SR 1579
MOORES LANDING EXT.

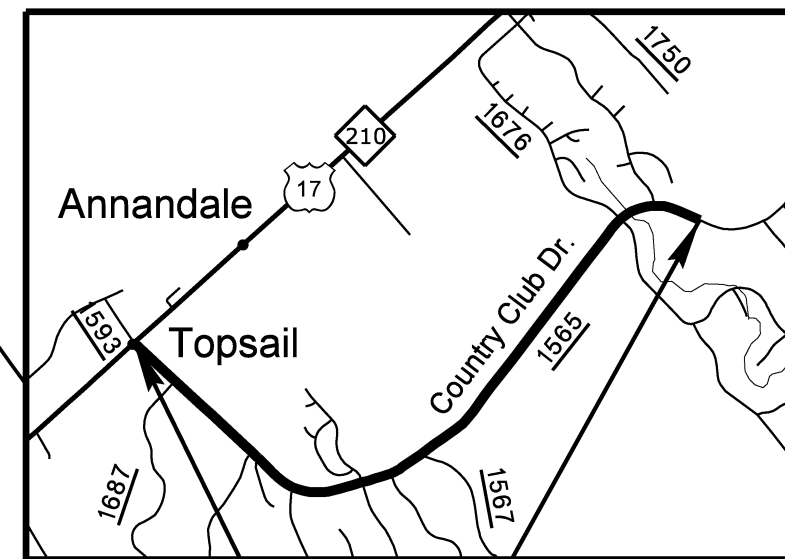


15



6

7 SR 1428
ARMSTRONG RD.

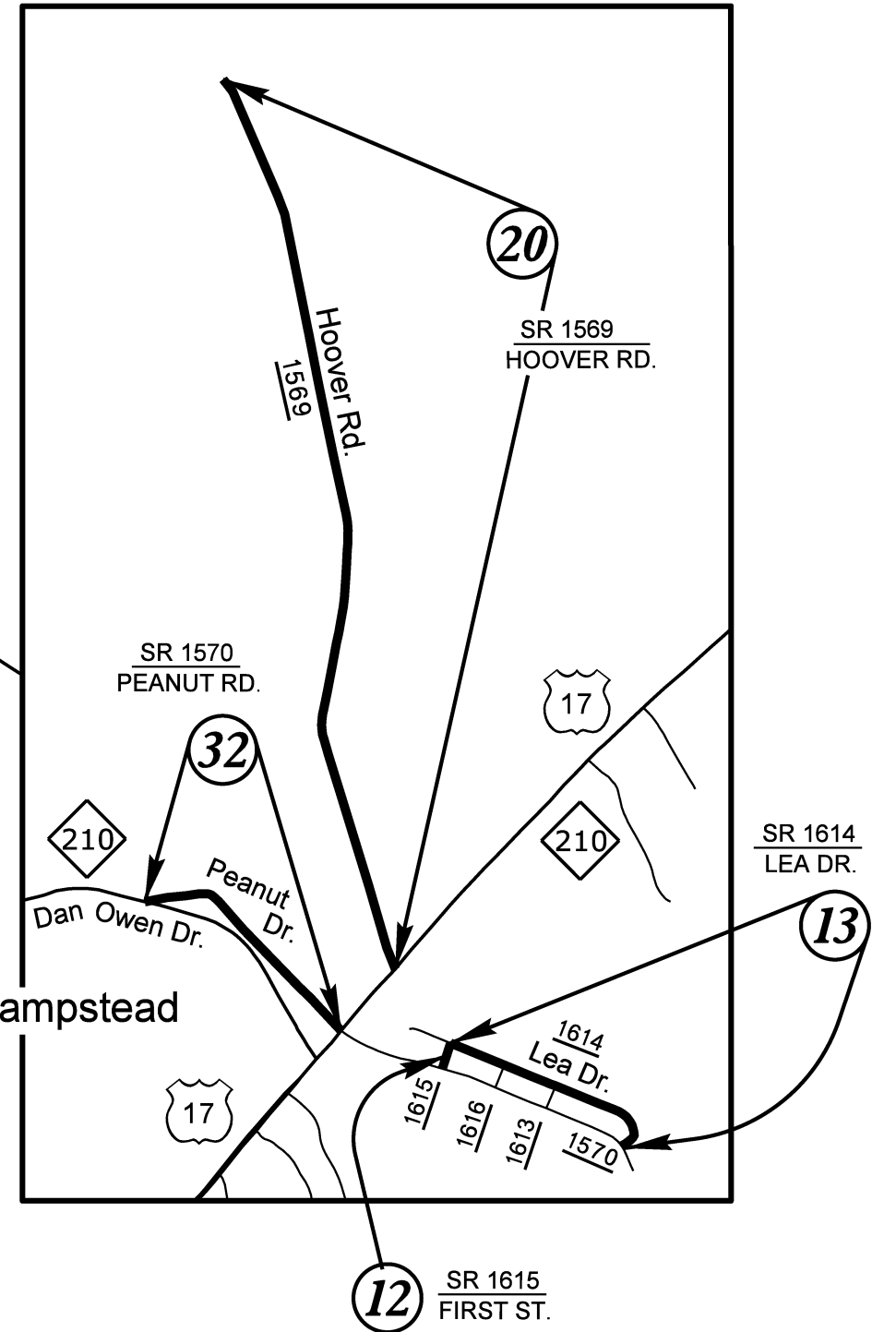
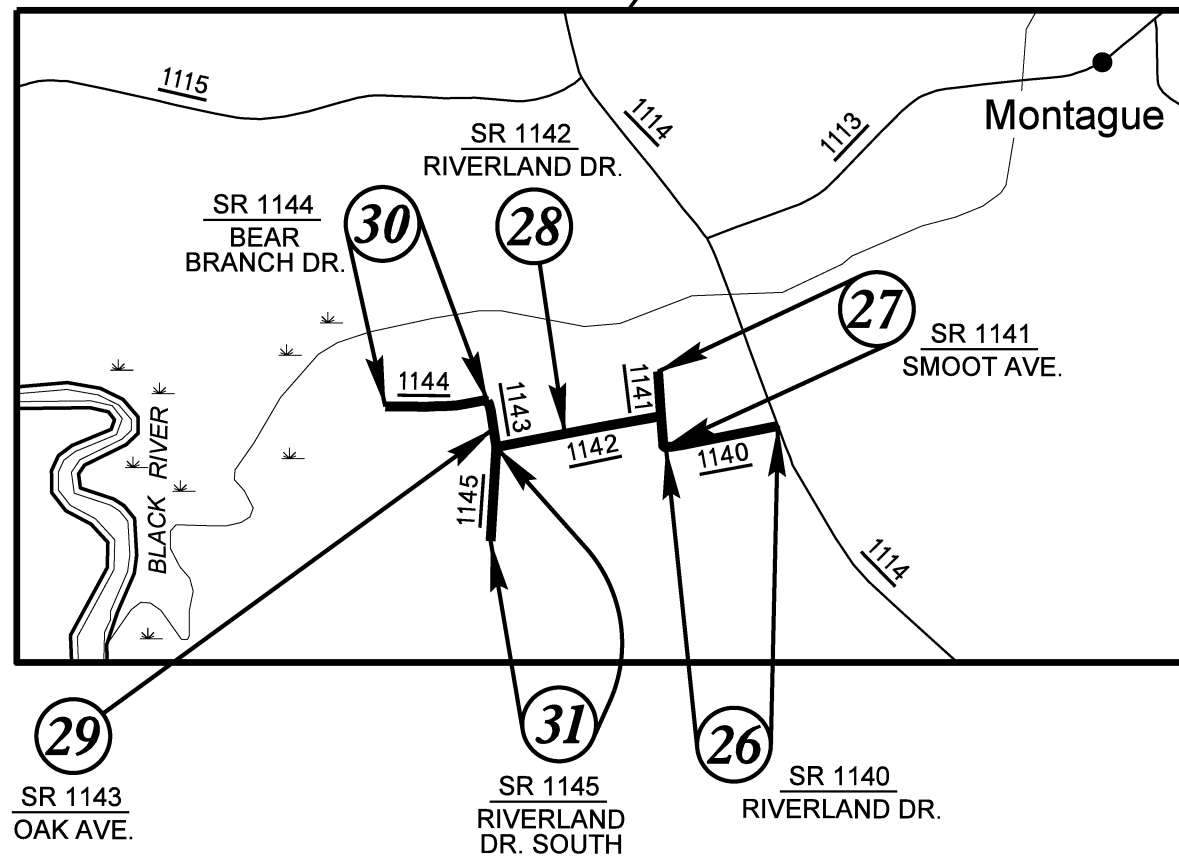
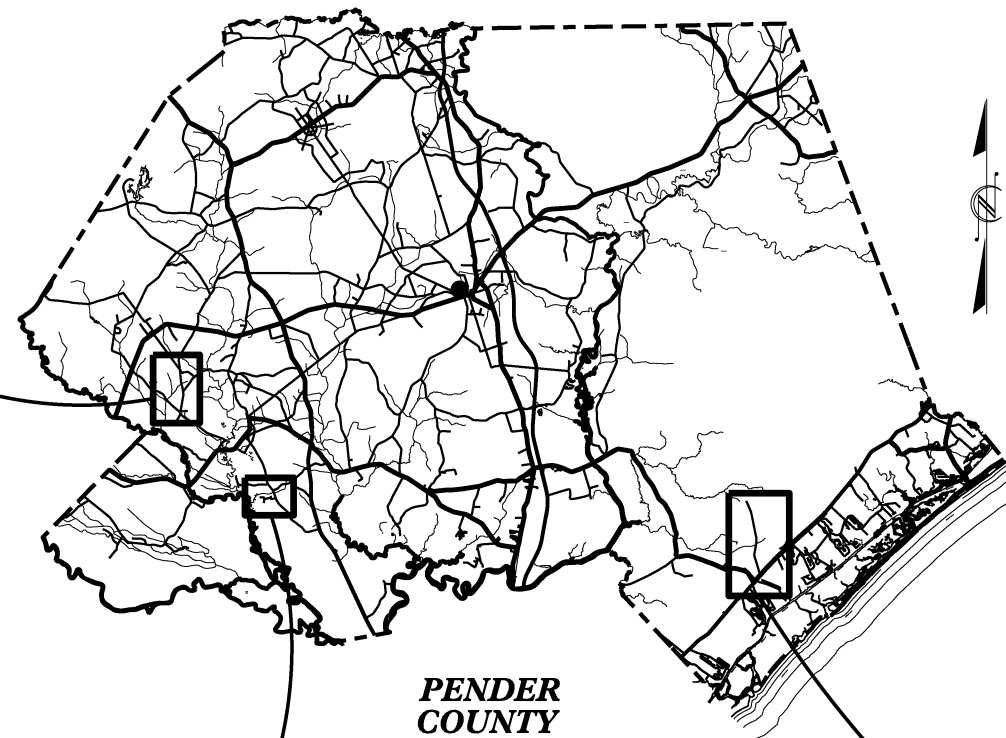
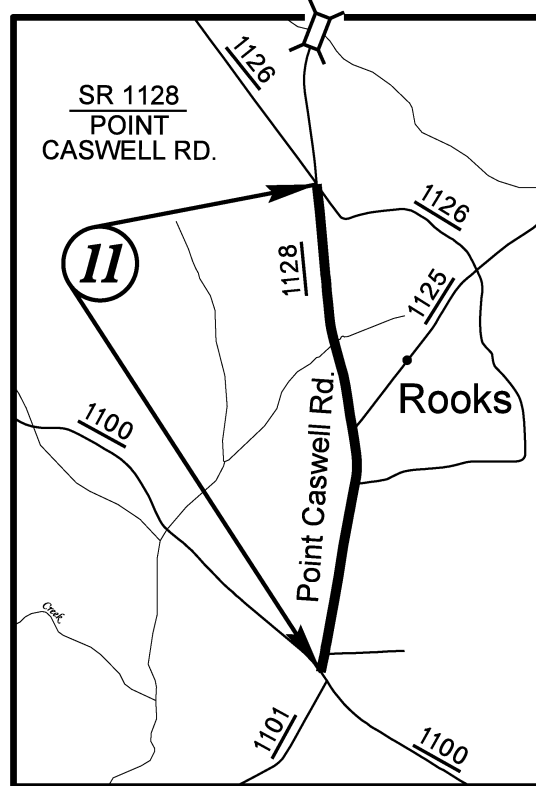


4 SR 1565
COUNTRY CLUB DR.

MAPS N.T.S.

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 8/17/19

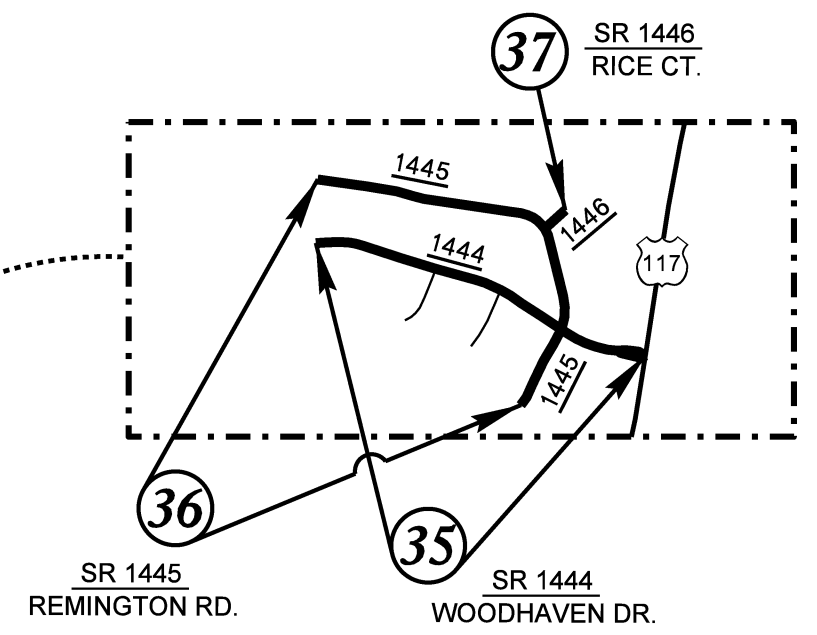
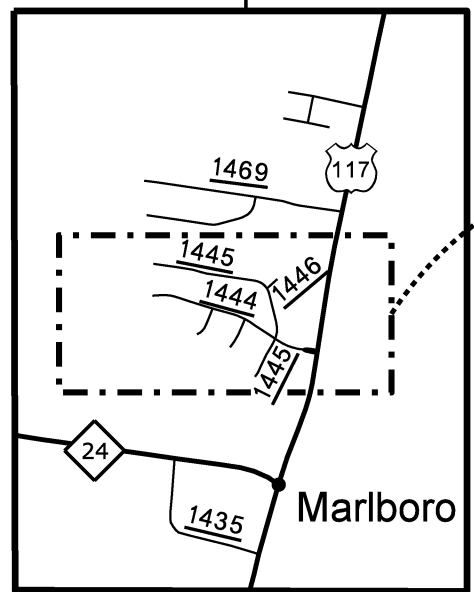
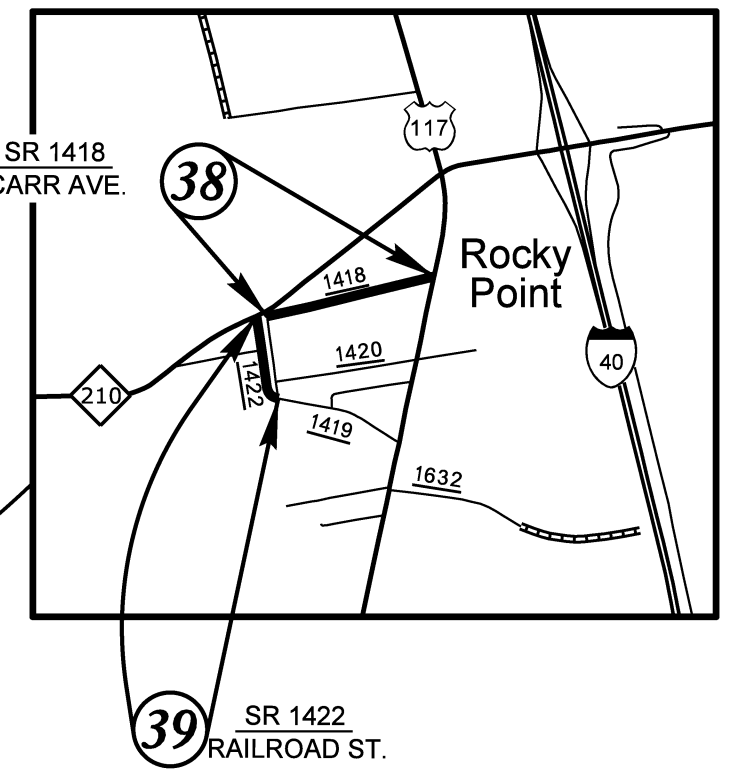
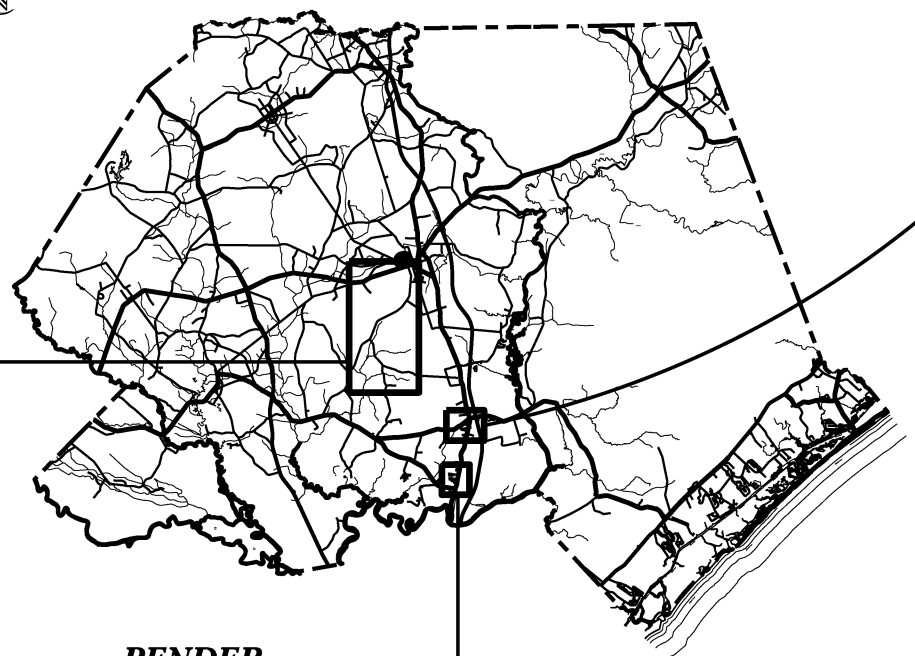
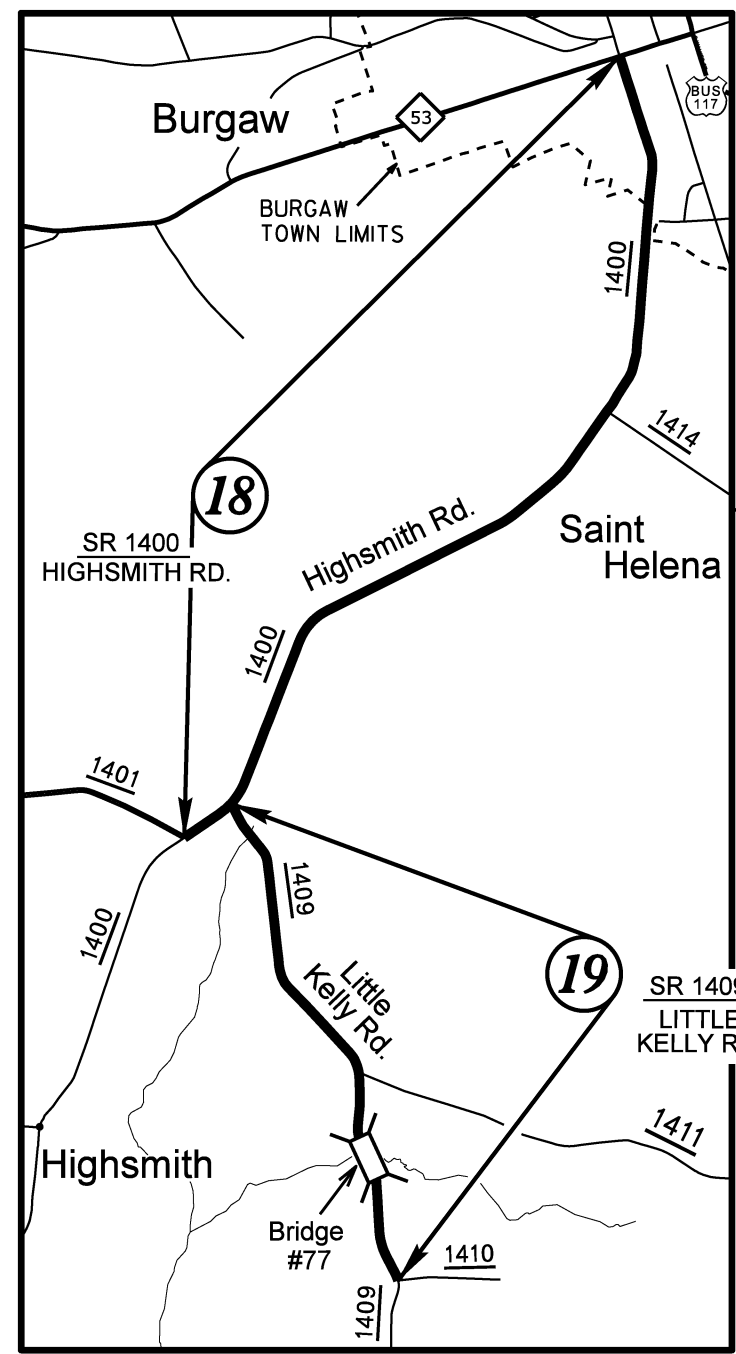
PENDER COUNTY - CONT.



MAPS N.T.S.

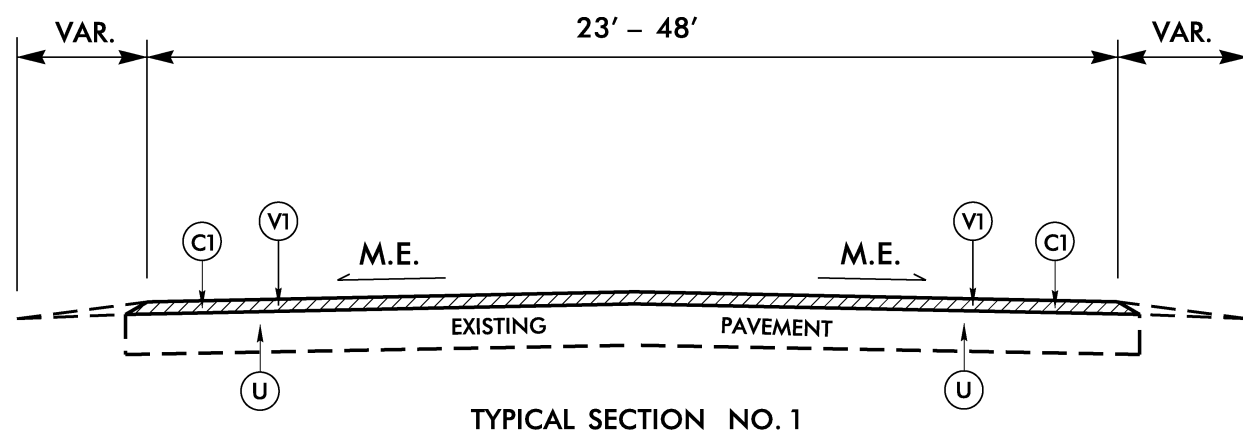
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PENDER COUNTY - CONT.



MAPS N.T.S.

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 8/17/99



TYPICAL SECTION NO. 1

MAP NO. 1
NC 50 (S.N. ANDERSON BLVD.)
MP 0.000 – MP 3.962

MAP NO. 2
NC 210
MP 5.520 – MP 6.531

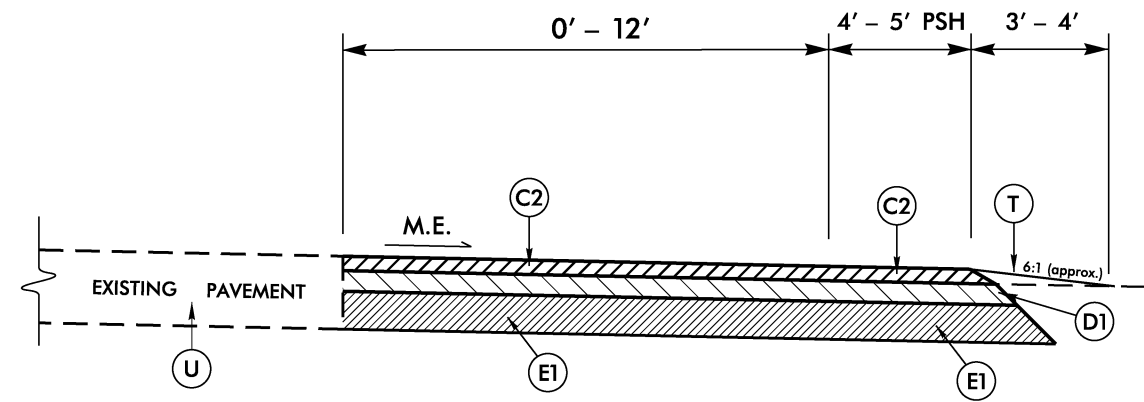
NOTES: MILL A SINGLE LANE AND PAVE BACK BY THE END OF EACH WORK DAY.

SHOULDER WORK ON MAP NO.1 AS NEEDED, TO BE DETERMINED BY ENGINEER.

SHOULDER WORK ON MAP NO.2 AS NEEDED, TO BE DETERMINED BY ENGINEER. USE AGGREGATE SHOULDER BORROW (ASB) ONLY.

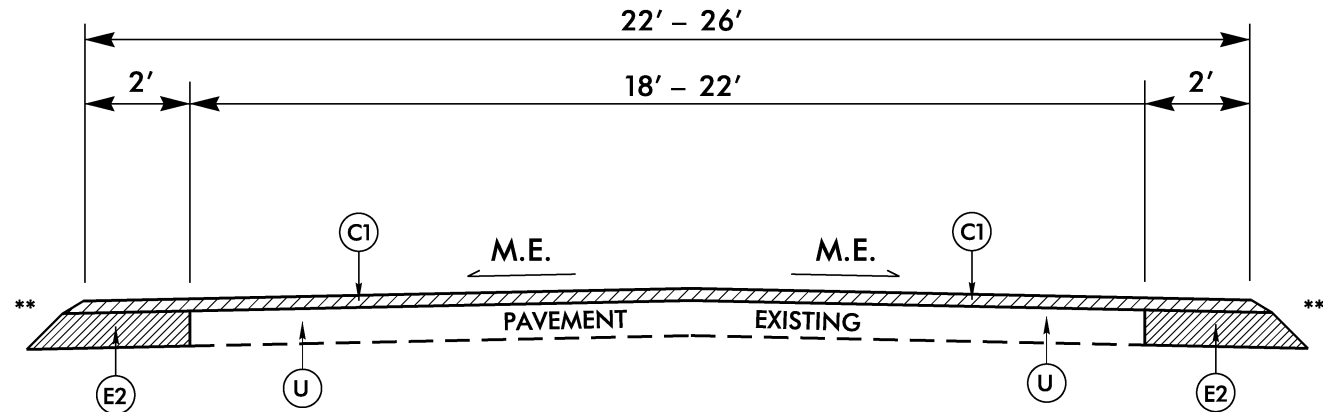
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1½" DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ.YD.
C2	PROP. APPROX. 2" DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 224 LBS. PER SQ.YD.
C3	PROP. APPROX. 1½" DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ.YD.
C4	PROP. APPROX. ¾" DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S4.75A, AT AN AVERAGE RATE OF 85 LBS. PER SQ.YD.
D1	PROP. APPROX. 3" DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ.YD.
E1	PROP. APPROX. 5" DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ.YD.
E2	PROP. APPROX. 4" DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ.YD.
R1	EXISTING CONCRETE 2'-6" CURB & GUTTER
R2	EXISTING CONCRETE BRIDGE RAIL
T	SHOULDER CONSTRUCTION
U	EXISTING PAVEMENT
V1	MILLING ASPHALT PAVEMENT, 1½" DEPTH

PAVEMENT EDGE SLOPES ARE 1:1, EXCEPT FINAL SURFACE COURSE. SEE SHOULDER WEDGE DETAIL.



TYPICAL SECTION NO. 2

MAP NO. 3
US 17 (RT. LANE TURN EXTENSION)
MP 13.642 – MP 13.702



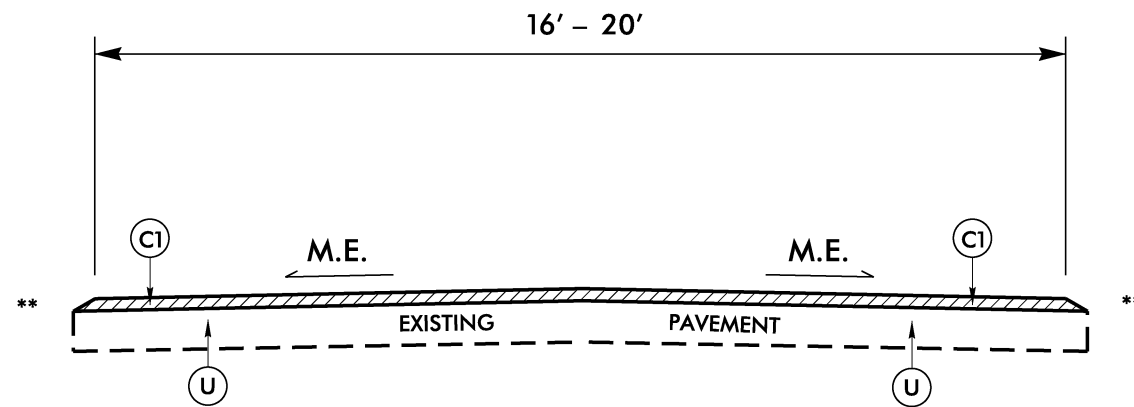
TYPICAL SECTION NO. 3

MAP NO. 4
SR 1565 (COUNTRY CLUB RD.)
MP 0.000 – MP 2.460
1.5" MILLING: C&G TURN LANE

MAP NO. 16
SR 1533 (SHEPARDS RD.)
MP 0.000 – MP 1.220

NOTE: SHOULDER WORK TO BE DONE BY STATE FORCES (MAP NO. 4 & 16).

8/17/99
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 2017-2018CPT\03.05.10711.Etc.Rdy-tp.dgn



TYPICAL SECTION NO. 4

MAP NO. 5
SR 1314 (JOHNSON NURSERY RD.)
MP 0.000 – MP 1.300

MAP NO. 6
SR 1109 (COWPEN LANDING RD.)
MP 0.000 – MP 2.050

MAP NO. 7
SR 1428 (ARMSTRONG RD.)
MP 0.000 – MP 0.290

MAP NO. 8
SR 1306 (POWERS RD.)
MP 0.000 – MP 1.960

MAP NO. 9
SR 1578 (MOORES LANDING RD.)
MP 0.000 – MP 0.500

MAP NO. 10
SR 1579 (MOORES LANDING EXT.)
MP 0.000 – MP 0.190

MAP NO. 11
SR 1128 (POINT CASWELL RD.)
MP 0.000 – MP 1.910

MAP NO. 12
SR 1615 (FIRST ST.)
MP 0.000 – MP 0.100

MAP NO. 13
SR 1614 (LEA DR.)
MP 0.160 – MP 0.990

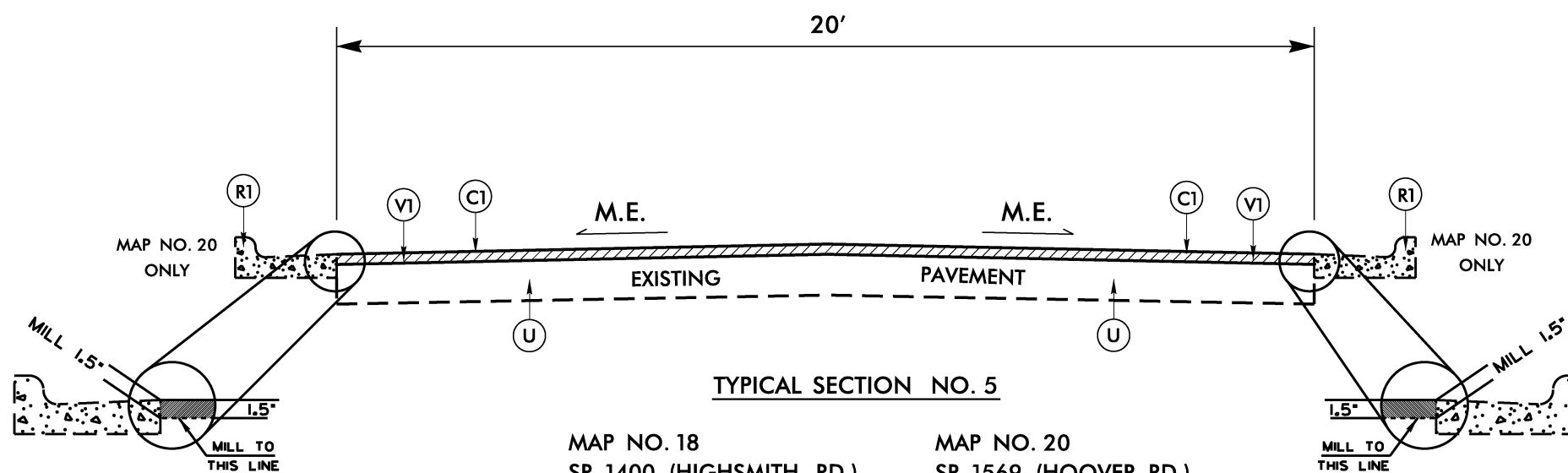
MAP NO. 17
SR 1583 (PERKINS RD.)
MP 0.000 – MP 0.700

MAP NO. 19
SR 1409 (LITTLE KELLY RD.)
MP 0.000 – MP 1.899
MP 1.914 – MP 2.540

MAP NO. 20
SR 1569 (HOOVER RD.)
MP 0.073 – MP 3.358

PAVEMENT SCHEDULE	
C1	1½" S9.5B
R1	EXISTING 2'-6" CURB & GUTTER
U	EXISTING PAVEMENT
V1	MILLING 1½" DEPTH

NOTE: ** SHOULDER WORK TO BE DONE BY STATE FORCES (MAP NO. 5-13,17,19 & 20)

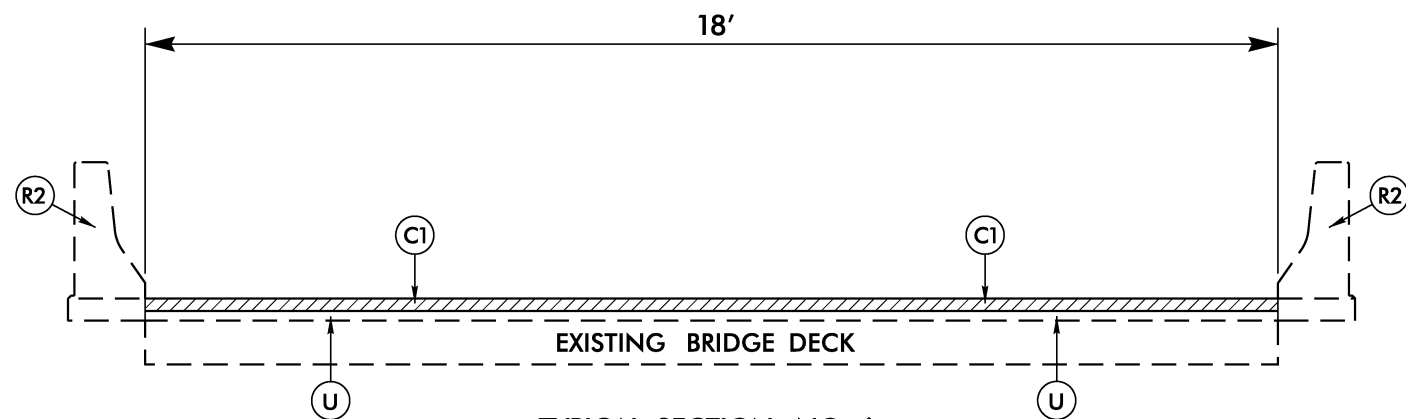


TYPICAL SECTION NO. 5

MAP NO. 18
SR 1400 (HIGHSMITH RD.)
MP 4.390 – MP 9.210

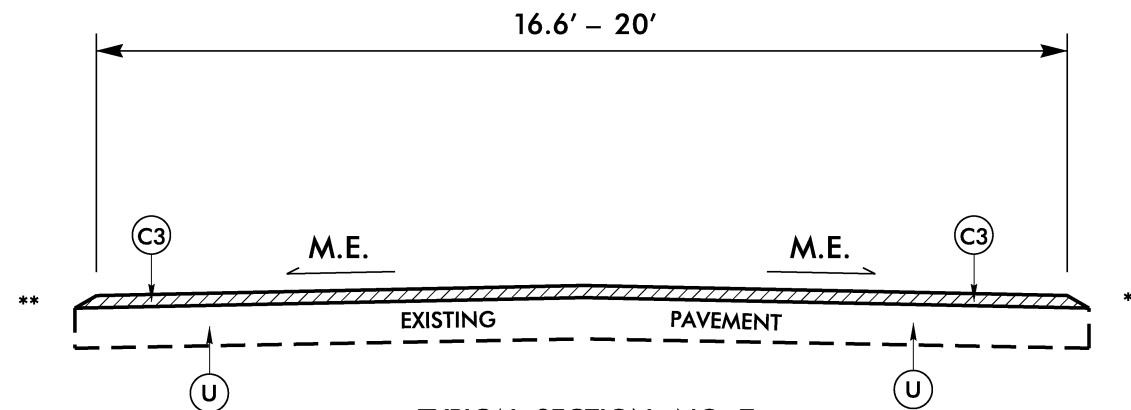
MAP NO. 20
SR 1569 (HOOVER RD.)
MP 0.000 – MP 0.073

NOTES: MILL A SINGLE LANE AND PAVE BACK BY THE END OF EACH WORK DAY
SHOULDER WORK ON MAP NO.18 AS NEEDED, TO BE PERFORMED BY STATE FORCES



TYPICAL SECTION NO. 6

MAP NO. 19
SR 1409 (LITTLE KELLY RD.)
PENDER BRIDGE NO. 77
MP 1.899 – MP 1.914



TYPICAL SECTION NO. 7

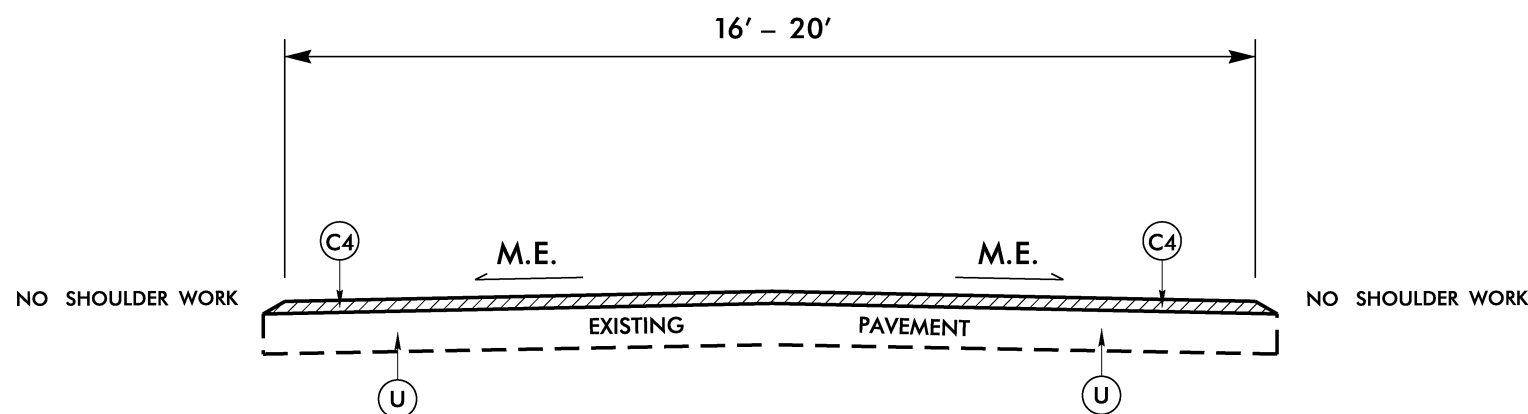
MAP NO. 14
SR 1562 (UNION BETHEL CHURCH RD.)
MP 0.000 – MP 1.010

TOPSAIL BEACH MUNICIPAL STREETS
MAP NO. 21 SPOT AVE. 0.072 MILES
MAP NO. 23 CANADY AVE. 0.136 MILES
MAP NO. 25 BARWICK AVE. 0.073 MILES

MAP NO. 15
SR 1131 (BIG FOUR RD.)
MP 0.000 – MP 0.720

MAP NO. 22 DRUM AVE. 0.122 MILES
MAP NO. 24 BANKS CHANNEL CT. 0.038 MILES

** NOTE: SHOULDER WORK TO BE DONE BY STATE FORCES (MAP NO.14,15 & 21-25)



TYPICAL SECTION NO. 8

MAP NO. 26
SR 1140 (RIVERLAND DR.)
MP 0.000 – MP 0.231

MAP NO. 30
SR 1144 (BEAR BRANCH DR.)
MP 0.000 – MP 0.18

MAP NO. 34
SR 1586 (BROWNTOWN RD.)
MP 0.000 – MP 0.290

MAP NO. 38
SR 1418 (CARR AVE.)
MP 0.000 – MP 0.430

MAP NO. 27
SR 1141 (SMOOT AVE.)
MP 0.000 – MP 0.140

MAP NO. 31
SR 1145 (RIVERLAND DR. SOUTH)
MP 0.000 – MP 0.170

MAP NO. 35
SR 1444 (WOODHAVEN DR.)
MP 0.000 – MP 0.450

MAP NO. 39
SR 1422 (RAILROAD ST.)
MP 0.000 – MP 0.230

MAP NO. 28
SR 1142 (RIVERLAND DR.)
MP 0.000 – MP 0.300

MAP NO. 32
SR 1570 (PEANUT RD.)
MP 0.000 – MP 0.930

MAP NO. 36
SR 1445 (REMINGTON RD.)
MP 0.000 – MP 0.550

MAP NO. 29
SR 1143 (OAK AVE.)
MP 0.000 – MP 0.070

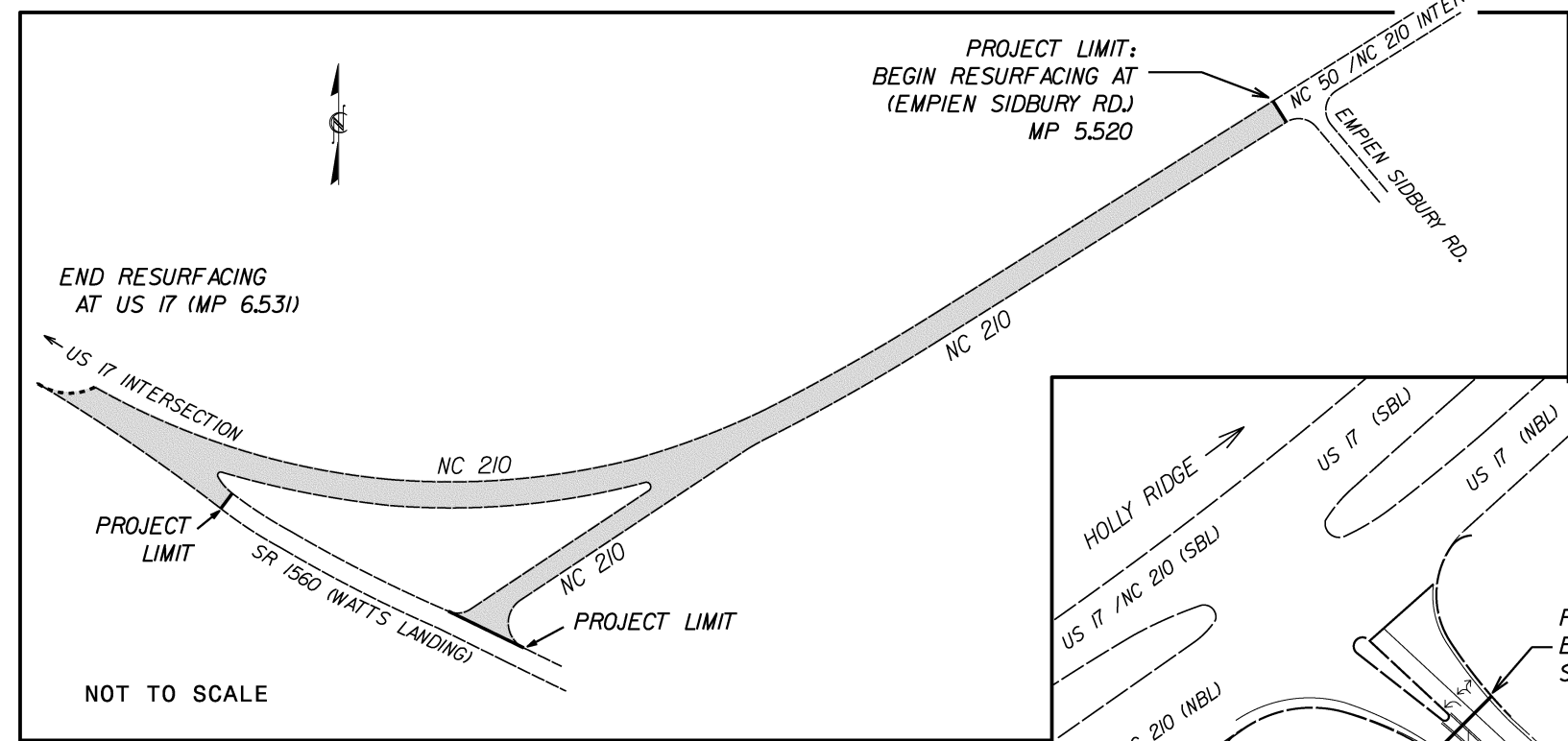
MAP NO. 33
SR 1587 (CHRISTIAN CHAPEL RD.)
MP 0.000 – MP 0.130

MAP NO. 37
SR 1446 (RICE COURT)
MP 0.000 – MP 0.030

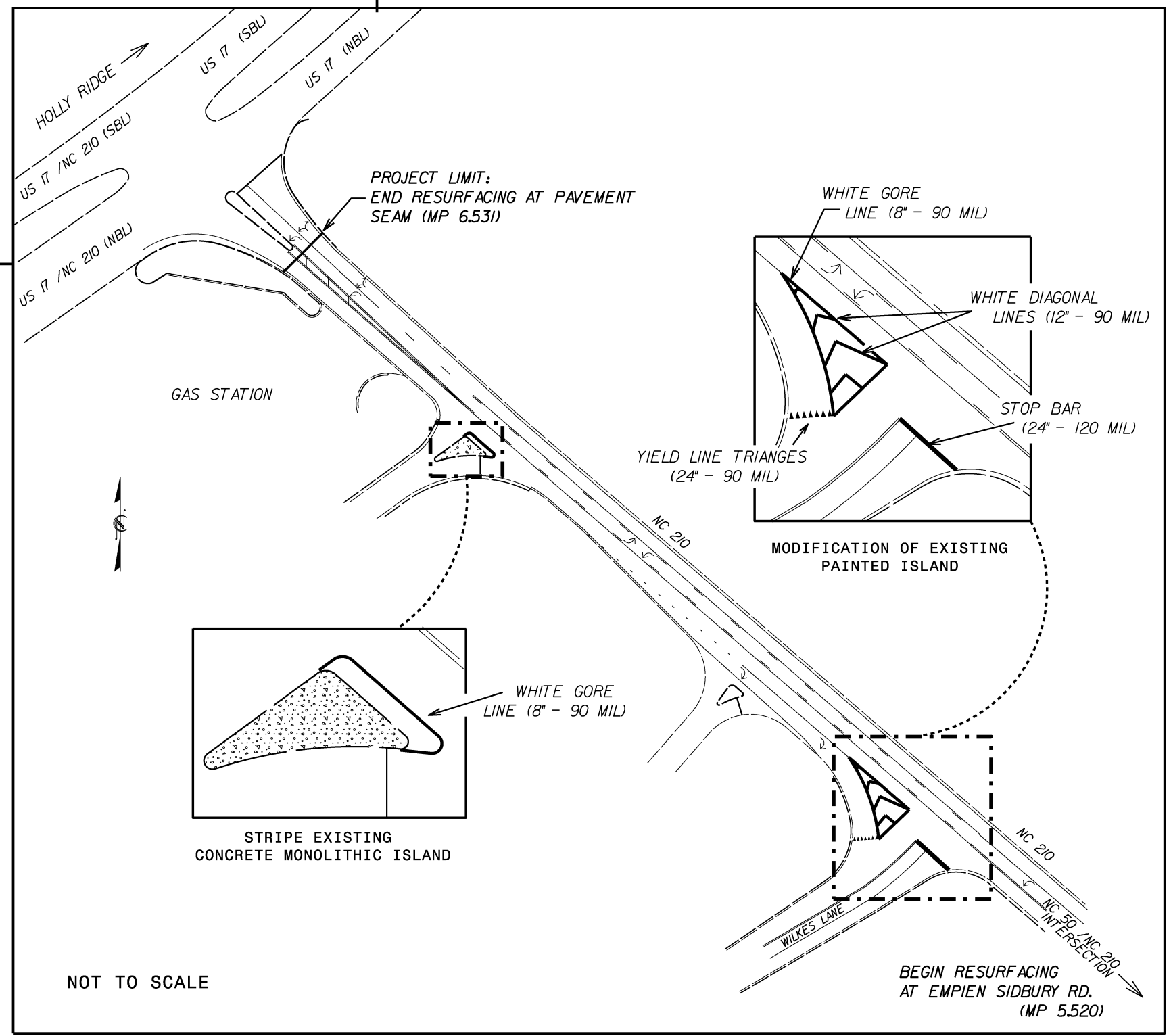
PAVEMENT SCHEDULE	
C1	1½" S9.5B
C3	1½" SF9.5A
C4	¾" S4.75A
R2	EXISTING CONCRETE BRIDGE RAIL
U	EXISTING PAVEMENT

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 8/17/19

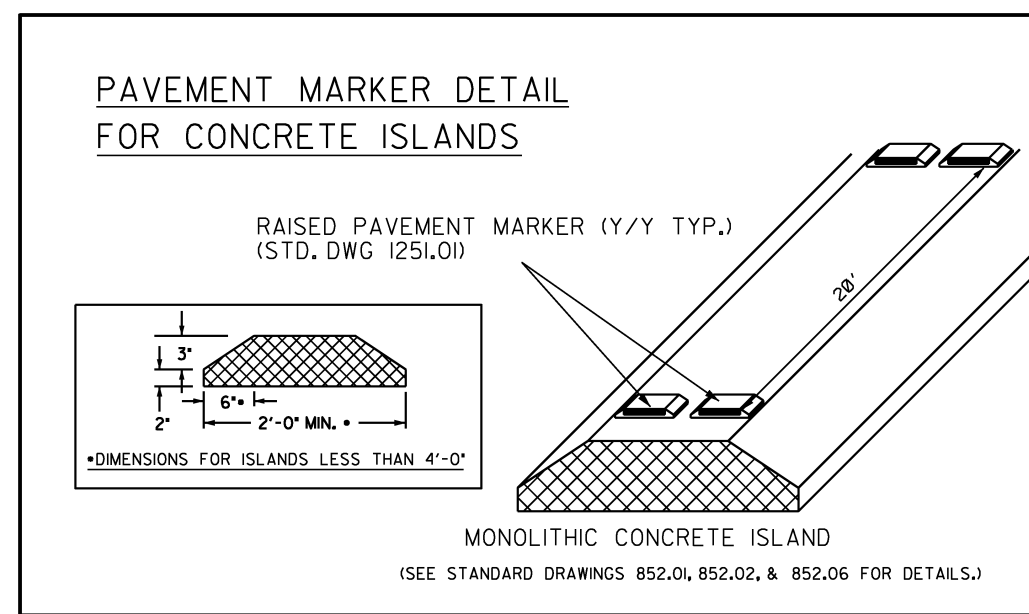
**MAP 2: NC 210 RESURFACING LIMITS,
PAVEMENT MARKING & MARKER DETAILS**



NOT TO SCALE



NOT TO SCALE



20-AUG-2017 11:42
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 8/17/19

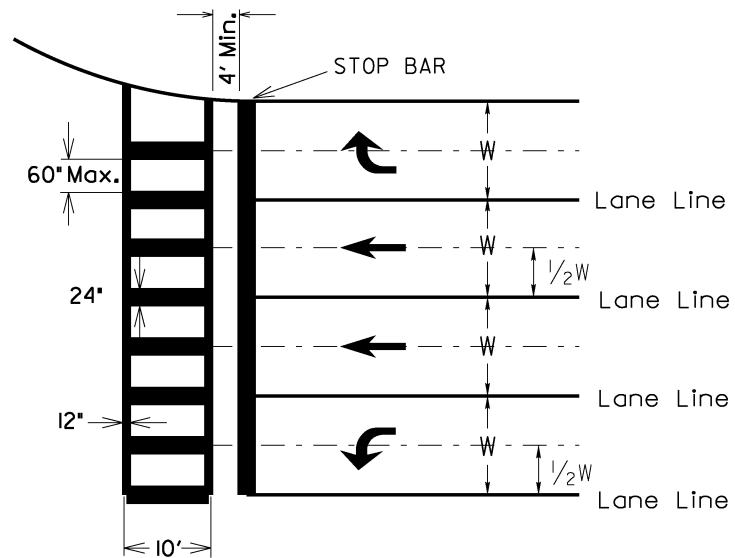
EFF.1-01-2018

2018 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N.C. Department of Transportation - Raleigh, N.C., Dated January, 2018 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 8 - INCIDENTALS	
846.01	Concrete Curb, Gutter and Curb & Gutter
DIVISION 12 - PAVEMENT MARKINGS	
1205.06	Lane Drops

SPECIAL EMPHASIS HI-VISIBILITY
CROSSWALK MARKING DETAIL



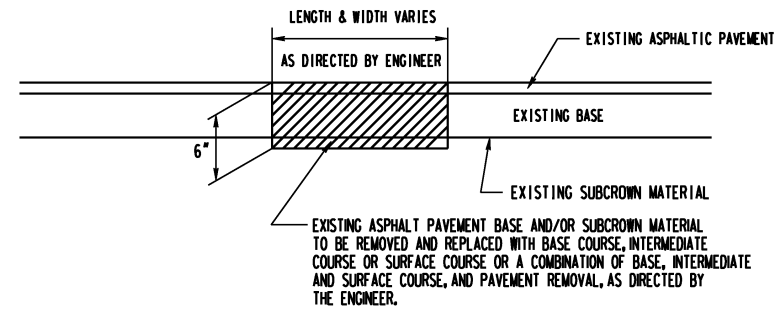
NOTES: SPACING OF CROSSWALK LINES POSITIONED TO AVOID WHEELPATHS

MAP NO. 1 (NC 50)
HIGH VISIBILITY CROSSWALK DETAIL

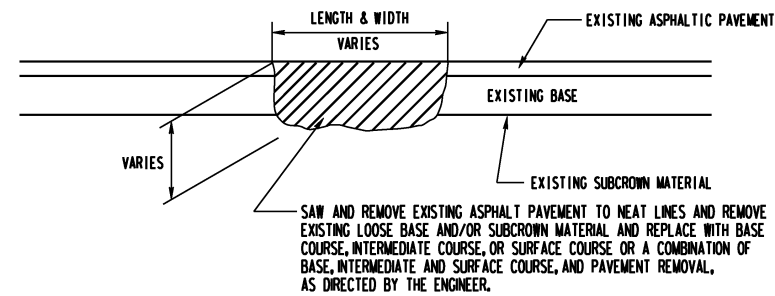
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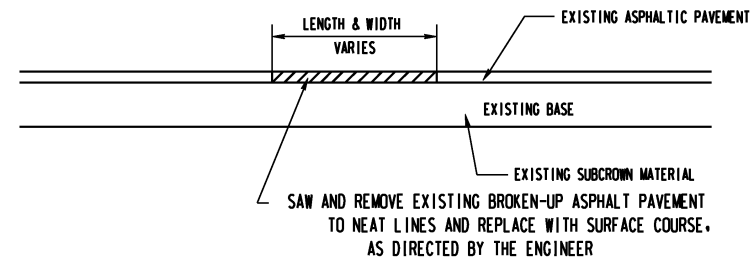
DETAILS OF REPAIRING EXISTING PAVEMENT PRIOR TO RESURFACING FOR FULL DEPTH AND MILLING



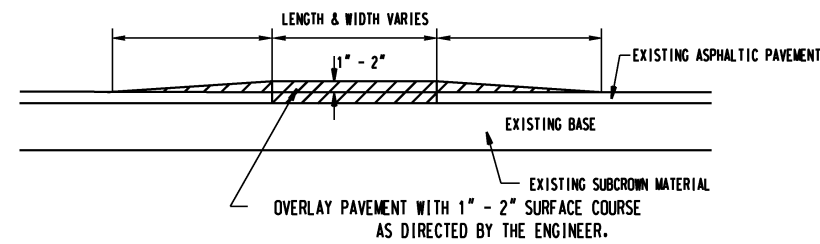
DETAIL NO. 1



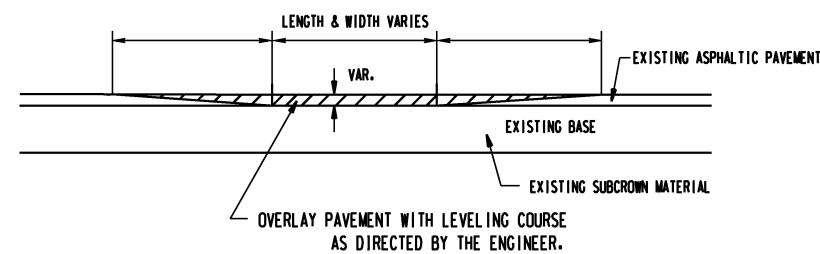
DETAIL NO. 2



DETAIL NO. 3



DETAIL NO. 4

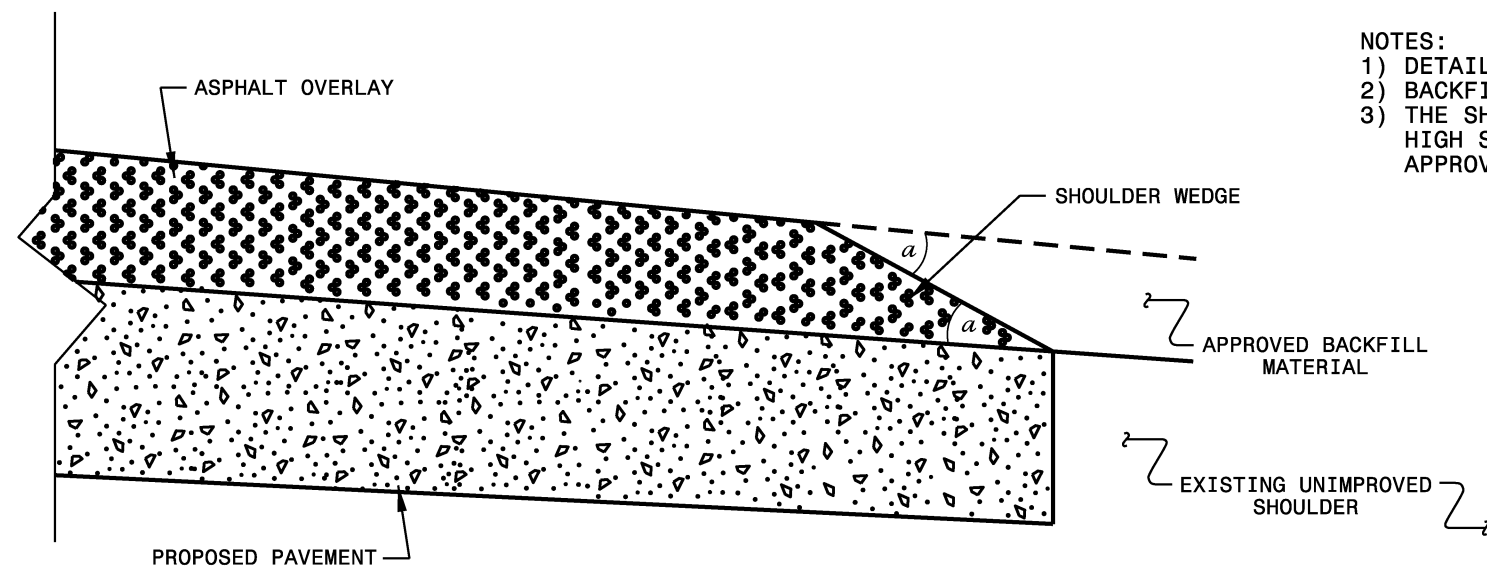


DETAIL NO. 5

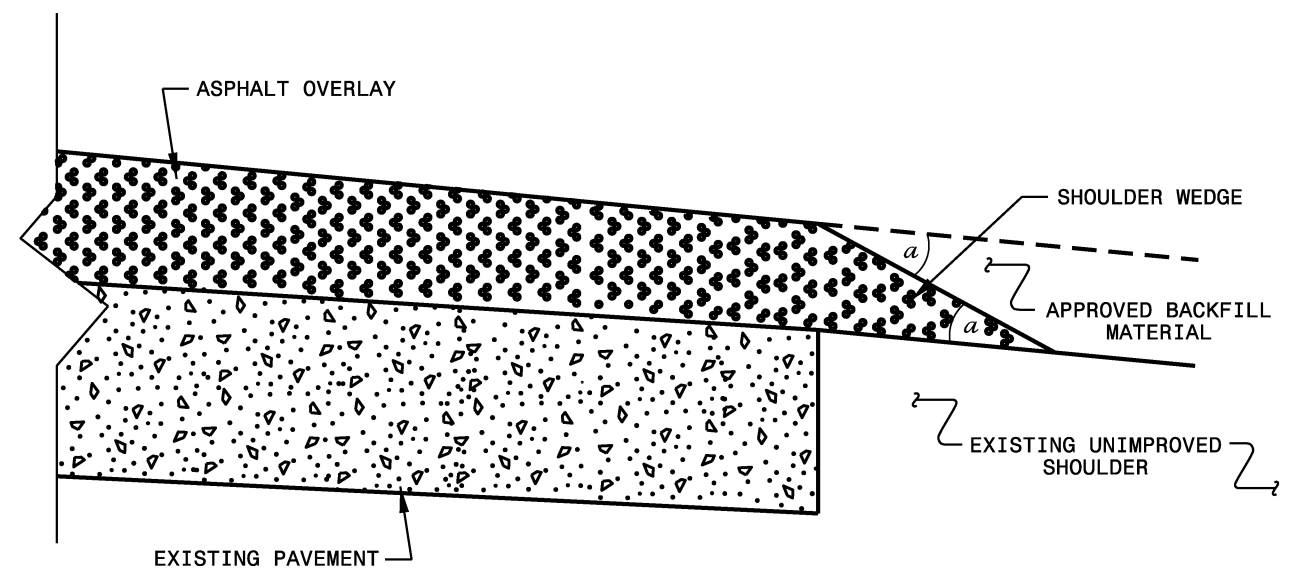
REVISIONS

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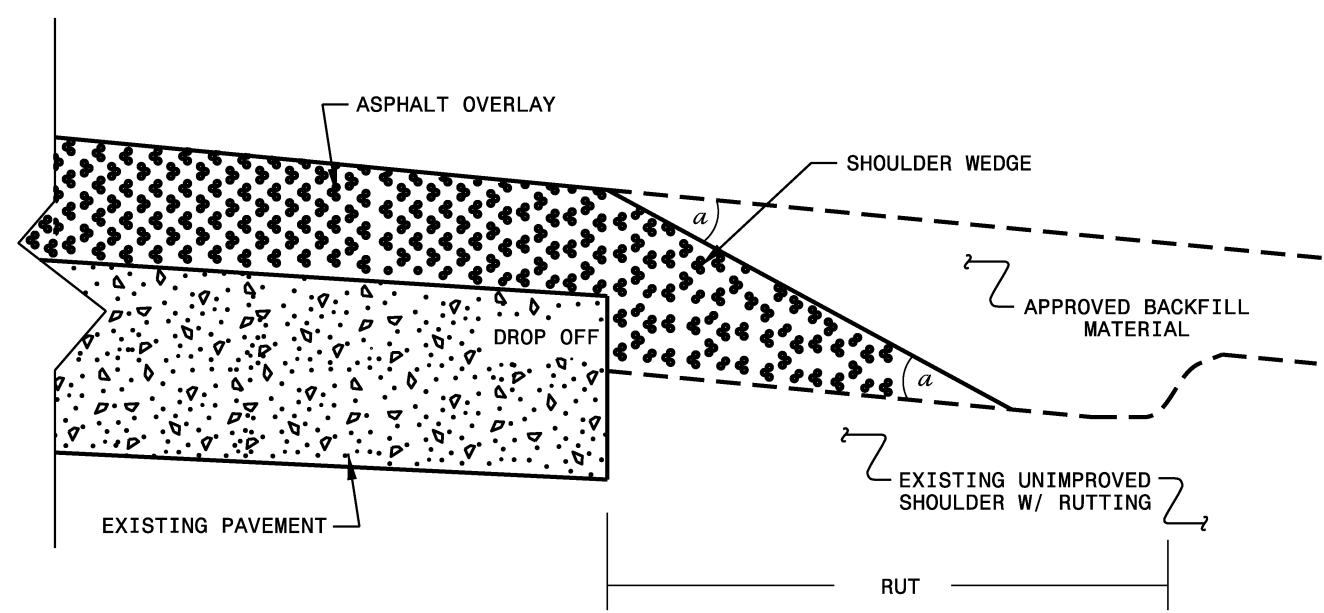
- NOTES:
- 1) DETAIL DOES NOT APPLY TO OGAFB AND ULTRA-THIN BONDED WEARING COURSE.
 - 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
 - 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS, SIDE STREETS, HIGH SHOULDERS, AND OTHER LOCATIONS NOT FEASIBLE TO CONSTRUCT AS APPROVED BY THE ENGINEER.



SHOULDER WEDGE DETAIL
 (Resurfacing Projects w/ Widening or
 with Existing Paved Shoulder having no dropoffs)



SHOULDER WEDGE DETAIL
 (Resurfacing Projects w/ NO Widening)



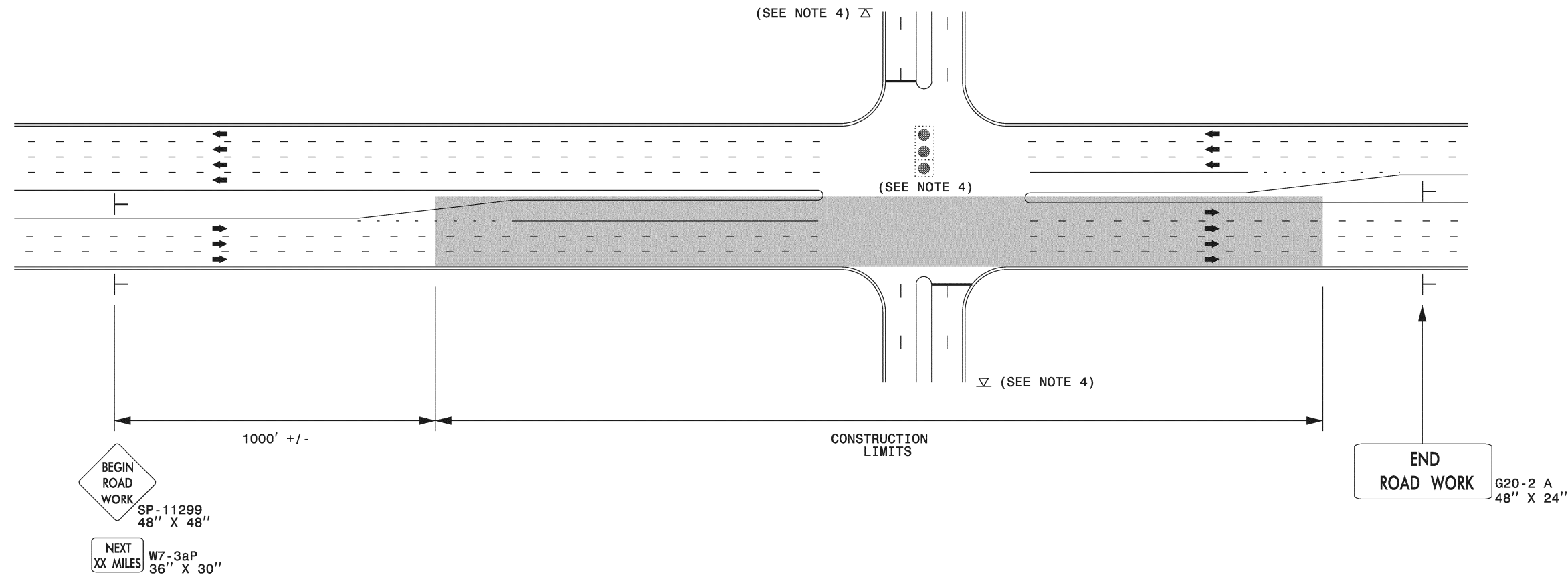
SHOULDER WEDGE DETAIL
 (Resurfacing Adjacent to
 Rutted Shoulder)

- SHOULDER WEDGE ANGLE = 30°

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

24-AUG-2017 15:17
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 P:\porter - AT\USD-212512

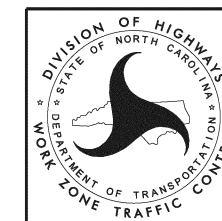
URBAN / SUBURBAN WORKZONES



NOTES:

- 1) 48" x 48" SIZED SIGNS (SP- 11299) MAY BE REDUCED TO 36" X 36" ON ROADWAYS WITH SPEED LIMITS OF 40 MPH OR LESS.
- 2) MOUNT SIGNS THAT ARE LARGER THAN 10 SQUARE FEET IN AREA ON TWO OR MORE WOOD OR U-CHANNEL SUPPORTS. PERFORATED SQUARE TUBING SUPPORT SYSTEMS MAY SUPPORT LARGER AREAS ON A SINGLE SUPPORT. FOLLOW MANUFACTURER'S RECOMMENDATIONS. THESE SYSTEMS SHALL BE NCHRP 350 COMPLIANT AND NCDOT APPROVED.
- 3) ADVANCE WARNING SIGNS NOT REQUIRED ON NON-SIGNALIZED SIDE STREETS.
- 4) MAY USE LAW ENFORCEMENT TO CONTROL TRAFFIC AT SIGNALIZED INTERSECTIONS AS DIRECTED BY THE ENGINEER. PROVIDE PORTABLE "ROAD WORK AHEAD" (W20-1) SIGNS 500' IN ADVANCE ALONG BOTH APPROACHES FROM THE SIDE STREETS WHEN PAVING PROCEEDS THROUGH THE INTERSECTION.
- 5) LATERAL CLEARANCE AT ALL SIGN LOCATIONS SHALL BE 2' AS MEASURED FROM THE EDGE OF PAVEMENT OR THE FACE OF THE CURB. WHEN UNABLE TO OBTAIN THE LATERAL CLEARANCE WITHIN THE MEDIAN AREA USE SHOULDER MOUNTS ONLY.
- 6) SIGN MOUNT LOCATIONS SHALL NOT BLOCK SIDEWALKS OR DRIVEWAYS.
- 7) IF STATIONARY GENERAL WARNING SIGNS ARE USED, THEY WILL BE PAID FOR PER SECTION 104 OF THE NCDOT STANDARD SPECIFICATIONS AS EXTRA WORK.
- 8) IF MILLED AREAS ARE NOT PAVED BACK BY THE END OF THE WORK DAY, PORTABLE SIGNS SHALL BE USED TO WARN DRIVERS OF THE PRESENT CONDITIONS. THESE ARE TO INCLUDE, BUT NOT LIMITED TO "ROUGH ROAD" W8-8, "UNEVEN LANES" W8-11, "GROOVED PAVEMENT" W8-15 w/MOTORCYCLE PLAQUE MOUNTED BELOW. THESE ARE TO BE DOUBLE INDICATED ON MULTI-LANE ROADWAYS WITH SPEED LIMITS 45 MPH AND GREATER WHERE LATERAL CLEARANCE CAN BE OBTAINED WITHIN THE MEDIAN AREAS. THESE PORTABLE SIGNS ARE INCIDENTAL TO THE OTHER ITEMS OF WORK INCLUDED IN THE TEMPORARY TRAFFIC CONTROL (LUMP SUM) PAY ITEM.

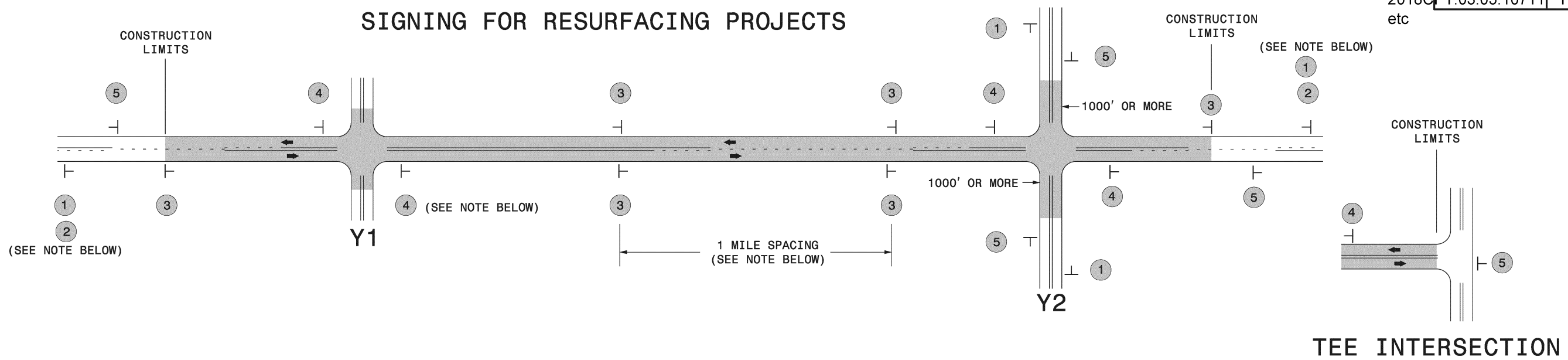
LEGEND	
├	STATIONARY SIGN
➔	DIRECTION OF TRAFFIC FLOW



**RESURFACING ADVANCE
WARNING SIGNS FOR
URBAN / SUBURBAN
FACILITIES**

2018CPT.03.05.10711
etc

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	3	4	5	
						<p>PLACE 1000' PRIOR TO BEGINNING OF CONSTRUCTION LIMITS. ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000' ALONG -Y- LINE.</p> <p>#2 SIGN ONLY USED WHEN RESURFACING LIMITS ARE 2 OR MORE MILES IN LENGTH. ROUND UP TO NEXT WHOLE NUMBER. (NO FRACTIONAL OR DECIMAL NUMBERS)</p>
						<p>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>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>
						<p>PLACED 500' IN ADVANCE OF FLAGGER. PLACED 250' IN ADVANCE OF FLAGGER.</p>
						<p>PLACED 500' FOLLOWING THE END OF CONSTRUCTION LIMITS OR AS SHOWN WHEN WORK ENDS AT A 3-WAY TEE INTERSECTION.</p>

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

TIP NO. 2018CPT.03.05.10711, ETC
SHEET NO. PMP-1

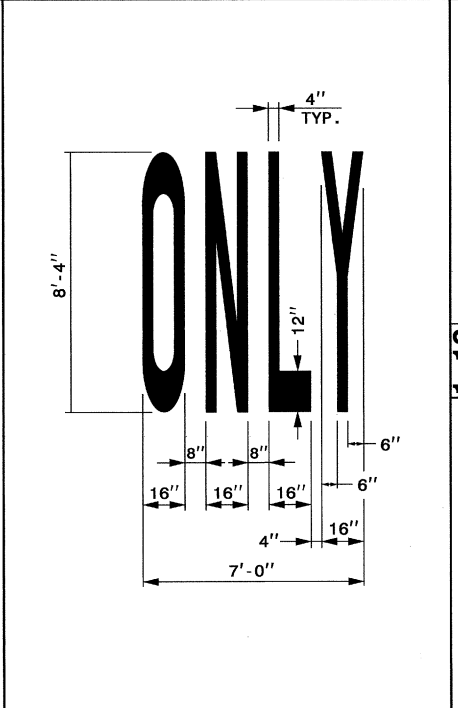
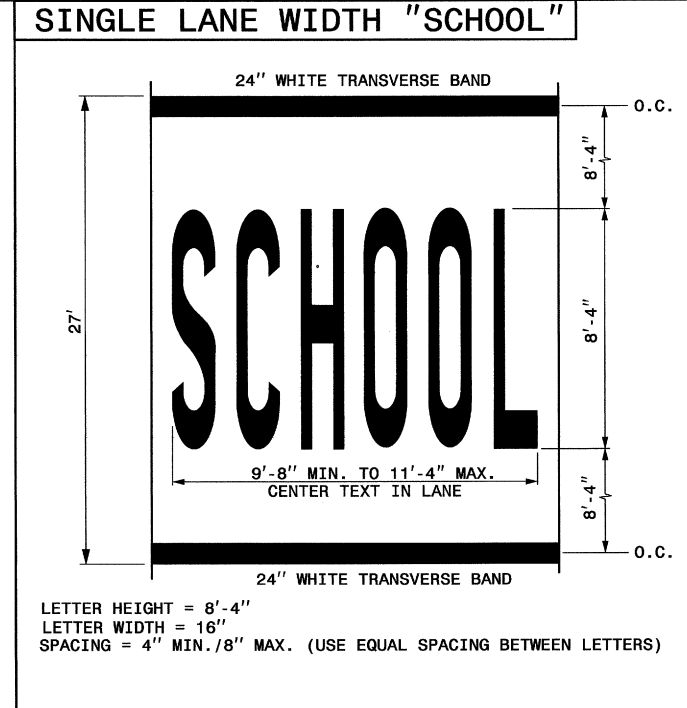
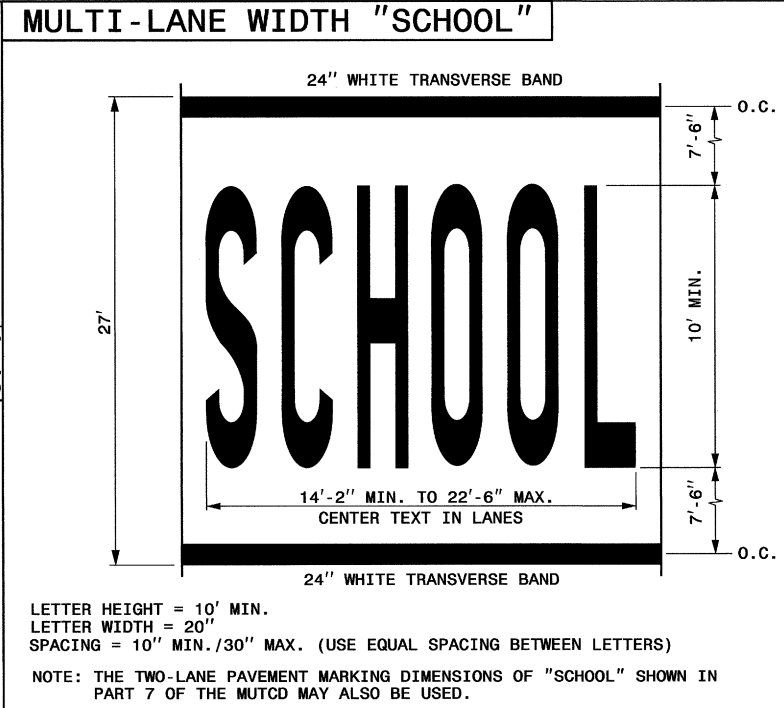
APPROVED: *RWF*
DATE: 3/8/12

SEAL

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
PAVEMENT MARKINGS
SYMBOLS AND WORD MESSAGES

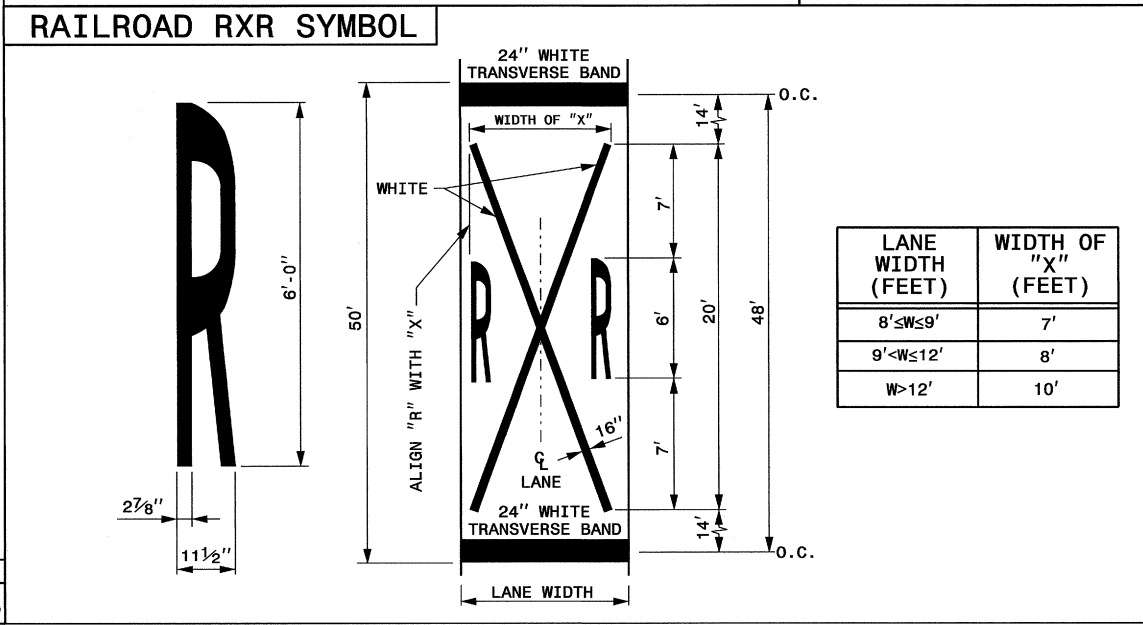
SHEET 3 OF 8
1205D08



STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
PAVEMENT MARKINGS
SYMBOLS AND WORD MESSAGES

SHEET 3 OF 8
1205D08



GENERAL NOTES:

- 1- THE SCHOOL PAVEMENT MARKING CONSISTS OF SIX (6) CHARACTERS. THE TWO (2) 24" TRANSVERSE BANDS WILL BE PAID FOR UNDER A SEPARATE PAY ITEM. REFER TO ROADWAY STANDARD DRAWING 1205.10 FOR ADDITIONAL PAVEMENT MARKING GUIDANCE.
- 2- PAVEMENT MARKING IN ADVANCE OF A HIGHWAY-RAIL CROSSING SHALL CONSIST OF TWO (2) CHARACTERS AND TWO (2) 16" LINES (FORMING AN X) WHICH ARE PAID FOR UNDER TWO SEPARATE PAY ITEMS. THE TWO (2) 24" TRANSVERSE BANDS WILL BE PAID FOR UNDER A SEPARATE PAY ITEM. REFER TO ROADWAY STANDARD DRAWING 1205.11 FOR ADDITIONAL PAVEMENT MARKING GUIDANCE.

**REVISED PAVEMENT MARKING
ROADWAY STANDARD DRAWING**

08-MAR-2012 12:18 S:\S&DU\Standards_Group\NMP\2012 Standard Drawings\Standard Dwg 8-17-11\Revised\12050803_Rev12.dgn

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

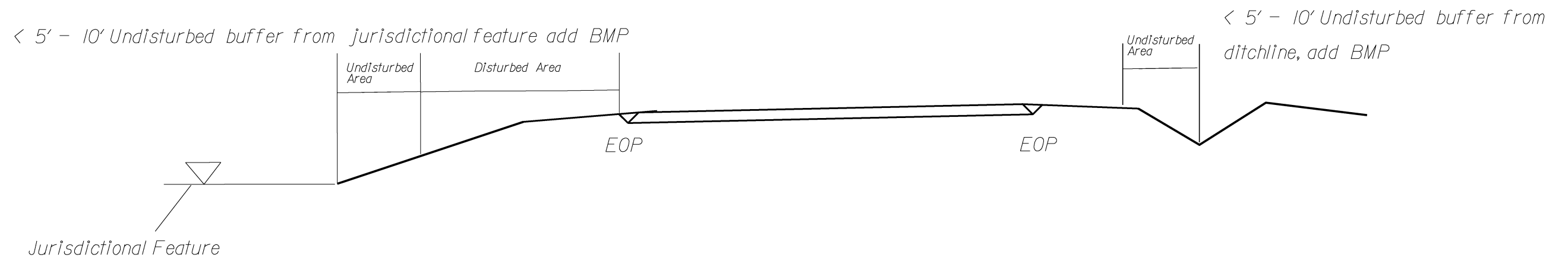
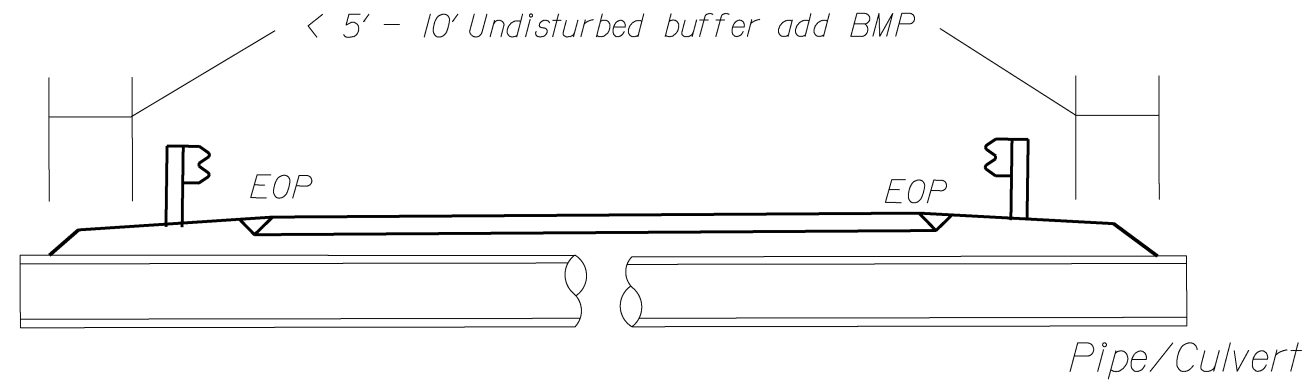
SOIL STABILIZATION TIMEFRAMES

<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
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.

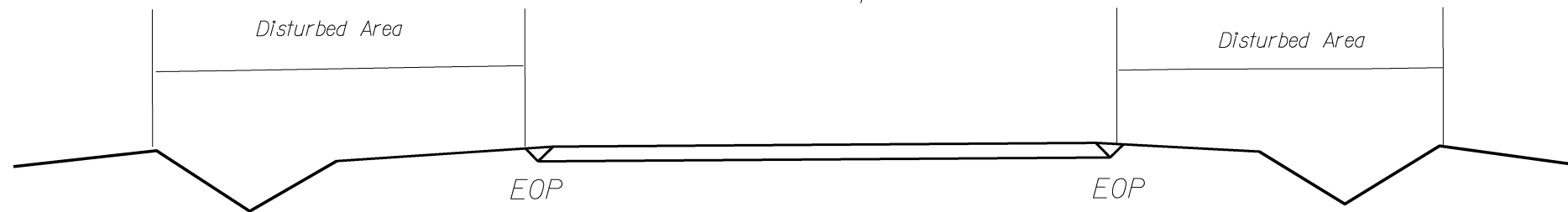
NOTES: Less than 5' - 10' undisturbed buffer from ROW, ditchline, water feature, or drainage inlet, add BMP.

BMP Options: Wattle or Silt Fence

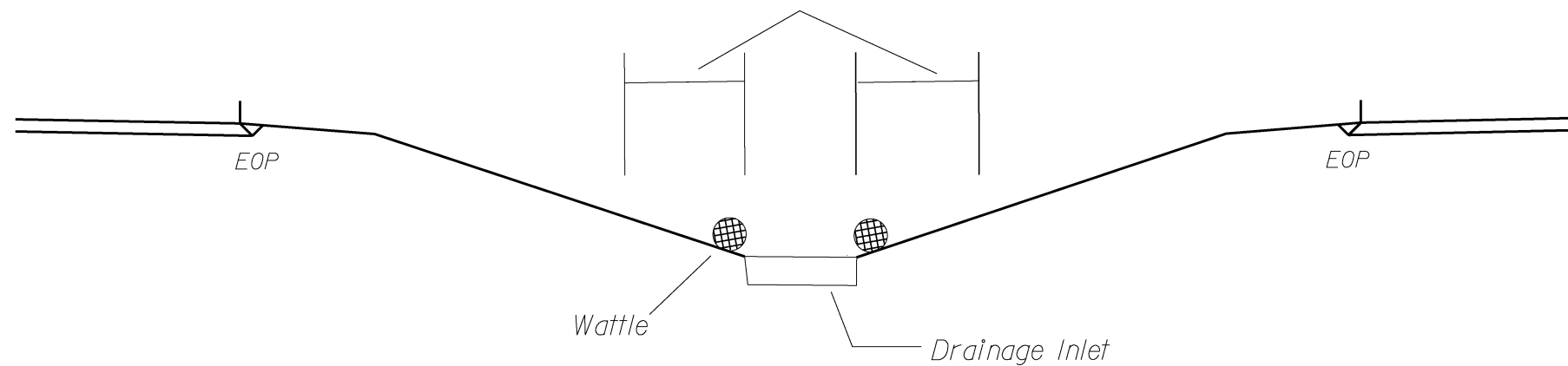
EROSION CONTROL DETAIL



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

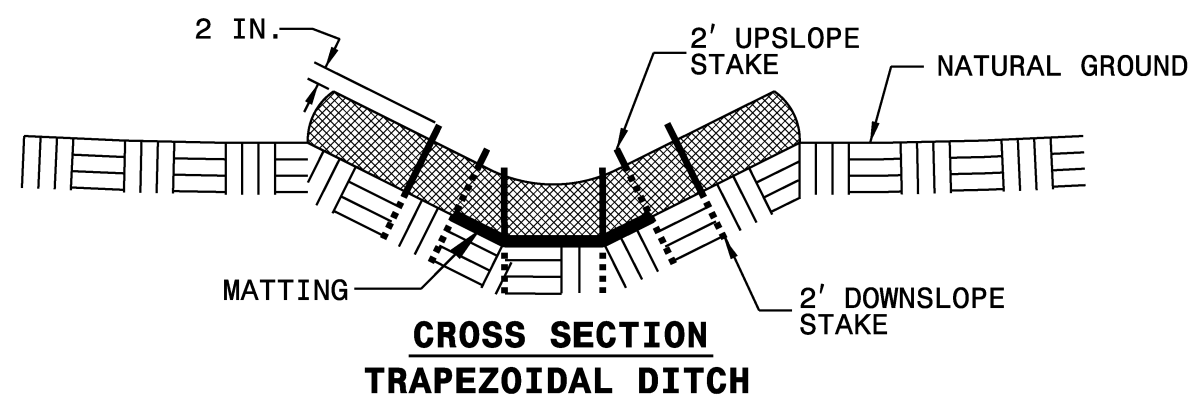
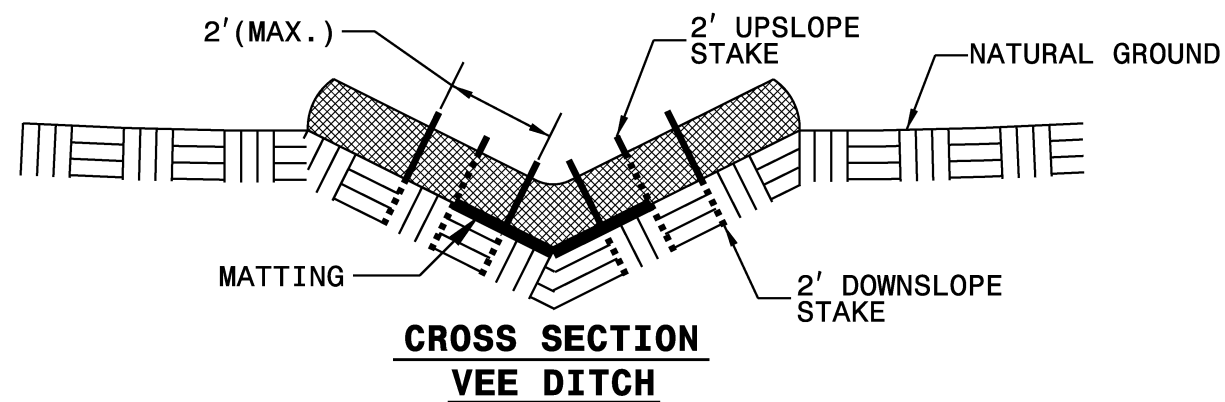
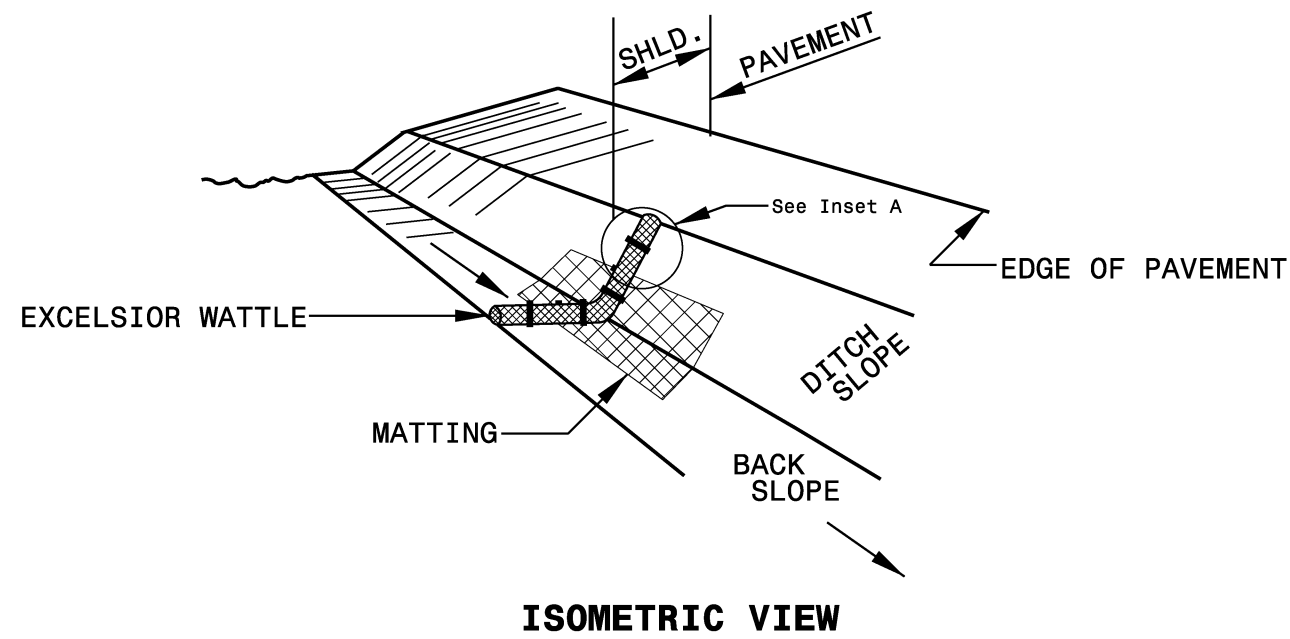


< 5' - 10' Undisturbed buffer from inlet, add wattle



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.

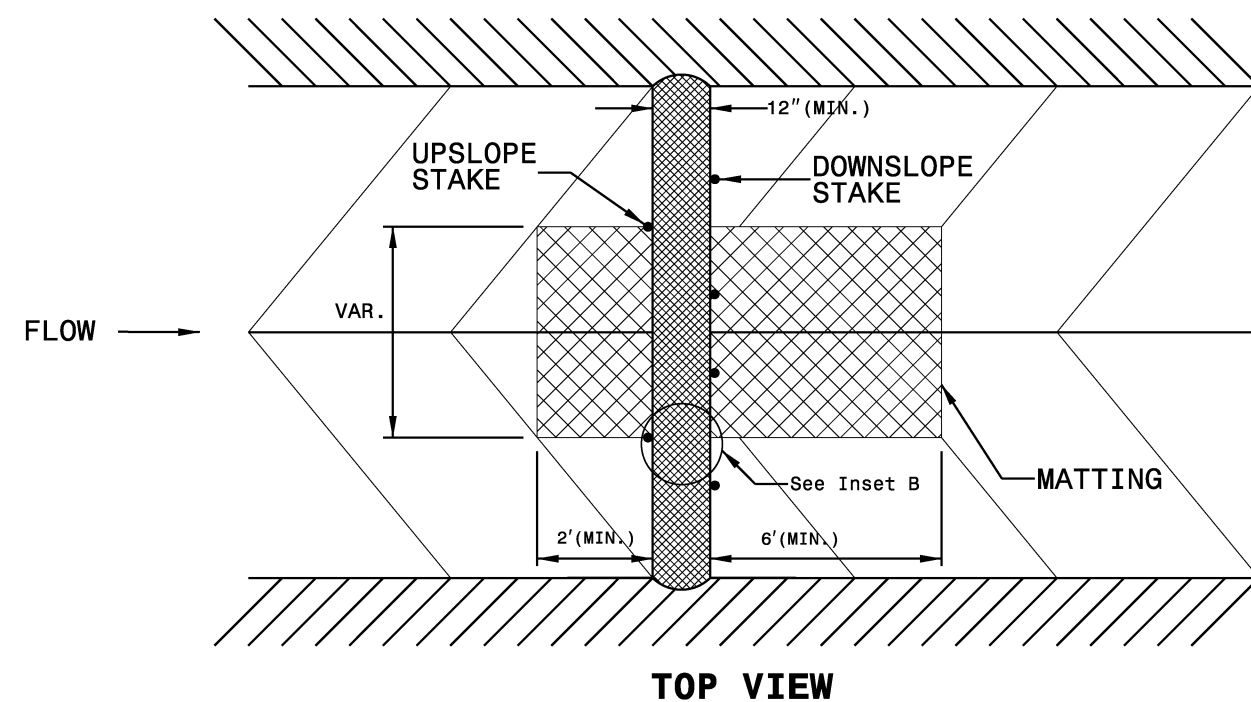
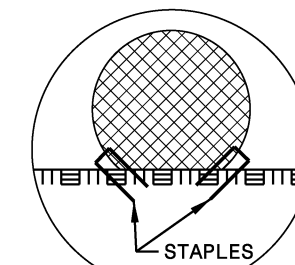
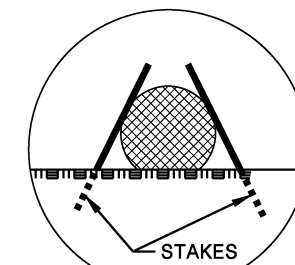
ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

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.

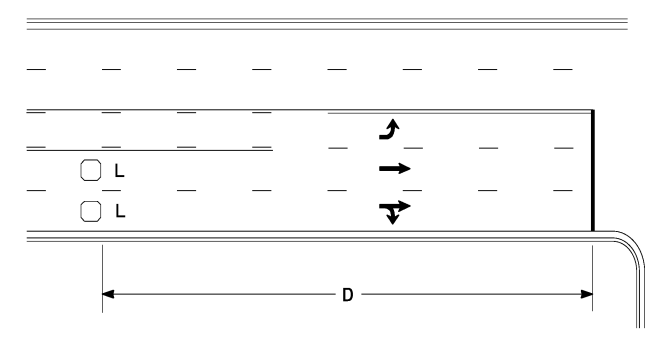
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

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



I:\FEB-2015\1141\01\Resurfacing\Pender County\Plan Sheets\3CR.20711.173. EC RESURF_2015.dgn
 Date: 2/15/2015 11:41 AM
 User: Resurfacing

High Speed Detection (≥40 mph)

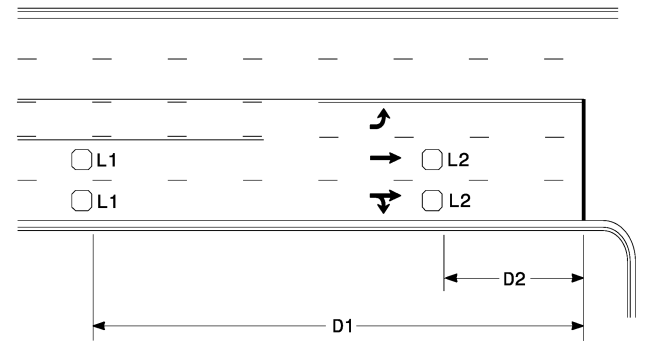


Speed Limit mph	D ft
40	250
45	300
50	355
55	420

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

Volume Density Operation

OR

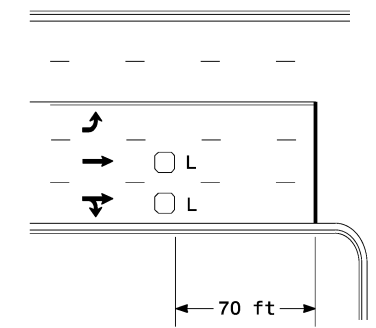


Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

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

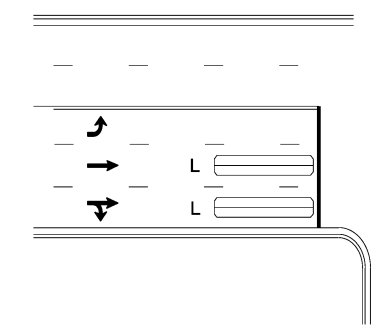
"Stretch" Operation

Low Speed Detection (≤35 mph)



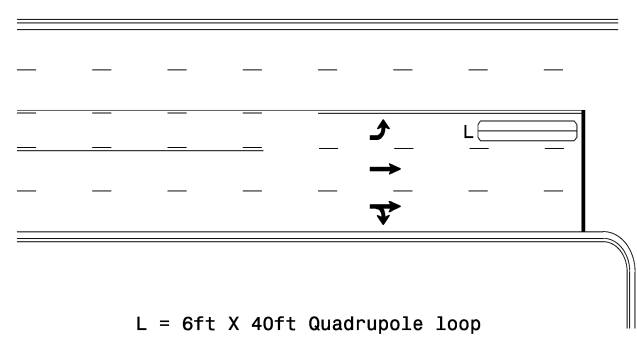
L = 6ft X 6ft
 Wired in series

OR



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

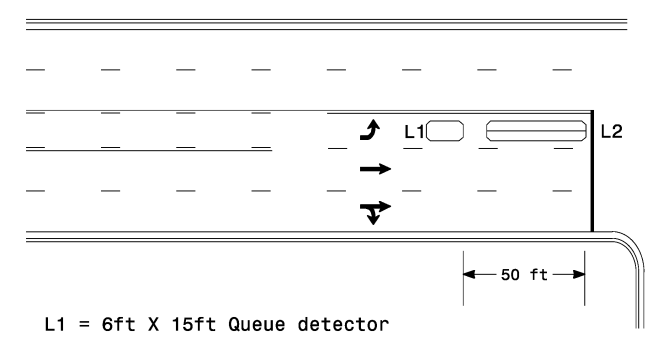
Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

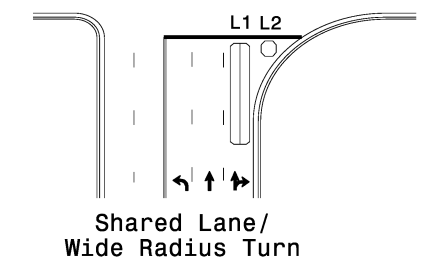
OR



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

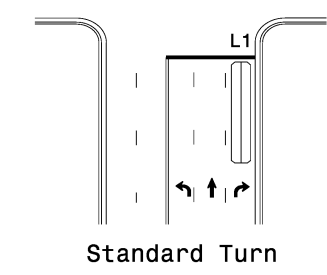
Queue Loop Detection

Right Turn Lane Detection

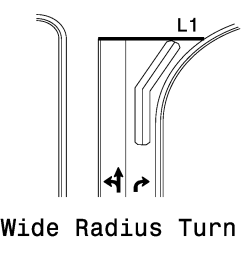


L1 = 6ft X 40ft Quadrupole loop
 L2 = 6ft X 6ft [Minimum] Presence loop
 Wired separately

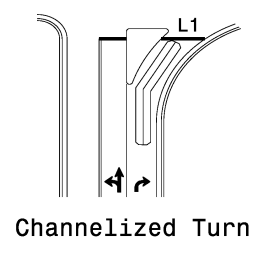
Shared Lane/
Wide Radius Turn



Standard Turn

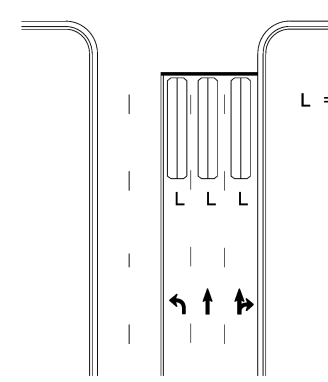


Wide Radius Turn



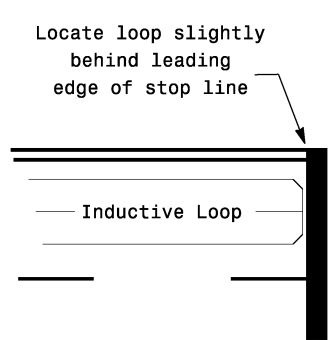
Channelized Turn

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 REVIEWED BY: JPG
 PREPARED BY: PLA REVIEWED BY:

REVISIONS	INIT.	DATE

SCALE: N/A
 1/30/2015
 SIG. INVENTORY NO.