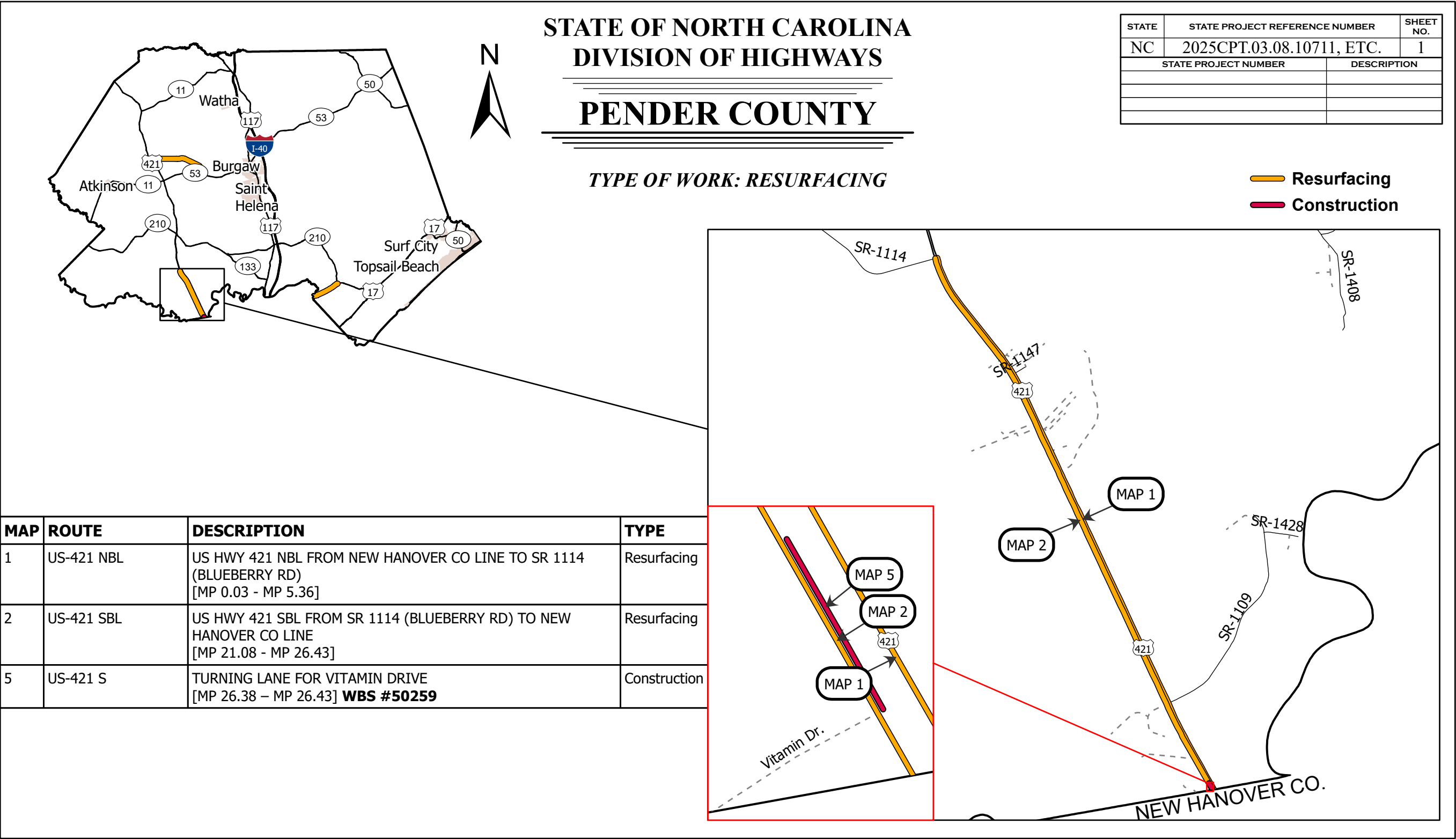


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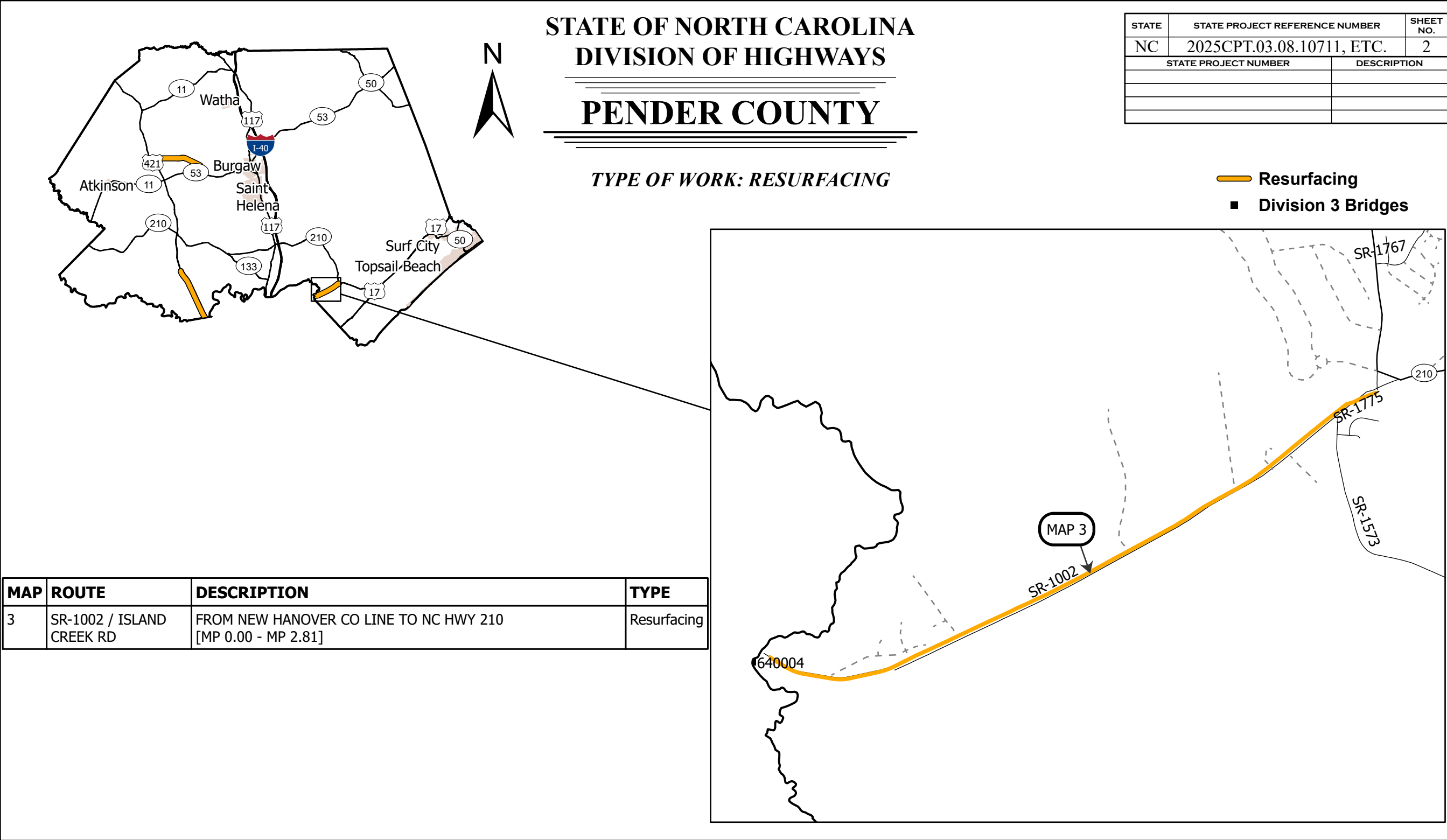
CONTRACT: C205101



<i>PROJECT LENGTH</i>		Prepared in the Office of: <i>DIVISION OF HIGHWAYS</i> 5501 BARBADOS BLVD., CASTLE HAYNE, NC, 28429								
<table border="1"><thead><tr><th>MAP</th><th>MILES</th></tr></thead><tbody><tr><td>1</td><td>5.33</td></tr><tr><td>2</td><td>5.35</td></tr><tr><td>5</td><td>0.05</td></tr></tbody></table>		MAP		MILES	1	5.33	2	5.35	5	0.05
MAP	MILES									
1	5.33									
2	5.35									
5	0.05									

WBS NO: 2025CPT.03.08.10711, ETC.

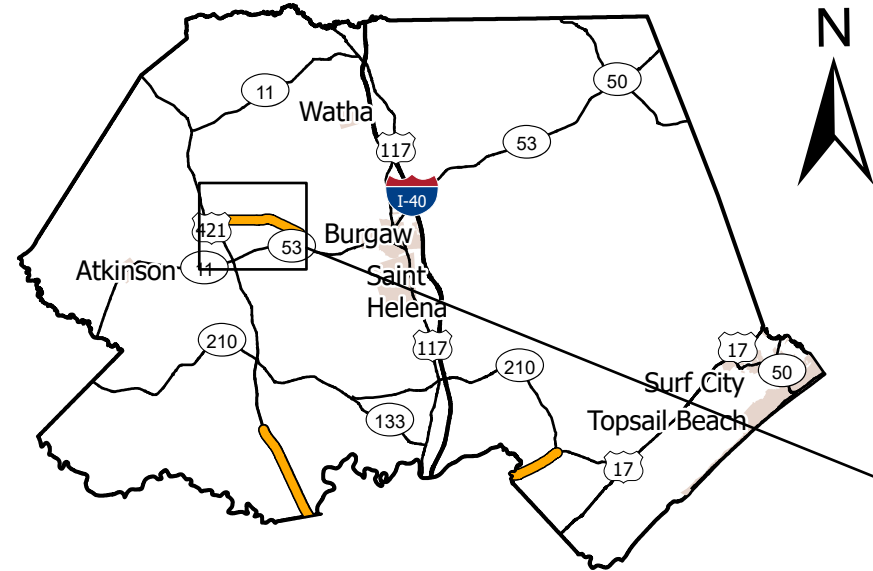
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<i>PROJECT LENGTH</i>		Prepared in the Office of: <i>DIVISION OF HIGHWAYS</i> 5501 BARBADOS BLVD., CASTLE HAYNE, NC, 28429				
<table border="1"><tr><td>MAP</td><td>MILES</td></tr><tr><td>3</td><td>2.81</td></tr></table>		MAP		MILES	3	2.81
MAP	MILES					
3	2.81					

WBS NO: 2025CPT.03.08.10711, ETC.

CONTRACT: C205101



STATE OF NORTH CAROLINA

DIVISION OF HIGHWAYS

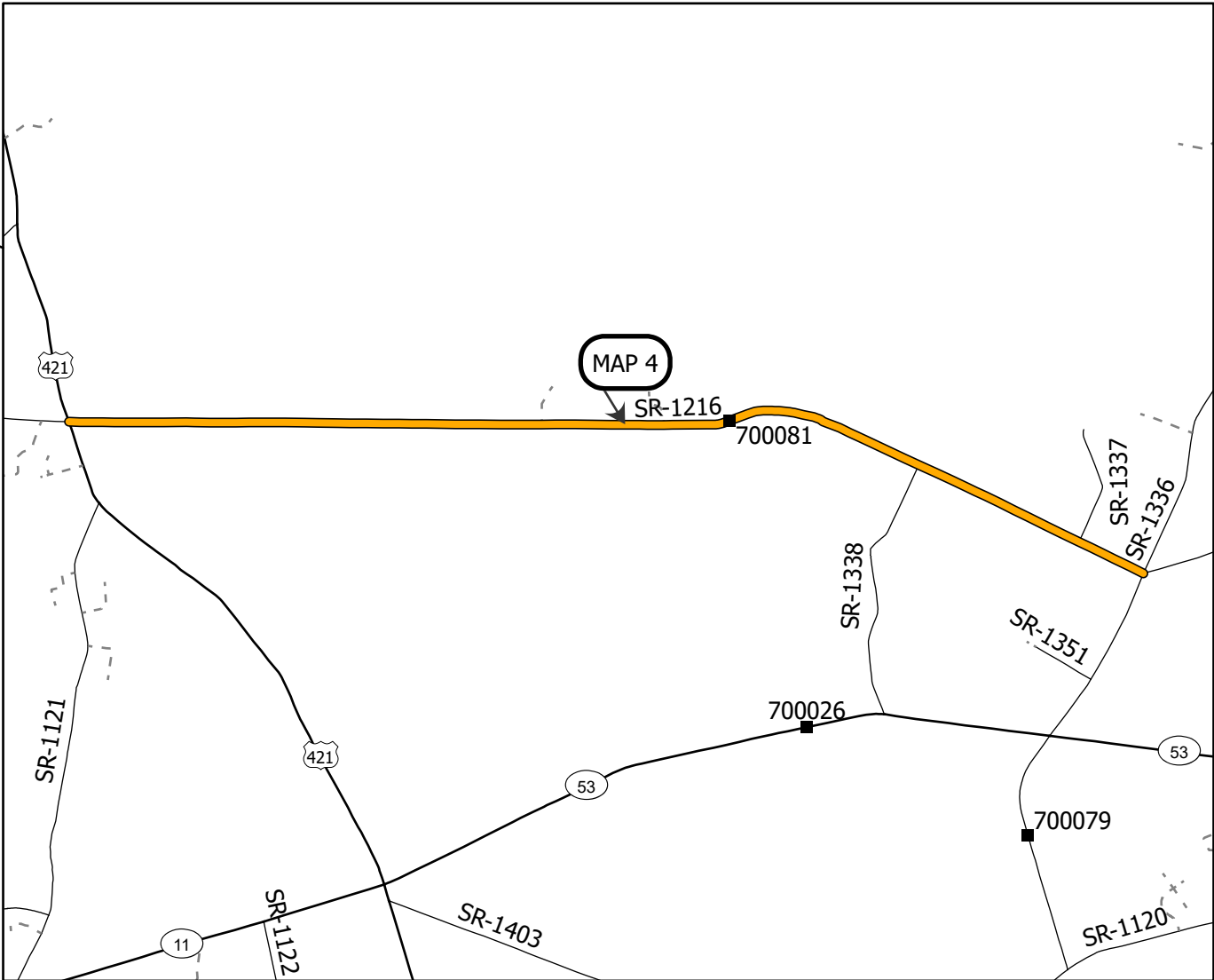
PENDER COUNTY

TYPE OF WORK: RESURFACING

STATE	STATE PROJECT REFERENCE NUMBER	SHEET NO.
NC	2025CPT.03.08.10711, ETC.	3
STATE PROJECT NUMBER		DESCRIPTION

- Resurfacing
- Division 3 Bridges

MAP	ROUTE	DESCRIPTION	TYPE
4	SR-1216 / PINEY WOODS RD	FROM US HWY 421 TO SR 1336 (HORSE BRANCH RD) [MP 1.40 - MP 6.60]	Resurfacing



PROJECT LENGTH

MAP	MILES
4	5.20

Prepared in the Office of:
DIVISION OF HIGHWAYS
5501 BARBADOS BLVD., CASTLE HAYNE, NC, 28429

This exhibit does not meet NC 47-30 requirements and therefore is not intended for design, construction, or recording or transfer of title.



PAVEMENT SCHEDULE

C1	PROP. APPROX. 1½" DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ.YD.
C2	PROP. APPROX. 2.5" DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ.YD. IN EACH OF TWO LAYERS
C3	PROP. APPROX. 1½" DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ.YD.
C4	PROP. APPROX. 3" DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 336 LBS. PER SQ.YD.
D1	PROP. APPROX. 4" DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ.YD.
E1	PROP. APPROX. 5" DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 LBS. PER SQ.YD.
R1	EXISTING CONCRETE BRIDGE RAIL
R2	5" CONCRETE MONOLITHIC ISLAND (KEYED IN)
T1	EARTH MATERIAL (SHOULDER RECONSTRUCTION)
U	EXISTING PAVEMENT
V1	14" SINUSOIDAL MILLED RUMBLE STRIP, SHOULDER WITH 5:1 BICYCLE PATTERN, 60 FT LONG WITH 12 FT GAPS
V2	8" SINUSOIDAL MILLED RUMBLE STRIPE, EDGELINE WITH 5:1 BICYCLE PATTERN, 60 FT LONG WITH 12 FT GAPS
V3	14" SINUSOIDAL MILLED RUMBLE STRIPE, CENTERLINE
V4	14" SINUSOIDAL MILLED RUMBLE STRIP, SHOULDER
V5	1.5" MILLING

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

SHOULDER WORK ON MAP NO.1-5 AS NEEDED, TO BE DETERMINED BY ENGINEER.

NO WORK ON BRIDGE *0004 (ISLAND CREEK DR)

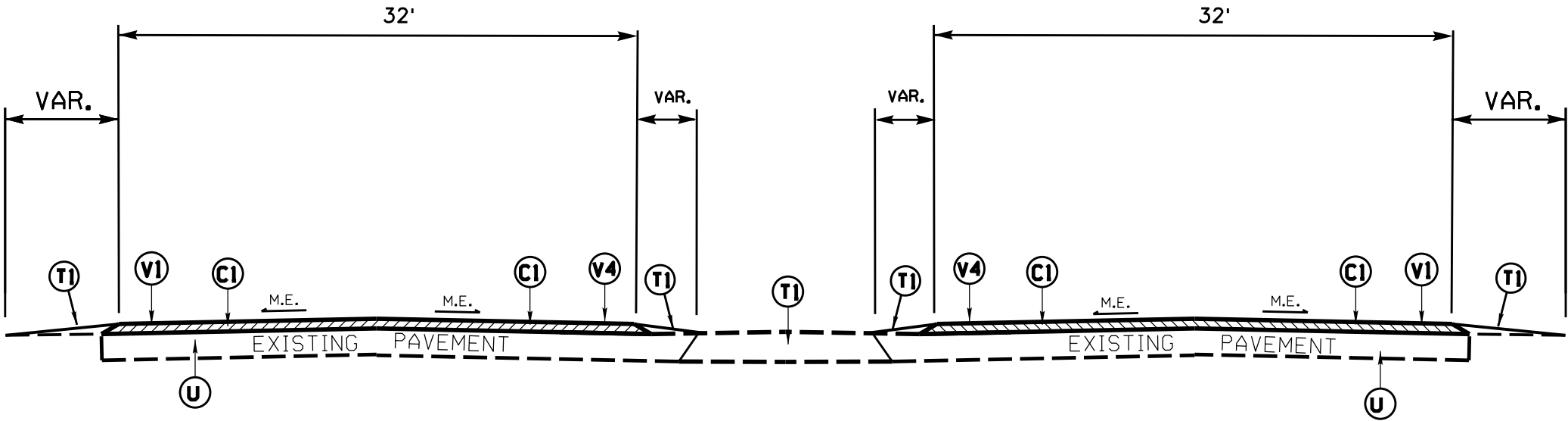
PAVEMENT EDGE SLOPES ARE 1:1, EXCEPT FINAL SURFACE COURSE. SEE SHOULDER WEDGE DETAIL.

2024 ROADWAY ENGLISH STANDARD DRAWINGS

EFF. 01-16-2024
REV.

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N.C. Department of Transportation - Raleigh, N.C., Dated January, 2024 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 3 - PIPE CULVERTS	
310.01	Method of Pipe Installation
DIVISION 8 - INCIDENTALS	
840.22	Frame with Two Grates
840.28	Brick Grated Drop Inlet Type "D"
846.01	Concrete Curb, Gutter and Curb & Gutter
852.01	Concrete Islands
862.01	Guardrail Placement
DIVISION 12 - PVT MARKING, MARKERS AND DELINEATION	
1205.01	Pavement Markings
1205.08	Pavement Markings - Symbols & Word Messages



TYPICAL SECTION NO. 1

MAP NO. 2
US-421 SBL
MP 21.08 - MP 26.43

MAP NO. 1
US-421 NBL
MP 0.03 - MP 5.36

REMOVE & RESET EXISITING GUARDARIL
CAT -1 REMOVAL AND TL-3 INSTALL

MAP	NAME	MP	MP
1	US 421 NBL	3.55	3.64
2	US 421 SBL	22.8	22.88

PAVEMENT SCHEDULE	
C2	PROP. APPROX. 2.5" DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ.YD. IN EACH OF TWO LAYERS
T1	EARTH MATERIAL (SHOULDER RECONSTRUCTION)
U	EXISTING PAVEMENT
V2	8" SINUSOIDAL MILLED RUMBLE STRIPE, EDGELINE WITH 5:1 BICYCLE PATTERN, 60 FT LONG WITH 12 FT GAPS
V3	14" SINUSOIDAL MILLED RUMBLE STRIPE, CENTERLINE

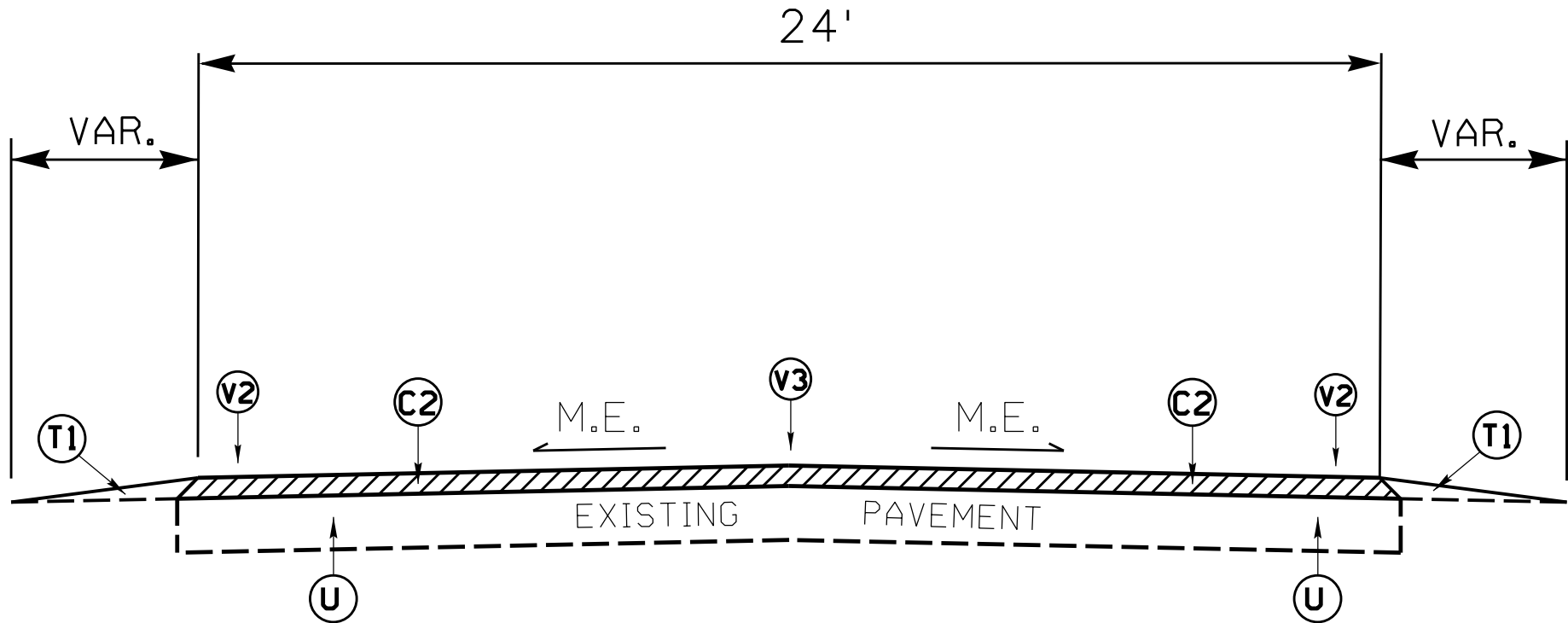
NOTES: MILL A SINGLE LANE AND PAVE BACK BY THE END OF EACH WORK DAY.

SHOULDER WORK ON MAP NO.1-5 AS NEEDED, TO BE DETERMINED BY ENGINEER.

NO WORK ON BRIDGE #0004 (ISLAND CREEK DR)

MAINTAIN EXISTING LANE WIDTHS

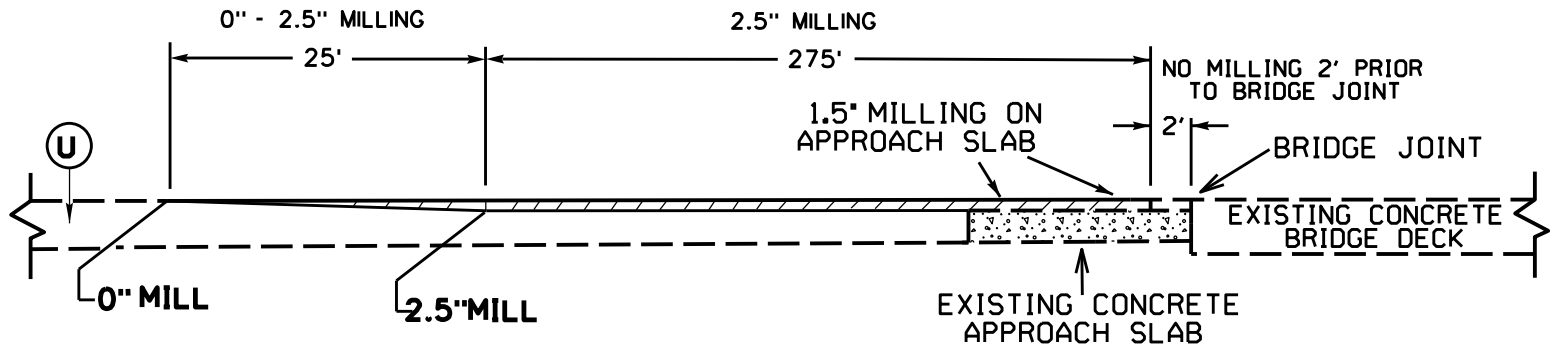
PAVEMENT EDGE SLOPES ARE 1:1, EXCEPT FINAL SURFACE COURSE. SEE SHOULDER WEDGE DETAIL.



TYPICAL SECTION NO. 2

MAP NO. 3
SR 1002 ISLAND CREEK RD
MP 0.00 - MP 2.81

INCIDENTAL MILLING DETAIL FOR BRIDGE APPROACHES



MAP 3: BRIDGE #0004 - SR 1002 (ISLAND CREEK RD.)

PAVEMENT SCHEDULE	
C3	PROP. APPROX. 1½" DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ.YD.
R1	EXISTING CONCRETE BRIDGE RAIL
T1	EARTH MATERIAL (SHOULDER RECONSTRUCTION)
U	EXISTING PAVEMENT
V2	8" SINUSOIDAL MILLED RUMBLE STRIPE, EDGELINE WITH 5:1 BICYCLE PATTERN, 60 FT LONG WITH 12 FT GAPS
V3	14" SINUSOIDAL MILLED RUMBLE STRIPE, CENTERLINE
V5	1.5" MILLING

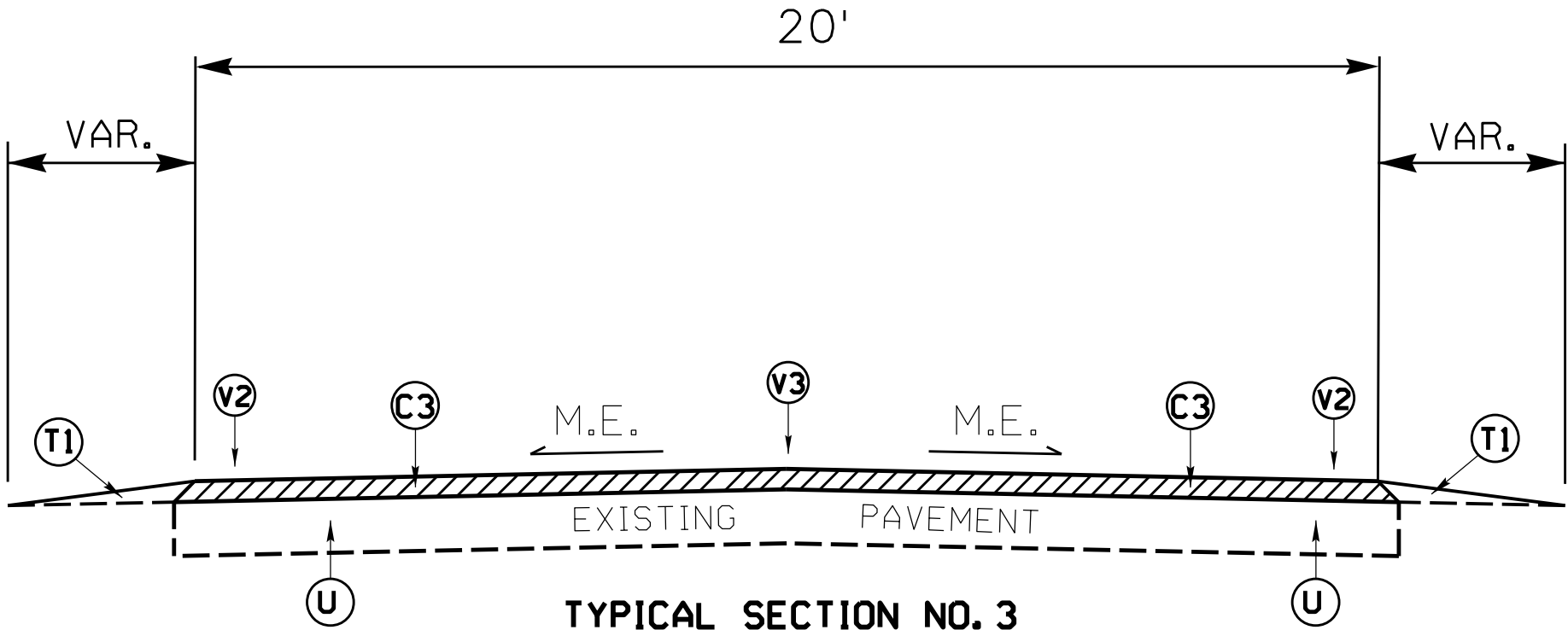
NOTES: MILL A SINGLE LANE AND PAVE BACK BY THE END OF EACH WORK DAY.

SHOULDER WORK ON MAP NO.1-5 AS NEEDED, TO BE DETERMINED BY ENGINEER.

NO WORK ON BRIDGE *0004 (ISLAND CREEK DR)

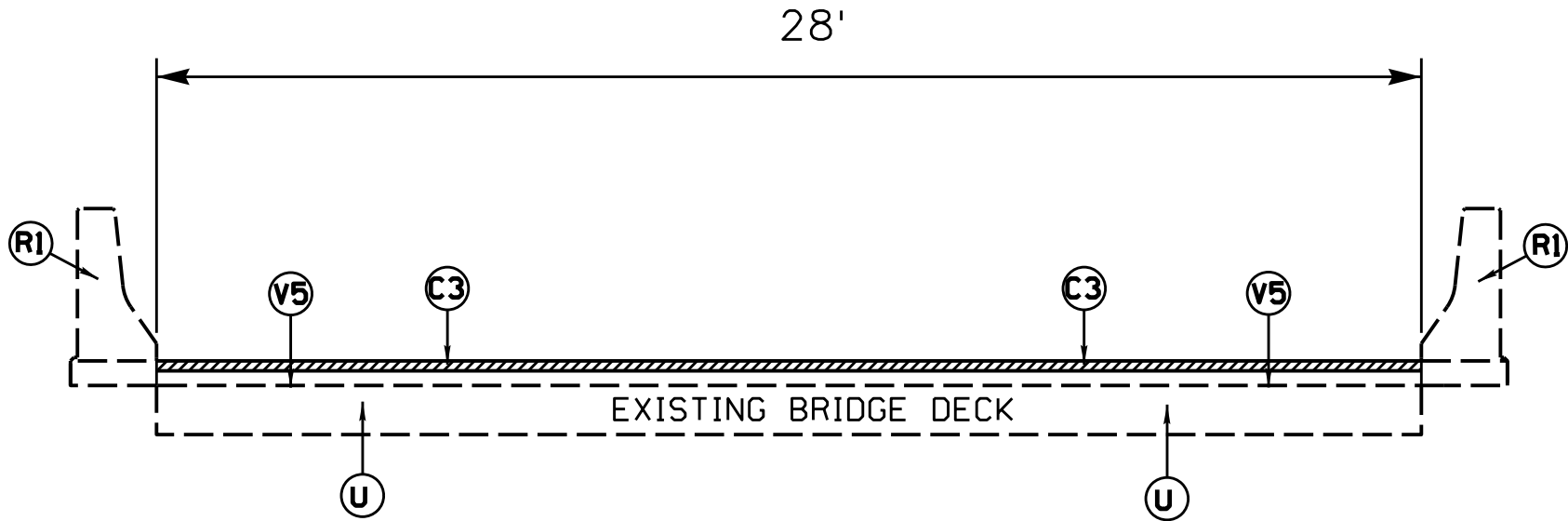
2' OFFSET FROM EOP FOR RUMBLE STRIP

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



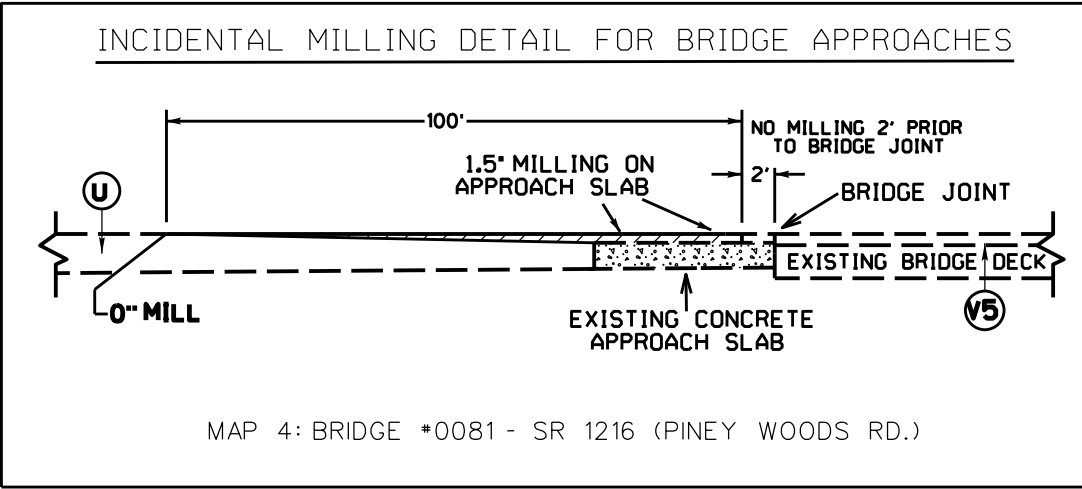
TYPICAL SECTION NO. 3

MAP NO. 4
SR 1216 PINEY WOODS RD
MP 1.40 - MP 6.60



TYPICAL SECTION NO. 4

MAP NO. 4
SR 1216 PINEY WOODS RD
BRIDGE NO. 0081
MP 4.51 - MP 4.54

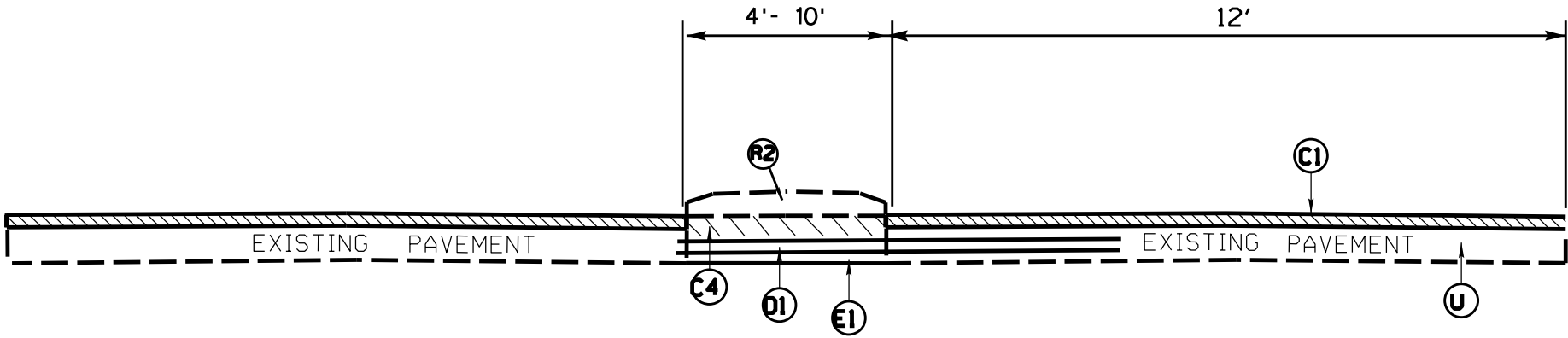


PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1½" DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ.YD.
C4	PROP. APPROX. 3" DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 336 LBS. PER SQ.YD.
D1	PROP. APPROX. 4" DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ.YD.
E1	PROP. APPROX. 5" DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 LBS. PER SQ.YD.
R2	5" CONCRETE MONOLITHIC ISLAND (KEYED IN)
U	EXISTING PAVEMENT

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

SHOULDER WORK ON MAP NO.1-5 AS NEEDED, TO BE DETERMINED BY ENGINEER.

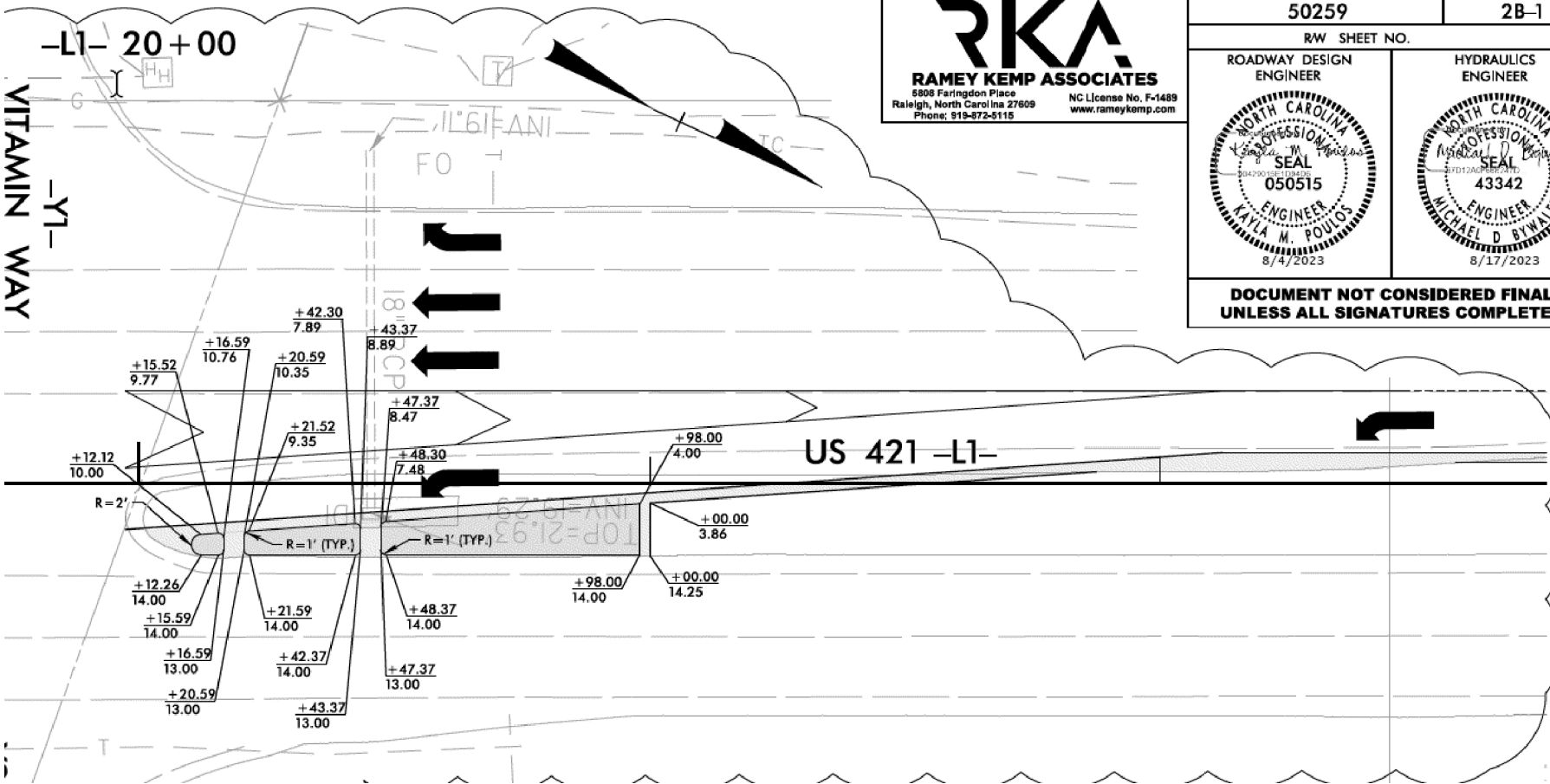
PAVEMENT EDGE SLOPES ARE 1:1, EXCEPT FINAL SURFACE COURSE. SEE SHOULDER WEDGE DETAIL.



TYPICAL SECTION NO. 5

MAP NO. 5
US-421 SBL VITAMIN DR
MP 26.38 - MP 26.43

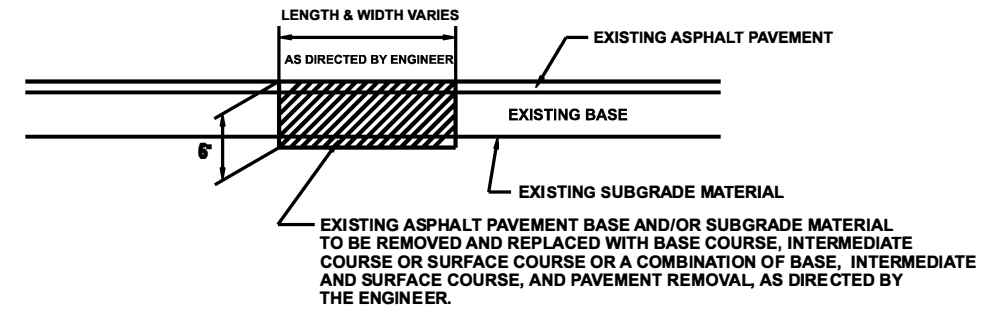
WBS: 50259



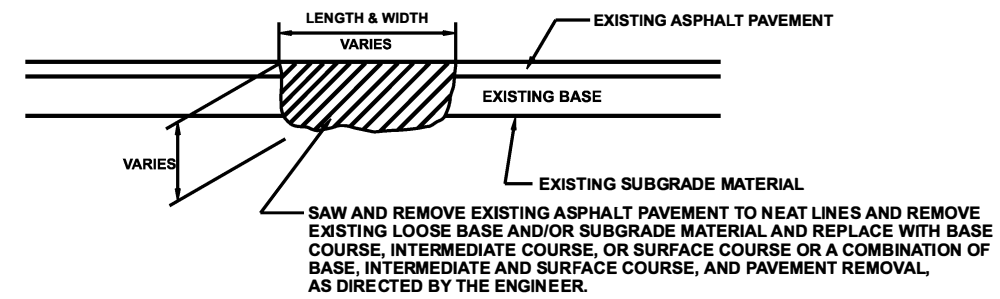
Infrastructure Consulting Services, Inc.
RKA
RAMEY KEMP ASSOCIATES
5808 Faringdon Place
Raleigh, North Carolina 27609
Phone: 919-872-5115
NC License No. F-1489
www.rameykemp.com

PROJECT REFERENCE NO. 50259		SHEET NO. 2B-1
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

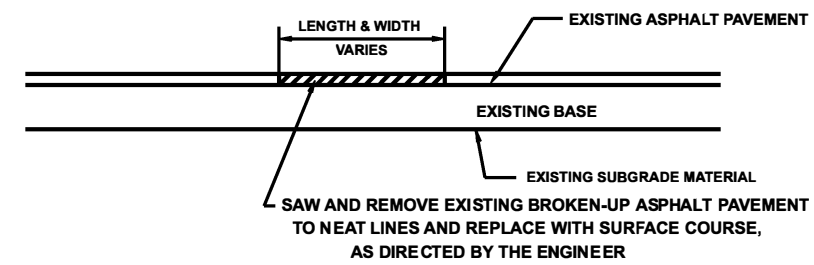
DETAILS OF REPAIRING EXISTING PAVEMENT PRIOR TO RESURFACING FOR FULL DEPTH AND MILLING



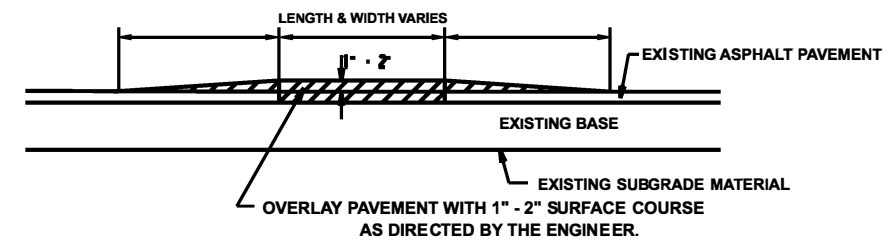
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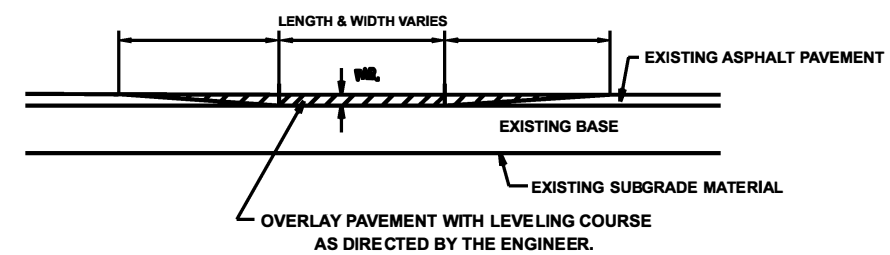
DETAIL NO. 2



DETAIL NO. 3



DETAIL NO. 4



DETAIL NO. 5

REVISIONS

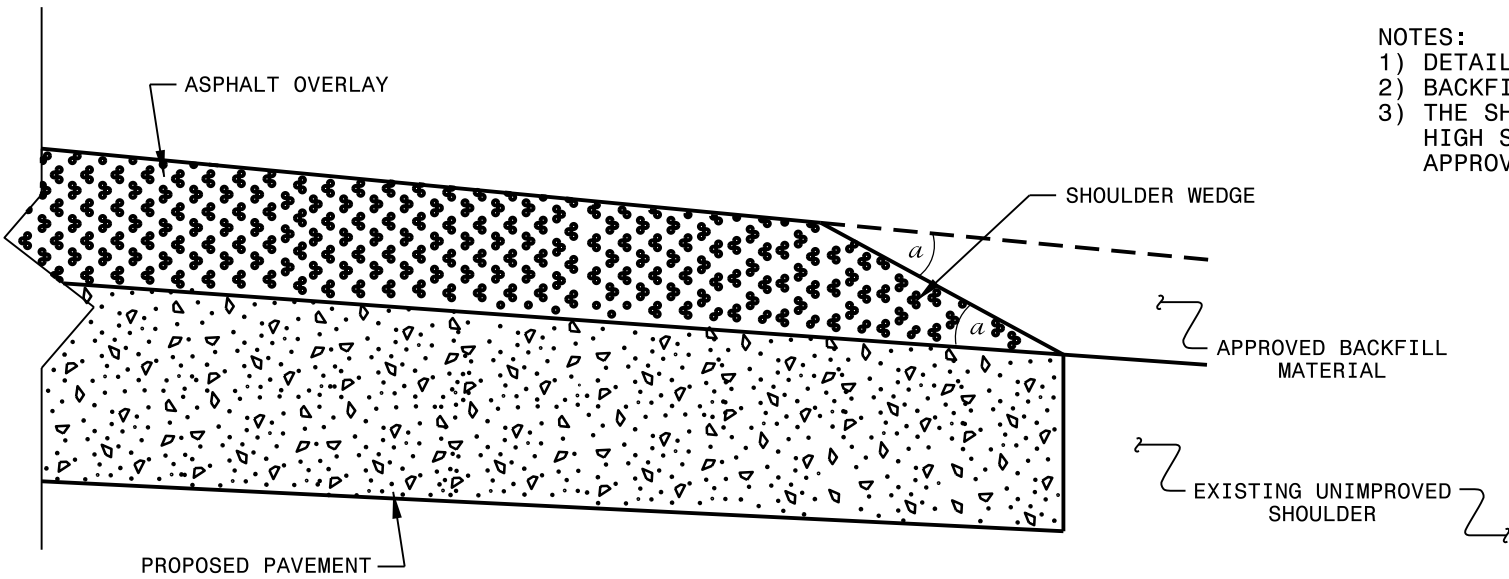
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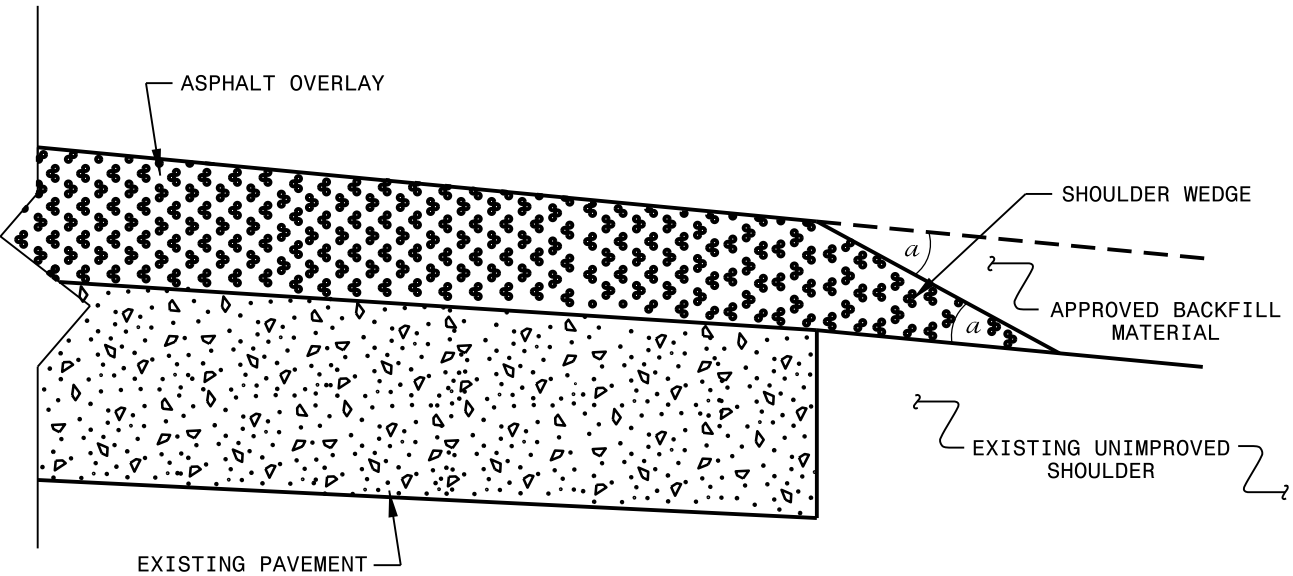
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8/17/99

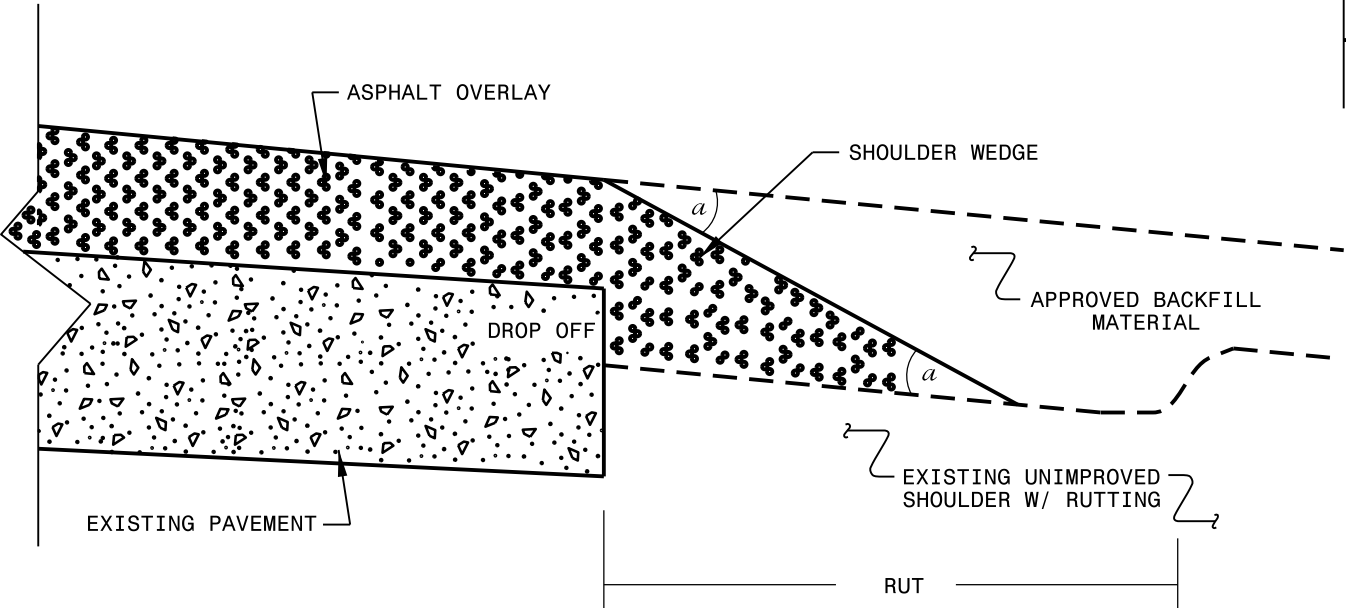
- NOTES:
- 1) DETAIL DOES NOT APPLY TO OGAFC AND ULTRA-THIN BONDED WEARING COURSE.
 - 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
 - 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS, SIDE STREETS, HIGH SHOULDERS, AND OTHER LOCATIONS NOT FEASIBLE TO CONSTRUCT AS APPROVED BY THE ENGINEER.



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



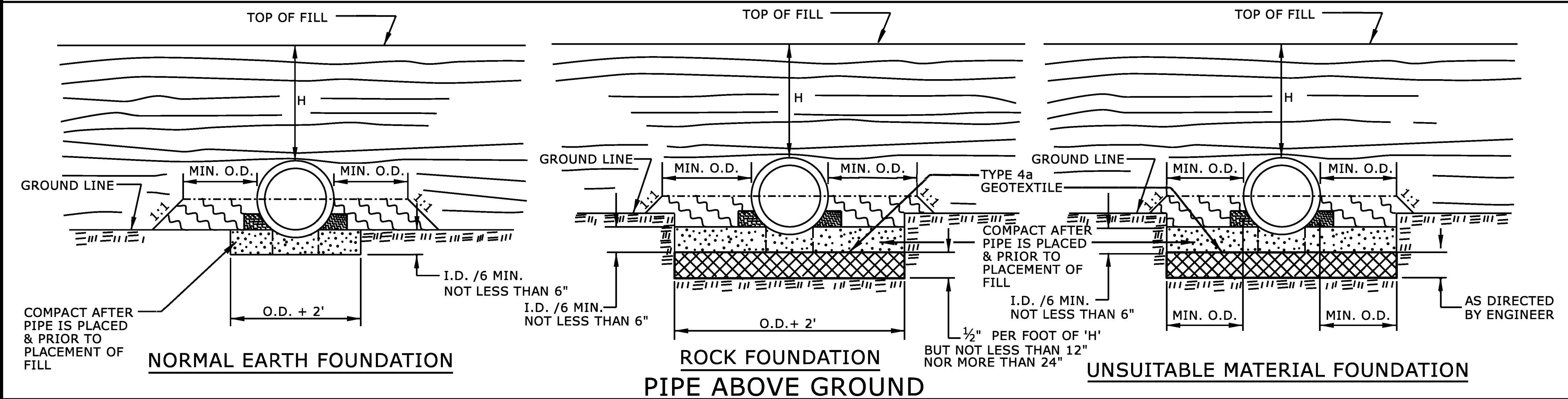
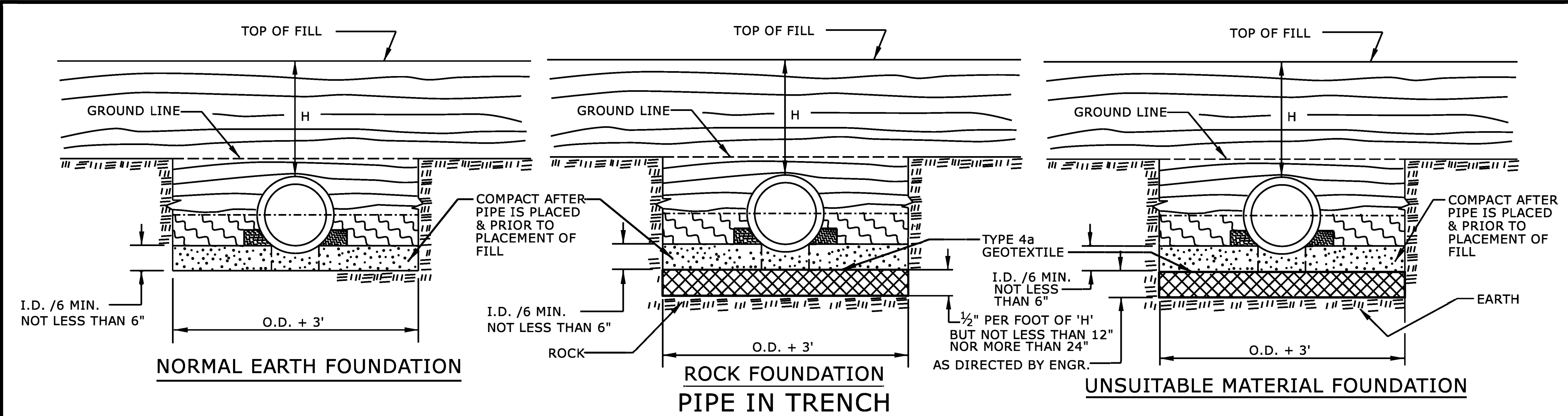
SHOULDER WEDGE DETAIL
(Resurfacing Projects w/ NO Widening)



SHOULDER WEDGE DETAIL
(Resurfacing Adjacent to
Rutted Shoulder)

- SHOULDER WEDGE ANGLE = 30°

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		



GENERAL NOTES:

I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.

O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.

H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP OF THE EMBANKMENT AT THAT POINT.

APPROVED SUITABLE LOCAL MATERIAL.

TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.

LOOSELY PLACED SELECT MATERIAL CLASS III OR CLASS II, TYPE 1 FOR PIPE BEDDING. LEAVE SECTION DIRECTLY BENEATH PIPE UNCOMPACTED AS PIPE SEATING AND BACKFILL WILL ACCOMPLISH COMPACTION.

DO NOT OPERATE HEAVY EQUIPMENT OVER ANY PIPE CULVERT UNTIL THE PIPE CULVERT HAS BEEN PROPERLY BACKFILLED AND COVERED WITH AT LEAST 3 FEET OF APPROVED MATERIAL.

REFER TO NCDOT PIPE MATERIAL SELECTION GUIDE AND STANDARD SPECIFICATIONS FOR ALLOWABLE PIPE FILL HEIGHTS AND PIPE SPECIFICATIONS.

SPRINGLINE OF PIPE

SELECT BACKFILL MATERIAL CLASS III OR CLASS II, BELOW SPRINGLINE.

UNDISTURBED EARTH MATERIAL

SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE WITH TYPE IV GEOTEXTILE AS DIRECTED BY THE ENGINEER.

SHEET 2 OF 2
300.01

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

ROADWAY DETAIL DRAWING FOR
METHOD OF PIPE INSTALLATION
RIGID PIPE

Signed by:
Nicole M. Hackler
588432034164C5.

SEAL
033144
NORTH CAROLINA
PROFESSIONAL
ENGINEER
NICOLE M. HACKLER

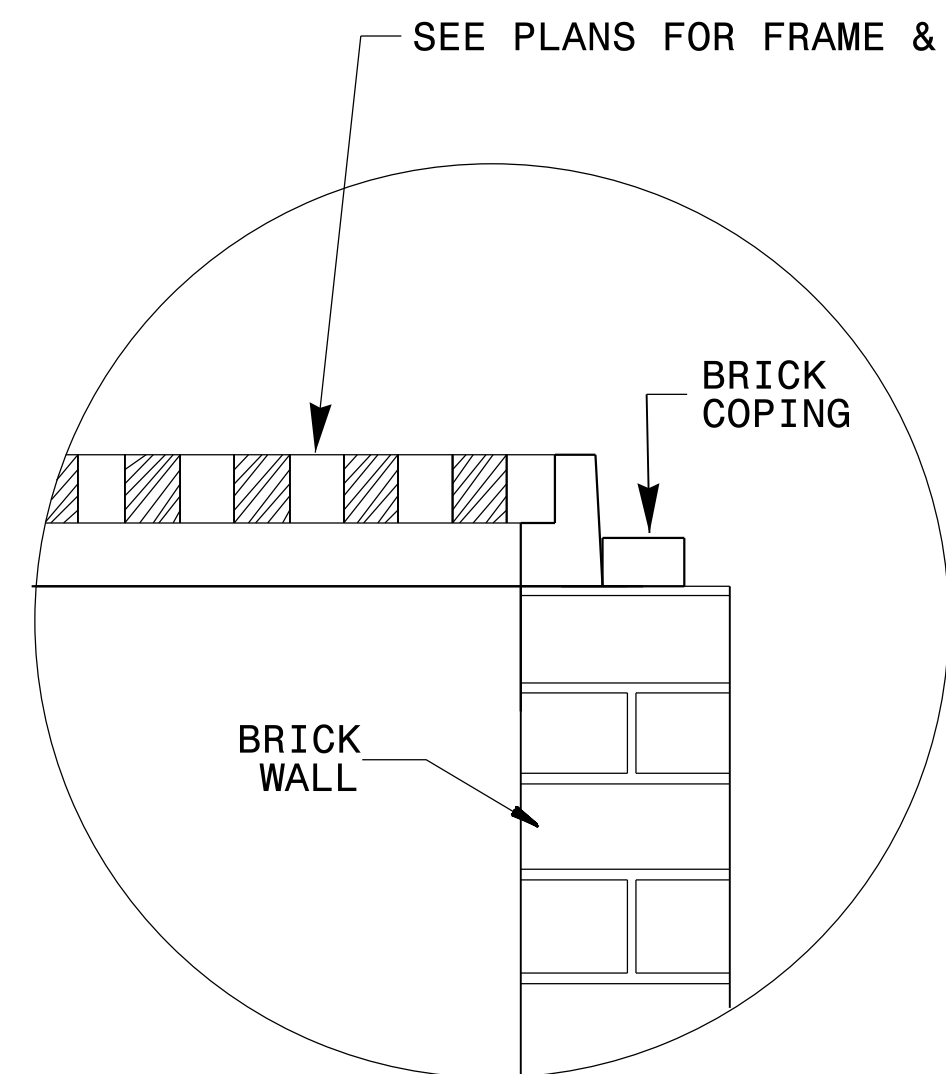
04/07/2025

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

**CONTRACTS STANDARDS
AND DEVELOPMENT UNIT**
Office 919-707-6950 FAX 919-250-4119

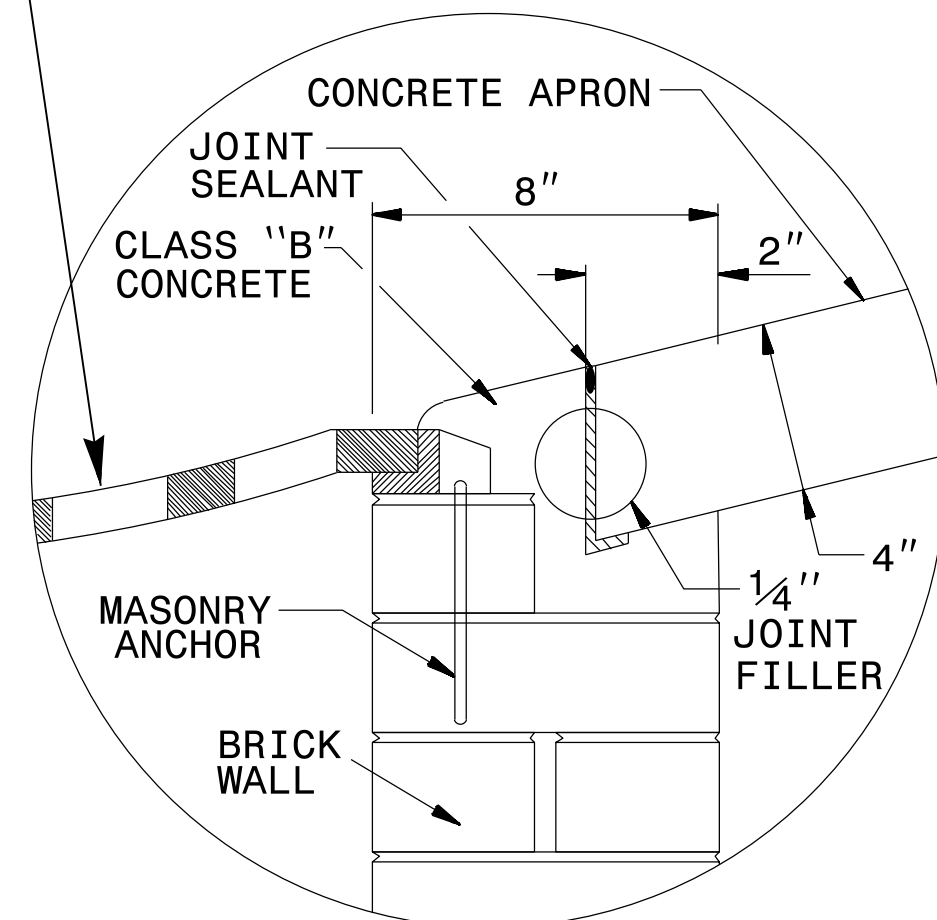
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MODIFIED BY:		DATE:	
CHECKED BY:		DATE:	
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GRATE PLACEMENT DETAIL

FOR DROP INLETS

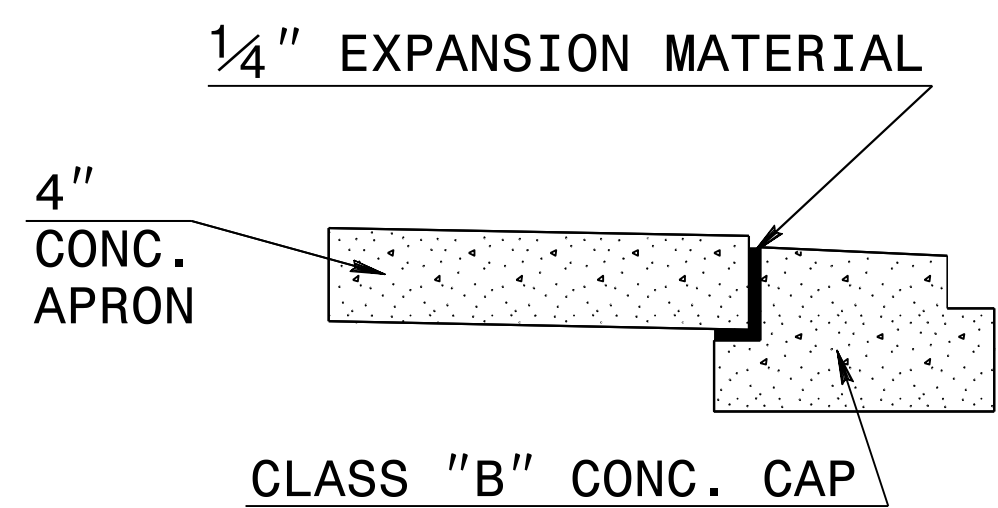


GRATE PLACEMENT DETAIL

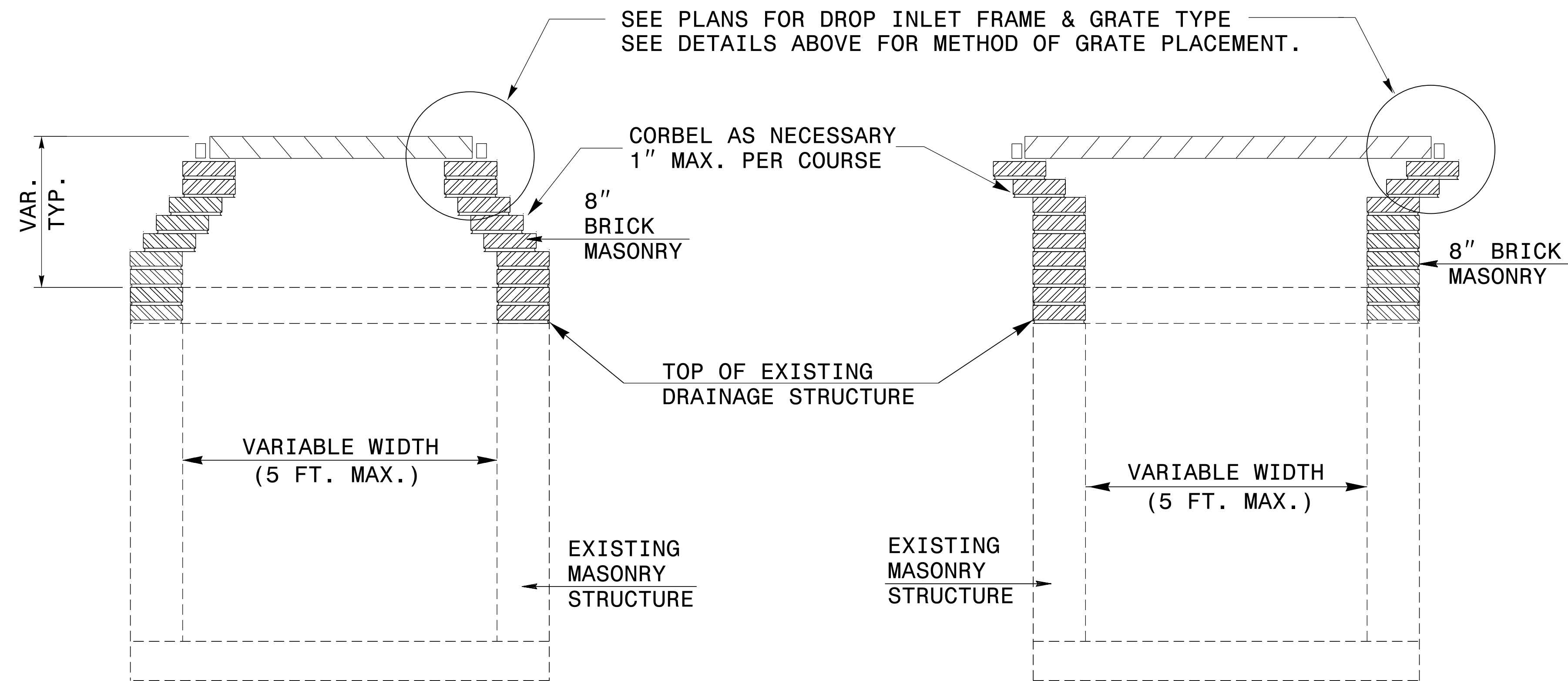
FOR GRATED DROP INLETS

GENERAL NOTES:

- CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.
- USE CLASS B CONCRETE.
- THE DIMENSIONS FOR THE EXISTING BOXES ARE APPROXIMATE AND MAY VARY SLIGHTLY.
- JUMBO CONCRETE BRICK WILL BE PERMITTED. 4" CONCRETE BRICK OR 8" SOLID CONCRETE BLOCK ARE REQUIRED FOR DRAINAGE STRUCTURE.
- INCLUDE 18" CONCRETE APRON IN UNIT PRICE BID PER EACH, CONVERT EXISTING CATCH BASIN TO DROP INLET.
- SPECIAL DESIGN IS REQUIRED FOR USE UNDER PAVEMENT.
- CONFIRM DIMENSIONS ON EACH INDIVIDUAL FRAME & GRATE PROPOSAL.
- SEE STD. DRAWING 840.25 FOR MASONRY ANCHORAGE.



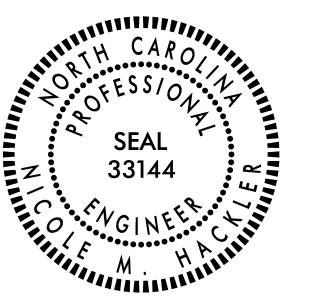
EXPANSION JOINT DETAIL



TYPICAL SECTION

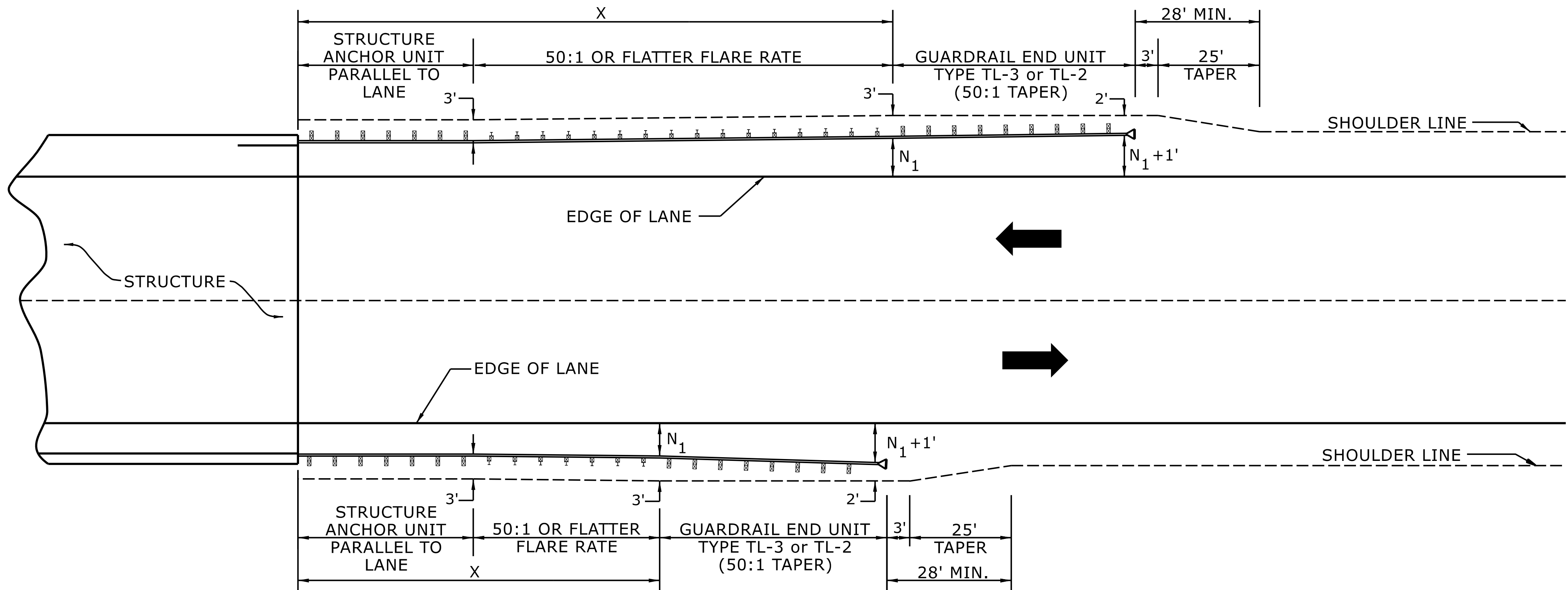
TYPICAL SECTION

Signed by:
Nicole M. Fischer
588432034194CS



04/07/2025

CONTRACT STANDARDS AND DEVELOPMENT UNIT			
Office 919-707-6950		FAX 919-250-4119	
DETAIL TO CONVERT EXISTING CATCH BASIN OR JUNCTION BOX TO DI OR 2-GI			
ORIGINAL BY:	T.S.S.	DATE:	NOV. 1997
MODIFIED BY:	T.S.S.	DATE:	FEB. 2000
CHECKED BY:		DATE:	
FILE SPEC.:	s:usr/details/stand/cbtodi02.dgn		



USE FLARE RATE AS THE CONTROL IF THE "N₁" DISTANCE IS NOT OBTAINED.
("N₁" IS BASED ON SHOULDER WIDTHS IN THE ROADWAY DESIGN MANUAL)

SEE STD. 862.03 FOR STRUCTURE ANCHOR UNITS

FOR POSTED SPEEDS ≥ 45MPH USE GREU TYPE TL-3
FOR POSTED SPEEDS < 45MPH USE GREU TYPE TL-2

GUARDRAIL LENGTH OF NEED (X) IS CALCULATED BASED ON THE AASHTO ROADSIDE DESIGN GUIDE.

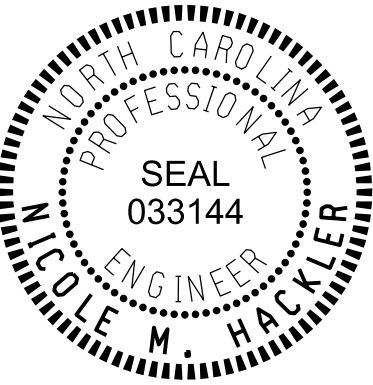
LENGTHS AND OFFSETS FOR PROPOSED GUARDRAIL AT TWO LANE - TWO WAY LOCATIONS

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT

SHEET 4 OF 15
862D01

Signed by:
Nicole M. Hacker
588432034164C5...



04/07/2025

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

**CONTRACTS STANDARDS
AND DEVELOPMENT UNIT**

Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

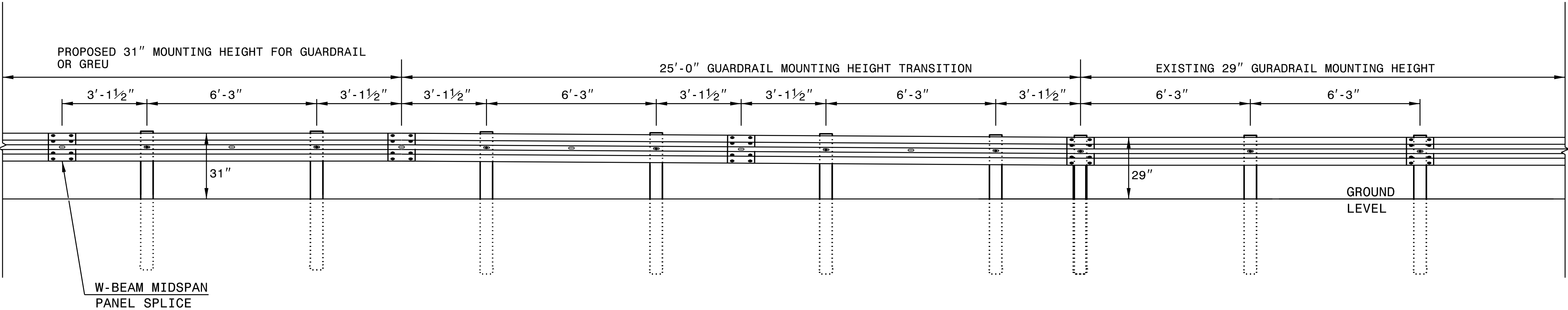
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MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.:

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 5 OF 9
862D02

**NOTE: IF EXISTING GUARDRAIL IS LOWER THAN 29", USE AN ADDITIONAL 12'-6" LONG SECTION OF GUARDRAIL,
FOR EVERY 1" OF HEIGHT DIFFERENCE, TO TRANSITION FROM EXISTING GUARDRAIL TO PROPOSED 31" GUARDRAIL.**



ELEVATION VIEW

TRANSITION FROM 29" TO 31" W-BEAM GUARDRAIL MOUNTING HEIGHT



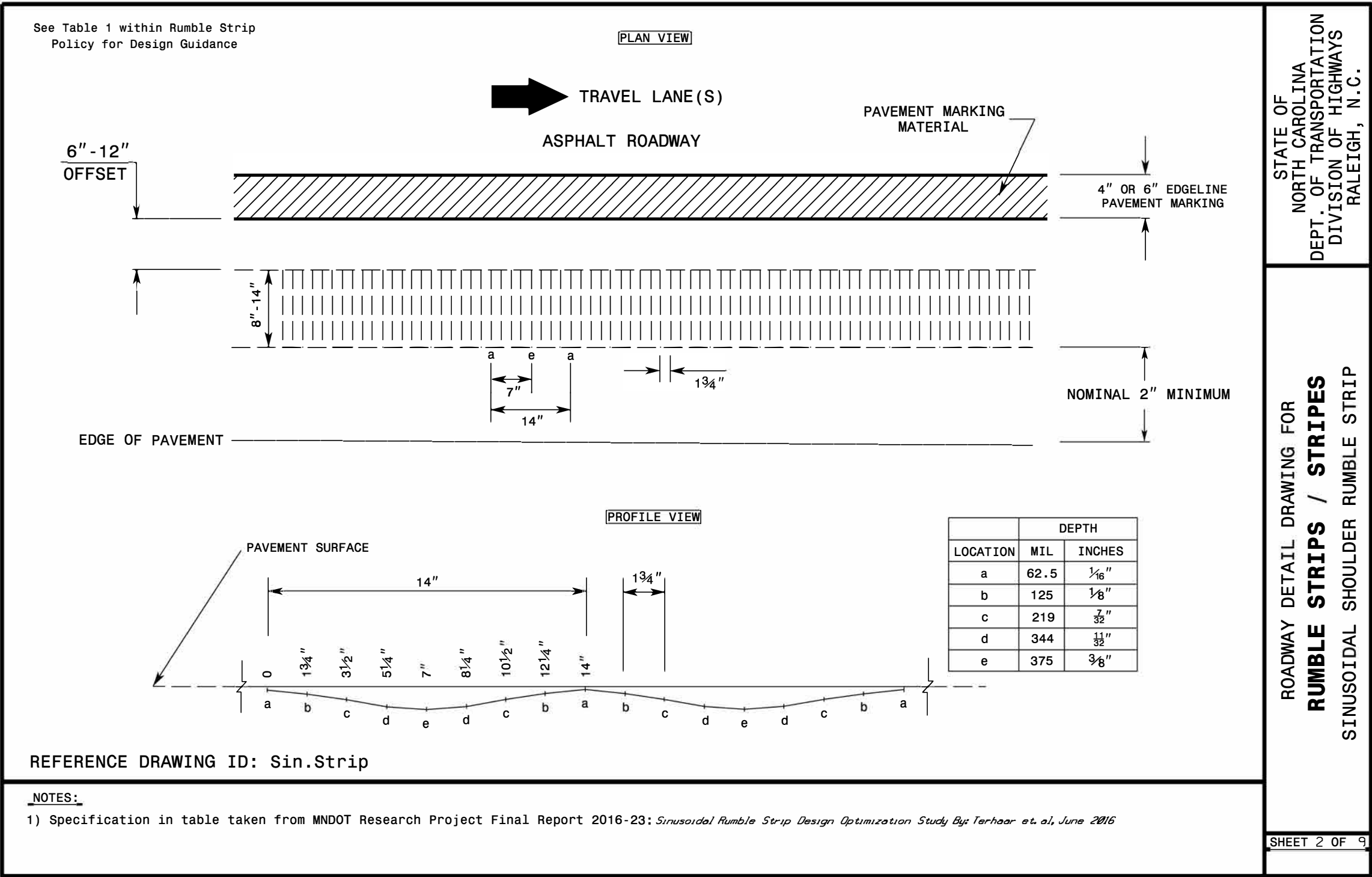
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DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

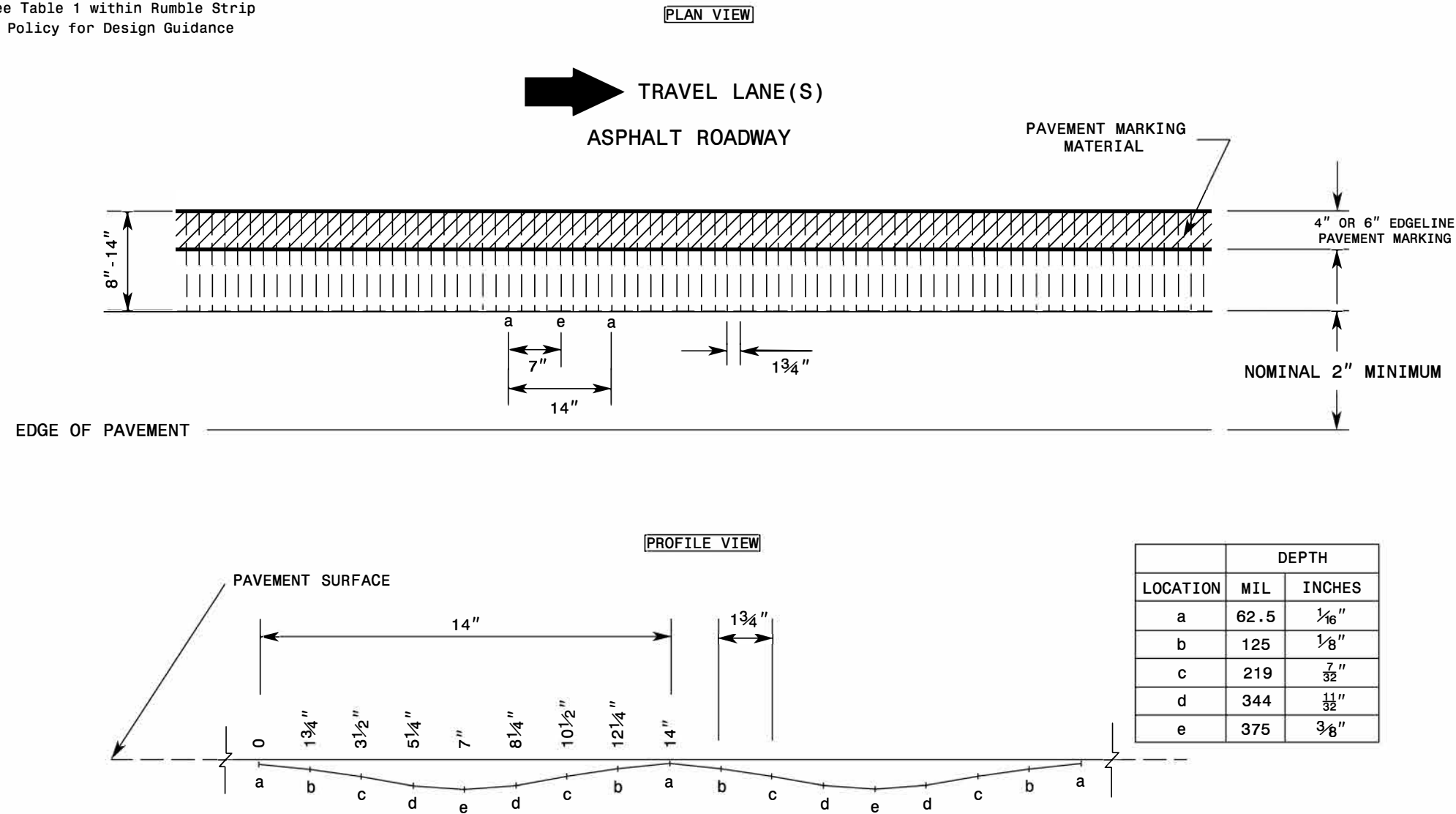
**CONTRACTS STANDARDS
AND DEVELOPMENT UNIT**
Office 919-707-8950 FAX 919-250-4119

SEE TITLE BLOCK

ORIGINAL BY: K. Aldridge DATE: 02-25
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: DATE:



See Table 1 within Rumble Strip
Policy for Design Guidance



REFERENCE DRAWING ID: Sin.Stripe

NOTES:

- 1) Specification in table taken from MNDOT Research Project Final Report 2016-23: *Sinusoidal Rumble Strip Design Optimization Study By: Terhaar et. al, June 2016*
- 2) USING A VACUUM, REMOVE ALL DEBRIS FROM THE MILLINGS JUST PRIOR TO PLACING ANY PAVEMENT MARKINGS.
- 3) ENSURE GLASS BEADS ARE SPREAD UNIFORMLY OVER THE ENTIRE SURFACE OF THE PAVEMENT MARKING MATERIAL.

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

ROADWAY DETAIL DRAWING FOR
RUMBLE STRIPS / STRIPES
SINUSOIDAL EDGELINE RUMBLE STRIPE

SHEET 4 OF 9



DocuSigned by:
Jessi L. Leonard
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05/05/2025

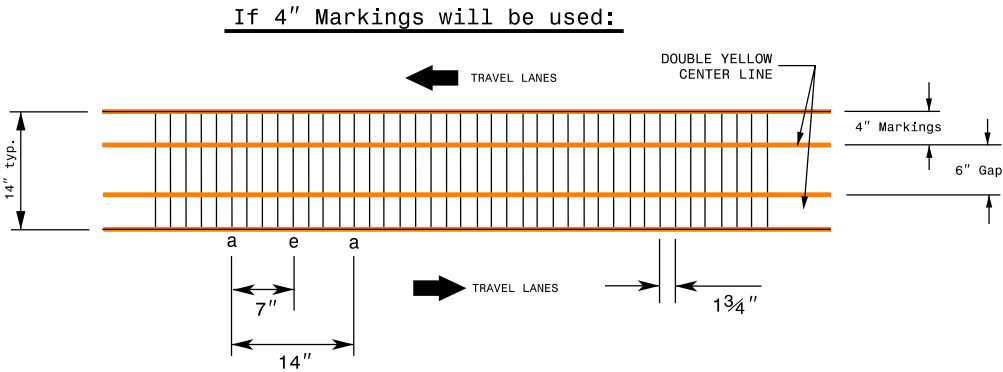
CONTRACTS STANDARDS
AND DEVELOPMENT UNIT
Office 919-707-8950 FAX 919-250-4119

SEE TITLE BLOCK

ORIGINAL BY: C. SIMPSON DATE: 04-24-2025
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.:

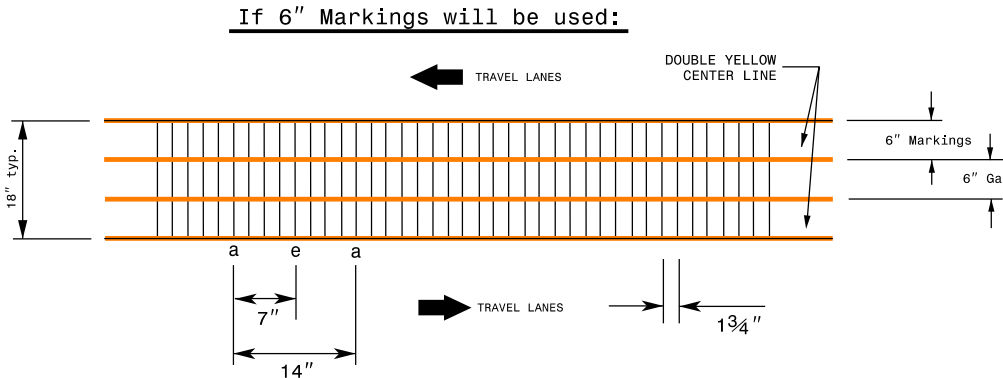
See Table 2 within Rumble Strip
Policy for Design Guidance

Rumble Dimensions



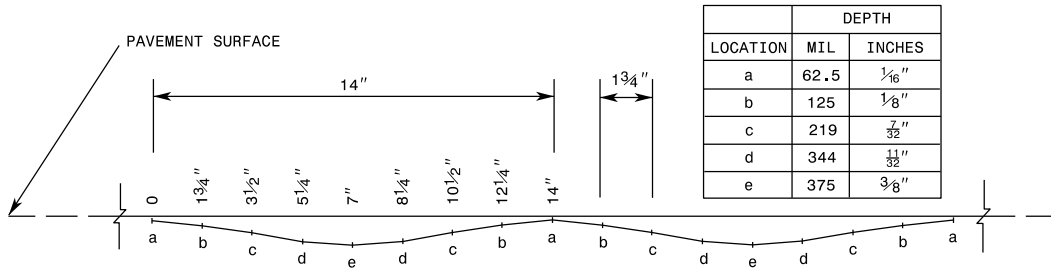
Markings Dimensions

Rumble Dimensions



Markings Dimensions

PROFILE:



REFERENCE DRAWING ID: Sin.CL

NOTES:

- 1) Specification in table taken from MNDOT Research Project Final Report 2016-23: *Sinusoidal Rumble Strip Design Optimization Study By: Terhaar et. al, June 2016*
- 2) USING A VACUUM, REMOVE ALL DEBRIS FROM THE MILLINGS JUST PRIOR TO PLACING ANY PAVEMENT MARKINGS.
- 3) ENSURE GLASS BEADS ARE SPREAD UNIFORMLY OVER THE ENTIRE SURFACE OF THE PAVEMENT MARKING MATERIAL.

SHEET 6 OF 9

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

ROADWAY DETAIL DRAWING FOR
RUMBLE STRIPS / STRIPES
SINUSOIDAL CENTERLINE RUMBLE STRIPE



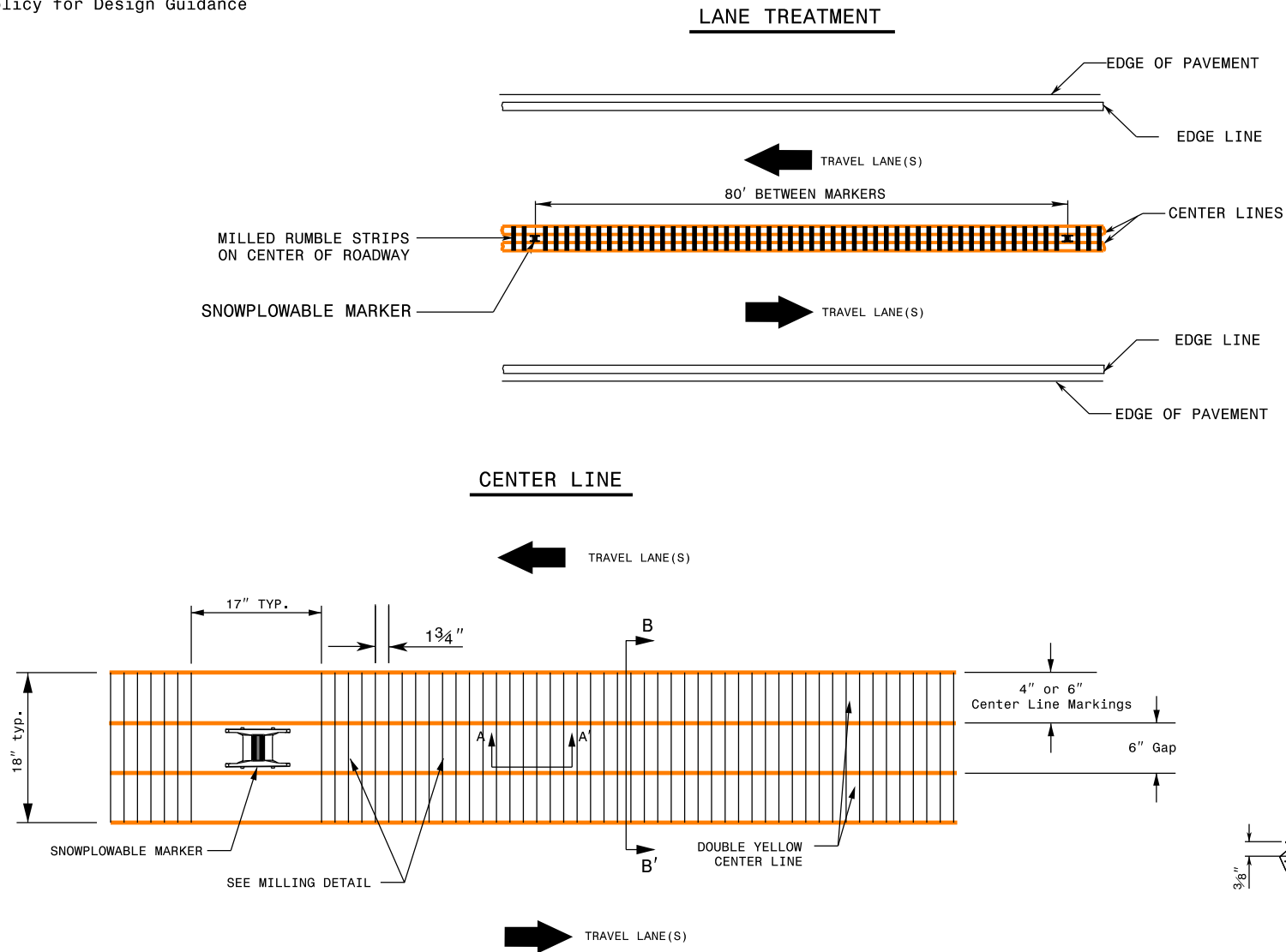
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FILE SPEC.: _____

See Table 2 within Rumble Strip Policy for Design Guidance



REFERENCE DRAWING ID: Sin.CL with Snowplowable Markers

NOTES:

- 1) USING A VACUUM, REMOVE ALL DEBRIS FROM THE MILLINGS JUST PRIOR TO PLACING ANY PAVEMENT MARKINGS.
- 2) ENSURE GLASS BEADS ARE SPREAD UNIFORMLY OVER THE ENTIRE SURFACE OF THE PAVEMENT MARKING MATERIAL.
- 3) INSTALL SNOWPLOWABLE MARKERS AT APPROXIMATELY 80' INCREMENTS. DO NOT MILL RUMBLE STRIPS IN SECTION WHERE SNOWPLOWABLE MARKERS ARE INSTALLED.

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

ROADWAY DETAIL DRAWING FOR
RUMBLE STRIPS / STRIPES
SINUSOIDAL CENTERLINE RUMBLE STRIPE WITH SNOWPLOWABLE MARKERS

SHEET 8 OF 9



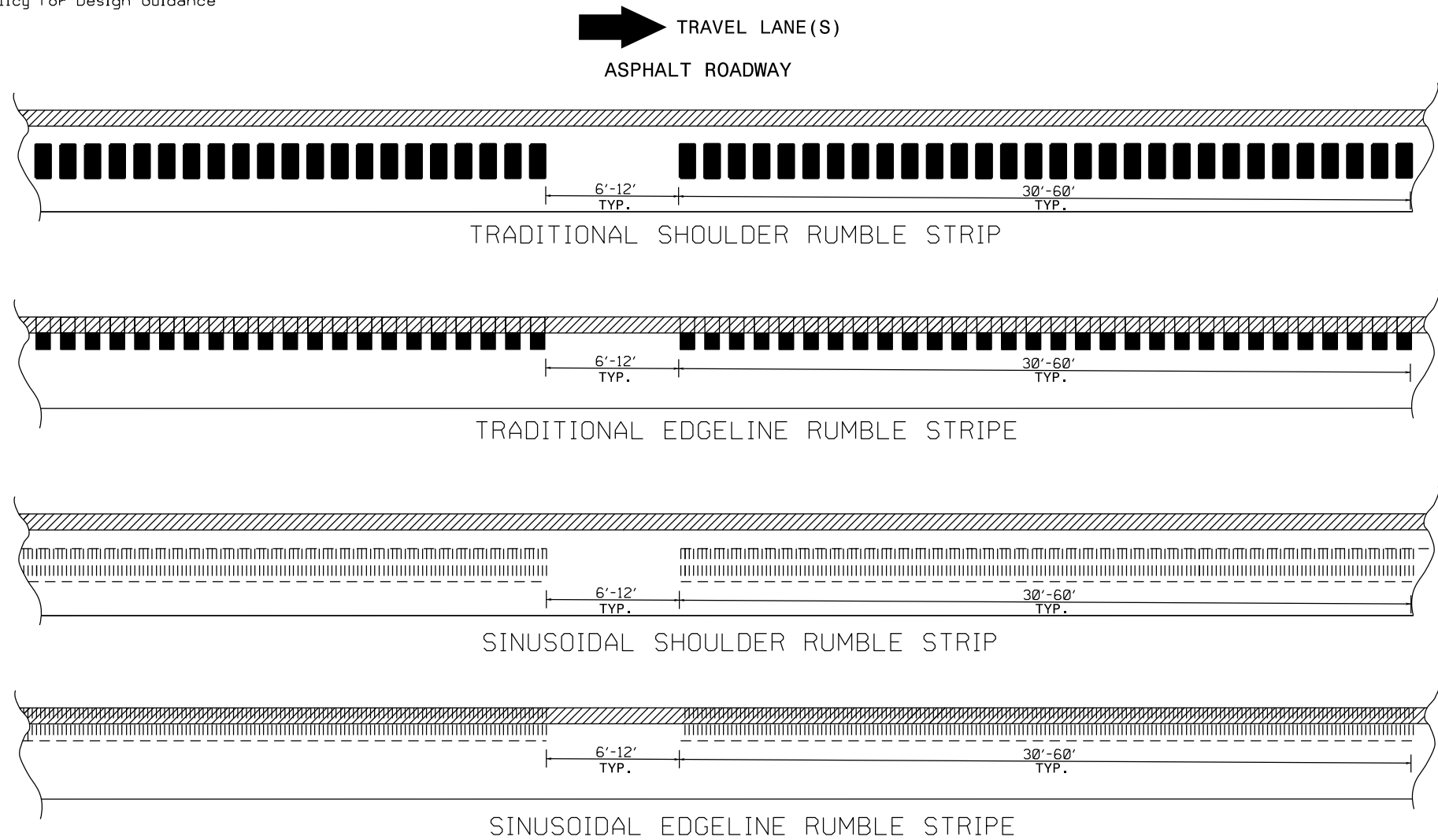
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CHECKED BY:		DATE:	
FILE SPEC.:			

See Page 4 within Rumble Strip
Policy for Design Guidance



REFERENCE DRAWING ID: Bicycle Gap

NOTES:

- 1) FOR ROADWAYS WITH NOMINAL PAVED SHOULDER WIDTHS OF AT LEAST 5 FEET, GAPS IN MILLED PATTERNS, VARYING BETWEEN 6 AND 12 FEET, SHALL BE PROVIDED TO ALLOW BICYCLISTS TO MOVE BETWEEN THE THROUGH LANE AND THE RIGHT SHOULDER. THE PATTERN SHOULD BE A MINIMUM OF A 5:1 RUMBLE-TO-GAP RATIO.
- 2) FOR ROADWAYS WITH NOMINAL PAVED SHOULDER WIDTHS OF 1.5 FEET UP TO 5 FEET FOR A LENGTH OF 200' OR GREATER, A BICYCLE GAP SHOULD BE CONSIDERED.
- 3) FOR ROADWAYS WITH NOMINAL PAVED SHOULDER WIDTHS OF LESS THAN 1.5 FEET, NO BICYCLE GAP IS NEEDED.

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

ROADWAY DETAIL DRAWING FOR
RUMBLE STRIPS / STRIPES
BICYCLE GAP FOR SHOULDER RUMBLE STRIP / EDGELINE RUMBLE STRIPE

SHEET 9 OF 9



DocuSigned by:
Jessi L. Leonard
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05/05/2025

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MODIFIED BY: _____	DATE: _____
CHECKED BY: _____	DATE: _____
FILE SPEC.: _____	

PROJECT NO.	SHEET NO.
2025CPT.03.08.10711, ETC.	20

SUMMARY OF QUANTITIES

												0063000000-N	0050000000-E	0234000000-E	0448200000-E	0448300000-E	1220000000-E	1245000000-E	1297000000-E
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	WIDTH	BEG N MP	END MP	GRADING	SUPPLEMENTARY CLEARING & GURBBING	BORROW EXCAVATION (STATE FURNISHED SOURCES)	15" RC PIPE CULVERTS, CLASS IV	18" RC PIPE CULVERTS, CLASS IV	INCIDENTAL STONE BASE	SHOULDER RECONSTRUCTION (State Furnished Borrow)	1.5" MILLING
								MI	FT										
2025CPT.03.08.10711	Pender	1	US-421 NBL	US HWY 421 NBL FROM NEW HANOVER CO LINE TO SR 1114 (BLUEBERRY RD) [MP 0.03 - MP 5.36]	1	2	MD	5.33	32	0.03	5.36	LS	ACR	CY	LF	LF	TON	SMI	SY
TOTAL FOR MAP NO. 1								5.33						649			24	10.66	
2025CPT.03.08.10711	Pender	2	US-421 SBL	US HWY 421 SBL FROM SR 1114 (BLUEBERRY RD) TO NEW HANOVER CO LINE [MP 21.08 - MP 26.43]	1	2	MD	5.35	32	21.08	26.43			663			8	10.70	
TOTAL FOR MAP NO. 2								5.35						663			8	10.70	
TOTAL FOR PROJ NO. 2025CPT.03.08.10711								10.68						1,312			32	21.36	
2025CPT.03.08.20711	Pender	3	SR-1002 / ISLAND CREEK RD	FROM NEW HANOVER CO LINE TO NC HWY 210 [MP 0.00 - MP 2.81]	2	2	2WU	2.81	24	0	2.81			354			44	5.62	
TOTAL FOR MAP NO. 3								2.81						354			44	5.62	
2025CPT.03.08.20711	Pender	4	SR-1216 / PINEY WOODS RD	FROM US HWY 421 TO SR 1336 (HORSE BRANCH RD) [MP 1.40 - MP 6.60]	3,4	2	2WU	5.2	20	1.4	6.6			639			200	10.46	404
TOTAL FOR MAP NO. 4								5.2						639			200	10.46	404
TOTAL FOR PROJ NO. 2025CPT.03.08.20711								8.01						993			244	16.08	404
WBS 50259	Pender	5	US-421 S	TURNING LANE FOR VITAMIN DRIVE	5	3	MD	0.05	12	26.38	26.43	1	1.00	5	84	8			800
TOTAL FOR MAP NO. 5								0.05				1	1.00	5	84	8			800
TOTAL FOR PROJ NO. WBS 50259								0.05				1	1.00	5	84	8			800
GRAND TOTAL								18.74				1	1.00	2,310	84	8	276	37.44	1,204

PROJECT NO.	SHEET NO.
2025CPT.03.08.10711, ETC.	21

SUMMARY OF QUANTITIES

												1330000000-E	1491000000-E	1503000000-E	1519000000-E	1520000000-E	1523000000-E	1575000000-E	1705500000-E
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	WIDTH	BEG N MP	END MP	INCIDENTAL MILLING	BASE COURSE, B25.0C	INTERMEDIATE COURSE, I19.0C	SURFACE COURSE, S9.5B	LEVELING COURSE, S9.5B	SURFACE COURSE, S9.5C	ASPHALT BINDER FOR PLANT MIX	PATCHING EXISTING PAVEMENT (MILL)
								MI	FT										
2025CPT.03.08.10711	Pender	1	US-421 NBL	US HWY 421 NBL FROM NEW HANOVER CO LINE TO SR 1114 (BLUEBERRY RD) [MP 0.03 - MP 5.36]	1	2	MD	5.33	32	0.03	5.36	1,245					9,863	601	404
TOTAL FOR MAP NO. 1								5.33				1,245					9,863	601	404
2025CPT.03.08.10711	Pender	2	US-421 SBL	US HWY 421 SBL FROM SR 1114 (BLUEBERRY RD) TO NEW HANOVER CO LINE [MP 21.08 - MP 26.43]	1	2	MD	5.35	32	21.08	26.43	1,536					10,177	629	589
TOTAL FOR MAP NO. 2								5.35				1,536					10,177	629	589
TOTAL FOR PROJ NO. 2025CPT.03.08.10711								10.68				2,781					20,040	1,230	993
2025CPT.03.08.20711	Pender	3	SR-1002 / ISLAND CREEK RD	FROM NEW HANOVER CO LINE TO NC HWY 210 [MP 0.00 - MP 2.81]	2	2	2WU	2.81	24	0	2.81	1,705			6,742			440	45
TOTAL FOR MAP NO. 3								2.81				1,705			6,742			440	45
2025CPT.03.08.20711	Pender	4	SR-1216 / PINEY WOODS RD	FROM US HWY 421 TO SR 1336 (HORSE BRANCH RD) [MP 1.40 - MP 6.60]	3,4	2	2WU	5.2	20	1.4	6.6	759			5,479	50		393	699
TOTAL FOR MAP NO. 4								5.2				759			5,479	50		393	699
TOTAL FOR PROJ NO. 2025CPT.03.08.20711								8.01				2,464			12,221	50		833	744
WBS 50259	Pender	5	US-421 S	TURNING LANE FOR VITAMIN DRIVE	5	3	MD	0.05	12	26.38	26.43	22	80	70			110	13	
TOTAL FOR MAP NO. 5								0.05				22	80	70			110	13	
TOTAL FOR PROJ NO. WBS 50259								0.05				22	80	70			110	13	
GRAND TOTAL								18.74				5,267	80	70	12,221	50	20,150	2,076	1,737

PROJECT NO.	SHEET NO.
2025CPT.03.08.10711, ETC.	22

SUMMARY OF QUANTITIES

												1881000000-E		1881000000-E	2253000000-E	2286000000-N	2365000000-N	2619000000-E	2655000000-E	2893000000-N
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	WIDTH	BEGIN MP	END MP	SINUSOIDAL MILLED RUMBLE STRIP (14") SHOULDER	SINUSOIDAL MILLED RUMBLE STRIPE (14") CENTERLINE	SINUSOIDAL MILLED RUMBLE STRIPE (8") EDGE LINE	PIPE COLLARS	MASONRY DRAINAGE STRUCTURES (BRICK GRATED DI TYPE 'D' 840.28)	FRAME WITH TWO GRATES, STD 840.22	4" CONCRETE PAVED DITCH	5" MONOLITHIC CONCRETE ISLANDS (KEYED IN)	CONVERT EXISTING CATCH BASIN TO 2GI
								MI	FT			LF	LF	LF	CY	EA	EA	SY	SY	EA
2025CPT.03.08.10711	Pender	1	US-421 NBL	US HWY 421 NBL FROM NEW HANOVER CO LINE TO SR 1114 (BLUEBERRY RD) [MP 0.03 - MP 5.36]	1	2	MD	5.33	32	0.03	5.36	57,500								
TOTAL FOR MAP NO. 1								5.33				57,500								
2025CPT.03.08.10711	Pender	2	US-421 SBL	US HWY 421 SBL FROM SR 1114 (BLUEBERRY RD) TO NEW HANOVER CO LINE [MP 21.08 - MP 26.43]	1	2	MD	5.35	32	21.08	26.43	57,500								
TOTAL FOR MAP NO. 2								5.35				57,500								
TOTAL FOR PROJ NO. 2025CPT.03.08.10711								10.68				115,000								
2025CPT.03.08.20711	Pender	3	SR-1002 / ISLAND CREEK RD	FROM NEW HANOVER CO LINE TO NC HWY 210 [MP 0.00 - MP 2.81]	2	2	2WU	2.81	24	0	2.81		15,320	30,640						
TOTAL FOR MAP NO. 3								2.81					15,320	30,640						
2025CPT.03.08.20711	Pender	4	SR-1216 / PINEY WOODS RD	FROM US HWY 421 TO SR 1336 (HORSE BRANCH RD) [MP 1.40 - MP 6.60]	3,4	2	2WU	5.2	20	1.4	6.6		27,720	55,440						
TOTAL FOR MAP NO. 4								5.2					27,720	55,440						
TOTAL FOR PROJ NO. 2025CPT.03.08.20711								8.01					43,040	86,080						
WBS 50259	Pender	5	US-421 S	TURNING LANE FOR VITAMIN DRIVE	5	3	MD	0.05	12	26.38	26.43				1.00	3	3	20	70	1
TOTAL FOR MAP NO. 5								0.05							1.00	3	3	20	70	1
TOTAL FOR PROJ NO. WBS 50259								0.05							1.00	3	3	20	70	1
GRAND TOTAL								18.74				115,000	43,040							
												158,040		86,080	1.00	3	3	20	70	1

PROJECT NO.	SHEET NO.
2025CPT.03.08.10711, ETC.	23

SUMMARY OF QUANTITIES

												3287000000-N	3360000000-E	3345000000-E	3420000000-E	4072000000-E	4102000000-N	6000000000-E	6009000000-E	6012000000-E	6015000000-E
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	WIDTH	BEGI N MP	END MP	GUARDRAIL END UNITS, TYPE TL-3	REMOVE EXISTING GUARDRAIL	REMOVE & RESET EXISTING GUARDRAIL	REMOVE & REPLACE EXISTING GUARDRAIL (GENERIC)	SUPPORTS, 3-LB STEEL U-CHANNEL	SIGN ERECTION, TYPE E	TEMPORARY SILT FENCE	STONE FOR EC CLASS B	SEDIMENT CONTROL STONE	TEMPORARY MULCHING
								MI	FT												
2025CPT.03.08.10711	Pender	1	US-421 NBL	US HWY 421 NBL FROM NEW HANOVER CO LINE TO SR 1114 (BLUEBERRY RD) [MP 0.03 - MP 5.36]	1	2	MD	5.33	32	0.03	5.36	1	50	355				530	130	130	5.25
TOTAL FOR MAP NO. 1								5.33				1	50	355				530	130	130	5.25
2025CPT.03.08.10711	Pender	2	US-421 SBL	US HWY 421 SBL FROM SR 1114 (BLUEBERRY RD) TO NEW HANOVER CO LINE [MP 21.08 - MP 26.43]	1	2	MD	5.35	32	21.08	26.43	1	50	258	50			542	135	135	5.42
TOTAL FOR MAP NO. 2								5.35				1	50	258	50			542	135	135	5.42
TOTAL FOR PROJ NO. 2025CPT.03.08.10711								10.68				2	100	613	50			1,072	265	265	10.67
2025CPT.03.08.20711	Pender	3	SR-1002 / ISLAND CREEK RD	FROM NEW HANOVER CO LINE TO NC HWY 210 [MP 0.00 - MP 2.81]	2	2	2WU	2.81	24	0	2.81							290	75	75	2.90
TOTAL FOR MAP NO. 3								2.81										290	75	75	2.90
2025CPT.03.08.20711	Pender	4	SR-1216 / PINEY WOODS RD	FROM US HWY 421 TO SR 1336 (HORSE BRANCH RD) [MP 1.40 - MP 6.60]	3,4	2	2WU	5.2	20	1.4	6.6							523	130	130	5.22
TOTAL FOR MAP NO. 4								5.2										523	130	130	5.22
TOTAL FOR PROJ NO. 2025CPT.03.08.20711								8.01										813	205	205	8.12
WBS 50259	Pender	5	US-421 S	TURNING LANE FOR VITAMIN DRIVE	5	3	MD	0.05	12	26.38	26.43					15	1				
TOTAL FOR MAP NO. 5								0.05								15	1				
TOTAL FOR PROJ NO. WBS 50259								0.05								15	1				
GRAND TOTAL								18.74				2	100	613	50	15	1	1,885	470	470	18.79

PROJECT NO.	SHEET NO.
2025CPT.03.08.10711, ETC.	24

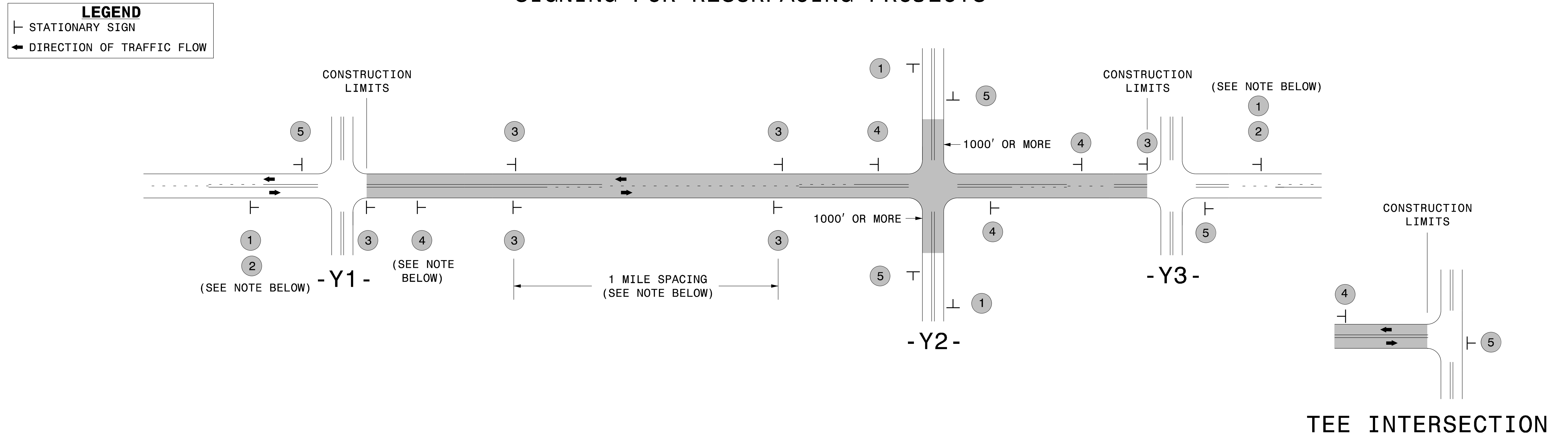
SUMMARY OF QUANTITIES

												6018000000-E	6021000000-E	6036000000-E	6042000000-E	6071010000-E	6084000000-E	6090000000-E	6093000000-E	6117000000-N	7444000000-E
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	WIDTH	BEGI N MP	END MP	SEED FOR TEMPORARY SEEDING	FERTILIZER FOR TEMPORARY SEEDING	MATTING FOR EROSION CONTROL	1/4" HARDWARE CLOTH	WATTLE	SEED & MULCHING	SEED FOR REPAIR SEEDING	FERTILIZER FOR REPAIR SEEDING	RESPONSE FOR EROSION CONTROL	INDUCTIVE LOOP SAWCUT
								MI	FT												
2025CPT.03.08.10711	Pender	1	US-421 NBL	US HWY 421 NBL FROM NEW HANOVER CO LINE TO SR 1114 (BLUEBERRY RD) [MP 0.03 - MP 5.36]	1	2	MD	5.33	32	0.03	5.36	265	1.30	40	265	80	5.00	265	1.30	11	300
TOTAL FOR MAP NO. 1								5.33				265	1.30	40	265	80	5.00	265	1.30	11	300
2025CPT.03.08.10711	Pender	2	US-421 SBL	US HWY 421 SBL FROM SR 1114 (BLUEBERRY RD) TO NEW HANOVER CO LINE [MP 21.08 - MP 26.43]	1	2	MD	5.35	32	21.08	26.43	265	1.30	40	271	90	5.25	271	1.36	11	300
TOTAL FOR MAP NO. 2								5.35				265	1.30	40	271	90	5.25	271	1.36	11	300
TOTAL FOR PROJ NO. 2025CPT.03.08.10711								10.68				530	2.60	80	536	170	10.25	536	2.66	22	600
2025CPT.03.08.20711	Pender	3	SR-1002 / ISLAND CREEK RD	FROM NEW HANOVER CO LINE TO NC HWY 210 [MP 0.00 - MP 2.81]	2	2	2WU	2.81	24	0	2.81	145	0.75	20	145	50	2.80	145	0.75	6	
TOTAL FOR MAP NO. 3								2.81				145	0.75	20	145	50	2.80	145	0.75	6	
2025CPT.03.08.20711	Pender	4	SR-1216 / PINEY WOODS RD	FROM US HWY 421 TO SR 1336 (HORSE BRANCH RD) [MP 1.40 - MP 6.60]	3,4	2	2WU	5.2	20	1.4	6.6	260	1.30	40	261	80	5.00	260	1.30	10	
TOTAL FOR MAP NO. 4								5.2				260	1.30	40	261	80	5.00	260	1.30	10	
TOTAL FOR PROJ NO. 2025CPT.03.08.20711								8.01				405	2.05	60	406	130	7.80	405	2.05	16	
WBS 50259	Pender	5	US-421 S	TURNING LANE FOR VITAMIN DRIVE	5	3	MD	0.05	12	26.38	26.43					60	0.10				
TOTAL FOR MAP NO. 5								0.05								60	0.10				
TOTAL FOR PROJ NO. WBS 50259								0.05								60	0.10				
GRAND TOTAL																					
								18.74				935	4.65	140	942	360	18.15	941	4.71	38	600

THERMOPLASTIC AND PAINT QUANTITIES

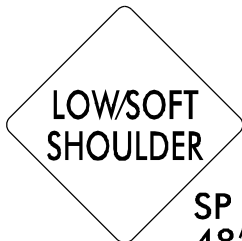
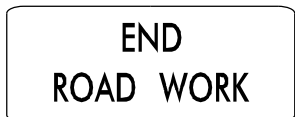
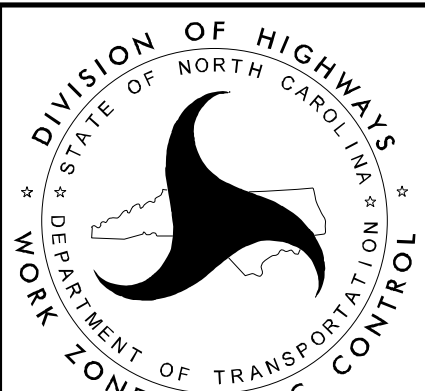
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	WIDTH	BEGIN MP	END MP	4410000000-E	4413000000-E	4445000000-E	4457000000-N	4510000000-N	4685000000-E	4688000000-E	4695000000-E	4700000000-E	4709000000-E	4725000000-E					4810000000-E		4895000000-N				
												BARRICADE MOUNTED WORK ZONE SIGN	WORK ZONE ADVANCE/GENERAL WARNING SIGNING	TYPE III BARICADE	TEMPORARY TRAFFIC CONTROL	LAW ENFORCEMENT	4" X 90 M YELLOW THERMO	4" X 90 M WHITE THERMO	6" X 90 M WHITE THERMO	6" X90 M YELLOW THERMO	8" X 90 M YELLOW THERMO	12" X 90 M WHITE THERMO	12" X 90 M YELLOW THERMO	THERMOPLASTIC PAVEMENT MARKING LINES (24" X 90 MILS)	THERMO STR ARROW (90 MIL)	THERMO RT ARROW (90 MIL)	THERMO LT ARROW (90 MIL)	THERMO U-TURN ARROW (90 MIL)	THERMO STR & LT ARROW (90 MIL)	4" WHITE PAINT	4" YELLOW PAINT	POLYCARBONATE H SHAPED MARKER (C/R)	POLYCARBONATE H SHAPED MARKER (Y/Y)
								MI	FT			SF	SF	LF	LS	HR	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	LF	LF	EA	EA	
2025CPT.03.08.10711	Pender	1	US-421 NBL	US HWY 421 NBL FROM NEW HANOVER CO LINE TO SR 1114 (BLUEBERRY RD) [MP 0.03 - MP 5.36]	1	2	MD	5.33	32	0.03	5.36					40			36,798	28,020		1,337		84	49	2	20					446	
TOTAL FOR MAP NO. 1							5.33						608			40			36,798	28,020		1,337		84	49	2	20				446		
2025CPT.03.08.10711	Pender	2	US-421 SBL	US HWY 421 SBL FROM SR 1114 (BLUEBERRY RD) TO NEW HANOVER CO LINE [MP 21.08 - MP 26.43]	1	2	MD	5.35	32	21.08	26.43					40	1,200	154	37,828	28,200	125	1,337		132	52	8	20	2	1			479	
TOTAL FOR MAP NO. 2							5.35						608			40	1,200	154	37,828	28,200	125	1,337		132	52	8	20	2	1			479	
TOTAL FOR PROJ NO. 2025CPT.03.08.10711							10.68						1,216		1.00	80	1,200	154	74,626	56,220	125	2,674		216	101	10	40	2	1			925	
																1,354		130,846			2,674		154								925		
2025CPT.03.08.20711	Pender	3	SR-1002 / ISLAND CREEK RD	FROM NEW HANOVER CO LINE TO NC HWY 210 [MP 0.00 - MP 2.81]	2	2	2WU	2.81	24	0	2.81						18,529	31,204					39		4						15	191	
TOTAL FOR MAP NO. 3							2.81						336				18,529	31,204					39		4						15	191	
2025CPT.03.08.20711	Pender	4	SR-1216 / PINEY WOODS RD	FROM US HWY 421 TO SR 1336 (HORSE BRANCH RD) [MP 1.40 - MP 6.60]	3,4	2	2WU	5.2	20	1.4	6.6						16,310	55,440					30									345	
TOTAL FOR MAP NO. 4							5.2						592				16,310	55,440					30									345	
TOTAL FOR PROJ NO. 2025CPT.03.08.20711							8.01						928		1.00		34,839	86,644					69		4						15	536	
																	121,483							4								551	
WBS 50259	Pender	5	US-421 S	TURNING LANE FOR VITAMIN DRIVE	5	3	MD	0.05	12	26.38	26.43	80		16	*				650		650	650				3			260	430		40	
TOTAL FOR MAP NO. 5							0.05					80		16					650		650	650				3			260	430		40	
TOTAL FOR PROJ NO. WBS 50259							0.05					80		16	1.00				650		650	650				3			260	430		40	
																	650				1,300			3					690		40		
GRAND TOTAL							18.74					80	2,144	16	1	80	36,039	86,798	74,626	56,870	125	3,324	650	285	101	14	43	2	1	260	430	940	576
																	122,837		131,496			3,974			161					690		1,516	

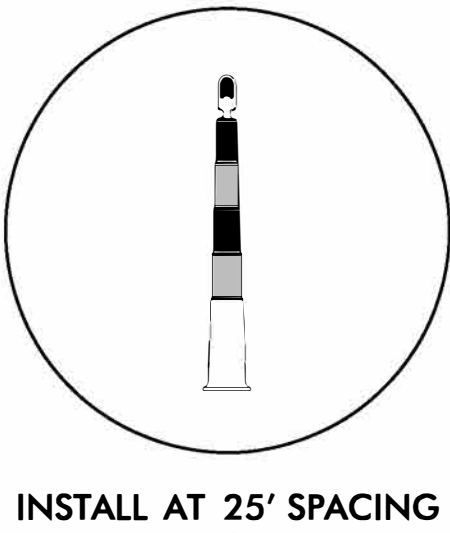
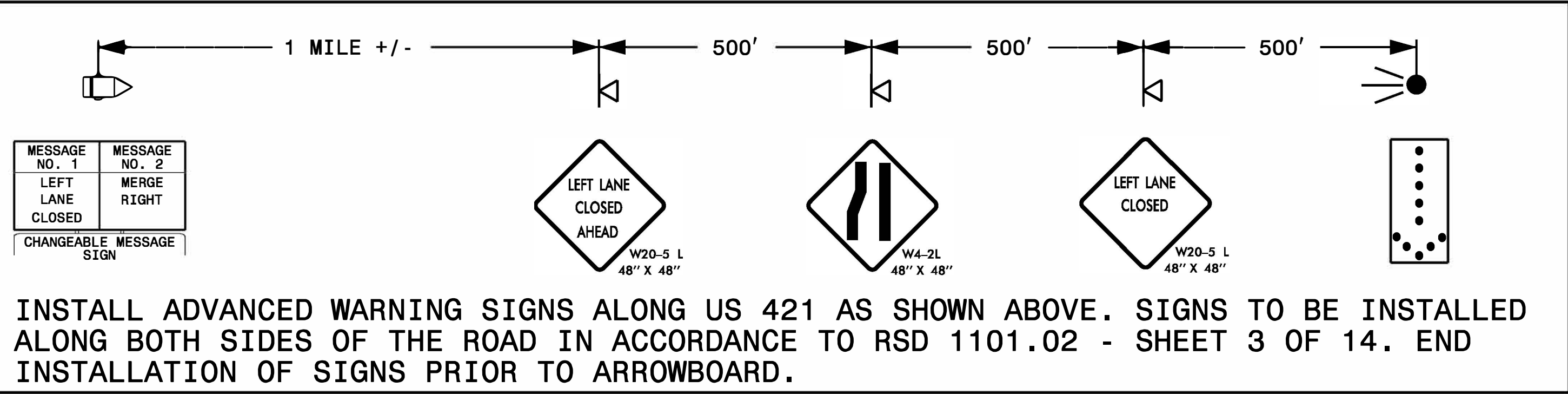
SIGNING FOR RESURFACING PROJECTS



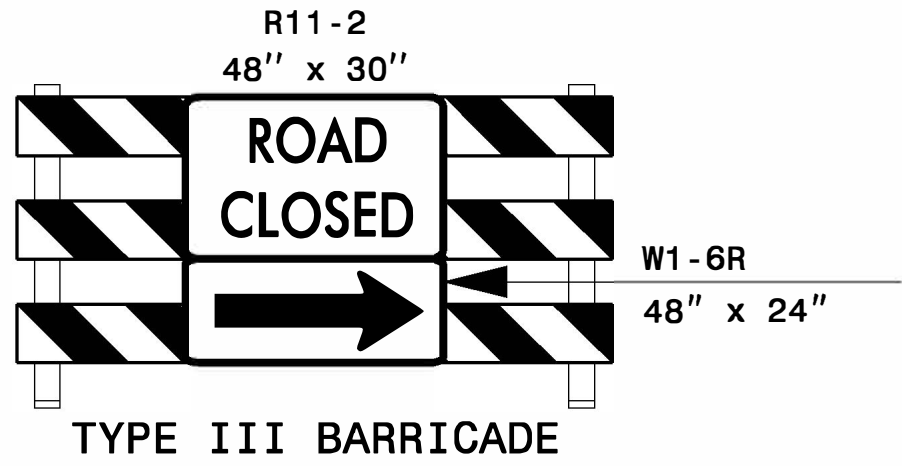
MAINLINE (-L-) SIGNING

-Y- LINE SIGNING

SIGNING NOTES AND PLACEMENT PER DIRECTION	1  W20-1 48" X 48" 2  W7-3aP 24" X 18" PLACE 1000' PRIOR TO BEGINNING OF CONSTRUCTION LIMITS. ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000' ALONG -Y- LINE.	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, PORTABLE ADVANCE WARNING SIGNS SHALL BE USED ALONG THE -Y- LINE AS SHOWN BELOW. REMOVE UPON COMPLETION OF WORK.  W20-1 48" X 48" PLACED 500' IN ADVANCE OF FLAGGER.  W20-7 A 48" X 48" PLACED 250' IN ADVANCE OF FLAGGER.
	3  SP 13107 48" X 48" - PLACE INITIALLY AT THE CONSTRUCTION LIMITS AND SPACE 1 MILE APART THEREAFTER. - AT TEE INTERSECTIONS INSTALL INITIALLY 1/2 MILE FROM INTERSECTION AND SPACE 1 MILE APART THEREAFTER.	
	4  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  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.	
	THE ABOVE SIGNS ARE ALL THAT ARE REQUIRED FOR A CONTRACTOR TO BEGIN A RESURFACING CONTRACT. ANY ADDITIONAL SIGNS REQUESTED BY NCDOT DIVISIONS SHALL BE INSTALLED WITHIN 7 BUSINESS DAYS OF THE START OF CONTRACT WORK.	
LESS THAN 2 MILES	FOR RESURFACING MAPS WITH CONSTRUCTION LIMITS LESS THAN 2 MILES IN LENGTH, NO STATIONARY SIGNS ARE REQUIRED. USE PORTABLE "ROAD UNDER CONSTRUCTION" OR "ROAD WORK AHEAD" SIGNS IN LIEU OF STATIONARY ADVANCE WARNINGS SIGNS.	

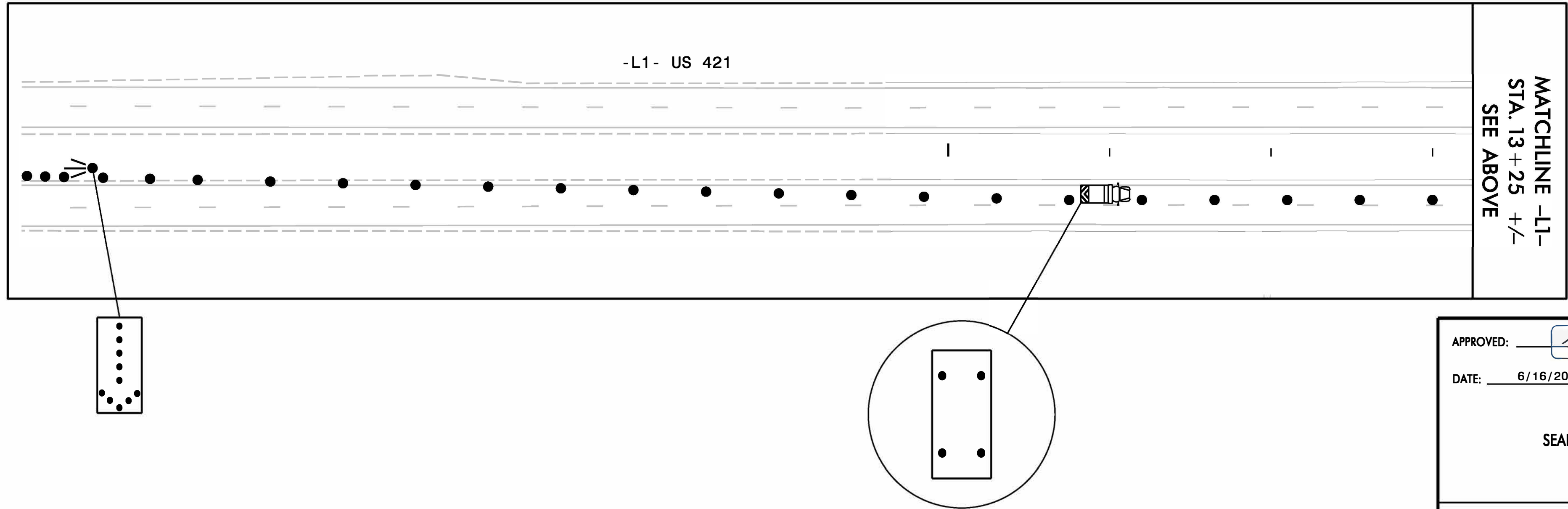
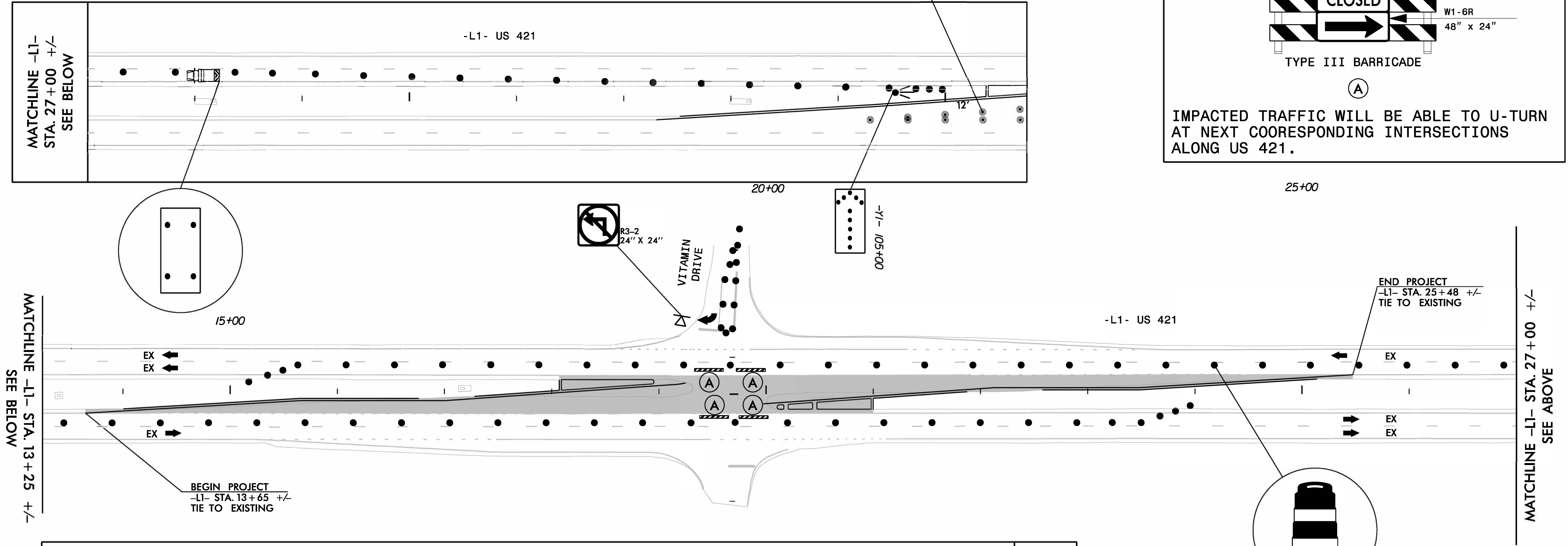


INSTALL AT 25' SPACING

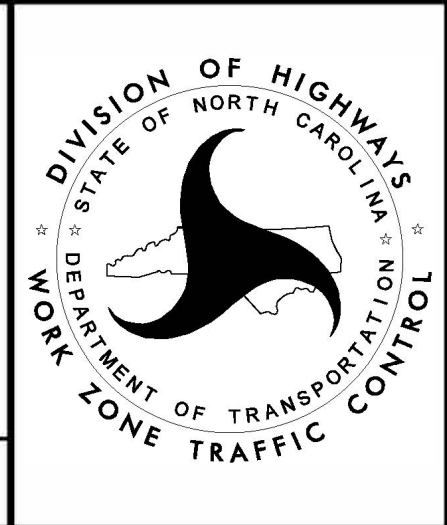


(A)

IMPACTED TRAFFIC WILL BE ABLE TO U-TURN AT NEXT COORESPONDING INTERSECTIONS ALONG US 421.



APPROVED: *Zachary M. Esposito*
DATE: 6/16/2023
SEAL
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

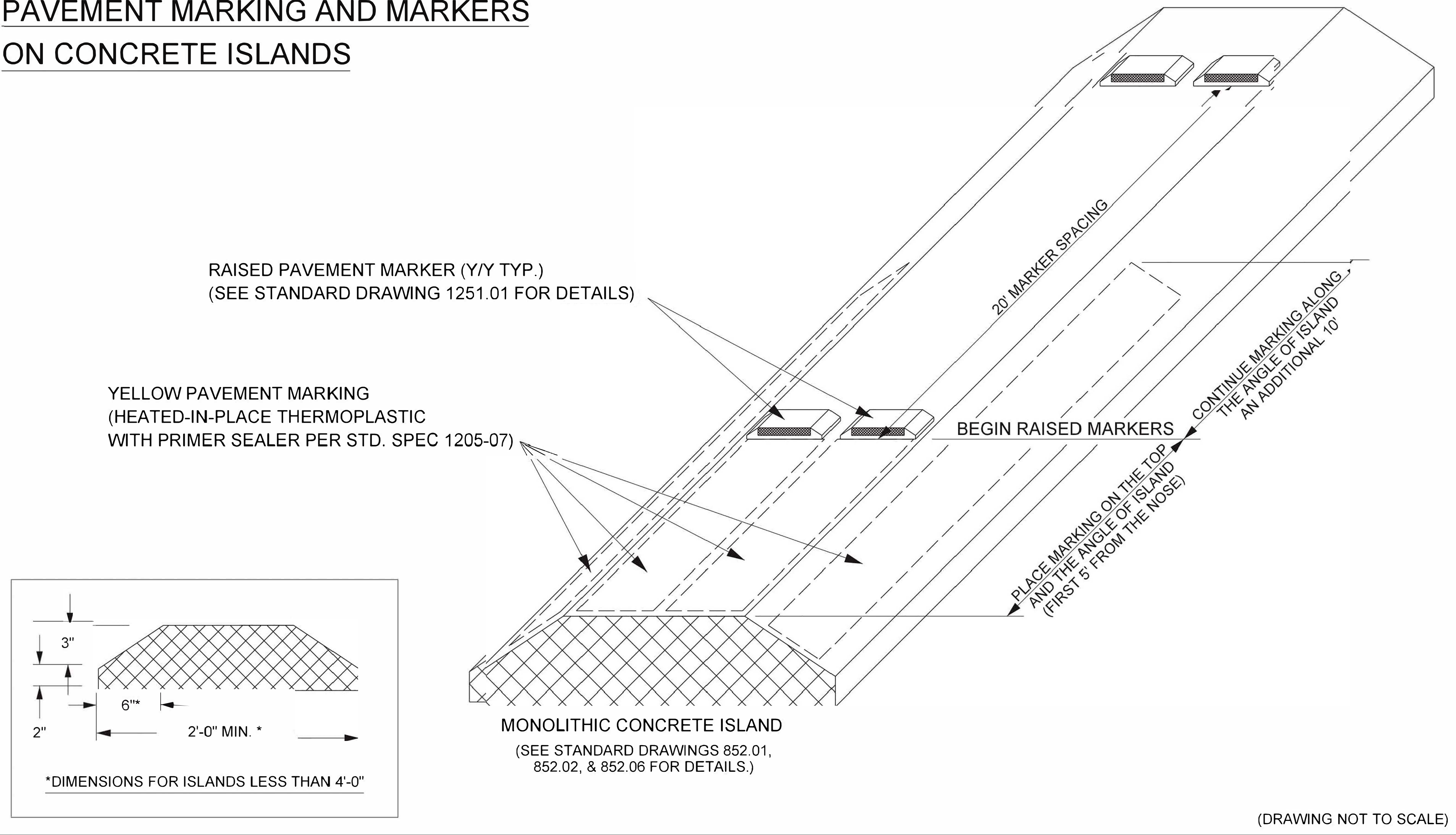


DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

TEMPORARY
TRAFFIC CONTROL
PHASE II - STEP B

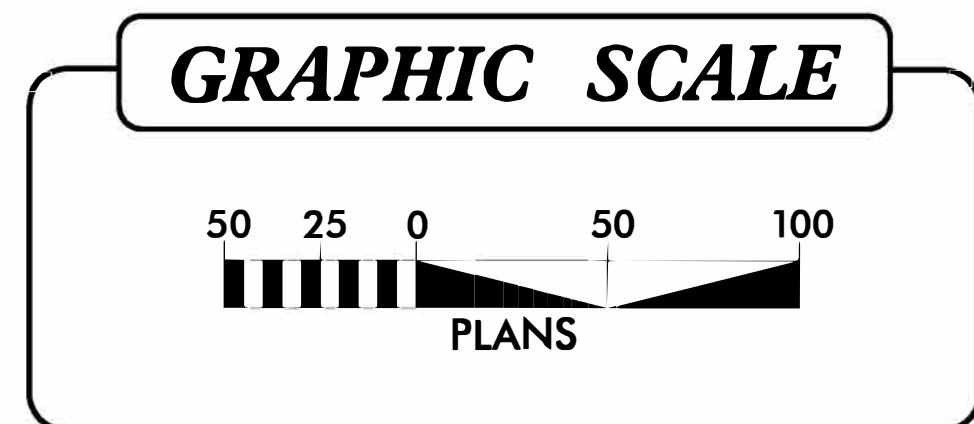
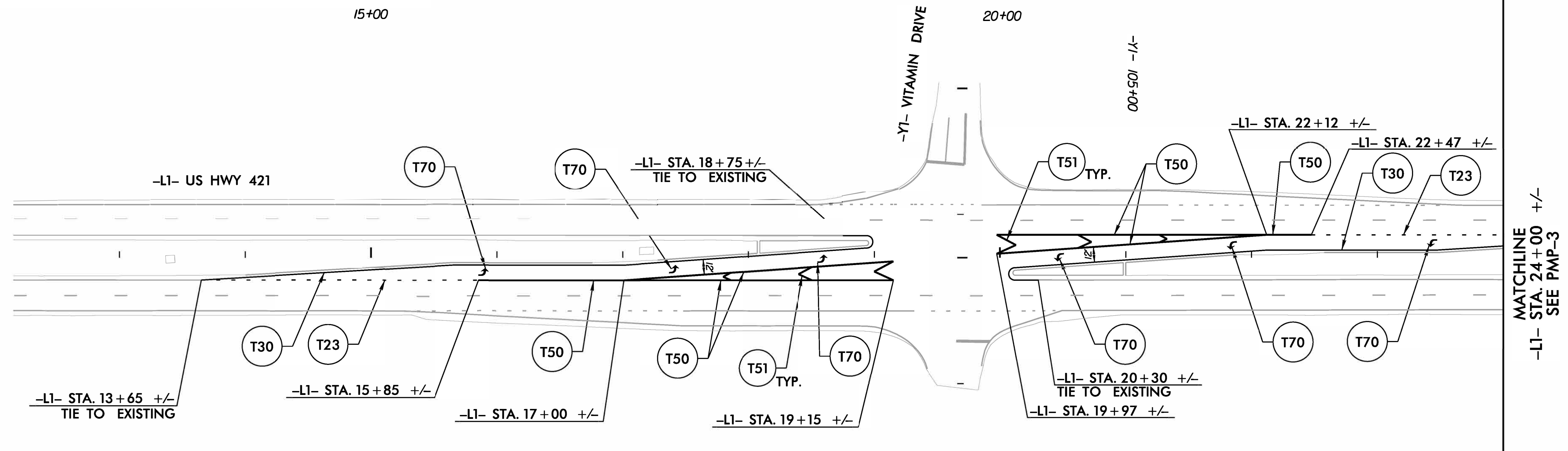
PAVEMENT MARKING DETAIL

PAVEMENT MARKING AND MARKERS ON CONCRETE ISLANDS



PAVEMENT MARKING SCHEDULE	
SYMBOL	DESCRIPTION
THERMOPLASTIC(4", 90 MILS)	
T1	WHITE EDGELINE
T2	WHITE SOLID LANE LINE
T4	3FT. - 9FT./SP WHITE MINISKIP
T13	YELLOW DOUBLE CENTER
THERMOPLASTIC(6", 90 MILS)	
T20	WHITE EDGELINE
T21	WHITE SOLID LANE LINE
T23	3FT. - 9FT./SP WHITE MINISKIP
T24	2FT. - 6FT./SP WHITE MINISKIP
T30	YELLOW EDGELINE
THERMOPLASTIC(8", 90 MILS)	
T42	YELLOW DIAGONAL
THERMOPLASTIC(12", 90 MILS)	
T50	WHITE GORELINE
T51	WHITE DIAGONAL
T52	YELLOW DIAGONAL
THERMOPLASTIC(24", 90 MILS)	
T61	WHITE STOPBAR
THERMOPLASTIC PAVEMENT MARKING SYMBOLS (90 MILS)	
T70	LEFT TURN ARROW
T71	RIGHT TURN ARROW
T73	COMBO. LEFT/STRAIGHT ARROW
T75	COMBO. LEFT/RIGHT ARROW
T77	U-TURN ARROW

<u>SYMBOL</u>		<u>DESCRIPTION</u>
THERMOPLASTIC(4", 90 MILS)		
T1		WHITE EDGELINE
T2		WHITE SOLID LANE LINE
T4	3FT. - 9FT./SP	WHITE MINISKIP
T13		YELLOW DOUBLE CENTER
THERMOPLASTIC(6", 90 MILS)		
T20		WHITE EDGELINE
T21		WHITE SOLID LANE LINE
T23	3FT. - 9FT./SP	WHITE MINISKIP
T24	2FT. - 6FT./SP	WHITE MINISKIP
T30		YELLOW EDGELINE
THERMOPLASTIC(8", 90 MILS)		
T42		YELLOW DIAGONAL
THERMOPLASTIC(12", 90 MILS)		
T50		WHITE GORELINE
T51		WHITE DIAGONAL
T52		YELLOW DIAGONAL
THERMOPLASTIC(24", 90 MILS)		
T61		WHITE STOPBAR
THERMOPLASTIC PAVEMENT MARKING SYMBOLS (90 MILS)		
T70		LEFT TURN ARROW
T71		RIGHT TURN ARROW
T73		COMBO. LEFT/STRAIGHT ARROW
T75		COMBO. LEFT/RIGHT ARROW
T77		U-TURN ARROW

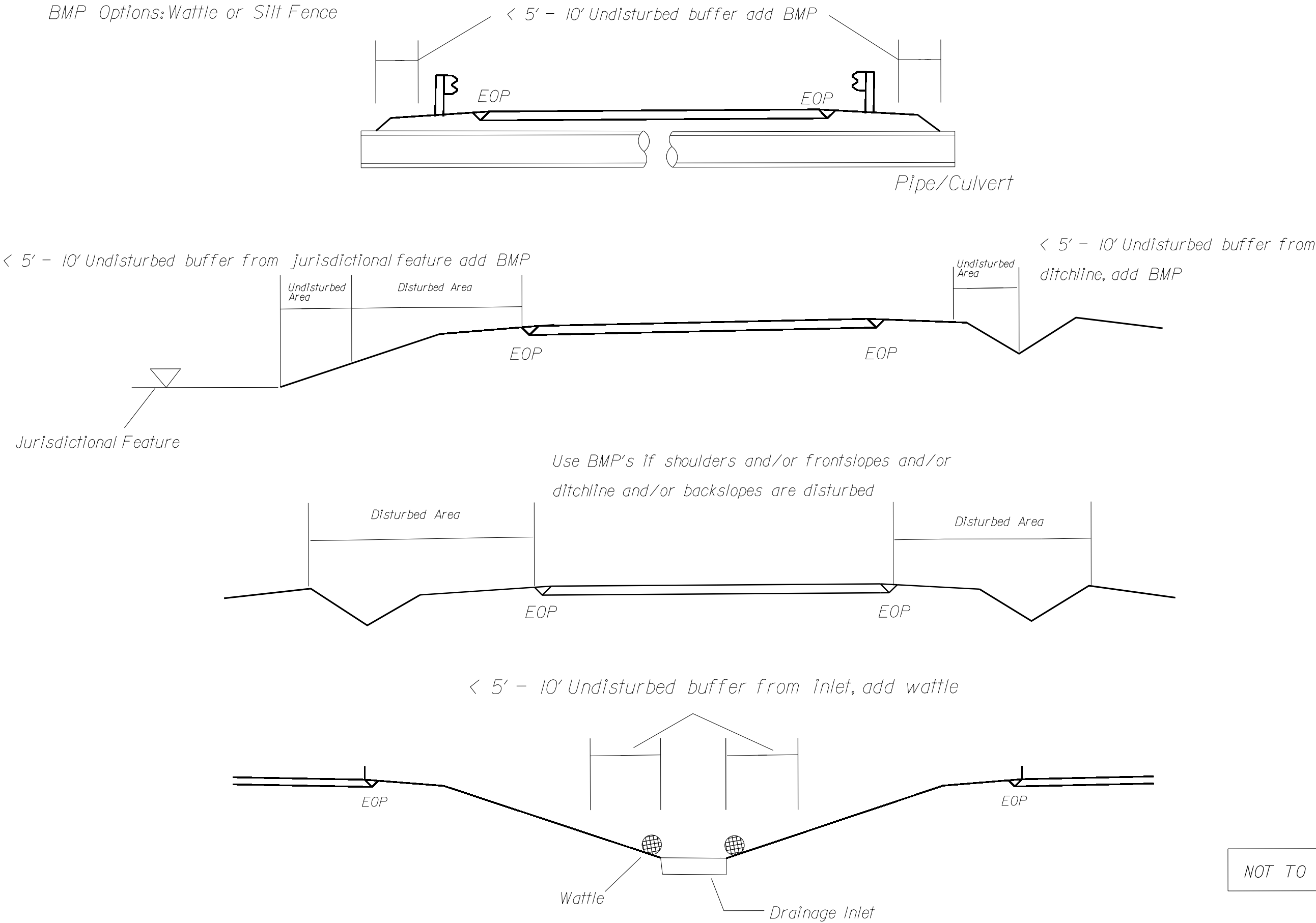


PAVEMENT MARKING DETAILS

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



NOT TO SCALE

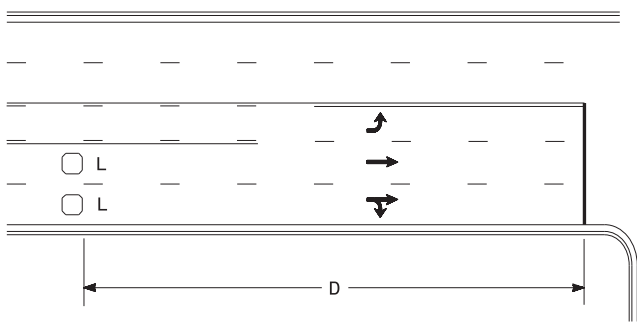
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

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.

High Speed Detection

(≥40 mph)

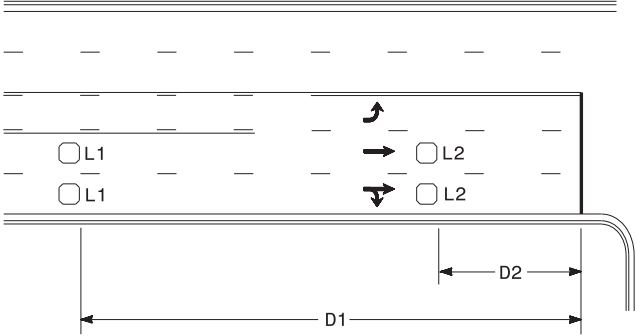


Speed Limit mph	D ft
40	250
45	300
50	355
55	420

L = 6ft X 6ft
Wired separately

Volume Density Operation

OR



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

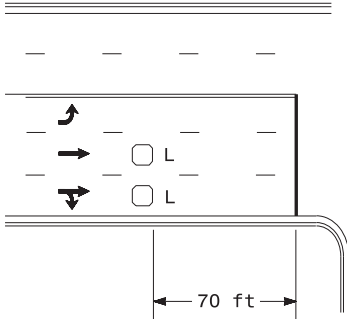
L1 = 6ft X 6ft
Wired in series

L2 = 6ft X 6ft
Wired in series

"Stretch" Operation

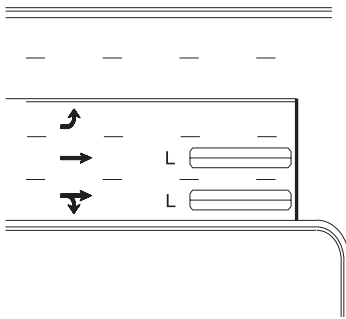
Low Speed Detection

(≤35 mph)



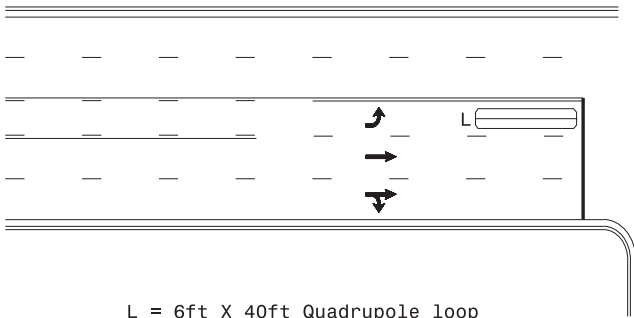
L = 6ft X 6ft
Wired in series

OR



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

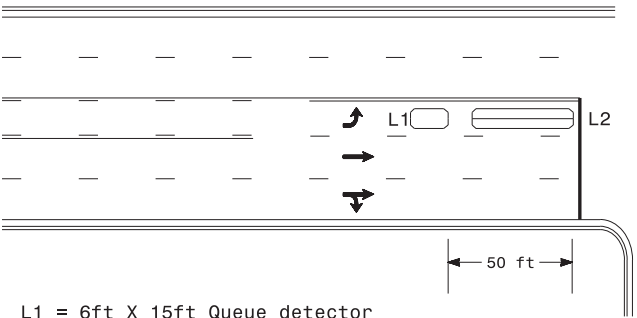
Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

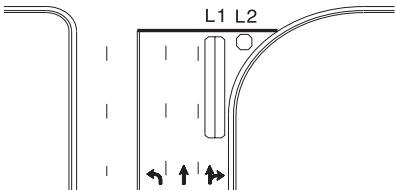
OR



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

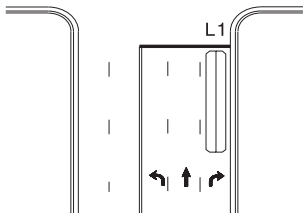
Queue Loop Detection

Right Turn Lane Detection

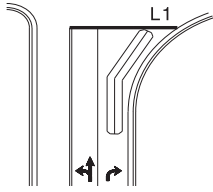


Shared Lane/
Wide Radius Turn

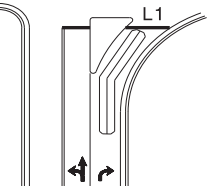
L1 = 6ft X 40ft Quadrupole loop
L2 = 6ft X 6ft [Minimum] Presence loop
Wired separately



Standard Turn

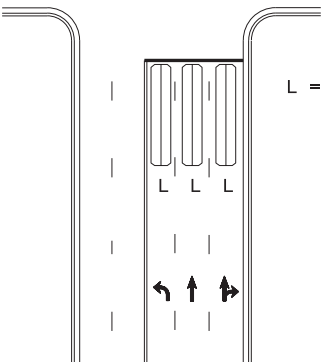


Wide Radius Turn



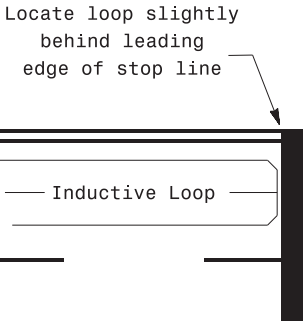
Channelized Turn

Side Street Detection



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

Presence Loop Placement at Stop Lines



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:

750 N. Greenfield Pkwy, Garner, NC 27529

Typical Signal Loop Locations

PLAN DATE: September 2020

REVIEWED BY: JPG

PREPARED BY: PLA

REVIEWED BY:

REVISIONS

INIT.

DATE

SCALE

N/A

SEAL

NORTH CAROLINA

SEAL

029904

ENGINEER

WASON P. GALLOWAY

DATE

9/8/2020

SIG. INVENTORY NO.