

WBS NO: 2024CPT.03.09.10651, ETC.

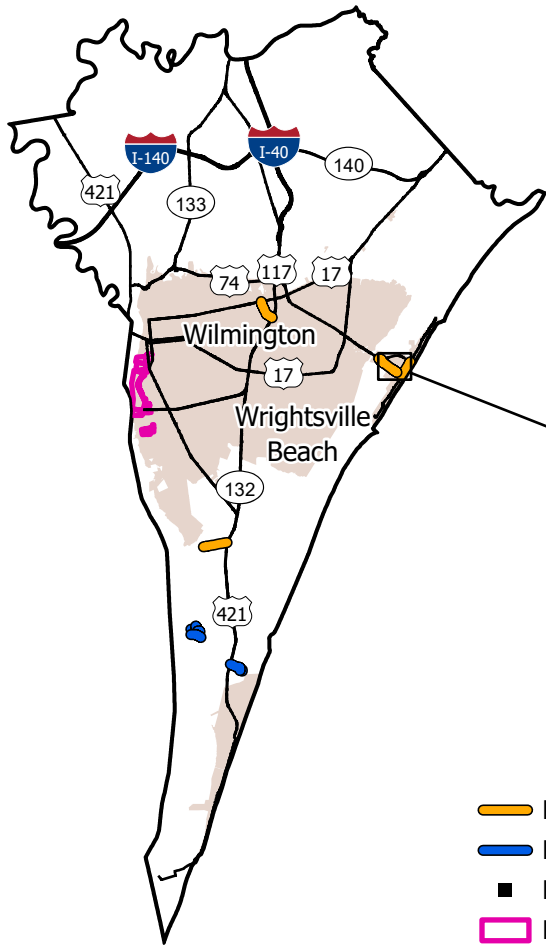
CONTRACT: DC00448

STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS  
**NEW HANOVER**

TYPE OF WORK: RESURFACING & PRESERVATION

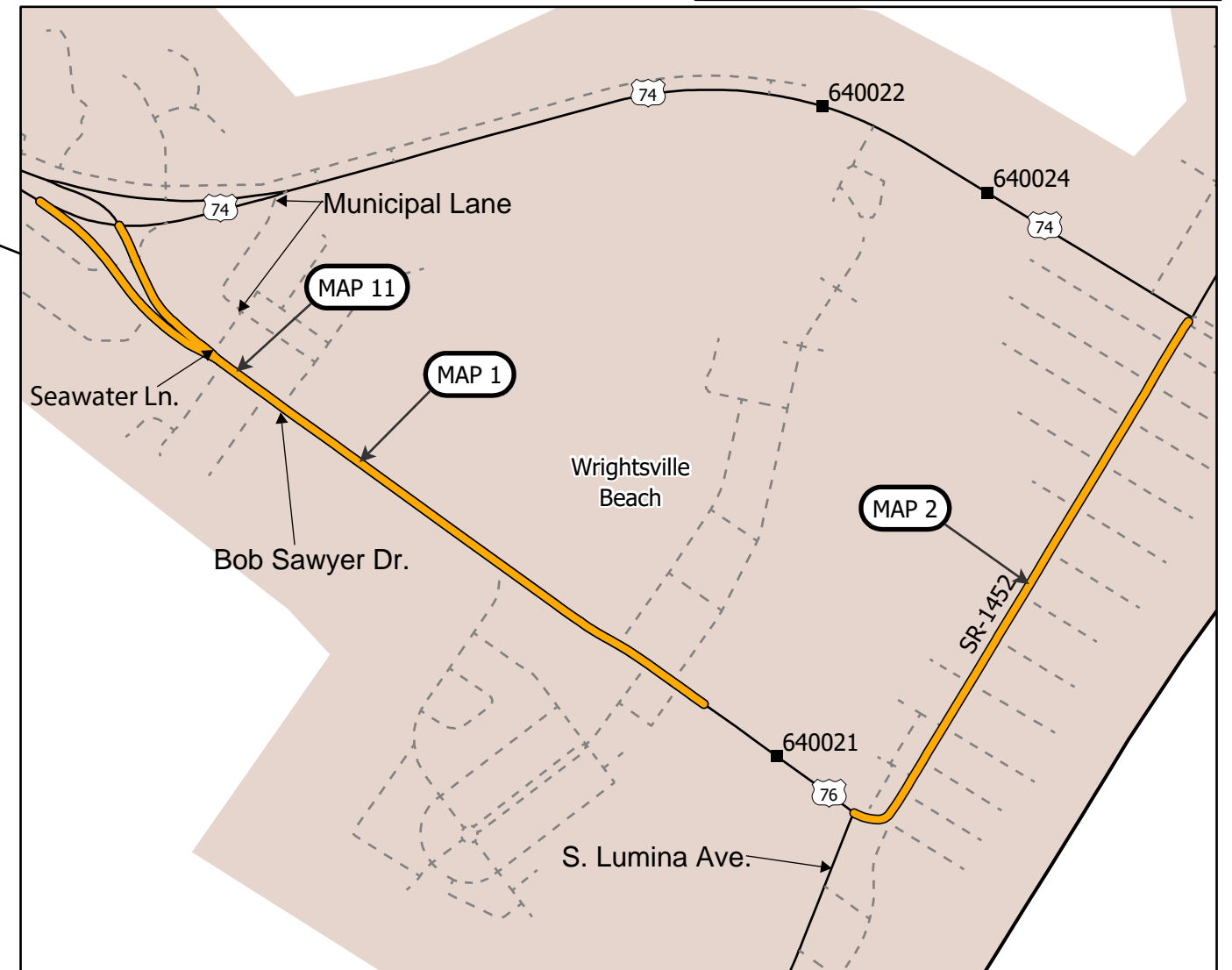
STATE	STATE PROJECT REFERENCE NUMBER	SHEET NO.
NC	2024CPT.03.09.10651, ETC.	1
STATE PROJECT NUMBER		DESCRIPTION

STATE	STATE PROJECT REFERENCE NUMBER	SHEET NO.
NC	BL-0075	1
STATE PROJECT NO.	F.A. PROJECT NO.	DESCRIPTION
50708.3.1	5070802	CONST.



- Resurfacing
- Preservation
- Division 3 Bridges
- NC State Port Parcels

MAP	ROUTE	DESCRIPTION	TYPE
1	US-76 CAUSEWAY DRIVE	FROM US 74 (W SALISBURY ST) TO .04 MI EAST OF N. CHANNEL DR. (NON-SYSTEM) [MP 10.04 - MP 10.78]	Resurfacing
11	US-76 CAUSEWAY DRIVE	FROM US 74 (W SALISBURY ST) TO .04 MI EAST OF N. CHANNEL DR. (NON-SYSTEM) [MP 10.04 - MP 10.78]	Resurfacing
2	SR-1452 / N LUMINA AVE	FROM S. LUMINA AVE (NON-SYSTEM) TO US 74 (W. SALISBURY ST) [MP 0.00 - MP 0.57]	Resurfacing



**PROJECT LENGTH**

MAP	MILES
1	0.74
2	0.57
11	N/A

Prepared in the Office of:

**DIVISION OF HIGHWAYS**  
 5501 BARBADOS BLVD., CASTLE HAYNE, NC, 28429

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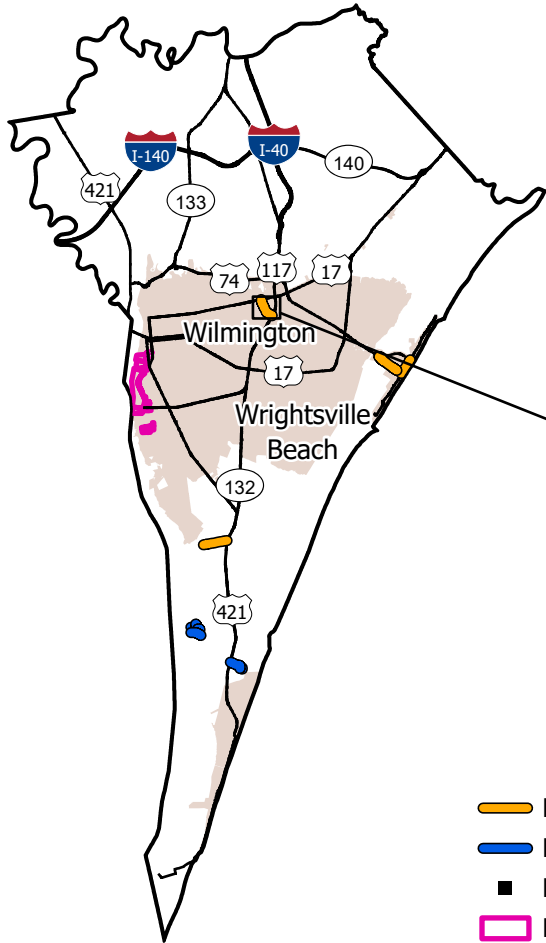
CONTRACT: DC00448

STATE OF NORTH CAROLINA  
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**NEW HANOVER**

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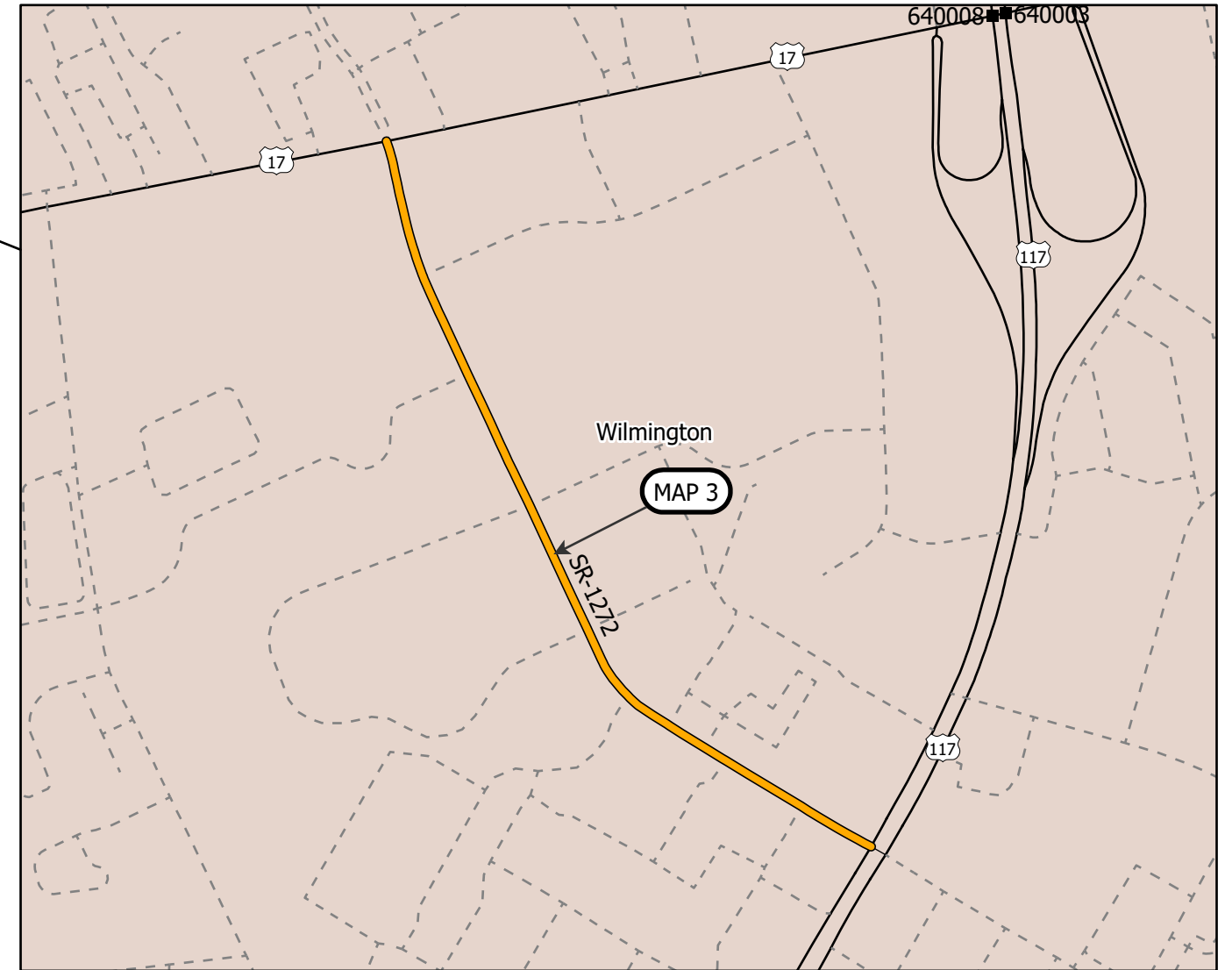
STATE	STATE PROJECT REFERENCE NUMBER	SHEET NO.
NC	2024CPT.03.09.10651, ETC.	2
STATE PROJECT NUMBER		DESCRIPTION

STATE	STATE PROJECT REFERENCE NUMBER	SHEET NO.
NC	BL-0075	2
STATE PROJECT NO.	F.A. PROJECT NO.	DESCRIPTION
50708.3.1	5070802	CONST.



- Resurfacing
- Preservation
- Division 3 Bridges
- NC State Port Parcels

MAP	ROUTE	DESCRIPTION	TYPE
3	SR-1272 / NEW CENTRE DR	FROM US 17 BUS (MARKET ST) TO US 117 (S. COLLEGE RD) [MP 0.00 - MP 0.69]	Resurfacing



**PROJECT LENGTH**

MAP	MILES
3	0.69

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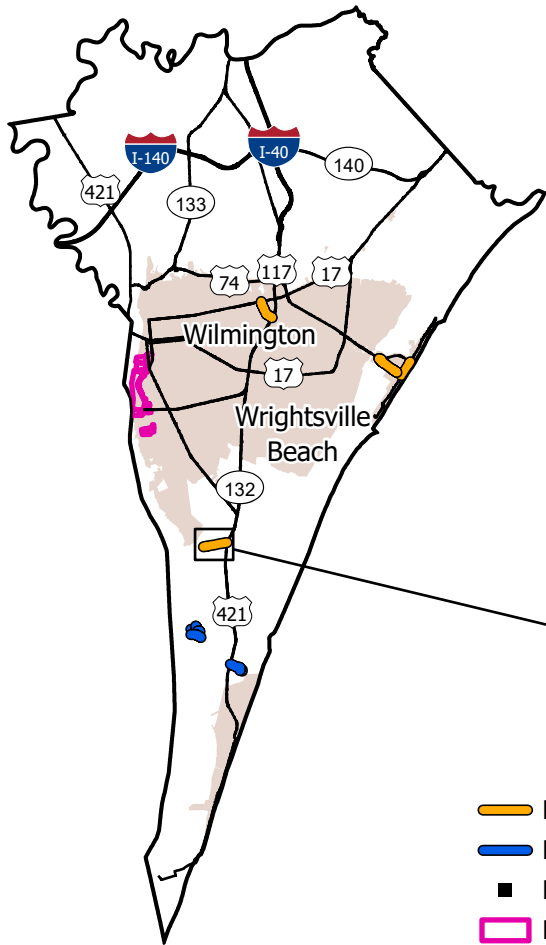
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STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS  
**NEW HANOVER**

TYPE OF WORK: RESURFACING & PRESERVATION

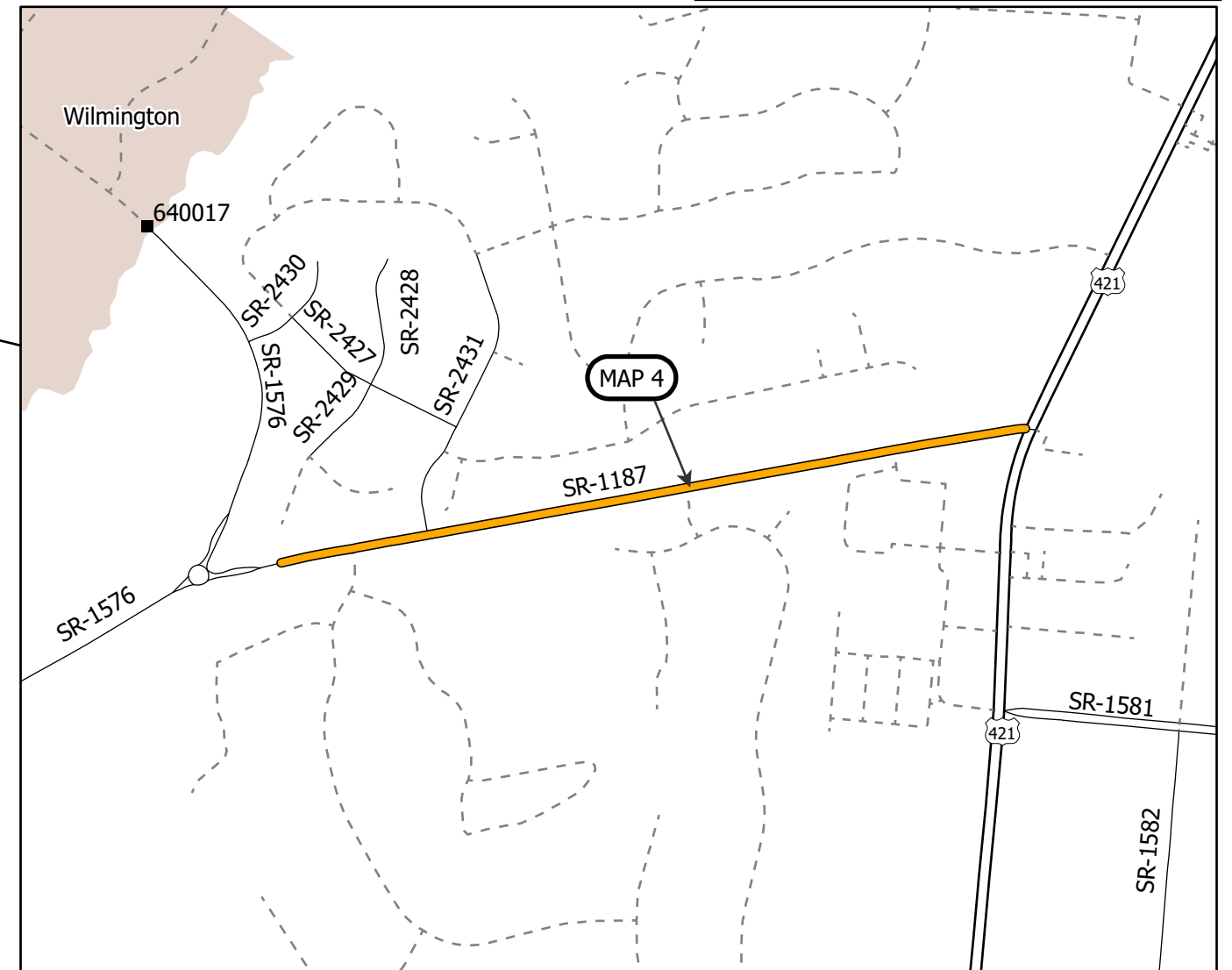
STATE	STATE PROJECT REFERENCE NUMBER	SHEET NO.
NC	2024CPT.03.09.10651, ETC.	3
STATE PROJECT NUMBER		DESCRIPTION

STATE	STATE PROJECT REFERENCE NUMBER	SHEET NO.
NC	BL-0075	3
STATE PROJECT NO.	F.A. PROJECT NO.	DESCRIPTION
50708.3.1	5070802	CONST.



- █ Resurfacing
- █ Preservation
- Division 3 Bridges
- █ NC State Port Parcels

MAP	ROUTE	DESCRIPTION	TYPE
4	SR-1187 / SANDERS RD	FROM SR 1576 (RIVER RD) TO US HWY 421 (CAROLINA BEACH RD) [MP 0.11 - MP 0.93]	Resurfacing



**PROJECT LENGTH**

MAP	MILES
4	0.82

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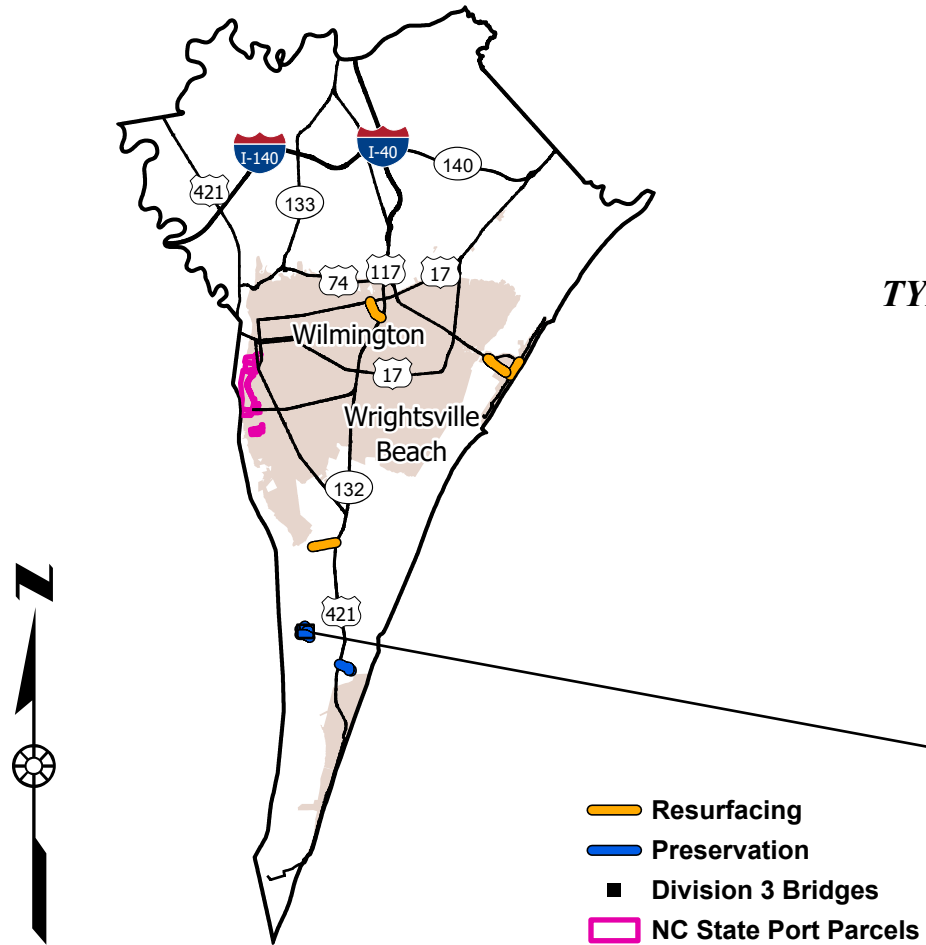
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**NEW HANOVER**

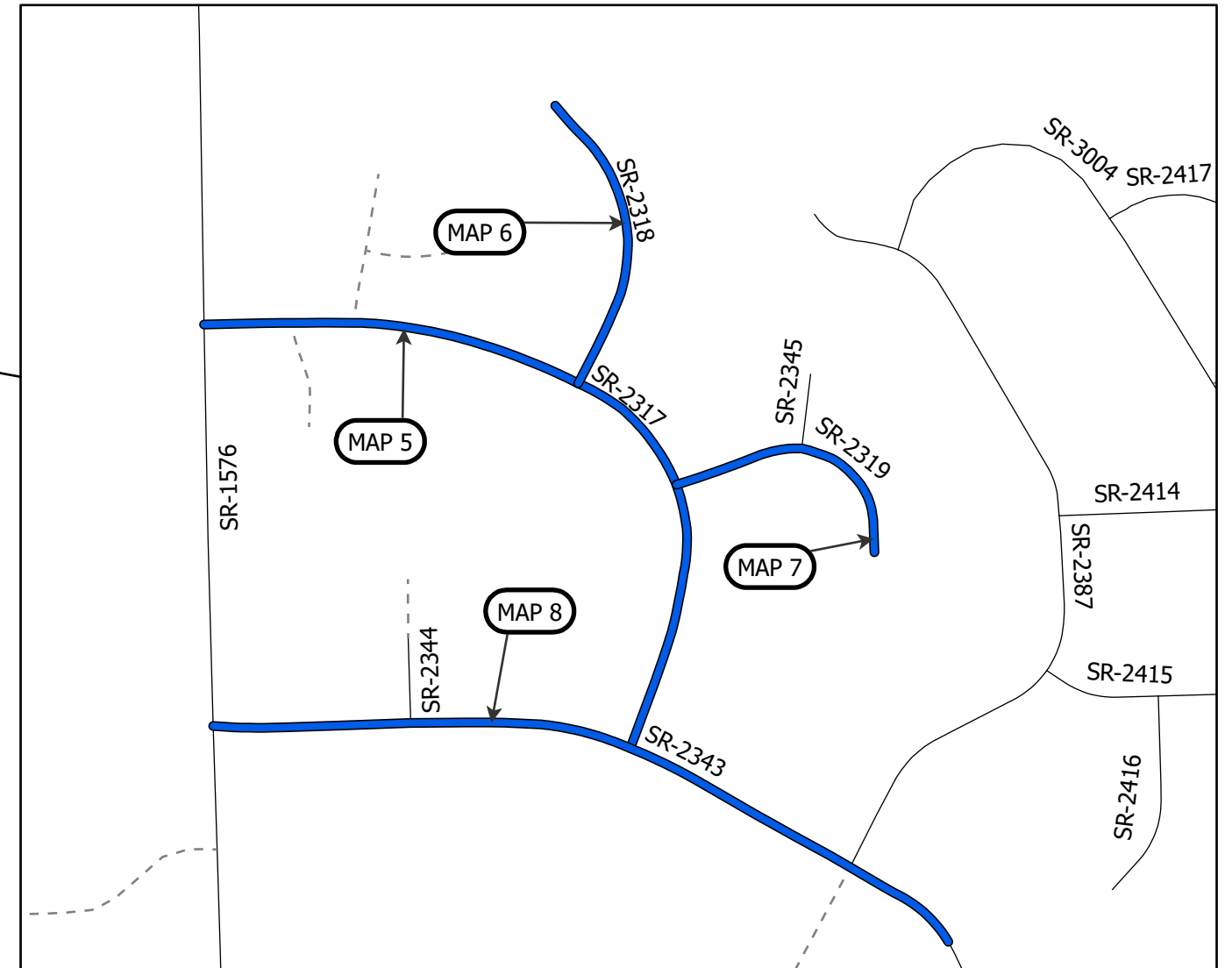
TYPE OF WORK: RESURFACING & PRESERVATION

STATE	STATE PROJECT REFERENCE NUMBER	SHEET NO.
NC	2024CPT.03.09.10651, ETC.	4
STATE PROJECT NUMBER		DESCRIPTION

STATE	STATE PROJECT REFERENCE NUMBER	SHEET NO.
NC	BL-0075	4
STATE PROJECT NO.	F.A. PROJECT NO.	DESCRIPTION
50708.3.1	5070802	CONST.



MAP	ROUTE	DESCRIPTION	TYPE
5	SR-2317 / RIVER OAKS DR	FROM SR 1576 (RIVER RD) TO SR 2343 (ROYAL FERN DR) [MP 0.00 TO MP 0.37]	Preservation
6	SR-2318 / MARSH VIEW TRL	FROM SR 2317 (RIVER OAKS DR) TO PAV'T SEAM AT CUL-DE-SAC [MP 0.00 - MP 0.13]	Preservation
7	SR-2319 / MAYPOP LN	FROM SR 2317 (RIVER OAKS DR) TO CUL-DE-SAC [MP 0.00 - MP 0.13]	Preservation
8	SR-2343 / ROYAL FERN RD	FROM .07 MILE EAST OF SR 2387 (YELLOW DAISY DR) TO SR 1576 (RIVER RD) [MP 0.18 - MP 0.55]	Preservation



**PROJECT LENGTH**

MAP	MILES
5	0.37
6	0.13
7	0.13
8	0.37

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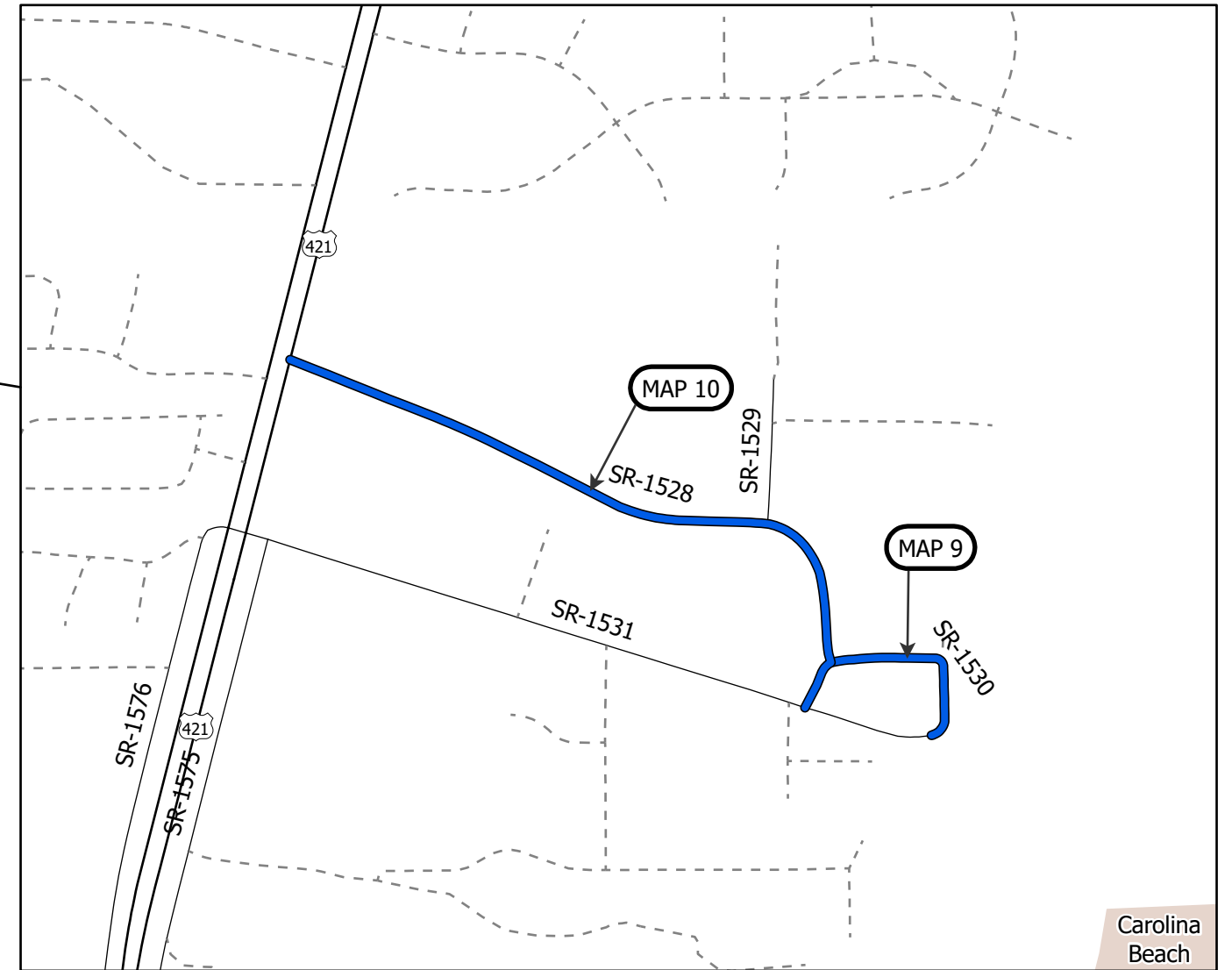
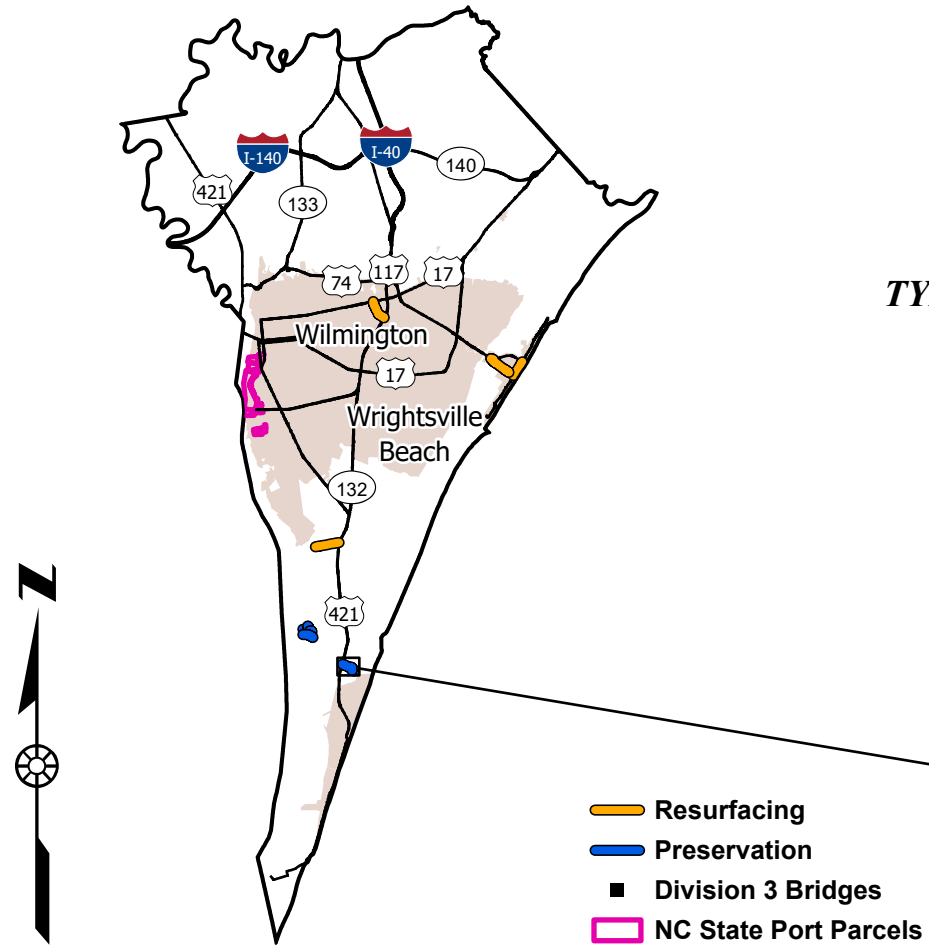
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STATE OF NORTH CAROLINA  
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**NEW HANOVER**

TYPE OF WORK: RESURFACING & PRESERVATION

STATE	STATE PROJECT REFERENCE NUMBER	SHEET NO.
NC	2024CPT.03.09.10651, ETC.	5
STATE PROJECT NUMBER		DESCRIPTION

STATE	STATE PROJECT REFERENCE NUMBER	SHEET NO.
NC	BL-0075	5
STATE PROJECT NO.	F.A. PROJECT NO.	DESCRIPTION
50708.3.1	5070802	CONST.



MAP	ROUTE	DESCRIPTION	TYPE
10	SR-1528 / N SEABREEZE RD	FROM SR 1531 (S. SEABREEZE RD) TO US HWY 421 (CAROLINA BEACH RD) [MP 0.00 - MP 0.45]	Preservation
9	SR-1530 / S SEABREEZE RD	FROM SR 1528 (N. SEABREEZE RD) TO SR 1531 (S. SEABREEZE RD) [MP 0.00 - MP 0.12]	Preservation

PROJECT LENGTH	
MAP	MILES
9	0.12
10	0.45

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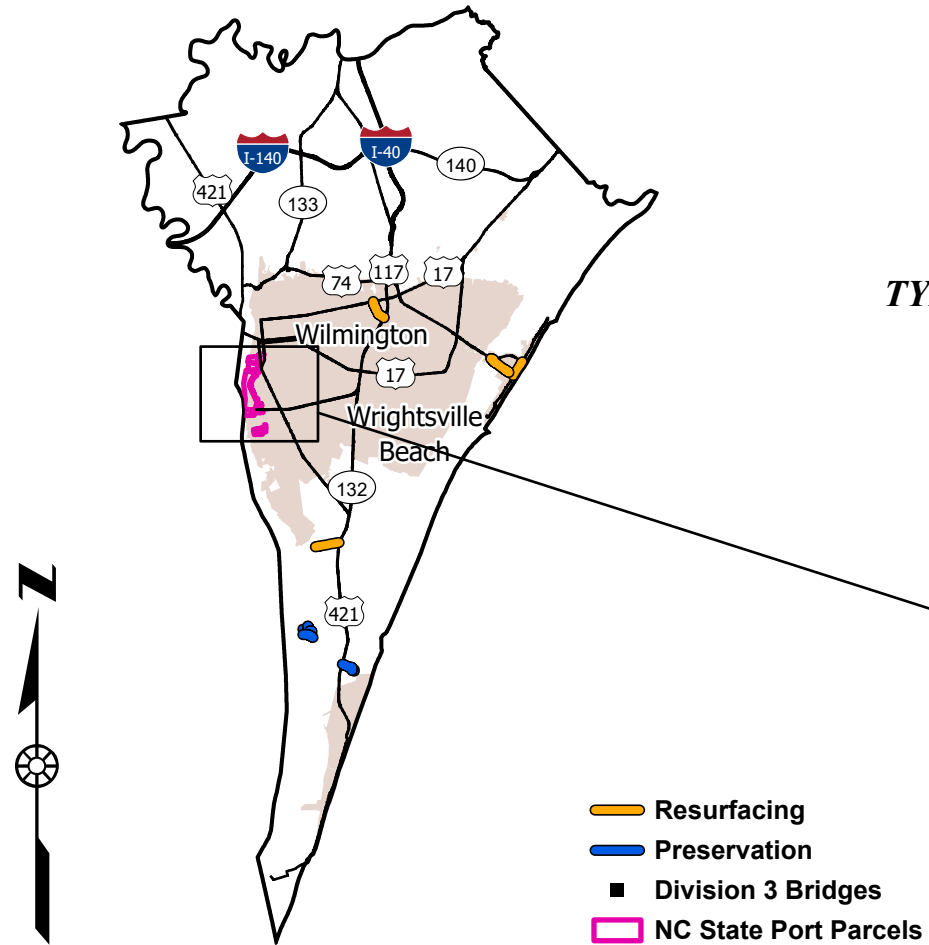
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STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS  
**NEW HANOVER**

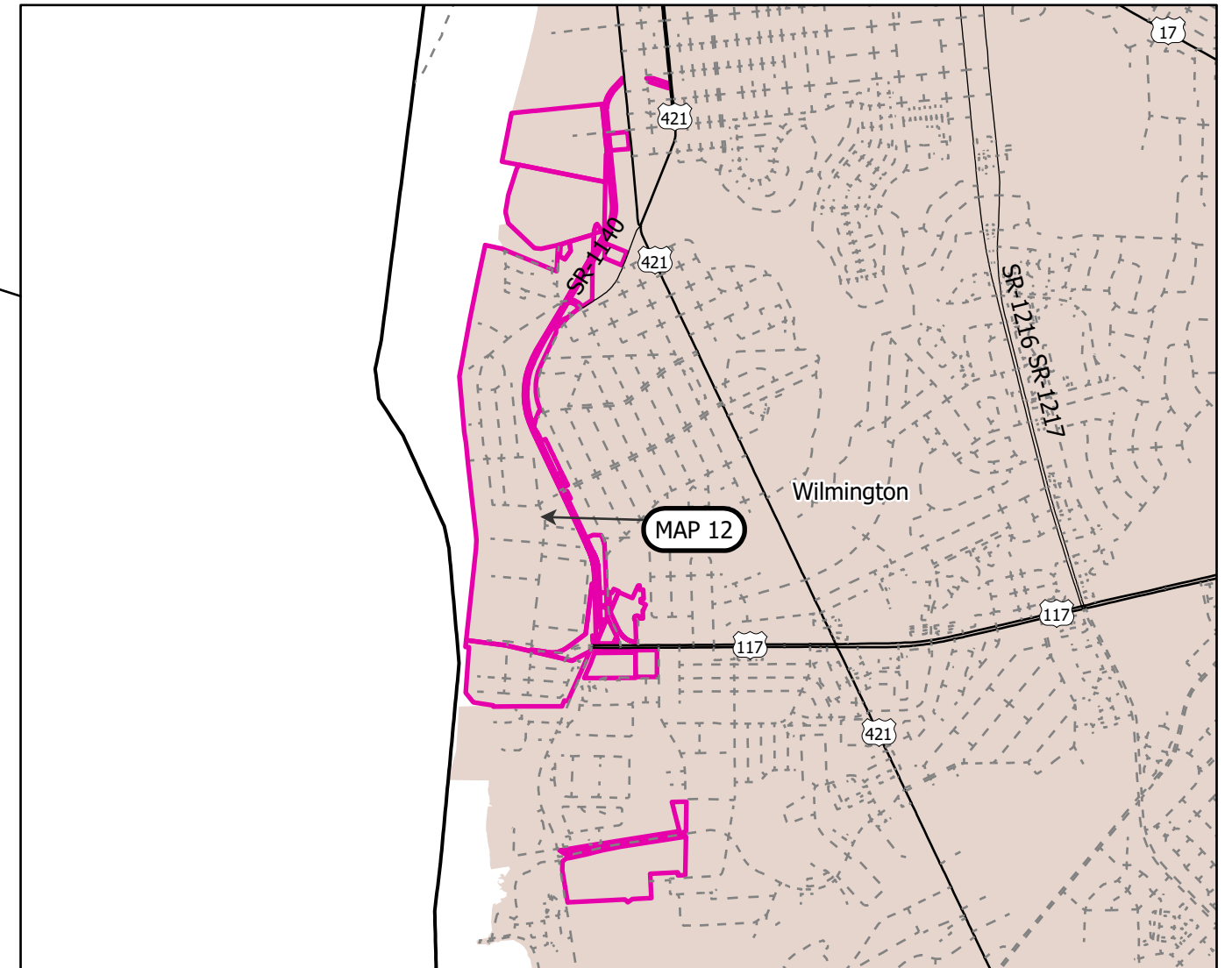
TYPE OF WORK: RESURFACING & PRESERVATION

STATE	STATE PROJECT REFERENCE NUMBER	SHEET NO.
NC	2024CPT.03.09.10651, ETC.	6
STATE PROJECT NUMBER		DESCRIPTION

STATE	STATE PROJECT REFERENCE NUMBER	SHEET NO.
NC	BL-0075	6
STATE PROJECT NO.	F.A. PROJECT NO.	DESCRIPTION
50708.3.1	5070802	CONST.



MAP	ROUTE	DESCRIPTION	TYPE
12	NC STATE PORT OF WILMINGTON	PATCHING EXISTING PAVEMENT ON NC STATE PORT PROPERTY	Patching



**PROJECT LENGTH**

MAP	MILES
12	N/A

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**PAVEMENT SCHEDULE**

C1	PROP. APPROX. 1 1/2" DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ.YD.
C2	PROP. APPROX. 1 1/2" DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ.YD.
C3	PROP. APPROX. 1" DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 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 2'6" CURB AND GUTTER
R2	EXISTING CONCRETE SIDEWALK
V1	0" TO 1.50" MILLING
V2	1.50" FINE MILLING
V3	1.50" MILLING
T1	EARTH MATERIAL (SHOULDER RECONSTRUCTION)
U	EXISTING PAVEMENT

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

**NOTES:** SHOULDER WORK ON MAP NO. 1, 2, AND 4 AS NEEDED, TO BE DETERMINED BY ENGINEER.

MAP NO. 3: MILL A SINGLE LANE AND PAVE BACK BY THE END OF EACH WORK DAY.

EFF. 01-01-2024

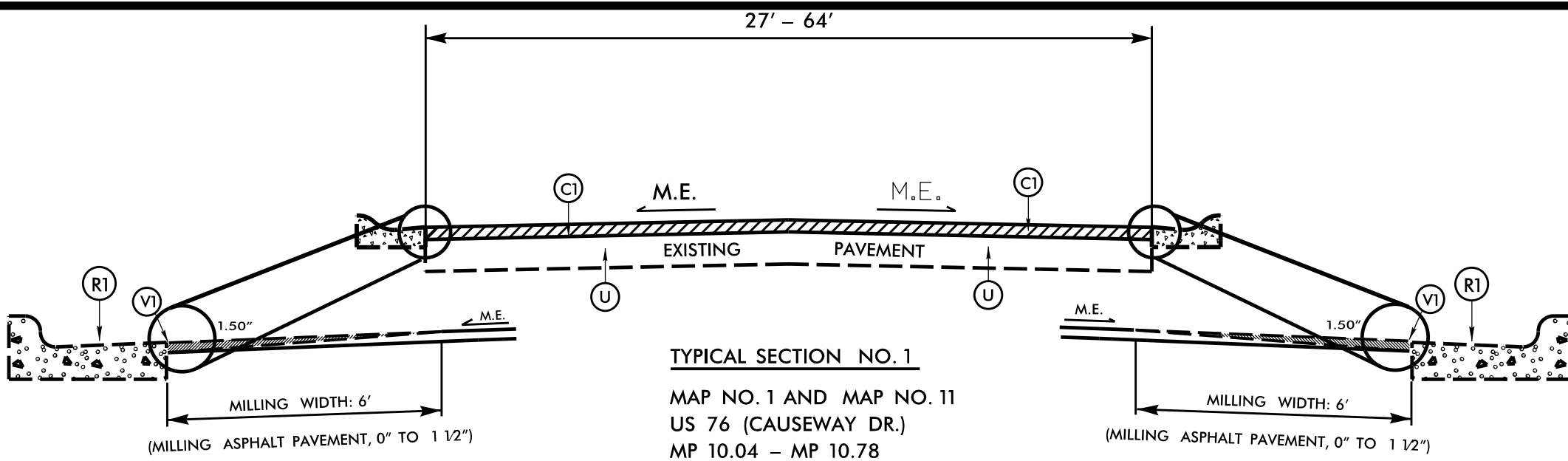
2024 ROADWAY ENGLISH STANDARD DRAWINGS

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 12 - PVMT MARKING, MARKERS AND DELINEATION	
1205.08	Pavement Markings - Symbols & Word Messages

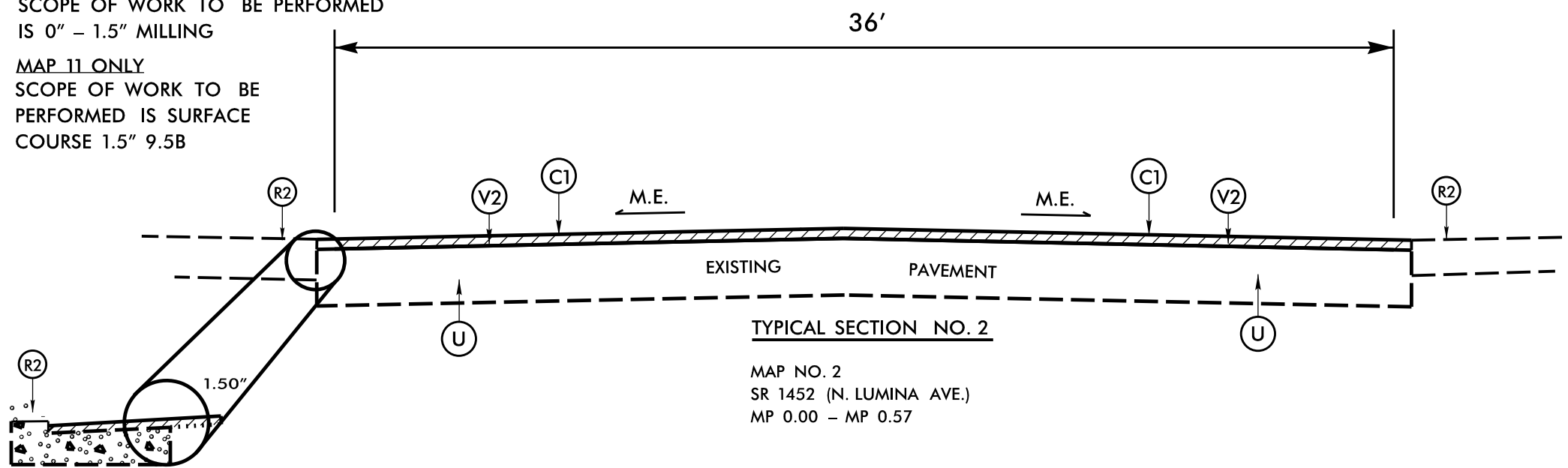
8/17/99

REVISIONS

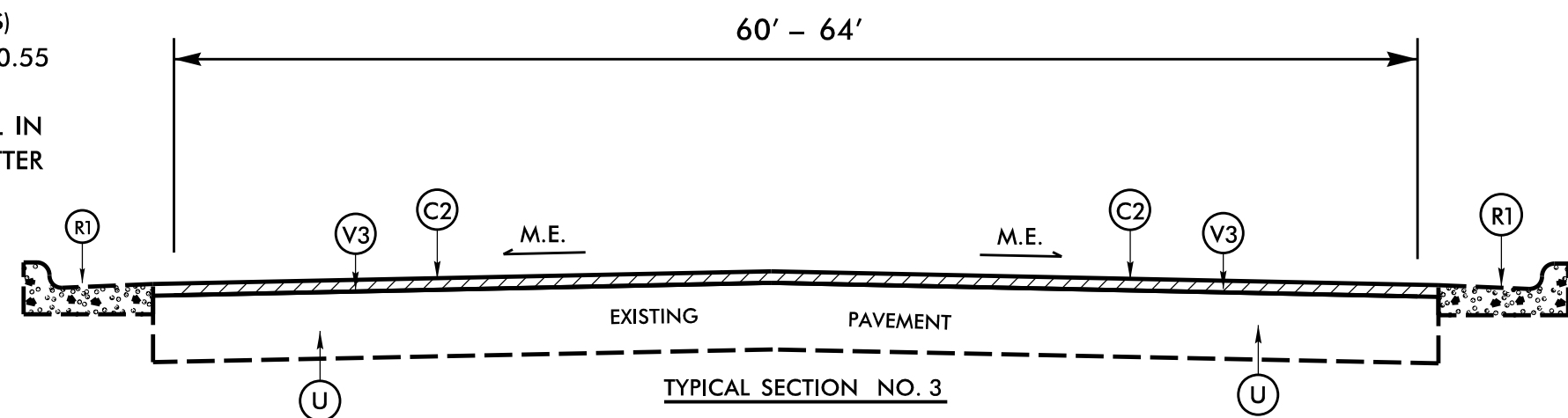


**MAP 1 ONLY**  
 SCOPE OF WORK TO BE PERFORMED IS 0" - 1.5" MILLING

**MAP 11 ONLY**  
 SCOPE OF WORK TO BE PERFORMED IS SURFACE COURSE 1.5" 9.5B

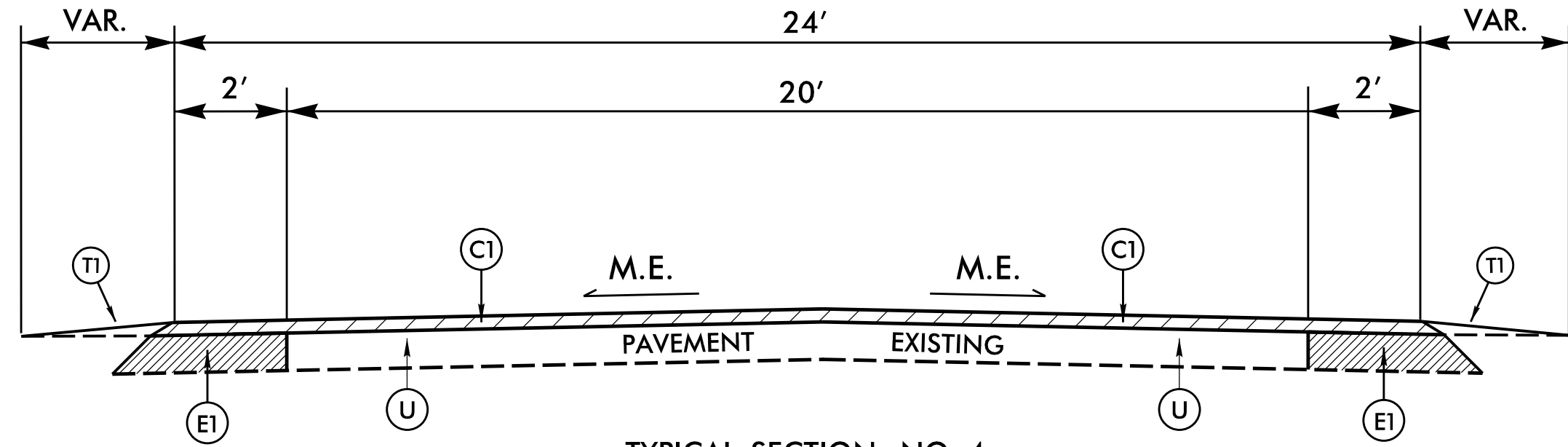


**MAP 2 ONLY**  
 MP 0.00 - MP 0.23  
 MP 0.55 - MP 0.56  
 (LT AND RT SIDES)  
 MP 0.23 - MP 0.55  
 (LT SIDE ONLY)  
 1.5" MILL & FILL IN CONCRETE GUTTER



SYSTEMS \$\$\$\$\$\$  
 DESIGN \$\$\$\$\$\$  
 NAME \$\$\$\$\$\$

PAVEMENT SCHEDULE	
C1	1 1/2" S9.5B
C3	1" S9.5B
E1	5" B25.0C
T1	EARTH MATERIAL SHOULDER RECONST.
U	EXISTING PAVEMENT



**TYPICAL SECTION NO. 4**

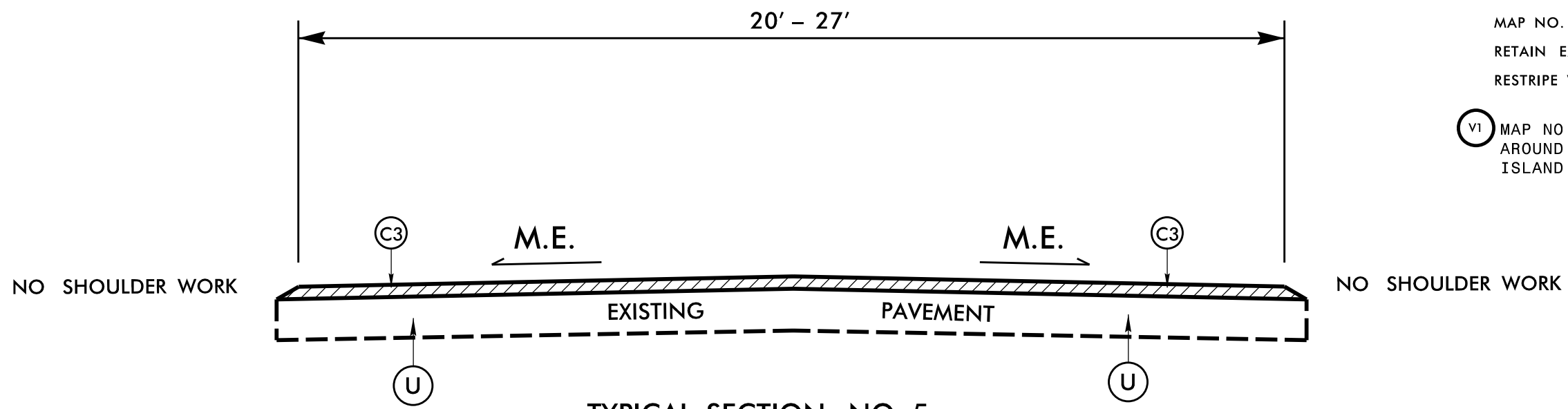
MAP NO. 4  
SR 1187 (SANDERS DR.)  
MP 0.11 – MP 0.93

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

**NOTES:** SHOULDER WORK ON MAP NO. 1, 2, AND 4 AS NEEDED, TO BE DETERMINED BY ENGINEER.

MAP NO. 4: THE CONTRACTOR SHALL RETAIN EXISTING LANE WIDTHS AND RESTRIPE WITH 2' PAVED SHOULDERS.

VI MAP NO. 4: 0" - 1.5" MILLING AROUND CONCRETE MONOLITHIC ISLAND.



**TYPICAL SECTION NO. 5**

MAP NO. 5  
SR 2317 (RIVER OAKS DR.)  
MP 0.00 – MP 0.37

MAP NO. 6  
SR 2318 (MARSH VIEW TRL.)  
MP 0.00 – MP 0.13

MAP NO. 7  
SR 2319 (MAYPOP LN.)  
MP 0.00 – MP 0.13

MAP NO. 8  
SR 2343 (ROYAL FERN RD.)  
MP 0.18 – MP 0.55

MAP NO. 9  
SR 1530 (S. SEABREEZE RD.)  
MP 0.00 – MP 0.12

MAP NO. 10  
SR 1528 (N. SEABREEZE RD.)  
MP 0.00 – MP 0.45

REVISIONS

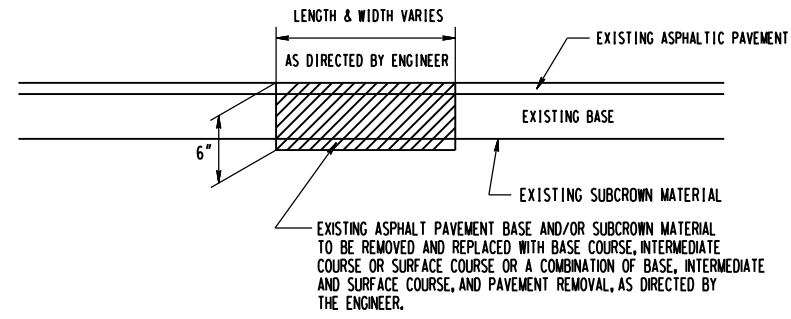
8/17/99

SYSTEMS  
DESIGN  
NAME

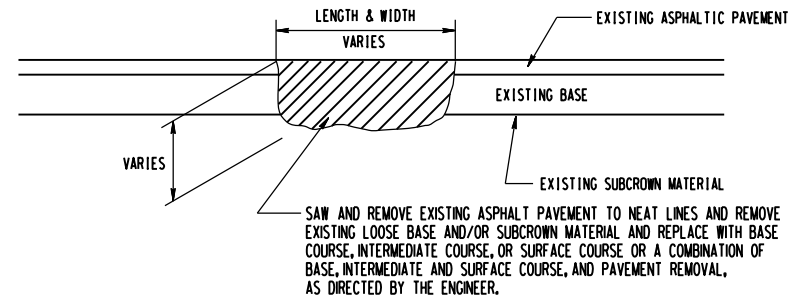




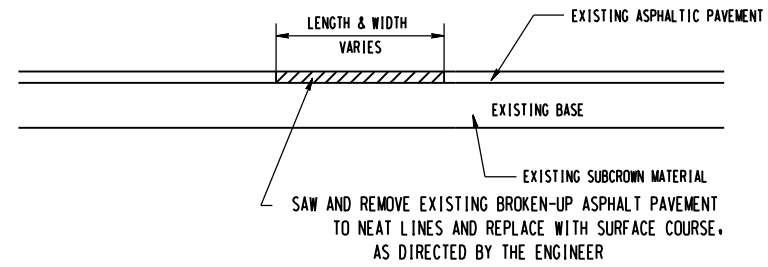
DETAILS OF REPAIRING EXISTING PAVEMENT PRIOR TO RESURFACING FOR FULL DEPTH AND MILLING



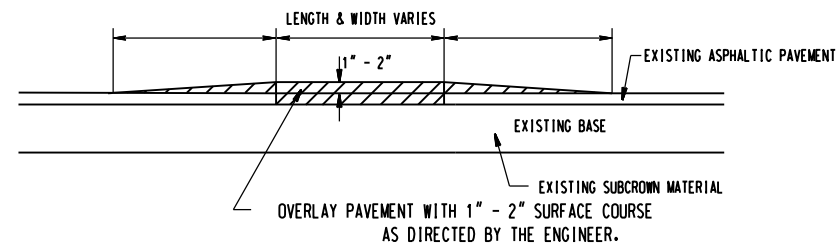
DETAIL NO. 1



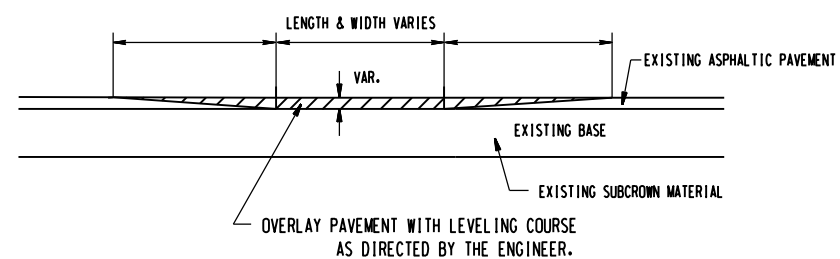
DETAIL NO. 2



DETAIL NO. 3



DETAIL NO. 4

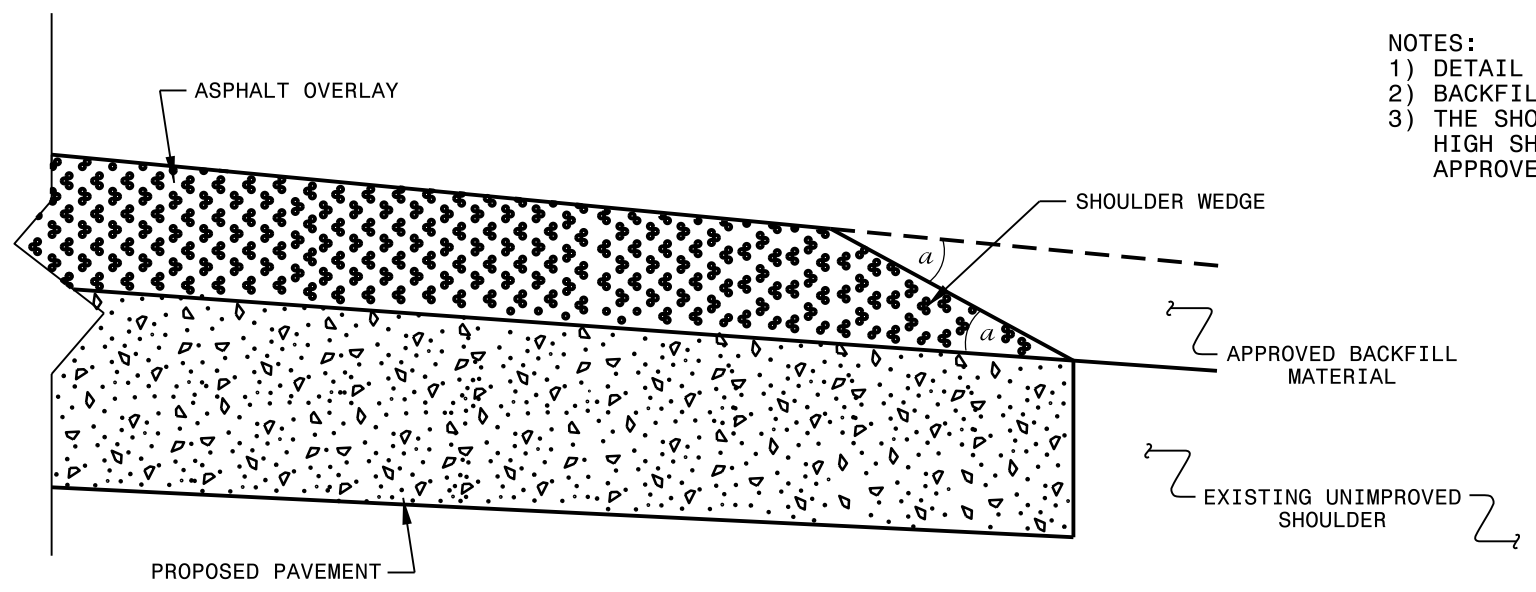


DETAIL NO. 5

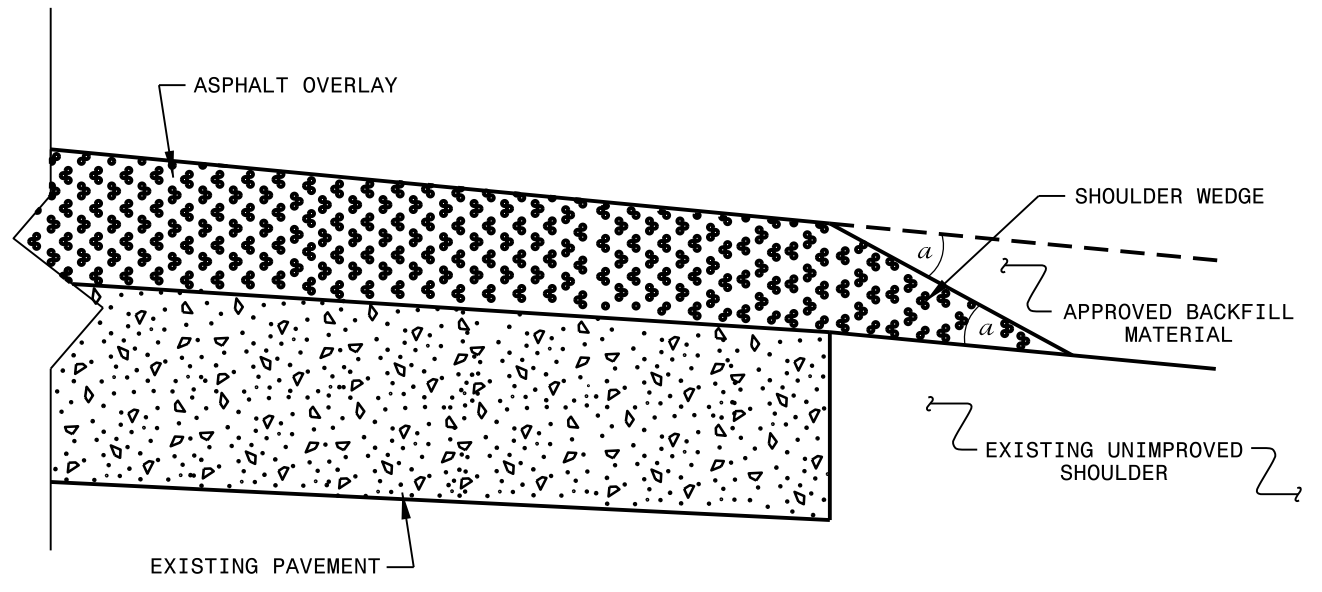
REVISIONS

20-APP-2015-1156  
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 \$\$\$SUNRISE\$\$\$

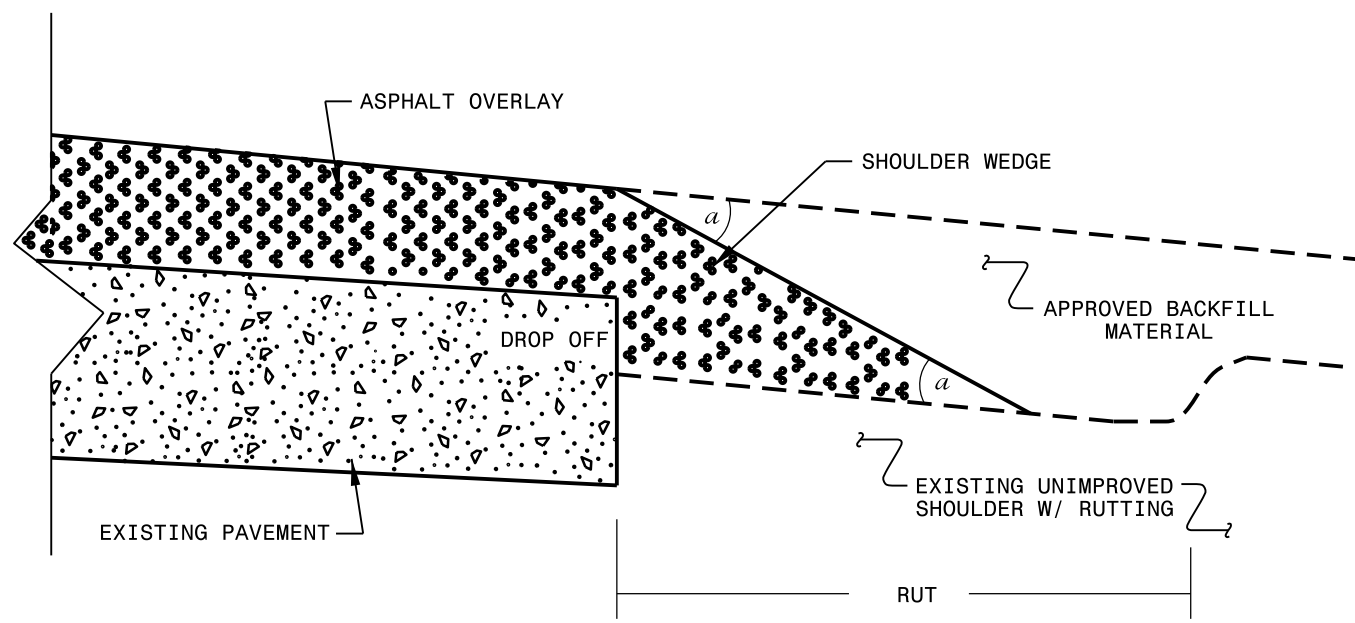
- NOTES:
- 1) DETAIL DOES NOT APPLY TO OGAFC AND ULTRA-THIN BONDED WEARING COURSE.
  - 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
  - 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS, SIDE STREETS, HIGH SHOULDERS, AND OTHER LOCATIONS NOT FEASIBLE TO CONSTRUCT AS APPROVED BY THE ENGINEER.



**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°

<b>CONTRACT STANDARDS AND DEVELOPMENT UNIT</b>			
Office 919-707-6950		FAX 919-250-4119	
<b>SHOULDER WEDGE DETAILS</b>			
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			

27 JUN 2018 13:22 s:\projects\Resurfacing Projects\Division 3\Sampson August 2018\Revised Shoulder Wedge Detail.dgn  
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DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

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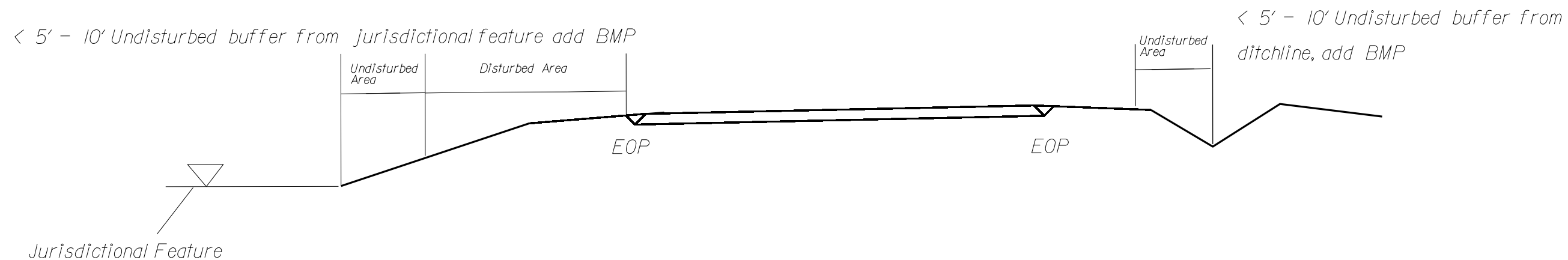
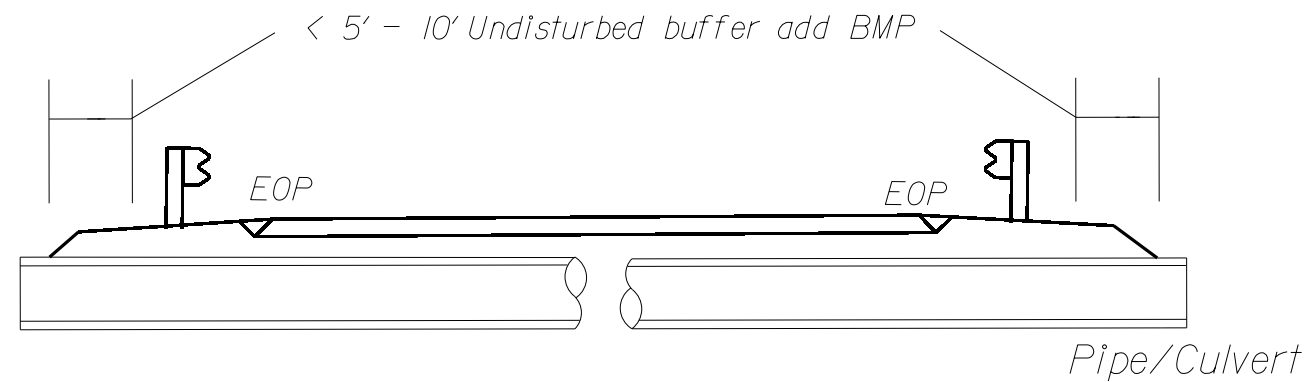
## ***SOIL STABILIZATION TIMEFRAMES***

<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.

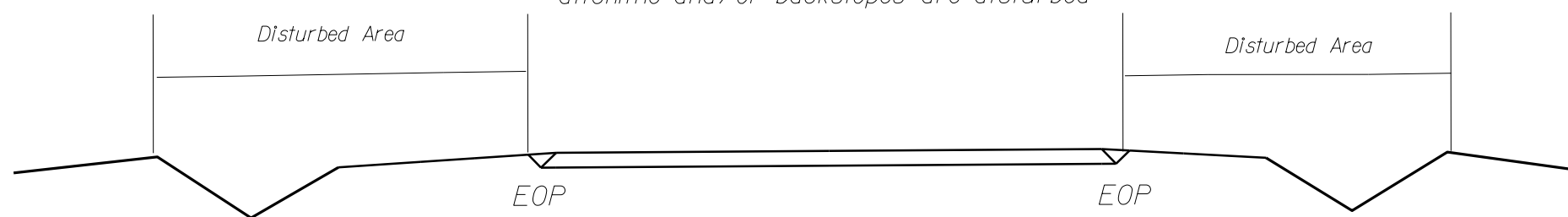
NOTES: Less than 5' - 10' undisturbed buffer from ROW, ditchline, water feature, or drainage inlet, add BMP.

BMP Options: Wattle or Silt Fence

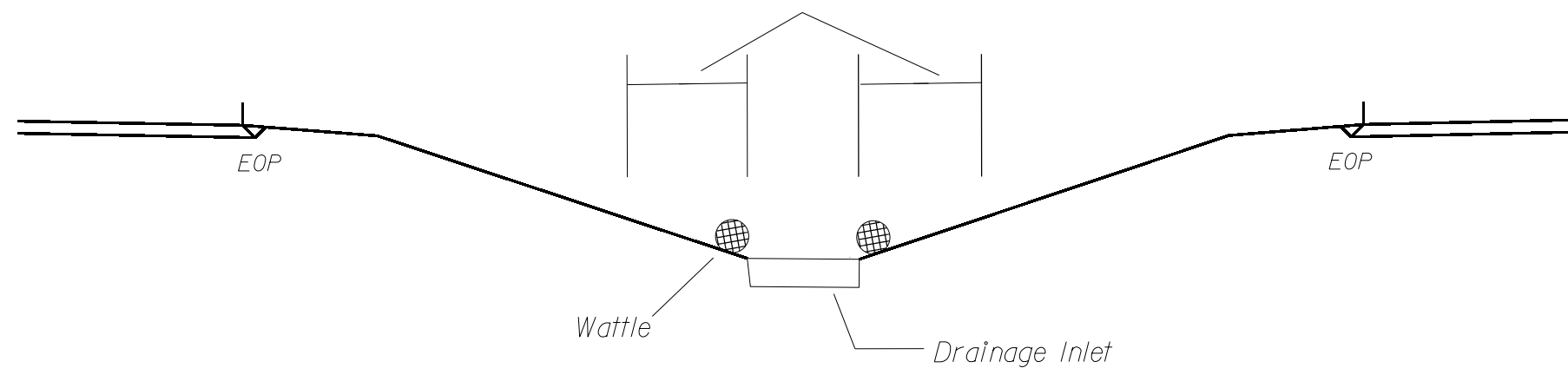
# EROSION CONTROL DETAIL



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

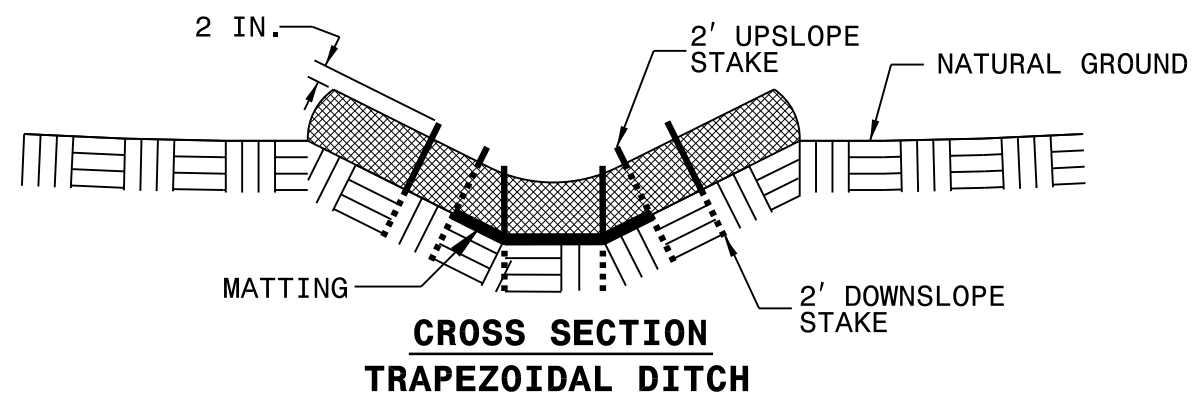
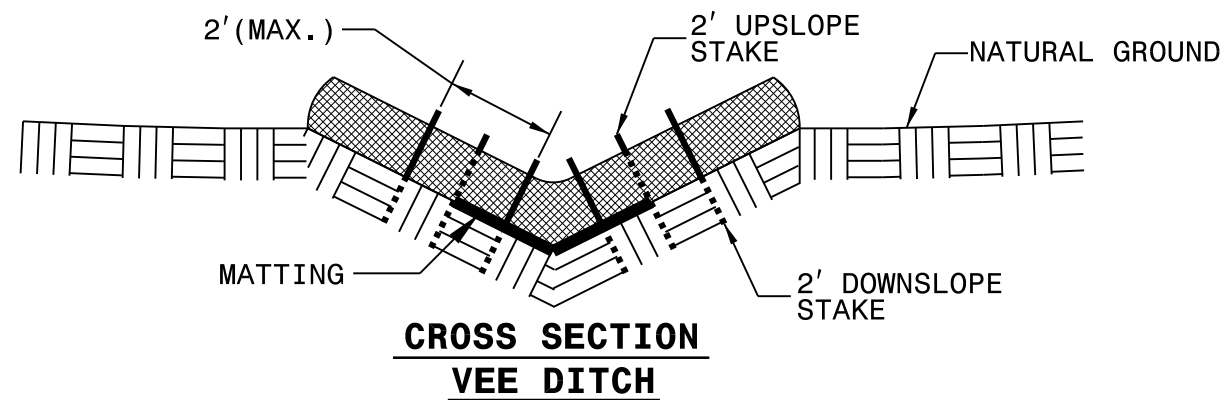
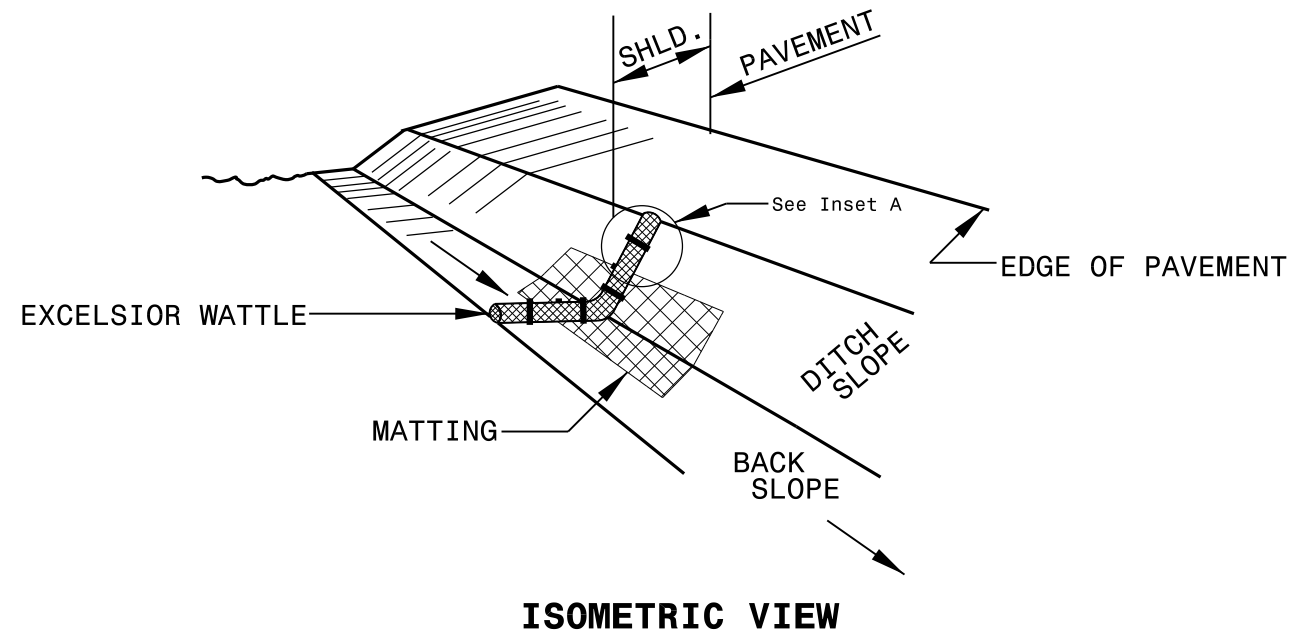


< 5' - 10' Undisturbed buffer from inlet, add wattle



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.

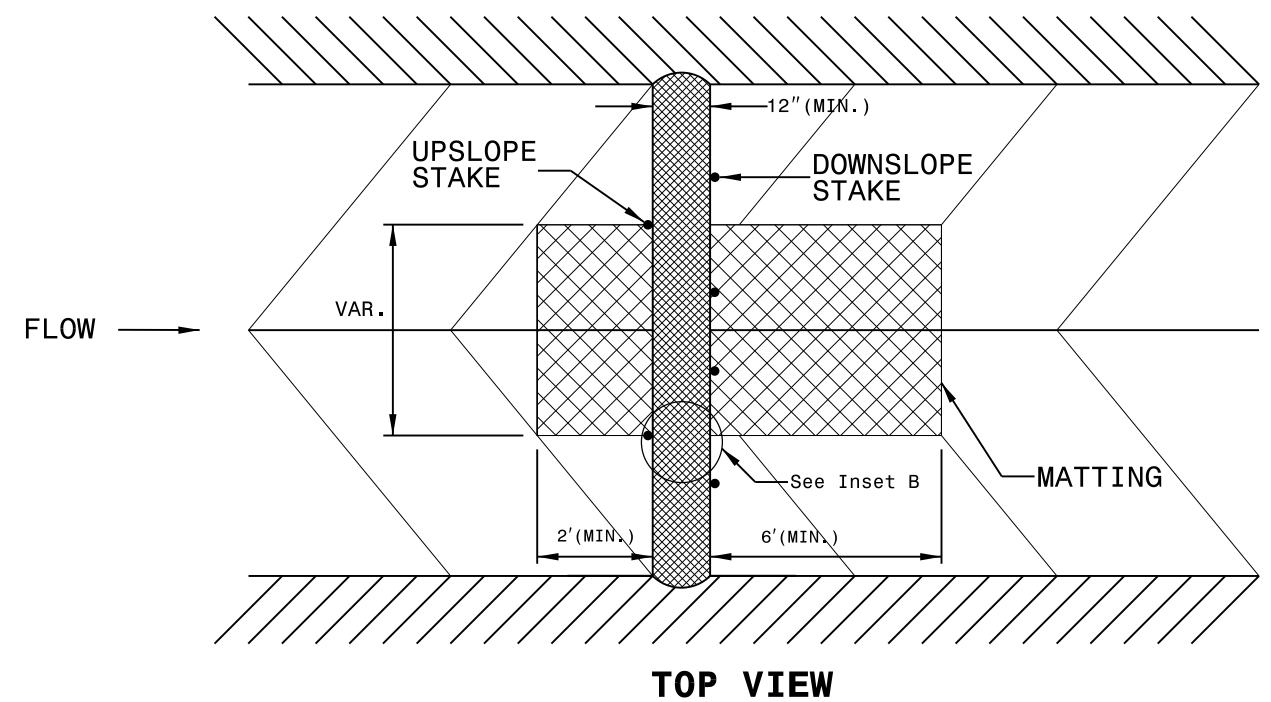
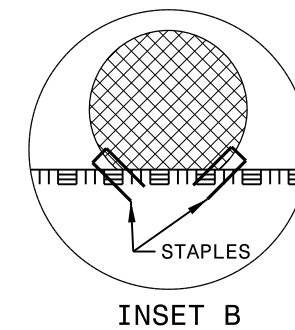
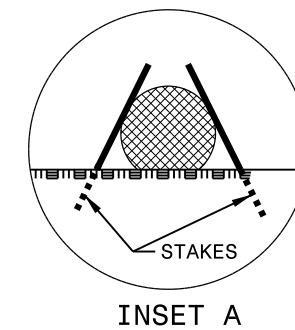
ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

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.







PROJECT NO.	SHEET NO.
2024CPT.03.09.10651, ETC.	13

## SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH	WIDTH	BEGIN MP	END MP	2591000000-E	2605000000-N	2612300000-N	2655000000-E	2759000000-N	2815000000-N	2830000000-N	2845000000-N	4025000000-E	4072000000-E	4102000000-N	5255000000-N								
														4" CONCRETE SIDEWALK	CONCRETE CURB RAMP	RETROFIT EXISTING CURB RAMP	5" MONOLITHIC CONC. ISLAND (GENERIC)	ADJUSTMENT OF MONUMENTS (GENERIC)	ADJUSTMENT OF DROP INLET	ADJUSTMENT OF MANHOLES	ADJUSTMENT OF METER OR VALVE BOX	CONTRACTOR FURNISHED, TYPE E SIGN	SUPPORTS, 3-LB STEEL U-CHANNEL	SIGN ERECTION, TYPE E	PORTABLE LIGHTING								
														MI	FT																		
														SY	EA	EA	SY	EA	EA	EA	EA	EA	SF	LF	EA	LS							
2024CPT.03.09.10651	NewHanover	1	US-76 CAUSEWAY DRIVE	FROM US 74 (W SALISBURY ST) TO .04 MI EAST OF N. CHANNEL DR. (NON-SYSTEM) [MP 10.04 - MP 10.78]	1	5	MU	NO	NO	N/A	27-64	10.04	10.78	35	2						14	14											
<b>TOTAL FOR MAP NO. 1</b>														35	2								14	14									
<b>TOTAL FOR PROJ NO. 2024CPT.03.09.10651</b>														35	2								14	14									
2024CPT.03.09.20651	NewHanover	2	SR-1452 / N LUMINA AVE	FROM S. LUMINA AVE. TO US 74 (W. SALISBURY ST) [MP 0.00 - MP 0.57]	2	2	2WU	NO	NO	0.57	36-39	0	0.57			8			40	24	24												
<b>TOTAL FOR MAP NO. 2</b>														0.57									8			40	24	24					
2024CPT.03.09.20651	NewHanover	3	SR-1272 / NEW CENTRE DR	FROM US 17 BUS (MARKET ST) TO US 117 (S. COLLEGE RD) [MP 0.00 - MP 0.69]	3	5	M2	NO	NO	0.69	55-57	0	0.69								3	7			0.70								
<b>TOTAL FOR MAP NO. 3</b>														0.69												3	7			0.70			
2024CPT.03.09.20651	NewHanover	4	SR-1187 / SANDERS RD	FROM SR 1576 (RIVER RD) TO US HWY 421 (CAROLINA BEACH RD) [MP 0.11 - MP 0.93]	4	2	2WU	NO	NO	0.82	24	0.11	0.93								1	1											
<b>TOTAL FOR MAP NO. 4</b>														0.82												1	1						
<b>TOTAL FOR PROJ NO. 2024CPT.03.09.20651</b>														2.08													8	40	28	32			0.70
2024CPT.03.09.20652	NewHanover	5	SR-2317 / RIVER OAKS DR	FROM SR 1576 (RIVER RD) TO SR 2343 (ROYAL FERN DR) [MP 0.00 TO MP 0.37]	5	2	2WU	NO	NO	0.37	20	0	0.37																				
<b>TOTAL FOR MAP NO. 5</b>														0.37												4	4						
2024CPT.03.09.20652	NewHanover	6	SR-2318 / MARSH VIEW TRL	FROM SR 2317 (RIVER OAKS TRAIL) TO EXISTING PAVEMENT SEAM [MP 0.00 - MP 0.13]	5	2	2WU	NO	NO	0.13	20	0	0.13																				
<b>TOTAL FOR MAP NO. 6</b>														0.13												1	1						
2024CPT.03.09.20652	NewHanover	7	SR-2319 / MAYPOP LN	FROM SR 2317 (RIVER OAKS) TO CUL-DE-SAC [MP 0.00 - MP 0.13]	5	2	2WU	NO	NO	0.13	20	0	0.13																				
<b>TOTAL FOR MAP NO. 7</b>														0.13												2	2						
2024CPT.03.09.20652	NewHanover	8	SR-2343 / ROYAL FERN RD	FROM .07 MILE EAST OF SR 2387 (YELLOW DAISY DR) TO SR 1576 (RIVER RD) [MP 0.18 - MP 0.55]	5	2	2WU	NO	NO	0.37	20	0.18	0.55																				
<b>TOTAL FOR MAP NO. 8</b>														0.37												6	5	5					
2024CPT.03.09.20652	NewHanover	9	SR-1530 / ELM ST/ S SEABREEZE RD	FROM SR 1528 (N. SEABREEZE RD) TO SR 1531 (S. SEABREEZE RD) [MP 0.00 - MP 0.12]	5	2	2WU	NO	NO	0.12	20	0	0.12				15																
<b>TOTAL FOR MAP NO. 9</b>														0.12												15	15						
2024CPT.03.09.20652	New Hanover	10	SR-1528 / N SEABREEZE RD	FROM SR 1531 (S. SEABREEZE RD) TO US HWY 421 (CAROLINA BEACH RD) [MP 0.00 - MP 0.45]	5	2	2WU	NO	NO	0.45	20	0	0.45																				
<b>TOTAL FOR MAP NO. 10</b>														0.45																			
<b>TOTAL FOR PROJ NO. 2024CPT.03.09.20652</b>														1.57													15	13	5				
50708.3.1	NewHanover	11	US-76 CAUSEWAY DRIVE	FROM US 74 (W SALISBURY ST) TO .04 MI EAST OF N. CHANNEL DR. (NON-SYSTEM) [MP 10.04 - MP 10.78]	1	2	MU	NO	NO	0.74	27-64	10.04	10.78										45	100	8								
<b>TOTAL FOR MAP NO. 11</b>														0.74																45	100	8	
<b>TOTAL FOR PROJ NO. 50708.3.1</b>														0.74																	45	100	8
2024CPT.03.09.20651.1	NewHanover	12	NC STATE PORT OF WILMINGTON	PATCHING EXISTING PAVEMENT ON NC STATE PORT PROPERTY	N/A	2		NO	NO	N/A	N/A	0	1												0.30								
<b>TOTAL FOR MAP NO. 12</b>																																0.30	
<b>TOTAL FOR PROJ NO. 2024CPT.03.09.20651.1</b>																																	0.30
<b>GRAND TOTAL</b>										4.39					35	2	8	15	13	40	47	46	45	100	8	1							

PROJECT NO.	SHEET NO.
2024CPT.03.09.10651, Etc.	14

## SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH	WIDTH	BEGIN MP	END MP	6012000000-E	6015000000-E	6018000000-E	6021000000-E	6036000000-E	6042000000-E	6071010000-E	6084000000-E	6090000000-E	6093000000-E	6117000000-N	6117500000-N	7444000000-E								
														SEDIMENT CONTROL STONE	TEMPORARY MULCHING	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	CONCRETE WASHOUT STRUCTURE	INDUCTIVE LOOP SAWCUT								
														MI	FT																			
														TON	ACR	LBS	TON	SY	LF	LF	AC	LB	TON	EA	EA	LF								
2024CPT.03.09.10651	NewHanover	1	US-76 CAUSEWAY DRIVE	FROM US 74 (W SALISBURY ST) TO .04 MI EAST OF N. CHANNEL DR. (NON-SYSTEM) [MP 10.04 - MP 10.78]	1	5	MU	NO	NO	N/A	27-64	10.04	10.78	10	0.50	25	0.13	10	25	30	0.50	25	0.13	2										
<b>TOTAL FOR MAP NO. 1</b>														<b>10</b>	<b>0.50</b>	<b>25</b>	<b>0.13</b>	<b>10</b>	<b>25</b>	<b>30</b>	<b>0.50</b>	<b>25</b>	<b>0.13</b>	<b>2</b>										
<b>TOTAL FOR PROJ NO. 2024CPT.03.09.10651</b>														<b>10</b>	<b>0.50</b>	<b>25</b>	<b>0.13</b>	<b>10</b>	<b>25</b>	<b>30</b>	<b>0.50</b>	<b>25</b>	<b>0.13</b>	<b>2</b>										
2024CPT.03.09.20651	New Hanover	2	SR-1452 / N LUMINA AVE	FROM S. LUMINA AVE. TO US 74 (W. SALISBURY ST) [MP 0.00 - MP 0.57]	2	2	2WU	NO	NO	0.57	36-39	0	0.57	5	0.20	10	0.05	10	20	10	0.19	10	0.05	2		160								
<b>TOTAL FOR MAP NO. 2</b>														<b>0.57</b>		<b>10</b>	<b>0.05</b>	<b>10</b>	<b>20</b>	<b>10</b>	<b>0.19</b>	<b>10</b>	<b>0.05</b>	<b>2</b>			<b>160</b>							
2024CPT.03.09.20651	NewHanover	3	SR-1272 / NEW CENTRE DR	FROM US 17 BUS (MARKET ST) TO US 117 (S. COLLEGE RD) [MP 0.00 - MP 0.69]	3	5	M2	NO	NO	0.69	55-57	0	0.69													1,500								
<b>TOTAL FOR MAP NO. 3</b>														<b>0.69</b>														<b>1,500</b>						
2024CPT.03.09.20651	NewHanover	4	SR-1187 / SANDERS RD	FROM SR 1576 (RIVER RD) TO US HWY 421 (CAROLINA BEACH RD) [MP 0.11 - MP 0.93]	4	2	2WU	NO	NO	0.82	24	0.11	0.93	20	0.80	40	0.20	10	40	20	0.80	40	0.20	3		475								
<b>TOTAL FOR MAP NO. 4</b>														<b>0.82</b>	<b>0.80</b>	<b>40</b>	<b>0.20</b>	<b>10</b>	<b>40</b>	<b>20</b>	<b>0.80</b>	<b>40</b>	<b>0.20</b>	<b>3</b>			<b>475</b>							
<b>TOTAL FOR PROJ NO. 2024CPT.03.09.20651</b>														<b>2.08</b>	<b>1.00</b>	<b>50</b>	<b>0.25</b>	<b>20</b>	<b>60</b>	<b>30</b>	<b>0.99</b>	<b>50</b>	<b>0.25</b>	<b>5</b>			<b>2,135</b>							
2024CPT.03.09.20652	NewHanover	5	SR-2317 / RIVER OAKS DR	FROM SR 1576 (RIVER RD) TO SR 2343 (ROYAL FERN DR) [MP 0.00 TO MP 0.37]	5	2	2WU	NO	NO	0.37	20	0	0.37																					
<b>TOTAL FOR MAP NO. 5</b>														<b>0.37</b>																				
2024CPT.03.09.20652	NewHanover	6	SR-2318 / MARSH VIEW TRL	FROM SR 2317 (RIVER OAKS DR) TO EXISTING PAVEMENT SEAM [MP 0.00 - MP 0.13]	5	2	2WU	NO	NO	0.13	20	0	0.13																					
<b>TOTAL FOR MAP NO. 6</b>														<b>0.13</b>																				
2024CPT.03.09.20652	New Hanover	7	SR-2319 / MAYPOP LN	FROM SR 2317 (RIVER OAKS DR) TO CUL-DE-SAC [MP 0.00 - MP 0.13]	5	2	2WU	NO	NO	0.13	20	0	0.13																					
<b>TOTAL FOR MAP NO. 7</b>														<b>0.13</b>																				
2024CPT.03.09.20652	NewHanover	8	SR-2343 / ROYAL FERN RD	FROM .07 MILE EAST OF SR 2387 (YELLOW DAISY DR) TO SR 1576 (RIVER RD) [MP 0.18 - MP 0.55]	5	2	2WU	NO	NO	0.37	20	0.18	0.55																					
<b>TOTAL FOR MAP NO. 8</b>														<b>0.37</b>																				
2024CPT.03.09.20652	New Hanover	9	SR-1530 / ELM ST/ S SEABREEZE RD	FROM SR 1528 (N. SEABREEZE RD) TO SR 1531 (S. SEABREEZE RD) [MP 0.00 - MP 0.12]	5	2	2WU	NO	NO	0.12	20	0	0.12													1								
<b>TOTAL FOR MAP NO. 9</b>														<b>0.12</b>														<b>1</b>						
2024CPT.03.09.20652	New Hanover	10	SR-1528 / N SEABREEZE RD	FROM SR 1531 (S. SEABREEZE RD) TO US HWY 421 (CAROLINA BEACH RD) [MP 0.00 - MP 0.45]	5	2	2WU	NO	NO	0.45	20	0	0.45																					
<b>TOTAL FOR MAP NO. 10</b>														<b>0.45</b>																				
<b>TOTAL FOR PROJ NO. 2024CPT.03.09.20652</b>														<b>1.57</b>														<b>1</b>						
50708.3.1	NewHanover	11	US-76 CAUSEWAY DRIVE	FROM US 74 (W SALISBURY ST) TO .04 MI EAST OF N. CHANNEL DR. (NON-SYSTEM) [MP 10.04 - MP 10.78]	1	2	MU	NO	NO	0.74	27-64	10.04	10.78																					
<b>TOTAL FOR MAP NO. 11</b>														<b>0.74</b>																				
<b>TOTAL FOR PROJ NO. 50708.3.1</b>														<b>0.74</b>																				
2024CPT.03.09.20651.1	NewHanover	12	NC STATE PORT OF WILMINGTON	PATCHING EXISTING PAVEMENT ON NC STATE PORT PROPERTY	N/A	2		NO	NO	N/A	N/A	0	1																					
<b>TOTAL FOR MAP NO. 12</b>																																		
<b>TOTAL FOR PROJ NO. 2024CPT.03.09.20651.1</b>																																		
<b>GRAND TOTAL</b>														<b>4.39</b>								<b>35</b>	<b>1.50</b>	<b>75</b>	<b>0.38</b>	<b>30</b>	<b>85</b>	<b>60</b>	<b>1.49</b>	<b>75</b>	<b>0.38</b>	<b>7</b>	<b>1</b>	<b>2,135</b>

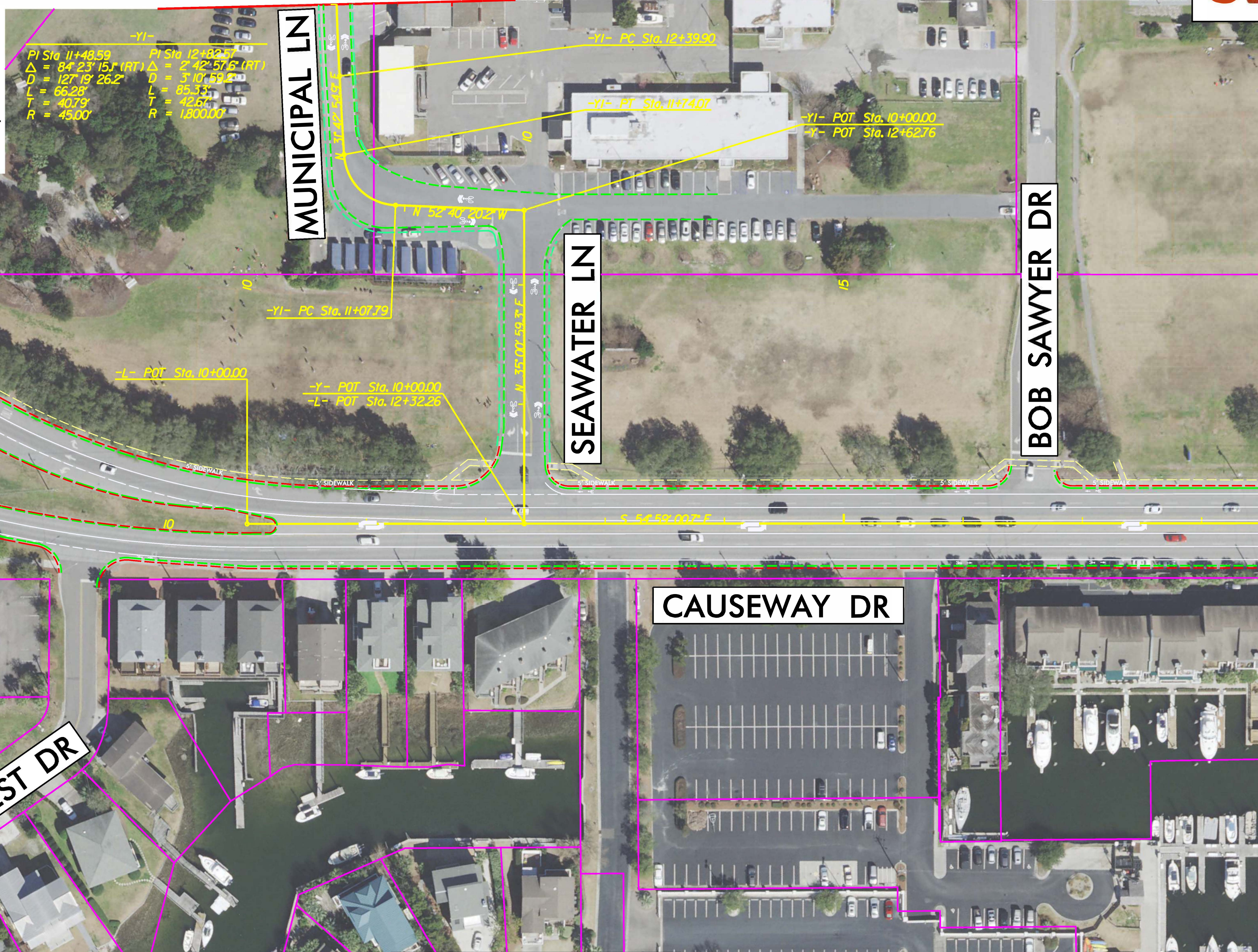
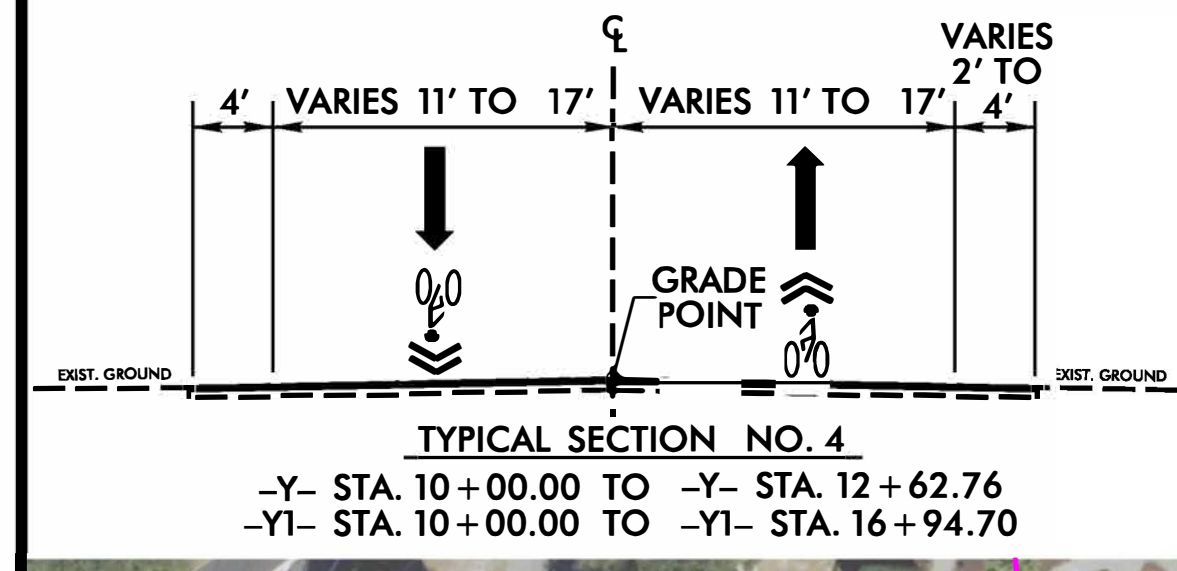




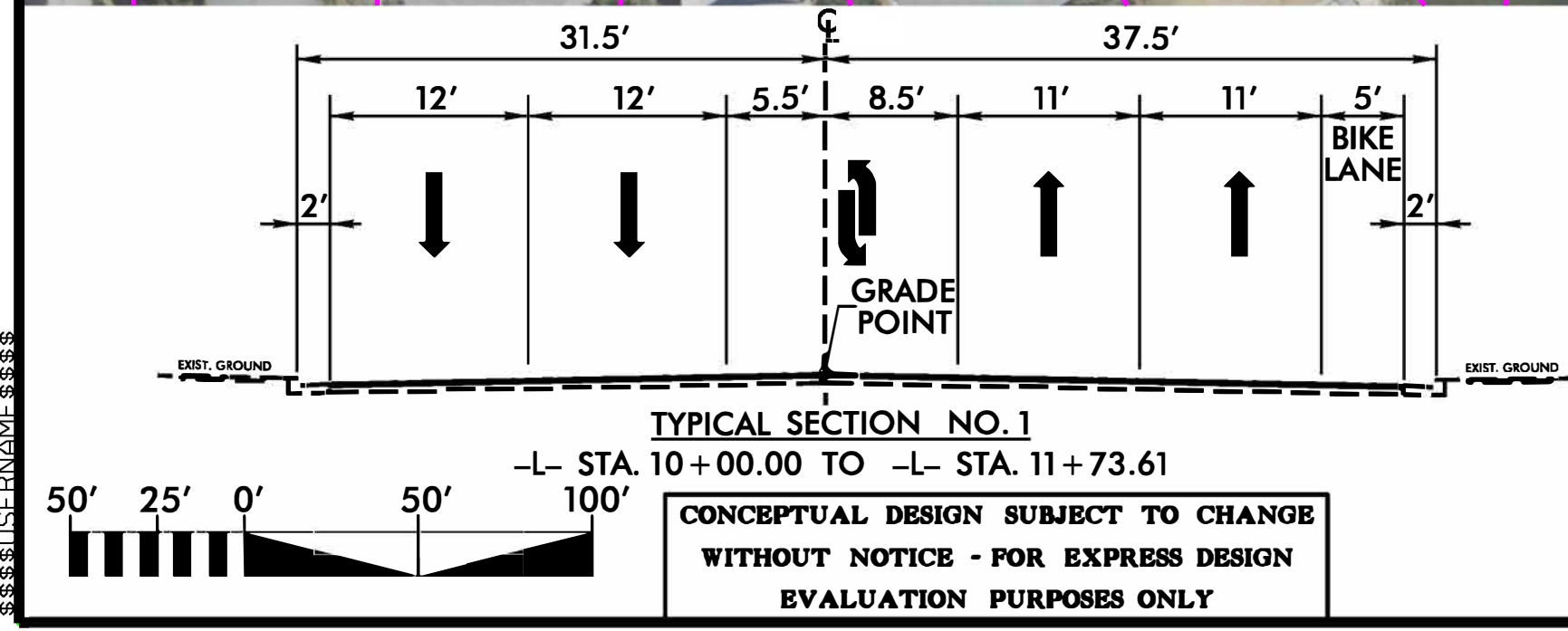


LEGEND	
	EXISTING PROPERTY LINES (GIS)
	EXISTING LIFESTYLE
	PROPOSED LIFESTYLE

**MATCHLINE -Y1- STA. 13+00  
SEE SHEET 4**



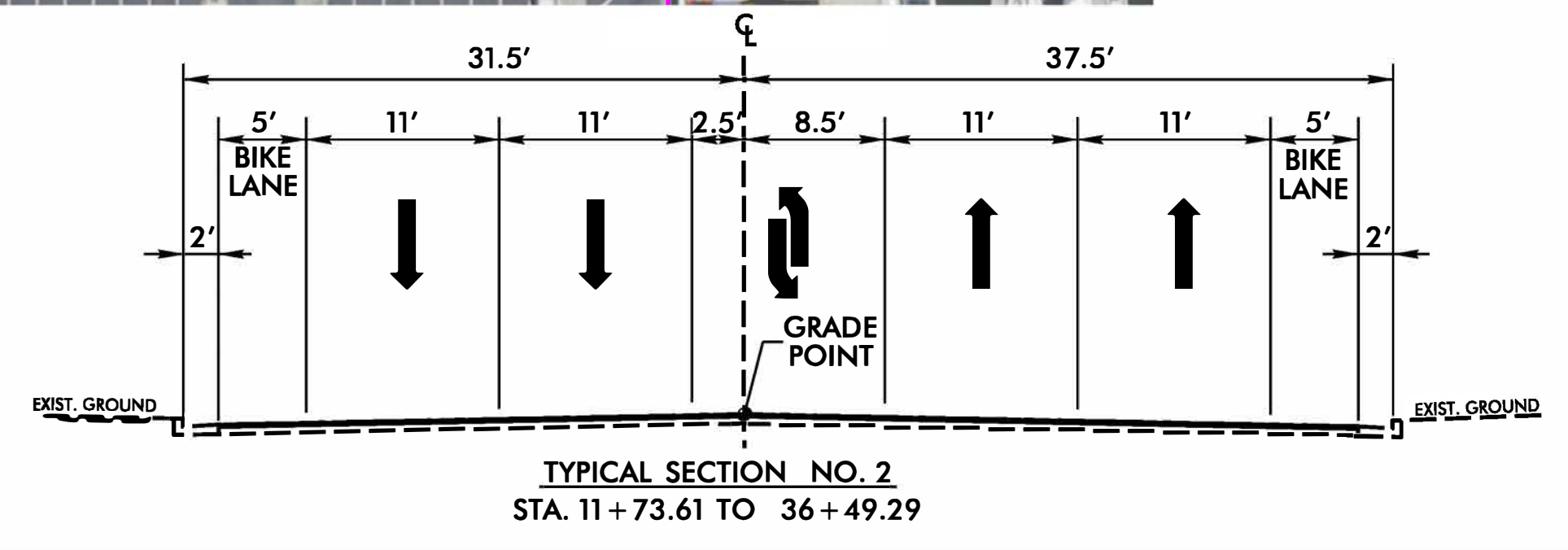
**MATCHLINE -L- STA. 18+50  
SEE SHEET 2**



FUNCTIONAL CLASSIFICATION: MINOR ARTERIAL  
POSTED SPEED: 35 MPH

**CAUSEWAY DRIVE BIKE & PEDESTRIAN IMPROVEMENTS  
WRIGHTSVILLE BEACH, NC**

NEW HANOVER COUNTY  
FEBRUARY 2021  
MAP 1 OF 4



6/2/2019  
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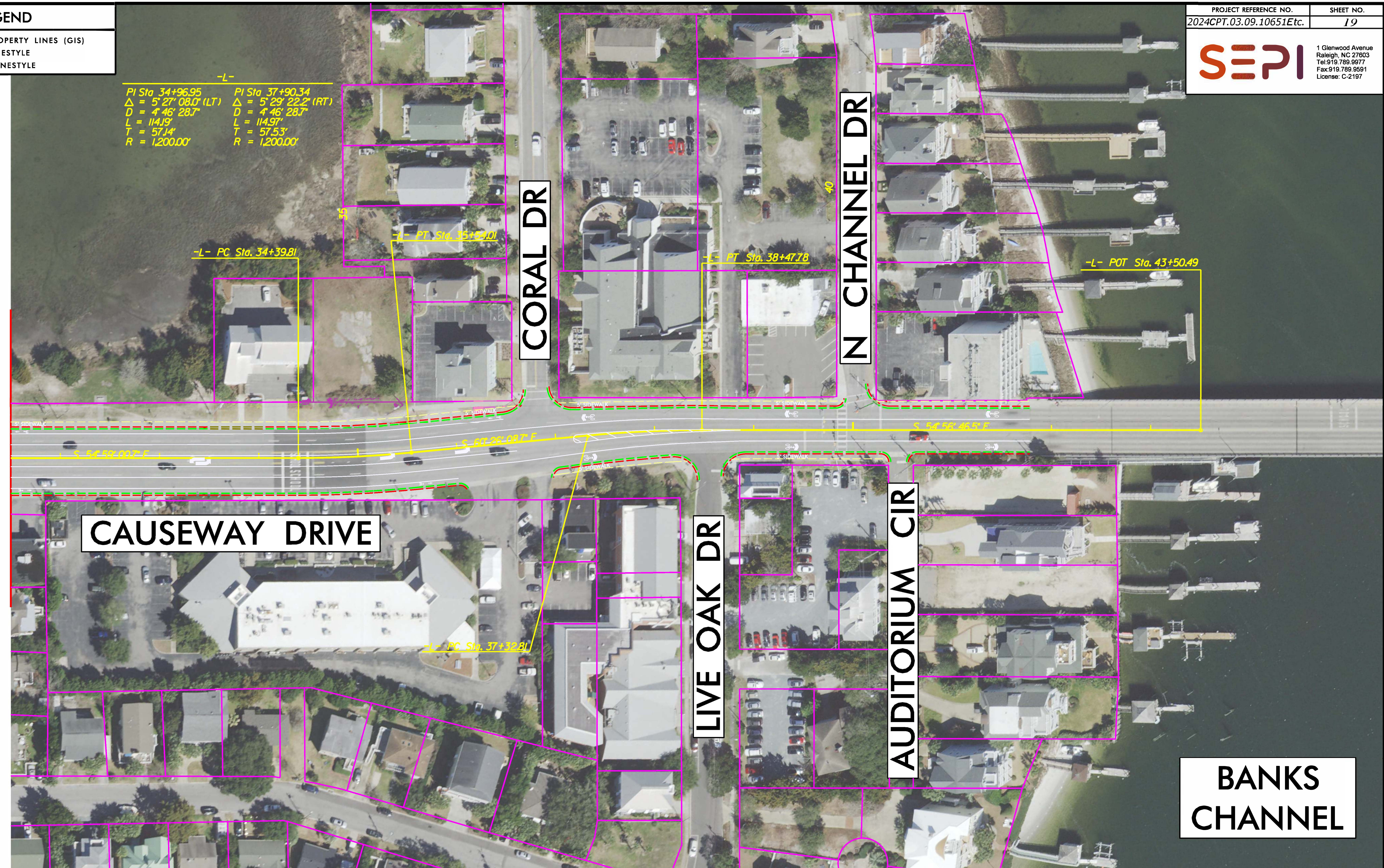






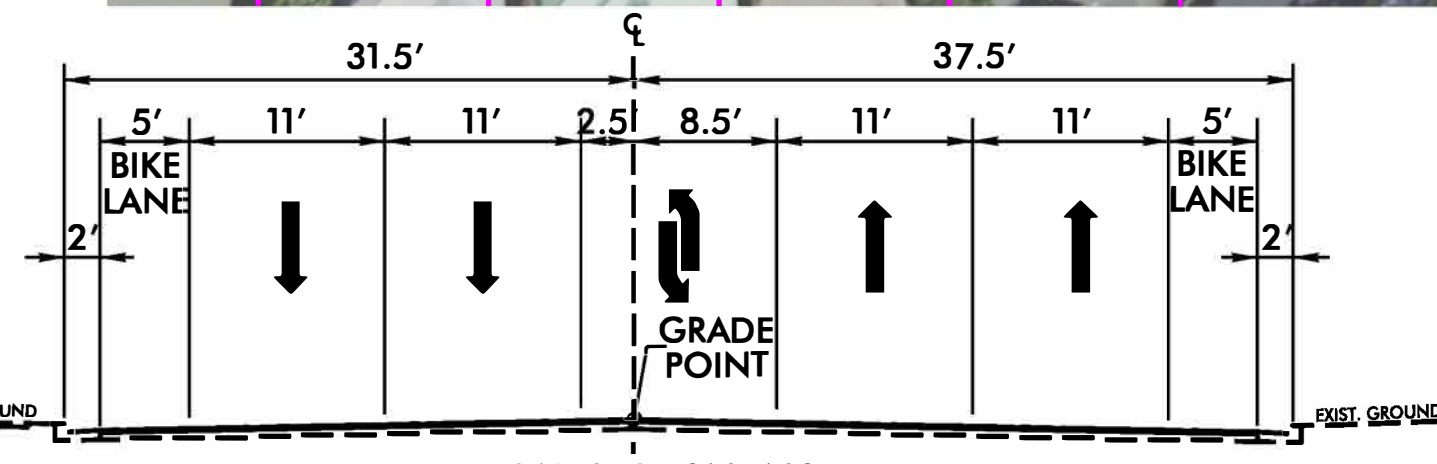
LEGEND	
	EXISTING PROPERTY LINES (GIS)
	EXISTING LIFESTYLE
	PROPOSED LIFESTYLE

MATCHLINE -L- STA. 31+50  
SEE SHEET 2



-L-

PI Sta 34+96.95 Δ = 5° 27' 08.0" (LT) D = 4' 46" 28.7" L = 114.19' T = 57.14' R = 1,200.00'	PI Sta 37+90.34 Δ = 5° 29' 22.2" (RT) D = 4' 46" 28.7" L = 114.97' T = 57.53' R = 1,200.00'
--	--

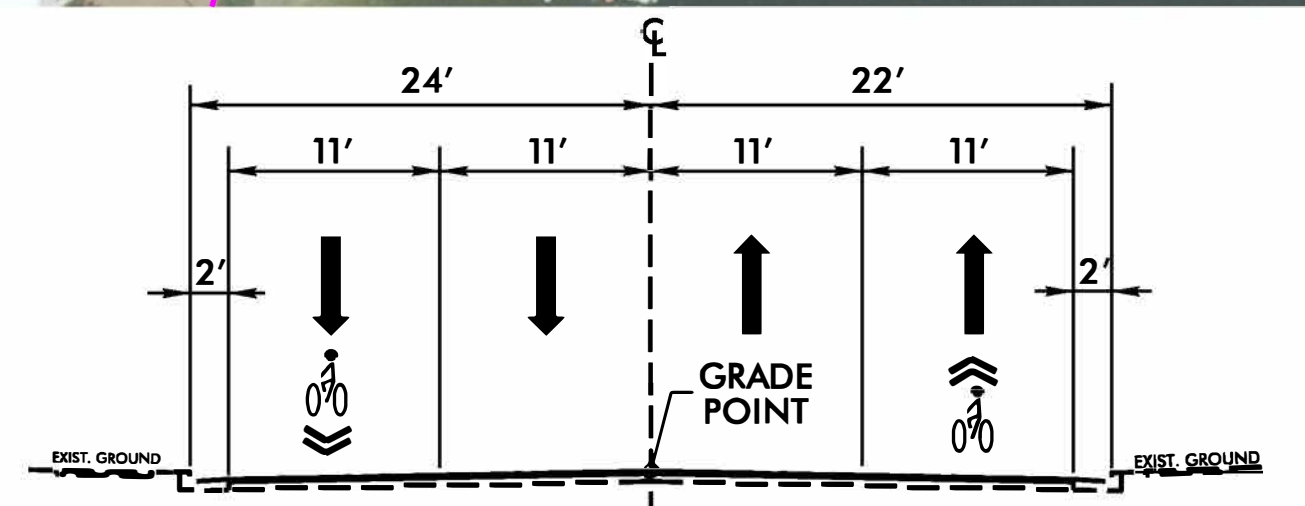


**TYPICAL SECTION NO. 2**  
STA. 11+73.61 TO 36+49.29  
CONCEPTUAL DESIGN SUBJECT TO CHANGE  
WITHOUT NOTICE - FOR EXPRESS DESIGN  
EVALUATION PURPOSES ONLY

FUNCTIONAL CLASSIFICATION: MINOR ARTERIAL  
POSTED SPEED: 35 MPH

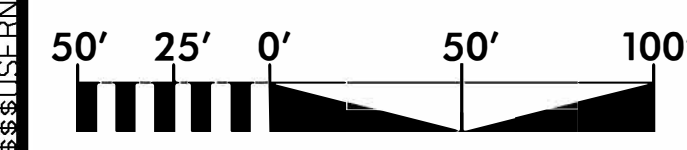
**CAUSEWAY DRIVE BIKE & PEDESTRIAN IMPROVEMENTS**  
WRIGHTSVILLE BEACH, NC

NEW HANOVER COUNTY  
FEBRUARY 2021  
MAP 3 OF 4



**TYPICAL SECTION NO. 3**  
-L- STA. 36+49.29 TO -L- STA. 41+78.04

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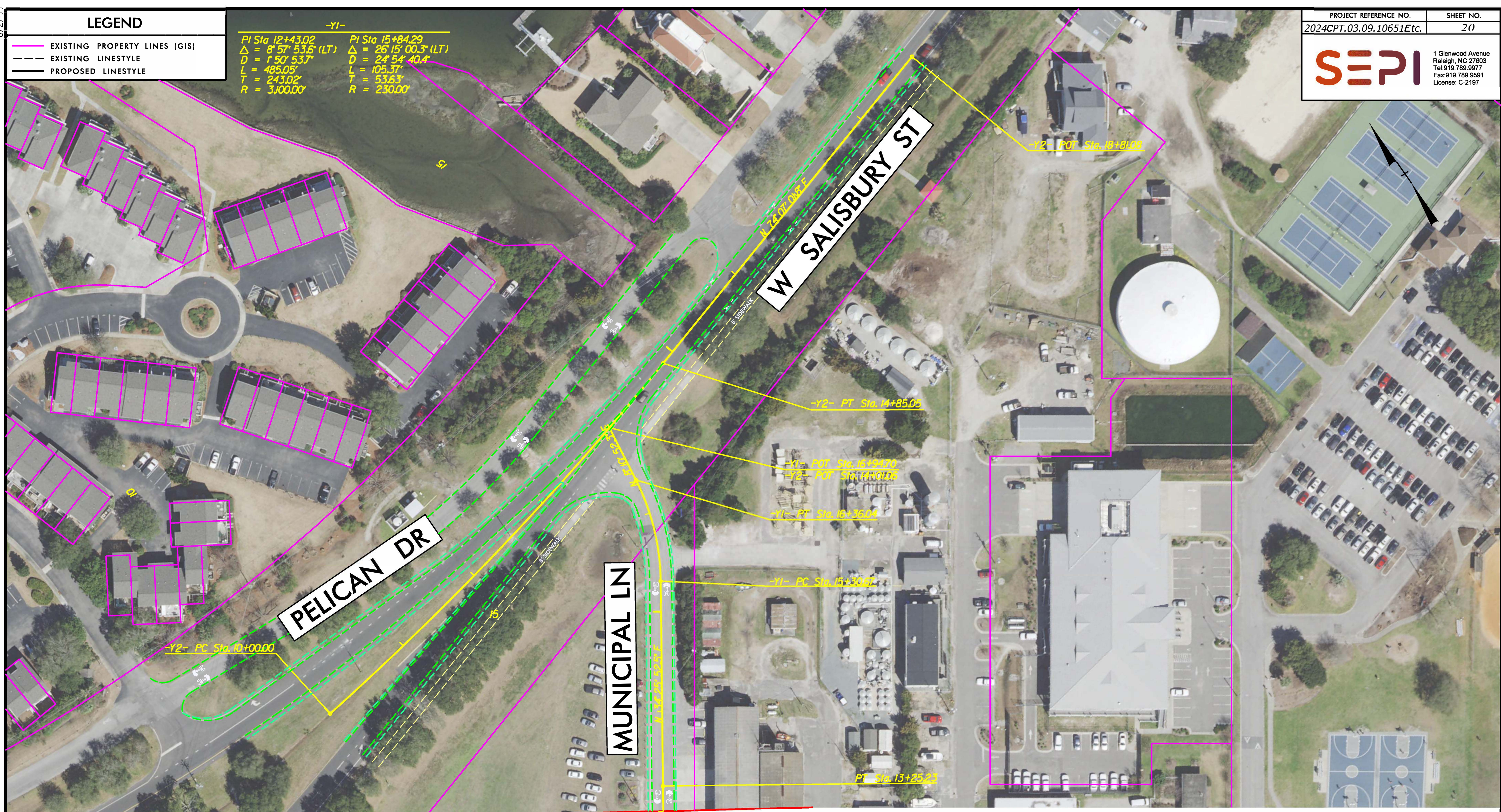


**LEGEND**

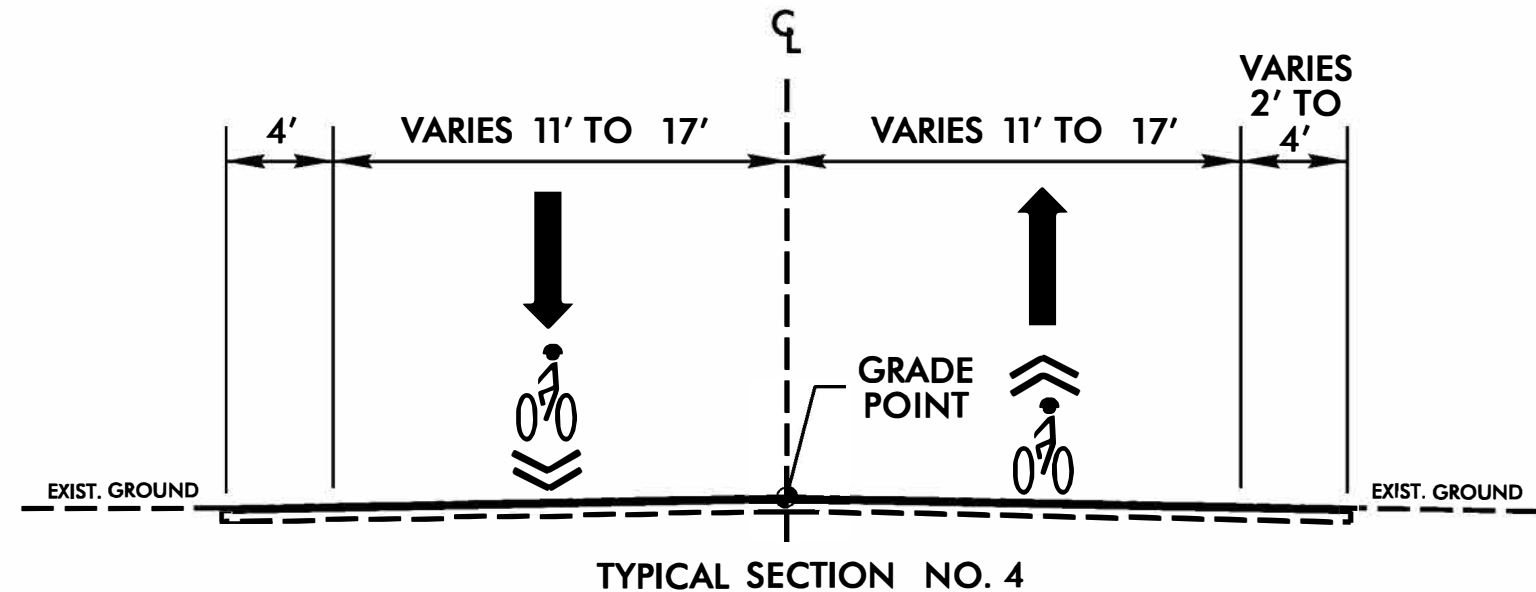
- EXISTING PROPERTY LINES (GIS)
- EXISTING LIFESTYLE
- PROPOSED LIFESTYLE

**-Y1-**

PI Sta 12+43.02	PI Sta 15+84.29
$\Delta = 8^{\circ} 57' 53.6" (LT)$	$\Delta = 26^{\circ} 15' 00.3" (LT)$
$D = 1^{\circ} 50' 53.7"$	$D = 24^{\circ} 54' 40.4"$
$L = 485.05'$	$L = 105.37'$
$T = 243.02'$	$T = 53.63'$
$R = 3,100.00'$	$R = 230.00'$



**MATCHLINE -Y1- STA. 13+00**  
**SEE SHEET 1**



-Y- STA. 10+00.00 TO -Y- STA. 12+62.76  
-Y1- STA. 10+00.00 TO -Y1- STA. 16+94.70



CONCEPTUAL DESIGN SUBJECT TO CHANGE  
WITHOUT NOTICE - FOR EXPRESS DESIGN  
EVALUATION PURPOSES ONLY

FUNCTIONAL CLASSIFICATION: MINOR ARTERIAL  
POSTED SPEED: 35 MPH

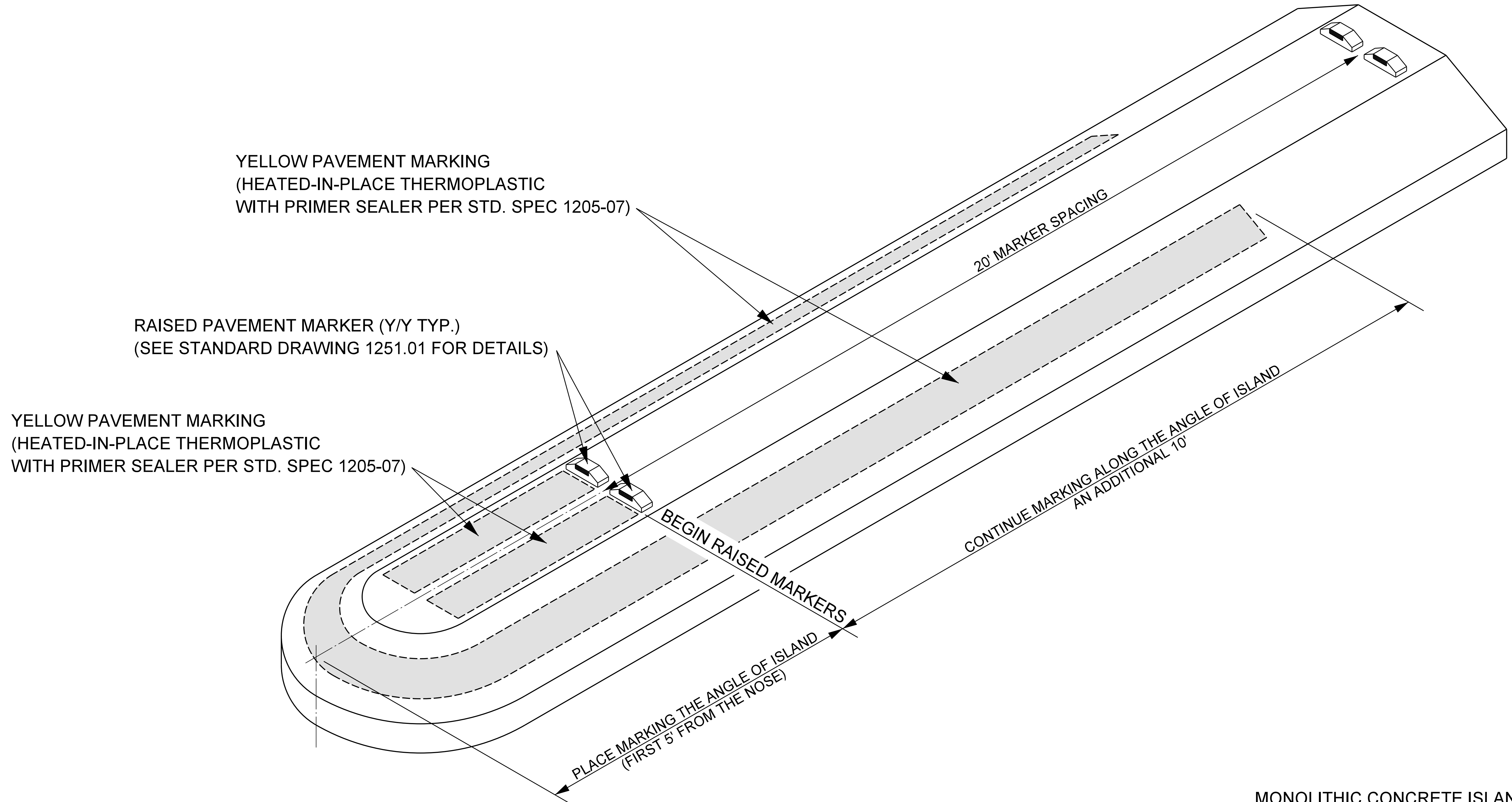
**CAUSEWAY DRIVE BIKE & PEDESTRIAN IMPROVEMENTS**  
**WRIGHTSVILLE BEACH, NC**

NEW HANOVER COUNTY  
FEBRUARY 2021  
MAP 4 OF 4

6/2/19 2024CPT.03.09.10651Etc. 20



# CONCRETE ISLAND PAVEMENT MARKING & MARKER DETAIL



7/19/2023 R:\WZTC Programs\_Details\_Manuals\Pavement Marking Plans - AdditionalInfo\Concrete Island Pavement Marking and Marker Detail.dgn 11:26:16 AM

(DRAWING NOT TO SCALE)

**MONOLITHIC CONCRETE ISLAND**  
 (SEE STANDARD DRAWINGS 852.01, 852.02, & 852.06 FOR DETAILS.)



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

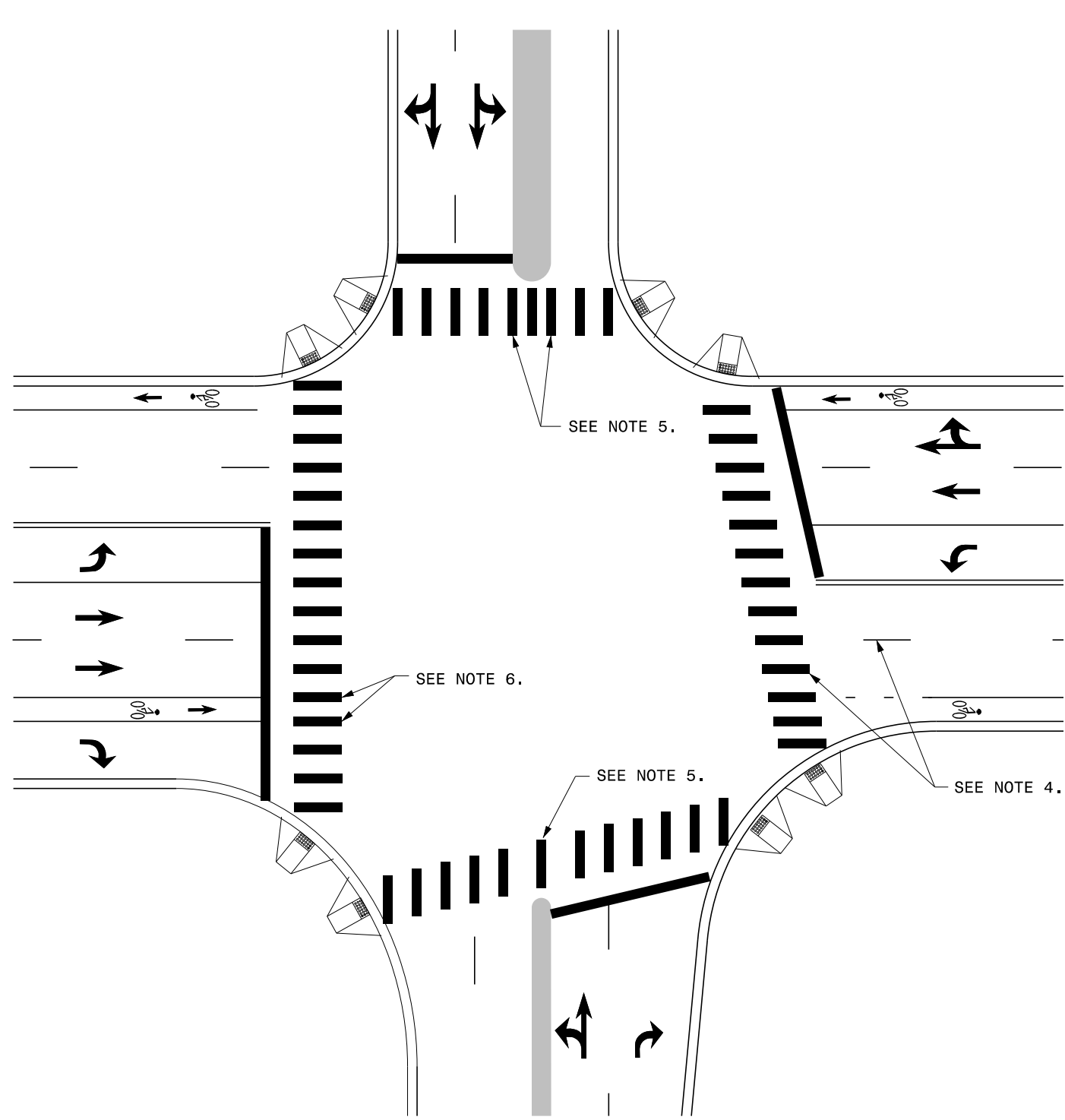
2-19

ENGLISH TYPICAL DRAWING FOR  
**PAVEMENT MARKINGS**  
HI-VISIBILITY CROSSWALKS  
NO-TRACK MARKING GUIDANCE

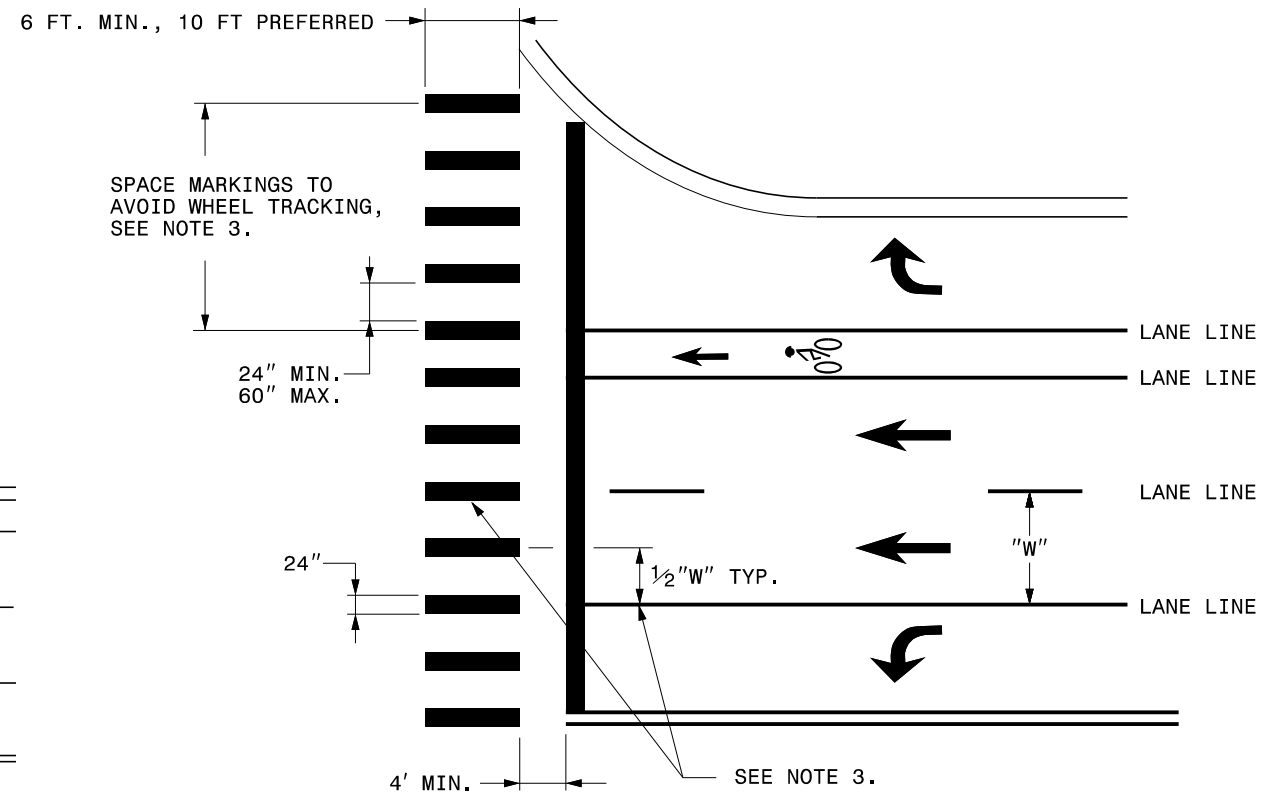
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

2-19

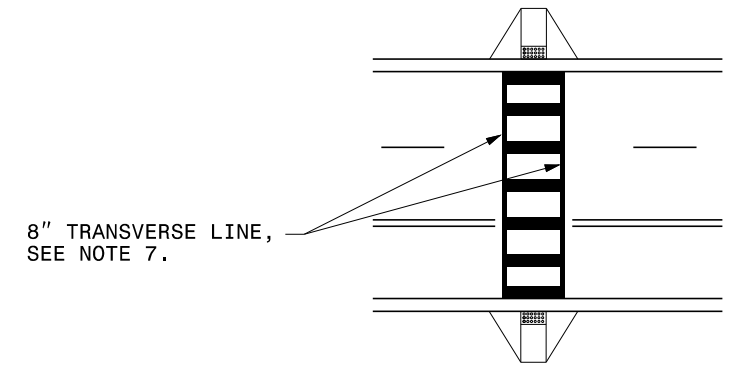
ENGLISH TYPICAL DRAWING FOR  
**PAVEMENT MARKINGS**  
HI-VISIBILITY CROSSWALKS  
NO-TRACK MARKING GUIDANCE



CROSSWALK INTERSECTION DETAIL



CROSSWALK MARKING DETAIL



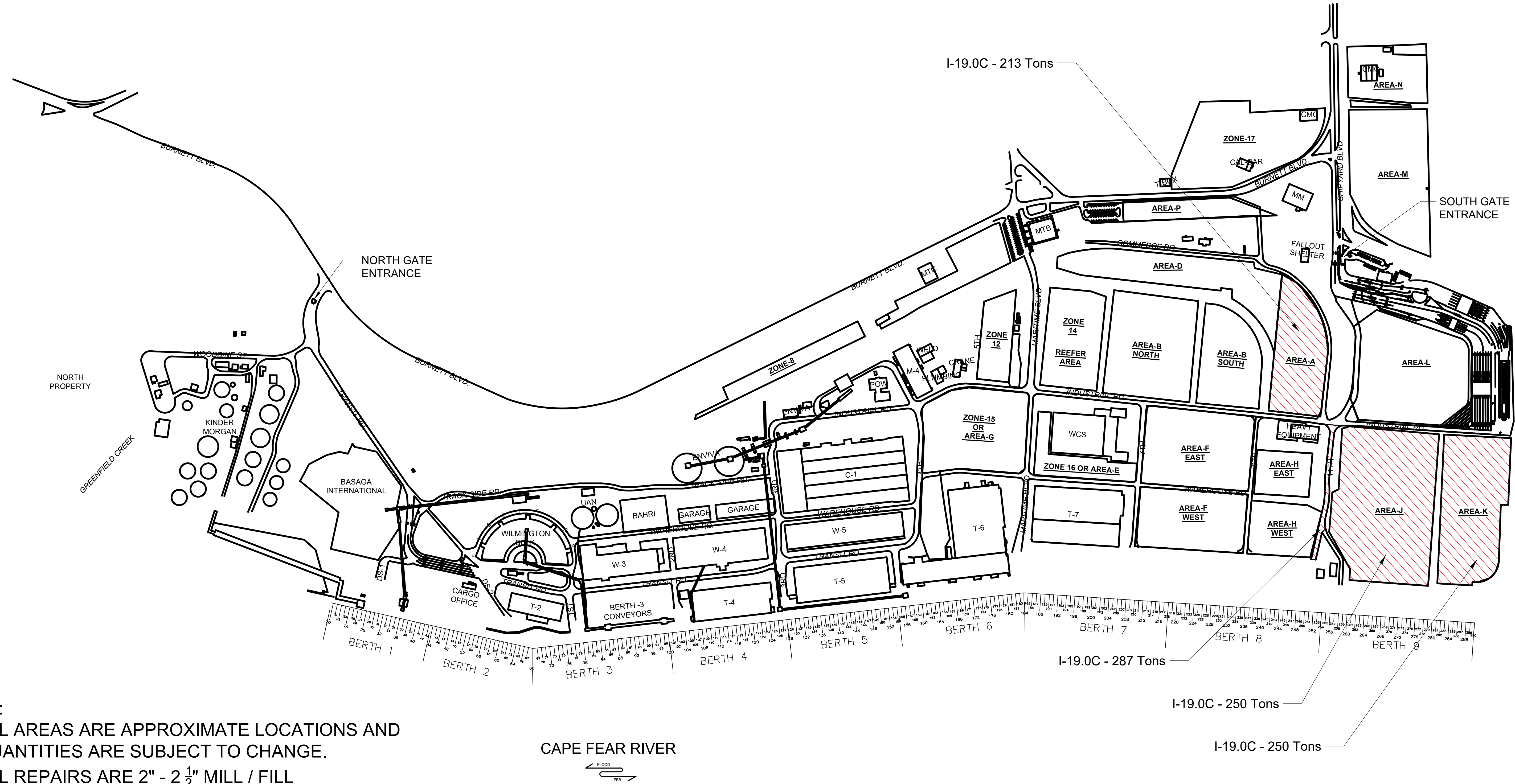
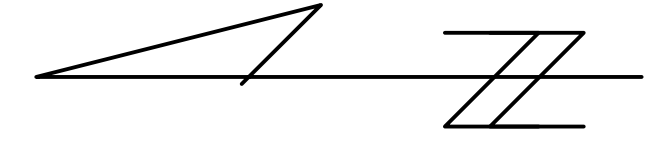
MID-BLOCK CROSSWALK DETAIL

GENERAL NOTES:

- 1- THE GUIDANCE IN THIS DETAIL IS TO BE USED WHEN NO-TRACK SPACING OF HI-VISIBILITY MARKINGS IS REQUESTED.
- 2- USE THE GUIDANCE SHOWN ON THE ABOVE DETAILS IN CONJUNCTION WITH PAVEMENT MARKING GUIDANCE SHOWN ON ROADWAY STANDARD DRAWINGS 1205.01 AND 1205.07.
- 3- PLACE MARKINGS TO AVOID WHEELPATH OF VEHICLES. MARKINGS TYPICALLY WILL BE LOCATED CENTERED AT THE LANE LINES AND EDGE LINES WITH ONE ADDITIONAL MARKING CENTERED IN THE MIDDLE OF THE LANE. AT WIDE LANE WIDTHS DUE TO TAPERS AND LARGE RADII, LOCATE MARKINGS AT BEST SPACING TO AVOID WHEEL TRACKING. THE SPACE BETWEEN MARKINGS SHALL NOT BE LESS THAN 24 INCHES OR GREATER THAN 60 INCHES.

- 4- WHERE THE CROSSWALK IS SKEWED TO THE LANE LINES, THE MARKINGS SHOULD BE PARALLEL TO THE LANE LINES.
- 5- PLACE MARKINGS ON BOTH EDGES OF THE NOSE OF A MEDIAN. FOR NARROW MEDIANS LESS THAN 4 FEET, A SINGLE MARKING MAY BE USED. FOR WIDE MEDIANS, INSTALL ADDITIONAL MARKINGS IN THE MEDIAN AREA. THE SPACE BETWEEN THE MARKINGS SHALL NOT TO BE LESS THAN 24 INCHES OR GREATER THAN 60 INCHES.
- 6- LOCATE MARKINGS CENTERED ON BICYCLE LANE LINES. MARKINGS SHALL NOT BE LOCATED IN THE CENTER OF THE BICYCLE PATH.
- 7- INCLUDE 8" TRANSVERSE LINES WITH 24" LONGITUDINAL MARKINGS AT MID-BLOCK CROSSINGS.

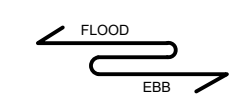
# PROPOSED PAVEMENT PATCHING LOCATIONS - PORT OF WILMINGTON



## NOTES:

- ALL AREAS ARE APPROXIMATE LOCATIONS AND QUANTITIES ARE SUBJECT TO CHANGE.
- ALL REPAIRS ARE 2" - 2 1/2" MILL / FILL
- ASSUME 1,000 TONS I-19.0C TOTAL.
- FULL ROAD CLOSURES ARE NOT ALLOWED WITHOUT COORDINATION WITH NCSPA OPERATIONS.
- ALL WORK WILL OCCUR FROM HOURS OF 6PM TO 6AM (MONDAY - SUNDAY)

CAPE FEAR RIVER



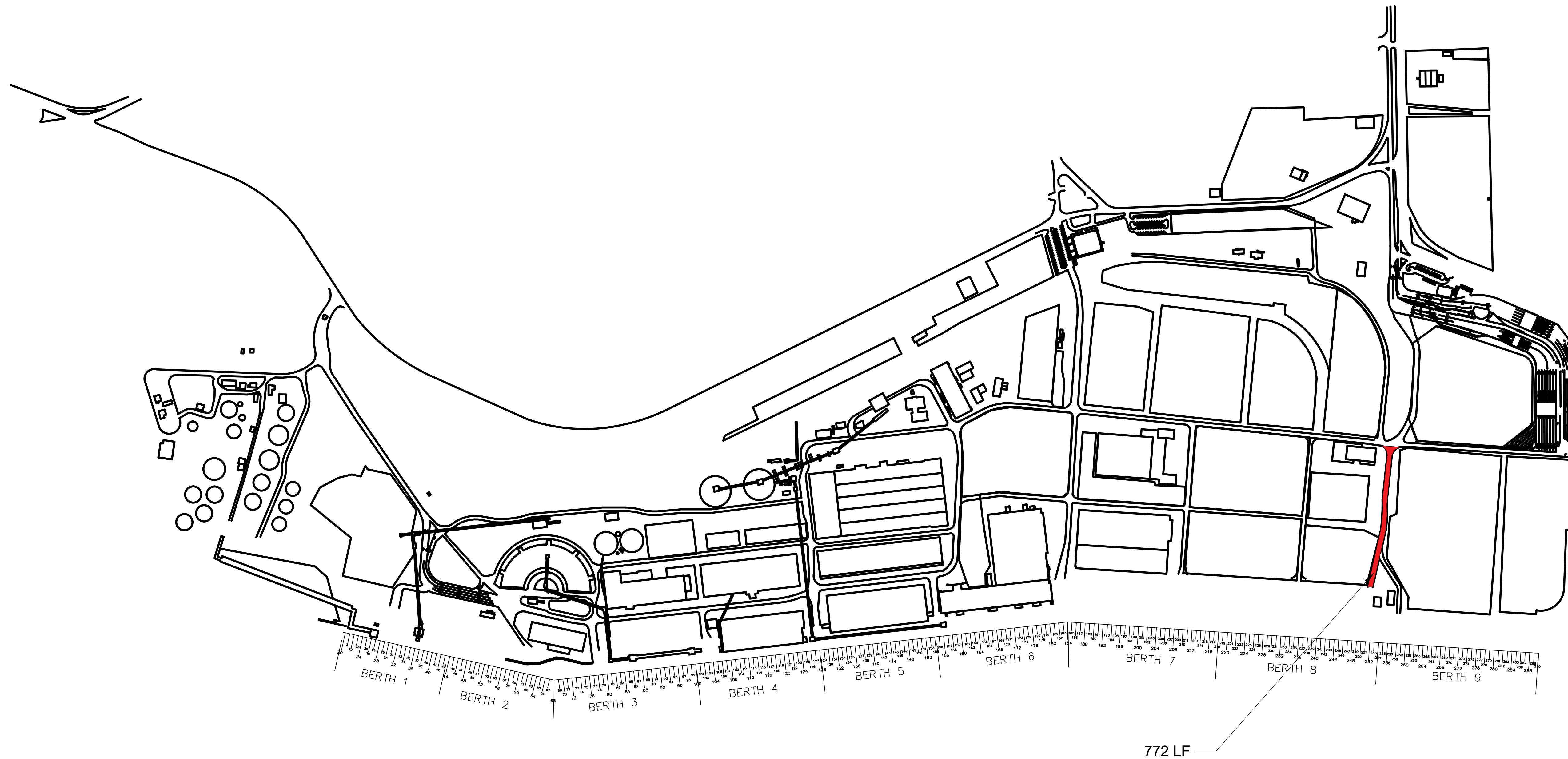
The North Carolina State Ports Authority does not and cannot guarantee the accuracy of this drawing(s). Use of the information and data contained within this drawing(s) is at your sole risk. If you rely on the information on this drawing you are responsible for ensuring by independent verification its accuracy, currency or completeness.

ISSUED BY: APP BY:	ISSUED BY: NCSPA
DATE:	10/02/2023
DESCRIPTION:	
ISSUED FOR BID:	
REV:	A
NORTH CAROLINA STATE PORTS AUTHORITY DEPARTMENT OF ENGINEERING and MAINTENANCE PO BOX 9002 WILMINGTON, NC 28402 MARK A. BLAKE, P.E., V.P. of ENGINEERING	
DESIGNED BY:	NAME
DRAWN BY:	NAME
CHECKED BY:	NAME
PROJ. MAN:	Bobby Sweet
NORTH CAROLINA STATE PORTS AUTHORITY PORT OF WILMINGTON BASE MAP PAVEMENT PATCHING LOCATIONS Port of Wilmington	
SHEET # 7 OF 7 SCALE: AS SHOWN Print Size 24 x 36	
DOT	
PAGE 1	

N:\Engineering\Department Files\Personnel\Bobby Sweet\DOT Mill Patching 2024\DOT Mill Patching 2024.dwg



# PROPOSED STRIPING LOCATIONS - PORT OF WILMINGTON



**NOTES:**

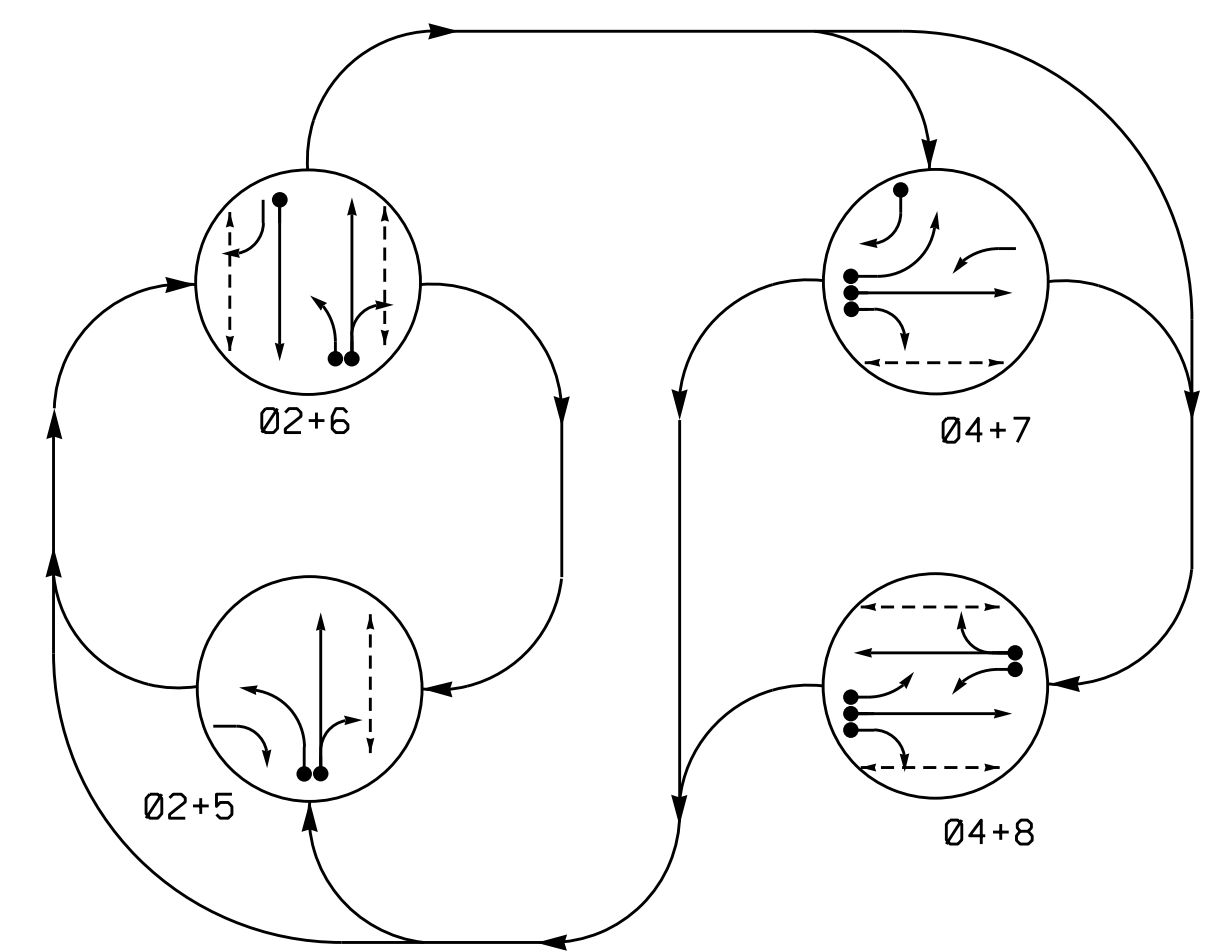
1. 3,088 LF OF STRIPING (PLUS OR MINUS 20 LF)
2. INCLUDE DOUBLE YELLOW & (2) SINGLE WHITE LINES
3. INCLUDE STOP BAR AT INTERSECTION OF INDUSTRIAL RD
4. ONE COAT OF PAINT

The North Carolina State Ports Authority does not and cannot guarantee the accuracy of this drawing(s). Use of the information and data contained within this drawing(s) is at your sole risk. If you rely on the information on this drawing you are responsible for ensuring by independent verification its accuracy, currency or completeness.

NORTH CAROLINA STATE PORTS AUTHORITY DEPARTMENT OF ENGINEERING and MAINTENANCE PO BOX 9002 WILMINGTON, NC 28402 MARK A. BLAKE, P.E., V.P. of ENGINEERING	ISSUED FOR BID A	DATE 10/02/2023	ISSUED BY NCSPA
	DESCRIPTION	PROJECT MANAGER Bobby Sweet	CHECKED BY NAME
NORTH CAROLINA STATE PORTS AUTHORITY PORT OF WILMINGTON BASE MAP PAVEMENT STRIPING LOCATIONS Port of Wilmington	DRAWN BY NAME	PROJECT MANAGER Bobby Sweet	CHECKED BY NAME
SHEET # 7 OF 7 SCALE: AS SHOWN Print Size 24 x 36	DOT	PAGE 2	PROJECT MANAGER Bobby Sweet



**PHASING DIAGRAM**



**PHASING DIAGRAM DETECTION LEGEND**

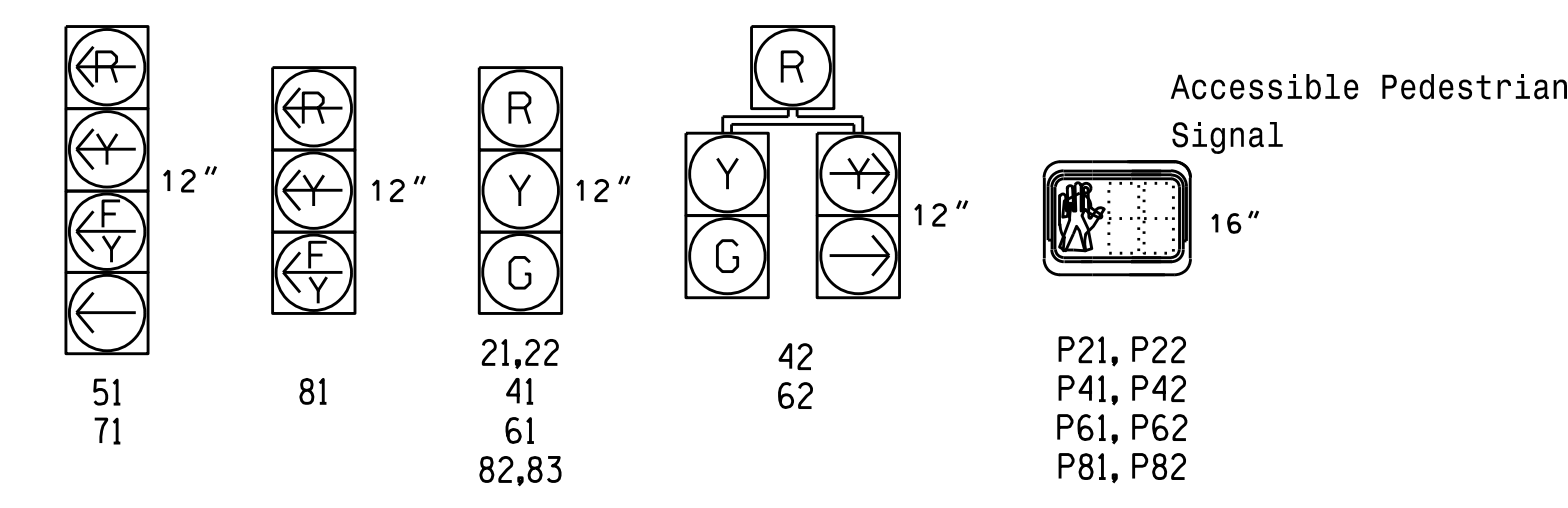
- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- ⇄ PEDESTRIAN MOVEMENT

**TABLE OF OPERATION**

SIGNAL FACE	PHASE				
	02+5	02+6	04+7	04+8	FL
21, 22	G	G	R	R	Y
41	R	R	G	G	R
42	R	R	G	G	R
51	---	---	---	---	---
61	R	G	R	R	Y
62	R	G	R	R	Y
71	R	R	---	---	---
81	R	R	---	---	---
82, 83	R	R	R	G	R
P21, P22	W	W	DW	DW	DRK
P41, P42	DW	DW	W	W	DRK
P61, P62	DW	W	DW	DW	DRK
P81, P82	DW	DW	DW	W	DRK

**SIGNAL FACE I.D.**

All Heads L.E.D.  
Do Not Install Backplates



**ACCESSIBLE PEDESTRIAN SIGNAL OPERATION**

SIGNAL FACE	VOICE	INTERVAL	SPEECH MESSAGE
P21	X	Walk	(Rapid Ticks)
P21	X	Flashing Don't Walk / Don't Walk	-
P22	X	Walk	(Rapid Ticks)
P22	X	Flashing Don't Walk / Don't Walk	-
P41	X	Walk	(Rapid Ticks)
P41	X	Flashing Don't Walk / Don't Walk	-
P42	X	Walk	(Rapid Ticks)
P42	X	Flashing Don't Walk / Don't Walk	-
P61	X	Walk	(Rapid Ticks)
P61	X	Flashing Don't Walk / Don't Walk	-
P62	X	Walk	(Rapid Ticks)
P62	X	Flashing Don't Walk / Don't Walk	-
P81	X	Walk	(Rapid Ticks)
P81	X	Flashing Don't Walk / Don't Walk	-
P82	X	Walk	(Rapid Ticks)
P82	X	Flashing Don't Walk / Don't Walk	-

**OASIS 2070L LOOP & DETECTOR INSTALLATION CHART**

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	DETECTOR PROGRAMMING				SYSTEM LOOP	NEW CARD
					PHASE	CALLING	EXTENSION	FULL TIME DELAY		
2A	6X6	70	4	Y	2	Y	Y	-	-	-
4A	6X40	0	2-4-2	Y	4	Y	Y	-	-	-
4B	6X40	0	2-4-2	Y	4	Y	Y	-	15	-
5A	6X40	0	2-4-2	Y	5	Y	Y	-	15	-
6A	6X6	87	4	-	6	Y	Y	-	-	-
7A	6X40	0	2-4-2	Y	7	Y	Y	-	15	-
7B	6X40	0	2-4-2	-	7	Y	Y	-	15	-
8A	6X40	0	2-4-2	Y	8	Y	Y	-	-	-
8B	6X40	0	2-4-2	Y	8	Y	Y	-	10	-

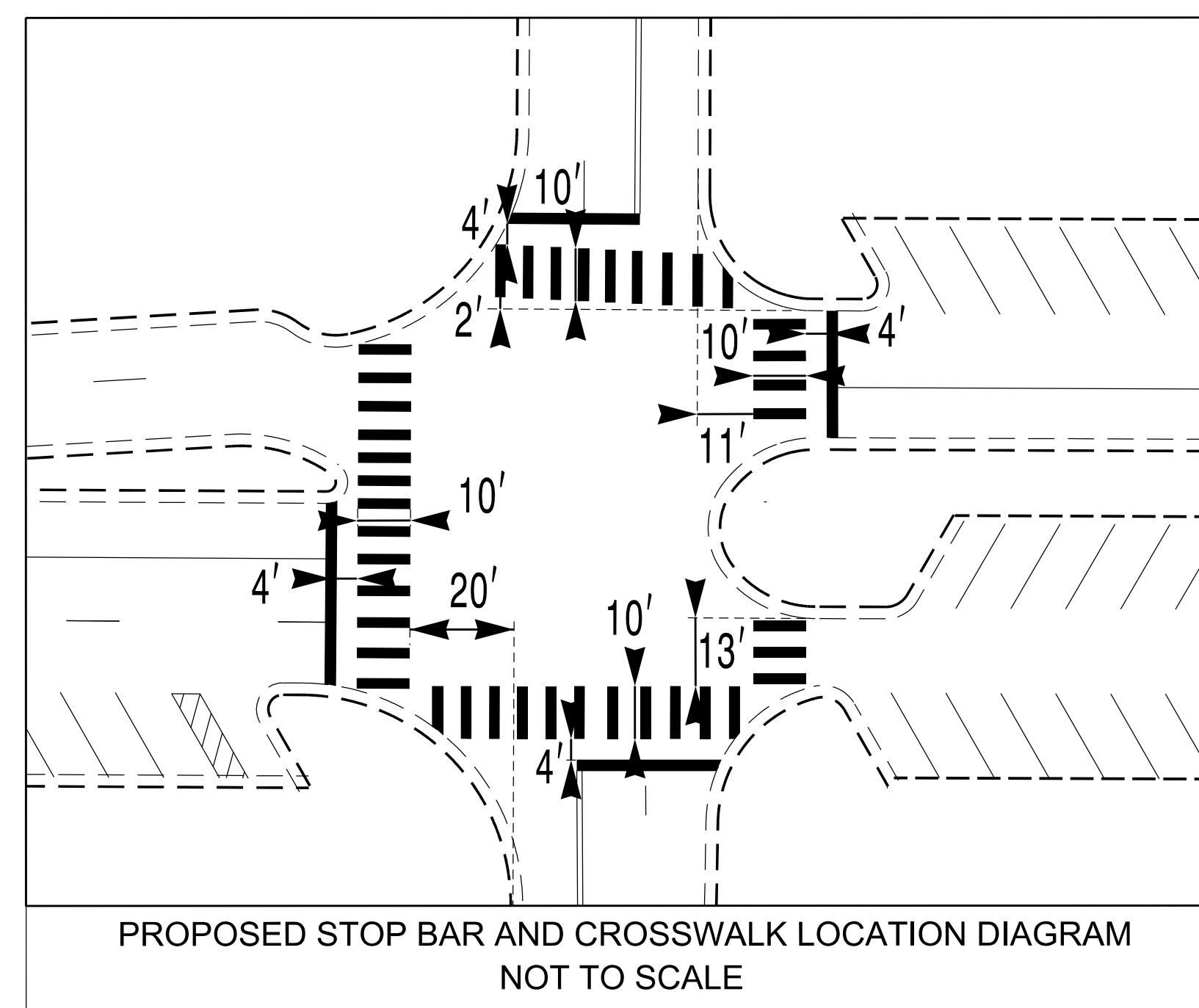
**4 Phase Fully Actuated (Isolated)**

**NOTES**

- Refer to "Roadway Standard Drawings NCDOT" dated January 2018, "Standard Specifications for Roads and Structures" dated January 2018, and all applicable sections of the latest version of the generic Project Special Provisions. The PSP can be accessed at the following website: "http://connect.ncdot.gov/resources/safety/Pages/ITS-Design-Resources.aspx"
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 5 may be lagged.
- Phase 7 may be lagged.
- Reposition existing signal heads numbered 41, 42, 71, and 82.
- Set all detector units to presence mode.
- In the event of loop replacement, refer to the current ITS and Signals Design Manual and submit a Plan of Record to the Signal Design Section.
- Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- Replace all standard push buttons with accessible pedestrian signals.

**LEGEND**

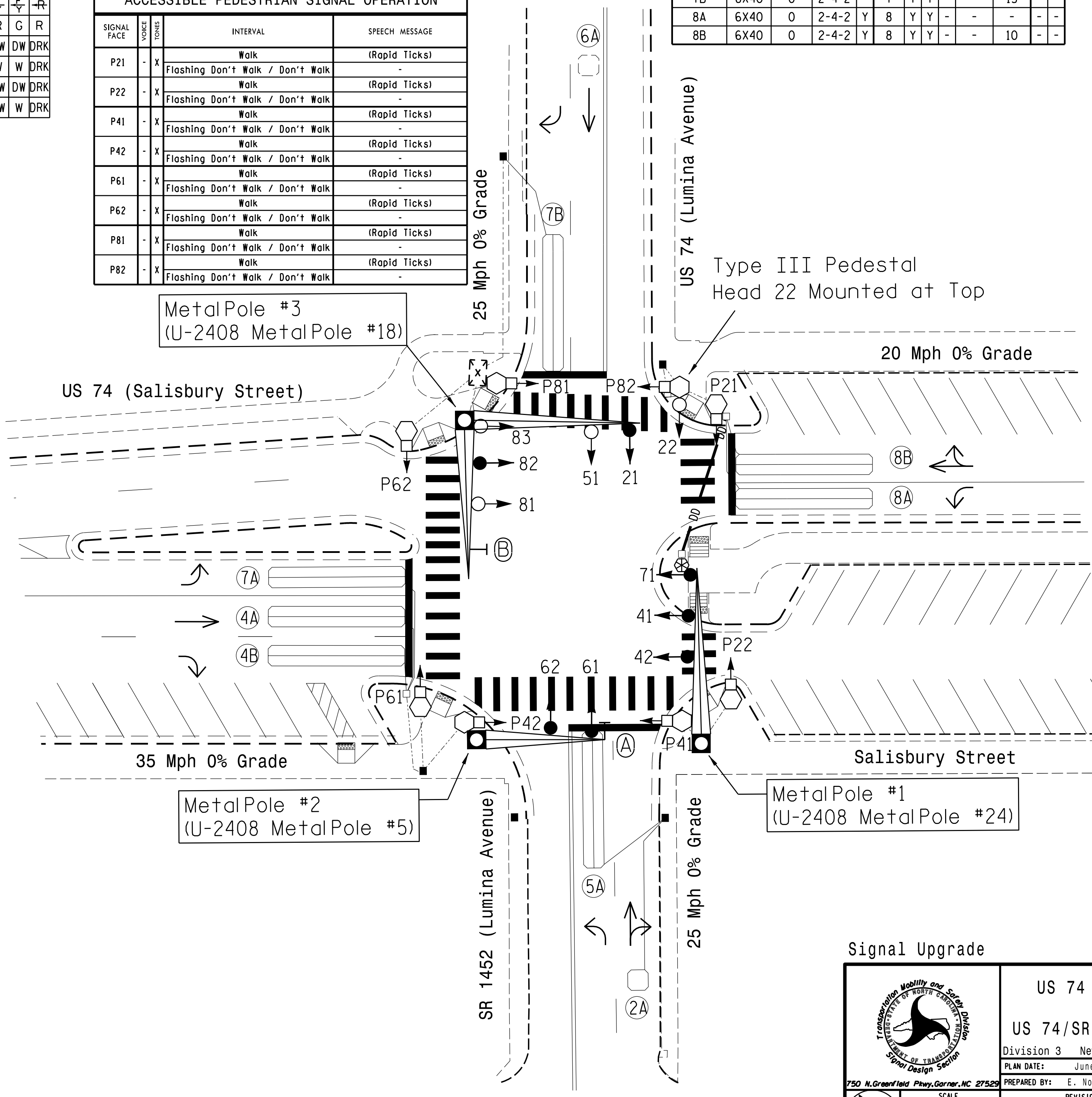
PROPOSED	EXISTING
	N/A
N/A	
N/A	



**OASIS 2070L TIMING CHART**

FEATURE	PHASE					
	2	4	5	6	7	8
Min Green 1 *	10	7	7	10	7	7
Extension 1 *	3.0	2.0	2.0	3.0	2.0	2.0
Max Green 1 *	45	30	15	45	15	30
Yellow Clearance	3.2	3.8	3.0	3.2	3.0	3.8
Red Clearance	2.6	2.9	2.8	2.6	2.6	2.9
Walk 1 *	7	7	-	7	-	7
Don't Walk 1	20	18	-	18	-	13
Walk Advance time	4	4	-	4	-	4
Seconds Per Actuation *	-	-	-	-	-	-
Max Variable Initial *	-	-	-	-	-	-
Time Before Reduction *	-	-	-	-	-	-
Time To Reduce *	-	-	-	-	-	-
Minimum Gap	-	-	-	-	-	-
Recall Mode	MIN RECALL	-	-	MIN RECALL	-	-
Vehicle Call Memory	YELLOW	-	-	YELLOW	-	-
Dual Entry	-	ON	-	-	-	ON
Simultaneous Gap	ON	ON	ON	ON	ON	ON

\* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.



NC Dept of Transportation  
Division of Highways  
Final Drawing Date: 06/05/2020  
DocuSigned by:  
Zachary M. Heltz  
ITS & Signals Unit

Project #: 190235

**DAVENPORT**  
HOME OFFICE:  
119 BROOKSTOWN AVE, SUITE PH1  
WINSTON-SALEM, NC 27101  
336.744.1656 www.davenportworld.com  
NCBELS FIRM LICENSE NO. C-2522

Signal Upgrade

US 74 (Salisbury Street)  
at  
US 74/SR 1452 (Lumina Avenue)

Division 3 New Hanover County Wrightsville Beach

PLAN DATE: June 2020 REVIEWED BY: R. Hinshaw

PREPARED BY: E. Nonemaker REVIEWED BY:

REVISIONS

REVISIONS	INIT.	DATE

DocuSigned by:  
R. Hinshaw  
DATE: 6/5/2020  
SIGNATURE  
DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

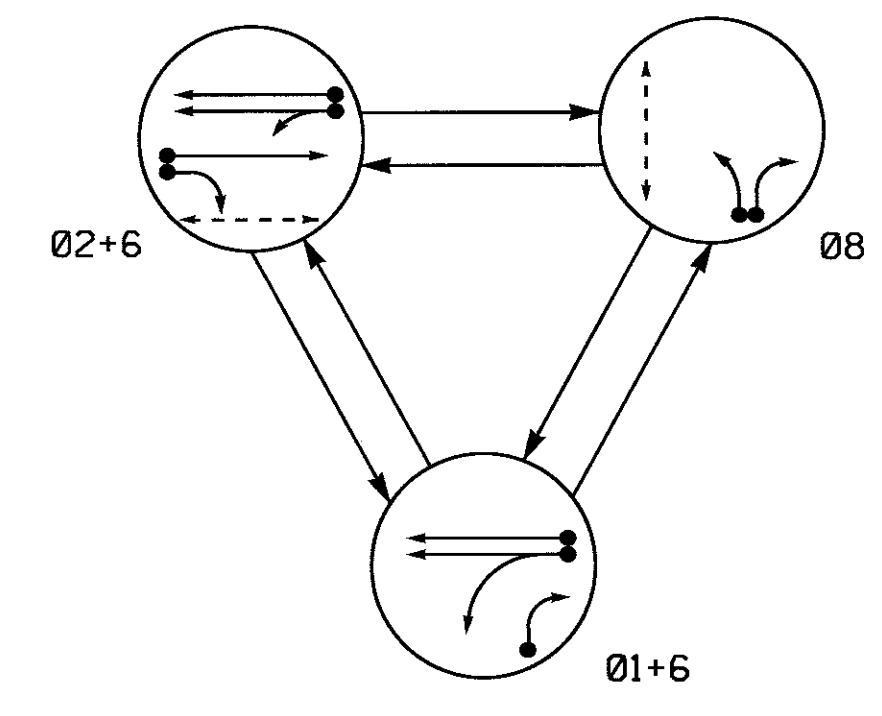
NOT A PROFESSIONAL SEAL 032117

ROYAL HINSHAW  
REGISTERED PROFESSIONAL ENGINEER  
STATE OF NORTH CAROLINA

DocuSigned by:  
SIC. INVENTORY NO. 03-0054



**PHASING DIAGRAM**

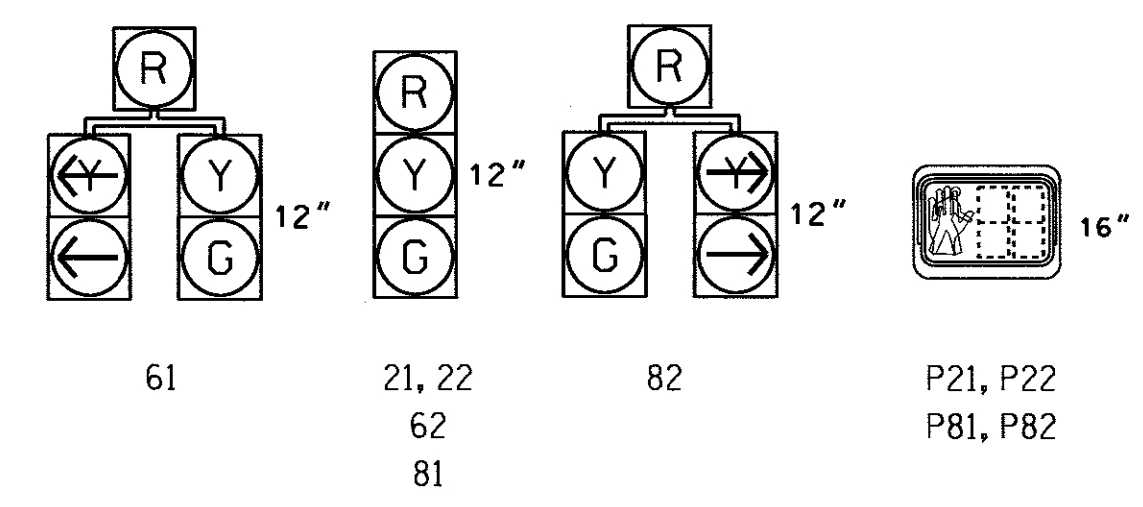


SIGNAL FACE	PHASE			
	01+6	02+6	08	FLASH
21, 22	R	G	R	Y
61	G	R	G	Y
62	G	G	R	Y
81	R	R	G	R
82	R	R	G	R
P21, P22	DW	W	DW	DRK
P81, P82	DW	DW	W	DRK

W - Walk  
 DW - Don't Walk  
 DRK - Dark

**SIGNAL FACE I.D.**

All Heads L.E.D.



**PHASING DIAGRAM DETECTION LEGEND**

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

**OASIS 2070L LOOP & DETECTOR INSTALLATION CHART**

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	DETECTOR PROGRAMMING				STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
					PHASE	CALLING	EXTENSION	FULL TIME DELAY				
1A	6X40	0	2-4-2	Y	1	Y	Y	-	-	15	-	Y
1B	6X60	+5	2-4-2	-	1	Y	Y	-	-	15	-	Y
2A	*	70	*	-	2	Y	Y	-	-	-	-	Y
2B	*	70	*	-	2	Y	Y	-	-	-	-	Y
6A	6X6	70	4	Y	6	Y	Y	-	-	-	-	Y
8A	6X6	+5	2-4-2	-	8	Y	Y	-	-	3	-	Y

\*Use wireless detection.

**3 Phase Fully Actuated Isolated**

**NOTES**

- Refer to "Roadway Standard Drawings NCDOT" dated July 2006 and "Standard Specifications for Roads and Structures" dated July 2006.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Set all detector units to presence mode.
- In the event of loop replacement, refer to the current ITS and Signals Design Manual and submit a Plan of Record to the Signal Design Section.
- Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- Program pedestrian heads to countdown the flashing "Don't Walk" time only.

**LEGEND**

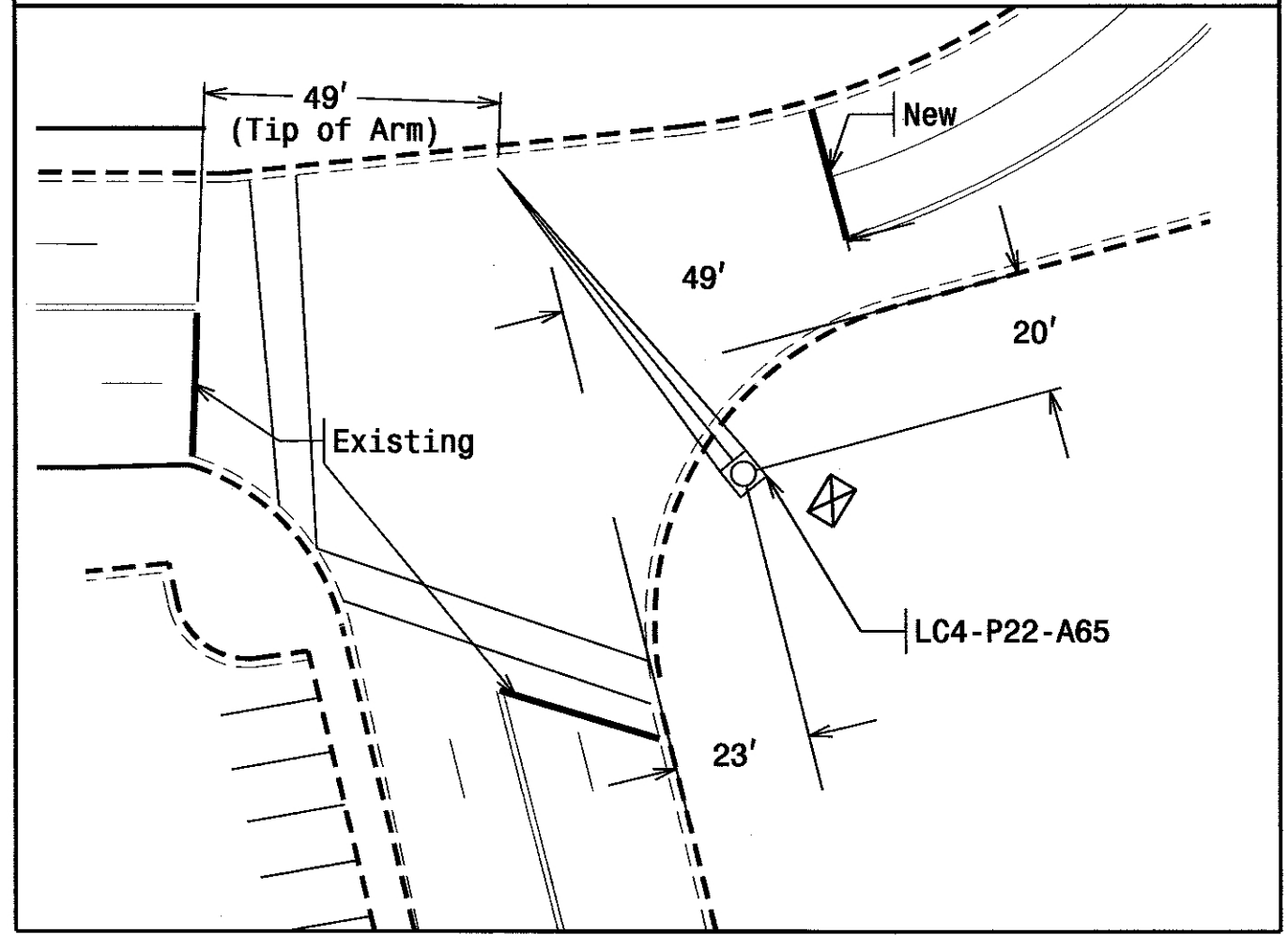
- | PROPOSED   | EXISTING |
|--|----------|
| ○ → Traffic Signal Head                            | ● → N/A  |
| ○ → Modified Signal Head                           | ○ → N/A  |
| ○ → Pedestrian Signal Head With Push Button & Sign | ○ → N/A  |
| ○ → Signal Pole with Guy                           | ○ → N/A  |
| ○ → Signal Pole with Sidewalk Guy                  | ○ → N/A  |
| ○ → Inductive Loop Detector                        | ○ → N/A  |
| ○ → Controller & Cabinet                           | ○ → N/A  |
| ○ → Junction Box                                   | ○ → N/A  |
| ○ → 2-in Underground Conduit                       | ○ → N/A  |
| ○ → Right of Way                                   | ○ → N/A  |
| ○ → Directional Arrow                              | ○ → N/A  |
| ○ → Directional Drill                              | ○ → N/A  |
| ○ → Metal Pole with Mastarm                        | ○ → N/A  |
| ○ → Signal Pedestal                                | ○ → N/A  |
| ○ → Wheelchair Ramp                                | ○ → N/A  |
| ○ → Left Arrow "ONLY" Sign (R3-5L)                 | ○ → N/A  |
| ○ → Right Arrow "ONLY" Sign (R3-5R)                | ○ → N/A  |
| ○ → "STOP" Sign (R1-1)                             | ○ → N/A  |

**OASIS 2070L TIMING CHART**

FEATURE	PHASE			
	1	2	6	8
Min Green 1 *	7	10	10	7
Extension 1 *	2.0	3.0	3.0	1.0
Max Green 1 *	25	35	35	25
Yellow Clearance	3.0	3.8	3.2	3.0
Red Clearance	3.2	1.4	3.0	2.9
Walk 1 *	-	7	-	7
Don't Walk 1	-	14	-	16
Seconds Per Actuation *	-	-	-	-
Max Variable Initial *	-	-	-	-
Time Before Reduction *	-	-	-	-
Time To Reduce *	-	-	-	-
Minimum Gap	-	-	-	-
Recall Mode	-	SOFT RECALL	SOFT RECALL	-
Vehicle Call Memory	-	YELLOW	YELLOW	-
Dual Entry	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON

\* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

**PROPOSED METAL POLE AND STOPBAR LOCATION**



**Signal Upgrade**

	Prepared in the Office of: <b>US 76 (Causeway Drive) / SR 1452 (Lumina Avenue)</b> At <b>US 76 (Waynick Boulevard)</b> Division 03 New Hanover County Wrightsville Beach		SEAL I. O. UMZURIKE PROFESSIONAL ENGINEER STATE OF NORTH CAROLINA LICENSE NO. 29904 DATE: 9/14/11
	PLAN DATE: September 2011 PREPARED BY: I. O. Umzurike SCALE: 1"=30" REVISIONS:	REVIEWED BY: DATE:	

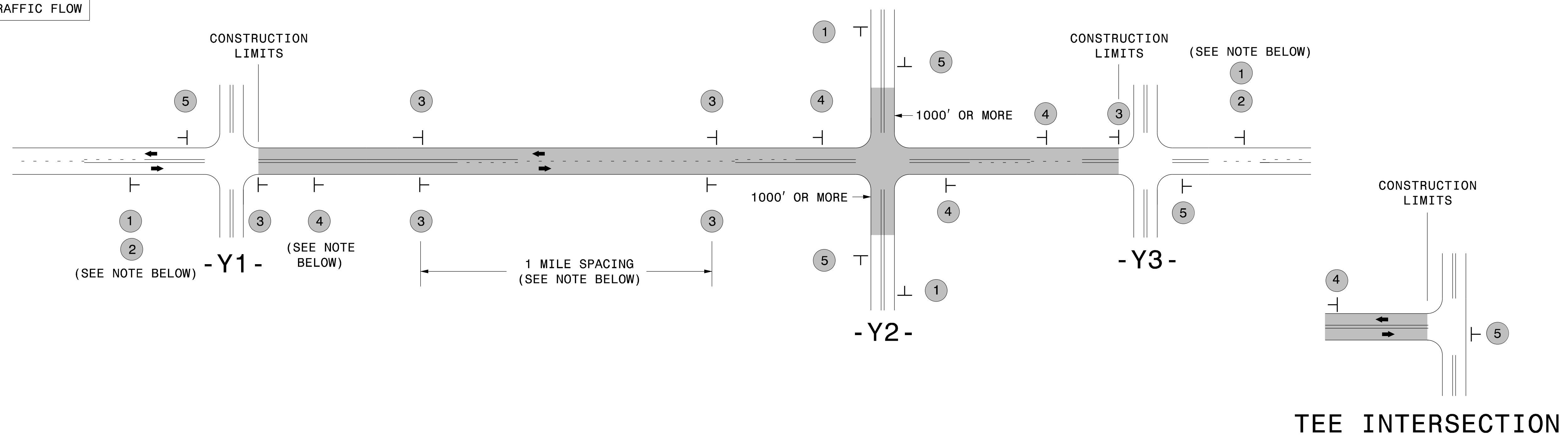
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 I:\03022ur.rte

# SIGNING FOR RESURFACING PROJECTS

**LEGEND**

┆ STATIONARY SIGN

← DIRECTION OF TRAFFIC FLOW



## MAINLINE (-L-) SIGNING

## -Y- LINE SIGNING

<b>SIGNING NOTES AND PLACEMENT PER DIRECTION</b>	1	 <small>W20-1 48" X 48"</small>	PLACE 1000' PRIOR TO BEGINNING OF CONSTRUCTION LIMITS. ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000' ALONG -Y- LINE.	
	2	 <small>W7-3aP 24" X 18"</small>	#2 SIGN ONLY USED WHEN CONSTRUCTION LIMITS ARE 2 OR MORE MILES IN LENGTH. ROUND UP TO NEXT WHOLE NUMBER. (NO FRACTIONAL OR DECIMAL NUMBERS)	
	3	 <small>SP 13107 48" X 48"</small>	- 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	 <small>SP 13106 48" X 48"</small>	- 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	 <small>G20-2 A 48" X 24"</small>	PLACE 500' FOLLOWING THE END OF CONSTRUCTION LIMITS OR AS SHOWN WHEN WORK ENDS AT A 3-WAY TEE INTERSECTION.	

**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.

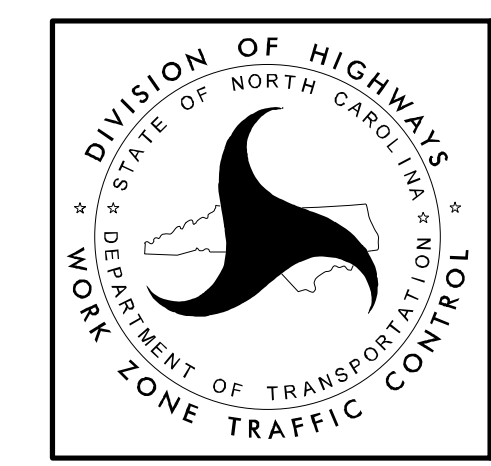
W20-1  
48" X 48"  
 PLACED 500' IN ADVANCE OF FLAGGER.

W20-7 A  
48" X 48"  
 PLACED 250' IN ADVANCE OF FLAGGER.

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.

### MAPS LESS THAN 2 MILES

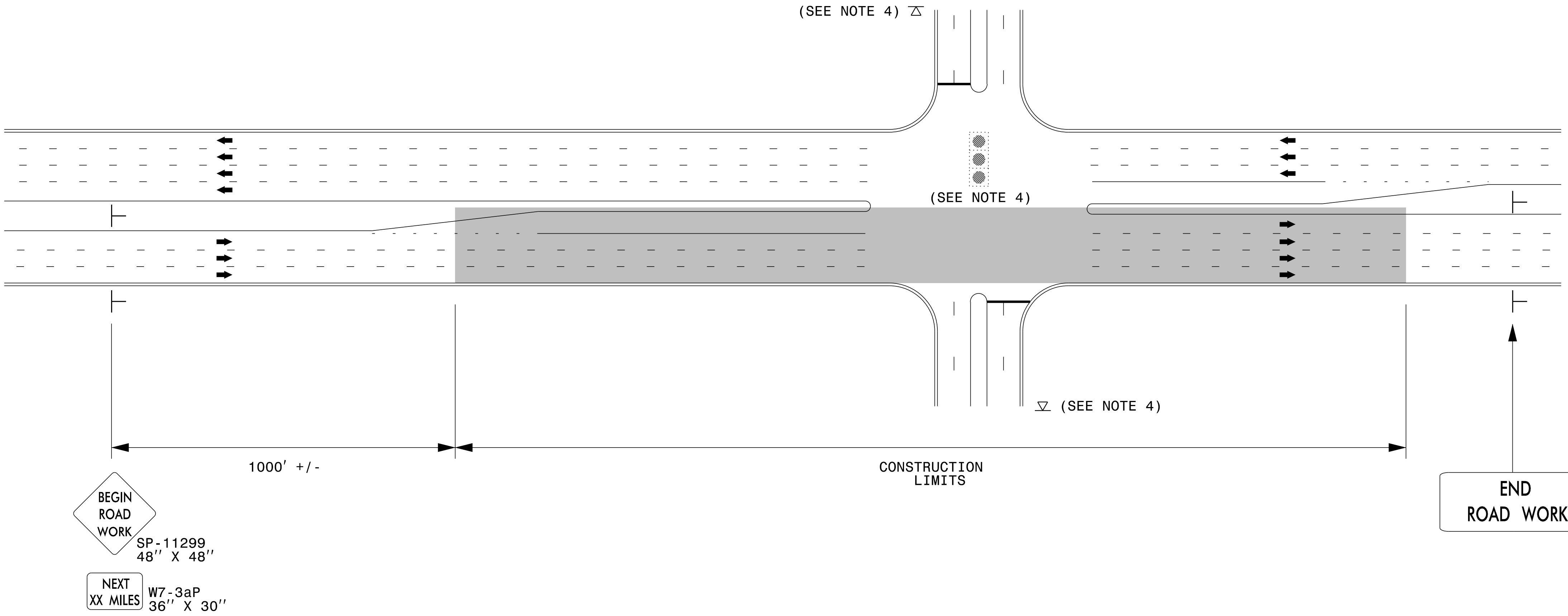
FOR RESURFACING MAPS WITH CONSTRUCTION LIMITS LESS THAN 2 MILES IN LENGTH, NO STATIONARY SIGNS ARE REQUIRED. USE PORTABLE "ROAD UNDER CONSTRUCTION" OR "ROAD WORK AHEAD" SIGNS IN LIEU OF STATIONARY ADVANCE WARNINGS SIGNS.



**ADVANCE WARNING SIGNS FOR RURAL AND SUBURBAN 2-LANE ROADWAY RESURFACING**



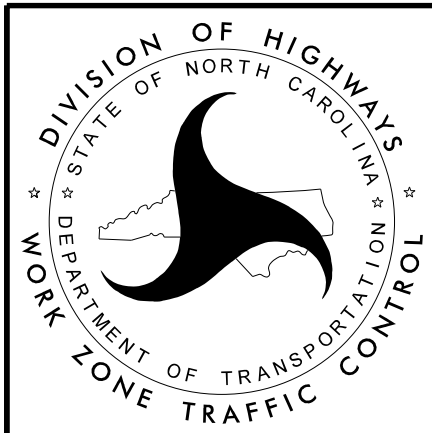
# URBAN / SUBURBAN WORKZONES



**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**