

TIP PROJECT: I-5905

CONTRACT: C204365

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MECKLENBURG COUNTY

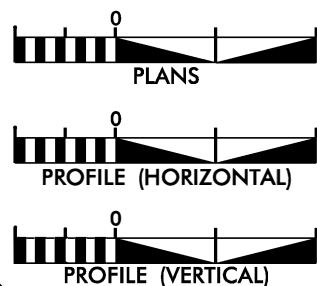
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5905	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45888.3.1	NHPIM-0085(050)	CONST.	

LOCATION: I-85 FROM THE CONCRETE PAVEMENT JOINT SOUTH OF NC 16 BROOKSHIRE BLVD TO CONCRETE PAVEMENT JOINT AT US 29 BY PASS CONNECTOR ROAD MM 35.95 TO MM 42.03

TYPE OF WORK: MILLING AND PAVING WITH HOT MIX ASPHALT
PAVEMENT MARKINGS & SNOWPLOWABLE
PAVEMENT MARKERS, STRUCTURAL REHABILITATION



GRAPHIC SCALES



DESIGN DATA

ADT 2016 = 181,000
ADT =
K = %
D = %
T = % *
V = 60 MPH
* TTST = DUAL

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT 50441.3.1 = 6.08 MILES
TOTAL LENGTH OF STATE PROJECT 50441.3.1 = 6.08 MILES

Prepared in the Office of
DIVISION OF HIGHWAYS
DIVISION 10

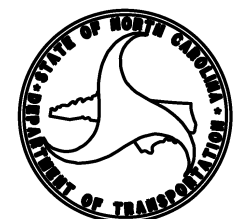
2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
N/A

LETTING DATE:
APRIL 20, 2021

JOHN H. EDMONDS
PROJECT ENGINEER

TRAVIS LOWDER
PROJECT DESIGN ENGINEER



INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
2 THRU 7	PLAN SHEETS
8 THRU 20	TYPICAL AND DETAIL SHEETS
21 THRU 23	SUMMARY OF QUANTITIES
TMP-1 THRU TMP-11	TRANSPORTATION MANAGEMENT PLANS
PMP-1 THRU PMP-2	PAVEMENT MARKING PLANS
EC-1 THRU EC-2	EROSION CONTROL PLANS
SIG-1	SIGNAL PLANS
X-1 THRU X-23	CROSS-SECTIONS (X-3 IS OMITTED)

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES", DATED JANUARY 2018, THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION "ROADWAY STANDARD DRAWINGS", DATED JANUARY 2018, AND THE CURRENT EDITION OF THE "MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES" UNLESS OTHERWISE NOTED ON THE PLANS OR WITHIN THE SPECIFICATIONS OF THE CONTRACT DOCUMENTS

GENERAL NOTES: 2018 SPECIFICATIONS
EFFECTIVE: JANUARY 2018

GRADING AND SURFACING OR RESURFACING AND WIDENING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTERLINE OF THE SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01 OR 560.02.

WHEELCHAIR RAMPS:

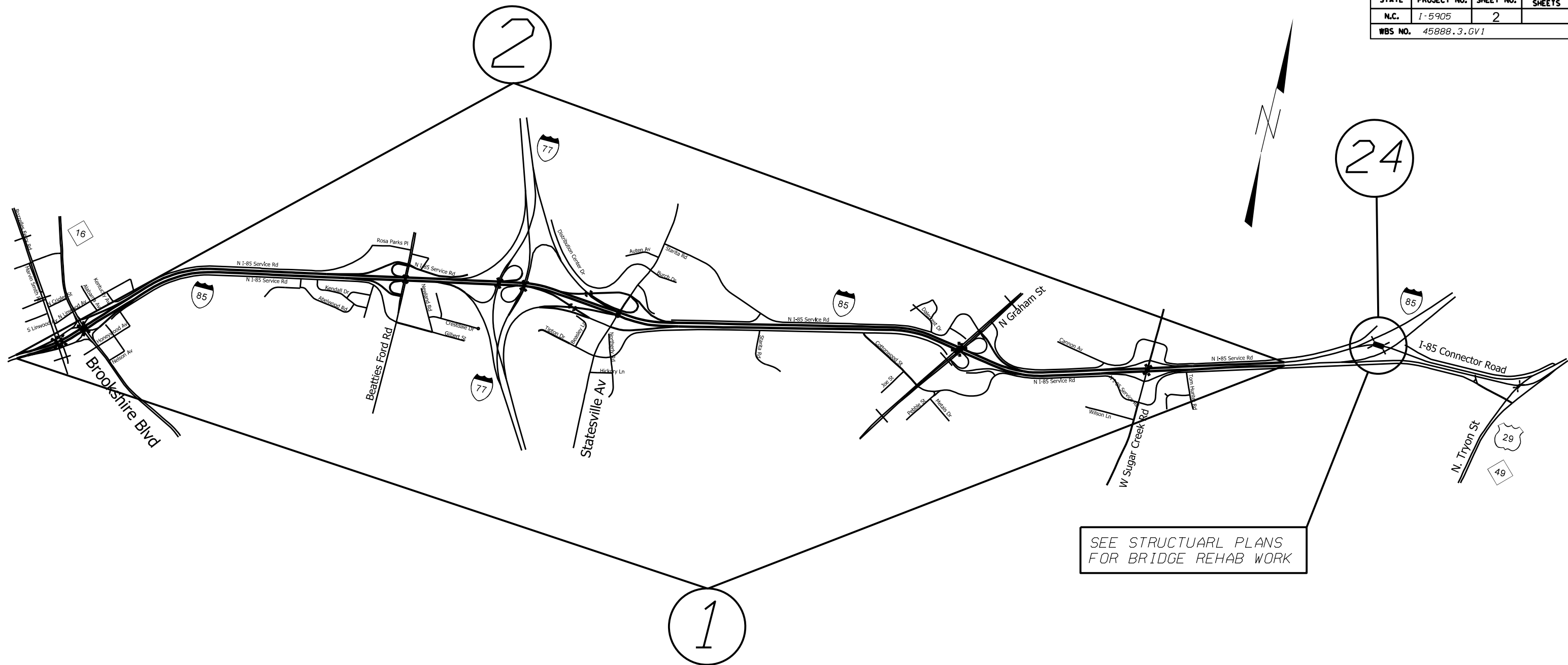
WHEELCHAIR RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS.

2018 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in the "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 considered a part of these plans:

STD. NO.	TITLE
DIVISION 2 - EARTHWORK	
225.01	Guide for Grading Subgrade - Interstate and Freeway
DIVISION 5 - SUBGRADE, BASES, AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
560.02	Method of Shoulder Construction - High Side of Superelevated Curve - Method II
DIVISION 7 - CONCRETE PAVEMENTS AND SHOULDERS	
700.01	Concrete Pavement Joints - Construction and Contraction Joints
700.03	Dowel Assembly
700.04	Concrete Pavement Header Board
DIVISION 8 - INCIDENTALS	
848.01	Concrete Sidewalk

09-MAR-2020 10:07
 S:\DDC\RDY\Mecklenburg\I-5905.Statesville Ave.I-85.off ramp\psh\I-5905.Statesville Ave.I-85.psh1A.dgn
 8/17/99



SEE STRUCTUARL PLANS FOR BRIDGE REHAB WORK

MAPS

DESCRIPTION

1 I-85 NORTH BOUND

FROM CONCRETE PAVEMENT JOINT SOUTH OF NC 16 BROOKSHIRE BLVD TO CONCRETE PAVEMENT JOINT SOUTH OF THE US 29 BY PASS CONNECTOR ROAD

2 I-85 SOUTH BOUND

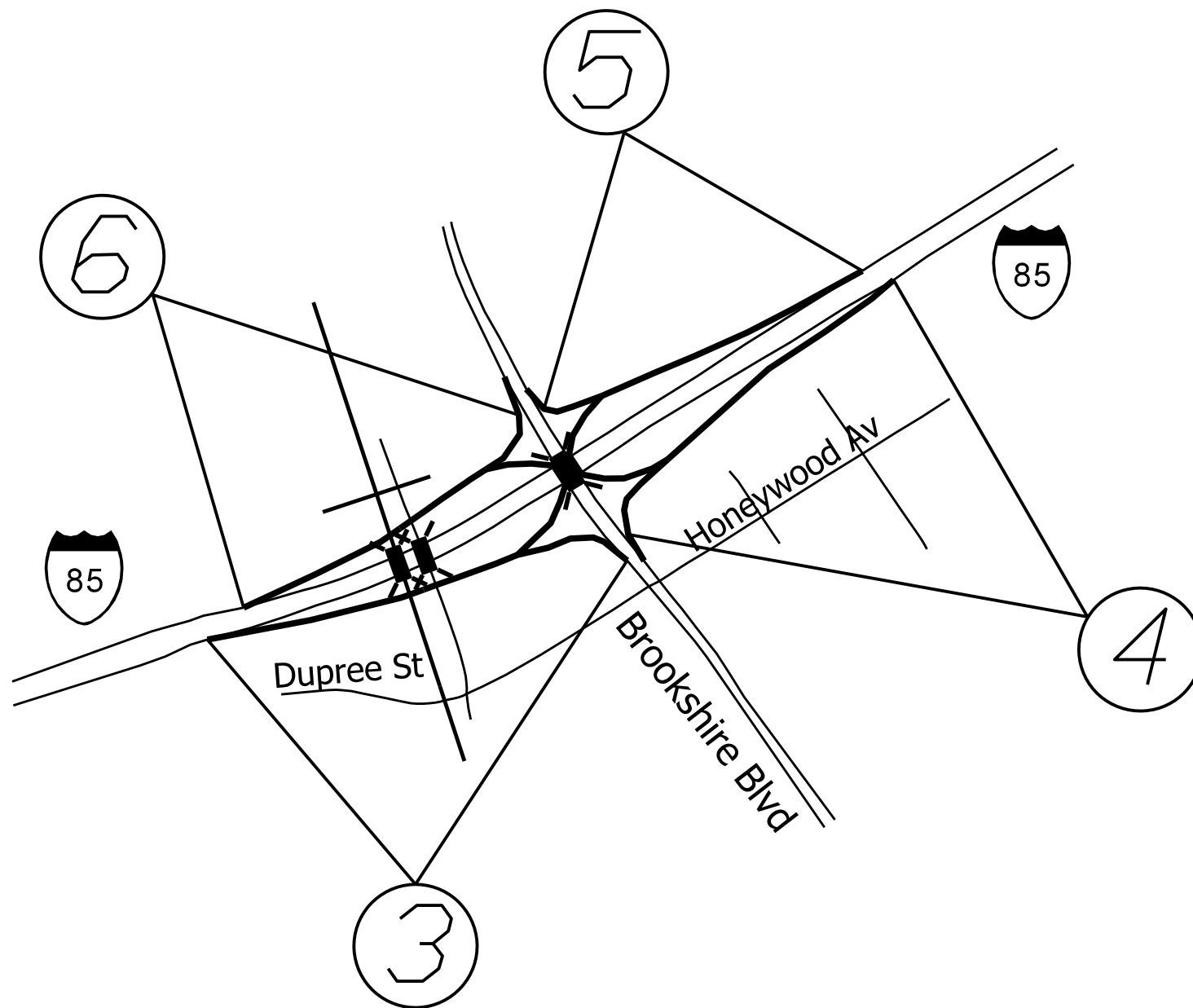
FROM THE CONCRETE JOINT SOUTH THE US 29 BY PASS CONNECTOR TO THE CONCRETE PAVEMENT JOINT SOUTH OF NC 16 BROOKSHIRE BLVD.

24 US 29 FLYOVER BRIDGE

OVER I-85

<p>I-5905 I-85 PAVEMENT PRESERVATION MECKLENBURG COUNTY</p>			
SCALE	-NA-		REVISIONS
DATE	3/19		
DWG. BY	JHE		
DESIGN BY	JHE		
APPROVED			

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5905	3	
WBS NO.	45888.3.GV1		



MAPS

3 NB OFF RAMP

4 NB ON RAMP

5 SB OFF RAMP

6 SB ON RAMP

DESCRIPTION

FROM PHYSICAL GORE TO TOP OF RAMP AT BROOKSHIRE BLVD.

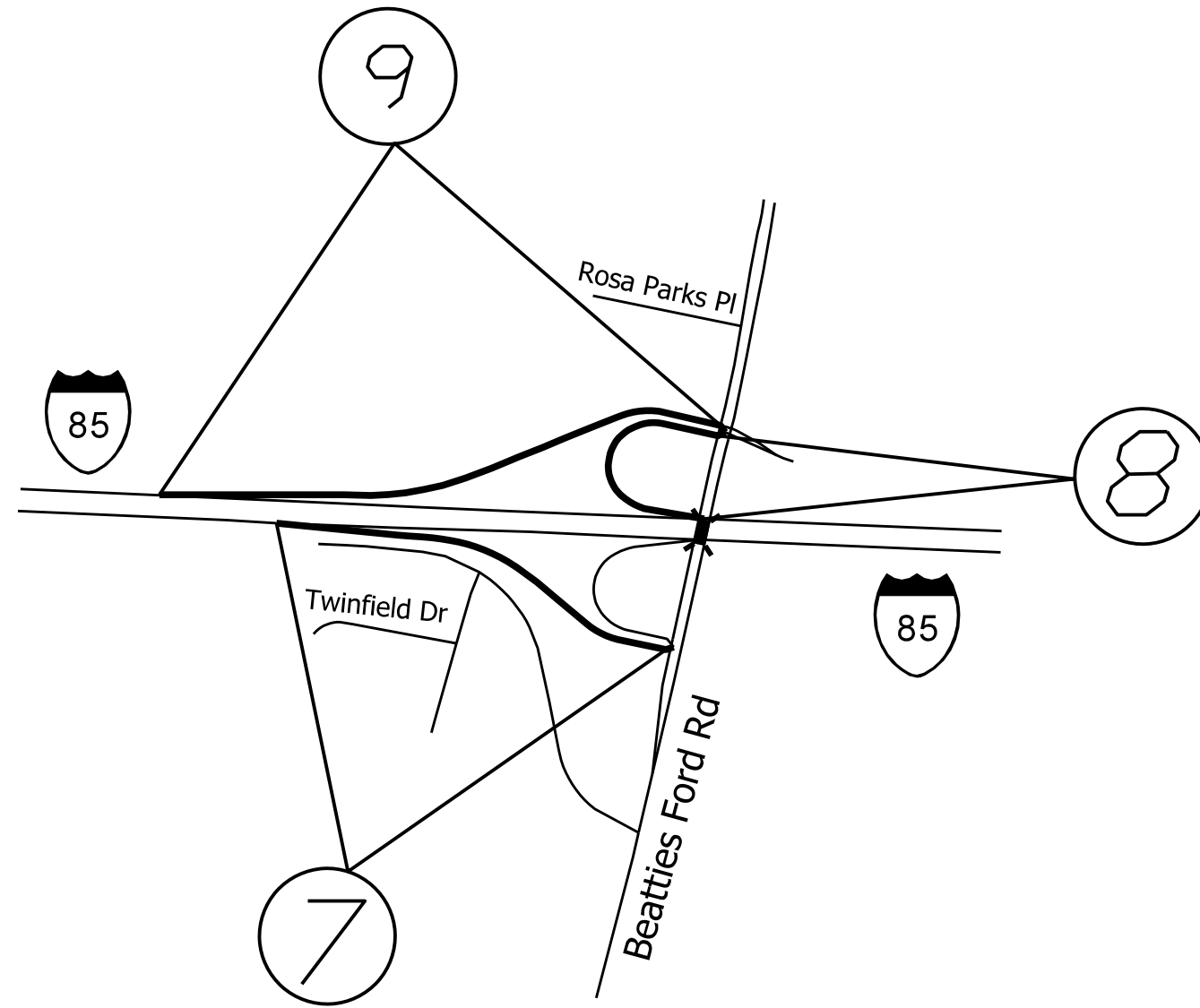
FROM TOP OF RAMP AT BROOKSHIRE BLVD TO PHYSICAL GORE

FROM PHYSICAL GORE TO TOP OF RAMP AT BROOKSHIRE BLVD.

FROM TOP OF RAMP AT BROOKSHIRE BLVD TO PHYSICAL GORE

I-5905 I-85 PAVEMENT PRESERVATION MECKLENBURG COUNTY										
SCALE	-NA-									
DATE	3/19									
DWG. BY	JHE									
DESIGN BY	JHE									
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REVISIONS										

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	1-5905	4	
WBS NO. 45888.3.GV1			



MAPS

DESCRIPTION

#7 NB OFF RAMP

FROM PHYSICAL GORE TO TOP OF RAMP AT BEATTIES FORD RD

#8 SB LOOP OFF RAMP

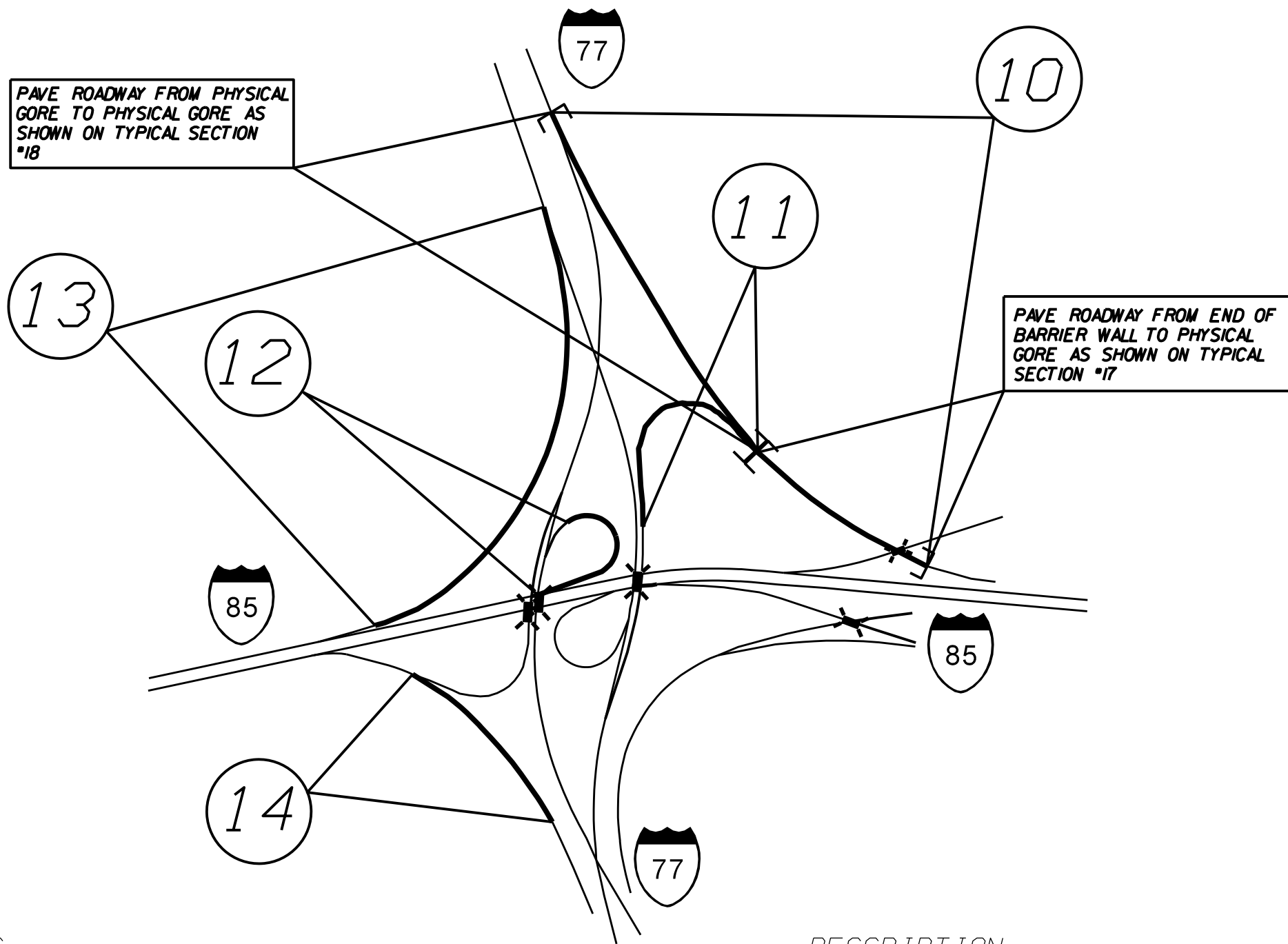
FROM PHYSICAL GORE TO TOP OF LOOP RAMP AT BEATTIES FORD RD.

#9 SB ON RAMP

FROM TOP OF RAMP AT BEATTIES FORD RD TO PHYSICAL GORE

1-5905 I-85 PAVEMENT PRESERVATION MECKLENBURG COUNTY			
SCALE	-NA-		REVISIONS
DATE	3/19		
DWG. BY	JME		
DESIGN BY	JME		
APPROVED			

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	1-5905	5	
WBS NO. 45888.3.GV1			



MAPS

- # 10 ON RAMP TO NB I-77
- # 11 LOOP ON RAMP TO SB I-77
- # 12 LOOP ON RAMP TO SB I-85
- # 13 ON RAMP TO SB I-85
- # 14 ON RAMP TO SB I-77

DESCRIPTION

- FROM END OF BARRIER WALL APPROXIMATELY 3240 FEET TO PHYSICAL GORE
- FROM PHYSICAL GORE AT SPLIT TO PHYSICAL GORE
- FROM PHYSICAL GORE TO PHYSICAL GORE
- FROM PHYSICAL GORE TO PHYSICAL GORE
- FROM PAVEMENT JOINT TO APPROXIMATELY 730 FEET DOWN RAMP

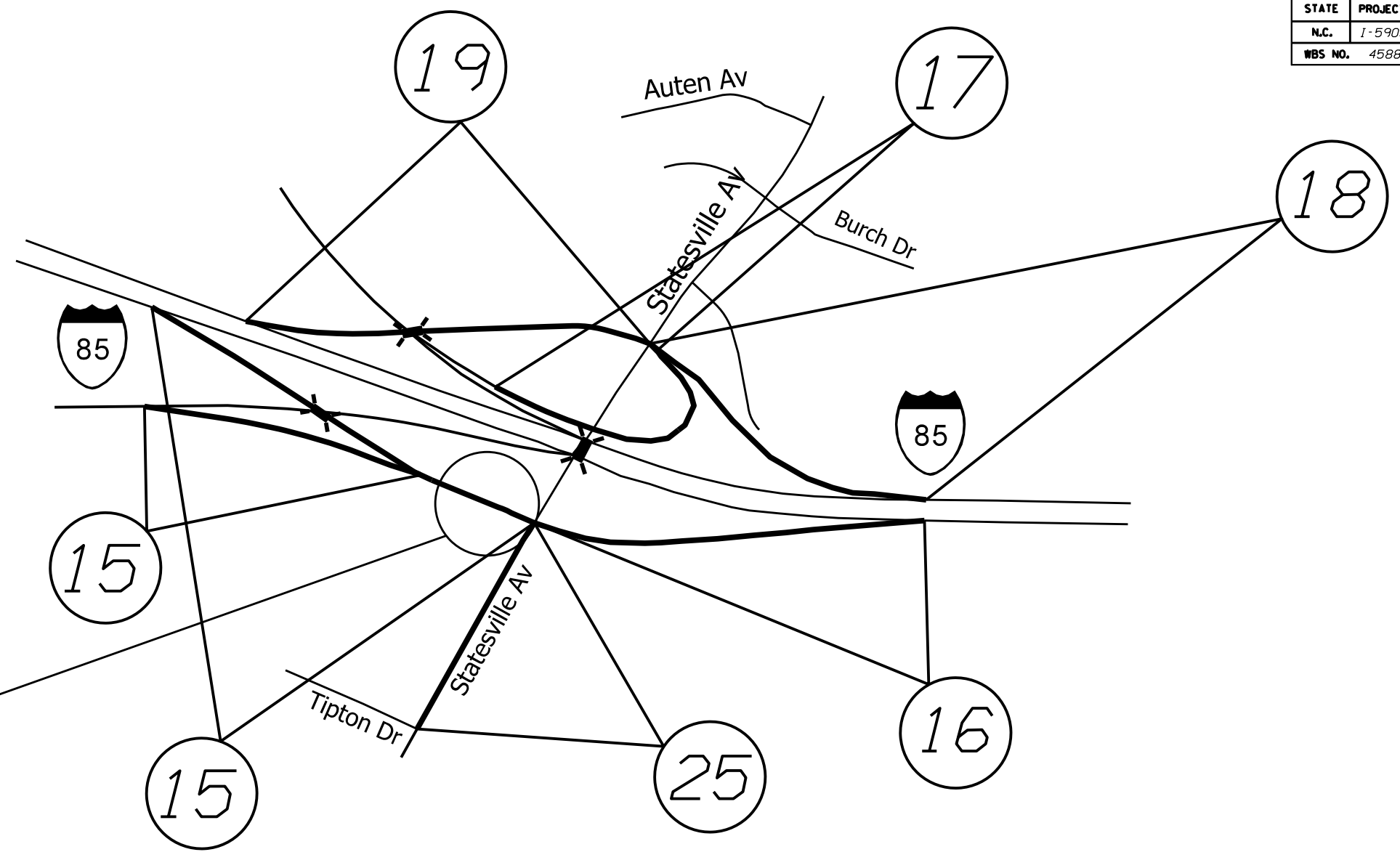
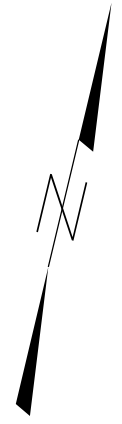
1-5905
I-85 PAVEMENT PRESERVATION
MECKLENBURG COUNTY

SCALE	-1A-
DATE	3/19
DWG. BY	JHE
DESIGN BY	JHE
APPROVED	



REVISIONS	

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5905	6	
WBS NO. 45888.3.GV1			



NOTE:
 MAP # 15 SHALL BE RECONSTRUCTED IN CONCRETE DOWN THE RAMP APPROX. 475 FEET TO THE END OF THE EXPRESSWAY GUTTER, THE REMAINING SECTIONS OF RAMP SHALL BE CONSTRUCTED WITH ASPHALT AS SHOWN ON THE TYPICAL SECTIONS.

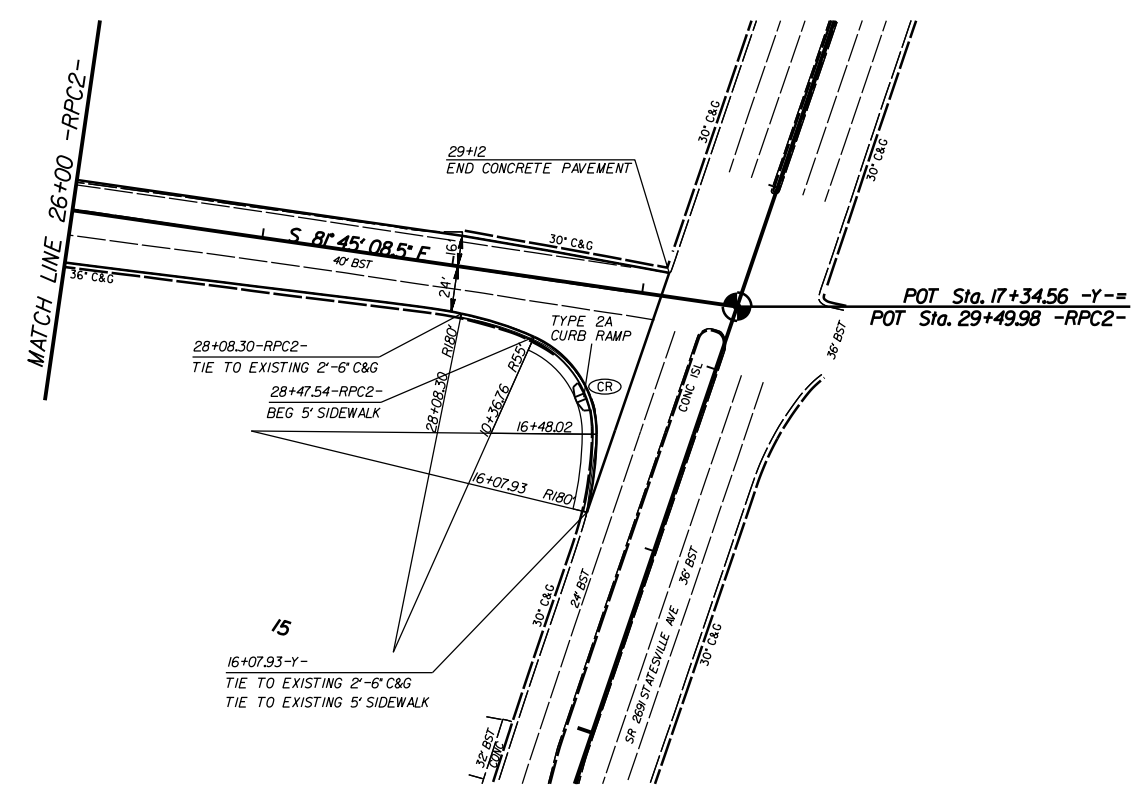
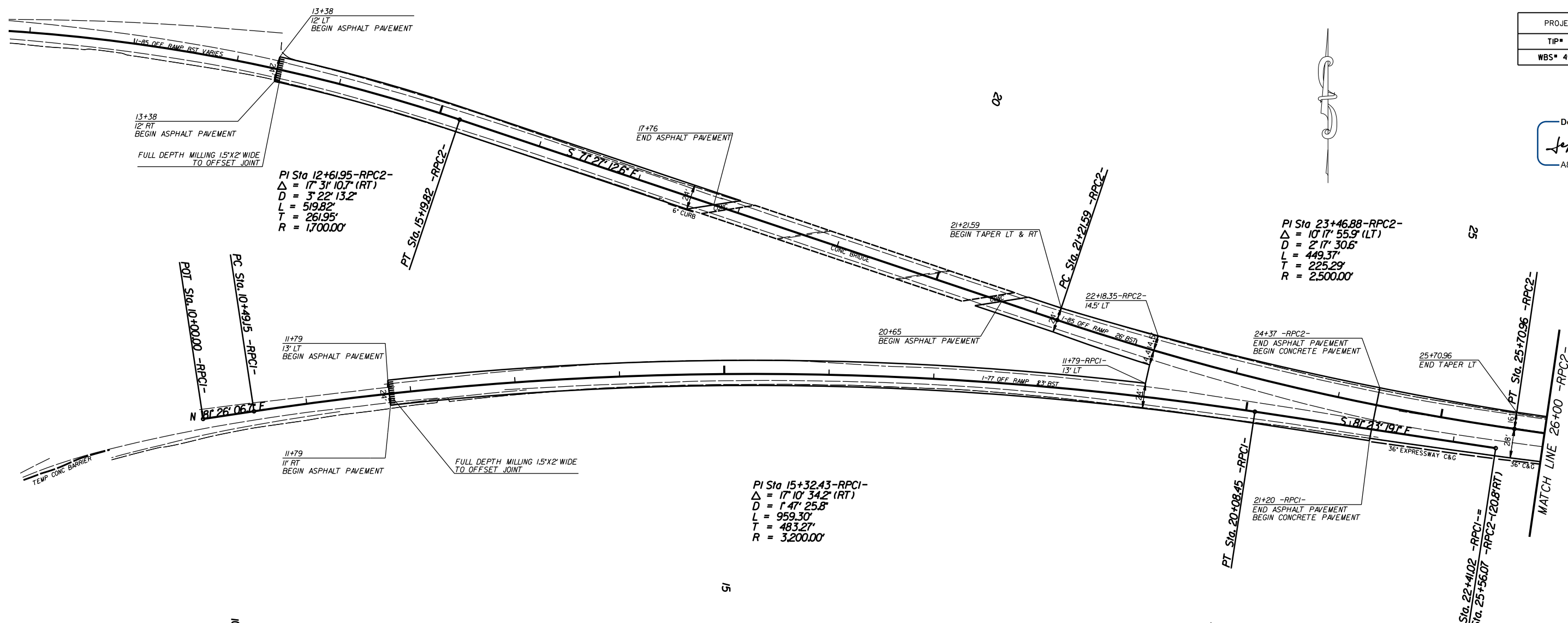
MAPS	DESCRIPTION
# 15 NB OFF RAMP	FROM PHYSICAL GORE TO TOP OF RAMP AT STATESVILLE AVE.
# 16 NB ON RAMP	FROM TOP OF RAMP AT STATESVILLE AVE TO PHYSICAL GORE
# 17 SB LOOP ON RAMP	FROM TOP OF LOOP RAMP AT STATESVILLE ROAD TO THE END OF BARRIER WALL
# 18 SB OFF RAMP	FROM PHYSICAL GORE TO TOP OF RAMP AT STATESVILLE ROAD
# 19 SB ON RAMP	FROM TOP OF RAMP AT STATESVILLE ROAD TO PHYSICAL GORE
# 25 SB STATESVILLE AVE	FROM BRIDGE DECK AT I-85 TO TIPTON DRIVE

I-5905 I-85 PAVEMENT PRESERVATION MECKLENBURG COUNTY		
SCALE	-NA-	
DATE	3/19	
DWG. BY	JHE	
DESIGN BY	JHE	
APPROVED		REVISIONS

PROJECT NO.	SHEET NO.
TIP# I-5905	6A
WBS# 45888.3.GVI	

ROADWAY DESIGN ENGINEER

DocuSign
 035674
 3/4/2020



I-85 PAVEMENT PRESERVATION
MECKLENBURG COUNTY

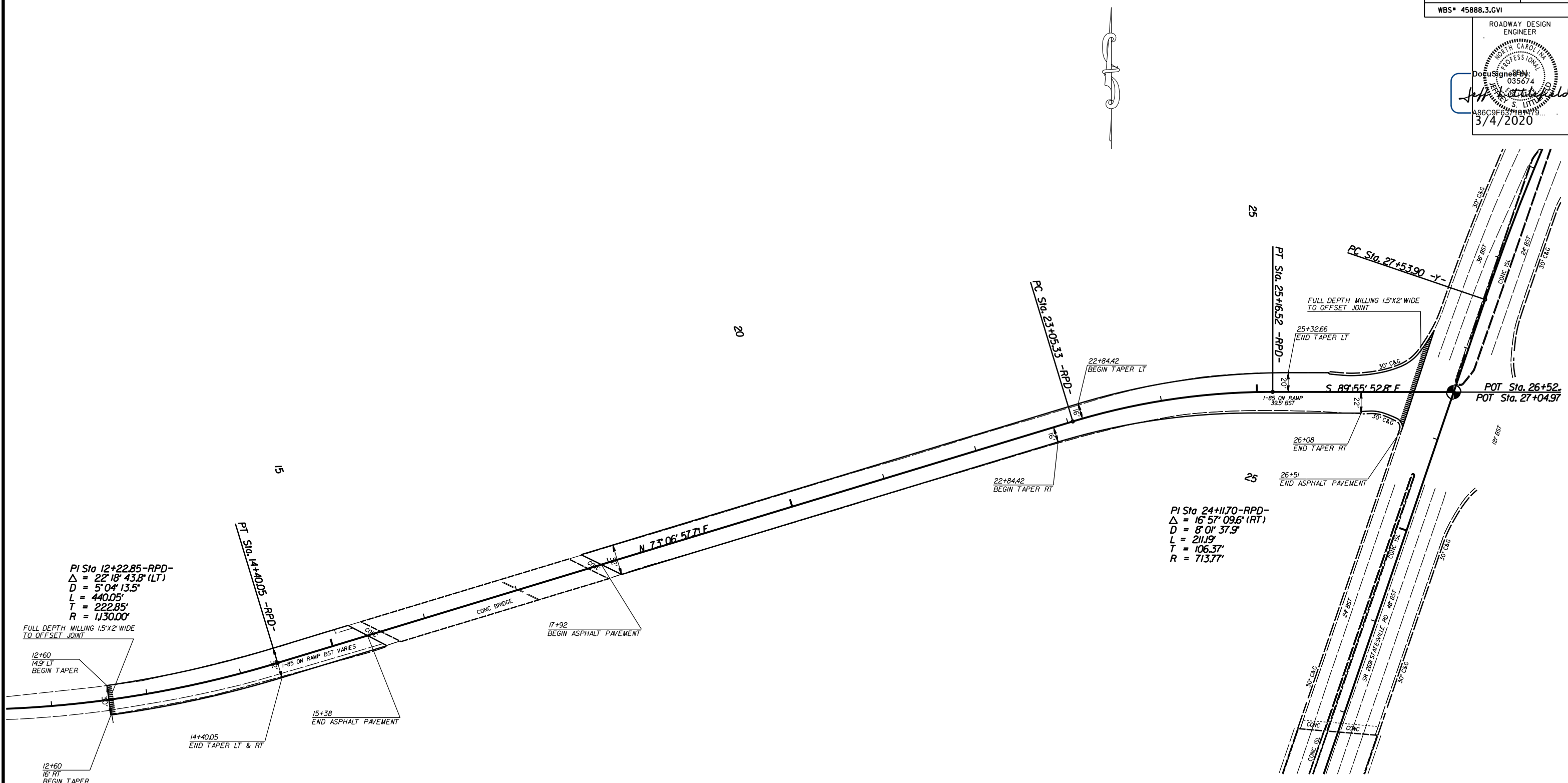
SCALE	1"=50'
DATE	1-2020
DWG. BY	TBL
DESIGN BY	TBL
APPROVED	JHE

REVISIONS



ROADWAY DESIGN
ENGINEER

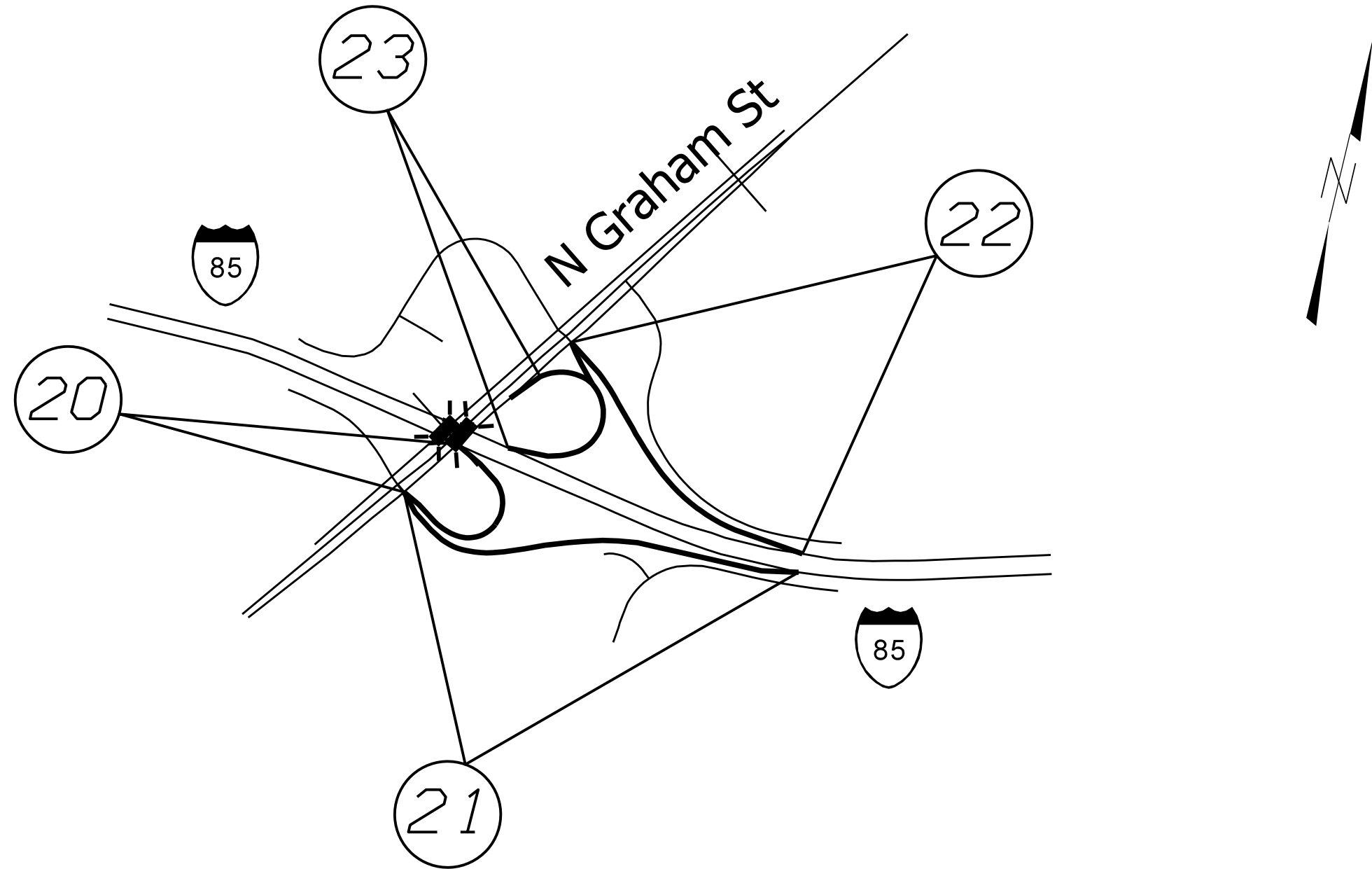
Professional Seal
DoE License No. 035674
S. LITTLE
3/4/2020



I-85 PAVEMENT PRESERVATION
MECKLENBURG COUNTY

SCALE	1"=50'		REVISIONS
DATE	1-2020		
DWG. BY	TBL		
DESIGN BY	TBL		
APPROVED	JHE		

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5905	7	
WBS NO.		45888.3.GV1	



MAPS

DESCRIPTION

- # 20 NB LOOP OFF RAMP
- # 21 NB ON RAMP
- # 22 SB OFF RAMP
- # 23 SB LOOP ON RAMP

FROM PHYSICAL GORE TO TOP OF LOOP RAMP AT N. GRAHAM ST.

FROM TOP OF RAMP AT N. GRAHAM ST. TO PHYSICAL GORE

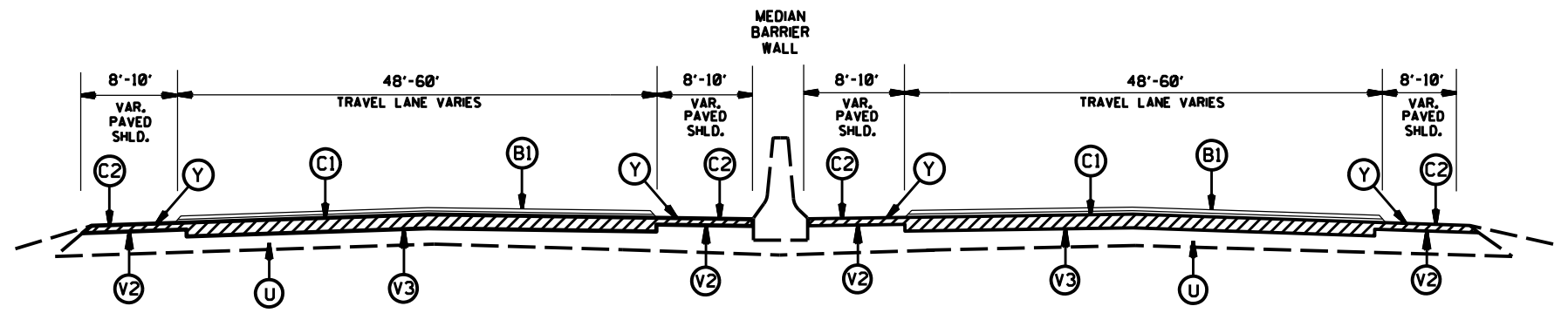
FROM PHYSICAL GORE TO TOP OF RAMP AT N. GRAHAM ST.

FROM TOP OF LOOP RAMP AT N. GRAHAM ST. TO PHYSICAL GORE

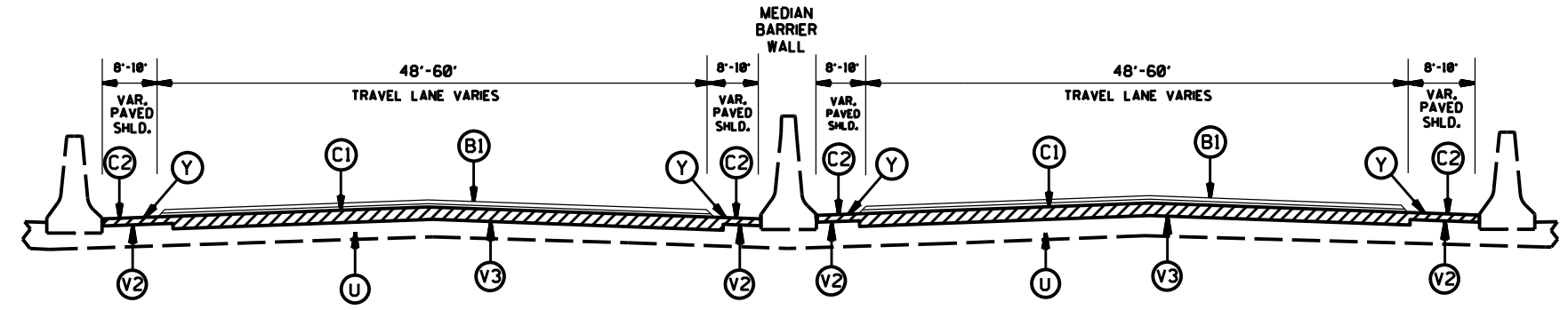
I-5905 I-85 PAVEMENT PRESERVATION MECKLENBURG COUNTY										
SCALE	-RA-									
DATE	3/19									
DWG. BY	JME									
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STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5905	8	
WBS NO. 45888.3.GVI			

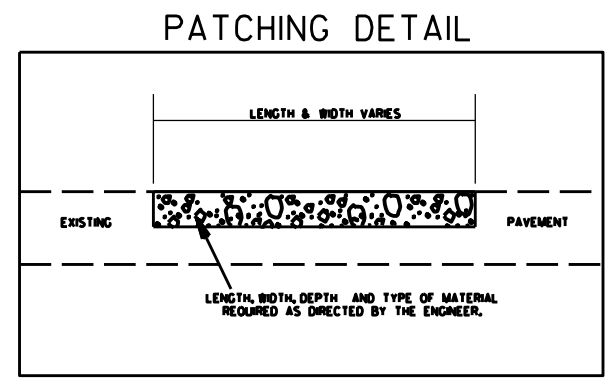
PAVEMENT SCHEDULE	
A1	PROP. 11" PORTLAND CEMENT CONCRETE PAVEMENT
B1	PROP. APPROX. 5/8" ULTRA-THIN BONDED WEARING COURSE, AT AN AVERAGE RATE OF 70 LBS. PER SQ. YD.
C1	PROP. APPROX. 2.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
C2	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D, IN 2 SEPARATE 1.5" LIFTS AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
D1	PROP. APPROX. 4.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 4.0" ASPHALT CONCRETE BASE COURSE, B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. APPROX. 8.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, IN 2 SEPARATE 4" LIFTS AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
R1	PROP. 2'6" CONCRETE CURB AND GUTTER 11" THICK
T	SHOULDER CONSTRUCTION
U	EXISTING PAVEMENT
V2	MILLING 1.5" DEPTH
V3	MILLING, 2.0" DEPTH
Y	MILLED RUMBLE STRIPS
Z	EXISTING STABILIZED SUBGRADE



TYPICAL SECTION NO.1
I-85 NORTH & SOUTH BOUND



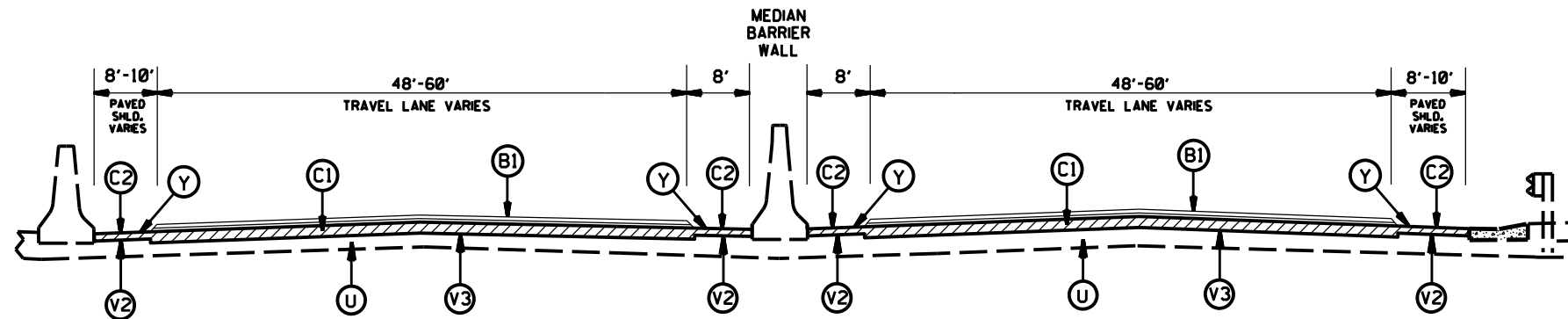
TYPICAL SECTION NO.2
I-85 NORTH & SOUTH BOUND



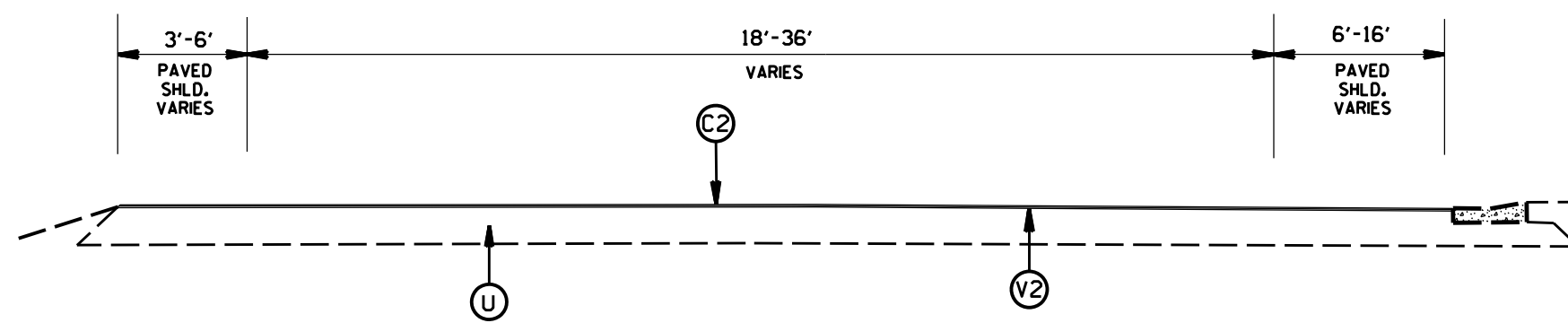
I-5905
I-85 PAVEMENT PRESERVATION
MECKLENBURG COUNTY

SCALE	-NA-		REVISIONS
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DWG. BY	JHE		
DESIGN BY	JHE		
APPROVED			

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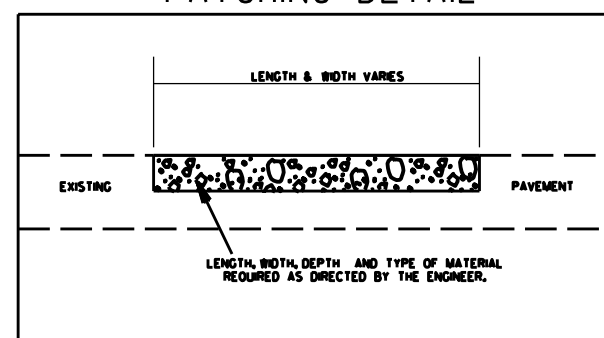


TYPICAL SECTION NO.3
I-85 NORTH & SOUTH BOUND



TYPICAL SECTION NO.4
RAMP

PATCHING DETAIL

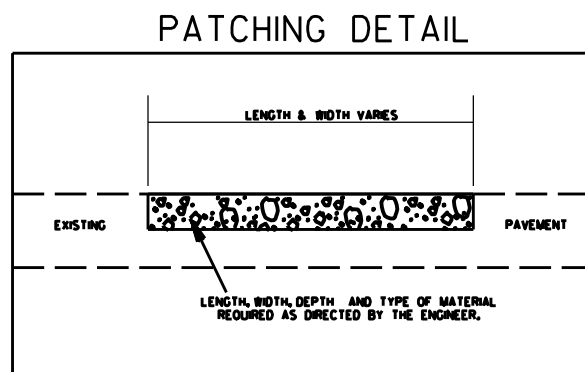
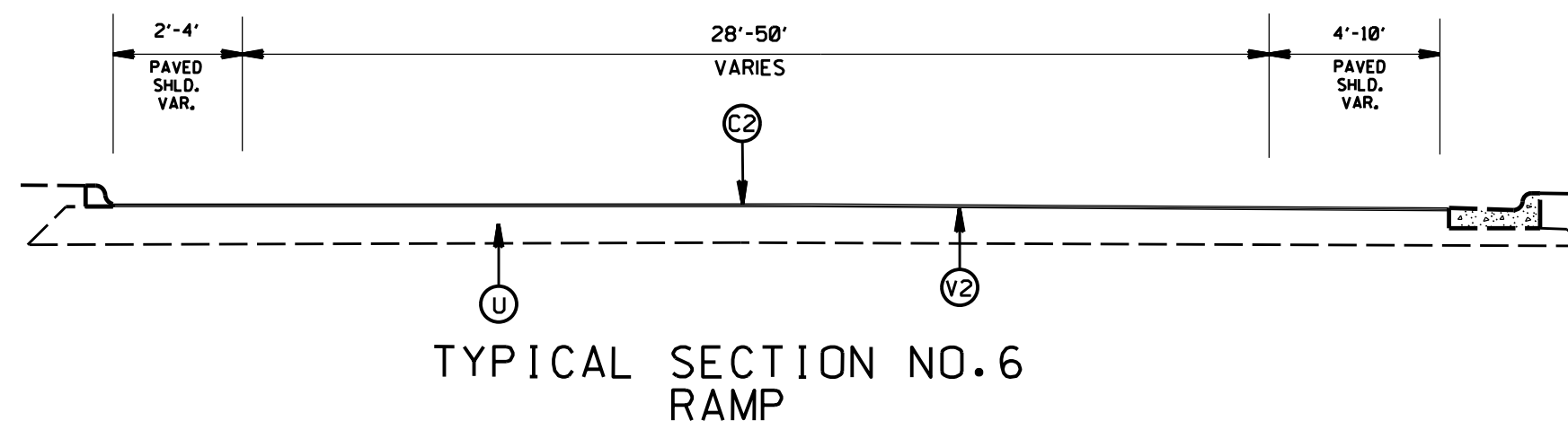
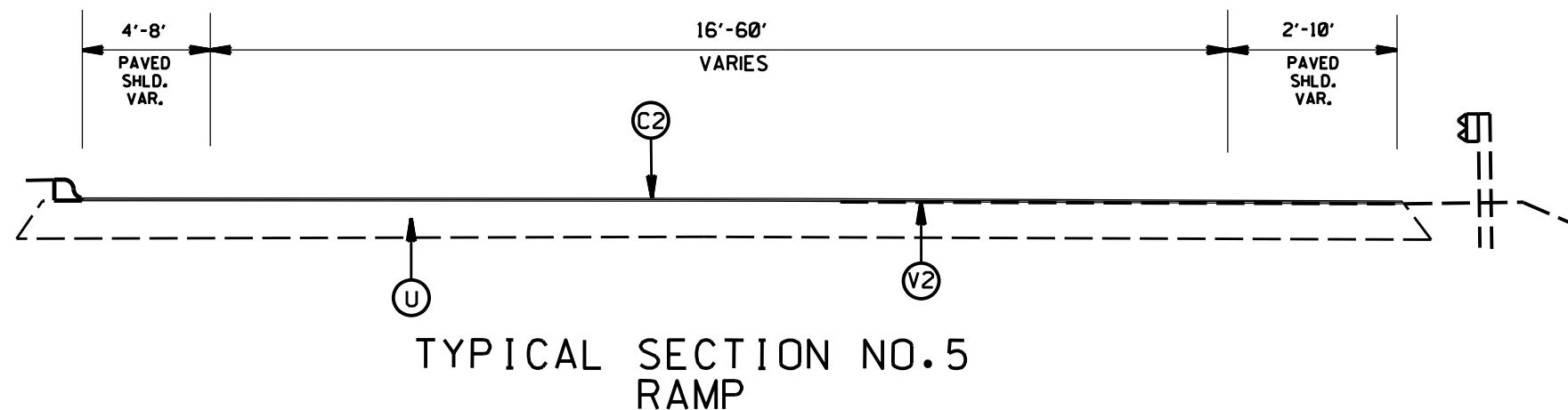



I-5905
I-85 PAVEMENT PRESERVATION
MECKLENBURG COUNTY

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DESIGN BY	JHE		
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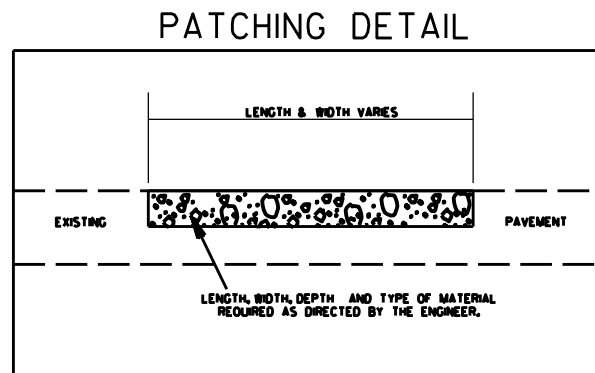
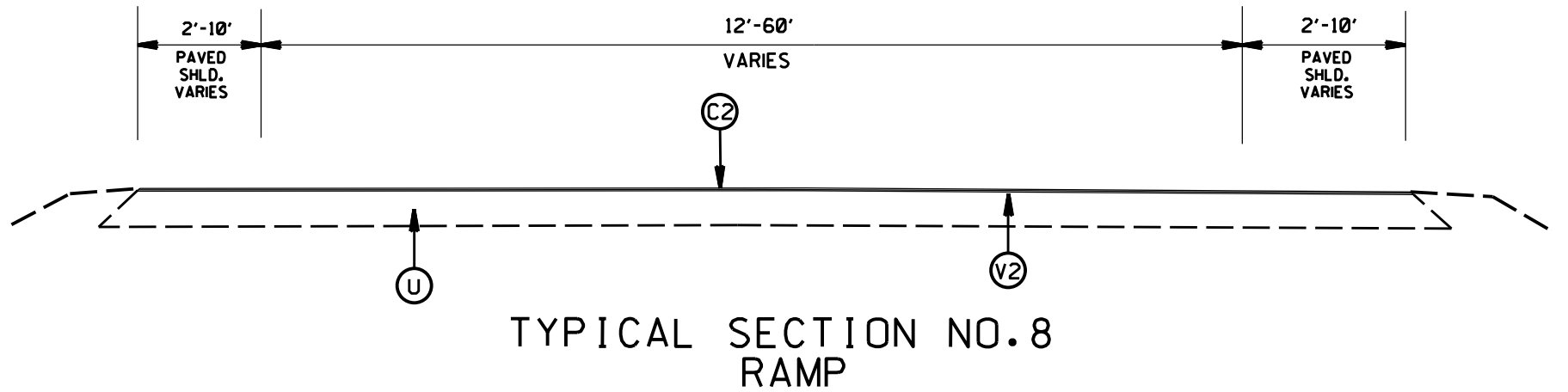
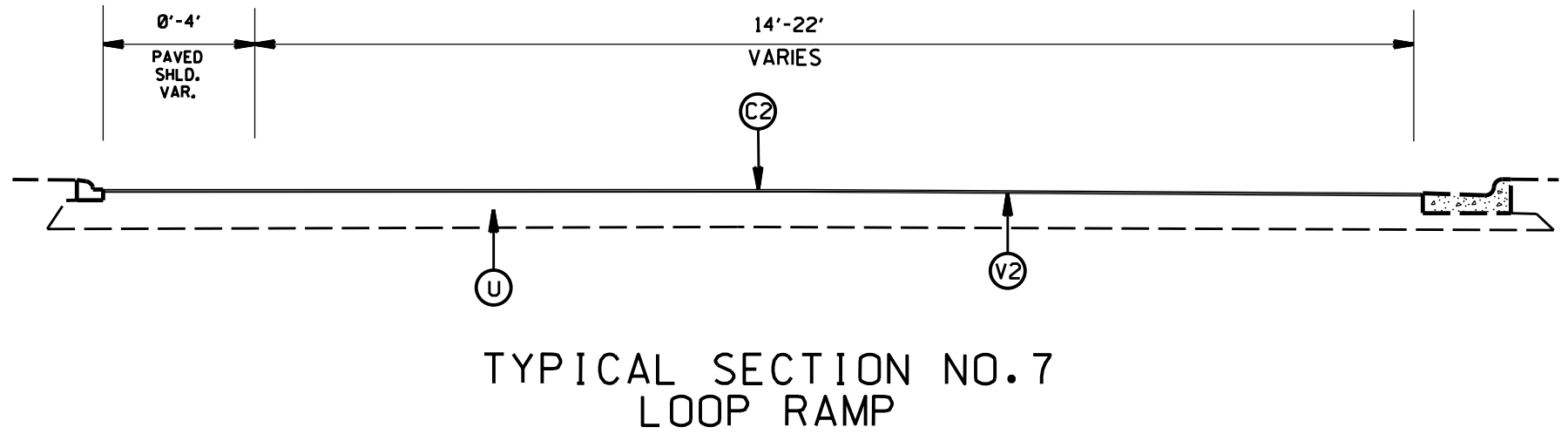
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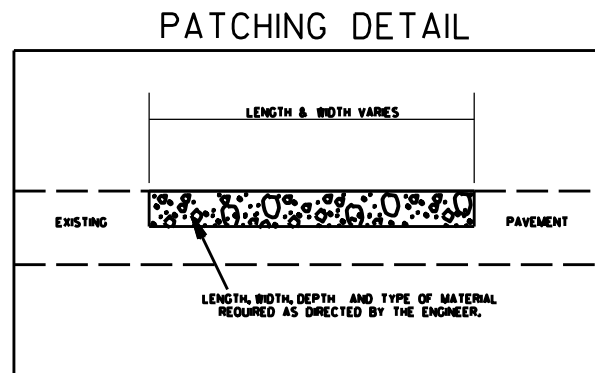
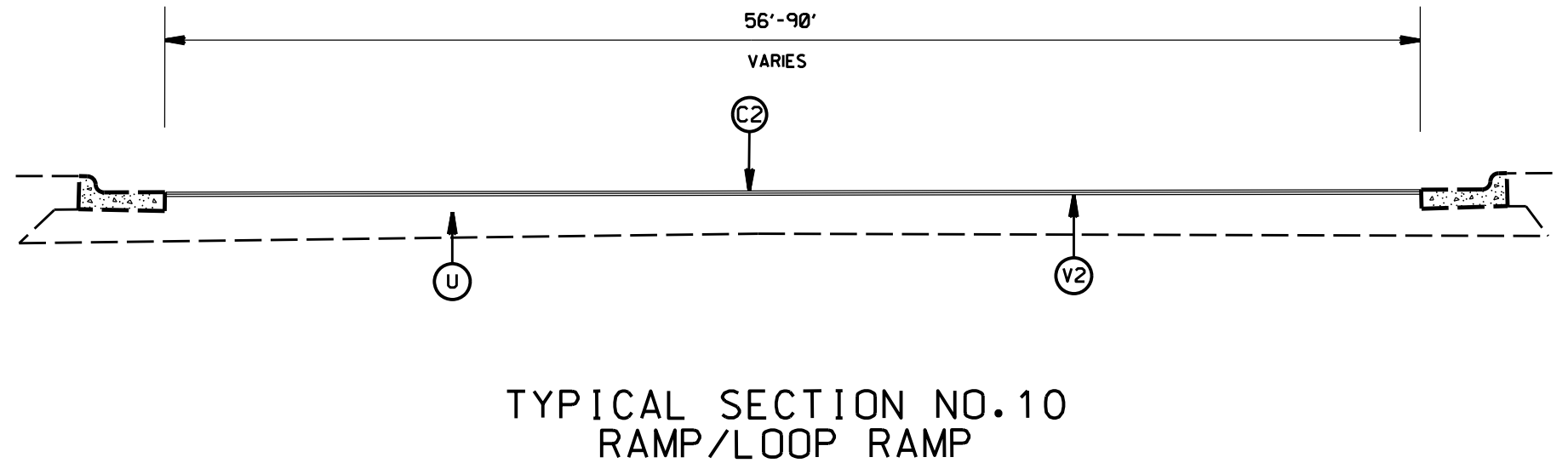
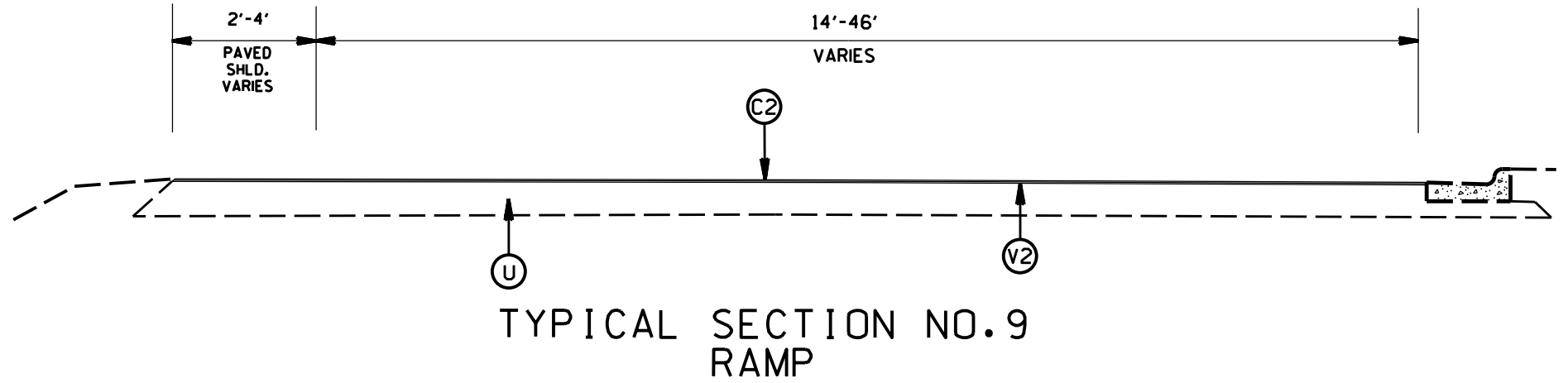
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E2	PROP. APPROX. 8.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, IN 2 SEPARATE 4" LIFTS AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
R1	PROP. 2'6" CONCRETE CURB AND GUTTER 11" THICK
T	SHOULDER CONSTRUCTION
U	EXISTING PAVEMENT
V2	MILLING 1.5" DEPTH
V3	MILLING, 2.0" DEPTH
Y	MILLED RUMBLE STRIPS
Z	EXISTING STABILIZED SUBGRADE



I-5905 I-85 PAVEMENT PRESERVATION MECKLENBURG COUNTY		
SCALE	-NA-	
DATE	3/19	
DWG. BY	JME	
DESIGN BY	JME	
APPROVED		
REVISIONS		

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5905	12	
WBS NO. 45888.3.GVI			

PAVEMENT SCHEDULE	
A1	PROP. 11" PORTLAND CEMENT CONCRETE PAVEMENT
B1	PROP. APPROX. 5/8" ULTRA-THIN BONDED WEARING COURSE, AT AN AVERAGE RATE OF 70 LBS. PER SQ. YD.
C1	PROP. APPROX. 2.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
C2	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D, IN 2 SEPARATE 1.5" LIFTS AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
D1	PROP. APPROX. 4.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 4.0" ASPHALT CONCRETE BASE COURSE, B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. APPROX. 8.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, IN 2 SEPARATE 4" LIFTS AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
R1	PROP. 2'6" CONCRETE CURB AND GUTTER 11" THICK
T	SHOULDER CONSTRUCTION
U	EXISTING PAVEMENT
V2	MILLING 1.5" DEPTH
V3	MILLING, 2.0" DEPTH
Y	MILLED RUMBLE STRIPS
Z	EXISTING STABILIZED SUBGRADE

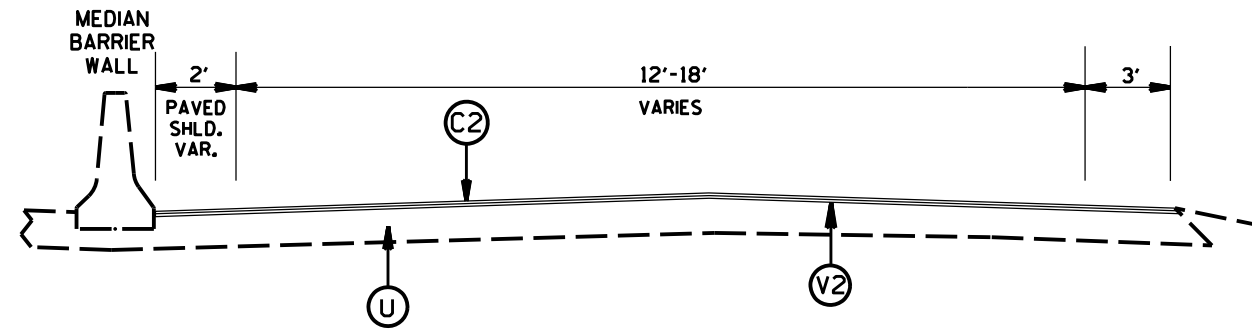


I-5905 I-85 PAVEMENT PRESERVATION MECKLENBURG COUNTY		
SCALE	-NA-	REVISIONS
DATE	3/19	
DWG. BY	JHE	
DESIGN BY	JHE	
APPROVED		

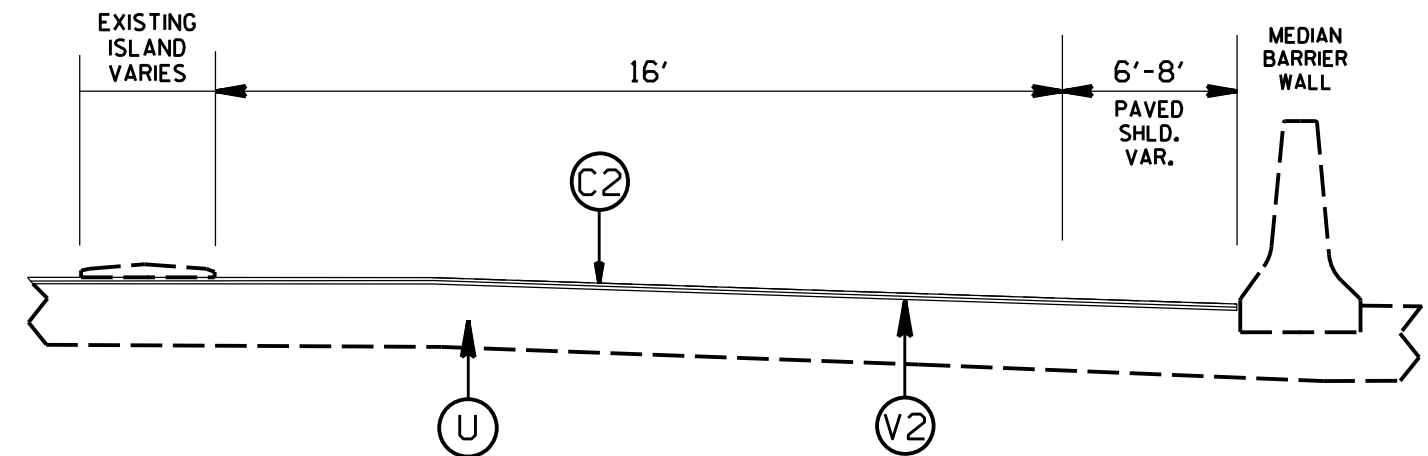


STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5905	13	
WBS NO. 45888.3.GVI			

PAVEMENT SCHEDULE	
A1	PROP. 11" PORTLAND CEMENT CONCRETE PAVEMENT
B1	PROP. APPROX. 5/8" ULTRA-THIN BONDED WEARING COURSE, AT AN AVERAGE RATE OF 70 LBS. PER SQ. YD.
C1	PROP. APPROX. 2.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
C2	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D, IN 2 SEPARATE 1.5" LIFTS AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
D1	PROP. APPROX. 4.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
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E2	PROP. APPROX. 8.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, IN 2 SEPARATE 4" LIFTS AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
R1	PROP. 2'6" CONCRETE CURB AND GUTTER 11" THICK
T	SHOULDER CONSTRUCTION
U	EXISTING PAVEMENT
V2	MILLING 1.5" DEPTH
V3	MILLING, 2.0" DEPTH
Y	MILLED RUMBLE STRIPS
Z	EXISTING STABILIZED SUBGRADE

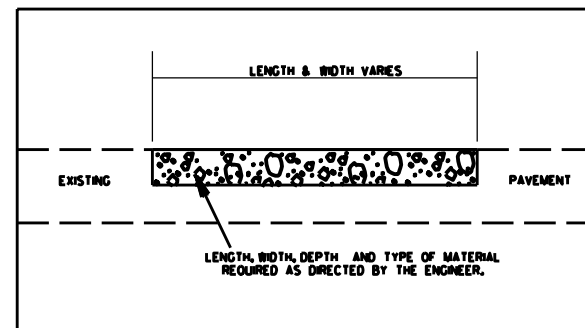


TYPICAL SECTION NO.13
LOOP RAMP



TYPICAL SECTION NO.14
RAMP

PATCHING DETAIL



I-5905
I-85 PAVEMENT PRESERVATION
MECKLENBURG COUNTY

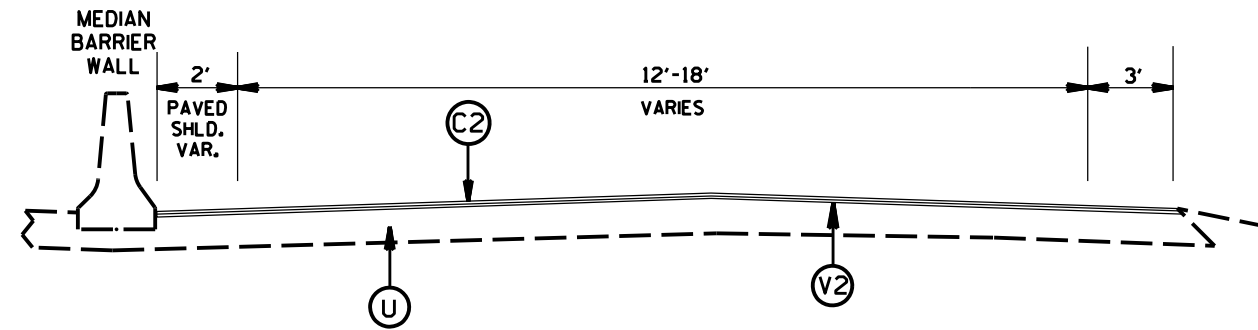
SCALE	-NA-
DATE	3/19
DWG. BY	JHE
DESIGN BY	JHE
APPROVED	



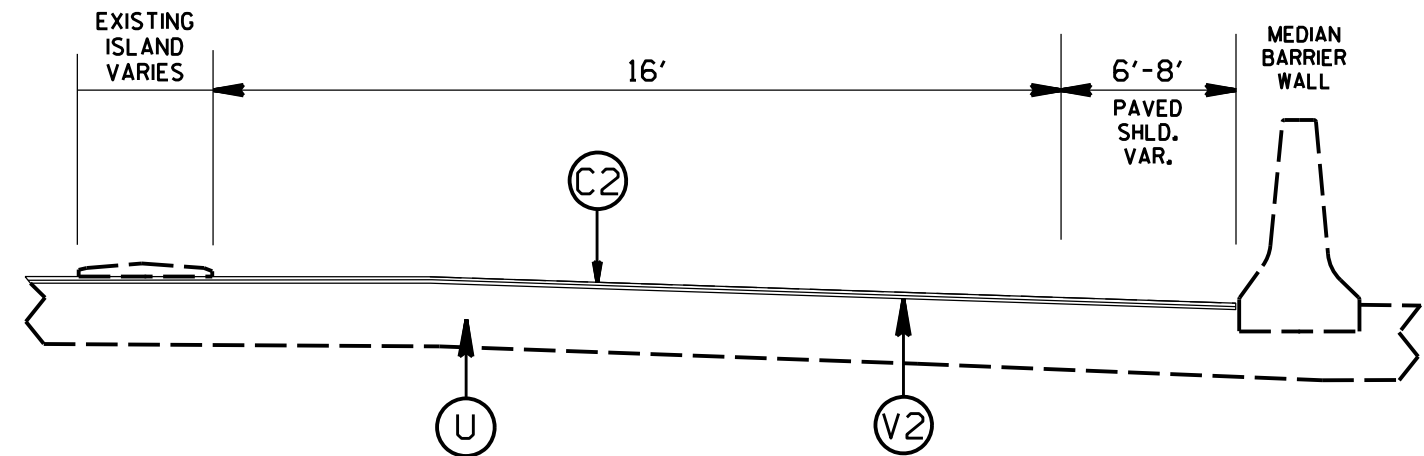
REVISIONS	

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5905	14	
WBS NO. 45888.3.GVI			

PAVEMENT SCHEDULE	
A1	PROP. 11" PORTLAND CEMENT CONCRETE PAVEMENT
B1	PROP. APPROX. 5/8" ULTRA-THIN BONDED WEARING COURSE, AT AN AVERAGE RATE OF 70 LBS. PER SQ. YD.
C1	PROP. APPROX. 2.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
C2	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D, IN 2 SEPARATE 1.5" LIFTS AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
D1	PROP. APPROX. 4.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 4.0" ASPHALT CONCRETE BASE COURSE, B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. APPROX. 8.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, IN 2 SEPARATE 4" LIFTS AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
R1	PROP. 2'6" CONCRETE CURB AND GUTTER 11" THICK
T	SHOULDER CONSTRUCTION
U	EXISTING PAVEMENT
V2	MILLING 1.5" DEPTH
V3	MILLING, 2.0" DEPTH
Y	MILLED RUMBLE STRIPS
Z	EXISTING STABILIZED SUBGRADE

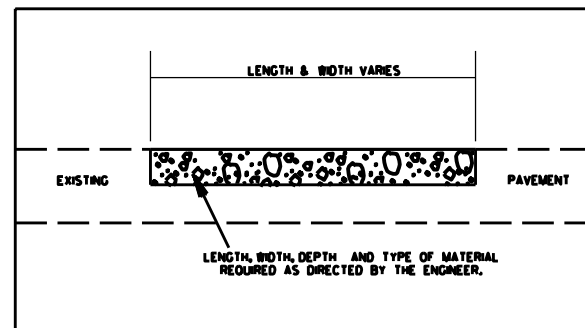


TYPICAL SECTION NO.13
LOOP RAMP



TYPICAL SECTION NO.14
RAMP

PATCHING DETAIL

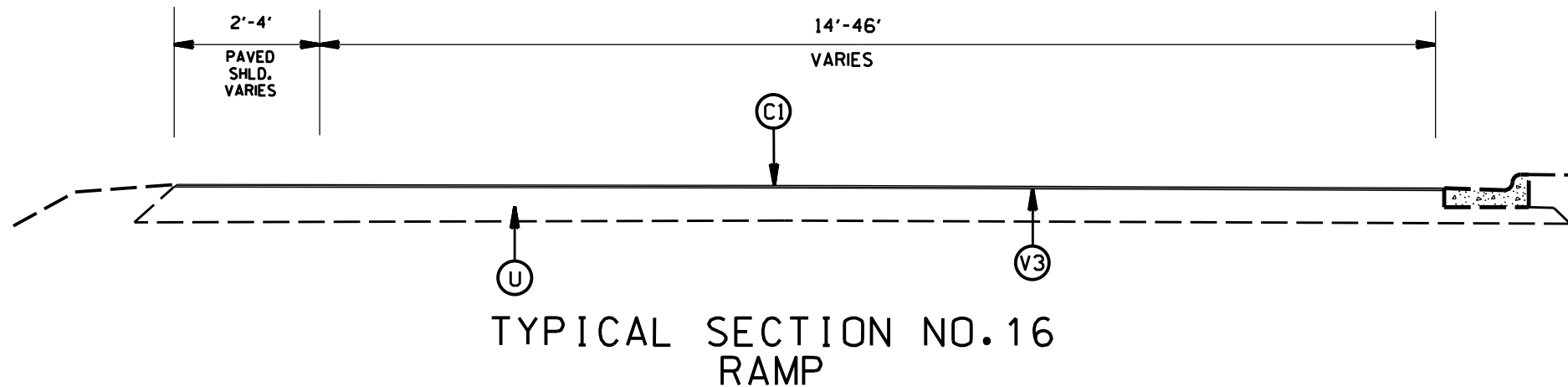
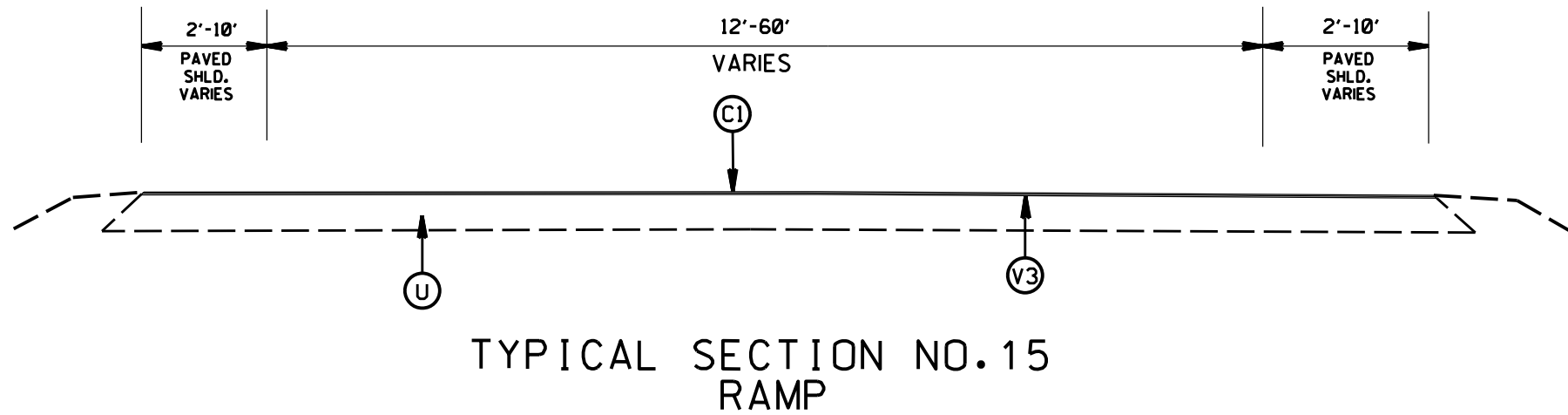


I-5905 I-85 PAVEMENT PRESERVATION MECKLENBURG COUNTY										
SCALE	-NA-	<table border="1"> <thead> <tr> <th colspan="2">REVISIONS</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	REVISIONS							
REVISIONS										
DATE	3/19									
DWG. BY	JHE									
DESIGN BY	JHE									
APPROVED										

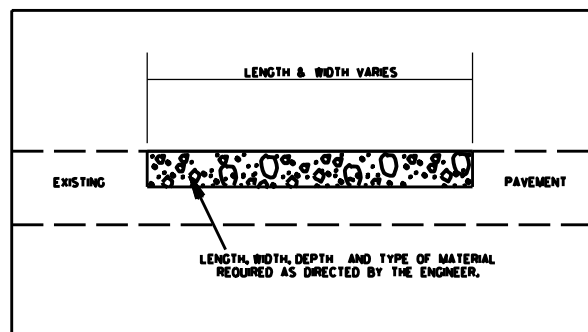


STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5905	15	
WBS NO. 45888.3.GVI			

PAVEMENT SCHEDULE	
A1	PROP. 11" PORTLAND CEMENT CONCRETE PAVEMENT
B1	PROP. APPROX. 5/8" ULTRA-THIN BONDED WEARING COURSE, AT AN AVERAGE RATE OF 70 LBS. PER SQ. YD.
C1	PROP. APPROX. 2.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
C2	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D, IN 2 SEPARATE 1.5" LIFTS AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
D1	PROP. APPROX. 4.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 4.0" ASPHALT CONCRETE BASE COURSE, B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. APPROX. 8.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, IN 2 SEPARATE 4" LIFTS AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
R1	PROP. 2'6" CONCRETE CURB AND GUTTER 11" THICK
T	SHOULDER CONSTRUCTION
U	EXISTING PAVEMENT
V2	MILLING 1.5" DEPTH
V3	MILLING, 2.0" DEPTH
Y	MILLED RUMBLE STRIPS
Z	EXISTING STABILIZED SUBGRADE



PATCHING DETAIL

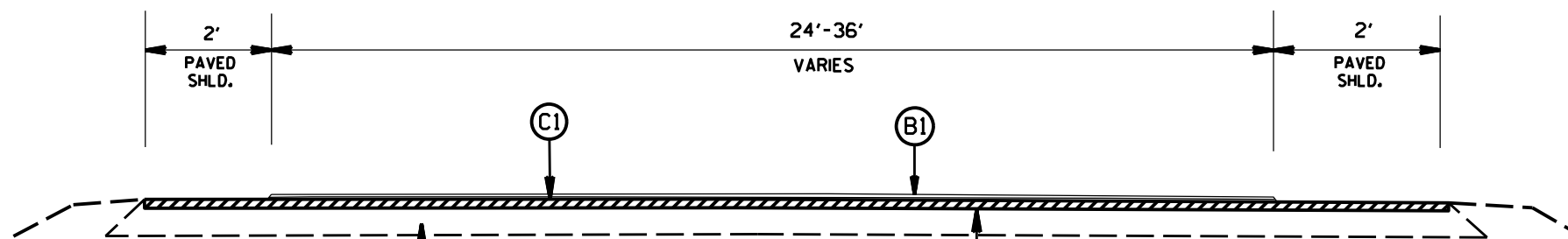


I-5905
I-85 PAVEMENT PRESERVATION
MECKLENBURG COUNTY

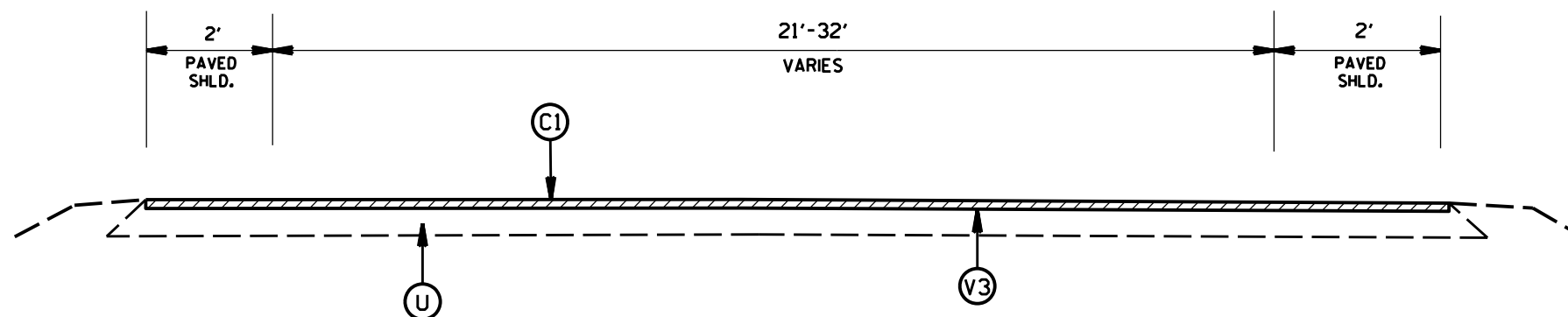
SCALE	-NA-		REVISIONS
DATE	3/19		
DWG. BY	JHE		
DESIGN BY	JHE		
APPROVED			

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5905	16	
WBS NO. 45888.3.GVI			

PAVEMENT SCHEDULE	
A1	PROP. 11" PORTLAND CEMENT CONCRETE PAVEMENT
B1	PROP. APPROX. 5/8" ULTRA-THIN BONDED WEARING COURSE, AT AN AVERAGE RATE OF 70 LBS. PER SQ. YD.
C1	PROP. APPROX. 2.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
C2	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
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E2	PROP. APPROX. 8.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, IN 2 SEPARATE 4" LIFTS AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
R1	PROP. 2'6" CONCRETE CURB AND GUTTER 11" THICK
T	SHOULDER CONSTRUCTION
U	EXISTING PAVEMENT
V2	MILLING 1.5" DEPTH
V3	MILLING, 2.0" DEPTH
Y	MILLED RUMBLE STRIPS
Z	EXISTING STABILIZED SUBGRADE

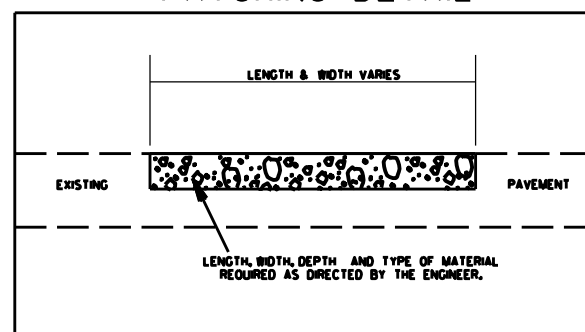


TYPICAL SECTION NO.17
RAMP FROM SB I-85 TO I-77



TYPICAL SECTION NO.18
RAMP FROM SB I-85 TO NB I-77

PATCHING DETAIL



I-5905
I-85 PAVEMENT PRESERVATION
MECKLENBURG COUNTY

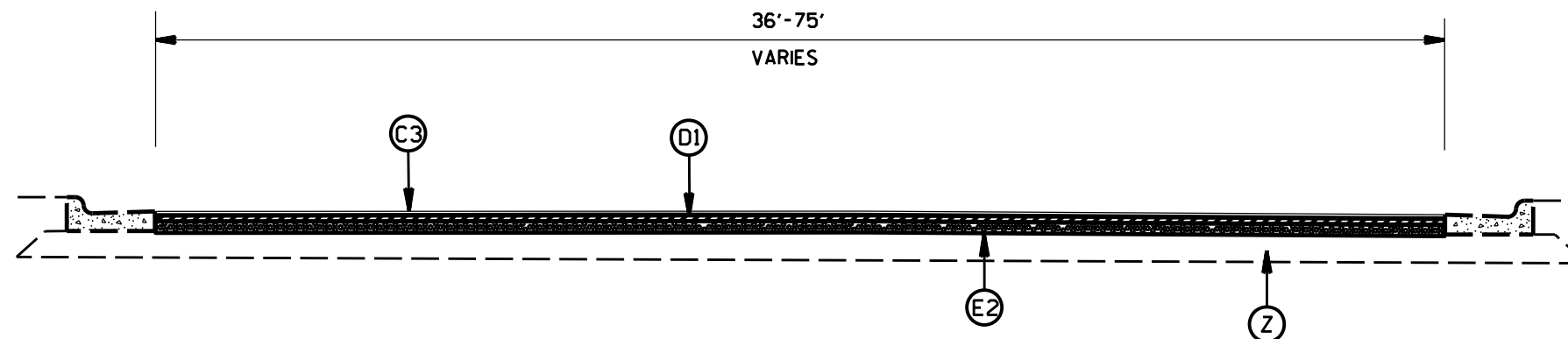
SCALE	-NA-
DATE	3/19
DWG. BY	JHE
DESIGN BY	JHE
APPROVED	



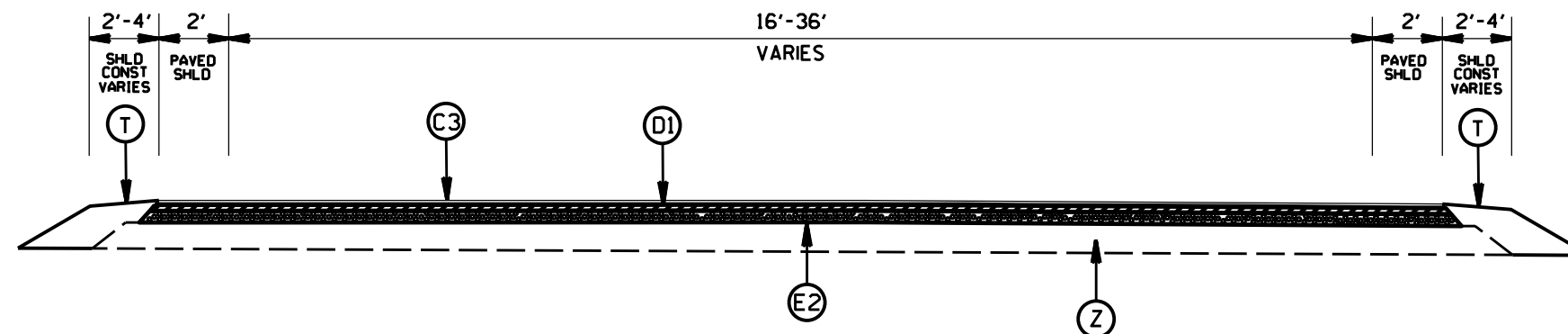
REVISIONS	

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5905	17	
WBS NO. 45888.3.GVI			

PAVEMENT SCHEDULE	
A1	PROP. 11" PORTLAND CEMENT CONCRETE PAVEMENT
B1	PROP. APPROX. 5/8" ULTRA-THIN BONDED WEARING COURSE, AT AN AVERAGE RATE OF 70 LBS. PER SQ. YD.
C1	PROP. APPROX. 2.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
C2	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D, IN 2 SEPARATE 1.5" LIFTS AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
D1	PROP. APPROX. 4.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
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E2	PROP. APPROX. 8.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, IN 2 SEPARATE 4" LIFTS AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
R1	PROP. 2'6" CONCRETE CURB AND GUTTER 11" THICK
T	SHOULDER CONSTRUCTION
U	EXISTING PAVEMENT
V2	MILLING 1.5" DEPTH
V3	MILLING, 2.0" DEPTH
Y	MILLED RUMBLE STRIPS
Z	EXISTING STABILIZED SUBGRADE

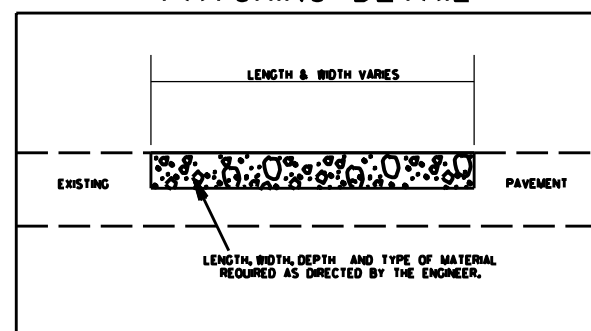


TYPICAL SECTION NO.19
ON RAMP FROM STATESVILLE ROAD



TYPICAL SECTION NO.20
ON RAMP FROM STATESVILLE ROAD

PATCHING DETAIL



SUMMARY OF EARTHWORK		
DESCRIPTION	MAP #15	MAP #19
UNCLASSIFIED EXCAVATION	2146 CY	1282 CY
BORROW EXCAVATION	100 CY	100 CY
REMOVAL OF EXISTING ASPHALT PAVEMENT	8360 SY	5186 SY
SHOULDER CONSTRUCTION	0.72 SMI	0.45 SMI

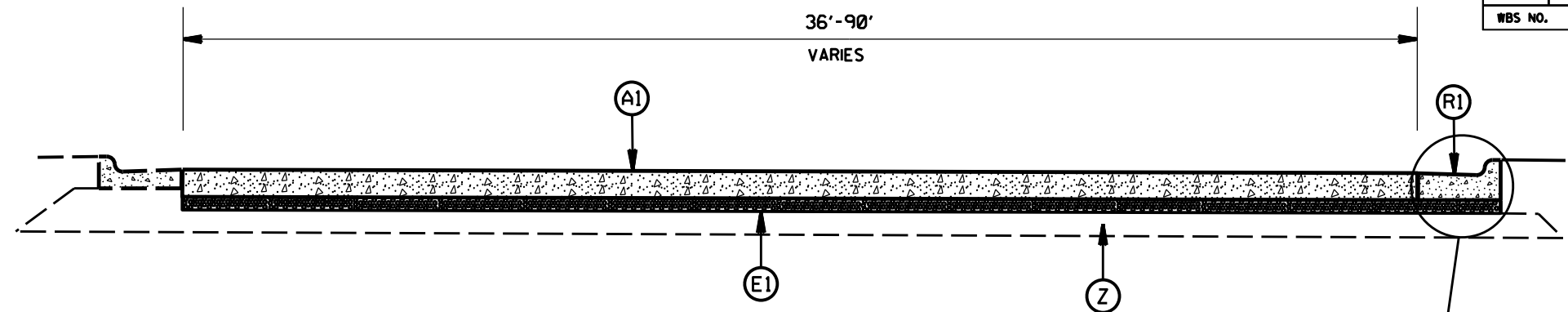
NOTE: QUANTITIES ARE APPROXIMATE, AND ARE ONLY TO BE USED FOR THE PURPOSE OF BIDDING THIS CONTRACT. PAYMENT FOR EARTH WORK QUANTITIES WILL BE COVERED UNDER COMPREHENSIVE GRADING AS A LUMP SUM PAY ITEM AS DETERMINED BY THE RESIDENT ENGINEER.

I-5905
I-85 PAVEMENT PRESERVATION
MECKLENBURG COUNTY

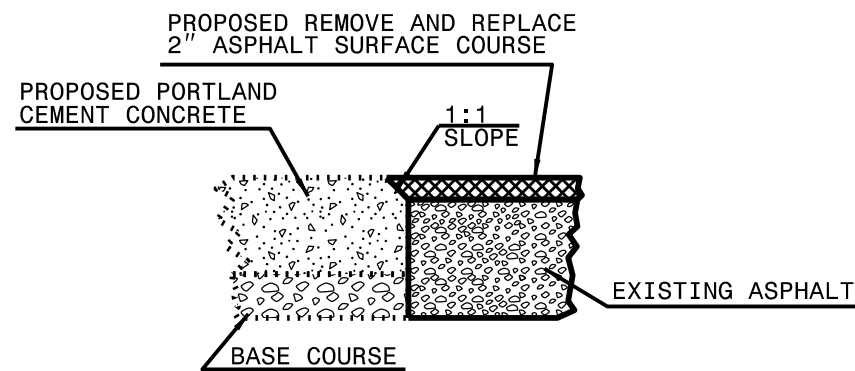
SCALE	-NA-		REVISIONS
DATE	3/19		
DWG. BY	JHE		
DESIGN BY	JHE		
APPROVED			

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5905	18	
WBS NO. 45888.3.GVI			

PAVEMENT SCHEDULE	
A1	PROP. 11" PORTLAND CEMENT CONCRETE PAVEMENT
B1	PROP. APPROX. 5/8" ULTRA-THIN BONDED WEARING COURSE, AT AN AVERAGE RATE OF 70 LBS. PER SQ. YD.
C1	PROP. APPROX. 2.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
C2	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D, IN 2 SEPARATE 1.5" LIFTS AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
D1	PROP. APPROX. 4.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 4.0" ASPHALT CONCRETE BASE COURSE, B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. APPROX. 8.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, IN 2 SEPARATE 4" LIFTS AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
R1	PROP. 2'6" CONCRETE CURB AND GUTTER 11" THICK
T	SHOULDER CONSTRUCTION
U	EXISTING PAVEMENT
V2	MILLING 1.5" DEPTH
V3	MILLING, 2.0" DEPTH
Y	MILLED RUMBLE STRIPS
Z	EXISTING STABILIZED SUBGRADE

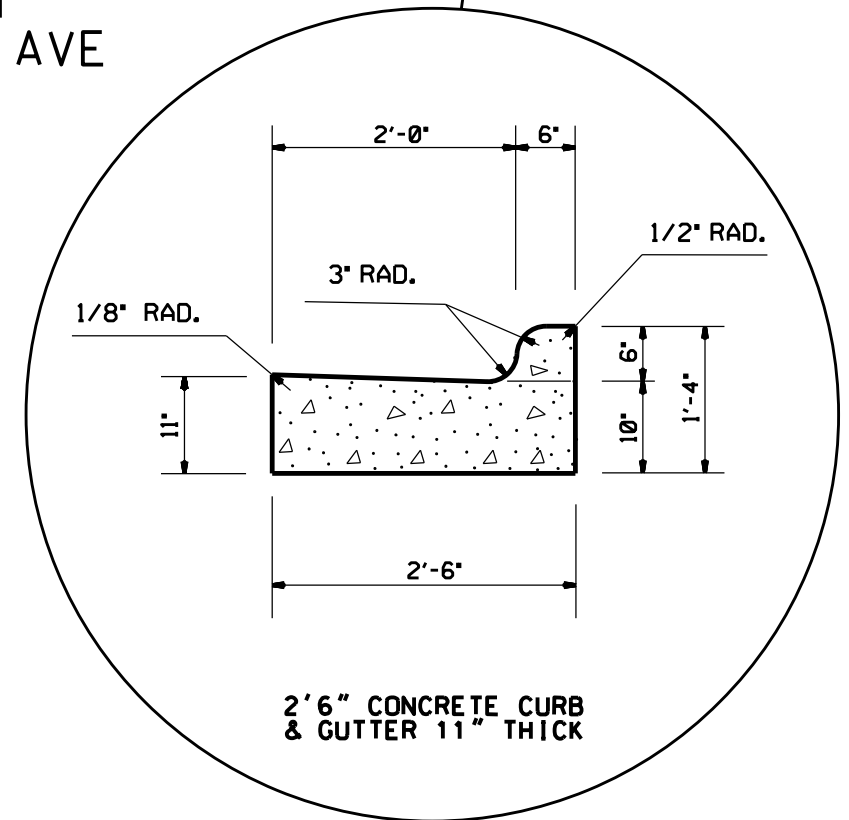


TYPICAL SECTION NO.21
OFF RAMP TO STATESVILLE AVE

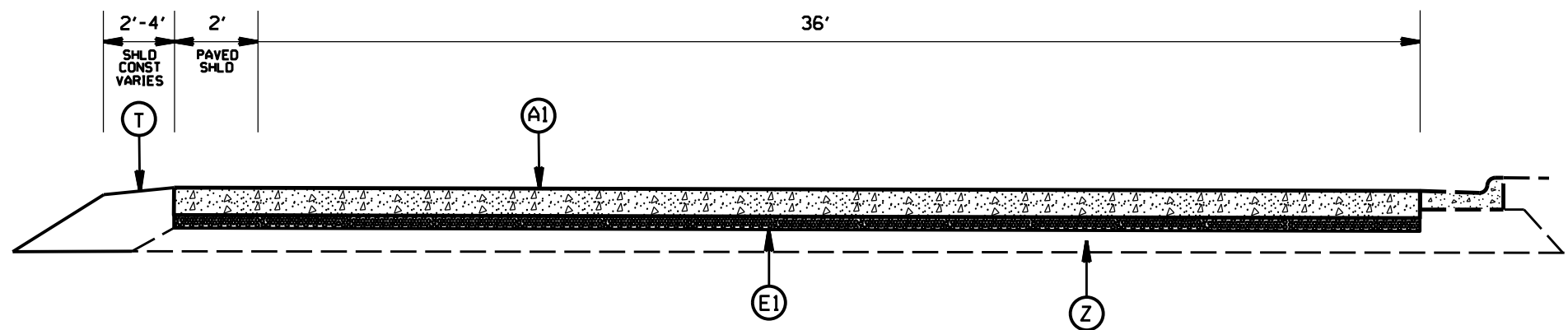


LONGITUDINAL JOINT

PROPOSED PORTLAND CEMENT CONCRETE
TO
PROPOSED ASPHALT SURFACE COURSE



2'6" CONCRETE CURB
& GUTTER 11" THICK



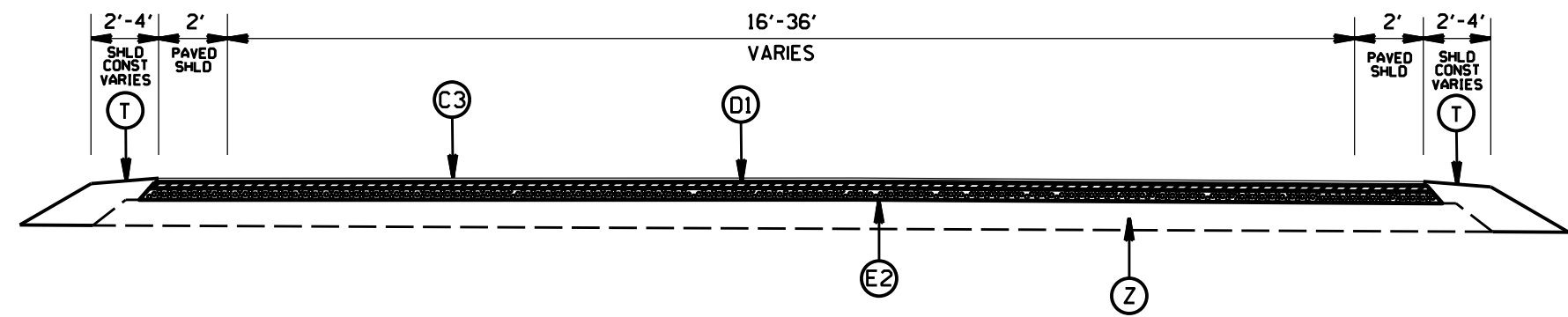
TYPICAL SECTION NO.22
TO RAMP TO STATESVILLE AVE

I-5905 I-85 PAVEMENT PRESERVATION MECKLENBURG COUNTY			REVISIONS
SCALE	-NA-		
DATE	3/19		
DWG. BY	JHE		
DESIGN BY	JHE		
APPROVED			

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	1-5905	19	
WBS NO. 45888.3.GVI			

PAVEMENT SCHEDULE

A1	PROP. 11" PORTLAND CEMENT CONCRETE PAVEMENT
B1	PROP. APPROX. 5/8" ULTRA-THIN BONDED WEARING COURSE, AT AN AVERAGE RATE OF 70 LBS. PER SQ. YD.
C1	PROP. APPROX. 2.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
C2	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D, IN 2 SEPARATE 1.5" LIFTS AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
D1	PROP. APPROX. 4.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
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E2	PROP. APPROX. 8.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, IN 2 SEPARATE 4" LIFTS AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
R1	PROP. 2'6" CONCRETE CURB AND GUTTER 11" THICK
T	SHOULDER CONSTRUCTION
U	EXISTING PAVEMENT
V2	MILLING 1.5" DEPTH
V3	MILLING, 2.0" DEPTH
Y	MILLED RUMBLE STRIPS
Z	EXISTING STABILIZED SUBGRADE

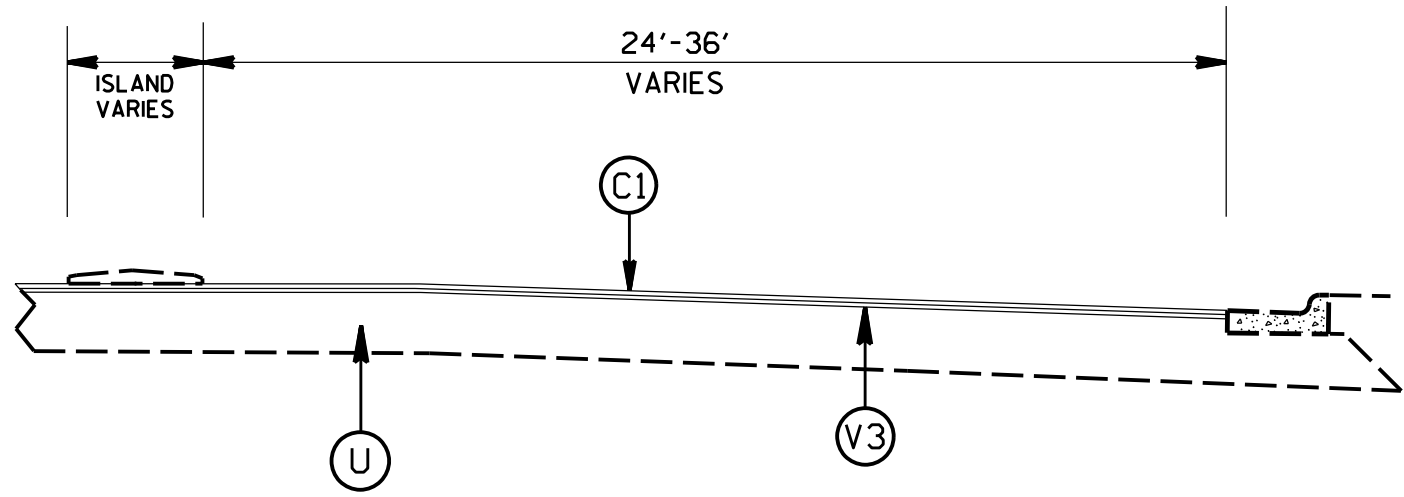


TYPICAL SECTION NO.23
OFF RAMP TO STATESVILLE AVE

SUMMARY OF EARTHWORK

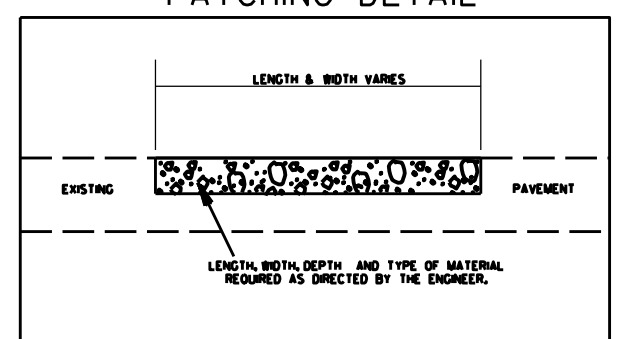
DESCRIPTION	MAP #15	MAP #19
UNCLASSIFIED EXCAVATION	2146 CY	1282 CY
BORROW EXCAVATION	100 CY	100 CY
REMOVAL OF EXISTING ASPHALT PAVEMENT	8360 SY	5186 SY
SHOULDER CONSTRUCTION	0.72 SMI	0.45 SMI

NOTE: QUANTITIES ARE APPROXIMATE, AND ARE ONLY TO BE USED FOR THE PURPOSE OF BIDDING THIS CONTRACT. PAYMENT FOR EARTH WORK QUANTITIES WILL BE COVERED UNDER COMPREHENSIVE GRADING AS A LUMP SUM PAY ITEM AS DETERMINED BY THE RESIDENT ENGINEER.



TYPICAL SECTION NO.24
STATESVILLE AVE

PATCHING DETAIL

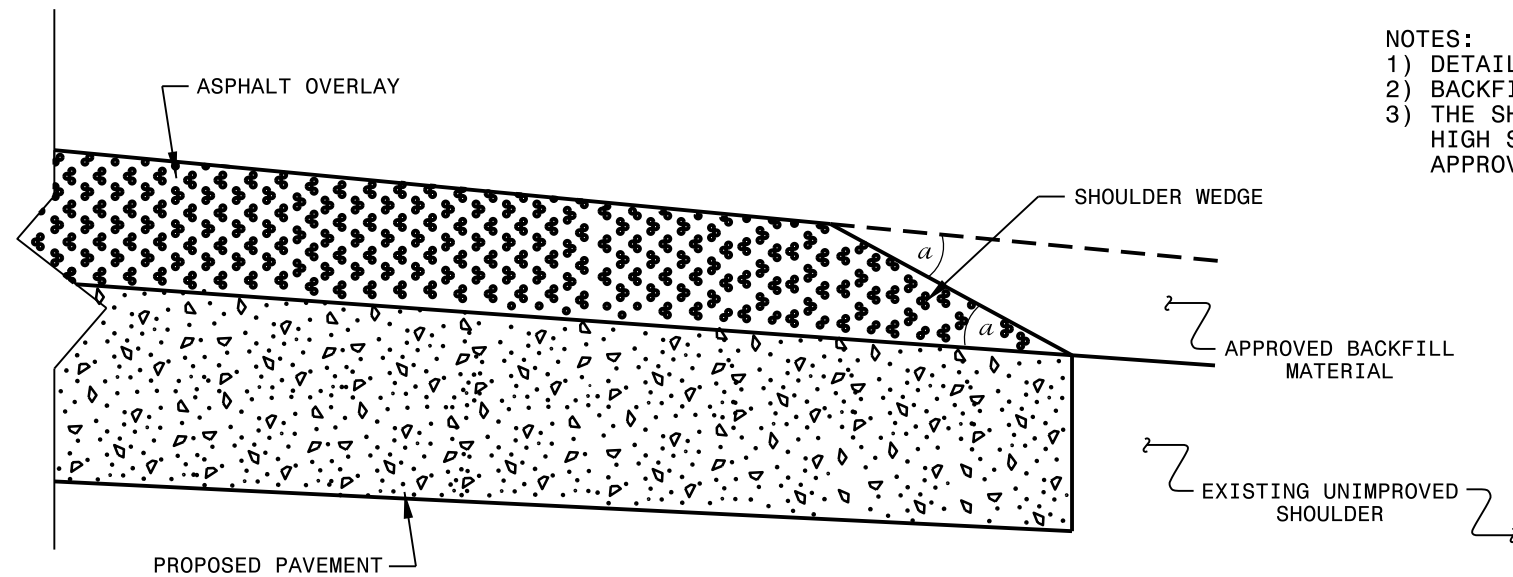


1-5905
1-85 PAVEMENT PRESERVATION
MECKLENBURG COUNTY

SCALE	-NA-		REVISIONS
DATE	3/19		
DWG. BY	JHE		
DESIGN BY	JHE		
APPROVED			

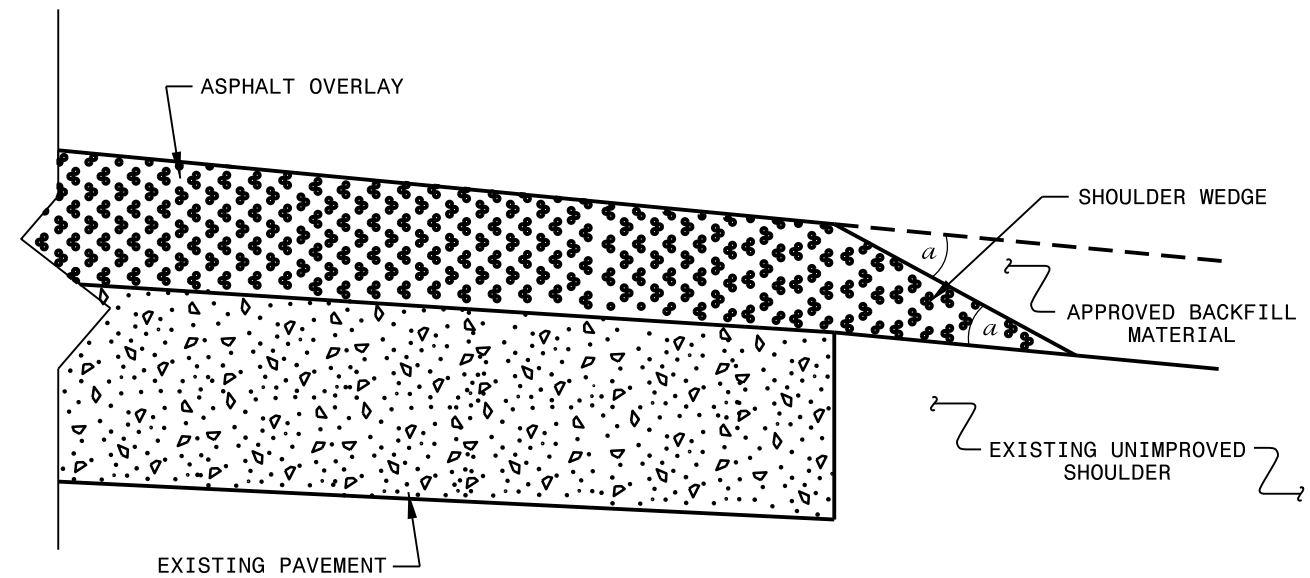
NOTES:

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



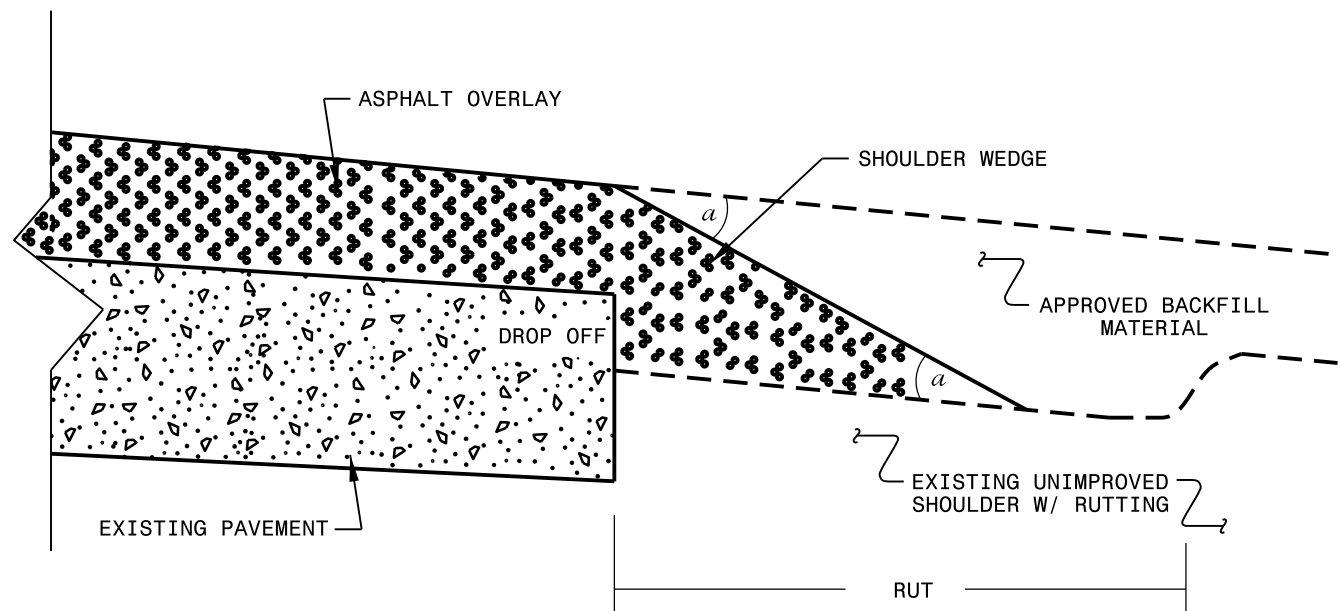
SHOULDER WEDGE DETAIL

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



SHOULDER WEDGE DETAIL

(Resurfacing Projects w/ NO Widening)



SHOULDER WEDGE DETAIL

(Resurfacing Adjacent to Rutted Shoulder)

- SHOULDER WEDGE ANGLE = 30°

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

THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO. I-5905	SHEET NO. 23	TOTAL NO.
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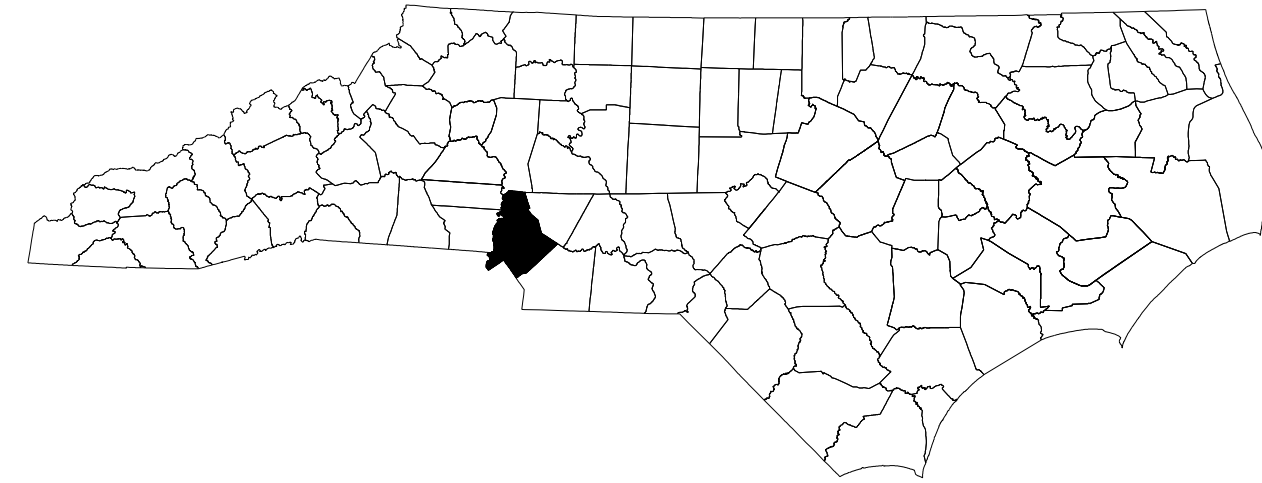
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGT H	WID TH	TYPE II																4895000	4895...												
										4795000					4805000000-N					4810000000-		4815000000-E		4820000	48250000			4835000	4840000	4845000000-N						4855000	4870000	4890000	4895000
										COLD APPL PLAS. LINES, WHITE TYPE II (24")	COLD APPL PLAS. SYMBOL LEFT TURN ARROW	COLD APPL PLAS. SYMBOLS LEFT/ STRAIGHT ARROW	COLD APPL PLAS. SYMBOL RIGHT TURN ARROW	COLD APPL PLAS. SYMB. TYPE II 24"YIELD	4" WHITE PAINT	4" YELLOW PAINT	6" WHITE PAINT	6" YELLOW PAINT	8" WHITE PAINT	12" WHITE PAINT	24" WHITE PAINT	PAINT MSG ONLY	PAINT RT ARROW	PAINT MERGE ARROW	PAINT LT ARROW			PAINT STR & RT ARROW	PAINT STR & LT ARROW	PAINT YIELD SYMBOL	6" LINE REMOVAL	24" LINE REMOVAL	THERM O LINES WHITE (24",90 MILS)	NON- CAST IRON SNOW PLOW. MARKERS					
LF	EA	EA	EA	EA	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA														
			1	NB I-85 MAINLINE		1,2,3	4	MD	6.08	48							87,360	64,122		13,022			32	22	64												1,720		
			2	SB I-85 MAINLINE		1,2,3	4	MD	6.08	48							86,544	64,122		16,220			104	52	48											1,770			
			3	NB OFF RAMP		4	1		0.17	24							1,309	1,010		205	30						6						15	30	20				
			4	NB ON RAMP		4	1		0.15	35							952	836		205						4										20			
			5	SB OFF RAMP		4	1		0.12	36							898	679	236	193	30					6							20	30	18				
			6	SB ON RAMP		4	1		0.15	33							1,004	847		176						5									16				
			7	NB OFF RAMP		9	1		0.15	22							110	504	235		40						3	3						40	12				
			8	SB LOOP OFF RAMP		7,9	1		0.11	20							150	606	220		40						3							40	10				
			9	SB ON RAMP		8	1		0.21	20							918	1,124	214																				
			10	ON RAMP TO NB I-77		17	1		0.61	24							6,587	5,049		1,440						6										80			
			11	LOOP ON RAMP TO SB I-77		15	1		0.14	40							889	714		82																50			
			12	LOOP ON RAMP TO SB I-85		16	1		0.13	27							133	685																					
			13	ON RAMP TO SB I-85		15	1		0.44	31							2,808	2,295										8								20			
			14	ON RAMP TO SB I-77		15	1		0.14	31							913	730																					
			15	NB OFF RAMP		1,22,2	1		0.30	30	30	2	2	2	5	45	2,674	2,492	105	606	30				2		2						5	635		64			
			16	NB ON RAMP		8,11	1		0.21	25							1,040	1,080	130																				
			17	SB LOOP ON RAMP		12,13	1		0.27	20							865	1,530	188																				
			18	SB OFF RAMP		4,12	1		0.17	32							908	969	142								3	3								14			
			19	SB ON RAMP		19,20	1		0.27	34							1,451	1,201									3						633		12				
			20	NB LOOP OFF RAMP		9	1		0.13	29							270	804	210		42						6	3						42	20				
			21	NB ON RAMP		8,14	1		0.24	27							1,100	1,300	210																				
			22	SB OFF RAMP		4,14	1		0.19	37							1,165	968	304		55						6	3						55	16				
			23	SB LOOP ON RAMP		9,12	1		0.12	21								660	247	165												10							
			24	US 29 BY PASS CONNECTOR			2		0.07	34																													
			25	STATESVILLE AVE		24	2	MD	0.19	26.8						660	925										5	3							85				
GRAND TOTAL FOR I-5905										16.82							30	2	2	2	5	705	925	200,048	154,327	2,441	32,314	352	136	79	138	37	15	5	15	1,268	35	322	3,862
																	11					1,630	354,375																

45888.3.GV1
Mecklenburg

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

MECKLENBURG COUNTY



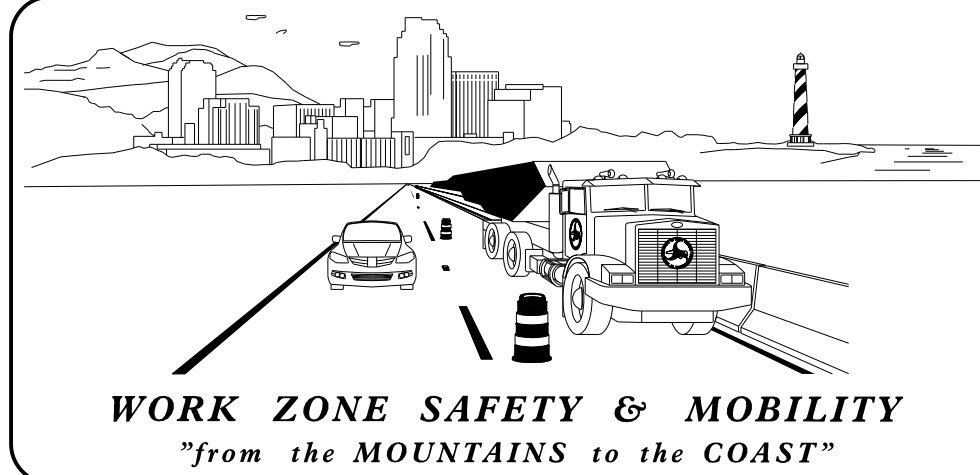
I-85 - MECKLENBURG COUNTY, FROM I-77 TO STATESVILLE AVE. PAVEMENT REHABILITATION.

MAPS 15 THROUGH 19



SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (GENERAL NOTES)
TMP-2	PHASING AND MANAGEMENT STRATEGIES
TMP-2A	TEMPORARY RAMP CLOSURE
TMP-2B	DETOUR SIGN DESIGN
TMP-3	PROJECT LAYOUT
TMP-4	OFFSITE DETOUR- MAP 15 I-85 NORTH
TMP-5	AUXILIARY LANE CLOSURE RAMP DETAIL
TMP-6	OFFSITE DETOUR- MAP 15 I-77 NORTH
TMP-7	OFFSITE DETOUR- MAP 16
TMP-8	OFFSITE DETOUR- MAP 17
TMP-9	OFFSITE DETOUR- MAP 18
TMP-10	MAP 19 RAMP CLOSURE DETAIL
TMP-11	OFFSITE DETOUR- MAP 19

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PLANS PREPARED BY:

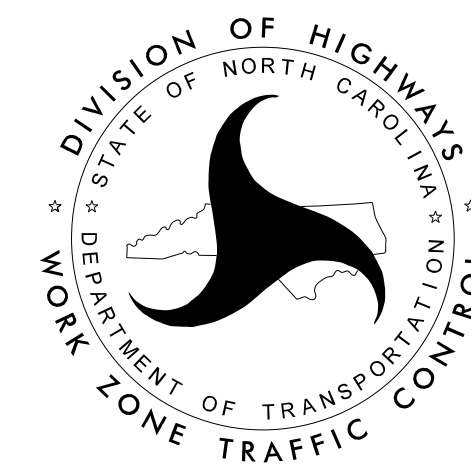
TADEAUS M. KELLY, EIT

JUSTIN D. BEAVER, P.E.

NCDOT CONTACTS:

KENNETH C. THORNEWELL, P.E.
PROJECT ENGINEER

JUSTIN D. BEAVER, P.E.
PROJECT DESIGN ENGINEER

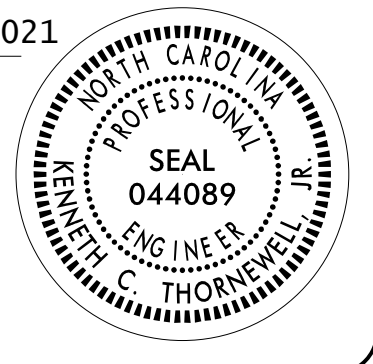


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UNLESS ALL SIGNATURES COMPLETED

APPROVED: *Kenneth C. Thornevell Jr., P.E.*

DATE: 3/8/2021

SEAL



SHEET NO.
TMP-1

I-5905

TIP PROJECT:

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - 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
1101.01	WORK ZONE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.06	WARNING SIGNS FOR BLASTING ZONES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1165.01	TRUCK MOUNTED ATTENUATOR
1170.01	PORTABLE CONCRETE BARRIER
1180.01	SKINNY - DRUMS
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.03	PAVEMENT MARKINGS - EXITS AND ENTRANCE RAMP
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.06	PAVEMENT MARKINGS - LANE DROPS
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.10	PAVEMENT MARKINGS - SCHOOL AREAS
1205.11	PAVEMENT MARKINGS - RAILROAD CROSSINGS
1205.12	PAVEMENT MARKINGS - BRIDGES
1205.13	PAVEMENT MARKINGS - LANE REDUCTIONS
1205.14	PAVEMENT MARKINGS - ROUNDABOUTS
1205.15	PAVEMENT MARKINGS - SUPERSTREETS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - (PERMANENT AND TEMPORARY)
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION
1264.01	OBJECT MARKERS - TYPES
1264.02	OBJECT MARKERS - INSTALLATION

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- TEMP. SHORING (LOCATION PURPOSES ONLY)
- WORK AREA
- REMOVAL

SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM
- SKINNY DRUM
- TUBULAR MARKER
- TEMPORARY CRASH CUSHION
- FLASHING ARROW BOARD
- FLAGGER
- LAW ENFORCEMENT
- TRUCK MOUNTED ATTENUATOR (TMA)
- CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

PAVEMENT MARKERS

- CRYSTAL/CRYSTAL
- CRYSTAL/RED
- YELLOW/YELLOW

PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

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APPROVED: DATE: 1/8/2020			<p style="text-align: center;">ROADWAY STANDARD DRAWINGS & LEGEND</p>
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>			

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRABLE OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

TIME RESTRICTIONS

A) EXCEPT AS ALLOWED ELSEWHERE, DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
I-85, INCLUDING OTHER RAMPS & LOOPS (ONE LANE) I-77, INCLUDING OTHER RAMPS & LOOPS (ONE LANE) STATESVILLE AVE	MONDAY THROUGH SUNDAY 6:00 A.M. TO 9:00 P.M.
I-85 (TWO LANES) I-77 (TWO LANES) I-85/I-77 INTERCHANGE RAMPS AND LOOPS	MONDAY THROUGH SUNDAY 5:00 A.M. TO 10:00 P.M.
I-85 (THREE LANES)	MONDAY THROUGH SUNDAY 5:00 A.M. TO 11:00 P.M.

B) DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

ROAD NAME
I-85, INCLUDING RAMPS & LOOPS I-77, INCLUDING RAMPS & LOOPS STATESVILLE AVE

HOLIDAY

- FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
- FOR NEW YEAR'S, BETWEEN THE HOURS OF 6:00 A.M. DECEMBER 31st TO 9:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 9:00 P.M. THE FOLLOWING TUESDAY.
- FOR EASTER, BETWEEN THE HOURS OF 6:00 A.M. THURSDAY AND 9:00 P.M. MONDAY.
- FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 9:00 P.M. TUESDAY.
- FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 9:00 P.M. THE DAY AFTER INDEPENDENCE DAY.

IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 6:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 9:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
- FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY AND 9:00 P.M. TUESDAY.
- FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 A.M. TUESDAY TO 9:00 P.M. MONDAY.
- FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 9:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.
- FOR CAROLINA PANTHERS GAMES, OCCURRING AT THE BANK OF AMERICA STADIUM BETWEEN 3 HOURS BEFORE THE START AND 2 HOURS AFTER THE END OF THE GAME.
- FOR ANY NASCAR RACE AT THE CHARLOTTE MOTOR SPEEDWAY BETWEEN THE HOURS OF 6:00 A.M. THE THURSDAY BEFORE THE FIRST TRACK EVENT AND 9:00 P.M. THE DAY AFTER THE GAME.

C) EXCEPT AS ALLOWED ELSEWHERE, DO NOT CLOSE ROADS AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
I-85 RAMPS & LOOPS I-77 RAMPS & LOOPS	MONDAY THROUGH SUNDAY 5:00 A.M. TO 10:00 P.M.

D) DO NOT CONDUCT ANY HAULING OPERATIONS AGAINST THE FLOW OF TRAFFIC OF AN OPEN TRAVELWAY UNLESS THE HAULING OPERATION IS PROTECTED BY BARRIER OR GUARDRAIL OR AS DIRECTED BY THE ENGINEER.

LANE AND SHOULDER CLOSURE REQUIREMENTS

- E) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.
- F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.
- G) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- H) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.
- I) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.
- J) DO NOT INSTALL MORE THAN ONE LANE CLOSURE IN ANY ONE DIRECTION ON I-85.

PAVEMENT EDGE DROP OFF REQUIREMENTS

- K) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 500 FT IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

- L) NOTIFY THE ENGINEER THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

- M) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- N) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.

PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.
- O) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.

COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.
- P) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

- Q) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.
- R) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES DRUMS PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

PAVEMENT MARKINGS AND MARKERS

- S) INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

ROAD NAME	MARKING	MARKER
I-85	PAINT	NONE

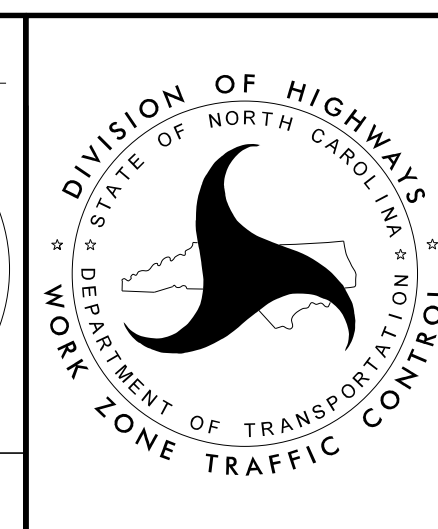
MISCELLANEOUS

- T) LAW ENFORCEMENT SHALL BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS DIRECTED BY THE ENGINEER.

APPROVED: *Kenneth C. Thornwell Jr., P.E.*
DocuSigned by:
1E991EF27373405...

DATE: 2/5/2021

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



TRANSPORTATION
OPERATIONS
PLAN

PHASING

BEFORE BEGINNING ANY CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL INSTALL ALL ADVANCE WARNING SIGNS AND TRAFFIC CONTROL DEVICES. FIELD VERIFY LOCATIONS WITH THE RESIDENT ENGINEER PRIOR TO INSTALLATION.

COMPLETE PAVEMENT WEDGING/ BUILD UP IN SUCH A MANNER THAT NO PONDING OF WATER WILL OCCUR WITHIN THE TRAVEL LANE. MAINTAIN POSITIVE DRAINAGE AND A MAXIMUM OF 0.04 ROLLOVER IN EXISTING TRAVEL LANES.

USE RSD 1101.02 SHEET 4 OF 14 TO CLOSE A SINGLE LANE FOR ALL TIE IN WORK NECESSARY FOR PAVEMENT REHABILITATION.

USE LAW ENFORCEMENT AS NECESSARY TO INITIALLY CLOSE RAMPS, OR AS DIRECTED BY THE ENGINEER.

RAMPS CAN BE CONSTRUCTED IN ANY ORDER, ONE MAP AT A TIME.

FOR ALL OTHER RAMP RESURFACING NOT SPECIFIED IN THIS PHASING, REFERENCE "WORK ZONE TRAFFIC CONTROL FOR INTERSTATE/FREEWAY RESURFACING PROJECTS" SPECIAL PROVISION.

MAP 15, I-77/I-85 OFF RAMPS

PHASE 1

THE CONTRACTOR SHALL COMPLETE THE WORK REQUIRED IN PHASE 1, STEP 1 THROUGH PHASE 1, STEP 3 ON MAP 15, BEGINNING 9:00 P.M. THE FRIDAY THE CONTRACTOR ELECTS TO BEGIN THE WORK. ALL LANES OF TRAFFIC SHALL BE OPEN BY 6:00 A.M. ON THE THIRD MONDAY AFTER THE CONTRACTOR ELECTS TO BEGIN THE WORK. SEE INTERMEDIATE CONTRACT TIMES AND LIQUIDATED DAMAGES.

STEP 1:

USING TMP-4, TMP-5, AND TMP-6, INSTALL TRAFFIC CONTROL DEVICES AND CLOSE OFF RAMP AND AUXILIARY LANE ON I-85 NORTH TO STATESVILLE AVE (-RPC2-), AND CLOSE THE OFF RAMP ON I-77 NORTH TO STATESVILLE AVE (-RPC1-). DETOUR TRAFFIC OFFSITE. COORDINATE WITH THE CITY OF CHARLOTTE TO MODIFY EXISTING SIGNAL AT STATESVILLE AVE (-Y-) INTERSECTION.

STEP 2:

ON MAP 15, CONSTRUCT -RPC2-, UP TO BUT NOT INCLUDING FINAL SURFACE LAYER, UNDER TEMPORARY RAMP CLOSURE. INSTALL TEMPORARY PAVEMENT MARKINGS.

STEP 3:

UPON COMPLETION OF -RPC2- RAMP WORK, REMOVE DETOUR SIGNS AND OTHER TRAFFIC CONTROL DEVICES AND RESTORE TRAFFIC TO NORMAL PATTERNS.

PHASE 2

THE CONTRACTOR SHALL COMPLETE THE WORK REQUIRED IN PHASE 2, STEP 1 THROUGH PHASE 2, STEP 3 ON MAP 15, BEGINNING 9:00 P.M. THE FRIDAY THE CONTRACTOR ELECTS TO BEGIN THE WORK. ALL LANES OF TRAFFIC SHALL BE OPEN BY 6:00 A.M. ON THE SECOND MONDAY AFTER THE CONTRACTOR ELECTS TO BEGIN THE WORK. SEE INTERMEDIATE CONTRACT TIMES AND LIQUIDATED DAMAGES.

STEP 1:

USING TMP-2A AND TMP-6, INSTALL TRAFFIC CONTROL DEVICES TO CLOSE OFF RAMP ON I-77 NORTH TO STATESVILLE AVE (-RPC1-). DETOUR TRAFFIC OFFSITE. OFF RAMP ON I-85 NORTH TO STATESVILLE AVE (-RPC2-) SHALL REMAIN OPEN TO ALL LANES.

STEP 2:

ON MAP 15, CONSTRUCT -RPC1-, UP TO BUT NOT INCLUDING THE FINAL SURFACE LAYER FROM STATION 10+00 TO 21+40. INSTALL TEMPORARY PAVEMENT MARKINGS.

STEP 3:

REMOVE DETOUR SIGNS AND REOPEN ROADWAY.

STEP 4:

CONSTRUCT FINAL SURFACE LAYER FOR -RCP1- AND -RCP2- UNDER NIGHTLY RAMP CLOSURES. INSTALL FINAL PAVEMENT MARKINGS/MARKERS.

MAPS 16, 17 AND 18 RAMPS

STEP 1:

USING TMP-2A AND TMP-7, TMP-8 OR TMP-9, INSTALL TRAFFIC CONTROL DEVICES TO CLOSE RAMPS AND DETOUR TRAFFIC OFFSITE.

STEP 2:

CONSTRUCT MAPS 16, 17, OR 18 UNDER NIGHTLY RAMP CLOSURES FOR EACH RESPECTIVE I-85 RAMP, ONE AT A TIME. INSTALL FINAL PAVEMENT MARKINGS/MARKERS.

STEP 3:

UPON COMPLETION OF MAPS 16, 17, OR 18 PAVEMENT REHABILITATION, REMOVE DETOUR SIGNS AND OTHER TRAFFIC CONTROL DEVICES AND RESTORE TRAFFIC TO NORMAL PATTERNS.

MAP 19, I-85 ON RAMP

THE CONTRACTOR SHALL COMPLETE THE WORK REQUIRED IN STEP 1 THROUGH STEP 3 ON MAP 19, BEGINNING 9:00 P.M. THE FRIDAY THE CONTRACTOR ELECTS TO BEGIN THE WORK. ALL LANES OF TRAFFIC SHALL BE OPEN BY 6:00 A.M. ON THE SECOND MONDAY AFTER THE CONTRACTOR ELECTS TO BEGIN THE WORK. SEE INTERMEDIATE CONTRACT TIMES AND LIQUIDATED DAMAGES.

STEP 1:

USING TMP-2A, INSTALL TRAFFIC CONTROL DEVICES AND CLOSE I-85 SOUTH ON RAMP (-RPD-). USE DRUMS TO CLOSE LEFT TURN LANES ON STATESVILLE AVE (-Y-) AS SHOWN IN TMP-10. DETOUR TRAFFIC OFFSITE.

STEP 2:

ON MAP 19, CONSTRUCT -RPD- UNDER TEMPORARY RAMP CLOSURE, UP TO BUT NOT INCLUDING FINAL SURFACE LAYER. INSTALL TEMPORARY PAVEMENT MARKINGS.

STEP 3:

UPON COMPLETION OF -RPD- PAVEMENT REHABILITATION, REMOVE DETOUR SIGNS AND OTHER TRAFFIC CONTROL DEVICES AND RESTORE TRAFFIC TO NORMAL PATTERN.

STEP 4:


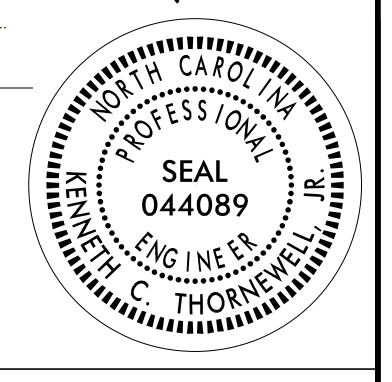

CONSTRUCT FINAL SURFACE COURSE & INSTALL FINAL PAVEMENT MARKINGS AND MARKERS UNDER NIGHTLY RAMP CLOSURE.

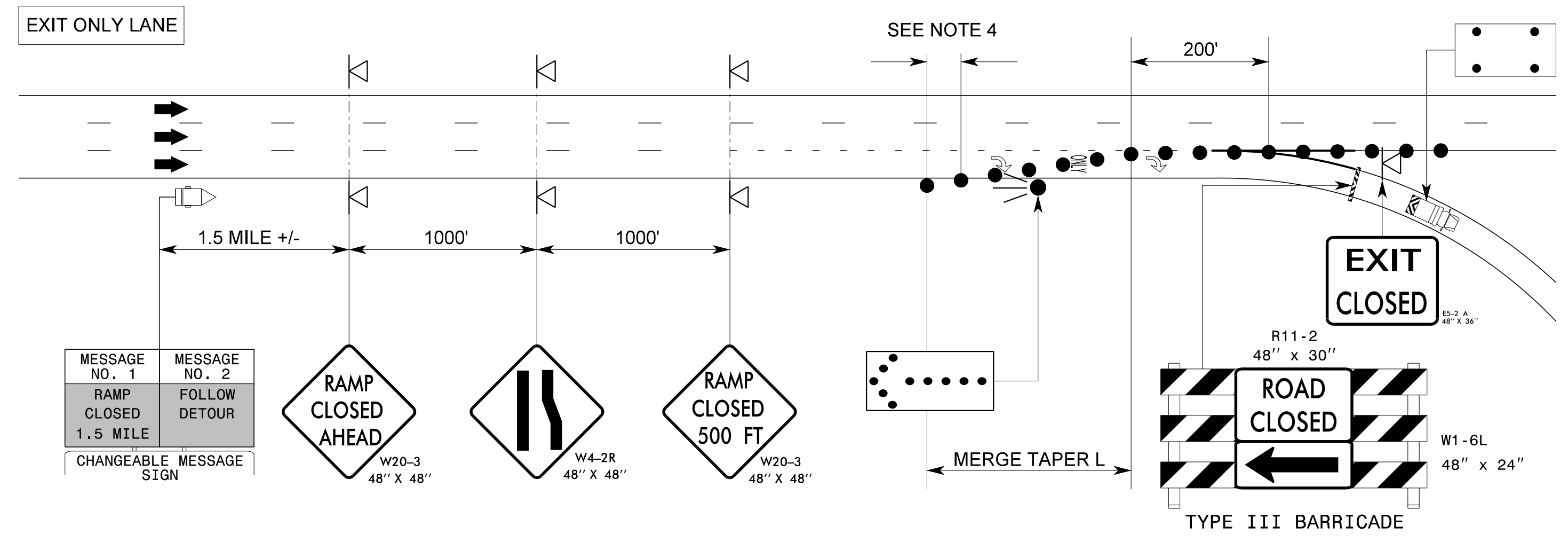
MANAGEMENT STRATEGIES

THE FOLLOWING LISTED WORK ZONE STRATEGIES ARE RECOMMENDED FOR INCLUSION WITHIN THIS TRANSPORTATION MANAGEMENT PLAN (TMP).

RECOMMENDED STRATEGIES:

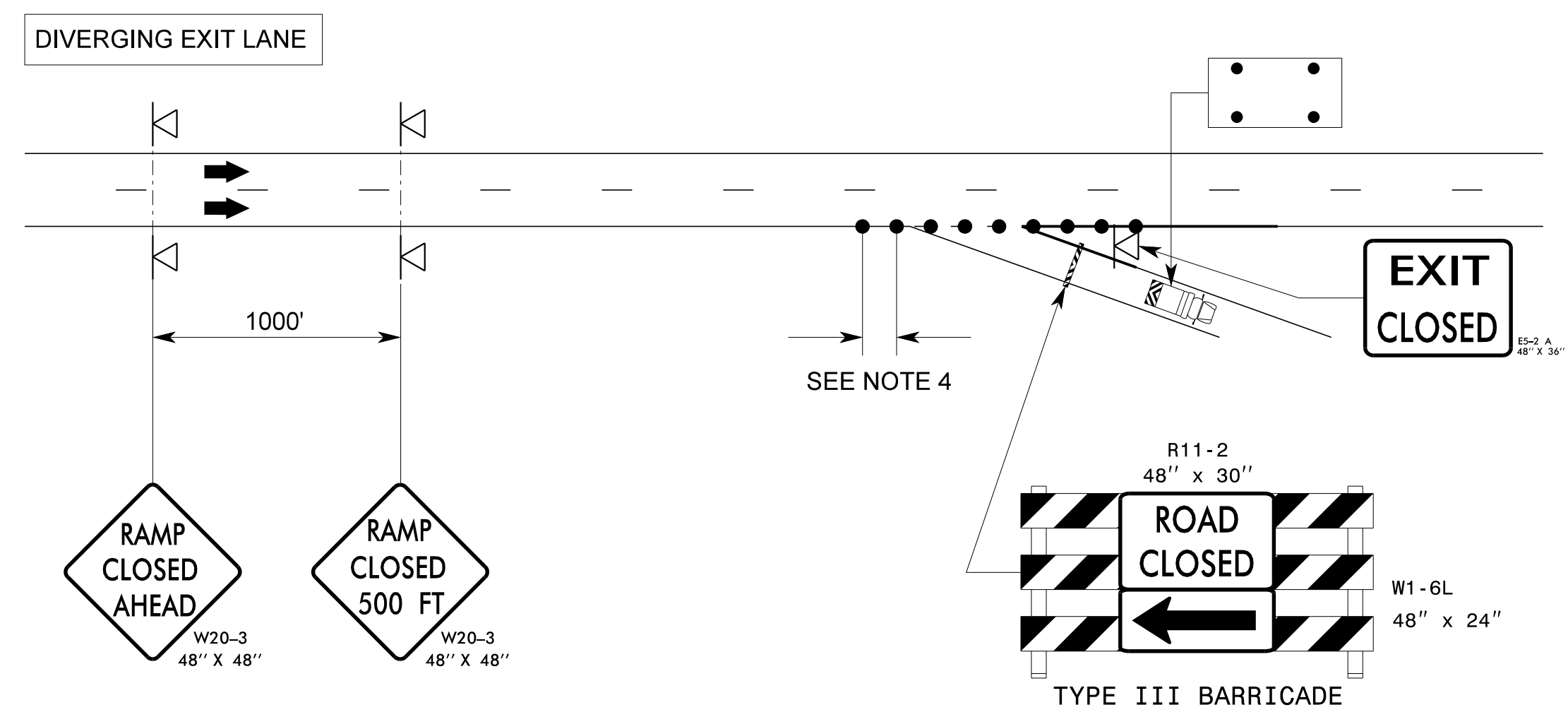
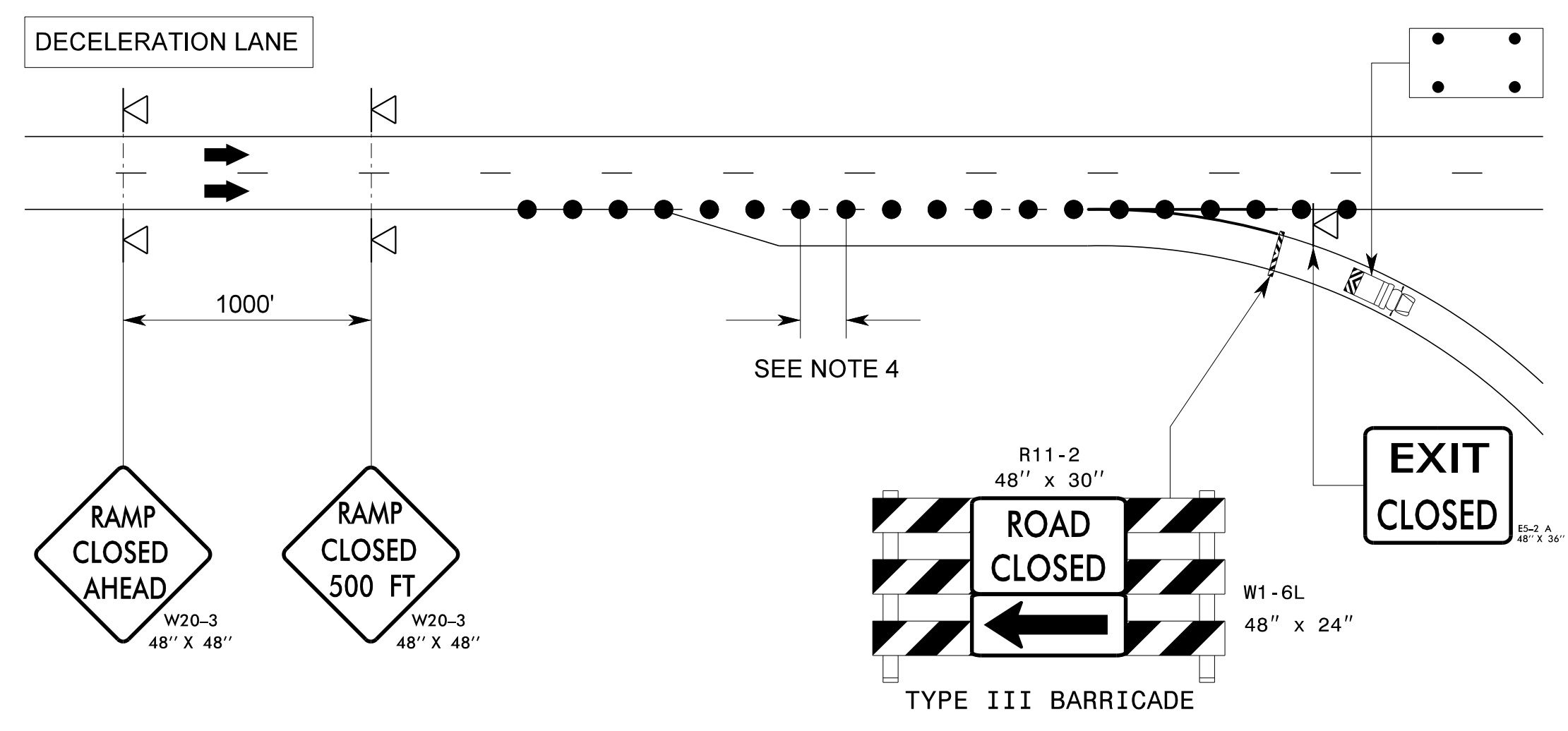
- RAMP CLOSURES / RELOCATION
- OFF-SITE DETOURS / USE OF ALTERNATIVE ROUTES
- TEMPORARY TRAFFIC SIGNALS
- DEDICATED (PAID) LAW ENFORCEMENT

<p>APPROVED: </p> <p>DATE: 3/8/2021</p>			<h3 style="margin: 0;">PHASING AND MANAGEMENT STRATEGIES</h3>
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>			



LEGEND

- CHANGEABLE MESSAGE SIGN (CMS)
- PORTABLE SIGN
- FLASHING ARROW BOARD (FAB)
- TRUCK MOUNTED ATTENUATOR (TMA)
- DRUM
- FLASHING ARROW BOARD (96"X48"), CAUTION MODE
- DIRECTION OF TRAFFIC FLOW



GENERAL NOTES

- 1- USE STATIONARY SIGNS FOR LONG TERM RAMP CLOSURES.
- 2- REFER TO RSD. 1101.11 SHEET 1 OF 4 FOR "L" DISTANCE. IF THE MERGE TAPER "L" DISTANCE CANNOT BE ACHIEVED DUE TO FIELD CONDITIONS, ENGINEER SHALL DETERMINE ACCEPTABLE DISTANCE FOR THE LENGTH OF THE TAPER.
- 3- IF APPLICABLE, INSTALL LANE CLOSURES WITH THE FLOW OF TRAFFIC, BEGINNING ON THE UPSTREAM SIDE OF TRAFFIC. REMOVE LANE CLOSURES AGAINST THE FLOW OF TRAFFIC BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
- 4- PLACE DRUMS IN TAPERS AT THE MAXIMUM SPACING EQUAL IN FEET TO THE POSTED SPEED LIMIT.
- 5- POSITION THE TMA TO MAINTAIN A ROLL-AHEAD DISTANCE AS RECOMMENDED BY THE MANUFACTURER.
- 6- PLACE FLASHING ARROW BOARDS (FAB) ON THE SHOULDER. PLACE THE FAB WITHIN THE TAPER IF SHOULDERS DO NOT EXIST. MEET THE REQUIREMENTS FOR STOPPING SIGHT DISTANCE AT THE FAB LOCATION. IF NEEDED, EXTEND LANE CLOSURES AT THE BUFFER SPACE, SUCH THAT STOPPING SIGHT DISTANCE HAS BEEN MET. (SEE RSD. 1101.11, SHEET 2)
- 7- USE LAW ENFORCEMENT AS NECESSARY FOR THE INITIAL CLOSURE OF RAMPS, OR AS DIRECTED BY THE ENGINEER.
- 8- COVER EXISTING EXIT SIGN LOCATED WITHIN THE GORE.
- 9- LONG TERM RAMP CLOSURES IN EXCESS OF 14 DAYS WILL REQUIRE OVERHEAD GUIDE SIGNS TO BE COVERED WITH EXIT CLOSED SIGN.

APPROVED: *Kenneth C. Thornwell, Jr., P.E.*

DATE: 3/8/2021

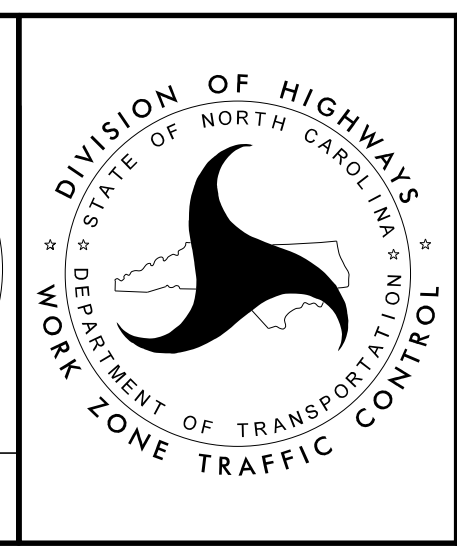
15991EP27373405

SEAL 044089

ENGINEER

C. THORNEWELL, JR.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



TEMPORARY RAMP CLOSURE

DIVISION OF HIGHWAYS

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

WORK ZONE TRAFFIC CONTROL

I:\9\2020\1\dot\dfs\root\01NPrj\Store\Div\Proj\Division\5905\TrafficControl\TCP\DCN\I-5905_TC_TMP-2A_RSD-closure.dgn
 User: tkelly

SIGN NUMBER: SP200005 TYPE: D QUANTITY: 1 SIGN WIDTH: 2'-6" HEIGHT: 1'-0" TOTAL AREA: 2.5 Sq.Ft. BORDER TYPE: FLUSH RECESS: 0.38" WIDTH: 0.63" RADII: 1.5" NO. Z BARS: LENGTH:	BACKG COLOR: Orange COPY COLOR: Black <table border="1"> <tr> <th>SYMBOL</th> <th>X</th> <th>Y</th> <th>WID</th> <th>HT</th> </tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table> MAT'L: 0.063" (1.6 mm) ALUMINUM	SYMBOL	X	Y	WID	HT																																																			DESIGN BY: J.Navarrete PROJECT ID: I-5905 CHECKED BY: LOCATION: Jan 14, 2020 DIV:WZTC
SYMBOL	X	Y	WID	HT																																																					

USE NOTES: 1,2

- Legend and border(except those that are colored black) shall be direct applied Grade C sheeting.
- Background shall be Grade C reflective sheeting.

BORDER
R=1.5"
TH=0.63"
IN=0.38"

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

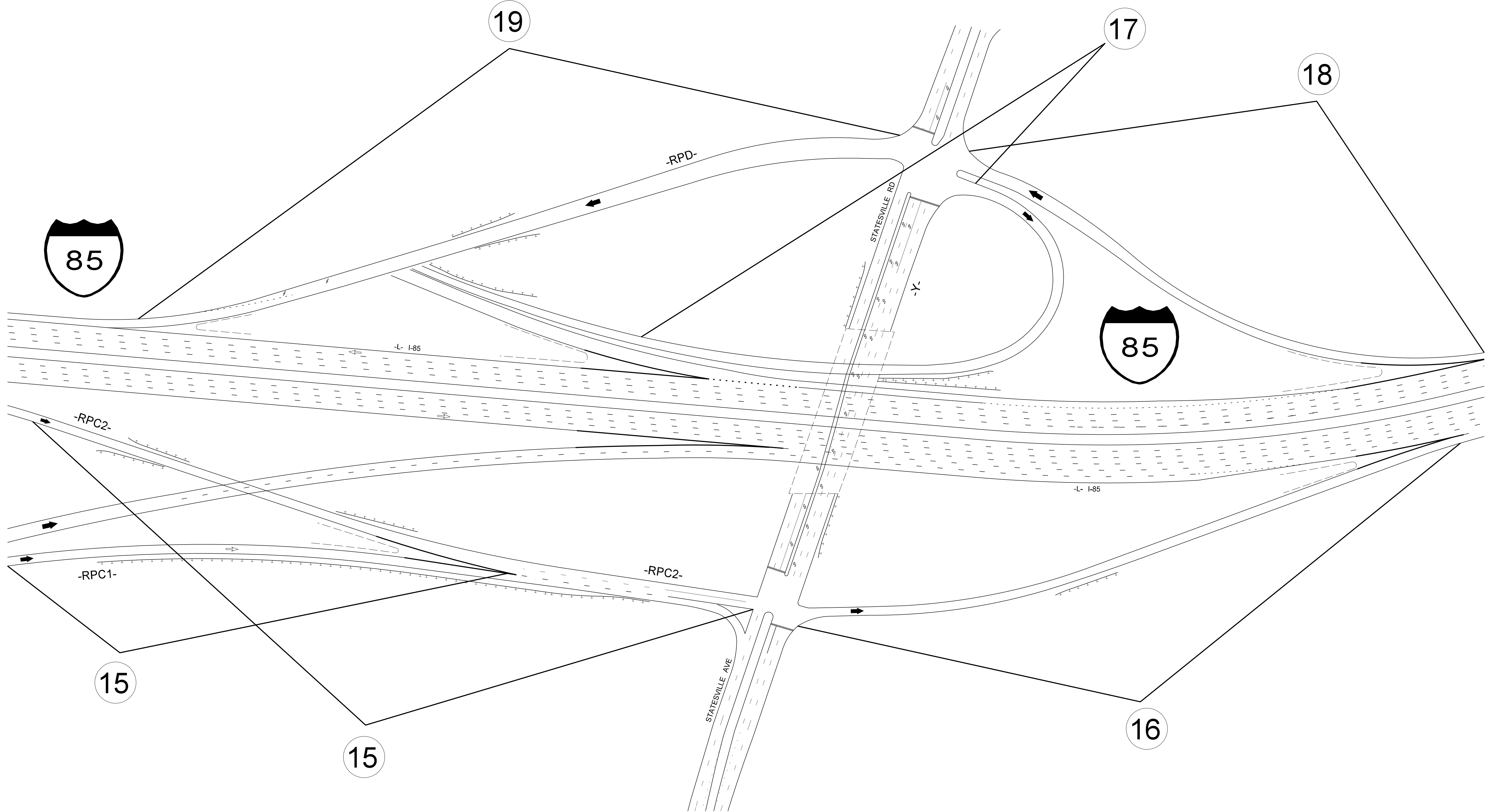
Letter spacings are to start of next letter

	S	T	A	T	E	S	V	I	L	L	E	A	V	E	Series/Size Text Length			
	3.1	1.5	1.3	1.8	1.6	1.4	1.5	1.8	1	1.6	1.6	1.1	3	1.8	1.8	1.1	2.8	B 2000
																		24.1

FILENAME: Special Signs 8 NORTH CAROLINA D.O.T. SIGN DETAIL

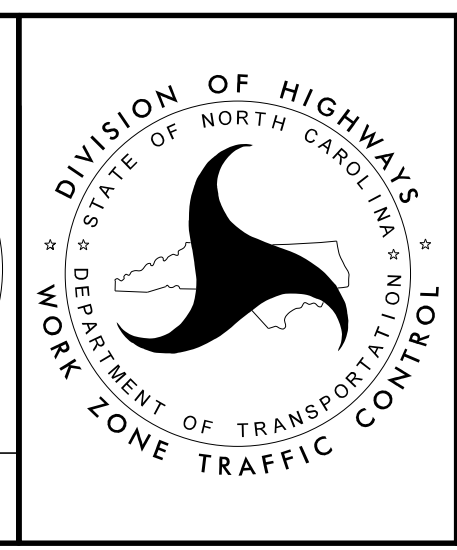
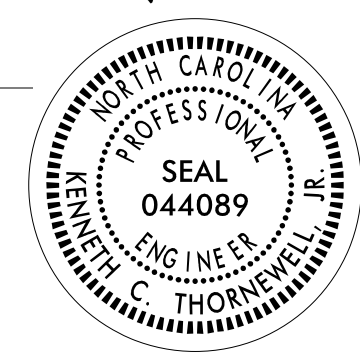
3/9/2021
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 User: jdbeaver1

APPROVED: <i>Renee B. Roach</i> DATE: 3/10/2021 SEAL 		SPECIAL SIGN DESIGN
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



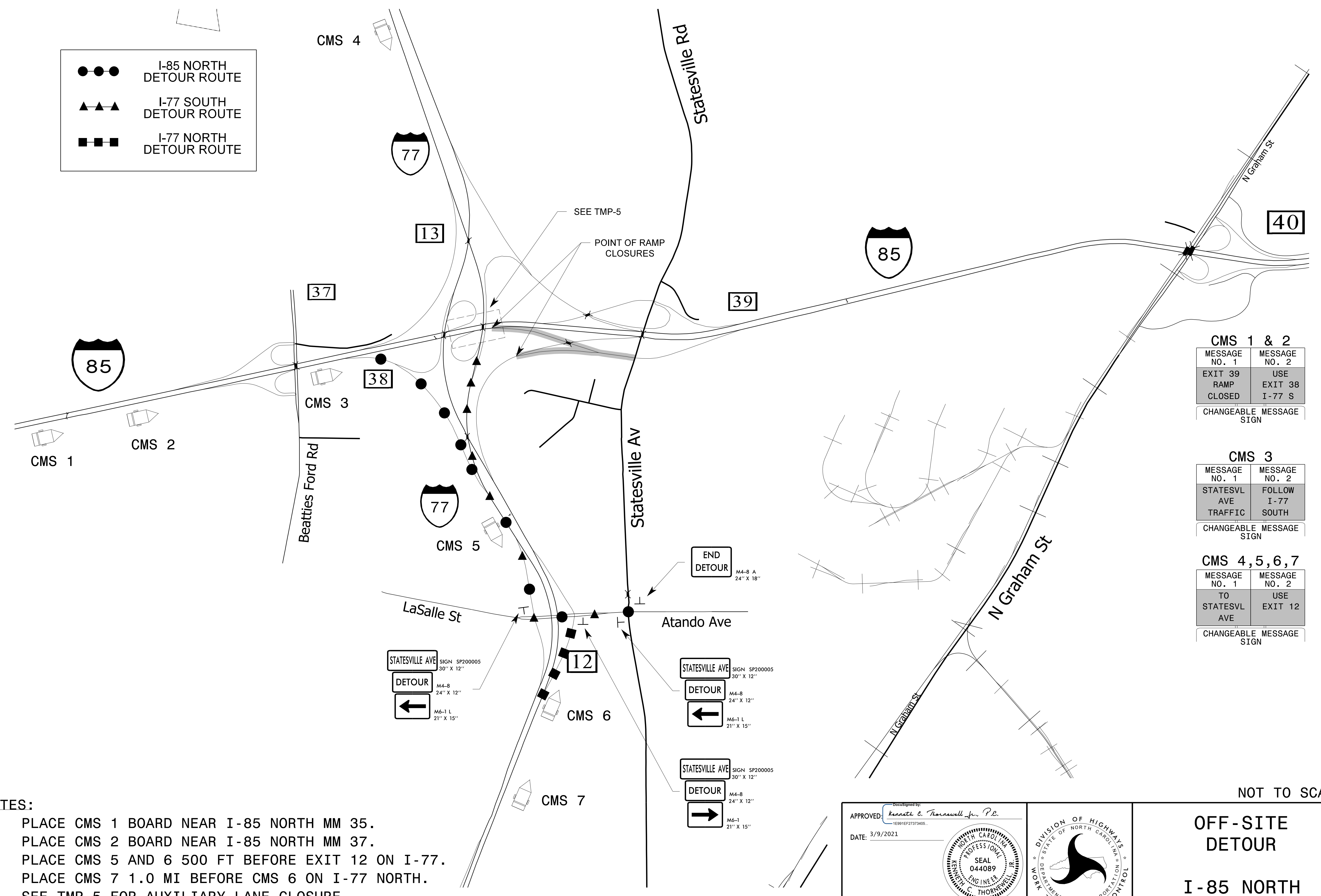
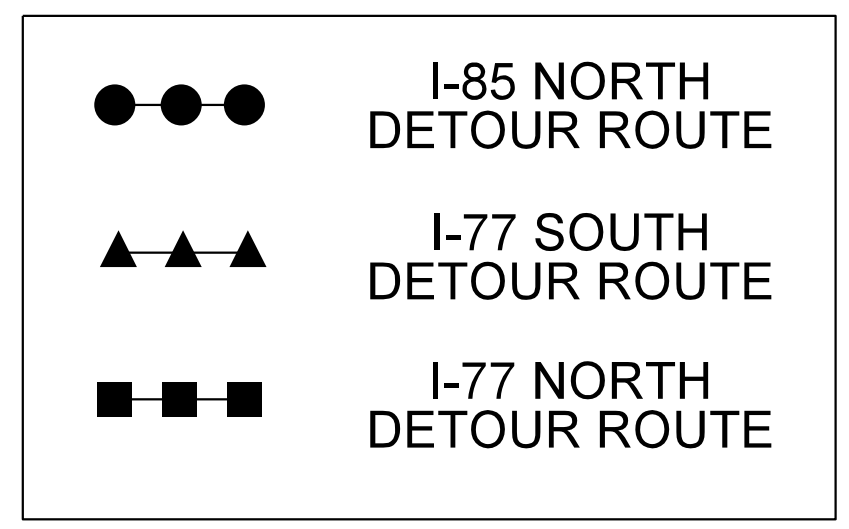
I/8/2020
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 User:tmkelyl

APPROVED: *Kenneth C. Thornwell Jr., P.E.*
DocuSigned by: Kenneth C. Thornwell Jr., P.E. 1E091EF27373405
 DATE: 1/8/2020



PROJECT LAYOUT
MAPS 15, 16, 17, 18 & 19

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



CMS 1 & 2

MESSAGE NO. 1	MESSAGE NO. 2
EXIT 39 RAMP CLOSED	USE EXIT 38 I-77 S

CHANGEABLE MESSAGE SIGN

CMS 3

MESSAGE NO. 1	MESSAGE NO. 2
STATESVL AVE TRAFFIC	FOLLOW I-77 SOUTH

CHANGEABLE MESSAGE SIGN

CMS 4,5,6,7

MESSAGE NO. 1	MESSAGE NO. 2
TO STATESVL AVE	USE EXIT 12

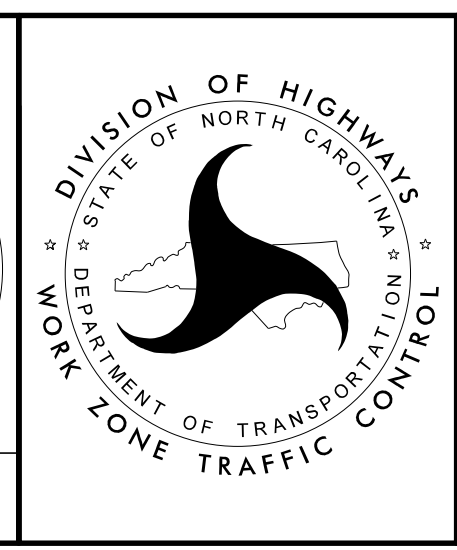
CHANGEABLE MESSAGE SIGN

- NOTES:**
1. PLACE CMS 1 BOARD NEAR I-85 NORTH MM 35.
 2. PLACE CMS 2 BOARD NEAR I-85 NORTH MM 37.
 3. PLACE CMS 5 AND 6 500 FT BEFORE EXIT 12 ON I-77.
 4. PLACE CMS 7 1.0 MI BEFORE CMS 6 ON I-77 NORTH.
 5. SEE TMP-5 FOR AUXILIARY LANE CLOSURE.

APPROVED: *Kenneth C. Harrell, Jr., P.E.*
 DATE: 3/9/2021

Seal: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 044089
 KENNETH C. THORNEVELL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

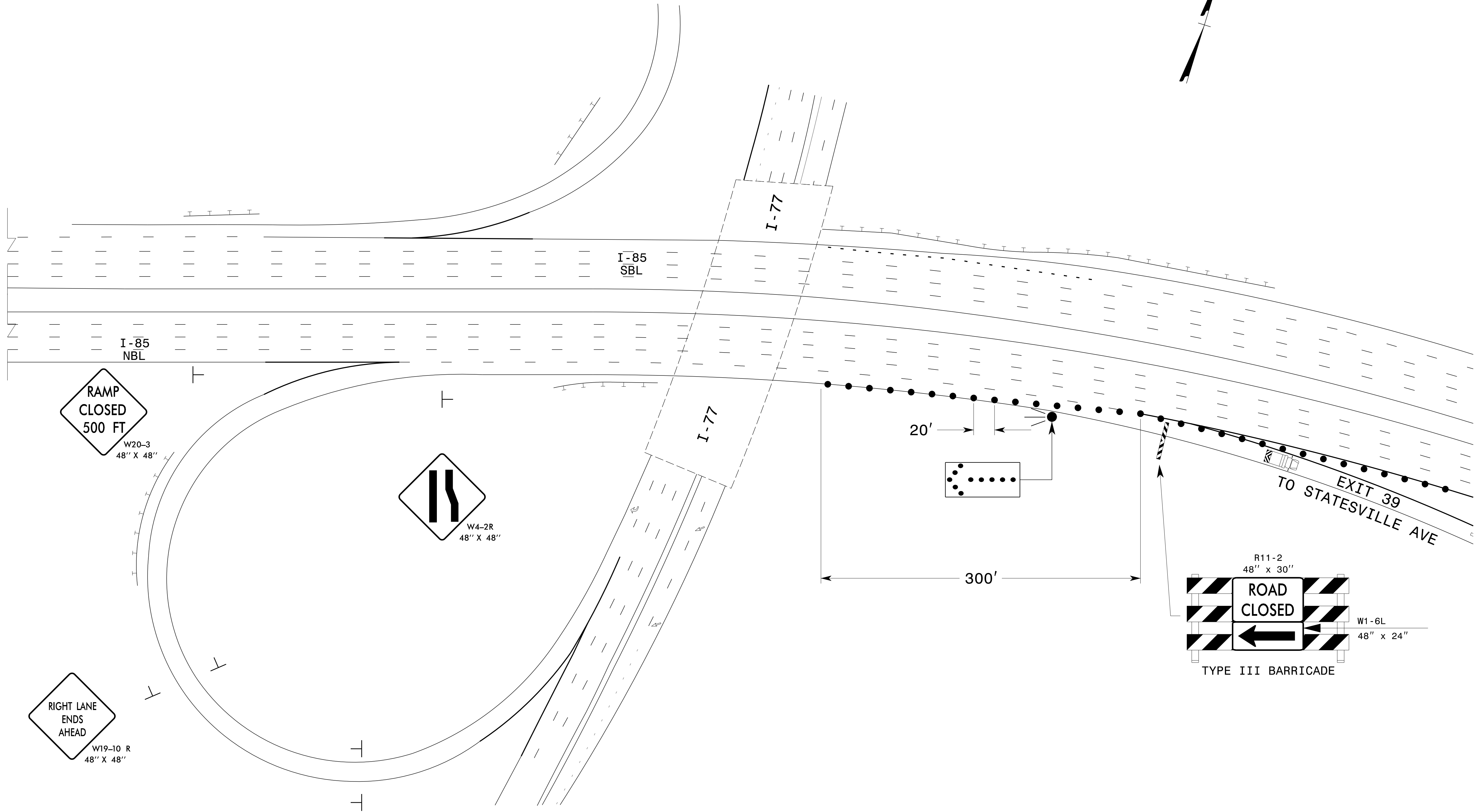


NOT TO SCALE

OFF-SITE DETOUR

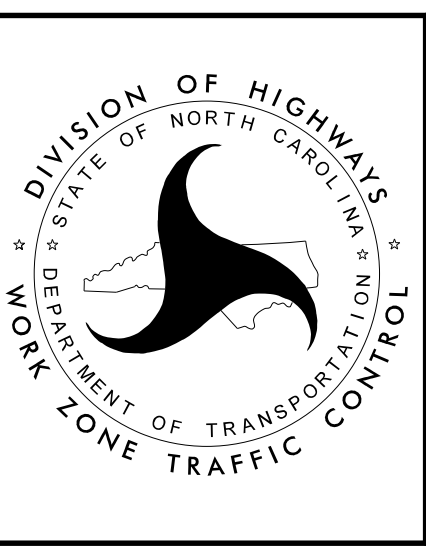
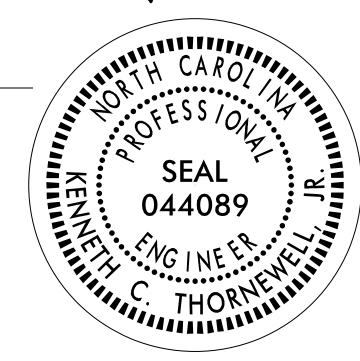
I-85 NORTH RAMP - MAP 15

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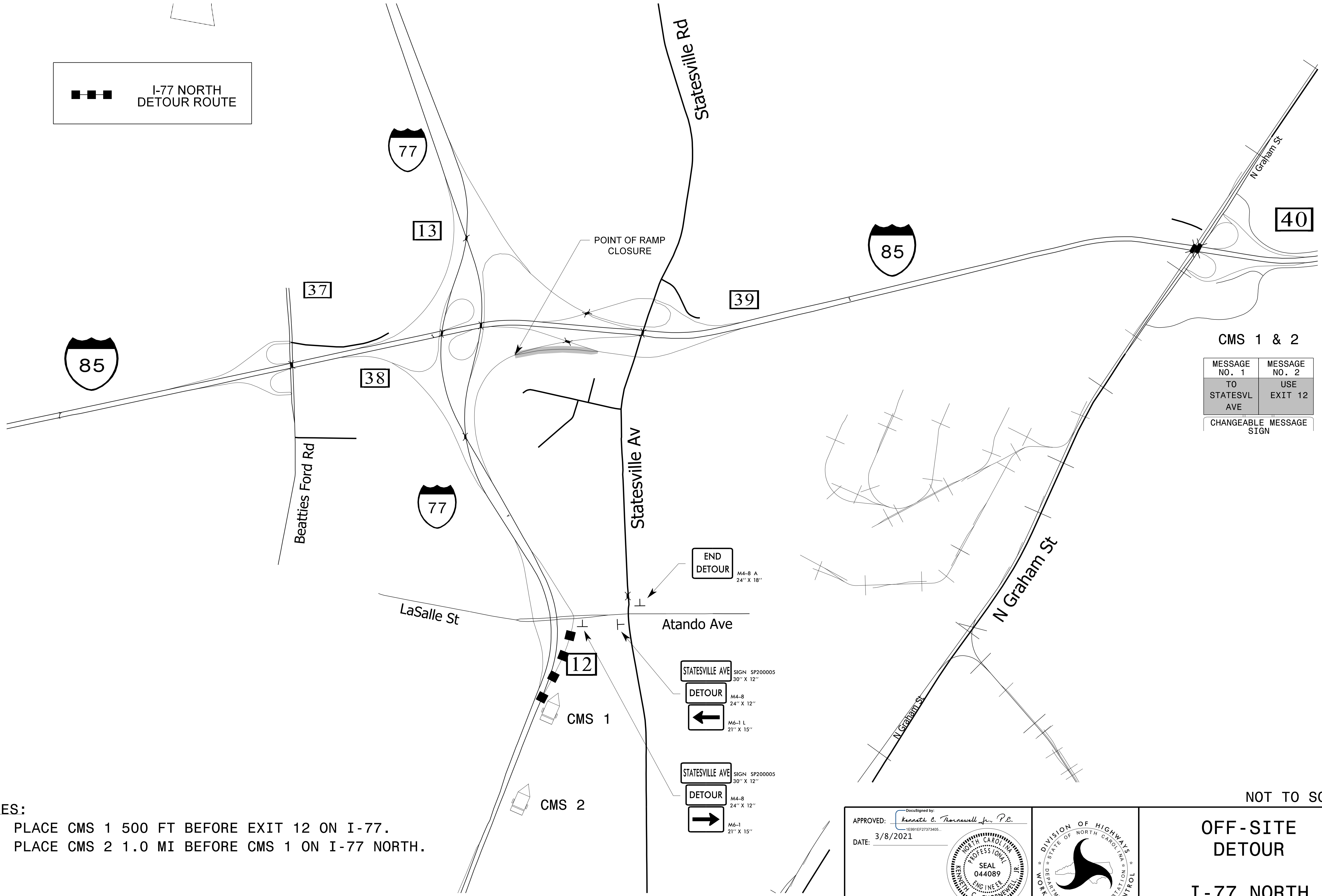


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 User: jdbeaver1

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 DATE: 1/8/2020
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**I-77 SOUTH
 EXIT 13A
 AUXILIARY LANE CLOSURE
 RAMP DETAIL**



CMS 1 & 2

MESSAGE NO. 1	MESSAGE NO. 2
TO STATESVL AVE	USE EXIT 12
CHANGEABLE MESSAGE SIGN	

NOTES:

1. PLACE CMS 1 500 FT BEFORE EXIT 12 ON I-77.
2. PLACE CMS 2 1.0 MI BEFORE CMS 1 ON I-77 NORTH.

END
DETOUR
M4-8 A
24" X 18"

STATESVILLE AVE
SIGN SP200005
30" X 12"
DETOUR
M4-8
24" X 12"
M6-1 L
21" X 15"

STATESVILLE AVE
SIGN SP200005
30" X 12"
DETOUR
M4-8
24" X 12"
M6-1
21" X 15"

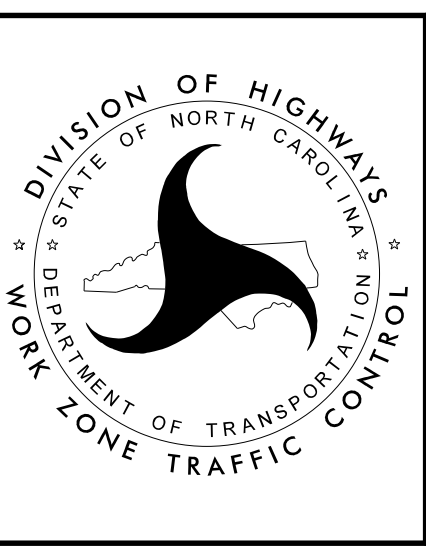
NOT TO SCALE

APPROVED: *Kenneth C. Thornwell Jr., P.E.*
DATE: 3/8/2021

15911EP27373405

SEAL
044089
ENGINEER
KENNETH C. THORNWELL JR., P.E.

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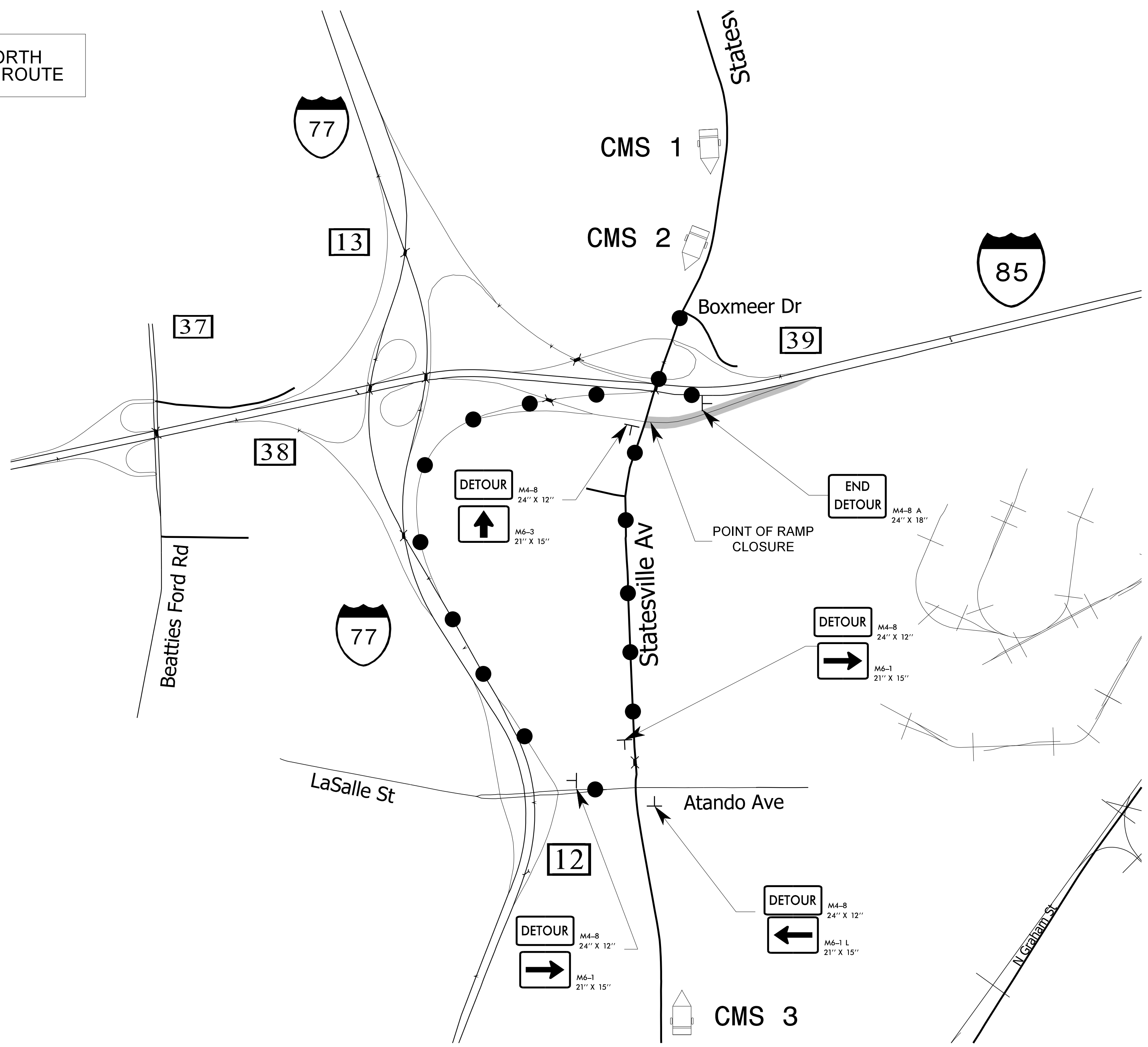


**OFF-SITE
DETOUR**

**I-77 NORTH
RAMP- MAP 15**

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 User: jdbaverl

●●● I-85 NORTH
DETOUR ROUTE



CMS 1

MESSAGE NO. 1	MESSAGE NO. 2
RAMP TO I-85N CLOSED	FOLLOW DETOUR ROUTE

CHANGEABLE MESSAGE SIGN

CMS 2

MESSAGE NO. 1	MESSAGE NO. 2
RAMP TO I-85N CLOSED	TO I-85N KEEP STRAIGHT

CHANGEABLE MESSAGE SIGN

CMS 3

MESSAGE NO. 1	MESSAGE NO. 2
RAMP TO I-85N CLOSED	USE I-77 N

CHANGEABLE MESSAGE SIGN

- NOTES:**
1. PLACE CMS 2 0.5 MILE FROM BOXMEER DR.
 2. PLACE CMS 1 1 MILE FROM CMS 2.
 3. PLACE CMS 3 1 MILE FROM ATANDO AVE.

NOT TO SCALE

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DATE: 1/8/2020

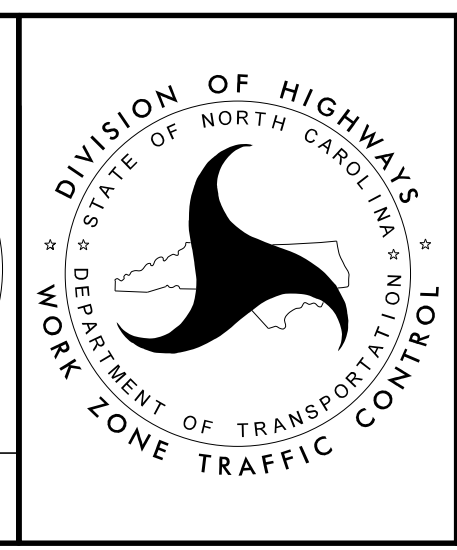
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SEAL 044089

ENGINEER

THORNWELL

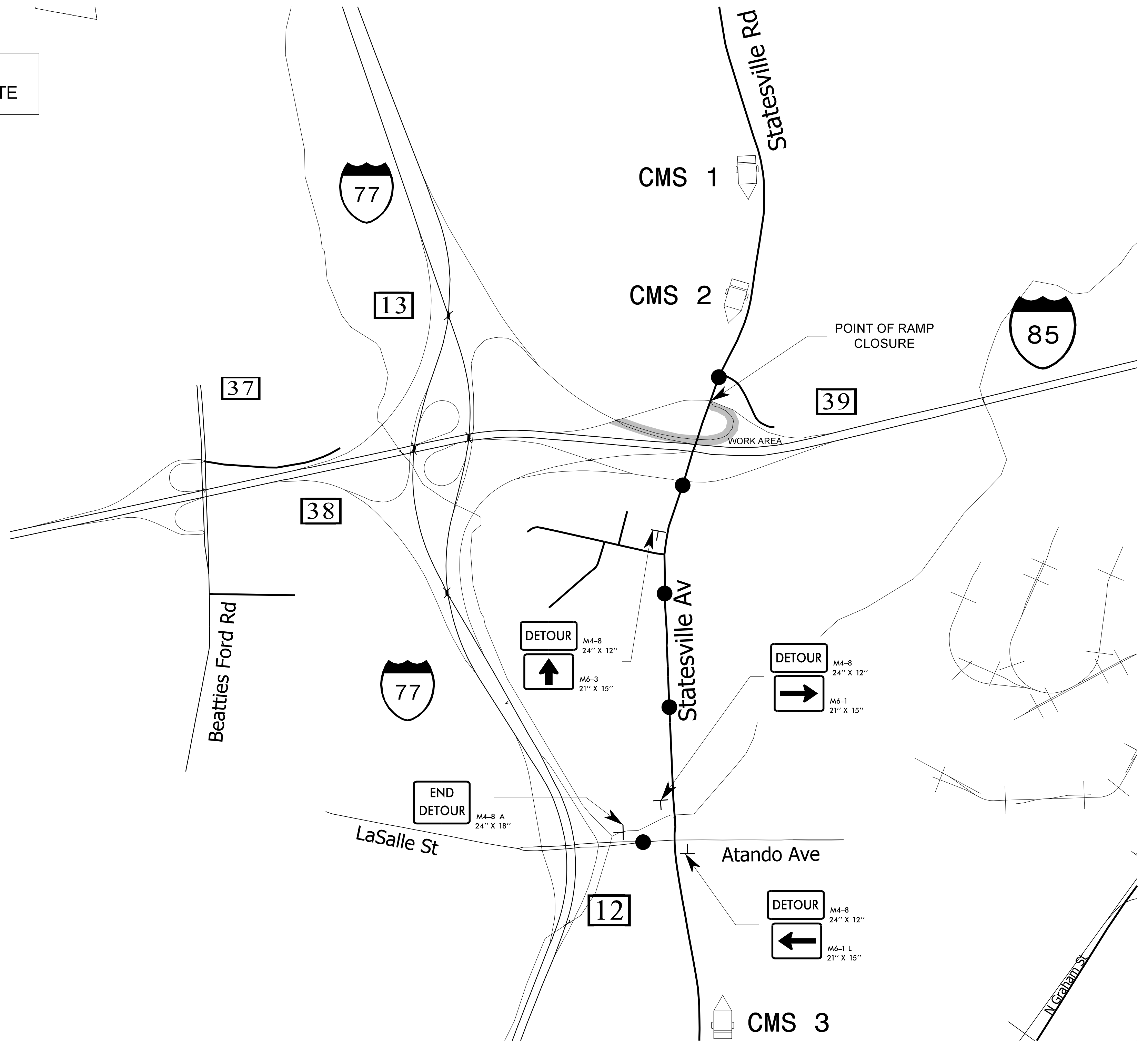
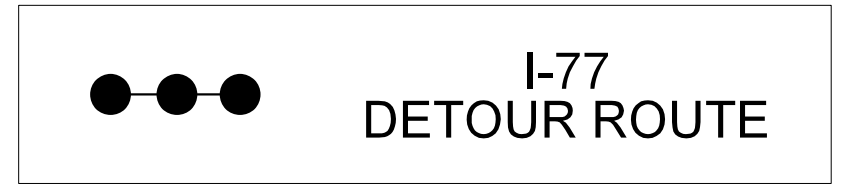
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UNLESS ALL SIGNATURES COMPLETED**



**OFF-SITE
DETOUR**

**I-85 NORTH
RAMP - MAP 16**

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 User:tmkelly



CMS 1

MESSAGE NO. 1	MESSAGE NO. 2
RAMP TO I-77 CLOSED	FOLLOW DETOUR 1 MILE

CHANGEABLE MESSAGE SIGN

CMS 2

MESSAGE NO. 1	MESSAGE NO. 2
RAMP TO I-77 CLOSED	TO I-77 KEEP STRAIGHT

CHANGEABLE MESSAGE SIGN

CMS 3

MESSAGE NO. 1	MESSAGE NO. 2
TO I-77	FOLLOW DETOUR 1 MILE

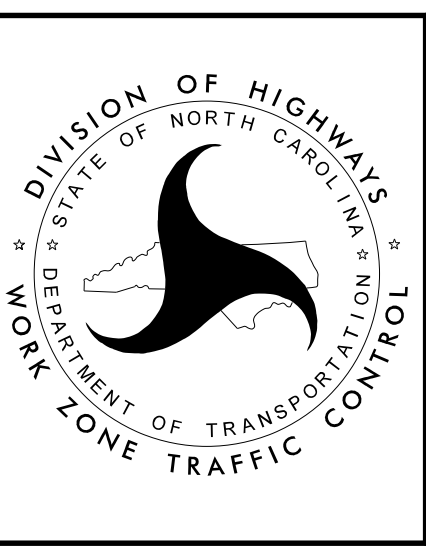
CHANGEABLE MESSAGE SIGN

- NOTES:
1. PLACE CMS 2 0.5 MILE FROM BOXMEER DR.
 2. PLACE CMS 1 1 MILE FROM CMS 2.
 3. PLACE CMS 3 1 MILE FROM ATANDO AVE.

NOT TO SCALE

APPROVED: *Kenneth C. Thornwell, Jr., P.E.*
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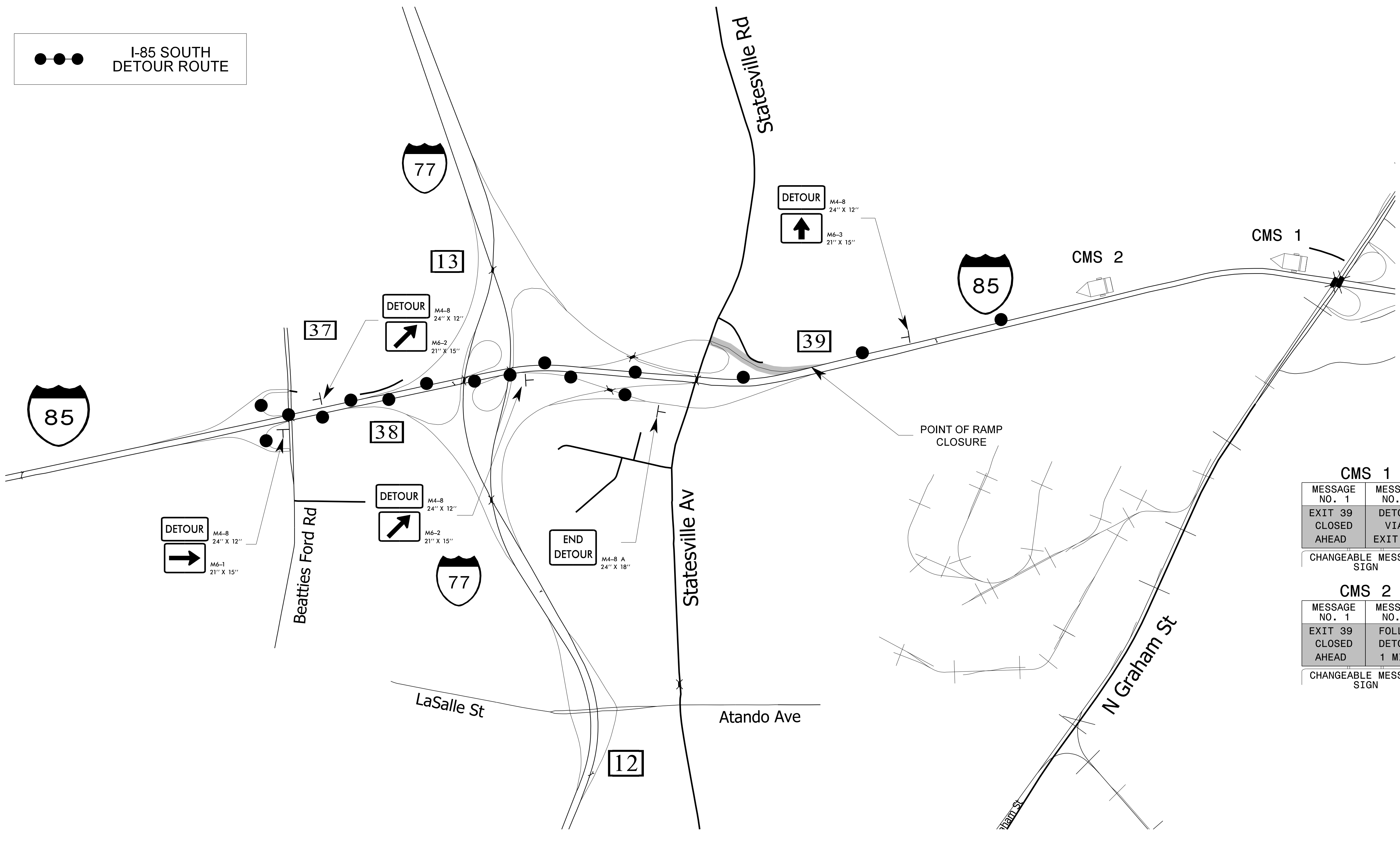
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**OFF-SITE
DETOUR**

**I-77 NORTH
RAMP - MAP 17**

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 User: jdbeaver1



CMS 1	
MESSAGE NO. 1	MESSAGE NO. 2
EXIT 39 CLOSED AHEAD	DETOUR VIA EXIT 37
CHANGEABLE MESSAGE SIGN	

CMS 2	
MESSAGE NO. 1	MESSAGE NO. 2
EXIT 39 CLOSED AHEAD	FOLLOW DETOUR 1 MILE
CHANGEABLE MESSAGE SIGN	

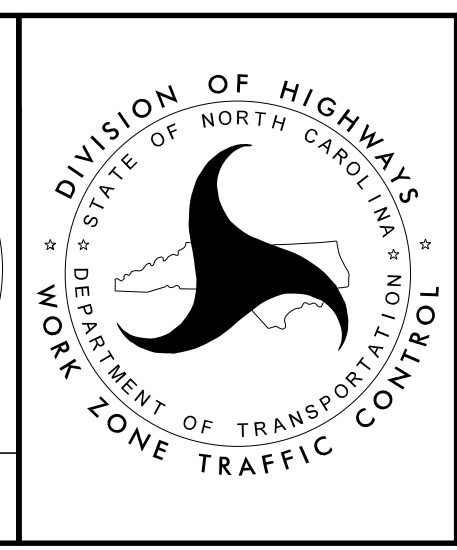
- NOTES:
1. PLACE CMS 2 1 MILE FROM EXIT 39.
 2. PLACE CMS 1 0.25 MILE FROM CMS 2.

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 User: jdbeaver1

APPROVED: *Kenneth C. Thornwell Jr., P.E.*
 DATE: 1/8/2020

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 KENNETH C. THORNWELL JR., P.E.

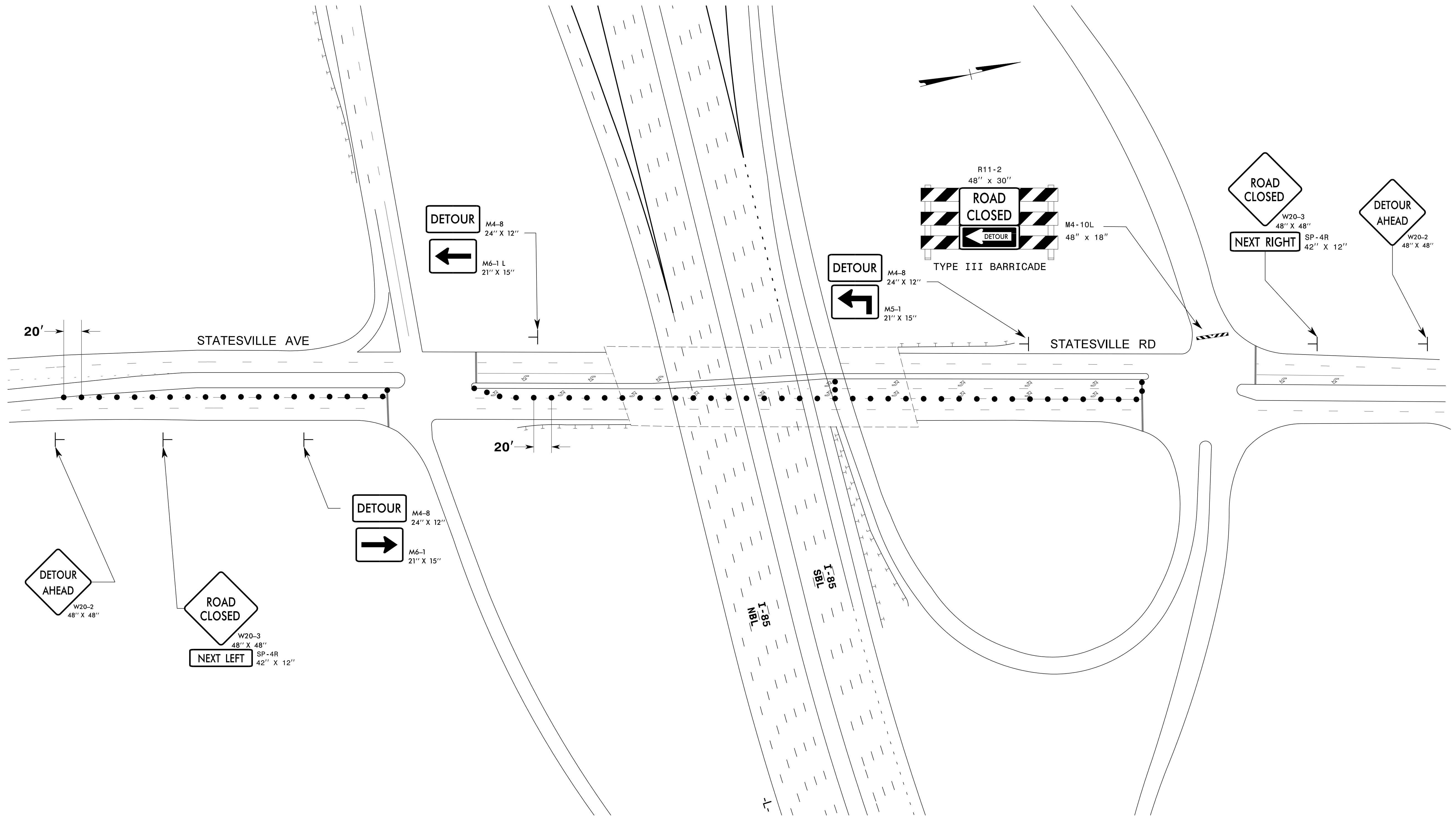
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NOT TO SCALE

**OFF-SITE
 DETOUR**

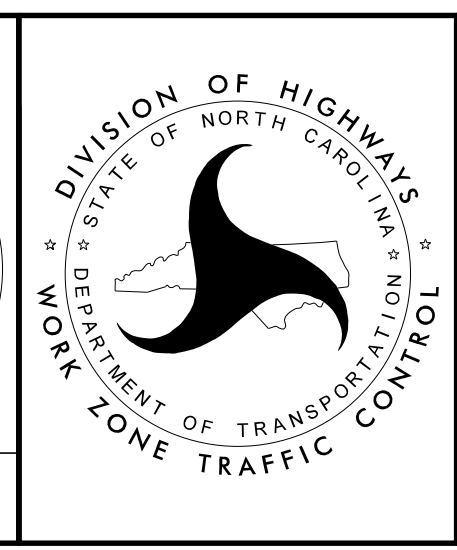
**I-85 SOUTH
 RAMP - MAP 18**



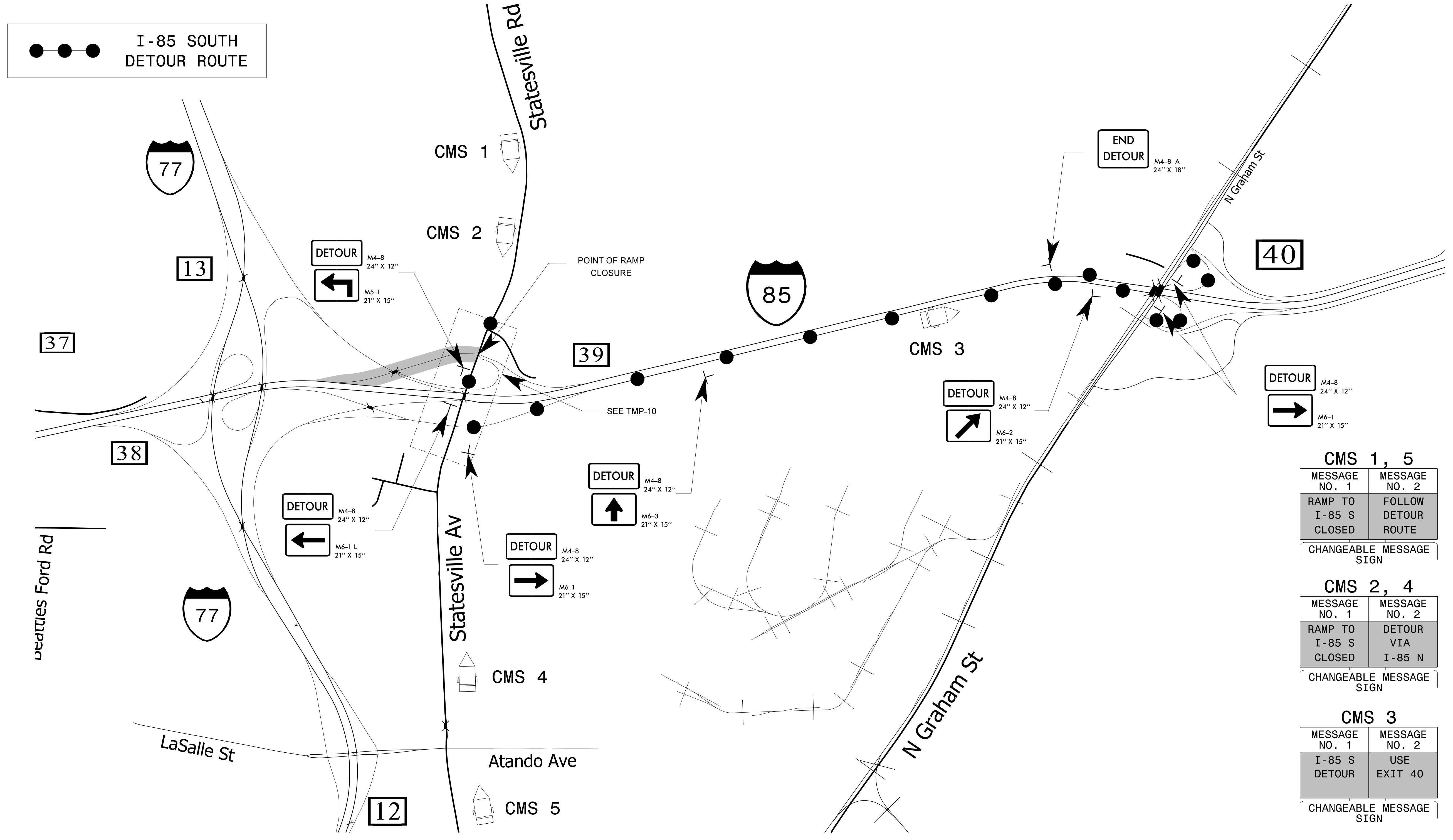
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 User: jdbeaver1

APPROVED: *Kenneth C. Thornwell Jr., P.E.*
1E991EP27373405
 DATE: 3/8/2021

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**MAP 19
TURN LANE CLOSURE
DETAIL**



**I-85 SOUTH
DETOUR ROUTE**

CMS 1, 5

MESSAGE NO. 1	MESSAGE NO. 2
RAMP TO I-85 S CLOSED	FOLLOW DETOUR ROUTE

CHANGEABLE MESSAGE SIGN

CMS 2, 4

MESSAGE NO. 1	MESSAGE NO. 2
RAMP TO I-85 S CLOSED	DETOUR VIA I-85 N

CHANGEABLE MESSAGE SIGN

CMS 3

MESSAGE NO. 1	MESSAGE NO. 2
I-85 S DETOUR	USE EXIT 40

CHANGEABLE MESSAGE SIGN

- NOTES:**
1. PLACE CMS 2 0.5 MILE FROM BOXMEER.
 2. PLACE CMS 1 1 MILE FROM CMS 2.
 3. PLACE CMS 3 0.5 MILE FROM EXIT 40.
 4. PLACE CMS 4 0.25 MILE NORTH OF ATANDO AVE.
 5. PLACE CMS 5 0.5 MILE FROM CMS 4

NOT TO SCALE

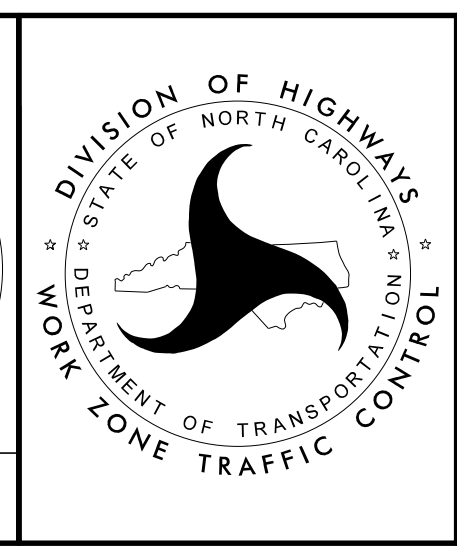
APPROVED: *Kenneth C. Thornwell, Jr., P.E.*
 DATE: 1/8/2020

DocuSigned by:
Kenneth C. Thornwell, Jr., P.E.
1E091EF27373405

SEAL
044089

ENGINEER
KENNETH C. THORNWELL, JR., P.E.

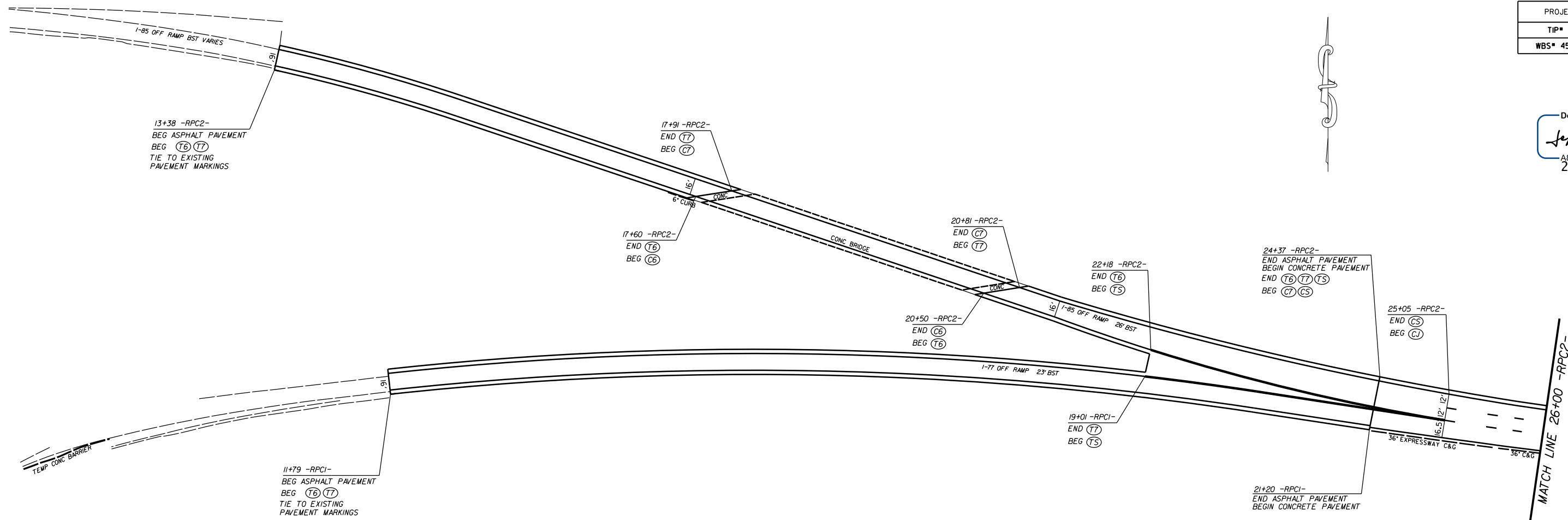
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**OFF-SITE
DETOUR**

**I-85 SOUTH
RAMP - MAP 19**

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 User: jdbaver1



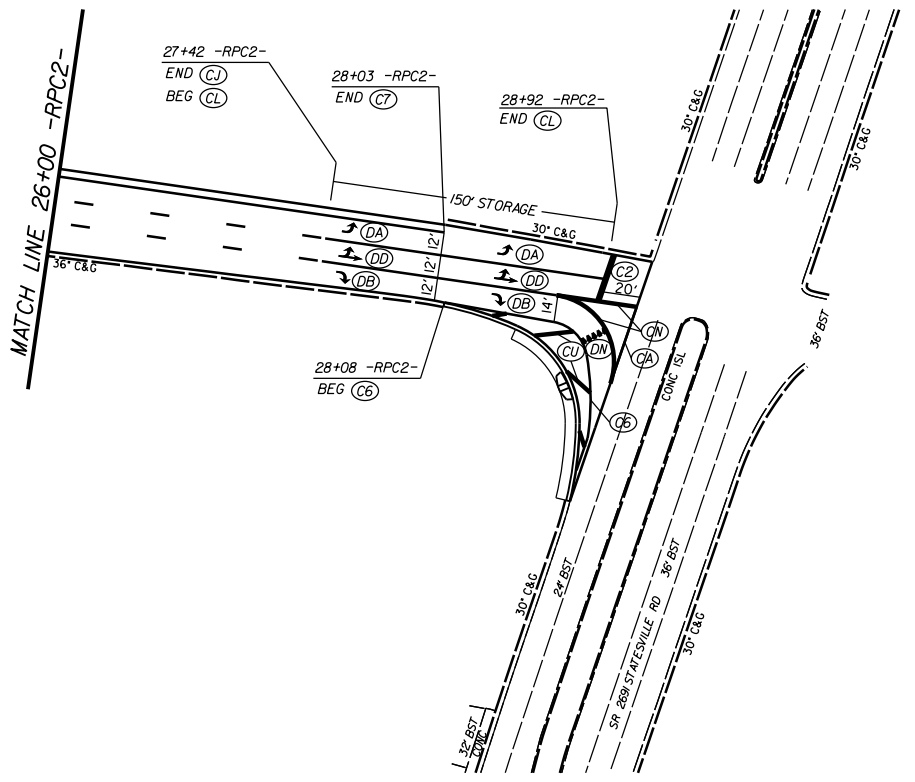
PAVEMENT MARKING SCHEDULE

THERMOPLASTIC MARKING LINES

- | | |
|--|---|
| TA - WHITE EDGELINE (4'.90 MIL) | TU - WHITE DIAGONAL (12'.90 MIL) |
| TB - YELLOW EDGELINE (4'.90 MIL) | TV - YELLOW DIAGONAL (12'.90 MIL) |
| TC - 10FT. WHITE SKIP (4'.90 MIL) | TI - WHITE LINE, RR X (16'.90 MIL) |
| TD - 3FT.-9FT./SP WHITE MINISKIP (4'.90 MIL) | T2 - WHITE STOPBAR (24'.90 MIL) |
| TE - WHITE SOLID LANE LINE (4'.90 MIL) | T3 - WHITE CROSSWALK LINE (24'.90 MIL) |
| TF - 10FT. YELLOW SKIP (4'.90 MIL) | T4 - WHITE RUMBLE STRIP (4'.240 MIL) |
| TH - YELLOW SINGLE CENTER (4'.90 MIL) | T5 - YELLOW RUMBLE STRIP (4'.240 MIL) |
| TI - YELLOW DOUBLE CENTER (4'.90 MIL) | T6 - WHITE EDGELINE (16'.90 MIL) |
| TJ - 10FT. WHITE SKIP (6'.90 MIL) | TT - YELLOW EDGELINE (16'.90 MIL) |
| TK - 3FT.-9FT./SP WHITE MINISKIP (6'.90 MIL) | T8 - 2FT.-6FT./SP WHITE MINISKIP (4'.90 MIL) |
| TL - WHITE SOLID LANE LINE (16'.90 MIL) | T9 - 2FT.-6FT./SP YELLOW MINISKIP (4'.90 MIL) |
| TM - 10FT. YELLOW SKIP (6'.90 MIL) | T10 - 3FT.-3FT./SP WHITE MINISKIP (12'.90 MIL) |
| TN - WHITE GORELINE (8'.90 MIL) | T11 - 2FT.-6FT./SP WHITE MINISKIP (6'.90 MIL) |
| TO - WHITE DIAGONAL (8'.90 MIL) | T12 - 2FT.-6FT./SP YELLOW MINISKIP (6'.90 MIL) |
| TP - YELLOW DIAGONAL (8'.90 MIL) | T13 - 3FT.-9FT./SP WHITE MINISKIP (8'.90 MIL) |
| TQ - WHITE CROSSWALK LINE (8'.90 MIL) | T14 - 3FT.-9FT./SP WHITE MINISKIP (12'.90 MIL) |
| TR - WHITE SOLID LANE LINE (8'.90 MIL) | T15 - YELLOW SINGLE CENTER (6'.90 MIL) |
| TS - WHITE GORELINE (12'.90 MIL) | T16 - YELLOW DOUBLE CENTER (6'.90 MIL) |
| TT - WHITE SOLID LANE LINE (12'.90 MIL) | T17 - 3FT.-3FT./SP WHITE MINISKIP ENTRANCE LINE (8'.90 MIL) |

THERMOPLASTIC MARKING SYMBOLS

- | | |
|--|--|
| UA - LEFT TURN ARROW (90 MIL) | UU - FISH-HOOK STRAIGHT ARROW (90 MIL) |
| UB - RIGHT TURN ARROW (90 MIL) | UV - FISH-HOOK LEFT/STRAIGHT ARROW (90 MIL) |
| UC - STRAIGHT ARROW (90 MIL) | UW - FISH-HOOK RIGHT/STRAIGHT ARROW (90 MIL) |
| UD - COMBO. LEFT/STRAIGHT ARROW (90 MIL) | UX - FISH-HOOK LEFT/RIGHT ARROW (90 MIL) |
| UE - COMBO. RIGHT/STRAIGHT ARROW (90 MIL) | UY - FISH-HOOK LEFT/RIGHT/STRAIGHT ARROW (90 MIL) |
| UF - COMBO. LEFT/RIGHT ARROW (90 MIL) | UZ - FISH-HOOK W/CIRCLE STRAIGHT ARROW (90 MIL) |
| UG - COMBO. LEFT/RIGHT/STRAIGHT ARROW (90 MIL) | |
| UH - HANDICAP PARKING (90 MIL) | YA - FISH-HOOK W/CIRCLE LEFT ARROW (90 MIL) |
| UI - ALPHANUMERIC CHAR. (90 MIL) | YB - FISH-HOOK W/CIRCLE LEFT/STRAIGHT ARROW (90 MIL) |
| UJ - BICYCLE SYMBOL (90 MIL) | YC - FISH-HOOK W/CIRCLE LEFT/RIGHT/STRAIGHT ARROW (90 MIL) |
| UK - BICYCLE STRAIGHT ARROW (90 MIL) | YD - COMBO. LEFT/U-TURN ARROW (90 MIL) |
| UL - BICYCLE CHAR. (90 MIL) | MA - PERMANENT RAISED MARKER (YELLOW & YELLOW) |
| UM - 12" YIELD LINE TRIANGLE (90 MIL) | MB - PERMANENT RAISED MARKER (CRYSTAL & RED) |
| UN - 24" YIELD LINE TRIANGLE (90 MIL) | MC - PERMANENT RAISED MARKER (YELLOW & RED) |
| UO - BICYCLE LEFT ARROW (90 MIL) | MD - PERMANENT RAISED MARKER (YELLOW) |
| UP - MERGE ARROW (90 MIL) | ME - SNOWPLOWABLE MARKER (YELLOW & YELLOW) |
| UQ - RAMP ARROW SYMBOL (90 MIL) | MF - SNOWPLOWABLE MARKER (CRYSTAL & RED) |
| UR - SHARROW (90 MIL) | MG - SNOWPLOWABLE MARKER (YELLOW & RED) |
| US - BICYCLE LOOP DETECTOR (90 MIL) | ML - PERMANENT RAISED MARKER (CRYSTAL & CRYSTAL) |
| UT - U-TURN ARROW (90 MIL) | MO - SNOWPLOWABLE MARKER (CRYSTAL & CRYSTAL) |



COLD APPLIED PLASTIC MARKING LINES

- | | |
|---------------------------------------|---|
| CA - WHITE EDGELINE (4') | CU - WHITE DIAGONAL (12') |
| CB - YELLOW EDGELINE (4') | CV - YELLOW DIAGONAL (12') |
| CC - 10FT. WHITE SKIP (4') | CW - WHITE LINE, RR X (16') |
| CD - 3FT.-9FT./SP WHITE MINISKIP (4') | CX - WHITE STOPBAR (24') |
| CE - WHITE SOLID LANE LINE (4') | CY - WHITE CROSSWALK LINE (24') |
| CF - 10FT. YELLOW SKIP (4') | CZ - WHITE RUMBLE STRIP (4') |
| CH - YELLOW SINGLE CENTER (4') | CA1 - YELLOW RUMBLE STRIP (4') |
| CI - YELLOW DOUBLE CENTER (4') | CA2 - WHITE EDGELINE (6') |
| CJ - 10FT. WHITE SKIP (6') | CA3 - YELLOW EDGELINE (6') |
| CK - 3FT.-9FT./SP WHITE MINISKIP (6') | CA4 - 2FT.-6FT./SP WHITE MINISKIP (4') |
| CL - WHITE SOLID LANE LINE (6') | CA5 - 2FT.-6FT./SP WHITE MINISKIP (4') |
| CM - 10FT. YELLOW SKIP (6') | CA6 - 3FT.-3FT./SP WHITE MINISKIP (12') |
| CN - WHITE GORELINE (8') | CA7 - WHITE DIAGONAL (8') |
| CO - WHITE DIAGONAL (8') | CA8 - 2FT.-6FT./SP WHITE MINISKIP (6') |
| CP - YELLOW DIAGONAL (8') | CA9 - 3FT.-9FT./SP WHITE MINISKIP (8') |
| CQ - WHITE CROSSWALK LINE (8') | CA10 - 3FT.-9FT./SP WHITE MINISKIP (12') |
| CR - WHITE SOLID LANE LINE (8') | CA11 - YELLOW SINGLE CENTER (6') |
| CS - WHITE GORELINE (12') | CA12 - YELLOW DOUBLE CENTER (6') |
| CT - WHITE SOLID LANE LINE (12') | CA13 - 3FT.-3FT./SP WHITE MINISKIP ENTRANCE LINE (8') |

COLD APPLIED PLASTIC MARKING SYMBOLS

- | | |
|---------------------------------------|---|
| DA - LEFT TURN ARROW | DJ - FISH-HOOK STRAIGHT ARROW |
| DB - RIGHT TURN ARROW | DK - FISH-HOOK LEFT/STRAIGHT ARROW |
| DC - STRAIGHT ARROW | DL - FISH-HOOK RIGHT/STRAIGHT ARROW |
| DD - COMBO. LEFT/STRAIGHT ARROW | DM - FISH-HOOK LEFT/RIGHT ARROW |
| DE - COMBO. RIGHT/STRAIGHT ARROW | DN - FISH-HOOK LEFT/RIGHT/STRAIGHT ARROW |
| DF - COMBO. LEFT/RIGHT ARROW | DO - FISH-HOOK W/CIRCLE STRAIGHT ARROW |
| DG - COMBO. LEFT/RIGHT/STRAIGHT ARROW | XA - FISH-HOOK W/CIRCLE LEFT ARROW |
| DH - HANDICAP PARKING | XB - FISH-HOOK W/CIRCLE LEFT/STRAIGHT ARROW |
| DI - ALPHANUMERIC CHAR. | XC - FISH-HOOK W/CIRCLE LEFT/RIGHT/STRAIGHT ARROW |
| DJ - BICYCLE SYMBOL | XD - COMBO. LEFT/U-TURN ARROW |
| DK - BICYCLE STRAIGHT ARROW | |
| DL - BICYCLE CHAR. | |
| DM - 12" YIELD LINE TRIANGLE | |
| DN - 24" YIELD LINE TRIANGLE | |
| DO - BICYCLE LEFT ARROW | |
| DP - MERGE ARROW | |
| DQ - RAMP ARROW SYMBOL | |
| DR - SHARROW | |
| DS - BICYCLE LOOP DETECTOR | |
| DT - U-TURN ARROW | |

NOTES:
 -USE TYPE 2 - PERMANENT HIGH PERFORMANCE TAPE (STANDARD 1205-6)
 -WHITE TAPE SHALL HAVE A CONTRASTING BLACK BORDER

**I-85 PAVEMENT PRESERVATION
 MECKLENBURG COUNTY**

SCALE	1"=50'		REVISIONS
DATE	1-2020		
DWG. BY	TBL		
DESIGN BY	TBL		
APPROVED	JHE		

PAVEMENT MARKING SCHEDULE

THERMOPLASTIC MARKING LINES

- TA - WHITE EDGELINE (4',.90 MIL)
- TB - YELLOW EDGELINE (4',.90 MIL)
- TC - 10FT. WHITE SKIP (4',.90 MIL)
- TD - 3FT.-9FT./SP WHITE MINISKIP (4',.90 MIL)
- TE - WHITE SOLID LANE LINE (4',.90 MIL)
- TF - 10FT. YELLOW SKIP (4',.90 MIL)
- TH - YELLOW SINGLE CENTER (4',.90 MIL)
- TJ - YELLOW DOUBLE CENTER (4',.90 MIL)
- TK - 10FT. WHITE SKIP (6',.90 MIL)
- TL - 3FT.-9FT./SP WHITE MINISKIP (6',.90 MIL)
- TM - WHITE SOLID LANE LINE (6',.90 MIL)
- TN - 10FT. YELLOW SKIP (6',.90 MIL)
- TO - WHITE GORELINE (8',.90 MIL)
- TP - WHITE DIAGONAL (8',.90 MIL)
- TQ - YELLOW DIAGONAL (8',.90 MIL)
- TR - WHITE CROSSWALK LINE (8',.90 MIL)
- TS - WHITE SOLID LANE LINE (8',.90 MIL)
- TT - WHITE GORELINE (12',.90 MIL)
- TU - WHITE DIAGONAL (12',.90 MIL)
- TV - YELLOW DIAGONAL (12',.90 MIL)
- TI - WHITE LINE, RR X (16',.90 MIL)
- T2 - WHITE STOPBAR (24',.90 MIL)
- T3 - WHITE CROSSWALK LINE (24',.90 MIL)
- T4 - WHITE RUMBLE STRIP (4',.240 MIL)
- T5 - YELLOW RUMBLE STRIP (4',.240 MIL)
- T6 - WHITE EDGELINE (6',.90 MIL)
- T7 - YELLOW EDGELINE (6',.90 MIL)
- T8 - 2FT.-6FT./SP WHITE MINISKIP (4',.90 MIL)
- T9 - 2FT.-6FT./SP YELLOW MINISKIP (4',.90 MIL)
- T10 - 3FT.-3FT./SP WHITE MINISKIP (12',.90 MIL)
- T11 - 2FT.-6FT./SP WHITE MINISKIP (6',.90 MIL)
- T12 - 2FT.-6FT./SP YELLOW MINISKIP (6',.90 MIL)
- T13 - 3FT.-9FT./SP WHITE MINISKIP (8',.90 MIL)
- T14 - 3FT.-9FT./SP WHITE MINISKIP (12',.90 MIL)
- T15 - YELLOW SINGLE CENTER (6',.90 MIL)
- T16 - YELLOW DOUBLE CENTER (6',.90 MIL)
- T17 - 3FT.-3FT./SP WHITE MINISKIP ENTRANCE LINE (8',.90 MIL)

THERMOPLASTIC MARKING SYMBOLS

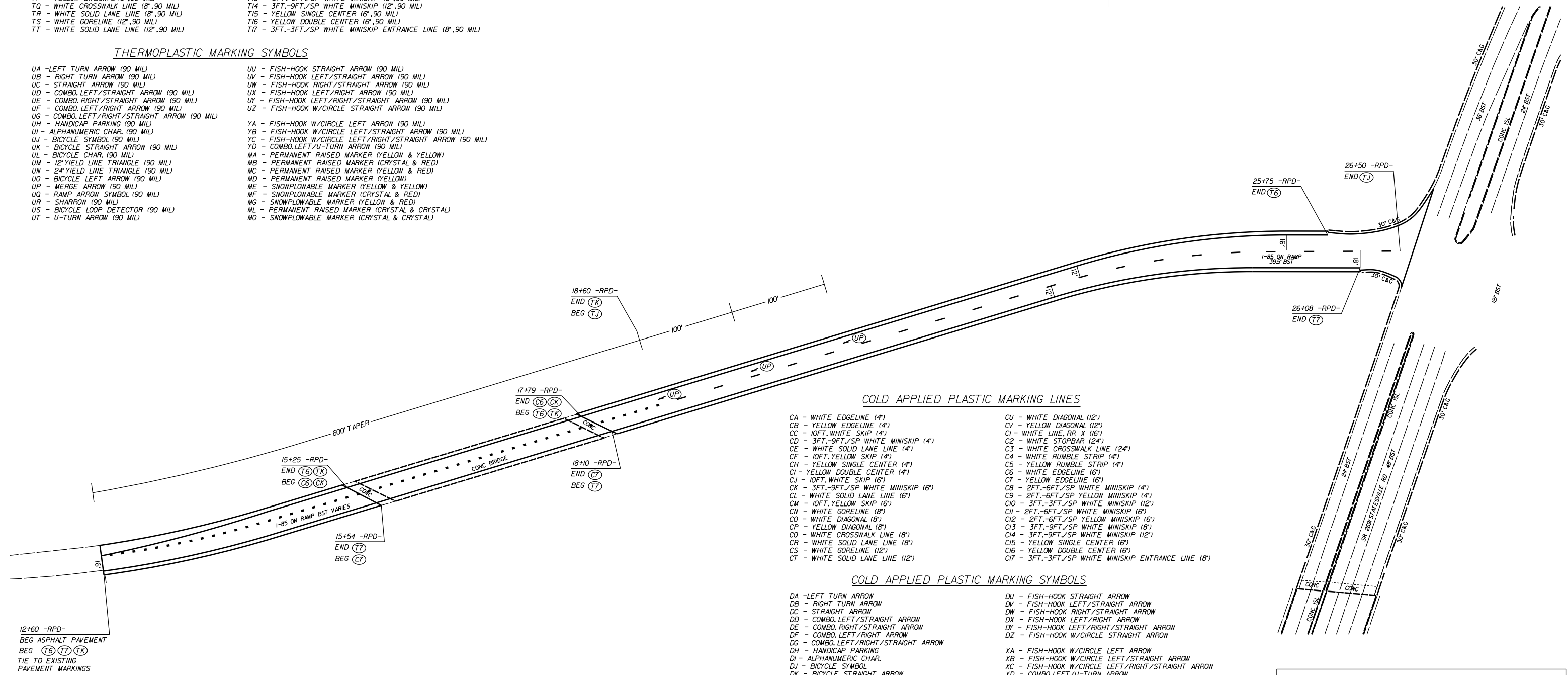
- UA - LEFT TURN ARROW (90 MIL)
- UB - RIGHT TURN ARROW (90 MIL)
- UC - STRAIGHT ARROW (90 MIL)
- UD - COMBO. LEFT/STRAIGHT ARROW (90 MIL)
- UE - COMBO. RIGHT/STRAIGHT ARROW (90 MIL)
- UF - COMBO. LEFT/RIGHT ARROW (90 MIL)
- UG - COMBO. LEFT/RIGHT/STRAIGHT ARROW (90 MIL)
- UH - HANDICAP PARKING (90 MIL)
- UI - ALPHANUMERIC CHAR. (90 MIL)
- UJ - BICYCLE SYMBOL (90 MIL)
- UK - BICYCLE STRAIGHT ARROW (90 MIL)
- UL - BICYCLE CHAR. (90 MIL)
- UM - 12" YIELD LINE TRIANGLE (90 MIL)
- UN - 24" YIELD LINE TRIANGLE (90 MIL)
- UO - BICYCLE LEFT ARROW (90 MIL)
- UP - MERGE ARROW (90 MIL)
- UQ - RAMP ARROW SYMBOL (90 MIL)
- UR - SHARROW (90 MIL)
- US - BICYCLE LOOP DETECTOR (90 MIL)
- UT - U-TURN ARROW (90 MIL)
- UU - FISH-HOOK STRAIGHT ARROW (90 MIL)
- UV - FISH-HOOK LEFT/STRAIGHT ARROW (90 MIL)
- UW - FISH-HOOK RIGHT/STRAIGHT ARROW (90 MIL)
- UX - FISH-HOOK LEFT/RIGHT ARROW (90 MIL)
- UY - FISH-HOOK LEFT/RIGHT/STRAIGHT ARROW (90 MIL)
- UZ - FISH-HOOK W/CIRCLE STRAIGHT ARROW (90 MIL)
- YA - FISH-HOOK W/CIRCLE LEFT ARROW (90 MIL)
- YB - FISH-HOOK W/CIRCLE LEFT/STRAIGHT ARROW (90 MIL)
- YC - FISH-HOOK W/CIRCLE LEFT/RIGHT/STRAIGHT ARROW (90 MIL)
- YD - COMBO. LEFT/U-TURN ARROW (90 MIL)
- MA - PERMANENT RAISED MARKER (YELLOW & YELLOW)
- MB - PERMANENT RAISED MARKER (CRYSTAL & RED)
- MC - PERMANENT RAISED MARKER (YELLOW & RED)
- MD - PERMANENT RAISED MARKER (YELLOW)
- ME - SNOWFLOWABLE MARKER (YELLOW & YELLOW)
- MF - SNOWFLOWABLE MARKER (CRYSTAL & RED)
- MG - SNOWFLOWABLE MARKER (YELLOW & RED)
- ML - PERMANENT RAISED MARKER (CRYSTAL & CRYSTAL)
- MO - SNOWFLOWABLE MARKER (CRYSTAL & CRYSTAL)

PROJECT NO.	SHEET NO.
TIP# I-5905	PMP-2
WBS# 45888.3.GVI	

ROADWAY DESIGN ENGINEER

Seal: *Jeff S. ...*

2/27/2020



COLD APPLIED PLASTIC MARKING LINES

- CA - WHITE EDGELINE (4')
- CB - YELLOW EDGELINE (4')
- CC - 10FT. WHITE SKIP (4')
- CD - 3FT.-9FT./SP WHITE MINISKIP (4')
- CE - WHITE SOLID LANE LINE (4')
- CF - 10FT. YELLOW SKIP (4')
- CH - YELLOW SINGLE CENTER (4')
- CI - YELLOW DOUBLE CENTER (4')
- CJ - 10FT. WHITE SKIP (6')
- CK - 3FT.-9FT./SP WHITE MINISKIP (6')
- CL - WHITE SOLID LANE LINE (6')
- CM - 10FT. YELLOW SKIP (6')
- CN - WHITE GORELINE (8')
- CO - WHITE DIAGONAL (8')
- CP - YELLOW DIAGONAL (8')
- CQ - WHITE CROSSWALK LINE (8')
- CR - WHITE SOLID LANE LINE (8')
- CS - WHITE GORELINE (12')
- CT - WHITE SOLID LANE LINE (12')
- CU - WHITE DIAGONAL (12')
- CV - YELLOW DIAGONAL (12')
- CI - WHITE LINE, RR X (16')
- C2 - WHITE STOPBAR (24')
- C3 - WHITE CROSSWALK LINE (24')
- C4 - WHITE RUMBLE STRIP (4')
- C5 - YELLOW RUMBLE STRIP (4')
- C6 - WHITE EDGELINE (6')
- C7 - YELLOW EDGELINE (6')
- C8 - 2FT.-6FT./SP WHITE MINISKIP (4')
- C9 - 2FT.-6FT./SP YELLOW MINISKIP (4')
- C10 - 3FT.-3FT./SP WHITE MINISKIP (12')
- C11 - 2FT.-6FT./SP WHITE MINISKIP (6')
- C12 - 2FT.-6FT./SP YELLOW MINISKIP (6')
- C13 - 3FT.-9FT./SP WHITE MINISKIP (8')
- C14 - 3FT.-9FT./SP WHITE MINISKIP (12')
- C15 - YELLOW SINGLE CENTER (6')
- C16 - YELLOW DOUBLE CENTER (6')
- C17 - 3FT.-3FT./SP WHITE MINISKIP ENTRANCE LINE (8')

COLD APPLIED PLASTIC MARKING SYMBOLS

- DA - LEFT TURN ARROW
- DB - RIGHT TURN ARROW
- DC - STRAIGHT ARROW
- DD - COMBO. LEFT/STRAIGHT ARROW
- DE - COMBO. RIGHT/STRAIGHT ARROW
- DF - COMBO. LEFT/RIGHT ARROW
- DG - COMBO. LEFT/RIGHT/STRAIGHT ARROW
- DH - HANDICAP PARKING
- DI - ALPHANUMERIC CHAR.
- DJ - BICYCLE SYMBOL
- DK - BICYCLE STRAIGHT ARROW
- DL - BICYCLE CHAR.
- DM - 12" YIELD LINE TRIANGLE
- DN - 24" YIELD LINE TRIANGLE
- DO - BICYCLE LEFT ARROW
- DP - MERGE ARROW
- DQ - RAMP ARROW SYMBOL
- DR - SHARROW
- DS - BICYCLE LOOP DETECTOR
- DT - U-TURN ARROW
- DU - FISH-HOOK STRAIGHT ARROW
- DV - FISH-HOOK LEFT/STRAIGHT ARROW
- DW - FISH-HOOK RIGHT/STRAIGHT ARROW
- DX - FISH-HOOK LEFT/RIGHT ARROW
- DY - FISH-HOOK LEFT/RIGHT/STRAIGHT ARROW
- DZ - FISH-HOOK W/CIRCLE STRAIGHT ARROW
- XA - FISH-HOOK W/CIRCLE LEFT ARROW
- XB - FISH-HOOK W/CIRCLE LEFT/STRAIGHT ARROW
- XC - FISH-HOOK W/CIRCLE LEFT/RIGHT/STRAIGHT ARROW
- XD - COMBO. LEFT/U-TURN ARROW

NOTES:
 -USE TYPE 2 - PERMANENT HIGH PERFORMANCE TAPE (STANDARD 1205-6)
 -WHITE TAPE SHALL HAVE A CONTRASTING BLACK BORDER

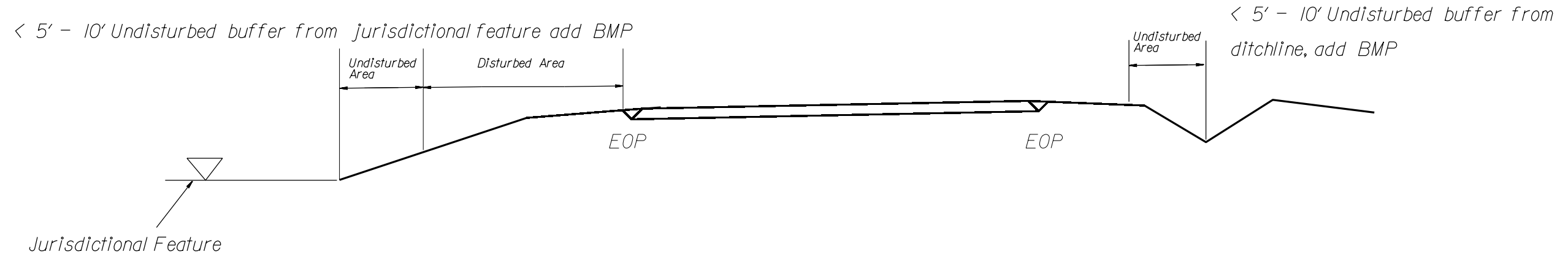
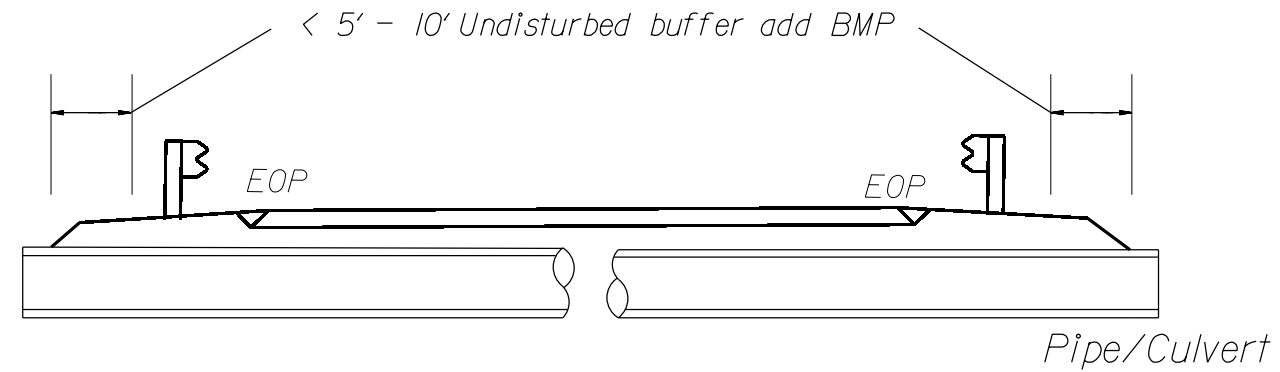
I-85 PAVEMENT PRESERVATION
MECKLENBURG COUNTY

SCALE	1"=50'	REVISIONS
DATE	1-2020	
DWG. BY	TBL	
DESIGN BY	TBL	
APPROVED	JHE	

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

BMP Options: Wattle, Silt Fence or Hardened Aggregate.

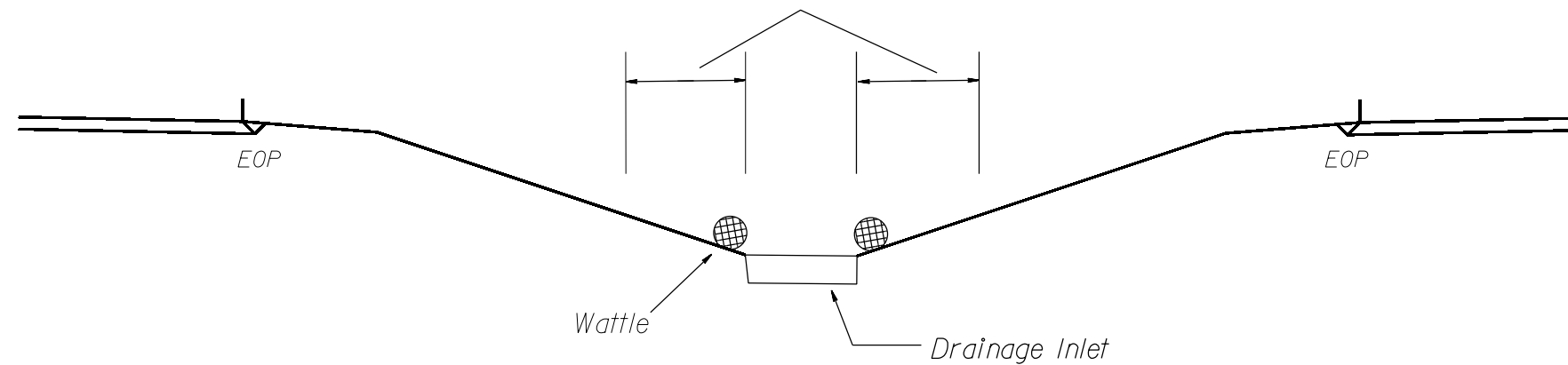
EROSION CONTROL DETAIL



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

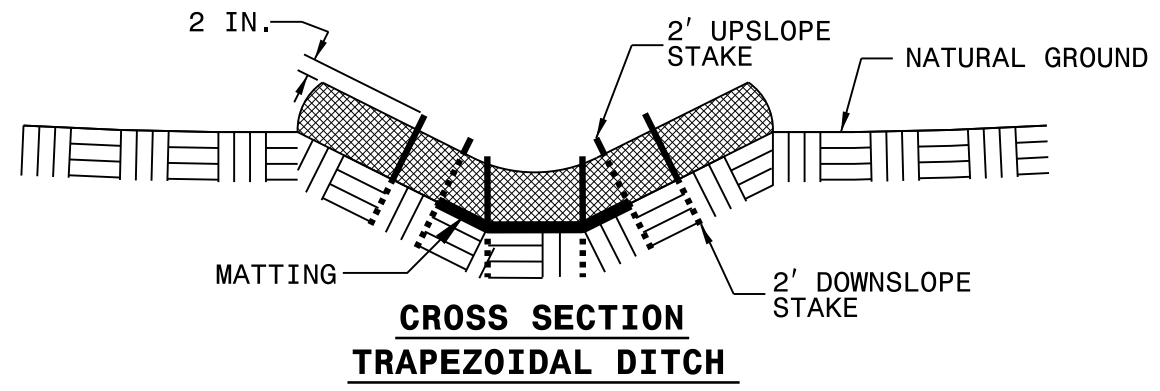
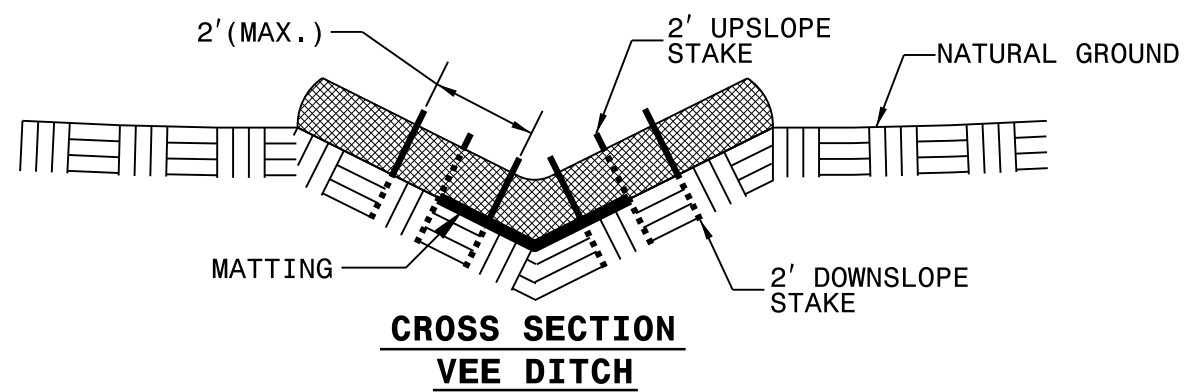
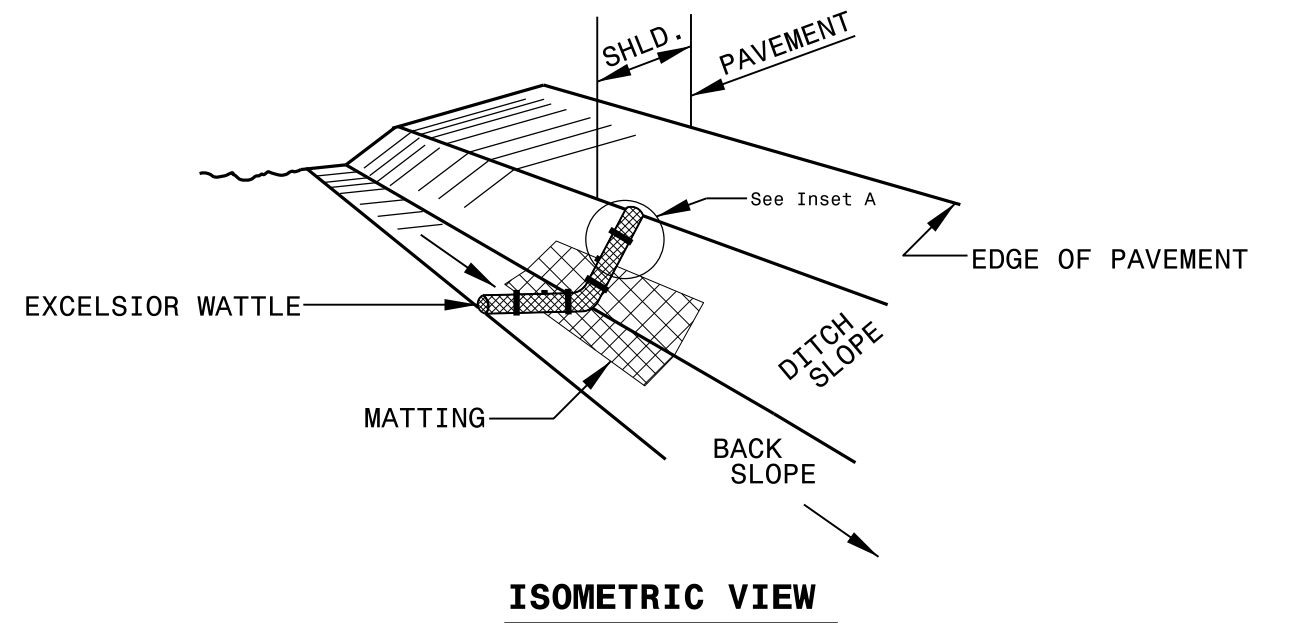


< 5' - 10' Undisturbed buffer from inlet, add wattle



NOT TO SCALE

WATTLE DETAIL



NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

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

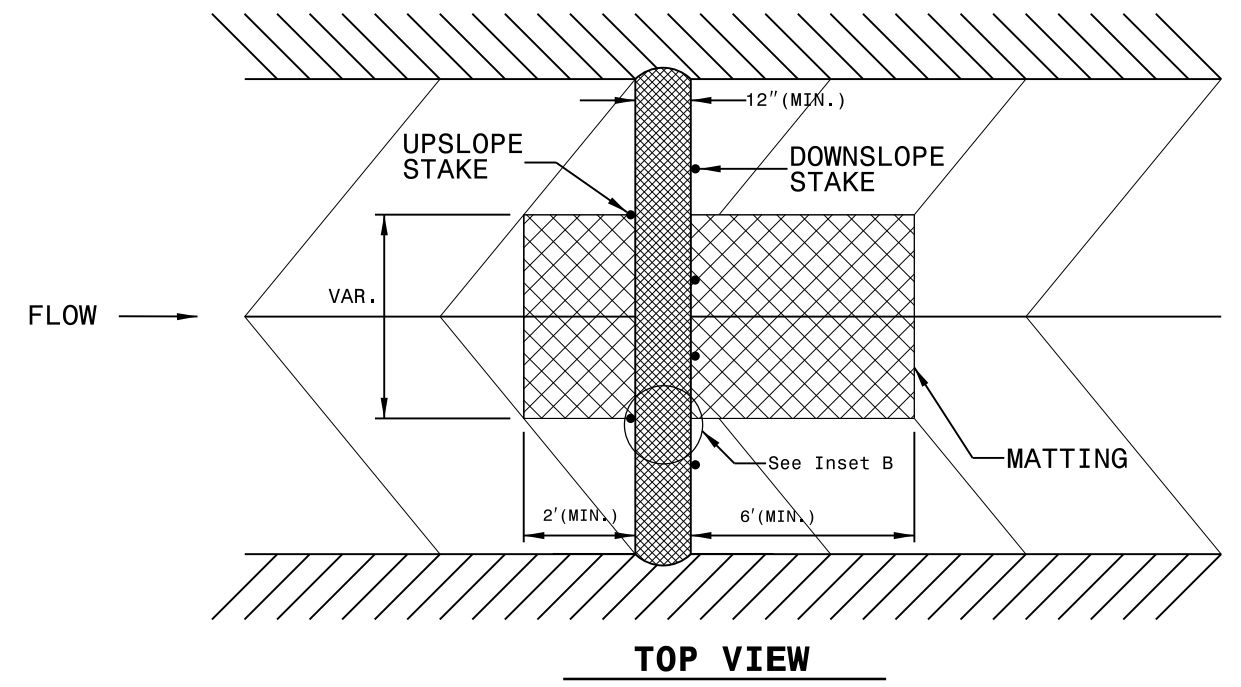
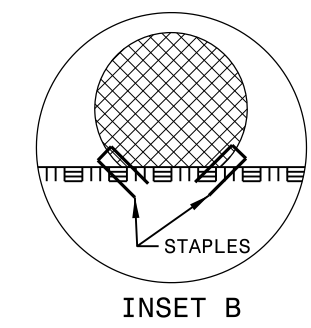
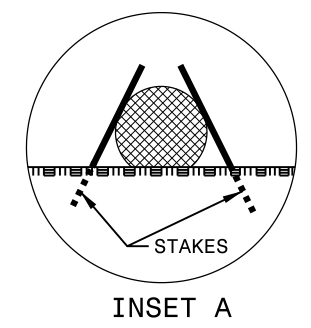
ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

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

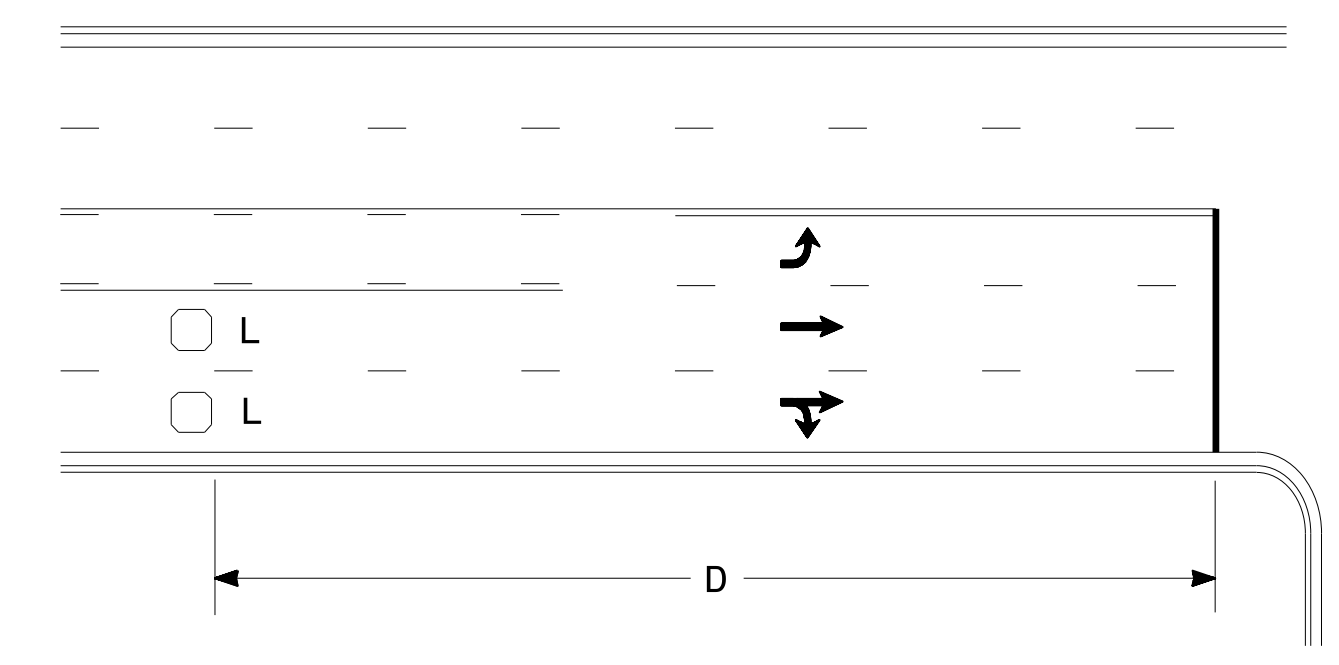
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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

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



High Speed Detection (≥40 mph)

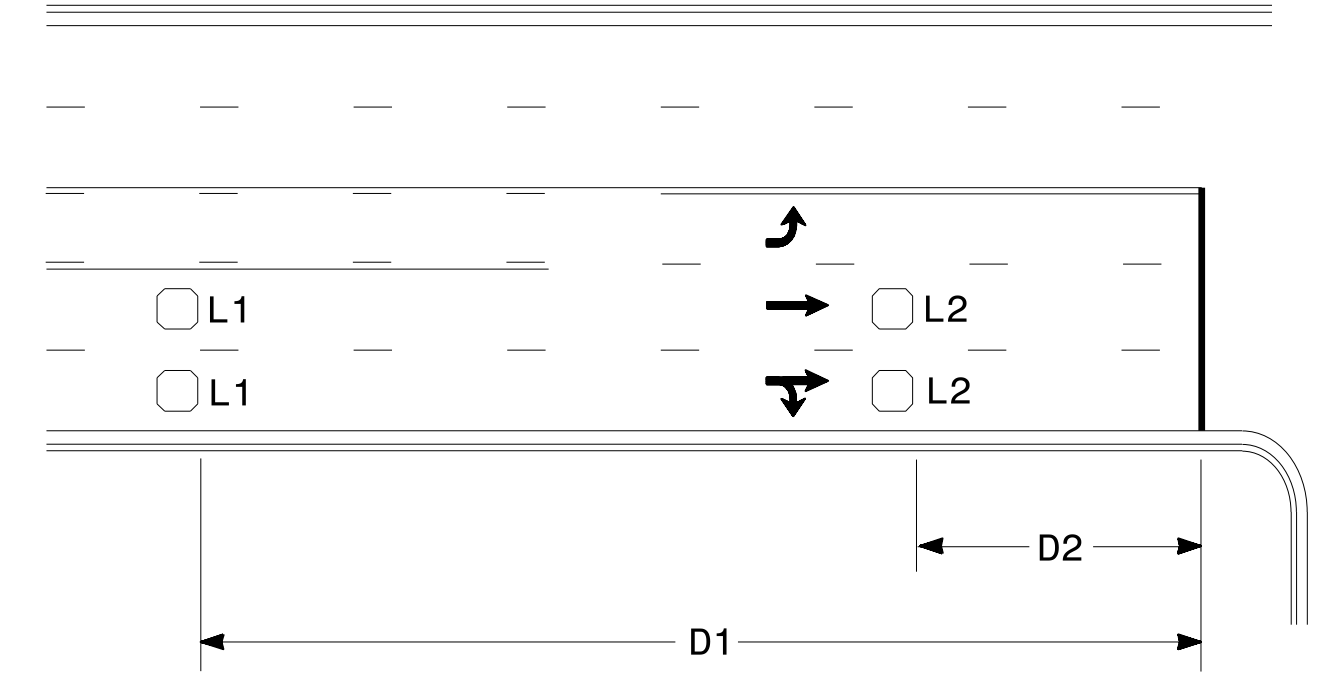


Speed Limit mph	D ft
40	250
45	300
50	355
55	420

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

Volume Density Operation

OR

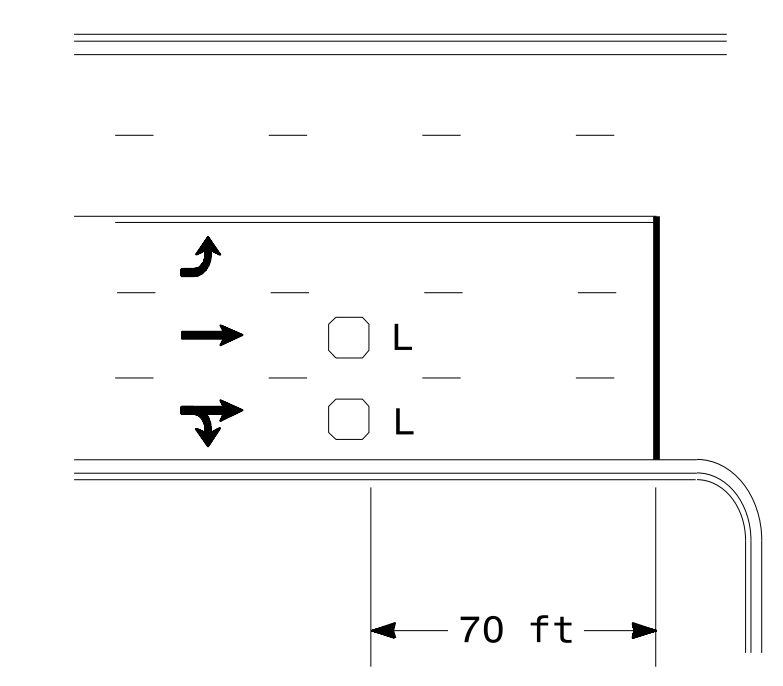


Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

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

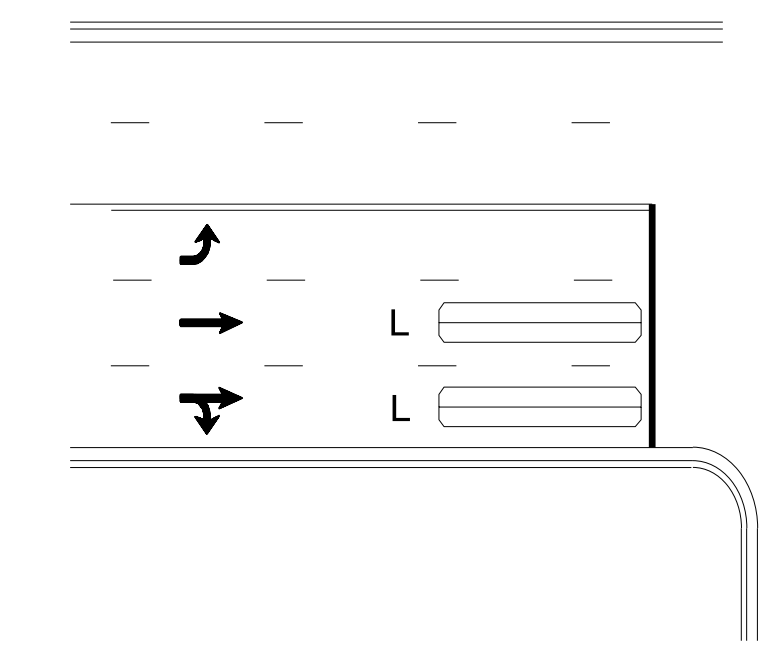
"Stretch" Operation

Low Speed Detection (≤35 mph)



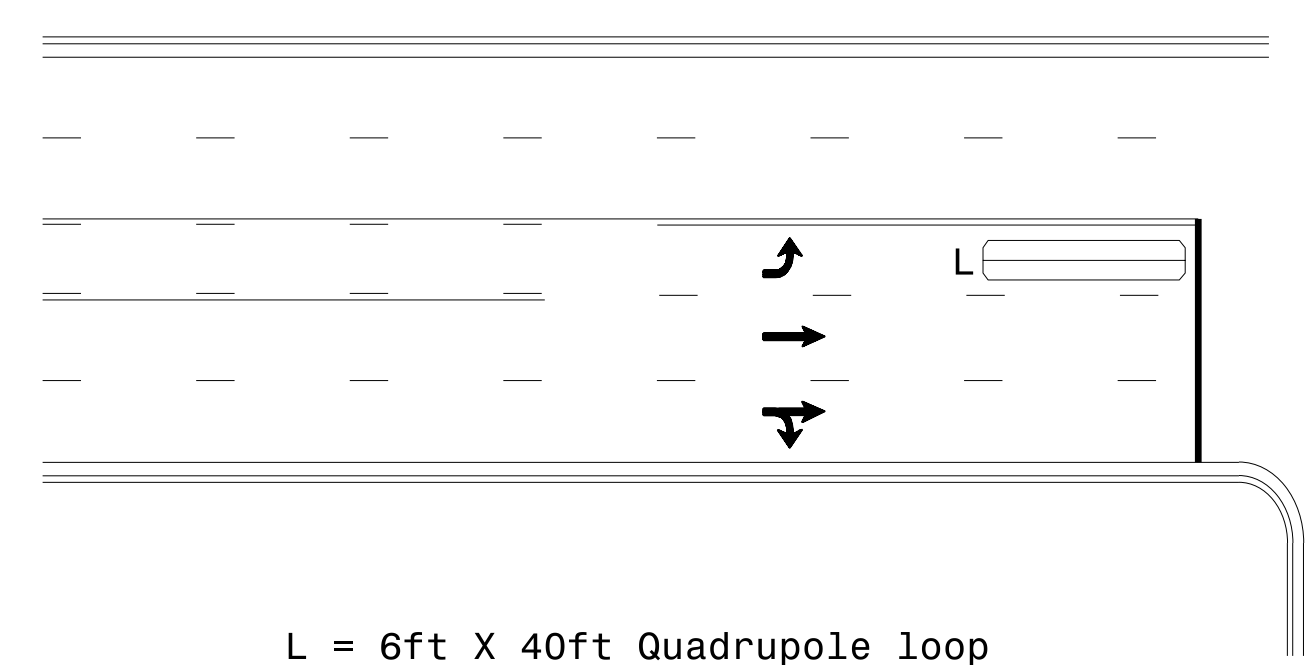
L = 6ft X 6ft
Wired in series

OR



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

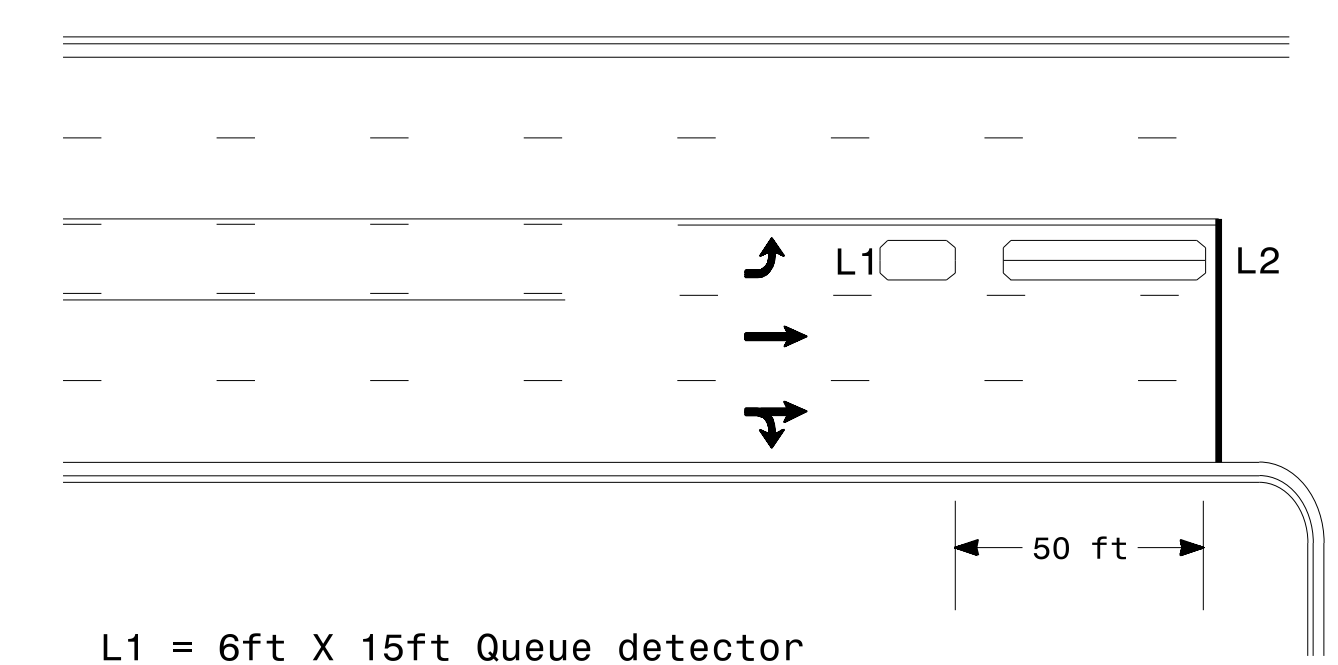
Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

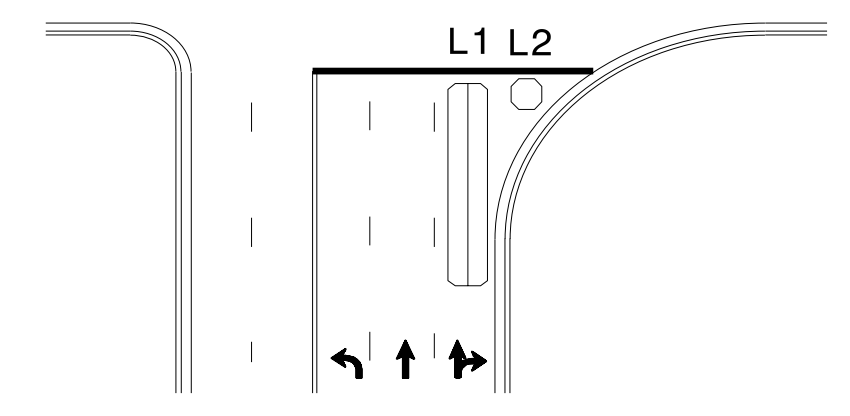
OR



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

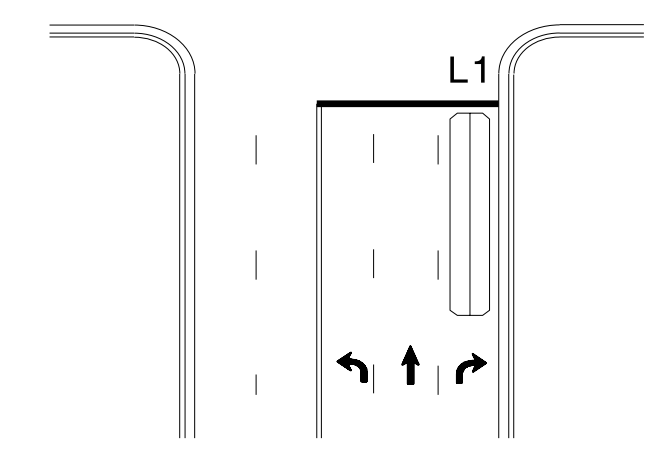
Queue Loop Detection

Right Turn Lane Detection

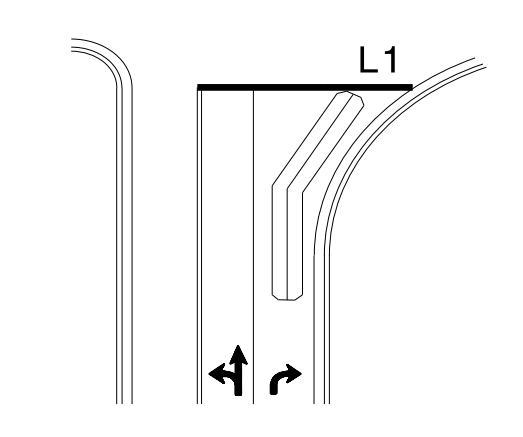


Shared Lane/
Wide Radius Turn

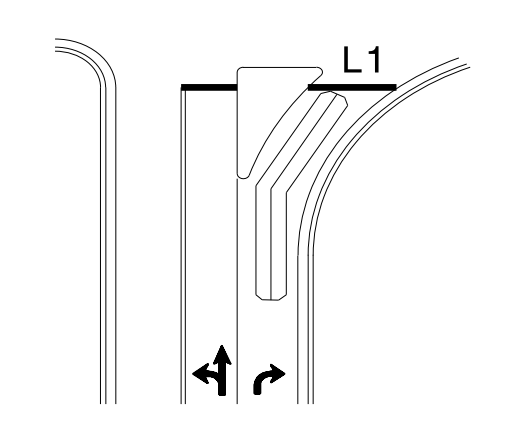
L1 = 6ft X 40ft Quadrupole loop
L2 = 6ft X 6ft [Minimum] Presence loop
Wired separately



Standard Turn

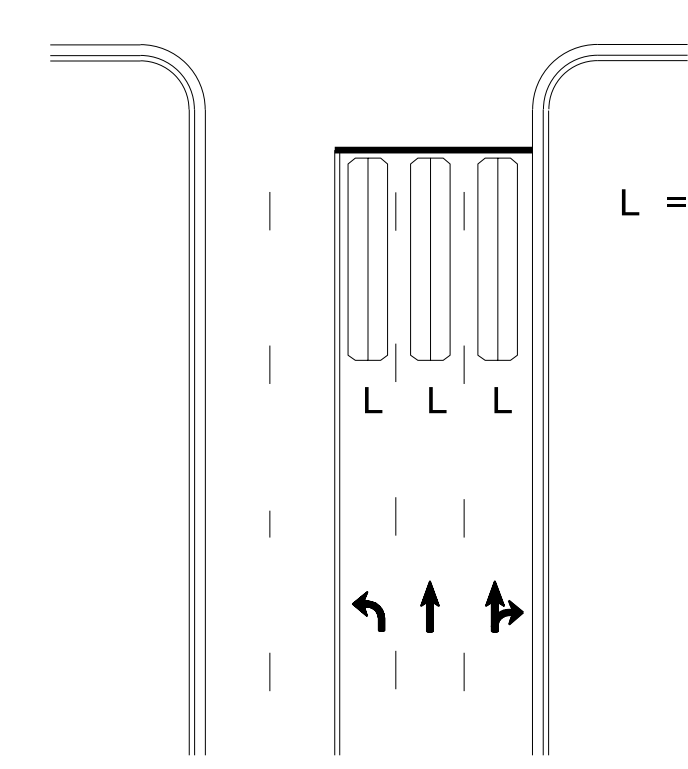


Wide Radius Turn



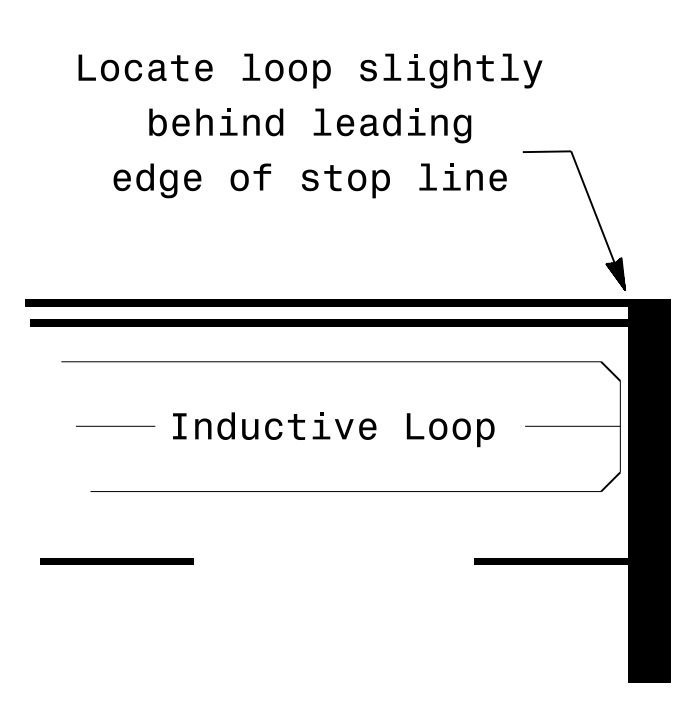
Channelized Turn

Side Street Detection



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

Presence Loop Placement at Stop Lines



Locate loop slightly
behind leading
edge of stop line

Inductive Loop

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

750 N. Greenfield Pkwy, Garner, NC 27529

Typical Signal Loop Locations

PLAN DATE: January 2015 REVIEWED BY: JPG
PREPARED BY: PLA REVIEWED BY:

SEAL
NORTH CAROLINA
PROFESSIONAL ENGINEER
PAMELA L. ALEXANDER
1/30/2015

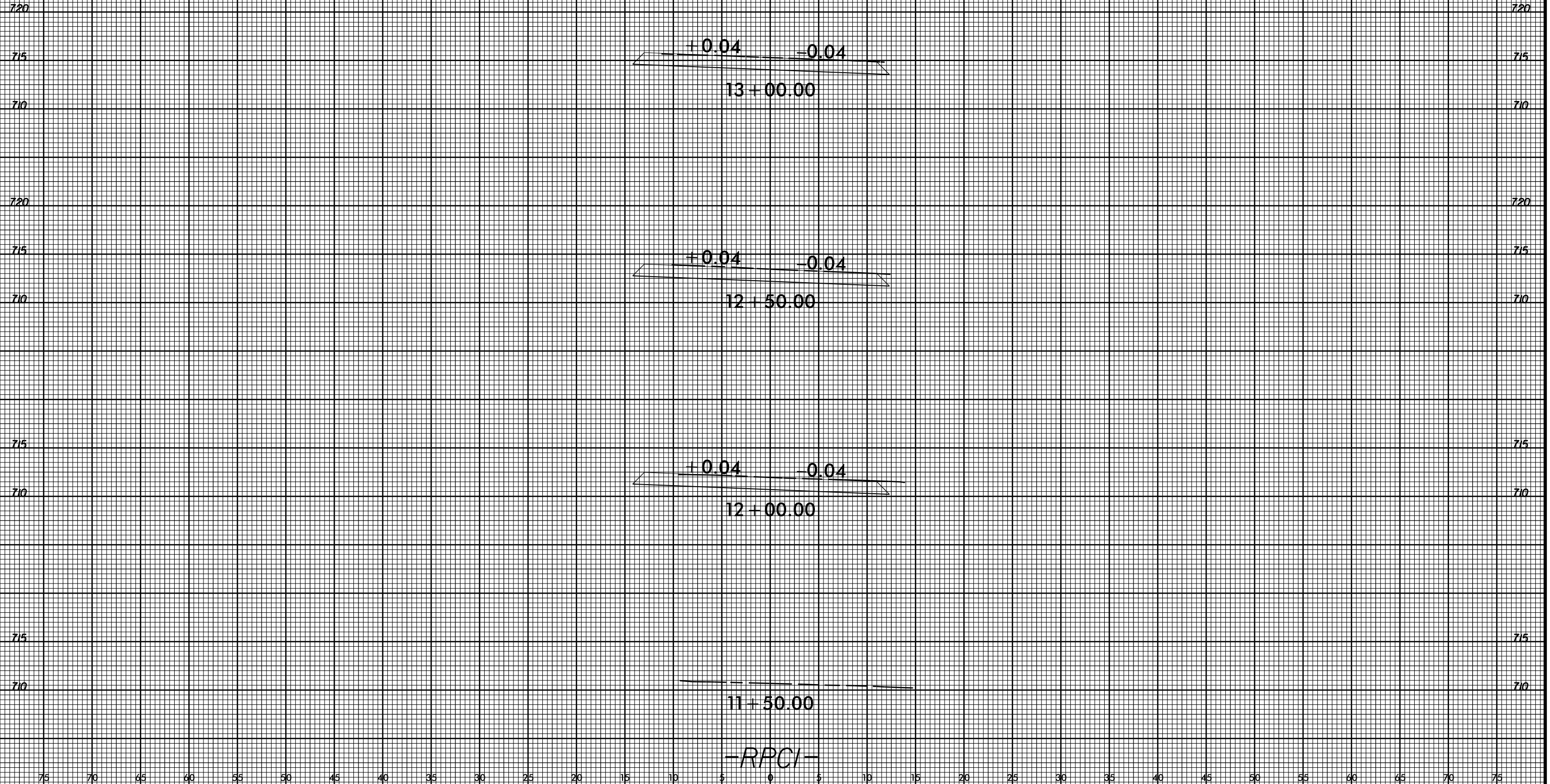
SCALE: N/A

SIG. INVENTORY NO.

3D:\4146-2015-12-29-SIGNAL\Signal Design\Section\Eastern\Region\loop\ypj\ca\2015.dgn
 P:\alexander



75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



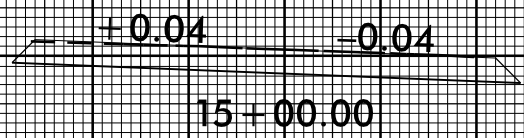
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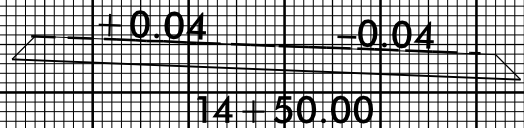
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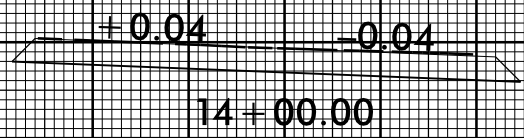
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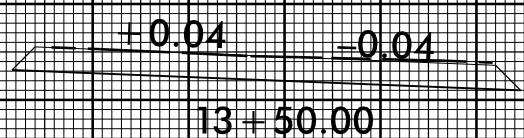
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725 725

720 720



715 715

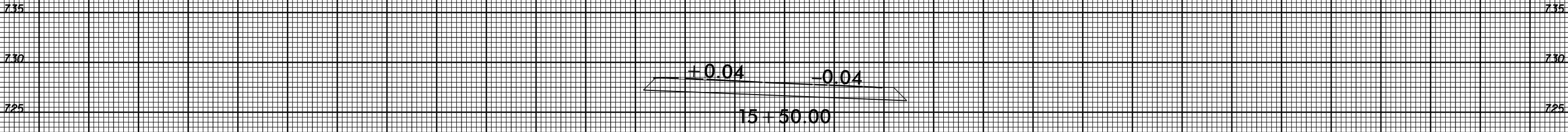
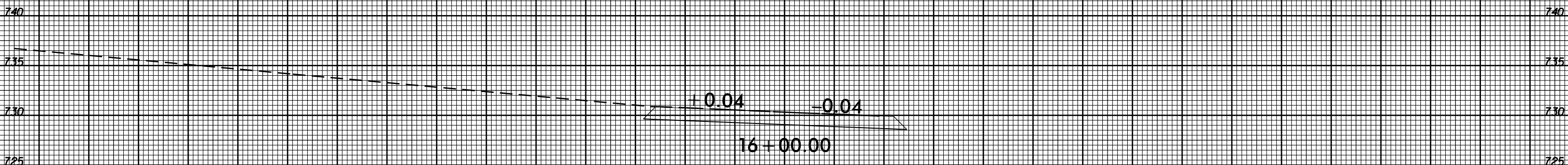
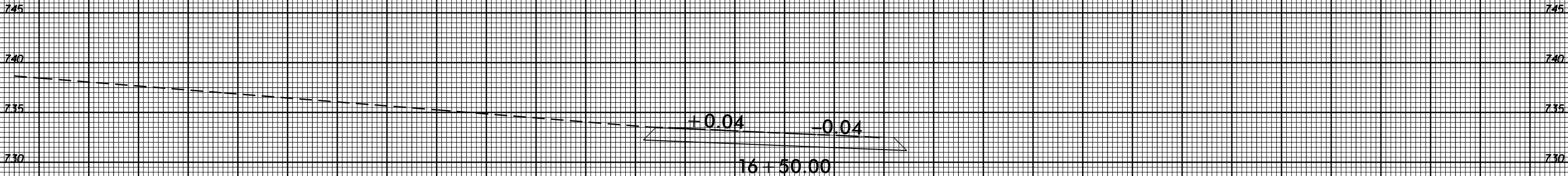
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At Blower At DIV10-31.132

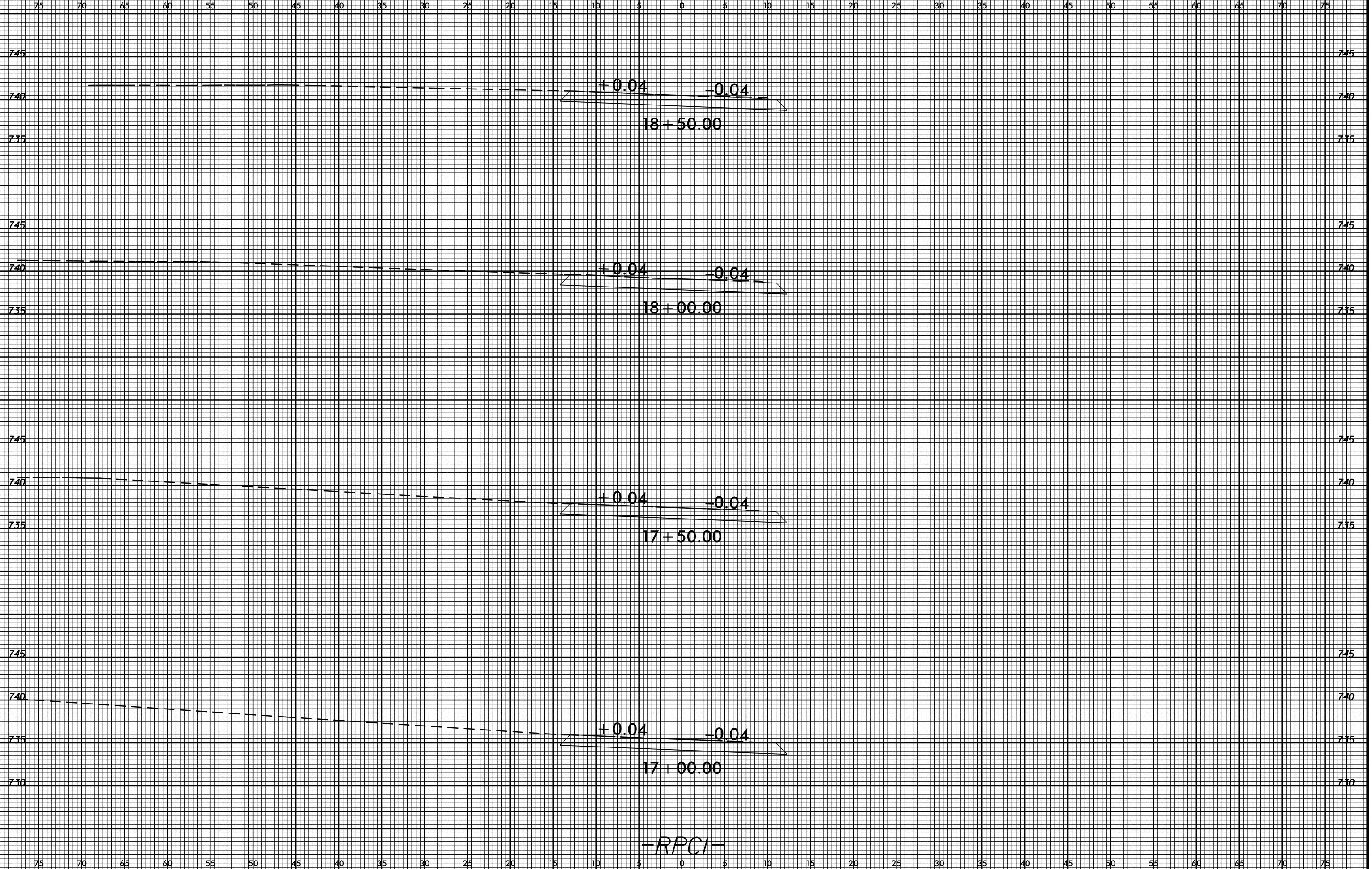


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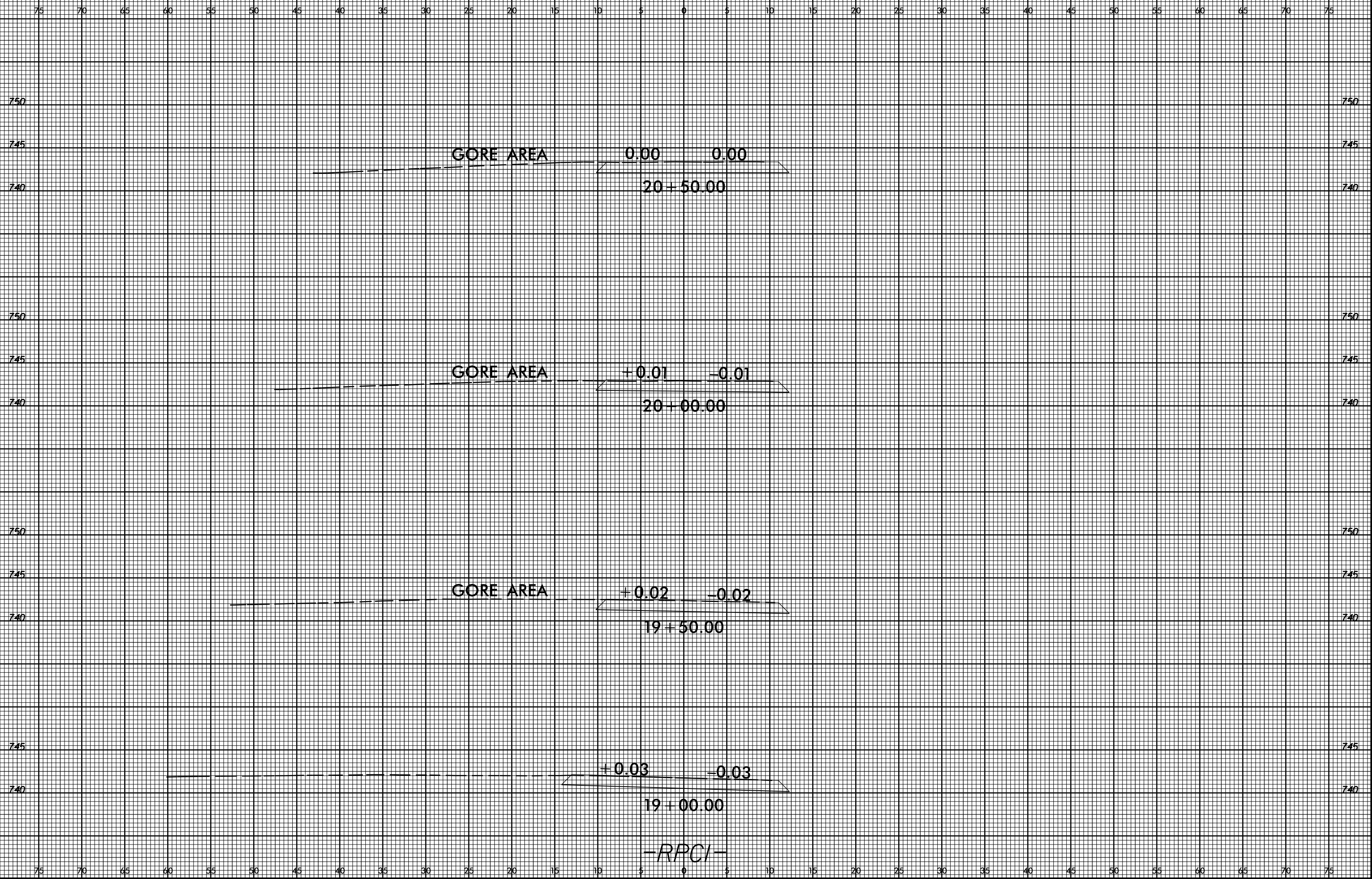


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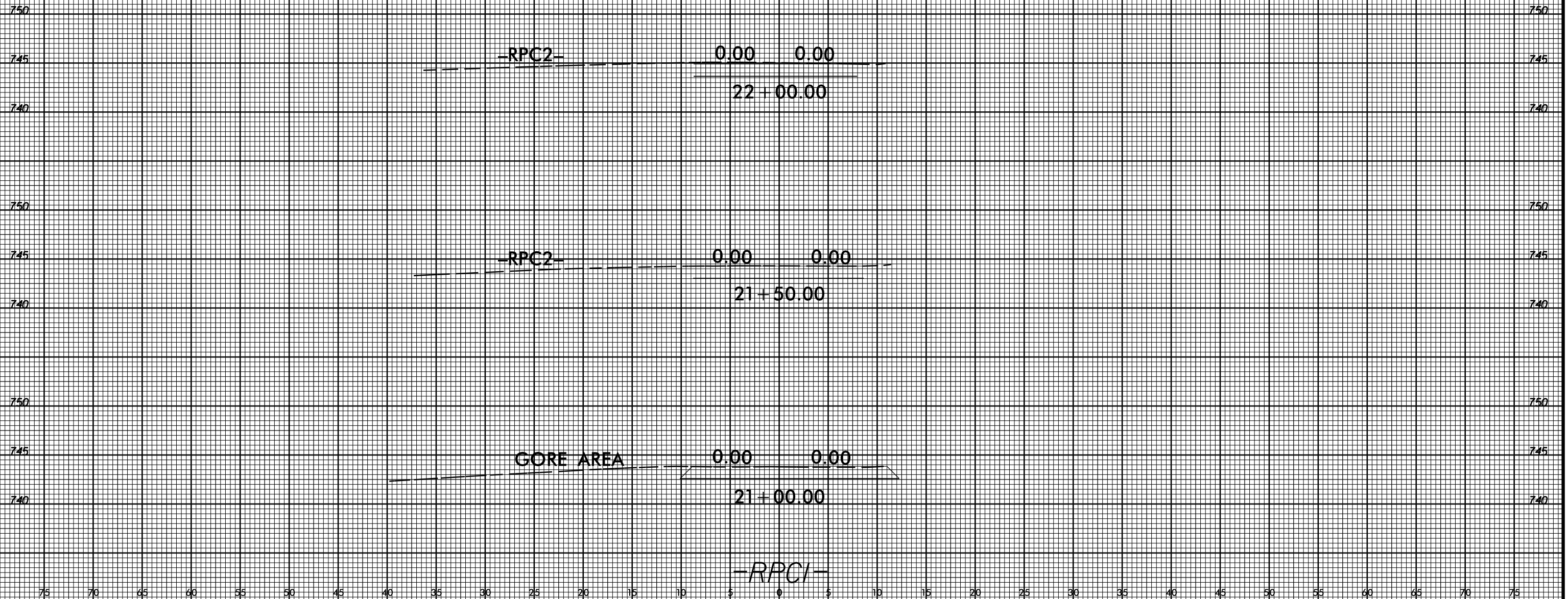


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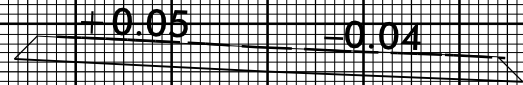




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735 735

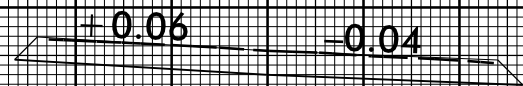


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14+50.00

740 740

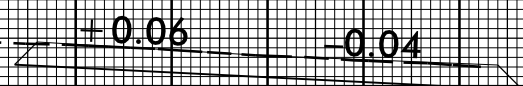
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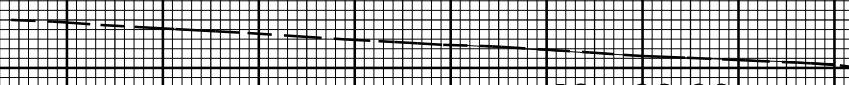


730 730

13+50.00

725 725

735 735



730 730

13+00.00

-RPC2-

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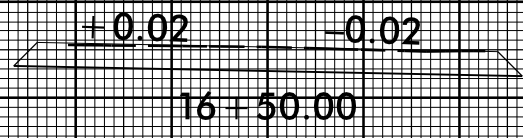
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Blower At DIV10-31432



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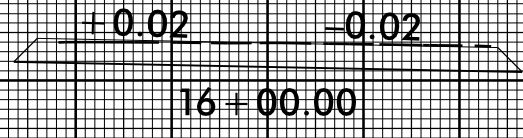
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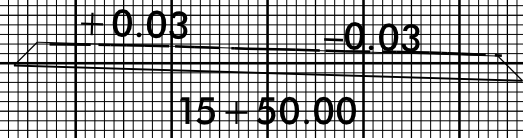
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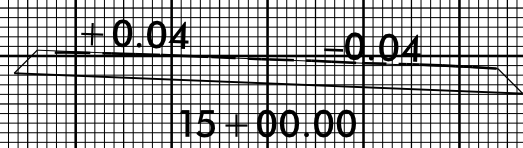
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735 735

730 730

740 740



735 735

730 730

-RPC2-

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75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

7.45 7.45

7.40 7.40

BRIDGE
18+50.00

7.35 7.35

7.45 7.45

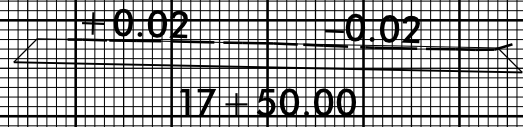
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BRIDGE
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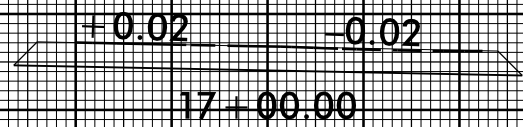
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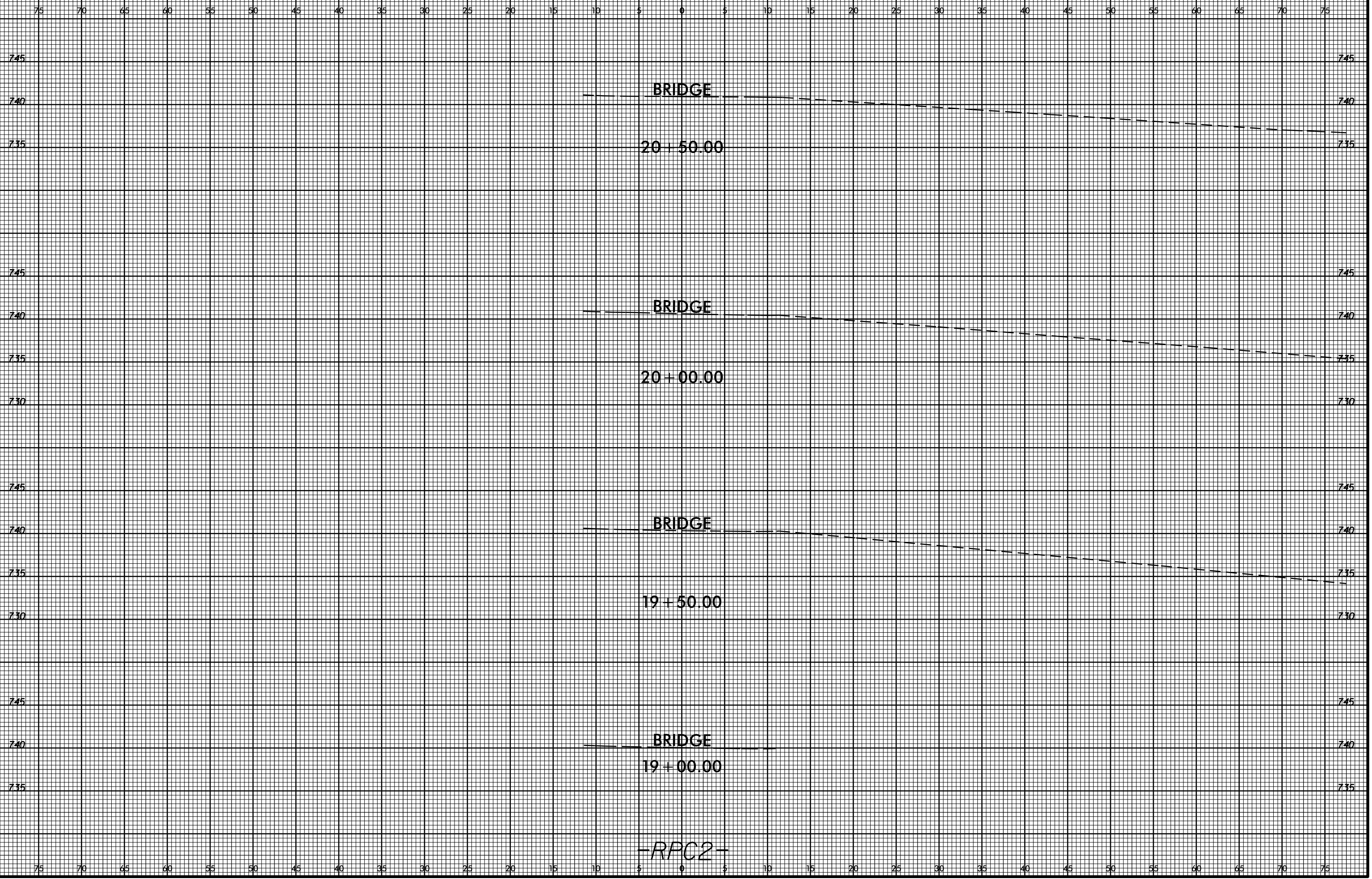
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7.35 7.35

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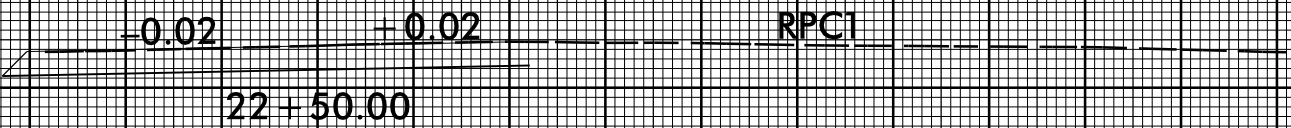
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Blower AT DIV10-31732



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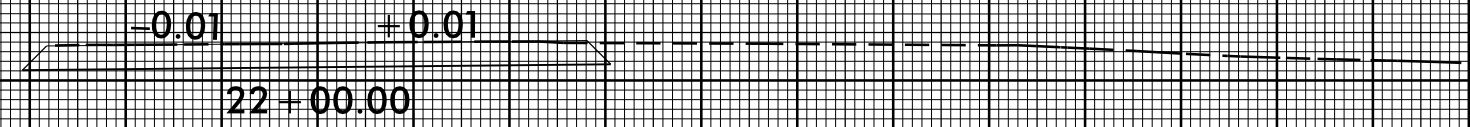
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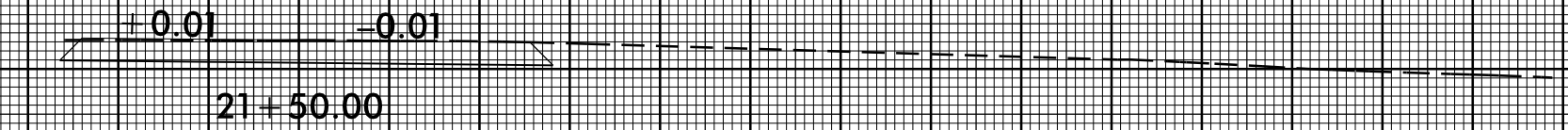
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740 740



745 745

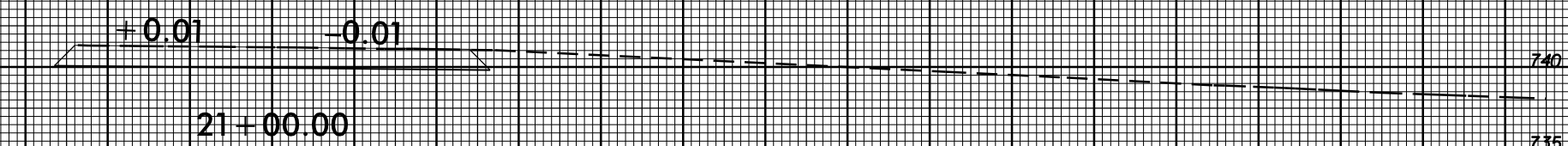
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735 735

745 745

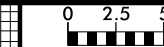
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735 735

-RPC2-

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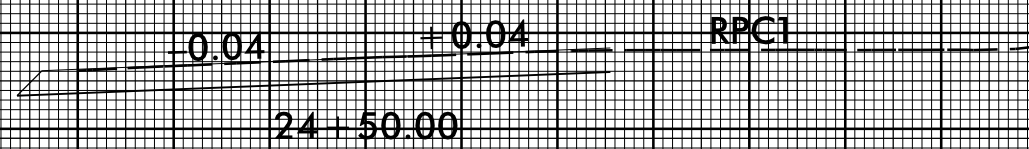


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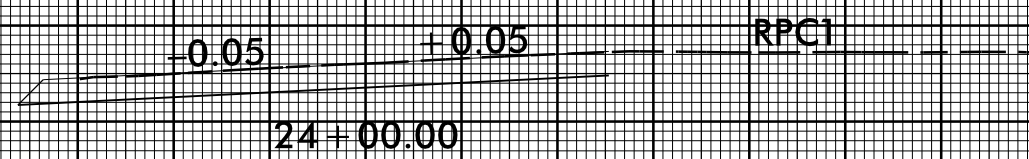
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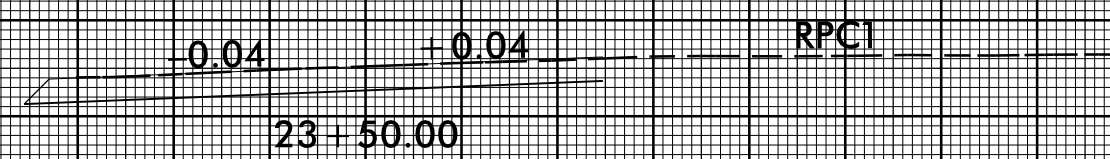
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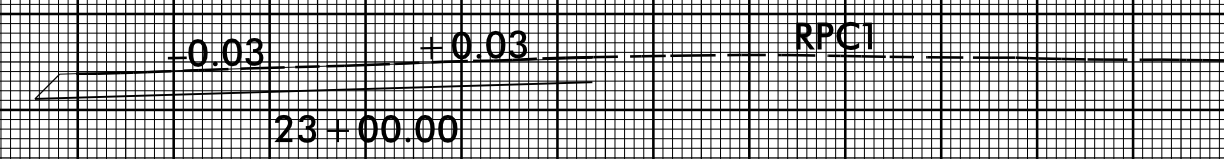
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740 740



-RPC2-

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750 750

745 745

-0.00 +0.00

26+50.00

750 750

745 745

-0.01 +0.01

26+00.00

740 740

750 750

745 745

-0.02 +0.02 RPC1

25+50.00

740 740

750 750

745 745

-0.03 +0.03 RPC1

25+00.00

740 740

-RPC2-

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Blower AT DIV10-31732



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755 755

750 750

745 745

755 755

750 750

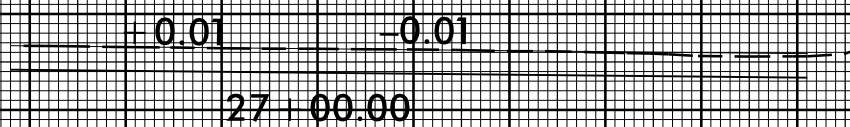
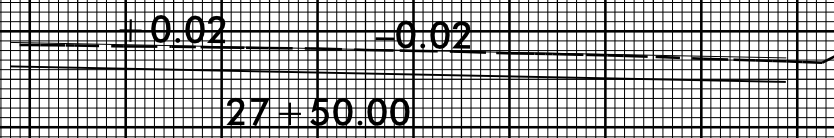
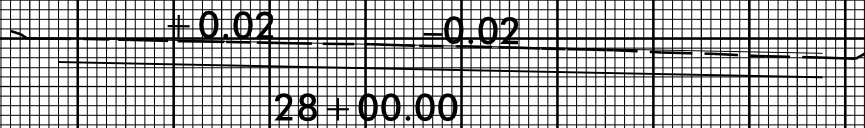
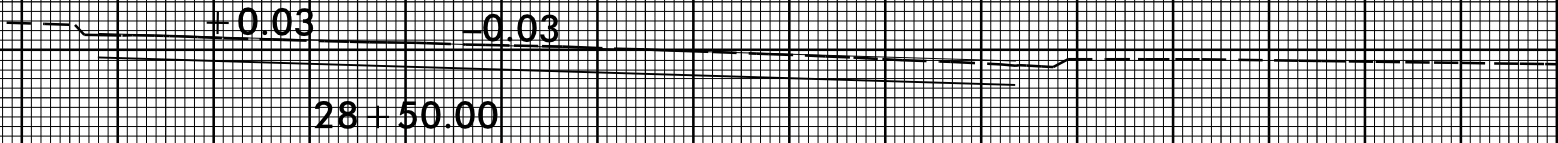
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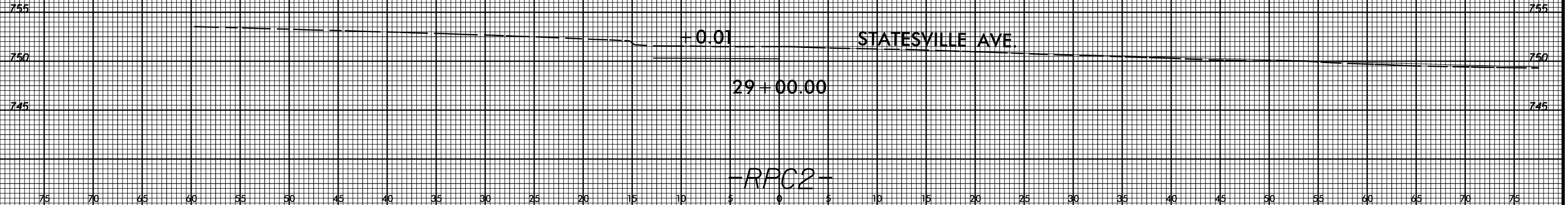


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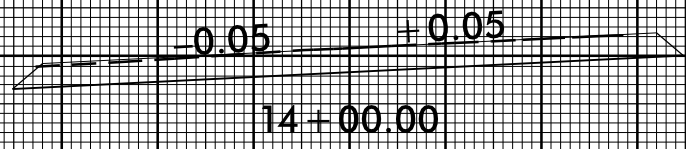
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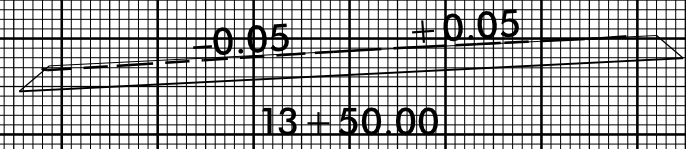
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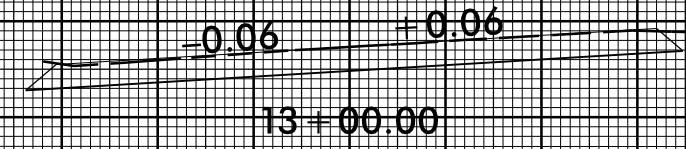
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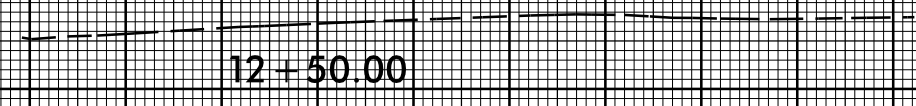


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7.45 7.45

BRIDGE
16+00.00

7.40 7.40

7.45 7.45

BRIDGE
15+50.00

7.40 7.40

7.35 7.35

7.45 7.45

-0.02 +0.02
15+00.00

7.40 7.40

7.35 7.35

7.40 7.40

-0.03 +0.03
14+50.00

7.35 7.35

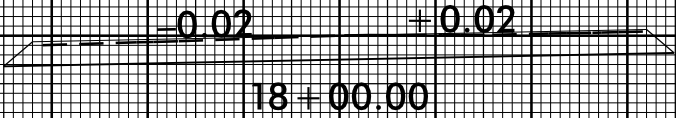
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75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



18+00.00

BRIDGE

17+50.00

BRIDGE

17+00.00

BRIDGE

16+50.00

-RPD-

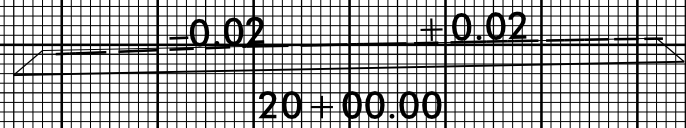
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760 760

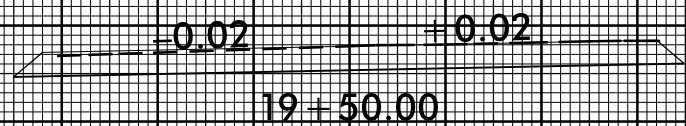
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750 750

760 760

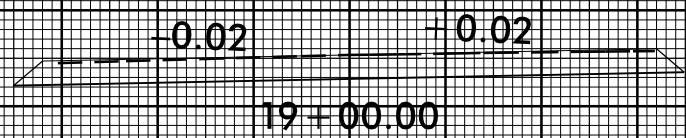
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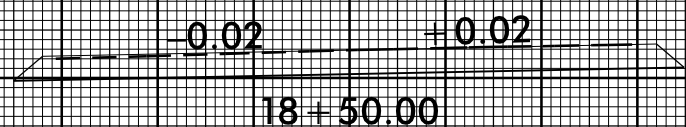
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750 750

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745 745

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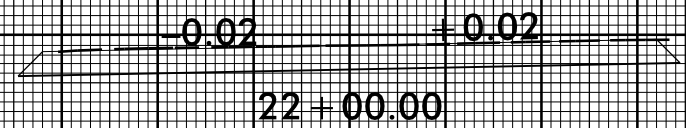
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Blower At DIV10-31732



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765 765

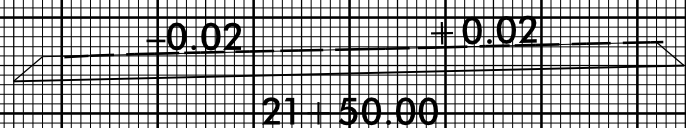
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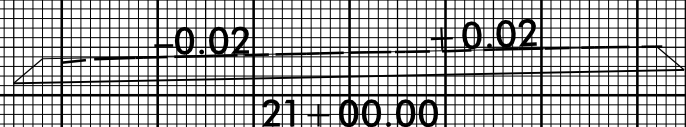
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760 760



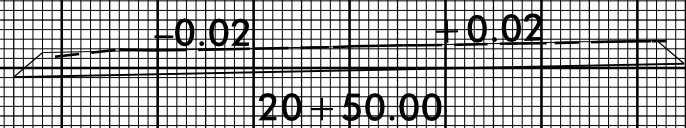
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760 760



755 755

760 760



755 755

750 750

-RPD-

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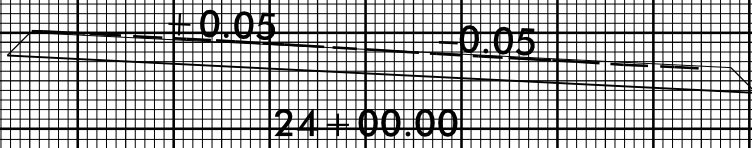


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765 765

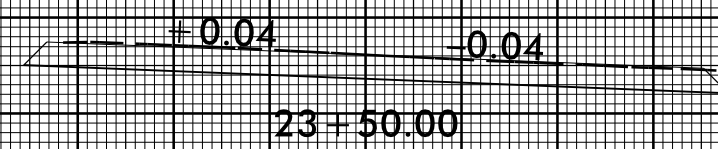
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770 770

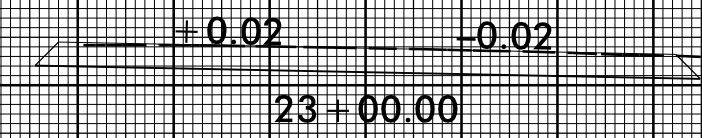
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760 760



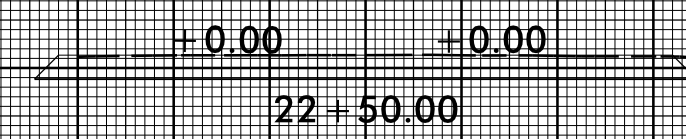
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760 760



765 765

760 760



755 755

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Blower At DIV10-31.32



75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

775 775

770 770

765 765

+0.015 -0.015

26+00.00

775 775

770 770

765 765

+0.035 -0.035

25+50.00

770 770

765 765

760 760

+0.05 -0.05

25+00.00

770 770

765 765

760 760

+0.05 -0.05

24+50.00

-RPD-

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tblower At D:\10-31\32



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775 775

770 770

765 765

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765 765

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

STATESVILLE RD.

27+00.00

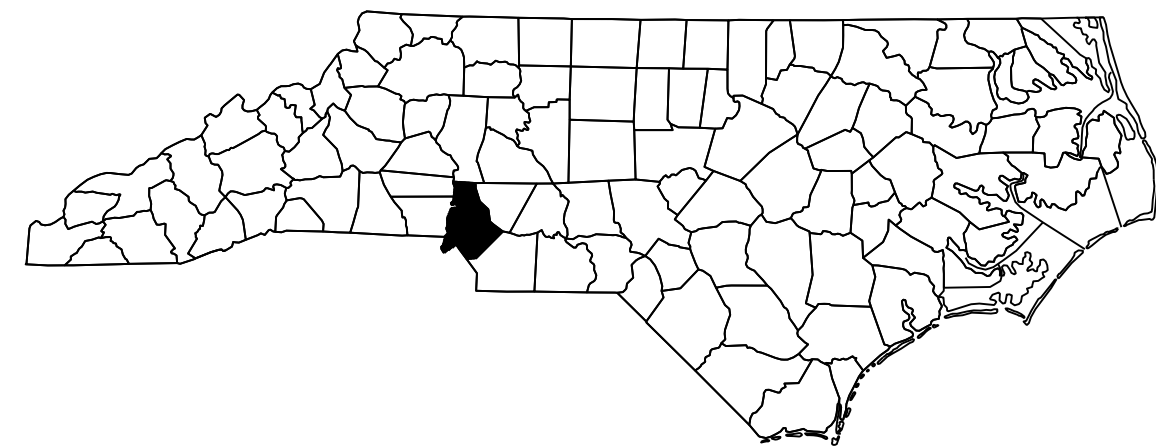
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tblower At DIV10-31432

PROJECT: I-5905

CONTRACT NO: C204365



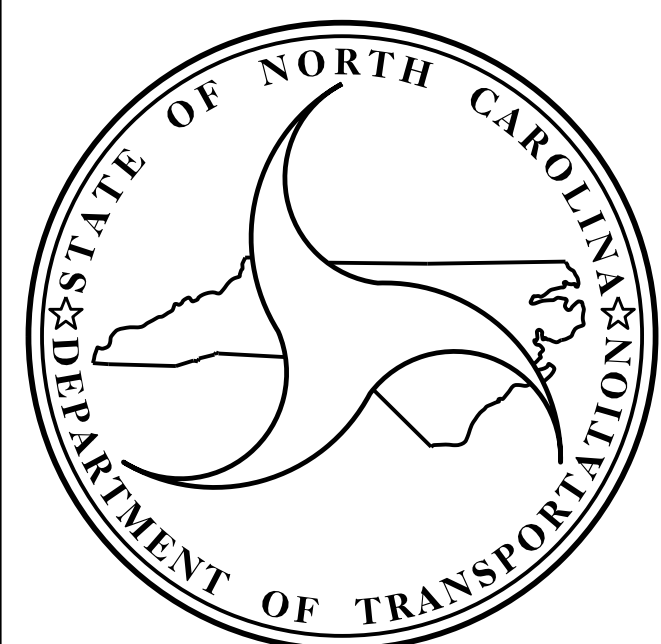
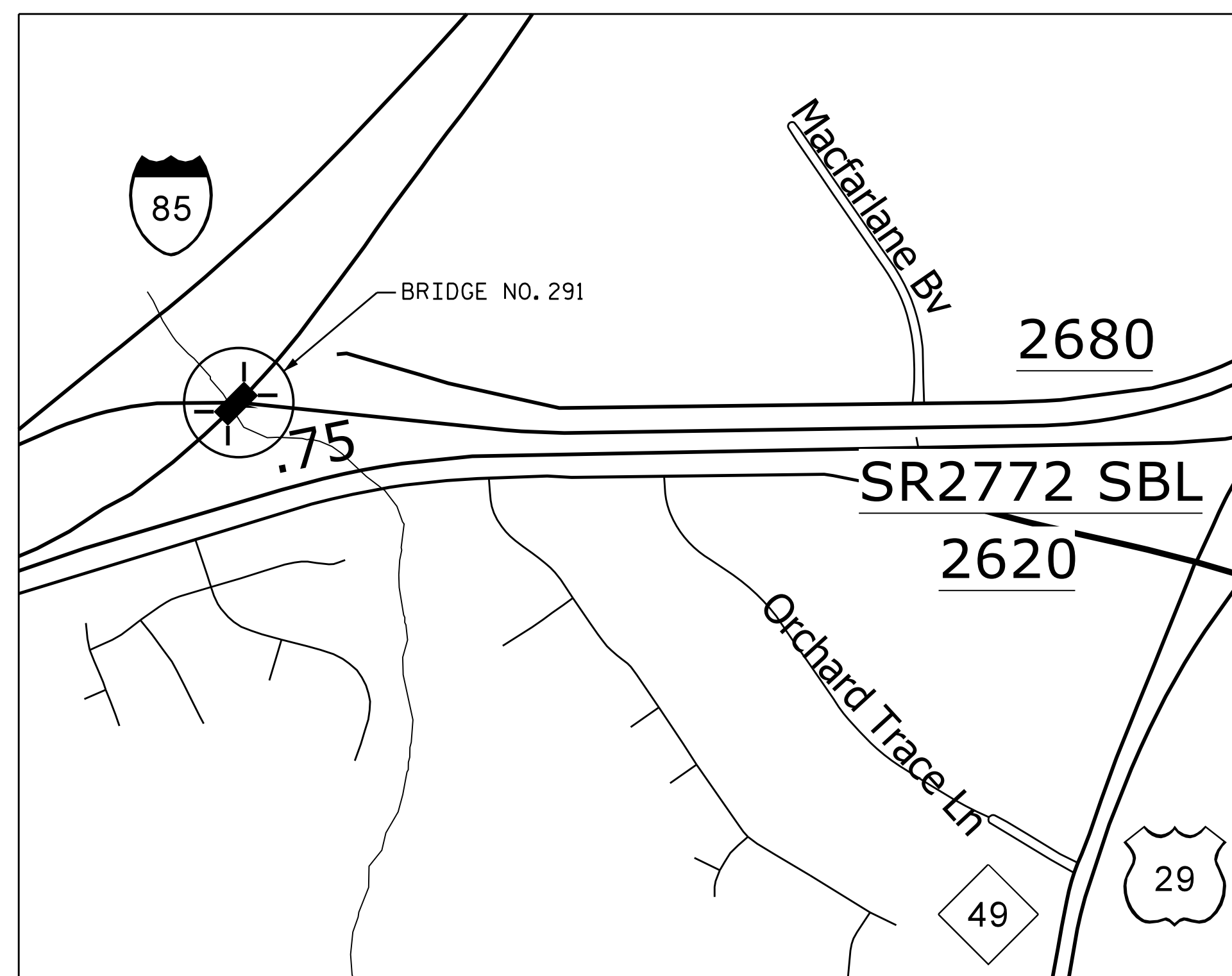
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MECKLENBURG COUNTY

LOCATION: BRIDGE #590291 ON SR2772 SBL OVER I-85

TYPE OF WORK: BRIDGE PRESERVATION - SILANE DECK TREATMENT, SILANE BARRIER
RAIL TREATMENT & FOAM JOINT REPLACEMENT

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5905	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45888.1.1	—	P.E.	
45888.3.GV1	NHPIM-0085(50)	CONST.	



DESIGN DATA

BRIDGE #291 - ADT 2008 - 18,000

PROJECT LENGTH

BRIDGE #291 - 0.067 MILE

Prepared in the Office of:
DIVISION OF HIGHWAYS
STRUCTURES MANAGEMENT UNIT
1000 BIRCH RIDGE DR.
RALEIGH, N.C. 27610

2018 STANDARD SPECIFICATIONS

LETTING DATE :

APRIL 21, 2020

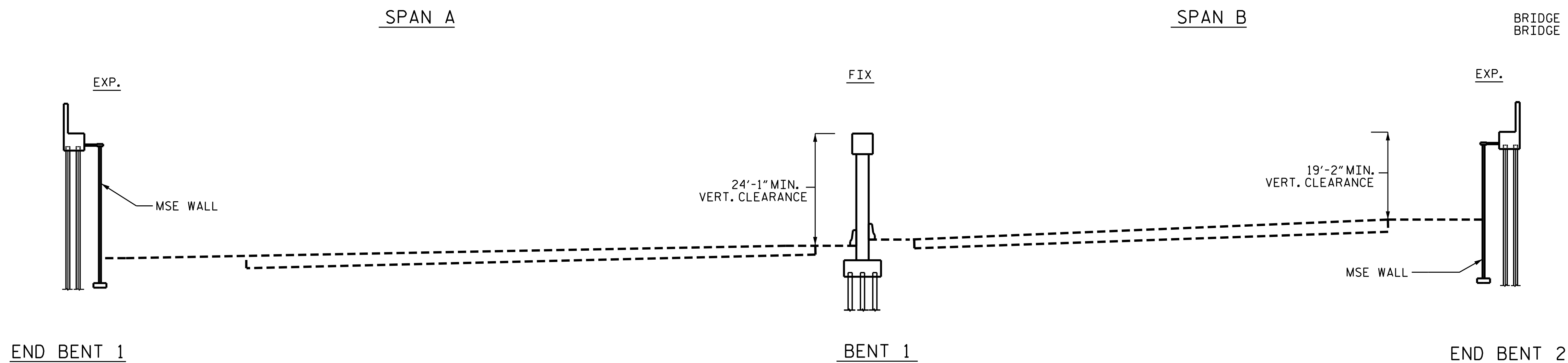
A. KEITH PASCHAL, PE
PROJECT ENGINEER

ADAM A. COLE, PE
PROJECT DESIGN ENGINEER

NOTES

GENERAL DRAWING INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 9/21/2017.

BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.

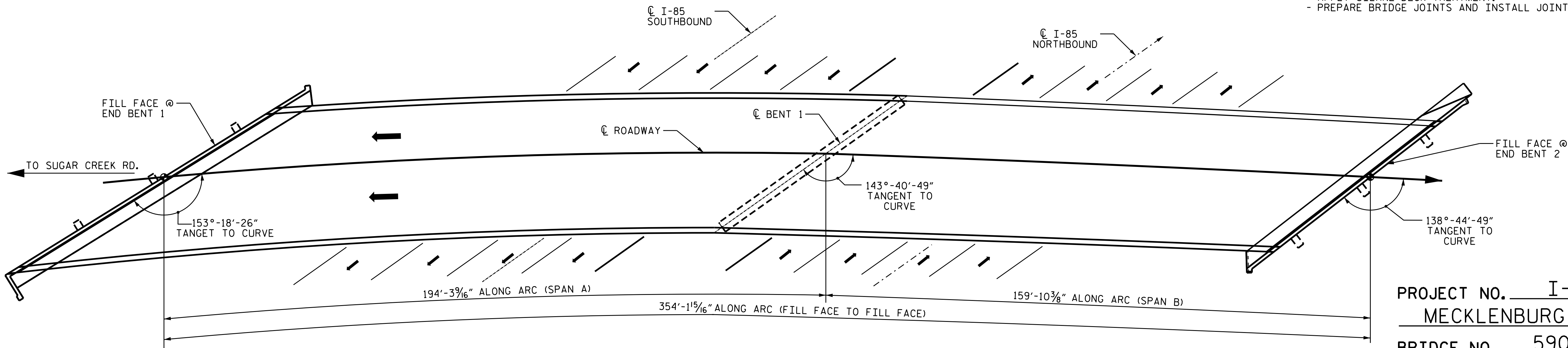


I HEREBY CERTIFY THAT THIS STRUCTURE WAS REHABILITATED ACCORDING TO THESE PLANS OR AS NOTED HEREIN.

RESIDENT ENGINEER _____ DATE _____

SCOPE OF WORK

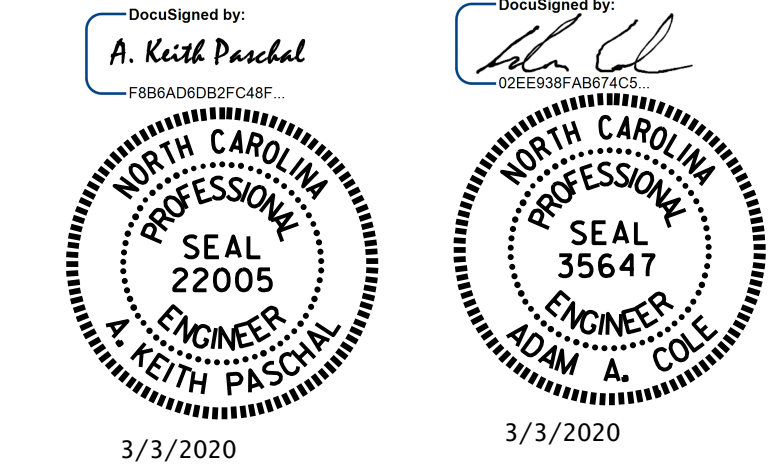
- PREPARE CONCRETE DECK SURFACE BY SHOTBLASTING.
- APPLY SILANE DECK TREATMENT.
- PREPARE BRIDGE JOINTS AND INSTALL JOINT SEALS.



PLAN

PROJECT NO. I-5905
MECKLENBURG COUNTY
 BRIDGE NO. 590291

SHEET 1 OF 2



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
US29/NC49 CONNECTOR
BRIDGE
OVER I-85 BETWEEN
SR2480 & US29/NC49

DRAWN BY : GHOLAMREZA KOUCHEKI DATE : 7/2019
 CHECKED BY : H.A.LOCKLEAR DATE : 7/2019

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-01
1			3			TOTAL SHEETS
2			4			6



LOCATION SKETCH

INFORMATION INDICATED ON THE LOCATION SKETCH SHALL BE CONSIDERED GENERAL INFORMATION ONLY. THE CONTRACTOR SHALL CONFIRM, THROUGH OTHER SOURCES, SPECIFIC INFORMATION REGARDING BRIDGES, ROADWAYS, UTILITIES, THE SURROUNDING AREA, AND ANY OTHER ASPECTS THAT MAY BE NECESSARY TO PERFORM AND COMPLETE THE PROJECT.

BRIDGE COORDINATES

LAT: 35.284325
LONG: -80.77524167

TOTAL BILL OF MATERIAL

BRIDGE NO. 291	FOAM JOINT SEAL FOR PRESERVATION	ELASTOMERIC CONCRETE FOR PRESERVATION	SURFACE PREPARATION FOR CONCRETE BARRIER RAIL	SILANE BARRIER RAIL TREATMENT	EPOXY COATING	BRIDGE JOINT DEMOLITION	SHOTBLASTING BRIDGE DECK	SILANE DECK TREATMENT
	LIN. FT.	CU. FT.	SQ. FT.	SQ. FT.	SQ. FT.	SQ. FT.	SQ. YD.	SQ. YD.
	142.7	36.50	2,557	2,557	750	146	1,482	1,482

NOTE:
AT THE TIME OF PREPARATION OF THESE PLANS, IT WAS NOT ANTICIPATED THAT CONCRETE REPAIRS, SHOTCRETE REPAIRS, AND CONCRETE DECK REPAIR FOR SILANE DECK TREATMENT WOULD BE REQUIRED. HOWEVER, IT MAY BE DETERMINED IN THE FIELD THAT CONCRETE REPAIRS, OR OTHER WORK WILL BE NECESSARY TO PROPERLY COMPLETE THE INTENDED BRIDGE PRESERVATION/REHABILITATION WORK. THE CONTRACTOR SHALL BE PREPARED TO PERFORM SUCH WORK IN A TIMELY MANNER, AS DETERMINED IN THE FIELD. SUCH WORK SHALL BE CONSIDERED EXTRA WORK AND SHALL BE ADDRESSED AS PER ARTICLE 104-7 OF THE STANDARD SPECIFICATIONS. PROJECT SPECIAL PROVISIONS THAT OUTLINE REQUIREMENTS FOR THESE POTENTIAL ADDITIONAL WORK ITEMS HAVE BEEN PROVIDED IN PROJECT DOCUMENTS, BUT NO QUANTITIES HAVE BEEN LISTED. ACTUAL PAY ITEMS, QUANTITIES, AND COSTS WILL BE ESTABLISHED, AS REQUIRED, IF EXTRA WORK IS ENCOUNTERED.

UNANTICIPATED ITEMS:

ITEM NO	DESCRIPTION	UNIT
1	CONCRETE REPAIRS	CU. FT.
2	SHOTCRETE REPAIRS	CU. FT.
3	CONCRETE DECK REPAIR FOR SILANE DECK TREATMENT	SQ. FT.

DRAWN BY : GHOLAMREZA KOUCHEKI DATE : 7/2019
CHECKED BY : H.A.LOCKLEAR DATE : 7/2019

NOTES

- EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM THE BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL FIELD VERIFY THE INFORMATION SHOWN ON THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL STATE AND FEDERAL SAFETY REQUIREMENTS.
- EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING REPAIR OF BRIDGE DECKS.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR SILANE DECK TREATMENT, SEE SPECIAL PROVISIONS.
- FOR SILANE BARRIER RAIL TREATMENT, SEE SPECIAL PROVISIONS.
- FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.
- FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.
- FOR CONCRETE DECK REPAIR FOR SILANE DECK TREATMENT, SEE SPECIAL PROVISIONS.
- FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5905
MECKLENBURG COUNTY
BRIDGE NO. 590291

SHEET 2 OF 2



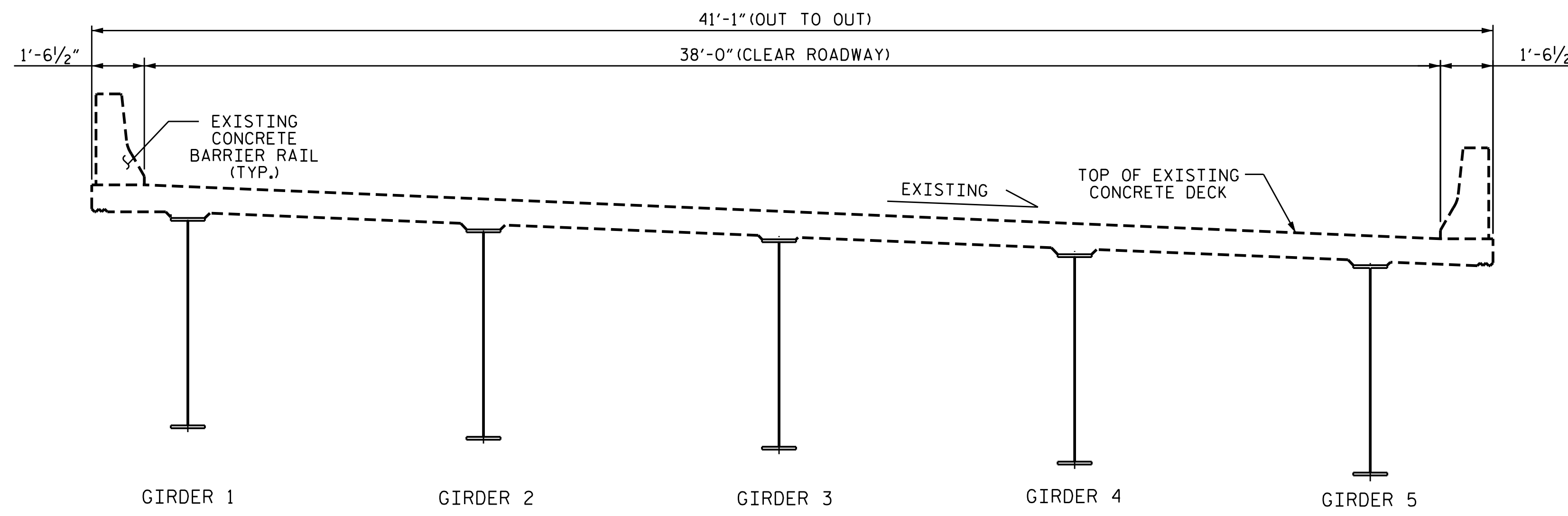
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
GENERAL DRAWING
US29/NC49 CONNECTOR
BRIDGE
OVER I-85 BETWEEN
SR2480 & US29/NC49

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-02
1			3			TOTAL SHEETS
2			4			6

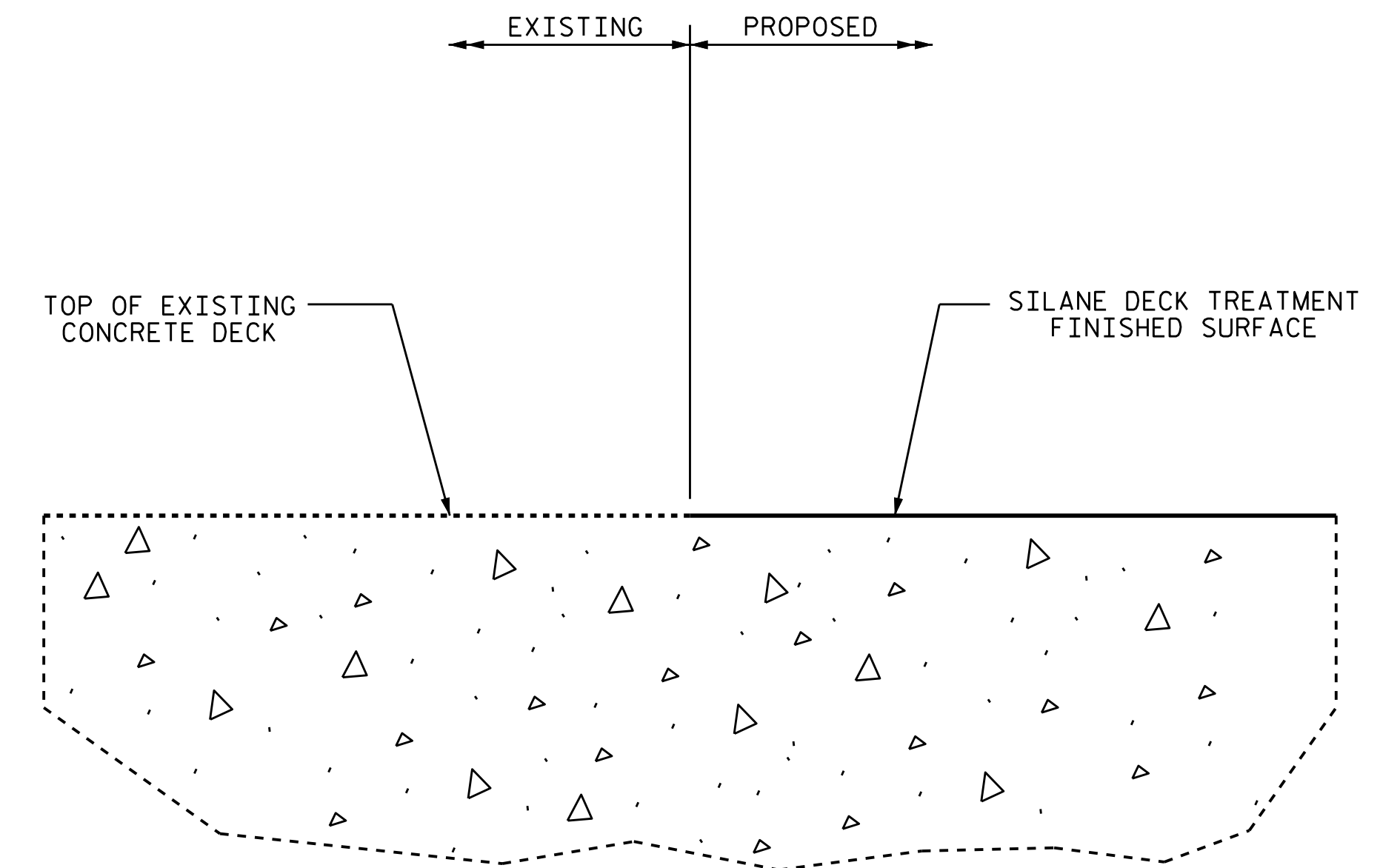
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NOTE:

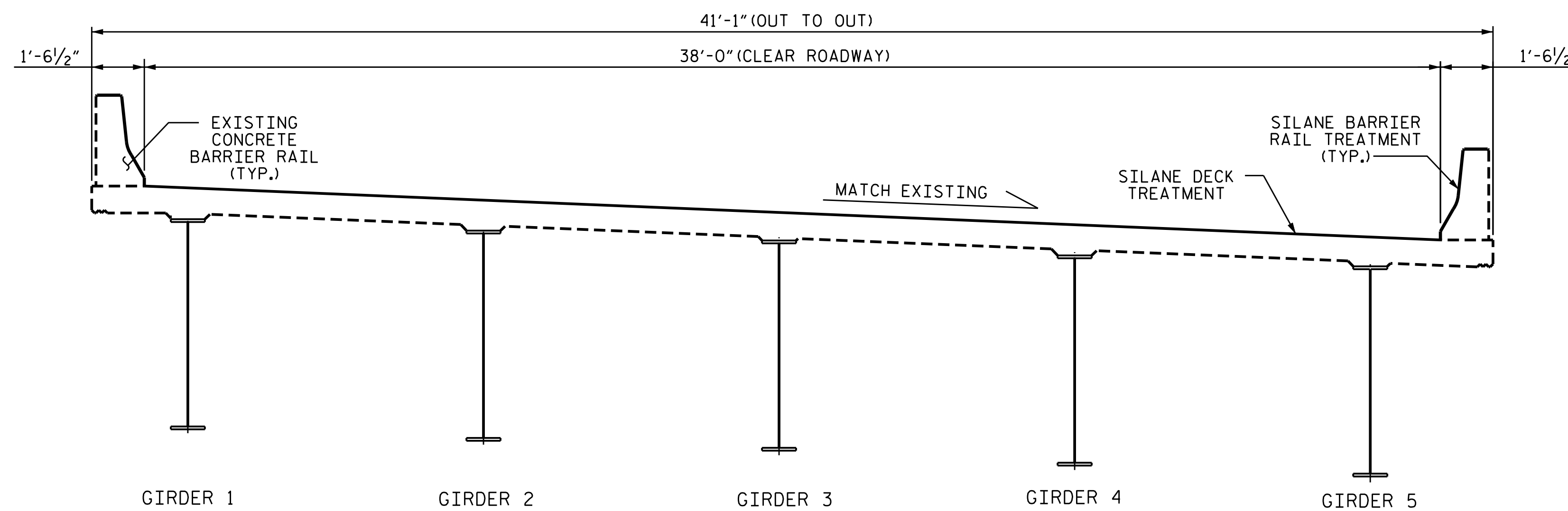
SEE TRAFFIC MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF OVERLAY SURFACE PREPARATION AND DECK SEAL PLACEMENT.



TYPICAL SECTION
(EXISTING)

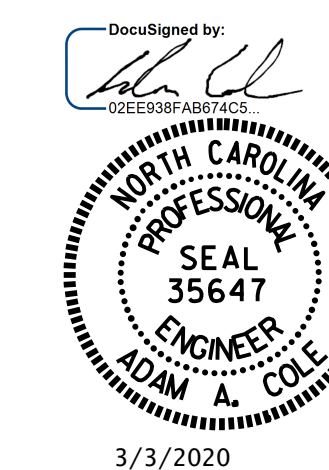


DETAIL OF SILANE DECK TREATMENT



TYPICAL SECTION
(PROPOSED)

PROJECT NO. I-5905
MECKLENBURG COUNTY
BRIDGE NO. 590291



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SUPERSTRUCTURE
TYPICAL SECTION**

DRAWN BY : R. SAHA DATE : 7/2019
CHECKED BY : H.A. LOCKLEAR DATE : 7/30/2019

DOCUMENT NOT CONSIDERED
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SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-03
1			3			TOTAL SHEETS
2			4			6

NOTES:

REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ADJUST QUANTITIES ENTERED INTO AS-BUILT REPAIR QUANTITY TABLE.

 SHOTBLASTING AND SILANE DECK TREATMENT

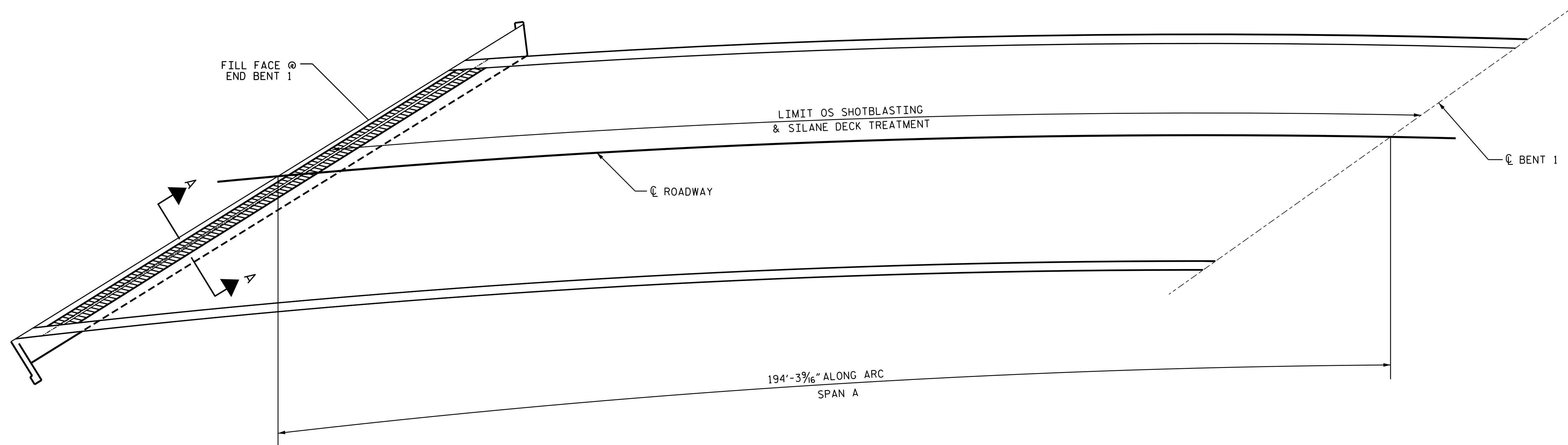
 ELASTOMERIC CONCRETE

BRIDGE DECK QUANTITIES

	ESTIMATE		ACTUAL	
	AREA	VOLUME	AREA	VOLUME
SHOTBLASTING BRIDGE DECK	808 SQ. YD.			
SILANE DECK TREATMENT	808 SQ. YD.			
SURFACE PREPARATION FOR CONCRETE BARRIER RAIL	1403 SQ. FT.			
SILANE BARRIER RAIL TREATMENT	1403 SQ. FT.			
BRIDGE JOINT DEMOLITION	88 SQ. FT.			
ELASTOMERIC CONCRETE FOR PRESERVATION		22.0 CU.FT.		

SUBSTRUCTURE QUANTITY

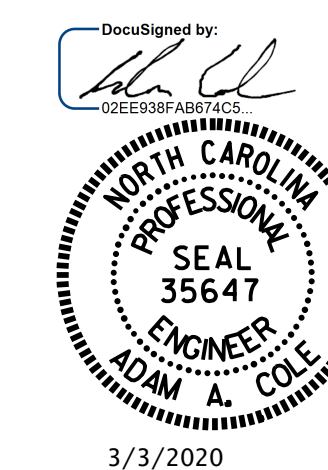
EPOXY COATING FOR END BENT 1	412.0 SQ. FT.			
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PLAN-SPAN A

PROJECT NO. I-5905
MECKLENBURG COUNTY
 BRIDGE NO. 590291

SHEET 1 OF 2



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SURFACE PREPARATION
 & SILANE DECK
 TREATMENT**

DRAWN BY : GHOLAMREZA KOUICHEKI DATE : 7/2019
 CHECKED BY : H.A.LOCKLEAR DATE : 8/2019

DOCUMENT NOT CONSIDERED
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-04
1			3			TOTAL SHEETS
2			4			6

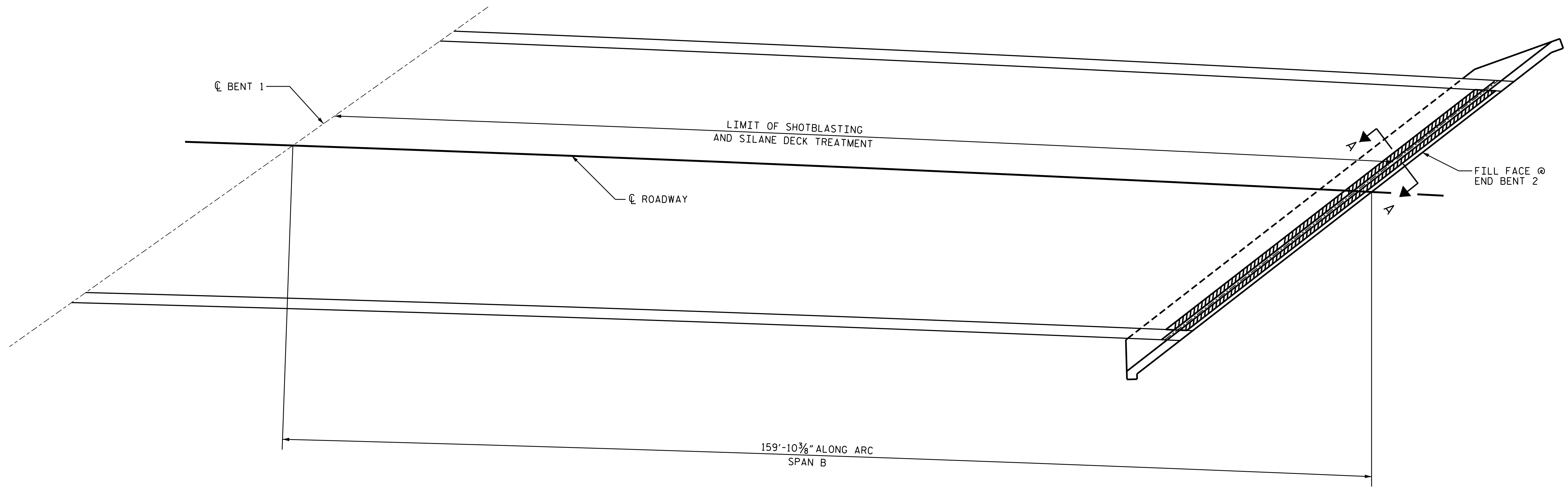
NOTES:

REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ADJUST QUANTITIES ENTERED INTO AS-BUILT REPAIR QUANTITY TABLE.

 SHOTBLASTING AND SILANE DECK TREATMENT

 ELASTOMERIC CONCRETE

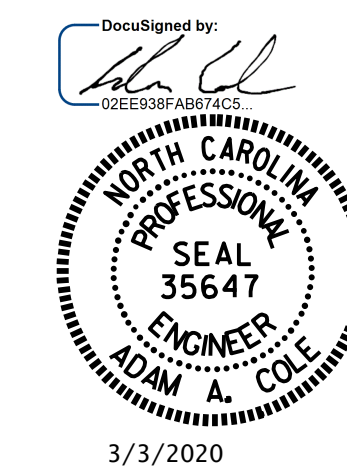
BRIDGE DECK QUANTITIES				
	ESTIMATE		ACTUAL	
	AREA	VOLUME	AREA	VOLUME
SHOTBLASTING BRIDGE DECK	674 SQ. YD.			
SILANE DECK TREATMENT	674 SQ. YD.			
SURFACE PREPARATION FOR CONCRETE BARRIER RAIL	1154 SQ. FT.			
SILANE BARRIER RAIL TREATMENT	1154 SQ. FT.			
BRIDGE JOINT DEMOLITION	58 SQ. FT.			
ELASTOMERIC CONCRETE FOR PRESERVATION		14.50 CU. FT.		
SUBSTRUCTURE QUANTITY				
EPOXY COATING FOR END BENT 2	338 SQ. FT.			



PLAN - SPAN B

PROJECT NO. I-5905
MECKLENBURG COUNTY
 BRIDGE NO. 590291

SHEET 2 OF 2



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**SURFACE PREPARATION
 & SILANE DECK
 TREATMENT**

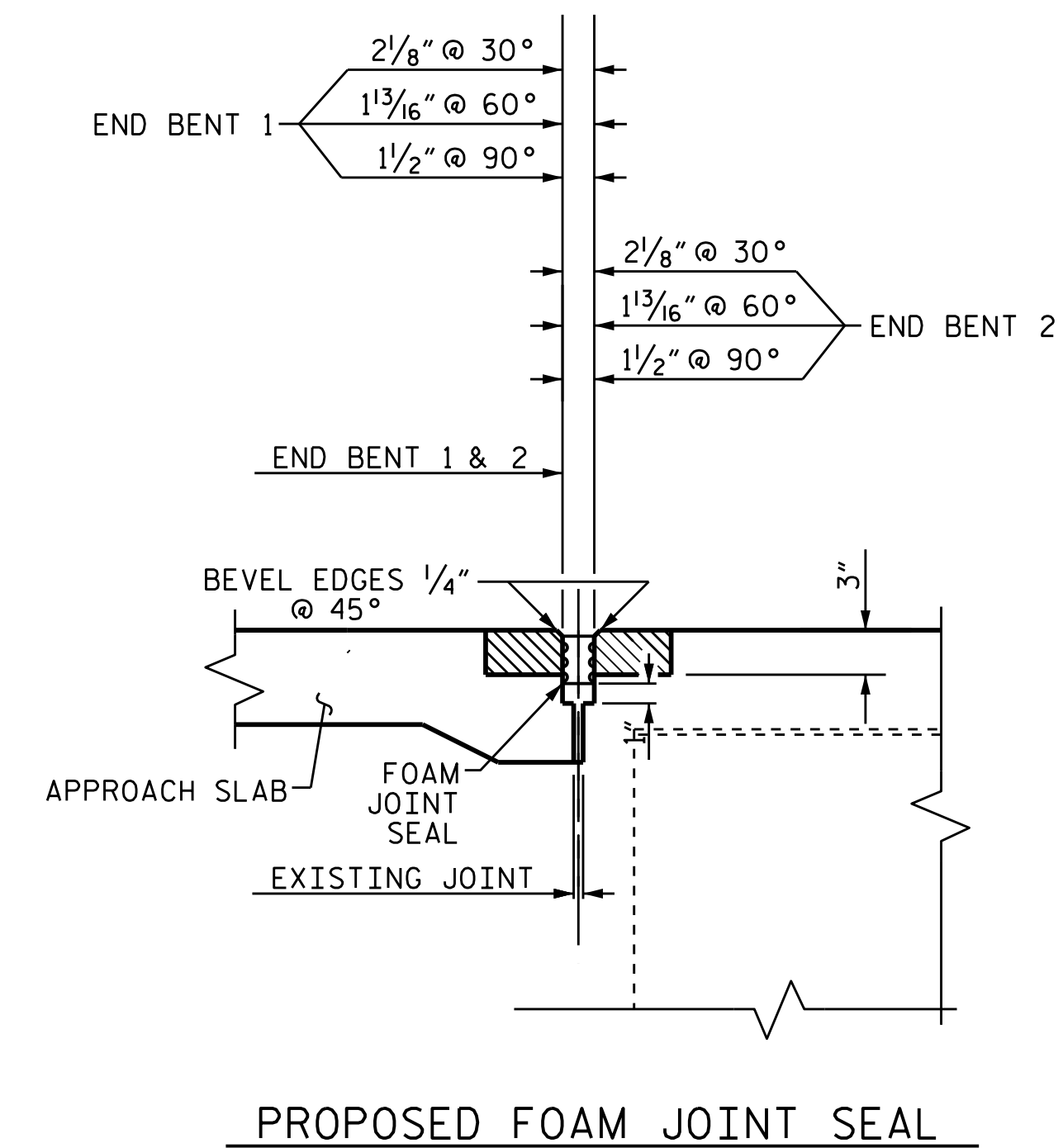
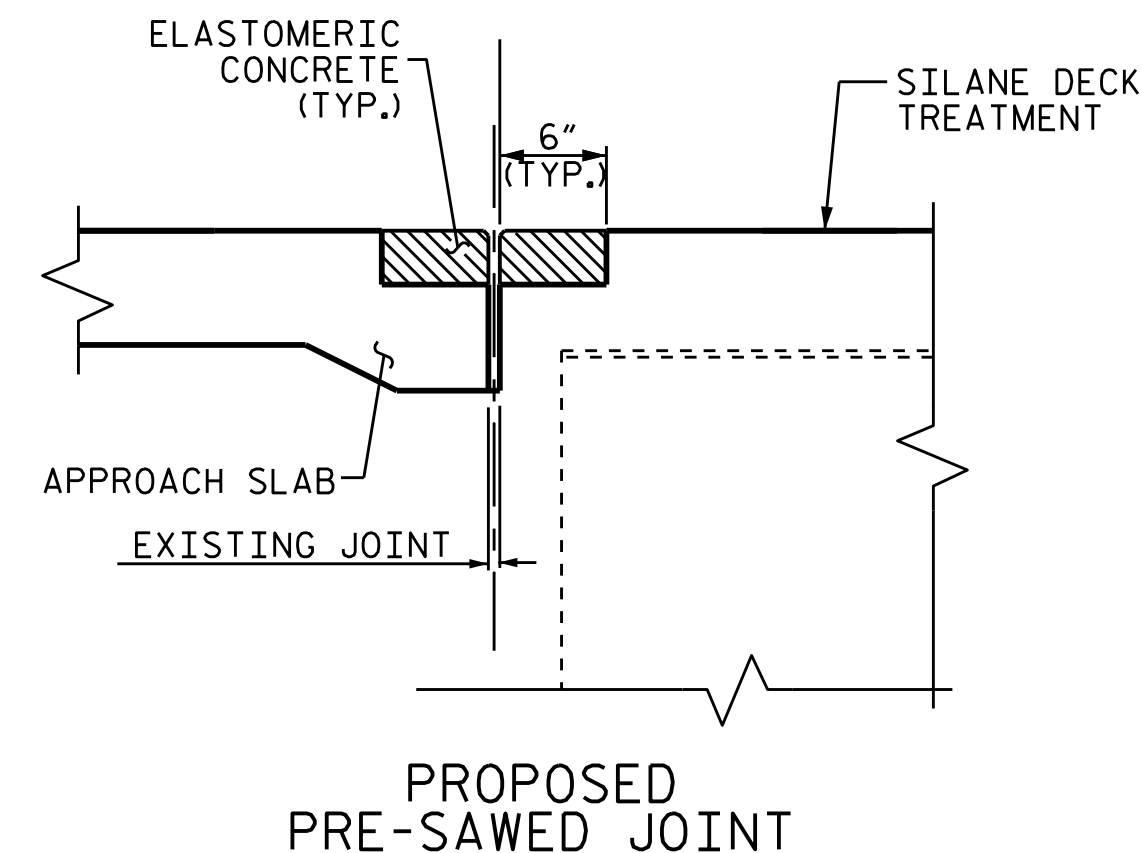
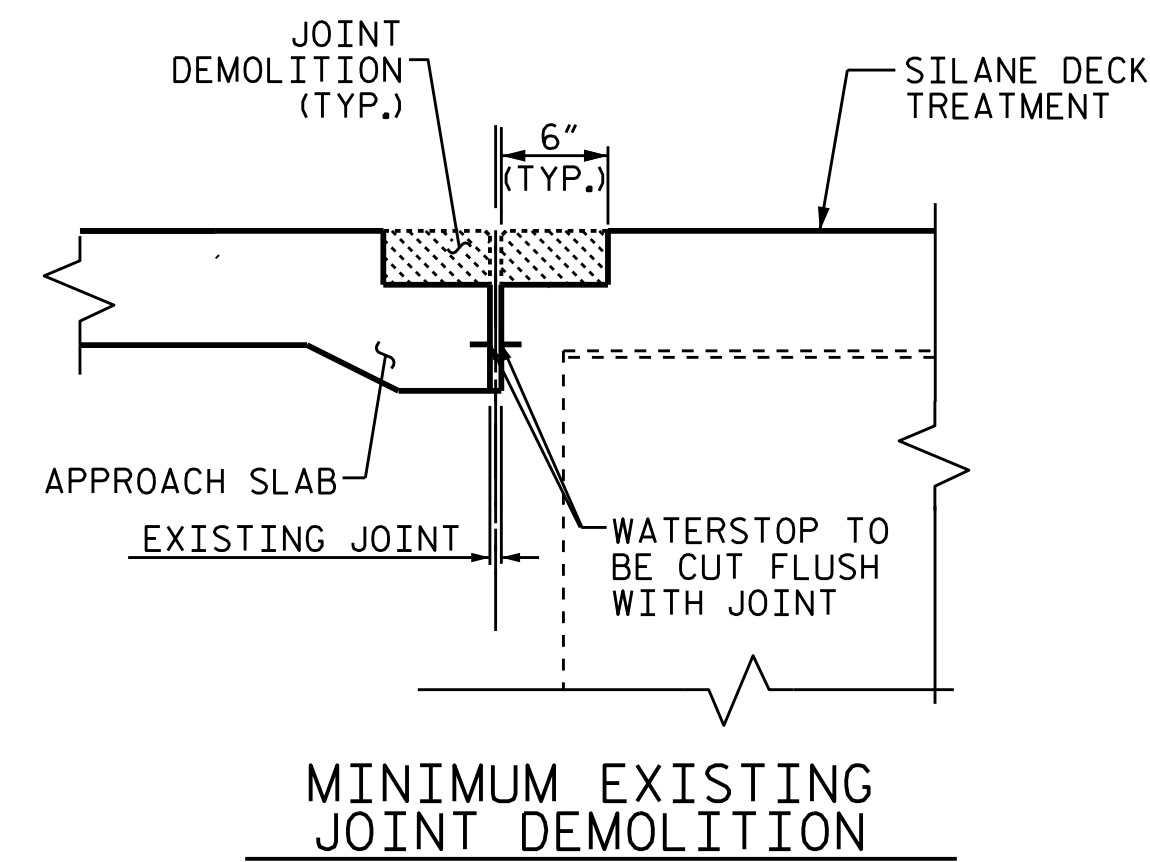
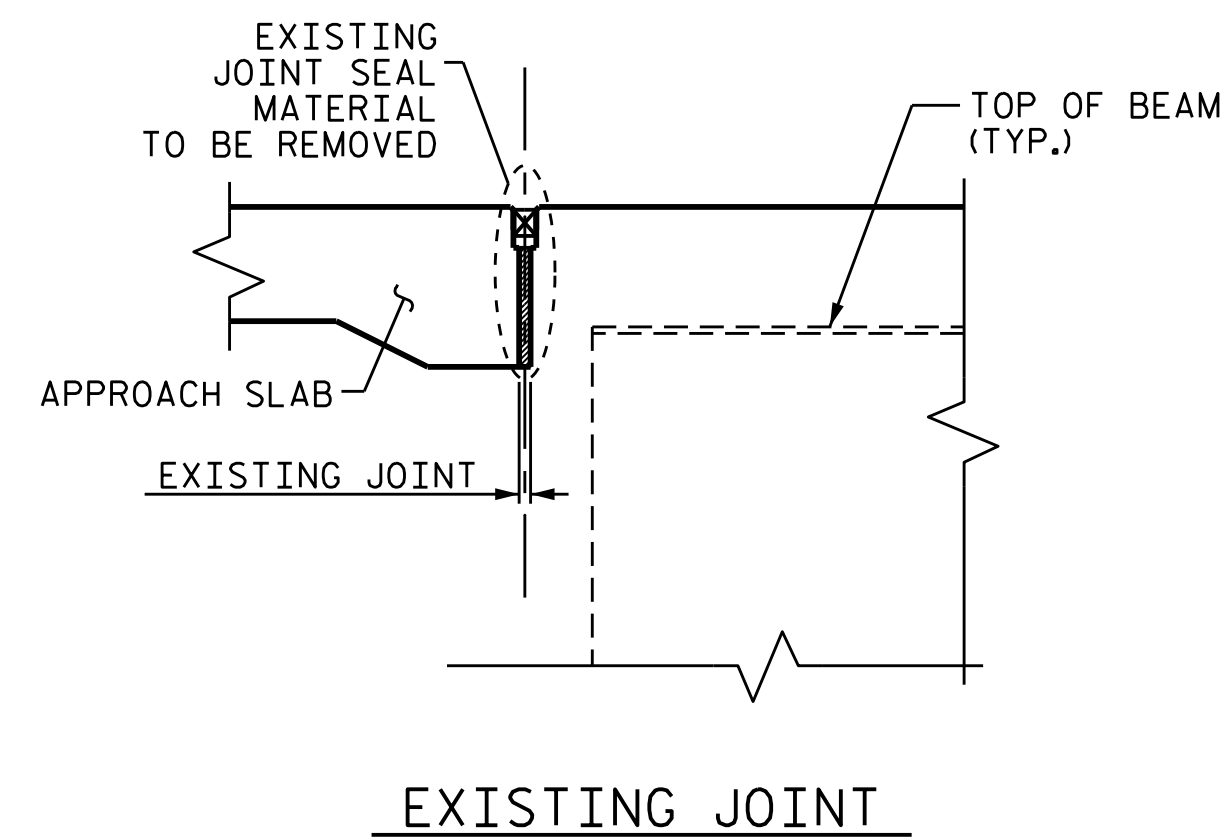
DRAWN BY : REZA KOUCHEKI DATE : 7/2019
 CHECKED BY : H.A. LOCKLEAR DATE : 7/2019

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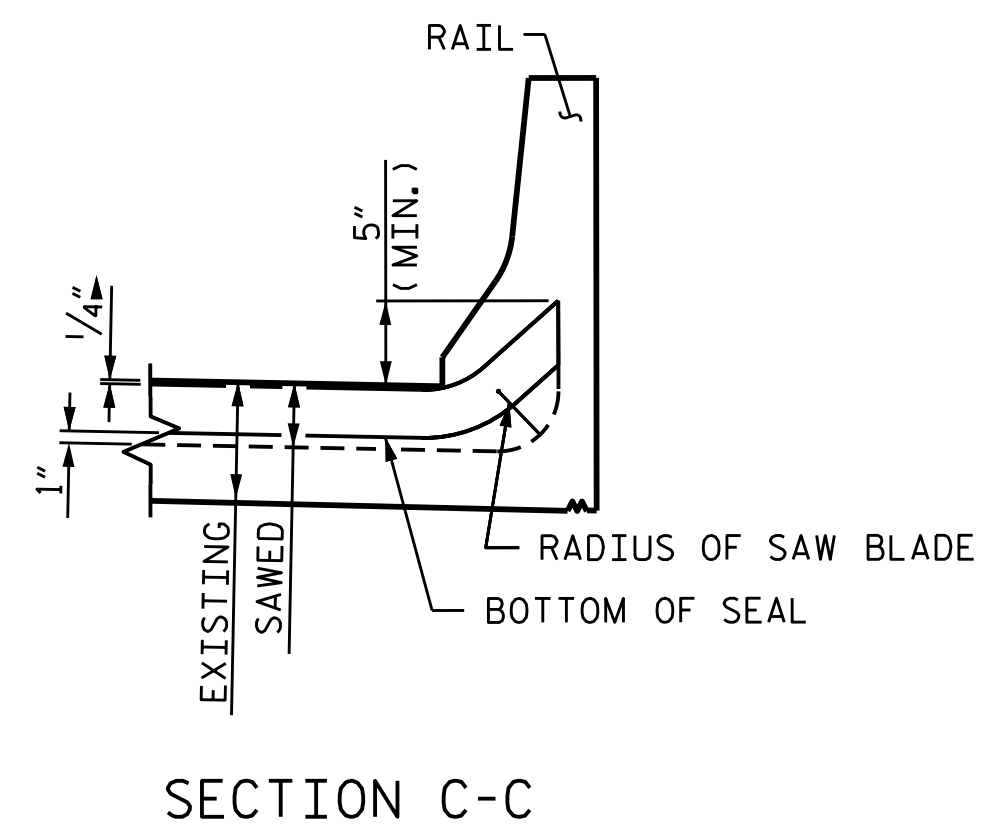
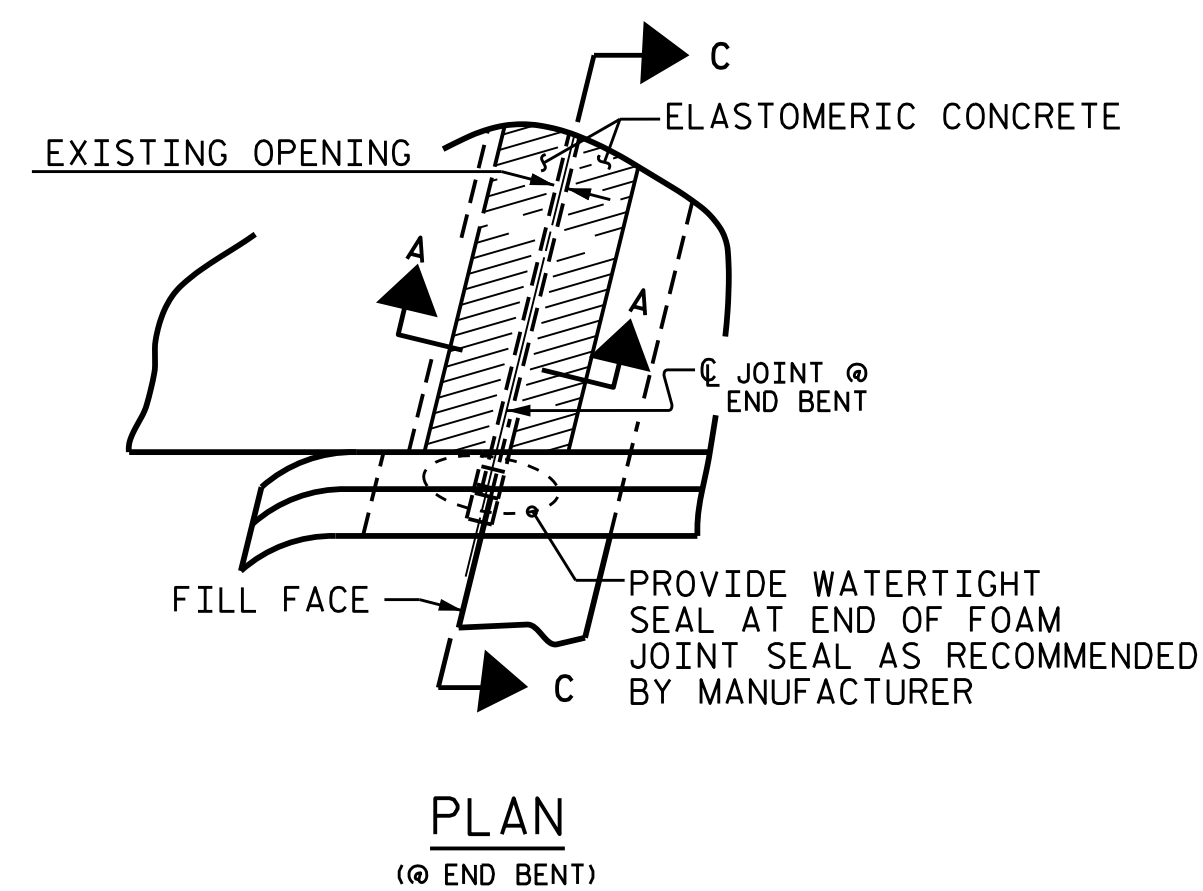
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-05
1			3			TOTAL SHEETS
2			4			6

NOTES

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
 THE INSTALLED FOAM JOINT SEALS SHALL BE WATERTIGHT.
 NOMINAL UNCOMPRESSED SEAL WIDTH OF FOAM JOINT SEAL AT END BENT 1 SHALL BE 2³/₁₆" AND AT END BENT 2 SHALL BE 2¹/₁₆".



SECTION A-A



FOAM JOINT SEALS FOR PRESERVATION		
END BENT 1	85.0	(LIN. FT.)
END BENT 2	57.7	(LIN. FT.)
TOTAL	142.7	(LIN. FT.)

JOINT SEAL DETAILS

NOTES:

FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.
 THE INSTALLED FOAM JOINT SEAL SHALL BE WATER TIGHT.
 NOMINAL UNCOMPRESSED SEAL WIDTH OF FOAM JOINT SEAL SHALL BE 2³/₁₆" AT THE END BENTS AND 2¹/₁₆" AT THE BENTS.
 FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.



PROJECT NO. I-5905
MECKLENGURG COUNTY
 BRIDGE NO. 590291

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

JOINT DETAIL

DRAWN BY : GHOLAMREZA KOUCHEKI DATE : 1/2020
 CHECKED BY : H.A. LOCKLEAR DATE : 2/2020

DOCUMENT NOT CONSIDERED
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 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			6

STANDARD NOTES

DESIGN DATA:

SPECIFICATIONS	-----	A.A.S.H.T.O. (CURRENT)
LIVE LOAD	-----	SEE PLANS
IMPACT ALLOWANCE	-----	SEE A.A.S.H.T.O.
STRESS IN EXTREME FIBER OF STRUCTURAL STEEL - AASHTO M270 GRADE 36	--	20,000 LBS. PER SQ. IN.
	--	27,000 LBS. PER SQ. IN.
	--	27,000 LBS. PER SQ. IN.
REINFORCING STEEL IN TENSION - GRADE 60	----	24,000 LBS. PER SQ. IN.
CONCRETE IN COMPRESSION	-----	1,200 LBS. PER SQ. IN.
CONCRETE IN SHEAR	-----	SEE A.A.S.H.T.O.
STRUCTURAL TIMBER - TREATED OR UNTREATED EXTREME FIBER STRESS	----	1,800 LBS. PER SQ. IN.
COMPRESSION PERPENDICULAR TO GRAIN OF TIMBER	-----	375 LBS. PER SQ. IN.
EQUIVALENT FLUID PRESSURE OF EARTH	-----	30 LBS. PER CU. FT. (MINIMUM)

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2018 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N.C. DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED $\frac{3}{4}$ " WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO $\frac{1}{2}$ " RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A $\frac{1}{4}$ " FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A $\frac{1}{4}$ " RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.

ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.

IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE $\frac{7}{8}$ " \emptyset SHEAR STUDS FOR THE $\frac{3}{4}$ " \emptyset STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - $\frac{7}{8}$ " \emptyset STUDS FOR 4 - $\frac{3}{4}$ " \emptyset STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF $\frac{7}{8}$ " \emptyset STUDS ALONG THE BEAM AS SHOWN FOR $\frac{3}{4}$ " \emptyset STUDS BASED ON THE RATIO OF 3 - $\frac{7}{8}$ " \emptyset STUDS FOR 4 - $\frac{3}{4}$ " \emptyset STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST $\frac{3}{16}$ " IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY $\frac{1}{16}$ " INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.

ENGLISH

JANUARY, 1990

STD. NO. SN