

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

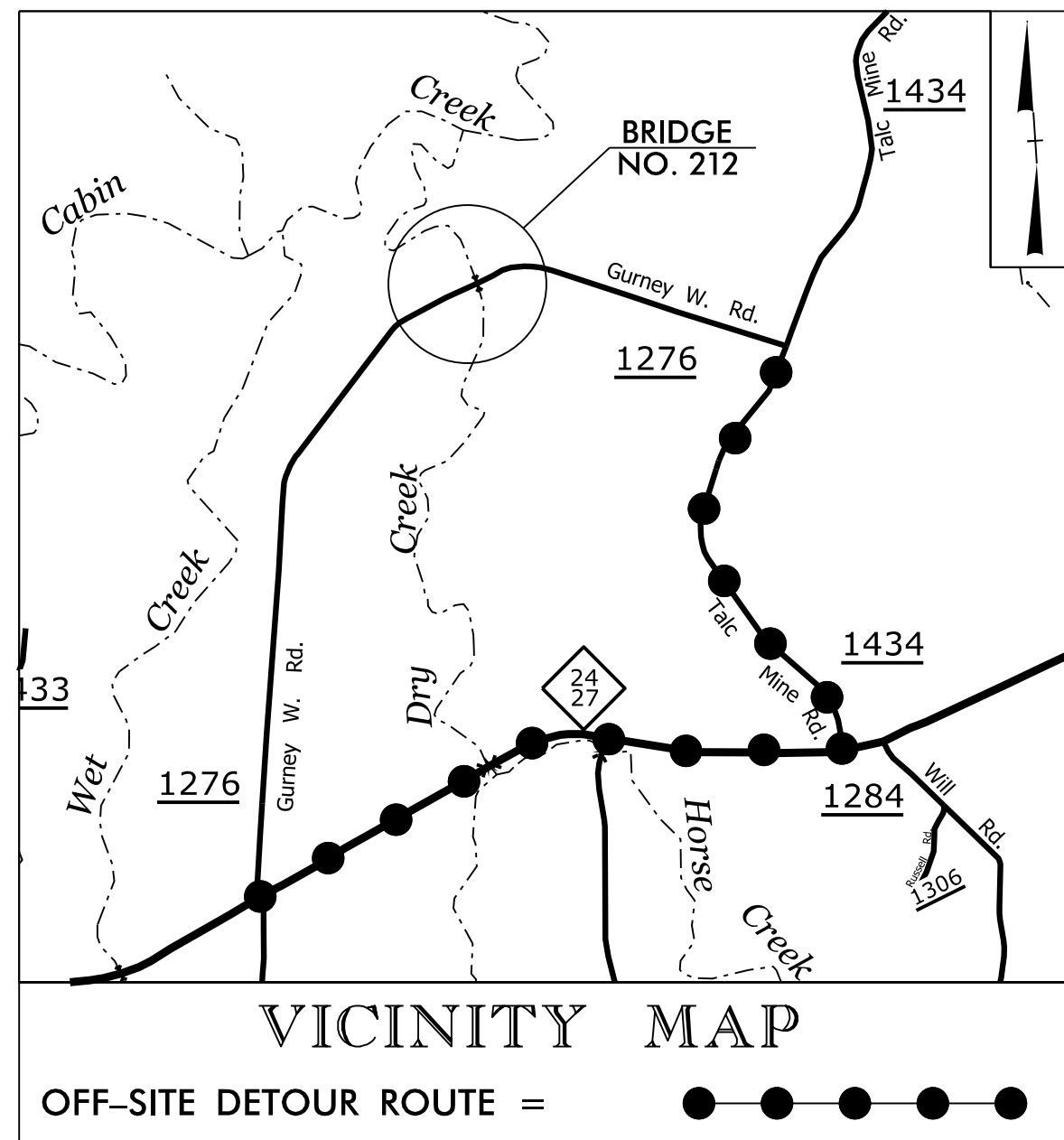
**The documents contained herein were originally issued
and sealed by the individuals whose names and license
numbers appear on each page, on the dates appearing
with their signature on that page.**

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

PROJECT: 17BP.8.R.127

CONTRACT:

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional symbols
See Sheet 1C-1 For Survey Control Sheet



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

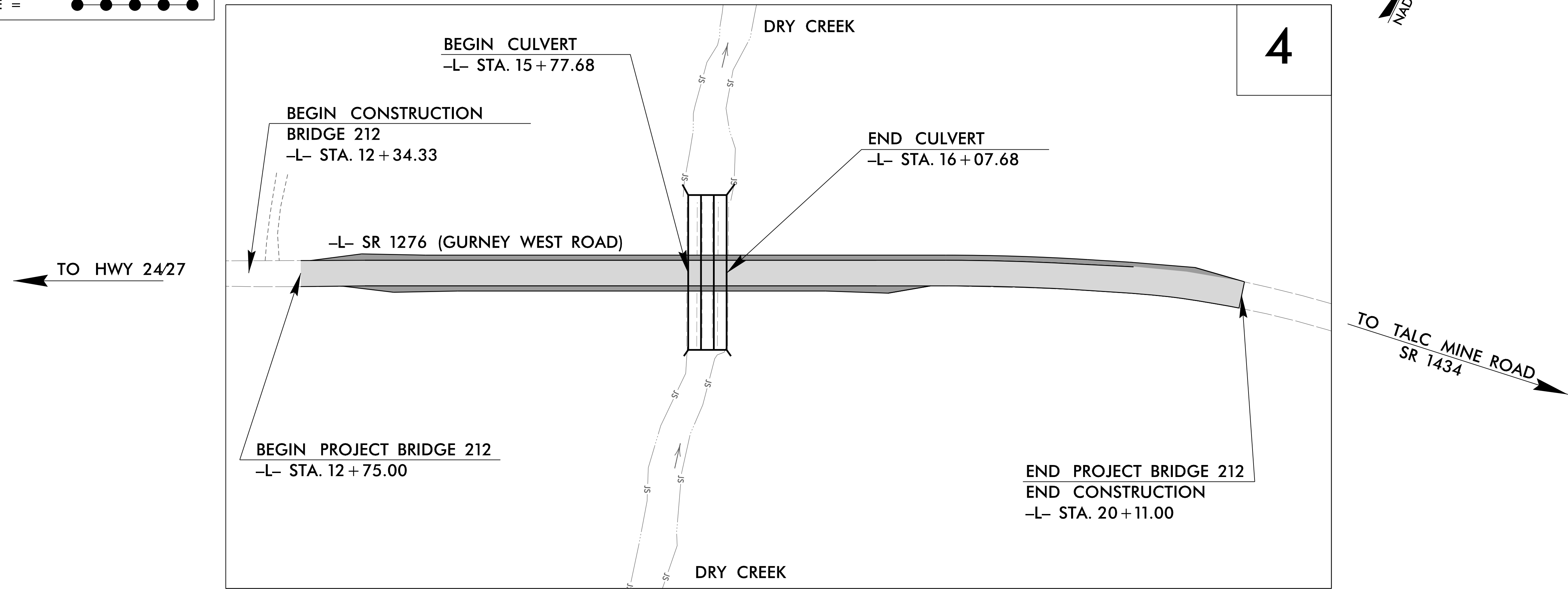
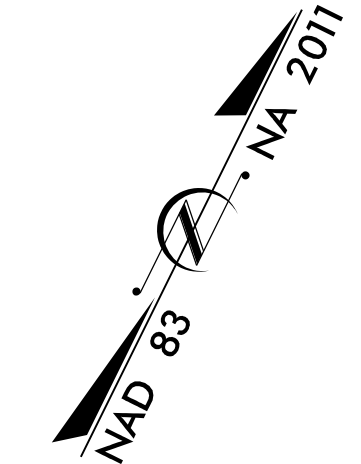
MOORE COUNTY

**LOCATION: BRIDGE NO. 212 OVER DRY CREEK
ON SR 1276 (GURNEY W. ROAD)**

TYPE OF WORK: GRADING, DRAINAGE, PAVING & CULVERT

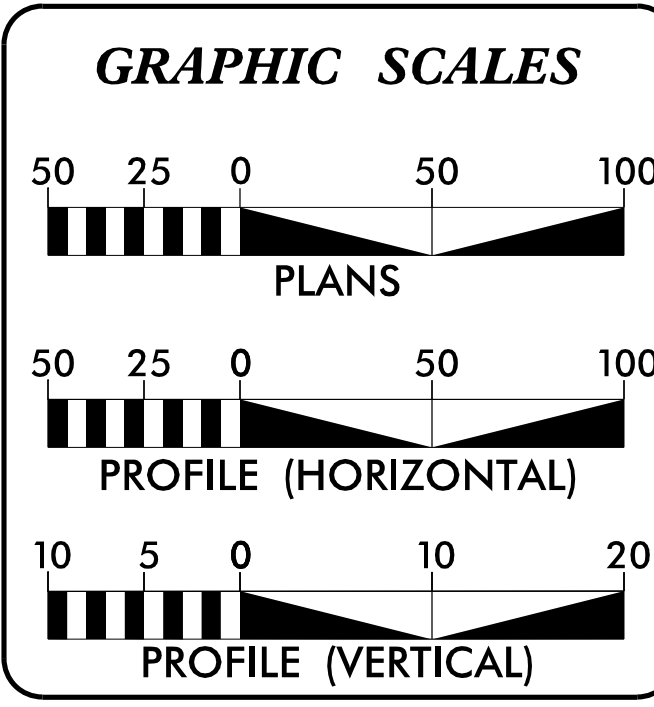
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.8.R.127	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.8.R.127		PE	
17BP.8.R.127		R/W & UTILITIES	

DESCRIPTION: FINAL ROADWAY PLANS
SUBMITTAL # _____
DATE: _____



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

DESIGN EXCEPTION REQUIRED FOR SAG VERTICAL CURVE AND ASSOCIATED NIGHTTIME STOPPING SIGHT DISTANCE.



DESIGN DATA

ADT = 540

T = 6 % *

V = 55 MPH

* TTST =

FUNC CLASS = LOCAL
"SUBREGIONAL TIER"

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT BRIDGE 212 = 0.133 Miles
LENGTH OF STRUCTURE PROJECT BRIDGE 212 = 0.006 Miles
TOTAL LENGTH OF PROJECT BRIDGE 212 = 0.139 Miles

Prepared in the Office of:

SEPI
ENGINEERING & CONSTRUCTION
1025 Wade Avenue
Raleigh, NC 27605
Tel: 919-789-5977
Fax: 919-789-9591
License: C-2157

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
DECEMBER 15, 2017

LETTING DATE:
SEPTEMBER 11, 2018

STEVE SCOTT, PE
PROJECT ENGINEER

MATTHEW COPPLE, PE
PROJECT DESIGN ENGINEER

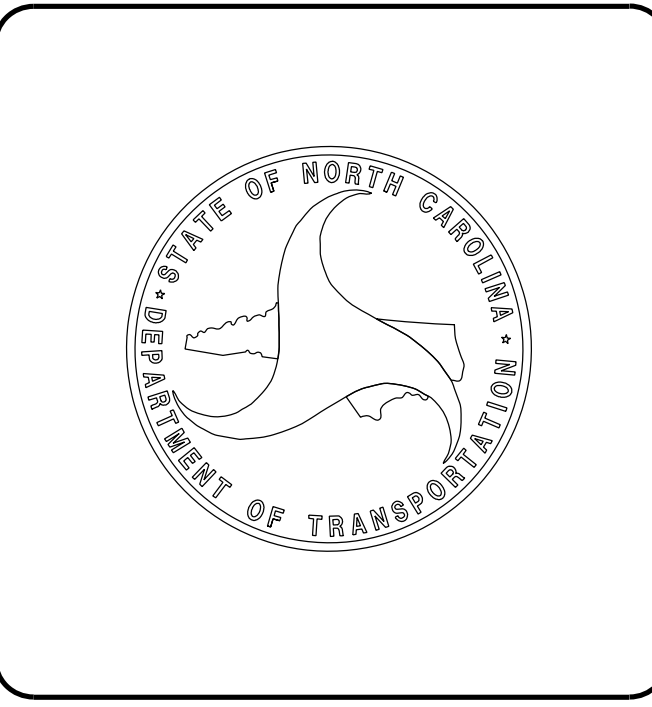
TIM WELCH, PE
NCDOT CONTACT

HYDRAULICS ENGINEER
7/17/2018


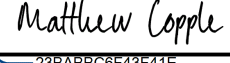
DocuSigned by:
Ernan Marzodui
SIGNATURE

ROADWAY DESIGN ENGINEER
7/17/2018

DocuSigned by:
Matthew Copple
SIGNATURE



8/17/99

PROJECT REFERENCE NO. <i>17BP.B.R.J27</i>	SHEET NO. <i>1A</i>
ROADWAY DESIGN ENGINEER 7/17/2018	
	
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
1C-1	SURVEY CONTROL SHEETS
2A-1	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
3B-1	ROADWAY AND DRAINAGE SUMMARIES
4 THRU 5	PLAN AND PROFILE SHEET
TMP-1 THRU TMP-4	TRAFFIC MANAGEMENT PLANS
PMP-1 THRU PMP-2	PAVEMENT MARKING PLANS
EC-1 THRU EC- 5	EROSION CONTROL PLANS
UO-1 THRU UO-2	UTILITIES BY OTHERS PLANS
X-1	CROSS-SECTION INDEX
X-2 THRU X- 8	CROSS-SECTIONS
C-1 THRU C- 6	STRUCTURE PLANS - CULVERT

GENERAL NOTES:

2018 SPECIFICATIONS
EFFECTIVE: 01-16-2018

2018 ROADWAY ENGLISH STANDARD DRAWINGS
EFF. 01-16-2018

GRADING AND SURFACING:

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 CENTER LINE OF 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.

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:

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

GUARDRAIL:

THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

SUBSURFACE PLANS:

NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE Duke Energy and Centurylink
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

RIGHT-OF-WAY MARKERS:

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY CONTRACT.

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

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method III
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
300.01	Method of Pipe Installation
DIVISION 4 - MAJOR STRUCTURES	
422.01	Reinforced Bridge Approach Fills
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
840.36	Traffic Bearing Grated Drop Inlet - for Steel (840.37) Double Frame and Grates
840.37	Steel Grate and Frame
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units (Beg. March 2013 Letting use detail in lieu of Standard)
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets

7/17/2018 11:51:11 AM
I:\Projects\Bridges\212_Rdy_psh_1A.dgn

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS CONVENTIONAL PLAN SHEET SYMBOLS

12/2/2016

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
Computed Property Corner	-----
Property Monument	□ ECM
Parcel/Sequence Number	①23
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	---WLB---
Proposed Wetland Boundary	WLB
Existing Endangered Animal Boundary	---EAB---
Existing Endangered Plant Boundary	---EPB---
Existing Historic Property Boundary	---HPB---
Known Contamination Area: Soil	☠-s-☠
Potential Contamination Area: Soil	☠-s-☠
Known Contamination Area: Water	☠-w-☠
Potential Contamination Area: Water	☠-w-☠
Contaminated Site: Known or Potential	☠?

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○ S
Well	○ W
Small Mine	✕
Foundation	□
Area Outline	□
Cemetery	□
Building	□
School	□
Church	□
Dam	▬

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	-----
Jurisdictional Stream	---JS---
Buffer Zone 1	---BZ 1---
Buffer Zone 2	---BZ 2---
Flow Arrow	←
Disappearing Stream	→
Spring	○
Wetland	▽
Proposed Lateral, Tail, Head Ditch	-----
False Sump	▽

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○ MILEPOST 35
Switch	□ SWITCH
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY & PROJECT CONTROL:

Secondary Horiz and Vert Control Point	◆
Primary Horiz Control Point	○
Primary Horiz and Vert Control Point	◆
Exist Permanent Easement Pin and Cap	◇
New Permanent Easement Pin and Cap	◆
Vertical Benchmark	⊠
Existing Right of Way Marker	△
Existing Right of Way Line	-----
New Right of Way Line	○ R W
New Right of Way Line with Pin and Cap	○ R W ▲
New Right of Way Line with Concrete or Granite R/W Marker	▲ R W
New Control of Access Line with Concrete C/A Marker	▲ C/A
Existing Control of Access	○ C/A
New Control of Access	▲ C/A
Existing Easement Line	---E---
New Temporary Construction Easement	E
New Temporary Drainage Easement	TDE
New Permanent Drainage Easement	PDE
New Permanent Drainage / Utility Easement	DUE
New Permanent Utility Easement	PUE
New Temporary Utility Easement	TUE
New Aerial Utility Easement	AUE

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	---C---
Proposed Slope Stakes Fill	---F---
Proposed Curb Ramp	---CR---
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	⊠

VEGETATION:

Single Tree	○
Single Shrub	○

Note: Not to Scale *S.U.E. = Subsurface Utility Engineering

Hedge	-----
Woods Line	-----
Orchard	-----
Vineyard	-----

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	CONC
Bridge Wing Wall, Head Wall and End Wall	CONC WW
MINOR:	
Head and End Wall	CONC HW
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	□ CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	○ S
Storm Sewer	S

UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊕
Power Line Tower	⊠
Power Transformer	⊠
U/G Power Cable Hand Hole	○
H-Frame Pole	●
U/G Power Line LOS B (S.U.E.*)	---P---
U/G Power Line LOS C (S.U.E.*)	---P---
U/G Power Line LOS D (S.U.E.*)	---P---

TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊕
Telephone Pedestal	⊠
Telephone Cell Tower	⊠
U/G Telephone Cable Hand Hole	○
U/G Telephone Cable LOS B (S.U.E.*)	---T---
U/G Telephone Cable LOS C (S.U.E.*)	---T---
U/G Telephone Cable LOS D (S.U.E.*)	---T---
U/G Telephone Conduit LOS B (S.U.E.*)	---TC---
U/G Telephone Conduit LOS C (S.U.E.*)	---TC---
U/G Telephone Conduit LOS D (S.U.E.*)	---TC---
U/G Fiber Optics Cable LOS B (S.U.E.*)	---T FO---
U/G Fiber Optics Cable LOS C (S.U.E.*)	---T FO---
U/G Fiber Optics Cable LOS D (S.U.E.*)	---T FO---

WATER:

Water Manhole	⊕
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
U/G Water Line LOS B (S.U.E.*)	---W---
U/G Water Line LOS C (S.U.E.*)	---W---
U/G Water Line LOS D (S.U.E.*)	---W---
Above Ground Water Line	A/G Water

TV:

TV Pedestal	⊠
TV Tower	⊗
U/G TV Cable Hand Hole	○
U/G TV Cable LOS B (S.U.E.*)	---TV---
U/G TV Cable LOS C (S.U.E.*)	---TV---
U/G TV Cable LOS D (S.U.E.*)	---TV---
U/G Fiber Optic Cable LOS B (S.U.E.*)	---TV FO---
U/G Fiber Optic Cable LOS C (S.U.E.*)	---TV FO---
U/G Fiber Optic Cable LOS D (S.U.E.*)	---TV FO---

GAS:

Gas Valve	◇
Gas Meter	⊕
U/G Gas Line LOS B (S.U.E.*)	---G---
U/G Gas Line LOS C (S.U.E.*)	---G---
U/G Gas Line LOS D (S.U.E.*)	---G---
Above Ground Gas Line	A/G Gas

SANITARY SEWER:

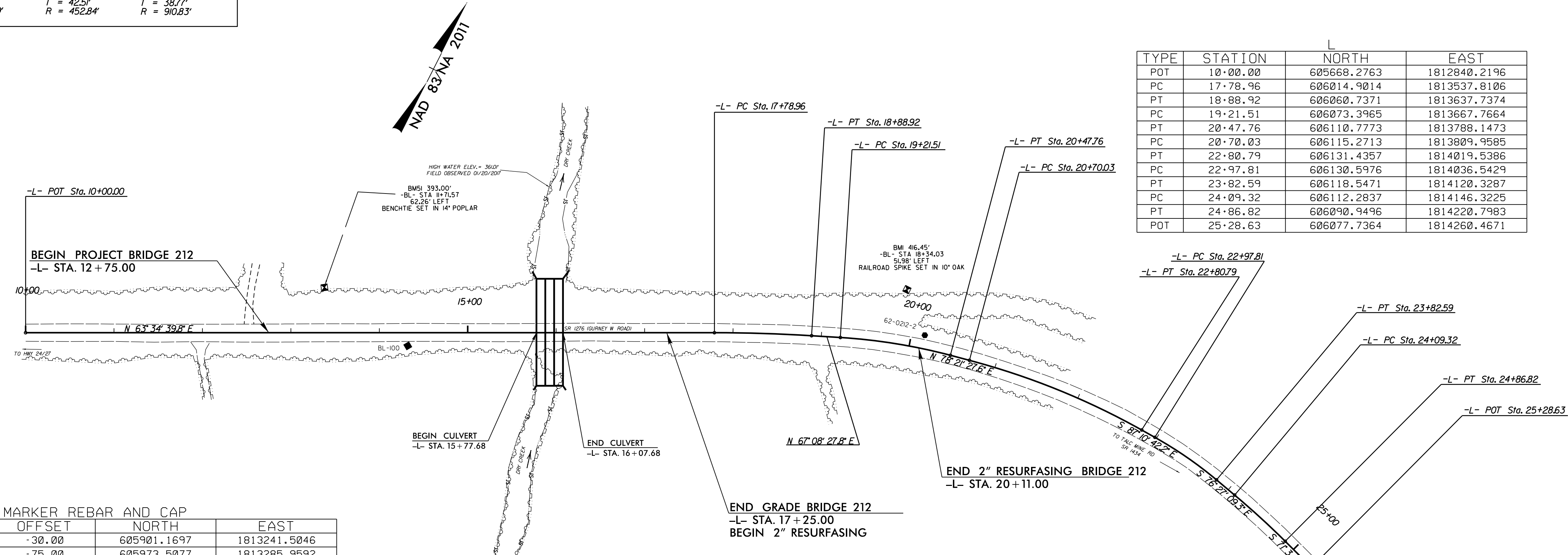
Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	---SS---
Above Ground Sanitary Sewer	A/G Sanitary Sewer
SS Forced Main Line LOS B (S.U.E.*)	---FSS---
SS Forced Main Line LOS C (S.U.E.*)	---FSS---
SS Forced Main Line LOS D (S.U.E.*)	---FSS---

MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	⊠
Utility Unknown U/G Line LOS B (S.U.E.*)	---ZUTL---
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	UST
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊕
U/G Test Hole LOS A (S.U.E.*)	○
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

SURVEY CONTROL SHEET BRIDGE 212

-L-				
PI Sta 18+33.96	PI Sta 19+84.83	PI Sta 21+75.97	PI Sta 23+40.32	PI Sta 24+48.09
Δ = 3° 33' 48.0" (RT)	Δ = 1° 12' 59.7" (RT)	Δ = 14° 27' 50.2" (RT)	Δ = 10° 43' 32.5" (RT)	Δ = 4° 52' 29.2" (RT)
D = 314' 26.6"	D = 8' 53' 03.3"	D = 6' 51' 45.7"	D = 12' 39' 09.3"	D = 6' 17' 25.7"
L = 109.95'	L = 126.25'	L = 210.76'	L = 84.77'	L = 77.45'
T = 55.00'	T = 63.33'	T = 105.94'	T = 42.51'	T = 38.77'
R = 1768.00'	R = 644.91'	R = 834.89'	R = 452.84'	R = 910.83'
SE = SEE PLANS				



TYPE	STATION	NORTH	EAST
POT	10+00.00	605668.2763	1812840.2196
PC	17+78.96	606014.9014	1813537.8106
PT	18+88.92	606060.7371	1813637.7374
PC	19+21.51	606073.3965	1813667.7664
PT	20+47.76	606110.7773	1813788.1473
PC	20+70.03	606115.2713	1813809.9585
PT	22+80.79	606131.4357	1814019.5386
PC	22+97.81	606130.5976	1814036.5429
PT	23+82.59	606118.5471	1814120.3287
PC	24+09.32	606112.2837	1814146.3225
PT	24+86.62	606090.9496	1814220.7983
POT	25+28.63	606077.7364	1814260.4671

ROW MARKER REBAR AND CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
L	14+63.00	-30.00	605901.1697	1813241.5046
L	15+35.00	-75.00	605973.5077	1813285.9592
L	16+40.00	-75.00	606020.2310	1813379.9907
L	17+44.00	-30.00	606026.2100	1813493.1510
L	17+44.00	30.00	605972.4776	1813519.8500
L	16+40.00	75.00	605885.9001	1813446.7382
L	15+35.00	75.00	605839.1769	1813352.7066
L	14+63.00	30.00	605847.4373	1813268.2036

PERMANENT EASEMENT REBAR AND CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
L	12+75.00	-30.00	605817.5128	1813073.1433
L	12+40.00	-30.00	605801.9384	1813041.7994
L	12+91.00	-78.00	605867.6184	1813066.1127
L	13+04.00	-49.00	605847.4326	1813090.6592
L	15+25.00	-104.00	605995.0285	1813264.0993
L	15+24.00	-120.00	606008.9122	1813256.0840
L	15+70.00	-126.00	606034.7546	1813294.6089
L	16+25.00	-120.00	606053.8555	1813346.5334
L	16+25.00	-75.00	606013.5562	1813366.5577
L	16+56.00	-118.00	606065.8589	1813375.1851
L	16+54.00	-102.00	606050.6403	1813380.5137
L	18+20.00	-30.00	606059.9031	1813562.0478
L	15+96.00	113.00	605832.2904	1813424.2439

BL POINT	DESC.	NORTH	EAST	ELEVATION	BL STATION	L STATION	OFFSET
62-0212-1	REBAR & CAP	605532.6275	1812532.9169	443.75	5+00.00	OUTSIDE PROJECT LIMITS	15.27 LT
100	REBAR & CAP	605847.3052	1813233.8741	388.47	12+68.35	14+32.20	14.84 RT
62-0212-2	REBAR & CAP	606118.2276	1813752.1532	417.90	18+53.17	20+14.78	15.42 LT

NOTES:

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTPS://CONNECT.NCDOT.GOV/RESOURCES/LOCATION/](https://connect.ncdot.gov/resources/location/)
THE FILES TO BE FOUND ARE AS FOLLOWS:
620212_LS_BASELINE.TXT

SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

▲ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

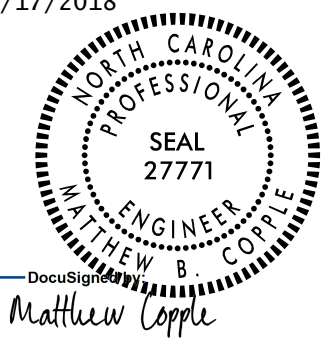

DATUM DESCRIPTION
THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY SEPI FOR MONUMENT "620212-1" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 605532.6275(ft) EASTING: 1812532.9169(ft) ELEVATION: 443.75(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99986011
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "620212-1" TO -L- 10+00.00 STATION IS N 66°10'56.99" E 335.91'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

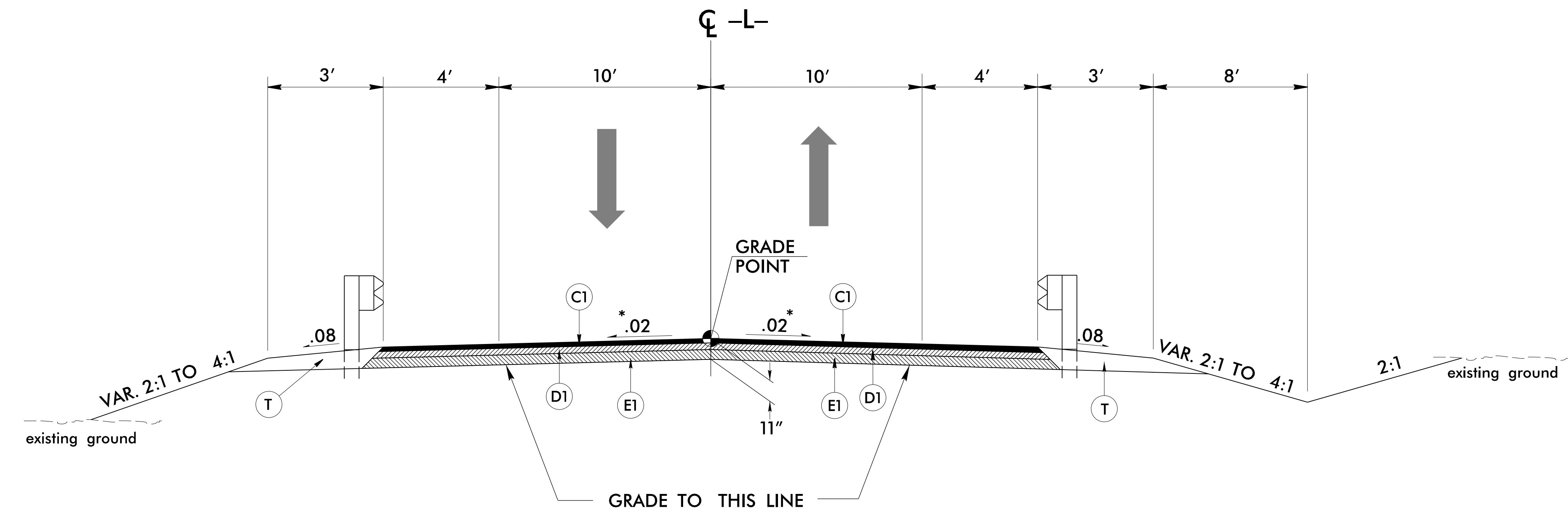
.....
BM51 ELEVATION = 393.00'
N 605864 E 1813120
-L- STATION 13+37.93 51.16' LEFT
BENCHTIE SET IN 14" POPLAR
.....
.....
BM1 ELEVATION = 416.45'
N 606155 E 1813711
-L- STATION 19+87.09 62.40' LEFT
RAILROAD SPIKE IN 10" OAK
.....

NOTE: DRAWING NOT TO SCALE

6/2/2018

7/16/2018
1:55:11 PM
115:11:11 PM

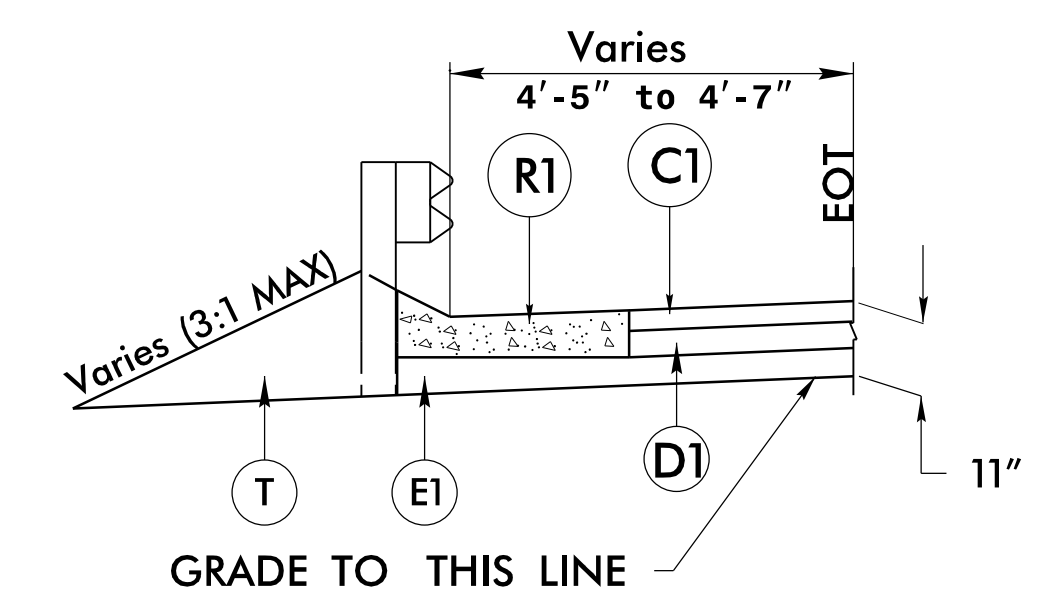
PROJECT REFERENCE NO. 17BP.8.R.127	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER 7/17/2018 Matthew Copple	PAVEMENT DESIGN ENGINEER
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
	
1025 Wade Avenue Raleigh, NC 27605 Tel: 919-789-9977 Fax: 919-789-9591 License: C-2197	



TYPICAL SECTION NO. 1

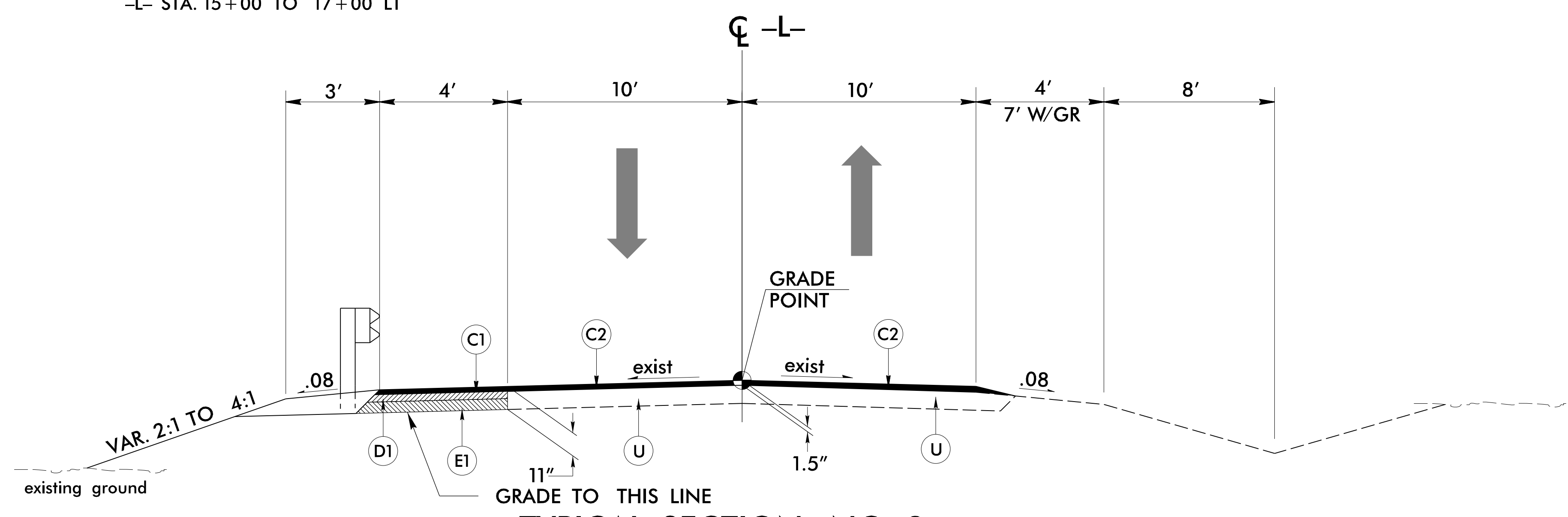
USE TYPICAL SECTION NO. 1 AS FOLLOWS
-L- STA 12+75.00 TO STA 17+25.00

* CROSS SLOPE VARIES.
SEE PLAN SHEET 4 AND CROSS SECTIONS



DETAIL SHOWING SHOULDER BERM GUTTER (SBG)

-L- STA. 15+00 TO 16+50 RT
-L- STA. 15+00 TO 17+00 LT



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2 AS FOLLOWS
-L- STA 17+25.00 TO STA 20+11.00

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 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, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
R1	SHOULDER BERM GUTTER
V	0"-2" VARIABLE MILLING.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.

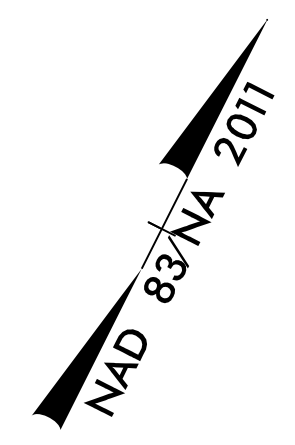
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE

8/17/99

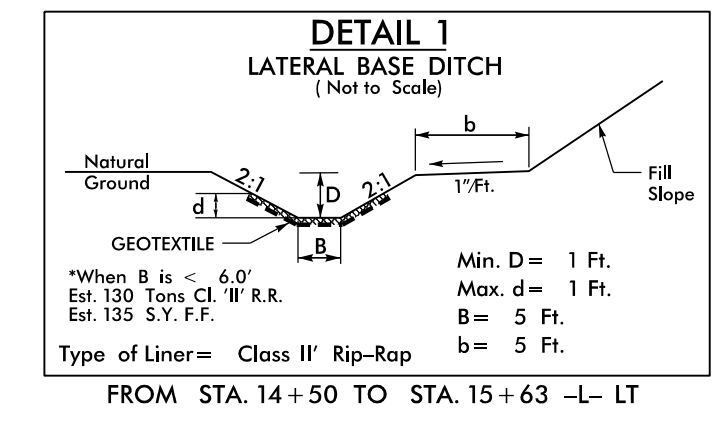
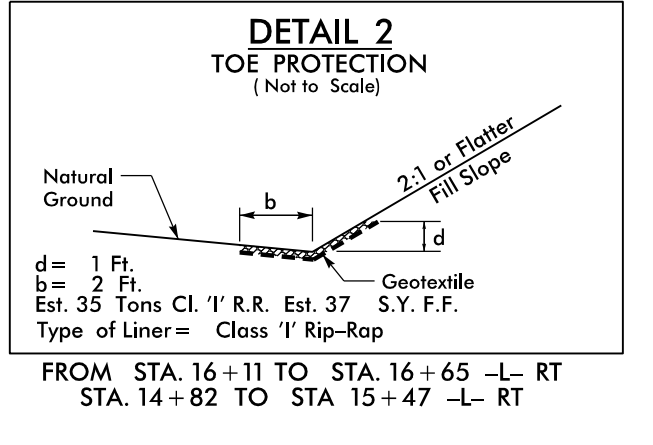
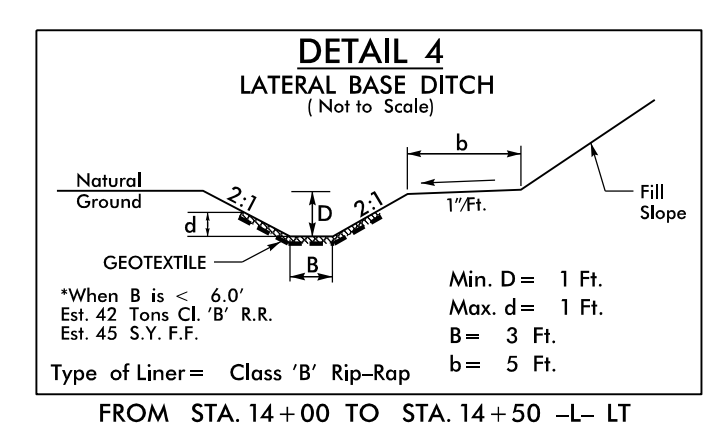
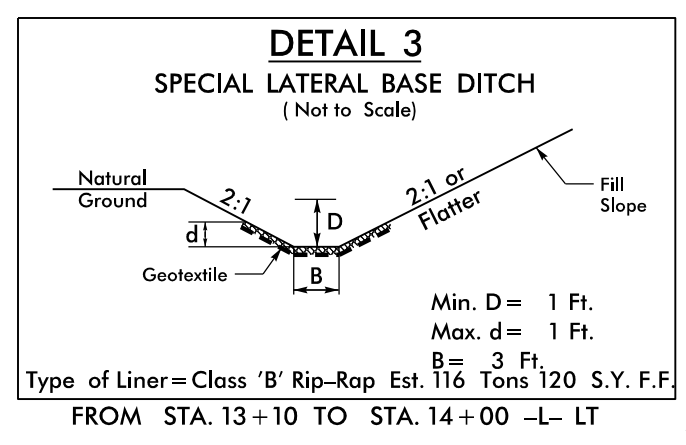
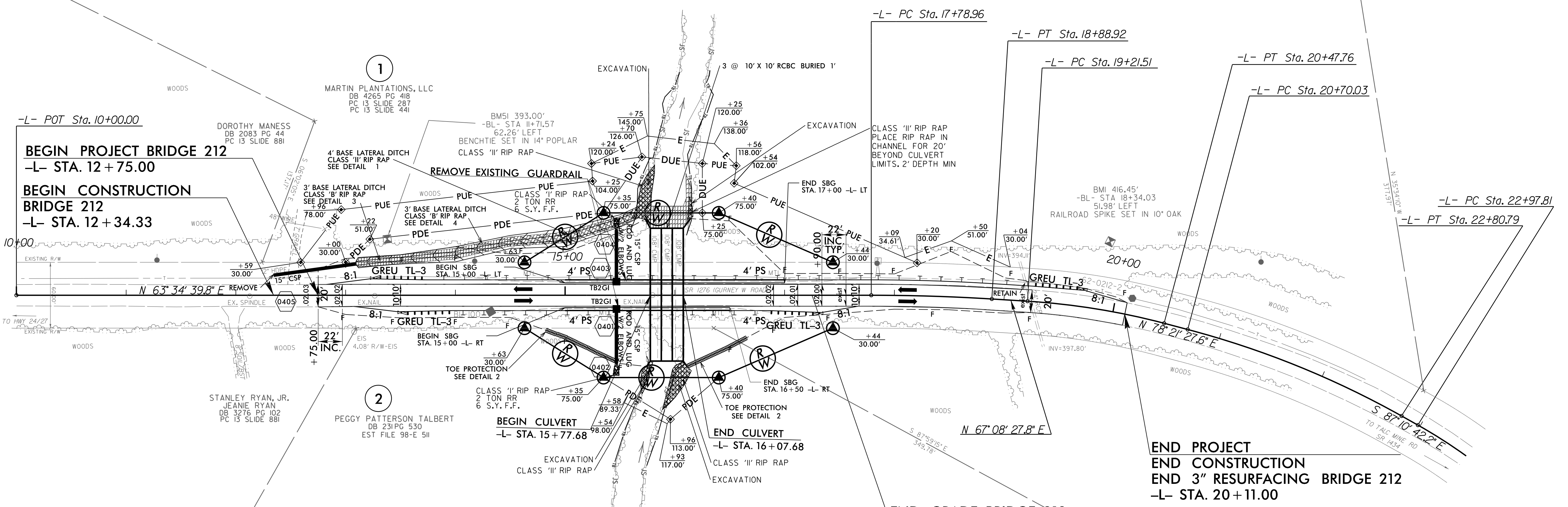
SEPI
ENGINEERING & CONSTRUCTION
1025 Wade Avenue
Raleigh, NC 27605
Tel: 919-789-9977
Fax: 919-789-9591
License: C-2197

PROJECT REFERENCE NO. 17BP.8.R.127	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 7/17/2018	HYDRAULICS ENGINEER 7/17/2018
DocuSigned by: Matthew Copple	DocuSigned by: Brian Maggoli
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

$\Delta = 3^{\circ} 33' 48.0''$ (RT) $D = 3' 14' 26.6''$ $L = 109.96'$ $T = 55.00'$ $R = 1,768.00'$ SE = SEE PLANS	$\Delta = 1^{\circ} 12' 59.7''$ (RT) $D = 8' 53' 03.3''$ $L = 126.25'$ $T = 63.33'$ $R = 644.91'$ SE = SEE PLANS	$\Delta = 14^{\circ} 27' 50.2''$ (RT) $D = 6' 51' 45.7''$ $L = 210.76'$ $T = 105.94'$ $R = 834.89'$	$\Delta = 10^{\circ} 43' 32.9''$ (RT) $D = 12' 39' 09.3''$ $L = 84.77'$ $T = 42.51'$ $R = 452.84'$	$\Delta = 4^{\circ} 52' 29.2''$ (RT) $D = 6' 17' 25.7''$ $L = 77.49'$ $T = 38.77'$ $R = 910.83'$
---	---	---	--	--



MARTIN PLANTATIONS, LLC
DB 4265 PG 418
PC 13 SLIDE 287
PC 13 SLIDE 441



PEGGY PATTERSON TALBERT
DB 231 PG 530
PC 13 SLIDE 881
PC 13 SLIDE 441

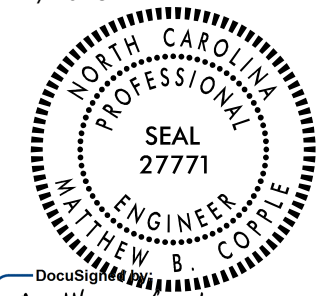
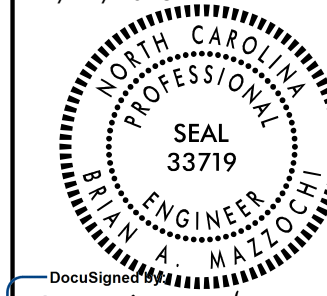
NOTE: PS - PAVED SHOULDER
SEE SHEET 5 FOR -L- PROFILE
SEE SHEET C-1 THRU C-6 FOR CULVERT PLANS

REVISIONS

7/12/2018 Bepi.dae-212-Rdy-psh_04.dgn
15:58:00

5/14/99

-L-

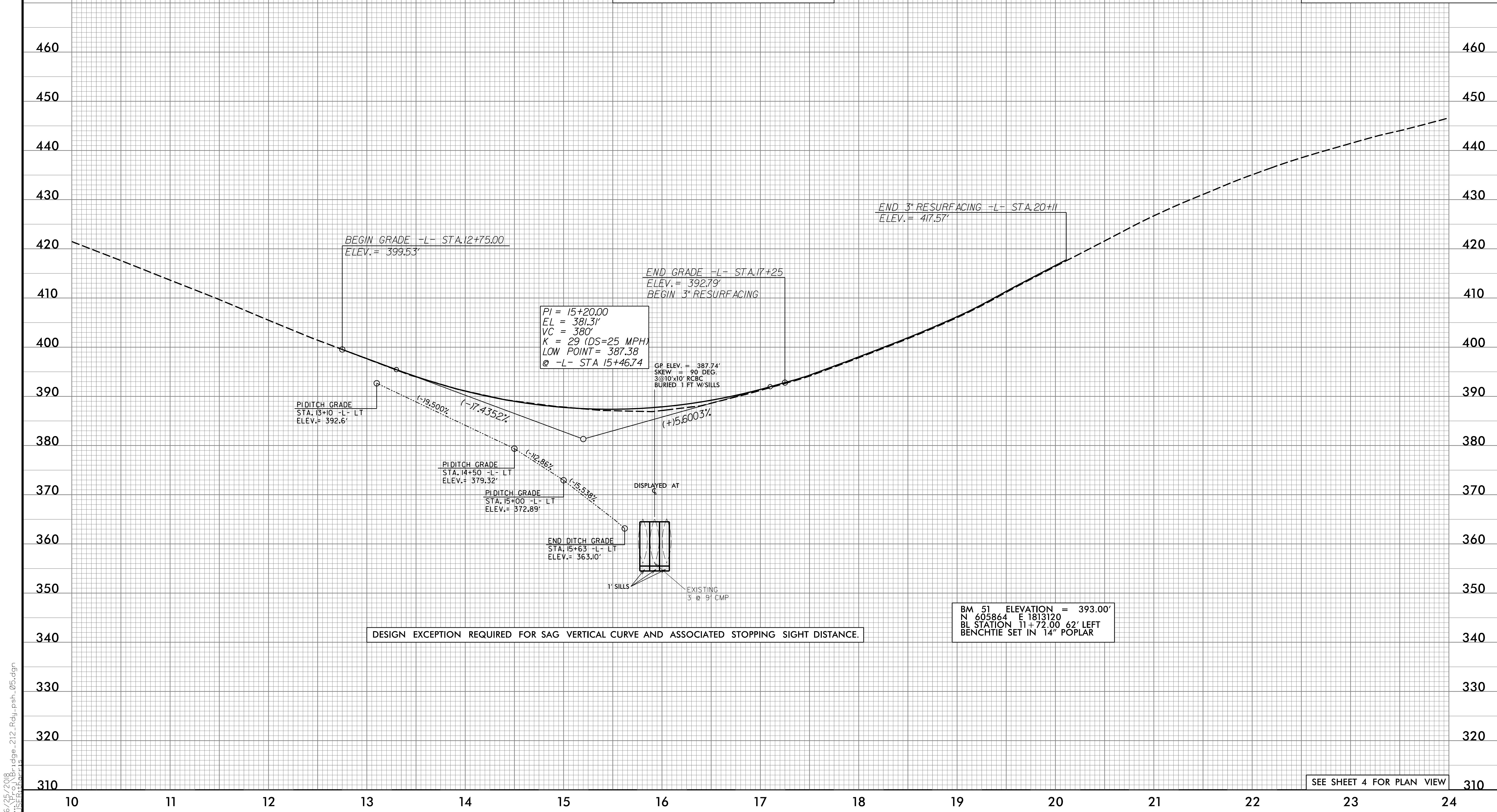
PROJECT REFERENCE NO. 17BP.8.R.127	SHEET NO. 5
ROADWAY DESIGN ENGINEER 7/17/2018  Matthew Copple	HYDRAULICS ENGINEER 7/17/2018  Brian Marzulli

CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	= 1400	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 365.8	FT
BASE DISCHARGE	= 3220	CFS
BASE FREQUENCY	= FEMA 100	YRS
BASE HW ELEVATION	= 372.3	FT
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING FREQUENCY	= 500±	YRS
OVERTOPPING ELEVATION	= 387.4	FT

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

SEPI ENGINEERING & CONSTRUCTION
1025 Wade Avenue
Raleigh, NC 27605
Tel: 919-789-9977
Fax: 919-789-9591
License: C-2197



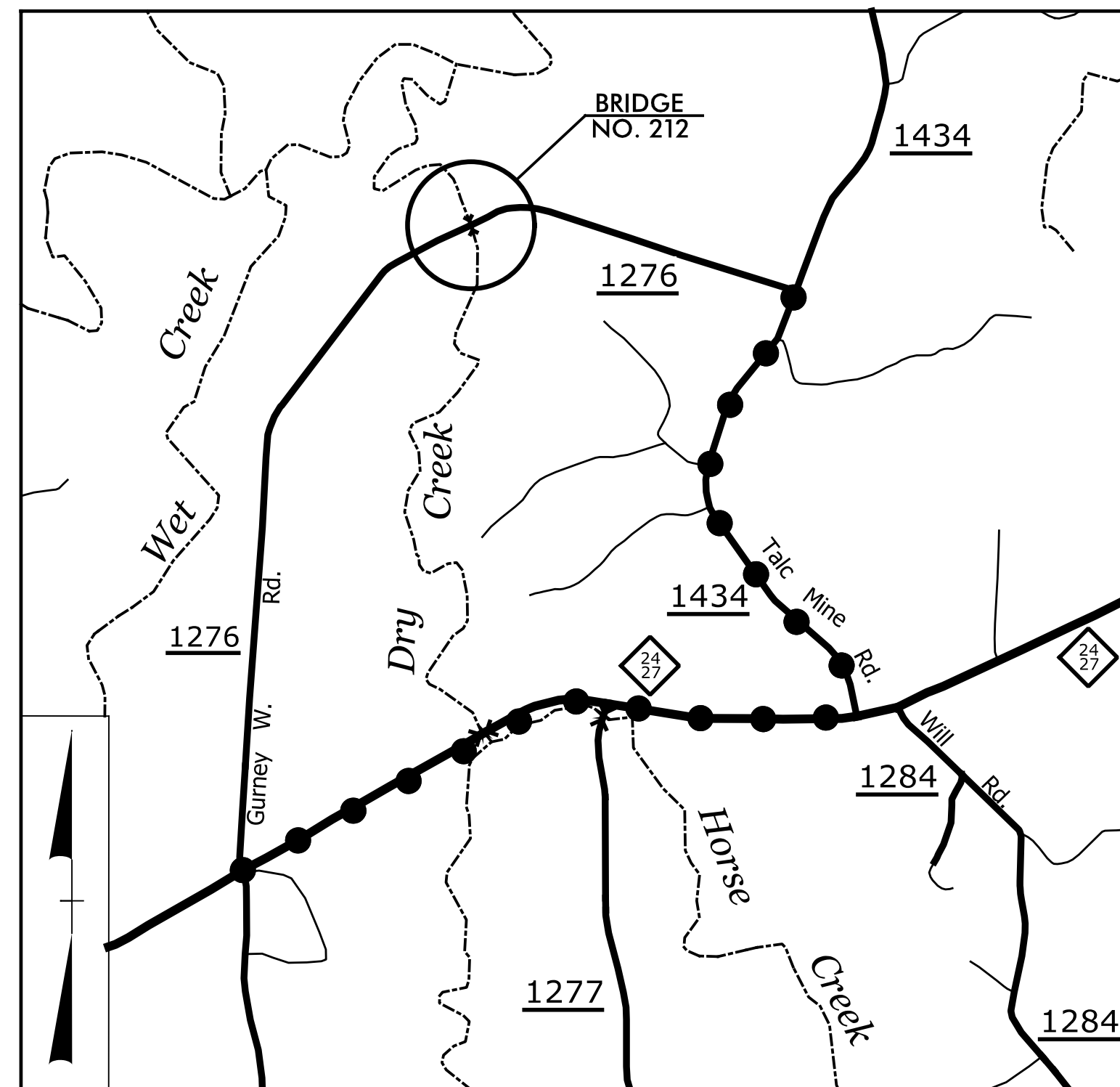
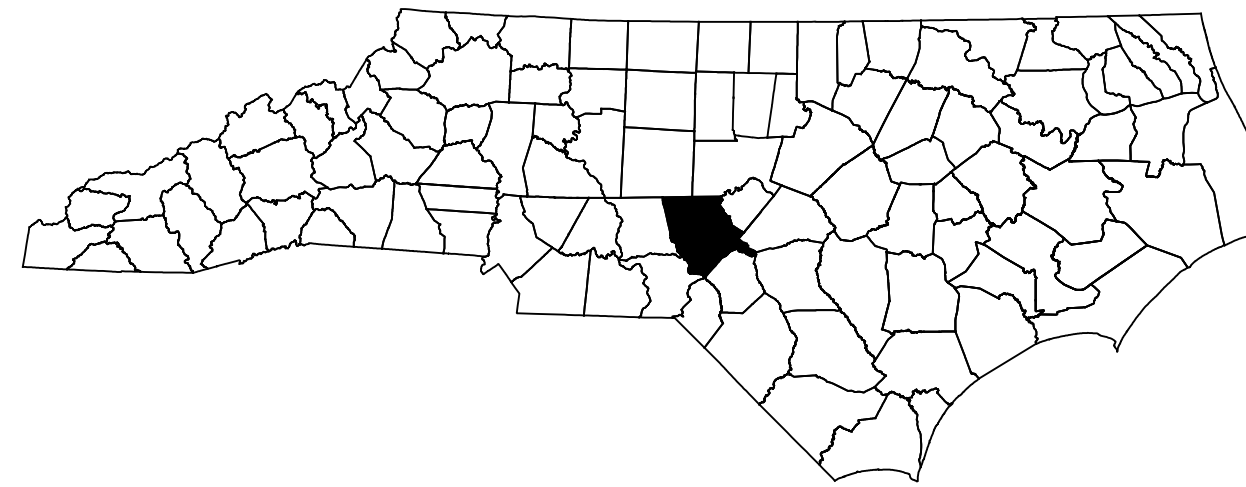
6/25/2018 11:55:43 AM 212-Rdy-psh_05.dgn

SEE SHEET 4 FOR PLAN VIEW

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

MOORE COUNTY



**LOCATION: BRIDGE NO. 212 OVER DRY CREEK ON SR 1276
(GURNEY WEST ROAD)**

**TYPE OF WORK: GRADING, DRAINAGE, PAVING, &
CULVERT**

VICINITY MAP

**OFF-SITE DETOUR ROUTE = NC 24 TO SR 1434
TOTAL ROUTE APPROX. 2.5 MILES**

OFF-SITE DETOUR ROUTE = ●●●●●●●●

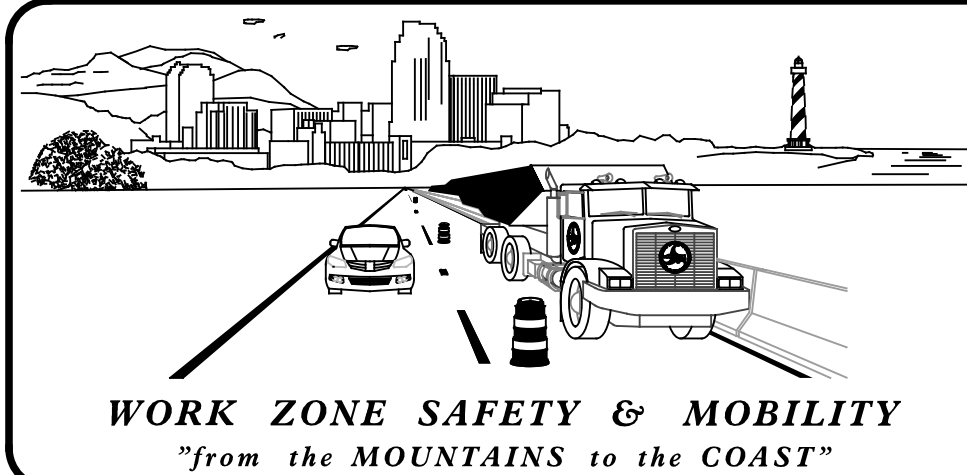
INDEX OF SHEETS

<u>SHEET NO.</u>	<u>TITLE</u>
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: (MANAGEMENT STRATEGIES, GENERAL NOTES, AND PHASING)
TMP-2	SIGN DESIGN
TMP-3	OFF-SITE DETOUR
TMP-4	ROAD CLOSURE

SHEET NO.
TMP-1

PROJECT: 17BP.8.R.127

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



N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)
PHONE: (919) 773-2800 FAX: (919) 771-2745

J. E. HUMMER, PHD, P.E. STATE TRAFFIC MANAGEMENT ENGINEER

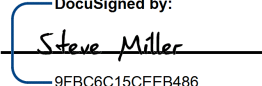
_____ TRAFFIC CONTROL PROJECT ENGINEER

_____ TRAFFIC CONTROL PROJECT DESIGN ENGINEER


_____ TRAFFIC CONTROL DESIGN ENGINEER



SEPI
ENGINEERING & CONSTRUCTION
1025 Wade Avenue
Raleigh, NC 27605
Tel: 919-789-9977
Fax: 919-789-9591
License: C-2197

APPROVED: 
DATE: 7/16/2018

SEAL



4/16/2018 X:\2017\SET.034.00 Bridge 212\TP\Traffic\TMP\Bridge 212 TMP-1.dgn jbauman

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - 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:

<u>STD. NO.</u>	<u>TITLE</u>
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.03	TEMPORARY ROAD CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES - TYPE III

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
- USER DEFINED (IF NEEDED)
- USER DEFINED (IF NEEDED)

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

4/17/2018 X:\2017\SET\034.00 Bridge 212\TP\Traffic\TMP\Bridge 212 TMP-1A.dgn smiller

SEPI
ENGINEERING & CONSTRUCTION

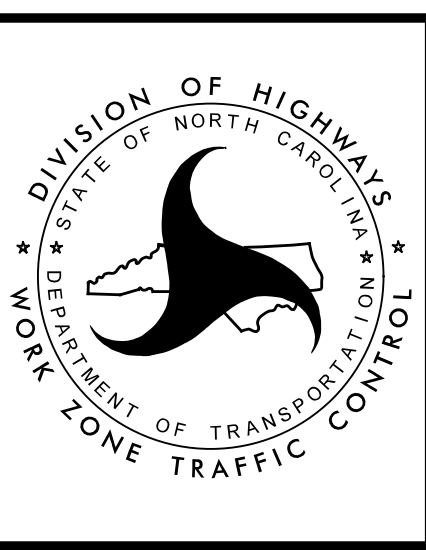
1025 Wade Avenue
Raleigh, NC 27605
Tel: 919-789-9977
Fax: 919-789-9591
License: C-2197

APPROVED:

DATE: 7/16/2018

SEAL

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



**ROADWAY STANDARD
DRAWINGS & LEGEND**

MANAGEMENT STRATEGIES

- CLOSE SR 1276 (GURNEY WEST RD.) AND DETOUR TRAFFIC OFF-SITE VIA NC 24 AND SR 1434 (TALC MINE RD.)
- LOCAL ACCESS TO ALL RESIDENCES AND BUSINESSES WILL BE MAINTAINED BETWEEN CLOSURE POINTS AT ALL TIMES DURING CONSTRUCTION
- PROVIDE ONE MONTH NOTICE TO THE ENGINEER, MOORE COUNTY EMERGENCY SERVICES, AND MOORE COUNTY SCHOOL OFFICIALS PRIOR TO ROAD CLOSURE

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 UNDESIRE 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.

TRAFFIC PATTERN ALTERATIONS

- A) NOTIFY THE ENGINEER ONE MONTH PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

- B) 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.
- C) 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.
- D) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

- E) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

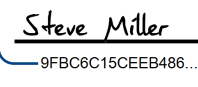
PHASING

- STEP 1: USING RSD 1101.03 SHEET 1 OF 9, CLOSE SR 1276 (GURNEY WEST RD.) AND DETOUR TRAFFIC OFF-SITE AS SHOWN ON TMP-3. MAINTAIN ACCESS TO ALL RESIDENCES AND BUSINESSES BETWEEN CLOSURE POINTS.
- STEP 2: REMOVE THE EXISTING STRUCTURE.
- STEP 3: CONSTRUCT THE PROPOSED STRUCTURE AND ROADWAY.
- STEP 4: PLACE FINAL PAVEMENT MARKINGS ACCORDING TO THE PAVEMENT MARKING PLANS.
- STEP 5: OPEN SR 1276 (GURNEY WEST RD.) TO TRAFFIC AND REMOVE ALL WORK ZONE TRAFFIC CONTROL DEVICES.

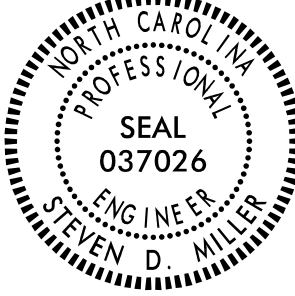
4/16/2018 X:\2017\SET\034.00 Bridge 212\TP\Traffic\TMP\Bridge 212 TMP-1B.dgn jbauman

SEPI
ENGINEERING & CONSTRUCTION

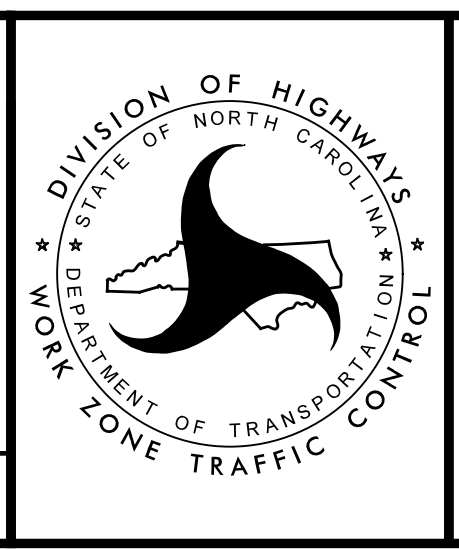
1025 Wade Avenue
Raleigh, NC 27605
Tel: 919-789-9977
Fax: 919-789-9591
License: C-2197

APPROVED: 
DATE: 7/16/2018

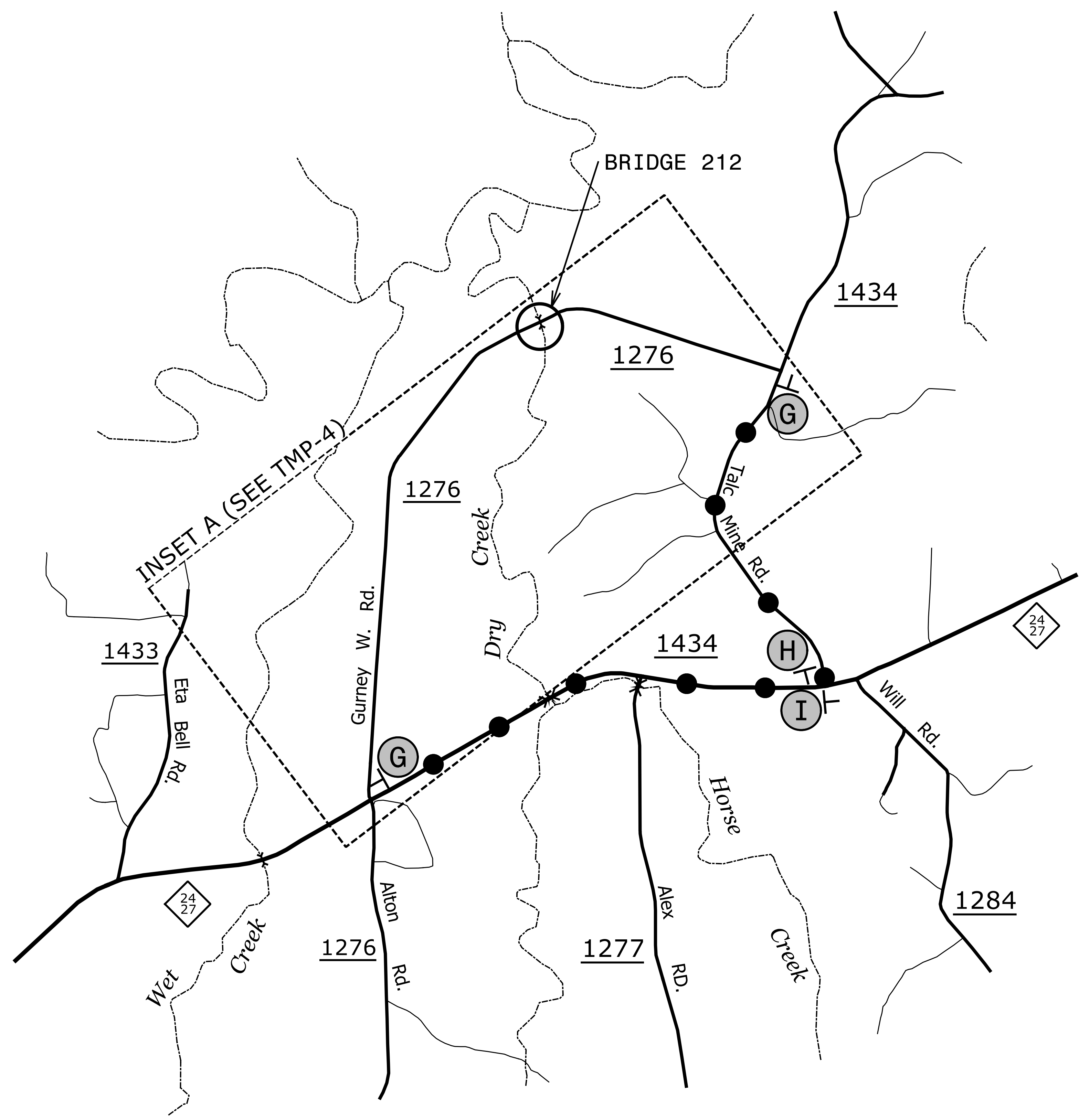
SEAL



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



TRANSPORTATION OPERATIONS PLAN



4/16/2018
 X:\2017\SET\034.00 Bridge 212\TPA\Traffic\TMP\Bridge 212 TMP-3.dgn
 JBauman

SEPI
 ENGINEERING &
 CONSTRUCTION

1025 Wade Avenue
 Raleigh, NC 27605
 Tel: 919-789-9977
 Fax: 919-789-9591
 License: C-2197

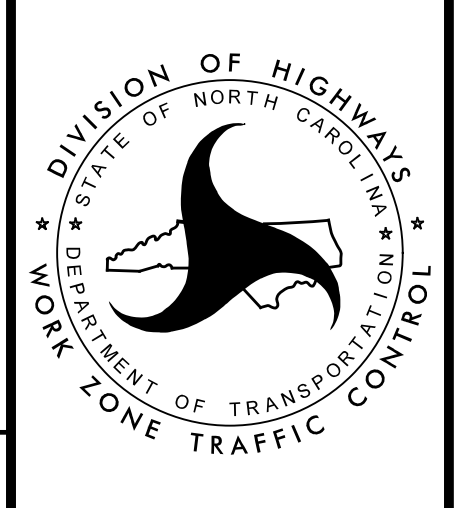
APPROVED: *Steven Miller*
DocuSigned by:
 Steven Miller
 9F8C8C15CEE8486

DATE: 7/16/2018

SEAL

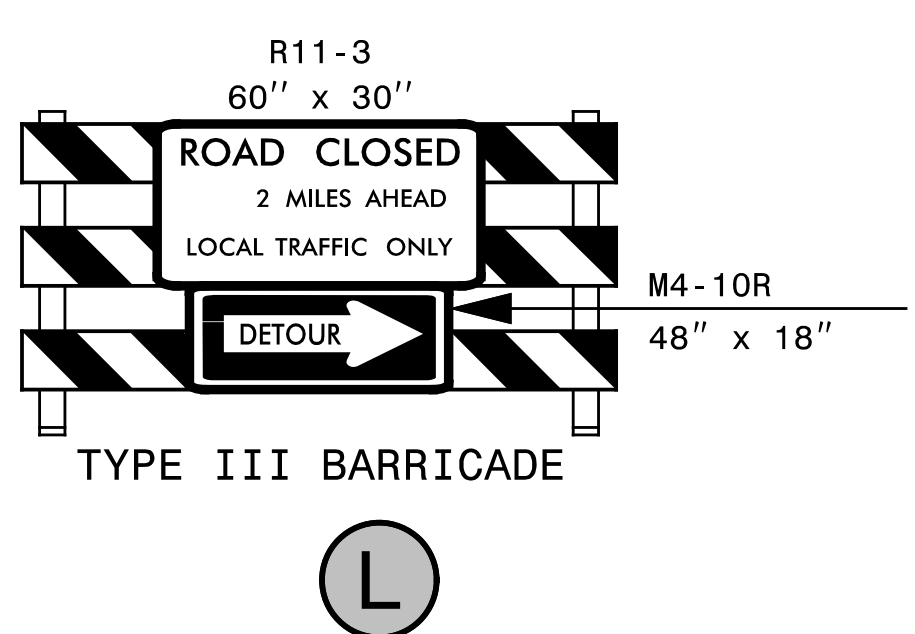
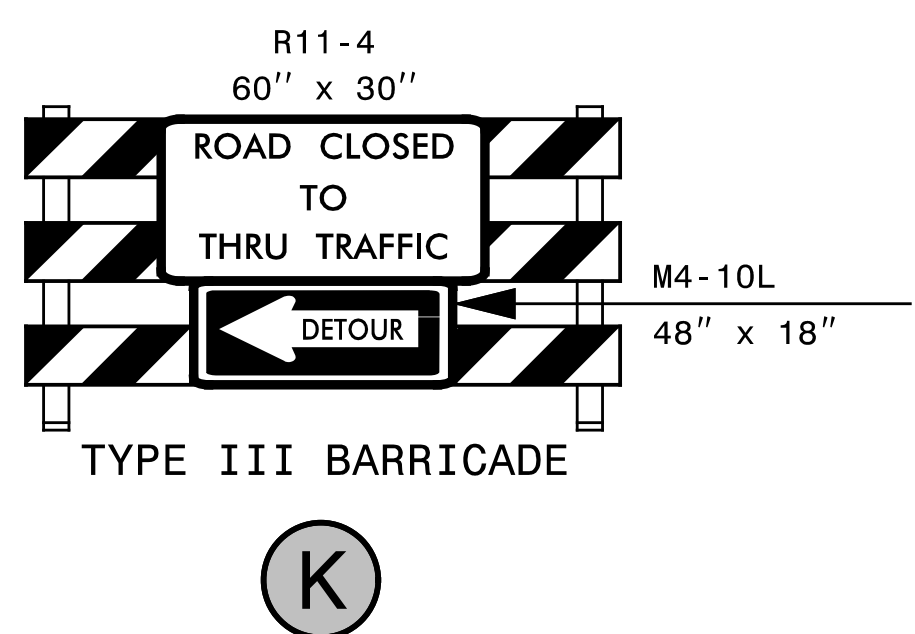
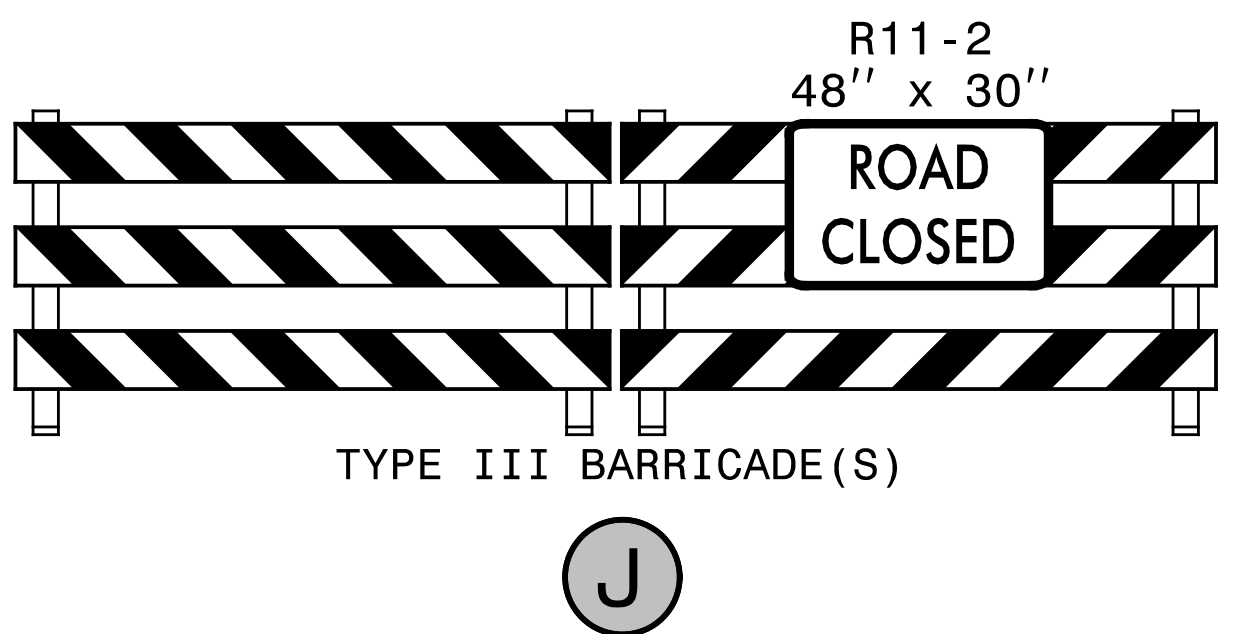
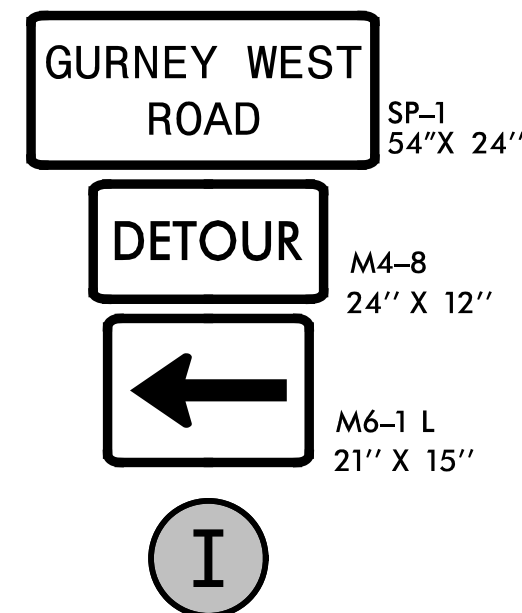
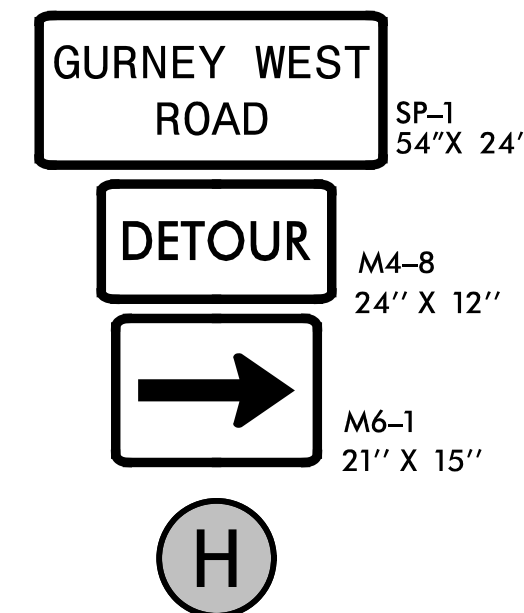
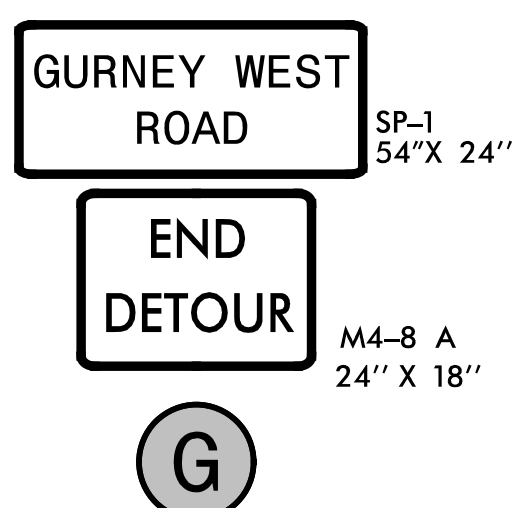
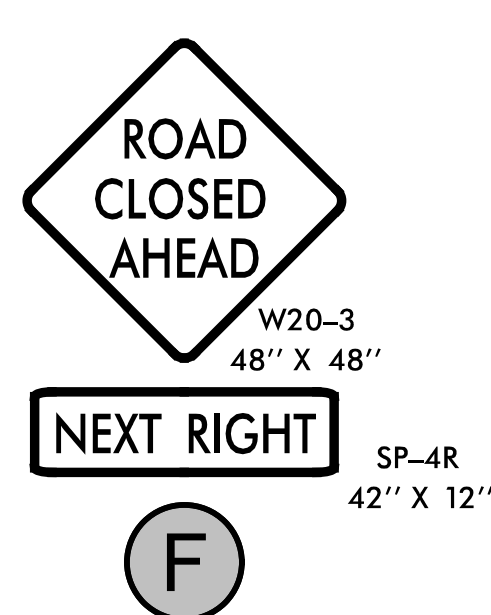
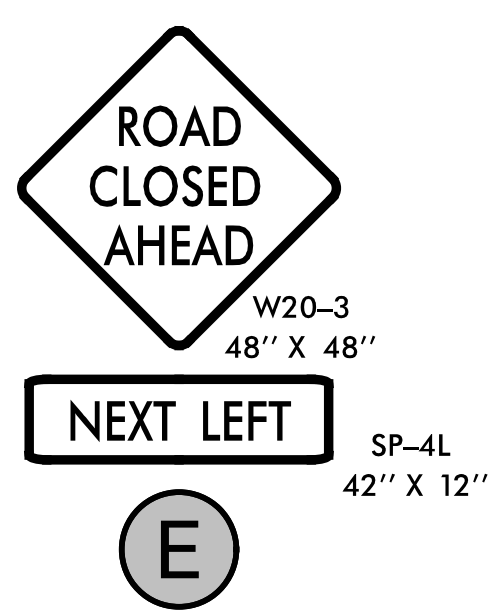
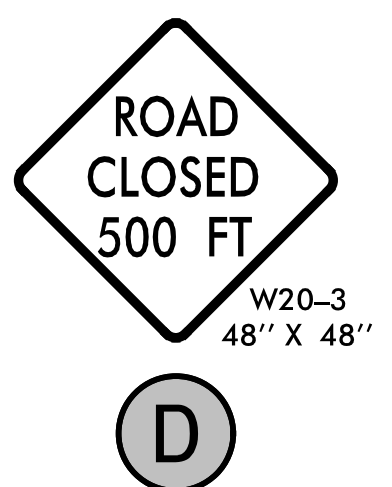
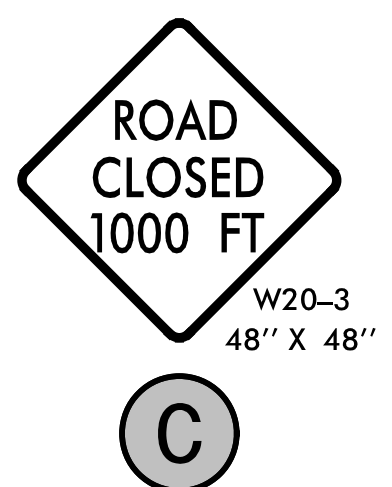
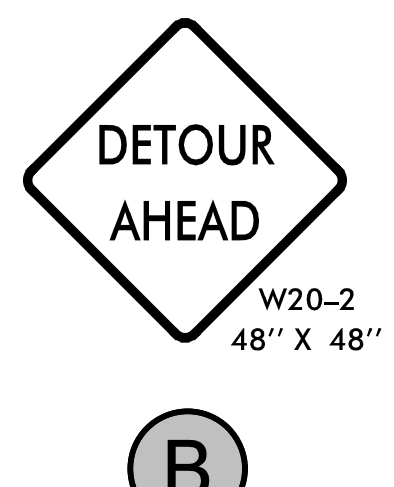
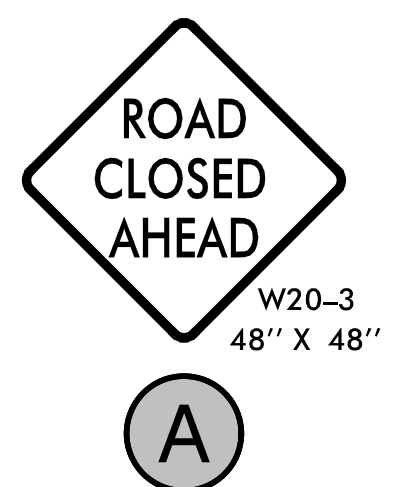
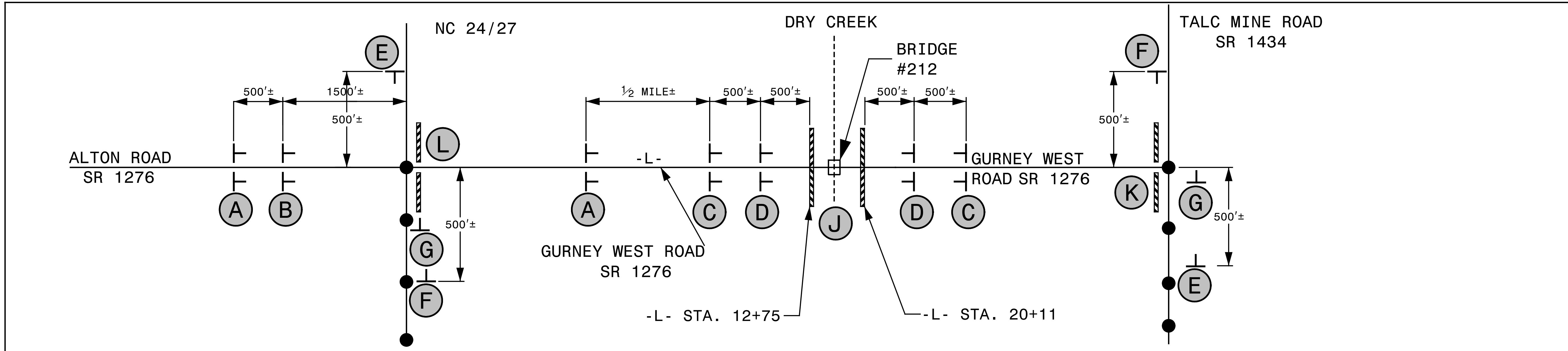
SEAL
 037026
 ENGINEER
 STEVEN D. MILLER

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



OFF-SITE DETOUR

INSET A



4/16/2018 X:\2017\SET\034.00 Bridge 212\TP\Traffic\TMP\Bridge 212 TMP-4.dgn jbauman

SEPI
ENGINEERING & CONSTRUCTION
1025 Wade Avenue
Raleigh, NC 27605
Tel: 919-789-9977
Fax: 919-789-9591
License: C-2197

APPROVED: *Steve Miller*
DATE: 7/16/2018
SEAL
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

ROAD CLOSURE

PROJECT: 17BP.8.R.127

**STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION**

**PAVEMENT MARKING PLAN
MOORE COUNTY**

<small>TIP NO.</small> 17BP.8.R.127	<small>SHEET NO.</small> PMP - 1
<small>APPROVED:</small> Steve Miller <small>9FBC6C15CEE8488</small>	
<small>DATE:</small> 7/16/2018	
<small>SEAL</small> 	
<small>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</small>	

INDEX

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
PMP - 1	PAVEMENT MARKING PLAN COVER SHEET AND SCHEDULE
PMP - 2	PAVEMENT MARKING DETAIL

ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - 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:

<u>STD. NO.</u>	<u>TITLE</u>
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1253.01	RAISED PAVEMENT MARKERS - SNOWPLOWABLE
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

GENERAL NOTES

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.

- A) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKER
SR 1276 (GURNEY WEST RD.)	THERMOPLASTIC	SNOWPLOWABLE
BRIDGE DECK (CONCRETE)	THERMOPLASTIC	SNOWPLOWABLE
- B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.
- D) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.
- E) REMOVE ALL RESIDUE AND SURFACE LAITANCE BY ACCEPTABLE METHODS ON CONCRETE BRIDGE DECKS PRIOR TO PLACING THERMOPLASTIC PAVEMENT MARKING MATERIAL.
- F) UNLESS OTHERWISE SPECIFIED, HEATED-IN-PLACE THERMOPLASTIC MAY BE USED IN LIEU OF EXTRUDED THERMOPLASTIC FOR STOP BARS, SYMBOLS, CHARACTERS AND DIAGONALS. IF HEATED-IN-PLACE IS USED, IT SHALL BE PAID FOR USING THE EXTRUDED THERMOPLASTIC PAY ITEM.

PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION
	<u>THERMOPLASTIC(4", 90 MILS)</u>
TA	WHITE EDGELINE
	<u>THERMOPLASTIC(4", 120 MILS)</u>
TI	YELLOW DOUBLE CENTER
	<u>PAVEMENT MARKERS</u>
ME	SNOWPLOWABLE MARKER

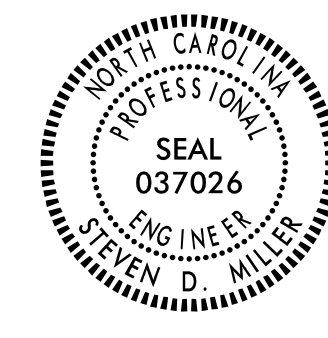
PLAN PREPARED BY: SEPI Engineering

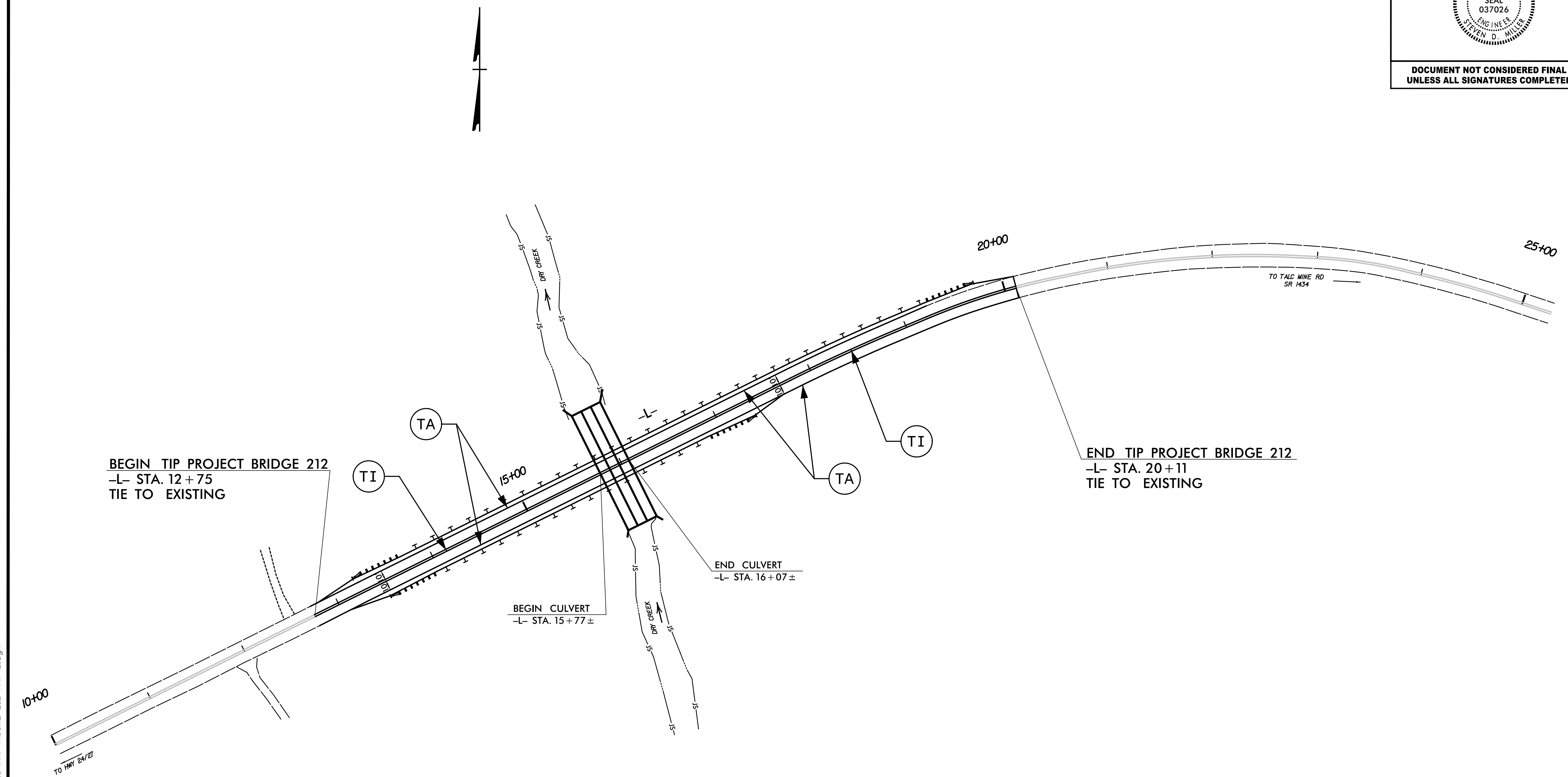
STEVE MILLER, P.E. PROJECT MANAGER	
JOHN BAUMAN TRAFFIC ENGINEER	

SEPI

ENGINEERING & CONSTRUCTION

1025 Wade Avenue
Raleigh, NC 27605
Tel: 919-789-9977
Fax: 919-789-9591
License: C-2197

TIP NO. 17BP.8.R.127	SHEET NO. PMP-2
APPROVED: <i>Steve Miller</i> <small>DocuSigned by: 9FBC6C15CEEB488</small>	
DATE: 7/16/2018	
SEAL 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



5/8/2018 10:51:17 AM C:\Users\seil7\OneDrive\Documents\212\TP\Tr-aff\ic\PM\MOORE 212 PMP-2.dgn

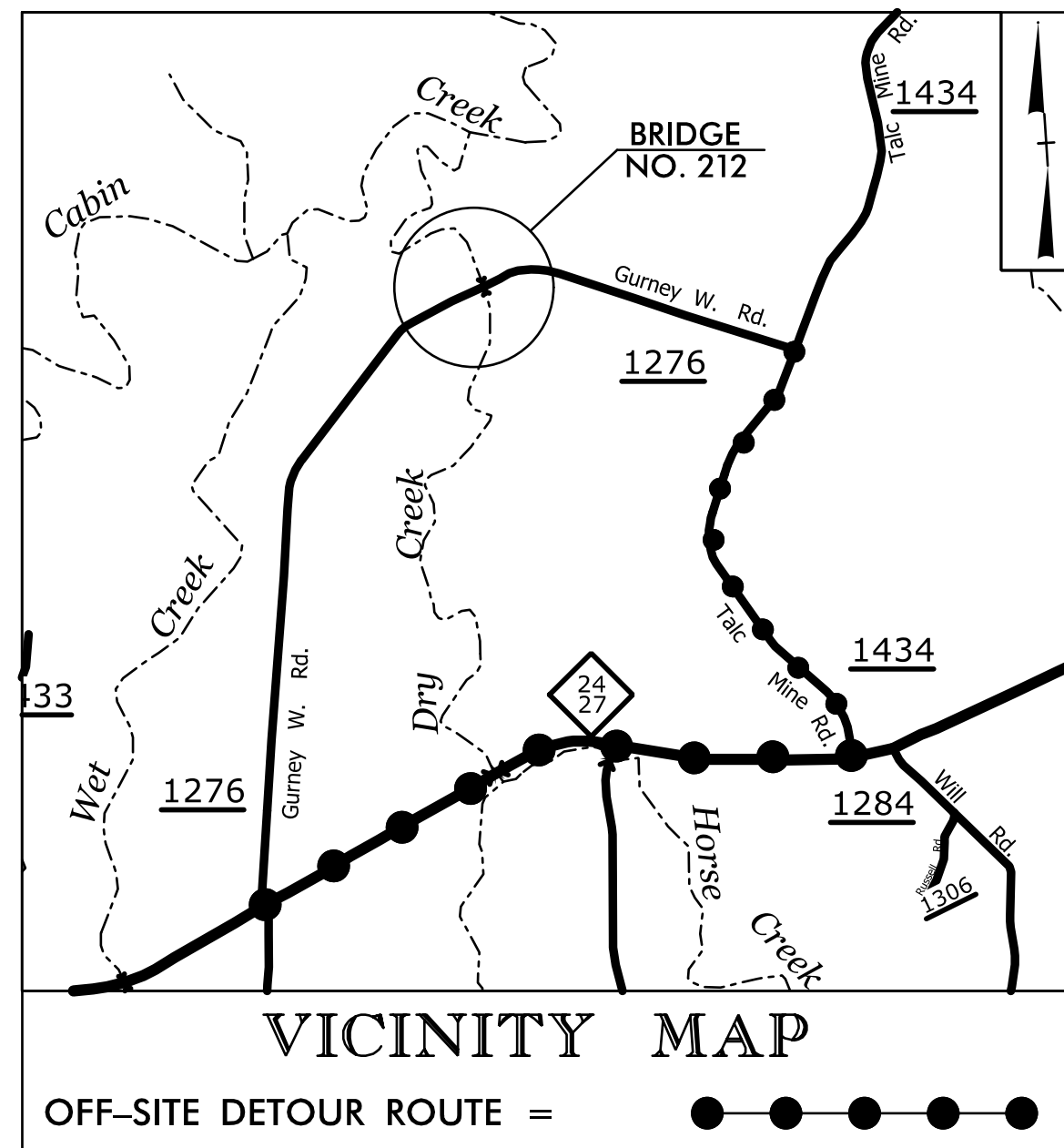
SEPI
ENGINEERING & CONSTRUCTION

1025 Wade Avenue
Raleigh, NC 27605
Tel: 919-789-9977
Fax: 919-789-9591
License: C-2197

**PAVEMENT MARKING
DETAIL**

TIP PROJECT: SF-620212

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols
See Sheet 1C-1 For Survey Control Sheet



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL
MOORE COUNTY

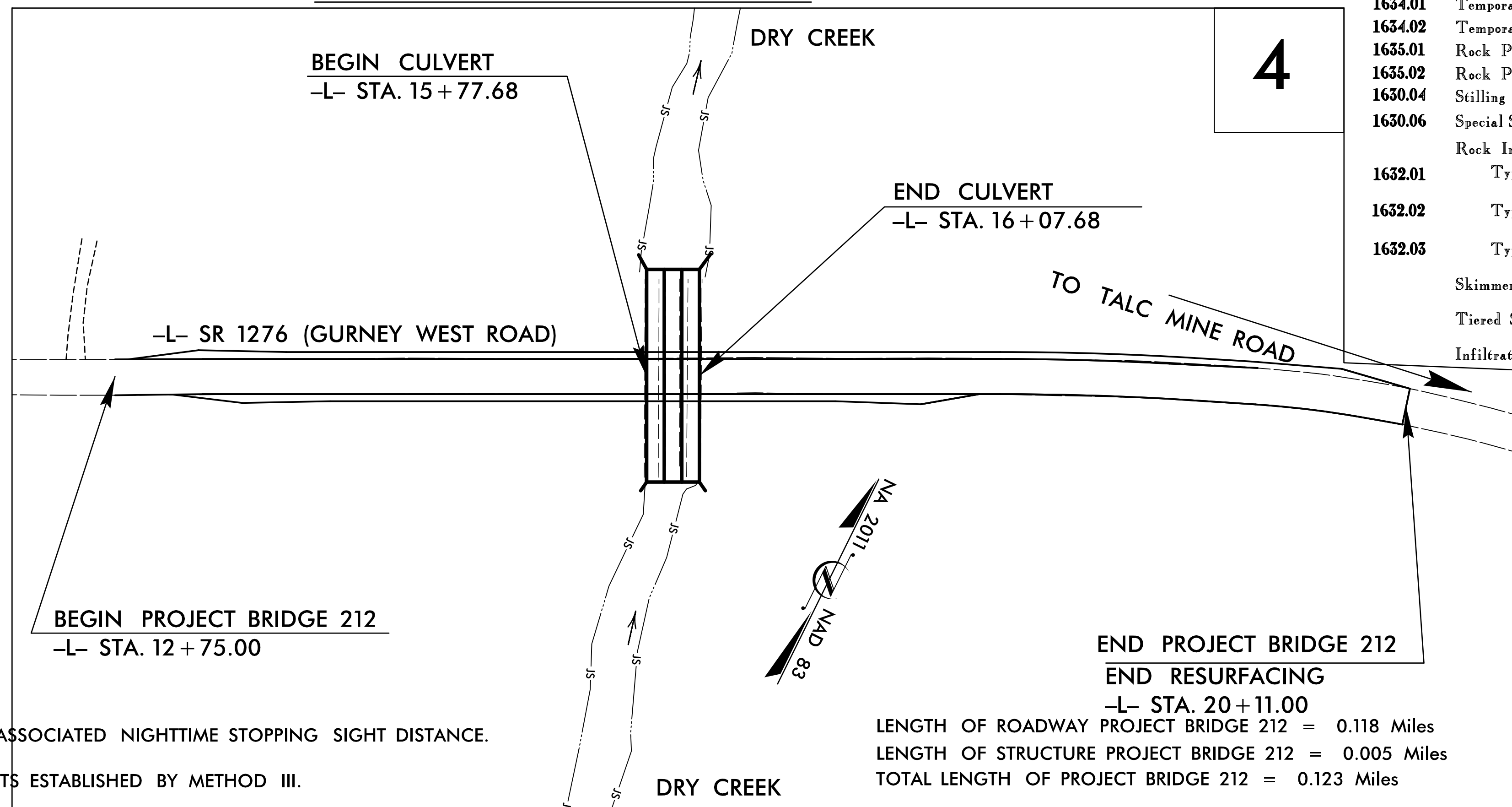
**LOCATION: BRIDGE NO. 212 OVER DRY CREEK
ON SR 1276 (GURNEY W. ROAD)**

TYPE OF WORK: GRADING, DRAINAGE, PAVING & CULVERT

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	SF-620212	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	▲▲▲
1622.01	Temporary Berms and Slope Drains	▲
1630.02	Silt Basin Type B	▨
1633.01	Temporary Rock Silt Check Type-A	▩
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	▩
1633.02	Temporary Rock Silt Check Type-B	▩
	Wattle/Coir Fiber Wattle	▩
	Wattle/Coir Fiber Wattle with Polyacrylamide (PAM)	▩
1634.01	Temporary Rock Sediment Dam Type-A	▩
1634.02	Temporary Rock Sediment Dam Type-B	▩
1635.01	Rock Pipe Inlet Sediment Trap Type-A	▩
1635.02	Rock Pipe Inlet Sediment Trap Type-B	▩
1630.04	Stilling Basin	▩
1630.06	Special Stilling Basin	▩
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	▩
	Tiered Skimmer Basin	▩
	Infiltration Basin	▩

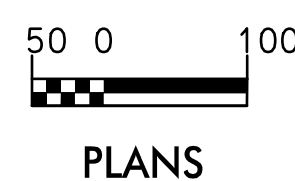


**THIS PROJECT CONTAINS
EROSION CONTROL PLANS
FOR CLEARING AND
GRUBBING PHASE OF
CONSTRUCTION.**

DESIGN EXCEPTION REQUIRED FOR SAG VERTICAL CURVE AND ASSOCIATED NIGHTTIME STOPPING SIGHT DISTANCE.
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

END PROJECT BRIDGE 212
END RESURFACING
-L- STA. 20+11.00
LENGTH OF ROADWAY PROJECT BRIDGE 212 = 0.118 Miles
LENGTH OF STRUCTURE PROJECT BRIDGE 212 = 0.005 Miles
TOTAL LENGTH OF PROJECT BRIDGE 212 = 0.123 Miles

GRAPHIC SCALE



THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER RESOURCES.

Prepared In the Office of:
SEPI
ENGINEERING & CONSTRUCTION
1025 Wade Avenue
Raleigh, NC 27605
Tel: 919-789-9977
Fax: 919-789-9591
License: C-2197

Designed by:
Brian A. Mazzochi, P.E. 3120
NAME LEVEL III CERTIFICATION NO.

Reviewed In the Office of:
ROADSIDE ENVIRONMENTAL UNIT
1 South Wilmington St.
Raleigh, NC 27611
2018 STANDARD SPECIFICATIONS

Reviewed by:
AARON HARPER, PE

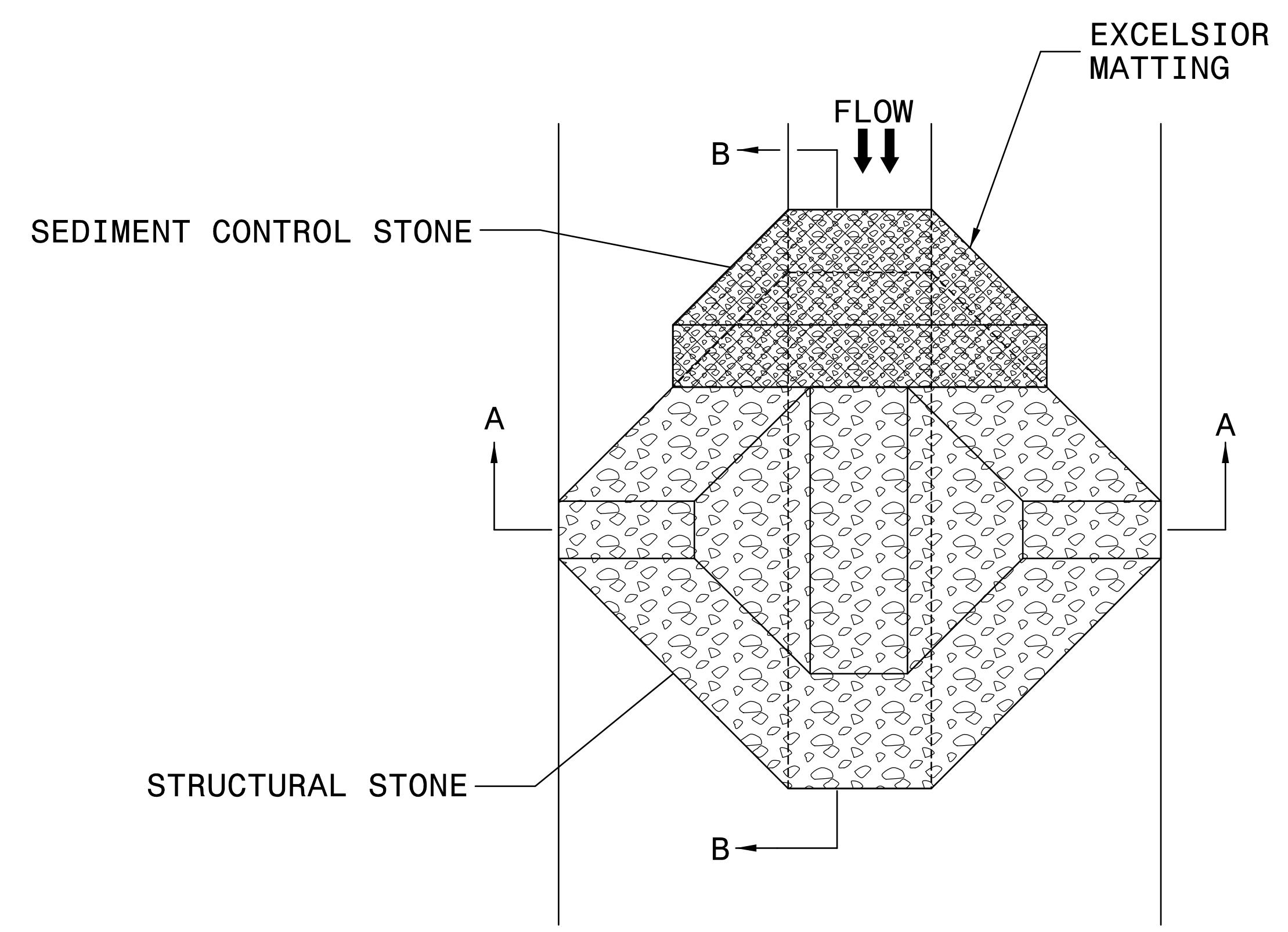
Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2012 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01 Railroad Erosion Control Detail	1632.01 Rock Inlet Sediment Trap Type A
1605.01 Temporary Silt Fence	1632.02 Rock Inlet Sediment Trap Type B
1606.01 Special Sediment Control Fence	1632.03 Rock Inlet Sediment Trap Type C
1607.01 Gravel Construction Entrance	1633.01 Temporary Rock Silt Check Type A
1622.01 Temporary Berms and Slope Drains	1633.02 Temporary Rock Silt Check Type B
1630.01 Riser Basin	1634.01 Temporary Rock Sediment Dam Type A
1630.02 Silt Basin Type B	1634.02 Temporary Rock Sediment Dam Type B
1630.03 Temporary Silt Ditch	1635.01 Rock Pipe Inlet Sediment Trap Type A
1630.04 Stilling Basin	1635.02 Rock Pipe Inlet Sediment Trap Type B
1630.05 Temporary Diversion	1640.01 Coir Fiber Baffle
1630.06 Special Stilling Basin	1645.01 Temporary Stream Crossing
1631.01 Matting Installation	

PROJECT REFERENCE NO. BRIDGE 620212	SHEET NO. EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)



PLAN

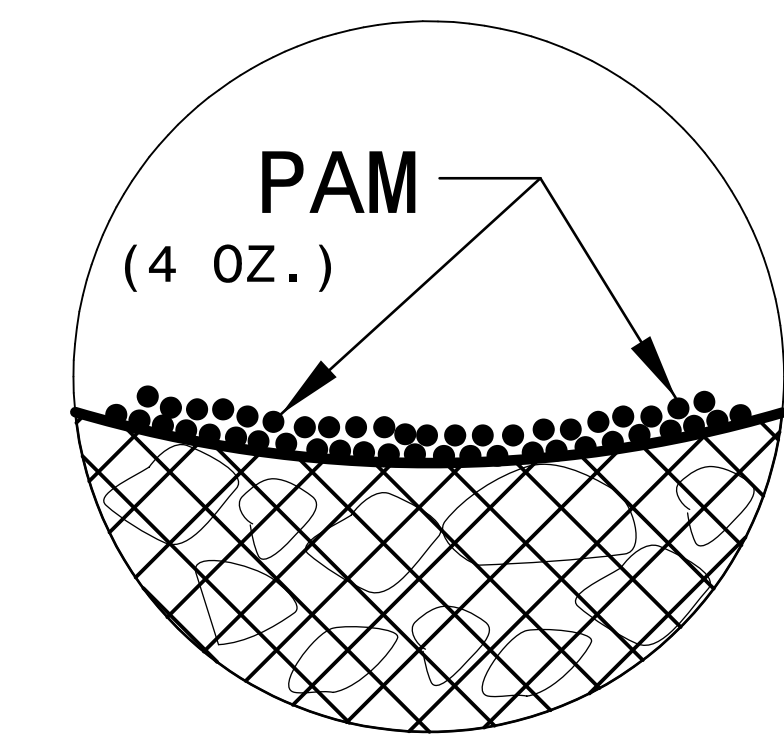
NOTES:

INSTALL TEMPORARY ROCK SILT CHECK TYPE A IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1633.01.

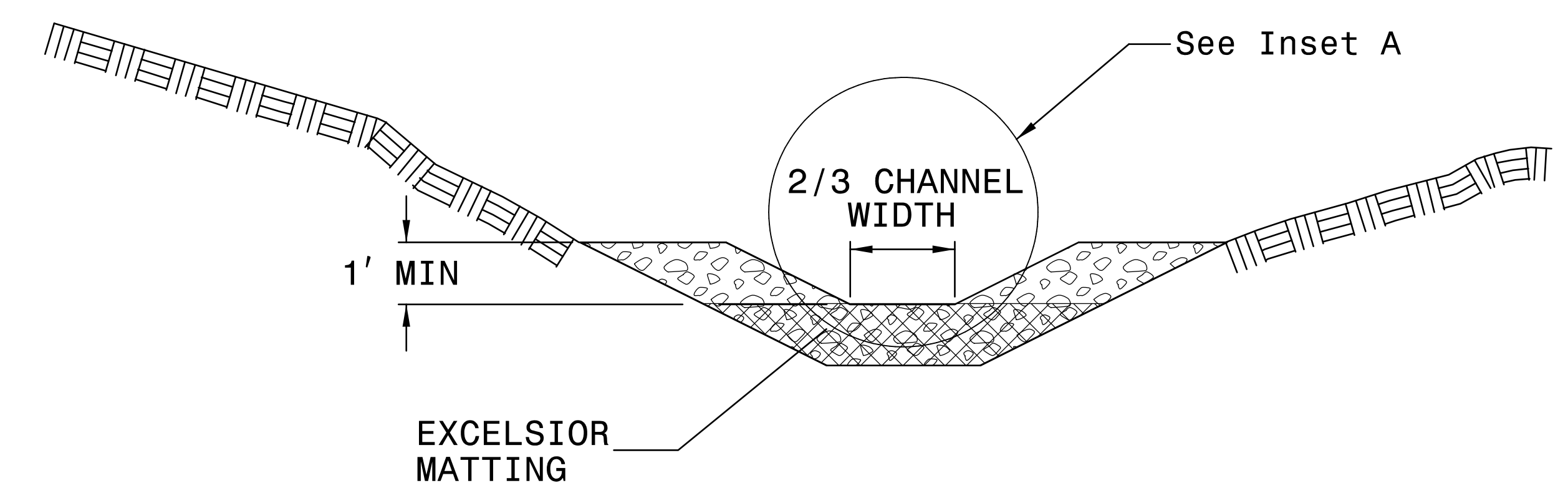
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH ROCK SILT CHECK.

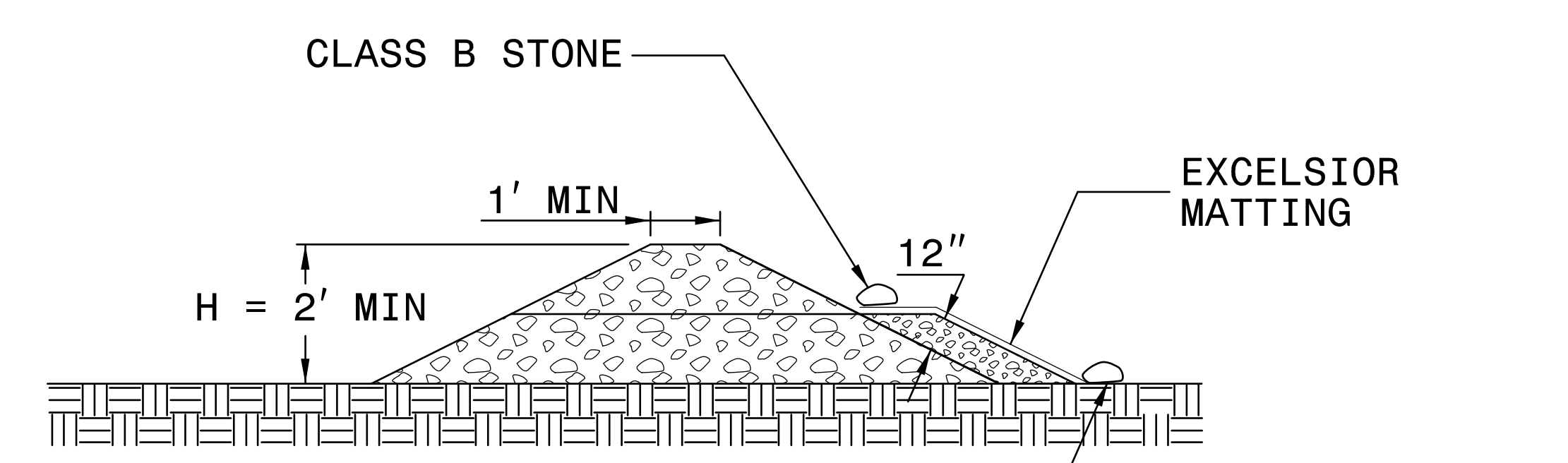
INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A



SECTION B-B

NOT TO SCALE

8/17/99

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

REVISIONS

<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

69
68
67
66
65
64
63
62
61
60
59
58
57
56
55
54
53
52
51
50
49
48
47
46
45
44
43
42
41
40
39
38
37
36
35
34
33
32
31
30
29
28
27
26
25
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1

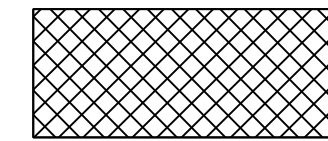
CLEARING AND GRUBBING

-L-				
PI Sta 18+33.96	PI Sta 19+84.83	PI Sta 21+75.97	PI Sta 23+40.32	PI Sta 24+48.09
$\Delta = 3' 33'' 48.0'' (RT)$	$\Delta = 1' 12'' 59.7'' (RT)$	$\Delta = 14' 27'' 50.2'' (RT)$	$\Delta = 10' 43'' 32.9'' (RT)$	$\Delta = 4' 52'' 29.2'' (RT)$
$D = 3' 14'' 26.6''$	$D = 8' 53'' 03.3''$	$D = 6' 51'' 45.7''$	$D = 12' 39'' 09.3''$	$D = 6' 17'' 25.7''$
$L = 109.96'$	$L = 126.25'$	$L = 210.76'$	$L = 84.77'$	$L = 77.49'$
$T = 55.00'$	$T = 63.33'$	$T = 105.94'$	$T = 42.51'$	$T = 38.77'$
$R = 1768.00'$	$R = 644.91'$	$R = 834.89'$	$R = 452.84'$	$R = 910.83'$
SE = SEE PLANS	SE = SEE PLANS			

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

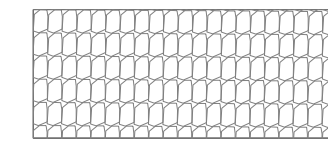
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B
AND TEMPORARY ROCK SILT CHECKS TYPE - A AT
DRAINAGE OUTLETS.

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE
INSTALLED DURING CLEARING AND GRUBBING PHASE.

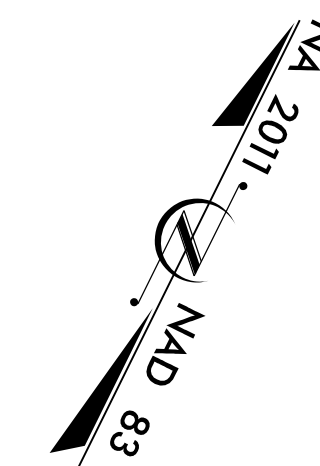


EXCAVATION

NOTE:
TEMPORARY DIVERSION DITCH TO BE CONSTRUCTED,
REROUTING EXISTING DITCH FLOW INTO STREAM.



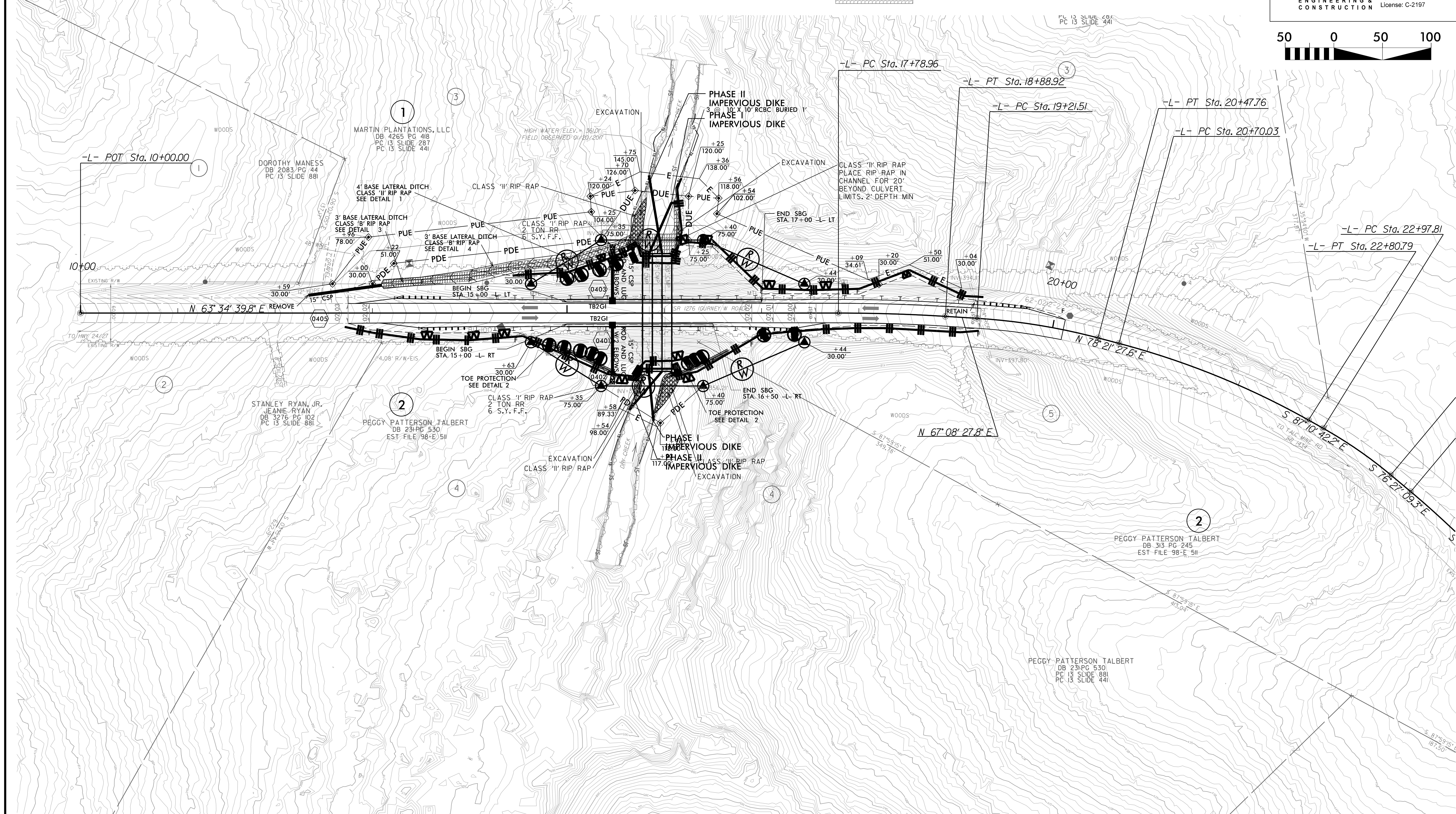
CLASS II
RIP RAP



PROJECT REFERENCE NO. SF-620212 SHEET NO. EC-4 / CONST. 4

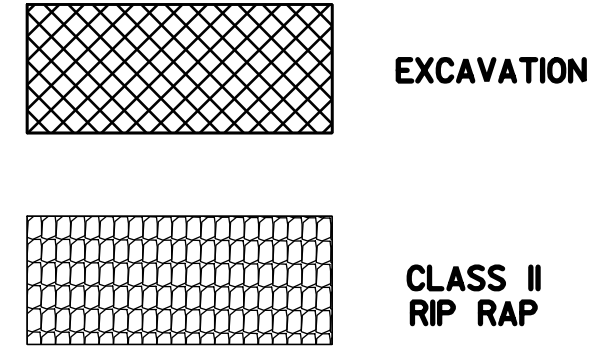
RW SHEET NO. ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

SEPI
ENGINEERING & CONSTRUCTION
1025 Wade Avenue
Raleigh, NC 27605
Tel: 919-799-9977
Fax: 919-789-3591
License: C-2197

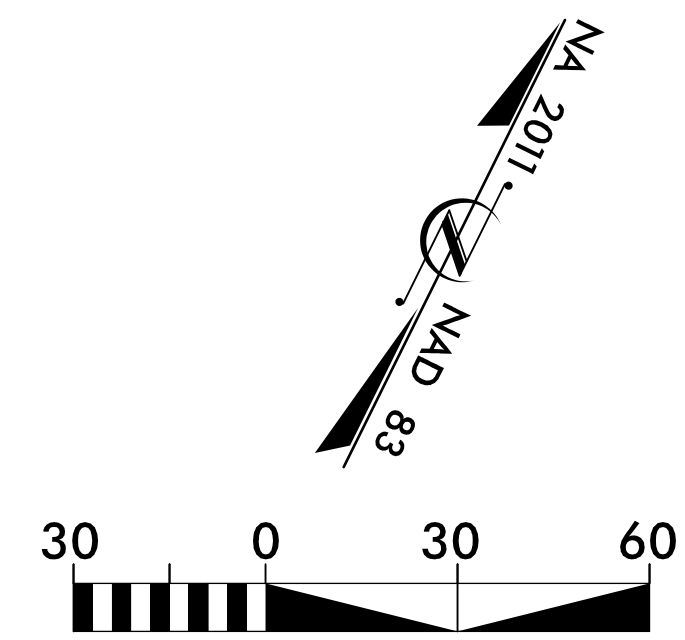


CULVERT CONSTRUCTION SEQUENCE STA. 15+92.5 -L-

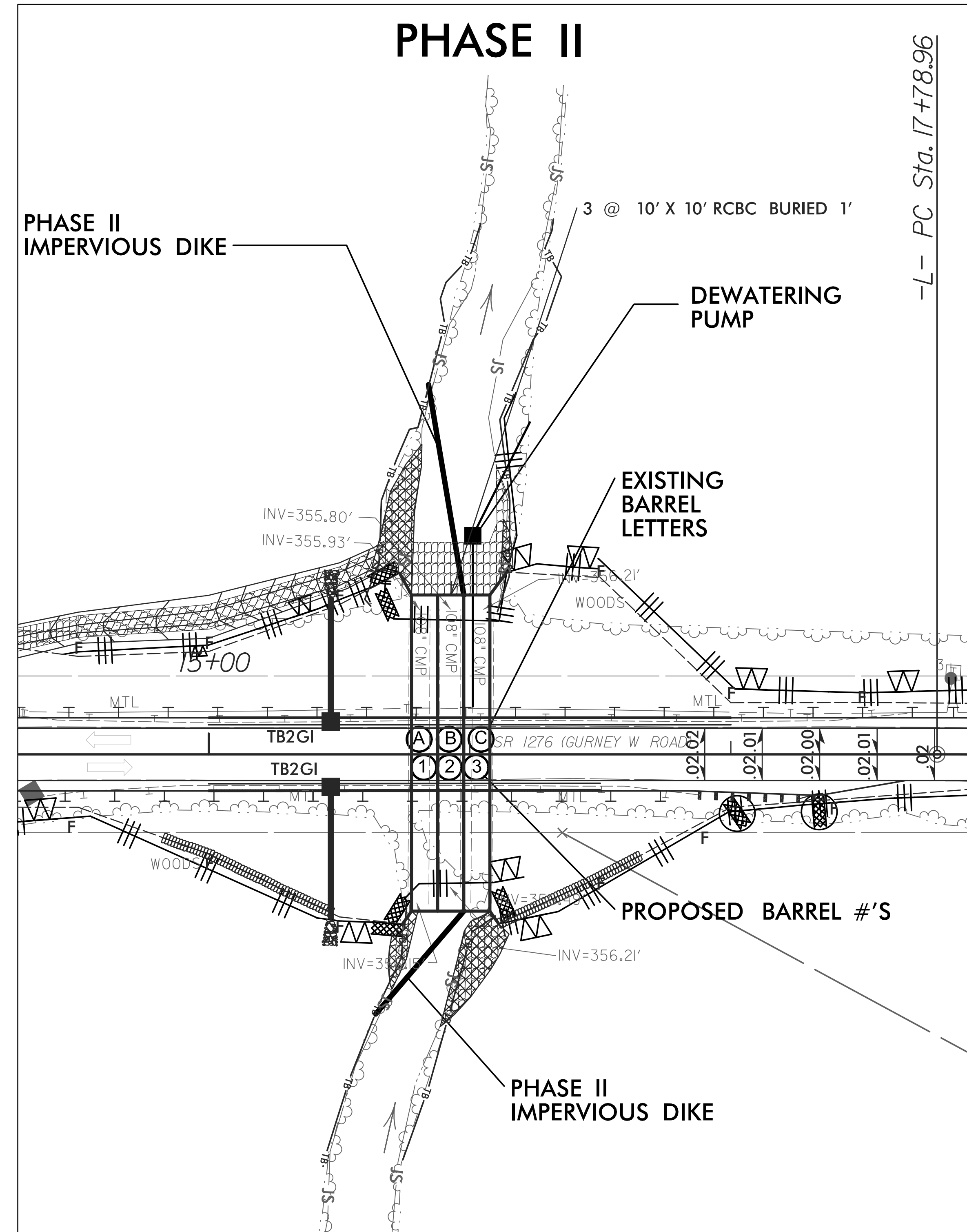
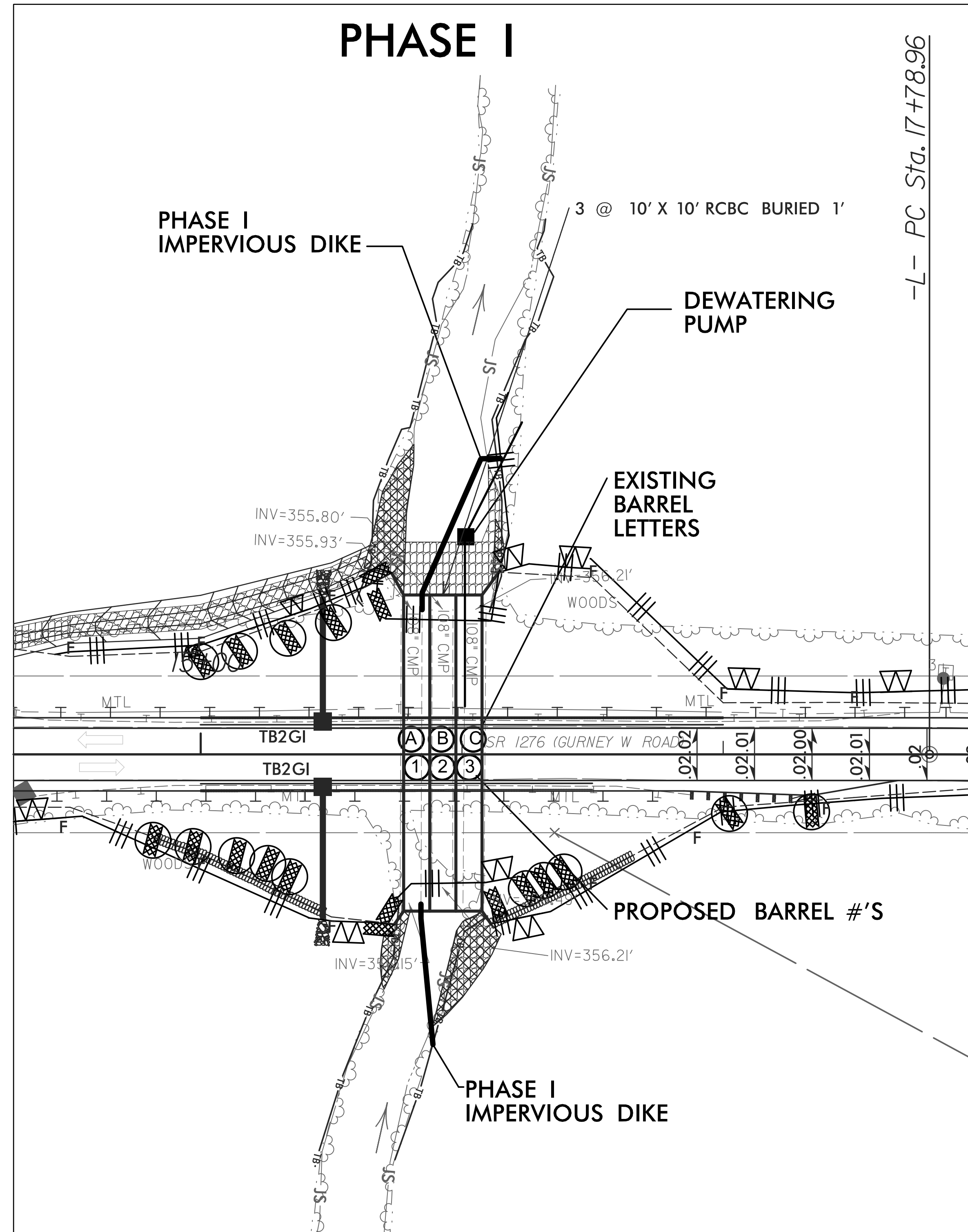
1. INSTALL PERIMETER EROSION CONTROL DEVICES AS SHOWN IN THE CLEARING AND GRUBBING PHASE.
2. INSTALL PHASE I IMPERVIOUS DIKES.
3. INSTALL DEWATERING PUMP AND SPECIAL STILLING BASIN.
4. REMOVE EXISTING ROADWAY EMBANKMENT AND RIGHT EXISTING CULVERT BARRELS (FACING DOWNSTREAM-BARRELS "B" AND "C").
5. CONSTRUCT THE TWO RIGHTMOST BARRELS (#2 AND #3) OF THE PROPOSED CULVERT.
6. REMOVE PHASE I IMPERVIOUS DIKES AND INSTALL PHASE II IMPERVIOUS DIKES.
7. REMOVE EXISTING BARREL "A".
7. INSTALL LEFT BARREL (#1) OF PROPOSED CULVERT.
8. AS ALLOWED BY THE PROGRESS OF CONSTRUCTION, INSTALL FINAL EROSION CONTROL MEASURES AND REMOVE IMPERVIOUS DIKES.
7. COMPLETE CONSTRUCTION OF ROADWAY AND EMBANKMENT.
8. ENSURE EXPOSED SOIL HAS BEEN STABILIZED.
9. REMOVE TEMPORARY EROSION CONTROL DEVICES



PHASING



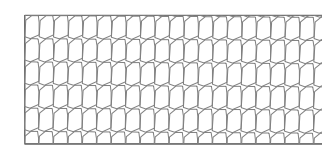
PROJECT REFERENCE NO. <i>SF-620212</i>	SHEET NO. <i>EC-4A /CONST. 4</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
SEPI ENGINEERING & CONSTRUCTION	
1025 Wade Avenue Raleigh, NC 27605 Tel: 919-789-9977 Fax: 919-789-9591 License: C-2197	



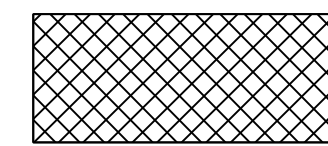
FINAL GRADE EROSION CONTROL

FINAL GRADE
EROSION CONTROL FOR
CONSTRUCTION SHEET 4_

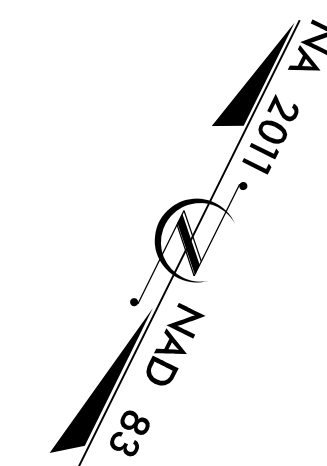
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B
AND TEMPORARY ROCK SILT CHECKS TYPE - A AT
DRAINAGE OUTLETS.



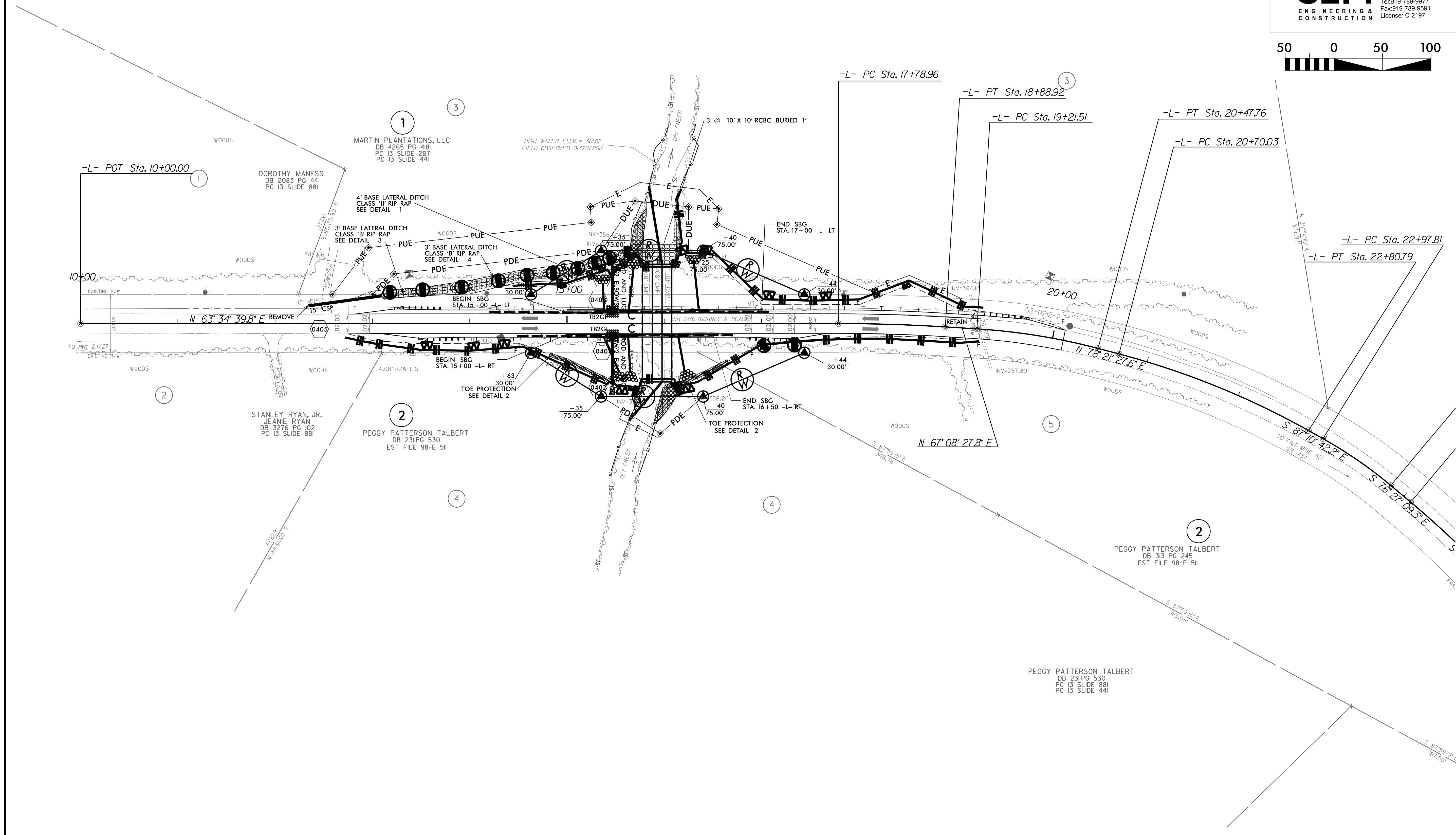
CLASS II
RIP RAP



EXCAVATION



PROJECT REFERENCE NO. SF-620212	SHEET NO. EC-5 /CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
SEPI ENGINEERING & CONSTRUCTION	
1025 Wade Avenue Raleigh, NC 27605 Tel: 919-799-9977 Fax: 919-789-8591 License: C-2197	



-L- POT Sta. 10+00.00

DOROTHY MANESS
DB 2083 PG 44
PC 13 SLIDE 881

MARTIN PLANTATIONS, LLC
DB 4265 PG 418
PC 13 SLIDE 287
PC 13 SLIDE 441

HIGH WATER ELEV. = 361.01'
FIELD OBSERVED 01/20/2017

STANLEY RYAN, JR.
JEANIE RYAN
DB 3276 PG 102
PC 13 SLIDE 881

PEGGY PATTERSON TALBERT
DB 231 PG 530
EST FILE 98-E 511

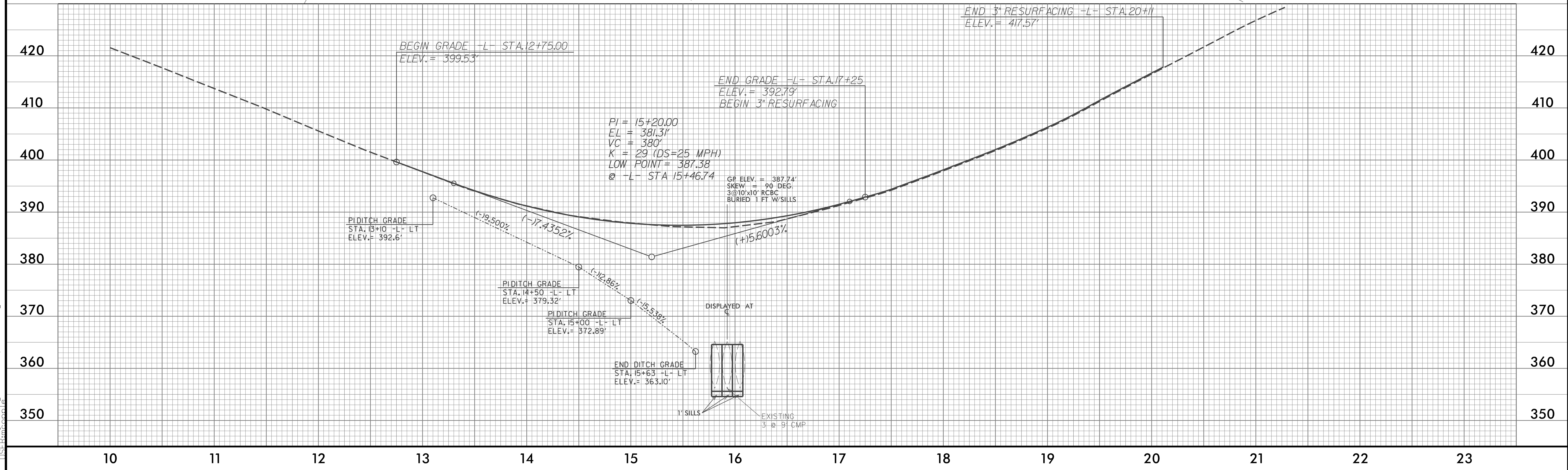
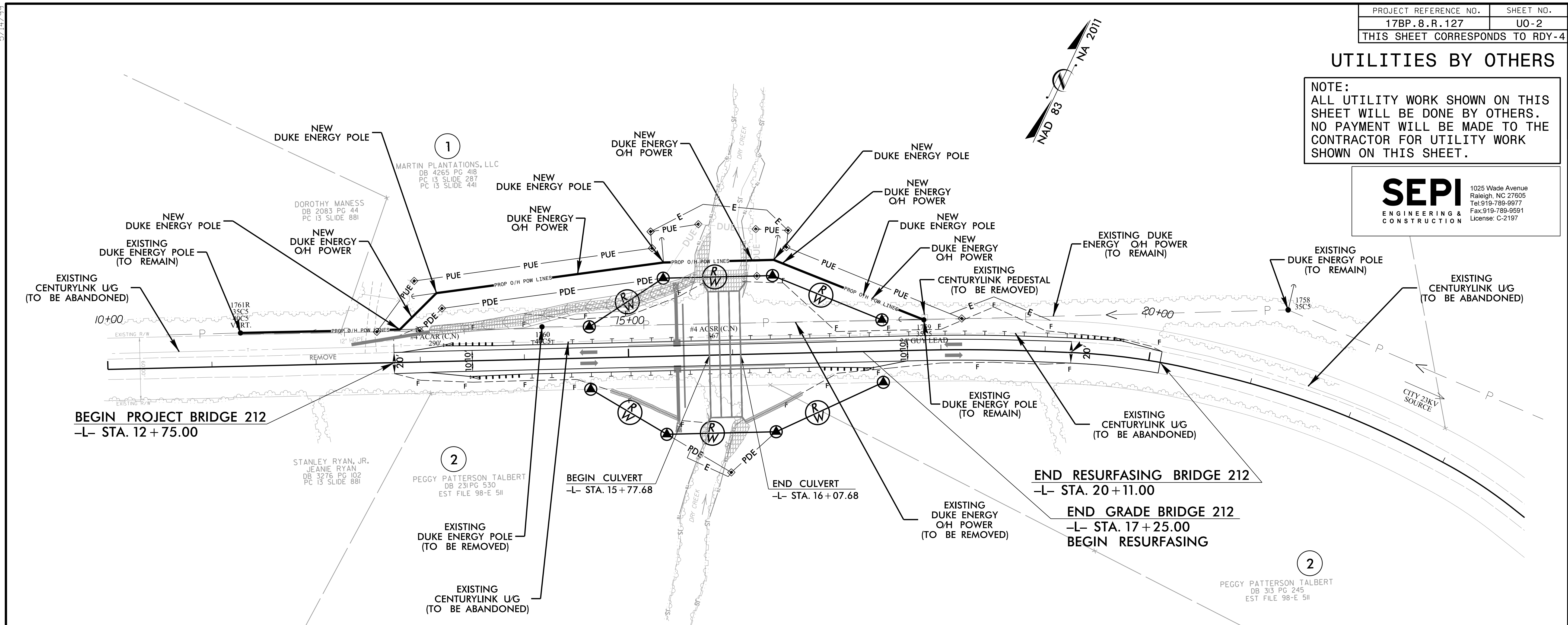
PEGGY PATTERSON TALBERT
DB 313 PG 245
EST FILE 98-E 511

PEGGY PATTERSON TALBERT
DB 231 PG 530
PC 13 SLIDE 881
PC 13 SLIDE 441

UTILITIES BY OTHERS

NOTE:
ALL UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR UTILITY WORK SHOWN ON THIS SHEET.

SEPI
ENGINEERING & CONSTRUCTION
1025 Wade Avenue
Raleigh, NC 27605
Tel: 919-789-9977
Fax: 919-789-9591
License: C-2197



5/14/99
7/12/2018
N:\Projects\17BP\17BP.8.R.127\17BP.8.R.127.dgn

09.08/99

TIP PROJECT: 17BP.8.R.127

CONTRACT:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

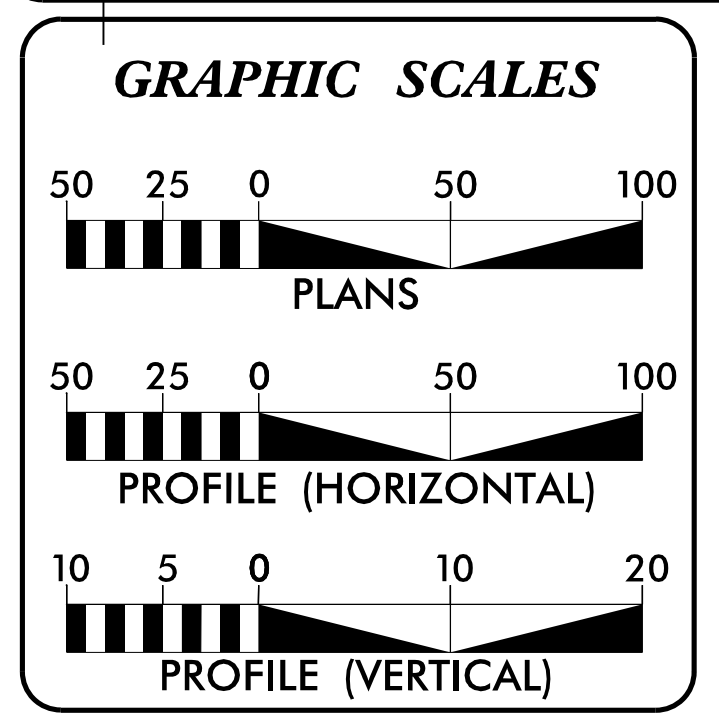
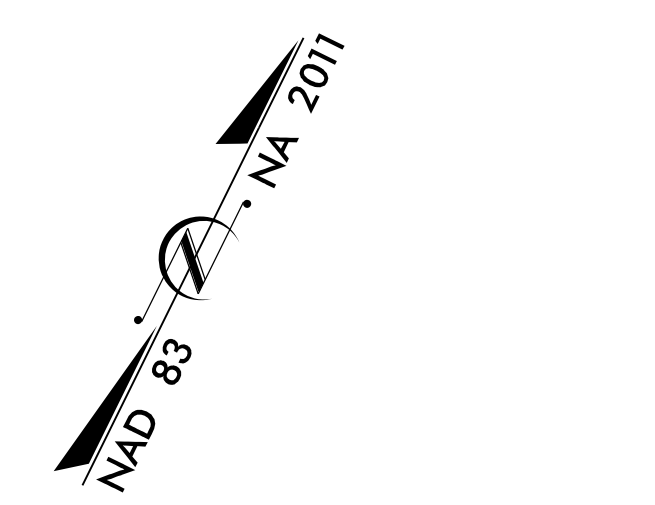
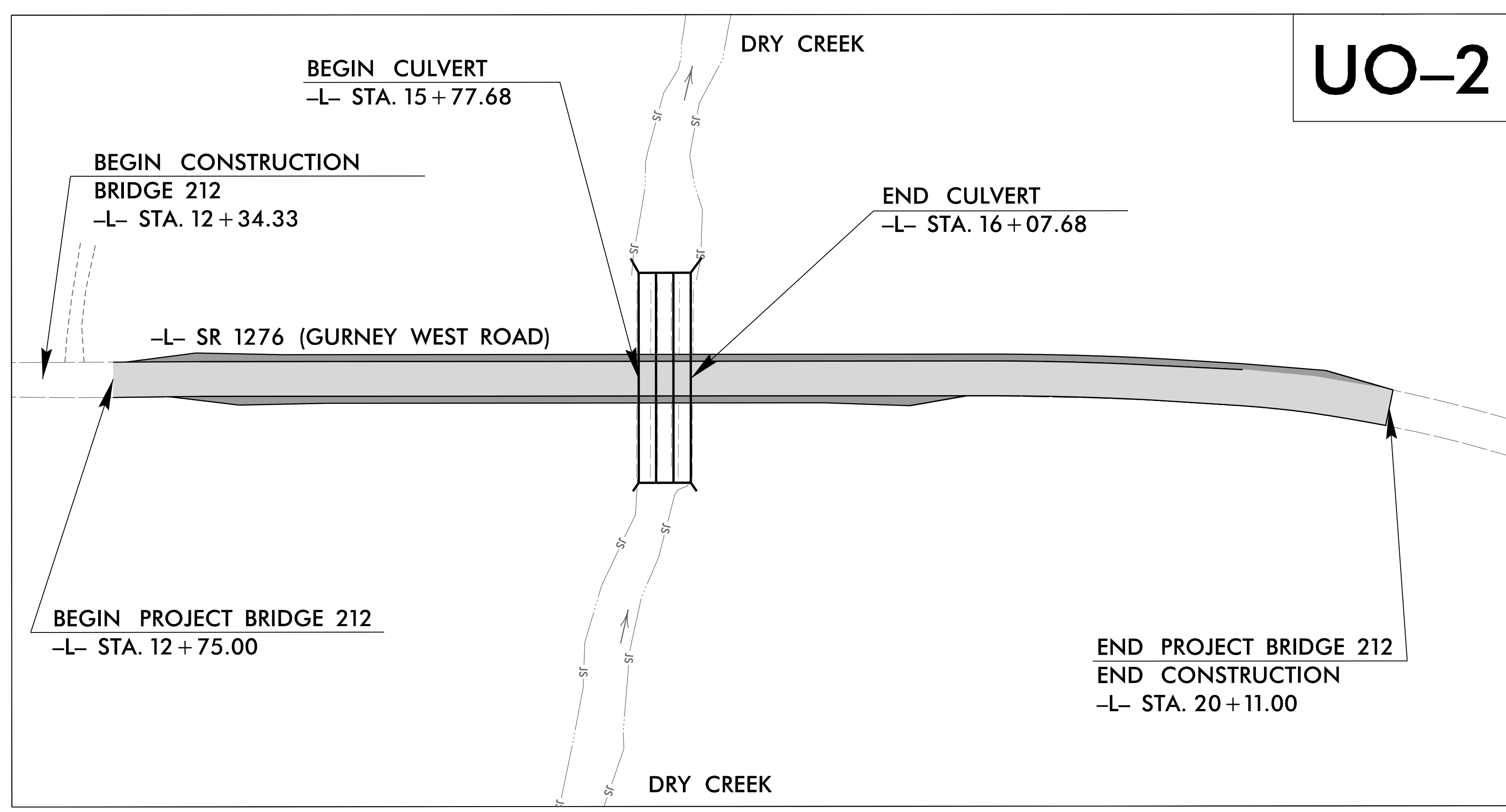
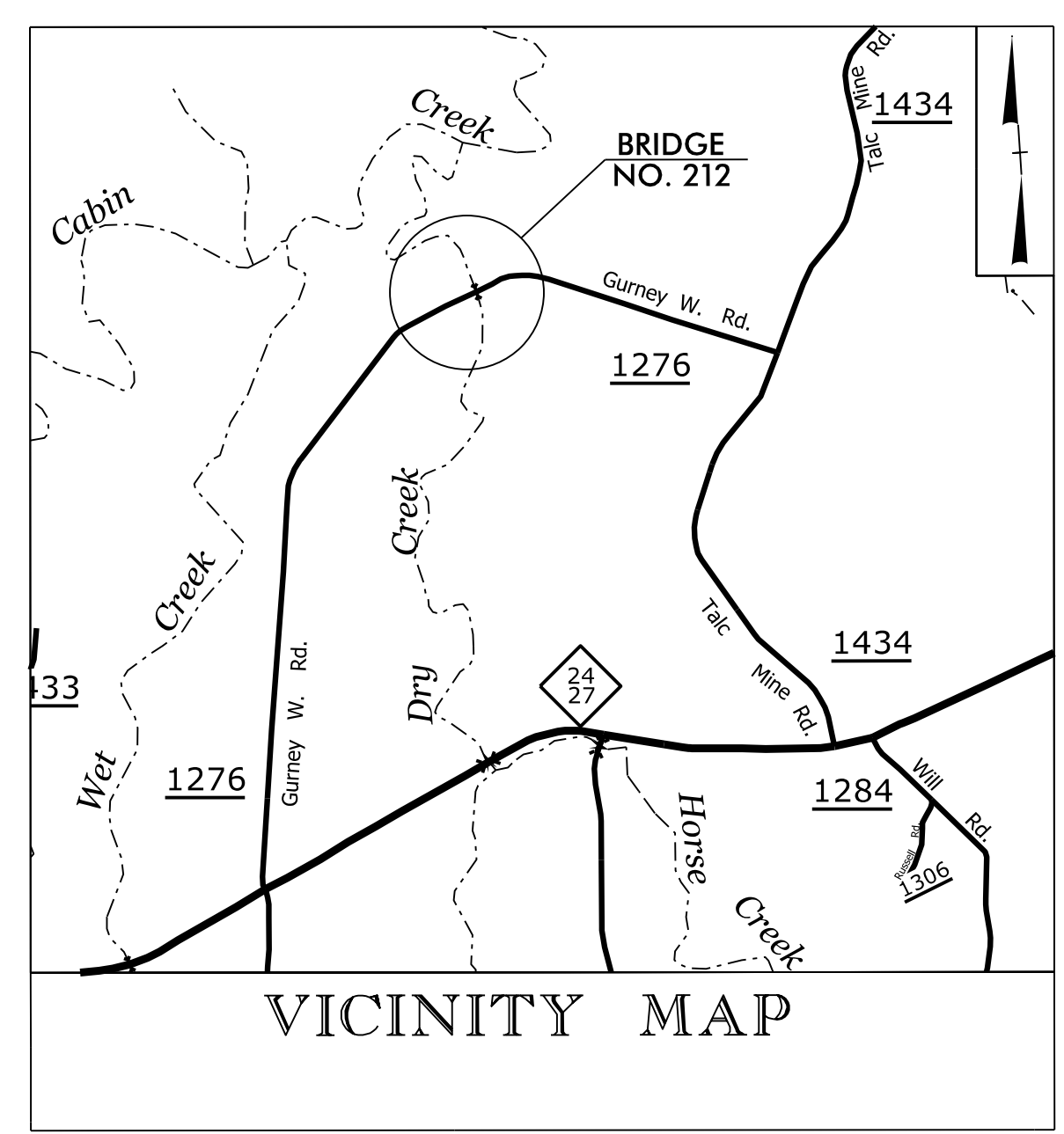
**UTILITIES BY OTHERS PLANS
MOORE COUNTY**

**LOCATION: BRIDGE NO. 212 OVER DRY CREEK
ON SR 1276 (GURNEY W. ROAD)**

TYPE OF WORK: ELECTRIC POWER DISTRIBUTION

T.I.P. NO.	SHEET NO.
17BP.8.R.127	UO-1

NOTE:
ALL UTILITY WORK SHOWN ON THIS SHEET IS DONE BY OTHERS.
NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR UTILITY WORK SHOWN ON THIS SHEET.



INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2	UTILITY BY OTHERS SHEET

UTILITY OWNERS ON PROJECT

(1) DUKE ENERGY - POWER (DISTRIBUTION)
(2) CENTURYLINK - COMMUNICATIONS

Blank space for additional utility owner information.

SEPI ENGINEERING & CONSTRUCTION

1025 Wade Avenue
Raleigh, NC 27605
Tel: 919-789-9977
Fax: 919-789-9591
License: C-2197

Tim Welch, PE DIVISION 8 BRIDGE MANAGER
Jamie Yow DIVISION 8 UTILITY COORDINATOR
Kelly Hayes, PE, PLS UTILITIES COORDINATION CONSULTANT

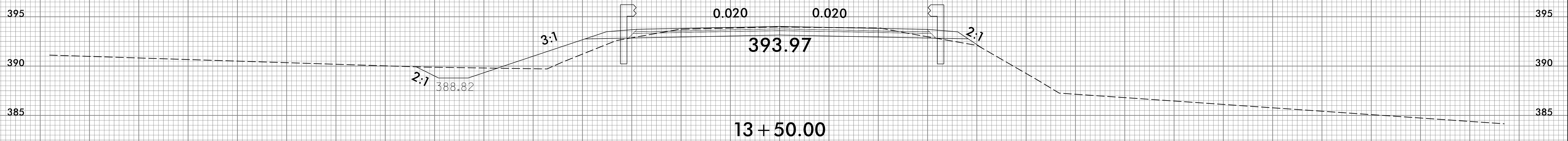
5/1/2018
I:\Bridge_212_U1_tsh_u01_psh.dgn
USER:mcopple

6/23/16

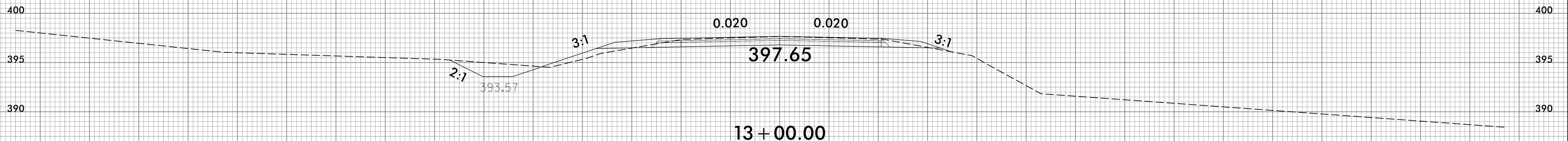


PROJ. REFERENCE NO.	SHEET NO.
17BP.8.R.127	X-2

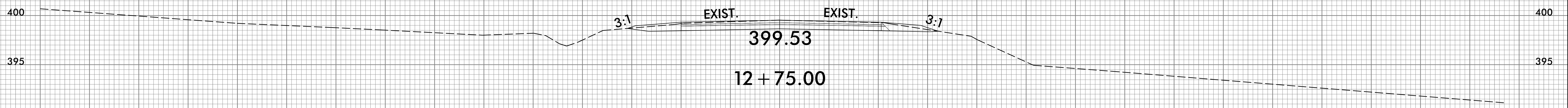
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



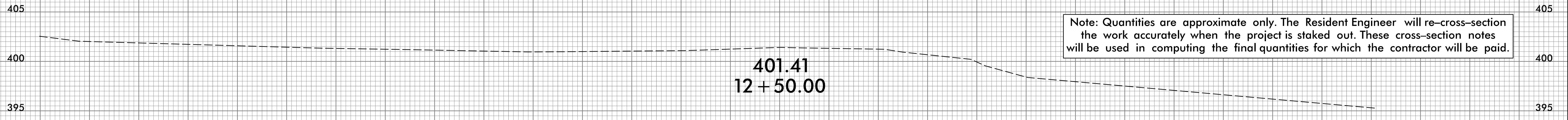
13 + 50.00



13 + 00.00

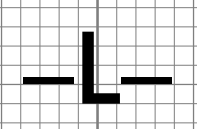


12 + 75.00



12 + 50.00

Note: Quantities are approximate only. The Resident Engineer will re-cross-section the work accurately when the project is staked out. These cross-section notes will be used in computing the final quantities for which the contractor will be paid.



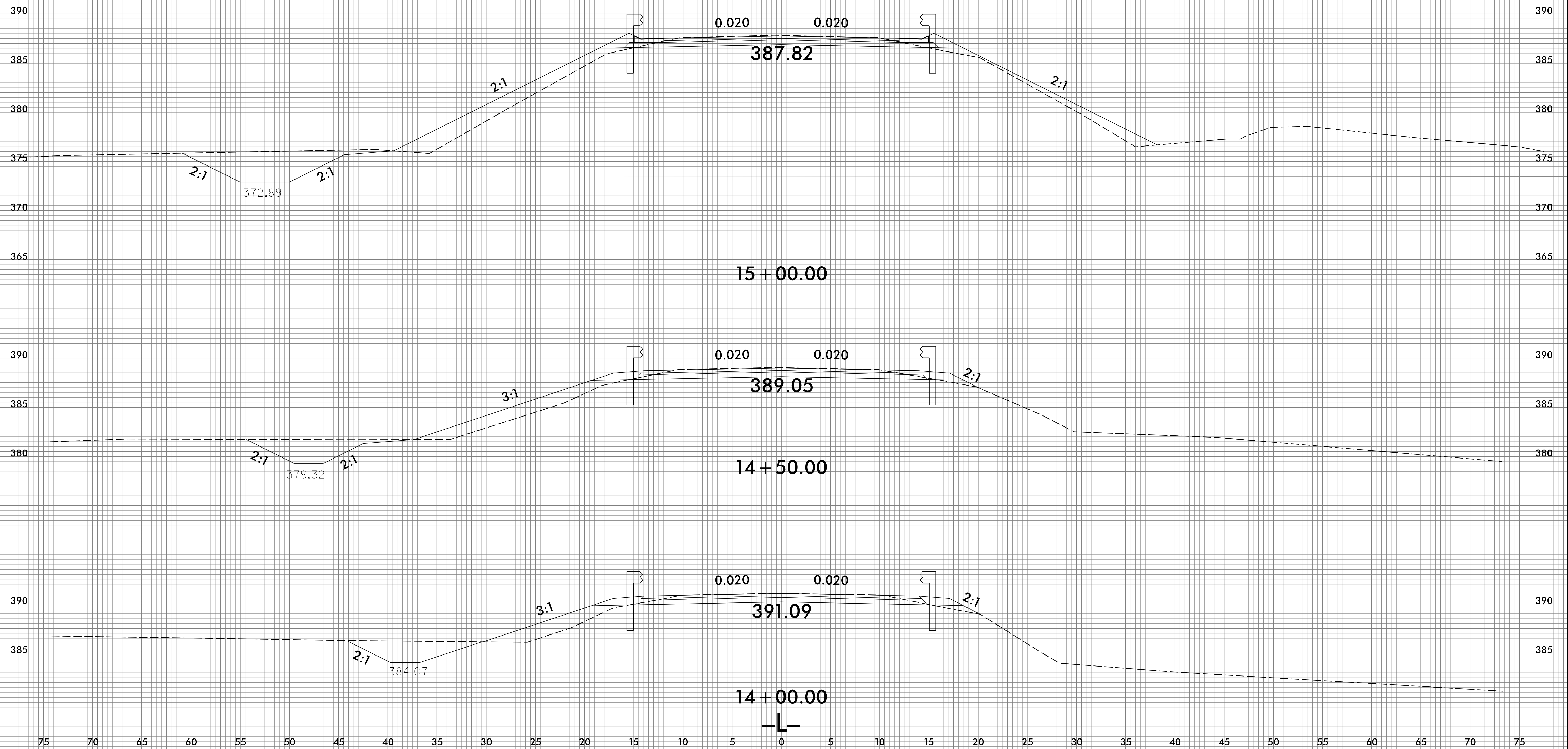
6/25/2018
 I:\X\15\15-Br-tdge-212-Rdy-1.dgn
 15-Br-tdge-212

6/23/16



PROJ. REFERENCE NO.	SHEET NO.
17BP.8.R.127	X-3

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



6/25/2018
I:\Projects\17BP.8.R.127\17BP.8.R.127-X-3.dgn

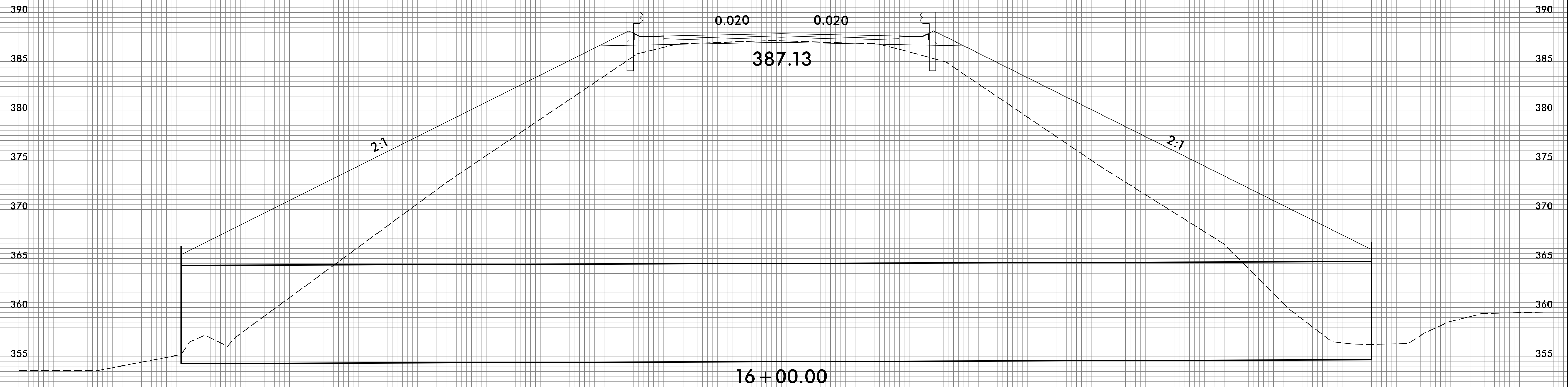
6/23/16



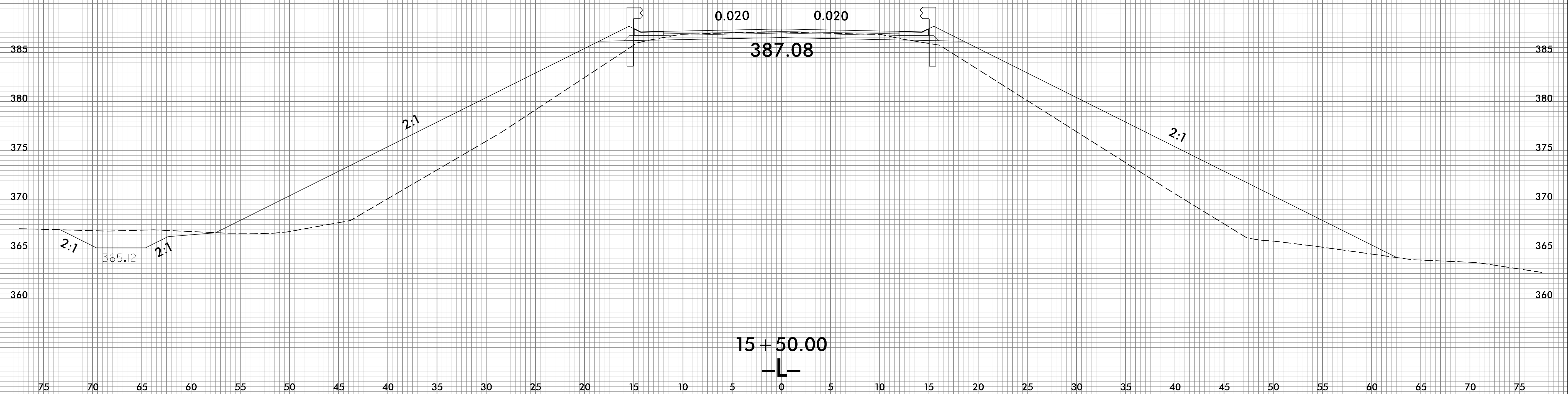
PROJ. REFERENCE NO.	SHEET NO.
17BP.8.R.127	X-4

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

END CULVERT 16+07.68



BEGIN CULVERT 15+77.68



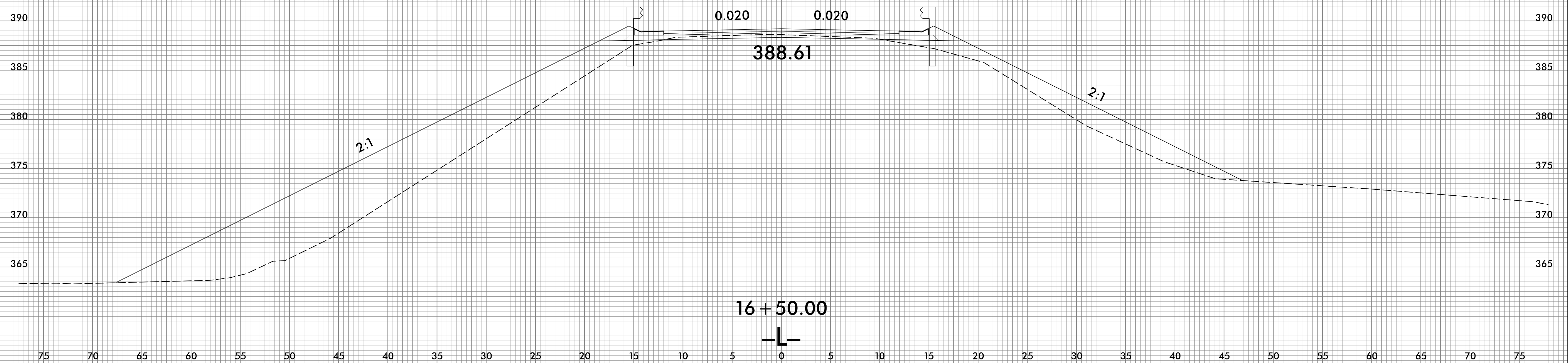
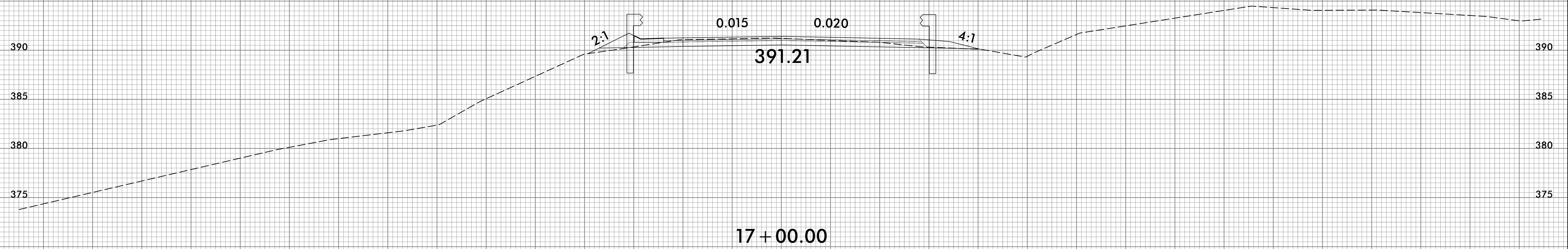
6/25/2008 1:53:15 PM I:\Projects\17BP.8.R.127\17BP.8.R.127.dgn

6/23/16



PROJ. REFERENCE NO.	SHEET NO.
17BP.8.R.127	X-5

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



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

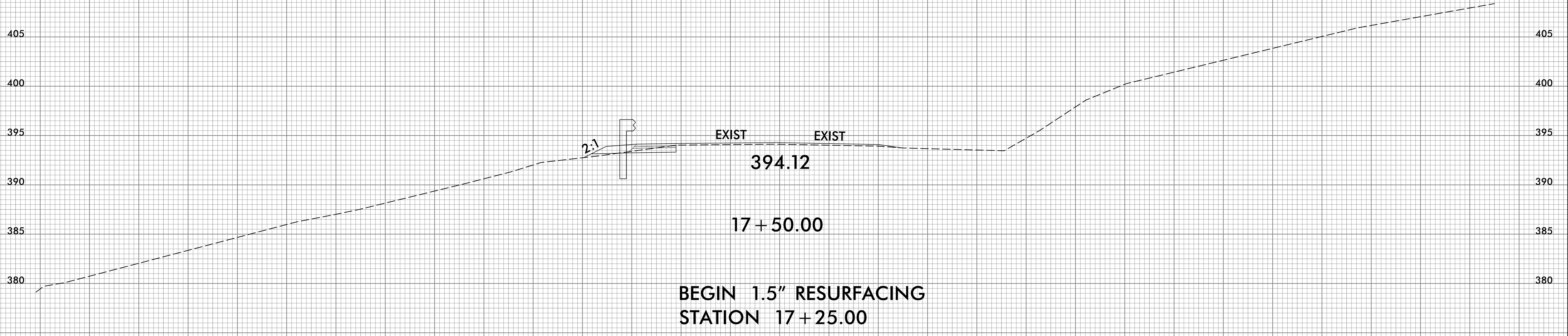
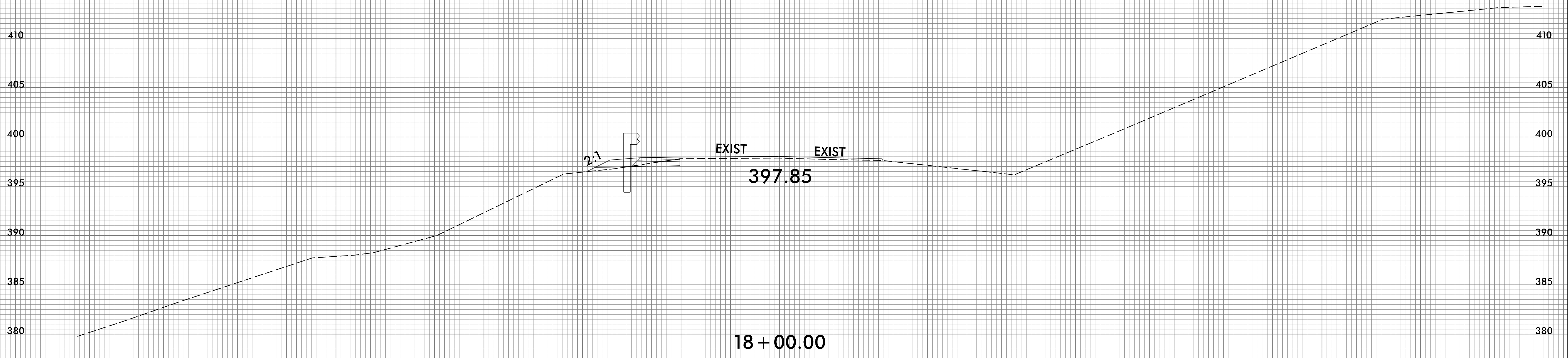
6/25/2008 1:53:15 PM \\s:\br\dge-212\Fdy_xp1.dgn

6/23/16



PROJ. REFERENCE NO.	SHEET NO.
17BP.8.R.127	X-6

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



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

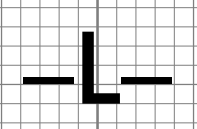
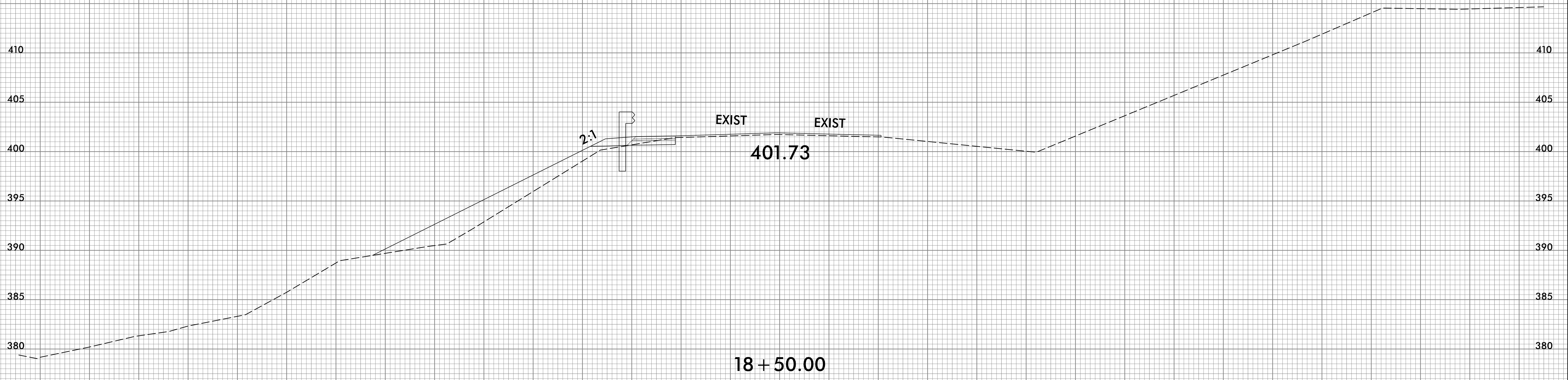
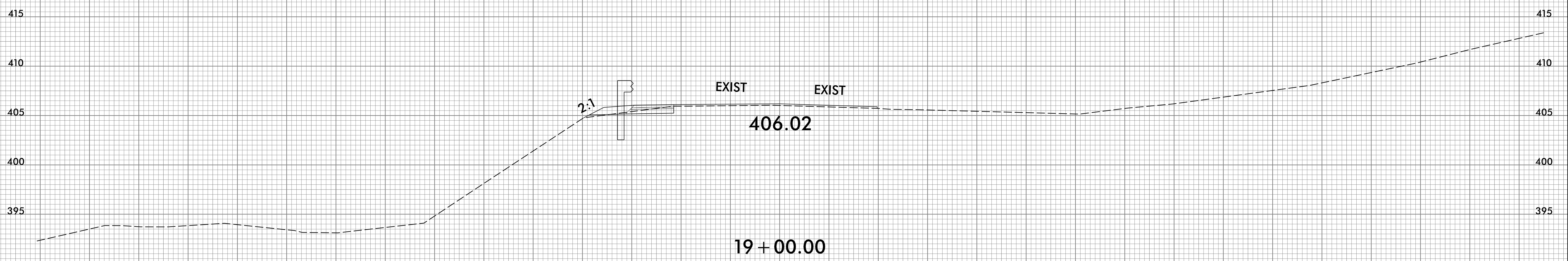
7/12/2018
I:\SC\Brdge-212.Rdy_xp.dgn
J:\E\mccoppe

6/23/16



PROJ. REFERENCE NO.	SHEET NO.
17BP.8.R.127	X-7

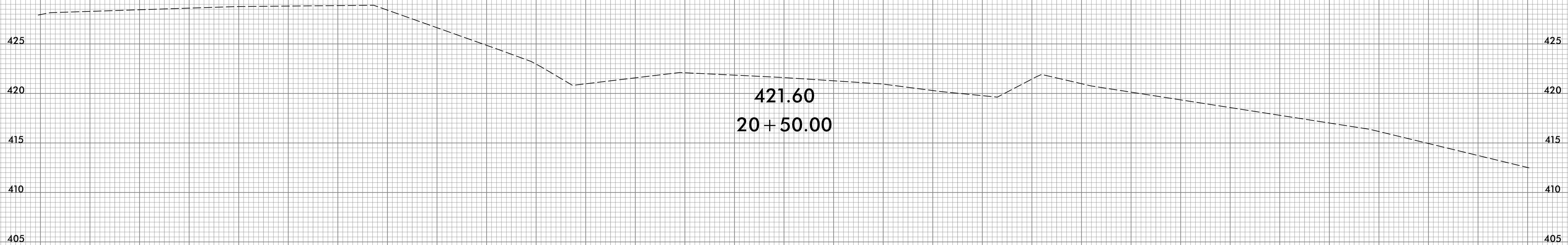
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



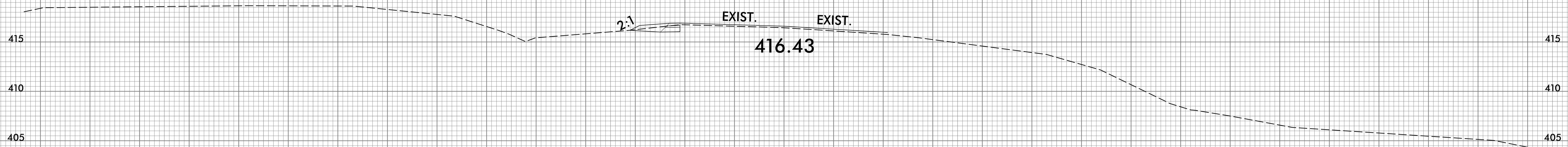
6/25/2008
J:\GIS\17BP\17BP-127-212-Rdy_xp1.dgn
J:\GIS\17BP\17BP-127-212-Rdy_xp1.dgn



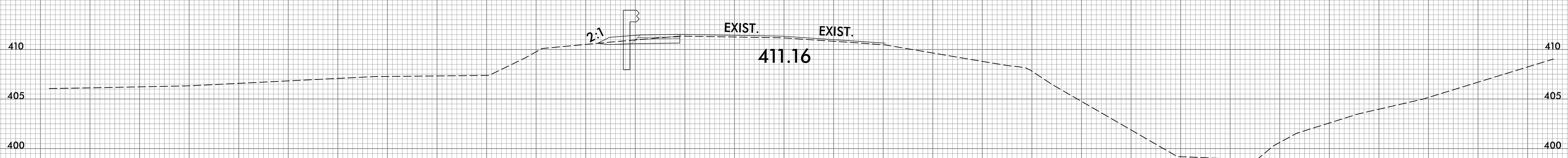
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



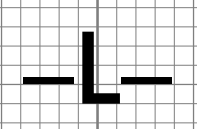
END 1.5" RESURFACING
STA. 20+11.00



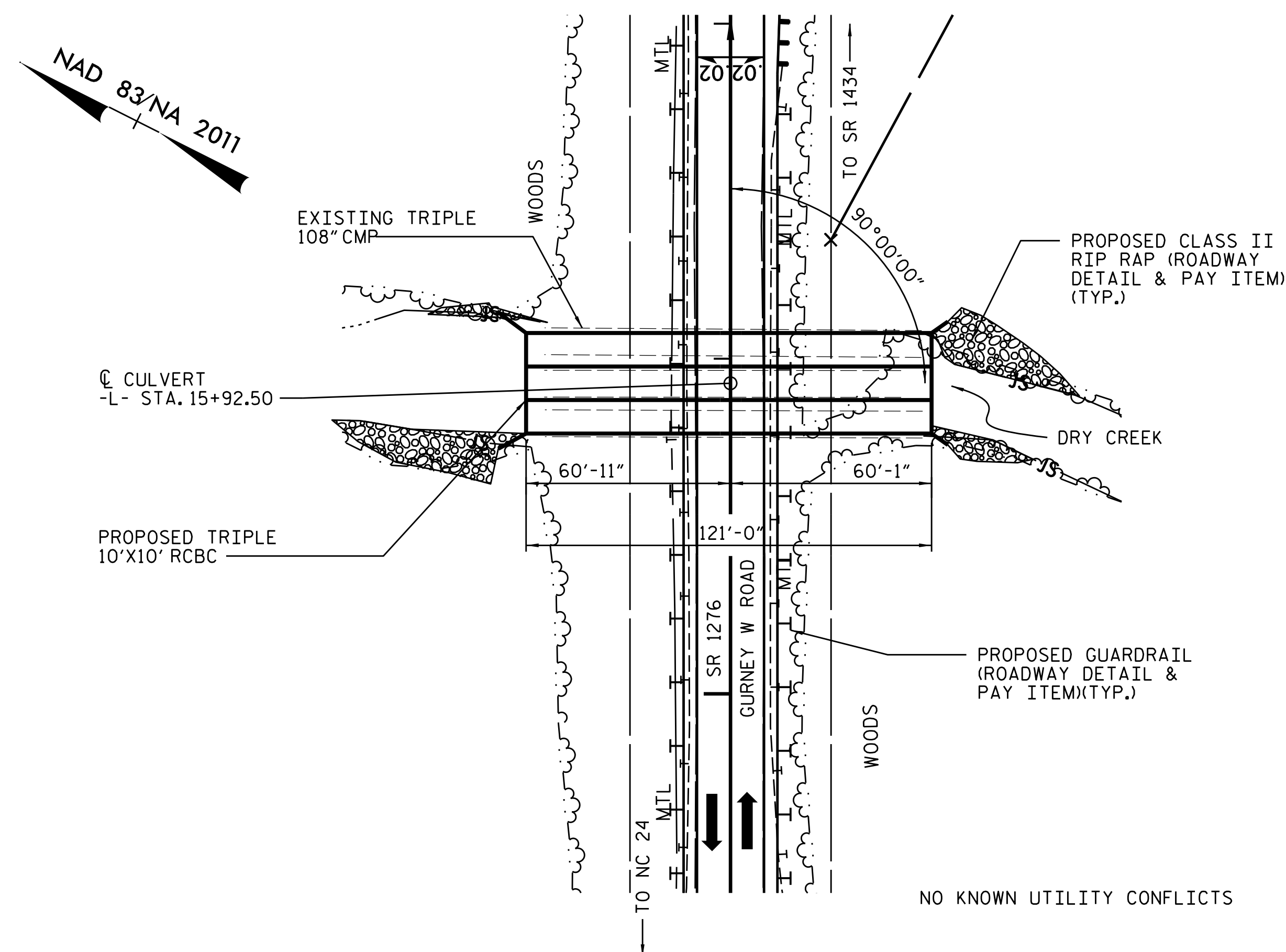
20+00.00



19+50.00



BENCH MARK: BM-#51 BENCH TIE IN 14" POPLAR, 62.26' LT STA 11+71.57 -L- ELEV. 393.0 NAVD 88

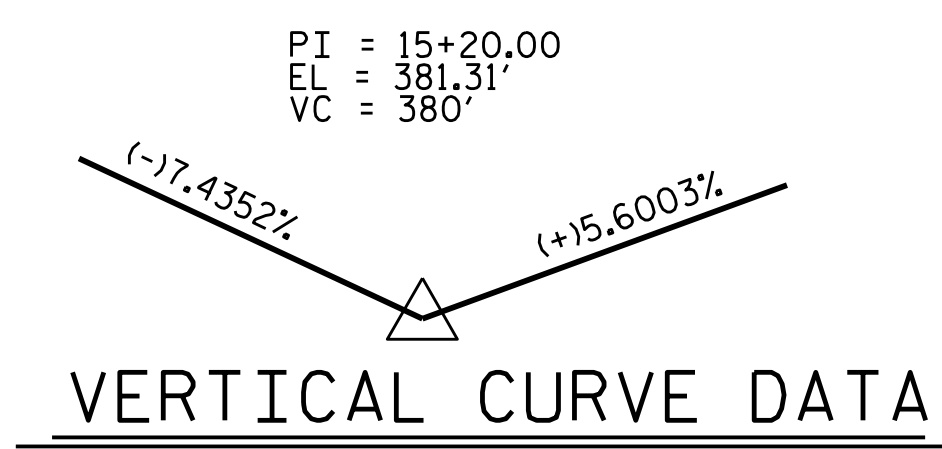


HYDRAULIC DATA

DESIGN DISCHARGE	= 1400	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 365.8	FT
DRAINAGE AREA	= 10.3	SQ.MI.
BASE DISCHARGE	= 3220	CFS
BASE FREQUENCY	= FEMA 100	YRS
BASE HW ELEVATION	= 372.3	FT

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 387.4	FT

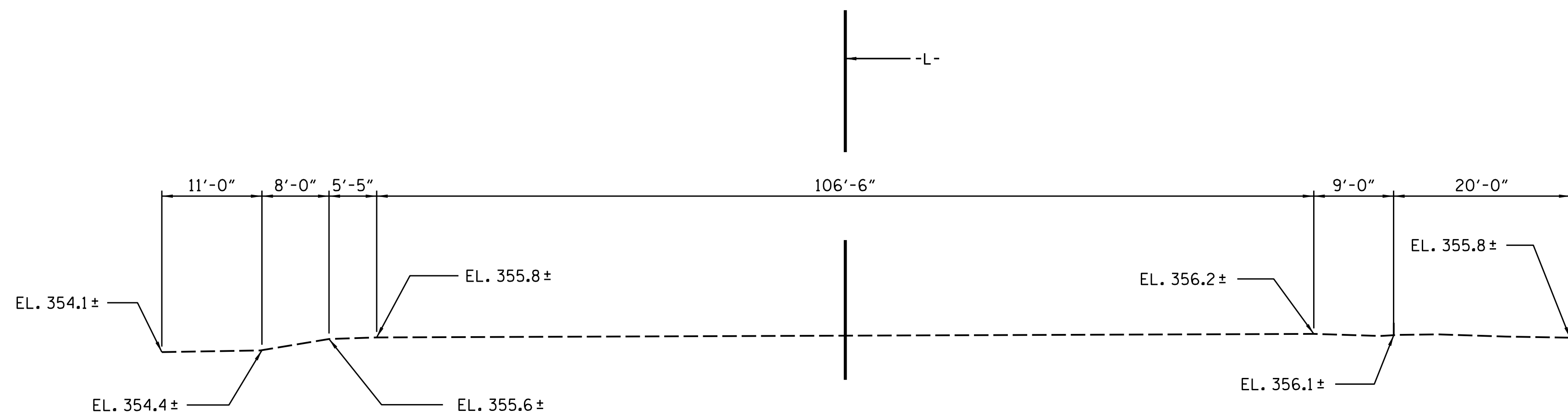


NOTES

ASSUMED LIVE LOAD -----HL93 OR ALTERNATE LOADING.
 DESIGN FILL 23.5'
 FOR OTHER DESIGN DATA AND NOTES SEE STANDARD NOTE SHEET.
 3" Ø WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.
 CONCRETE IN CULVERTS TO BE POURED IN THE FOLLOWING ORDER:
 1. STAGE 1 OF WING FOOTINGS AND FLOOR SLAB INCLUDING 4" OF ALL VERTICAL WALLS.
 2. STAGE 2 OF WING FOOTINGS AND FLOOR SLAB INCLUDING 4" OF ALL VERTICAL WALLS.
 3. THE REMAINING PORTIONS OF THE WALLS AND WINGS FULL HEIGHT FOLLOWED BY ROOF SLAB, HEADWALLS AND SILLS.
 THE RESIDENT ENGINEER SHALL CHECK THE LENGTH OF CULVERT BEFORE STAKING IT OUT TO MAKE CERTAIN THAT IT WILL PROPERLY TAKE CARE OF THE FILL.
 DIMENSIONS FOR WING LAYOUT AS WELL AS ADDITIONAL REINFORCING STEEL EMBEDDED IN BARREL ARE SHOWN ON WING SHEET.
 TRANSVERSE CONSTRUCTION JOINTS SHALL BE USED IN THE BARREL, SPACED TO LIMIT THE POURS TO A MAXIMUM OF 70 FT. LOCATION OF JOINTS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.
 AT THE CONTRACTOR'S OPTION, HE MAY SPLICE THE VERTICAL REINFORCING STEEL IN THE INTERIOR FACE OF EXTERIOR WALL AND BOTH FACES OF INTERIOR WALLS ABOVE LOWER WALL CONSTRUCTION JOINT. THE SPLICE LENGTH SHALL BE AS PROVIDED IN THE SPLICE LENGTH CHART SHOWN ON THE PLANS. EXTRA WEIGHT OF STEEL DUE TO THE SPLICES SHALL BE PAID FOR BY THE CONTRACTOR.
 FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.
 A 3 FOOT STRIP OF FILTER FABRIC SHALL BE ATTACHED TO THE FILL FACE OF THE WING COVERING THE ENTIRE LENGTH OF THE EXPANSION JOINT.
 FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS
 FOR FALSEWORK AND FORM WORK, SEE SPECIAL PROVISIONS
 FOR CRANE SAFETY, SEE SPECIAL PROVISIONS
 FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS
 CONSTRUCT THE REINFORCED CONCRETE BOX CULVERT AT STATION 15+92+50 WITH 0" CAMBER TO ACCOUNT FOR ANTICIPATED SETTLEMENT.
 BACKFILL WITH SELECT MATERIAL, CLASS III MEETING THE REQUIREMENTS OF SECTION 1016 OF THE STANDARD SPECIFICATIONS.
 USE CLASS VI SELECT MATERIAL FOUNDATION CONDITIONING MATERIAL IN ACCORDANCE WITH SECTION 1016 OF THE STANDARD SPECIFICATIONS.

LOCATION SKETCH

GRADE POINT ELEVATION AT STATION 15+92.50 -L- = 387.74 FT
 BED ELEVATION AT STATION 15+92.50 -L- = 354.50 FT
 ROADWAY SLOPES 2:1



PROFILE ALONG CULVERT

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE			
BARREL @ 5.42	CY/FT	655.8	C.Y.
WINGS ETC.		40.1	C.Y.
TOTAL		695.90	C.Y.
REINFORCING STEEL			
BARREL		79517	LBS.
WINGS ETC.		2427	LBS.
TOTAL		81944	LBS.
FOUNDATION CONDITIONING MATERIAL		464	TONS *
CULVERT EXCAVATION			LUMP SUM

* INCLUDES 143 TONS FOR BACKFILL OF UNDERCUT

PROJECT NO. 17BP.8.R.127
MOORE COUNTY
 STATION: 15+92.50 -L-
 SHEET 1 OF 6 REPLACES BRIDGE NO. 212

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**TRIPLE 10 FT. X 10 FT.
 CONCRETE BOX CULVERT
 90° SKEW**

DocuSigned by:
 Robert C. Larson
 3/20/2018

DESIGN ENGINEER OF RECORD: [Signature] DATE: 3/20/2018
 DRAWN BY: K. SU DATE: 11/20/17
 CHECKED BY: R.C. LARSON DATE: 12/13/17

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

KCI Associates of North Carolina, P.A.		4005 FALLS OF NEVUE ROAD SUITE 200 RALEIGH, NC 27609-5900		SHEET NO. C-1	
DWG. REF. NO. 1 OF 6		REVISIONS		TOTAL SHEETS 6	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

**LOAD AND RESISTANCE FACTOR RATING (LRFR)
SUMMARY FOR REINFORCED CONCRETE BOX CULVERTS**

LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING #	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE								COMMENT NUMBER		
						MOMENT				SHEAR						
						LIVE-LOAD FACTORS (γ _L)	RATING FACTOR	BARREL NO.	ELEMENT TYPE	DISTANCE FROM LEFT END OF ELEMENT (ft)	RATING FACTOR	BARREL NO.	ELEMENT TYPE		DISTANCE FROM LEFT END OF ELEMENT (ft)	
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	①	1.58	--	1.75	8.77	3	TOP SLAB	0.00'	1.58	1	BOTTOM SLAB	0.00'		
	HL-93 (OPERATING)	N/A		2.05	--	1.35	11.37	3	TOP SLAB	0.00'	2.05	1	TOP SLAB	10.00'		
	HS-20 (INVENTORY)	36.000	②	2.11	75	1.75	11.42	2	TOP SLAB	0.00'	2.11	3	TOP SLAB	0.00'		
	HS-20 (OPERATING)	36.000		2.73	98	1.35	14.81	2	TOP SLAB	0.00'	2.73	3	TOP SLAB	0.00'		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH		8.84	119	1.40	45.33	2	TOP SLAB	0.00'	8.84	3	TOP SLAB	0.00'		
		SNGARBS2	20.000		6.08	121	1.40	33.24	2	TOP SLAB	0.00'	6.08	3	TOP SLAB	0.00'	
		SNAGRIS2	22.000		5.56	122	1.40	30.63	1	TOP SLAB	5.00'	5.56	3	TOP SLAB	0.00'	
		SNCOTTS3	27.250		4.37	162	1.40	21.60	2	TOP SLAB	0.00'	4.37	3	TOP SLAB	0.00'	
		SNAGGRS4	34.925		3.53	123	1.40	18.27	2	TOP SLAB	0.00'	3.53	3	TOP SLAB	0.00'	
		SNS5A	35.550		3.55	126	1.40	17.91	2	TOP SLAB	0.00'	3.55	3	TOP SLAB	0.00'	
		SNS6A	39.950		3.32	132	1.40	17.04	2	TOP SLAB	0.00'	3.32	1	BOTTOM SLAB	0.00'	
	SNS7B	42.000		3.13	131	1.40	16.37	2	TOP SLAB	0.00'	3.13	1	BOTTOM SLAB	0.00'		
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		3.86	127	1.40	20.70	2	TOP SLAB	0.00'	3.86	3	TOP SLAB	0.00'	
		TNT4A	33.075		4.08	134	1.40	20.88	2	TOP SLAB	0.00'	4.08	3	TOP SLAB	0.00'	
		TNT6A	41.600		3.34	138	1.40	17.32	2	TOP SLAB	0.00'	3.34	3	BOTTOM SLAB	0.00'	
		TNT7A	42.000		3.34	140	1.40	17.53	2	TOP SLAB	0.00'	3.34	3	TOP SLAB	0.00'	
		TNT7B	42.000		3.47	146	1.40	18.07	2	TOP SLAB	0.00'	3.47	1	BOTTOM SLAB	0.00'	
		TNAGRIT4	43.000		3.18	136	1.40	16.58	2	TOP SLAB	0.00'	3.18	3	TOP SLAB	0.00'	
TNAGT5A		45.000		3.11	139	1.40	16.77	2	TOP SLAB	0.00'	3.11	1	BOTTOM SLAB	0.00'		
TNAGT5B	45.000		③	2.94	132	1.40	15.69	2	TOP SLAB	0.00'	2.94	3	TOP SLAB	0.00'		

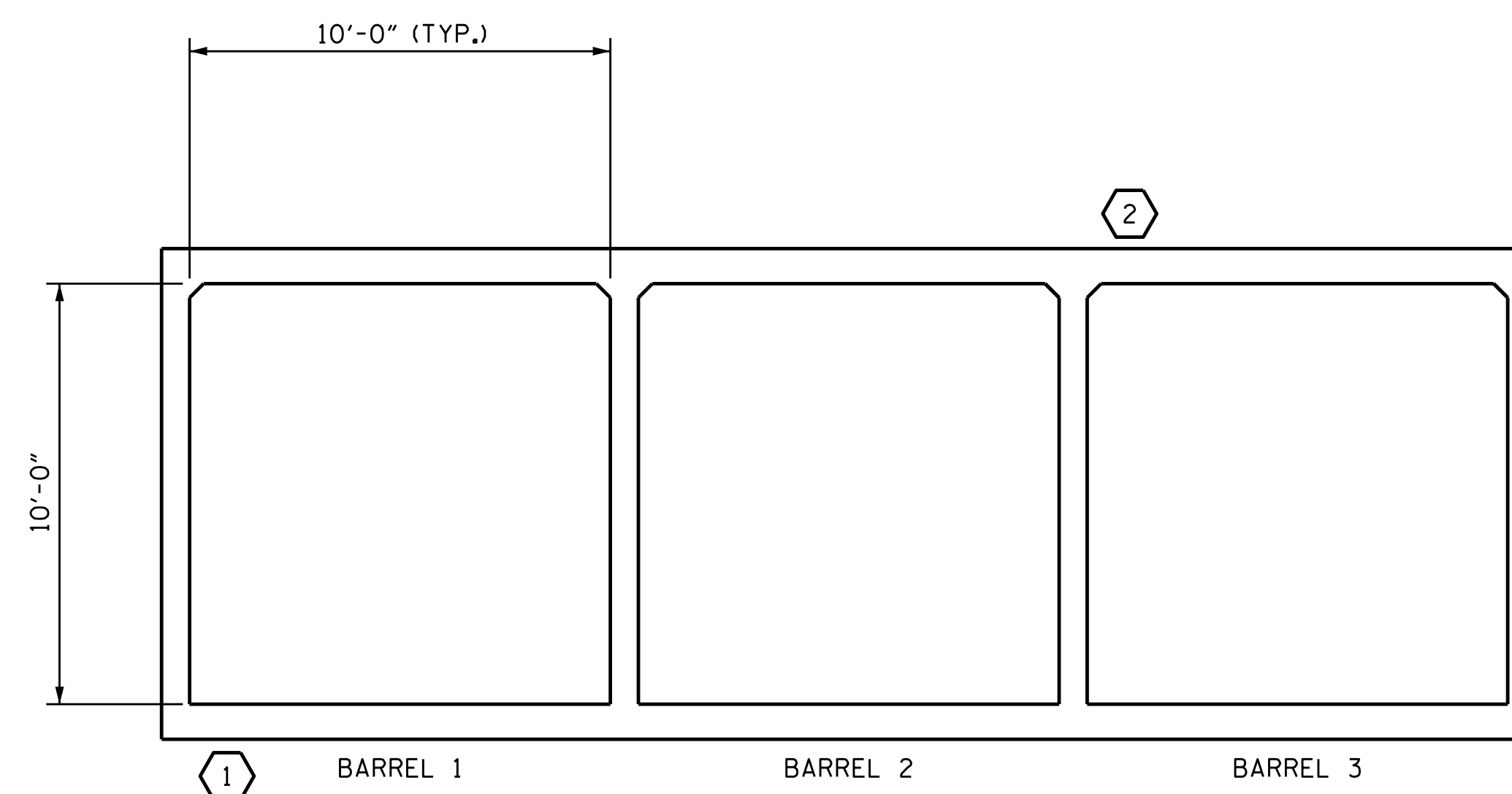
LOAD FACTORS:

LOAD TYPE	MAX FACTOR	MIN FACTOR
DC	1.25	0.90
DW	1.50	0.65
EV	1.30	0.90
EH	1.35	0.90
ES	1.35	0.90
LS	1.75	--
WA	1.00	--

NOTE:

RATING FACTORS ARE BASED ON THE STRENGTH I LIMIT STATE.

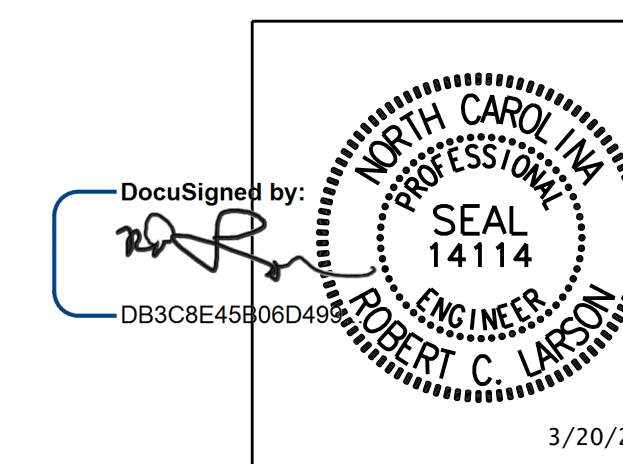
#	CONTROLLING LOAD RATING
①	DESIGN LOAD RATING (HL-93)
②	DESIGN LOAD RATING (HS-20)
③	LEGAL LOAD RATING **
** SEE CHART FOR VEHICLE TYPE	



LRFR SUMMARY
(LOOKING UPSTREAM)

PROJECT NO. 17BP.8.R.127
MOORE COUNTY
STATION: 15+92.50 -L-

SHEET 2 OF 6



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
LRFR SUMMARY FOR
REINFORCED CONCRETE
BOX CULVERTS
(NON-INTERSTATE TRAFFIC)

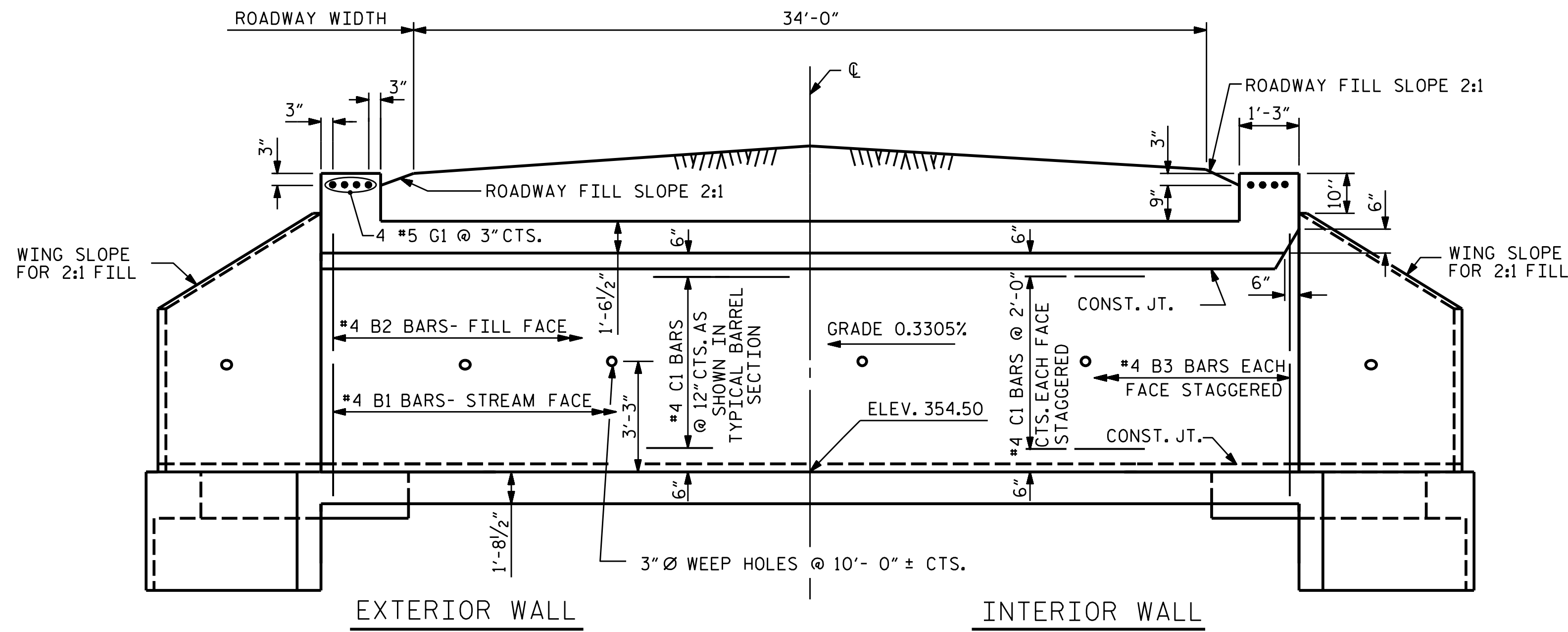
DESIGN ENGINEER OF RECORD	DATE: 3/20/2018
ASSEMBLED BY: K. SU	DATE: 12/12/17
CHECKED BY: R. A. PRUETT	DATE: 12/14/17
DRAWN BY: WMC	REV. 10/1/11 MAA/GM

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

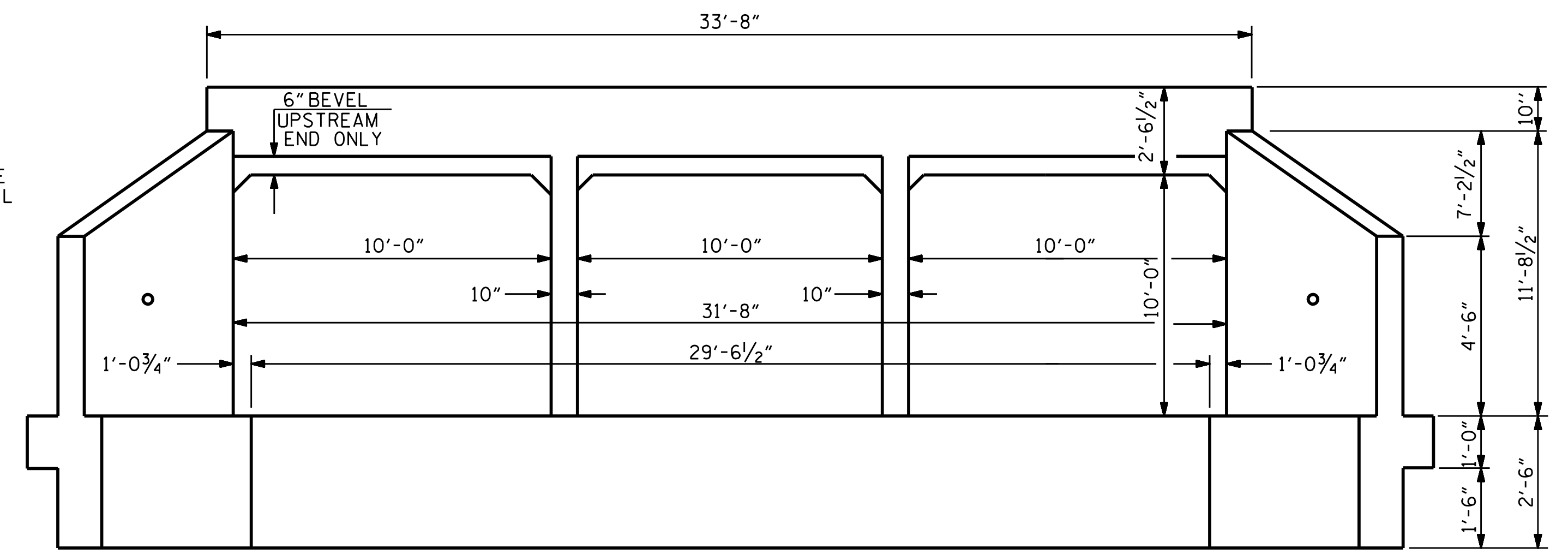
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-2
1			3			TOTAL SHEETS
2			4			6

DWG. REF. NO. 2 OF 6

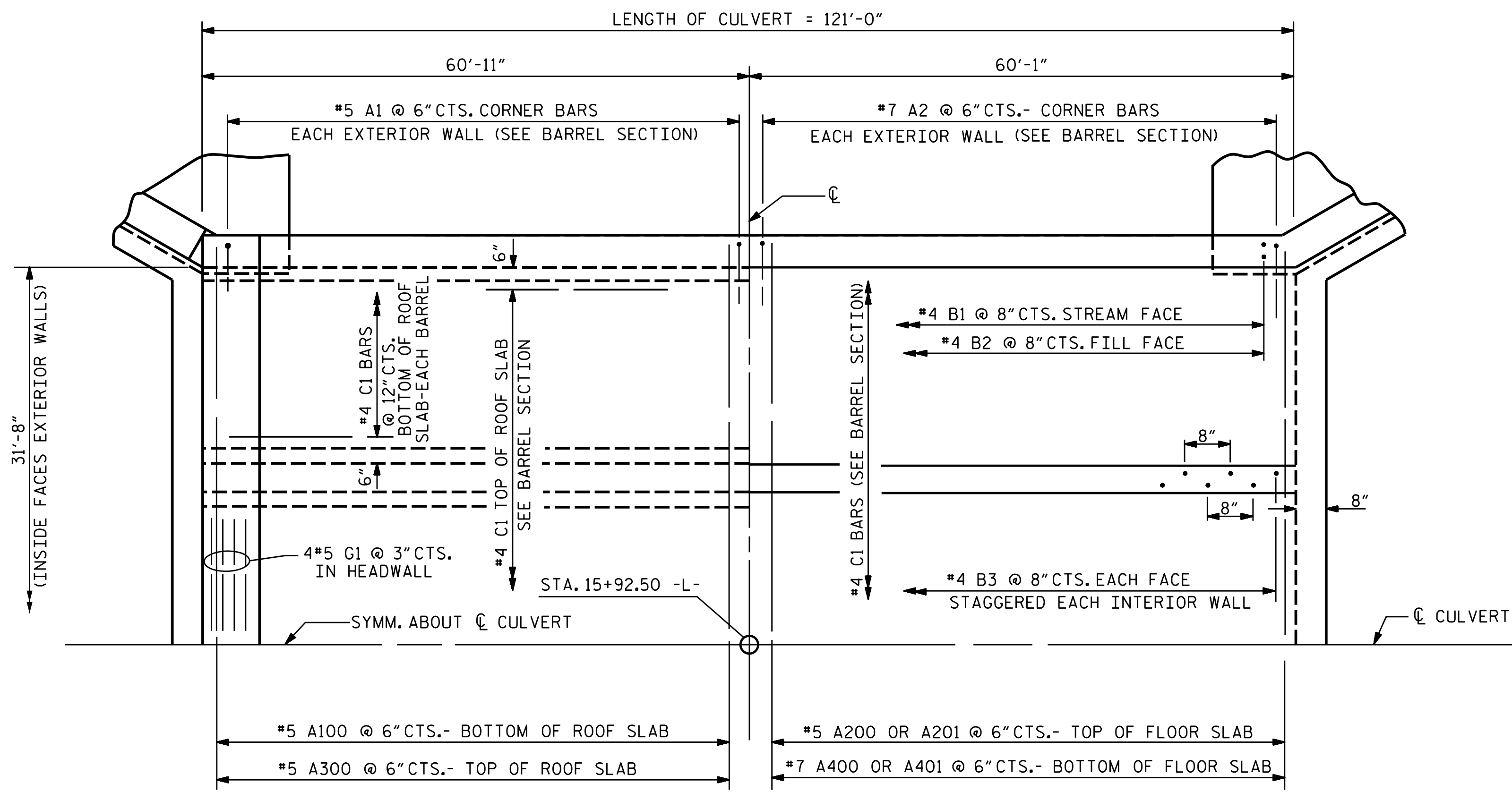
STD. NO. LRFR5



CULVERT SECTION NORMAL TO ROADWAY

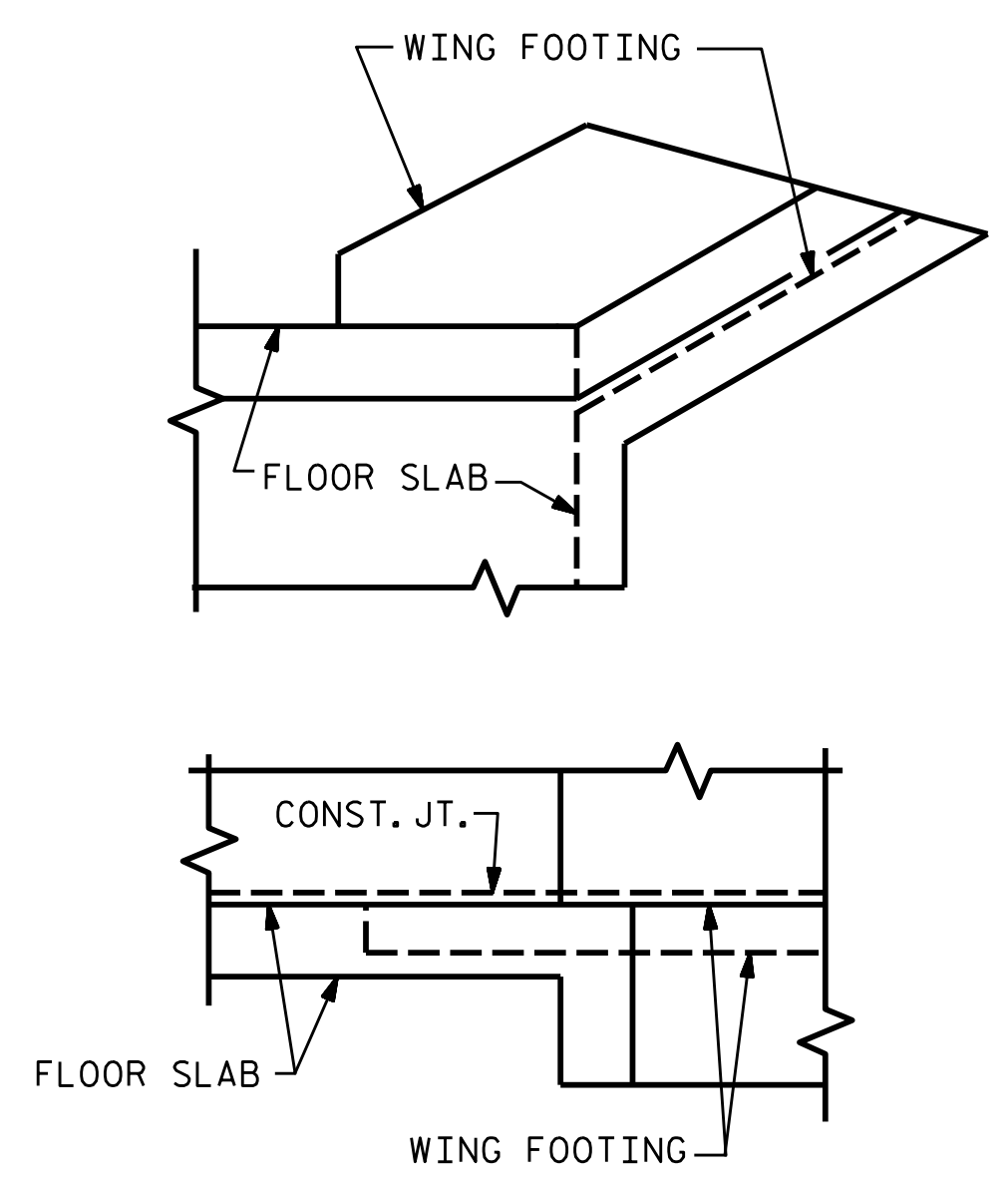


END ELEVATION



PART PLAN - ROOF SLAB

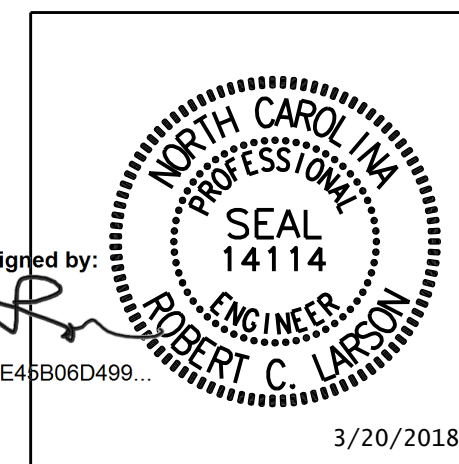
PART PLAN - FLOOR SLAB



CONNECTION OF WING FOOTING AND FLOOR SLAB WHEN SLAB IS THICKER THAN FOOTING

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

PROJECT NO. 17BP.8.R.127
MOORE COUNTY
 STATION: 15+92.50 -L-
 SHEET 3 OF 6



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**BARREL STANDARD
 TRIPLE 10 FT. X 10 FT.
 CONCRETE BOX CULVERT
 90° SKEW**

REVISED 8-28-92 BY E.L.R. CHECKED BY G.R.P.
 REDRAWN NOV. 1990 BY T.S.S. CHECKED BY A.R.B.
 REVISED 11-19-99 BY M.M. CHECKED BY R.M.W.

DESIGN ENGINEER OF RECORD: Robert C. Larson DATE: 3/20/2018
 ASSEMBLED BY: K. SU DATE: 12/06/17
 CHECKED BY: R. C. LARSON DATE: 12/13/17
 DRAWN BY: JOEL JOHNSON DATE: MAR. 1971
 CHECKED BY: GARY BROOME DATE: MAR. 1971

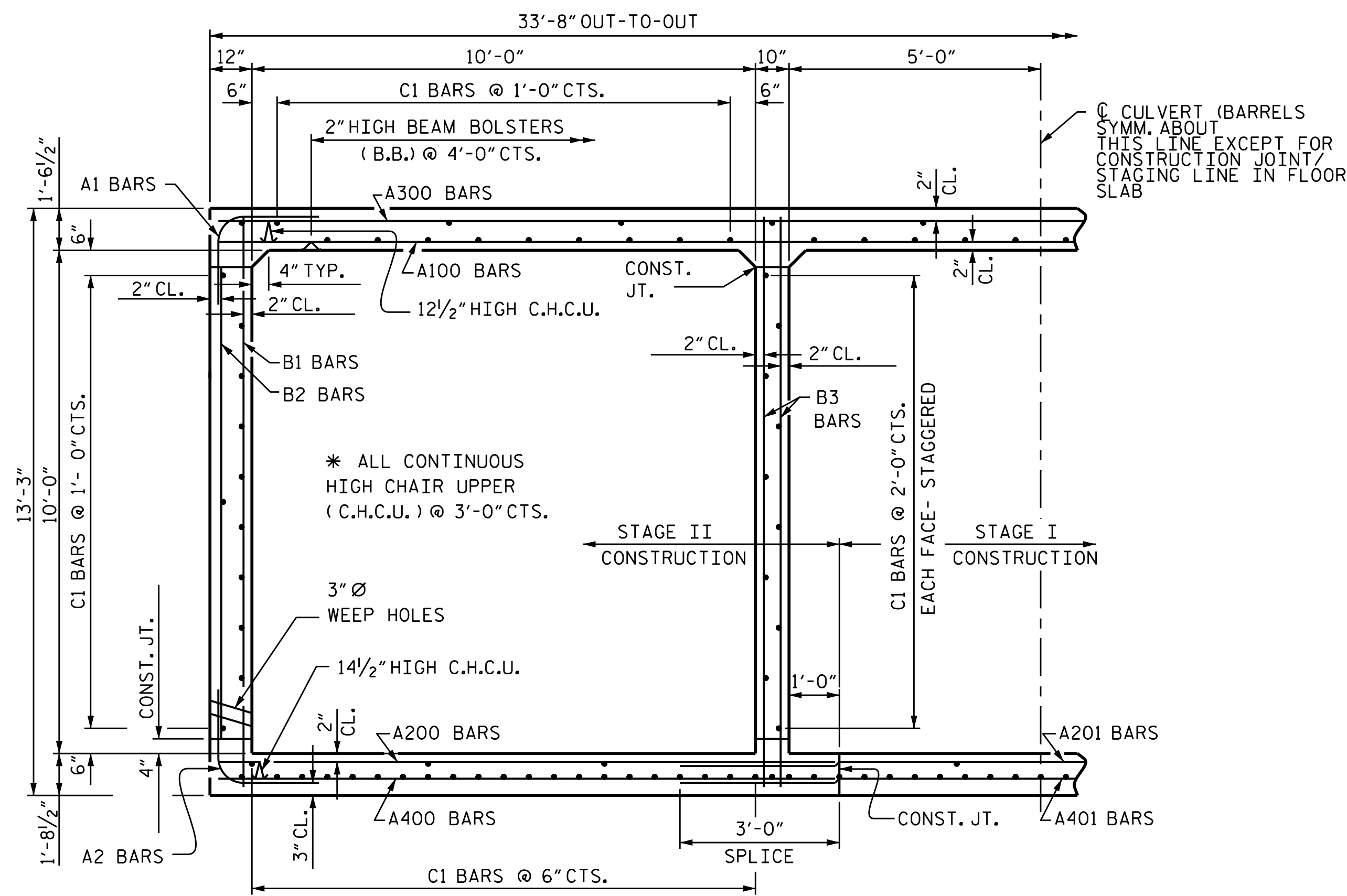
**SPECIAL
 STANDARD**

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

KCI Associates of North Carolina, P.A.
 4000 FALLS OF NEUSE ROAD SUITE 600
 RALEIGH, NC 27609-5200
 PHONE 919-871-0101
 LICENSE NUMBER C-954
 DWG. REF. NO. 3 OF 6

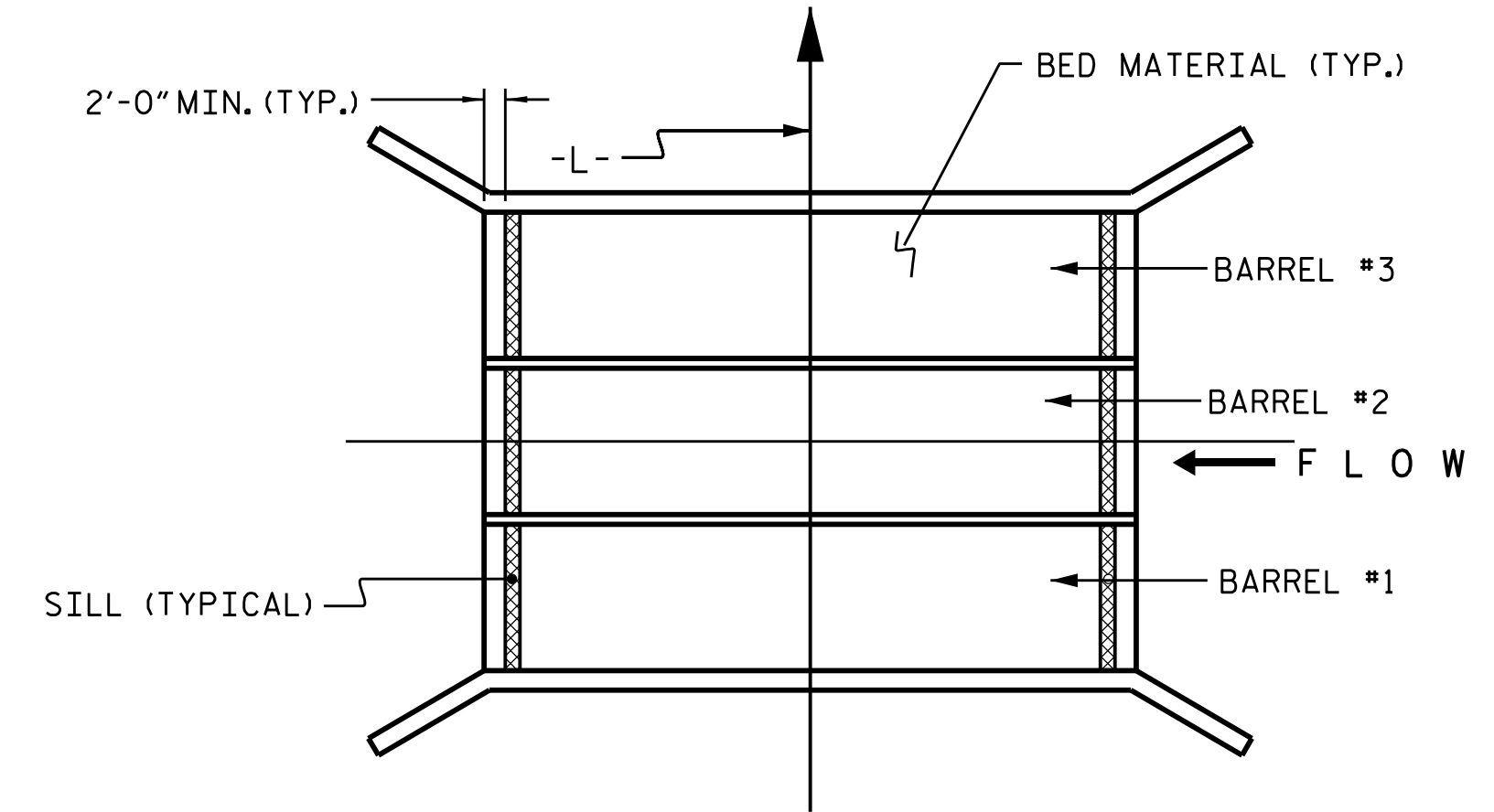
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

TOTAL SHEETS: 6



RIGHT ANGLE SECTION OF BARREL

LOOKING DOWNSTREAM
THERE ARE 155 "C" BARS IN SECTION OF BARREL



PLAN OF SILLS

2 SILLS REQUIRED IN EACH BARREL

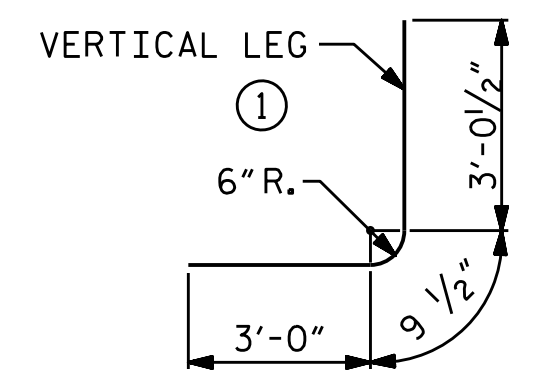
NOTE:
BED MATERIAL PLACED BETWEEN SILLS IN THE CULVERT SHALL PROVIDE A CONTINUOUS LOW FLOW CHANNEL BETWEEN THE LOWER SILLS. THE MATERIAL SHALL BE NATURAL STONE WITH A GRADATION SIZE SIMILAR TO THAT OF CLASS B RIP RAP. STONES LARGER THAN 8 INCHES SHALL NOT BE PLACED WITHIN THE LOW FLOW CHANNEL. BED MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER.

NATIVE MATERIALS CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM BED OR FLOODPLAIN AT THE PROJECT SITE DURING CULVERT CONSTRUCTION. ONLY MATERIAL THAT IS EXCAVATED FROM THE STREAM BED MAY BE USED TO LINE THE LOW FLOW CULVERT BARREL. RIP RAP MAY BE USED TO SUPPLEMENT THE NATIVE MATERIAL IN THE HIGH FLOW BARREL. IF RIP RAP IS USED TO LINE THE HIGH FLOW CULVERT BARREL, NATIVE MATERIAL SHOULD BE PLACED ON TOP TO FILL VOIDS AND PROVIDE A FLAT SURFACE FOR ANIMAL PASSAGE. NATIVE MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS. THE ENTIRE COST OF WORK TO REPLACE EXCAVATED OR SUPPLEMENTAL MATERIAL SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR CULVERT EXCAVATION.

BED MATERIAL; SAND, SMALL TO MEDIUM ROCKS, SMALL BOULDERS

REINFORCING STEEL SCHEDULE					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1	484	5	1	6'-10"	3450
A2	484	7	1	6'-10"	6760
A100	242	5	STR.	33'-4	8414
A200	242	5	STR.	12'-7"	3176
A201	242	5	STR.	23'-8"	5974
A300	242	5	STR.	33'-4"	8414
A400	242	7	STR.	12'-7"	6224
A401	242	7	STR.	23'-8"	11707
B1	364	4	STR.	12'-10"	3120
B2	364	4	STR.	9'-2"	2229
B3	724	4	STR.	12'-10"	6207
*C1	775	4	STR.	26'-1"	13503
D1	18	6	STR.	2'-3"	61
G1	8	5	STR.	33'-4"	278

REINFORCING STEEL (BARREL) LB. 79517



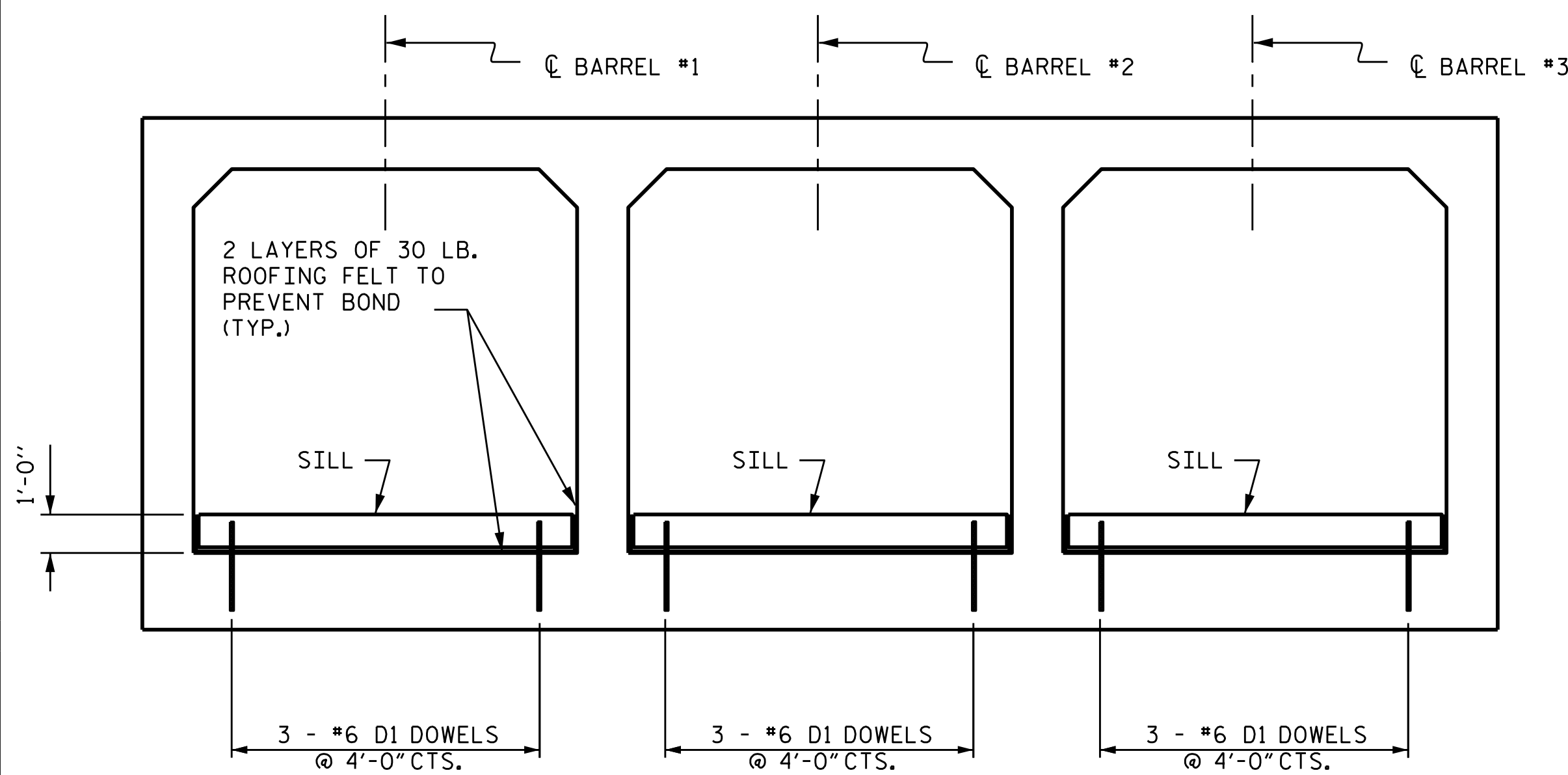
BAR TYPE

BAR DIMENSIONS ARE OUT TO OUT

* FIVE BAR RUNS

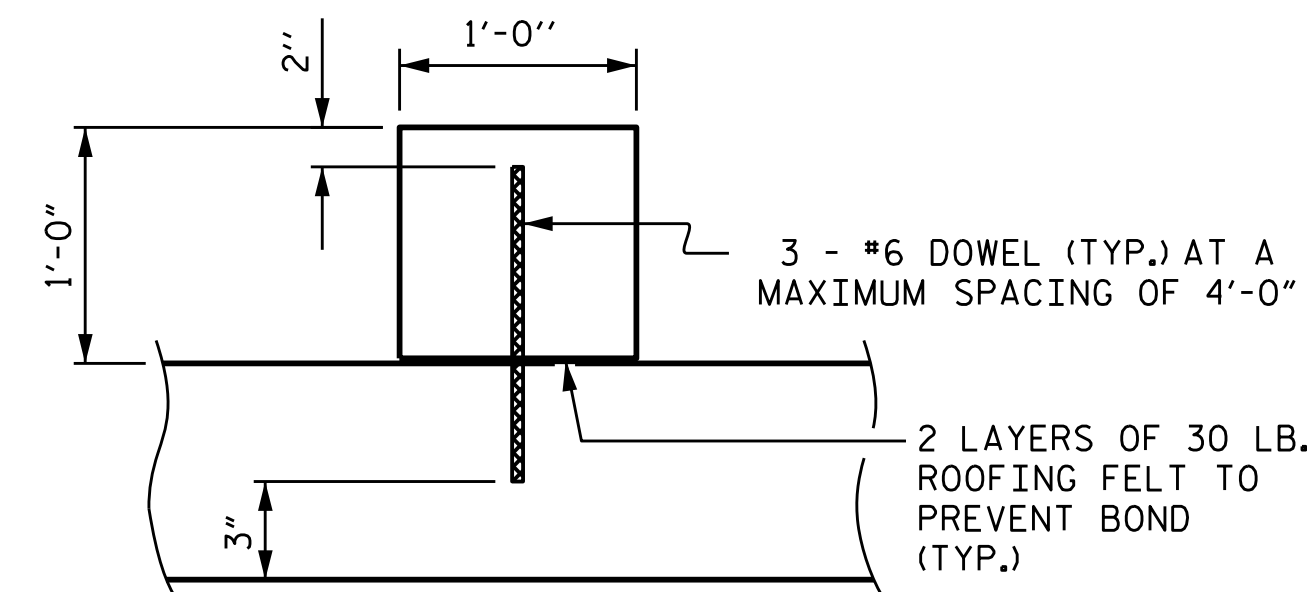
REINFORCING SPLICE LENGTH CHART	
BAR	SPLICE
#4 C1	2'-5"
#4 "B"	1'-5"

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS



ELEVATION

LOOKING DOWNSTREAM



SECTION THROUGH SILL

* DOWELS MAY BE PUSHED INTO GREEN CONCRETE AFTER SLAB HAS BEEN FLOAT FINISHED.

PROJECT NO. 17BP.8.R.127
MOORE COUNTY
STATION: 15+92.50 -L-

SHEET 4 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
BARREL SECTION
TRIPLE 10 FT. X 10 FT.
CONCRETE BOX CULVERT
90° SKEW

DocuSigned by:

DB3C8E45B06D499...
3/20/2018

KCI Associates
of North Carolina, P.A.
4005 FALLS OF NEVE ROAD
RALEIGH, NC 27609
919.783.5241

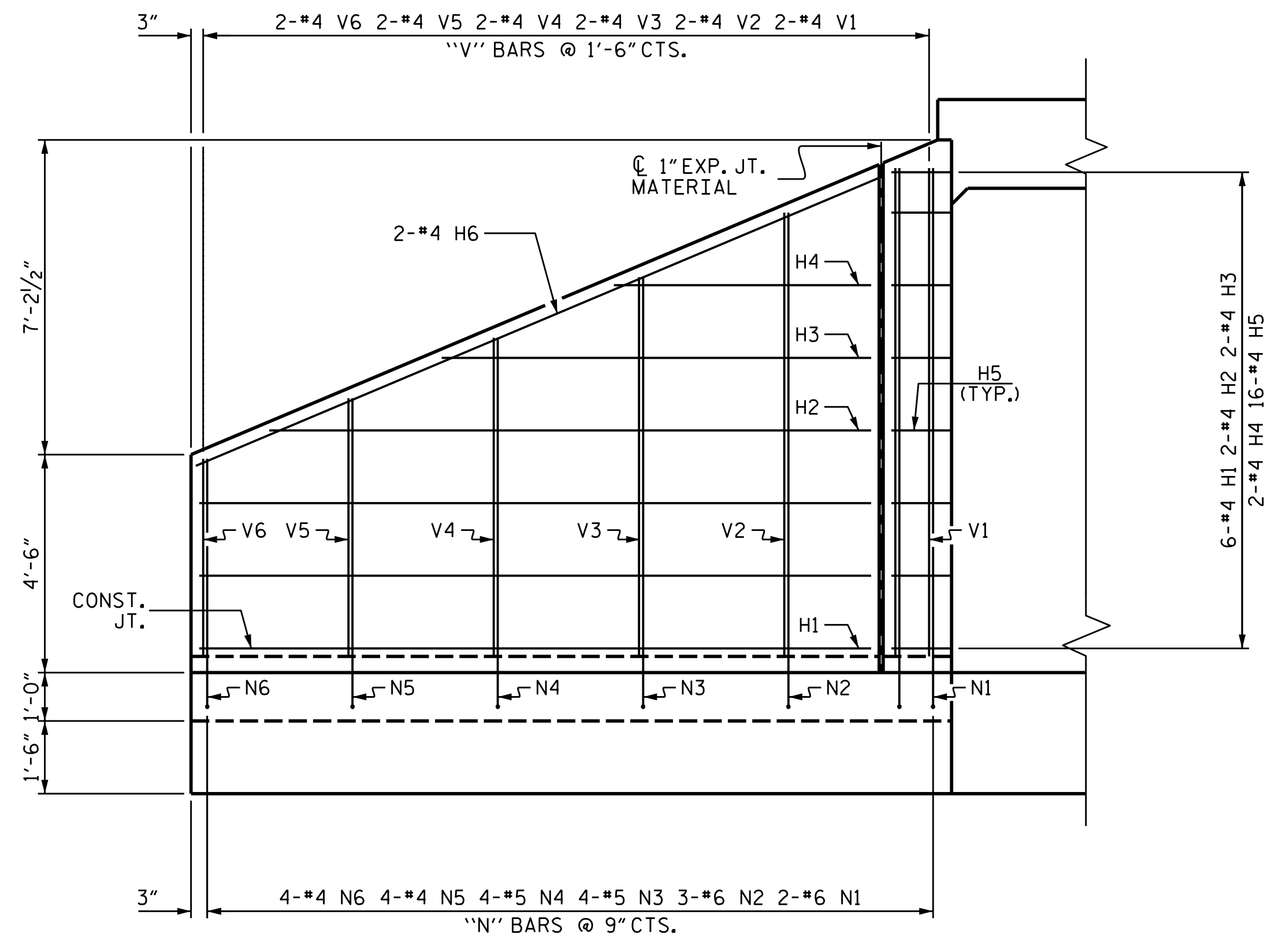
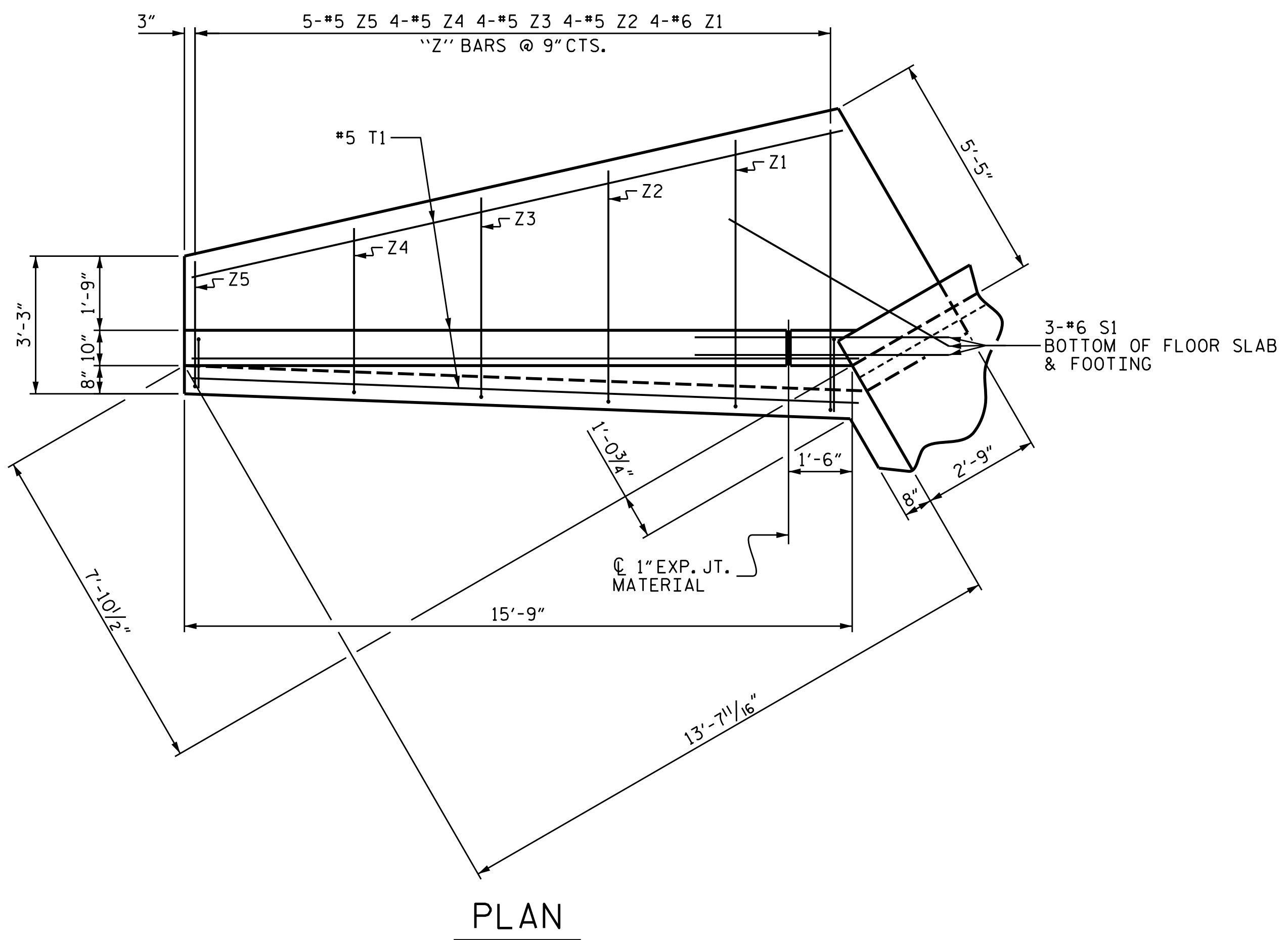
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

DESIGN ENGINEER OF RECORD: DATE: 3/20/2018
DRAWN BY: K. SU DATE: 12/08/17
CHECKED BY: R.C. LARSON DATE: 12/13/17

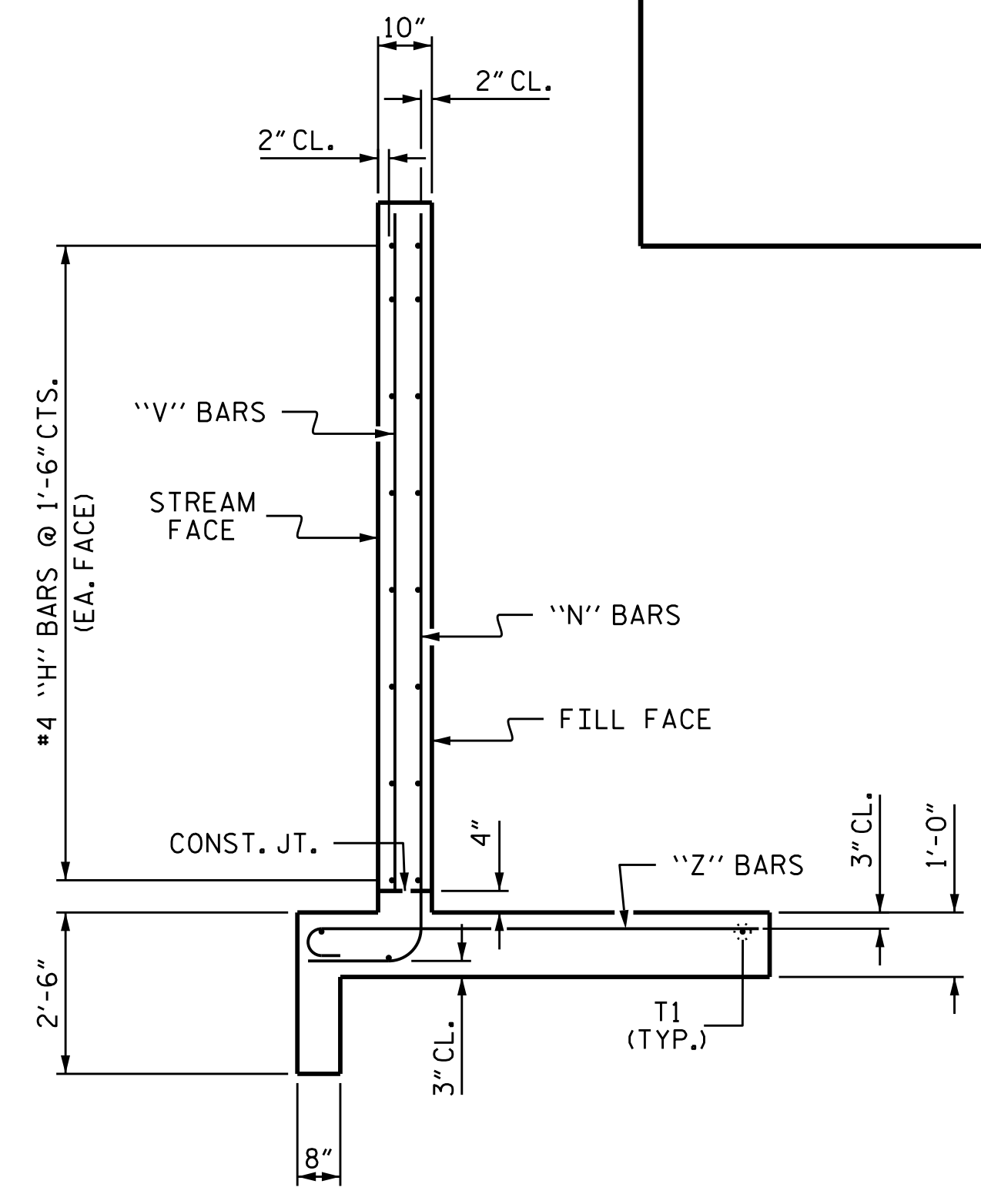
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

DWG. REF. NO. 4 OF 6

SHEET NO.
C-4
TOTAL SHEETS
6



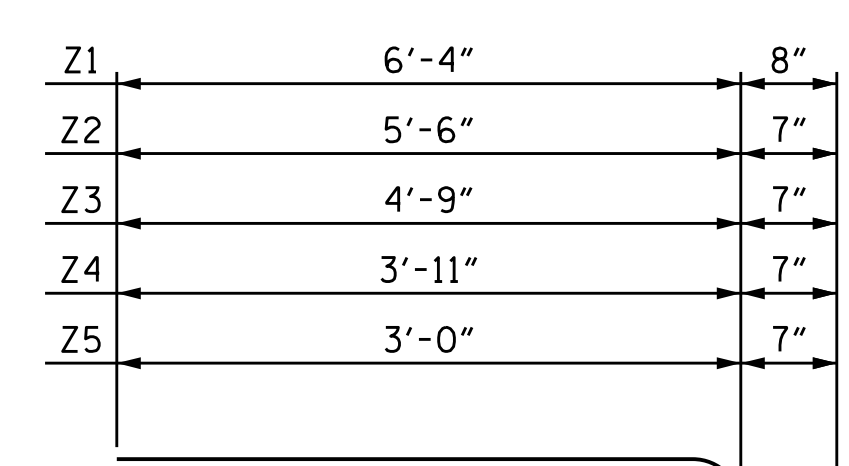
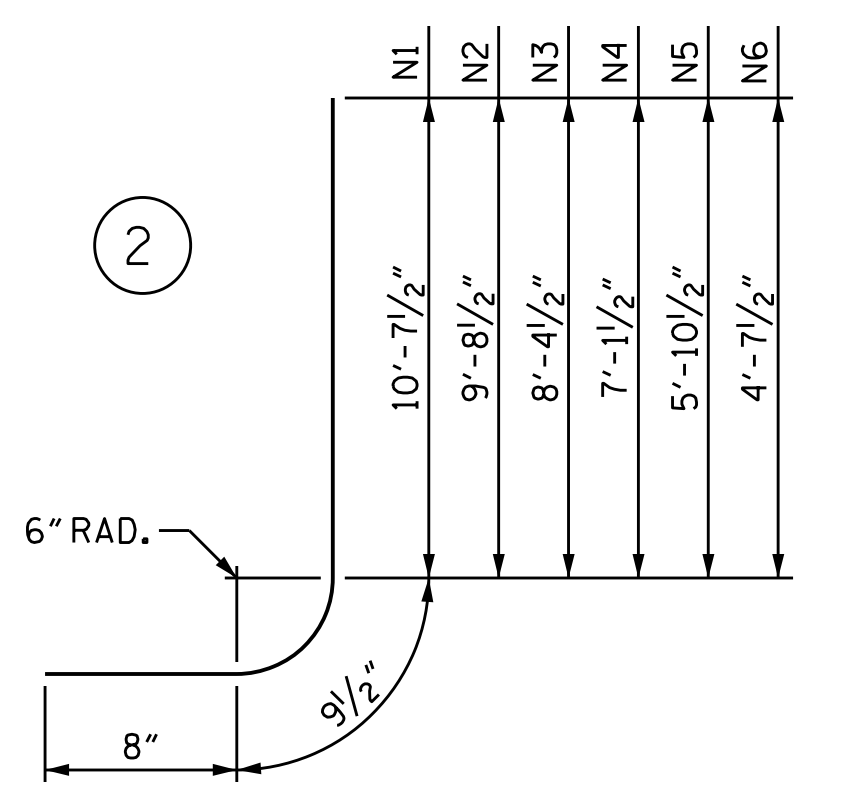
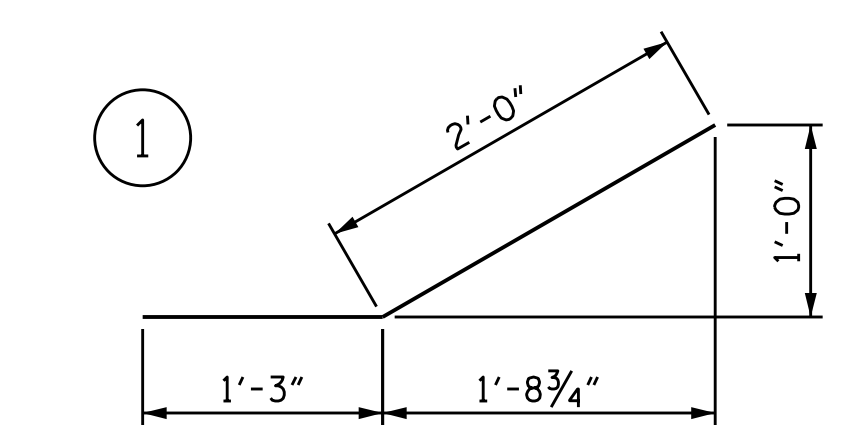
ELEVATION



TYPICAL WING SECTION

BAR TYPES

ALL BAR DIMENSIONS ARE OUT TO OUT.



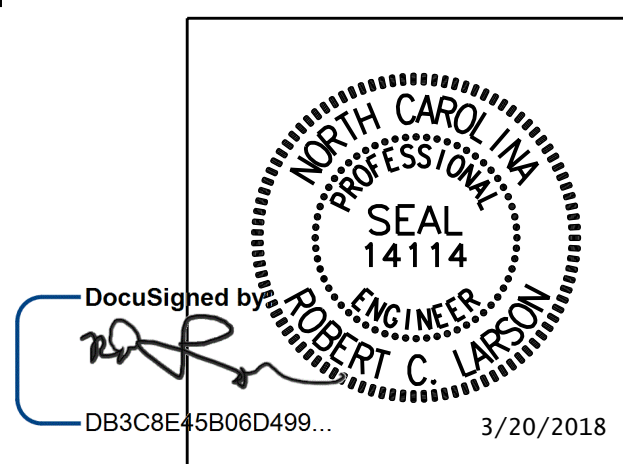
BILL OF MATERIAL

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H1	24	#4	STR	13'-10"	222
H2	8	#4	STR	12'-5"	66
H3	8	#4	STR	8'-10"	47
H4	8	#4	STR	5'-4"	29
H5	64	#4	1	3'-3"	139
H6	8	#4	STR	15'-5"	82
N1	8	#6	2	12'-1"	146
N2	12	#6	2	11'-2"	201
N3	16	#5	2	9'-10"	164
N4	16	#5	2	8'-7"	143
N5	16	#4	2	7'-4"	78
N6	16	#4	2	6'-1"	65
S1	12	#6	STR	6'-0"	108
T1	12	#5	STR	15'-9"	197
V1	8	#4	STR	10'-1"	54
V2	8	#4	STR	9'-2"	49
V3	8	#4	STR	7'-10"	42
V4	8	#4	STR	6'-7"	35
V5	8	#4	STR	5'-4"	29
V6	8	#4	STR	4'-1"	22
Z1	16	#6	3	7'-0"	168
Z2	16	#5	3	6'-1"	102
Z3	16	#5	3	5'-4"	89
Z4	16	#5	3	4'-6"	75
Z5	20	#5	3	3'-7"	75

REINFORCING STEEL FOR 4 WINGS 2427 LBS

CLASS A CONCRETE	
4 WINGS	31.2 CY
2 HEADWALLS	3.1 CY
END CURTAIN WALLS	3.6 CY
SILLS	2.2 CY
TOTAL	40.1 CY

DESIGN ENGINEER OF RECORD: DATE: 3/20/2018
 ASSEMBLED BY: K. SU DATE: 12/08/17
 CHECKED BY: R. C. LARSON DATE: 12/13/17
 DRAWN BY: CCJ 10/99
 CHECKED BY: RWW 03/00



PROJECT NO. 17BP.8.R.127
 MOORE COUNTY
 STATION: 15+92.50 -L-

SHEET 5 OF 6
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD WINGS
 FOR
 CONCRETE BOX CULVERT
 H = 10'-0" SLOPE = 2:1
 90° SKEW

DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

KCI Associates of North Carolina, P.A.
 REGISTERED PROFESSIONAL ENGINEERS & ARCHITECTS
 LICENSE NUMBER: C-0187
 DWG. REF. NO. 5 OF 6

STD. NO. CW9010

