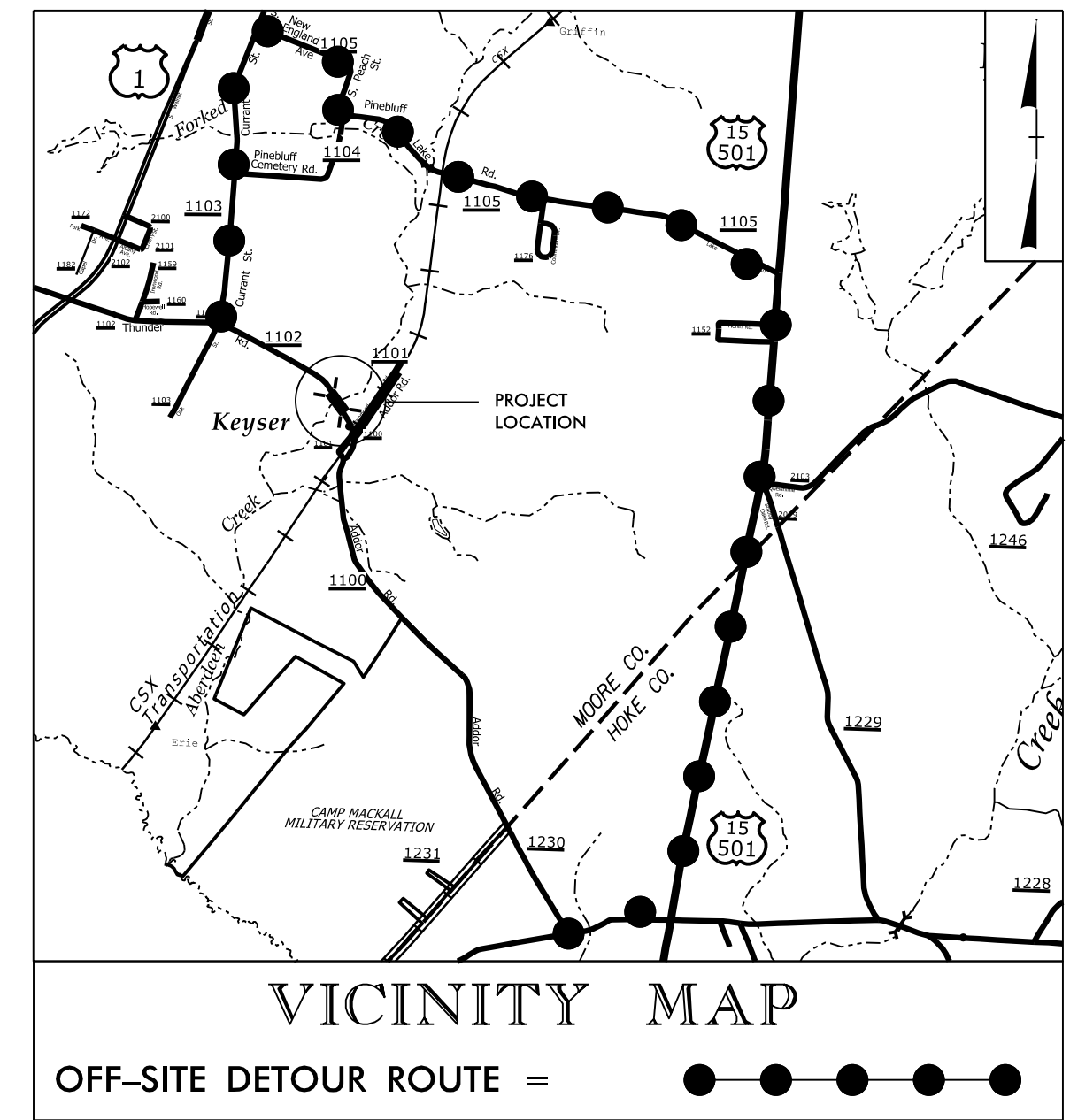


09_08/2017

TIP PROJECT: B-5758

CONTRACT: DH00237

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

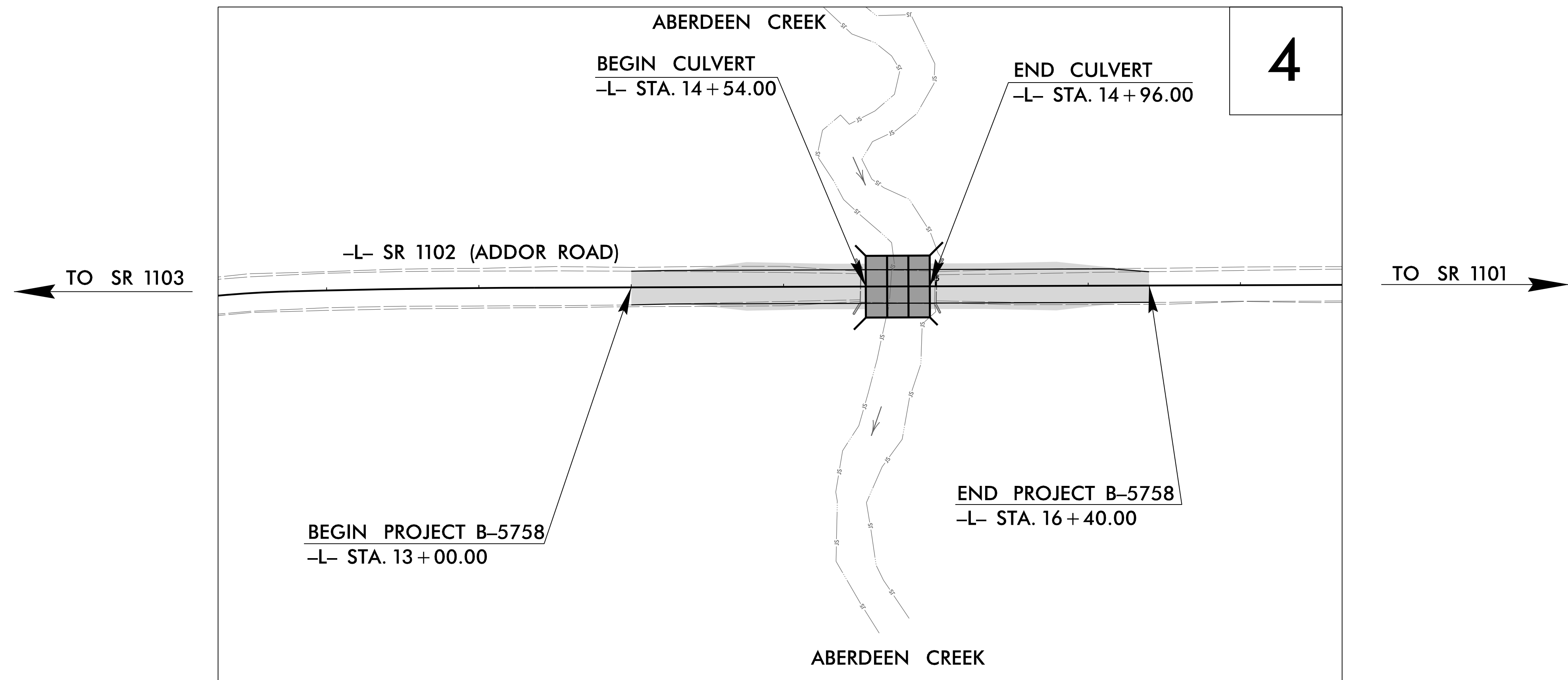
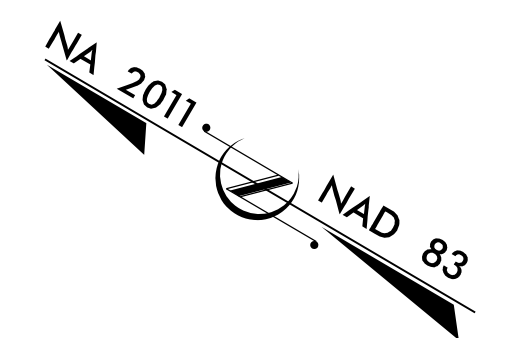


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
MOORE COUNTY

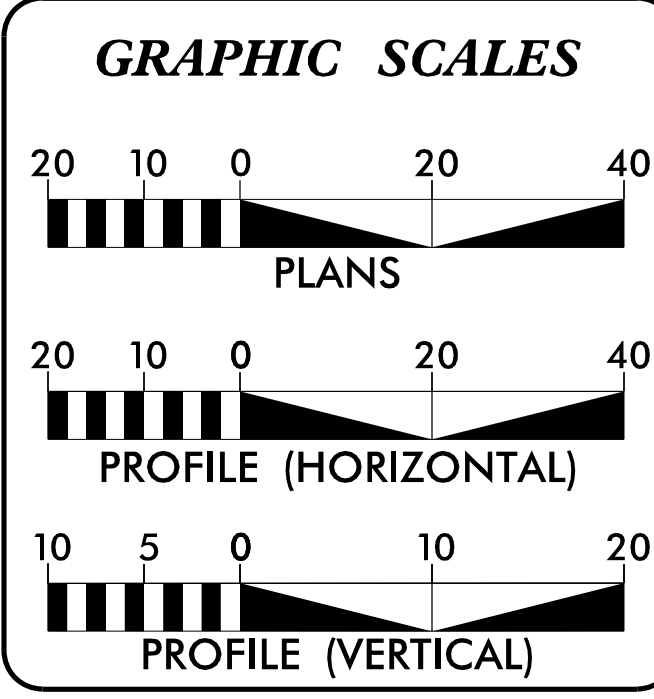
**LOCATION: BRIDGE NO. 13 OVER ABERDEEN CREEK ON SR 1102
(ADDOR ROAD)**

TYPE OF WORK: GRADING, DRAINAGE, PAVING & CULVERT

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5758	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45714.1.1		PE	
45714.1.1		RW & UTILITIES	
45714.3.1		CONST.	



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



DESIGN DATA

ADT = 1,200

V = 60 MPH
* TTST = DUAL
FUNC CLASS =
MINOR COLLECTOR
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT B-5758 = 0.056 MI
LENGTH OF STRUCTURE PROJECT B-5758 = 0.008 MI
TOTAL LENGTH OF PROJECT B-5758 = 0.064 MI

Prepared in the Office of:
SEPI
ENGINEERING & CONSTRUCTION
1025 Wade Avenue
Raleigh, NC 27605
Tel: 919-789-5977
Fax: 919-789-9591
License: C-2197

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

LETTING DATE:
APRIL 25, 2017

BEN CRAWFORD, PE
PROJECT ENGINEER

MATTHEW COPPLE, PE
PROJECT DESIGN ENGINEER

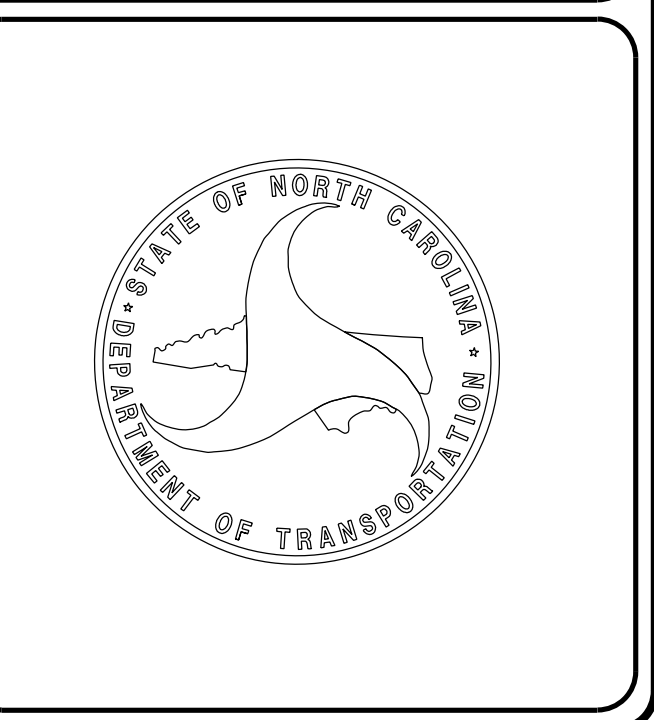
TIM WELCH, PE
NCDOT CONTACT

HYDRAULICS ENGINEER

3/30/2017
DocuSigned by:
Andrew M Howell
SIGNATURE

ROADWAY DESIGN ENGINEER

3/31/2017
DocuSigned by:
Benjamin R. Crawford
SIGNATURE



8/17/99

SHEET NUMBER	SHEET
	INDEX OF SHEETS
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL PLAN SHEET SYMBOLS
1C-1	SURVEY CONTROL SHEET
2A-1	PAVEMENT SCHEDULE, WEDGING DETAIL, AND TYPICAL SECTIONS
3B-1	SUMMARY OF EARTHWORK, GUARDRAIL SUMMARY, AND REMOVAL OF ASPHALT PAVEMENT SUMMARY
4	PLAN SHEET
5	PROFILE SHEET
TMP-1 THRU TMP-4	TRANSPORTATION MANAGEMENT PLANS
PMP-1 THRU PMP-2	PAVEMENT MARKING PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
UC-1 THRU UC-4	UTILITY CONSTRUCTION PLANS
UO-1 THRU UO-3	UTILITIES BY OTHERS PLANS
X-1	CROSS-SECTION SUMMARY SHEET
X-2 THRU X-5	CROSS-SECTIONS
C-1 THRU C-8	CULVERT PLANS

GENERAL NOTES: 2012 SPECIFICATIONS
EFFECTIVE: 01-17-2012
REVISED: 10-31-2014

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 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.

TEMPORARY SHORING:
SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

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

UTILITIES:
UTILITY OWNERS ON THIS PROJECT ARE
Duke Energy - Power (Distribution)
Windstream - Communications
Charter Communications (AKA Time Warner Cable) - Communications
Moore Co. Public Works - Domestic Water
Moore Co. Public Works - Sanitary Sewer Outfall
Town of Southern Pines - Water Treatment Plant Discharge

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON PLANS.

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

2012 ROADWAY ENGLISH STANDARD DRAWINGS

EFF. 01-17-2012
REV. 02-29-2016

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2012 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 Super-elevation - Two Lane Pavement
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Super-elevated Curve - Method I
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
862.01	Guardrail Placement
862.02	Guardrail Installation
876.01	Rip Rap in Channels

PROJECT REFERENCE NO. <i>B-5758</i>	SHEET NO. <i>1A</i>
ROADWAY DESIGN ENGINEER	
<i>Benjamin R. Crawford</i> <small>DocuSigned By: Benjamin R. Crawford</small>	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

SEPI
ENGINEERING & CONSTRUCTION

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License: C-2197

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

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

04/06/15

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
Property Corner	-----
Property Monument	□ ECM
Parcel/Sequence Number	⑩ 23
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	☠ ☠
Potential Contamination Area: Soil	☒ ☒
Known Contamination Area: Water	☠ ☠
Potential Contamination Area: Water	☒ ☒
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:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	○ R/W
Proposed Right of Way Line with Iron Pin and Cap Marker	○ R/W ▲
Proposed Right of Way Line with Concrete or Granite RW Marker	▲ R/W
Proposed Control of Access Line with Concrete C/A Marker	○ C/A
Existing Control of Access	○ C/A
Proposed Control of Access	○ C/A
Existing Easement Line	-E-
Proposed Temporary Construction Easement	-E-
Proposed Temporary Drainage Easement	-TDE-
Proposed Permanent Drainage Easement	-PDE-
Proposed Permanent Drainage / Utility Easement	-DUE-
Proposed Permanent Utility Easement	-PUE-
Proposed Temporary Utility Easement	-TUE-
Proposed Aerial Utility Easement	-AUE-
Proposed Permanent Easement with Iron Pin and Cap Marker	◆

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	☀
Hedge	▬
Woods Line	▬

Orchard	☀ ☀ ☀ ☀
Vineyard	□ 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	○ P
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	○ T
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.*)	-----TFD-----
U/G Fiber Optics Cable LOS C (S.U.E.*)	-----TFD-----
U/G Fiber Optics Cable LOS D (S.U.E.*)	-----TFD-----

WATER:

Water Manhole	○ W
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-----

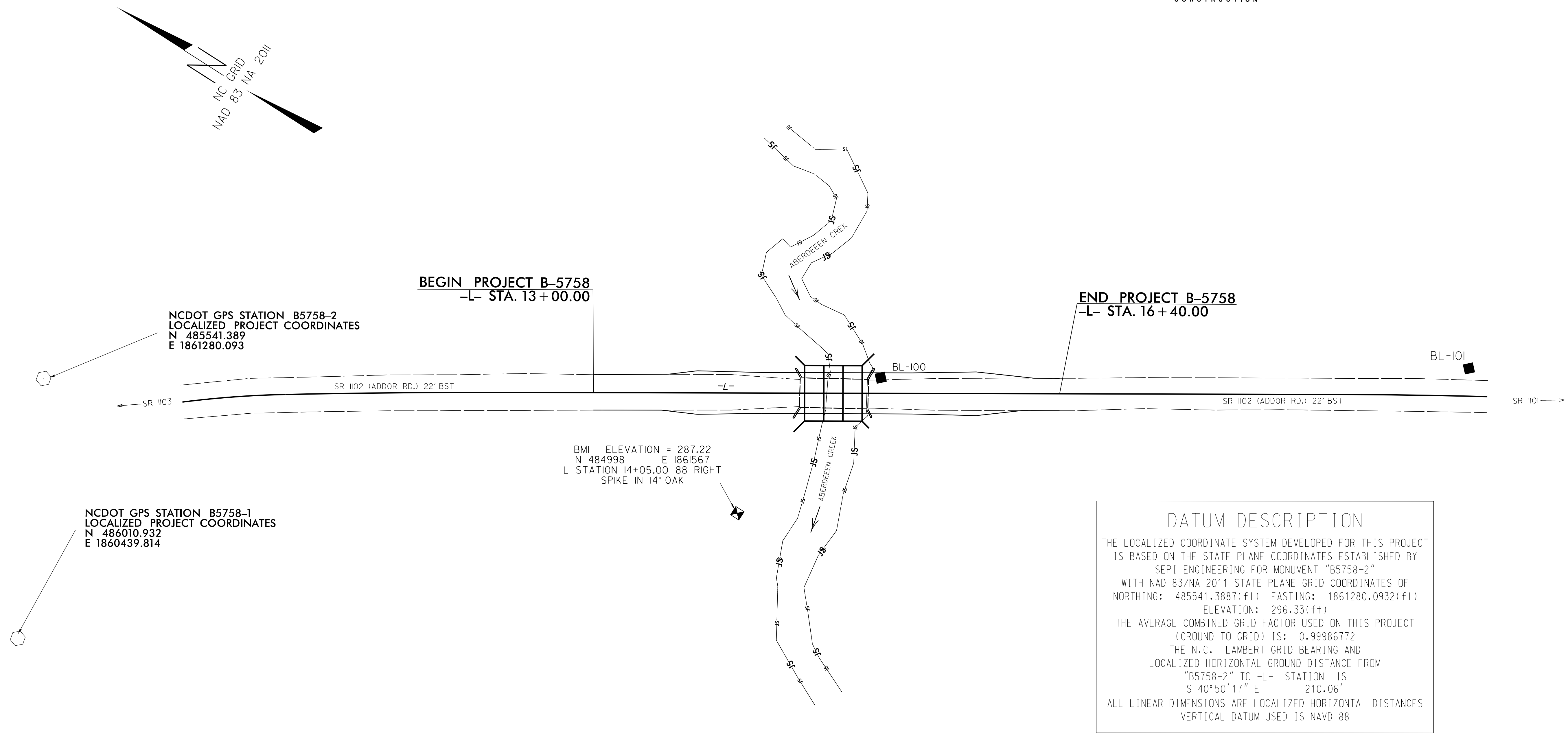
MISCELLANEOUS:

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 B-5758

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



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY SEPI ENGINEERING FOR MONUMENT "B5758-2" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 485541.3887(±) EASTING: 1861280.0932(±) ELEVATION: 296.33(±±)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99986772

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B5758-2" TO -L- STATION IS S 40°50'17" E 210.06'

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

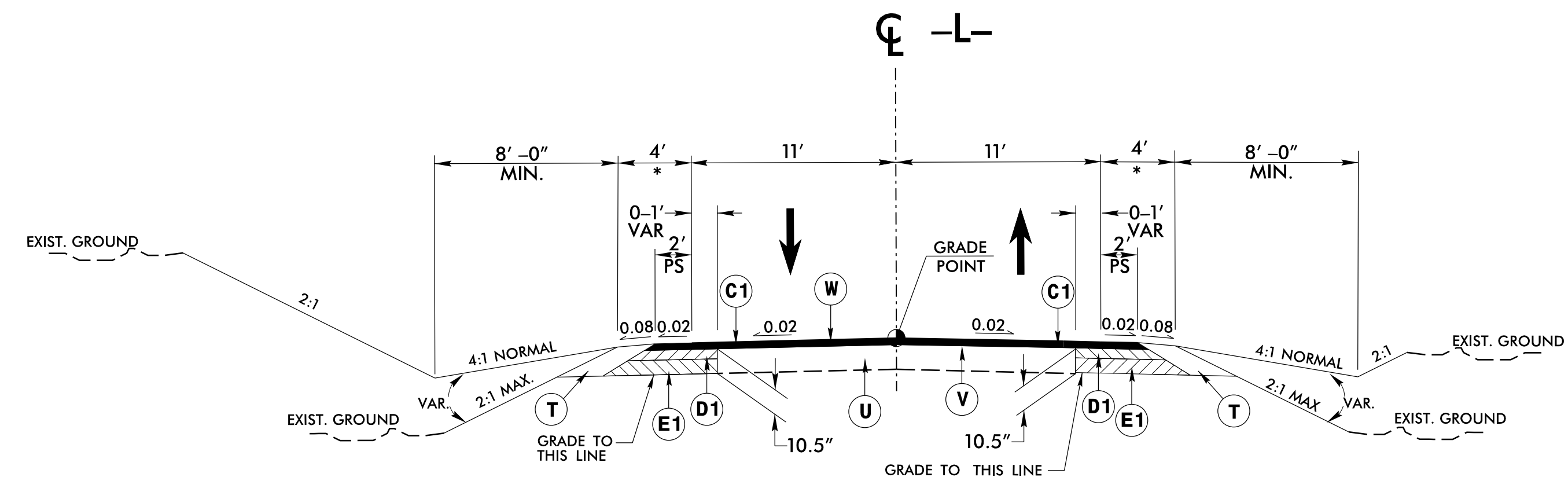
BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	B5758-1	486010.9324	1860439.8137	333.36	OUTSIDE PROJECT LIMITS	
2	B5758-2	485541.3887	1861280.0932	296.33	OUTSIDE PROJECT LIMITS	
100	BL-100	484963.0004	1861706.8870	287.89	15+09.54	11.37 LT
101	BL-101	484605.3354	1861943.7871	286.99	19+38.07	20.20 LT

.....
 BM1 ELEVATION = 287.22
 N 484998 E 1861567
 L STATION 14+05.00 88 RIGHT
 SPIKE IN 14" OAK

NOTES:

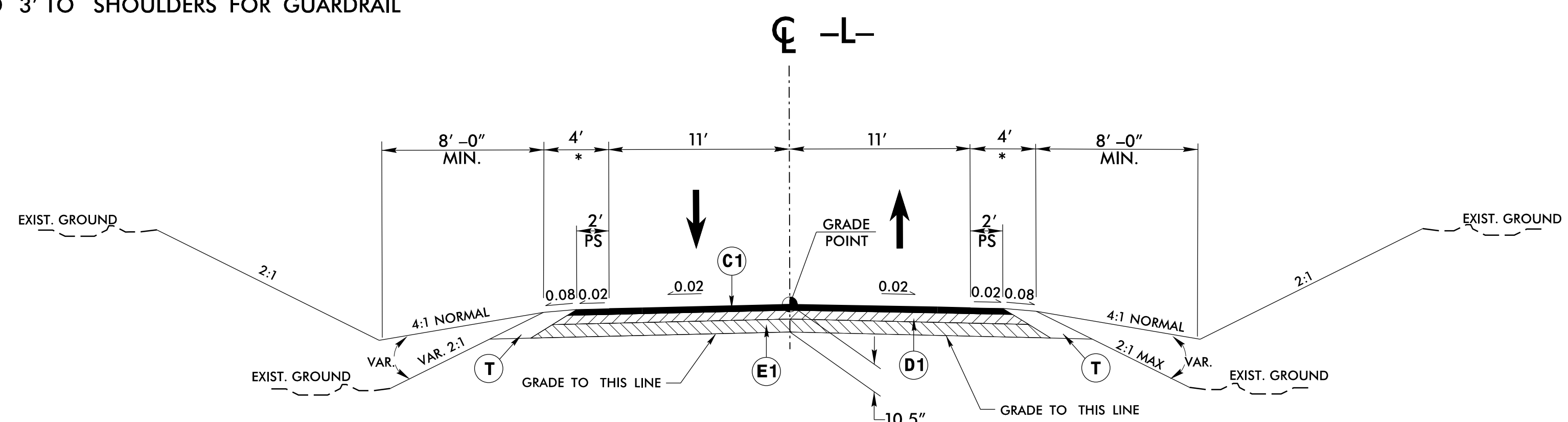
1. THE CONTROL DATA FOR THIS PROJECT WAS PROVIDED BY SEPI ENGINEERING & CONSTRUCTION.
- SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.*
- INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
 PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

NOTE: DRAWING NOT TO SCALE

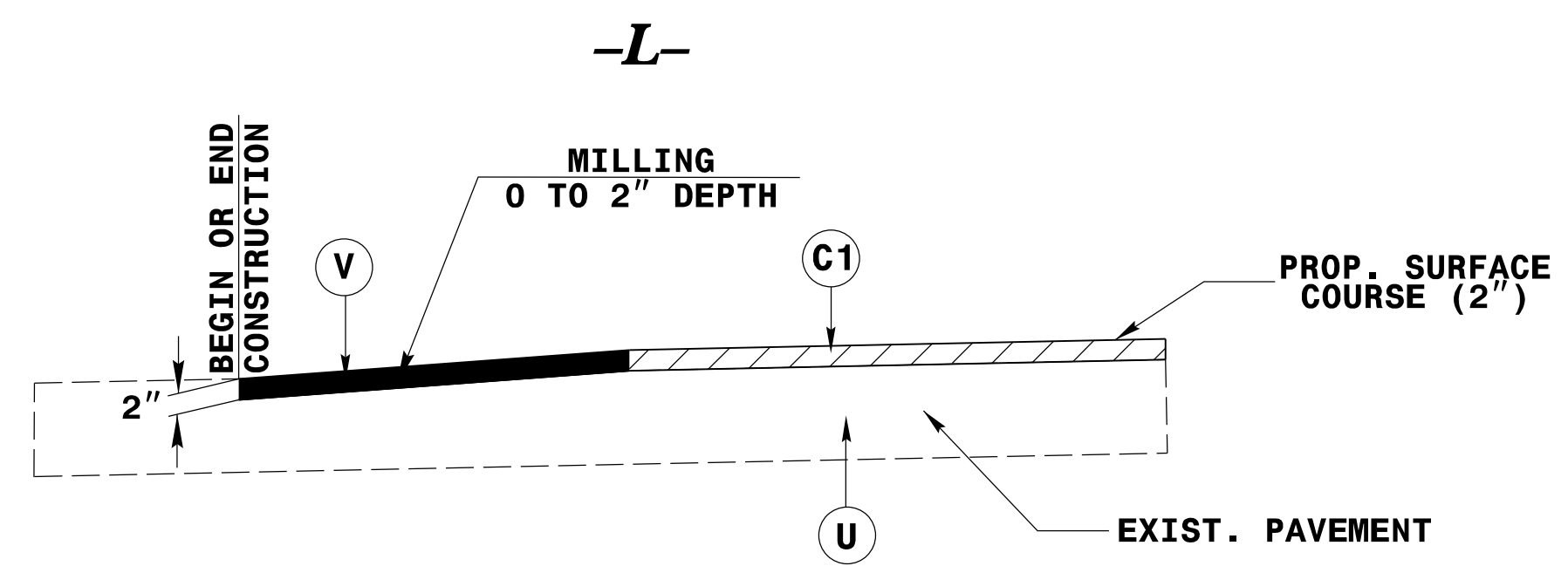


TYPICAL SECTION NO. 1
-L- STA. 13+00.00 TO -L- STA. 14+25.00
-L- STA. 15+25.00 TO -L- STA. 16+40.00

* ADD 3' TO SHOULDERS FOR GUARDRAIL



TYPICAL SECTION NO. 2
-L- STA. 14+25.00 TO -L- STA. 15+25.00

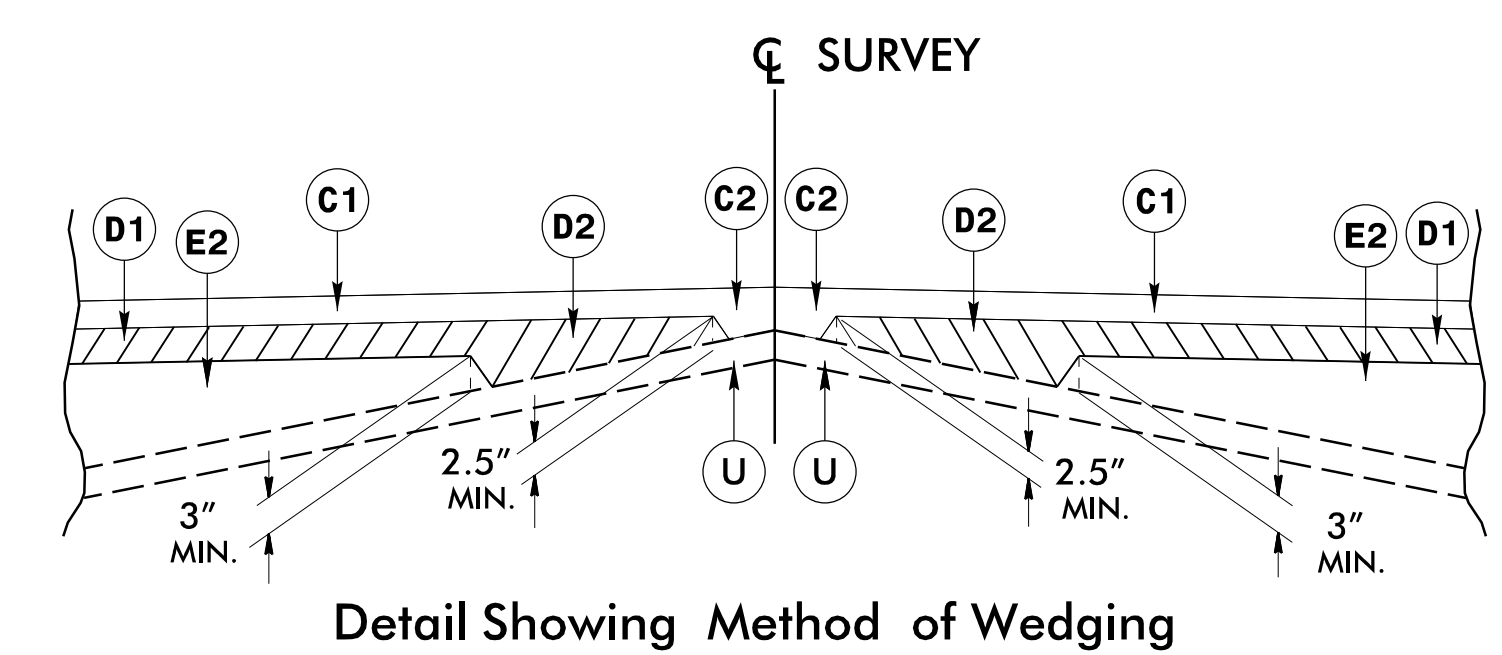


LINE	FROM	TO
-L-	13+00.00	13+50.00
-L-	15+90.00	16+40.00

NOTE: MIRROR FOR END OF CONSTRUCTION

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 1.5" IN DEPTH.
D1	PROP. APPROX. 3.0" ASPHALT CONCRETE BASE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT GREATER THAN 4.0" IN DEPTH OR LESS THAN 2.5" IN DEPTH.
E1	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT GREATER THAN 5.5" IN DEPTH OR LESS THAN 3.0" IN DEPTH.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V	0"-2" VARIABLE MILLING.
W	WEDGING.

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



Detail Showing Method of Wedging

REVISIONS

12/06/07

COMPUTED BY: DWG _____ DATE: 10/5/16
 CHECKED BY: DB _____ DATE: 10/25/16

PROJECT REFERENCE NO. B-5758 SHEET NO. 3B-1

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS
SUMMARY OF EARTHWORK
 IN CUBIC YARDS

STATION	STATION	UNCL. EXCAV.	EMBANK. +%	BORROW	WASTE
SUMMARY NO. 1					
-L- 13+00.00	-L- 16+40.00	63	420	357	
TOTAL SUMMARY NO. 1		63	420	357	
SUMMARY TOTALS					
EST. SHOULDER MATERIAL			84	84	
PROJECT TOTALS		63	504	441	
EST. 5% TO REPLACE TOPSOIL ON BORROW PIT				22	
CULVERT INLET/OUTLET EXCAVATION		230			
GRAND TOTAL		293	504	463	
SAY		325		500	
EST. UNDERCUT CONTINGENCY = 190 CUBIC YARDS					

Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

Note: Approximate quantities only. Unclassified Excavation, Fine Grading, Clearing and Grubbing, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
 TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
 FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
 W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
 G = GATING IMPACT ATTENUATOR TYPE 350
 NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS				IMPACT ATTENUATOR TYPE 350			SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS	
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	GRAU 350	EA	G	NG								
-L-	13+71.00	13+83.50	LT.	212.50			14+47.16	13+95.00	4'	7'	50'	50'	1'	1'												
-L-	13+71.00	13+83.50	RT.	212.50			14+46.12	15+01.07	4'	7'	50'	50'	1'	1'												
TOTALS				425																						
LESS DEDUCTION FOR ANCHORS																										
GRAU-350 4 @ 50' =				-200																						
PROJECT TOTALS				225																						
ADDITIONAL GUARDRAIL POSTS = 5 EA.																										
SAY				250																						

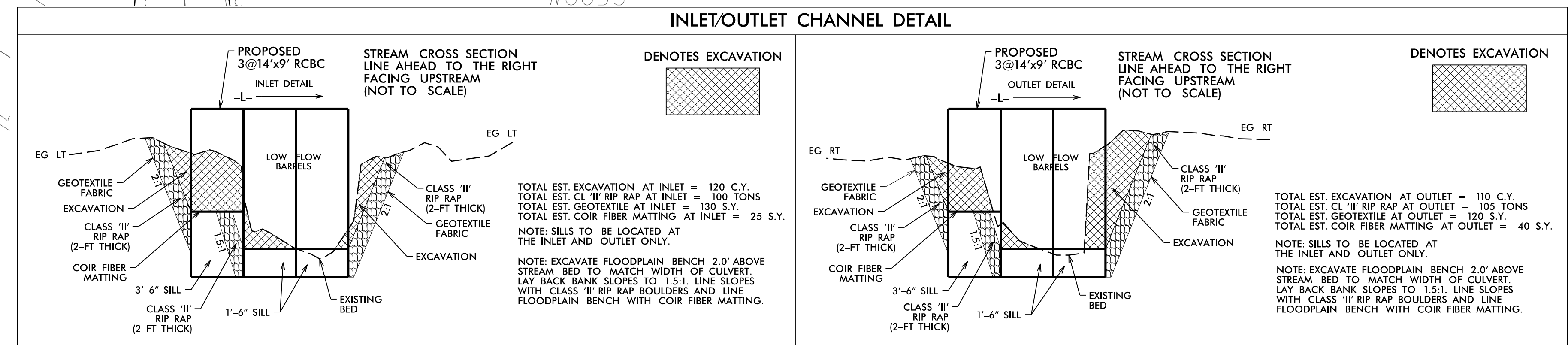
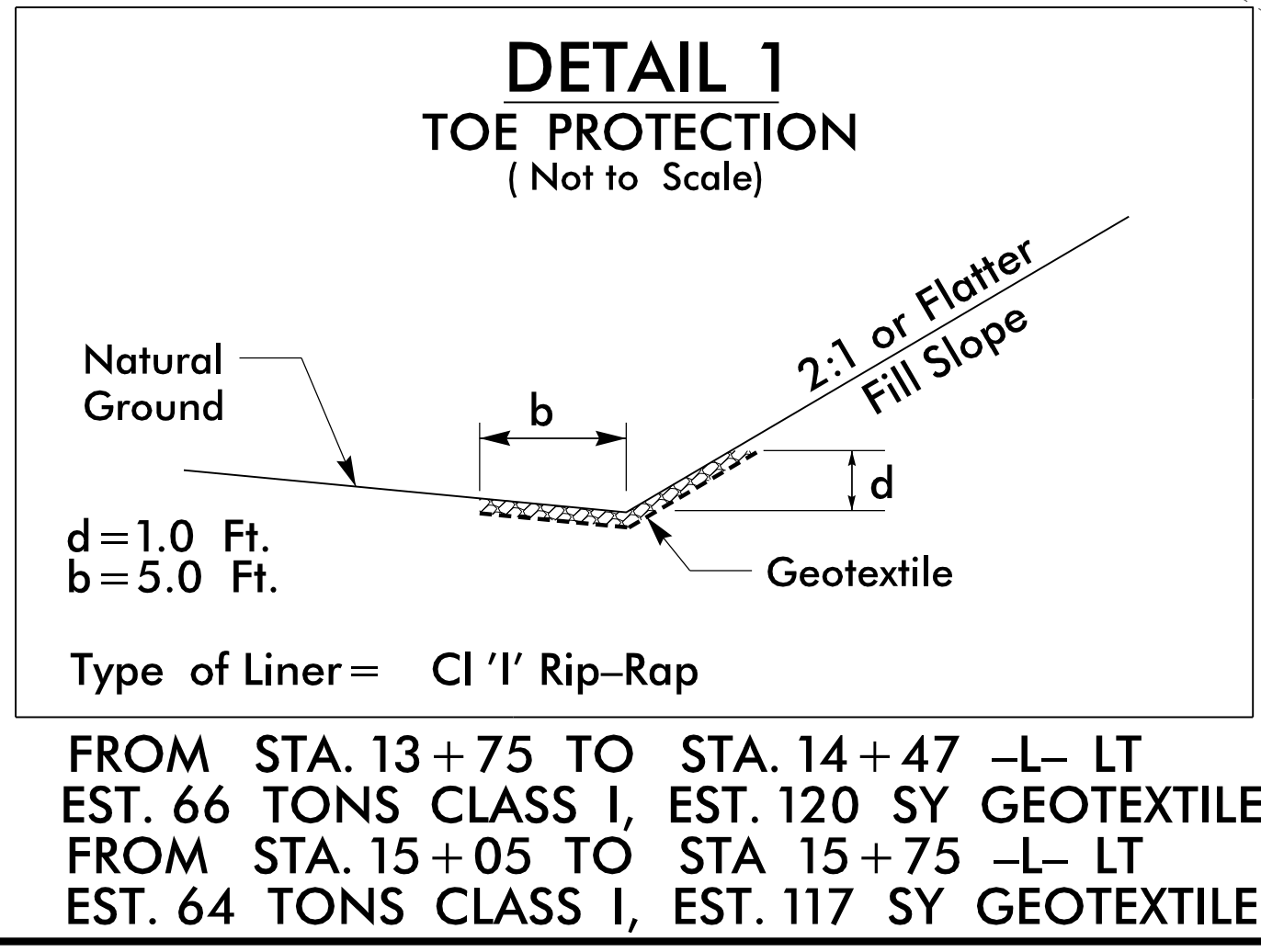
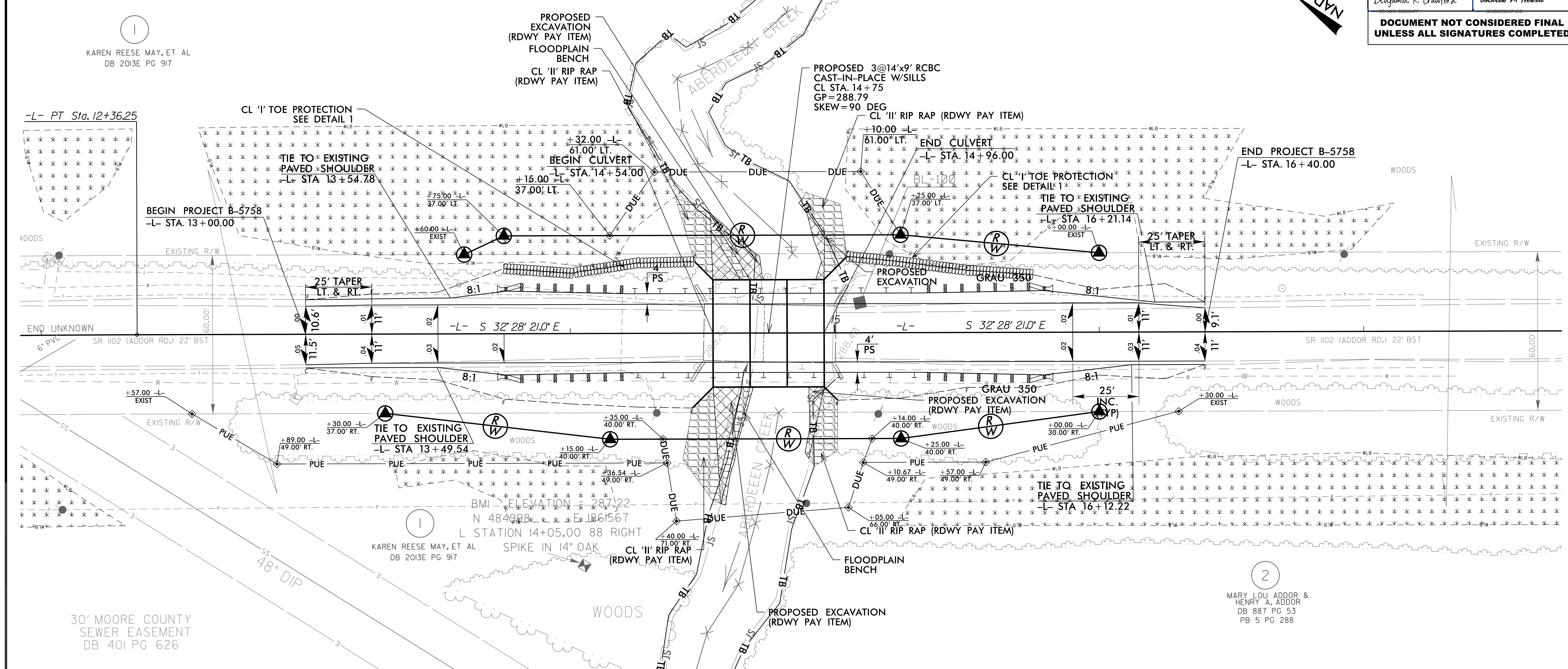
REMOVAL OF ASPHALT PAVEMENT SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD ²
-L-	14+25.00	14+50.54	LT/RT	60.41
-L-	15+00.42	15+25.00	LT/RT	57.50
TOTAL:				117.91
SAY:				125.00

3/28/2017 10:58:58 AM ... \\p-cj\B-5758_Rdy_sum_3B-1.dgn

PROJECT REFERENCE NO. B-5758	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
Benjamin R. Crawford	Andrew M. Howell
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

NAD 83 N/A 2011



NOTE: THE CULVERT INLET/OUTLET CHANNEL EXCAVATION (230 CY) WILL BE INCIDENTAL TO THE LUMP SUM GRADING QUANTITY FOR UNCLASSIFIED EXCAVATION.

SEE SHEET 5 FOR -L- LINE PROFILE
SEE SHEETS C-1 THRU C-8 FOR CULVERT PLANS

REVISIONS

3/30/2017
11:51:40 AM
B-5758_Rdw_psh_4.dgn

5/14/99

PROJECT REFERENCE NO. <i>B-5758</i>	SHEET NO. <i>5</i>
ROADWAY DESIGN ENGINEER <i>BENJAMIN R. CRAWFORD</i> 3/31/2007 Professional Seal 32606	HYDRAULICS ENGINEER <i>ANDREW M. HOWELL</i> 3/30/2007 Professional Seal 35621

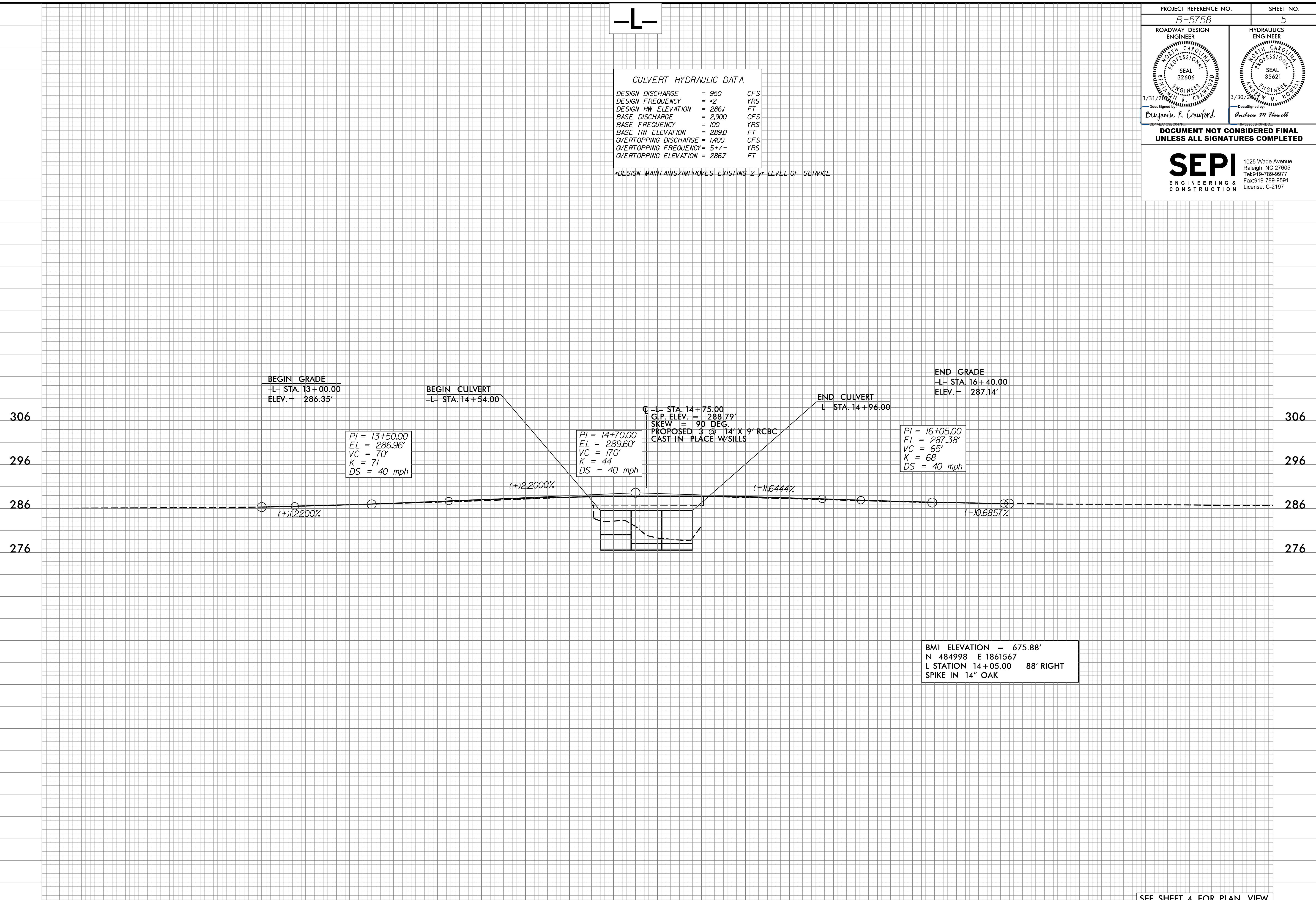
CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	= 950	CFS
DESIGN FREQUENCY	= *2	YRS
DESIGN HW ELEVATION	= 286J	FT
BASE DISCHARGE	= 2900	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 289.0	FT
OVERTOPPING DISCHARGE	= 1,400	CFS
OVERTOPPING FREQUENCY	= 5+/-	YRS
OVERTOPPING ELEVATION	= 286.7	FT

*DESIGN MAINTAINS/IMPROVES EXISTING 2 yr LEVEL OF SERVICE

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



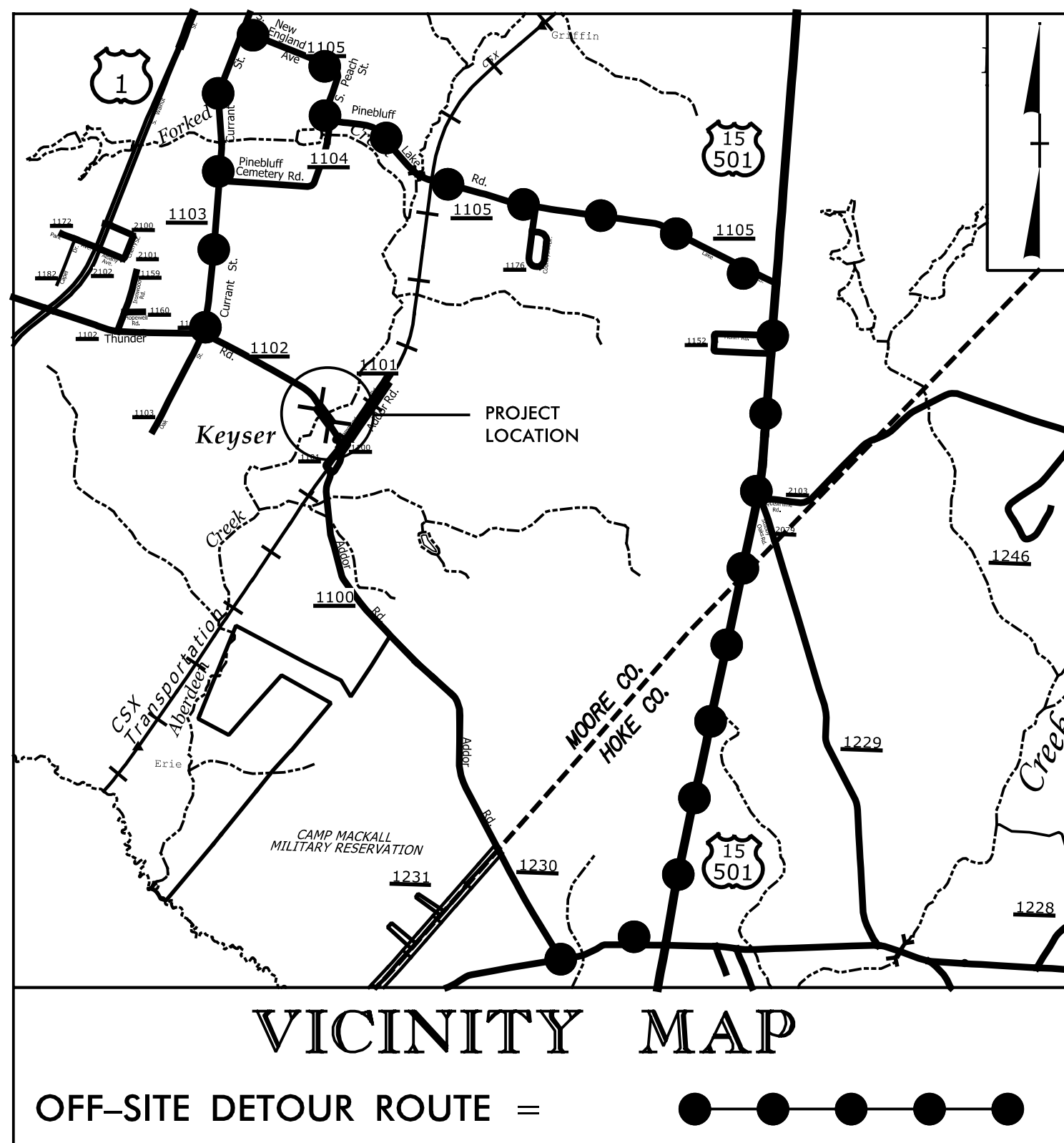
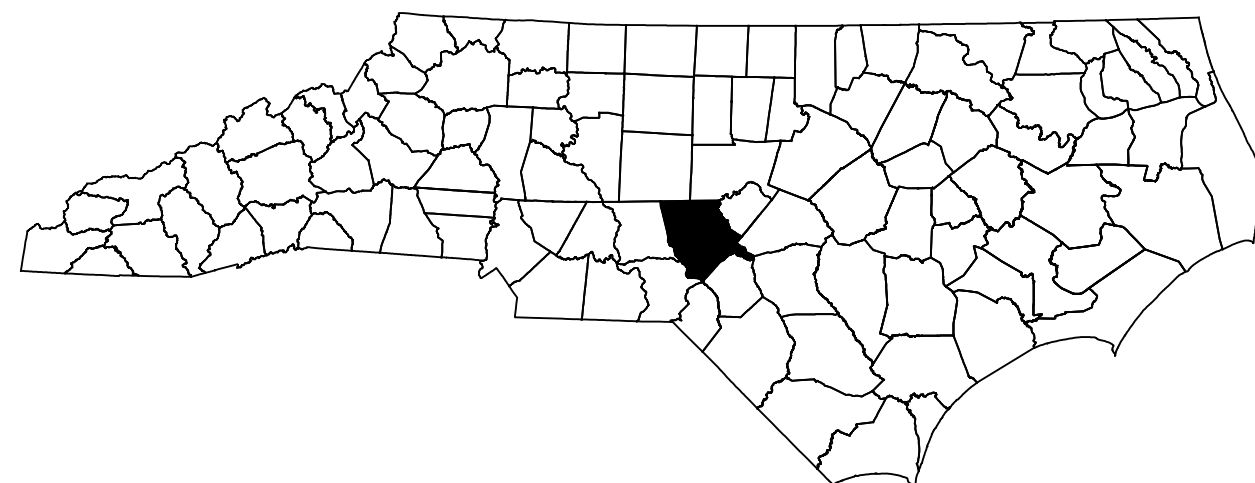
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SEE SHEET 4 FOR PLAN VIEW

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

MOORE COUNTY



LOCATION: BRIDGE NO. 13 ON ADDOR ROAD (SR 1102) OVER ABERDEEN CREEK

TYPE OF WORK: GRADING, DRAINAGE, PAVING, & STRUCTURE

INDEX OF SHEETS

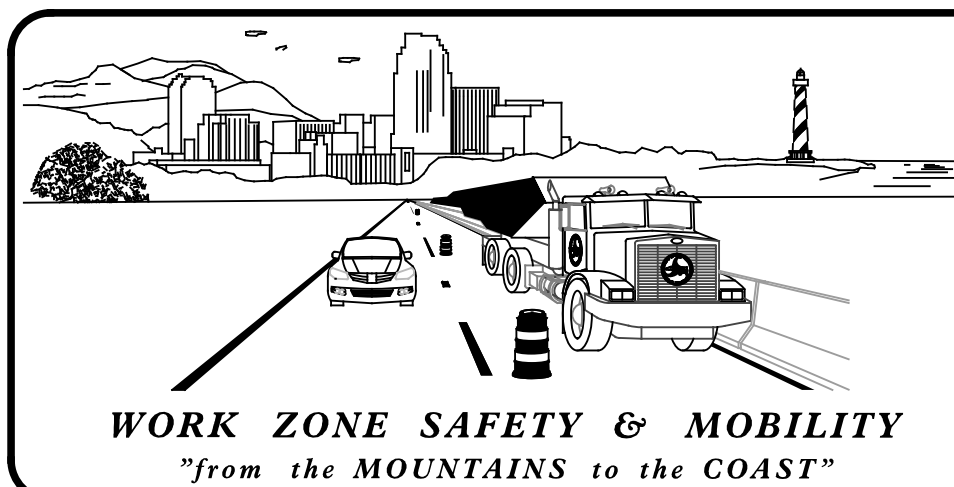
<u>SHEET NO.</u>	<u>TITLE</u>
TMP-1	TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS AND LEGEND
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, GENERAL NOTES, AND PHASING)
TMP-2	SIGN DESIGN
TMP-3	OFF-SITE DETOUR
TMP-4	ROAD CLOSURE

SHEET NO.
TMP-1

B-5758

TIP PROJECT:

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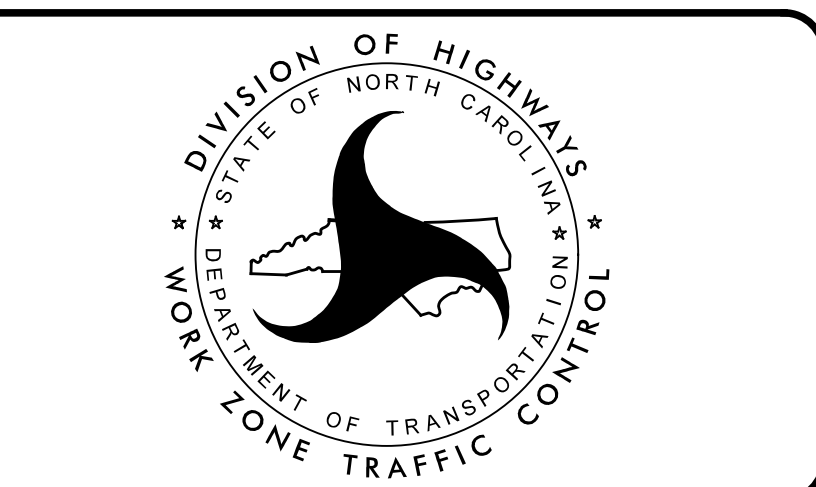
N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)
PHONE: (919) 773-2800 FAX: (919) 771-2745

J. S. BOURNE, P.E. STATE TRAFFIC MANAGEMENT ENGINEER

D. W. BISSETTE, P.E. TRAFFIC CONTROL PROJECT ENGINEER

TRAFFIC CONTROL PROJECT DESIGN ENGINEER

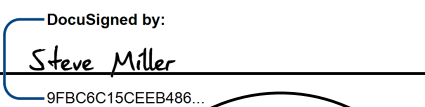
TRAFFIC CONTROL DESIGN ENGINEER




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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 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

<u>STD. NO.</u>	<u>TITLE</u>
1101.03	TEMPORARY ROAD CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSSES
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

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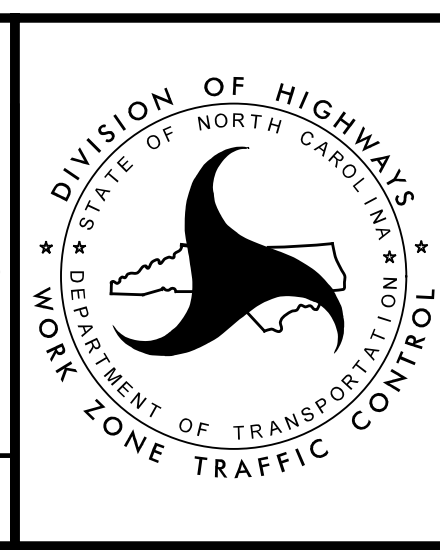
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**ROADWAY STANDARD
DRAWINGS & LEGEND**

MANAGEMENT STRATEGIES

- CLOSE SR 1102 (ADDOR RD.) AND DETOUR TRAFFIC OFF-SITE
- 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) INSTALL ADVANCE WORK ZONE WARNING SIGNS NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- C) 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.

- D) 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.

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

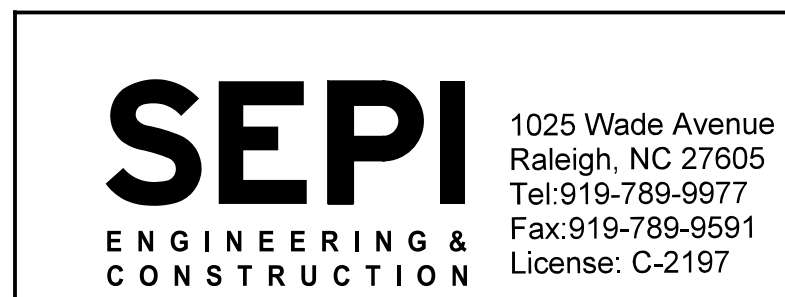
TRAFFIC CONTROL DEVICES

- F) 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 1102 (ADDOR 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 1102 (ADDOR RD.) TO TRAFFIC AND REMOVE ALL WORKZONE TRAFFIC CONTROL DEVICES.

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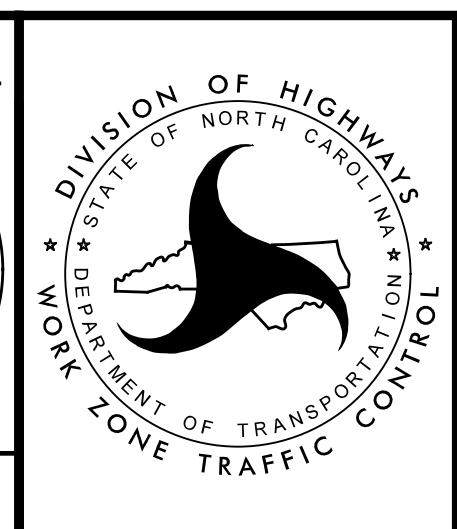
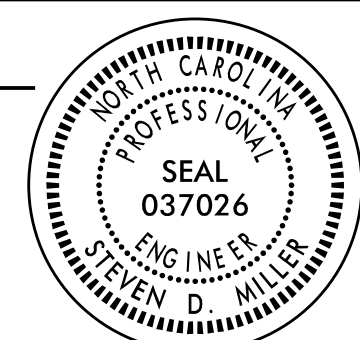


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DATE: 3/28/2017

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TRANSPORTATION OPERATIONS PLAN

<p>SIGN NUMBER: SP-1 TYPE: STATIONARY QUANTITY: SEE PLANS SIGN WIDTH: 3'-6" HEIGHT: 1'-6" TOTAL AREA: 5.3 Sq.Ft. BORDER TYPE: INSET RECESS: 0.47" WIDTH: 0.63" RADII: 1.5"</p>	<p>BACKG COLOR: Fluorescent Orange COPY COLOR: Black</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>SYMBOL</th> <th>X</th> <th>Y</th> <th>WID</th> <th>HT</th> </tr> </thead> <tbody> <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> </tbody> </table> <p>MAT'L: 0.080" (2.0 mm) ALUMINUM</p>	SYMBOL	X	Y	WID	HT																																									<p>DESIGN BY: R DRAYTON PROJECT ID: B-5758</p>	<p>CHECKED BY: S MILLER Feb 24, 2016 DIV: 8</p>																																																																																																		
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<p>Spacing Factor is 1 unless specified otherwise</p>																																																																																																																																																		
<p>LETTER POSITIONS</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="12">Letter spacings are to start of next letter</th> <th>Series/Size</th> </tr> <tr> <th>A</th> <th>D</th> <th>D</th> <th>O</th> <th>R</th> <th></th> <th>R</th> <th>D</th> <th colspan="4"></th> <th>Text Length</th> </tr> </thead> <tbody> <tr> <td>3.2</td> <td>4.7</td> <td>4.6</td> <td>4.4</td> <td>4.7</td> <td>3.4</td> <td>6</td> <td>4.4</td> <td>3.4</td> <td>3.2</td> <td colspan="2"></td> <td>C 2000</td> </tr> <tr> <td colspan="12"></td> <td>35.5</td> </tr> <tr><td colspan="13"> </td></tr> <tr><td colspan="13"> </td></tr> <tr><td colspan="13"> </td></tr> <tr><td colspan="13"> </td></tr> <tr><td colspan="13"> </td></tr> <tr><td colspan="13"> </td></tr> <tr><td colspan="13"> </td></tr> </tbody> </table>				Letter spacings are to start of next letter												Series/Size	A	D	D	O	R		R	D					Text Length	3.2	4.7	4.6	4.4	4.7	3.4	6	4.4	3.4	3.2			C 2000													35.5																																																																																											
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<p>FILENAME: B-5758 Sign Design</p>				<p>NORTH CAROLINA D.O.T. SIGN DETAIL</p>																																																																																																																																														

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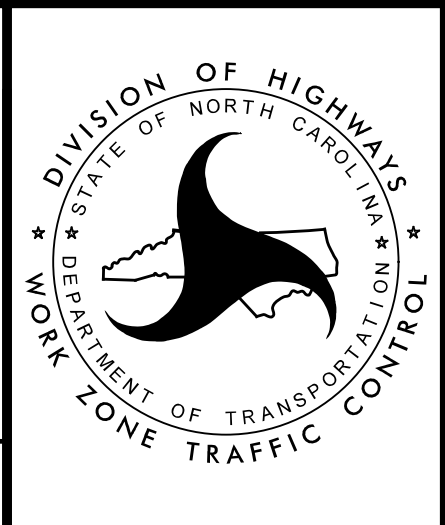
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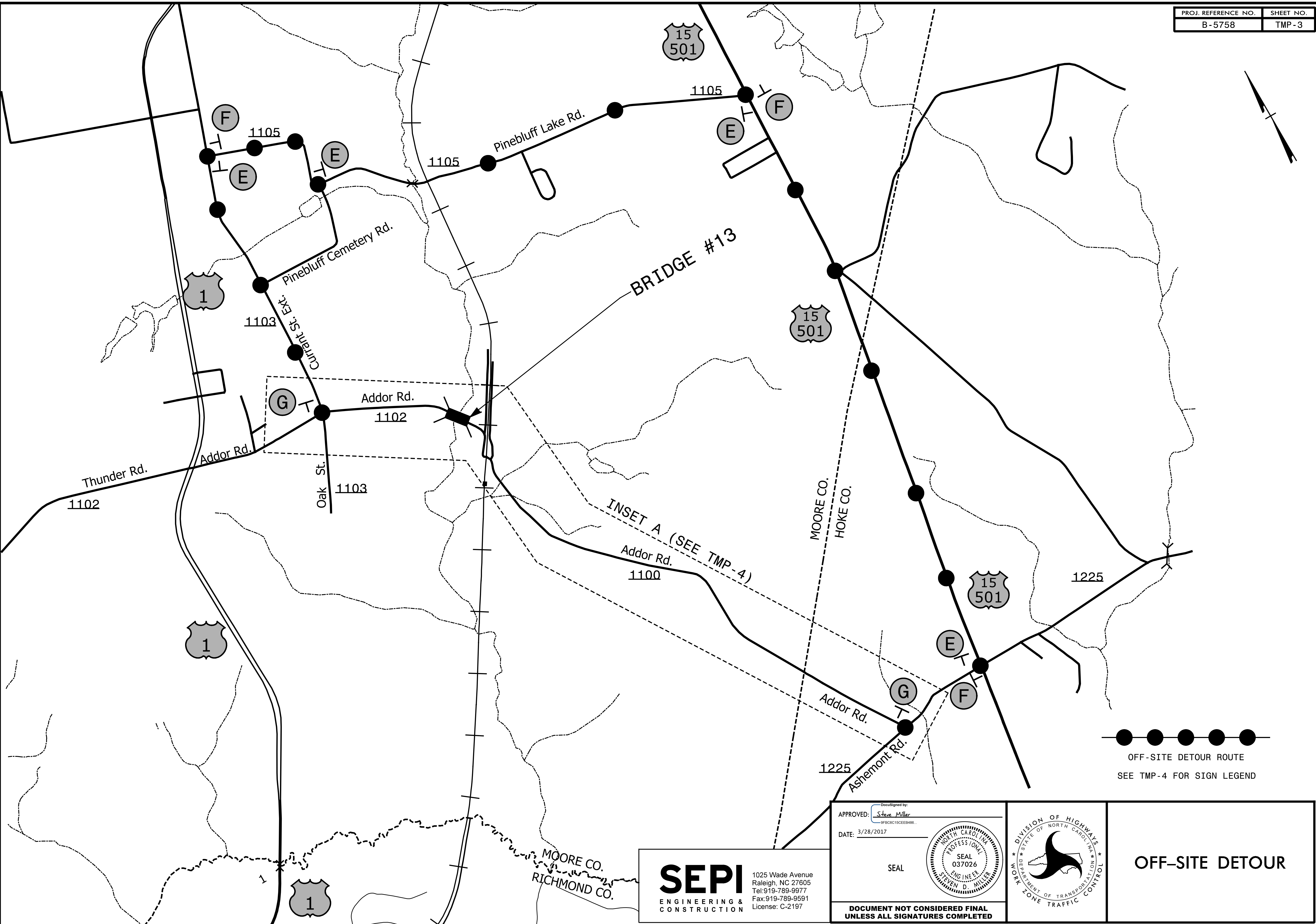
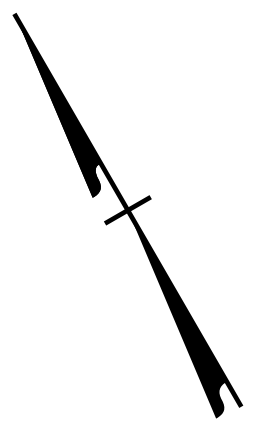
DATE: 3/28/2017

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SIGN DESIGN



●●●●●
OFF-SITE DETOUR ROUTE
SEE TMP-4 FOR SIGN LEGEND

10/11/2016
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 Mishak

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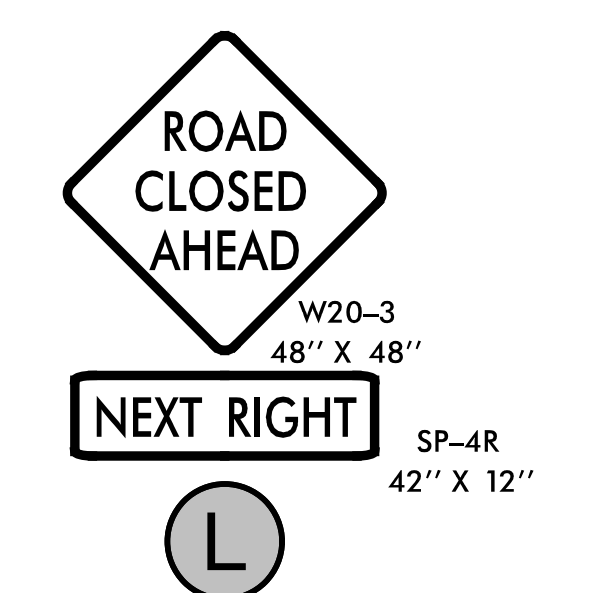
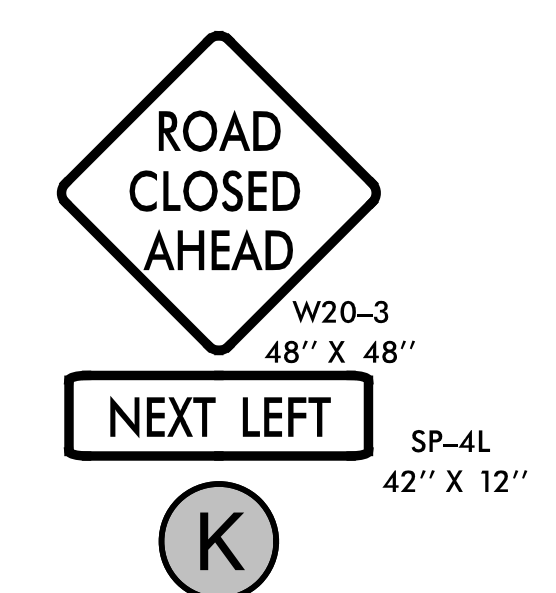
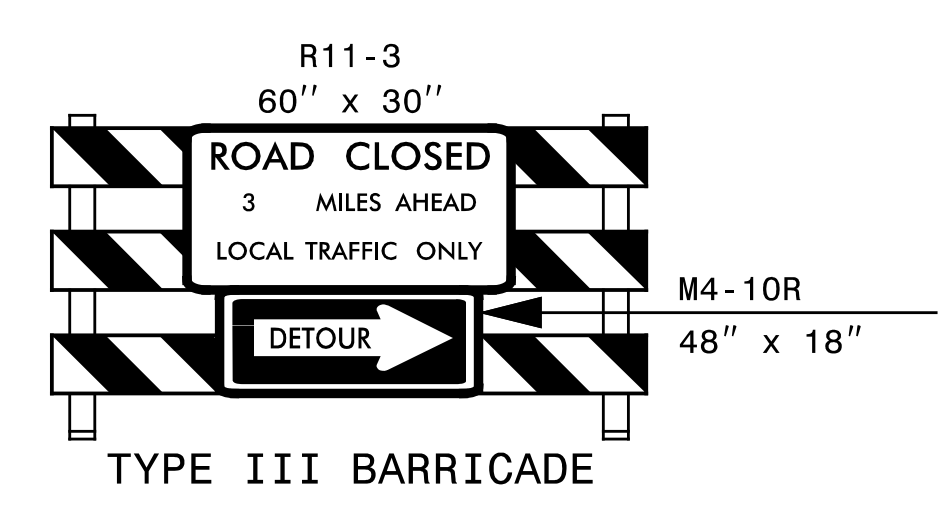
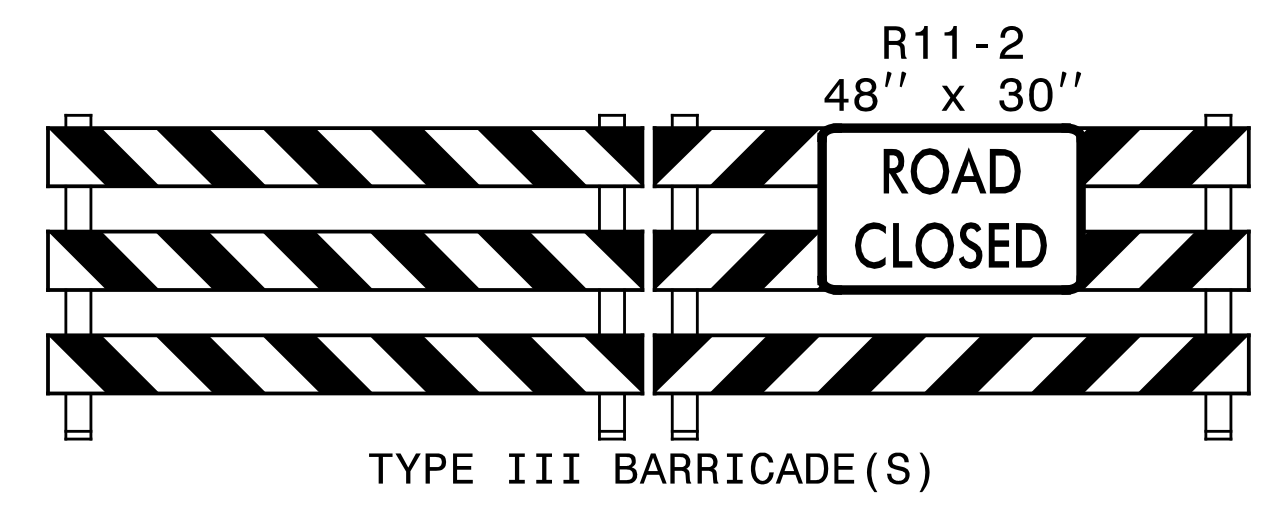
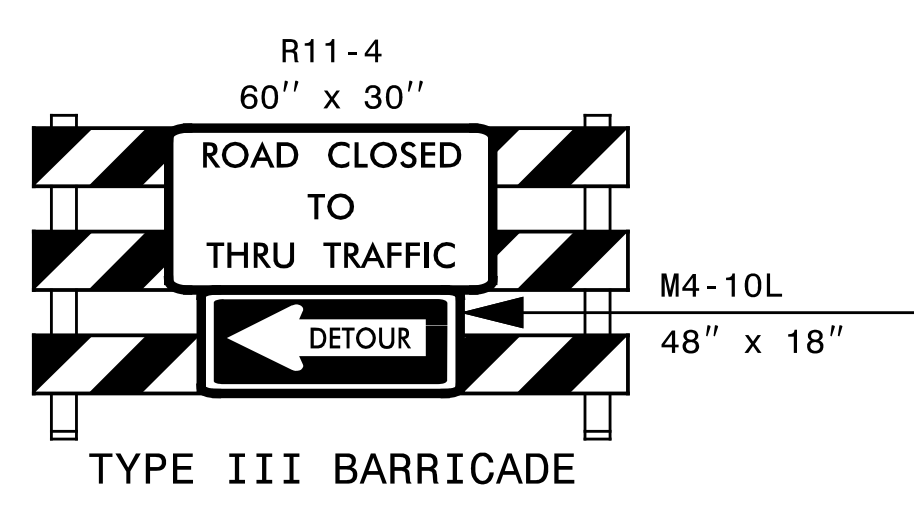
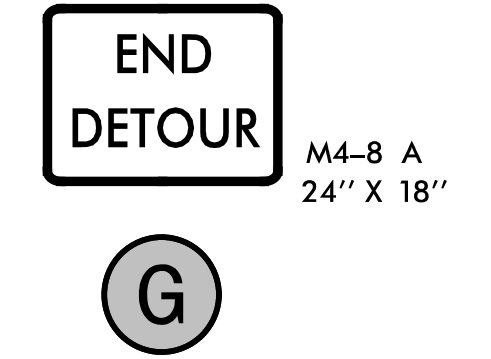
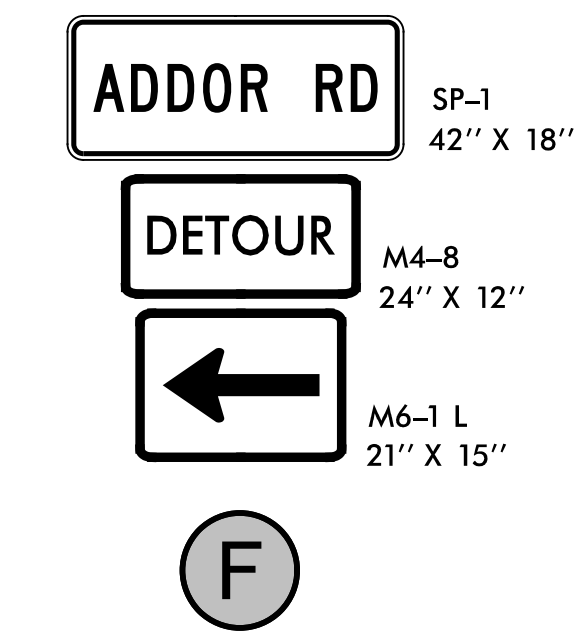
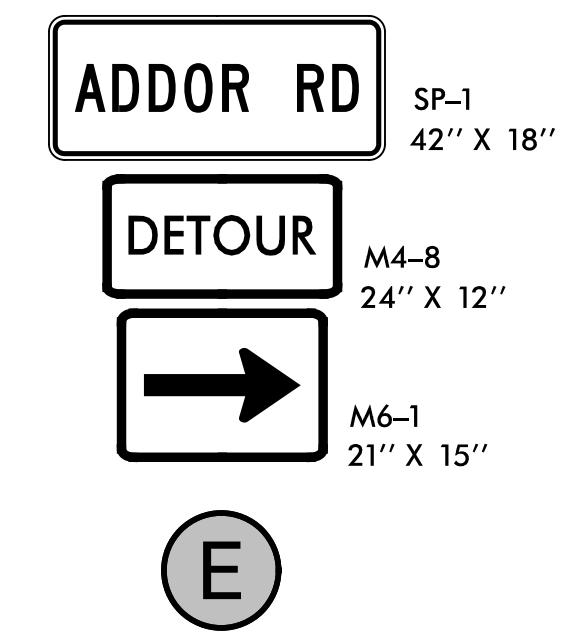
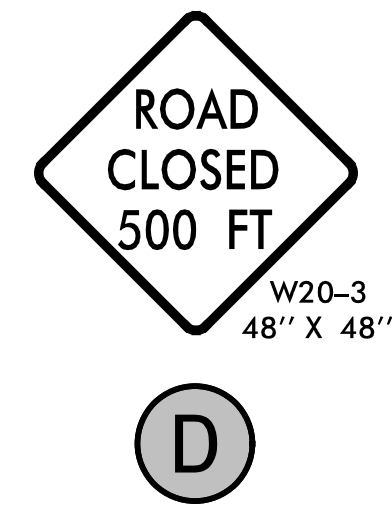
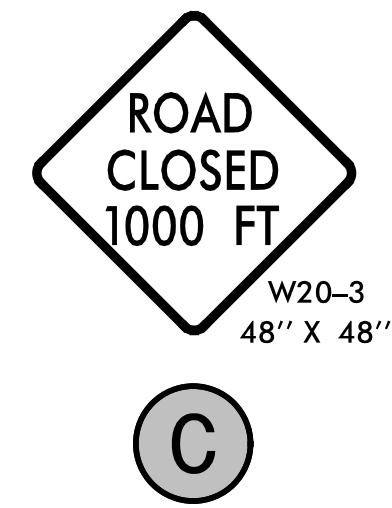
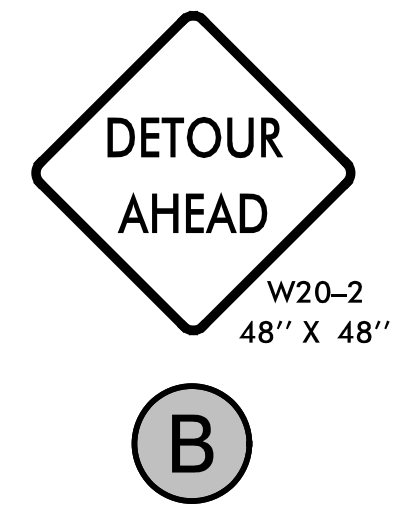
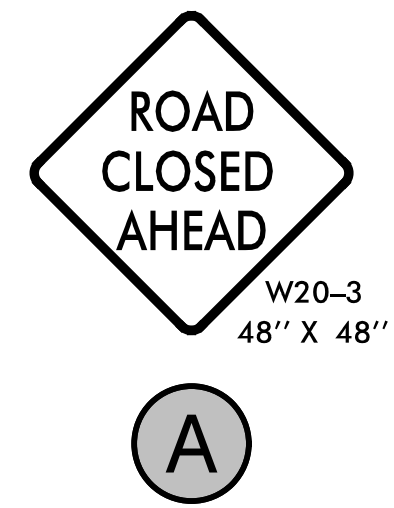
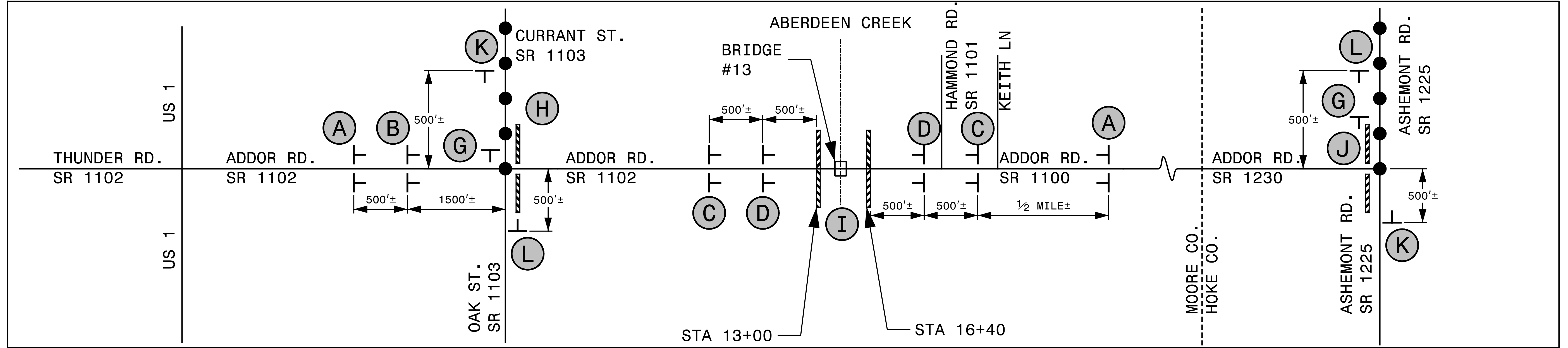
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OFF-SITE DETOUR



INSET A



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DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL
SEAL
037026
STEVEN D. MILLER
ENGINEER

ROAD CLOSURE

T.I.P.: B-5758

**STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION**

**PAVEMENT MARKING PLAN
MOORE COUNTY**

TIP NO. B-5758	SHEET NO. PMP - 1
APPROVED: Steve Miller <small>9FBC6C15CEEB466</small>	
DATE: 3/28/2017	
SEAL 	
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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 2012 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
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

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
ADDOR RD.	THERMOPLASTIC	NONE

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.

PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION
	<u>THERMOPLASTIC (4", 90 MIL)</u>
TA	WHITE EDGELINE
	<u>THERMOPLASTIC (4", 120 MIL)</u>
TI	YELLOW DOUBLE CENTER

N.C.D.O.T. SIGNING AND DELINEATION UNIT

RENEE ROACH, PE SIGNING AND DELINEATION REGIONAL ENGINEER	
_____ SIGNING & DELINEATION PROJECT DESIGN ENGINEER	

PLAN PREPARED BY: SEPI Engineering

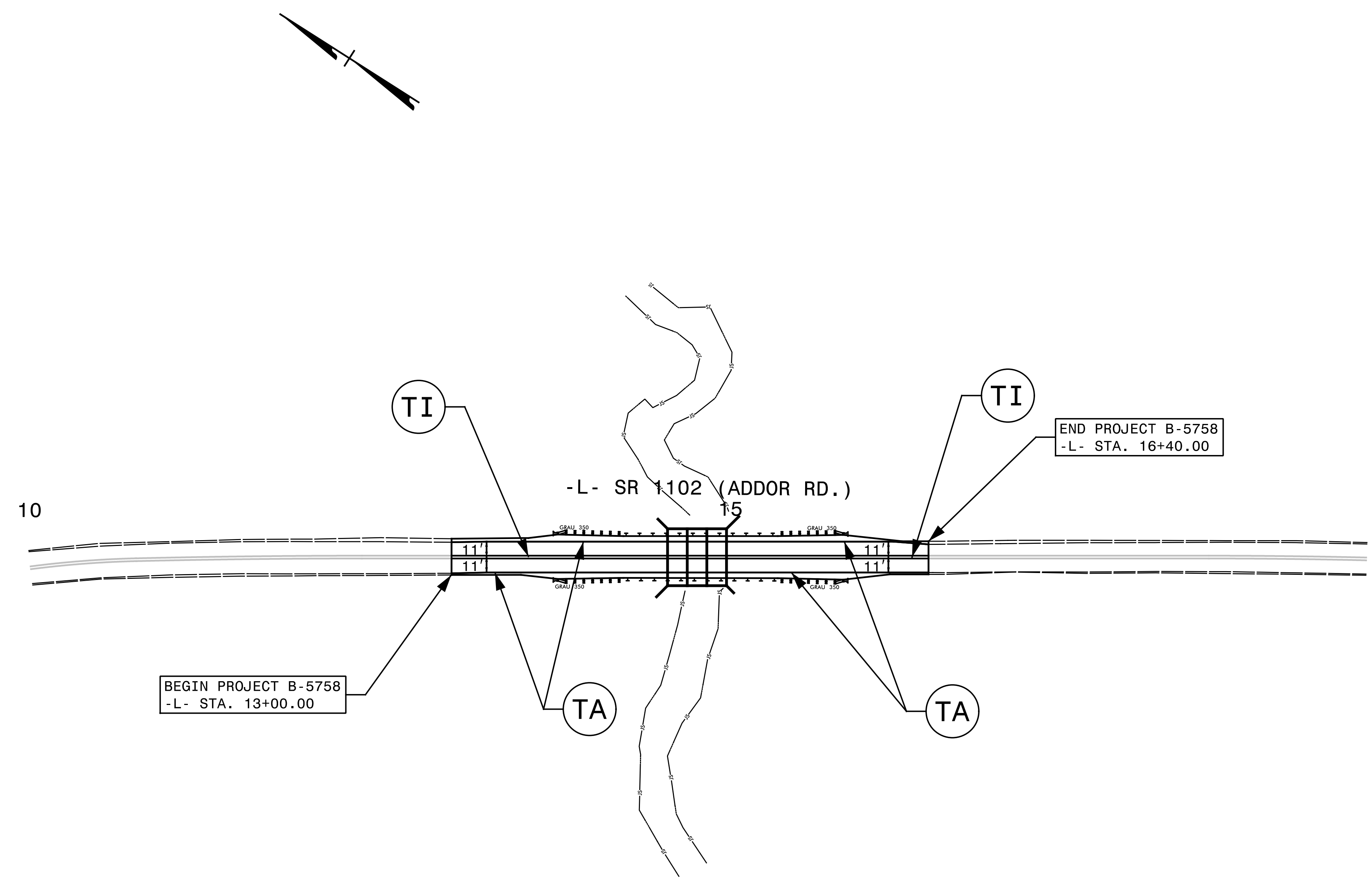
STEVE MILLER, P.E. PROJECT MANAGER
MARIO ISHAK TRAFFIC ENGINEER

SEPI

ENGINEERING & CONSTRUCTION

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TIP NO.	SHEET NO.
B-5758	PMP-2
APPROVED: <u>Steve Miller</u> <small>DocuSigned by: 9F8C9C15CEEB488</small>	
DATE: 3/28/2017	
SEAL	
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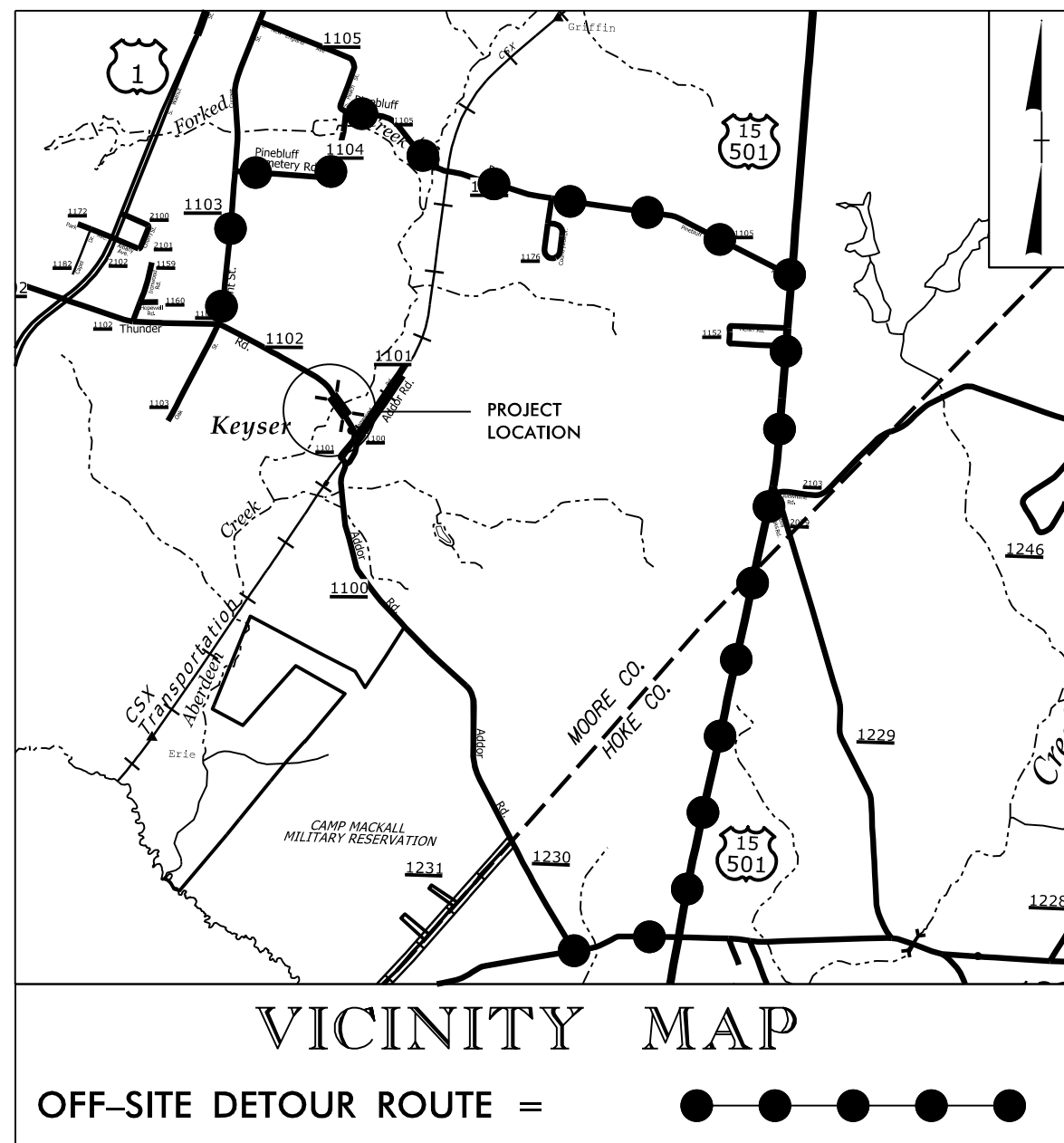


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 Fax: 919-789-9591
 License: C-2197

PAVEMENT MARKING DETAIL

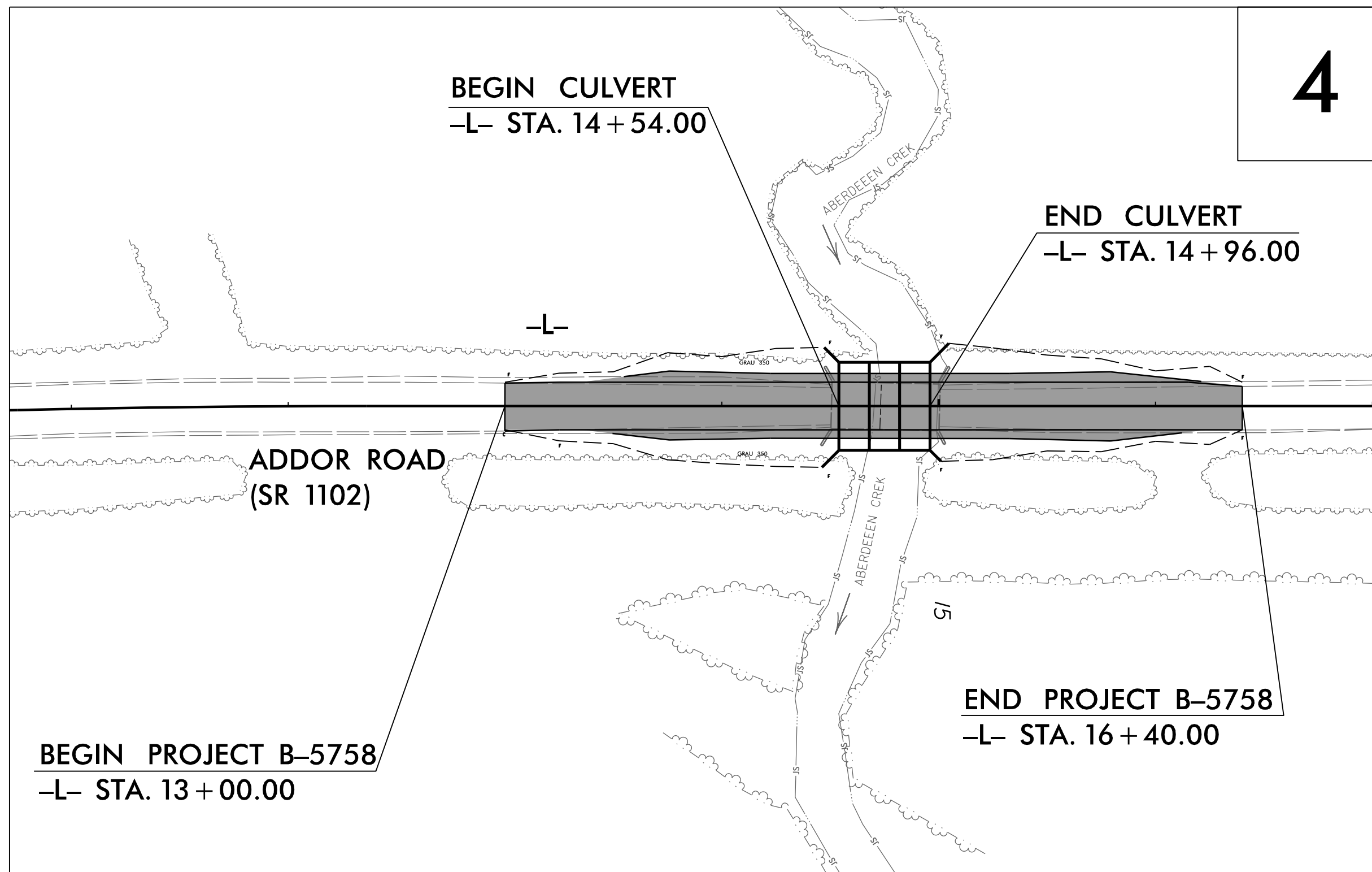
TIP PROJECT: B-5758



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

**LOCATION: BRIDGE NO. 13 OVER ABERDEEN CREEK ON SR 1102
(ADDOR ROAD)**

TYPE OF WORK: GRADING, DRAINAGE, PAVING & STRUCTURE



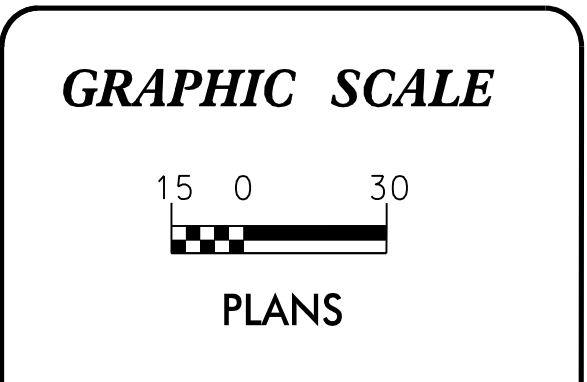
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5758	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1650.03	Temporary Silt Ditch	TD
1650.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	III III III
1606.01	Special Sediment Control Fence	△△△△△
1622.01	Temporary Berms and Slope Drains	—
1650.02	Silt Basin Type B	[Symbol]
1633.01	Temporary Rock Silt Check Type-A	[Symbol]
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	[Symbol]
1633.02	Temporary Rock Silt Check Type-B	[Symbol]
	Wattle / Coir Fiber Wattle	[Symbol]
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	[Symbol]
1634.01	Temporary Rock Sediment Dam Type-A	[Symbol]
1634.02	Temporary Rock Sediment Dam Type-B	[Symbol]
1635.01	Rock Pipe Inlet Sediment Trap Type-A	[Symbol]
1635.02	Rock Pipe Inlet Sediment Trap Type-B	[Symbol]
1650.04	Stilling Basin	[Symbol]
1650.06	Special Stilling Basin	[Symbol]
	Rock Inlet Sediment Trap:	
1632.01	Type A	A [Symbol]
1632.02	Type B	B [Symbol]
1632.03	Type C	C [Symbol]
	Skimmer Basin	[Symbol]
	Tiered Skimmer Basin	[Symbol]
	Infiltration Basin	[Symbol]

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

THIS PROJECT IS NOT WITHIN MUNICIPAL BOUNDARIES
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.



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
2012 STANDARD SPECIFICATIONS
4025 Wade Avenue
Raleigh, NC 27605
Tel: 919-789-9977
Fax: 919-789-9591
License: C-2197
Designed by:
ANDREW M. HOWELL, PE 3105
NAME LEVEL III CERTIFICATION NO.

Reviewed in the Office of:
ROADSIDE ENVIRONMENTAL UNIT
2012 STANDARD SPECIFICATIONS
1 South Wilmington St.
Raleigh, NC 27611
Reviewed by:
WES CHANDLER, EI

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		

8/17/99

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. <i>B-5758</i>	SHEET NO. <i>EC-2</i>
SEPI ENGINEERING & CONSTRUCTION	
1025 Wade Avenue Raleigh, NC 27605 Tel: 919-789-9977 Fax: 919-789-9591 License: C-2197	

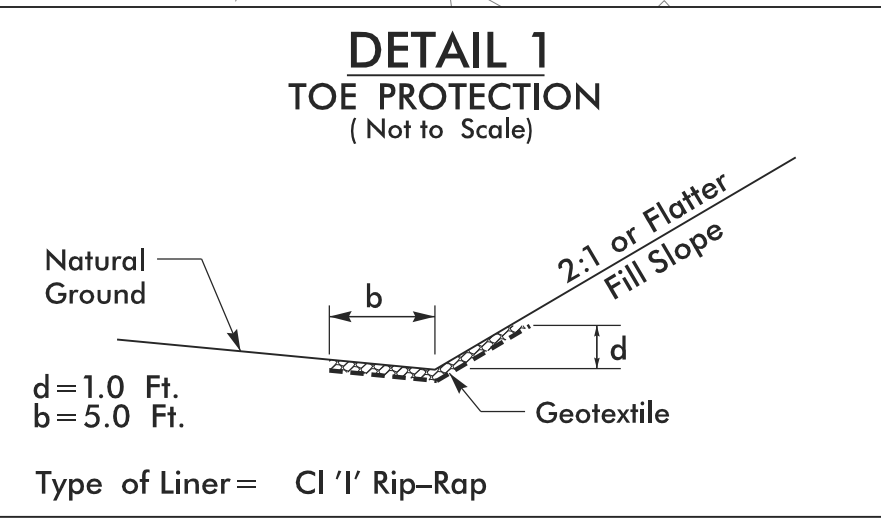
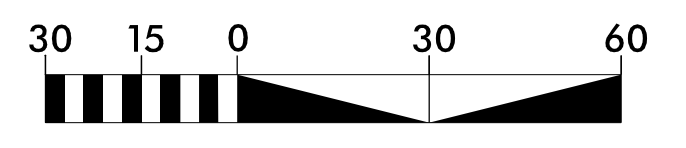
SOIL STABILIZATION TIMEFRAMES

REVISIONS

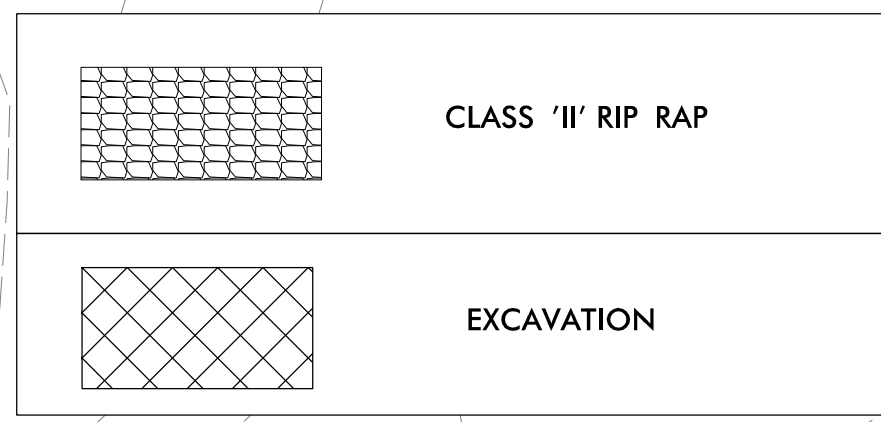
<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES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

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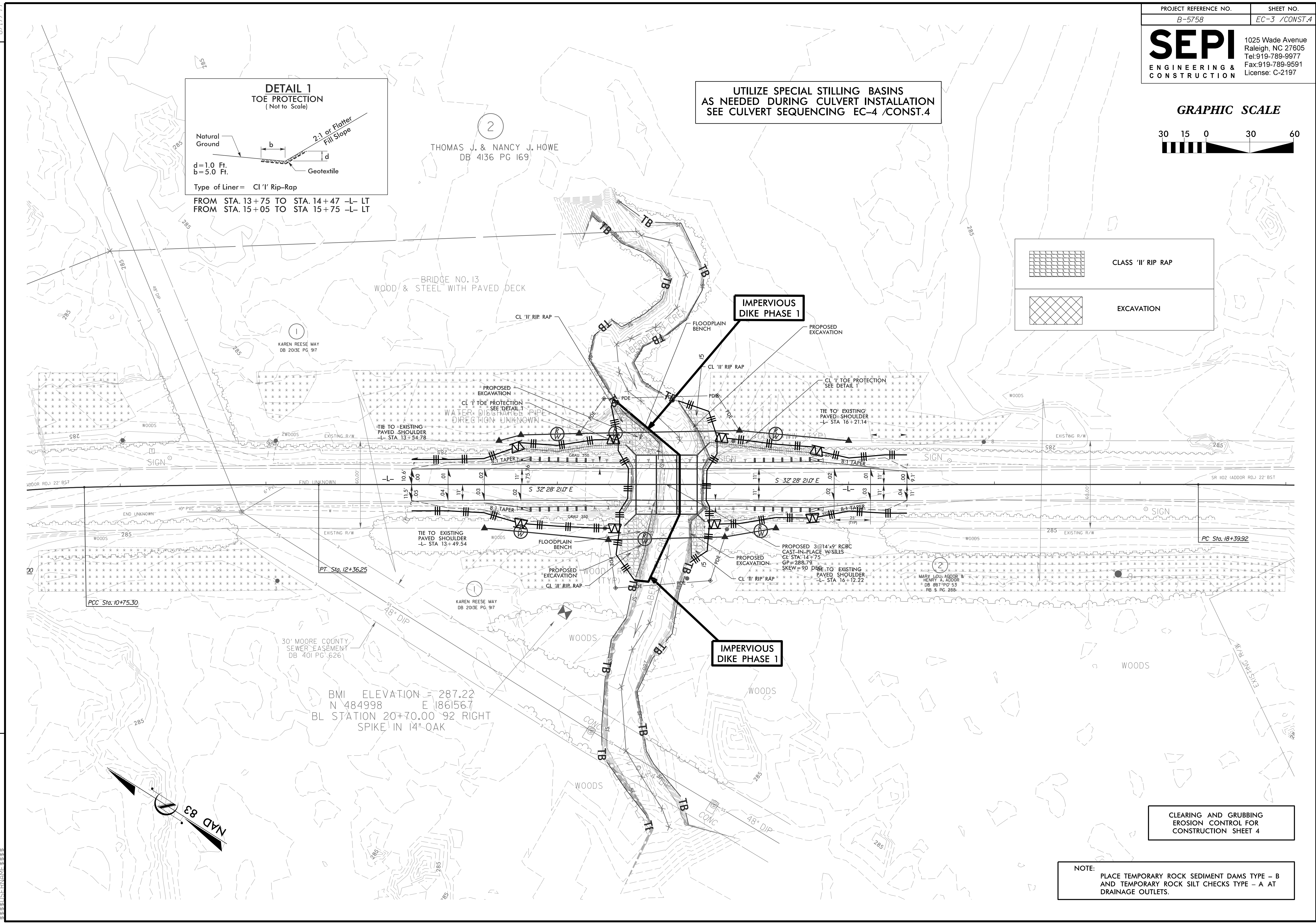
GRAPHIC SCALE



UTILIZE SPECIAL STILLING BASINS AS NEEDED DURING CULVERT INSTALLATION SEE CULVERT SEQUENCING EC-4 / CONST. 4



REVISIONS



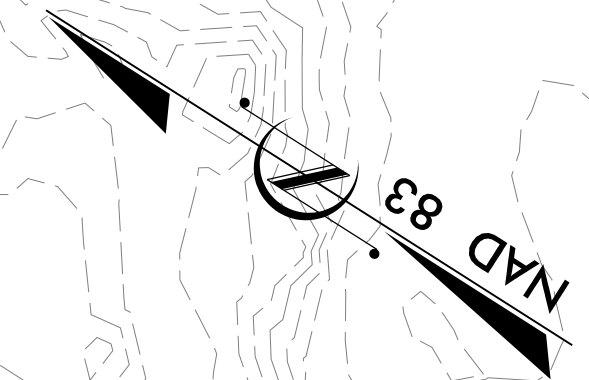
THOMAS J. & NANCY J. HOWE
 DB 4136 PG 169

KAREN REESE MAY
 DB 203E PG 917

KAREN REESE MAY
 DB 203E PG 917

MARY LOU ADDOR
 HENRY A. ADDOR
 DB 867 PG 53
 PB 5 PG 288

BMI ELEVATION = 287.22
 N 484998 E 1861567
 BL STATION 20+70.00 92 RIGHT
 SPIKE IN 14" OAK



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.

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CULVERT CONSTRUCTION SEQUENCE STA. 14+75 -L-

PHASE I

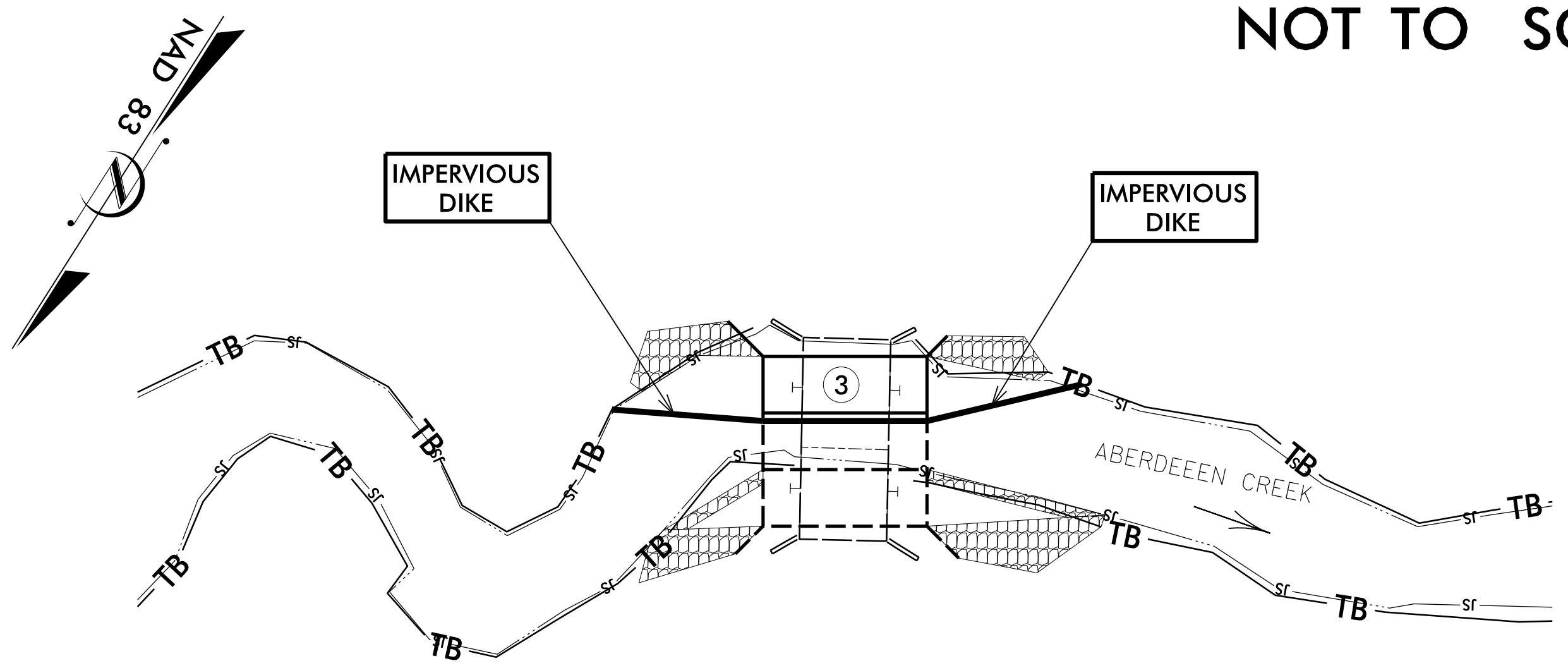
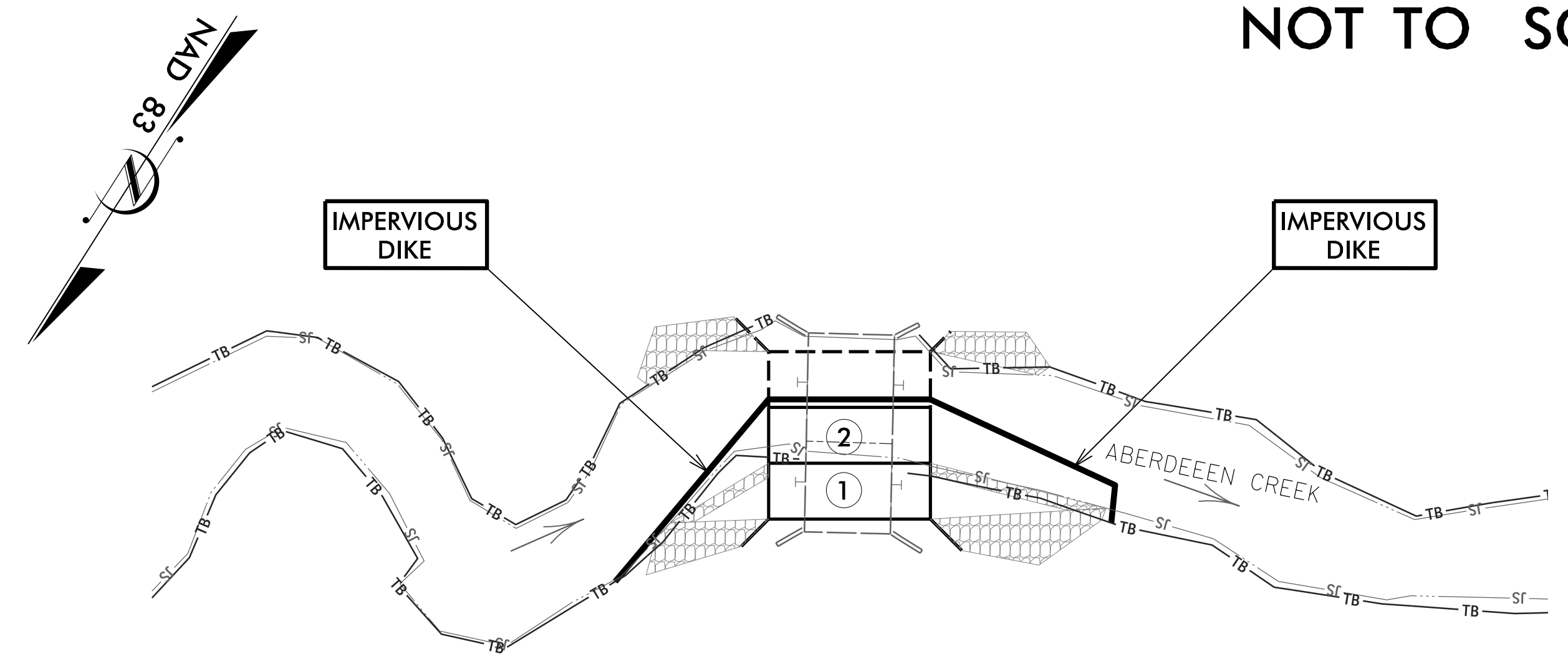
PHASE II

CONSTRUCT BARREL NO. 1 AND 2 (RIGHT AND CENTER BARRELS FACING DOWNSTREAM)

CONSTRUCT BARREL NO. 3 (LEFT BARREL FACING DOWNSTREAM)

NOT TO SCALE

NOT TO SCALE



PHASE I

PHASE II

1. UTILIZE SPECIAL STILLING BASINS AS NEEDED DURING CULVERT CONSTRUCTION.
2. REMOVE EXISTING BRIDGE DECK.
3. INSTALL IMPERVIOUS DIKE(S) AND DIRECT BASE FLOW THROUGH FUTURE LEFT BARREL AS SHOWN ABOVE.
4. REMOVE EXISTING NORTHERN MASS CONCRETE ABUTMENT, AND MASS CONCRETE INTERIOR BENT. RETAIN EXISTING SOUTHERN MASS CONCRETE END BENT DURING PHASE I. PROTECT EXISTING STREAMBANKS UP AND DOWNSTREAM WITH CLASS 'II' RIP RAP WITHIN THE PERMIT LIMITS AS NECESSARY TO PREVENT STREAMBANK EROSION.
5. CONSTRUCT BOTTOM, SIDES AND TOP SLAB OF BARRELS NO. 1 AND 2 ACCORDING TO THE PLANS. CONSTRUCT CULVERT SILL(S) IN BARRELS NO. 1 AND 2 AT THIS TIME.
6. CONSTRUCT CHANNEL IMPROVEMENTS ADJACENT TO BARREL NO. 1. PREPARE CHANNEL ADJACENT TO BARREL NO. 2 TO ACCEPT BASE FLOW.
7. PLACE 3'-6" OF NATIVE MATERIAL AND SUPPLEMENTAL RIP RAP (IF USED) IN BARREL NO. 1. REFER TO NCDOT SPECIFICATION FOR NATIVE MATERIALS (SHOWN ON CULVERT SURVEY REPORT).
8. PLACE 1'-6" OF NATIVE MATERIAL IN BARREL NO. 2. DO NOT PLACE RIP RAP IN BARREL NO. 2 WITHOUT PERMIT APPROVAL. REFER TO NCDOT SPECIFICATION FOR NATIVE MATERIALS (SHOWN ON CULVERT SURVEY REPORT).
9. STABILIZE CHANNEL IMPROVEMENTS, REMOVE IMPERVIOUS DIKE(S).

1. UTILIZE SPECIAL STILLING BASINS AS NEEDED DURING CULVERT INSTALLATION.
2. INSTALL IMPERVIOUS DIKE(S) AND DIRECT BASE FLOW THROUGH BARREL NO. 2 (CONSTRUCTED IN PHASE I) AS SHOWN ABOVE.
3. REMOVE EXISTING SOUTHERN MASS CONCRETE ABUTMENT DURING PHASE II.
4. CONSTRUCT BOTTOM, SIDES AND TOP SLAB OF BARREL NO. 3 ACCORDING TO THE PLANS. CONSTRUCT CULVERT SILL(S) IN BARREL NO. 3 AT THIS TIME.
5. CONSTRUCT CHANNEL IMPROVEMENTS ADJACENT TO BARREL NO. 3 AS SHOWN ON THE PLANS.
6. PLACE 1'-6" OF NATIVE MATERIAL IN BARREL NO. 3. DO NOT PLACE RIP RAP IN BARREL NO. 3 WITHOUT PERMIT APPROVAL. REFER TO NCDOT SPECIFICATION FOR NATIVE MATERIALS (SHOWN ON CULVERT SURVEY REPORT).
7. STABILIZE CHANNEL IMPROVEMENTS, REMOVE IMPERVIOUS DIKE(S).
8. PLACE ROADWAY FILL.

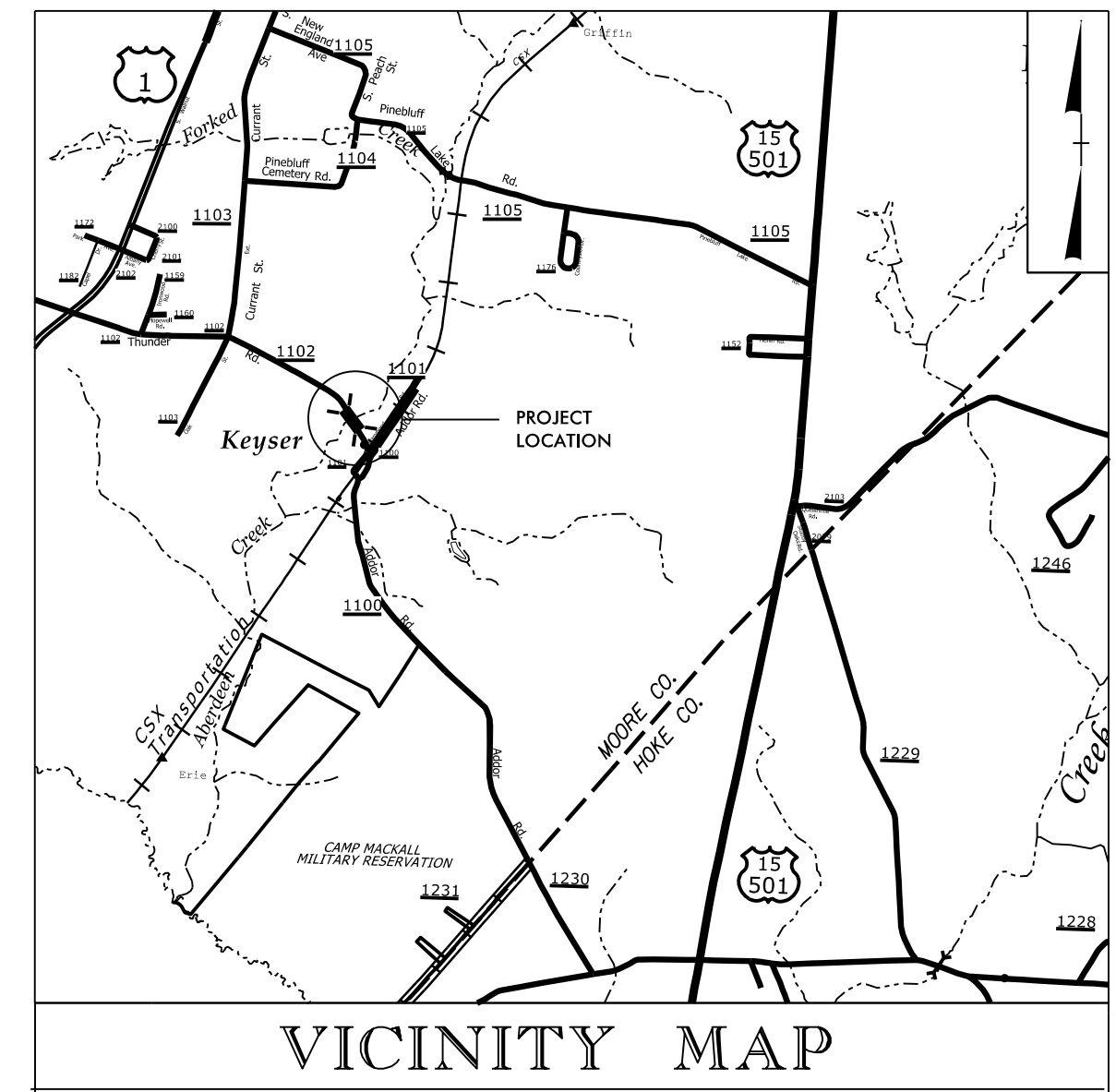
REVISIONS

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09_2015/199

TIP PROJECT: B-5758

T.I.P. NO.	SHEET NO.
B-5758	UC-1

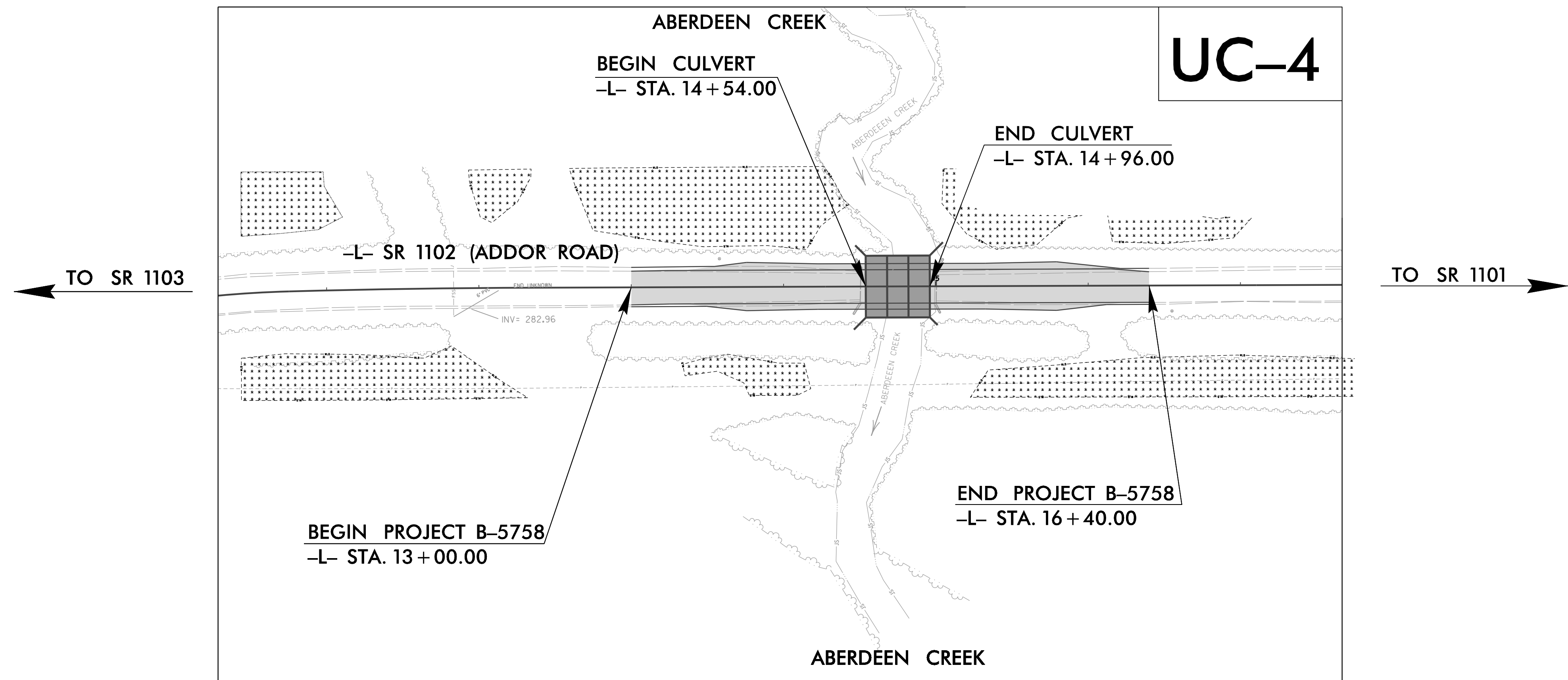
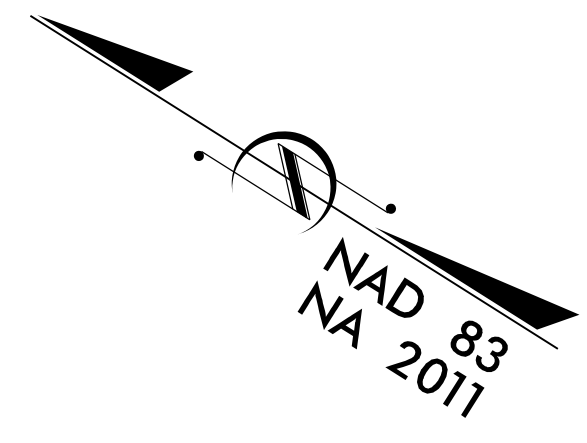


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

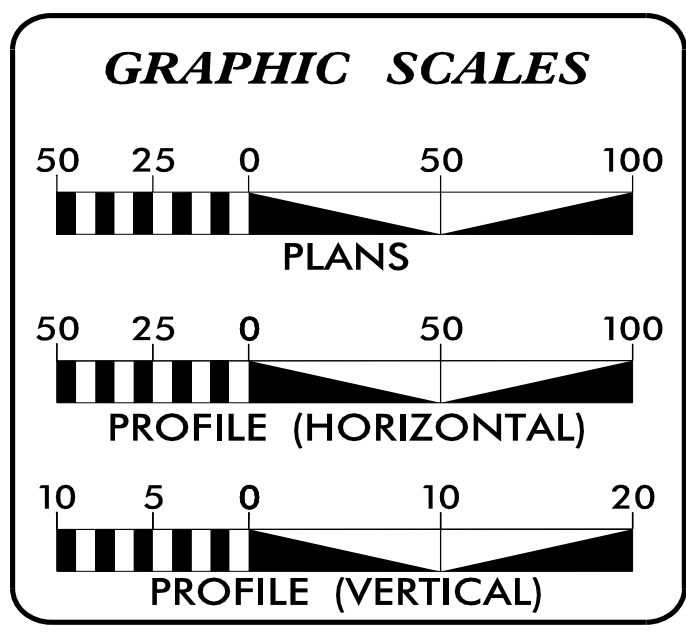
UTILITY CONSTRUCTION PLANS MOORE COUNTY

**LOCATION: BRIDGE NO. 13 OVER ABERDEEN CREEK
ON SR 1102 (ADDOR ROAD)**

**TYPE OF WORK: RELOCATION OF WATER LINE AND
WATER TREATMENT PLANT DISCHARGE LINE**



DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED



INDEX OF SHEETS

SHEET NO.:	DESCRIPTION:
UC-1	TITLE SHEET
UC-2	UTILITY SYMBOLOGY
UC-3	NOTES
UC-3A & UC-3B	DETAILS
UC-4	UTILITY CONSTRUCTION SHEET AND PROFILE SHEET

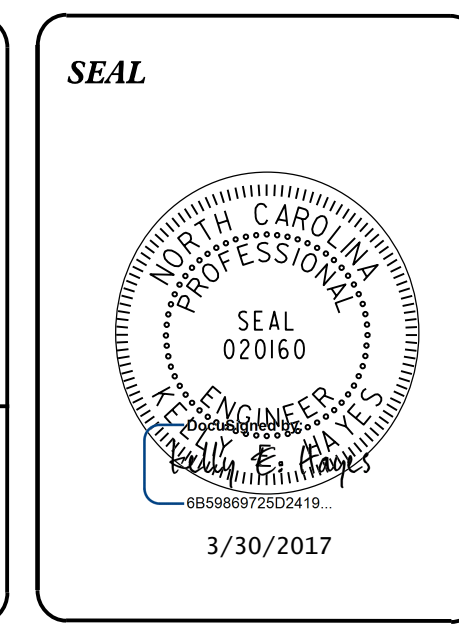
- WATER AND SEWER OWNERS ON PROJECT**
- (1) MOORE CO. PUBLIC WORKS - DOMESTIC WATER
 - (2) MOORE CO. PUBLIC WORKS - SANITARY SEWER OUTFALL
 - (3) TOWN OF SOUTHERN PINES - WATER TREATMENT PLANT DISCHARGE LINE

PREPARED IN THE OFFICE OF

SEPI
ENGINEERING & CONSTRUCTION

1025 Wade Avenue
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**DIVISION OF HIGHWAYS
UTILITIES UNIT**
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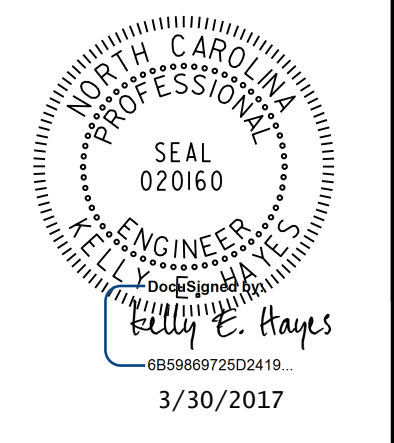
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5/14/99

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS



PROJECT REFERENCE NO. B-5758	SHEET NO. UC-2
UTILITY CONSTRUCTION	



UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

Water Line (Sized as Shown)	
11 1/4 Degree Bend	
22 1/2 Degree Bend	
45 Degree Bend	
90 Degree Bend	
Plug	
Tee	
Cross	
Reducer	
Gate Valve	
Butterfly Valve	
Tapping Valve	
Line Stop	
Line Stop with Bypass	
Blow Off	
Fire Hydrant	
Relocate Fire Hydrant	
Remove Fire Hydrant	
Water Meter	
Relocate Water Meter	
Remove Water Meter	
Water Pump Station	
RPZ Backflow Preventer	
DCV Backflow Preventer	
Relocate RPZ Backflow Preventer	
Relocate DCV Backflow Preventer	

PROPOSED SEWER SYMBOLS

Gravity Sewer Line (Sized as Shown)	
Force Main Sewer Line (Sized as Shown)	
Manhole (Sized per Note)	
Sewer Pump Station	

PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

Power Pole	
Telephone Pole	
Joint Use Pole	
Telephone Pedestal	
Utility Line by Others (Type as Shown)	
Trenchless Installation	
Encasement by Open Cut	
Encasement	

Thrust Block	
Air Release Valve	
Utility Vault	
Concrete Pier	
Steel Pier	
Plan Note	
Pay Item Note	


EXISTING UTILITIES SYMBOLS

Power Pole		*Underground Power Line	
Telephone Pole		*Underground Telephone Cable	
Joint Use Pole		*Underground Telephone Conduit	
Utility Pole		*Underground Fiber Optics Telephone Cable	
Utility Pole with Base		*Underground TV Cable	
H-Frame Pole		*Underground Fiber Optics TV Cable	
Power Transmission Line Tower		*Underground Gas Pipeline	
Water Manhole		Aboveground Gas Pipeline	
Power Manhole		*Underground Water Line	
Telephone Manhole		Aboveground Water Line	
Sanitary Sewer Manhole		*Underground Gravity Sanitary Sewer Line	
Hand Hole for Cable		Aboveground Gravity Sanitary Sewer Line	
Power Transformer		*Underground SS Forced Main Line	
Telephone Pedestal		Underground Unknown Utility Line	
CATV Pedestal		SUE Test Hole	
Gas Valve		Water Meter	
Gas Meter		Water Valve	
Located Miscellaneous Utility Object		Fire Hydrant	
Abandoned According to Utility Records		Sanitary Sewer Cleanout	
End of Information			

*For Existing Utilities
 Utility Line Drawn from Record (Type as Shown)
 Designated Utility Line (Type as Shown)

2/1/2012
USF

UTILITY CONSTRUCTION

PROJECT REFERENCE NO.	SHEET NO.
B-5758	UC-3
DESIGNED BY: JB	
DRAWN BY: JH	
CHECKED BY: KH	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
3/30/2017 UTILITY CONSTRUCTION PLANS ONLY	

GENERAL NOTES:

1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" AND STANDARD DRAWINGS DATED JANUARY 2012.
2. THE EXISTING WATER MAIN BELONG TO MOORE COUNTY PUBLIC WORKS. THE EXISTING WATER TREATMENT PLANT DISCHARGE BELONGS TO THE TOWN OF SOUTHERN PINES.
3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER RESOURCES, PUBLIC WATER SUPPLY SECTION, AND MOORE COUNTY PUBLIC WORKS. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.
4. THE UTILITY OWNER OWNS THE EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT. THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND UTILITY OWNER ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT OR IS SECONDARY TO THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.
5. PROVIDE ACCESS FOR THE DEPARTMENT PERSONNEL AND THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. NOTIFY DEPARTMENT PERSONNEL AND THE UTILITY OWNER TWO WEEKS PRIOR TO COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTION. KEEP UTILITY OWNERS' REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPORTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.

6. THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION, SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE MATERIAL OF THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE DEPARTMENT.
7. MAKE FINAL CONNECTIONS OF THE NEW WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS, OR AS DIRECTED.
8. MAKE CONNECTIONS BETWEEN EXISTING AND PROPOSED UTILITIES AT TIMES MOST CONVENIENT TO THE PUBLIC, WITHOUT ENDANGERING THE UTILITY SERVICE, AND IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS. MAKE CONNECTIONS ON WEEKENDS, AT NIGHT, AND ON HOLIDAYS IF NECESSARY.
9. ALL UTILITY MATERIALS SHALL BE APPROVED PRIOR TO DELIVERY TO THE PROJECT. SEE 1500-7, "SUBMITTALS AND RECORDS" IN SECTION 1500 OF THE STANDARD SPECIFICATIONS.

PROJECT SPECIFIC NOTES:

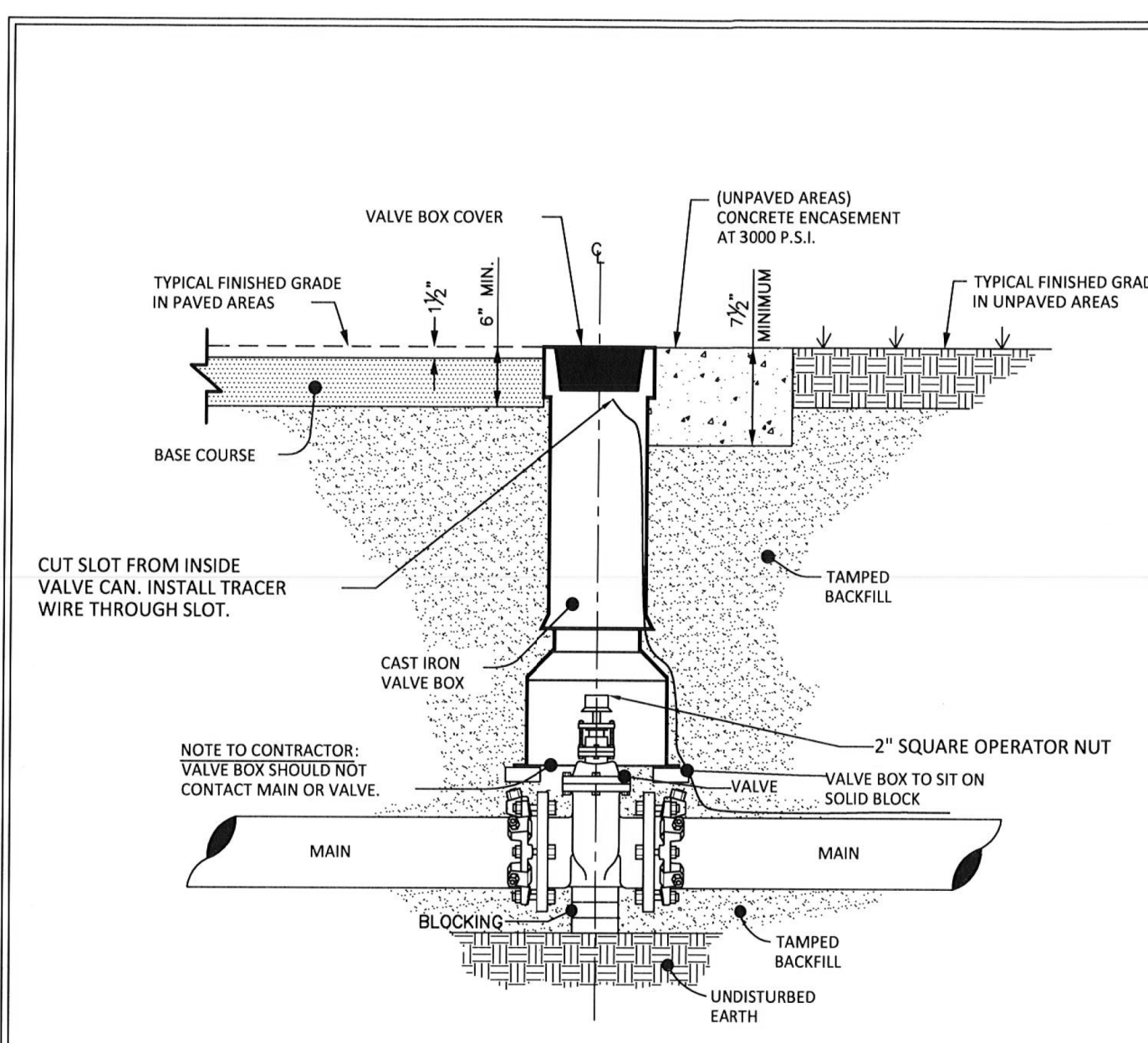
1. PROPOSED 6" WATER LINE FROM -L- STATION 12+57 TO -L- STATION 16+40 SHALL BE D.I.R.J. (DUCTILE IRON RESTRAINED JOINT) PIPE, CL 350.
2. PROPOSED 8" WATER TREATMENT PLANT DISCHARGE LINE FROM -L- STATION 13+55+/- TO -L- STATION 14+35+/- SHALL BE D.I.R.J. (DUCTILE IRON RESTRAINED JOINT) PIPE, CL 350.
3. CONTRACTOR'S ATTENTION IS DIRECTED TO SECTIONS 102, 107, AND 1550 OF THE STANDARD SPECIFICATIONS CONCERNING TRENCHLESS INSTALLATION. IT IS CONTRACTOR'S RESPONSIBILITY TO HAVE BORE DESIGNED AND SEALED BY A LICENSED NORTH CAROLINA PROFESSIONAL ENGINEER. NO DAMAGE IS ALLOWED TO STREAM, WETLANDS, OR BUFFER ZONES.
4. IF HDPE PIPE IS INSTALLED BY DIRECTIONAL DRILL, IT SHALL BE FILLED WITH WATER AND NOT BE CONNECTED TO ANY OTHER PIPE OR FITTINGS FOR ONE WEEK FROM THE TIME OF INSTALLATION.
5. ALL MATERIALS AND CONSTRUCTION PERTAINING TO WATERLINE INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS, SPECIFICATIONS, AND STANDARD DETAILS/DRAWINGS OF MOORE CO. PUBLIC WORKS.
6. ALL MATERIALS AND CONSTRUCTION PERTAINING TO DISCHARGE LINE INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS, SPECIFICATIONS, AND STANDARD DETAILS/DRAWINGS OF TOWN OF SOUTHERN PINES.
7. CONTRACTOR SHALL OBTAIN THE LATEST STANDARDS, SPECIFICATIONS, AND STANDARD DETAILS/DRAWINGS OF MOORE CO. PUBLIC WORKS, TOWN OF SOUTHERN PINES, AND NCDOT.
8. THE CONTRACTOR SHALL COORDINATE ISOLATION OF THE EXISTING WATER MAIN FOR TIE-INS WITH MOORE CO. PUBLIC WORKS. CALL RANDY GOULD, 910-947-6315. IF TEMPORARY SHUT DOWN IS REQUIRED THE CONTRACTOR WILL COORDINATE THIS SHUT DOWN WITH MOORE CO. PUBLIC WORKS IN A MANNER THAT IS MOST CONVENIENT FOR CUSTOMERS AND MOORE CO. PUBLIC WORKS
9. THE CONTRACTOR SHALL COORDINATE ISOLATION OF THE EXISTING DISCHARGE LINE FOR TIE-INS WITH THE TOWN OF SOUTHERN PINES. CALL RON ISTRE, 910-692-1983
10. CONTRACTOR TO LOCATE 6" VALVE TIE-IN AT A FULL JOINT LENGTH OF 6" ASBESTOS CEMENT (AC) PIPE.
11. CONTRACTOR TO PLACE CONCRETE THRUST COLLAR AROUND THE EXISTING ASBESTOS CEMENT (AC) PIPE WEST OF THE 6" VALVE APPROXIMATE -L- STA. 12+57 AND EAST OF THE 6" VALVE AT APPROXIMATE -L- STA. 16+40.
12. ABANDON EXISTING 6" ASBESTOS CEMENT (AC) PIPE IN PLACE. CONTRACTOR TO FILL WITH GROUT, FLOWABLE FILL, OR 3,600 PSI CONCRETE.
13. PERFORM FLUSHING, BACTERIA AND PRESSURE TESTING OF WATER LINE PER MOORE CO. PUBLIC WORKS REQUIREMENTS AND SPECIFICATIONS.
14. PERFORM FLUSHING OF WATER TREATMENT PLANT DISCHARGE LINE PER TOWN OF SOUTHERN PINES REQUIREMENTS AND SPECIFICATIONS. BACTERIA AND PRESSURE TESTING IS NOT REQUIRED BY TOWN OF SOUTHERN PINES
15. COVER OVER ENCASEMENT PIPE AT STREAM CROSSING SHALL BE 5' MINIMUM BELOW STREAM BOTTOM TO TOP OF ENCASEMENT PIPE.
16. THE CONTRACTOR SHALL COORDINATE THE TEMPORARY WATER LINE BYPASS PIPING WITH MOORE CO. PUBLIC WORKS IN A MANNER THAT IS MOST CONVENIENT FOR CUSTOMERS AND MOORE CO. PUBLIC WORKS

UTILITY CONSTRUCTION

PROJECT REFERENCE NO.	SHEET NO.
B-5758	UC-3A
DESIGNED BY: JB	
DRAWN BY: JH	
CHECKED BY: KH	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION

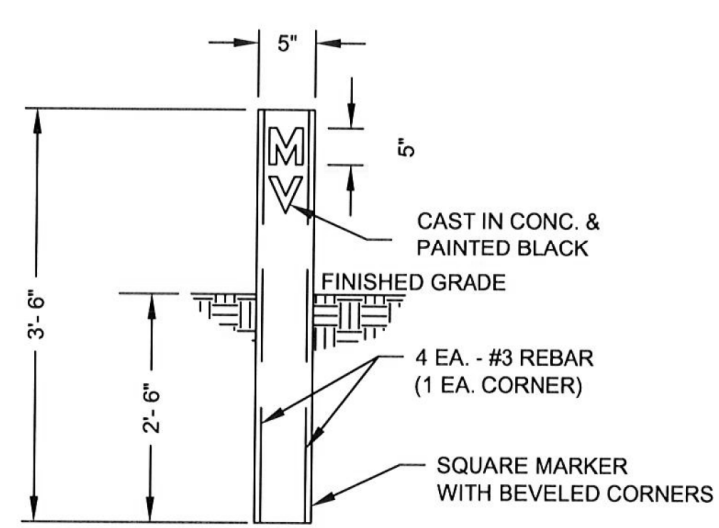
PROJECT TYPICAL DETAILS



- NOTES:
1. ONLY MANUFACTURED VALVE BOX EXTENSIONS SHALL BE ALLOWED.
 2. VALVE OPERATING NUT MUST BE EXTENDED SO THAT THE DEPTH IS NO GREATER THAN 8" (R.) FROM THE SURFACE USING A MANUFACTURER APPROVED EXTENSION KIT.
 3. PRECAST CONCRETE ENCASEMENT IS ALLOWED OUTSIDE OF PAVED AREAS.
 4. CONCRETE PROTECTOR RING MAY BE USED IN LIEU OF ENCASEMENT IN UNPAVED AREAS.
 5. ALL GATE VALVES SHALL BE PLACED ON 4" THICK 8"x12" CONCRETE BLOCKS.

REVISED		MOORE COUNTY PUBLIC WORKS ENGINEERING DIVISION	VALVE AND VALVE BOX INSTALLATION	STD NO.
DATE	DESCRIPTION			PW-3

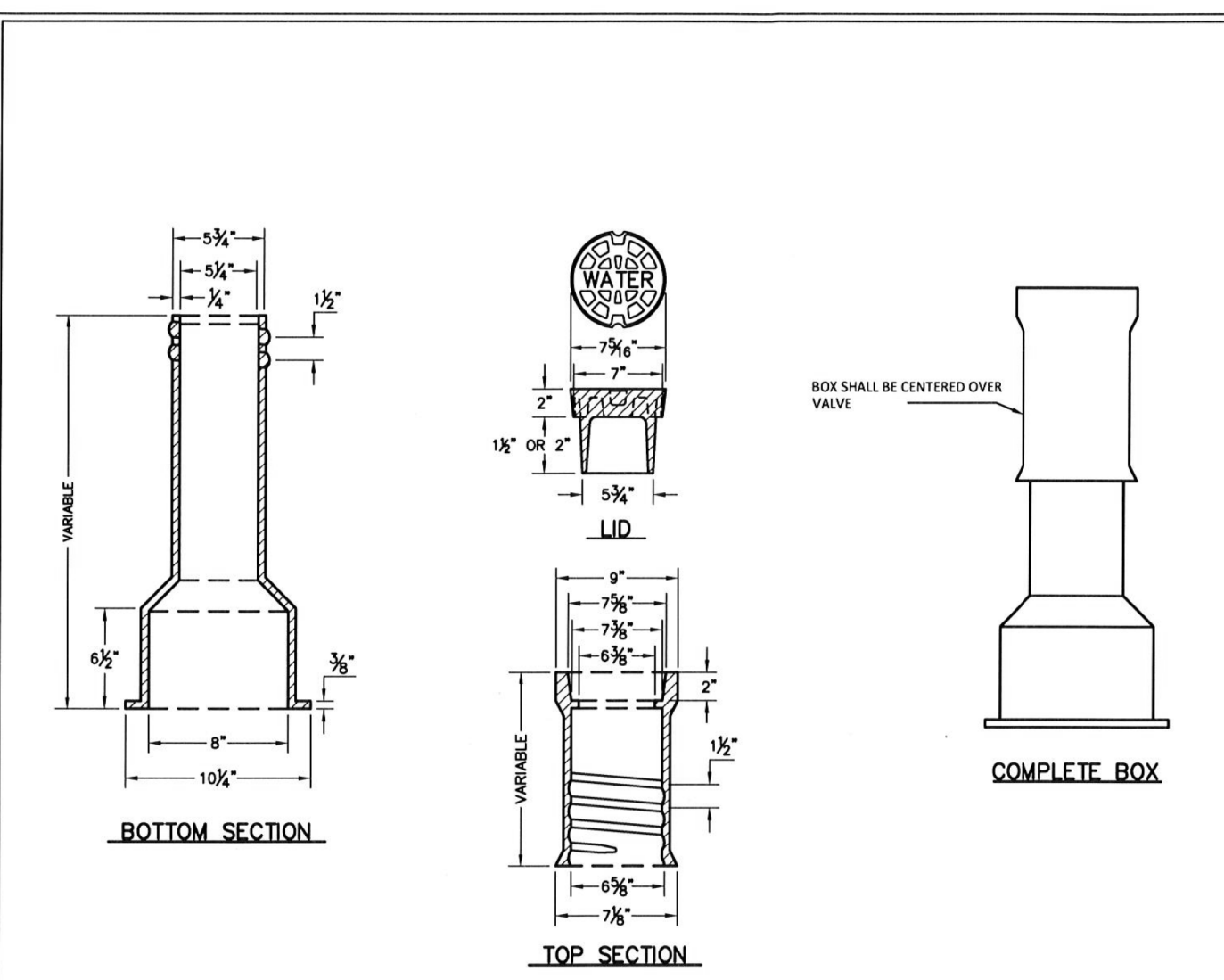
MAY 2015



- NOTES:
1. VALVE MARKERS SHALL BE PLACED AT R.W.
 2. LETTERS SHALL FACE TOWARDS VALVE.
 3. MARKER SHALL HAVE BRASS OR BRONZE EMBED ON TOP OR SIDE.
 4. CONTRACTOR SHALL STAMP DISTANCE TO CENTER OF VALVE INTO EMBED.
 5. MAIN LINE VALVES SHALL HAVE MARKER WITH "MV" CASTED IN IT.
 6. BLOW-OFF ASSEMBLY SHALL INCLUDE MARKER WITH "BO" CASTED IN IT.

REVISED		MOORE COUNTY PUBLIC WORKS ENGINEERING DIVISION	VALVE MARKER	STD NO.
DATE	DESCRIPTION			PW-4

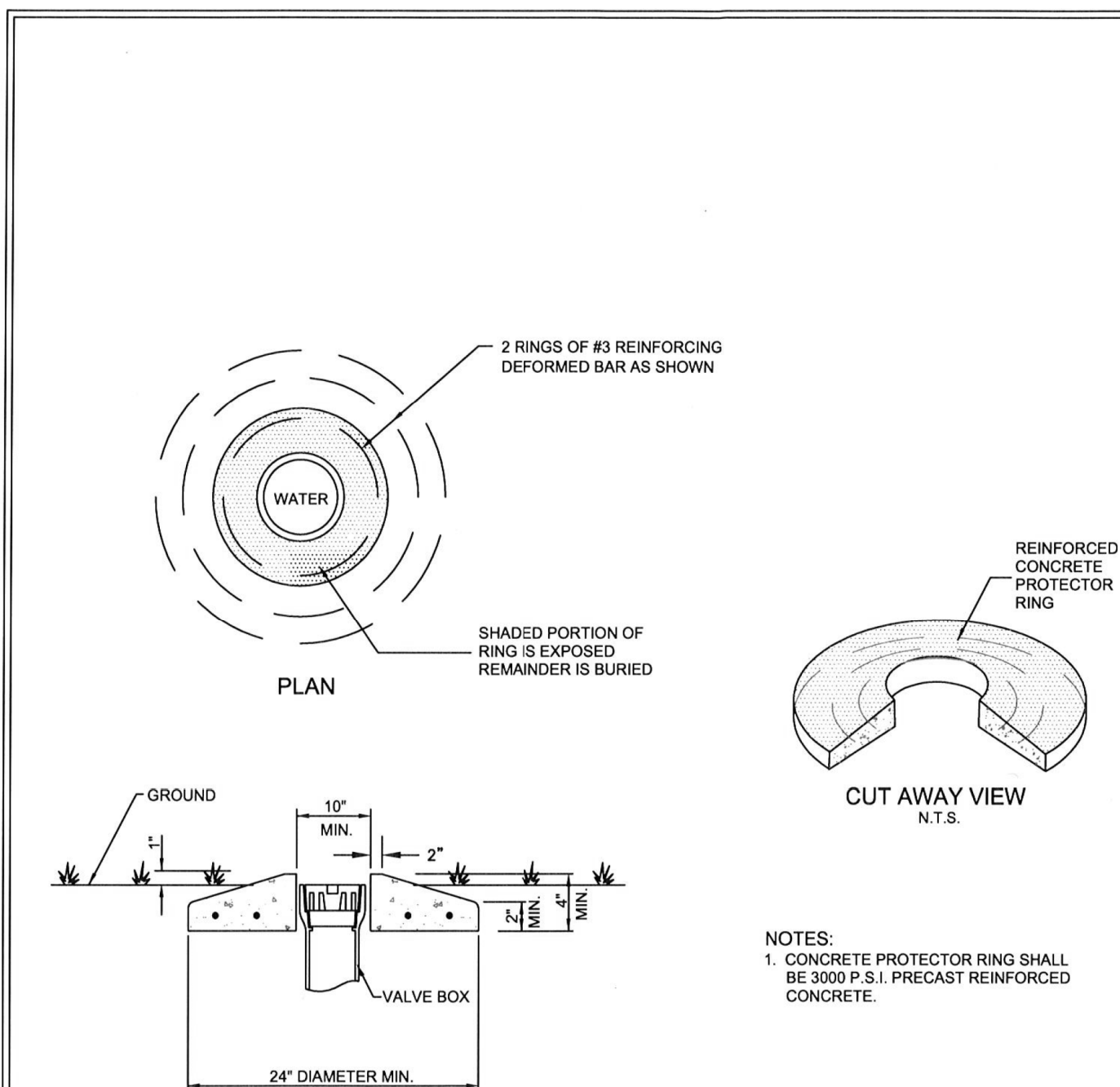
MAY 2015



DIMENSIONS IN INCHES	
TOP	BOTTOM
10	15
10	15
16	24
16	36
26	36
26	48
26	60

REVISED		MOORE COUNTY PUBLIC WORKS ENGINEERING DIVISION	VALVE BOX STANDARD	STD NO.
DATE	DESCRIPTION			PW-5

JAN 2015

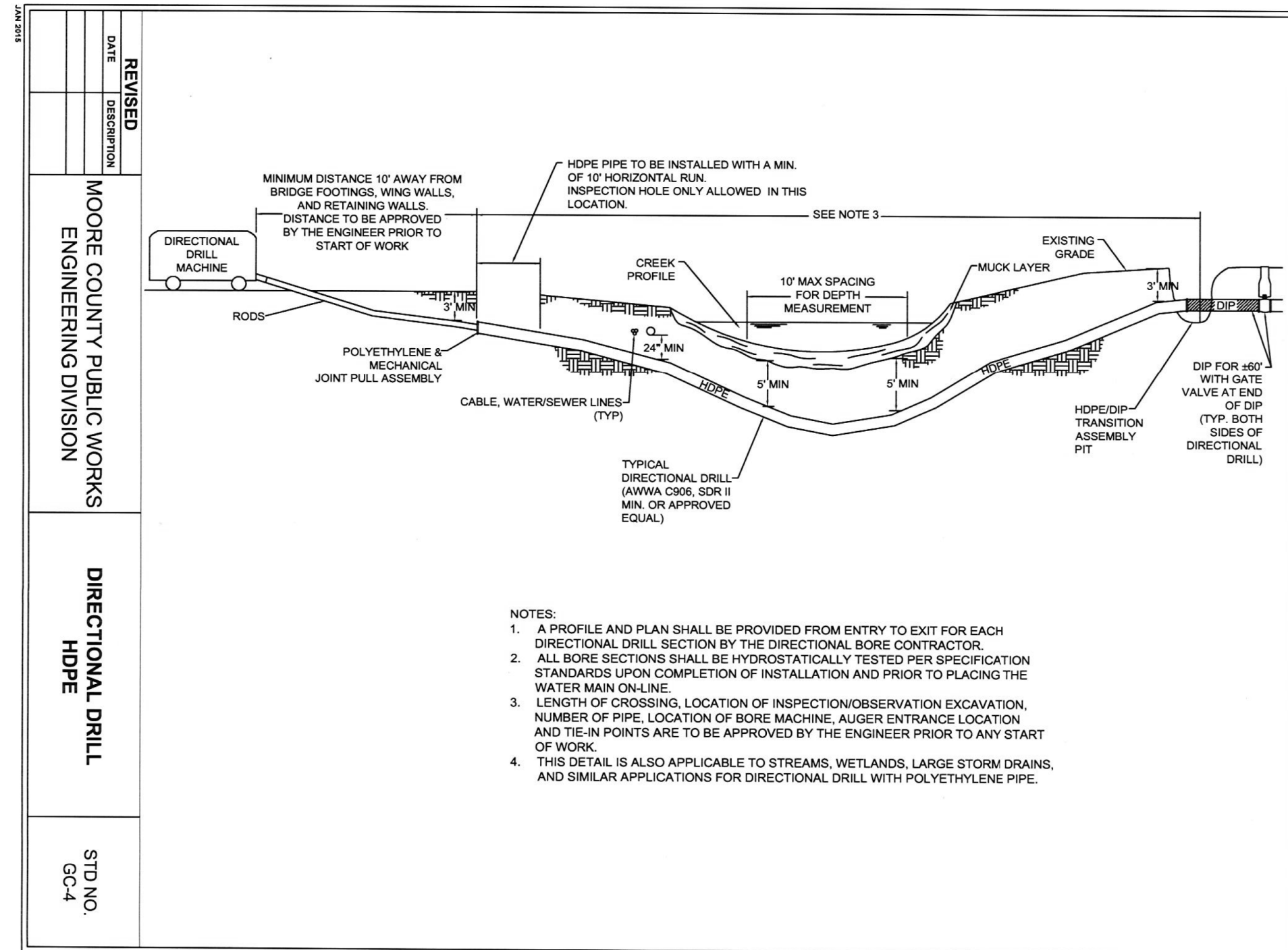


- NOTES:
1. CONCRETE PROTECTOR RING SHALL BE 3000 P.S.I. PRECAST REINFORCED CONCRETE.

REVISED		MOORE COUNTY PUBLIC WORKS ENGINEERING DIVISION	CONCRETE PROTECTOR RING	STD NO.
DATE	DESCRIPTION			PW-6

JAN 2015

5/14/99



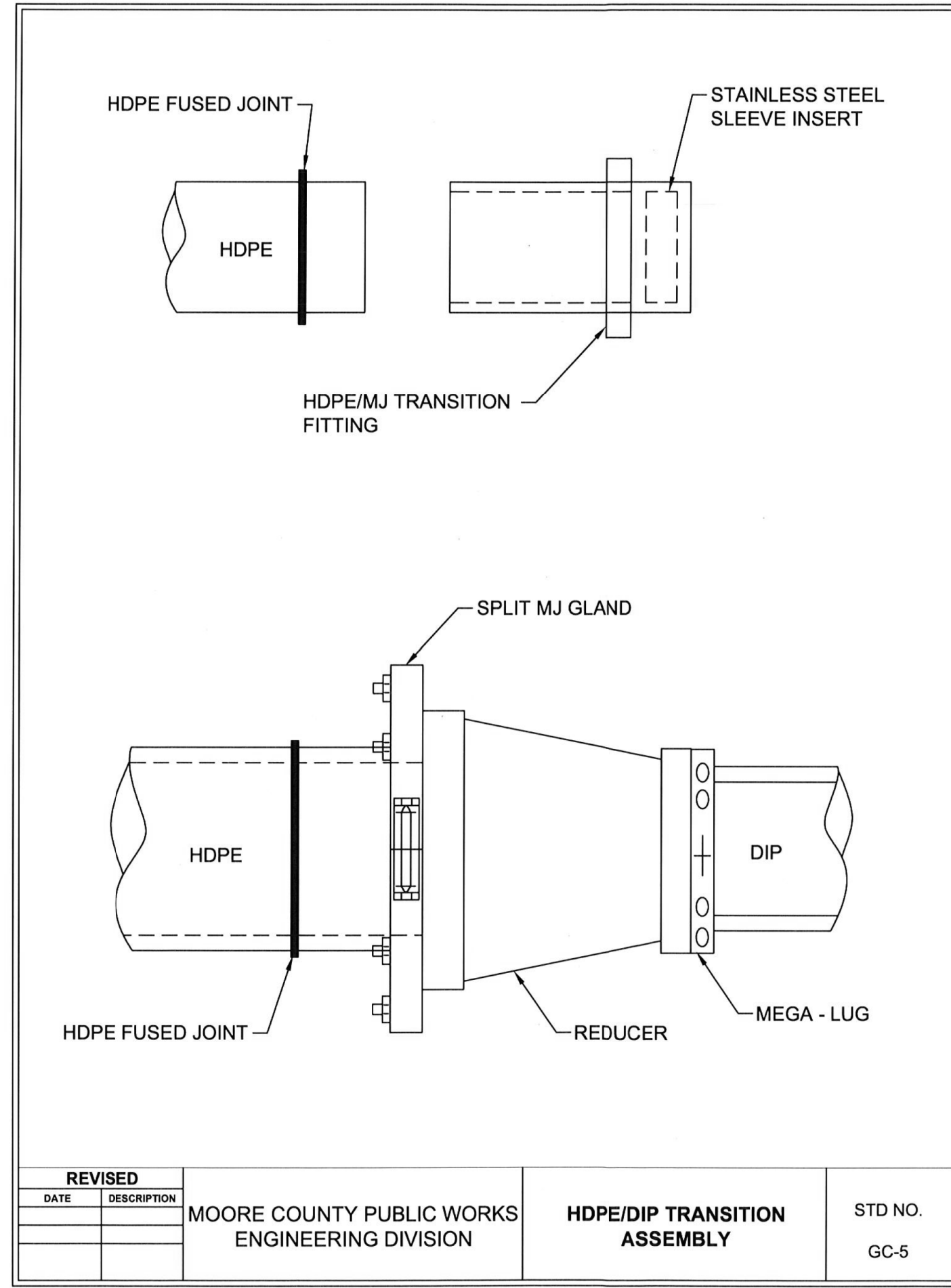
- NOTES:
1. A PROFILE AND PLAN SHALL BE PROVIDED FROM ENTRY TO EXIT FOR EACH DIRECTIONAL DRILL SECTION BY THE DIRECTIONAL BORE CONTRACTOR.
 2. ALL BORE SECTIONS SHALL BE HYDROSTATICALLY TESTED PER SPECIFICATION STANDARDS UPON COMPLETION OF INSTALLATION AND PRIOR TO PLACING THE WATER MAIN ON-LINE.
 3. LENGTH OF CROSSING, LOCATION OF INSPECTION/OBSERVATION EXCAVATION, NUMBER OF PIPE, LOCATION OF BORE MACHINE, AUGER ENTRANCE LOCATION AND TIE-IN POINTS ARE TO BE APPROVED BY THE ENGINEER PRIOR TO ANY START OF WORK.
 4. THIS DETAIL IS ALSO APPLICABLE TO STREAMS, WETLANDS, LARGE STORM DRAINS, AND SIMILAR APPLICATIONS FOR DIRECTIONAL DRILL WITH POLYETHYLENE PIPE.

REVISED	DATE	DESCRIPTION

MOORE COUNTY PUBLIC WORKS
ENGINEERING DIVISION

DIRECTIONAL DRILL
HDPE

STD NO.
GC-4



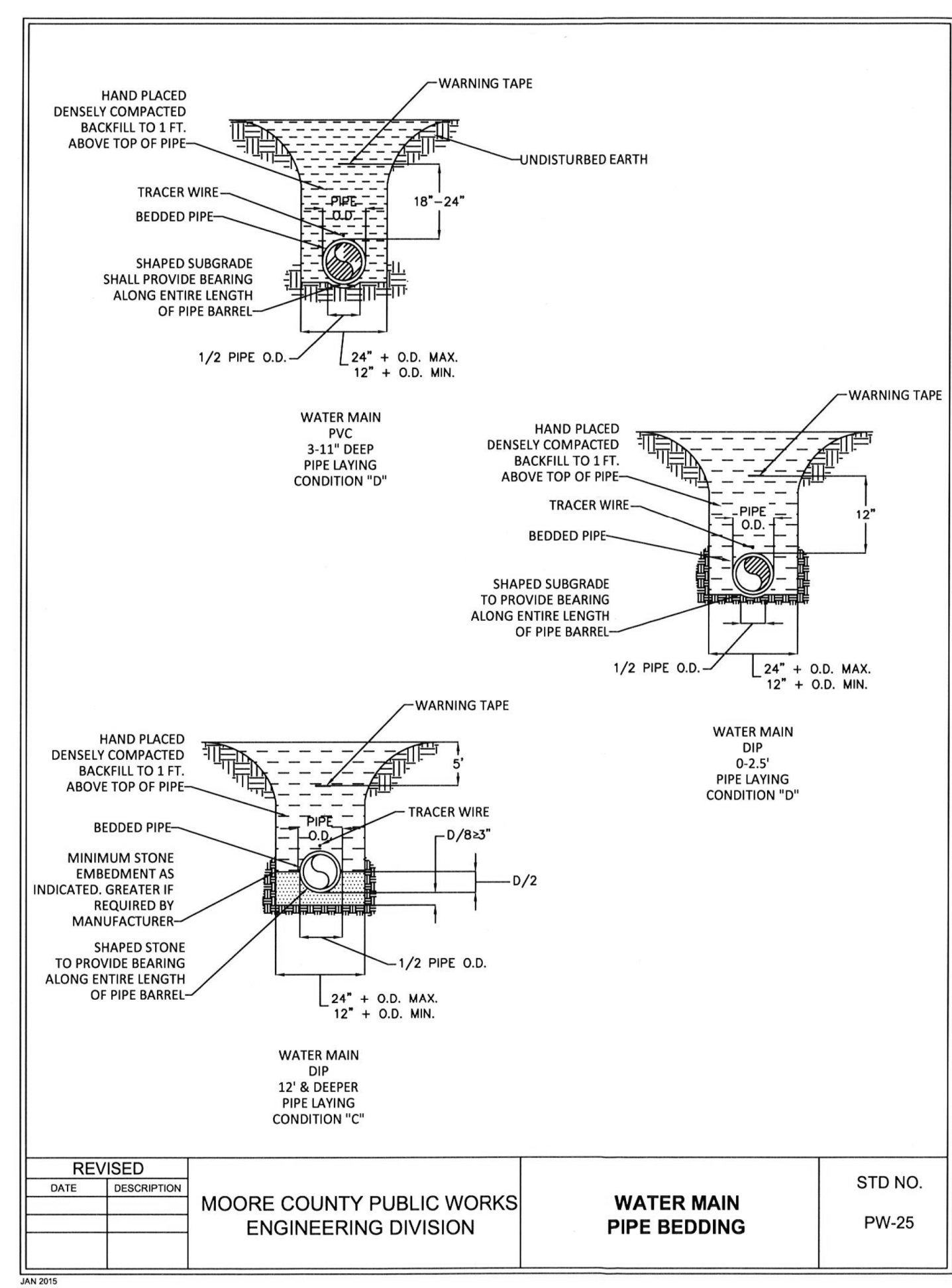
REVISED	DATE	DESCRIPTION	MOORE COUNTY PUBLIC WORKS ENGINEERING DIVISION	HDPE/DIP TRANSITION ASSEMBLY	STD NO. GC-5

JAN 2015

PROJECT REFERENCE NO. B-5758	SHEET NO. UC-3B
DESIGNED BY: JB	
DRAWN BY: JH	
CHECKED BY: KH	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

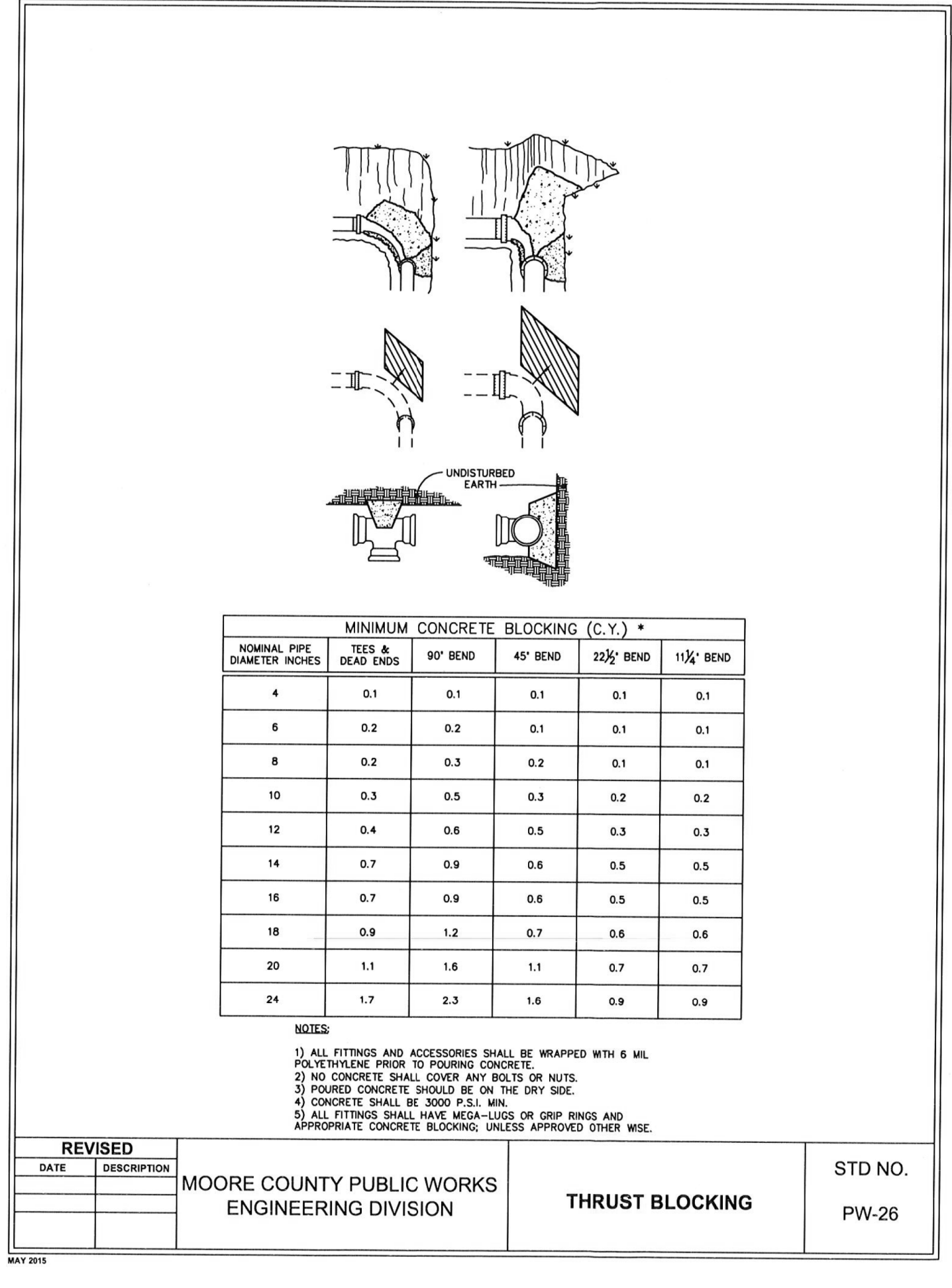
UTILITY CONSTRUCTION

PROJECT
TYPICAL
DETAILS



REVISED	DATE	DESCRIPTION	MOORE COUNTY PUBLIC WORKS ENGINEERING DIVISION	WATER MAIN PIPE BEDDING	STD NO. PW-25

JAN 2015

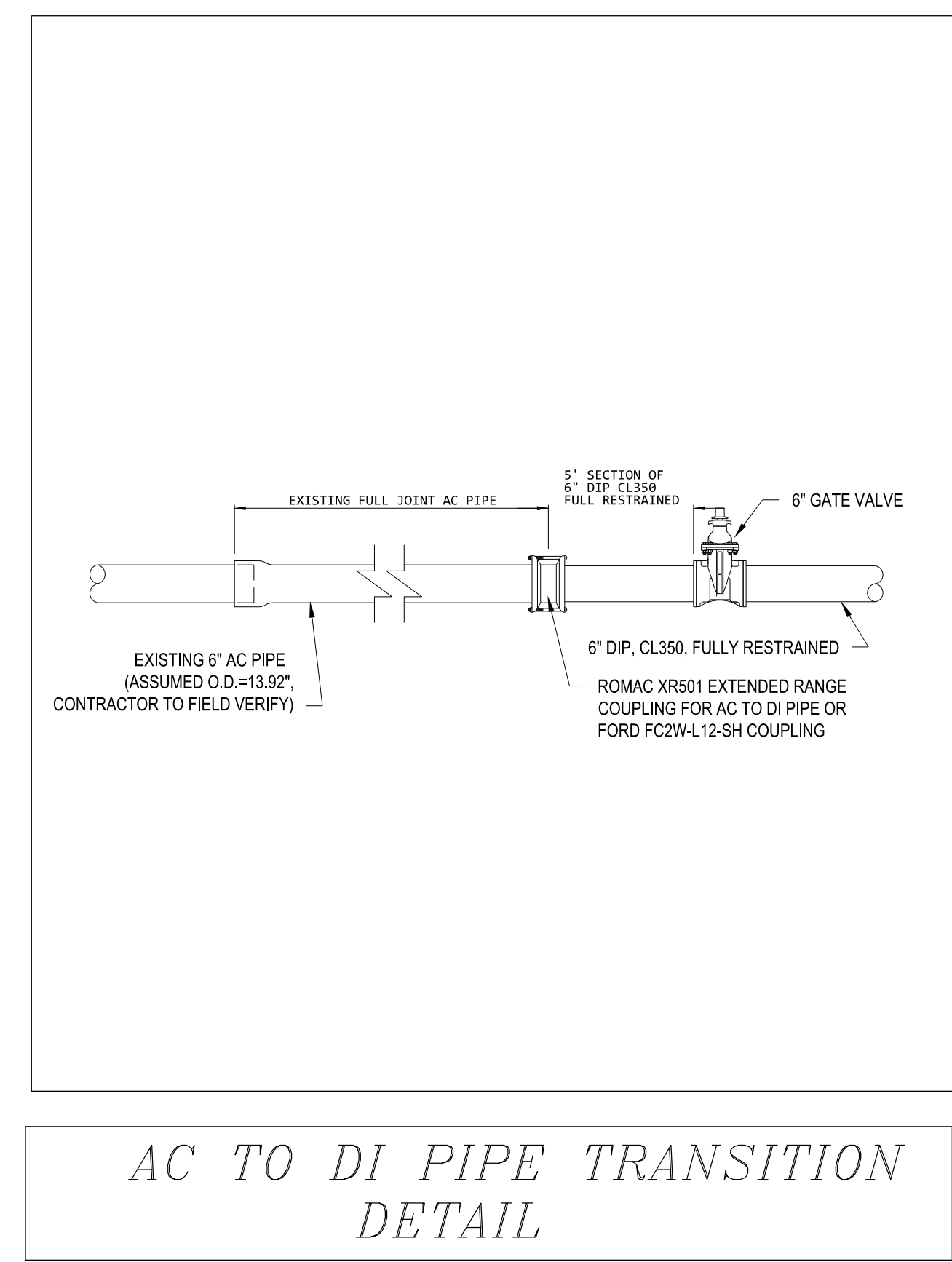


NOMINAL PIPE DIAMETER INCHES	MINIMUM CONCRETE BLOCKING (C.Y.) *				
	TEES & DEAD ENDS	90° BEND	45° BEND	22½° BEND	1½° BEND
4	0.1	0.1	0.1	0.1	0.1
6	0.2	0.2	0.1	0.1	0.1
8	0.2	0.3	0.2	0.1	0.1
10	0.3	0.5	0.3	0.2	0.2
12	0.4	0.6	0.5	0.3	0.3
14	0.7	0.9	0.6	0.5	0.5
16	0.7	0.9	0.6	0.5	0.5
18	0.9	1.2	0.7	0.6	0.6
20	1.1	1.6	1.1	0.7	0.7
24	1.7	2.3	1.6	0.9	0.9

- NOTES:
- 1) ALL FITTINGS AND ACCESSORIES SHALL BE WRAPPED WITH 6 MIL POLYETHYLENE PRIOR TO POURING CONCRETE.
 - 2) NO CONCRETE SHALL COVER ANY BOLTS OR NUTS.
 - 3) POURED CONCRETE SHOULD BE ON THE DRY SIDE.
 - 4) CONCRETE SHALL BE 3000 P.S.I. MIN.
 - 5) ALL FITTINGS SHALL HAVE MEGA-LUGS OR GRIP RINGS AND APPROPRIATE CONCRETE BLOCKING, UNLESS APPROVED OTHER WISE.

REVISED	DATE	DESCRIPTION	MOORE COUNTY PUBLIC WORKS ENGINEERING DIVISION	THRUST BLOCKING	STD NO. PW-26

MAY 2015



AC TO DI PIPE TRANSITION
DETAIL

5/14/2015
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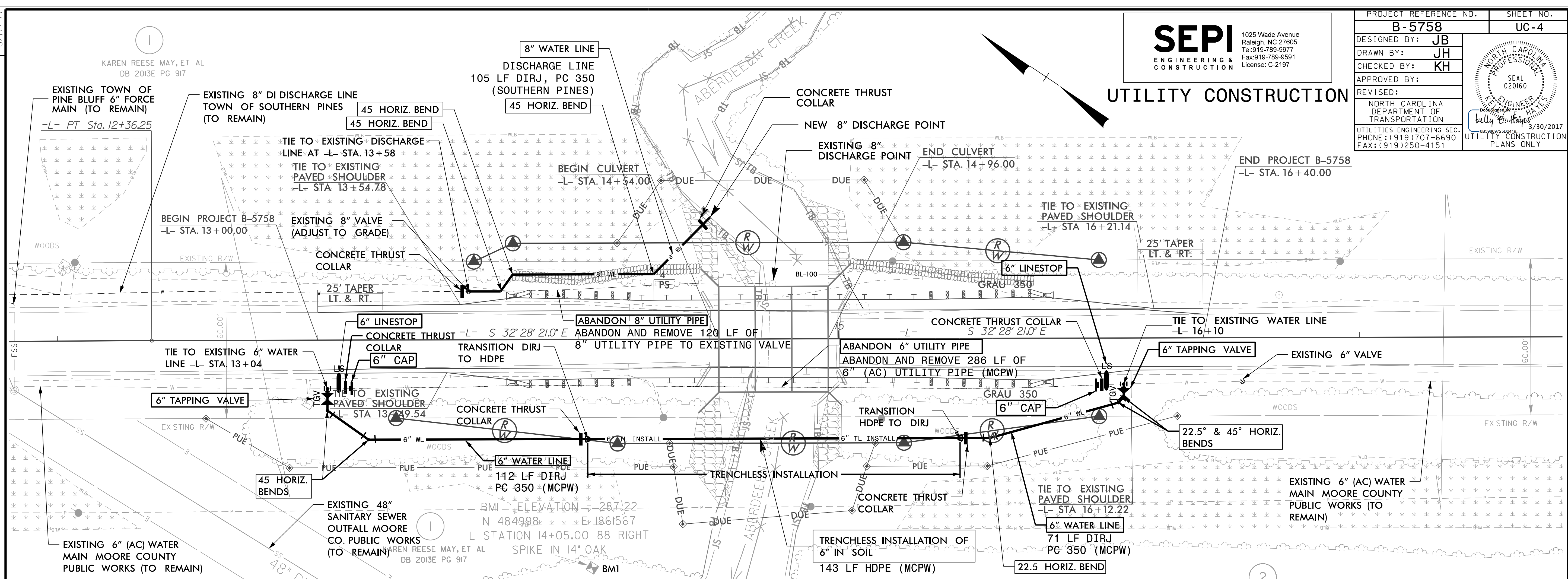
8/17/17

KAREN REESE MAY, ET AL
DB 2013E PG 917

SEPI
ENGINEERING & CONSTRUCTION
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Raleigh, NC 27605
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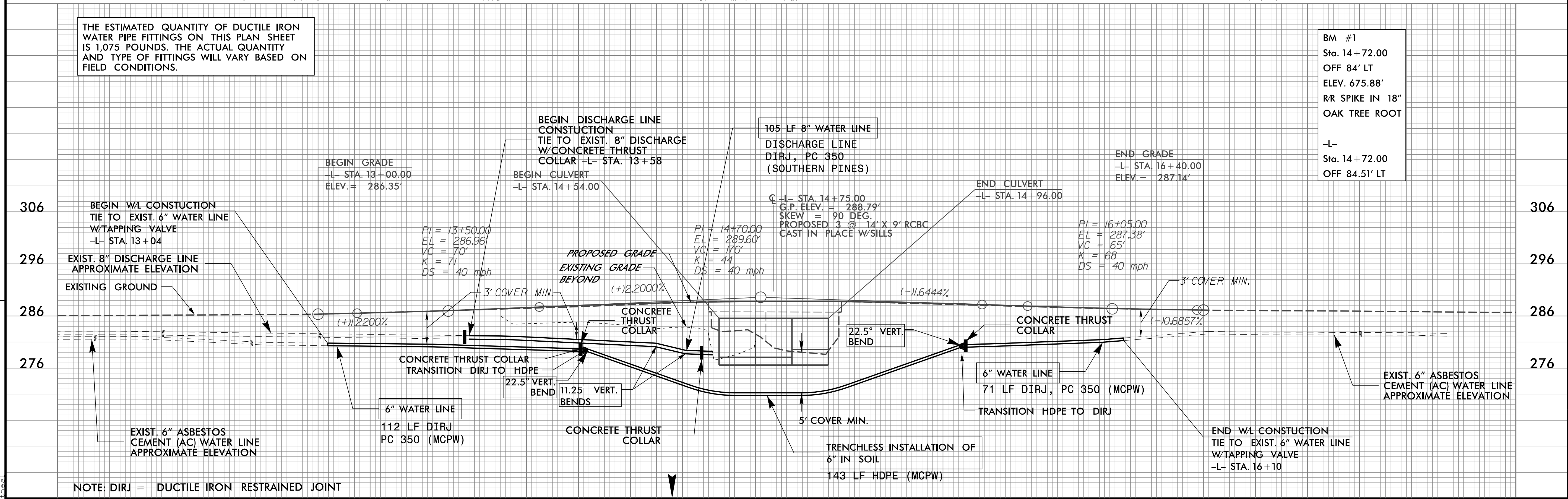
PROJECT REFERENCE NO.	SHEET NO.
B-5758	UC-4
DESIGNED BY: JB	
DRAWN BY: JH	
CHECKED BY: KH	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SECTION PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION



THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 1,075 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

BM #1
Sta. 14+72.00
OFF 84' LT
ELEV. 675.88'
RR SPIKE IN 18" OAK TREE ROOT
-L- Sta. 14+72.00
OFF 84.51' LT



NOTE: DIRJ = DUCTILE IRON RESTRAINED JOINT

REVISIONS

3/27/2017
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09/08/99

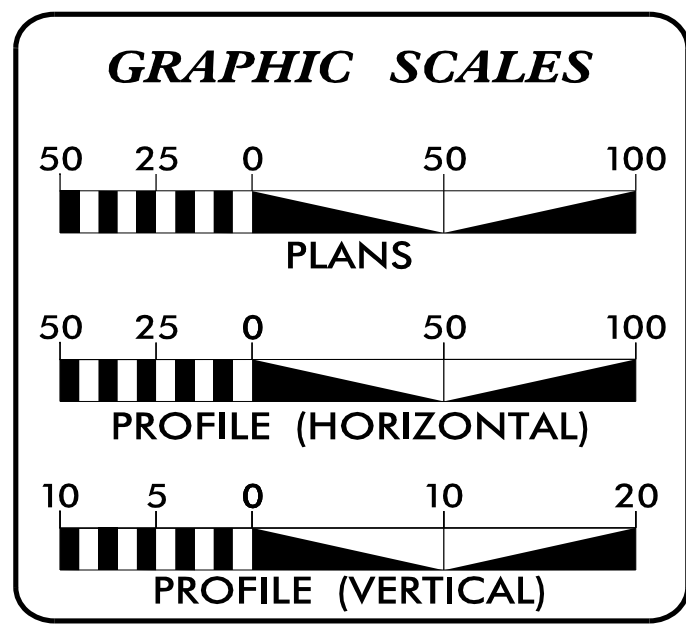
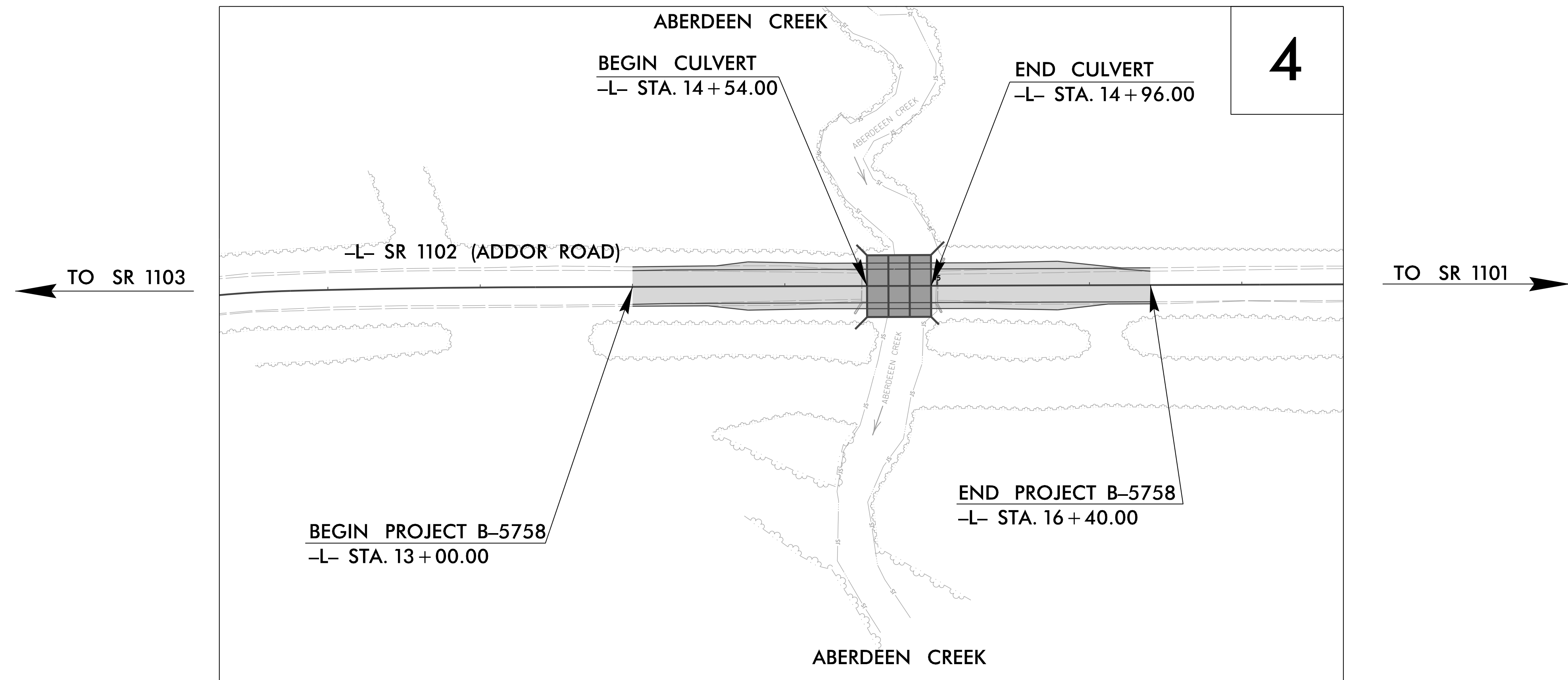
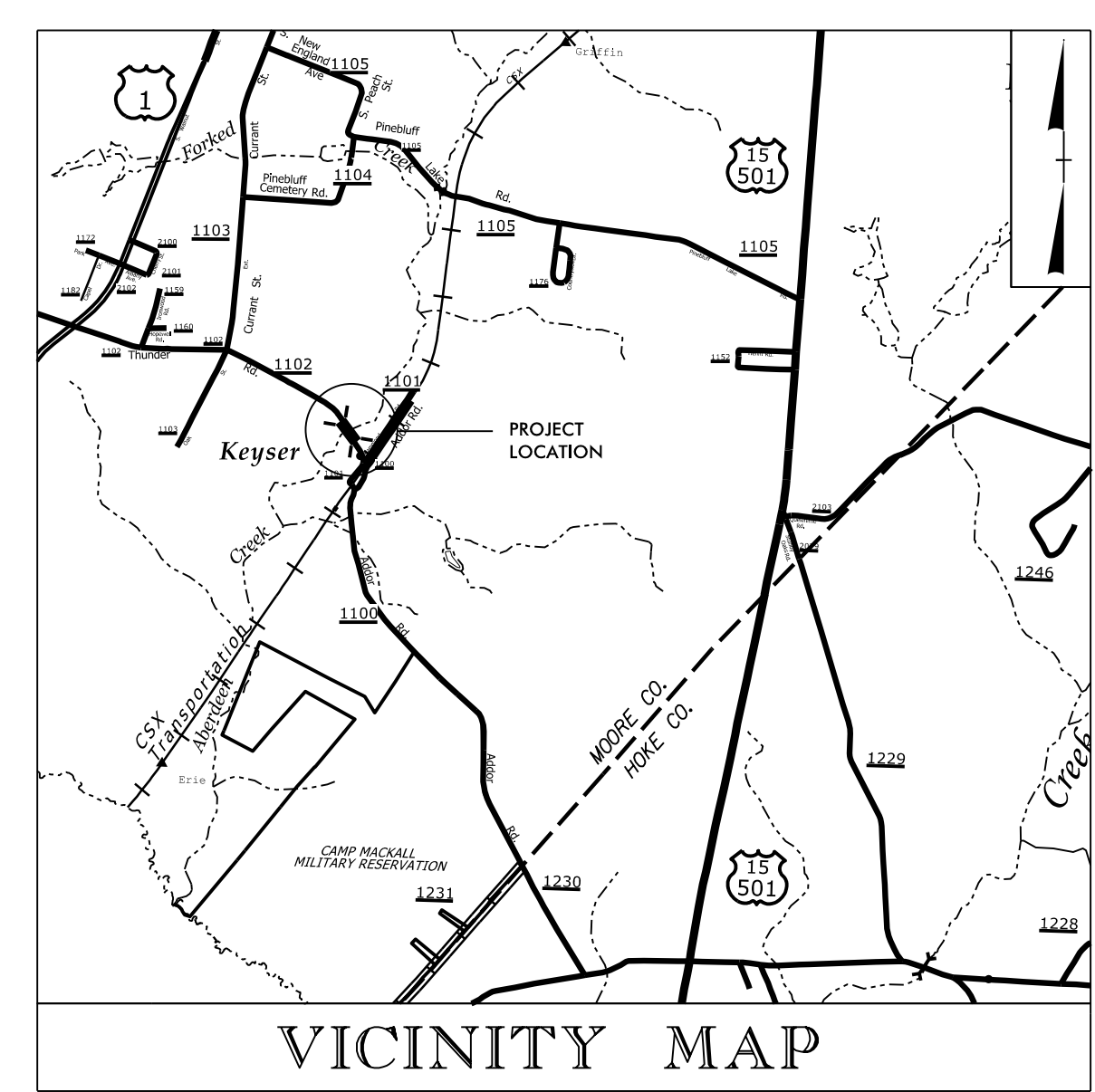
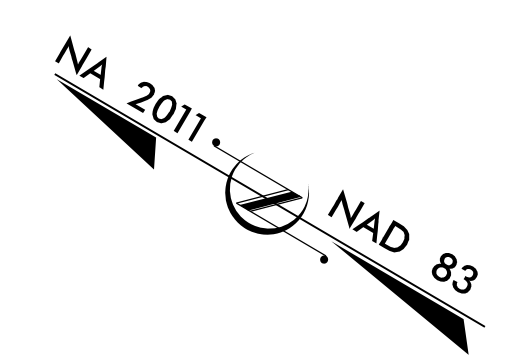
PROJECT: B-5758

T.I.P. NO.	SHEET NO.
B-5758	UO-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

**UTILITY BY OTHERS PLANS
MOORE COUNTY**

**LOCATION: BRIDGE NO. 13 OVER ABERDEEN CREEK ON
S.R. 1102 (ADDOR ROAD)**
**TYPE OF WORK: ELECTRIC POWER DISTRIBUTION, TELEPHONE,
CABLE TV**



SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2	UTILITY SYMBOLOGY SHEET
UC-3	UTILITY BY OTHERS SHEET

- UTILITY OWNERS ON PROJECT**
- (1) DUKE ENERGY - POWER (DISTRIBUTION)
 - (2) WINDSTREAM - COMMUNICATIONS
 - (3) MOORE CO. PUBLIC WORKS - DOMESTIC WATER LINE
 - (4) MOORE CO. PUBLIC WORKS - SANITARY SEWER OUTFALL
 - (5) TOWN OF SOUTHERN PINES - WATER TREATMENT PLANT DISCHARGE LINE

SEPI
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License: C-2197

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

3/30/2017
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5/14/99

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS



PROJECT REFERENCE NO. B-5758	SHEET NO. U0-2
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UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK
SHOWN ON THIS SHEET WILL
BE DONE BY OTHERS

UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

Water Line (Sized as Shown)	_____
11¼ Degree Bend	++
22½ Degree Bend	+x
45 Degree Bend	+x
90 Degree Bend	+†
Plug	⊥
Tee	⊥
Cross	⊥
Reducer	▶
Gate Valve	GV
Butterfly Valve	BV
Tapping Valve	TGV
Line Stop	LS
Line Stop with Bypass	LS/BP
Blow Off	BO
Fire Hydrant	PFH
Relocate Fire Hydrant	RFH
Remove Fire Hydrant	REM FH
Water Meter	PWM
Relocate Water Meter	RWM
Remove Water Meter	REM WM
Water Pump Station	PS(W)
RPZ Backflow Preventer	PRPZ
DCV Backflow Preventer	PBFP
Relocate RPZ Backflow Preventer	RRPZ
Relocate DCV Backflow Preventer	RBFP

PROPOSED SEWER SYMBOLS

Gravity Sewer Line (Sized as Shown)	_____
Force Main Sewer Line (Sized as Shown)	_____
Manhole (Sized per Note)	•
Sewer Pump Station	PS(SS)

PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

Power Pole	o
Telephone Pole	o
Joint Use Pole	o
Telephone Pedestal	TEL PED
Utility Line by Others (Type as Shown)	_____
Trenchless Installation	_____
Encasement by Open Cut	_____
Encasement	_____

Thrust Block	I
Air Release Valve	AR
Utility Vault	UV
Concrete Pier	CP
Steel Pier	SP
Plan Note	NOTE
Pay Item Note	PAY ITEM

EXISTING UTILITIES SYMBOLS

Power Pole	•	*Underground Power Line	_____
Telephone Pole	•	*Underground Telephone Cable	_____
Joint Use Pole	•	*Underground Telephone Conduit	_____
Utility Pole	•	*Underground Fiber Optics Telephone Cable	_____
Utility Pole with Base	□	*Underground TV Cable	_____
H-Frame Pole	•—•	*Underground Fiber Optics TV Cable	_____
Power Transmission Line Tower	⊠	*Underground Gas Pipeline	_____
Water Manhole	⊙	Aboveground Gas Pipeline	A/G Gas
Power Manhole	⊙	*Underground Water Line	_____
Telephone Manhole	⊙	Aboveground Water Line	A/G Water
Sanitary Sewer Manhole	⊙	*Underground Gravity Sanitary Sewer Line	_____
Hand Hole for Cable	⊠	Aboveground Gravity Sanitary Sewer Line	A/G Sanitary Sewer
Power Transformer	⊠	*Underground SS Forced Main Line	_____
Telephone Pedestal	⊠	Underground Unknown Utility Line	_____
CATV Pedestal	⊠	SUE Test Hole	•
Gas Valve	◇	Water Meter	○
Gas Meter	◇	Water Valve	⊙
Located Miscellaneous Utility Object	○	Fire Hydrant	◇
Abandoned According to Utility Records	AATUR	Sanitary Sewer Cleanout	⊙
End of Information	E.O.I.		

*For Existing Utilities
Utility Line Drawn from Record (Type as Shown)
Designated Utility Line (Type as Shown)

3/30/2017 10:00 AM B-5758_Ut_sjm_U02.dgn

8/17/99

KAREN REESE MAY, ET AL
DB 2013E PG 917

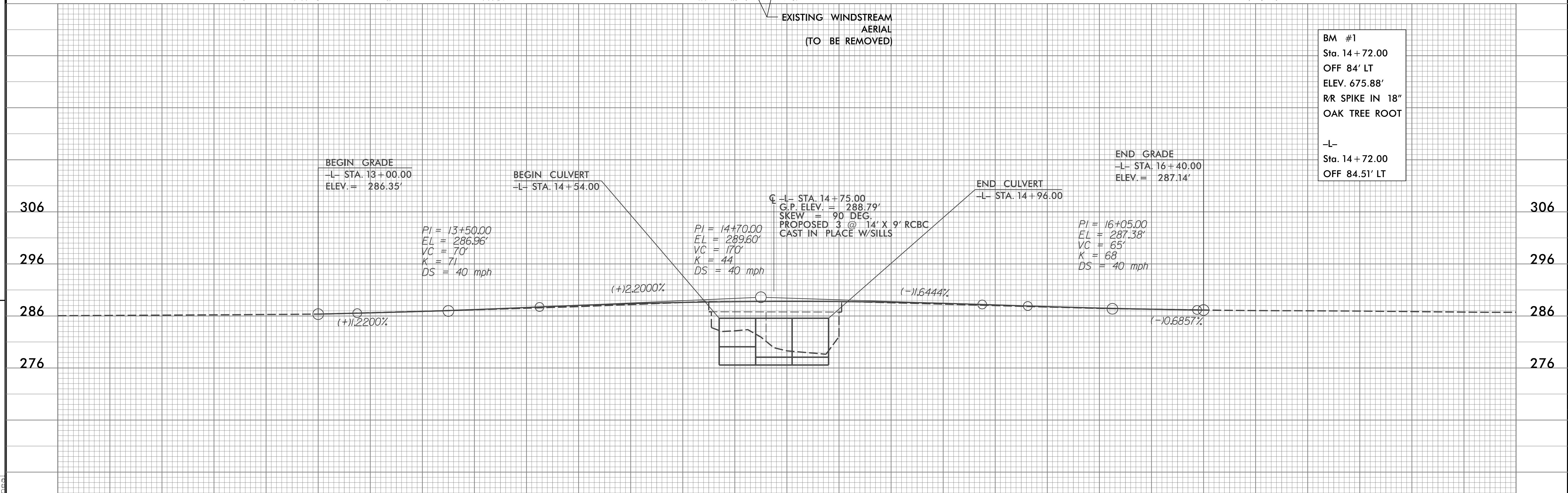
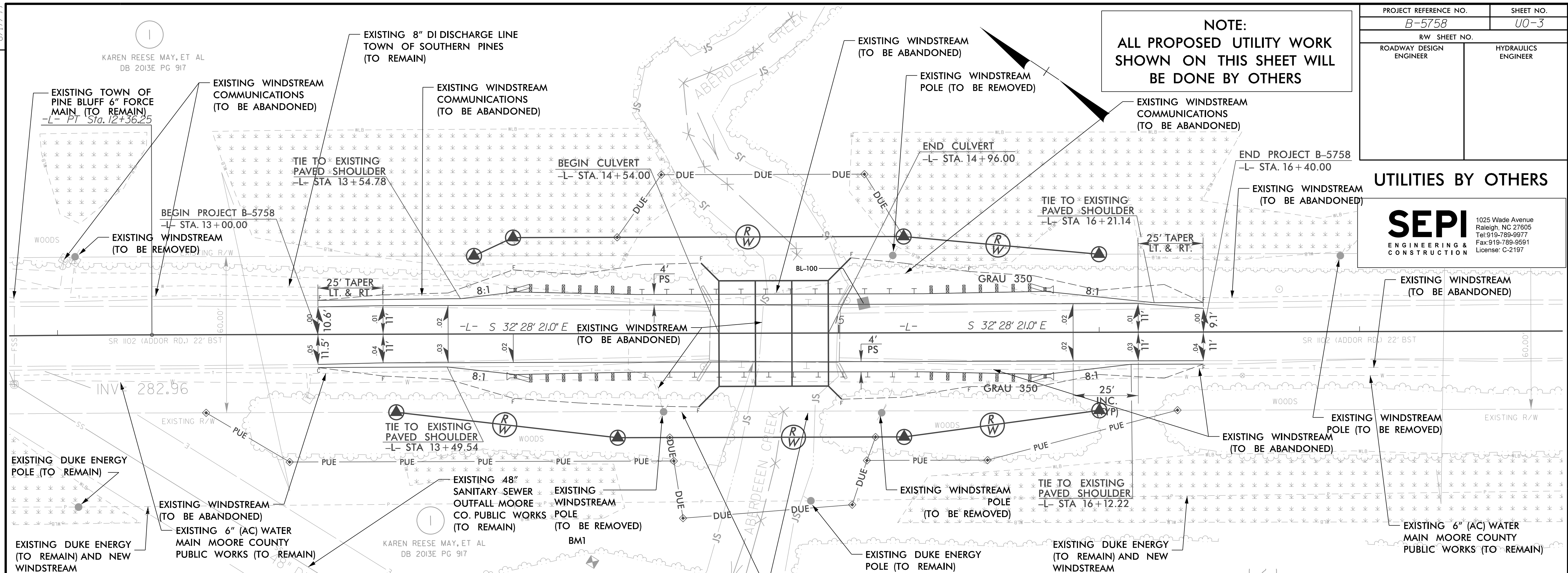
PROJECT REFERENCE NO. B-5758	SHEET NO. U0-3
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

UTILITIES BY OTHERS

SEPI
ENGINEERING & CONSTRUCTION

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



BM #1
Sta. 14+72.00
OFF 84' LT
ELEV. 675.88'
RR SPIKE IN 18"
OAK TREE ROOT

-L-
Sta. 14+72.00
OFF 84.51' LT

REVISIONS

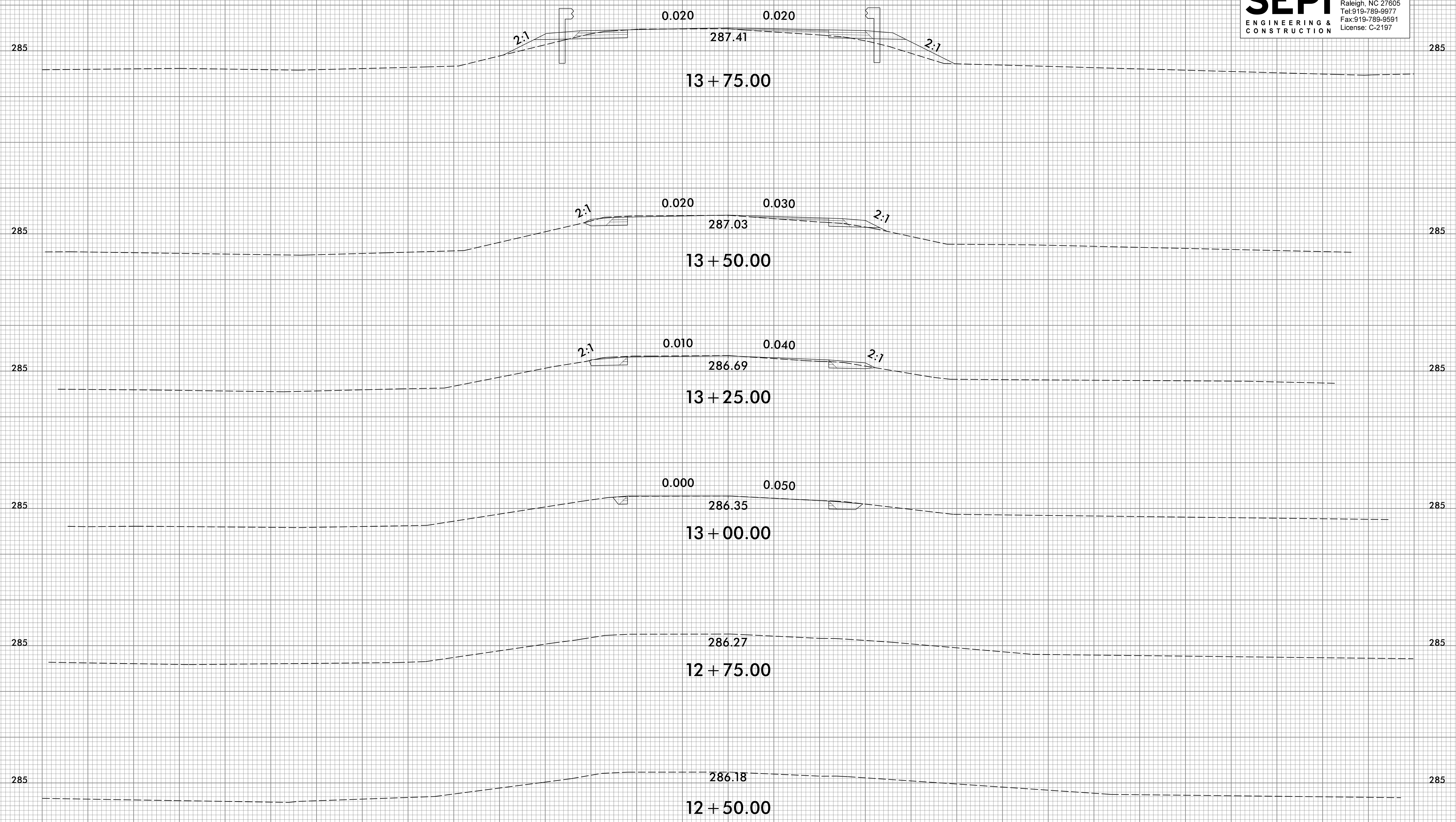
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8/23/99

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SEPI
 ENGINEERING &
 CONSTRUCTION

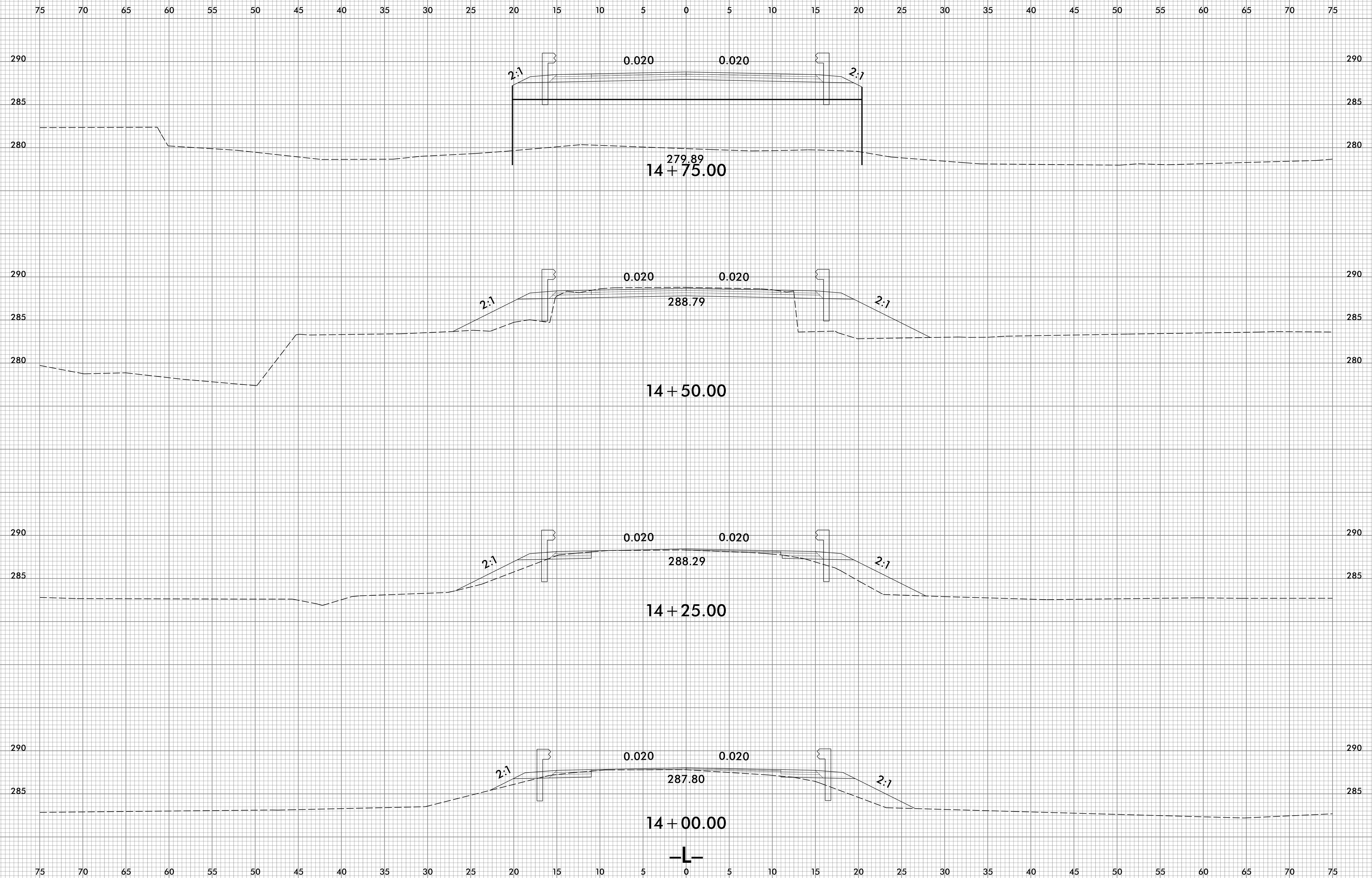
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 Raleigh, NC 27605
 Tel: 919-789-9977
 Fax: 919-789-9591
 License: C-2197

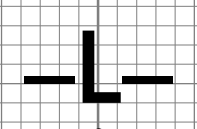
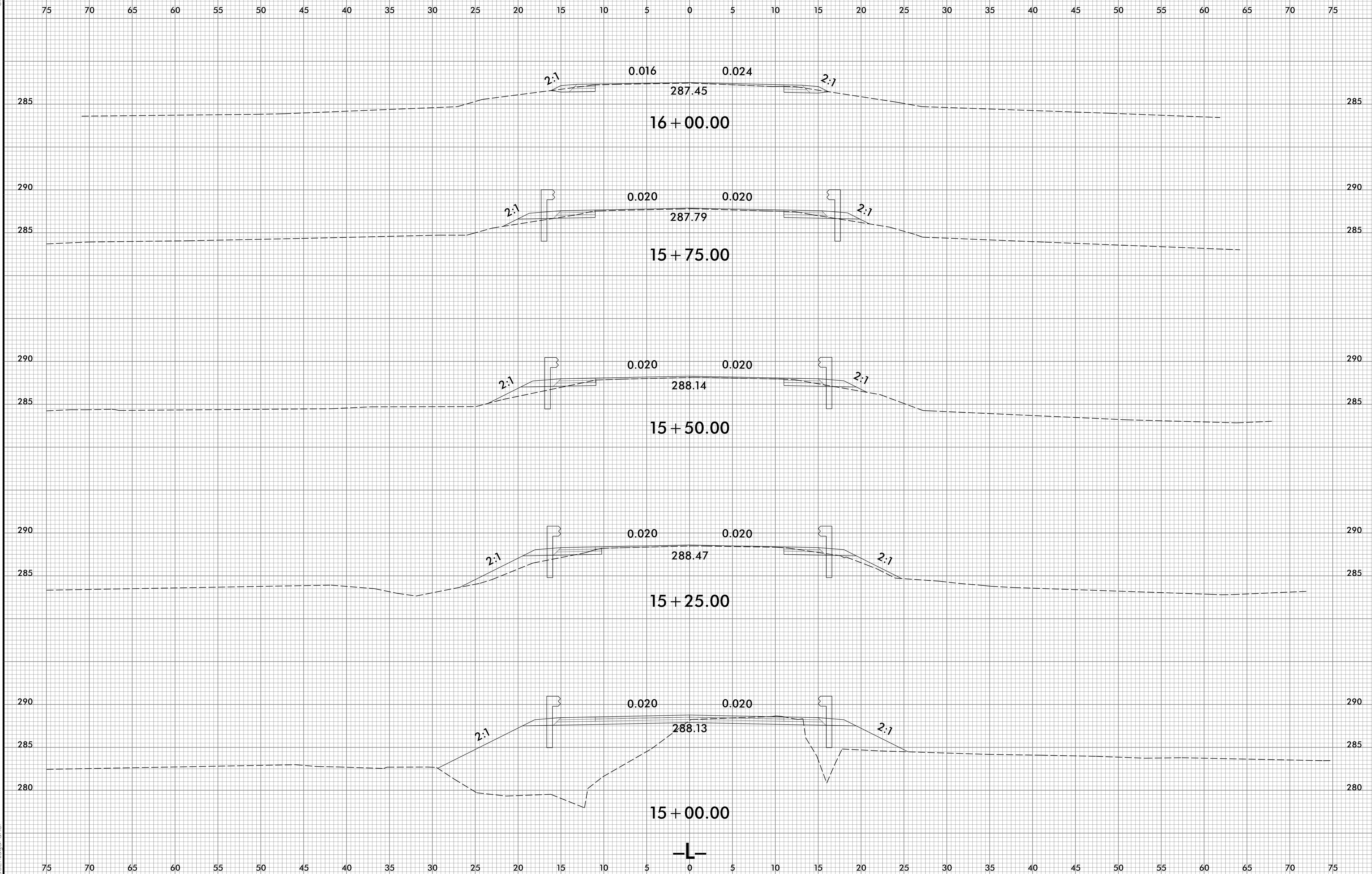


Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

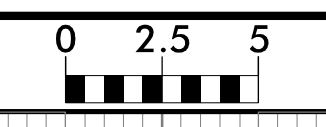
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8/23/99



PROJ. REFERENCE NO.	SHEET NO.
B-5758	X-5

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285 285

287.07

16 + 50.00

285 285

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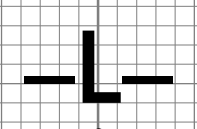
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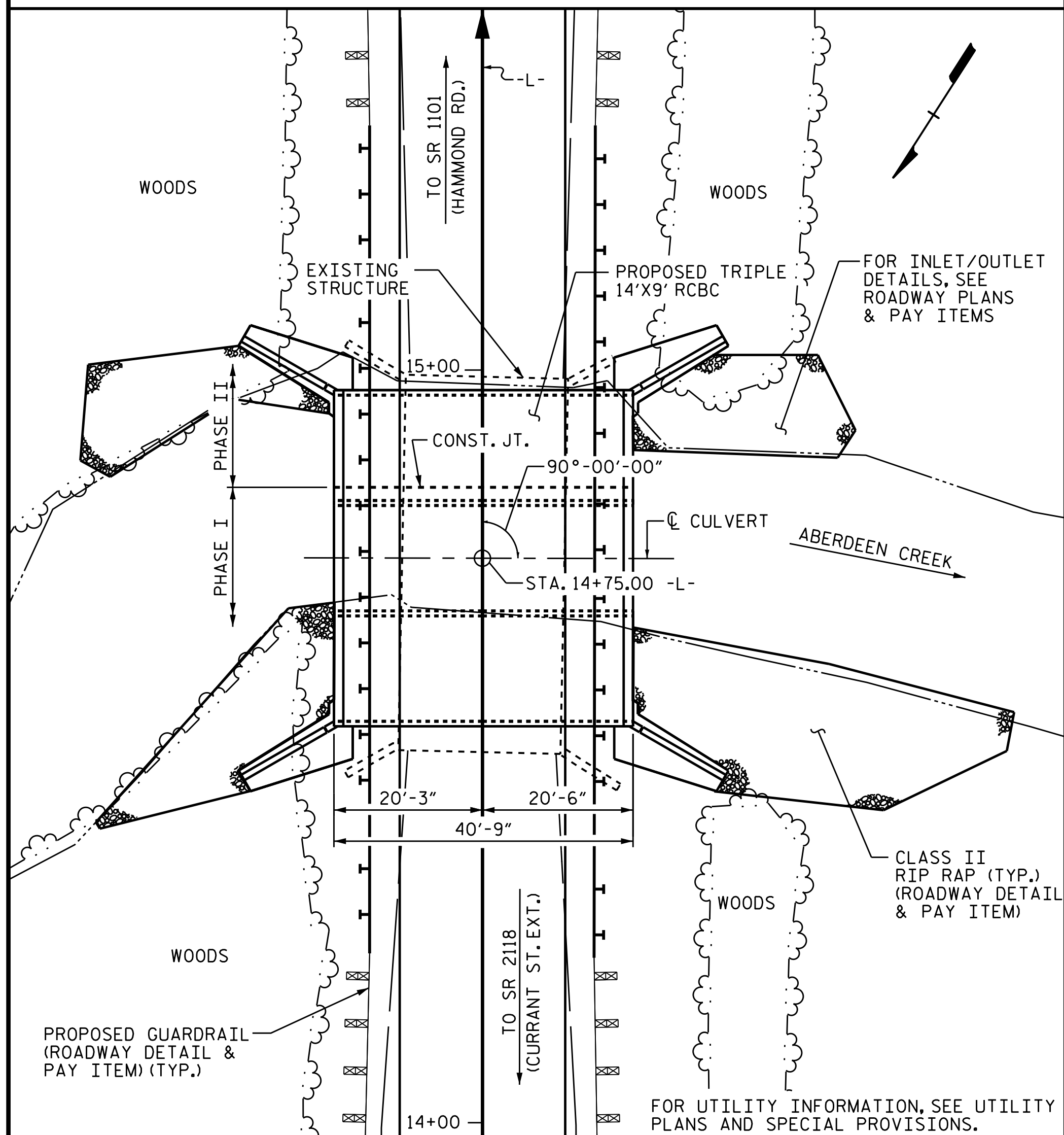
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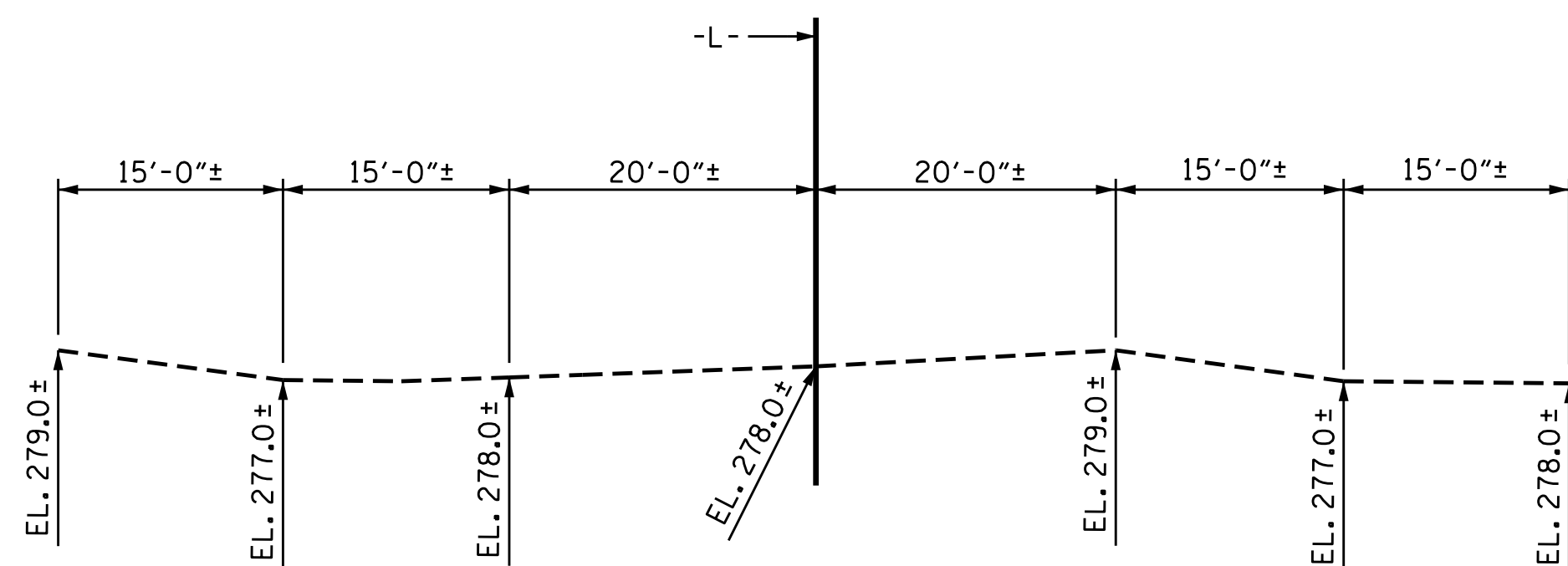
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3/28/2017
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 JSE:Rcdg-ar

BM #1: RR SPIKE IN 14"Ø OAK TREE, STATION 14+05.17 -L-
87.72' RIGHT, ELEV. 287.22



LOCATION SKETCH



PROFILE ALONG CULVERT

DRAWN BY : J.S. SMITH DATE : 7/26/16
 CHECKED BY : J.K. BOWLES DATE : 8/5/16
 DESIGN ENGINEER OF RECORD: J.K. BOWLES DATE : 11/23/16

NOTES

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

DESIGN FILL = 3.22' MAXIMUM, 2.79' MINIMUM

FOR OTHER DESIGN DATA AND NOTES, SEE STANDARD NOTE SHEET.

3"Ø WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.

CONCRETE IN PHASE I CULVERT TO BE POURED IN THE FOLLOWING ORDER:

1. PHASE I WING FOOTINGS, FLOOR SLAB AND CURTAIN WALLS TO THE CONSTRUCTION JOINT INCLUDING 4" OF PHASE I VERTICAL WALLS.
2. THE REMAINING PORTION OF PHASE I WALLS AND PHASE I WINGS FULL HEIGHT.
3. PHASE I SILLS.

CONCRETE IN PHASE II CULVERT TO BE POURED IN THE FOLLOWING ORDER:

1. PHASE II WING FOOTINGS, FLOOR SLAB AND CURTAIN WALLS TO THE CONSTRUCTION JOINT INCLUDING 4" OF PHASE II VERTICAL WALL.
2. THE REMAINING PORTION OF PHASE II WALL AND PHASE II WINGS FULL HEIGHT.
3. PHASE II SILLS.
4. ROOF SLAB AND HEADWALLS.

THE RESIDENT ENGINEER SHALL CHECK THE LENGTH OF THE 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 THE WING SHEETS.

STEEL IN THE BOTTOM SLAB MAY BE SPLICED AT THE PERMITTED CONSTRUCTION JOINT AT THE CONTRACTOR'S OPTION. EXTRA WEIGHT OF STEEL DUE TO THE SPLICES WILL BE PAID FOR BY THE CONTRACTOR.

AT THE CONTRACTOR'S OPTION, HE MAY SPLICE THE VERTICAL REINFORCING STEEL IN THE INTERIOR FACE OF EXTERIOR WALL ABOVE THE 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 FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED IN A MANNER THAT PREVENTS DEBRIS FROM FALLING INTO THE WATER. THE CONTRACTOR SHALL SUBMIT DEMOLITION PLANS FOR REVIEW AND REMOVE THE BRIDGE IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE."

THE EXISTING STRUCTURE CONSISTING OF SPANS: 1 @ 23'-3", 1 @ 28'-0" WITH 21'-0" CLEAR ROADWAY WIDTH AND TIMBER DECK ON W12X25 BEAMS ON REINFORCED CONCRETE ABUTMENTS AND POST AND WEB INTERIOR BENT LOCATED AT THE PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED FOR LOAD LIMIT.

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

NATIVE MATERIALS CONSIST 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 REQUIRED TO PLACE THE EXCAVATED MATERIAL AS SHOWN ON THE PLANS SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE BID FOR CULVERT EXCAVATION.

THE ENTIRE COST OF WORK REQUIRED TO CONSTRUCT THE SILLS SHALL BE INCLUDED IN THE VARIOUS PAY ITEMS.

FOR ASBESTOS ASSESSMENT FOR BRIDGE DEMOLITION AND RENOVATION ACTIVITIES, SEE SPECIAL PROVISIONS.

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

TOTAL STRUCTURE QUANTITIES

REMOVAL OF EXISTING STRUCTURE	LUMP SUM
CULVERT EXCAVATION	LUMP SUM
FOUNDATION CONDITIONING MATERIAL	
PHASE I	190 TONS
PHASE II	90 TONS
TOTAL	280 TONS
CLASS A CONCRETE	
PHASE I	89.0 C.Y.
PHASE II	141.6 C.Y.
TOTAL	230.6 C.Y.
REINFORCING STEEL	
PHASE I	11,671 LBS.
PHASE II	15,310 LBS.
TOTAL	26,981 LBS.
ASBESTOS ASSESSMENT	LUMP SUM

ROADWAY DATA

GRADE POINT EL. @ STA 14+75.00 -L-	= 288.79
BED EL. @ STA. 14+75.00 -L-	= 276.57
ROADWAY FILL SLOPES	= 2:1

HYDRAULIC DATA

DESIGN DISCHARGE	= 950 C.F.S.
FREQUENCY OF DESIGN FLOOD	= 2 YRS.
DESIGN HIGH WATER ELEVATION	= 286.1
DRAINAGE AREA	= 32.5 SQ. MI.
BASE DISCHARGE (Q100)	= 2900 C.F.S.
BASE HIGH WATER ELEVATION	= 289.00

OVERTOPPING DATA

OVERTOPPING DISCHARGE	= 1400 C.F.S.
FREQUENCY OF OVERTOPPING FLOOD	= 5± YRS.
OVERTOPPING FLOOD ELEVATION	= 287.1

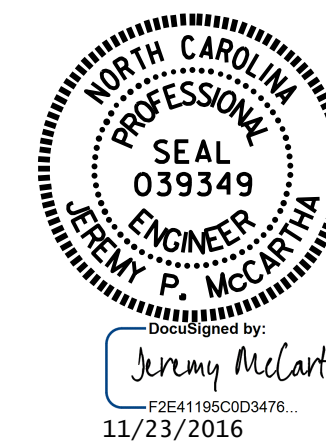
PROJECT NO. B-5758
 MOORE COUNTY
 STATION: 14+75.00 -L-

SHEET 1 OF 8 REPLACES BRIDGE NO. 13

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

TRIPLE 14 FT. X 9 FT.
 CONCRETE BOX CULVERT

90° SKEW



Documented by:
 Jeremy McArthur
 P26411950003476
 11/23/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-1
1			3			TOTAL SHEETS
2			4			8

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

LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING #	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE								COMMENT NUMBER		
						LIVE-LOAD FACTORS (γ _{LL})	MOMENT				SHEAR					
							RATING FACTOR	BOX NO.	ELEMENT TYPE	DISTANCE FROM LEFT END OF ELEMENT (ft)	RATING FACTOR	BOX NO.	ELEMENT TYPE		DISTANCE FROM LEFT END OF ELEMENT (ft)	
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	①	1.10	--	1.75	1.10	1	TOP SLAB	5.87	1.11	1	BOTTOM SLAB	13.70		
	HL-93 (OPERATING)	N/A		1.42	--	1.35	1.42	1	TOP SLAB	5.87	1.43	1	BOTTOM SLAB	13.70		
	HS-20 (INVENTORY)	36,000	②	1.11	39.79	1.75	1.33	1	TOP SLAB	5.87	1.11	1	BOTTOM SLAB	13.70		
	HS-20 (OPERATING)	36,000		1.43	51.58	1.35	1.73	1	TOP SLAB	5.87	1.43	1	BOTTOM SLAB	13.70		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13,500		2.44	32.89	1.40	2.44	1	TOP SLAB	6.23	3.66	1	BOTTOM SLAB	13.70	
		SNGARBS2	20,000		2.28	45.60	1.40	2.28	1	TOP SLAB	5.87	2.47	1	BOTTOM SLAB	13.70	
		SNAGRIS2	22,000		2.26	49.69	1.40	2.44	1	TOP SLAB	5.87	2.26	1	BOTTOM SLAB	13.70	
		SNCOTTS3	27,250		1.37	37.45	1.40	1.37	1	TOP SLAB	6.23	1.83	1	TOP SLAB	13.27	
		SNAGGRS4	34,925		1.43	49.85	1.40	1.56	1	TOP SLAB	6.23	1.43	1	BOTTOM SLAB	13.70	
		SNS5A	35,550		1.40	49.92	1.40	1.50	1	TOP SLAB	6.23	1.40	1	BOTTOM SLAB	13.70	
		SNS6A	39,950		1.25	49.89	1.40	1.49	1	BOTTOM SLAB	13.93	1.25	1	BOTTOM SLAB	13.70	
	SNS7B	42,000		1.19	49.82	1.40	1.43	1	BOTTOM SLAB	13.93	1.19	1	BOTTOM SLAB	13.70		
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33,000		1.50	49.55	1.40	1.83	1	BOTTOM SLAB	13.93	1.50	1	BOTTOM SLAB	13.70	
		TNT4A	33,075		1.50	49.66	1.40	1.64	1	TOP SLAB	6.23	1.50	1	BOTTOM SLAB	13.70	
		TNT6A	41,600		1.20	50.03	1.40	1.44	1	BOTTOM SLAB	13.93	1.20	1	BOTTOM SLAB	13.70	
		TNT7A	42,000		1.19	50.05	1.40	1.43	1	BOTTOM SLAB	13.93	1.19	1	BOTTOM SLAB	13.70	
		TNT7B	42,000		1.19	49.82	1.40	1.47	1	BOTTOM SLAB	13.93	1.19	1	BOTTOM SLAB	13.70	
		TNAGRIT4	43,000		1.15	49.64	1.40	1.41	1	BOTTOM SLAB	13.93	1.15	1	BOTTOM SLAB	13.70	
TNACT5A		45,000		③	1.11	49.74	1.40	1.35	1	BOTTOM SLAB	13.93	1.11	1	BOTTOM SLAB	13.70	
TNAGT5B	45,000		1.11	49.74	1.40	1.35	1	BOTTOM SLAB	13.93	1.11	1	BOTTOM SLAB	13.70			

LOAD FACTORS

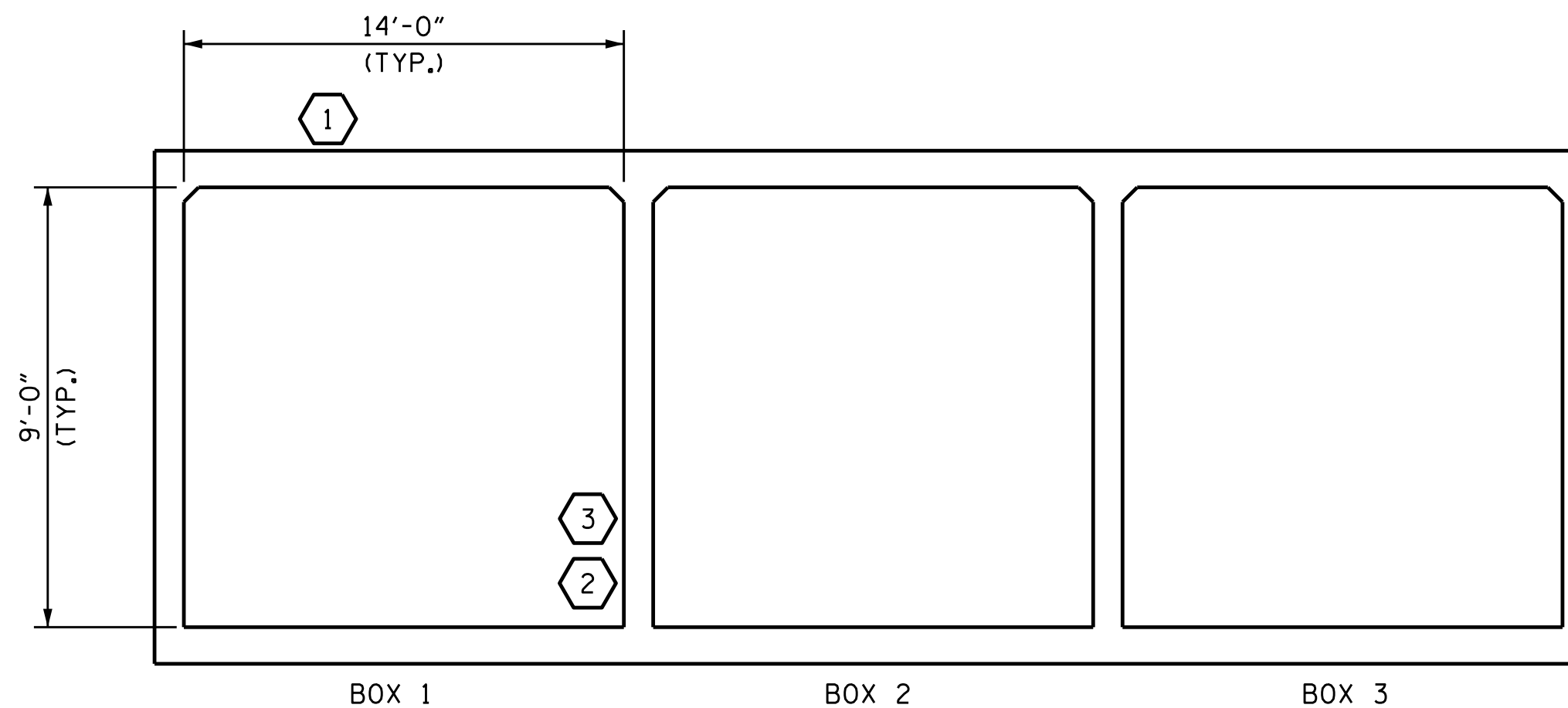
DESIGN LOAD RATING FACTORS

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.

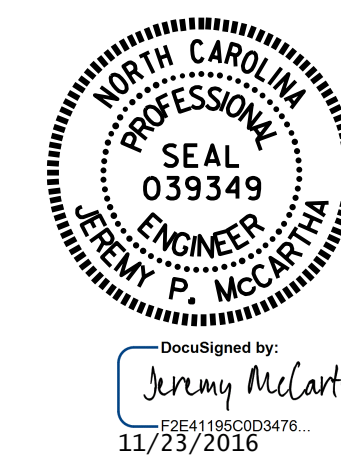
①	CONTROLLING LOAD RATING
①	DESIGN LOAD RATING (HL-93)
②	DESIGN LOAD RATING (HS-20)
③	LEGAL LOAD RATING **
** SEE CHART FOR VEHICLE TYPE	



LRFR SUMMARY
LOOKING DOWNSTREAM

PROJECT NO. B-5758
MOORE COUNTY
STATION: 14+75.00 -L-

SHEET 2 OF 8



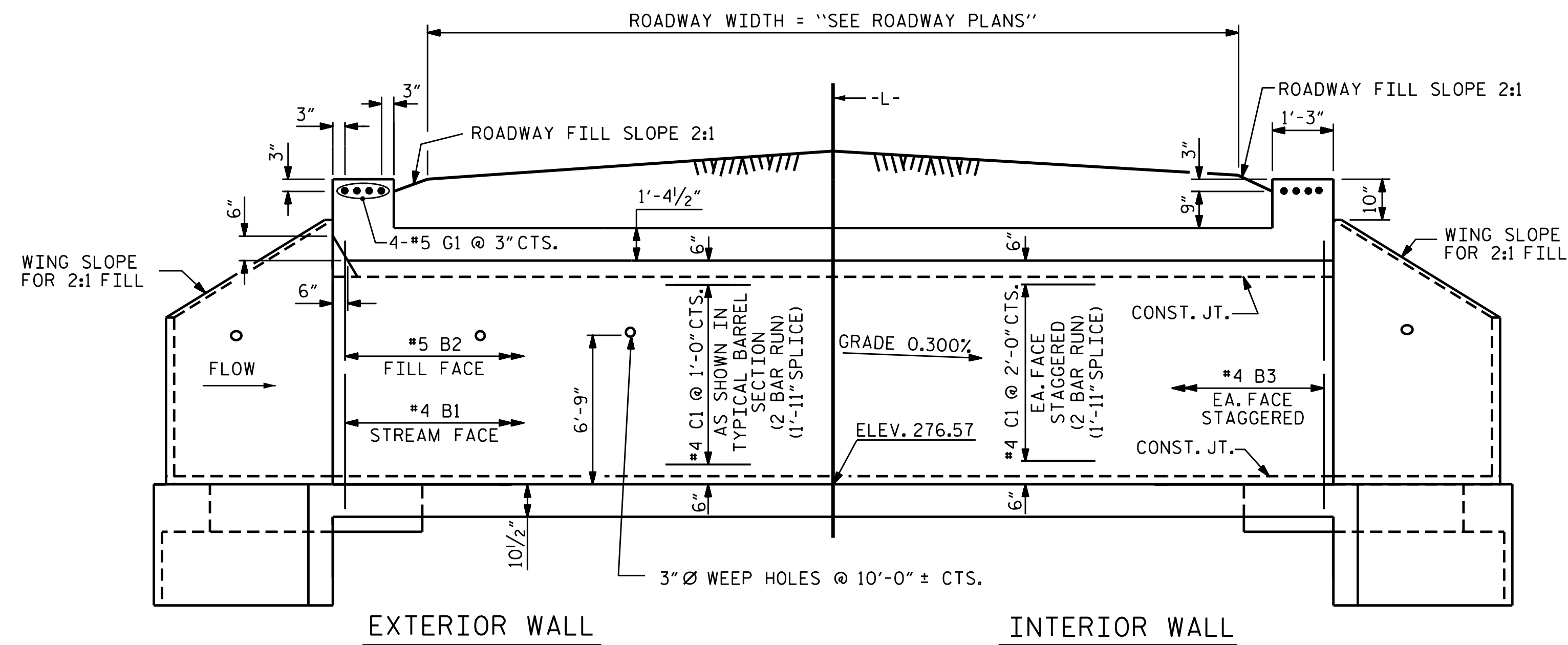
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
**STANDARD
LRFR SUMMARY FOR
REINFORCED CONCRETE
BOX CULVERT**
(NON-INTERSTATE TRAFFIC)

NO.	REVISIONS				SHEET NO.
	BY:	DATE:	NO.	DATE:	
1			3		C-2 TOTAL SHEETS 8
2			4		

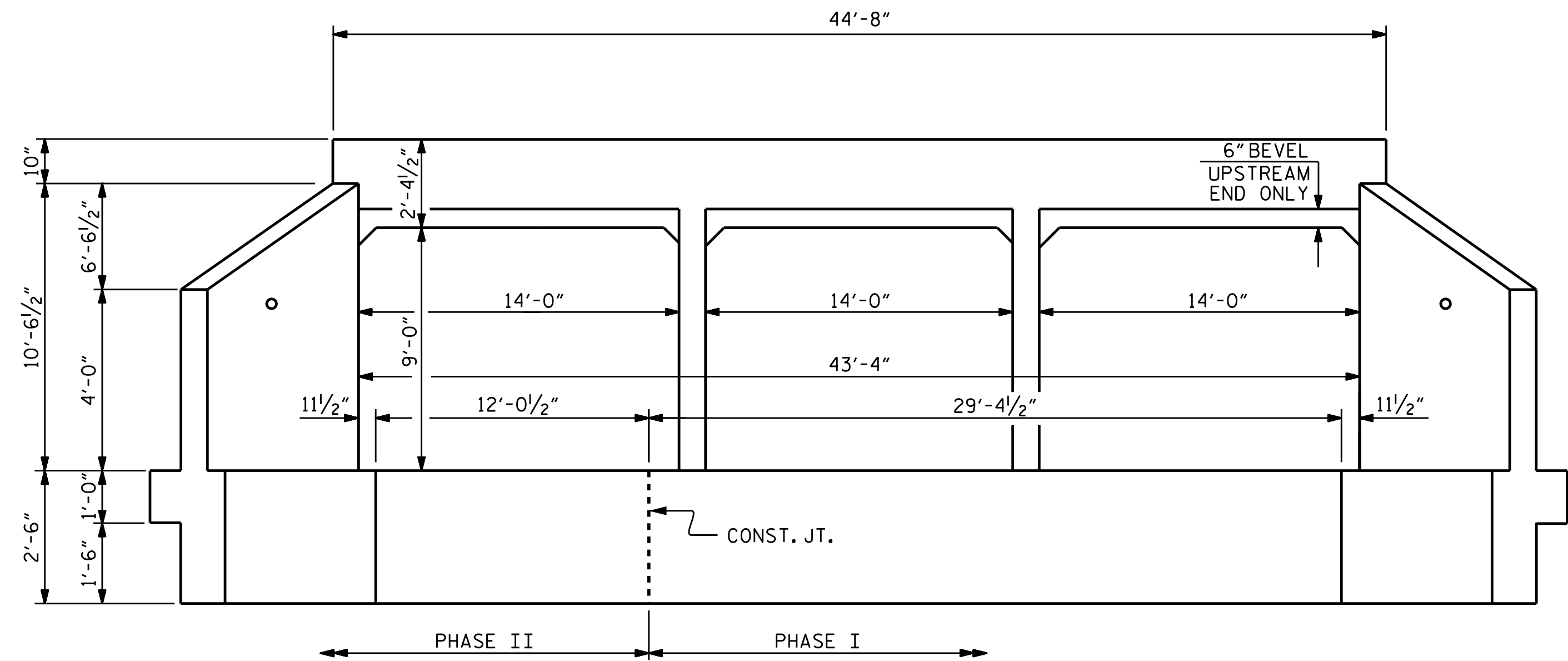
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ASSEMBLED BY : J.S. SMITH DATE : 7/28/16
CHECKED BY : J.K. BOWLES DATE : 8/5/16

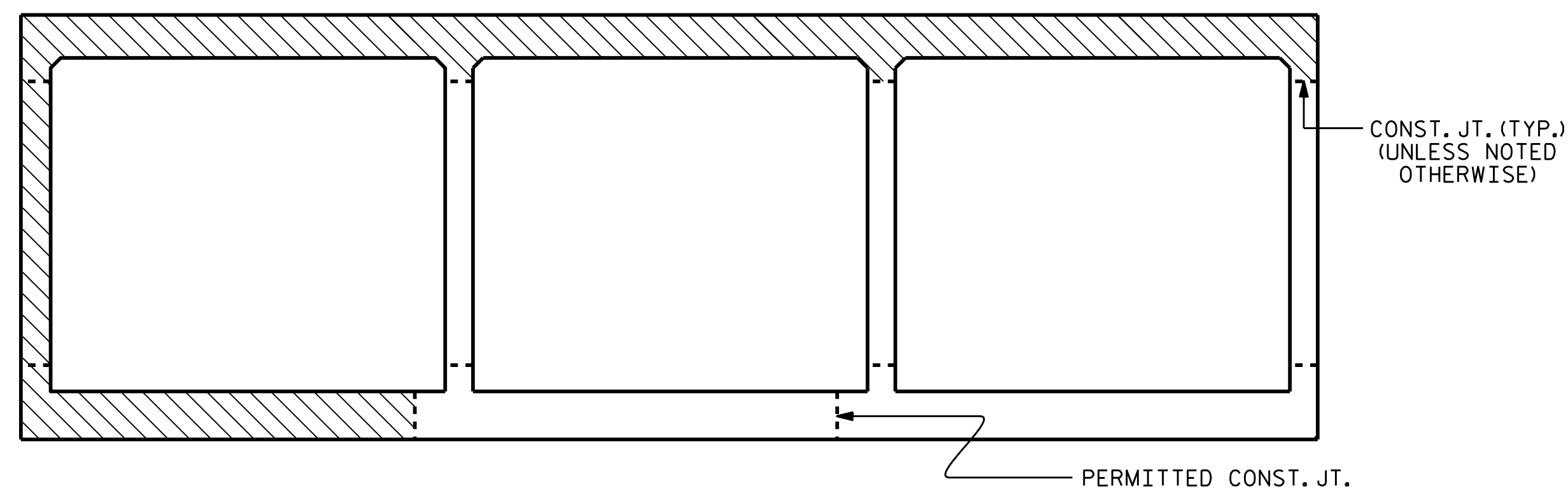
DESIGN ENGINEER OF RECORD:
J.K. BOWLES DATE : 11/23/16



CULVERT SECTION



END ELEVATION
(LOOKING DOWNSTREAM)



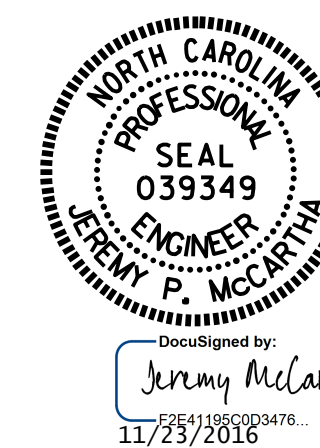
PHASE II
 PHASE I

CONSTRUCTION SEQUENCE
(LOOKING DOWNSTREAM)

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

PROJECT NO. B-5758
MOORE COUNTY
 STATION: 14+75.00 -L-

SHEET 3 OF 8



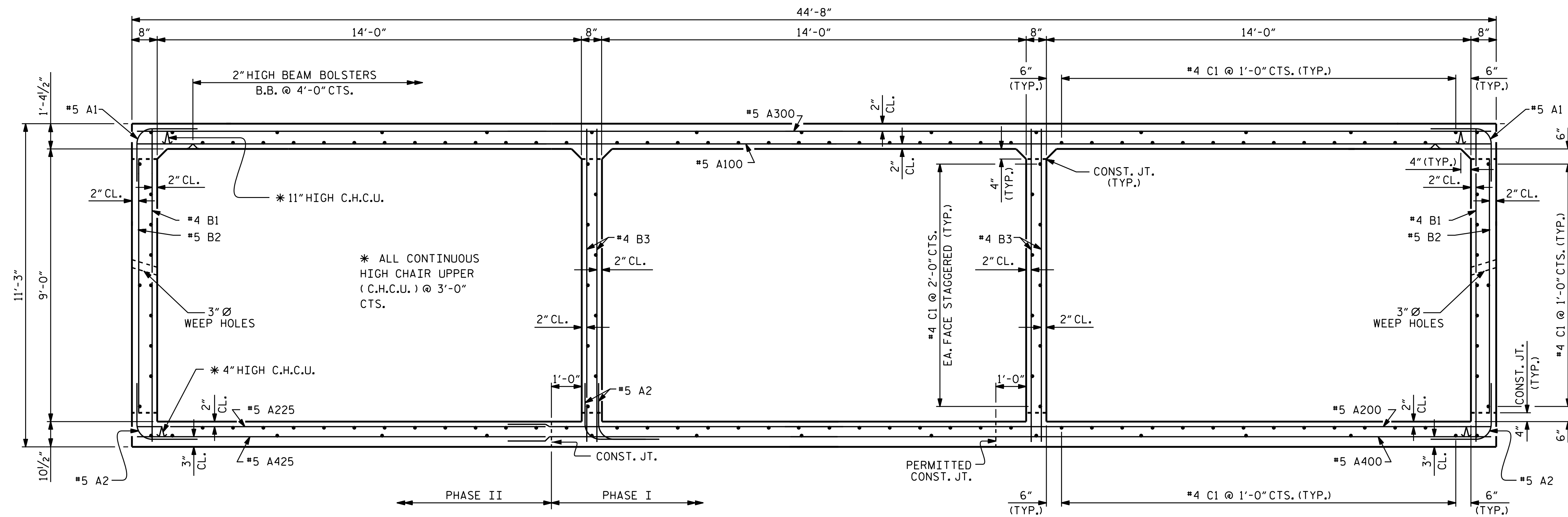
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**TRIPLE 14 FT. X 9 FT.
 CONCRETE BOX CULVERT**

90° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-3
1			3			TOTAL SHEETS
2			4			8

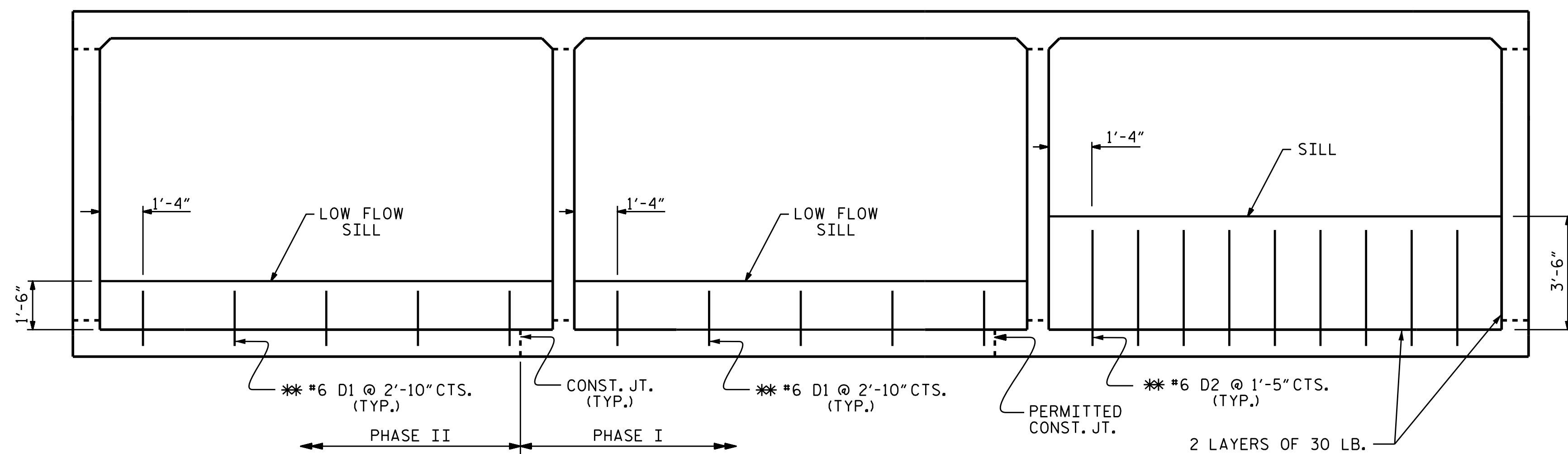
DRAWN BY: J.S. SMITH DATE: 7/27/16 DESIGN ENGINEER OF RECORD: J.K. BOWLES DATE: 11/23/16
 CHECKED BY: J.K. BOWLES DATE: 8/5/16

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

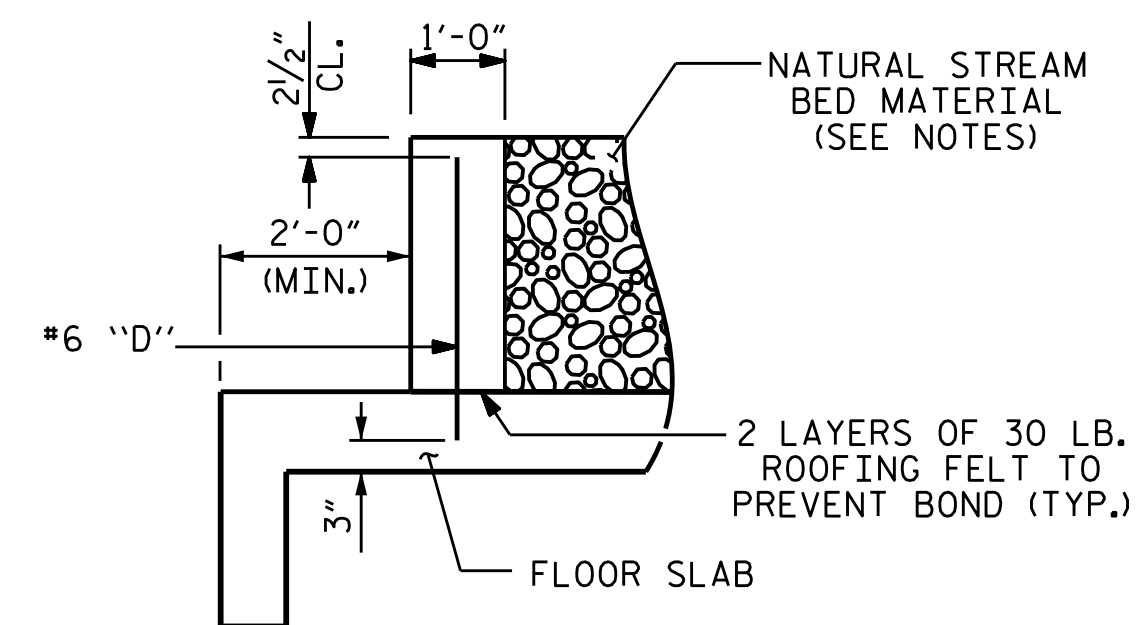


RIGHT ANGLE SECTION OF BARREL

(LOOKING DOWNSTREAM)
 THERE ARE 66 C1 BARS IN SECTION OF BARREL IN PHASE I.
 THERE ARE 82 C1 BARS IN SECTION OF BARREL IN PHASE II.

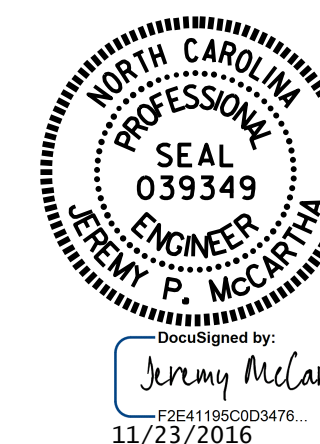


ELEVATION
(LOOKING DOWNSTREAM)



SECTION THROUGH SILL
 * DOWELS MAY BE PUSHED INTO GREEN CONCRETE AFTER SLAB HAS BEEN FLOAT FINISHED

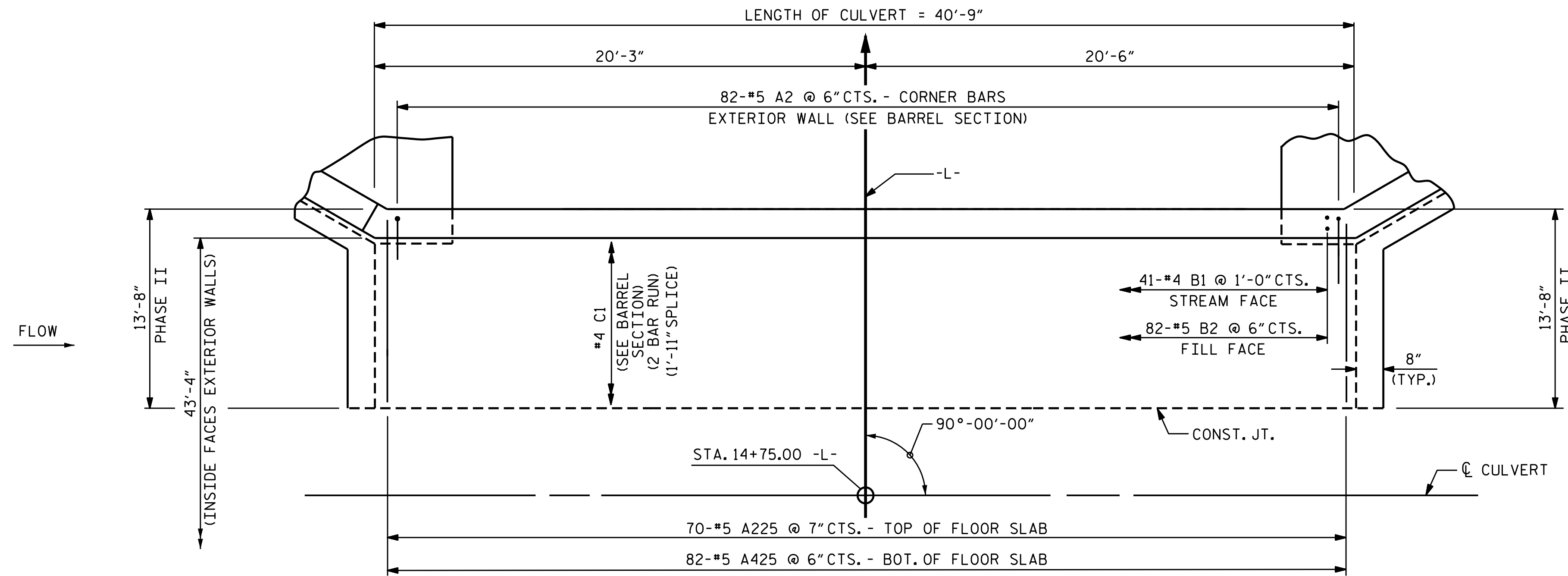
PROJECT NO. B-5758
MOORE COUNTY
 STATION: 14+75.00 -L-
 SHEET 4 OF 8



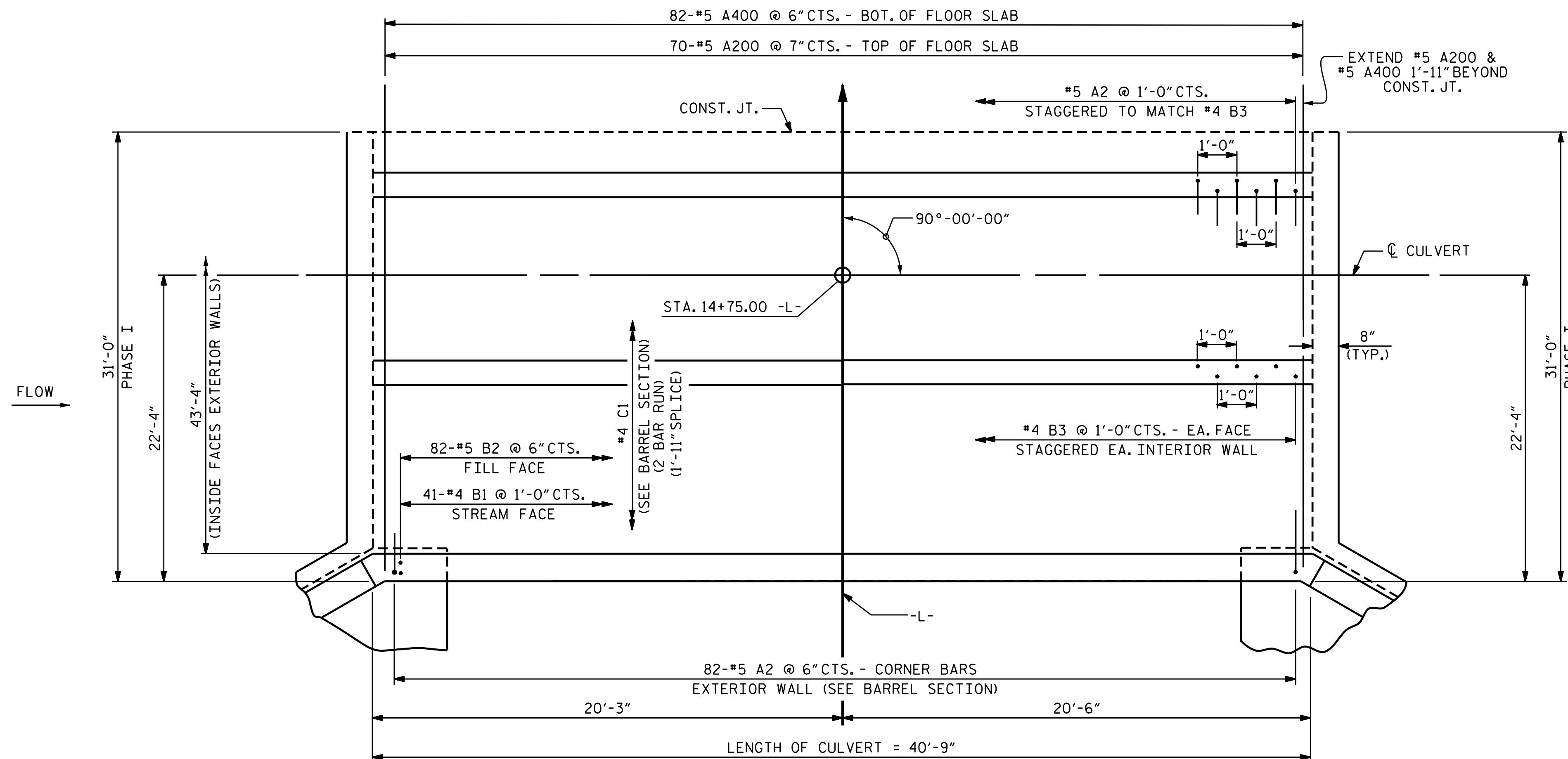
STATE OF NORTH CAROLINA		DEPARTMENT OF TRANSPORTATION		RALEIGH	
TRIPLE 14 FT. X 9 FT. CONCRETE BOX CULVERT					
90° SKEW					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. C-4
					TOTAL SHEETS 8

DRAWN BY: J.K. BOWLES DATE: 9/21/16 DESIGN ENGINEER OF RECORD: J.K. BOWLES DATE: 11/23/16
 CHECKED BY: H.A. LOCKLEAR DATE: 9/28/16

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED



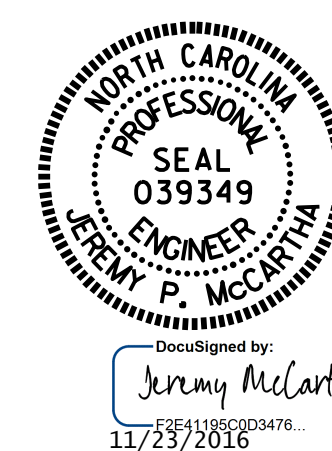
PART PLAN - FLOOR SLAB
PHASE II



PART PLAN - FLOOR SLAB
PHASE I

PROJECT NO. B-5758
MOORE COUNTY
 STATION: 14+75.00 -L-
 SHEET 5 OF 8

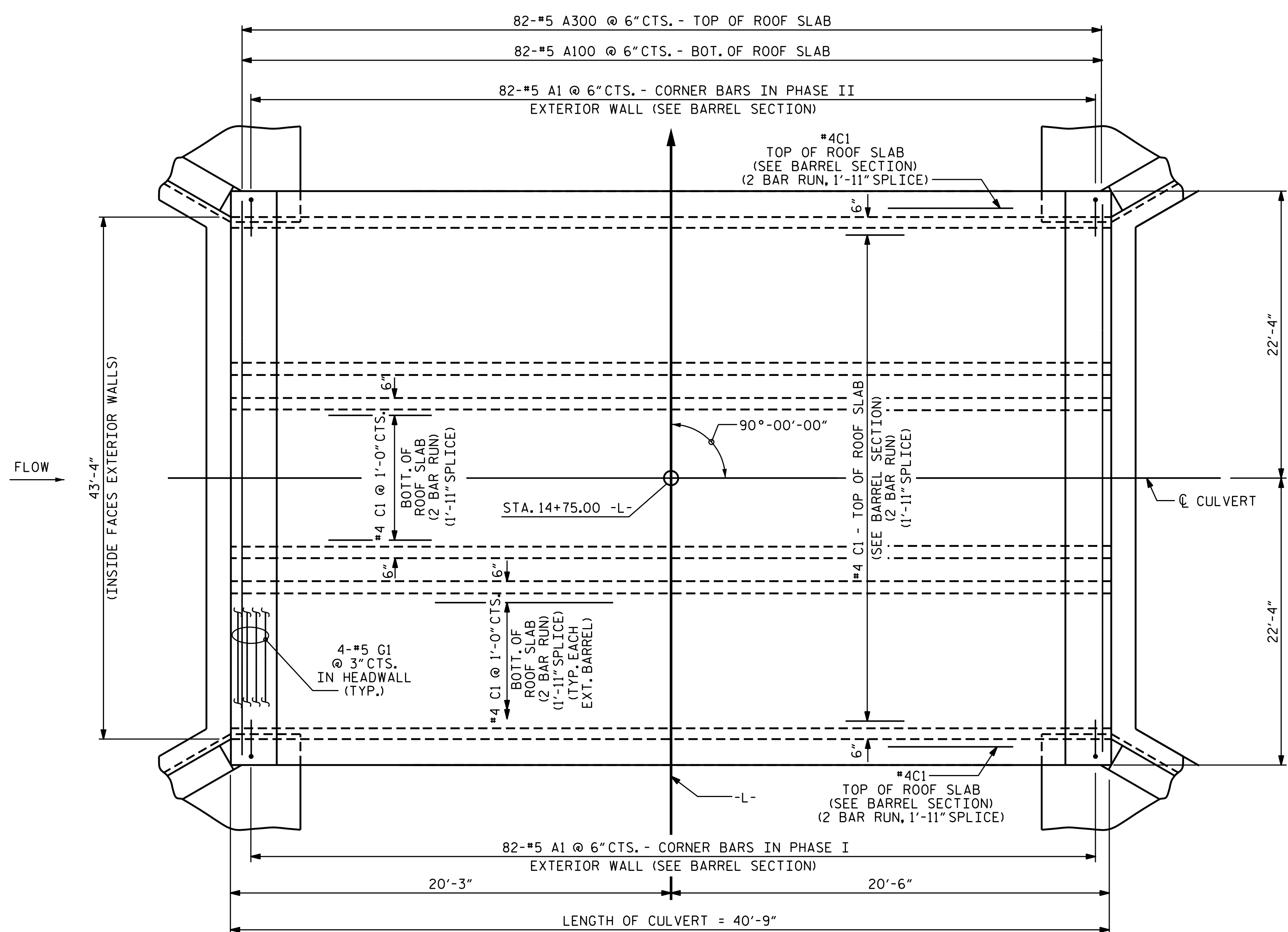
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**TRIPLE 14 FT. X 9 FT.
 CONCRETE BOX CULVERT**
 90° SKEW



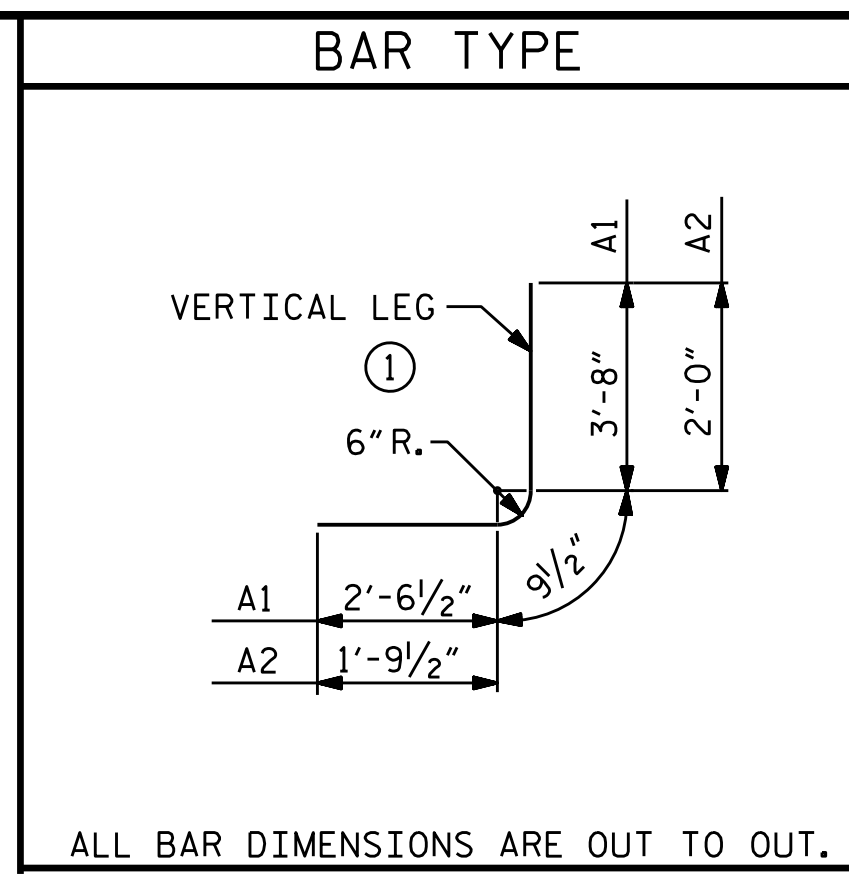
DRAWN BY : J.K. BOWLES DATE : 11/9/16
 CHECKED BY : H.A. LOCKLEAR DATE : 11/6/16
 DESIGN ENGINEER OF RECORD: J.K. BOWLES DATE : 11/23/16

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-5
1			3			TOTAL SHEETS
2			4			8



PART PLAN - ROOF SLAB
PHASE II



REINFORCING BAR SCHEDULE					
PHASE I					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1	82	#5	1	7'-0"	599
A2	164	#5	1	4'-7"	784
A200	70	#5	STR	32'-9"	2391
A400	82	#5	STR	32'-9"	2801
B1	41	#4	STR	10'-9"	294
B2	82	#5	STR	8'-4"	713
B3	164	#4	STR	10'-9"	1178
C1	132	#4	STR	21'-3"	1874
D1	10	#6	STR	1'-11"	29
D2	18	#6	STR	3'-11"	106
REINFORCING STEEL				LBS.	10,769

SPLICE CHART		
BAR	SIZE	SPLICE LENGTH
A200	#5	1'-9"
A400	#5	1'-9"
B1	#4	1'-5"
B3	#4	1'-5"
C1	#4	1'-11"

PHASE I	
CLASS A CONCRETE	
BARREL @ 1.647 CY/FT	67.1 C.Y.
WINGS, ETC.	16.7 C.Y.
SILLS	5.2 C.Y.
TOTAL	89.0 C.Y.
REINFORCING STEEL	
BARREL	10,769 LBS.
WINGS, ETC.	902 LBS.
TOTAL	11,671 LBS.

REINFORCING BAR SCHEDULE					
PHASE II					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1	82	#5	1	7'-0"	599
A2	82	#5	1	4'-7"	392
A100	82	#5	STR	44'-3"	3785
A225	70	#5	STR	13'-4"	973
A300	82	#5	STR	44'-3"	3785
A425	82	#5	STR	13'-4"	1140
B1	41	#4	STR	10'-9"	294
B2	82	#5	STR	8'-4"	713
C1	164	#4	STR	21'-3"	2328
G1	8	#5	STR	44'-4"	370
D1	10	#6	STR	1'-11"	29
REINFORCING STEEL				LBS.	14,408

PHASE II	
CLASS A CONCRETE	
BARREL @ 2.977 CY/FT	121.3 C.Y.
WINGS, ETC.	18.7 C.Y.
SILLS	1.6 C.Y.
TOTAL	141.6 C.Y.
REINFORCING STEEL	
BARREL	14,408 LBS.
WINGS, ETC.	902 LBS.
TOTAL	15,310 LBS.

PROJECT NO. B-5758
MOORE COUNTY
 STATION: 14+75.00 -L-

SHEET 6 OF 8



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

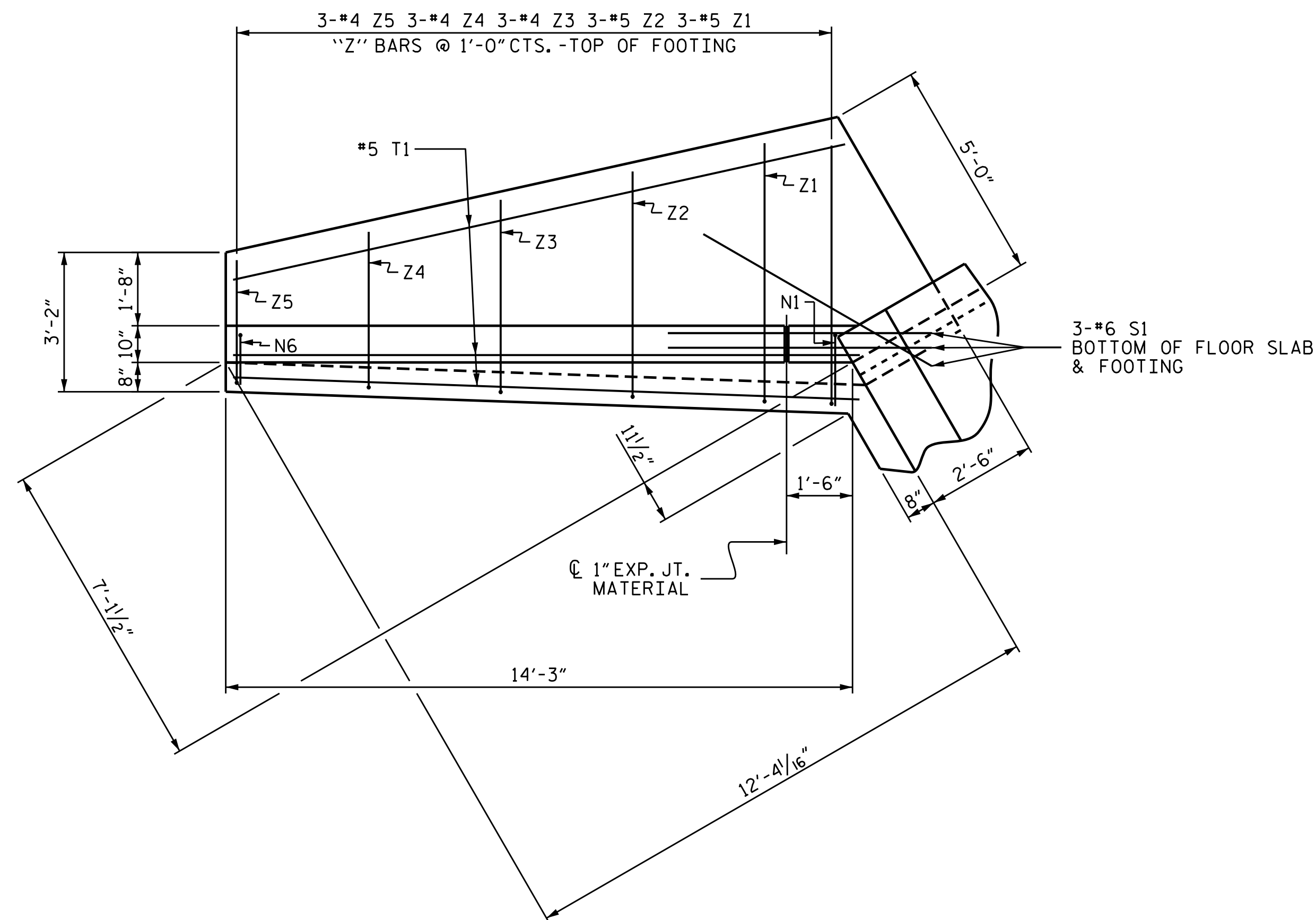
**TRIPLE 14 FT. X 9 FT.
 CONCRETE BOX CULVERT**

90° SKEW

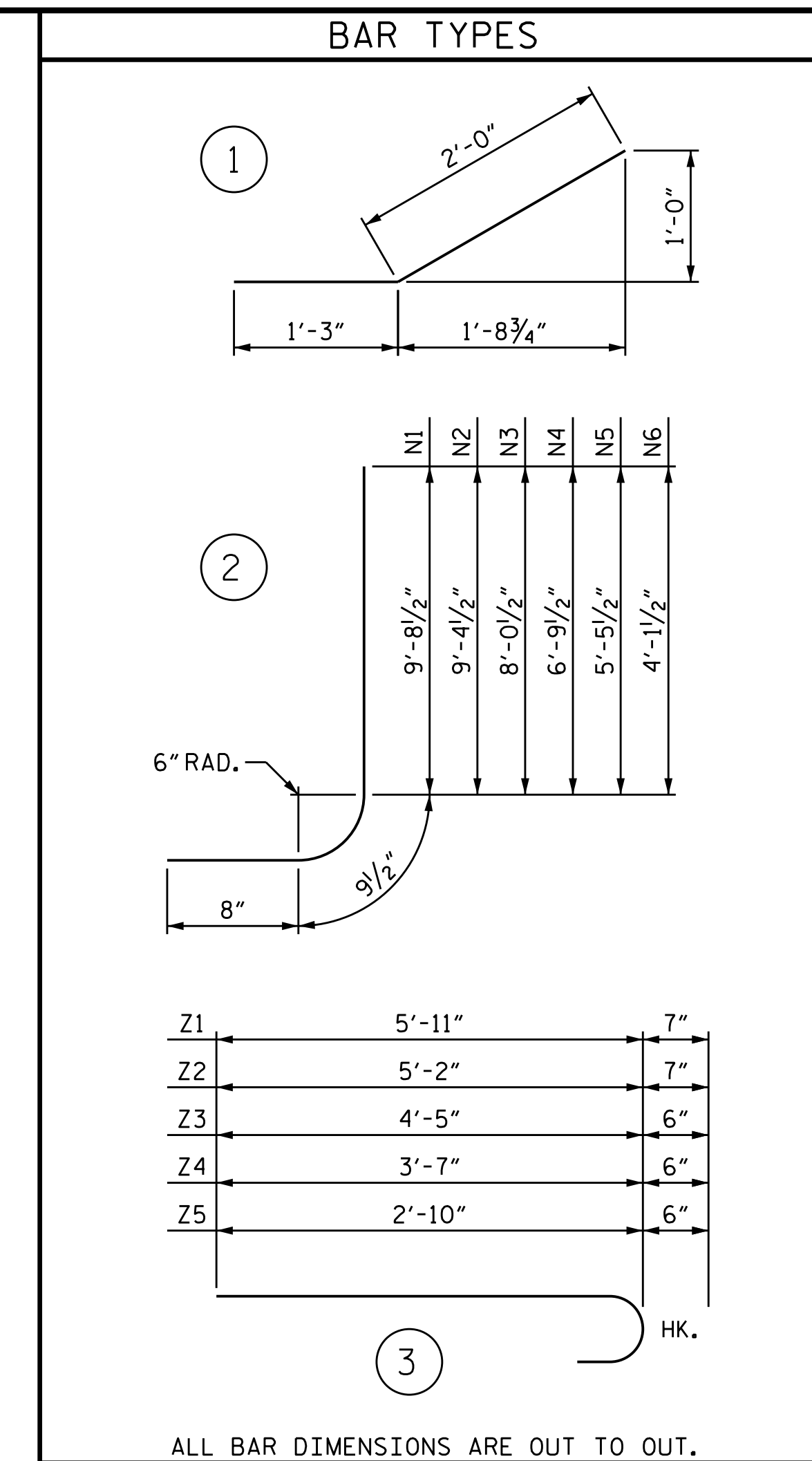
DRAWN BY : J.K. BOWLES DATE : 9/20/16
 CHECKED BY : H.A. LOCKLEAR DATE : 9/28/16
 DESIGN ENGINEER OF RECORD: J.K. BOWLES DATE : 11/23/16

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REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	C-6	
1			3			TOTAL	8
2			4			SHEETS	

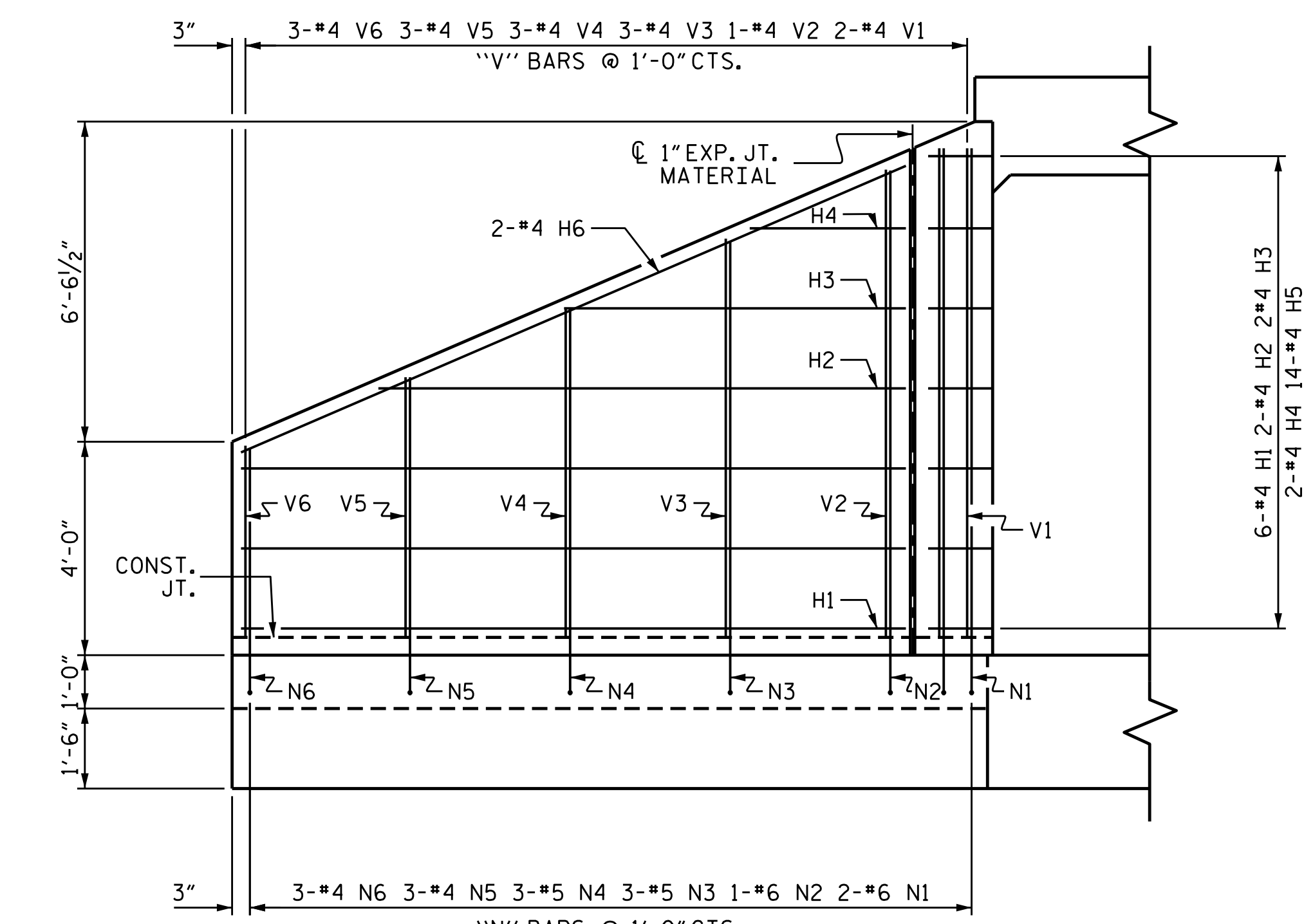


PLAN

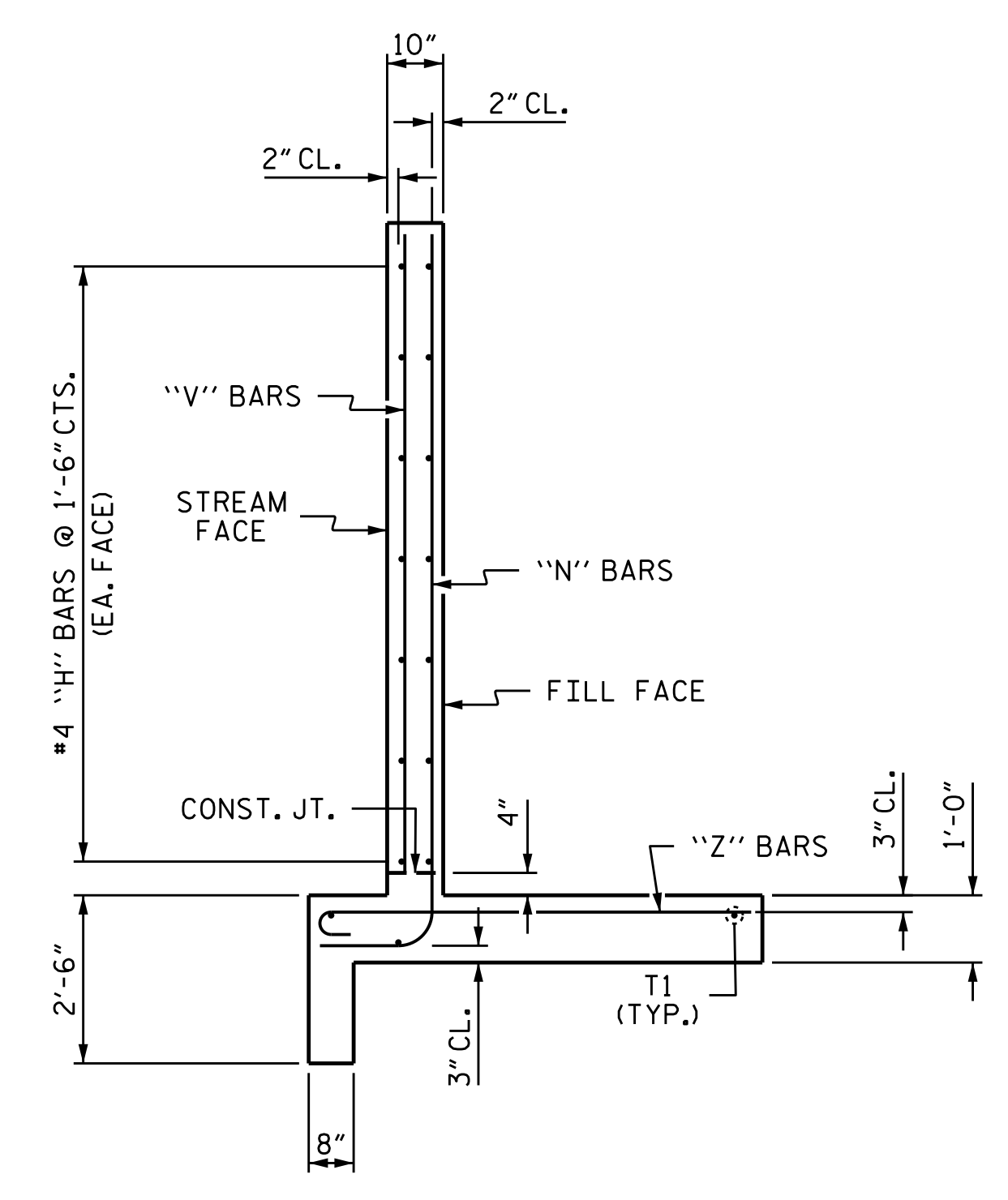


ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL											
PHASE I					PHASE II						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H1	12	#4	STR	12'-5"	100	H1	12	#4	STR	12'-5"	100
H2	4	#4	STR	9'-10"	26	H2	4	#4	STR	9'-10"	26
H3	4	#4	STR	6'-5"	17	H3	4	#4	STR	6'-5"	17
H4	4	#4	STR	2'-11"	8	H4	4	#4	STR	2'-11"	8
H5	28	#4	1	3'-3"	61	H5	28	#4	1	3'-3"	61
H6	4	#4	STR	13'-6"	36	H6	4	#4	STR	13'-6"	36
N1	4	#6	2	11'-2"	67	N1	4	#6	2	11'-2"	67
N2	2	#6	2	10'-10"	33	N2	2	#6	2	10'-10"	33
N3	6	#5	2	9'-6"	59	N3	6	#5	2	9'-6"	59
N4	6	#5	2	8'-3"	52	N4	6	#5	2	8'-3"	52
N5	6	#4	2	6'-11"	28	N5	6	#4	2	6'-11"	28
N6	6	#4	2	5'-7"	22	N6	6	#4	2	5'-7"	22
S1	6	#6	STR	6'-0"	54	S1	6	#6	STR	6'-0"	54
T1	6	#5	STR	14'-3"	89	T1	6	#5	STR	14'-3"	89
V1	4	#4	STR	9'-2"	24	V1	4	#4	STR	9'-2"	24
V2	2	#4	STR	8'-9"	12	V2	2	#4	STR	8'-9"	12
V3	6	#4	STR	7'-5"	30	V3	6	#4	STR	7'-5"	30
V4	6	#4	STR	6'-2"	25	V4	6	#4	STR	6'-2"	25
V5	6	#4	STR	4'-10"	19	V5	6	#4	STR	4'-10"	19
V6	6	#4	STR	3'-7"	14	V6	6	#4	STR	3'-7"	14
Z1	6	#5	3	6'-6"	41	Z1	6	#5	3	6'-6"	41
Z2	6	#5	3	5'-9"	36	Z2	6	#5	3	5'-9"	36
Z3	6	#4	3	4'-11"	20	Z3	6	#4	3	4'-11"	20
Z4	6	#4	3	4'-1"	16	Z4	6	#4	3	4'-1"	16
Z5	6	#4	3	3'-4"	13	Z5	6	#4	3	3'-4"	13
REINFORCING STEEL FOR 2 WINGS					LBS. 902	REINFORCING STEEL FOR 2 WINGS					LBS. 902
CLASS A CONCRETE 2 WINGS					C.Y. 13.1	CLASS A CONCRETE 2 WINGS					C.Y. 13.1
END CURTAIN WALLS					C.Y. 3.6	END CURTAIN WALLS					C.Y. 1.5
TOTAL					C.Y. 16.7	HEADWALLS					C.Y. 4.1
						TOTAL					C.Y. 18.7

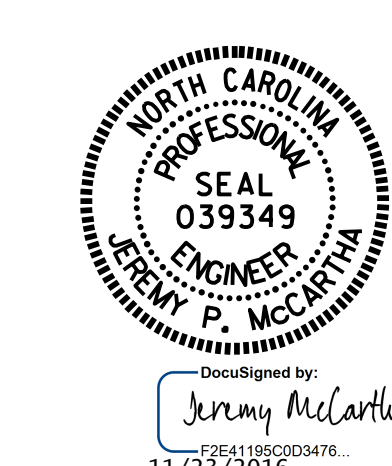


ELEVATION



TYPICAL WING SECTION

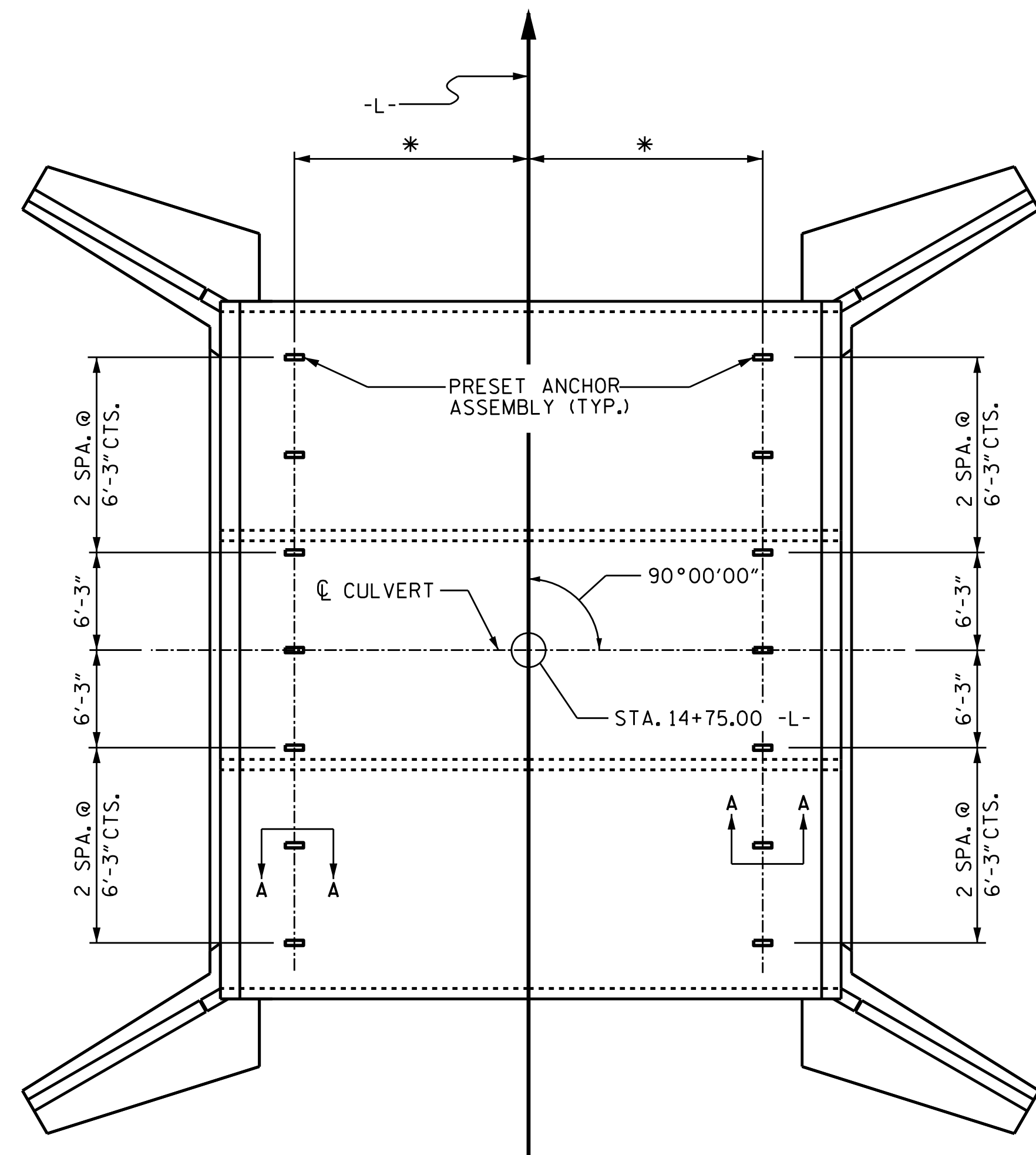
PROJECT NO. B-5758
MOORE COUNTY
 STATION: 14+75.00 -L-
 SHEET 7 OF 8



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH			
STANDARD WINGS FOR CONCRETE BOX CULVERT			
H = 9'-0" 90° SKEW SLOPE = 2:1			
REVISIONS			
NO.	BY:	DATE:	
1			
2			
3			
4			
SHEET NO.			C-7
TOTAL SHEETS			8

ASSEMBLED BY : J.S. SMITH	DATE : 7/25/16
CHECKED BY : J.K. BOWLES	DATE : 8/5/16
DRAWN BY : CCJ 10/99	
CHECKED BY : RWW 03/00	

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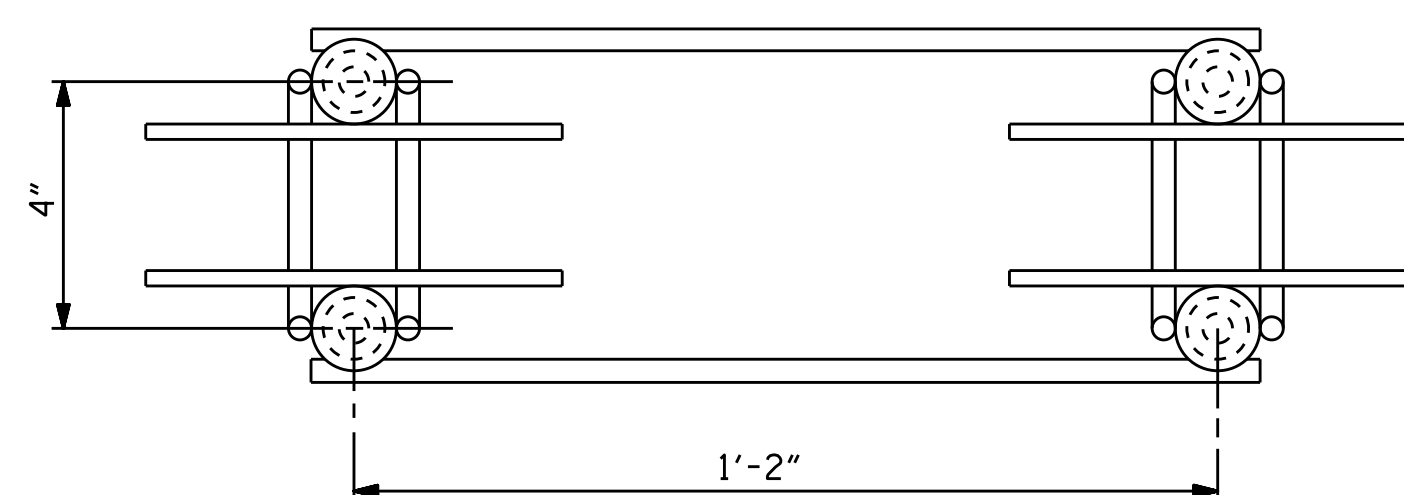


PLAN

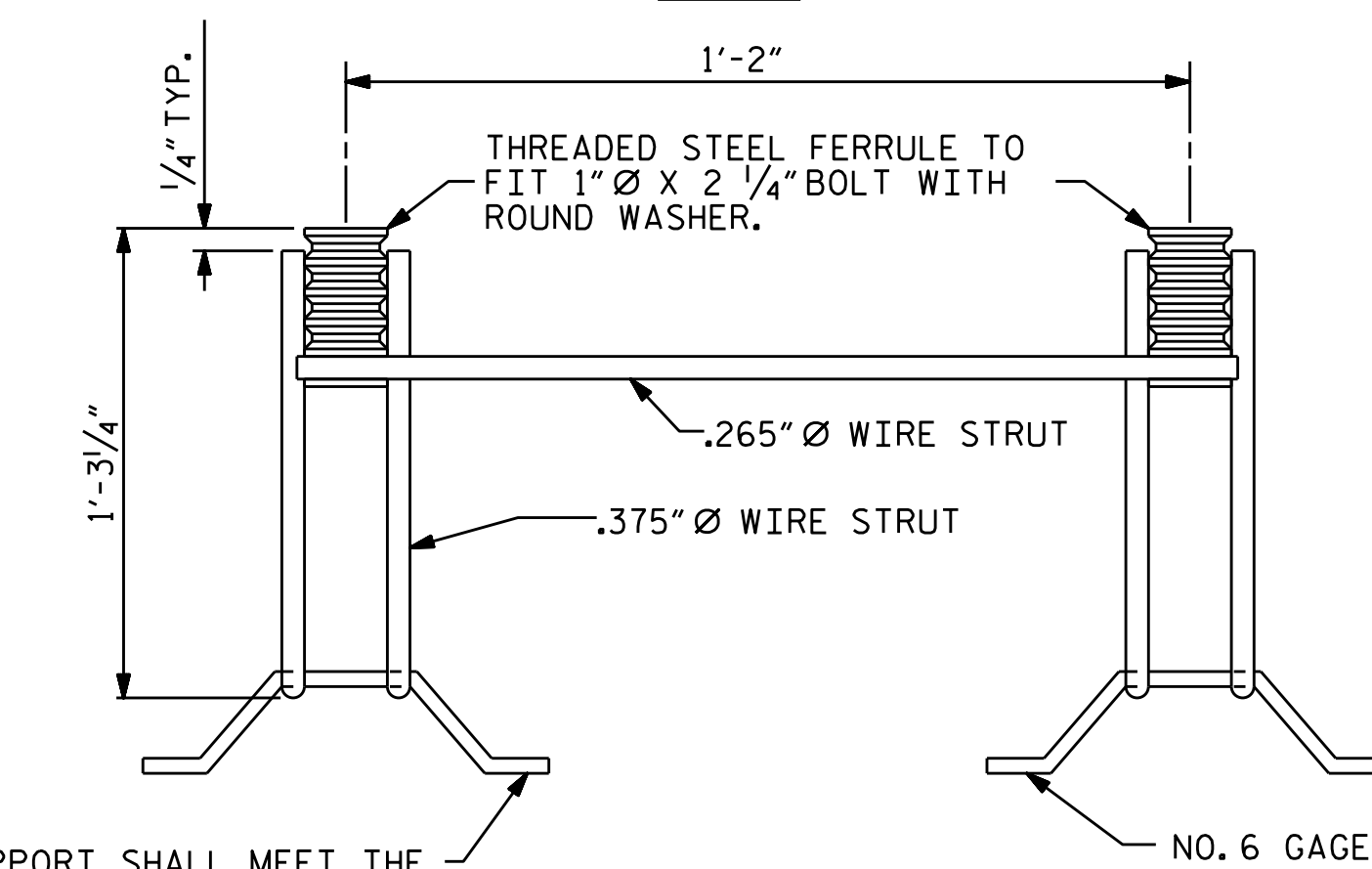
SHOWING: GUARDRAIL ANCHOR ASSEMBLY SPACING.
* THIS DIMENSION TO BE FURNISHED BY THE RESIDENT ENGINEER.

NOTES

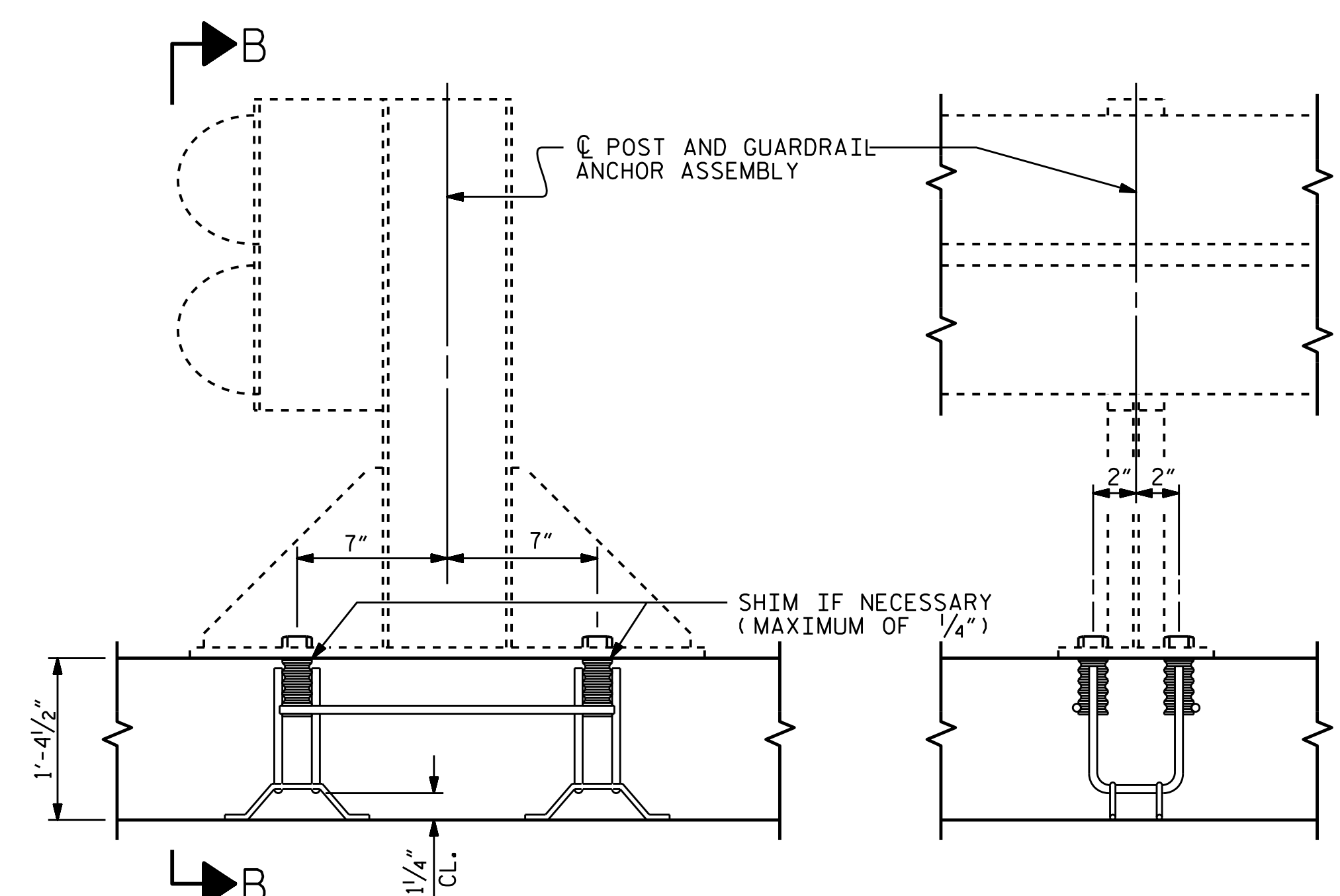
- THE GUARDRAIL ANCHOR ASSEMBLY FOR CULVERTS SHALL CONSIST OF THE FOLLOWING COMPONENTS:
- A. FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF AASHTO M169, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 2 1/2".
 - B. 4 - 1" Ø X 2 1/4" BOLTS WITH WASHERS, BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 1" Ø X 2 1/4" GALVANIZED BOLTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)
 - C. WIRE STRUTS SHOWN IN THE GUARDRAIL ANCHOR ASSEMBLY FOR CULVERTS DETAIL ARE MINIMUM ALLOWABLE SIZE AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 100,000 P.S.I. AS AN OPTION, A 1/16" Ø WIRE STRUT WITH A MINIMUM TENSILE STRENGTH OF 90,000 PSI IS ACCEPTABLE.
- GUARDRAIL ANCHOR ASSEMBLY WITH BOLTS SHALL BE ASSEMBLED IN THE SHOP. BOLT THREADS MAY BE RECUT AS NECESSARY TO INSURE FIT.
- THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY FOR CULVERTS COMPLETE IN PLACE, SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CLASS "A" CONCRETE.
- FERRULES TO BE PLUGGED DURING POURING OF SLAB AS RECOMMENDED BY THE MANUFACTURER.
- AT THE CONTRACTOR'S OPTION, FERRULES WITH OPEN OR CLOSED ENDS MAY BE USED.
- PAYMENT FOR GUARDRAIL, POSTS, AND POST BASE PLATES IS INCLUDED IN ROADWAY PAY ITEMS.
- SLAB REINFORCING STEEL MAY BE SHIFTED AS NECESSARY TO CLEAR GUARDRAIL ANCHOR ASSEMBLY. CARE SHOULD BE TAKEN TO KEEP THE SHIFTING OF REINFORCING STEEL TO A MINIMUM.
- THE CONTRACTOR MAY USE ADHESIVELY ANCHORED ANCHOR BOLTS IN PLACE OF GUARDRAIL ANCHOR ASSEMBLY. LEVEL TWO FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 1" Ø BOLT IS 21.8 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE STANDARD SPECIFICATIONS.



PLAN

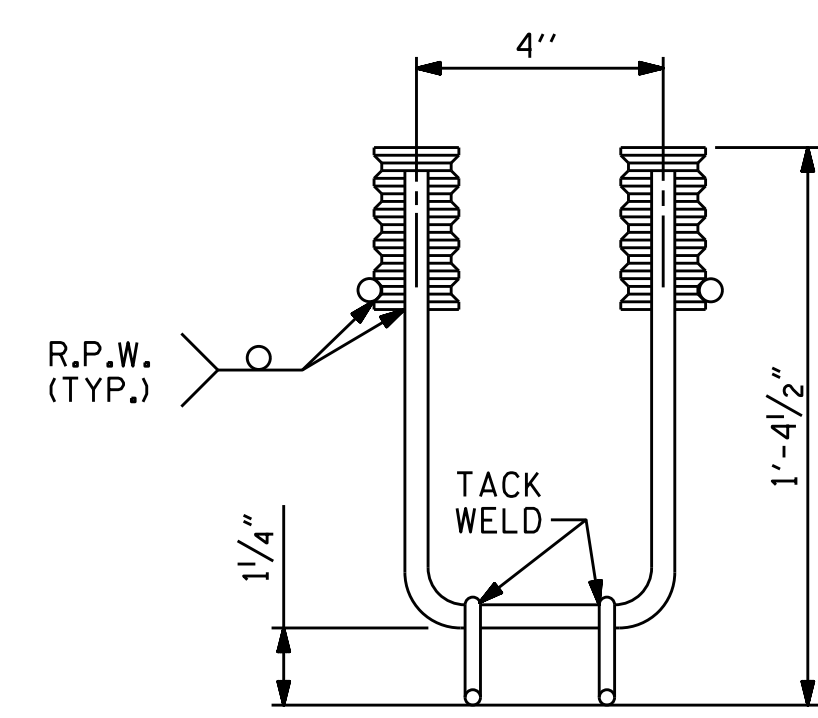


SIDE VIEW



SECTION A-A

SECTION B-B



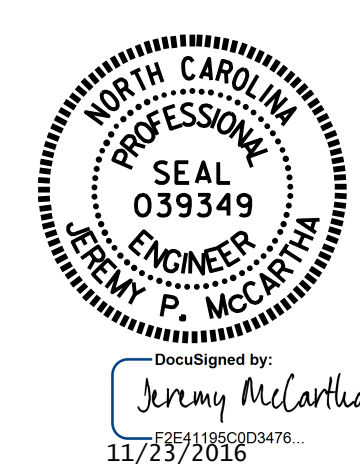
ELEVATION

THIS SUPPORT SHALL MEET THE REQUIREMENTS AS SPECIFIED FOR SUPPORTS FOR REINFORCING STEEL. SEE SPECIFICATIONS.

GUARDRAIL ANCHOR ASSEMBLY FOR CULVERT

PROJECT NO. B-5758
MOORE COUNTY
STATION: 14+75.00 -L-

SHEET 8 OF 8



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
ANCHORAGE DETAILS FOR
GUARDRAIL ANCHOR ASSEMBLY
FOR CULVERTS

ASSEMBLED BY : J.S. SMITH	DATE : 7/28/16
CHECKED BY : J.K. BOWLES	DATE : 8/5/16
DRAWN BY : FCJ 6/88	REV. 5/7/03 RWW/JTE
CHECKED BY : ARB 6/88	REV. 5/1/06R KMM/GM
	REV. 10/1/11 MAA/GM

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-8
1			3			TOTAL SHEETS
2			4			8

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.
- AASHTO M270 GRADE 50W	-	27,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50	-	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 2012 "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 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1-1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 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 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 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø 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 5/16" 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 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. FINIS 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