

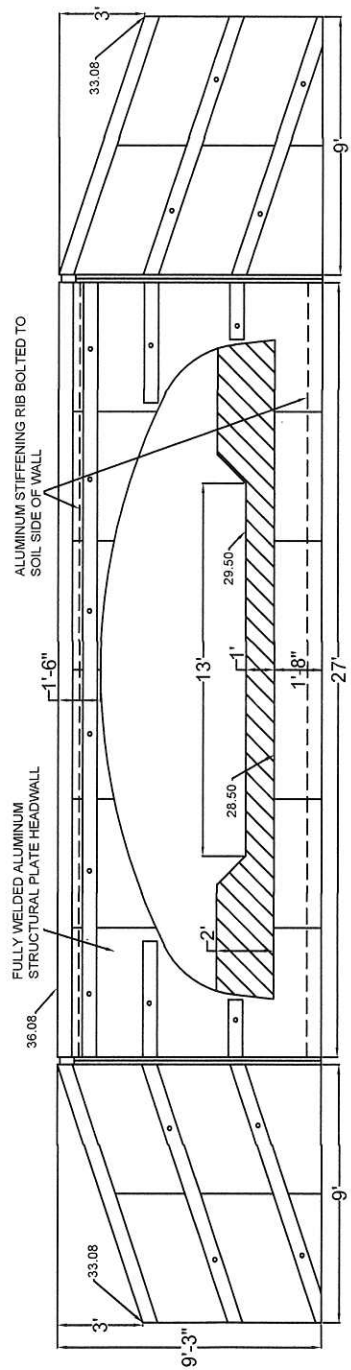
DESCRIPTION

NCDOT LENOIR CO
BRIDGE #159
BRITISH RD

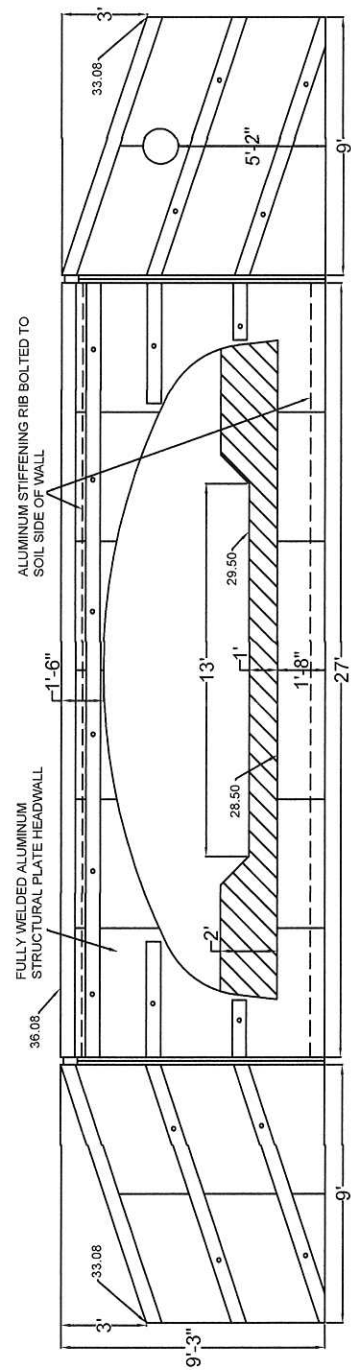
DATE:
FEB 15, 2019

SHEET

NOT TO SCALE



END VIEW - INLET HEADWALL



END VIEW - OUTLET HEADWALL

* NOTE: ELEVATIONS ARE PROPOSED
VERIFY ON SITE PRIOR TO
CONSTRUCTION

DESCRIPTION

NC DOT LENOIR CO
BRIDGE #159
BRITISH RD

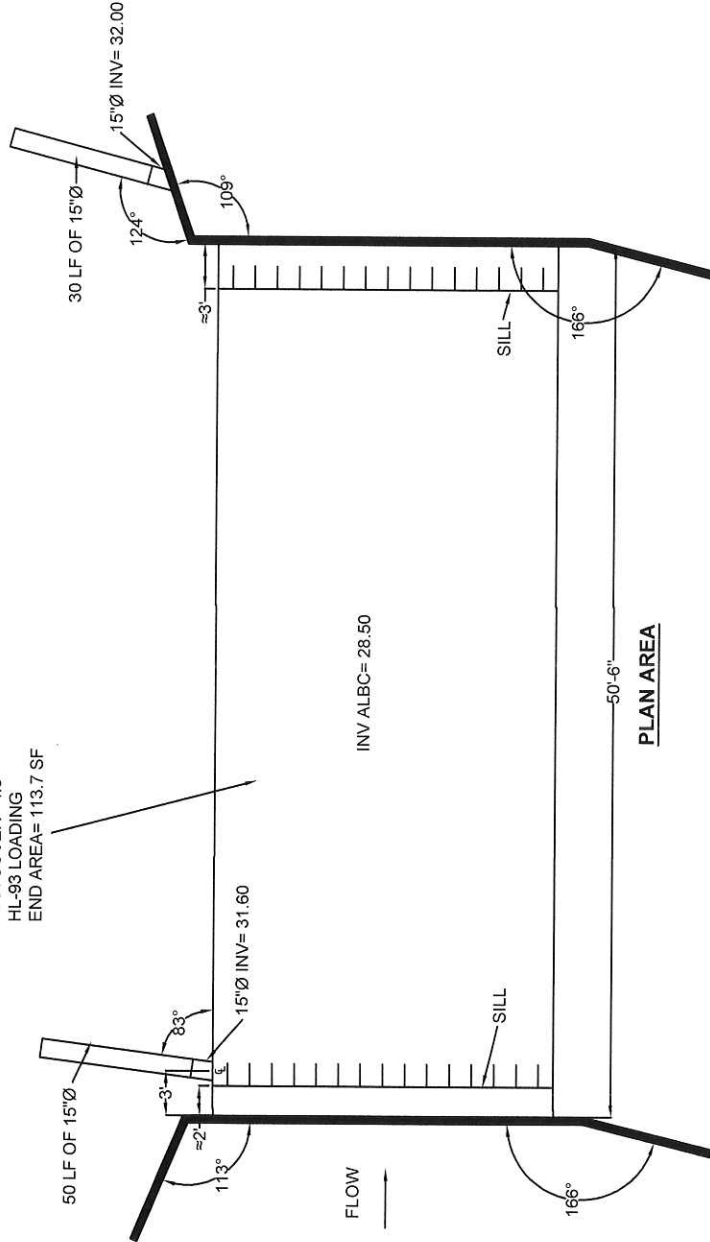
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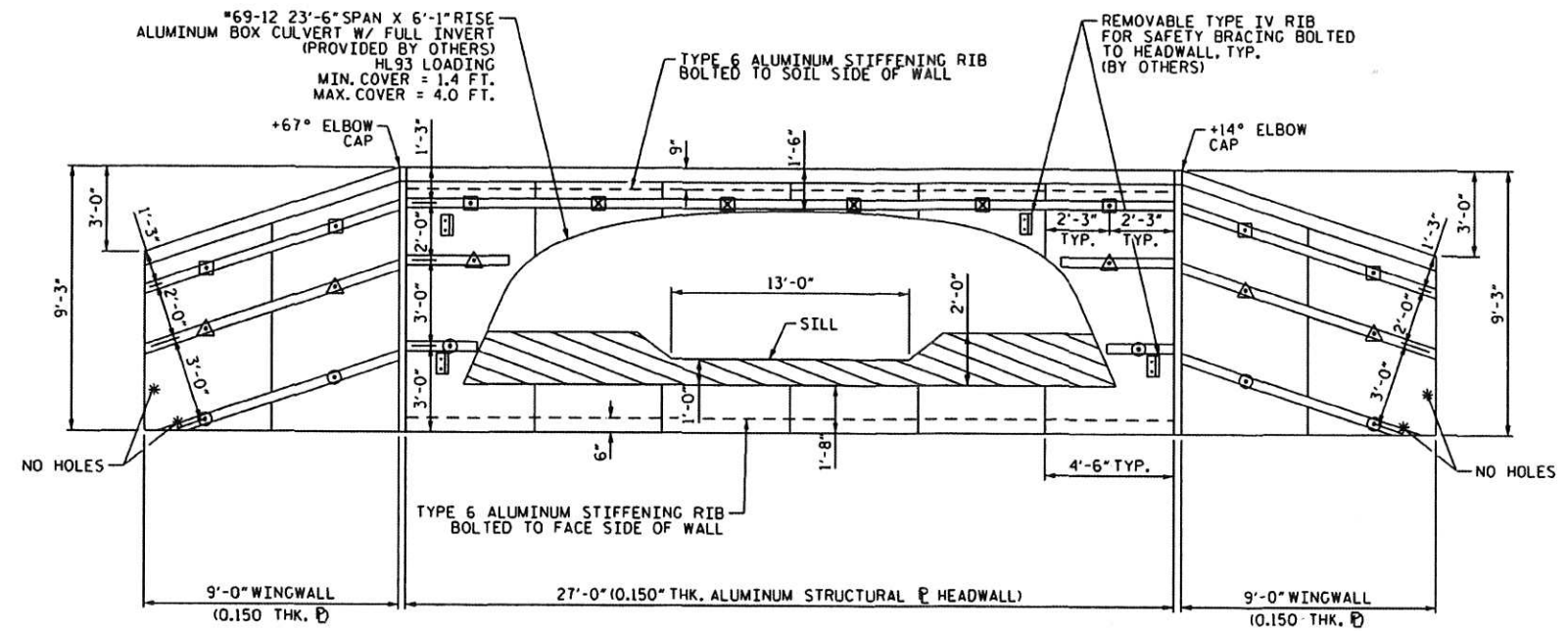
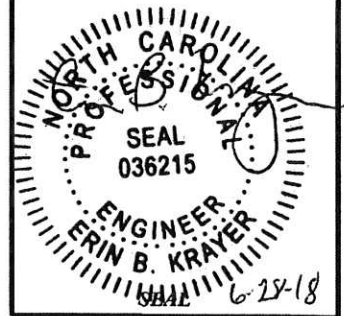
PROJECT:

DATE:
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SHEET
NOT TO SCALE

50.5 LF OF #69-L2 (23'-0" SPAN X 6'-1" RISE) ALUMINUM BOX
CULVERT WITH FULL ALUMINUM INVERT
MIN COVER= 1.4'
MAX COVER= 4.0'
HL-93 LOADING
END AREA= 113.7 SF

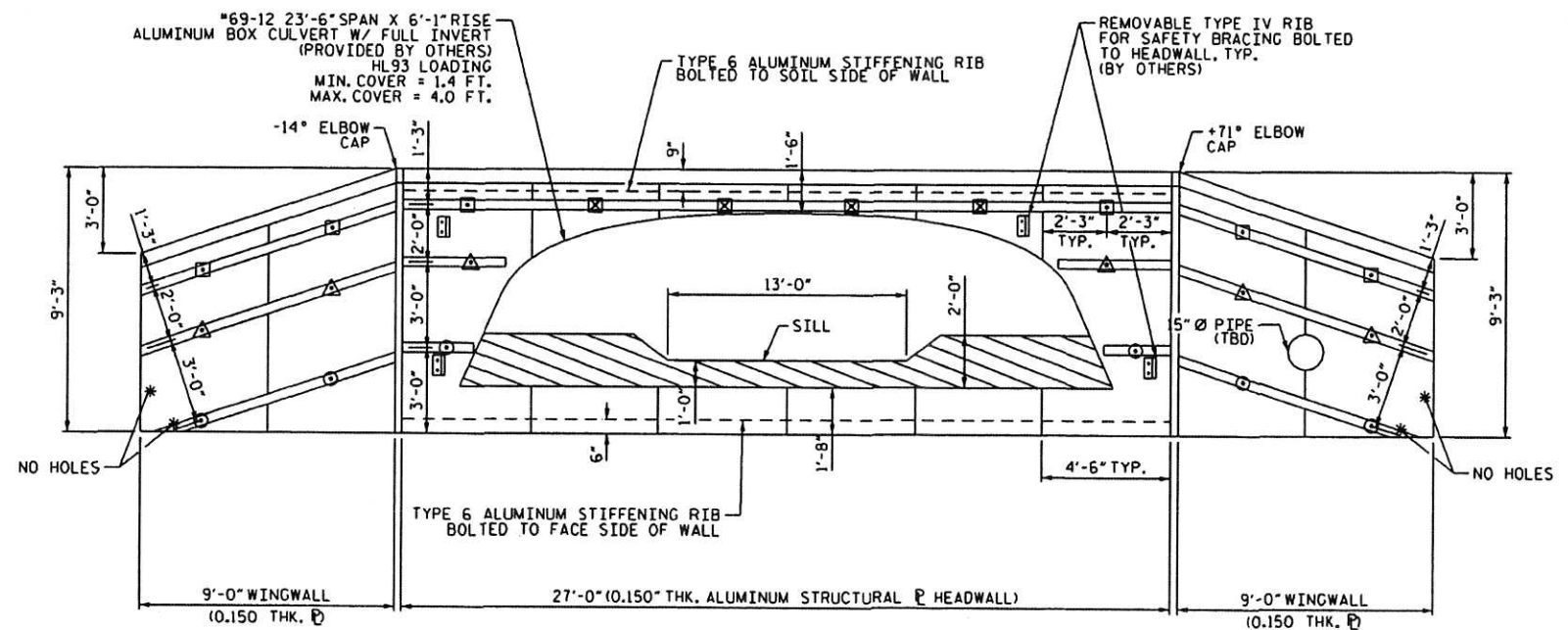




INLET HEADWALL ELEVATION

DIMENSIONS ARE TO BE VERIFIED BY ENGINEER IN THE FIELD. HEADWALLS HAVE 3/4" Ø GALVANIZED

- (6) 12'-6" LONG STEEL TIEBACK ROD W/ DMA PLATE
- △ (6) 10'-0" OR 12'-6" LONG STEEL TIEBACK ROD W/ DMA PLATE
- ⊗ (4) 6'-0" MIN. ROD LENGTH AS NECESSARY TO FACILITATE BOLTING TO BOX AS SHOWN ON "RIB & ANCHOR ATTACHMENT" DETAIL AND PER MANUFACTURER'S RECOMMENDATIONS
- (6) 5'-0" MIN. LONG STEEL TIEBACK ROD W/ DMA PLATE



OUTLET HEADWALL ELEVATION

DIMENSIONS ARE TO BE VERIFIED BY ENGINEER IN THE FIELD. HEADWALLS HAVE 3/4" Ø GALVANIZED

- (6) 12'-6" LONG STEEL TIEBACK ROD W/ DMA PLATE
- △ (6) 10'-0" OR 12'-6" LONG STEEL TIEBACK ROD W/ DMA PLATE
- ⊗ (4) 6'-0" MIN. ROD LENGTH AS NECESSARY TO FACILITATE BOLTING TO BOX AS SHOWN ON "RIB & ANCHOR ATTACHMENT" DETAIL AND PER MANUFACTURER'S RECOMMENDATIONS
- (6) 5'-0" MIN. LONG STEEL TIEBACK ROD W/ DMA PLATE

NOTES

- SOIL PROPERTIES
 Ø = 38 DEG.
 UNIT WEIGHT = 110 PCF.
- MINIMUM EMBEDMENT ALONG THE BASE OF WALL SHALL BE 2'-0"
- INLET & OUTLET HEADWALL DESIGN BASED ON HL-93 LOADING
- LIVE LOAD TO BE A MINIMUM 2 FT. FROM HEADWALL.

ALUMINUM STRUCTURAL PLATE WALL
 MATERIAL SPECIFICATIONS (AASHTO M-219):
 INLET & OUTLET HEADWALLS
 Fy = 24 ksi
 THICKNESS = 0.150"
 SECTION MODULUS = 1.131 CUBIC INCHES

ALUMINUM WALE BEAM
 MATERIAL SPECIFICATIONS:
 Fy = 35 ksi
 SECTION MODULUS = 5.073 CUBIC INCHES

TIEBACK ROD
 MATERIAL SPECIFICATIONS:
 ASTM F1554 3/4" Ø
 Fy = 55 ksi

REVISIONS		BY
NO.	DATE	DESCRIPTION

1223 James Franklin Rd.
 Raleigh, NC 27607
 Phone: 919.851.8077
 Fax: 919.851.8077
 License No. F-0377



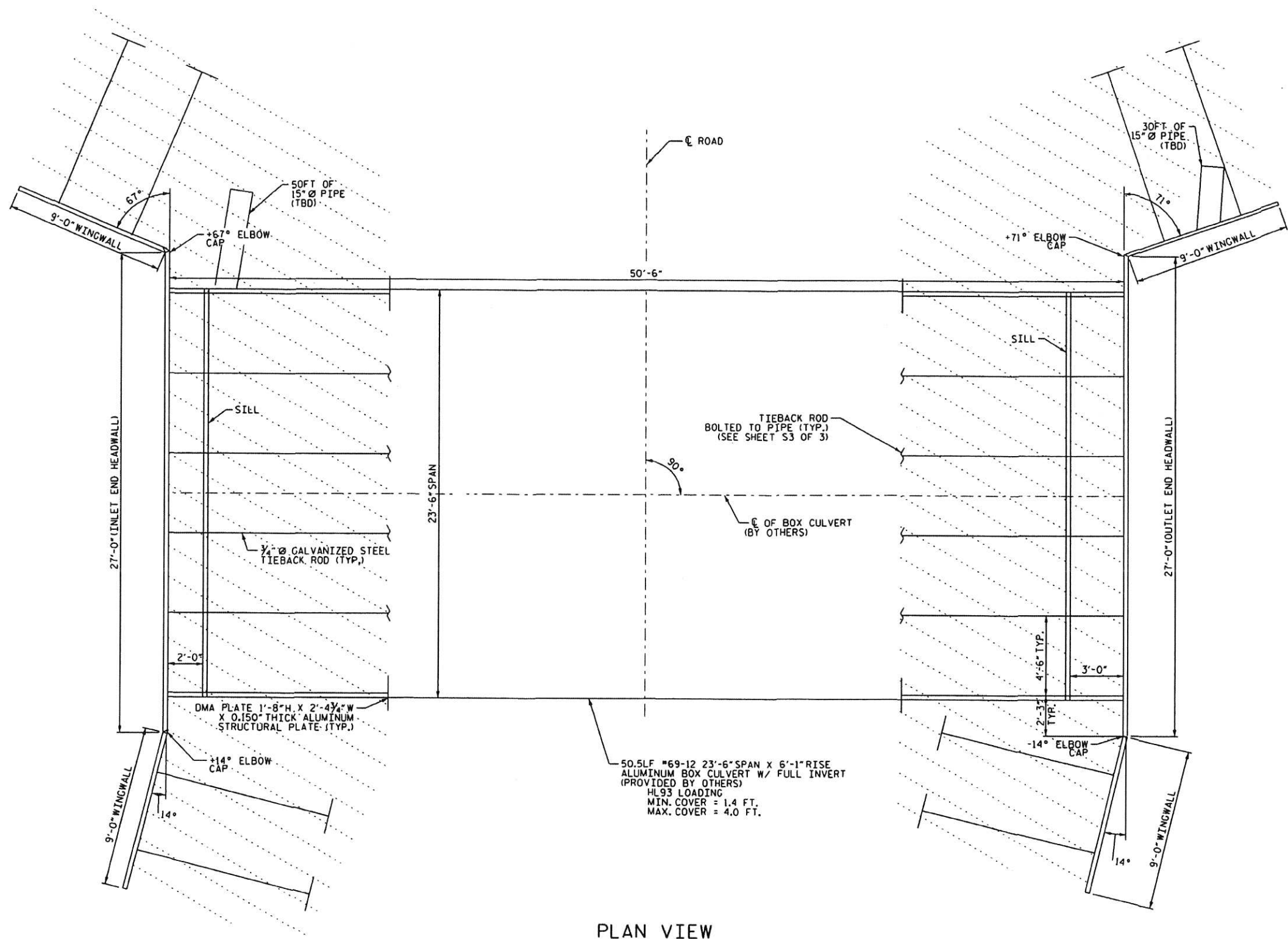
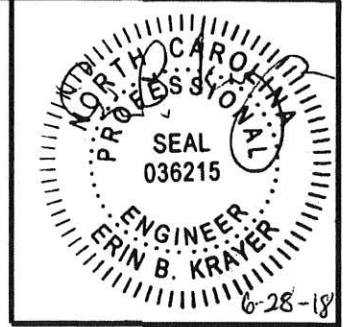
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

NCDOT BRIDGE #159
 BRITISH ROAD
 NORTH CAROLINA
 LENOIR COUNTY
METAL HEADWALL DESIGN

DATE: 4-19-18
 SCALE: NTS
 DESIGN: EBK
 DRAWN: EBK
 CHECKED: JAD
 PROJ. NO. 18379.06
 SHEET: S1 OF 3

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 DATE/TIME: 6/28/2018 4:13:32 PM



PLAN VIEW

*DIMENSIONS TO BE VERIFIED BY ENGINEER IN FIELD

BACKFILL #57 STONE

NOTES

- SOIL PROPERTIES
 UNIT WEIGHT = 110 PCF.
 MINIMUM EMBEDMENT ALONG THE BASE OF WALL SHALL BE 2'-0"
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- LIVE LOAD TO BE A MINIMUM 2 FT. FROM HEADWALL.

ALUMINUM STRUCTURAL PLATE WALL
 MATERIAL SPECIFICATIONS (AASHTO M-219):
 INLET & OUTLET HEADWALLS
 F_y = 24 ksi
 THICKNESS = 0.150"
 SECTION MODULUS = 1.131 CUBIC INCHES

ALUMINUM WALE BEAM
 MATERIAL SPECIFICATIONS:
 F_y = 35 ksi
 SECTION MODULUS = 5.073 CUBIC INCHES

TIEBACK ROD
 MATERIAL SPECIFICATIONS:
 ASTM F1554 3/4" Ø
 F_y = 55 ksi

NO.	DATE	DESCRIPTION	BY

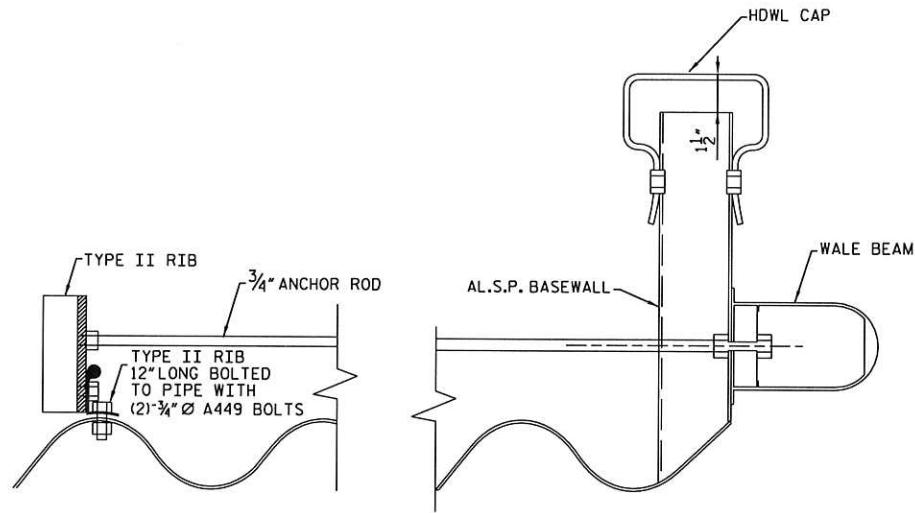
1223 Jones Franklin Rd
 Raleigh, NC 27607
 Tel: 919 851 8077
 Fax: 919 851 8107
 License No. F-0377



TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

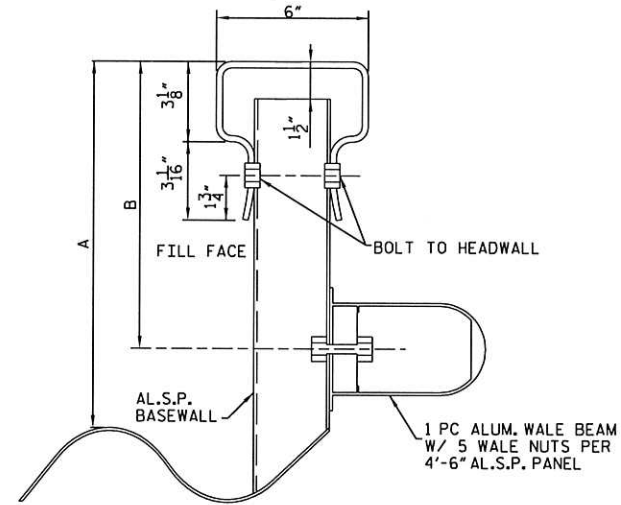
NC DOT BRIDGE #159
 BRITISH ROAD
 LENOIR COUNTY NORTH CAROLINA
METAL HEADWALL DESIGN

DATE:	4-19-18
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PROJ. NO.:	18379.06
SHEET:	S2 OF 3



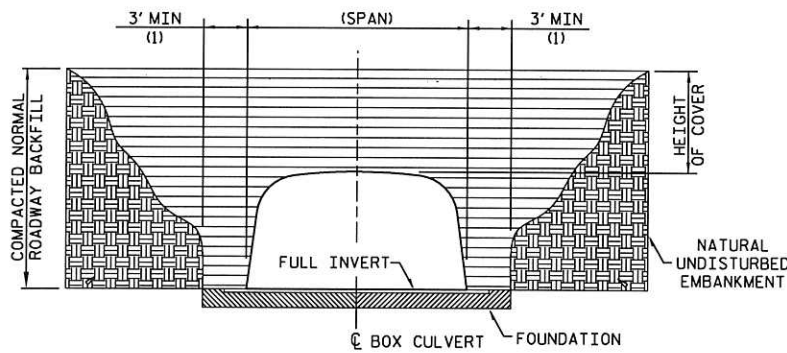
RIB & ANCHOR ATTACHMENT

NTS
MAY BE USED TO ATTACH DEADMAN ANCHOR RODS TO BOX WHERE COVER LIMITS USE OF THE TYPICAL ANCHOR PLATE.



DETAIL AT TOP OF WALL

NTS

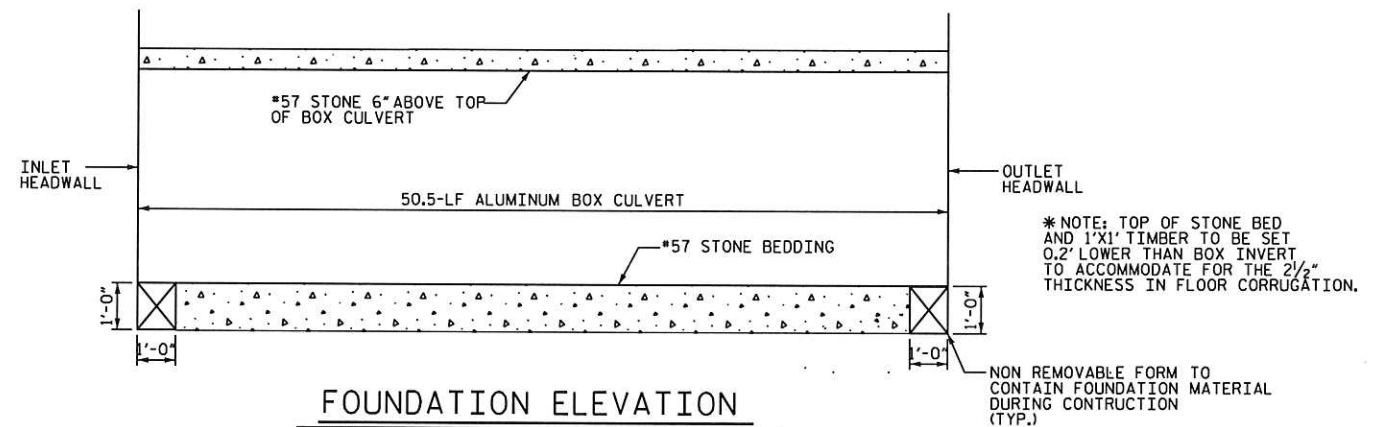


TYPICAL BACKFILL CROSS SECTION

- BACKFILL NOTES:**
1. IF LESS THAN 3' SPACE IS AVAILABLE CONCRETE GROUT MAY BE REQUIRED.
 2. STRUCTURAL BACKFILL MATERIAL TO BE NCDOT SELECT BACKFILL MATERIAL CLASS IV OR VI (OR APPROVED EQUAL). ABOVE AND BELOW SPRINGLINE SHALL BE PLACED IN UNIFORM HORIZONTAL LAYERS NOT EXCEEDING AN 8 INCH MAXIMUM LOOSE LIFT THICKNESS AND COMPACTED TO DENSITY NOT LESS THAN 90% PER AASHTO T180. D-4 DOZER OR SMALLER TO OPERATE NEAR AND ABOVE STRUCTURE DURING BACKFILLING TO FINISHED GRADE. REFER TO ASTM B789 INSTALLATION SPECIFICATION.
 3. WHEN USING A FULL INVERT, THE FOUNDATION SHALL HAVE A MINIMUM OF 4,000 PSF BEARING CAPACITY AND INCLUDE A MINIMUM OF 6\"/>

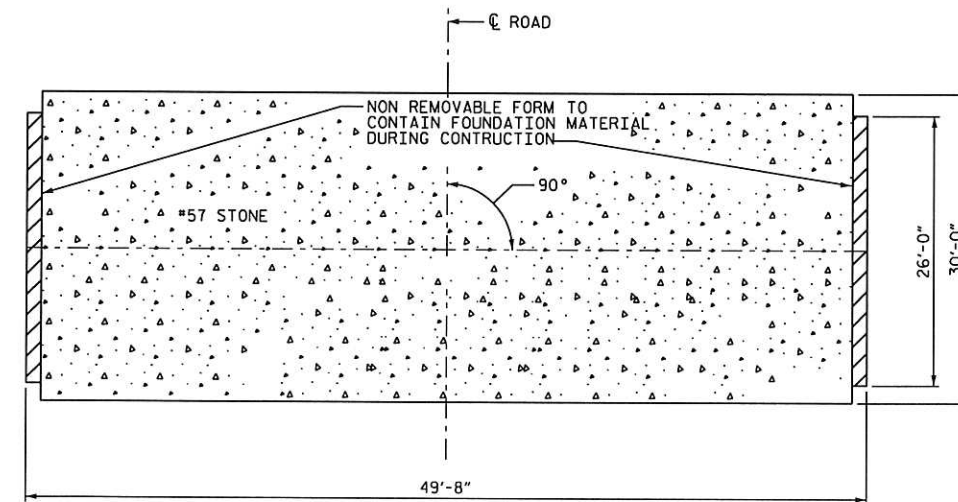
DETAIL OF TYPICAL BACKFILL

NTS



FOUNDATION ELEVATION

NTS



PLAN VIEW OF FOUNDATION FOR BOX CULVERT

NTS

FOUNDATION AND DETAILS ON THIS SHEET PROVIDED BY:
POMONA PIPE PRODUCTS
DUNDAS DR., GREENSBORO, NC

1223 Jones Franklin Rd.
Raleigh, N.C. 27606
Bus: 919 851 8077
Fax: 919 851 8077
License No. F-0377



TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

NCDOT BRIDGE #159
BRITISH ROAD
LENOIR COUNTY NORTH CAROLINA
METAL HEADWALL DESIGN

DATE:	4-19-18
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DESIGN:	EBK
DRAWN:	EBK
CHECKED:	JAD
PROJ. NO.:	1837906
SHEET:	S3 OF 3