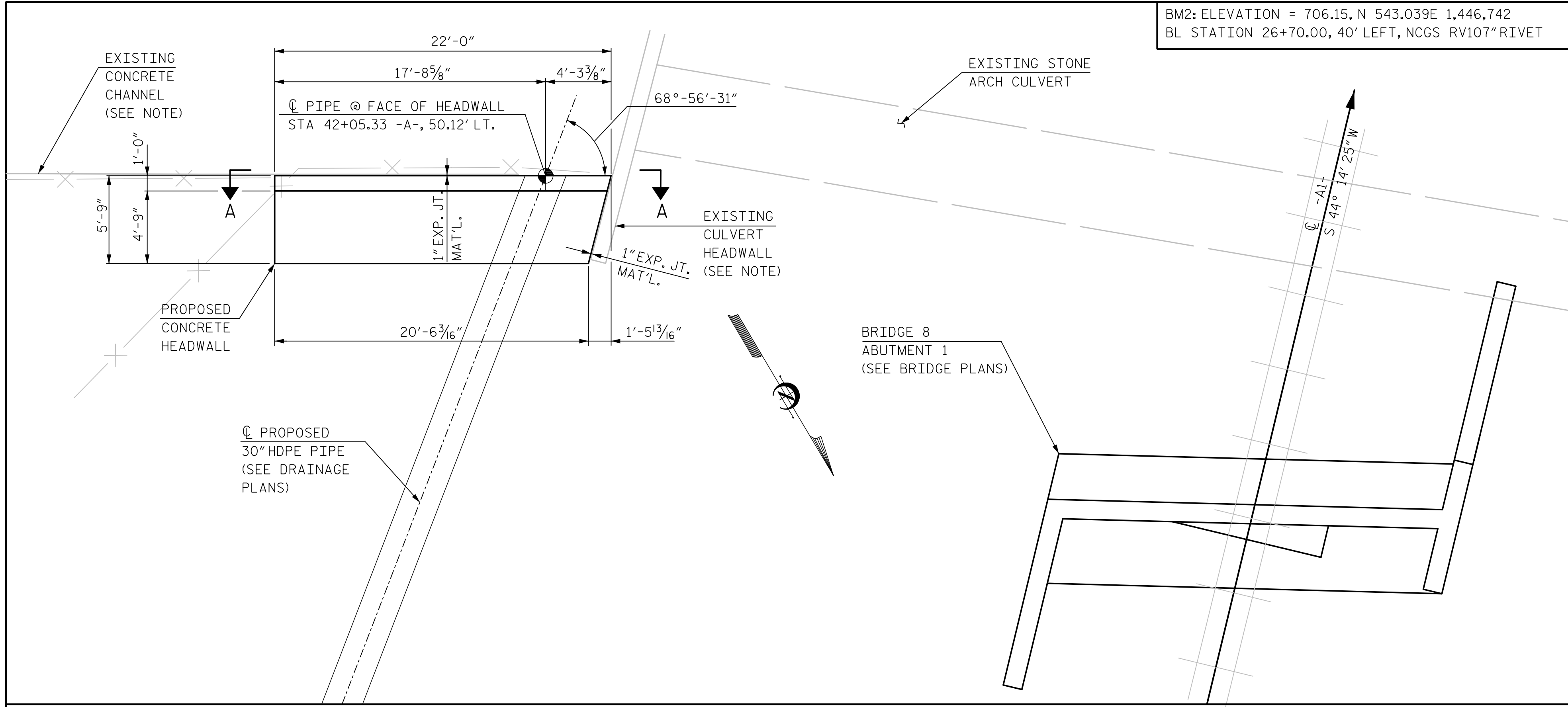


**This electronic collection of documents is provided
for the convenience of the user
and is Not a Certified Document –**

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

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

BM2: ELEVATION = 706.15, N 543.039E 1,446,742
BL STATION 26+70.00, 40' LEFT, NCGS RV107" RIVET



LOCATION SKETCH

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

TOTAL BILL OF MATERIAL			
	CULVERT EXCAVATION AT STATION 42+05.33 -A1-	CLASS AA CONCRETE	REINFORCING STEEL
	LUMP SUM	CU. YDS.	LBS.
CULVERT HEADWALL	LUMP SUM	20.5	96

INDEX OF DRAWINGS

- GENERAL DRAWING: CONCRETE HEADWALL (SHEET 1 OF 2)
- CONCRETE HEADWALL DETAILS (SHEET 2 OF 2)

NOTE: FOR VIEW A-A, SEE SHEET 2 OF 2.

NOTES:

THIS HEADWALL HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT EDITION OF AREMA'S MANUAL FOR RAILWAY ENGINEERING, VOL. 2, STRUCTURES.

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

HEADWALL SHALL BE CONSTRUCTED USING CLASS AA CONCRETE WITH $f'_c = 4,500$ psi.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

REINFORCING STEEL SHALL BE ASTM DESIGNATION A615, GRADE 60. ALL DIMENSIONS RELATING TO BAR SPACING ARE TO BAR CENTERS UNLESS NOTED. FABRICATION TO BE IN ACCORDANCE WITH THE "MANUAL OF STANDARD PRACTICE" A.C.I. 315-80.

THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH SIZE BAR USED. THE BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPLICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLE, PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS. PAYMENT FOR THE SAMPLES OF REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES", JANUARY 2018, NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (HEREIN CALLED STANDARD SPECIFICATIONS), EXCEPT AS NOTED HEREIN, ELSEWHERE ON PLANS, OR IN THE SPECIAL PROVISIONS.

ALL CONCRETE SHALL BE 4,500 PSI CLASS AA CONCRETE WITH NO. 57 OR 67 COARSE AGGREGATE AND SHALL BE AIR-ENTRAINED. MINIMUM CEMENT CONTENT PER CUBIC YARD OF CONCRETE SHALL BE 6.5 BAGS. NO SUBSTITUTION OF FLYASH, BLAST FURNACE SLAG OR OTHER MATERIAL WILL BE PERMITTED IN MEETING THIS MINIMUM CEMENT REQUIREMENT. CHAMFER ALL EXPOSED EDGES AND CORNERS $\frac{3}{4}$ " EXCEPT AS NOTED. THE USE OF GROUND GRANULATED BLAST FURNACE SLAG IS NOT PERMITTED IN THIS STRUCTURE.

CONTROL OF WORK: ALL WORK INVOLVED IN THE CONSTRUCTION OF THE RAILWAY STRUCTURE SHALL BE PERFORMED SATISFACTORY TO THE ENGINEER AND/OR NORFOLK SOUTHERN RAILWAY COMPANY. ALL METHODS OF HANDLING THE WORK AFFECTING THE SAFETY OF RAIL OPERATIONS MUST BE APPROVED BY THE RAILWAY COMPANY BEFORE PROCEEDING WITH THAT PORTION OF THE WORK. RAIL TRAFFIC SHALL, AT ALL TIMES, BE MAINTAINED AND PROTECTED. THE CONTRACTOR SHALL NOT AT ANY TIME DELAY OR INTERFERE WITH RAIL OPERATIONS.

FOR PORTLAND CEMENT, SEE SPECIAL PROVISIONS.

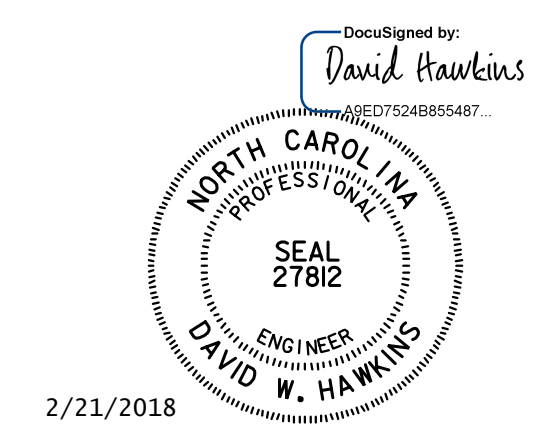
FOR FINE AND COARSE AGGREGATE, SEE SPECIAL PROVISIONS.

FOR BACKFILL AROUND STRUCTURE, SEE SPECIAL PROVISION "BACKFILLING AROUND STRUCTURES".

EXISTING CONCRETE CHANNEL AND EXISTING CULVERT HEADWALL ARE TO REMAIN. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO ENSURE EXISTING CHANNEL AND HEADWALL ARE PROTECTED DURING CONSTRUCTION. ANY DAMAGE TO EXISTING CHANNEL OR HEADWALL SHALL BE AT THE CONTRACTOR'S EXPENSE AND SUBJECT TO THE APPROVAL OF THE ENGINEER.

PROJECT NO. P-5705BA
MECKLENBURG COUNTY
STATION: STA. 42+05.33 -A1-

SHEET 1 OF 2

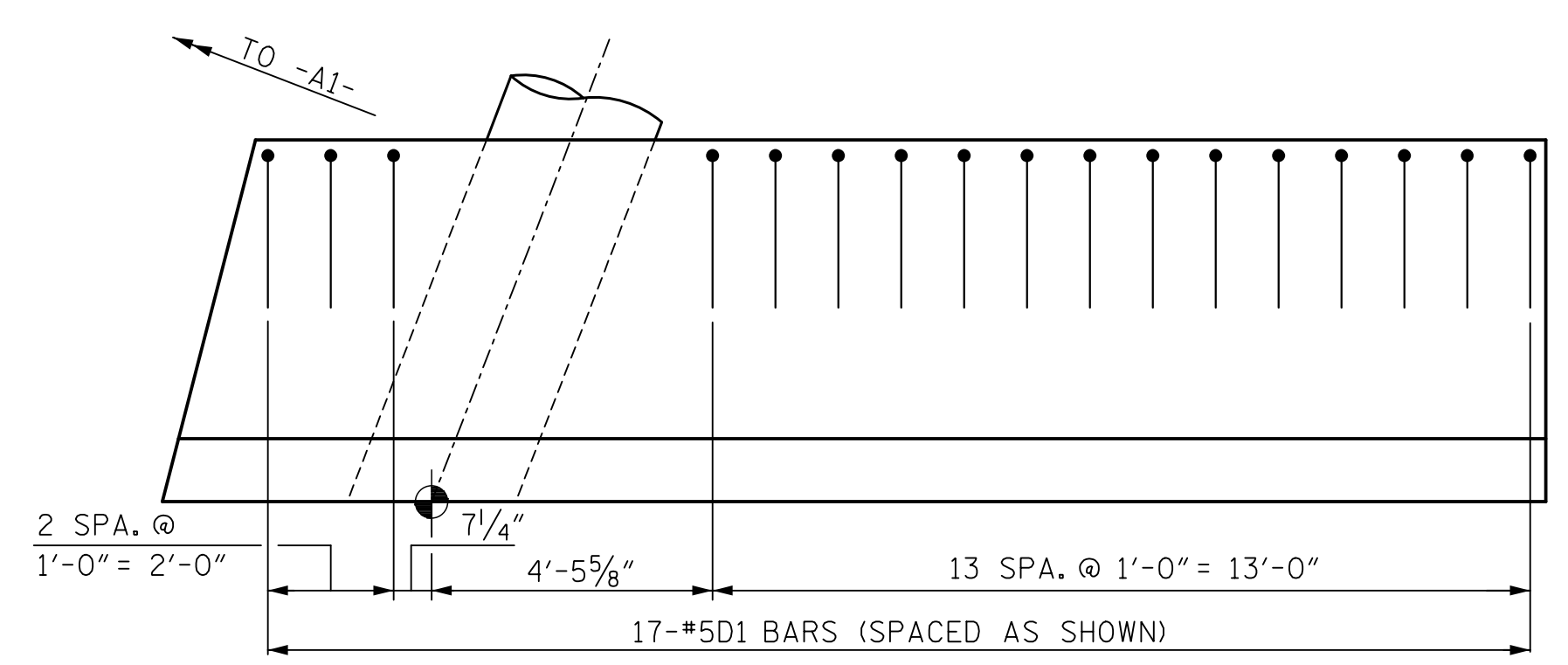


DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

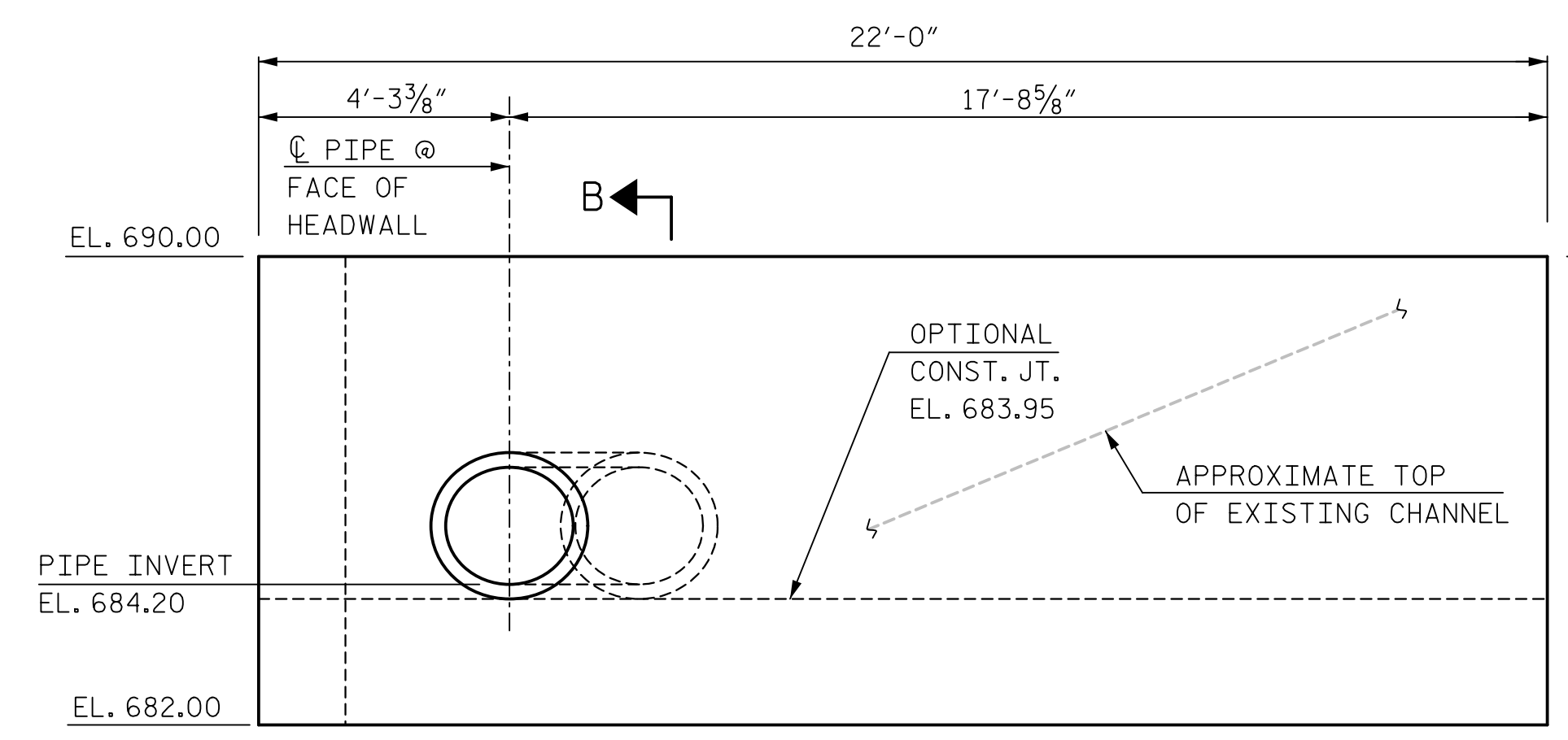
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
CONCRETE
HEADWALL

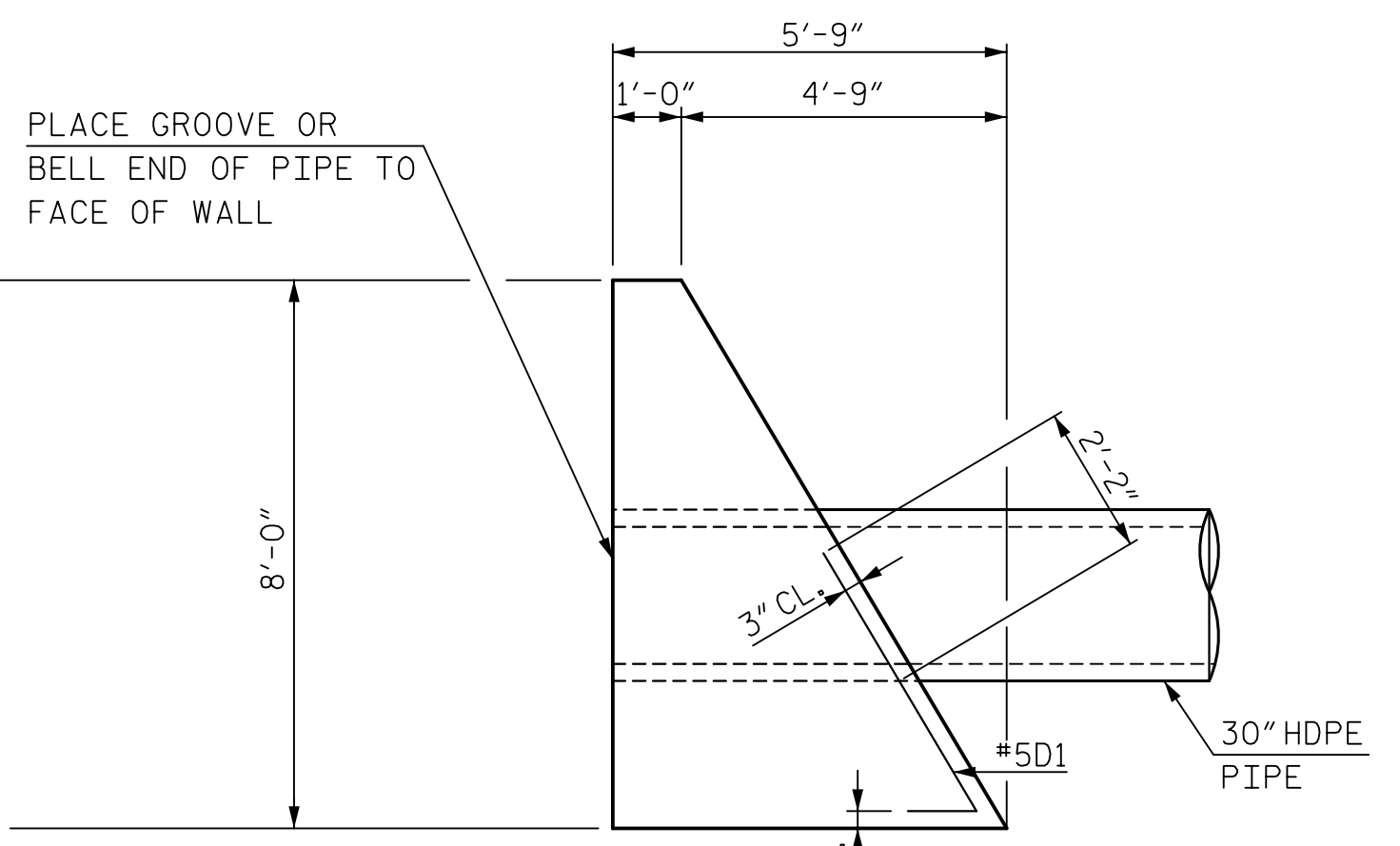
HNTB HNTB NORTH CAROLINA, P.C. NC License No. C-1554 343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609	REVISIONS					SHEET NO. C1-1 TOTAL SHEETS 2	
	NO.	BY	DATE	NO.	BY		DATE
	1			3			
DRAWN BY: J. BAYNE DATE: 2/18 CHECKED BY: D. HAWKINS DATE: 2/18 DWG. NO. 1	2			4			



PLAN

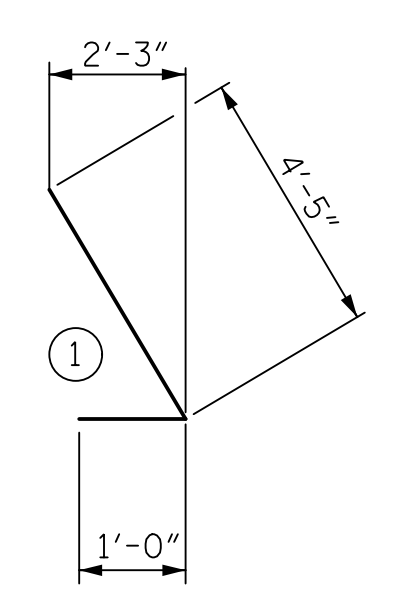


VIEW A-A
(EXPOSED FACE)



SECTION B-B

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

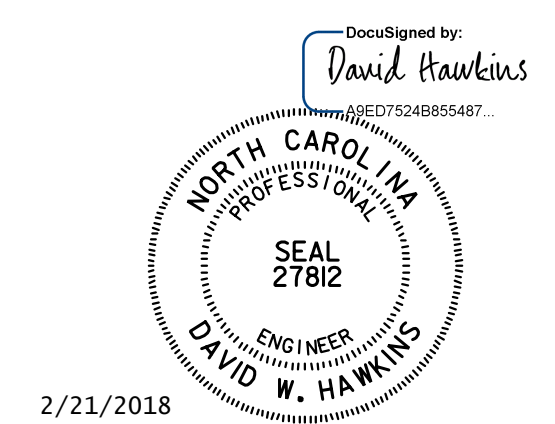
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
HEADWALL						
D1	17	5	1	5'-5"	96	
QUANTITIES						
REINFORCING STEEL					LBS.	96
CLASS AA CONCRETE					CU. YDS.	20.5

PROJECT NO. P-5705BA
MECKLENBURG COUNTY
 STATION: STA. 42+05.33 -A1-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

CONCRETE
 HEADWALL
 DETAILS



DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

HNTB HNTB NORTH CAROLINA, P.C.
 NC License No. C-1554
 343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609

DRAWN BY J. BAYNE DATE 2/18
 CHECKED BY D. HAWKINS DATE 2/18 DWG. NO. 2

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	C1-2
1			3			TOTAL SHEETS
2			4			2