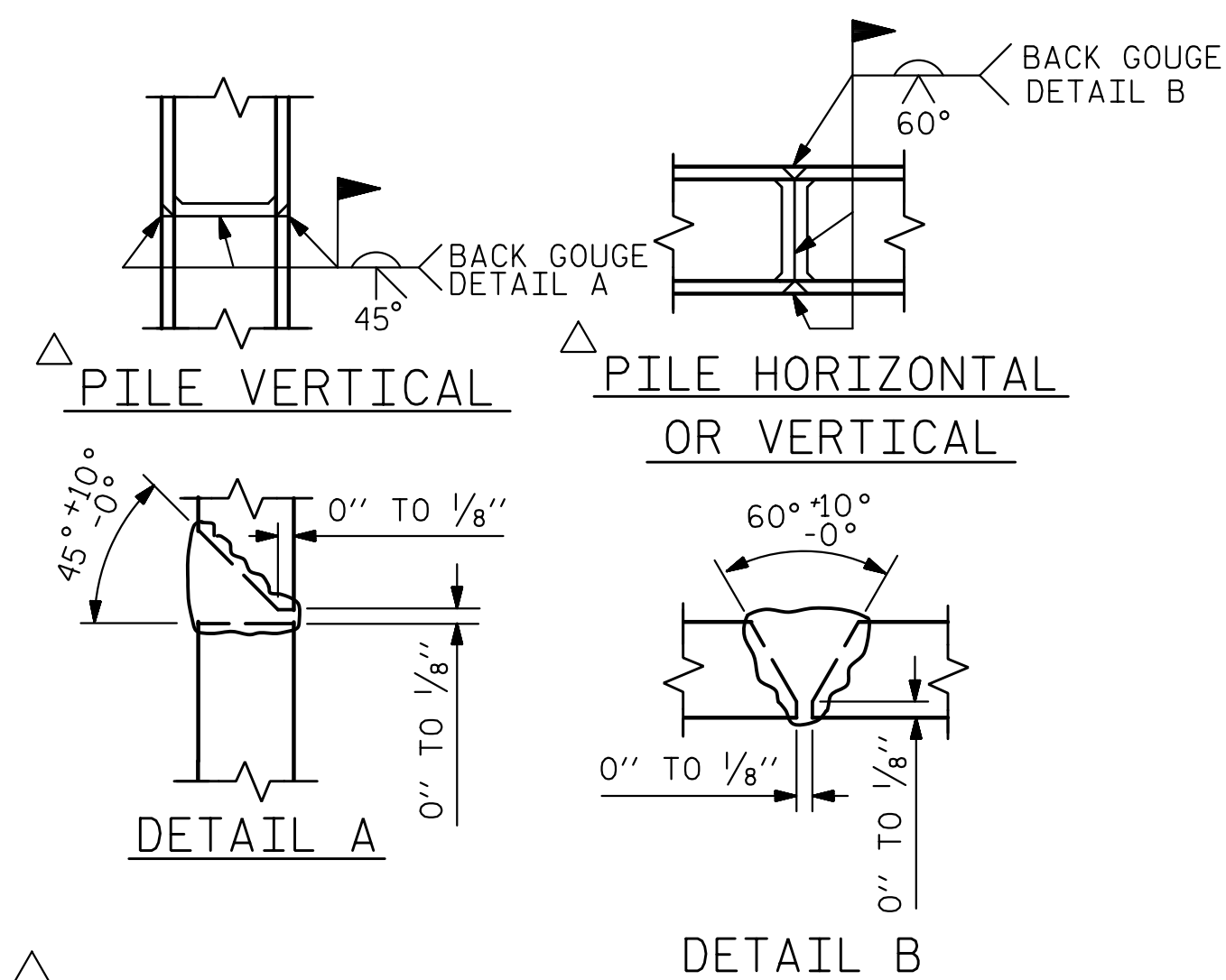


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR EFFECTIVENESS.

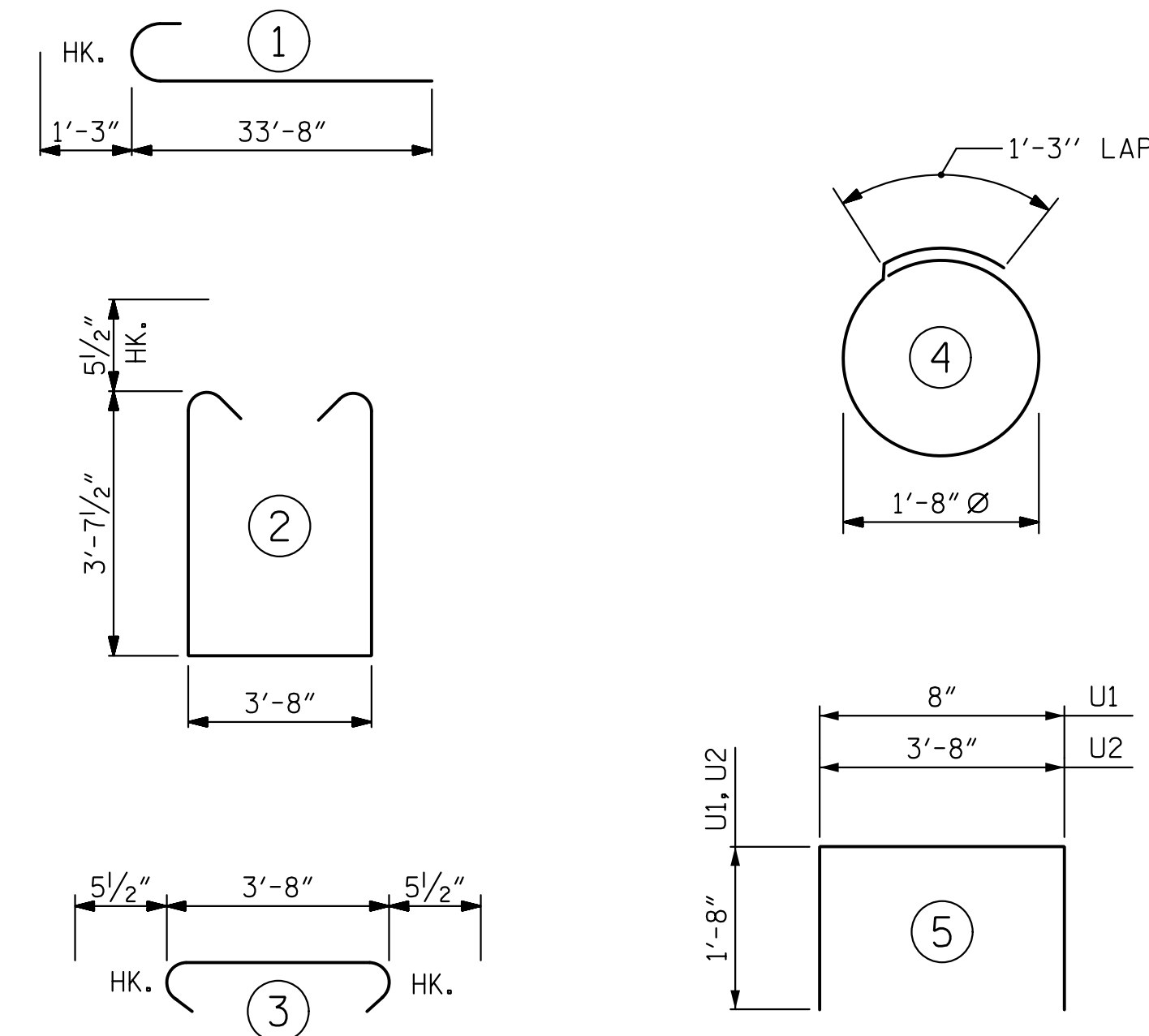
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

### TEMPORARY DRAINAGE AT END BENT



### PILE SPLICE DETAILS

### BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

HP 12 X 53 STEEL PILES  
NO: 9 LIN. FT. = 315

### BILL OF MATERIAL

#### END BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	22	#9	1	34'-11"	2,612
B2	28	#4	STR	30'-6"	570
B3	15	#4	STR	3'-8"	37
B4	15	#4	STR	3'-3"	33
K1	8	#4	STR	4'-4"	23
K2	28	#4	STR	30'-6"	570
S1	64	#5	2	11'-10"	790
S2	64	#5	3	4'-7"	306
S3	36	#4	4	6'-6"	156
U1	50	#4	5	4'-0"	134
U2	9	#4	5	7'-0"	42
V1	100	#5	STR	9'-8"	1,008
V2	20	#5	STR	11'-6"	240

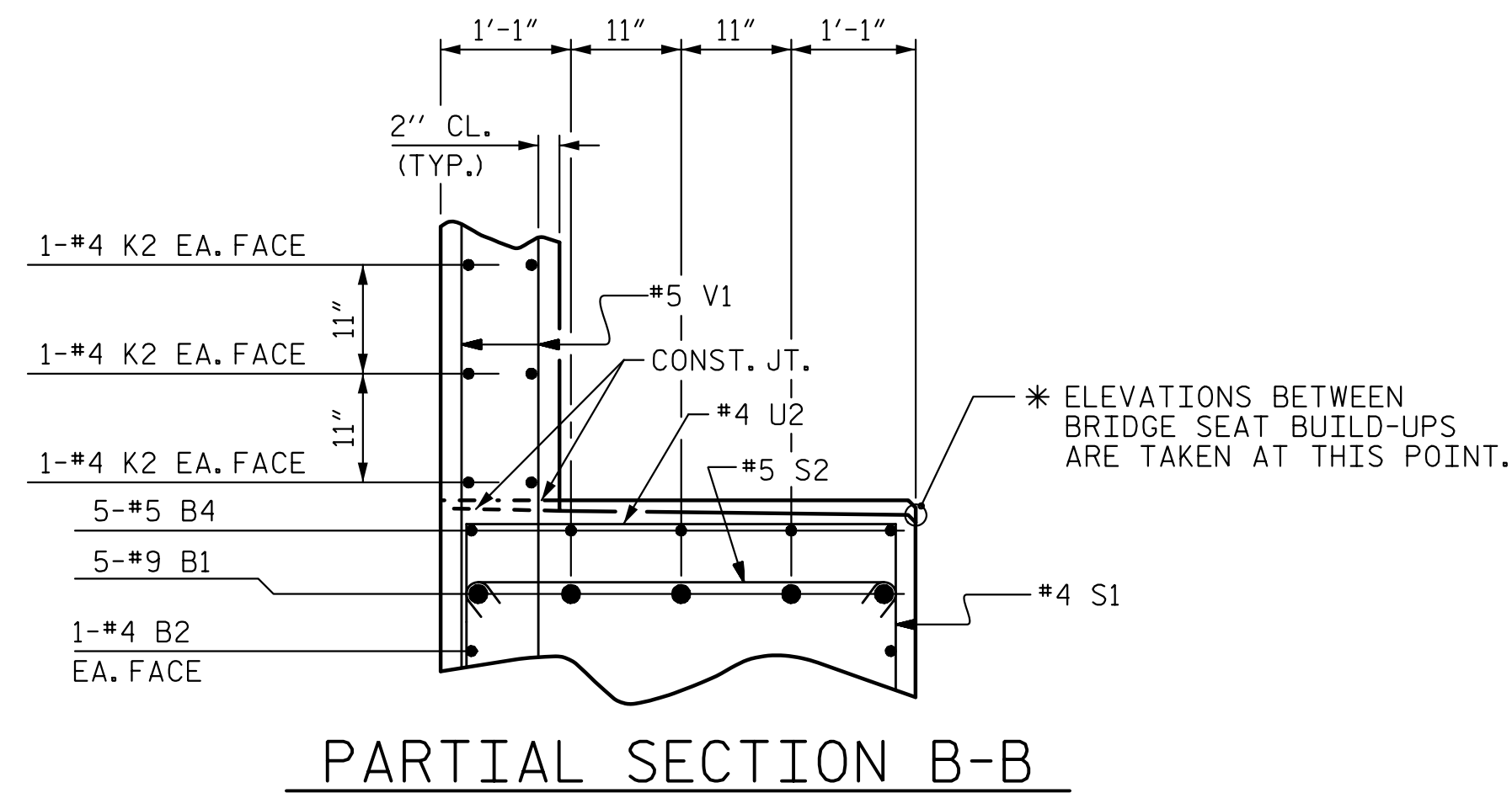
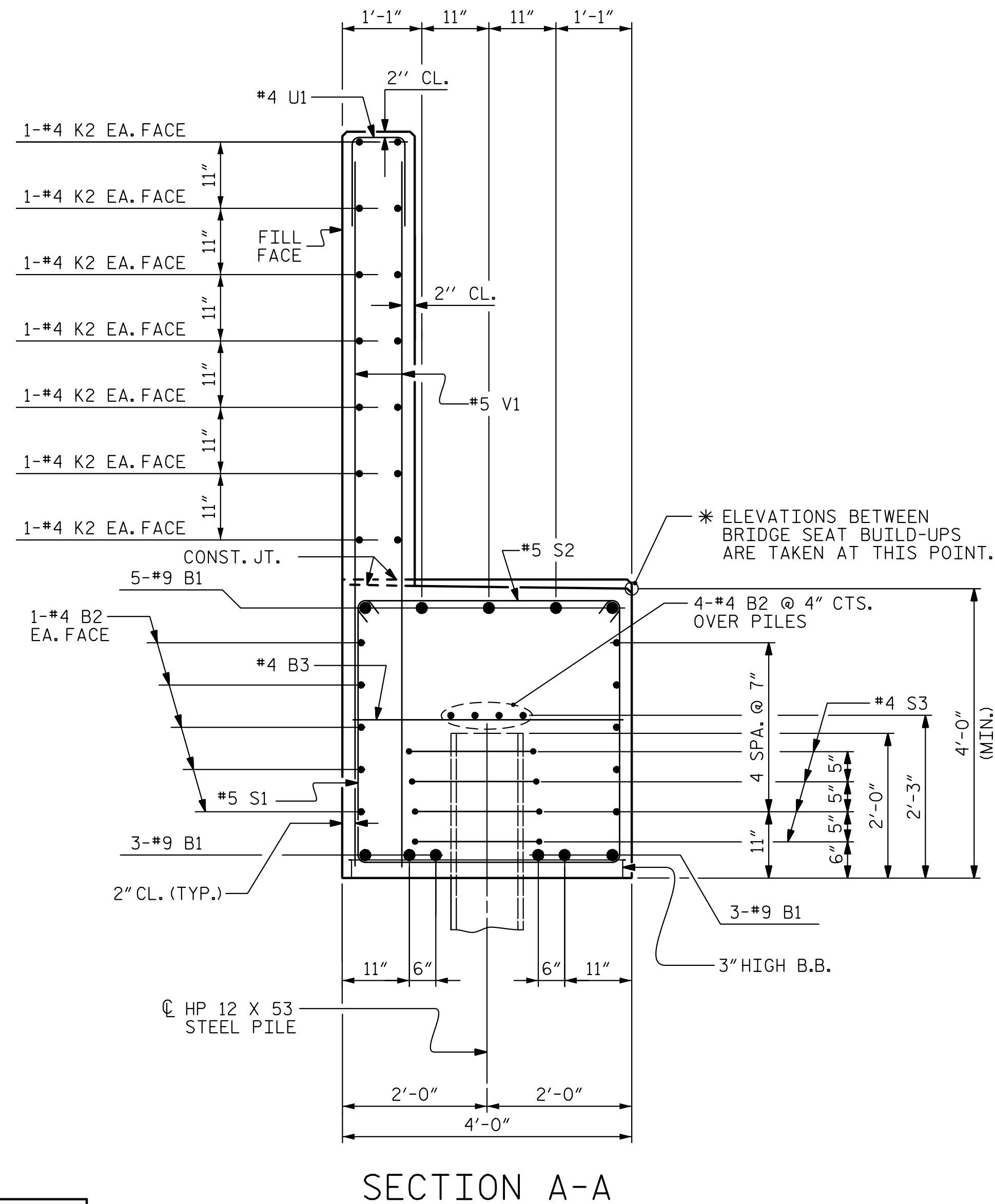
REINFORCING STEEL 6,521 LBS.

CLASS A CONCRETE BREAKDOWN

POUR #1 CAP 36.1 C.Y.

POUR #2 BACKWALL 13.8 C.Y.

TOTAL CLASS A CONCRETE 49.9 C.Y.



PROJECT NO. W-5516

ROWAN COUNTY

STATION: 61+79.40 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

SUBSTRUCTURE  
END BENT 2  
DETAILS

#### REVISIONS

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

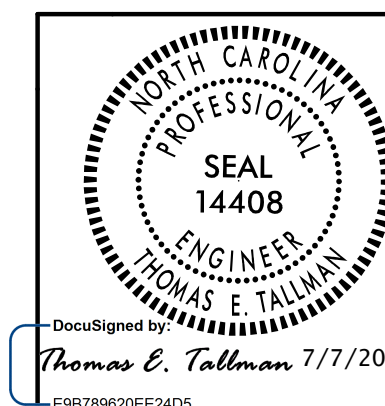
SHEET NO.

S-37

TOTAL SHEETS  
41

**ICA**  
Engineering

5121 Kingdom Way, Suite 100 Raleigh, NC 27607  
NC License No. P-09298



DocuSigned by:  
Thomas E. Tallman 7/7/2015  
E9878620E24D5

5/29/2015 10:53 AM C:\Users\p\Documents\Projects\37. w-5516.sd.e2.02.dgn  
ICA Engineering, Inc.

DRAWN BY: D. H. CARTER DATE: MAY 2015  
CHECKED BY: M. T. NEIHEISEL DATE: MAY 2015  
DESIGN ENGINEER OF RECORD: T. E. TALLMAN DATE: MAY 2015