

NOT FOR BIDDING

PLAN  
SCALE: 1"=10'

**HYDRAULIC DATA**  
**38"x60" R.C.E.P**

DRAINAGE AREA = 0.17 SQUARE MILES  
 50 YEAR FLOOD ELEVATION = 55.6  
 50 YEAR DESIGN DISCHARGE = 67 C.F.S.  
 VELOCITY AT Q 50 = 10.3 F.P.S.  
 100 YEAR FLOOD ELEVATION = 56.4  
 100 YEAR DESIGN DISCHARGE = 88 C.F.S.  
 VELOCITY AT Q 100 = 12.3 F.P.S.  
 PROPOSED OPENING = 12.4 S.F.

**HYDRAULIC DATA**  
**53"x83" R.C.E.P**

DRAINAGE AREA = 0.17 SQUARE MILES  
 50 YEAR FLOOD ELEVATION = 55.6  
 50 YEAR DESIGN DISCHARGE = 128 C.F.S.  
 VELOCITY AT Q 50 = 5.8 F.P.S.  
 100 YEAR FLOOD ELEVATION = 56.4  
 100 YEAR DESIGN DISCHARGE = 153 C.F.S.  
 VELOCITY AT Q 100 = 6.9 F.P.S.  
 PROPOSED OPENING = 22 S.F.

INDEX OF SHEETS  
PIPE CULVERT AT 656+75.00

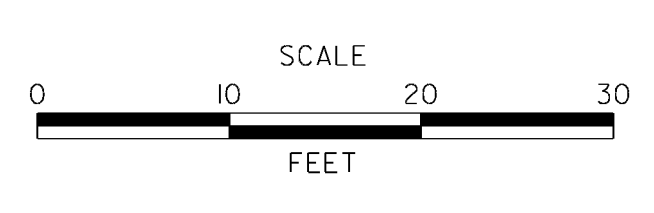
SHEET NO.	DWG. NO.	TITLE
78	BRI-444A-01	SITE PLAN
79	BRI-444A-02	ELEVATION AND QUANTITIES
80	BRI-444A-03	STAKE OUT PLAN AND INLET PLAN AND ELEVATION
81	BRI-444A-04	STAKE OUT PLAN AND OUTLET PLAN AND ELEVATION
82	BRI-444A-05	INLET AND OUTLET WALL SECTIONS
83	BRI-444A-06	REINFORCEMENT BAR LIST (1 OF 2)
84	BRI-444A-07	REINFORCEMENT BAR LIST (2 OF 2)

**NOTES:**

1. BELOW ORDINARY HIGH WATER LINE: RIPRAP AND RIFFLE GRADE CONTROL MATERIAL PER PLANS. PLACE TOP OF RIPRAP TO MATCH INVERT OF PIPE. CHOKE RIPRAP OR RIFFLE GRADE MATERIAL VOIDS WITH BORROW, TYPE B. PLACE CHANNEL BED FILL TO MATCH CHANNEL BED ELEVATIONS. DO NOT PLACE CHANNEL BED FILL INSIDE PIPE.
2. ABOVE ORDINARY HIGH WATER LINE: RIPRAP PER PLANS. CHOKE RIPRAP VOIDS WITH ITEM 302012-DELAWARE NO. 57 STONE. FILL REMAINING VOIDS WITH TOPSOIL SO THAT THE RIPRAP IS BARELY VISIBLE. REGARDLESS OF DEPTH, THIS SHALL BE PAID FOR UNDER ITEM 733001-TOPSOILING, 4" DEPTH. PLACE ADDITIONAL 4" TOPSOIL, STREAM BANK SEED MIX AND SOIL RETENTION BLANKET MULCH, TYPE 5. TOPSOIL DEPTH TRANSITION TO BE INCIDENTAL TO TOPSOIL/TOPSOILING ITEM.
3. SEE ENVIRONMENTAL COMPLIANCE SHEETS FOR ADDITIONAL DETAILS.
4. FOR QUANTITIES, SEE SHEET 2 OF 7.
5. FOR EXCAVATION AND BACKFILL SECTIONS, SEE SHEET 3 OF 7.



ADDENDUMS / REVISIONS	



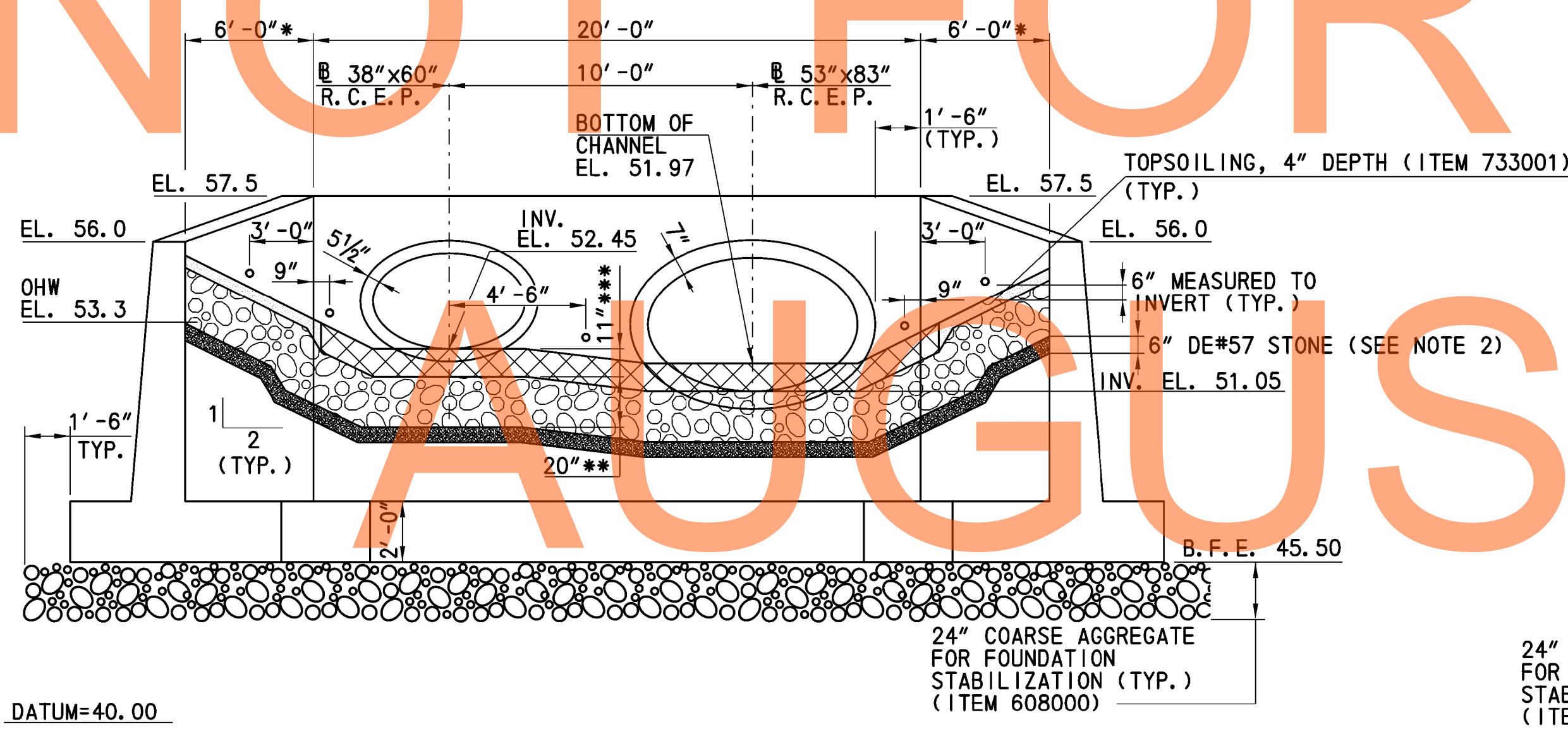
**US 301**  
**NORFOLK SOUTHERN RR TO SR 896**

CONTRACT T200911301	BRIDGE NO. <b>1-444A</b>	DESIGNED BY: CCJ	CHECKED BY: JFM
COUNTY NEW CASTLE			

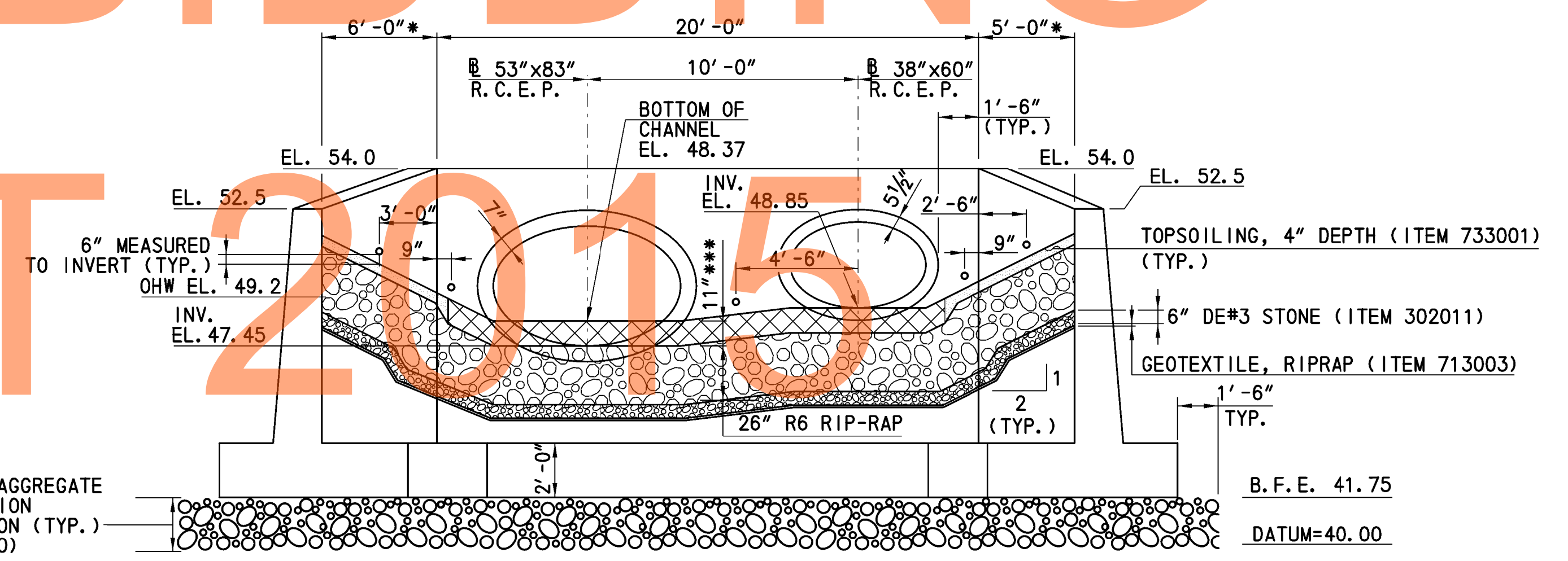
<b>SITE PLAN</b> <b>PIPE CULVERT</b> <b>STA. 656 + 75.00</b>	SHEET NO. <b>78</b> TOTAL SHTS. <b>240</b>
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QUANTITIES			
ITEM NO.	NAME	UNITS	QUANTITY
612215	REINFORCED CONCRETE ELLIPTICAL PIPE, 38"x60", CLASS IV	L.F.	190
612229	REINFORCED CONCRETE ELLIPTICAL PIPE, 53"x83", CLASS IV	L.F.	190
207000	EXCAVATION AND BACKFILL FOR STRUCTURES	C.Y.	470
208000	EXCAVATION AND BACKFILL FOR PIPE TRENCHES	C.Y.	720
	BORROW, TYPE C (AVAILABLE FROM BORROW SITE EXCAVATION)	C.Y.	740
302011	DELAWARE No. 3 STONE	TON	31
602001	PORTLAND CEMENT CONCRETE MASONRY, CLASS A	C.Y.	31
602002	PORTLAND CEMENT CONCRETE MASONRY, CLASS B	C.Y.	58
604000	BAR REINFORCEMENT, EPOXY COATED	L.B.	9,000
608000	COARSE AGGREGATE FOR FOUNDATION STABILIZATION AND SUBFOUNDATION BACKFILL	TON	162
713003	GEOTEXTILES, RIPRAP	S.Y.	87
712022	RIPRAP, CLASS R-6	TON	128
712531	CHANNEL BED FILL	C.Y.	25
733001	TOPSOILING (4" DEPTH)	S.Y.	7
302012	DELAWARE NO. 57 STONE	TON	11

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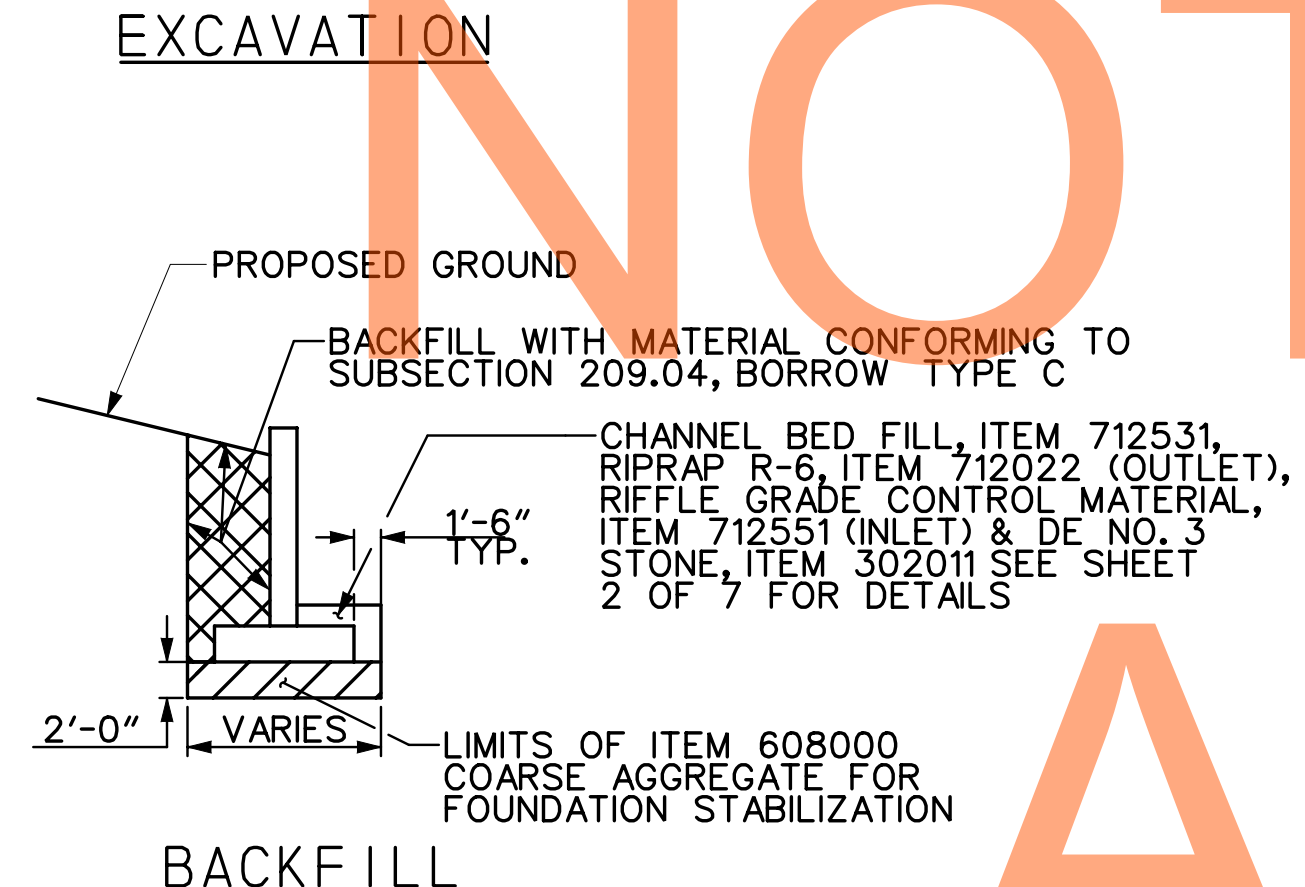
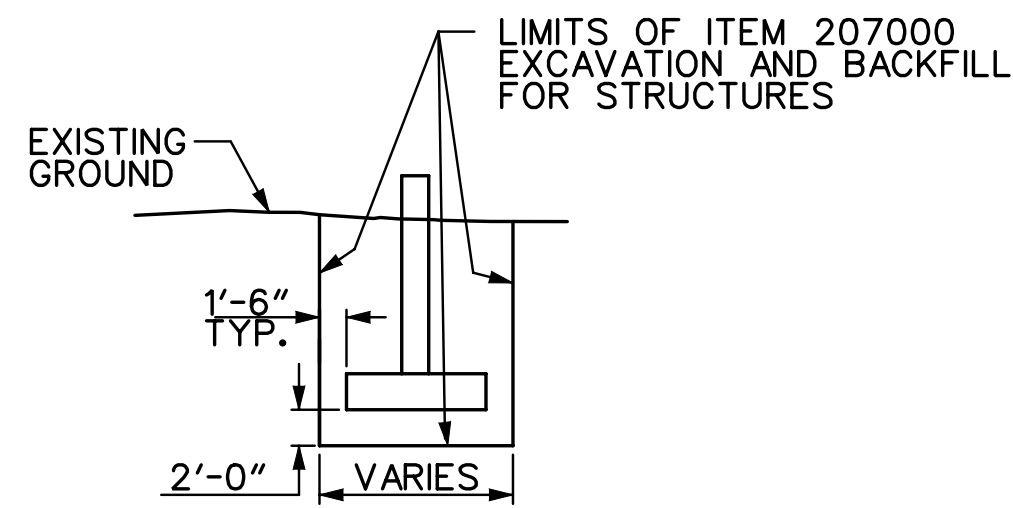
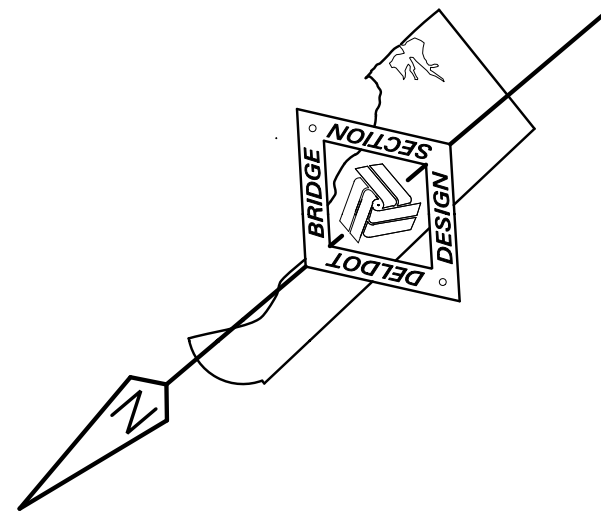
INLET  
ELEVATION  
SCALE: 1/4"=1'-0"



OUTLET  
ELEVATION  
SCALE: 1/4"=1'-0"

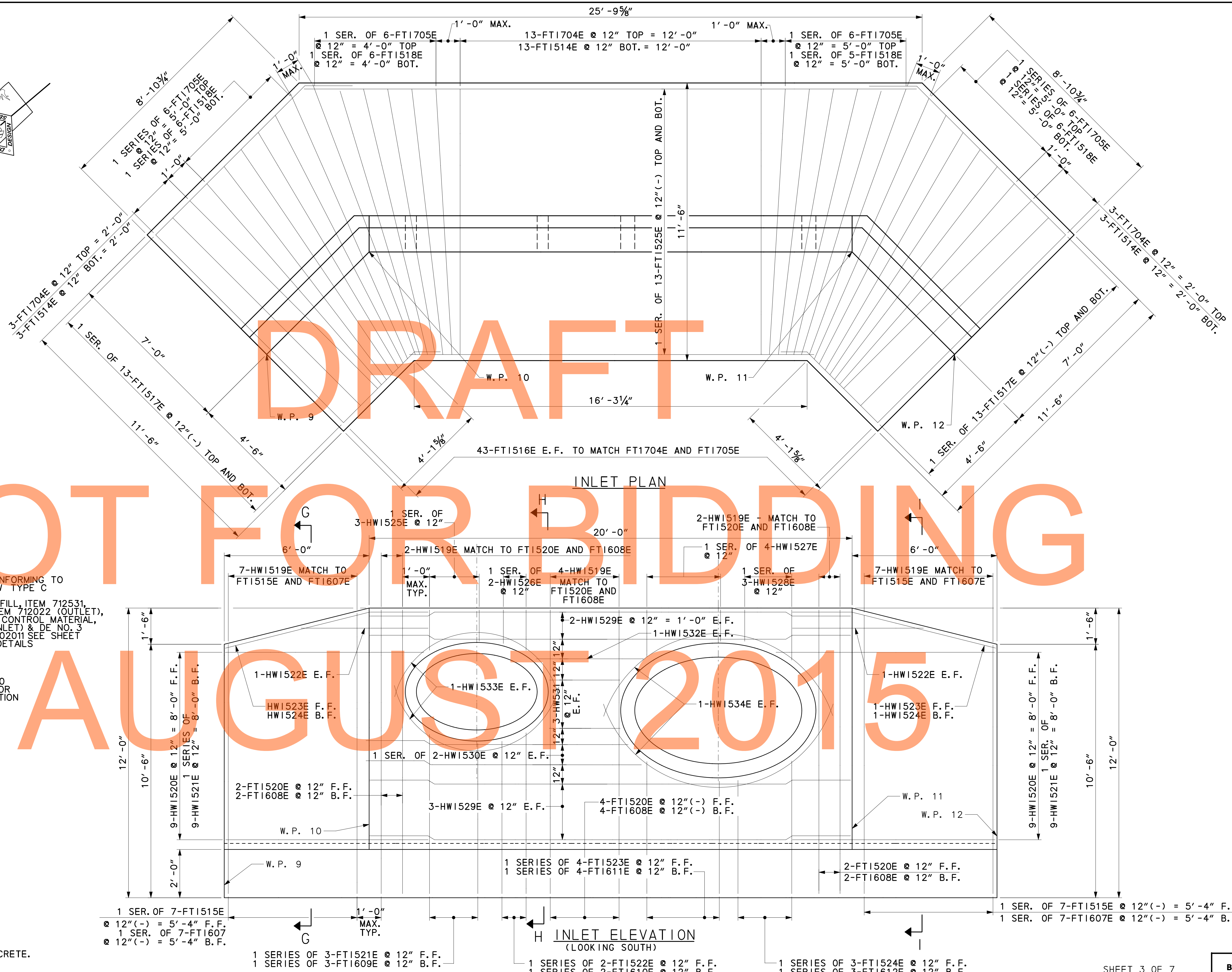
- \* MEASURED ALONG FRONT FACE.
- \*\* RIFFLE GRADE CONTROL MATERIAL-SEE STREAM RELOCATION DETAILS.
- \*\*\* CHANNEL BED FILL

- NOTES:**
- FOR EXCAVATION AND BACKFILL SECTIONS, SEE SHEET 3 OF 7.
  - QUANTITIES FOR DE NO. 57 STONE, ITEM 302011, CHANNEL BED FILL, ITEM 712531 AND RIFFLE GRADE CONTROL MATERIAL, ITEM 712531 AT THE INLET HAVE BEEN INCLUDED WITH THE STREAM RELOCATION DETAILS AND ARE NOT INCLUDED IN THE QUANTITIES SHOWN ON THIS SHEET.



WORK POINT COORDINATES		
W. P.	CONSTRUCTION US 301 MAINLINE	
	STATION	OFFSET
9	656+94.26	86.87' L
10	656+89.87	82.65' L
11	656+69.30	82.68' L
12	656+64.92	86.92' L

- NOTES**
1. VERTICAL WALL REINFORCING IN FOOTING NOT SHOWN FOR CLARITY.
  2. FOR SECTIONS G-G, H-H, AND I-I, SEE SHEET 5 OF 7.
  3. FOR WEEP HOLE LOCATIONS, SEE SHEET 2 OF 7.
  4. STEM CONCRETE SHALL BE CLASS A CONCRETE AND FOOTING CONCRETE SHALL BE CLASS B CONCRETE.

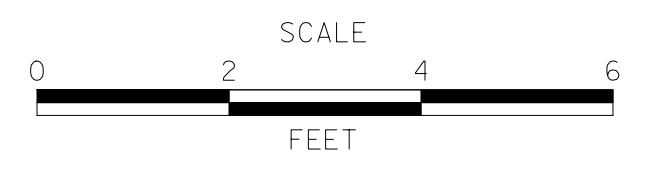


SHEET 3 OF 7

BR1-444A-03



ADDENDUMS / REVISIONS	

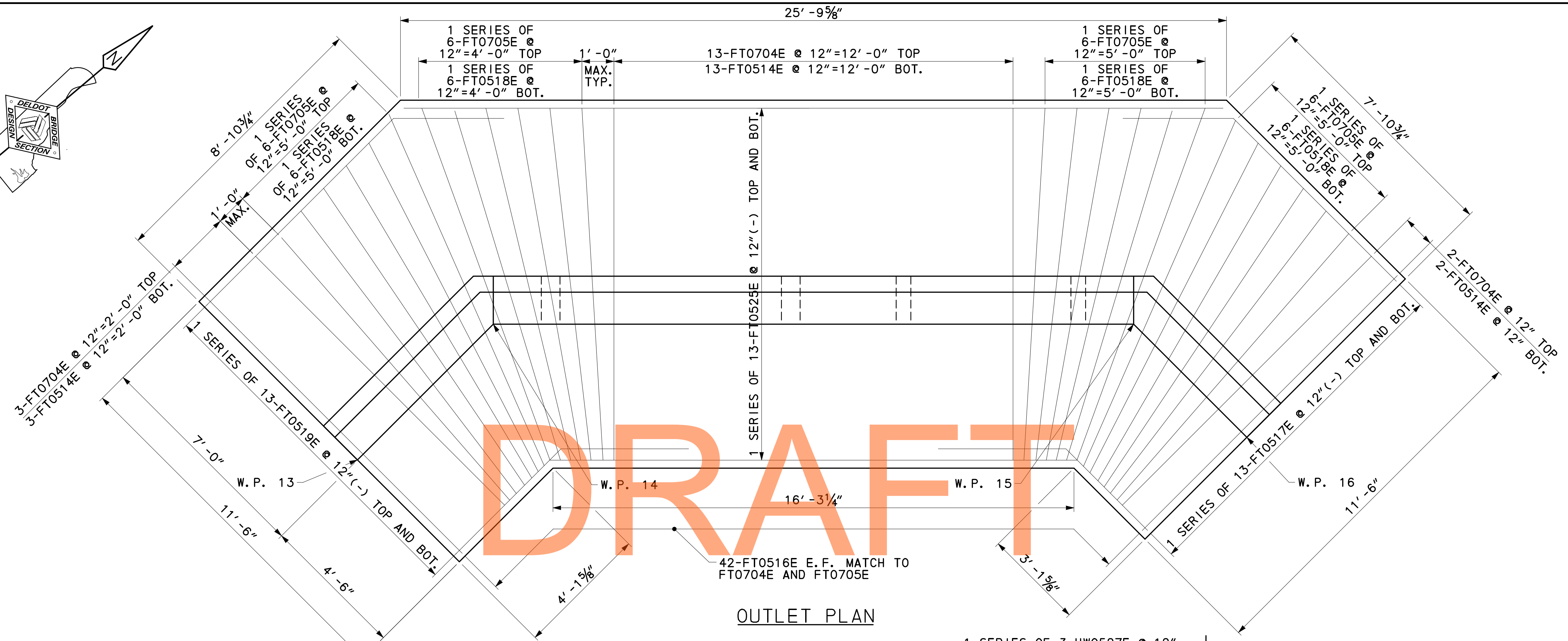
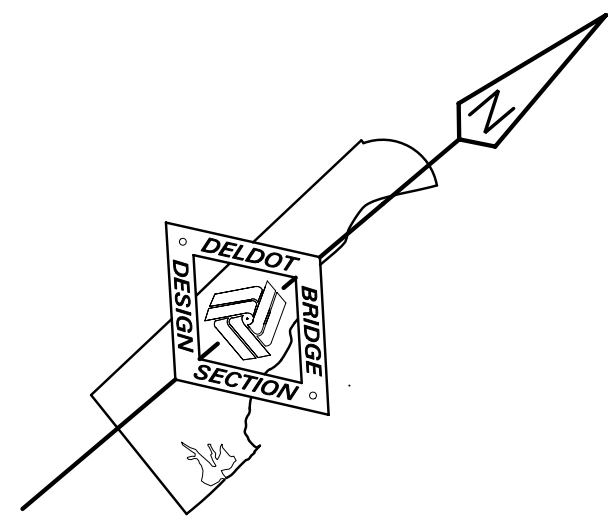


US 301  
NORFOLK SOUTHERN RR TO SR 896

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COUNTY NEW CASTLE	DESIGNED BY: CCJ
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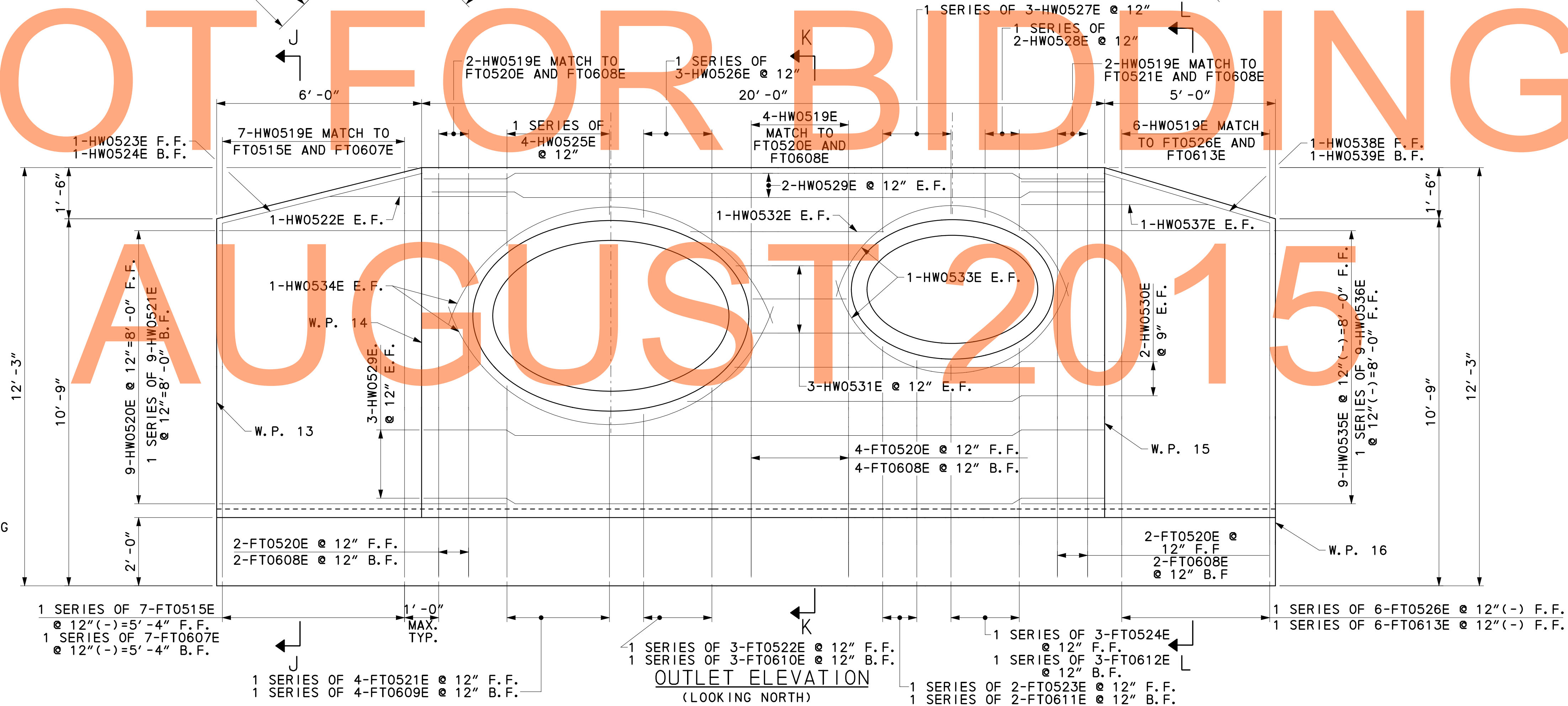
STAKE OUT PLAN AND  
INLET PLAN AND ELEV.

SHEET NO. 80
TOTAL SHTS. 240



OUTLET PLAN

NOT FOR BIDDING

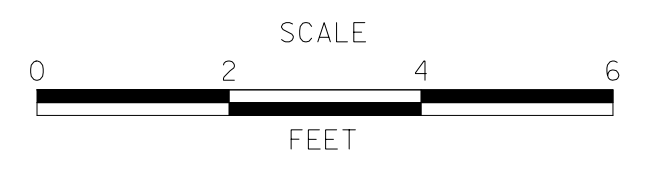


OUTLET ELEVATION  
(LOOKING NORTH)

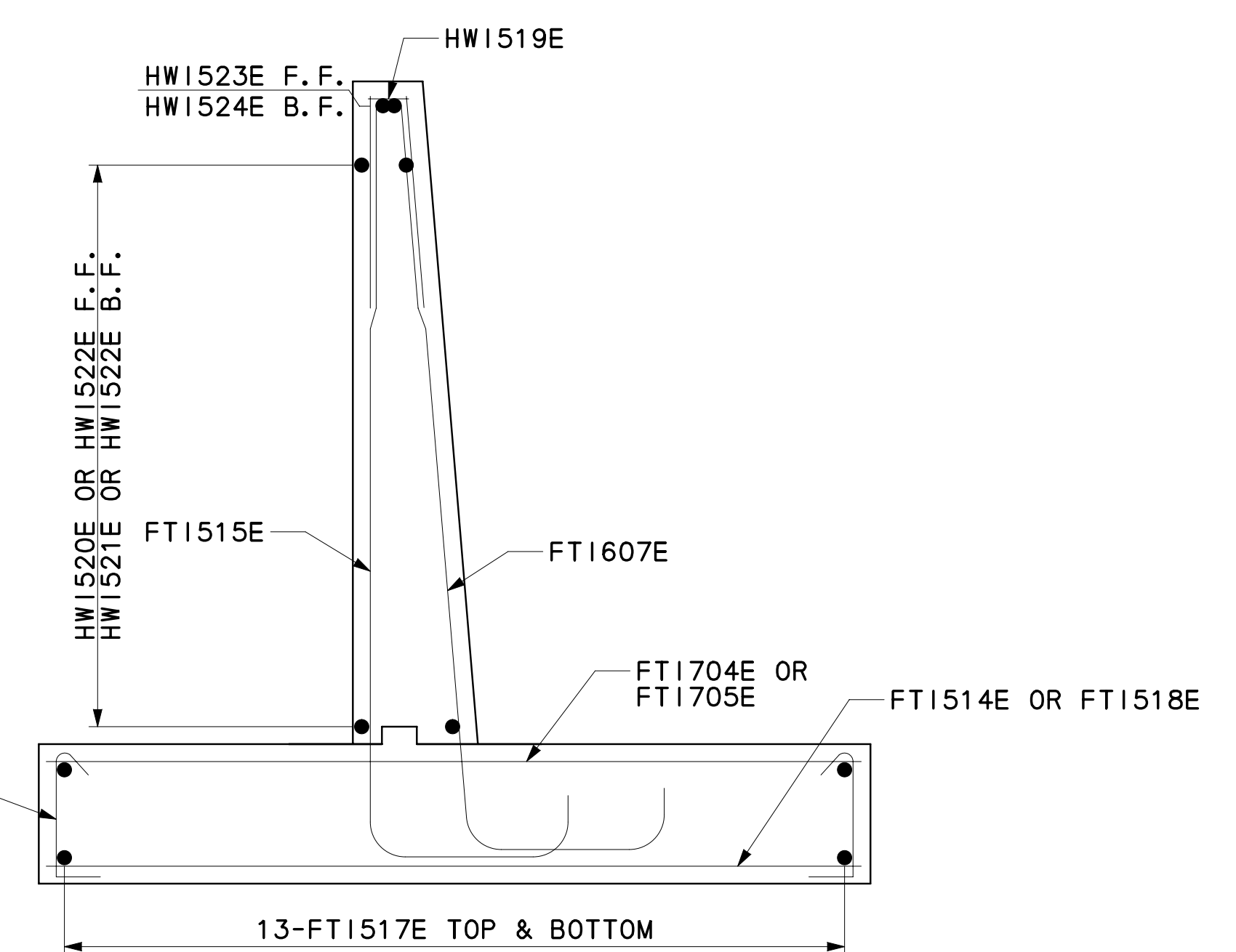
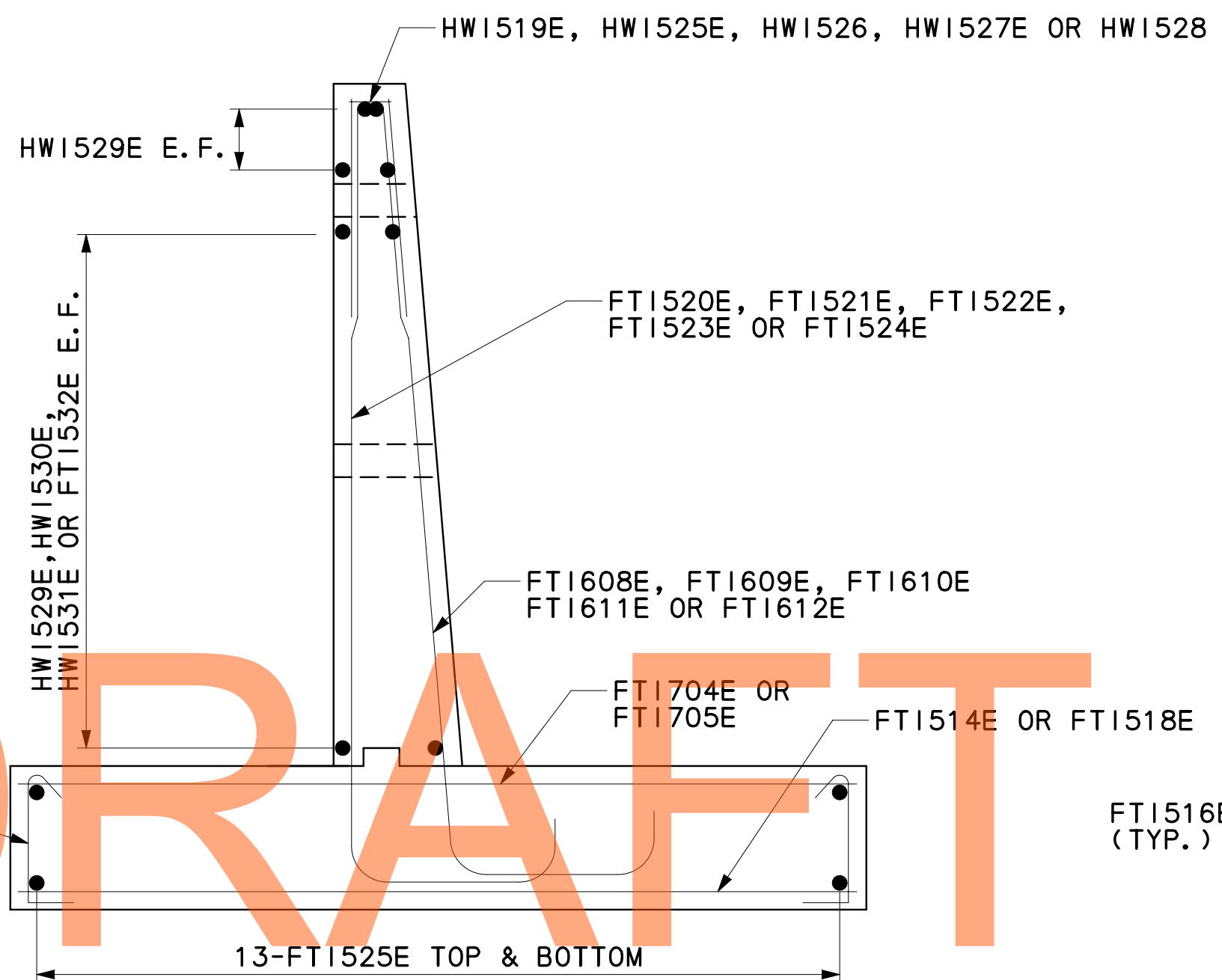
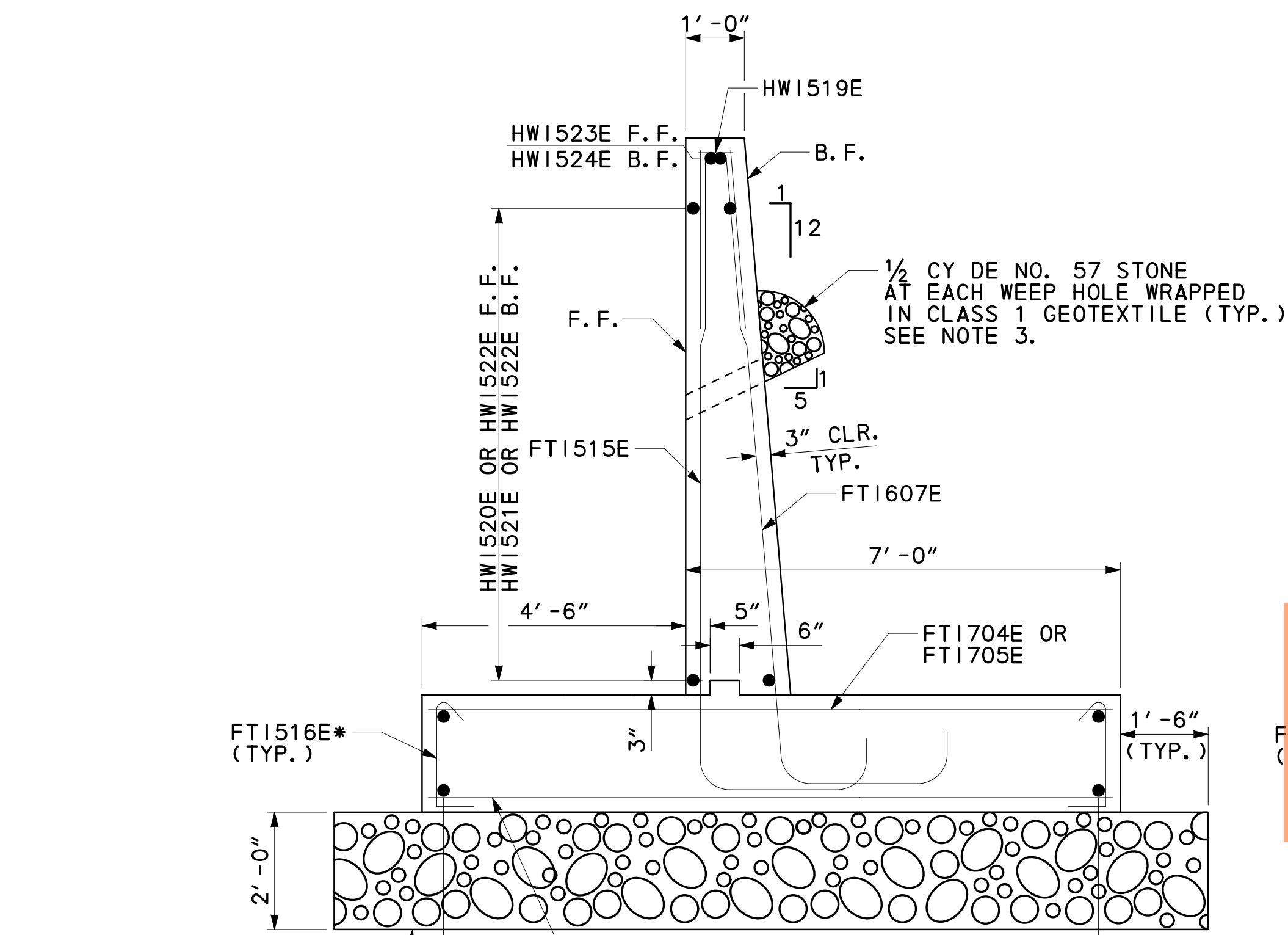
WORK POINT COORDINATES		
W. P.	CONSTRUCTION US 301 MAINLINE	
	STATION	OFFSET
13	656+65.57	112.07' R
14	656+69.65	107.82' R
15	656+88.96	107.84' R
16	656+92.35	111.40' R

- NOTES**
- VERTICAL WALL REINFORCING IN FOOTING NOT SHOWN FOR CLARITY.
  - FOR SECTIONS J-J, K-K, AND L-L, SEE SHEET 5 OF 7.
  - FOR WEEP HOLE LOCATIONS, SEE SHEET 2 OF 7.
  - STEM CONCRETE SHALL BE CLASS A CONCRETE AND FOOTING CONCRETE SHALL BE CLASS B CONCRETE.

ADDENDUMS / REVISIONS



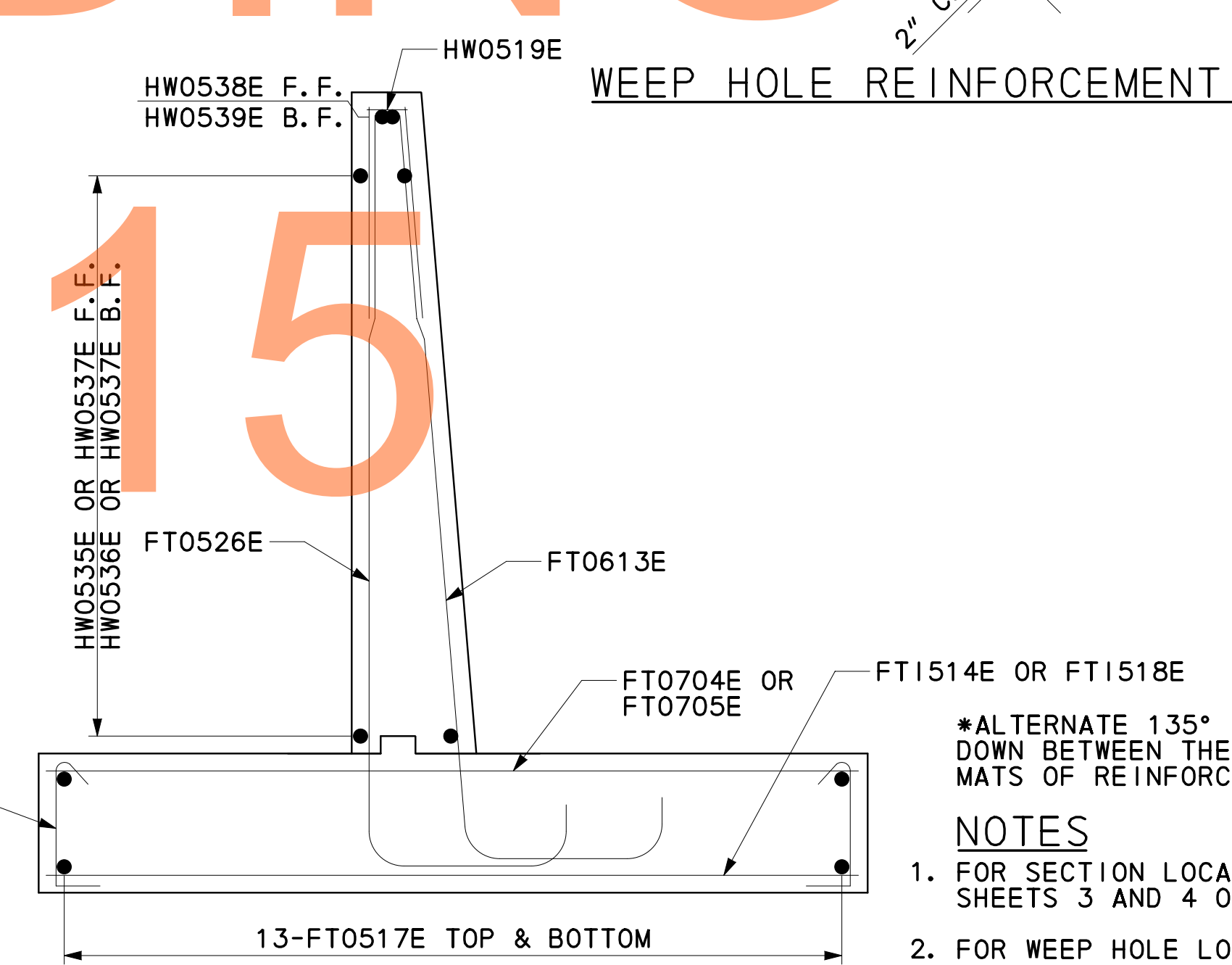
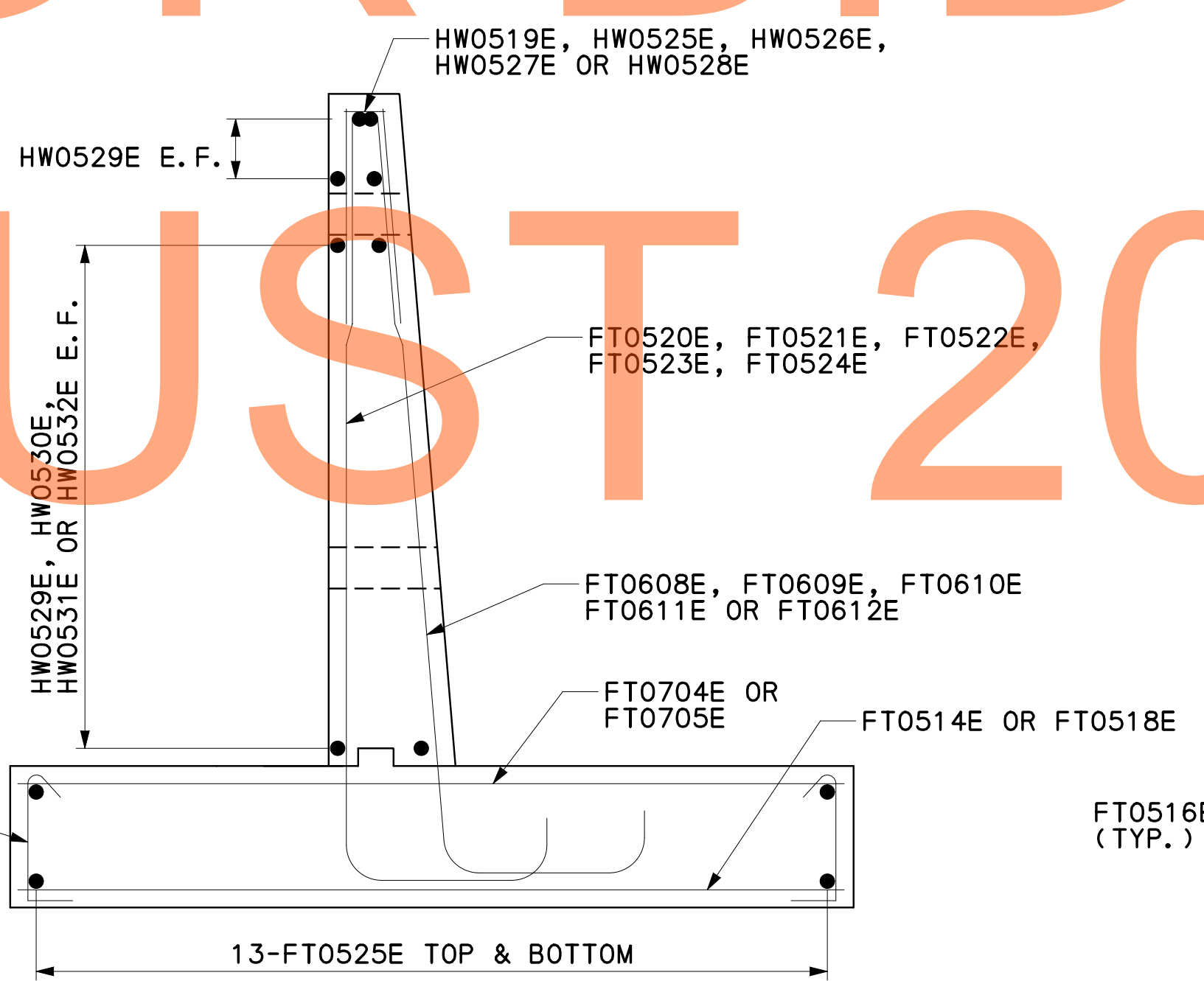
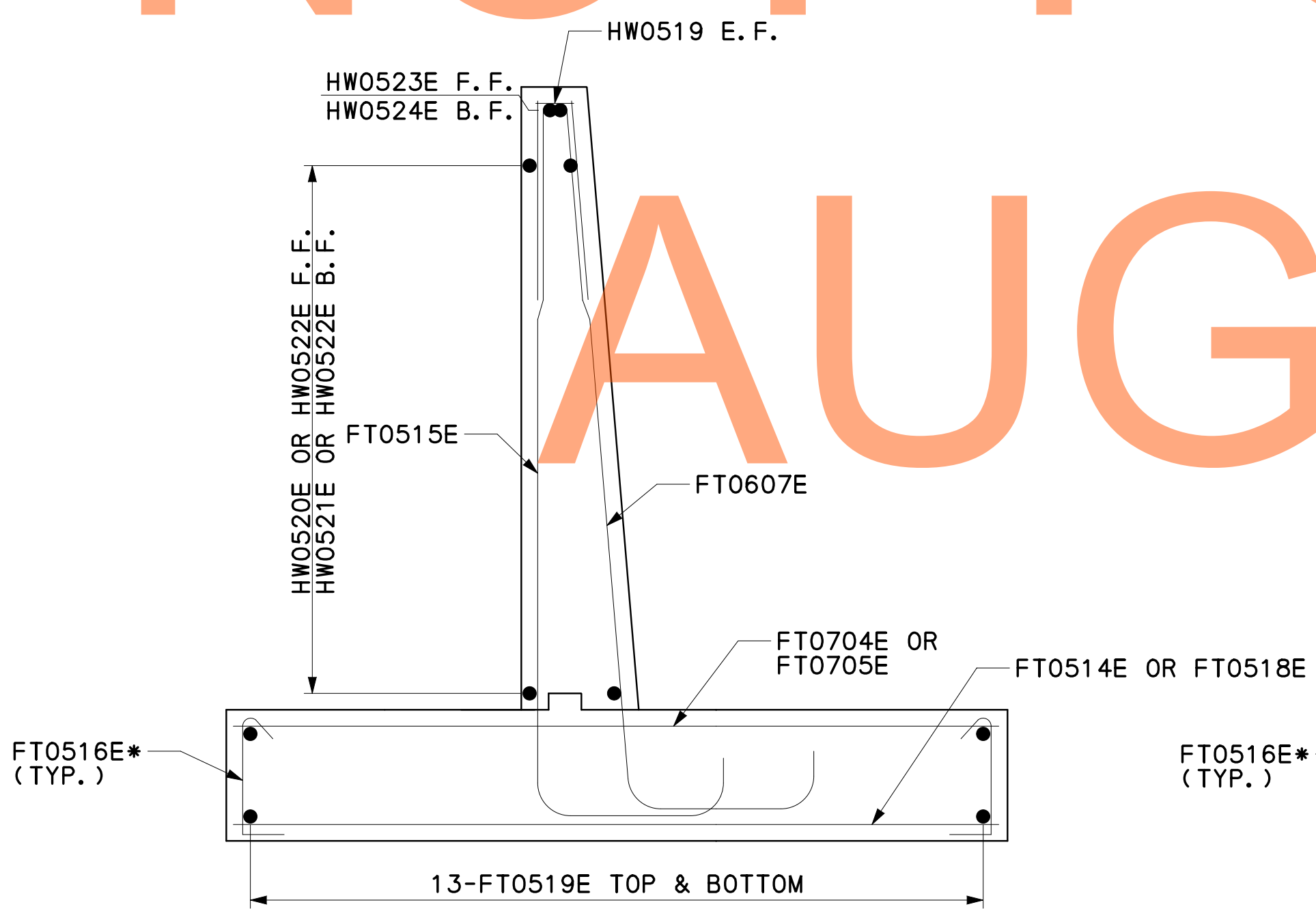
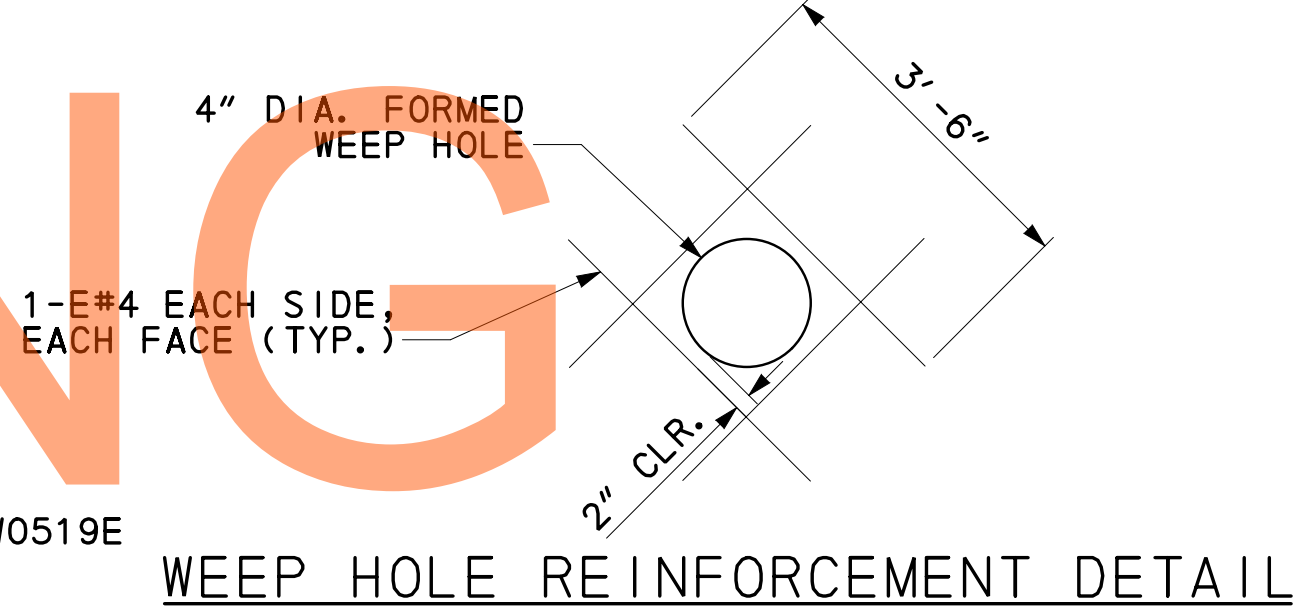
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2'-0" BEDDING (COARSE AGGREGATE FOR FOUNDATION STABILIZATION)

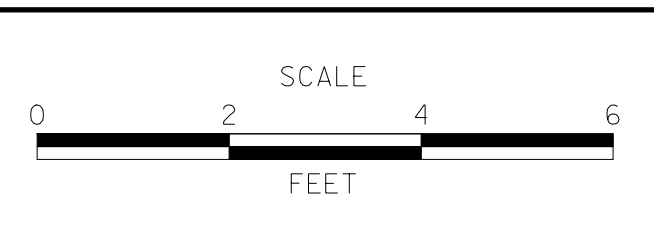
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SECTION G-G  
THE DETAILS SHOWN IN SECTION G-G THAT ARE NOT SHOWN IN OTHER SECTIONS ON SHEET ARE TYP. UNLESS NOTED OTHERWISE



- \*ALTERNATE 135° HOOK UP AND DOWN BETWEEN THE TOP AND BOT. MATS OF REINFORCING
- NOTES**
- FOR SECTION LOCATIONS SEE SHEETS 3 AND 4 OF 7.
  - FOR WEEP HOLE LOCATIONS, SEE SHEET 2 OF 7.
  - COST FOR CLASS 1 GEOTEXTILE INCIDENTAL TO COST FOR DE NO. 57 STONE.

ADDENDUMS / REVISIONS



CONTRACT T200911301	BRIDGE NO. <b>1-444A</b>
COUNTY NEW CASTLE	DESIGNED BY: CCJ CHECKED BY: JFM



① ANY MARK NUMBER WITH SUFFIX 'E' DENOTES EPOXY COATED REINFORCING STEEL.

② ALL MARK 'LOCATION PREFIXES' SHALL CONSIST OF TWO LETTERS AND ARE AS FOLLOWS: AB = ABUTMENT, AS = APPROACH SLAB, BC = BOX CULVERT, BW = BACKWALL, CL = COLUMN, DK = DECK, DL = DOWEL, FT = FOOTING, HW = HEADWALL, MS = MISC. BARS, PA = PARAPET, PR = PIER, SC = SHEETPILE CAP, SL = SLAB, TW = TOEWALL, WL = WALL (UNIQUE LOCATION), WW = WINGWALL

Table with columns: SPECIFICATIONS (QTY, SIZE, LENGTH, MARK, TYPE), BENDING DIMENSIONS (FEET-INCHES /QUARTER INCH) (A, B, C, D, E, F/R, G, H, J, K, O). Rows include various bar types like FT0514E, FT0515E, FT0516E, FT0517E, FT0518E, FT0519E, FT0520E, FT0521E, FT0522E, FT0523E, FT0524E, FT0525E, FT0526E, FT0607E, FT0608E, FT0609E.

Table with columns: SPECIFICATIONS (QTY, SIZE, LENGTH, MARK, TYPE), BENDING DIMENSIONS (FEET-INCHES /QUARTER INCH) (A, B, C, D, E, F/R, G, H, J, K, O). Rows include various bar types like FT0610E, FT0611E, FT0612E, FT0613E, FT0704E, FT0705E, HW0401E, HW0519E, HW0520E, HW0521E, HW0522E, HW0523E, HW0524E, HW0525E, HW0526E, HW0527E, HW0528E.

Table with columns: SPECIFICATIONS (QTY, SIZE, LENGTH, MARK, TYPE), BENDING DIMENSIONS (FEET-INCHES /QUARTER INCH) (A, B, C, D, E, F/R, G, H, J, K, O). Rows include various bar types like HW0529E, HW0530E, HW0531E, HW0532E, HW0533E, HW0534E, HW0535E, HW0536E, HW0537E, HW0538E, HW0539E.

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DRAFT

Table with columns: BAR SIZE, NOMINAL DIMENSIONS (DIAMETER, AREA, WEIGHT), 180° HOOKS, 90° HOOKS, 135° HOOKS. Includes dimensions for hooks and weights.

- NOTES: 1. FIGURES SHOWN IN CIRCLES REPRESENT BAR BEND TYPES. 2. STANDARD BAR BENDS INCLUDE ONLY THOSE TYPES BELOW, INDICATED AS SUCH. 3. ALL DIMENSIONS OUT-TO-OUT, EXCEPT "A" AND "C" ON STD. 180° AND 135° HOOKS. 4. "J" DIMENSIONS ON 180° HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE, OTHERWISE STANDARD 'ACI' HOOKS ARE TO BE USED. 5. WHERE "J" IS NOT SHOWN, "J" WILL BE KEPT EQUAL TO OR LESS THAN "H" ON TYPES 3, 5 AND 22. WHERE "J" CAN EXCEED "H", IT SHALL BE SHOWN. 6. "H" DIMENSIONS OF STIRRUPS TO BE SHOWN AS NEEDED TO FIT WITHIN THE CONCRETE. 7. UNLESS OTHERWISE NOTED, DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR (EXCEPT FOR BEND TYPES 11 AND 13). 8. WHERE SLOPE DIFFERS FROM 45° OFFSET, "H" AND "K" MUST BE SHOWN. 9. WHERE BARS ARE TO BE BENT MORE ACCURATELY THAN STANDARD BENDING TOLERANCES, BENDING DIMENSIONS REQUIRING CLOSER FABRICATION SHOULD HAVE LIMITS INDICATED. 10. FOR RECOMMENDED DIAMETER "D", OF BENDS, HOOKS, ETC., REFER TO TABLE ABOVE, 'CRS1' OR 'AC1' TABLES WHERE APPLICABLE AND REQUIRED. 11. TYPE S1-S6, S11, T1-T3 AND T6-T9 APPLICABLE TO BAR SIZES #3 THROUGH #8.

