

PROJECT NOTES:

- LOCATION**
PROPOSED NEW STRUCTURE CARRYING US301 OVER DRAWYER CREEK IN NEW CASTLE COUNTY, DELAWARE.
- ELEVATIONS**
VERTICAL DATUM IS REFERENCED TO NAVD 88.
- DESIGN CRITERIA**
2007 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, INCLUDING 2008 AND 2009 INTERIMS, AND SUPPLEMENTED BY THE DELAWARE DEPARTMENT OF TRANSPORTATION 2005 BRIDGE DESIGN MANUAL, INCLUDING REVISIONS THROUGH 2009.
- LOADING**
LIVE LOAD: AASHTO HL-93 AND DELAWARE LEGAL LOADS.
FUTURE OVERLAY = 25 P.S.F.
S. I. P. DECK FORMS = 15 P.S.F.
FILL SOIL = 120 P.C.F.
- CONCRETE**
ALL CONCRETE PROPERTIES SHALL BE IN ACCORDANCE WITH SECTION 812 OF THE DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
CLASS A - EXPOSED ABUTMENTS, STEMS, BACKWALLS, WINGWALLS AND PARAPETS (f'c = 4,500 PSI).
CLASS B - ABUTMENT AND WINGWALL FOOTINGS NOT EXPOSED (f'c = 3,000 PSI).
CLASS D - CONCRETE DECK SLAB, APPROACH SLAB, MOMENT SLAB, SLEEPER SLAB, HEADER SLAB, SHEAR BLOCKS, PEDESTALS, AND DIAPHRAGMS (F'c = 4,500 PSI).
CLASS A - M.S.E. WALL PANELS AND M.S.E. WALL COPING (F'c = 4,500 PSI).
CLASS B - M.S.E. WALL LEVELING PADS (f'c = 3,000 PSI)
ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4" UNLESS NOTED OTHERWISE.
- REINFORCING STEEL**
ALL REINFORCING STEEL SHALL BE AASHTO M31 (ASTM A615), GRADE 60 AND UNLESS NOTED OTHERWISE SHALL BE PROTECTED WITH FUSION BONDED EPOXY, CONFORMING TO AASHTO M284 (ASTM D3963). MINIMUM CONCRETE COVER FOR REINFORCING STEEL SHALL BE:
FOUNDATION ELEMENTS: 3"
DECK SLABS: 2 1/2" TOP OF SLAB (INCLUDES 1/2" INTEGRAL WEARING SURFACE)
1" BOTTOM OF SLAB WHEN STAY-IN-PLACE FORMS ARE USED
MINIMUM CONCRETE COVER FOR REINFORCING STEEL SHALL BE 2" UNLESS NOTED OTHERWISE.
- PRESTRESSED REINFORCED CONCRETE MEMBERS**
PRESTRESSED CONCRETE DESIGN: DESIGN CONSISTENT WITH 2007 AASHTO LRFD, WITH 2008 AND 2009 INTERIMS. THE PRECAST CONCRETE BEAMS ARE DESIGNED AS COMPOSITE FOR LIVE LOAD, PARAPET AND FUTURE WEARING SURFACE. THE PRECAST CONCRETE BEAMS ARE DESIGNED AS NON-COMPOSITE FOR ALL OTHER DEAD LOADS.
PRESTRESSED CONCRETE: THE MINIMUM COMPRESSIVE STRENGTH FOR PRESTRESSED CONCRETE AT THE AGE OF 28 DAYS SHALL BE f'c = 8,000 PSI. THE MINIMUM COMPRESSIVE STRENGTH AT THE TRANSFER OF PRESTRESS SHALL BE f'ci = 6,800 PSI.
PRETENSIONING STEEL: PRETENSIONING STEEL SHALL CONSIST OF 6/10" DIAMETER 7-WIRE BRIGHT LOW RELAXATION STRANDS CONFORMING TO THE REQUIREMENTS OF AASHTO M203 GRADE 270. EACH 6/10" STRAND SHALL BE PRETENSIONED TO 43,950 LBS (0.75 f's). AFTER ESTIMATED LOSSES OF 59.2 PSI, THE FINAL EFFECTIVE PRESTRESS FORCE PER STRAND IS 31,089 LBS. CAMBER GROWTH IN PRETENSIONED BEAMS BETWEEN THE TIME OF STRESSING AND THE TIME OF SLAB PLACEMENT IS ASSUMED TO BE 80% FOR CAMBER CALCULATIONS.
- ELASTOMERIC BEARINGS**
ELASTOMERIC BEARINGS SHALL CONFORM TO AASHTO M251. ELASTOMER SHALL BE 50 DUROMETER. SHIMS SHALL BE 11 GAGE MILD STEEL CONFORMING TO AASHTO M270, GRADE 36.
- CONSTRUCTION JOINTS**
KEYED CONSTRUCTION JOINTS SHALL BE 2" X 4" OR AS NOTED. ALL EXPOSED CONSTRUCTION JOINT EDGES SHALL HAVE A 3/4" V-NOTCH UNLESS NOTED OTHERWISE.
- MISCELLANEOUS**
ALL AREAS DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE GRADED BACK TO THE ORIGINAL EXISTING GRADE, TOP SOILED, SEEDED AND MULCHED. PAYMENT SHALL BE INCIDENTAL TO THE CONTRACT, AS DIRECTED BY THE ENGINEER. ALL AREAS DISTURBED BY THE CONTRACTOR'S OPERATION OUTSIDE THE LIMIT OF CONSTRUCTION SHALL BE TOP SOILED, SEEDED, AND MULCHED AT THE CONTRACTOR'S EXPENSE. SEE SHEET PN-02 FOR ADDITIONAL REQUIREMENTS.
- STABILIZING STRUCTURAL EXCAVATIONS**
SLOPING AND SHORING, SHALL CONFORM TO CURRENT OSHA AND LOCAL STANDARDS. A QUALIFIED THE CONTRACTOR IS RESPONSIBLE FOR STABILITY OF EXCAVATED SLOPES. DIRECT SURFACE RUNOFF AWAY FROM THE EXCAVATION. ALL EXCAVATION SAFETY MEASURES, INCLUDING ENGINEER REGISTERED IN THE STATE OF DELAWARE SHALL DESIGN ALL TEMPORARY SHEETING AND SHORING.
THE CONTRACTOR IS ALSO RESPONSIBLE FOR PROVIDING DEWATERING OF THE EXCAVATION TO ALLOW FOR INSPECTION AND CONSTRUCTION. ANY DEWATERING SUMPS OR WELLS SHALL BE LOCATED AT LEAST 3-ft AWAY FROM THE FOOTING EXCAVATION.
- PILE FOUNDATIONS**
PRESTRESSED CONCRETE PILES SHALL CONFORM TO THE REQUIREMENTS OF SECTION 618 OF THE DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS EXCEPT THAT LOW RELAXATION STRANDS SHALL BE USED.
STEEL H-PILES ALTERNATE SHALL BE AASHTO M270, GRADE 50.
PERFORM WAVE EQUATION ANALYSIS TO SIZE THE PILE HAMMER USING NOMINAL RESISTANCE. CONTROL PILE DRIVING USING HIGH STRAIN DYNAMIC TESTING WITH SIGNAL MATCHING.

THE CONTRACTOR IS TO CONDUCT THE HIGH STRAIN DYNAMIC TESTING WITH SIGNAL MATCHING DURING CONSTRUCTION AND IS ALSO RESPONSIBLE FOR DEVELOPING THE DRIVING CRITERIA WITH THE APPROVAL OF THE ENGINEER.
PERFORM DYNAMIC PILE MONITORING ON THE TEST PILES AND IF DIRECTED, ON SELECTED PRODUCTION PILES, AT THE LOCATIONS DETERMINED BY THE ENGINEER. DRIVE PRODUCTION PILES TO SATISFY THE DRIVING CRITERIA DEVELOPED FROM THE TEST PILES AND THE MINIMUM TIP ELEVATION REQUIREMENTS.

13. HYDRAULIC DATA
DRAINAGE AREA = 0.90 SQ. MILES
DESIGN FREQUENCY = 25 YEARS
DESIGN DISCHARGE = 521 CFS
DESIGN HEADWATER ELEV. = 43.9 Ft. (SB)/43.3 Ft. (NB)
OUTLET VELOCITY = 3.0 FPS (SB)/5.0 FPS (NB)
PROPOSED OPENING = 2449 SF (SB)
2427 SF (NB)

DRAINAGE AREA = 0.90 SQ. MILES
DESIGN FREQUENCY = 50 YEARS (DESIGN)
DESIGN DISCHARGE = 642 CFS
DESIGN HEADWATER ELEV. = 44.2 Ft. (SB)/43.7 Ft. (NB)
OUTLET VELOCITY = 3.0 FPS (SB)/4.4 FPS (NB)

DRAINAGE AREA = 0.90 SQ. MILES
DESIGN FREQUENCY = 100 YEARS
DESIGN DISCHARGE = 787 CFS
DESIGN HEADWATER ELEV. = 44.5 Ft. (SB)/44.0 Ft. (NB)
OUTLET VELOCITY = 3.1 FPS (SB)/4.5 FPS (NB)

14. LOAD RATINGS
LOAD AND RESISTANCE FACTOR RATING METHOD

BRIDGE NO. 1-467 N&S LOAD RATINGS							
RATING VEHICLE	RATING TYPE	CONTROLLING UNIT/SPAN/MEMBER	CONTROLLING POINT (FT.)	LOAD EFFECT	LIMIT STATE	LOAD RATING FACTOR	LOAD RATING (TONS)
HL-93 TRUCK	INVENTORY	1ST INT.	105.00	CONCRETE STRESS	SERVICE III	1.07	N/A
HL-93 TANDEM	OPERATING	1ST INT.	105.00	CONCRETE STRESS	SERVICE III	1.27	N/A
HL-93 TRUCK	OPERATING	1ST INT.	105.00	LONG. REINFORCEMENT	STRENGTH I	2.34	N/A
HL-93 TANDEM	OPERATING	1ST INT.	105.00	LONG. REINFORCEMENT	STRENGTH I	2.80	N/A
S220	LEGAL	1ST INT.	105.00	CONCRETE STRESS	SERVICE III	2.87	57.40
S335	LEGAL	1ST INT.	105.00	CONCRETE STRESS	SERVICE III	1.62	56.70
S437	LEGAL	1ST INT.	105.00	CONCRETE STRESS	SERVICE III	1.54	56.43
T330	LEGAL	1ST INT.	105.00	CONCRETE STRESS	SERVICE III	2.08	62.40
T435	LEGAL	1ST INT.	105.00	CONCRETE STRESS	SERVICE III	1.81	63.35
T540	LEGAL	1ST INT.	105.00	CONCRETE STRESS	SERVICE III	1.59	63.60

15. UTILITIES
BEFORE BEGINNING WORK, THE CONTRACTOR SHALL GIVE NOTIFICATION BY TELEPHONE BY CALLING "MISS UTILITY" AT 1-800-282-8555 A MINIMUM OF 2 WORKING DAYS PRIOR TO START OF WORK. VERIFY AND LOCATE ALL UTILITIES PRIOR TO STARTING WORK.
COORDINATE THE REQUIREMENTS FOR PROTECTION OF ANY UTILITY WITH THE UTILITY OWNER PRIOR TO STARTING WORK.
CONDUCT OPERATIONS IN A MANNER WHICH ENSURES THAT THE UTILITIES WILL NOT BE DISTURBED OR ENDANGERED. ANY DAMAGE INCURRED TO THESE UTILITIES OR ANY OTHER UTILITIES, SHOWN OR NOT SHOWN ON THE PLANS, DUE TO THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE APPROPRIATE UTILITY COMPANY. THE DEPARTMENT DOES NOT ASSUME RESPONSIBILITY FOR REIMBURSEMENT, PARTICIPATION IN DESIGN AND/OR REVISIONS, OR LIABILITY FOR ACCURACY OF TYPE, SIZE AND LOCATION OF ANY UTILITY.
THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARILY SUPPORTING, PROTECTING, OR RELOCATING ANY UTILITIES DURING CONSTRUCTION. WHERE NECESSARY, THE COST FOR THIS WORK WILL BE INCIDENTAL TO THE CONTRACT.

16. STAGING AREAS
PROPER EROSION AND SEDIMENT CONTROL MEASURES AS DETERMINED BY THE ENGINEER SHALL BE INSTALLED IN ALL STAGING AREAS.
ALL AREAS USED BY THE CONTRACTOR FOR STAGING OPERATIONS SHALL BE FULLY RESTORED BY THE CONTRACTOR UPON COMPLETION OF THE PROJECT. IF THE STAGING AREA IS PAVED, IT SHALL BE RESTORED TO ITS ORIGINAL CONDITION. IF THE STAGING AREA IS UNPAVED, IT SHALL BE RE-GRADED, TOP SOILED, SEEDED AND MULCHED IN ACCORDANCE WITH DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS SECTIONS 732, 734 AND 735, FOR TOP SOIL, SEED, AND MULCH, RESPECTIVELY, TO THE SATISFACTION OF THE ENGINEER. THE SEED SHALL ADHERE TO THE SPECIFICATIONS OF SECTION 734 FOR PERMANENT GRASS SEEDING-DRY GROUND. ALL COSTS ASSOCIATED WITH RESTORATION OF THE STAGING AREA SHALL BE AT THE CONTRACTOR'S EXPENSE. IF THE ENGINEER DETERMINES THAT A SATISFACTORY STAND OF GRASS DOES NOT EXIST AT THE TIME OF FINAL INSPECTION, ALL COSTS ASSOCIATED WITH RE-ESTABLISHING A SATISFACTORY STAND OF GRASS SHALL ALSO BE AT THE CONTRACTOR'S EXPENSE.

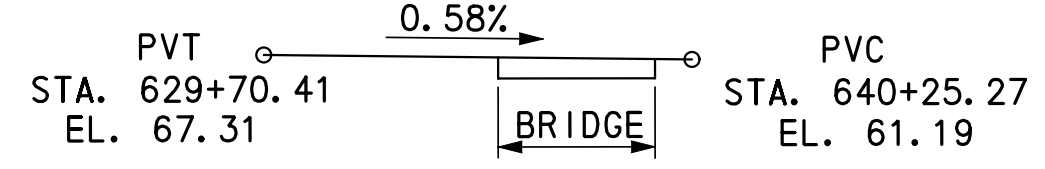
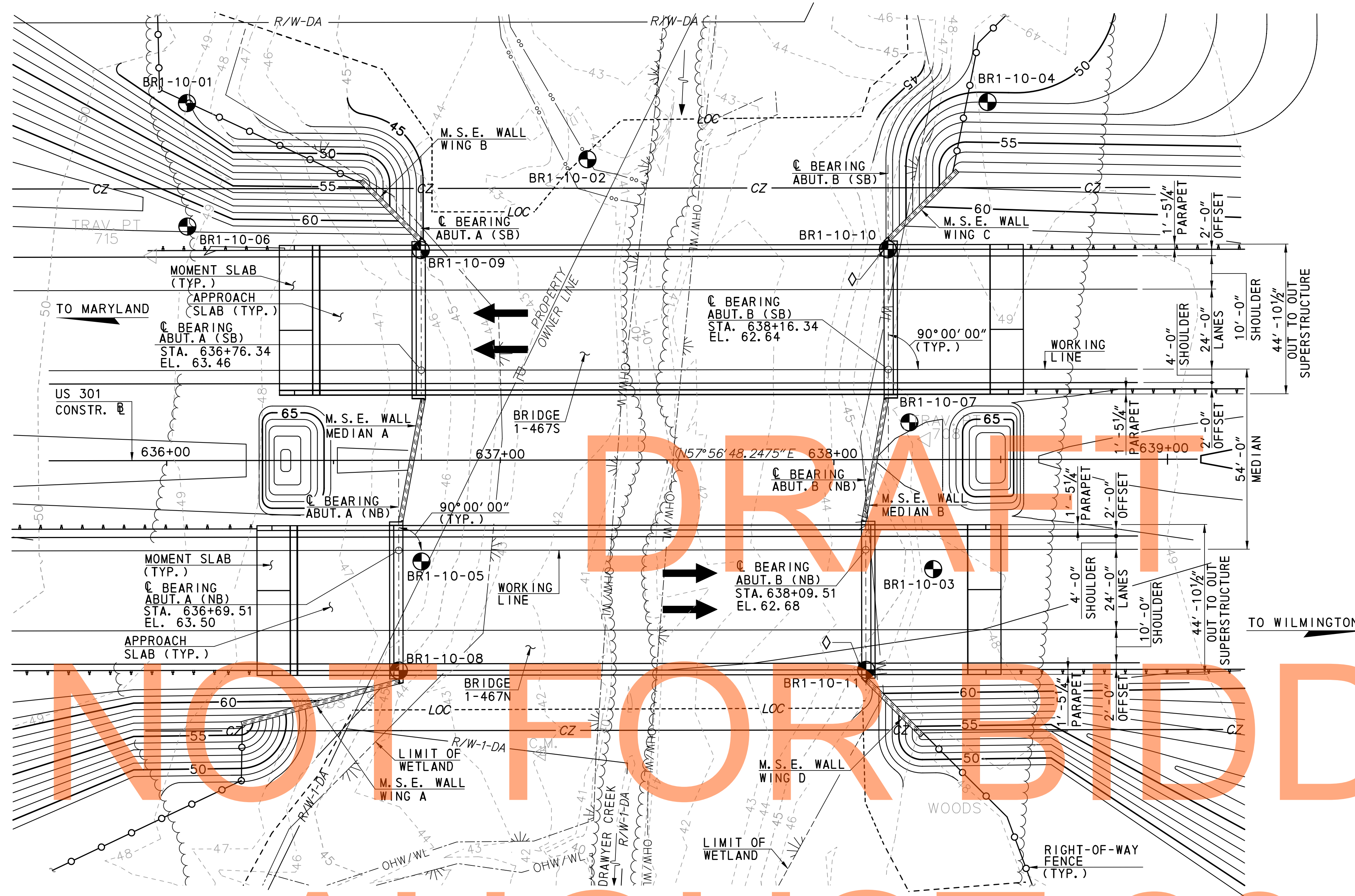
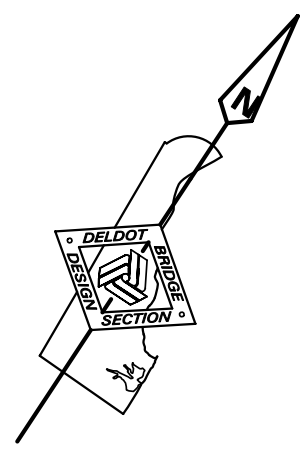
17. PERFORM WORK IN ACCORDANCE WITH DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS AND CONSTRUCTION DETAILS AND CONTRACT SPECIAL PROVISIONS.
DELDOT STANDARD SPECIFICATION 619.11(a)(6) SHALL BE MODIFIED BY REFERENCE TO SPECIAL PROVISIONS 619519 AND 619539.

INDEX OF DRAWINGS

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89	BR1-467DT-01	TEMPORARY SURCHARGE
90	BR1-467FT-01	ABUTMENT A (NB)-FOOTING PLAN
91	BR1-467AB-01	ABUTMENT A (NB)-PLAN, ELEVATION AND SECTION
92	BR1-467FT-02	ABUTMENT B (NB)-FOOTING PLAN
93	BR1-467AB-02	ABUTMENT B (NB)-PLAN, ELEVATION AND SECTION
94	BR1-467BR-01	ABUTMENT REINFORCEMENT BAR LIST (NB)
95	BR1-467FT-03	ABUTMENT A (SB)-FOOTING PLAN
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99	BR1-467BR-02	ABUTMENT REINFORCEMENT BAR LIST (SB)
100	BR1-467WW-01	M.S.E. WINGWALLS
101	BR1-467DT-02	MISCELLANEOUS DETAILS
102	BR1-467FD-01	FINISHED BRIDGE DECK ELEVATIONS
103	BR1-467FR-01	FRAMING PLAN
104	BR1-467BM-01	BEAM PLAN AND BEARING DETAILS
105	BR1-467BM-02	BEAM ELEVATION AND SECTIONS
106	BR1-467DK-01	DECK PLAN, SECTION AND DETAILS (NB)
107	BR1-467DPH-01	DIAPHRAGM DETAILS - 1 (NB)
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109	BR1-467AS-01	APPROACH SLAB - 1 (NB)
110	BR1-467AS-02	APPROACH SLAB - 2 (NB)
111	BR1-467AS-03	APPROACH SLAB - 3 (NB)
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113	BR1-467DK-02	DECK PLAN, SECTION AND DETAILS (SB)
114	BR1-467DPH-03	DIAPHRAGM DETAILS - 1 (SB)
115	BR1-467DPH-04	DIAPHRAGM DETAILS - 2 (SB)
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120	BR1-467EX-01	EXPANSION JOINT DETAILS
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122	BR1-467BO-02	SOIL BORINGS-2
123	BR1-467BO-03	SOIL BORINGS-3
124	BR1-467BO-04	SOIL BORINGS-4

QUANTITIES

ITEM NO.	ITEM TITLE	UNIT	QUANTITY
202505	SETTLEMENT PLATFORM	EACH	8
207000	EXCAVATION AND BACKFILL FOR STRUCTURES	C. Y.	2,980
	BORROW TYPE C (AVAILABLE FROM BORROW SITE EXCAVATION)	C. Y.	1,295
302007	GRADED AGGREGATE BASE COURSE, TYPE B	C. Y.	342
602004	P.C.C. MASONRY, ABUTMENT, FOOTING, CLASS B	C. Y.	278
602013	P.C.C. MASONRY, SUPERSTRUCTURE, CLASS D	C. Y.	509
602014	P.C.C. MASONRY, APPROACH SLAB, CLASS D	C. Y.	428
602015	P.C.C. MASONRY, ABUTMENT, ABOVE FOOTING, CLASS A	C. Y.	410
602017	P.C.C. MASONRY, PARAPET, CLASS A	C. Y.	109
602772	MECHANICALLY STABILIZED EARTH WALLS	L.S.	1
603000	BAR REINFORCEMENT	LB	36,900
604000	BAR REINFORCEMENT, EPOXY COATED	LB	265,150
605512	PREFABRICATED EXPANSION JOINT SYSTEM 4"	L.F.	90
618062 (ALTERNATE)	STEEL H PILES, HP 14X73	L.F.	5,220
618065 (ALTERNATE)	STEEL H TEST PILES, HP 14X73	L.F.	220
618081	FURNISH PRECAST PRESTRESSED CONCRETE PILE, 14X14	L.F.	3,480
618091	FURNISH PRECAST PRESTRESSED CONCRETE TEST PILE, 14X14	L.F.	160
619042 (ALTERNATE)	INSTALL STEEL H PILES, HP 14X73	L.F.	5,220
619045 (ALTERNATE)	INSTALL STEEL H TEST PILES, HP 14X73	L.F.	220
619061	INSTALL PRECAST PRESTRESSED CONCRETE PILE, 14X14	L.F.	3,480
619067	INSTALL PRECAST PRESTRESSED CONCRETE TEST PILE, 14X14	L.F.	160
619501	PRODUCTION PILE RESTRIKE	EACH	1
619502	TEST PILE RESTRIKE	EA. DAY	1
619519	DYNAMIC PILE TESTING BY CONTRACTOR	EACH	8
619539	SIGNAL MATCHING ANALYSIS BY CONTRACTOR	EACH	8
623003	PRESTRESSED REINFORCED CONCRETE MEMBERS, BULB-TEE BEAMS	L.S.	1
713002	GEOTEXTILES, SEPARATION	S. Y.	1000
715001	PERFORATED PIPE UNDERDRAIN	L.F.	212



VERTICAL GEOMETRY DATA U.S. 301
NOT TO SCALE

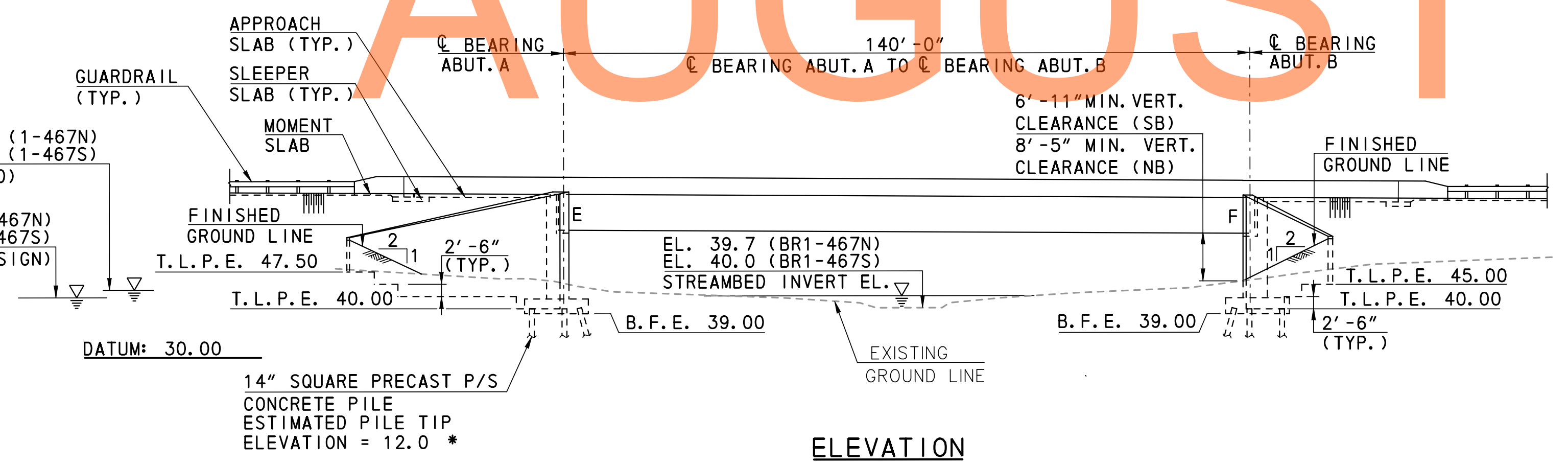
- NOTES:
- ELEVATION VIEW IS SHOWN FOR NORTHBOUND BRIDGE. SOUTHBOUND BRIDGE IS SIMILAR. FOR ADDITIONAL TOP OF LEVELING PAD ELEVATIONS, SEE SHEET 16 OF 40.
 - FOR TEMPORARY ACCESS ROAD LOCATION, SEE SHEET 5 OF 40.
 - FOR PLACEMENT OF RIGHT-OF-WAY FENCE, SEE CP-07.

NOT FOR BIDDING

AUGUST 2015

PLAN
SCALE: 1" = 20'-0"

- LEGEND:
- ABUT. = ABUTMENT
 - B.F.E. = BOTTOM FOOTING ELEVATION
 - APPROX. = APPROXIMATE
 - CONSTR. = CONSTRUCTION
 - CLR. = CLEAR
 - CZ = CLEAR ZONE
 - DA = DENIAL OF ACCESS
 - E = EXPANSION
 - EL. = ELEVATION
 - F = FIXED
 - MIN. = MINIMUM
 - LOC = LIMIT OF CONSTRUCTION
 - NB = NORTHBOUND
 - P/S = PRESTRESSED
 - R/W = RIGHT-OF-WAY
 - SB = SOUTHBOUND
 - STA. = STATION
 - TYP. = TYPICAL
 - T.L.P.E. = TOP OF LEVELING PAD ELEVATION
 - VERT. = VERTICAL
 - W.S. = WATER SURFACE
 - YR. = YEAR
 - = BORING



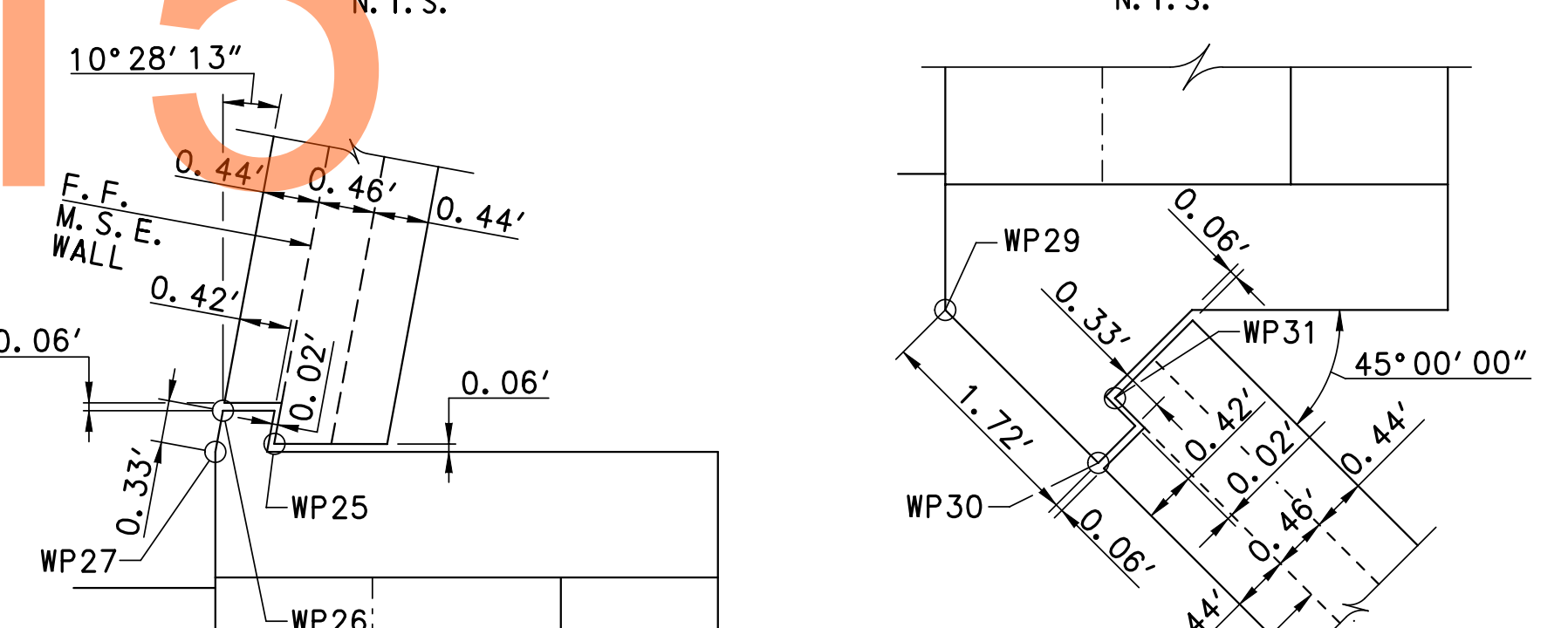
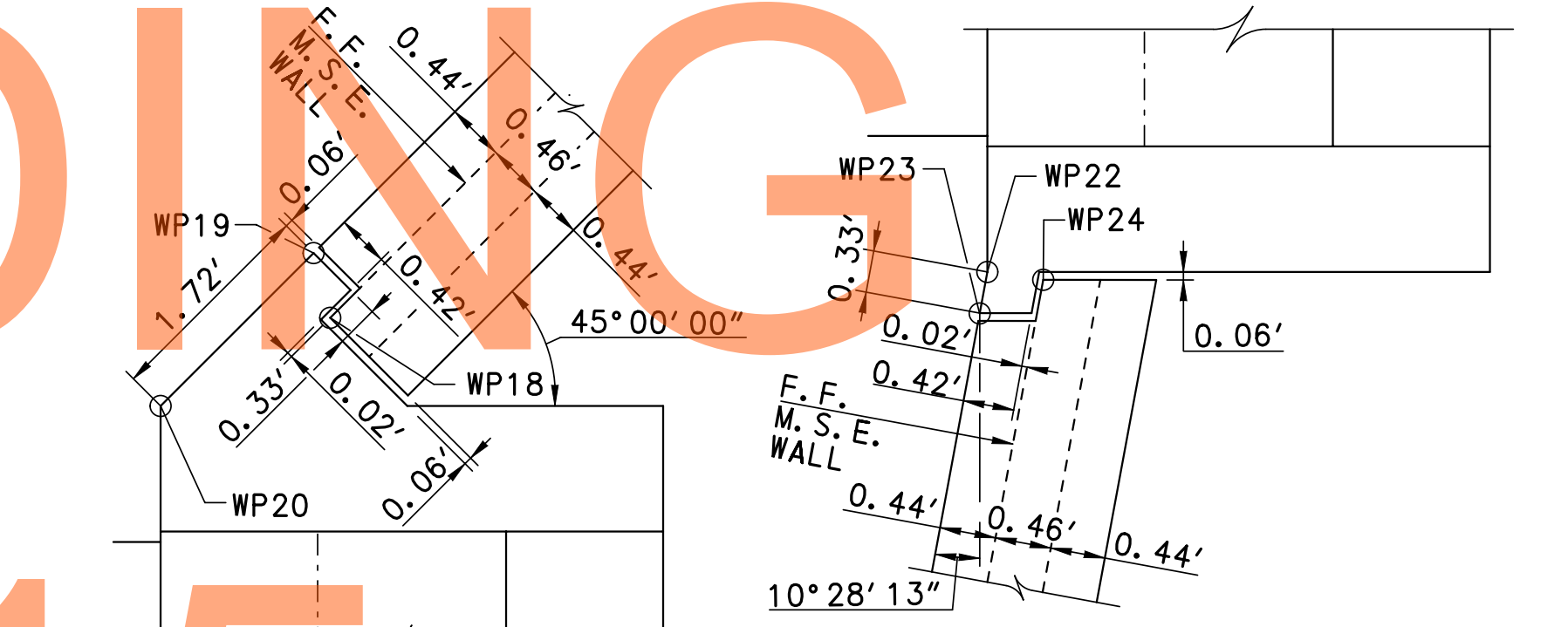
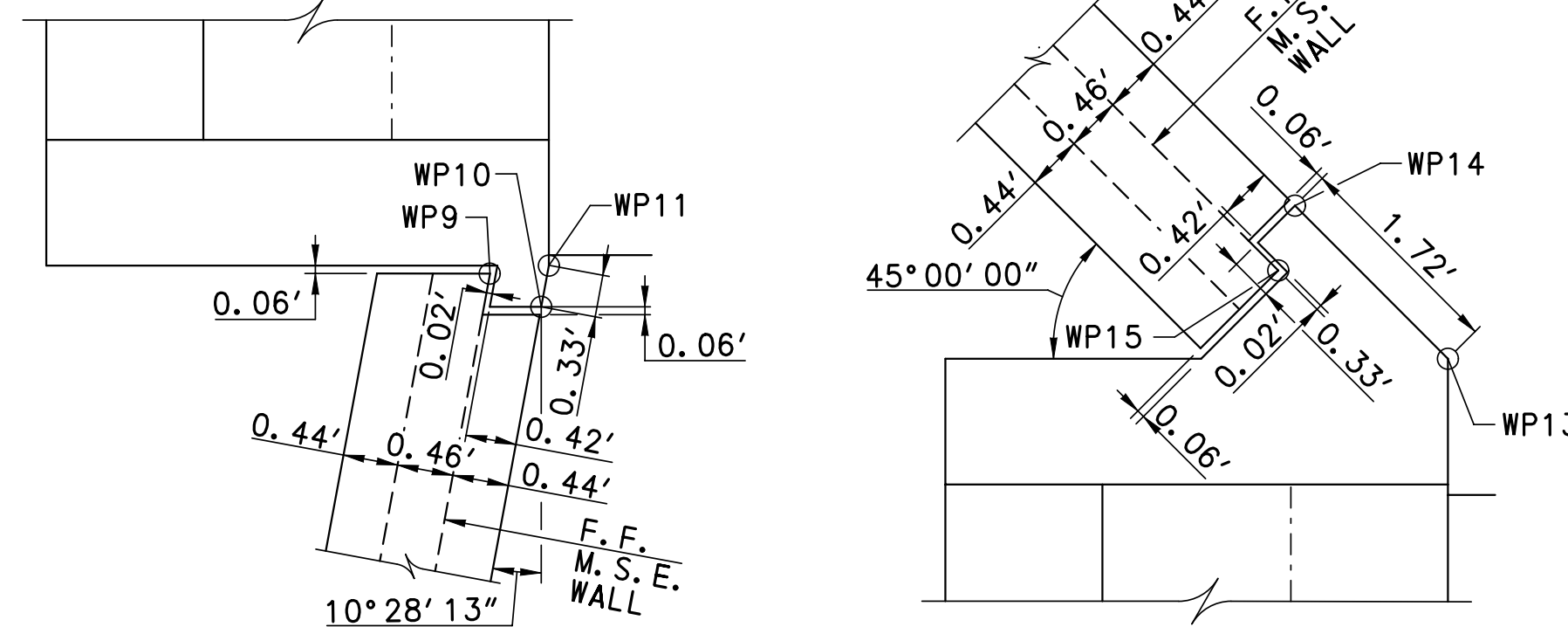
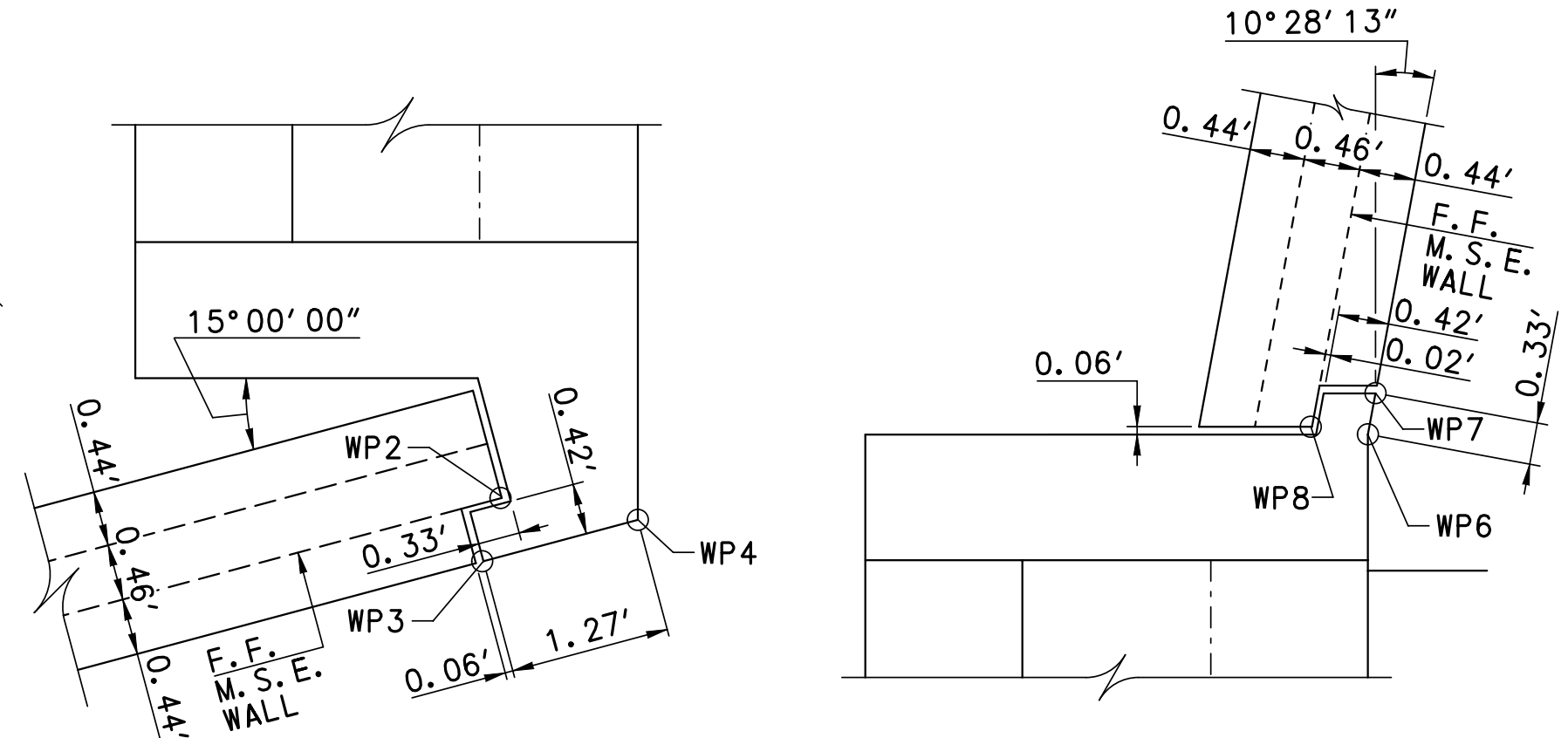
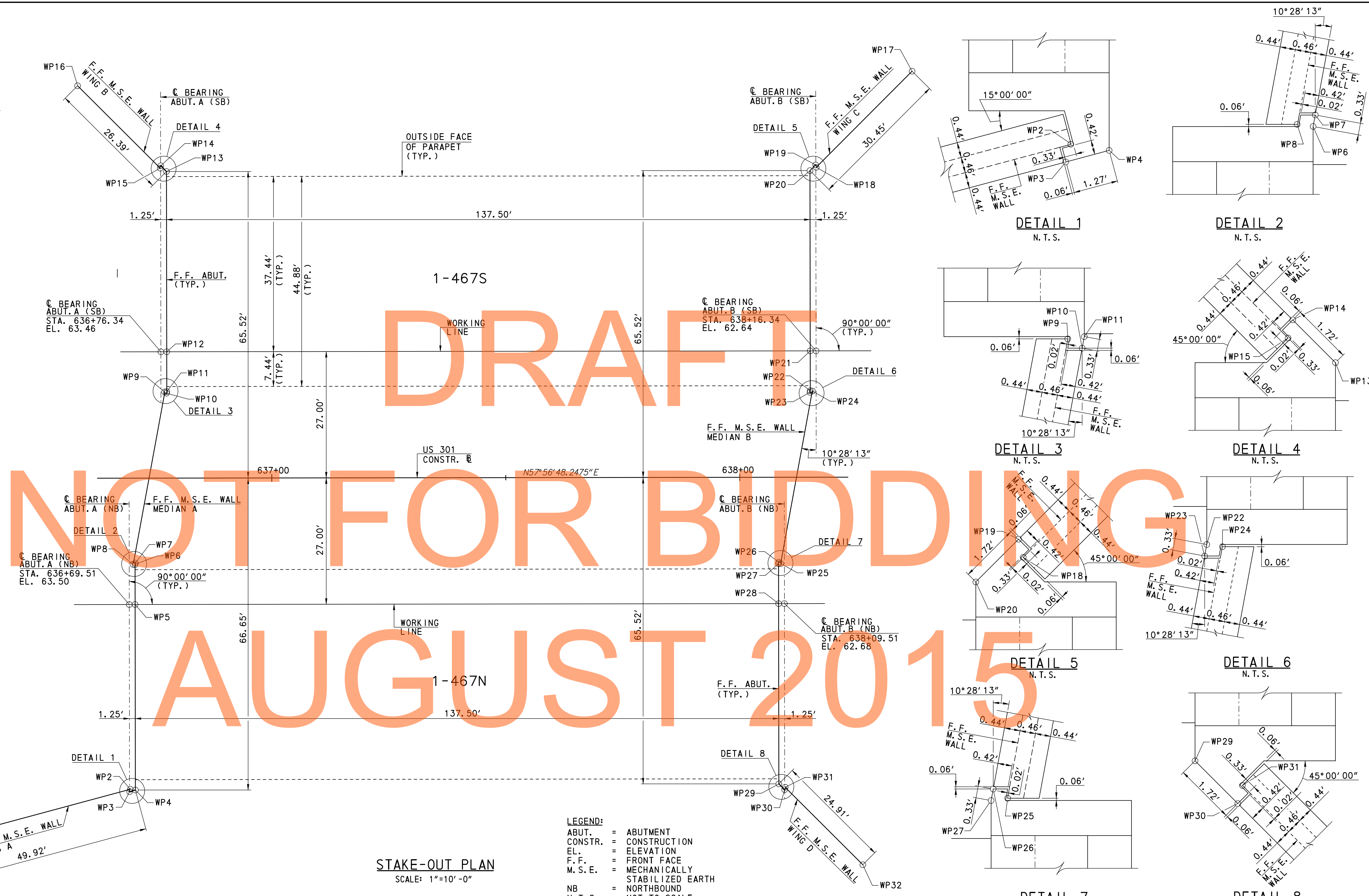
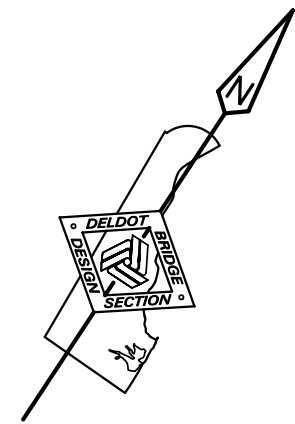
ELEVATION
SCALE: 1" = 20'-0"

* ELEVATION = -3.0 FOR HP14X73
STEEL PILE ALTERNATE

ADDENDUMS / REVISIONS	

CONTRACT T200911301	BRIDGE NO. 1-467 N&S
COUNTY NEW CASTLE	DESIGNED BY: BK CHECKED BY: ZAA

SHEET NO. 86
TOTAL SHTS. 240



DRAFT

NOT FOR BIDDING

AUGUST 2015

STAKE-OUT PLAN
SCALE: 1"=10'-0"

NOTE:
1. FOR WORK POINT (WP) COORDINATES, SEE SHEET 4 OF 40.

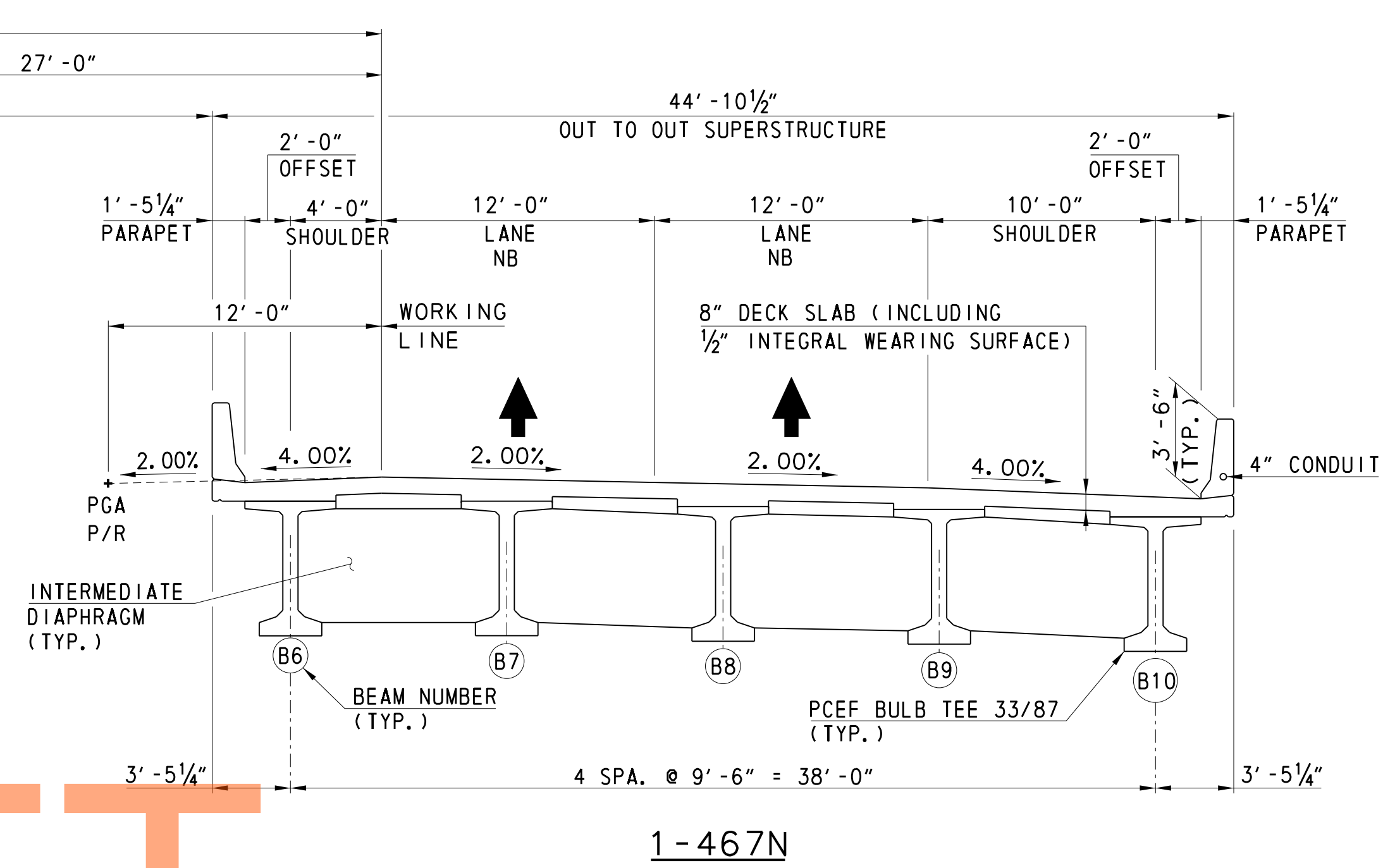
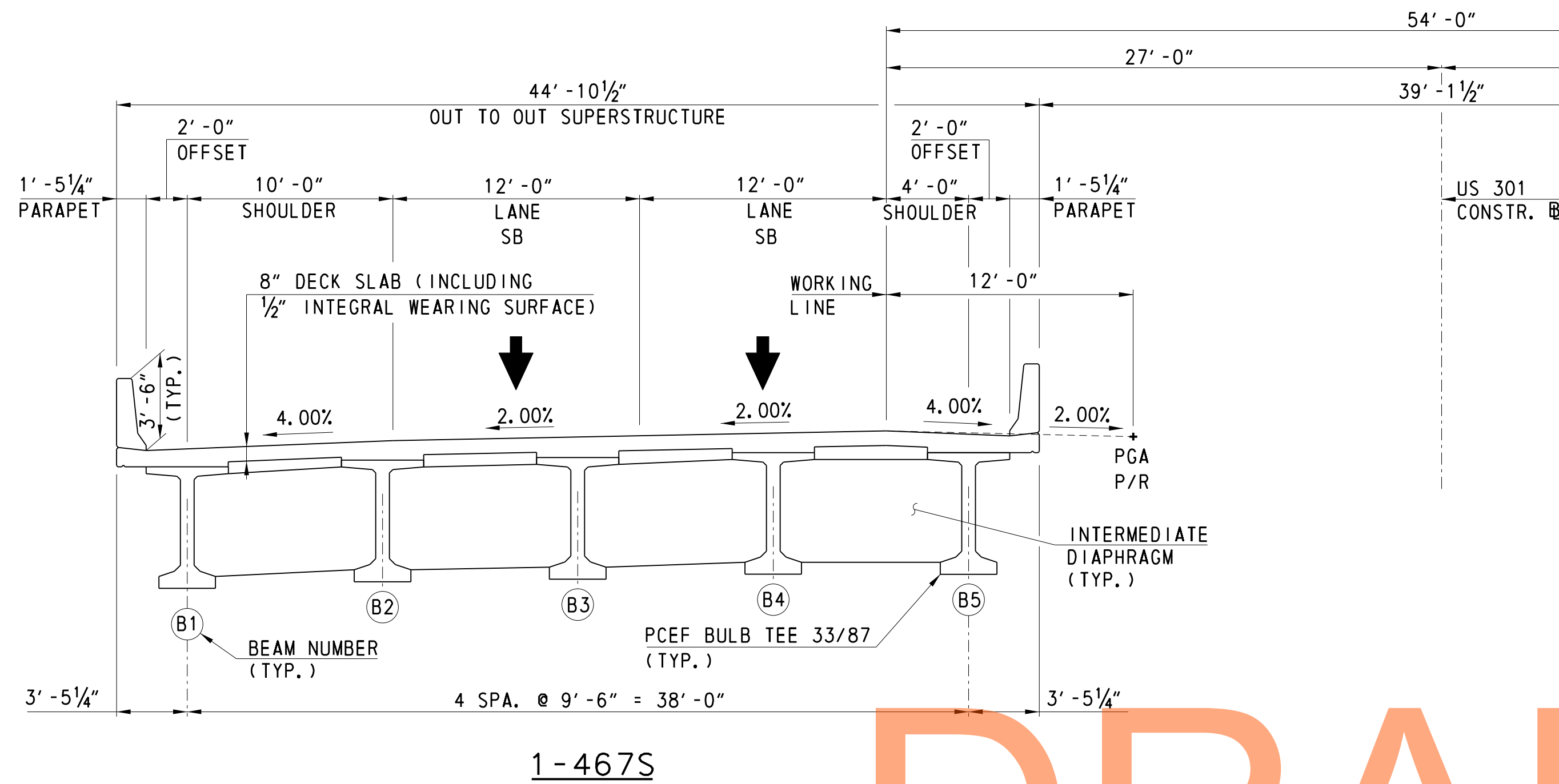
- LEGEND:**
- ABUT. = ABUTMENT
 - CONSTR. = CONSTRUCTION
 - EL. = ELEVATION
 - F.F. = FRONT FACE
 - M. S. E. = MECHANICALLY STABILIZED EARTH
 - NB = NORTHBOUND
 - N. T. S. = NOT TO SCALE
 - SB = SOUTHBOUND
 - STA. = STATION
 - TYP. = TYPICAL
 - WP = WORK POINT

ADDENDUMS / REVISIONS	

SCALE: AS NOTED

CONTRACT T200911301	BRIDGE NO. 1-467 N&S	
COUNTY NEW CASTLE	DESIGNED BY: ZAA	
	CHECKED BY: BJH	

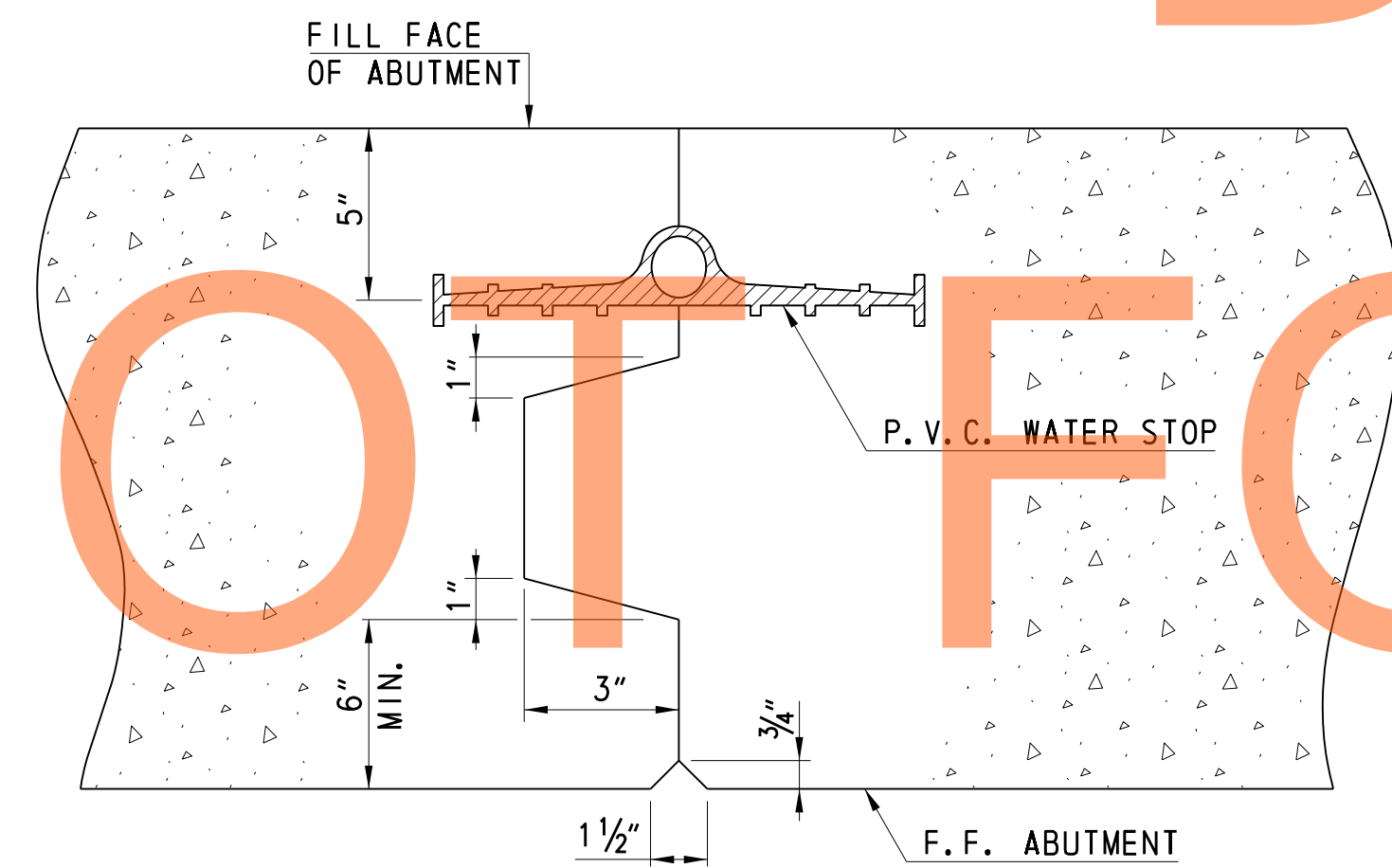
GEOMETRIC LAYOUT PLAN	SHEET NO. 87
	TOTAL SHTS. 240



DRAFT

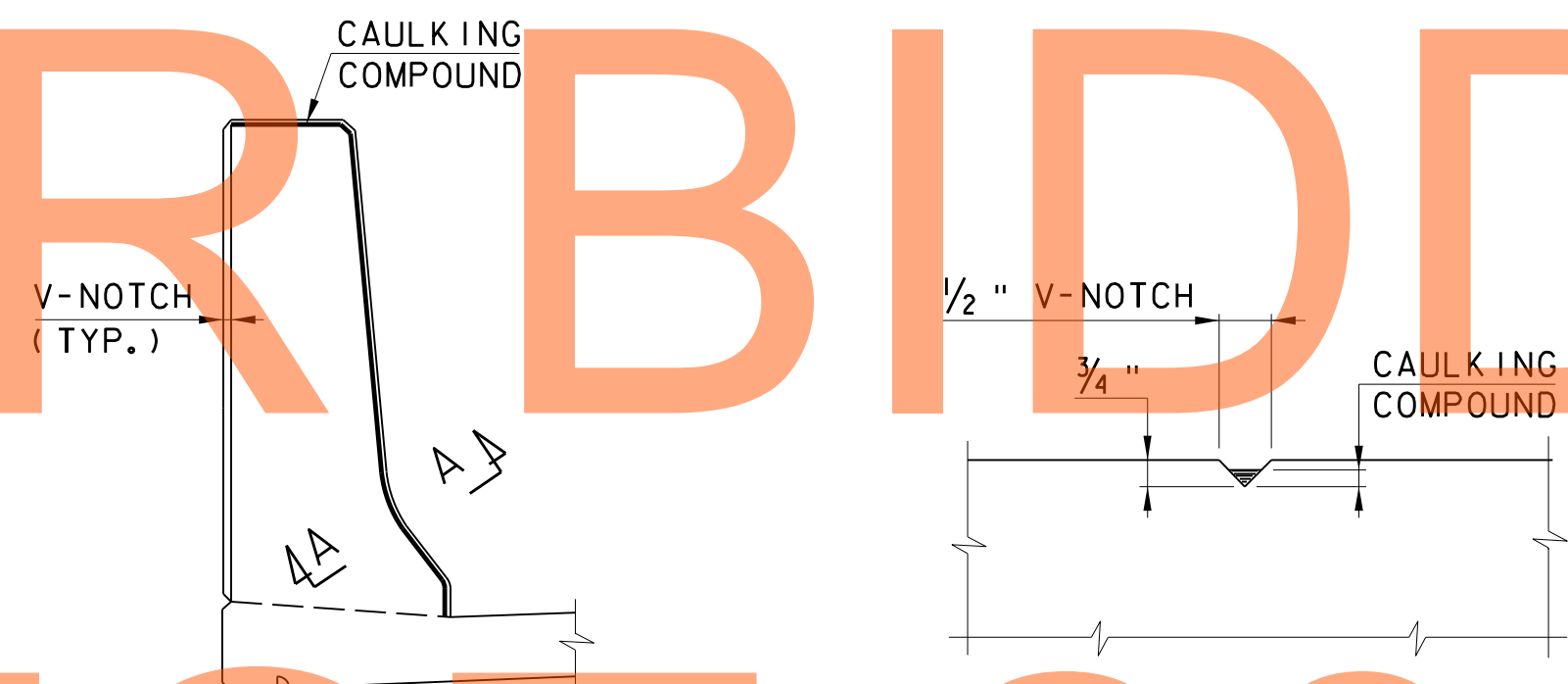
TYPICAL SECTION
SCALE: 3/16" = 1'-0"

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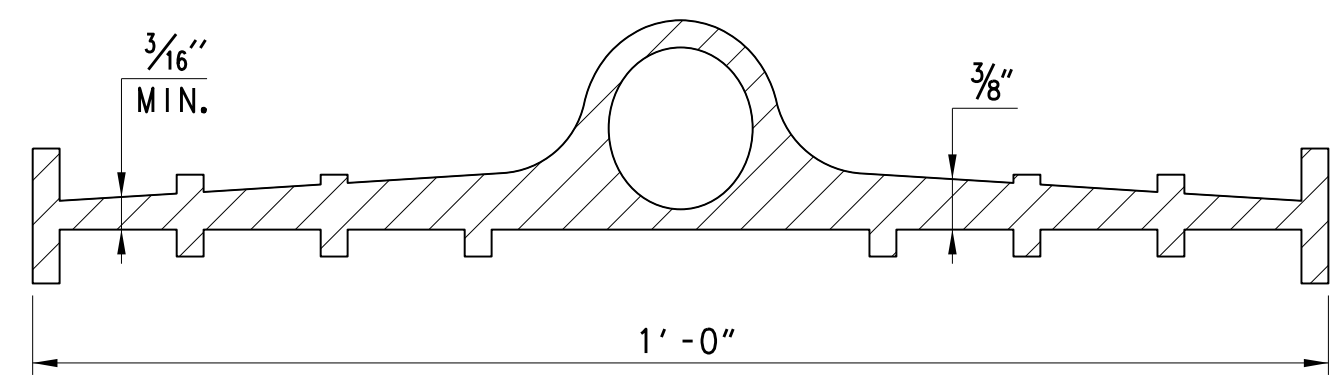
NOTE:
REINFORCING SHALL PASS THROUGH CONSTRUCTION JOINT.

CONSTRUCTION JOINT DETAIL
NOT TO SCALE



NOTES:
• LONGITUDINAL REINFORCEMENT IS CONTINUOUS THROUGH THE JOINT.
• PROVIDE CAULKING COMPOUND IN ACCORDANCE WITH ASTM C834 OR C920.

MODIFIED DEFLECTION JOINT DETAIL
NOT TO SCALE



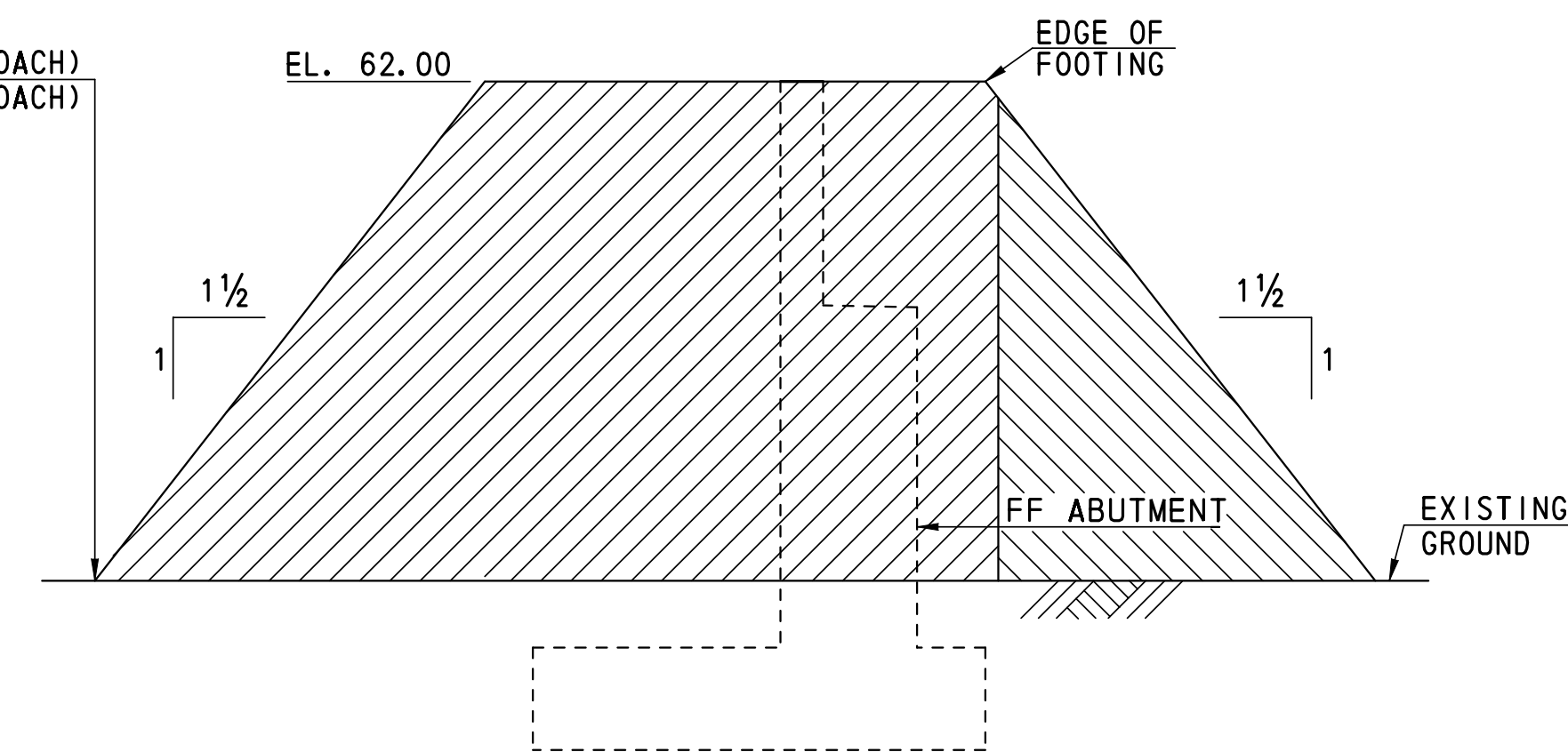
P.V.C. WATER STOP
NOT TO SCALE

- NOTE:
- FOR LOCATION OF MODIFIED DEFLECTION JOINTS, SEE SHEETS 22 AND 29 OF 40.
 - REFLECTORS SHALL BE INSTALLED ALONG EACH PARAPET. SEE CONSTRUCTION DETAILS, DT-03 FOR DETAILS.

WORK POINT COORDINATES				
WP	NORTHING	EASTING	STATION	OFFSET (FT)
1	575475.9724	545150.6448	636+22.43	79.14 RT.
2	575522.7384	545164.9901	636+69.68	66.48 RT.
3	575522.3512	545165.3290	636+69.53	66.97 RT.
4	575523.5661	545165.7016	636+70.76	66.65 RT.
5	575544.6064	545132.0996	636+70.76	27.00 RT.
6	575549.1285	545124.8778	636+70.76	18.48 RT.
7	575549.3537	545124.6321	636+70.82	18.15 RT.
8	575548.7943	545124.5948	636+70.33	18.42 RT.
9	575574.1113	545096.9890	636+77.13	18.42 LT.
10	575574.3061	545097.4239	636+77.53	18.15 LT.
11	575574.5314	545097.1782	636+77.59	18.48 LT.
12	575579.0534	545089.9564	636+77.59	27.00 LT.
13	575599.4967	545057.3079	636+77.59	65.52 LT.
14	575599.1116	545055.6328	636+76.37	66.74 LT.
15	575598.7459	545055.9947	636+76.26	66.24 LT.
16	575593.1588	545031.6913	636+58.62	83.87 LT.
17	575745.8074	545123.8848	638+36.93	86.74 LT.
18	575717.5447	545130.3821	638+16.42	66.24 LT.
19	575717.7106	545129.8950	638+16.31	66.74 LT.
20	575716.0355	545130.2801	638+15.09	65.52 LT.
21	575695.5922	545162.9286	638+15.09	27.00 LT.
22	575691.0702	545170.1505	638+15.09	18.48 LT.
23	575690.8449	545170.3961	638+15.03	18.15 LT.
24	575691.4043	545170.4334	638+15.52	18.42 LT.
25	575666.0873	545198.0393	638+08.72	18.42 RT.
26	575665.8926	545197.6044	638+08.32	18.15 RT.
27	575665.6673	545197.8500	638+08.26	18.48 RT.
28	575661.1453	545205.0719	638+08.26	27.00 RT.
29	575640.7020	545237.7204	638+08.26	65.52 RT.
30	575641.0871	545239.3955	638+09.48	66.74 RT.
31	575641.4528	545239.0336	638+09.59	66.24 RT.
32	575646.7085	545261.8955	638+26.18	82.82 RT.

- LEGEND:
- CONSTR. = CONSTRUCTION
 - F.F. = FRONT FACE
 - L.T. = LEFT
 - MIN. = MINIMUM
 - NB = NORTHBOUND
 - PGA = PROFILE GRADE APPLICATION
 - P/R = POINT OF ROTATION
 - RT. = RIGHT
 - SB = SOUTHBOUND
 - SPA. = SPACES
 - TYP. = TYPICAL

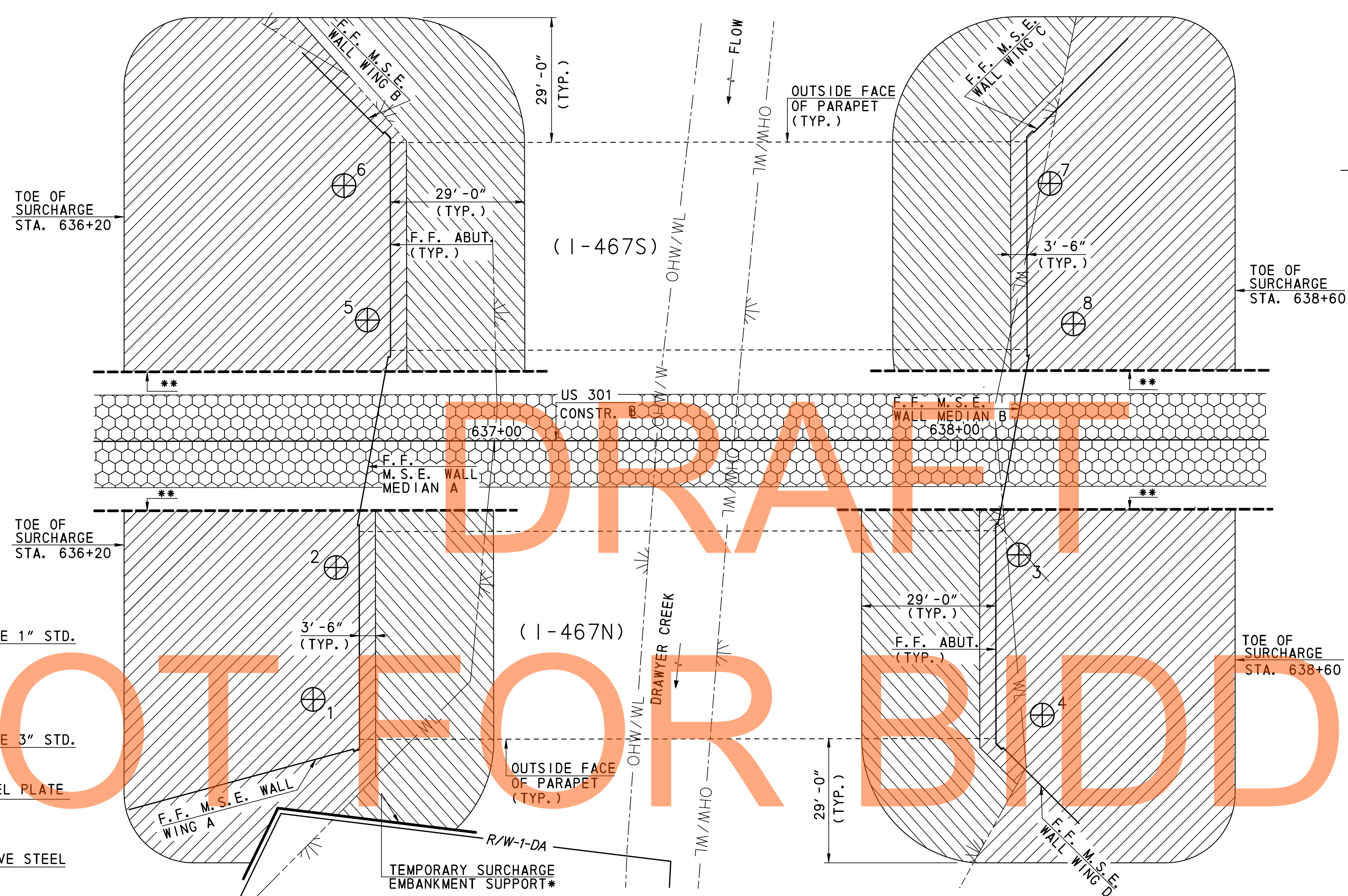
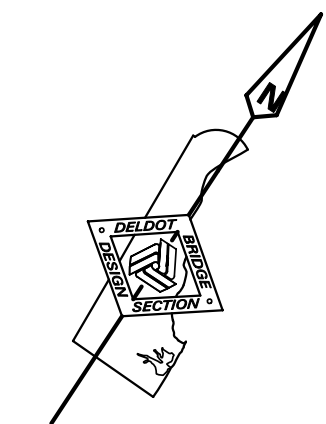
STA. 636+20 (SOUTH APPROACH)
STA. 638+60 (NORTH APPROACH)



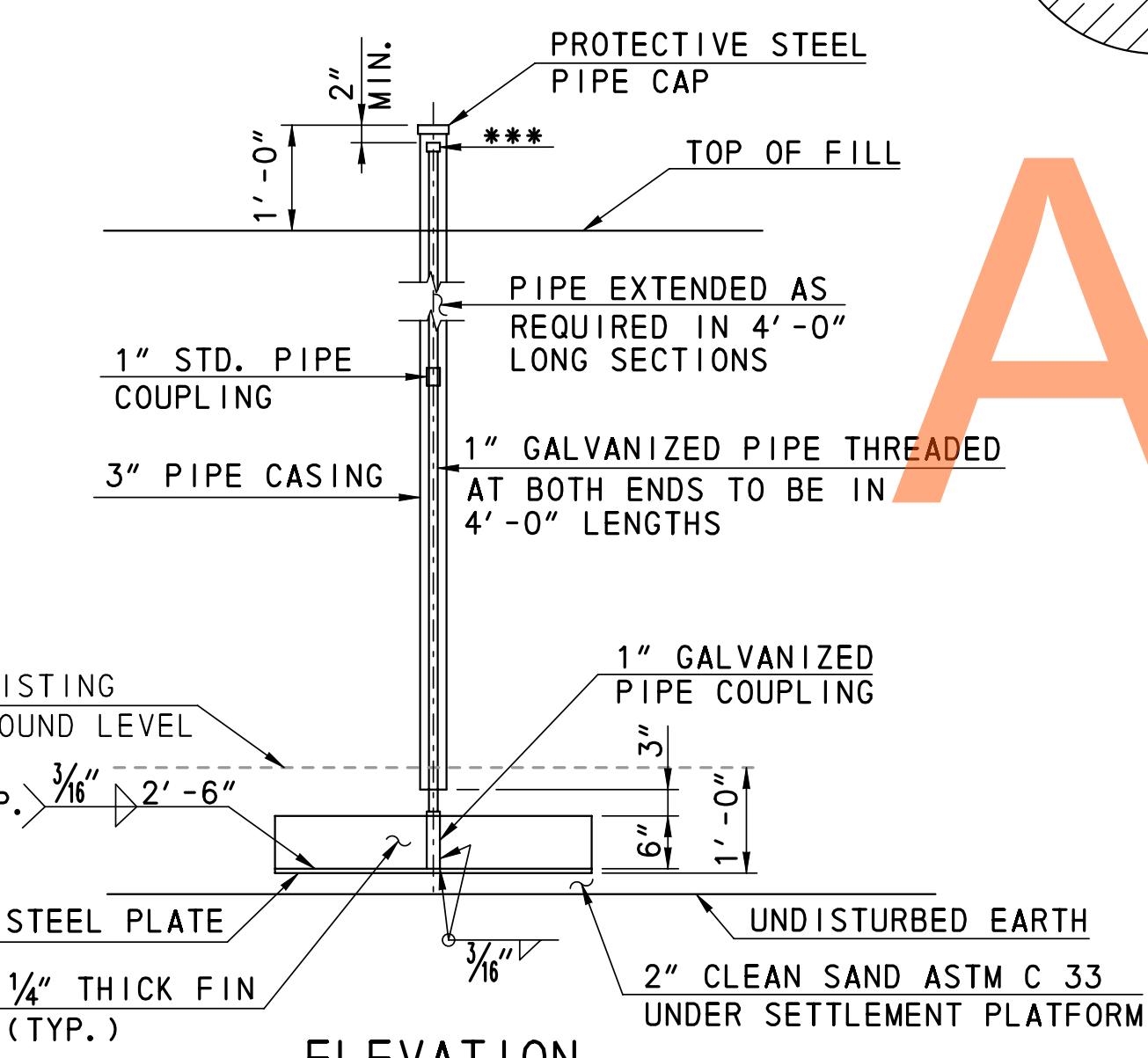
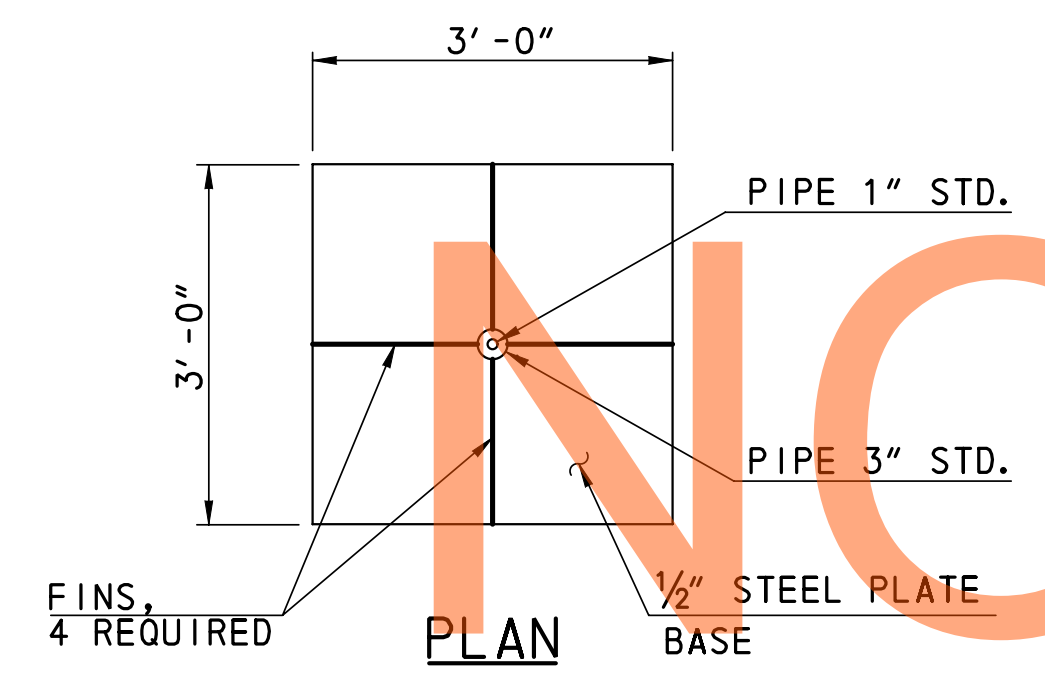
TEMPORARY SURCHARGE LIMITS
NOT TO SCALE

- CONSTRUCTION SEQUENCE:**
1. CLEAR AND GRUB AREA. DO NOT GRUB WITHIN WETLANDS LIMITS.
 2. PLACE TEMPORARY SHORING, TEMPORARY SURCHARGE EMBANKMENT SUPPORT, AND GEOTEXTILE WITHIN THE LIMITS AS SHOWN.
 3. INSTALL SETTLEMENT PLATFORMS. PLACE TEMPORARY SURCHARGE, SEE ITEM 202000 - EXCAVATION AND EMBANKMENT.
 4. MONITOR TEMPORARY SURCHARGE UNTIL SETTLEMENT IS COMPLETE AS DIRECTED BY THE ENGINEER.
 5. REMOVE TEMPORARY SURCHARGE UNDER APPROPRIATE ITEMS. SEE SHEET 17 OF 40 FOR DETAILS.
 6. CONSTRUCT BRIDGE BR1-467. FOR INSTALLATION OF TEST PILES AND PRODUCTION PILES, SEE SHEET 17 OF 40 PILE NOTES 6g AND 6b.

- NOTES:**
1. EMBANKMENT SETTLEMENT IS ANTICIPATED.
 2. ESTIMATE 60 DAYS QUARANTINE PERIOD FOR SCHEDULING PURPOSES, SEE SPECIAL PROVISION 202505 FOR SETTLEMENT PLATFORMS.
 3. BEGIN THE QUARANTINE PERIOD WHEN THE EMBANKMENT IS AT FINAL SUBGRADE AND THE SETTLEMENT PLATFORMS ARE COMPLETELY CONSTRUCTED. THE ENGINEER WILL DETERMINE THE DURATION OF THE QUARANTINE PERIOD BASED ON THE SETTLEMENT PLATFORM READINGS.
 4. THE ENGINEER WILL NOTIFY THE CONTRACTOR, IN WRITING, WHEN THE QUARANTINE PERIOD CAN BE LIFTED AND WILL BE BASED ON THE RESULTS OF THE SETTLEMENT READINGS.
 5. THIS PROJECT INCLUDES THE INSTALLATION OF SETTLEMENT PLATFORMS IN EMBANKMENT AREAS. SEE SPECIAL PROVISION 202505. THE CONTRACTOR IS REQUIRED TO MONITOR THESE SETTLEMENT PLATFORMS. THIS WORK CONSISTS OF OBTAINING, RECORDING, COMPILING AND ANALYZING THE SETTLEMENT PLATFORM READINGS.
 6. PROVIDE QUALIFIED PERSONNEL WITH EXPERIENCE IN SETTLEMENT MONITORING AND THE NECESSARY EQUIPMENT AND MATERIALS TO OBTAIN, RECORD, COMPIL AND ANALYZE THE VERTICAL SETTLEMENT READINGS AS SPECIFIED OR DIRECTED.
 7. OBTAIN WRITTEN APPROVAL OF THE ENGINEER BEFORE FIRST (INITIAL) SETTLEMENT PLATFORM READING AND COORDINATE SUBSEQUENT PLATFORM READINGS. PROVIDE THE RESULTS WITHIN 24 HOURS AFTER THE READINGS ARE OBTAINED IN A FORMAT SUCH THAT IMMEDIATE EVALUATION OF THE CONDITIONS CAN BE MADE.
 8. READINGS ON THE SETTLEMENT PLATFORMS SHALL BE MADE AFTER THE INITIAL INSTALLATION OF THE RISER AND CASING PIPES AND INSTALLATION RECORD SHEETS ARE APPROVED BY THE ENGINEER AND PRIOR TO FILL PLACEMENT. DURING FILL PLACEMENT, READINGS ON ALL SETTLEMENT PLATFORMS SHALL BE TAKEN AT A MINIMUM OF 3 CALENDAR DAY INTERVALS. AFTER COMPLETION OF THE FILL AND SURCHARGE PLACEMENT, INSTALL SETTLEMENT MONUMENTS AND TAKE INITIAL READINGS. READINGS ON ALL SETTLEMENT MONITORING DEVICES SHALL THEN BE TAKEN AT A MINIMUM OF 3 CALENDAR DAY INTERVALS. IF THE SETTLEMENT HAS CEASED BY CALENDAR DAY 6 THAT IS THREE READINGS, AFTER THE COMPLETION OF THE FILL, SURCHARGE AND SETTLEMENT MONUMENT PLACEMENT, THE SUBSTRUCTURE WILL BE RELEASED BY THE ENGINEER FOR REMOVAL OF THE SURCHARGE AND INSTALLATION OF PRODUCTION PILES WITHIN THREE WORKING DAYS OF RECEIPT OF SETTLEMENT MONITORING RESULTS. AFTER COMPLETION OF THE ABUTMENT AND MSE WALL PANEL PLACEMENT, THE CONTRACTOR SHALL ESTABLISH REFERENCE POINTS TO MONITOR SETTLEMENT ON TOP OF THE ABUTMENT SEAT AND EITHER ON TOP OF THE MSE WALL PANELS OR ON TOP OF THE MSE WALL LEVELING PAD AT POINTS WITHIN FIVE FEET OF ALL ENDS AND CORNERS AND AT THE CENTER OF BRIDGES AND THE CENTERLINE OF US301. AFTER THE CONCRETE ABUTMENTS HAVE BEEN CONSTRUCTED AND THE MSE WALL PANELS HAVE BEEN PLACED, READINGS ON ALL SETTLEMENT MONITORING DEVICES AND REFERENCE POINTS SHALL CONTINUE TO BE TAKEN AT A MINIMUM OF 30-DAY INTERVALS FOR THE NEXT 6 MONTHS OR AS DIRECTED BY THE ENGINEER.
 9. DO NOT ALLOW CONSTRUCTION ACTIVITY, OTHER THAN MONITORING, WITHIN THE QUARANTINE AREAS DURING THE QUARANTINE TIME PERIOD, EXCEPT AS PERMITTED BY THE ENGINEER IN THE AREA OF THE TEMPORARY ACCESS ROAD.
 10. LOCATE SETTLEMENT PLATFORMS HORIZONTALLY AND VERTICALLY AT THE DIRECTION OF THE ENGINEER. PROVIDE A TEMPORARY BENCHMARK FOR THE MONITORING OF THIS WORK. THE BENCHMARK SHALL BE LOCATED IN A PROTECTED AREA OUTSIDE OF THE AREA OF ANTICIPATED SETTLEMENT.
 11. SEE EC SHEET GENERAL NOTES AND MOT SHEET FOR TEMPORARY IMPACT RESTORATION REQUIREMENTS.



TEMPORARY SURCHARGE LIMITS - PLAN
NOT TO SCALE

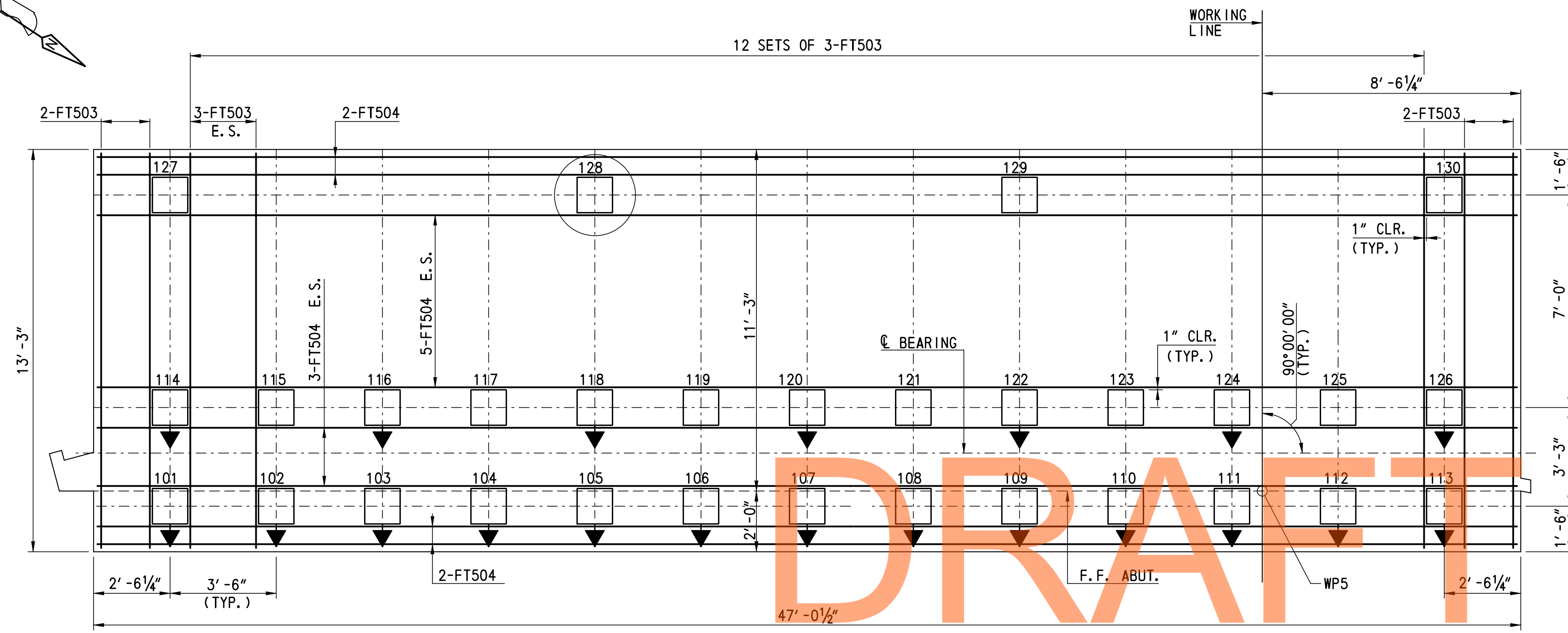
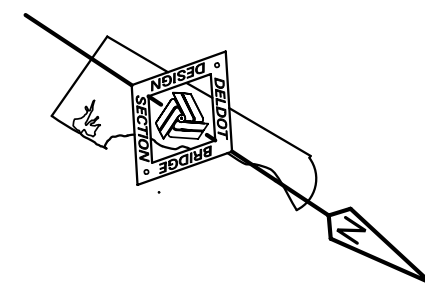


SETTLEMENT PLATFORM DETAIL
NOT TO SCALE

- * INCIDENTAL TO ITEM 202000 - EXCAVATION AND EMBANKMENT. SUBMIT DESIGN CALCULATIONS FOR APPROVAL. NO TEMPORARY OR PERMANENT IMPACTS ALLOWED TO THE CULTURAL RESOURCE BOUNDARY.
- ** TEMPORARY SHORING AS NEEDED TO CONSTRUCT TEMPORARY ACCESS ROAD. TEMPORARY SHORING IS INCIDENTAL TO ITEM 202000 - EXCAVATION AND EMBANKMENT. SEE SHEET CS-03 FOR DETAILS OF TEMPORARY ACCESS ROAD.
- *** PIPE CAP WITH 1/4" DIA. ROUND HEAD STAINLESS STEEL BOLT SET SECURELY IN CAP. TACK WELD CAP TO PIPE.

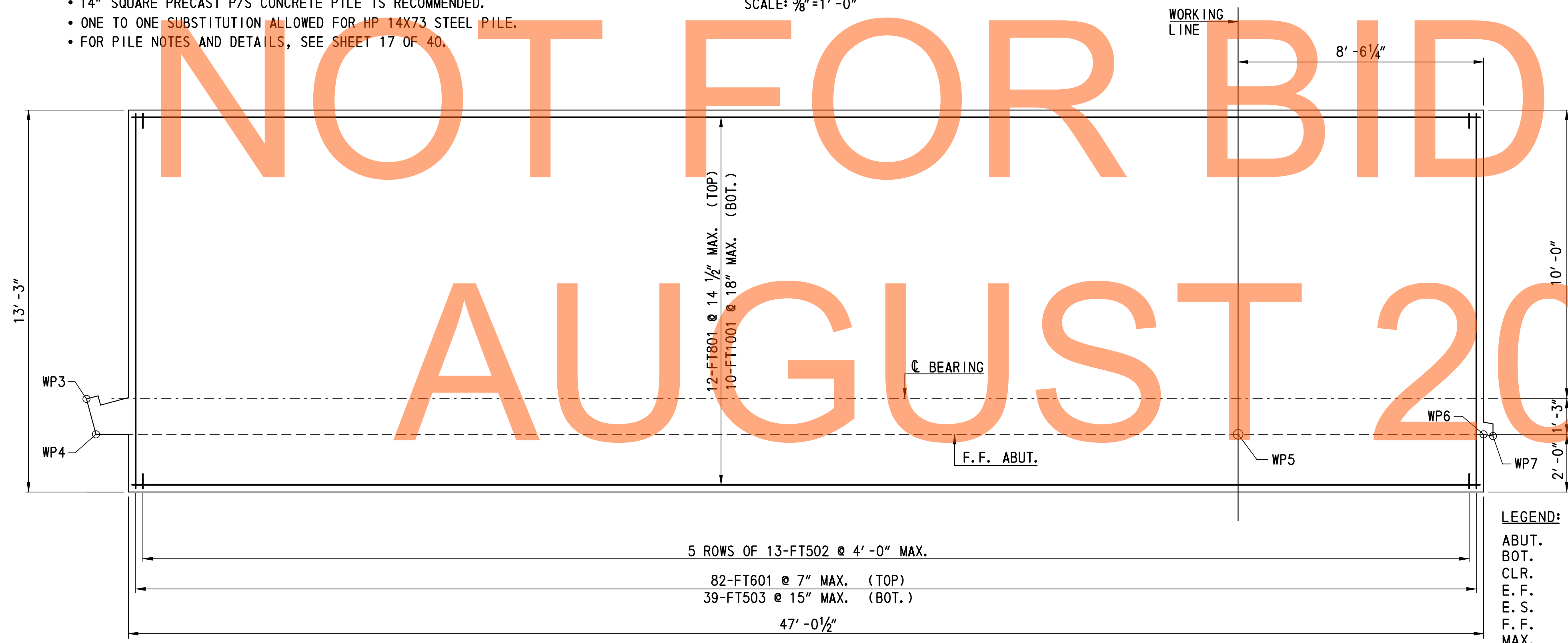
SETTLEMENT PLATFORM LOCATION		
	STATION	OFFSET (FT.)
NB	1	636+61 56.0 RT.
	2	636+66 27.0 RT.
	3	638+13 25.0 RT.
	4	638+18 59.0 RT.
SB	5	636+73 26.0 LT.
	6	636+68 55.0 LT.
	7	638+20 55.0 LT.
	8	638+25 25.0 LT.

- LEGEND**
- ABUT. = ABUTMENT
 - CONSTR. = CONSTRUCTION
 - DA = DENIAL OF ACCESS
 - DIA. = DIAMETER
 - EL. = ELEVATION
 - F.F. = FRONT FACE
 - LT. = LEFT
 - M.S.E. = MECHANICALLY STABILIZED EARTH
 - RT. = RIGHT
 - R/W = RIGHT-OF-WAY
 - STA. = STATION
 - STD. = STANDARD
 - WL = WETLAND
 - [Hatched Area] = TEMPORARY SURCHARGE
 - [Hatched Area] = TEMPORARY SURCHARGE ON GEOTEXTILE
 - [Circle with Cross] = SETTLEMENT PLATFORM
 - [Hatched Area] = TEMPORARY ACCESS ROAD

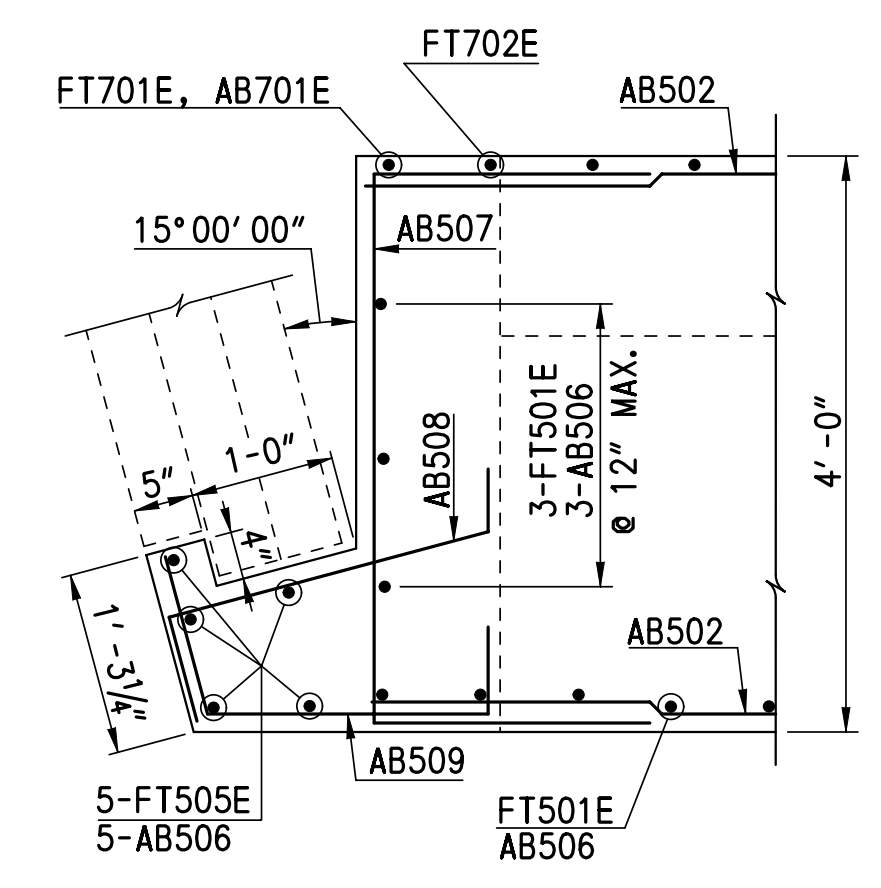


PILE LAYOUT PLAN-WITH SUPPLEMENTAL REINFORCEMENT
SCALE: 3/8" = 1' - 0"

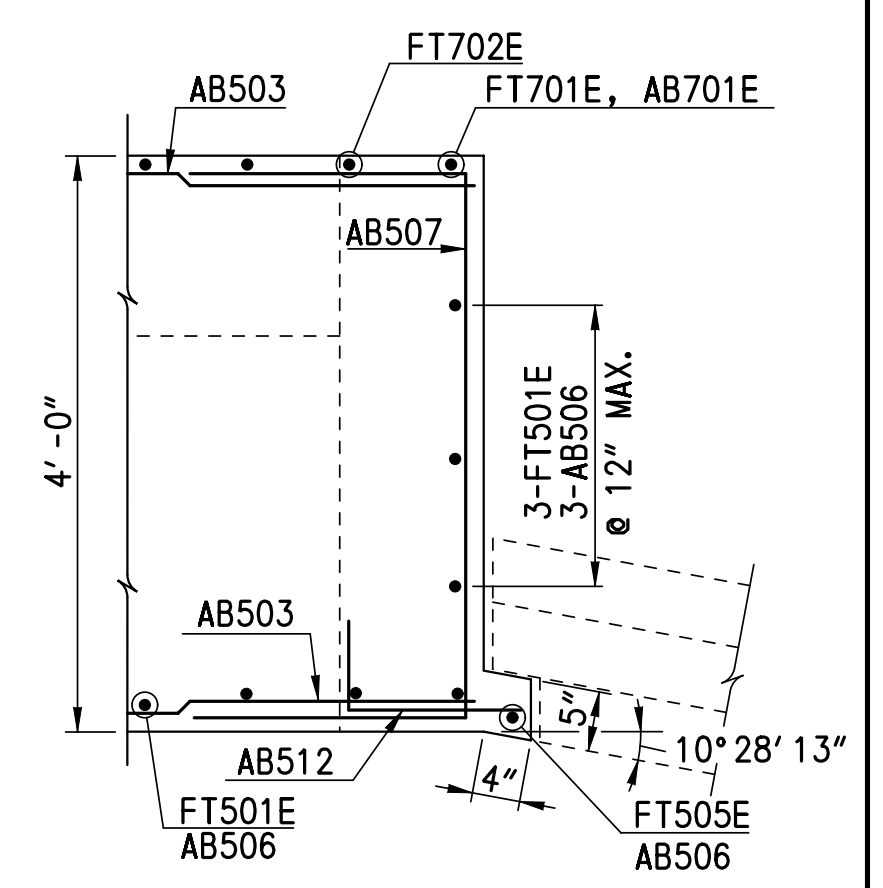
- NOTES:**
- 14" SQUARE PRECAST P/S CONCRETE PILE IS RECOMMENDED.
 - ONE TO ONE SUBSTITUTION ALLOWED FOR HP 14X73 STEEL PILE.
 - FOR PILE NOTES AND DETAILS, SEE SHEET 17 OF 40.



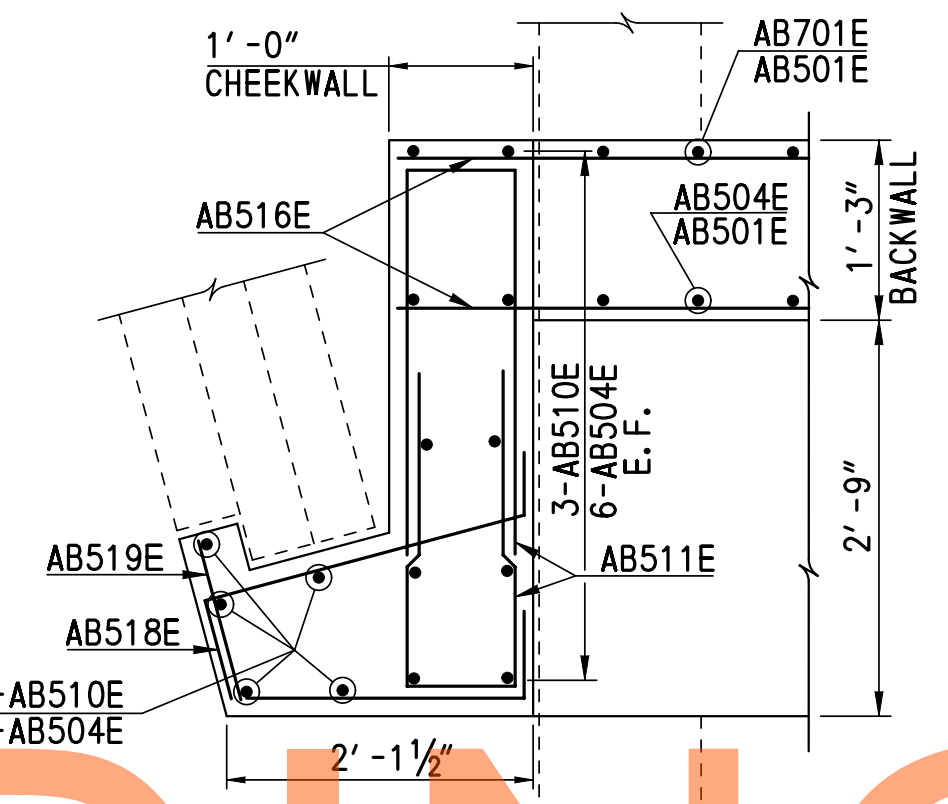
PLAN TOP AND BOTTOM REINFORCEMENT
SCALE: 3/8" = 1' - 0"



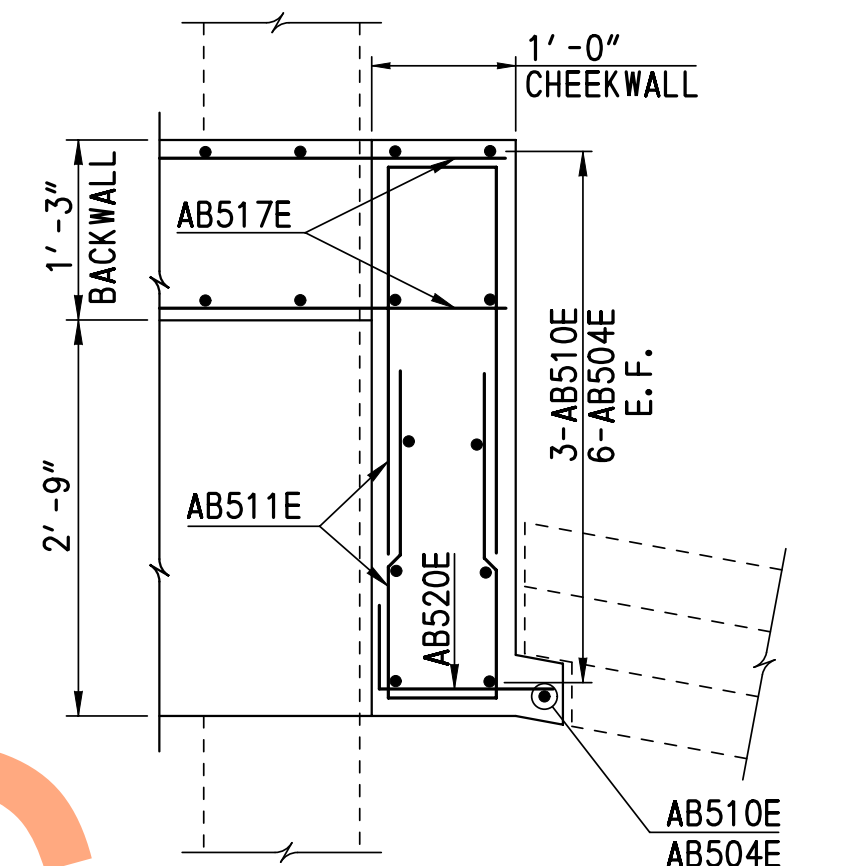
SECTION NA1-NA1
SCALE: 3/4" = 1' - 0"



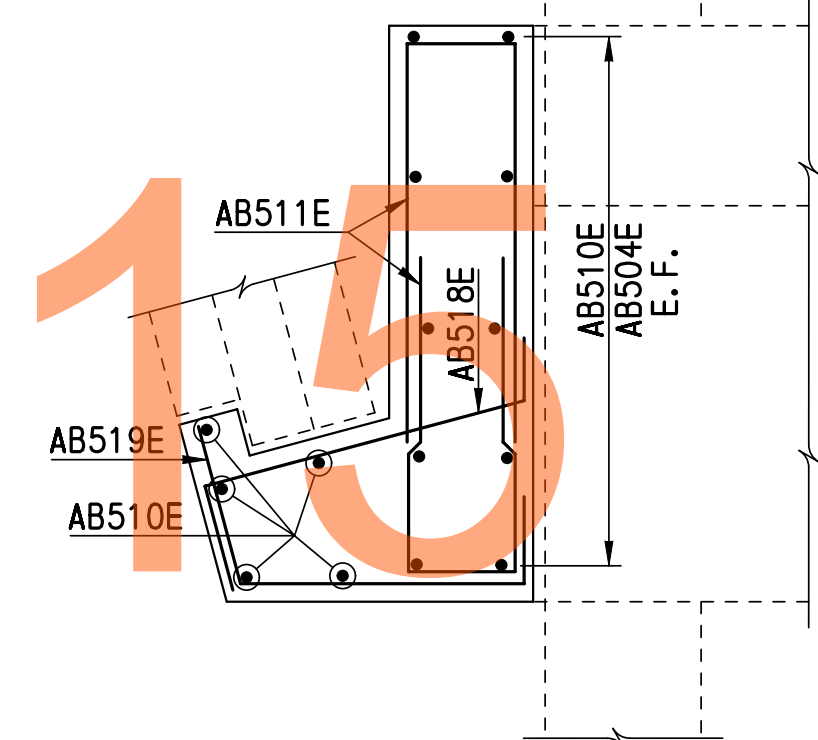
SECTION NA4-NA4
SCALE: 3/4" = 1' - 0"



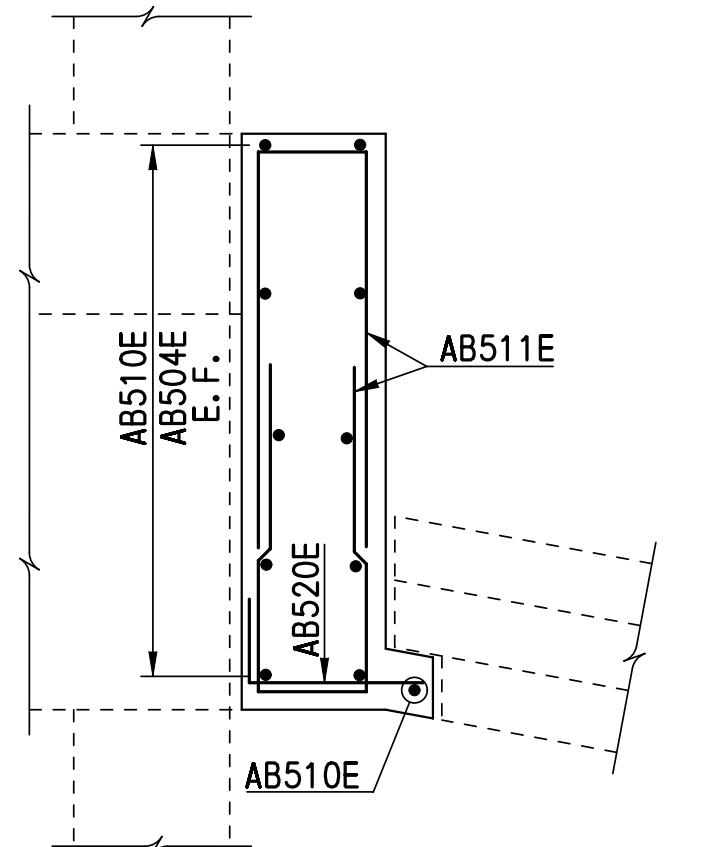
SECTION NA2-NA2
SCALE: 3/4" = 1' - 0"



SECTION NA5-NA5
SCALE: 3/4" = 1' - 0"



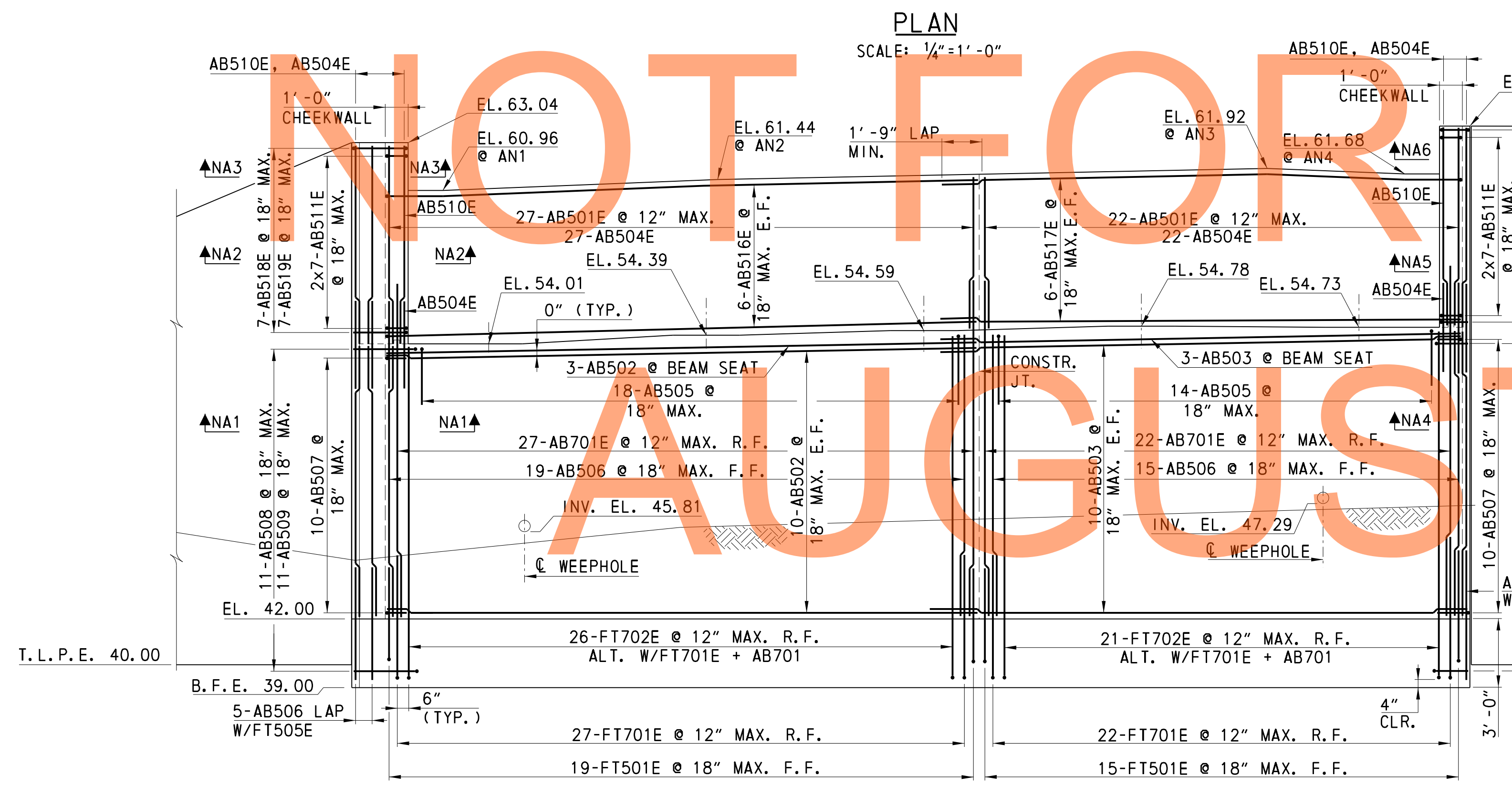
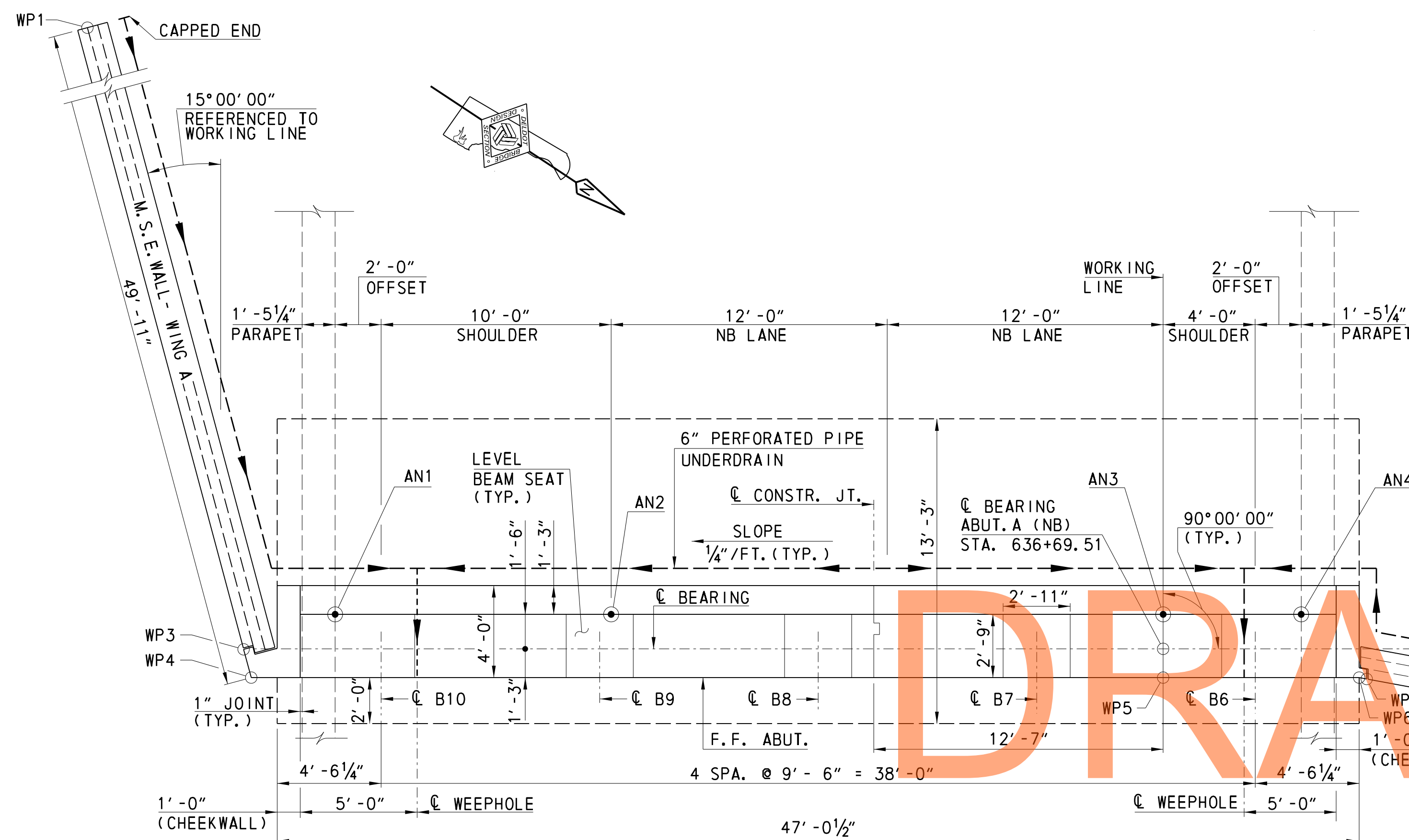
SECTION NA3-NA3
SCALE: 3/4" = 1' - 0"



SECTION NA6-NA6
SCALE: 3/4" = 1' - 0"

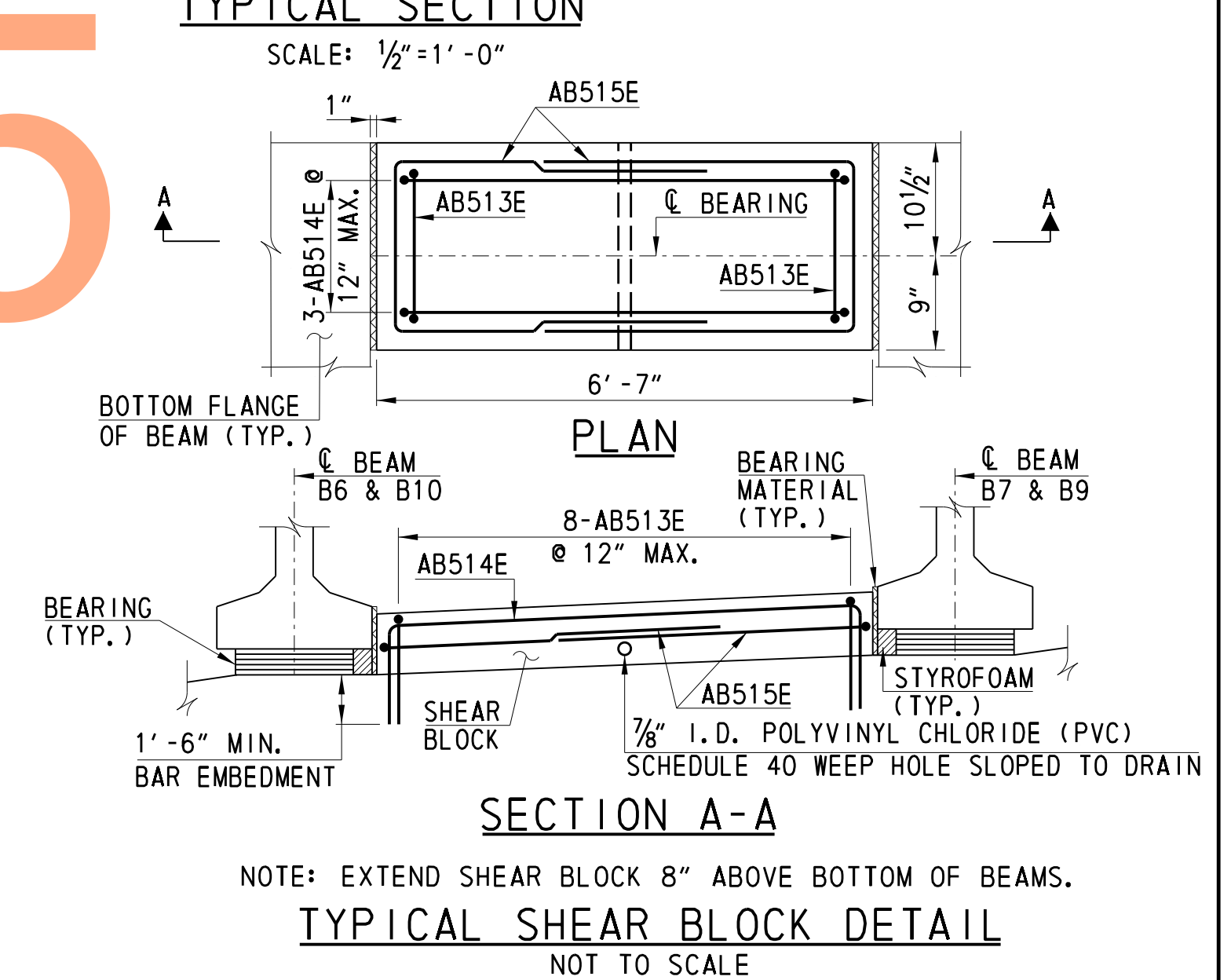
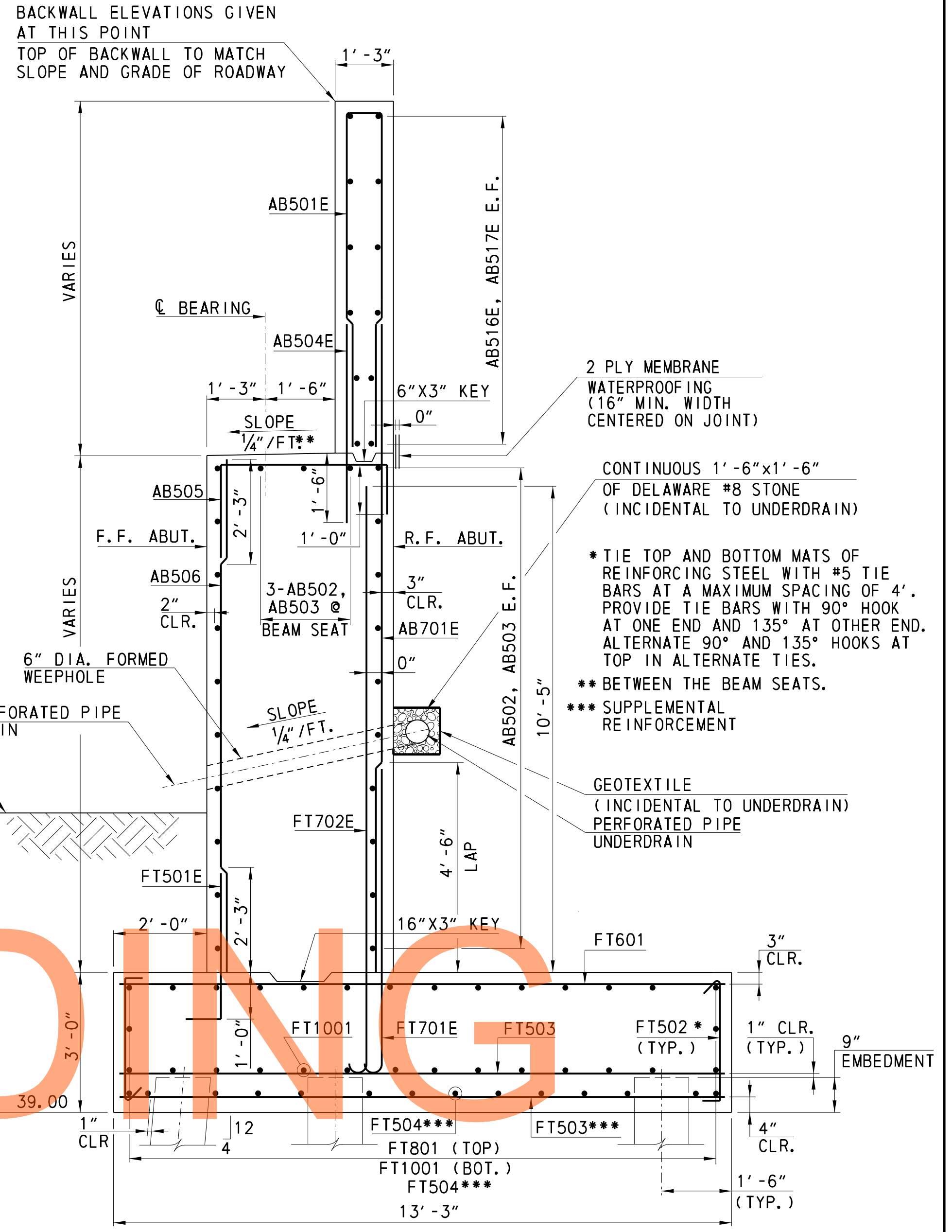
- LEGEND:**
- ABUT. = ABUTMENT
 - BOT. = BOTTOM
 - CLR. = CLEAR
 - E. F. = EACH FACE
 - E. S. = EQUAL SPACING
 - F. F. = FRONT FACE
 - MAX. = MAXIMUM
 - P/S = PRESTRESSED
 - TYP. = TYPICAL
 - WP = WORK POINT
 - = DENOTES BATTER PILE, 1 HORIZONTAL ON 3 VERTICAL
 - = DENOTES TEST PILE

- NOTES:**
1. FOR LOCATION OF SECTIONS NA1-NA1 TO NA6-NA6, SEE SHEET 7 OF 40.
 2. FOR REINFORCEMENT BAR LIST, SEE SHEET 10 OF 40.



- LEGEND:**
- ABUT. = ABUTMENT
 - ALT. = ALTERNATE
 - B. F. E. = BOTTOM OF FOOTING ELEVATION
 - BOT. CLR. = BOTTOM CLEAR ELEVATION
 - CONSTR. DIA. = CONSTRUCTION DIAMETER
 - E. F. = EACH FACE ELEVATION
 - EL. = ELEVATION
 - F. F. = FRONT FACE
 - FT. = FEET
 - I. D. = INSIDE DIAMETER
 - INV. = INVERT
 - JT. = JOINT
 - MAX. = MAXIMUM
 - MIN. = MINIMUM
 - M. S. E. = MECHANICALLY STABILIZED EARTH
 - NB = NORTHBOUND
 - R. F. = REAR FACE
 - SPA. = SPACES
 - STA. = STATION
 - TYP. = TYPICAL
 - T. L. P. E. = TOP OF LEVELING PAD ELEVATION
 - W/ = WITH
 - WP = WORK POINT

- NOTES:**
- FOR SECTIONS NA1-NA1 TO NA6-NA6, SEE SHEET 6 OF 40.
 - FOR PILE FOOTING PLAN, SEE SHEET 6 OF 40.
 - FOR REINFORCEMENT BAR LIST, SEE SHEET 10 OF 40.
 - FOR JOINT AND WATER STOP DETAIL, SEE SHEET 4 OF 40.
 - FOR ADDITIONAL 6" PERFORATED PIPE UNDERDRAIN INFORMATION, SEE SHEET 16 OF 40.
 - STYROFOAM AND P.V.C. SCHEDULE 40 WEEP HOLE PAYMENT SHALL BE INCIDENTAL TO CONCRETE CONSTRUCTION.
 - BEARING MATERIAL SHALL BE NEOPRENE WITH A DUROMETER OF 50±5. PAYMENT SHALL BE INCIDENTAL TO CONCRETE CONSTRUCTION.
 - MEMBRANE WATERPROOFING SHALL BE INCIDENTAL TO ITEM 602015 - PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT ABOVE FOOTING, CLASS A. SEE SPECIAL PROVISION ITEM 602616 - WATERPROOFING P.C.C. MASONRY SURFACES FOR ADDITIONAL REQUIREMENTS.



DATUM 30.00

ADDENDUMS / REVISIONS

SCALE: AS NOTED

US 301,
NORFOLK SOUTHERN RR TO SR 896

CONTRACT	BRIDGE NO.	1-467 N&S
T200911301	DESIGNED BY:	ZAA
COUNTY	CHECKED BY:	AKW/MDM
NEW CASTLE		

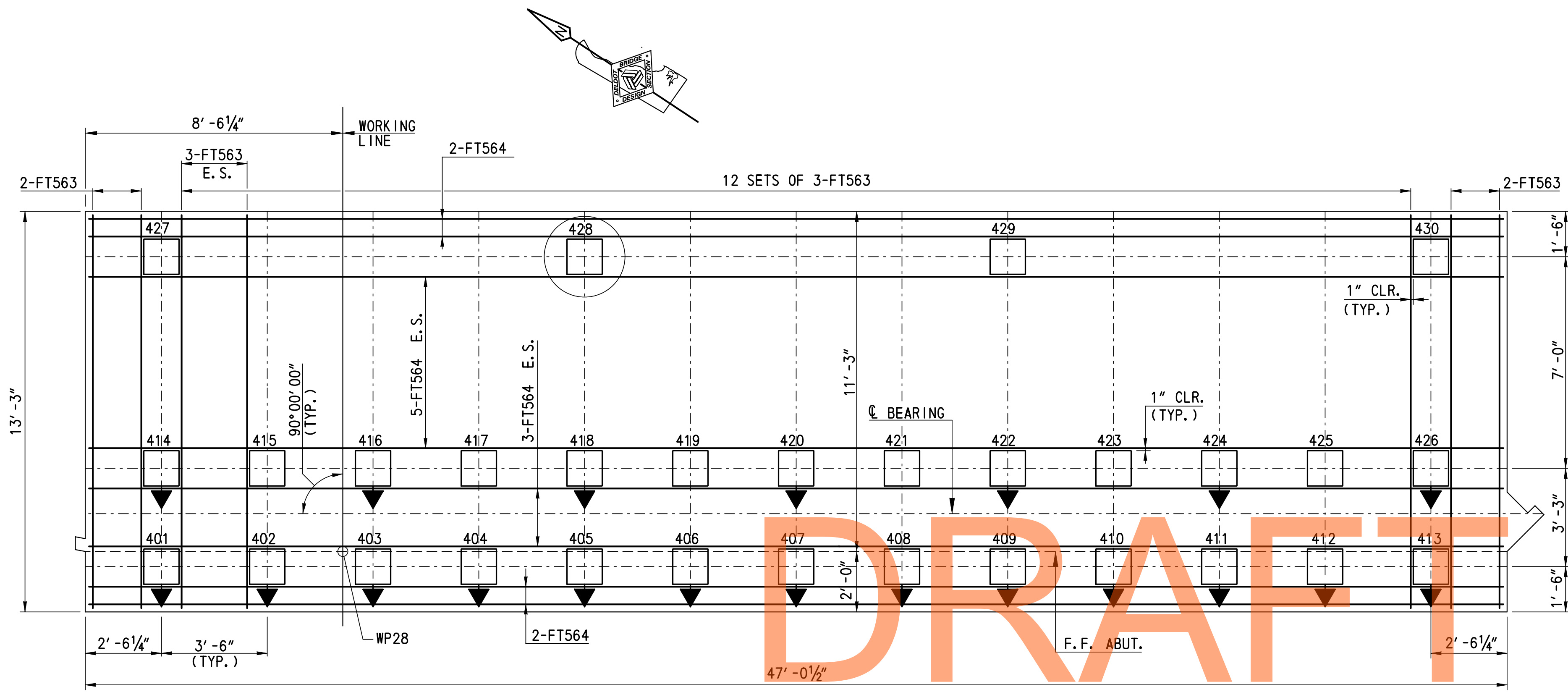
ABUTMENT A (NB)
PLAN, ELEVATION AND SECTION

SHEET 7 OF 40

BR1-467AB-01

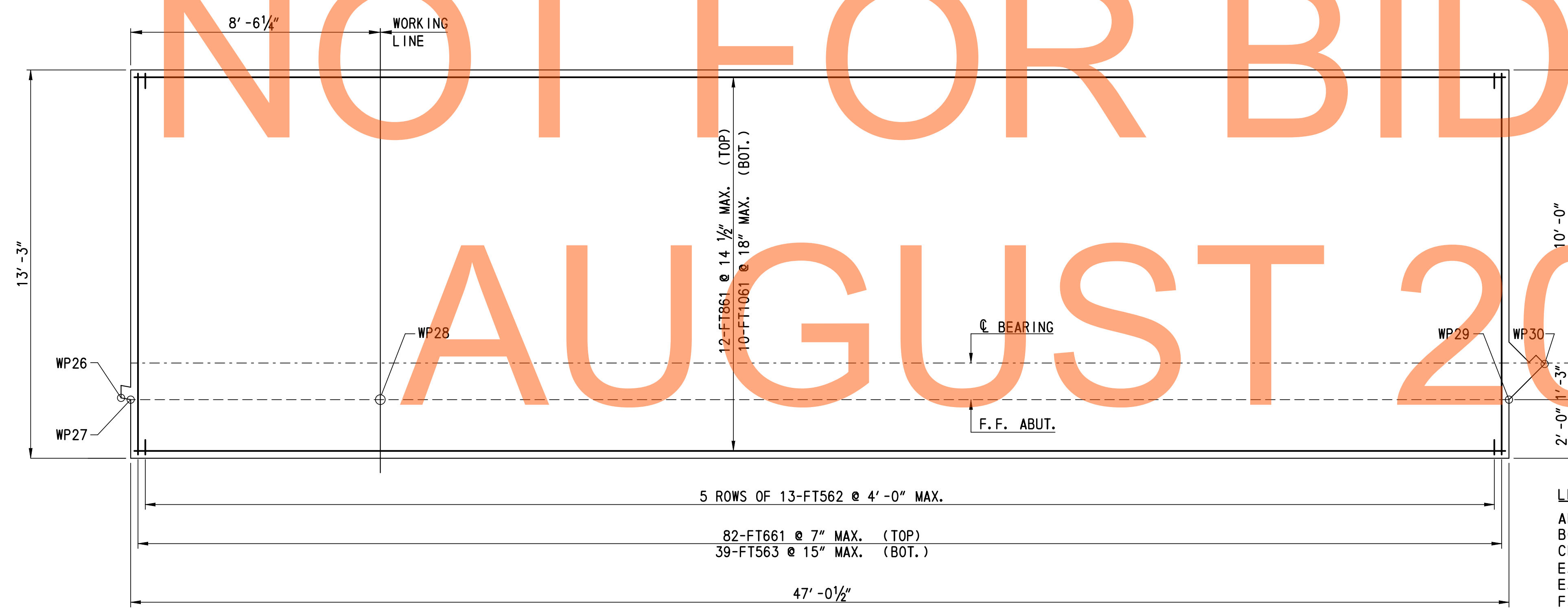


SHEET NO.	91
TOTAL SHTS.	240

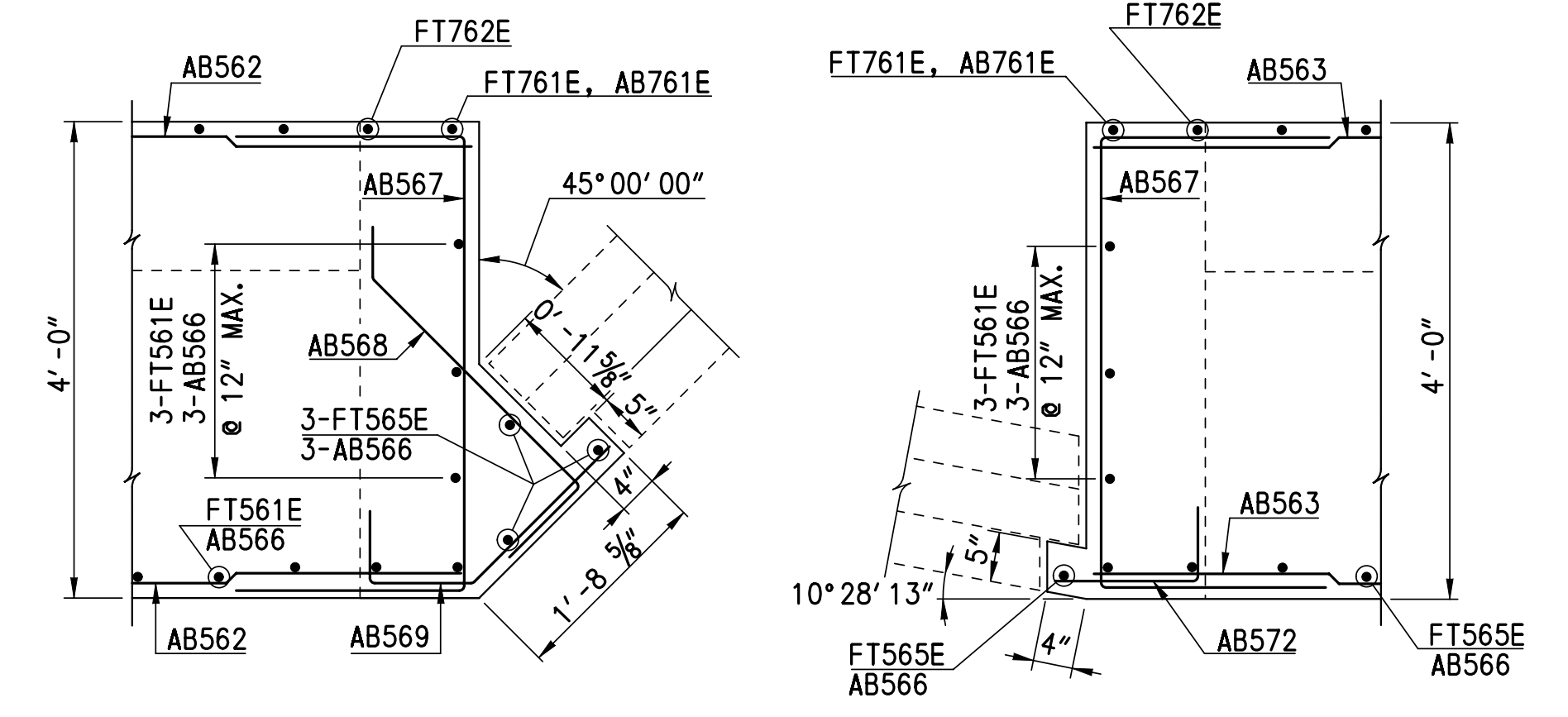


PILE LAYOUT PLAN - WITH SUPPLEMENTAL REINFORCEMENT
SCALE: 3/8"=1'-0"

- NOTES:
- 14" SQUARE PRECAST P/S CONCRETE PILE IS RECOMMENDED.
 - ONE TO ONE SUBSTITUTION ALLOWED FOR HP 14X73 STEEL PILE.
 - FOR PILE NOTES AND DETAILS, SEE SHEET 17 OF 40.

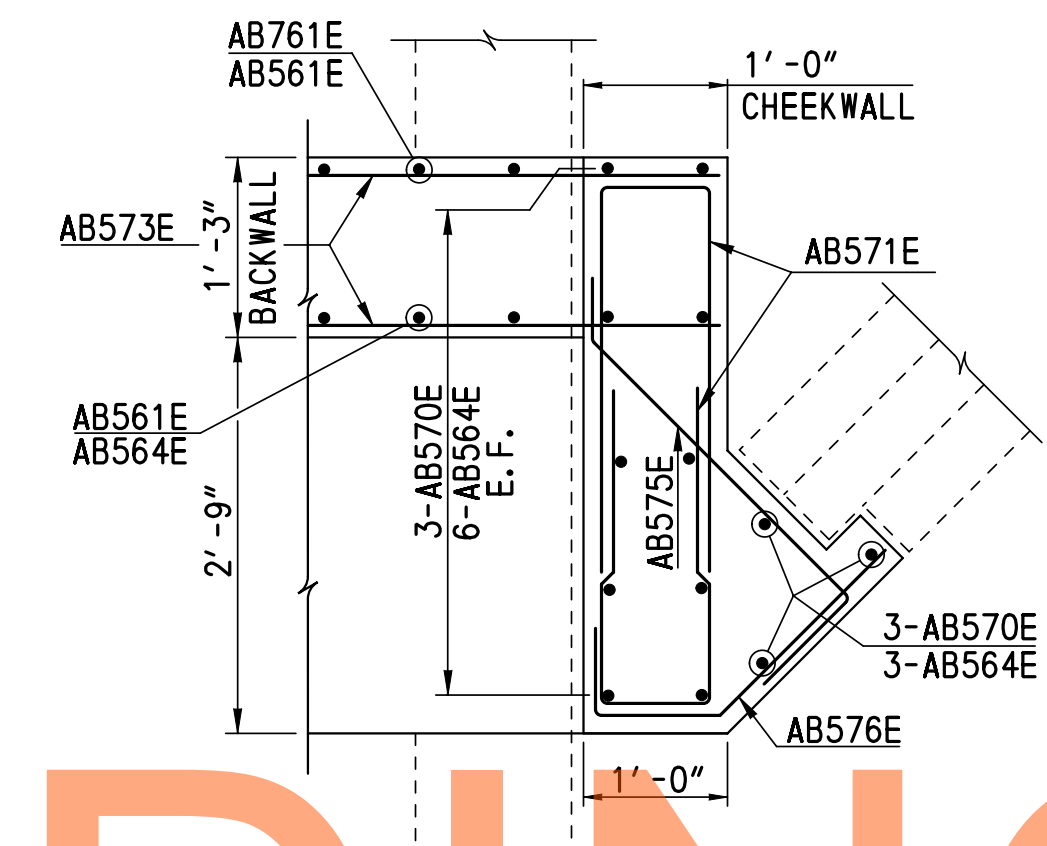


PLAN
TOP AND BOTTOM REINFORCEMENT
SCALE: 3/8"=1'-0"

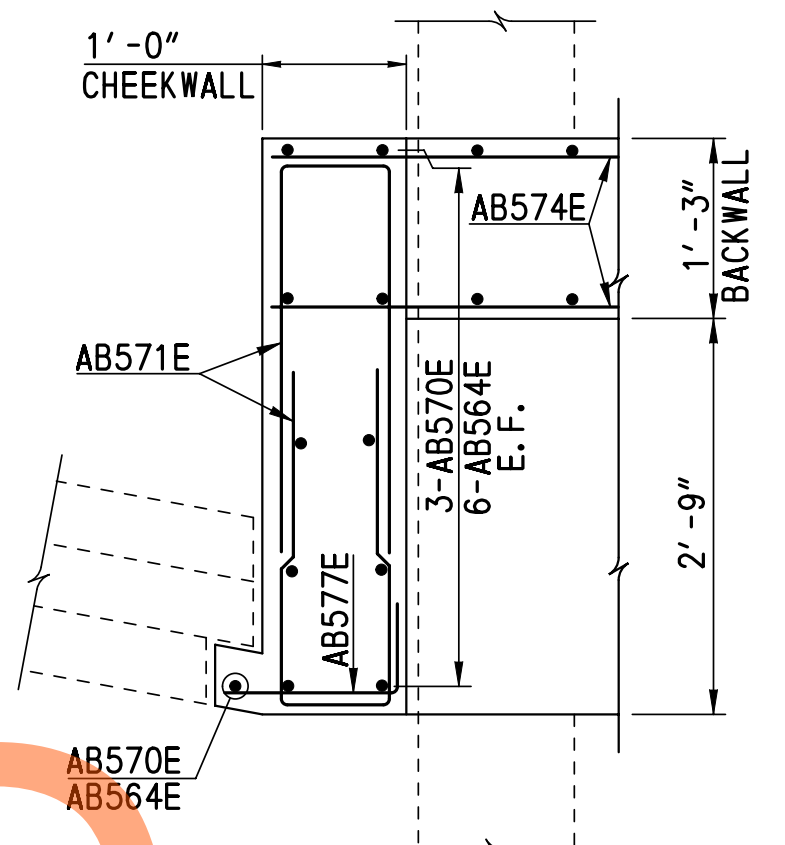


SECTION NB1-NB1
SCALE: 3/4"=1'-0"

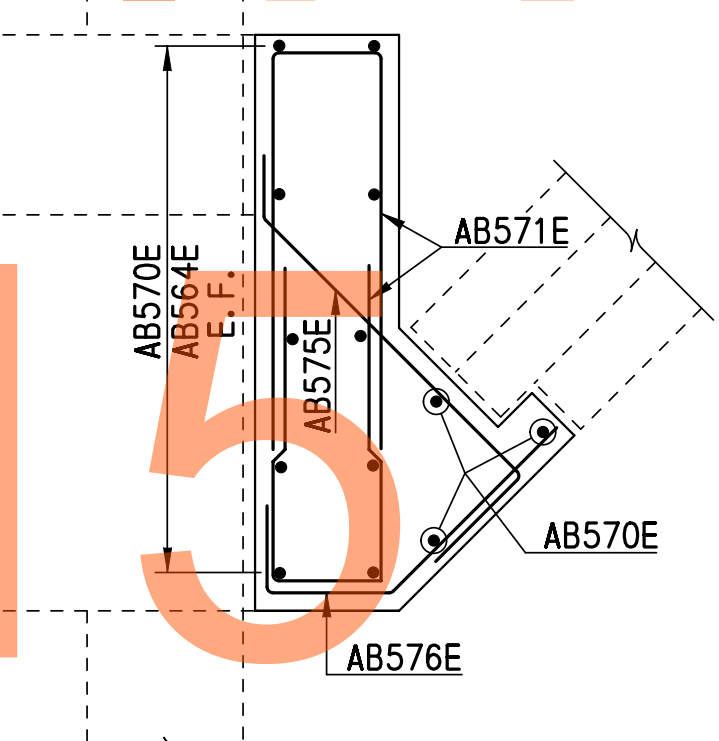
SECTION NB4-NB4
SCALE: 3/4"=1'-0"



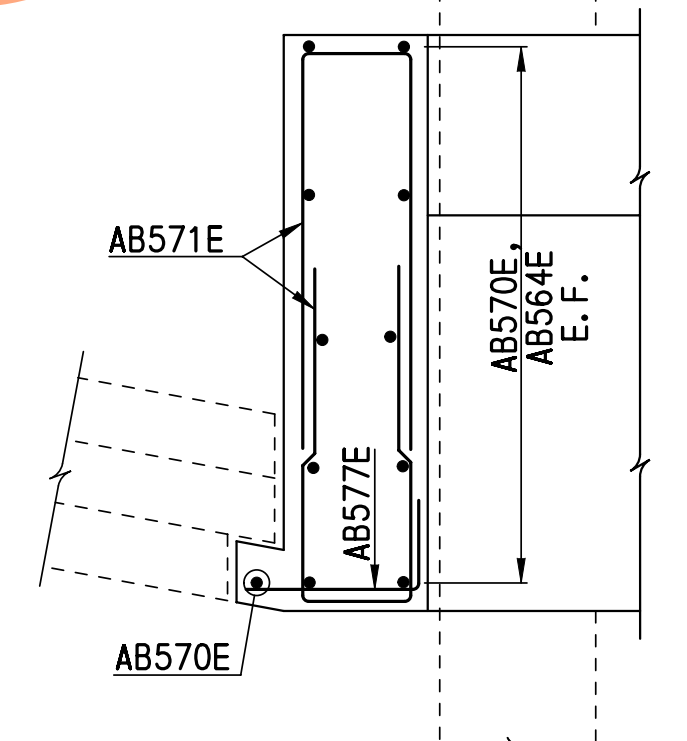
SECTION NB2-NB2
SCALE: 3/4"=1'-0"



SECTION NB5-NB5
SCALE: 3/4"=1'-0"



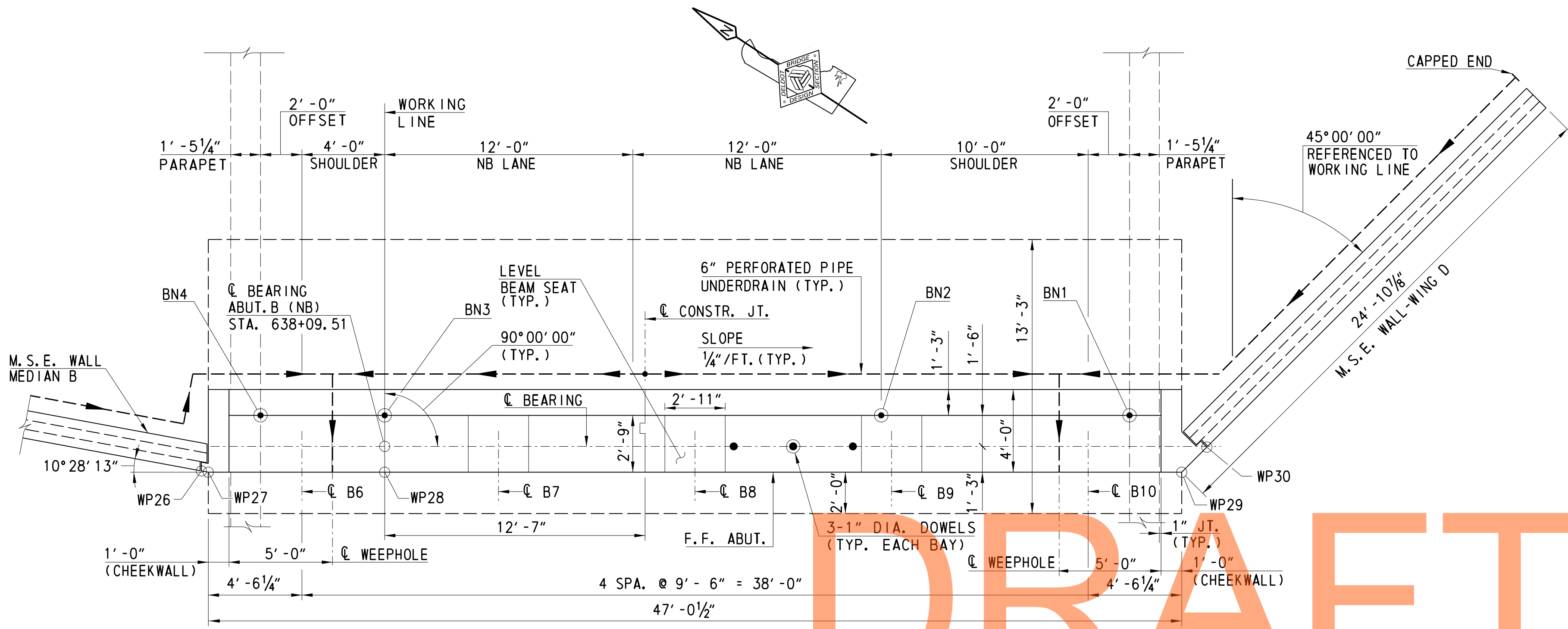
SECTION NB3-NB3
SCALE: 3/4"=1'-0"



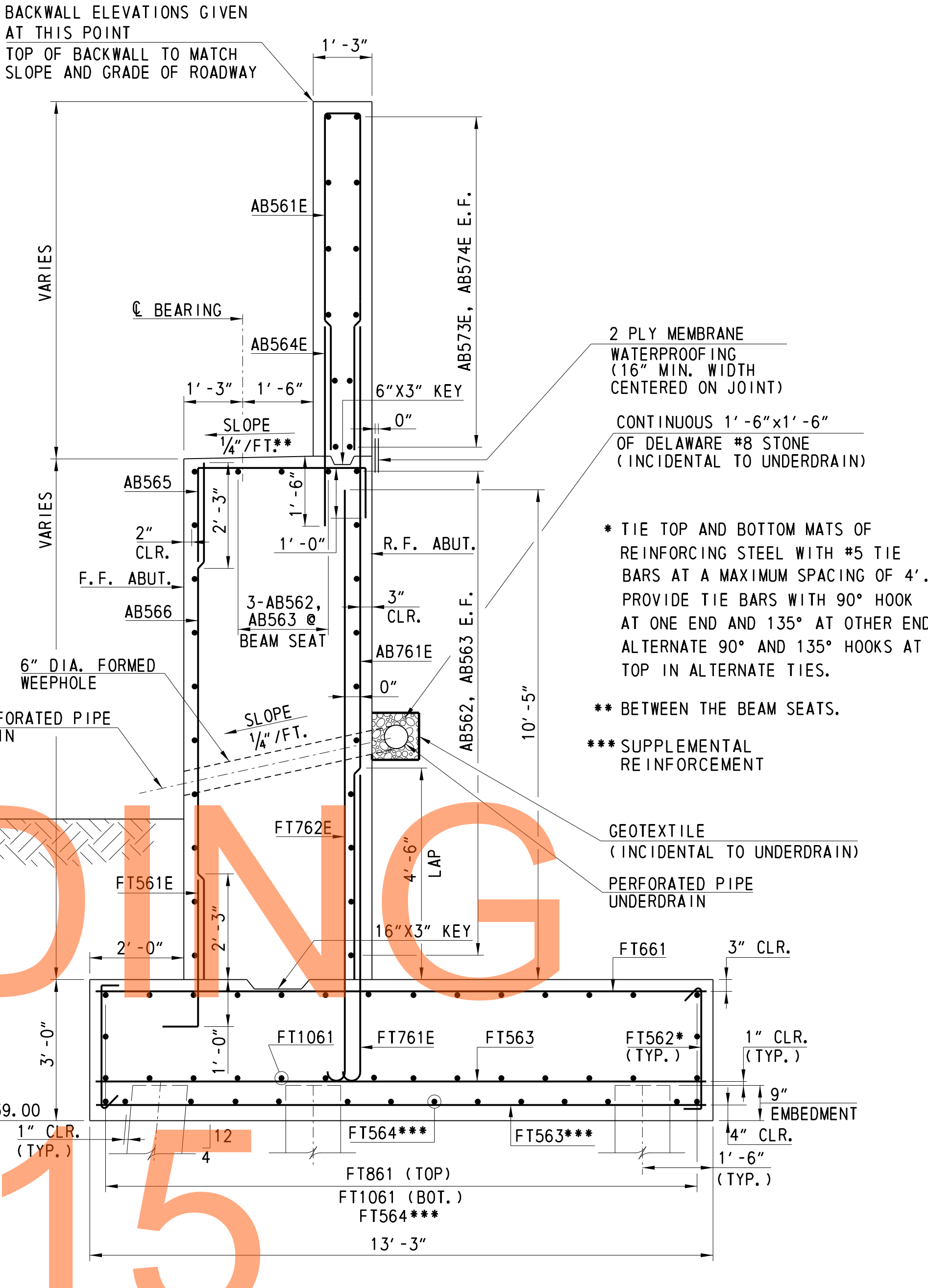
SECTION NB6-NB6
SCALE: 3/4"=1'-0"

- LEGEND:
- ABUT. = ABUTMENT
 - BOT. = BOTTOM
 - CLR. = CLEAR
 - E. F. = EACH FACE
 - E. S. = EQUAL SPACING
 - F. F. = FRONT FACE
 - MAX. = MAXIMUM
 - P/S = PRESTRESSED
 - TYP. = TYPICAL
 - WP = WORK POINT
 - = DENOTES BATTER PILE, 1 HORIZONTAL ON 3 VERTICAL
 - = DENOTES TEST PILE

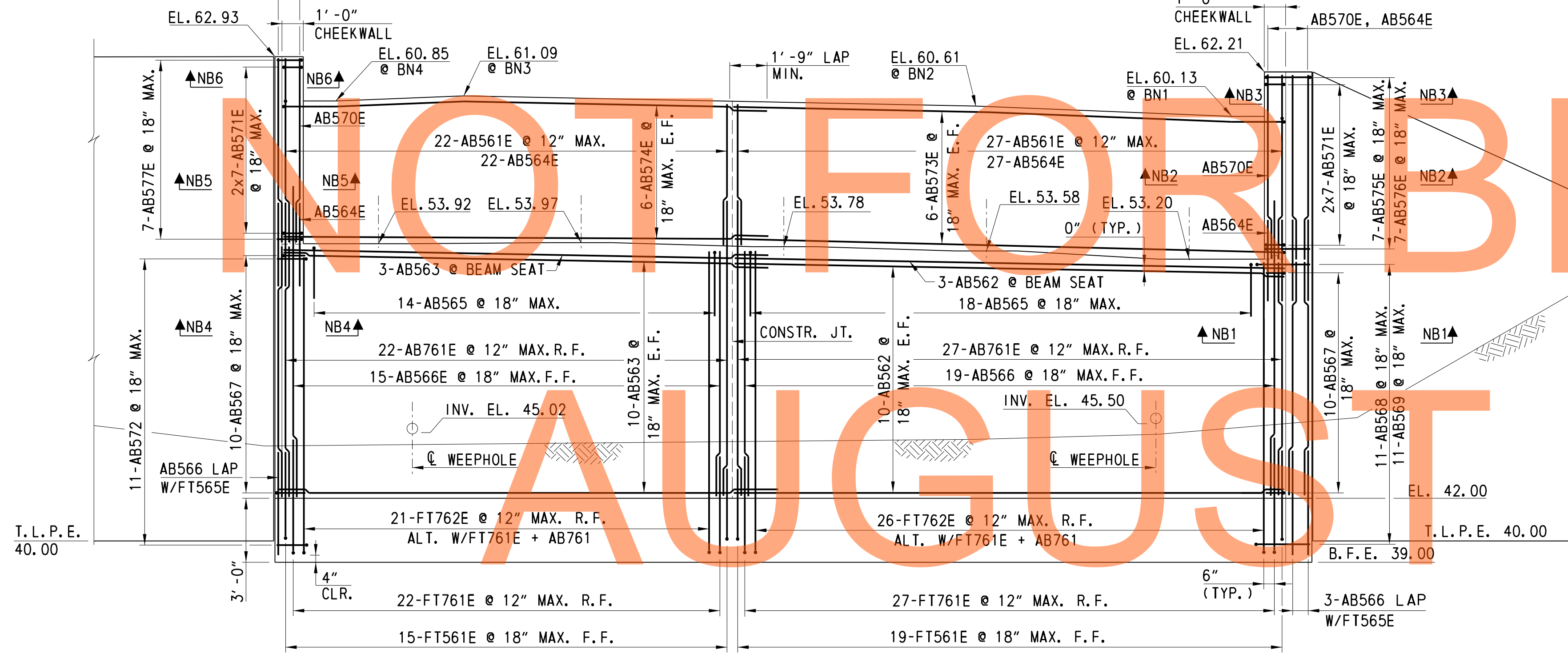
- NOTES:
1. FOR LOCATION OF SECTIONS NB1-NB1 TO NB6-NB6, SEE SHEET 9 OF 40.
 2. FOR REINFORCEMENT BAR LIST, SEE SHEET 10 OF 40.



PLAN
SCALE: 1/4"=1'-0"



TYPICAL SECTION
SCALE: 1/2"=1'-0"



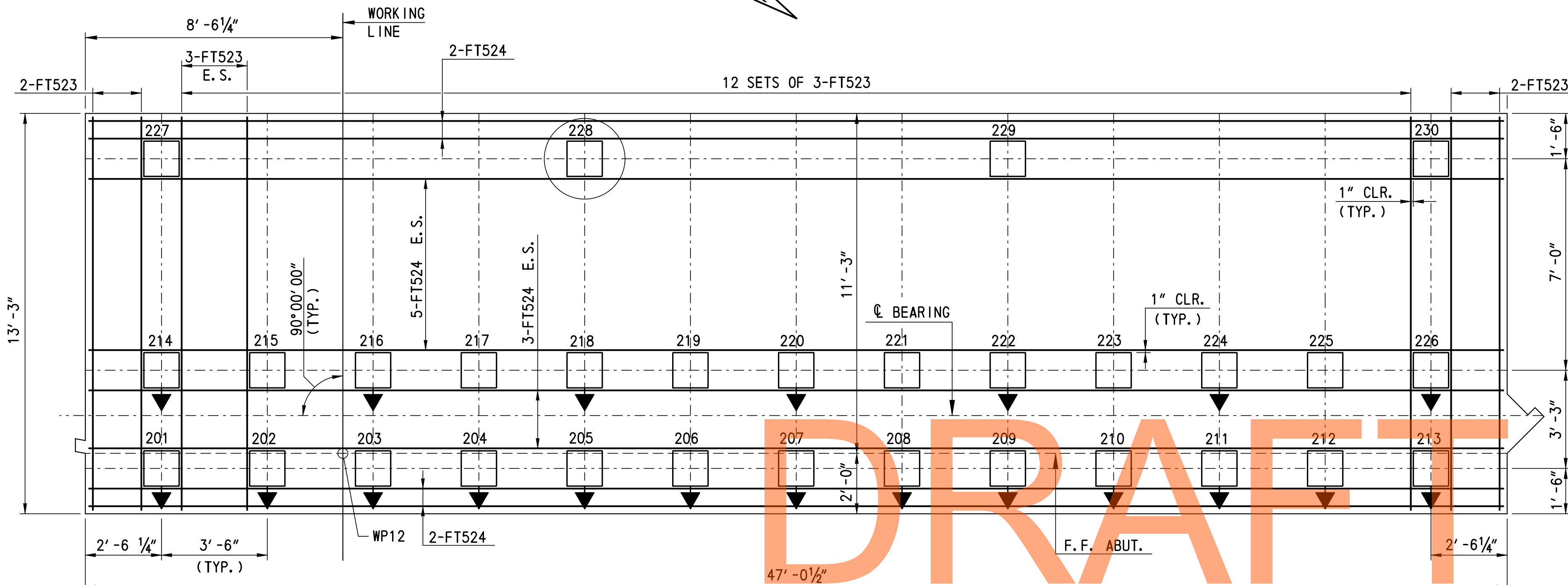
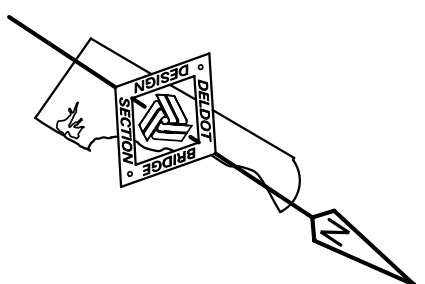
ELEVATION
SCALE: 1/4"=1'-0"

DATUM 30.00

LEGEND:

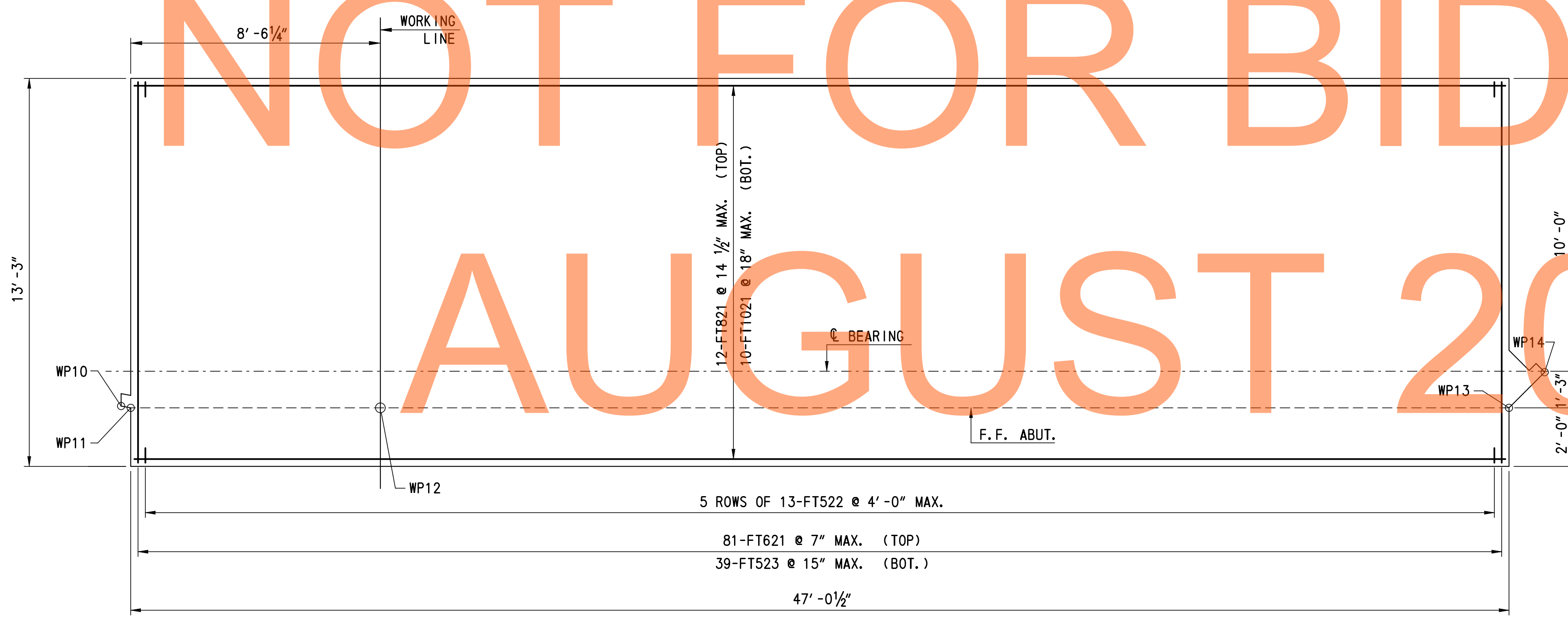
ABUT.	=	ABUTMENT	MAX.	=	MAXIMUM
ALT.	=	ALTERNATE	MIN.	=	MINIMUM
B.F.E.	=	BOTTOM OF FOOTING ELEVATION	M.S.E.	=	MECHANICALLY STABILIZED EARTH
BOT.	=	BOTTOM	NB	=	NORTHBOUND
CIP	=	CAST-IN-PLACE	R.F.	=	REAR FACE
CLR.	=	CLEAR	SPA.	=	SPACES
CONSTR.	=	CONSTRUCTION	STA.	=	STATION
DIA.	=	DIAMETER	TYP.	=	TYPICAL
E.F.	=	EACH FACE	T.L.P.E.	=	TOP OF LEVELING PAD ELEVATION
EL.	=	ELEVATION	W/	=	WITH
F.F.	=	FRONT FACE	WP	=	WORK POINT
FT.	=	FEET			
INV.	=	INVERT			
JT.	=	JOINT			

- NOTES:**
- FOR SECTIONS NB1-NB1 TO NB6-NB6, SEE SHEET 8 OF 40.
 - FOR PILE FOOTING PLAN, SEE SHEET 8 OF 40.
 - FOR REINFORCEMENT BAR LIST, SEE SHEET 10 OF 40.
 - FOR DIAPHRAGM DETAILS, SEE SHEETS 23 AND 24 OF 40.
 - FOR JOINT AND WATER STOP DETAIL, SEE SHEET 4 OF 40.
 - FOR ADDITIONAL 6" PERFORATED PIPE UNDERDRAIN INFORMATION, SEE SHEET 16 OF 40.
 - DOWEL PAYMENT SHALL BE INCIDENTAL TO CONCRETE CONSTRUCTION.
 - SEE DELDOT STANDARD SPECIFICATIONS 824.02 (g) FOR CIP DOWEL MATERIAL REQUIREMENTS. FOR DOWEL DETAILS, SEE SHEET 23 OF 40.
 - MEMBRANE WATERPROOFING SHALL BE INCIDENTAL TO ITEM 602015 - PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT ABOVE FOOTING, CLASS A. SEE SPECIAL PROVISION ITEM 602616 - WATERPROOFING P.C.C. MASONRY SURFACE FOR ADDITIONAL REQUIREMENTS.

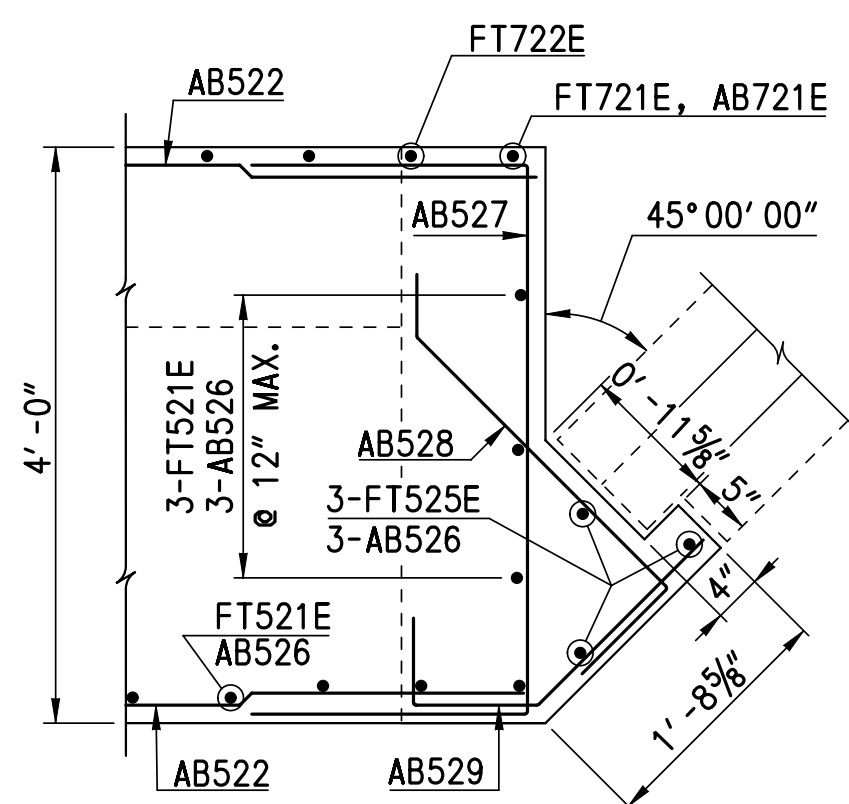


- NOTES:
- 14" SQUARE PRECAST P/S CONCRETE PILE IS RECOMMENDED.
 - ONE TO ONE SUBSTITUTION ALLOWED FOR HP 14X73 STEEL PILE.
 - FOR PILE NOTES AND DETAILS, SEE SHEET 17 OF 40.

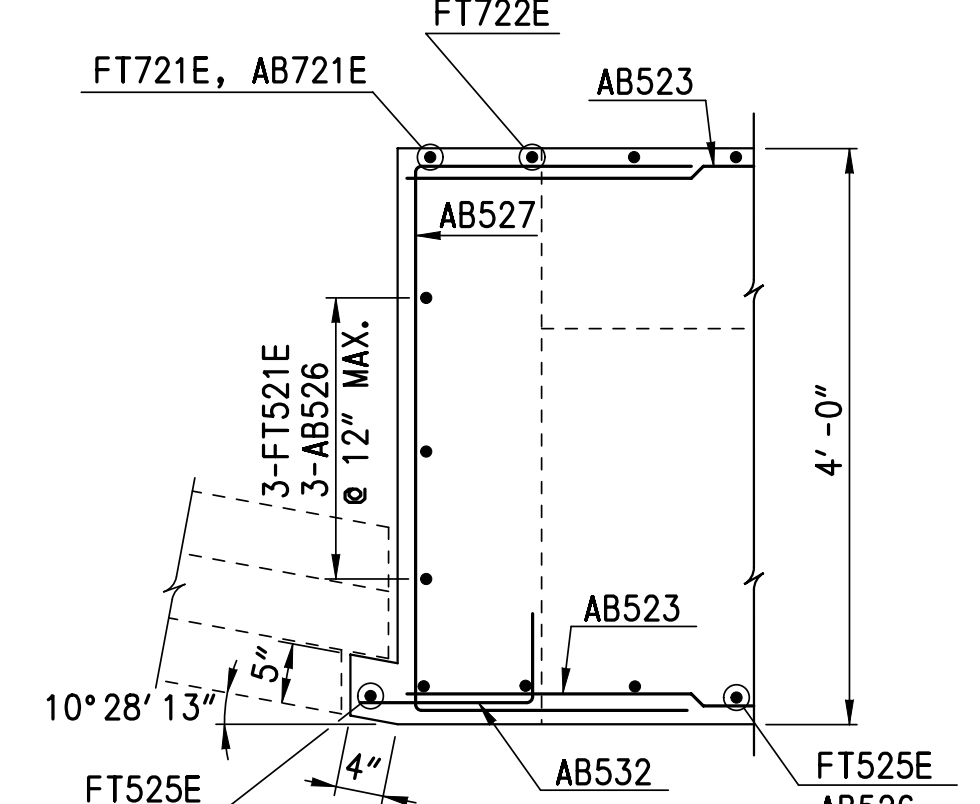
PILE LAYOUT PLAN-WITH SUPPLEMENTAL REINFORCEMENT
SCALE: 3/8"=1'-0"



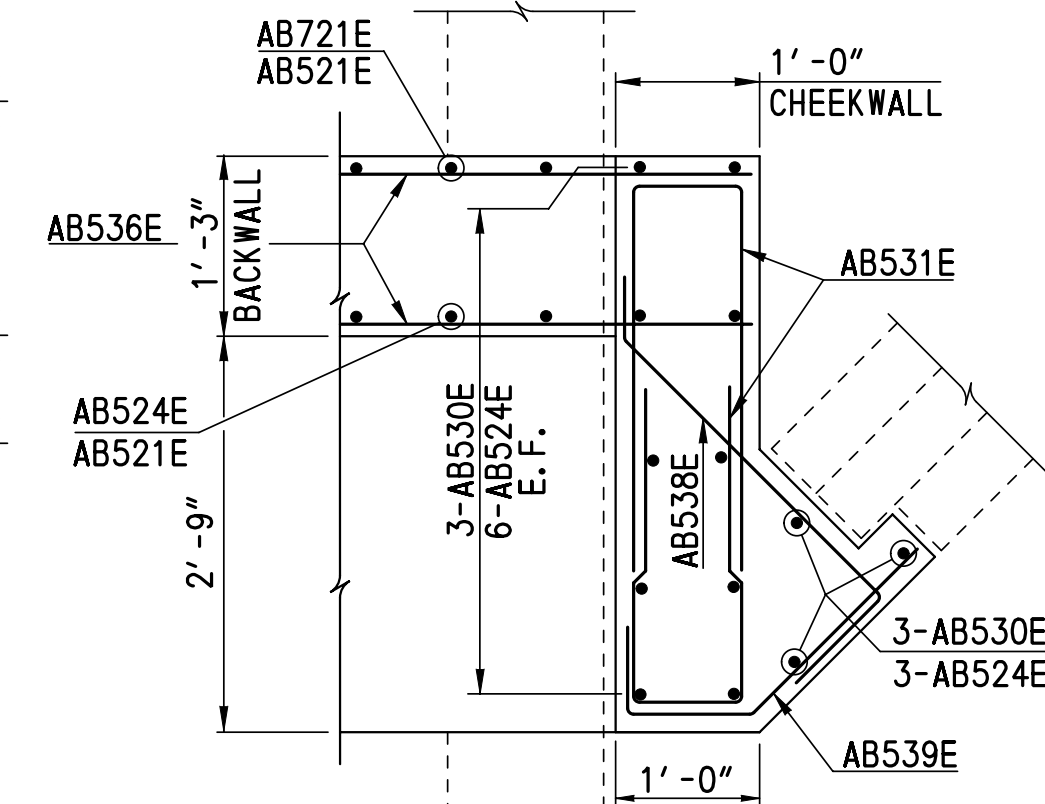
PLAN TOP AND BOTTOM REINFORCEMENT
SCALE: 3/8"=1'-0"



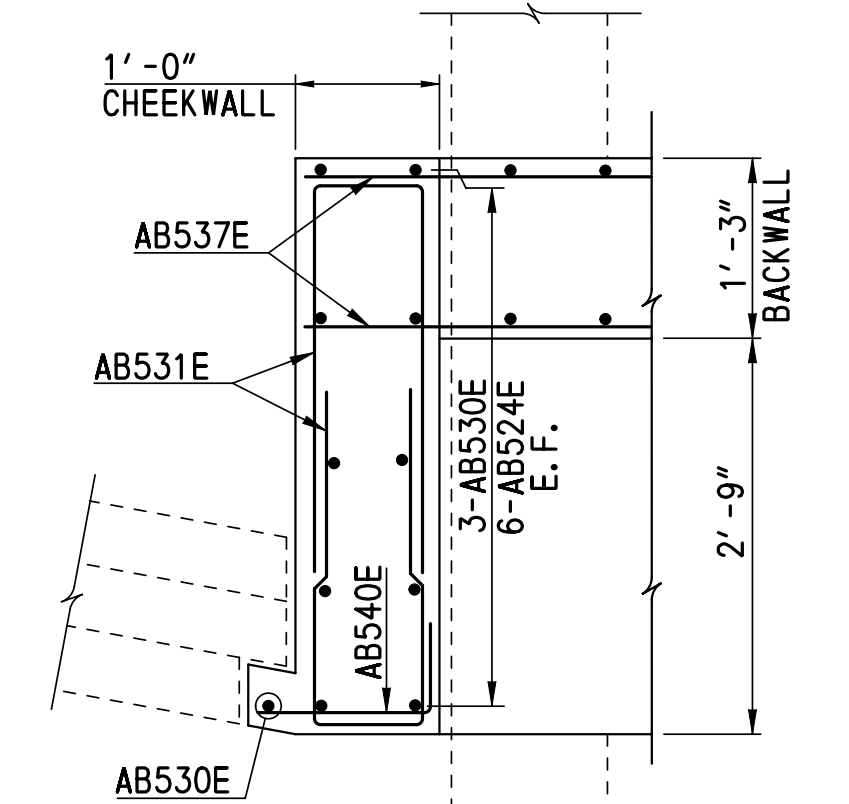
SECTION SA1-SA1
SCALE: 3/4"=1'-0"



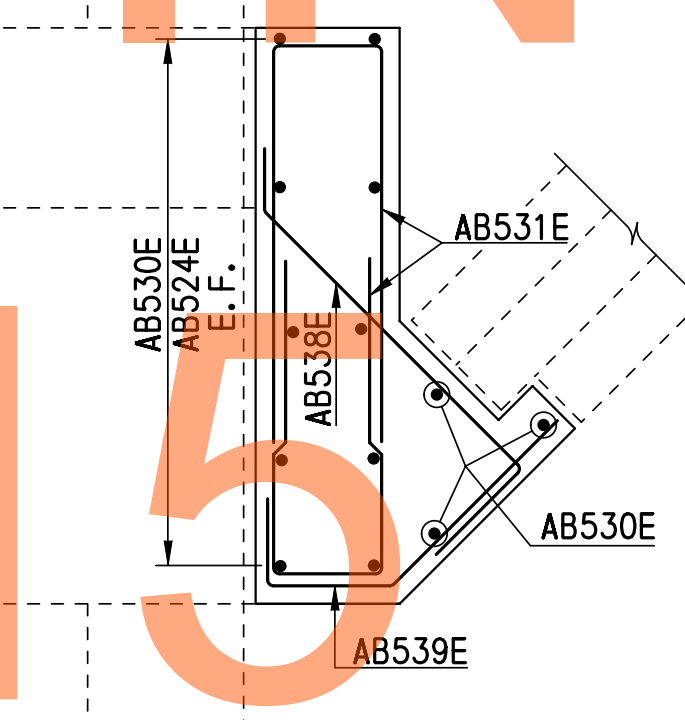
SECTION SA4-SA4
SCALE: 3/4"=1'-0"



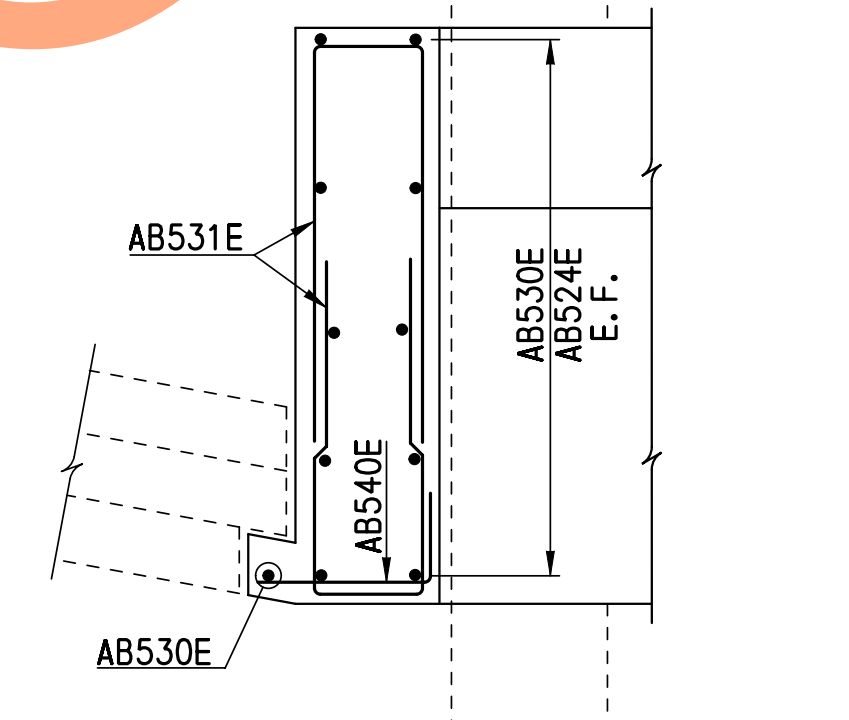
SECTION SA2-SA2
SCALE: 3/4"=1'-0"



SECTION SA5-SA5
SCALE: 3/4"=1'-0"



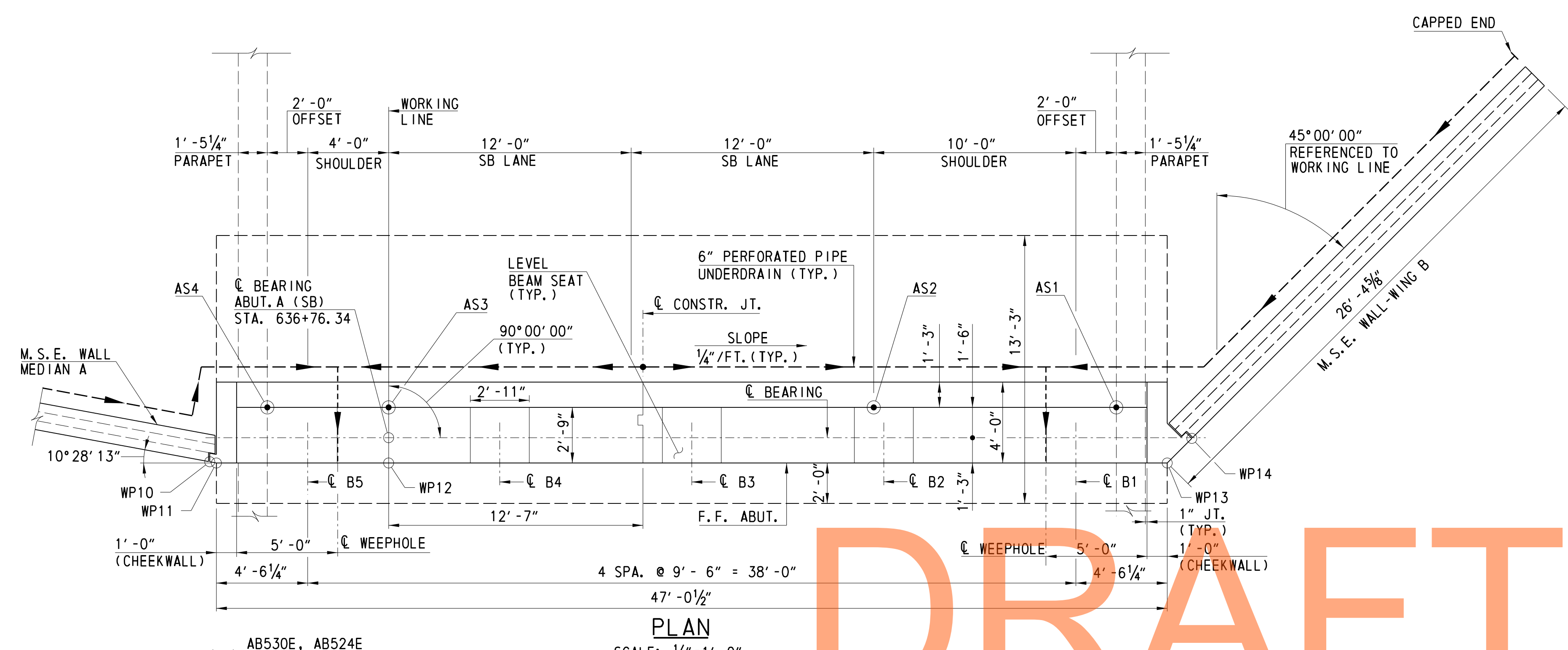
SECTION SA3-SA3
SCALE: 3/4"=1'-0"



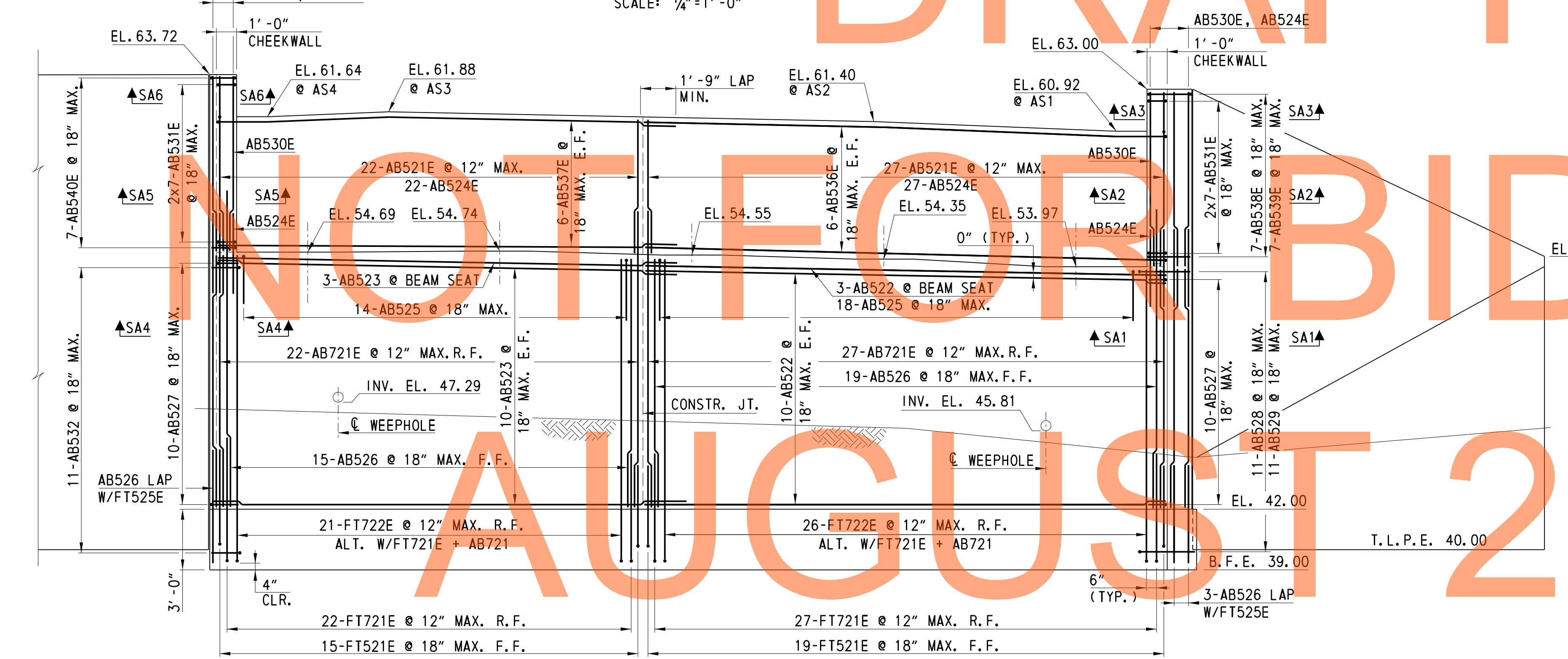
SECTION SA6-SA6
SCALE: 3/4"=1'-0"

- LEGEND:
- ABUT. = ABUTMENT
 - BOT. = BOTTOM
 - CLR. = CLEAR
 - E. F. = EACH FACE
 - E. S. = EQUAL SPACING
 - F. F. = FRONT FACE
 - MAX. = MAXIMUM
 - P/S = PRESTRESSED
 - TYP. = TYPICAL
 - WP = WORK POINT
 - = DENOTES BATTER PILE, 1 HORIZONTAL ON 3 VERTICAL
 - = DENOTES TEST PILE

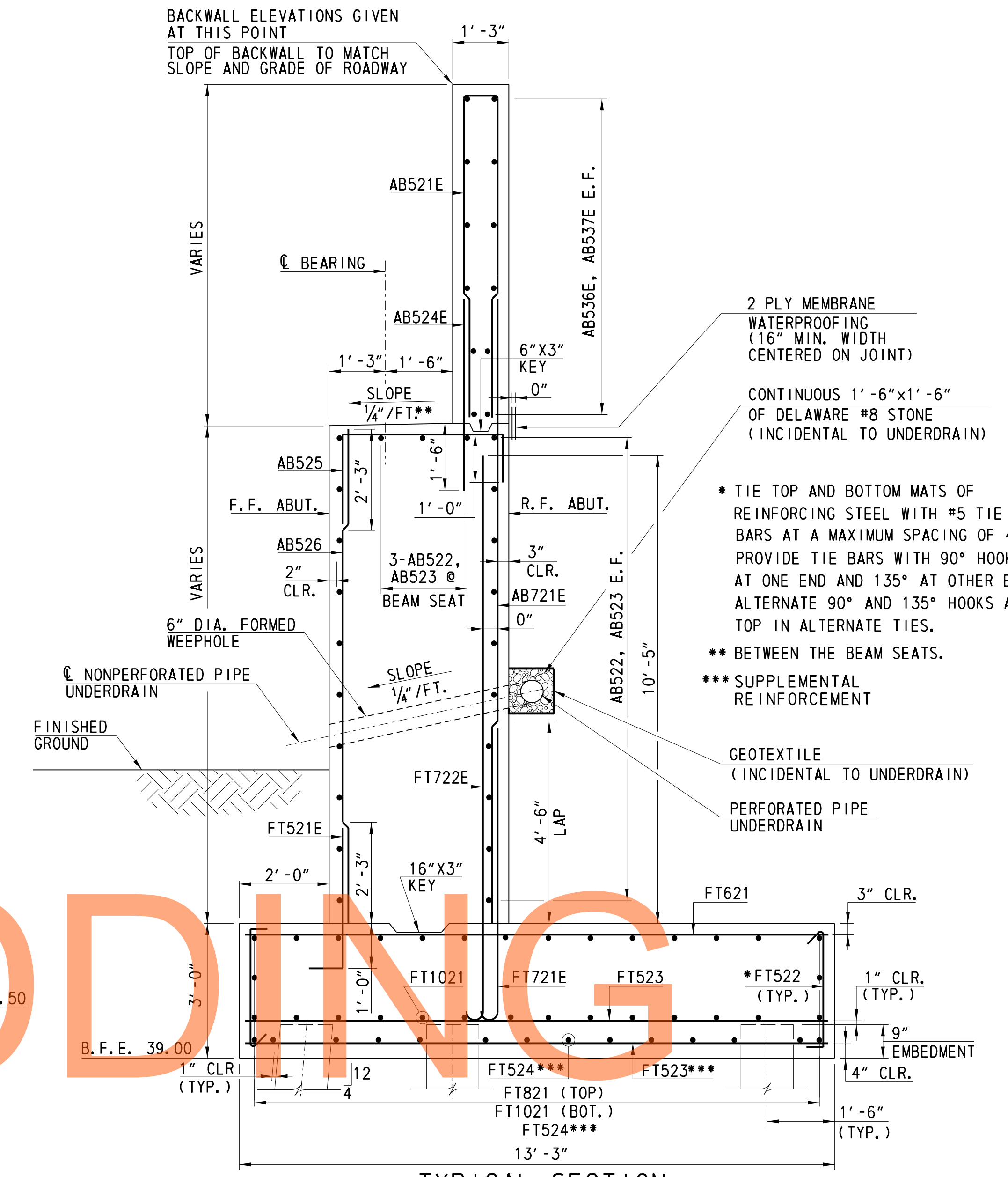
- NOTES:
1. FOR LOCATION OF SECTIONS SA1-SA1 TO SA6-SA6, SEE SHEET 12 OF 40.
 2. FOR REINFORCEMENT BAR LIST, SEE SHEET 15 OF 40.



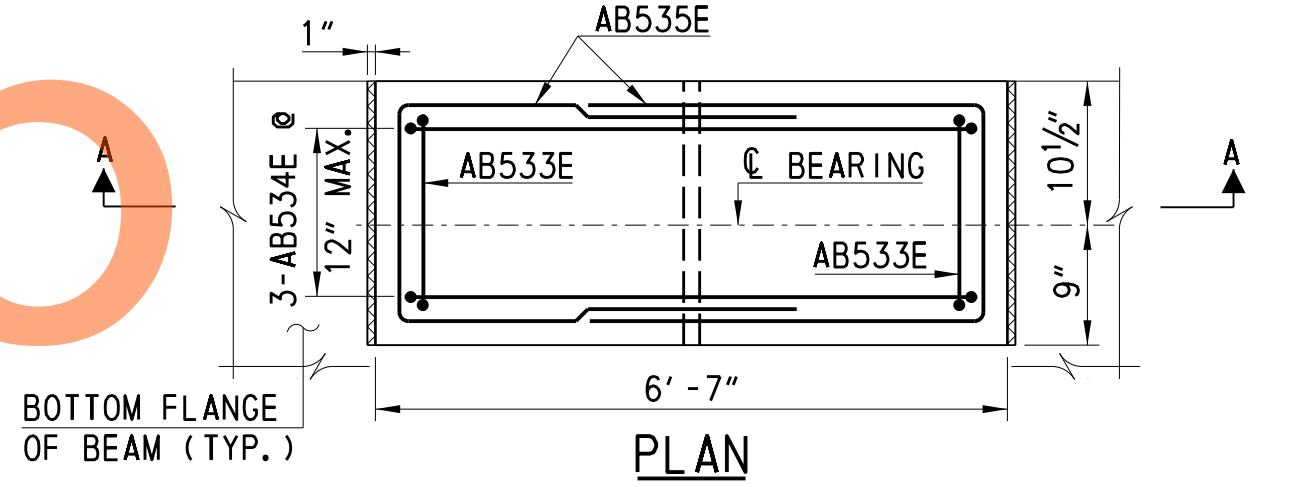
PLAN
SCALE: 1/4" = 1' - 0"



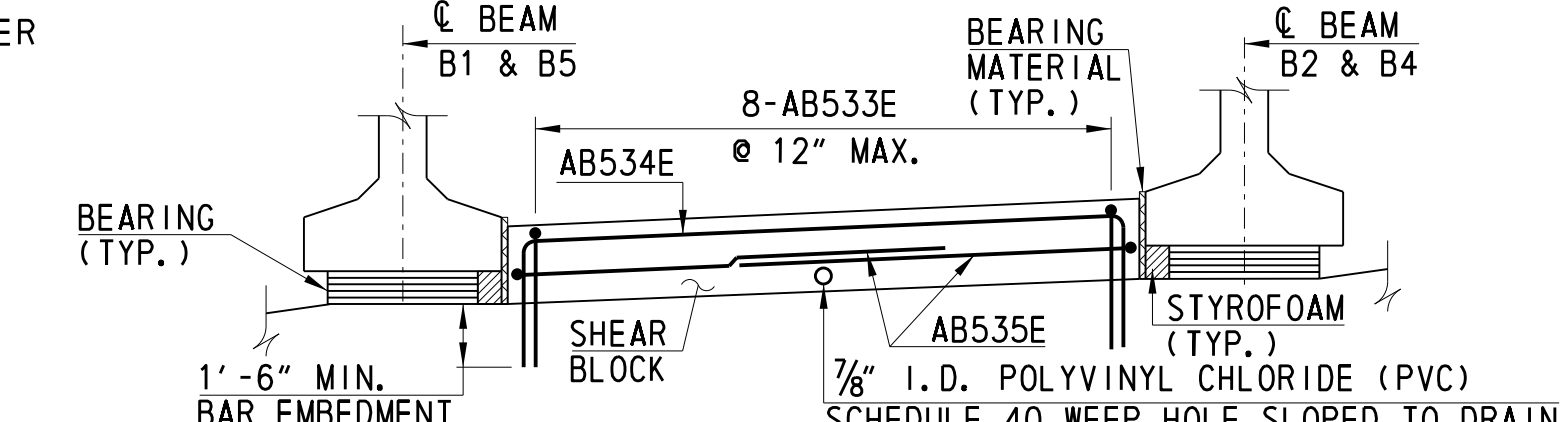
ELEVATION
SCALE: 1/4" = 1' - 0"



TYPICAL SECTION
SCALE: 1/2" = 1' - 0"



PLAN



SECTION A-A
TYPICAL SHEAR BLOCK DETAIL
NOT TO SCALE

- LEGEND:**
- ABUT. = ABUTMENT
 - ALT. = ALTERNATE
 - B.F.E. = BOTTOM OF FOOTING
 - BOT. = BOTTOM
 - CLR. = CLEAR
 - CONSTR. = CONSTRUCTION
 - DIA. = DIAMETER
 - E.F. = EACH FACE
 - EL. = ELEVATION
 - F.F. = FRONT FACE
 - FT. = FEET
 - I.D. = INSIDE DIAMETER
 - INV. = INVERT
 - JT. = JOINT
 - MAX. = MAXIMUM
 - MIN. = MINIMUM
 - M.S.E. = MECHANICALLY STABILIZED EARTH
 - NB = NORTHBOUND
 - R.F. = REAR FACE
 - SPA. = SPACES
 - STA. = STATION
 - TYP. = TYPICAL
 - T.L.P.E. = TOP OF LEVELING PAD ELEVATION
 - W/ = WITH
 - WP = WORK POINT

- NOTES:**
1. FOR SECTIONS SA1-SA1 TO SA6-SA6, SEE SHEET 11 OF 40.
 2. FOR PILE FOOTING PLAN, SEE SHEET 11 OF 40.
 3. FOR REINFORCEMENT BAR LIST, SEE SHEET 15 OF 40.
 4. FOR JOINT AND WATER STOP DETAIL, SEE SHEET 4 OF 40.
 5. FOR ADDITIONAL 6" PERFORATED PIPE UNDERDRAIN INFORMATION, SEE SHEET 16 OF 40.
 6. STYROFOAM AND P.V.C. SCHEDULE 40 WEEP HOLE PAYMENT SHALL BE INCIDENTAL TO CONCRETE CONSTRUCTION.
 7. BEARING MATERIAL SHALL BE NEOPRENE WITH A DUROMETER OF 50±5. PAYMENT SHALL BE INCIDENTAL TO CONCRETE CONSTRUCTION.
 8. MEMBRANE WATERPROOFING SHALL BE INCIDENTAL TO ITEM 602015 - PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT ABOVE FOOTING, CLASS A. SEE SPECIAL PROVISION ITEM 602616 - WATERPROOFING P.C.C. MASONRY SURFACES FOR ADDITIONAL REQUIREMENTS.

DATUM 30.00



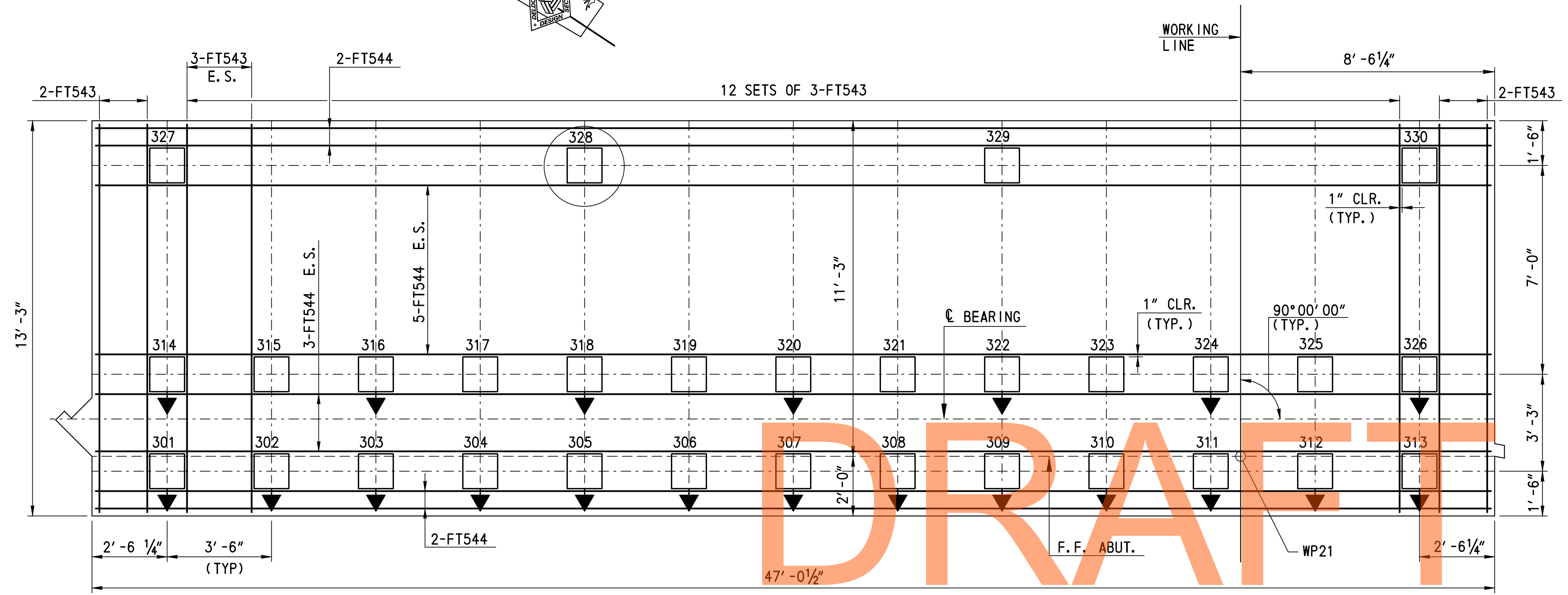
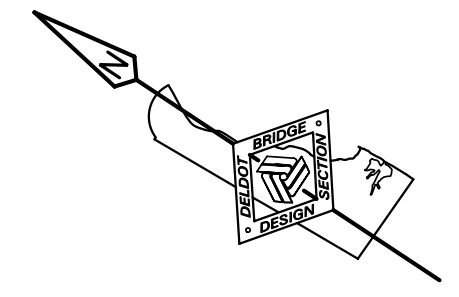
ADDENDUMS / REVISIONS	

SCALE: AS NOTED

US 301,
NORFOLK SOUTHERN RR TO SR 896

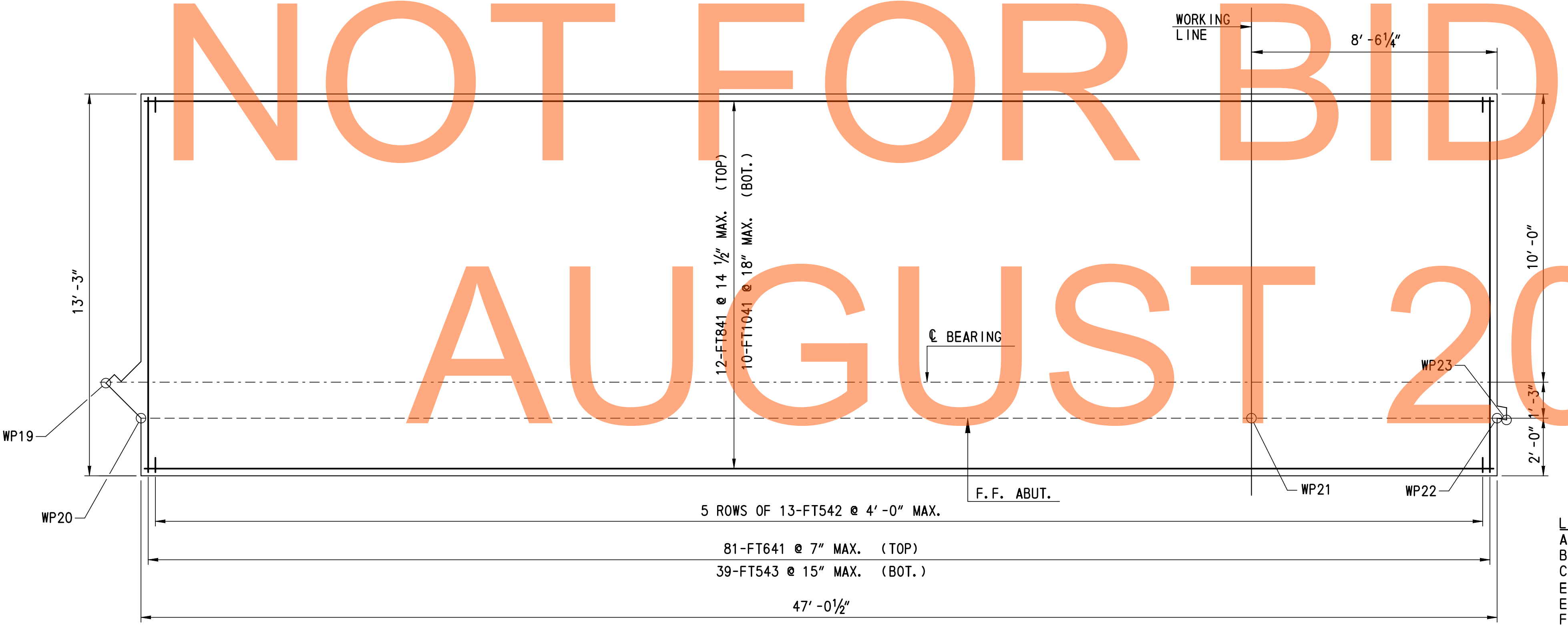
CONTRACT T200911301	BRIDGE NO. 1-467 N&S
COUNTY NEW CASTLE	DESIGNED BY: ZAA
	CHECKED BY: AKW/MDM

SHEET 12 OF 40		BR1-467AB-03
DEPARTMENT OF TRANSPORTATION		SHEET NO. 96
ABUTMENT A (SB) PLAN, ELEVATION AND SECTION		TOTAL SHTS. 240

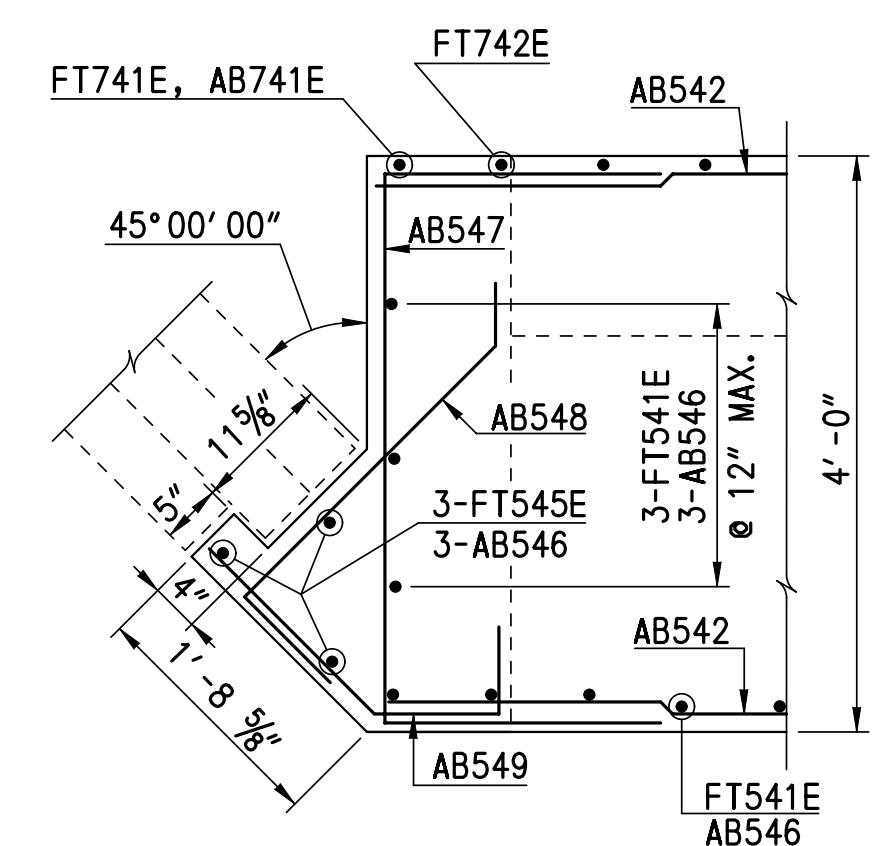


PILE LAYOUT PLAN-WITH SUPPLEMENTAL REINFORCEMENT
SCALE: 3/8"=1'-0"

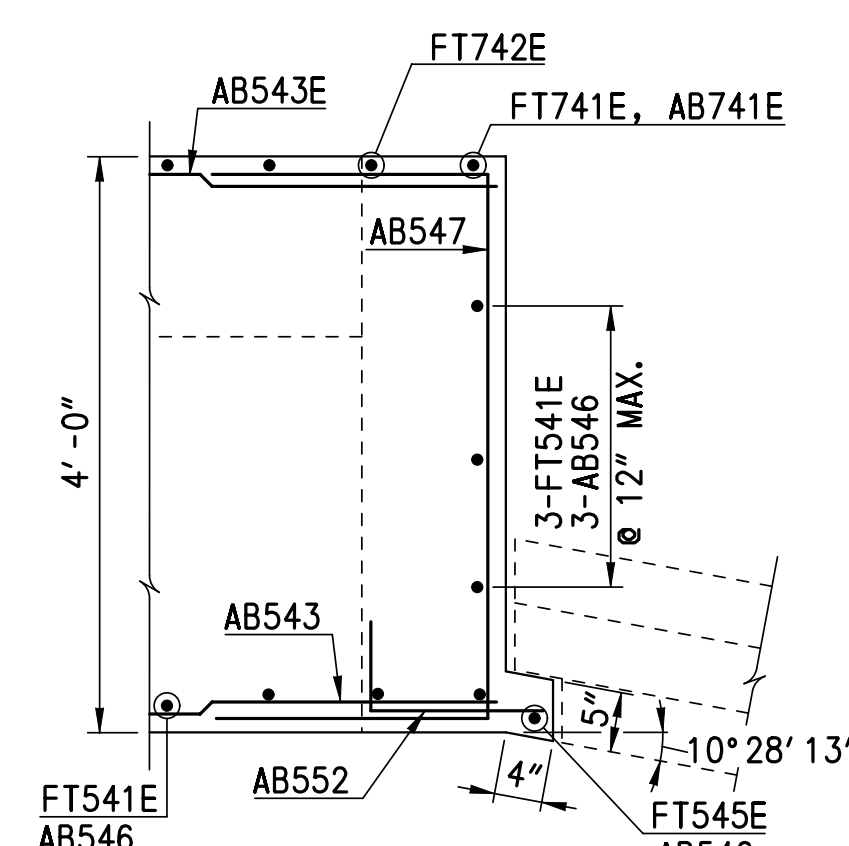
- NOTES:**
- 14" SQUARE PRECAST P/S CONCRETE PILE IS RECOMMENDED.
 - ONE TO ONE SUBSTITUTION ALLOWED FOR HP 14X73 STEEL PILE.
 - FOR PILE NOTES AND DETAILS, SEE SHEET 17 OF 40.



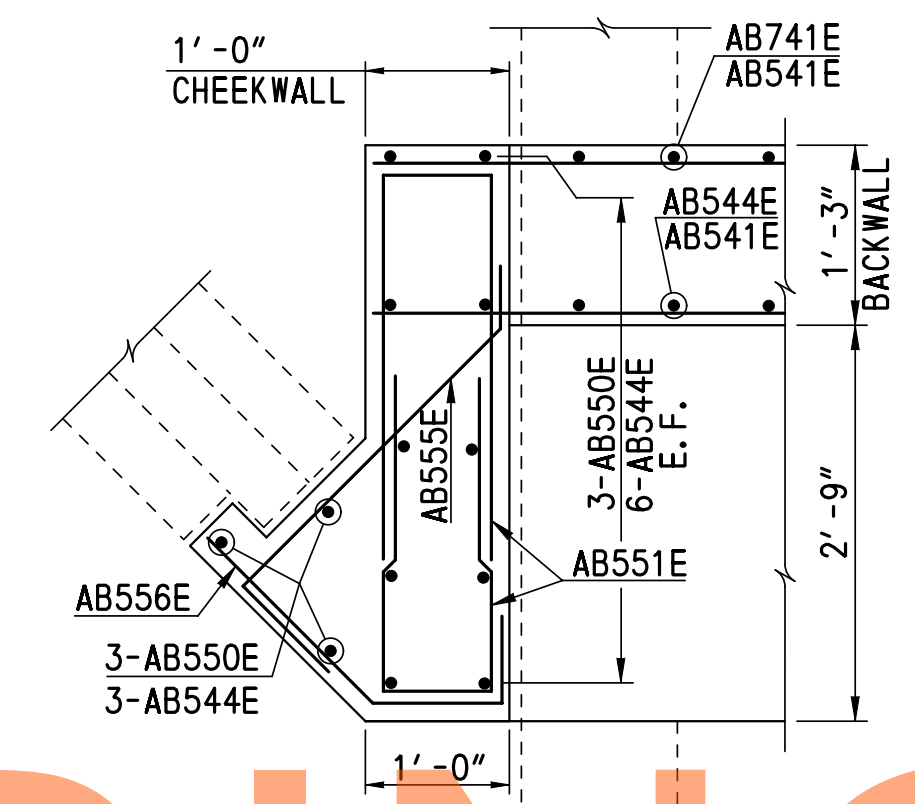
PLAN TOP AND BOTTOM REINFORCEMENT
SCALE: 3/8"=1'-0"



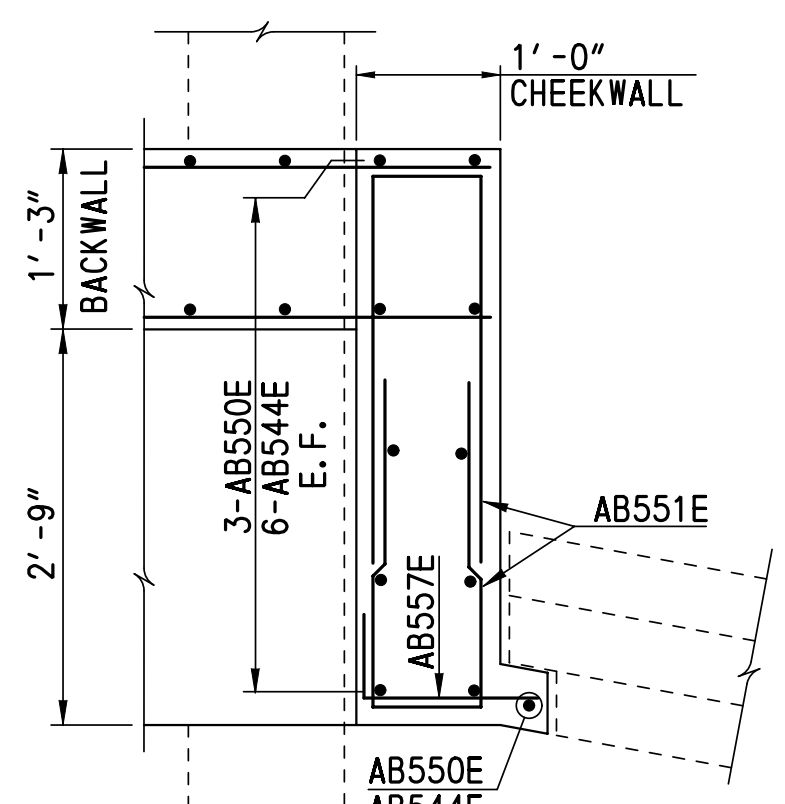
SECTION SB1-SB1
SCALE: 3/4"=1'-0"



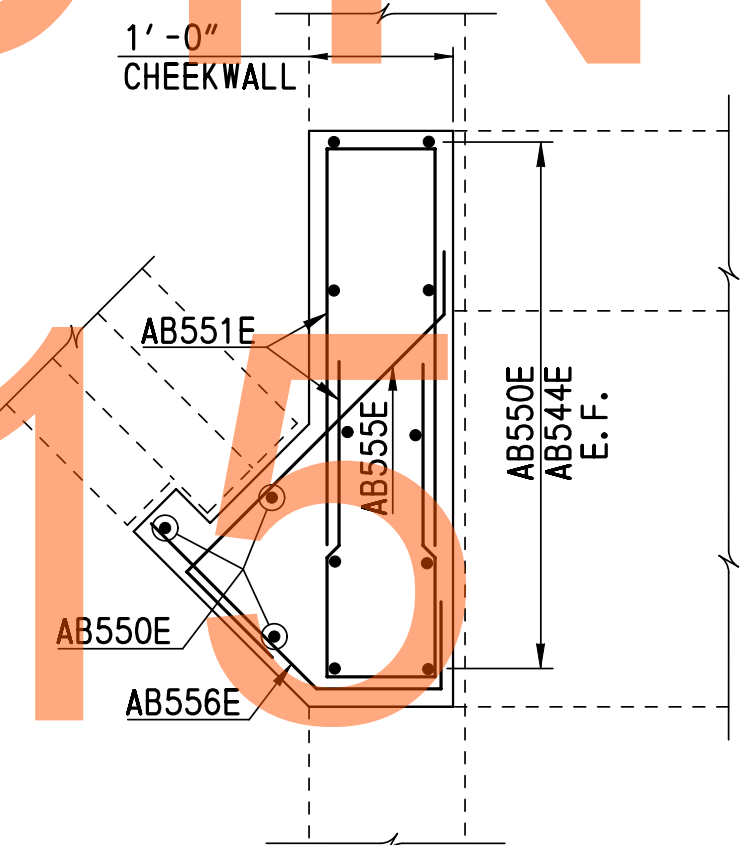
SECTION SB4-SB4
SCALE: 3/4"=1'-0"



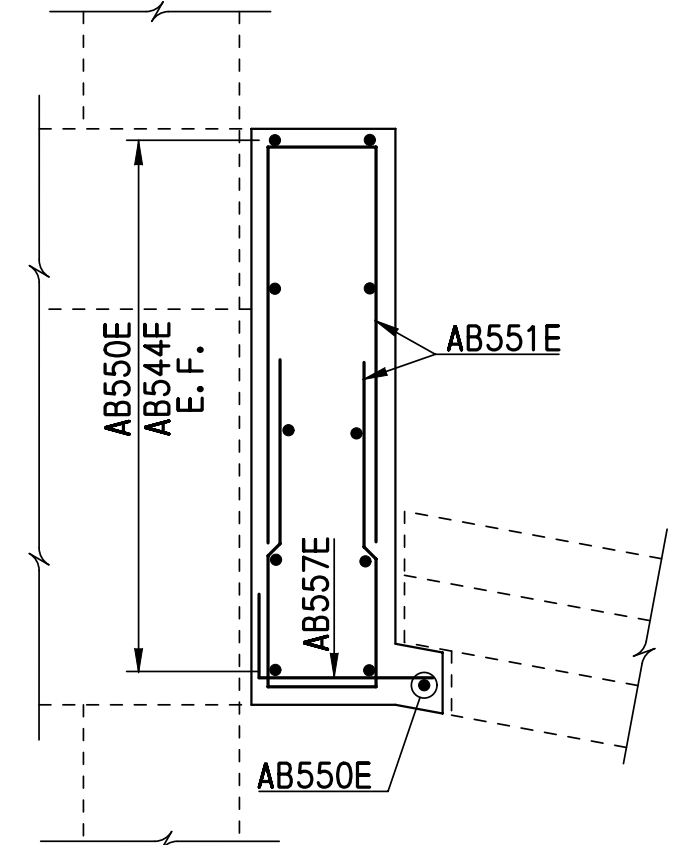
SECTION SB2-SB2
SCALE: 3/4"=1'-0"



SECTION SB5-SB5
SCALE: 3/4"=1'-0"



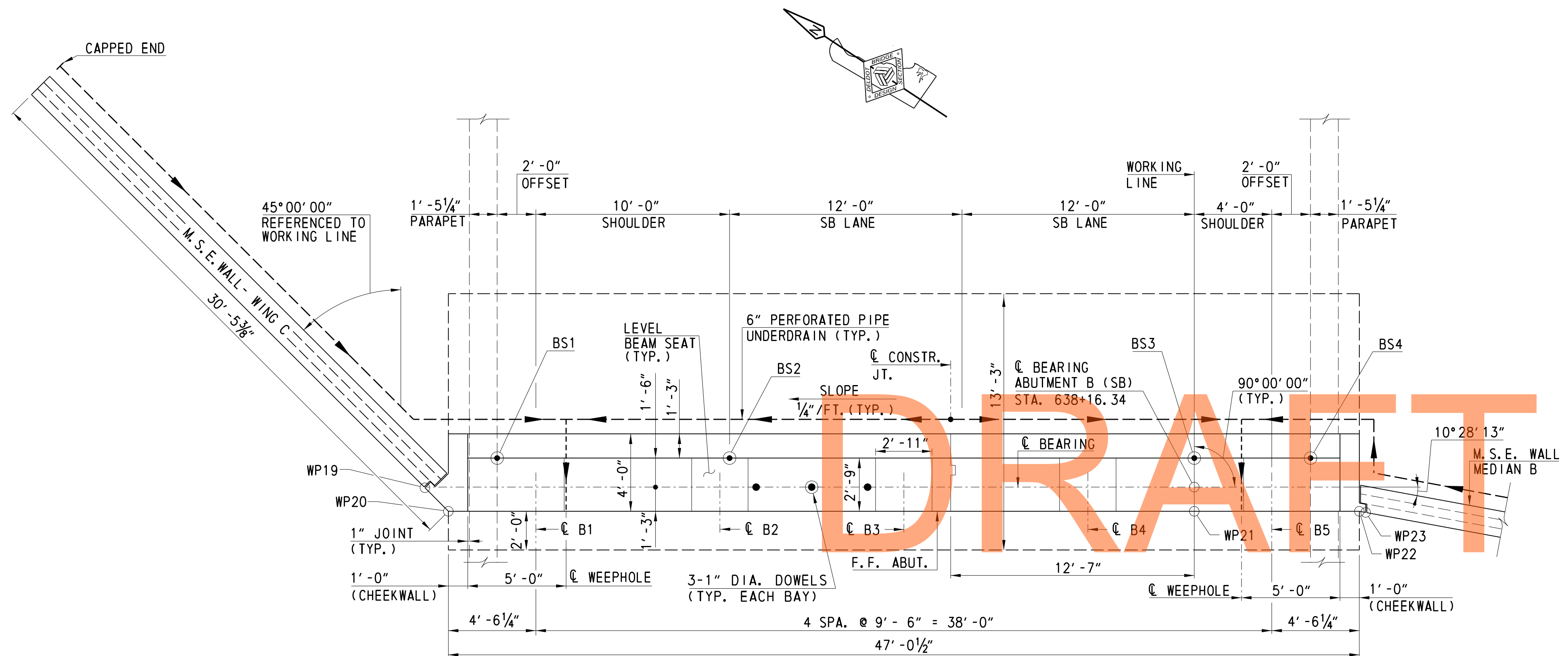
SECTION SB3-SB3
SCALE: 3/4"=1'-0"



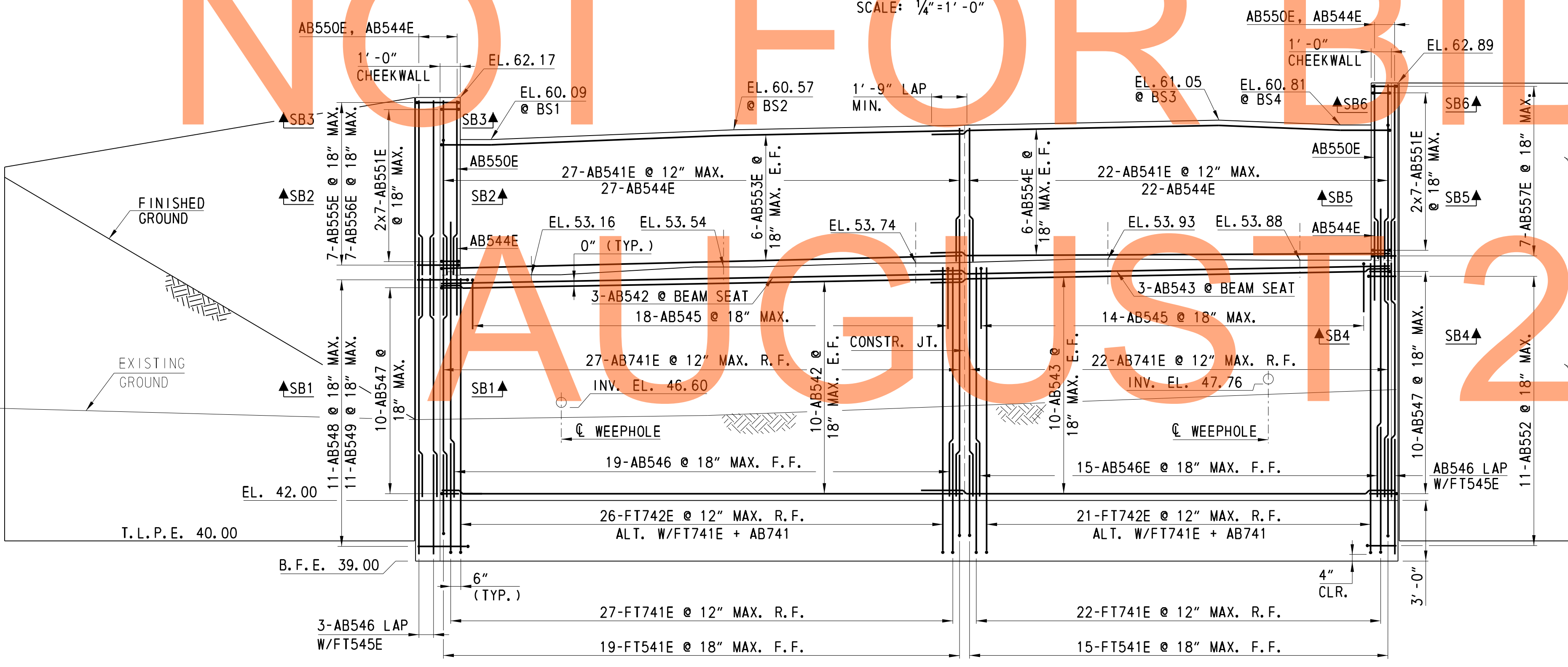
SECTION SB6-SB6
SCALE: 3/4"=1'-0"

- LEGEND:**
- ABUT. = ABUTMENT
 - BOT. = BOTTOM
 - CLR. = CLEAR
 - E. F. = EACH FACE
 - E. S. = EQUAL SPACING
 - F. F. = FRONT FACE
 - MAX. = MAXIMUM
 - P/S = PRESTRESSED
 - TYP. = TYPICAL
 - WP = WORK POINT
 - = DENOTES BATTER PILE, 1 HORIZONTAL ON 3 VERTICAL
 - = DENOTES TEST PILE

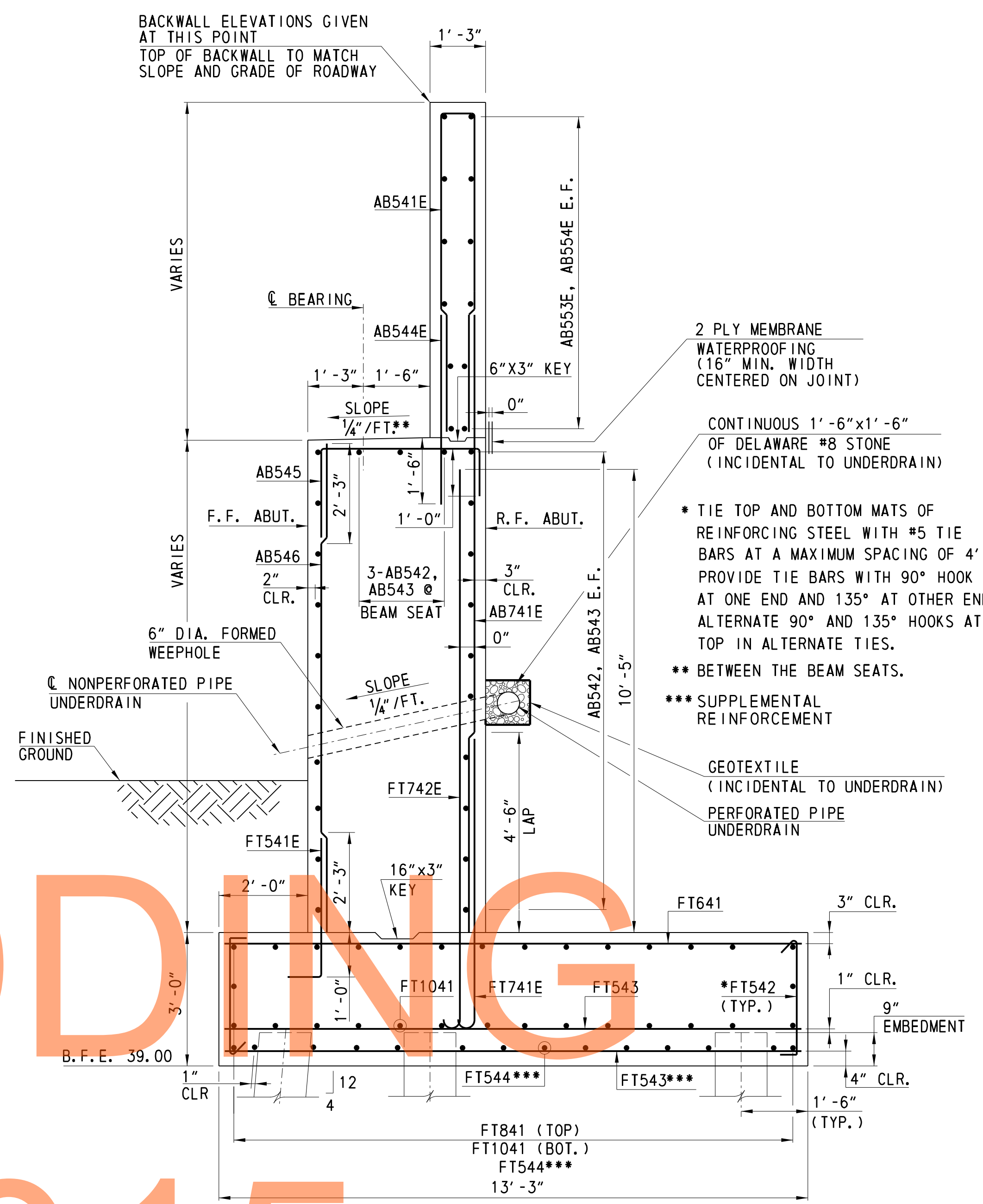
- NOTES:**
1. FOR LOCATION OF SECTIONS SB1-SB1 TO SB6-SB6, SEE SHEET 14 OF 40.
 2. FOR REINFORCEMENT BAR LIST, SEE SHEET 15 OF 40.



PLAN
SCALE: 1/4" = 1'-0"



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



TYPICAL SECTION
SCALE: 1/2" = 1'-0"

- LEGEND:**
- ABUT. = ABUTMENT
 - ALT. = ALTERNATE
 - B. F. E. = BOTTOM OF FOOTING
 - ELEVATION = ELEVATION
 - BOT. = BOTTOM
 - CIP = CAST-IN-PLACE
 - CLR. = CLEAR
 - CONSTR. = CONSTRUCTION
 - DIA. = DIAMETER
 - E. F. = EACH FACE
 - E.L. = ELEVATION
 - F. F. = FRONT FACE
 - FT. = FEET
 - INV. = INVERT
 - JT. = JOINT
 - MAX. = MAXIMUM
 - MIN. = MINIMUM
 - M. S. E. = MECHANICALLY STABILIZED EARTH
 - NB = NORTHBOUND
 - R. F. = REAR FACE
 - SPA. = SPACES
 - STA. = STATION
 - TYP. = TYPICAL
 - T. L. P. E. = TOP OF LEVELING PAD ELEVATION
 - W/ = WITH
 - WP = WORK POINT

- NOTES:**
1. FOR SECTIONS SB1-SB1 TO SB6-SB6, SEE SHEET 13 OF 40.
 2. FOR PILE FOOTING PLAN, SEE SHEET 13 OF 40.
 3. FOR REINFORCEMENT BAR LIST, SEE SHEET 15 OF 40.
 4. FOR DIAPHRAGM DETAILS, SEE SHEETS 30 AND 31 OF 40.
 5. FOR JOINT AND WATER STOP DETAIL, SEE SHEET 4 OF 40.
 6. FOR ADDITIONAL 6" PERFORATED PIPE UNDERDRAIN INFORMATION, SEE SHEET 16 OF 40.
 7. DOWEL PAYMENT SHALL BE INCIDENTAL TO CONCRETE CONSTRUCTION.
 8. SEE DELDOT STANDARD SPECIFICATIONS 824.02 (g) FOR CIP DOWEL MATERIAL REQUIREMENTS. FOR DOWEL DETAILS, SEE SHEET 30 OF 40.
 9. MEMBRANE WATERPROOFING SHALL BE INCIDENTAL TO ITEM 602015 - PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT ABOVE FOOTING, CLASS A. SEE SPECIAL PROVISION ITEM 602616 - WATERPROOFING P. C. C. MASONRY SURFACE FOR ADDITIONAL REQUIREMENTS.

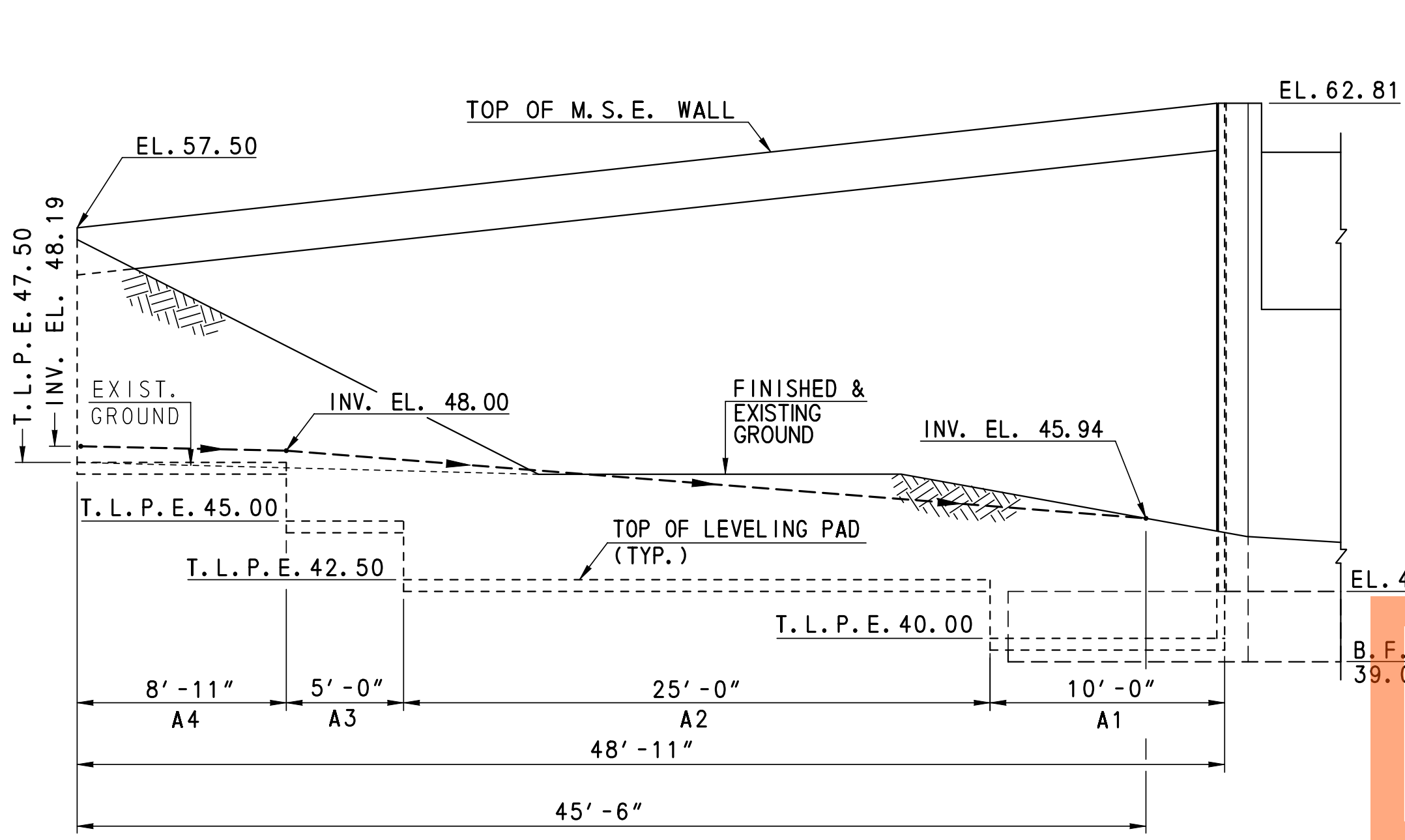
DATUM 30.00

ADDENDUMS / REVISIONS

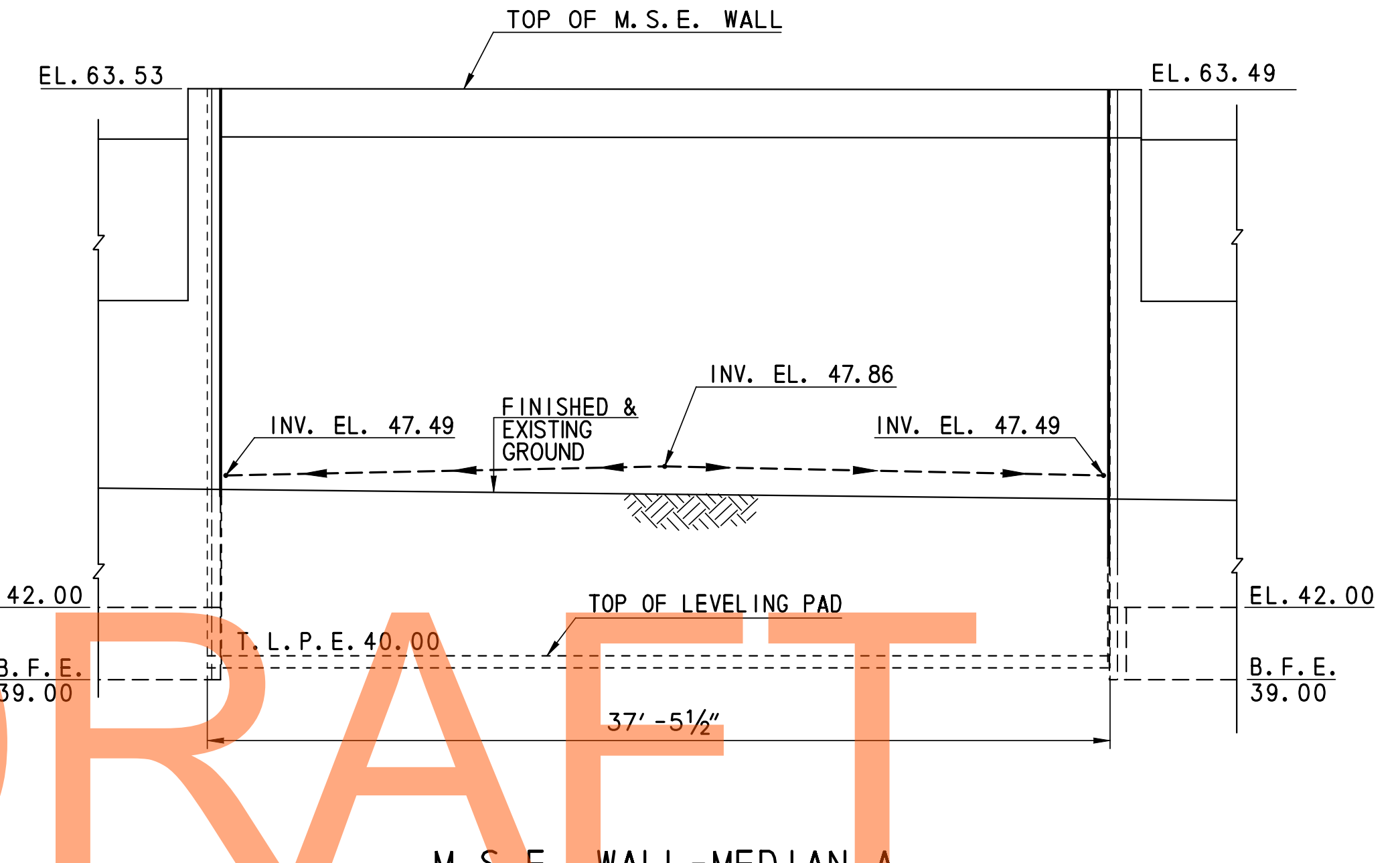
SCALE: AS NOTED

CONTRACT T200911301	BRIDGE NO. 1-467 N&S
COUNTY NEW CASTLE	DESIGNED BY: ZAA
	CHECKED BY: AKW/MDM

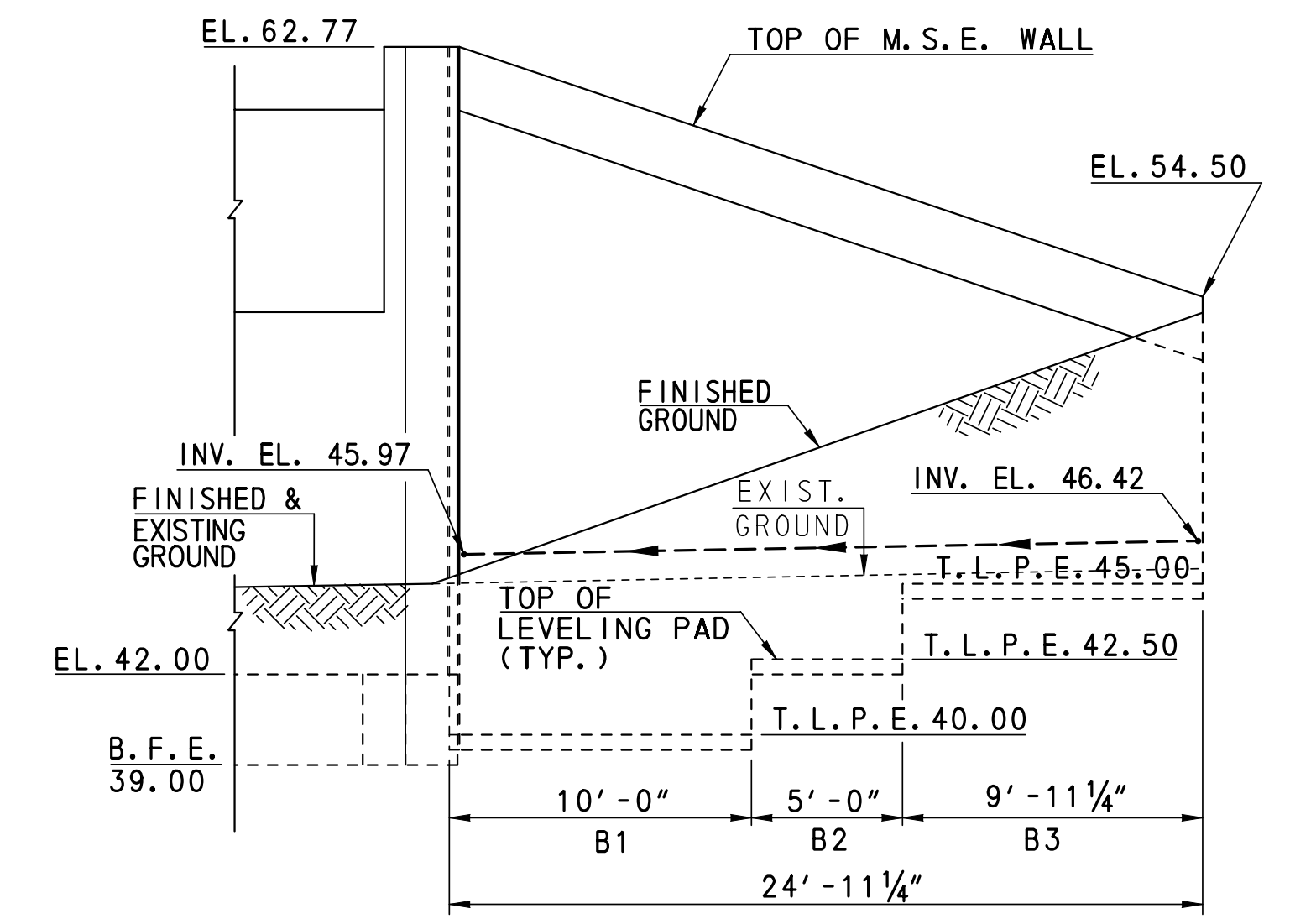
SHEET NO. 98
TOTAL SHTS. 240



M.S.E. WALL-WING A
SCALE: 3/16"=1' 0"



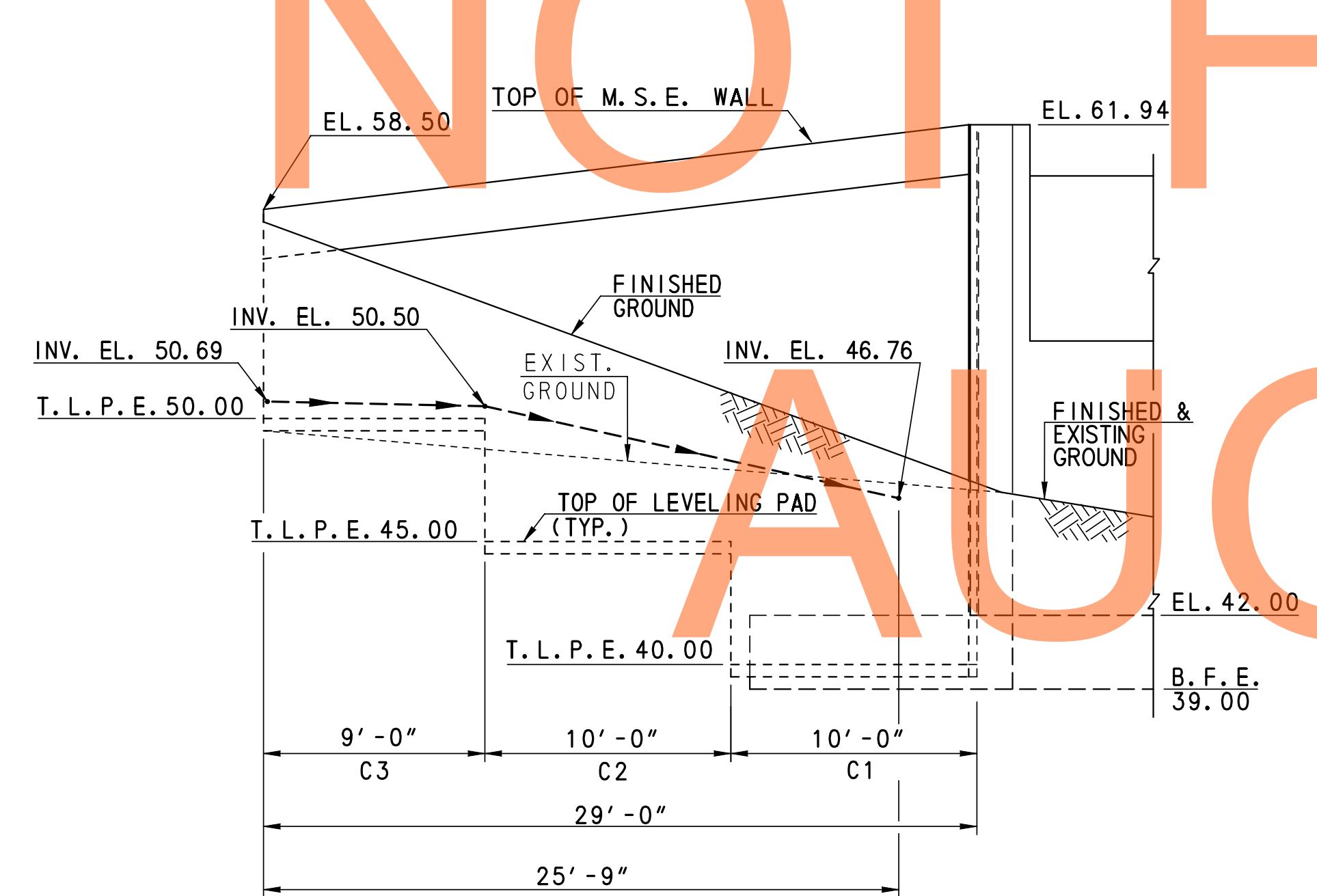
M.S.E. WALL-MEDIAN A
SCALE: 3/16"=1' 0"



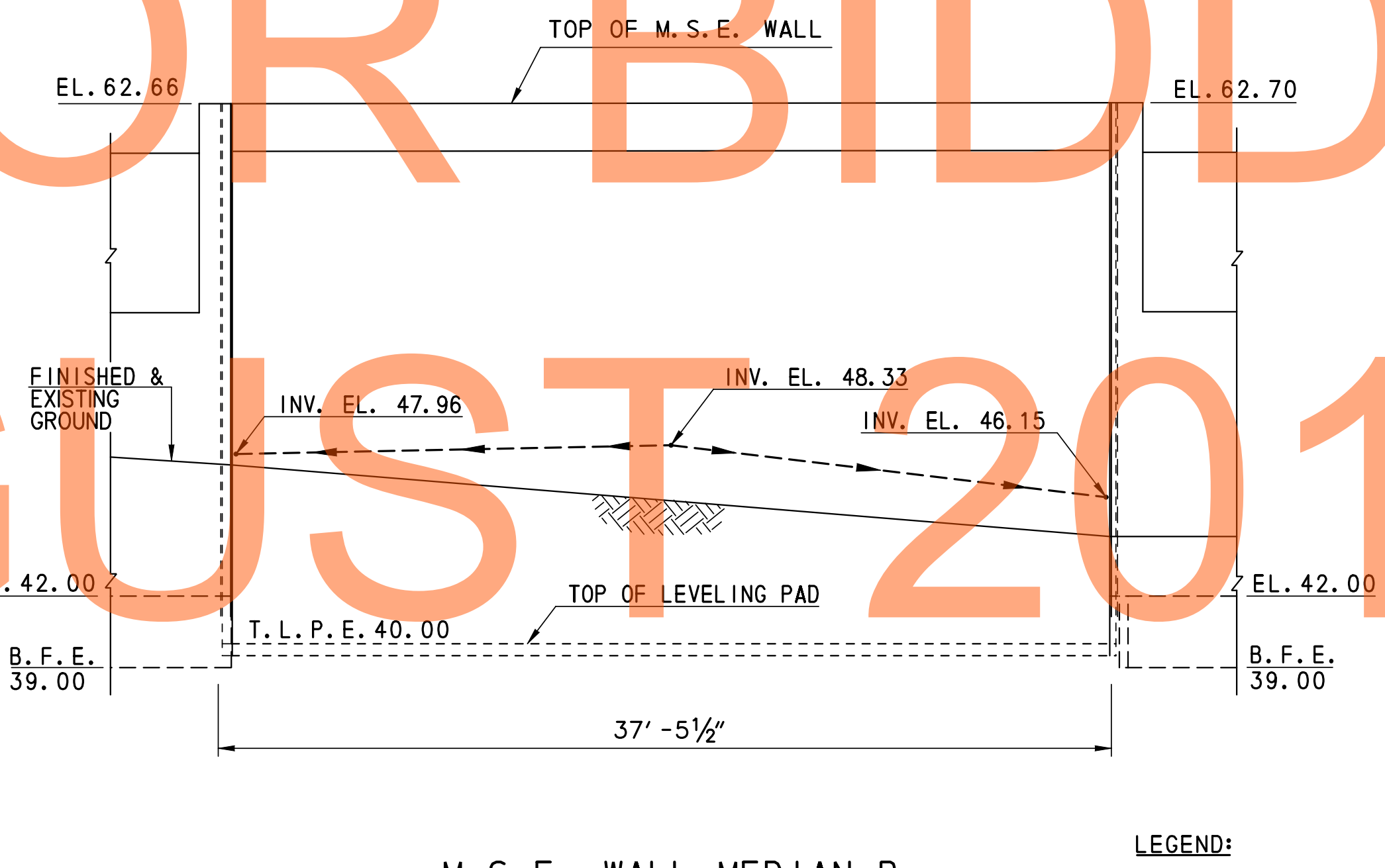
M.S.E. WALL-WING B
SCALE: 3/16"=1' 0"

DATUM EL. 25.00

NOT FOR BIDDING

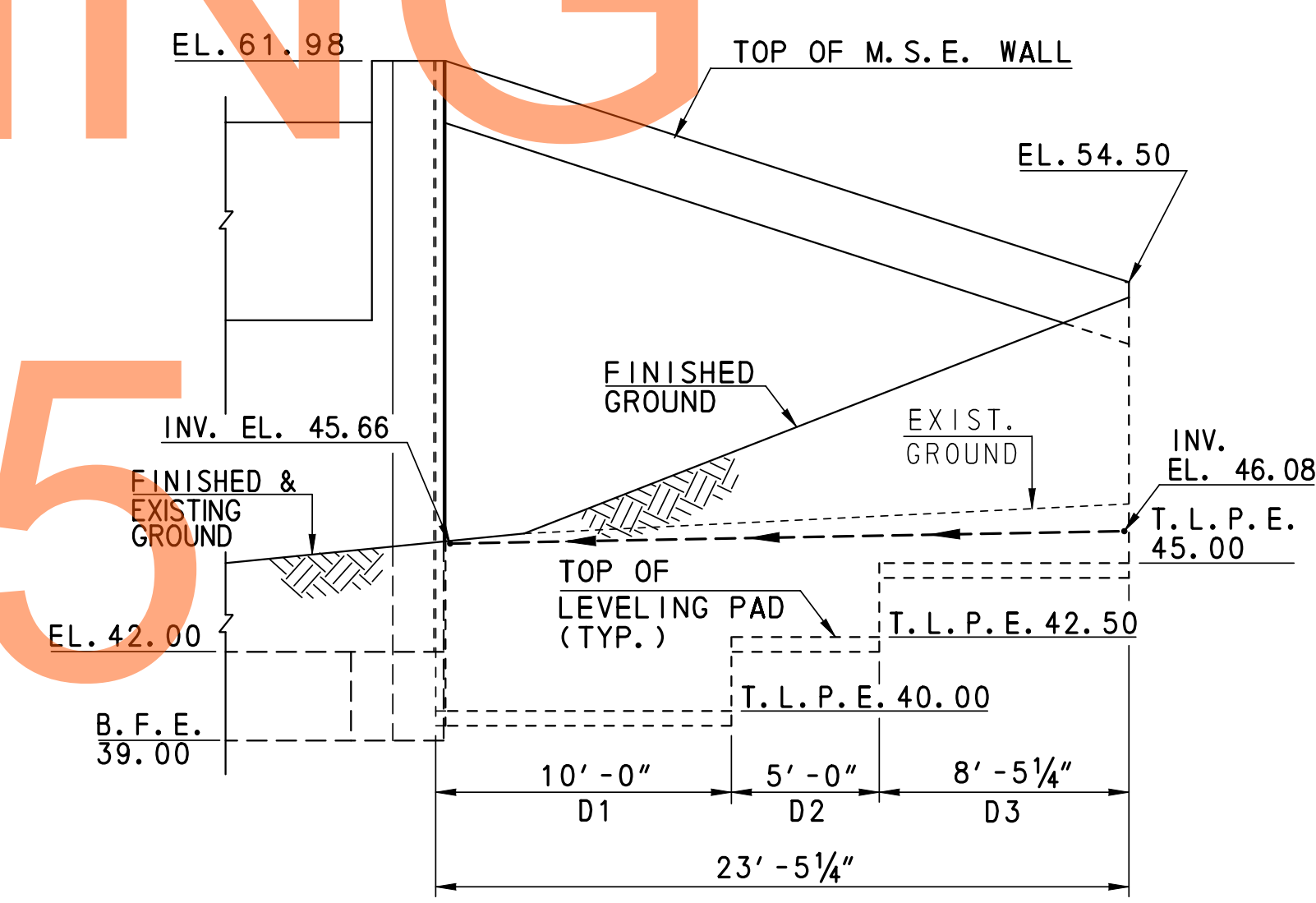


M.S.E. WALL-WING C
SCALE: 3/16"=1' 0"



M.S.E. WALL-MEDIAN B
SCALE: 3/16"=1' 0"

DATUM EL. 25.00



M.S.E. WALL-WING D
SCALE: 3/16"=1' 0"

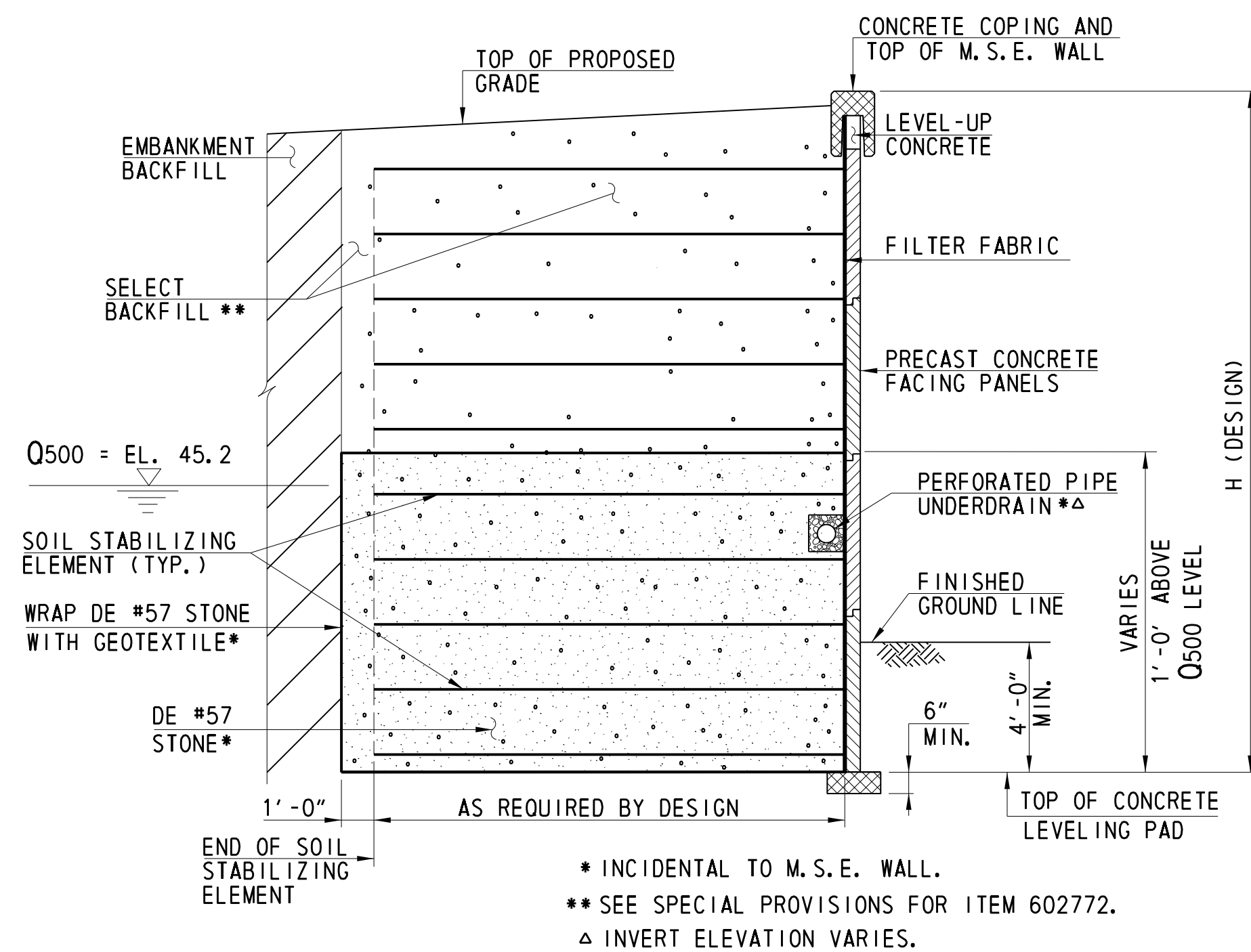
- LEGEND:**
- B.F.E. = BOTTOM OF FOOTING ELEVATION
 - EL. = ELEVATION
 - EXIST. = EXISTING
 - INV. = INVERT
 - M.S.E. = MECHANICALLY STABILIZED EARTH
 - TYP. = TYPICAL
 - T.L.P.E. = TOP OF LEVELING PAD ELEVATION
 - - - = 6" PERFORATED PIPE UNDERDRAIN

- NOTES:**
1. FOR TYPICAL M.S.E. WALL SECTION, SEE SHEET 17 OF 40.
 2. FOR M.S.E. WALL MINIMUM STRAP LENGTH TABLE, SEE SHEET 17 OF 40.

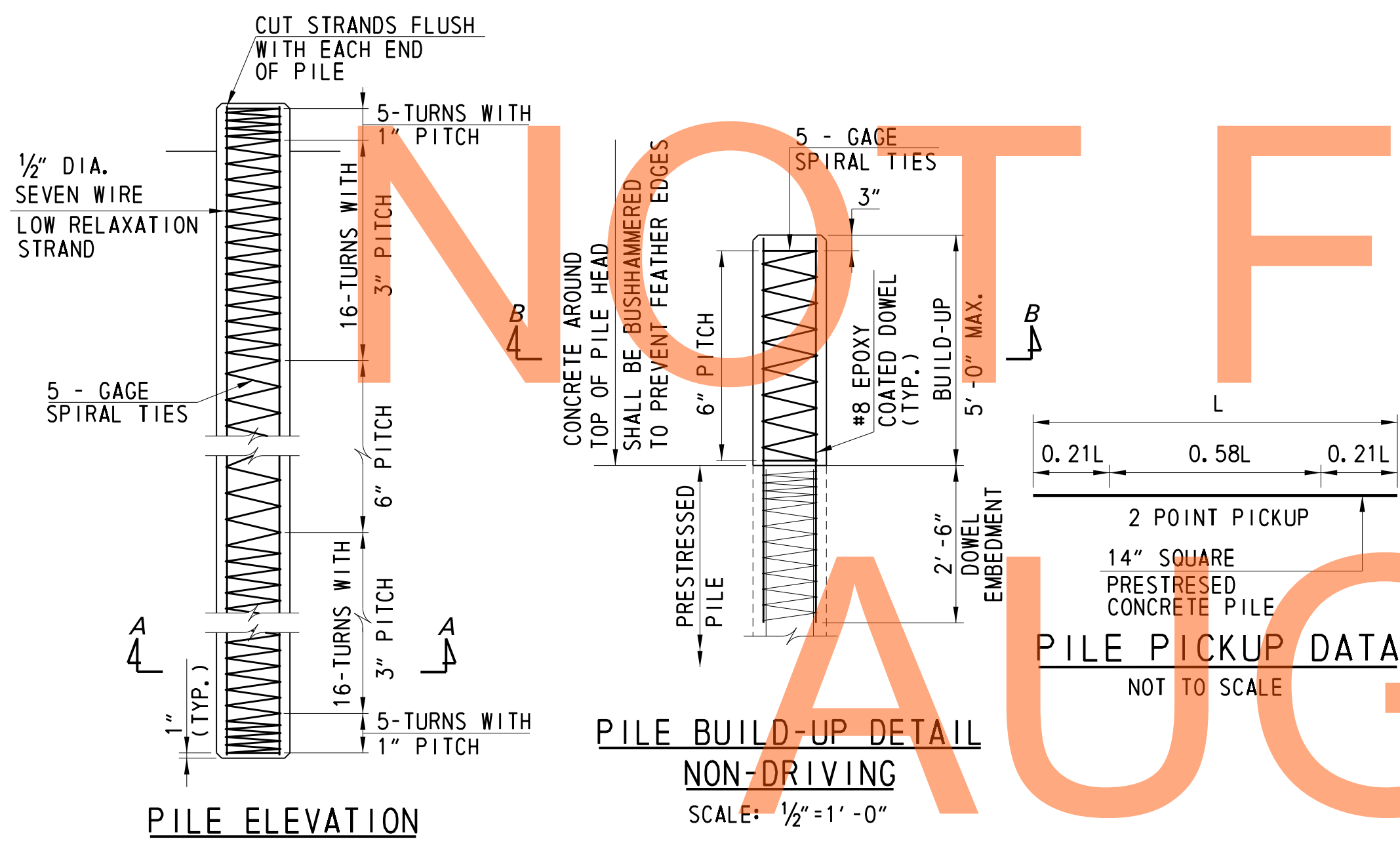
ADDENDUMS / REVISIONS	

CONTRACT	BRIDGE NO.	1-467 N&S
T200911301	DESIGNED BY:	ZAA
COUNTY	CHECKED BY:	SJM
NEW CASTLE		

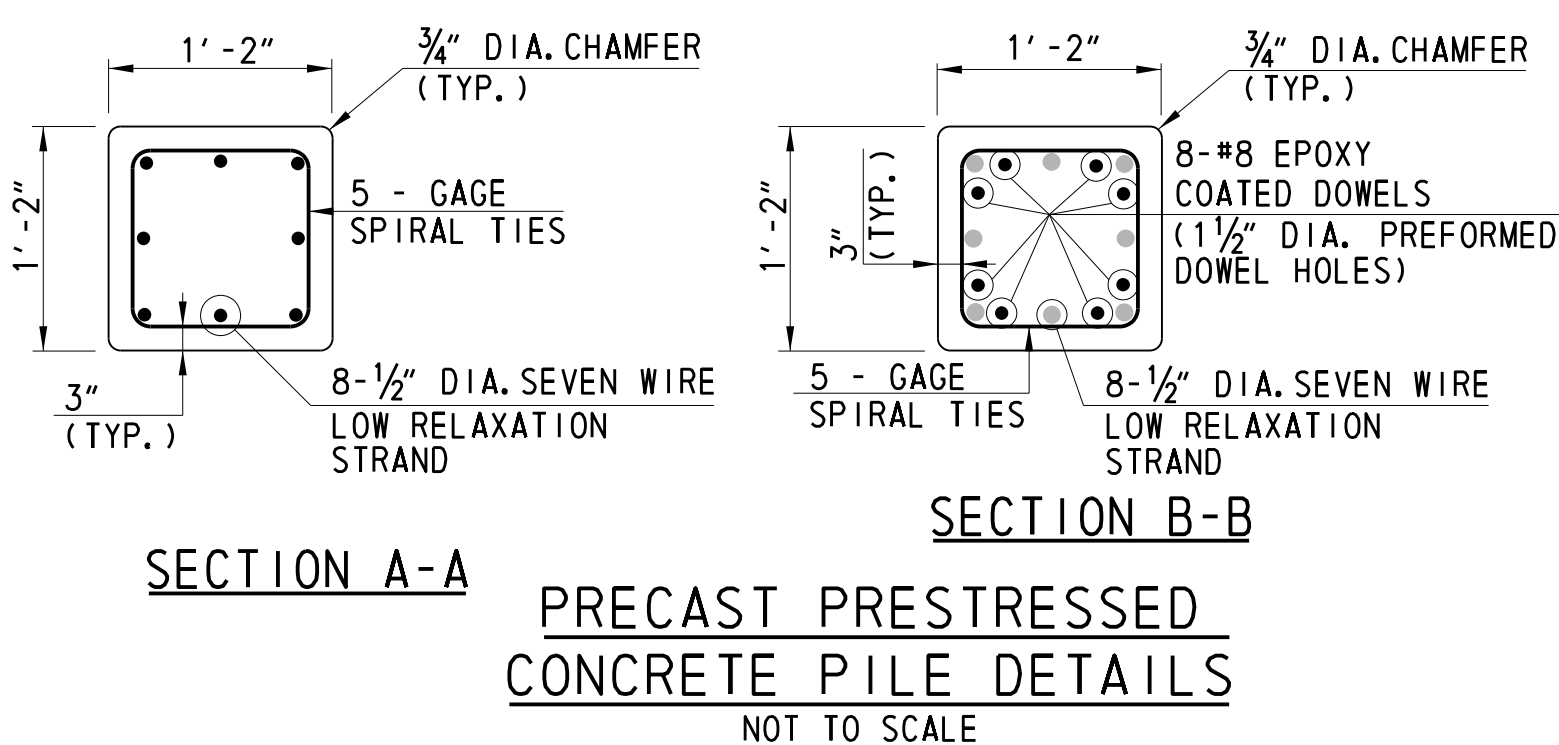
SHEET NO.	100
TOTAL SHTS.	240



MECHANICALLY STABILIZED EARTH WALL - SECTION
SCALE: 1/4"=1'-0"



PILE BUILD-UP DETAIL NON-DRIVING
SCALE: 1/2"=1'-0"



PRECAST PRESTRESSED CONCRETE PILE DETAILS
NOT TO SCALE

M. S. E. WALL NOTES

1. PROVIDE MECHANICALLY STABILIZED EARTH WALLS IN ACCORDANCE WITH SPECIAL PROVISION 602772.
2. DESIGN CRITERIA: SEE SPECIAL PROVISION FOR ITEM 602772.
3. ALL EXPOSED CORNERS OF CONCRETE SHALL BE CHAMFERED WITH 3/4"x3/4" MILLED CHAMFER STRIPS, UNLESS OTHERWISE NOTED, EXCEPT ON UNEXPOSED FOOTINGS OR WHERE INDICATED BY THE FOLLOWING NOTATION ON THE PLANS: "DO NOT CHAMFER".
4. THE PROPRIETARY WALL MANUFACTURER MAY RELOCATE THE LEVELING PAD STEPS AT THEIR DISCRETION PROVIDED THAT THE MINIMUM EMBEDMENT IS MAINTAINED. ANY CHANGE TO THE STEP LOCATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
5. THE PROPRIETARY WALL MANUFACTURER SHALL ASSURE THAT PROPOSED PROPRIETARY WALL COMPONENTS ARE POSITIONED SUCH THAT THE DESIGNATED ROADWAY LIMITS ARE NOT ENCRUCHEDED UPON.
6. CONTRACTOR AND PROPRIETARY WALL MANUFACTURER SHALL COORDINATE LOCATIONS OF ALL APPURTENANCES WITH LOCATIONS OF PROPRIETARY WALL TIE BACK SYSTEM.
7. ALL RETAINING WALL COMPONENTS SHALL BE DESIGNED FOR A MINIMUM SERVICE LIFE OF 100 YEARS.
8. ONLY ONE M.S.E. WALL SYSTEM MAY BE USED ON THIS PROJECT.
9. WAIT A MINIMUM OF 30 DAYS AFTER COMPLETING M.S.E. WALL PLACEMENT BEFORE INSTALLING C.I.P. LEVEL-UP CONCRETE AND COPING.
10. PLACE TOE OF EARTH MOUND IN THE MEDIAN ON THE WALL SIDE, A MINIMUM OF 20' FROM THE FACE OF THE M.S.E. WALL.

PILE NOTES

1. ALL PILES SHALL BE EITHER 14" SQUARE PRECAST PRESTRESSED CONCRETE PILES OR HP 14X73 STEEL PILES.
2. ALL PILES SHALL BE DRIVEN TO THE NOMINAL PILE DRIVING RESISTANCE (R_{ndr}), LISTED IN THE PILE INSTALLATION DATA TABLE, OR REFUSAL AS DEFINED IN SECTION 619 OF SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, DELAWARE DEPARTMENT OF TRANSPORTATION, AUGUST 2001, AND ADDENDUMS. THE CONTRACTOR SHALL ORDER THE PILE LENGTHS BASED ON THE TEST PILES DRIVEN AT EACH ABUTMENT.
3. TEST PILES SHALL BE DYNAMICALLY TESTED BY THE CONTRACTOR IN ACCORDANCE WITH SPECIAL PROVISIONS 619519 AND 619539. THE NEED TO RESTRIKE EITHER A TEST PILE OR A PRODUCTION PILE SHALL BE THE SOLE DECISION OF THE ENGINEER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING A WAVE EQUATION ANALYSIS AND ALL OTHER INCIDENTALS IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. THE WAVE EQUATION AND HIGH-STRAIN DYNAMIC PILE TESTING MUST BE SIGNED AND STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF DELAWARE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
5. UPON COMPLETION OF THE HIGH-STRAIN DYNAMIC PILE TESTING THE CONTRACTOR SHALL SUBMIT A SIGNAL MATCHING ANALYSIS TO THE ENGINEER FOR REVIEW AND APPROVAL IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
- 6a. A QUARANTINE PERIOD IS REQUIRED AFTER THE CONSTRUCTION OF THE FULL HEIGHT OF THE FILL AT THE ABUTMENTS IS ACHIEVED (SEE SHEET 5 OF 40). PILES MAY NOT BE DRIVEN UNTIL AFTER COMPLETION OF THE QUARANTINE PERIOD.
- 6b. TEST PILES MAY BE DRIVEN PRIOR TO PLACING EMBANKMENT AND SURCHARGE MATERIAL. RESTRIKES OF THESE TEST PILES SHALL BE PERFORMED PRIOR TO PLACING EMBANKMENT IN ACCORDANCE WITH ITEM 619502-TEST PILE RESTRIKE. AFTER THE SETTLEMENT HAS BEEN ACHIEVED AND THE SUBSTRUCTURE HAS BEEN RELEASED BY THE ENGINEER, PRODUCTION PILES MAY BE INSTALLED. AT THIS POINT, THE TEST PILE SHALL BE ACTING AS A PRODUCTION PILE AND IT SHALL BE RE-STRUCK PRIOR TO PLACING ANY OTHER PRODUCTION PILES WITH PAYMENT UNDER ITEM 619501-PRODUCTION PILE RESTRIKE.
7. PILE LENGTHS FOR ORDERING PURPOSES SHALL BE DETERMINED BY TEST PILES. A MINIMUM OF ONE (1) PILE PER SUBSTRUCTURE, AS SHOWN ON THE PLANS, SHALL BE DYNAMICALLY TESTED WITH SIGNAL MATCHING ANALYSIS BY THE CONTRACTOR IN ACCORDANCE WITH SPECIAL PROVISIONS 619519 AND 619539. TEST AND PRODUCTION PILE RESTRIKES WILL BE PAID AS FOLLOWS:
 - a). ALL TEST PILE(S) WILL BE RE-STRUCK AFTER A WAITING PERIOD OF AT LEAST 48 HOURS. TEST PILE RESTRIKES SHALL BE INCIDENTAL TO THE INITIAL INSTALLATION OF THE PILE PROVIDED THEY ARE REQUESTED WITHIN FIVE WORKING DAYS FROM THE COMPLETION OF THE INITIAL DRIVE. IF TEST PILE RESTRIKES ARE REQUESTED AFTER THE FIVE WORKING DAYS FROM THE COMPLETION OF THE INITIAL DRIVE THEN THE TEST PILE RESTRIKE SHALL BE PAID AS NOTED IN SPECIAL PROVISION 619502.
 - b). IF DIRECTED BY THE ENGINEER TO RESTRIKE A PRODUCTION PILE, THE RESTRIKE OF THE PRODUCTION PILE SHALL BE PAID SEPARATELY UNDER ITEM 619501.
 - c). RESTRIKES ON PRODUCTION PILES WHICH ARE DESIGNATED TO BE DYNAMICALLY TESTED WILL NOT BE PAID UNDER ITEM 619501-PRODUCTION PILE RESTRIKE. THESE PRODUCTION PILE RESTRIKES ARE INCIDENTAL TO ITEM 619519-DYNAMIC PILE TESTING BY CONTRACTOR.
 - d). THE FIRST TEN (10) PRODUCTION PILE RESTRIKES FOR THE BRIDGE SHALL BE PERFORMED AT NO COST TO THE DEPARTMENT. SUBSEQUENT RESTRIKES SHALL BE PAID UNDER ITEM 619501-PRODUCTION PILE RESTRIKES AT THE FIXED PRICE OF \$ 500.00 EACH.
8. THE DEPARTMENT RESERVES THE RIGHT TO PERFORM DYNAMIC TESTING OF RESTRIKES.

14" SQUARE PRECAST PRESTRESSED CONCRETE PILES

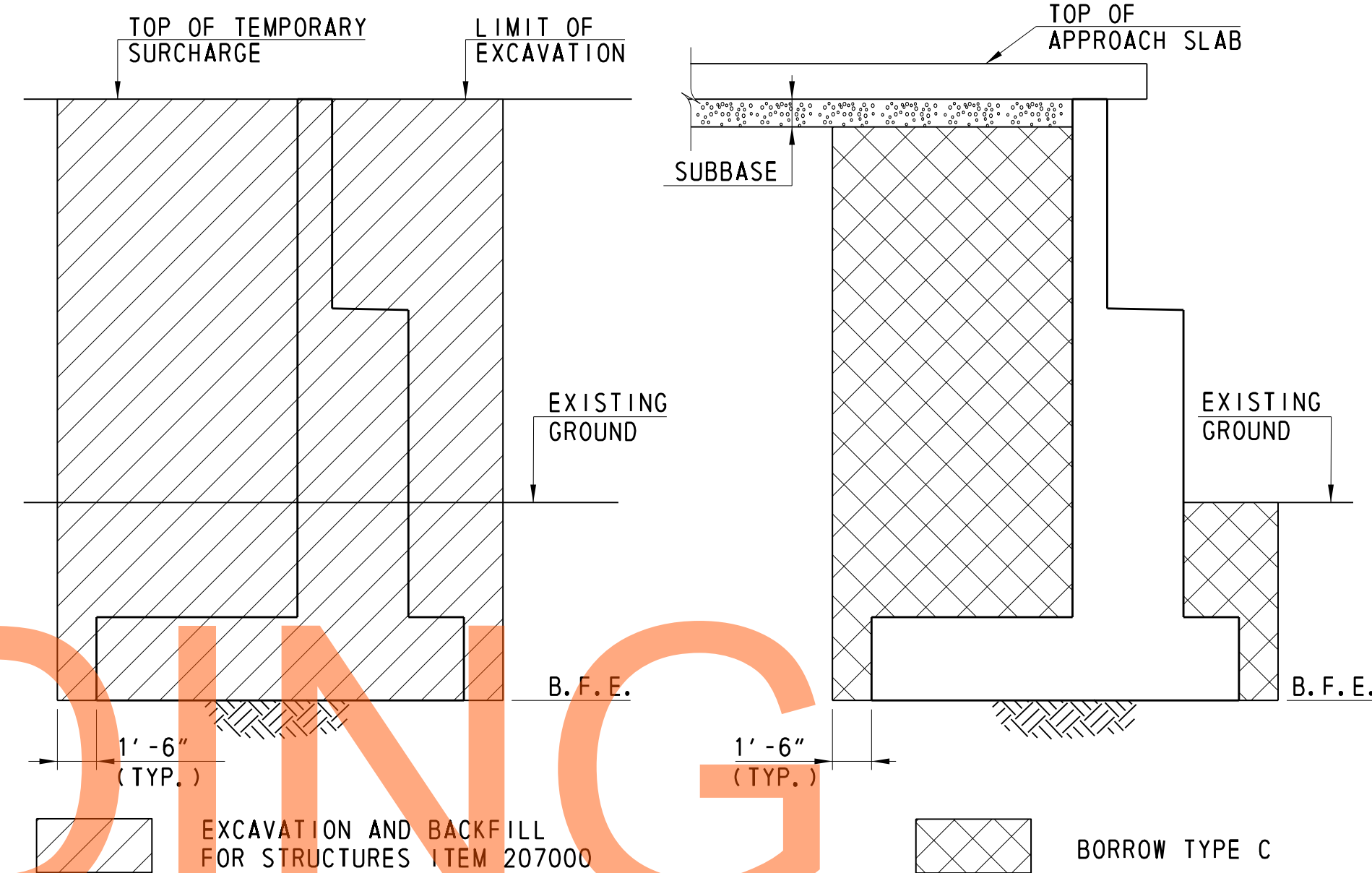
- A. THE ESTIMATED PILE LENGTH = 30'-0"
 - B. THE ESTIMATED TEST PILE LENGTH = 40'-0"
 - C. THE ESTIMATED RATED HAMMER ENERGY RANGE REQUIRED TO DRIVE THE PILES IS BETWEEN 27.09 AND 71.45 kip-ft.
 - D. MINIMUM GROUT COMPRESSIVE STRENGTH F'c = 6,000 psi. DOWEL HOLES SHALL BE POSITIONED TO MAINTAIN 1" CLEAR TO ALL PRESTRESSING STRANDS IN THE CONCRETE PILE. PREFORMED HOLES SHALL BE FREE OF ANY OBSTRUCTIONS BEFORE GROUTING WITH AN APPROVED NON-SHRINK GROUT. HOLES SHALL ALSO BE GROUTED WHEN PILE BUILD-UP IS NOT NEEDED.
 - E. THE CAST-IN-PLACE CONCRETE PILE BUILD-UP SHALL BE USED WHERE PILES MUST BE DRIVEN TO AN ELEVATION WHICH RESULTS IN THE TOP OF PILE BEING LOWER THAN THE BOTTOM OF CAP TO ACHIEVE THE REQUIRED NOMINAL RESISTANCE. PILE BUILD-UP WILL BE MEASURED AND PAID FOR IN CONFORMANCE WITH SECTION 618 OF THE DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS. MINIMUM CONCRETE COMPRESSIVE STRENGTH F'c = 6,000 psi.
- HP 14X73 STEEL PILES**
- A CONTRACTOR'S ALTERNATE USING AN HP14X73 STEEL PILE IS ALLOWED. ASSUME A ONE TO ONE PILE SUBSTITUTION. STEEL H-PILES SHALL MEET THE REQUIREMENTS OF AASHTO M270, GRADE 50. ORIENT STRONG AXIS OF STEEL H-PILES PARALLEL TO CENTERLINE OF BEARINGS.
- A. THE ESTIMATED PILE LENGTH = 45'-0"
 - B. THE ESTIMATED TEST PILE LENGTH = 55'-0"
 - C. USE A HAMMER ENERGY RANGE BETWEEN 22.61 AND 51.22 kip-ft.

M. S. E. WALL SOIL PARAMETERS

RETAINED ZONE	
IN-SITU SOIL DENSITY, (lb/ft ³)	130
IN-SITU SOIL COHESION, (psf)	0
IN-SITU SOIL FRICTION ANGLE, (deg)	34
FOUNDATION ZONE	
IN-SITU SOIL DENSITY, (lb/ft ³)	115
IN-SITU SOIL COHESION, (psf)	0
IN-SITU SOIL FRICTION ANGLE, (deg)	30
BEARING RESISTANCE FACTOR	0.65
ALLOWABLE SETTLEMENT (Inch)	1.0

M. S. E. WALL MINIMUM STRAP LENGTH

LOCATION	SEGMENT	REINFORCEMENT LENGTH (ft)
M. S. E. WALL-WING A	A1	20.0
	A2	17.0
	A3	15.0
	A4	12.0
M. S. E. WALL-WING B	B1	20.0
	B2	15.0
	B3	12.0
M. S. E. WALL-WING C	C1	20.0
	C2	15.0
	C3	12.0
M. S. E. WALL-WING D	D1	20.0
	D2	15.0
	D3	12.0
M. S. E. WALL-MEDIAN A		21.0
M. S. E. WALL-MEDIAN B		21.0



EXCAVATION AND BACKFILL

NOTE: PAYMENT FOR EXCAVATION BEYOND THE LIMITS SHOWN ABOVE SHALL BE MADE UNDER ITEM 202000 EXCAVATION AND EMBANKMENT.

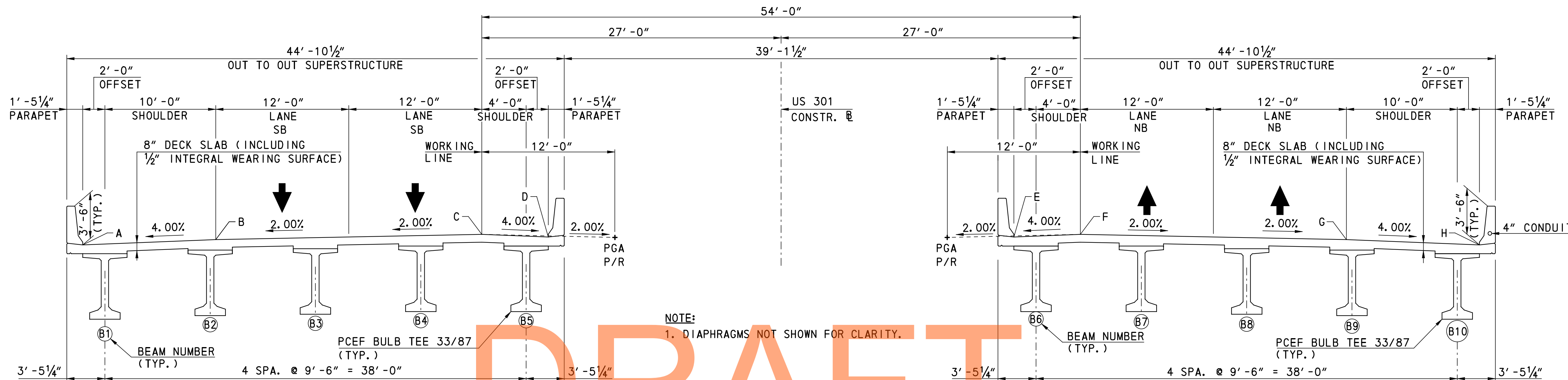
BORROW

PAY LIMITS FOR ABUTMENT WITH SOIL EXCAVATION (PILE FOOTING)
NOT TO SCALE

PILE INSTALLATION DATA***						
SUBSTR. UNIT	PILE TYPE	NOMINAL PILE DRIVING RESISTANCE (R _{ndr}) (KIPS)	ESTIMATED TIP ELEVATION	MINIMAL TIP ELEVATION	AVERAGE ACTUAL MINIMUM TIP ELEVATION	AVERAGE ACTUAL MINIMUM TIP ELEVATION
ABUT. A	14" S.P.P.C.P.	250	12.00	12.00		
	HP 14X73		-3.00	-3.00		
ABUT. B	14" S.P.P.C.P.	250	12.00	12.00		
	HP 14X73		-3.00	-3.00		

PILE DRIVING INFORMATION***			
PILE SIZE AND TYPE		14" S.P.P.C.P.	HP 14X73
ACTUAL BEARING OBTAINED	ABUT. A		
	ABUT. B		
HAMMER TYPE	ABUT. A		
	ABUT. B		
PILE HAMMER ENERGY	ABUT. A		
	ABUT. B		
SPECIAL DRIVING CONDITIONS AND COMMENTS	ABUT. A		
	ABUT. B		

***CONTRACTOR SHALL PROVIDE DATA FOR BOTH NB AND SB BRIDGES



1-467S

1-467N

TYPICAL SECTION

SCALE: 3/16" = 1'-0"

NOTE:
1. DIAPHRAGMS NOT SHOWN FOR CLARITY.

TOP OF DECK ELEVATIONS AT 10 FT. INTERVALS					
BRIDGE 1-467S					
STATION	PGL ELEVATION AT CONSTR. @	DECK ELEVATION @ A (GUTTER)	DECK ELEVATION @ B	DECK ELEVATION @ C (WORKING LINE SB)	DECK ELEVATION @ D (GUTTER)
636+30.00	63.48	62.76	63.24	63.72	63.48
636+40.00	63.43	62.71	63.19	63.67	63.43
636+50.00	63.37	62.65	63.13	63.61	63.37
636+60.00	63.31	62.59	63.07	63.55	63.31
636+70.00	63.25	62.53	63.01	63.49	63.25
*636+76.34	63.22	62.50	62.98	63.46	63.22
636+80.00	63.19	62.47	62.95	63.43	63.19
636+90.00	63.14	62.42	62.90	63.38	63.14
637+00.00	63.08	62.36	62.84	63.32	63.08
637+10.00	63.02	62.30	62.78	63.26	63.02
637+20.00	62.96	62.24	62.72	63.20	62.96
637+30.00	62.90	62.18	62.66	63.14	62.90
637+40.00	62.85	62.13	62.61	63.09	62.85
637+50.00	62.79	62.07	62.55	63.03	62.79
637+60.00	62.73	62.01	62.49	62.97	62.73
637+70.00	62.67	61.95	62.43	62.91	62.67
637+80.00	62.61	61.89	62.37	62.85	62.61
637+90.00	62.56	61.84	62.32	62.80	62.56
638+00.00	62.50	61.78	62.26	62.74	62.50
638+10.00	62.44	61.72	62.20	62.68	62.44
**638+16.34	62.40	61.68	62.16	62.64	62.40
638+20.00	62.38	61.66	62.14	62.62	62.38
638+30.00	62.32	61.60	62.08	62.56	62.32
638+40.00	62.27	61.55	62.03	62.51	62.27
638+50.00	62.21	61.49	61.97	62.45	62.21

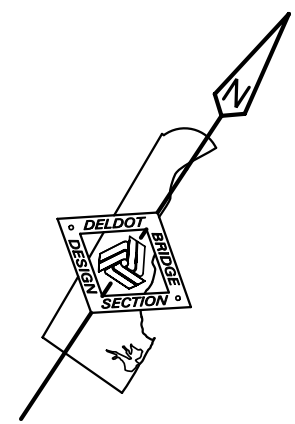
TOP OF DECK ELEVATIONS ALONG C BEAM					
BRIDGE 1-467S					
STATION	BEAM B1	BEAM B2	BEAM B3	BEAM B4	BEAM B5
*636+76.34	62.58	62.96	63.16	63.35	63.30
636+86.34	62.52	62.90	63.10	63.29	63.24
636+96.34	62.46	62.84	63.04	63.23	63.18
637+06.34	62.40	62.78	62.98	63.17	63.12
637+16.34	62.34	62.72	62.92	63.11	63.06
637+26.34	62.29	62.67	62.87	63.06	63.01
637+36.34	62.23	62.61	62.81	63.00	62.95
637+46.34	62.17	62.55	62.75	62.94	62.89
637+56.34	62.11	62.49	62.69	62.88	62.83
637+66.34	62.05	62.43	62.63	62.82	62.77
637+76.34	62.00	62.38	62.58	62.77	62.72
637+86.34	61.94	62.32	62.52	62.71	62.66
637+96.34	61.88	62.26	62.46	62.65	62.60
638+06.34	61.82	62.20	62.40	62.59	62.54
**638+16.34	61.76	62.14	62.34	62.53	62.48

TOP OF DECK ELEVATIONS AT 10 FT. INTERVALS					
BRIDGE 1-467N					
STATION	PGL ELEVATION AT CONSTR. @	DECK ELEVATION @ E (GUTTER)	DECK ELEVATION @ F (WORKING LINE NB)	DECK ELEVATION @ G	DECK ELEVATION @ H (GUTTER)
636+30.00	63.48	63.48	63.72	63.24	62.76
636+40.00	63.43	63.43	63.67	63.19	62.71
636+50.00	63.37	63.37	63.61	63.13	62.65
636+60.00	63.31	63.31	63.55	63.07	62.59
*636+69.51	63.26	63.26	63.50	63.02	62.54
636+70.00	63.25	63.25	63.49	63.01	62.53
636+80.00	63.19	63.19	63.43	62.95	62.47
636+90.00	63.14	63.14	63.38	62.90	62.42
637+00.00	63.08	63.08	63.32	62.84	62.36
637+10.00	63.02	63.02	63.26	62.78	62.30
637+20.00	62.96	62.96	63.20	62.72	62.24
637+30.00	62.90	62.90	63.14	62.66	62.18
637+40.00	62.85	62.85	63.09	62.61	62.13
637+50.00	62.79	62.79	63.03	62.55	62.07
637+60.00	62.73	62.73	62.97	62.49	62.01
637+70.00	62.67	62.67	62.91	62.43	61.95
637+80.00	62.61	62.61	62.85	62.37	61.89
637+90.00	62.56	62.56	62.80	62.32	61.84
638+00.00	62.50	62.50	62.74	62.26	61.78
**638+09.51	62.44	62.44	62.68	62.20	61.72
638+10.00	62.44	62.44	62.68	62.20	61.72
638+20.00	62.38	62.38	62.62	62.14	61.66
638+30.00	62.32	62.32	62.56	62.08	61.60
638+40.00	62.27	62.27	62.51	62.03	61.55
638+50.00	62.21	62.21	62.45	61.97	61.49

TOP OF DECK ELEVATIONS ALONG C BEAM					
BRIDGE 1-467N					
STATION	BEAM B6	BEAM B7	BEAM B8	BEAM B9	BEAM B10
*636+69.51	63.34	63.39	63.20	63.00	62.62
636+79.51	63.28	63.33	63.14	62.94	62.56
636+89.51	63.22	63.27	63.08	62.88	62.50
636+99.51	63.16	63.21	63.02	62.82	62.44
637+09.51	63.10	63.15	62.96	62.76	62.38
637+19.51	63.05	63.10	62.91	62.71	62.33
637+29.51	62.99	63.04	62.85	62.65	62.27
637+39.51	62.93	62.98	62.79	62.59	62.21
637+49.51	62.87	62.92	62.73	62.53	62.15
637+59.51	62.81	62.86	62.67	62.47	62.09
637+69.51	62.76	62.81	62.62	62.42	62.04
637+79.51	62.70	62.75	62.56	62.36	61.98
637+89.51	62.64	62.69	62.50	62.30	61.92
637+99.51	62.58	62.63	62.44	62.24	61.86
**638+09.51	62.52	62.57	62.38	62.18	61.80

* C BRG. ABUT. A
** C BRG. ABUT. B

LEGEND
CONSTR. = CONSTRUCTION
NB = NORTHBOUND
PGA = PROFILE GRADE APPLICATION
P/R = POINT OF ROTATION
SB = SOUTHBOUND
SPA. = SPACES
TYP. = TYPICAL



DRAFT

NOT FOR BIDDING

AUGUST 2015

- NOTES:**
1. FOR TYPICAL SECTION, SEE SHEETS 4 AND 18 OF 40.
 2. FOR BEAM DETAILS, SEE SHEETS 20 AND 21 OF 40.
 3. FOR DIAPHRAGM DETAILS, SEE SHEETS 23, 24, 30 AND 31 OF 40.
 4. FOR SHEAR BLOCK DETAILS, SEE SHEETS 7 AND 12 OF 40.

- LEGEND**
- EXP. = EXPANSION
 - FIX. = FIXED
 - NB = NORTHBOUND
 - SB = SOUTHBOUND
 - SPA. = SPACES
 - STA. = STATION
 - TYP. = TYPICAL

PLAN
SCALE: 1/8" = 1' - 0"

* AT END BAYS ABUTMENT A ONLY.



ADDENDUMS / REVISIONS	

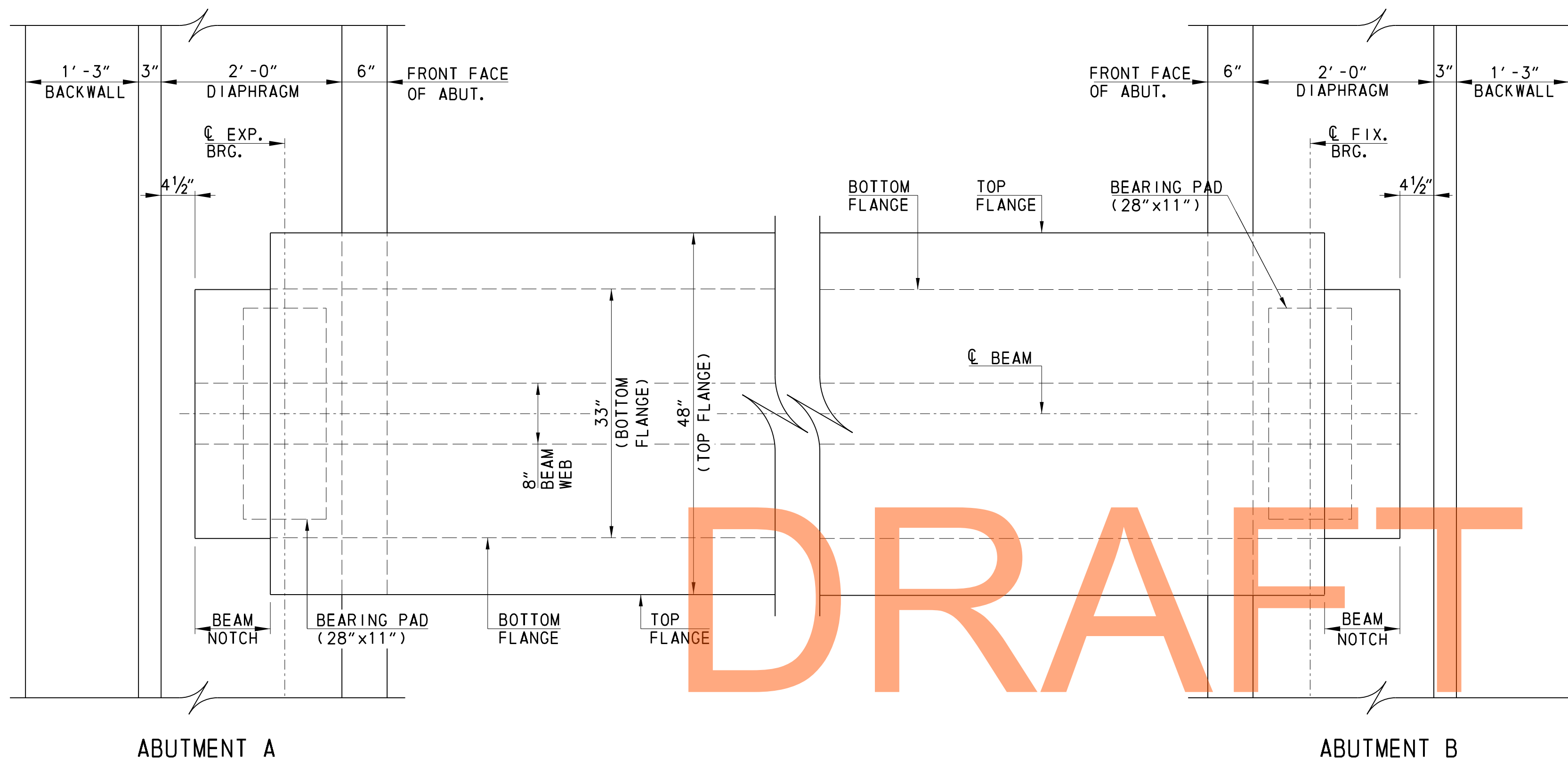
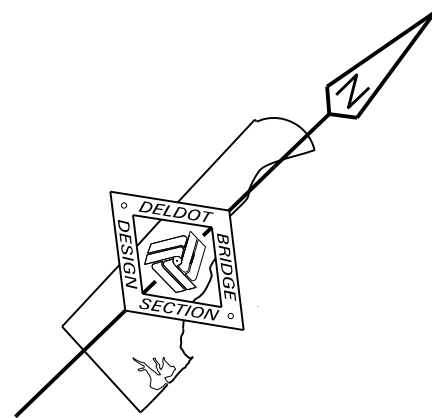
SCALE: AS NOTED

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

CONTRACT T200911301	BRIDGE NO. 1-467 N&S	DESIGNED BY: ZAA	
COUNTY NEW CASTLE		CHECKED BY: BK	

FRAMING PLAN

SHEET NO. 103	TOTAL SHTS. 240
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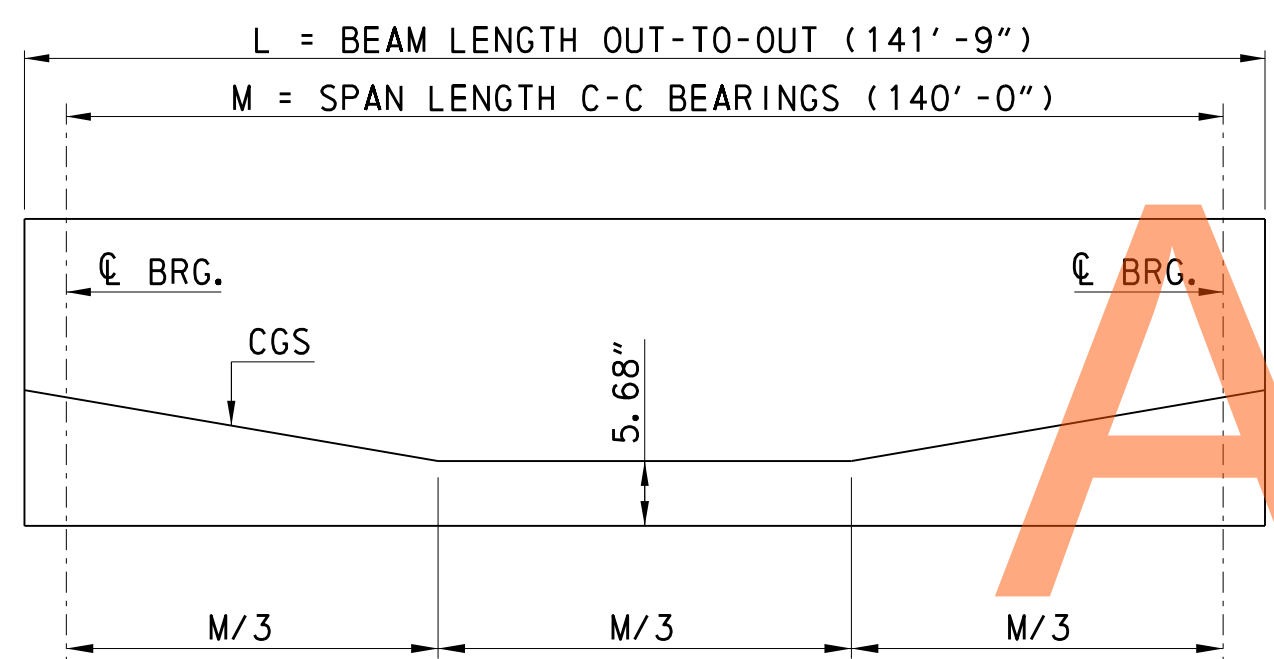
DRAFT

ABUTMENT A

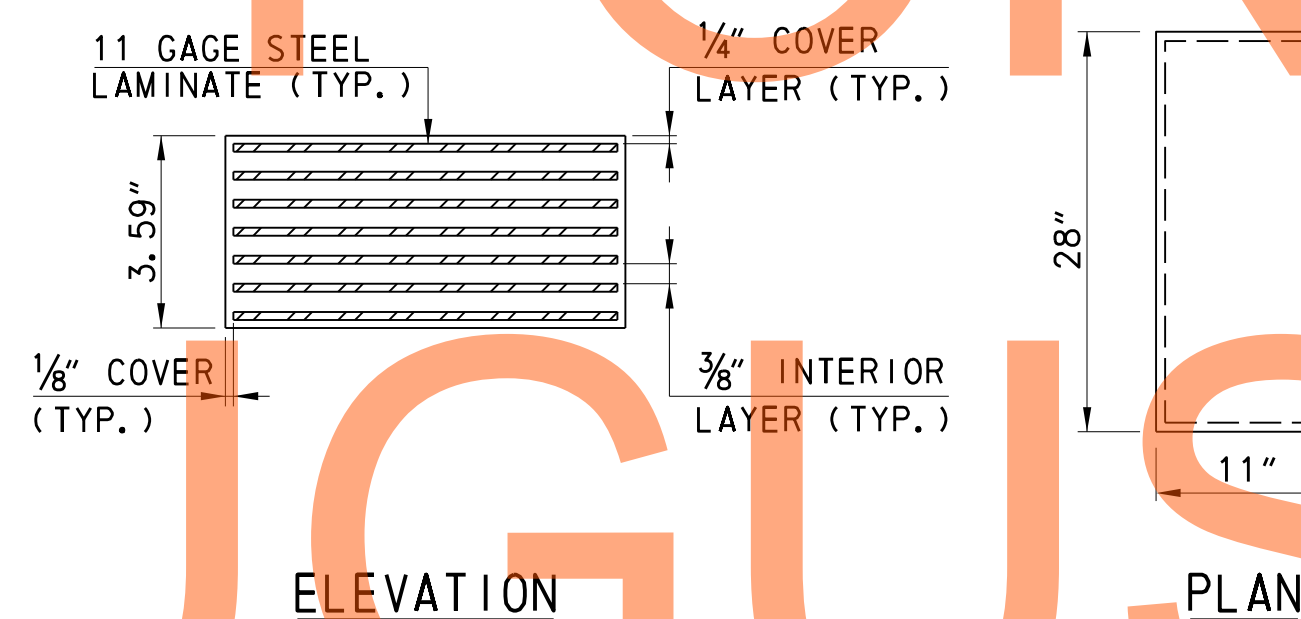
ABUTMENT B

PLAN
STRUCTURE AT ENDS OF BEAM
SCALE: 1"=1'-0"

NOT FOR BIDDING



STRAND PROFILE, CGS
NOT TO SCALE

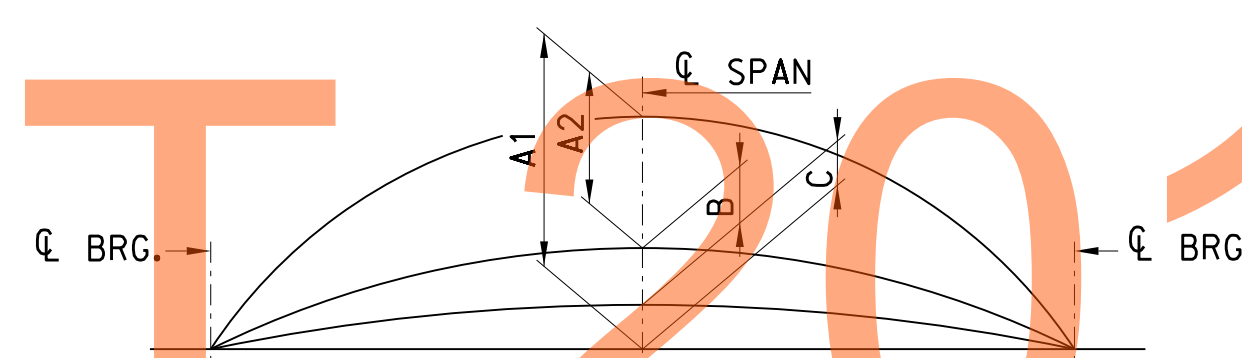


ELEVATION
BEARING PAD DETAILS
(EXP. AND FIX. BEARINGS)
NOT TO SCALE

NOTE:
11"x28"x3.59" LAMINATED BEARING PAD
20 REQUIRED FOR STRUCTURE.

LEGEND
 ABUT. = ABUTMENT
 BRG. = BEARING
 CGS = CENTER OF GRAVITY, STRANDS
 EXP. = EXPANSION
 FIX. = FIXED
 MIN. = MINIMUM
 TYP. = TYPICAL

CAMBER TABLE				
BEAM	A1 (in)	A2 (in)	B (in)	C (in)
B1, B5, B6, B10	7 5/8"	2 3/4"	1 1/16"	3 3/16"
B2, B4, B7, B9	7 5/8"	2 3/4"	1 1/16"	2 1/16"
B3, B8	7 5/8"	2 3/4"	1 3/4"	3 1/8"



CAMBER NOTES

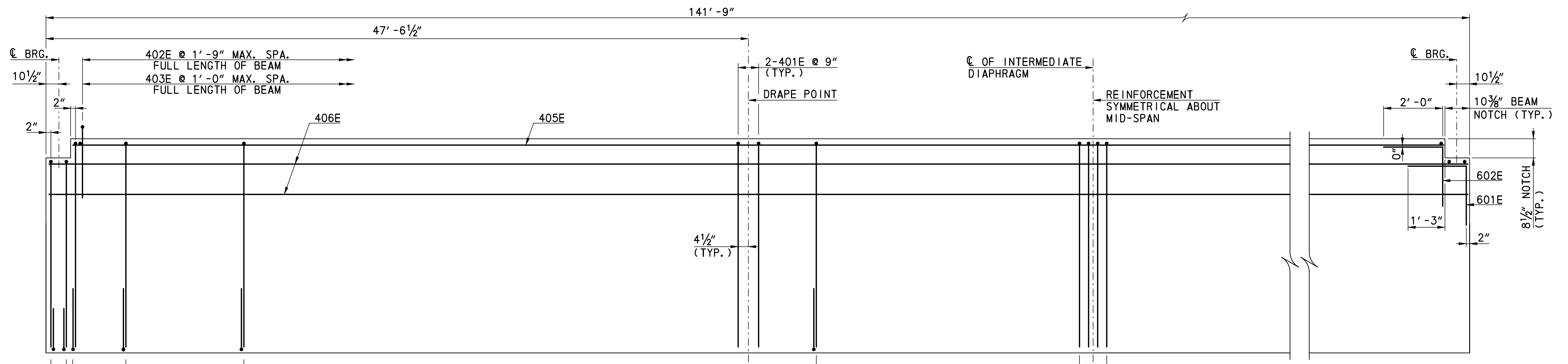
- A1 = ESTIMATED PRESTRESS CAMBER TIMES CREEP FACTOR OF 1.6 AND INITIAL P/S LOSS OF 10%.
- A2 = DEFLECTION DUE TO DEAD LOAD TIMES CREEP FACTOR OF 1.6.
- A = A1-A2
- B = DEFLECTION DUE TO DEAD LOAD OF SLAB, PERMANENT METAL FORMS AND SUPERIMPOSED DEAD LOAD.
- C = NET FINAL CAMBER (A-B).
- CAMBER VALUES ARE THEORETICAL AND MAY VARY WITH ACTUAL CONCRETE STRENGTH (AGE), VARIOUS PRESTRESSING CONDITIONS, CREEP FACTOR AND PRESTRESS LOSSES.
- BEARING SEAT ELEVATIONS AND HAUNCH THICKNESS HAVE BEEN CALCULATED USING THE NET FINAL CAMBER "C".

BEARING PAD NOTES

- THE MAXIMUM DESIGN LOAD FOR THE FIXED BEARINGS = 306 KIPS.
- THE MAXIMUM DESIGN LOAD FOR THE EXPANSION BEARINGS = 306 KIPS
- SMOOTH CUT AND DEBURR METAL SHIMS.
- GRIT BLAST AND DEGREASE METAL SHIMS.
- ALL BEARING PADS ARE TO BE MOLDED TO DESIGN DIMENSIONS. CUTTING TO SIZE AFTER FABRICATION IS PROHIBITED.
- MEET THE MATERIAL SPECIFICATIONS FOR ELASTOMERIC BEARING REQUIREMENTS OF AASHTO M251. BEARING PADS SHALL BE SAMPLED FOR TESTING ACCORDING TO AASHTO M251, AS DIRECTED.
- PROVIDE NEOPRENE 50 ±5 DUROMETER.
- PROVIDE INTERNAL SHIMS PER AASHTO M270, GRADE 36.
- VULCANIZE PATCH PIN GROOVES.
- SANDBLAST CLEAN THE CONCRETE BEARING SURFACES TO ACHIEVE A ROUGH TEXTURE. DO NOT EPOXY COAT BEARING SURFACES.

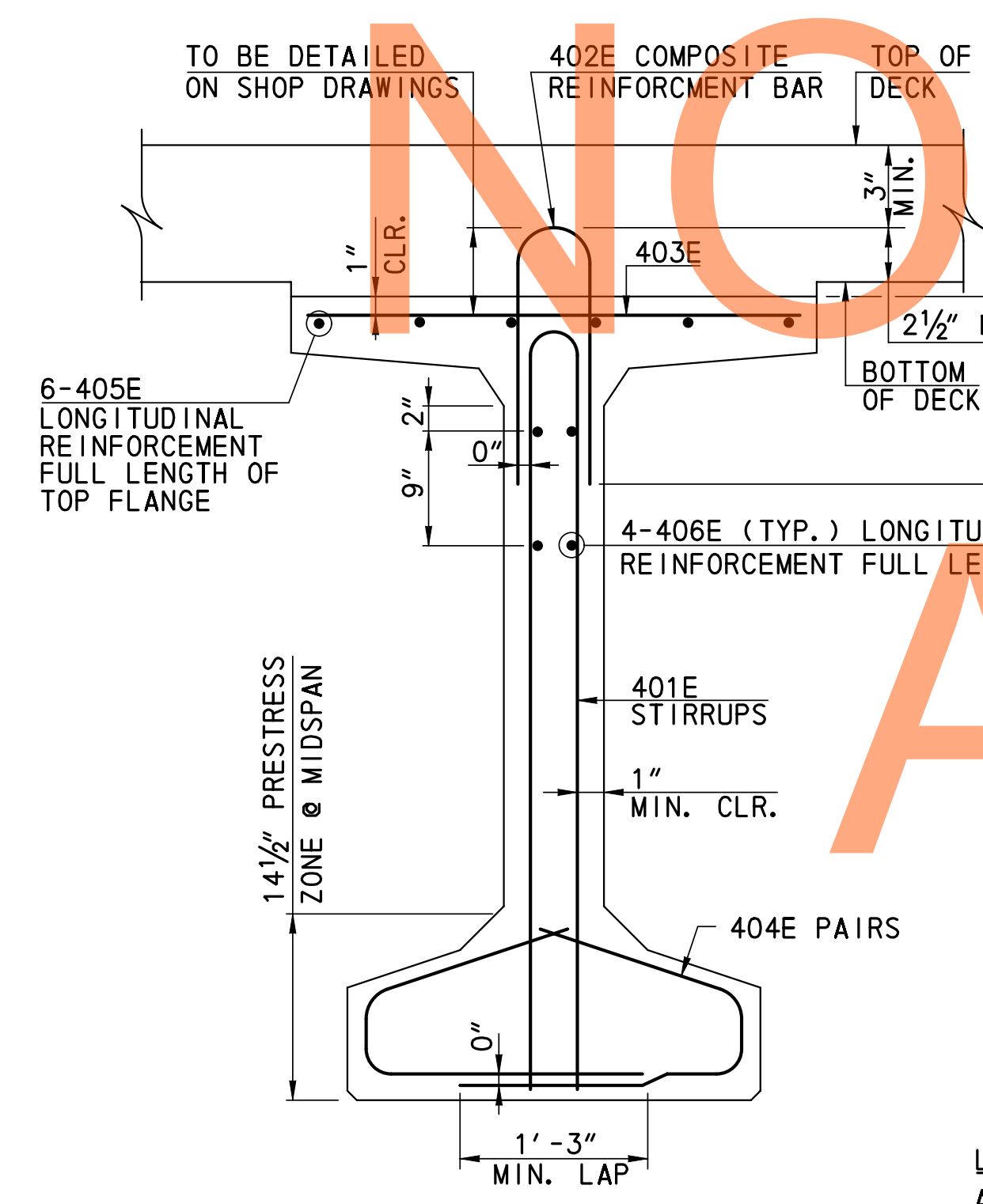
BEAM NOTES

- GIRDERS ARE BULB TEE TYPE PCEF (33/87).
- CONCRETE STRENGTH AT STRAND RELEASE (f'c) = 6.8 Ks1
- CONCRETE STRENGTH AT 28 DAYS (f'c) = 8.0 Ks1
- JACKING PRESTRESS STRESS (f pj) PER STRAND = 202.50 Ks1
- USE LOW RELAXATION 270 Ks1, 0.6" DIAMETER STRANDS (A = 0.217 in²)
- MINIMUM COVER ON REINFORCEMENT BARS:
 STIRRUPS - 1" MIN.
 ALL OTHERS - 1 1/2" MIN. UNLESS OTHERWISE NOTED
- PROVIDE MILD STEEL REINFORCEMENT CONFORMING TO AASHTO M31, GRADE 60.
- END ZONE REINFORCEMENT MAY BE INCREASED BY FABRICATOR TO REFLECT FABRICATOR'S EXPERIENCE AND/OR TO CONTROL CRACKING. WIRE MESH OF EQUIVALENT AREA IS PERMISSIBLE FOR CRACK CONTROL REINFORCEMENT.
- CAST ENDS OF BEAMS TO BE TRULY VERTICAL WHEN ERECTED.
- CLEAN TOP OF BEAMS BEFORE DECK SLAB IS PLACED.
- SHOW PLAN, ELEVATION, SECTIONS AND ALL REINFORCEMENT DETAILS ON SHOP DRAWINGS.
- SHOW DESIGN LENGTH AND CASTING LENGTH ON SHOP DRAWINGS.
- SHOW DETAILS OF GIRDER LIFTING DEVICES WITH ITS TYPE, SIZE AND LOCATION ON THE SHOP DRAWINGS.
- AT THE SHOP DRAWING STAGE PROVIDE CRACK CONTROL DEBONDING.
- SHOW ON THE SHOP DRAWINGS THE TYPE AND LOCATION OF TEMPORARY STORAGE SUPPORT AND THE TYPE AND LOCATION OF TEMPORARY TRANSPORTATION BRACING AND SUPPORTS.
- SHOW ANY MODIFICATIONS TO REINFORCEMENT SPLICE AND BENDING DETAILS ON SHOP DRAWINGS.
- ALL MILD STEEL REINFORCEMENT IN GIRDERS SHALL BE EPOXY COATED.
- GIRDER LENGTHS IN CASTING BED SHALL BE DETERMINED AND DEPICTED IN SHOP DRAWINGS TO COMPENSATE FOR GRADE SHORTENING DUE TO PRESTRESS EFFECT.
- TOP SURFACE OF ALL GIRDERS SHALL BE ROUGH FINISHED TO A FULL AMPLITUDE OF 1/4" AND SCRUBBED TRANSVERSELY WITH A COARSE WIRE BRUSH TO REMOVE ALL LAITANCE AND TO PRODUCE A ROUGHENED SURFACE FOR BONDING.
- NO CLEAR COVER LESS THAN AS SHOWN ON THESE PLANS WILL BE ACCEPTED.
- FOR PERMANENT STEEL BRIDGE DECK FORM DETAILS, SEE SHEET 22 OF 40.
- SHOW FORM ANCHOR DETAIL ON THE SHOP DRAWINGS. SUPPORT SYSTEM AND THE GALVANIZED ANCHOR INSERT ARE TO BE FROM AN APPROVED MANUFACTURER. THE ANCHOR INSERT IS TO BE PROVIDED AT EACH WELD REQUIRED ALONG THE DECK FORM AND SHALL NOT BE CONTINUOUS.
- PERMANENT STEEL DECK FORMS AND SUPPORTS SHALL CONFORM TO SECTION 602 OF THE STANDARD SPECIFICATIONS. THESE FORMS SHALL BE THE PROPER GAGE TO SUPPORT, WITHIN SPECIFIED DEFLECTIONS, THE SPECIFIED WEIGHTS FOR THE PARTICULAR SPAN INVOLVED. THE DESIGN SPAN SHALL BE THE CLEAR DISTANCE BETWEEN GIRDER FLANGES LESS 2".
- ANY PERMANENTLY EXPOSED FORM METAL WHERE THE GALVANIZED COATING HAS BEEN DAMAGED SHALL BE THOROUGHLY CLEANED, WIRE BRUSHED AND PAINTED WITH TWO COATS OF ZINC DUST-ZINC OXIDE PAINT, NO COLOR ADDED, TO THE SATISFACTION OF THE ENGINEER. MINOR HEAT DISCOLORATION IN AREAS OF WELDS NEED NOT BE TOUCHED UP.



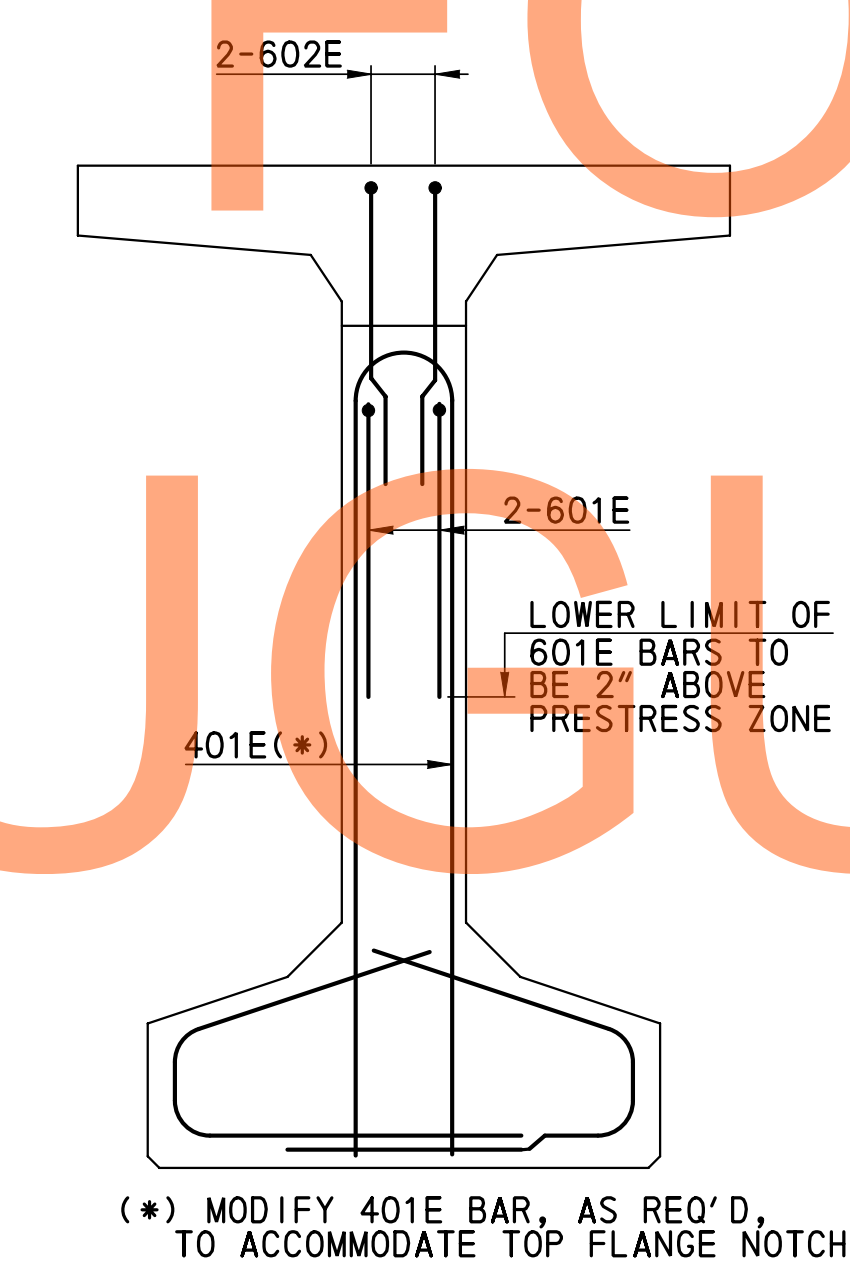
NOTES:
1. FOR DIAPHRAGM DETAILS, SEE SHEETS 23, 24, 30 AND 31 OF 40.

PCEF 8" WEB BULB-TEE BEAM
ELEVATION
SCALE: 1/4"=1'-0"

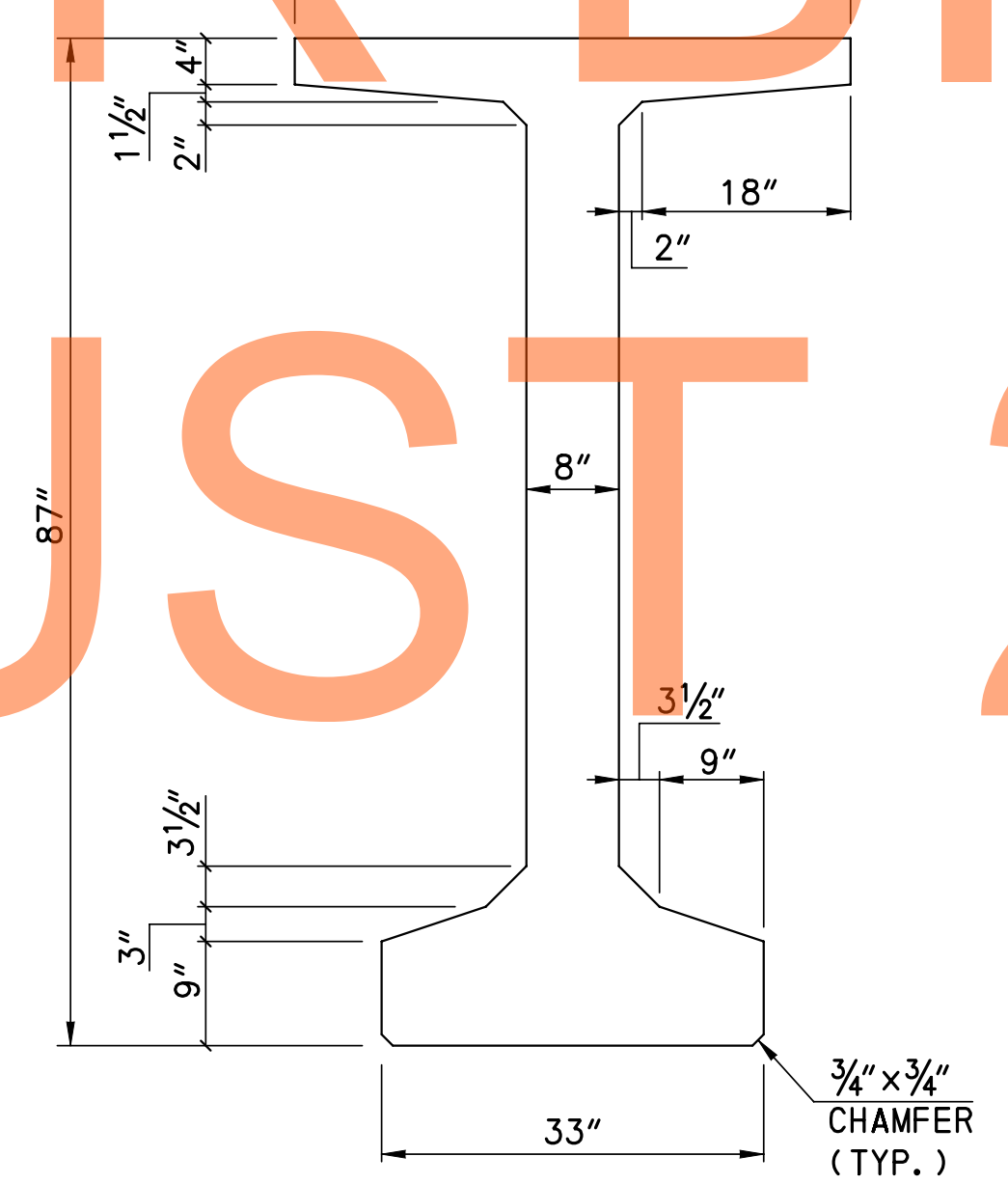


TYPICAL BEAM REINFORCEMENT
NOT TO SCALE

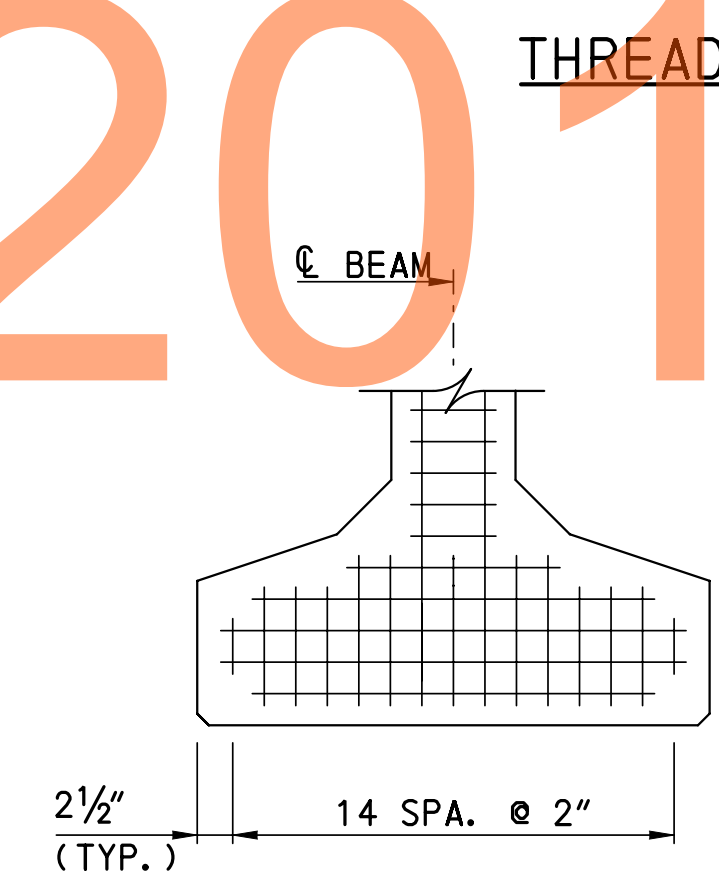
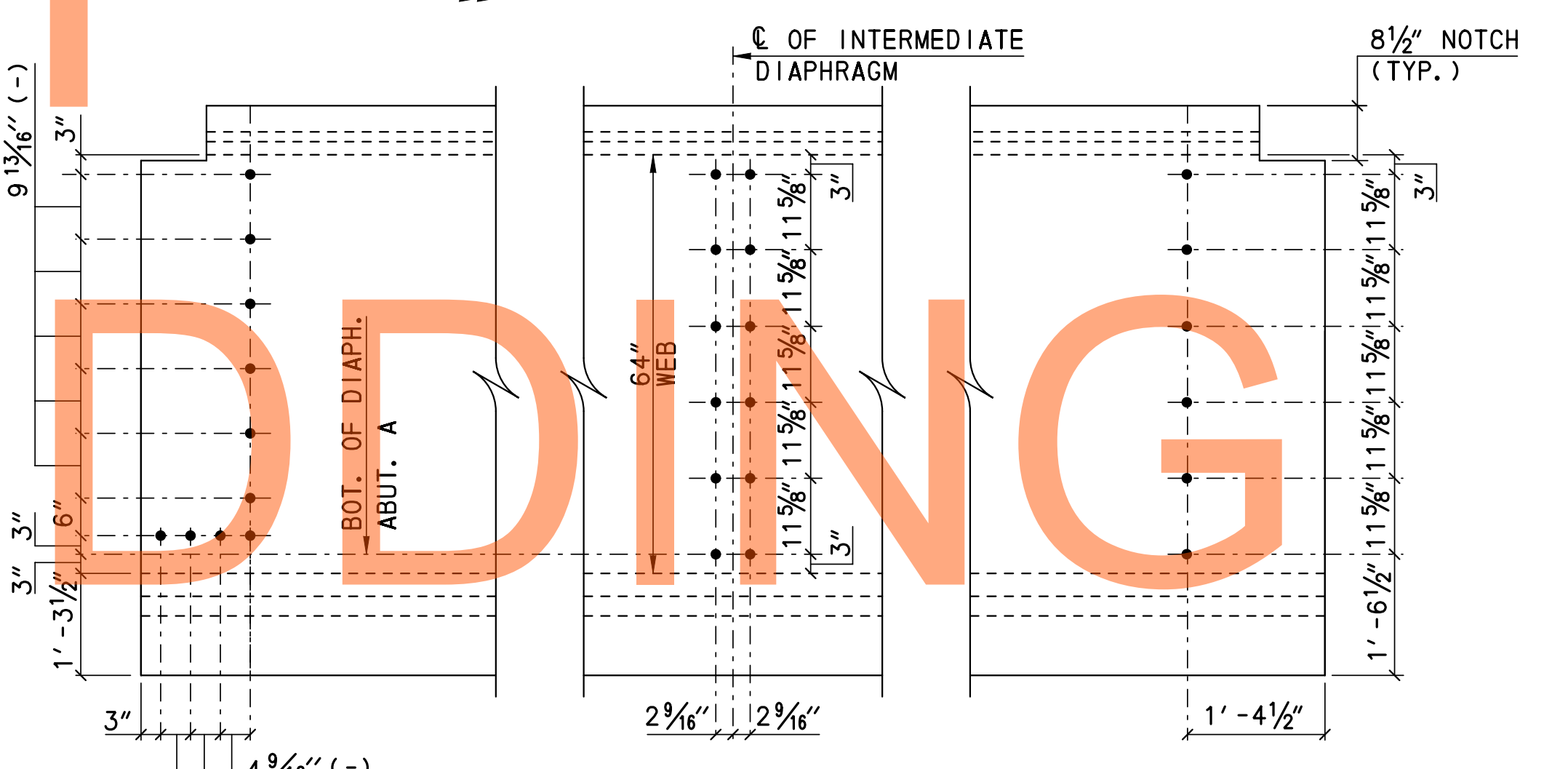
- LEGEND
- ABUT. = ABUTMENT
 - BOT. = BOTTOM
 - BRG. = BEARING
 - CLR. = CLEAR
 - DIAPH. = DIAPHRAGM
 - MAX. = MAXIMUM
 - MIN. = MINIMUM
 - REQ'D. = REQUIRED
 - SPA. = SPACING
 - TYP. = TYPICAL



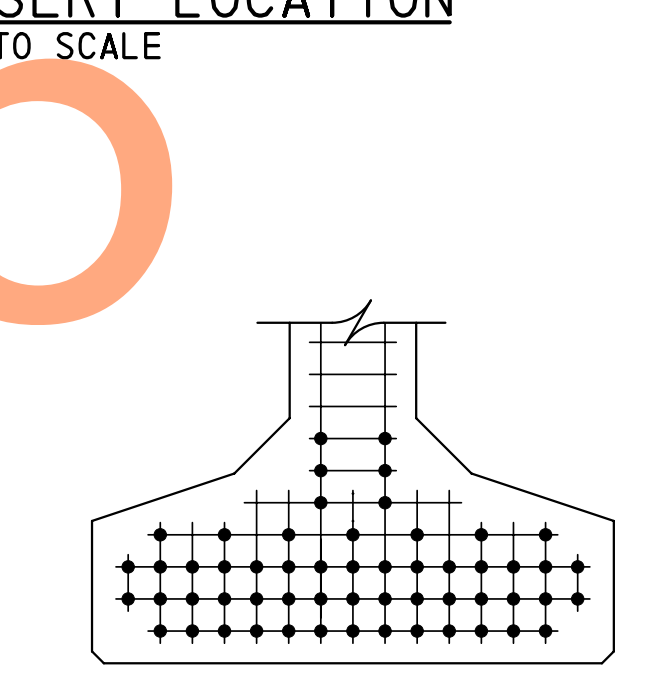
NOTCHED END REINFORCEMENT
NOT TO SCALE



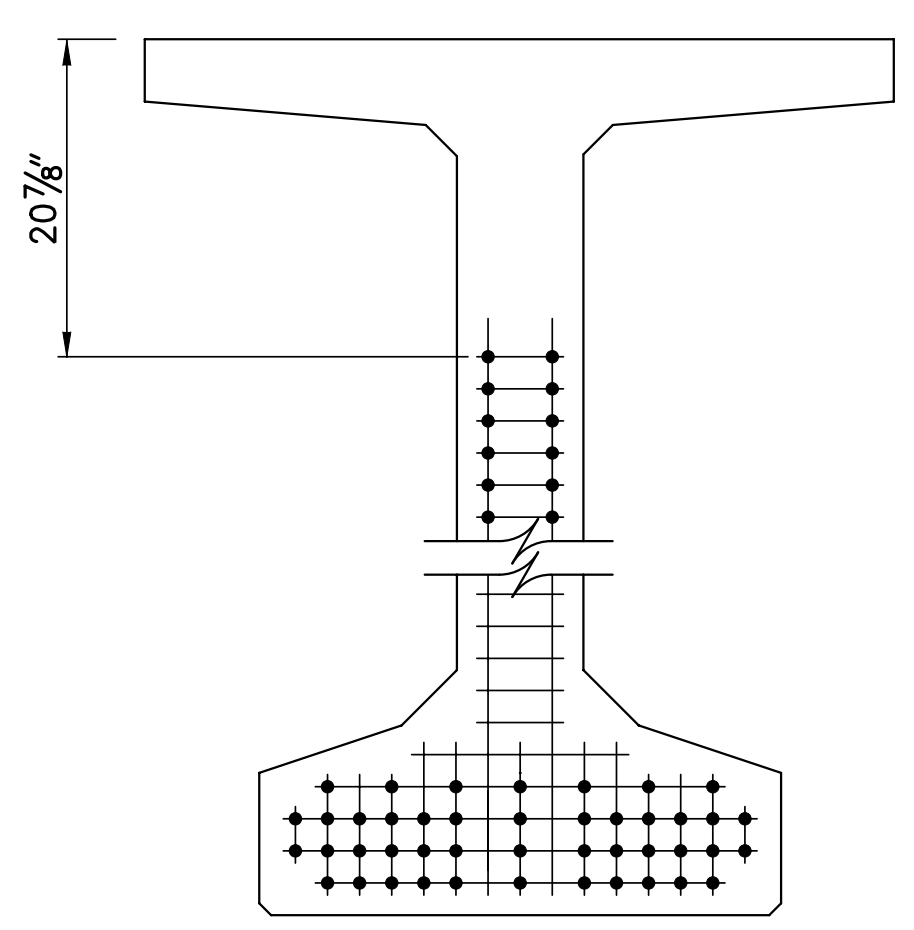
TYPICAL BEAM SECTION (PCEF BULB TEE BEAM 33x87)
NOT TO SCALE



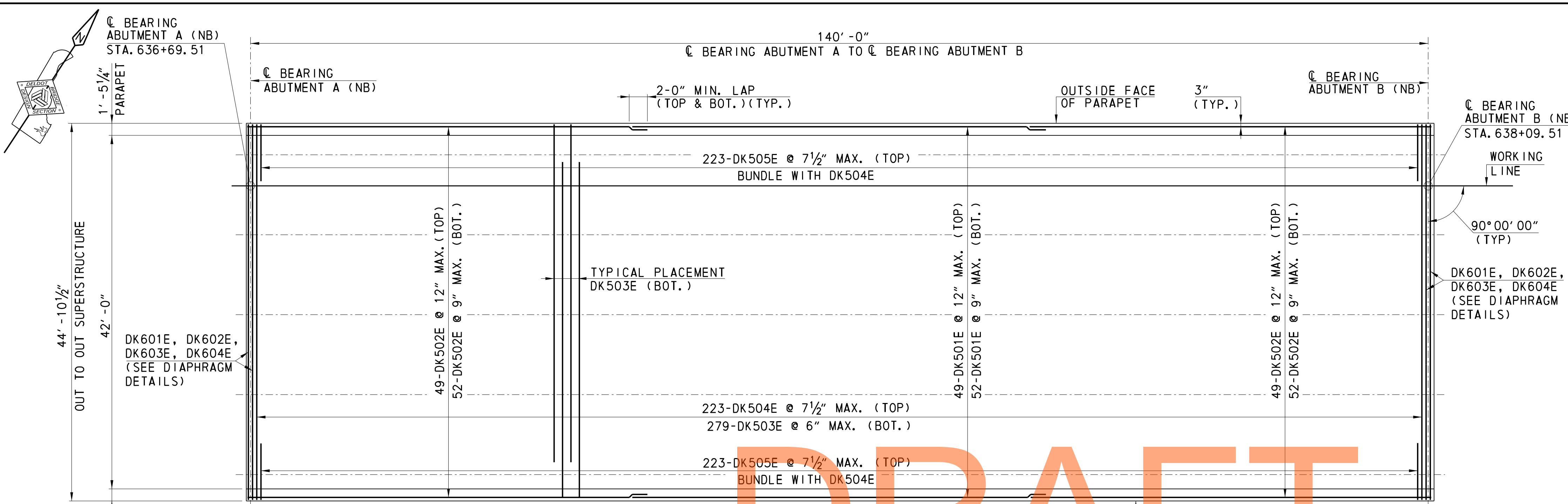
TYPICAL STRAND GRID PATTERN
NOT TO SCALE



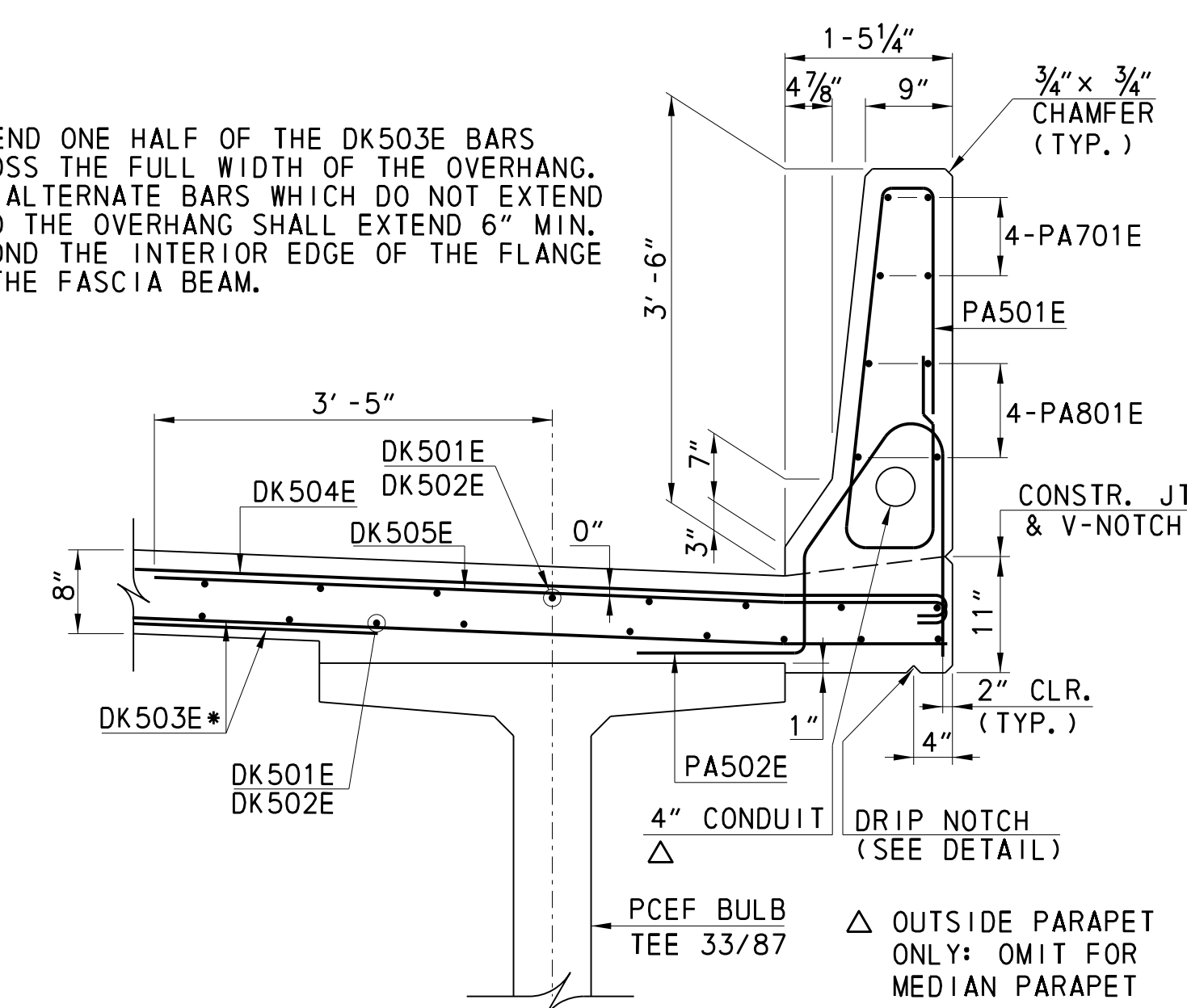
STRAND LOCATION AT MIDSPAN
NOT TO SCALE



STRAND LOCATION AT ENDS
NOT TO SCALE

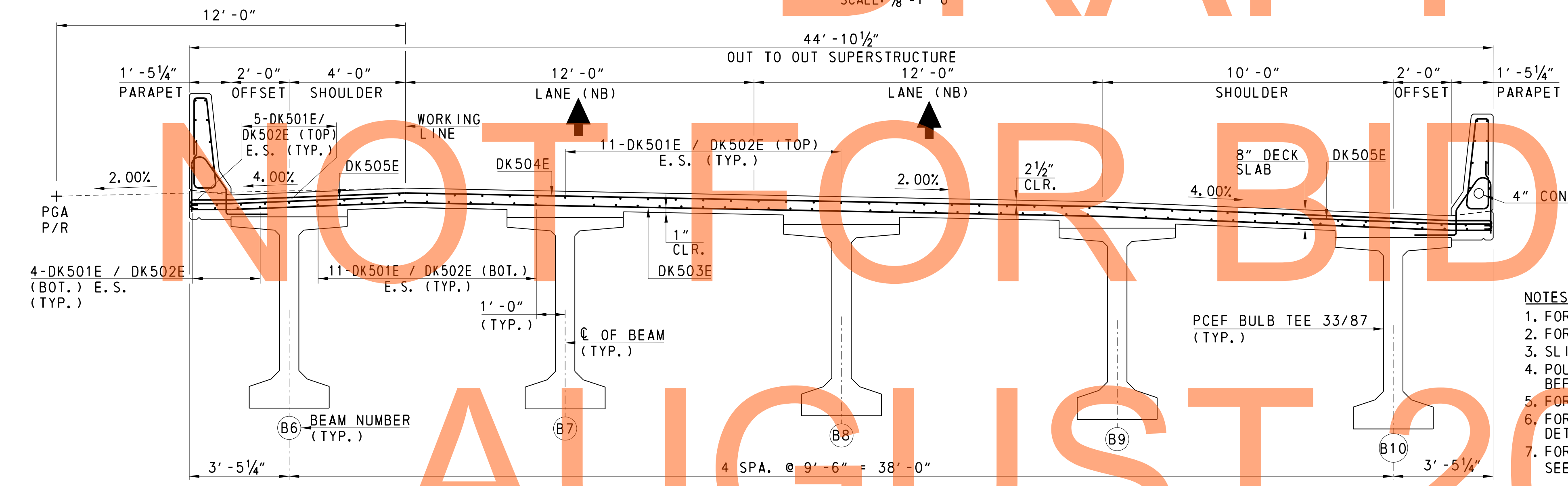


* EXTEND ONE HALF OF THE DK503E BARS ACROSS THE FULL WIDTH OF THE OVERHANG. THE ALTERNATE BARS WHICH DO NOT EXTEND INTO THE OVERHANG SHALL EXTEND 6" MIN. BEYOND THE INTERIOR EDGE OF THE FLANGE OF THE FASCIA BEAM.



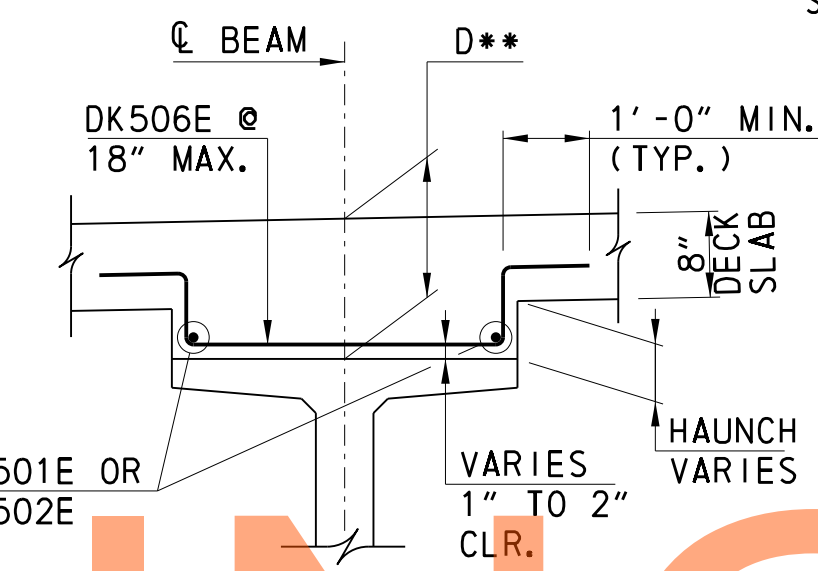
PARAPET DETAIL (NB)
SCALE: 3/8"=1'-0"

1-467N
DECK PLAN
SCALE: 1/8"=1'-0"



1-467N
TYPICAL SECTION
SCALE: 3/8"=1'-0"

NOTES:
• DECK SLAB REINFORCEMENT NOT SHOWN FOR CLARITY.
• FIELD VERIFY ACTUAL HAUNCH DIMENSIONS.



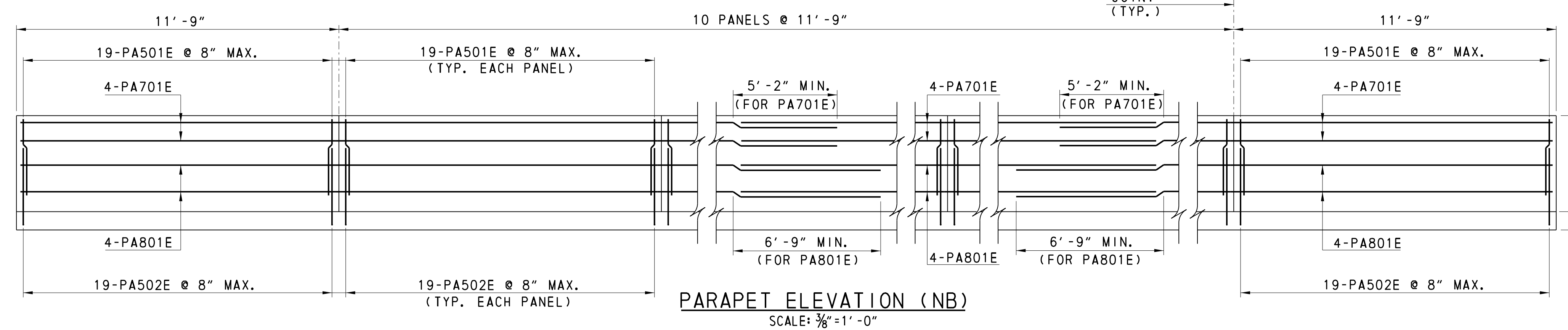
HAUNCH REINFORCEMENT
NOT TO SCALE

DRIP NOTCH
DETAIL
NOT TO SCALE

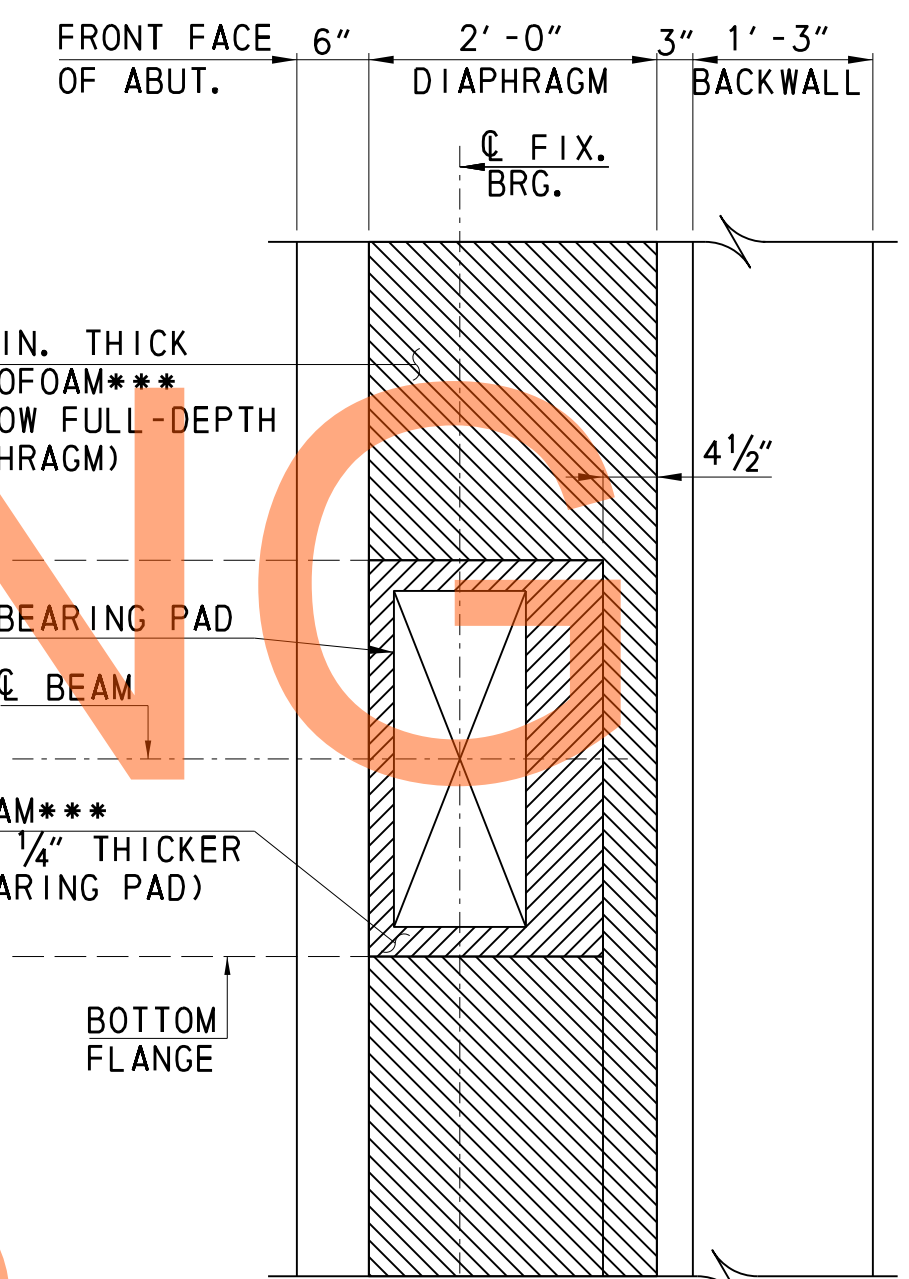
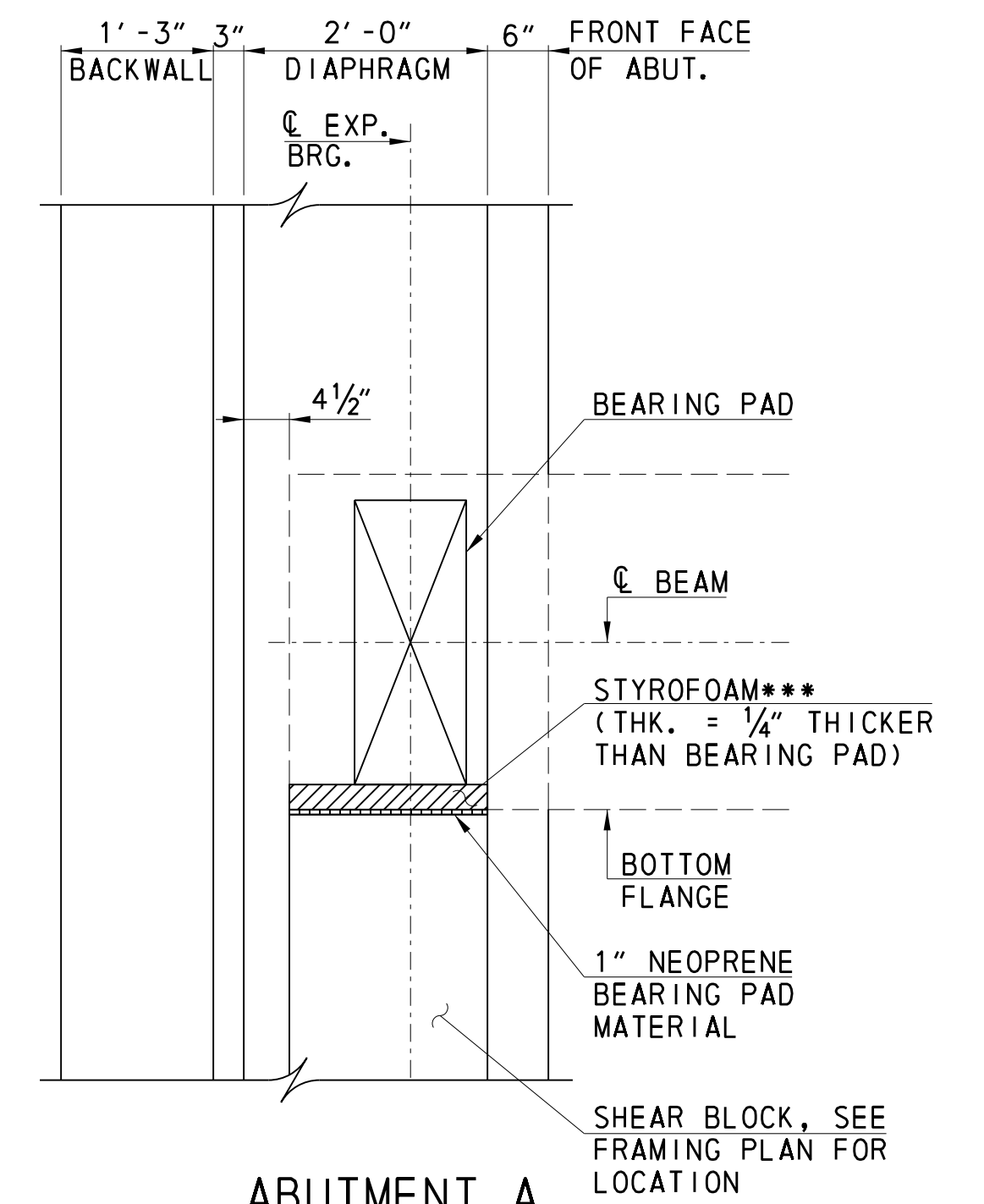
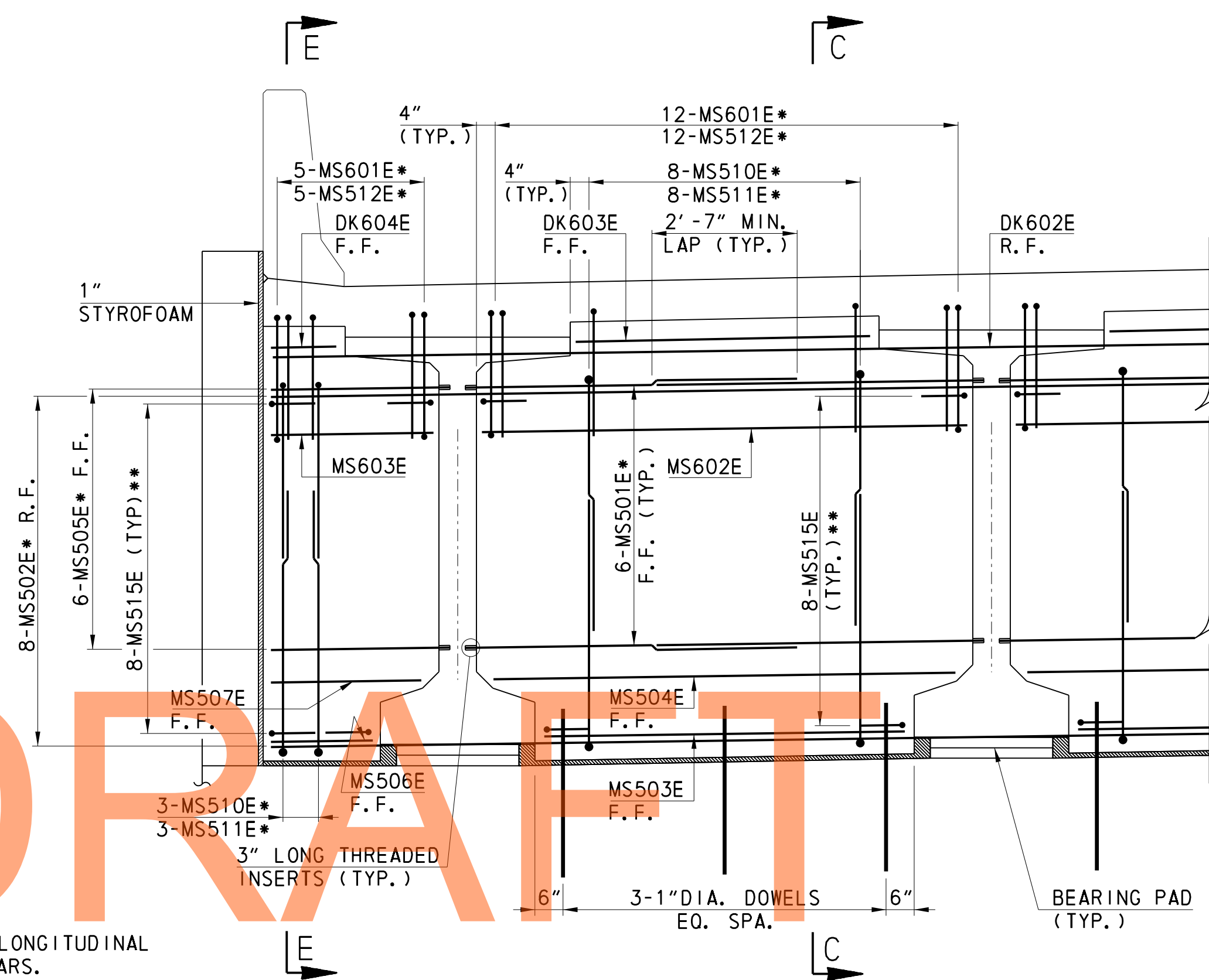
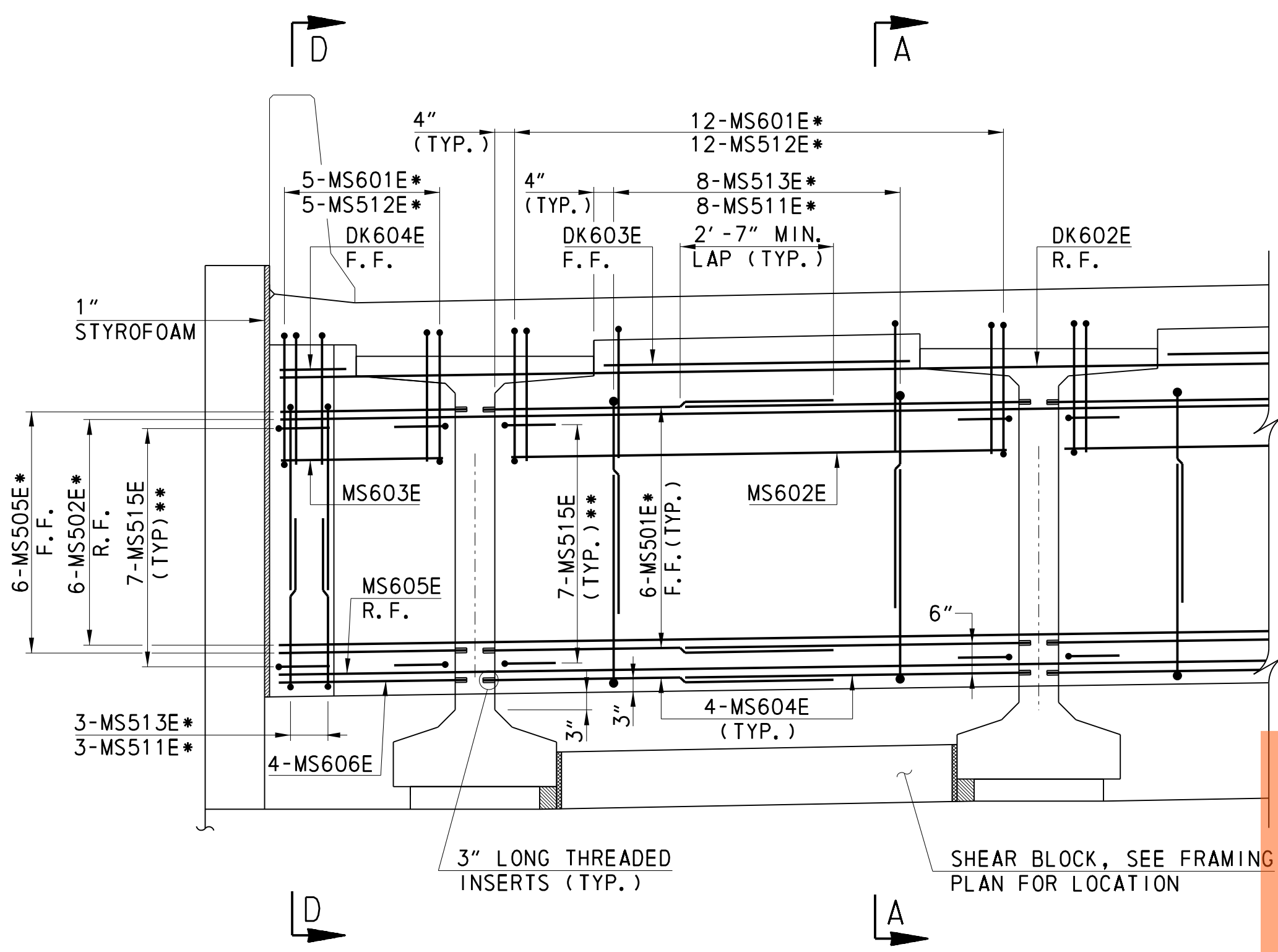
NOTES:
• SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE ENGINEER. METAL FORMS MUST BE GALVANIZED, MORTAR TIGHT AND STEEL METAL SCREWS MUST BE NON-CORROSIVE. SELF TAPPING SCREWS SHALL BE INSTALLED AT THE SIDE LAP OF THE SHEETS AT MID-SPAN BETWEEN SUPPORTS. NO WELD WILL BE PERMITTED AT NEGATIVE MOMENT ZONE.
• FOR ADDITIONAL NOTES, SEE SHEET 20 OF 40.

STAY-IN-PLACE FORM CONNECTION
NOT TO SCALE

- LEGEND:
- CLR. = CLEAR
 - CONSTR. = CONSTRUCTION
 - BOT. = BOTTOM
 - BRG. = BEARING
 - E. S. = EQUAL SPACING
 - GALV. = GALVANIZED
 - JT. = JOINT
 - MAX. = MAXIMUM
 - MIN. = MINIMUM
 - NB = NORTHBOUND
 - PGA = PROFILE GRADE APPLICATION
 - P/R = POINT OF ROTATION
 - SPA. = SPACE
 - TYP. = TYPICAL

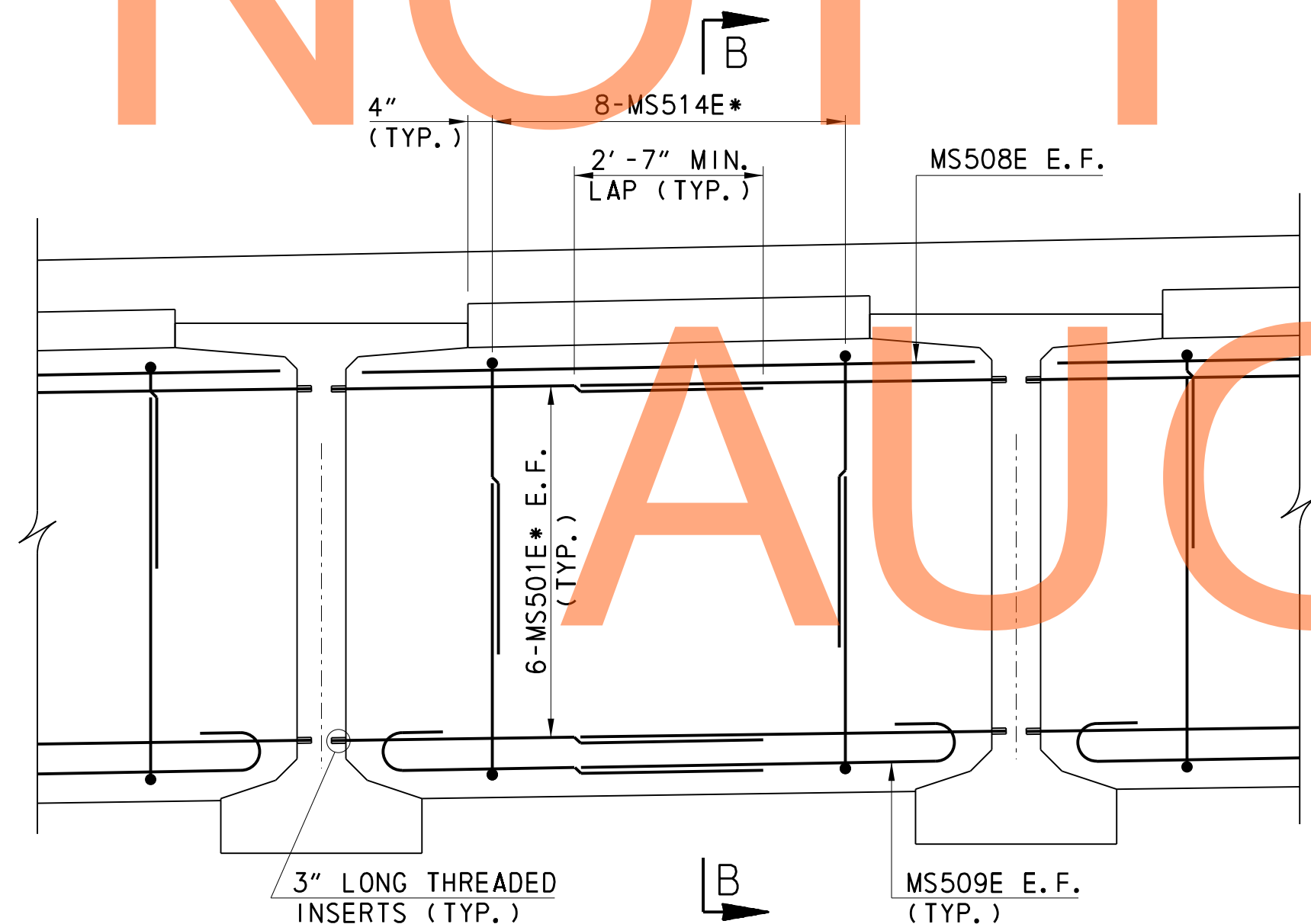


PARAPET ELEVATION (NB)
SCALE: 3/8"=1'-0"



ABUTMENT A (NB)
DIAPHRAGM ELEVATION
SCALE: 1/2" = 1'-0"

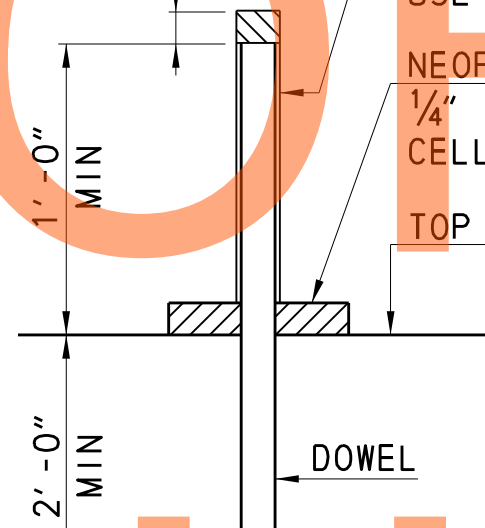
ABUTMENT B (NB)
DIAPHRAGM ELEVATION
SCALE: 1/2" = 1'-0"



INTERMEDIATE DIAPHRAGM (NB)
ELEVATION
SCALE: 1/2" = 1'-0"

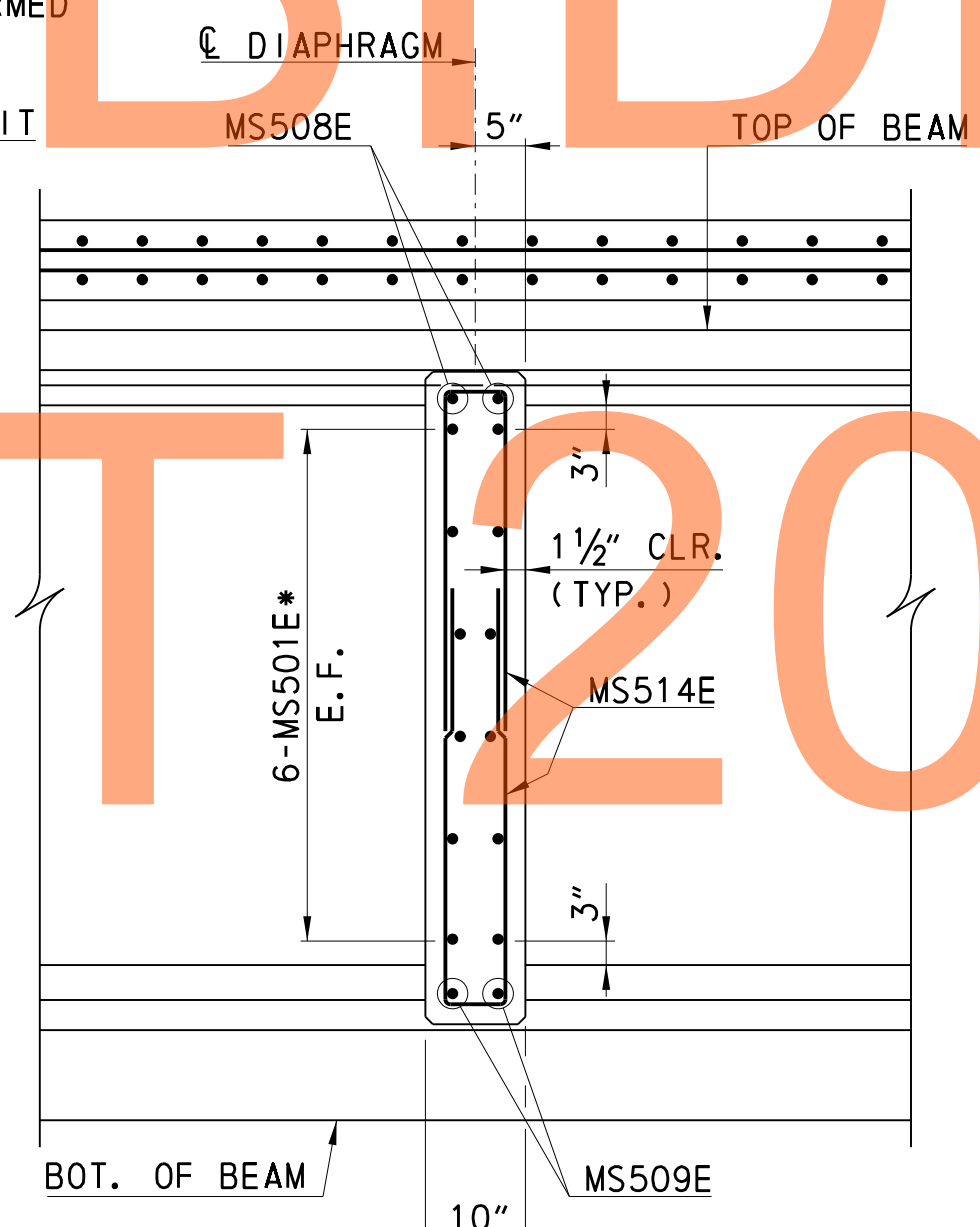
WRAP 2" THICK PREFORMED CELLULAR POLYSTYRENE CAP WITH 24 GAGE METAL SLEEVE

WRAP 24 GAGE METAL SLEEVE OR SLEEVE WITH SCHEDULE 40 PVC PIPE AROUND THE DOWEL (DO NOT USE ALUMINUM SLEEVE)
NEOPRENE SPONGE WASHER 1/4" THICKER THAN PREFORMED CELLULAR POLYSTYRENE
TOP OF SUBSTRUCTURE UNIT



DOWEL DETAIL
NOT TO SCALE

- LEGEND**
- ABUT. = ABUTMENT
 - BOT. = BOTTOM
 - CLR. = CLEAR
 - DIA. = DIAMETER
 - E.F. = EACH FACE
 - EQ. = EQUAL
 - EXP. = EXPANSION
 - FIX. = FIXED
 - F.F. = FRONT FACE
 - MIN. = MINIMUM
 - R.F. = REAR FACE
 - SPA. = SPACES
 - THK. = THICKNESS
 - TYP. = TYPICAL

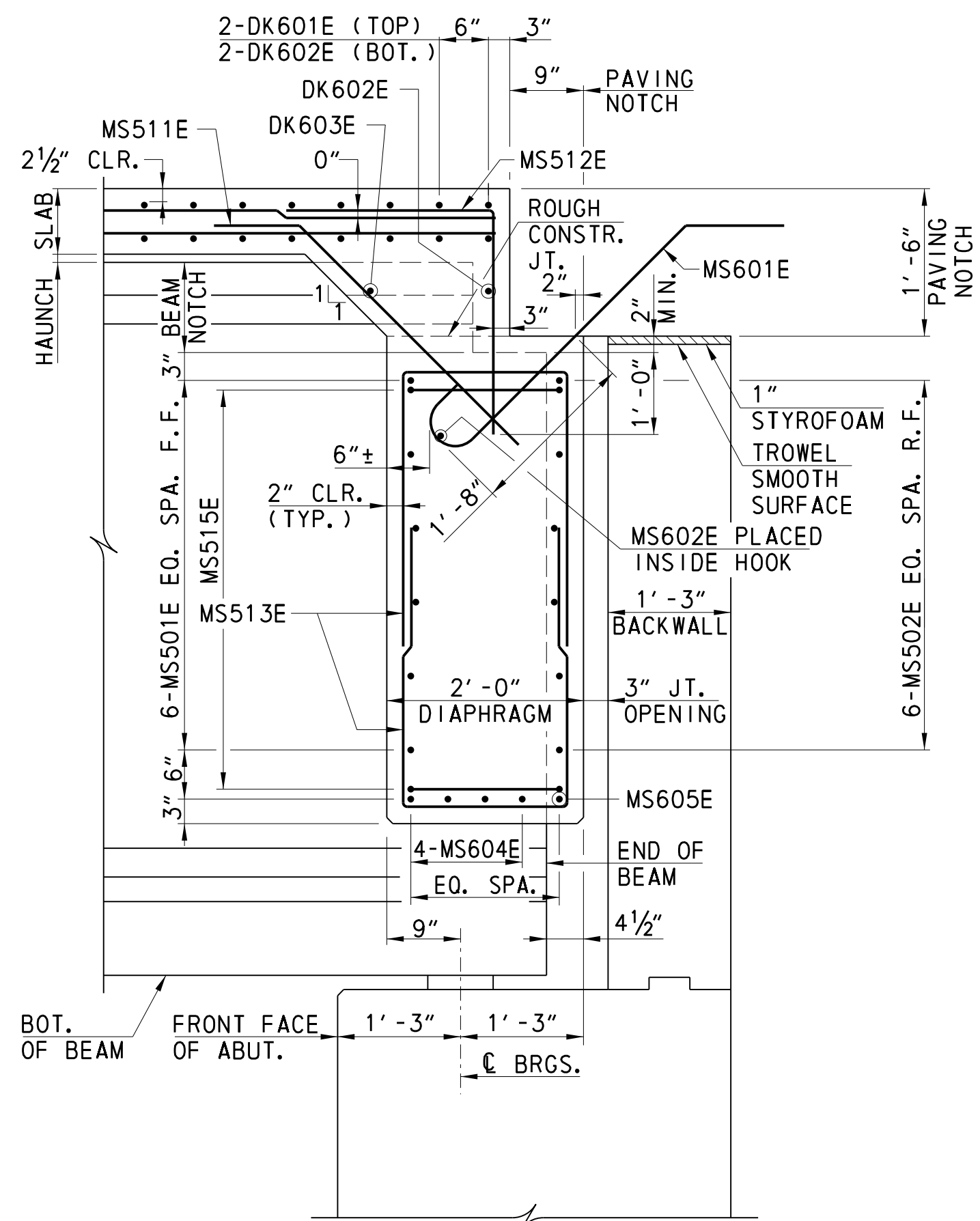


SECTION B-B (NB)
SCALE: 3/4" = 1'-0"

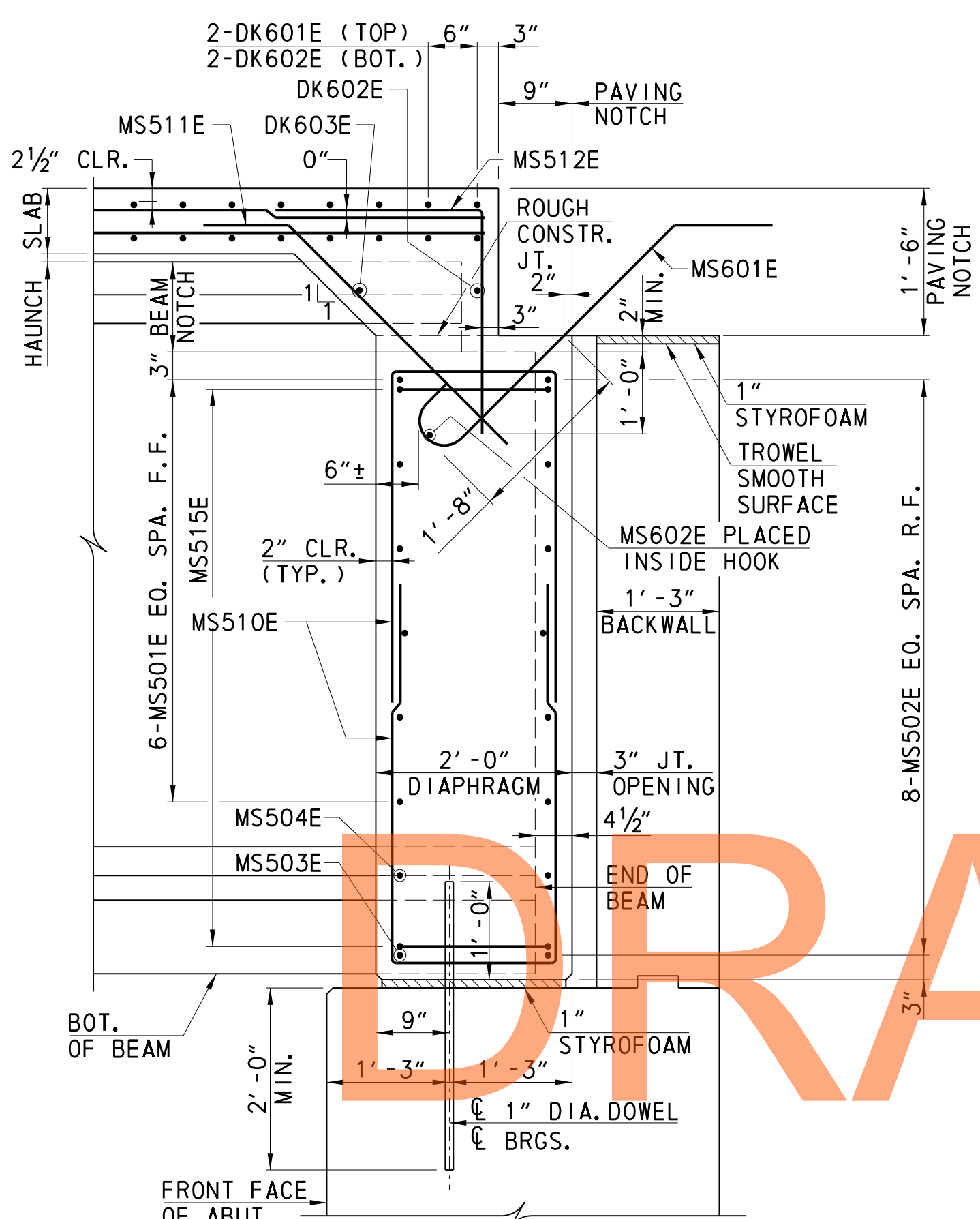
*** STYROFOAM SHALL MEET ASTM C-578 TYPE 1 MATERIAL REQUIREMENTS, EXCEPT THE MAXIMUM ALLOWABLE WATER ABSORPTION SHALL BE 2%.

NOTES:

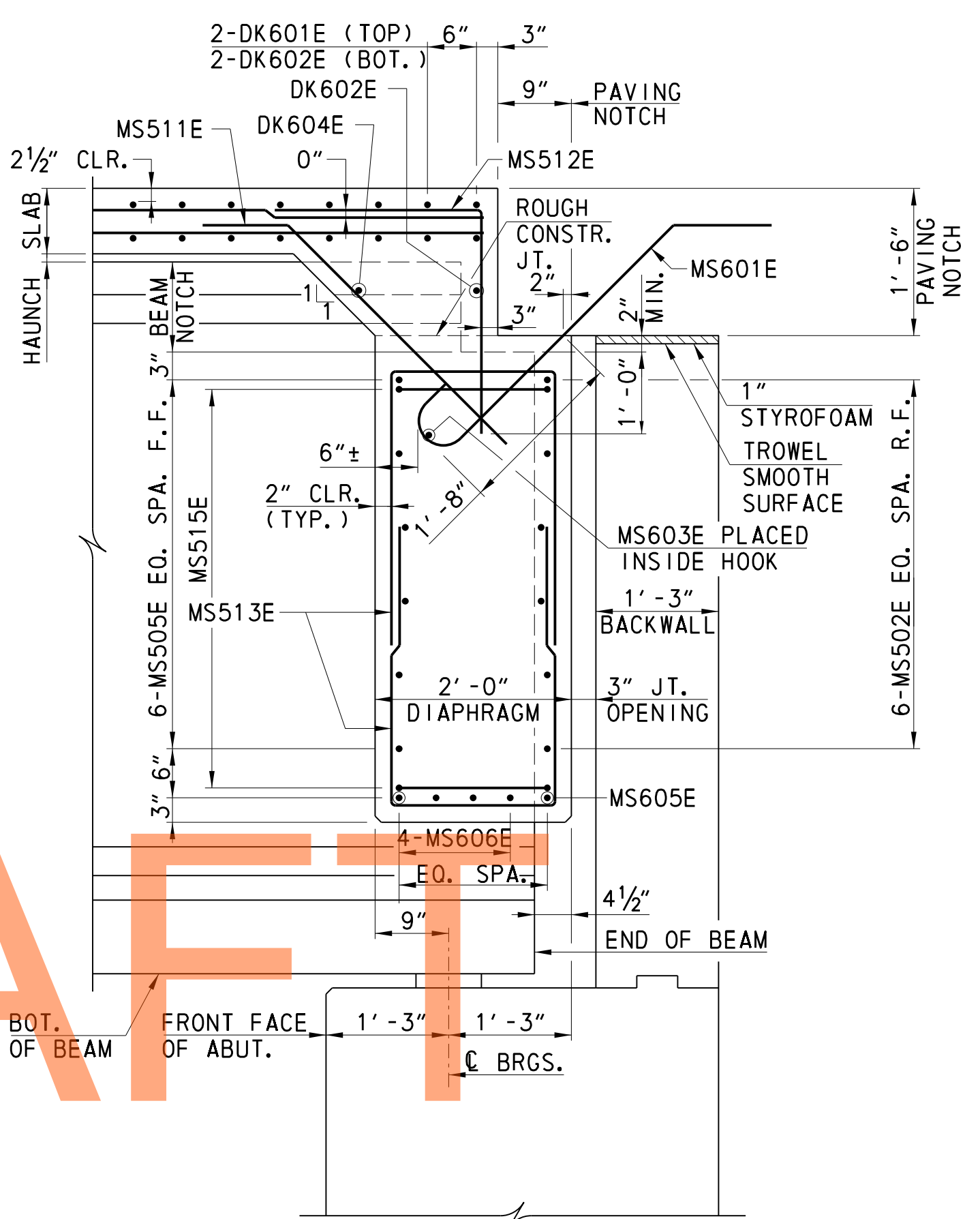
1. FOR SECTIONS A-A, C-C, D-D, AND E-E, SEE SHEET 24 OF 40.
2. FOR SHEAR BLOCK DETAILS, SEE SHEET 7 OF 40.
3. FOR FRAMING PLAN, SEE SHEET 19 OF 40.
4. FOR BEARING PAD DETAILS, SEE SHEET 20 OF 40.
5. FOR BEAM DETAILS, SEE SHEET 21 OF 40.
6. FOR REINFORCEMENT BAR LIST, SEE SHEET 28 OF 40.
7. FOR LAYOUT OF DOWELS AND DOWEL REQUIREMENTS, SEE SHEET 9 OF 40.
8. BITUMINOUS TAR PAPER OR SCHEDULE 40 PVC PIPE ARE PERMITTED TO BE USED AS ALTERNATIVE BOND BREAKER MATERIALS IN LIEU OF THE METAL SLEEVE. OTHER BOND BREAKER MATERIALS MAY BE USED AROUND THE DOWEL ONLY WITH THE APPROVAL OF THE ENGINEER.



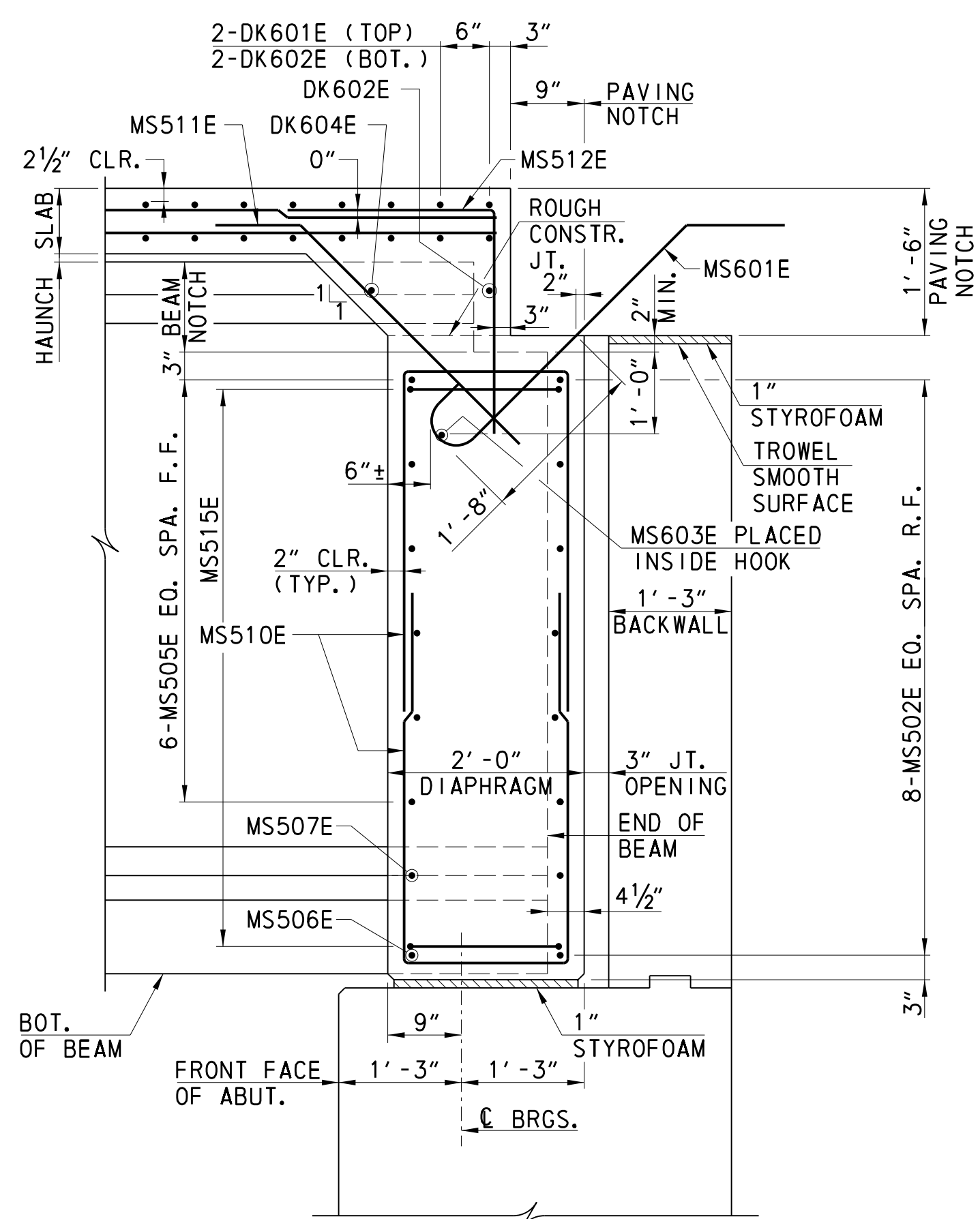
SECTION A-A (NB)
SCALE: 3/4" = 1'-0"



SECTION C-C (NB)
SCALE: 3/4" = 1'-0"



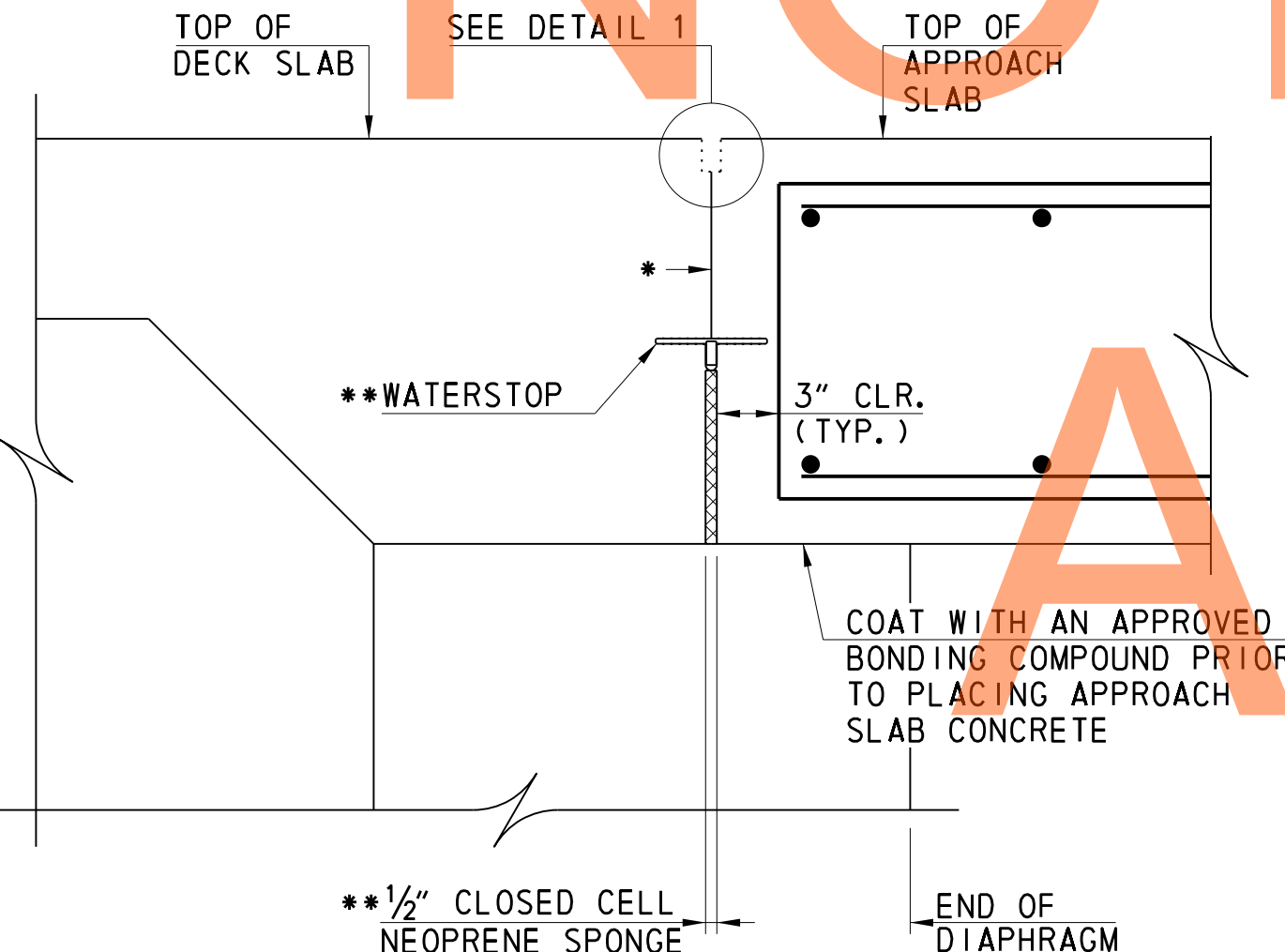
SECTION D-D (NB)
SCALE: 3/4" = 1'-0"



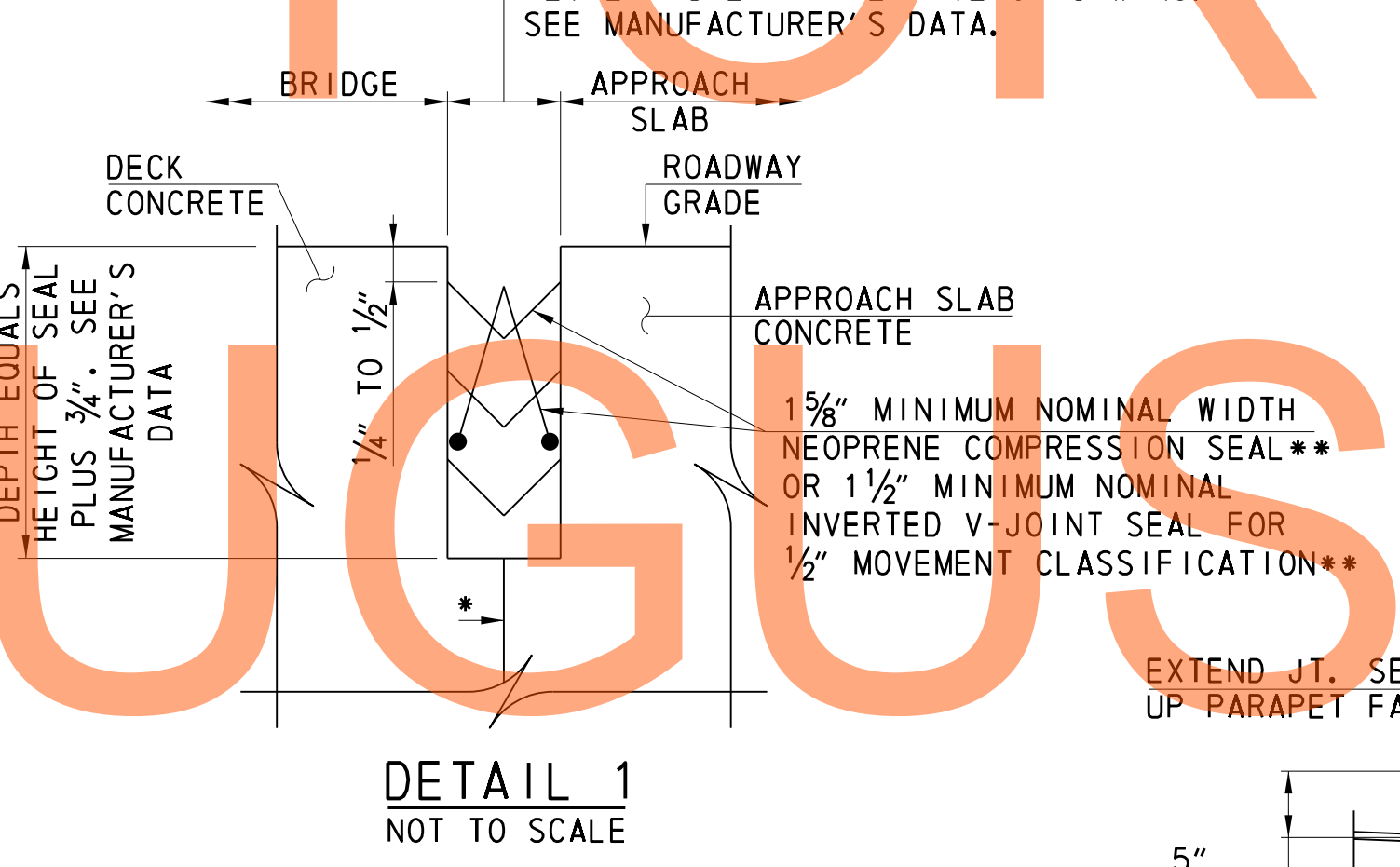
SECTION E-E (NB)
SCALE: 3/4" = 1'-0"

SAW CUT JOINT OPENING FOR JOINT SEAL.
WIDTH OF SAW CUT SHALL BE ADJUSTED
TO ACCOUNT FOR THE CONCRETE SURFACE
TEMPERATURE AT THE TIME OF SAWING.
SEE MANUFACTURER'S DATA.

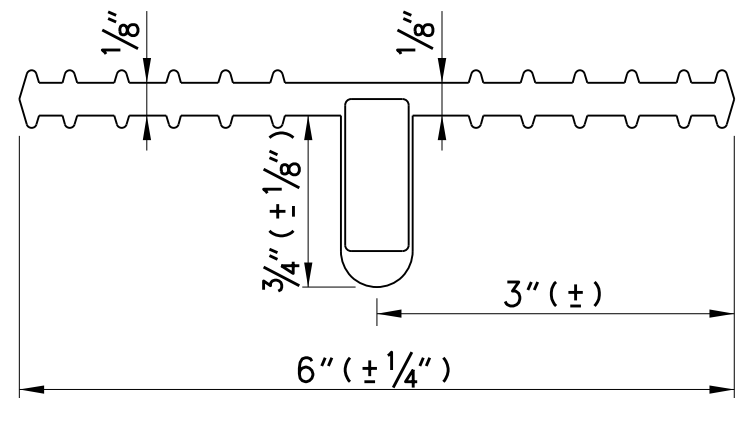
- NOTES:
- FOR LOCATION OF SECTIONS A-A, C-C, D-D AND E-E, SEE SHEET 23 OF 40.
 - FOR DECK DETAILS, SEE SHEET 22 OF 40.
 - FOR REINFORCEMENT BAR LIST, SEE SHEET 28 OF 40.
 - FOR APPROACH SLAB DETAILS, SEE SHEETS 25 AND 26 OF 40.
 - FOR DOWEL DETAIL, SEE SHEET 23 OF 40.



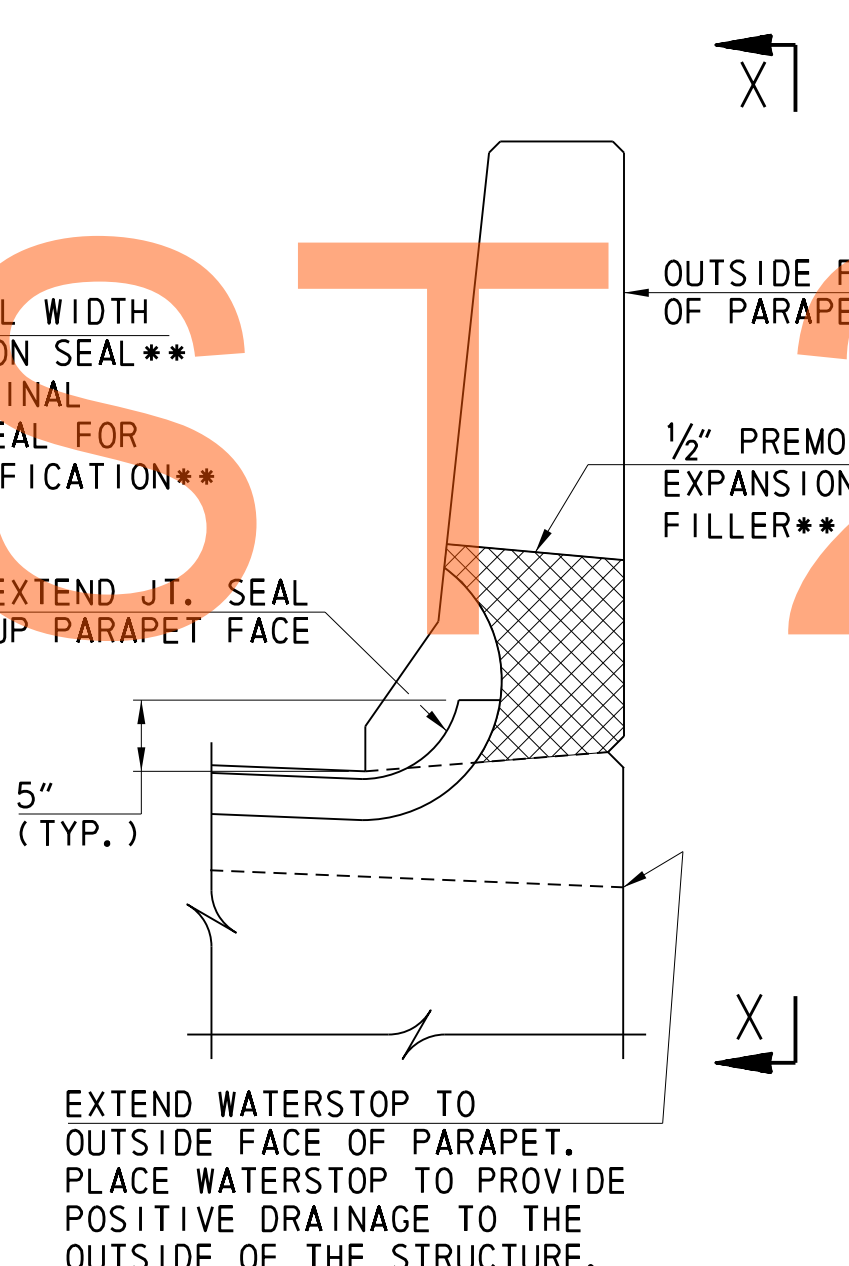
APPROACH SLAB JOINT DETAIL
NOT TO SCALE



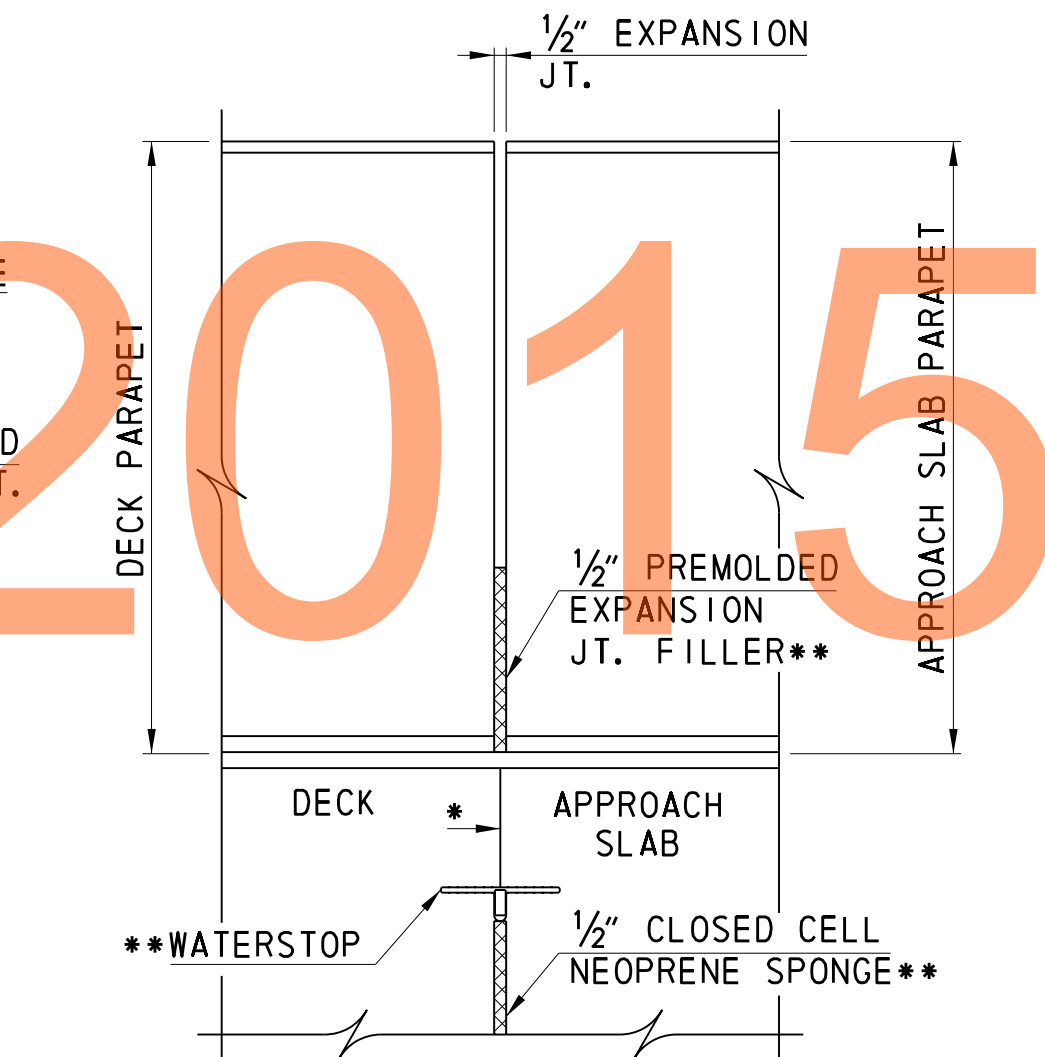
DETAIL 1
NOT TO SCALE



WATERSTOP DETAIL
NOT TO SCALE



ELEVATION



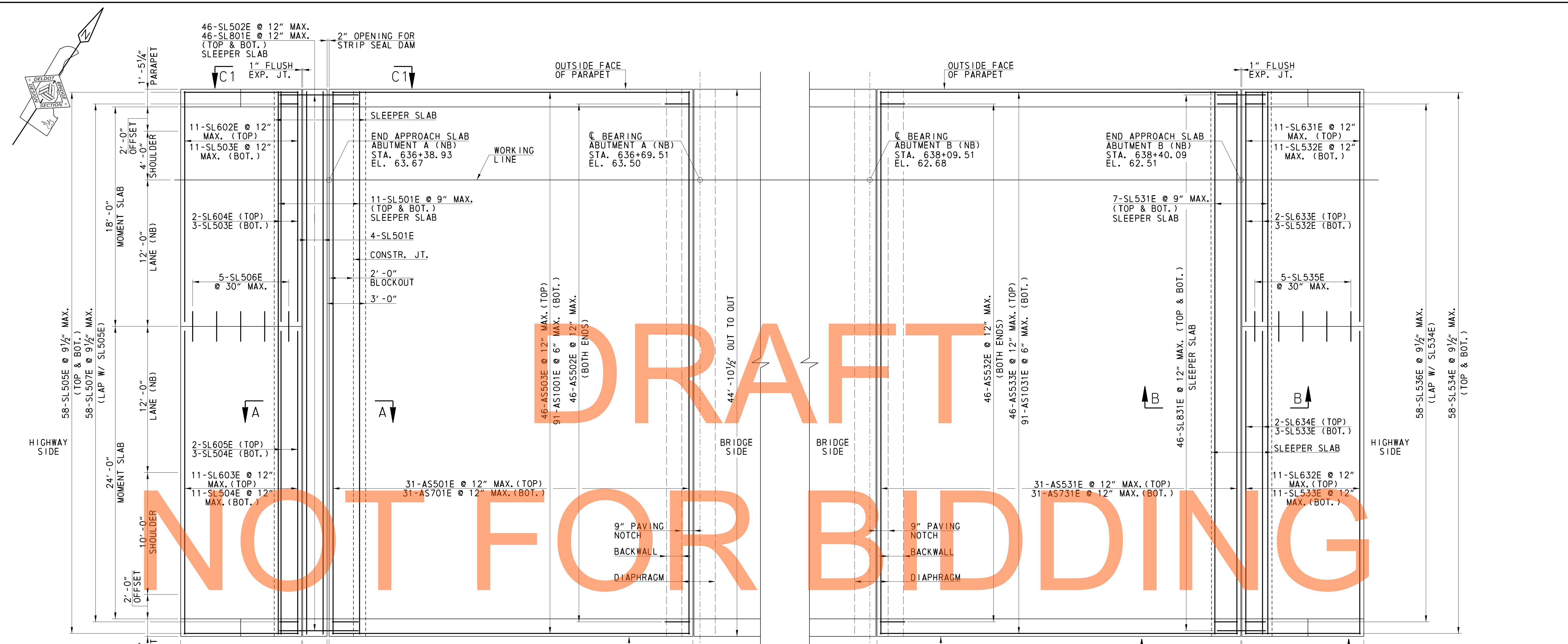
SECTION X-X

JOINT SEAL AND WATERSTOP TERMINATION DETAIL
NOT TO SCALE

- JOINT PREPARATION NOTES:
- THE JOINT OPENING IS TO BE FORMED BY A TWO-STAGE SAWING OPERATION WHERE ACCESSIBLE AND FORMED ELSEWHERE. THE FIRST SAW CUT IS DESIGNED TO CONTROL CRACKING. THE SECOND SAW CUT IS MADE USING A DOUBLE-BLADED WATER-COOLED SAW CAPABLE OF HOLDING A TOLERANCE OF $\pm 1/16$ " TO CREATE THE PROPER OPENING FOR THE PREFORMED NEOPRENE COMPRESSION SEAL OR INVERTED V-JOINT SEAL.
 - WATER BLAST OPENING IMMEDIATELY FOLLOWING SAW CUTTING OPERATION TO REMOVE ANY RESIDUAL SLURRY BEFORE IT DRIES.
 - THE DEPTH OF THE SEAL OPENING EQUALS THE HEIGHT OF THE SEAL PLUS $3/4$ ". THE WIDTH OF THE SECOND SAW CUT SHALL BE ADJUSTED TO ACCOUNT FOR THE CONCRETE SURFACE TEMPERATURE AT THE TIME OF SAWING, SEE MANUFACTURER'S PRODUCT INFORMATION.
 - BEFORE INSTALLING THE SEAL, ABRASIVE BLAST THE BONDING SURFACES TO THOROUGHLY CLEAN THE JOINT OPENING AND REMOVE FOREIGN MATERIAL, INCLUDING BROKEN CONCRETE. USE WATER AND OIL FREE COMPRESSED AIR TO BLOW OUT RESIDUE FROM THE SEAL GROOVE OPENING.
 - PREPARE BONDING SURFACES AND INSTALL JOINT SEAL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
 - DO NOT EXCEED 3% ELONGATION OF SEAL, IF STRETCHING OCCURS.

LEGEND

ABUT.	= ABUTMENT	F.F.	= FRONT FACE
BOT.	= BOTTOM	JT.	= JOINT
BRG.	= BEARING	MIN.	= MINIMUM
CLR.	= CLEAR	R.F.	= REAR FACE
CONSTR.	= CONSTRUCTION	SPA.	= SPACES
DIA.	= DIAMETER	TYP.	= TYPICAL
EQ.	= EQUAL		

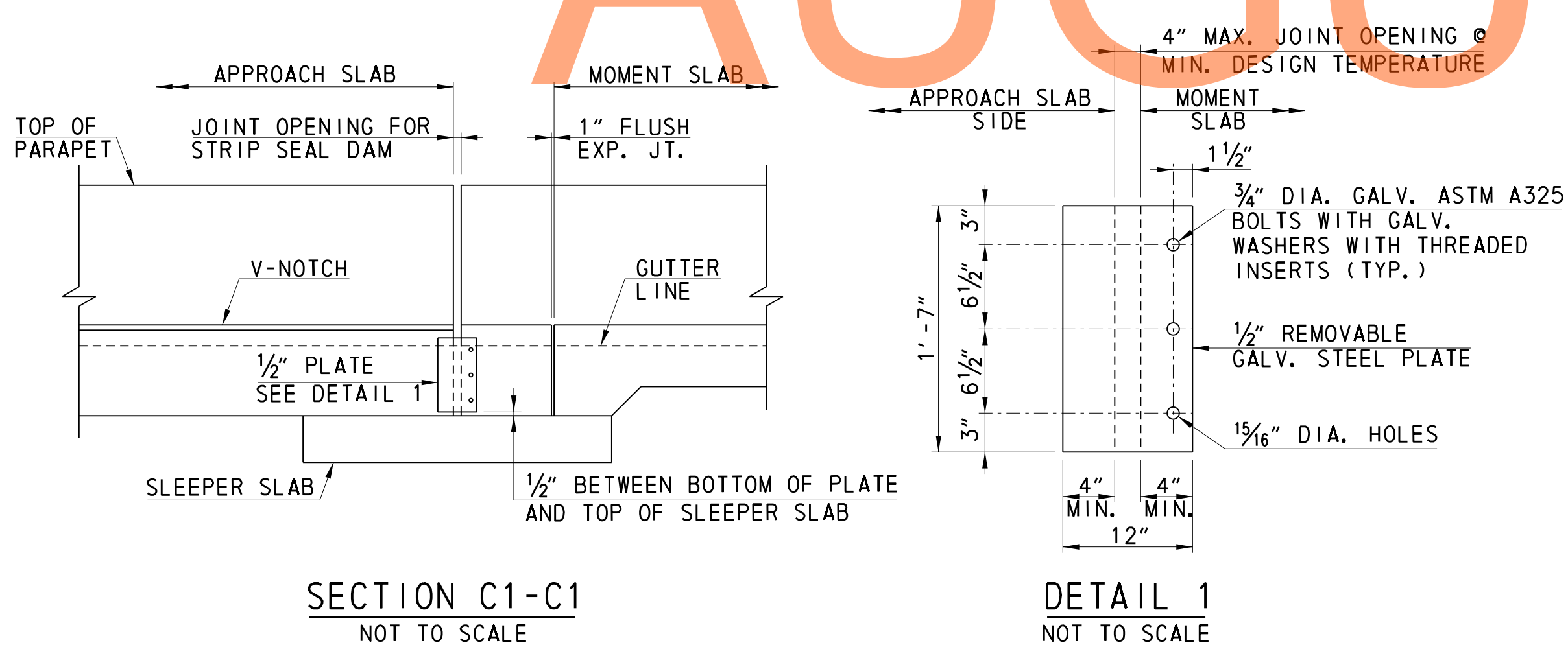


DRAFT

NOT FOR BIDDING

AUGUST 2015

APPROACH SLABS - PLAN (NB)
SCALE: 1/4" = 1' - 0"



SECTION C1-C1
NOT TO SCALE

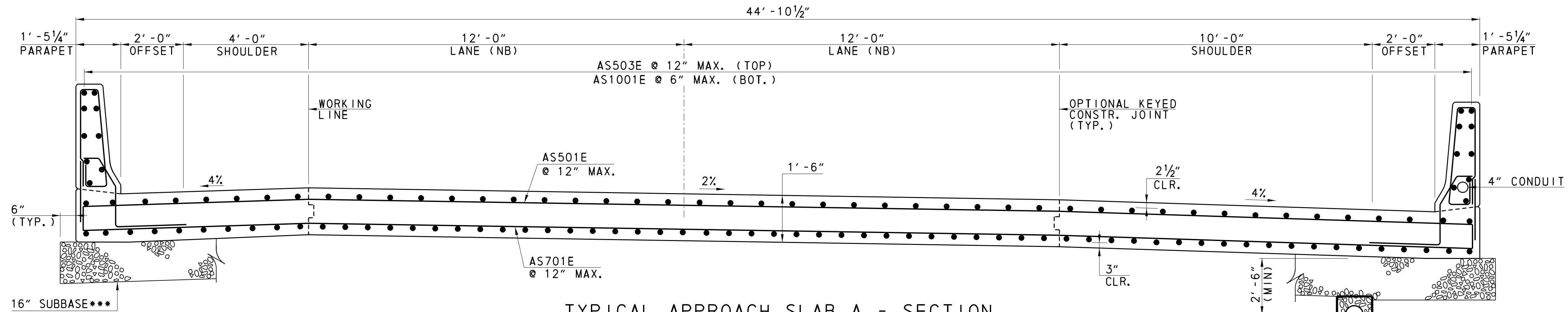
DETAIL 1
NOT TO SCALE

APPROACH SLAB NOTES

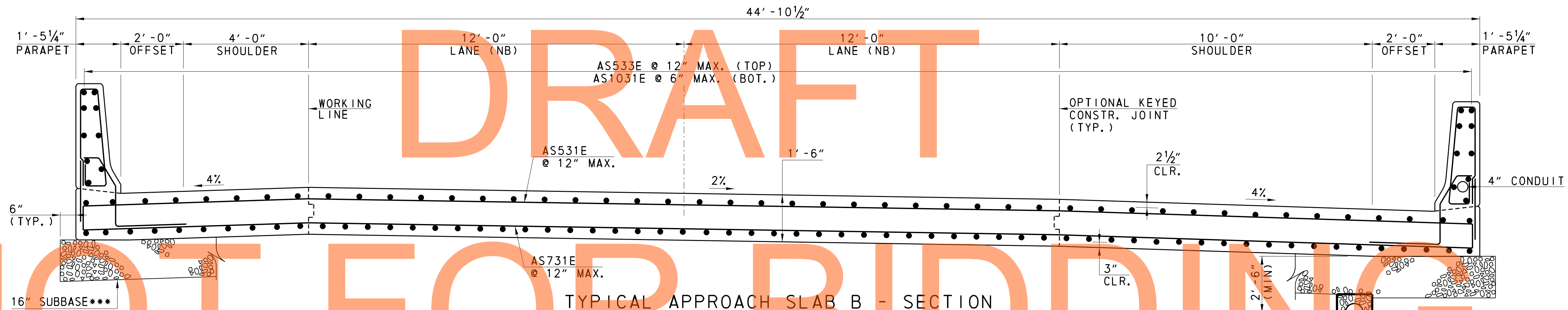
- PROVIDE CLASS D CONCRETE IN APPROACH SLAB, HEADER SLAB, SLEEPER SLAB AND MOMENT SLAB.
- PROVIDE CLASS A CONCRETE IN PARAPETS.
- A HIGHER CLASS OF CONCRETE MAY BE SUBSTITUTED FOR A LOWER CLASS OF CONCRETE AT NO ADDITIONAL COST TO THE DEPARTMENT.
- PLACE APPROACH SLAB CONCRETE WITH A MOTORIZED, MECHANICAL FINISHING MACHINE.
- PLACE CONCRETE IN ONE CONTINUOUS OPERATION, UNLESS OTHERWISE INDICATED OR DIRECTED.
- LONGITUDINAL KEYED CONSTRUCTION JOINTS ARE PERMITTED IN THE APPROACH SLAB BETWEEN THE SHOULDER AND THE LANE LINE.
- CONSTRUCT BRIDGE APPROACH SLAB AFTER THE BRIDGE DECK SLAB IS CONSTRUCTED.
- PROVIDE GRADE 60 DEFORMED REINFORCING BARS THAT MEET THE REQUIREMENTS OF AASHTO M31.
- EPOXY COAT ALL REINFORCEMENT BARS.

NOTES:

1. FOR SECTIONS A-A AND B-B, SEE SHEET 26 OF 40.
2. FOR REINFORCEMENT BAR LIST, SEE SHEET 28 OF 40.
3. FOR APPROACH SLAB JOINT DETAILS AT END OF BRIDGE DECK, SEE SHEET 24 OF 40.
4. FOR TYPICAL APPROACH SLAB SECTIONS, SEE SHEET 26 OF 40.
5. PAYMENT FOR GALVANIZED STEEL PLATE AND HARDWARE SHALL BE INCIDENTAL TO APPROACH SLAB CONSTRUCTION.



TYPICAL APPROACH SLAB A - SECTION
(NB)
SCALE: 1/2" = 1' - 0"



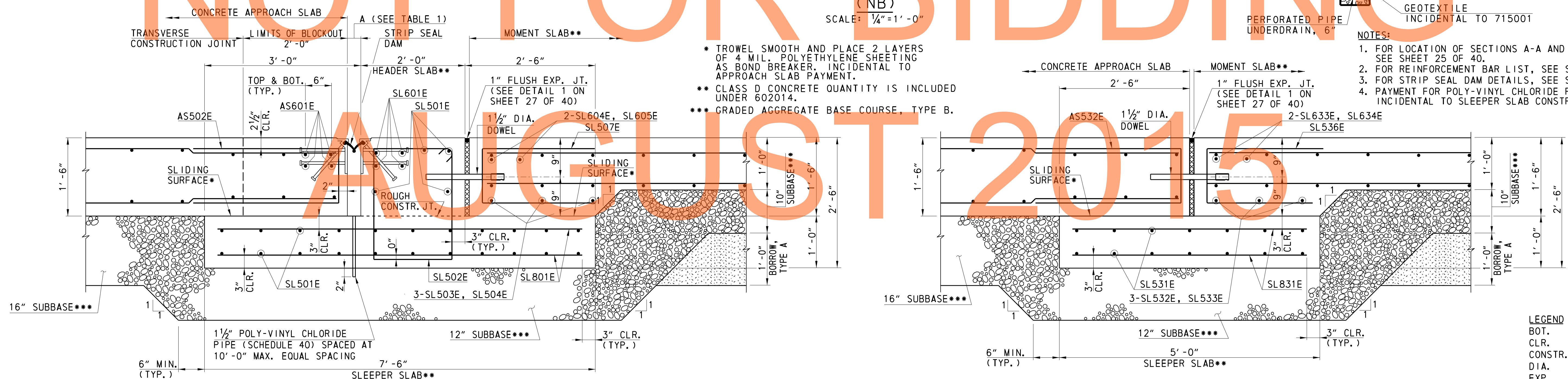
TYPICAL APPROACH SLAB B - SECTION
(NB)
SCALE: 1/4" = 1' - 0"

DRAFT
NOT FOR BIDDING
AUGUST 2015

CONCRETE APPROACH SLAB
TRANSVERSE CONSTRUCTION JOINT
LIMITS OF BLOCKOUT
A (SEE TABLE 1)
STRIP SEAL DAM
MOMENT SLAB**

* TROWEL SMOOTH AND PLACE 2 LAYERS OF 4 MIL. POLYETHYLENE SHEETING AS BOND BREAKER. INCIDENTAL TO APPROACH SLAB PAYMENT.
** CLASS D CONCRETE QUANTITY IS INCLUDED UNDER 602014.
*** GRADED AGGREGATE BASE COURSE, TYPE B.

NOTES:
1. FOR LOCATION OF SECTIONS A-A AND B-B, SEE SHEET 25 OF 40.
2. FOR REINFORCEMENT BAR LIST, SEE SHEET 28 OF 40.
3. FOR STRIP SEAL DAM DETAILS, SEE SHEET 36 OF 40.
4. PAYMENT FOR POLY-VINYL CHLORIDE PIPE SHALL BE INCIDENTAL TO SLEEPER SLAB CONSTRUCTION.

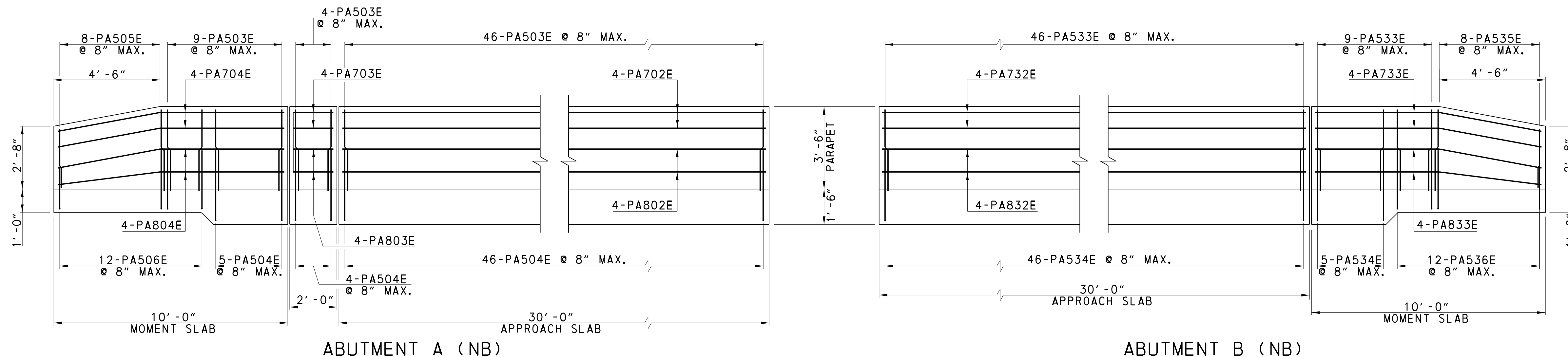


SECTION A-A
SCALE: 3/4" = 1' - 0"

SECTION B-B
SCALE: 3/4" = 1' - 0"

Temperature (°F)	10	20	30	32	40	50	60	68	70	80	90	100
Opening Size	0' - 2 1/16"	0' - 2 3/16"	0' - 2 1/8"	0' - 2 1/16"	0' - 2 1/8"	0' - 2 1/4"	0' - 2 1/8"	0' - 2"	0' - 2"	0' - 1 7/8"	0' - 1 3/4"	0' - 1 5/8"

LEGEND
BOT. = BOTTOM
CLR. = CLEAR
CONSTR. = CONSTRUCTION
DIA. = DIAMETER
EXP. = EXPANSION
JT. = JOINT
MAX. = MAXIMUM
MIN. = MINIMUM
NB = NORTHBOUND
TYP. = TYPICAL

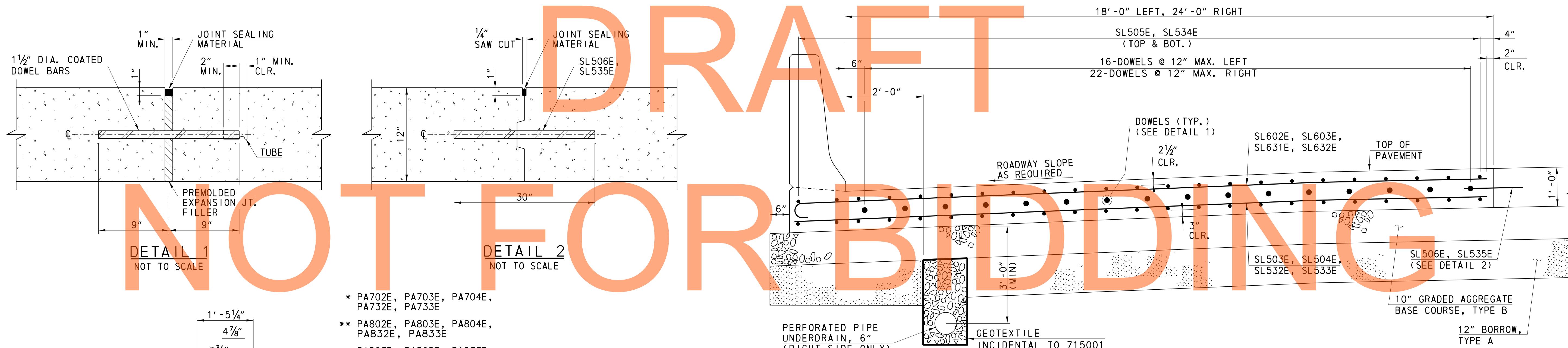


ABUTMENT A (NB)

PARAPET ELEVATION

SCALE: 3/8" = 1'-0"

ABUTMENT B (NB)



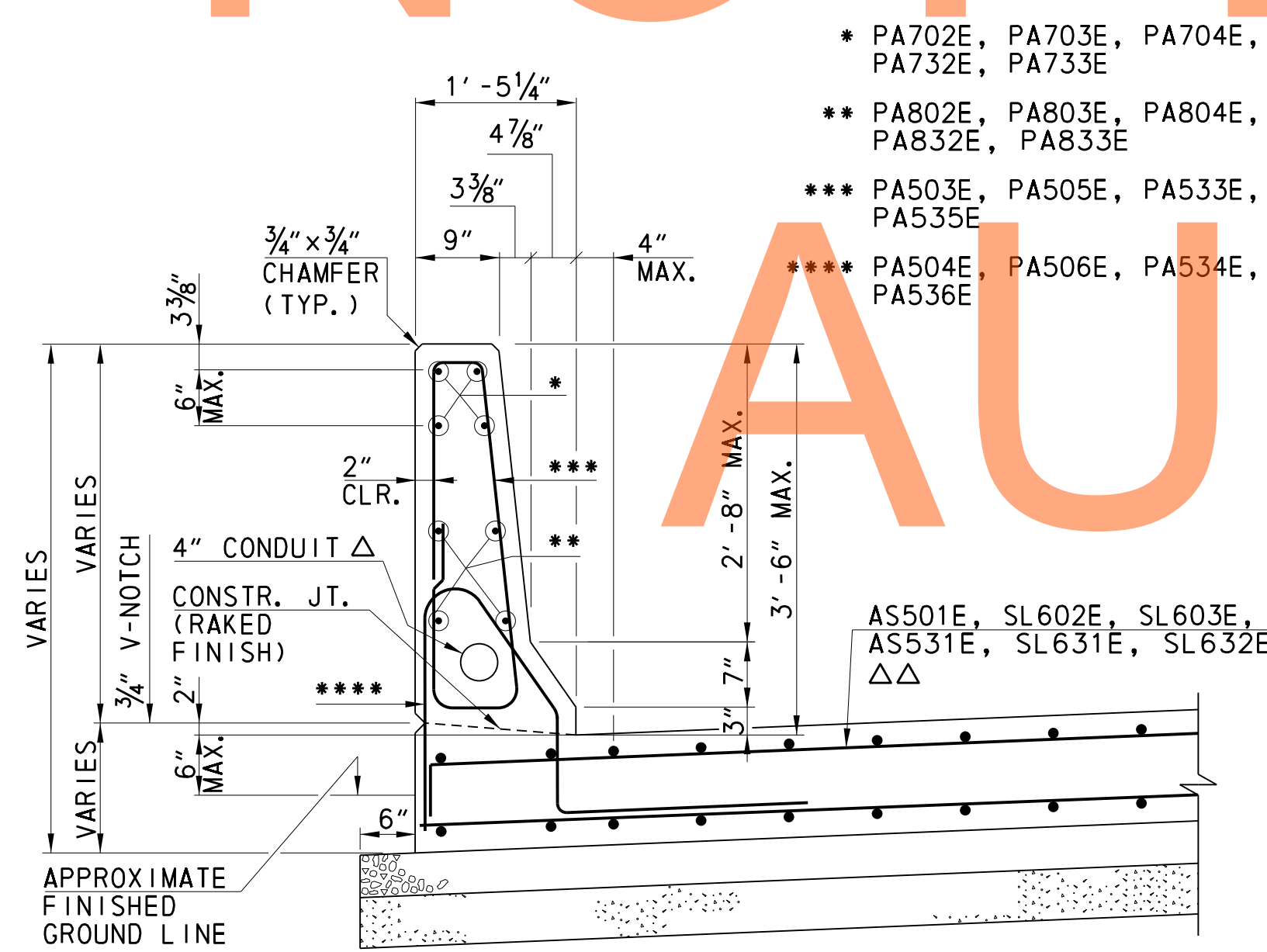
DETAIL 1
NOT TO SCALE

DETAIL 2
NOT TO SCALE

MOMENT SLAB (AT GRADE)
WITH TYPICAL C. I. P. BARRIER

SCALE: 3/4" = 1'-0"

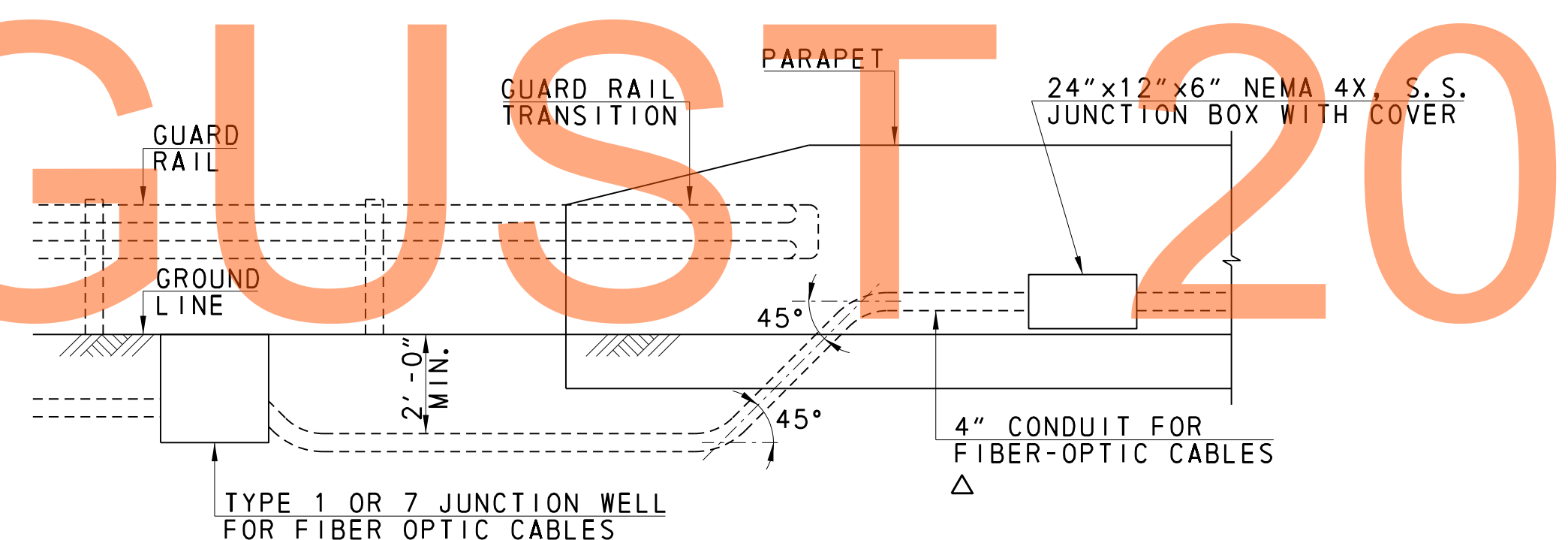
- NOTES:
1. PROVIDE DOWELS AT EXPANSION JOINTS.
 2. PLACE A TUBE FROM AN APPROVED MANUFACTURER OVER THE LUBRICATED END OF ALL DOWEL BARS AND PROVIDE A MINIMUM 1" CLEARANCE POCKET ASSURED BY MEANS OF A POSITIVE SPACING DEVICE.
 3. CUT EXPANSION JOINT FILLER MATERIAL TO CONFORM TO CROSS SECTION OF THE PAVEMENT AND FURNISH IN STRIPS EQUAL TO THE WIDTH OF THE PAVEMENT SLAB. MAKE THE TOP SURFACE SMOOTH AND HAVE HOLES PUNCHED FOR THE DOWEL BARS. PROVIDE A SNUG FIT WITHOUT LOSS IN THICKNESS OF THE MATERIAL. PAYMENT SHALL BE INCIDENTAL TO APPROACH SLAB CONSTRUCTION.
 4. CONSTRUCT ALL TRANSVERSE JOINTS PERPENDICULAR TO THE CENTERLINE.
 5. USE 1 1/2" DIA. x 18" LONG DOWEL BARS. APPROVED ALTERNATE DOWEL BARS HAVING EQUIVALENT PROPERTIES TO CONVENTIONAL ROUND DOWEL BARS MAY BE USED. COATED DOWEL BARS SHALL CONFORM TO DELDOT STANDARD SPECIFICATION 824.02 (g). PAYMENT SHALL BE INCIDENTAL TO APPROACH SLAB CONSTRUCTION.
 6. PLACE DOWEL BARS PARALLEL TO THE CENTERLINE AND SURFACE OF THE SLAB.
 7. MAKE THE TOP OF THE JOINT SEALING MATERIAL FROM 1/8" TO 1/4" BELOW THE SURFACE OF THE PAVEMENT. USE HEAT RESISTANT JOINT BACKING MATERIAL FOR HOT Poured JOINTS. PAYMENT SHALL BE INCIDENTAL TO APPROACH SLAB AND MOMENT SLAB CONSTRUCTION.
 8. FOR REINFORCEMENT BAR LIST, SEE SHEET 28 OF 40.
 9. SLIP FORMING FOR PARAPETS IS NOT PERMITTED.



NOTE:
UNDERDRAIN NOT SHOWN

PARAPET DETAIL
SCALE: 1/4" = 1'-0"

△ OUTSIDE PARAPET ONLY; OMIT FOR MEDIAN PARAPET.
△△ USE 90° BEND AT APPROACH SLABS. USE 180° BEND AT MOMENT SLABS.

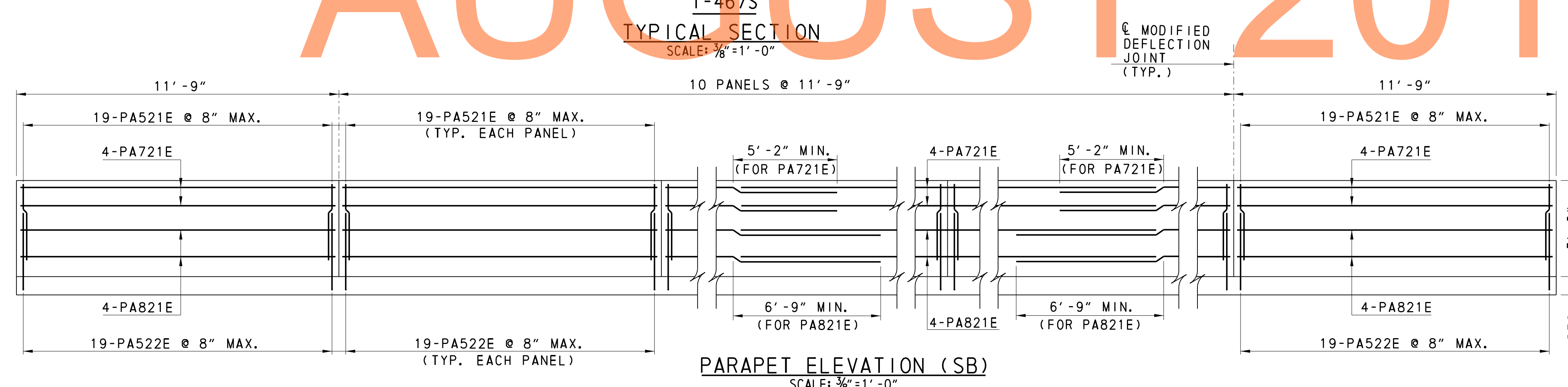
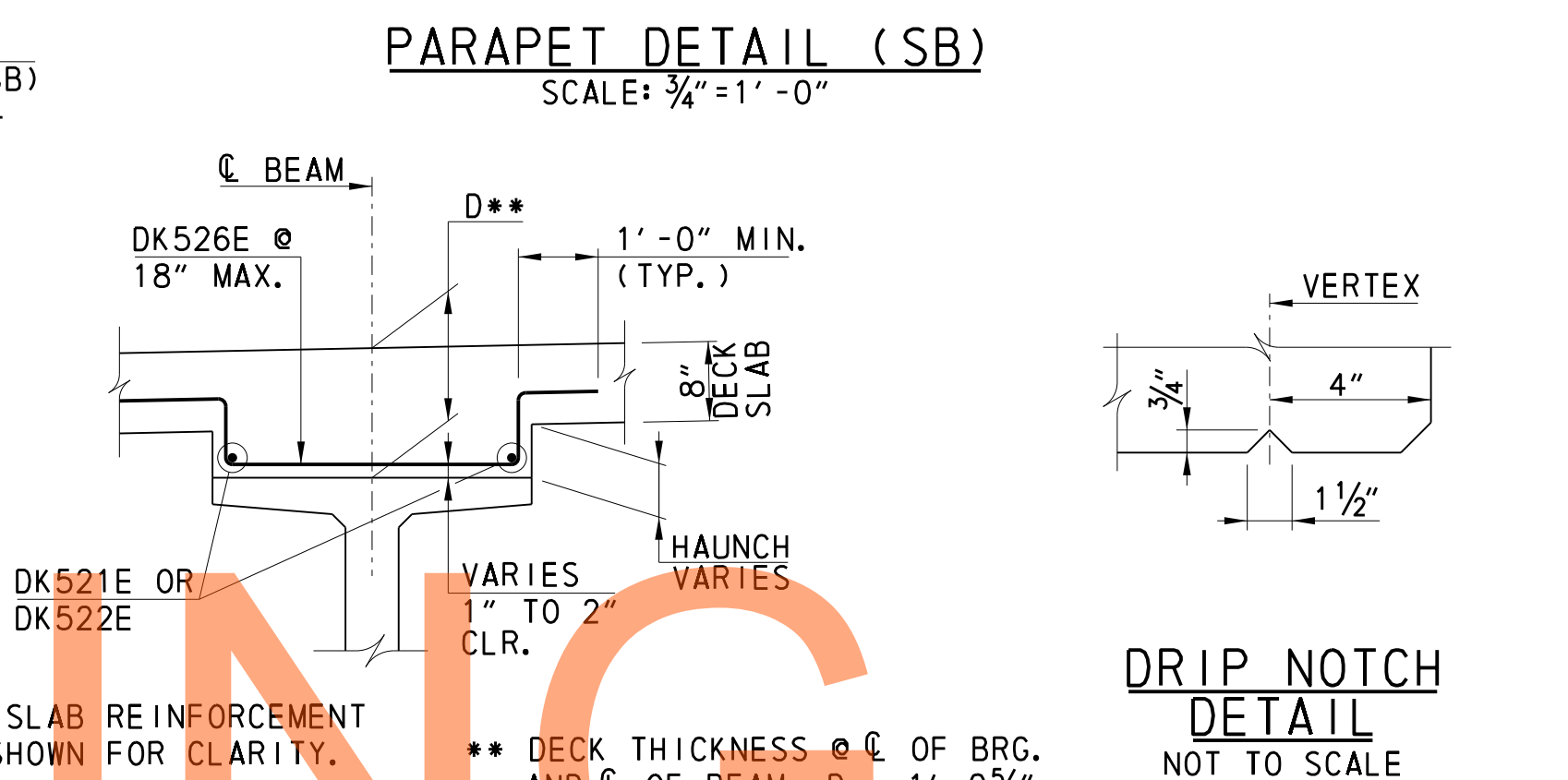
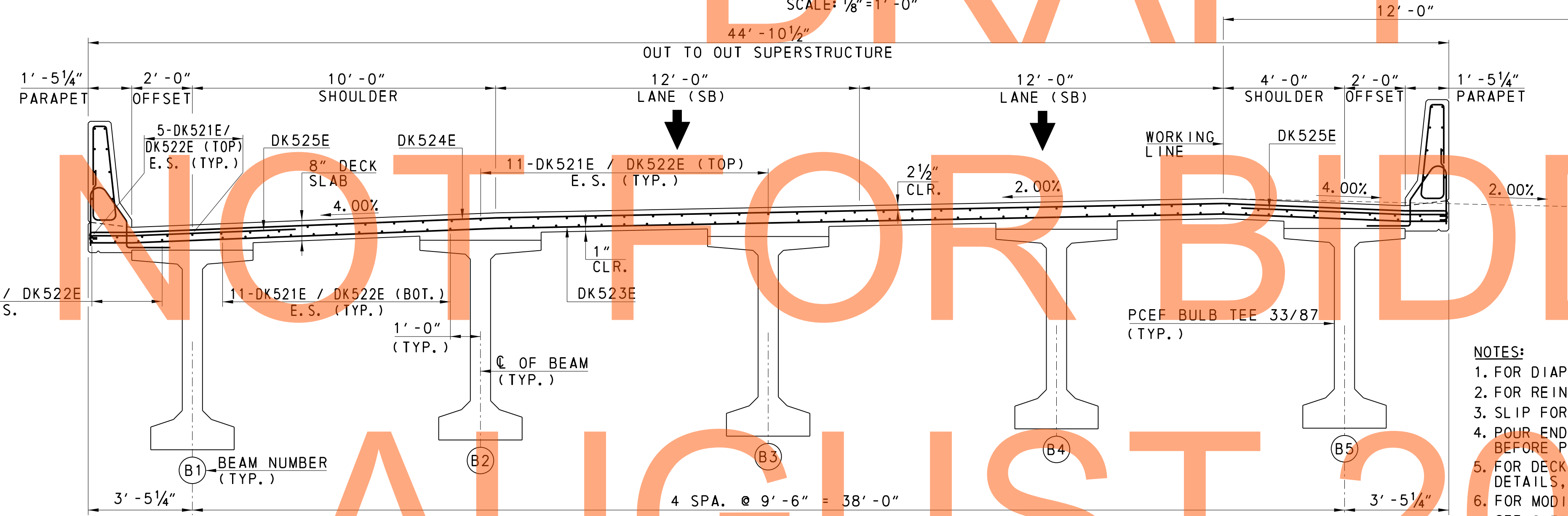
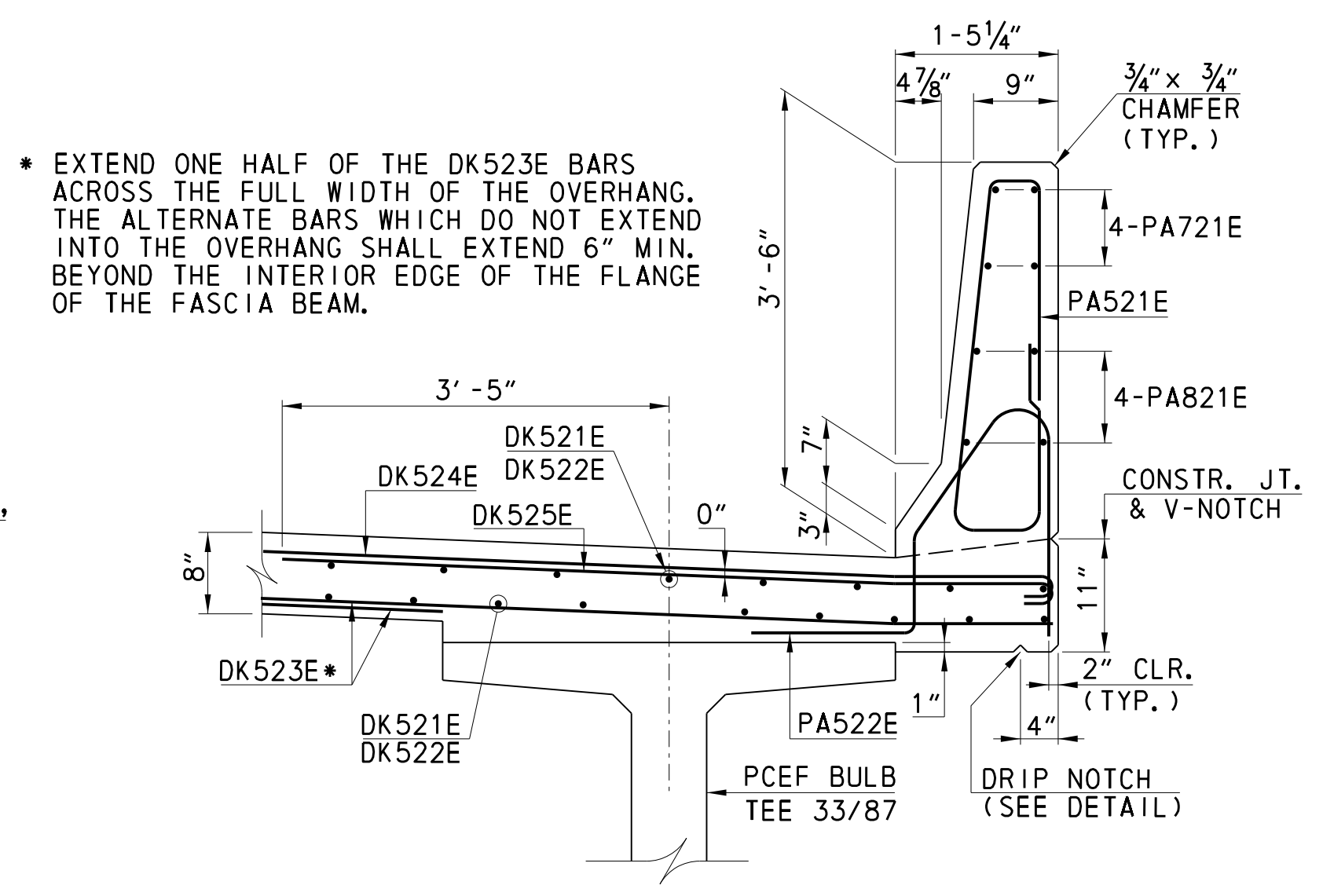
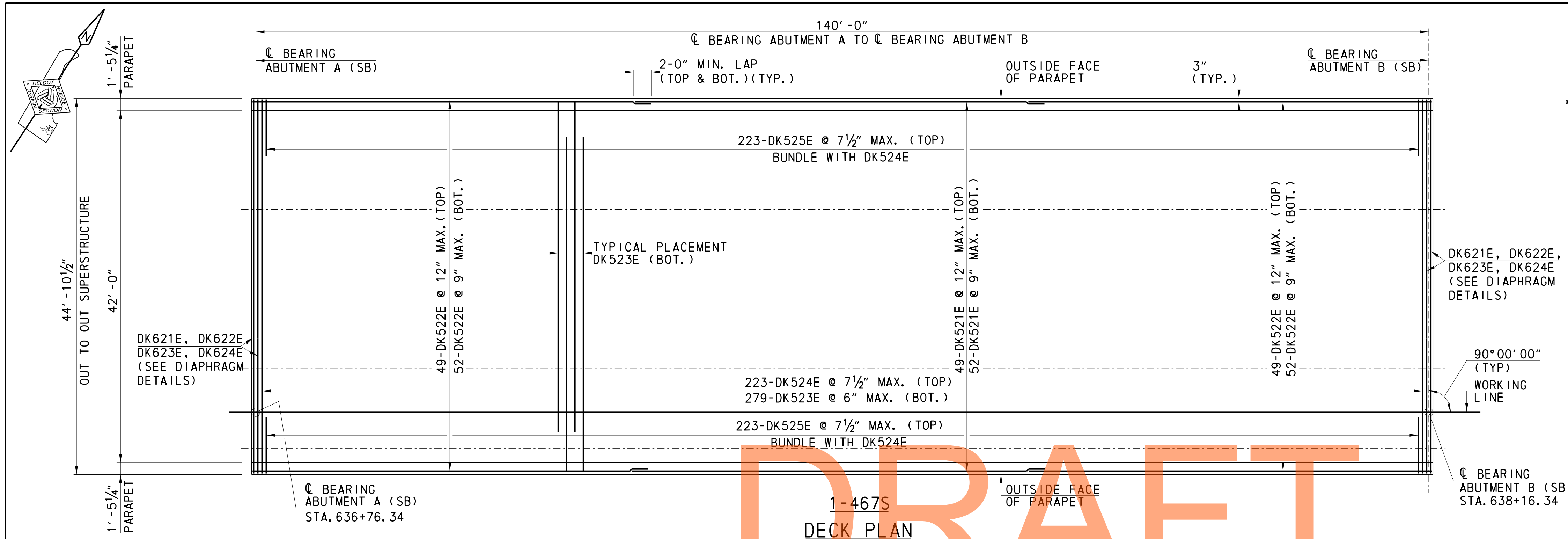


- NOTES:
- FOR CONDUIT, JUNCTION BOX AND JUNCTION WELL DETAILS AND PAYMENT, SEE SHEET SS-06.
 - USE FLEXIBLE COUPLING AT BRIDGE EXPANSION JOINTS.

CONDUIT TRANSITION
FROM BRIDGE END
NOT TO SCALE

LEGEND

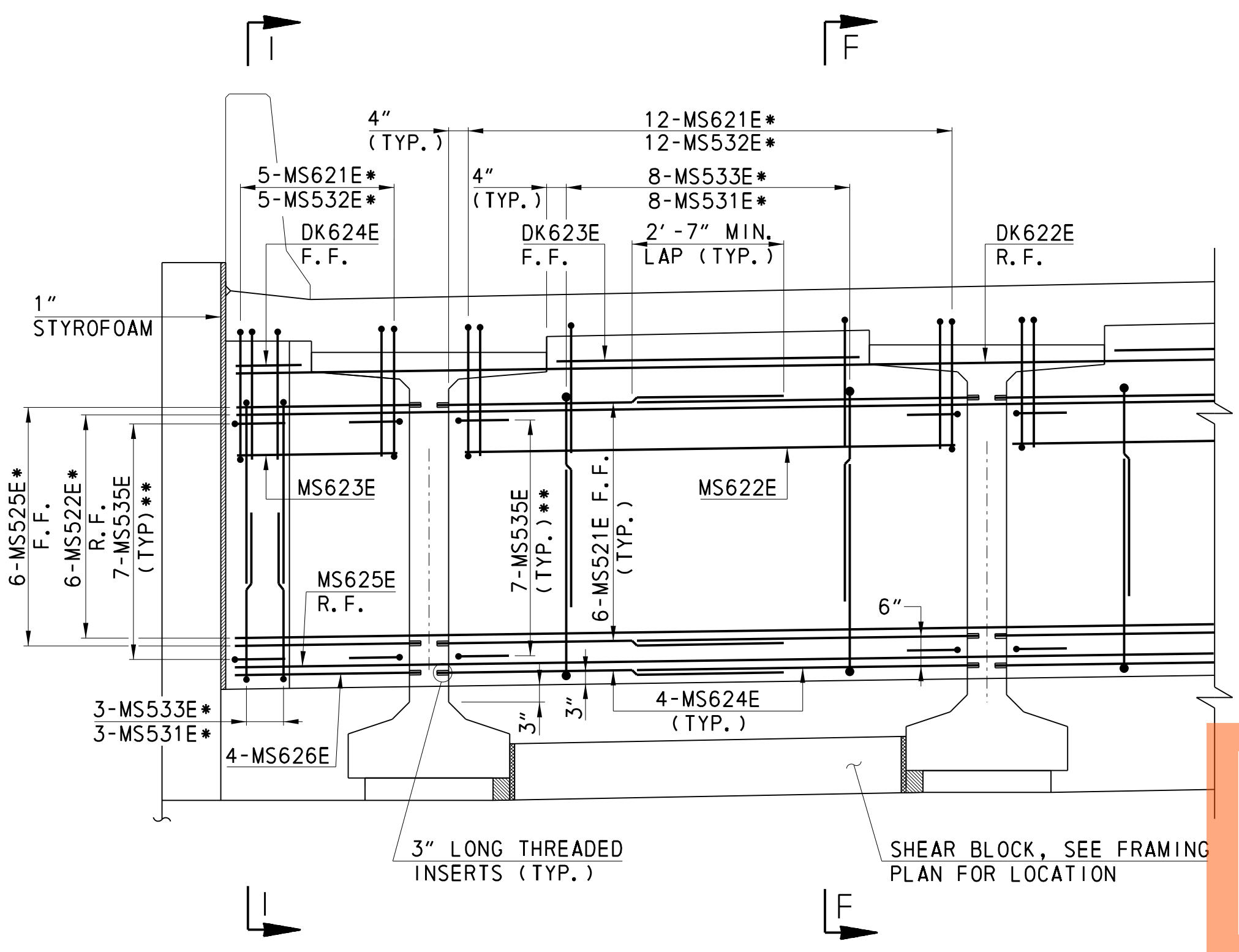
BOT.	=	BOTTOM
C. I. P.	=	CAST-IN-PLACE
CLR.	=	CLEAR
DIA.	=	DIAMETER
JT.	=	JOINT
MAX.	=	MAXIMUM
MIN.	=	MINIMUM
NB	=	NORTHBOUND
TYP.	=	TYPICAL



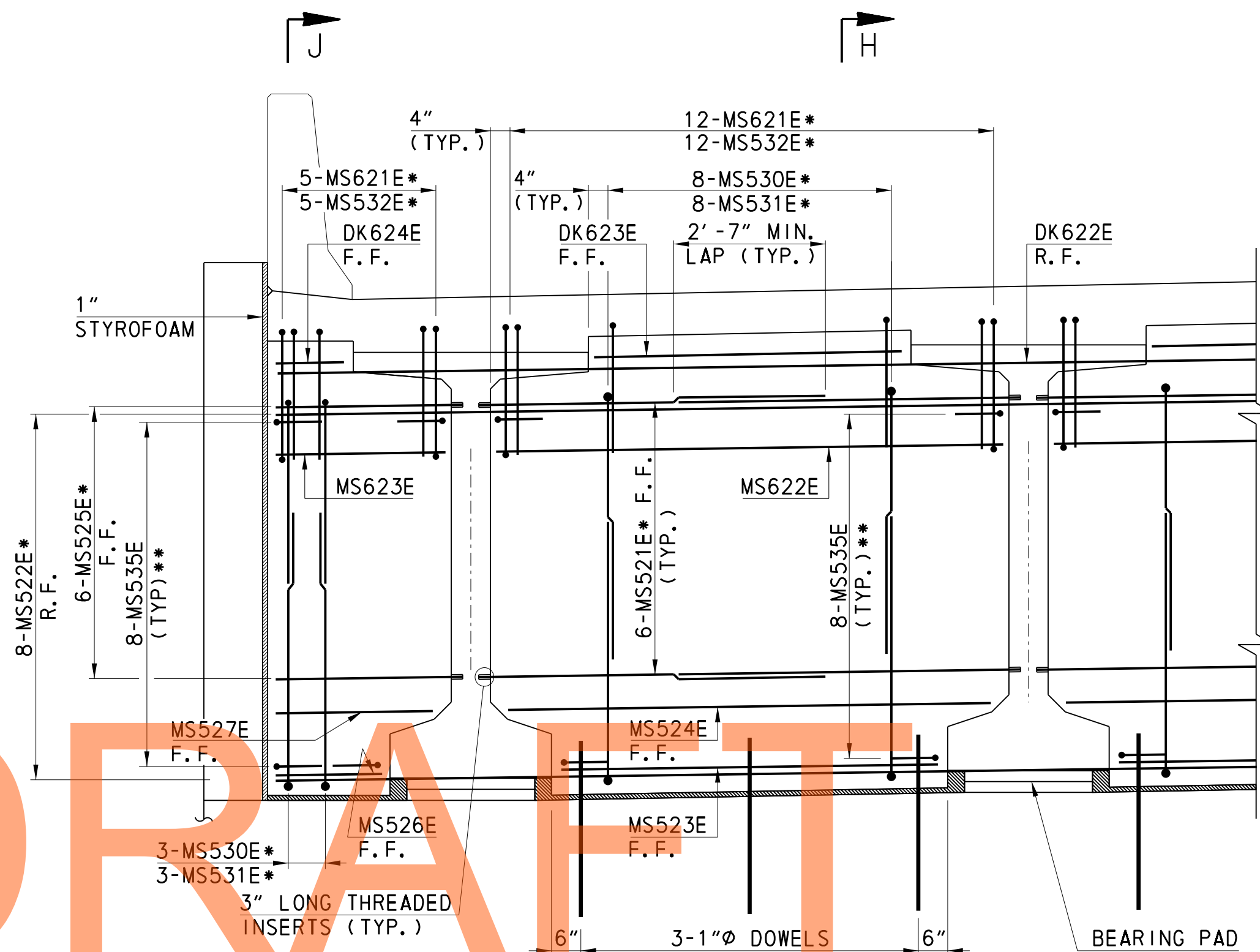
- NOTES:**
- FOR DIAPHRAGM DETAILS, SEE SHEET 31 OF 40.
 - FOR REINFORCEMENT BAR LIST, SEE SHEET 35 OF 40.
 - SLIP FORMING FOR PARAPETS IS NOT PERMITTED.
 - POUR END AND INTERMEDIATE DIAPHRAGMS BEFORE POURING DECK.
 - FOR DECK PARAPET/ APPROACH SLAB PARAPET JOINT DETAILS, SEE SHEET 31 OF 40.
 - FOR MODIFIED DEFLECTION JOINT DETAILS, SEE SHEET 4 OF 40.

- NOTES:**
- SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE ENGINEER. METAL FORMS MUST BE GALVANIZED, MORTAR TIGHT AND STEEL METAL SCREWS MUST BE NON-CORROSIVE. SELF TAPPING SCREWS SHALL BE INSTALLED AT THE SIDE LAP OF THE SHEETS AT MID-SPAN BETWEEN SUPPORTS. NO WELD WILL BE PERMITTED AT NEGATIVE MOMENT ZONE.
 - FOR ADDITIONAL NOTES, SEE SHEET 20 OF 40.

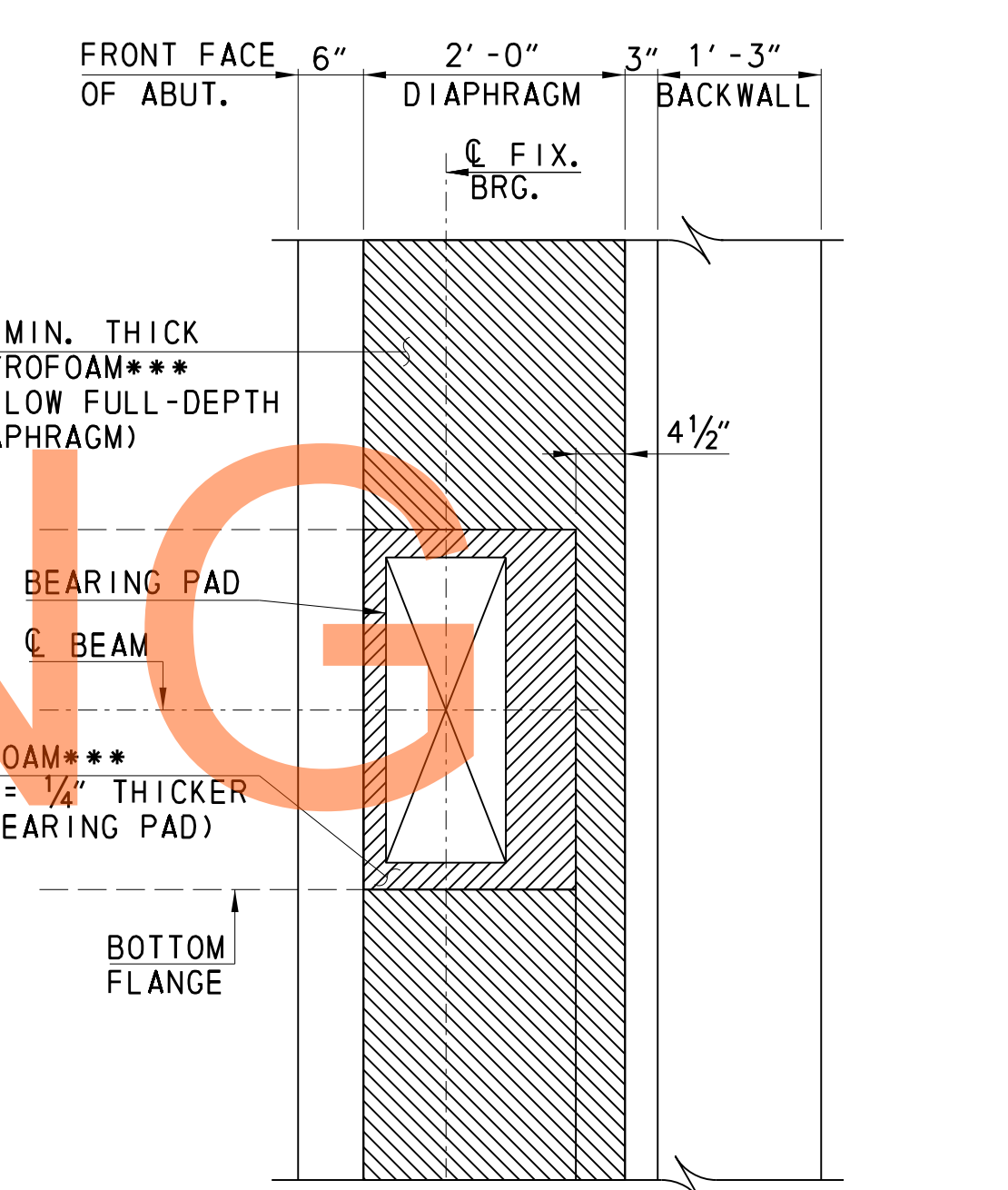
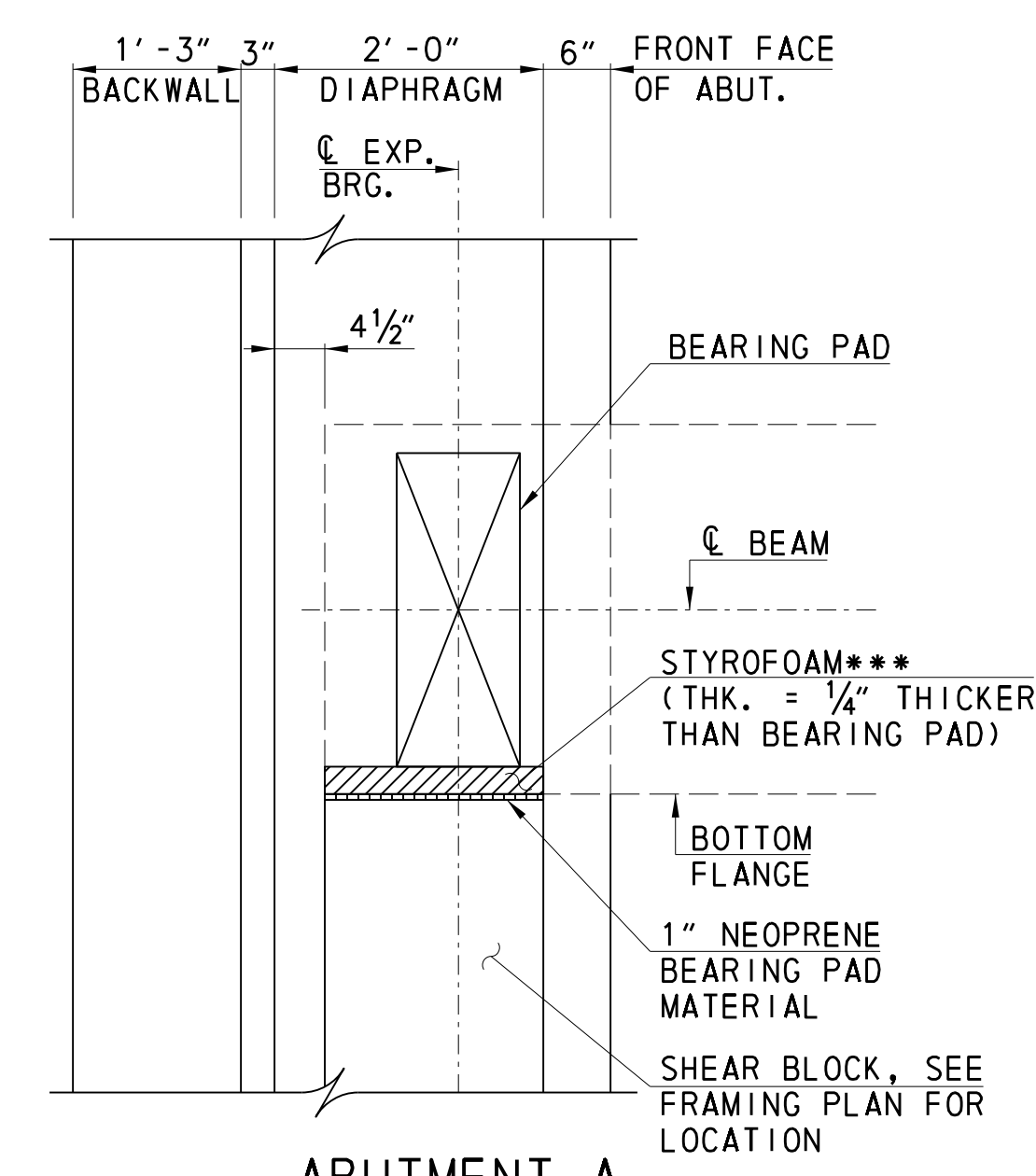
- LEGEND:**
- CLR. = CLEAR
 - CONSTR. = CONSTRUCTION
 - BOT. = BOTTOM
 - BRG. = BEARING
 - E. S. = EQUAL SPACING
 - GALV. = GALVANIZED
 - JT. = JOINT
 - MAX. = MAXIMUM
 - MIN. = MINIMUM
 - NB = NORTHBOUND
 - PGA = PROFILE GRADE APPLICATION
 - P/R = POINT OF ROTATION
 - SPA. = SPACE
 - TYP. = TYPICAL



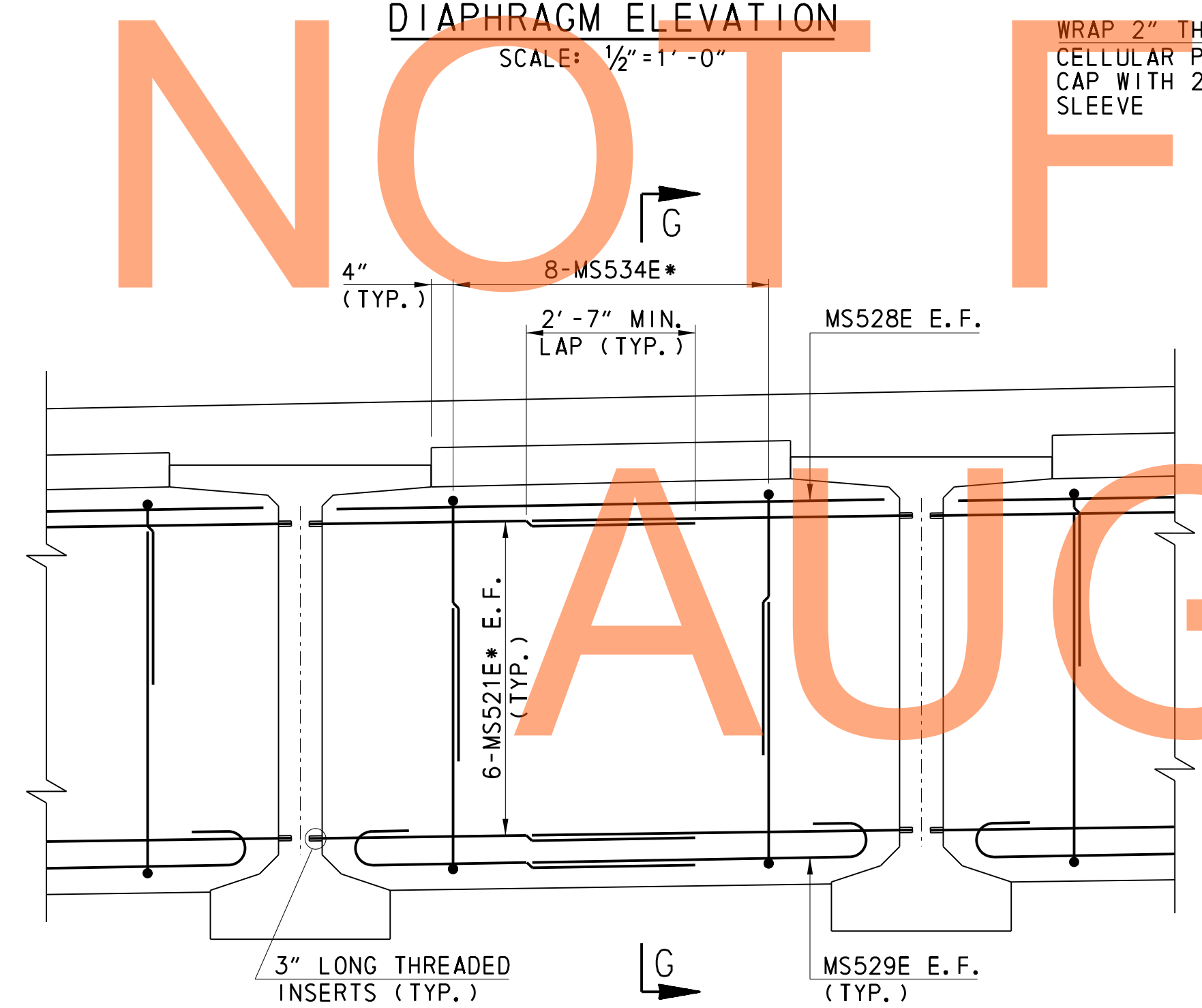
ABUTMENT A (SB)
DIAPHRAGM ELEVATION
SCALE: 1/2" = 1'-0"



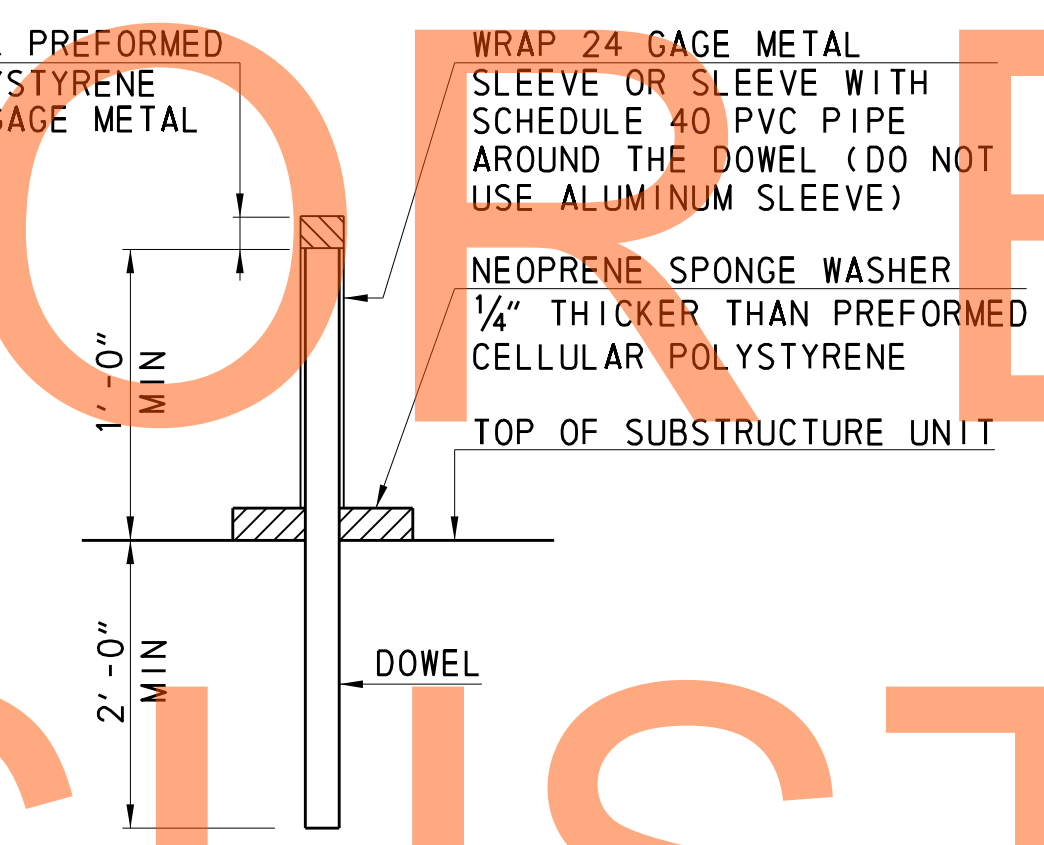
ABUTMENT B (SB)
DIAPHRAGM ELEVATION
SCALE: 1/2" = 1'-0"



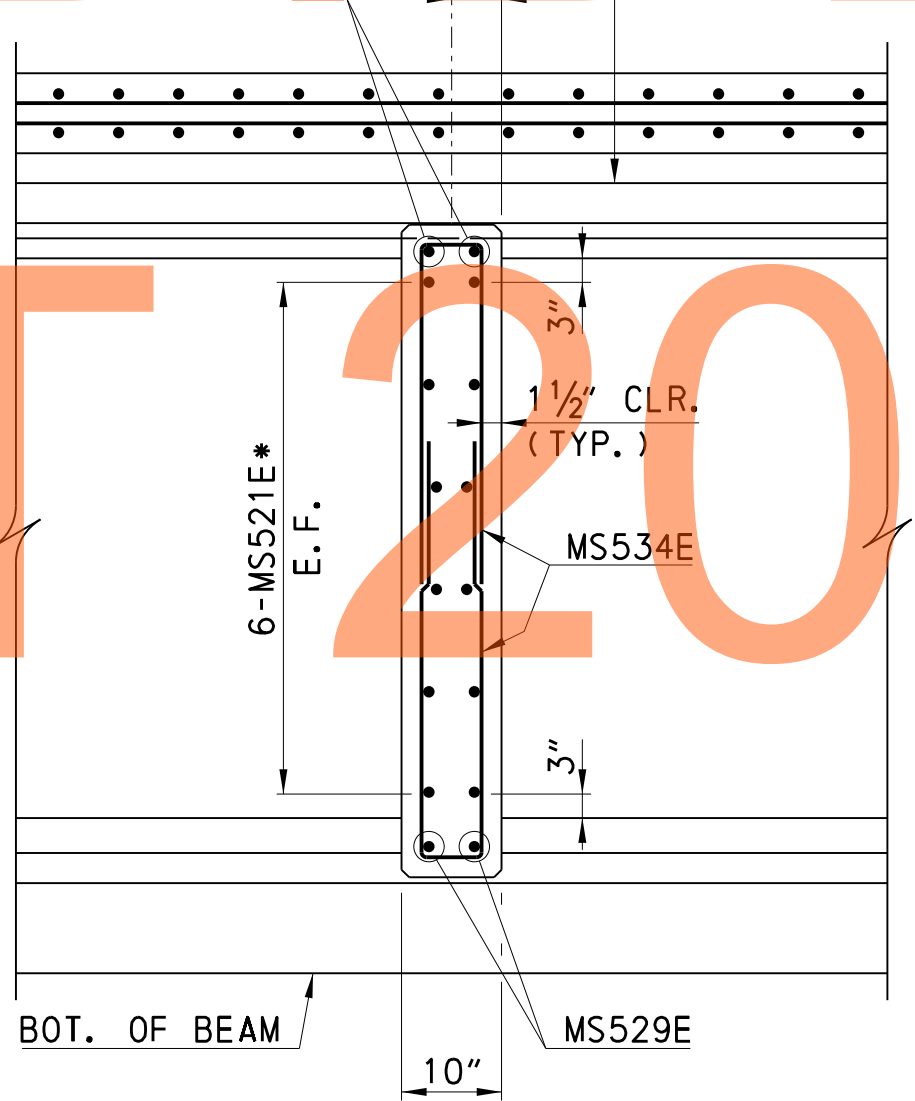
ABUTMENT B
WATERPROOFING LIMITS PLAN
SCALE: 3/4" = 1'-0"



INTERMEDIATE DIAPHRAGM (SB)
ELEVATION
SCALE: 1/2" = 1'-0"



DOWEL DETAIL
NOT TO SCALE

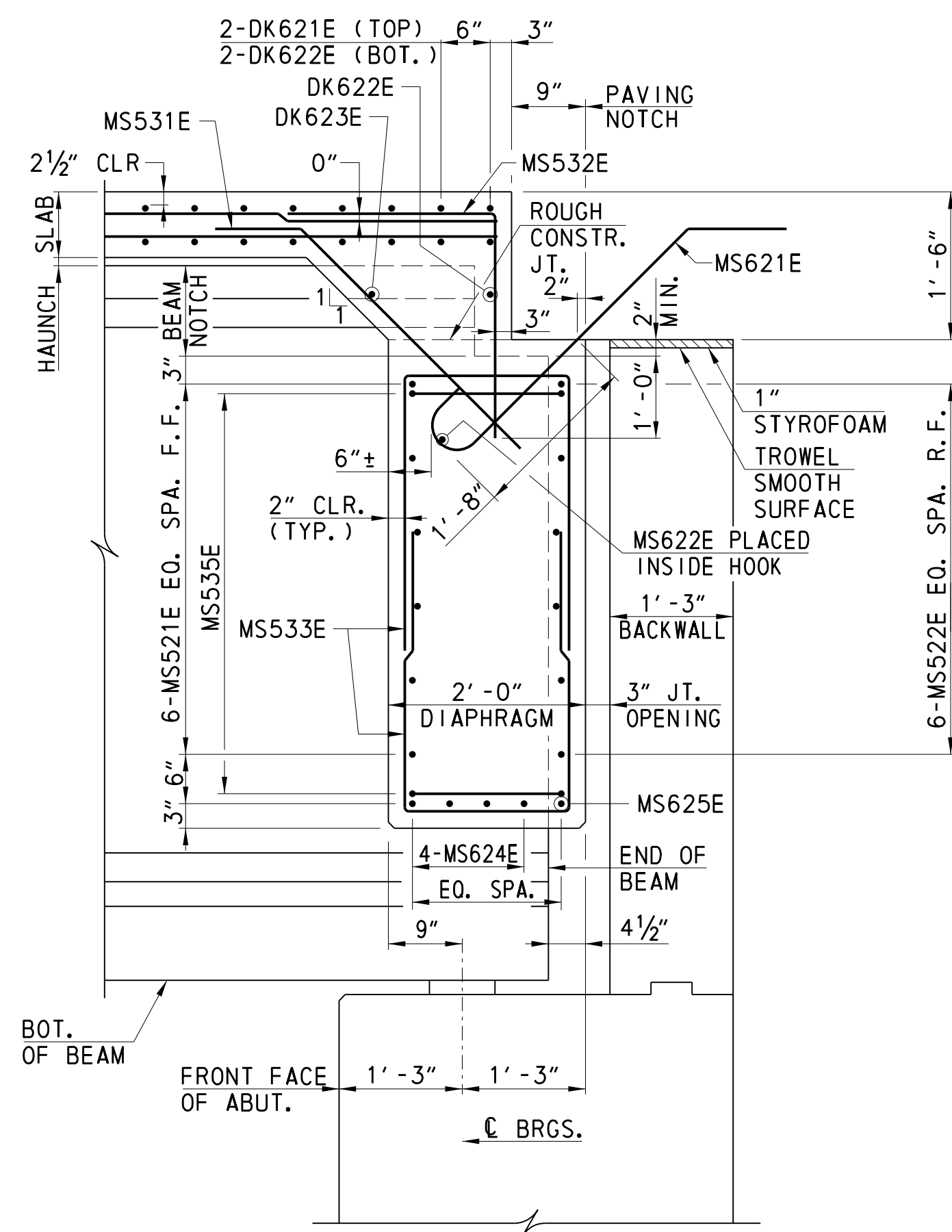


SECTION G-G (SB)
SCALE: 3/4" = 1'-0"

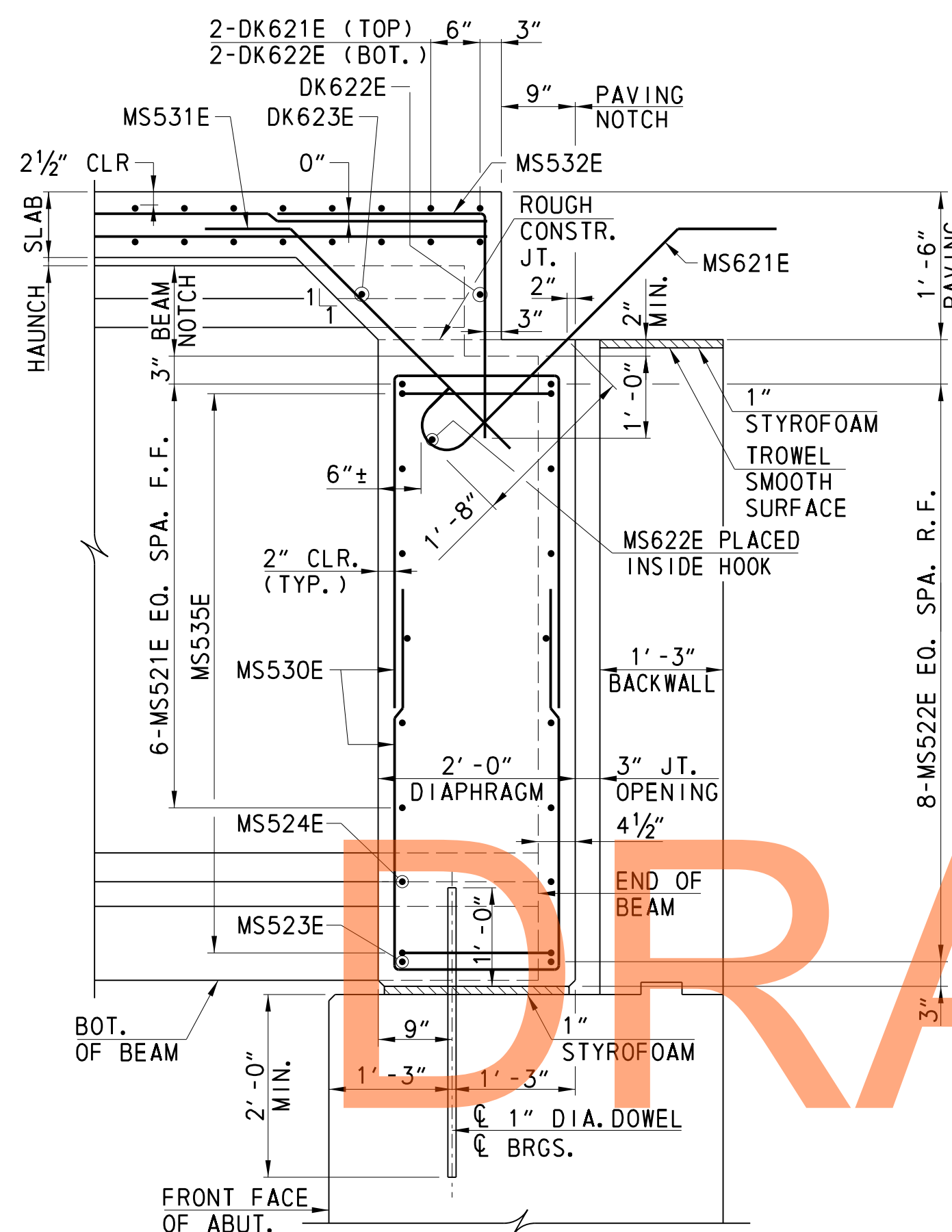
* EQUAL SPACE
** MATCH WITH LONGITUDINAL DIAPHRAGM BARS.

- LEGEND
- ABUT. = ABUTMENT
 - BOT. = BOTTOM
 - CLR. = CLEAR
 - DIA. = DIAMETER
 - E.F. = EACH FACE
 - EQ. = EQUAL
 - EXP. = EXPANSION
 - FIX. = FIXED
 - F.F. = FRONT FACE
 - MIN. = MINIMUM
 - R.F. = REAR FACE
 - SPA. = SPACES
 - THK. = THICKNESS
 - TYP. = TYPICAL

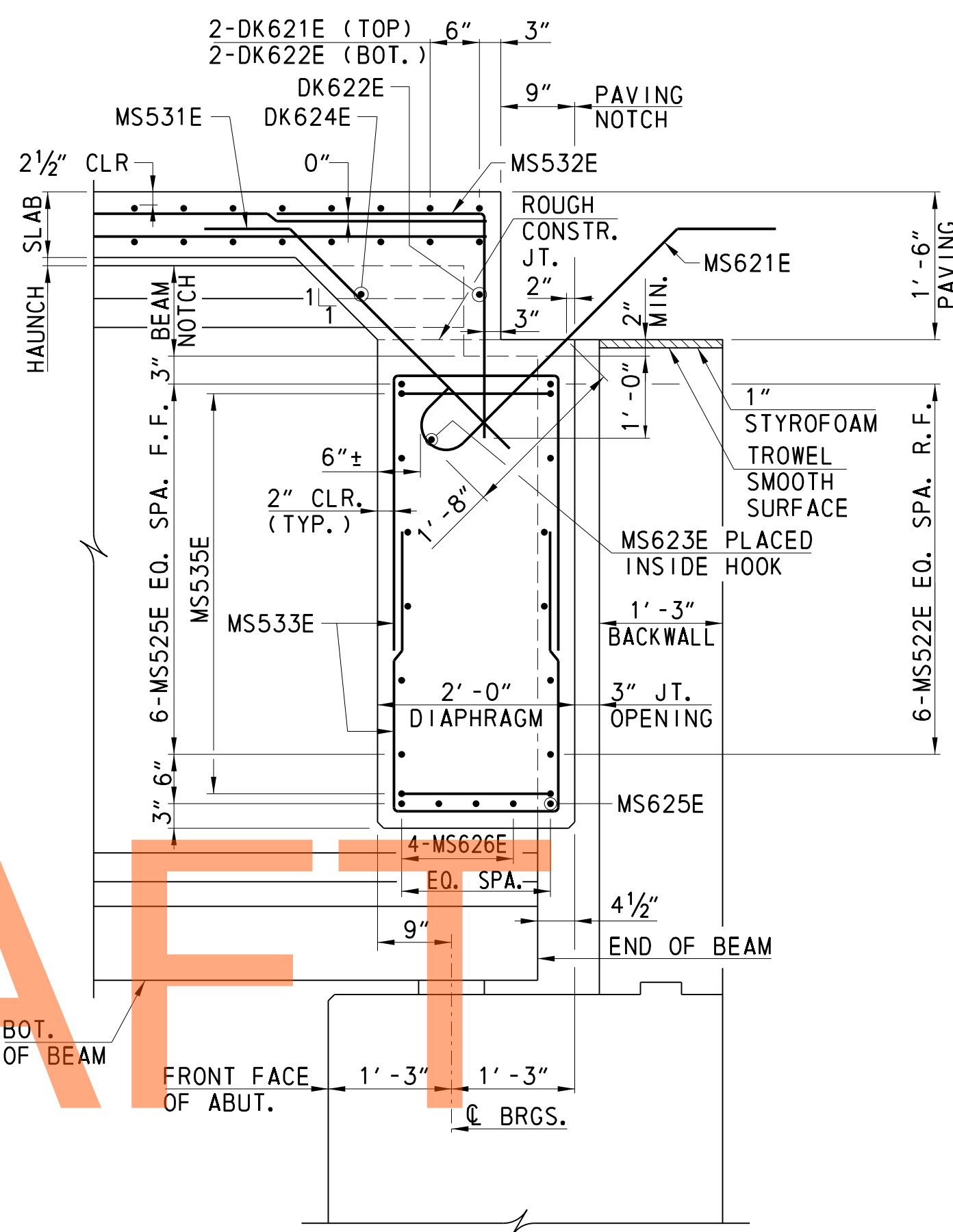
- NOTES:
1. FOR SECTIONS F-F, H-H, I-I, AND J-J, SEE SHEET 31 OF 40.
 2. FOR SHEAR BLOCK DETAILS, SEE SHEET 12 OF 40.
 3. FOR FRAMING PLAN, SEE SHEET 19 OF 40.
 4. FOR BEARING PAD DETAILS, SEE SHEET 20 OF 40.
 5. FOR BEAM DETAILS, SEE SHEET 21 OF 40.
 6. FOR REINFORCEMENT BAR LIST, SEE SHEET 35 OF 40.
 7. FOR LAYOUT OF DOWELS AND DOWEL REQUIREMENTS, SEE SHEET 14 OF 40.
 8. BITUMINOUS TAR PAPER OR SCHEDULE 40 PVC PIPE ARE PERMITTED TO BE USED AS ALTERNATIVE BOND BREAKER MATERIALS IN LIEU OF THE METAL SLEEVE. OTHER BOND BREAKER MATERIALS MAY BE USED AROUND THE DOWEL ONLY WITH THE APPROVAL OF THE ENGINEER.



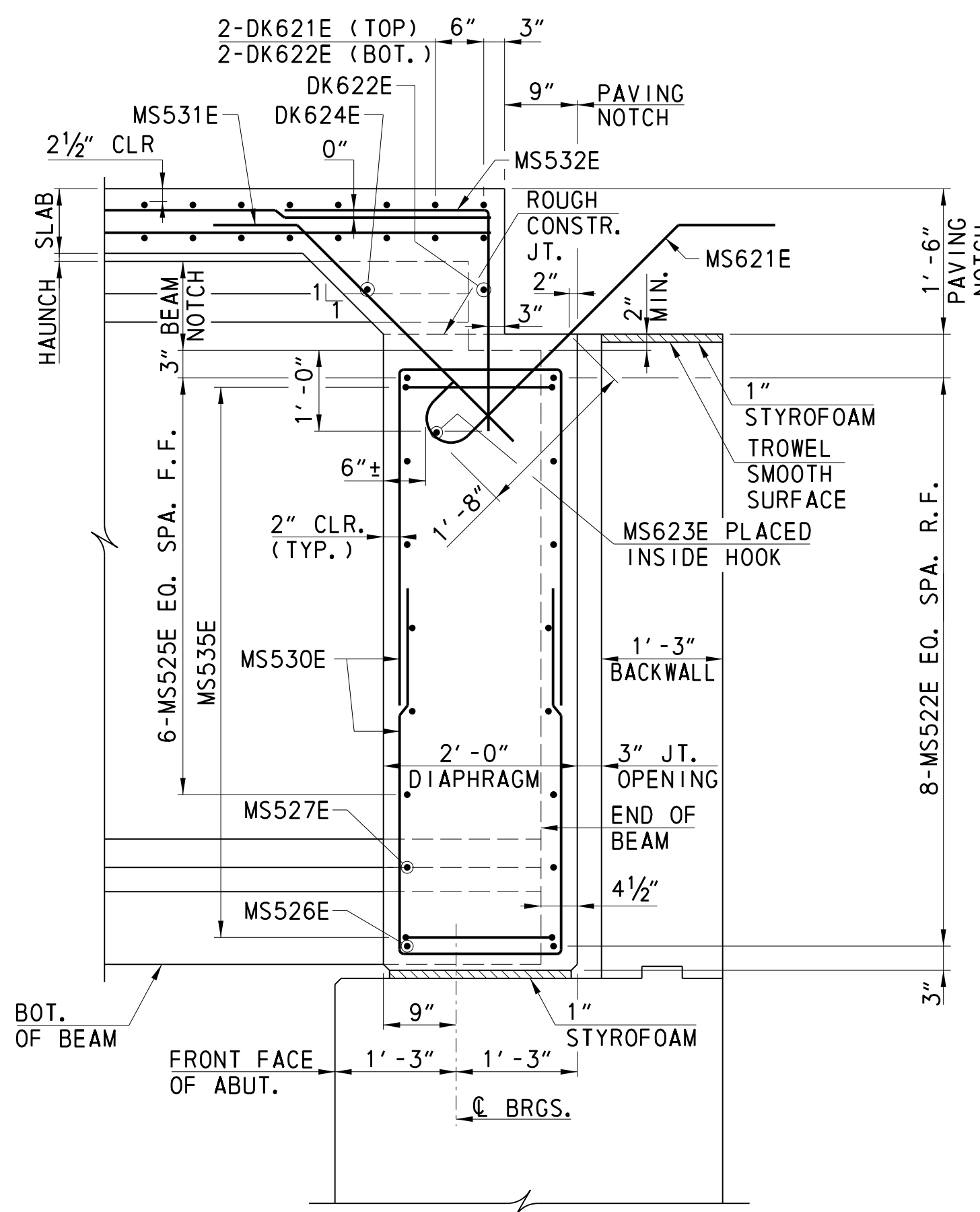
SECTION F-F (SB)
SCALE: 3/4" = 1'-0"



SECTION H-H (SB)
SCALE: 3/4" = 1'-0"

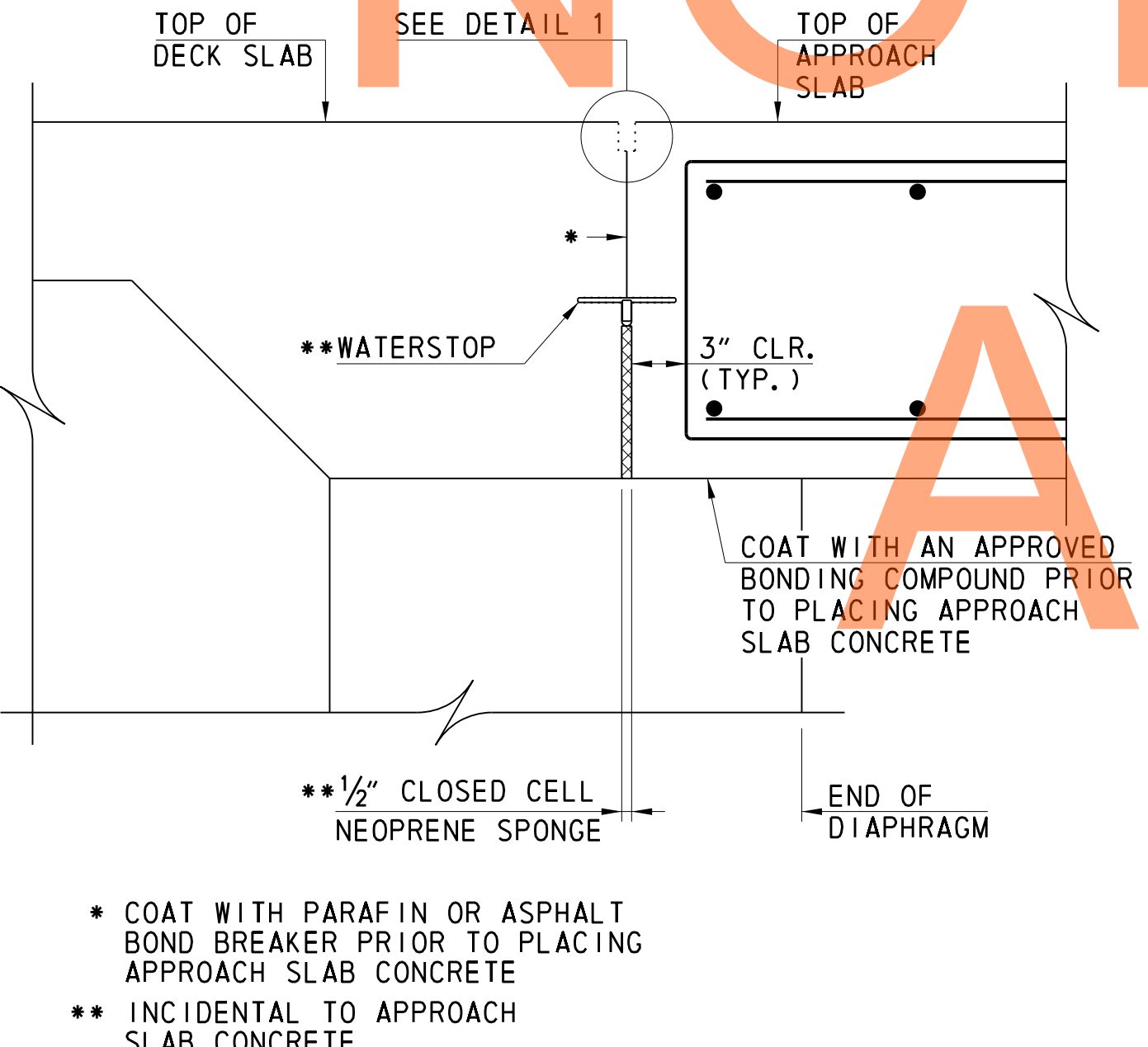


SECTION I-I (SB)
SCALE: 3/4" = 1'-0"

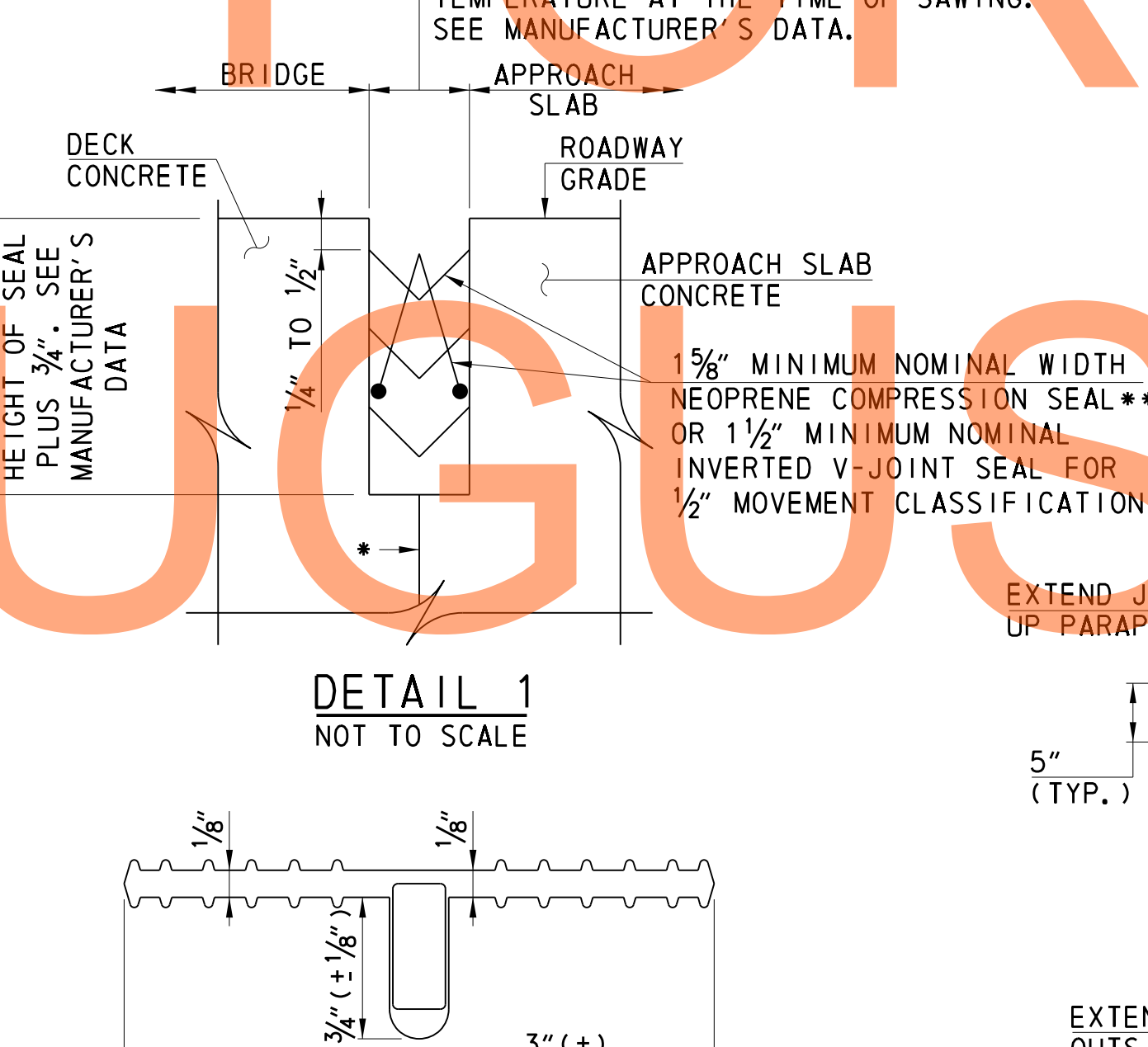


SECTION J-J (SB)
SCALE: 3/4" = 1'-0"

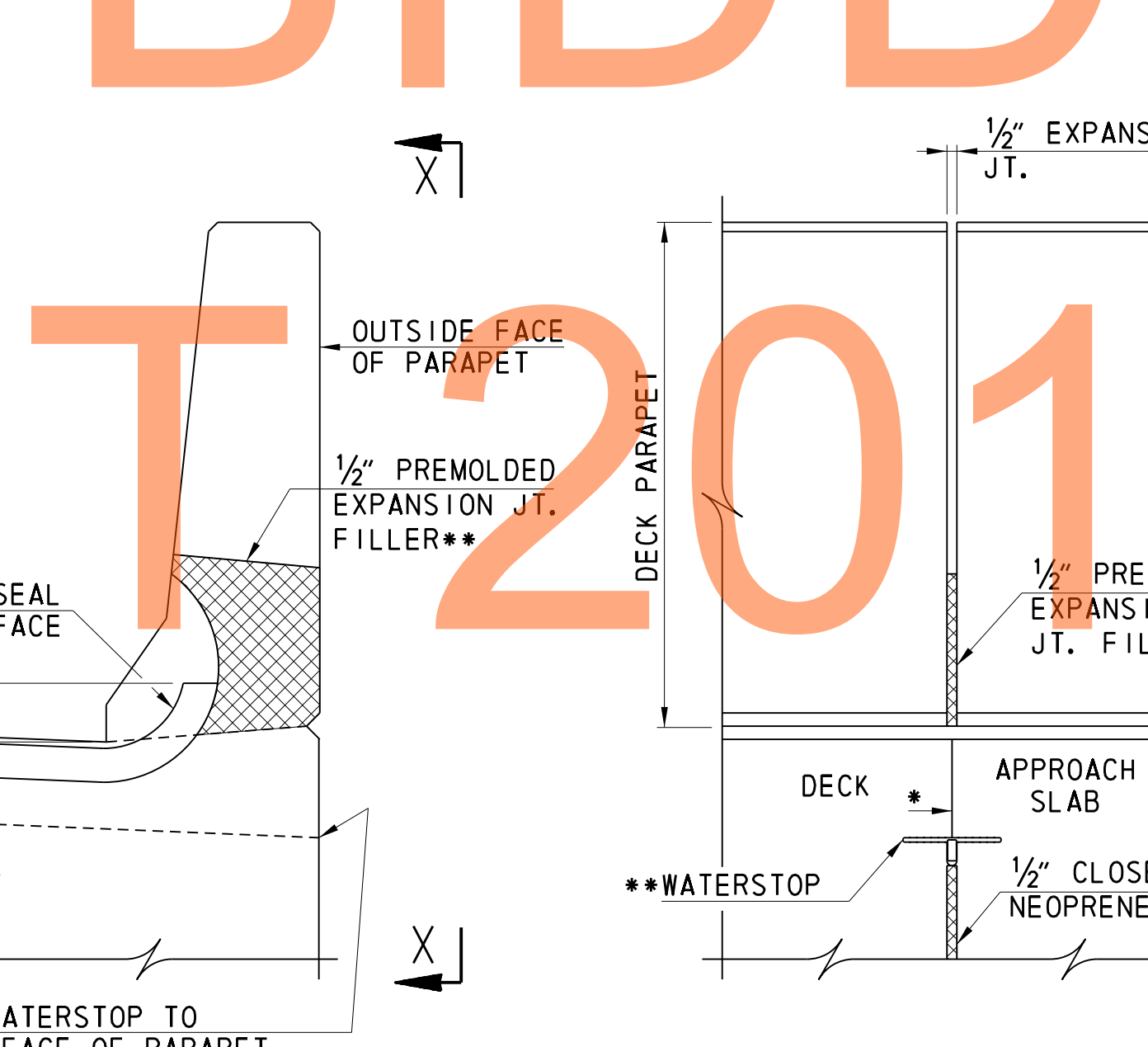
- NOTES:
- FOR LOCATION OF SECTIONS F-F, H-H, I-I AND J-J, SEE SHEET 30 OF 40.
 - FOR DECK DETAILS, SEE SHEET 29 OF 40.
 - FOR REINFORCEMENT BAR LIST, SEE SHEET 35 OF 40.
 - FOR APPROACH SLAB DETAILS, SEE SHEETS 32 AND 33 OF 40.
 - FOR DOWEL DETAIL, SEE SHEET 30 OF 40.



APPROACH SLAB JOINT DETAIL
NOT TO SCALE



WATERSTOP DETAIL
NOT TO SCALE



ELEVATION
SECTION X-X
JOINT SEAL AND WATERSTOP TERMINATION DETAIL
NOT TO SCALE

- JOINT PREPARATION NOTES:
- THE JOINT OPENING IS TO BE FORMED BY A TWO-STAGE SAWING OPERATION WHERE ACCESSIBLE AND FORMED ELSEWHERE. THE FIRST SAW CUT IS DESIGNED TO CONTROL CRACKING. THE SECOND SAW CUT IS MADE USING A DOUBLE-BLADED WATER-COOLED SAW CAPABLE OF HOLDING A TOLERANCE OF $\pm 1/16$ " TO CREATE THE PROPER OPENING FOR THE PREFORMED NEOPRENE COMPRESSION SEAL OR INVERTED V-JOINT SEAL.
 - WATER BLAST OPENING IMMEDIATELY FOLLOWING SAW CUTTING OPERATION TO REMOVE ANY RESIDUAL SLURRY BEFORE IT DRIES.
 - THE DEPTH OF THE SEAL OPENING EQUALS THE HEIGHT OF THE SEAL PLUS $3/4$ ". THE WIDTH OF THE SECOND SAW CUT SHALL BE ADJUSTED TO ACCOUNT FOR THE CONCRETE SURFACE TEMPERATURE AT THE TIME OF SAWING, SEE MANUFACTURER'S PRODUCT INFORMATION.
 - BEFORE INSTALLING THE SEAL, ABRASIVE BLAST THE BONDING SURFACES TO THOROUGHLY CLEAN THE JOINT OPENING AND REMOVE FOREIGN MATERIAL, INCLUDING BROKEN CONCRETE. USE WATER AND OIL FREE COMPRESSED AIR TO BLOW OUT RESIDUE FROM THE SEAL GROOVE OPENING.
 - PREPARE BONDING SURFACES AND INSTALL JOINT SEAL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
 - DO NOT EXCEED 3% ELONGATION OF SEAL, IF STRETCHING OCCURS.

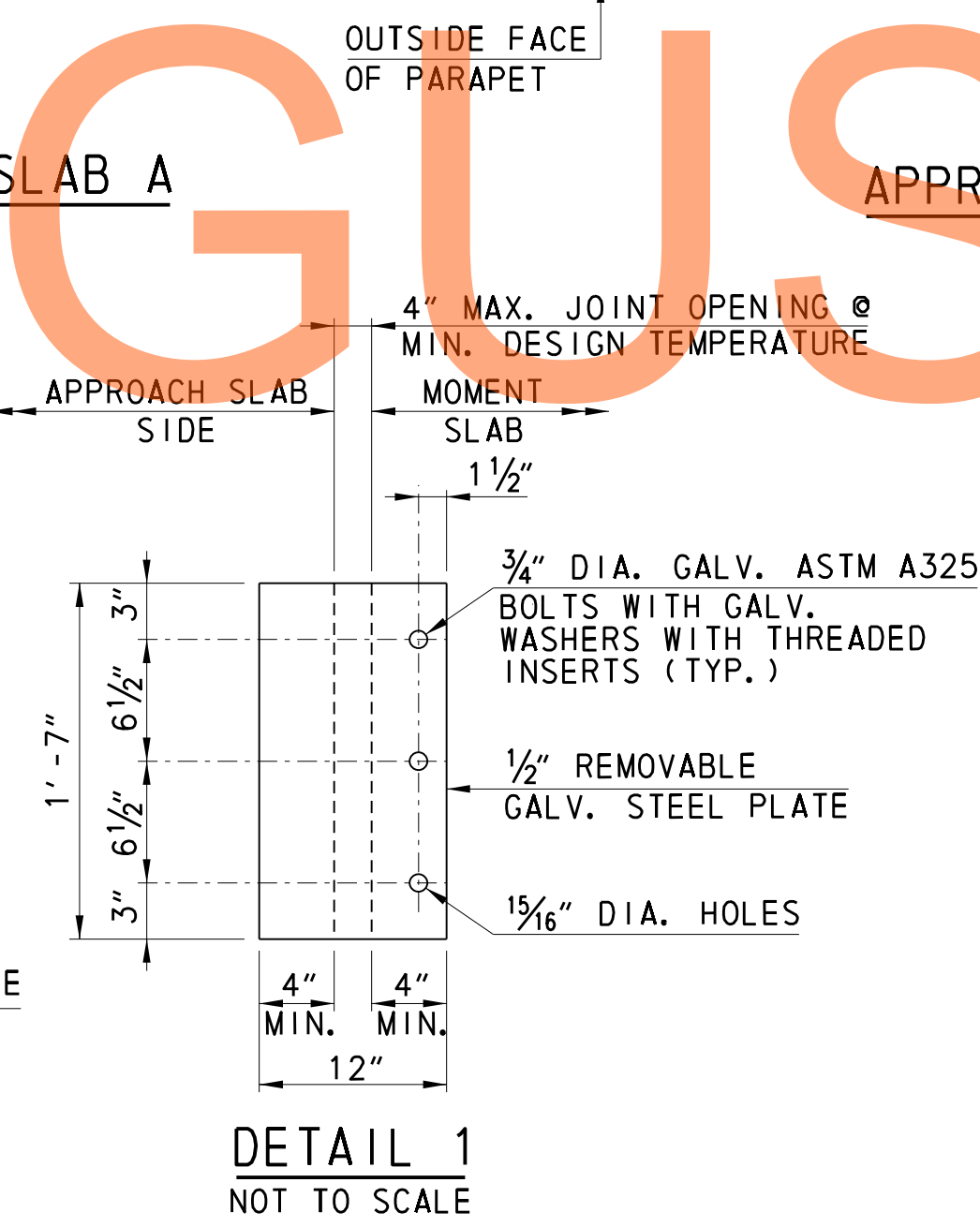
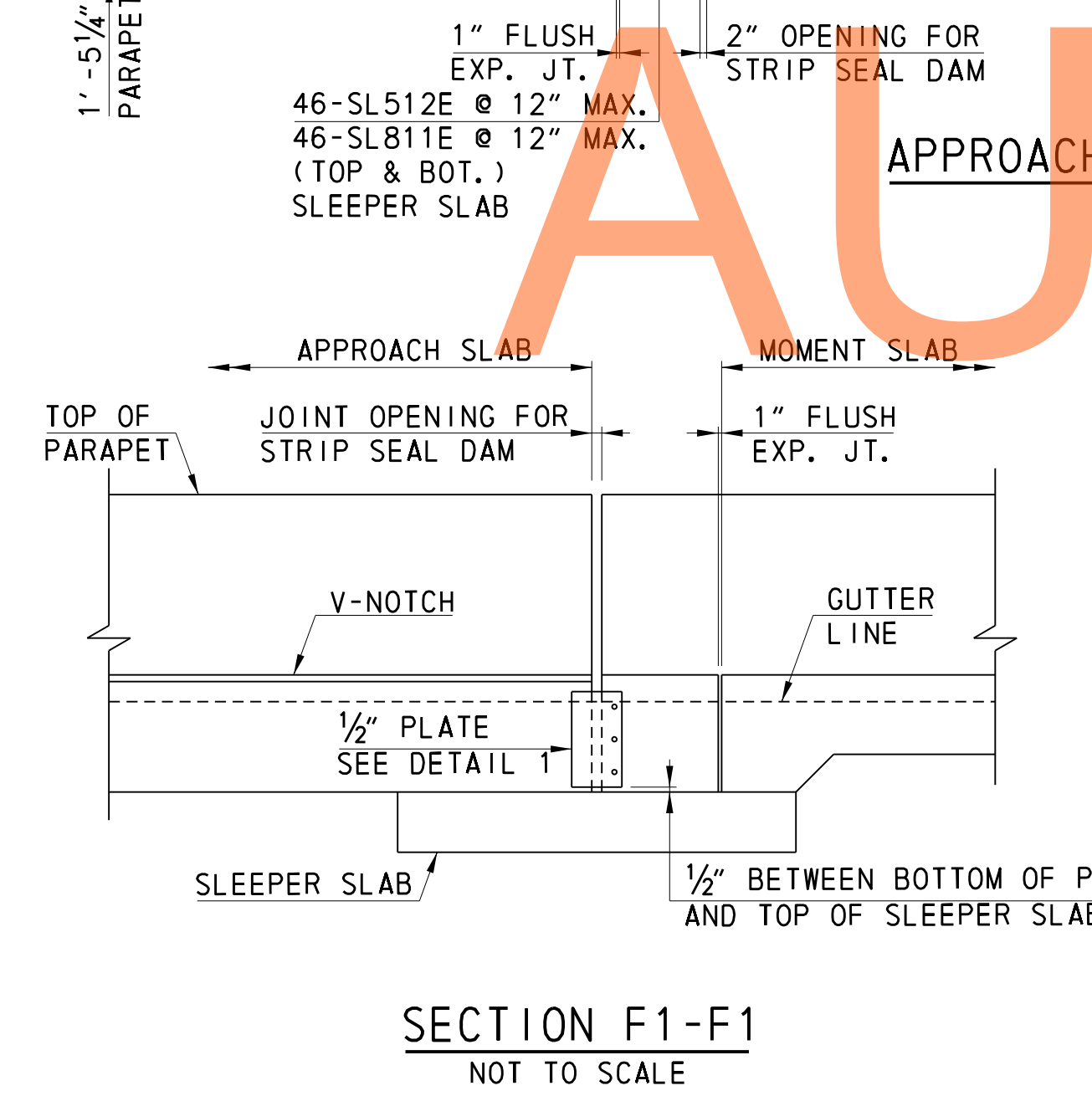
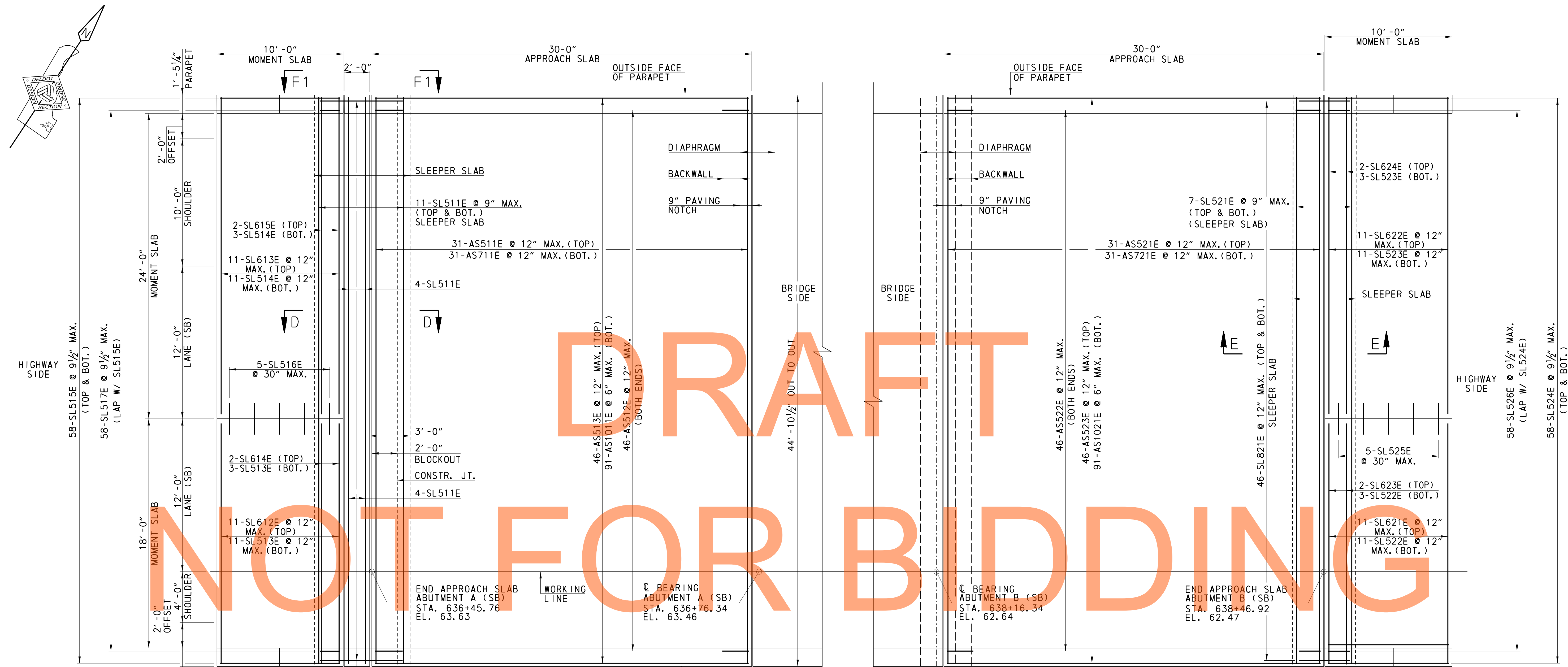
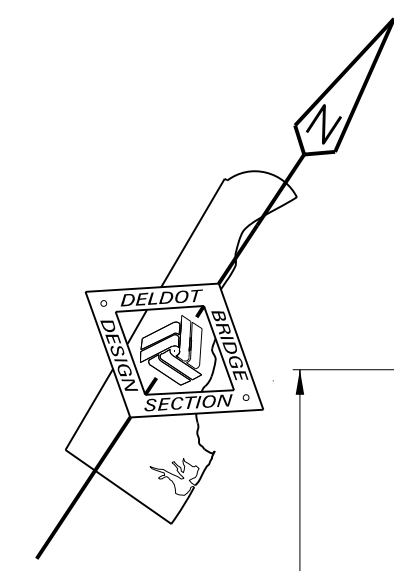
LEGEND

ABUT.	= ABUTMENT	F.F.	= FRONT FACE
BOT.	= BOTTOM	JT.	= JOINT
BRG.	= BEARING	MIN.	= MINIMUM
CLR.	= CLEAR	R.F.	= REAR FACE
CONSTR.	= CONSTRUCTION	SPA.	= SPACES
DIA.	= DIAMETER	TYP.	= TYPICAL
EO.	= EQUAL		

ADDENDUMS / REVISIONS

CONTRACT	T20091301
COUNTY	NEW CASTLE
BRIDGE NO.	1-467 N&S
DESIGNED BY:	ZAA
CHECKED BY:	MDM

DIAPHRAGM DETAILS - 2 (SB)		SHEET NO.	115
		TOTAL SHTS.	240

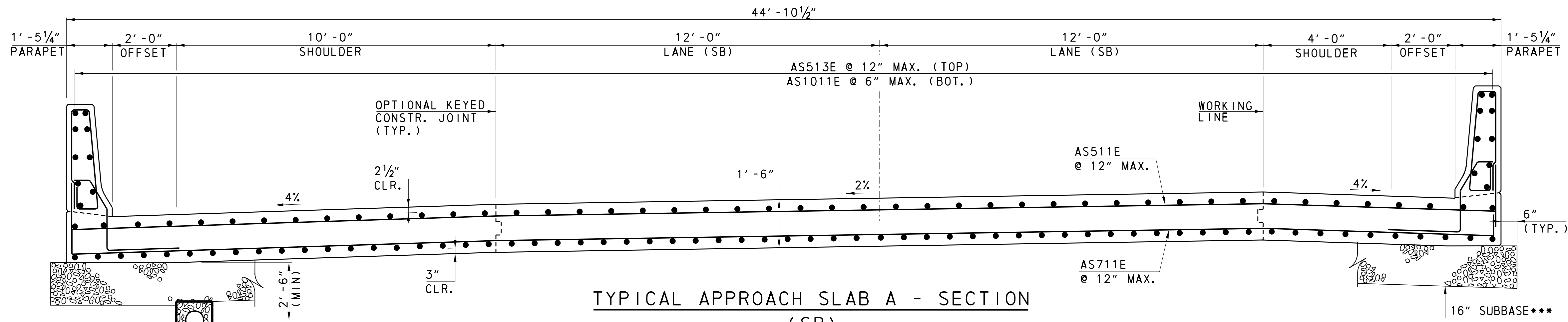


APPROACH SLAB NOTES

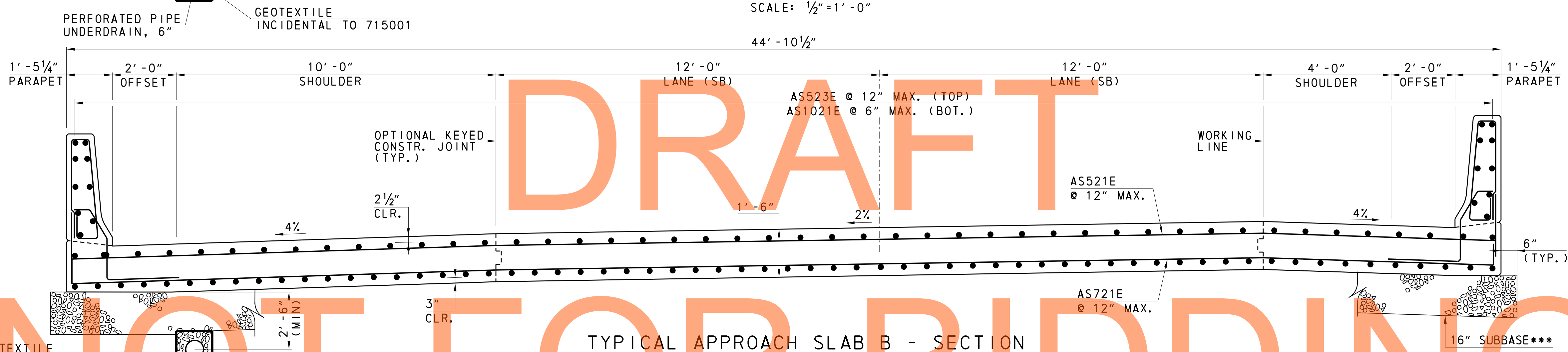
- PROVIDE CLASS D CONCRETE IN APPROACH SLAB, HEADER SLAB, SLEEPER SLAB AND MOMENT SLAB.
- PROVIDE CLASS A CONCRETE IN PARAPETS.
- A HIGHER CLASS OF CONCRETE MAY BE SUBSTITUTED FOR A LOWER CLASS OF CONCRETE AT NO ADDITIONAL COST TO THE DEPARTMENT.
- PLACE APPROACH SLAB CONCRETE WITH A MOTORIZED, MECHANICAL FINISHING MACHINE.
- PLACE CONCRETE IN ONE CONTINUOUS OPERATION, UNLESS OTHERWISE INDICATED OR DIRECTED.
- LONGITUDINAL KEYS CONSTRUCTION JOINTS ARE PERMITTED IN THE APPROACH SLAB BETWEEN THE SHOULDER AND THE LANE LINE.
- CONSTRUCT BRIDGE APPROACH SLAB AFTER THE BRIDGE DECK SLAB IS CONSTRUCTED.
- PROVIDE GRADE 60 DEFORMED REINFORCING BARS THAT MEET THE REQUIREMENTS OF AASHTO M31.
- EPOXY COAT ALL REINFORCEMENT BARS.

NOTES:

1. FOR SECTIONS D-D AND E-E, SEE SHEET 33 OF 40.
2. FOR REINFORCEMENT BAR LIST, SEE SHEET 35 OF 40.
3. FOR APPROACH SLAB JOINT DETAILS AT END OF BRIDGE DECK, SEE SHEET 31 OF 40.
4. FOR TYPICAL APPROACH SLAB SECTIONS, SEE SHEET 33 OF 40.
5. PAYMENT FOR GALVANIZED STEEL PLATE AND HARDWARE SHALL BE INCIDENTAL TO APPROACH SLAB CONSTRUCTION.



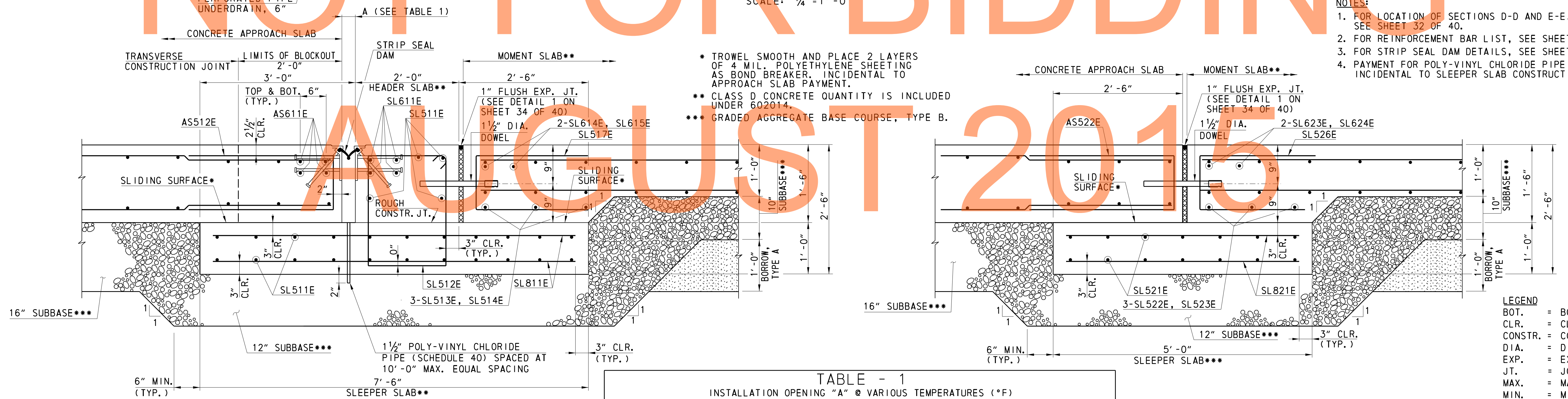
TYPICAL APPROACH SLAB A - SECTION
(SB)
SCALE: 1/2" = 1'-0"



TYPICAL APPROACH SLAB B - SECTION
(SB)
SCALE: 1/4" = 1'-0"

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- NOTES:
1. FOR LOCATION OF SECTIONS D-D AND E-E, SEE SHEET 32 OF 40.
 2. FOR REINFORCEMENT BAR LIST, SEE SHEET 35 OF 40.
 3. FOR STRIP SEAL DAM DETAILS, SEE SHEET 36 OF 40.
 4. PAYMENT FOR POLY-VINYL CHLORIDE PIPE SHALL BE INCIDENTAL TO SLEEPER SLAB CONSTRUCTION.



* TROWEL SMOOTH AND PLACE 2 LAYERS OF 4 MIL. POLYETHYLENE SHEETING AS BOND BREAKER. INCIDENTAL TO APPROACH SLAB PAYMENT.
** CLASS D CONCRETE QUANTITY IS INCLUDED UNDER 602014.
*** GRADED AGGREGATE BASE COURSE, TYPE B.

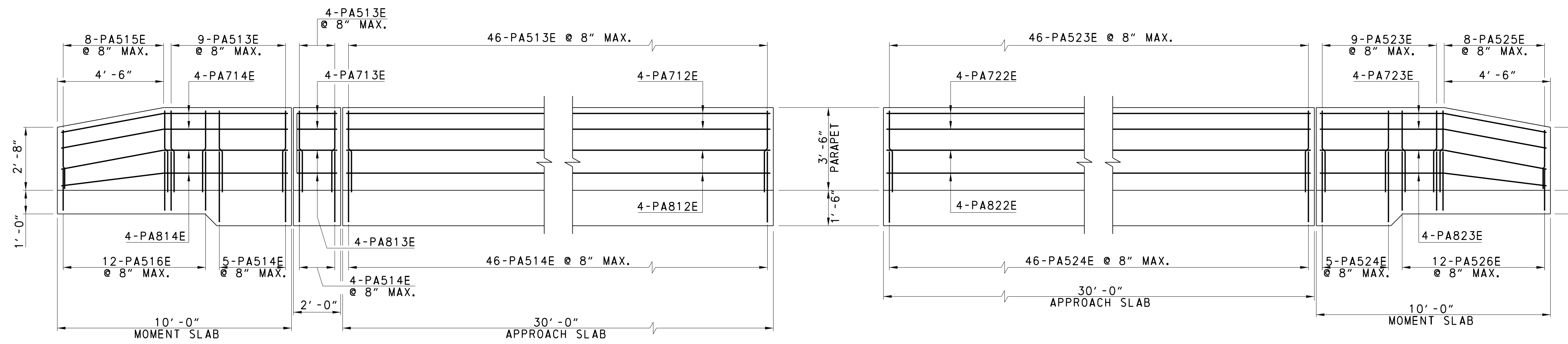
TABLE - 1
INSTALLATION OPENING "A" @ VARIOUS TEMPERATURES (°F)

10	20	30	32	40	50	60	68	70	80	90	100
0' - 2 1/16"	0' - 2 3/16"	0' - 2 1/4"	0' - 2 1/8"	0' - 2 1/4"	0' - 2 1/8"	0' - 2 1/4"	0' - 2 1/8"	0' - 2"	0' - 2"	0' - 1 7/8"	0' - 1 3/4"

SECTION D-D
SCALE: 3/4" = 1'-0"

SECTION E-E
SCALE: 3/4" = 1'-0"

- LEGEND
- BOT. = BOTTOM
 - CLR. = CLEAR
 - CONSTR. = CONSTRUCTION
 - DIA. = DIAMETER
 - EXP. = EXPANSION
 - JT. = JOINT
 - MAX. = MAXIMUM
 - MIN. = MINIMUM
 - SB = SOUTHBOUND
 - TYP. = TYPICAL

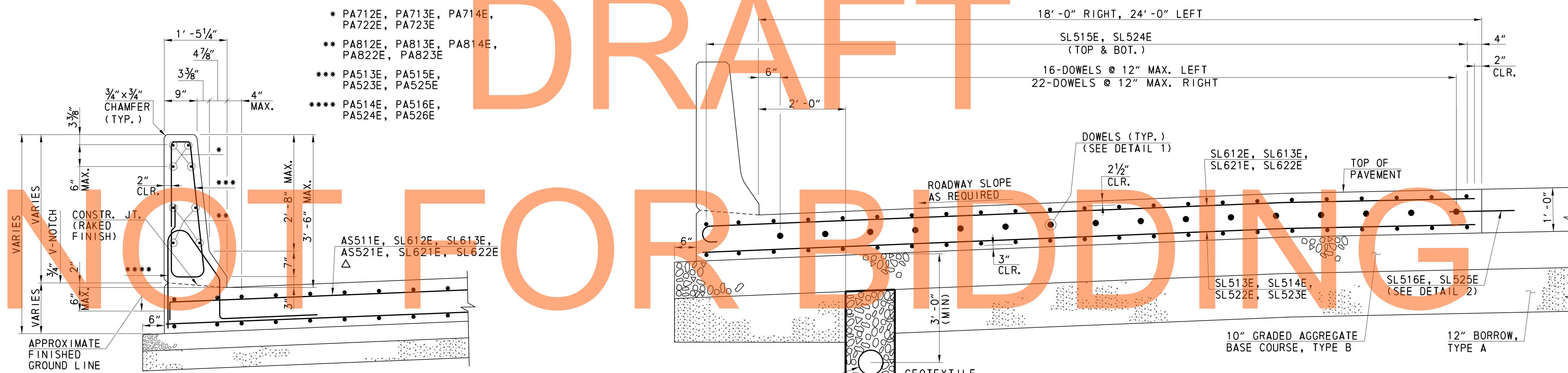


ABUTMENT A (SB)

ABUTMENT B (SB)

PARAPET ELEVATION

SCALE: 3/8" = 1'-0"



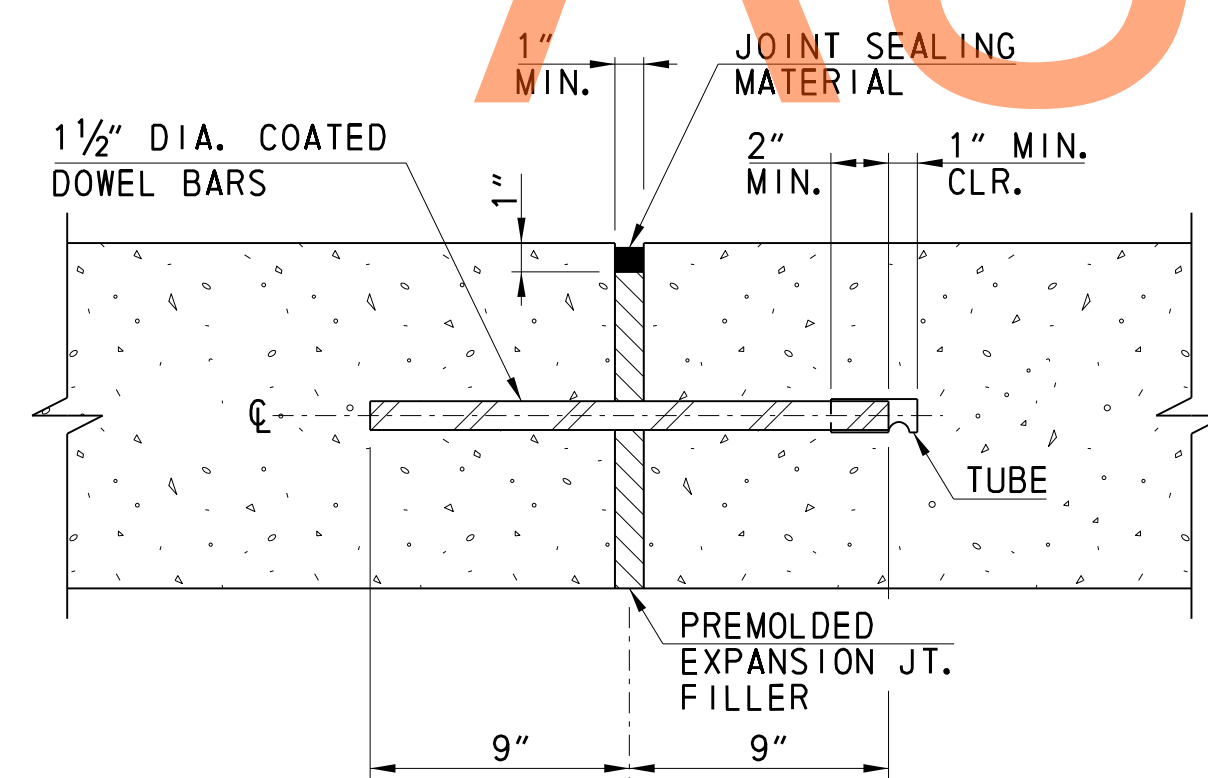
NOTE: UNDERDRAIN NOT SHOWN
 Δ USE 90° BEND AT APPROACH SLABS.
 USE 180° BEND AT MOMENT SLABS.

PARAPET DETAIL

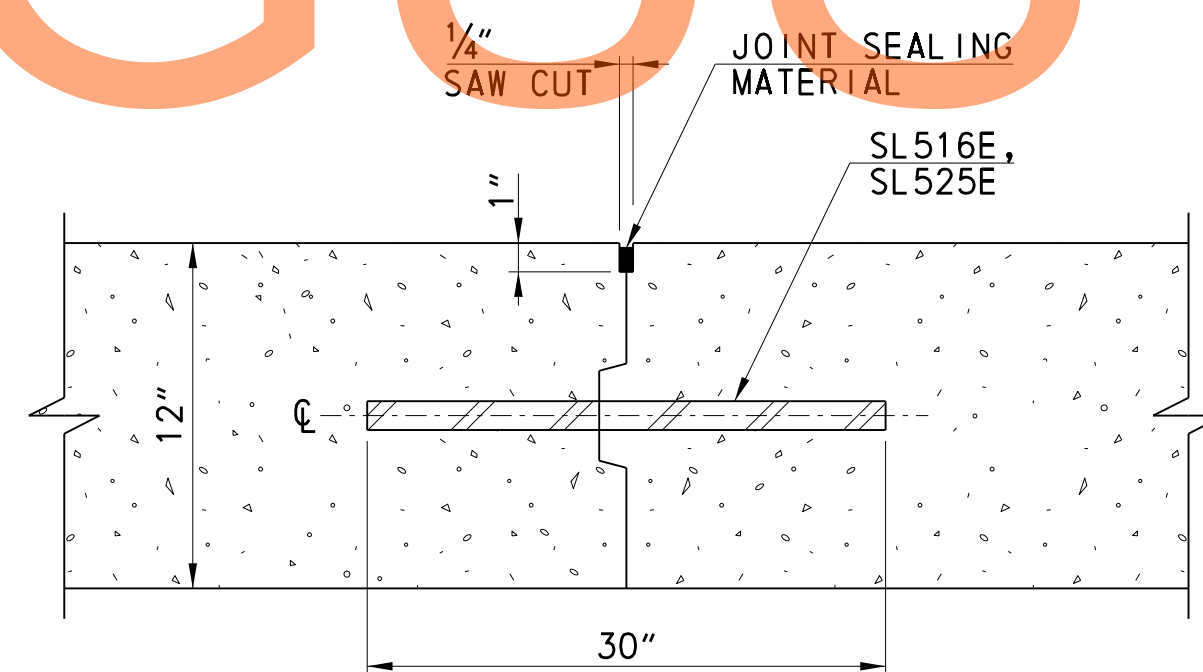
SCALE: 1/4" = 1'-0"

MOMENT SLAB (AT GRADE)
 WITH TYPICAL C.I.P. BARRIER

SCALE: 3/4" = 1'-0"



DETAIL 1
 NOT TO SCALE

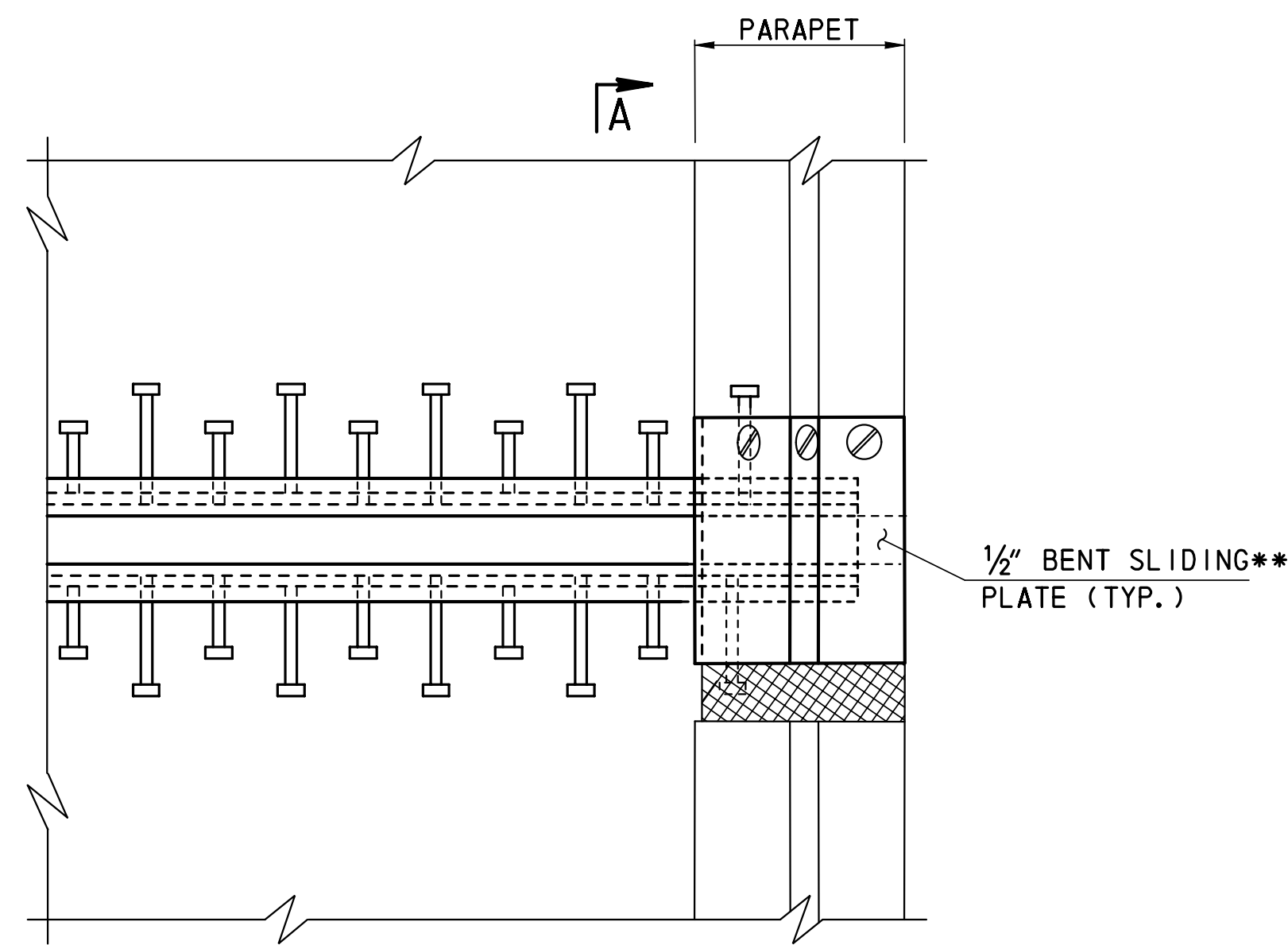


DETAIL 2
 NOT TO SCALE

- LEGEND
- BOT. = BOTTOM
 - C. I. P. = CAST-IN-PLACE
 - CLR. = CLEAR
 - DIA. = DIAMETER
 - JT. = JOINT
 - MAX. = MAXIMUM
 - MIN. = MINIMUM
 - TYP. = TYPICAL

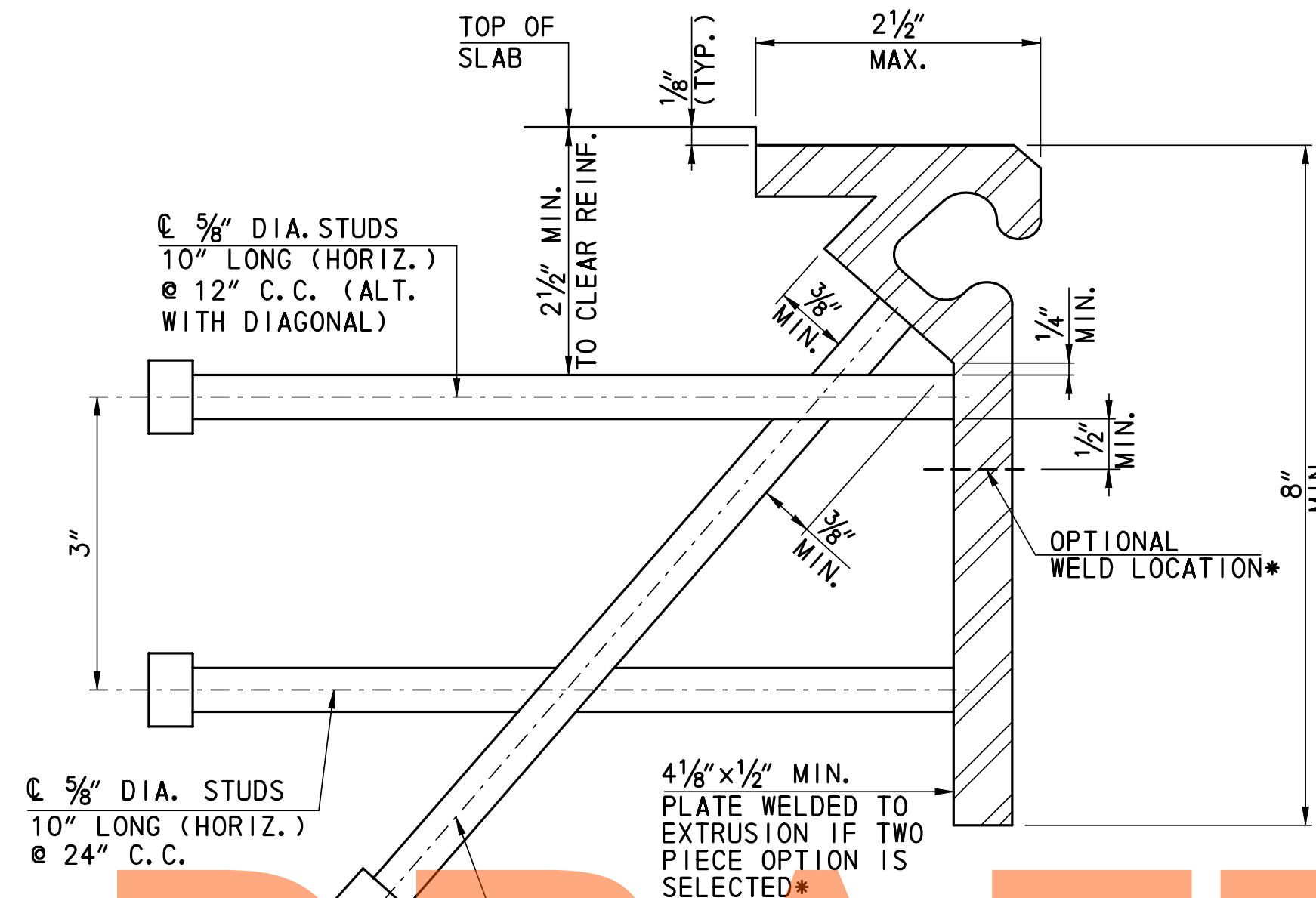
NOTES:

1. PROVIDE DOWELS AT EXPANSION JOINTS.
2. PLACE A TUBE FROM AN APPROVED MANUFACTURER OVER THE LUBRICATED END OF ALL DOWEL BARS AND PROVIDE A MINIMUM 1" CLEARANCE POCKET ASSURED BY MEANS OF A POSITIVE SPACING DEVICE.
3. CUT EXPANSION JOINT FILLER MATERIAL TO CONFORM TO CROSS SECTION OF THE PAVEMENT AND FURNISH IN STRIPS EQUAL TO THE WIDTH OF THE PAVEMENT SLAB. MAKE THE TOP SURFACE SMOOTH AND HAVE HOLES PUNCHED FOR THE DOWEL BARS. PROVIDE A SNUG FIT WITHOUT LOSS IN THICKNESS OF THE MATERIAL. PAYMENT SHALL BE INCIDENTAL TO APPROACH SLAB CONSTRUCTION.
4. CONSTRUCT ALL TRANSVERSE JOINTS PERPENDICULAR TO THE CENTERLINE.
5. USE 1 1/2" DIA. x 18" LONG DOWEL BARS. APPROVED ALTERNATE DOWEL BARS HAVING EQUIVALENT PROPERTIES TO CONVENTIONAL ROUND DOWEL BARS MAY BE USED. COATED DOWEL BARS SHALL CONFORM TO DELDOT STANDARD SPECIFICATION 824.02 (g). PAYMENT SHALL BE INCIDENTAL TO APPROACH SLAB CONSTRUCTION.
6. PLACE DOWEL BARS PARALLEL TO THE CENTERLINE AND SURFACE OF THE SLAB.
7. MAKE THE TOP OF THE JOINT SEALING MATERIAL FROM 1/8" TO 1/4" BELOW THE SURFACE OF THE PAVEMENT. USE HEAT RESISTANT JOINT BACKING MATERIAL FOR HOT POURED JOINTS. PAYMENT SHALL BE INCIDENTAL TO APPROACH SLAB AND MOMENT SLAB CONSTRUCTION.
8. FOR REINFORCEMENT BAR LIST, SEE SHEET 35 OF 40.
9. SLIP FORMING FOR PARAPETS IS NOT PERMITTED.



PLAN AT PARAPET
SCALE: 1 1/2" = 1' - 0"

** INCIDENTAL TO STRIP SEAL ASSEMBLY.



NOTE:
• EXTRUSION THICKNESS IS 1/2".

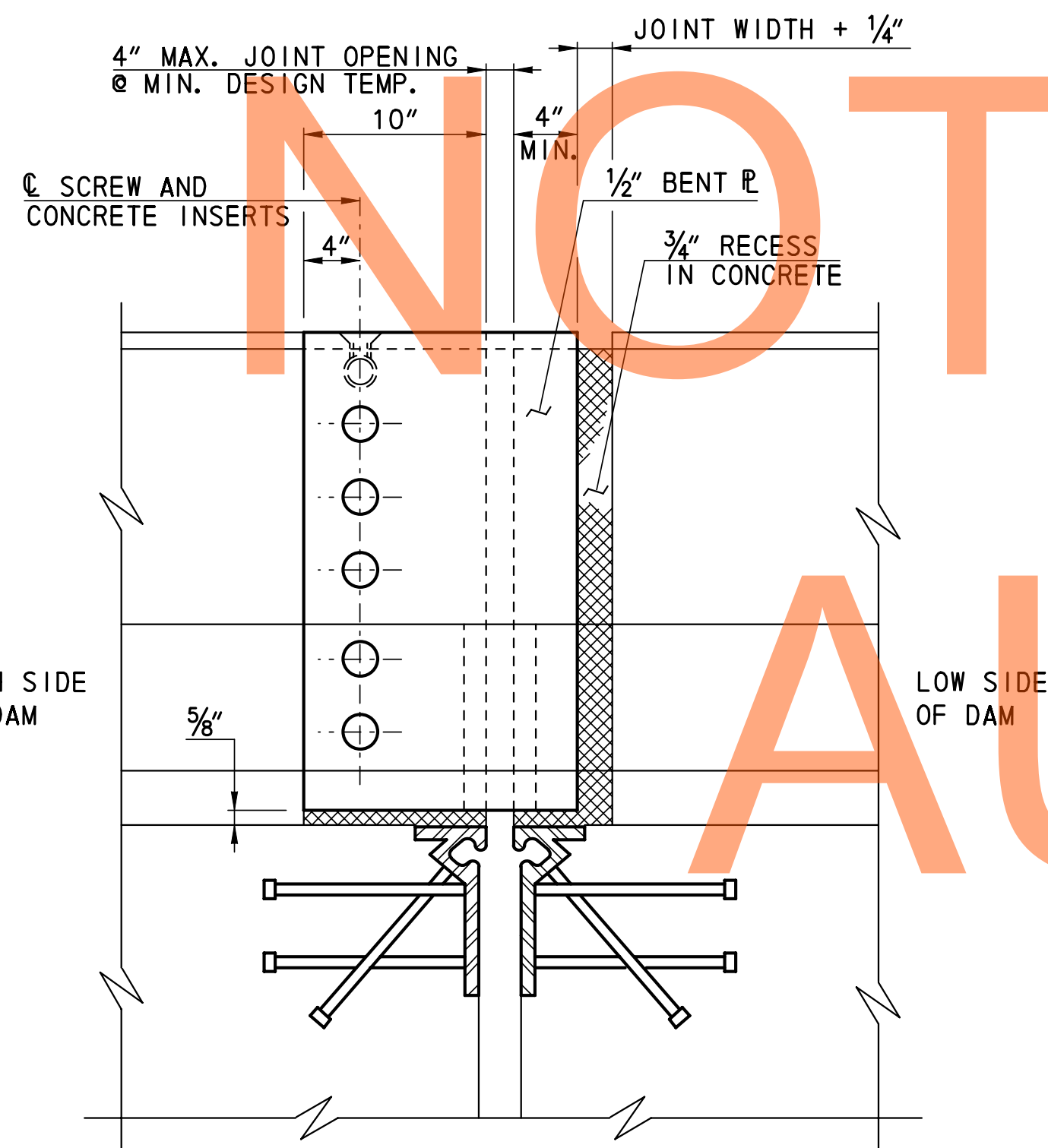
* TWO PIECE MEMBER (EXTRUSION AND PLATE COMBINATION) IN LIEU OF ONE PIECE EXTRUSION IS PERMITTED. WELD IN ACCORDANCE WITH AASHTO/AWS SPECIFICATIONS. (FULL PENETRATION WELD AND N. D. T. REQUIRED)

STRIP SEAL INSTALLATION NOTES

- THE FRAME RAILS SHALL BE CLEANED THOROUGHLY AND SEAL CHANNELS SHALL BE INSPECTED TO ASCERTAIN THE ABSENCE OF CONCRETE AND DEBRIS. THE SEAL CHANNEL SHALL ALSO BE INSPECTED AT ALL FIELD SPLICES, AND ALL WELD SPLATTER AND/OR SHARP EDGES SHALL BE REMOVED.
- LIBERALLY COAT THE STRIP SEAL LUGS WITH LUBRICANT ADHESIVE. COAT ONLY 3'-0" TO 4'-0" PRECEDING THE INSTALLATION.
- COLLAPSE THE STRIP SEAL INTO THE THE JOINT OPENING UNTIL THE LUG IS ALIGNED WITH THE FRAME RAIL CHANNEL. (SEE FIGURE 1)
- PUSH THE LUG INTO THE CHANNEL AND THEN USE A BENT BAR TO FORCE THE LUG INTO THE CHANNEL (MAKE SURE THAT THE BAR IS DULL TO PREVENT PUNCTURING OF THE SEAL) (SEE FIGURE 2)
- AFTER THE SEAL LOCKS INTO PLACE, PUSH THE TOP OF THE LUG AGAINST THE FRAME RAIL TO INSURE PROPER SEATING. (SEE FIGURE 3)
- AS THE WORK PROGRESSES DOWN THE LENGTH OF THE JOINT, WORK BOTH SIDES OF THE STRIP SEAL INTO THE RAIL CHANNEL.

NOTES:

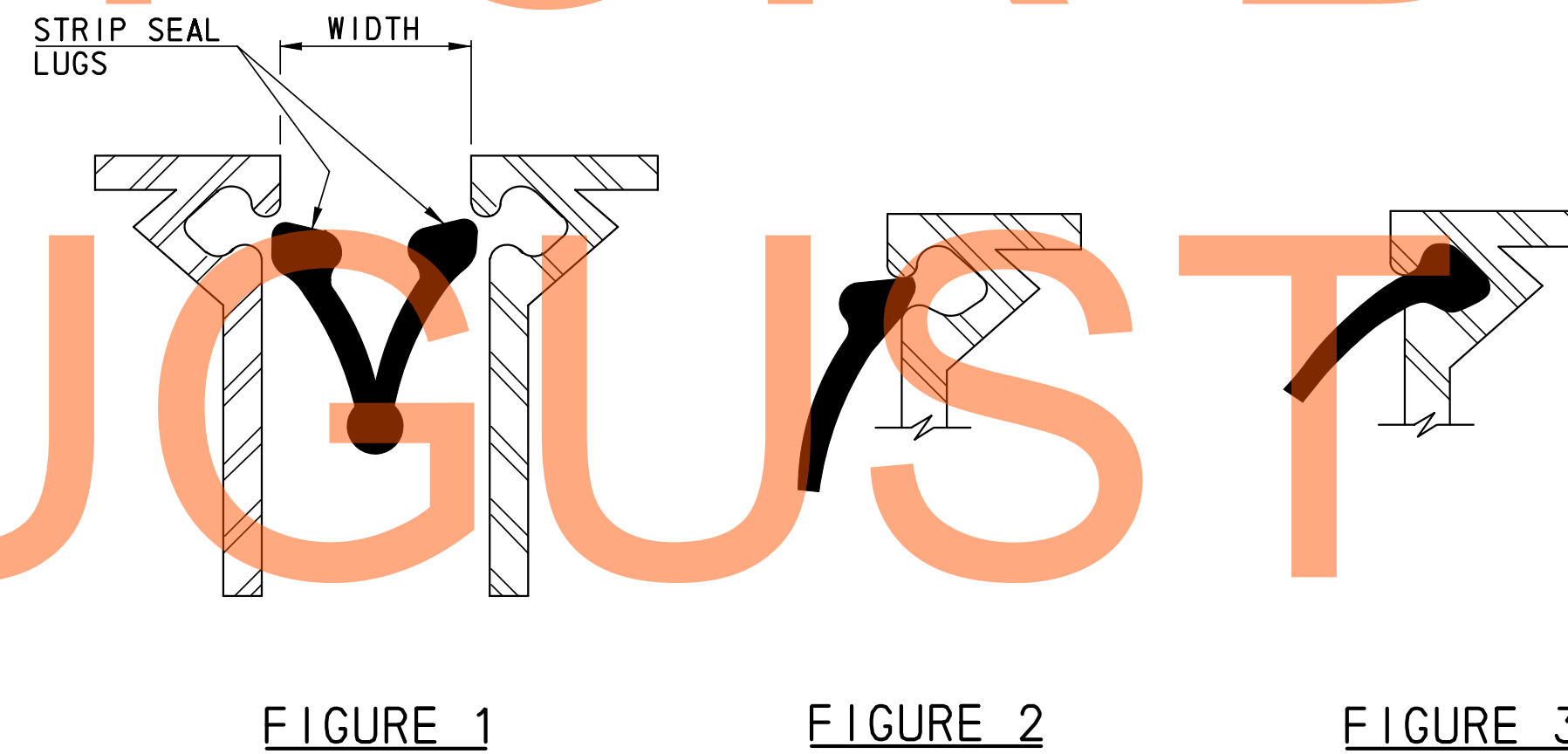
1. INSTALL CONTINUOUS NEOPRENE STRIP SEAL IN THE FIELD. SPLICING OF SEAL IS NOT PERMITTED. TEMPORARY SEAL MAY BE REQUIRED DEPENDING ON STAGES OF CONSTRUCTION.
2. CONSTRUCT EXPANSION DAM TO MATCH ROADWAY GRADE AND CROSS SLOPE.
3. FABRICATOR TO PROVIDE A CHART SHOWING JOINT OPENING FOR TEMPERATURES BETWEEN 10°F TO 100°F IN 10° INTERVALS ON SHOP DRAWINGS. SET WIDTH @ 68°F.
4. BOND NEOPRENE STRIP SEAL TO EXTRUSION WITH APPROVED ADHESIVE.
5. GRIND ALL STEEL EDGES EXPOSED TO TRAFFIC OR PEDESTRIANS TO 3/16" MIN. RADIUS.
6. FOR ADDITIONAL DETAILS AND LOCATION OF EXPANSION JOINT, SEE SHEETS 25, 26, 32 AND 33 OF 40.
7. FOR JOINT OPENING TABLE, SEE SHEETS 26 AND 33 OF 40.



NOTE:
FORM CONCRETE RECESS AREA IN BARRIER AND GRIND TO PROVIDE SMOOTH SURFACE. APPLY ONE COAT OF ASPHALT CEMENT PAINT OR PERFORMANCE GRADED ASPHALT CEMENT PG 64-22 TO ALLOW BENT SLIDING PLATE TO MOVE FREELY WITHOUT FRICTION.

SECTION A-A
SCALE: 1 1/2" = 1' - 0"

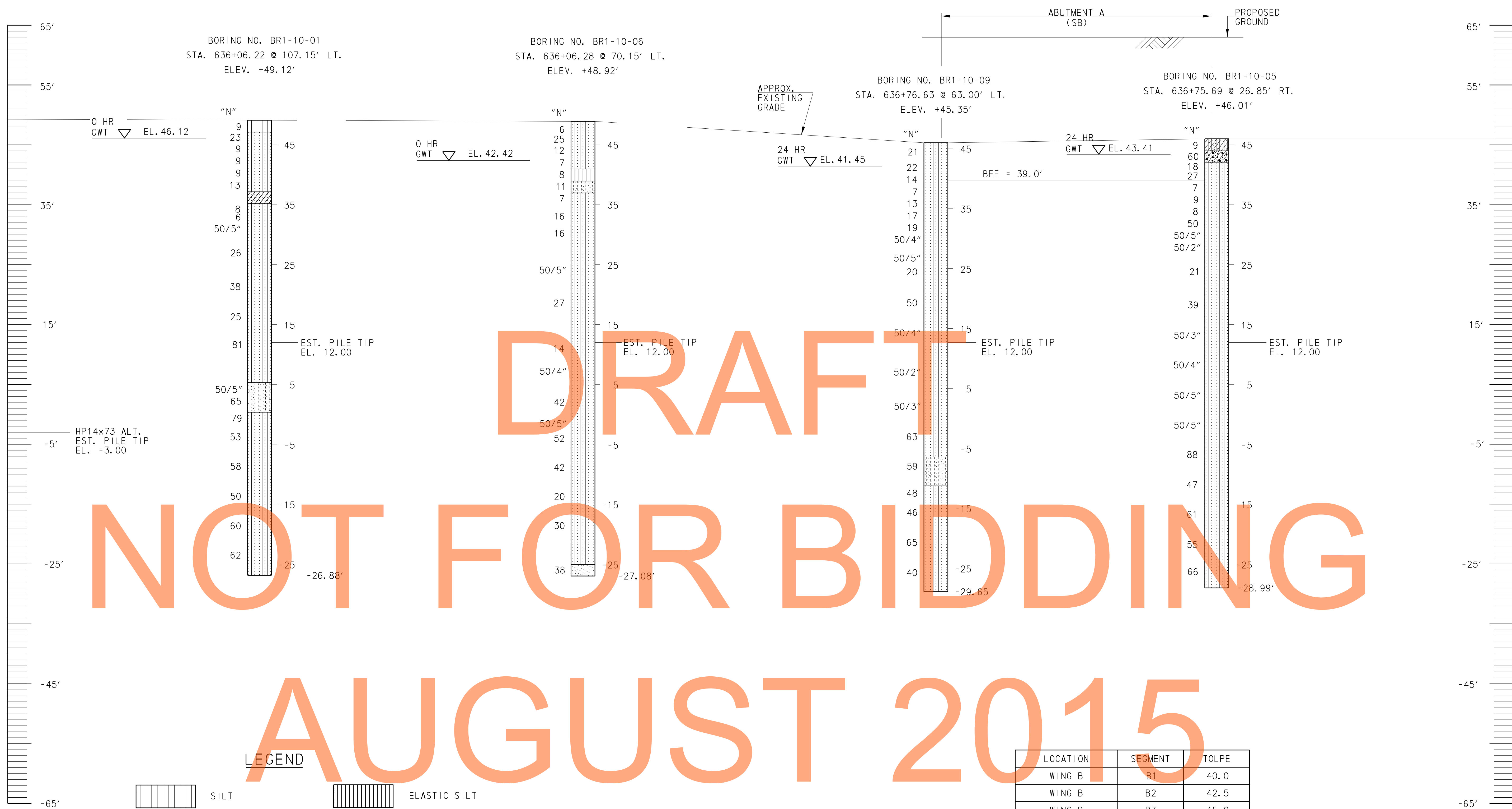
EXTRUSION SCHEMATIC
NOT TO SCALE



STRIP SEAL INSTALLATION PROCEDURE
NOT TO SCALE

LEGEND

- ALT. = ALTERNATE
- C. C. = CENTER TO CENTER
- DIA. = DIAMETER
- HORIZ. = HORIZONTAL
- MAX. = MAXIMUM
- MIN. = MINIMUM
- N. D. T. = NONDESTRUCTIVE TESTING
- RE INF. = REINFORCEMENT
- TYP. = TYPICAL



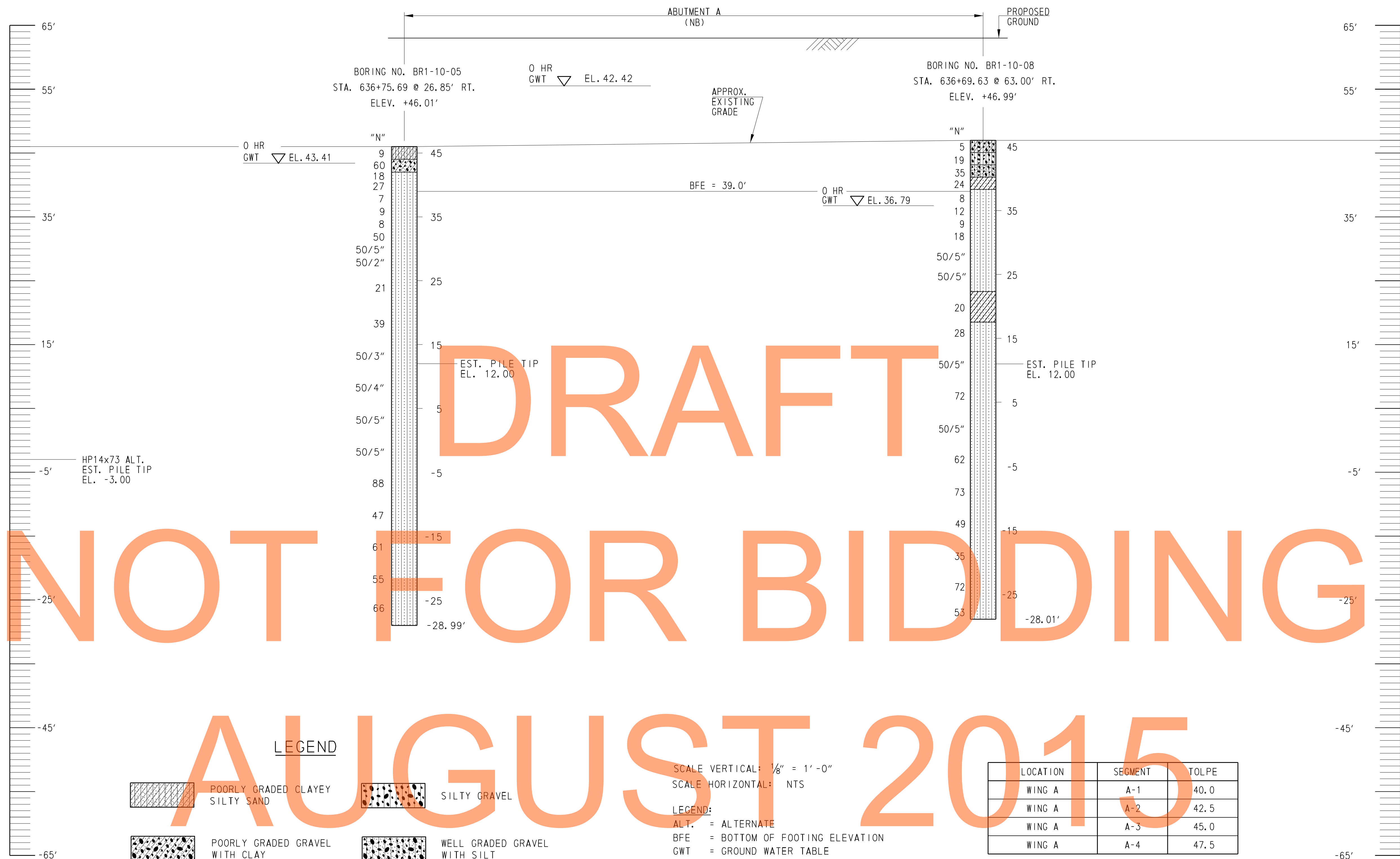
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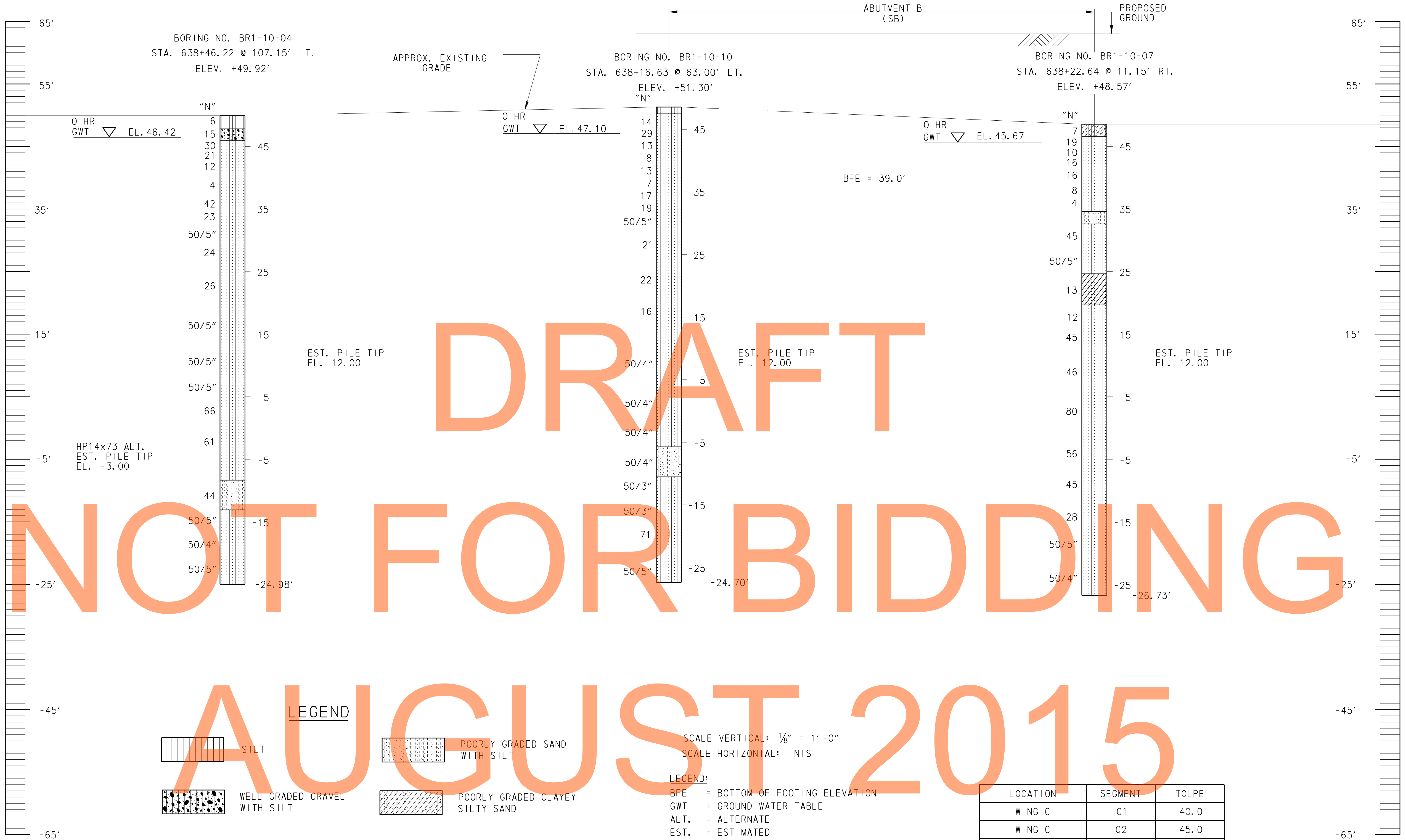
LEGEND

	SILT		ELASTIC SILT
	SILTY SAND		POORLY GRADED SAND
	CLAYEY SAND		POORLY GRADED CLAYEY SILTY SAND
	POORLY GRADED SAND WITH SILT		POORLY GRADED GRAVEL WITH CLAY

LEGEND:
 ALT. = ALTERNATE
 BFE = BOTTOM OF FOOTING ELEVATION
 GWT = GROUND WATER TABLE
 EST. = ESTIMATED
 TOLPE = TOP OF LEVELING PAD ELEVATION
 SB = SOUTHBOUND
 STA. = STATION
 ▽ = TOP OF GROUND WATER

LOCATION	SEGMENT	TOLPE
WING B	B1	40.0
WING B	B2	42.5
WING B	B3	45.0
MEDIAN A WALL	MA	40.0

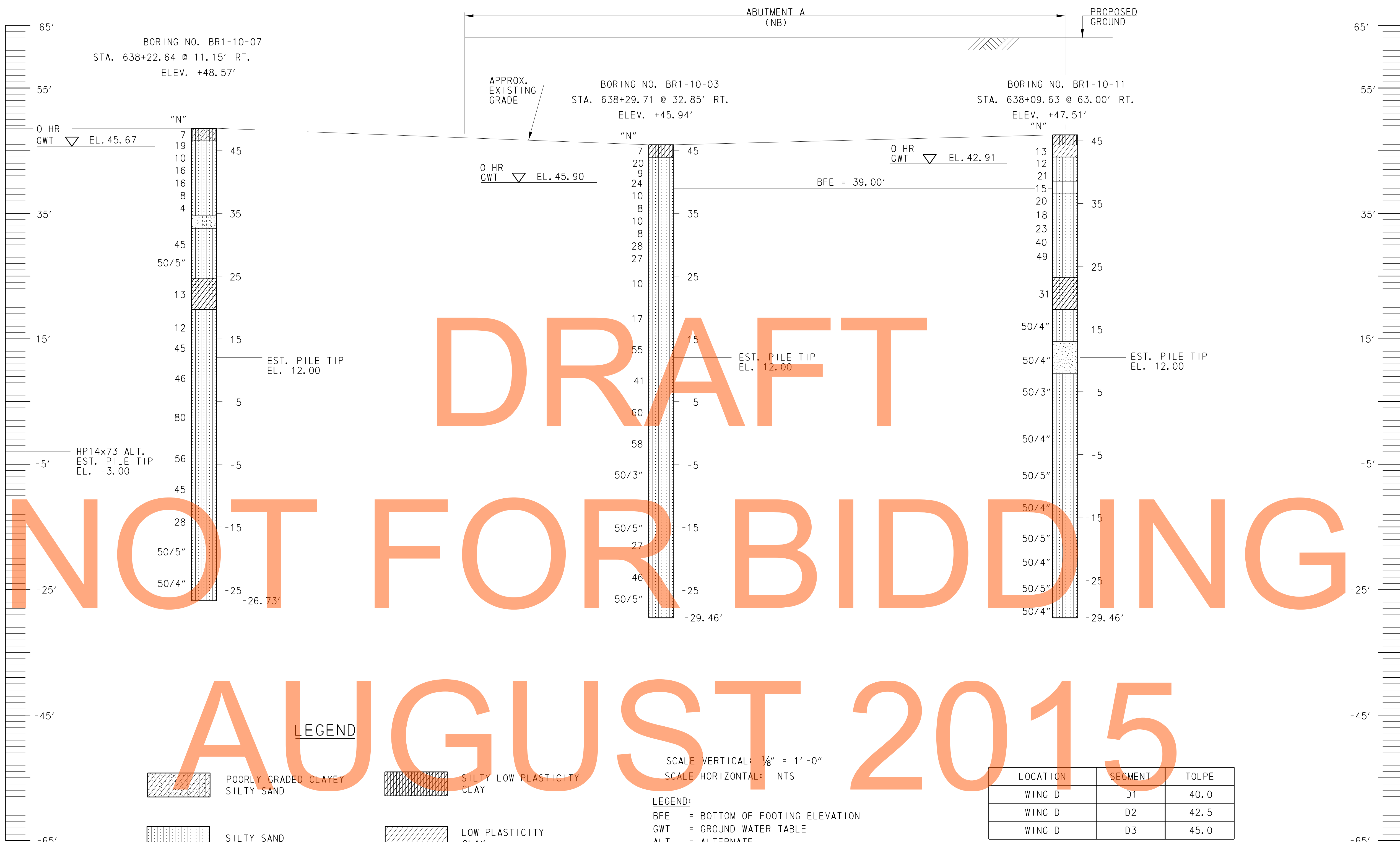




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LEGEND

	POORLY GRADED CLAYEY SILTY SAND		SILTY LOW PLASTICITY CLAY
	SILTY SAND		LOW PLASTICITY CLAY
	POORLY GRADED SAND WITH SILT		SILT
	CLAYEY SAND		POORLY GRADED SAND

SCALE VERTICAL: 1/8" = 1' - 0"
 SCALE HORIZONTAL: NTS

LEGEND:
 BFE = BOTTOM OF FOOTING ELEVATION
 GWT = GROUND WATER TABLE
 ALT. = ALTERNATE
 EST. = ESTIMATED
 TOLPE = TOP OF LEVELING PAD ELEVATION
 SB = SOUTHBOUND
 STA. = STATION
 ▽ = TOP OF GROUND WATER

LOCATION	SEGMENT	TOLPE
WING D	D1	40.0
WING D	D2	42.5
WING D	D3	45.0