

PROJECT NOTES:

- LOCATION
PROPOSED NEW STRUCTURE CARRYING US301 OVER SR 896 (BOYDS CORNER ROAD) 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. PROVIDE MATERIAL AND PERFORM WORK IN ACCORDANCE TO THE DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS AND CONSTRUCTION DETAILS AND CONTRACT SPECIAL PROVISIONS.
- 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 - ABUTMENTS, STEMS, BACKWALLS, WINGWALLS AND PARAPETS (f'c = 4,500 PSI).
CLASS A - ABUTMENT FOOTING (f'c = 4,500 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 GIRDERS
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 59,696 PSI, THE FINAL EFFECTIVE PRESTRESS FORCE PER STRAND IS 30,996 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.
- STABILIZING STRUCTURAL EXCAVATIONS
THE CONTRACTOR IS RESPONSIBLE FOR STABILITY OF EXCAVATED SLOPES. DIRECT SURFACE RUNOFF AWAY FROM THE EXCAVATION. ALL EXCAVATION SAFETY MEASURES, INCLUDING SLOPING AND SHORING, SHALL CONFORM TO CURRENT OSHA AND LOCAL STANDARDS. A QUALIFIED ENGINEER REGISTERED IN THE STATE OF DELAWARE SHOULD 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 APPROVAL OF THE ENGINEER. PERFORM DYNAMIC PILE MONITORING ON THE TEST PILES AND IF DIRECTED, ON SELECTED BEARING 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. LOAD RATINGS
LOAD AND RESISTANCE FACTOR RATING METHOD**

DESIGN VEHICLE	RATING FACTOR	RATING WEIGHT (TON)	CONTROLLING MEMBER	CONTROLLING POINT (FT.)	LOAD EFFECT
HL-93 TRUCK (INVENTORY)	1.05	N/A	1ST INT. BEAM	105	CONCRETE STRESS
HL-93 TANDEM (INVENTORY)	1.25	N/A	1ST INT. BEAM	105	CONCRETE STRESS
HS-20 (INVENTORY)	1.54	55.42	1ST INT. BEAM	105	CONCRETE STRESS
HL-93 TRUCK (OPERATING)	2.09	N/A	1ST INT. BEAM	105	LONG. REINFORCEMENT
HL-93 TANDEM (OPERATING)	2.49	N/A	1ST INT. BEAM	105	LONG. REINFORCEMENT
HS-20 (OPERATING)	2.98	107.14	1ST INT. BEAM	104	LONG. REINFORCEMENT
DE S220 (LEGAL)	2.67	53.49	1ST INT. BEAM	105	CONCRETE STRESS
DE S335 (LEGAL)	1.50	52.66	1ST INT. BEAM	105	CONCRETE STRESS
DE S437 (LEGAL)	1.43	52.49	1ST INT. BEAM	105	CONCRETE STRESS
DE T330 (LEGAL)	1.97	59.11	1ST INT. BEAM	105	CONCRETE STRESS
DE T435 (LEGAL)	1.71	60.01	1ST INT. BEAM	105	CONCRETE STRESS
DE T540 (LEGAL)	1.51	60.45	1ST INT. BEAM	105	CONCRETE STRESS

NOTE: LOAD RATING INCLUDES FUTURE WEARING SURFACE AS NOTED IN THE PLANS.

14. 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.

15. 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.

16. PROVIDE A MINIMUM TEMPORARY VERTICAL CLEARANCE OF 16'-11" AT ALL TIMES DURING CONSTRUCTION.

17. DO NOT PICK OR LIFT OVER LANES AND/OR SHOULDERS OPEN TO TRAFFIC.

18. DO NOT PERFORM ANY WORK DIRECTLY OVER OPEN LANES OF TRAFFIC WITHOUT ADEQUATE SHIELDING OR WORK PLATFORMS, LANE CLOSURES, OR DETOURS IN ACCORDANCE WITH THE CONTRACT PLANS AND SPECIFICATIONS.

19. INSTALL STAY-IN-PLACE FORMS, ADDITIONAL PROTECTIVE SHIELD SYSTEM, WORK PLATFORMS, AND/OR OVERHANG FALSEWORK BEFORE BEGINNING ANY CONSTRUCTION OPERATIONS OVER TRAFFIC.

20. IF THE CONTRACTOR DETERMINES THAT ADDITIONAL PROTECTIVE SHIELDING OR WORK PLATFORMS ARE NEEDED TO PROTECT TRAFFIC, SUBMIT PLANS AND CALCULATIONS FOR REVIEW AND APPROVAL FOR PROTECTING TRAFFIC WHILE WORKING OVER TRAVELWAYS. HAVE THE DRAWINGS AND DESIGN CALCULATIONS PREPARED, SIGNED, AND SEALED BY A DELAWARE REGISTERED PROFESSIONAL ENGINEER. THE APPROVAL OF THE ENGINEER WILL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR THE SAFETY OF THE METHOD OR EQUIPMENT. BASED ON CONTRACTOR MEANS AND METHODS, DETERMINE AND CLEARLY DEFINE ALL DEAD AND LIVE LOADS FOR THIS SYSTEM, WHICH, AT A MINIMUM, SHALL BE INSTALLED BETWEEN BEAMS OR GIRDERS OVER ANY TRAVEL WAY OR SHOULDER AREA WHERE TRAFFIC IS MAINTAINED. NO SEPARATE PAYMENT WILL BE MADE FOR ADDITIONAL PROTECTIVE SHIELDING OR WORK PLATFORMS.

21. ALL FORMWORK, INCLUDING STAY-IN-PLACE FORMS, SHALL BE MORTAR TIGHT.

22. WHILE PLACING DECK, DECK OVERHANG, AND PARAPET CONCRETE OVER LANES OPEN TO TRAFFIC, NO CLOSURE OR DETOURS WILL BE ALLOWED DURING THESE OPERATIONS.

23. THE MAINTENANCE OF TRAFFIC REQUIRED FOR THE INSTALLATION OF THESE ITEMS WILL BE PAID UNDER THE MAINTENANCE OF TRAFFIC UNIT BID ITEMS. CONTRACTOR SHALL ADHERE TO THE TRAFFIC CONTROL PLAN, DELAWARE MUTCD, AND TRAFFIC LANE CLOSURE AND WORK RESTRICTIONS PROVIDED IN THE CONTRACT DOCUMENTS.

INDEX OF DRAWINGS

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543	BR1-466GL-01	GEOMETRIC LAYOUT PLAN
544	BR1-466TS-01	TYPICAL SECTION
545	BR1-466DT-01	CONSTRUCTION SEQUENCE AT ABUTMENTS
546	BR1-466FT-01	ABUTMENT A (NB) - FOOTING PLAN
547	BR1-466AB-01	ABUTMENT A (NB) - PLAN AND ELEVATION
548	BR1-466FT-02	ABUTMENT B (NB) - FOOTING PLAN
549	BR1-466AB-02	ABUTMENT B (NB) - PLAN AND ELEVATION
550	BR1-466BR-01	ABUTMENT REINFORCEMENT BAR LIST (NB)
551	BR1-466FT-03	ABUTMENT A (SB) - FOOTING PLAN
552	BR1-466AB-03	ABUTMENT A (SB) - PLAN AND ELEVATION
553	BR1-466FT-04	ABUTMENT B (SB) - FOOTING PLAN
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555	BR1-466BR-02	ABUTMENT REINFORCEMENT BAR LIST (SB)
556	BR1-466WW-01	M.S.E. WALLS
557	BR1-466DT-02	MISCELLANEOUS DETAILS
558	BR1-466FD-01	FINISHED BRIDGE DECK ELEVATIONS
559	BR1-466FR-01	FRAMING PLAN
560	BR1-466BM-01	BEAM PLAN AND BEARING DETAILS
561	BR1-466BM-02	BEAM ELEVATION AND SECTIONS
562	BR1-466DK-01	DECK PLAN, SECTION AND DETAILS (NB)
563	BR1-466DPH-01	DIAPHRAGM DETAILS - 1 (NB)
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565	BR1-466AS-01	APPROACH SLAB - 1 (NB)
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567	BR1-466AS-03	APPROACH SLAB - 3 (NB)
568	BR1-466BR-03	SUPERSTRUCTURE REINFORCEMENT BAR LIST - 1 (NB)
569	BR1-466BR-04	SUPERSTRUCTURE REINFORCEMENT BAR LIST - 2 (NB)
570	BR1-466DK-02	DECK PLAN, SECTION AND DETAILS (SB)
571	BR1-466DPH-03	DIAPHRAGM DETAILS - 1 (SB)
572	BR1-466DPH-04	DIAPHRAGM DETAILS - 2 (SB)
573	BR1-466AS-04	APPROACH SLAB - 1 (SB)
574	BR1-466AS-05	APPROACH SLAB - 2 (SB)
575	BR1-466AS-06	APPROACH SLAB - 3 (SB)
576	BR1-466BR-05	SUPERSTRUCTURE REINFORCEMENT BAR LIST - 1 (SB)
577	BR1-466BR-06	SUPERSTRUCTURE REINFORCEMENT BAR LIST - 2 (SB)
578	BR1-466EX-01	EXPANSION JOINT DETAILS
579	BR1-466BO-01	SOIL BORINGS - 1
580	BR1-466BO-02	SOIL BORINGS - 2

QUANTITIES

ITEM NO.	ITEM TITLE	UNIT	QUANTITY
202505	SETTLEMENT PLATFORM	EACH	8
602003	P.C.C. MASONRY, ABUTMENT FOOTING, CLASS A	C.Y.	104
602013	P.C.C. MASONRY, SUPERSTRUCTURE, CLASS D	C.Y.	463
602014	P.C.C. MASONRY, APPROACH SLAB, CLASS D	C.Y.	478
602015	P.C.C. MASONRY, ABUTMENT ABOVE FOOTING, CLASS A	C.Y.	92
602017	P.C.C. MASONRY, PARAPET, CLASS A	C.Y.	106
602772	MECHANICALLY STABILIZED EARTH WALLS	L.S.	1
604000	BAR REINFORCEMENT, EPOXY COATED	LB	262,700
605512	PREFABRICATED EXPANSION JOINT SYSTEM 4"	L.F.	104
618062 (ALTERNATE)	STEEL H PILES, HP 14X73	L.F.	2,632
618065 (ALTERNATE)	STEEL H TEST PILES, HP 14X73	L.F.	369
618081	FURNISH PRECAST PRESTRESSED CONCRETE PILE, 14X14	L.F.	1,864
618091	FURNISH PRECAST PRESTRESSED CONCRETE TEST PILE, 14X14	L.F.	273
619042 (ALTERNATE)	INSTALL STEEL H PILES, HP 14X73	L.F.	2,632
619045 (ALTERNATE)	INSTALL STEEL H TEST PILES, HP 14X73	L.F.	369
619061	INSTALL PRECAST PRESTRESSED CONCRETE PILE, 14X14	L.F.	1,864
619067	INSTALL PRECAST PRESTRESSED CONCRETE TEST PILE, 14X14	L.F.	273
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 BEAM	L.S.	1



ADDENDUMS / REVISIONS

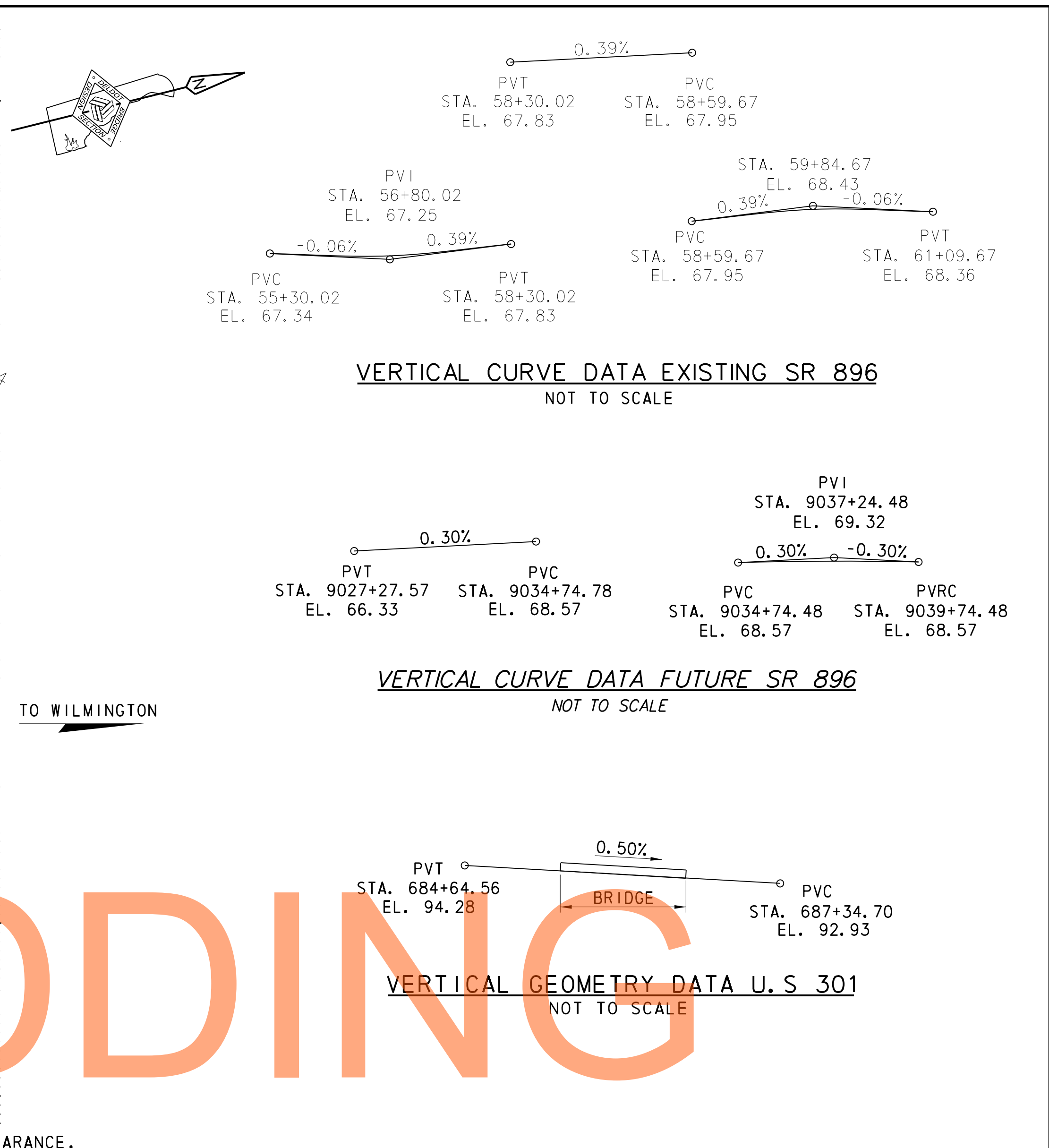
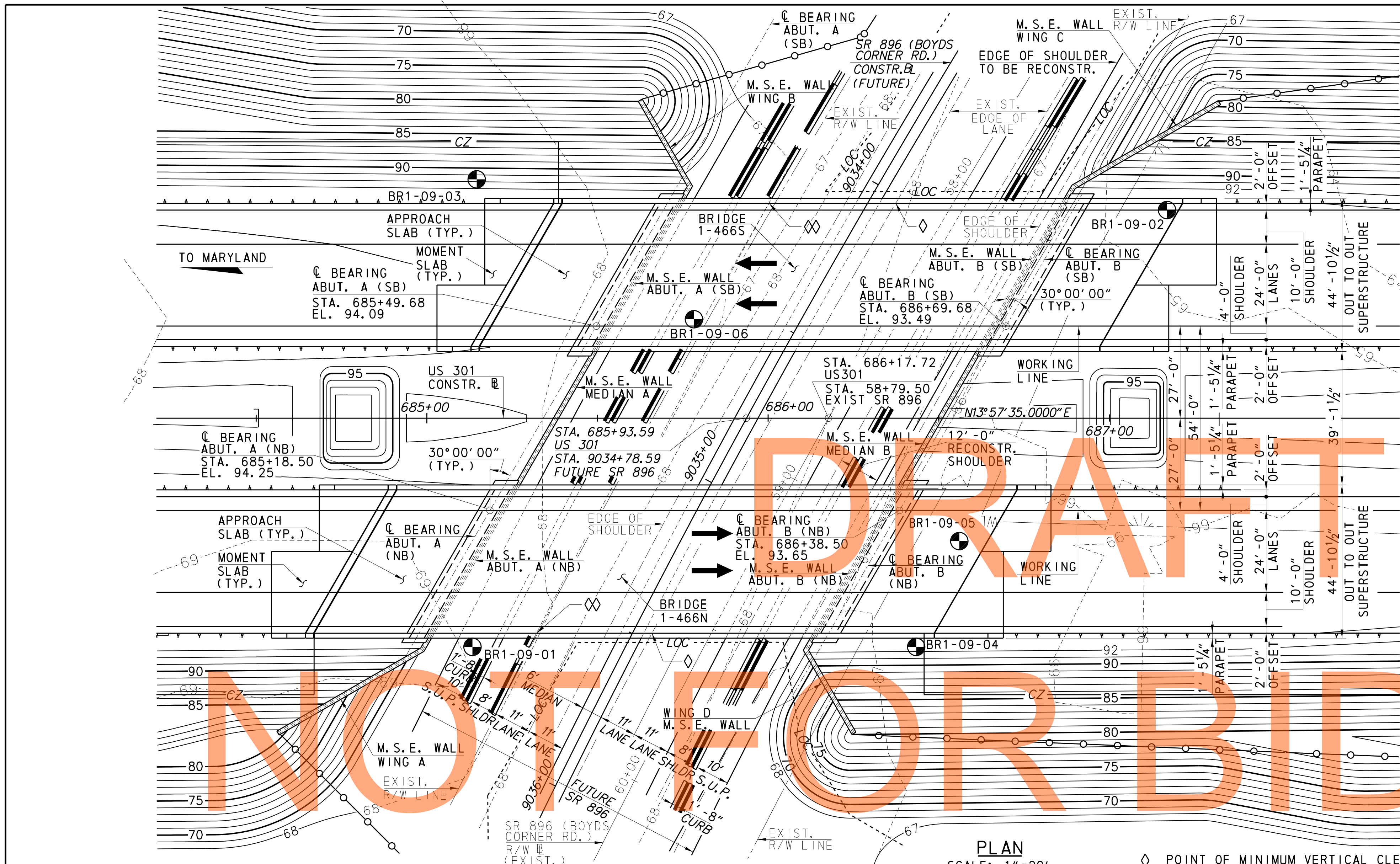
NO SCALE

**US 301,
SR 896 TO SR 1**

CONTRACT	BRIDGE NO.	1-466 N&S
T200911308	DESIGNED BY: BK	
COUNTY	CHECKED BY: ZAA	
NEW CASTLE		

**PROJECT NOTES
AND QUANTITIES**

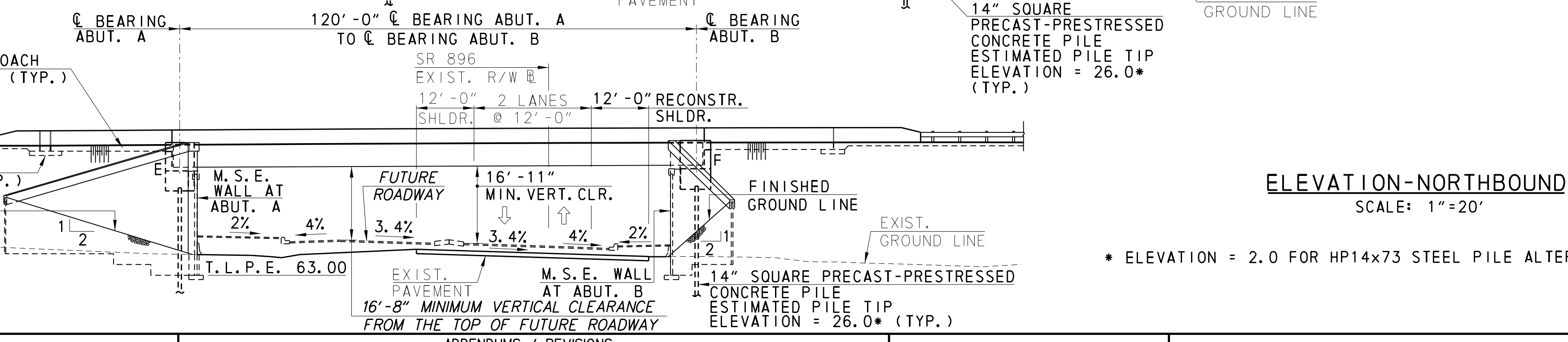
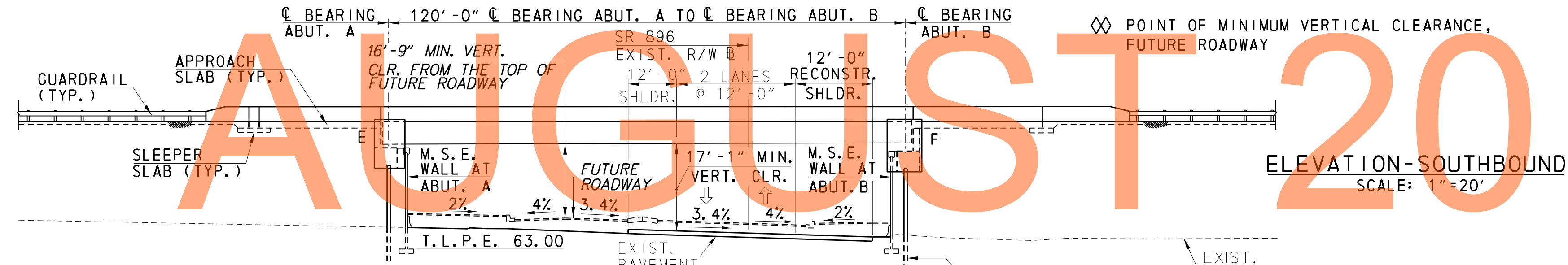
SHEET NO.	541
TOTAL SHTS.	875



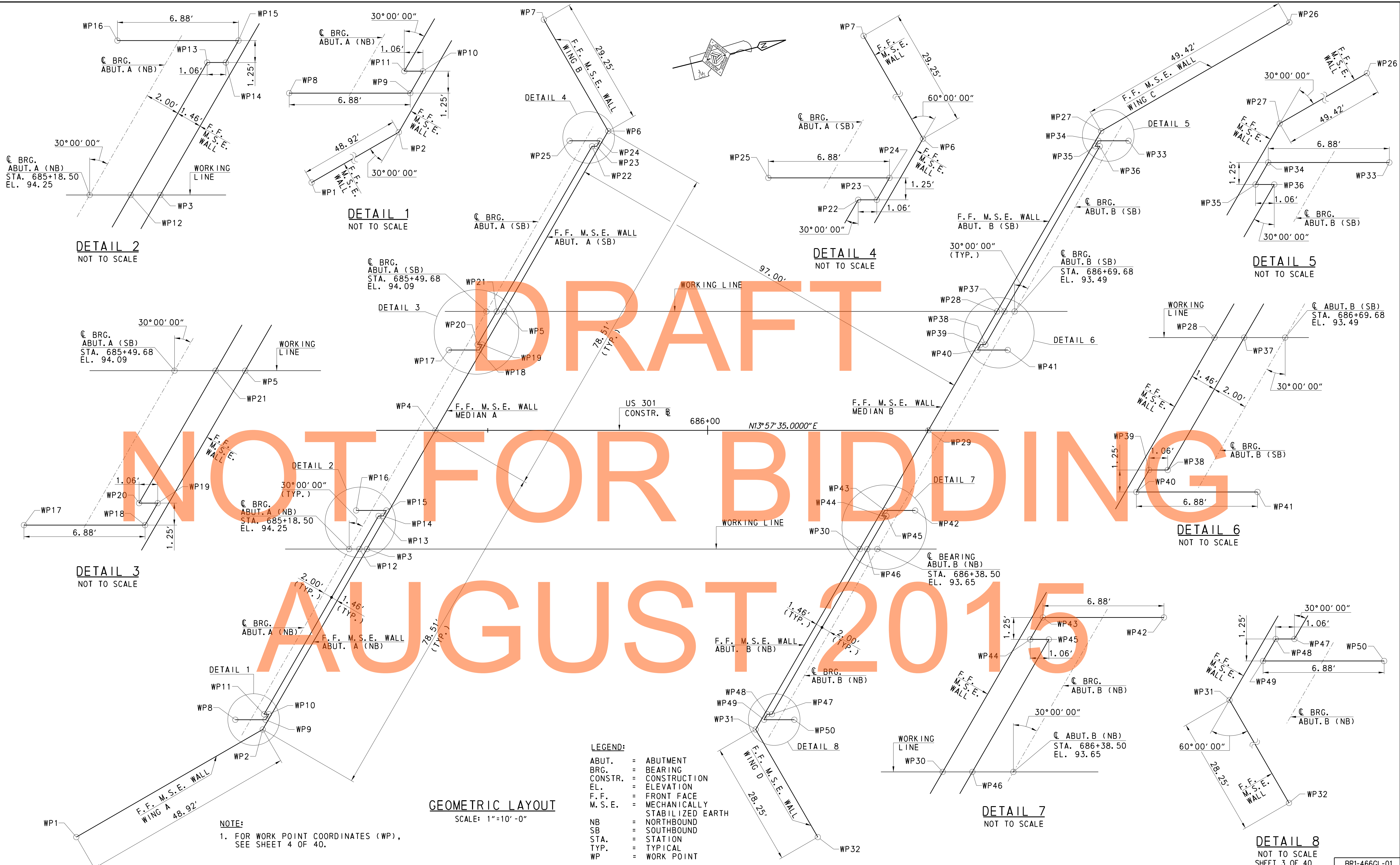
NOT FOR BIDDING

PLAN
SCALE: 1"=20'

- ◇ POINT OF MINIMUM VERTICAL CLEARANCE, EXISTING ROADWAY
- ◇◇ POINT OF MINIMUM VERTICAL CLEARANCE, FUTURE ROADWAY



- LEGEND:**
- ABUT. = ABUTMENT
 - APPROX. = APPROXIMATE
 - CONSTR. = CONSTRUCTION
 - CLR. = CLEAR
 - CZ = CLEAR ZONE
 - DA = DENIAL OF ACCESS
 - E = EXPANSION
 - EL. = ELEVATION
 - F = FIXED
 - LT. = LEFT
 - MIN. = MINIMUM
 - M. S. E. = MECHANICALLY STABILIZED EARTH
 - NB = NORTHBOUND
 - P/S = PRESTRESSED
 - RECONSTR. = RECONSTRUCTED
 - RT. = RIGHT
 - R/W = RIGHT-OF-WAY
 - SB = SOUTHBOUND
 - SHLDR = SHOULDER
 - STA. = STATION
 - S. U. P. = SHARED USE PATH
 - TYP. = TYPICAL
 - T. L. P. E. = TOP OF LEVELING PAD ELEVATION
 - VERT. = VERTICAL
 - W. S. = WATER SURFACE



DRAFT

NOT FOR BIDDING

AUGUST 2015

- LEGEND:**
- ABUT. = ABUTMENT
 - BRG. = BEARING
 - CONSTR. = CONSTRUCTION
 - EL. = ELEVATION
 - F. F. = FRONT FACE
 - M. S. E. = MECHANICALLY STABILIZED EARTH
 - NB = NORTHBOUND
 - SB = SOUTHBOUND
 - STA. = STATION
 - TYP. = TYPICAL
 - WP = WORK POINT

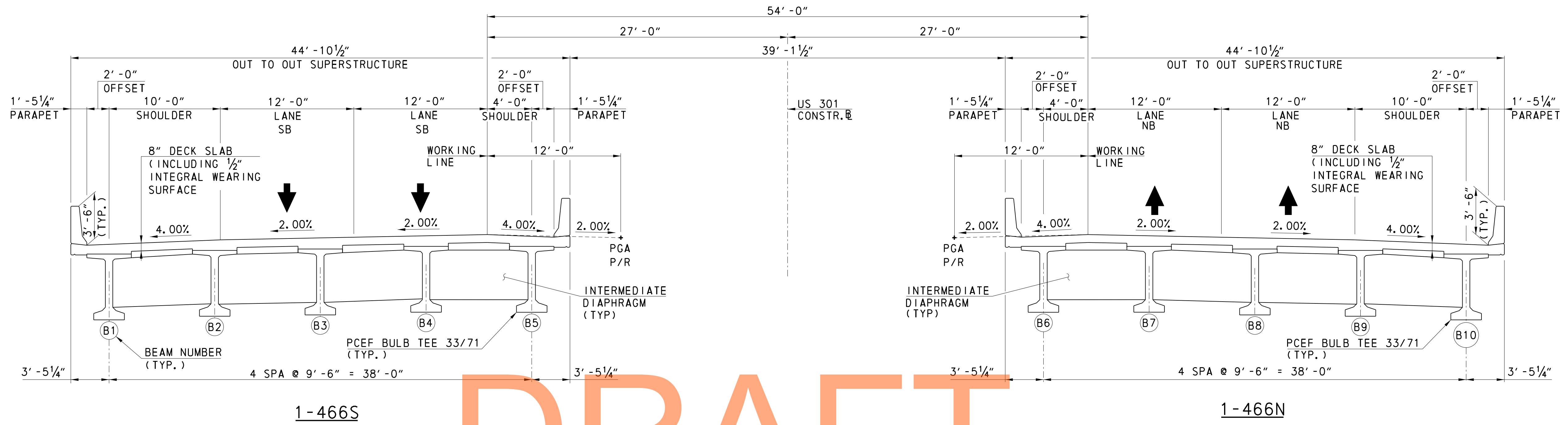
NOTE:
1. FOR WORK POINT COORDINATES (WP),
SEE SHEET 4 OF 40.

GEOMETRIC LAYOUT
SCALE: 1"=10'-0"

ADDENDUMS / REVISIONS	SCALE: AS NOTED

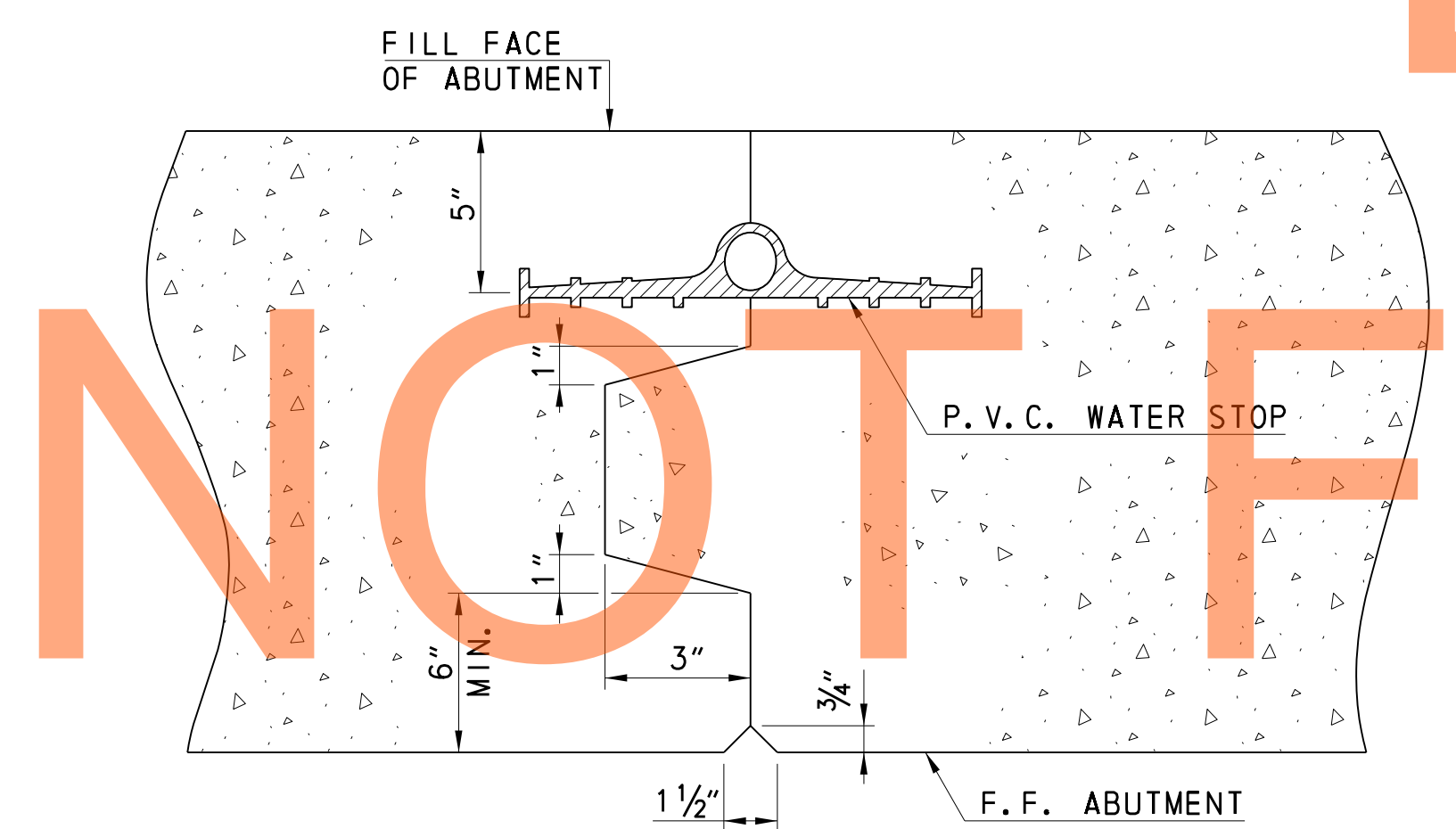
CONTRACT T200911308	BRIDGE NO. 1-466 N&S	DESIGNED BY: BJH
COUNTY NEW CASTLE	CHECKED BY: BSW	

SHEET NO. 543	BR1-466GL-01
TOTAL SHTS. 875	



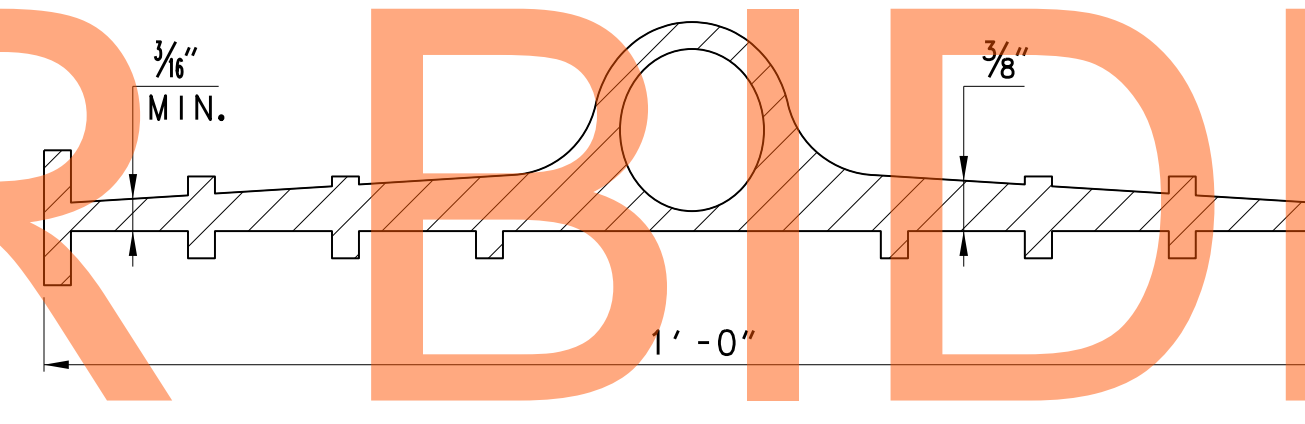
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TYPICAL SECTION
SCALE: 3/16" = 1'-0"

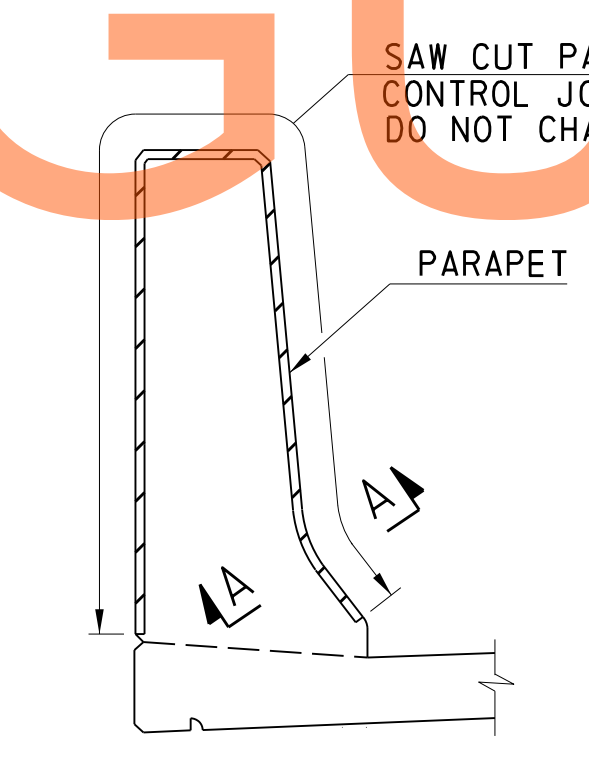


NOTE:
REINFORCING SHALL PASS THROUGH CONSTRUCTION JOINT.

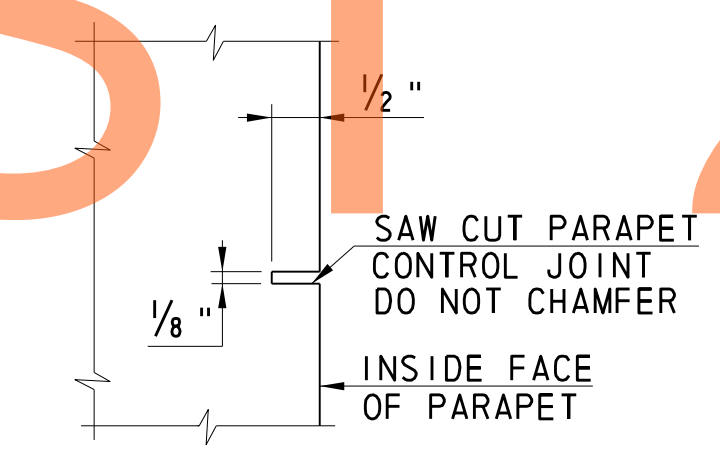
CONSTRUCTION JOINT DETAIL
NOT TO SCALE



P. V. C. WATER STOP
NOT TO SCALE



PARAPET CONTROL
JOINT DETAIL
NOT TO SCALE



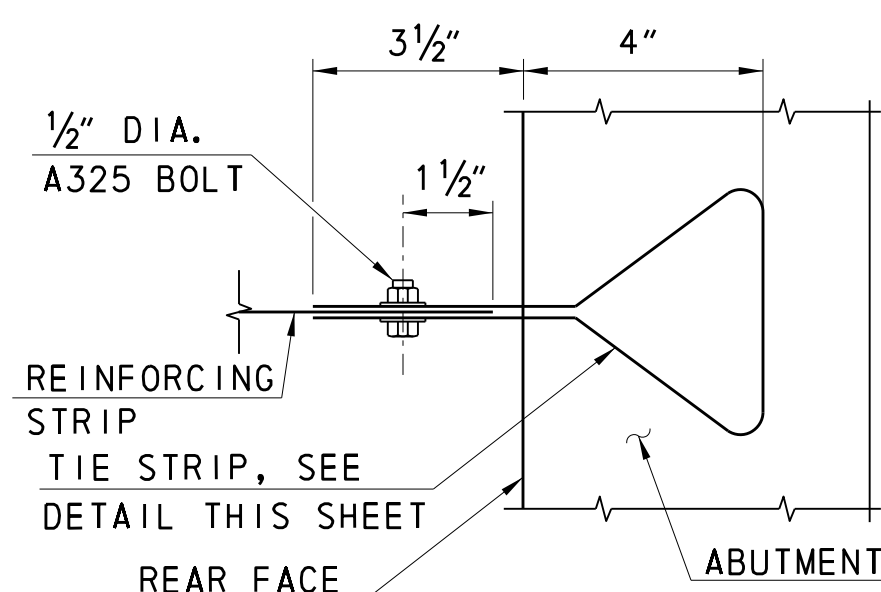
SECTION A-A
NOT TO SCALE

- NOTES:
1. SAW CUT PARAPET CONTROL JOINT SHALL BE SAWED SAME DAY AS CONCRETE IS POURED.
 2. FOR LOCATION OF PARAPET CONTROL JOINTS, SEE SHEETS 22 AND 30 OF 40.
 3. REFLECTORS SHALL BE INSTALLED ALONG EACH PARAPET. SEE CONSTRUCTION DETAILS, DT-17 FOR DETAILS.

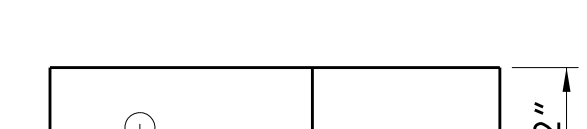
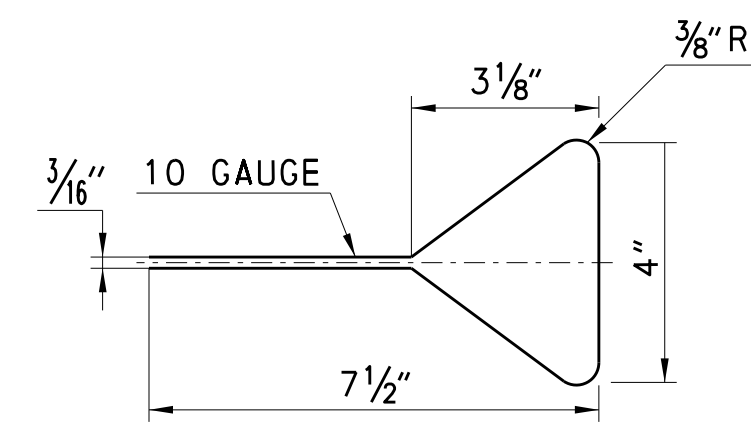
LEGEND:

CONSTR.	=	CONSTRUCTION
F. F.	=	FRONT FACE
LT.	=	LEFT
MIN.	=	MINIMUM
NB	=	NORTHBOUND
RT.	=	RIGHT
SB	=	SOUTHBOUND
SPA.	=	SPACES
TYP.	=	TYPICAL

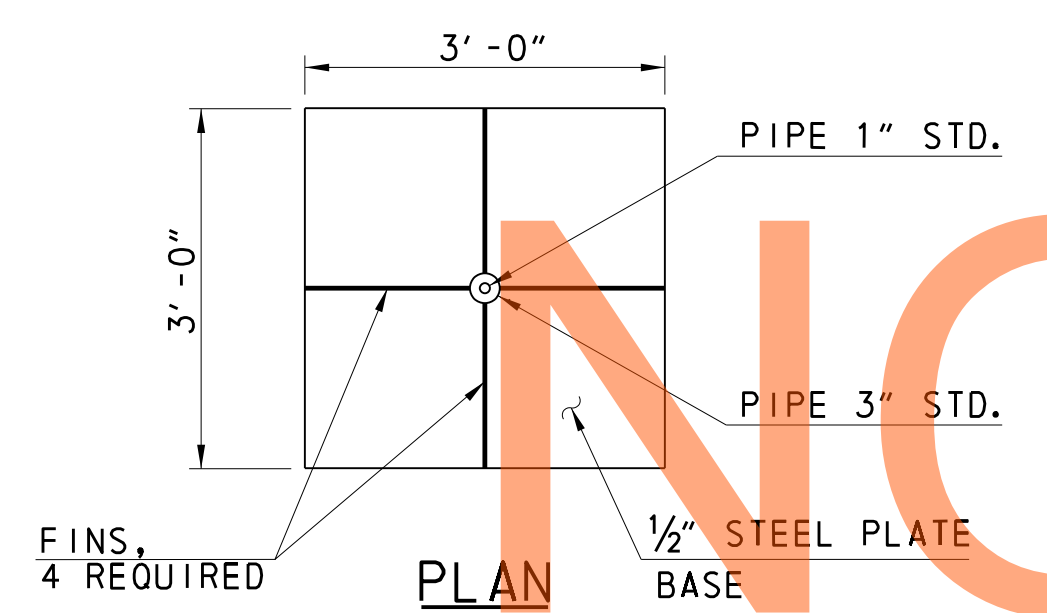
WORK POINT COORDINATES				
WP	NORTHING	EASTING	STATION	OFFSET (FT)
1	548808.6847	578265.0207	684+56.46	92.45 RT.
2	548855.7002	578251.5035	684+98.83	67.99 RT.
3	548888.5544	578217.4340	685+22.50	27.00 RT.
4	548910.1974	578194.9924	685+38.09	0.00
5	548931.8404	578172.5507	685+53.68	27.00 LT.
6	548964.6947	578138.4813	685+77.34	67.99 LT.
7	548956.6125	578110.3700	685+62.72	93.32 LT.
8	548850.1930	578247.8500	684+92.60	65.77 RT.
9	548856.8698	578249.5097	684+99.48	65.77 RT.
10	548857.8694	578248.4732	685+00.20	64.52 RT.
11	548856.8407	578248.2175	684+99.14	64.52 RT.
12	548886.9183	578217.0273	685+20.81	27.00 RT.
13	548892.9505	578210.7720	685+25.15	19.47 RT.
14	548893.9792	578211.0277	685+26.21	19.47 RT.
15	548894.9788	578209.9912	685+26.93	18.23 RT.
16	548888.3020	578208.3314	685+20.05	18.23 RT.
17	548917.5245	578178.0319	685+41.10	18.23 LT.
18	548924.2013	578179.6916	685+47.98	18.23 LT.
19	548925.2009	578178.6550	685+48.70	19.47 LT.
20	548924.1722	578178.3993	685+47.64	19.47 LT.
21	548930.2044	578172.1440	685+51.99	27.00 LT.
22	548960.2820	578140.9539	685+73.65	64.52 LT.
23	548961.3107	578141.2096	685+74.71	64.52 LT.
24	548962.3103	578140.1730	685+75.43	65.77 LT.
25	548955.6335	578138.5133	685+68.55	65.77 LT.
26	549120.8920	578151.8470	687+32.15	92.70 LT.
27	549073.3960	578165.5024	686+89.35	67.99 LT.
28	549040.5418	578199.5718	686+65.68	27.00 LT.
29	549018.8988	578222.0135	686+50.09	0.00
30	548997.2557	578244.4551	686+34.50	27.00 RT.
31	548964.4015	578278.5246	686+10.84	67.99 RT.
32	548972.2073	578305.6747	686+24.96	92.45 RT.
33	549078.9032	578169.1558	686+95.58	65.77 LT.
34	549072.2264	578167.4961	686+88.70	65.77 LT.
35	549071.2268	578168.5327	686+87.98	64.52 LT.
36	549072.2555	578168.7884	686+89.04	64.52 LT.
37	549042.1779	578199.9785	686+67.37	27.00 LT.
38	549036.1457	578206.2338	686+63.03	19.47 LT.
39	549035.1170	578205.9781	686+61.97	19.47 LT.
40	549034.1174	578207.0147	686+61.25	18.23 LT.
41	549040.7942	578208.6744	686+68.13	18.23 LT.
42	549011.5717	578238.9740	686+47.08	18.23 RT.
43	549004.8949	578237.3143	686+40.20	18.23 RT.
44	549003.8953	578238.3508	686+39.48	19.47 RT.
45	549004.9240	578238.6065	686+40.54	19.47 RT.
46	548998.8918	578244.8618	686+36.19	27.00 RT.
47	548968.8142	578276.0520	686+14.53	64.52 RT.
48	548967.7855	578275.7963	686+13.47	64.52 RT.
49	548966.7859	578276.8328	686+12.75	65.77 RT.
50	548973.4627	578278.4925	686+19.63	65.77 RT.



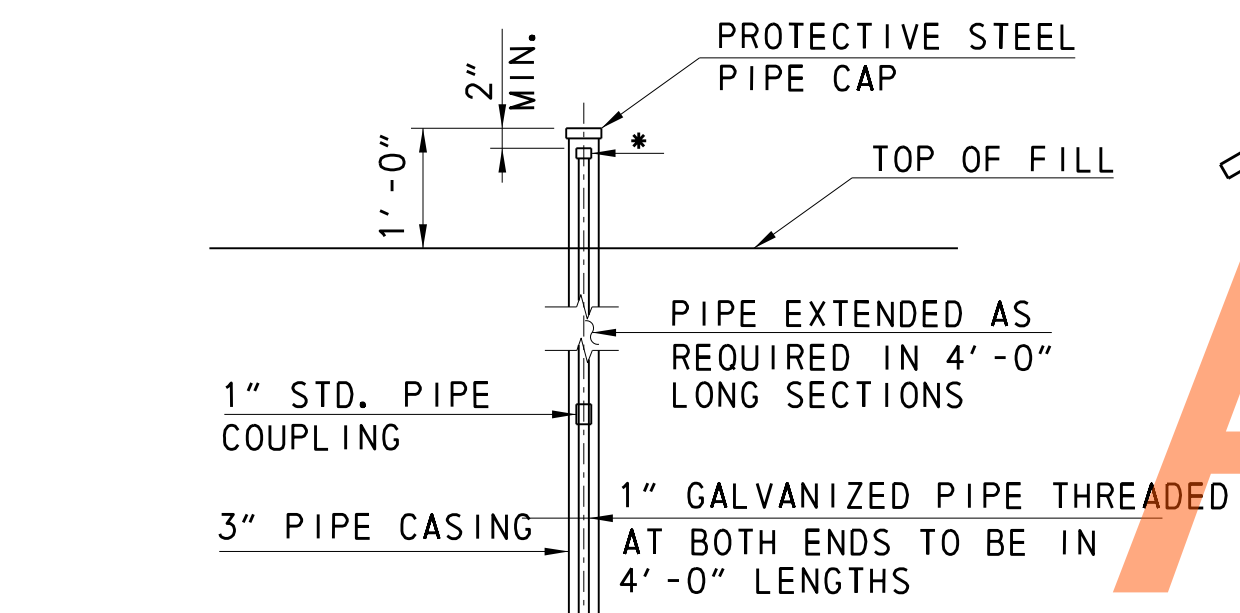
DETAIL A
NOT TO SCALE



TIE STRIP DETAIL
NOT TO SCALE



PLAN



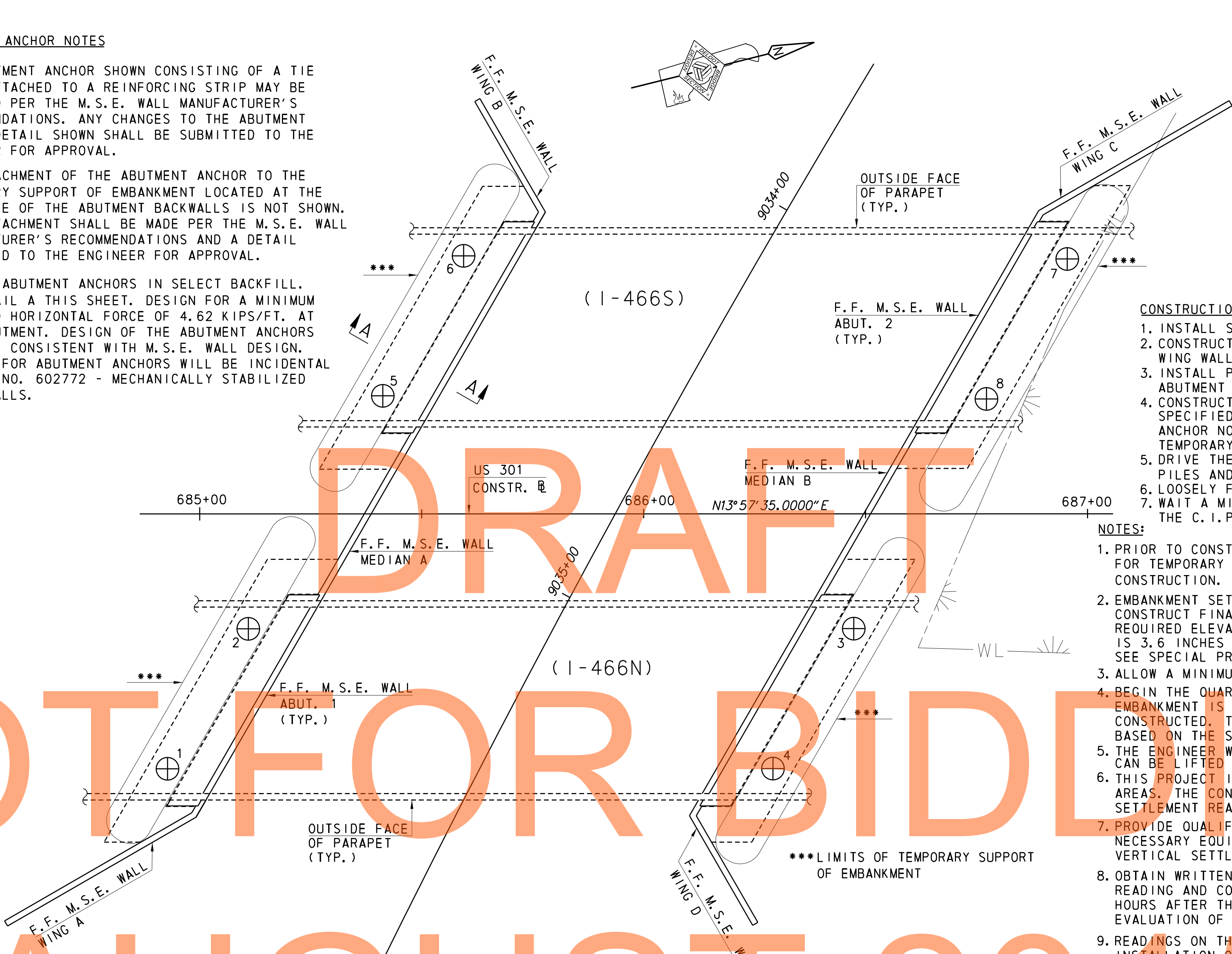
ELEVATION

SETTLEMENT PLATFORM DETAIL
NOT TO SCALE

* PIPE CAP WITH 1/4" DIA. ROUND HEAD STAINLESS STEEL BOLT SET SECURELY IN CAP. TACK WELD CAP TO PIPE.

ABUTMENT ANCHOR NOTES

1. THE ABUTMENT ANCHOR SHOWN CONSISTING OF A TIE STRIP ATTACHED TO A REINFORCING STRIP MAY BE MODIFIED PER THE M.S.E. WALL MANUFACTURER'S RECOMMENDATIONS. ANY CHANGES TO THE ABUTMENT ANCHOR DETAIL SHOWN SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
2. THE ATTACHMENT OF THE ABUTMENT ANCHOR TO THE TEMPORARY SUPPORT OF EMBANKMENT LOCATED AT THE REAR FACE OF THE ABUTMENT BACKWALLS IS NOT SHOWN. THIS ATTACHMENT SHALL BE MADE PER THE M.S.E. WALL MANUFACTURER'S RECOMMENDATIONS AND A DETAIL SUBMITTED TO THE ENGINEER FOR APPROVAL.
3. PROVIDE ABUTMENT ANCHORS IN SELECT BACKFILL. SEE DETAIL A THIS SHEET. DESIGN FOR A MINIMUM FACTORED HORIZONTAL FORCE OF 4.62 KIPS/FT. AT EACH ABUTMENT. DESIGN OF THE ABUTMENT ANCHORS SHALL BE CONSISTENT WITH M.S.E. WALL DESIGN. PAYMENT FOR ABUTMENT ANCHORS WILL BE INCIDENTAL TO ITEM NO. 602772 - MECHANICALLY STABILIZED EARTH WALLS.



LAYOUT FOR TEMPORARY SUPPORT OF EMBANKMENT AND SETTLEMENT PLATFORM
NOT TO SCALE

SOIL PARAMETERS

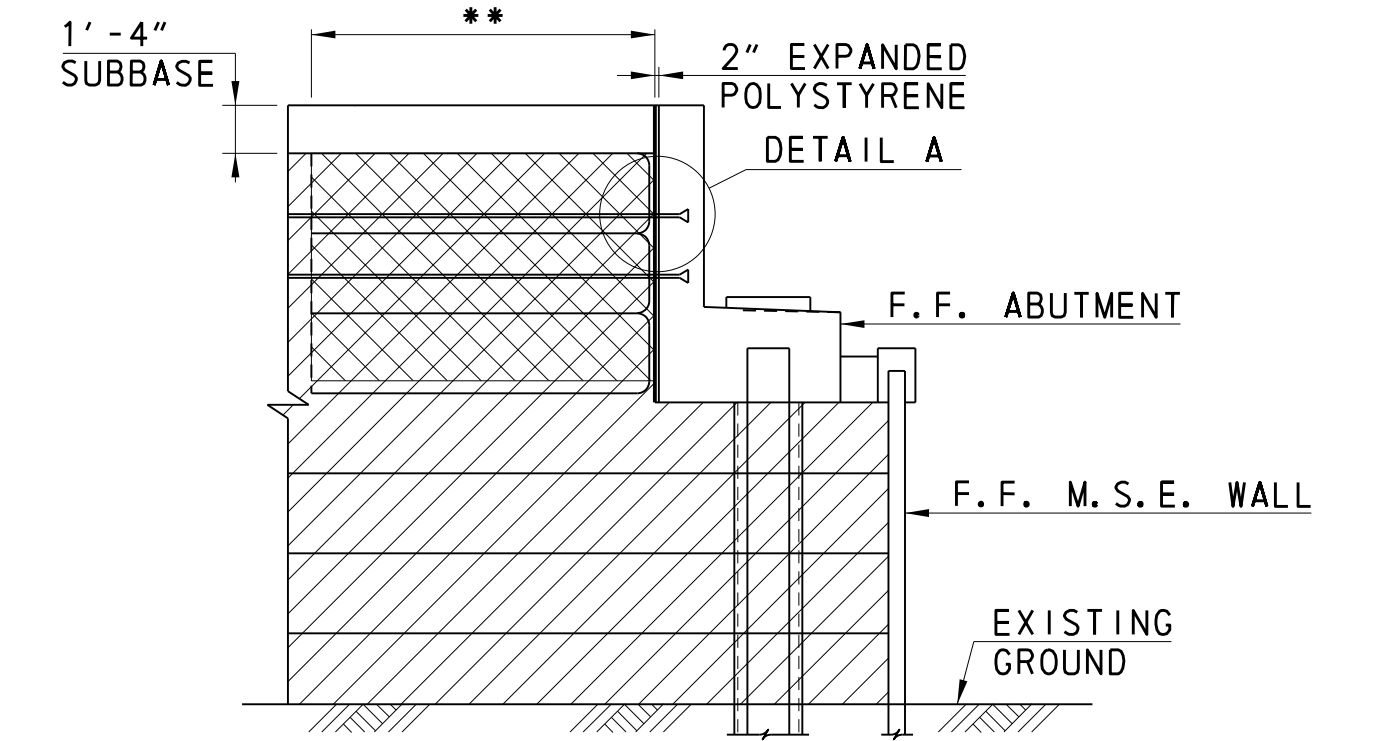
TEMPORARY SUPPORT OF EMBANKMENT

REINFORCEMENT ZONE	
IN-SITU SOIL DENSITY, (lb/ft ³)	130
IN-SITU SOIL COHESION, (psf)	0
IN-SITU SOIL FRICTION ANGLE, (deg)	34
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)	130
IN-SITU SOIL COHESION, (psf)	0
IN-SITU SOIL FRICTION ANGLE, (deg)	34
BEARING RESISTANCE FACTOR	0.65

SETTLEMENT PLATFORM LOCATION

	STATION	OFFSET (FT.)
NB	1	684+93 57.0 RT.
	2	685+11 26.0 RT.
	3	686+48 26.0 RT.
	4	686+30 57.0 RT.
SB	5	685+41 26.0 LT.
	6	685+59 57.0 LT.
	7	686+96 57.0 LT.
	8	686+78 26.0 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
 - ⊕ = SETTLEMENT PLATFORMS
 - ▨ = M.S.E. WALL
 - ▩ = TEMPORARY SUPPORT OF EMBANKMENT



SECTION A-A
NOT TO SCALE

CONSTRUCTION SEQUENCE:

1. INSTALL SETTLEMENT PLATFORMS, SEE SPECIAL PROVISION 202505.
2. CONSTRUCT M.S.E. WALL AT ABUTMENTS, M.S.E. WALL AT MEDIANS AND WING WALLS MAY ALSO BE CONSTRUCTED AT THE SAME TIME.
3. INSTALL PIPE CASINGS AT THE PROPOSED PILE LOCATIONS DURING THE ABUTMENT M.S.E. WALL CONSTRUCTION.
4. CONSTRUCT TEMPORARY SUPPORT OF EMBANKMENT AS INDICATED AND AS SPECIFIED. INSTALL THE BACKWALL STRAPS AS REQUIRED; SEE ABUTMENT ANCHOR NOTES, THIS SHEET. SEE SPECIAL PROVISIONS 602772 (MATERIALS: TEMPORARY SUPPORT OF EMBANKMENT).
5. DRIVE THE PILES AFTER THE QUARANTINE PERIOD. FOR INSTALLATION OF TEST PILES AND PRODUCTION PILES, SEE SHEET 17 OF 40 PILE NOTES 6a AND 6b.
6. LOOSELY FILL THE CORRUGATED STEEL PIPE WITH FINE AGGREGATE OR SAND.
7. WAIT A MINIMUM OF 30 DAYS AFTER THE QUARANTINE PERIOD BEFORE INSTALLING THE C.I.P. LEVEL-UP CONCRETE AND COPING FOR THE M.S.E. WALL.

NOTES:

1. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL SUBMIT PLANS AND SHOP DRAWINGS FOR TEMPORARY SUPPORT OF EMBANKMENT AND M.S.E. WALL INCLUDING SEQUENCE OF CONSTRUCTION.
2. EMBANKMENT SETTLEMENT IS ANTICIPATED. THE PROPRIETARY WALL MANUFACTURER SHALL CONSTRUCT FINAL WALL AND FACING SUCH THAT THE FINAL WALL FACING IS AT THE REQUIRED ELEVATION AFTER SETTLEMENT HAS TAKEN PLACE. THE ANTICIPATED SETTLEMENT IS 3.6 INCHES BEHIND THE FACE OF THE WALL AND WILL OCCUR DURING FILL PLACEMENT. SEE SPECIAL PROVISIONS FOR SETTLEMENT MONITORING REQUIREMENTS.
3. ALLOW A MINIMUM OF 60 DAYS QUARANTINE PERIOD FOR SETTLEMENT MONITORING.
4. BEGIN THE QUARANTINE PERIOD WHEN THE M.S.E. WALL AND TEMPORARY SUPPORT OF 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 READINGS.
5. 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.
6. THIS PROJECT INCLUDES THE INSTALLATION OF SETTLEMENT PLATFORMS IN EMBANKMENT AREAS. THE CONTRACTOR IS REQUIRED TO OBTAIN, RECORD, COMPILER AND ANALYZE THE SETTLEMENT READINGS.
7. PROVIDE QUALIFIED PERSONNEL WITH EXPERIENCE IN SETTLEMENT MONITORING AND THE NECESSARY EQUIPMENT AND MATERIALS TO OBTAIN, RECORD, COMPILER AND ANALYZE THE VERTICAL SETTLEMENT READINGS AS SPECIFIED OR DIRECTED.
8. OBTAIN WRITTEN APPROVAL OF THE ENGINEER BEFORE FIRST (INITIAL) SETTLEMENT READING AND COORDINATE SUBSEQUENT 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.
9. 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 REPLACEMENT. DURING FILL PLACEMENT, READINGS ON ALL SETTLEMENT PLATFORMS SHALL BE TAKEN AT A MINIMUM OF 3 CALENDAR DAY INTERVALS. AFTER COMPLETION OF THE FILL, TAKE AN INITIAL READING. READINGS ON ALL SETTLEMENT PLATFORMS SHALL THEN BE TAKEN AT A MINIMUM OF 3 CALENDAR DAY INTERVALS. IF THE SETTLEMENT HAS CEASED BY CALENDAR DAY 6, THAT IS 3 READINGS AFTER THE COMPLETION OF THE FILL, THE SUBSTRUCTURE WILL BE RELEASED BY THE ENGINEER FOR THE INSTALLATION OF PRODUCTION PILES WITHIN 3 WORKING DAYS OF RECEIPT OF SETTLEMENT MONITORING RESULTS.
10. AFTER COMPLETION OF THE ABUTMENT AND M.S.E. WALL PANEL PLACEMENT, THE CONTRACTOR SHALL ESTABLISH REFERENCE POINTS TO MONITOR SETTLEMENT ON TOP OF THE ABUTMENT SEAT AND EITHER ON TOP OF THE M.S.E. WALL PANELS OR ON TOP OF M.S.E. WALL LEVELING PAD AT POINTS WITHIN FIVE FEET OF ALL ENDS AND CORNERS AND AT THE CENTER OF BRIDGES AND THE CENTERLINE OF U.S. 301. READINGS ON ALL SETTLEMENT PLATFORMS 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. SEE SPECIAL PROVISIONS FOR ADDITIONAL SETTLEMENT MONITORING REQUIREMENTS.
11. DO NOT ALLOW CONSTRUCTION ACTIVITY, OTHER THAN MONITORING, WITHIN THE QUARANTINE AREAS DURING THE QUARANTINE TIME PERIOD.
12. LOCATE SETTLEMENT PLATFORMS HORIZONTALLY AND VERTICALLY AT THE DIRECTION OF THE ENGINEER. PROVIDE A BENCHMARK FOR THE MONITORING OF THIS WORK. THE BENCHMARK SHALL BE LOCATED IN A PROTECTED AREA OUTSIDE OF THE AREA OF ANTICIPATED SETTLEMENT.
13. EXPANDED POLYSTYRENE SHALL CONFORM TO ASTM C 578, EXCEPT THAT THE MAXIMUM ALLOWABLE WATER ABSORPTION SHALL BE 2%. COST SHALL BE INCIDENTAL TO ITEM 602014 - PORTLAND CEMENT CONCRETE MASONRY, APPROACH SLAB, CLASS D.

ADDENDUMS / REVISIONS

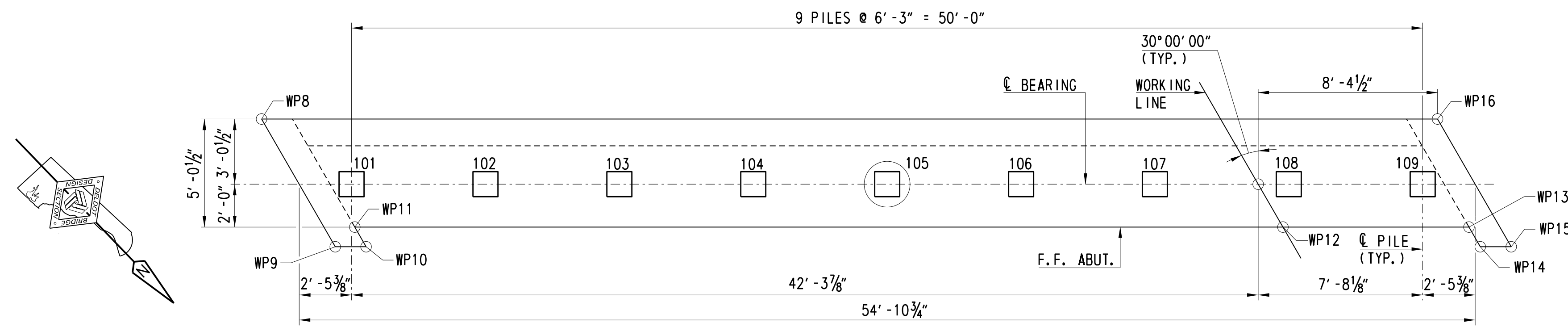
NOT TO SCALE

US 301, SR 896 TO SR 1

CONTRACT	BRIDGE NO.	1-466 N&S
T200911308	DESIGNED BY:	SJM
COUNTY	CHECKED BY:	ZAA
NEW CASTLE		

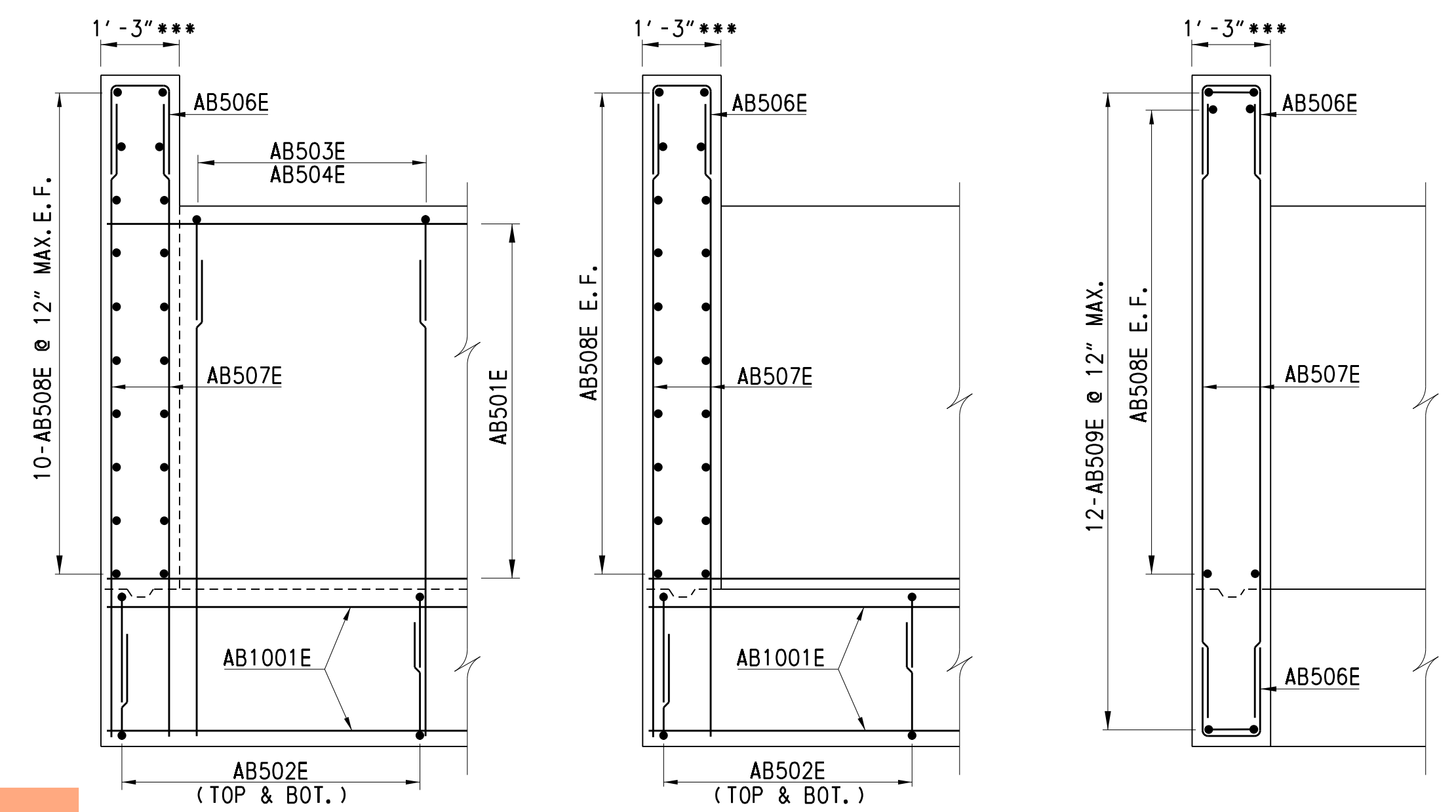
CONSTRUCTION SEQUENCE AT ABUTMENTS

SHEET NO.	545
TOTAL SHTS.	875



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

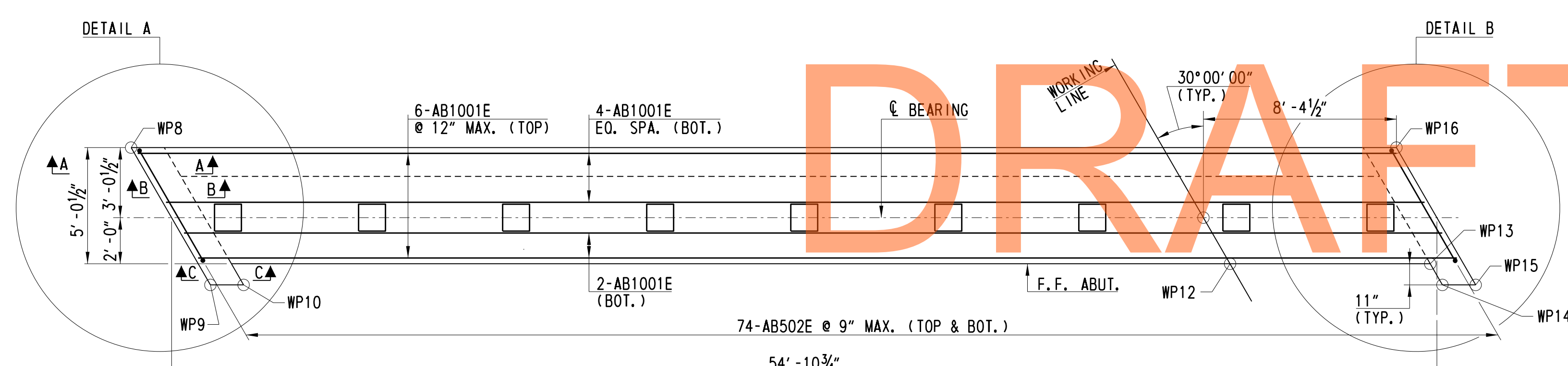


SECTION A-A
SCALE: 1/2"=1'-0"

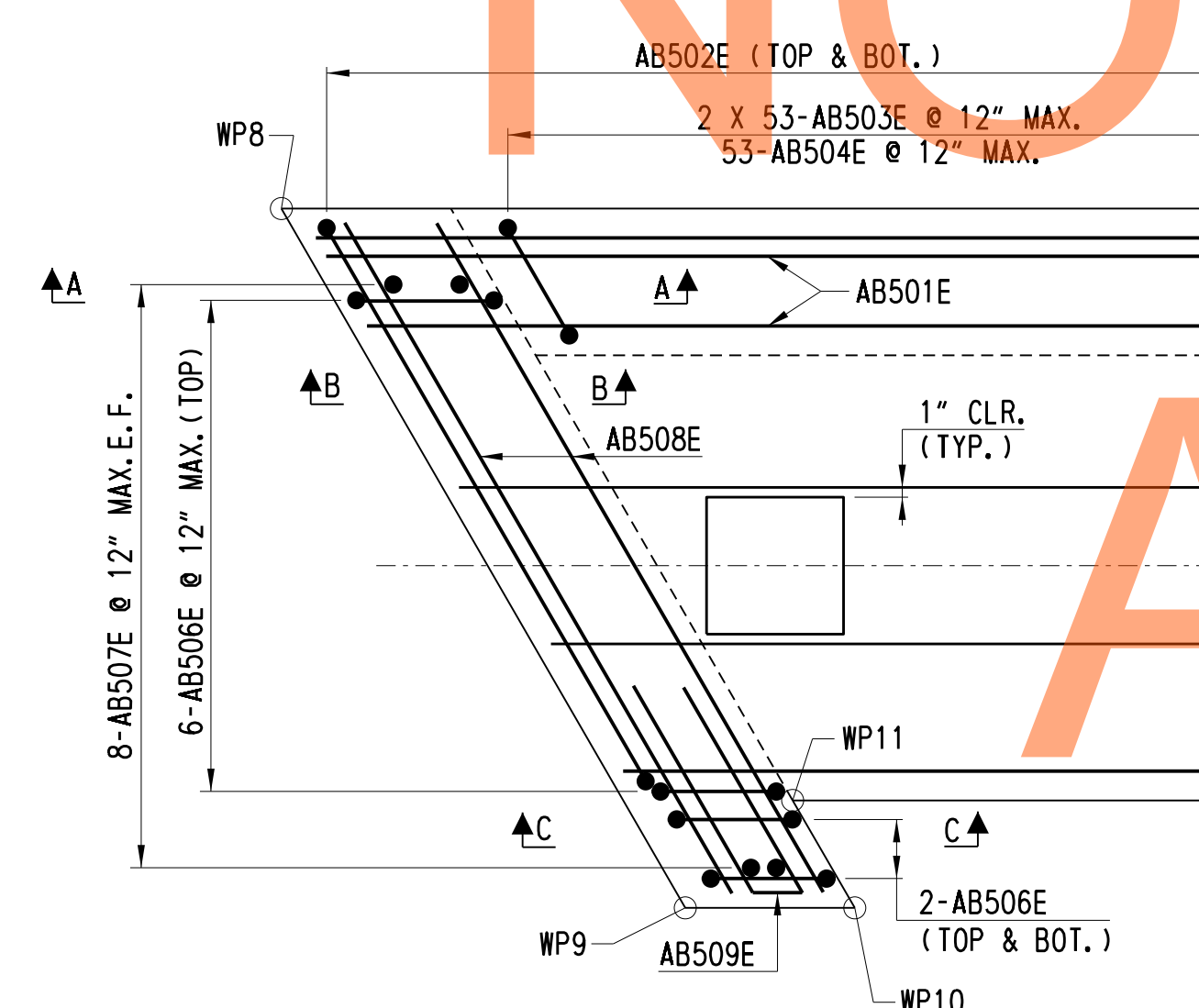
SECTION B-B
SCALE: 1/2"=1'-0"

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

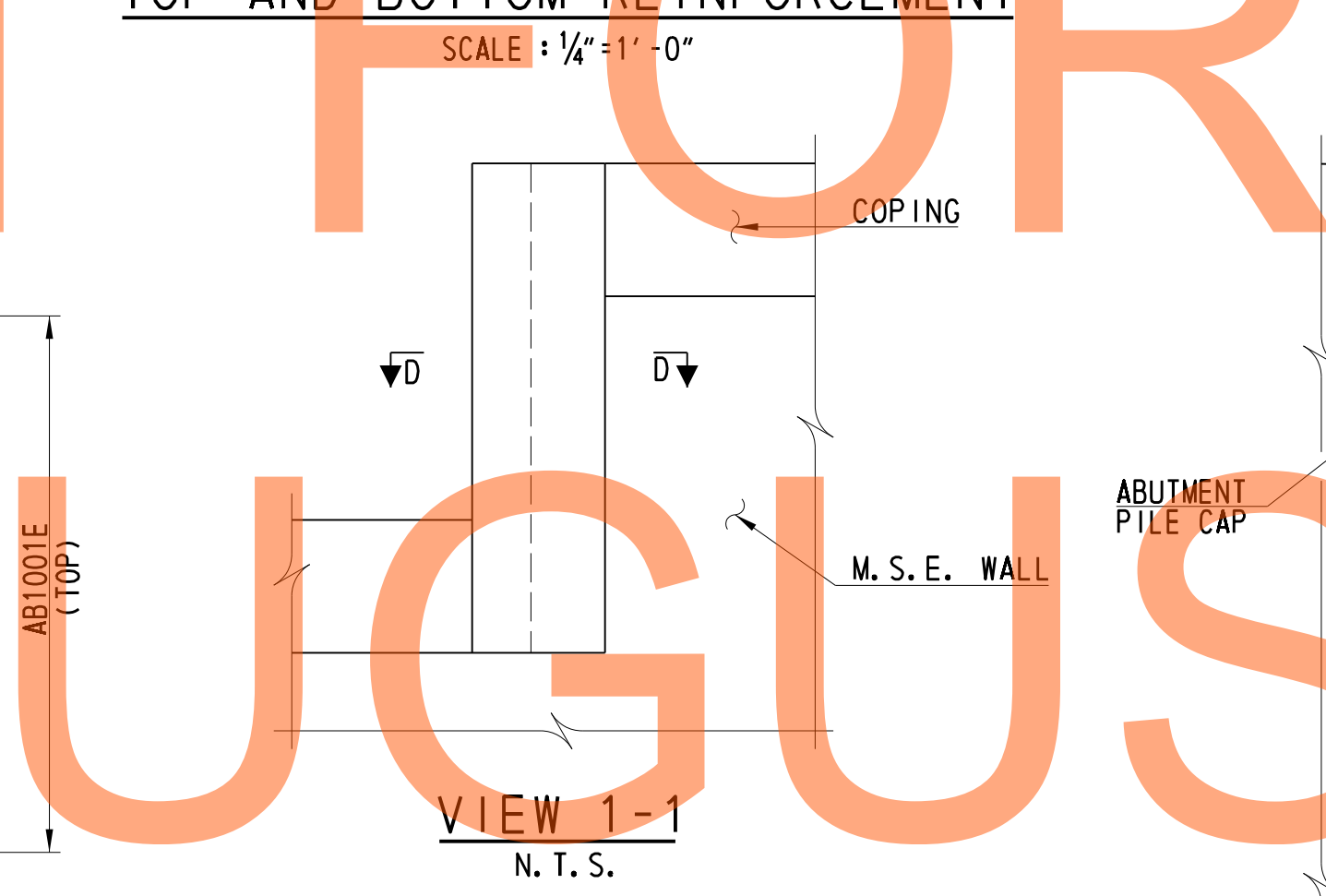
*** MEASURED NORMAL TO WORKING LINE.



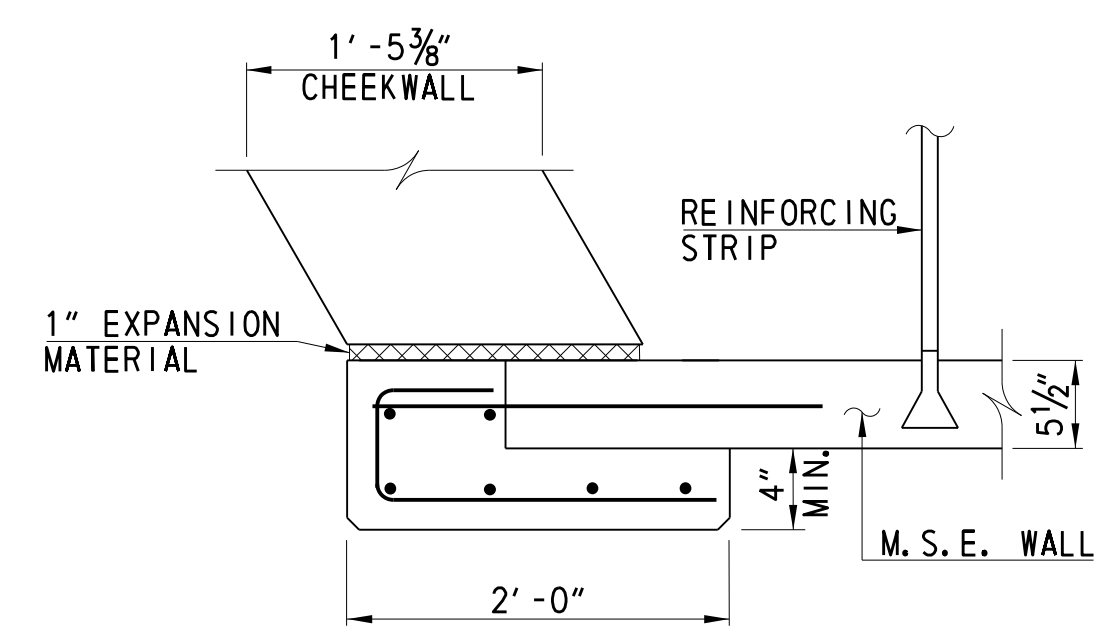
PLAN
TOP AND BOTTOM REINFORCEMENT
SCALE: 1/4"=1'-0"



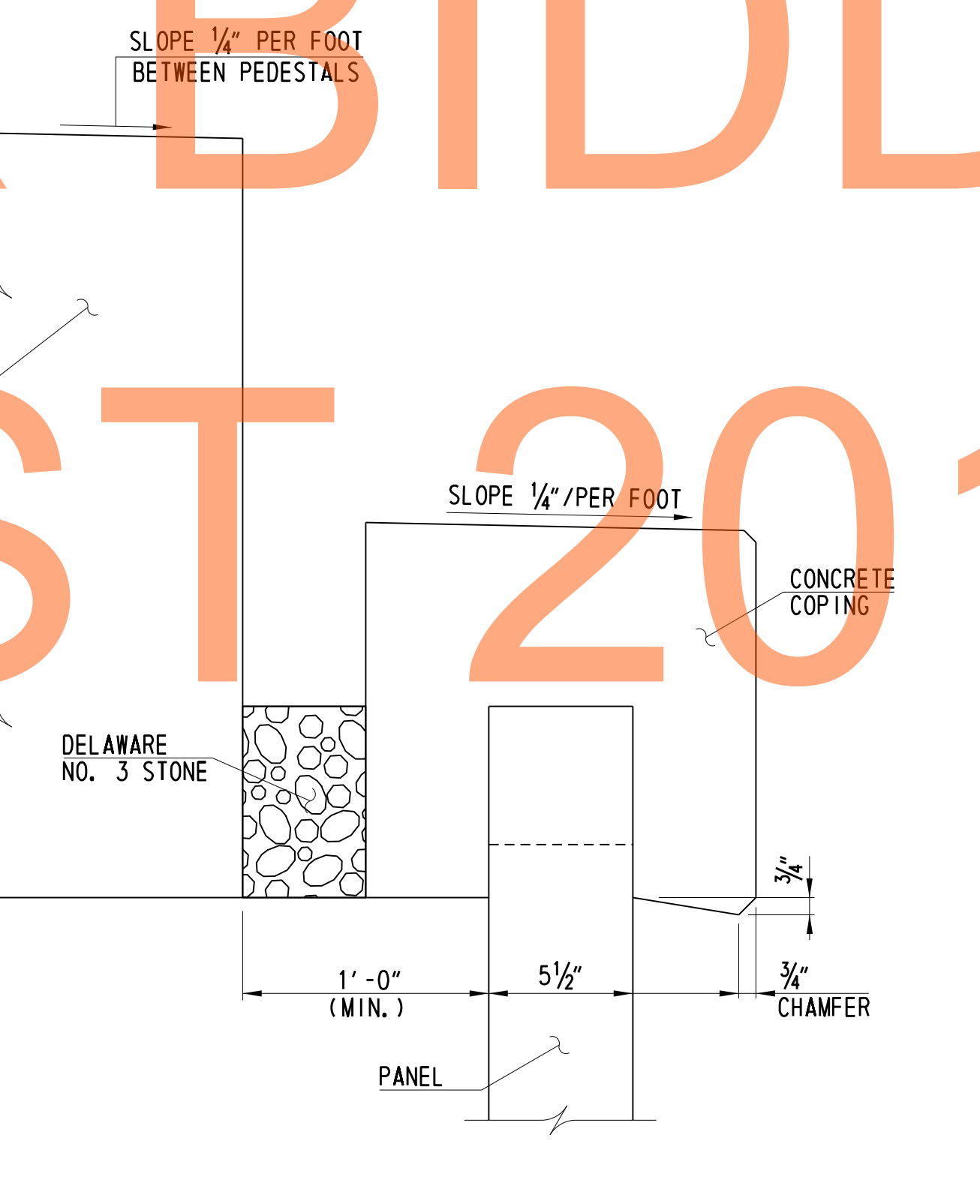
DETAIL A
(DETAIL B SIMILAR)
N. T. S.



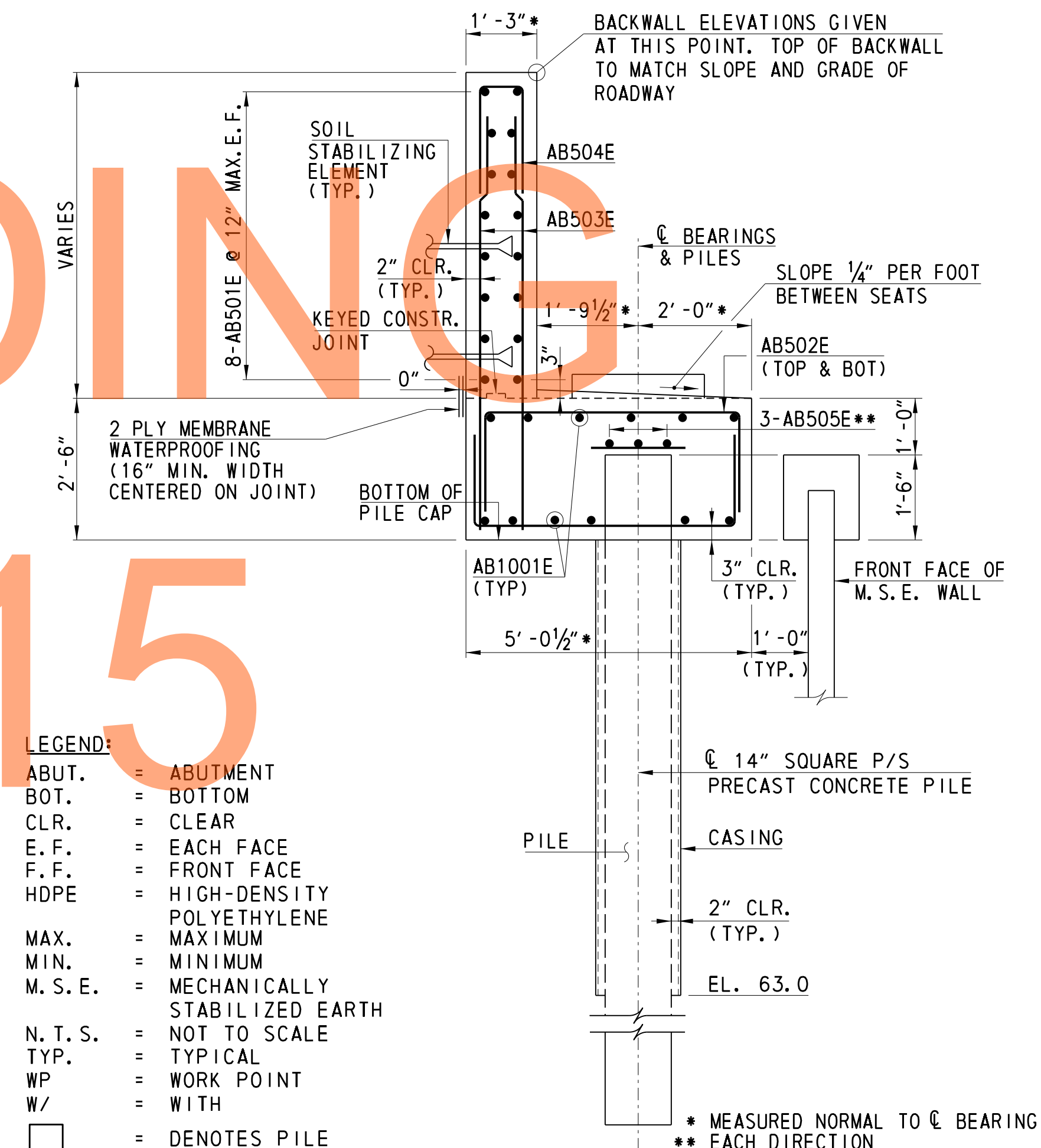
VIEW 1-1
N. T. S.



SECTION D-D
N. T. S.



ABUTMENT DETAIL
N. T. S.



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

LEGEND:

- ABUT. = ABUTMENT
- BOT. = BOTTOM
- CLR. = CLEAR
- E. F. = EACH FACE
- F. F. = FRONT FACE
- HDPE = HIGH-DENSITY POLYETHYLENE
- MAX. = MAXIMUM
- MIN. = MINIMUM
- M. S. E. = MECHANICALLY STABILIZED EARTH
- N. T. S. = NOT TO SCALE
- TYP. = TYPICAL
- WP = WORK POINT
- W/ = WITH
- = DENOTES PILE
- = DENOTES TEST PILE

- NOTES:
1. FOR LOCATION OF VIEW 1-1, SEE SHEET 7 OF 40.
 2. FOR REINFORCEMENT BAR LIST, SEE SHEET 10 OF 40.
 3. 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.

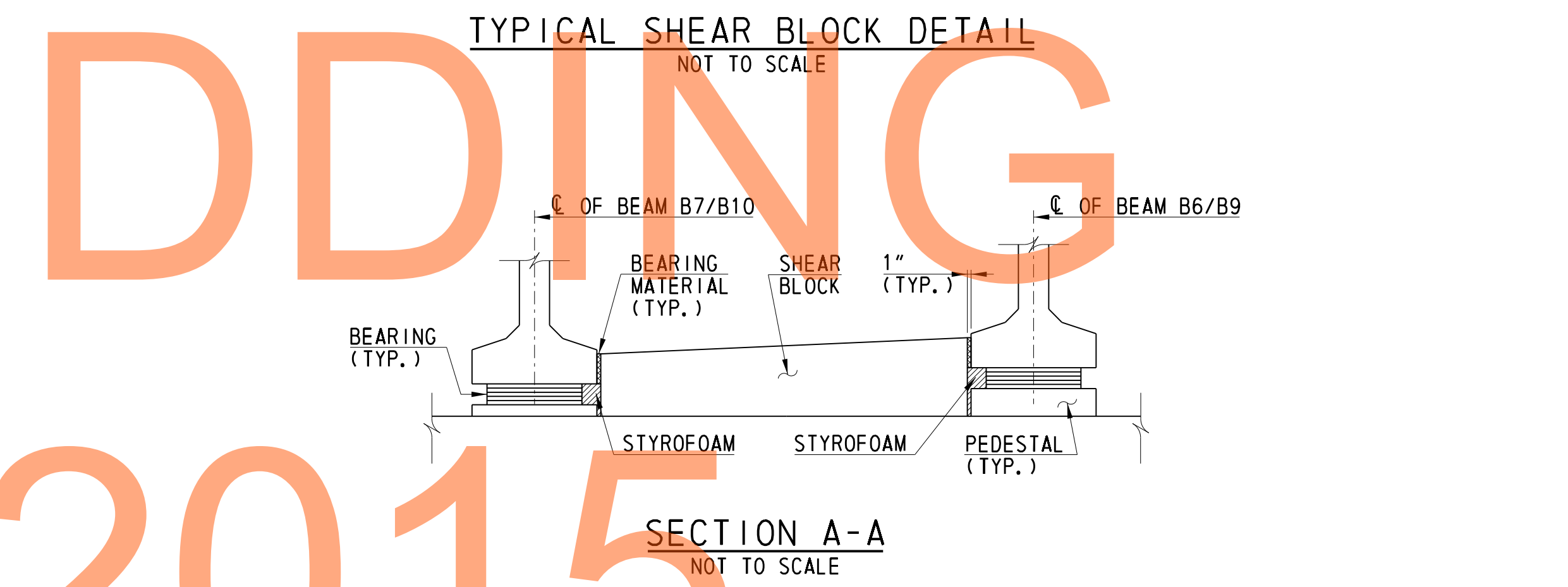
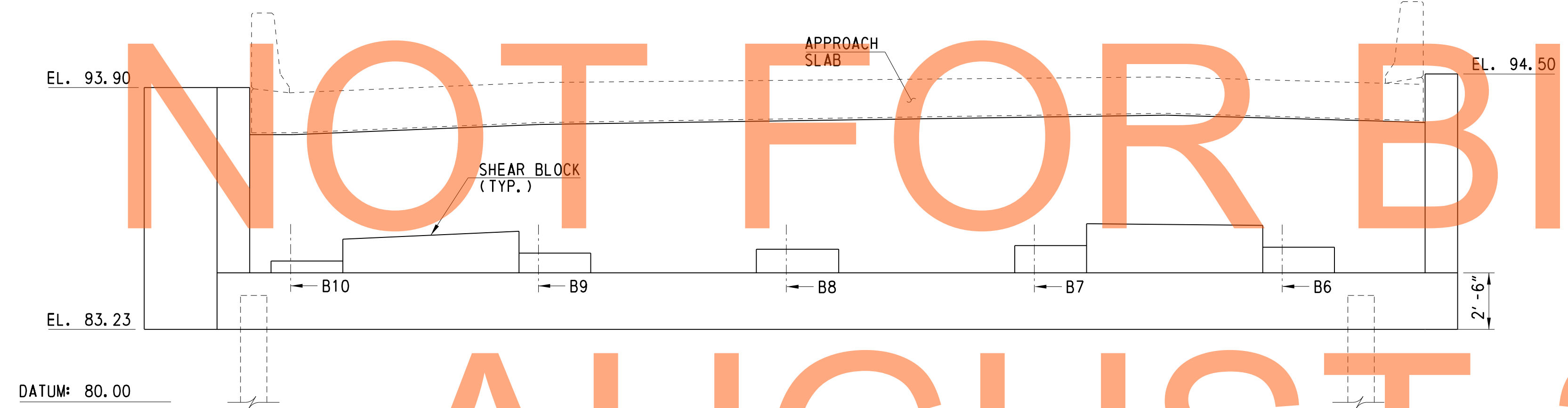
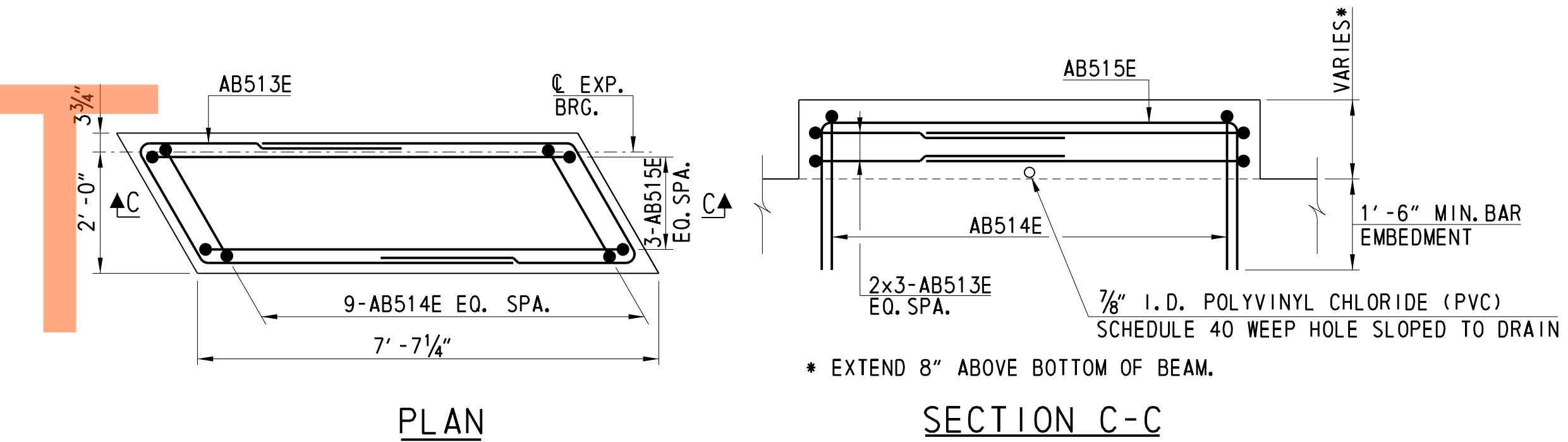
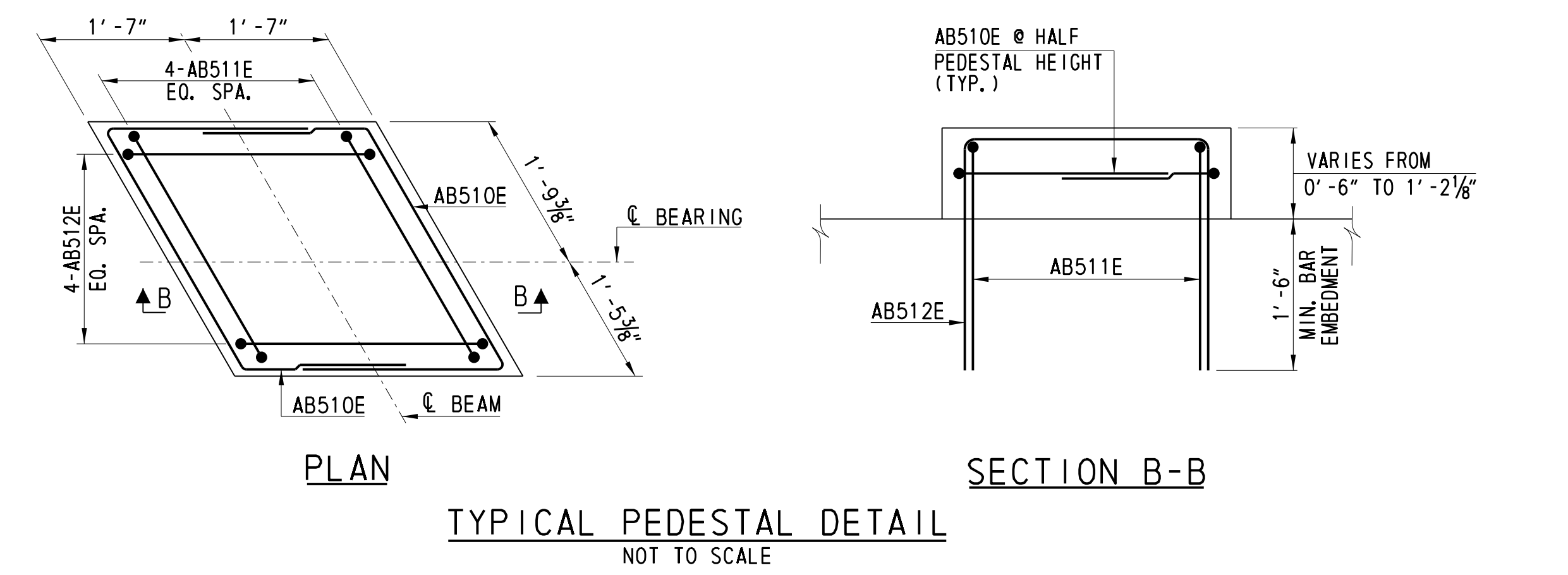
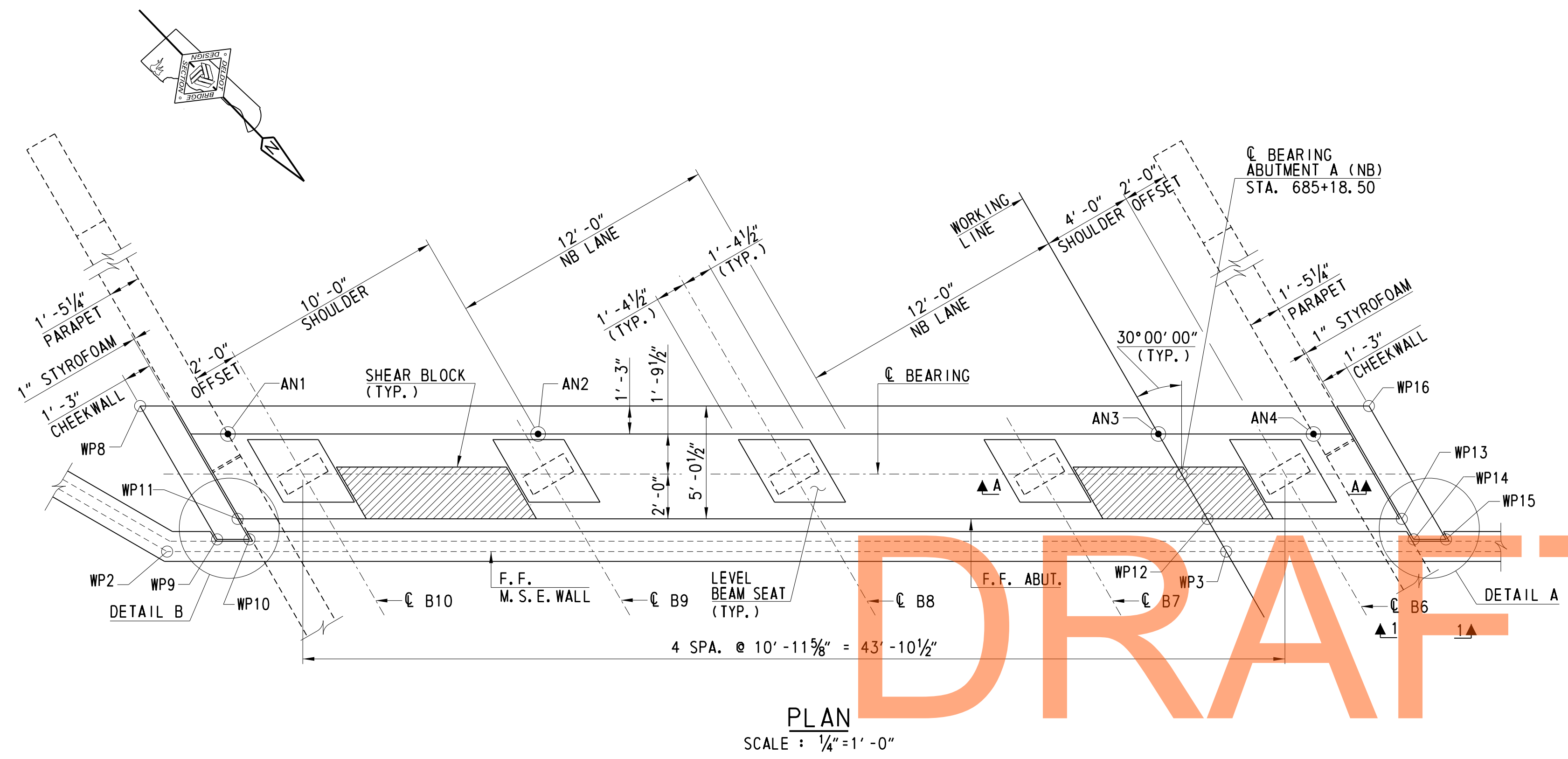


TABLE OF BACKWALL ELEVATIONS

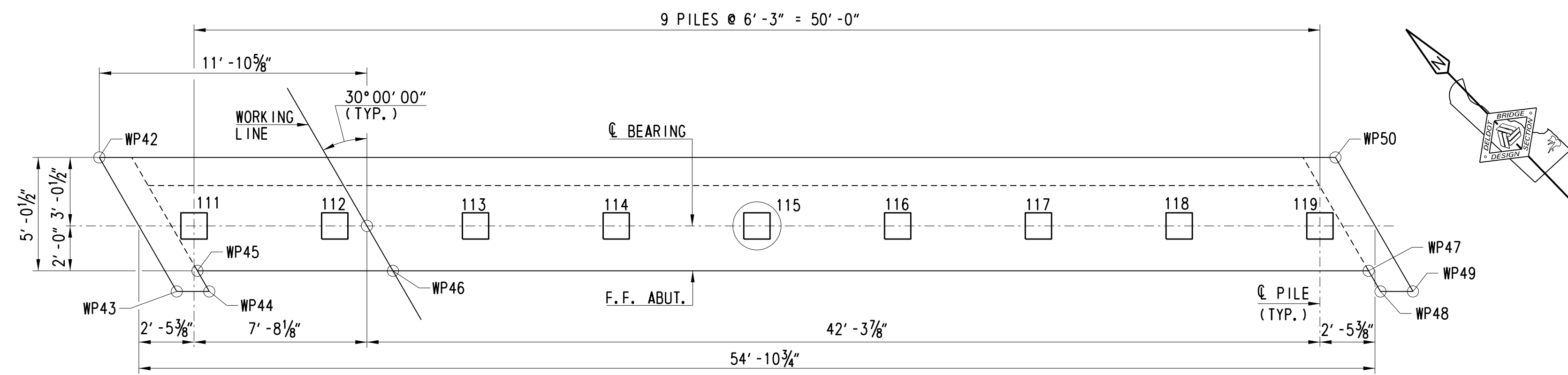
LOCATION	ELEVATION
AN1	91.82
AN2	92.27
AN3	92.68
AN4	92.42

TABLE OF BEAM SEAT ELEVATIONS

LOCATION	ELEVATION
B6	86.84
B7	86.91
B8	86.75
B9	86.58
B10	86.23

- LEGEND:
- ABUT. = ABUTMENT
 - BOT. = BOTTOM
 - E. F. = EACH FACE
 - EL. = ELEVATION
 - F. F. = FRONT FACE
 - GALV. = GALVANIZED
 - MAX. = MAXIMUM
 - M. S. E. = MECHANICALLY STABILIZED EARTH
 - NB. = NORTHBOUND
 - N. T. S. = NOT TO SCALE
 - P. C. P. = PREFORMED CELLULAR POLYSTYRENE
 - STA. = STATION
 - TYP. = TYPICAL
 - WP. = WORK POINT

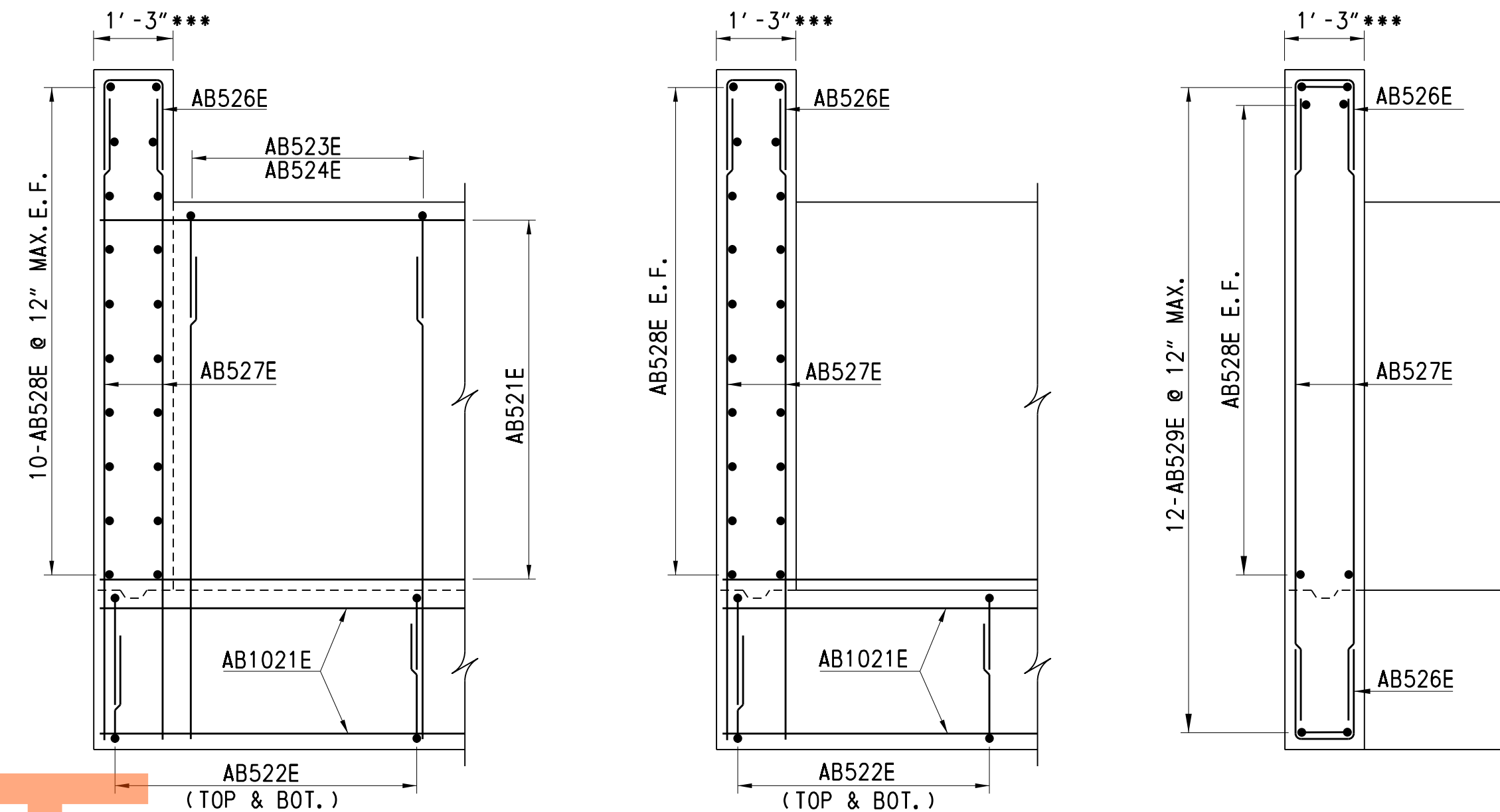
- NOTES:
- FOR LOCATION OF BACKWALL ELEVATIONS, SEE TYPICAL SECTION ON SHEET 6 OF 40.
 - FOR VIEW 1-1, SEE SHEET 6 OF 40.
 - FOR REINFORCEMENT BAR LIST, SEE SHEET 10 OF 40.
 - STYROFOAM AND P. V. C. SCHEDULE 40 WEEP HOLE PAYMENT SHALL BE INCIDENTAL TO CONCRETE CONSTRUCTION.
 - BEARING MATERIAL SHALL BE NEOPRENE WITH A DUROMETER OF 50 ± 5. PAYMENT SHALL BE INCIDENTAL TO CONCRETE CONSTRUCTION.



- 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

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



SECTION A-A

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

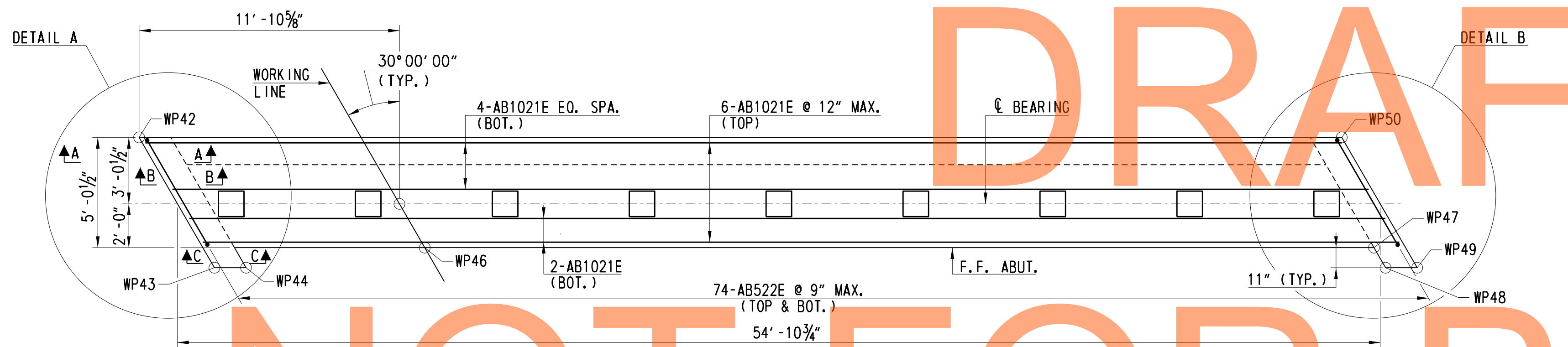
*** MEASURED NORMAL TO WORKING LINE.

SECTION B-B

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

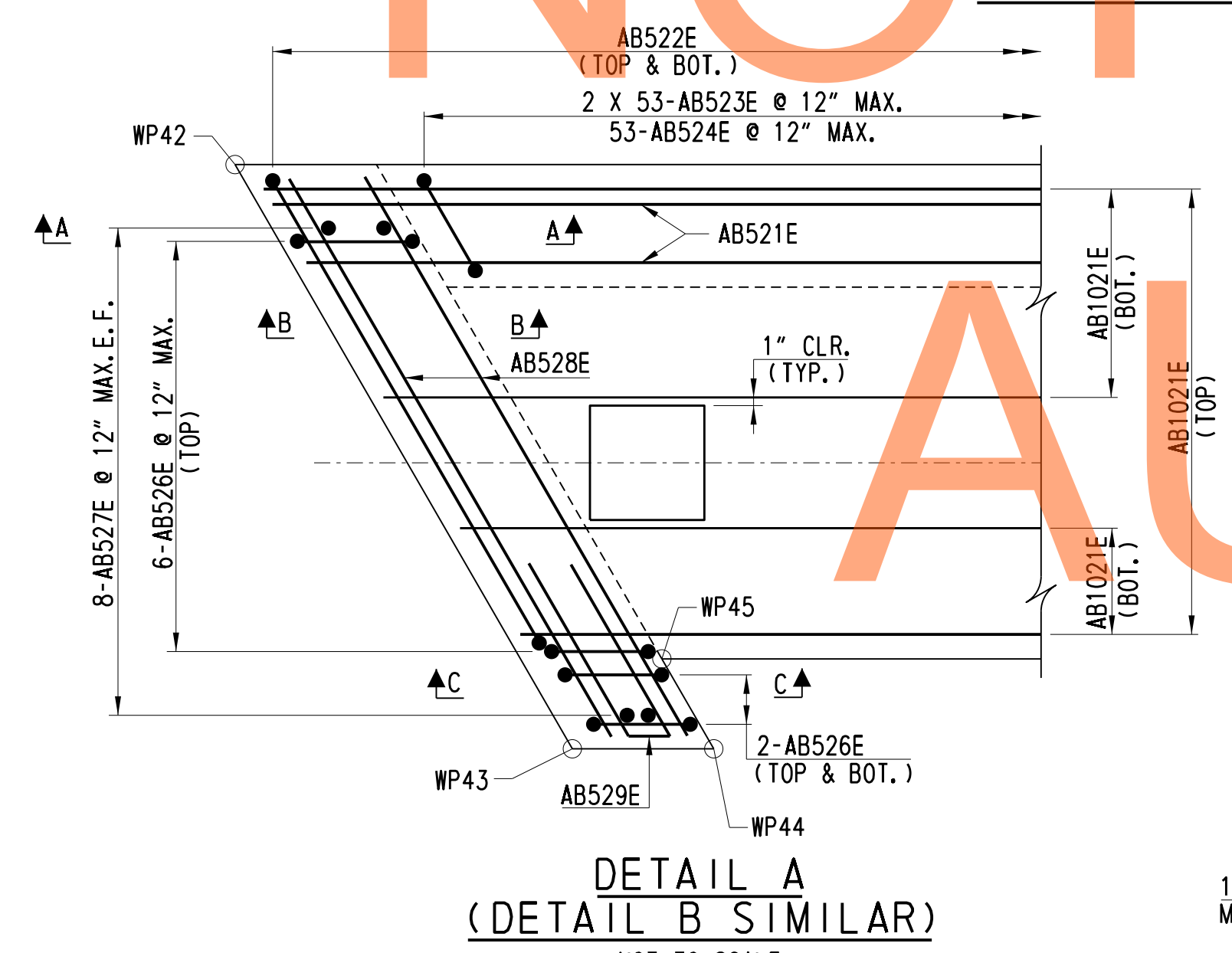
SECTION C-C

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



PLAN TOP AND BOTTOM REINFORCEMENT

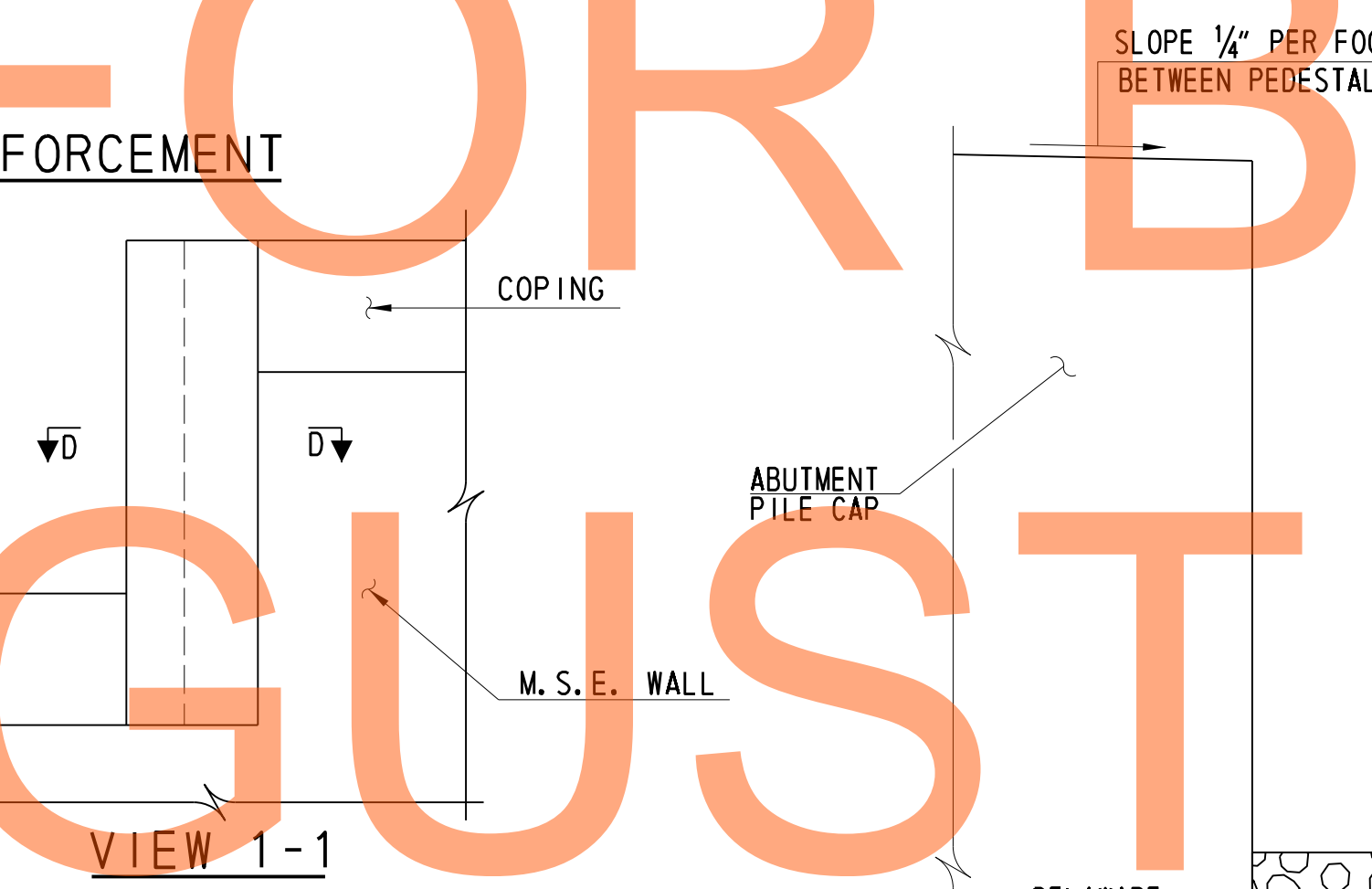
SCALE: 1/4"=1'-0"



DETAIL A (DETAIL B SIMILAR)

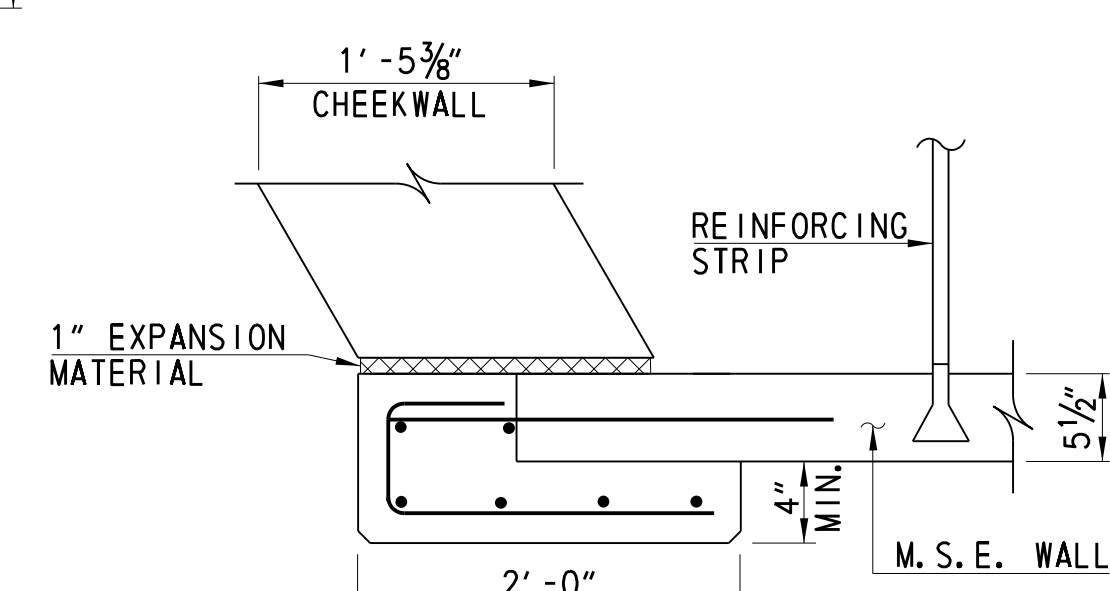
NOT TO SCALE

- NOTES:
1. FOR LOCATION OF VIEW 1-1, SEE SHEET 9 OF 40.
 2. FOR REINFORCEMENT BAR LIST, SEE SHEET 10 OF 40.
 3. 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.



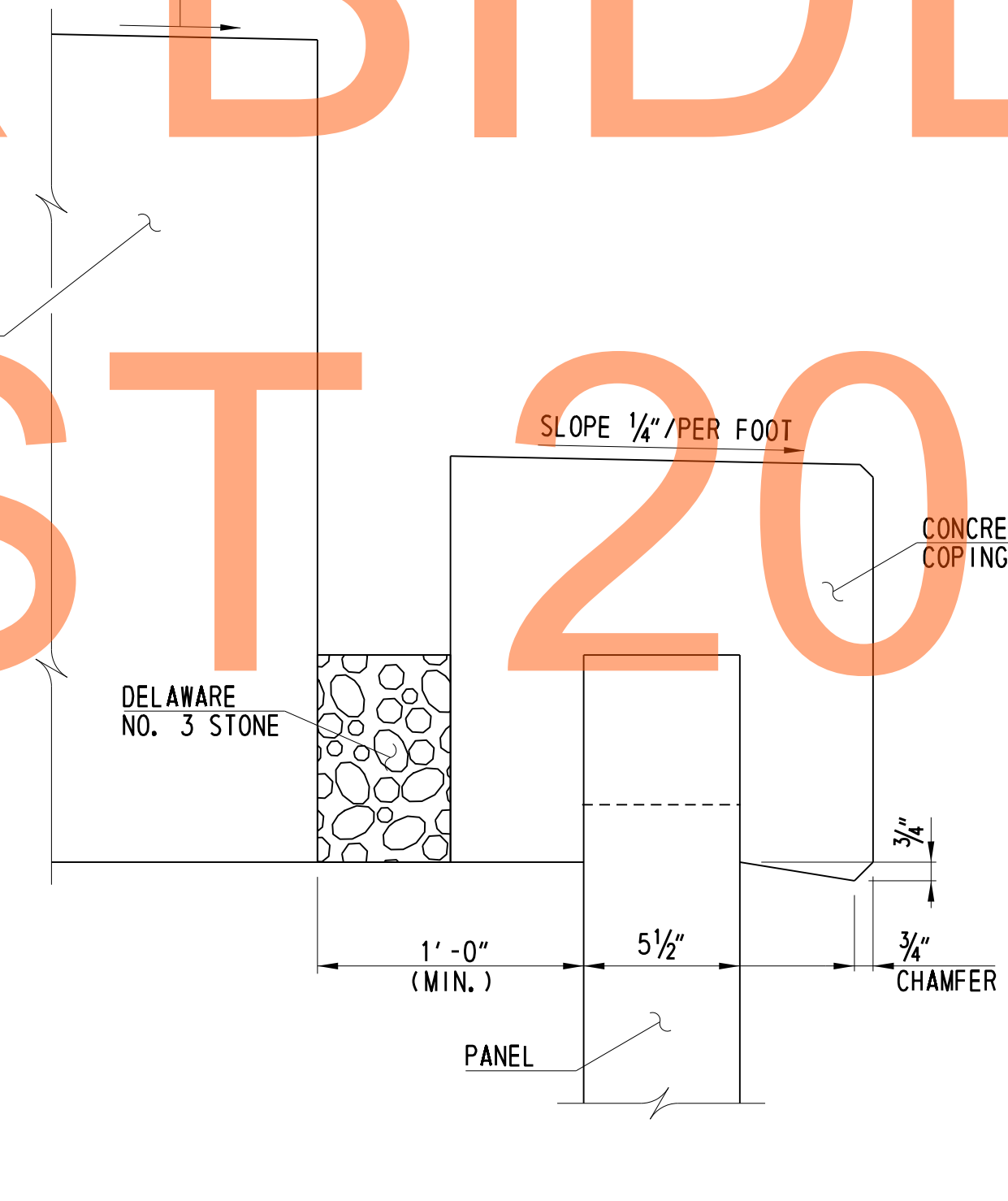
VIEW 1-1

NOT TO SCALE



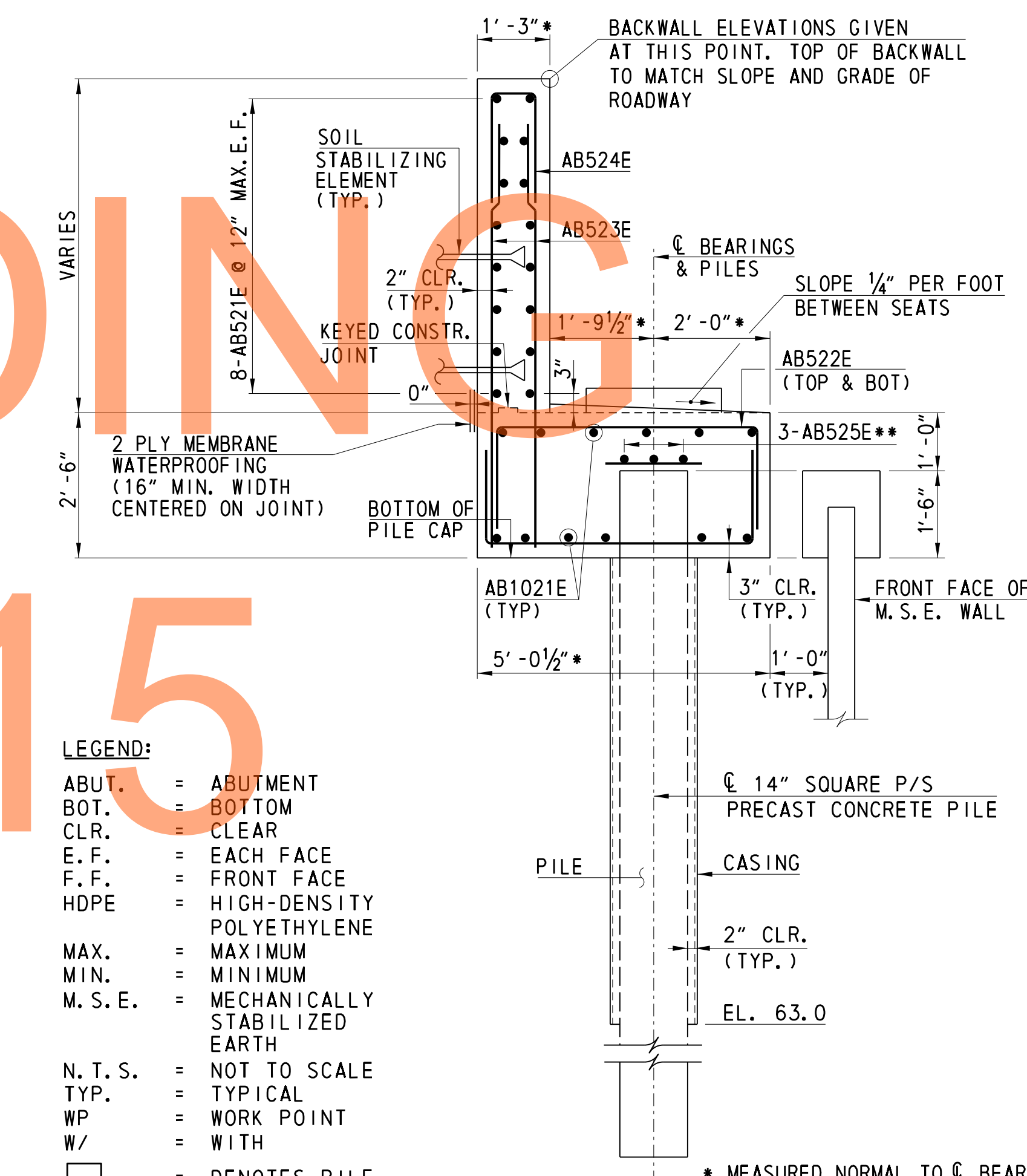
SECTION D-D

NOT TO SCALE



ABUTMENT DETAIL

NOT TO SCALE

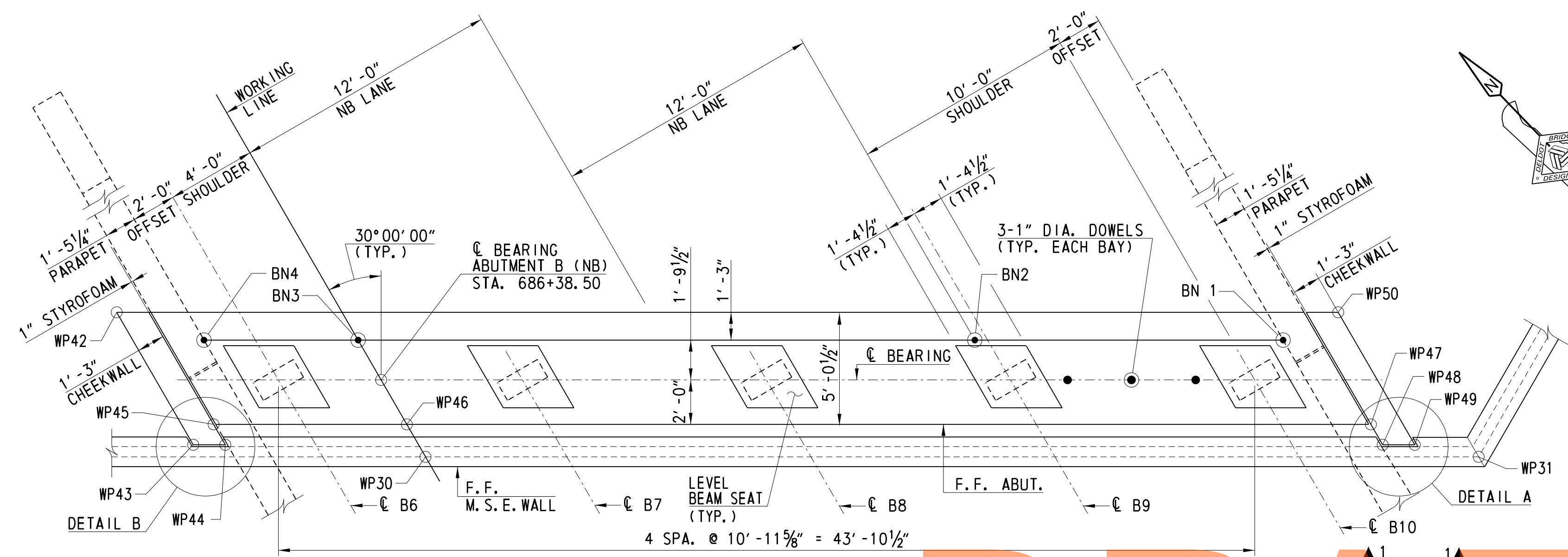


TYPICAL SECTION

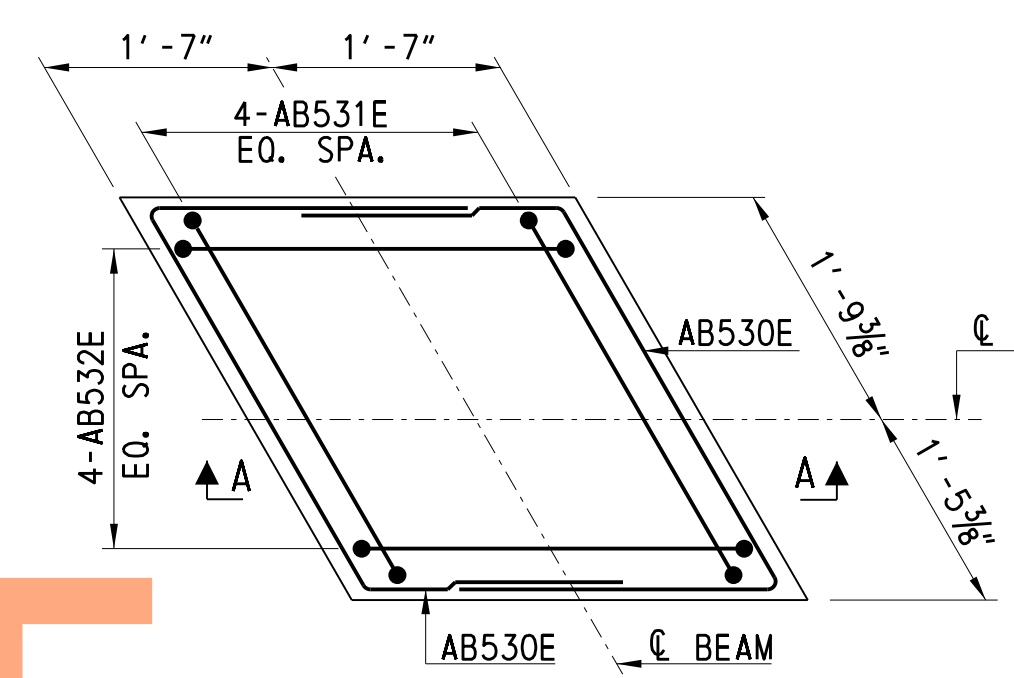
SCALE: 1/2"=1'-0"

LEGEND:

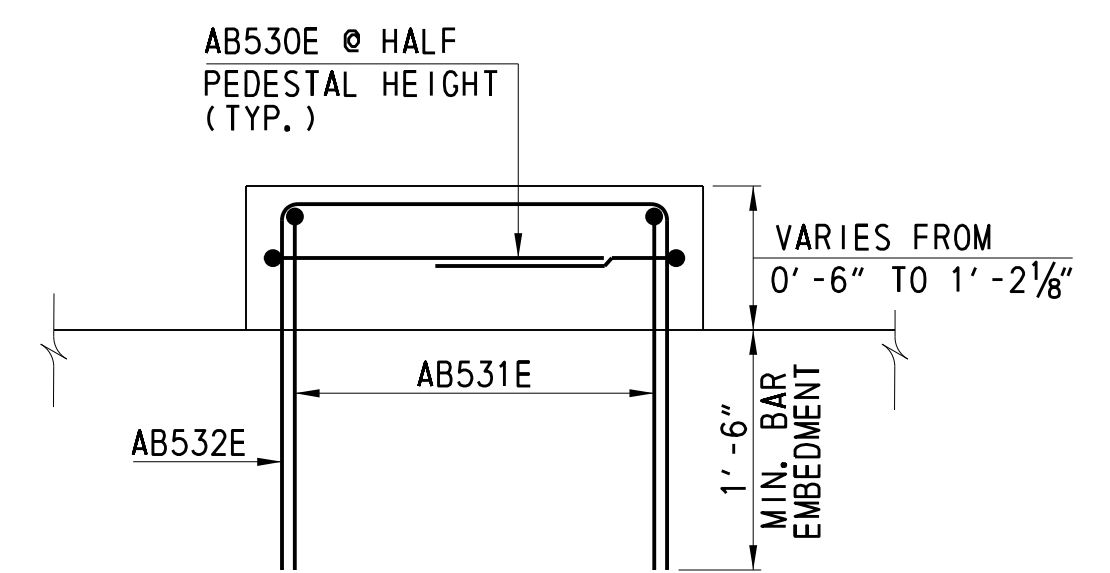
- ABUT. = ABUTMENT
 - BOT. = BOTTOM
 - CLR. = CLEAR
 - E. F. = EACH FACE
 - F. F. = FRONT FACE
 - HDPE = HIGH-DENSITY POLYETHYLENE
 - MAX. = MAXIMUM
 - MIN. = MINIMUM
 - M. S. E. = MECHANICALLY STABILIZED EARTH
 - N. T. S. = NOT TO SCALE
 - TYP. = TYPICAL
 - WP = WORK POINT
 - W/ = WITH
 - [Square Symbol] = DENOTES PILE
 - [Circle Symbol] = DENOTES TEST PILE
- * MEASURED NORMAL TO \bar{C} BEARING
 ** EACH DIRECTION



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

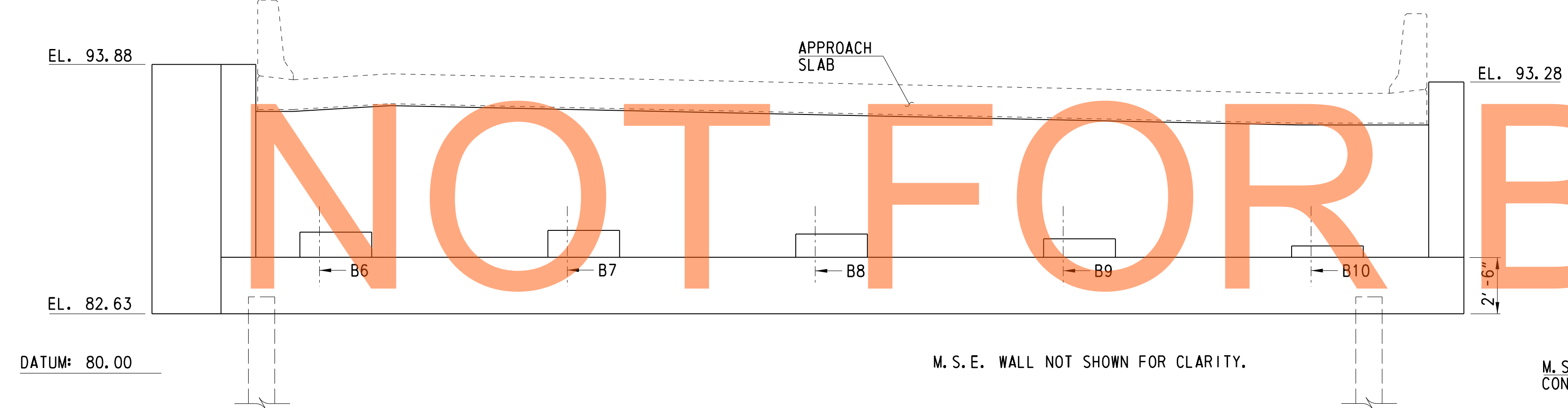


PLAN

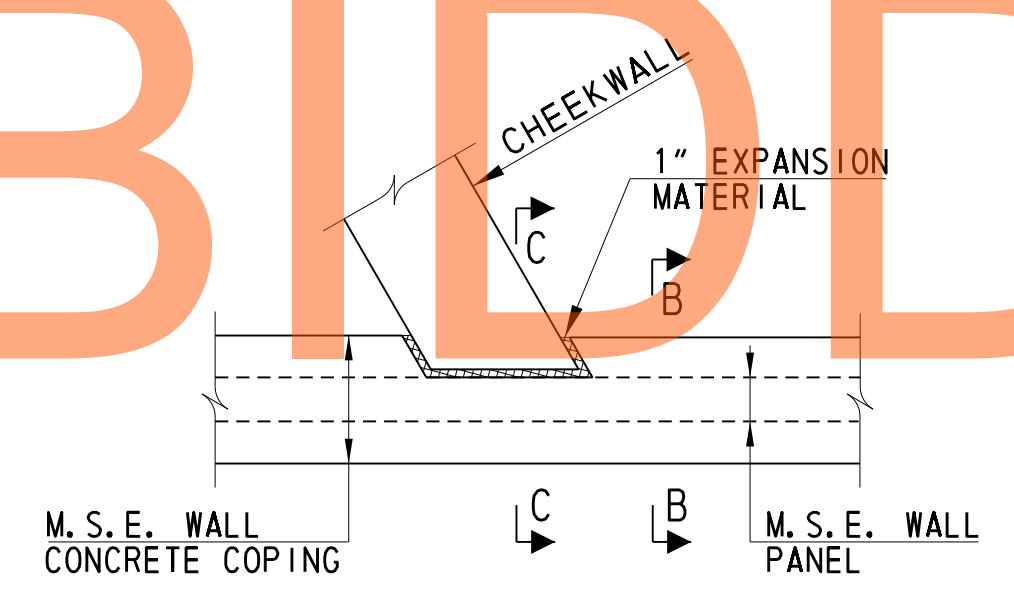


SECTION A-A

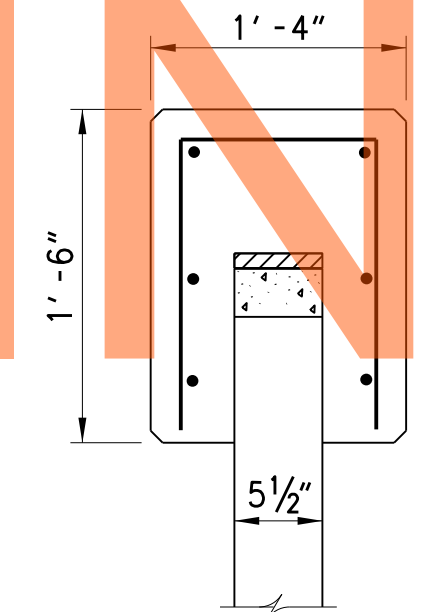
TYPICAL PEDESTAL DETAIL
NOT TO SCALE



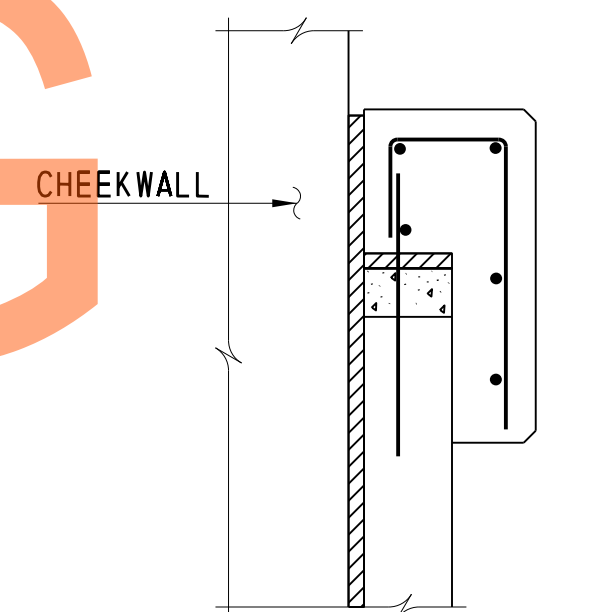
ELEVATION
SCALE: 1/4" = 1'-0"



DETAIL A
(DETAIL B SIMILAR)
NOT TO SCALE



SECTION B-B
NOT TO SCALE



SECTION C-C
NOT TO SCALE

TABLE OF BACKWALL ELEVATIONS

LOCATION	ELEVATION
BN1	91.20
BN2	91.65
BN3	92.06
BN4	91.80

TABLE OF BEAM SEAT ELEVATIONS

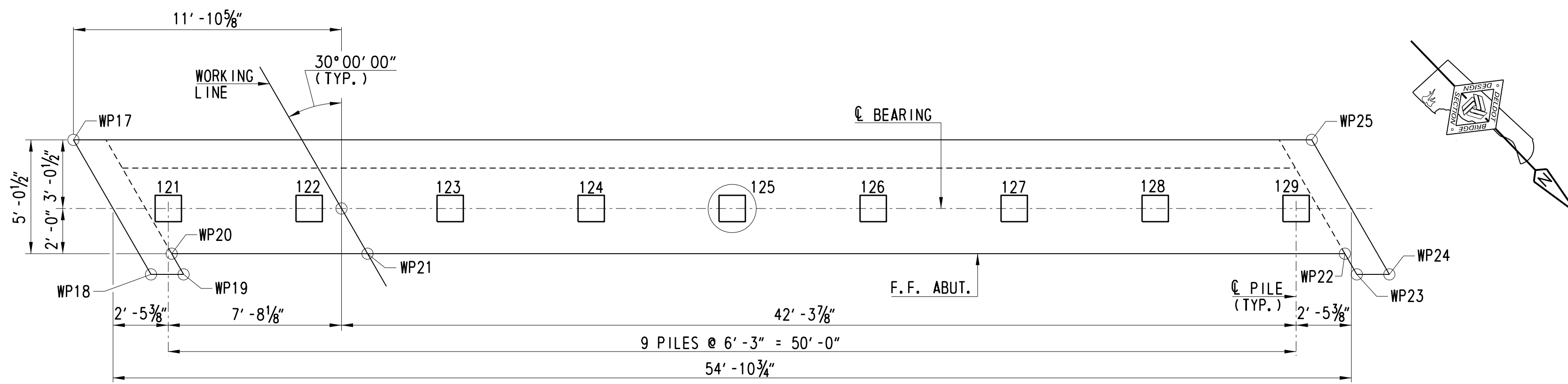
LOCATION	ELEVATION
B6	86.24
B7	86.31
B8	86.15
B9	85.98
B10	85.63

NOTES:

- FOR LOCATION OF BACKWALL ELEVATIONS, SEE TYPICAL SECTION ON SHEET 8 OF 40.
- FOR VIEW 1-1, SEE SHEET 8 OF 40.
- FOR REINFORCEMENT BAR LIST, SEE SHEET 10 OF 40.
- FOR DIAPHRAGM DETAILS, SEE SHEETS 23 AND 24 OF 40.
- STYROFOAM AND DOWEL PAYMENT SHALL BE INCIDENTAL TO CONCRETE CONSTRUCTION.
- SEE DELDOT STANDARD SPECIFICATION 824.02 (g) FOR CIP DOWEL MATERIAL REQUIREMENTS. FOR DOWEL DETAIL, SEE SHEET 23 OF 40.

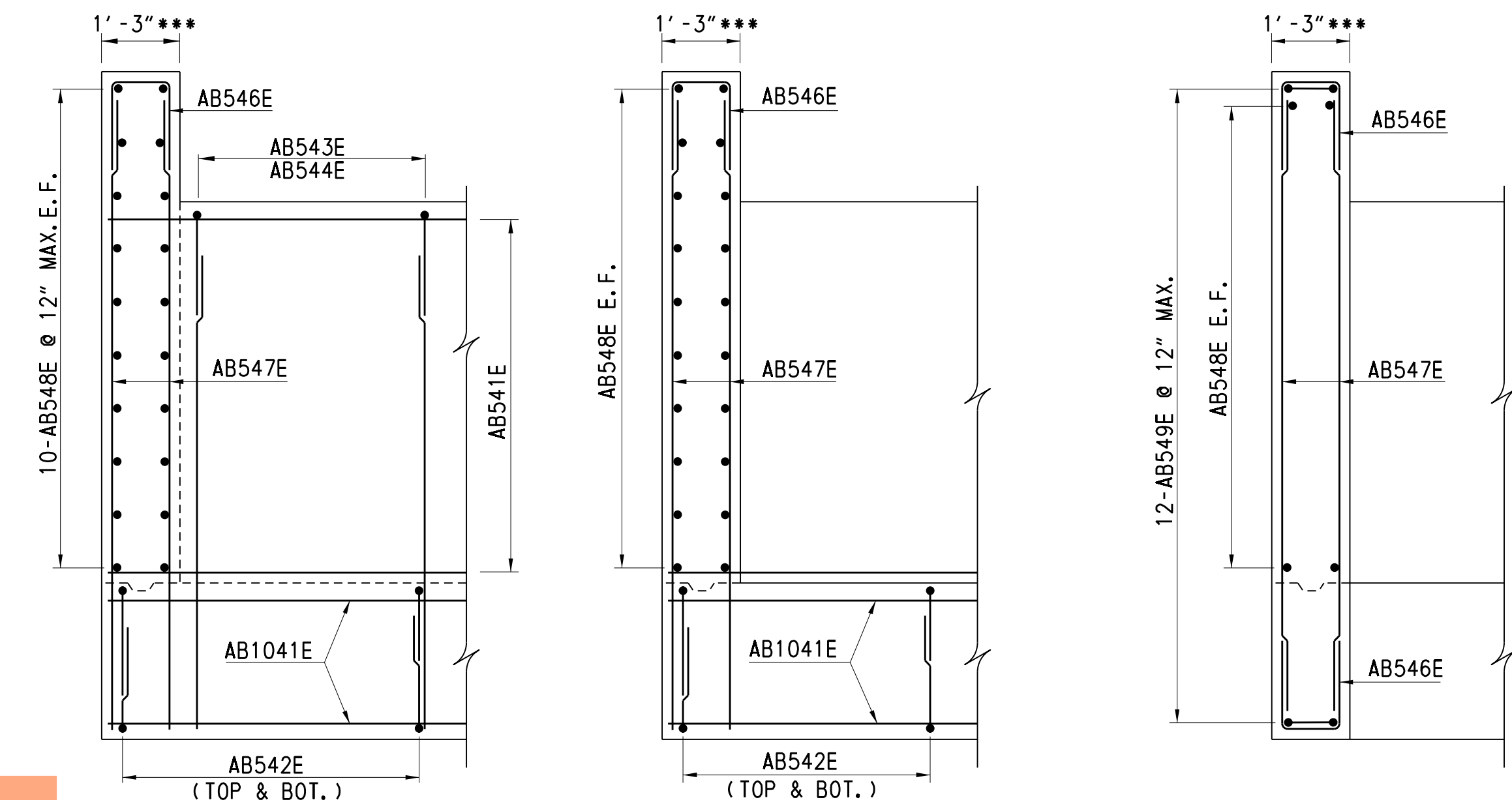
LEGEND:

- ABUT. = ABUTMENT
- BOT. = BOTTOM
- C. I. P. = CAST-IN-PLACE
- E. F. = EACH FACE
- EL. = ELEVATION
- F. F. = FRONT FACE
- GALV. = GALVANIZED
- MAX. = MAXIMUM
- M. S. E. = MECHANICALLY STABILIZED EARTH
- NB = NORTHBOUND
- P. C. P. = PREFORMED CELLULAR POLYSTYRENE
- STA. = STATION
- TYP. = TYPICAL
- WP = WORK POINT



- 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.

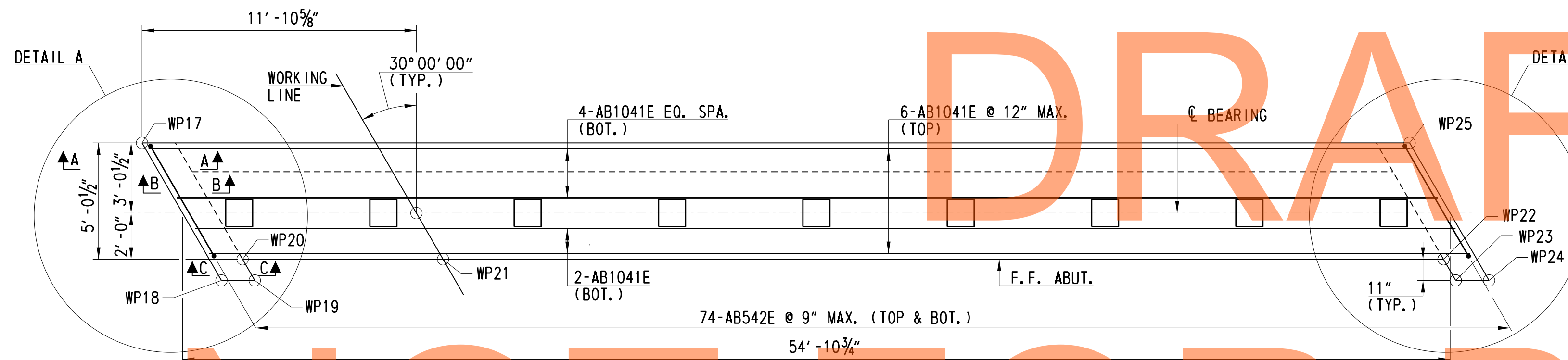
PILE LAYOUT PLAN
SCALE: 1/4" = 1'-0"



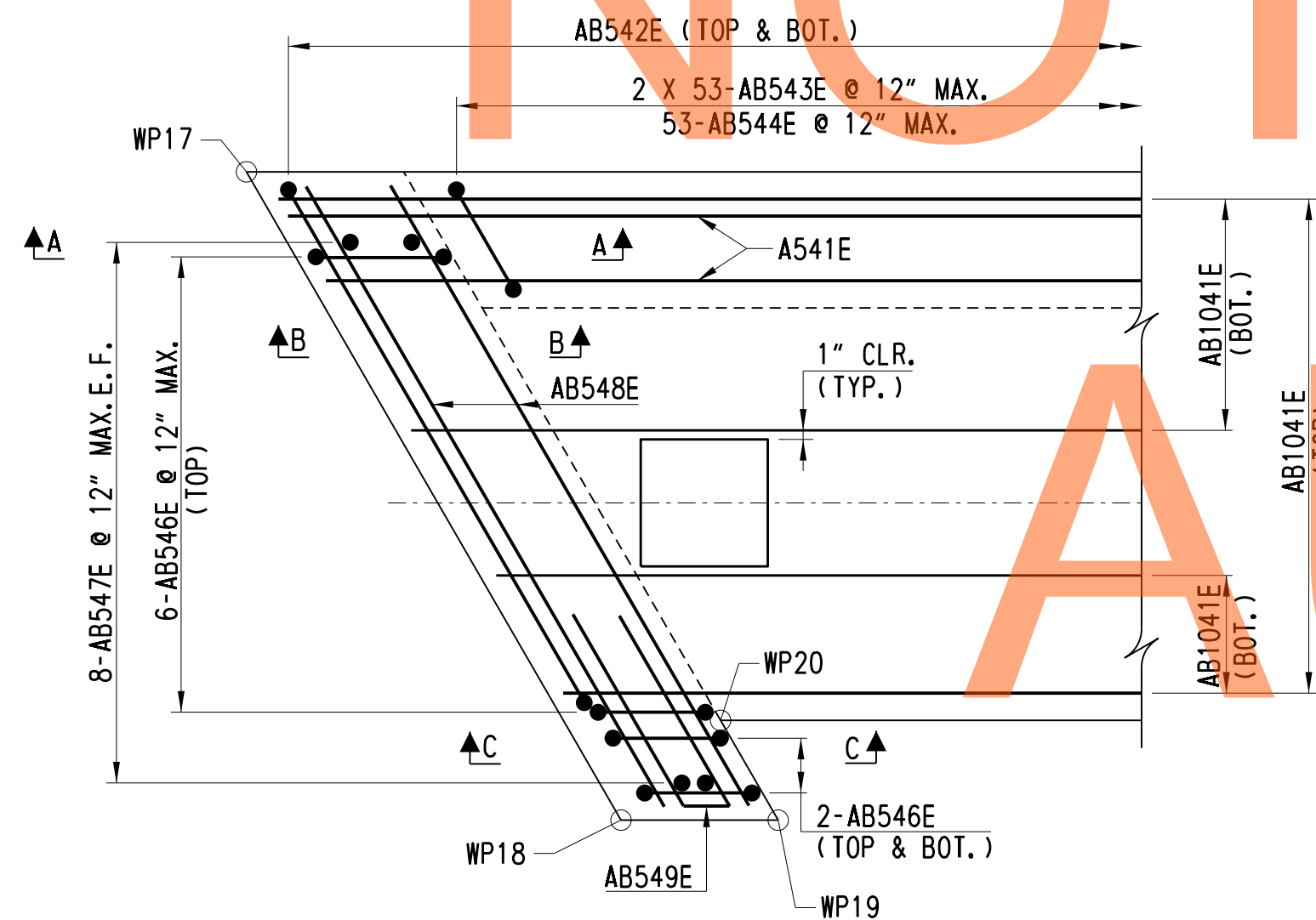
SECTION A-A
SCALE: 1/2" = 1'-0"

*** MEASURED NORMAL TO WORKING LINE.
SECTION B-B
SCALE: 1/2" = 1'-0"

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

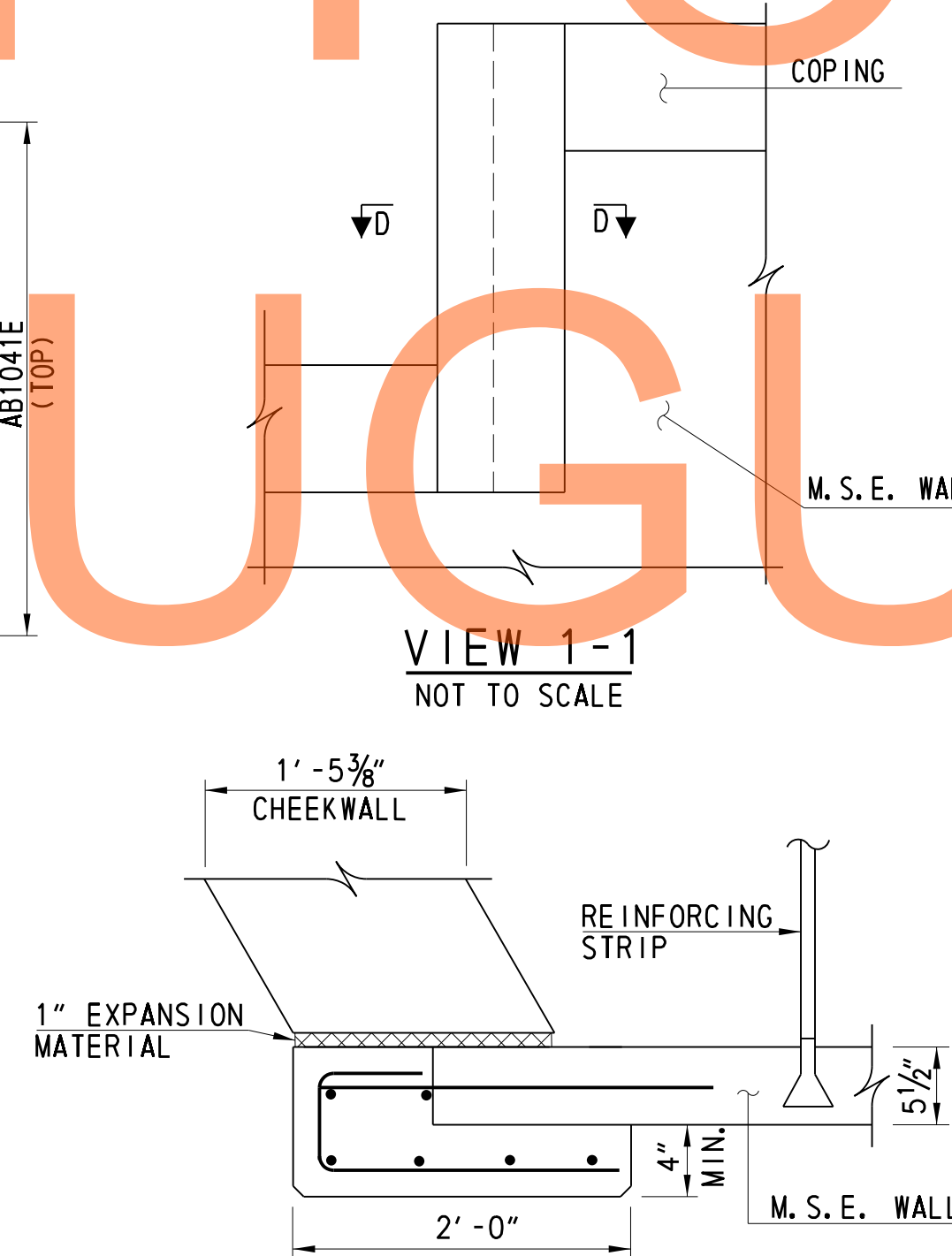


PLAN TOP AND BOTTOM REINFORCEMENT
SCALE: 1/4" = 1'-0"



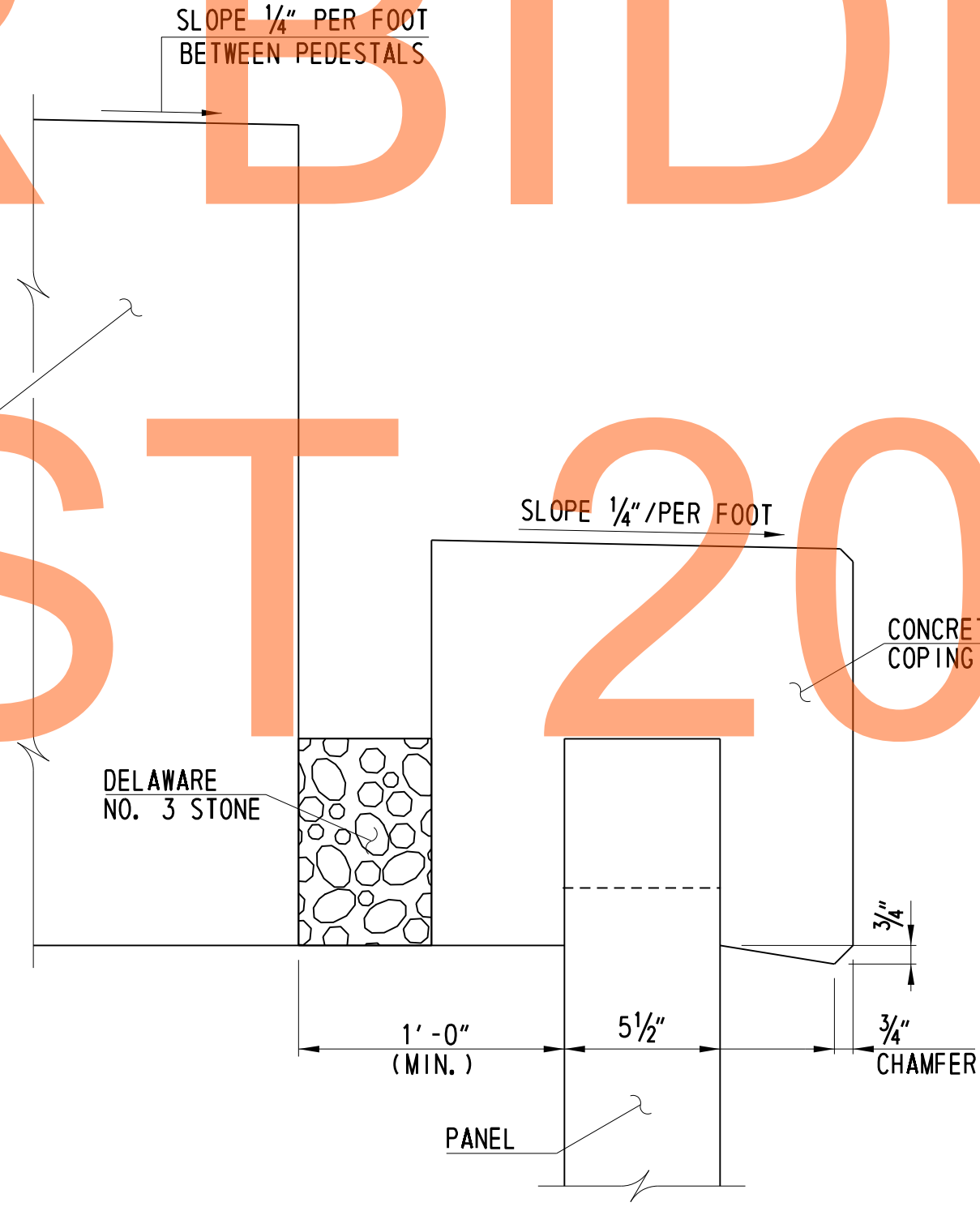
DETAIL A
DETAIL B (SIMILAR)
NOT TO SCALE

- NOTES:
1. FOR LOCATION OF VIEW 1-1, SEE SHEET 12 OF 40.
 2. FOR REINFORCEMENT BAR LIST, SEE SHEET 15 OF 40.
 3. 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.

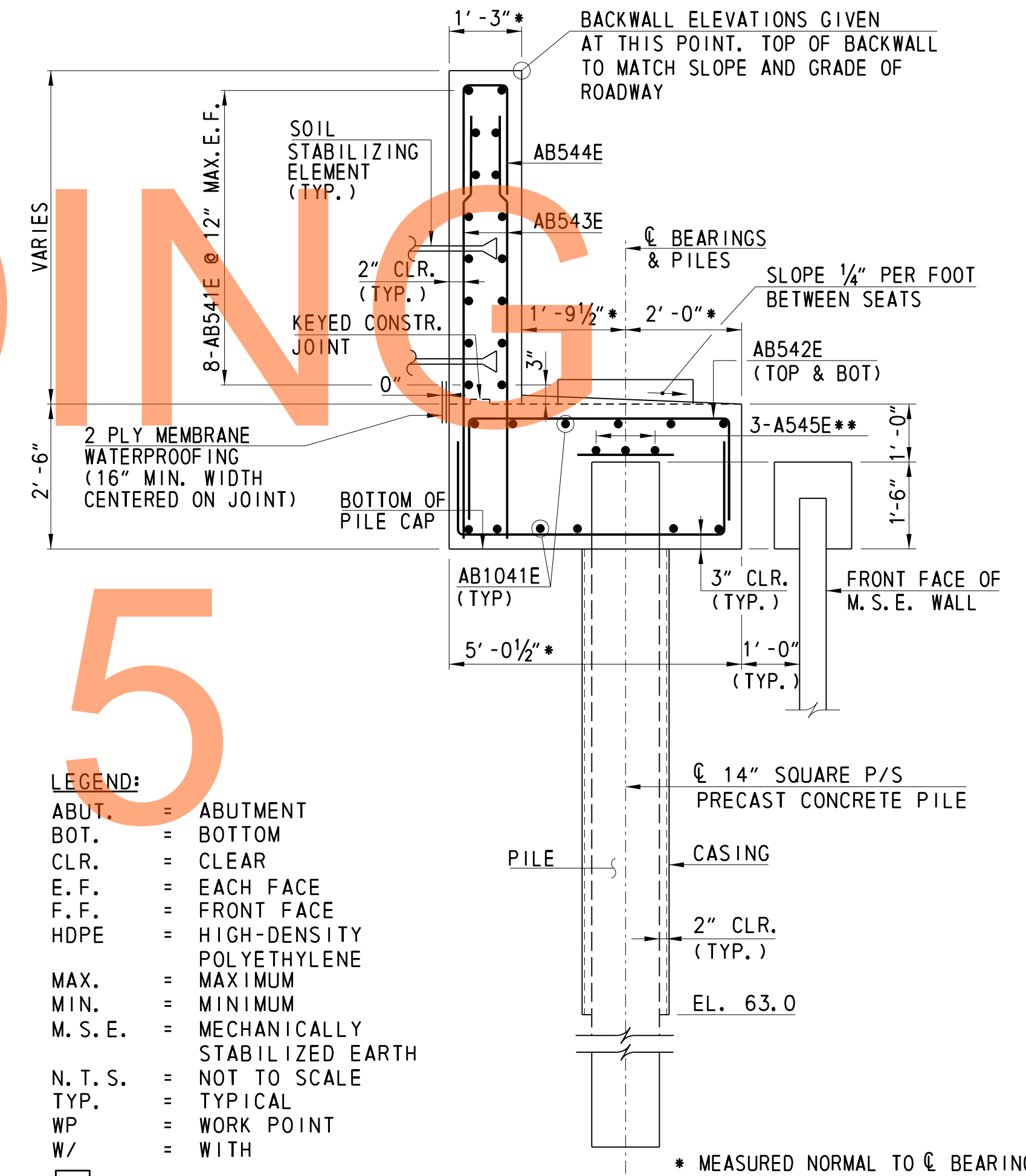


VIEW 1-1
NOT TO SCALE

SECTION D-D
NOT TO SCALE

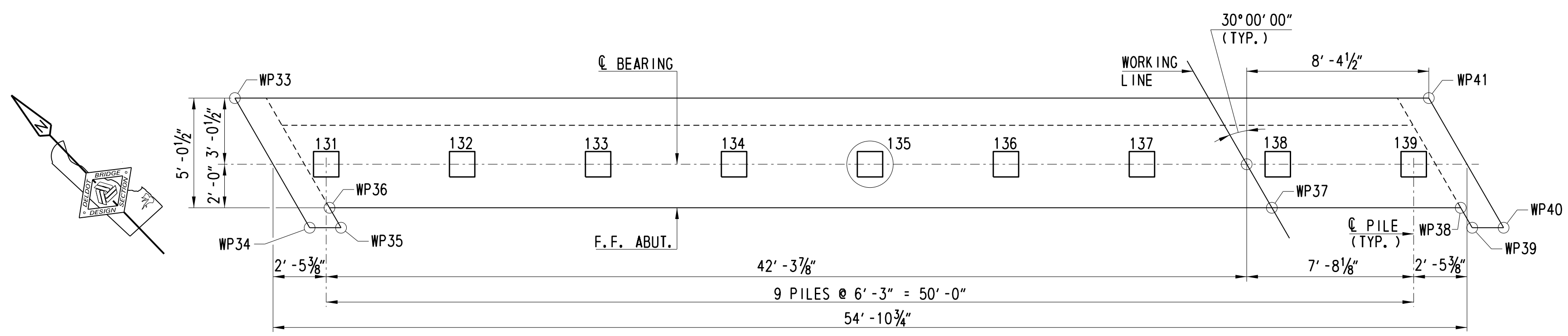


ABUTMENT DETAIL
NOT TO SCALE



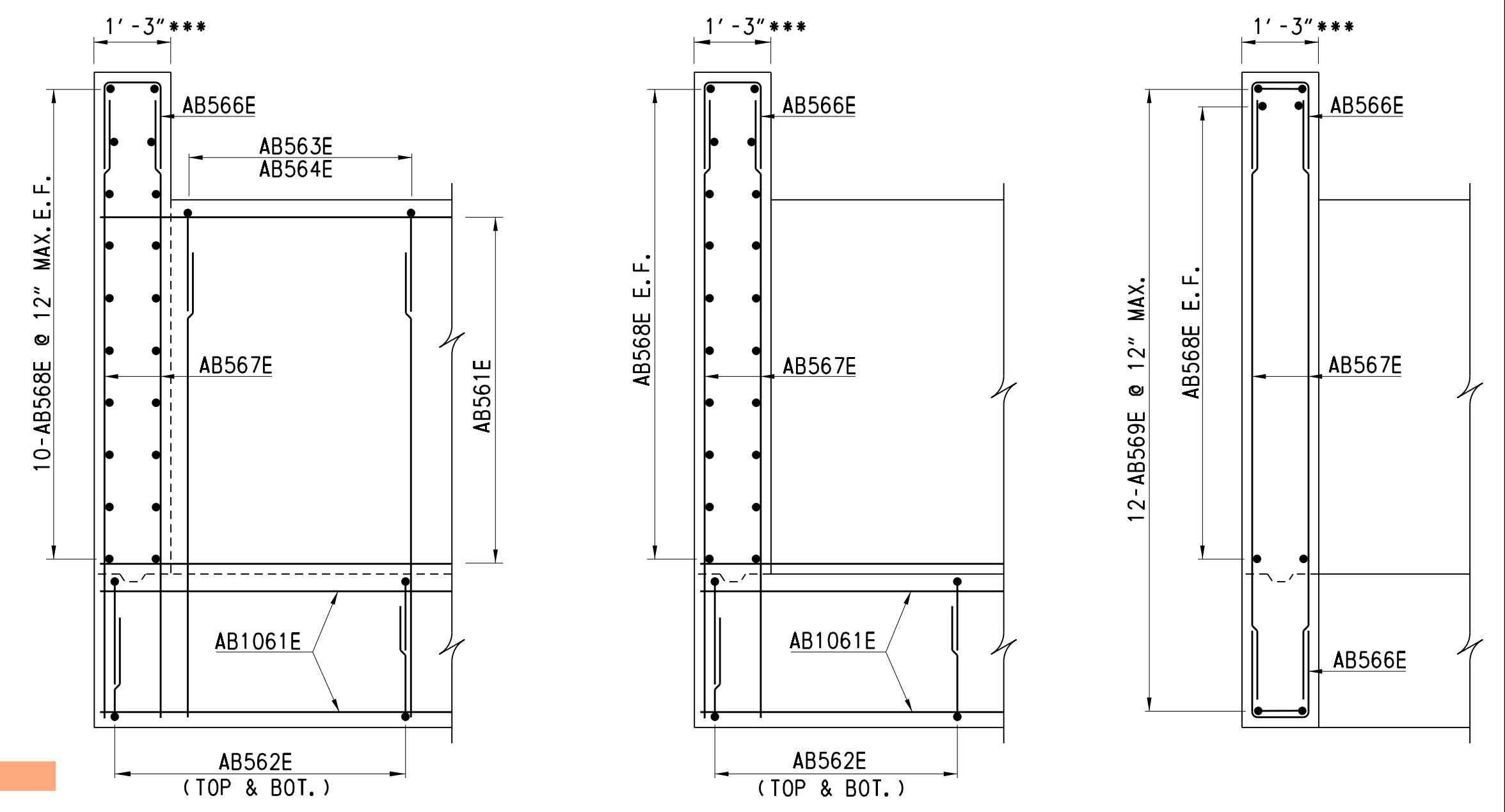
- LEGEND:**
- ABUT. = ABUTMENT
 - BOT. = BOTTOM
 - CLR. = CLEAR
 - E.F. = EACH FACE
 - F.F. = FRONT FACE
 - HDPE = HIGH-DENSITY POLYETHYLENE
 - MAX. = MAXIMUM
 - MIN. = MINIMUM
 - M.S.E. = MECHANICALLY STABILIZED EARTH
 - N.T.S. = NOT TO SCALE
 - TYP. = TYPICAL
 - WP = WORK POINT
 - W/ = WITH
 - = DENOTES PILE
 - = DENOTES TEST PILE

TYPICAL SECTION
SCALE: 1/2" = 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.

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

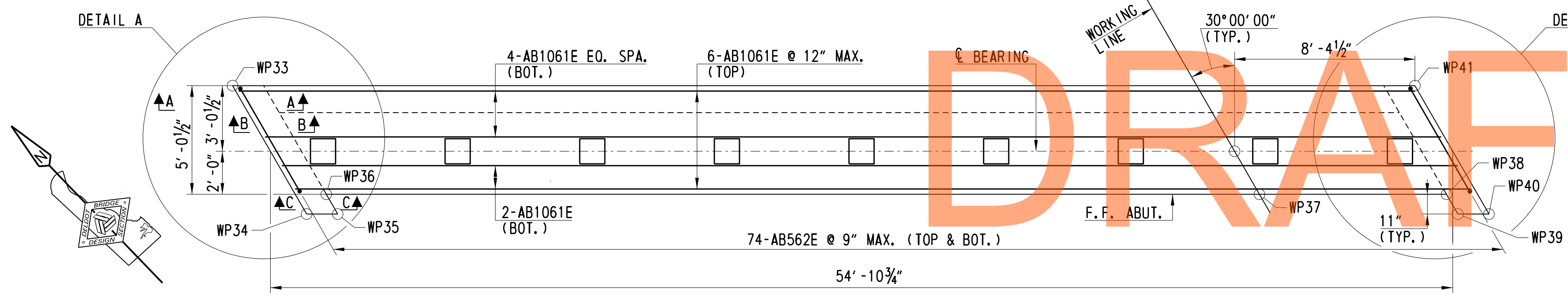


SECTION A-A
SCALE: 1/2" = 1' - 0"

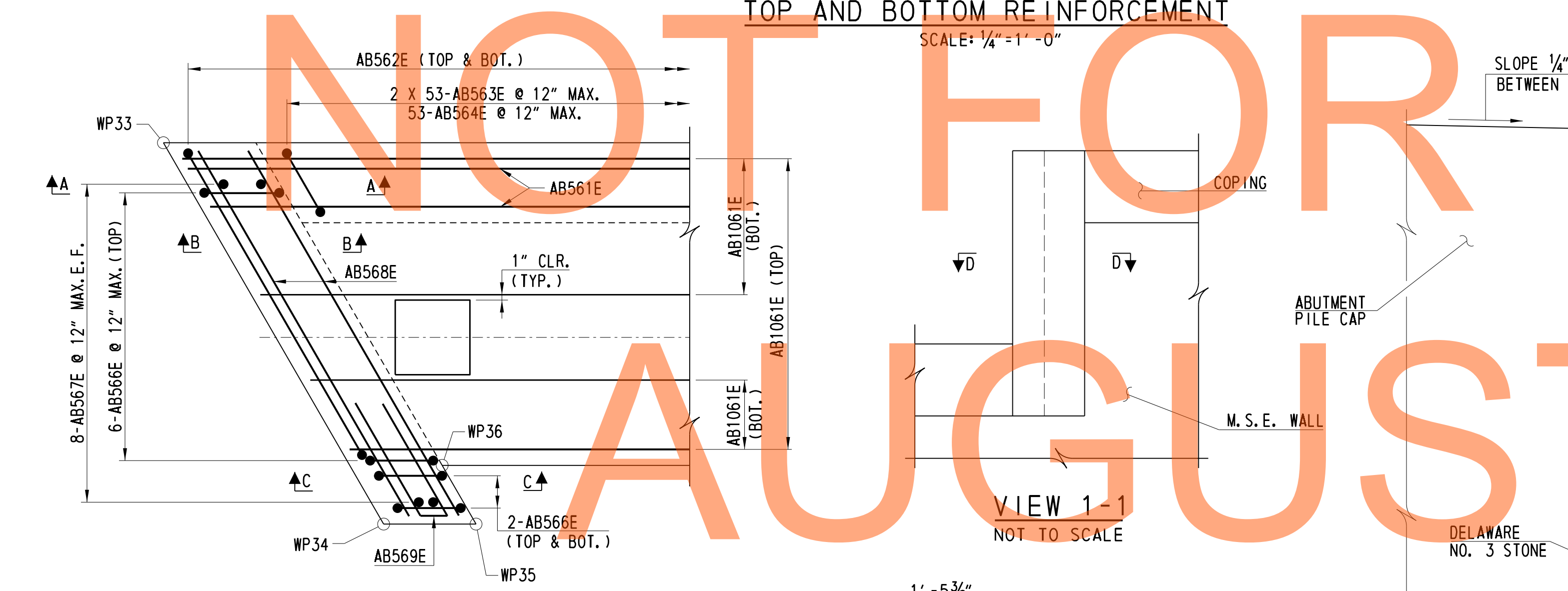
SECTION B-B
SCALE: 1/2" = 1' - 0"

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

*** MEASURED NORMAL TO WORKING LINE.

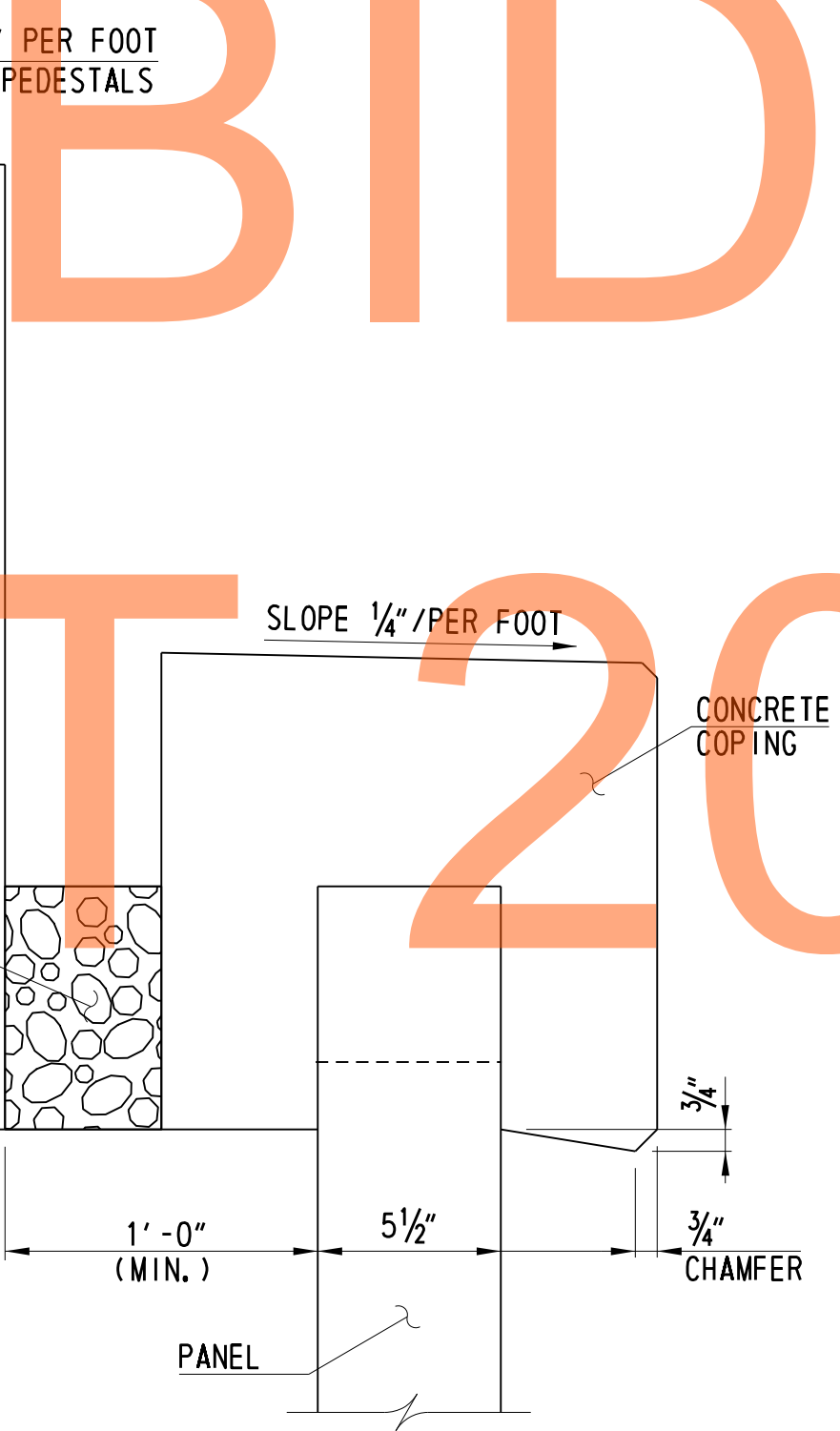


PLAN TOP AND BOTTOM REINFORCEMENT
SCALE: 1/4" = 1' - 0"

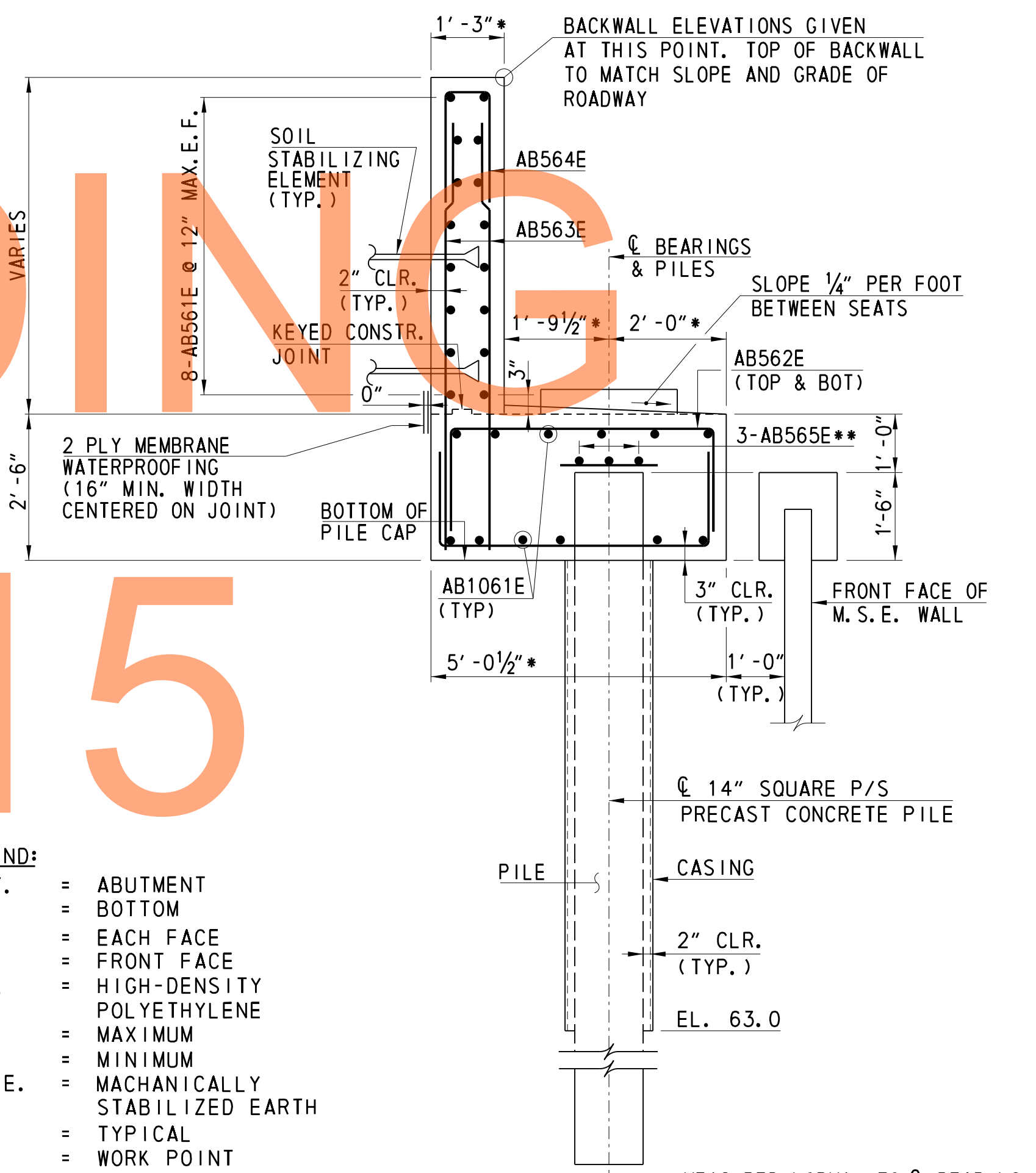


VIEW 1-1
NOT TO SCALE

DETAIL A (DETAIL B SIMILAR)
NOT TO SCALE



ABUTMENT DETAIL
NOT TO SCALE



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

- LEGEND:**
- ABUT. = ABUTMENT
 - BOT. = BOTTOM
 - E. F. = EACH FACE
 - F. F. = FRONT FACE
 - HDPE = HIGH-DENSITY POLYETHYLENE
 - MAX. = MAXIMUM
 - MIN. = MINIMUM
 - M. S. E. = MECHANICALLY STABILIZED EARTH
 - TYP. = TYPICAL
 - WP = WORK POINT
 - W/ = WITH
 - [Square symbol] = DENOTES PILE
 - [Circle symbol] = DENOTES TEST PILE

- NOTES:
1. FOR LOCATION OF VIEW 1-1, SEE SHEET 14 OF 40.
 2. FOR REINFORCEMENT BAR LIST, SEE SHEET 15 OF 40.
 3. 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.

SECTION D-D
NOT TO SCALE

ADDENDUMS / REVISIONS

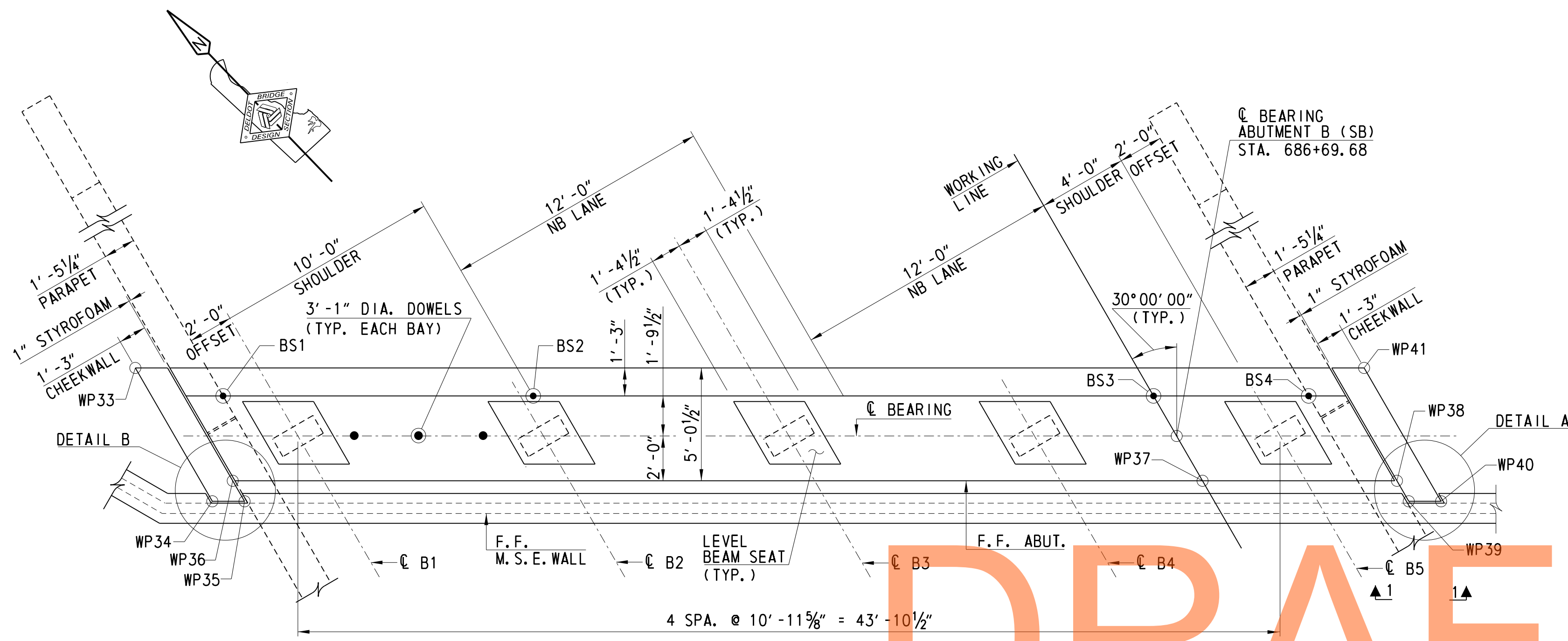
SCALE: AS NOTED

US 301, SR 896 TO SR 1

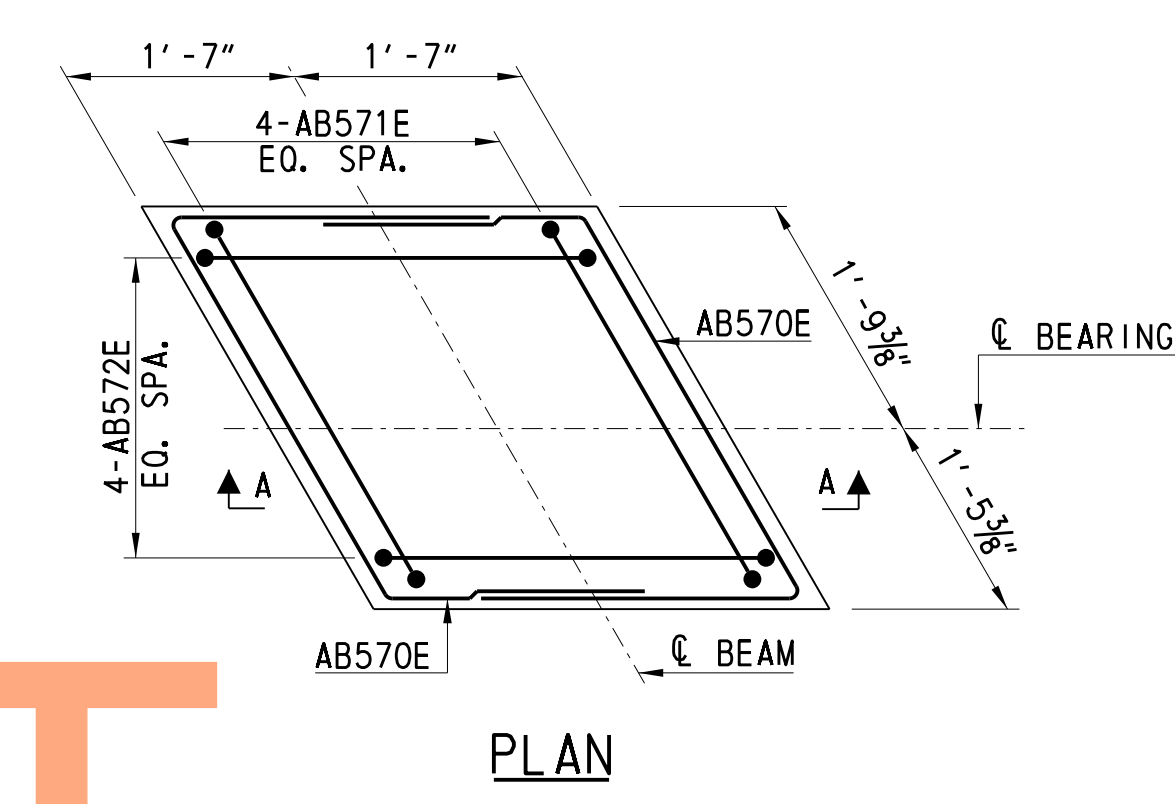
CONTRACT	BRIDGE NO.	1-466 N&S
T200911308	DESIGNED BY:	MDM/ZAA
COUNTY	CHECKED BY:	BJH
NEW CASTLE		

ABUTMENT B (SB) FOOTING PLAN

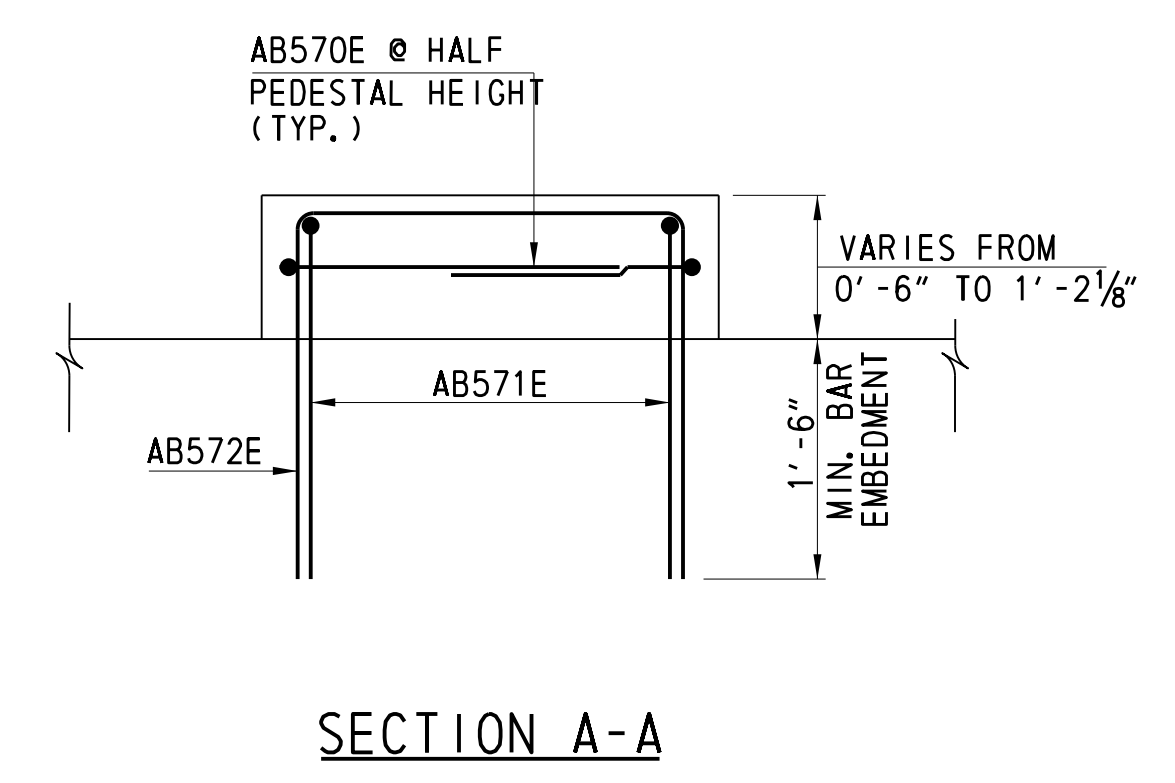
SHEET NO.	553
TOTAL SHTS.	875



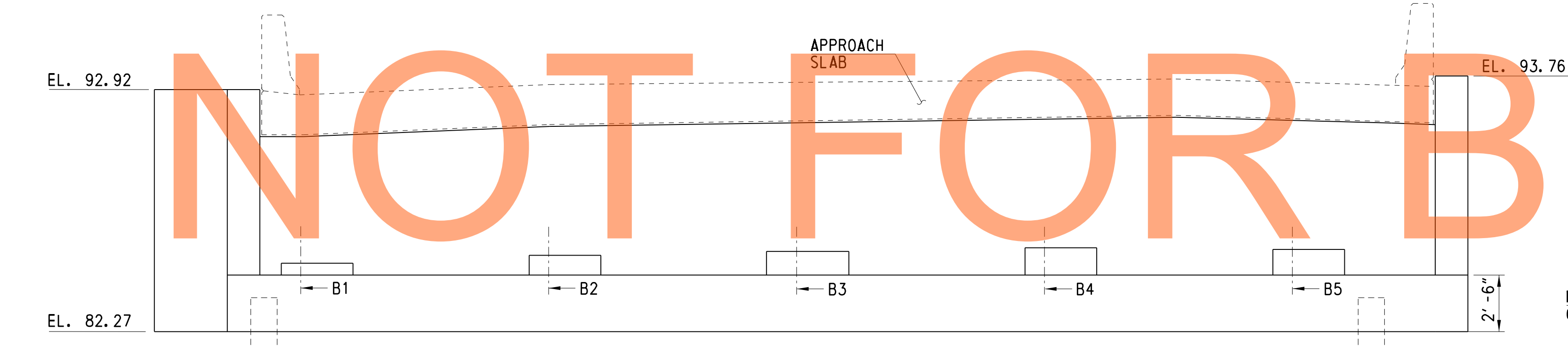
PLAN
SCALE: 1/4" = 1'-0"



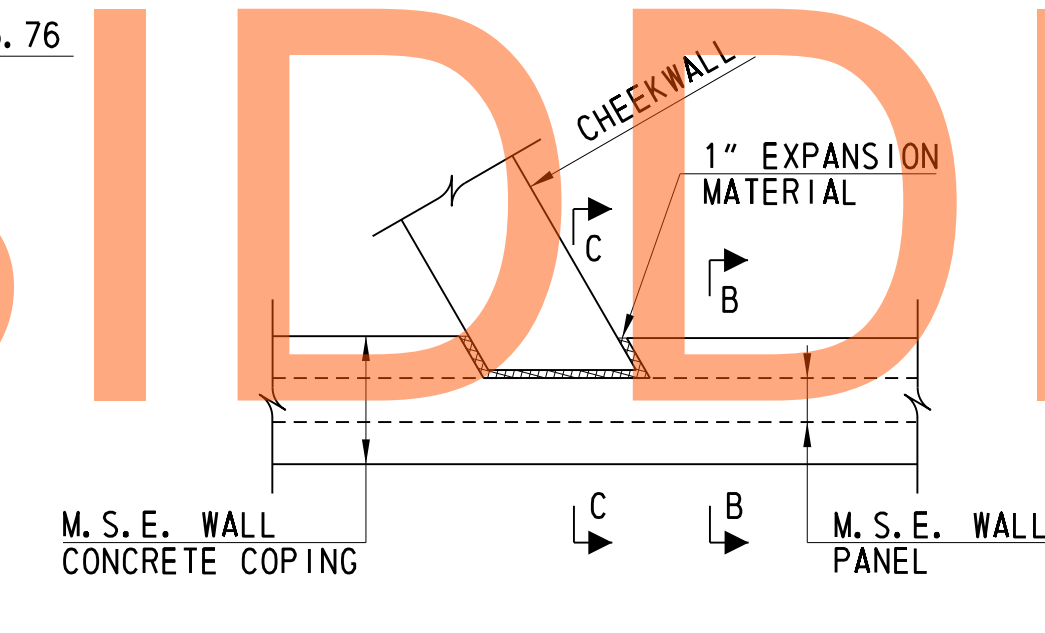
TYPICAL PEDESTAL DETAIL
NOT TO SCALE



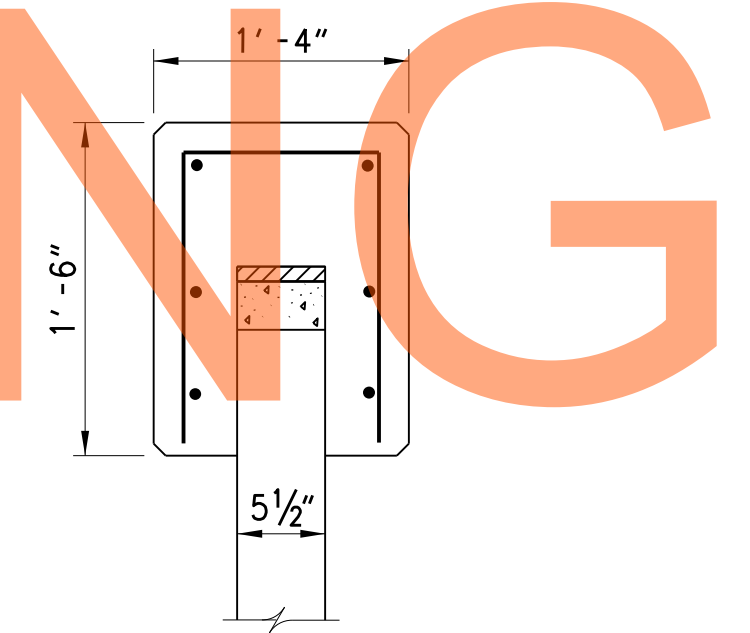
SECTION A-A
NOT TO SCALE



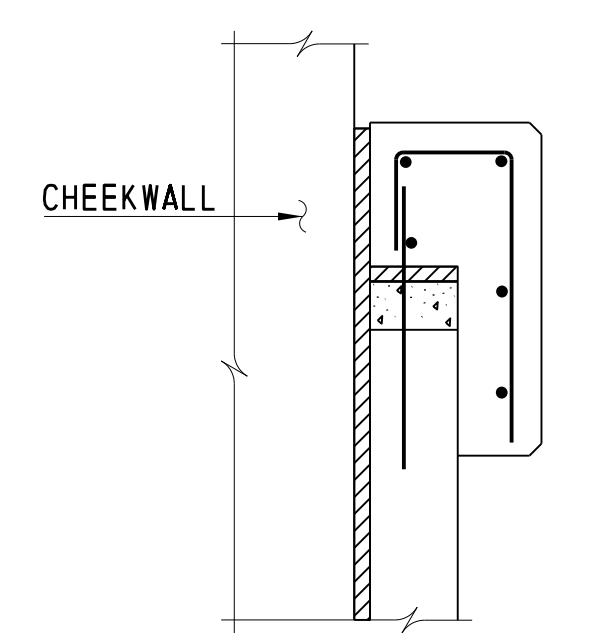
ELEVATION
SCALE: 1/4" = 1'-0"



DETAIL A
(DETAIL B SIMILAR)
NOT TO SCALE



SECTION B-B
NOT TO SCALE



SECTION C-C
NOT TO SCALE

DRAFT
NOT FOR BIDDING
AUGUST 2015

TABLE OF BACKWALL ELEVATIONS

LOCATION	ELEVATION
BS1	90.83
BS2	91.35
BS3	91.90
BS4	91.67

TABLE OF BEAM SEAT ELEVATIONS

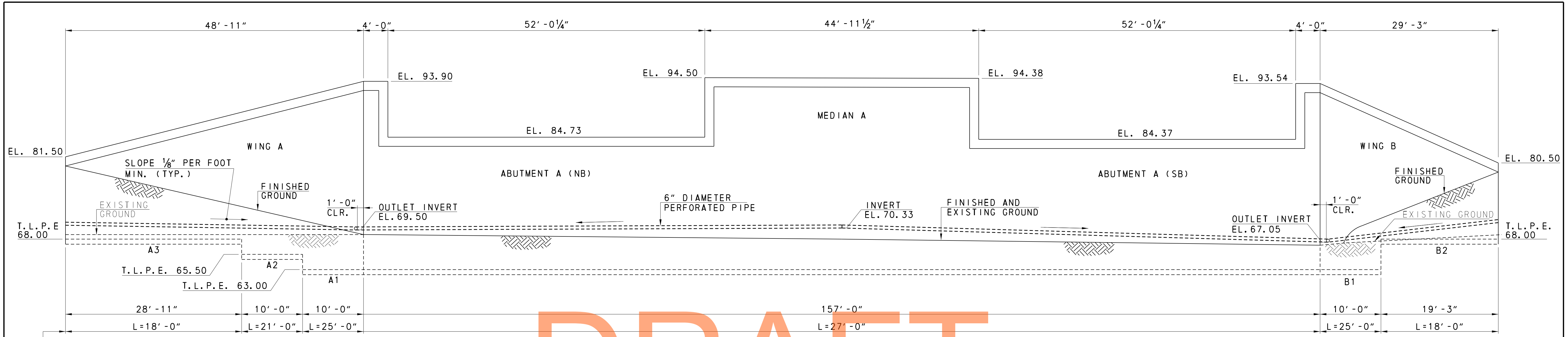
LOCATION	ELEVATION
B1	85.27
B2	85.68
B3	85.91
B4	86.13
B5	86.10

NOTES:

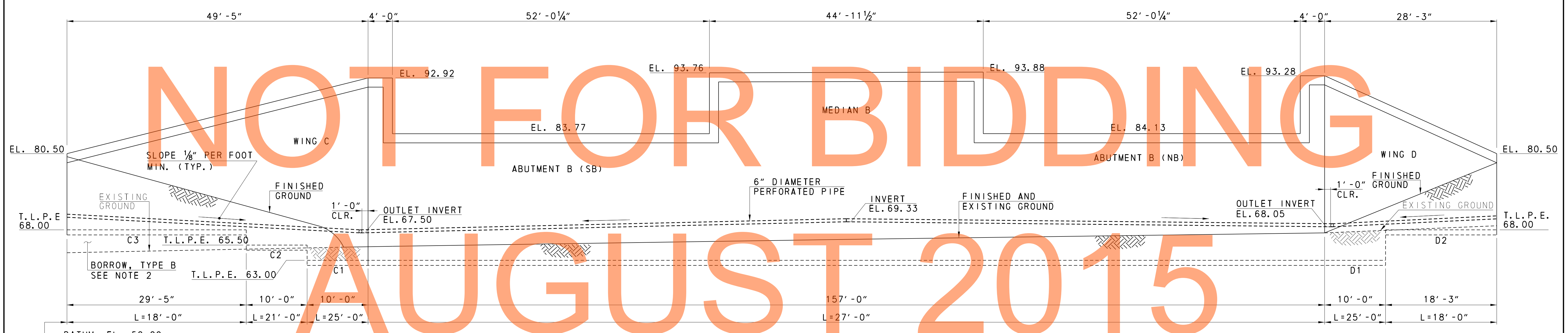
- FOR LOCATION OF BACKWALL ELEVATIONS, SEE TYPICAL SECTION ON SHEET 13 OF 40.
- FOR VIEW 1-1, SEE SHEET 13 OF 40.
- FOR REINFORCEMENT BAR LIST, SEE SHEET 15 OF 40.
- FOR DIAPHRAGM DETAILS, SEE SHEETS 31 AND 32 OF 40.
- STYROFOAM AND DOWEL PAYMENT SHALL BE INCIDENTAL TO CONCRETE CONSTRUCTION.
- SEE DELDOT STANDARD SPECIFICATION 824.02 (g) FOR CIP DOWEL MATERIAL REQUIREMENTS. FOR DOWEL DETAIL, SEE SHEET 31 OF 40.

LEGEND:

- ABUT. = ABUTMENT
- BOT. = BOTTOM
- C. I. P. = CAST-IN-PLACE
- E. F. = EACH FACE
- EL. = ELEVATION
- F. F. = FRONT FACE
- GALV. = GALVANIZED
- MAX. = MAXIMUM
- M. S. E. = MECHANICALLY STABILIZED EARTH
- NB = NORTHBOUND
- P. C. P. = PREFORMED CELLULAR POLYSTYRENE
- STA. = STATION
- TYP. = TYPICAL
- WP = WORK POINT



M.S.E. WALL-ABUTMENT A
(DEVELOPED ELEVATION)
SCALE: 1/8" = 1'-0"



M.S.E. WALL-ABUTMENT B
(DEVELOPED ELEVATION)
SCALE: 1/8" = 1'-0"

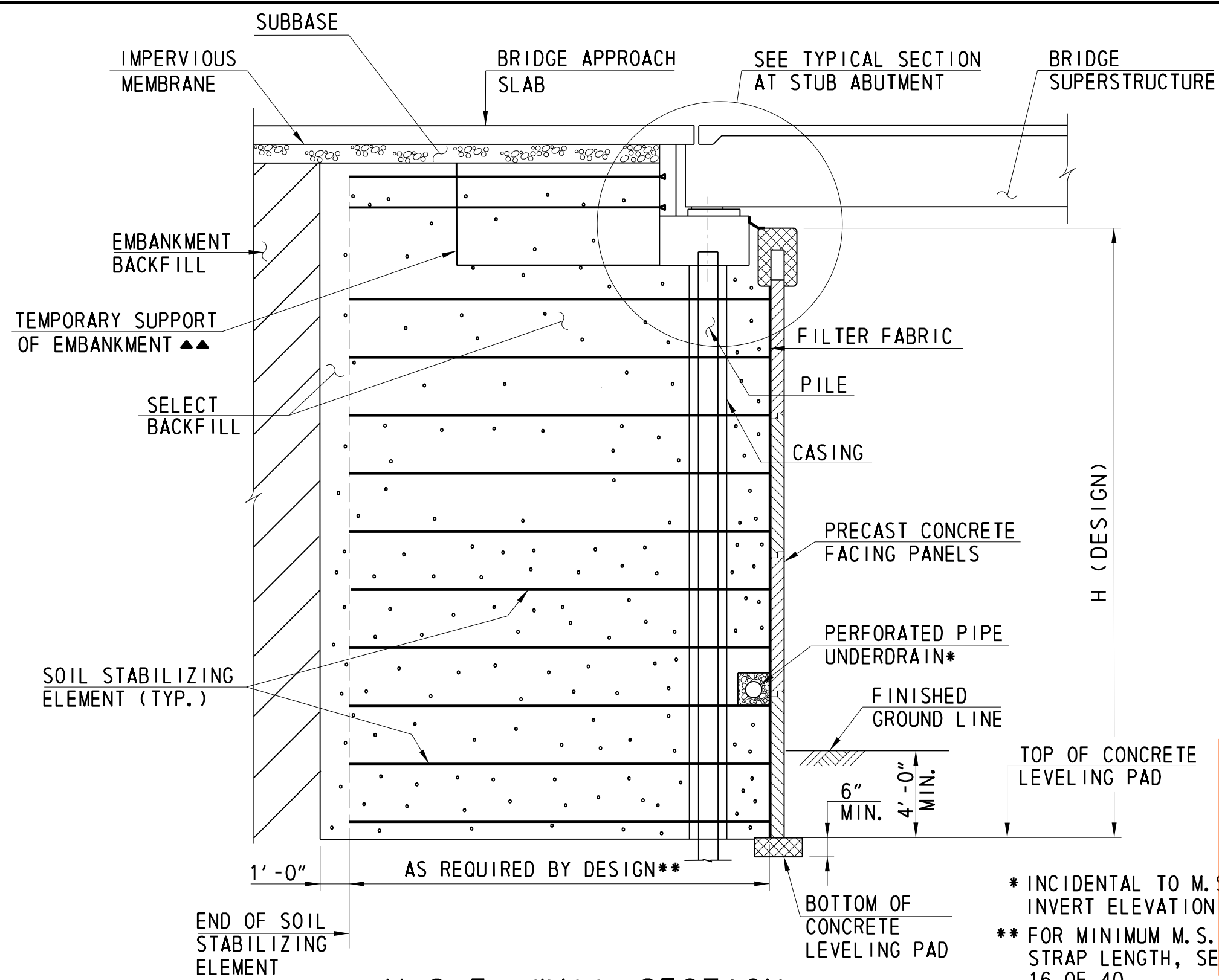
NOTES:

1. LOCATIONS OF EXPANSION AND CONTRACTION JOINTS TO BE DETERMINED BY THE MANUFACTURER.
2. THE VERTICAL LIMIT OF FOUNDATION SOIL (BORROW, TYPE B) SHALL BE FROM THE EXISTING GROUNDLINE TO THE BOTTOM OF THE LEVELING PAD. THE HORIZONTAL LIMIT OF BORROW, TYPE B SHALL BE 4'-0" IN FRONT OF THE M.S.E. WALL TO 1'-0" BEHIND THE M.S.E. WALL STRAP. PAYMENT FOR BORROW TYPE B WILL BE MADE UNDER ITEM 202000-EXCAVATION AND EMBANKMENT.
3. FOR ADDITIONAL M.S.E. WALL NOTES, SEE SHEET 17 OF 40.

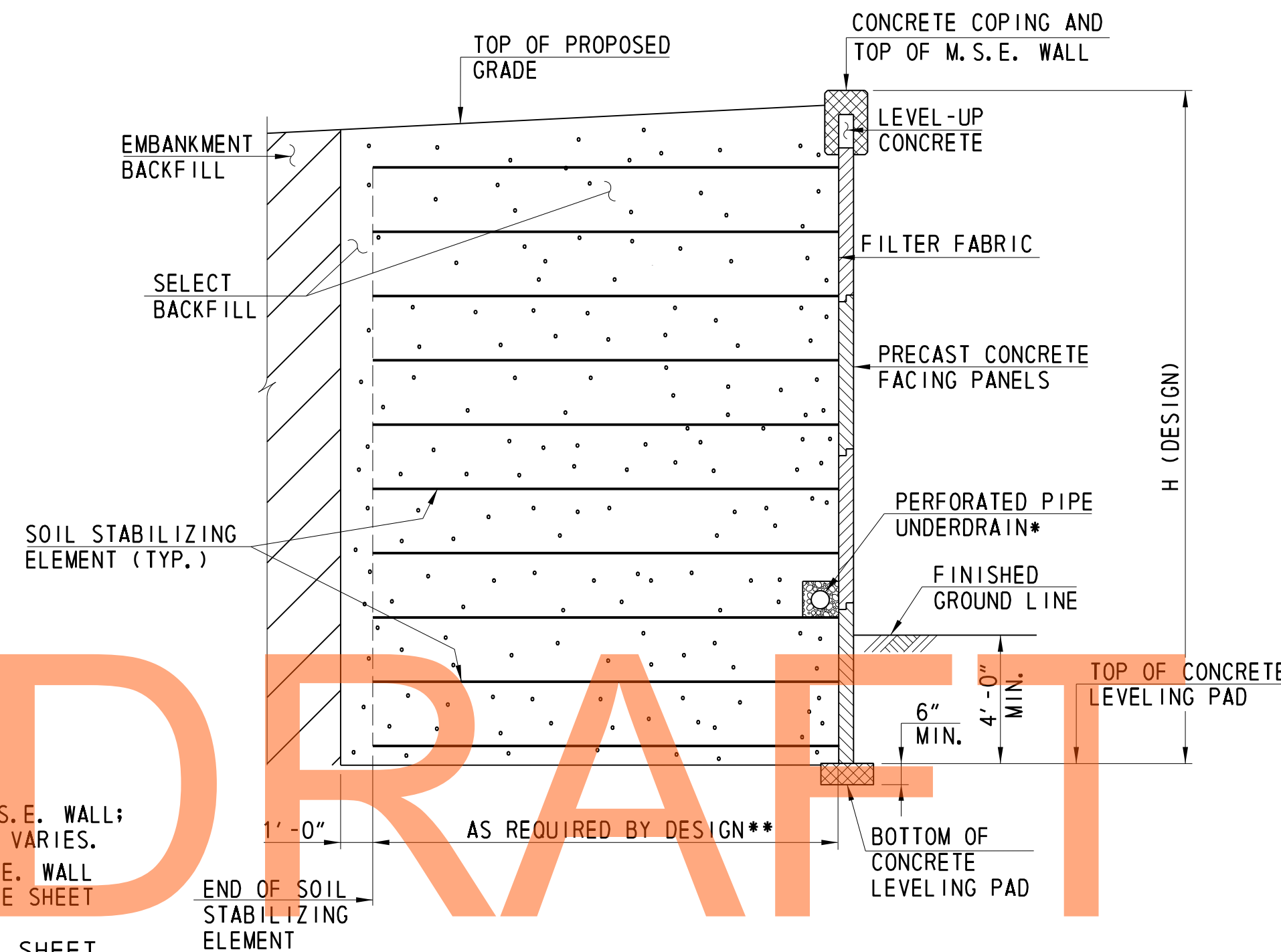
LEGEND

- CLR. = CLEAR
- EL. = ELEVATION
- NB = NORTHBOUND
- SB = SOUTHBOUND
- TYP. = TYPICAL
- T.L.P.E. = TOP OF LEVELING PAD ELEVATION

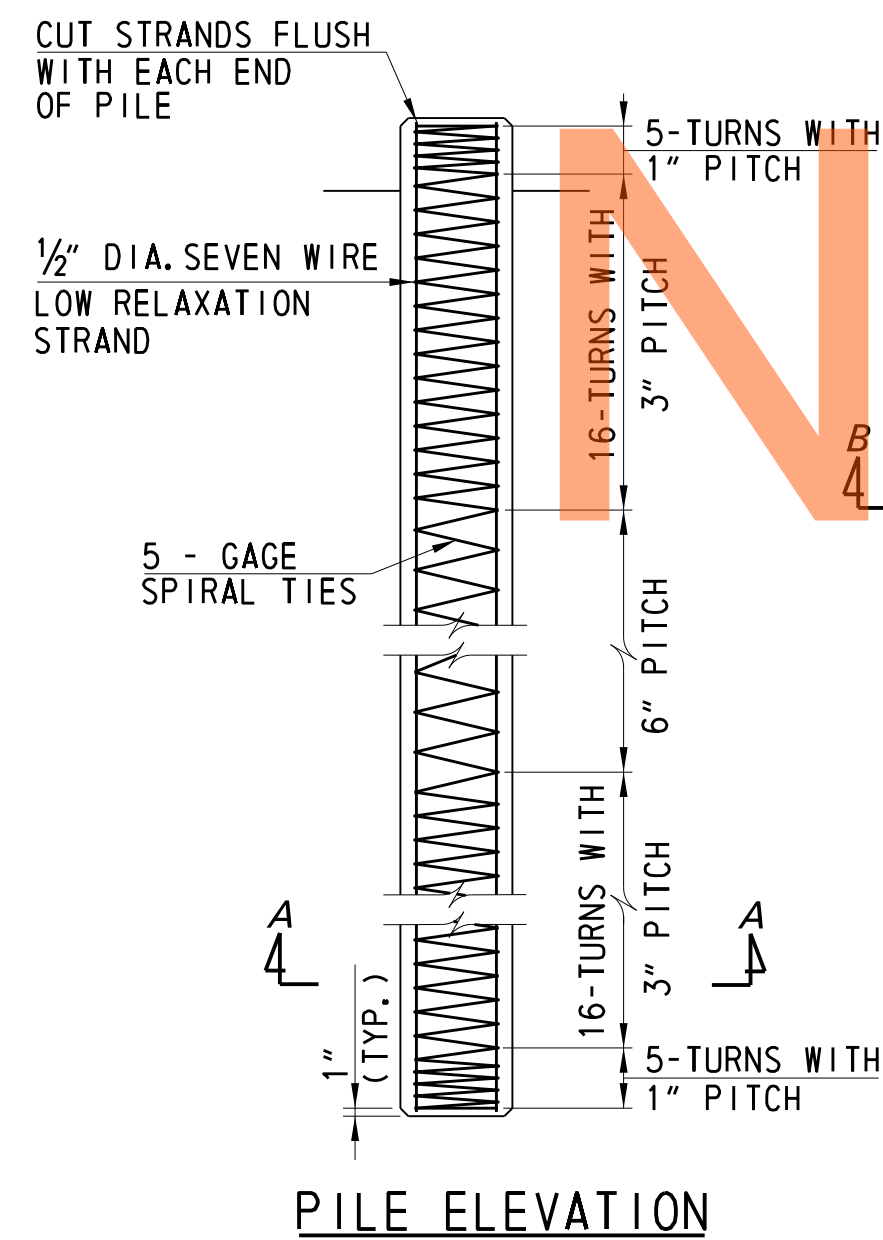
 DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE: AS NOTED	US 301, SR 896 TO SR 1	CONTRACT T200911308	BRIDGE NO. 1-466 N&S	M.S.E. WALLS	SHEET NO. 556
				COUNTY NEW CASTLE	DESIGNED BY: ZAA		TOTAL SHTS. 875
					CHECKED BY: BJH		



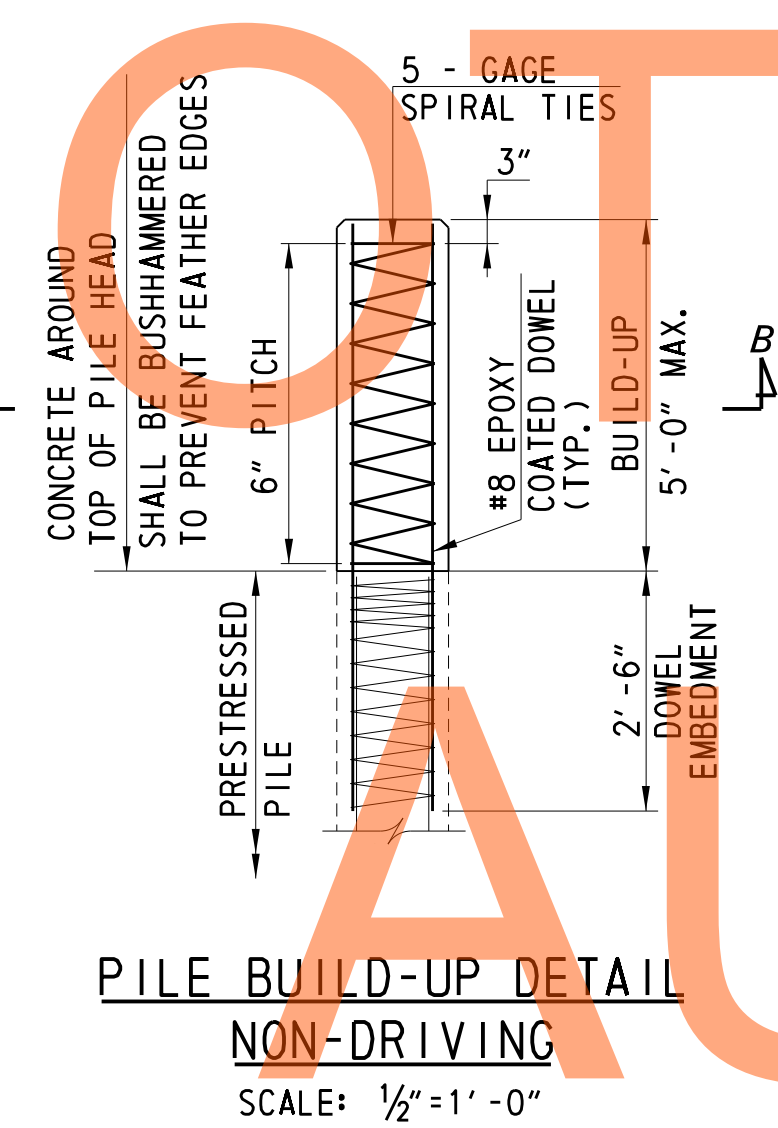
M.S.E. WALL SECTION AT ABUTMENT
NOT TO SCALE



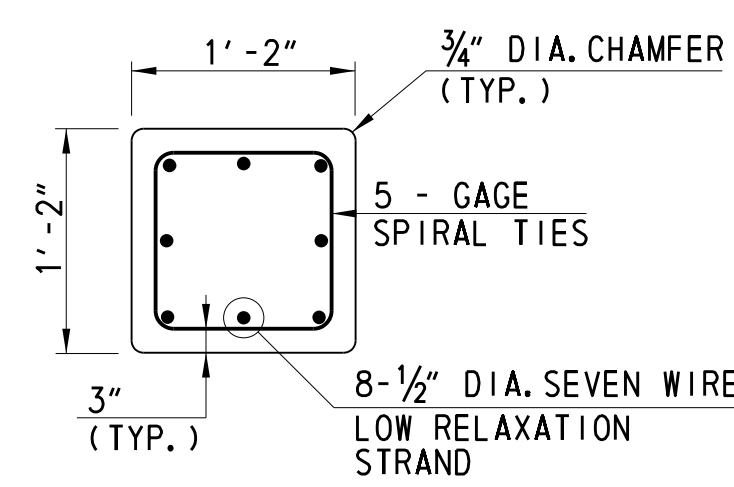
M.S.E. WALL SECTION AT MEDIAN AND WINGWALL
NOT TO SCALE



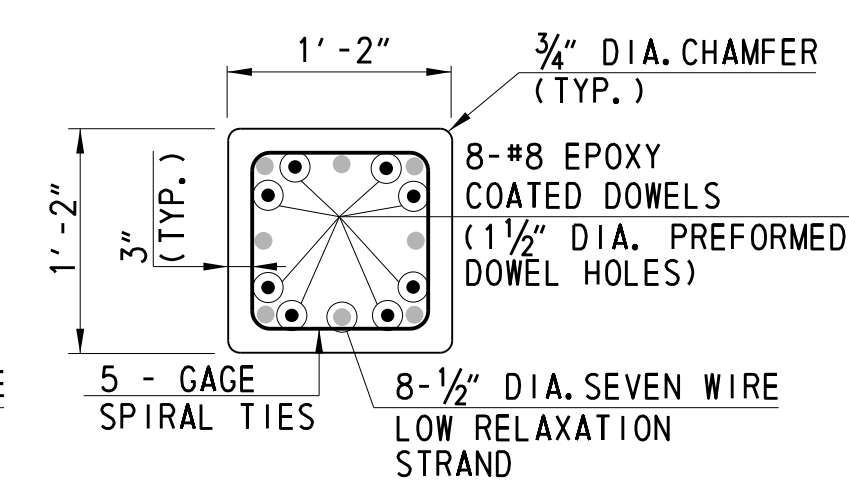
PILE ELEVATION



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



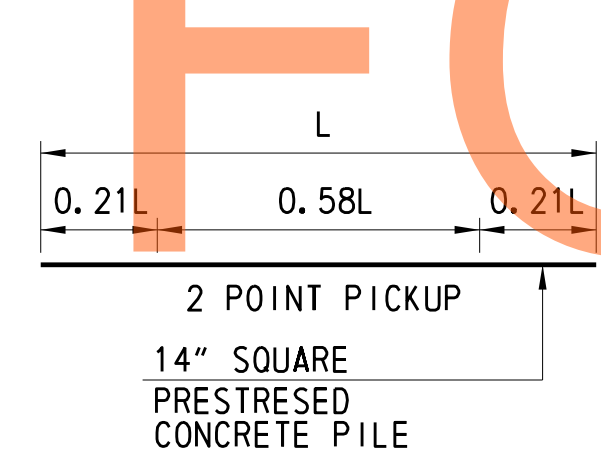
SECTION A-A



SECTION B-B

PRECAST PRESTRESSED CONCRETE PILE DETAILS
NOT TO SCALE

* INCIDENTAL TO M.S.E. WALL; INVERT ELEVATION VARIES.
** FOR MINIMUM M.S.E. WALL STRAP LENGTH, SEE SHEET 16 OF 40.
▲▲ FOR DETAILS, SEE SHEET 5 OF 40.



PILE PICKUP DATA
NOT TO SCALE

M.S.E. WALL SOIL PARAMETERS

RETAINED ZONE	
SOIL UNIT WEIGHT, (lb/ft ³)	125
SOIL COHESION, (psf)	0
SOIL FRICTION ANGLE, (deg)	34
FOUNDATION ZONE	
IN-SITU SOIL UNIT WEIGHT, (lb/ft ³)	115
IN-SITU SOIL COHESION, (psf)	0
IN-SITU SOIL FRICTION ANGLE, (deg)	30
FOUNDATION SOIL (BORROW, TYP B)	
SOIL UNIT WEIGHT, (lb/ft ³)	125
SOIL COHESION, (psf)	0
SOIL FRICTION ANGLE, (deg)	34
BEARING RESISTANCE FACTOR	0.65
ALLOWABLE SETTLEMENT (Inch)	1.0

SUBSTR. UNIT	PILE TYPE	NOMINAL PILE DRIVING RESISTANCE (R _{ndr}) (KIPS)	ESTIMATED TIP ELEVATION	MINIMUM TIP ELEVATION	AVERAGE ACTUAL MINIMUM TIP ELEVATION	AVERAGE ACTUAL MAXIMUM TIP ELEVATION
ABUT. A	14" S.P.P.C.P.	420	26.00	35.00		
	HP 14X73		2.00	2.00		
ABUT. B	14" S.P.P.C.P.	420	26.00	35.00		
	HP 14X73		2.00	2.00		

	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

LEGEND:
 B.F.E. = BOTTOM OF FOOTING ELEVATION
 CLR. = CLEAR
 DIA. = DIAMETER
 EL. = ELEVATION
 MAX. = MAXIMUM
 MIN. = MINIMUM
 M.S.E. = MECHANICALLY STABILIZED EARTH
 S.P.P.C.P. = SQUARE PRECAST PRESTRESSED CONCRETE PILE
 SUBSTR. = SUBSTRUCTURE
 TYP. = TYPICAL

M.S.E. WALL NOTES

1. PROVIDE MECHANICALLY STABILIZED EARTH WALLS IN ACCORDANCE WITH SPECIAL PROVISION 602771.
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 ENCRUCHEED 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 PROVISION 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.
6. 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.

SHALL BE PERFORMED PRIOR TO PLACING ANY EMBANKMENT IN ACCORDANCE WITH ITEM 619502-TEST PILE RESTRIKE. TEST PILES BEHIND M.S.E. WALLS SHALL THEN BE CASED PRIOR TO PLACING EMBANKMENT. 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 AS DIRECTED BY THE ENGINEER PRIOR TO PLACING ANY OTHER PRODUCTION PILES WITH PAYMENT UNDER ITEM 619501-PRODUCTION PILE RESTRIKE.

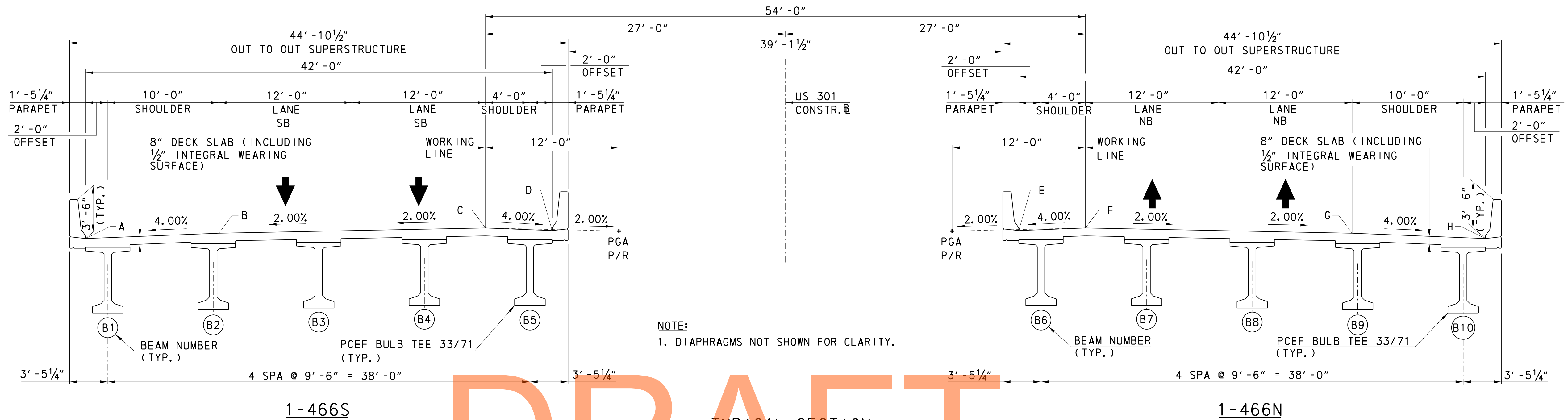
7. PILE LENGTHS FOR ORDERING PURPOSES SHALL BE DETERMINED BY TEST PILES. A MINIMUM OF ONE (1) PILE PER SUBSTRUCTURE, AS SHOWN ON THE PLANS, SHALL BE DYNAMICALLY TESTED WITH SIGNAL MATCHING ANALYSIS BY THE CONTRACTOR IN ACCORDANCE WITH SPECIAL PROVISIONS 619519 AND 619539. TEST AND PRODUCTION PILE RESTRIKES WILL BE PAID AS FOLLOWS:
 - a. ALL TEST PILE(S) WILL BE RESTRUCK 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 NO. 619501 PRODUCTION PILE RESTRIKE. THESE PRODUCTION PILE RESTRIKES ARE INCIDENTAL TO ITEM NO. 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 UNDER ITEM NO. 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 = 58'-0"
- B. THE ESTIMATED TEST PILE LENGTH = 68'-0"
- C. THE ESTIMATED RATED HAMMER ENERGY RANGE REQUIRED TO DRIVE THE PILES IS BETWEEN 59.70 AND 74.50 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 = 82'-0"
 - B. THE ESTIMATED TEST PILE LENGTH = 92'-0"
 - C. USE A HAMMER ENERGY RANGE BETWEEN 59.70 AND 74.50 kip-ft.



NOTE:
1. DIAPHRAGMS NOT SHOWN FOR CLARITY.

1-466S

TYPICAL SECTION

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

1-466N

TOP OF DECK ELEVATIONS ALONG C BEAM									
BRIDGE 1-466S									
BEAM B1		BEAM B2		BEAM B3		BEAM B4		BEAM B5	
STATION	ELEVATION	STATION	ELEVATION	STATION	ELEVATION	STATION	ELEVATION	STATION	ELEVATION
* 685+69.31	93.12	685+63.83	93.52	685+58.34	93.75	685+52.86	93.97	685+47.37	93.95
685+79.31	93.07	685+73.83	93.47	685+68.34	93.70	685+62.86	93.92	685+57.37	93.90
685+89.31	93.02	685+83.83	93.42	685+78.34	93.65	685+72.86	93.87	685+67.37	93.85
685+99.31	92.97	685+93.83	93.37	685+88.34	93.60	685+82.86	93.82	685+77.37	93.80
686+09.31	92.92	686+03.83	93.32	685+98.34	93.55	685+92.86	93.77	685+87.37	93.75
686+19.31	92.87	686+13.83	93.27	686+08.34	93.50	686+02.86	93.72	685+97.37	93.70
686+29.31	92.82	686+23.83	93.22	686+18.34	93.45	686+12.86	93.67	686+07.37	93.65
686+39.31	92.77	686+33.83	93.17	686+28.34	93.40	686+22.86	93.62	686+17.37	93.60
686+49.31	92.72	686+43.83	93.12	686+38.34	93.35	686+32.86	93.57	686+27.37	93.55
686+59.31	92.67	686+53.83	93.07	686+48.34	93.30	686+42.86	93.52	686+37.37	93.50
686+69.31	92.62	686+63.83	93.02	686+58.34	93.25	686+52.86	93.47	686+47.37	93.45
686+79.31	92.57	686+73.83	92.97	686+68.34	93.20	686+62.86	93.42	686+57.37	93.40
** 686+89.31	92.52	686+83.83	92.92	686+78.34	93.15	686+72.86	93.37	686+67.37	93.35

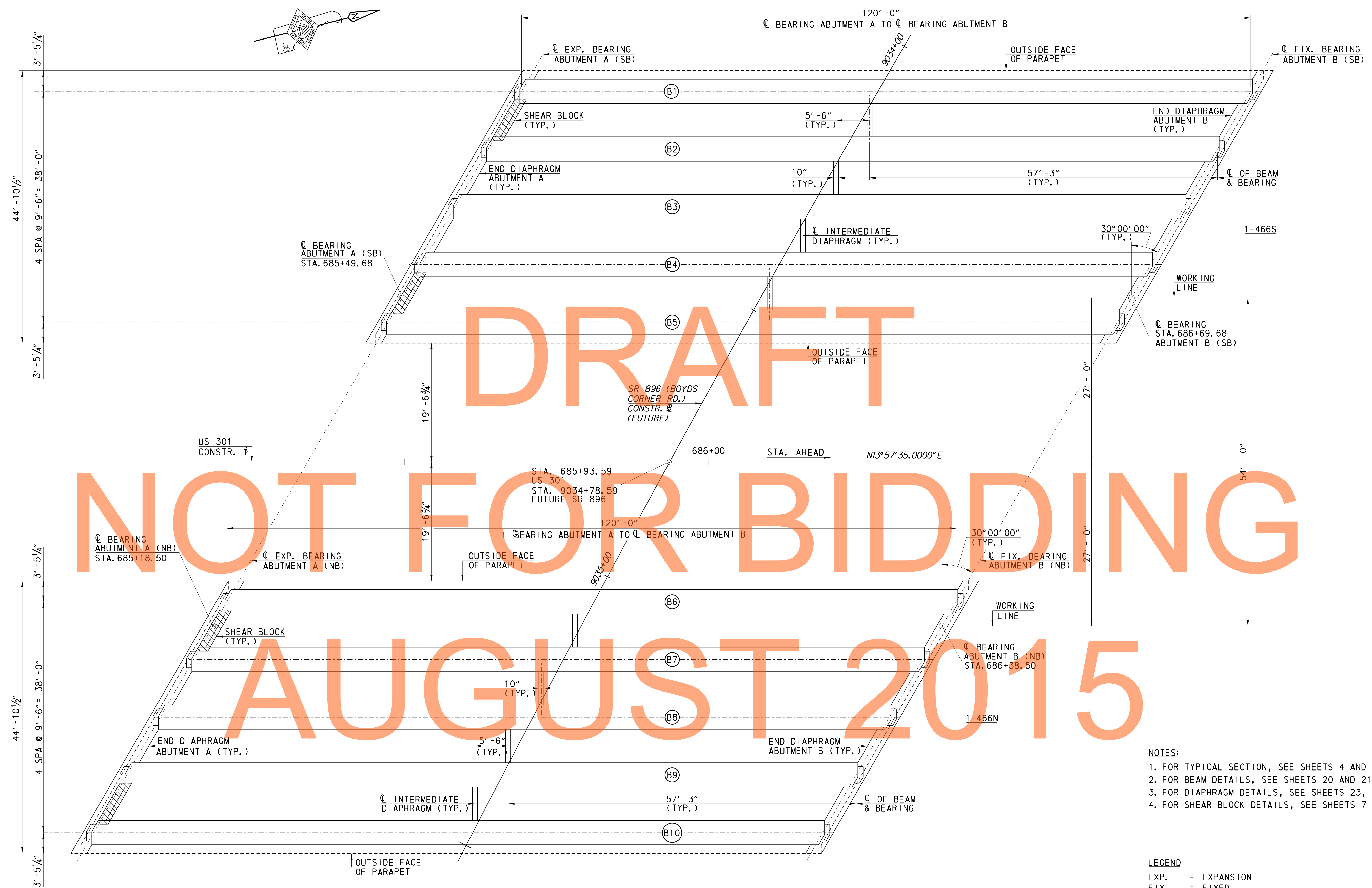
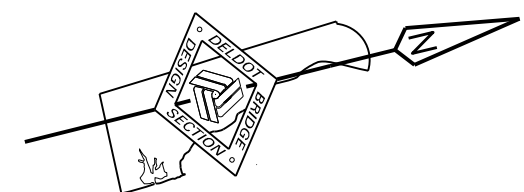
TOP OF DECK ELEVATIONS ALONG C BEAM									
BRIDGE 1-466N									
BEAM B6		BEAM B7		BEAM B8		BEAM B9		BEAM B10	
STATION	ELEVATION	STATION	ELEVATION	STATION	ELEVATION	STATION	ELEVATION	STATION	ELEVATION
* 685+20.81	94.08	685+15.32	94.16	685+09.84	93.99	685+04.35	93.82	684+98.87	93.47
685+30.81	94.03	685+25.32	94.11	685+19.84	93.94	685+14.35	93.77	685+08.87	93.42
685+40.81	93.98	685+35.32	94.06	685+29.84	93.89	685+24.35	93.72	685+18.87	93.37
685+50.81	93.93	685+45.32	94.01	685+39.84	93.84	685+34.35	93.67	685+28.87	93.32
685+60.81	93.88	685+55.32	93.96	685+49.84	93.79	685+44.35	93.62	685+38.87	93.27
685+70.81	93.83	685+65.32	93.91	685+59.84	93.74	685+54.35	93.57	685+48.87	93.22
685+80.81	93.78	685+75.32	93.86	685+69.84	93.69	685+64.35	93.52	685+58.87	93.17
685+90.81	93.73	685+85.32	93.81	685+79.84	93.64	685+74.35	93.47	685+68.87	93.12
686+00.81	93.68	685+95.32	93.76	685+89.84	93.59	685+84.35	93.42	685+78.87	93.07
686+10.81	93.63	686+05.32	93.71	685+99.84	93.54	685+94.35	93.37	685+88.87	93.02
686+20.81	93.58	686+15.32	93.66	686+09.84	93.49	686+04.35	93.32	685+98.87	92.97
686+30.81	93.53	686+25.32	93.61	686+19.84	93.44	686+14.35	93.27	686+08.87	92.92
** 686+40.81	93.48	686+35.32	93.56	686+29.84	93.39	686+24.35	93.22	686+18.87	92.87

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

TOP OF DECK ELEVATIONS AT 10 FT. INTERVALS					
BRIDGE 1-466S					
STATION	PGL ELEVATION AT CONSTR. B	DECK ELEVATION @ A (GUTTER)	DECK ELEVATION @ B	DECK ELEVATION @ C (WORKING LINE SB)	DECK ELEVATION @ D (GUTTER)
684+80.00	94.20	93.48	93.96	94.44	94.20
684+90.00	94.15	93.43	93.91	94.39	94.15
685+00.00	94.10	93.38	93.86	94.34	94.10
685+10.00	94.05	93.33	93.81	94.29	94.05
685+20.00	94.00	93.28	93.76	94.24	94.00
685+30.00	93.95	93.23	93.71	94.19	93.95
685+40.00	93.90	93.18	93.66	94.14	93.90
685+50.00	93.85	93.13	93.61	94.09	93.85
685+60.00	93.80	93.08	93.56	94.04	93.80
685+70.00	93.75	93.03	93.51	93.99	93.75
685+80.00	93.70	92.98	93.46	93.94	93.70
685+90.00	93.65	92.93	93.41	93.89	93.65
686+00.00	93.60	92.88	93.36	93.84	93.60
686+10.00	93.55	92.83	93.31	93.79	93.55
686+20.00	93.50	92.78	93.26	93.74	93.50
686+30.00	93.45	92.73	93.21	93.69	93.45
686+40.00	93.40	92.68	93.16	93.64	93.40
686+50.00	93.35	92.63	93.11	93.59	93.35
686+60.00	93.30	92.58	93.06	93.54	93.30
686+70.00	93.25	92.53	93.01	93.49	93.25
686+80.00	93.20	92.48	92.96	93.44	93.20
686+90.00	93.15	92.43	92.91	93.39	93.15
687+00.00	93.10	92.38	92.86	93.34	93.10
687+10.00	93.05	92.33	92.81	93.29	93.05
687+20.00	93.00	92.28	92.76	93.24	93.00
687+30.00	92.95	92.23	92.71	93.19	92.95

TOP OF DECK ELEVATIONS AT 10 FT. INTERVALS					
BRIDGE 1-466N					
STATION	PGL ELEVATION AT CONSTR. B	DECK ELEVATION @ E (GUTTER)	DECK ELEVATION @ F (WORKING LINE NB)	DECK ELEVATION @ G	DECK ELEVATION @ H (GUTTER)
684+80.00	94.20	94.20	94.44	93.96	93.48
684+90.00	94.15	94.15	94.39	93.91	93.43
685+00.00	94.10	94.10	94.34	93.86	93.38
685+10.00	94.05	94.05	94.29	93.81	93.33
685+20.00	94.00	94.00	94.24	93.76	93.28
685+30.00	93.95	93.95	94.19	93.71	93.23
685+40.00	93.90	93.90	94.14	93.66	93.18
685+50.00	93.85	93.85	94.09	93.61	93.13
685+60.00	93.80	93.80	94.04	93.56	93.08
685+70.00	93.75	93.75	93.99	93.51	93.03
685+80.00	93.70	93.70	93.94	93.46	92.98
685+90.00	93.65	93.65	93.89	93.41	92.93
686+00.00	93.60	93.60	93.84	93.36	92.88
686+10.00	93.55	93.55	93.79	93.31	92.83
686+20.00	93.50	93.50	93.74	93.26	92.78
686+30.00	93.45	93.45	93.69	93.21	92.73
686+40.00	93.40	93.40	93.64	93.16	92.68
686+50.00	93.35	93.35	93.59	93.11	92.63
686+60.00	93.30	93.30	93.54	93.06	92.58
686+70.00	93.25	93.25	93.49	93.01	92.53
686+80.00	93.20	93.20	93.44	92.96	92.48
686+90.00	93.15	93.15	93.39	92.91	92.43
687+00.00	93.10	93.10	93.34	92.86	92.38
687+10.00	93.05	93.05	93.29	92.81	92.33
687+20.00	93.00	93.00	93.24	92.76	92.28
687+30.00	92.95	92.95	93.19	92.71	92.23

LEGEND
CONSTR. = CONSTRUCTION
NB = NORTHBOUND
SB = SOUTHBOUND
SPA. = SPACES
TYP. = TYPICAL



DRAFT
NOT FOR BIDDING
AUGUST 2015

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

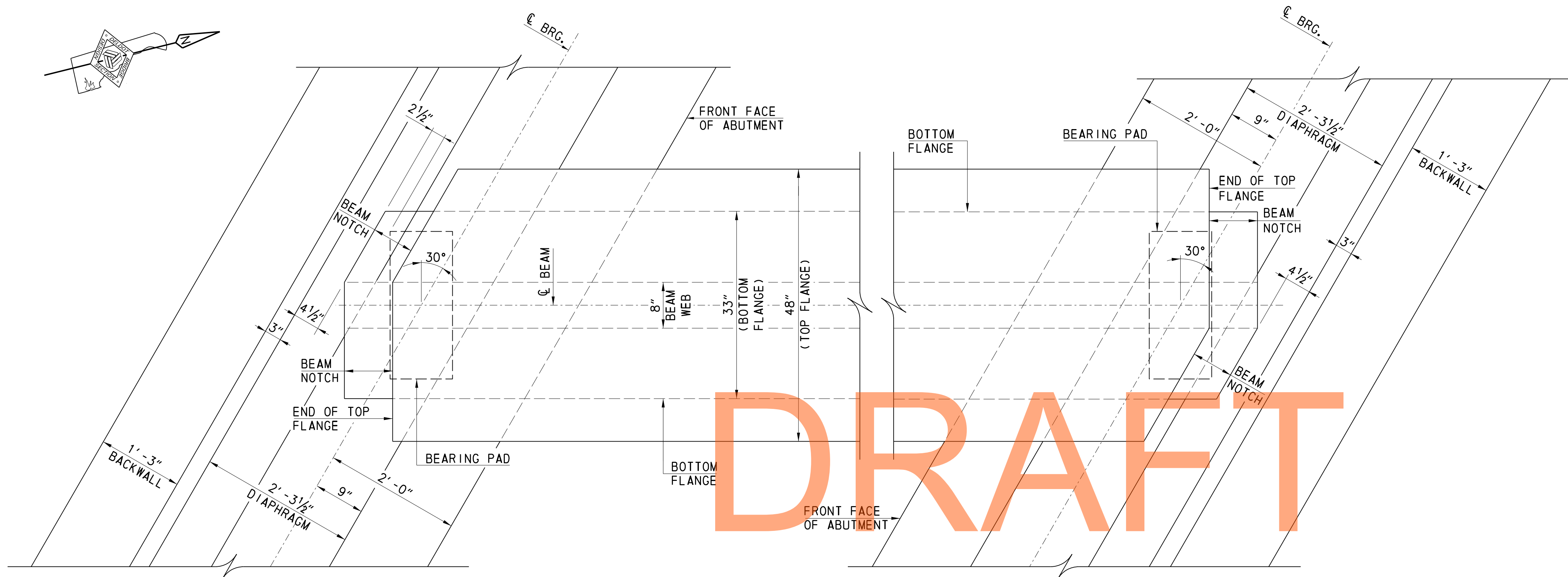
- NOTES:**
1. FOR TYPICAL SECTION, SEE SHEETS 4 AND 18 OF 40.
 2. FOR BEAM DETAILS, SEE SHEETS 20 AND 21 OF 40.
 3. FOR DIAPHRAGM DETAILS, SEE SHEETS 23, 24, 31 AND 32 OF 40.
 4. FOR SHEAR BLOCK DETAILS, SEE SHEETS 7 AND 12 OF 40.

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

ADDENDUMS / REVISIONS	SCALE: AS NOTED

CONTRACT T200911308	BRIDGE NO. 1-466 N&S	DESIGNED BY: ZAA	CHECKED BY: BK
COUNTY NEW CASTLE			

SHEET NO. 559	TOTAL SHTS. 875
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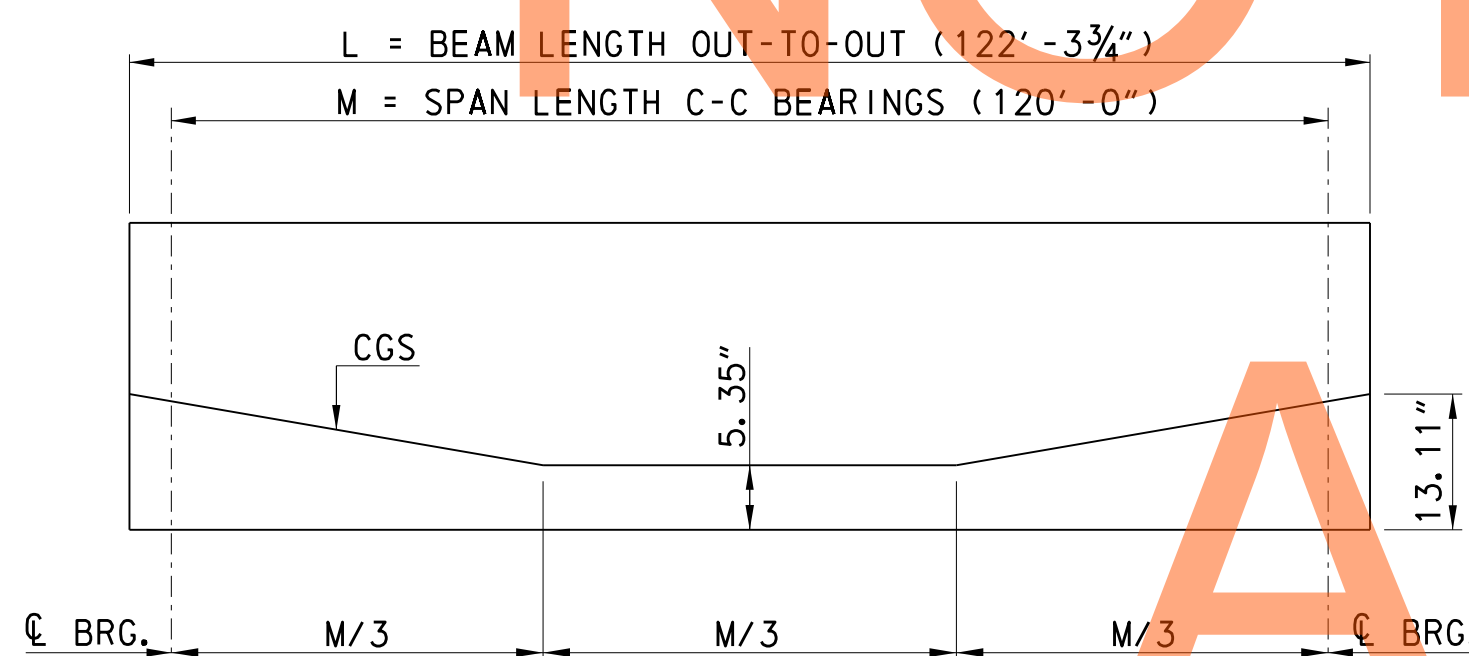


ABUTMENT A

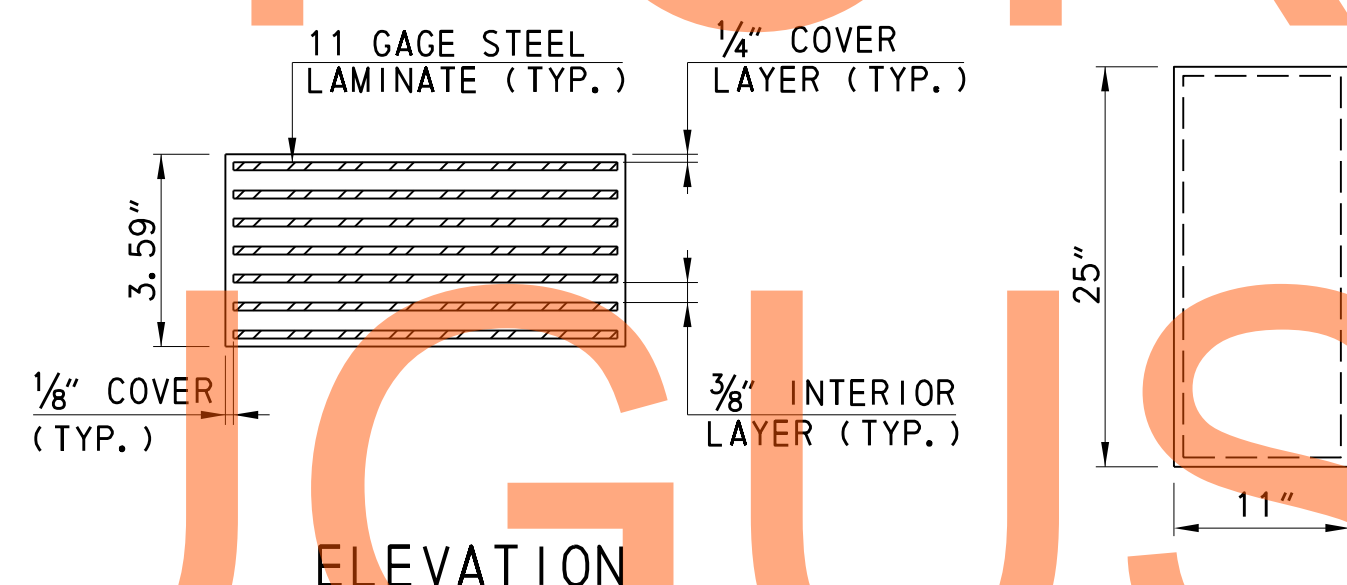
ABUTMENT B

PLAN
STRUCTURE AT END OF BEAM

SCALE: 1"=1'-0"



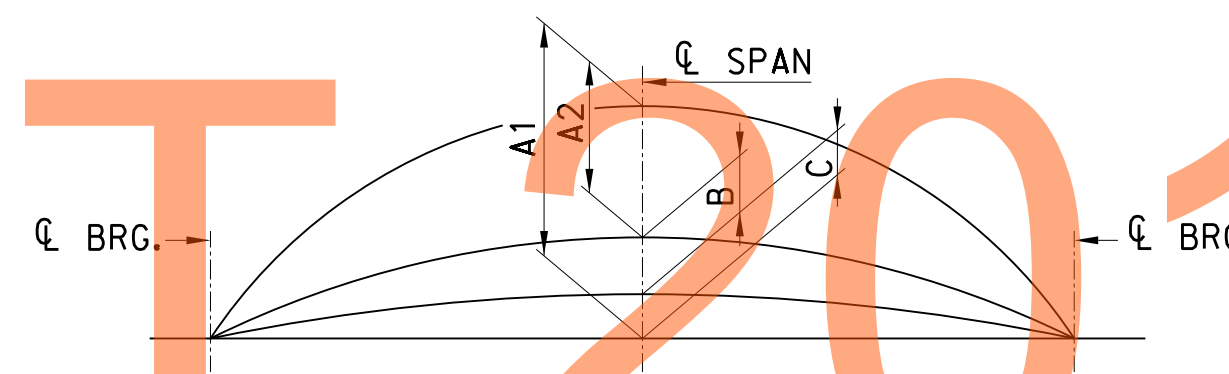
STRAND PROFILE, CGS
NOT TO SCALE



ELEVATION

NOTE:
11"x25"x3.59" LAMINATED BEARING PAD
20 REQUIRED FOR STRUCTURE.

CAMBER TABLE				
BEAM	A1 (in)	A2 (in)	B (in)	C (in)
B1, B5, B6, B10	6 7/8	2 1/2	1 1/2	2 7/8
B2, B4, B7, B9	6 7/8	2 1/2	1 3/4	2 5/8
B3, B8	6 7/8	2 1/2	1 5/8	2 1/8



BEAM CAMBER DESIGN
NOT TO SCALE

BEARING PAD DETAILS
(EXP. AND FIX. BEARINGS)

NOT TO SCALE

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

CAMBER NOTES

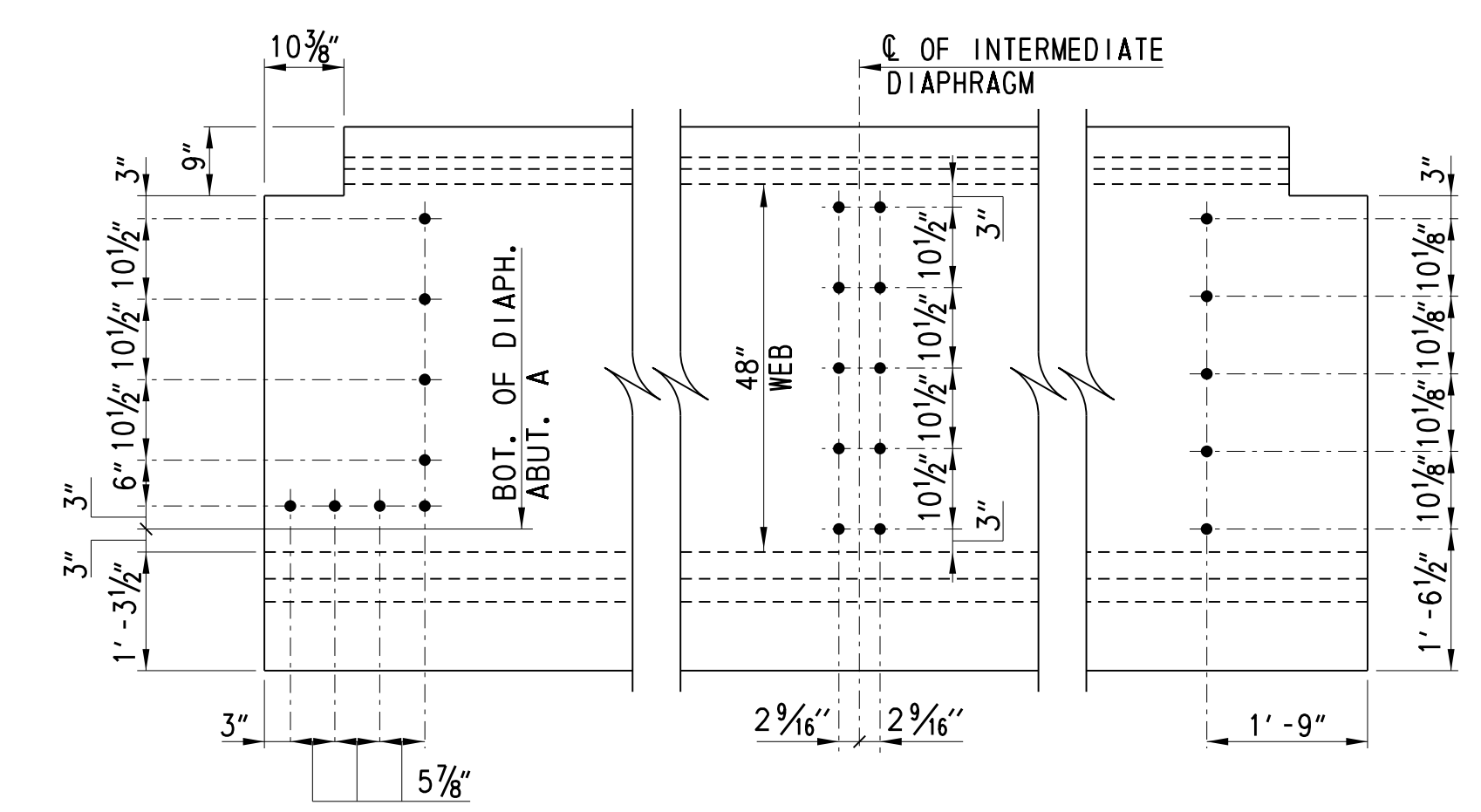
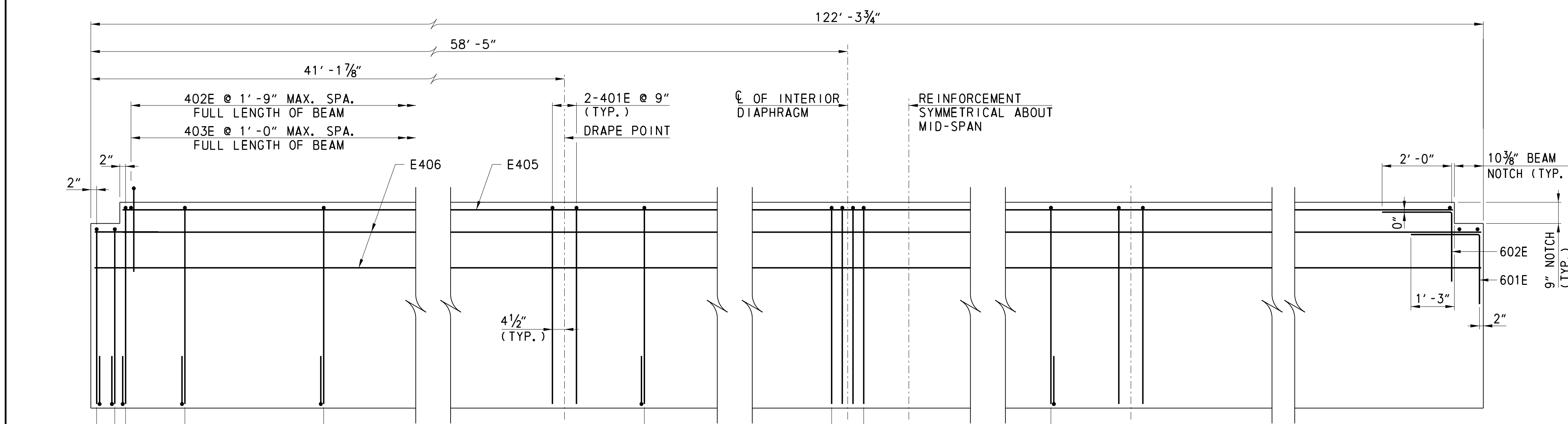
- A1 = ESTIMATED PRESTRESS CAMBER TIMES CREEP FACTOR OF 1.6 AND INITIAL P/S LOSS OF 10%.
- A2 = DEFLECTION DUE TO DEAD LOAD TIMES CREEP FACTOR OF 1.6
- A = A1-A2.
- B = DEFLECTION DUE TO DEAD LOAD OF SLAB, PERMANENT METAL FORMS AND SUPERIMPOSED DEAD LOAD.
- C = NET FINAL CAMBER (A-B).
- CAMBER VALUES 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

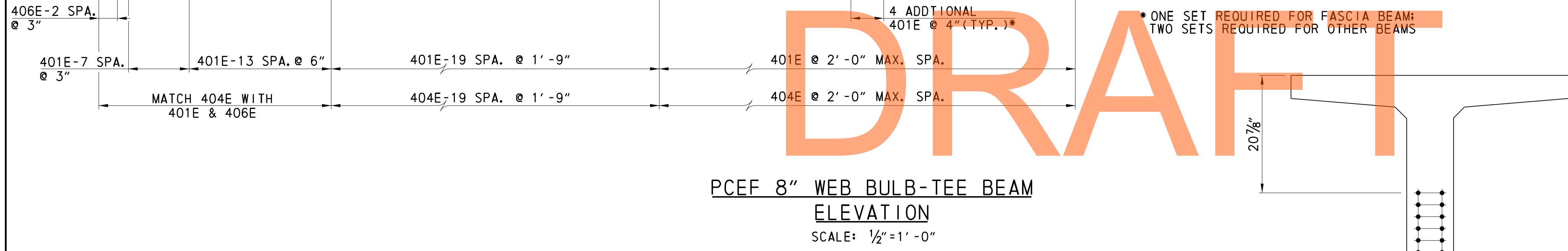
- THE MAXIMUM DESIGN LOAD FOR THE FIXED BEARINGS = 263 KIPS.
- THE MAXIMUM DESIGN LOAD FOR THE EXPANSION BEARINGS = 263 KIPS
- SMOOTH CUT AND DEBURR METAL SHIMS.
- GRIT BLAST AND DEGREASE METAL SHIMS.
- ALL BEARING PADS ARE TO BE MOLDED TO DESIGN DIMENSIONS. CUTTING TO SIZE AFTER FABRICATION IS PROHIBITED.
- MEET THE MATERIAL SPECIFICATIONS FOR ELASTOMERIC BEARING REQUIREMENTS OF AASHTO M251. BEARING PADS SHALL BE SAMPLED FOR TESTING ACCORDING TO AASHTO M254, 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.
- BEARING PADS ARE TO BE PLACED NORMAL TO THE CENTERLINE OF BEAM.

BEAM NOTES

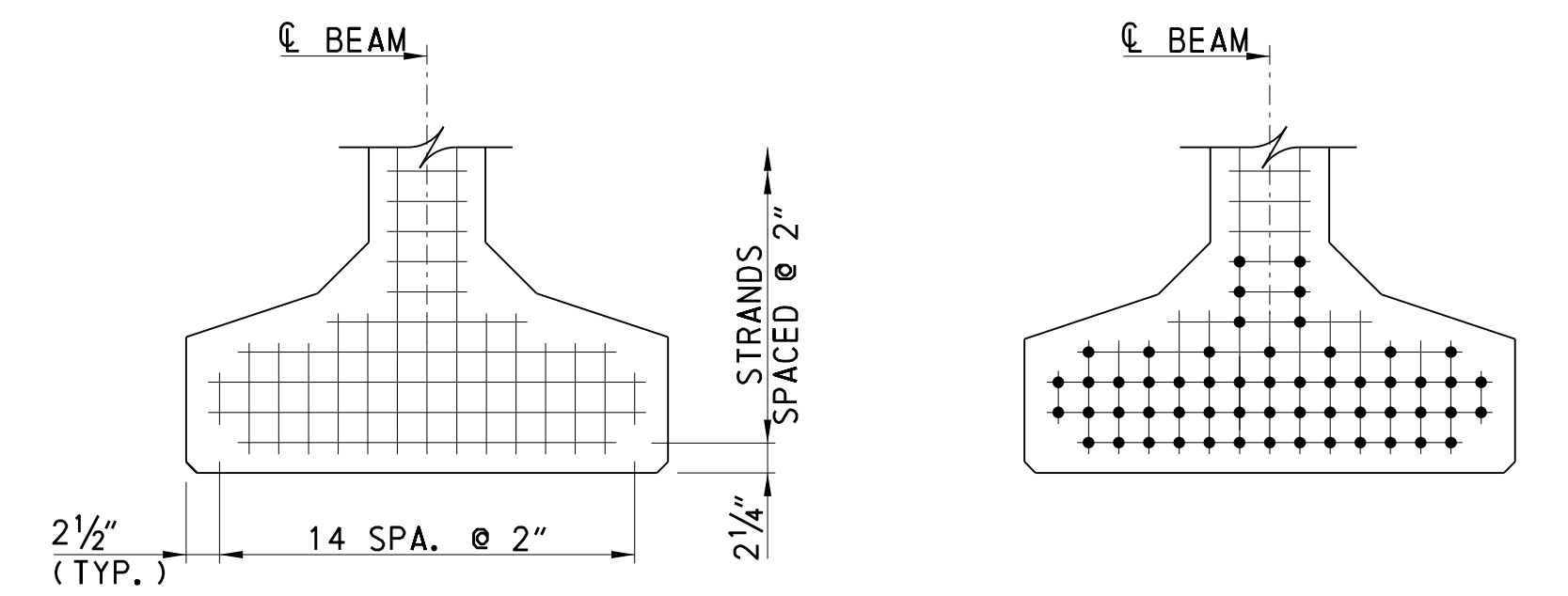
- GIRDERS ARE BULB TEE TYPE PCEF (33/71).
- CONCRETE STRENGTH AT STRAND RELEASE (f'ci) = 6.8 KsI
- CONCRETE STRENGTH AT 28 DAYS (f'c) = 8.0 KsI
- JACKING PRESTRESS STRESS (f pj) PER STRAND = 202.50 KsI
- USE LOW RELAXATION 270 KsI, 0.6" DIAMETER STRANDS (A = 0.217 in²)
- MINIMUM COVER ON REINFORCEMENT BARS:
STIRRUPS - 1" MIN.
ALL OTHERS - 1 1/2" MIN. UNLESS OTHERWISE NOTED
- PROVIDE MILD STEEL REINFORCEMENT CONFORMING TO AASHTO M31, GRADE 60.
- PROVIDE THREADED INSERTS IN P/S BEAMS FOR DIAPHRAGM REINFORCEMENT. DETAILS TO BE SHOWN ON SHOP DRAWINGS.
- 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.



THREADED INSERT LOCATION
NOT TO SCALE

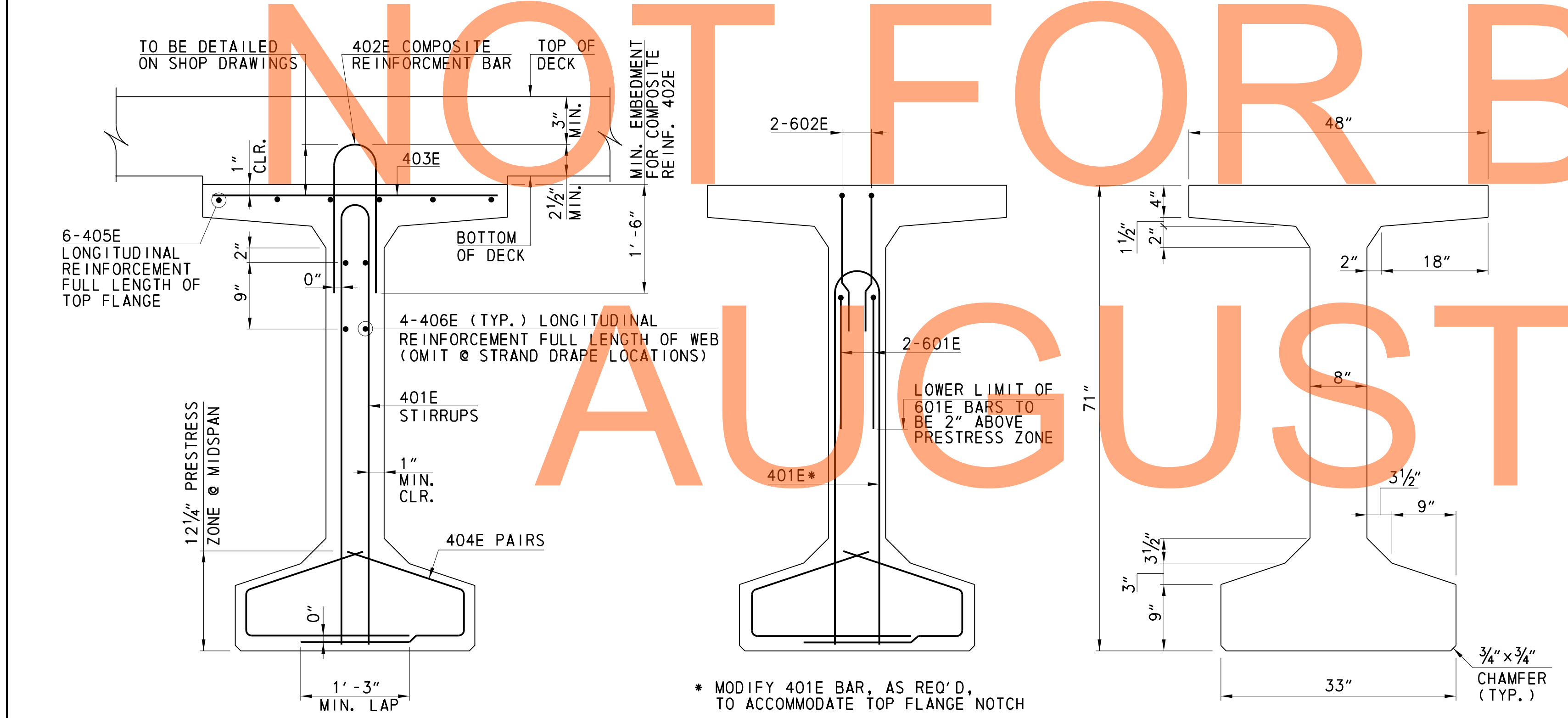


PCEF 8" WEB BULB-TEE BEAM
ELEVATION
SCALE: 1/2"=1'-0"



TYPICAL STRAND
GRID PATTERN
NOT TO SCALE

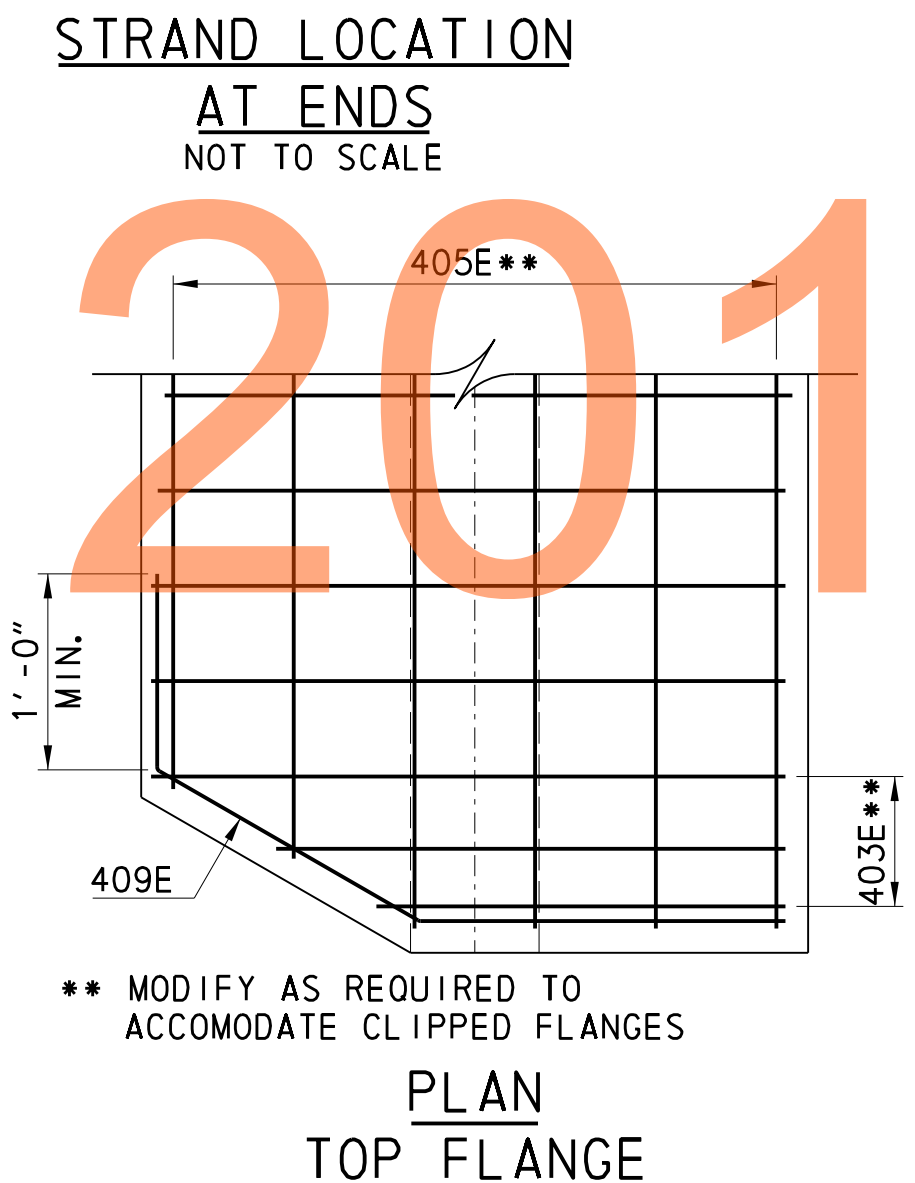
STRAND LOCATION
AT MIDSPAN
NOT TO SCALE



TYPICAL BEAM REINFORCEMENT
NOT TO SCALE

NOTCHED END
REINFORCEMENT
NOT TO SCALE

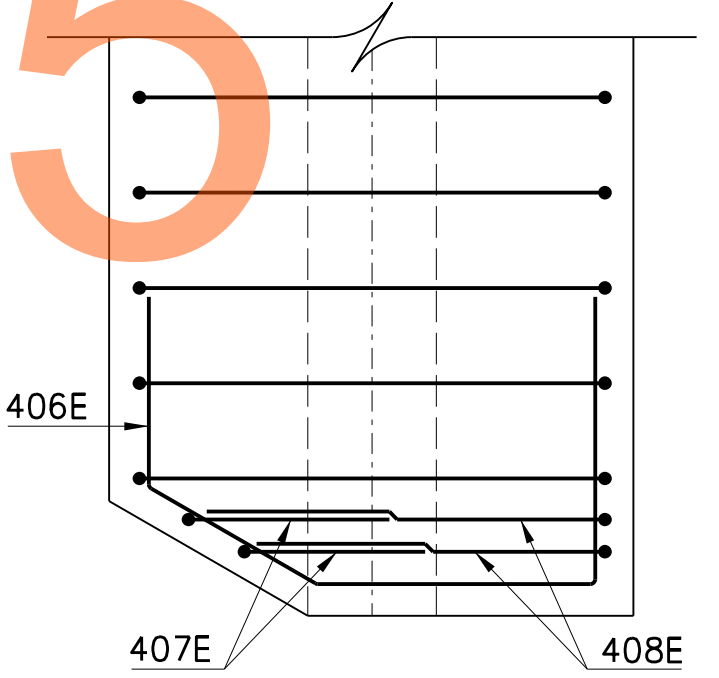
TYPICAL BEAM SECTION
(PCEF BULB TEE BEAM 33x71)
NOT TO SCALE



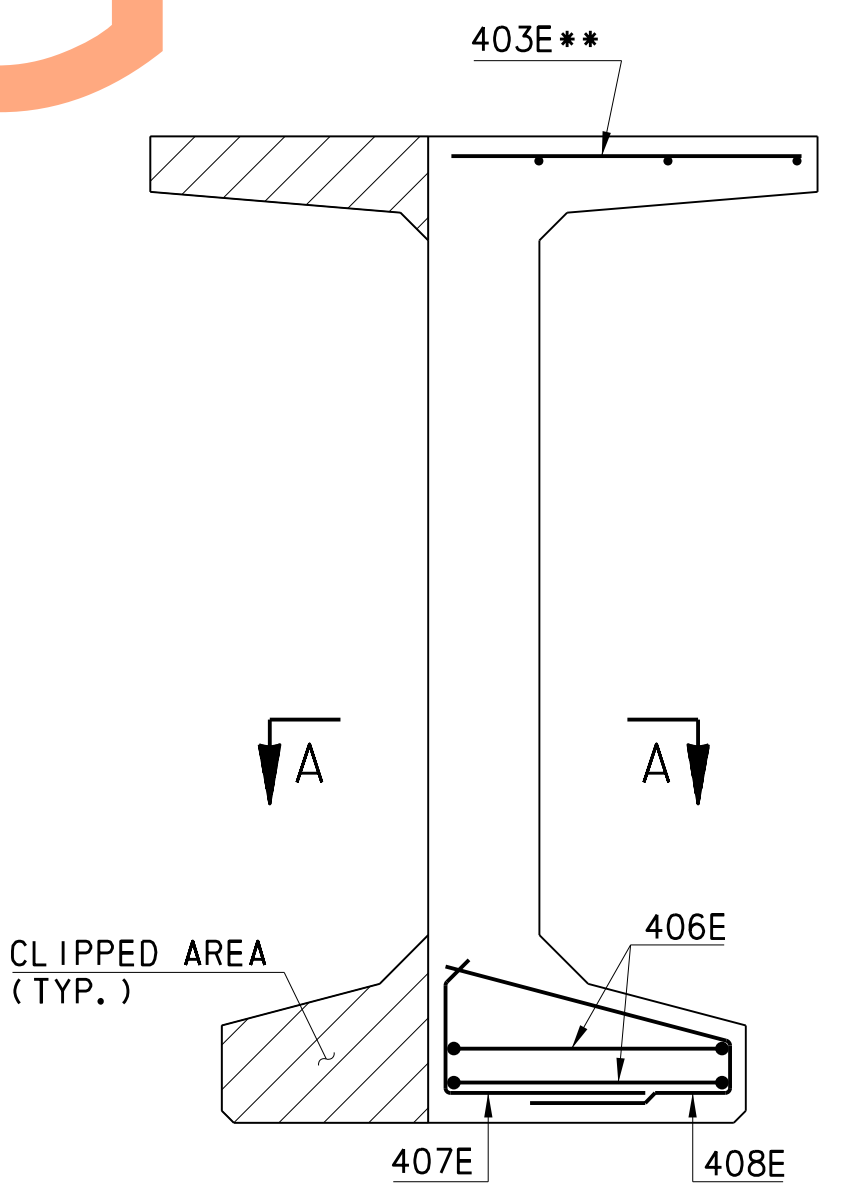
STRAND LOCATION
AT ENDS
NOT TO SCALE

PLAN
TOP FLANGE

LEGEND
CLR. = CLEAR
MAX. = MAXIMUM
MIN. = MINIMUM
REINF. = REINFORCEMENT
REQ'D. = REQUIRED
SPA. = SPACING
TYP. = TYPICAL

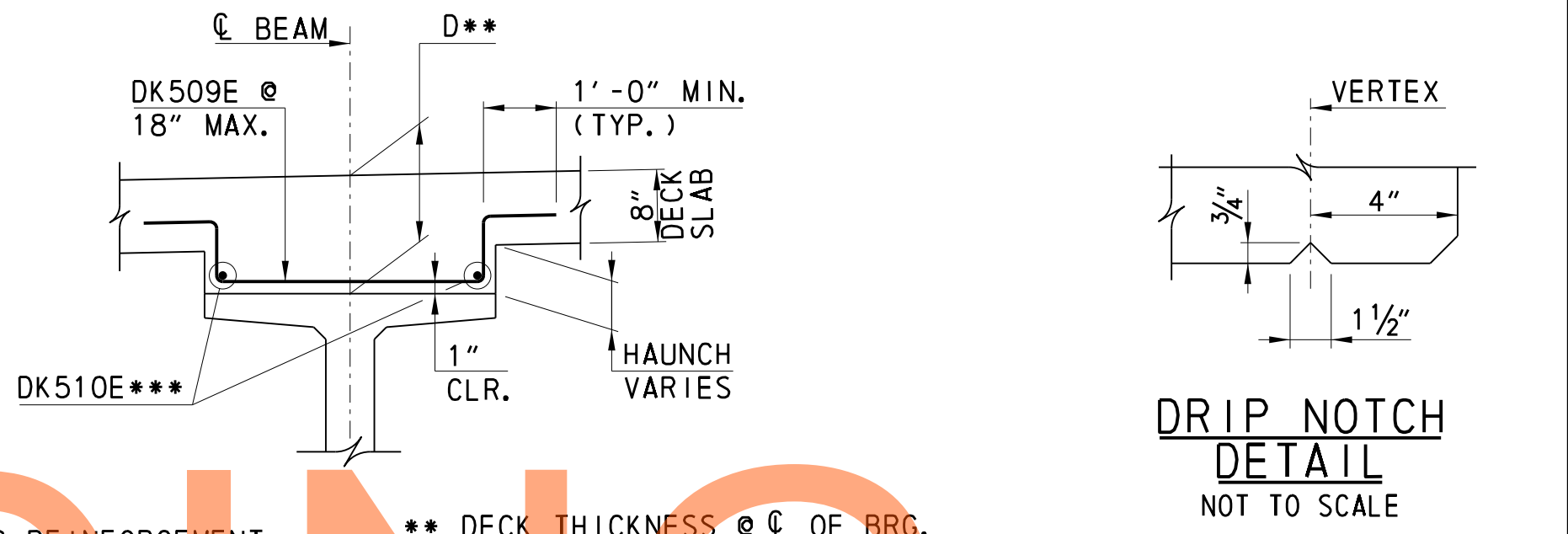
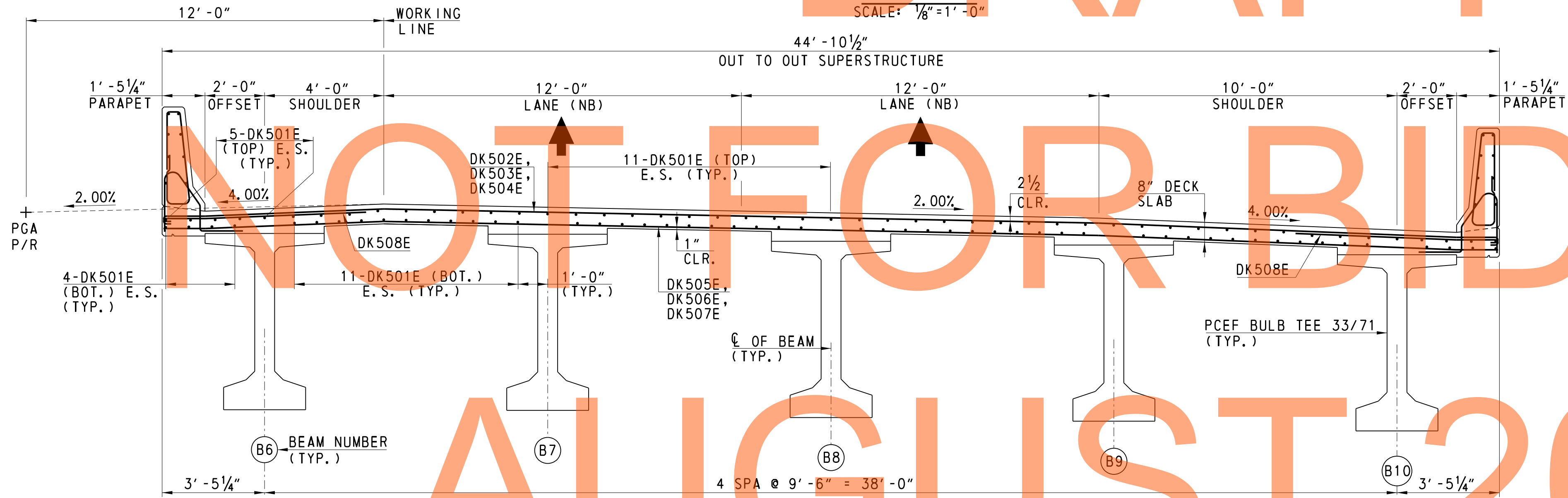
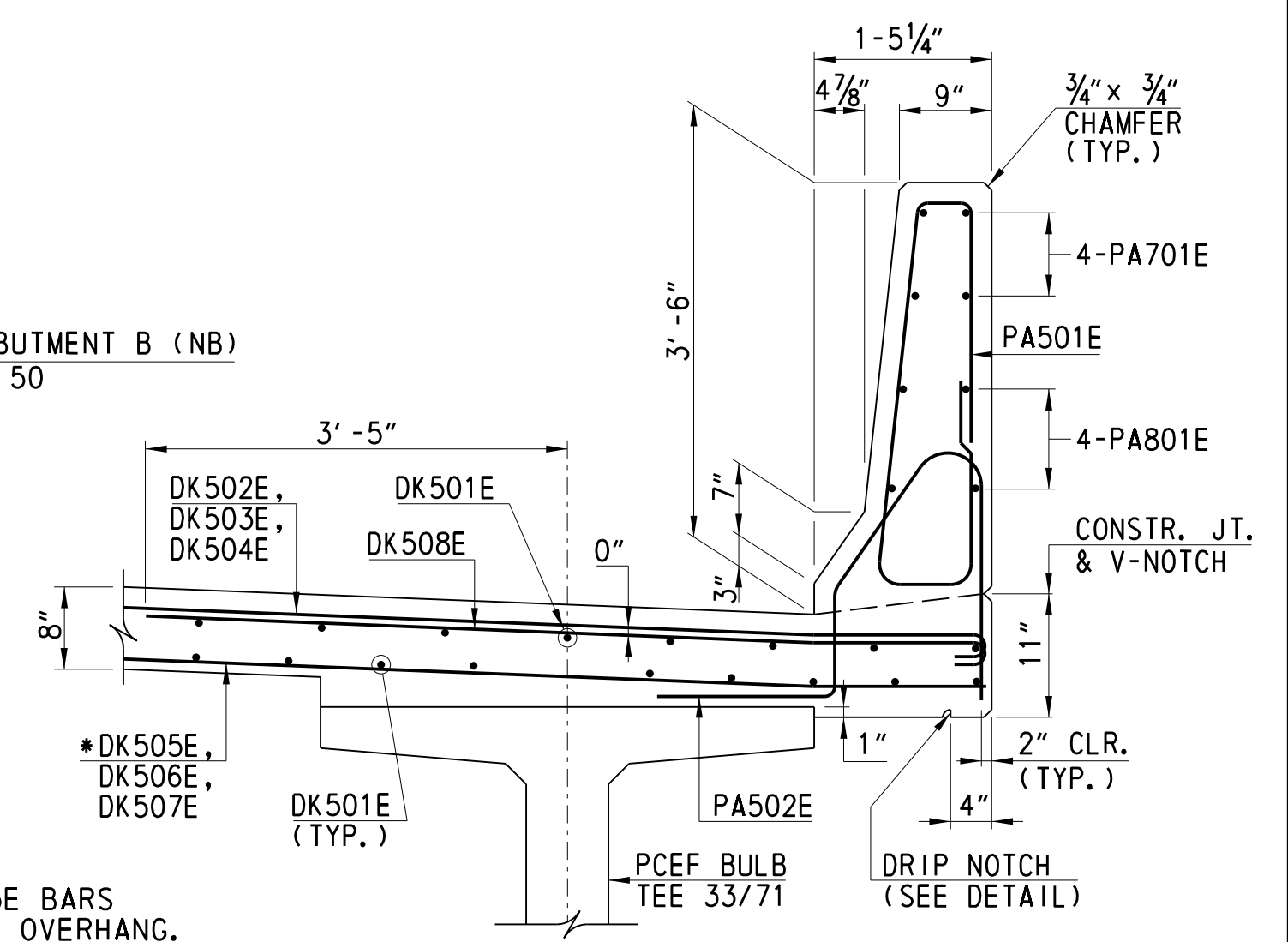
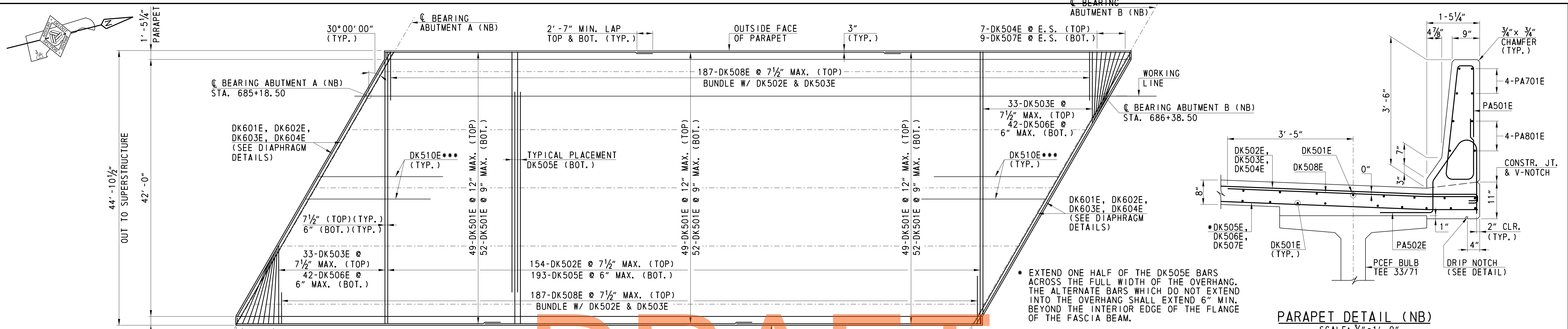


TYPICAL CLIPPED FLANGE
REINFORCEMENT DETAILS
SCALE: 1"=1'-0"



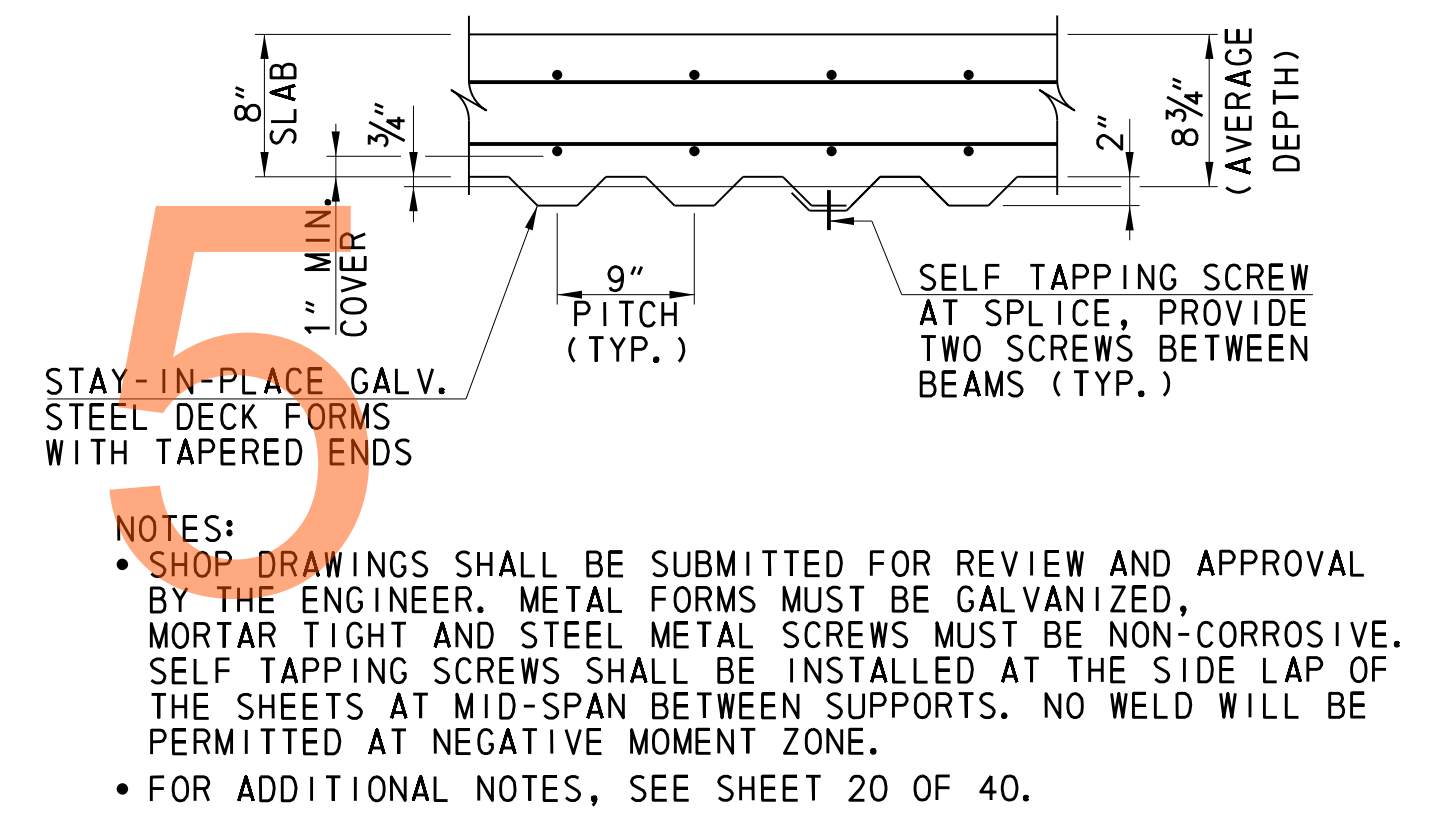
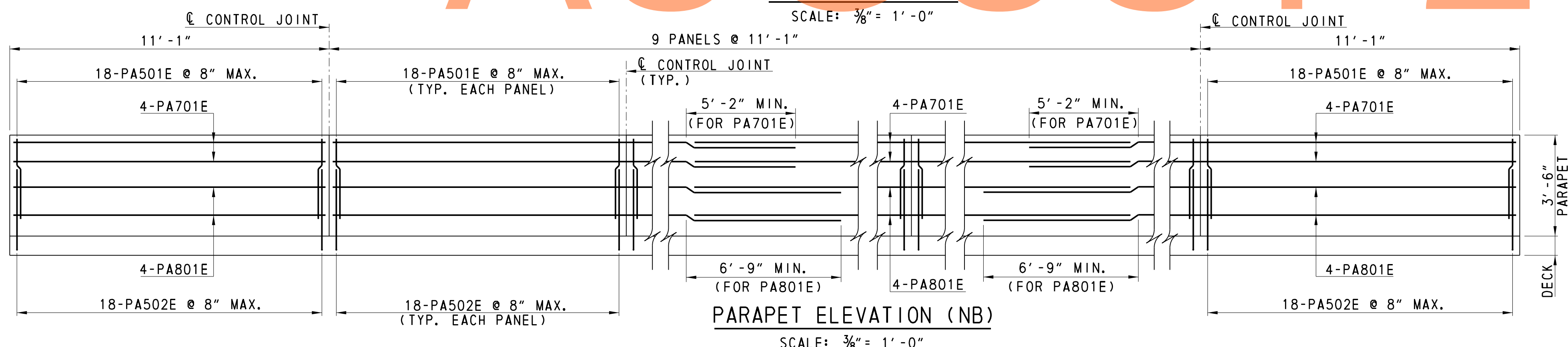
BEAM END VIEW

NOTES:
1. FOR DIAPHRAGM DETAILS,
SEE SHEETS 23, 24, 31 AND 32 OF 40.



NOTES:

- DECK SLAB REINFORCEMENT NOT SHOWN FOR CLARITY.
- FIELD VERIFY ACTUAL HAUNCH DIMENSIONS.
- DECK THICKNESS @ C. OF BRG. AND C. OF BEAM, D = 1'-0 3/8"
- PLACE HAUNCH REINFORCEMENT AT BOTH ENDS OF BEAMS B6 THRU B10



NOTES:

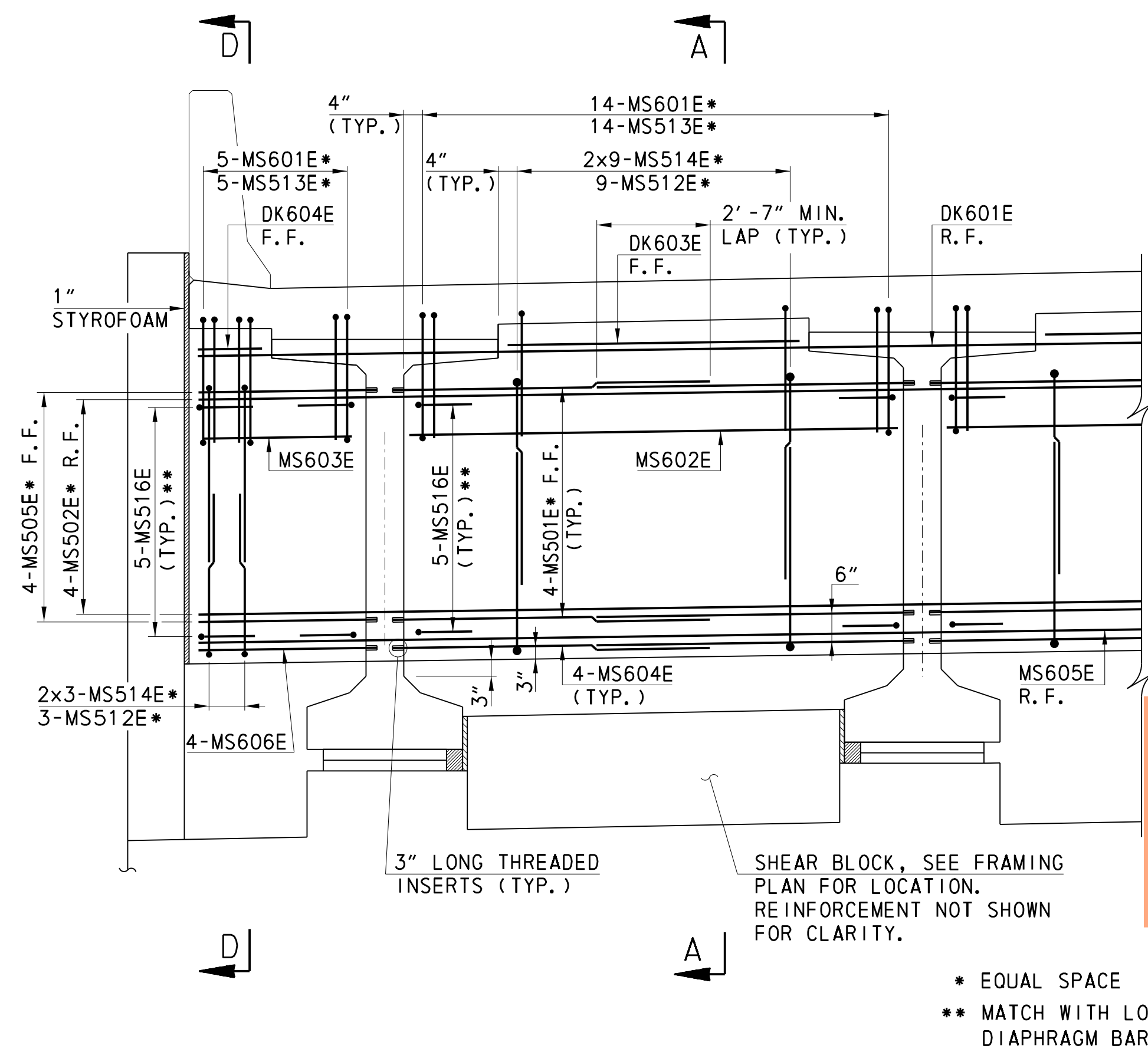
- SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE ENGINEER. METAL FORMS MUST BE GALVANIZED, MORTAR TIGHT AND STEEL METAL SCREWS MUST BE NON-CORROSIVE. SELF TAPPING SCREWS SHALL BE INSTALLED AT THE SIDE LAP OF THE SHEETS AT MID-SPAN BETWEEN SUPPORTS. NO WELD WILL BE PERMITTED AT NEGATIVE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

LEGEND:

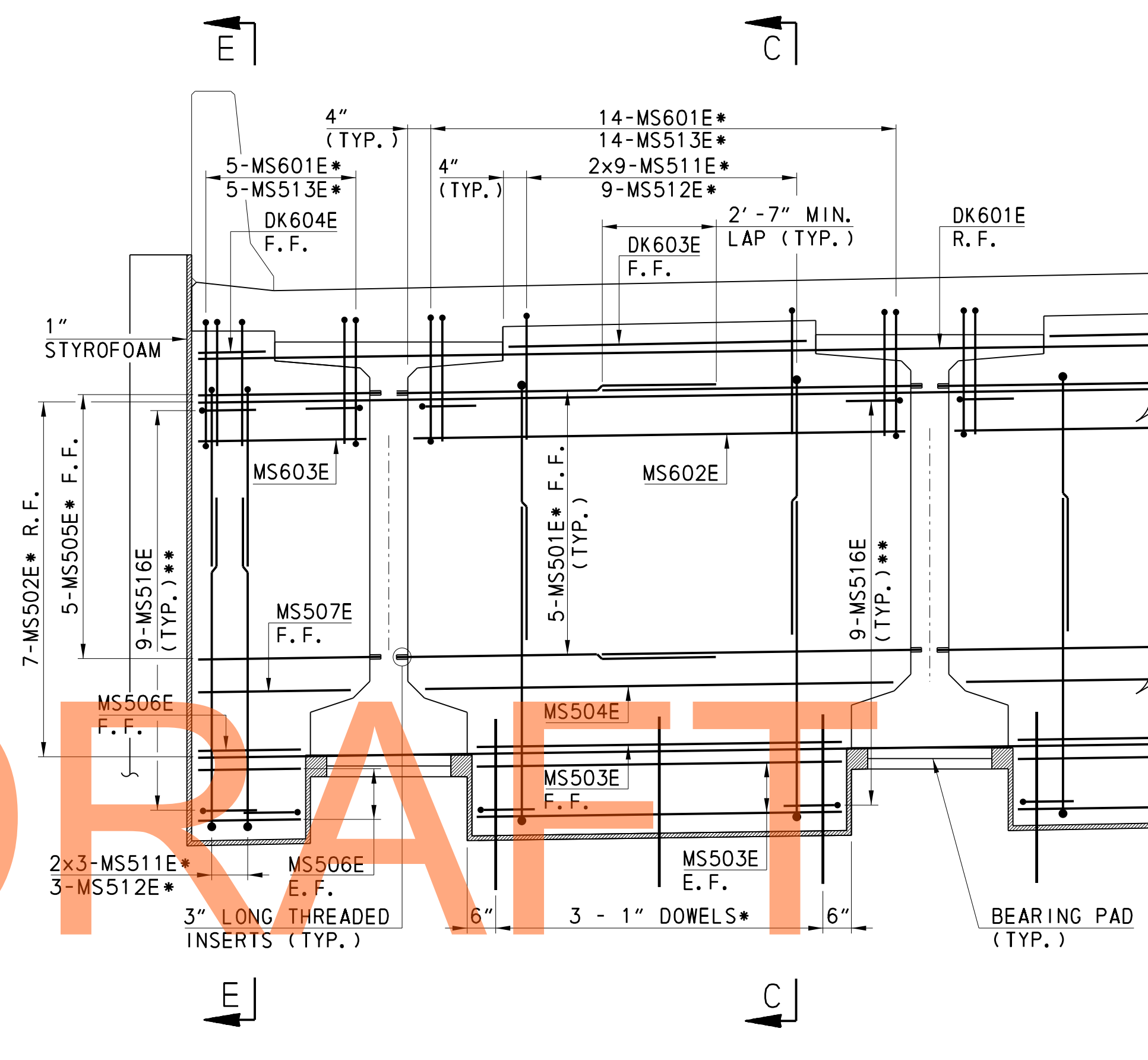
- CLR. = CLEAR
- CONSTR. = CONSTRUCTION
- BOT. = BOTTOM
- BRG. = BEARING
- E.S. = EQUAL SPACING
- JT. = JOINT
- MAX. = MAXIMUM
- MIN. = MINIMUM
- NB = NORTHBOUND
- PGA = PROFILE GRADE APPLICATION
- P/R = POINT OF ROTATION
- SPA. = SPACE
- TYP. = TYPICAL

NOTES:

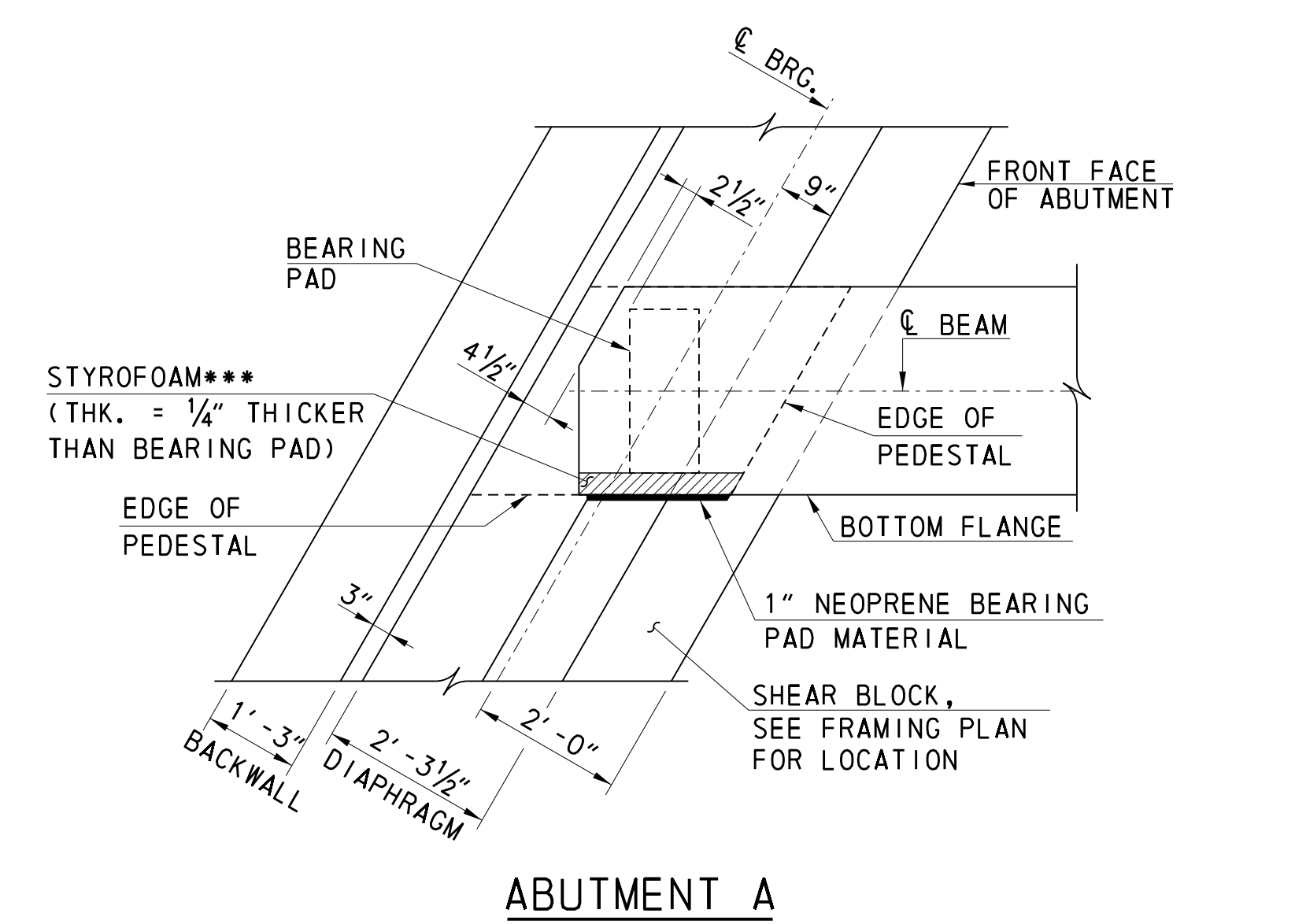
- FOR DIAPHRAGM DETAILS, SEE SHEETS 23 AND 24 OF 40.
- FOR REINFORCEMENT BAR LIST, SEE SHEETS 28 AND 29 OF 40.
- SLIP FORMING FOR PARAPETS IS NOT PERMITTED.
- POUR END AND INTERMEDIATE DIAPHRAGMS BEFORE POURING DECK.
- FOR DECK PARAPET/ APPROACH SLAB PARAPET JOINT DETAILS, SEE SHEET 24 OF 40.
- FOR PARAPET CONTROL JOINT DETAILS, SEE SHEET 4 OF 40.



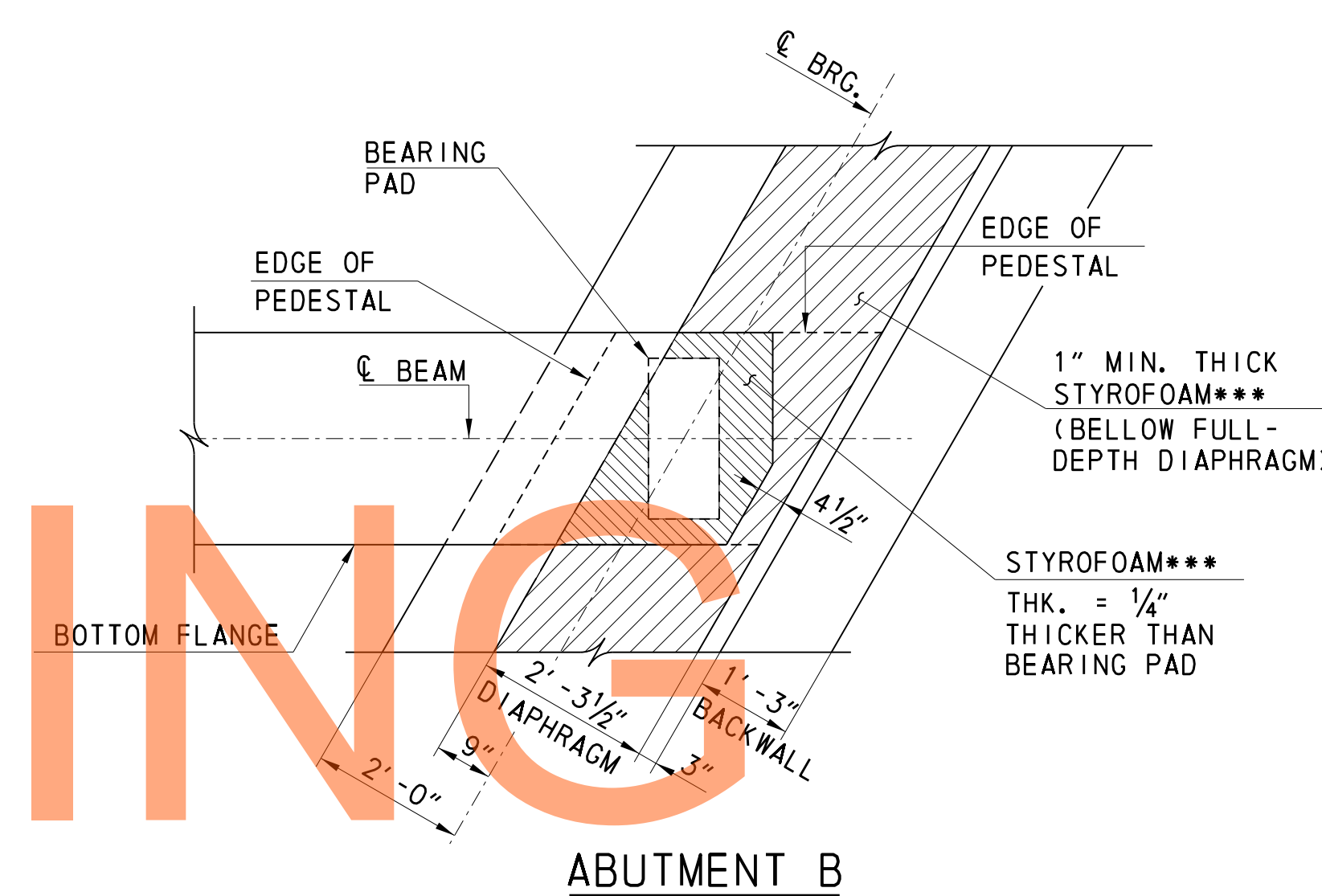
END ABUTMENT A
DIAPHRAGM ELEVATION (NB)
SCALE: 1/2" = 1'-0"



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



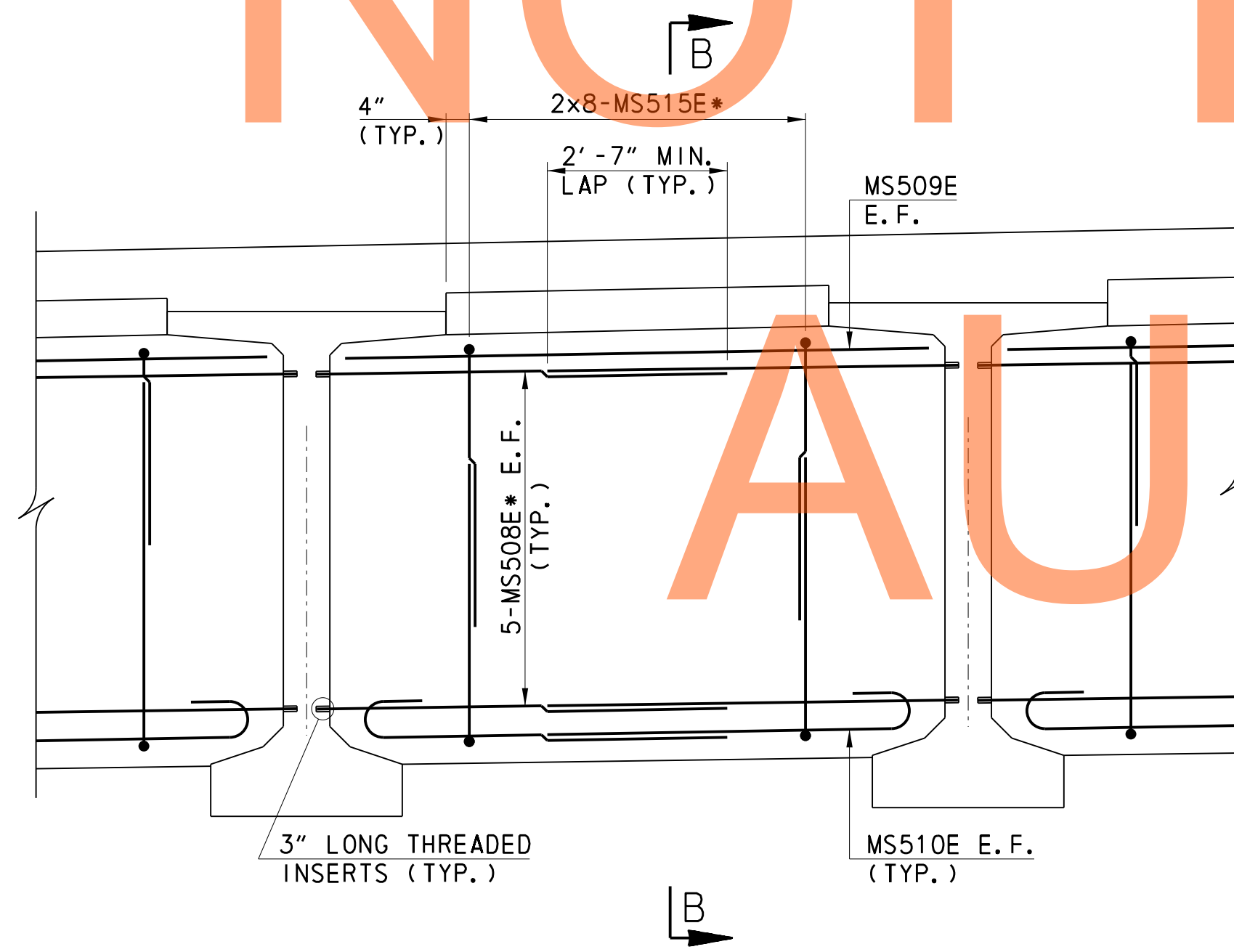
ABUTMENT A



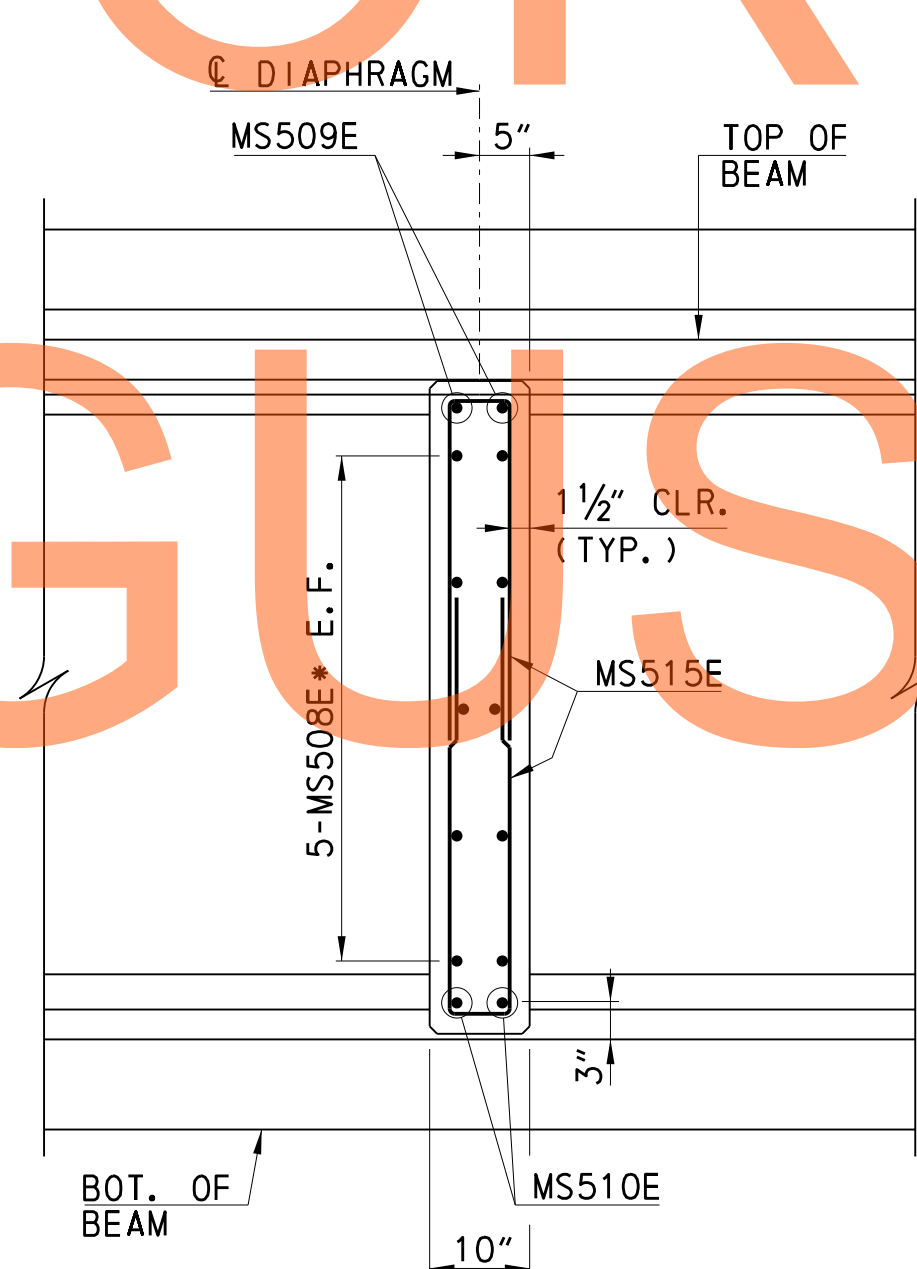
ABUTMENT B

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

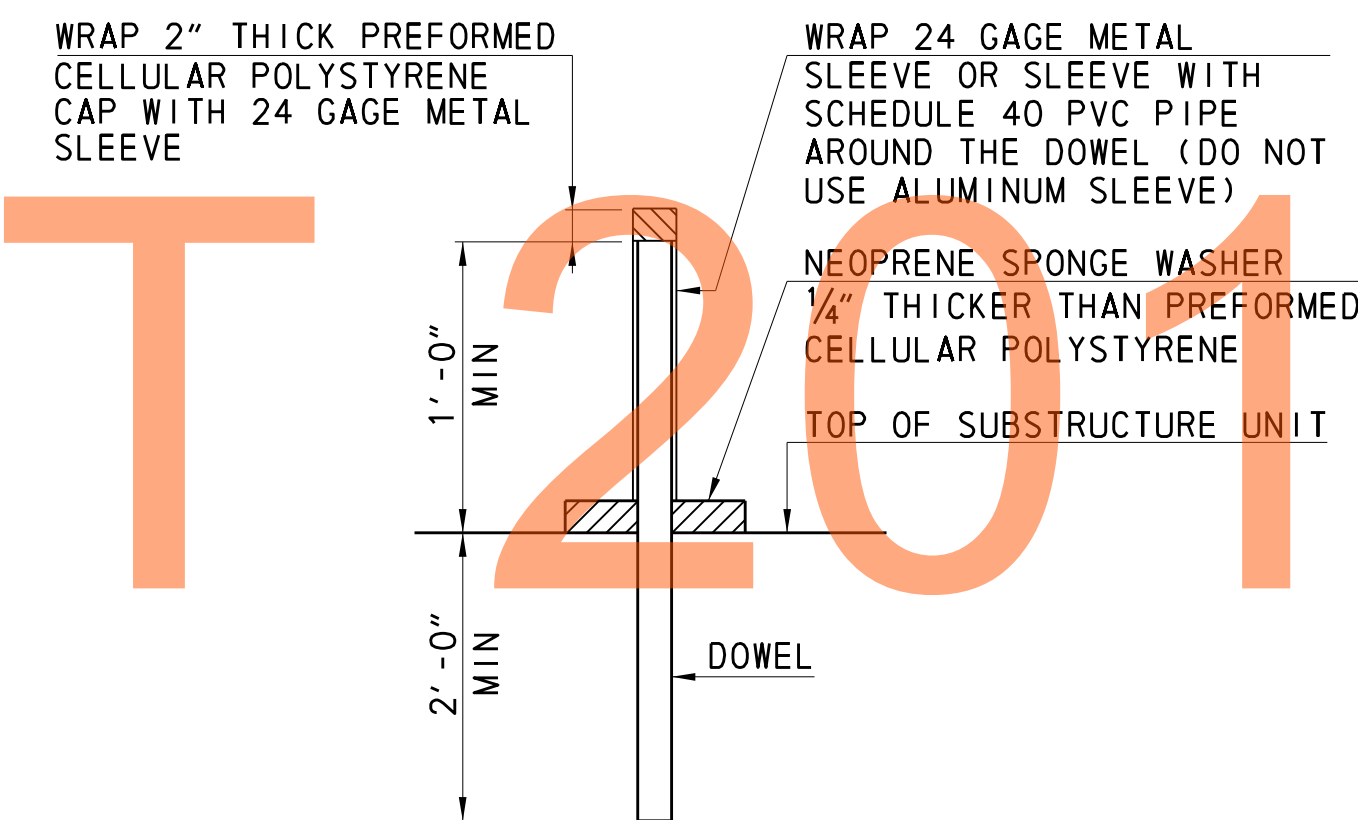
WATERPROOFING LIMITS PLAN
SCALE: 1/2" = 1'-0"



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



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



DOWEL DETAIL
N. T. S.

NOTES:

- FOR SECTIONS A-A, C-C, D-D, AND E-E, SEE SHEET 24 OF 40.
- BITUMINOUS TAR PAPER OR SCHEDULE 40 P.V.C. 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.
- FOR SHEAR BLOCK DETAILS, SEE SHEET 7 OF 40.
- FOR FRAMING PLAN, SEE SHEET 19 OF 40.
- FOR BEARING PAD DETAILS, SEE SHEET 20 OF 40.
- FOR BEAM DETAILS, SEE SHEET 21 OF 40.
- FOR REINFORCEMENT BAR LIST, SEE SHEETS 28 AND 29 OF 40.
- FOR LAYOUT OF DOWELS AND DOWEL REQUIREMENTS, SEE SHEET 9 OF 40.

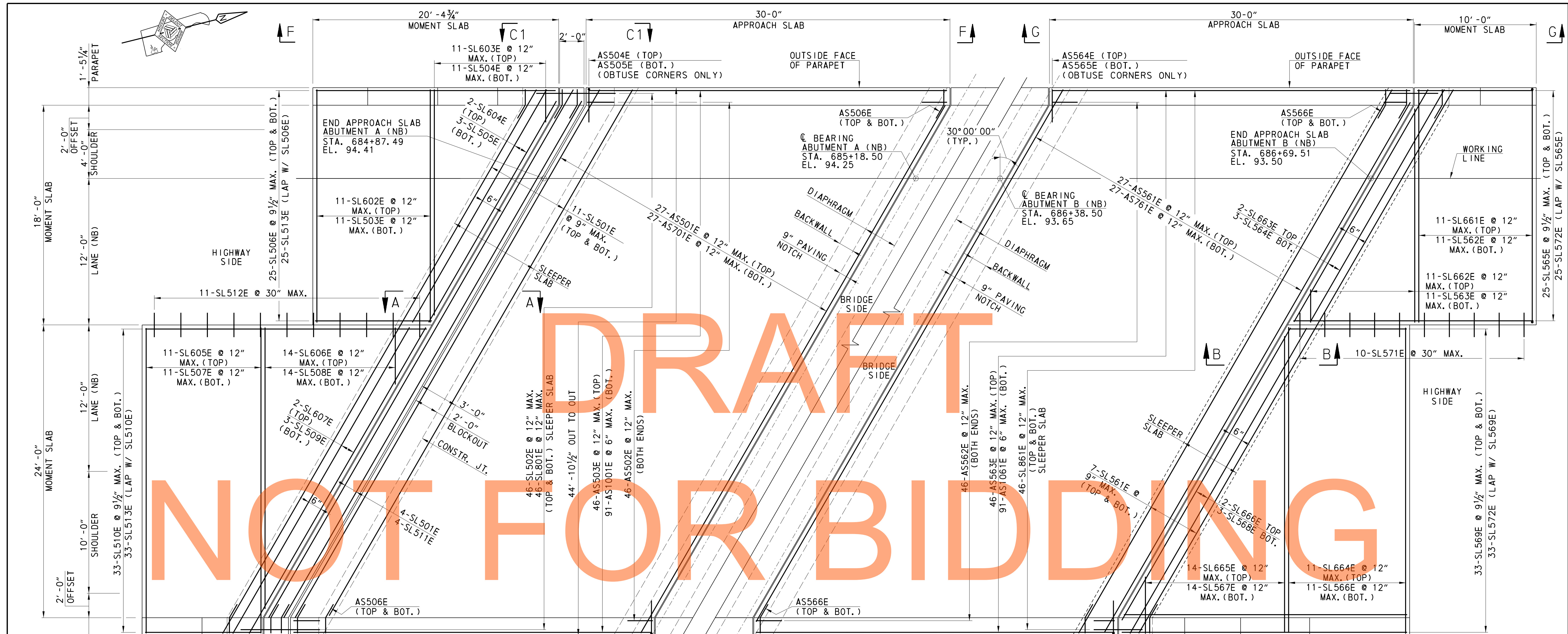
LEGEND

BOT.	=	BOTTOM
CLR.	=	CLEAR
DIA.	=	DIAMETER
E.F.	=	EACH FACE
EO.	=	EQUAL
F.F.	=	FRONT FACE
MIN.	=	MINIMUM
R.F.	=	REAR FACE
SPA	=	SPACING
THK.	=	THICKNESS
TYP.	=	TYPICAL

DRAFT

NOT FOR BIDDING

AUGUST 2015



DRAFT

NOT FOR BIDDING

AUGUST 2015

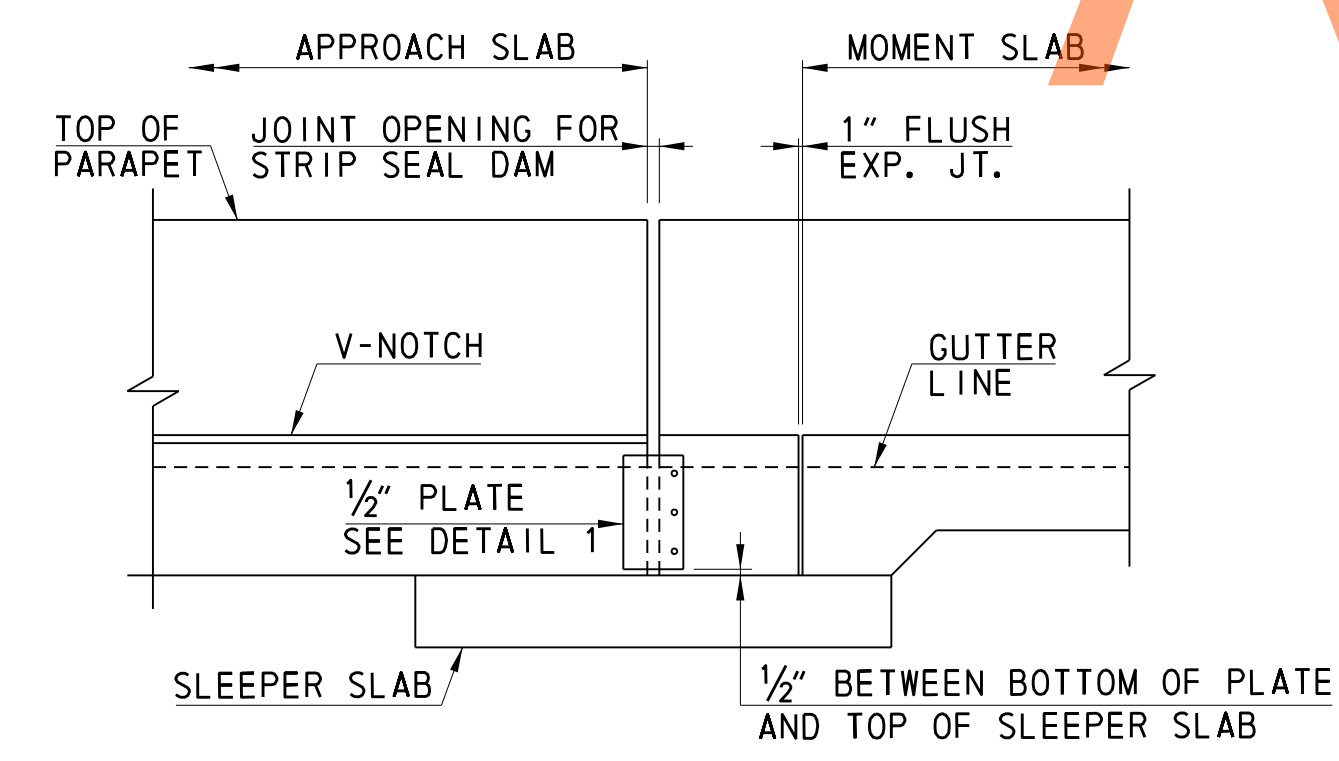
APPROACH SLABS - PLAN
(NB)
SCALE: 1/4" = 1' - 0"

- NOTES:**
- FOR SECTIONS A-A AND B-B, SEE SHEET 26 OF 40.
 - FOR SECTIONS D-D, E-E, F-F AND G-G, SEE SHEET 27 OF 40.
 - FOR REINFORCEMENT BAR LIST, SEE SHEET 29 OF 40.
 - FOR APPROACH SLAB JOINT DETAILS AT END OF BRIDGE DECK, SEE SHEET 24 OF 40.
 - FOR TYPICAL APPROACH SLAB SECTIONS, SEE SHEET 26 OF 40.
 - PAYMENT FOR GALVANIZED STEEL PLATE AND HARDWARE SHALL BE INCIDENTAL TO APPROACH SLAB CONSTRUCTION.

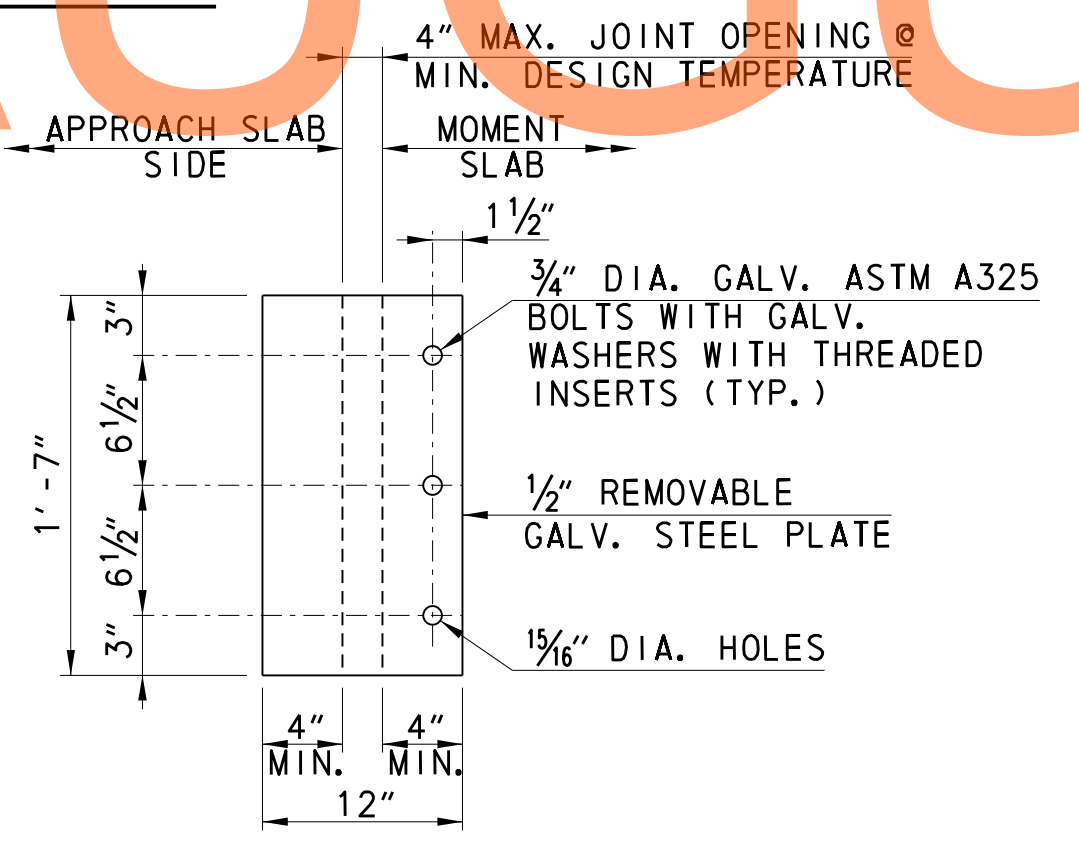
LEGEND

BOT.	=	BOTTOM	MAX.	=	MAXIMUM
GALV.	=	GALVANIZED	MIN.	=	MINIMUM
CONSTR.	=	CONSTRUCTION	NB	=	NORTHBOUND
DIA.	=	DIAMETER	STA.	=	STATION
EL.	=	ELEVATION	TYP.	=	TYPICAL
EXP.	=	EXPANSION	W/	=	WITH
JT.	=	JOINT			

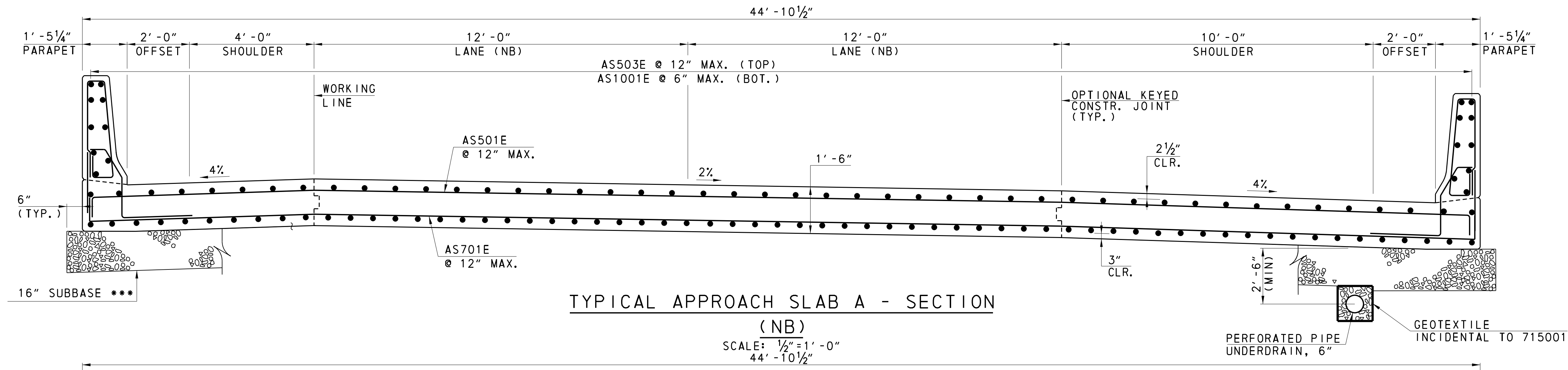
- APPROACH SLAB NOTES**
- PROVIDE CLASS D CONCRETE IN APPROACH SLAB, HEADER SLAB, SLEEPER SLAB AND MOMENT SLAB.
 - PROVIDE CLASS A CONCRETE IN PARAPETS.
 - A HIGHER CLASS OF CONCRETE MAY BE SUBSTITUTED FOR A LOWER CLASS OF CONCRETE AT NO ADDITIONAL COST TO THE DEPARTMENT.
 - PLACE APPROACH SLAB CONCRETE 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.



SECTION C1-C1
NOT TO SCALE

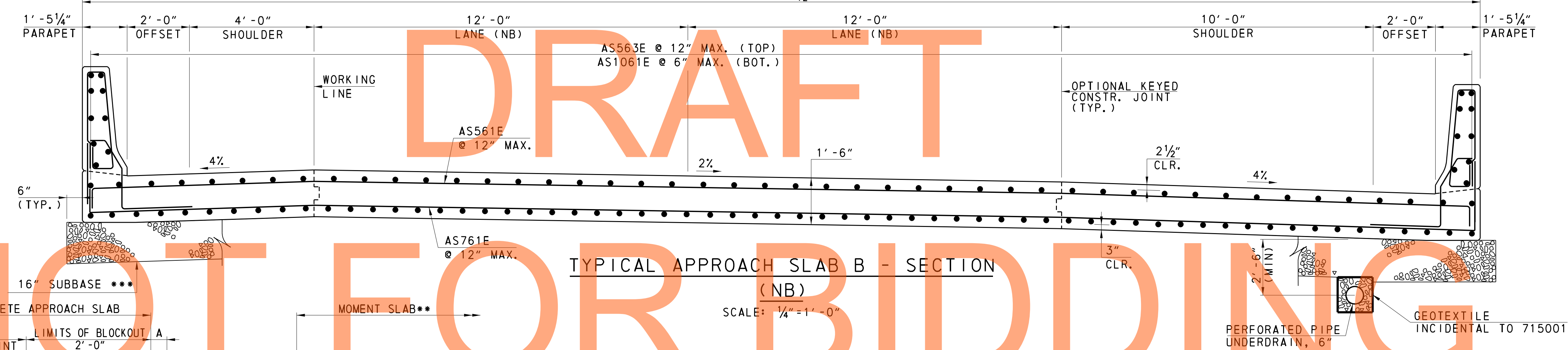


DETAIL 1
NOT TO SCALE



TYPICAL APPROACH SLAB A - SECTION

(NB)
SCALE: 1/2" = 1' - 0"
44' - 10 1/2"



TYPICAL APPROACH SLAB B - SECTION

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



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

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

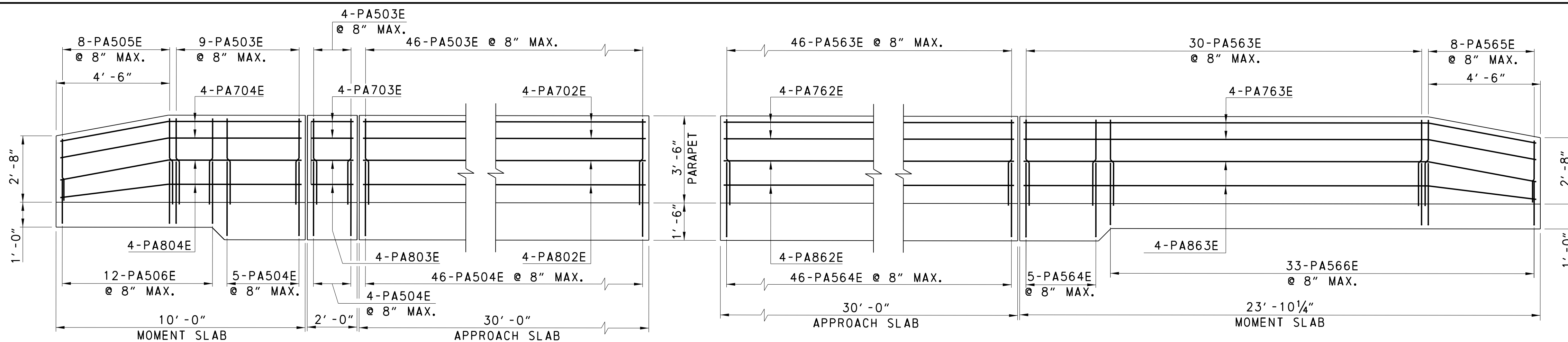
- * TROWEL SMOOTH AND PLACE 2 LAYERS OF 4 MIL. POLYETHYLENE SHEETING AS BOND BREAKER. INCIDENTAL TO APPROACH SLAB PAYMENT.
- ** PAYMENT FOR CLASS D CONCRETE IS INCLUDED UNDER 602014.
- *** GRADED AGGREGATE BASE COURSE, TYPE B.

- NOTES:
1. FOR LOCATION OF SECTIONS A-A AND B-B, SEE SHEET 25 OF 40.
 2. FOR REINFORCEMENT BAR LIST, SEE SHEETS 28 AND 29 OF 40.
 3. FOR STRIP SEAL DAM DETAILS, SEE SHEET 38 OF 40.
 4. PAYMENT FOR POLY-VINYL CHLORIDE PIPE SHALL BE INCIDENTAL TO SLEEPER SLAB CONSTRUCTION.

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

TABLE - 1
INSTALLATION OPENING "A" @ VARIOUS TEMPERATURES

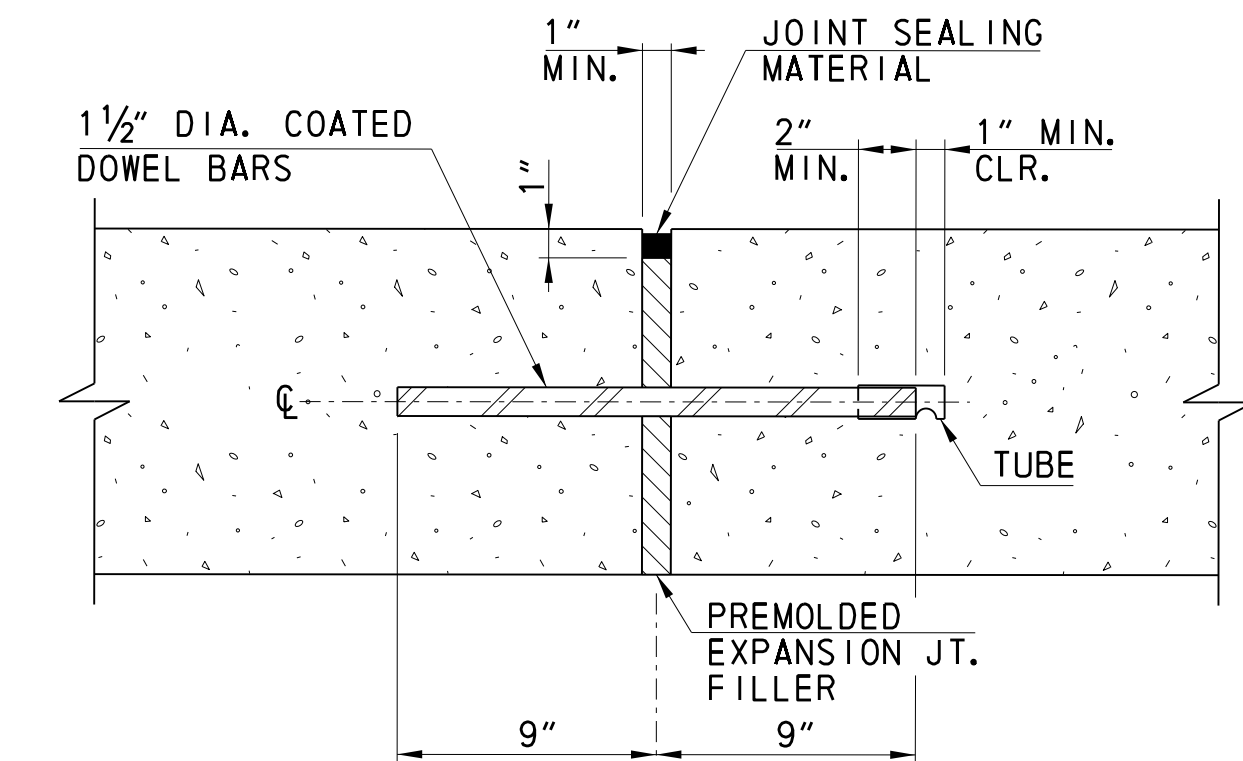
TEMPERATURE (°F)	
10	20
30	32
40	50
60	68
70	80
90	100



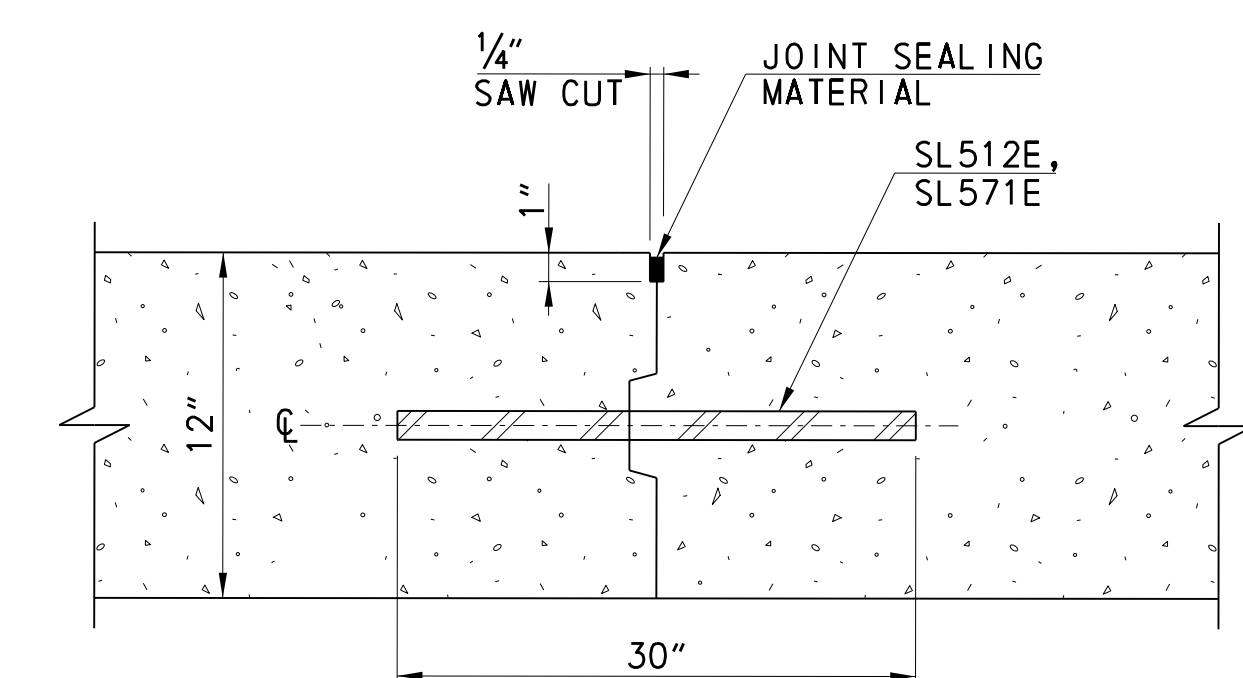
SECTION D-D

PARAPET ELEVATION

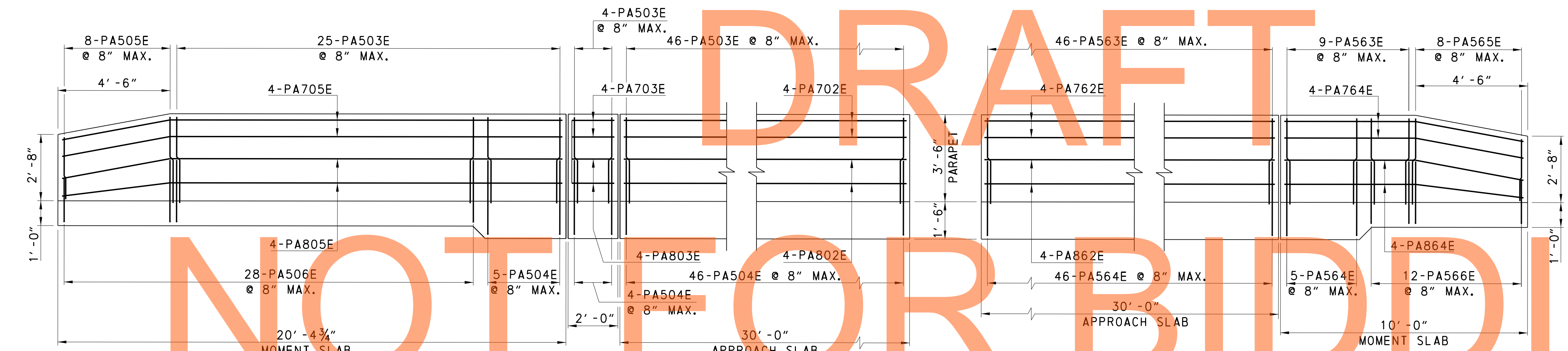
SECTION E-E



DETAIL 1



DETAIL 2

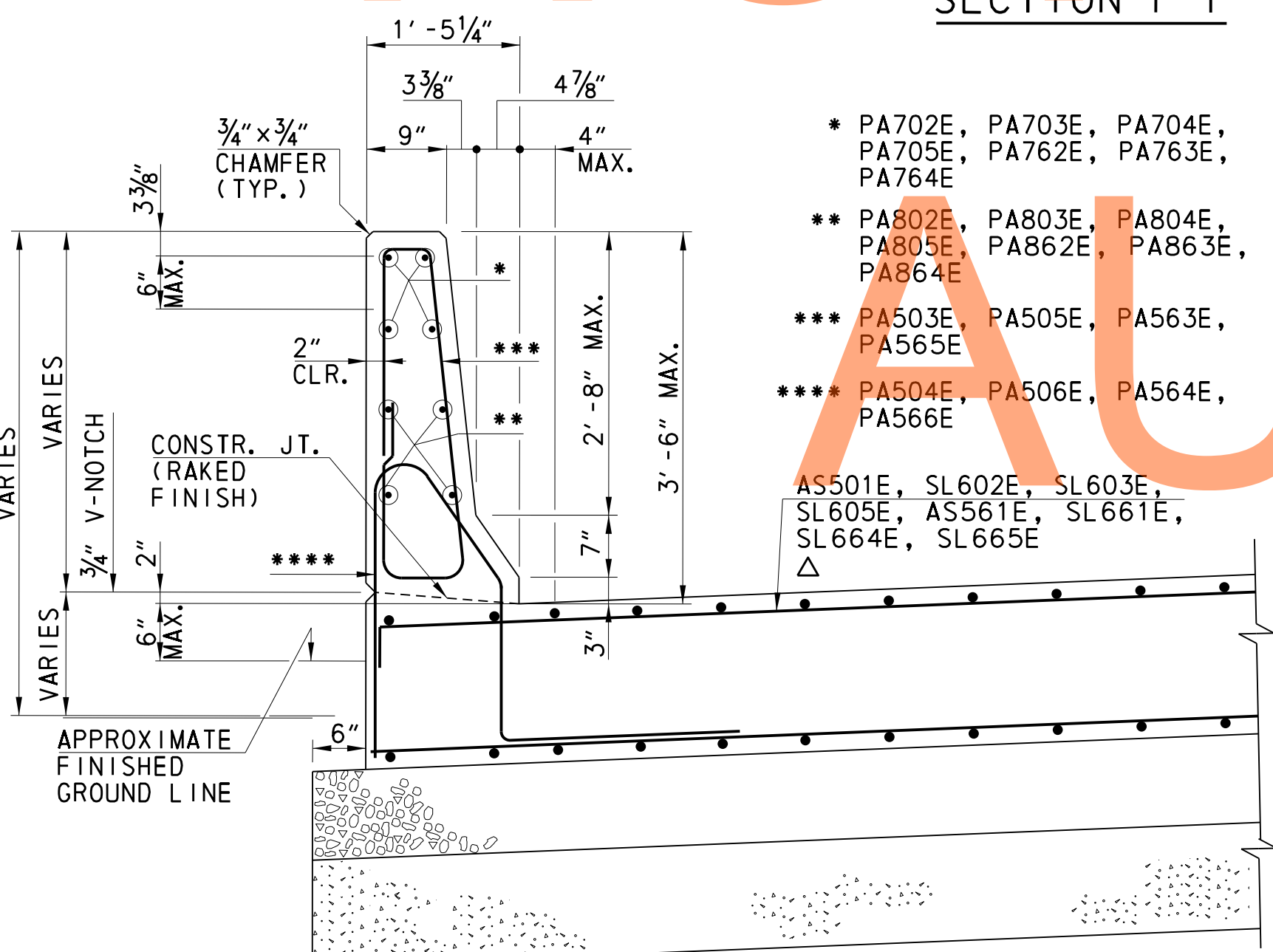


SECTION F-F

PARAPET ELEVATION

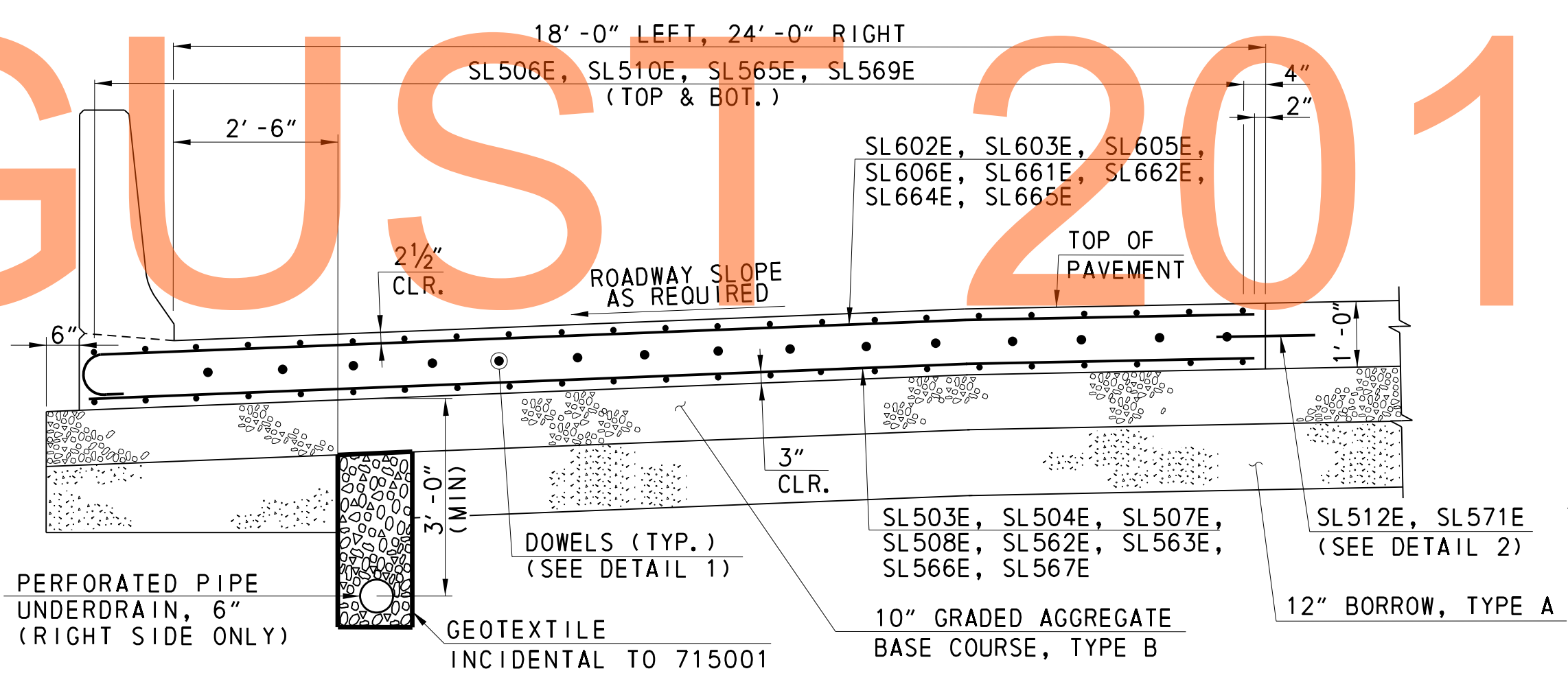
SECTION G-G

DRAFT
NOT FOR BIDDING



PARAPET DETAIL

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



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

SCALE: 1/2" = 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 SHEETS 28 AND 29 OF 40.
9. SLIP FORMING FOR PARAPETS IS NOT PERMITTED.
10. FOR LOCATION OF SECTIONS D-D, E-E, F-F AND G-G, SEE SHEET 25 OF 40.

LEGEND

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

Δ USE 90° BEND AT APPROACH SLABS.
USE 180° BEND AT MOMENT SLABS.

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

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

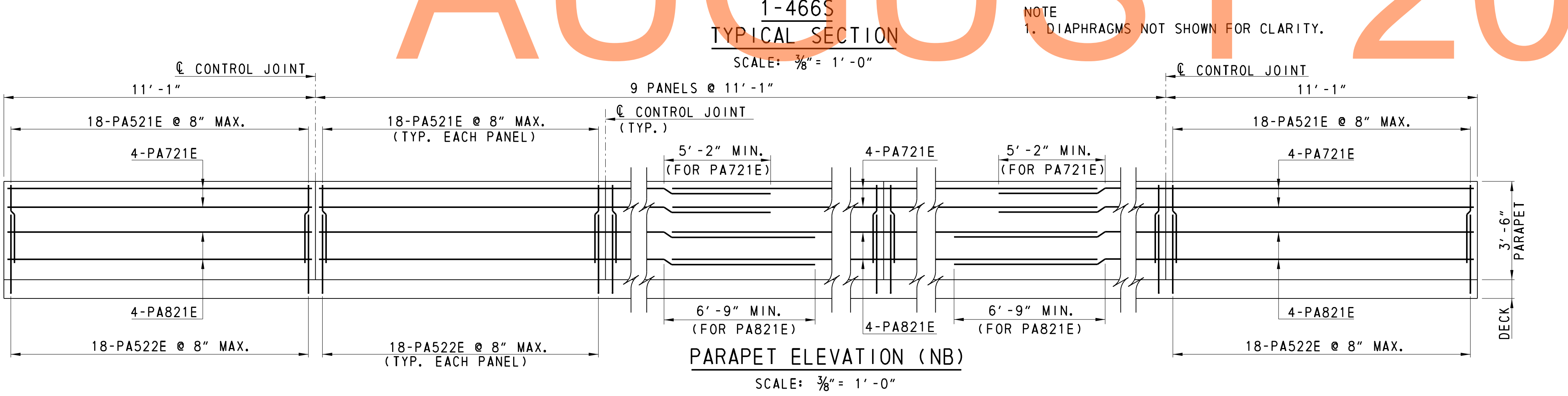
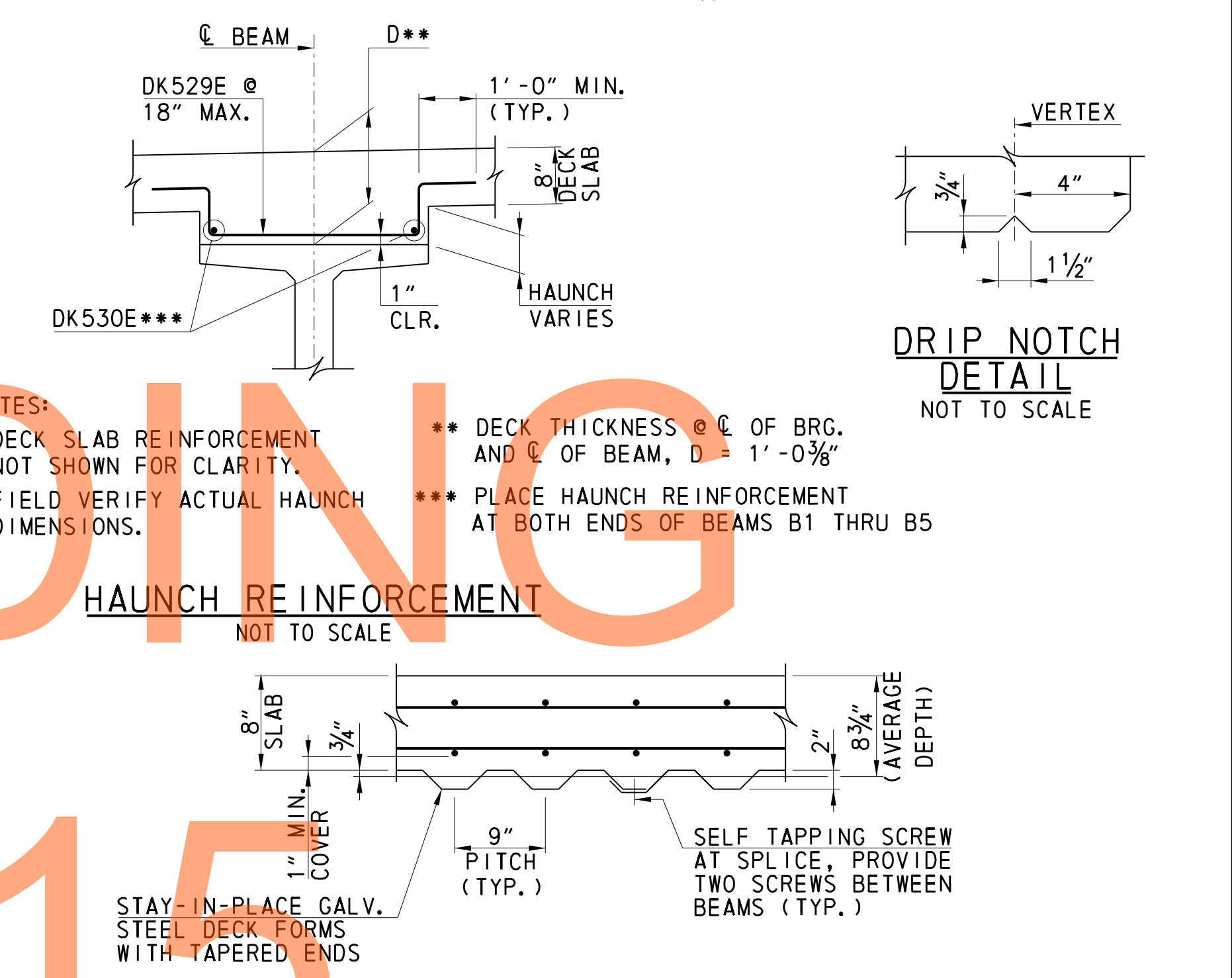
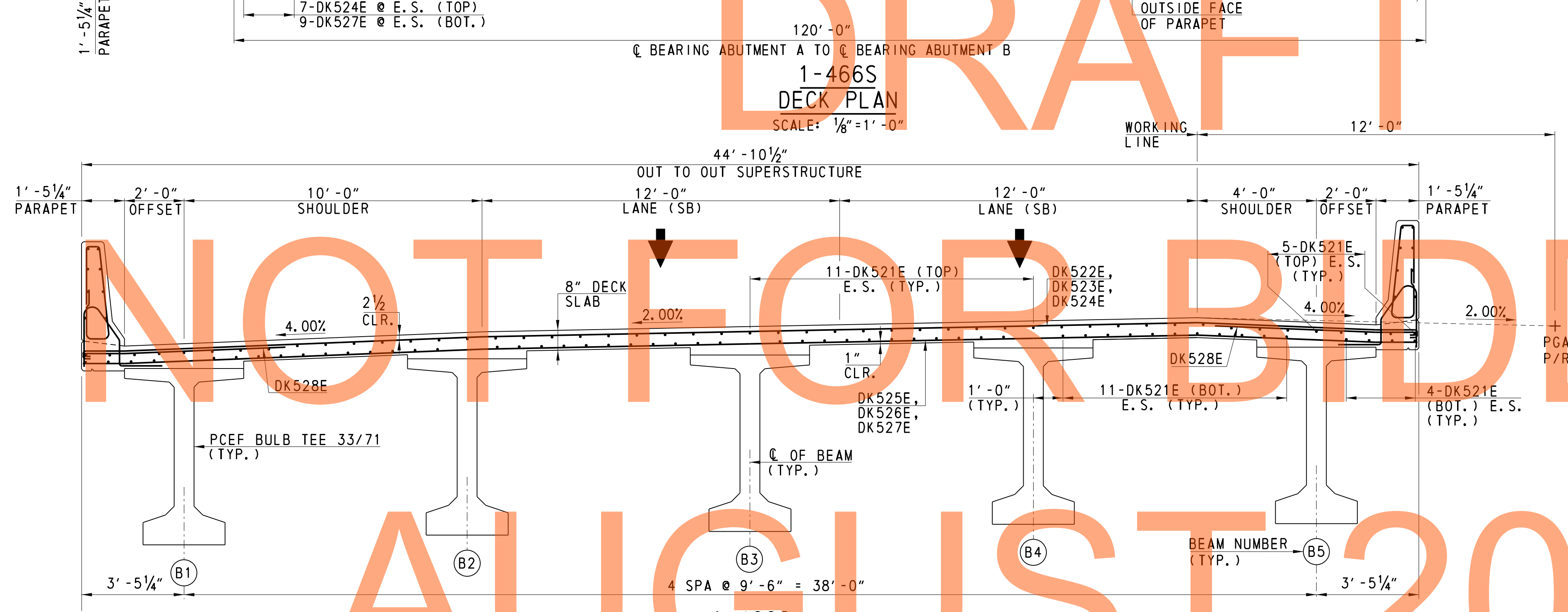
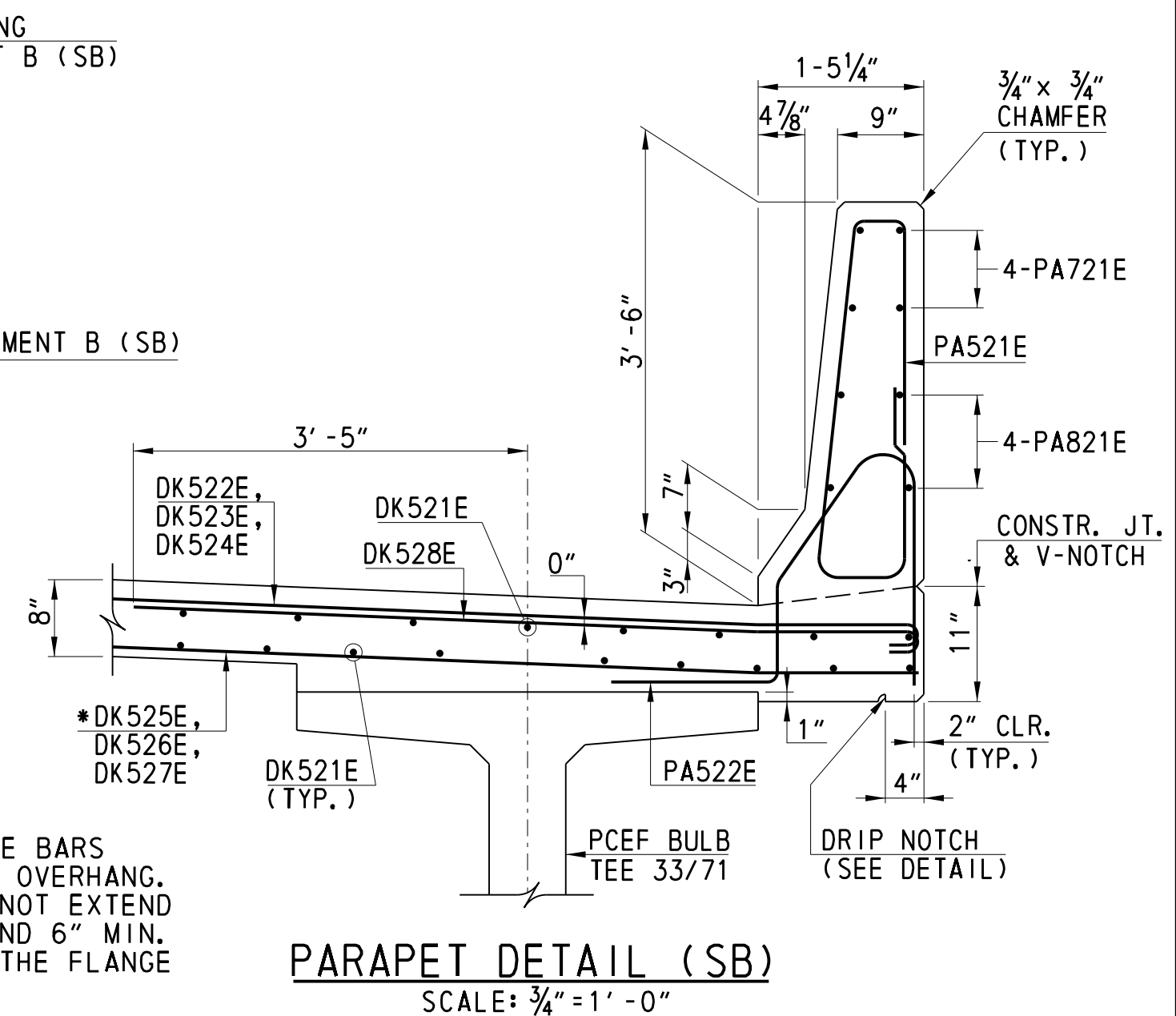
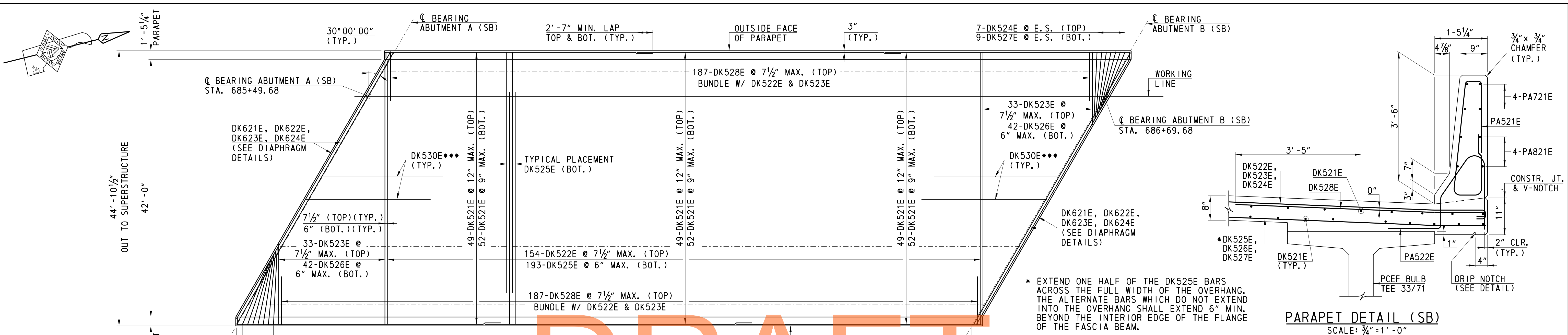
* VARY AT EQUAL INCREMENTS

SPECIFICATIONS				BENDING DIMENSIONS (FEET-INCHES /QUARTER INCH)													
QTY.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F/R	G	H	J	K	O		
APPROACH SLAB, MOMENT SLAB, SLEEPER SLAB, HEADER SLAB, PARAPET AT ABUTMENT A (NB)																	
27	5	53-50	AS501E	17			1-00	51-50	1-00								
92	5	6-62	AS502E	17		2-90	1-02	2-90									
46	5	29-80	AS503E	STR		29-80											
2	5	4-113	AS504E	17		0-113	4-00	0-00									
2	5	4-00	AS505E	STR		4-00											
4	5	3-31	AS506E	16	0-00	0-00	1-31	2-00				1-00		1-83	3-00		
4	6	51-50	AS601E	STR		51-50											
27	7	51-50	AS701E	STR		51-50											
91	10	29-80	AS1001E	STR		29-80											
26	5	51-50	SL501E	STR		51-50											
46	5	8-00	SL502E	T1	0-52	1-60	2-02	1-60	2-02		0-52						
11	5	19-11	SL503E	STR		19-11											
1X11	5	2-60	SL504E	STR		2-60											
		TO 17-60				TO 17-60											
3	5	20-73	SL505E	STR		20-73											
2X25	5	9-80	SL506E	STR		9-80											
		TO 20-03				TO 20-03											
11	5	25-11	SL507E	STR		25-11											
1X14	5	2-60	SL508E	STR		2-60											
		TO 22-03				TO 22-03											
3	5	28-113	SL509E	STR		28-113											
2X33	5	9-80	SL510E	STR		9-80											
		TO 23-33				TO 23-33											
52	5	3-31	SL511E	16	0-00	0-00	1-31	2-00				1-00		1-83	3-00		
11	5	2-60	SL512E	STR		2-60											
58	5	5-82	SL513E	17		2-40	1-02	2-40									
4	6	51-50	SL601E	STR		51-50											
11	6	19-91	SL602E	1	0-80	19-11											
1X11	6	3-20	SL603E	1	0-80	2-60											
		TO 18-20			TO 0-80	TO 17-60											
2	6	20-73	SL604E	STR		20-73											
11	6	25-91	SL605E	1	0-80	25-11											
1X14	6	3-20	SL606E	1	0-80	2-60											
		TO 22-83			TO 0-80	TO 22-03											
2	6	28-113	SL607E	STR		28-113											
92	8	7-00	SL801E	STR		7-00											

SPECIFICATIONS				BENDING DIMENSIONS (FEET-INCHES /QUARTER INCH)													
QTY.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F/R	G	H	J	K	O		
134	5	7-72	PA503E	28		2-91	0-12	2-92									
110	5	6-102	PA504E	29		1-43	2-52										
2X8	5	*6-02	PA505E	28		*1-111	*0-22	*1-112									
		TO *7-72				TO *2-91	TO *0-12	TO *2-92									
40	5	5-102	PA506E	29		0-103	1-112										
8	7	29-80	PA702E	STR		29-80											
8	7	1-80	PA703E	STR		1-80											
4	7	9-80	PA704E	16	0-00	0-00	5-30	4-50			0-80		4-40	9-70			
4	7	20-13	PA705E	16	0-00	0-00	15-83	4-50			0-80		4-40	20-03			
8	8	29-80	PA802E	STR		29-80											
8	8	1-80	PA803E	STR		1-80											
4	8	9-80	PA804E	16	0-00	0-00	5-30	4-50			0-80		4-40	9-70			
4	8	20-13	PA805E	16	0-00	0-00	15-83	4-50			0-80		4-40	20-03			
APPROACH SLAB, MOMENT SLAB, SLEEPER SLAB, HEADER SLAB, PARAPET AT ABUTMENT B (NB)																	
27	5	53-50	AS561E	17		1-00	51-50	1-00									
92	5	6-62	AS562E	17		2-90	1-02	2-90									
46	5	29-80	AS563E	STR		29-80											
2	5	4-113	AS564E	17		0-113	4-00	0-00									
2	5	4-00	AS565E	STR		4-00											
4	5	3-31	AS566E	16	0-00	0-00	1-31	2-00				1-00		1-83	3-00		
27	7	51-50	AS761E	STR		51-50											
91	10	29-80	AS1061E	STR		29-80											
14	5	51-50	SL561E	STR		51-50											
11	5	19-11	SL562E	STR		19-11											
1X11	5	2-60	SL563E	STR		2-60											
		TO 16-03				TO 16-03											
3	5	22-10	SL564E	STR		22-10											
2X25	5	9-80	SL565E	STR		9-80											
		TO 19-110				TO 19-110											
11	5	25-11	SL566E	STR		25-11											
1X14	5	2-60	SL567E	STR		2-60											
		TO 23-62				TO 23-62											
3	5	27-63	SL568E	STR		27-63											
2X33	5	9-80	SL569E	STR		9-80											
		TO 23-61				TO 23-61											
28	5	3-31	SL570E	16	0-00	0-00	1-31	2-00				1-00		1-83	3-00		
10	5	2-60	SL571E	STR		2-60											
58	5	5-82	SL572E	17		2-40	1-02	2-40									

SPECIFICATIONS				BENDING DIMENSIONS (FEET-INCHES /QUARTER INCH)												
QTY.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F/R	G	H	J	K	O	
11	6	19-91	SL661E	1	0-80	19-11										
1X11	6	3-20	SL662E	1	0-80	2-60										
		TO 16-83			TO 0-80	TO 16-03										
2	6	22-10	SL663E	STR		22-10										
11	6	25-91	SL664E	1	0-80	25-11										
1X14	6	3-20	SL665E	1	0-80	2-60										
		TO 24-22			TO 0-80	TO 23-62										
2	6	27-63	SL666E	STR		27-63										
92	8	4-60	SL861E	STR		4-60										
131	5	7-72	PA563E	28		2-91	0-12	2-92								
102	5	6-102	PA564E	29		1-43	2-52									
2X8	5	*6-02	PA565E	28		*1-111	*0-22	*1-112								
		TO *7-72				TO *2-91	TO *0-12	TO *2-92								
45	5	5-102	PA566E	29		0-103	1-112									
8	7	29-80	PA762E	STR		29-80										
4	7	23-71	PA763E	16	0-00	0-00	19-21	4-50				0-80		4-40	23-61	
4	7	9-80	PA764E	16	0-00	0-00	5-30	4-50				0-80		4-40	9-70	
8	8	29-80	PA862E	STR		29-80										
4	8	23-71	PA863E	16	0-00	0-00	19-21	4-50				0-80		4-40	23-61	
4	8	9-80	PA864E	16	0-00	0-00	5-30	4-50				0-80		4-40	9-70	

ASTM STANDARD ENGLISH REINFORCING BARS				RECOMMENDED END HOOKS, APPLICABLE TO ALL GRADES				STIRRUP AND TIE HOOKS, APPLICABLE TO ALL GRADES			
BAR SIZE	NOMINAL DIMENSIONS			180° HOOKS		90° HOOKS		90° HOOK		135° HOOK	
	DIAMETER (INCHES)	AREA (INCHES ²)	WEIGHT (LBS./FT.)	D							



NOTES:

- DECK SLAB REINFORCEMENT NOT SHOWN FOR CLARITY.
- FIELD VERIFY ACTUAL HAUNCH DIMENSIONS.
- DECK THICKNESS @ C OF BRG. AND C OF BEAM, D = 1'-0 3/8"
- PLACE HAUNCH REINFORCEMENT AT BOTH ENDS OF BEAMS B1 THRU B5
- 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.

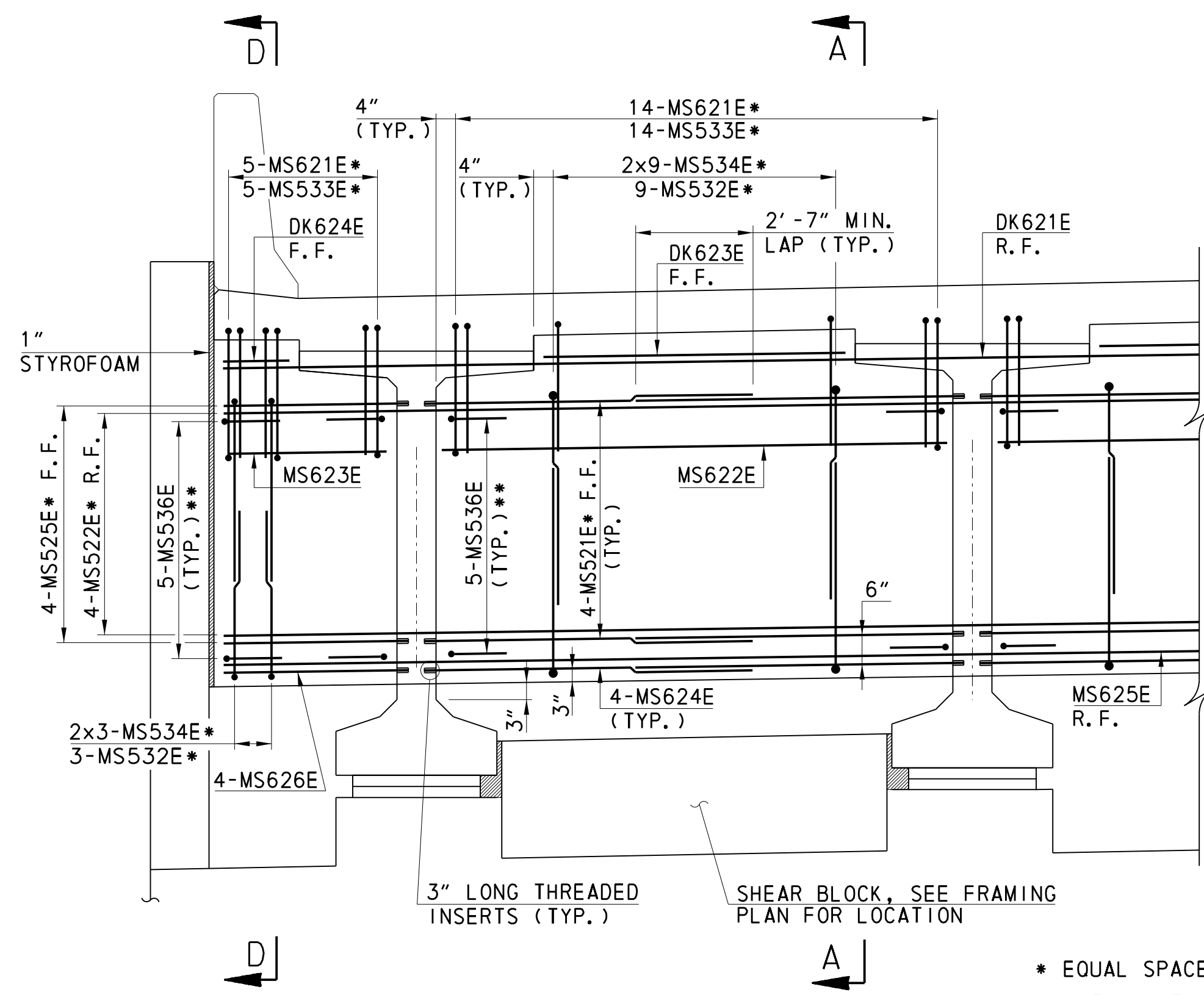
LEGEND:

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

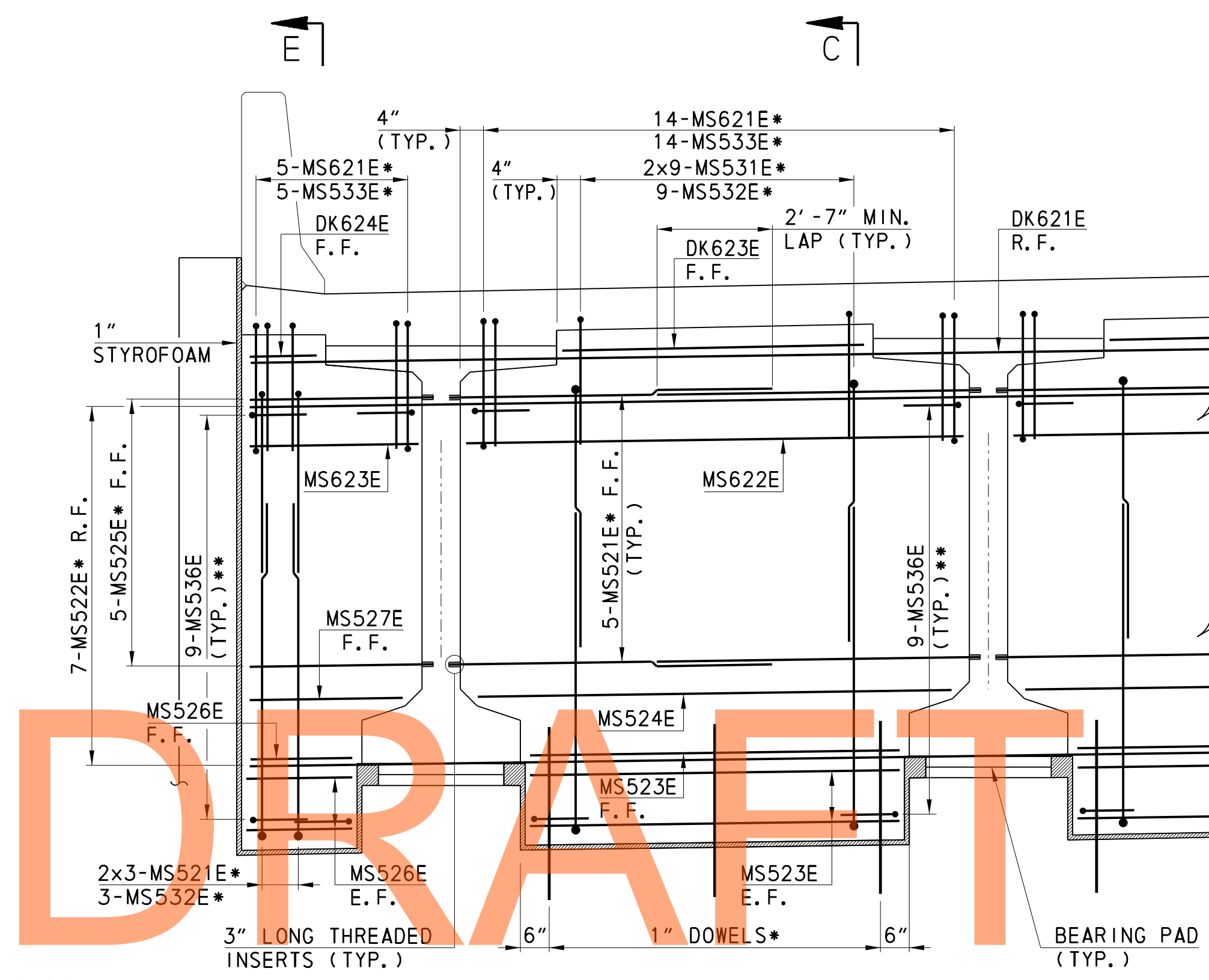
STAY-IN-PLACE FORM CONNECTION
NOT TO SCALE

NOTES:

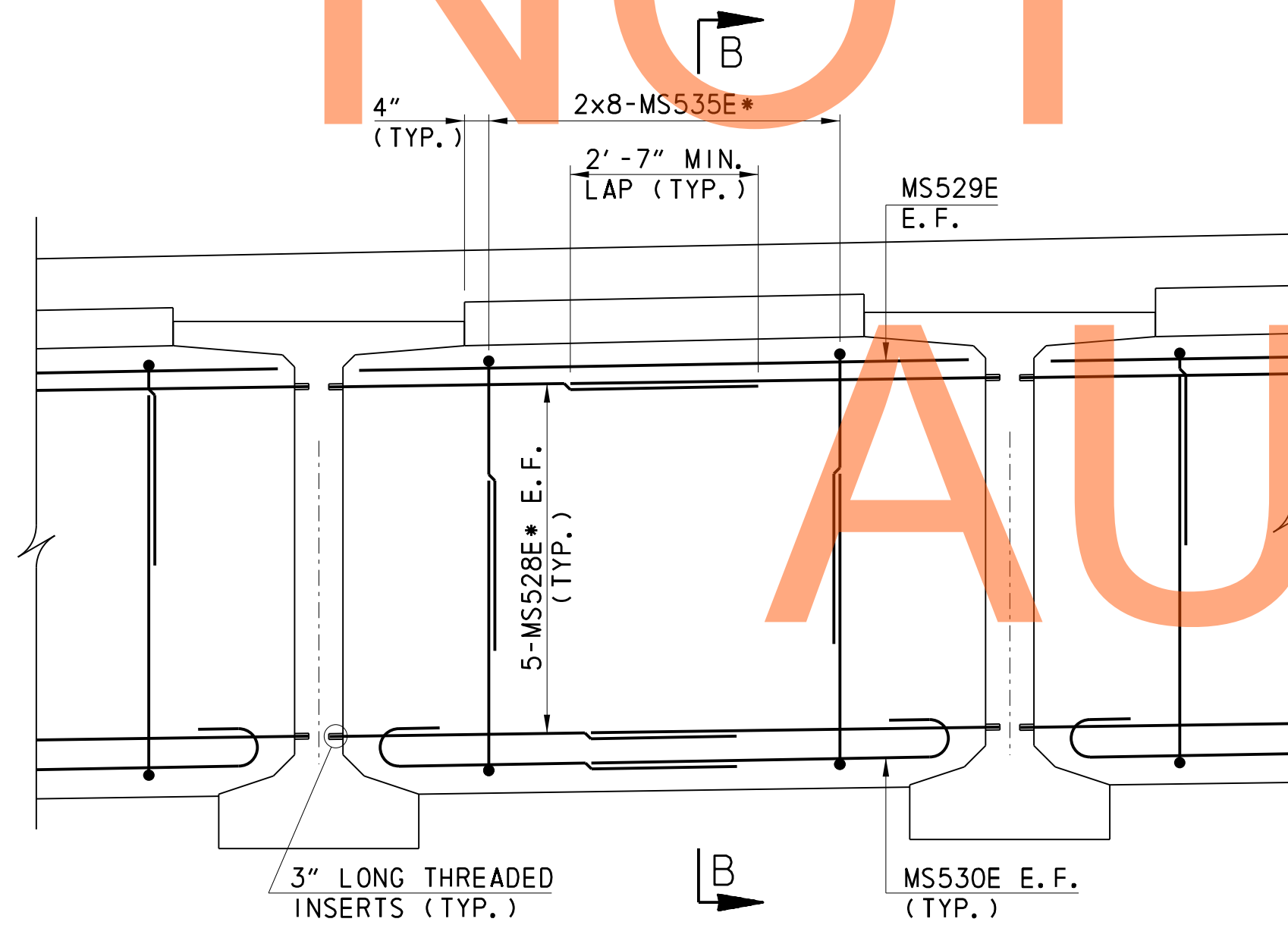
1. FOR DIAPHRAGM DETAILS, SEE SHEETS 31 AND 32 OF 40.
2. FOR REINFORCEMENT BAR LIST, SEE SHEETS 36 AND 37 OF 40.
3. SLIP FORMING FOR PARAPETS IS NOT PERMITTED.
4. POUR END AND INTERMEDIATE DIAPHRAGMS BEFORE POURING DECK.
5. FOR DECK PARAPET/ APPROACH SLAB PARAPET JOINT DETAILS, SEE SHEET 32 OF 40.
6. FOR PARAPET CONTROL JOINT DETAILS, SEE SHEET 4 OF 40.



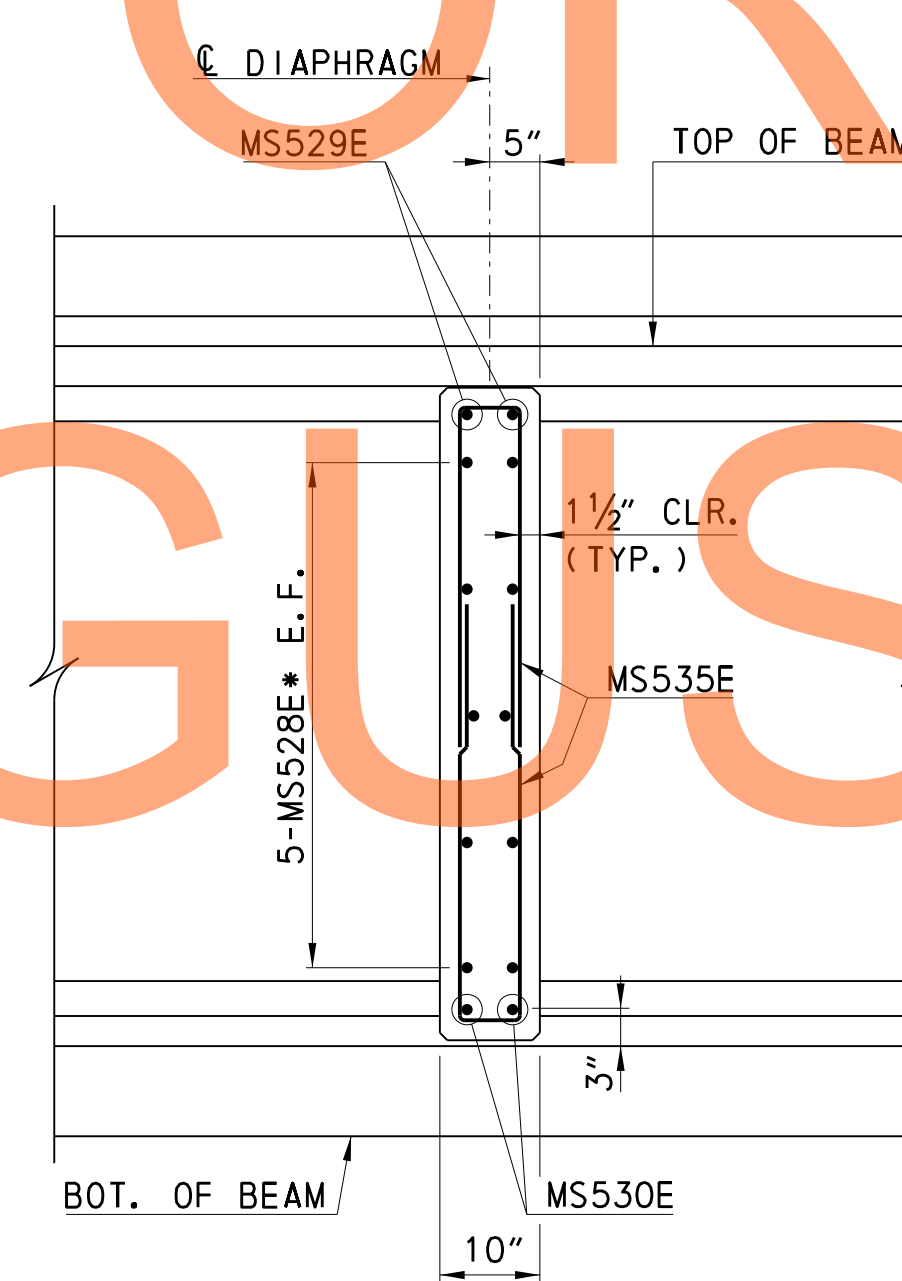
END ABUTMENT A
DIAPHRAGM ELEVATION (SB)
SCALE: 1/2" = 1'-0"



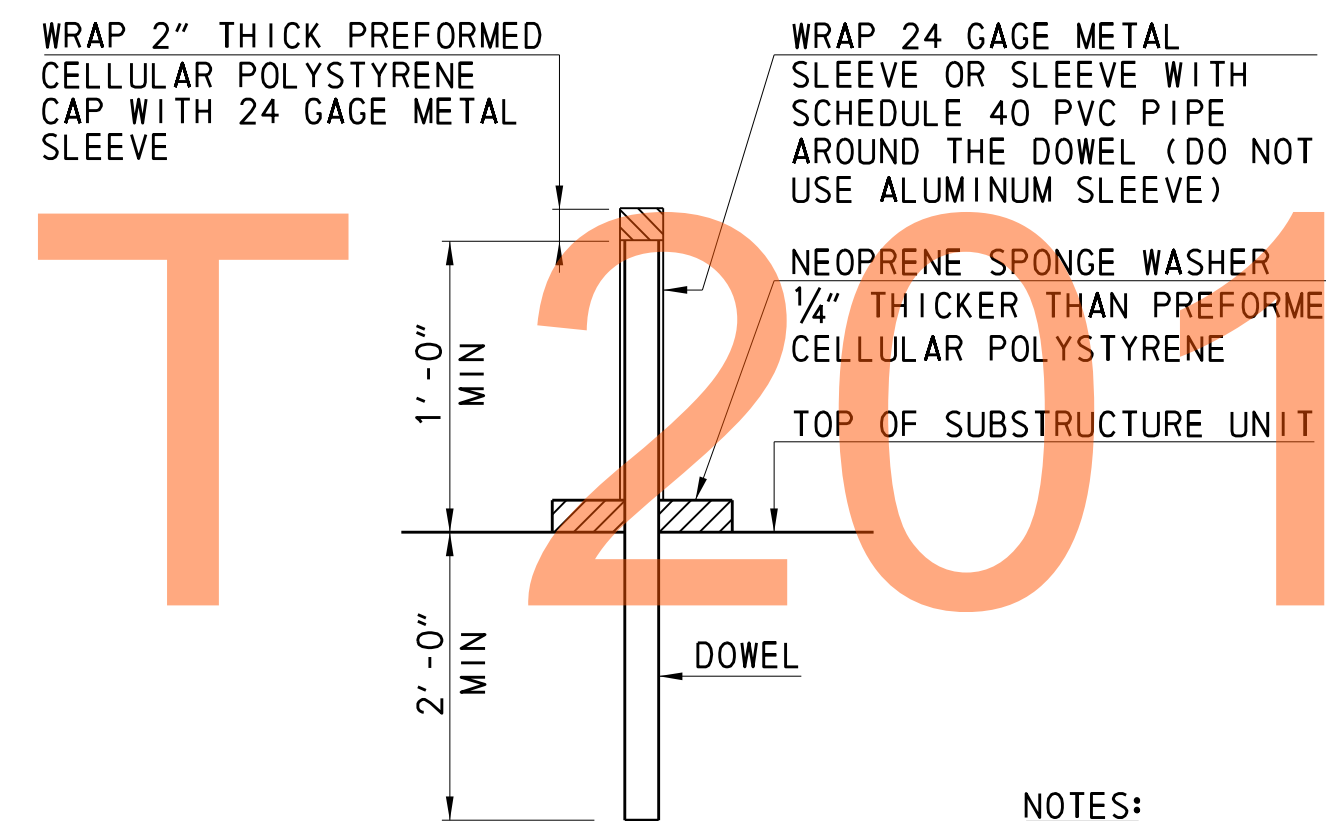
END ABUTMENT B
DIAPHRAGM ELEVATION (SB)
SCALE: 1/2" = 1'-0"



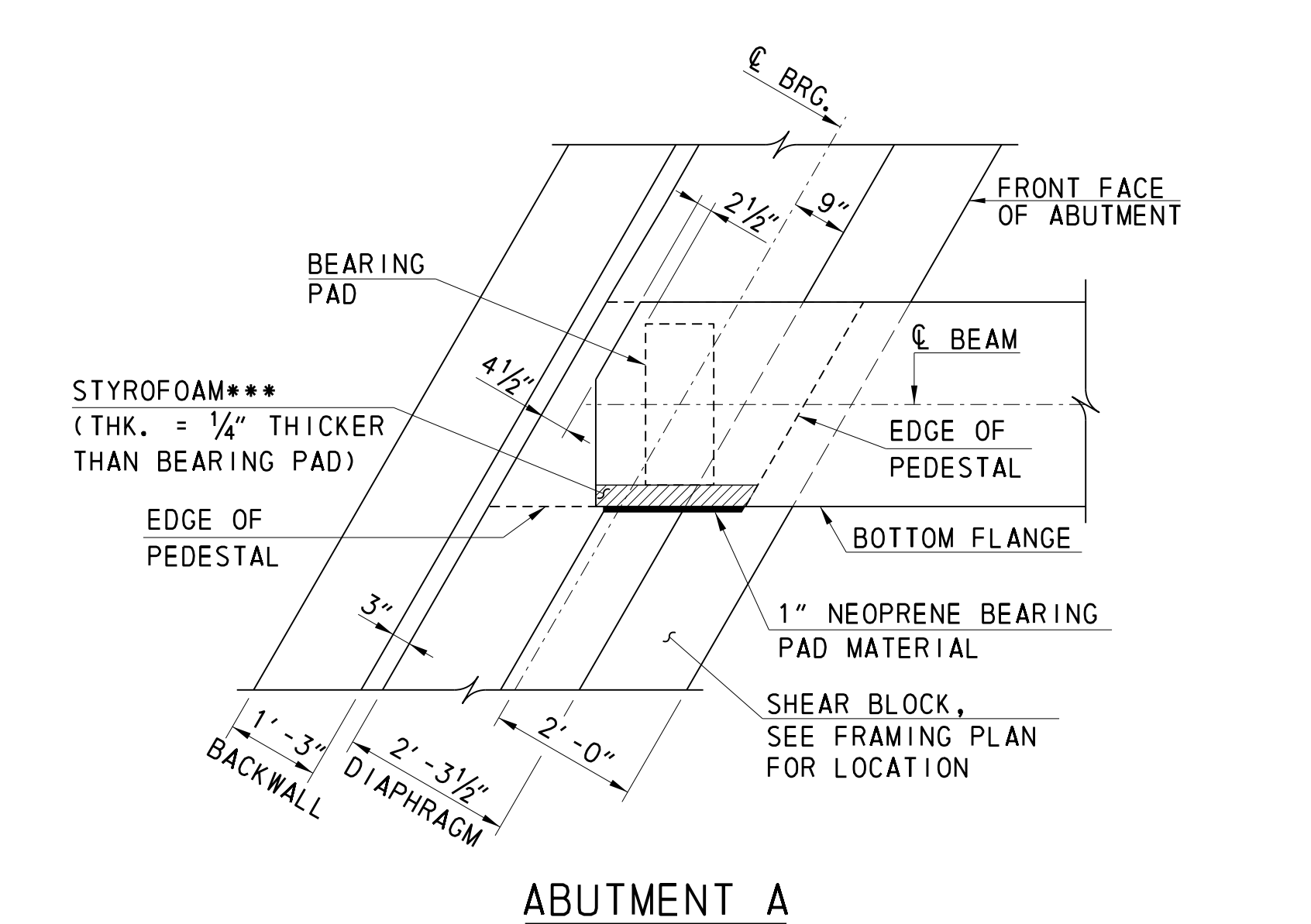
INTERMEDIATE DIAPHRAGM
ELEVATION (SB)
SCALE: 1/2" = 1'-0"



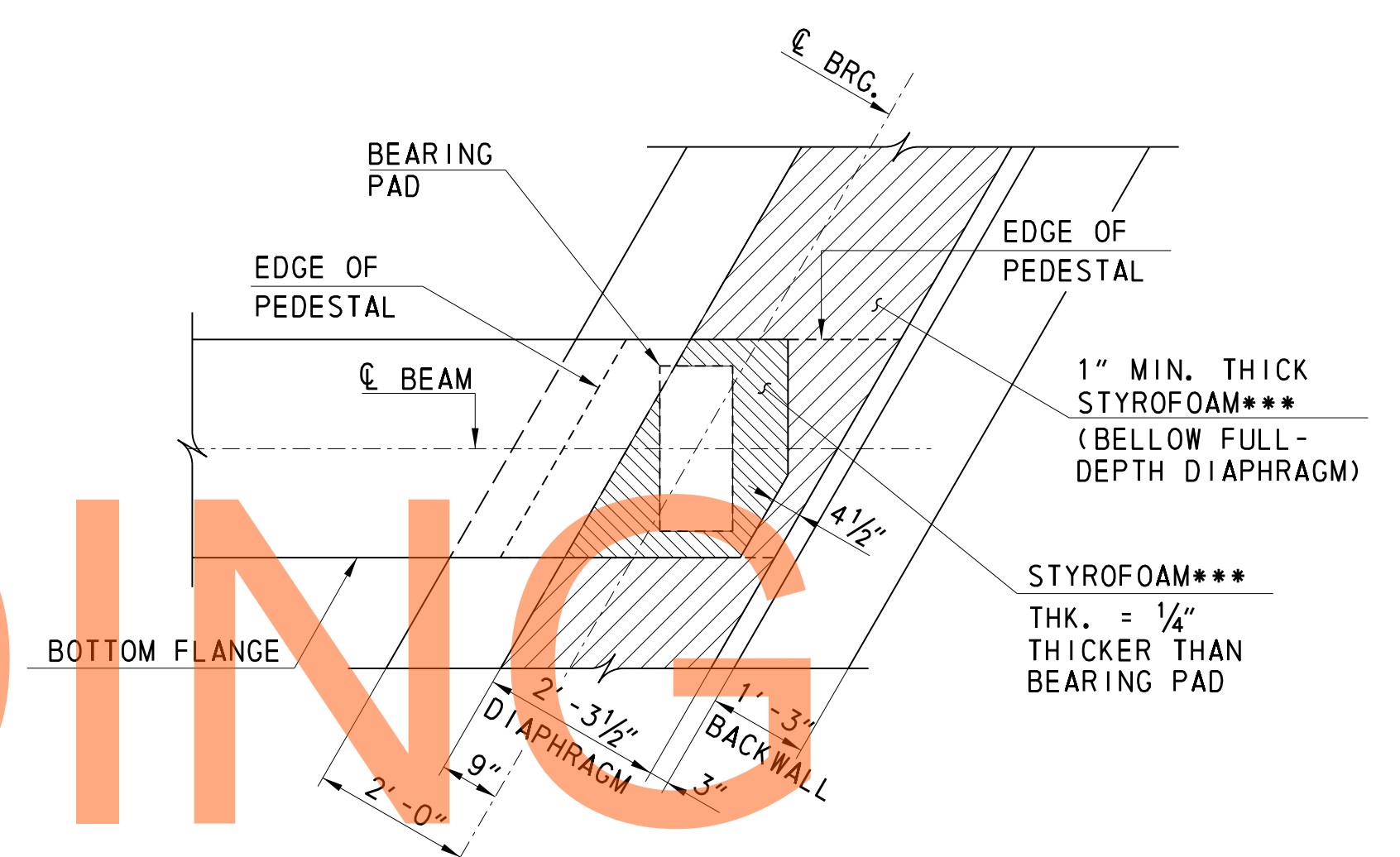
SECTION B-B
SCALE: 3/4" = 1'-0"



DOWEL DETAIL
N. T. S.



ABUTMENT A



ABUTMENT B

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

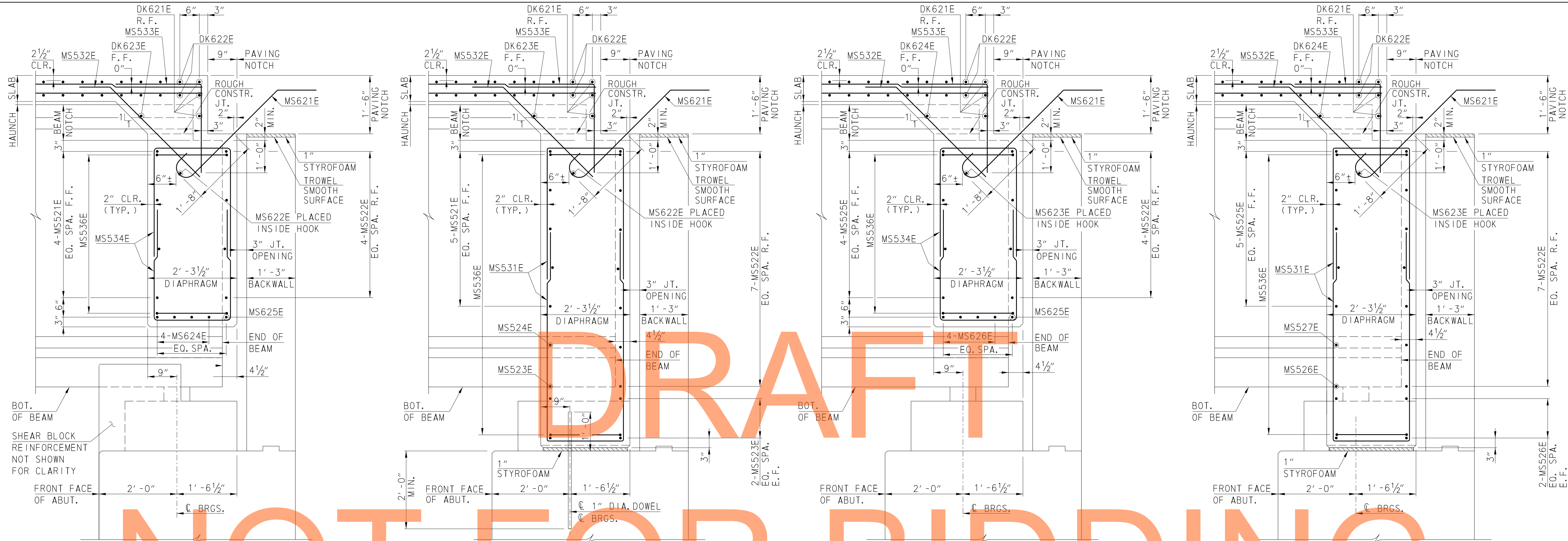
WATERPROOFING LIMITS PLAN
SCALE: 1/2" = 1'-0"

NOTES:

- FOR SECTIONS A-A, C-C, D-D, AND E-E, SEE SHEET 32 OF 40.
- BITUMINOUS TAR PAPER OR SCHEDULE 40 P.V.C. 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.
- FOR SHEAR BLOCK DETAILS, SEE SHEET 12 OF 40.
- FOR FRAMING PLAN, SEE SHEET 19 OF 40.
- FOR BEARING PAD DETAILS, SEE SHEET 20 OF 40.
- FOR BEAM DETAILS, SEE SHEET 21 OF 40.
- FOR REINFORCEMENT BAR LIST, SEE SHEETS 36 AND 37 OF 40.
- FOR LAYOUT OF DOWELS AND DOWEL REQUIREMENTS, SEE SHEET 14 OF 40.

LEGEND

BOT.	=	BOTTOM
CLR.	=	CLEAR
DIA.	=	DIAMETER
E. F.	=	EACH FACE
EQ.	=	EQUAL
F. F.	=	FRONT FACE
MIN.	=	MINIMUM
R. F.	=	REAR FACE
SPA	=	SPACING
THK.	=	THICKNESS
TYP.	=	TYPICAL



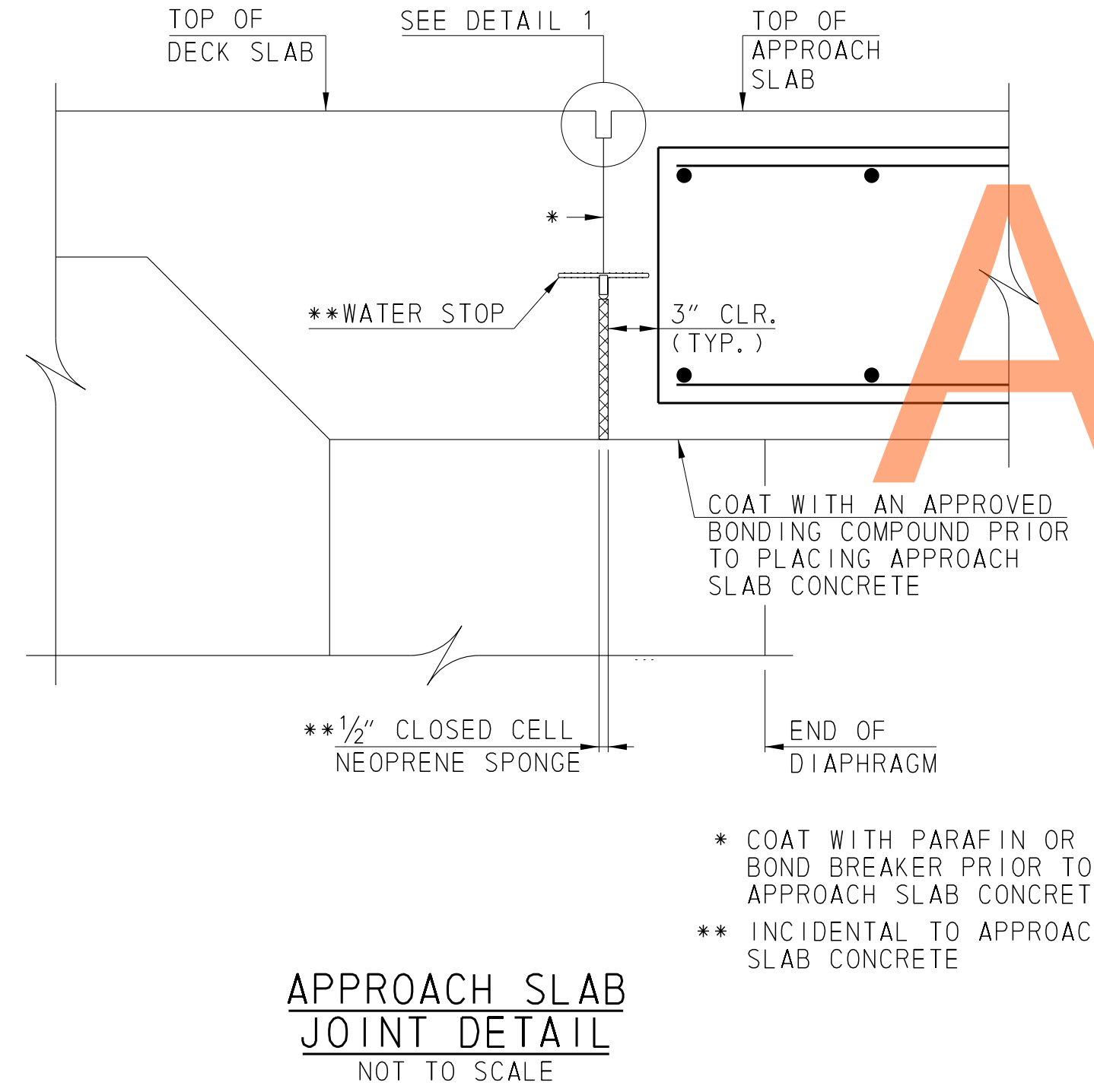
SECTION A-A
SCALE: 3/4" = 1'-0"

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

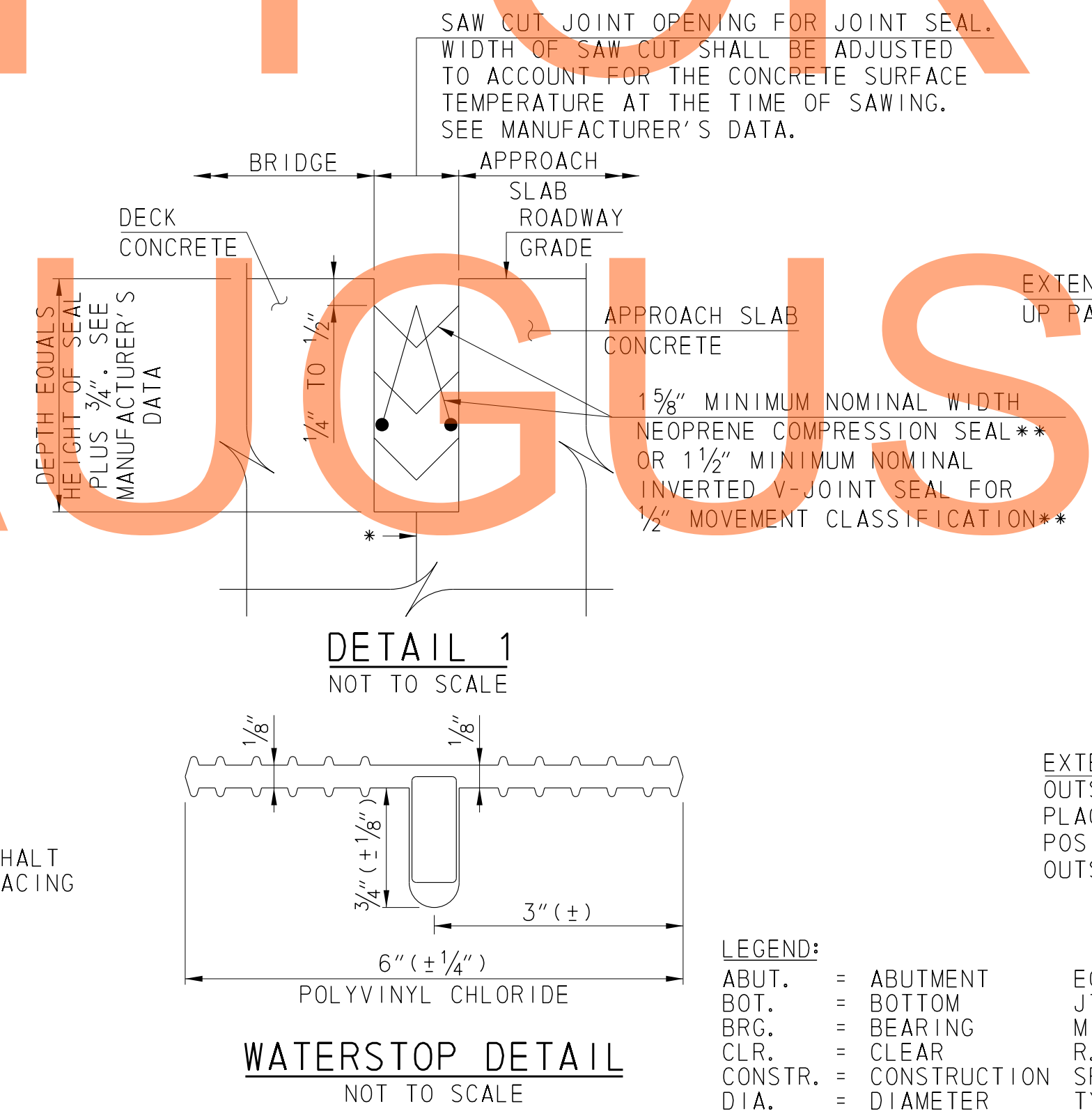
SECTION D-D
SCALE: 3/4" = 1'-0"

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

NOT FOR BIDDING

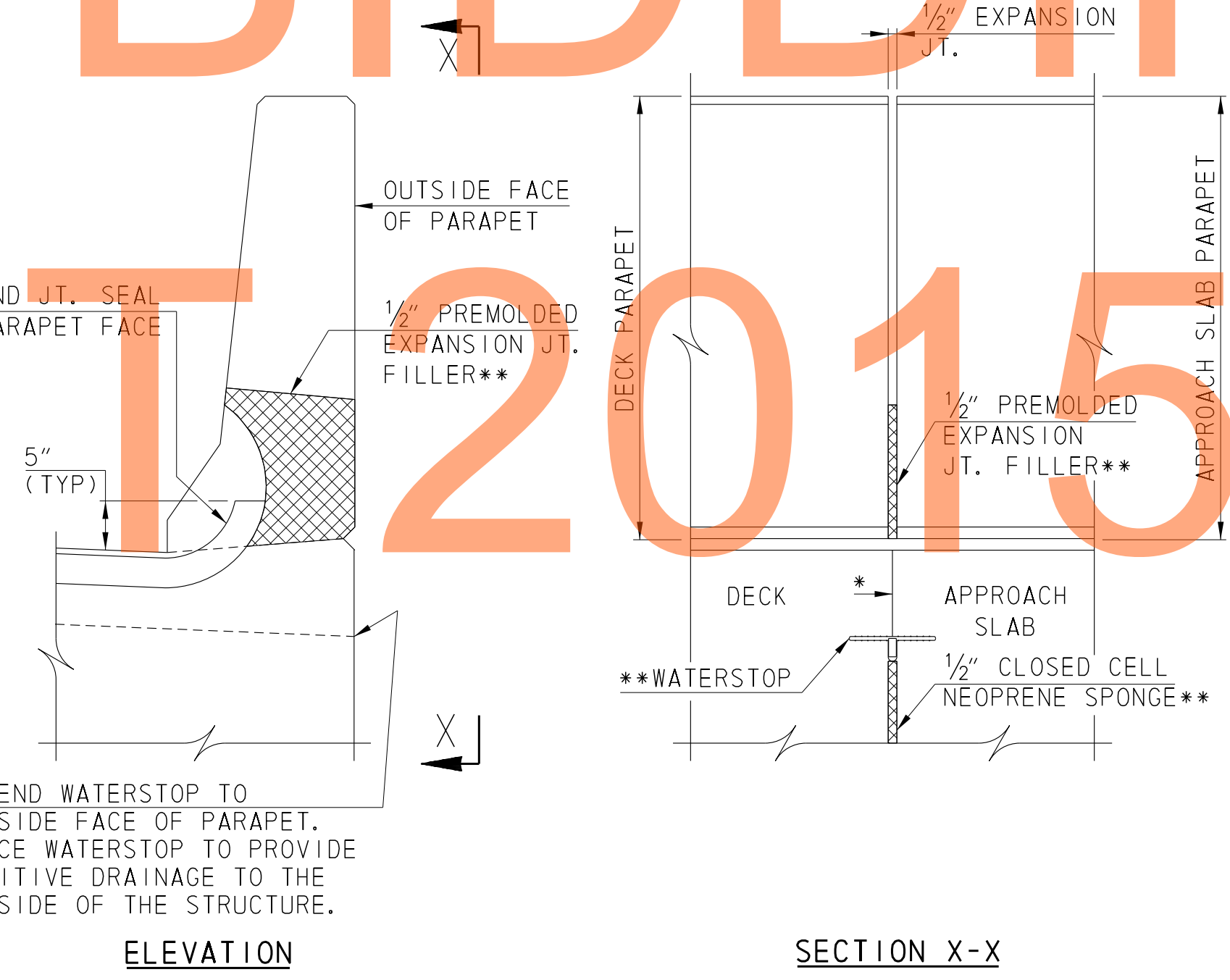


APPROACH SLAB JOINT DETAIL
NOT TO SCALE



WATERSTOP DETAIL
NOT TO SCALE

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.



ELEVATION

SECTION X-X

JOINT SEAL AND WATERSTOP TERMINATION DETAIL

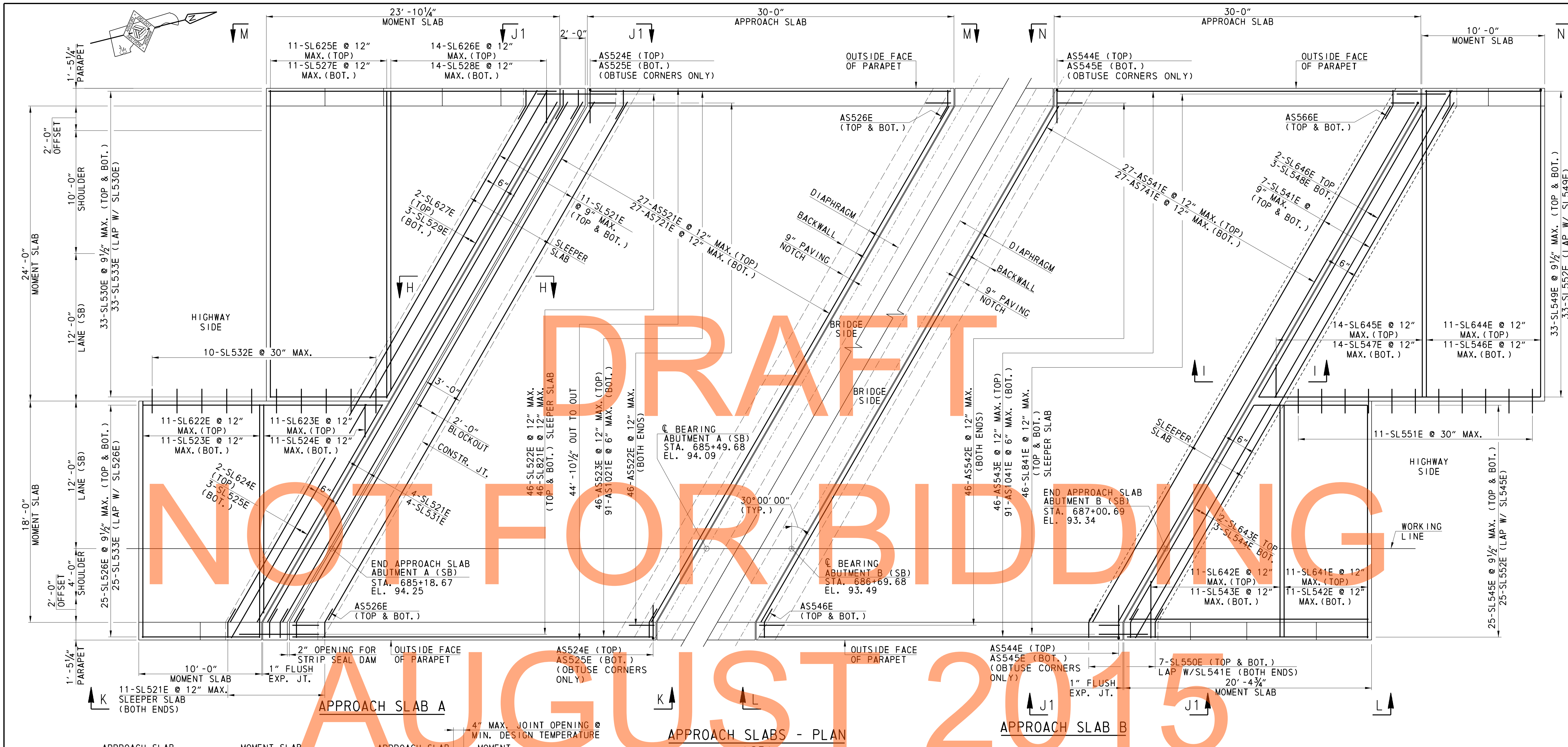
- JOINT PREPARATION NOTES:
1. THE JOINT OPENING IS TO BE FORMED BY A TWO-STAGE SAWING OPERATION WHERE ACCESSIBLE AND FORMED ELSEWHERE. THE FIRST SAW CUT IS DESIGNED TO CONTROL CRACKING. THE SECOND SAW CUT IS MADE USING A DOUBLE-BLADED WATER-COOLED SAW CAPABLE OF HOLDING A TOLERANCE OF $\pm 1/16"$ TO CREATE THE PROPER OPENING FOR THE PREFORMED NEOPRENE COMPRESSION SEAL OR INVERTED V-JOINT SEAL.
 2. WATER BLAST OPENING IMMEDIATELY FOLLOWING SAW CUTTING OPERATION TO REMOVE ANY RESIDUAL SLURRY BEFORE IT DRIES.
 3. 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.
 4. 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.
 5. PREPARE BONDING SURFACES AND INSTALL JOINT SEAL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
 6. DO NOT EXCEED 3% ELONGATION OF SEAL, IF STRETCHING OCCURS.

- NOTES:
1. FOR LOCATION OF SECTIONS A-A, C-C, D-D AND E-E, SEE SHEET 31 OF 40.
 2. FOR DECK DETAILS, SEE SHEET 30 OF 40.
 3. FOR REINFORCEMENT BAR LIST, SEE SHEETS 36 AND 37 OF 40.
 4. FOR APPROACH SLAB DETAILS, SEE SHEETS 33 AND 34 OF 40.
 5. FOR DOWEL DETAIL, SEE SHEET 23 OF 40.

ADDENDUMS / REVISIONS

CONTRACT	BRIDGE NO.	1-466 N&S
T200911308	DESIGNED BY:	MDM/ZAA
COUNTY	CHECKED BY:	BJH
NEW CASTLE		

SHEET NO.	572
TOTAL SHTS.	875

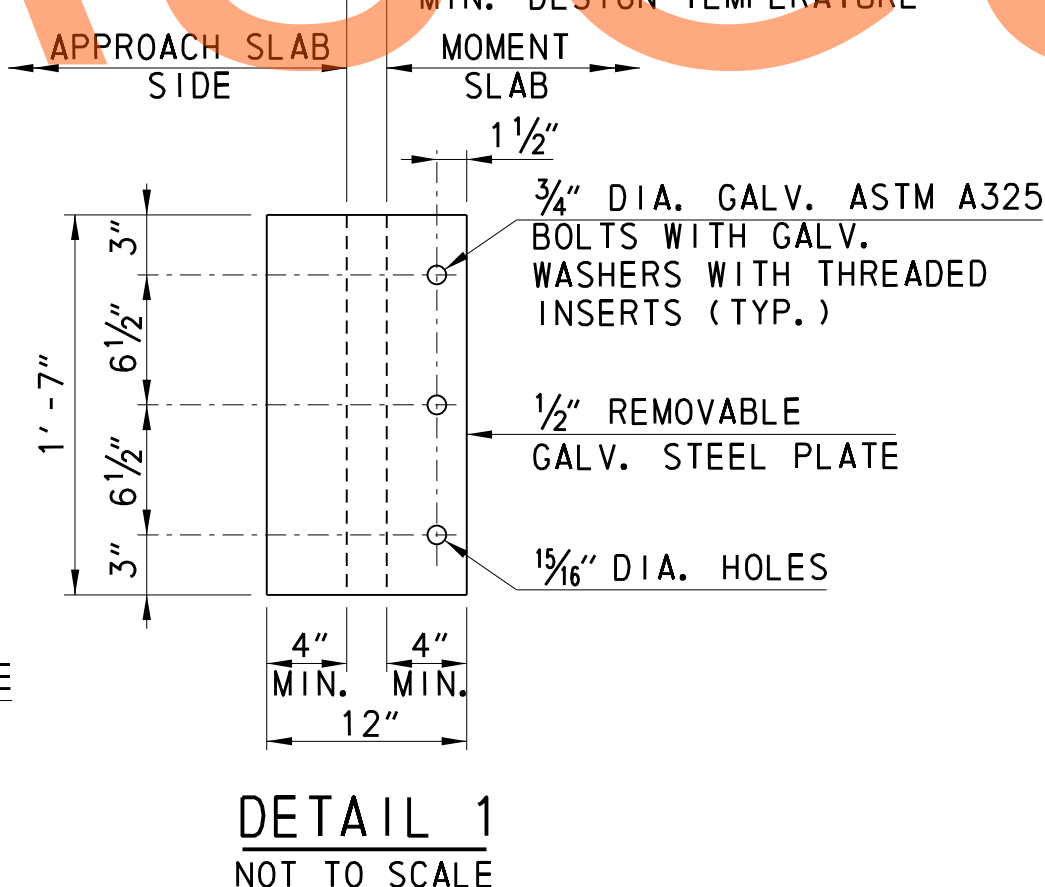
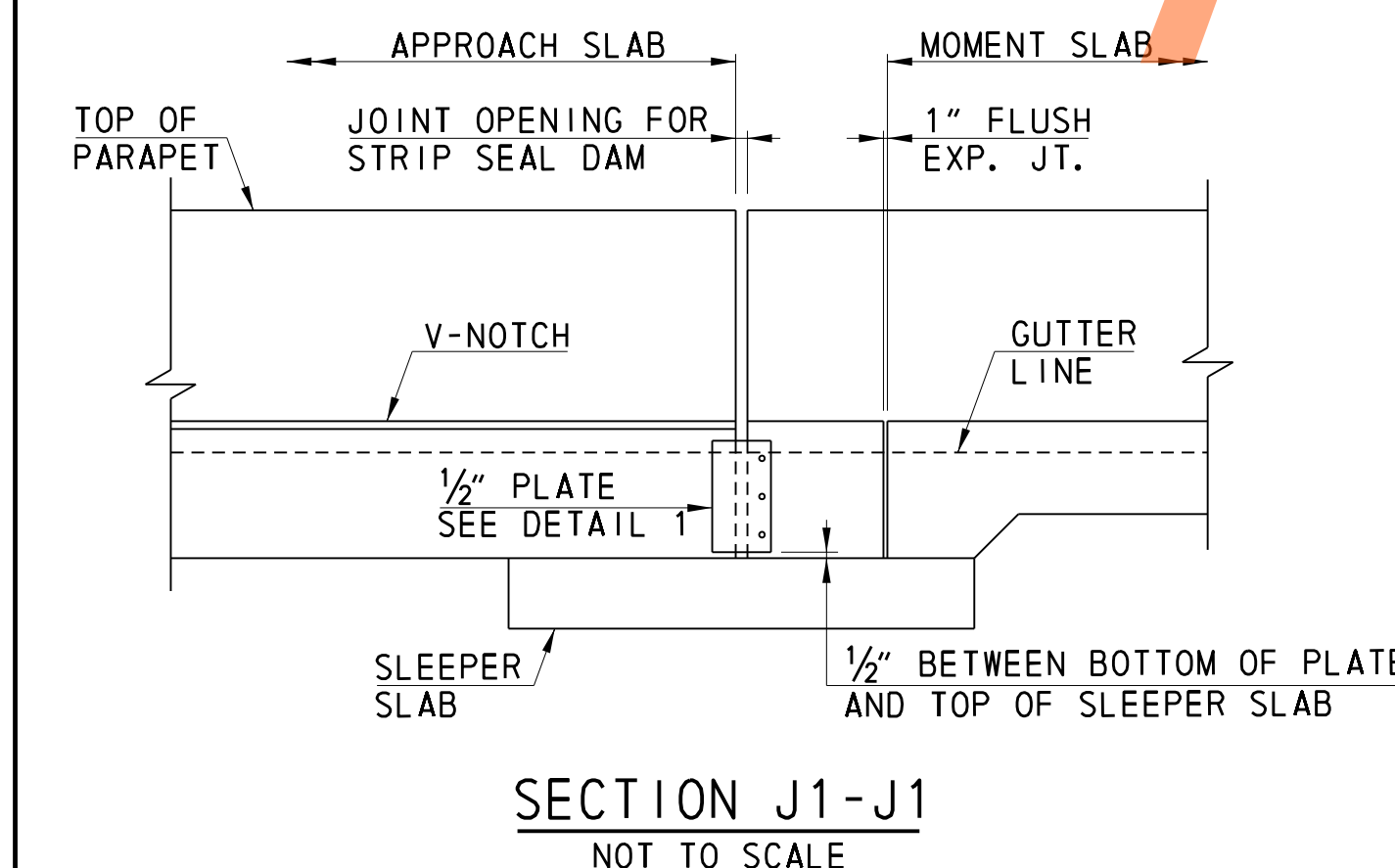


DRAFT

NOT FOR BIDDING

AUGUST 2015

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



APPROACH SLAB NOTES

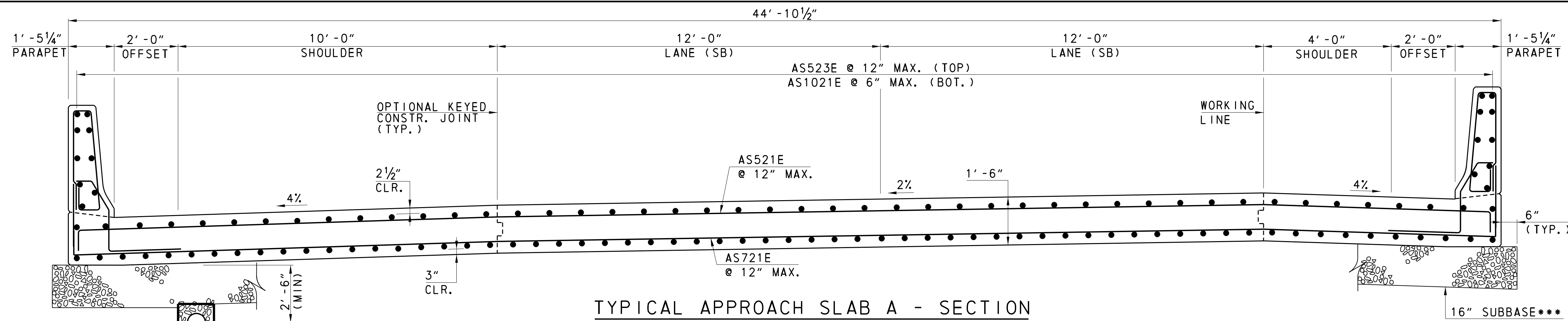
- PROVIDE CLASS D CONCRETE IN APPROACH SLAB, HEADER SLAB, SLEEPER SLAB AND MOMENT SLAB.
- PROVIDE CLASS A CONCRETE IN PARAPETS.
- A HIGHER CLASS OF CONCRETE MAY BE SUBSTITUTED FOR A LOWER CLASS OF CONCRETE AT NO ADDITIONAL COST TO THE DEPARTMENT.
- PLACE APPROACH SLAB CONCRETE WITH A MOTORIZED, MECHANICAL 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 H-H AND I-I, SEE SHEET 34 OF 40.
2. FOR SECTIONS K-K, L-L, M-M AND N-N, SEE SHEET 35 OF 40.
3. FOR REINFORCEMENT BAR LIST, SEE SHEET 37 OF 40.
4. FOR APPROACH SLAB JOINT DETAILS AT END OF BRIDGE DECK, SEE SHEET 32 OF 40.
5. PAYMENT FOR GALVANIZED STEEL PLATE AND HARDWARE SHALL BE INCIDENTAL TO APPROACH SLAB CONSTRUCTION.

LEGEND

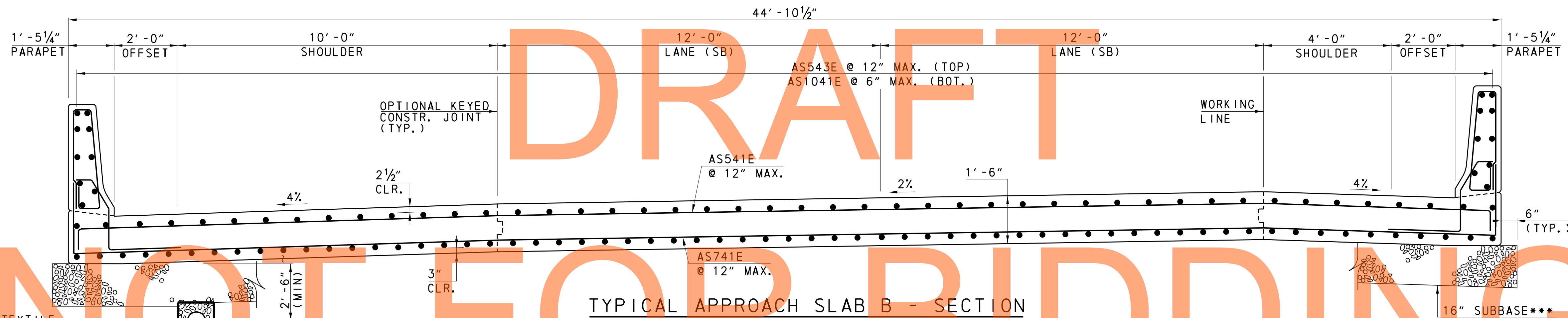
BOT.	= BOTTOM	JT.	= JOINT
GALV.	= GALVANIZED	MAX.	= MAXIMUM
CONSTR.	= CONSTRUCTION	MIN.	= MINIMUM
DIA.	= DIAMETER	SB	= SOUTHBOUND
EL.	= ELEVATION	STA.	= STATION
EXP.	= EXPANSION	TYP.	= TYPICAL



TYPICAL APPROACH SLAB A - SECTION

(SB)

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



TYPICAL APPROACH SLAB B - SECTION

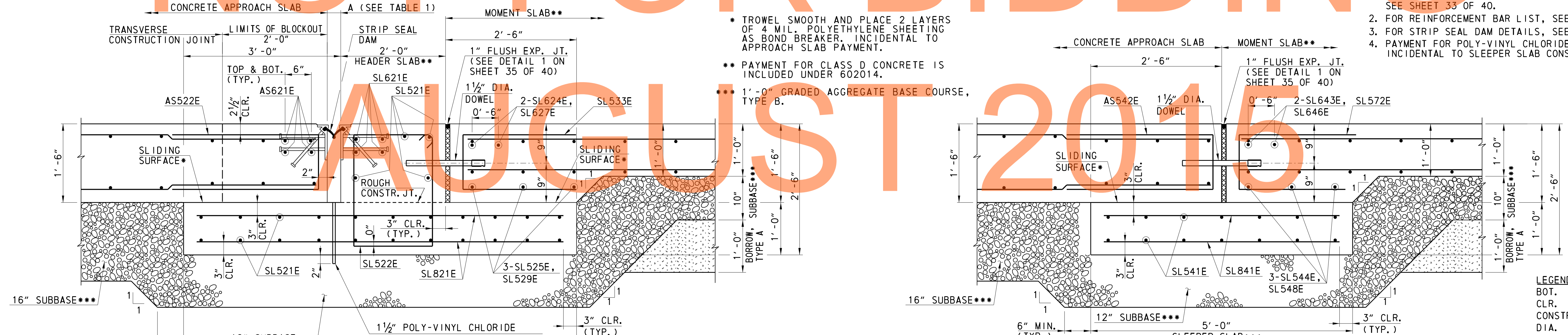
(SB)

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

DRAFT FOR BIDDING

NOTES:

1. FOR LOCATION OF SECTIONS H-H AND I-I, SEE SHEET 33 OF 40.
2. FOR REINFORCEMENT BAR LIST, SEE SHEET 37 OF 40.
3. FOR STRIP SEAL DAM DETAILS, SEE SHEET 38 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.

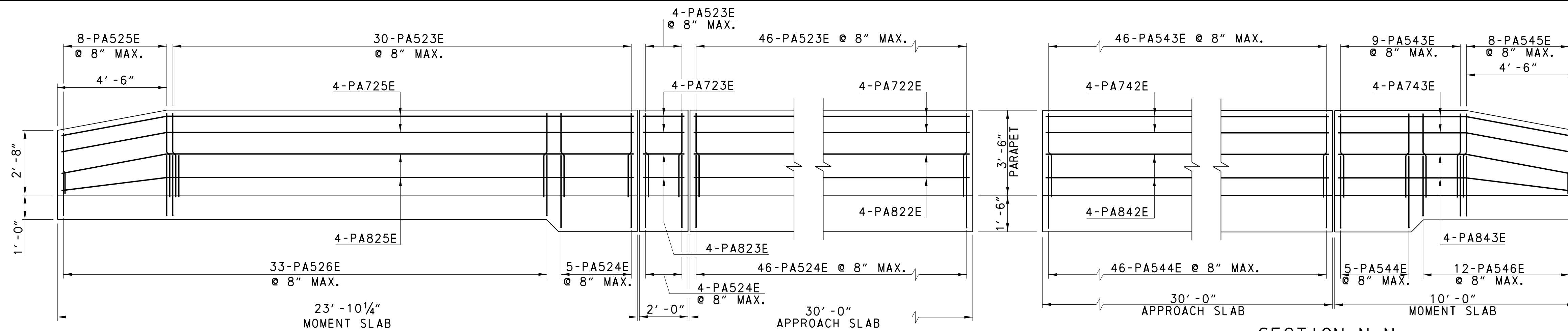
** PAYMENT FOR CLASS D CONCRETE IS INCLUDED UNDER 602014.

*** 1' - 0" GRADED AGGREGATE BASE COURSE, TYPE B.

TABLE - 1
INSTALLATION OPENING "A" @ VARIOUS TEMPERATURES

TEMPERATURE (°F)												
10	20	30	32	40	50	60	68	70	80	90	100	
0' - 2 5/8"	0' - 2 1/2"	0' - 2 1/4"	0' - 2 3/8"	0' - 2 3/16"	0' - 2 3/16"	0' - 2 1/16"	0' - 2"	0' - 1 15/16"	0' - 1 7/8"	0' - 1 3/4"	0' - 1 11/16"	

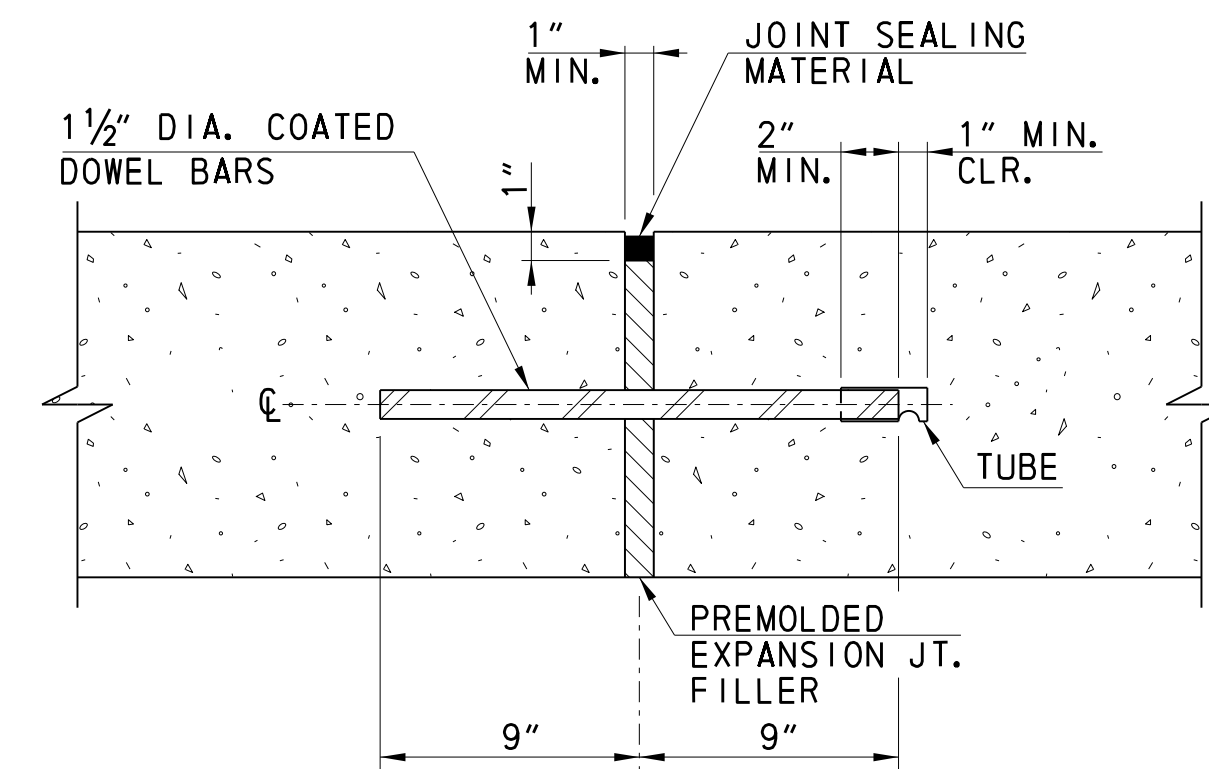
- LEGEND
- BOT. = BOTTOM
 - CLR. = CLEAR
 - CONSTR. = CONSTRUCTION
 - DIA. = DIAMETER
 - EXP. = EXPANSION
 - JT. = JOINT
 - MAX. = MAXIMUM
 - MIN. = MINIMUM
 - SB = SOUTHBOUND
 - TYP. = TYPICAL



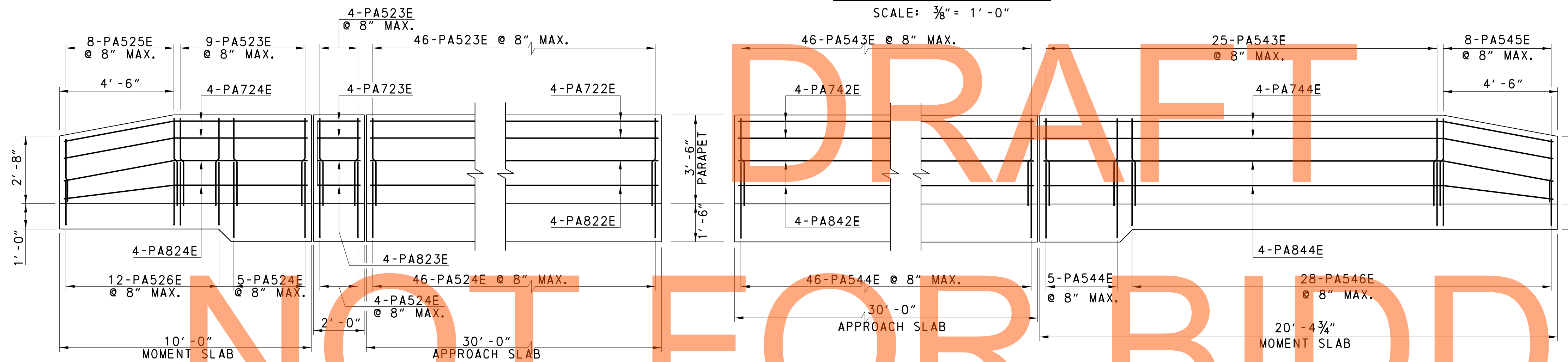
SECTION M-M

PARAPET ELEVATION

SECTION N-N



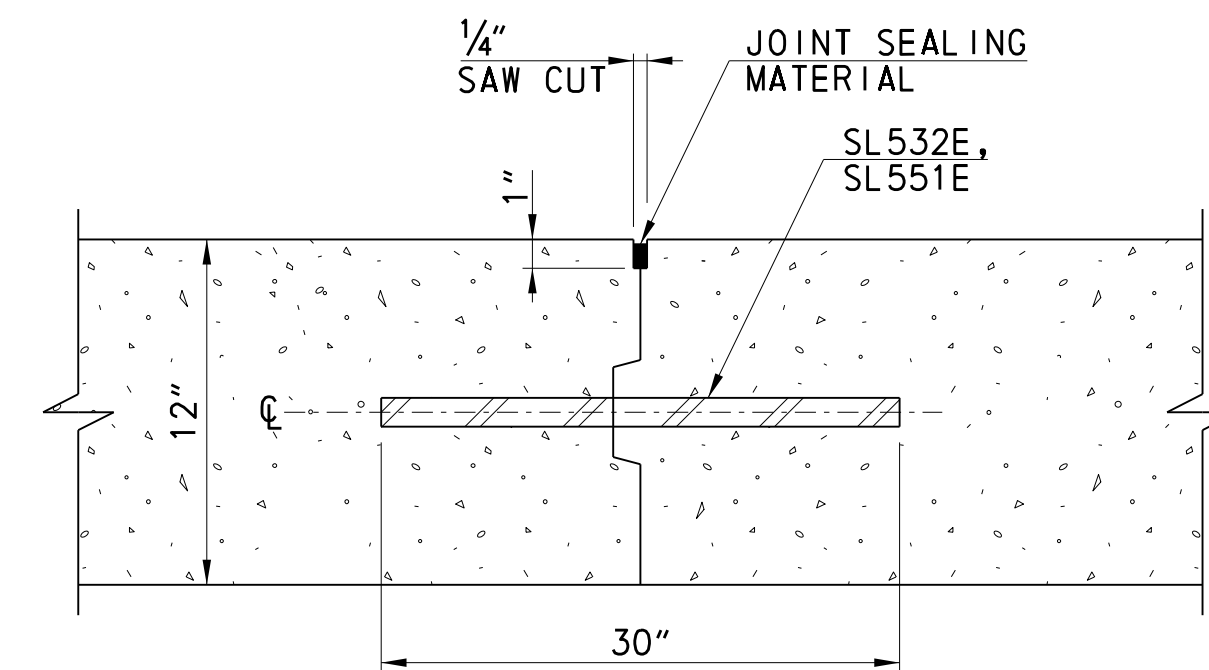
DETAIL 1
NOT TO SCALE



SECTION K-K

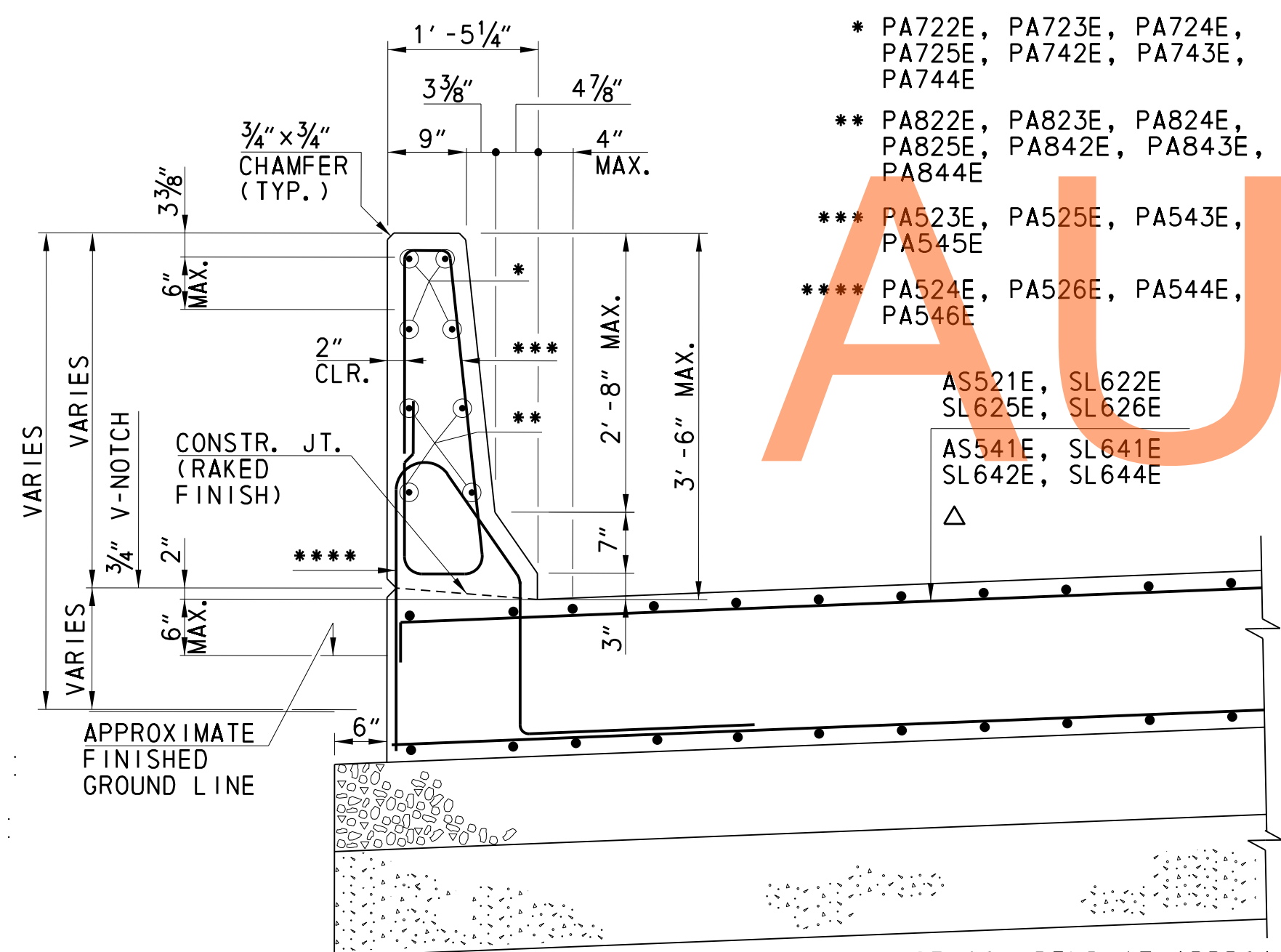
PARAPET ELEVATION

SECTION L-L

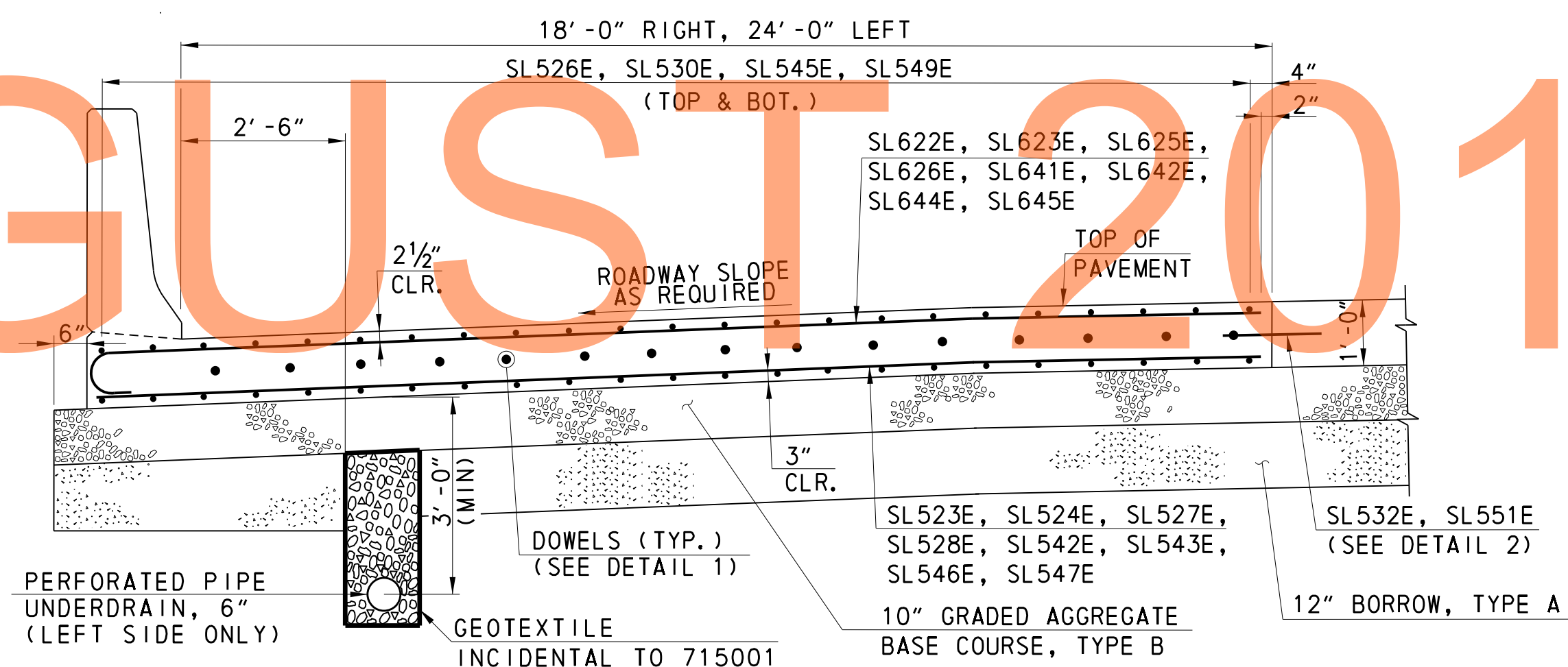


DETAIL 2
NOT TO SCALE

DRAFT
NOT FOR BIDDING



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



MOMENT SLAB (AT GRADE)
WITH TYPICAL C.I.P. BARRIER
SCALE: 1/2" = 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 SHEETS 28 AND 29 OF 40.
 9. SLIP FORMING FOR PARAPETS IS NOT PERMITTED.
 10. FOR LOCATION OF SECTIONS D-D, E-E, F-F AND G-G, SEE SHEET 25 OF 40.

LEGEND

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

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

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

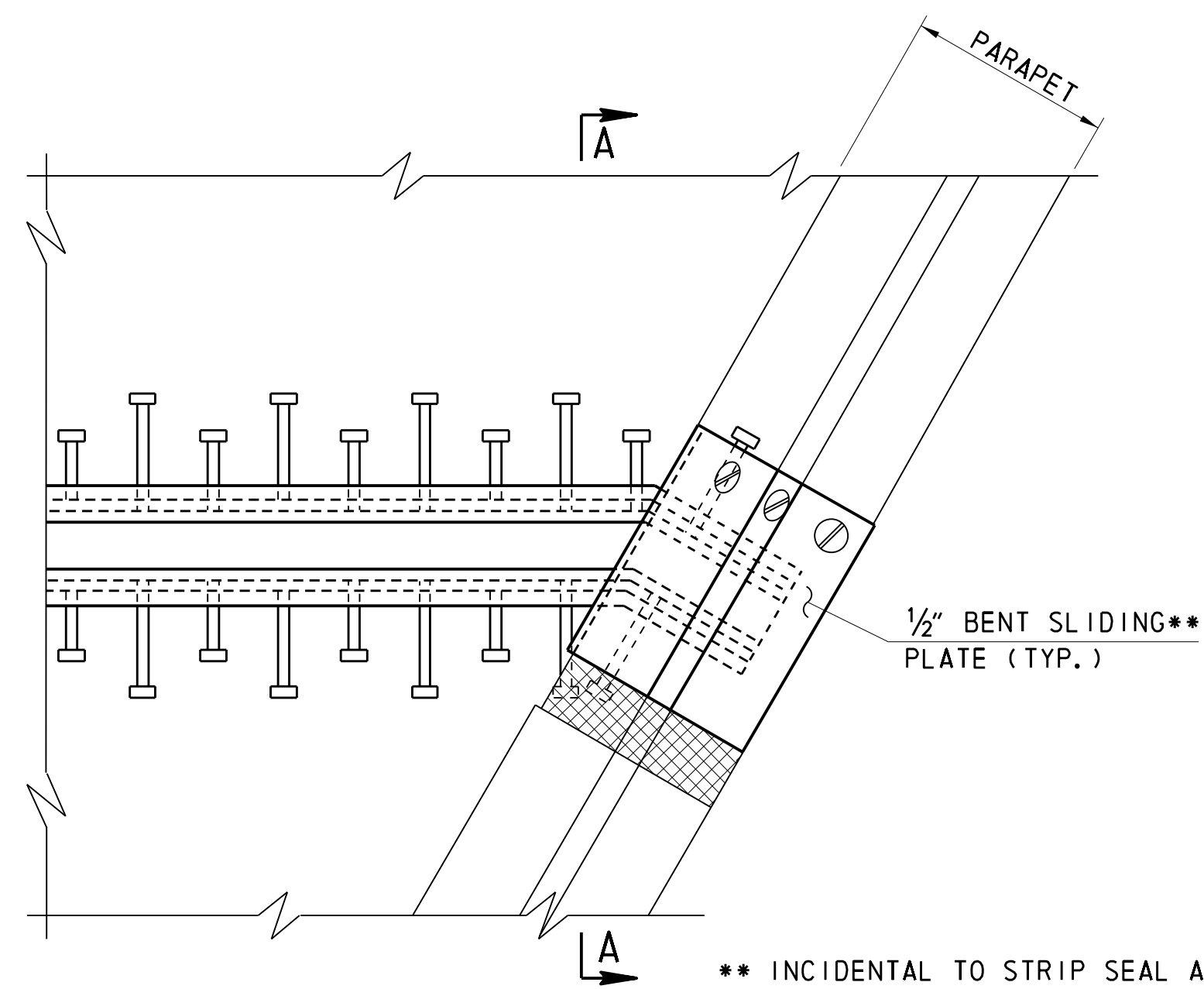
* VARY AT EQUAL INCREMENTS

SPECIFICATIONS				BENDING DIMENSIONS (FEET-INCHES /QUARTER INCH)											
QTY.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F/R	G	H	J	K	O
APPROACH SLAB, MOMENT SLAB, SLEEPER SLAB, HEADER SLAB, PARAPET AT ABUTMENT A (SB)															
27	5	53-50	AS521E	17		1-00	51-50	1-00							
92	5	6-62	AS522E	17		2-90	1-02	2-90							
46	5	29-80	AS523E	STR		29-80									
2	5	4-113	AS524E	17		0-113	4-00	0-00							
2	5	4-00	AS525E	STR		4-00									
4	5	3-31	AS526E	16	0-00	0-00	1-31	2-00				1-00		1-83	3-00
4	6	51-50	AS621E	STR		51-50									
27	7	51-50	AS721E	STR		51-50									
91	10	29-80	AS1021E	STR		29-80									
22	5	51-50	SL521E	STR		51-50									
46	5	8-00	SL522E	T1	0-52	1-60	2-02	1-60	2-02		0-52				
11	5	19-11	SL523E	STR		19-11									
1X11	5	2-60	SL524E	STR		2-60									
		TO 16-03				TO 16-03									
3	5	22-10	SL525E	STR		22-10									
2X25	5	9-80	SL526E	STR		9-80									
		TO 19-11				TO 19-11									
11	5	25-11	SL527E	STR		25-11									
1X14	5	2-60	SL528E	STR		2-60									
		TO 23-42				TO 23-42									
3	5	27-63	SL529E	STR		27-63									
2X33	5	9-83	SL530E	STR		9-80									
		TO 23-61				TO 23-61									
52	5	3-31	SL531E	16	0-00	0-00	1-31	2-00				1-00		1-83	3-00
10	5	2-60	SL532E	STR		2-60									
58	5	5-82	SL533E	17		2-40	1-02	2-40							
4	6	51-50	SL621E	STR		51-50									
11	6	19-91	SL622E	1	0-80								0-60		
1X11	6	3-20	SL623E	1	0-80	2-60							0-60		
		TO 16-83			TO 0-80	TO 16-03							TO 0-60		
2	6	22-10	SL624E	STR		22-10									
11	6	25-91	SL625E	1	0-80	25-11							0-60		
1X14	6	3-20	SL626E	1	0-80	2-60							0-60		
		TO 24-02			TO 0-80	TO 23-42							TO 0-60		
2	6	27-63	SL627E	STR		27-63									
92	8	7-00	SL821E	STR		7-00									

SPECIFICATIONS				BENDING DIMENSIONS (FEET-INCHES /QUARTER INCH)											
QTY.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F/R	G	H	J	K	O
APPROACH SLAB, MOMENT SLAB, SLEEPER SLAB, HEADER SLAB, PARAPET AT ABUTMENT B (SB)															
139	5	7-72	PA523E	28		2-91	0-12	2-92							
110	5	6-102	PA524E	29		1-43	2-52								
2X8	5	*6-02	PA525E	28		*1-111	*0-22	*1-112							
		TO *7-72				TO *2-91	*0-12	*2-92							
45	5	5-102	PA526E	29		0-103	1-112								
8	7	29-80	PA722E	STR		29-80									
8	7	1-80	PA723E	STR		1-80									
4	7	9-80	PA724E	16	0-00	0-00	5-30	4-50				0-80		4-40	9-70
4	7	23-71	PA725E	16	0-00	0-00	19-21	4-50				0-80		4-40	23-61
8	8	29-80	PA822E	STR		29-80									
8	8	1-80	PA823E	STR		1-80									
4	8	9-80	PA824E	16	0-00	0-00	5-30	4-50				0-80		4-40	9-70
4	8	23-71	PA825E	16	0-00	0-00	19-21	4-50				0-80		4-40	23-61
APPROACH SLAB, MOMENT SLAB, SLEEPER SLAB, HEADER SLAB, PARAPET AT ABUTMENT B (SB)															
27	5	53-50	AS541E	17		1-00	51-50	1-00							
92	5	6-62	AS542E	17		2-90	1-02	2-90							
46	5	29-80	AS543E	STR		29-80									
2	5	4-113	AS544E	17		0-113	4-00	0-00							
2	5	4-00	AS545E	STR		4-00									
4	5	3-31	AS546E	16	0-00	0-00	1-31	2-00				1-00		1-83	3-00
27	7	51-50	AS741E	STR		51-50									
91	10	29-80	AS1041E	STR		29-80									
14	5	51-50	SL541E	STR		51-50									
11	5	19-11	SL542E	STR		19-11									
1X11	5	2-60	SL543E	STR		2-60									
		TO 17-42				TO 17-42									
3	5	20-73	SL544E	STR		20-73									
2X25	5	9-83	SL545E	STR		9-80									
		TO 20-03				TO 20-03									
11	5	25-11	SL546E	STR		25-11									
1X14	5	2-60	SL547E	STR		2-60									
		TO 22-03				TO 22-03									
3	5	28-113	SL548E	STR		28-113									
2X33	5	9-80	SL549E	STR		9-80									
		TO 23-43				TO 23-43									
28	5	3-31	SL550E	16	0-00	0-00	1-31	2-00				1-00		1-83	3-00
11	5	2-60	SL551E	STR		2-60							0-00		

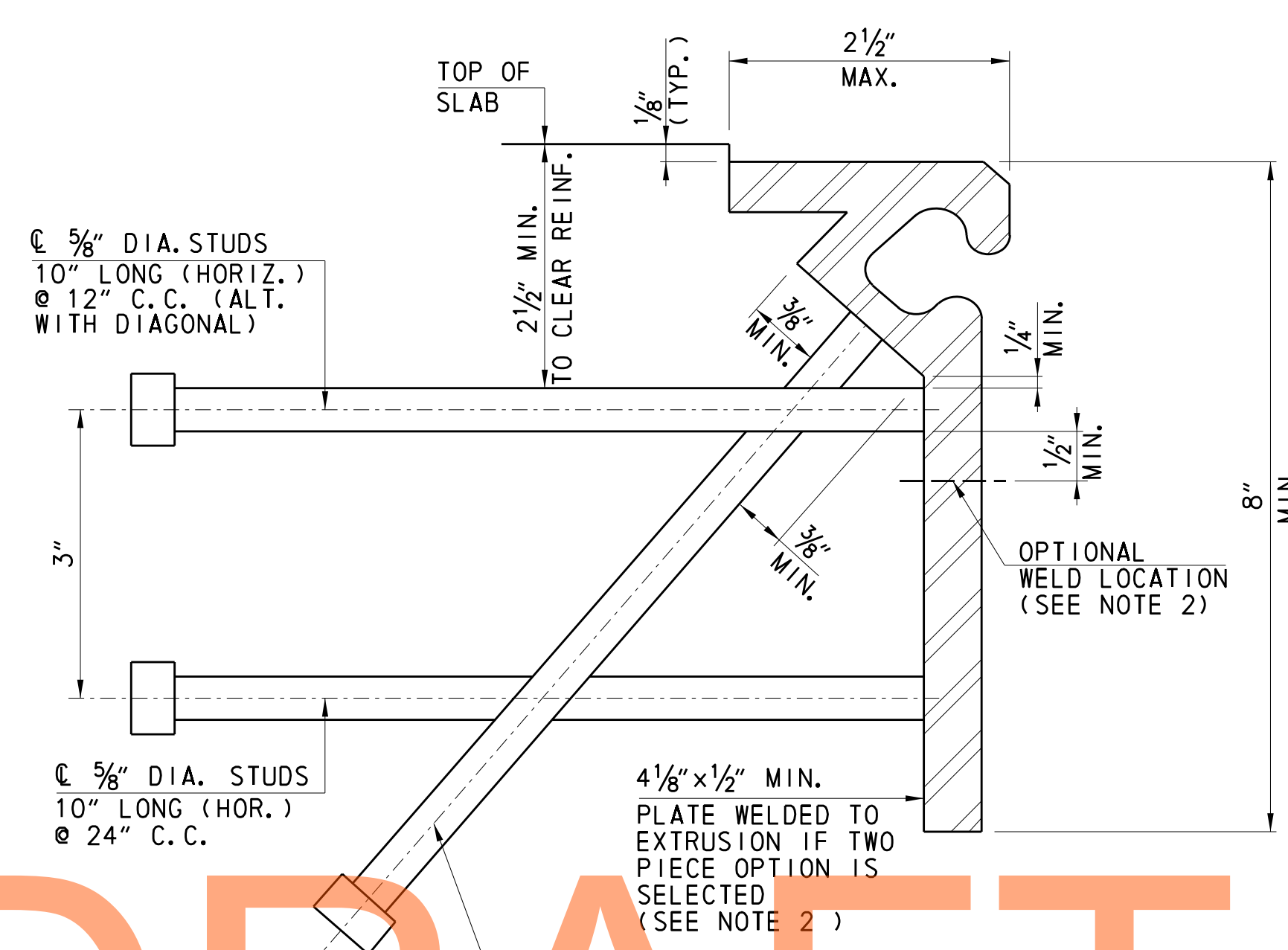
SPECIFICATIONS				BENDING DIMENSIONS (FEET-INCHES /QUARTER INCH)											
QTY.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F/R	G	H	J	K	O
11	5	2-60	SL551E	STR	0-00	2-60									0-00
58	5	5-82	SL552E	17	0-80	2-40		1-02	2-40						0-60
11	6	19-91	SL641E	1	0-80	19-11								0-00	0-60
1X11	6	3-20	SL642E	1	0-80	2-60								0-00	0-60
		TO 18-02			TO 0-80	TO 17-42								TO 0-00	TO 0-60
2	6	20-73	SL643E	STR		20-73									
11	6	25-91	SL644E	1	0-80	25-11								0-00	0-60
1X14	6	3-20	SL645E	1	0-80	2-60								0-00	0-60
		TO 22-83			TO 0-80	TO 22-03								TO 0-00	TO 0-60
2	6	28-113	SL646E	STR		28-113									
92	8	4-60	SL841E	STR		4-60									
126	5	7-72	PA543E	28	2-91	0-12	2-92								
102	5	6-102	PA544E	29	1-43	2-52									
2X8	5	*6-02	PA545E	28	*1-111	*0-22	*1-112								
		TO *7-72			TO *2-91	*0-12	*2-92								
40	5	5-102	PA546E	29	0-103	1-112									
8	7	29-80	PA742E	STR		29-80									
4	7	20-13	PA743E	16	0-00	0-00	15-83	4-50				0-80		4-40	20-03
4	7	9-80	PA744E	16	0-00	0-00	5-30	4-50				0-80		4-40	9-70
8	8	29-80	PA842E	STR		29-80									
4	8	20-13	PA843E	16	0-00	0-00	15-83	4-50				0-80		4-40	20-03
4	8	9-80	PA844E	16	0-00	0-00	5-30	4-50				0-80		4-40	9-70

ASTM STANDARD ENGLISH REINFORCING BARS				RECOMMENDED END HOOKS, APPLICABLE TO ALL GRADES				STIRRUP AND TIE HOOKS, APPLICABLE TO ALL GRADES			
BAR SIZE	NOMINAL DIMENSIONS			180° HOOKS		90° HOOKS		90° HOOK		135° HOOK	
	DIAMETER (INCHES)	AREA (INCHES ²)	WEIGHT (LBS./FT.)								



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

** INCIDENTAL TO STRIP SEAL ASSEMBLY.



EXTRUSION SCHEMATIC
NOT TO SCALE

- EXTRUSION NOTES:
1. EXTRUSION THICKNESS IS 1/2".
 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 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.

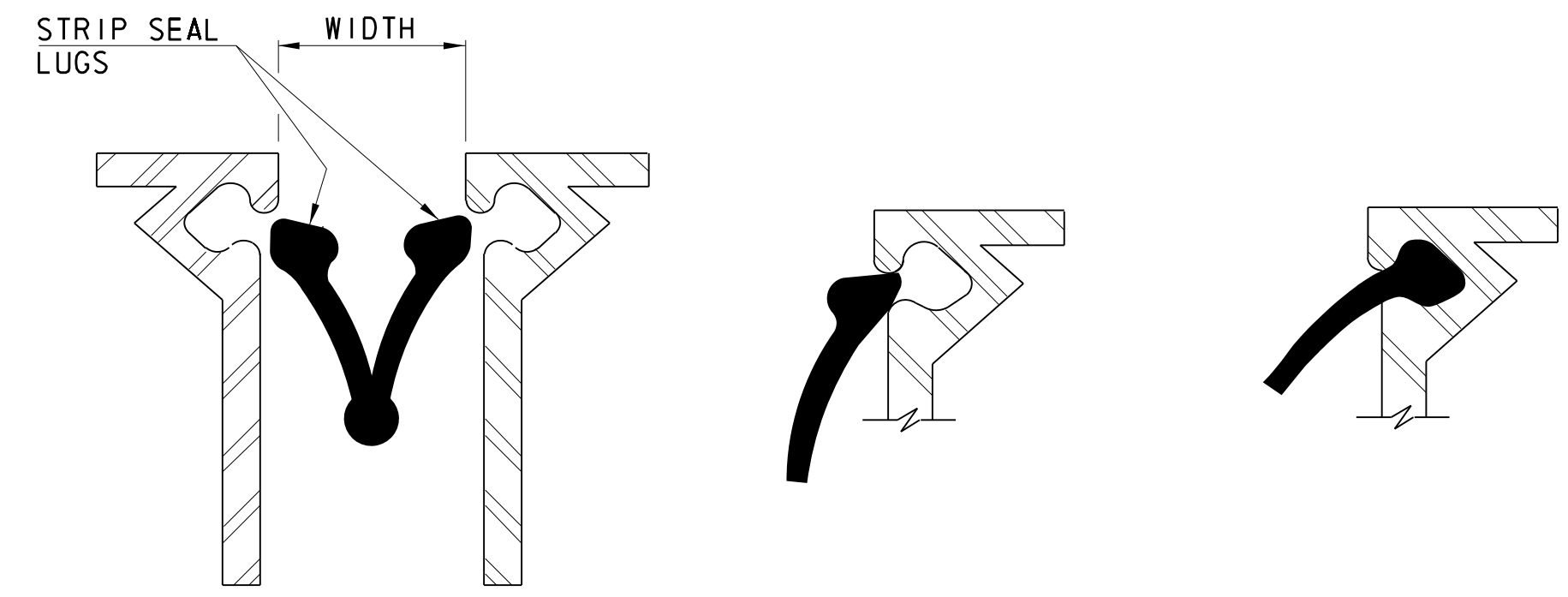
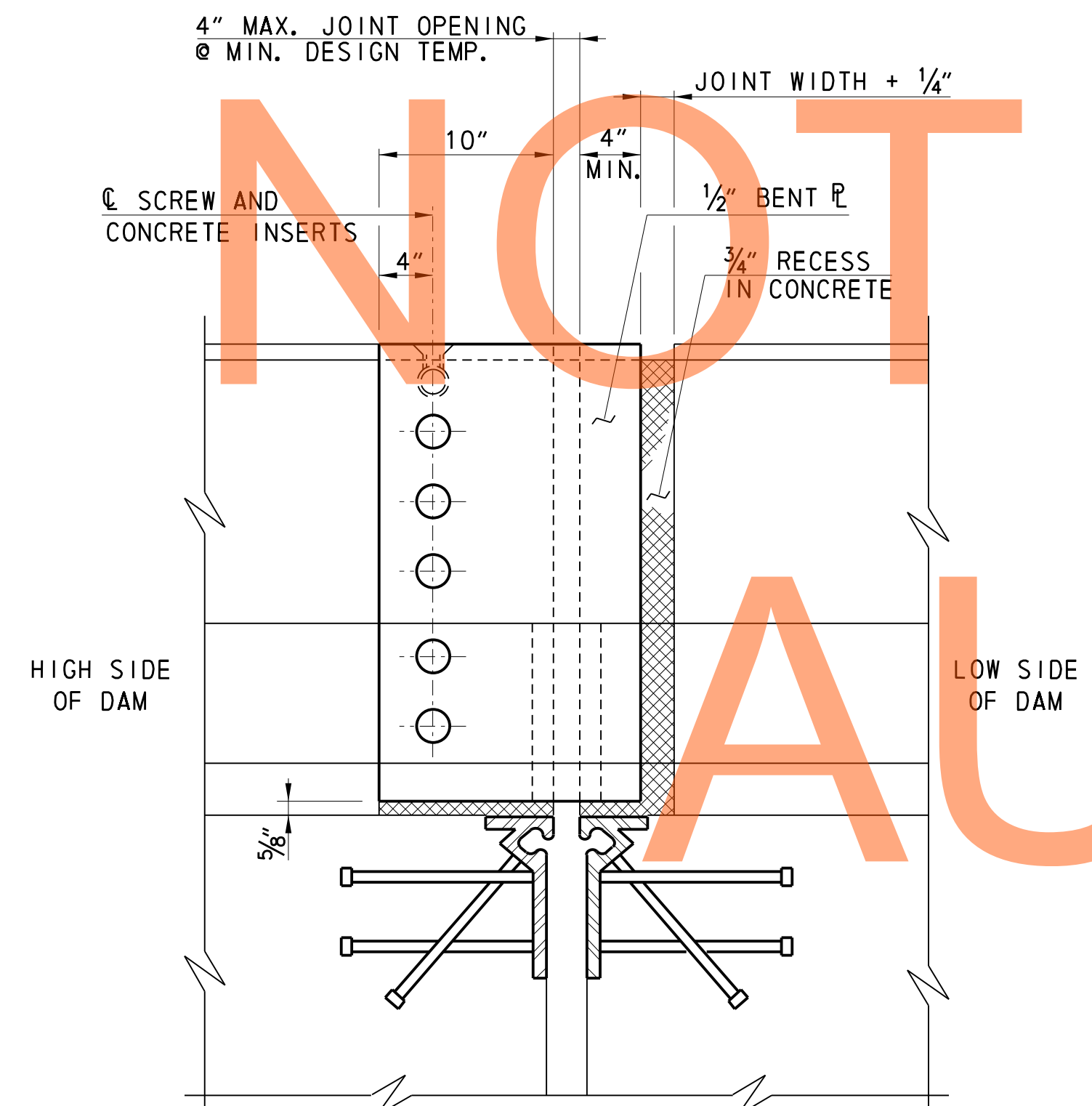


FIGURE 1 FIGURE 2 FIGURE 3

STRIP SEAL INSTALLATION PROCEDURE
NOT TO SCALE

- 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°F 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, 33 AND 34 OF 40.
 7. FOR JOINT OPENING TABLE, SEE SHEETS 26 AND 34 OF 40.



SECTION A-A
NOT TO SCALE

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.

- LEGEND:
- ALT. = ALTERNATE
 - C. C. = CENTER TO CENTER
 - DIA. = DIAMETER
 - HOR. = HORIZONTAL
 - MAX. = MAXIMUM
 - MIN. = MINIMUM
 - N. D. T. = NONDESTRUCTIVE TESTING

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ADDENDUMS / REVISIONS

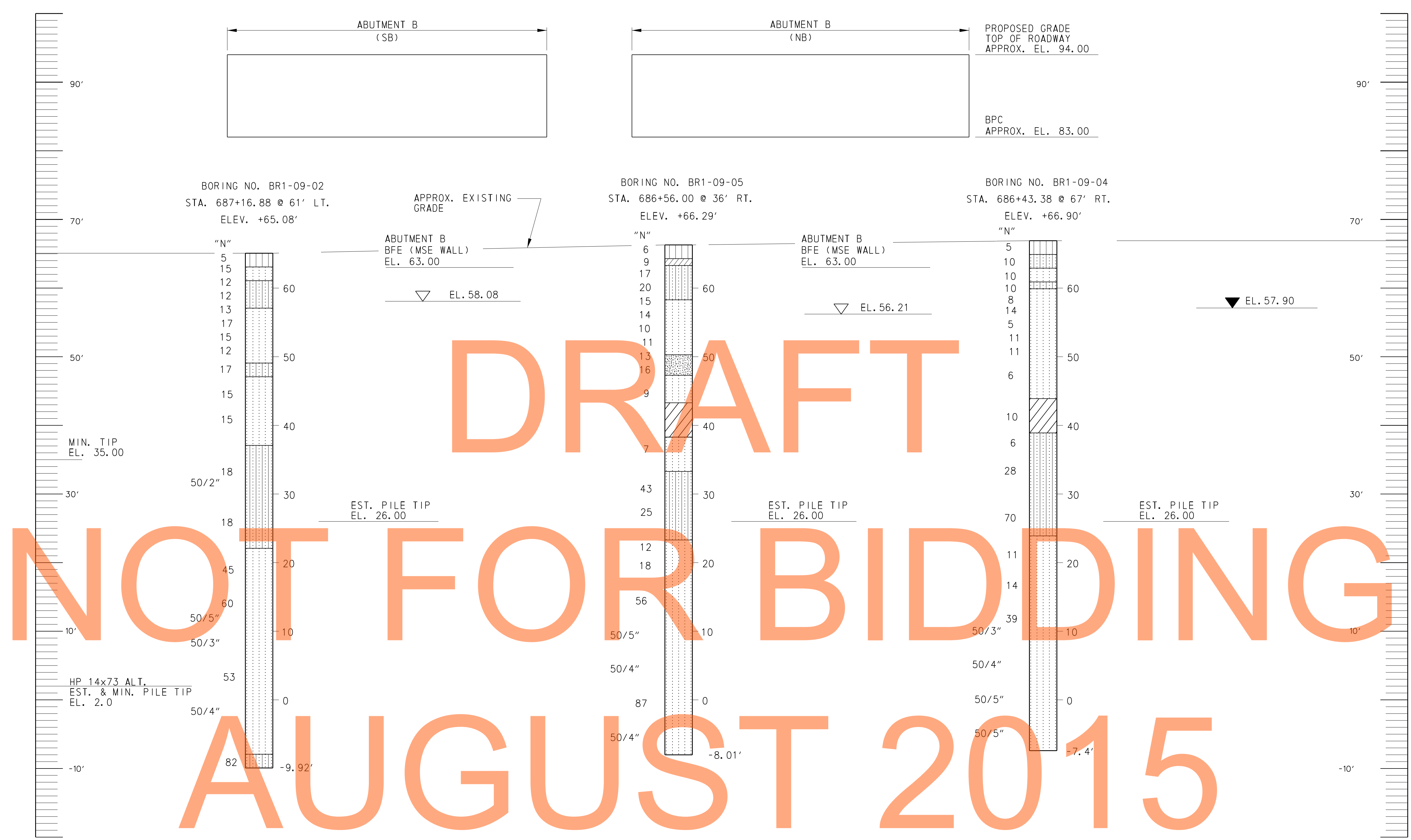
SCALE: AS NOTED

US 301,
SR 896 TO SR 1

CONTRACT T200911308	BRIDGE NO. 1-466 N&S
COUNTY NEW CASTLE	DESIGNED BY:ZAA
	CHECKED BY:MDM

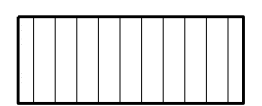
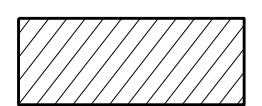
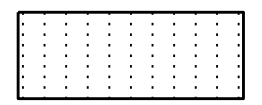
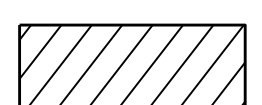
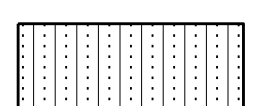

EXPANSION JOINT DETAILS

SHEET NO. 578
TOTAL SHTS. 875



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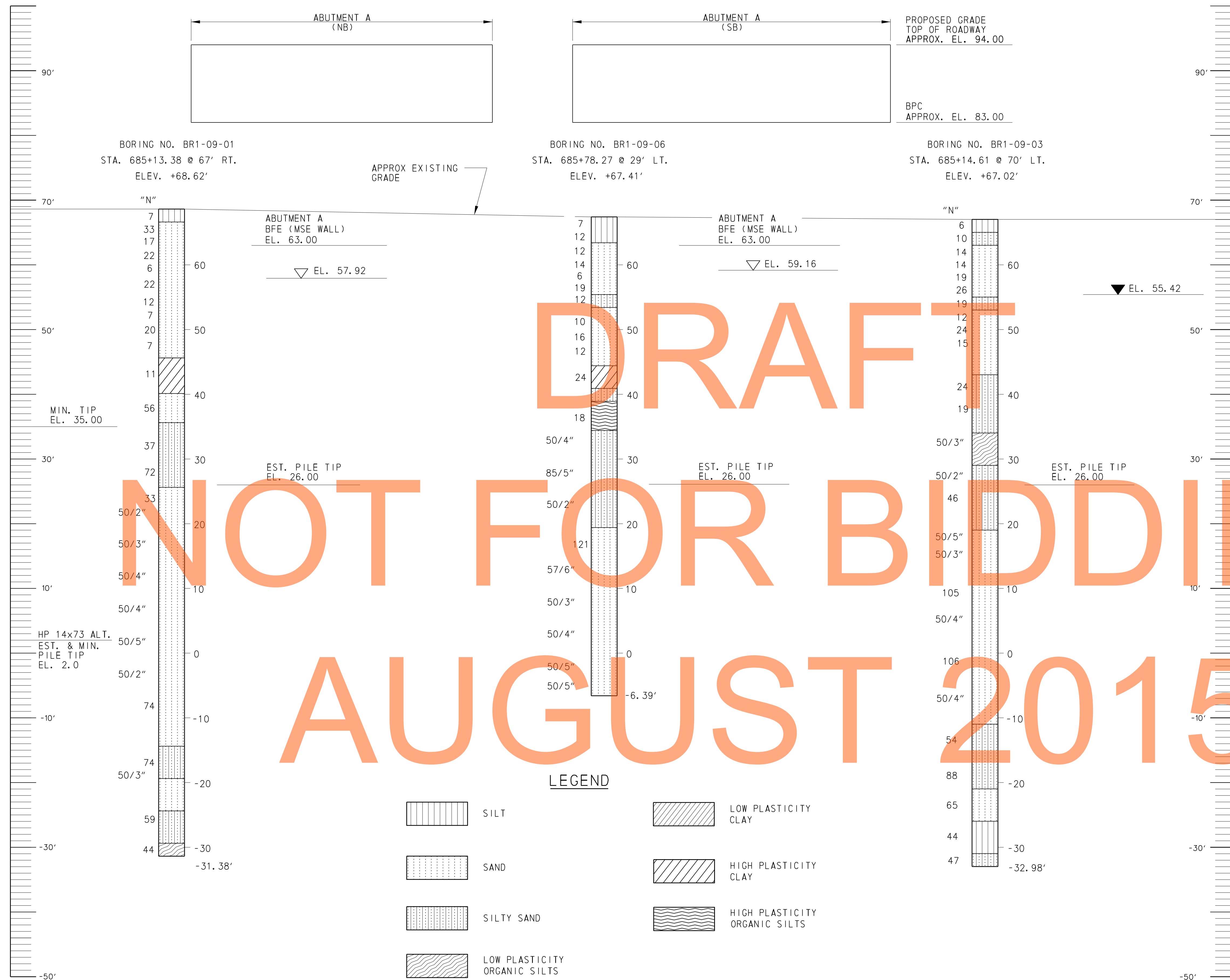
LEGEND

 SILT	 LOW PLASTICITY CLAY
 SAND	 HIGH PLASTICITY CLAY
 SILTY SAND	 GRAVEL

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

LEGEND:
 ALT. = ALTERNATE
 BFE = BOTTOM OF FOOTING ELEVATION
 EST. = ESTIMATED
 MIN. = MINIMUM
 NB = NORTHBOUND
 SB = SOUTHBOUND
 TOLPE = TOP OF LEVELING PAD ELEVATION
 ▽ = GROUND WATER TABLE @ 0 HR
 ▼ = GROUND WATER TABLE @ 96 HR

LOCATION	SEGMENT	TOLPE
WING C	C1	63.0
WING C	C2	65.5
WING C	C3	68.0
WING D	D1	63.0
WING D	D2	68.0
MEDIAN B WALL	MB	68.0



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