

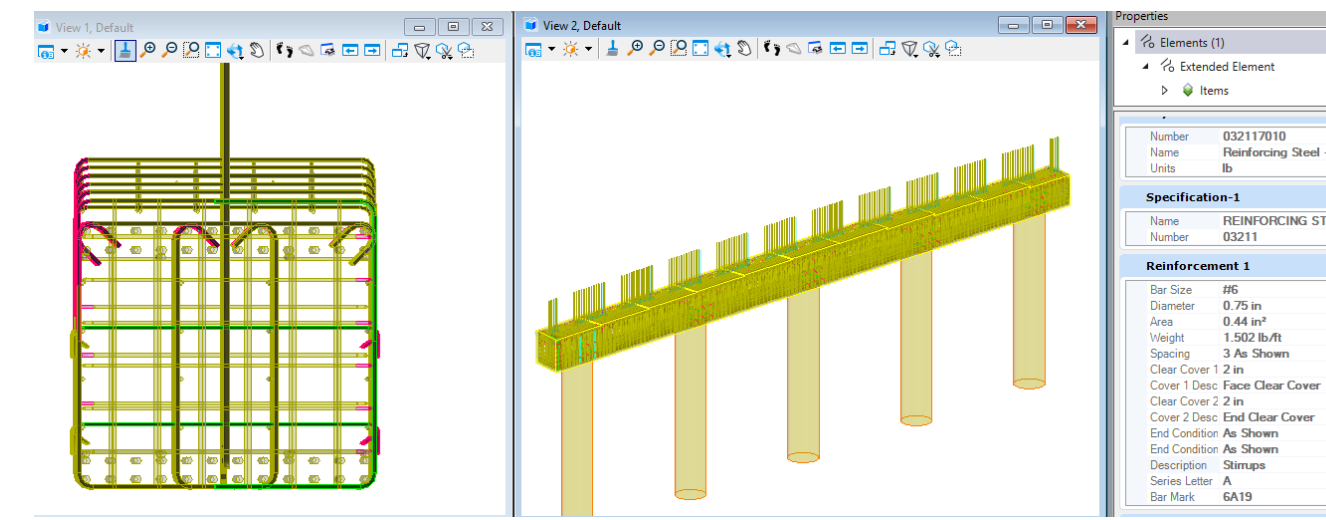
KEY ELEMENT COLOR DESIGNATION

KEY ELEMENT DESCRIPTION

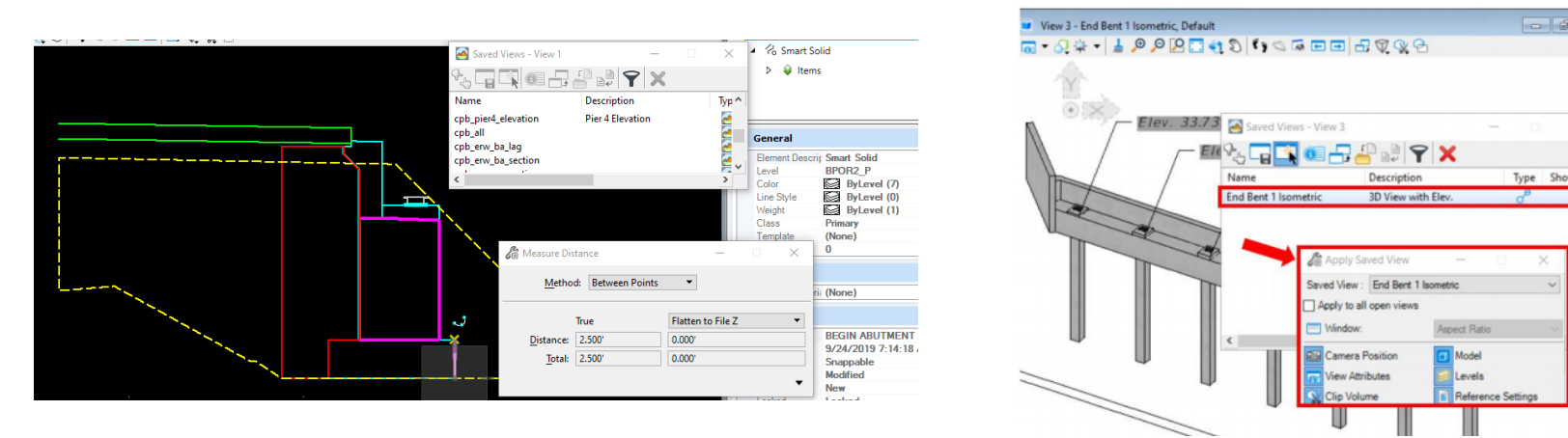
KEY ELEMENT EXAMPLE



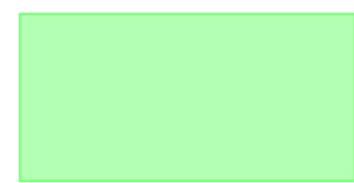
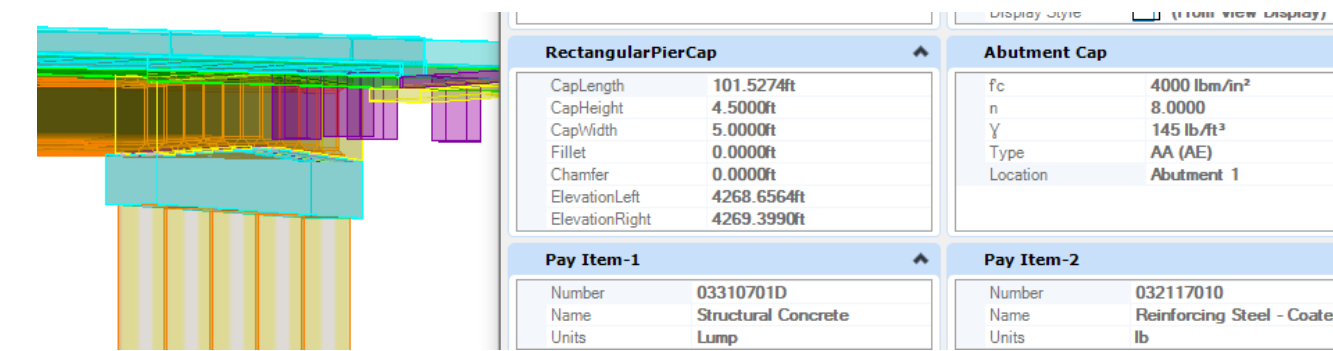
Reinforcement shown in model with attributes attached for bar mark, spacing, and cover. Saved views will be added for reinforcement per element and annotated as necessary for hard to determine situations (staggered deck bars, etc.).



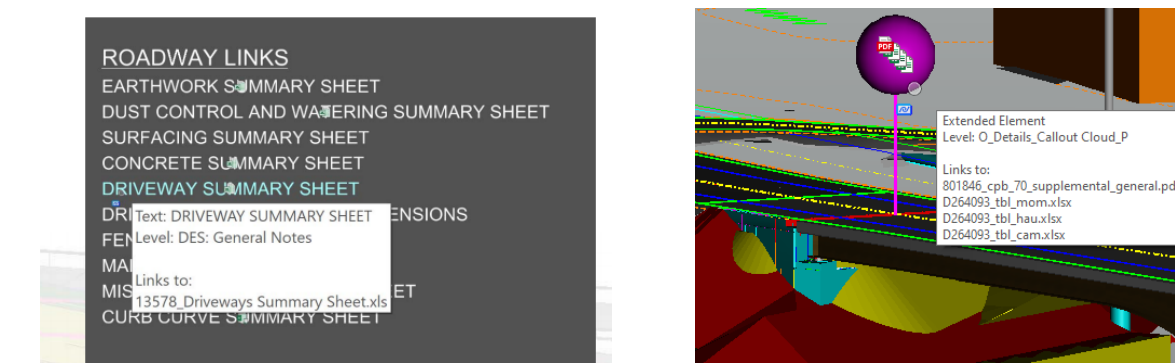
Geometry and key information included in model and shown in saved views. Annotation will generally not be provided for this information, and it is assumed that user will be able to measure within the model environment and obtain the information needed without explicit annotation in views.



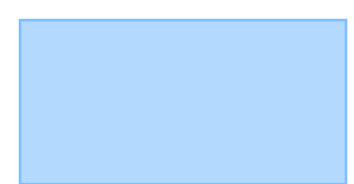
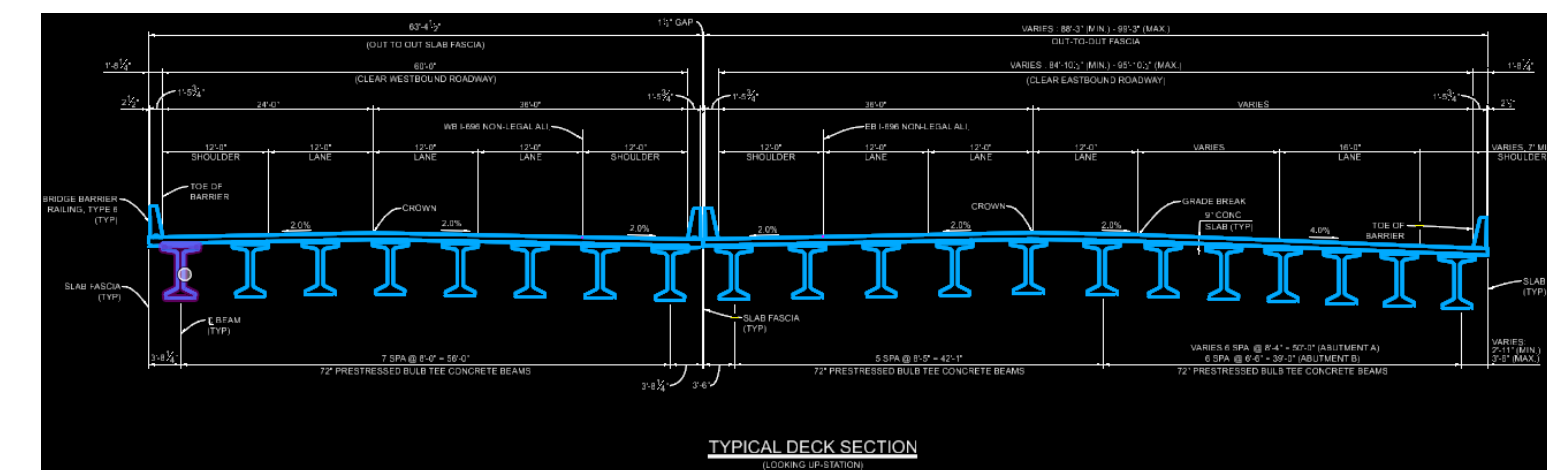
Added as named element attributes, item types in model, and/or assigned specific levels (such as with symbols or utilities). Also includes any embedded information within the model such as the Saved View List.



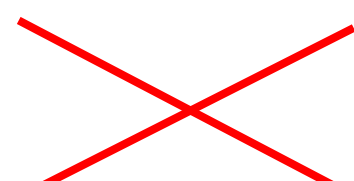
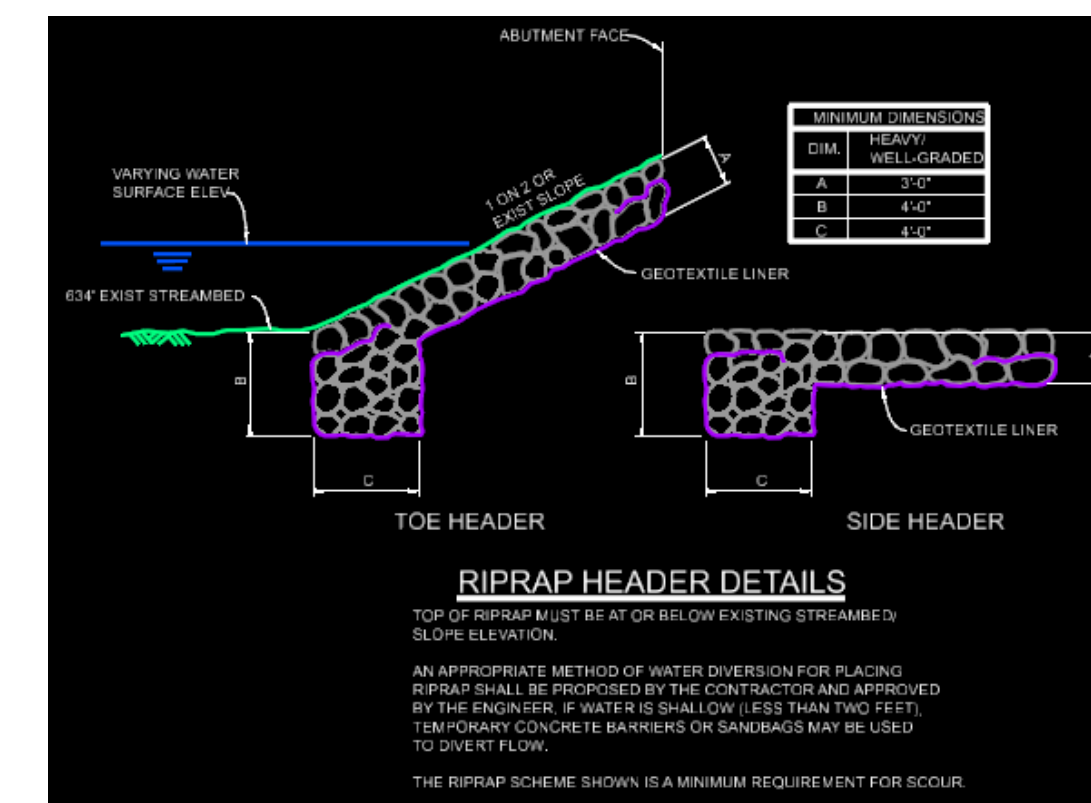
Information provided as separate document linked to model. This could be a pdf report, spreadsheet, or other documents.



Annotated information in the model saved views. This is also included in the model that can be measured, etc., but for more common views (typical section, profile view, etc.) or critical information and dimensions not able to be easily conveyed in the model.



Notes or 2D details that will be included in the model dgn and named saved views are added to provide direct views to details. This includes tabular information in digital format that can be copied or exported to other applications such as spreadsheets.



Element not included in typical project or not necessary to include in contract documents.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

COUNTY
SR XXXX

SEGMENT XXXX OFFSET XXXX
SR XXXX STA XX+XX.XX

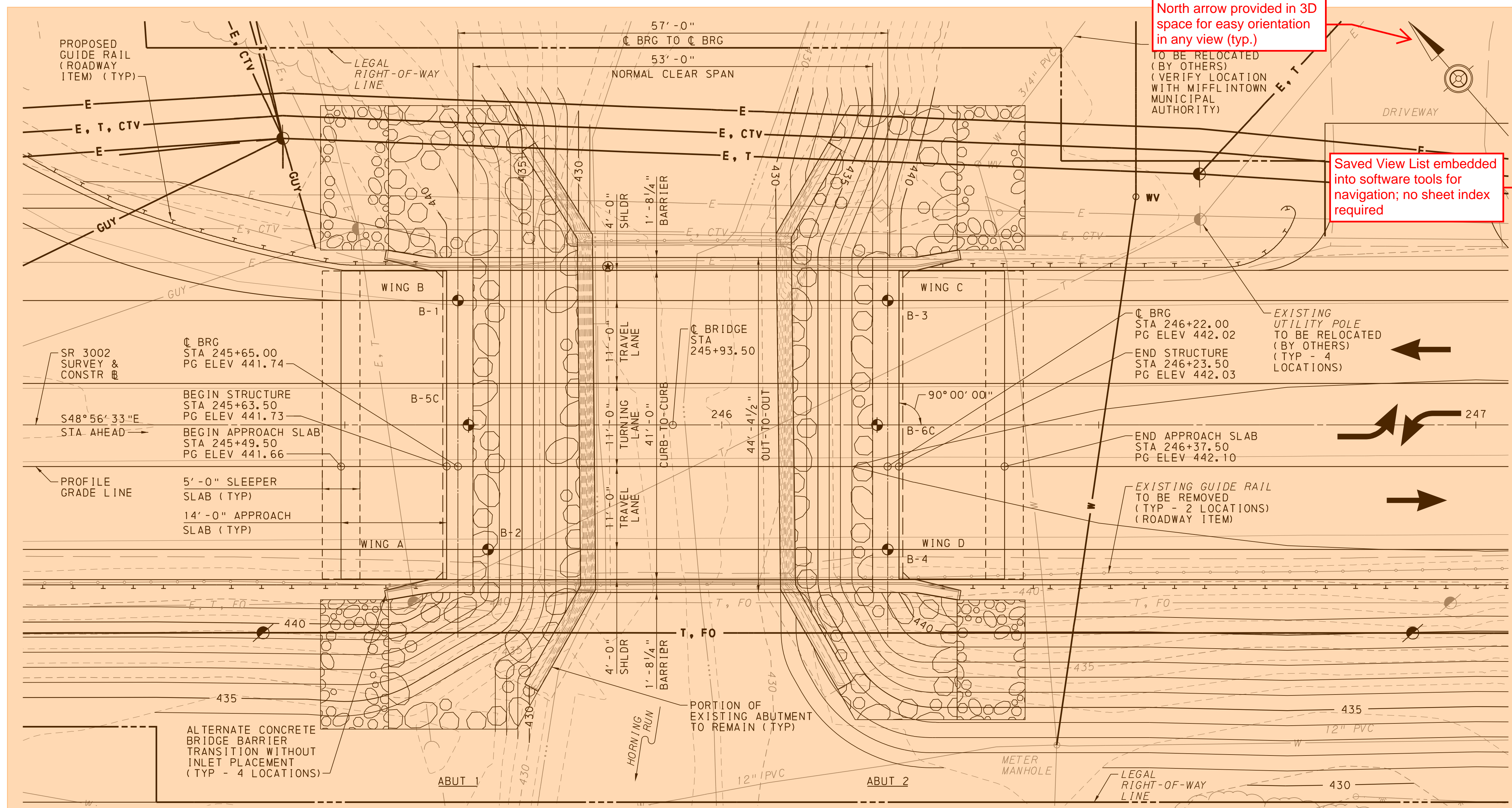
OVER CREEK

CROSSWALK PLAN EXHIBIT FROM 2D PLANS TO 3D MODEL DELIVERABLE

KEY SHEET

SHEET X OF XX

S - XXXXX



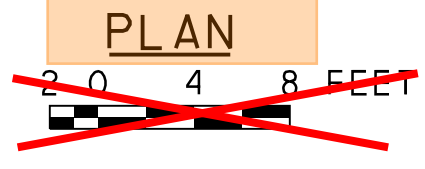
INDEX OF DRAWINGS	
SHEET NO.	TITLE
1	GENERAL PLAN
2	GENERAL ELEVATION & QUANTITIES
3	GENERAL NOTES
4	TYP SECT & ELEVATION CHART
5	DECK & BEAM ELEVATIONS
6	STAKE-OUT PLAN
7	ABUTMENT 1 PLANS
8	ABUTMENT 1 ELEVATION
9	ABUTMENT 1 SECTIONS
10	ABUTMENT 1 DETAILS
11	ABUTMENT 1 WINGWALL A
12	ABUTMENT 1 WINGWALL B
13	ABUTMENT 1 BEARING SEAT ELEV
14	ABUTMENT 1 REBAR SCHEDULE
15	ABUTMENT 2 PLANS
16	ABUTMENT 2 ELEVATION
17	ABUTMENT 2 SECTIONS
18	ABUTMENT 2 DETAILS
19	ABUTMENT 2 WINGWALL C
20	ABUTMENT 2 WINGWALL D
21	ABUTMENT 2 BEARING SEAT ELEV
22	ABUTMENT 2 REBAR SCHEDULE
23	FRAMING PLAN
24	P/S CONCRETE BEAM DETAILS
25	ELASTOMERIC BEARING DETAILS
26	DIAPHRAGM DETAILS 1
27	DIAPHRAGM DETAILS 2
28	SLAB PLAN
29	SLAB REINFORCEMENT SECTIONS
30	BARRIER DETAILS
31	APPROACH SLAB DETAILS 1
32	APPROACH SLAB DETAILS 2
33	SUPERSTRUCTURE REBAR SCHEDULE
34	RATING TABLES
35	STRUCTURE BORINGS - 1
36	STRUCTURE BORINGS - 2
37	STRUCTURE BORINGS - 3

- NOTES**
- FOR ELEVATION VIEW, SEE SHEET 2.
 - FOR TYPICAL SECTION, SEE SHEET 4.
 - FOR LOCATION AND DETAILS OF THE 6" STRUCTURE FOUNDATION DRAIN, SEE SHEETS 7 AND 15.
 - FOR RATINGS, SEE SHEET 34.

NOTE:
 THE BRIDGE PLANS WERE DEVELOPED USING BRASS 3 SYSTEM, BASED UPON THE INFORMATION SUPPLIED BY DEWBERRY ENGINEERS INC. CONSULTING ENGINEERS.

FOR FUTURE REDECKING OF THIS INTEGRAL ABUTMENT BRIDGE, THE END DIAPHRAGMS MUST BE COMPLETELY REMOVED PRIOR TO DECK REMOVAL TO AVOID DAMAGING THE GIRDERS.

3D Alignment will be shown in the model, accessed from both the roadway and bridge container files



A full list of Supplemental Drawings will be added in the 2D Details and Notes, and individual elements will have an attribute for applicable

Model revisions will be provided with updates noted and highlighted within viewing software including attributes with specific changes to model elements when applicable

LEGEND

	WETLANDS
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	PROPOSED TRAFFIC LANE
	SELECTED BORROW EXCAVATION ROCK, CLASS R-8, CHOKED WITH R-4
	SELECTED BORROW EXCAVATION ROCK, CLASS R-4 (ROADWAY ITEM)
	POINT OF MINIMUM VERTICAL UNDERCLEARANCE

HORIZONTAL CURVE DATA
 TANGENT S48°56'33"E

VERTICAL CURVE DATA

-0.94%	+	0.50%
PVI STA 244+97.50 ELEV 441.40 VC 135.00' MO 0.24' HLSD > 1000'		
+0.50%	+	-0.50%
PVI STA 246+97.50 ELEV 442.40 VC 135.00' MO -0.17' SSD 1147'		

BORING LOCATIONS

BORING NUMBER	LOCATION	
	STATION	OFFSET
B-1	245+65.00	16.50' LT
B-2	245+69.00	16.50' RT
B-3	246+22.00	16.50' LT
B-4	246+22.00	16.50' RT
B-5C	245+66.00	0.00'
B-6C	246+22.00	0.00'

Boring log locations will be shown within model (in 3D) with specific attributes included for material, blow counts, and other soil properties. See Soil Boring Log sheet for more details.

SUPPLEMENTAL DRAWINGS

DESCRIPTION	DWG. NO.	RECM'D DATE
PERMANENT METAL DECK FORMS	BC-732M	09-30-16
ANCHOR SYSTEMS	BC-734M	08-04-17
WALL CONSTRUCTION & EXPANSION JOINT DETAILS	BC-735M	09-30-16
REINFORCEMENT BAR FABRICATION DETAILS	BC-736M	09-30-16
BRIDGE BARRIER TO GUIDE RAIL TRANSITION	BC-739M	08-04-17
BRIDGE DRAINAGE	BC-751M	09-30-16
CONCRETE DECK SLAB DETAILS	BC-752M	09-30-16
BEARINGS	BC-755M	09-30-16
STEEL PILE TIP REINFORCEMENTS & SPLICES	BC-757M	09-30-16
PREFORMED NEOPRENE COMPRESSION SEAL JOINT FOR APPROACH SLABS	BC-766M	09-30-16
PRESTRESSED CONCRETE BEAM BRACING	BC-772M	09-30-16
MISCELLANEOUS PRESTRESS DETAILS	BC-775M	09-30-16
REINFORCED CONCRETE REPAIR	BC-783M	09-30-16
TYPICAL WATERPROOFING AND EXPANSION DETAILS	BC-788M	09-30-16
CLASSIFICATION OF EARTHWORK FOR STRUCTURES	RC-11M	06-01-10
BACKFILL AT STRUCTURES	RC-12M	09-15-16
GUIDE RAIL TO BRIDGE BARRIER TRANSITIONS	RC-50M	08-04-17
TYPE 31 STRONG POST GUIDE RAIL	RC-51M	08-04-17

Mark	Description	By	Chk'd	Recm'd	Date
REVISIONS					

SR 3002 PREVIOUSLY KNOWN AS LR 32

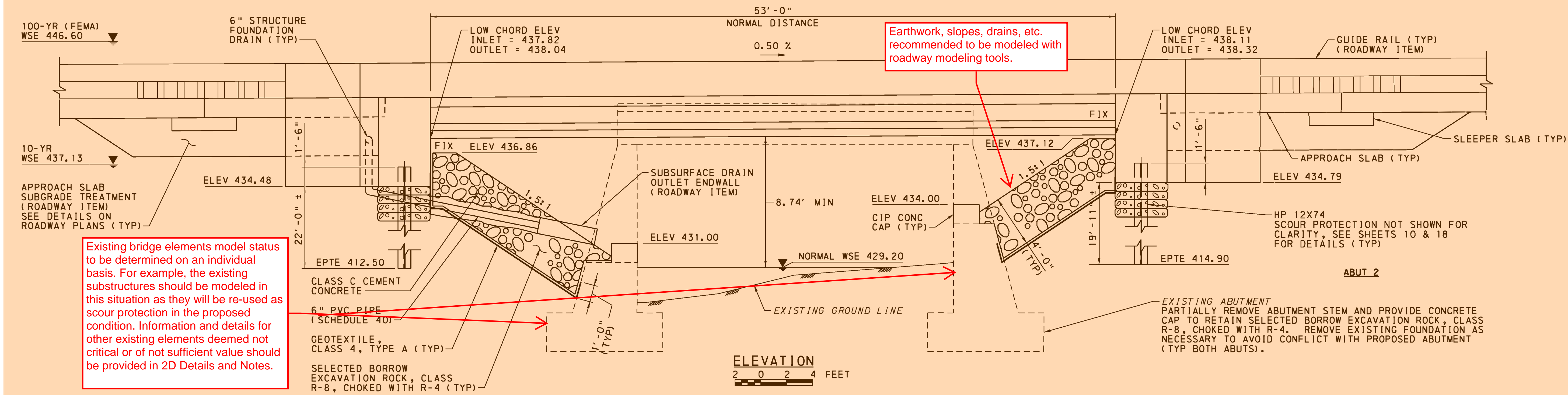
COMMONWEALTH OF PENNSYLVANIA
 DEPARTMENT OF TRANSPORTATION

JUNIATA COUNTY
 SR 3002 A01
 SEGMENT 0020 OFFSET 0164
 SR 3002-A01 STA 245+93.50
 OVER HORNING RUN
 1-SP COMP P/S CONC BULB-TEE BEAM BRIDGE
 GENERAL PLAN

SHEET 1 OF 37
 & SUPPLEMENTAL DRAWINGS
 S- 37399

Saved View List embedded into software tools for navigation; no sheet index required

- Rebar
- Measure Model
- Model Attributes
- Linked Doc
- Model Annotation
- 2D Detail
- Not Included



ALTERNATE STRUCTURE ITEMS			
ITEM NO.	DESCRIPTION	UNIT	TOTAL
8030-0001	BRIDGE STRUCTURE, AS DESIGNED, S-37399	LS	LUMP SUM
8000-0001	PRESTRESSED CONCRETE BRIDGE STRUCTURE	LS	LUMP SUM
8100-0001	STEEL BRIDGE STRUCTURE	LS	LUMP SUM

HYDRAULIC DATA					
DRAINAGE AREA <u>6.65</u> SQ MILES					
FREQUENCY	MAGNITUDE	PROPOSED		EXISTING	
		ELEVATION	VELOCITY	ELEVATION	VELOCITY
10 YEAR	681 CFS	437.13 FT	1.9 FPS	437.19 FT	1.9 FPS
100 YEAR	2750 CFS	446.60 FT	0.5 FPS	446.60 FT	0.5 FPS

FLOOD OF RECORD: UNKNOWN

- ITEMS IN BRIDGE STRUCTURE LUMP SUM ITEM 8030-0001 - GIVEN FOR INFORMATION ONLY.
- INCLUDES CLASS AAAP CONCRETE IN DECK SLAB AND END DIAPHRAGMS, AND APPROXIMATELY 5 CUBIC YARDS OF CLASS AAAP CONCRETE TO ACCOUNT FOR STAY-IN-PLACE FORM TROUGHS.
- INCLUDES CLASS AA CONCRETE IN CURBS, BARRIERS, AND INTERMEDIATE DIAPHRAGMS.
- QUANTITY TO BE USED FOR CLASS AA CONCRETE UNDER THE DECK COLUMN HEADING ON THE STRUCTURE COST DATA FORM.
- INCLUDES STEEL BEAM (HEAVY DUTY) PILE TIP REINFORCEMENT AND MANDATORY PRE-DRILLING.
- FOR TEST PILE LENGTHS, SEE THIS SHEET.
- FOR AS DESIGNED STRUCTURE, INCLUDED IN BRIDGE BID ITEMS. FOR ALTERNATE DESIGNS, INCLUDED IN BRIDGE STRUCTURE LUMP SUM BID ITEM.
- INCLUDED IN BRIDGE BID ITEMS FOR ALTERNATE DESIGN.
- APPLY IN TWO COATS PER PUBLICATION 408, SECTION 503. FOR PAY LIMITS, SEE SHEET 4. ONLY APPLY PROTECTIVE COATING IF CONCRETE IS POURED BETWEEN SEPTEMBER 1 AND MARCH 1 PER PUBLICATION 408M, SECTION 1001.3(K)6.
- INCLUDES REQUIRED ELASTOMERIC BEARING PADS.
- SEE SPECIAL PROVISIONS.
- INCLUDES 413 LBS OF REINFORCEMENT AND 153 PREDRILLED HOLES. ABUT 1 = 205 LBS AND 76 PREDRILLED HOLES. ABUT 2 = 208 LBS AND 77 PREDRILLED HOLES.
- APPLY EPOXY-BASED SURFACE TREATMENT FOR BRIDGE DECK TO DECK SURFACE AND APPROACH SLAB.
- APPLY BOILED LINSEED OIL TO DECK/APPROACH SLABS IF EPOXY SURFACE IS NOT APPLIED UNTIL THE FOLLOW CALENDAR YEAR.

TRAFFIC DATA	
CURRENT ADT	- 4214 (2019)
DESIGN YEAR ADT	- 4740 (2039)
DHV	- 521 (11%)
D	- 55%
T	- 4%

PROPOSED STRUCTURE DATA	
STA 245+93.50	
TYPE = P/S CONCRETE BULB-TEE BEAM	
CLEAR SPAN = 53'-0"	
CLEAR ROADWAY = 41'-0"	
SKEW = 90°00'00"	
MINIMUM UNDERCLEARANCE = 8.74'	
AVERAGE UNDERCLEARANCE = 9.3'	
HYDRAULIC OPENING = 330 SF	

EXISTING STRUCTURE DATA	
STA 245+95.25	
TYPE = REINFORCED CONCRETE T-BEAM	
CLEAR SPAN = 24'-5"	
SKEW = 88°	
CLEAR ROADWAY = 45'-0'	
MINIMUM UNDERCLEARANCE = 8.2'	
AVERAGE UNDERCLEARANCE = 10.0'	
HYDRAULIC OPENING = 244 SF	

APPROXIMATE QUANTITIES - BRIDGE STRUCTURE, AS DESIGNED								
ITEM NO.	DESCRIPTION	UNIT	ABUT 1	ABUT 2	SUPER	APPR SL-1	APPR SL-2	TOTAL
8030-0001	BRIDGE STRUCTURE, AS DESIGNED, S-37399 (11)	LS						
(1)	CLASS 3 EXCAVATION	CY	636	473				1109
(1)	GEOTEXTILE, CLASS 4, TYPE A	SY	423	365				788
(1)	MEMBRANE WATERPROOFING SYSTEM INSTALLED ON OTHER SURFACES	SY	13	13				26
(1)	NO. 57 COARSE AGGREGATE	CY	46	43				89
(1)	CLASS AAAP CEMENT CONCRETE	CY	4	4	106 (2)	32	32	178
(1)	CLASS AA CEMENT CONCRETE	CY			22 (3)	8	8	38 (4)
(1)	CLASS A CEMENT CONCRETE	CY	36	35				71
(1)	CLASS C CEMENT CONCRETE	CY	2					2
(1)	SELECTED BORROW EXCAVATION, STRUCTURE BACKFILL	CY	67	69				136
(1)	STEEL BEAM TEST PILES HP12X74 (5), (6)	EACH	1	1				2
(1)	PRESTRESSED CONCRETE PA BULB-TEE BEAMS 33" X 29" (10)	LF			295			295
(1)	6" STRUCTURE FOUNDATION DRAIN	LF	68	52				120
(1)	6" PVC PIPE (SCHEDULE 40)	LF	54	25				79
AND 1002-0053	REINFORCEMENT BARS, EPOXY COATED (7)	LB	7026	7017	25,775	9,466	9,466	58,750
AND 1005-1104	STEEL BEAM BEARING PILES, HP12X74 (8)	LF	94	86				180
AND 1005-1277	STEEL BEAM (HEAVY DUTY) PILE TIP REINFORCEMENT, HP12X74 (8)	EACH	4	4				8
AND 1019-0010	PROTECTIVE COATING FOR REINFORCED CONCRETE SURFACES (BOILED LINSEED OIL) (9), (14)	SY			131			131
1018-0050	REMOVAL OF PORTION OF EXISTING BRIDGE (11)	LS						LS
4205-0268	SELECTED BORROW EXCAVATION ROCK, CLASS R-8 CHOKED WITH R-4 (11)	CY	252	198				450
9000-0018	SEISMOGRAPH (11)	LS						LS
9000-0158	ADHESIVE ANCHOR, NO. 5 BAR (11), (12)	EACH	76	77				153
9000-7102	DYNAMIC PILE LOAD TESTING (11)	EACH	1	1				2
9005-0500	MANDATORY PRE-DRILLING FOR DRIVEN PILES (11)	LF	72	64				136
9043-0101	EPOXY-BASED SURFACE TREATMENT FOR BRIDGE DECKS (11), (13)	SY			274	64	64	402

GENERAL ELEVATION & QUANTITIES

- Rebar
- Measure Model
- Model Attributes
- Linked Doc
- Model Annotation
- 2D Detail
- ~~Not Included~~

All of these tabular data and notes will be provided in the electronic files as tables which can be exported to spreadsheets.

GENERAL NOTES

PROVIDE MATERIALS AND PERFORM WORK IN ACCORDANCE WITH SPECIFICATIONS, PUBLICATION 408/2016, AND THE CONTRACT SPECIAL PROVISIONS.

DESIGN SPECIFICATIONS:

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS 2014, AND AS SUPPLEMENTED BY DESIGN MANUAL, PART 4, APRIL 2015.

LIVE LOAD DISTRIBUTION TO GIRDERS IS BASED UPON DM-4 DISTRIBUTION FACTOR METHOD.

DESIGN IS IN ACCORDANCE WITH THE LRFD METHOD.

DESIGN LIVE LOADS:

PHL-93, ML-80, TK527 OR P-82 (204 kip PERMIT LOAD)

FATIGUE DESIGN IS BASED ON THE FOLLOWING:

PRESTRESSED CONCRETE: ADTT 95 (2039)
(ONE-DIRECTIONAL)

MAXIMUM ALLOWABLE TENSILE STRESS IN PRECOMPRESSED TENSILE ZONE: 0.0948*SQUARE ROOT(f'c).

DEAD LOADS:

INCLUDES A SURFACE AREA DENSITY OF 30 LB/SF FOR FUTURE WEARING SURFACE ON THE DECK SLAB.

INCLUDES A SURFACE AREA DENSITY OF 15 LB/SF FOR PERMANENT METAL DECK FORMS WHICH TAKES INTO ACCOUNT THE WEIGHT OF THE FORM, PLUS THE WEIGHT OF THE CONCRETE IN THE VALLEYS OF THE FORMS.

GENERAL:

STATIONS AND ELEVATIONS ARE GIVEN IN FEET UNLESS OTHERWISE NOTED.

PROVIDE 2" CONCRETE COVER ON REINFORCEMENT BARS, EXCEPT AS NOTED.

FOR INTEGRAL ABUTMENTS (i.e. ABUTMENT PILE CAP, END DIAPHRAGM, AND WINGWALLS): PROVIDE 3" CONCRETE COVER ON REINFORCEMENT BARS.

FOR INTEGRAL ABUTMENTS (i.e. ABUTMENT PILE CAP, END DIAPHRAGM, AND WINGWALLS) USE THE FOLLOWING MINIMUM REINFORCEMENT SPLICE LENGTHS UNLESS OTHERWISE INDICATED:

#4 2'-1" #6 3'-1" #8 5'-1" #10 8'-2"
#5 2'-7" #7 3'-10" #9 6'-5" #11 10'-0"

PLACE ALL GIRDERS, INCLUDING BOX BEAMS, WITH THEIR WEBS VERTICAL.

USE CLASS AAAP CEMENT CONCRETE IN:
DECK SLAB
APPROACH SLABS
END DIAPHRAGMS ABOVE CONSTRUCTION JOINT
WINGWALLS ABOVE CONSTRUCTION JOINT

USE CLASS AA CEMENT CONCRETE IN:
BARRIERS
INTERMEDIATE DIAPHRAGMS
SLEEPER SLABS

USE CLASS A CEMENT CONCRETE IN:
CAP BEAM BELOW CONSTRUCTION JOINT
WINGWALLS BELOW CONSTRUCTION JOINT
EXISTING ABUTMENT CAPS

USE CLASS C CEMENT CONCRETE BELOW THE BOTTOM OF FOOTINGS WHEN SPECIFIED.

A HIGHER CLASS CONCRETE MAY BE SUBSTITUTED FOR A LOWER CLASS CONCRETE AT NO ADDITIONAL COST TO THE DEPARTMENT, IF APPROVED BY THE DISTRICT BRIDGE ENGINEER.

PROVIDE GRADE 60 REINFORCING STEEL BARS THAT MEET THE REQUIREMENTS OF ASTM A 615, A 996, OR A 706.
DO NOT WELD GRADE 60 REINFORCING STEEL BARS UNLESS SPECIFIED.
GRADE 40 REINFORCING STEEL BARS MAY BE SUBSTITUTED WITH A PROPORTIONAL INCREASE IN CROSS-SECTIONAL AREA, IF APPROVED BY THE CHIEF BRIDGE ENGINEER.
DO NOT USE RAIL STEEL A 996 REINFORCEMENT BARS IN BRIDGE ABUTMENTS, SHEAR BLOCKS, BEAMS, FOOTINGS, PILES, BARRIERS OR WHERE BENDING OR WELDING OF THE REINFORCEMENT BARS IS INDICATED.

ALL REINFORCING BARS ARE TO BE EPOXY-COATED

WELDING OF REINFORCEMENT BARS DURING FABRICATION OR CONSTRUCTION IS NOT PERMITTED UNLESS SPECIFIED.

GALVANIZED REINFORCEMENT BARS MAY BE SUBSTITUTED FOR EPOXY-COATED REINFORCEMENT BARS AT NO ADDITIONAL COST TO THE DEPARTMENT.

RAKE-FINISH ALL HORIZONTAL CONSTRUCTION JOINTS, EXCEPT AS INDICATED.

SEISMIC FORCES WERE CONSIDERED FOR A SITE CLASS OF A-E.

USE RETARDER ADMIXTURE CONFORMING TO PUBLICATION 408/2016 IN THE CONCRETE DECK SLAB.

CONSTRUCT DECK SLAB TRANSVERSE CONSTRUCTION JOINTS PARALLEL TO BRIDGE CENTERLINE OF BEARINGS.

SUPERSTRUCTURE MUST BE ERECTED AND CONNECTED TO THE INTEGRAL ABUTMENTS PRIOR TO PLACING BACKFILL BEHIND THE ABUTMENTS.

APPLY PROTECTIVE COATING FOR REINFORCED CONCRETE SURFACES (BOILED LINSEED OIL) TO THE ENTIRE BRIDGE DECK, TOP SURFACES OF APPROACH SLABS, EXPOSED SURFACES OF THE SLEEPER SLAB, BARRIERS (FRONT FACE, TOP AND REAR FACE DOWN TO THE DRIP NOTCH ON THE BRIDGE DECK). APPLY IN ACCORDANCE WITH PUBLICATION 408, SECTION 1019(c).

CHAMFER EXPOSED CONCRETE EDGES 1 IN BY 1 IN, EXCEPT AS NOTED.

ALL DIMENSIONS SHOWN ARE HORIZONTAL, EXCEPT AS NOTED.

DIMENSIONS SHOWN ARE FOR A NORMAL TEMPERATURE OF 68 DEGREES F.

USE EITHER PERMANENT METAL FORMS OR REMOVABLE FORMS TO CONSTRUCT THE DECK SLAB.

DECK SLAB THICKNESS INCLUDES A 0.5" INTEGRAL WEARING SURFACE. BEFORE CONCRETE HAS INITIALLY SET, PERFORM FINAL TEXTURING WITH A SPRING STEEL TINE DEVICE TO PRODUCE STRIATIONS PARALLEL WITH CENTERLINE IN ACCORDANCE TO PUB 408 SECTION 500.

CONTRACTOR IS SOLELY RESPONSIBLE FOR THE STABILITY OF ALL EXCAVATED SLOPES AND THE DESIGN OF ANY TEMPORARY SHORING AND BRACING THAT MAY BE USED. PERFORM ALL EXCAVATIONS IN ACCORDANCE WITH OSHA REQUIREMENTS.

DIRECT ALL SURFACE RUNOFF AWAY FROM EXCAVATIONS.

NOTIFY THE REGIONAL HEADQUARTERS OF THE FISH COMMISSION PRIOR TO CONSTRUCTION AND COOPERATE WITH THE FISH COMMISSION DURING CONSTRUCTION.

ADDRESS: PENNSYLVANIA FISH AND BOAT COMMISSION
SOUTH CENTRAL REGIONAL OFFICE
1601 ELMERTON AVE
HARRISBURG, PA 17106-7000
PHONE: (717) 705-7800

PROVIDE ADEQUATE DEWATERING METHODS DURING EXCAVATION AND FOUNDATION CONSTRUCTION SUCH THAT THE EXCAVATION IS DRY ENOUGH FOR INSPECTION AND PLACEMENT.

THE CONTRACTOR IS RESPONSIBLE FOR THE STRUCTURAL STABILITY AND INTEGRITY OF THE COMPLETE STRUCTURE THROUGHOUT THE LIFE OF THE CONTRACT. ANY DAMAGE INCURRED DURING CONSTRUCTION, AS DETERMINED BY THE ENGINEER, IS TO BE REPAIRED AND/OR REPLACED AT NO ADDITIONAL COST TO THE DEPARTMENT.

BRIDGE IS NOT WEIGHT RESTRICTED. SEE PUBLICATION 408 SECTION 105.17 FOR CONSTRUCTION LOADING LIMITS.

UTILITY NOTES:

COORDINATE, LOCATE, AND CONDUCT ALL WORK RELATED TO PUBLIC AND PRIVATE UTILITIES IN ACCORDANCE WITH PUBLICATION 408/2016, SECTIONS 105.06 AND 107.12.

PILES:

USE HP12X74 STEEL PILES (DRIVEN TO REFUSAL) WITH HEAVY DUTY PILE TIP REINFORCEMENT. GALVANIZE ENTIRE LENGTH OF PILES.

FOR ALL H-PILES PROVIDE STRUCTURAL STEEL CONFORMING TO AASHTO M 270 GRADE 50 (ASTM A 709 GRADE 50) DESIGNATION.

INSTALL H-PILES WITH THEIR FLANGES ORIENTED PARALLEL TO THE CENTERLINE OF THE GIRDERS.

PROVIDE HEAVY DUTY PILE TIP REINFORCEMENT FOR PILES IN ACCORDANCE WITH PUBLICATION 408/2016, SECTION 1005.2(c) AND BC-757M.

DO NOT CUT PILE WEB, FLANGES OR FOOTING REINFORCEMENT BARS TO ACCOMMODATE REINFORCEMENT BAR REPLACEMENT, UNLESS DIRECTED BY THE ENGINEER.

PROVIDE NEW OR STOCKED (UNUSED) PILES, PILE SECTIONS, AND SPLICE MATERIAL ACCORDING TO AASHTO M 270 (ASTM A 709), GRADE 50; OR ASTM A 572, GRADE 50.

DRIVE BEARING PILES TO A TIP ELEVATION AND A DRIVING RESISTANCE PREDETERMINED BY THE ENGINEER FROM THE PILE LOAD TESTS. THE ENGINEER SHALL DETERMINE THE ACCEPTABILITY OF THE BEARING PILES WHICH ATTAIN ABSOLUTE REFUSAL ABOVE THE PREDETERMINED TIP ELEVATION.

DRIVE INTEGRAL ABUTMENT PILES TO PENNDOT CASE 2 ABSOLUTE REFUSAL IN ACCORDANCE WITH SECTION 1005.3(b)4 OR PUB 408 2016 AND METHOD A WAVE EQUATION ANALYSIS.

PROVIDE 1" MINIMUM CLEARANCE BETWEEN EDGE OF PILES AND FOOTING REINFORCEMENT.

DRIVE TEST PILES AS DIRECTED PRIOR TO DRIVING PRODUCTION PILES.

PILE INSTALLATION IS TO BE INSPECTED AND APPROVED BY THE DISTRICT GEOTECHNICAL ENGINEER.

DRIVE ONE (1) TEST PILE AT EACH ABUTMENT.

PERFORM DYNAMIC PILE MONITORING ON A MINIMUM OF ONE (1) TEST PILE AT EACH ABUTMENT TO CONFIRM THE DRIVING CRITERIA. CARRY OUT DYNAMIC PILE MONITORING IN ACCORDANCE WITH THE SPECIAL PROVISION.

NOTES FOR PILE INSTALLATION INFORMATION						
SUBSTRUCTURE UNIT	PILE TYPE	PILE TIP (NONE, NORMAL, HEAVY DUTY)	PILE TIP ELEVATION	FACTORED DESIGN LOAD (KIP)	ULTIMATE PILE CAPACITY AT END OF DRIVING (KIP)	WEAP OR PDA

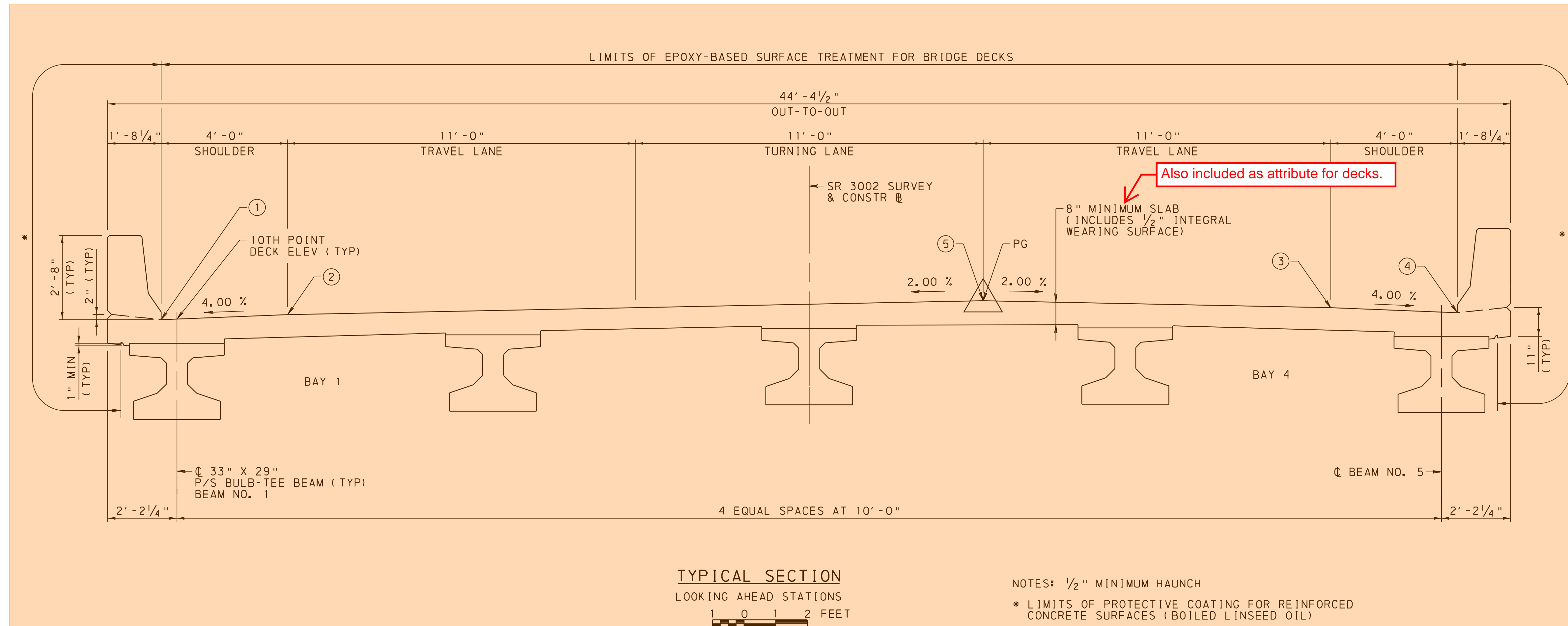
THIS TABLE IS TO BE COMPLETED FOR THE TEST PILES AFTER INSTALLATION ON THE "AS-BUILT" PLANS.

This information to be provided as an attribute in design (empty) and to be completed for as-built model submission.

THE FOLLOWING LEGEND APPLIES TO ALL DRAWINGS:

ABUT = ABUTMENT	IN = INCHES
ALT = ALTERNATE	JT = JOINT
APPR SL = APPROACH SLAB	LONG = LONGITUDINAL
B = BASELINE	MAX = MAXIMUM
BM = BEAM	MIN = MINIMUM
BOT = BOTTOM	NO. = NUMBER
BRG(S) = BEARING(S)	PG = PROFILE GRADE
BTWN = BETWEEN	P/S = PRESTRESSED
C = CENTERLINE	PT. = POINT
CC = CENTER-TO-CENTER	REINF = REINFORCEMENT
CIP = CAST-IN-PLACE	RF = REAR FACE
CLR = CLEAR COVER	SECT = SECTION
COMP = COMPOSITE	SHLDR = SHOULDER
CONC = CONCRETE	SPA = SPACING
CONSTR = CONSTRUCTION	SQ = SQUARE
DIA = DIAMETER	SR = STATE ROUTE
DWG = DRAWING	STA = STATION
EF = EACH FACE	STD = STANDARD
ELEV = ELEVATION	STR = STRAIGHT
EPTE = ESTIMATED PILE TIP ELEVATION	SUPER = SUPERSTRUCTURE
EQ = EQUAL	THRD = THREADED
FF = FRONT FACE	TYP = TYPICAL
FIX = FIXED	W/ = WITH
FT = FEET	W/O = WITHOUT
FWS = FUTURE WEARING SURFACE	WP = WORK POINT
	WSE = WATER SURFACE ELEVATION

GENERAL NOTES



BRIDGE APPROACH SLAB ELEVATION A

ABUTMENT 1 NOT TO SCALE

ABUTMENT 2 NOT TO SCALE

	TRANSVERSE LOCATION	STATION	ELEVATION
ABUT 1 ELEVATION A	PT. ①	245+63.50	441.13
	PT. ②	245+63.50	441.29
	PT. ⑤	245+63.50	441.73
	PT. ③	245+63.50	441.51
	PT. ④	245+63.50	441.35
ABUT 2 ELEVATION A	PT. ①	246+23.50	441.43
	PT. ②	246+23.50	441.59
	PT. ⑤	246+23.50	442.03
	PT. ③	246+23.50	441.81
	PT. ④	246+23.50	441.65

ELEVATION TABLE
TOP OF SLAB ELEVATION

STATION	PT. ①	PT. ②	PT. ⑤	PT. ③	PT. ④
245+65.00	441.14	441.30	441.74	441.52	441.36
245+70.00	441.17	441.32	441.76	441.55	441.38
245+80.00	441.21	441.38	441.81	441.60	441.44
245+90.00	441.26	441.43	441.87	441.64	441.49
246+00.00	441.31	441.48	441.92	441.69	441.54
246+10.00	441.37	441.52	441.96	441.75	441.58
246+20.00	441.42	441.57	442.01	441.80	441.63
246+22.00	441.43	441.58	442.02	441.81	441.64

ELEVATIONS GIVEN AT THE FIRST AND LAST STATIONS LISTED FOR EACH POINT ARE LOCATED AT THE C OF BEARING.

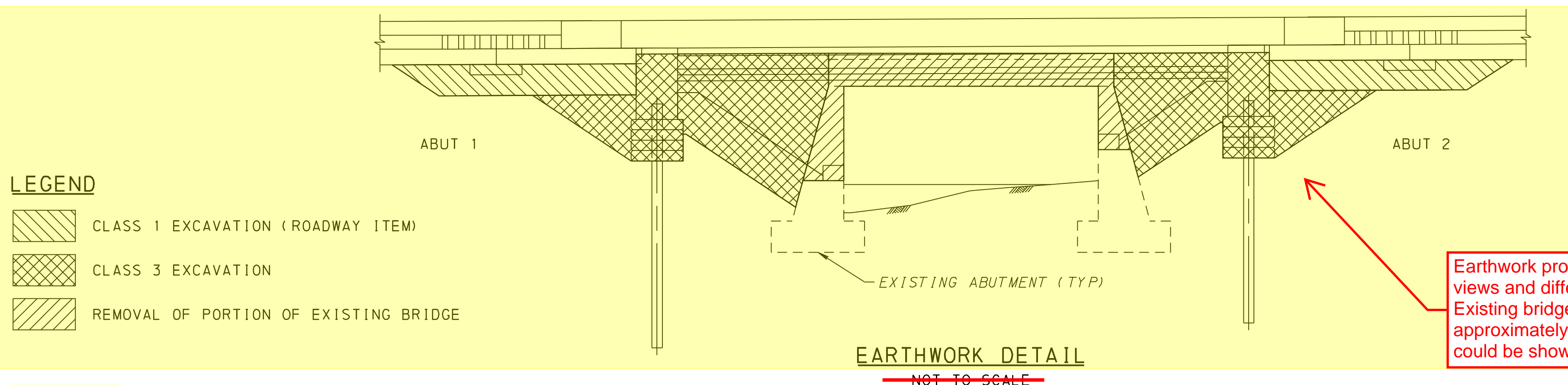
SR 3002 SURVEY & CONSTR

SHOULDER	TRAVEL LANE	TURNING LANE	TRAVEL LANE	SHOULDER	
-2%	-2%	-2%	-2%	-6%	STA 245+25.00
-4%	-2%	-2%	-2%	-4%	STA 245+50.00 TO STA 246+35.50
-6%	-2%	-2%	-2%	-6%	STA 246+75.00

SUPERELEVATION TRANSITION TABLE

These deck/approach slab elevations will be generated from the model and provided as a selectable table in the container file.

This information provided in the roadway models which can be accessed from referenced files in bridge model



Earthwork provided in 3D with saved views and different layers/levels for types. Existing bridge may be modeled approximately for limits of removal, or could be shown as a 2D Detail and Note.

TYP SECT & ELEVATION CHART

TABLE OF TOP OF DECK ELEVATIONS
AT 10TH POINTS ALONG CENTERLINE OF BEAM

LOCATION	BEAM NUMBER				
	1	2	3	4	5
CL BRG ABUT 1	441.16	441.43	441.63	441.65	441.38
5.700	441.19	441.46	441.66	441.68	441.41
11.400	441.22	441.49	441.69	441.71	441.44
17.100	441.25	441.52	441.72	441.74	441.47
22.800	441.27	441.54	441.74	441.76	441.49
28.500	441.30	441.57	441.77	441.79	441.52
34.200	441.33	441.60	441.80	441.82	441.55
39.900	441.36	441.63	441.83	441.85	441.58
45.600	441.39	441.66	441.86	441.88	441.61
51.300	441.42	441.69	441.89	441.91	441.64
CL BRG ABUT 2	441.44	441.71	441.92	441.94	441.67

DECK ELEVATIONS ARE GIVEN AT THE CL OF EACH BEAM.
LOCATIONS GIVEN ARE THE DISTANCE (FT) ALONG THE CL OF EACH BEAM
TO EACH 10TH POINT AS MEASURED FROM THE CL OF BEARING AT ABUTMENT 1.

TABLE OF TOP OF BEAM ELEVATIONS
AT 10TH POINTS ALONG CENTERLINE OF BEAM

LOCATION	BEAM NUMBER				
	1	2	3	4	5
CL BRG ABUT 1	440.24	440.53	440.72	440.75	440.46
5.700	440.31	440.60	440.79	440.82	440.53
11.400	440.39	440.66	440.86	440.88	440.61
17.100	440.45	440.72	440.92	440.94	440.67
22.800	440.50	440.77	440.97	440.99	440.72
28.500	440.53	440.80	441.00	441.02	440.75
34.200	440.56	440.83	441.03	441.05	440.77
39.900	440.56	440.84	441.04	441.06	440.78
45.600	440.56	440.83	441.03	441.06	440.78
51.300	440.54	440.82	441.02	441.05	440.76
CL BRG ABUT 2	440.52	440.81	441.01	441.03	440.74

NOTE: THE TOP OF BEAM ELEVATIONS SHOWN IN THE TABLE ARE THE DESIGN
VALUES COMPUTED INCLUDING THE EFFECT OF THE DESIGN BEAM CAMBER.

TABLE OF BOTTOM OF BEAM ELEVATIONS
AT 10TH POINTS ALONG CENTERLINE OF BEAM

LOCATION	BEAM NUMBER				
	1	2	3	4	5
CL BRG ABUT 1	437.82	438.11	438.30	438.33	438.04
5.700	437.90	438.18	438.38	438.40	438.12
11.400	437.97	438.25	438.44	438.47	438.19
17.100	438.03	438.31	438.50	438.52	438.25
22.800	438.08	438.35	438.55	438.57	438.30
28.500	438.12	438.39	438.59	438.61	438.34
34.200	438.14	438.41	438.61	438.63	438.36
39.900	438.15	438.42	438.62	438.64	438.37
45.600	438.14	438.42	438.62	438.64	438.36
51.300	438.12	438.41	438.61	438.63	438.35
CL BRG ABUT 2	438.11	438.39	438.59	438.62	438.32

NOTE: THE BOTTOM OF BEAM ELEVATIONS SHOWN IN THE TABLE
ARE THE DESIGN VALUES COMPUTED INCLUDING THE EFFECT OF THE
DESIGN BEAM CAMBER AND IS BASED SOLELY ON THE NOMINAL BEAM DEPTH.

FOR PRESTRESSED CONCRETE BEAMS, AS PER DM-4, THESE VALUES SHOULD
NOT BE USED FOR CALCULATING THE VERTICAL CLEARANCE TO THE BOTTOM
OF THE BEAM. IN THAT CASE, A STRAIGHT LINE VARIATION BETWEEN THE
BOTTOM OF BEAM ELEVATION AT EACH BEARING SHOULD BE USED.

TABLE OF DECK SLAB
THICKNESSES

BEAM NO.	SLAB THICKNESS	
	CL BRG ABUT 1	CL BRG ABUT 2
1	11 1/8 "	11 1/8 "
2	10 7/8 "	10 7/8 "
3	10 7/8 "	10 7/8 "
4	10 7/8 "	10 7/8 "
5	11 1/8 "	11 1/8 "

NOTE: LOCATION OF DECK SLAB THICKNESSES IS WHERE
THE CL OF BEAM INTERSECTS THE CL OF BEARING.
NOTE: DECK SLAB THICKNESS IS MEASURED FROM THE
TOP OF DECK TO THE TOP OF BEAM.

These thicknesses are provided as a
selectable table in the container file.

These deck/beam elevations will be
generated from the model and provided
as a selectable table in the container file.

DECK & BEAM ELEVATIONS

Rebar

Measure
Model

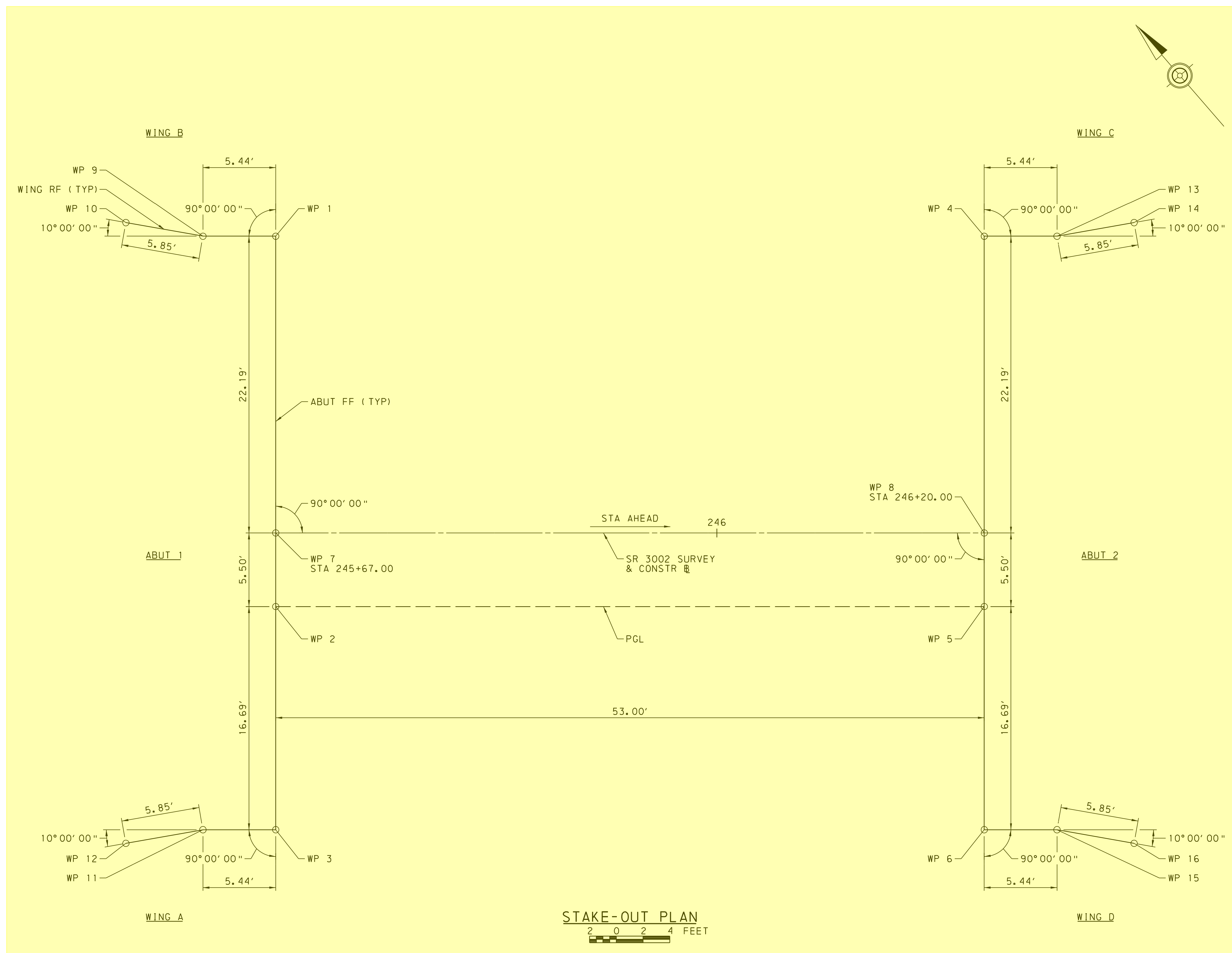
Model
Attributes

Linked Doc

Model
Annotation

2D Detail

Not
Included

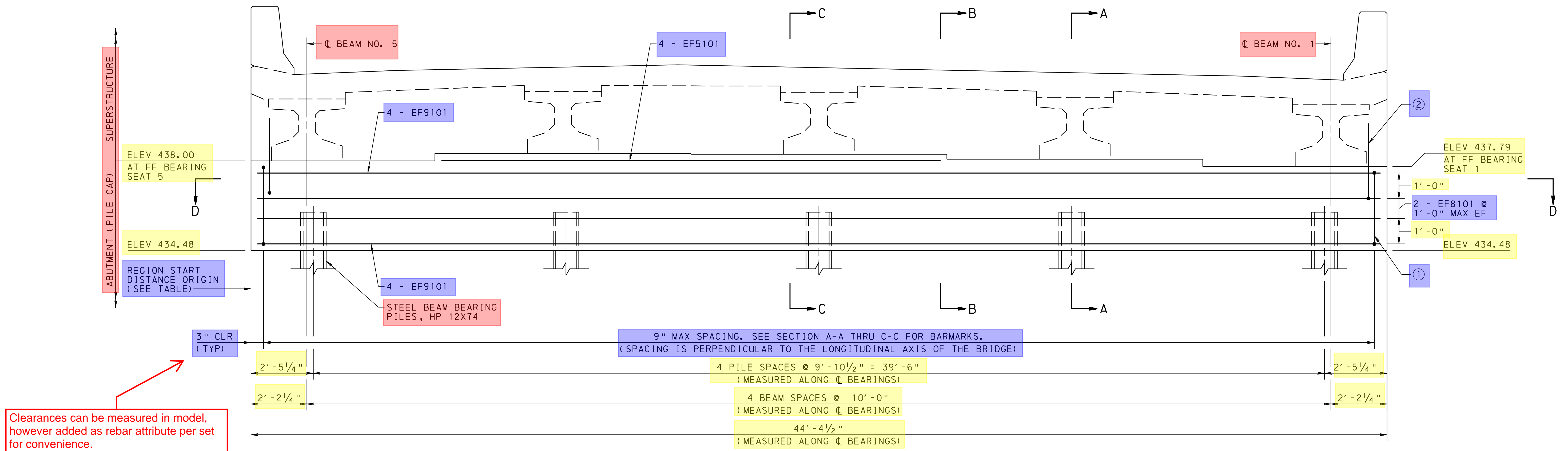


WORK POINTS				
NUMBER	COORDINATES		STATION	OFFSET
	NORTHING	EASTING		
1	460474.4259	2061438.5534	245+67.00	-22.19
2	460453.5481	2061420.3678	245+67.00	5.50
3	460440.9649	2061409.4072	245+67.00	22.19
4	460439.6146	2061478.5181	246+20.00	-22.19
5	460418.7369	2061460.3325	246+20.00	5.50
6	460406.1536	2061449.3719	246+20.00	22.19
7	460457.6954	2061423.9803	245+67.00	0.00
8	460422.8841	2061463.9450	246+20.00	0.00
9	460478.0013	2061434.4488	245+61.56	-22.19
10	460482.5530	2061430.7701	245+55.79	-23.20
11	460444.5403	2061405.3025	245+61.56	22.19
12	460447.5597	2061400.2892	245+55.79	23.20
13	460436.0393	2061482.6228	246+25.44	-22.19
14	460433.0198	2061487.6362	246+31.21	-23.20
15	460402.5783	2061453.4766	246+25.44	22.19
16	460398.0265	2061457.1552	246+31.21	23.20

NOTES:
 1. OFFSET IS MEASURED PERPENDICULAR TO SURVEY & CONSTRUCTION B, LOOKING AHEAD STATIONS.
 2. FOUR PLACE COORDINATES ARE USED FOR COMPUTATIONAL PURPOSES ONLY AND DO NOT IMPLY A PRECISION BEYOND TWO DECIMAL PLACES.
 3. COORDINATES BASED ON THE PENNSYLVANIA STATE PLAN COORDINATE SYSTEM (SPCS 83).

All points in the model are visible and coordinately correct, so there is no limitation on what points can be used for stake-out.

STAKE-OUT PLAN



Clearances can be measured in model, however added as rebar attribute per set for convenience.

- NOTES:
- ① TRANSVERSE REINFORCEMENT IN ABUTMENT PILE CAP
 - ② TRANSVERSE REINFORCEMENT TYING ABUTMENT TO SUPERSTRUCTURE

GALVANIZE TOP 15'-0" LENGTH OF PILES OR ENTIRE PILE LENGTH

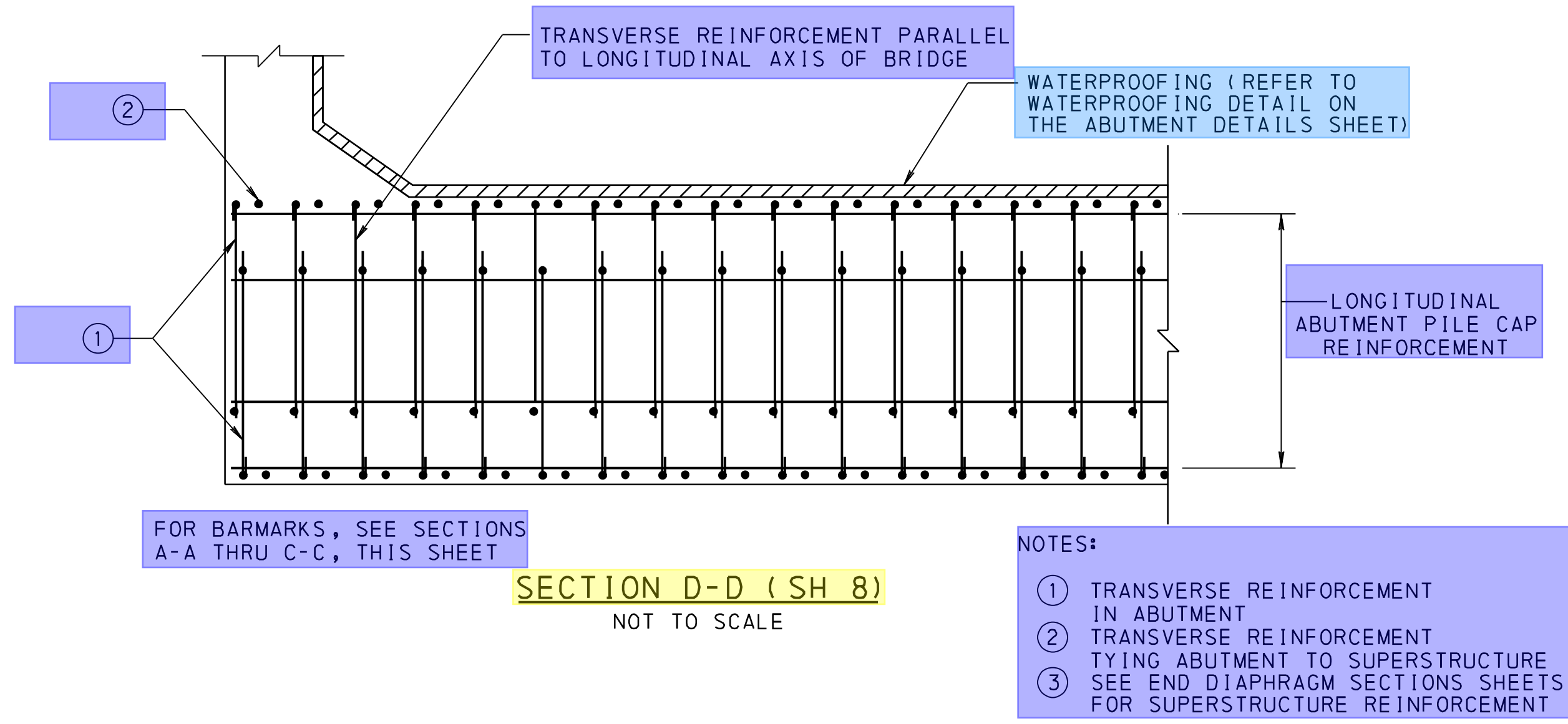
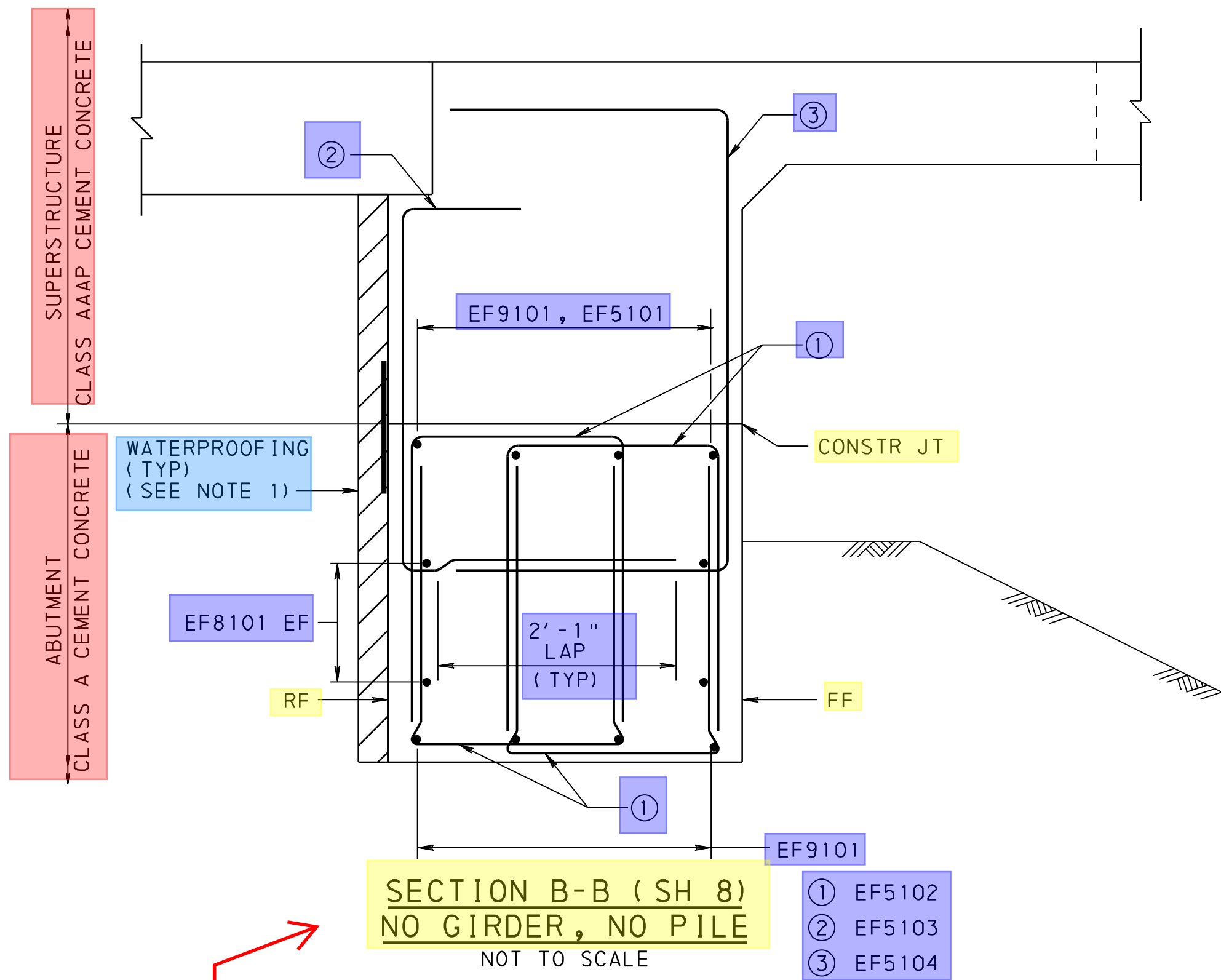


- NOTES
- FOR SECTIONS A-A THRU D-D, SEE SHEET 9.

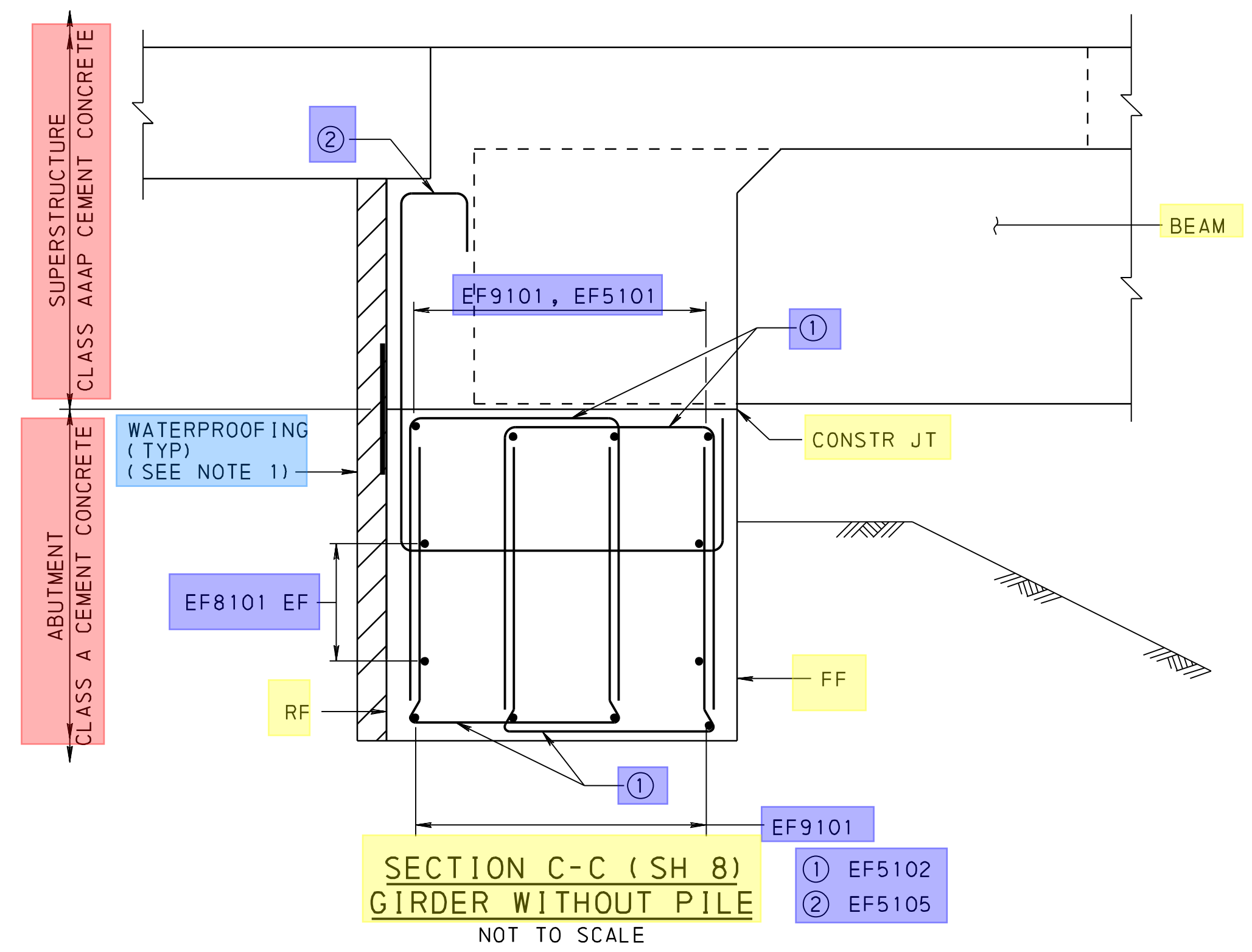
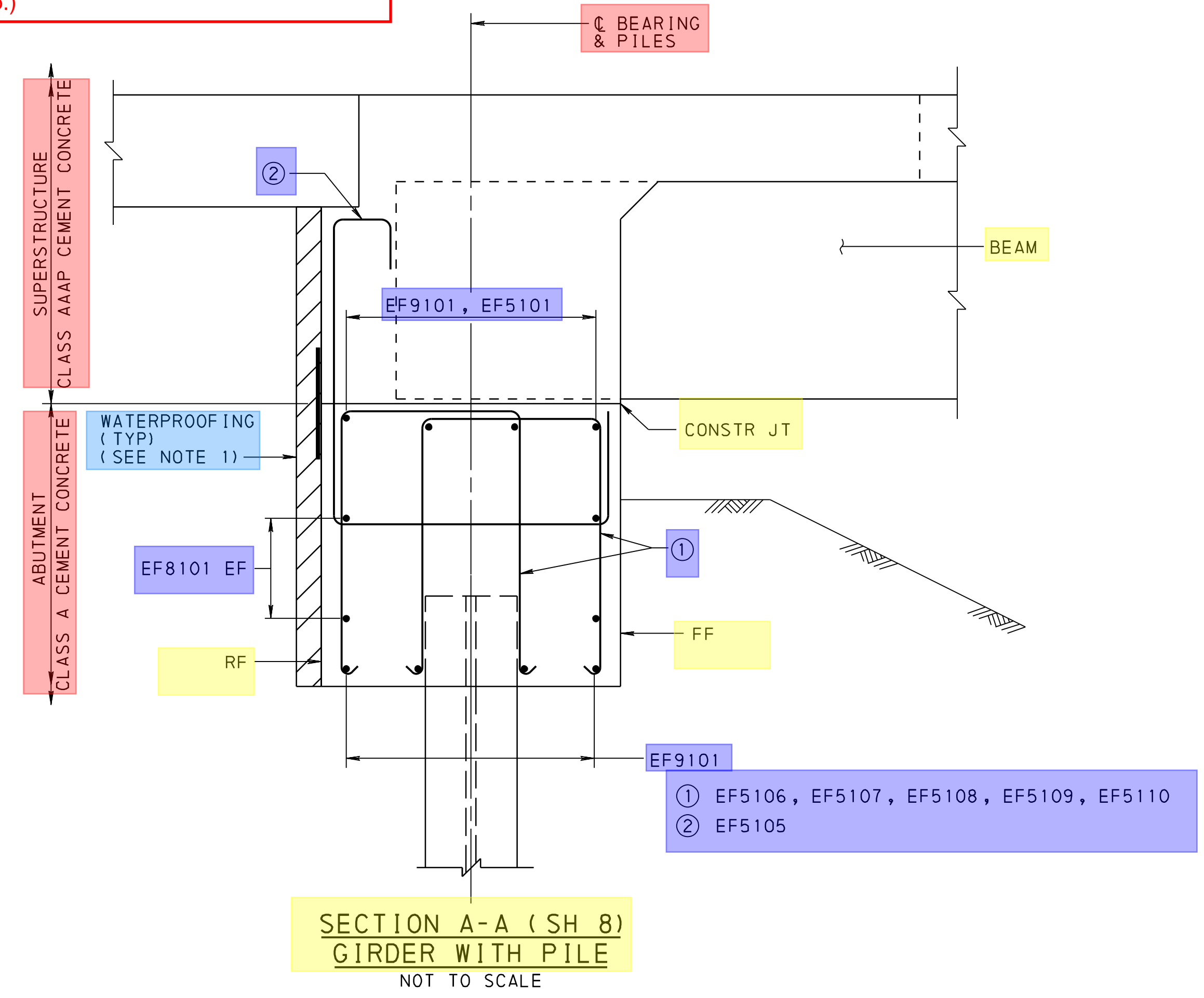
Sections will be conveyed with saved views of clipped sections and/or 3D views.

PILE CAP TRANSVERSE REINFORCEMENT INFORMATION							
REGION START DISTANCE	NUMBER OF REBAR GROUPS @ 9" SPACING FOR THE REGION*	ACTUAL SECTION FOR THE REGION	REBAR GROUP BARMARKS FOR THE REGION	REGION START DISTANCE	NUMBER OF REBAR GROUPS @ 9" SPACING FOR THE REGION*	ACTUAL SECTION FOR THE REGION	REBAR GROUP BARMARKS FOR THE REGION
3"	1	B-B	EF5102, EF5103, EF5104	23'-6"	1	C-C	EF5102, EF5105
1'-0"	1	C-C	EF5102, EF5105	24'-3"	9	B-B	EF5102, EF5103, EF5104
1'-9"	2	A-A	EF5106, EF5105	31'-0"	1	C-C	EF5102, EF5105
3'-3"	1	C-C	EF5102, EF5105	31'-9"	2	A-A	EF5109, EF5105
4'-0"	9	B-B	EF5102, EF5103, EF5104	33'-3"	1	C-C	EF5102, EF5105
10'-9"	2	C-C	EF5102, EF5105	34'-0"	9	B-B	EF5102, EF5103, EF5104
12'-3"	2	A-A	EF5107, EF5105	40'-9"	1	C-C	EF5102, EF5105
13'-9"	1	C-C	EF5102, EF5105	41'-6"	2	A-A	EF5110, EF5105
14'-6"	8	B-B	EF5102, EF5103, EF5104	43'-0"	2	C-C	EF5102, EF5105
20'-6"	2	C-C	EF5102, EF5105	44'-1 1/2"	1 **	B-B	EF5102, EF5103, EF5104
22'-0"	2	A-A	EF5108, EF5105				

* PERPENDICULAR TO THE LONGITUDINAL AXIS OF THE BRIDGE
 ** SPACING FOR LAST REBAR GROUP IS 9"
 NOTE: SEE ABUTMENT ELEVATION DETAIL FOR REGION START DISTANCE ORIGIN.



Sections will be conveyed with saved views of clipped sections and/or 3D views (typ.)



- NOTES**
- REFER TO SCOUR PROTECTION & WATERPROOFING DETAIL ON SHEET 10 FOR ADDITIONAL INFORMATION.
 - FOR ABUTMENT 1 REBAR SCHEDULE AND BAR TYPES, SEE SHEET 14.

ABUTMENT 1 SECTIONS

- NOTES:**
1. MAXIMUM CAP BEAM DEPTH EQUALS 4'-9". IF CAP BEAM EXTENDS BELOW BOTTOM OF SELECT BORROW EXCAVATION ROCK, R-8, THE INDICATED GEOTEXTILE, CLASS 4 (TYPE A) WITH NO. 57 COARSE AGGREGATE CAN BE ELIMINATED.
 2. NO. 8 COARSE AGGREGATE MAY BE USED IN LIEU OF THE NO. 57 COURSE AGGREGATE FOR THE GEOTEXTILE.
 3. PLACE GEOTEXTILE ALONG A VERTICAL REAR EXCAVATION FACE IF POSSIBLE. IF A VERTICAL EXCAVATION FACE CANNOT BE OBTAINED, GEOTEXTILE MAY BE PLACED ALONG THE EXCAVATION SLOPE NOT TO EXCEED 1.5H TO 1.0V.
 4. PROVIDE WATERPROOFING MEMBRANE IN ACCORDANCE WITH PUBLICATION 408, SECTION 680.2(b) ADHESIVE BACKED PREFORMED MEMBRANE.
 5. NO. 57 COARSE AGGREGATE ENCASED IN GEOTEXTILE IS NOT REQUIRED IF NO. 57 COARSE AGGREGATE BACKFILL IS USED. GEOTEXTILE IS INCIDENTAL TO COARSE AGGREGATE.

Pay items and materials provided as attributes and length measured from model saved views.

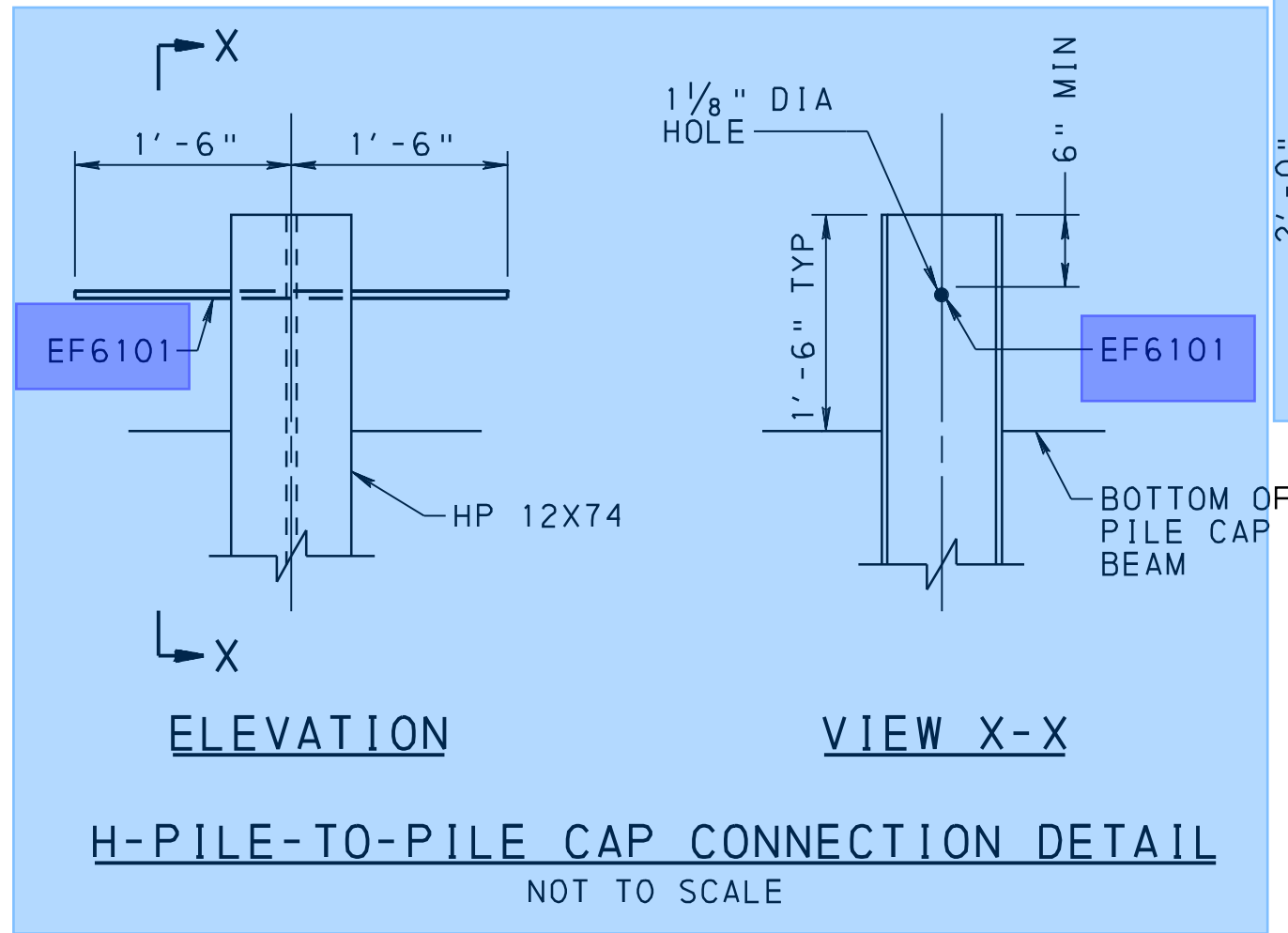
~~NOTE: REINFORCEMENT NOT SHOWN FOR CLARITY~~

ABUTMENT 1 PILE LOADS (KIPS)

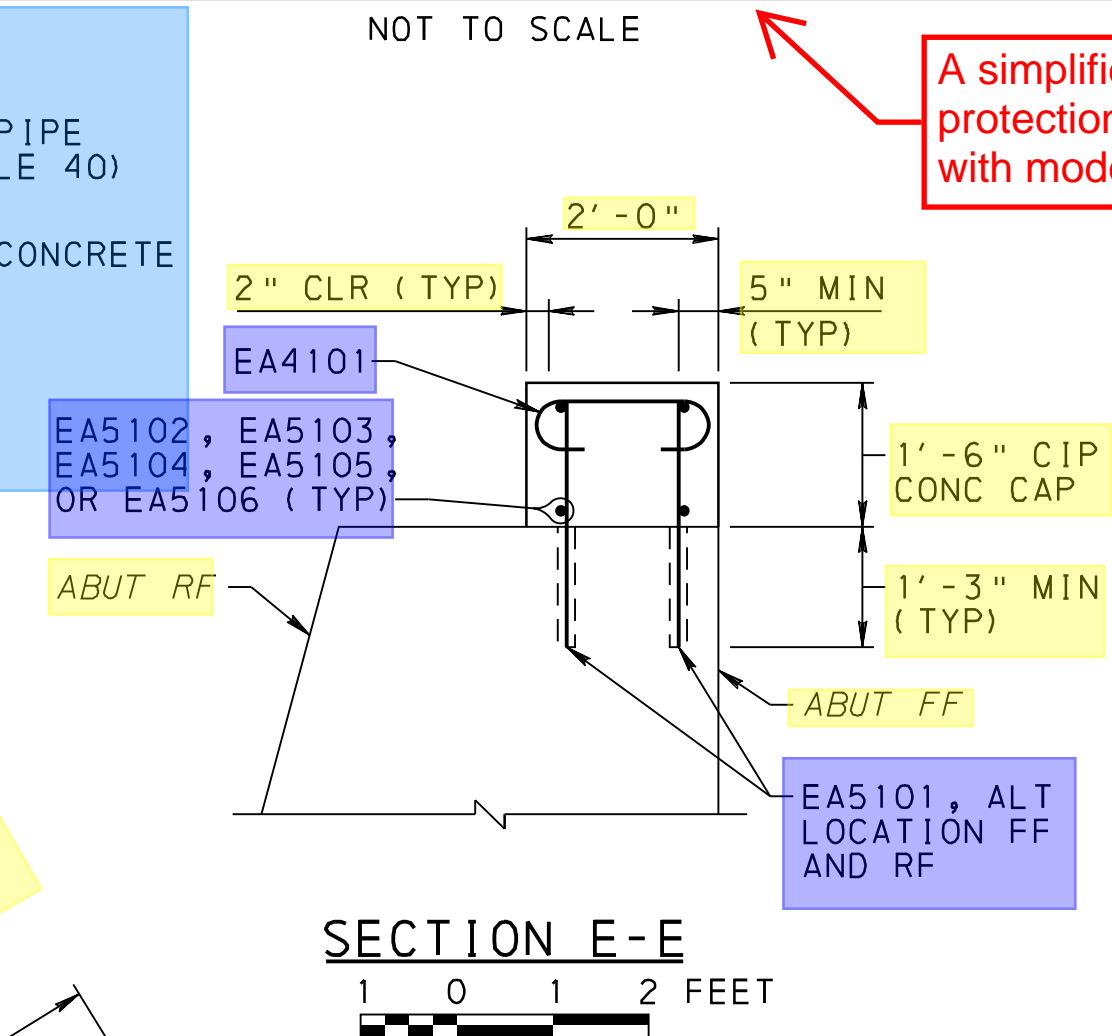
STRENGTH LIMIT STATE	STR 1
RESISTANCE FACTOR	0.50
FACTORED PILE AXIAL RESISTANCE	359.70
FACTORED PILE AXIAL LOAD	260.91

INTEGRAL ABUTMENT PILE INSTALLATION DETAIL

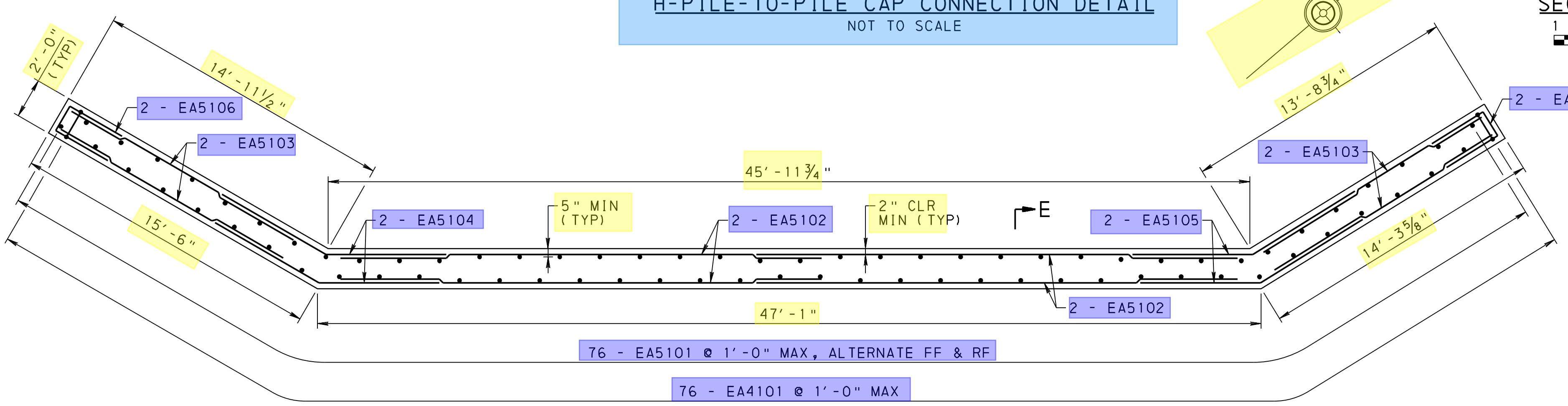
NOT TO SCALE
SEE APPENDIX G OF DESIGN MANUAL PART 4 SECTION 1.4.2 FOR PRE AUGERING REQUIREMENTS. PREDRILL OVERSIZED HOLES FOR ALL PILES IN ACCORDANCE WITH DESIGN MANUAL PART 4 AP.G.1.4.2.1. PLACE PILES VERTICAL IN THE HOLES BEFORE FILLING THE HOLES. FILL THE HOLES WITH DRY LOOSE SAND OR PEA GRAVEL BEFORE DRIVING THE PILES.



SCOUR PROTECTION & WATERPROOFING DETAIL



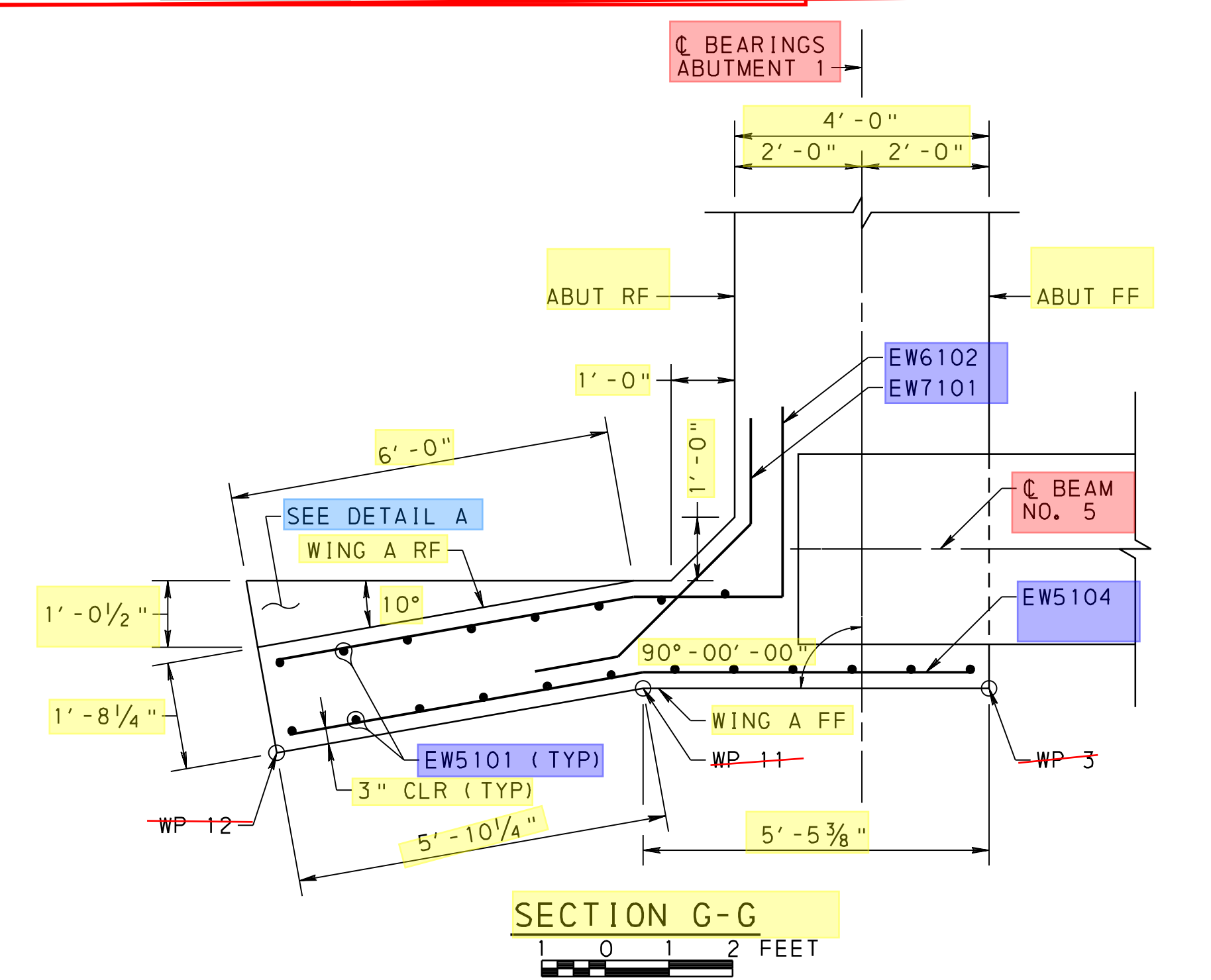
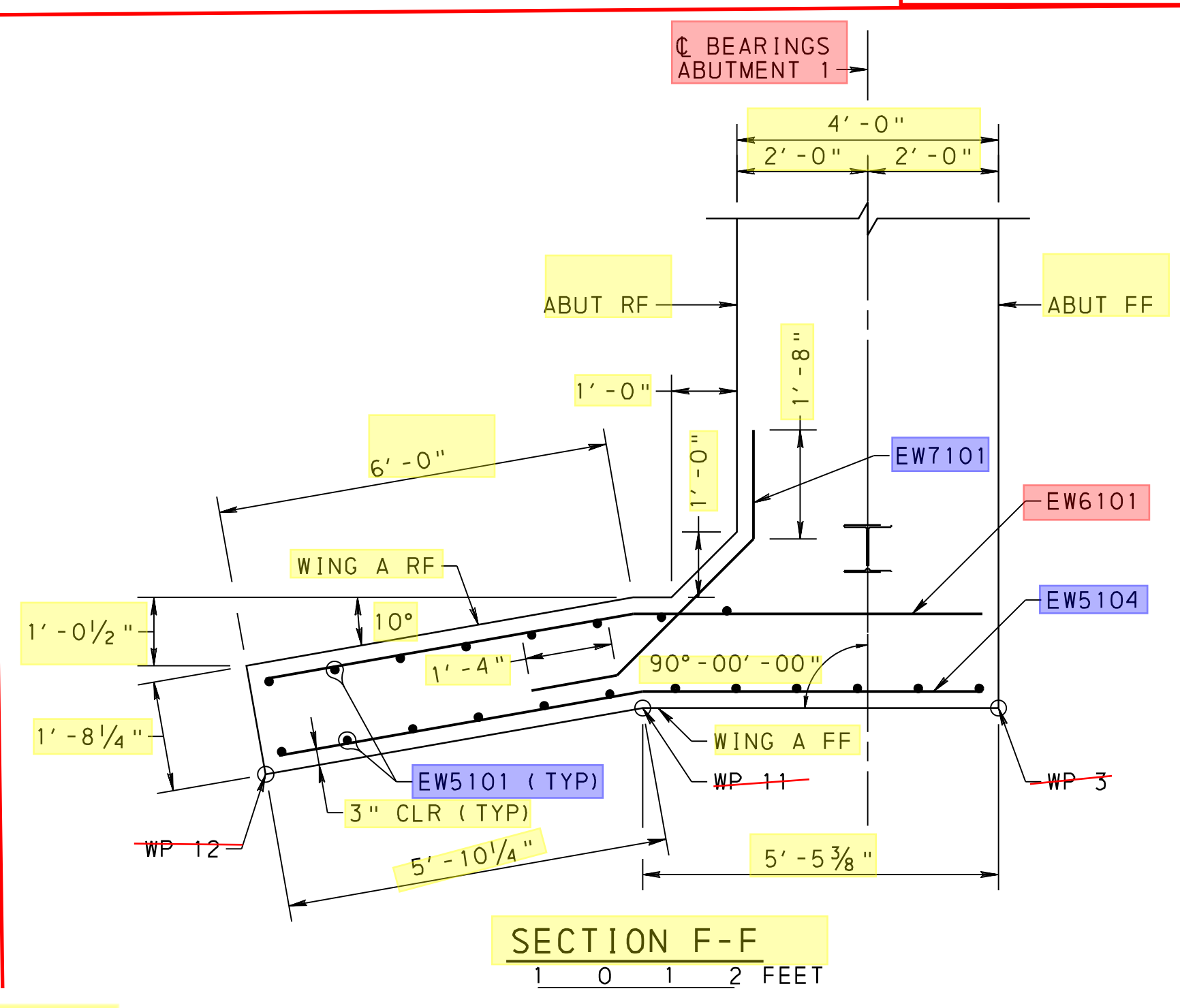
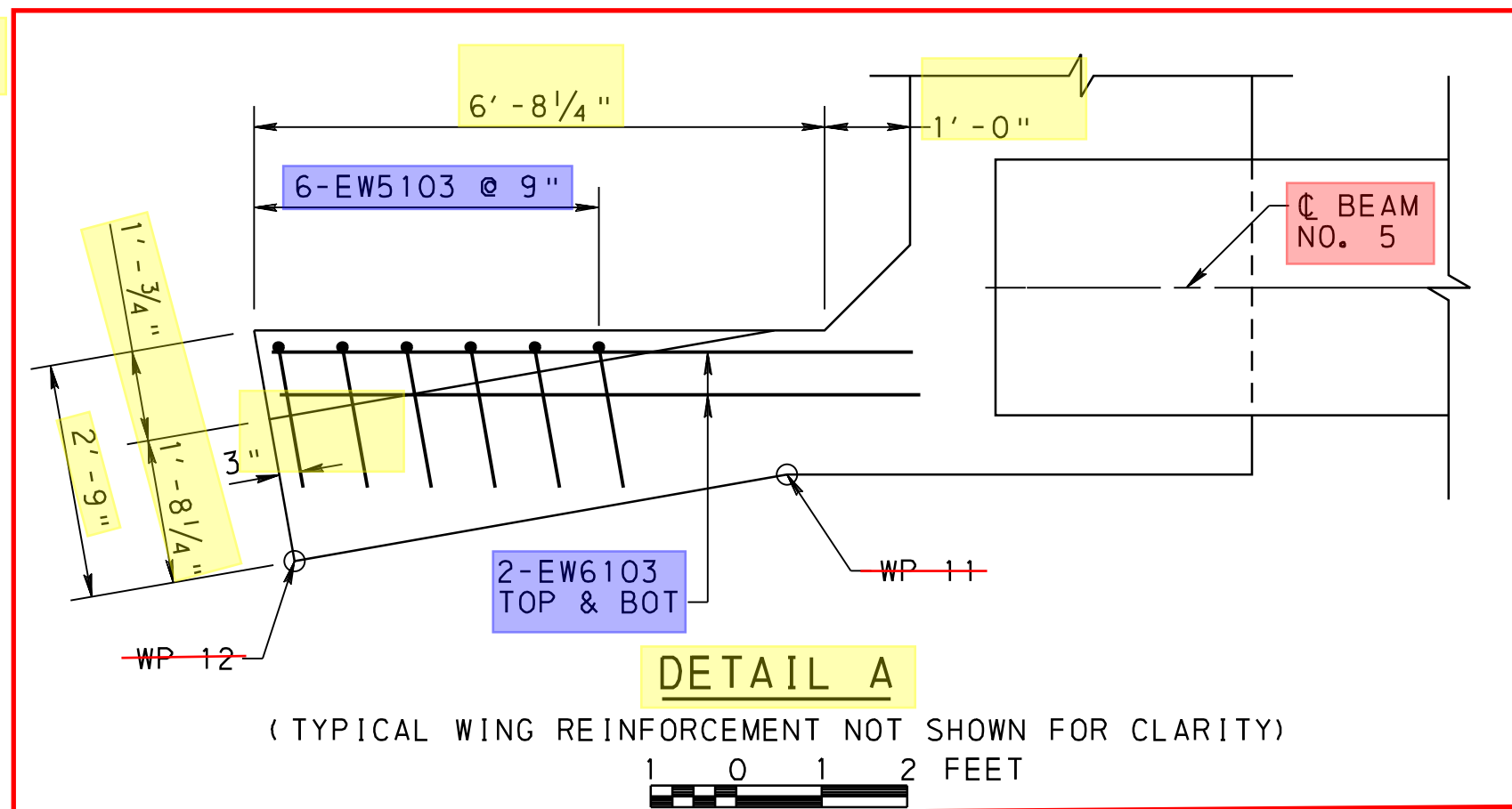
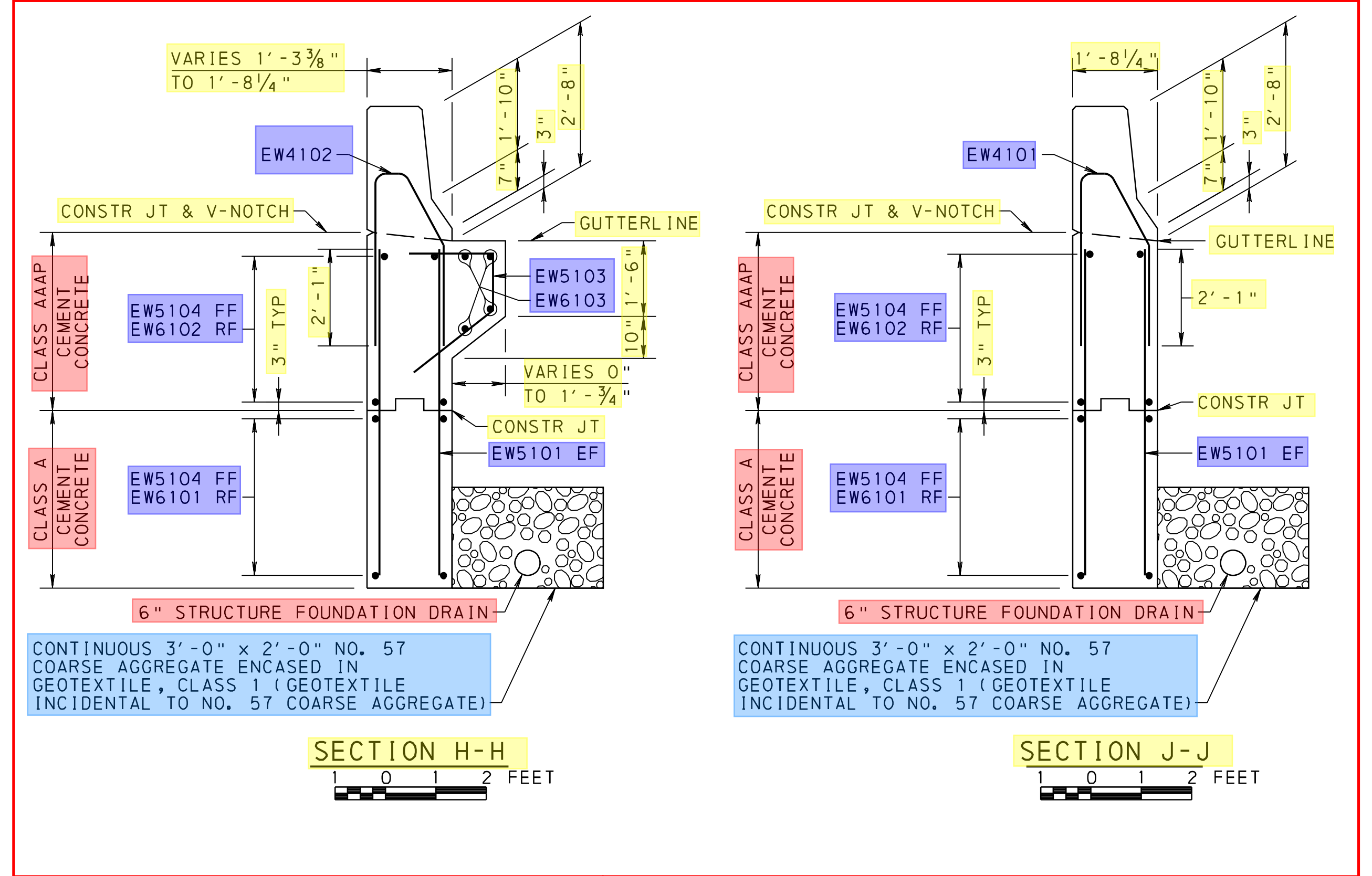
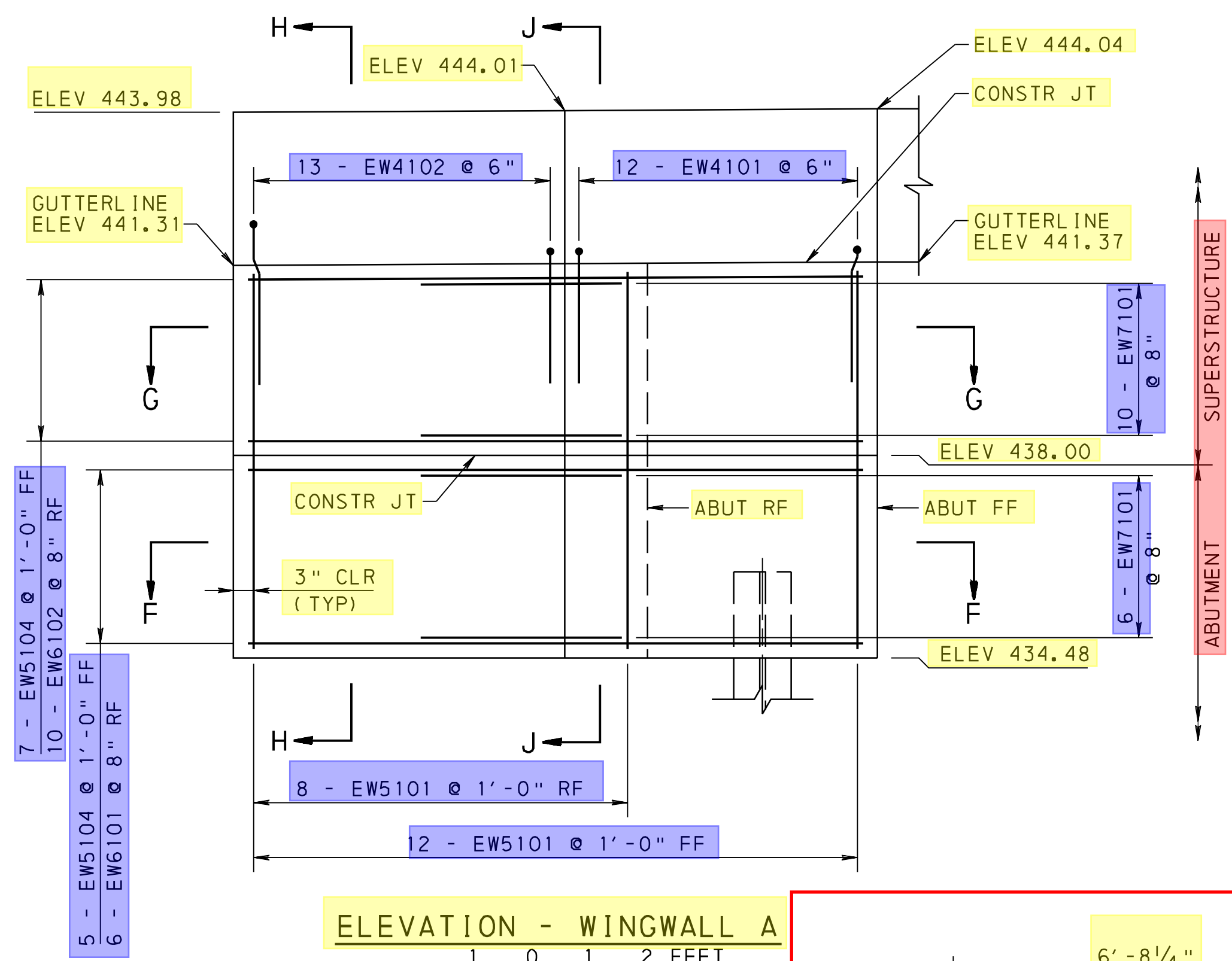
- NOTES**
1. FOR ABUTMENT 1 REBAR SCHEDULE AND BAR TYPES, SEE SHEET 14.
 2. THE DIMENSIONS SHOWN ON THE PROPOSED CAP FOR THE EXISTING ABUTMENT ARE APPROXIMATE AND MUST BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
 3. DRILL 1 1/2" DIA AND 1'-3" DEEP DOWEL HOLE IN TOP OF EXISTING ABUTMENT OR WING. FILL HOLE WITH NON-SHRINK GROUT.



Legend for drawing elements:

- Rebar (Blue box)
- Measure Model (Yellow box)
- Model Attributes (Red box)
- Linked Doc (Green box)
- Model Annotation (Orange box)
- 2D Detail (Light Blue box)
- Not Included (Red X box)

ABUTMENT 1 DETAILS

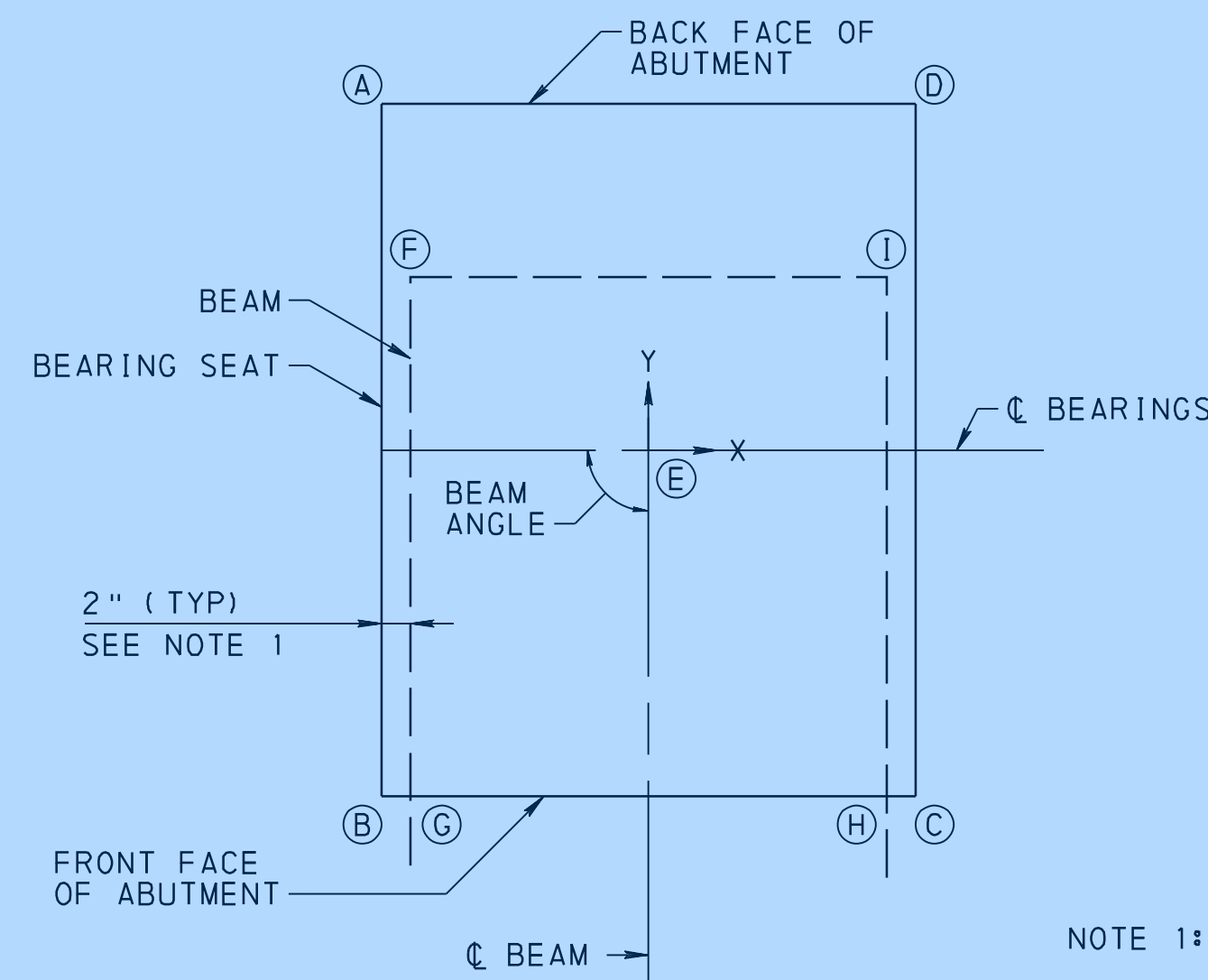


Sections provided as saved views

NOTES

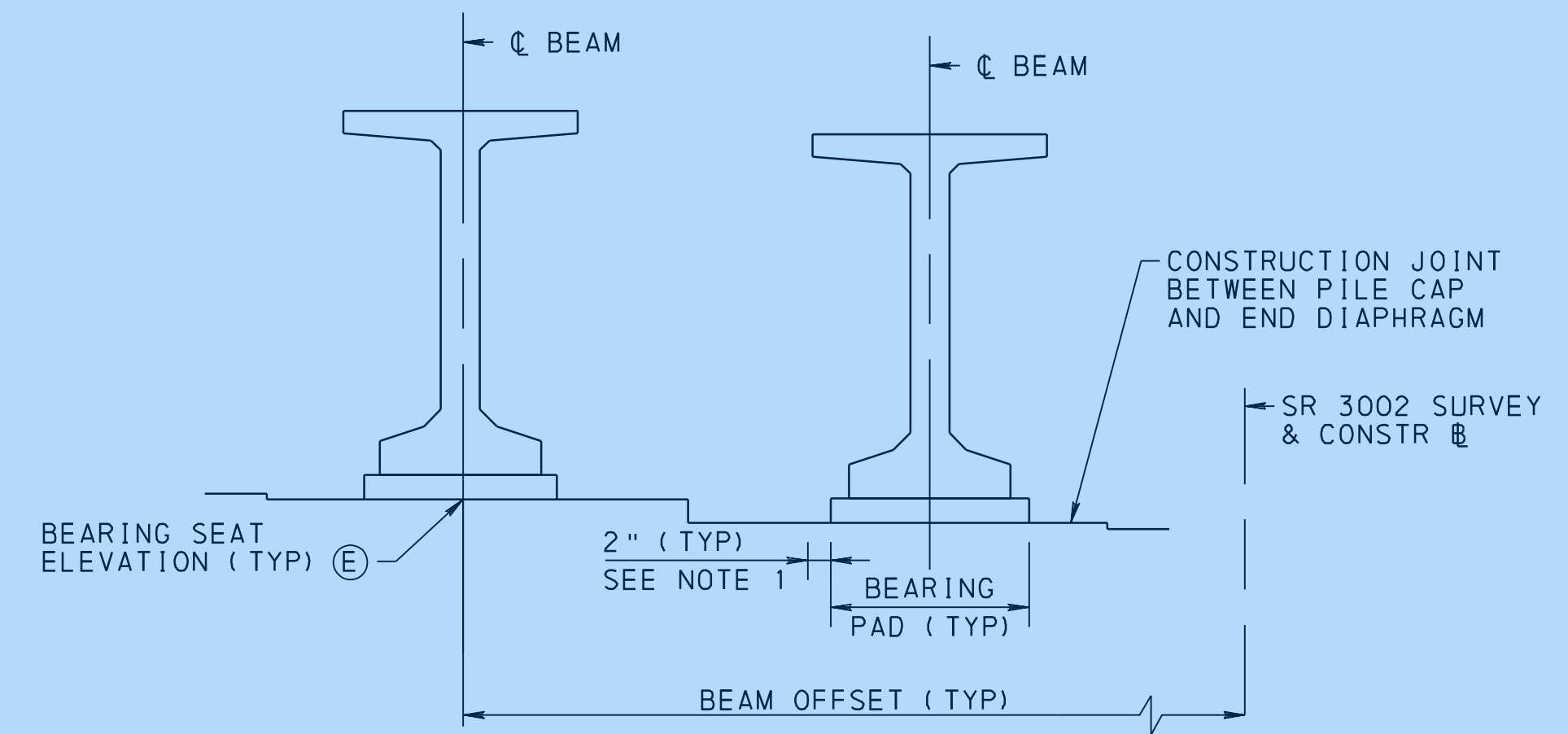
1. FOR ABUTMENT 1 REBAR SCHEDULE AND BAR TYPES, SEE SHEET 14.

ABUTMENT 1 WINGWALL A



BEARING SEAT PLAN VIEW
NOT TO SCALE

NOTE 1: TROWEL SMOOTH SURFACE OF CONSTRUCTION JOINT DIRECTLY UNDER BEAM AND EXTENDING 2" OUTSIDE THE BEARING AREA. PROVIDE A RAKED FINISH FOR THE REMAINDER OF THE CONSTRUCTION JOINT.



BEARING SEAT ELEVATION VIEW
NOT TO SCALE

NOTE: SEE BEARING SEAT PLAN VIEW DETAIL FOR FURTHER DETAILS.

ABUTMENT 1 BEARING SEAT LOCATION AND ELEVATION TABLE

BEAM NO.	CL BEAM OFFSET	BEAM ANGLE	BRG SEAT SLOPE		A			B			C			D			E		
			X	Y	X	Y	ELEV	X	Y	ELEV	X	Y	ELEV	X	Y	ELEV	X	Y	ELEV
1	20'-0"	90°-00'-00"	0.000%	-1.370%	-1'-6 1/2"	2'-0"	437.73	-1'-6 1/2"	-2'-0"	437.79	1'-6 1/2"	-2'-0"	437.79	1'-6 1/2"	2'-0"	437.73	0"	0"	437.76
2	10'-0"	90°-00'-00"	0.000%	-1.259%	-1'-6 1/2"	2'-0"	438.02	-1'-6 1/2"	-2'-0"	438.07	1'-6 1/2"	-2'-0"	438.07	1'-6 1/2"	2'-0"	438.02	0"	0"	438.05
3	0'-0"	90°-00'-00"	0.000%	-1.291%	-1'-6 1/2"	2'-0"	438.22	-1'-6 1/2"	-2'-0"	438.27	1'-6 1/2"	-2'-0"	438.27	1'-6 1/2"	2'-0"	438.22	0"	0"	438.24
4	-10'-0"	90°-00'-00"	0.000%	-1.259%	-1'-6 1/2"	2'-0"	438.24	-1'-6 1/2"	-2'-0"	438.29	1'-6 1/2"	-2'-0"	438.29	1'-6 1/2"	2'-0"	438.24	0"	0"	438.27
5	-20'-0"	90°-00'-00"	0.000%	-1.370%	-1'-6 1/2"	2'-0"	437.95	-1'-6 1/2"	-2'-0"	438.00	1'-6 1/2"	-2'-0"	438.00	1'-6 1/2"	2'-0"	437.95	0"	0"	437.98

NOTE:

CL BEAM OFFSET IS MEASURED ALONG THE CL BEARING.
CL BEAM OFFSET IS MEASURED FROM THE SR 3002 SURVEY & CONSTR TO THE CL OF BEAM AT THE BEARING SEAT POINT E.
NEGATIVE OFFSETS ARE MEASURED TO THE LEFT OF THE SR 3002 SURVEY & CONSTR, FACING THE ABUTMENT.

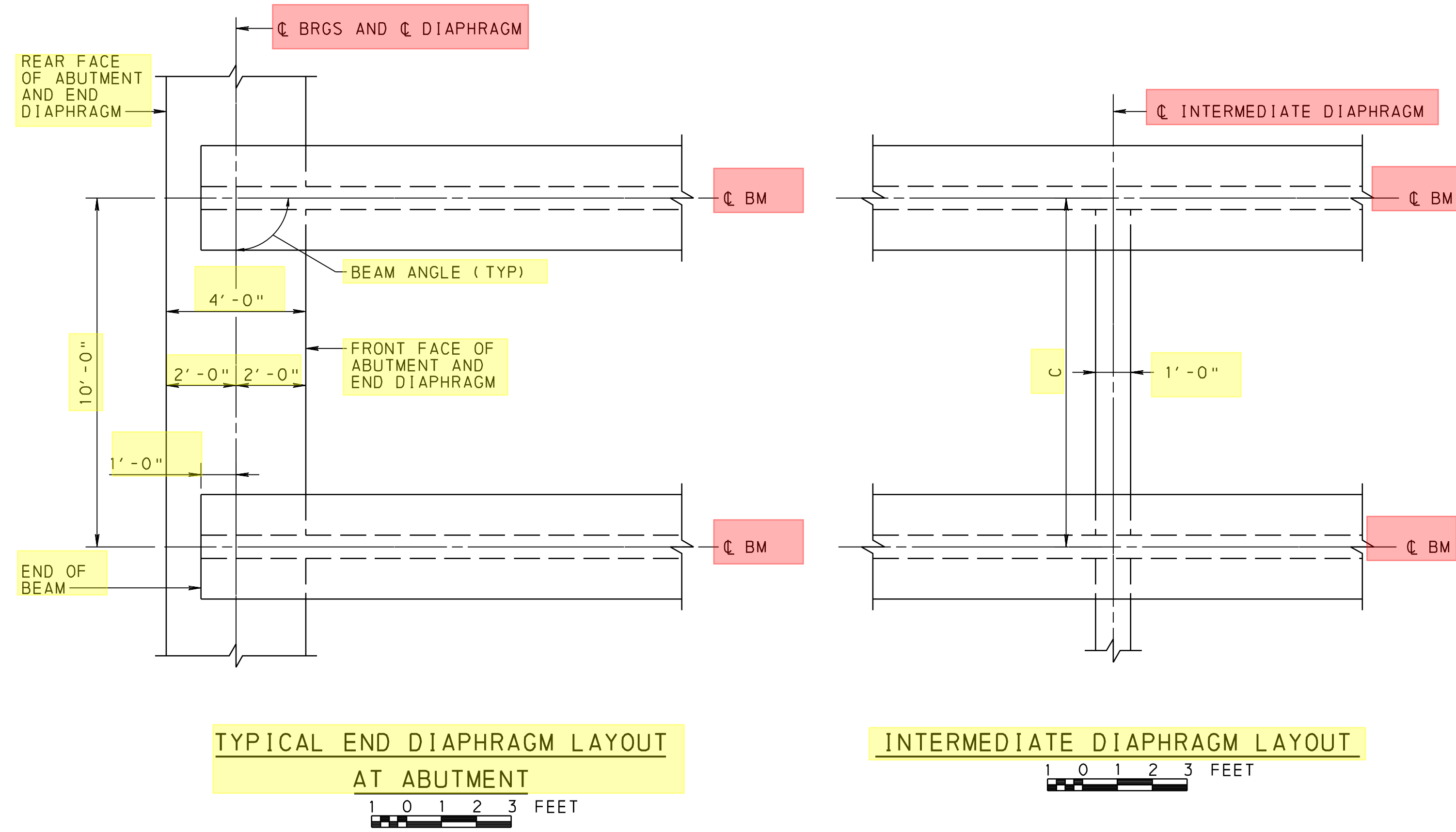
POSITIVE "BEARING SEAT SLOPE Y" REPRESENTS AN INCREASE IN ELEVATION FROM FRONT TO BACK FACE OF ABUTMENT, IN THE DIRECTION OF THE POSITIVE Y-AXIS SHOWN IN THE BEARING SEAT PLAN VIEW.

POSITIVE "BEARING SEAT SLOPE X" REPRESENTS AN INCREASE IN ELEVATION IN THE DIRECTION OF THE POSITIVE X-AXIS SHOWN IN THE BEARING SEAT PLAN VIEW.

ABUTMENT 1 BEARING SEAT LOCATION AND ELEVATION TABLE

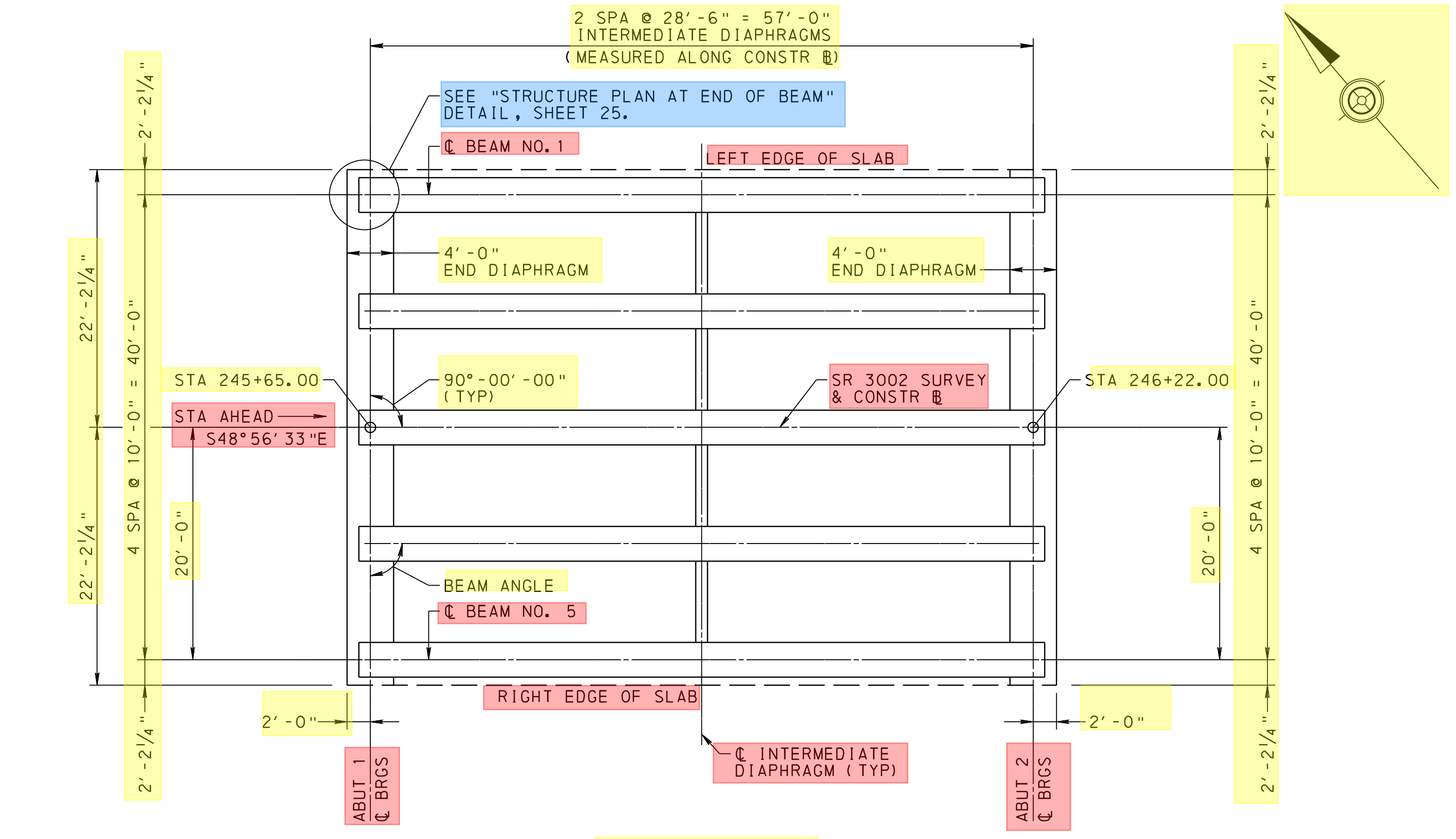
BEAM NO.	CL BEAM OFFSET	BEAM ANGLE	BRG SEAT SLOPE		F			G			H			I		
			X	Y	X	Y	ELEV	X	Y	ELEV	X	Y	ELEV	X	Y	ELEV
1	20'-0"	90°-00'-00"	0.000%	-1.370%	-1'-4 1/2"	1'-0"	437.74	-1'-4 1/2"	-2'-0"	437.79	1'-4 1/2"	-2'-0"	437.79	1'-4 1/2"	1'-0"	437.74
2	10'-0"	90°-00'-00"	0.000%	-1.259%	-1'-4 1/2"	1'-0"	438.03	-1'-4 1/2"	-2'-0"	438.07	1'-4 1/2"	-2'-0"	438.07	1'-4 1/2"	1'-0"	438.03
3	0'-0"	90°-00'-00"	0.000%	-1.291%	-1'-4 1/2"	1'-0"	438.23	-1'-4 1/2"	-2'-0"	438.27	1'-4 1/2"	-2'-0"	438.27	1'-4 1/2"	1'-0"	438.23
4	-10'-0"	90°-00'-00"	0.000%	-1.259%	-1'-4 1/2"	1'-0"	438.25	-1'-4 1/2"	-2'-0"	438.29	1'-4 1/2"	-2'-0"	438.29	1'-4 1/2"	1'-0"	438.25
5	-20'-0"	90°-00'-00"	0.000%	-1.370%	-1'-4 1/2"	1'-0"	437.96	-1'-4 1/2"	-2'-0"	438.00	1'-4 1/2"	-2'-0"	438.00	1'-4 1/2"	1'-0"	437.96

ABUTMENT 1 BEARING SEAT ELEV



TYPICAL END DIAPHRAGM LAYOUT AT ABUTMENT

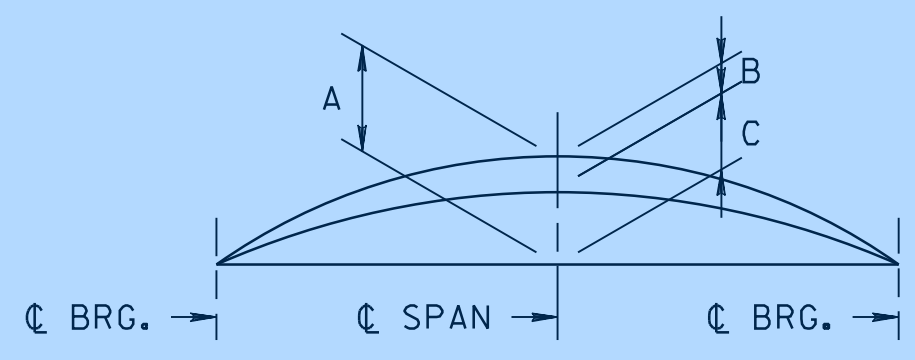
INTERMEDIATE DIAPHRAGM LAYOUT



FRAMING PLAN

NOTE: THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARILY BRACING THE BEAMS.

CAMBER AND PRESTRESS TABLE					
BEAM NO.	TOTAL NO. OF STRANDS	JACKING PRESTRESS FORCE	A	B	C
1	38	1285.07 K	2.633"	0.774"	1.859"
2	38	1285.07 K	2.633"	1.010"	1.623"
3	38	1285.07 K	2.633"	0.943"	1.690"
4	38	1285.07 K	2.633"	1.010"	1.623"
5	38	1285.07 K	2.633"	0.774"	1.859"



BEAM CAMBER DIAGRAM

- A= ESTIMATED PRESTRESS CAMBER LESS DEFLECTION DUE TO DEAD LOAD OF BEAM TIMES CREEP FACTOR (CHECK IN FIELD).
 - B= DEFLECTION DUE TO ALL DEAD LOAD EXCEPT BEAM WEIGHT AND FUTURE WEARING SURFACE.
 - C= A-B = NET FINAL CAMBER
- THE THICKNESS OF THE CONCRETE HAUNCH SHALL BE VARIED TO ACHIEVE THE PROPER GRADE AND CROSS SLOPE AND TO COMPENSATE FOR ANY INACCURACIES IN BEAM CAMBER.
- A, B AND C ARE THEORETICAL VALUES AND MAY VARY WITH ACTUAL CONCRETE STRENGTH (AGE), VARIOUS PRESTRESSING CONDITIONS, CREEP FACTOR AND PRESTRESS LOSSES.
- USE A CREEP FACTOR EQUAL TO 1.60 AND P/S LOSS EQUAL TO 10%.

PRESTRESSING DATA

CONCRETE STRENGTH AT STRAND RELEASE 6800 psi
 CONCRETE STRENGTH AT 28 DAYS (F'c) 8000 psi
 JACKING PRESTRESS STRESS 202500 psi
 270 ksi LOW RELAXATION STRANDS, 1/2" DIA, 0.167 SQ IN STRAND AREA

BEAM NO.	BEAM ANGLE	BEAM LENGTH CC BRGS *	BEAM LENGTH TOTAL *	C
1	90°-00'-00"	57'-0"	59'-0"	10'-0"
2	90°-00'-00"	57'-0"	59'-0"	10'-0"
3	90°-00'-00"	57'-0"	59'-0"	10'-0"
4	90°-00'-00"	57'-0"	59'-0"	10'-0"
5	90°-00'-00"	57'-0"	59'-0"	-

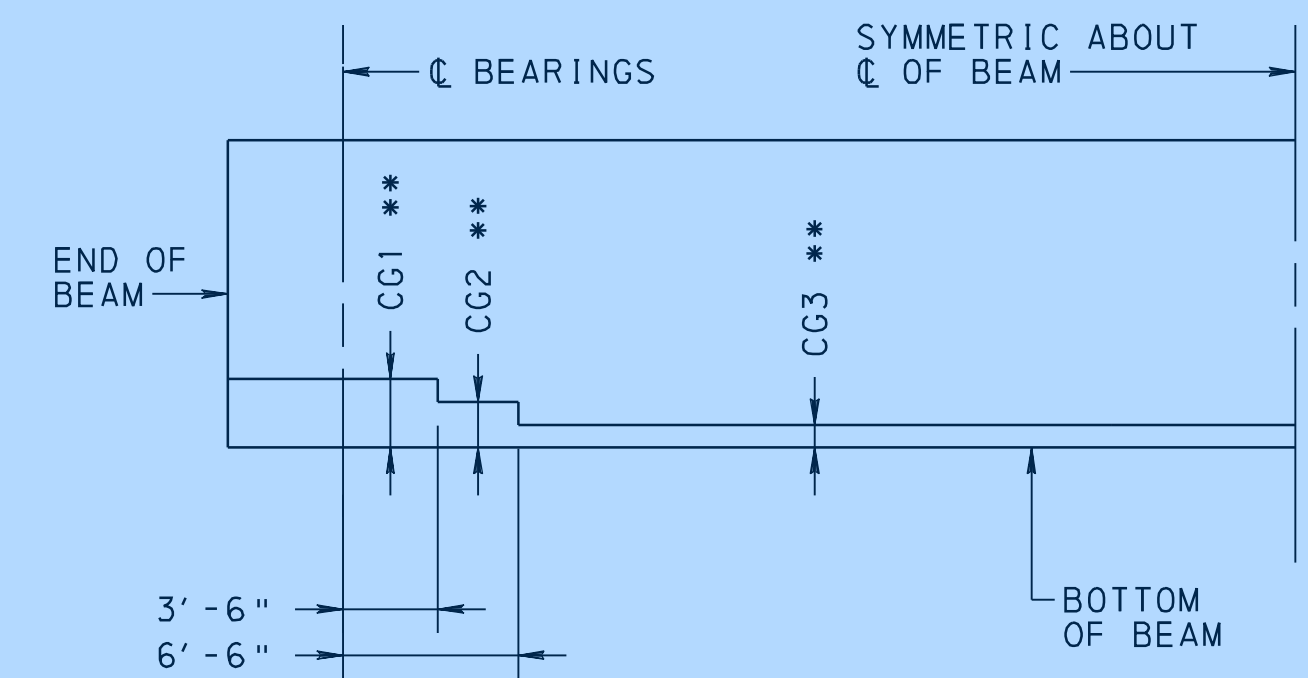
* HORIZONTAL DIMENSION ALONG CL BEAM

BEAM SCHEDULE

NOTE: BEAM ANGLE MEASURED FROM CL BEAM TO CL BRGS.

	CG	NO. STRANDS BONDED
CG1	5.655"	29
CG2	5.143"	35
CG3	4.895"	38

NOTE: NUMBER OF DEBONDED STRANDS DOES NOT INCLUDE CRACK CONTROL DEBONDING



DEBONDING DETAIL

NOT TO SCALE (NOTE: DIAGRAM SHOWN ALONG CL BEAM)

FRAMING PLAN

Legend for framing plan: Rebar (blue), Measure Model (yellow), Model Attributes (red), Linked Doc (green), Model Annotation (orange), 2D Detail (light blue), Not Included (white with red X).



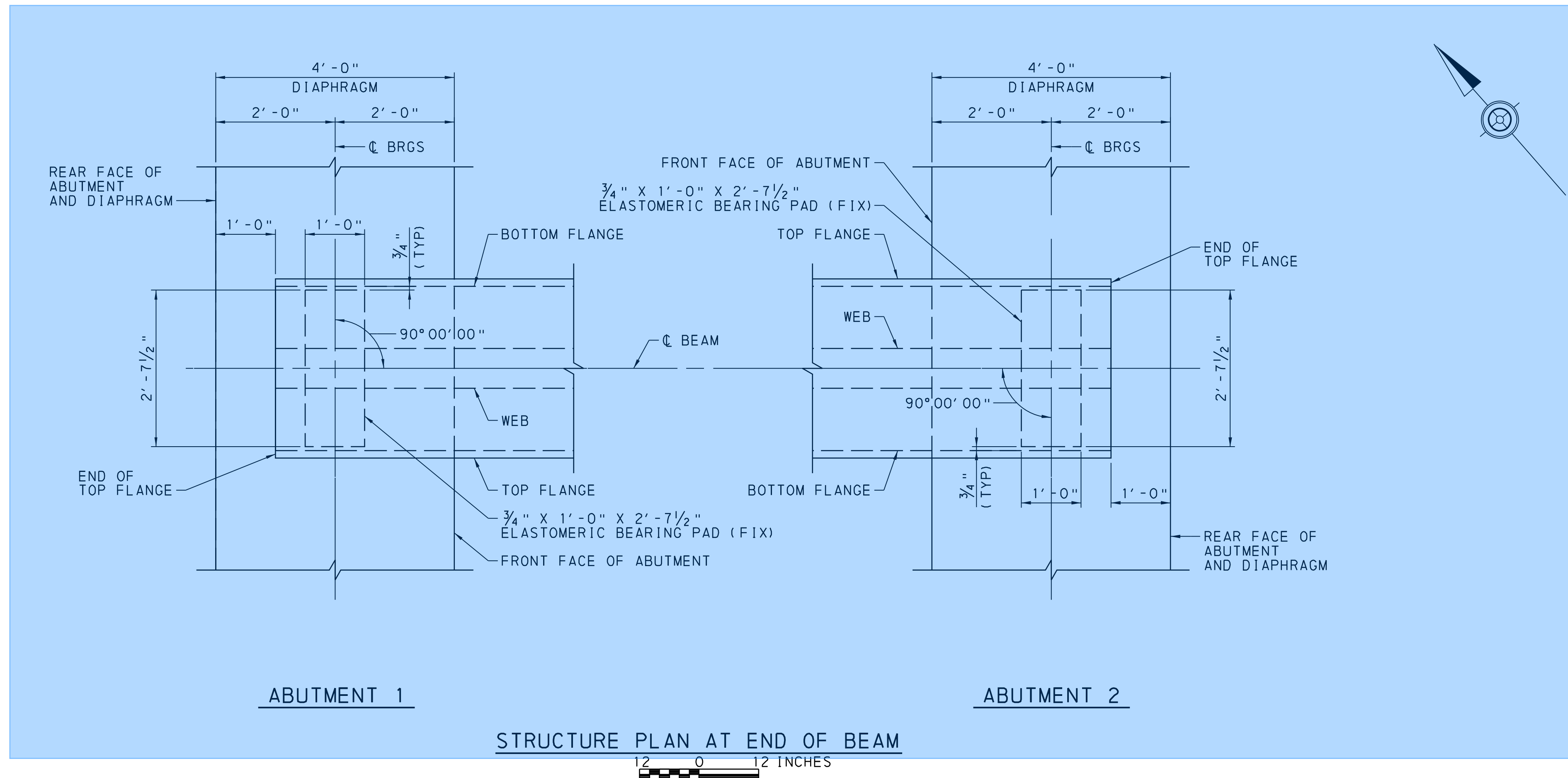
TYPICAL ELASTOMERIC BEARING PAD SECTION
NOT TO SCALE

PRESTRESSED CONCRETE BEAM SECTION PROPERTIES - PA BULB-TEE BEAM @ CENTERLINE OF SPAN					
	NON-COMPOSITE	COMPOSITE INTERIOR BEAM		COMPOSITE EXTERIOR BEAM	
	GROSS SECTION	GROSS SECTION	TRANSFORMED SECTION	GROSS SECTION	TRANSFORMED SECTION
AREA OF BASIC BEAM, IN ²	613.25	-	-	-	-
MOMENT OF INERTIA, IN ⁴	60633	177844	188400	158604	167406
NEUTRAL AXIS TO TOP OF SLAB, IN	-	13.14	13.59	14.70	15.19
NEUTRAL AXIS TO TOP OF BEAM, IN	15.37	5.64	6.09	7.20	7.69
NEUTRAL AXIS TO BOTTOM OF BEAM, IN	13.63	23.36	22.91	21.80	21.31
SECTION MODULUS AT TOP OF SLAB, IN ³	-	13539	13860	10786	11020
SECTION MODULUS AT TOP OF BEAM, IN ³	3944	31559	30922	22015	21767
SECTION MODULUS AT BOTTOM OF BEAM, IN ³	4450	7612	8224	7277	7856

ELASTOMERIC BEARING PADS				
LOCATION	BEARING TYPE	ITEM DESCRIPTION	SIZE (T x L x W)	NUMBER REQUIRED
ABUT 1	FIXED	PLAIN PADS	3/4" x 1'-0" x 2'-7 1/2"	5
ABUT 2	FIXED	PLAIN PADS	3/4" x 1'-0" x 2'-7 1/2"	5

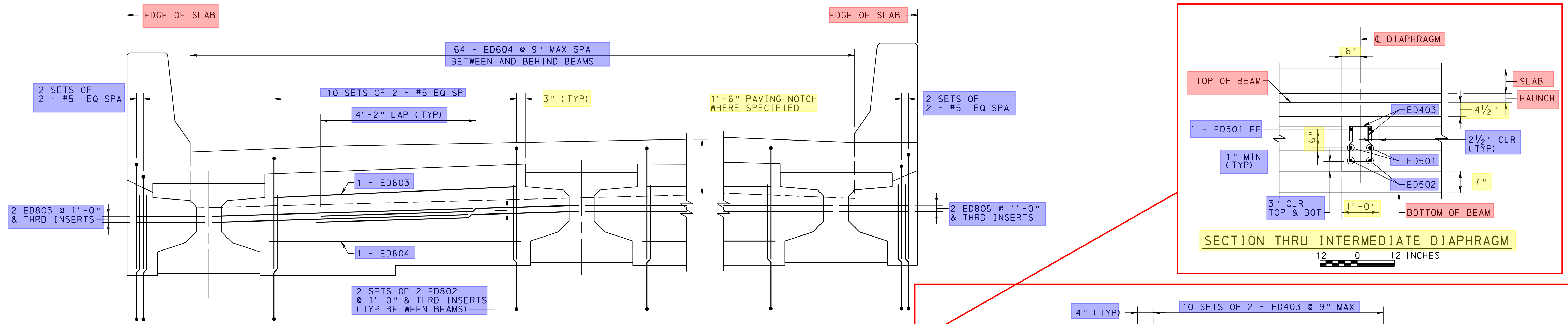
NOTES:

- * MANUFACTURE ALL BEARINGS IN ACCORDANCE WITH THE COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION PLANS AND SPECIFICATIONS (PUB. 408) SECTION 1113.02 AND DESIGN MANUAL - PART 4.
- * ALL BEARING PADS ARE TO BE MOLDED TO DESIGN DIMENSIONS. CUTTING TO SIZE AFTER FABRICATION IS PROHIBITED.
- * PROVIDE NEOPRENE 50 +/-5 DUROMETER.
- * PROVIDE MINIMUM LOW-TEMPERATURE NEOPRENE GRADE 3.
- * BEARING PADS WILL BE SAMPLED FOR TESTING ACCORDING TO PTM #312.
- * FABRICATOR MAY USE CONTRACT DRAWINGS TO FABRICATE BEARING PADS.
- * BLOCK THE AREAS UNDER THE GIRDERS NOT IN CONTACT WITH THE BEARING PADS USING 1" THICK BACKER RODS.



A simplified 2D detail will be provided for the structure plan at the end of the beam to be included for bearing fabrication.

ELASTOMERIC BEARING DETAILS

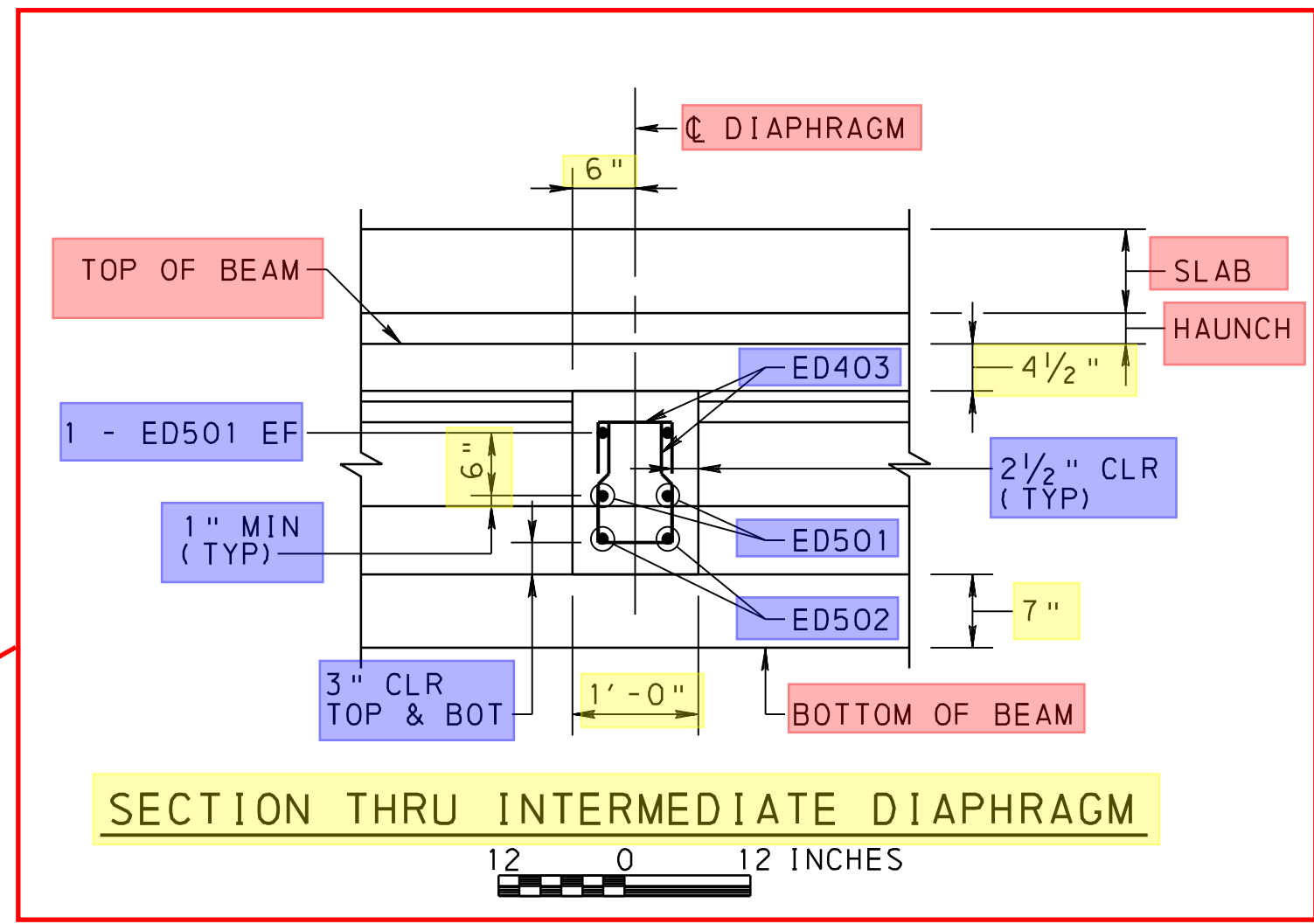


**FULL DEPTH END DIAPHRAGM
@ ABUTMENT 1**

12 0 12 INCHES

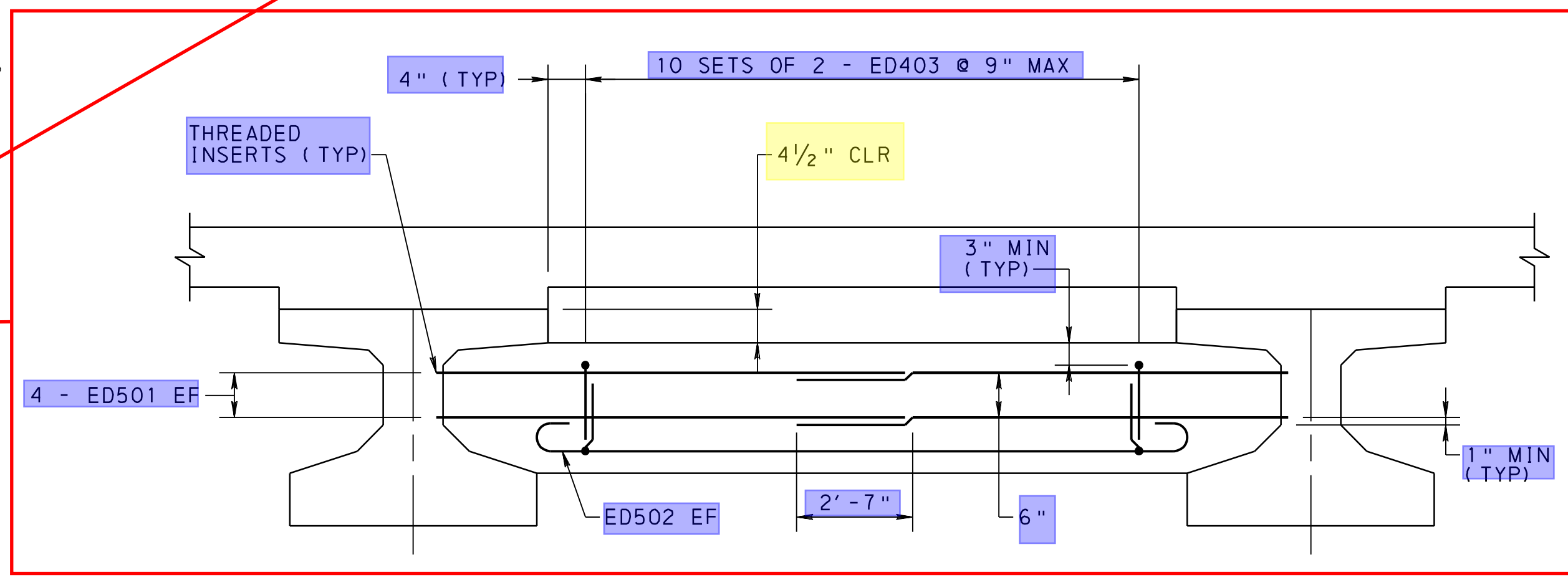
NOTE: BARS AT END OF BEAMS
NOT SHOWN FOR CLARITY

Sections
provided in
Saved Views



SECTION THRU INTERMEDIATE DIAPHRAGM

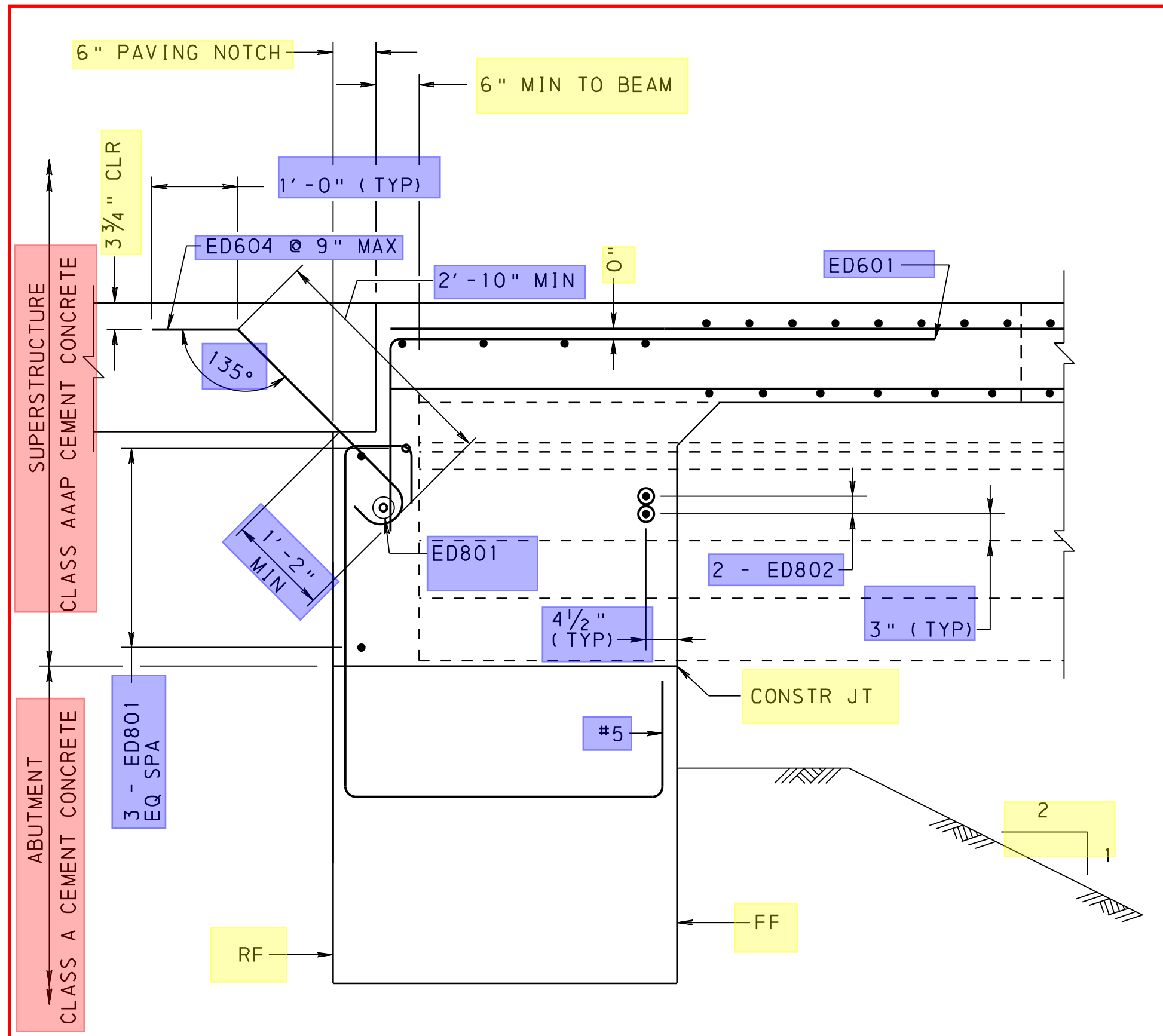
12 0 12 INCHES



INTERMEDIATE DIAPHRAGM

12 0 12 INCHES

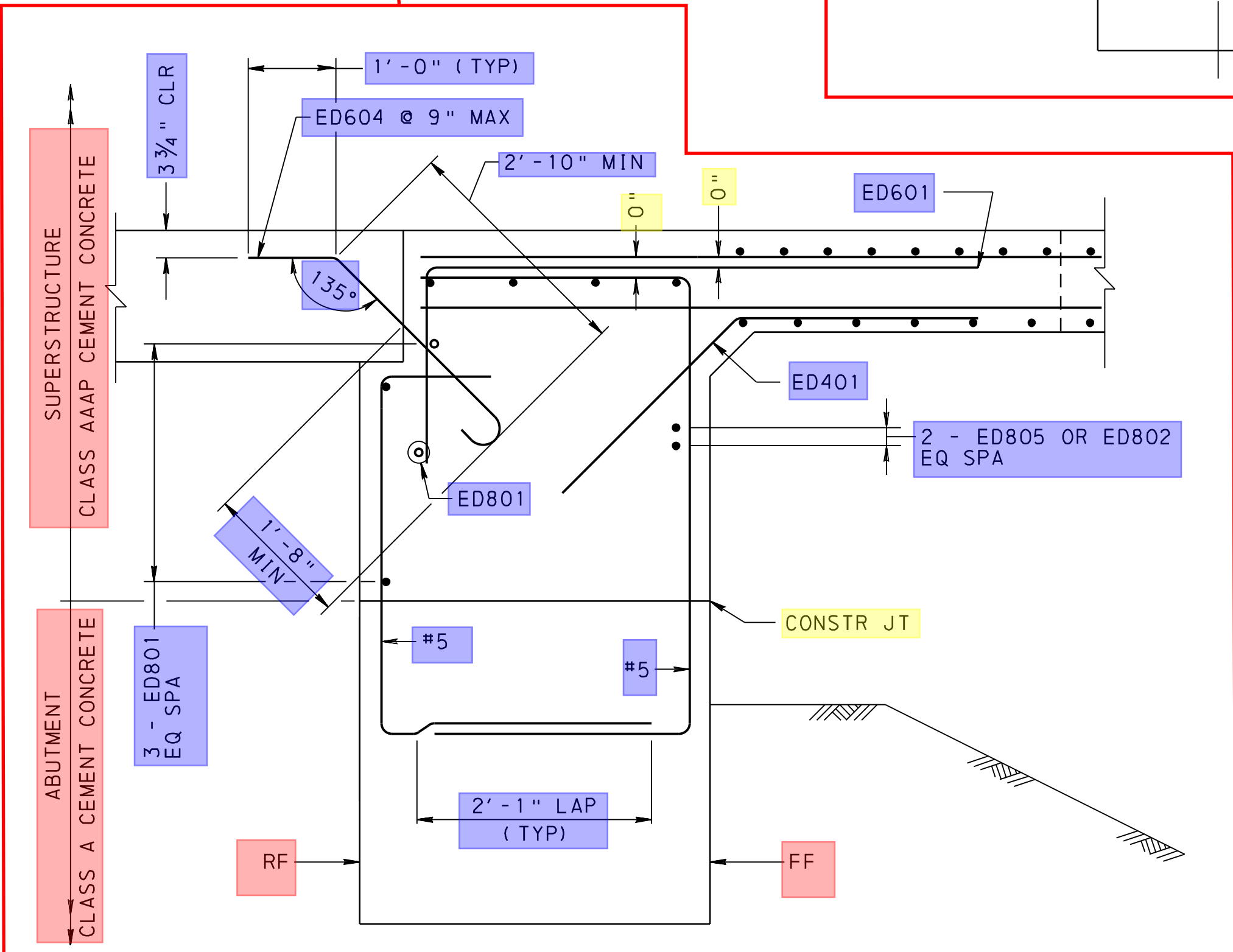
NOTES
1. FOR REBAR MARKS OF REINFORCEMENT IN THE PILE CAP, SEE
ABUTMENT 1 SECTIONS, SHEET 9.



**SECTION THRU
END DIAPHRAGM AT BEAMS**

NOT TO SCALE

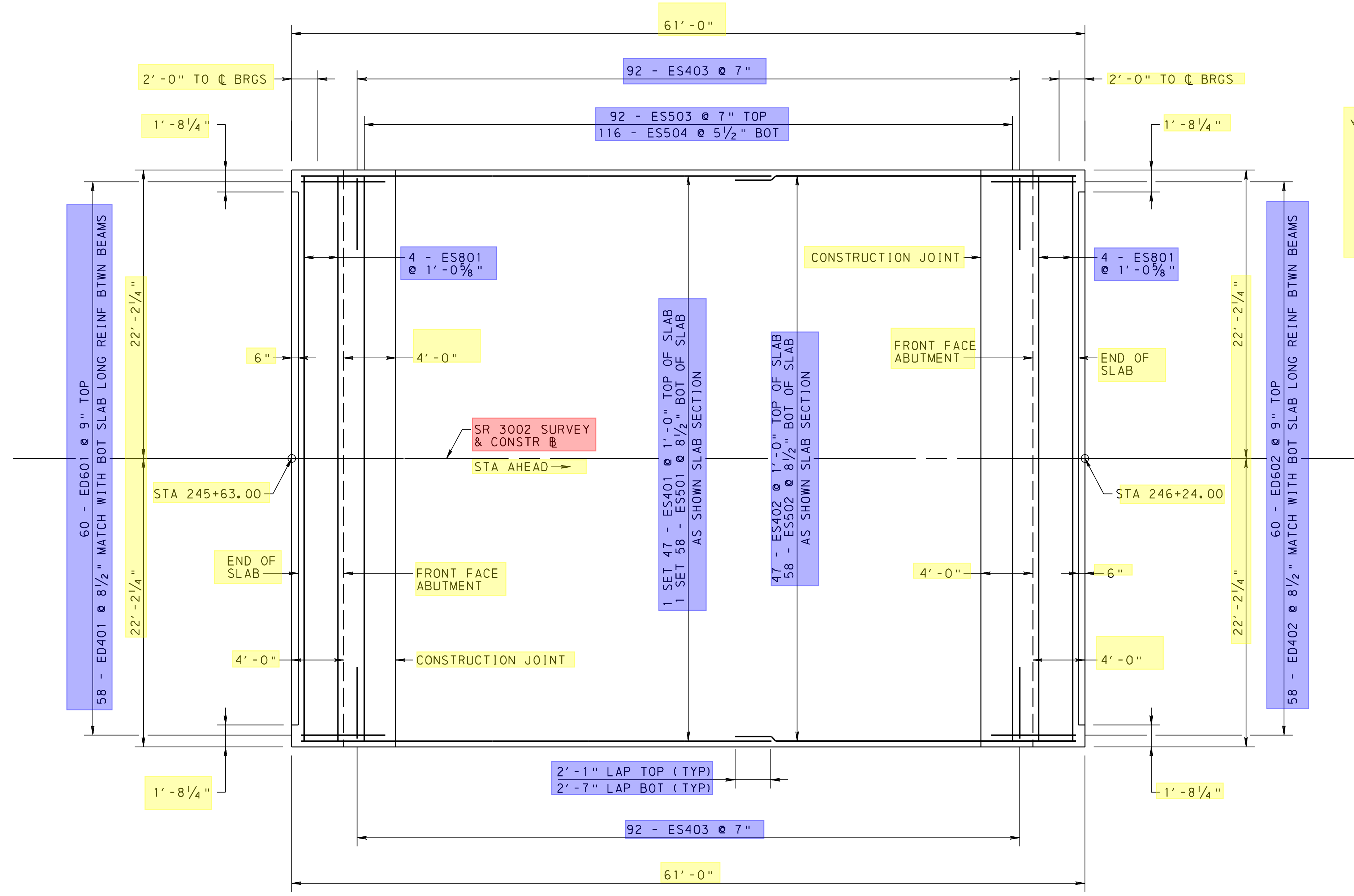
NOTE: DRAINAGE DETAILS NOT SHOWN
FOR CLARITY



**SECTION THRU
END DIAPHRAGM BETWEEN BEAMS**

NOT TO SCALE

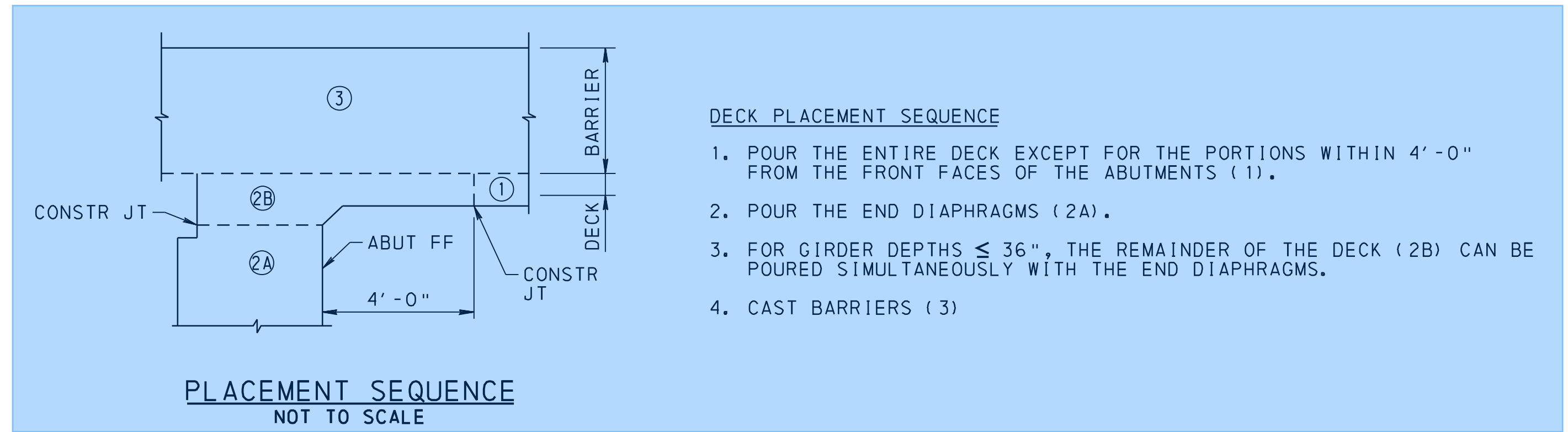
NOTE: DRAINAGE DETAILS NOT SHOWN
FOR CLARITY



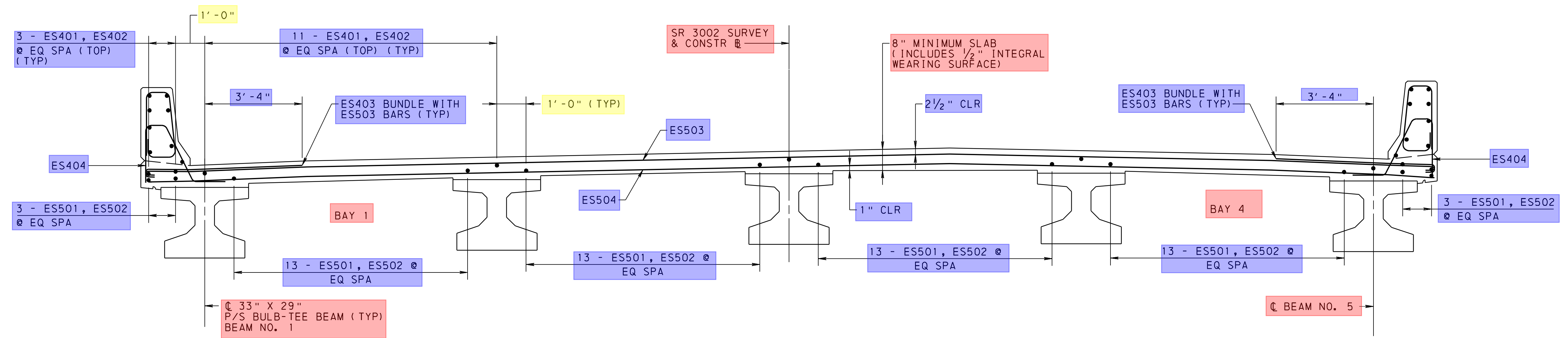
SLAB REINFORCING PLAN
 2 0 2 4 6 FEET

NOTES:
 - STAGGER LONGITUDINAL REBARS SUCH THAT NO REBAR IN THE TOP MAT IS DIRECTLY ABOVE A REBAR IN THE BOTTOM MAT

Note added as attribute for all longitudinal deck rebar sets.



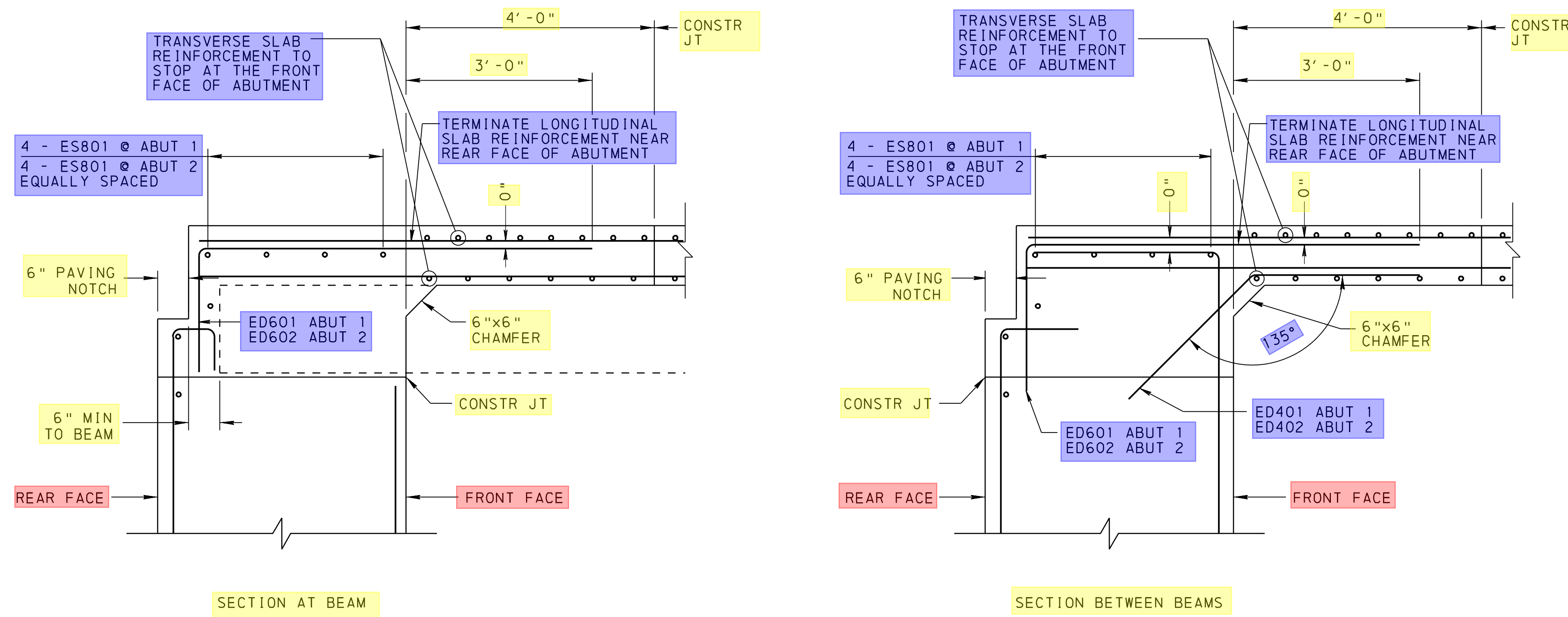
SLAB PLAN



NOTE: SEE TYPICAL SECTION FOR DIMENSIONS.

NOTE: REFER TO STD DWG BC-752M FOR V-NOTCH DETAILS AND STD DWG BC-775M FOR DRIP NOTCH DETAILS.

SLAB SECTION



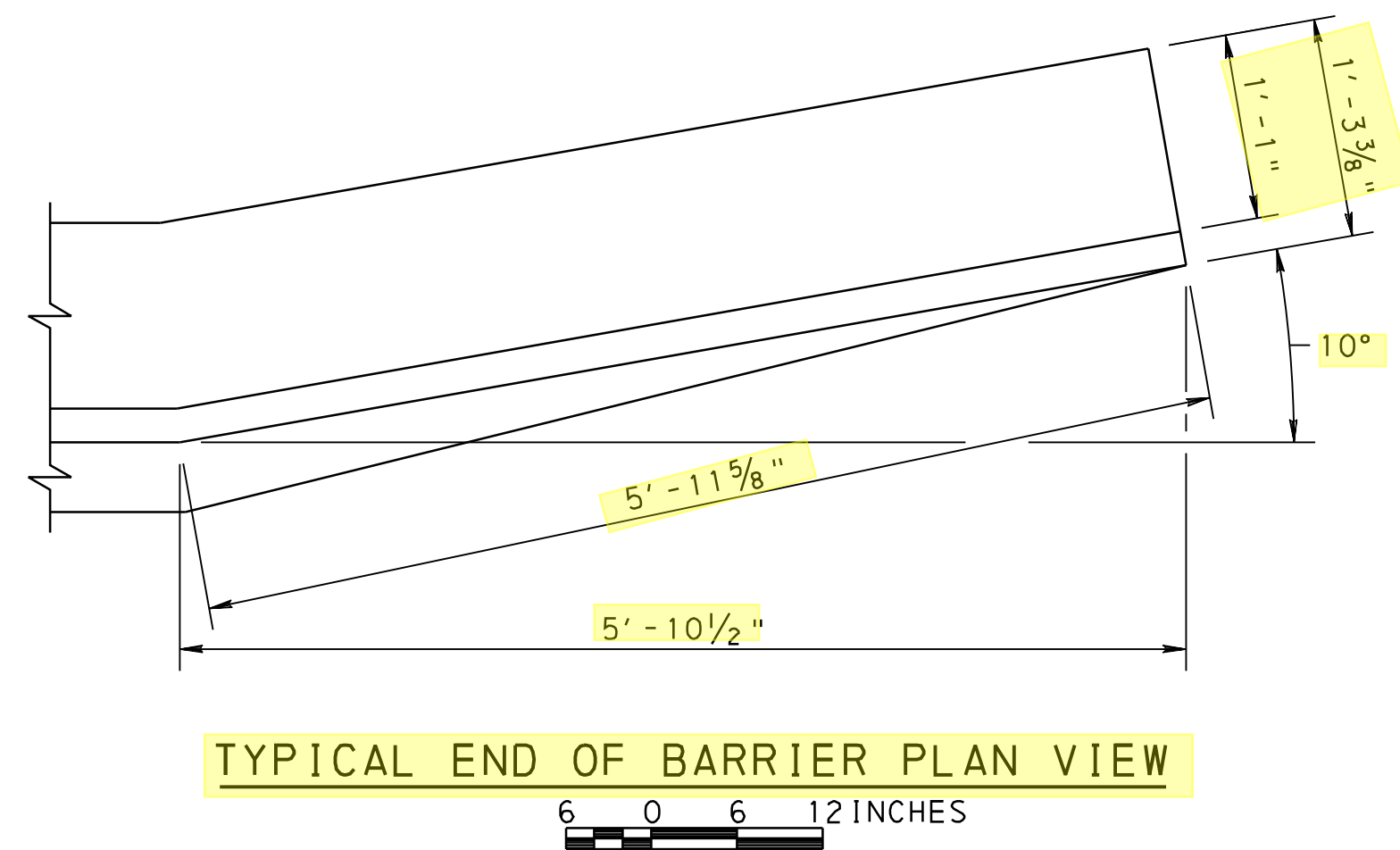
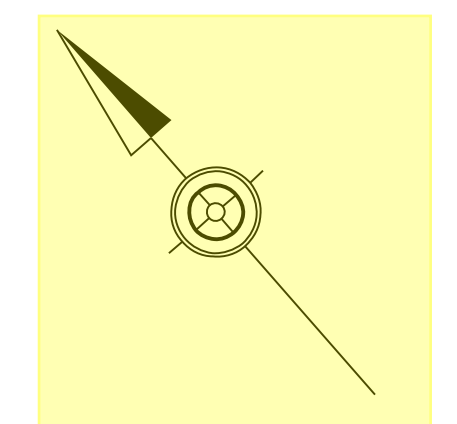
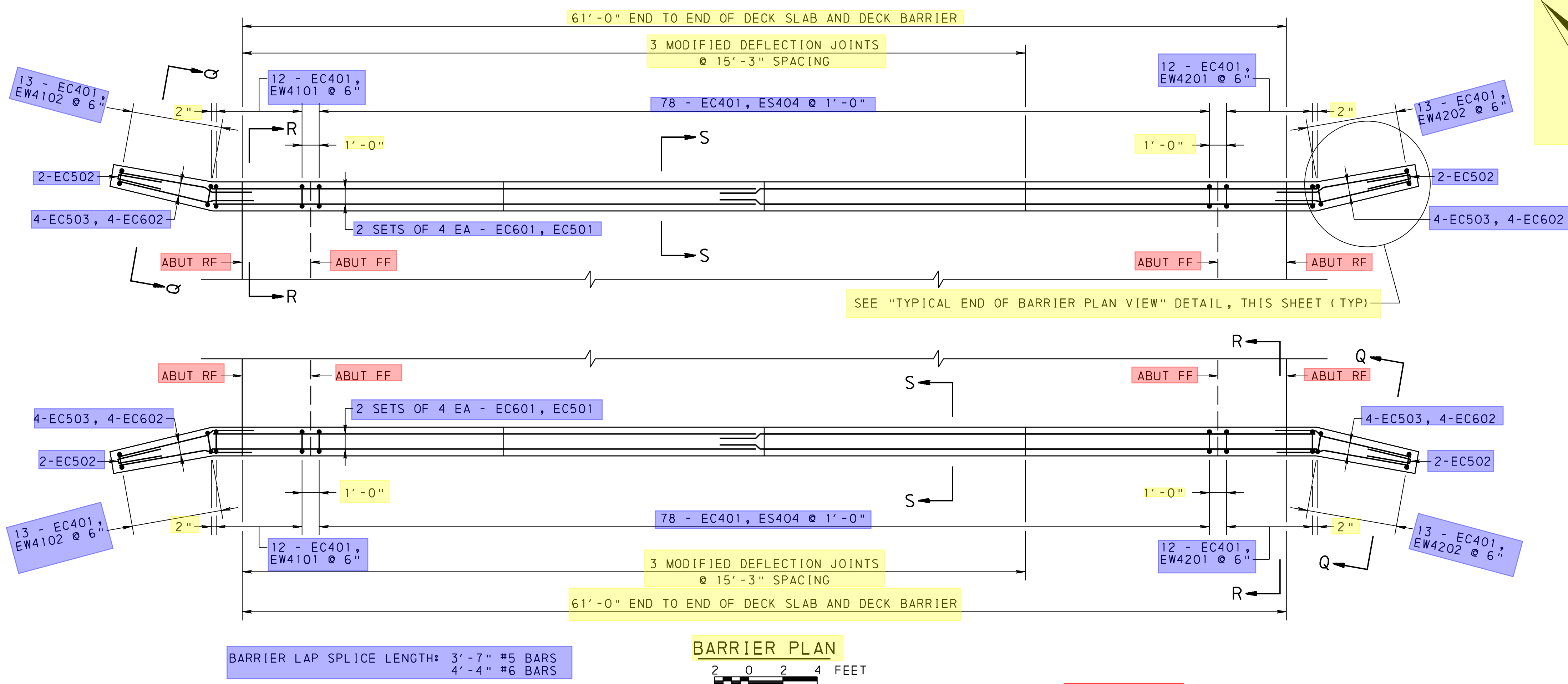
Sections provided in Saved Views

TRANSVERSE SLAB REINFORCEMENT PARALLEL TO ABUTMENT

NOTE: DRAINAGE DETAILS NOT SHOWN FOR CLARITY

NOT TO SCALE

SLAB REINFORCEMENT SECTIONS

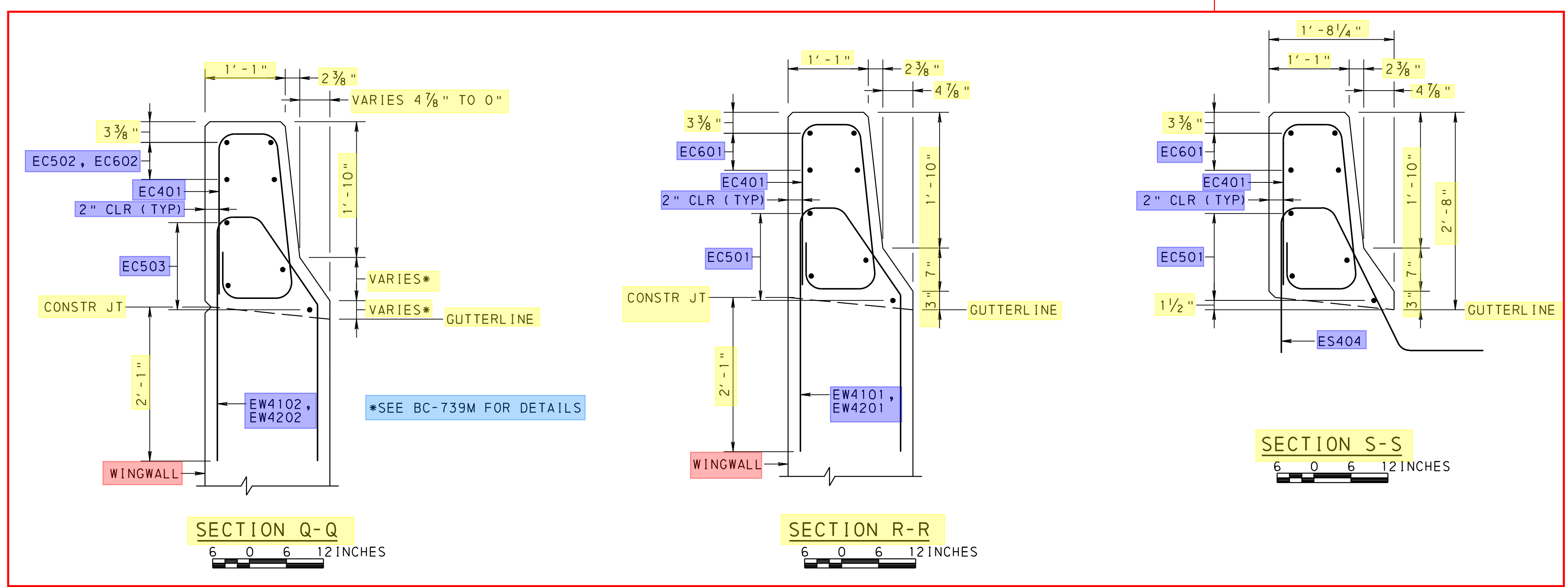


BARRIER LAP SPLICE LENGTH:
 3'-7" #5 BARS
 4'-4" #6 BARS

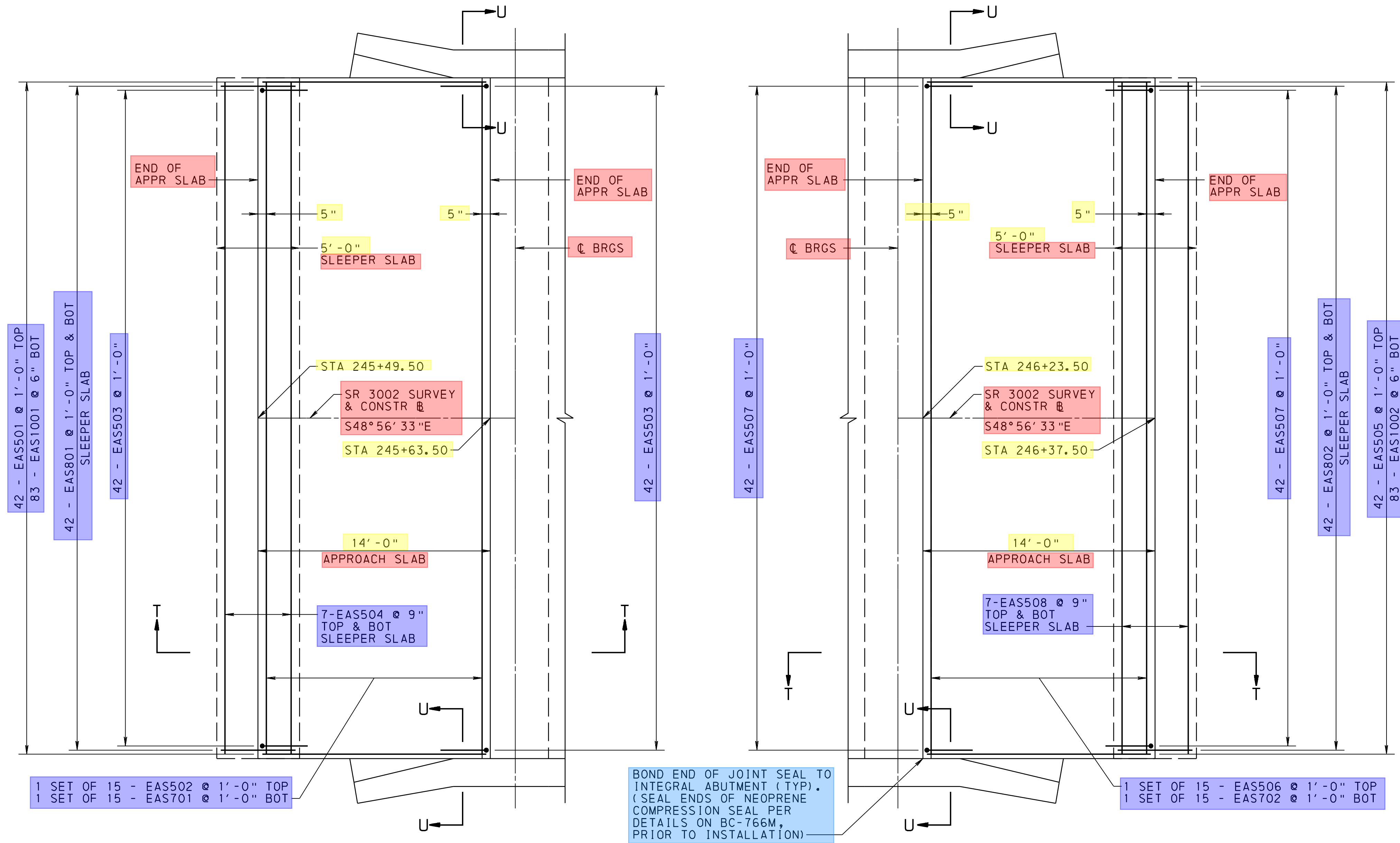
BARRIER PLAN
 2 0 2 4 FEET

TYPICAL END OF BARRIER PLAN VIEW
 6 0 6 12 INCHES

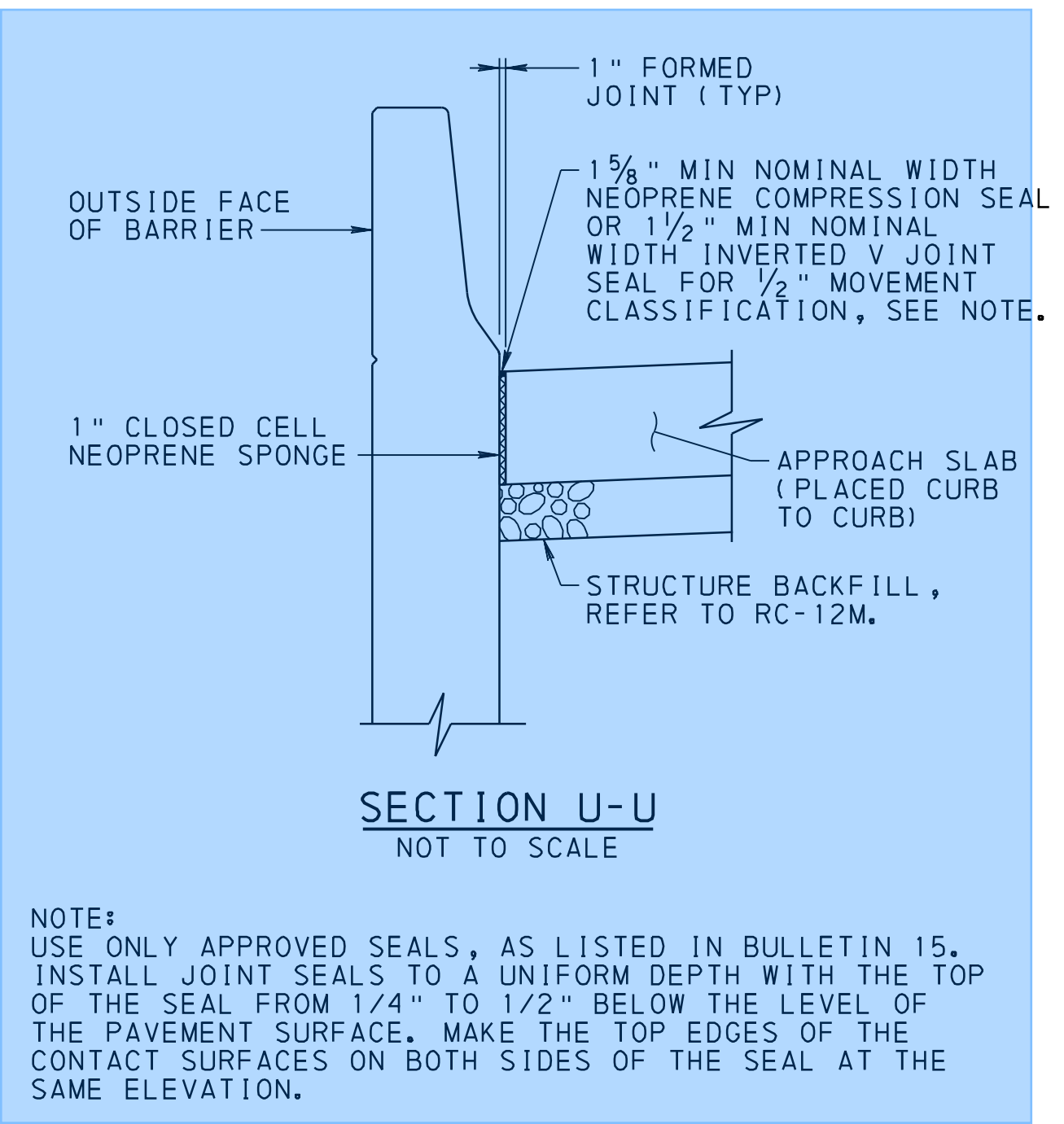
Sections provided in Saved Views



BARRIER DETAILS

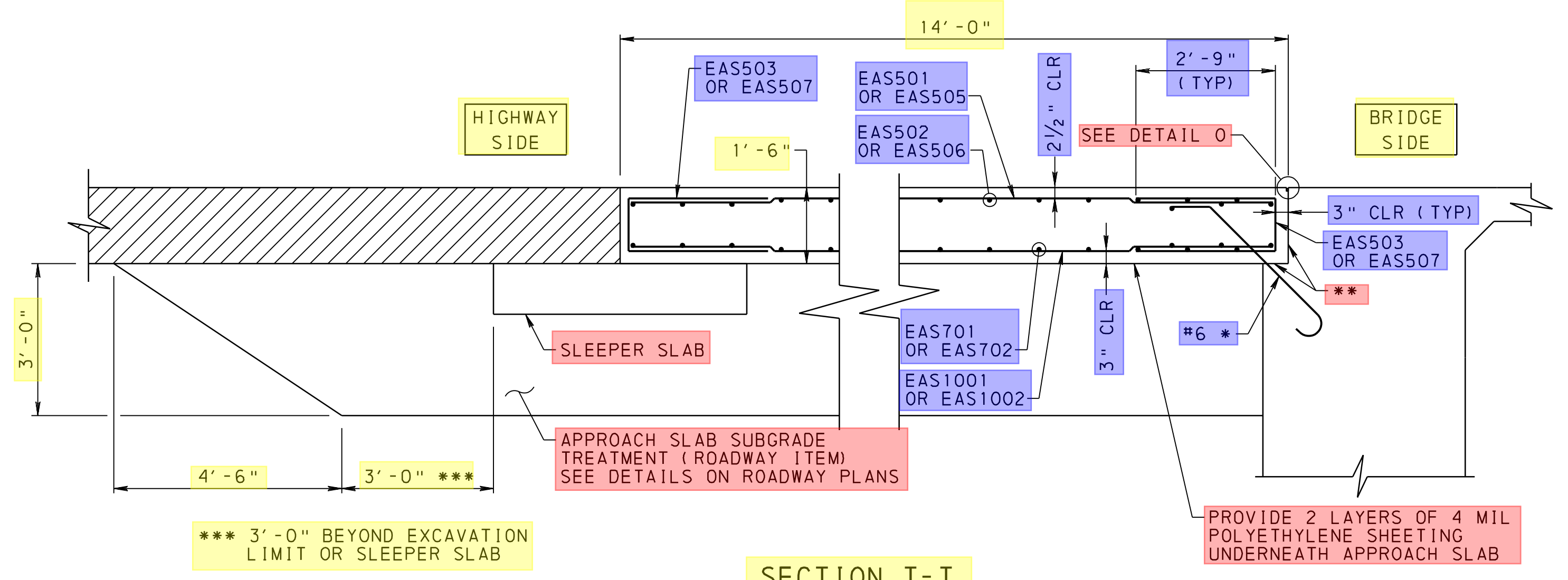
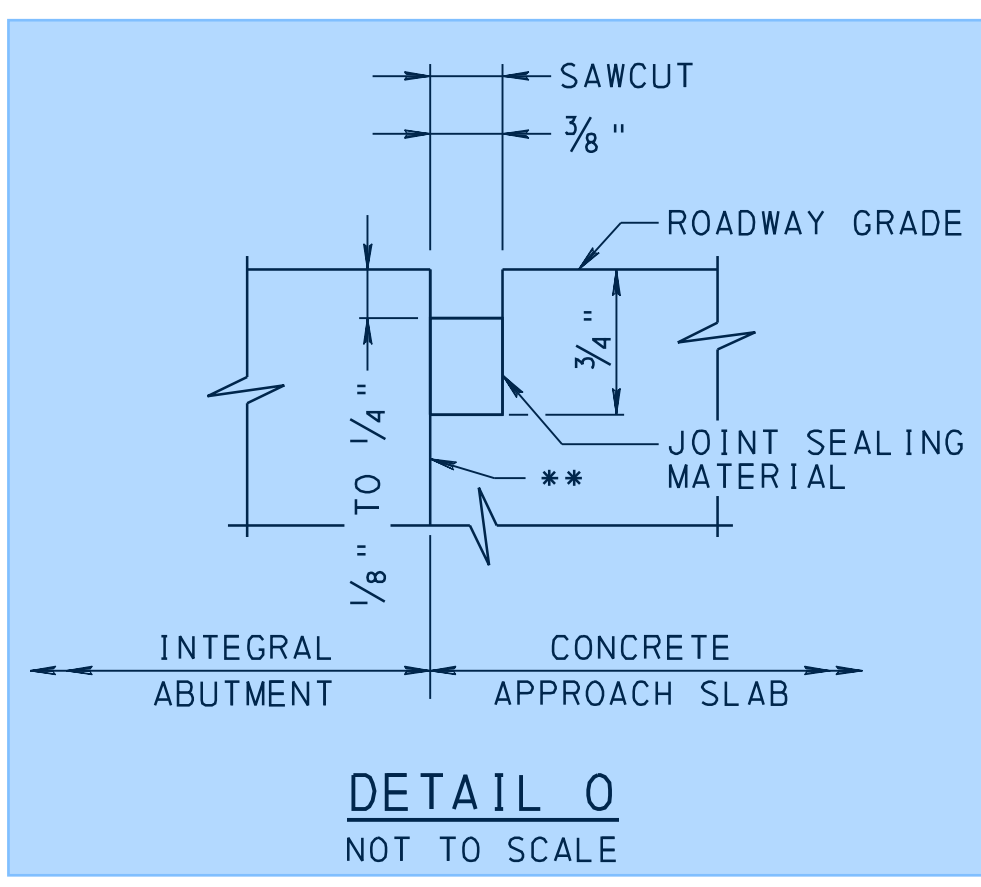


APPROACH SLAB PLAN
2 0 2 4 FEET



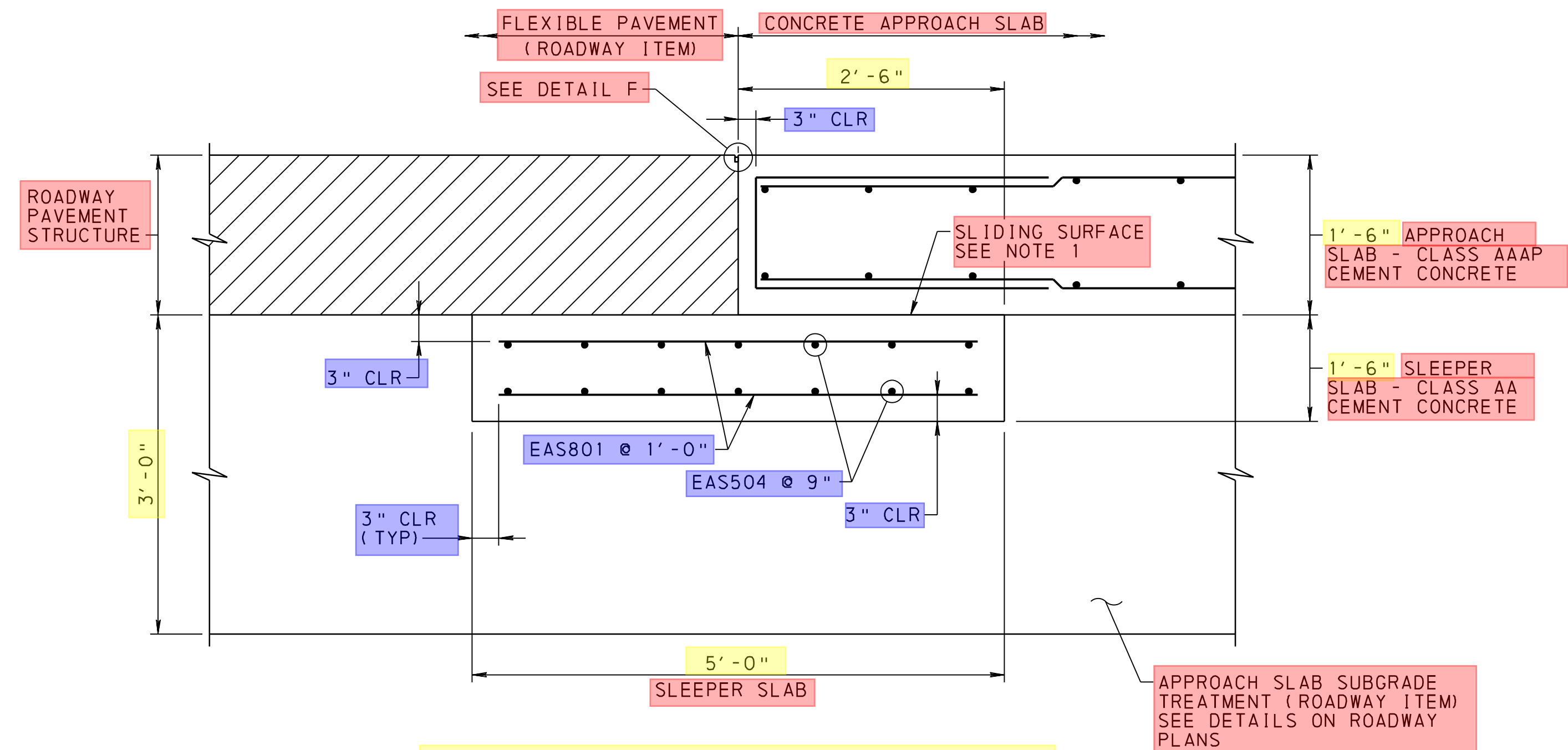
NOTE:
USE ONLY APPROVED SEALS, AS LISTED IN BULLETIN 15. INSTALL JOINT SEALS TO A UNIFORM DEPTH WITH THE TOP OF THE SEAL FROM 1/4" TO 1/2" BELOW THE LEVEL OF THE PAVEMENT SURFACE. MAKE THE TOP EDGES OF THE CONTACT SURFACES ON BOTH SIDES OF THE SEAL AT THE SAME ELEVATION.

- NOTES**
1. CONSTRUCT BRIDGE APPROACH SLAB AFTER THE BRIDGE DECK SLAB IS CONSTRUCTED.
 2. PLACE CONCRETE IN ONE CONTINUOUS OPERATION, UNLESS OTHERWISE INDICATED OR DIRECTED.
 3. TRANSVERSE CONSTRUCTION JOINTS ARE NOT PERMITTED IN THE CONCRETE APPROACH SLAB OR SLEEPER SLAB, UNLESS OTHERWISE INDICATED.
- * FOR EXACT SHAPE AND DIMENSION OF REBAR, SEE DIAPHRAGM DETAILS, SHEETS 26 AND 27.
- ** COAT WITH BOND BREAKER PRIOR TO PLACING APPROACH SLAB CONCRETE.

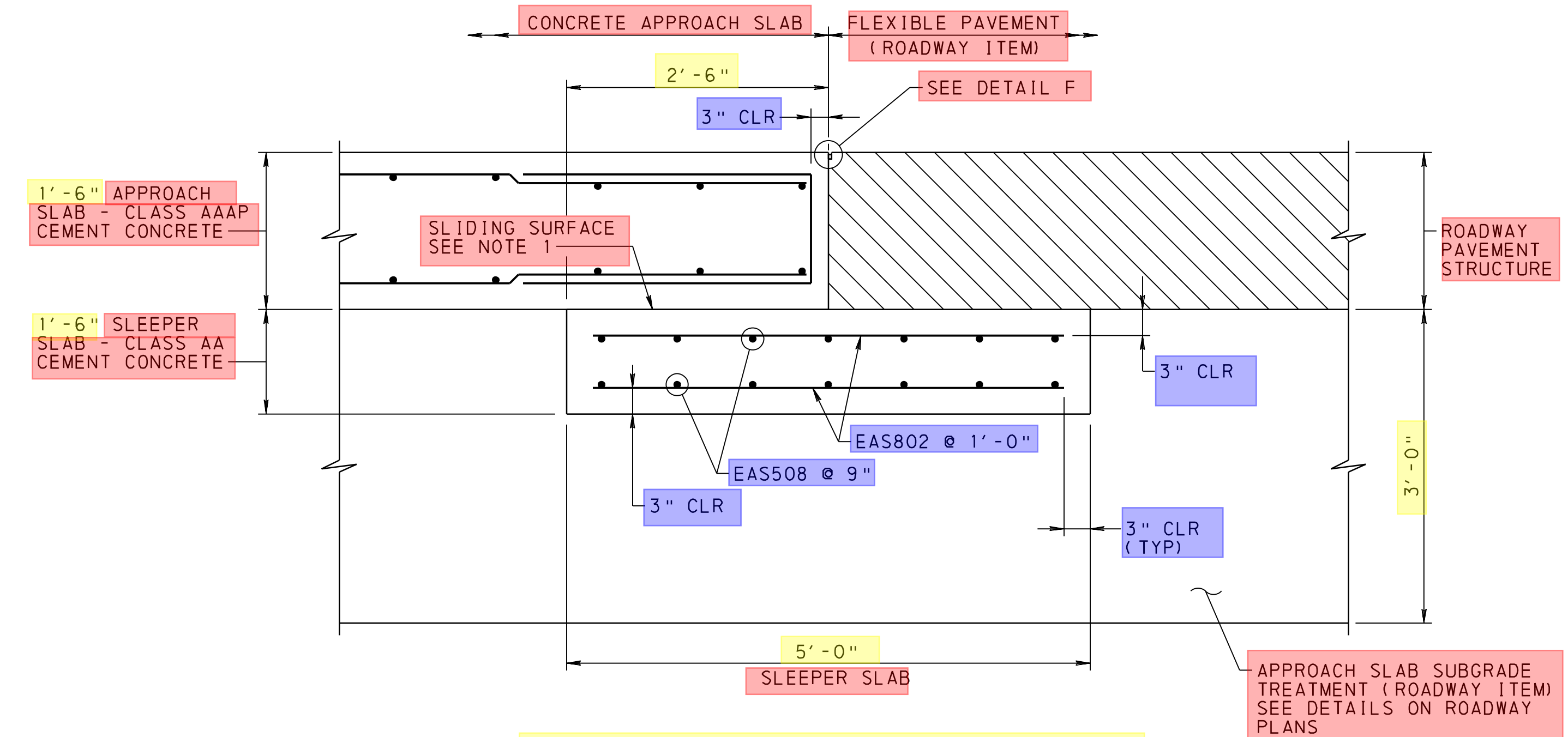


SECTION T-T
1 0 1 2 FEET

APPROACH SLAB DETAILS 1



SLEEPER SLAB AT ABUTMENT 1 DETAIL
NOT TO SCALE
END OF APPROACH SLAB
ADJACENT TO FLEXIBLE PAVEMENT



SLEEPER SLAB AT ABUTMENT 2 DETAIL
NOT TO SCALE
END OF APPROACH SLAB
ADJACENT TO FLEXIBLE PAVEMENT

These approach slab elevations will be generated from the model and provided as a selectable table in the container file.

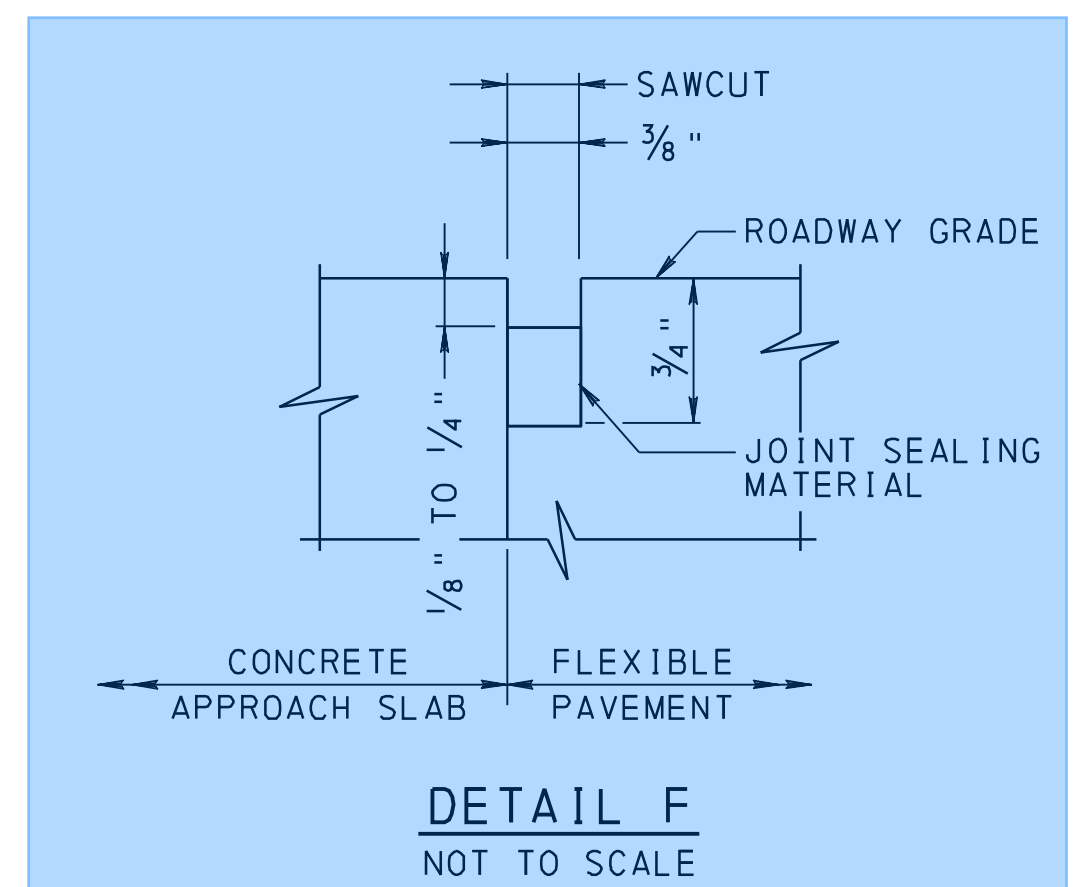
ABUTMENT 1 APPROACH SLAB ELEVATIONS					
LOOKING AHEAD STATIONS					
STATION	PT. ①	PT. ②	PT. ⑤	PT. ③	PT. ④
245+49.50	441.06	441.22	441.66	441.44	441.28
245+50.00	441.07	441.23	441.67	441.45	441.29
245+60.00	441.12	441.28	441.72	441.50	441.34
245+63.50	441.13	441.29	441.73	441.51	441.35

NOTE: FOR POINT LOCATIONS, SEE TYPICAL SECTION DETAIL ON THE TYP SECT & ELEVATION CHART SHEET.

ABUTMENT 2 APPROACH SLAB ELEVATIONS					
LOOKING AHEAD STATIONS					
STATION	PT. ①	PT. ②	PT. ⑤	PT. ③	PT. ④
246+23.50	441.43	441.59	442.03	441.81	441.65
246+30.00	441.47	441.63	442.07	441.85	441.69
246+37.50	441.50	441.66	442.10	441.88	441.72

NOTE: FOR POINT LOCATIONS, SEE TYPICAL SECTION DETAIL ON THE TYP SECT & ELEVATION CHART SHEET.

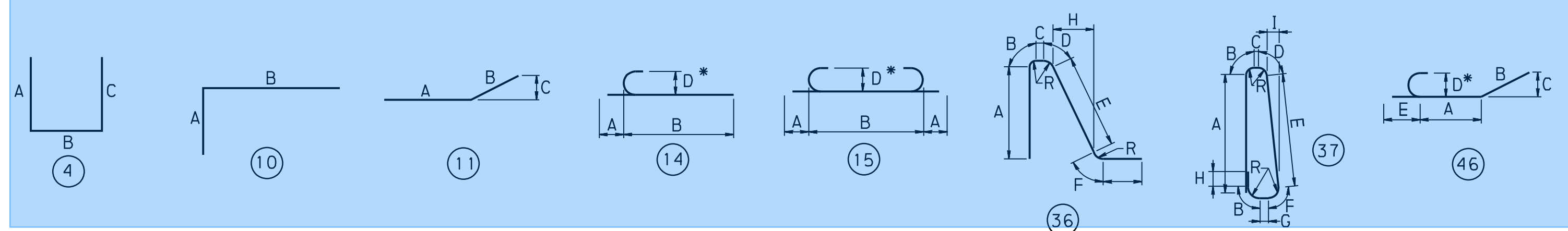
- NOTES**
- TROWEL SMOOTH AND PLACE TWO LAYERS OF 4 MIL POLYETHYLENE SHEETING AS BOND BREAKER.
 - THE DESIGNER IS RESPONSIBLE FOR MODIFYING THE SLEEPER SLAB DETAILS AS NEEDED.



MARK	SIZE	NUMBER	LENGTH	TYPE	A	B	C	D	E	R	REMARKS
SLAB											
ES401	4	47	40'-0"	STR							
ES402	4	47	22'-9"	STR							
ES403	4	184	5'-11"	14	6"	5'-4 1/4"					
ES404	4	156	5'-10"	36	1'-9"	4"	4"	2 3/4"	1'-11"	2"	F=2 3/4" ; G=1'-0" ; H=10"
ES501	5	58	40'-0"	STR							
ES502	5	58	23'-3"	STR							
ES503	5	92	45'-3"	15	7"	44'-0 1/2"					
ES504	5	116	44'-0"	STR							
ES801	8	8	44'-0"	STR							
BARRIER											
EC401	4	256	6'-6"	37	1'-11 1/2"	4"	4 1/2"	3 5/8"	1'-9 3/4"	2"	F=4 1/8" ; G=6 3/4" ; H=5" ; I=2 1/4"
EC501	5	16	33'-10"	STR							
EC502	5	8	5'-9"	4	2'-6"	9"	2'-6"				
EC503	5	16	7'-5"	11	1'-7"	5'-10"	1'-0 1/8"				
EC601	6	16	34'-2"	STR							
EC602	6	16	7'-9"	11	1'-11"	5'-10"	1'-0 1/8"				
INTERMEDIATE DIAPHRAGM											
ED403	4	80	2'-3"	4	10"	7"	10"				
ED501	5	16	6'-3"	STR							THREADED 3" ON ONE END
ED502	5	8	10'-2"	15	7"	9'-0"					
END DIAPHRAGM @ ABUTMENT NO. 1											
ED401	4	58	6'-0"	11	3'-0"	3'-0"	2'-1 3/8"				
ED601	6	60	9'-4"	10	3'-0"	6'-4"					
ED604	6	64	4'-6"	46	2'-10"	1'-0"	8 3/8"		8"		
ED801	8	4	43'-10"	STR							
ED802	8	16	7'-0"	STR							THREADED 3" ON ONE END
ED803	8	4	6'-6"	STR							
ED804	8	4	6'-9"	STR							
ED805	8	4	1'-11"	STR							THREADED 3" ON ONE END
END DIAPHRAGM @ ABUTMENT NO. 2											
ED402	4	58	6'-0"	11	3'-0"	3'-0"	2'-1 3/8"				
ED602	6	60	9'-4"	10	3'-0"	6'-4"					
ED605	6	64	4'-6"	46	2'-10"	1'-0"	8 3/8"		8"		
ED808	8	4	43'-10"	STR							
ED809	8	16	7'-0"	STR							THREADED 3" ON ONE END
ED810	8	4	6'-6"	STR							
ED811	8	4	6'-9"	STR							
ED812	8	4	1'-11"	STR							THREADED 3" ON ONE END
APPROACH SLAB NO. 1											
EAS501	5	42	13'-6"	STR							
EAS502	5	15	40'-6"	STR							
EAS503	5	84	6'-7"	4	2'-9"	1'-0 1/2"	2'-9"				
EAS504	5	14	40'-6"	STR							2 SETS OF 7
EAS701	7	15	40'-6"	STR							
EAS801	8	84	4'-6"	STR							2 SETS OF 42
EAS1001	10	83	13'-6"	STR							
APPROACH SLAB NO. 2											
EAS505	5	42	13'-6"	STR							
EAS506	5	15	40'-6"	STR							
EAS507	5	84	6'-7"	4	2'-9"	1'-0 1/2"	2'-9"				
EAS508	5	14	40'-6"	STR							2 SETS OF 7
EAS702	7	15	40'-6"	STR							
EAS802	8	84	4'-6"	STR							2 SETS OF 42
EAS1002	10	83	13'-6"	STR							

The schedule information will be generated from the model and provided in the electronic files as tables which can be exported to spreadsheets (typical all rebar schedules). This could also be provided as a separate document (excel file) and linked to the model.

- NOTES**
- "*" DIMENSION ON 180° HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE, OTHERWISE STANDARD HOOKS ARE TO BE USED.
 - FOR REINFORCEMENT BAR FABRICATION DETAILS, REFER TO STANDARD DRAWING BC-736M.
 - FIGURES IN CIRCLES SHOW TYPES.
 - "E" - INDICATES EPOXY COATED REBARS.
 - "SS" - INDICATES STAINLESS STEEL REBARS.
 - FOR ALL BAR TYPES SHOWN, DIMENSIONS A-H AND LENGTH ARE MEASURED ALONG OUTSIDE OF BAR. R IS MEASURED ALONG INSIDE OF BAR.
 - BAR TYPES ARE NUMBERED ACCORDING TO THE FOLLOWING:
SUPERSTRUCTURE: 01 THROUGH 99
ABUTMENT 1: 101 THROUGH 199
ABUTMENT 2: 201 THROUGH 299



SUPERSTRUCTURE REBAR SCHEDULE

FASCIA BEAM WITH FWS		P/S PA BULB-TEE BEAM 33/29					
SIMPLE SPAN		H20	HS20	ML-80	PHL-93	P-82	TK527
INVENTORY	DISTRIBUTION FACTOR	0.736	0.736	0.736	0.660	N/A	0.736
RATING	LOCATION (ft)	28.50	28.50	28.50	22.80	N/A	28.50
(IR)	LIMIT STATE	SERV-III	SERV-III	SERV-III	STR-I	N/A	SERV-III
	RATING FACTOR	2.44M	1.69M	1.40M	1.35V	N/A	1.48M
OPERATING	DISTRIBUTION FACTOR	0.660	0.660	0.660	0.660	0.660	0.660
RATING	LOCATION (ft)	22.80	22.80	22.80	22.80	14.25	22.80
(OR)	LIMIT STATE	STR-II	STR-II	STR-II	STR-IA	STR-II	STR-II
	RATING FACTOR	3.31V	2.29V	1.95V	1.74V	1.42V	2.03V
MAXIMUM FACTORED MOMENT RESISTANCE (kip-ft)		3883.09		SPAN LENGTH (ft) = 57.00			
LOCATION (ft)		19.95					
MAXIMUM FACTORED SHEAR RESISTANCE (kips)		352.69					
LOCATION (ft)		11.40					

FASCIA BEAM WITHOUT FWS		P/S PA BULB-TEE BEAM 33/29					
SIMPLE SPAN		H20	HS20	ML-80	PHL-93	P-82	TK527
INVENTORY	DISTRIBUTION FACTOR	0.736	0.736	0.736	0.660	N/A	0.736
RATING	LOCATION (ft)	28.50	28.50	28.50	22.80	N/A	28.50
(IR)	LIMIT STATE	SERV-III	SERV-III	SERV-III	STR-I	N/A	SERV-III
	RATING FACTOR	2.64M	1.83M	1.52M	1.41V	N/A	1.60M
OPERATING	DISTRIBUTION FACTOR	0.660	0.660	0.660	0.660	0.660	0.660
RATING	LOCATION (ft)	22.80	22.80	22.80	22.80	14.25	22.80
(OR)	LIMIT STATE	STR-II	STR-II	STR-II	STR-IA	STR-II	STR-II
	RATING FACTOR	3.47V	2.40V	2.04V	1.83V	1.50V	2.12V
MAXIMUM FACTORED MOMENT RESISTANCE (kip-ft)		3883.09		SPAN LENGTH (ft) = 57.00			
LOCATION (ft)		19.95					
MAXIMUM FACTORED SHEAR RESISTANCE (kips)		360.78					
LOCATION (ft)		11.40					

FIRST INTERIOR BEAM WITH FWS		P/S PA BULB-TEE BEAM 33/29					
SIMPLE SPAN		H20	HS20	ML-80	PHL-93	P-82	TK527
INVENTORY	DISTRIBUTION FACTOR	0.893	0.893	0.893	0.952	N/A	0.893
RATING	LOCATION (ft)	28.50	28.50	28.50	22.80	N/A	28.50
(IR)	LIMIT STATE	SERV-III	SERV-III	SERV-III	STR-I	N/A	SERV-III
	RATING FACTOR	1.74M	1.21M	1.00M	1.01V	N/A	1.06M
OPERATING	DISTRIBUTION FACTOR	0.952	0.952	0.952	0.952	0.952	0.952
RATING	LOCATION (ft)	14.25	14.25	14.25	22.80	14.25	14.25
(OR)	LIMIT STATE	STR-II	STR-II	STR-II	STR-IA	STR-II	STR-II
	RATING FACTOR	2.34V	1.64V	1.45V	1.31V	1.03V	1.46V
MAXIMUM FACTORED MOMENT RESISTANCE (kip-ft)		4048.32		SPAN LENGTH (ft) = 57.00			
LOCATION (ft)		19.95					
MAXIMUM FACTORED SHEAR RESISTANCE (kips)		324.05					
LOCATION (ft)		11.40					

FIRST INTERIOR BEAM WITHOUT FWS		P/S PA BULB-TEE BEAM 33/29					
SIMPLE SPAN		H20	HS20	ML-80	PHL-93	P-82	TK527
INVENTORY	DISTRIBUTION FACTOR	0.952	0.893	0.893	0.952	N/A	0.893
RATING	LOCATION (ft)	14.25	28.50	28.50	22.80	N/A	28.50
(IR)	LIMIT STATE	STR-I	SERV-III	SERV-III	STR-I	N/A	SERV-III
	RATING FACTOR	1.90V	1.32M	1.10M	1.06V	N/A	1.16M
OPERATING	DISTRIBUTION FACTOR	0.952	0.952	0.952	0.952	0.952	0.952
RATING	LOCATION (ft)	14.25	14.25	14.25	22.80	14.25	14.25
(OR)	LIMIT STATE	STR-II	STR-II	STR-II	STR-IA	STR-II	STR-II
	RATING FACTOR	2.46V	1.72V	1.51V	1.37V	1.08V	1.53V
MAXIMUM FACTORED MOMENT RESISTANCE (kip-ft)		4048.32		SPAN LENGTH (ft) = 57.00			
LOCATION (ft)		19.95					
MAXIMUM FACTORED SHEAR RESISTANCE (kips)		330.79					
LOCATION (ft)		11.40					

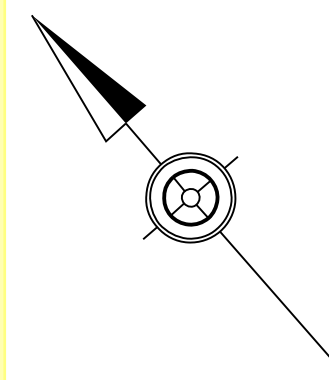
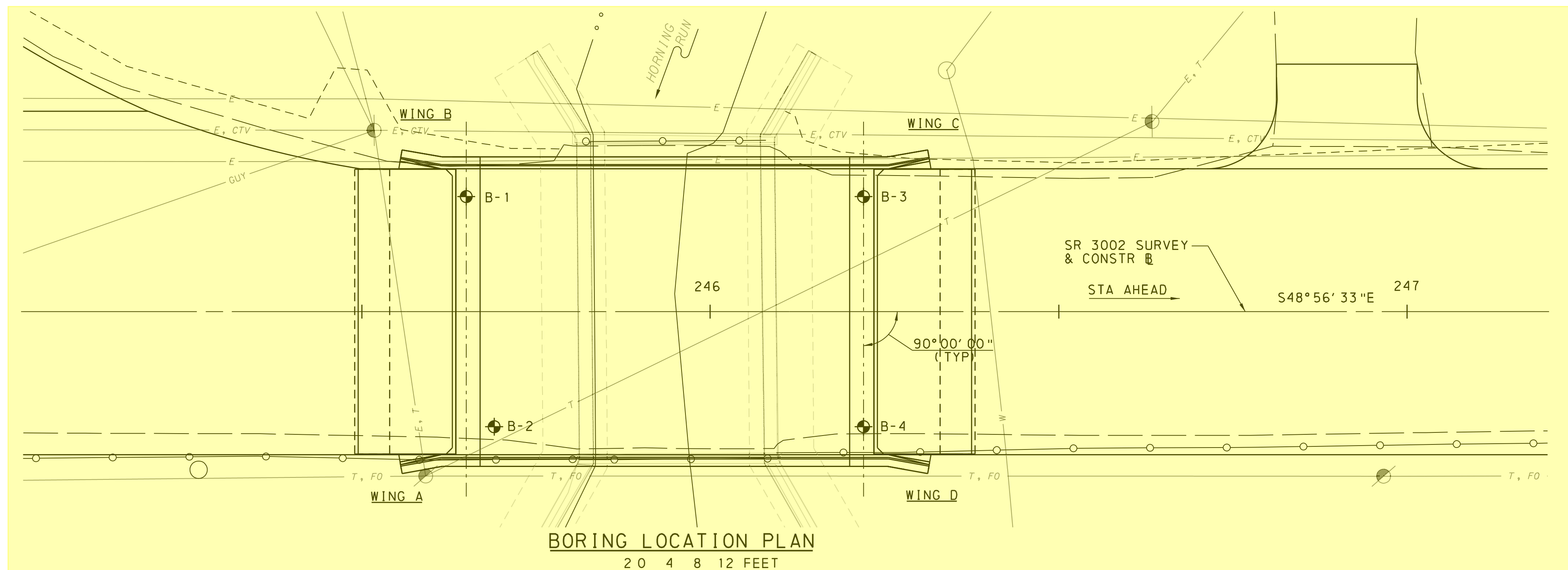
INTERIOR BEAM WITH FWS		P/S PA BULB-TEE BEAM 33/29					
SIMPLE SPAN		H20	HS20	ML-80	PHL-93	P-82	TK527
INVENTORY	DISTRIBUTION FACTOR	0.952	0.952	0.893	0.952	N/A	0.893
RATING	LOCATION (ft)	14.25	14.25	28.50	22.80	N/A	28.50
(IR)	LIMIT STATE	STR-I	STR-I	SERV-III	STR-I	N/A	SERV-III
	RATING FACTOR	1.88V	1.32V	1.10M	1.05V	N/A	1.16M
OPERATING	DISTRIBUTION FACTOR	0.952	0.952	0.952	0.952	0.952	0.952
RATING	LOCATION (ft)	14.25	14.25	14.25	22.80	14.25	14.25
(OR)	LIMIT STATE	STR-II	STR-II	STR-II	STR-IA	STR-II	STR-II
	RATING FACTOR	2.44V	1.71V	1.51V	1.36V	1.07V	1.53V
MAXIMUM FACTORED MOMENT RESISTANCE (kip-ft)		4048.32		SPAN LENGTH (ft) = 57.00			
LOCATION (ft)		22.80					
MAXIMUM FACTORED SHEAR RESISTANCE (kips)		329.97					
LOCATION (ft)		11.40					

INTERIOR BEAM WITHOUT FWS		P/S PA BULB-TEE BEAM 33/29					
SIMPLE SPAN		H20	HS20	ML-80	PHL-93	P-82	TK527
INVENTORY	DISTRIBUTION FACTOR	0.952	0.952	0.893	0.952	N/A	0.952
RATING	LOCATION (ft)	14.25	14.25	28.50	22.80	N/A	14.25
(IR)	LIMIT STATE	STR-I	STR-I	SERV-III	STR-I	N/A	STR-I
	RATING FACTOR	1.97V	1.38V	1.20M	1.10V	N/A	1.23V
OPERATING	DISTRIBUTION FACTOR	0.952	0.952	0.952	0.952	0.952	0.952
RATING	LOCATION (ft)	14.25	14.25	14.25	22.80	14.25	14.25
(OR)	LIMIT STATE	STR-II	STR-II	STR-II	STR-IA	STR-II	STR-II
	RATING FACTOR	2.55V	1.79V	1.58V	1.42V	1.12V	1.60V
MAXIMUM FACTORED MOMENT RESISTANCE (kip-ft)		4048.32		SPAN LENGTH (ft) = 57.00			
LOCATION (ft)		19.95					
MAXIMUM FACTORED SHEAR RESISTANCE (kips)		336.90					
LOCATION (ft)		11.40					

NOTES:
 GIVEN DISTRIBUTION FACTOR IS THE VEHICULAR LIVE LOAD DISTRIBUTION FACTOR USED TO PRODUCE THE GIVEN RATING. FOR THE STR-IP LIMIT STATE, THE VEHICULAR LIVE LOAD DISTRIBUTION FACTOR ACCOUNTS FOR THE PRESENCE OF PEDESTRIAN LOADS, IF APPLICABLE.

SYMBOL DESIGNATION FOR RATING FACTORS:
 M - MOMENT RATING FACTOR CONTROLS
 V - SHEAR RATING FACTOR CONTROLS

The rating will be provided in the electronic files as tables which can be exported to spreadsheets. This could also be provided as a separate document (excel file) and linked to the model.



GENERAL NOTES

THIS SHEET IS INCLUDED FOR THE CONVENIENCE OF THE DEPARTMENT. REFER TO PUBLICATION 408 SECTION 102.05 FOR FURTHER INFORMATION.

FOR ADDITIONAL SOIL AND ROCK DESCRIPTIONS SEE PUBLICATION 222.

THE BORING LOGS AND RELATED INFORMATION DEPICT SUBSURFACE CONDITIONS ONLY AT THE SPECIFIC LOCATIONS AND DATES INDICATED. SUBSURFACE CONDITIONS MAY DIFFER FROM THE CONDITIONS REPORTED AT THE SPECIFIC LOCATIONS. ALSO, THE PASSAGE OF TIME MAY RESULT IN A CHANGE OF CONDITIONS AT THE BORING LOCATIONS.

LEGEND

- PP POCKET PENETROMETER
- T TORVANE
- NTS NOT TO SCALE
- BPCE BOTTOM OF PILE CAP ELEVATION
- EPTE ESTIMATED PILE TIP ELEVATION
- TOR ESTIMATED TOP OF ROCK ELEVATION

THE DESCRIPTIONS OF THE MATERIALS ENCOUNTERED HAVE BEEN VERIFIED.

THE SUBSURFACE EXPLORATION DATA THAT ARE PRESENTED ON THESE DRAWINGS (INCLUDING BORING LOGS, EARTH SAMPLES, ROCK CORES, CLASSIFICATION OF MATERIALS AND DEPTH OF BORINGS) ACCURATELY REPRESENT THE CONDITIONS ENCOUNTERED BY THE TEST BORING PROGRAM AT EACH BORING LOCATION.

Handwritten signature
 GEOTECHNICAL ENGINEER/ENGINEERING GEOLOGIST
 DATE: 4/23/2018

LABORATORY TEST SUMMARY - SOILS

BORING NUMBER	STATION & OFFSET	SAMPLE #	TEST DEPTH (FT.)	NATURAL MOISTURE %	% GRAIN SIZE DISTRIBUTION (AASHTO)							CLASSIFICATION		PLASTICITY PARAMETERS			SHEAR STRENGTH				TEST METHOD		
					GRAVEL %	SAND %	COARSE SAND %	FINE SAND %	FINES %	SILT %	CLAY %	AASHTO	USCS	S.G.	LIQUID LIMIT	PLASTIC LIMIT	P. I.	C (TSF)	φ (DEG.)	C' (TSF)		φ' (DEG.)	
B-1	245+65.0 16.5 ft. LT.	BS-1	7.5 to 12.0	19.1	49.2	15.5			35.3	21.5	13.8	A-2-4	SC		29	20	9						
B-1	245+65.0 16.5 ft. LT.	S-11 to 15	17.5 to 25.0	23.4	41.5	22.1			36.4	24.2	12.2	A-4	SC-SM		29	22	7						
B-2	245+69.0 16.5 ft. RT.	S-8 to 11	12.0 to 18.0	23.6	24.9	23.1			52.0	35.0	17.0	A-4	CL-ML		28	21	7						
B-2	245+69.0 16.5 ft. RT.	S-12 to 15	18.0 to 24.0	15.1	48.3	25.9			25.8	18.7	7.1	A-2-4	SC		29	21	8						
B-3	246+22.0 16.5 ft. LT.	S-12 to 14	18.0 to 22.5	24.3	34.1	13.8			46.0	33.0	13.0	A-4	CL		30	21	9						
B-4	246+22.0 16.5 ft. RT.	S-6 to 10	9.0 to 16.5	23.3	30.8	23.2			46.0	33.0	13.0	A-4	SC		31	21	10						
B-4	246+22.0 16.5 ft. RT.	S-11 to 13	16.5 to 21.0	30.9	39.0	24.7			36.3	25.8	10.5	A-4	SM		NP	NP	NP						

LABORATORY TEST SUMMARY - ROCK CORE

BORING NUMBER	STATION & OFFSET	SAMPLE #	TEST DEPTH (FT.)	TEST	STRENGTH	JAR SLAKE TEST PERFORMED?	SLAKE DURABILITY INDEX & TYPE	ROCK RECOVERY %	RQD %	BEDROCK LITHOLOGY	STRATIGRAPHIC UNIT
B-1	245+65.0 16.5 ft. LT.	R-3	27.6 to 28.0	UNCONFINED COMPRESSIVE TEST	7380.0 PSI / 531.4 TSF	NO		100	20	SILTSTONE	KEYSER AND TONOLOWAY FORMATIONS, UNDIVIDED
B-2	245+69.0 16.5 ft. RT.	R-3	34.8 to 35.2	UNCONFINED COMPRESSIVE TEST	5660.0 PSI / 407.5 TSF	NO		98	32	SILTSTONE	KEYSER AND TONOLOWAY FORMATIONS, UNDIVIDED
B-3	246+22.0 16.5 ft. LT.	R-2	26.9 to 28.0	UNCONFINED COMPRESSIVE TEST	17910.0 PSI / 1,289.5 TSF	NO		80	50	SILTSTONE	KEYSER AND TONOLOWAY FORMATIONS, UNDIVIDED
B-4	246+22.0 16.5 ft. RT.	R-1	27.5 to 28.1	UNCONFINED COMPRESSIVE TEST	5130.0 PSI / 369.4 TSF	NO		65	25	SILTSTONE	KEYSER AND TONOLOWAY FORMATIONS, UNDIVIDED

LABORATORY TEST SUMMARY - ELECTROCHEMICAL

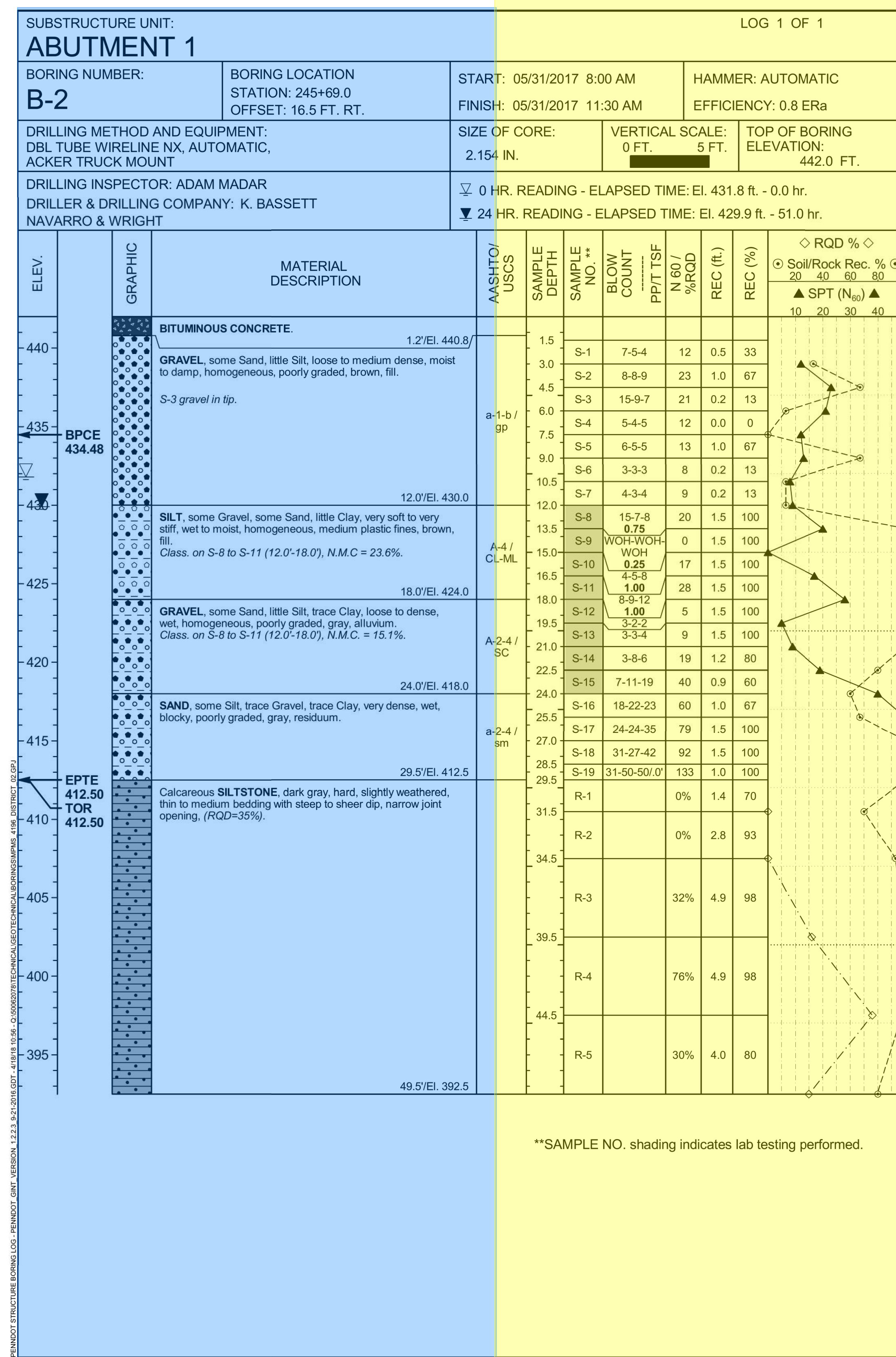
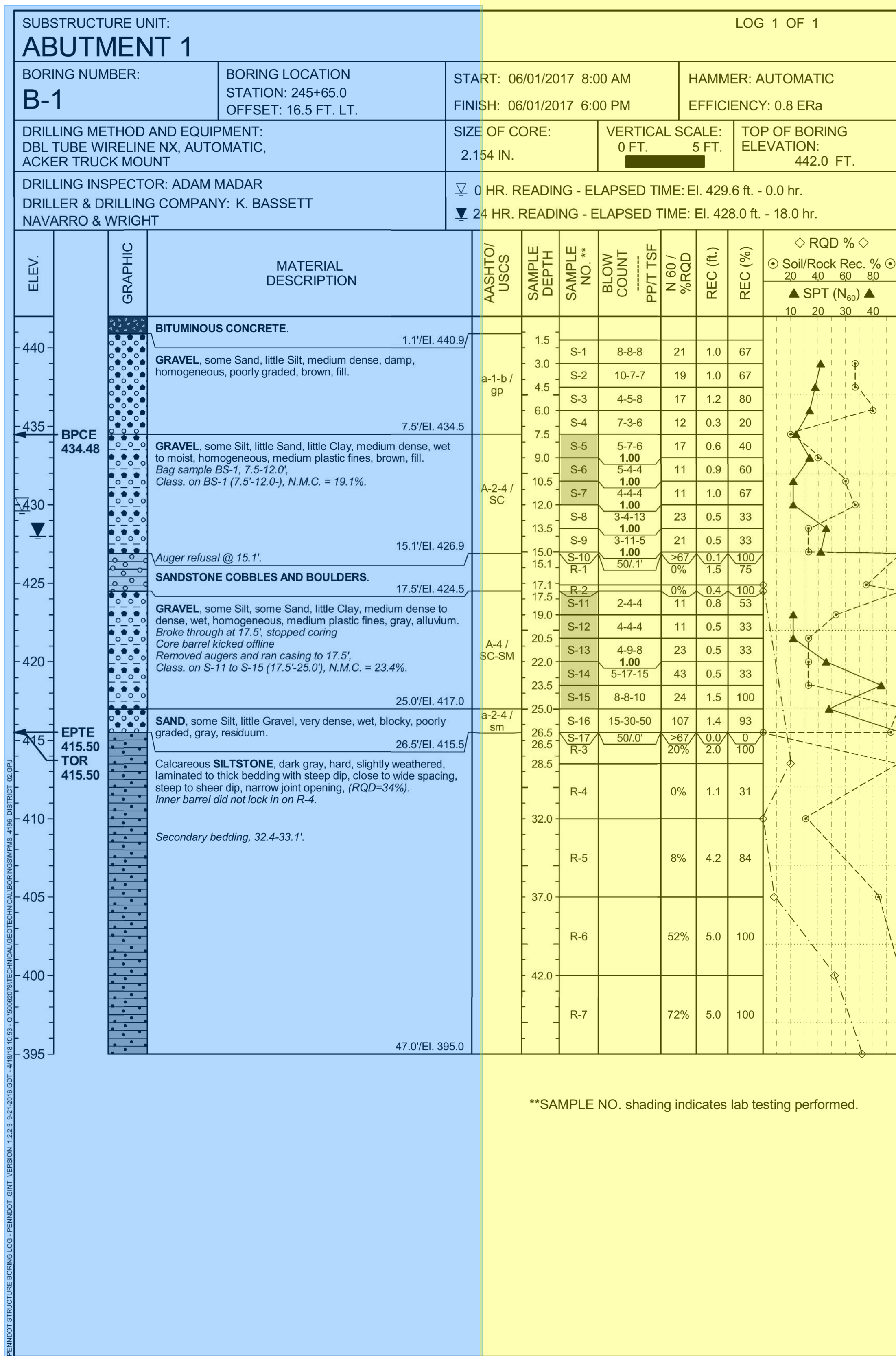
BORING NUMBER	STATION & OFFSET	SAMPLE #	TEST DEPTH (FT.)	SAMPLE SOURCE	pH	MINIMUM RESISTIVITY (ohm-cm)	CHLORIDE CONTENT (ppm)	SULFATE CONTENT (ppm)	HIGH ORGANIC CONTENT?	CORROSIVE FOR CONCRETE?	CORROSIVE FOR STEEL?
B-1	245+65.0 16.5 ft. LT.	S-5 to 7	7.5 to 12.0	SOIL	6.7	4,000	69	90	No	No	No
STREAM				WATER	8.8	4,545	35	70	No	No	No

CORE BORING DATA

BORING NUMBER	STATION	OFFSET	SURFACE ELEVATION
B-1	245+65.00	16.50' LT	442.0
B-2	245+69.00	16.50' RT	442.0
B-3	246+22.00	16.50' LT	442.0
B-4	246+22.00	16.50' RT	442.0

LEGEND
 ◉ LOCATION OF CORE BORING

The boring log and laboratory data will be provided in a separate electronic file and referenced to the container file.



GENERAL NOTES

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FOR ADDITIONAL SOIL AND ROCK DESCRIPTIONS SEE PUBLICATION 222.

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THE DESCRIPTIONS OF THE MATERIALS ENCOUNTERED HAVE BEEN VERIFIED.

The boring log and laboratory data will be provided in a separate electronic file and referenced to the container file. Also, 3D boring log data can also be provided as "for information only" within the model indicating key data such as boring locations, soil layers, and blow counts.