

### BENCHMARK DATA

BM #1 STA. 1186+51.63, ELEV. 835.37, OFFSET 22.67', LT.

FOR ADDITIONAL BENCHMARK INFORMATION. SEE ROADWAY PLAN SHEET 5/55.

### DESIGN TRAFFIC:

2026 ADT = 2,200 2026 ADTT = 110

2046 ADT = 2,500 2046 ADTT = 125

DIRECTIONAL DISTRIBUTION = 64%

### NOTES

- EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.
- ROCK CHANNEL PROTECTION SHALL BE PLACED ONLY ABOVE THE OHWM. PLACEMENT OF ROCK CHANNEL PROTECTION SHALL BE AS DIRECTED BY THE ENGINEER. ROCK CHANNEL PROTECTION IS INCLUDED WITH ROADWAY ITEM 601 FOR PAYMENT (55 CY).

### LEGEND

- ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN

### PROPOSED WORK

REMOVAL OF EXISTING WEARING SURFACE. REPLACEMENT OF EXISTING CONCRETE BOX BEAMS AND PORTIONS OF EXISTING WINGWALLS WITH NEW COMPOSITE REINFORCED CONCRETE DECK, ELASTOMERIC BEARINGS, THREE TUBE STEEL BRIDGE RAILING, AND APPROACH SLABS, AND REPAIR OF EXISTING ROCK CHANNEL PROTECTION. CONCRETE REPAIRS TO EXISTING SUBSTRUCTURES AS DIRECTED BY THE ENGINEER.

### HYDRAULIC DATA (PER 1995 RECORD PLANS)

DRAINAGE AREA = 5.4 SQ. MILES

Q (4%) = 1,377 CFS V (4%) = 4.92 FT/S

Q (1%) = 1,907 CFS V (1%) = 6.89 FT/S

HW (4%) = 834.15±

HW (1%) = 835.30±

STRUCTURE CLEARS THE 4% AEP STORM HW BY 0.00 FEET.

### EXISTING STRUCTURE

TYPE: SINGLE SPAN NON-COMPOSITE PRESTRESSED CONCRETE BOX BEAM BRIDGE ON REINFORCED CONCRETE CAPPED PILE SUBSTRUCTURE

SPAN: 48'-9"± C/C BEARINGS

ROADWAY: 40'-0"± F/F GUARDRAIL

LOADING: HS20-44 & ALTERNATE MILITARY LOADING

SKEW: 15°00'00"± L.F.

WEARING SURFACE: 3"± ASPHALT CONCRETE

APPROACH SLABS: 15'-0"± LONG, 12"± THICK (AS-1-81M)

ALIGNMENT: TANGENT

CROWN: 0.016± FT/FT

STRUCTURE FILE NUMBER: 7807694

DATE BUILT: 1997

DISPOSITION: TO BE REHABILITATED

### PROPOSED STRUCTURE

TYPE: SINGLE SPAN PRESTRESSED CONCRETE BOX BEAM BRIDGE WITH COMPOSITE REINFORCED CONCRETE DECK ON EXISTING REINFORCED CONCRETE CAPPED PILE SUBSTRUCTURE

SPAN: 48'-9" C/C BEARINGS

ROADWAY: 40'-0" F/F RAILING

LOADING: HL-93 & 0.06 KSF FUTURE WEARING SURFACE (SUPERSTRUCTURE) HS20-44 & ALTERNATE MILITARY LOADING (SUBSTRUCTURES)

SKEW: 15°00'00" L.F.

WEARING SURFACE: 1" MONOLITHIC CONCRETE

APPROACH SLABS: 15'-0" LONG, 12" THICK (AS-1-15, AS-2-15), TYPE B INSTALLATION

ALIGNMENT: TANGENT

CROWN: 0.016 FT/FT


DECK AREA: 2,075 SF

COORDINATES: LATITUDE 41°26'12.52" N LONGITUDE 80°57'18.93" W

ESTIMATED QUANTITIES								
					CALC. BY:	CDH	DATE:	4/5/2024
					CHECKED BY:	BCD	DATE:	4/15/2024
ITEM	EXTENSION	TOTAL 01/STR/10	UNIT	DESCRIPTION	ABUT.	SUPER.	GENERAL	SEE SHEET
202	11203	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN			LS	P.31
202	22900	134	SY	APPROACH SLAB REMOVED			134	
202	23500	356	SY	WEARING COURSE REMOVED		222	134	
509	10001	8151	LB	EPOXY COATED STEEL REINFORCEMENT, AS PER PLAN		8151		P.31
509	25000	124	LB	UNCOATED STEEL REINFORCEMENT	124			
510	10000	48	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	48			
511	31611	49	CY	CLASS QC2 CONCRETE, SUPERSTRUCTURE, AS PER PLAN		49		P.31, P.37
511	45710	1	CY	CLASS QC1 CONCRETE, ABUTMENT	1			
512	10100	65	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	37	28		
512	10600	40	FT	CONCRETE REPAIR BY EPOXY INJECTION	40			
512	33000	3	SY	TYPE 2 WATERPROOFING	3			
512	74000	35	SY	REMOVAL OF EXISTING COATINGS FROM CONCRETE SURFACES	35			
515	12030	10	EACH	PRESTRESSED CONCRETE COMPOSITE BOX BEAM BRIDGE MEMBERS, LEVEL 1, CB17-48 (49.78' LENGTH)		10		P.38
516	13900	9	SF	2" PREFORMED EXPANSION JOINT FILLER	9			
516	14014	93	FT	INTEGRAL ABUTMENT EXPANSION JOINT SEAL	93			
516	41100	20	EACH	1/8" PREFORMED BEARING PAD, TYPE CDP	20			P.31
516	43100	40	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES ONLY (NEOPRENE) (8"x10"x1.33")	40			
517	70100	112	FT	RAILING (THREE STEEL TUBE BRIDGE RAILING)		112		
518	21200	17	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	17			
SPECIAL	51822300	123.56	FT	STEEL DRIP STRIP		123.56		
519	11100	60	SF	PATCHING CONCRETE STRUCTURE	60			
526	10000	134	SY	REINFORCED CONCRETE APPROACH SLABS (T=12")			134	
526	90020	45	SY	TYPE B INSTALLATION			45	
625	33000	1	EACH	STRUCTURE GROUNDING SYSTEM			1	

ESTIMATED QUANTITIES  
BRIDGE NO. TRU-00534-22.360  
S.R. 534 OVER ANDREWS CREEK

SFN  
7807694

DESIGN AGENCY  
  
COMPASS  
INFRASTRUCTURE GROUP

DESIGNER  
CDH

CHECKER  
BCD

REVIEWER  
GLG 10/03/24

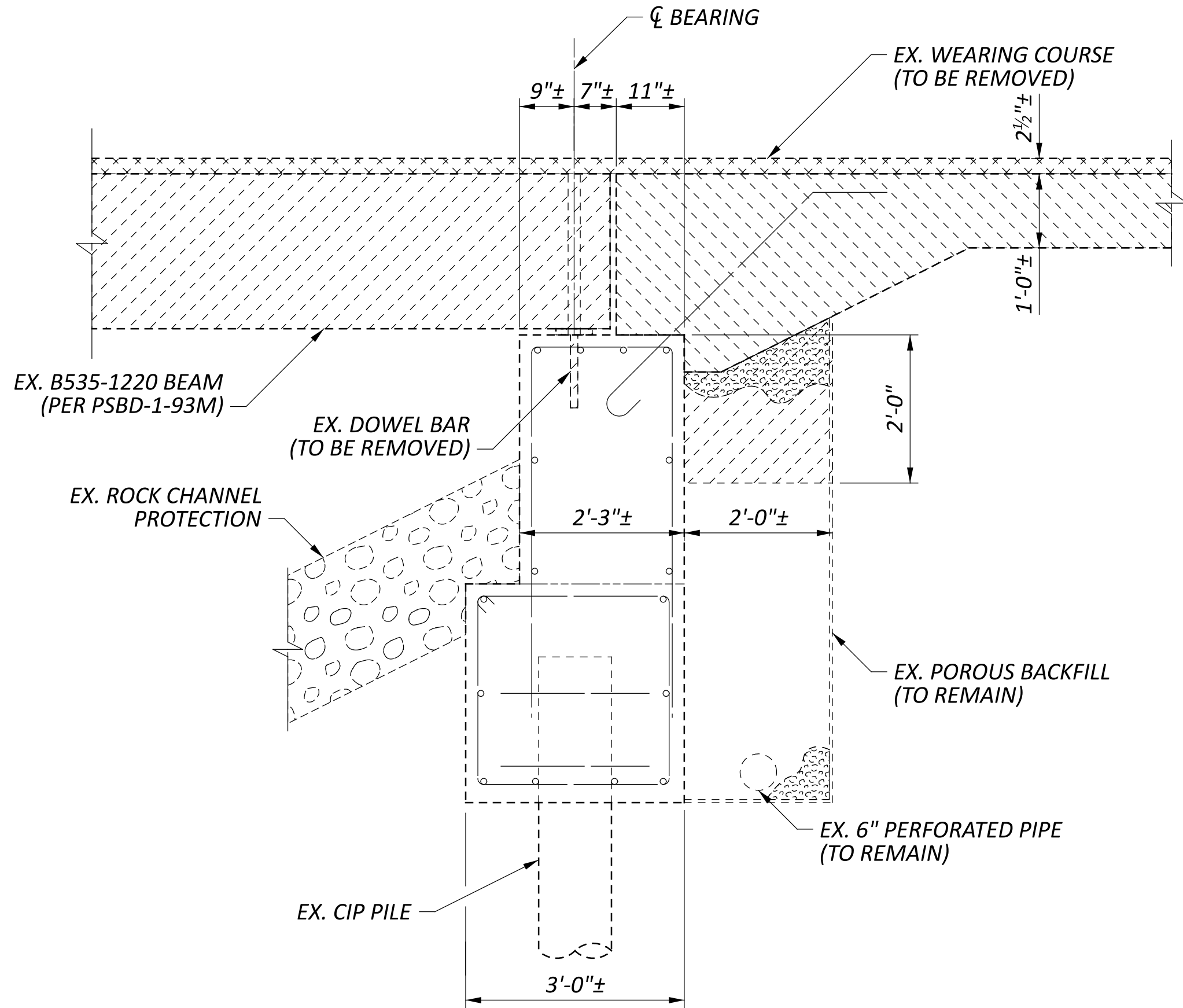
PROJECT ID  
118536

SUBSET  
2

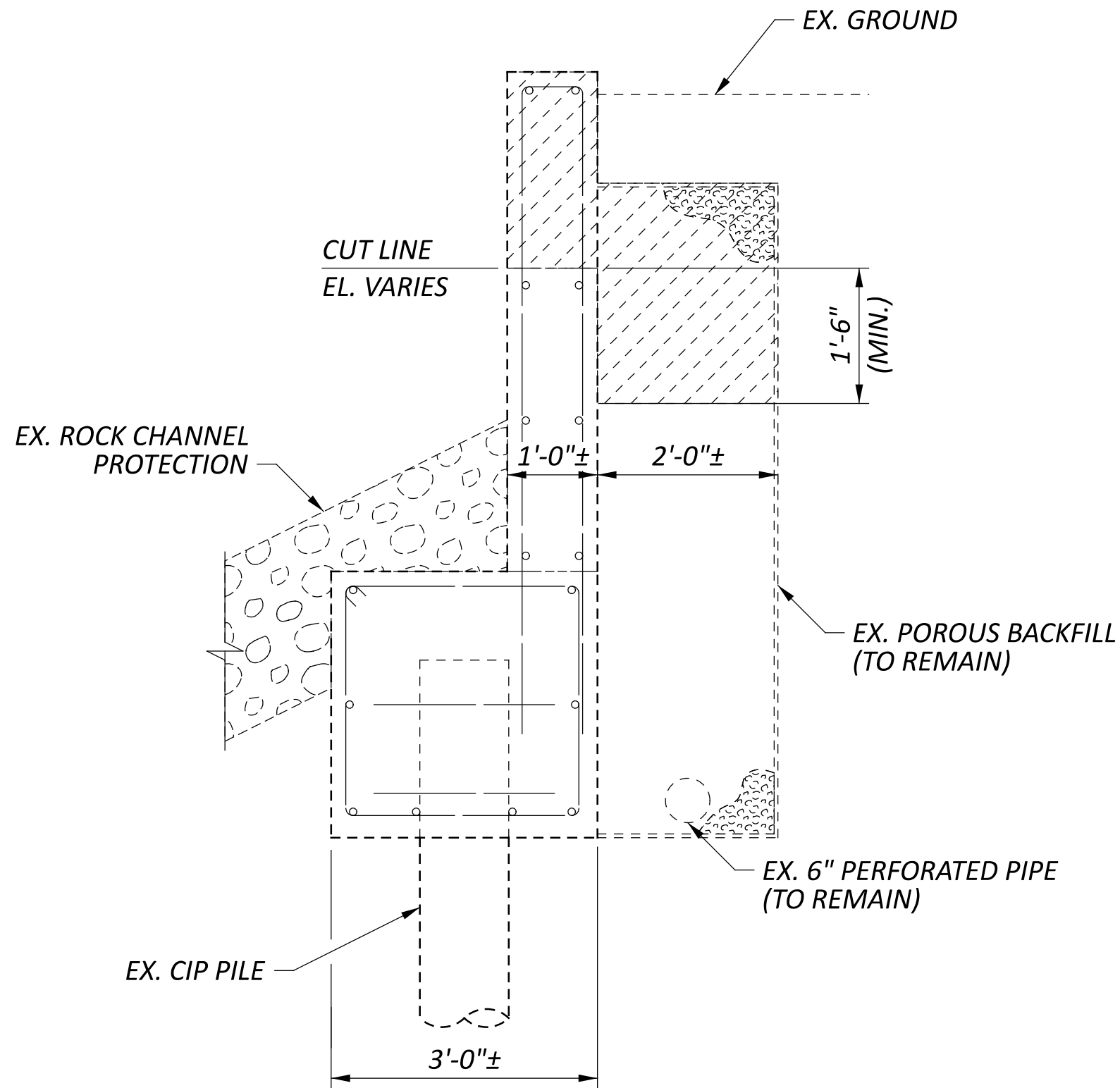
TOTAL  
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SHEET  
P.33

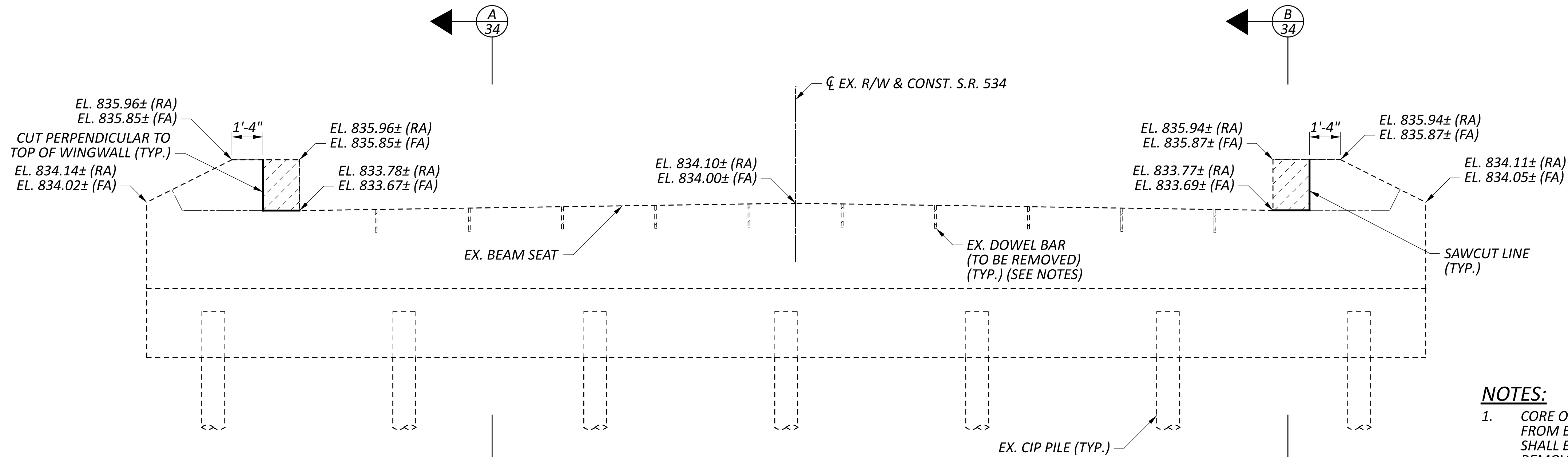
TOTAL  
55



**A**  
34  
TYPICAL ABUTMENT REMOVAL SECTION



**B**  
34  
TYPICAL WINGWALL REMOVAL SECTION



**TYPICAL ABUTMENT REMOVAL ELEVATION**  
(EXISTING REINFORCEMENT NOT SHOWN)

**LEGEND:**

- ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN
- ITEM 202 - APPROACH SLAB REMOVED
- ITEM 202 - WEARING COURSE REMOVED

**NOTES:**

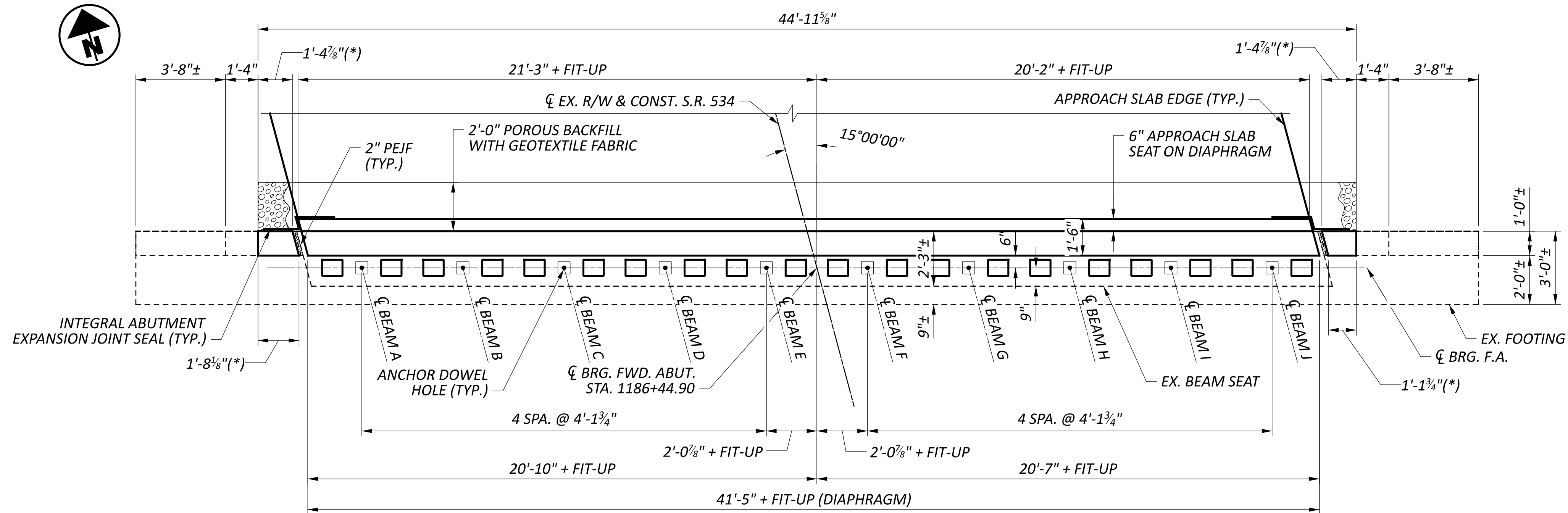
- CORE OUT 2" DIAMETER HOLES TO REMOVE EXISTING DOWELS FROM BEAM SEATS. PAYMENT FOR REMOVING EXISTING DOWELS SHALL BE INCLUDED WITH ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.
- THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE ESTIMATED QUANTITIES TABLE FOR USE AS DIRECTED BY THE ENGINEER.

ITEM 512 - CONCRETE REPAIR BY EPOXY INJECTION 40 FT  
ITEM 519 - PATCHING CONCRETE STRUCTURE 60 SF

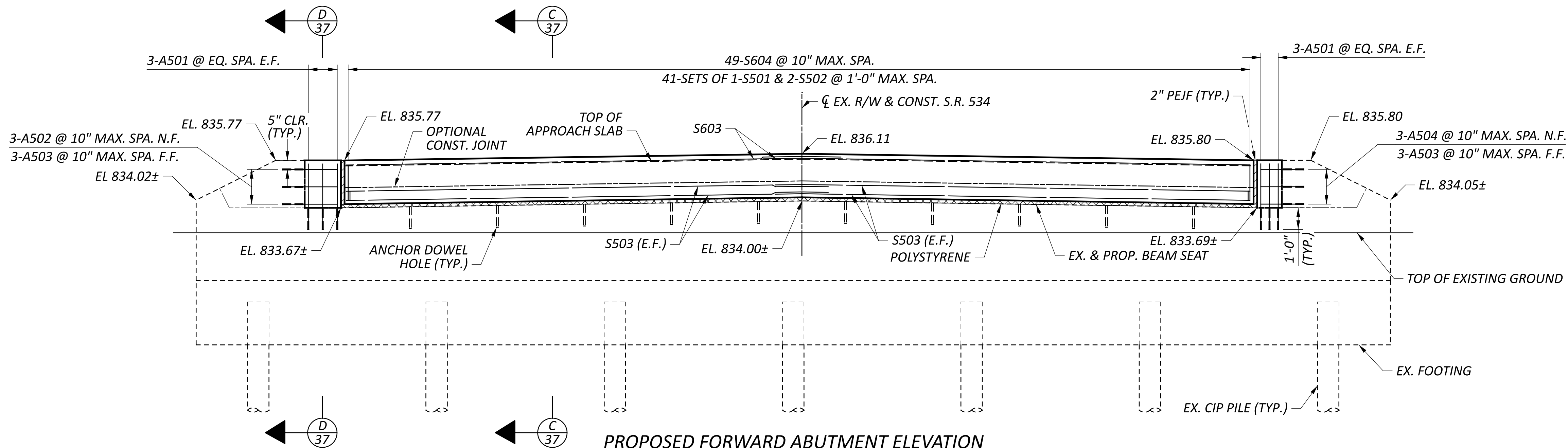


1. **ABUTMENT WINGWALL REINFORCEMENT DOWEL HOLES HAVE BEEN LOCATED TO AVOID INTERFERENCE WITH THE EXISTING REINFORCING STEEL BASED ON INFORMATION IN THE RECORD PLANS. IF EXISTING REINFORCING STEEL IS ENCOUNTERED WHILE DRILLING DOWEL HOLES, THE HOLE LOCATION MAY BE ADJUSTED BY UP TO 2" LEFT OR RIGHT TO ELIMINATE THE CONFLICT.**
2. **FOR DETAIL OF ANCHOR DOWEL BARS, SEE STANDARD DRAWING PSBD-2-07.**
3. **DO NOT PLACE THE ABUTMENT CONCRETE ABOVE THE BRIDGE SEAT CONSTRUCTION JOINT UNTIL THE PRESTRESSED CONCRETE BOX BEAMS HAVE BEEN ERECTED. ADJUST A502, A503, AND A504 BARS AS NECESSARY TO ENSURE PROPER CLEAR COVER.**
4. **ALL ELEVATIONS GIVEN AT  $\nabla$  BEARING.**
5. **LAP SPlice LENGTHS:**  
**#5 = 2'-5"**  
**#6 = 3'-7"**
6. **SEE P.40 OF 55 FOR PARTIAL DIAPHRAGM PLAN FOR PLACEMENT OF DIAPHRAGM REINFORCEMENT.**





**PROPOSED FORWARD ABUTMENT PLAN**  
(\*) - DIMENSION SHOWN ASSUMES 1/2" FIT-UP TOLERANCE PER BEAM JOINT



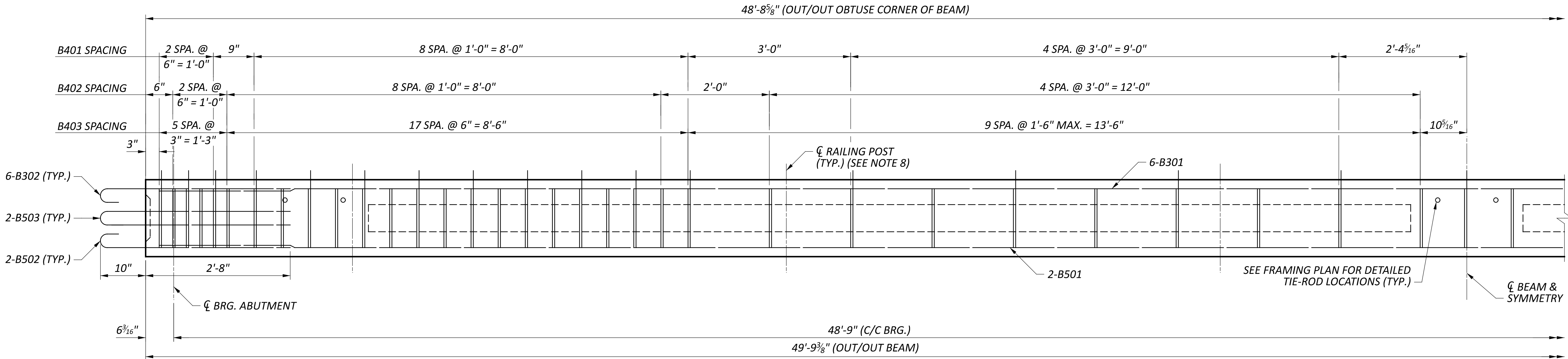
**PROPOSED FORWARD ABUTMENT ELEVATION**

**NOTES:**

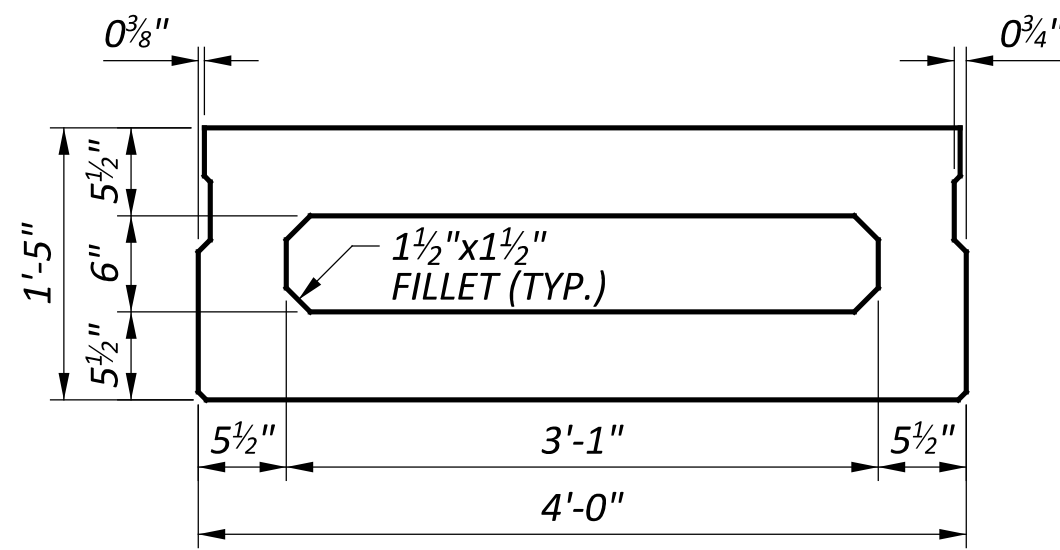
- ABUTMENT WINGWALL REINFORCEMENT DOWEL HOLES HAVE BEEN LOCATED TO AVOID INTERFERENCE WITH THE EXISTING REINFORCING STEEL BASED ON INFORMATION IN THE RECORD PLANS. IF EXISTING REINFORCING STEEL IS ENCOUNTERED WHILE DRILLING DOWEL HOLES, THE HOLE LOCATION MAY BE ADJUSTED BY UP TO 2" LEFT OR RIGHT TO ELIMINATE THE CONFLICT.
- FOR DETAIL OF ANCHOR DOWEL BARS, SEE STANDARD DRAWING PSBD-2-07.
- DO NOT PLACE THE ABUTMENT CONCRETE ABOVE THE BRIDGE SEAT CONSTRUCTION JOINT UNTIL THE PRESTRESSED CONCRETE BOX BEAMS HAVE BEEN ERECTED. ADJUST A502, A503, AND A504 BARS AS NECESSARY TO ENSURE PROPER CLEAR COVER.
- ALL ELEVATIONS GIVEN AT CL BEARING.
- LAP SPLICE LENGTHS:  
#5 = 2'-5"  
#6 = 3'-7"
- SEE P.40 OF 55 FOR PARTIAL DIAPHRAGM PLAN FOR PLACEMENT OF DIAPHRAGM REINFORCEMENT.



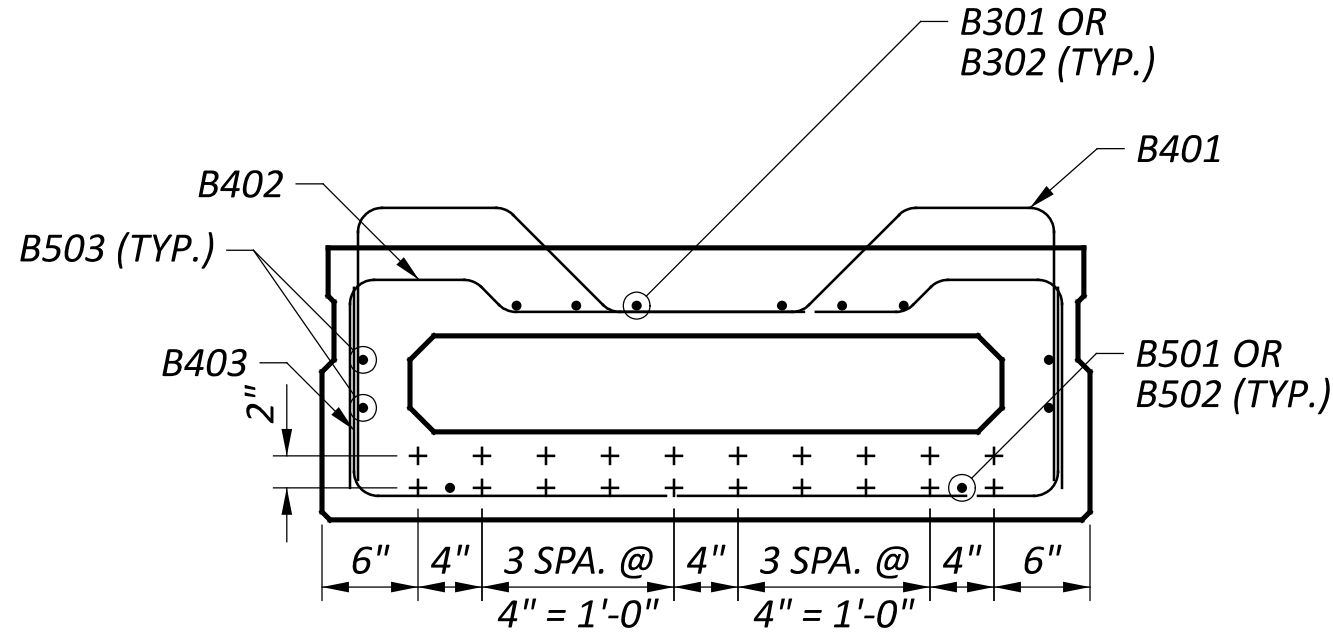
- ABUTMENT SECTIONS  
BRIDGE NO. TRU-00534-22.360  
S.R. 534 OVER ANDREWS CREEK



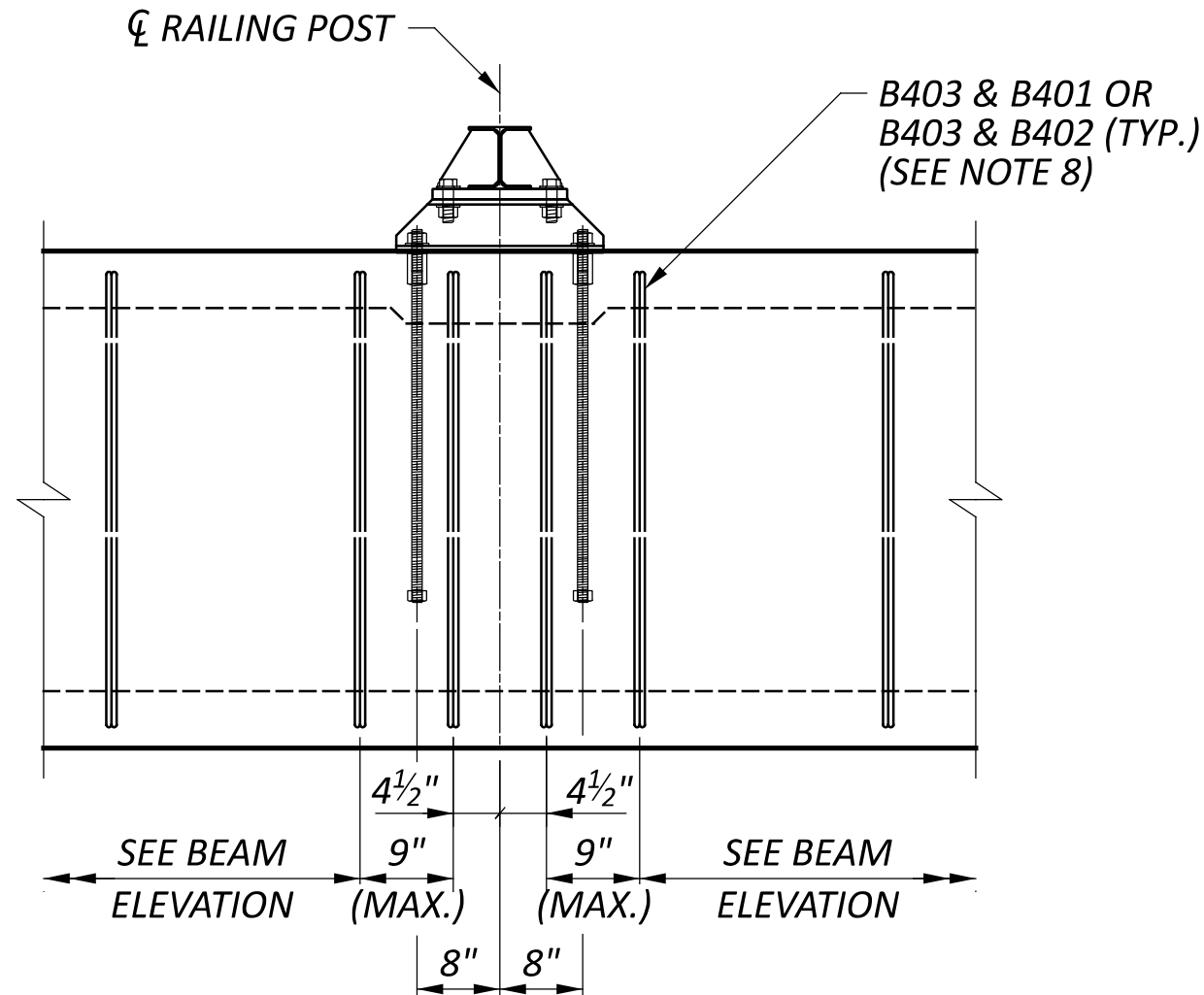
CB17-48 ELEVATION ALONG CL BEAM  
BEAM A SHOWN, BEAMS B-J SIMILAR



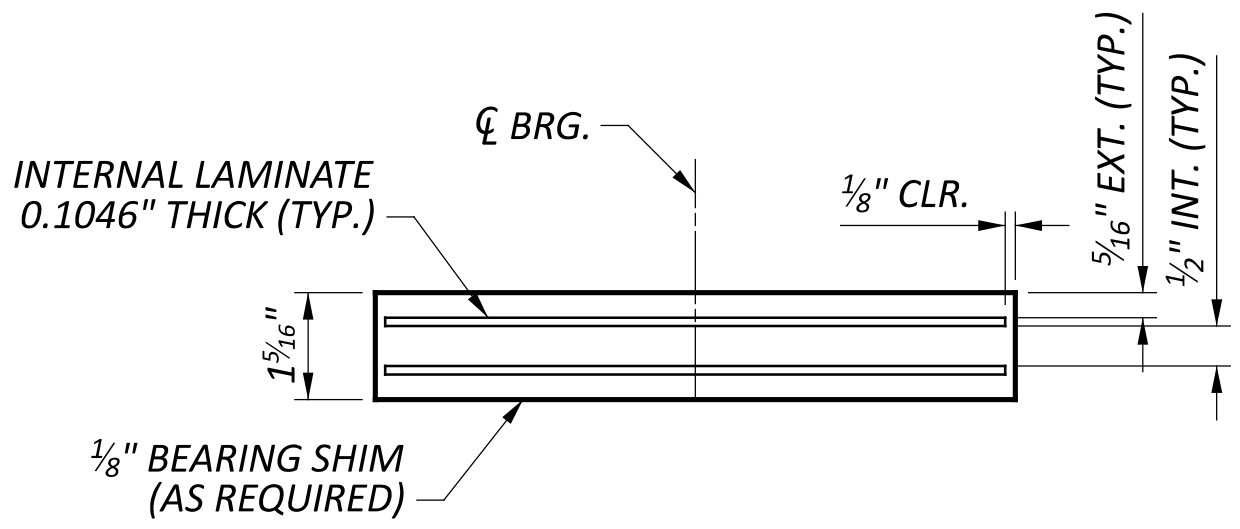
CB17-48 BEAM SECTION



CB17-48 STRAND PATTERN



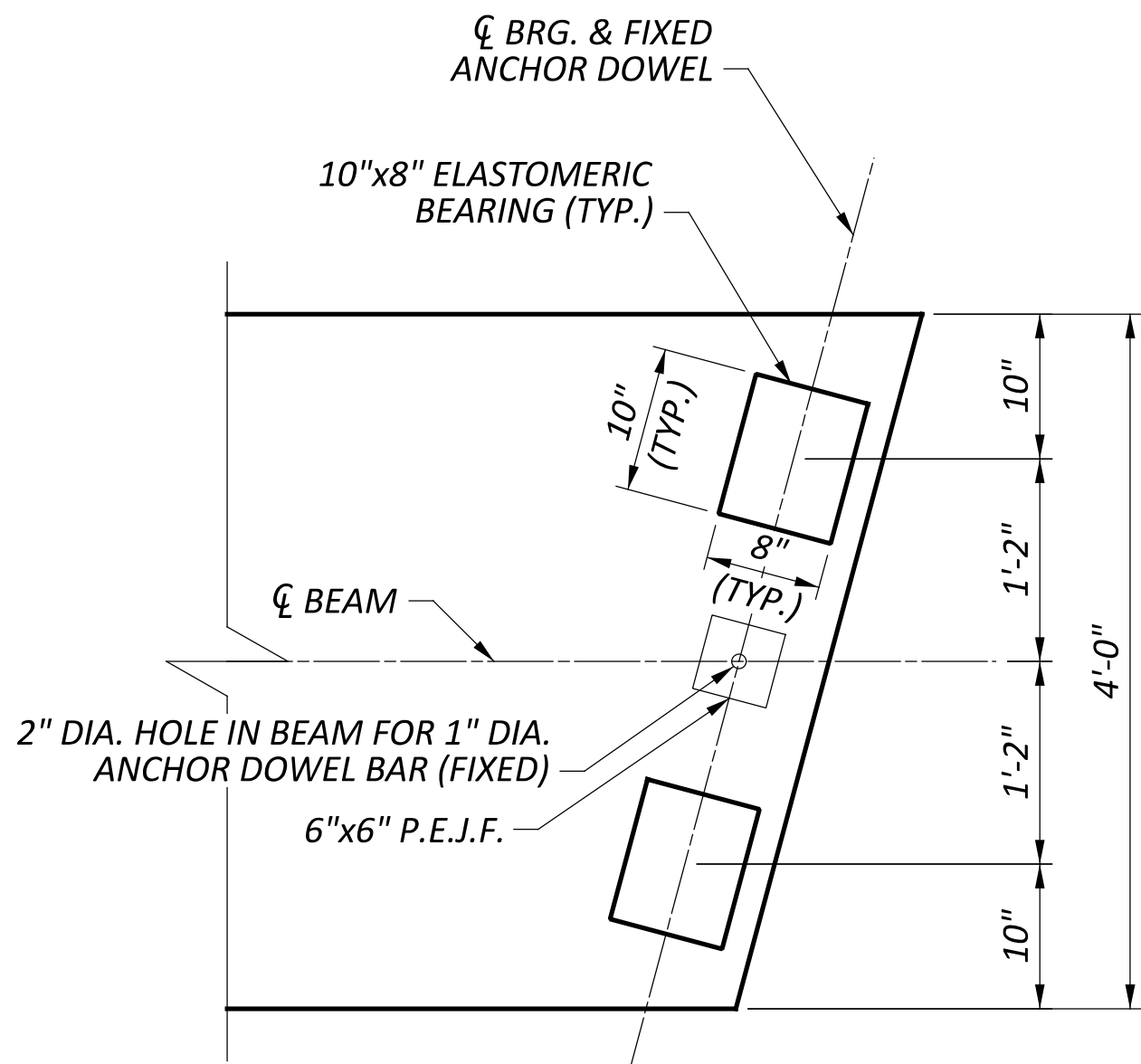
BEAM REINFORCEMENT AT RAILING POST DETAIL  
BEAM A SHOWN, BEAM J SIMILAR



LAMINATED ELASTOMERIC BEARING

LAMINATED ELASTOMERIC BEARING DATA				
BEARING LOCATION	NO. REQUIRED	UNFACTORED DEAD LOAD (KIPS)	UNFACTORED LIVE LOAD (KIPS)*	UNFACTORED TOTAL LOAD (DL+LL) (KIPS)*
REAR ABUT.	20	16	17	33
FWD. ABUT.	20	16	17	33

\* - WITHOUT IMPACT



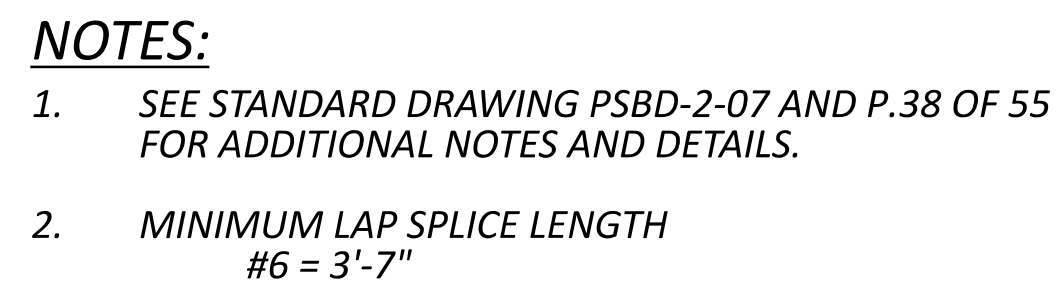
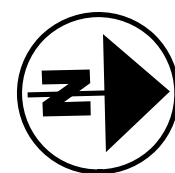
BEARING PAD AND ANCHOR DOWEL LAYOUT  
FORWARD ABUTMENT SHOWN;  
REAR ABUTMENT SIMILAR

LEGEND:

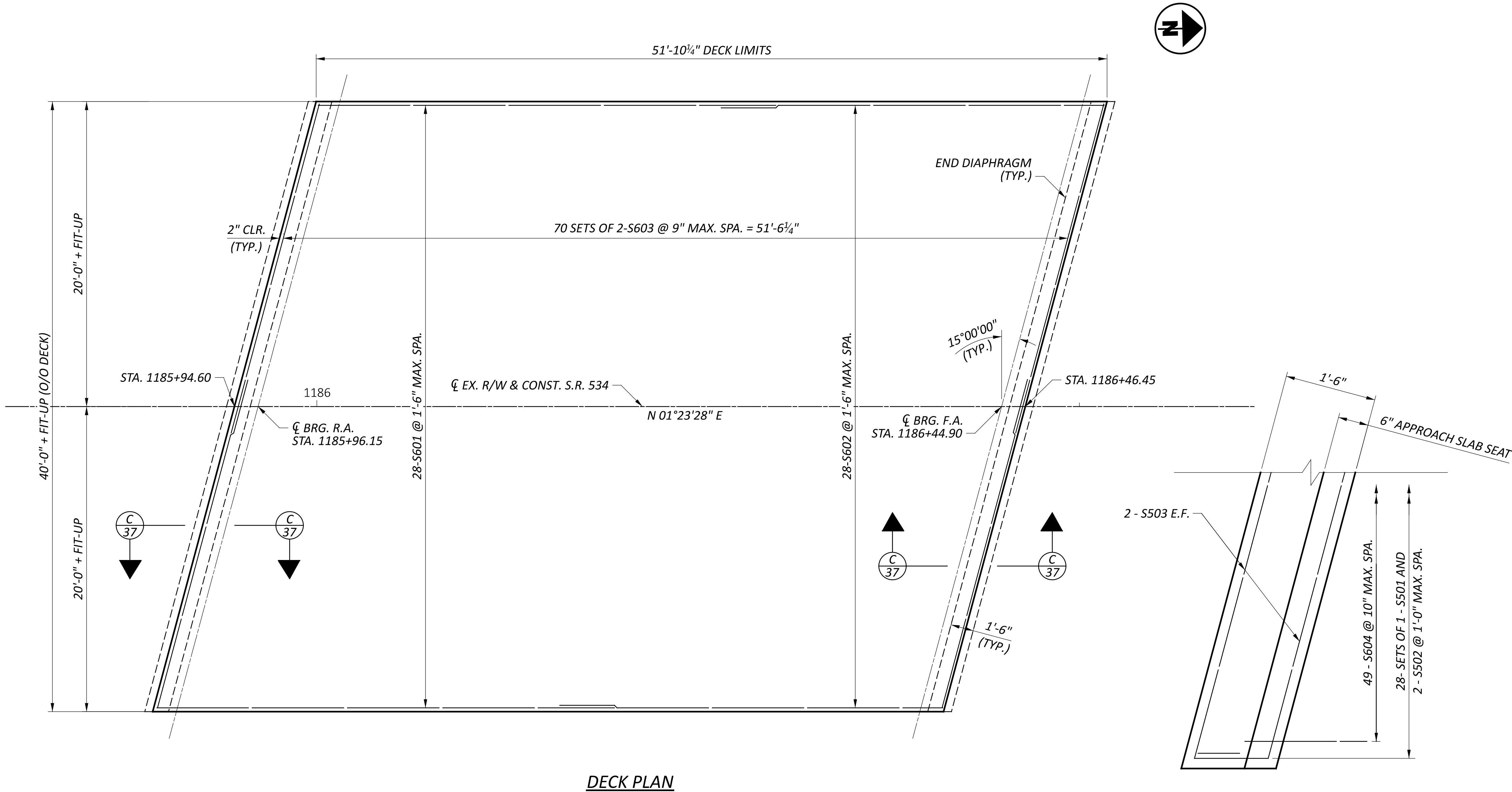
- + - PRESTRESSED STRAND
- - REINFORCING STEEL

NOTES:

- FOR ADDITIONAL BEAM DETAILS, SEE ODOT STANDARD DRAWING PSBD-2-07 AND TST-2-21.
- CONCRETE FOR PRESTRESSED BEAMS:  
COMPRESSIVE STRENGTH (FINAL) - 7.0 KSI  
COMPRESSIVE STRENGTH (RELEASE) - 5.0 KSI
- ALL BEAM STRANDS ARE 0.520" DIAMETER 270K LOW RELAXATION WITH A TOTAL CROSS SECTIONAL AREA = 0.167 SQ. IN.
- OMIT SHEAR KEY ON THE OUTSIDE OF EXTERIOR BEAMS.
- PROVIDE A 1" DEEP SHEAR KEY CENTERED IN THE BEAM END. THE SHEAR KEY HEIGHT SHALL BE 8 1/2" AND THE WIDTH SHALL BE 3'-2".
- THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED IN ACCORDANCE WITH SECTION 14.7.6 (METHOD A) OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. THE LONG-TERM COMPRESSION PROOF LOAD TEST (AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DIVISION II, SECTION 18.7.2.6) IS NOT REQUIRED.
- PAYMENT FOR ITEM 515 PRESTRESSED CONCRETE COMPOSITE BOX BEAM BRIDGE MEMBERS, LEVEL I, CB17-48, SHALL ALSO INCLUDE ALL COSTS ASSOCIATED WITH FILLING IN OF HOLES IN BEAM SEAT FROM REMOVAL OF EXISTING ANCHOR DOWELS WITH NON-SHRINK GROUT.
- AT EACH RAILING POST LOCATION, ADJUST THE BEAM STIRRUP SPACING TO MATCH THE DETAIL SHOWN. ADDITIONAL STIRRUPS MAY BE REQUIRED. SEE FRAMING PLAN FOR RAILING POST LOCATIONS.
- REINFORCING BARS PROJECTING FROM THE PRESTRESSED MEMBERS SHALL BE EPOXY COATED.
- CONTRACTOR SHALL COORDINATE WITH BEAM MANUFACTURER TO ENSURE THAT LIFTING LOOP DESIGN IS APPROPRIATE FOR CONTRACTOR'S PLANNED MEANS-AND-METHODS FOR ERECTION.



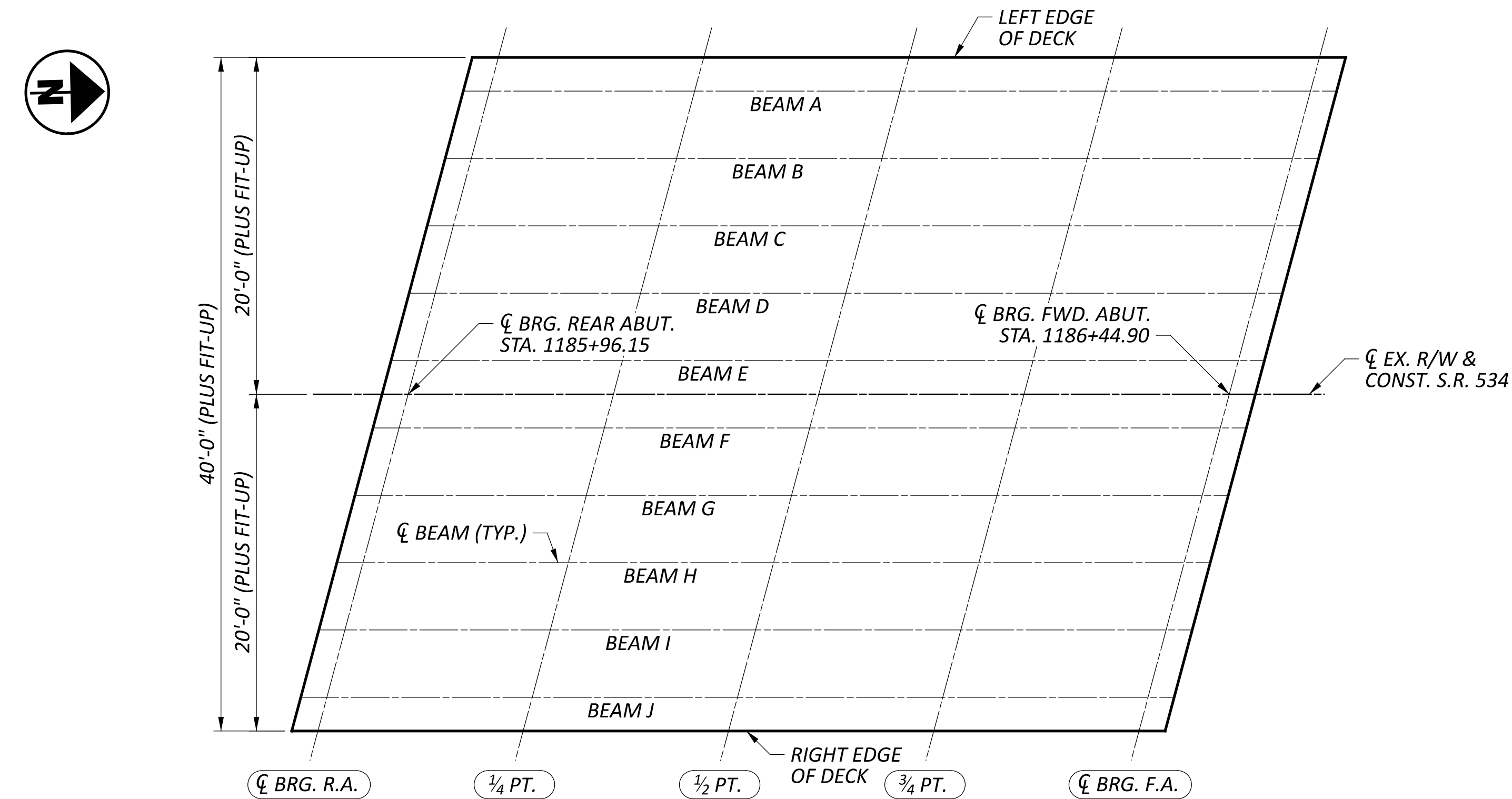




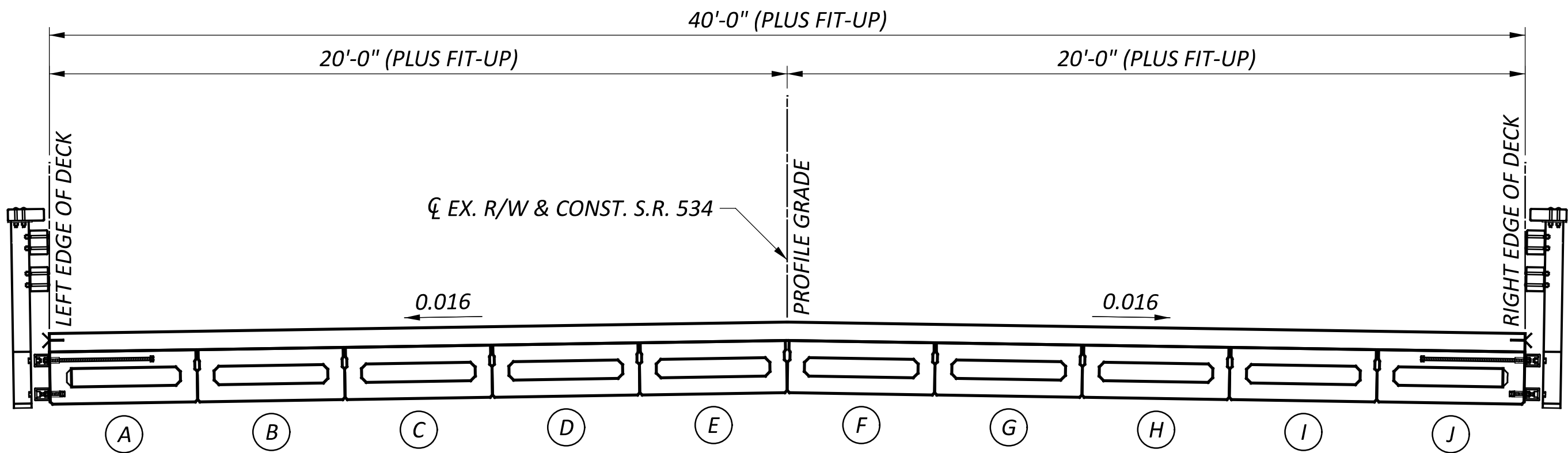
DECK PLAN

PARTIAL DIAPHRAGM PLAN

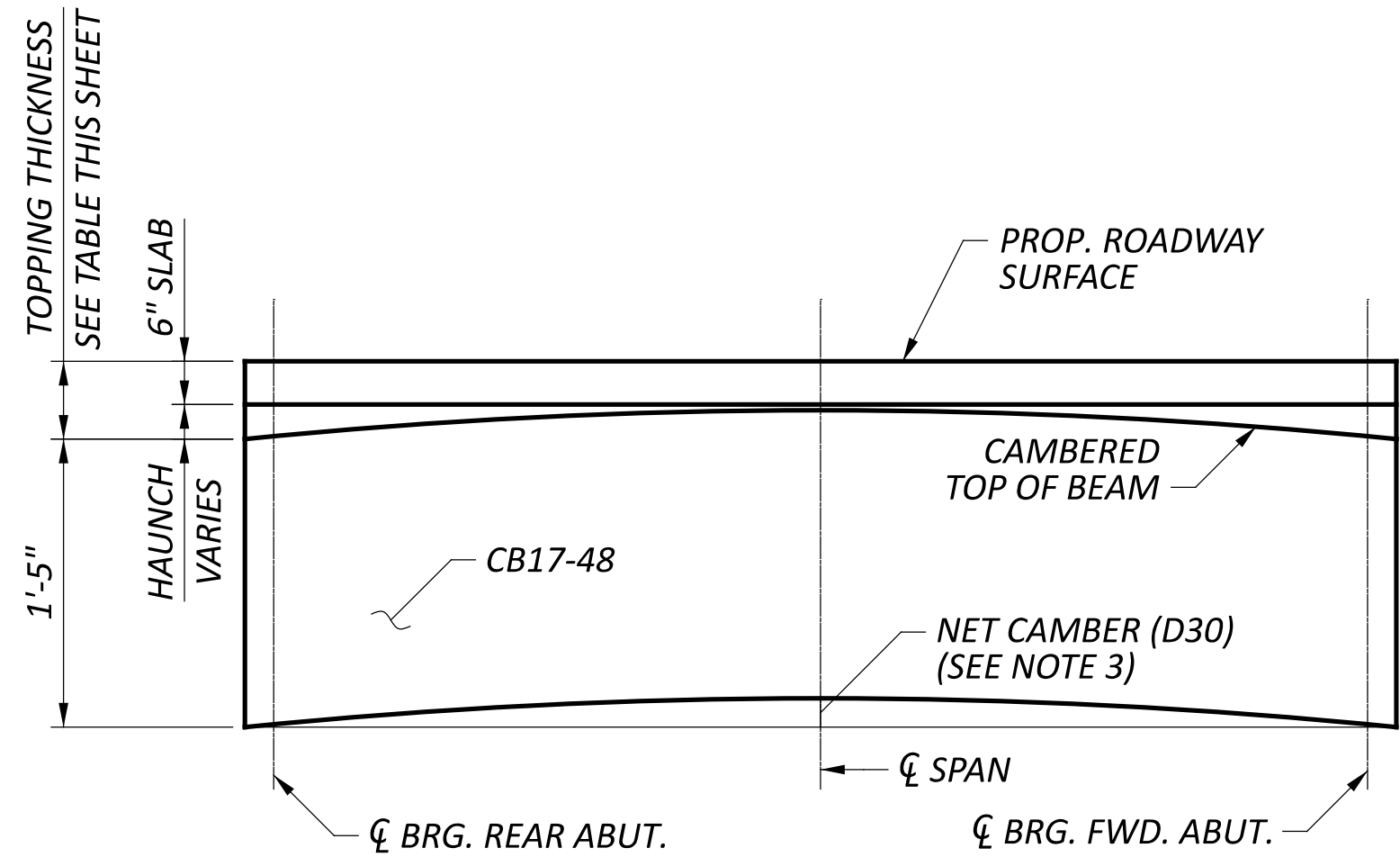
- NOTES:**
- MINIMUM LAP SPLICE LENGTH  
#5 = 2'-5"  
#6 = 3'-7"
  - LONGITUDINAL BAR SPACINGS ARE MEASURED PERPENDICULAR TO CL CONSTRUCTION  
AND TRANSVERSE BARS SPACINGS ARE MEASURED ALONG CL CONSTRUCTION.



SCREED LAYOUT



SCREED TRANSVERSE SECTION



REINFORCED CONCRETE SLAB THICKNESS DIAGRAM  
(NOT TO SCALE)

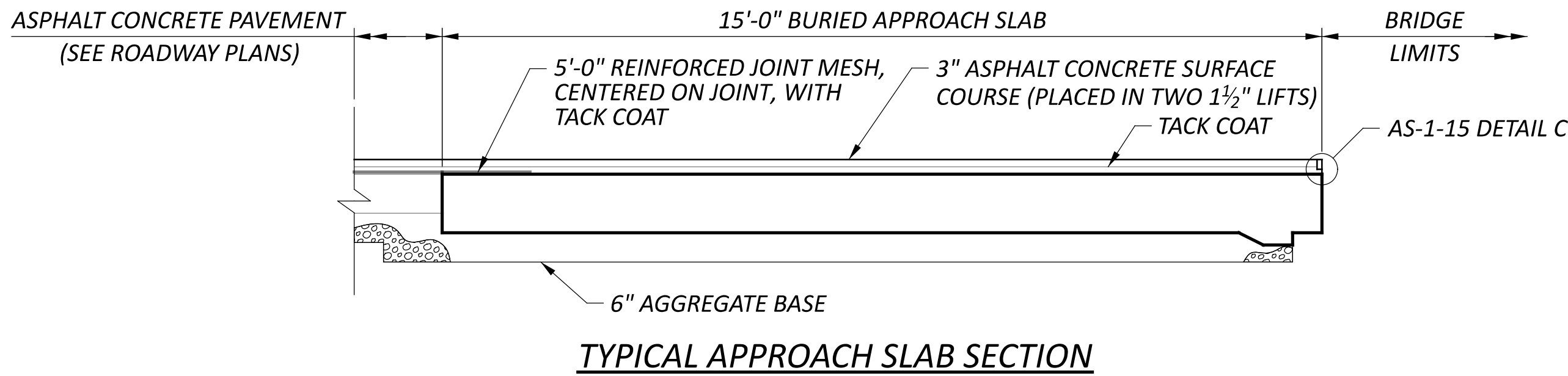
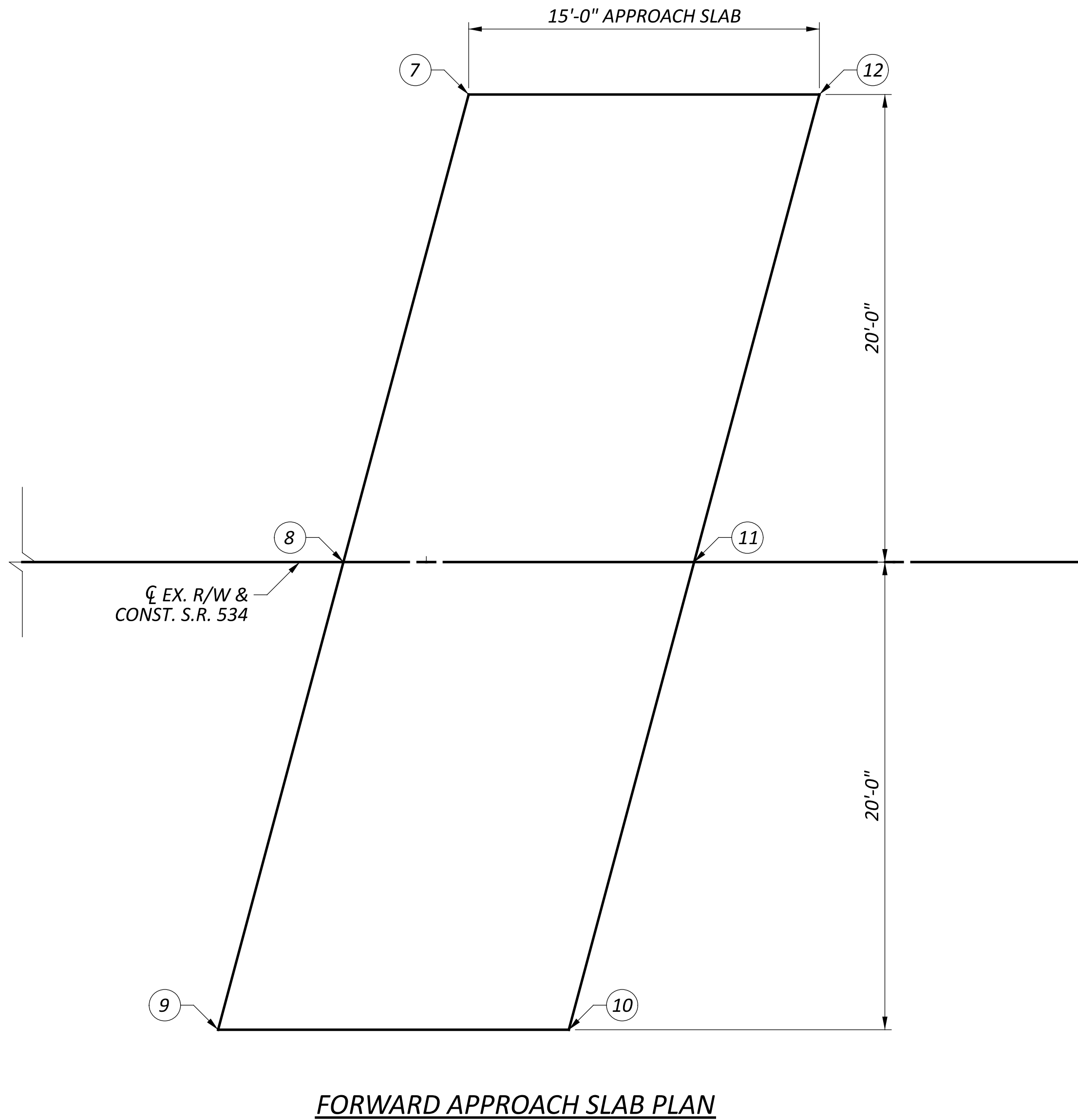
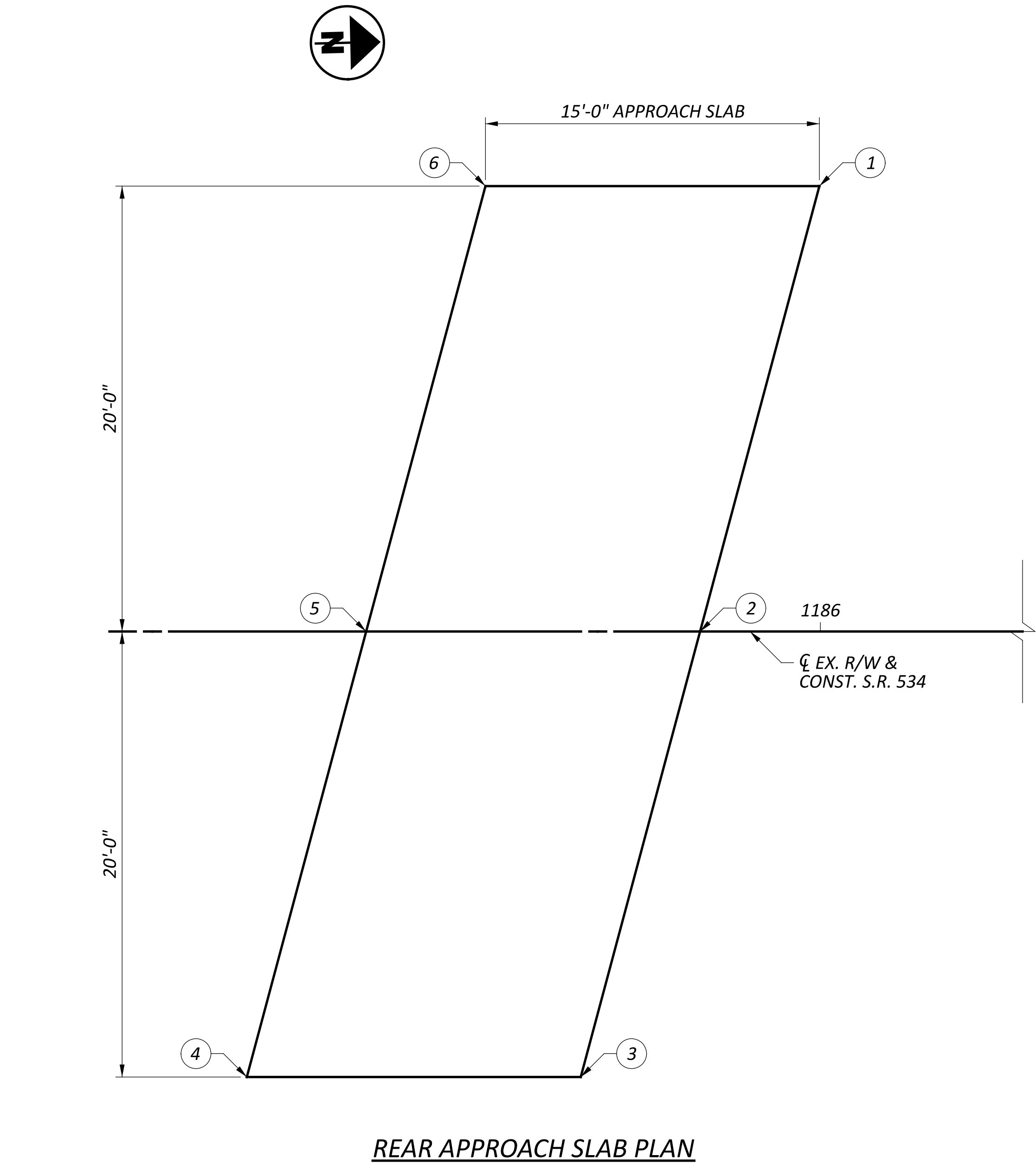
ANTICIPATED TOPPING THICKNESS (IN)			
LOCATION	BRG. R.A.	MID-SPAN	BRG. F.A.
BEAM A	7.37	6.19	6.91
BEAM B	7.39	6.20	6.92
BEAM C	7.40	6.21	6.93
BEAM D	7.41	6.23	6.95
BEAM E	7.42	6.24	6.96
BEAM F	7.45	6.26	6.97
BEAM G	7.48	6.28	6.98
BEAM H	7.52	6.30	7.00
BEAM I	7.55	6.33	7.01
BEAM J	7.59	6.35	7.02

SCREED ELEVATIONS					
LOCATION		REAR ABUT.	¼ POINT	½ POINT	¾ POINT
LEFT EDGE OF DECK	STATION	1186+01.51	1186+13.70	1186+25.89	1186+38.07
	SCREED ELEVATION	835.91	835.90	835.88	835.83
PROFILE GRADE	STATION	1185+96.15	1186+08.34	1186+20.53	1186+32.71
	SCREED ELEVATION	836.25	836.24	836.21	836.17
RIGHT EDGE OF DECK	STATION	1185+90.79	1186+02.98	1186+15.17	1186+27.35
	SCREED ELEVATION	835.94	835.93	835.91	835.86

FINAL DECK ELEVATION					
LOCATION		REAR ABUT.	¼ POINT	½ POINT	¾ POINT
LEFT EDGE OF DECK	STATION	1186+01.51	1186+13.70	1186+25.89	1186+38.07
	FINAL DECK ELEVATION	835.91	835.88	835.84	835.81
BEAM A	STATION	1186+00.97	1186+13.16	1186+25.35	1186+37.53
	FINAL DECK ELEVATION	835.95	835.91	835.88	835.84
BEAM B	STATION	1185+99.90	1186+12.09	1186+24.28	1186+36.46
	FINAL DECK ELEVATION	836.01	835.98	835.94	835.91
BEAM C	STATION	1185+98.83	1186+11.02	1186+23.21	1186+35.39
	FINAL DECK ELEVATION	836.08	836.04	836.01	835.98
BEAM D	STATION	1185+97.76	1186+09.95	1186+22.14	1186+34.32
	FINAL DECK ELEVATION	836.15	836.11	836.08	836.04
BEAM E	STATION	1185+96.69	1186+08.88	1186+21.07	1186+33.25
	FINAL DECK ELEVATION	836.21	836.18	836.14	836.11
PROFILE GRADE	STATION	1185+96.15	1186+08.34	1186+20.53	1186+32.71
	FINAL DECK ELEVATION	836.25	836.21	836.18	836.14
BEAM F	STATION	1185+95.61	1186+07.80	1186+19.99	1186+32.17
	FINAL DECK ELEVATION	836.22	836.18	836.15	836.11
BEAM G	STATION	1185+94.54	1186+06.73	1186+18.92	1186+31.10
	FINAL DECK ELEVATION	836.16	836.12	836.09	836.05
BEAM H	STATION	1185+93.47	1186+05.66	1186+17.85	1186+30.03
	FINAL DECK ELEVATION	836.09	836.06	836.03	835.99
BEAM I	STATION	1185+92.40	1186+04.59	1186+16.78	1186+28.96
	FINAL DECK ELEVATION	836.03	836.00	835.96	835.93
BEAM J	STATION	1185+91.33	1186+03.52	1186+15.71	1186+27.89
	FINAL DECK ELEVATION	835.97	835.94	835.90	835.87
RIGHT EDGE OF DECK	STATION	1185+90.79	1186+02.98	1186+15.17	1186+27.35
	FINAL DECK ELEVATION	835.94	835.91	835.87	835.84

NOTES:

- SCREED ELEVATIONS SHOWN REPRESENT THE THEORETICAL DECK SURFACE LOCATION PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.
- FINAL DECK SURFACE ELEVATIONS SHOWN REPRESENT THE DECK SURFACE LOCATION AFTER ALL ANTICIPATED DEAD LOAD DEFLECTIONS HAVE OCCURRED.
- CAMBER:  
ESTIMATED CAMBER AT DAY 0 (D0) IS 0<sup>13</sup>/<sub>16</sub> INCHES.  
ESTIMATED CAMBER AT DAY 30 (D30) IS 1<sup>3</sup>/<sub>8</sub> INCHES.  
DEFLECTION DUE TO REMAINING DEAD LOAD (E.G. CONCRETE DECK, DIAPHRAGMS, BRIDGE RAILINGS, ETC.) IS 0<sup>7</sup>/<sub>16</sub> INCHES.
- DECK SLAB THICKNESS FOR CONCRETE QUANTITY: THE ESTIMATED QUANTITY OF DECK CONCRETE IS MEASURED ACCORDING TO C&MS 511. IN ADDITION TO THE DESIGN SLAB THICKNESS, THE QUANTITY INCLUDES A VARIABLE HAUNCH THICKNESS THAT PROVIDES AN ALLOWANCE FOR: VERTICAL GRADE ADJUSTMENT AND BEAM CAMBER.



POINT	STATION	TOP OF ASPHALT EL.	TOP OF APPR. SLAB EL.
1	1185+99.96	835.92	835.67
2	1185+94.60	836.25	836.00
3	1185+89.24	835.95	835.70
4	1185+74.24	835.99	835.74
5	1185+79.60	836.29	836.04
6	1185+84.96	835.96	835.71
7	1186+51.81	835.77	835.52
8	1186+46.45	836.11	835.86
9	1186+41.09	835.80	835.55
10	1186+56.09	835.76	835.51
11	1186+61.45	836.06	835.81
12	1186+66.81	835.73	835.48

NOTES:  
1. FOR ADDITIONAL NOTES AND DETAILS, SEE STANDARD DRAWINGS AS-1-15 AND AS-2-15.

Bar Mark	Mat'rl Type	Number			Length	Weight (lbs.)	Total Length	Type	Dimensions						
		Rear	Fwd	Total					A	B	C	D	E	R	INC
Abutments (Uncoated Steel Reinforcement - USR)															
A501	USR	12	12	24	2'-11"	74		STR							
A502	USR	3	3	6	2'-5"	16		STR							
A503	USR	6	6	12	2'-2"	28		STR							
A504	USR	3	3	6	2'-0"	13		STR							
Abutments USR Subtotal						131									

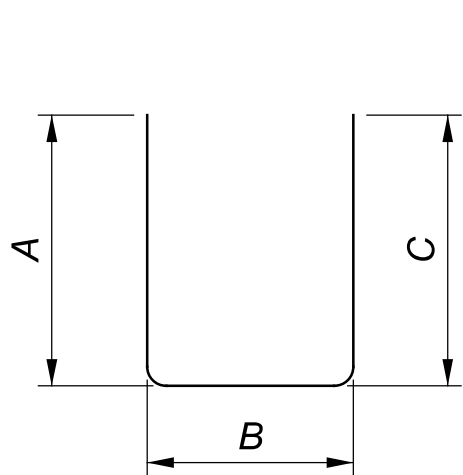
NOTES:

1. ALL BAR DIMENSIONS ARE GIVEN OUT-TO-OUT UNLESS OTHERWISE INDICATED.
2. ALL BARS OF A GIVEN SERIES VARY BY A CONSTANT AMOUNT.
3. BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, S501 IS A #5 BAR.

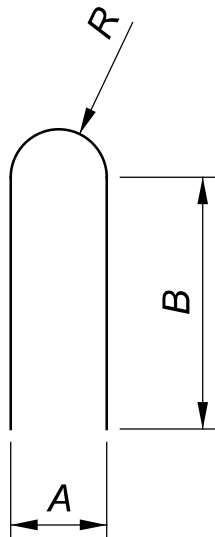
LEGEND:

A = ABUTMENT  
S = SUPERSTRUCTURE

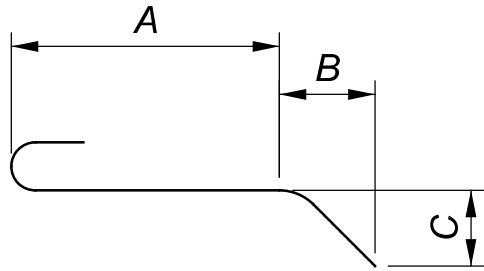
Bar Mark	Mat'rl Type	Number			Length	Weight (lbs.)	Type	Dimensions						
		Rear	Fwd	Total				A	B	C	D	E	R	INC
Superstructure (Epoxy Coated Steel Reinforcement - ECSR)														
S501	ECSR			56	3'-5"	200	2	1'-6"	8"	1'-6"				
S502	ECSR			112	2'-6"	292	24	5"	11"				2 ½"	
S503	ECSR			16	22'-0"	367	STR							
S601	ECSR			28	30'-0"	1,262	STR							
S602	ECSR			28	25'-2"	1,058	STR							
S603	ECSR			140	22'-7"	4,749	STR							
S604	ECSR			98	3'-11"	577	40	1'-10"	1'-0"	1'-0"				
Superstructure ECSR Subtotal						8,505								



TYPE-2




TYPE-24



TYPE-40

REINFORCING STEEL LIST  
BRIDGE NO. TRU-00534-22.360  
S.R. 534 OVER ANDREWS CREEK

SFN  
7807694

DESIGN AGENCY  
  
COMPASS  
INFRASTRUCTURE GROUP

DESIGNER  
CCJ

CHECKER  
BCD

REVIEWER  
GLG 10/03/24

PROJECT ID  
118536

SUBSET  
12

TOTAL  
12

SHEET  
P.43

TOTAL  
55