

GENERAL NOTES

EXPANSION JOINT MATERIAL SHALL MEET AASHTO SPECIFICATION M-213.

STRUCTURE EXCAVATION AND BACKFILL SHALL BE AS SHOWN ON THE PLANS, EXCEPT SHORING MAY BE REQUIRED FOR EXCAVATION ADJACENT TO THE EXISTING ROADWAY. TEMPORARY EXCAVATION SUPPORT SHALL BE PAID FOR BY ITEM 206 SHORING.

A COLORED STRUCTURAL CONCRETE COATING FINISH WILL BE REQUIRED, AS SHOWN ON THE PLANS, ON EXPOSED CONCRETE SURFACES. THE COLOR SHALL BE TAN, EQUIVALENT TO FEDERAL STANDARD 595B COLOR NO. 33531, AND IS TO BE SELECTED FROM TEST PANELS PROVIDED BY THE CONTRACTOR.

THE UNDERSIDE OF PERMANENT STEEL DECK FORMS BETWEEN GIRDERS SHALL BE PAINTED IN ACCORDANCE WITH SECTION 509 OF THE STANDARD SPECIFICATIONS. THE COLOR SHALL BE DARK BROWN, EQUIVALENT TO FEDERAL STANDARD 595B, COLOR NO. 30045.

EXCEPT AS NOTED BELOW, WEATHERING STEEL SHALL NOT BE PAINTED. THE UNPAINTED STEEL SHALL BE CLEANED IN ACCORDANCE WITH SECTION 509 OF THE STANDARD SPECIFICATIONS, UNDER EXPANSION DEVICES THE END 5 FEET OF THE GIRDERS, ALONG WITH ALL GIRDER ATTACHMENTS (INCLUDING DIAPHRAGMS) IN THIS 5 FOOT AREA, SHALL BE PAINTED IN ACCORDANCE WITH SECTION 509 OF THE STANDARD SPECIFICATIONS. THE COLOR SHALL BE DARK BROWN, EQUIVALENT TO FEDERAL STANDARD 595B COLOR NO. 30045.

THE FOLLOWING STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50W (ASTM A709 GRADE 50W): GIRDERS, DIAPHRAGMS, SPLICE PLATES, EXPANSION DEVICES, BEARING PLATES, BEARING DEVICES, AND STIFFENERS, EXCEPT FOR GIRDER FLANGES AND WEBS SPECIFICALLY SHOWN OR NOTED TO BE ASTM A709 GRADE HPS70W.

ALL BOLTS SHALL BE 7/8" DIAMETER, AASHTO M164 (ASTM A325) HIGH STRENGTH, TYPE 3, UNLESS OTHERWISE NOTED.

NO FIELD WELDING OF ANY ATTACHMENTS SHALL BE PERMITTED ON THE FLANGES OF STEEL GIRDERS UNLESS SPECIFICALLY CALLED FOR ON THE PLANS.

THE DECK AND GIRDER DESIGN ASSUMES THE BRIDGE DECK CONCRETE. CAN AND SHALL BE PLACED IN A CONTINUOUS UNINTERRUPTED SEQUENCE. THE BRIDGE DECK GEOMETRY AND GIRDER LOAD DEFLECTIONS REFLECT THIS ASSUMPTION. SHOULD THE CONTRACTOR ELECT TO CHANGE THE BRIDGE DECK CONCRETE PLACEMENT SEQUENCE, ALTERNATE BRIDGE DECK GEOMETRY FIELD PACKAGES AND THE VERTICAL CAMBER INFORMATION FOR THE GIRDERS WILL BE FURNISHED TO THE CONTRACTOR UPON RECEIPT AND APPROVAL OF THE CONTRACTOR'S PROPOSED POURING SEQUENCE AND SCHEDULE. THE CONTRACTOR SHALL ALLOW A MINIMUM OF FOUR WEEKS FOR APPROVAL OF THE CONTRACTOR'S POUR SEQUENCE, PREPARATION OF THE BRIDGE DECK GEOMETRY FIELD PACKAGES AND THE VERTICAL CAMBER INFORMATION FOR THE GIRDERS.

ALL CONCRETE IN CONTACT WITH THE SOIL SHALL BE SULFATE RESISTING IN ACCORDANCE WITH PROJECT SPECIAL PROVISION, REVISION OF SECTION 601, STRUCTURAL CONCRETE.

GRADE 60 REINFORCING STEEL IS REQUIRED.

ALL REINFORCING STEEL SHALL BE EPOXY COATED UNLESS OTHERWISE NOTED.

(N) DENOTES NON COATED REINFORCING STEEL.

THE FOLLOWING TABLE GIVES THE MINIMUM LAP SPLICE LENGTH FOR EPOXY COATED REINFORCING BARS PLACED IN ACCORDANCE WITH SUBSECTION 602.06. THESE SPLICE LENGTHS SHALL BE INCREASED BY 25% FOR BARS SPACED AT LESS THAN 6" ON CENTER.

BAR SIZE	#4	#5	#6	#7	#8	#9	#10	#11
SPLICE LENGTH FOR CLASS D CONCRETE	1'-3"	1'-6"	1'-10"	2'-2"	3'-8"	4'-8"	5'-11"	7'-3"

WHEN THE CONTRACTOR ELECTS TO SUBSTITUTE EPOXY COATED REINFORCEMENT FOR BLACK REINFORCING BARS, THE MINIMUM LAP SPLICE SHALL BE AS DESCRIBED ABOVE.

CROSS REFERENCE DRAWING NUMBER
(IF BLANK, REFERENCE IS TO SAME SHEET)

SECTION OR DETAIL IDENTIFICATION

THE FOLLOWING TABLE GIVES THE MINIMUM LAP SPLICE LENGTH FOR BLACK (NON-COATED) REINFORCING BARS PLACED IN ACCORDANCE WITH SUBSECTION 602.06. THESE SPLICE LENGTHS SHALL BE INCREASED BY 25% FOR BARS SPACED AT LESS THAN 6" ON CENTER.

BAR SIZE	#4	#5	#6	#7	#8	#9	#10	#11
SPLICE LENGTH FOR CLASS D CONCRETE	1'-0"	1'-4"	1'-7"	1'-10"	2'-5"	3'-1"	3'-11"	4'-10"

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE DURING CONSTRUCTION.

E.F. = EACH FACE
F.F. = FAR FACE
N.F. = NEAR FACE
I.F. = INSIDE FACE
O.F. = OUTSIDE FACE
E.O.P. = EDGE OF PAVEMENT
E.O.T.W. = EDGE OF TRAVELED WAY

PERMANENT STEEL DECK FORMS ARE REQUIRED.

PRECAST CONCRETE DECK FORMS ARE NOT ALLOWED.

FOR STRUCTURE NUMBER INSTALLATION, SEE STANDARD S-614-12.

THE INFORMATION SHOWN ON THESE PLANS CONCERNING THE TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO AT 1-800-922-1987 AT LEAST 2 WORKING DAYS (NOT INCLUDING THE DAY OF NOTIFICATION) PRIOR TO ANY EXCAVATION OR OTHER EARTHWORK.

DESIGN DATA

AASHTO, 16th EDITION, AS AMENDED BY THE 1997 & 1998 INTERIMS.

DESIGN METHOD: LOAD FACTOR DESIGN.

LIVE LOAD: AASHTO HS-25-44 AND ALTERNATE MILITARY LOADING
DEAD LOAD: ASSUMES 24 LBS. PER SQ. FT. FOR FUTURE BITUMINOUS PAVEMENT
ASSUMES 5 LBS. PER SQ. FT. FOR PERMANENT STEEL DECK FORMS
ASSUMES 5 LBS. PER SQ. FT. FOR UTILITIES

REINFORCED CONCRETE:

CLASS D CONCRETE: $f'_c = 4,500$ psi
REINFORCING STEEL: $f_y = 60,000$ psi

CAISSON CONCRETE:

CLASS BZ CONCRETE: $f'_c = 4,000$ psi
REINFORCING STEEL: $f_y = 60,000$ psi

STRUCTURAL STEEL: AASHTO M270 (ASTM A709) GRADE 50W, $F_y = 50,000$ psi
ASTM A709 GRADE HPS70W, $F_y = 70,000$ psi
FATIGUE DESIGN CYCLES: 500,000 TRUCK LOAD AND 100,000 LANE LOAD
BOLTED SURFACE CONDITIONS = CLASS A (SLIP COEFFICIENT 0.33)

(FR-4) THE FOLLOWING STRUCTURAL STEEL MEMBERS ARE CONSIDERED TO BE MAIN MEMBERS, ARE SUBJECT TO TENSILE STRESSES, AND SHALL MEET THE CHARPY V-NOTCH TOUGHNESS REQUIREMENTS FOR ZONE 2:

- GIRDER FLANGES AND WEBS IN TENSION, AS DENOTED ON THE DRAWINGS
- GIRDER SPLICES AND SPLICE PLATES
- ALL DIAPHRAGMS AND CROSS FRAMES, AND ASSOCIATED STIFFENERS, CONNECTION AND GUSSET PLATES WHICH ATTACH THEM TO THE GIRDERS

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BRIDGE DESCRIPTION

3-SPAN (120'-0", 146'-0", 148'-6") BRIDGE, WELDED STEEL PLATE GIRDERS, CONTINUOUS AND COMPOSITE

OVER I-225 (FROM ALAMEDA TO SOUTHBOUND I-225) 36'-0" ROADWAY CURB TO CURB WITH VARYING SKEWS BRIDGE RAIL TYPE 7



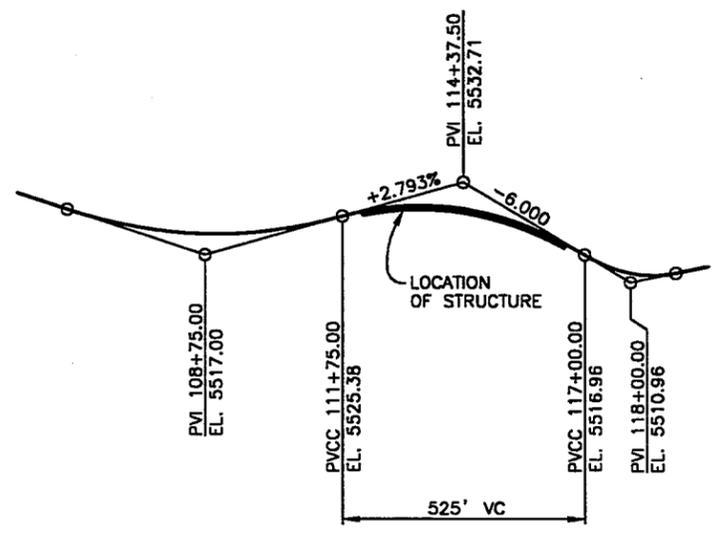
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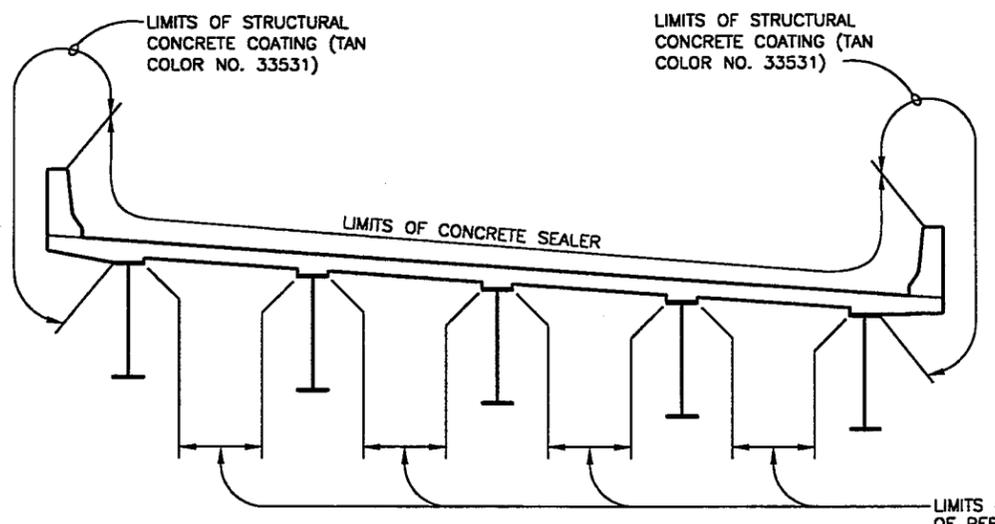
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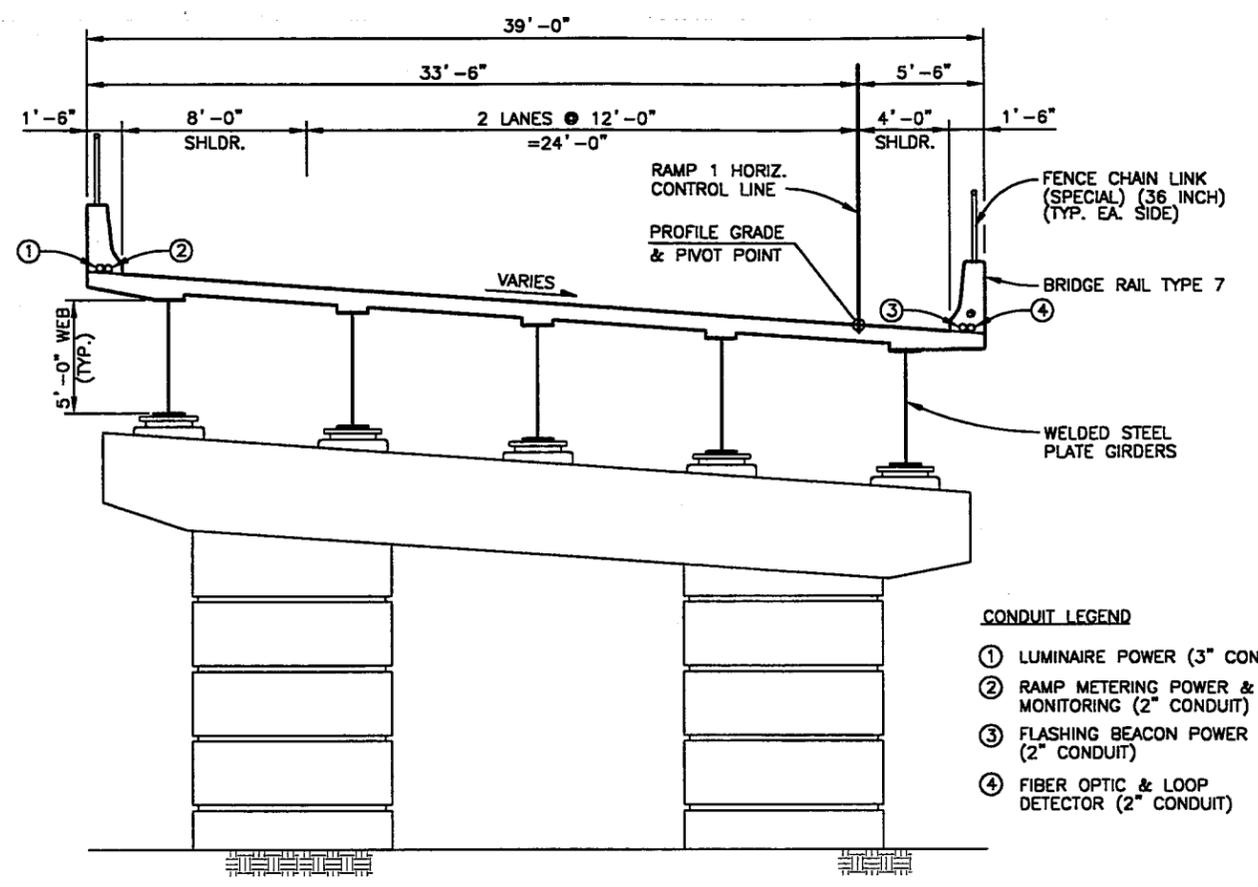


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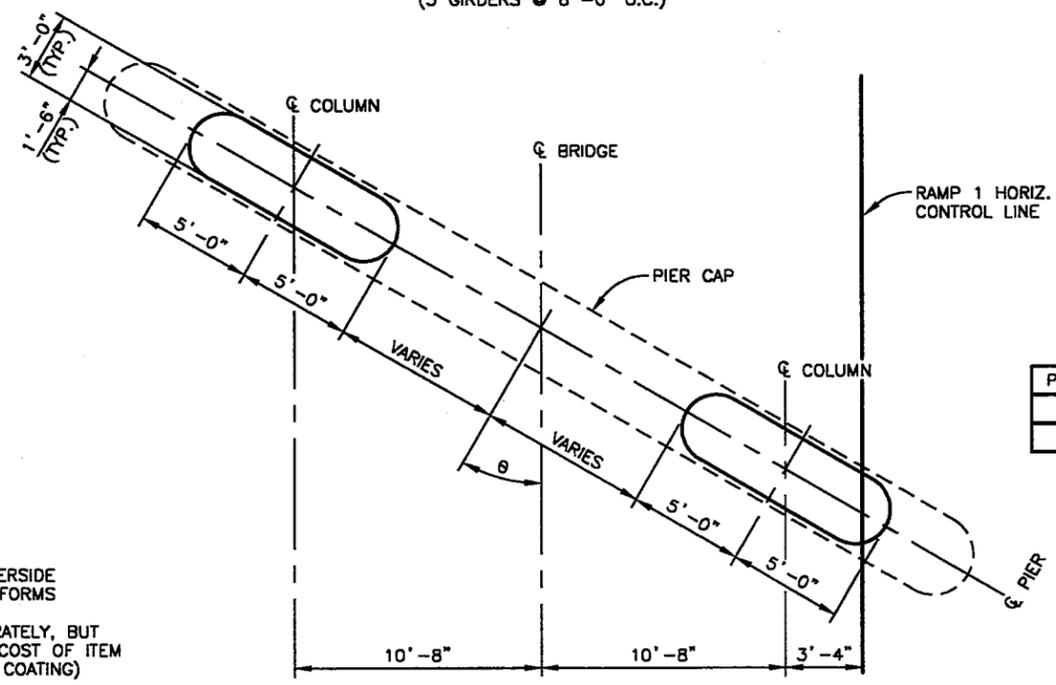
CONCRETE COATING & SEALER LIMITS

LIMITS OF PAINTING THE UNDERSIDE OF PERMANENT STEEL DECK FORMS (BROWN COLOR NO. 30045) (NOT TO BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF ITEM 601, STRUCTURAL CONCRETE COATING)



TYPICAL SECTION
(5 GIRDERS @ 8'-0" O.C.)

- CONDUIT LEGEND
- ① LUMINAIRE POWER (3" CONDUIT)
 - ② RAMP METERING POWER & WEATHER MONITORING (2" CONDUIT)
 - ③ FLASHING BEACON POWER (2" CONDUIT)
 - ④ FIBER OPTIC & LOOP DETECTOR (2" CONDUIT)



TYPICAL PIER COLUMNS

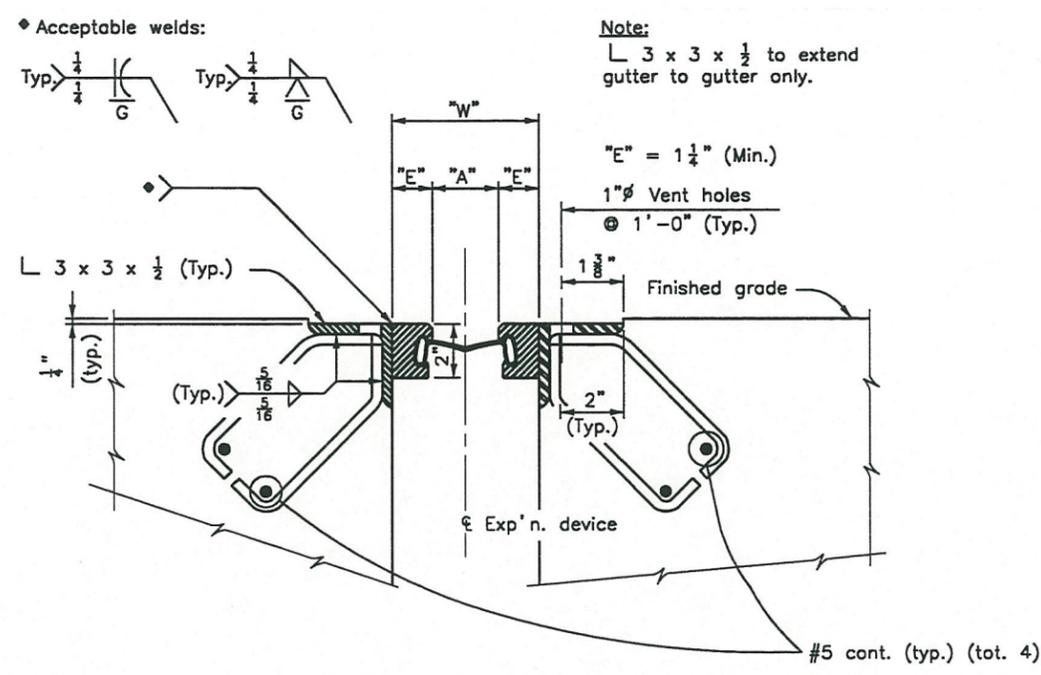
PIER	SKEW ANGLE
2	30°00'00"
3	37°09'8.1"



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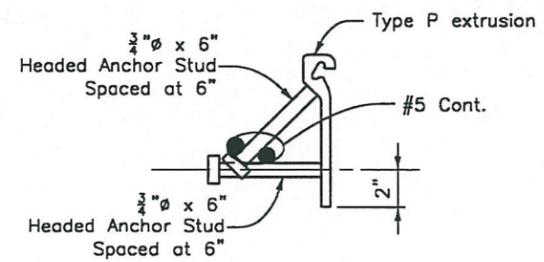
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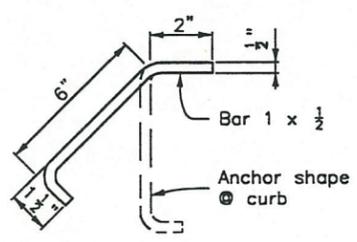


SECTION THRU STRIP SEAL BRIDGE EXPANSION DEVICE

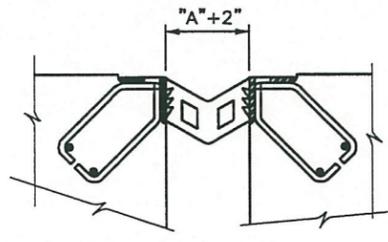
Section taken perpendicular to \perp exp'n device.
For reinforcing details see Dwg. No. B...



TYPE P DETAIL

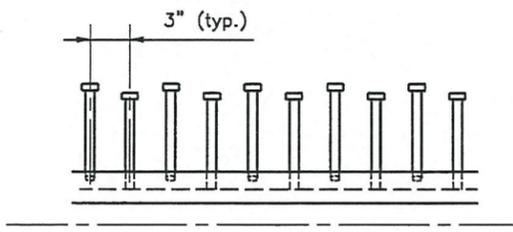


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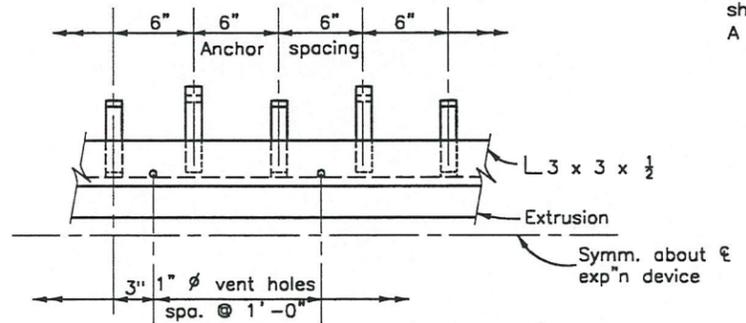


SECTION THRU HYDROZO EXPANSION DEVICE

(Similar to Strip Seal except as shown.)
A + 2 = 4" @ 40°F



PLAN



ANCHOR AND VENT HOLE SPACING

ALTERNATE STEEL EDGE BEAM

NOTES:

- The expansion device shall be installed on grade, parallel to the slope and grade of the deck.
- After the concrete has attained initial set, the attachments used to hold the expansion device assembly in its proper position shall be removed.
- Do not paint steel surfaces in contact with either concrete or seal.
- "W" and "E" dimensions are dependent upon the particular expansion device supplied, and shall be shown on the working drawings.
- The working drawings shall indicate the "W" and "A" dimensions at a range of temperatures from 30° F to 100° F assuming a midpoint temperature of 40° F.
- Opening in the curb to be constructed to the exact width of the existing deck opening.
- The neoprene extrusion shall be one piece.
- Vent holes shall not be used for support bolts. See Special Provisions for epoxy grouting of ventholes.

ACCEPTABLE EXPANSION DEVICE ALTERNATES

- D.S. BROWN A2400-SSA2
- EPOXY IND. S400-A
- HYDROZO/JEENE 4" W
- ONFLEX 40SEQ-AM2
- WABO SE400 Type A
- WABO SE400 Type P

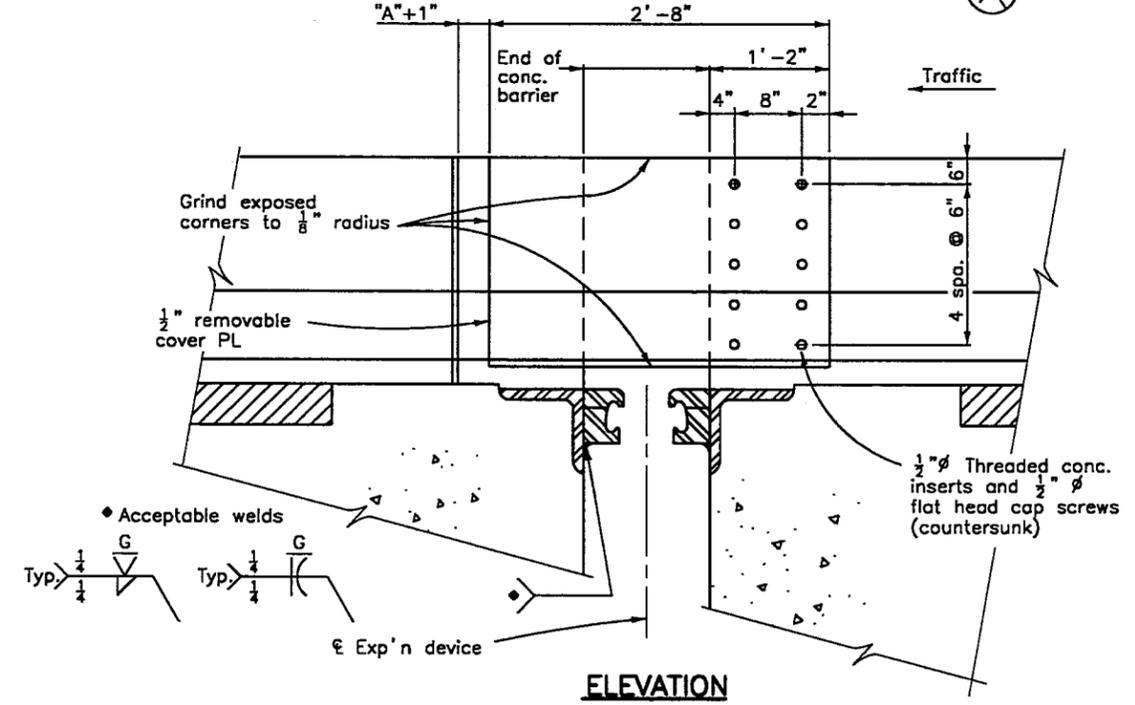
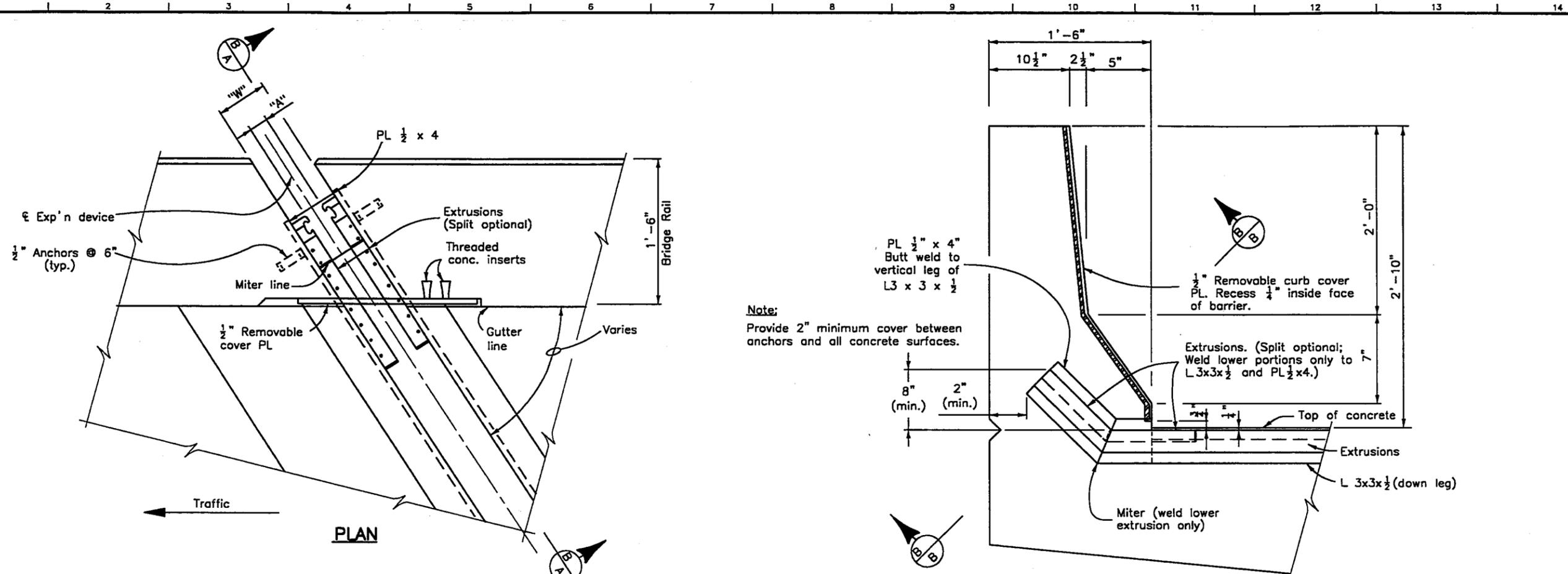
Str. Temp	ABUT 1	ABUT 4	APP. SLAB
	"A"(IN)	"A"(IN)	"A"(IN)
30° F	2 3/8	1 3/4	2 1/2
40° F	2 1/8	1 5/8	2 1/2
50° F	1 7/8	1 1/2	2 1/2
60° F	1 5/8	1 5/8	2 1/2
70° F	1 3/8	1 3/8	2 1/2
80° F	1 1/8	1 1/8	2 1/2
90° F	1 1/16	1 1/16	2 1/2
100° F	9/16	1 1/16	2 1/2



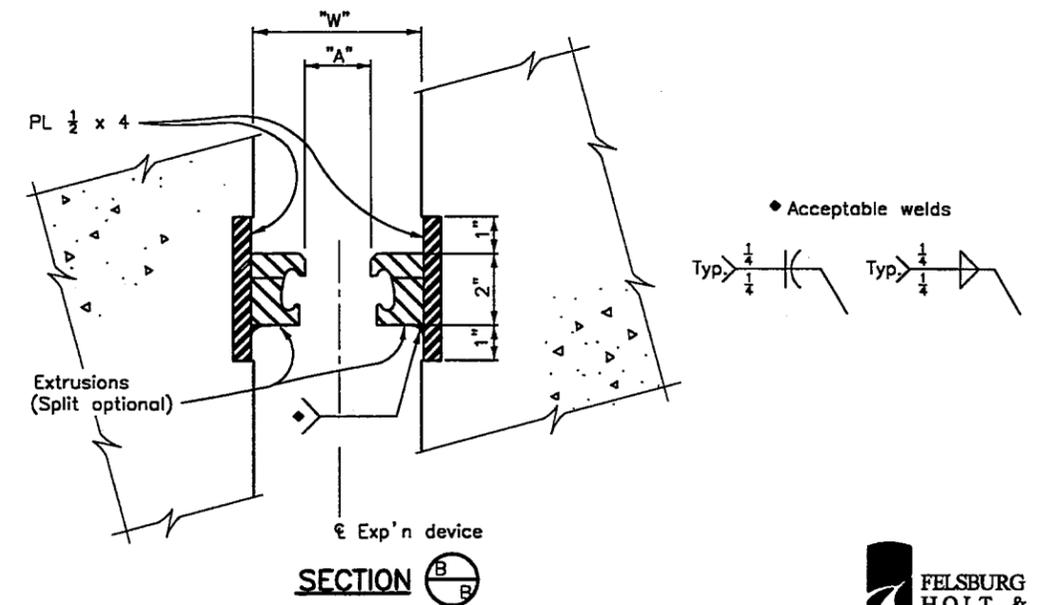
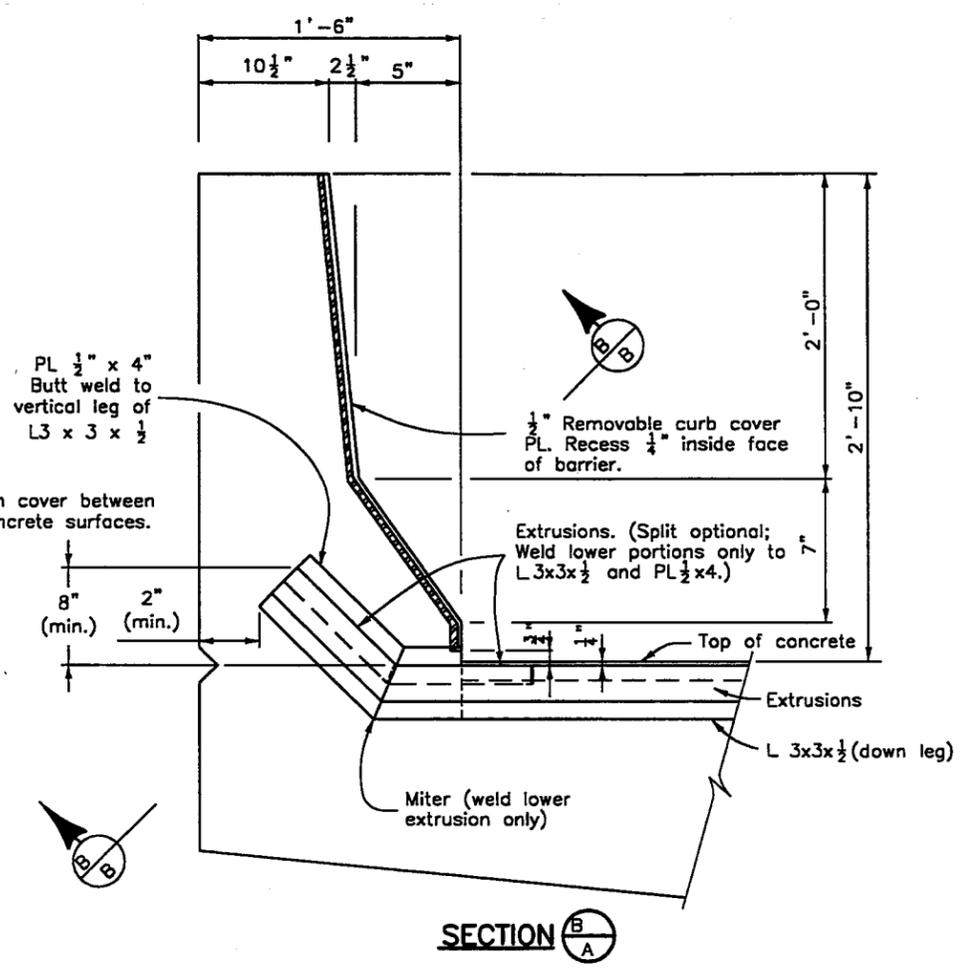
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Creation Date:	04/20/99 Initials: RAD			4201 East Arkansas Avenue, Room 330 Denver, Colorado 80222-3400 Phone: 303-757-9352 FAX: 303-757-9197		No Revisions:				CC 2254-061	
Last Modification Date:	09/13/99 Initials: GT			DOT DEPARTMENT OF TRANSPORTATION		Revised:		Designer: B. BEAMS Structure: F-17-AX		12482	
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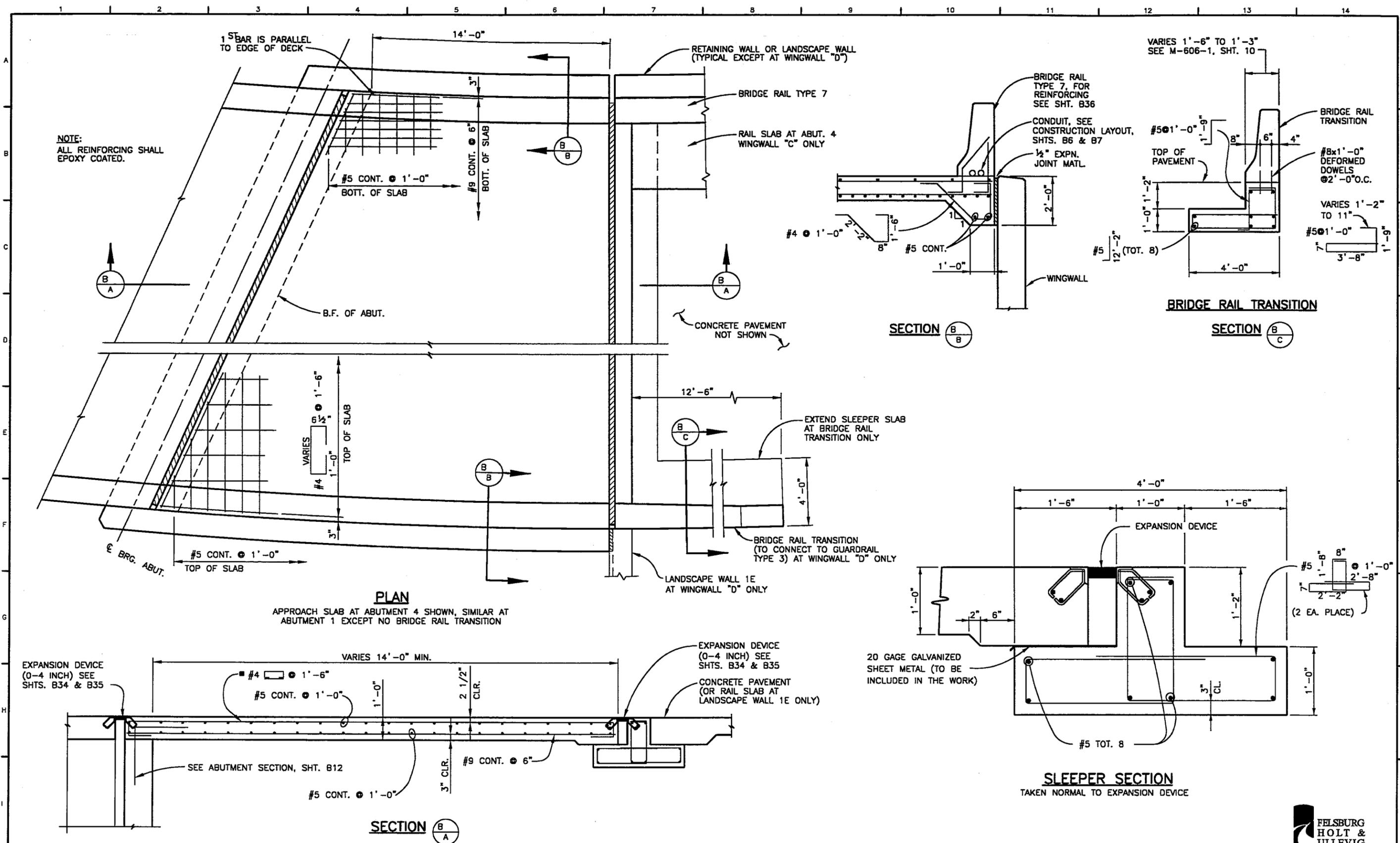
Note:
Provide 2" minimum cover between anchors and all concrete surfaces.



Computer File Information		Index of Revisions		Colorado Department of Transportation		As Constructed		1-225/ALAMEDA AVE. INTERCHANGE BRIDGE EXPANSION DEVICE		Project No./Code	
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MRS	09/99		
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Computer File Information		Index of Revisions		Colorado Department of Transportation		As Constructed		1-225/ALAMEDA AVE. INTERCHANGE APPROACH SLAB DETAILS		Project No./Code			
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