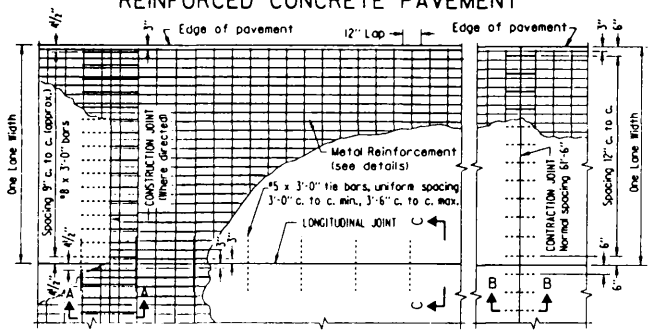
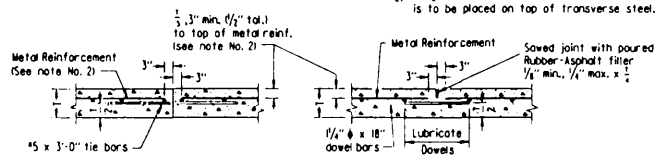
REINFORCED CONCRETE PAVEMENT



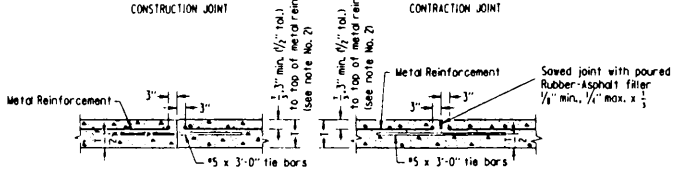
PLAN

NOTE:
1. Embedment depth of metal reinforcement is to top of longitudinal steel.
2. Longitudinal steel of the metal reinforcement is to be placed on top of transverse steel.



SECTION A-A
CONSTRUCTION JOINT

SECTION B-B
CONTRACTION JOINT



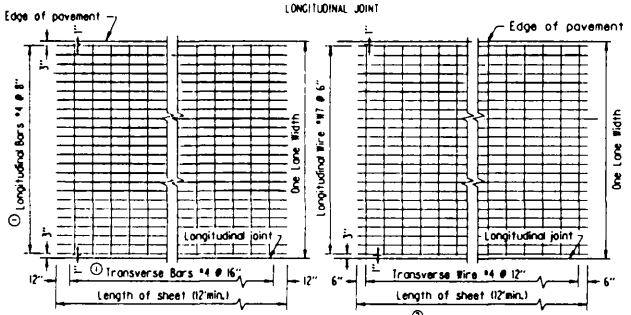
CONTACT - TYPE

WEAKENED - PLANE TYPE

SECTION C-C

ONE - LANE WIDTH STRIP CONSTRUCTION

TWO - LANE WIDTH STRIP CONSTRUCTION
LONGITUDINAL JOINT



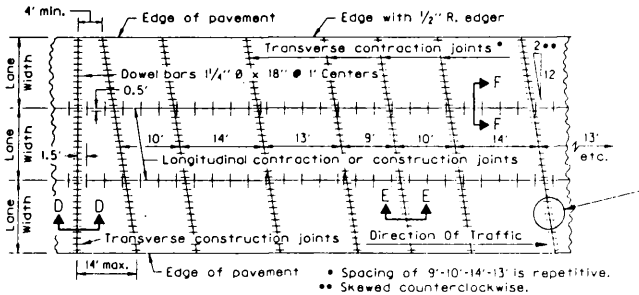
DEFORMED BARS

② WELDED WIRE FABRIC 6x12-W7/W4

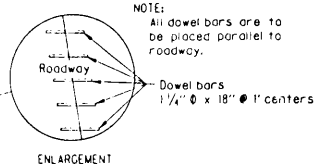
METAL REINFORCEMENT

① Bars attached at all intersections

PLAIN DOWELLED CONCRETE PAVEMENT

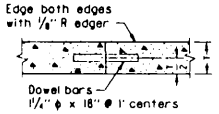


* Spacing of 9'-10'-14'-13' is repetitive.
** Skewed counterclockwise.

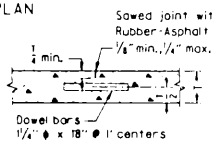


ENLARGEMENT

PLAN

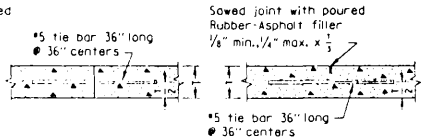


SECTION D-D
TRANSVERSE CONSTRUCTION JOINT



Sawed Type with poured Rubber-Asphalt Filler

SECTION E-E
TRANSVERSE CONTRACTION JOINT

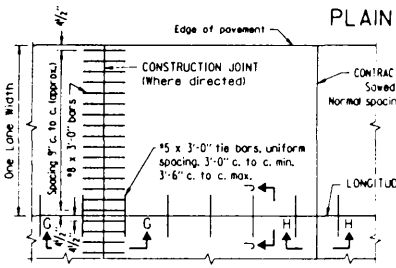


CONTACT - TYPE

SAWED JOINT

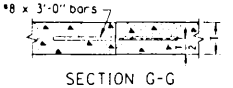
SECTION F-F
LONGITUDINAL JOINT

PLAIN UNDOWELLED CONCRETE PAVEMENT

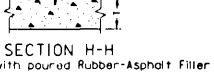


PLAN

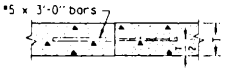
NOTE:
When directed - the joints may be skewed and on a staggered spacing as shown for "Plain Dowelled Concrete Pavement" above.



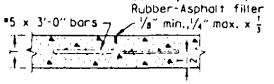
SECTION G-G
CONSTRUCTION JOINT



SECTION H-H
Sawed Type with poured Rubber-Asphalt Filler
CONTRACTION JOINT



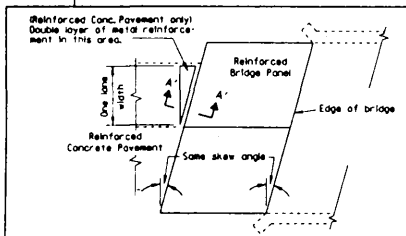
CONTACT - TYPE



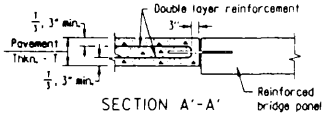
WEAKENED - PLANE TYPE

SECTION J-J

ONE - LANE WIDTH STRIP CONSTRUCTION
TWO - LANE WIDTH STRIP CONSTRUCTION
LONGITUDINAL JOINT



REINFORCEMENT AT SKEWED BRIDGE END
(For skew angles over 10°)
(For details not shown, see Std. Drg. 43422)



SECTION A'-A'

GENERAL NOTES:

1. Dowels must be installed parallel to the surface and centerline of the pavement.
2. Thickness "T" as shown on plans.

NOTE: All material and workmanship shall be in accordance with the current State of Oregon Standard Specifications for Highway Construction.

FED. ROAD Div. No.	STATE	PROJECT NUMBER	FISCAL YEAR	TOTAL SHEETS	SHEET NO.
10	OREGON			See Index	

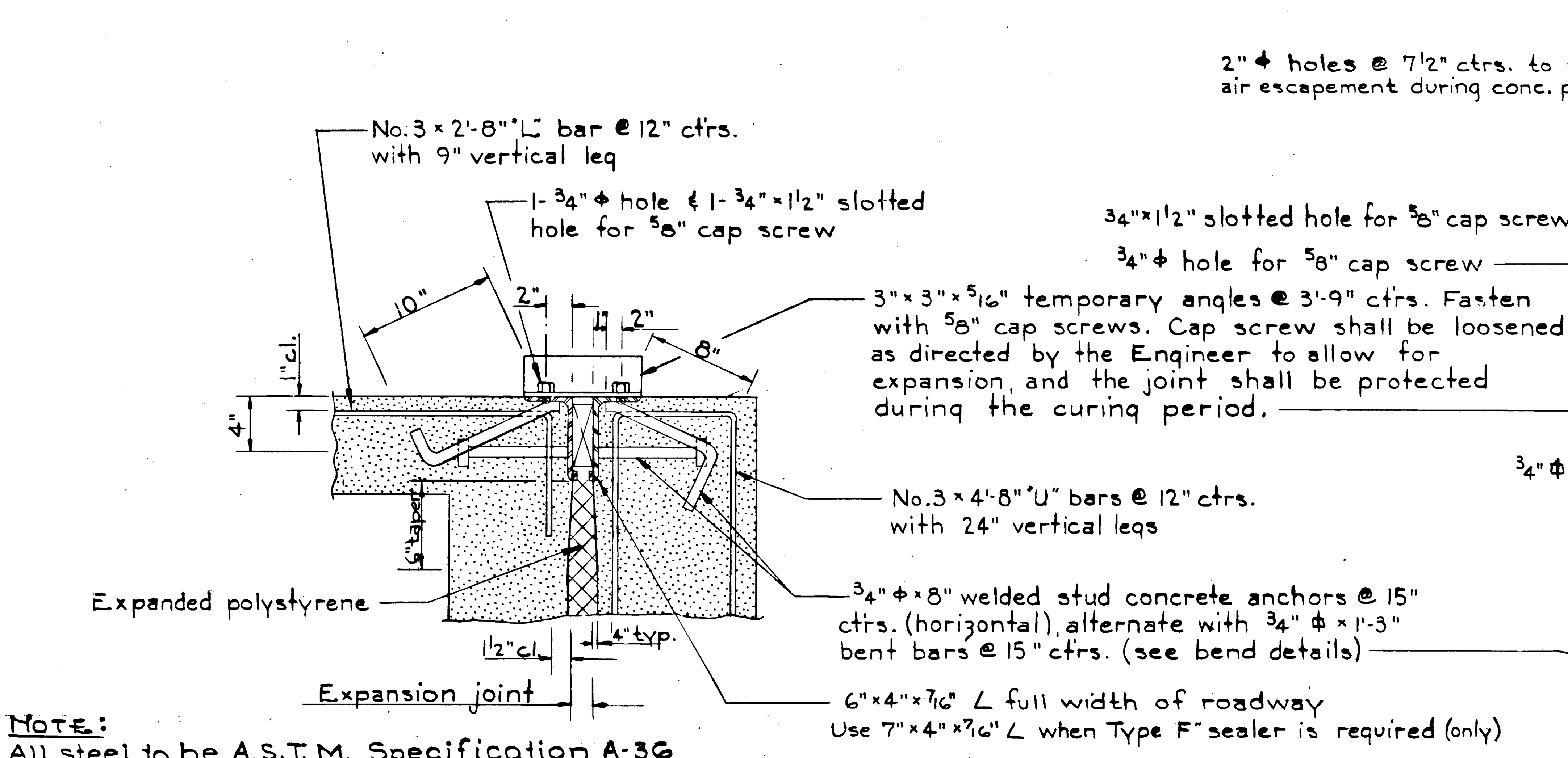
STATE OF OREGON
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY DIVISION
STANDARD

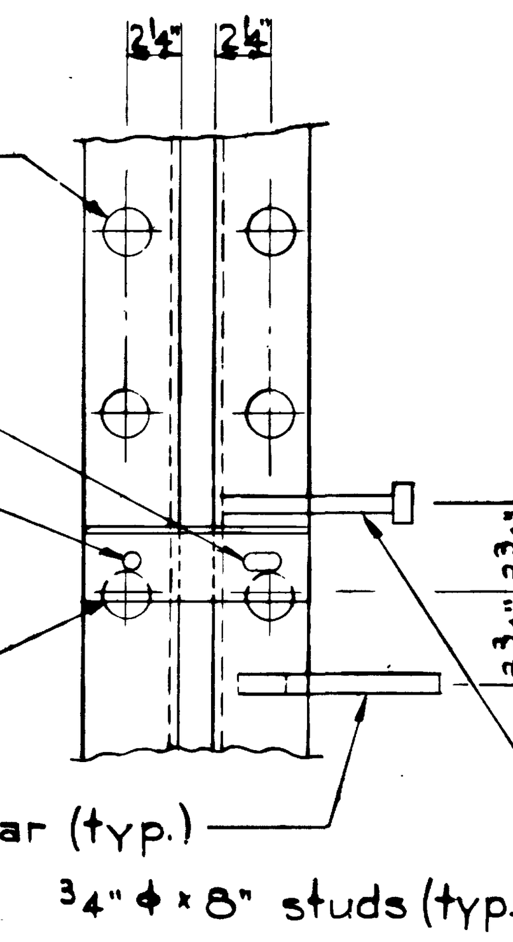
PORTLAND CEMENT CONCRETE PAVEMENT

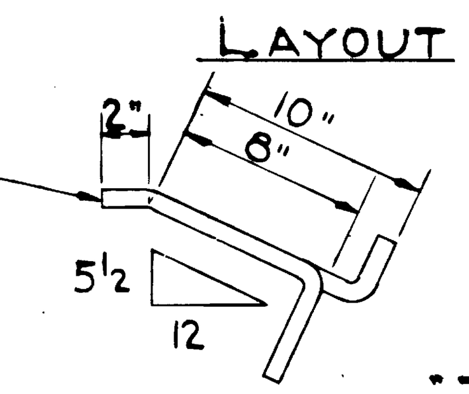
FEBRUARY, 1988

REVISIONS		APPROVED
DATE	DESCRIPTION	
MAY 89	CHANGE #5 BAR TO #8 BAR SEC. A-A	SPECIFICATIONS & ENGINEER
DEC. 1990	REINFORCEMENT AT SKEWED BRIDGE END DETAIL ADDED	DRG. NO. 2070

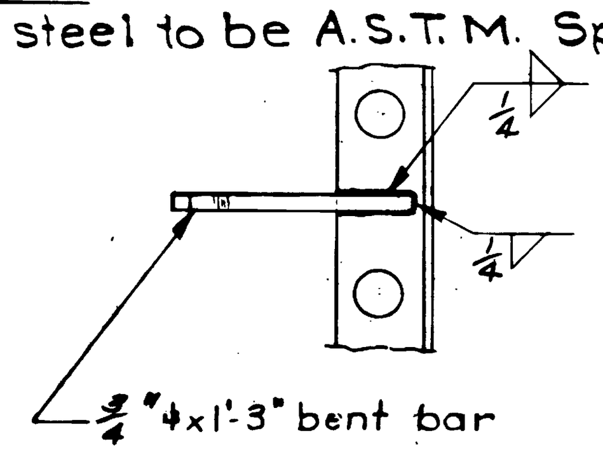
10-11-96
2-1.2



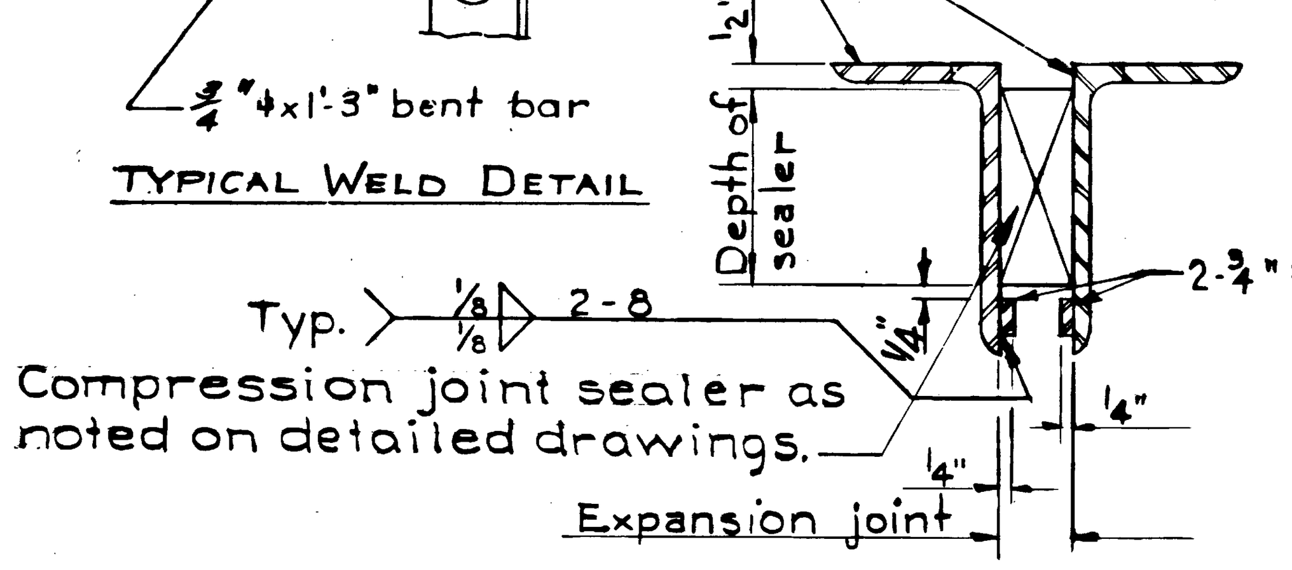




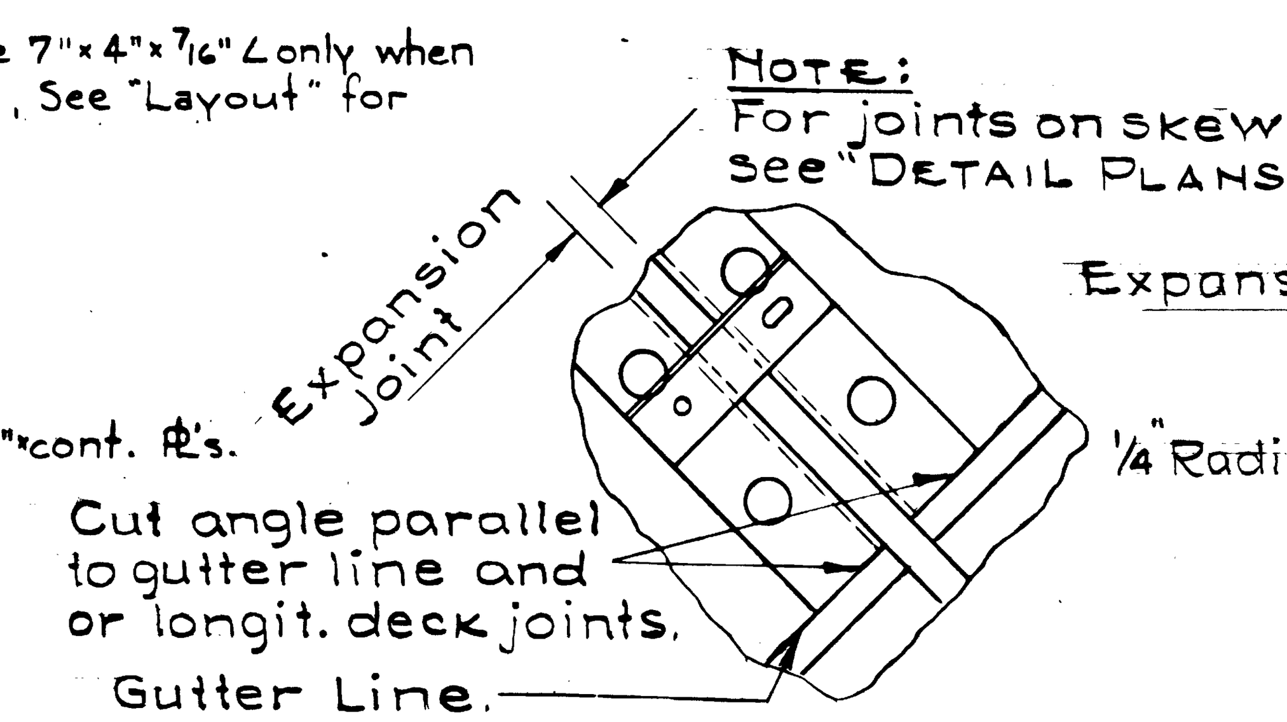
Note:
All steel to be A.S.T.M. Specification A-36



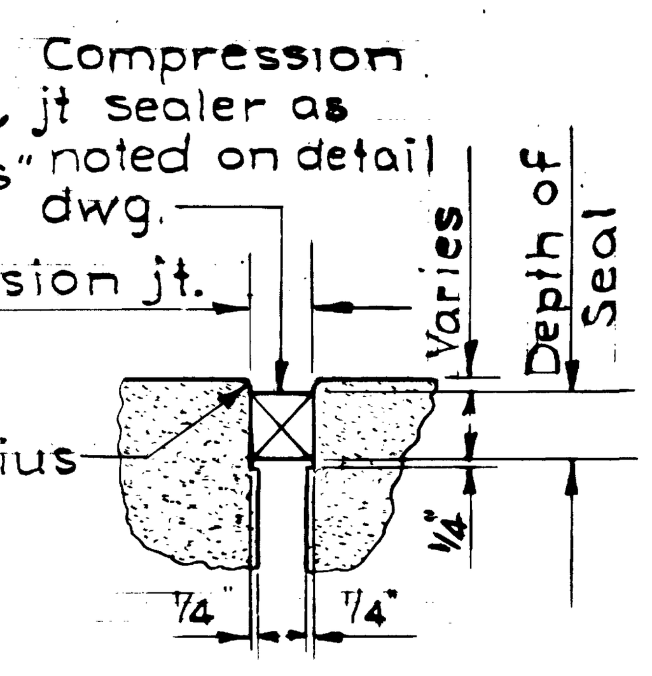
Typical Weld Detail



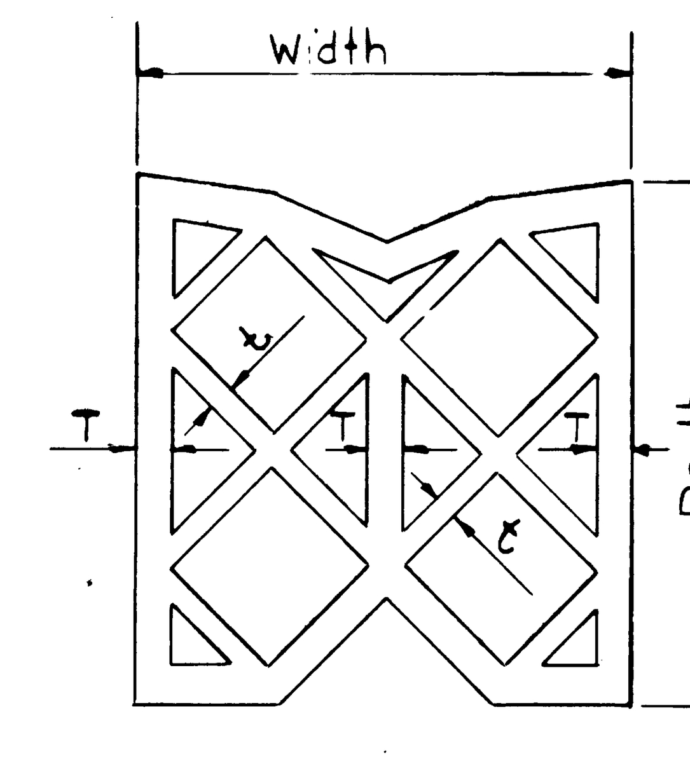
Joint With Armored Corner
Scale: 3" = 1'-0"



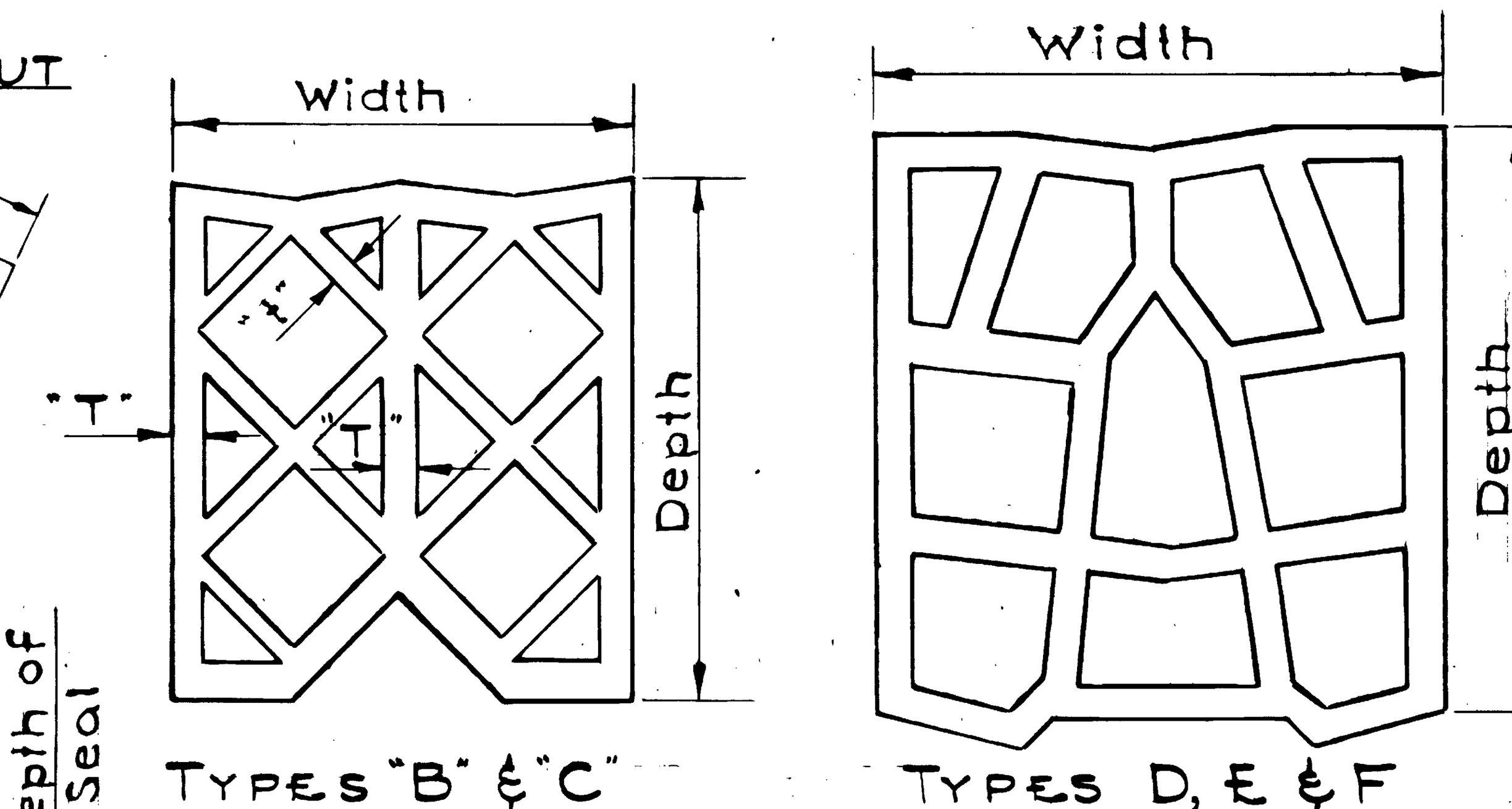
Detail At Gutter



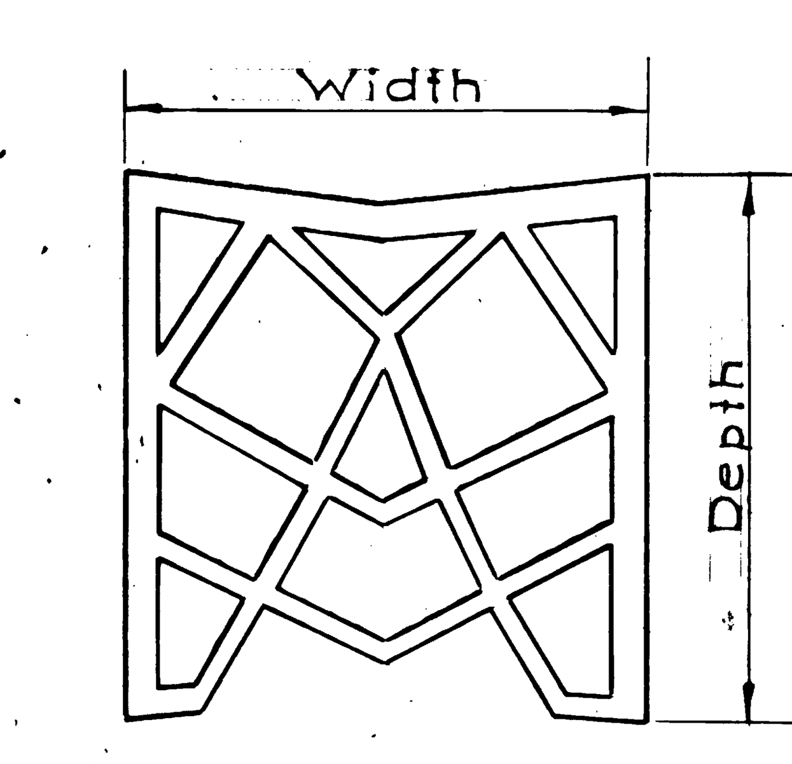
Detail "A"
No Scale



Alternate 1 Bridge Seal



Alternate 2 Bridge Seal



Alternate 3 Bridge Seal

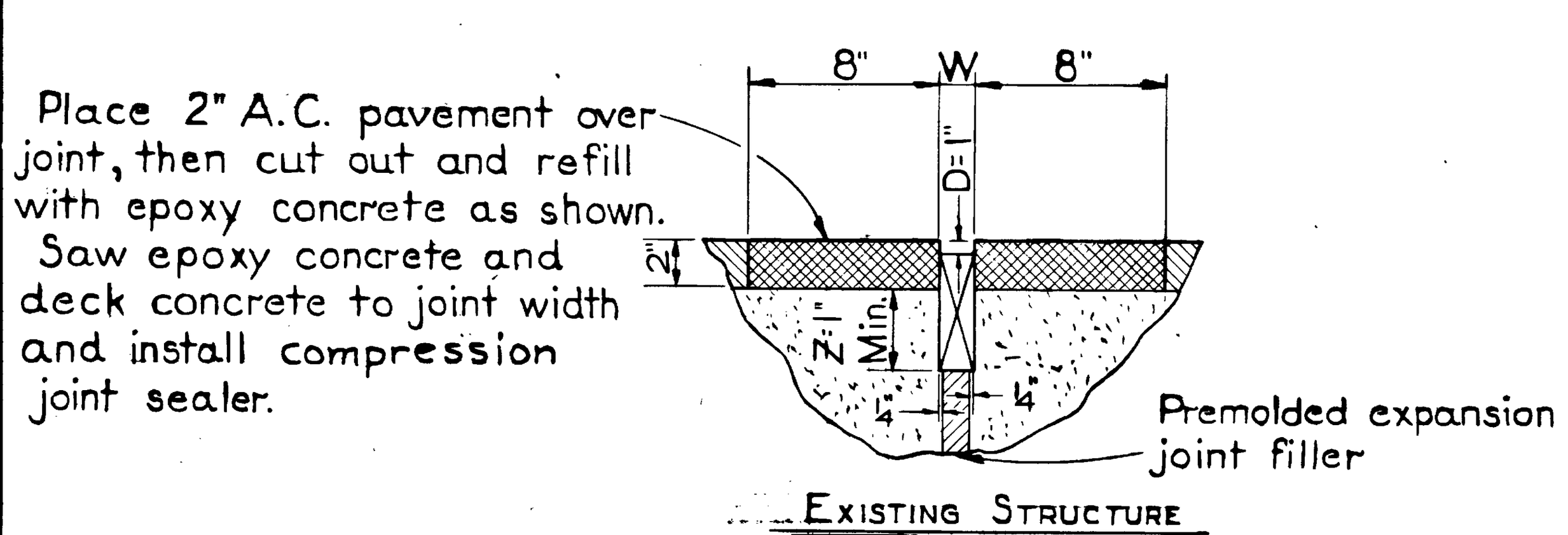
Dimensions for Alternate 1 Bridge Seal				
Type	Width	Depth	Thickness "T"	Thickness "t"
B	1¾" +0.156" -0.063"	2" ±0.062"	⅛" +0.031" -0.016"	3/32" +0.016" -0.032"
C	2" +0.156" -0.063"	2 1/16" ±0.062"	⅛" +0.031" -0.016"	3/32" +0.031" -0.016"
D	2½" +0.218" -0.088"	2¾" +0.187" -0.109"	3/16" +0.032" -0.016"	3/32" +0.032" -0.016"
E	3" +0.250" -0.101"	3 13/32" ±0.1875"	3/16" +0.047" -0.016"	⅛" +0.032" -0.016"
F	4" +0.313" -0.127"	4 23/32" ±0.250"	¼" +0.047" -0.032"	3/16" +0.032" -0.016"

Dimensions For Alternate 2 Bridge Seal				
Type	Width	Depth	Thickness (Note #3) "T"	Thickness (Note #3) "t"
B	1¾" +0.156" -0.063"	1¾" ±0.062"	5/64"	5/64"
C	2" +0.156" -0.063"	2" ±0.062"	3/32"	3/32"

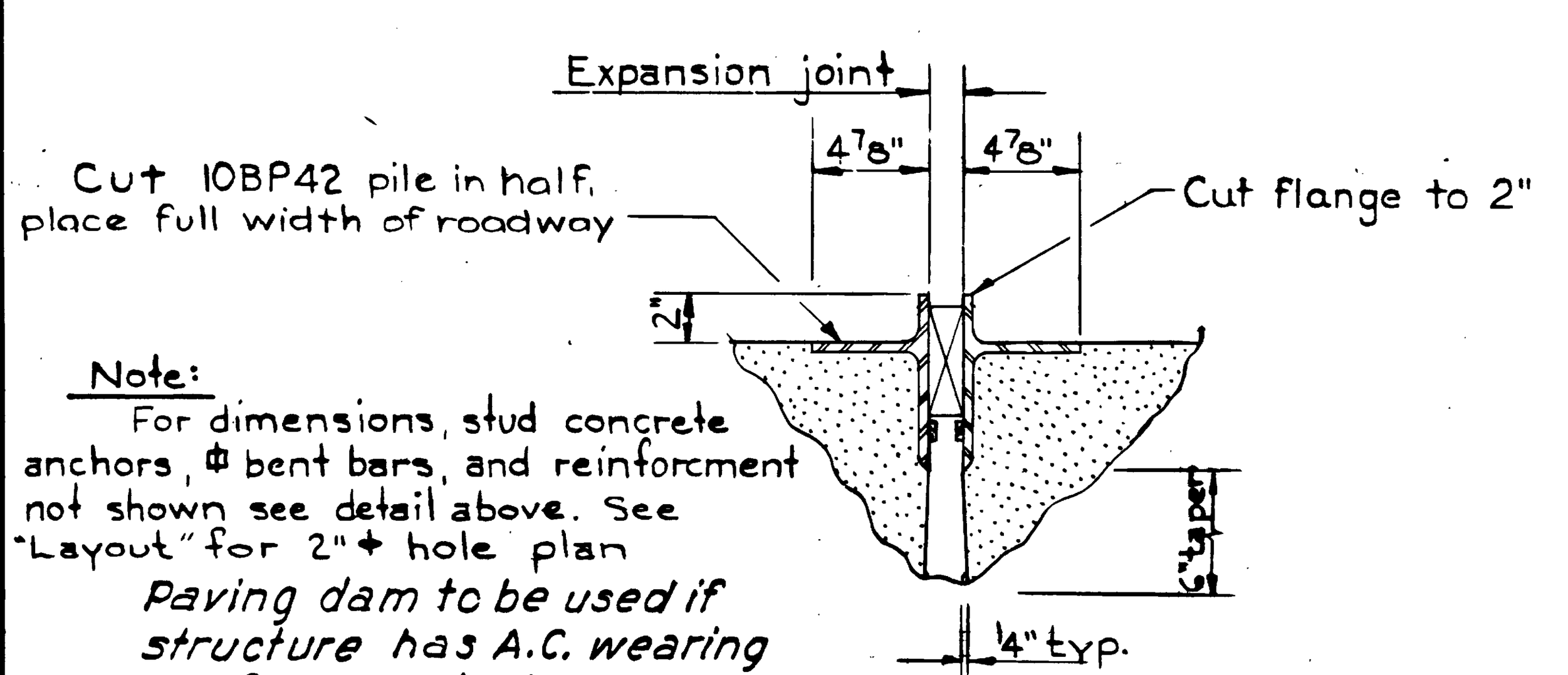
			Joint Limits Min. (Note #1)	Joint Limits Max. (Note #2)
D	2½" +0.1875" -0.00"	2⅝" ±0.125"	1"	2⅛"
E	3" +0.1875" -0.00"	3¼" ±0.1875"	1¼"	2½"
F	4" +0.250" -0.00"	4⅜" ±0.1875"	1¾"	3⅜"

Note
1. Minimum dimension: Force shall not exceed 50 lbs per linear inch.
2. Maximum dimension: Force shall not be less than 10 lbs per linear inch.
3. Web and shell tolerance not needed as Force-Deflection criterion assures tolerances within parameter of Movement Category.

Dimensions For Alternate 3 Bridge Seal				
Type	Seal Size Width	Seal Size Depth	Groove Width Min. (Note #1)	Groove Width Max. (Note #2)
B	1¾"	2"	.687"	1.487"
C	2"	2"	.875"	1.70"
D	2½"	2¾"	1.00"	2.125"
E	3"	3⅜"	1.125"	2.55"
F	4"	4⅜"	1.625"	3.40"

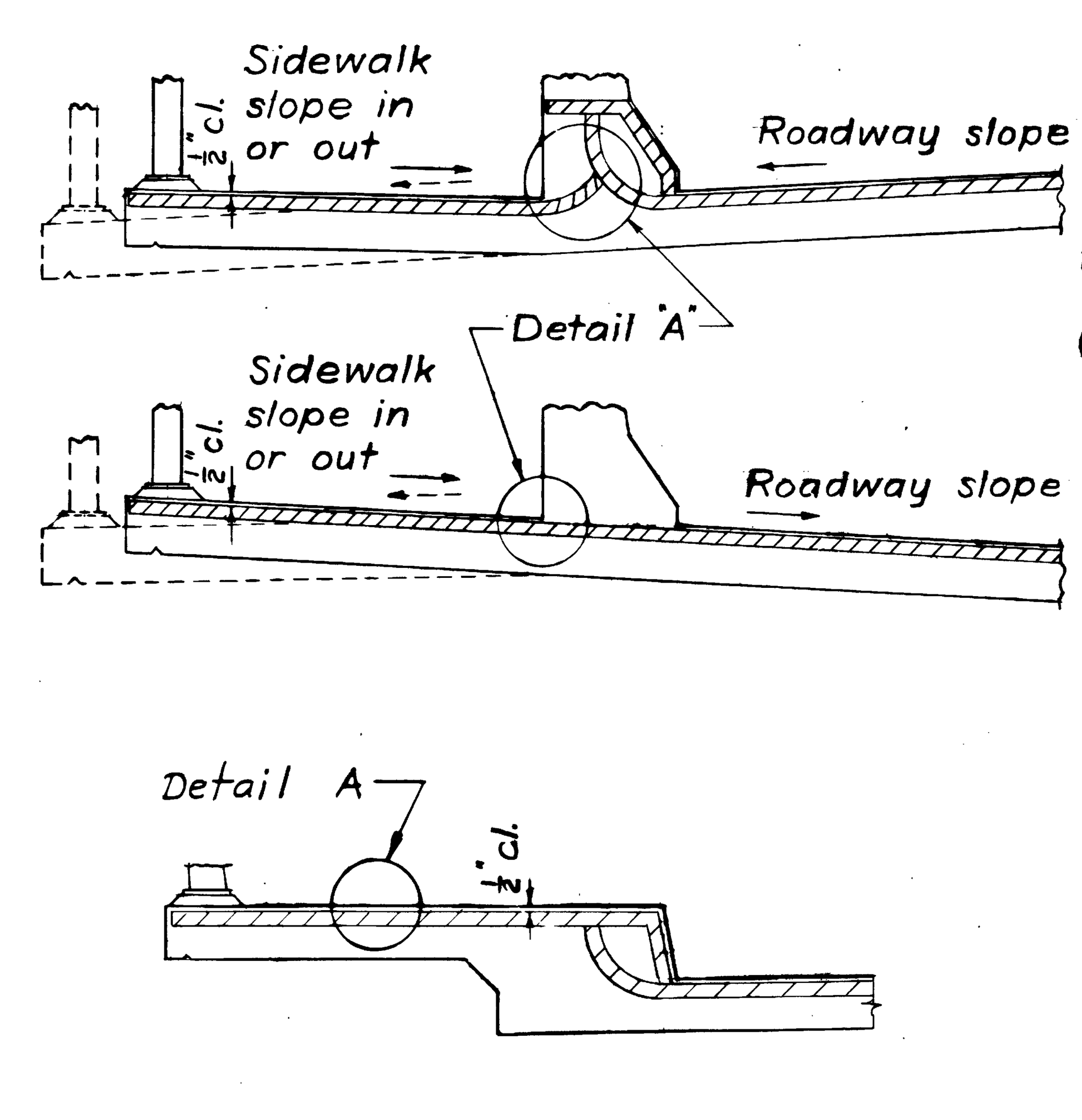


Existing Structure



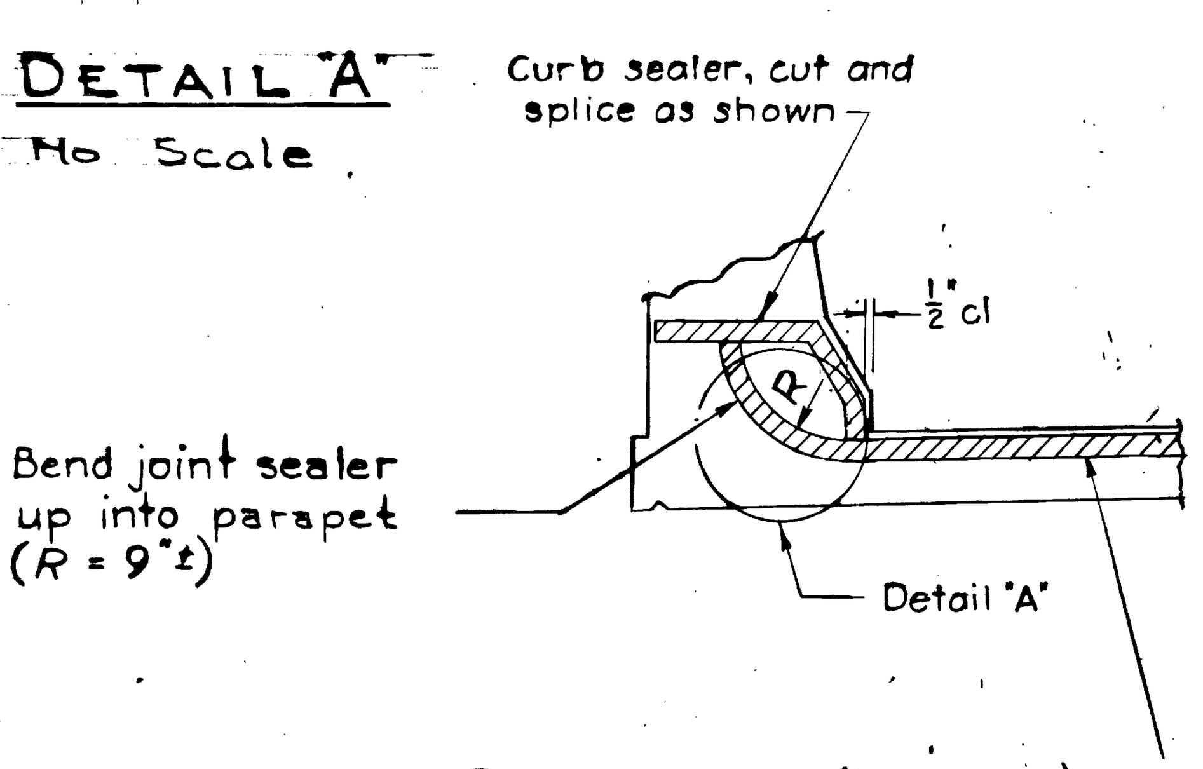
New Structure

Paving Dam Details-I
Scale: 1½" = 1'-0"

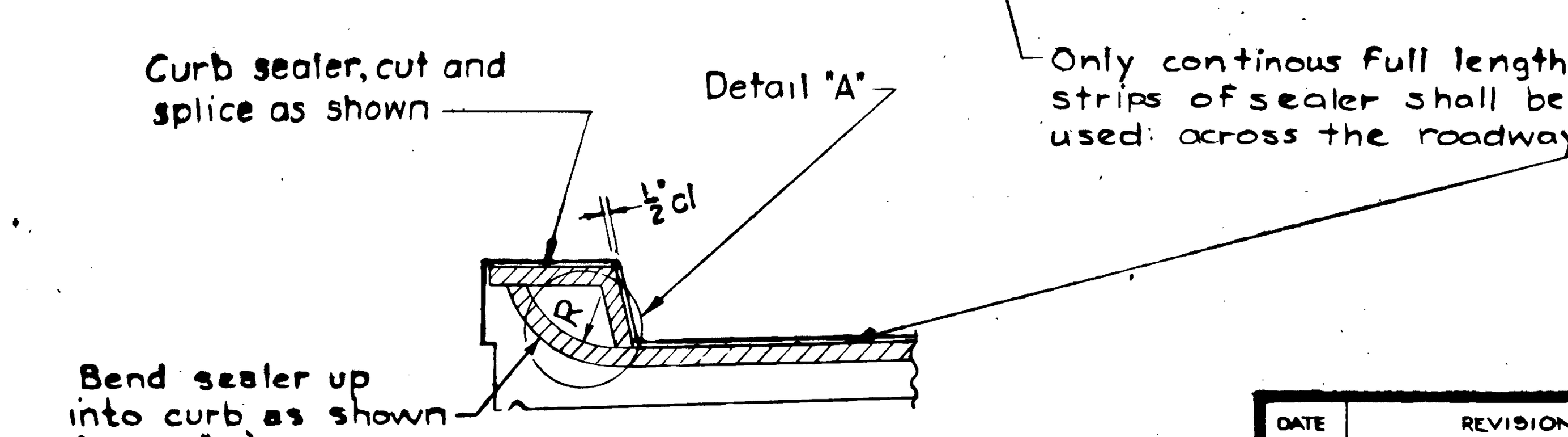


Sealer at Sidewalks
No Scale

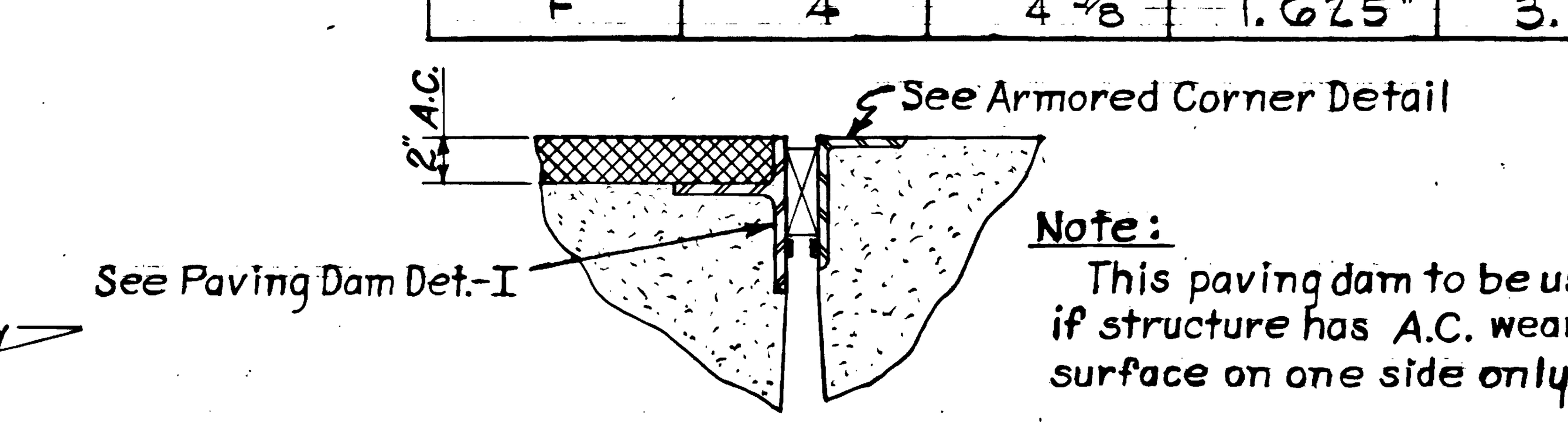
Note: Details for sidewalks are similar to those for parapets & curbs unless shown otherwise.



Sealer at (Type G) Parapet
No Scale



Sealer at (2 Tube) Curb
No Scale



Note: This paving dam to be used if structure has A.C. wearing surface on one side only.

Paving Dam Details-II

Date	Revision	Date	Revision
10-12-70	Note Revision	5-23-68	Weld Option
12-11-70	Sealer at sidewalks	5-23-68	Detail "A"
5-9-72	Added note	4-24-69	Alternate 2 Bridge Seal
7-18-72	Curb, parapet, sw. details	9-5-69	Joint Sealer Splice
12-4-72	Exist'ng Struct. Jt.	9-14-70	Dimension
1973	Armored corner	10-1-70	Alternate 2 Bridge Seal
7-31-73	Added Alt. #3 Seal		
10-9-74	Added Paving Dam Det. II		

Approved: [signature] Bridge Engineer
Designed: Checked:
Drawn: GDR Calc. Book:

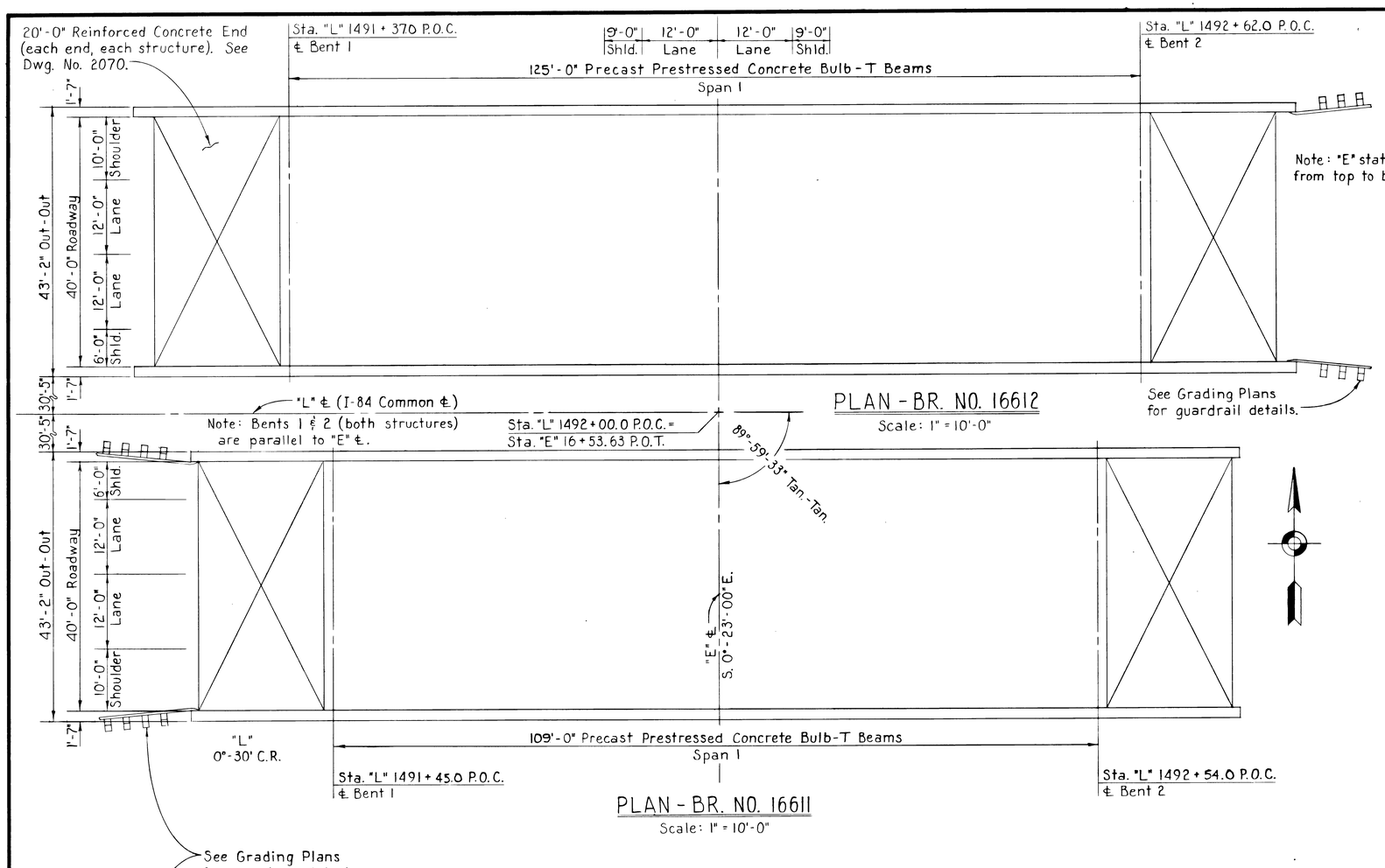
Oregon State Highway Department
Bridge Division

Standard Expansion Joint Detail

With and Without Armored Corners

Date: April 7, 1967 Sheet ... of ...
Bridge No. Standard Drawing No. 22970

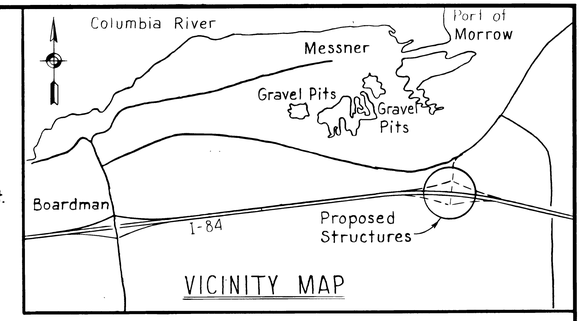
VOID See dwg no. 40791



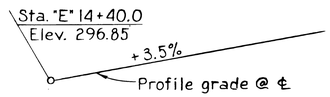
PLAN - BR. NO. 16612
Scale: 1" = 10'-0"

PLAN - BR. NO. 16611
Scale: 1" = 10'-0"

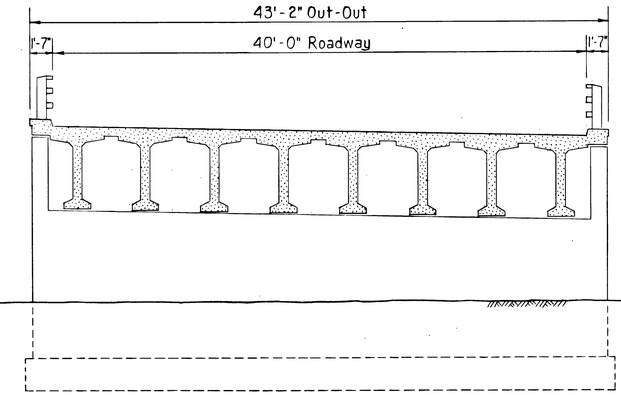
ELEVATION - BR. NO. 16611
Scale: 1" = 10'-0"



VICINITY MAP



"E" GRADELINE DIAGRAM

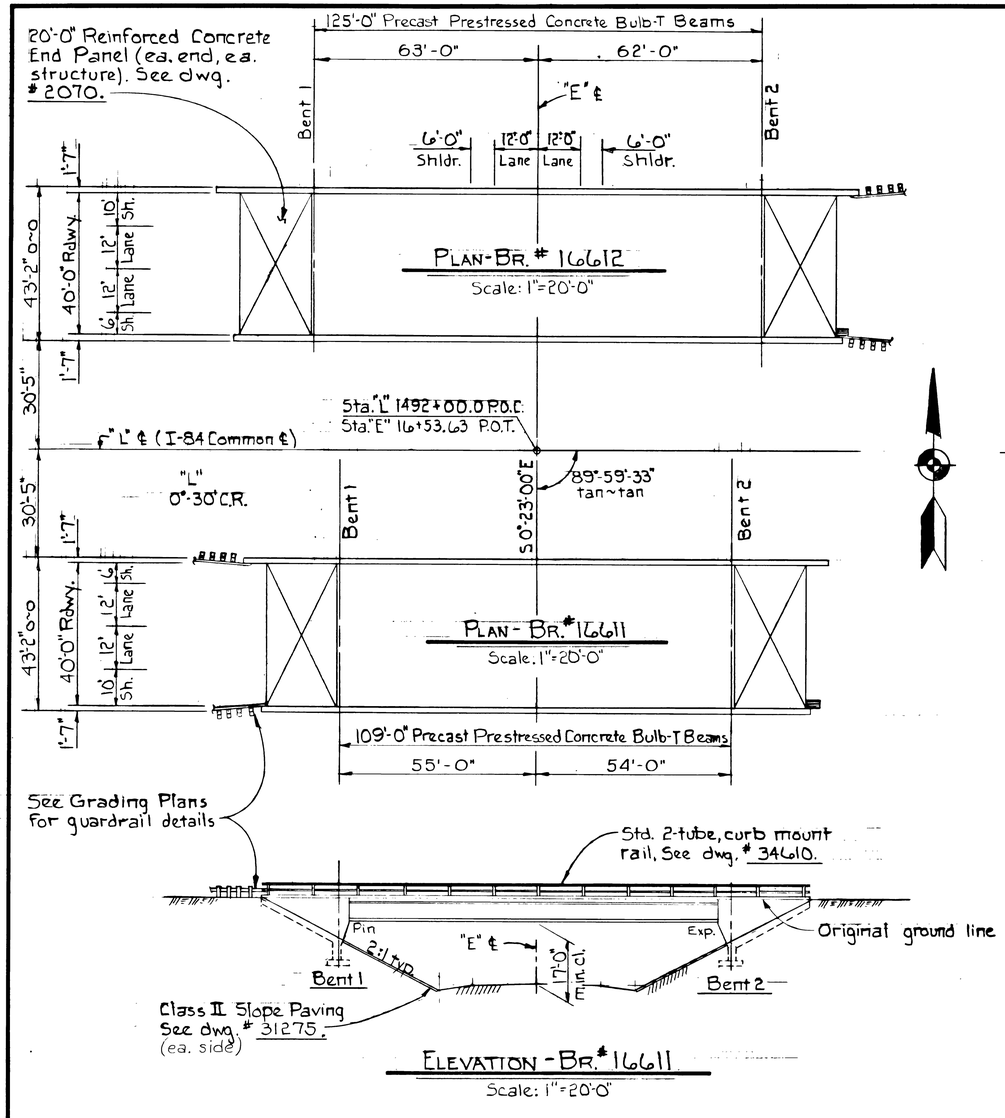


TYPICAL SECTION
Scale: 3/16" = 1'-0"

Note: Proposed loading is HS25.

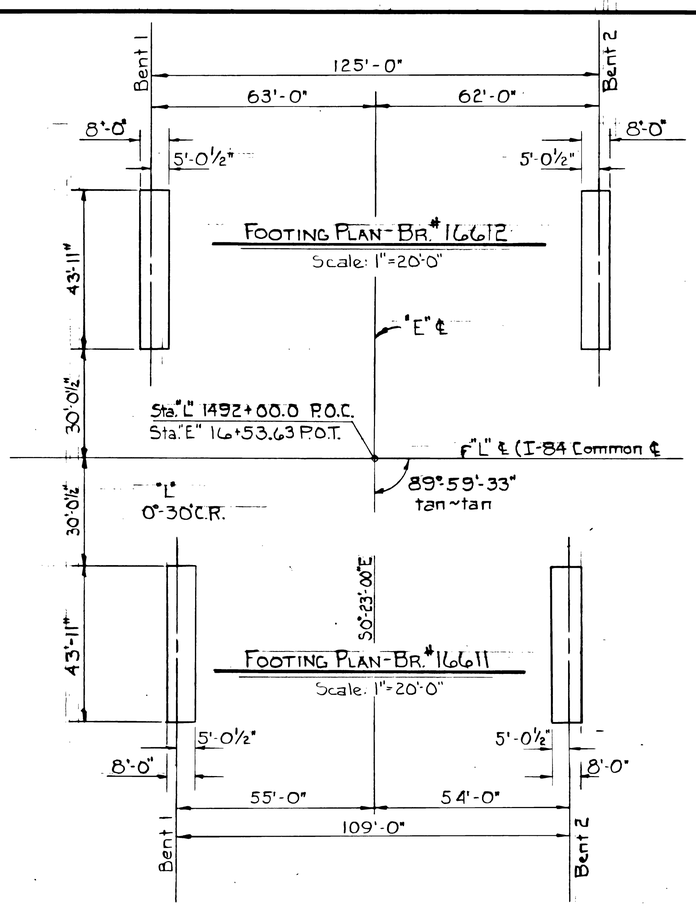
APPROVED: P.E. BRIDGE ENGINEER P.E. ASST. STATE HIGHWAY ENGINEER	OREGON DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN SECTION
DESIGNED W. M. Thompson DRAWN W. M. Thompson CHECKED REVIEWED REVIEWED CALC. BOOK 1919	PORT OF MORROW INTERCHANGE PORT OF MORROW INTERCHANGE SECTION COLUMBIA RIVER HWY. MORROW CO.
DATE / REVISION	PRELIMINARY PLAN AND ELEVATION
	ACCOMPANIED BY DWGS.
DATE October 1982 BRIDGE NO. 16611 & 16612	SHEET 1 OF 1 DRAWING NO. 37378

BRUNING 44-131 38223

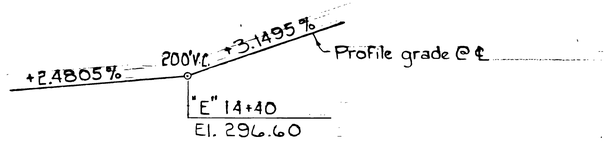


ELEVATION - BR. # 16611

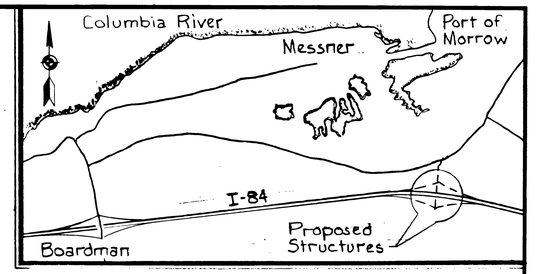
Scale: 1"=20'-0"



NOTE:
All bents are 90° to a chord between ℄'s.



"E" LINE PROFILE



VICINITY MAP

GENERAL NOTES:

All material and workmanship shall conform to the Standard Specifications for Highway Construction of the Oregon State Highway Division.

Bridges designed for HS25 and Military loadings with an allowance of 50psf for future wearing surface.

Concrete members except prestressed members designed by Load Factor Design Method.

Prestressing steel shall be in accordance with detail plans.

All other reinforcing steel shall conform to ASTM Specifiction A615 (S1) Grade 60. The following splice lengths shall be used unless shown otherwise:

Bar Size	3	4	5	6	7	8
Splice Length	1'-0"	1'-4"	1'-8"	2'-0"	2'-9"	3'-7"

All reinforcing steel in the upper portion of the deck shall be epoxy coated. This includes top longitudinal bars and top transverse bars including "truss" bars and all bars extending from the deck into the curb.

All bars shall be placed 2" clear of the nearest face of concrete unless shown otherwise. The top bends of stirrups extending from beam stems into the top slab shall be field bent.

Reinforcing steel for abutments and wingwalls shall not be fabricated until final footing elevations have been determined in the field.

Concrete in prestressed precast beams shall be as shown on the detail plans.

Concrete in deck shall be Class 4,500-1½".

All other concrete shall be Class 3,300-1½".

DRAWING 44-13 I 38025

APPROVED:
BRIDGE ENGINEER P.E.
ASST. STATE HIGHWAY ENGINEER P.E.

DESIGNED W.M. Thompson
DRAWN J. Silbernagel
CHECKED Page
REVIEWED J.M. Tindell 11-5-83
REVIEWED J.E.B. 11-25-83
CALC. BOOK 1919

DATE	REVISION
1 6/17/85	AS CONSTRUCTED

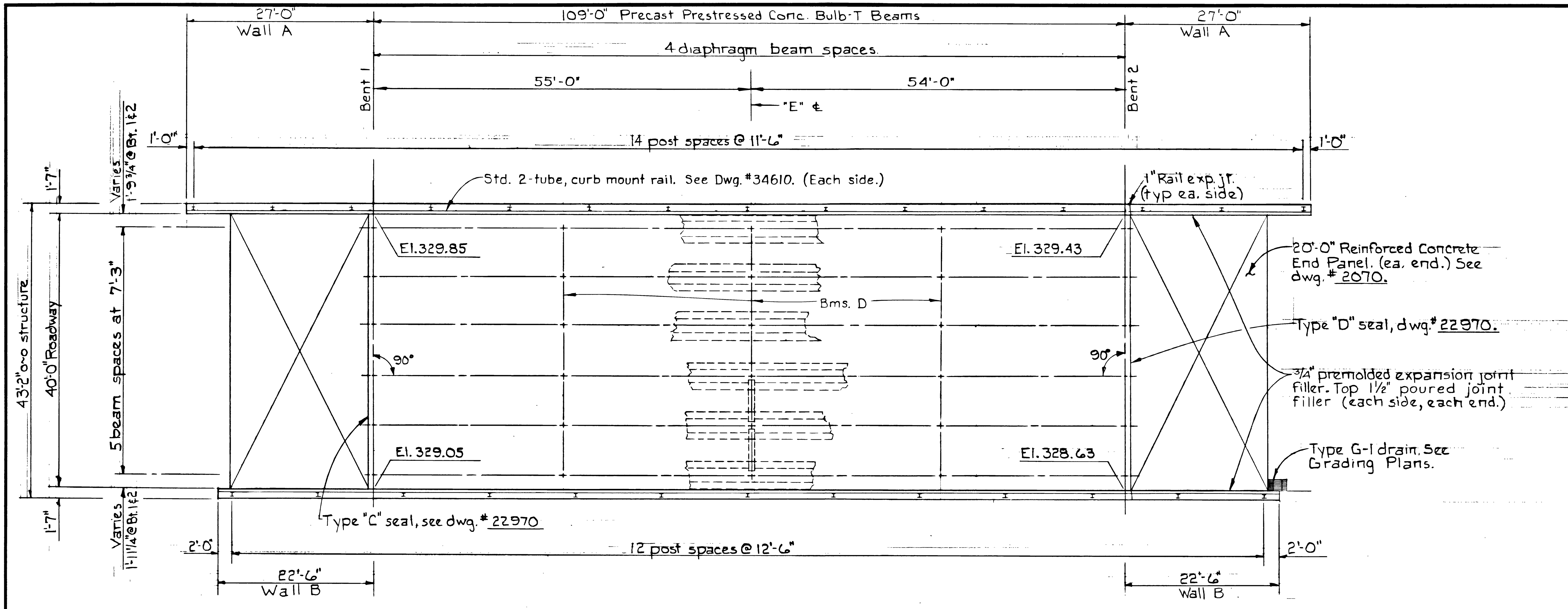
OREGON DEPARTMENT OF TRANSPORTATION
BRIDGE DESIGN SECTION

PORT OF MORROW INTERCHANGE
PORT OF MORROW INTERCHANGE SECTION
COLUMBIA RIVER HWY. (I-84)
MORROW COUNTY

PLAN & ELEVATION

ACCOMPANIED BY DWGS. 38014 thru 38022, 2070, 22970, 31275 & 34610

DATE Jan. 1983
SHEET 1 OF 14
BRIDGE NO. 16611 & 16612
DRAWING NO. 38013



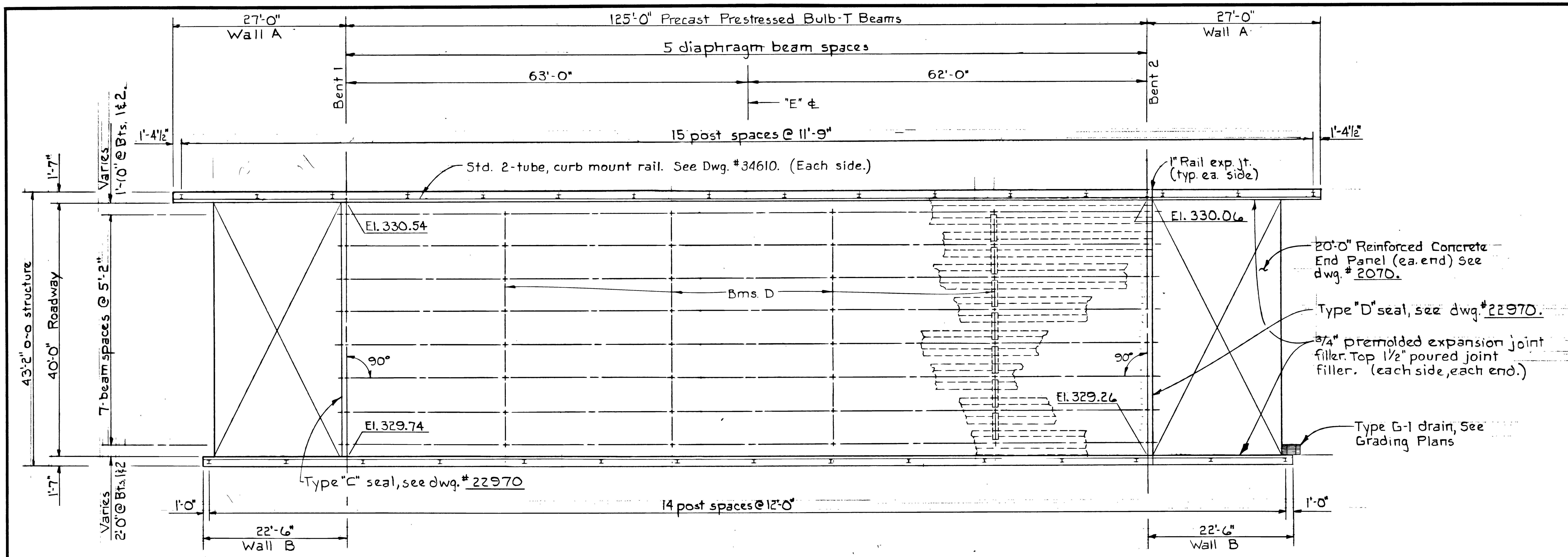
NOTE:

Elevations are @ top of deck @ ℄'s bent 1 & 2 gutters.

Verify elevations and superelevation rate in field to match existing roadway.

Scale: 1/8" = 1'-0"

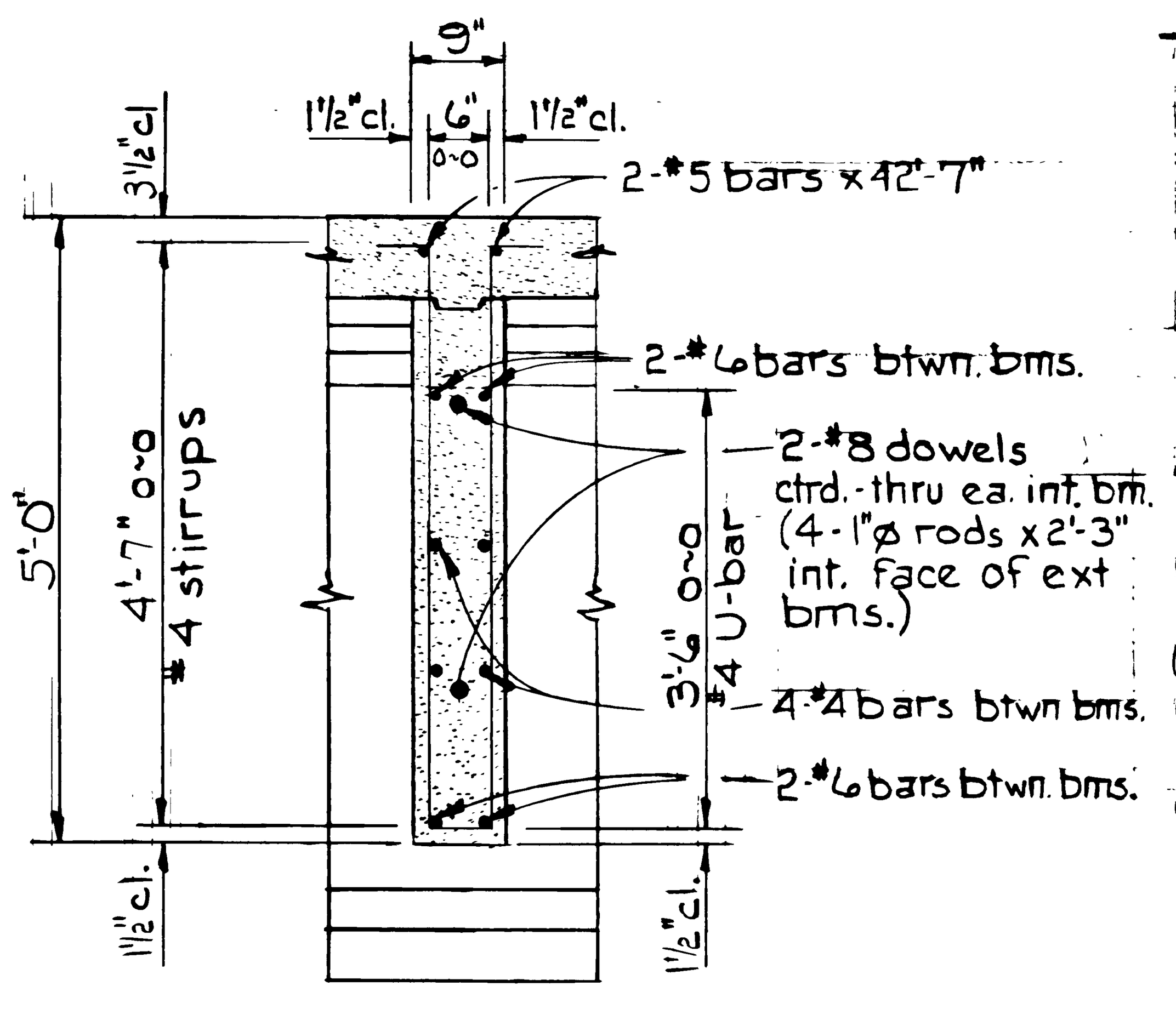
APPROVED: Walter J. Hart, BRIDGE ENGINEER	OREGON DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN SECTION
DESIGNED W. M. Thompson DRAWN J. Silbernagel CHECKED Page REVIEWED J. M. Tindall 1/25/83 REVIEWED J E B 1-25-83 CALC. BOOK 1919	PORT OF MORROW INTERCHANGE
DATE 6/17/85 — REVISION: AS CONSTRUCTED	DECK PLAN - BR. # 16611
	DATE Jan. 1983 — SHEET 3 OF 14
	BRIDGE NO. 16611 & 16612 — DRAWING NO. 38015



NOTE:
Elevations are @ top of deck @ ℄'s Bents 1 & 2 gutters.
Verify elevations and superelevation rate in field to match existing roadway.

Scale: 1/8" = 1'-0"

APPROVED: [signature] BRIDGE ENGINEER	**OREGON DEPARTMENT OF TRANSPORTATION** BRIDGE DESIGN SECTION
DESIGNED W. M. Thompson DRAWN J. Silbernagel CHECKED Page REVIEWED J. M. Tindall 1/25/83 REVIEWED J. E. D. 1-5-83 CALC. BOOK 1919	PORT OF MORROW INTERCHANGE
DATE: 6/17/85 — REVISION: AS CONSTRUCTED	DECK PLAN BR. # 16612
	DATE Jan. 1983 — SHEET 4 OF 14
	BRIDGE NO. 16611 & 16612 — DRAWING NO. 38016



BEAM D - BR.# 16611 & #16612

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

DECK STEEL: BR.# 16612

#5 straight transverse bars at 10" ctrs., top & bottom.

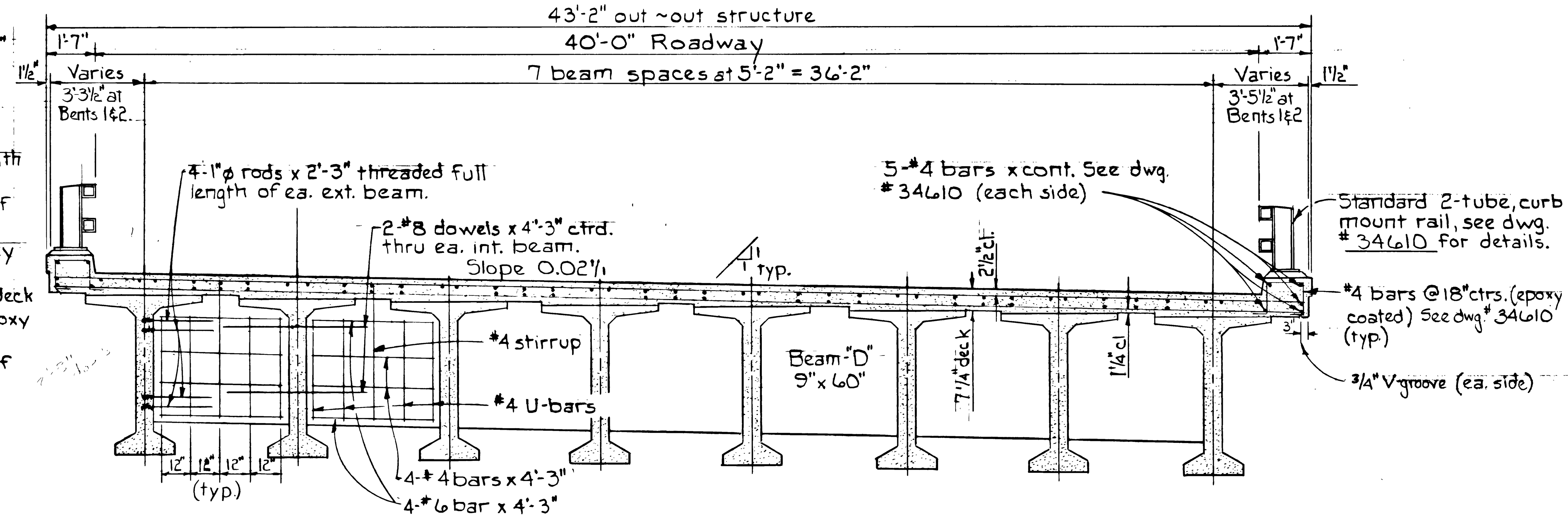
Place transverse bars parallel with bent ℄'s.

Stop transverse bars 6"± clear of all transverse beams.

Top straight bars shall be epoxy coated.

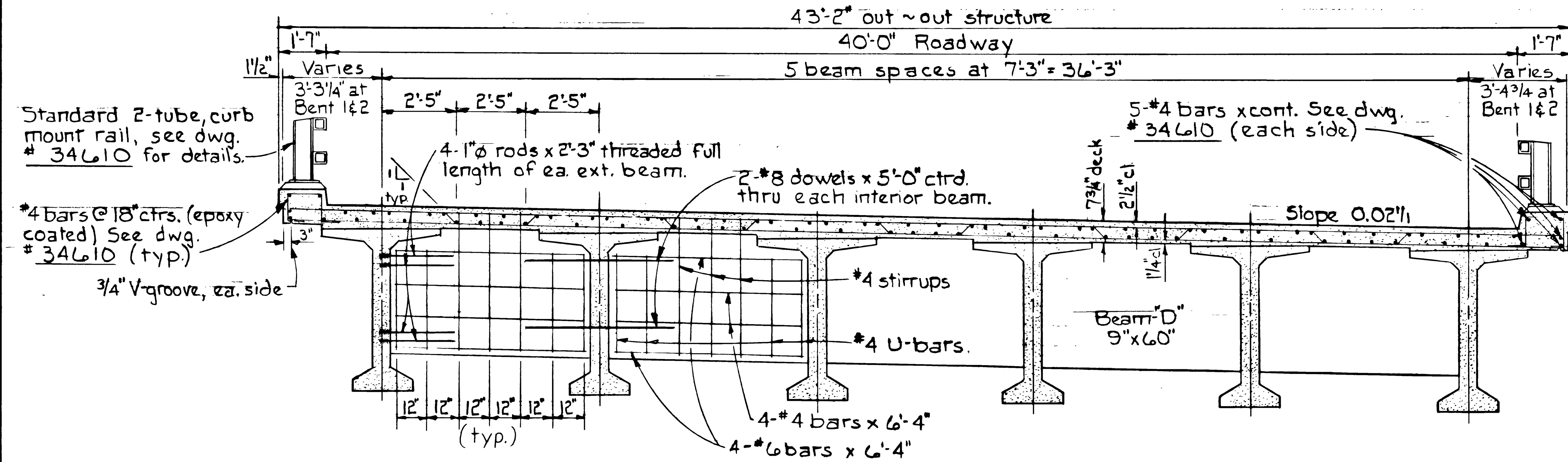
39 - #4 longitudinal bars in top of deck (includes hanger bars) as shown (epoxy coated.)

21 - #5 longitudinal bars in bottom of deck as shown.



DECK SECTION - BR.# 16612

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



DECK SECTION - BR.# 16611

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

DECK STEEL - BR.# 16611

#5 straight transverse bars at 17" ctrs. top & bottom.

#5 bent transverse bars at 17" ctrs.

Alternate straight & bent bars at 8½" ctrs.

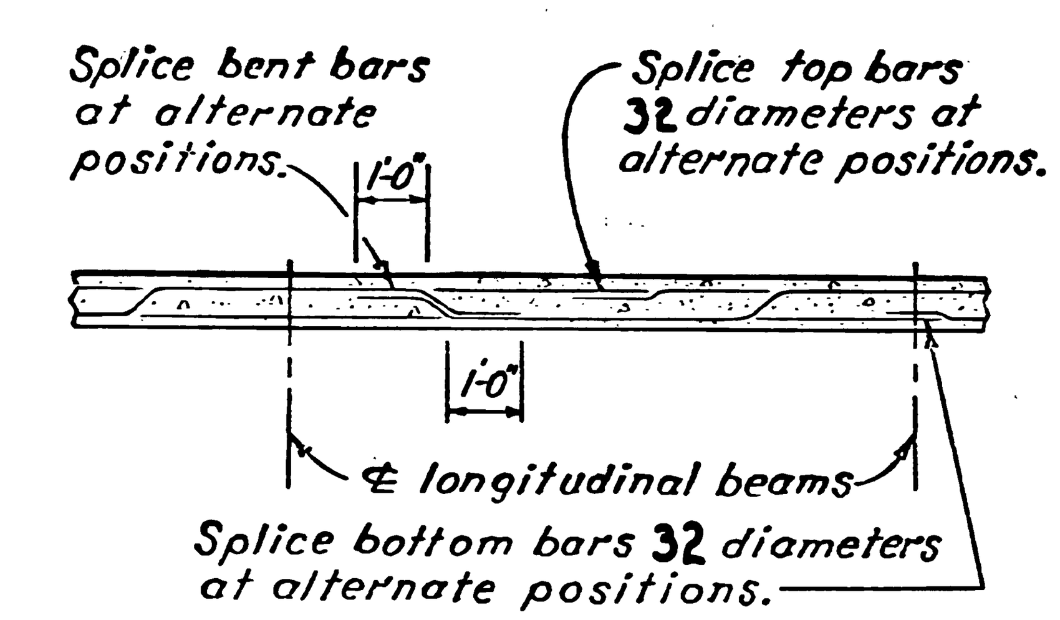
Place transverse bars parallel with bent ℄'s.

Stop transverse bars 6"± clear of all transverse beams.

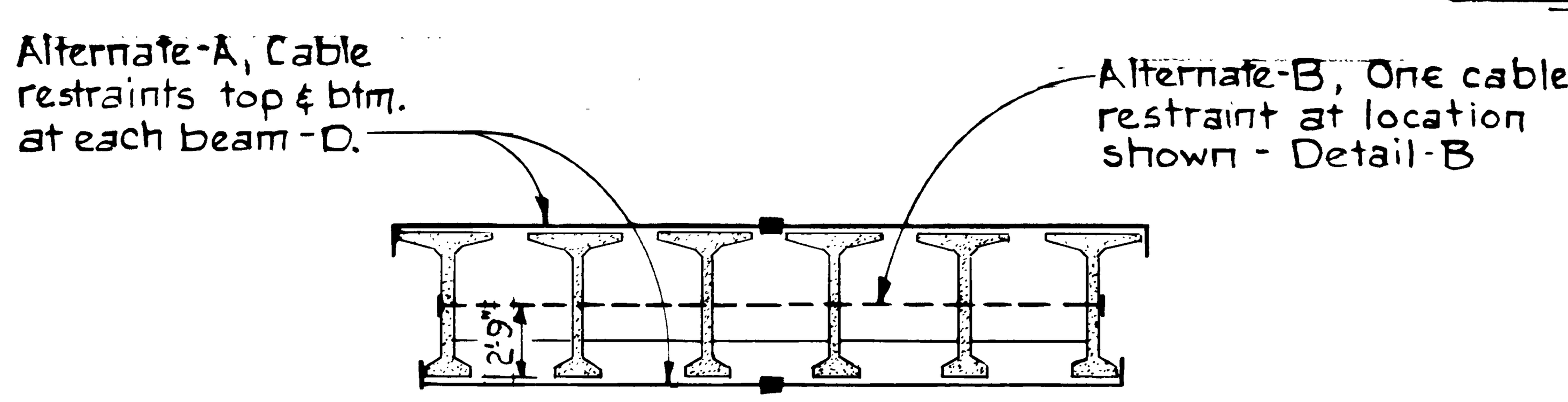
Top straight & bent bars shall be epoxy coated.

44 - #4 longitudinal bars in top of deck (includes hanger bars) as shown (epoxy coated).

32 - #5 longitudinal bars in bottom of deck as shown.

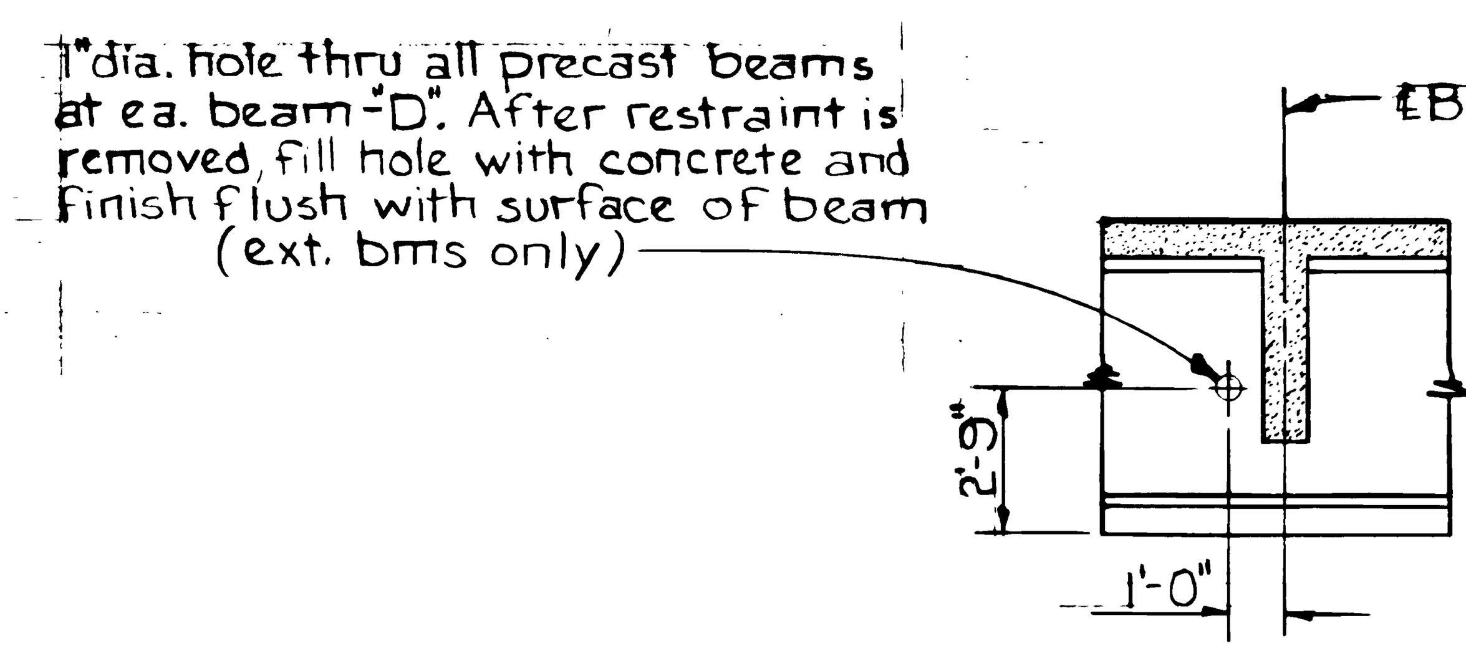


TRANSVERSE DECK BAR SPLICE



BEAM RESTRAINT DETAILS

Snug fit prestressed beams against forms prior to diaphragm beam pour. Let concrete take initial set then revibrate. Restraints to remain in place a minimum of two days after completion of diaphragm pour. (Shown for Br.# 16611, Br.# 16612 is similar)



DETAIL-B

APPROVED: [signature] BRIDGE ENGINEER	OREGON DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN SECTION
DESIGNED W.M. Thompson DRAWN J. Silbernagel CHECKED Page REVIEWED J.M. Tindall 1/25/83 REVIEWED J.E.B. 1-25-83 CALC. BOOK 1919	PORT OF MORROW INTERCHANGE
DATE 6/1/85 — REVISION AS CONSTRUCTED (0)	DECK SECTIONS
DATE Jan. 1983 BRIDGE NO. 16611 & 16612	SHEET 5 OF 14 DRAWING NO. 38017

BRUNING 44-131 38925