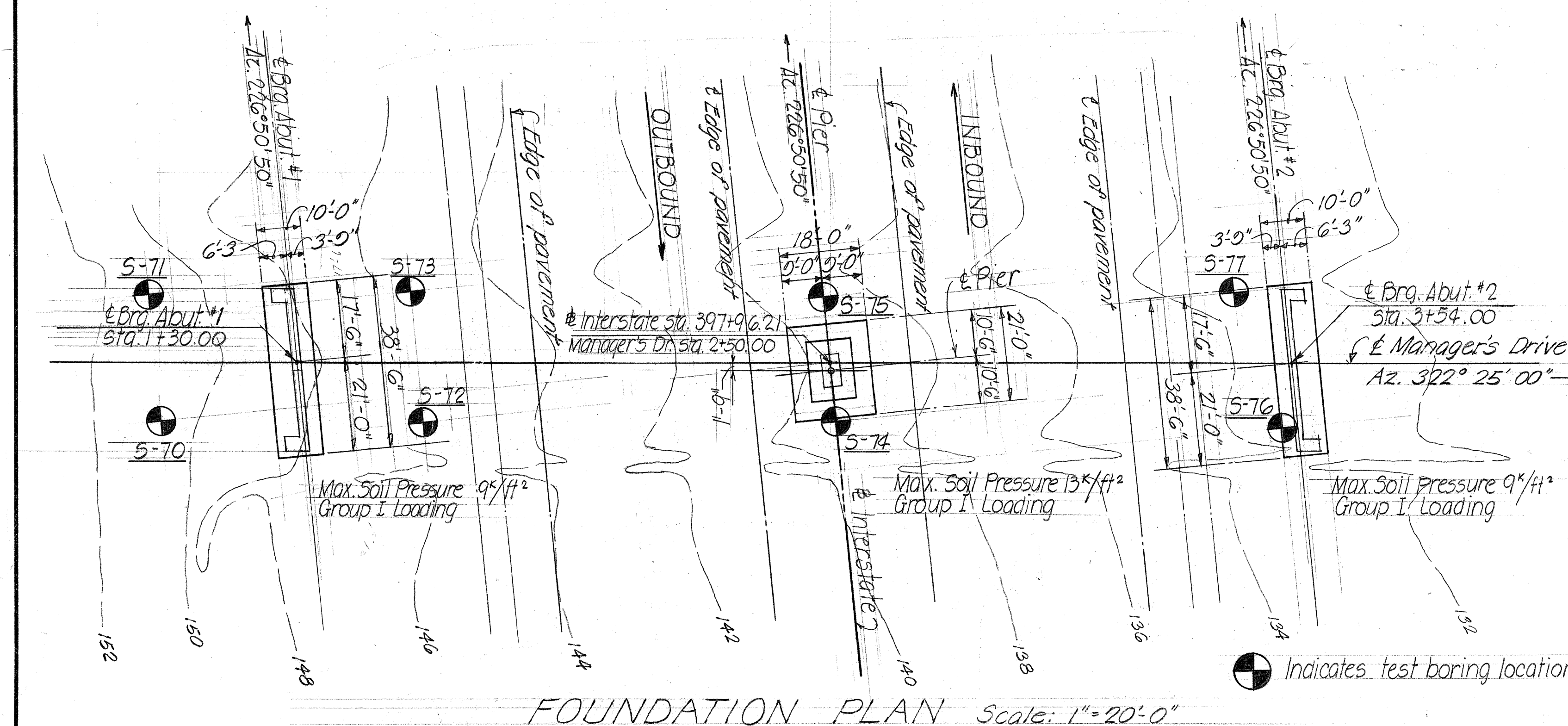
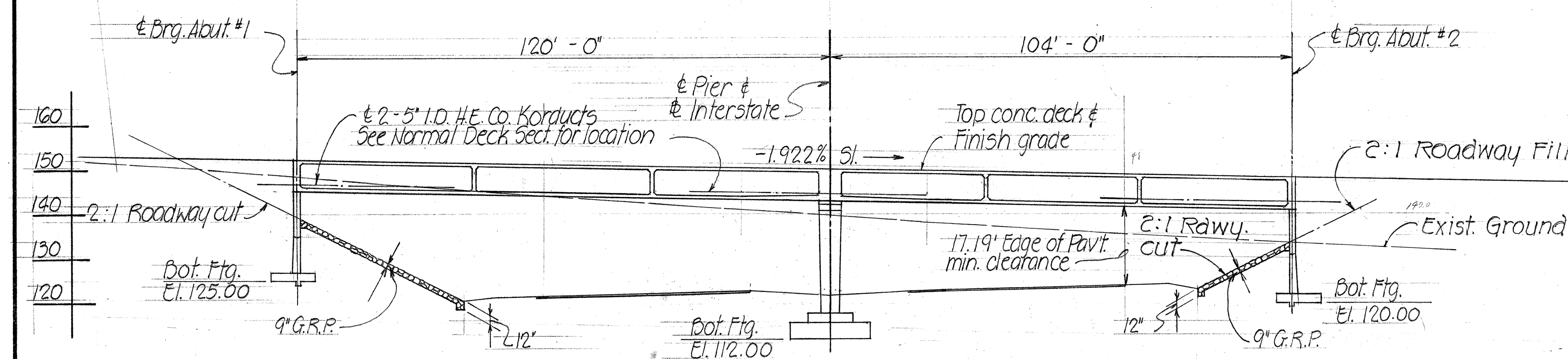
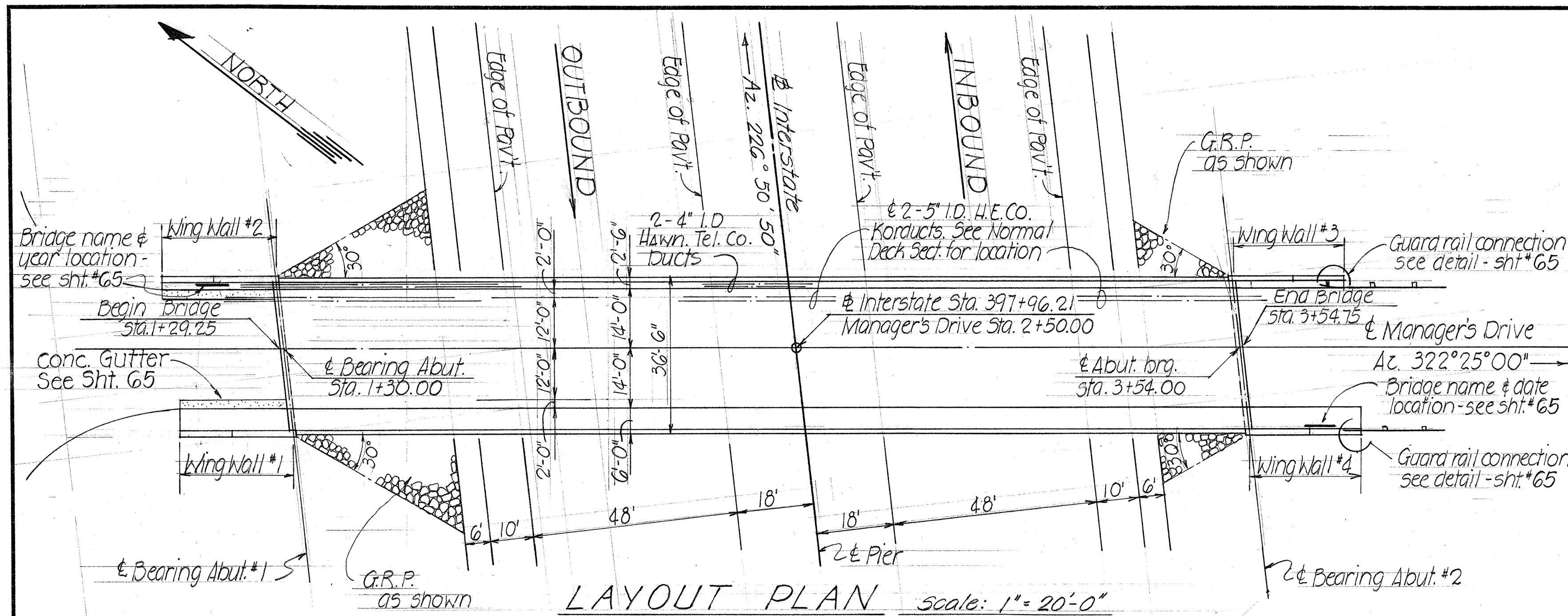




GENERAL NOTES

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(22)-5 Unit 2	1967	58	99

SPECIFICATIONS: AASHO

Standard Specifications for Highway Bridges (9th Edition) with subsequent additions and modifications.

DESIGN LOADS: HS 20-44

DESIGN STRESSES: $P_c = 3,000 \text{ psi}$
 $P_s = 1,200 \text{ psi}$
 $P_s = 20,000 \text{ psi}$

MATERIALS:

- All concrete shall be Class A-1 unless otherwise noted on plans.
- All reinforcing steel to be ASTM Designation A-15 Billet Steel, intermediate grade, except as otherwise noted.

CONSTRUCTION METHODS:

- Sides of footings shall be excavated and poured to neat lines when called for on the plans. For excavation of bottom of footings, see Standard Specifications. Over excavation beyond neat lines for sides of footings and the elevations indicated on the plans for the bottom of footings shall be backfilled with a minimum of Class "D" concrete at the Contractor's expense and as directed by the Engineer.
- Backfill below abutment rocker shall be in place before rocker is poured. Remainder of backfill to be placed simultaneously at each abutment after superstructure falsework is released.
- Vertical pier column bars shall be arranged in such a manner as to miss pier cap reinforcing above.
- In general, top of concrete deck of structure shall be constructed to follow the finish roadway grades.
- Wing walls on fill shall be constructed after the roadway fill is completed to required finish grades.

CAMBER:

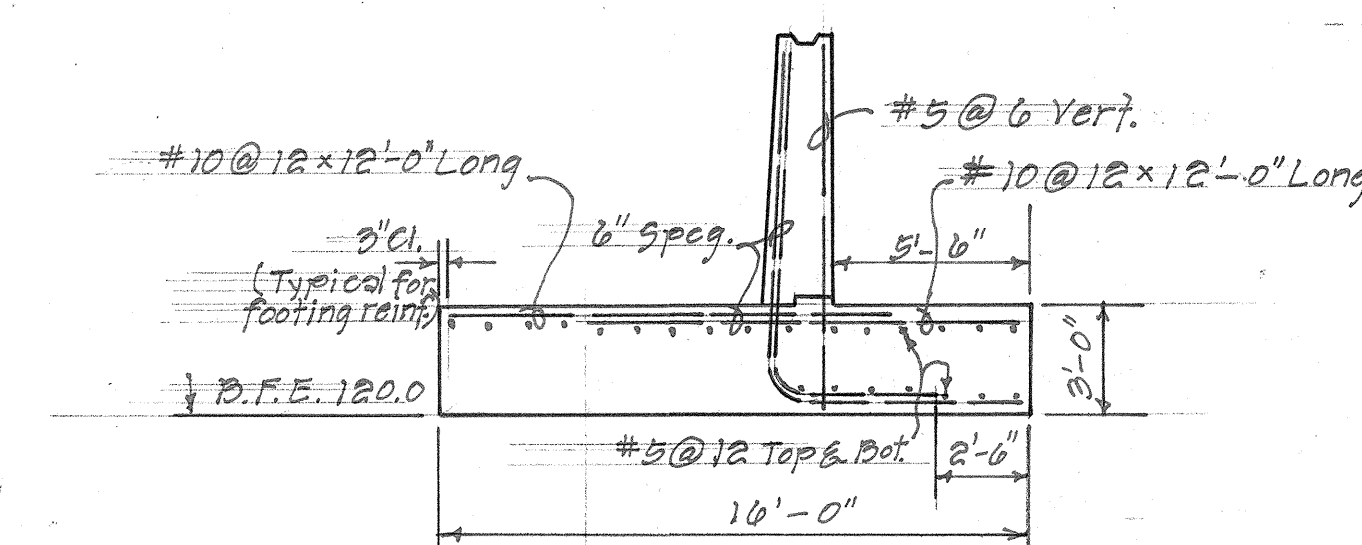
- Obtain camber by forming and shoring concrete surfaces above profile grades as shown in camber diagram and as indicated on detailed drawings.

REFERENCE:

- Refer to Standard Detail drawings, sheets #66 thru #73 inclusive.

NOTE:

Except as shown otherwise, all details shall remain as shown on original Contract Drawings. (Delete 12"x12" Cont. key as shown.)



CHANGES IN ESTIMATED QUANTITIES

Class "A-1" Concrete Plus 980 C.Y.
 Reinf. Steel Plus 9500 Lbs.
 Structural Excavations Plus 109 C.Y.
 Filter Mat, GRP, Railings No Change

TYPICAL REVISED SECT. ABUTMENT #2 ONLY

Allow Soil Press = 5 KSF
 Actual Soil Press = 5.1 KSF
 Scale: 3/16"=1'-0"

ESTIMATED QUANTITIES		
CLASS A-1 CONCRETE (LUMP SUM)	1,023-985	C.Y.
REINFORCING STEEL (LUMP SUM)	947,920-344,400	LBS
STRUCTURAL EXCAVATION	846.7-724	C.Y.
FILTER MATERIAL	50.1-49	C.Y.
GROUTED RUBBLE PAVING	104.3-102	C.Y.
CONC. RAILING & END POST	553	L.F.
METAL RAILING (2 RAIL COMBINATION TYPE)	444.3-445	L.F.

APPROVED:	8/18/67
HAWAIIAN ELECTRIC CO., INC.	DATE
OUTSIDE PLANT/ENGINEER, HT. CO., LTD.	8-16-67
	DATE

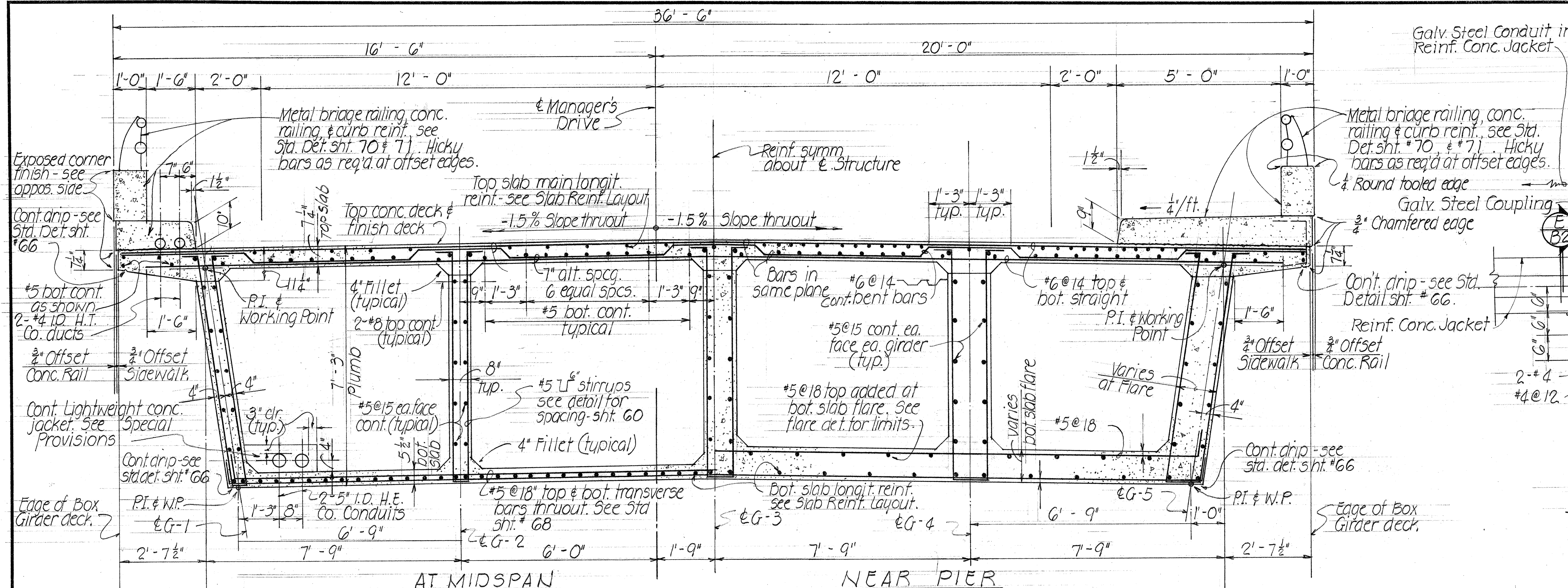
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION

MANAGER'S DRIVE GRADE SEPARATION

BRIDGE LAYOUT & GENERAL NOTES

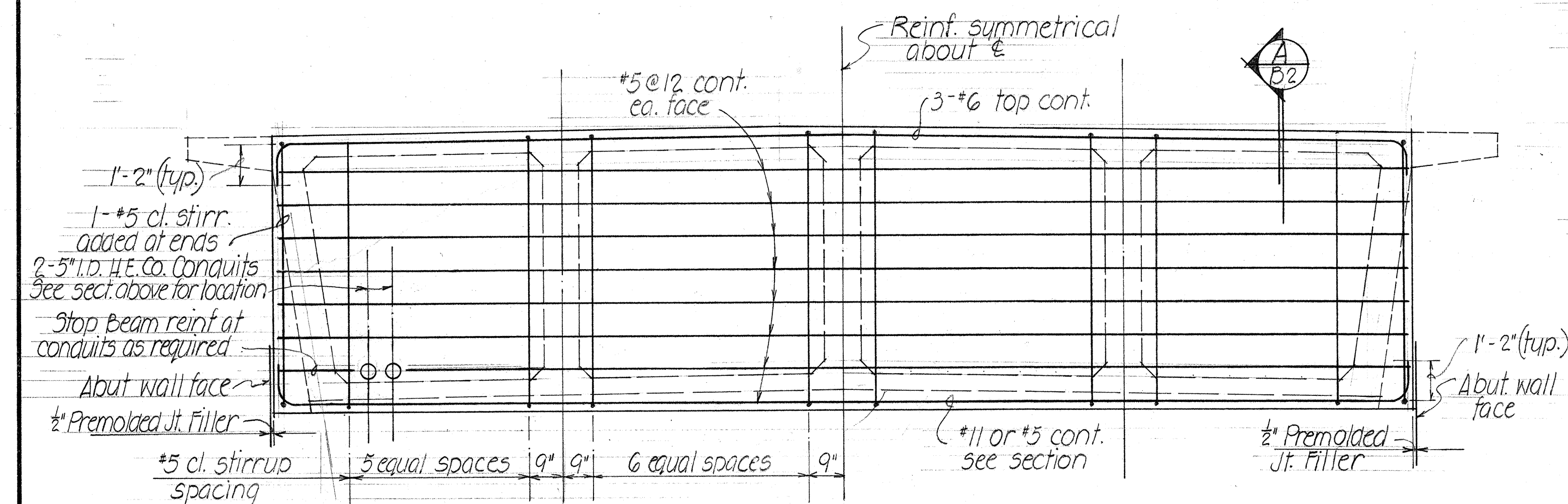
INTERSTATE ROUTE H-1
 F.A.I. PROJ. NO. I-HI-1(22)-5, Unit 2
 Scale: As Noted Date: May, 1967
 SHEET No. 51 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(22)-5 Unit 2	1967	59	99



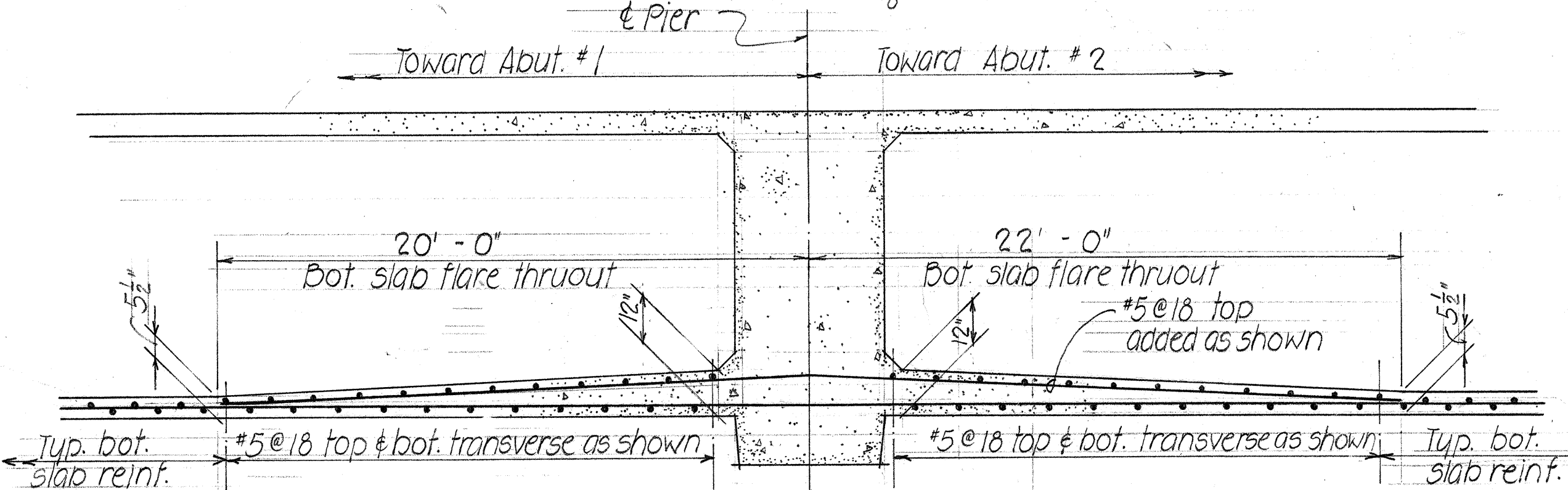
NORMAL DECK SECTION

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



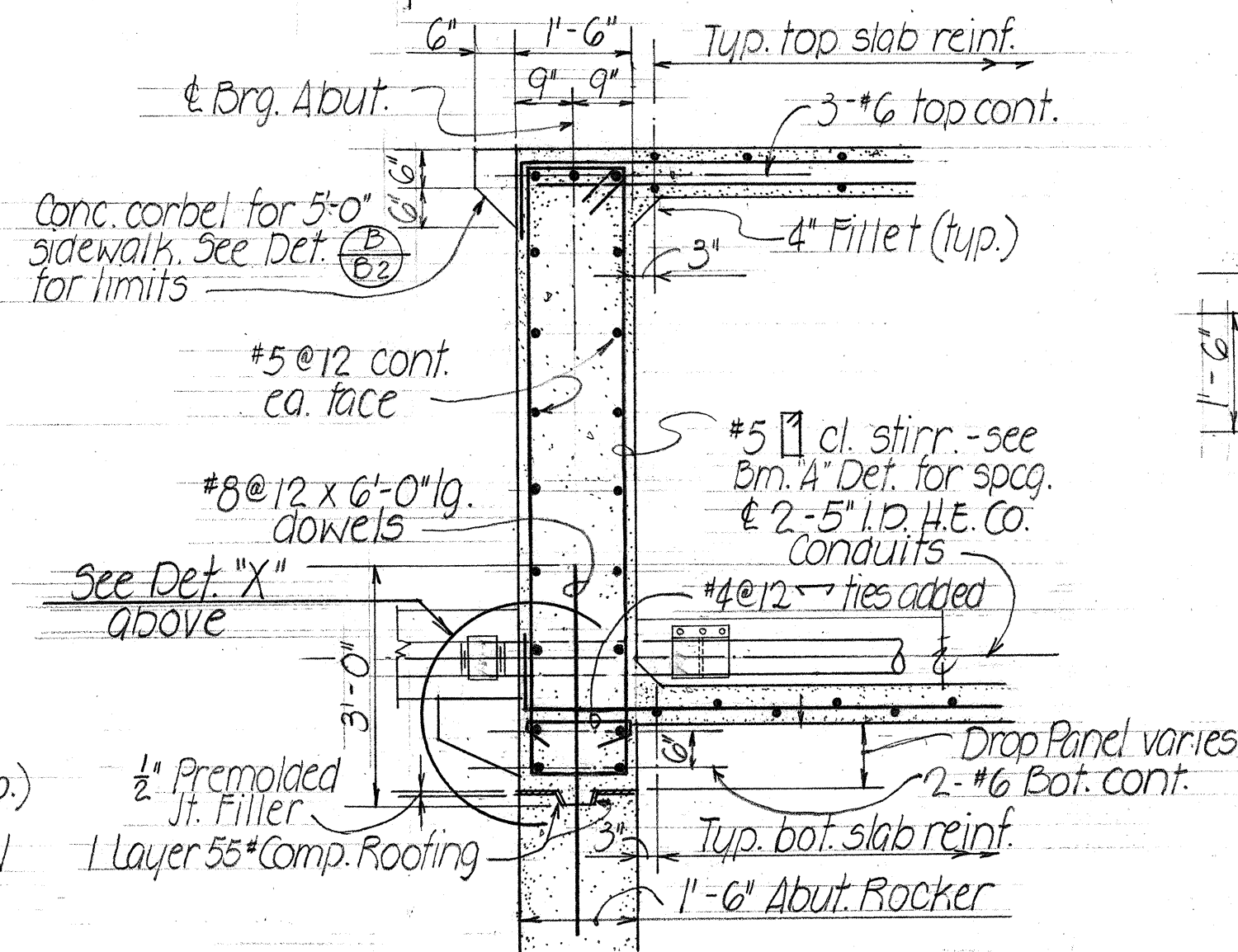
END ELEVATION-TYPICAL BEAM "A" DETAIL

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



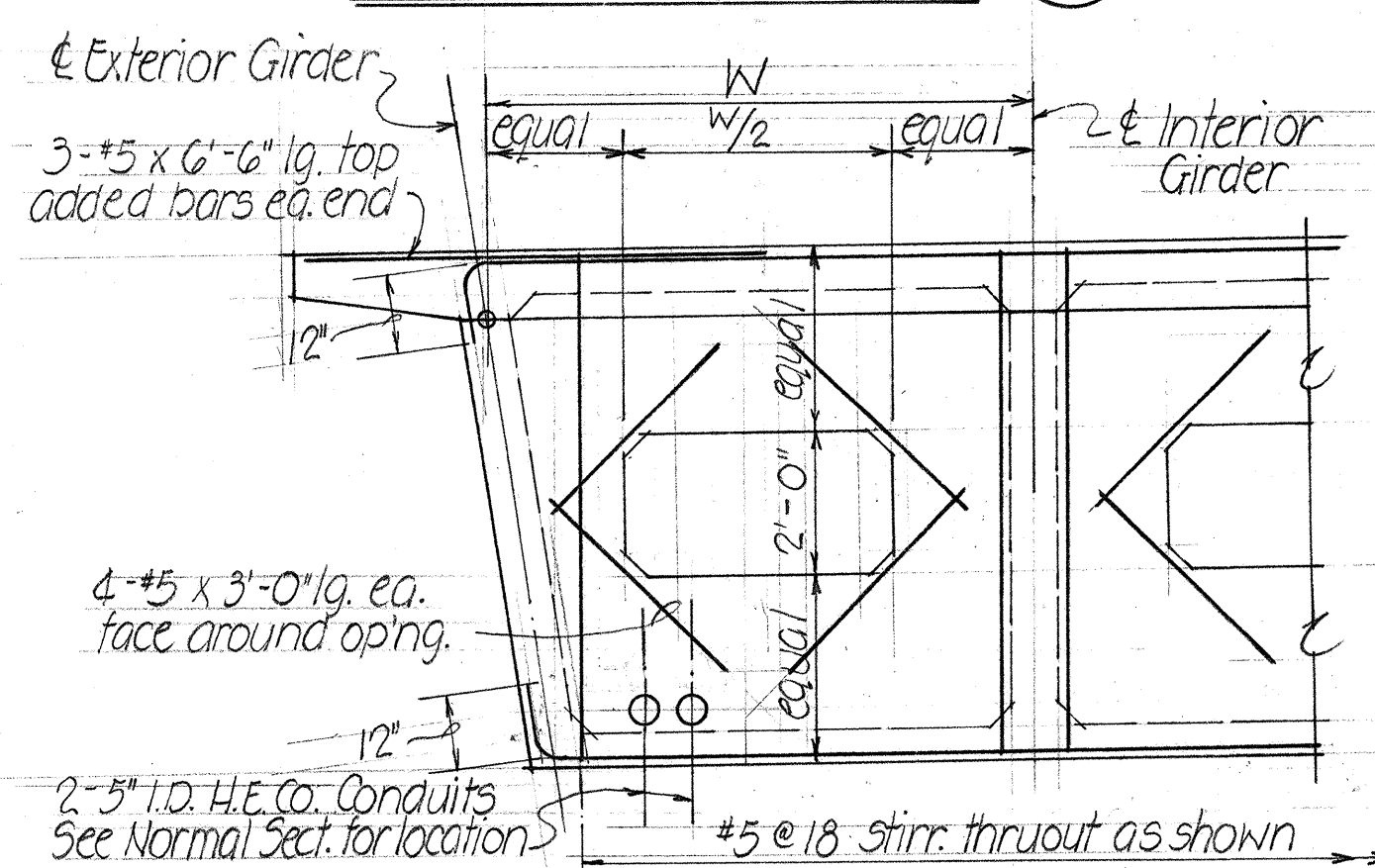
BOTTOM SLAB FLARE DETAIL

NOT TO SCALE



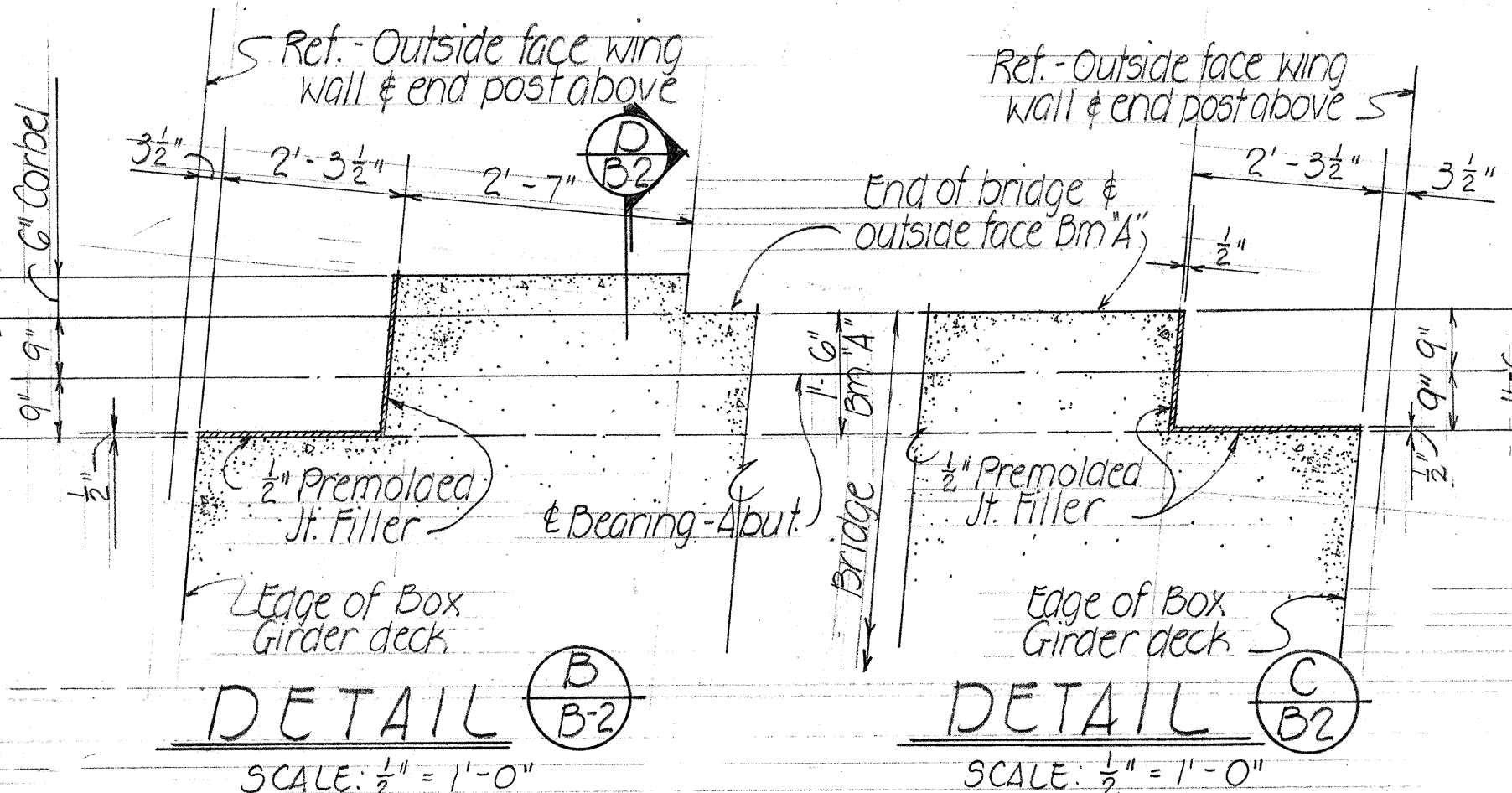
TYPICAL SECT. (B2)

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



TYPICAL BEAM "B" DETAIL NON-CONT. END

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



DETAIL "X"

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

ELEVATION (B2)

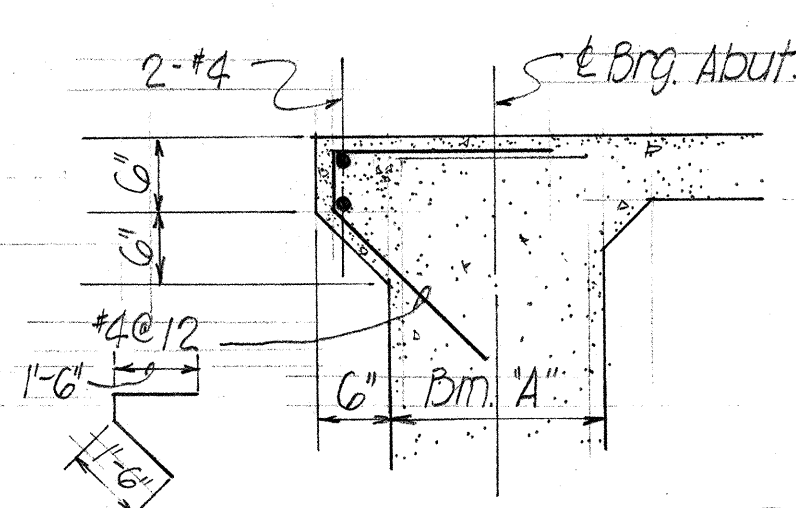
SCALE: 1/2" = 1'-0"

DETAIL (B2)

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

DETAIL (C2)

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



TYPICAL SECT. (D2)

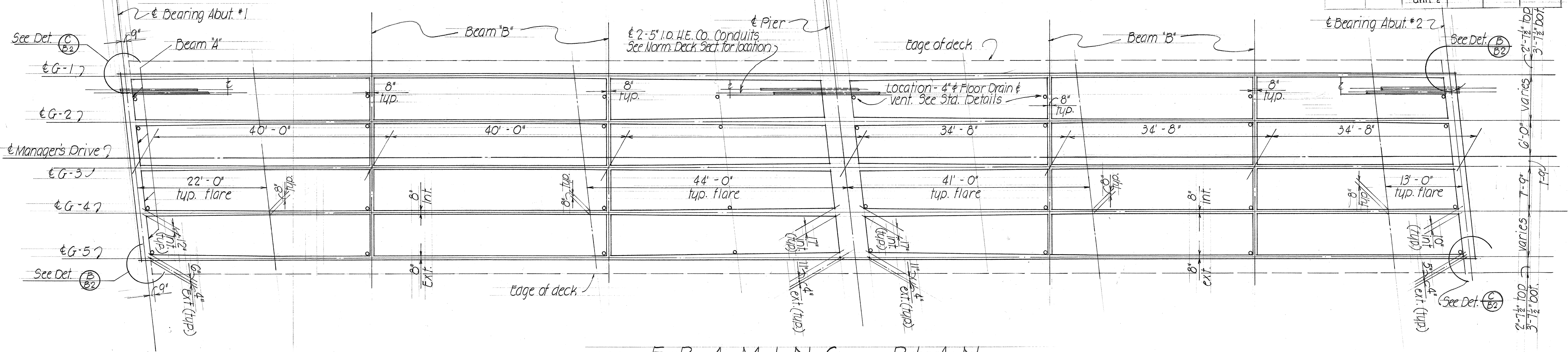
SCALE: 3/4" = 1'-0"

NOTE!
For typical interior span beam "B" and additional details - see Standard Details sht. #67

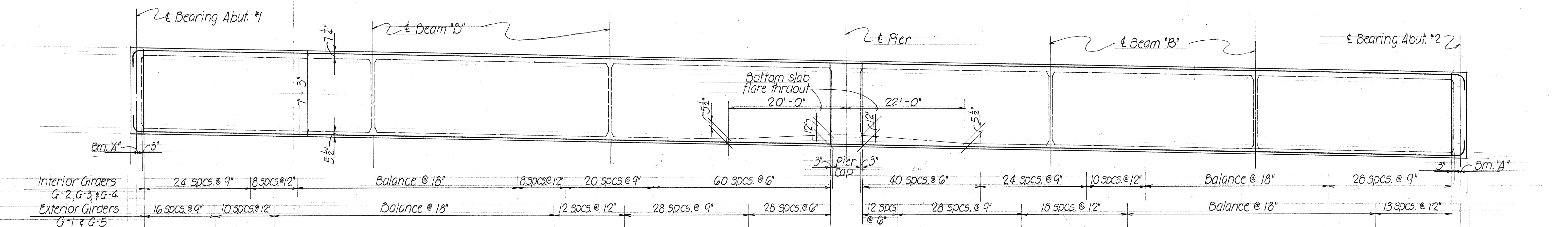
APPROVED:	
<i>Manahan</i>	8/18/67
HAWAIIAN ELECTRIC CO., INC. DATE	
<i>J. H. Quill</i>	8-16-67
OUTSIDE PLANT ENGINEER, H.T. CO., LTD. DATE	

STATE OF HAWAII	
DEPARTMENT OF TRANSPORTATION	
HIGHWAYS DIVISION	
MANAGER'S DRIVE	
GRADE SEPARATION	
NORMAL DECK SECTION & DETAILS	
INTERSTATE ROUTE H-1	
F.A.I. PROJ. NO. I-HI-1(22)-5, Unit 2	Date: May, 1967
Scale: As Noted	
SHEET No. B2 OF 8 SHEETS	

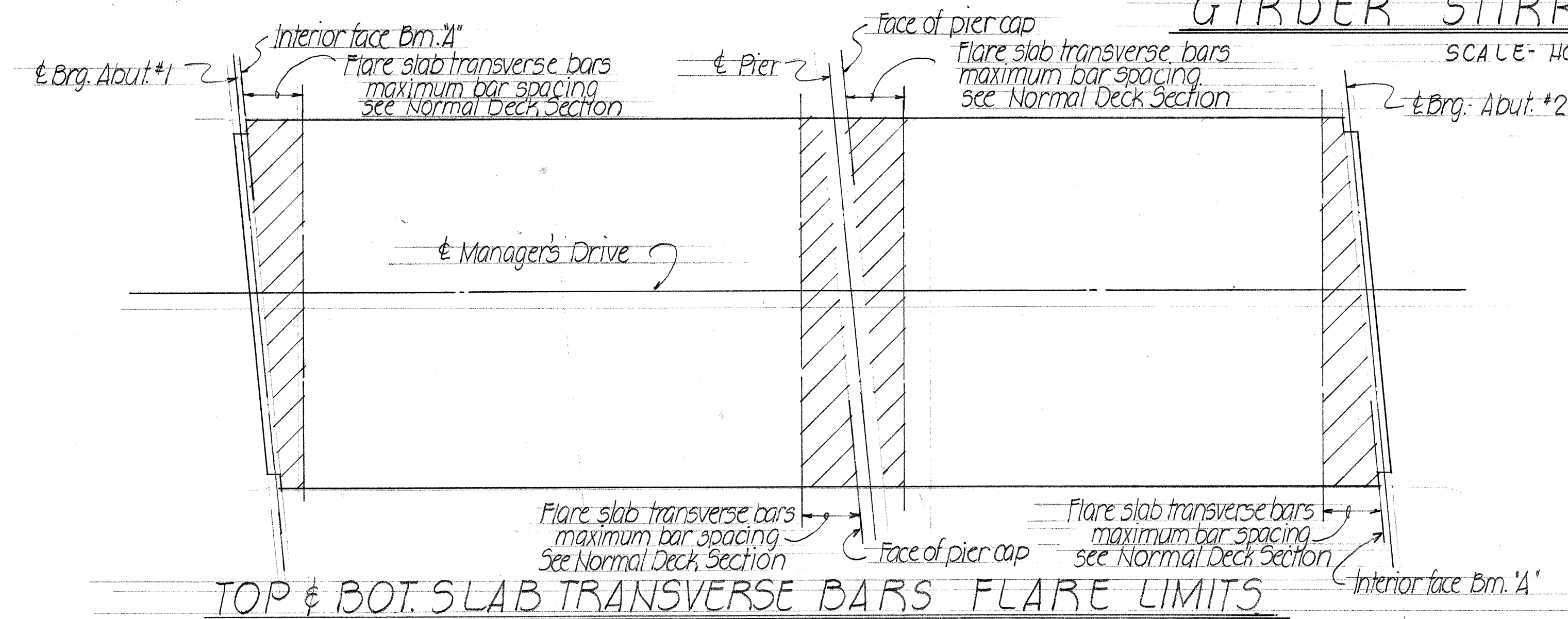
DIST. NO.	STATE	PROJ. NO.	YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-HI-1(22)5 Unit 2	1967	60	99



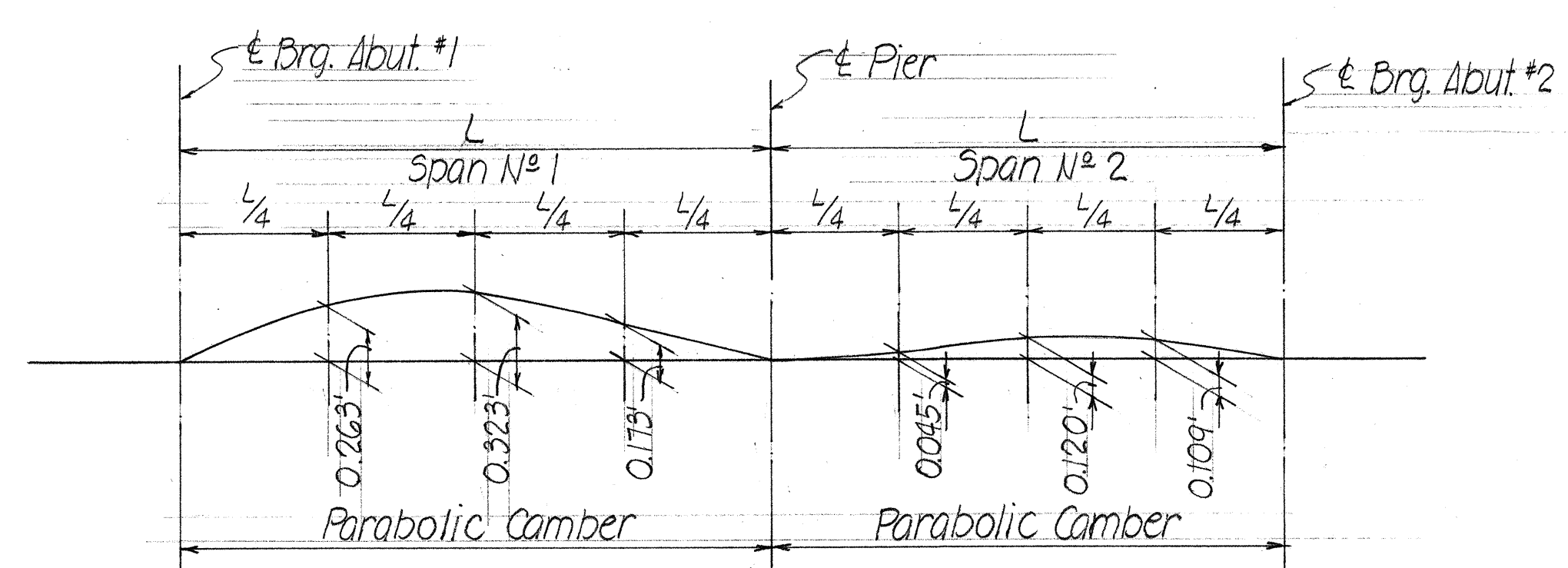
FRAMING PLAN
SCALE: $\frac{1}{8}" = 1'-0"$



GIRDER STIRRUP SPACING DETAIL



TOP & BOT. SLAB TRANSVERSE BARS FLARE LIMITS
NO SCALE



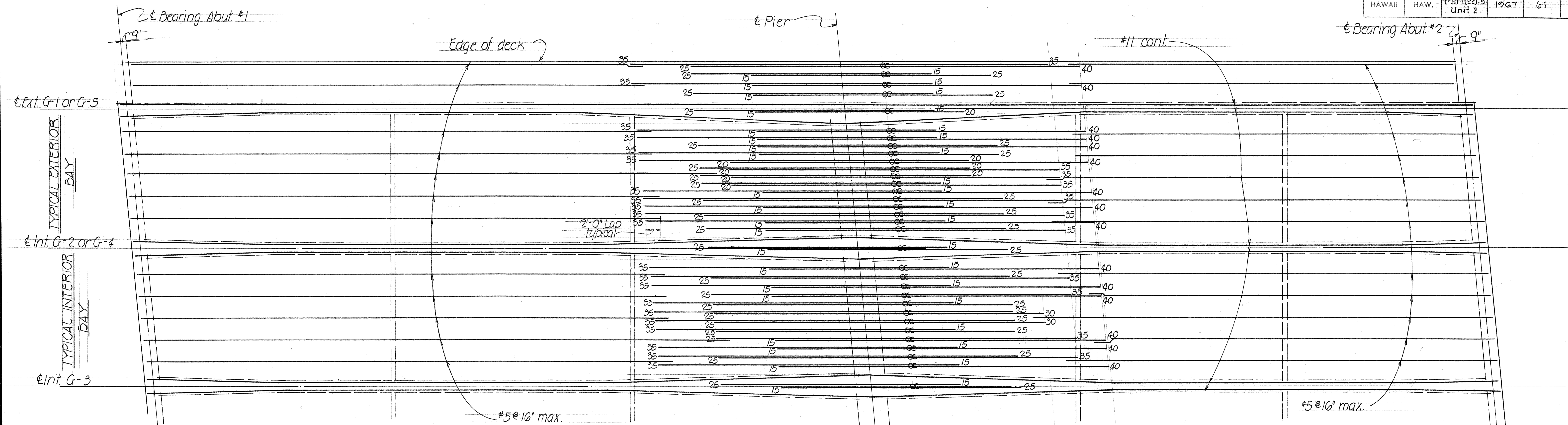
DECK CAMBER DIAGRAM
NO SCALE

APPROVED: *[Signature]* 8/18/67
HAWAIIAN ELECTRIC CO., INC. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**MANAGER'S DRIVE
GRADE SEPARATION**
FRAMING PLAN, CAMBER DIAGRAM & DETAILS
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. 1-HI-1(22)5, Unit 2
Scale: As Noted Date: May, 1967
SHEET No. 63 OF 8 SHEETS

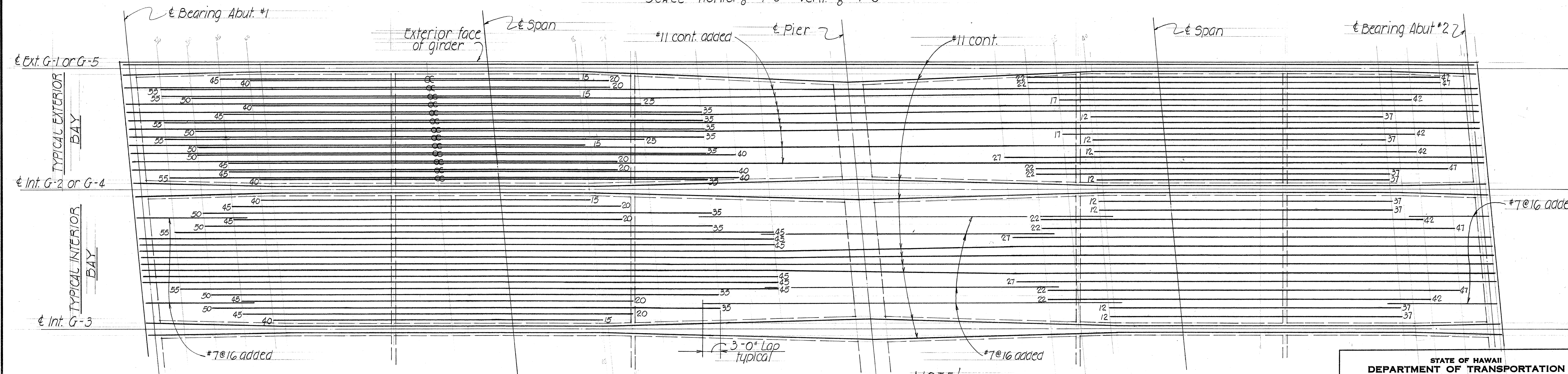
DATE: _____
DRAWN BY: _____
DESIGNED BY: _____
CHECKED BY: _____
ORIGINAL PLAN: _____
NOTE BOOK: _____
QUANTITIES BY: _____
NO. _____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-HI-1(22):5 Unit 2	1967	61	99



TOP DECK SLAB MAIN REINFORCEMENT LAYOUT

SCALE - HORIZ. $\frac{1}{8}" = 1'-0"$ VERT. $\frac{3}{8}" = 1'-0"$



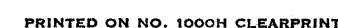
BOTTOM DECK SLAB MAIN REINFORCEMENT LAYOUT

SCALE - HORIZ. $\frac{1}{8}" = 1'-0"$ VERT. $\frac{3}{8}" = 1'-0"$

NOTE:
 All reinforcement to be #11 unless otherwise noted.
 Numbers at ends of bars indicate distance in feet from ϵ Pier for top reinforcement and ϵ span for bottom reinforcement.
 Continuous added are continuous bars from one span extended partially into the adjacent span.
 For additional slab reinforcement details see shts. #67, #68, #69, & Normal Section.
 All #5 @ 16" & #7 @ 16" max. bars shall be extended & lapped 2'-0" min. & 3'-0" min. respectively with the adjacent #11 bars as shown.
 --- indicates bundled bars in groups of two.

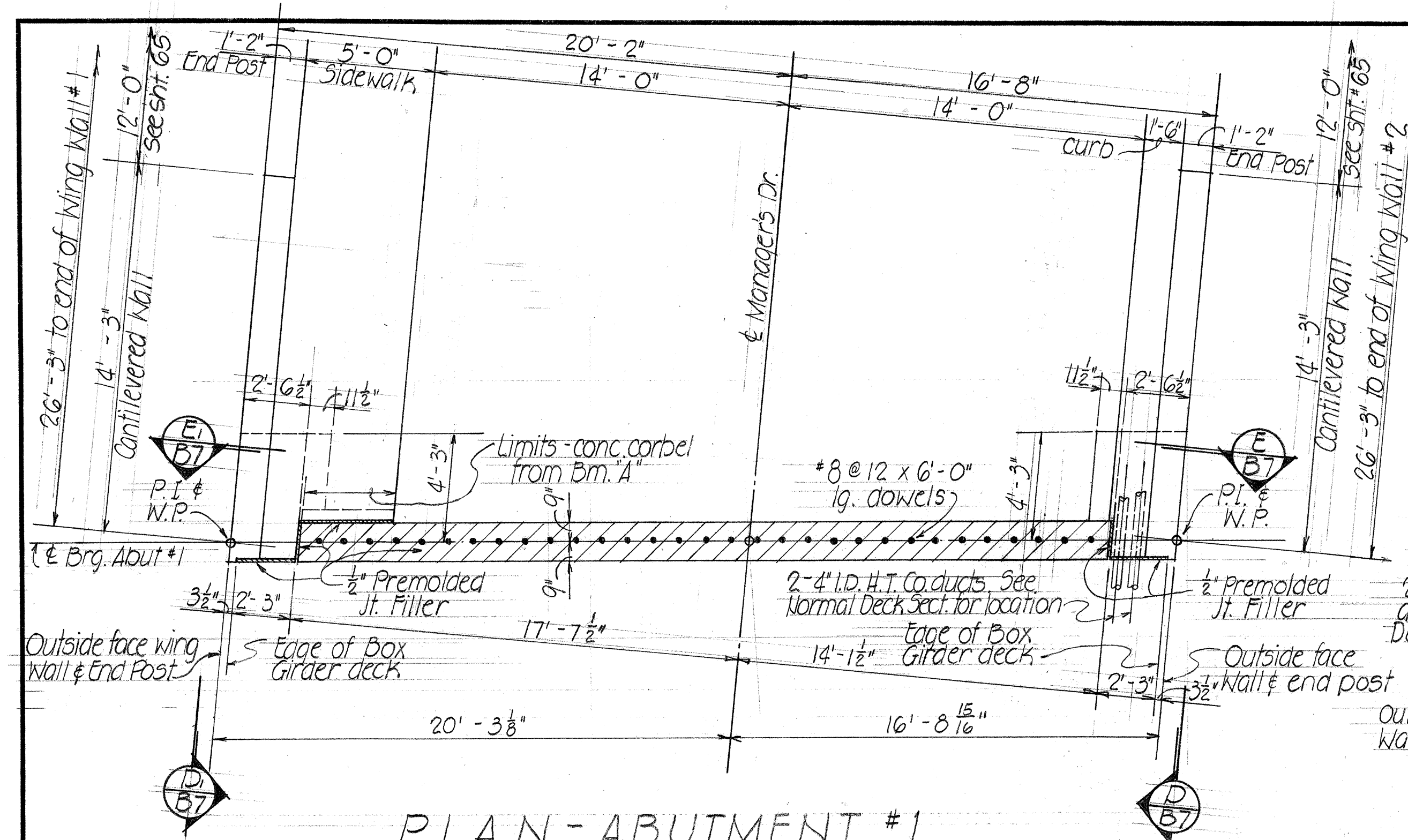
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
**MANAGER'S DRIVE
 GRADE SEPARATION**
 SLAB MAIN REINFORCEMENT LAYOUT
INTERSTATE ROUTE H-1
 F.A.I. PROJ. NO. I-HI-1(22):5, Unit 2
 Scale: As Noted Date: May, 1967
SHEET No. 64 OF 8 SHEETS

SURVEY PLANNED BY	DATE
DRAWN BY	
TRACED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

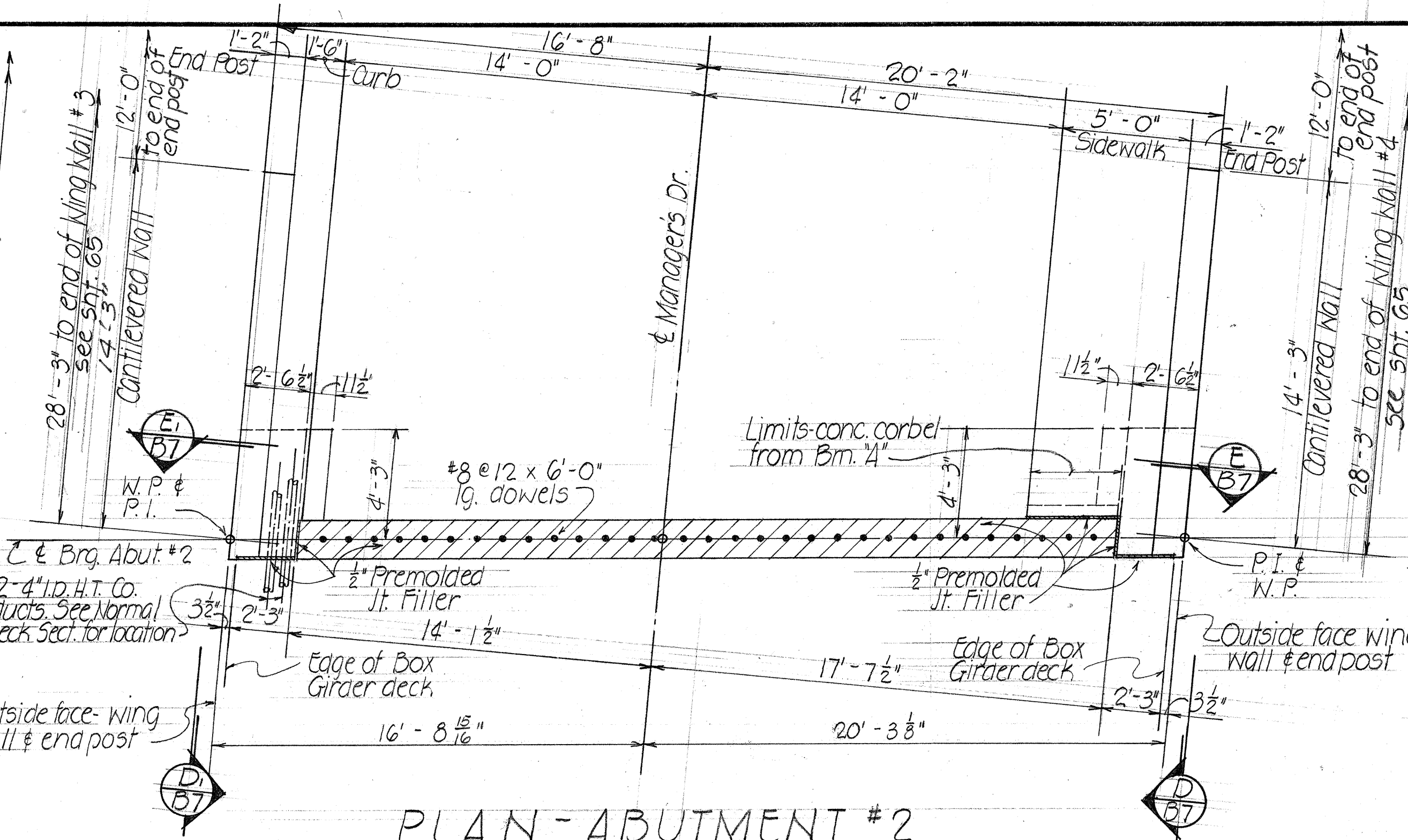


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(22)5 Unit 2	1967	63	99

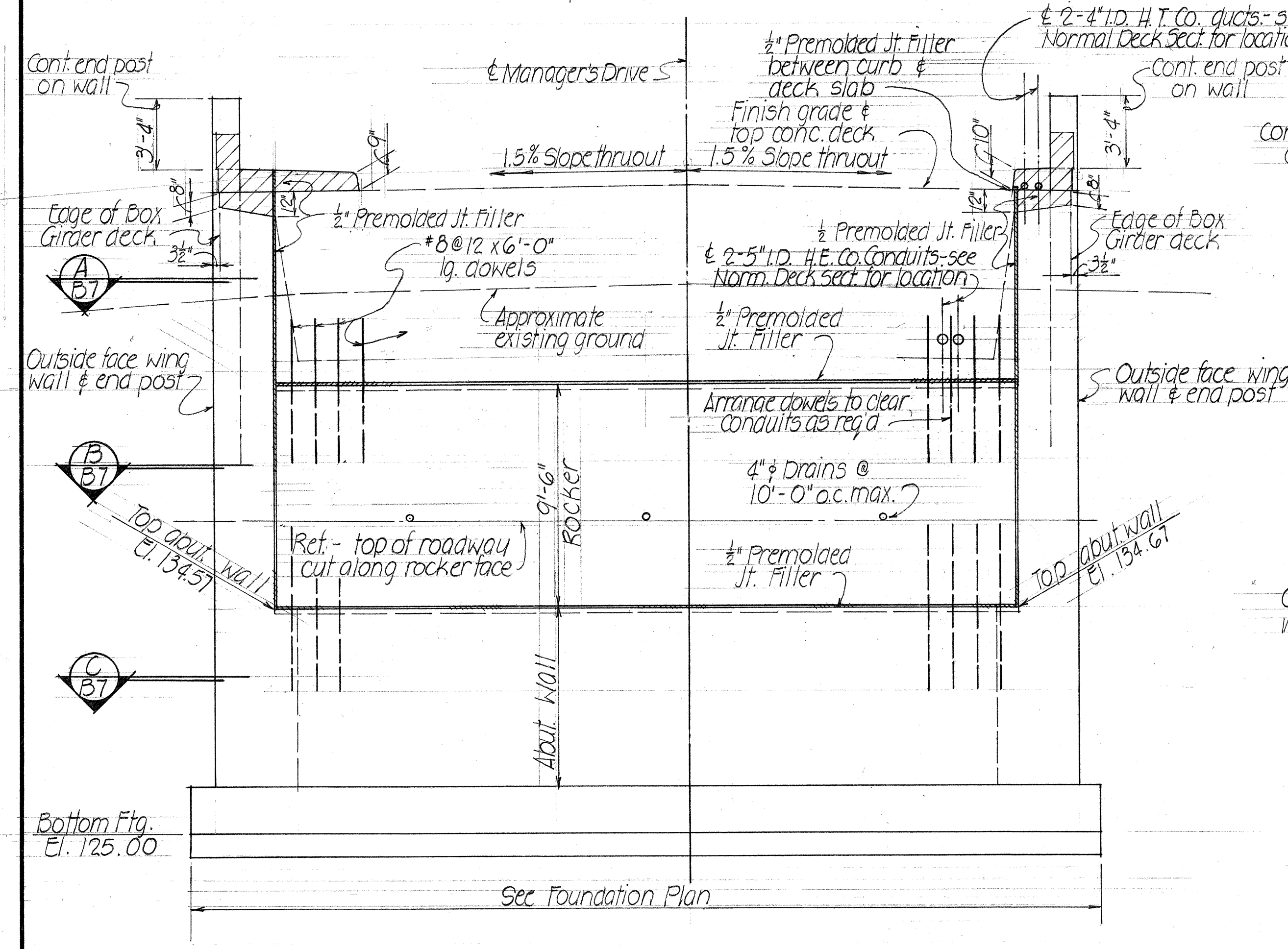
Bearing - Abut.



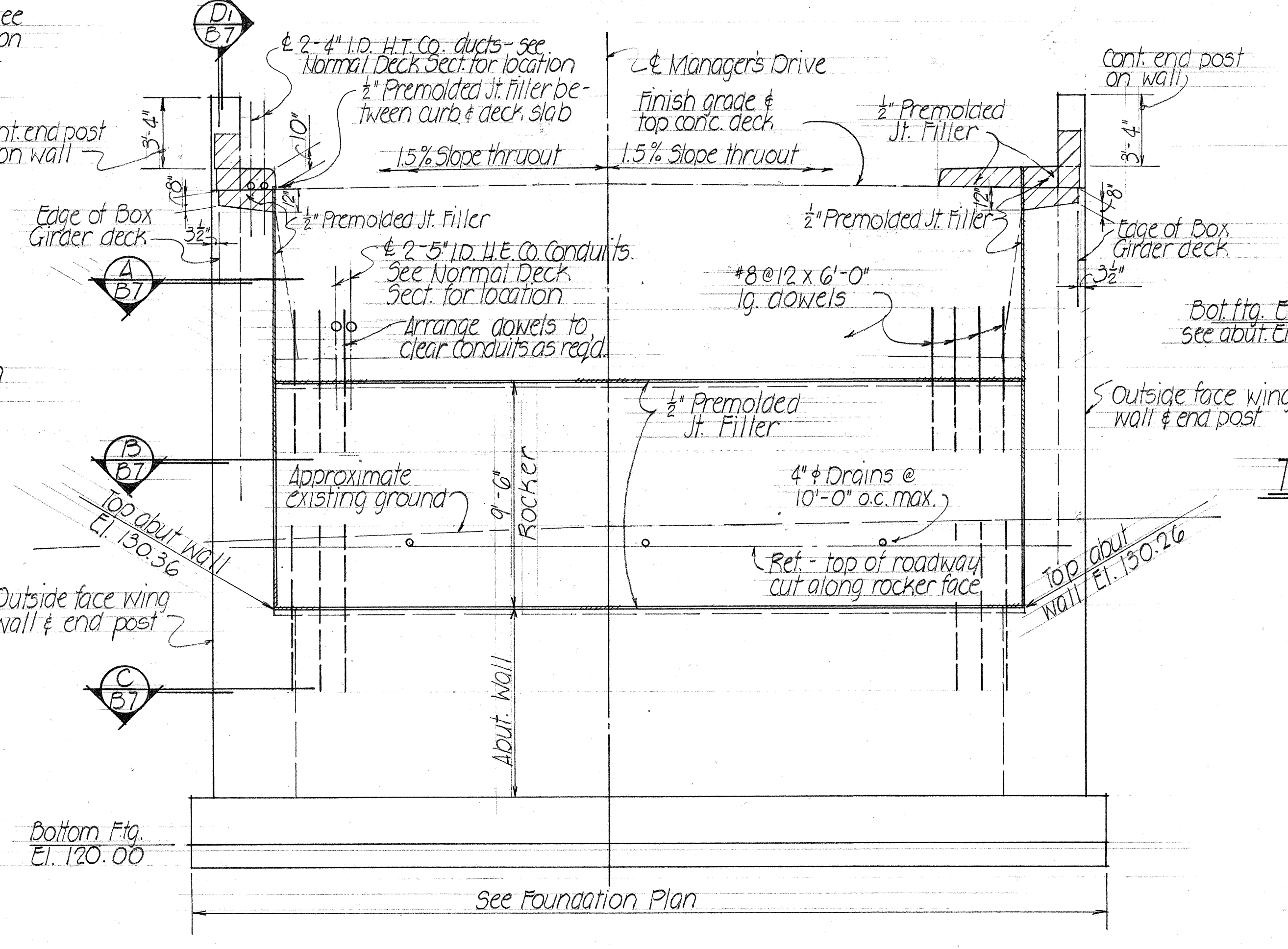
PLAN - ABUTMENT #1
SCALE: $\frac{1}{4}'' = 1'-0''$



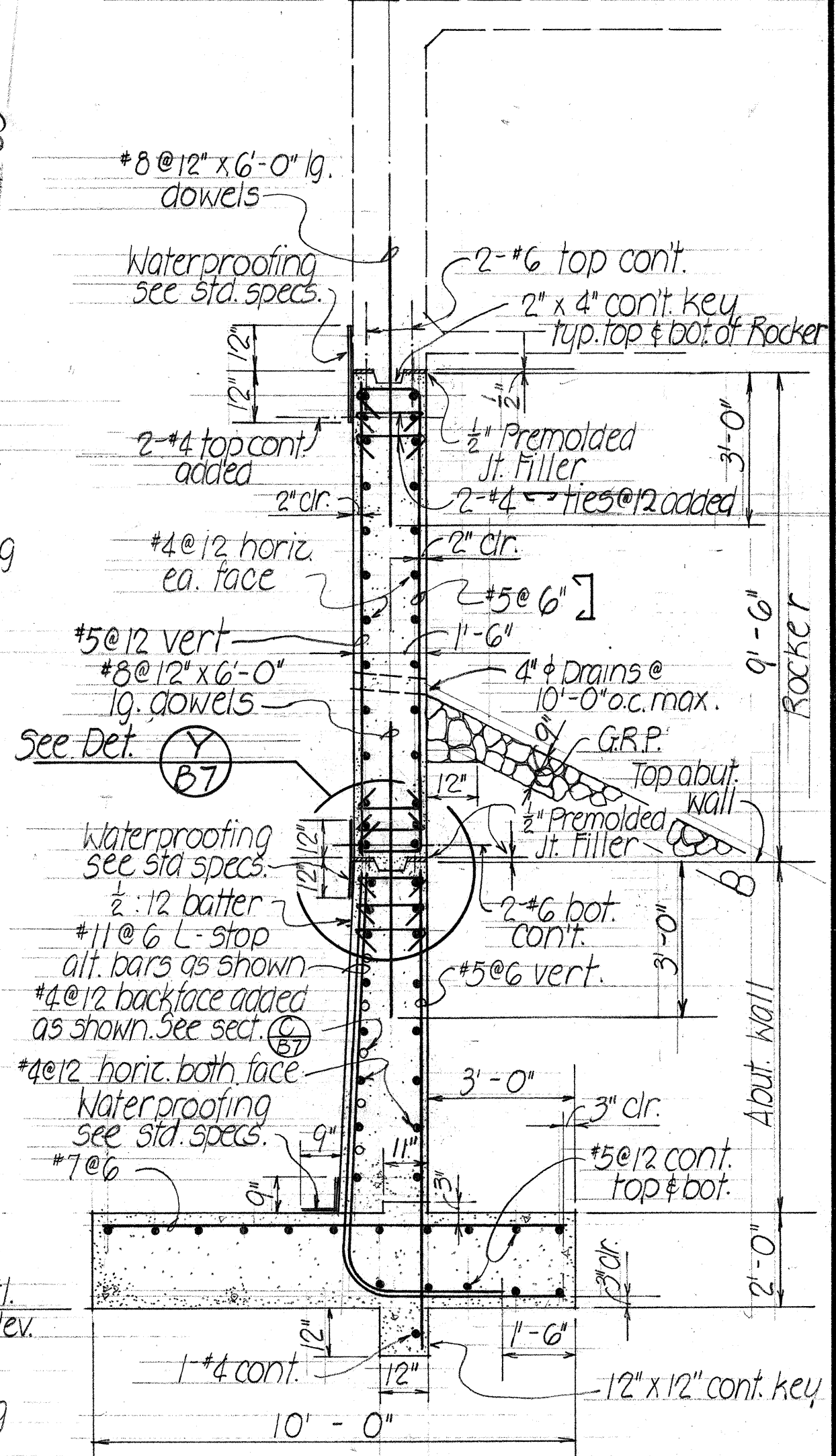
PLAN - ABUTMENT #2
SCALE: $\frac{1}{4}'' = 1'-0''$



ELEVATION - ABUTMENT #1
SCALE: $\frac{1}{4}'' = 1'-0''$



ELEVATION - ABUTMENT #2
SCALE: $\frac{1}{4}'' = 1'-0''$

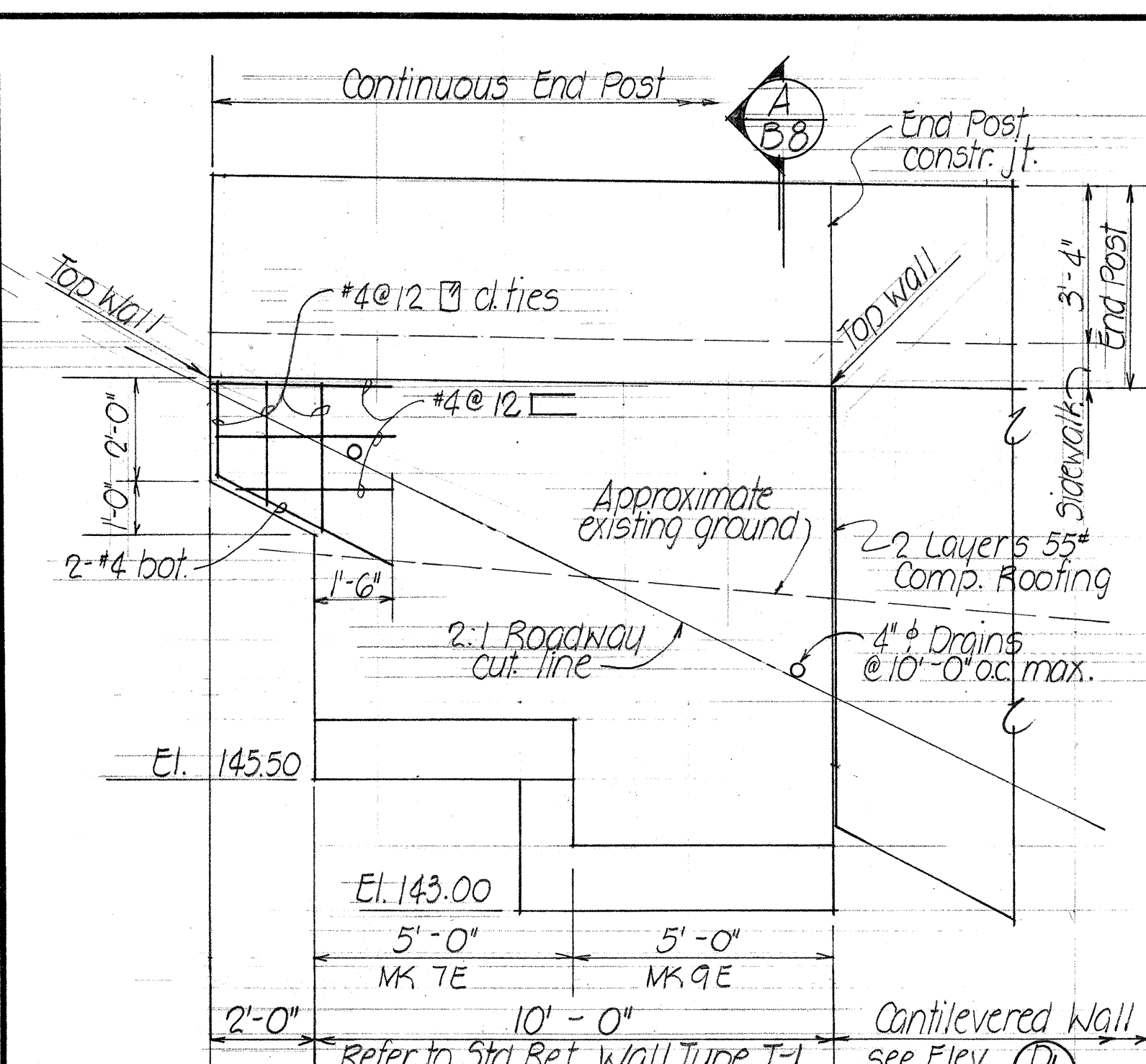


TYPICAL SECTION - ABUT. #1 & #2
SCALE: $\frac{3}{8}'' = 1'-0''$

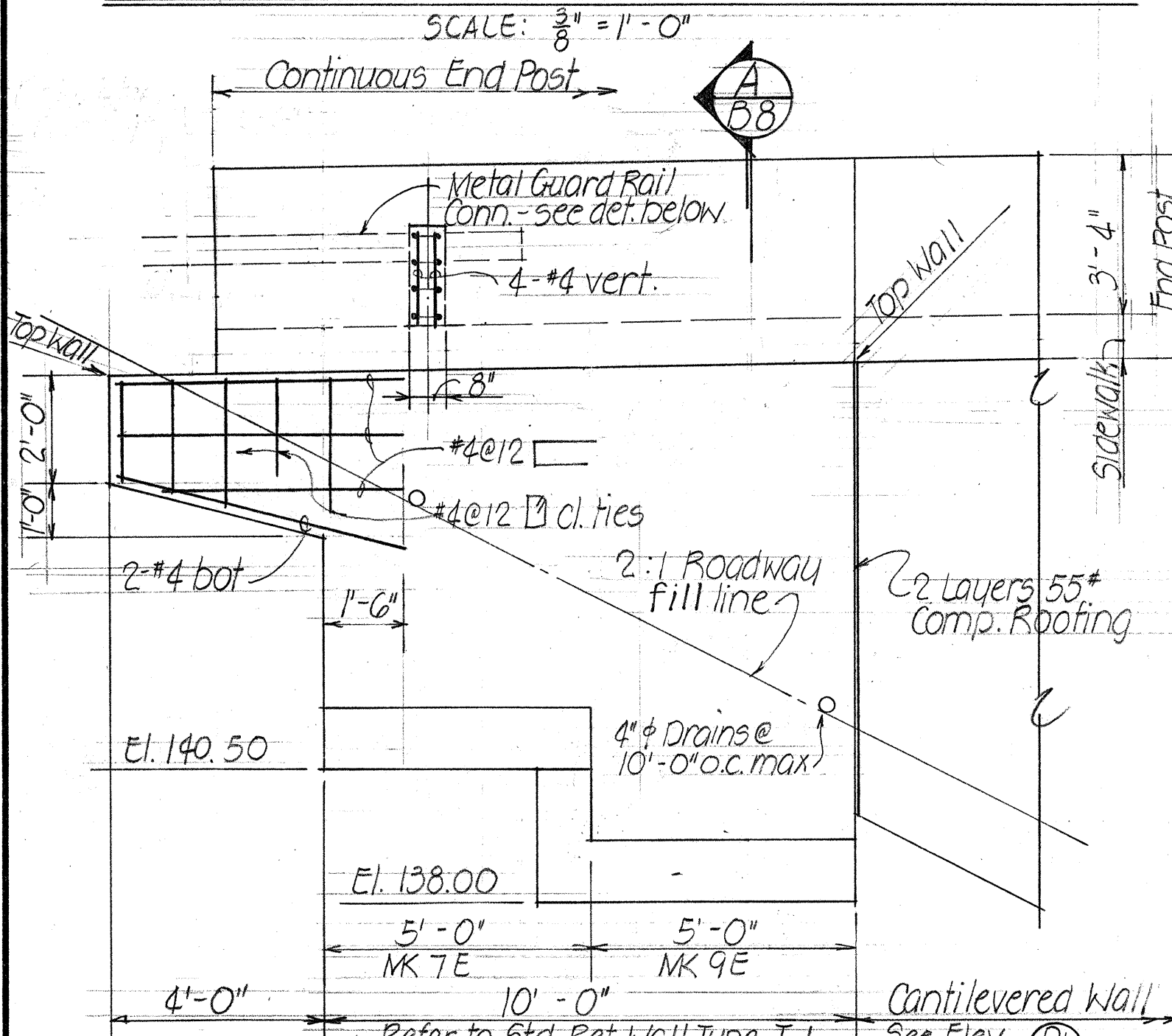
SEE SHEET No. 58 FOR
TYP. REVISED SECT. - ABUT. #2

APPROVED:		
<i>Thamalak</i>	8/18/67	DATE
HAWAIIAN ELECTRIC CO., INC.		
<i>T. J. J.</i>	8-16-67	DATE
OUTSIDE PLANT ENGINEER, H.T. CO., LTD.		

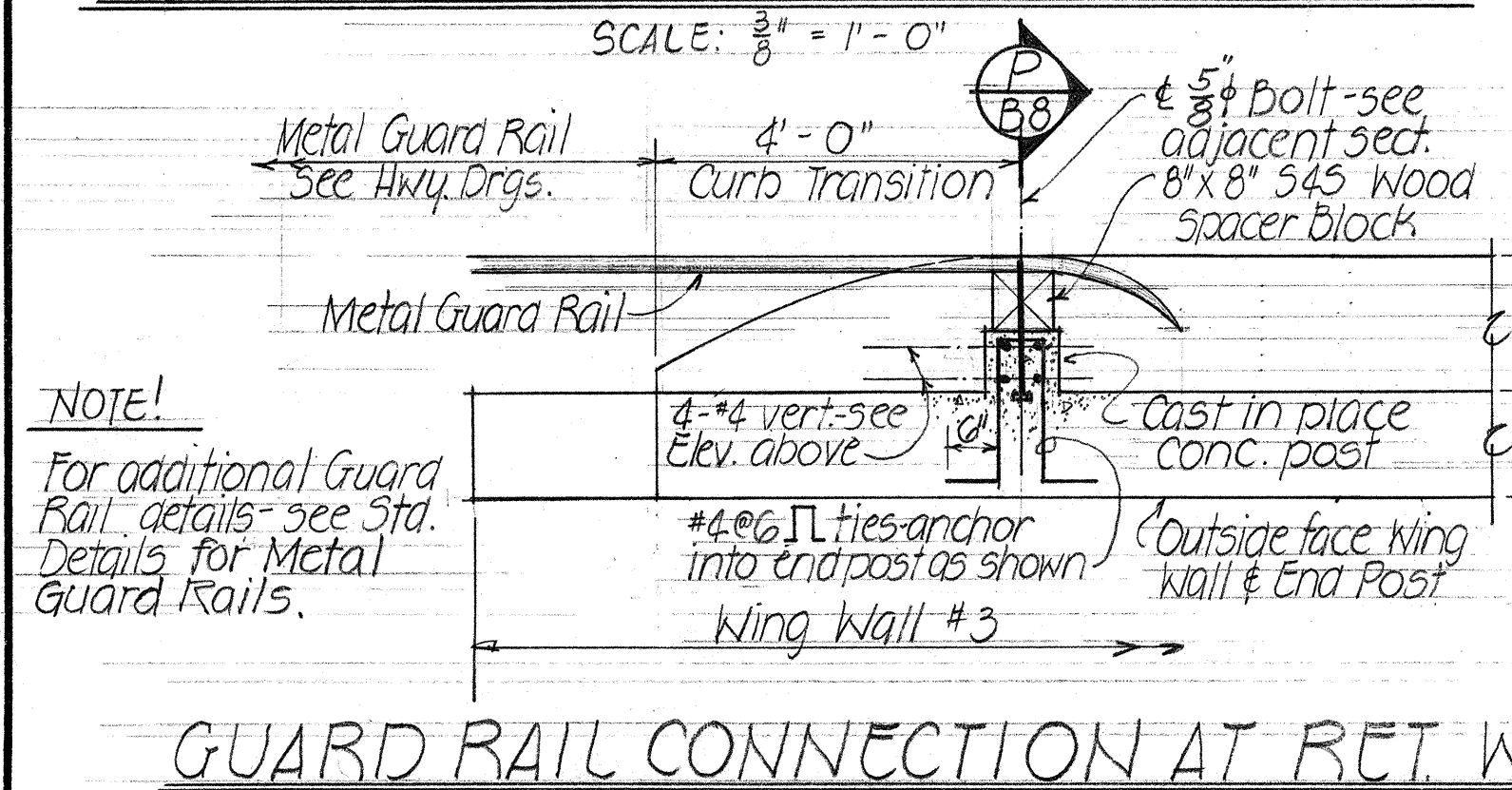
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**MANAGER'S DRIVE
GRADE SEPARATION**
ABUTMENT PLANS, ELEVATION, & SECTION
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1(22)5, Unit 2
Scale: As Noted Date: May, 1967
SHEET No. 66 OF 8 SHEETS



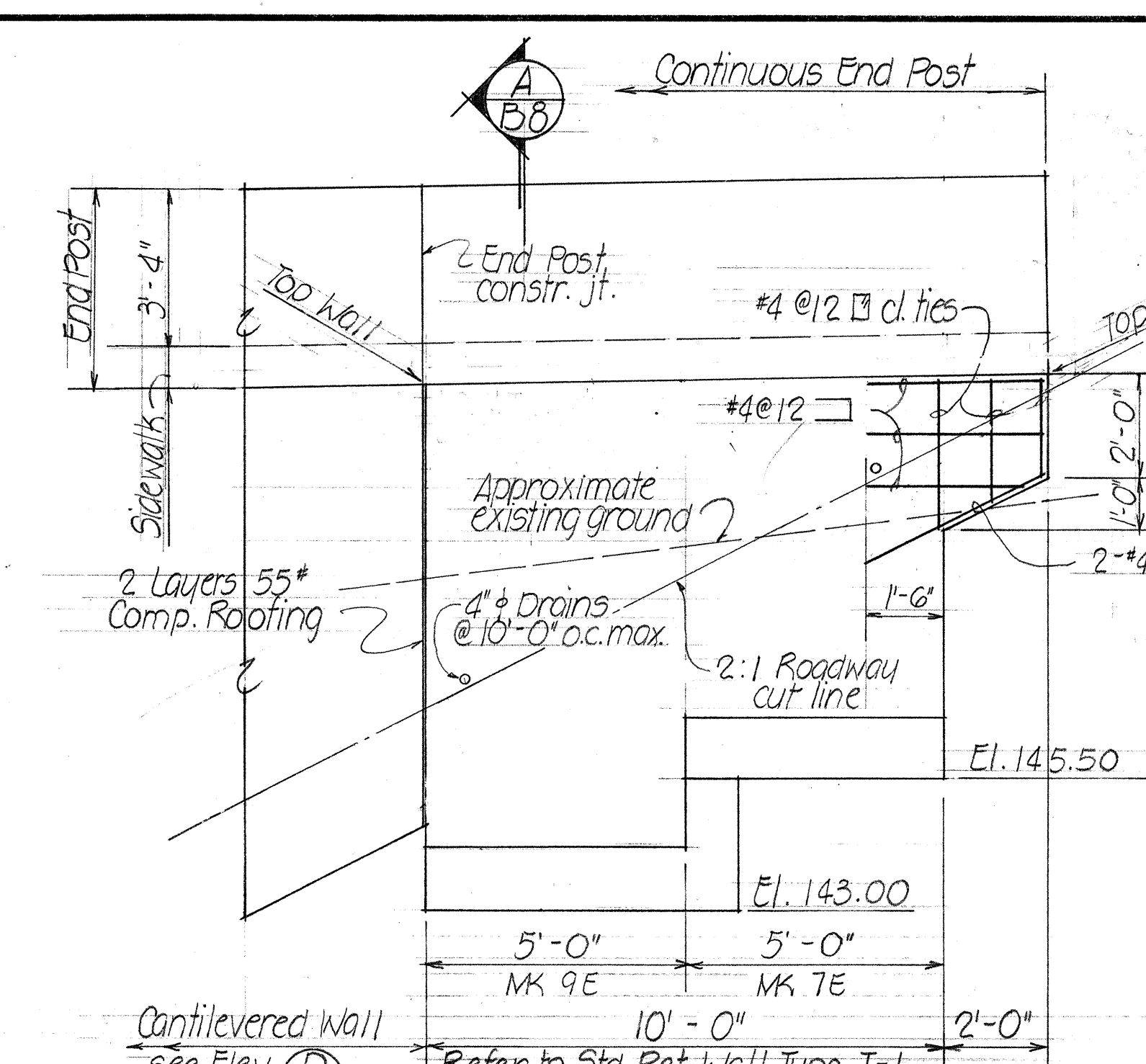
PART ELEVATION - WING WALL #1



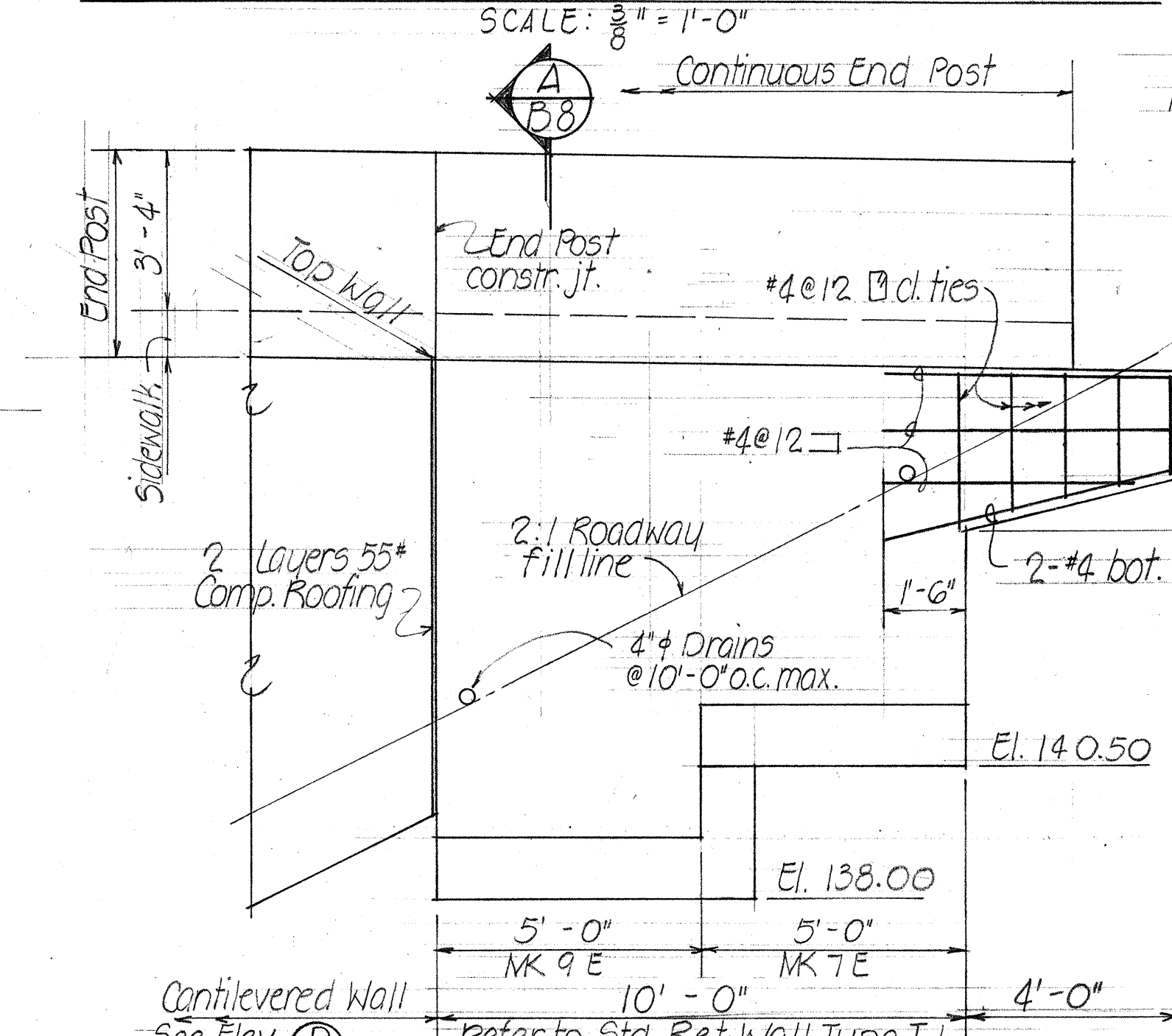
PART ELEVATION - WING WALL #3



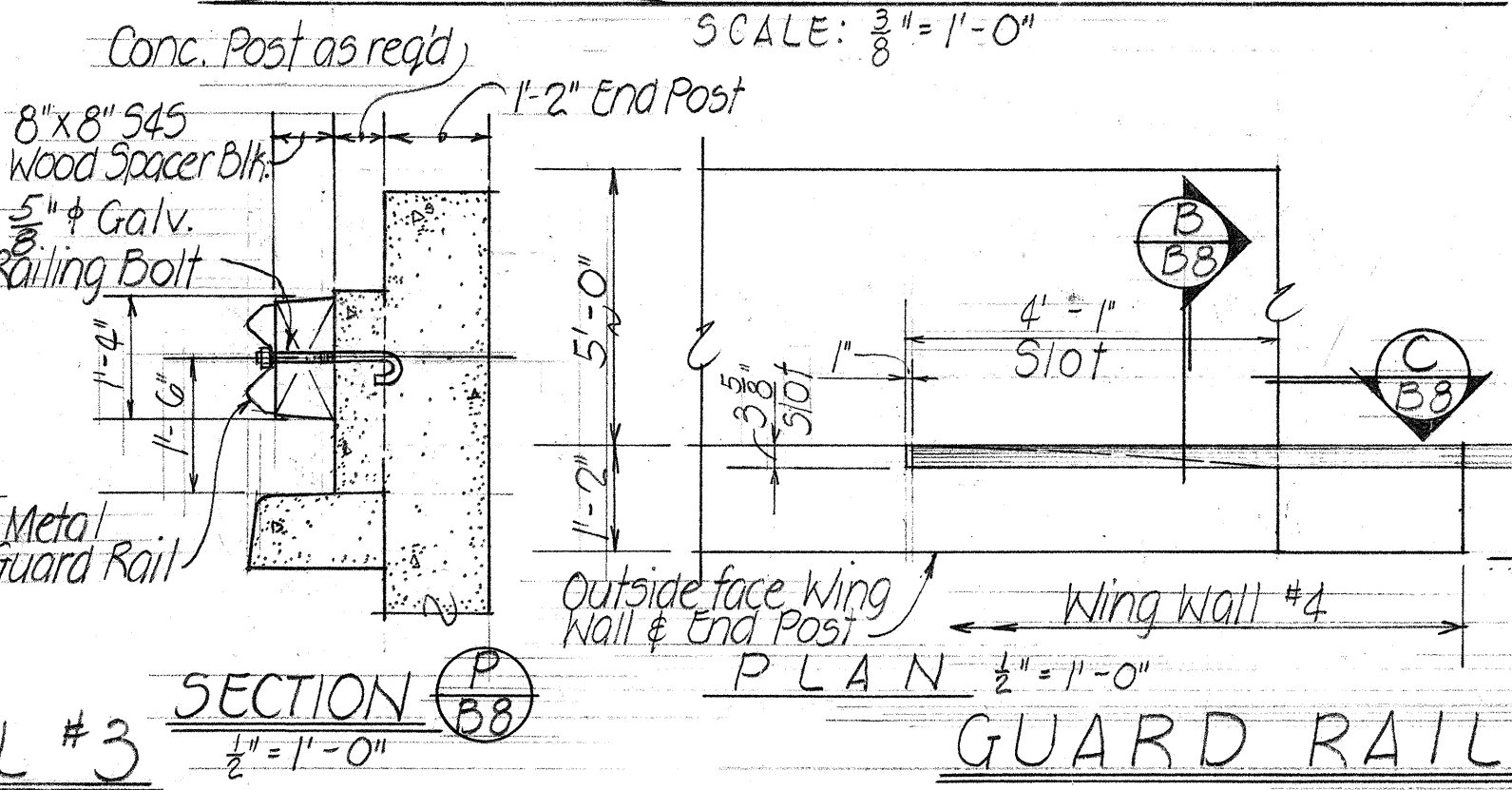
GUARD RAIL CONNECTION AT RET. WALL #3



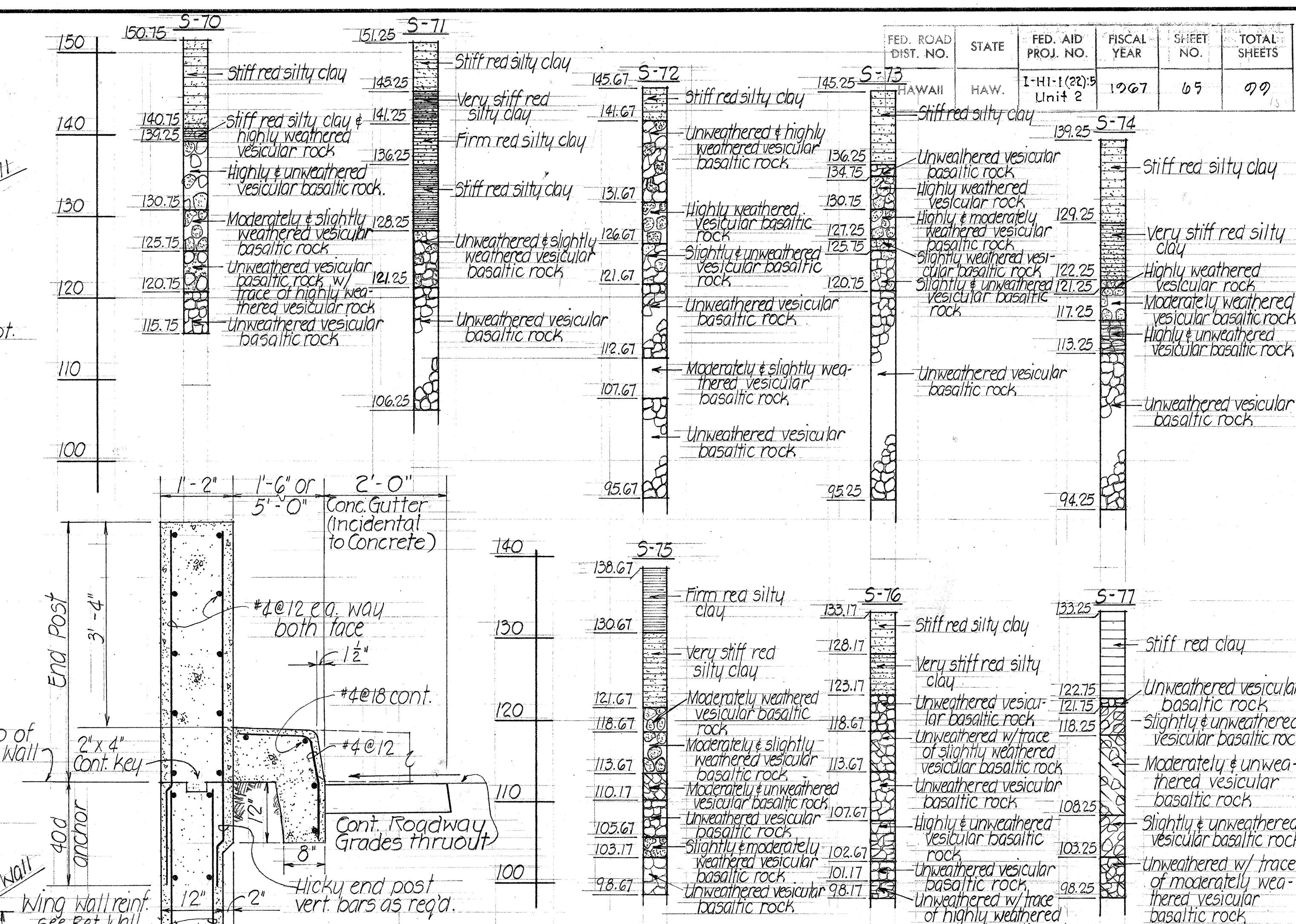
PART ELEVATION - WING WALL #2



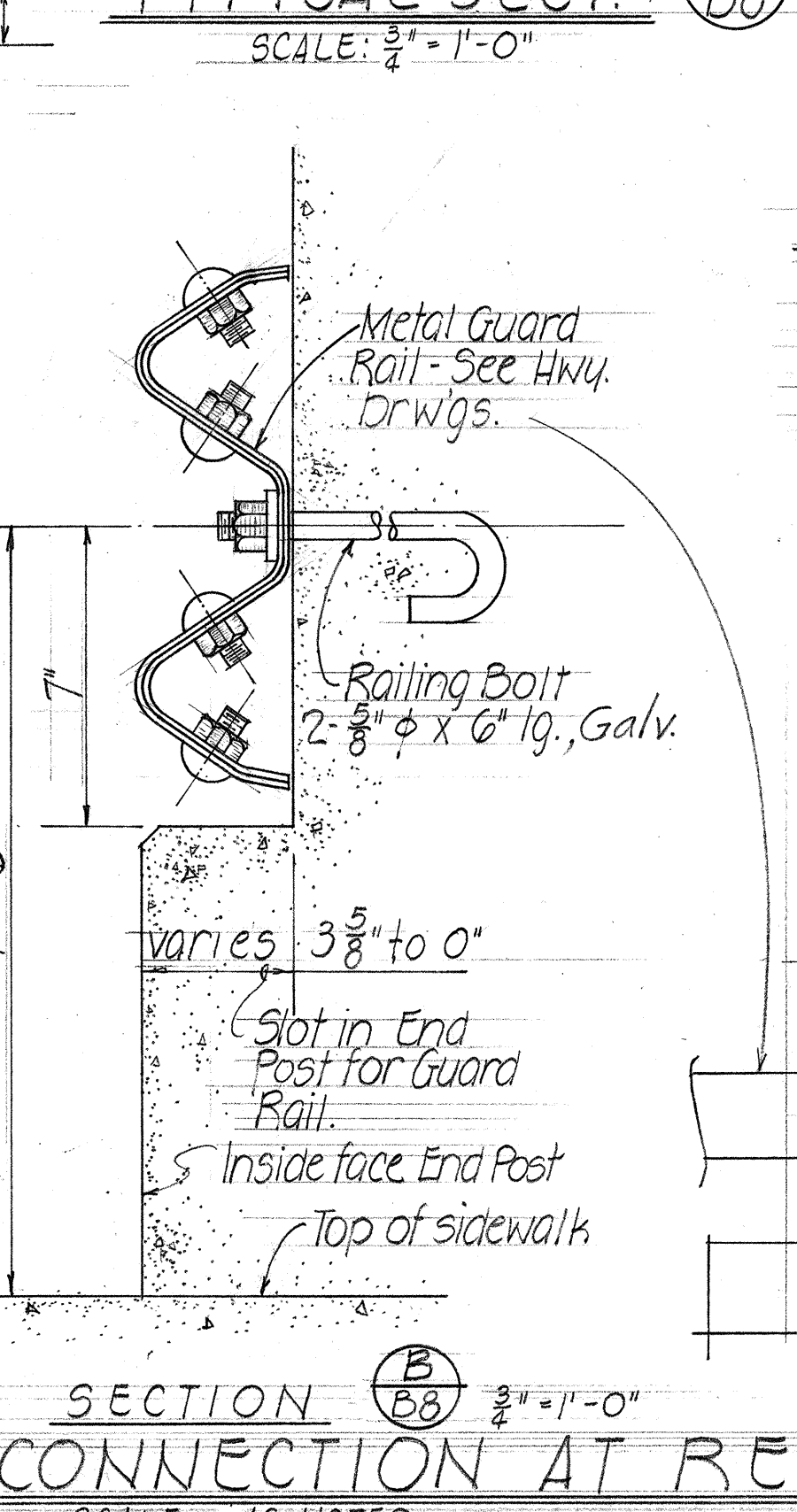
PART ELEVATION - WING WALL #4



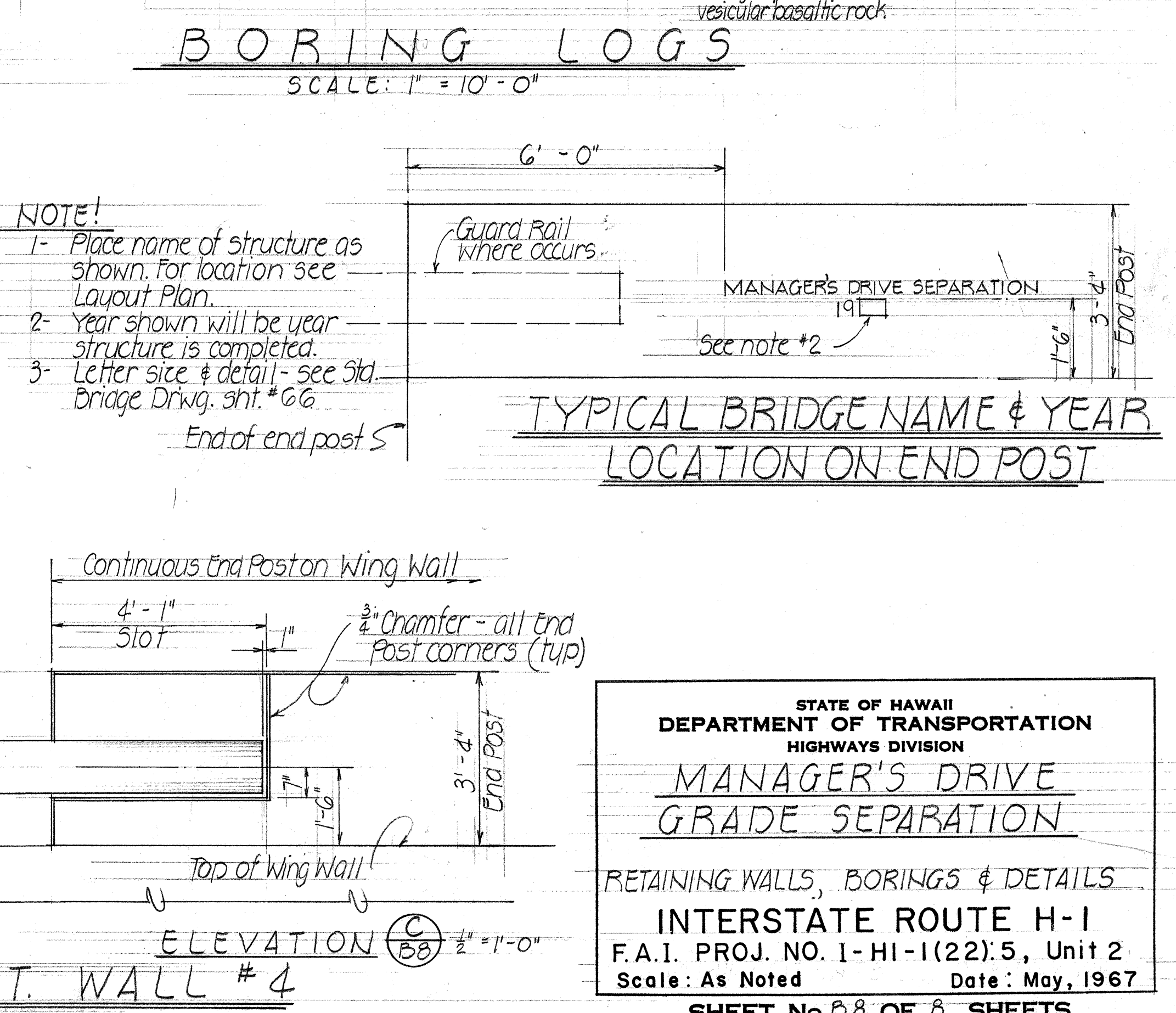
GUARD RAIL CONNECTION AT RET. WALL #4



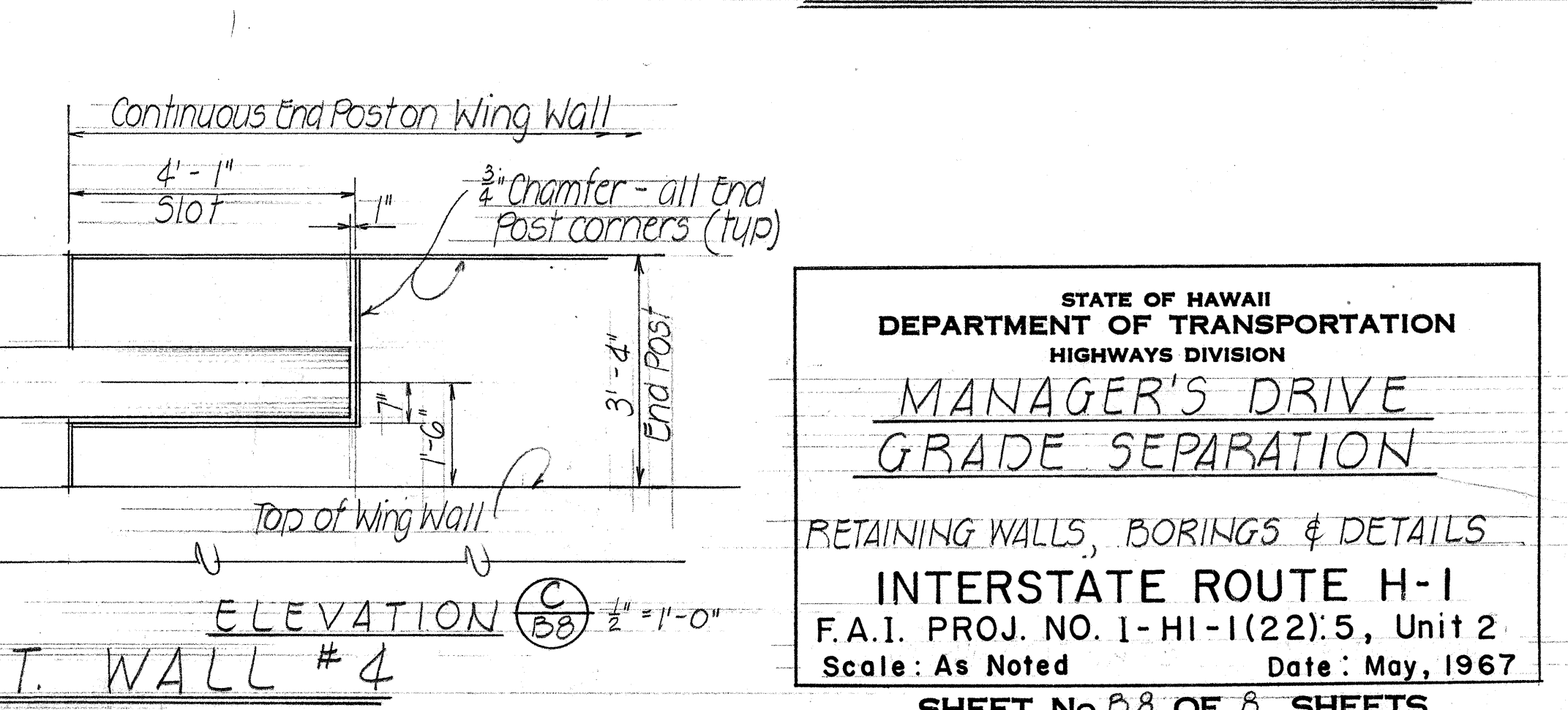
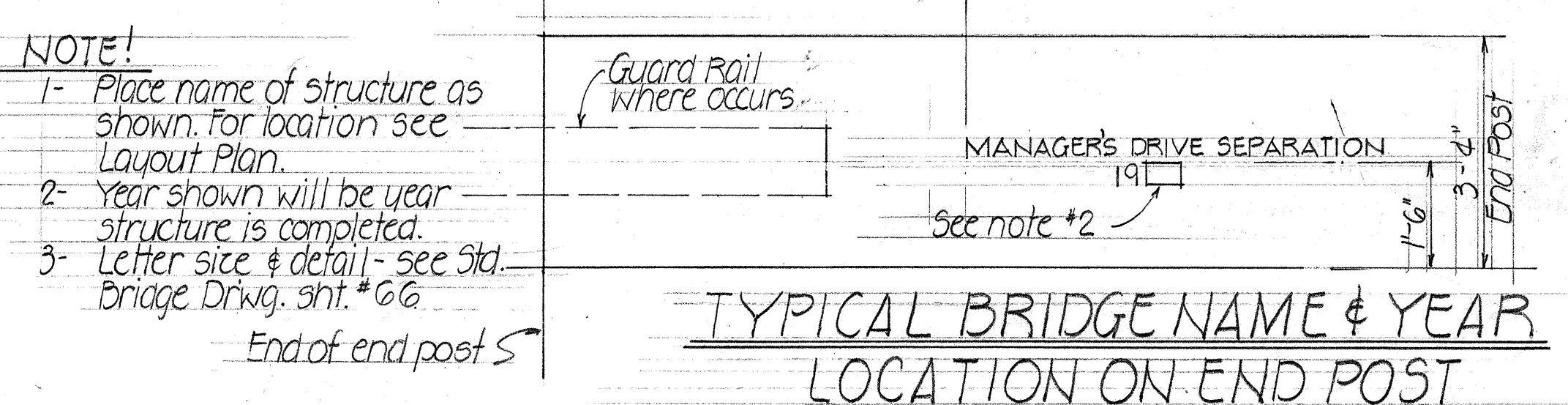
TYPICAL SECT. (A) B8



SECTION (B) B8



ELEVATION (C) B8



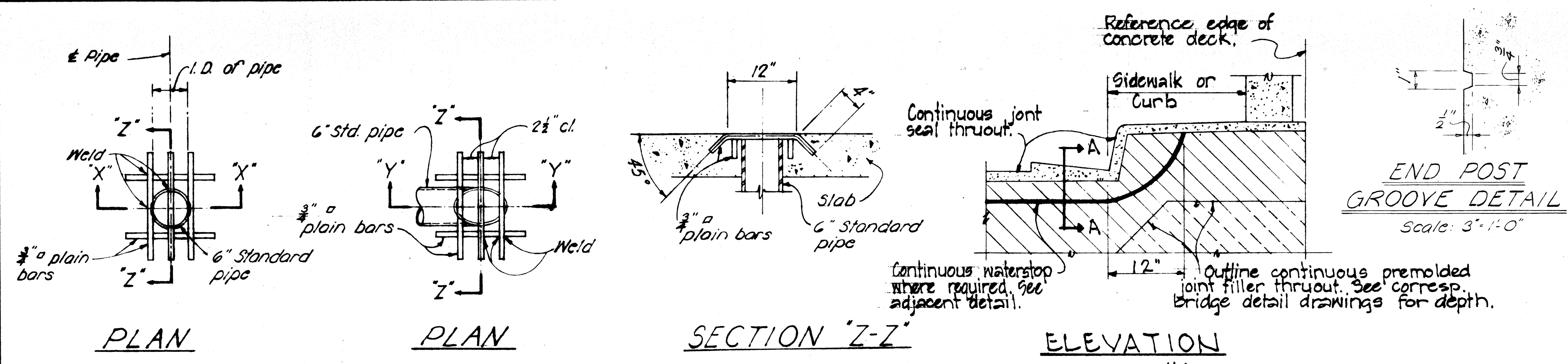
MANAGER'S DRIVE GRADE SEPARATION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
MANAGER'S DRIVE
GRADE SEPARATION
RETAINING WALLS, BORINGS & DETAILS
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. 1-HI-1(22)5, Unit 2
Scale: As Noted Date: May, 1967
SHEET No. B8 OF 8 SHEETS

DATE: _____
SURVEY PLOTTED BY: _____
DRAWN BY: _____
CHECKED BY: _____
ORIGINAL PLAN: _____
NOTE BOOK: _____
No. _____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(22):5, Unit 2	1967	66	99

Revision
Jan. 1967
Feb. 1967
Apr. 1967



GENERAL NOTES

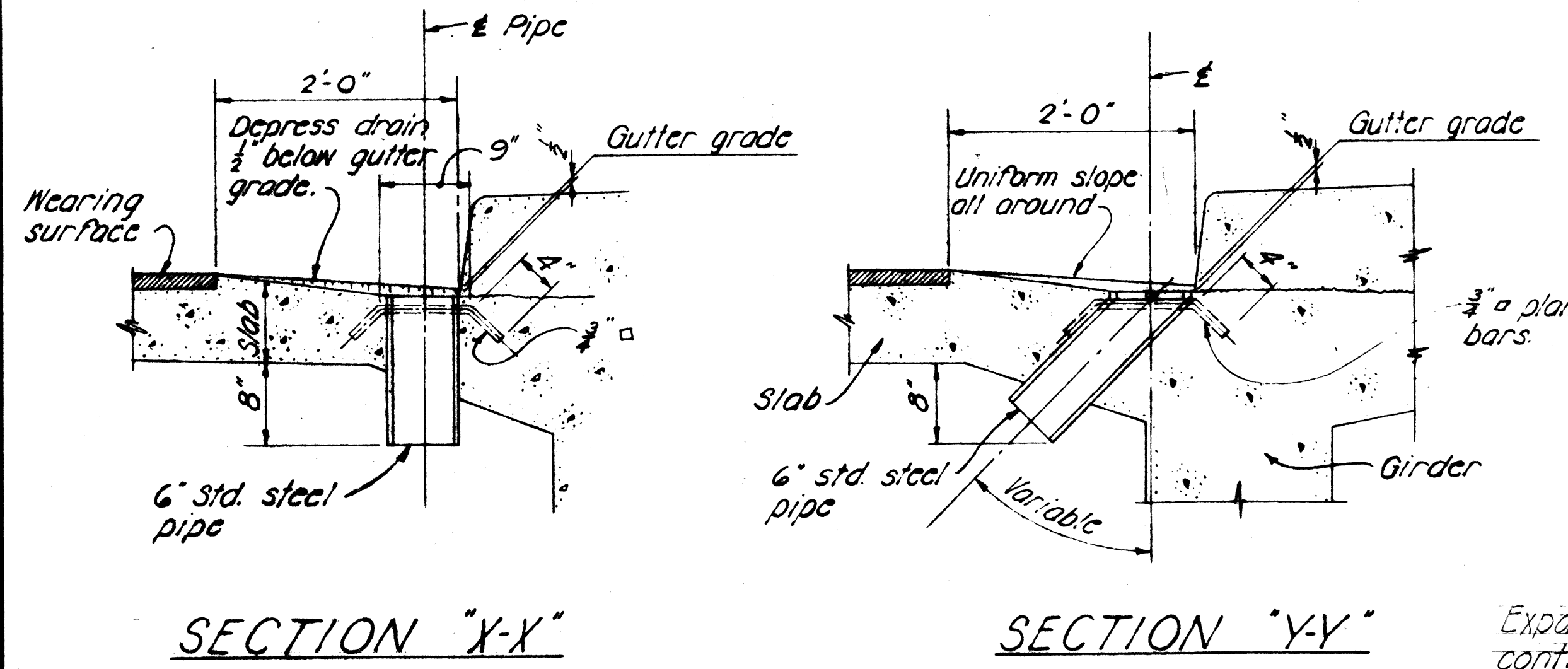
Elastometric Pads: Top & bottom of bridge bearing pads shall be secured against displacement, with adhesives approved by the Engineer. Pads shall be incidental to concrete and will not be paid for separately.

- The Contractor shall verify the location of all existing utility lines and notify the respective owners before commencing work of excavation.
- All concrete shall be Class A-1 unless otherwise noted.
- Clearance for reinforcing bars shall be as follows, unless otherwise noted:
 - 1 1/2" For stirrups or beams & pier caps.
 - 2" For ties of columns.
 - 2" For formed walls.
 - 3" For footings.
- Concrete seats receiving steel plates, lead plates or neoprene pads shall be poured monolithically with supporting structures & top surfaces of the concrete seats shall be finished with a steel trowel to a smooth level at the elevation shown on the plans.
- Reinforcing shall be detailed in accordance with A.C.I. Manual of Standard Practice for Detailing Reinforced Concrete Highway Structures unless otherwise noted.
- Reinforcing bars shall be securely tied at all intersections & lap splices & shall be held in place during pouring to maintain their proper locations as shown on plans.
- Splices of reinforcing - See Special Provisions.

Waterstop to have 5 or more pairs of raised ribs to provide 0.1 sq. in. min. rib cross section area on each half of the waterstop. Height of ribs to be 3/32" min.

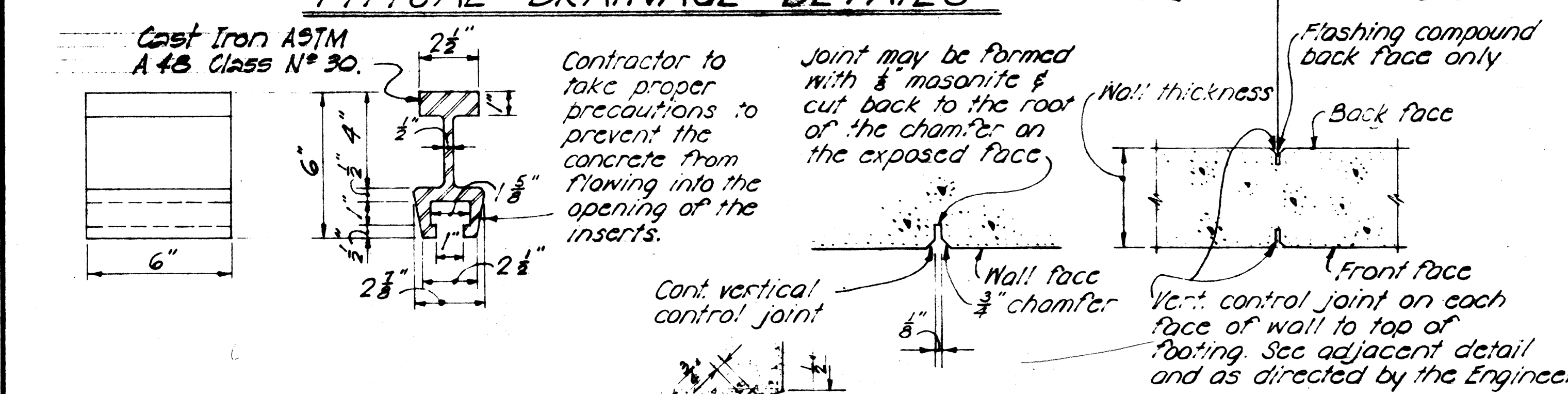
Nailing Strip:
Nail or staple to form or premolded joint filler.

Holes will be permitted in the outer 1/2" of the web for wires, rings, etc. Tie web to #3 reinforcing bars at 12" max. intervals to support the waterstop in proper position during concrete placement. Alternative detail may be submitted for approval of the Engineer.



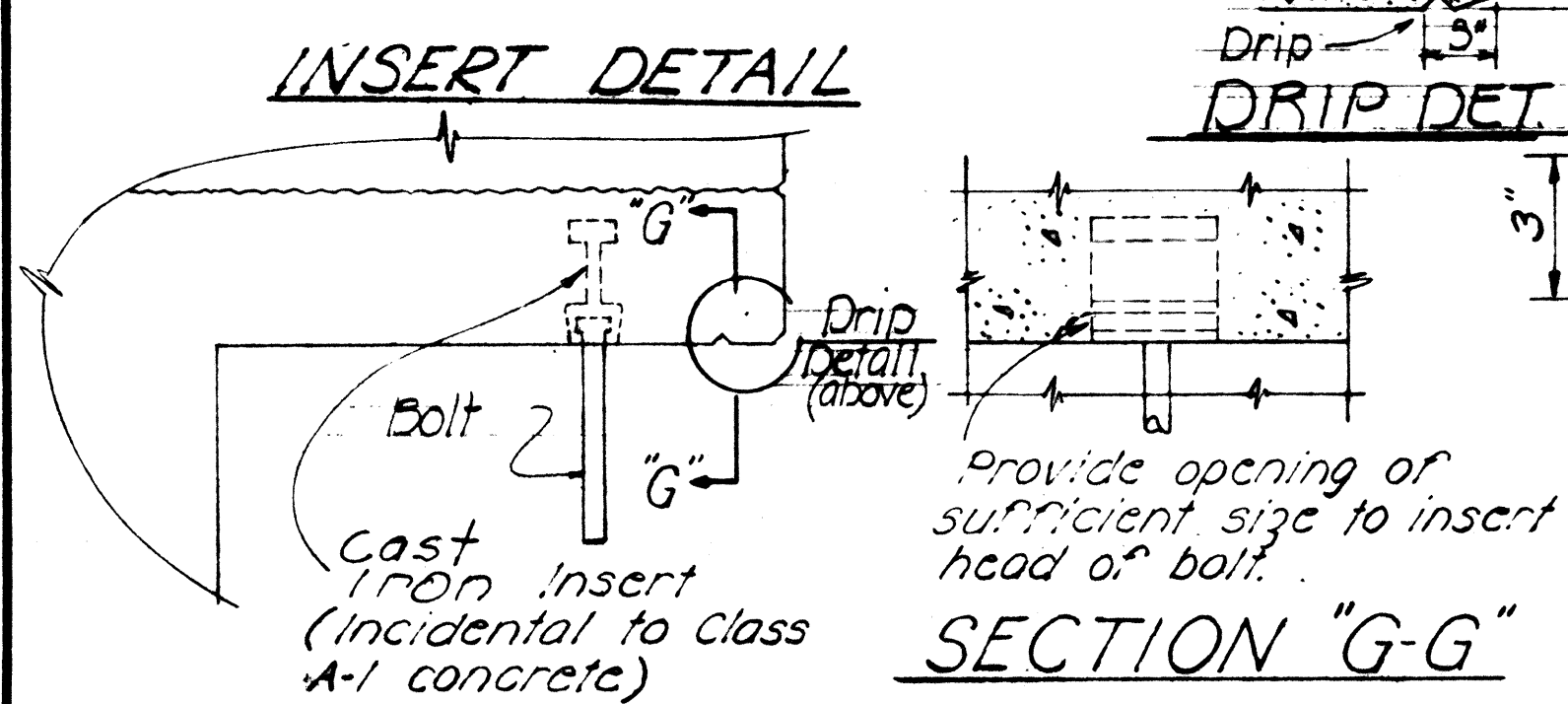
NOTE:
Metal drains shall be considered incidental to Class A-1 Concrete in both concrete and steel bridges and will not be paid for separately. Assemblage of grillage and pipe shall be hot-dip galvanized after all welding is completed.

TYPICAL DRAINAGE DETAILS



TYPICAL EXPANSION JOINT DETAIL

- Minimum spacing between parallel bars shall be 2 1/2 times the diameter of bars, but in no case shall the clear distance between the bars be 1 1/2 times the maximum size of the coarse aggregate.
- All dimensions relating to reinforcing are to centers of bars unless otherwise noted.
- Forms for all exposed surfaces of separation structures and surfaces of retaining walls visible from a traveled way or from a populated area shall be plywood except that metal forms may be permitted provided a surface finish satisfactory to the Engineer can be obtained and the use of such forms is approved in writing by the Engineer. Forms for round columns shall be made of materials that will give a smooth finish and true dimensions as given in the plans. Forms for prestressed concrete members shall be either metal or plywood.
- Vertical column bars shall be arranged in such a manner as to miss pier cap bars above as directed by the Engineer.
- Except as otherwise noted on drawings, all exterior corners & re-entrant angles in concrete work shall be chamfered 3/4" x 3/4". See Standard Specifications.
- Concrete finish - See Special Provisions.
- All welders and welding procedures shall be qualified according to the requirements of the Special Provisions.
- Gothic letters and figures approximating dimensions shown will be acceptable if approved by the Engineer.



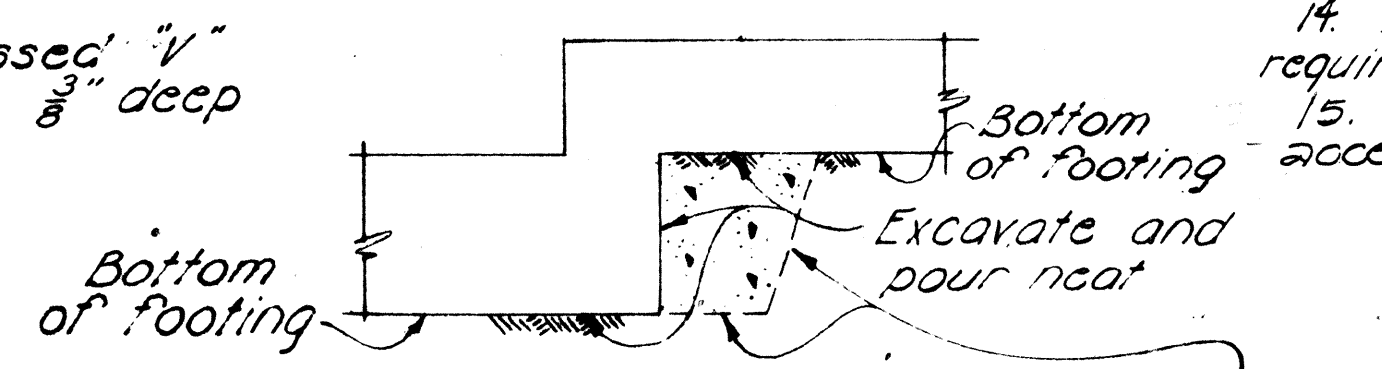
DETAIL OF PIPE HANGERS & INSERTS

CONTROL JOINT DETAIL

NAME DATE

Use correct name of bridge Date of Year built
NOTE: Refer to corresponding detail drawings for placement of such names & dates at end post. Exact details & spacing of letters & figures shall be as directed by the Engineer. See Note #15.

TYPICAL DETAIL OF LETTERS & FIGURES AT CONCRETE END POST



NOTE: In case of over excavation, the contractor shall backfill this area with minimum class D-1 concrete at his own expense.

TYPICAL EXCAVATION FOR CONTINUOUS FOOTING STEP-UP

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

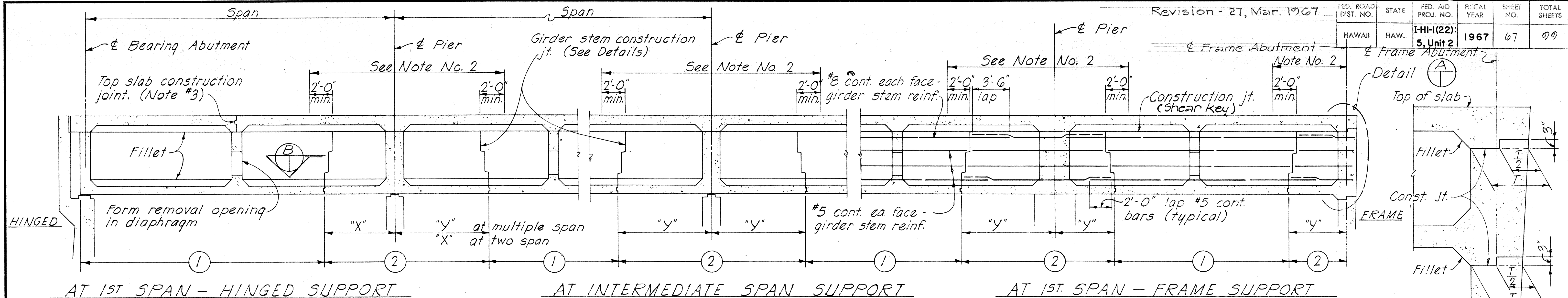
STANDARD BRIDGE DETAILS

INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1(22):5, Unit 2

Scale as Noted Date: June 1967
SHEET No. 51 OF 8 SHEETS

Revision - 27, Mar. 1967

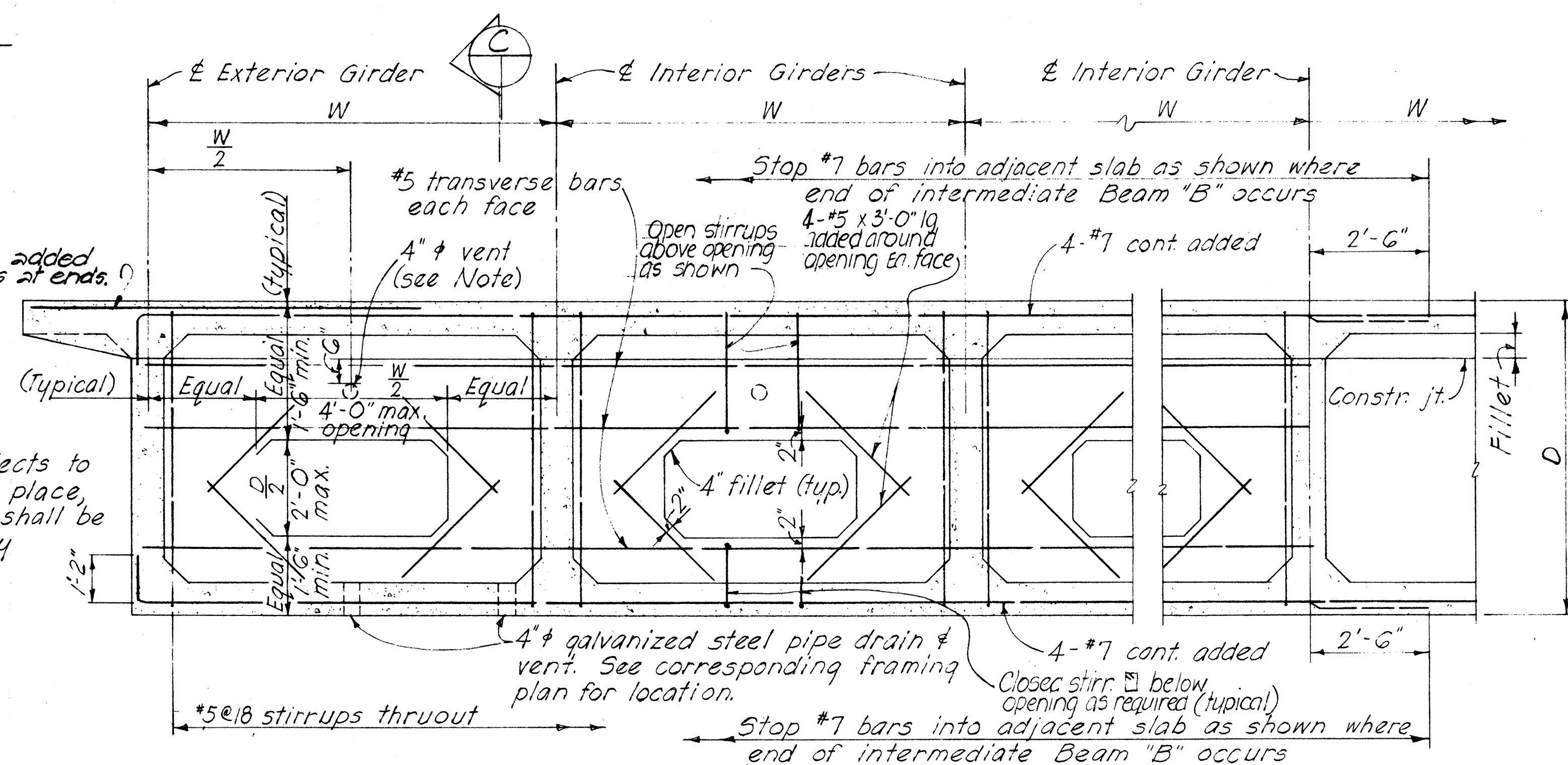
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(22): 5, Unit 2	1967	67	99



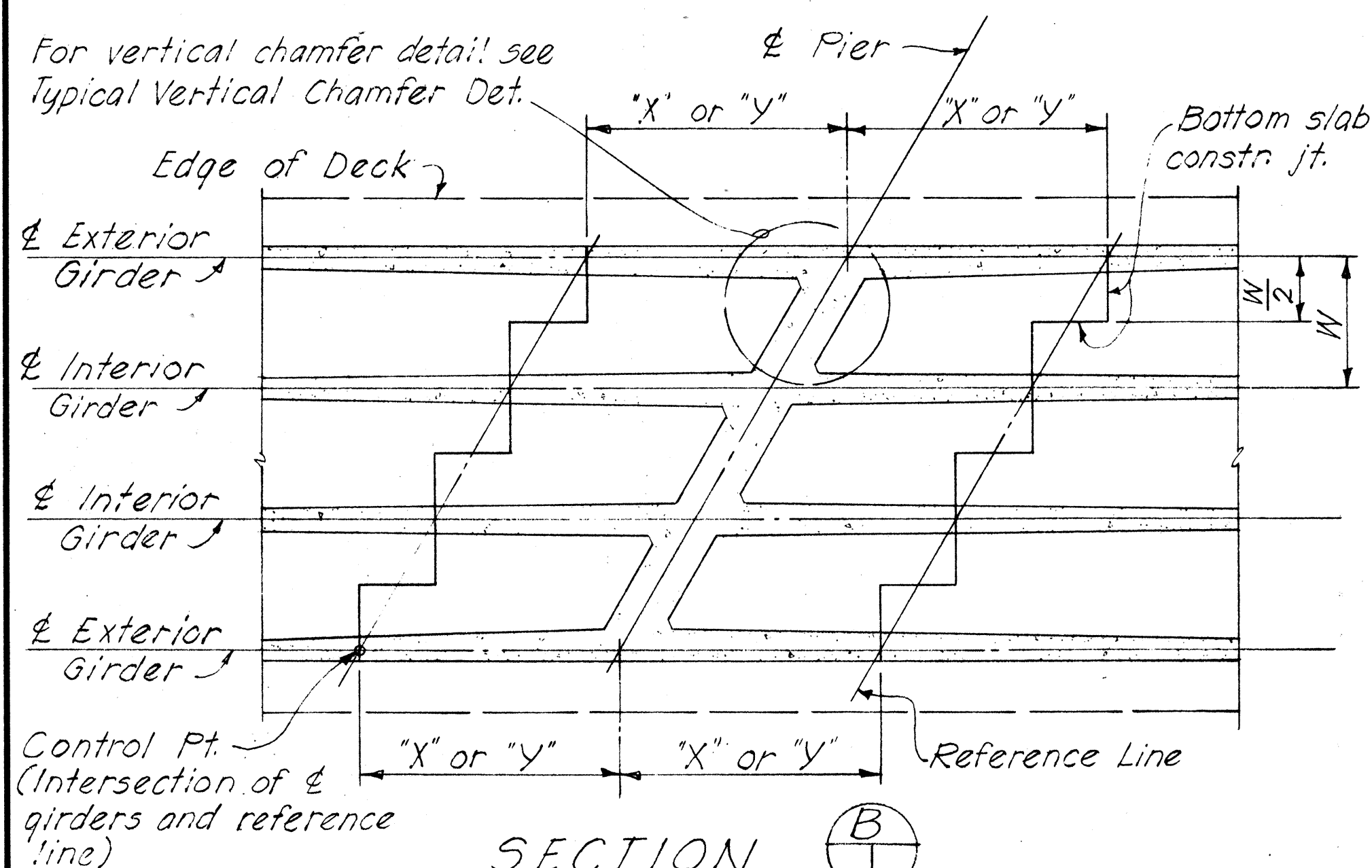
NOTE:

- No. 1 - Numbers ① & ② indicate sequence of placing bottom slab & girder stem concrete. ② may be placed with ① when approved by the Engineer provided that the ① sections adjoining the ② sections are placed in this pour. For any deviation from the above the Contractor shall submit a diagram to the Engineer for approval.
- No. 2 - No top slab construction joint or form removal opening shall be located in the region over the piers as noted.
- No. 3 - When top slab forms are not removed, construction joint in top slab shall be located over an intermediate diaphragm.
- No. 4 - Dimension "X" = $\frac{1}{4}$ span "Y" = $\frac{1}{5}$ span
- No. 5 - No lapping of main girder bars shall be permitted at construction joints.

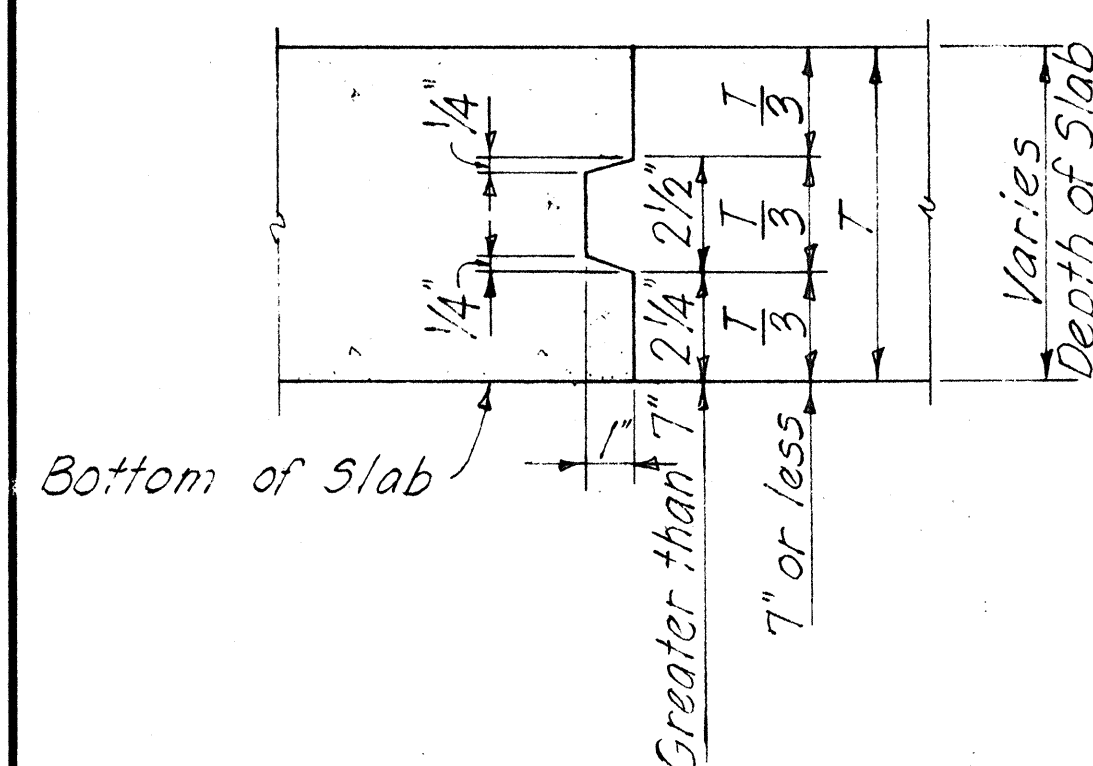
PLACING DIAGRAM FOR SUPERSTRUCTURE CONCRETE



AT NON-CONTINUOUS ENDS
TYPICAL INTERIOR SPAN
TYPICAL BEAM "B" DETAILS

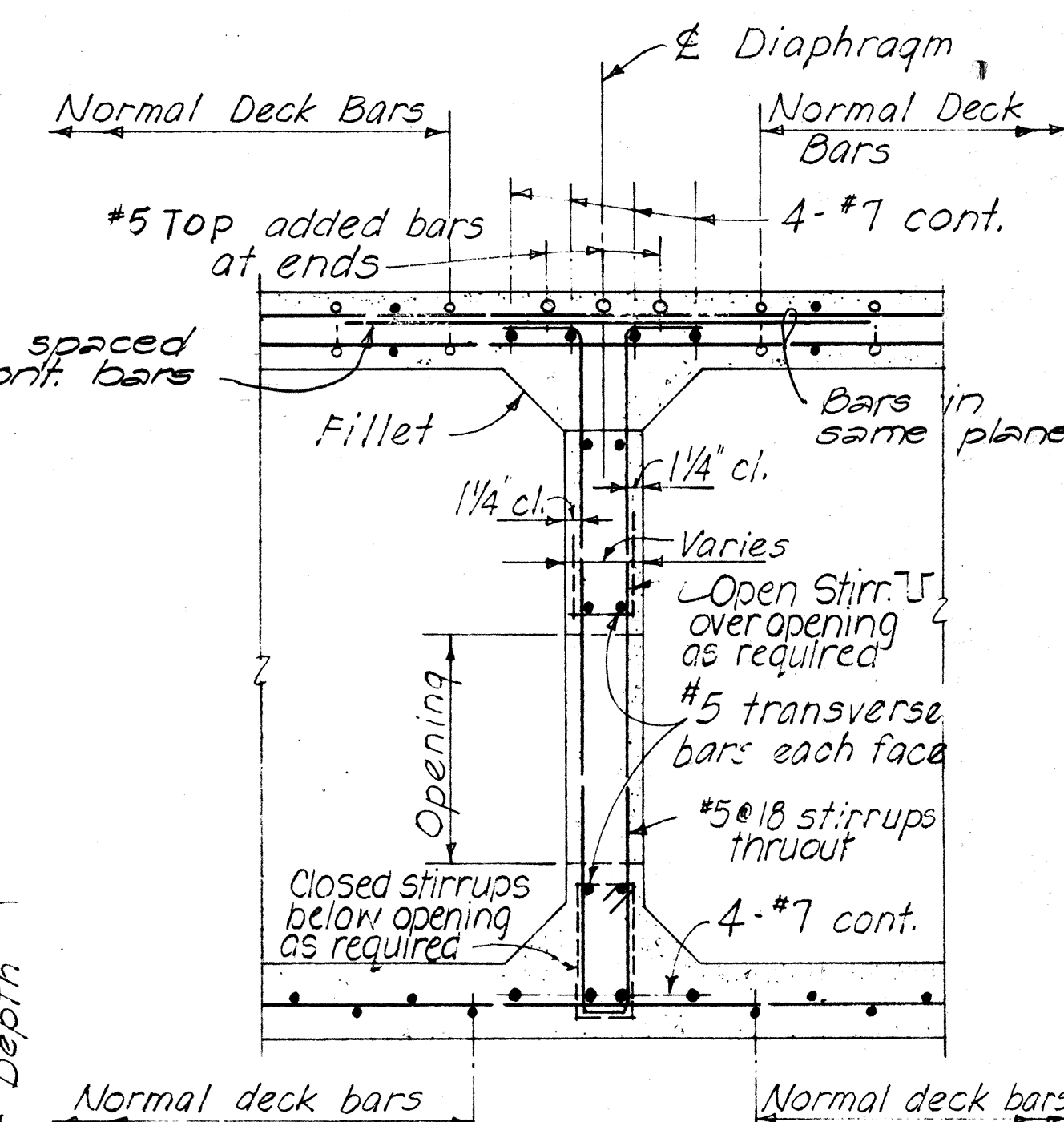


SECTION B
TREATMENT OF CONSTRUCTION JOINT
BRIDGES ON SKEW



TYPICAL SLAB CONSTRUCTION
JOINT DETAIL

NOTE: If Contractor elects to leave top slab forms in place, form removal opening shall be omitted and replaced by 4" ϕ vent.



SECTION C

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

CONCRETE BOX GIRDER

INTERSTATE ROUTE H-1

F.A.I. PROJ. NO. I-HI-1(22):5, Unit 2

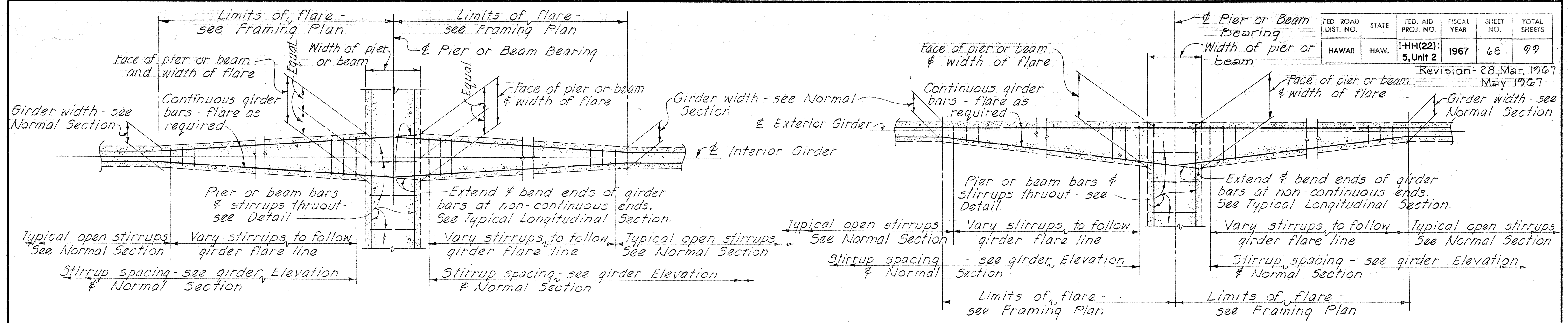
SCALE AS NOTED DATE: June 1967

SHEET No 52 OF 8 SHEETS

SURVEY PLANNED BY	DATE
DRAWN BY	
DESIGNED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI(22): 5, Unit 2	1967	68	99

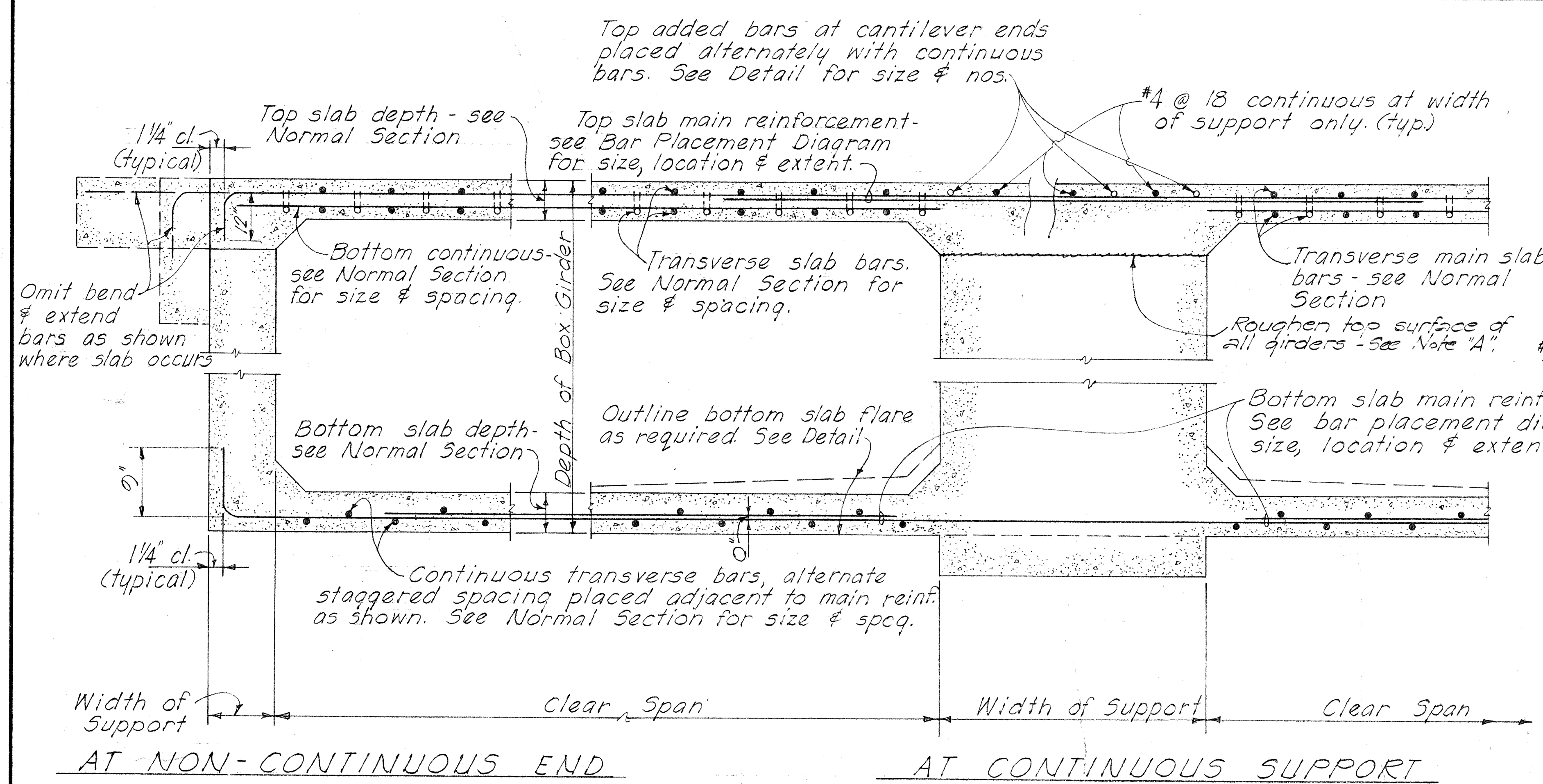
Revision - 28, Mar. 1967
May 1967



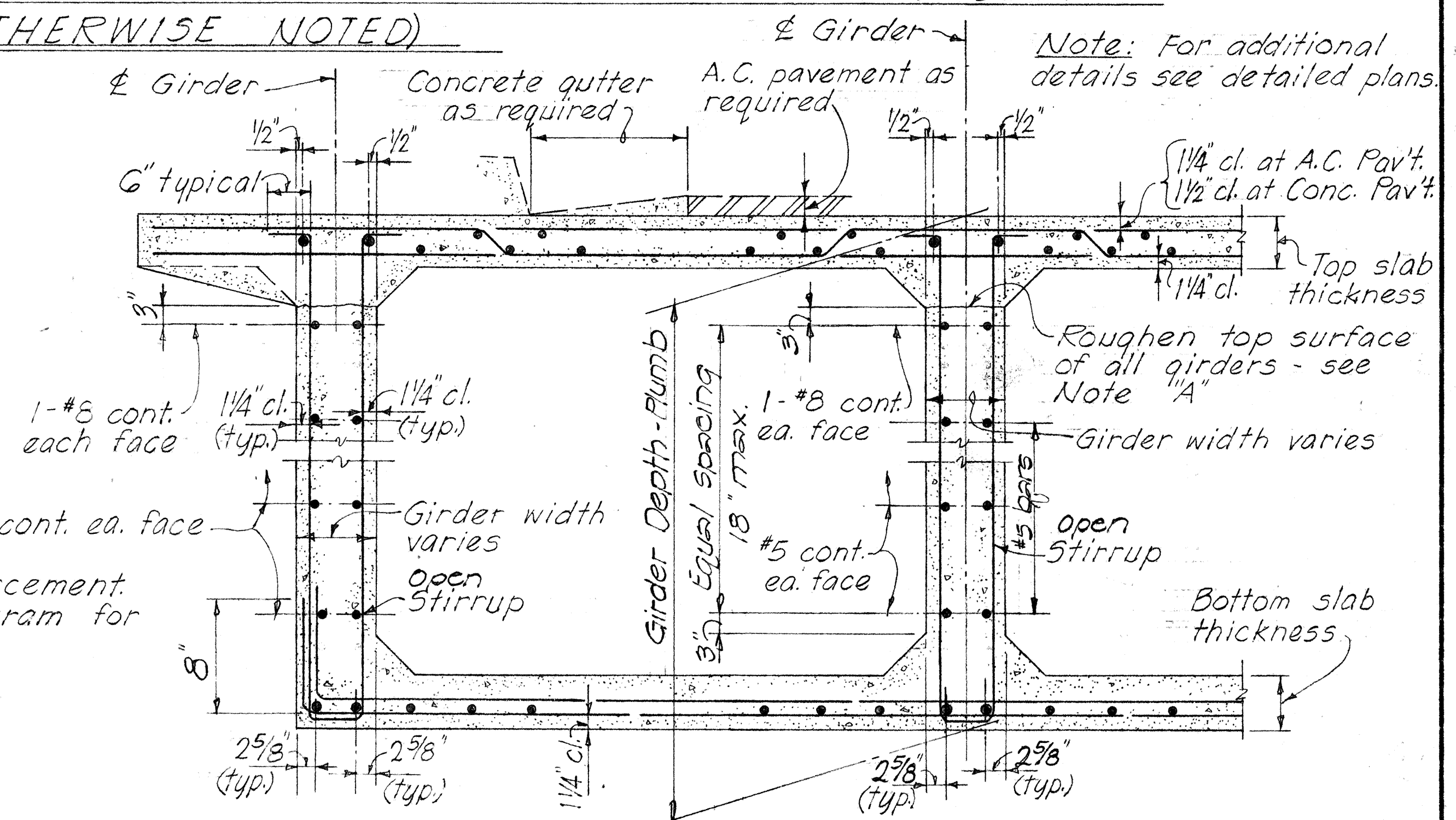
INTERIOR GIRDER

EXTERIOR GIRDER

TYPICAL DETAILS OF GIRDER FLARE AT NORMAL OR RADIAL SUPPORTS - CONTINUOUS ENDS AS SHOWN
(NON-CONTINUOUS ENDS SIMILAR EXCEPT AS OTHERWISE NOTED)



TYPICAL LONGITUDINAL DECK SECTION
ALONG GIRDER AT NORMAL OR RADIAL SUPPORTS



EXTERIOR GIRDER

INTERIOR GIRDER

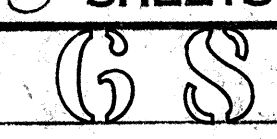
TYPICAL NORMAL BOX GIRDER SECTION

NOTE "A" - The entire surface of the joint shall be thoroughly cleaned of surface laitance, curing compound, and other material foreign to the concrete, and clean aggregate is exposed by abrasive blast cleaning after the curing period or immediately before placing concrete at the joint.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
CONCRETE BOX GIRDER

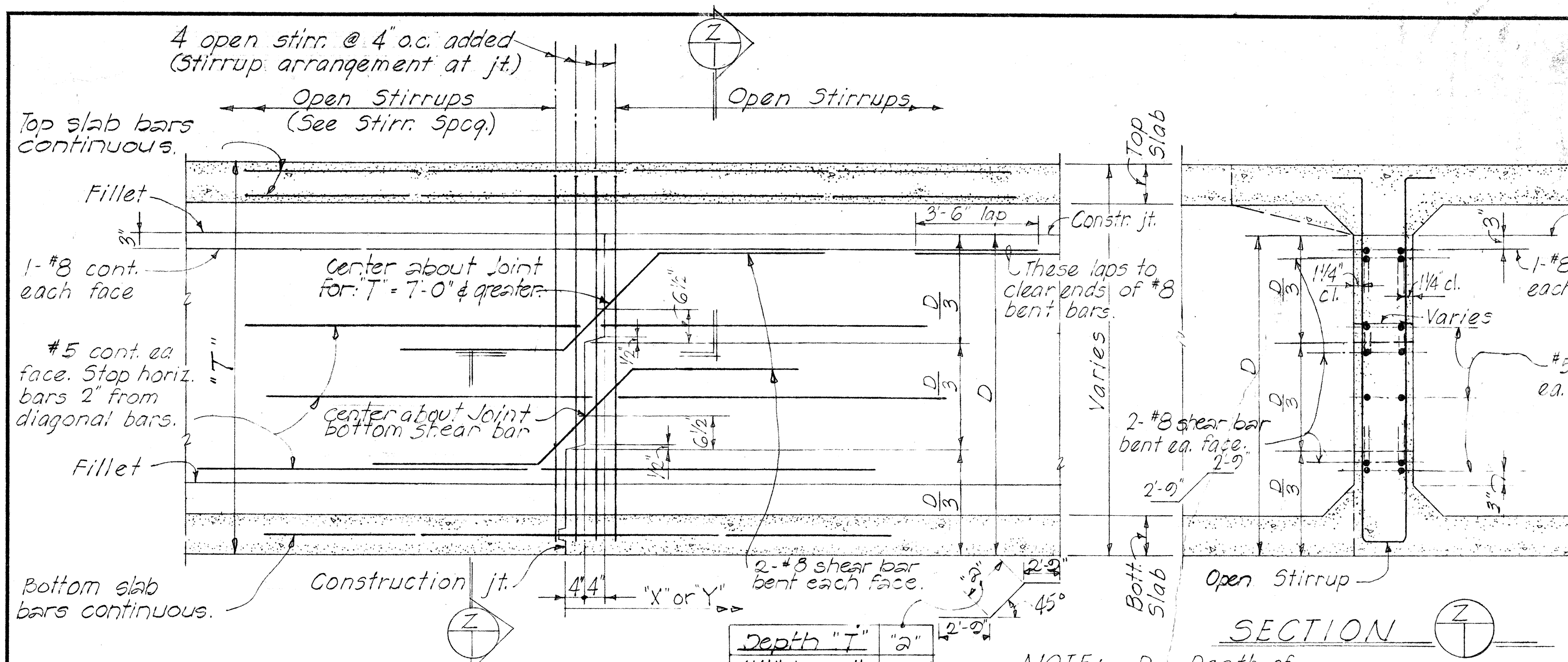
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1(22): 5, Unit 2



DATE
DESIGNED BY
CHECKED BY
NOTED BY
ORIGINAL
PLAN
NOTE BOOK
No.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1 (22): 5, Unit 2	1967	69	99

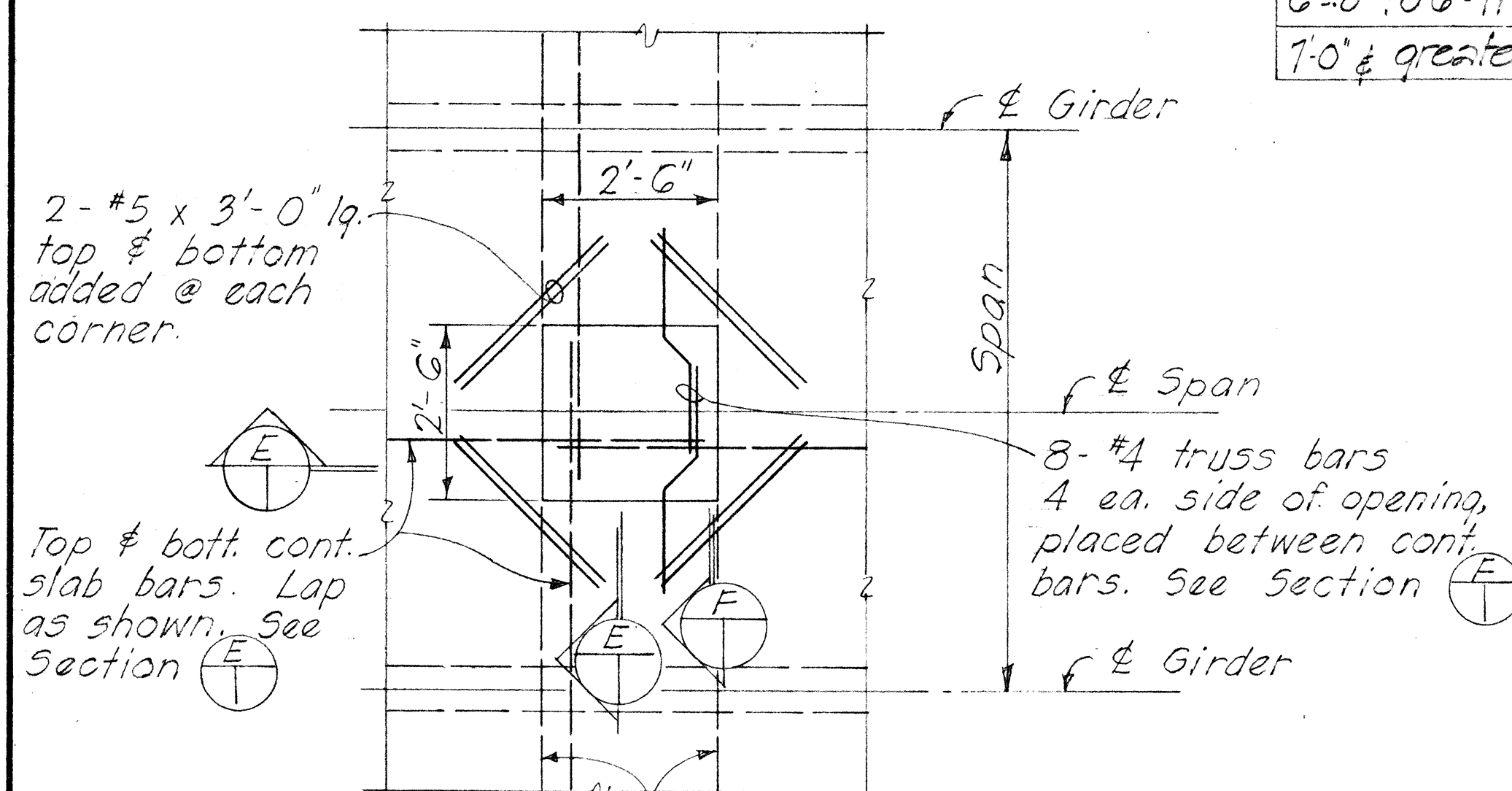
Revised - May 1967



GIRDER STEM CONSTRUCTION JOINT

Depth "T"	"a"
4'-11" & smaller	1'-9"
5'-0" to 5'-11"	2'-0"
6'-0" to 6'-11"	2'-3"
7'-0" & greater	3'-0"

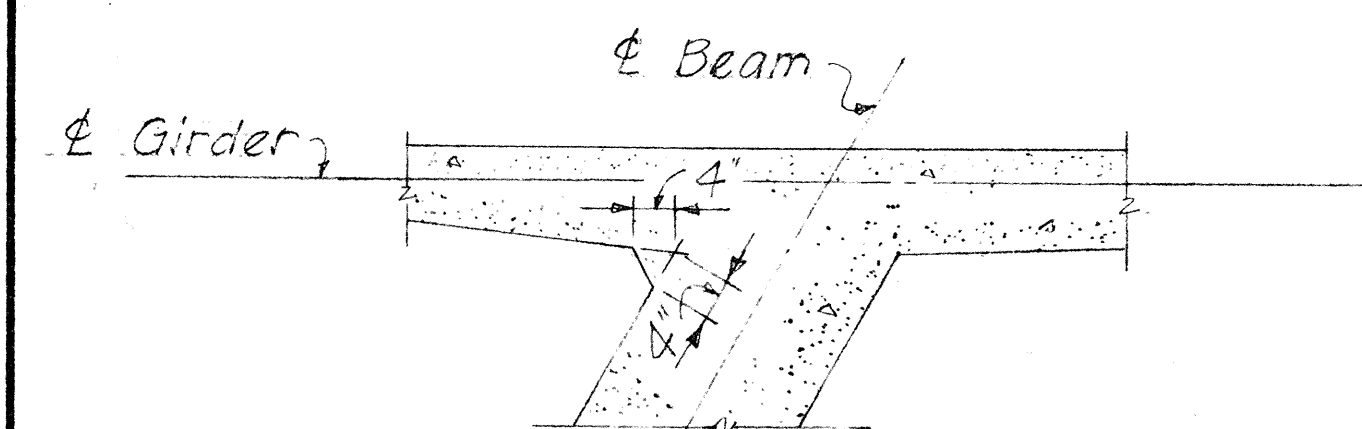
NOTE: D = Depth of girder stem to bott. of slab.



Note: Final location of opening shall be determined by the Engineer.

Form removal opening may extend from edge of deck to edge of deck with approval of the Engineer. Lap small longitudinal deck bars as shown on Section E

PART PLAN - DECK SHOWING FORM REMOVAL OPENING



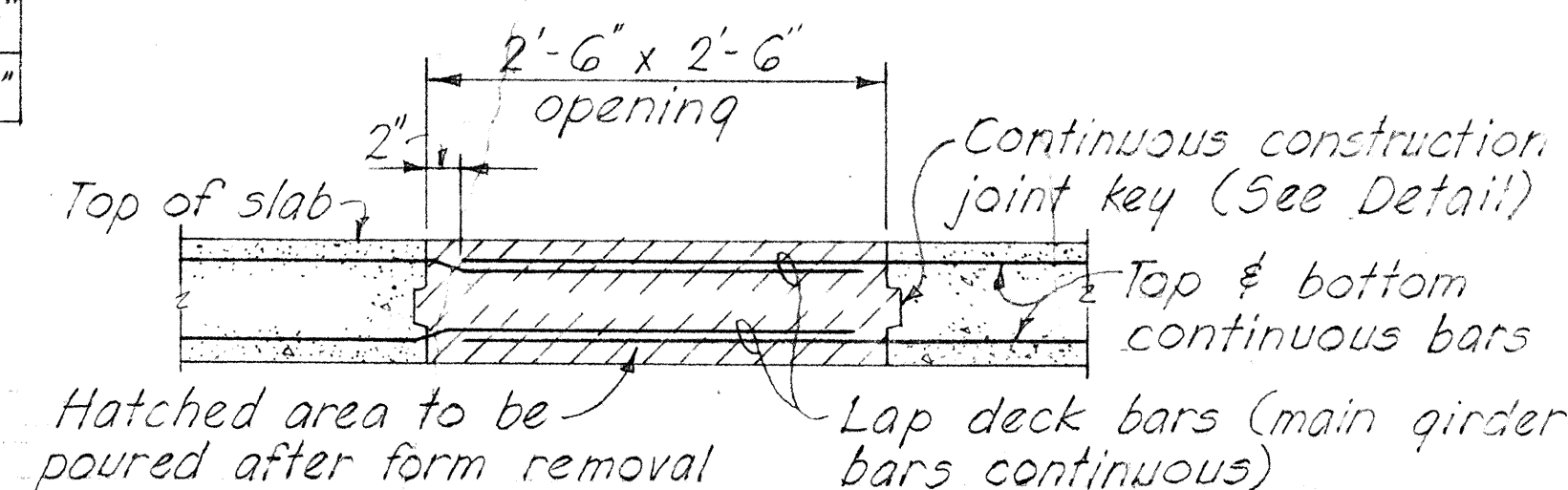
TYPICAL DETAIL OF VERTICAL CHAMFER AT ACUTE INTERSECTION OF SKEWED CONCRETE MEMBER

NOTE:

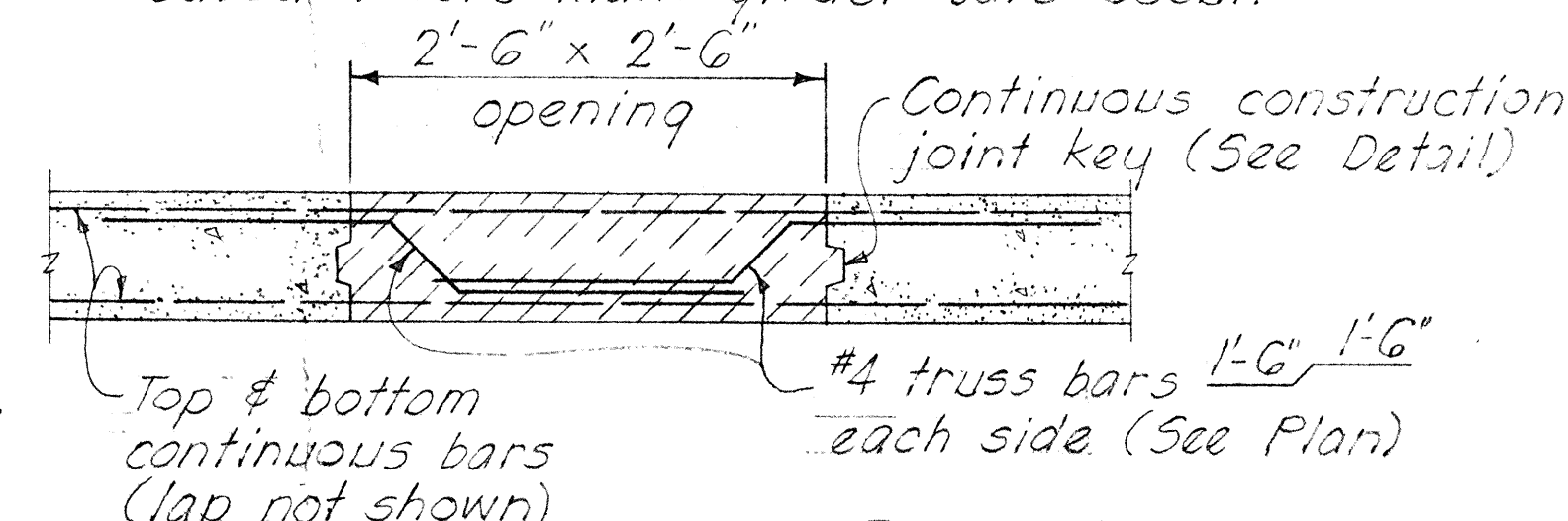
D = Depth of girder stem to bottom of slab.

S = Distance between top & bott. cont. girder stem longitudinal bars.

For additional details see Normal Section of the Plans.



Note: Form removal opening at top slab shall not be located where main girder bars occur.



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

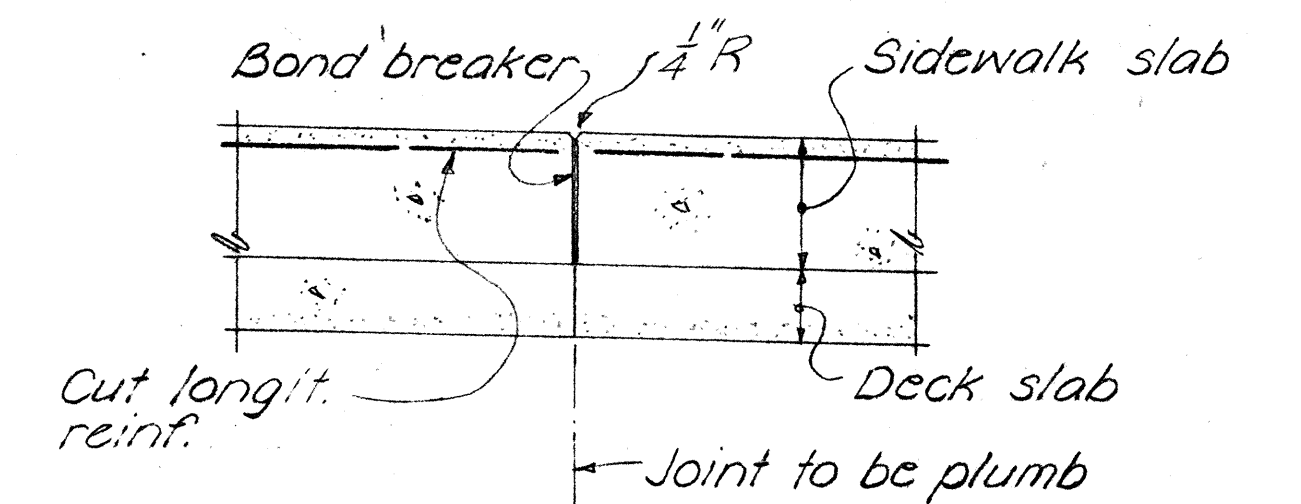
STANDARD DETAILS

CONCRETE BOX GIRDER

INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1 (22):5, Unit 2

SHEET No. 54 OF 8 SHEETS

(69)



Scale: $\frac{3}{4}" = 1' - 0"$

INTERMEDIATE

RAILING PLAN Scale: $\frac{3}{8}" = 1'-0"$

NOTES!!

- [illegible]

Miter jt. weld all around and grind smooth.

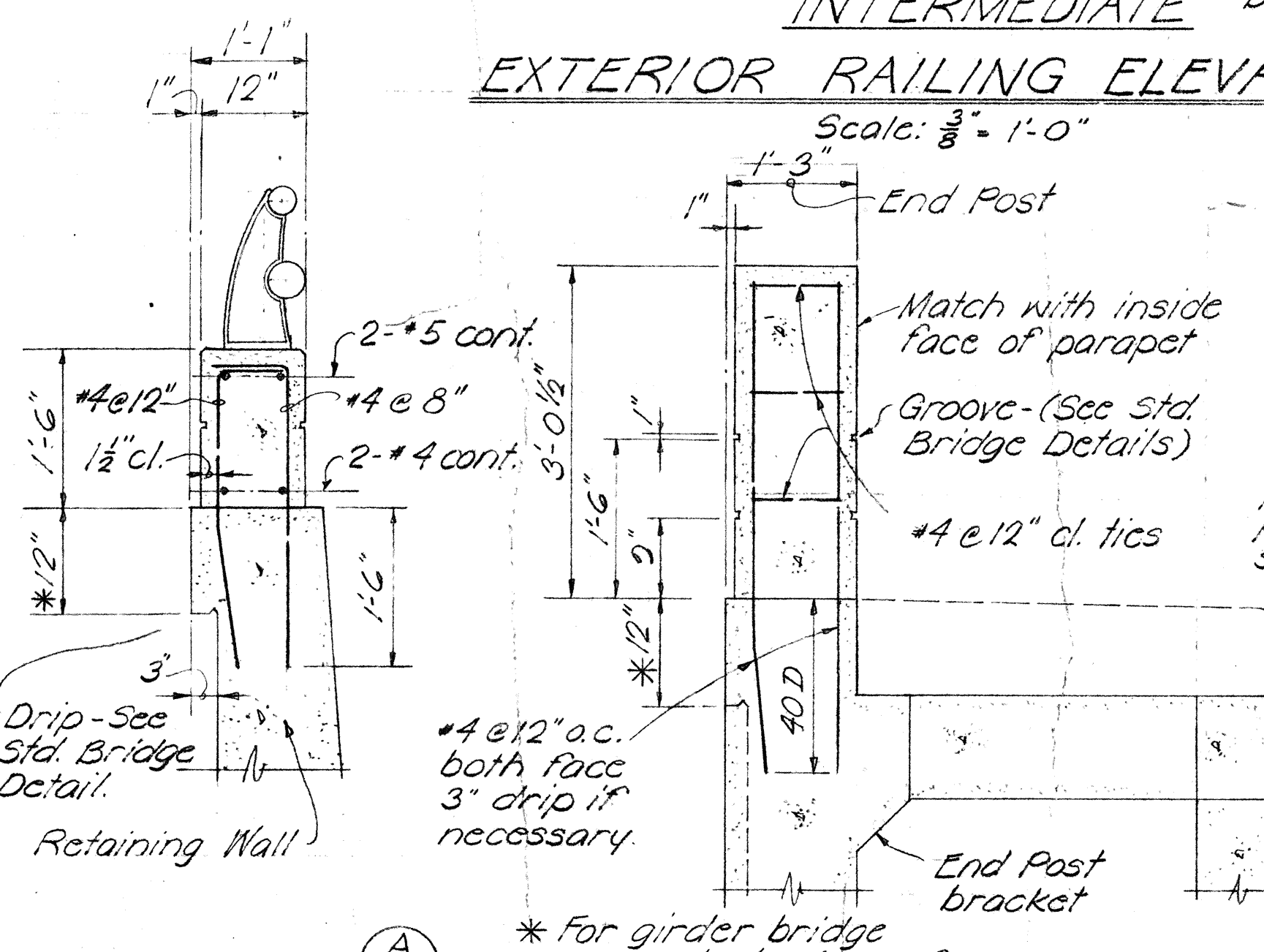
Inside face of parapet

1'-4"

1'-4"

AT BRIDGE END POST

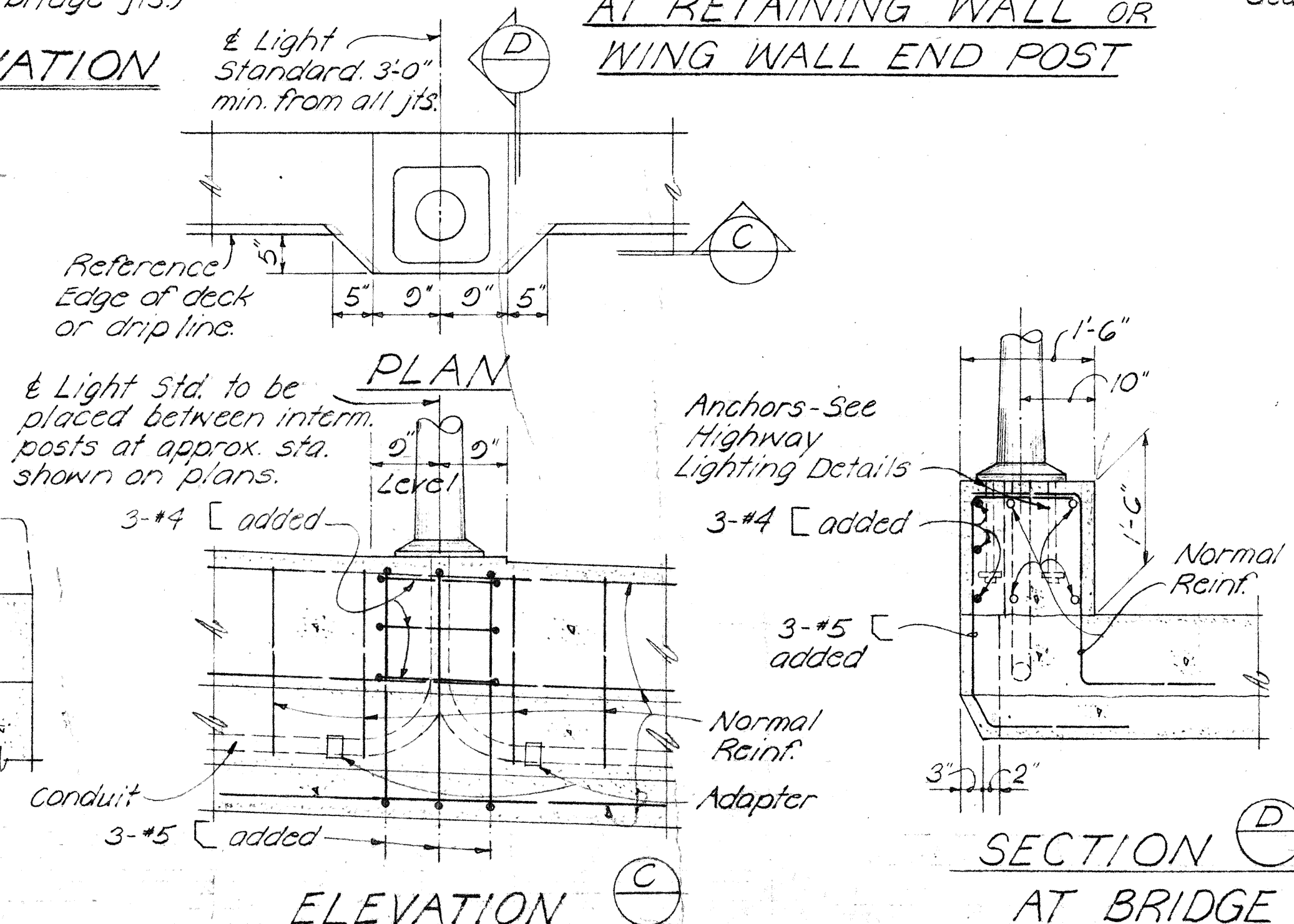
AT RETAINING WALL OR
WING WALL END POST



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

SECTION 

Scale: $\frac{3}{8}'' = 1'-0''$



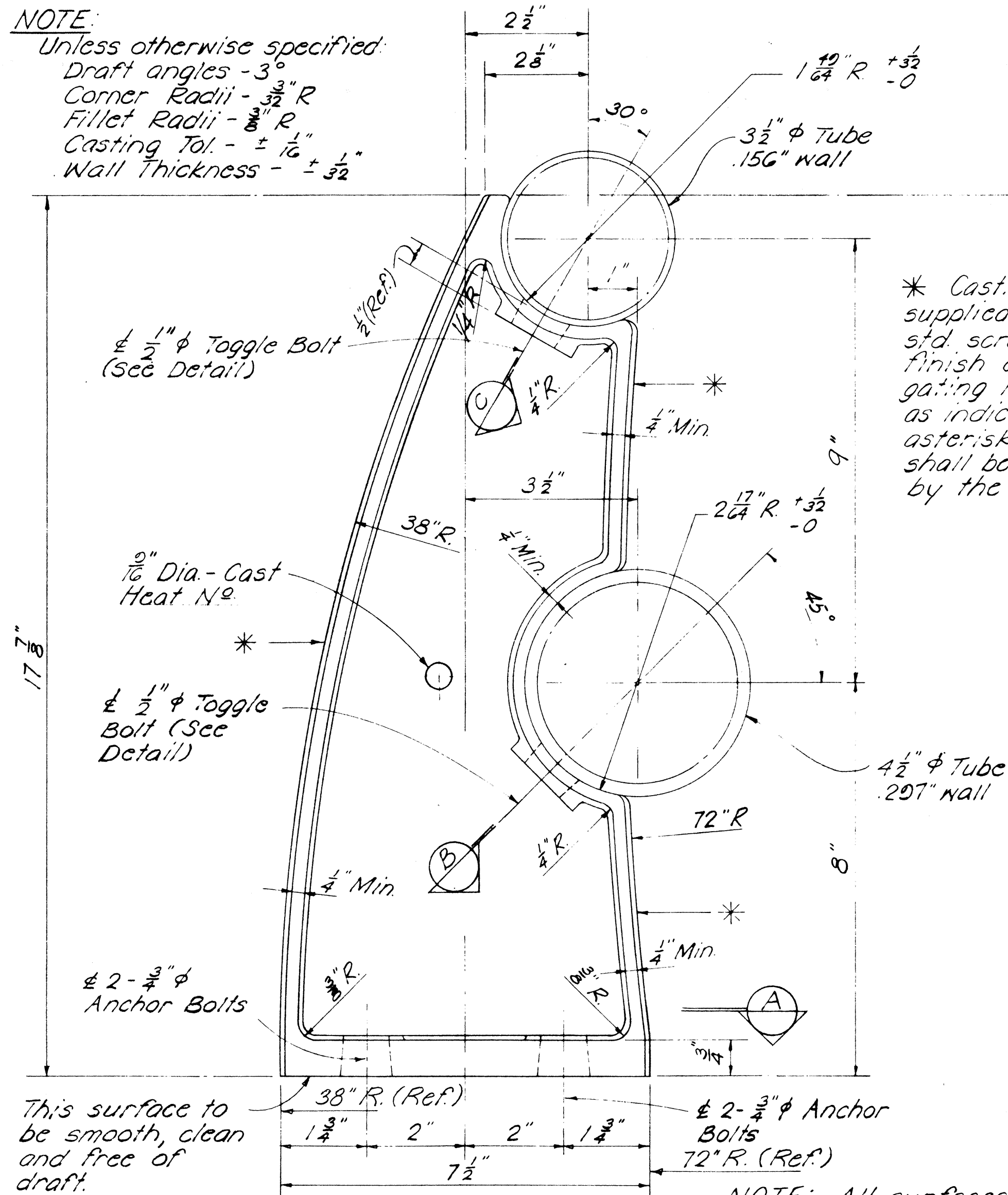
SECTION $\frac{D}{2}$
AT BRIDGE

SECTION 
AT WING WALL

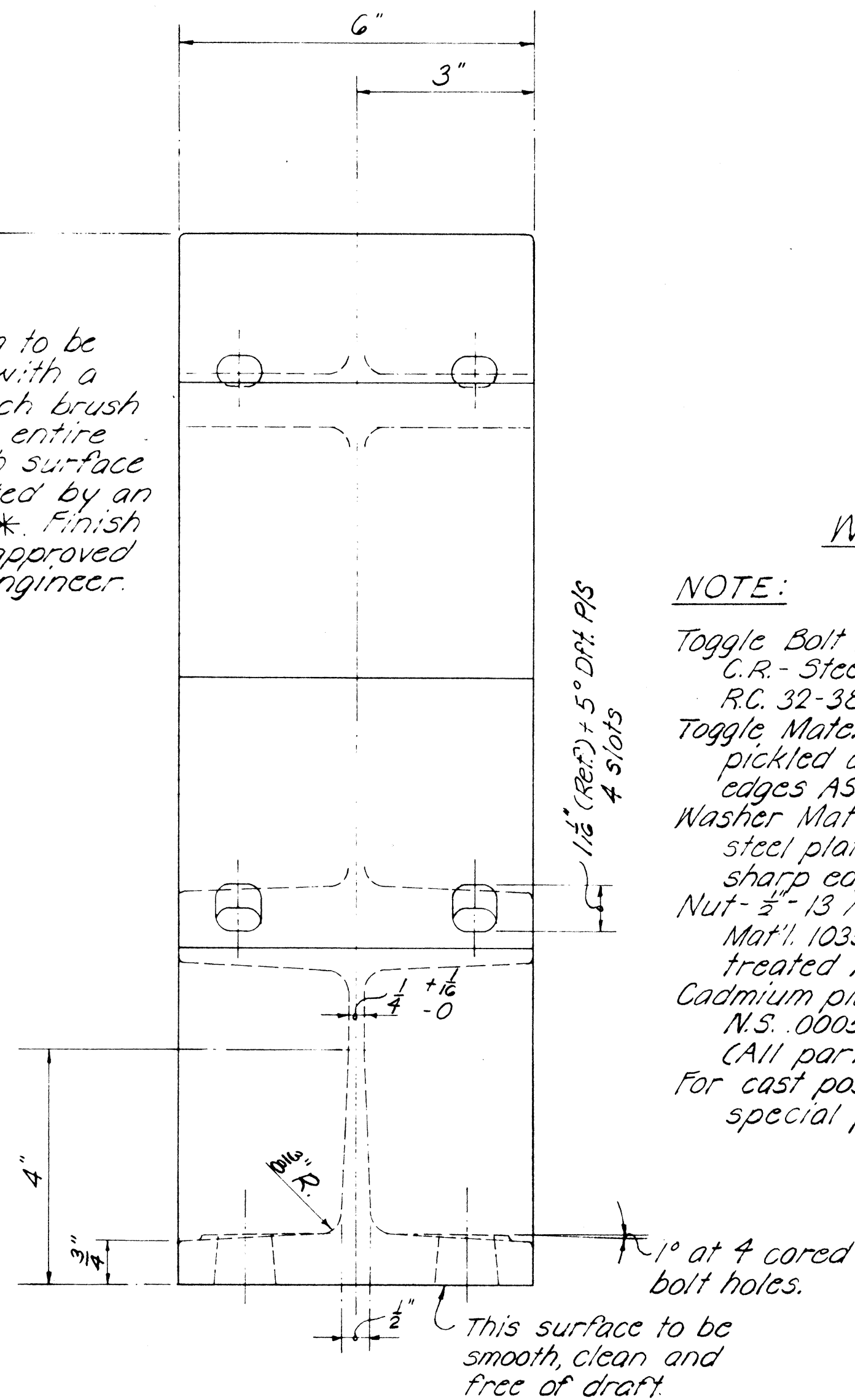
STANDARD DETAILS
METAL BRIDGE RAILING
DOUBLE RAIL COMBINATION TYPE
ON PARAPET

F.A.I. PROJ. NO. I-HI-1 (22):5, Unit 2
SHEET No. 55 OF 8 SHEETS

NOTE:
Unless otherwise specified:
Draft angles - 3°
Corner Radii - $\frac{3}{8}$ " R
Fillet Radii - $\frac{3}{8}$ " R
Casting Tol. - $\pm \frac{1}{16}$ "
Wall Thickness - $\pm \frac{1}{32}$ "

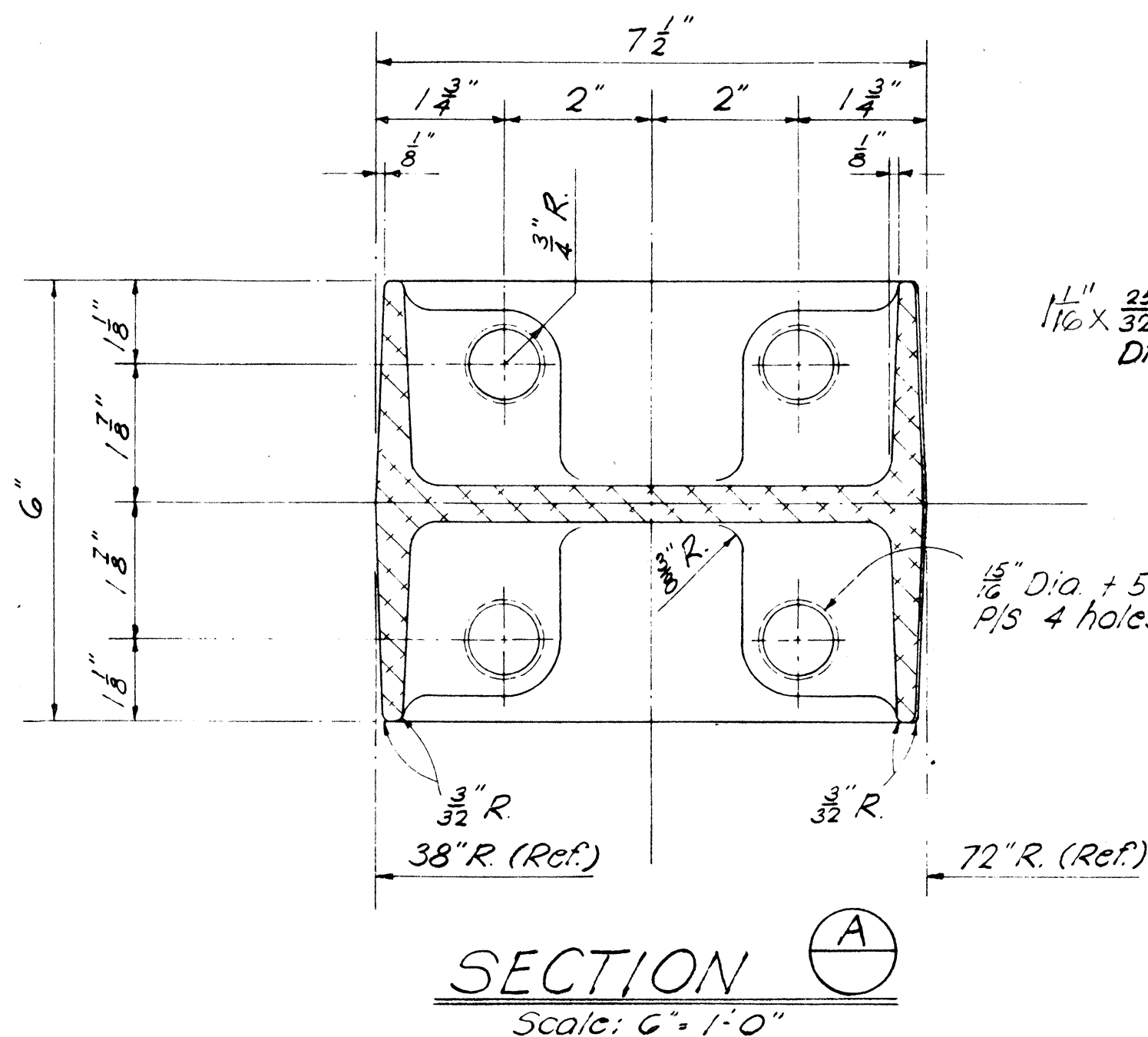


SIDE ELEVATION

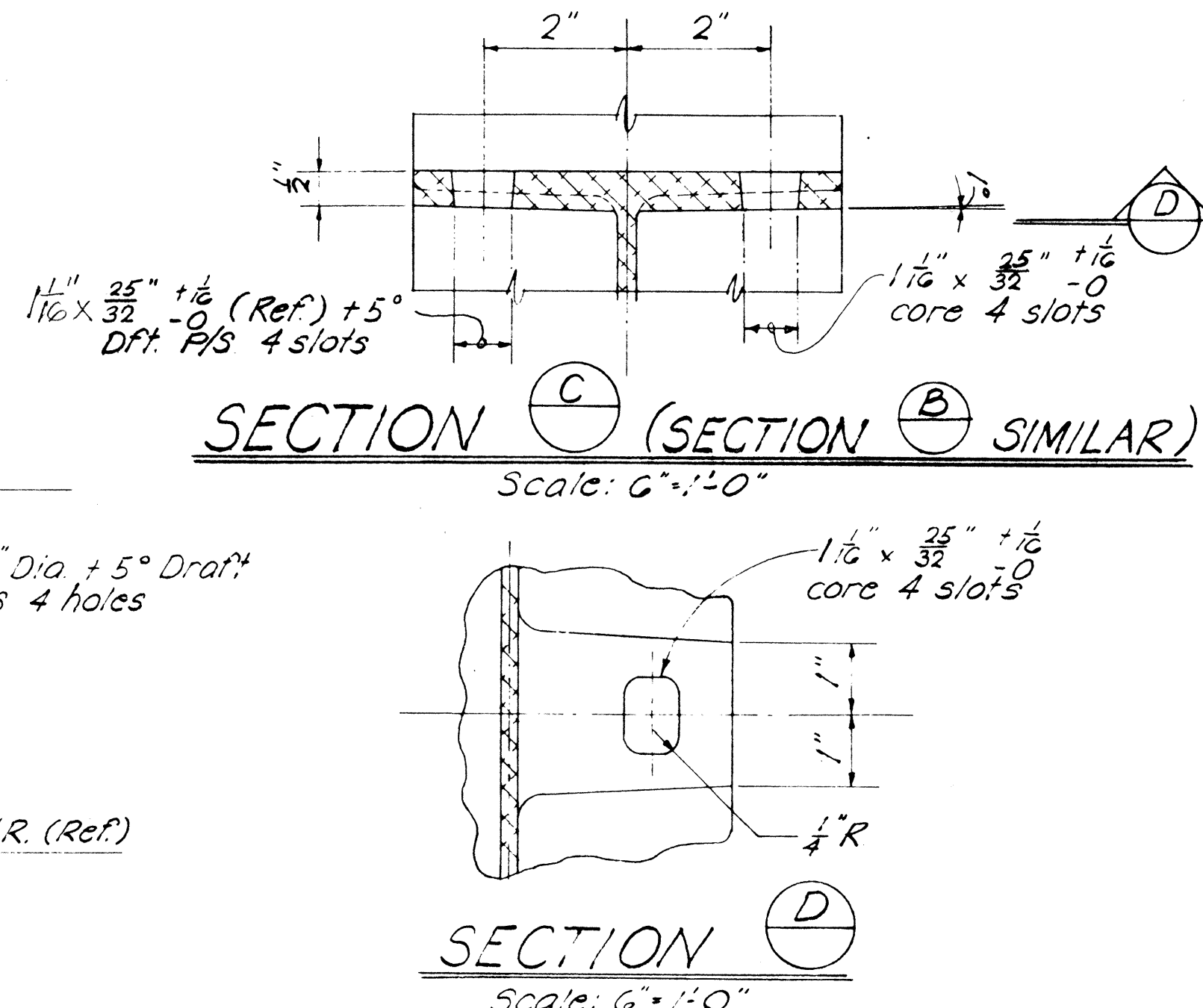


END ELEVATION

TYPICAL RAIL POST DETAILS
Scale: 6" = 1'-0"

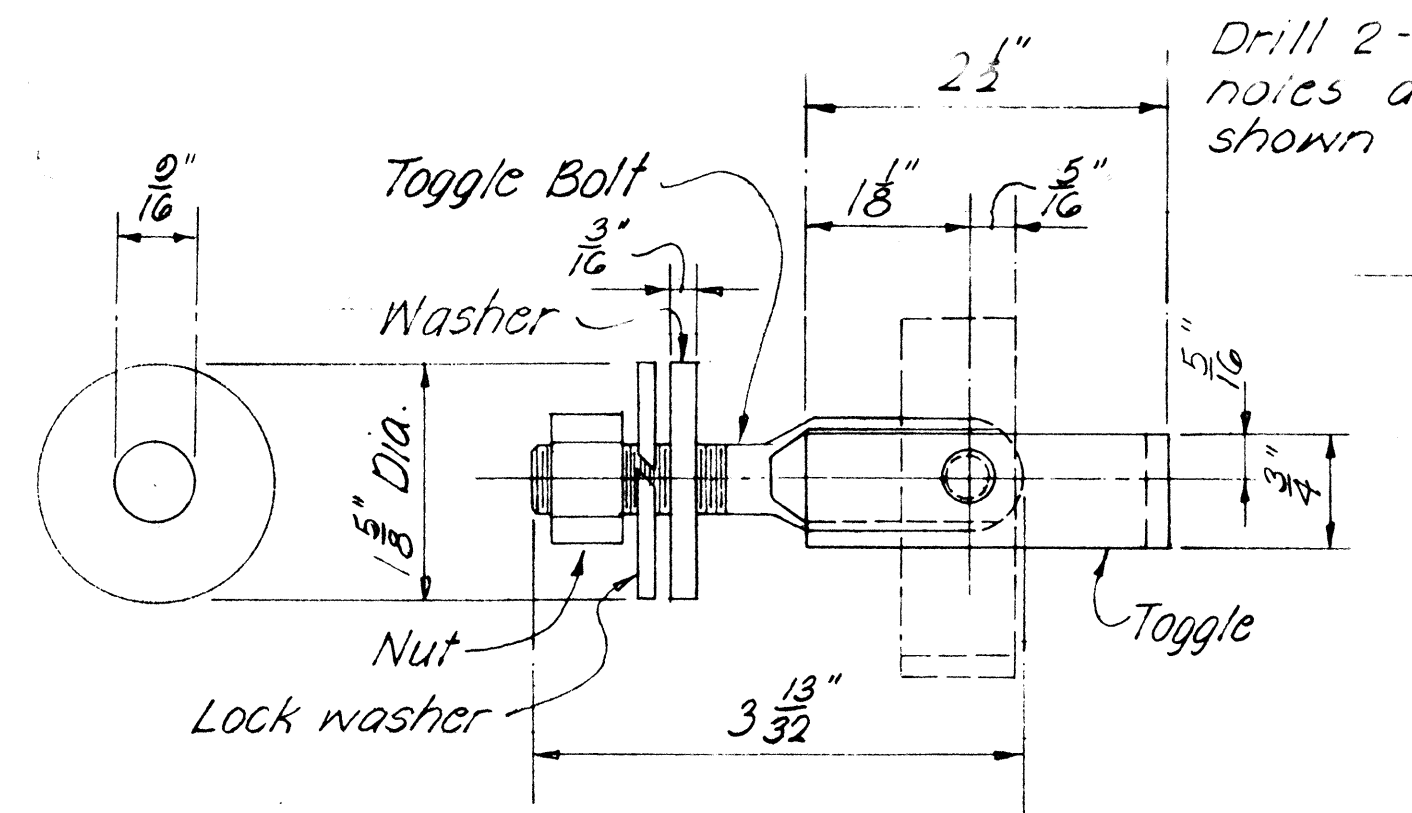


SECTION A
Scale: 6" = 1'-0"



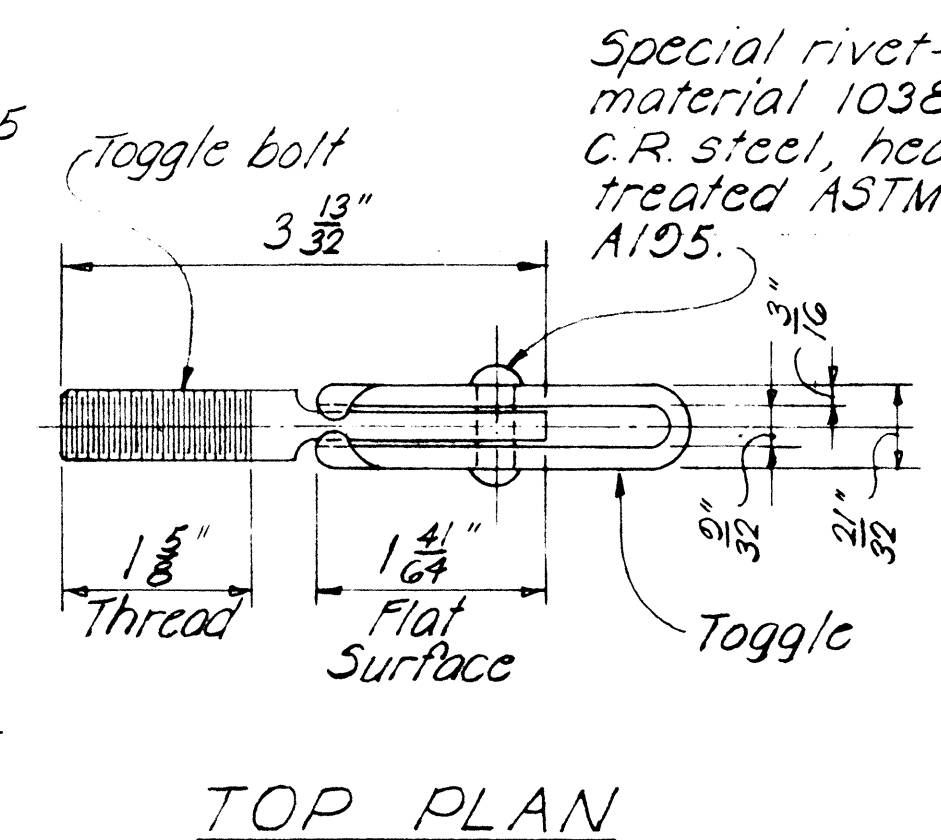
SECTION D
Scale: 6" = 1'-0"

WASHER



NOTE:

Toggle Bolt Material - $\frac{1}{2}$ " - 13 N.C. 1335
C.R. - Steel heat treated
RC 32-38 ASTM-A354
Toggle Material - 1015 H.R. steel
pickled and oiled. Round
edges ASTM-A303-58T
Washer Material - 5AE 1020 H.R.
steel plates. A.S.T.M. - A-7 Break
sharp edges.
Nut - $\frac{1}{2}$ " - 13 Amer. hex. nut - Heavy
Mat'l. 1035 C.R. Stl. - Heat
treated ASTM A325
Cadmium plating on steel - Type
N.S. 0005 thick ASTM-A165-55
(All parts)
For cast post specifications, see
special provisions.



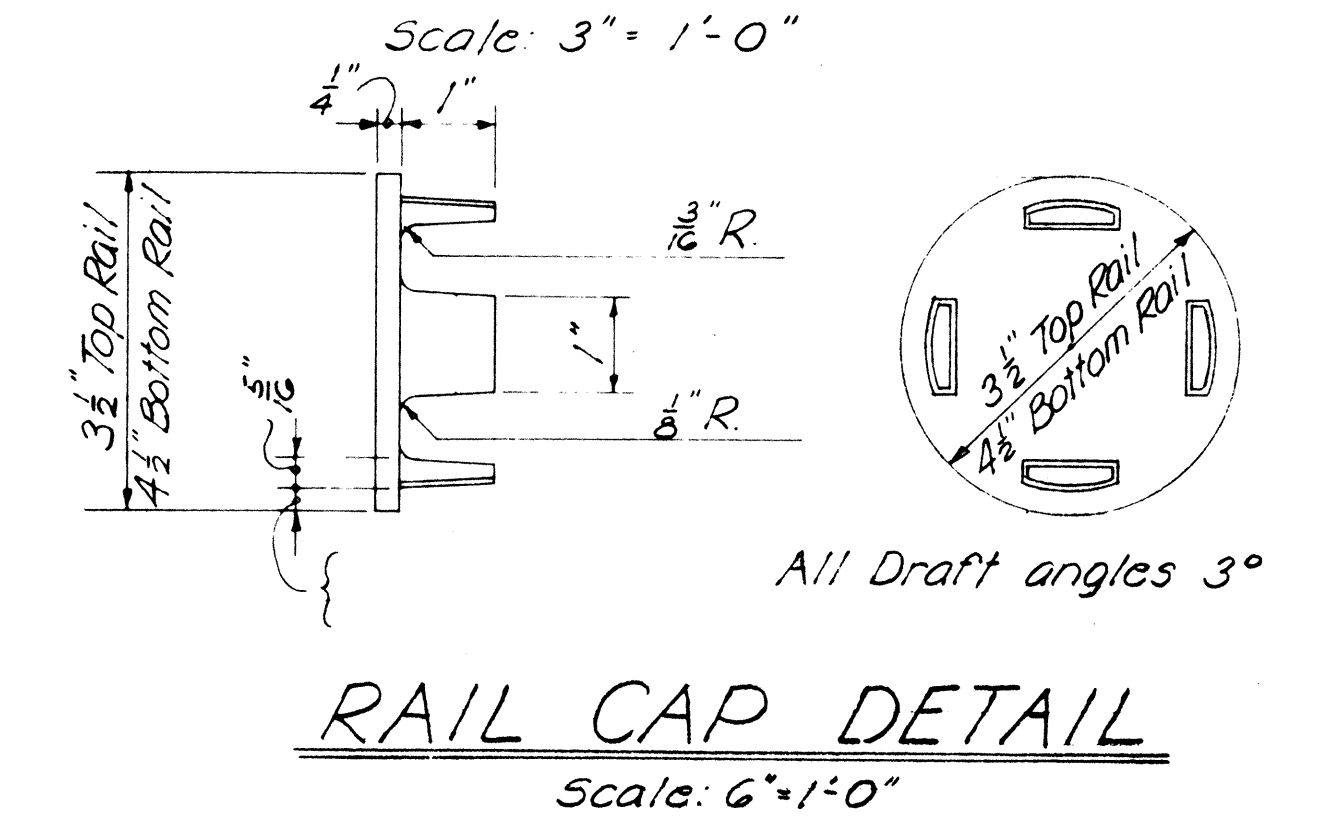
TOP PLAN

$\frac{1}{2}$ " ϕ TOGGLE BOLT DETAIL
Scale: 3" = 1'-0"

ELEVATION

ANCHOR BOLT

TYPICAL RAIL POST
ANCHOR BOLT ASSEMBLY



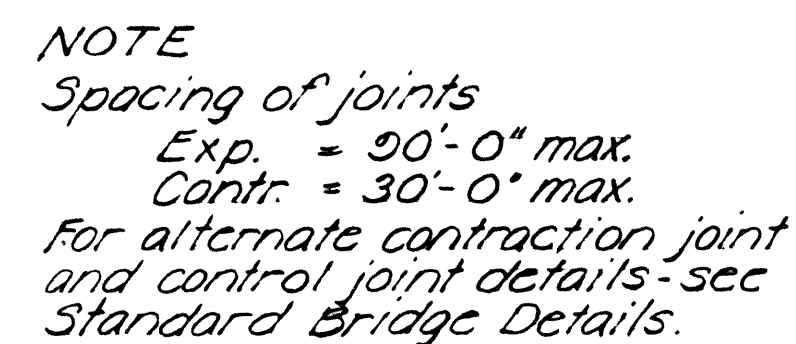
RAIL CAP DETAIL
Scale: 6" = 1'-0"

NOTE:
Metal Bridge Railing shown is
for Aluminum Bridge Railing. See
Special Provisions for alternate in
steel.

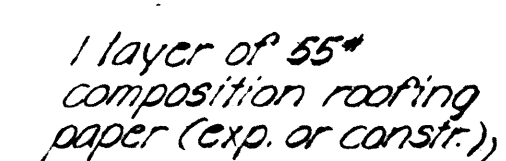
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
METAL BRIDGE RAILING
DOUBLE RAIL COMBINATION TYPE
ON PARAPET

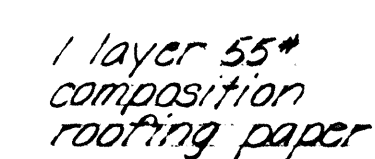
F.A.I. PROJ. NO. I-HI-1(22):5, Unit 2
SHEET No 56 OF 8 SHEETS



SECTION A-A



SECTION B-B



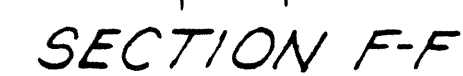
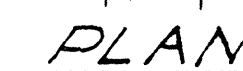
SECTION C-C



SECTION D-D

ELEVATION

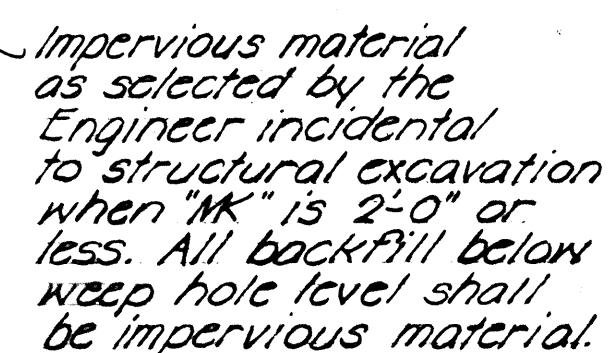
TYPICAL ADDED REINFORCEMENT
AT LIGHT STANDARD BASE No Scale



FOOTING STEP-UP DETAILS No Scale



CASE I



CASE II

STRUCTURAL EXCAVATION & DRAINAGE DETAILS No Scale

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

RETAINING WALL TYPE 7-1

INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1(22):5, Unit 2

SCALE AS NOTED DATE: June 1967

SHEET 58 OF 8 SHEETS