

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-099-1(24)	2007	52	74

GENERAL NOTES

DESIGN SPECIFICATIONS:

A. AASHTO 1998 LRFD Bridge Design Specifications, Third Edition, including all interim revisions.

MATERIALS:

- A. Reinforced Concrete: Class A, unless otherwise noted
B. Reinforcing Steel: ASTM A 615, Grade 60
C. Admixture in concrete: See Special Provisions
D. All expansion and premolded joint filler shall be incidental to concrete and will not be paid for separately.
E. All structural steel shall be ASTM A 36, hot-dip galvanized after fabrication.
F. All welding shall be in accordance with the current edition of Bridge Welding Code ANSI/AASHTO/AWS D 1.5
G. All anchor bolts, washers and nuts shall be ASTM F 1554, Gr. 55, hot-dip galvanized after fabrication, unless noted otherwise. All threaded rods (studs) shall be ASTM A 449 Type 1, hot-dip galvanized after fabrication.
H. Epoxy shall be "Glass Vial" or "Double Cartridge" type. Epoxies that require manual measuring or mixing will not be allowed. Epoxy shall meet the requirements of ASTM C 881, Type IV, Grade 3, Class C.

CONSTRUCTION METHODS:

- A. Refer to Hawaii Standard Specifications for Road, Bridge and Public Works Construction, 2005 Edition and Special Provisions.
B. Except as noted otherwise, all vertical dimensions are measured plumb.
C. For steel reinforcing, stagger all splices where possible.
D. Steel reinforcing shall be supported, bent and placed per LRFD Bridge Design Specifications.

- E. For cast-in-place concrete, minimum reinforcement cover:
Concrete cast against earth: 3"
Concrete cast against a smooth surface or finished to a smooth surface: 2"
F. At time concrete is placed, reinforcing shall be free from mud, oil, laitance or other coatings adversely affecting bond capacity.
G. Reinforcement, dowels and other embedded items shall be positively secured before pouring.
H. Minimum clear spacing between parallel bars shall be one and one-half (1½) times the diameter of the bars (for bundled bars). But in no case shall the clear distance between the bars be less than one and one-half (1½) times the maximum size of the course aggregate.
I. All dimensions relating to reinforcing bars (e.g. spacing of bars, etc.) are to centers of bars unless noted otherwise.
J. All footings shall bear on firm undisturbed natural ground or properly compacted structural fill.
K. In the event of over-excavation, the space between the footing/slab/wall and the ground shall be filled with a minimum of Class D concrete at the Contractor's expense at no cost to the State.
L. Where the plans call for reinforcement bars to be embedded or anchored into existing concrete, see Special Provisions Section 674--Concrete Retrofit.
M. Where the plans call for placing fresh plastic concrete against existing concrete, see Special Provisions Section 674--Concrete Retrofit.

REFERENCE:

- A. Refer to Standard Plans for additional details and notes not covered by details and typical drawings.

GENERAL:

- A. All items noted incidental will not be paid for separately.

- B. The Contractor shall verify the locations of all existing utility lines and notify their respective owners before commencing with any work.
C. The Contractor shall verify all grades and dimensions before commencing with any work.
D. The Contractor shall be solely responsible for the protection of adjacent property, utilities and existing and new structures from damage due to construction. Repairing any damage shall be at no cost to the State.
E. The Contractor shall provide temporary shoring or other measures as may be necessary to insure the safety of all concerned and to protect existing structures.
F. Unless noted otherwise, all exposed concrete edges shall be chamfered ¾".

METAL GUARDRAIL TYPE 3 THRIE BEAM:

- A. The work necessary to install guardrail shall include all labor, materials, tools, equipment and incidentals necessary to complete the work and will not be paid for separately.
B. Transition Section and Thrie Beam shall be fabricated from 10-gauge steel conforming to the requirements of AASHTO M 180, Type II, Class B.
C. Standard Spacer, including all anchor bolts, cap PL, nuts and washers, shall be hot-dip galvanized after fabrication. Supports shall be spaced as shown on the detail drawings with rail parallel to roadway, unless conditions at site renders it impossible to do so. Flare point to be determined in field.
D. Cap PL shall be fabricated from ASTM A 36. All steel shapes, rails and plates shall conform to ASTM A 36 specifications.
E. Anchor bolt length shall be such that a snug fit of the elements and full thread engagement plus ¼" (max) is attained.
F. Heads of through anchor bolts shall be placed on the traffic side of the rail.
G. Where double (nested) beam occur, 12" "Back-up Plate" not required.

SYMBOLS AND ABBREVIATIONS

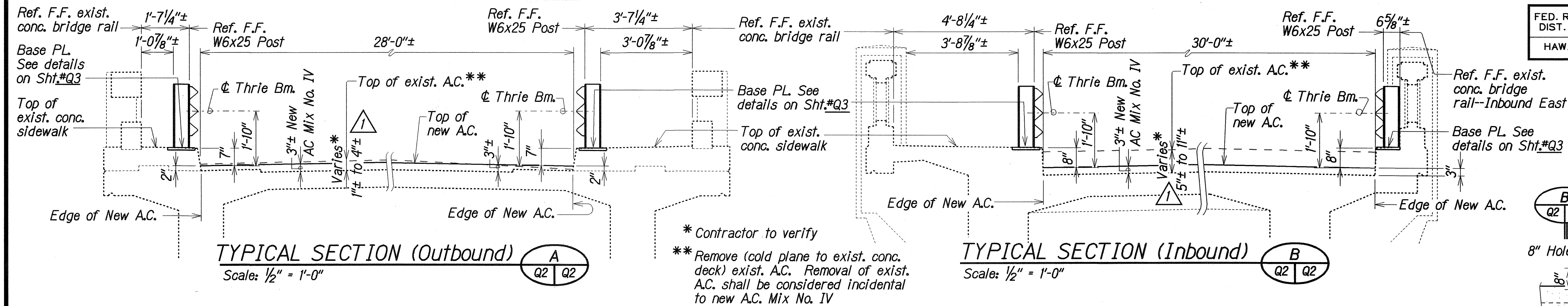
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Sheet No. Section is cut or Detail Location	E.F.	Each Face	LF, Lin. Ft.	Linear Feet	Shldr.	Shoulder
	El., Elev.	Elevation	Lg.	Long	Sht.	Sheet
	Eq.	Equal	Longit.	Longitudinal	Spc.	Space
	Est.	Estimated	L.S.	Lump Sum	Sped.	Spaced
	E.W.	Each Way	Lt.	Left	Spog.	Spacing
	Exc.	Excavation			Spec.	Specification
Adj.	Exist.	Existing	Max.	Maximum	Sta.	Station
Alt.	Exp., (E)	Expansion	Min.	Minimum	Std.	Standard
Approx.	Ext.	Exterior	Misc.	Miscellaneous	Stirr.	Stirrup
					Str.	Straight
#					Struct.	Structural
Bal.	F.F.	Front Face			Symm.	Symmetrical
Bel., Btwn.	Fin.	Finish	N	North		
B.F.	Fin. Gr.	Finish Grade	N.F.	Near Face		
B.F.E.	Ftg.	Footing	No., #	Number		
Bk.			N.T.S.	Not To Scale	T	Top
Blt.	Gr.	Grade			Temp.	Temporary
B, Bot., Bott.	Grd.	Ground			Thk.	Thick, Thickness
B.O.S.					T.O.S.	Top of Slab
					T.O.W.	Top of Wall
¢	Horiz.	Horizontal			Tot.	Total
ClP	Hwy.	Highway			Transv.	Transverse
Cl., Clr.					Typ.	Typical
Conc.			R	Radius		
Cont.	I.B.	Inbound	Rdwy	Roadway		
C.Y., Cu. Yd.	I.F.	Inside Face	Ref.	Reference	Var.	Varies
	In.	Inch	Reinf.	Reinforcement	Vert.	Vertical
	Int.	Interior	Ref.	Retaining		
Det.	Inv.	Invert	Req'd	Required		
Dia., ø			R.F.	Rear Face		
Dim.			Rt.	Right	w/	With
Dwg., Dwgs.	Jt.	Joint	R/W	Right Of Way	W.P.	Working Point
					W.W.	Wingwall

INDEX TO DRAWINGS

SHEET NO.	DESCRIPTION
Q1	General Notes, Symbols and Abbreviations and Index to Drawings
Q2	Waikakalaua Stream Bridge Layout Plan & Typical Upgrade Sections
Q3	Waikakalaua Stream Bridge Guardrail Type 3 Thrie Beam and Appurtenances Details
ES1	Waikakalaua Stream Bridge (Inbound) -- As-Built Plan
ES2	Waikakalaua Stream Bridge (Outbound) -- As-Built Plan

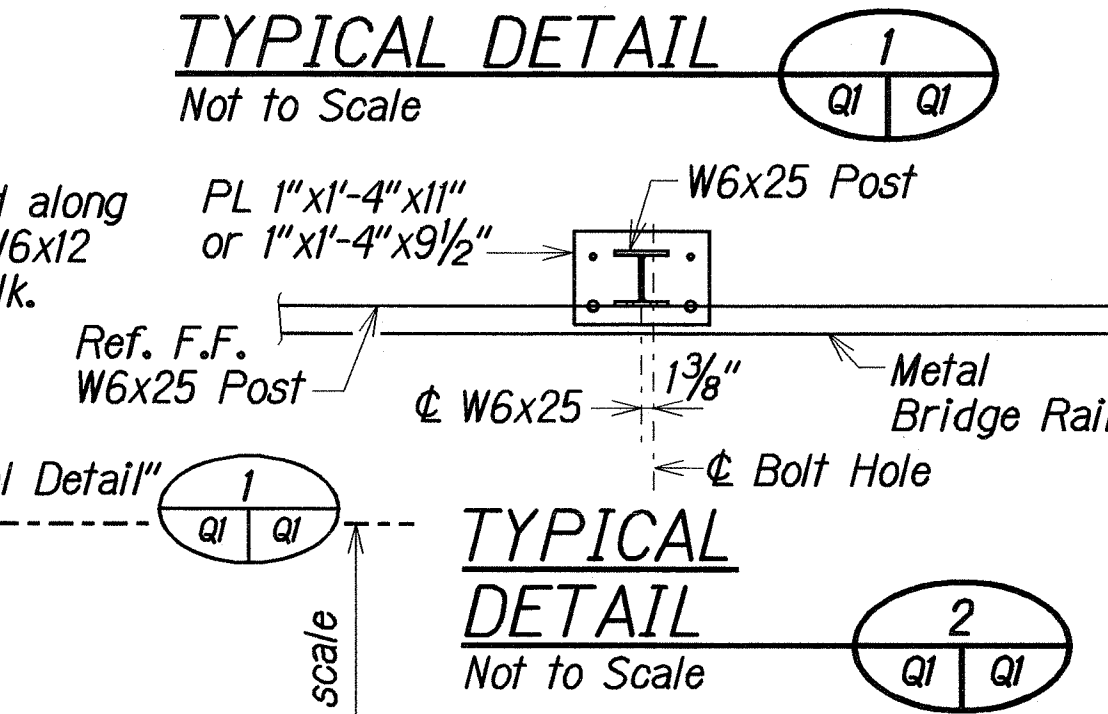
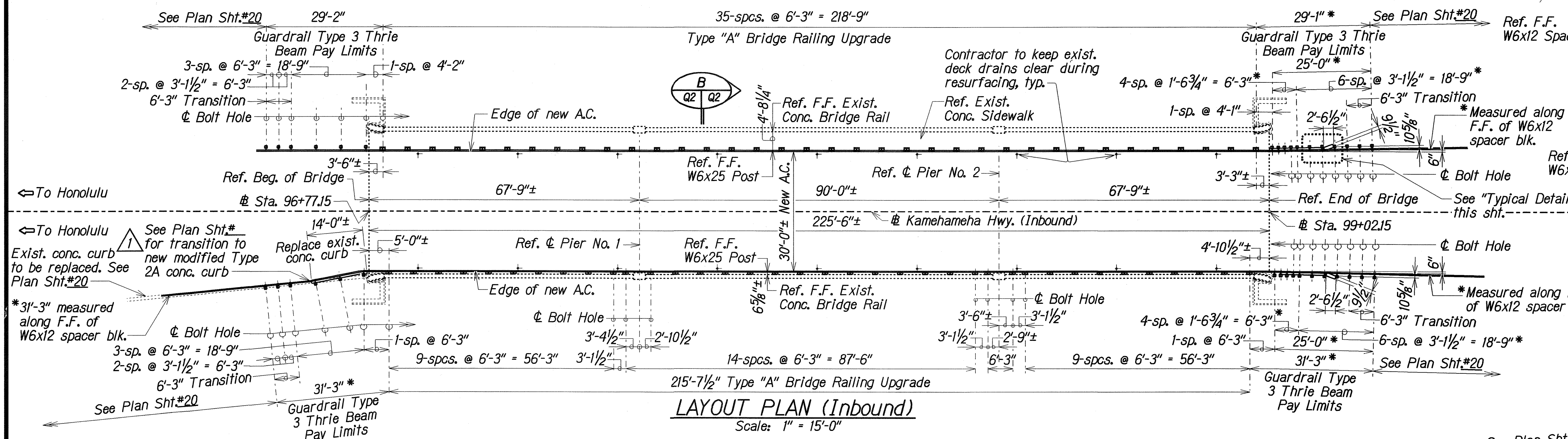
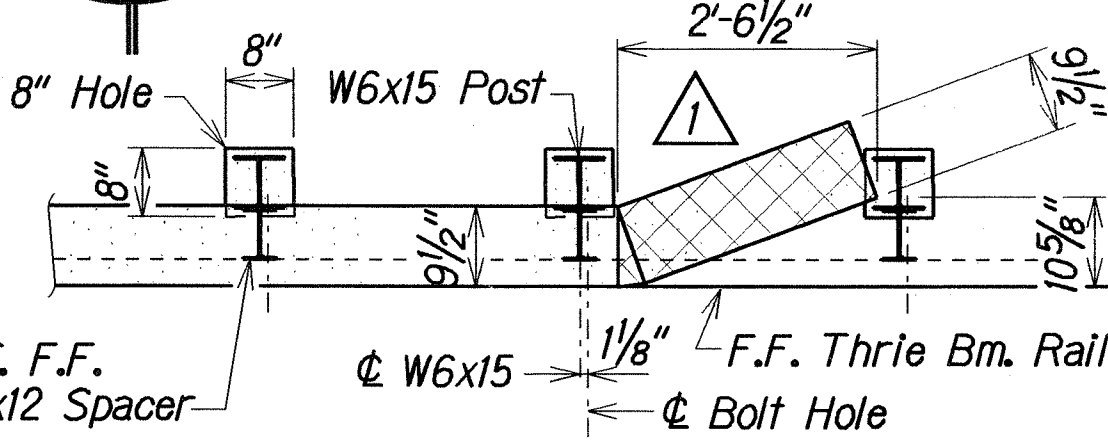
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**GENERAL NOTES, SYMBOLS, ABBREVIATIONS
and INDEX to DRAWINGS**
WAIKAKALAUA STREAM BRIDGE
KAMEHAMEHA HIGHWAY REHABILITATION
Interstate Route H-2 to Waihau Street
Project No. NH-099-1(24)
Scale: As Noted Date: Aug, 2006

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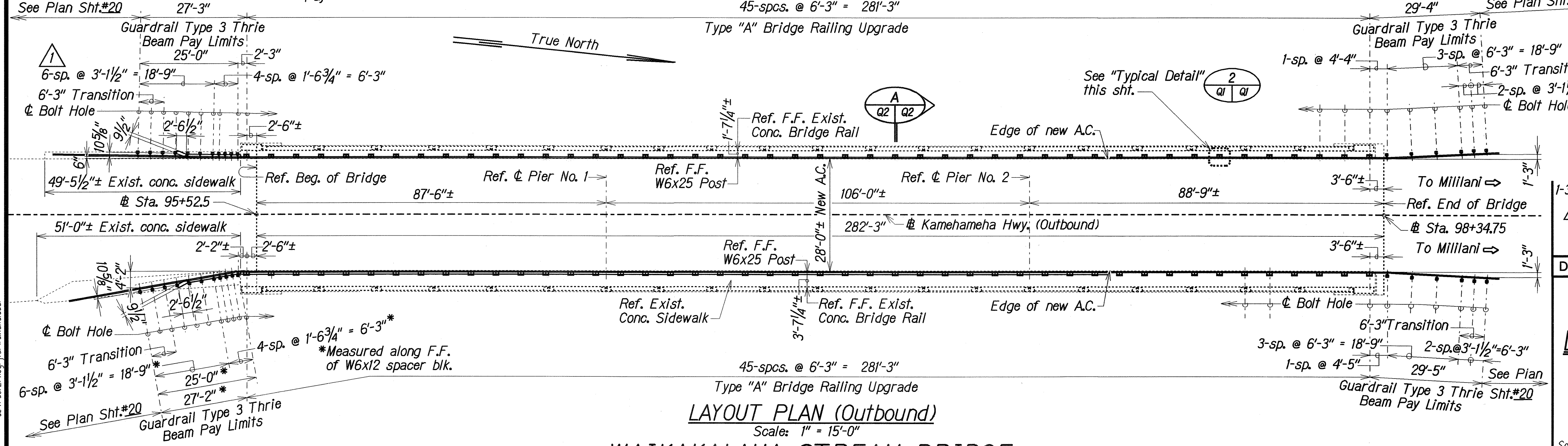


Provide 8"x8" hole in sidewalk (typ.) for W6x15 guardrail post. After W6x15 post has been set, backfill and compact all holes with suitable backfill material up to the bottom of the concrete sidewalk. Fill the balance of the hole, up to the top of existing grade, with AC.

Saw-cut and remove portion of existing conc. sidewalk to provide new 7" or 8" high x 9 1/2" wide concrete curb.



- NOTES:**
1. Type "A" Bridge Rail Upgrades shall be paid for under Item No. 507.7600
 2. Guardrail Type 3 Thrie Beam Upgrades, including concrete curbs, shall be paid for under Item No. 606.3112
 3. Portion of conc. curb (shown in Typical Detail 1) IS NOT required at the "Inbound" (trailing end) SE corner. See Plan Sht.#20



DATE	REVISION
1-30-07	Updated existing A.C. condition. Revised new conc. curb at "Inbound" trailing end, SE corner. Revised thrie beam post spacing dimensions at "Outbound" leading end, SW corner.

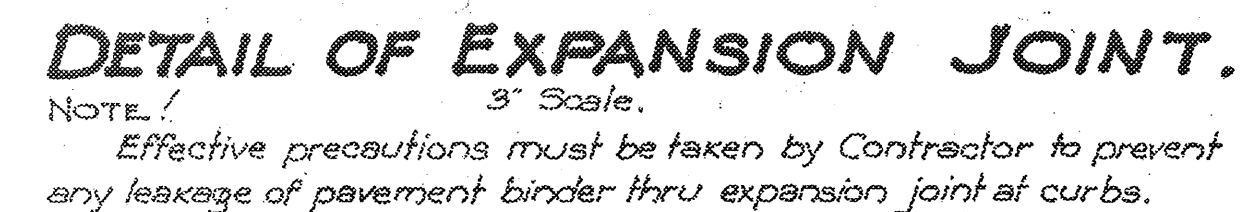
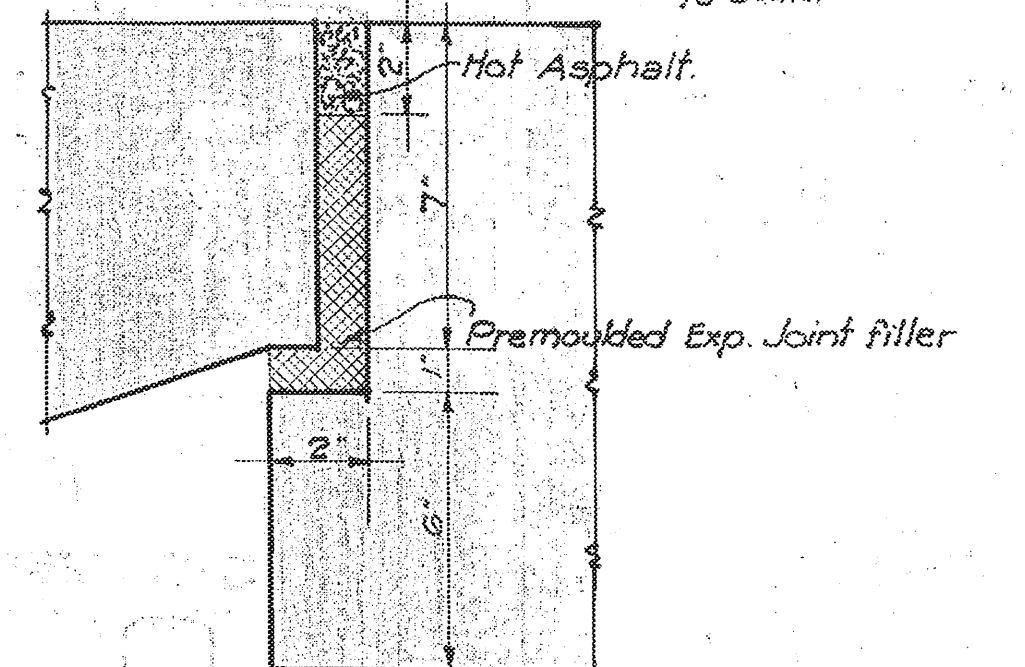
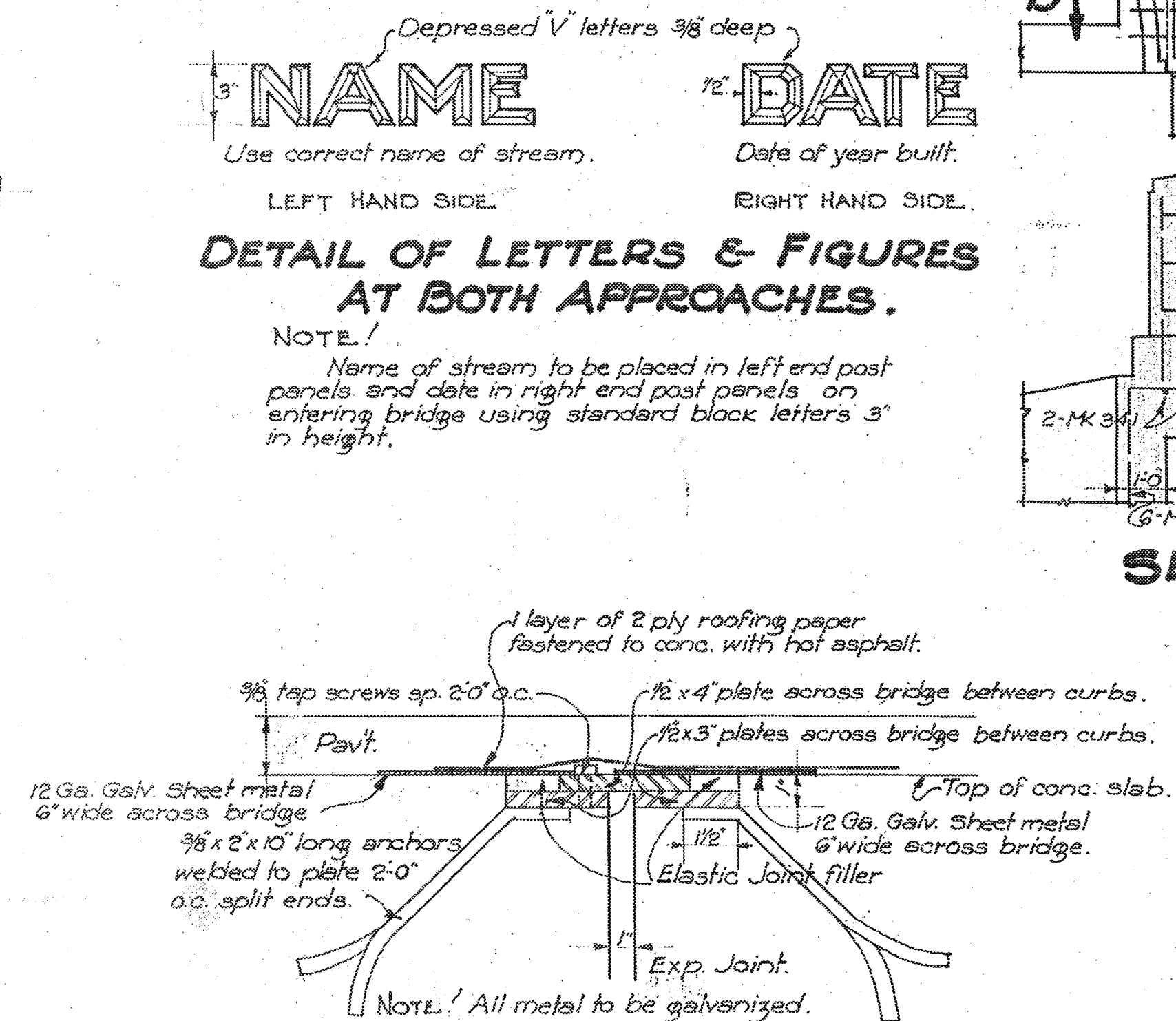
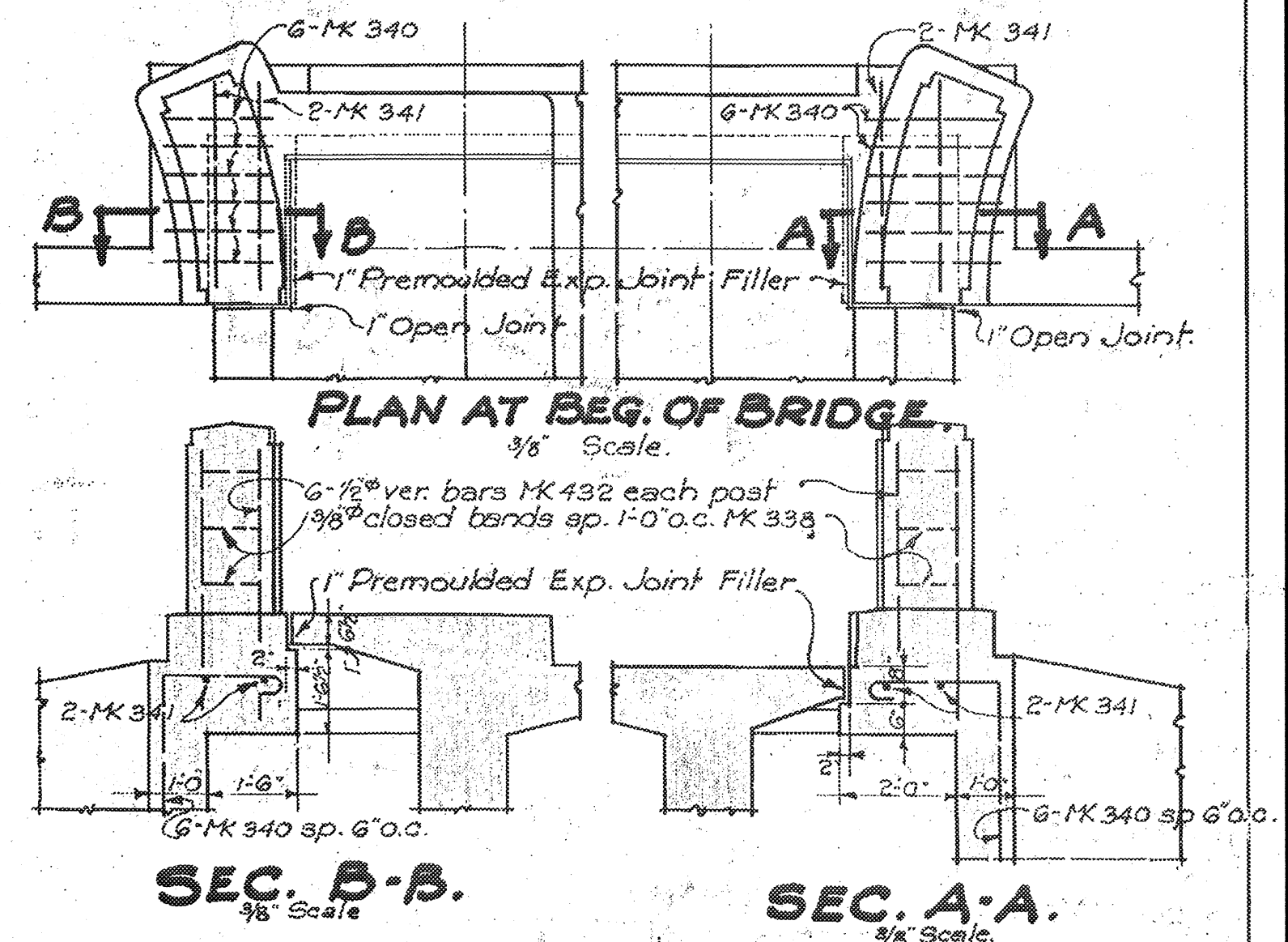
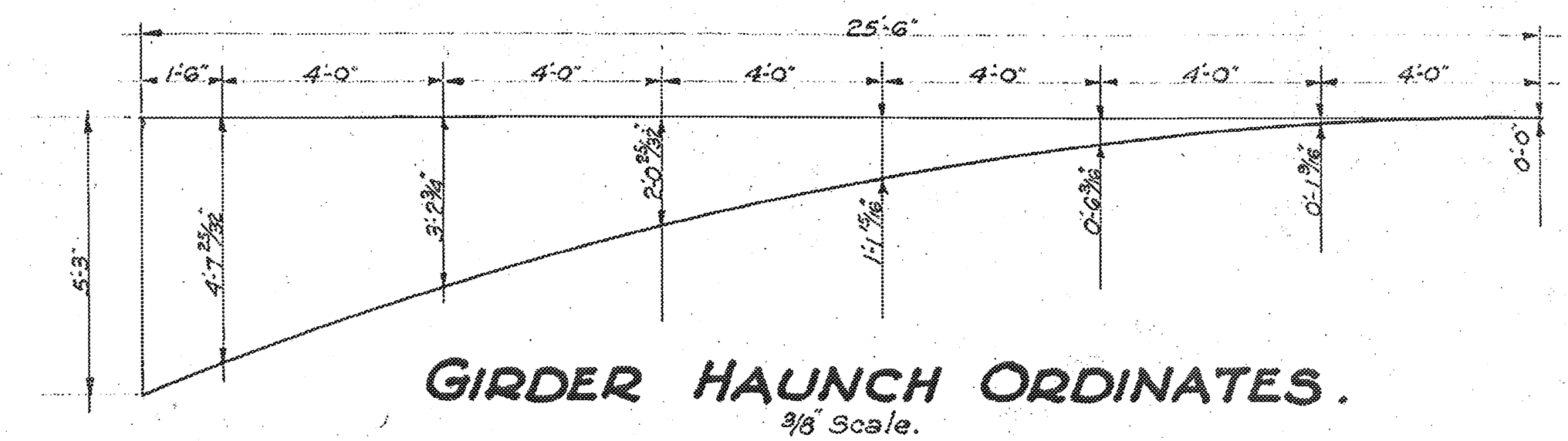
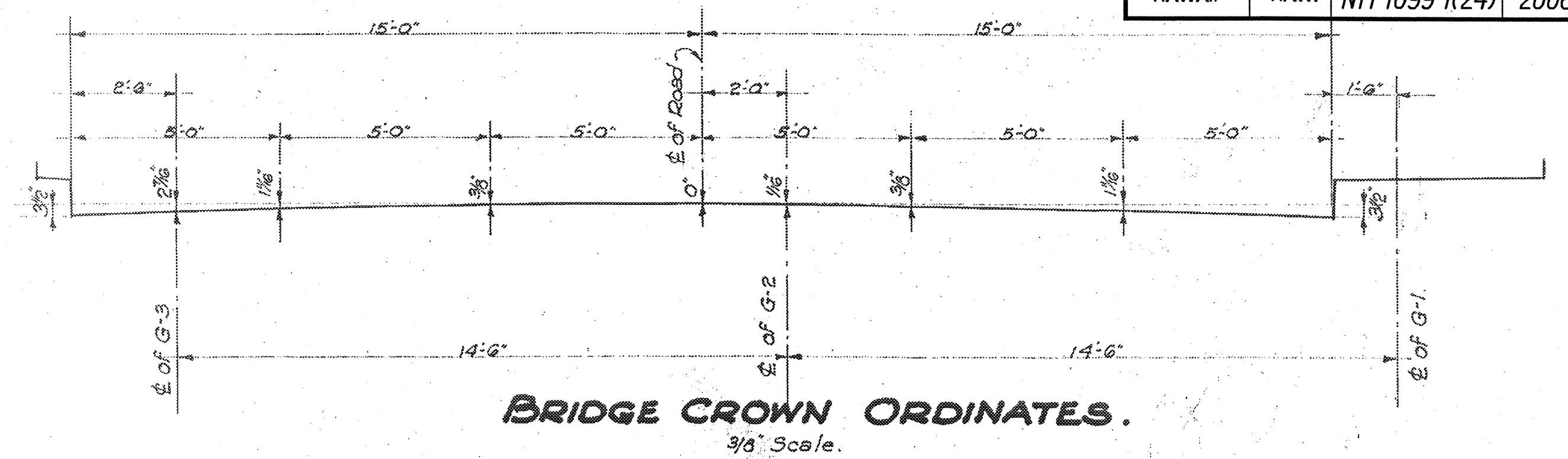
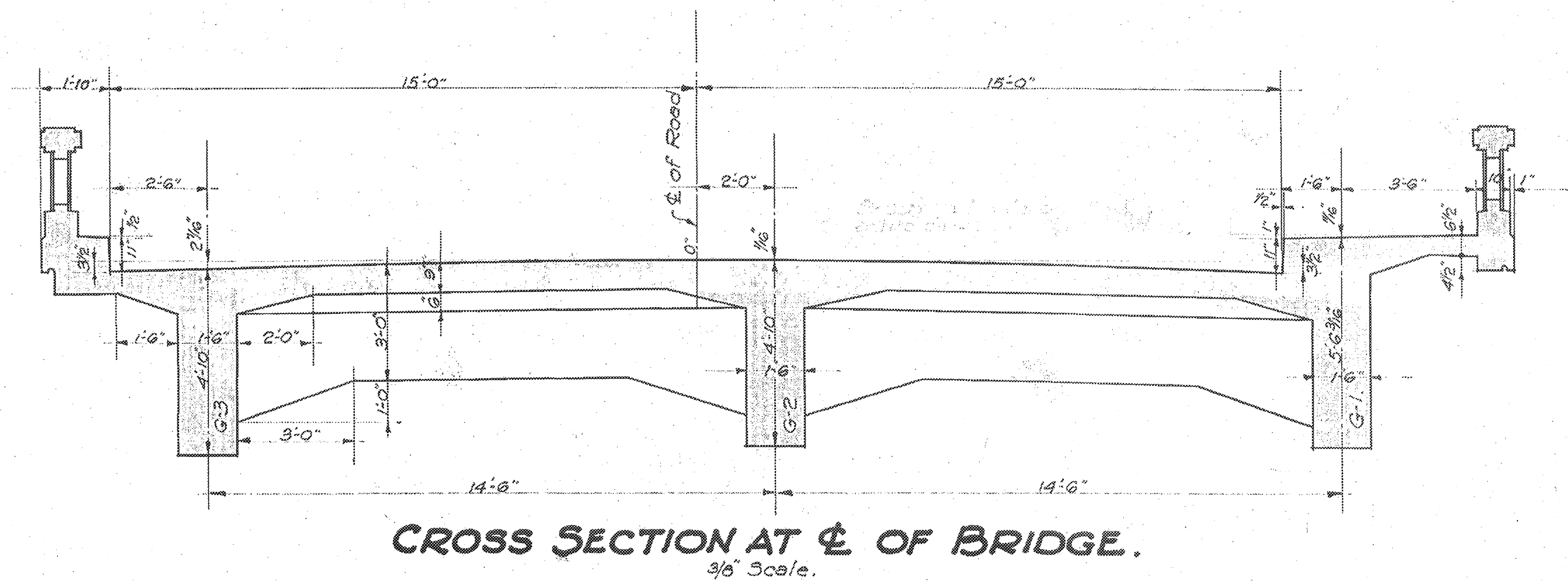
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LAYOUT PLAN and TYPICAL SECTIONS
WAIKAKALAUA STREAM BRIDGE
KAMEHAMEHA HIGHWAY REHABILITATION
Interstate Route H-2 to Waihau Street
Project No. NH-099-1(24)

Scale: As Noted Date: Aug. 2006
SHEET No. Q2 OF 3 SHEETS

WAIKAKALAUA STREAM BRIDGE

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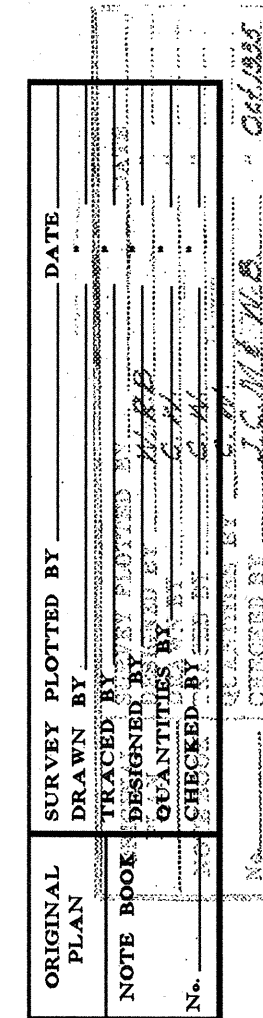


**FOR INFORMATION ONLY
NOT TO SCALE**

PREMOULDED EXPANSION JOINT.
 3rd DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
 TERRITORIAL HIGHWAY DEPARTMENT
 TERRITORY OF HAWAII.
 WAIKAKALAUA BRIDGE.
 NO STA. 30+77.25 TO STA. 33+02.75
 KAMEHAMEHA HIGHWAY ~~W.F.H. 70~~
 DATE ~~NOV-09-11(24)~~
 SHEET 6 OF 9 SHEETS

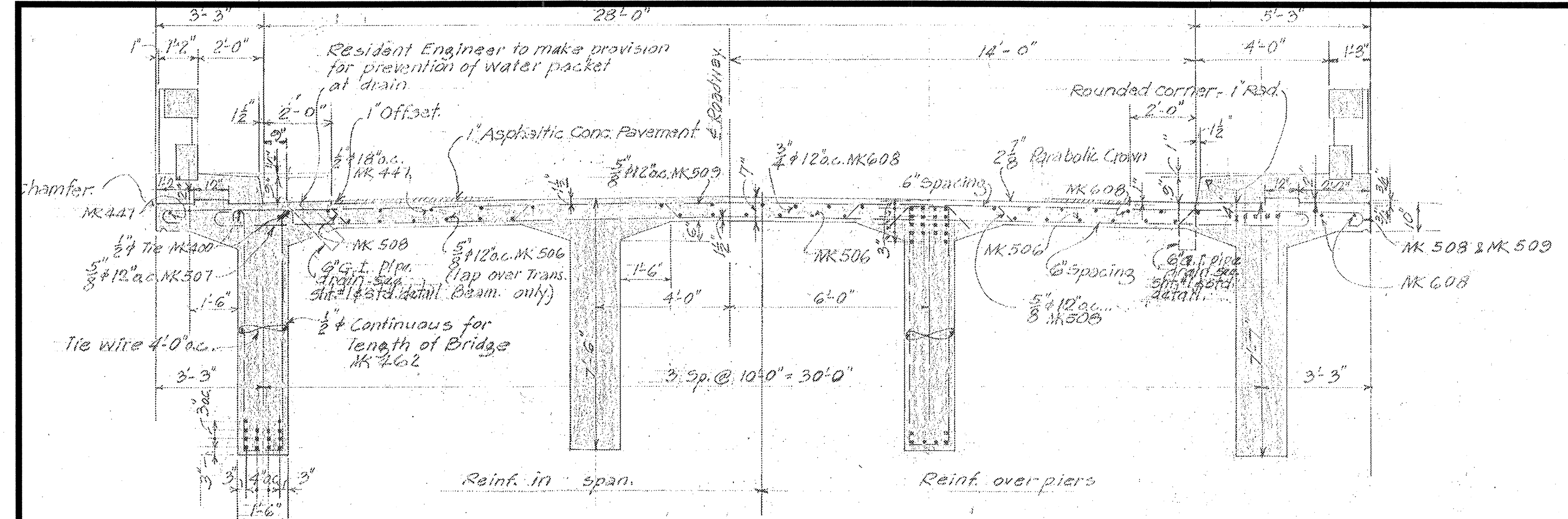
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SHEET No. **ES-1** OF **2** SHEETS

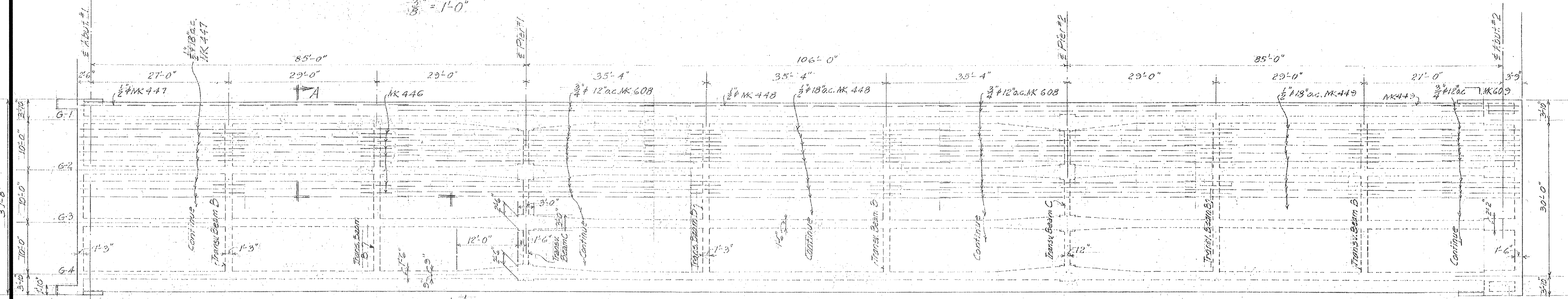


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
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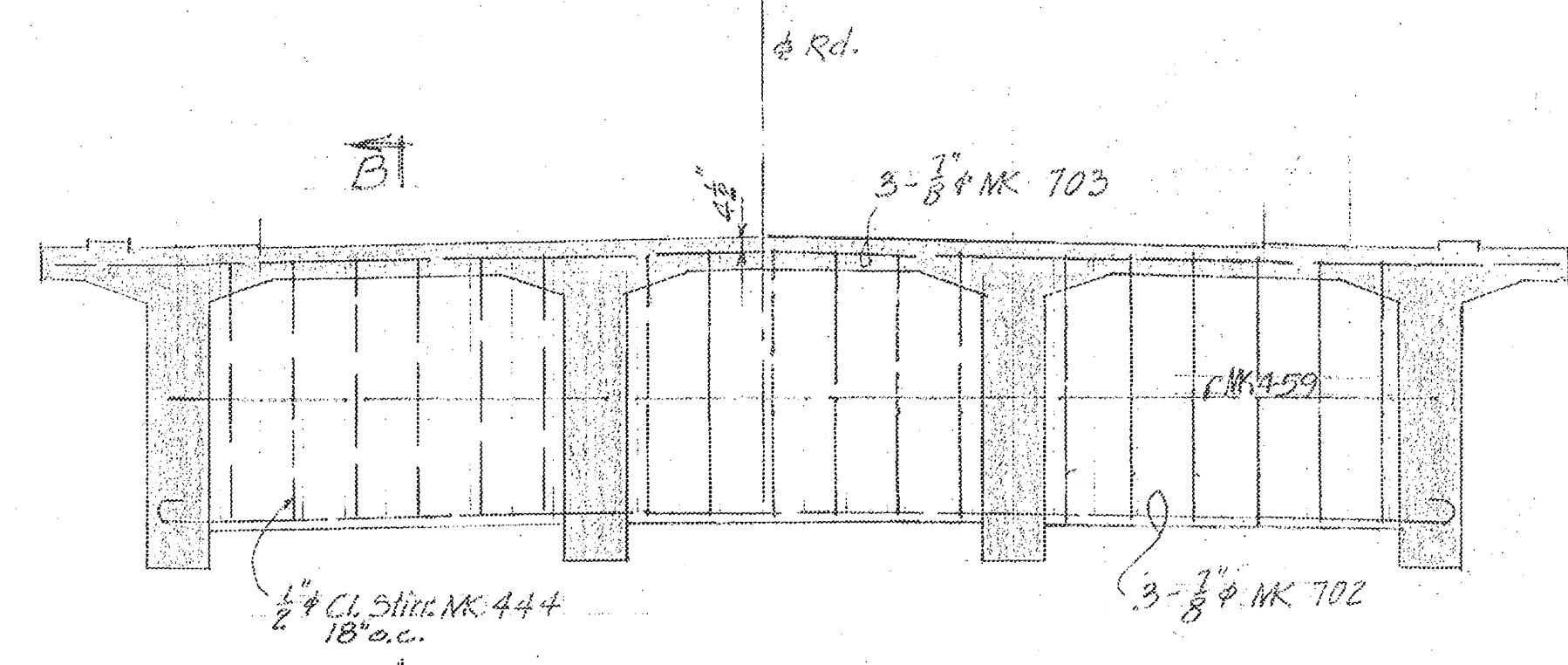
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HAWAII	HAW.	NH-099-1(24)	2006	56	73



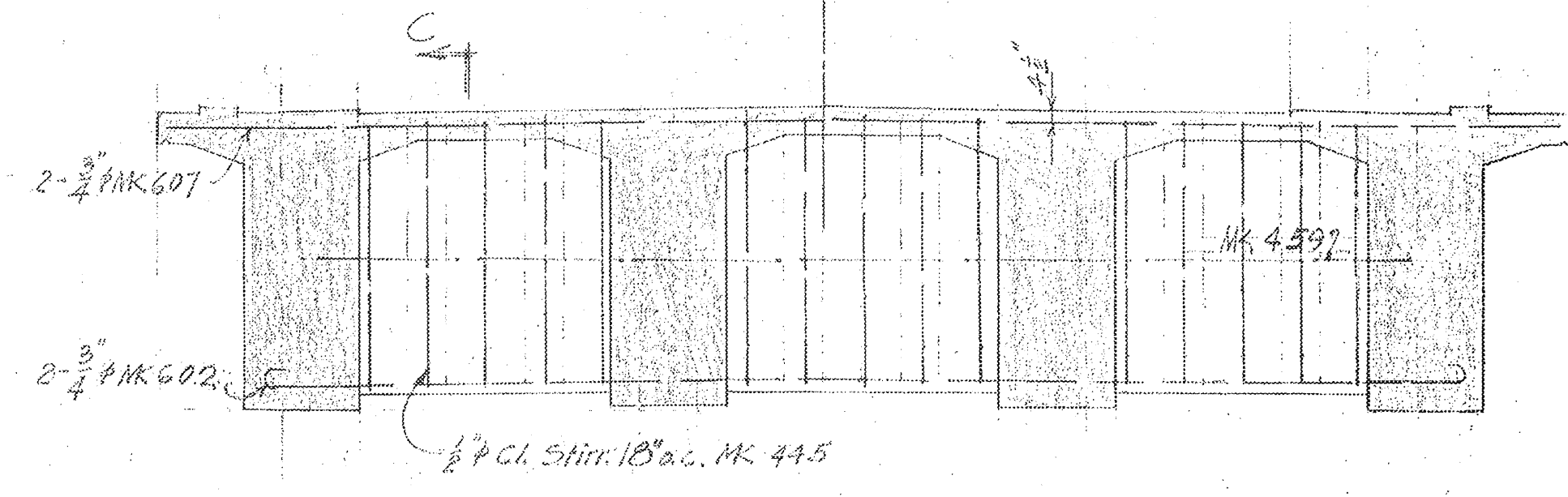
SECTION A-A
3/8" = 1'-0"



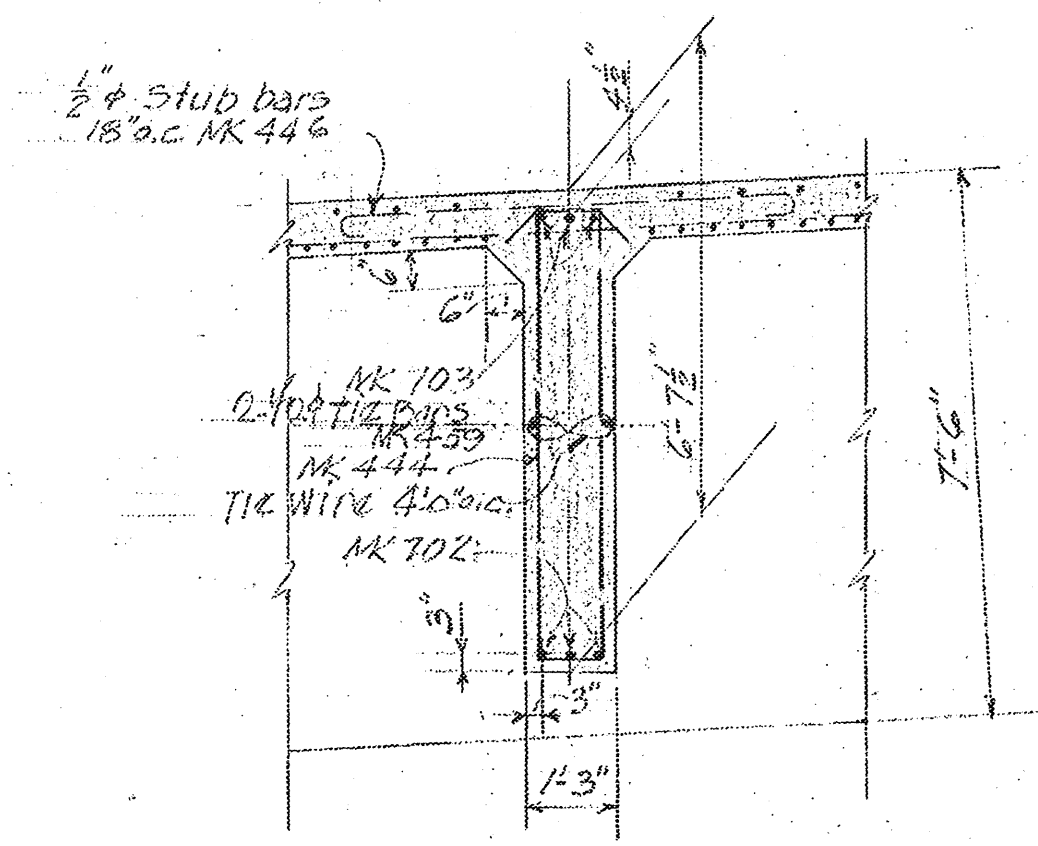
FRAMING PLAN
1" = 10'-0"



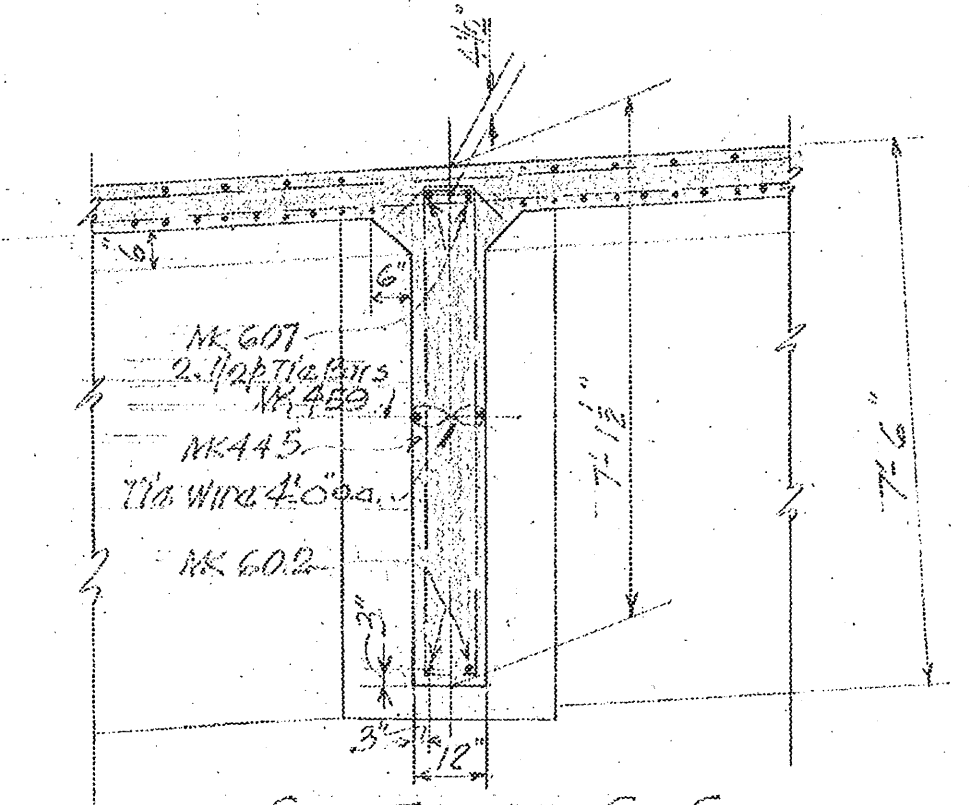
TRANSVERSE BEAM B
1/4" = 1'-0"



TRANSVERSE BEAM C
1/4" = 1'-0"



SECTION B-B
3/8" = 1'-0"



SECTION C-C
3/8" = 1'-0"

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TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
WAIKAKA BRIDGE
STA. 95+52.5 TO STA. 98+34.75
KAMEHAMEHA HIGHWAY
SNCDC FA 7(06)
NH-099-1(24)
MARCH 1949

SHEET No. 3 OF 3 SHEETS
56 5882.30
SHEET No. ES-2 OF 2 SHEETS

ORIGINAL PLAN	DATE	BY
PLAN	5/1/49	...
NOTE BOOK	...	...
CHECKED BY	...	...