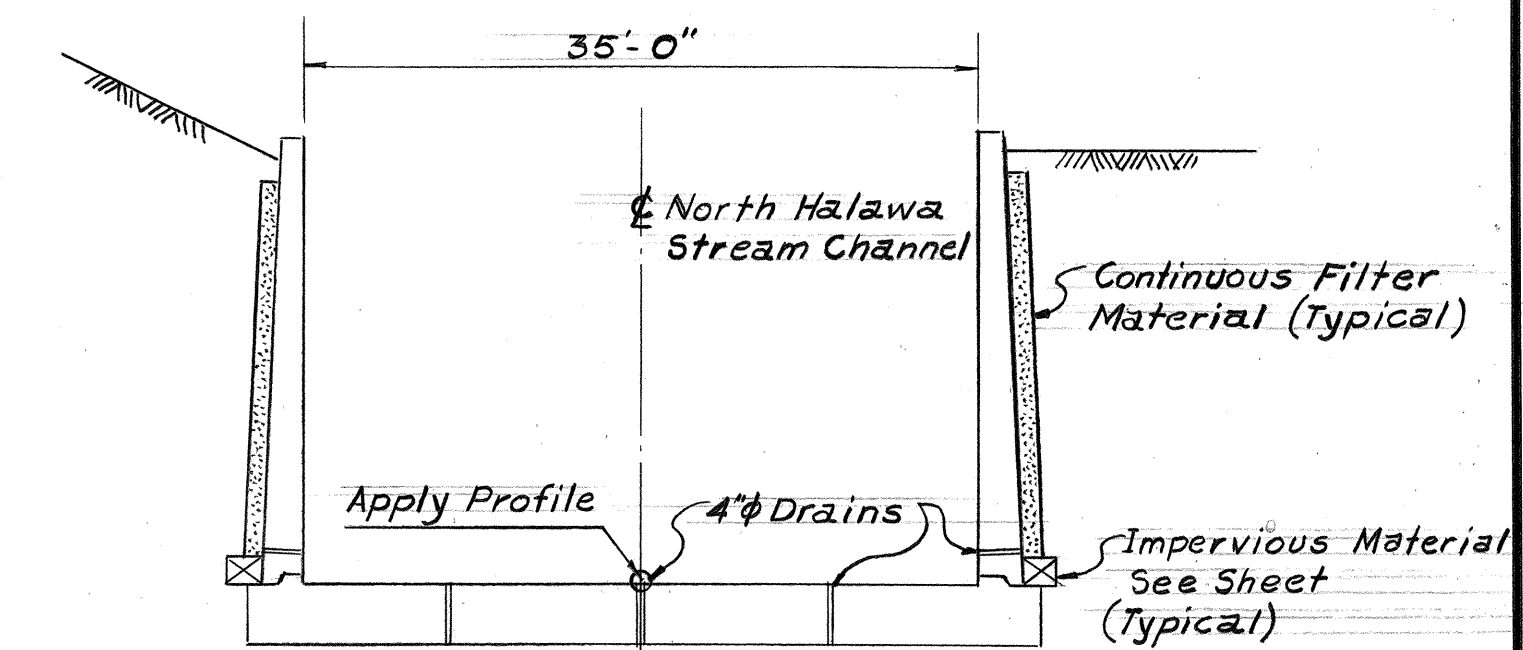
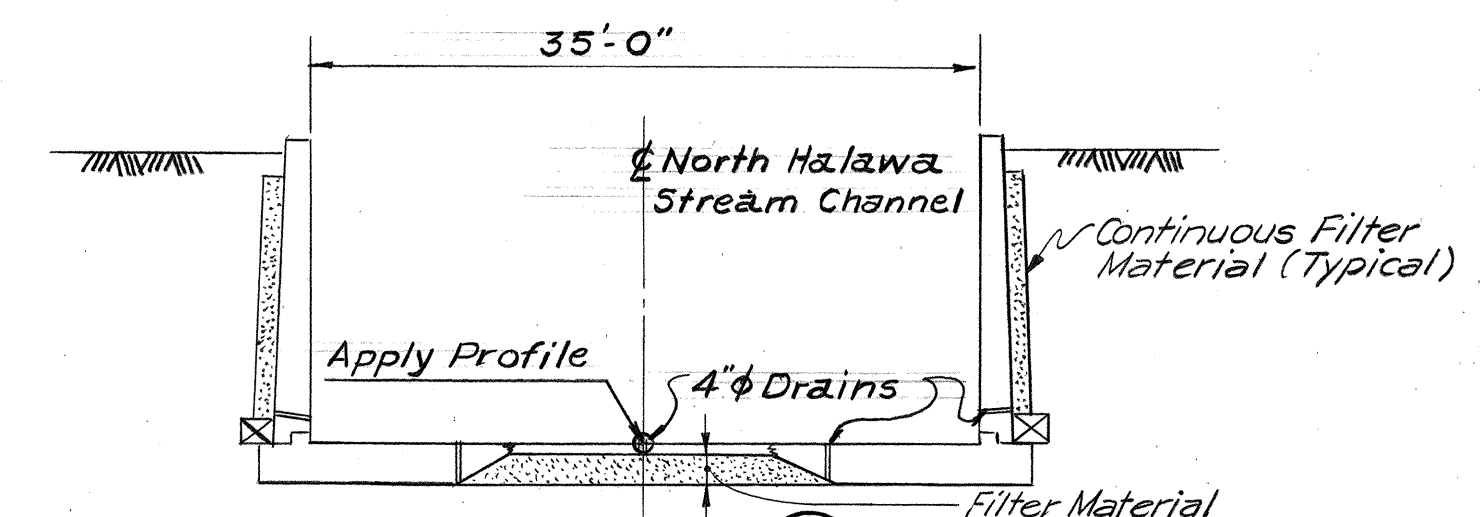


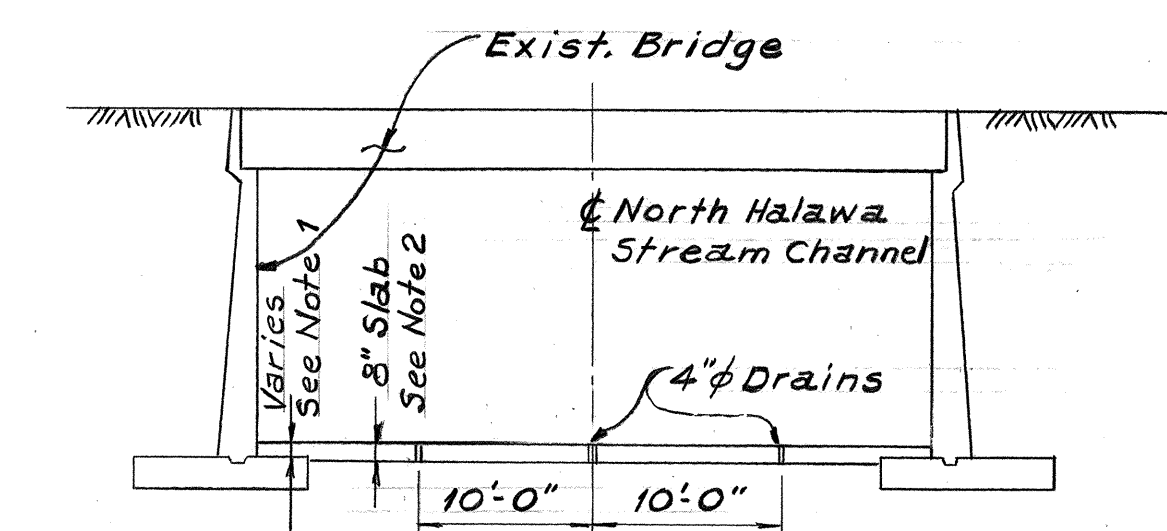
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(89):13	1971	234	362



SECTION $\frac{C}{2W}$
TYPE B WALL

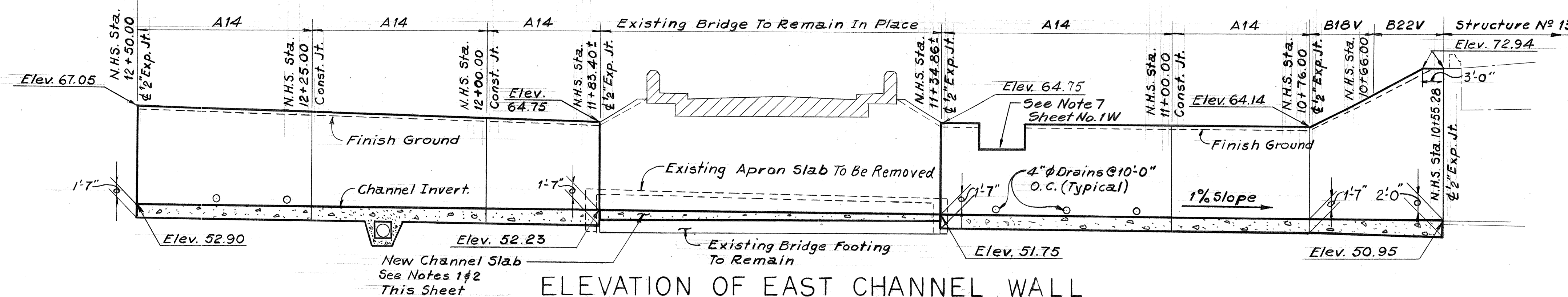


SECTION $\frac{D}{2W}$
TYPE A WALL

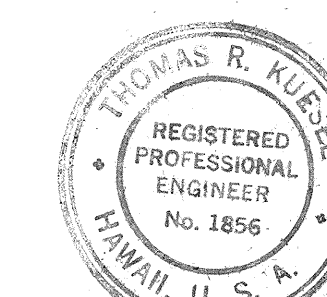
SECTION $\frac{E}{2W}$

NOTES:

- 1- New Slab Thickness To Vary Over Footing. Top Of Slab To Match Channel Invert & Bottom Of Slab To Rest On Top Of Existing Bridge Footing.
- 2- New Slab Thickness Between Footing Shall Be 8" Throughout Length And Reinforced With #3 @ 18" O.C. Both Ways And Placed In Middle Of Slab. Reinforcement Shall Extend Into Slab Over Footing
3. Chip Steps As Shown And As Directed By The Engineer Into Existing Wing Wall For New Concrete. (Work Incidental to Concrete) Care Shall Be Exercised So That Existing Reinf. Bars Will Be Utilized As Dowels For The New Concrete.



ELEVATION OF EAST CHANNEL WALL
DEVELOPED ALONG FACE OF WALL



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION

Thomas R. Kruce

**STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION**

HALAWA INTERCHANGE
NORTH HALAWA STREAM
CHANNEL

PLAN & ELEVATIONS

N.H.S. STA. 10+56.07 TO 12+50.00

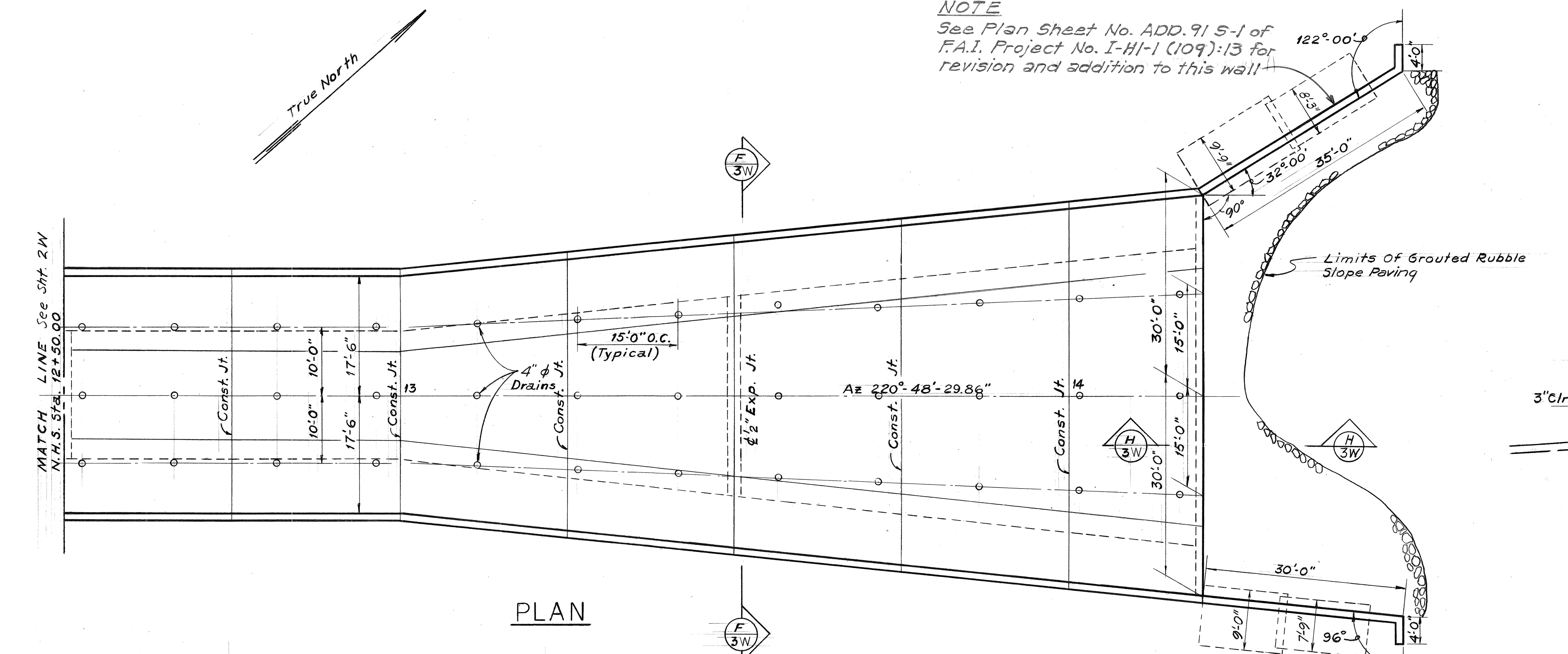
PROJ. NO. I-H1-1(89):13 DATE: MAY 1971

SCALE: 1"=10'-0" SHEET No. 2W OF 8W SHEETS

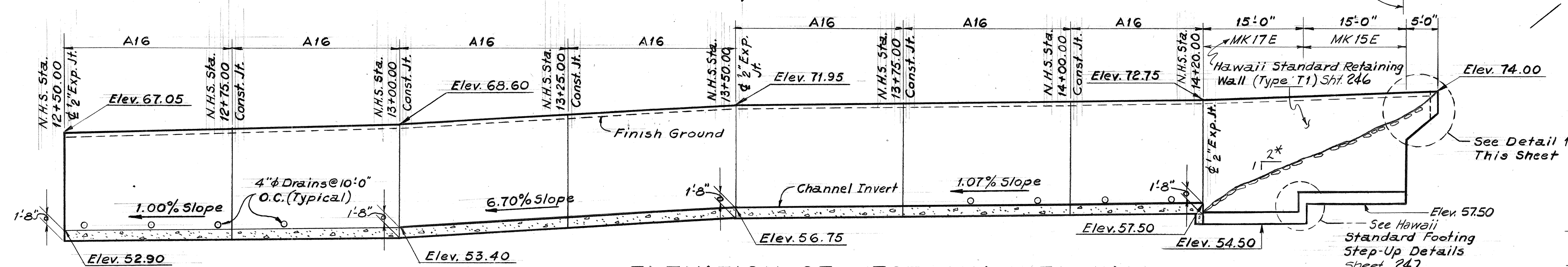
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H1-1(89):13	1971	235	362

NOTE

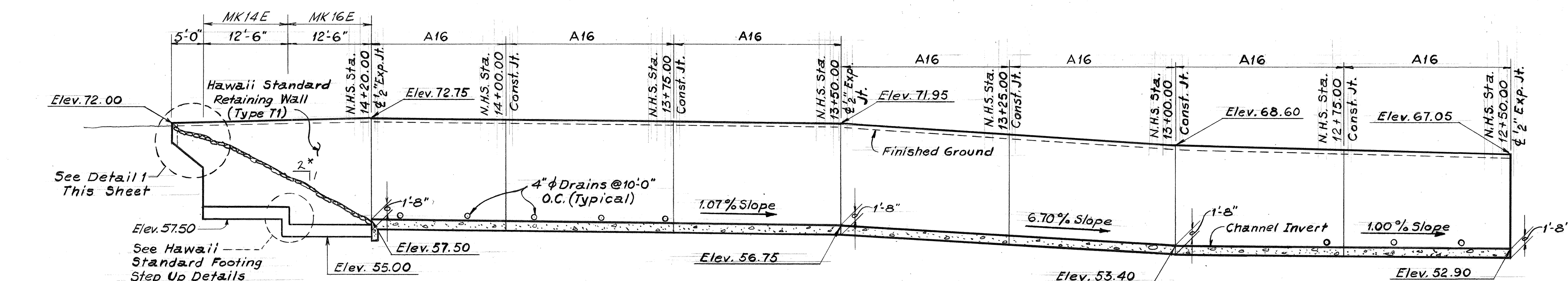
See Plan Sheet No. ADD. 91 5-1 of F.A.I. Project No. I-H1-1 (109):13 for revision and addition to this wall



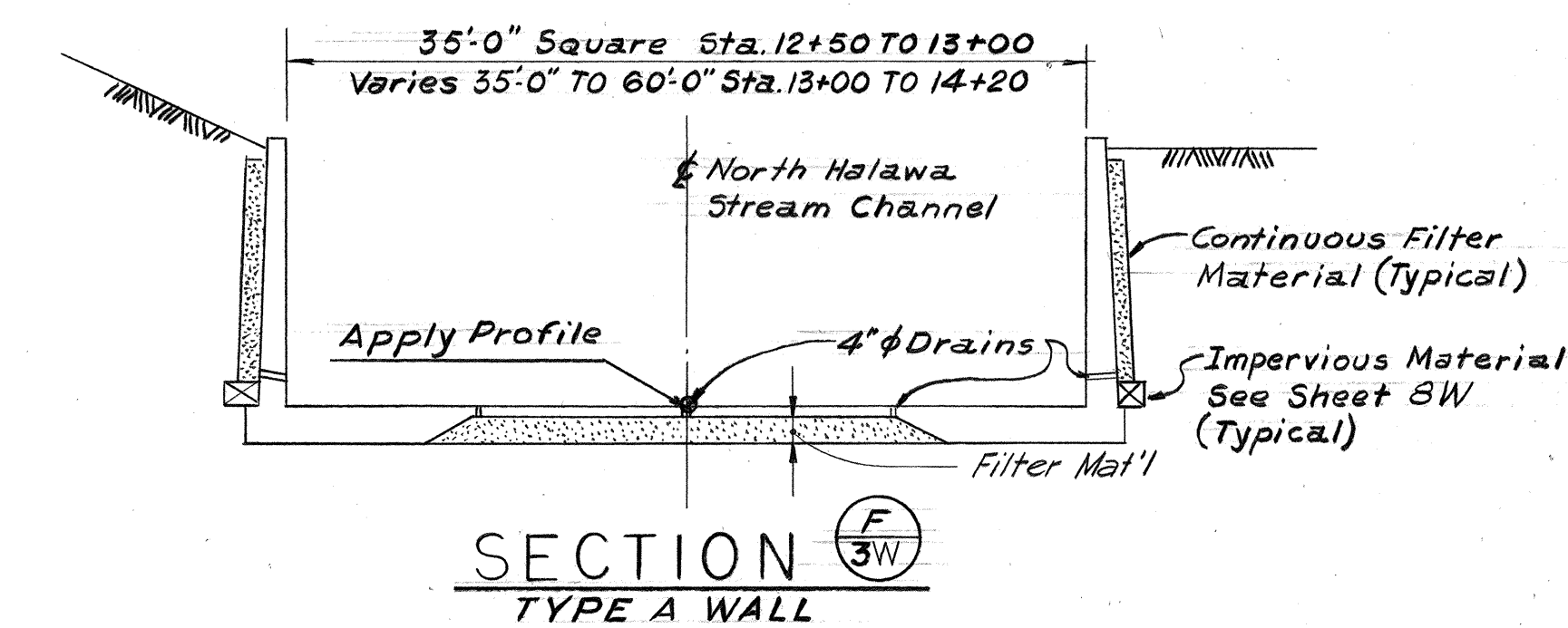
PLAN



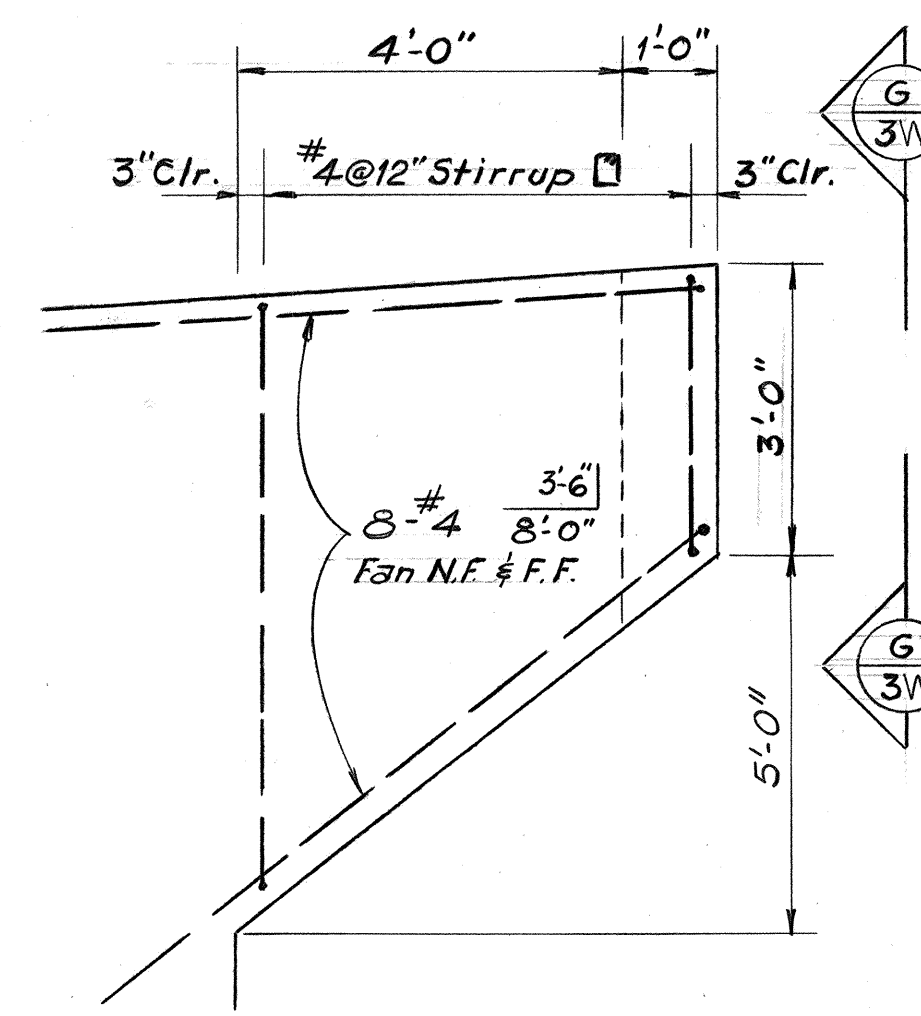
ELEVATION OF WEST CHANNEL WALL
DEVELOPED ALONG FACE OF WALL



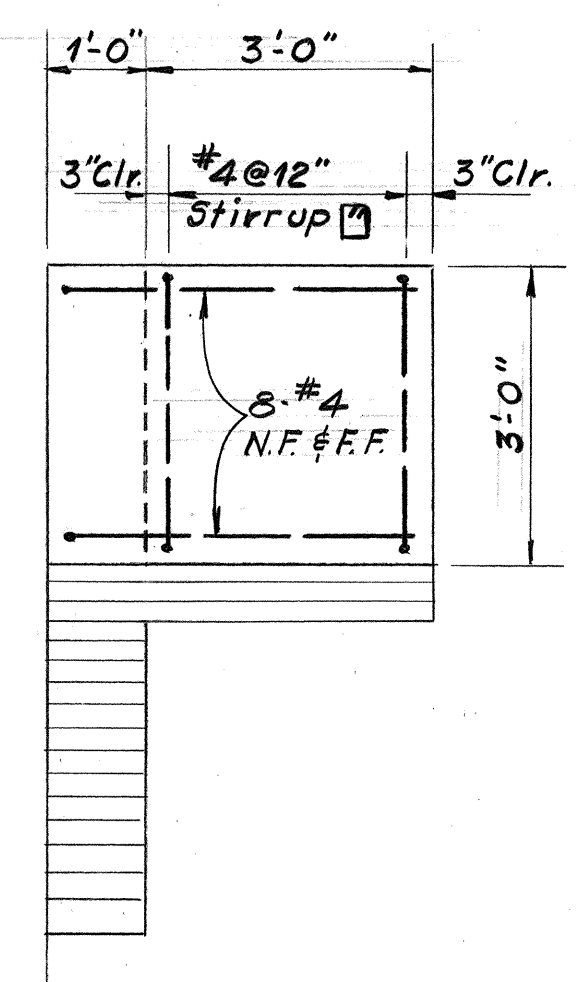
ELEVATION OF EAST CHANNEL WALL
DEVELOPED ALONG FACE OF WALL



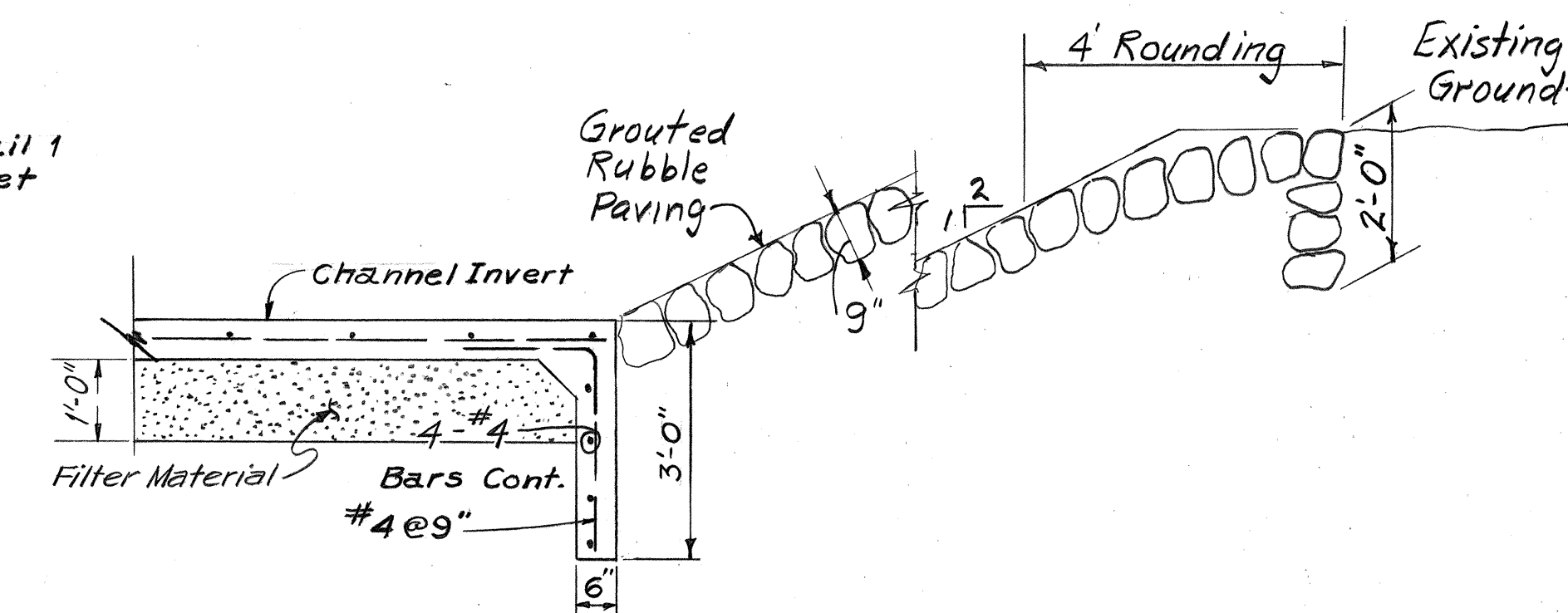
SECTION TYPE A WALL



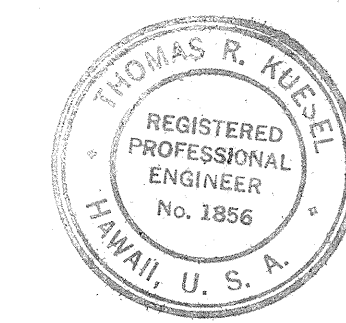
DETAIL 1
SCALE: 1/2" = 1'-0"



SECTION 6/3W
SCALE: 1/2" = 1'-0"



SECTION H/3W
SCALE: 1/2" = 1'-0"



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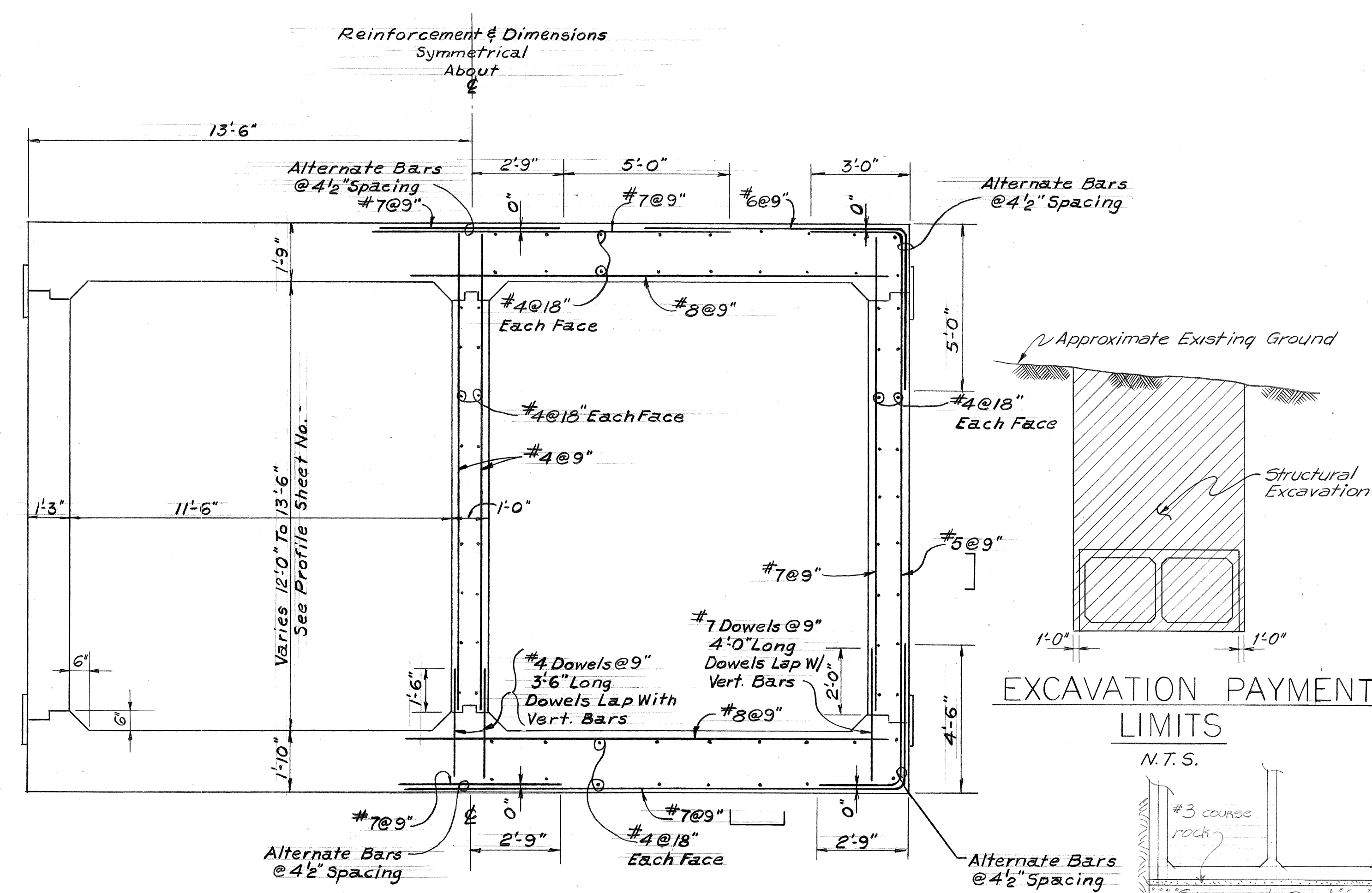
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**HALAWA INTERCHANGE
NORTH HALAWA STREAM
CHANNEL**

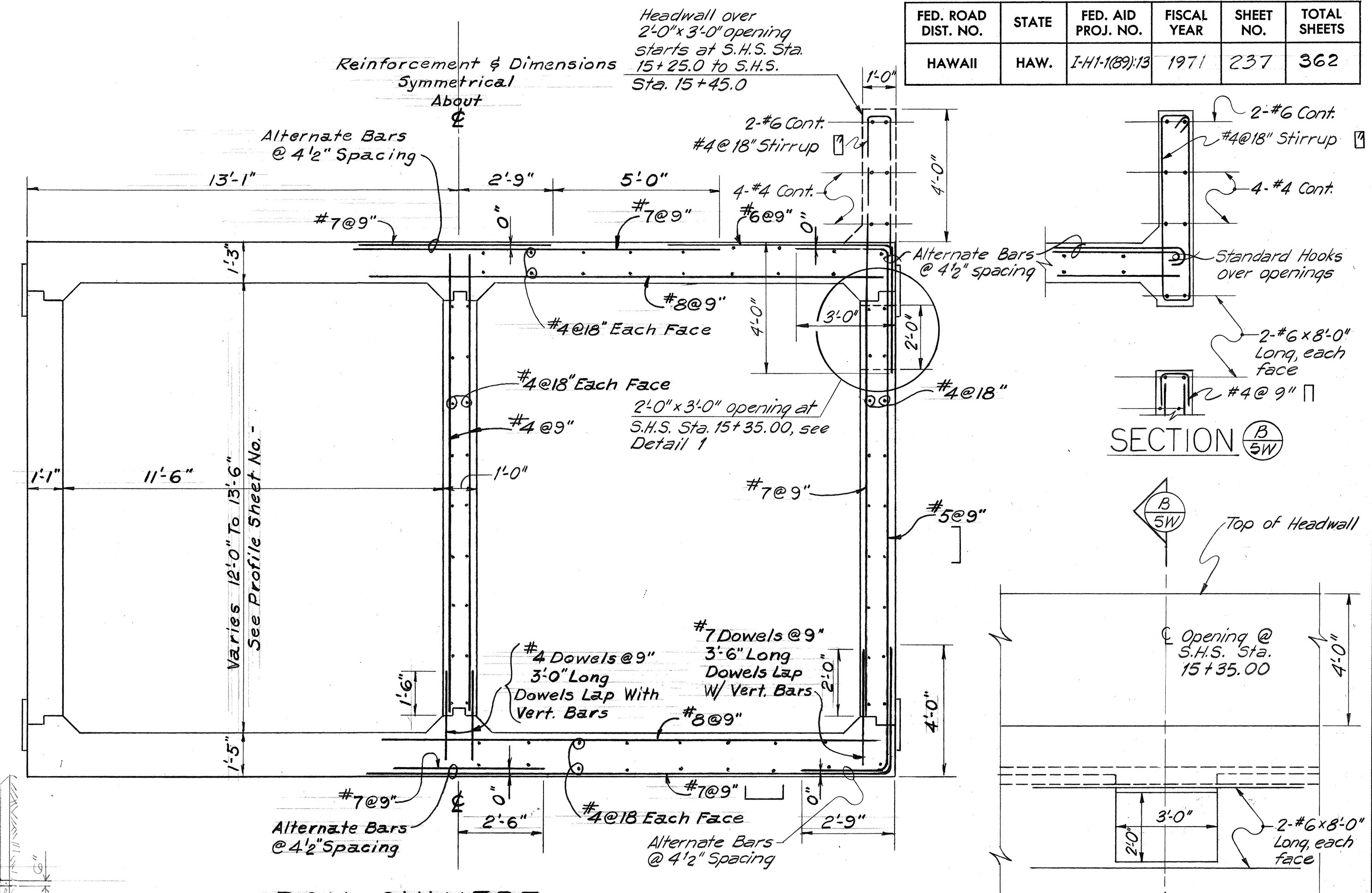
PLAN & ELEVATIONS
N.H.S. STA. 12+50.00 TO 14+20.00

PROJ. I-H1-1(89):13 DATE: MAY 1971

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-41(89)13	1971	237	362

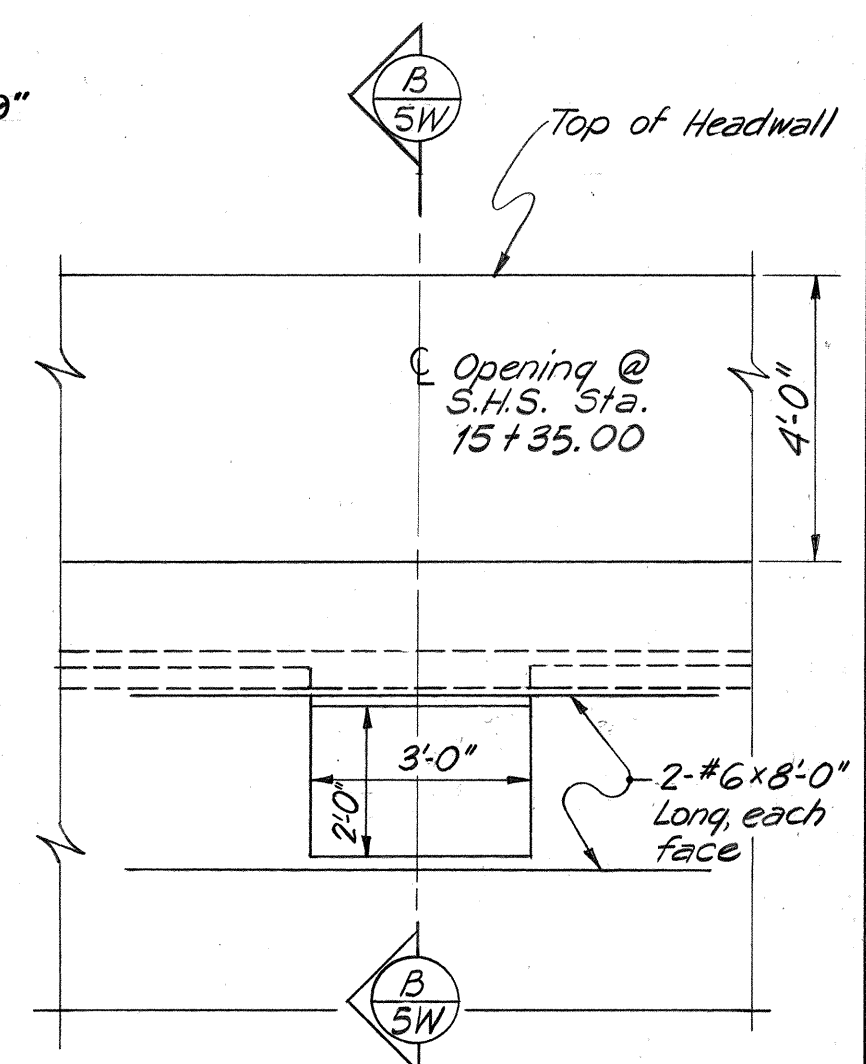


BOX CULVERT
S.H.S. Sta. 8+55 To 11+75 & Sta. 13+90 To 14+85
Scale: 3/8"=1'-0"



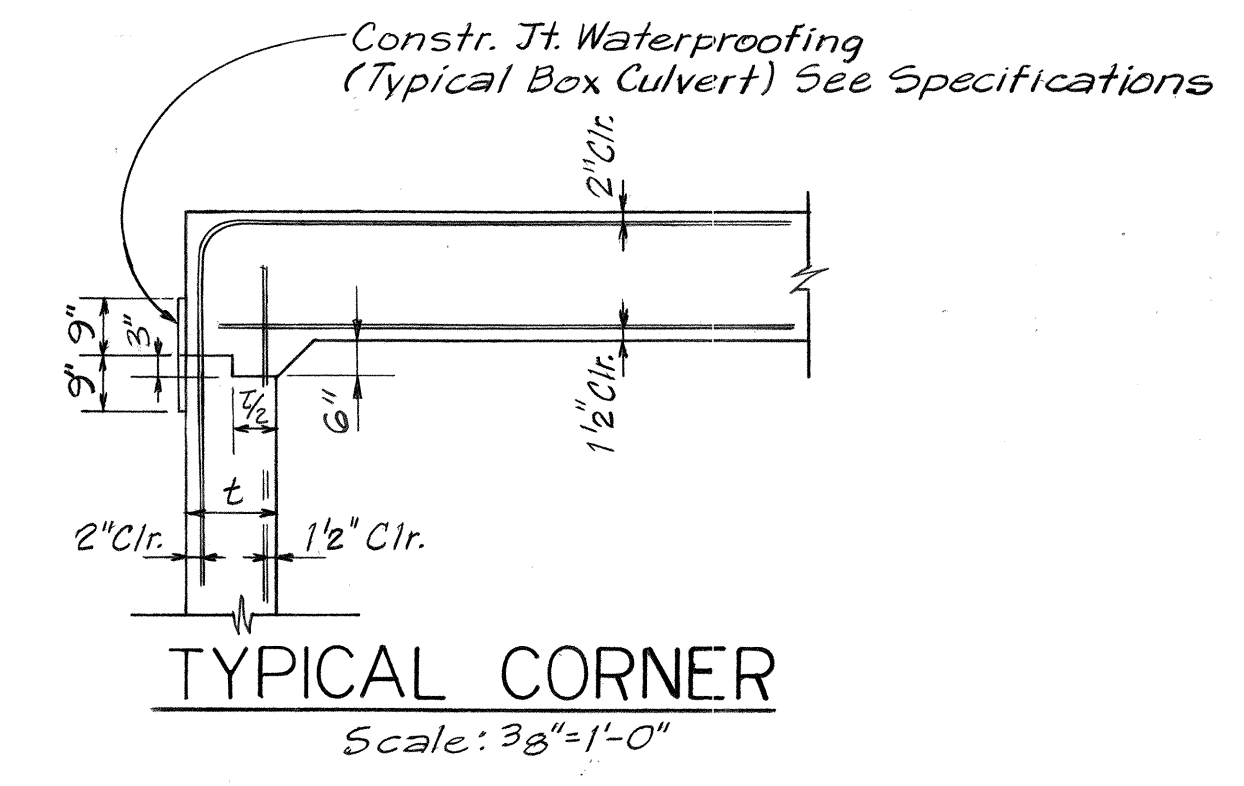
BOX CULVERT
S.H.S. Sta. 7+65 To 8+55, Sta. 11+75 To 12+40
Sta. 13+50 To 13+90, Sta. 14+85 To 15+65
Looking Up Station
Scale: 3/8"=1'-0"

SECTION B/W

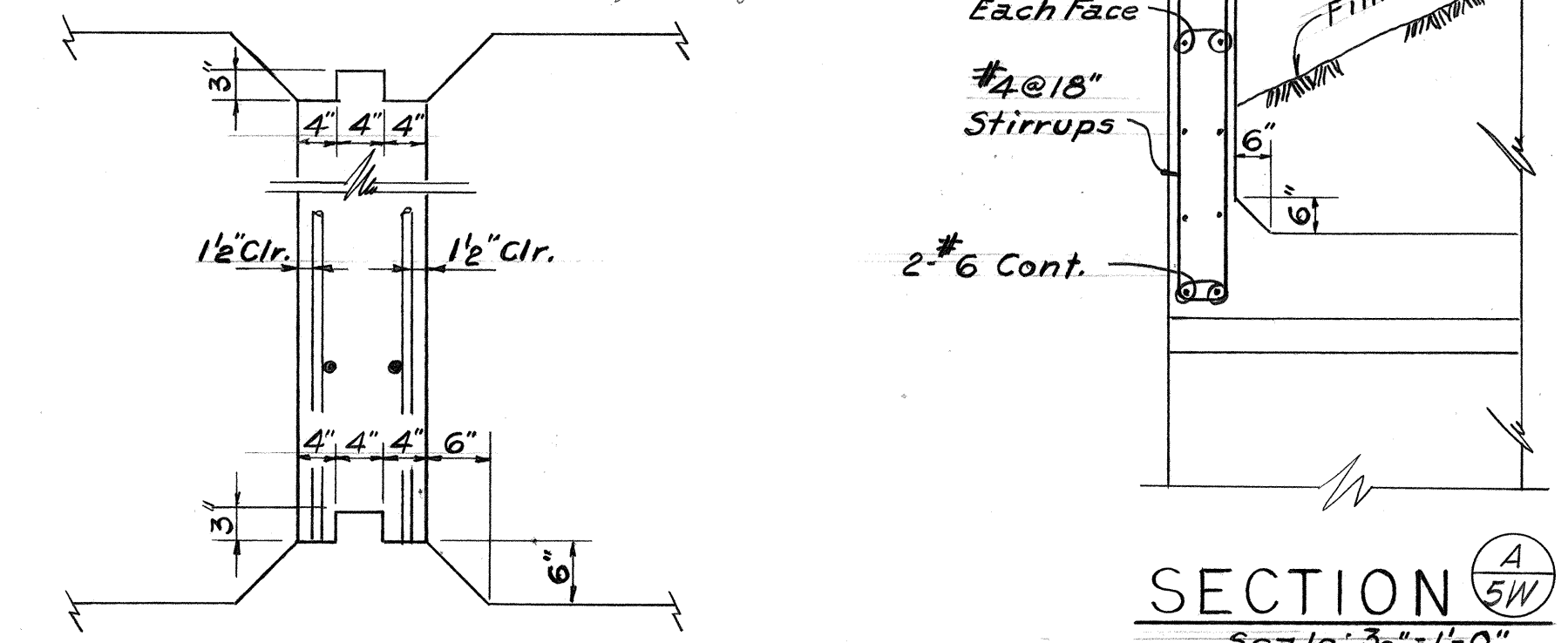


DETAIL 1
Scale: 3/8"=1'-0"

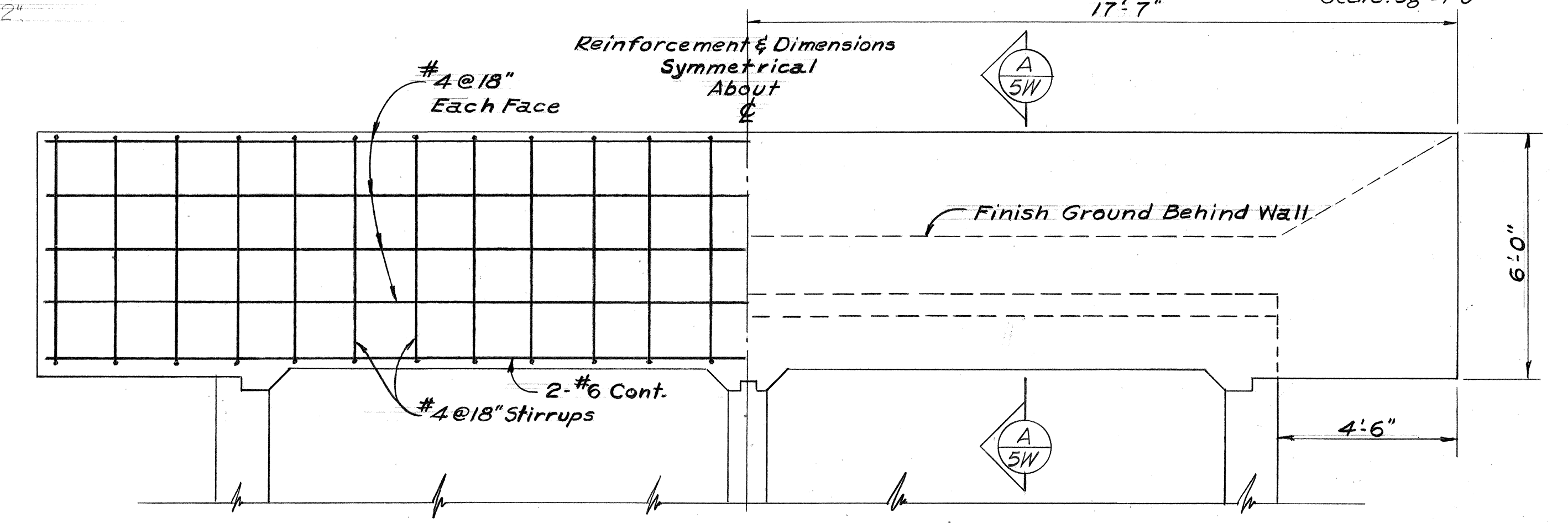
- NOTE:**
1. Payment for excavation shall be made under the applicable contract item.
 2. Payment for placement of foundation mat. shall include all incidentals necessary for complete constr.
 3. Surge rock material shall be as approved by the engineer.



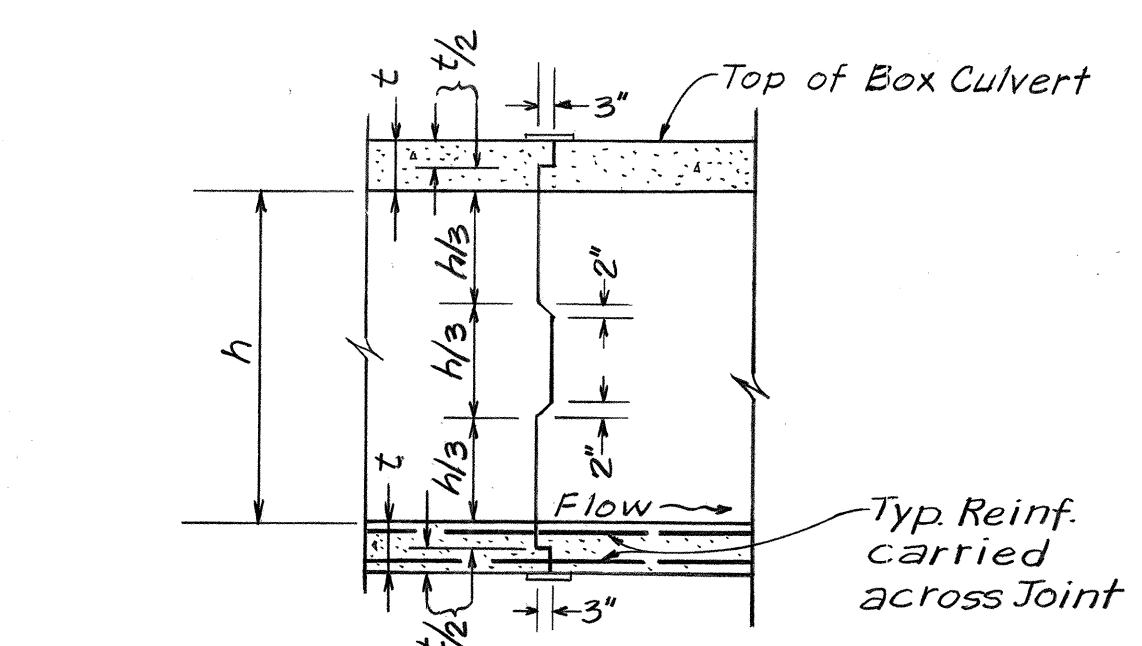
TYPICAL CORNER
Scale: 3/8"=1'-0"



CENTER WALL DETAIL
Scale: 3/4"=1'-0"



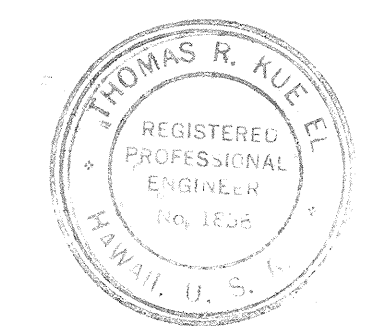
TYPICAL HEADWALL
S.H.S. Sta. 7+65, 12+40, 13+50, & 15+65
Scale: 3/8"=1'-0"



TYPICAL ELEVATION VIEW OF CONSTRUCTION JOINT DETAIL
(Construction Joint Detail For Box Culvert Only)

- NOTES:**
1. Box Culvert Construction Joint Spacing 30'-0" Max.
 2. The Connection between the Rectangular Channel and Box Culvert at Stations 7+65, 12+40, 13+50 and 15+65 will be an Expansion Joint and shown on Sheet 8W.
 3. See Drainage Plans for Finish Ground Line Elevations.
 4. For Profile of South Halawa Stream see SHT Nos. 64 & 65.
 5. For horizontal geometry of & of South Halawa Stream see Alignment Plans.

ESTIMATED QUANTITIES FOR CHANNEL			
ITEM NO.	ITEM	UNIT	QUANTITY
503.033	Concrete In South Halawa Stream Channel	L.S.	(2,600 C.Y.)
602.033	Reinforcing Steel In South Halawa Stream Channel	L.S.	(219,100 Lb.)
206.23	Structural Excavation SHS Channel	C.Y.	3,600
206.80	Filter Material	C.Y.	410
612.01	Grouted Rubble Paving	C.Y.	15
207.01	Ditch and Channel Excavation	C.Y.	7,924



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**HALAWA INTERCHANGE
SOUTH HALAWA STREAM
CHANNEL
BOX CULVERT
REINFORCEMENT & DETAILS**
PROJ. No. I-41-1(89)13 DATE: MAY 1971

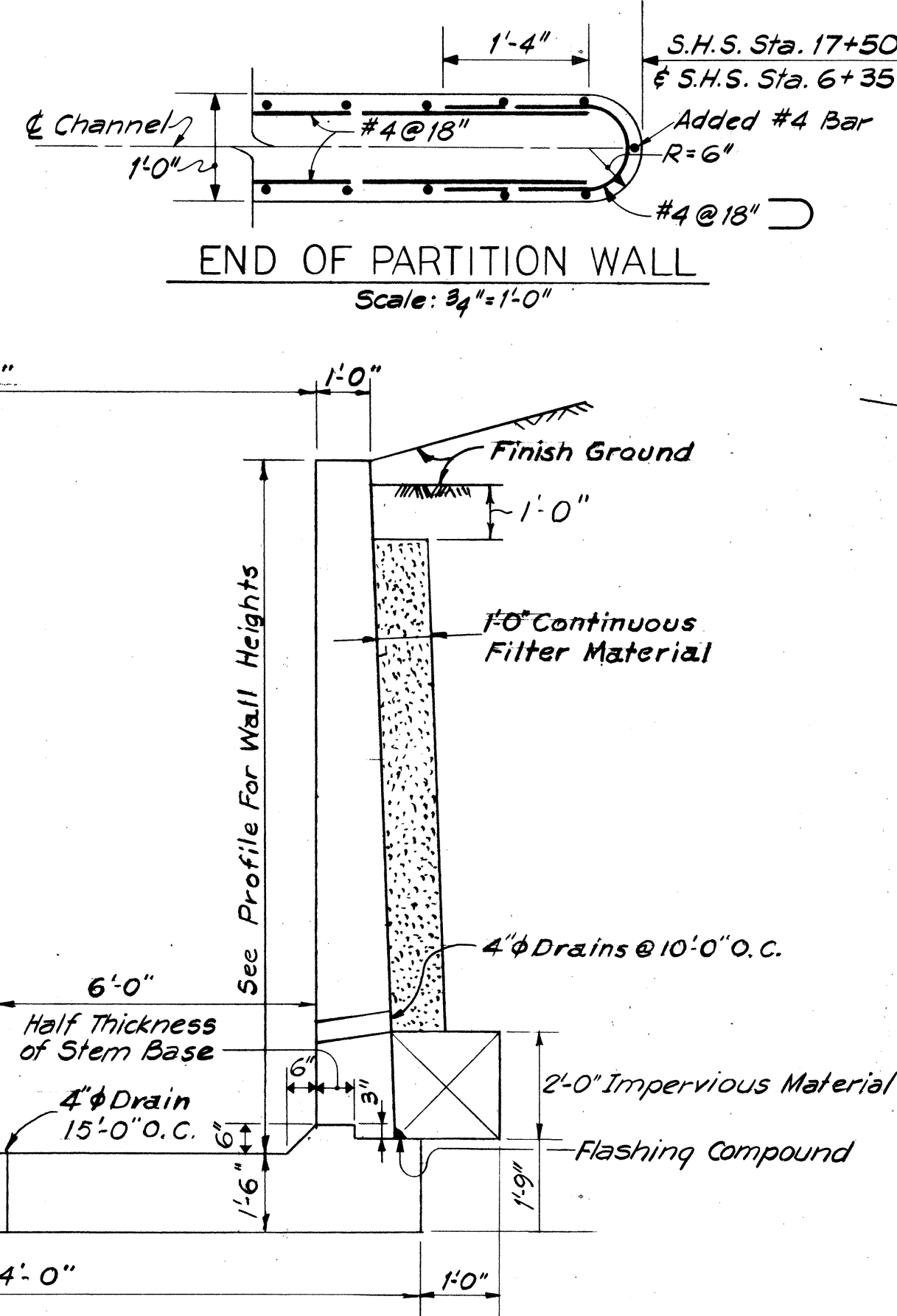
SCALE: AS SHOWN **SHEET No. 5W OF 8W SHEETS**

NOTE A:
In addition to the joints shown, expansion joints shall be spaced @ 90'-0" o.c. maximum, and construction joints @ 30'-0" o.c. maximum for the Rectangular Channel, with and without Partition Wall. For details see Sheet 8W.

NOTE B:
No backfill shall be placed behind channel walls until concrete in channel structure has developed a strength of at least 3,000 psi in compression. Backfilling shall be placed uniformly and simultaneously at opposite walls to avoid unequal lateral pressure.

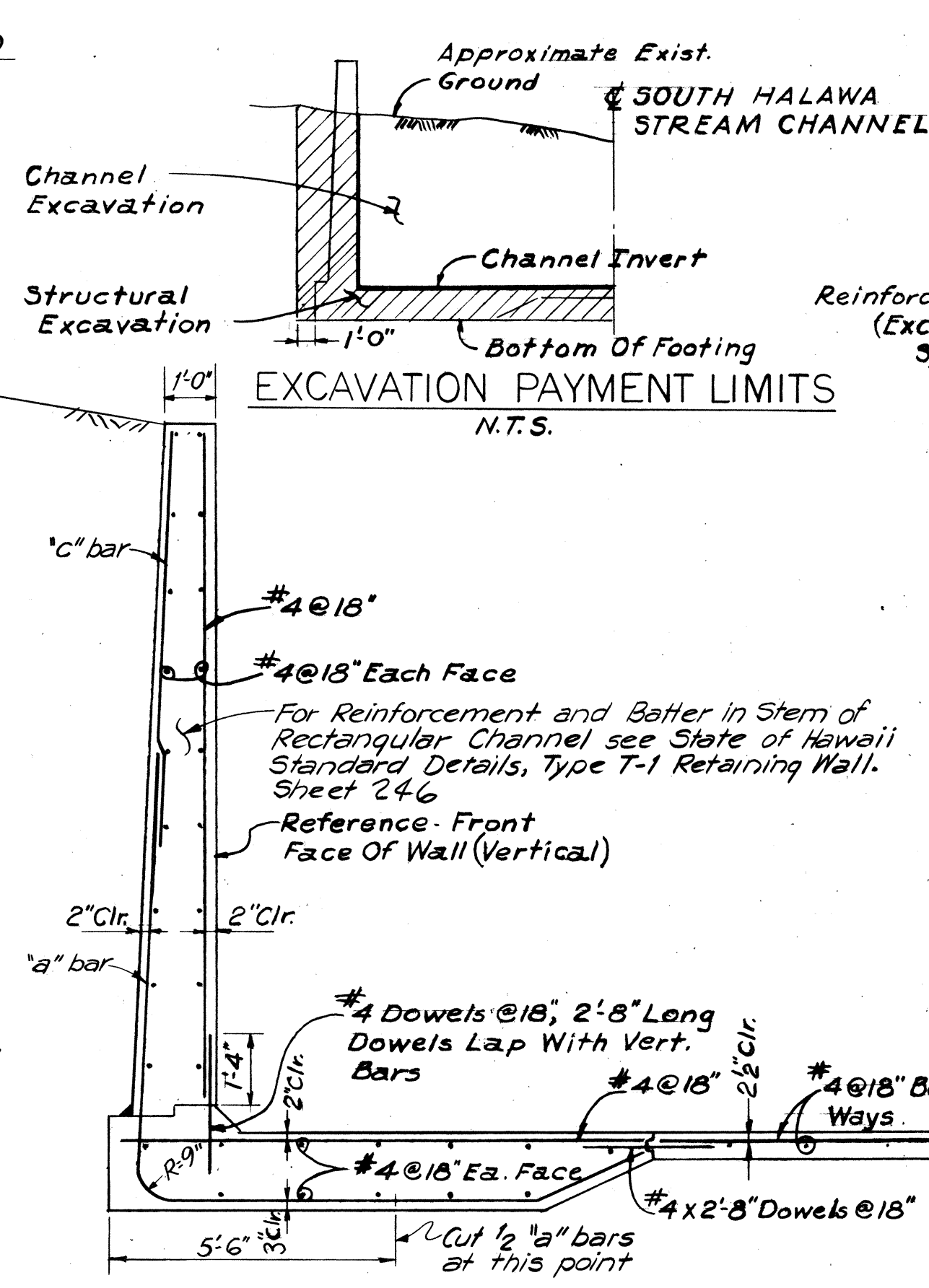
Reinforcement & Dimensions
(Except Wall Height)
Symmetrical
About
C

SOUTH HALAWA
STREAM CHANNEL



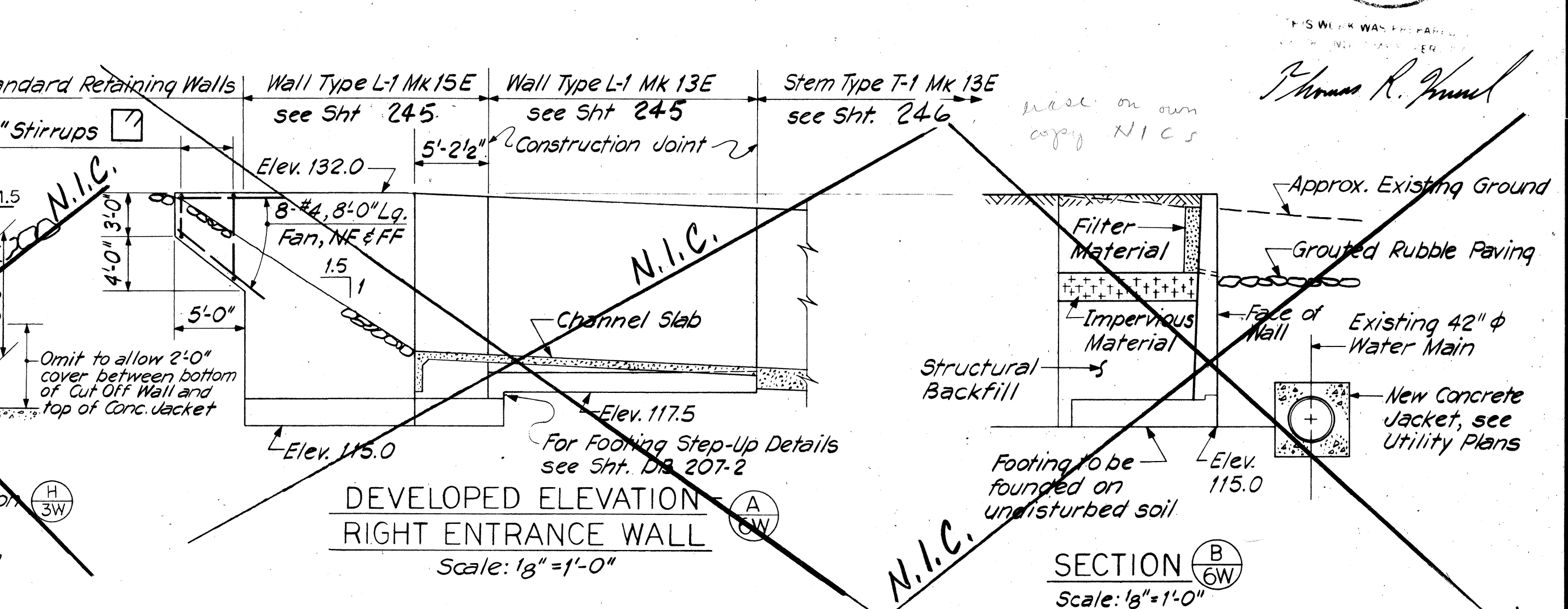
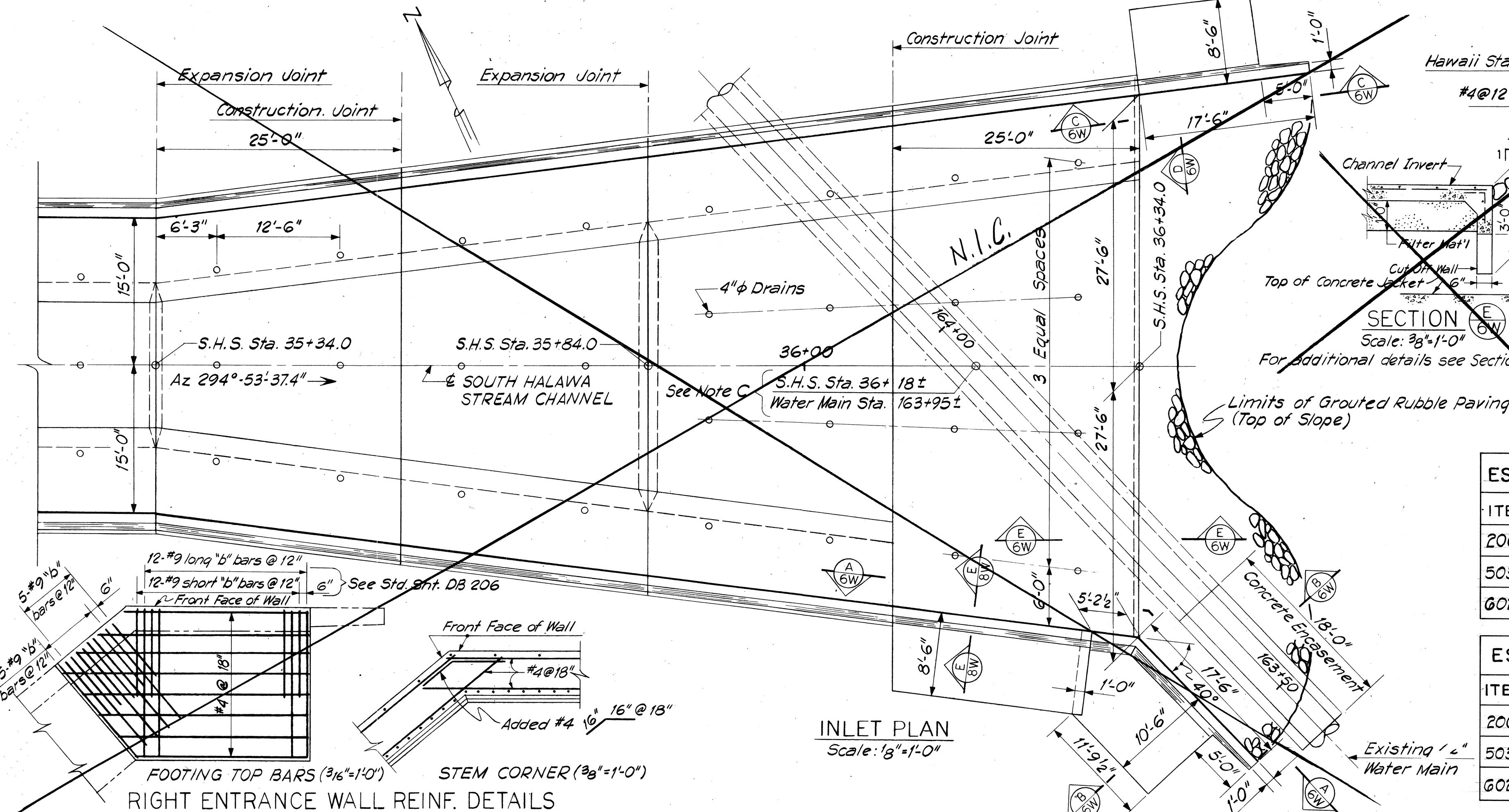
RECTANGULAR CHANNEL WITH PARTITION WALL
Scale: 3/8"=1'-0"

S.H.S. Sta. 6+35 to 7+65, Sta. 12+40 to 13+50 and Sta. 15+65 to 17+50



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

S.H.S. Sta. 3+55 to 6+35, Sta. 17+50 to 18+60
and Sta. 26+00 to 36+34.09 N.I.C.



ESTIMATED QUANTITIES FOR BOX CULV. @ MF STA. 194+30.73

ITEM NO.	ITEM	UNIT	QUANTITY
206.24	Struc. Exc. For Box Culv. @ MF Sta. 194+30.73	C.Y.	14,160
503.034	Conc. In Box Culv. @ MF Sta. 194+30.73	L.S.	(2,330 C.Y.)
602.034	Reinf. Steel In Box Culv. @ MF Sta. 194+30.73	L.S.	(333,400 Lb.)

ESTIMATED QUANTITIES FOR BOX CULV. @ N STA. 22+04.56

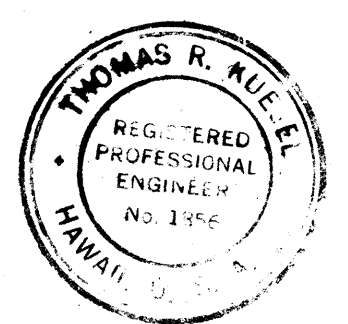
ITEM NO.	ITEM	UNIT	QUANTITY
206.25	Struc. Exc. For Box Culv. @ N Sta. 22+04.56	C.Y.	2,510
503.035	Conc. In Box Culv. @ N Sta. 22+04.56	L.S.	(980 C.Y.)
602.035	Reinf. Steel In Box Culv. @ N Sta. 22+04.56	L.S.	(146,500 Lb.)

NOTE C:
Prior to excavating for the Stream Channel the Contractor shall verify in the field the location of the existing Water Main. For additional General Water Notes see Sheet 1U.

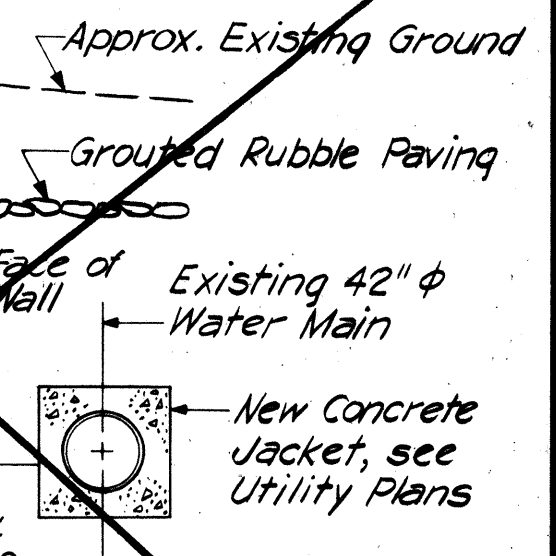
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**HALAWA INTERCHANGE
SOUTH HALAWA STREAM CHANNEL
RECTANGULAR CHANNEL
REINFORCEMENT & DETAILS**

PROJ. NO. I-H-1(89)13 DATE: MAY 1971

SCALE: AS SHOWN SHEET No. 6W OF 8W SHEETS

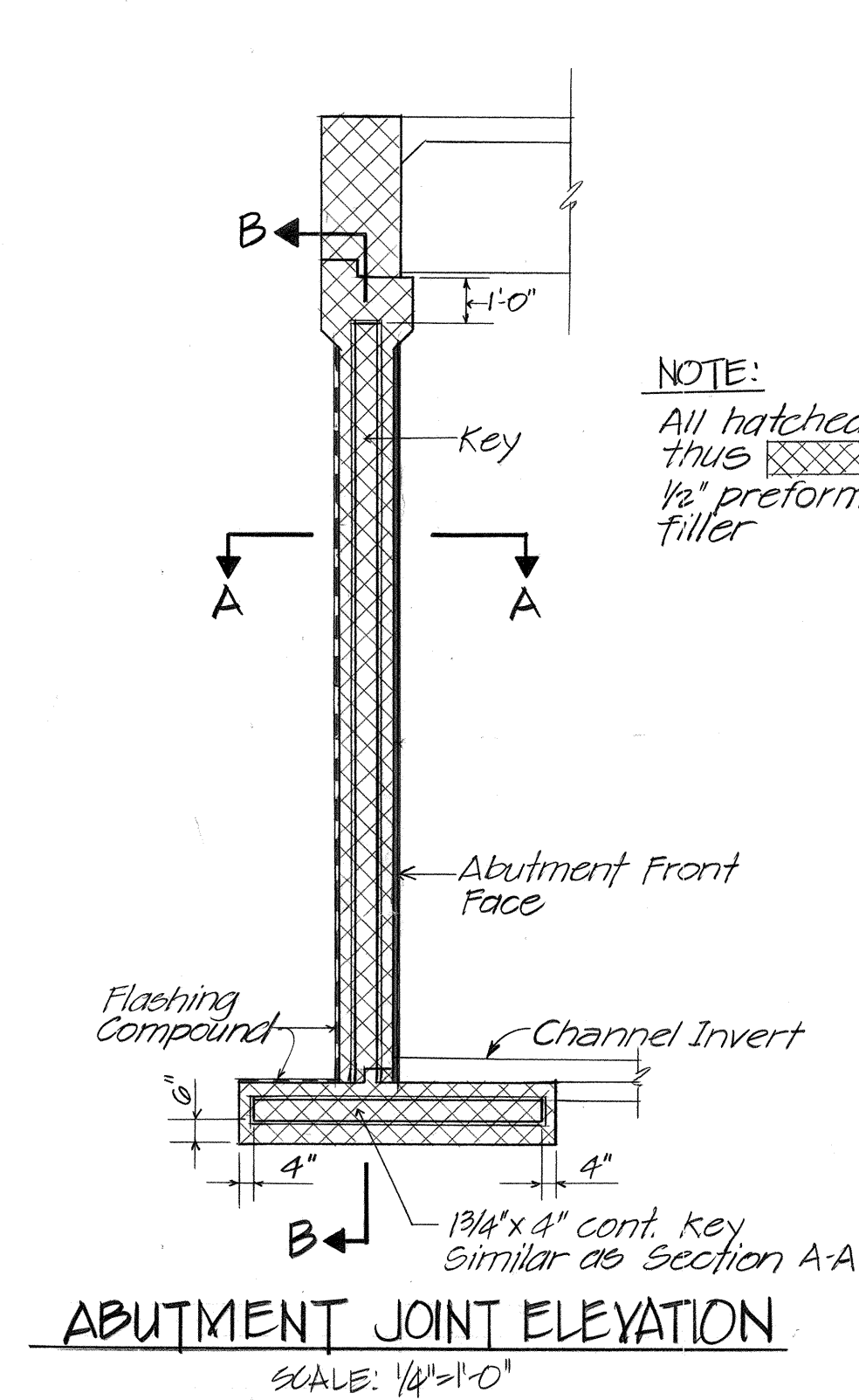


Thomas R. Huele

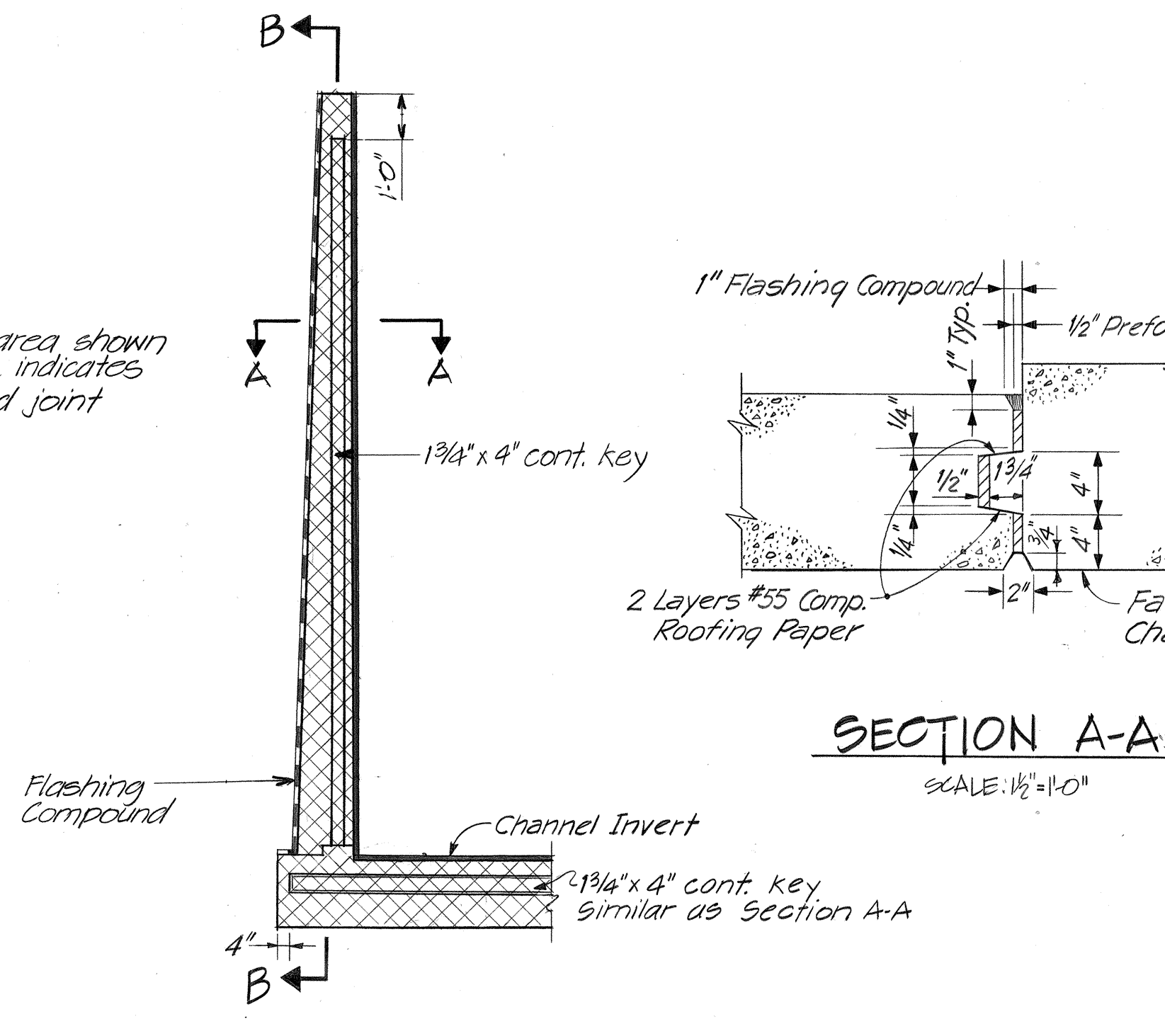


SECTION B
Scale: 1/8"=1'-0"

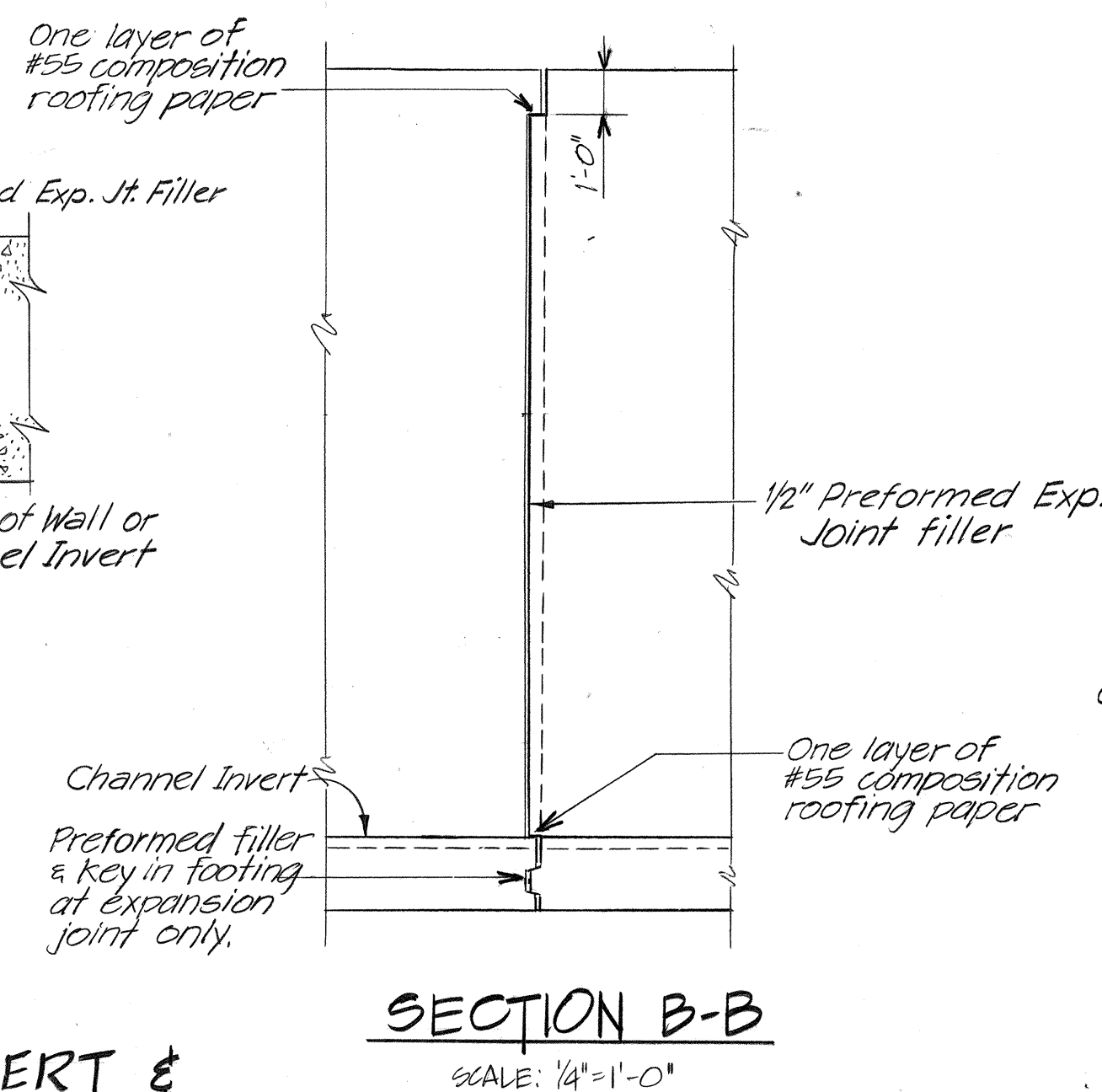
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H1-1(89)-13	1971	240	362



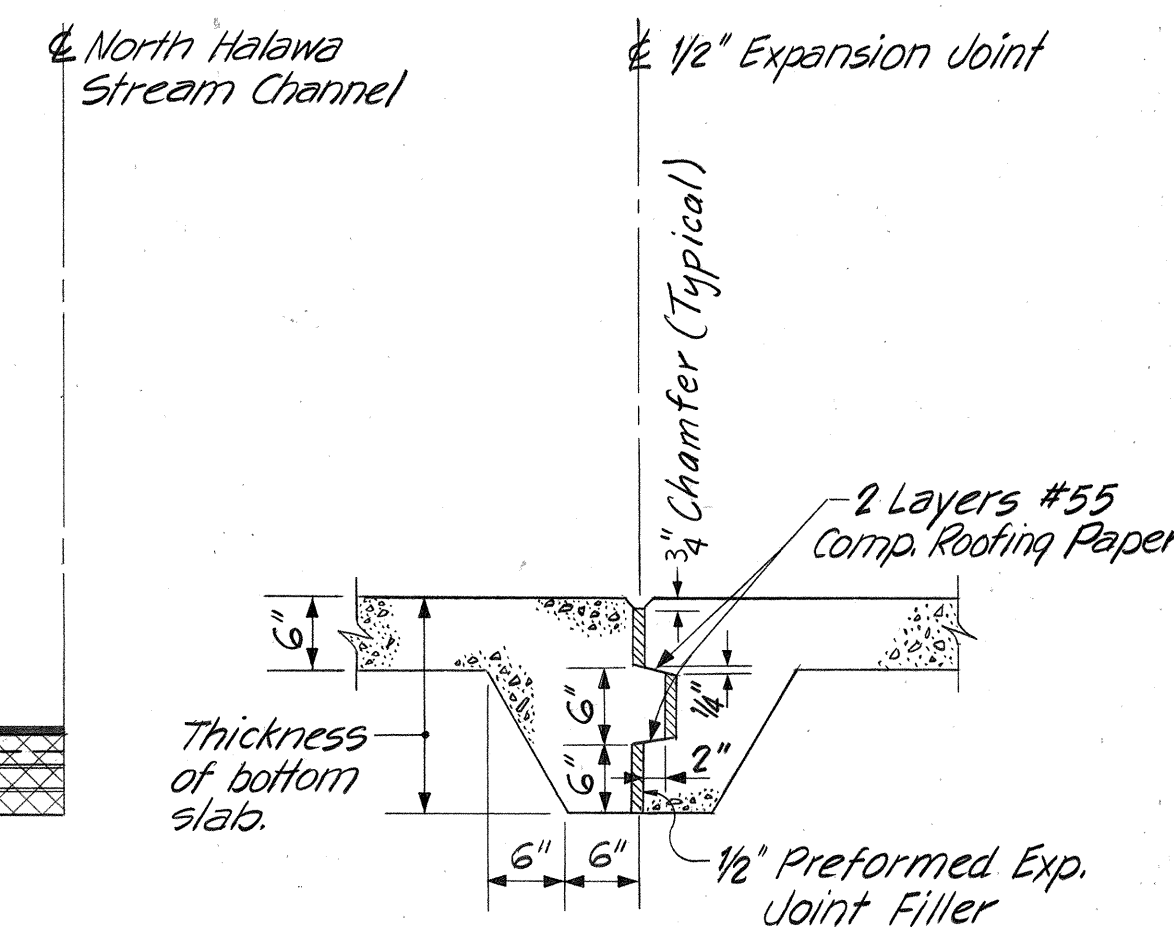
ABUTMENT JOINT ELEVATION
SCALE: 1/4"=1'-0"



RECTANGULAR CHANNEL TO BOX CULVERT &
RECTANGULAR CHANNEL (TYPE B WALL)
EXPANSION JOINT DETAILS
SCALE: 1/4"=1'-0"



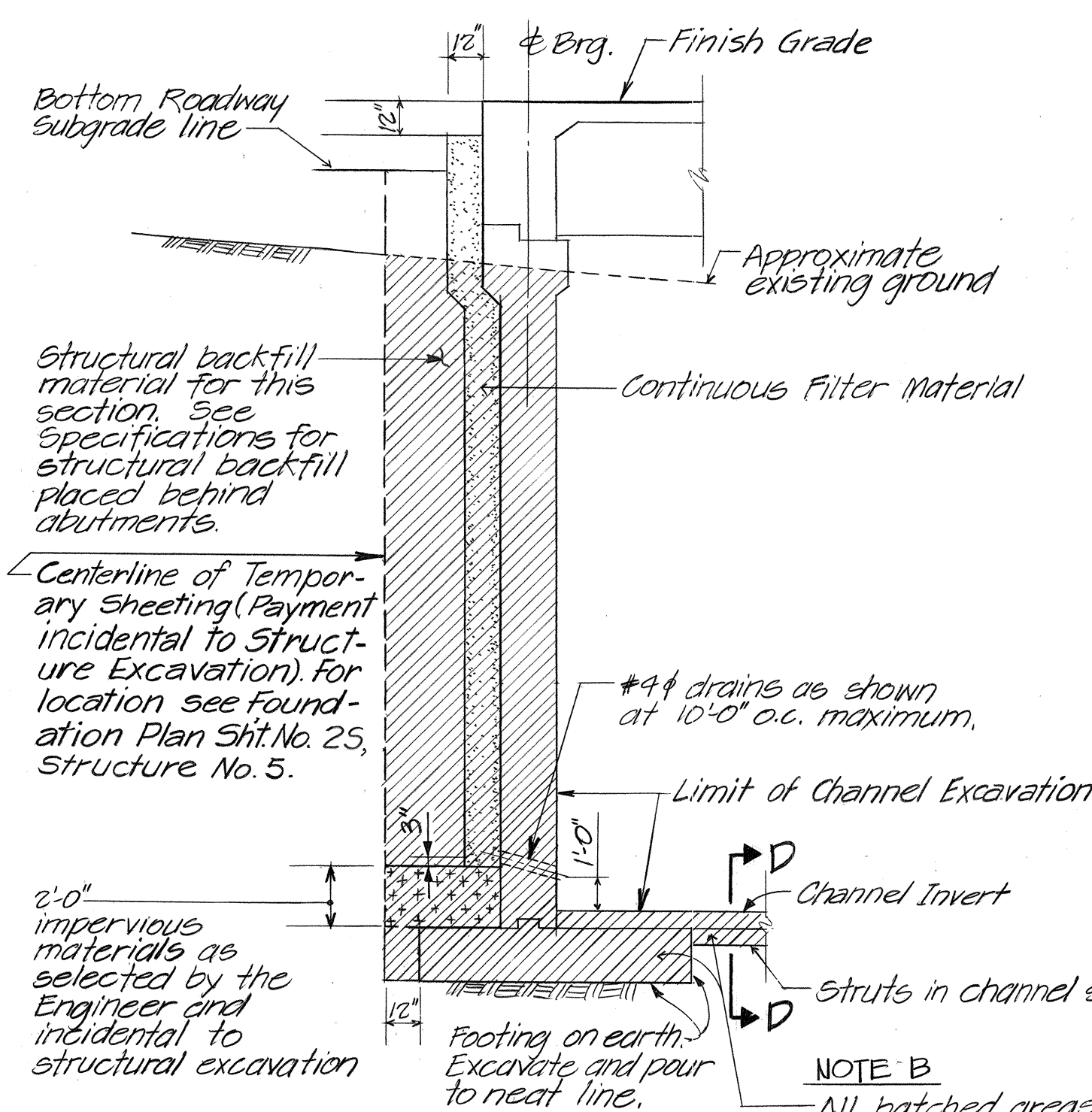
RECTANGULAR CHANNEL (TYPE A WALL)
EXPANSION JOINT DETAILS
SCALE: 1/4"=1'-0"



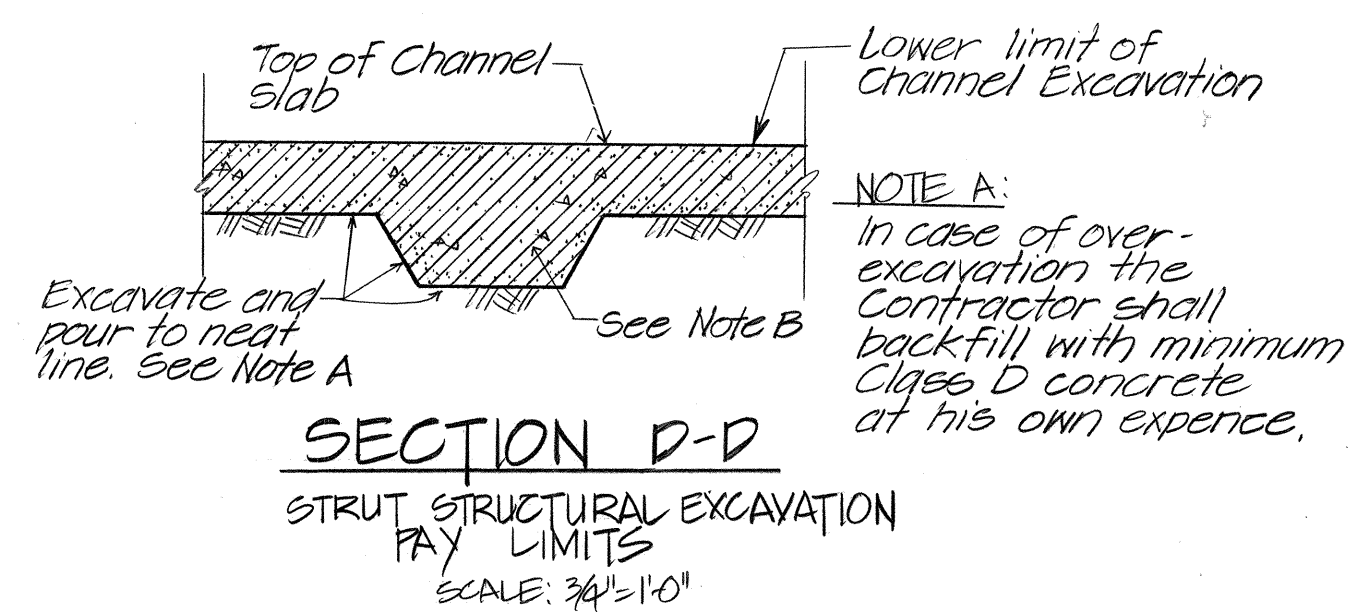
SECTION C-C
SCALE: 3/4"=1'-0"

TYPICAL EXPANSION JOINT DETAILS

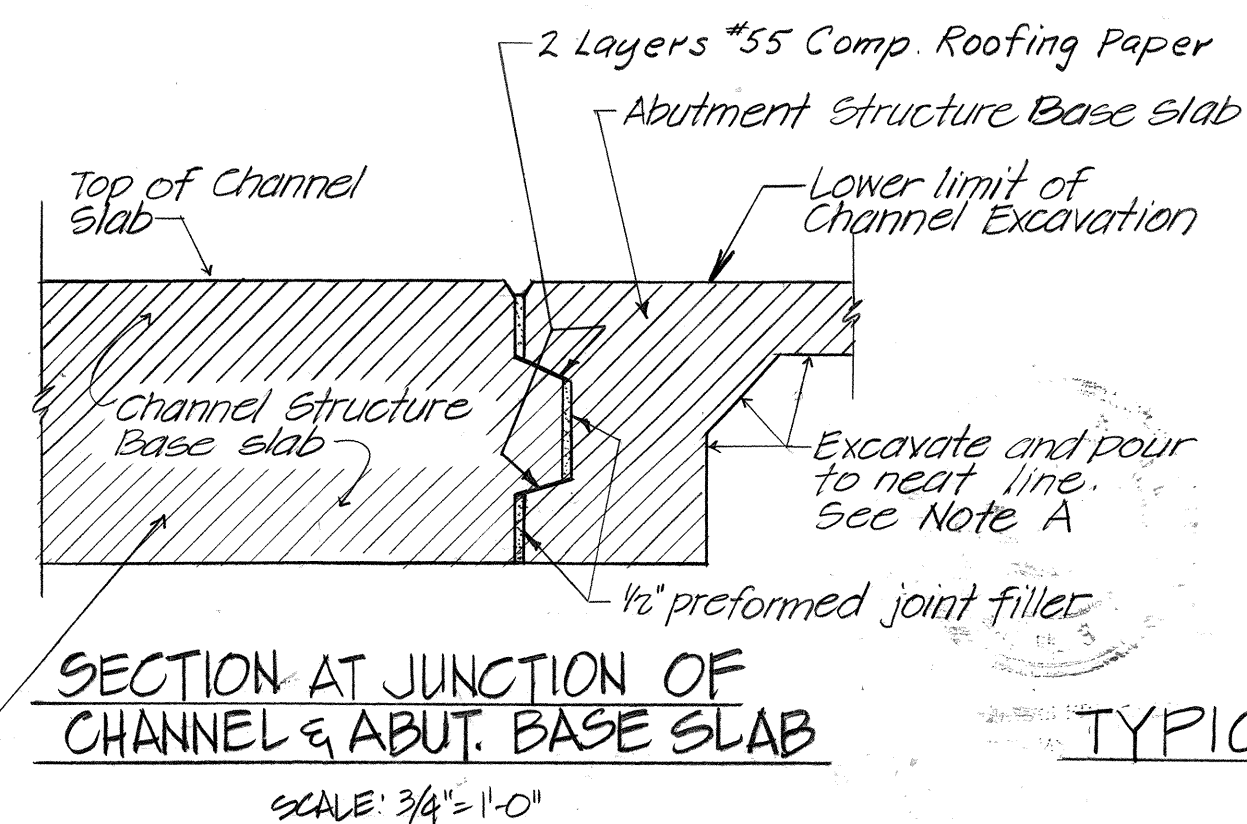
SCALE AS NOTED



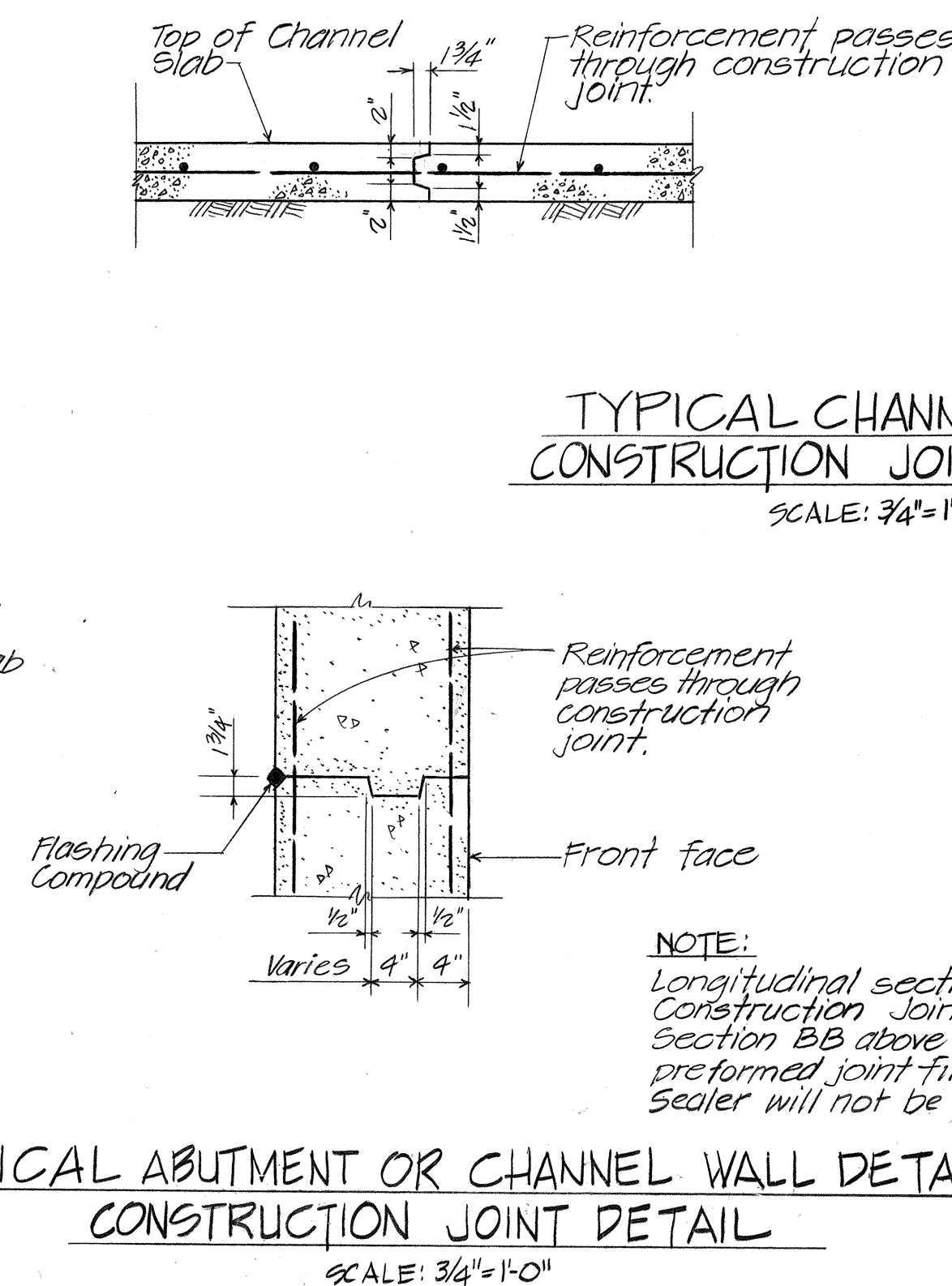
STRUCTURAL
EXCAVATION PAY LIMITS
AND BACKFILL DETAIL
ABUT. SHOWN, CHAN. WALL SIMILAR
SCALE: 1/4"=1'-0"



SECTION D-D
STRUCT. EXCAVATION
PAY LIMITS
SCALE: 3/4"=1'-0"



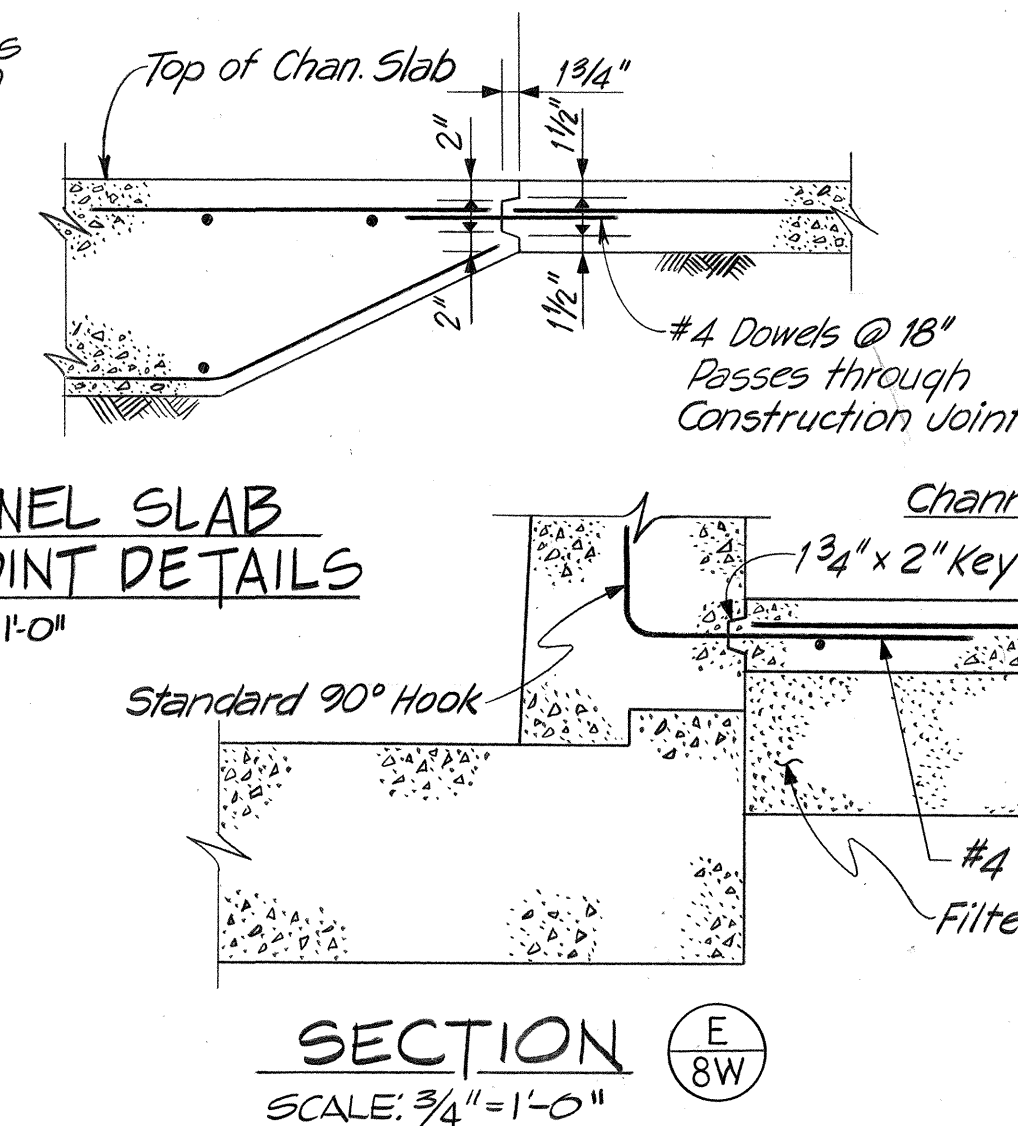
SECTION AT JUNCTION OF
CHANNEL & ABUT. BASE SLAB
SCALE: 3/4"=1'-0"



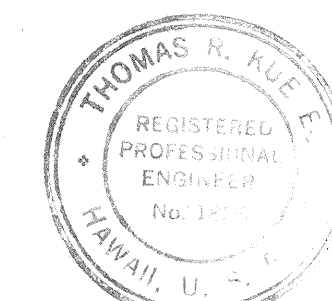
TYPICAL ABUTMENT OR CHANNEL WALL DETAIL
CONSTRUCTION JOINT DETAIL
SCALE: 3/4"=1'-0"

TYPICAL CHANNEL SLAB CONSTRUCTION JOINT DETAILS

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



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



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Thomas R. Rouse

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
HALAWA INTERCHANGE
CHANNEL WALL JOINT
DETAIL & PAY LIMIT SHEET

PROJ. No. I-H1-1(89)-13 DATE: MAY 1971

SCALE: AS SHOWN SHEET No. 8W OF 8W SHEETS

2410