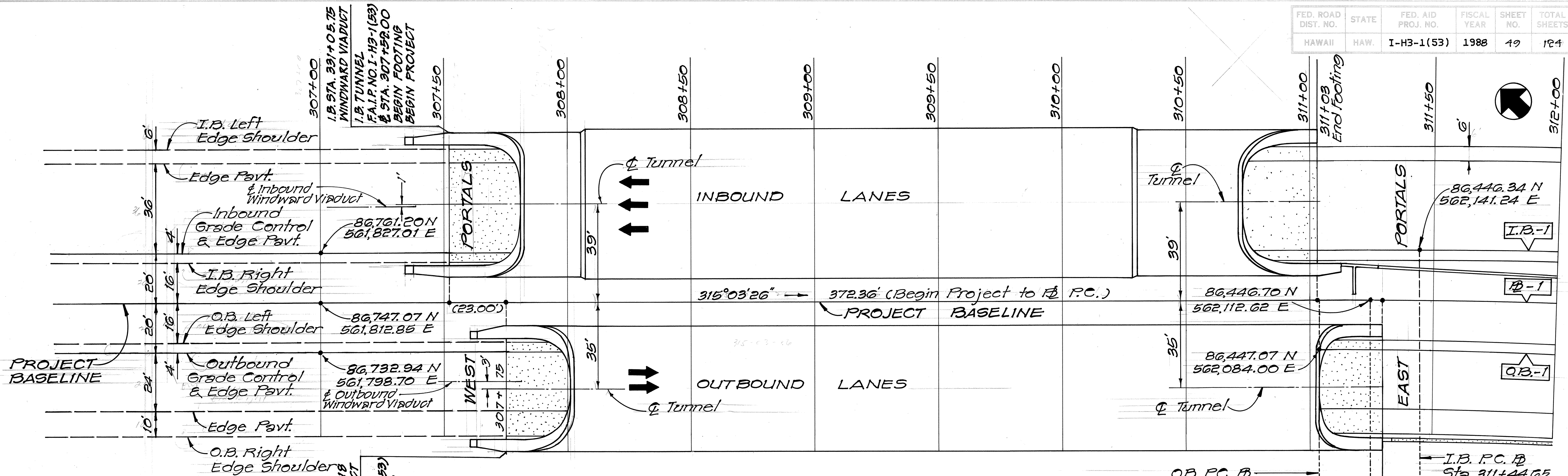
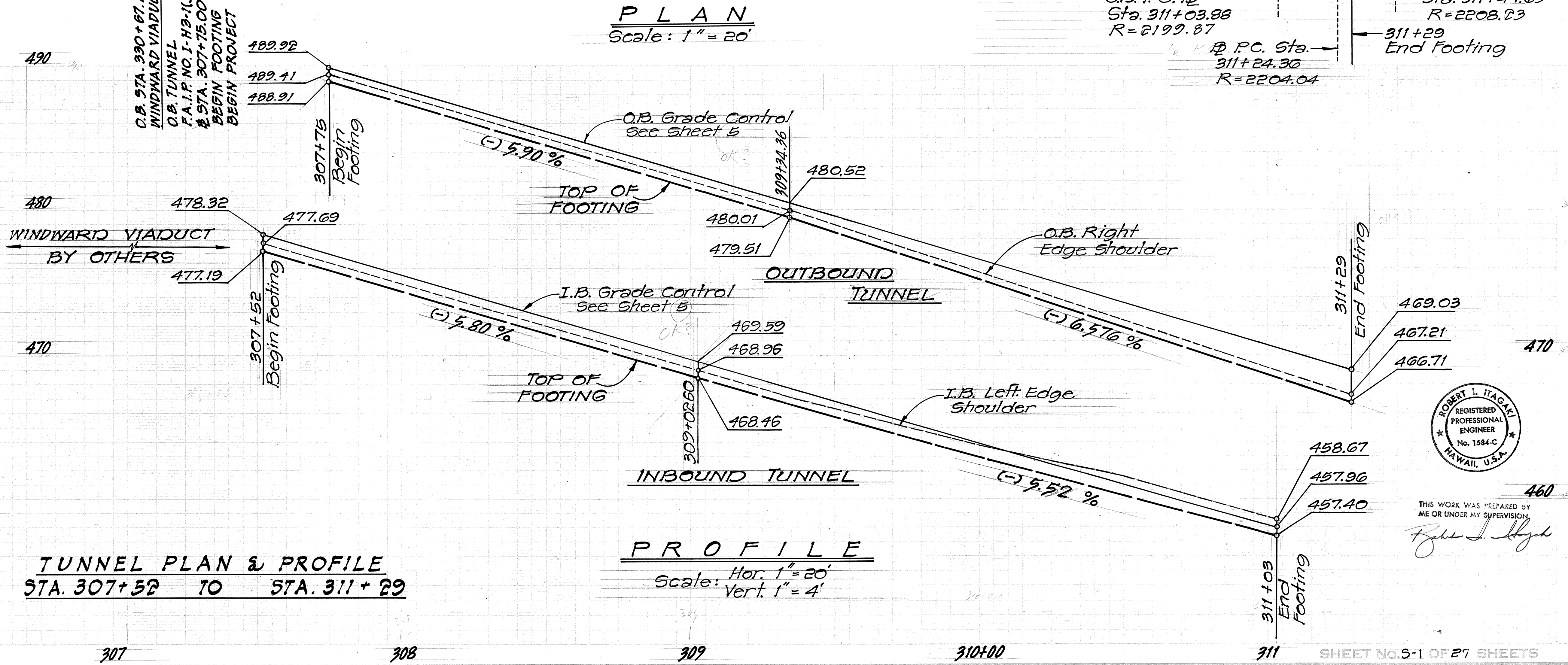


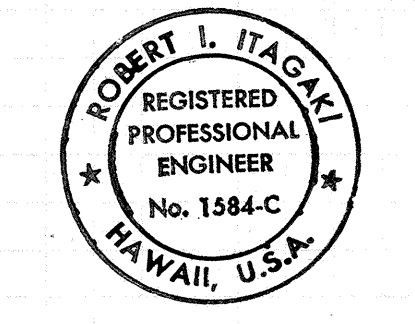


CURVE DATA

	B-1	O.B.-1	I.B.-1
Δ	48°36'17"	48°36'17"	48°36'17"
Δ/2	24°18'08.5"	24°18'08.5"	24°18'08.5"
R	2204.04	2199.87	2208.23
T	995.27	993.39	997.10
C	1814.15	1810.72	1817.60
Lc	1869.71	1866.18	1873.27

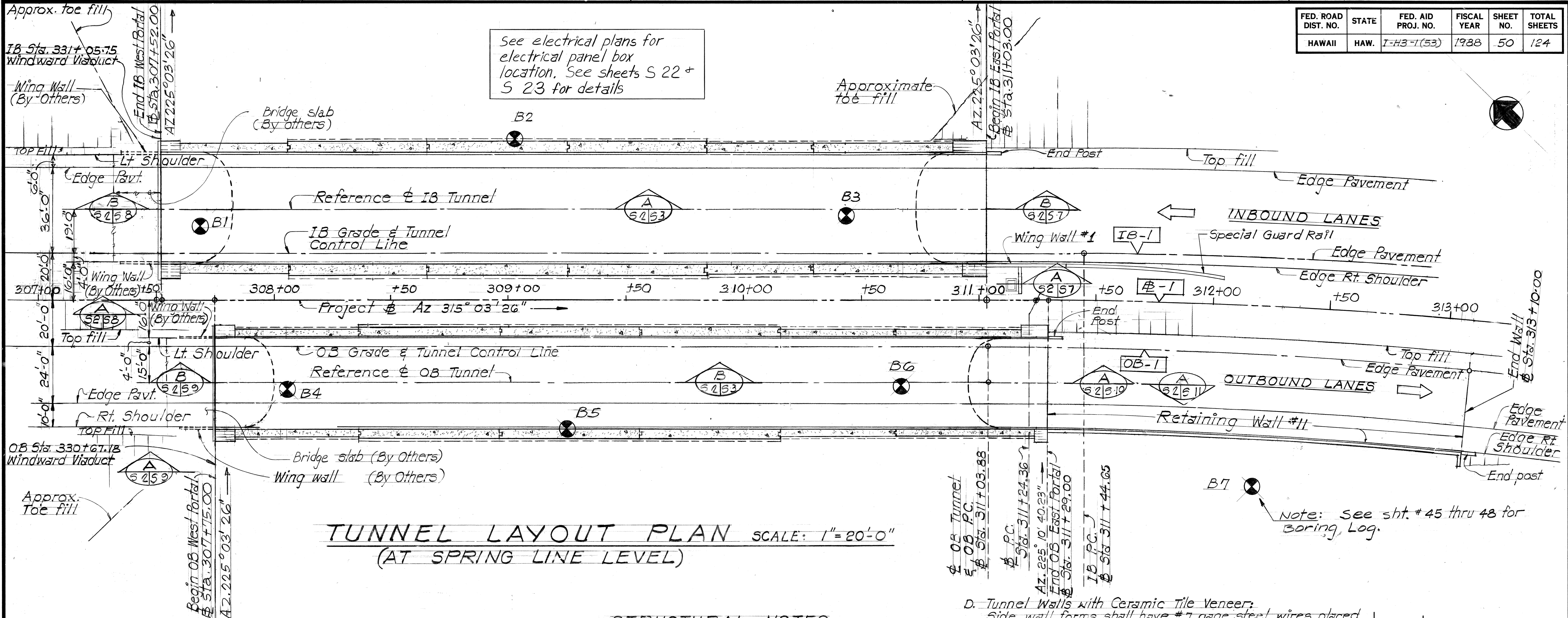


TUNNEL PLAN & PROFILE
STA. 307+52 TO STA. 311+29



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 Robert L. Itagaki

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	50	124



ESTIMATED QUANTITIES

ITEM NO.	ITEM	UNIT	QUANTITY
206.4200	STRUCTURAL EXCAVATION FOR TUNNEL	C.Y.	180,400
206.5000	STRUCTURAL EXCAVATION FOR RETAINING WALLS	C.Y.	2,700
206.8300	FILTER MATERIALS FOR RETAINING WALLS	C.Y.	110
206.8500	FILTER MATERIALS FOR TUNNEL	C.Y.	2,500
206.7270	TUNNEL BACKFILL	C.Y.	103,000
304.1110	AGGREGATE BASE	C.Y.	28,800
411.1118	REINFORCED CONCRETE PAVEMENT IN TUNNEL	L.S.	(1,000 C.Y.)
503.1010	CONCRETE IN TUNNEL	L.S.	(10,270 C.Y.)
503.1011	CONCRETE IN TUNNEL FOOTING	L.S.	(7,900 C.Y.)
503.1050	CONCRETE IN RETAINING WALLS	L.S.	(660 C.Y.)
602.0011	REINFORCING STEEL IN TUNNEL	L.S.	(4,400,000 LBS)
602.0050	REINFORCING STEEL FOR RETAINING WALLS	L.S.	(60,000 LBS)
660.1000	WATERPROOFING BELOW FINISH GRADE	L.S.	(7,600 S.F.)
680.1000	PAINTING FOR TUNNEL	L.S.	(45,000 S.F.)
681.1000	GLAZED CERAMIC TILE	L.S.	(13,000 S.F.)

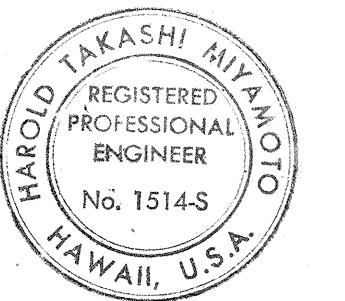
STRUCTURAL NOTES

- I. Design Specifications
 - A. AASHTO Standard Specifications for Highway Bridges, Thirteenth Edition (1983) with 1984 thru 1987 Interim Specifications.
- II. Reinforced Concrete
 - A. Minimum 28 day concrete compressive strength, f_c:
 1. Tunnels and portals - 4,500 psi.
 2. Reinforced concrete pavement - 3,750 psi (Class B0).
 3. Wing walls and retaining walls, and traffic barriers - 3,000 psi (Class A).
 4. Drainage structures - 3,000 psi (Class A).
 - B. Reinforcement
 1. All reinforcing bars shall conform to ASTM A615, Grade 60.
 2. Lap splices for tunnel longitudinal reinforcing shall be staggered 1/2 lap distances and the lap length shall be as follows:
 - *7 bar - 42 inches
 - *8 bar - 55 inches
 - *9 bar - 70 inches
 - C. Concrete Protection for Reinforcement
 1. Foundations poured against earth - 3 inches.
 2. Tunnel and portal walls and foundation slab - 2 1/2 in.
 3. Others - 2 inches.

- D. Tunnel Walls with Ceramic Tile Veneer:

Side wall forms shall have #7 gage steel wires placed horizontally at 6-inch centers and attached to the forms at 2-inch centers. When the forms are stripped, the resulting roughness of the fractured grooves provide an additional bonding surfaces for the scratch coat. (See detail 1/5-10)
- III. Construction Methods
 - A. All finished excavations under the tunnels shall be inspected by the Engineer prior to placing any base course, to verify the limits of the basalt, weathered rock, and clayey silt layers. The Engineer shall be notified of all discrepancies with the plans to determine if revisions are required.
 - B. Tunnels shall not be backfilled until the tunnel and has developed 4,500 psi compressive strength.
 - C. Backfill for the tunnels shall be placed in uniform horizontal layers extending from embankment to embankment. Backfilling shall progress so that the differences between elevations of the fills along opposite sides of the tunnels does not exceed two feet.
 - D. Ceramic tile shall not be placed on the tunnel walls until the backfilling of the tunnels are completed.
 - E. Mechanical splices of reinforcement is permitted subject to approval by the Engineer.

10/31/88	Revised "Estimated Quantities" Table
DATE	REVISION



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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**TUNNEL LAYOUT PLAN
AND ESTIMATED QUANTITIES**

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1 (53)

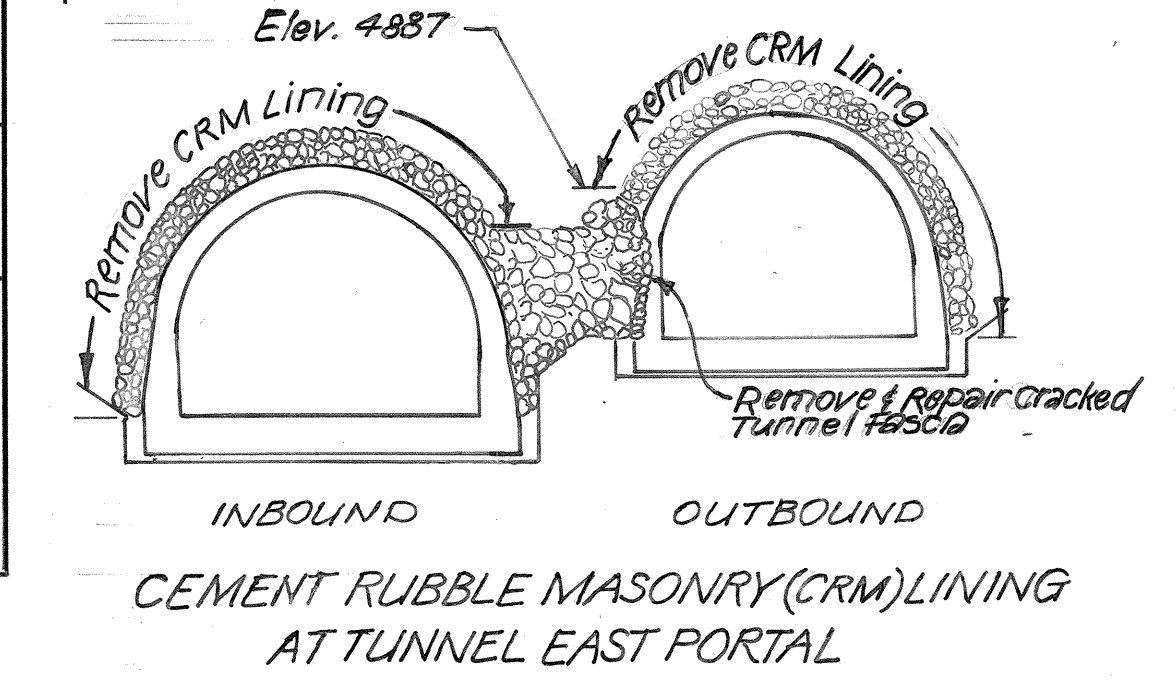
SCALE: AS NOTED DATE: AUG. 1988

SHEET No. 52 OF 27 SHEETS

NOTE:
 Profile lines for basalt, highly weathered rock and clayey silt shown are approximate only. The determination of the exact limits of the tunnel type to be constructed shall be made solely by the Engineer.

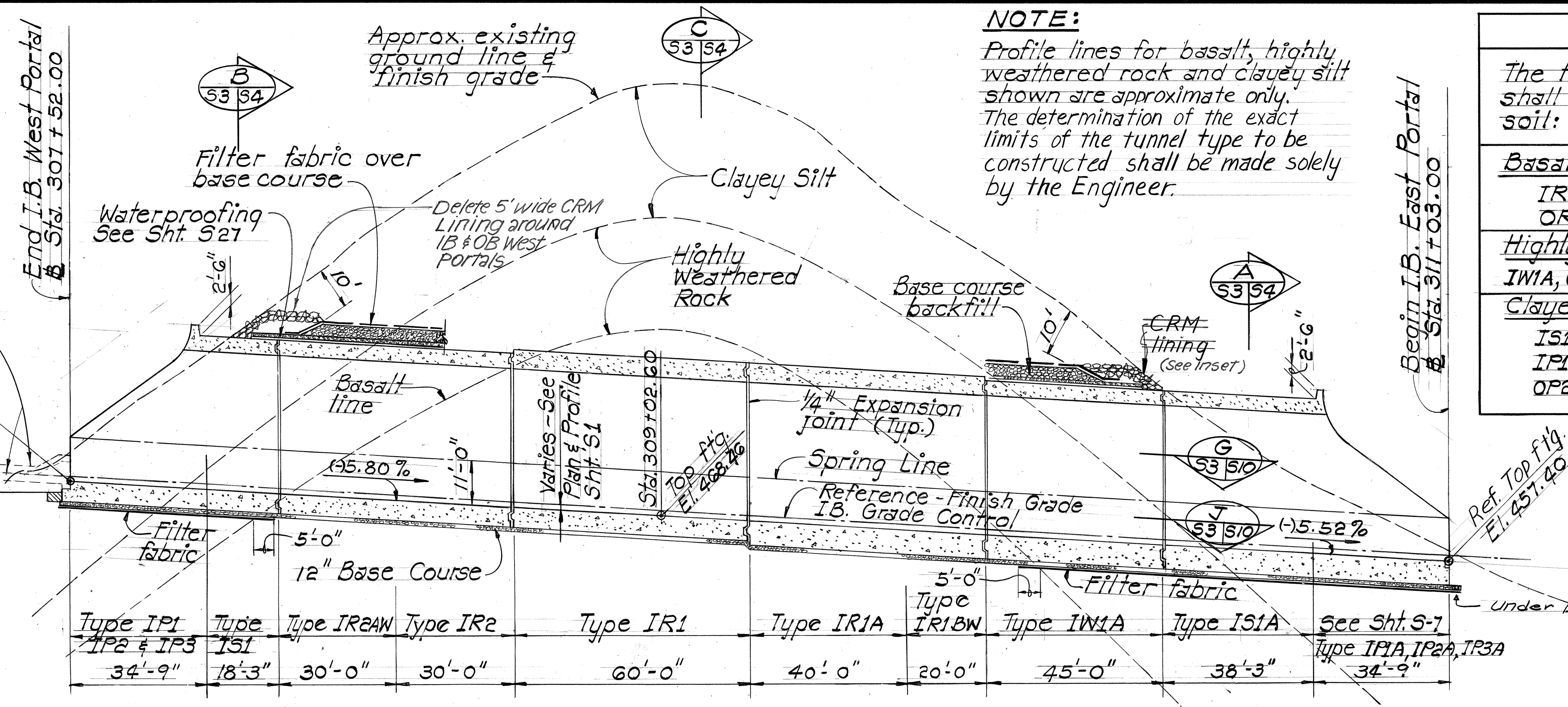
TABLE I	
The following tunnel types shall bear on corresponding soil:	
<u>Basalt Rock</u>	
IR1, IR1A, IR2, OR1, OR1A, OR2, & OR2A	
<u>Highly Weathered Rock</u>	
IW1A, OW1, OW1A, IR1BW & IR2AW	
<u>Clayey Silt</u>	
IS1, IS1A, IP1, IP2, IP3, IP1A, IP2A, IP3A, OS1A, OP1, OP2, OP3, OP1A, OP2A & OP3A	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1 (53)	1988	51	124
DATE		REVISION			
7/24/89		Added Revised Tunnel Sections			

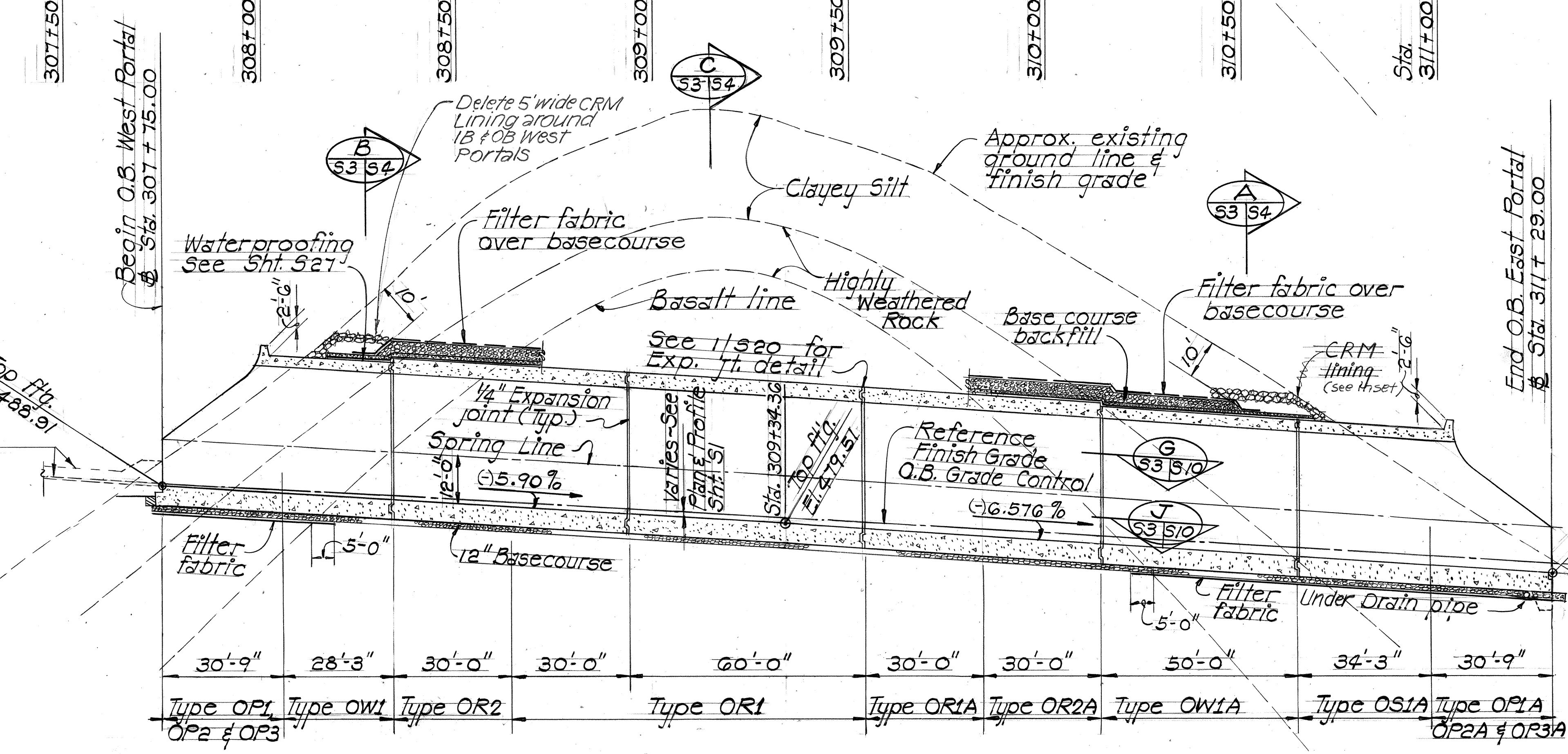


ABBREVIATIONS

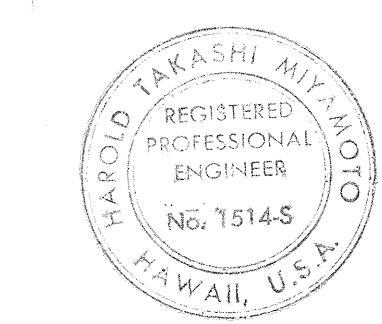
Approx.	Approximate	IB	Inbound
Bal.	Balance	Jt.	Joint
Bot.	Bottom	Longit.	Longitudinal
(C)	Contraction	Lt.	Left
c.c.	Center to center	Max.	Maximum
¢	Center line	Min.	Minimum
clr.	Clear	N.I.C.	Not in contract
Conc.	Concrete	OB	Outbound
Cont.	Continuous	O.C.	on center
Det.	Detail	Pavt.	Pavement
dia.	Diameter	P.	Plate
dwg.	Drawings	P.V.C.	Polyvinylchloride
E.F.	Each Face	Ref.	Reference
El.	Elevation	Reinf.	Reinforcement
Eq.	Equal	Ret.	Retaining
E.W.	Each Way	Rt.	Right
Exist.	Existing	Sect.	Section
Ftg.	Footing	Sht.	Sheet
Galv.	Galvanized	Sp.	Spacing
H	Height	Symm.	Symmetrical
H.S.	High Strength	T	Top
Horiz.	Horizontal	Typ.	Typical
		Vert.	Vertical



LONGITUDINAL SECTION ALONG & INBOUND TUNNEL
 Scale: 1" = 20'-0"



LONGITUDINAL SECTION ALONG & OUTBOUND TUNNEL
 Scale: 1" = 20'-0"



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 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

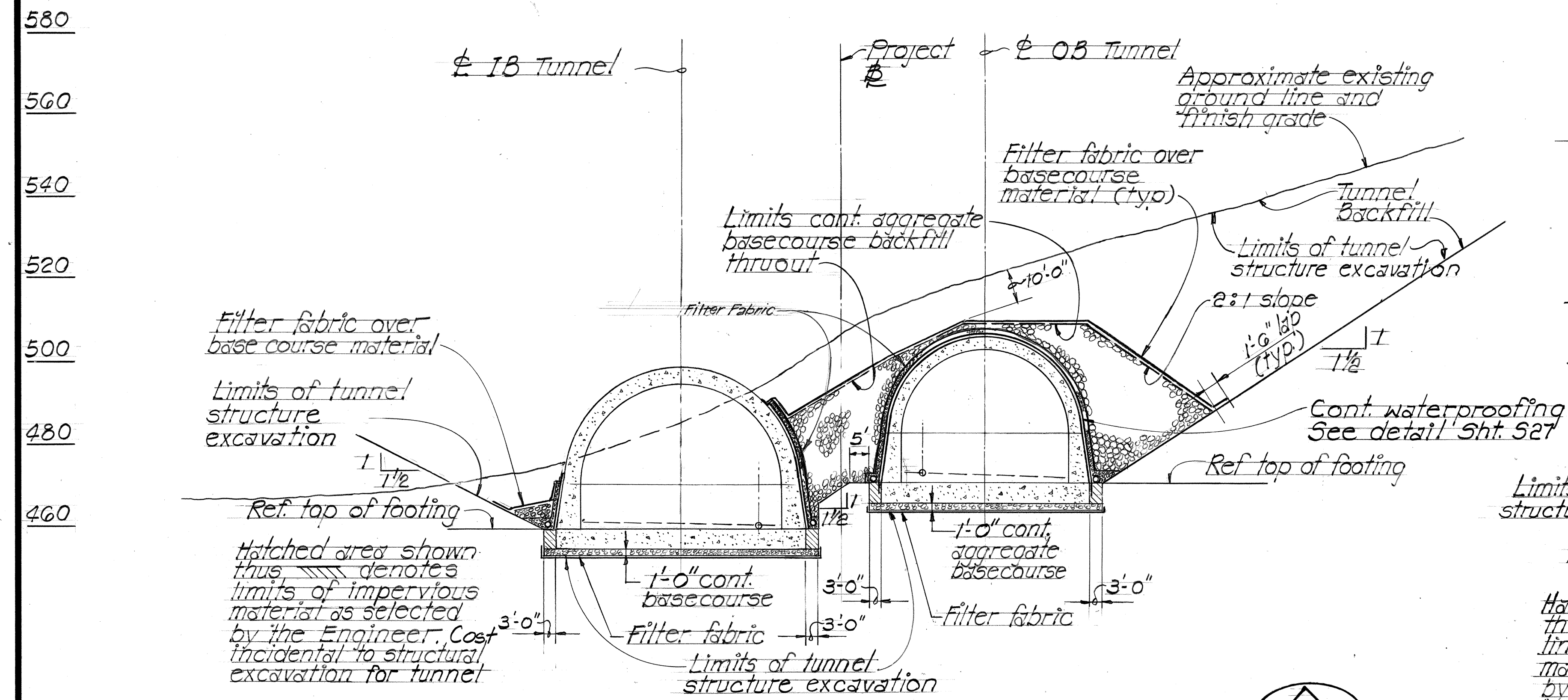
**LONGITUDINAL SECTIONS
 ALONG TUNNELS**

INTERSTATE ROUTE H-3
 F.A.I. PROJ. NO. I-H3-1 (53)

SCALE: AS NOTED DATE: AUG 1988
 SHEET No. 53 OF 27 SHEETS

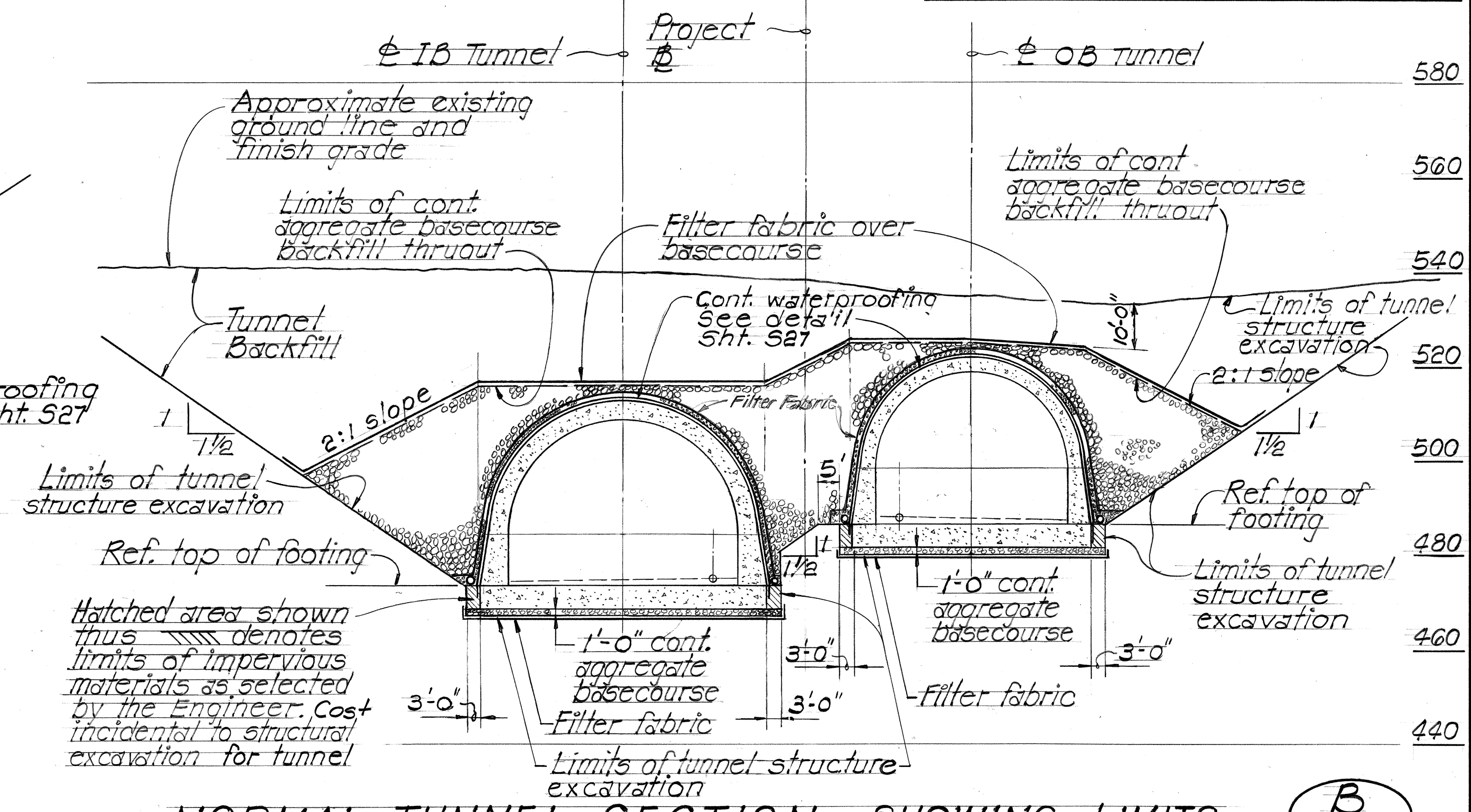
SURVEY PLOTTED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NO. 1	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	52	124



NORMAL TUNNEL SECTION - SHOWING LIMITS OF TUNNEL EXCAVATION AND BACKFILL Scale: 1" = 20'-0"

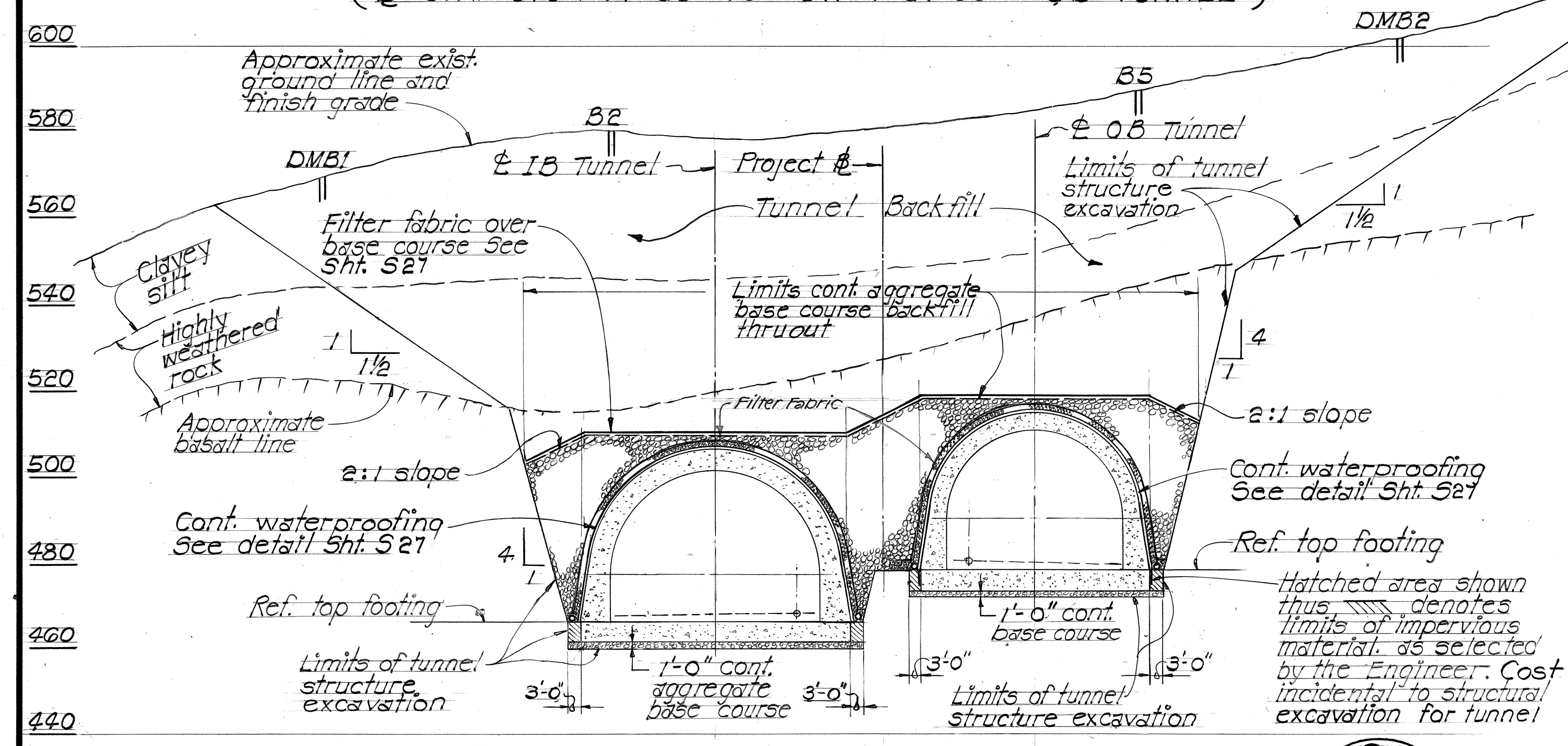
(# STA. 309 + 85.00 TO 311 + 03.00 - IB TUNNEL)
 (# STA. 310 + 14.00 TO 311 + 29.00 - OB TUNNEL)



NORMAL TUNNEL SECTION - SHOWING LIMITS OF TUNNEL EXCAVATION AND BACKFILL Scale: 1" = 20'-0"

(# STA. 307 + 52.00 TO 308 + 05.00 - IB TUNNEL)
 (# STA. 307 + 75.00 TO 308 + 34.00 - OB TUNNEL)

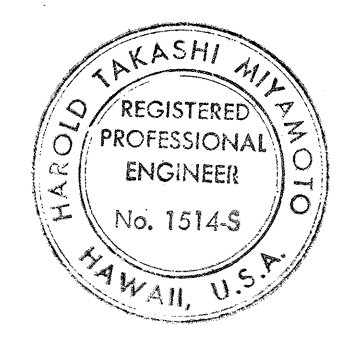
NOTE:
 See Sheet 4 for cement rubble masonry lining and slope reinforcement.



NORMAL TUNNEL SECTION - SHOWING LIMITS OF TUNNEL EXCAVATION AND BACKFILL Scale: 1" = 20'-0"

(# STA. 308 + 05.00 TO 309 + 85.00 - IB TUNNEL)
 (# STA. 308 + 34.00 TO 310 + 14.00 - OB TUNNEL)

ORIGINAL PLAN	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	



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 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

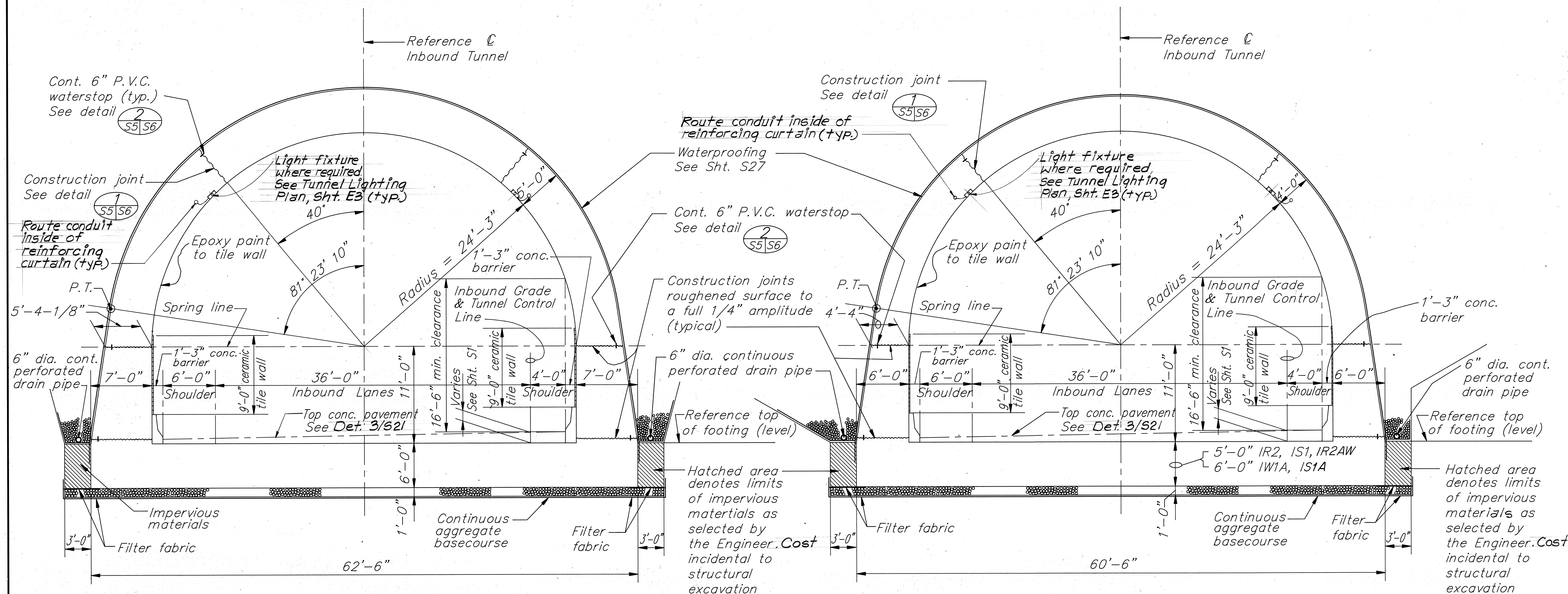
NORMAL TUNNEL SECTIONS AND BENTONITE WATERPROOFING DET.

INTERSTATE ROUTE H-3
 F.A.I. PROJ. NO. I-H3-1(53)

SCALE: AS NOTED DATE: AUG. 1988

SHEET No 54 OF 27 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	53	124

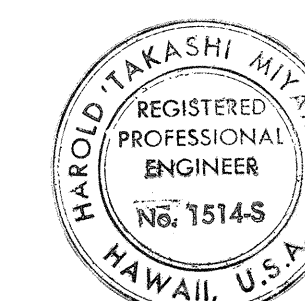


TYPE "IR1", "IR1A", "IR1BW"
SCALE: 3/16" = 1'-0"

TYPE "IR2", "IW1A", "IS1" & "IS1A", "IR2AW"
("IP1", "IP2", "IP3" SIMILAR TO "IS1")
("IR1A", "IR2A", "IR3A", SIMILAR TO "IS1A")
SCALE: 3/16" = 1'-0"

TYPICAL TUNNEL CROSS SECTIONS

INBOUND TUNNEL SECTIONS



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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

INBOUND TUNNEL
TYPICAL CROSS SECTIONS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

7/24/89 Added Revised Tunnel Sections
DATE REVISION

SCALE: AS NOTED DATE: AUG. 1988

SHEET No. S 5 OF 27 SHEETS

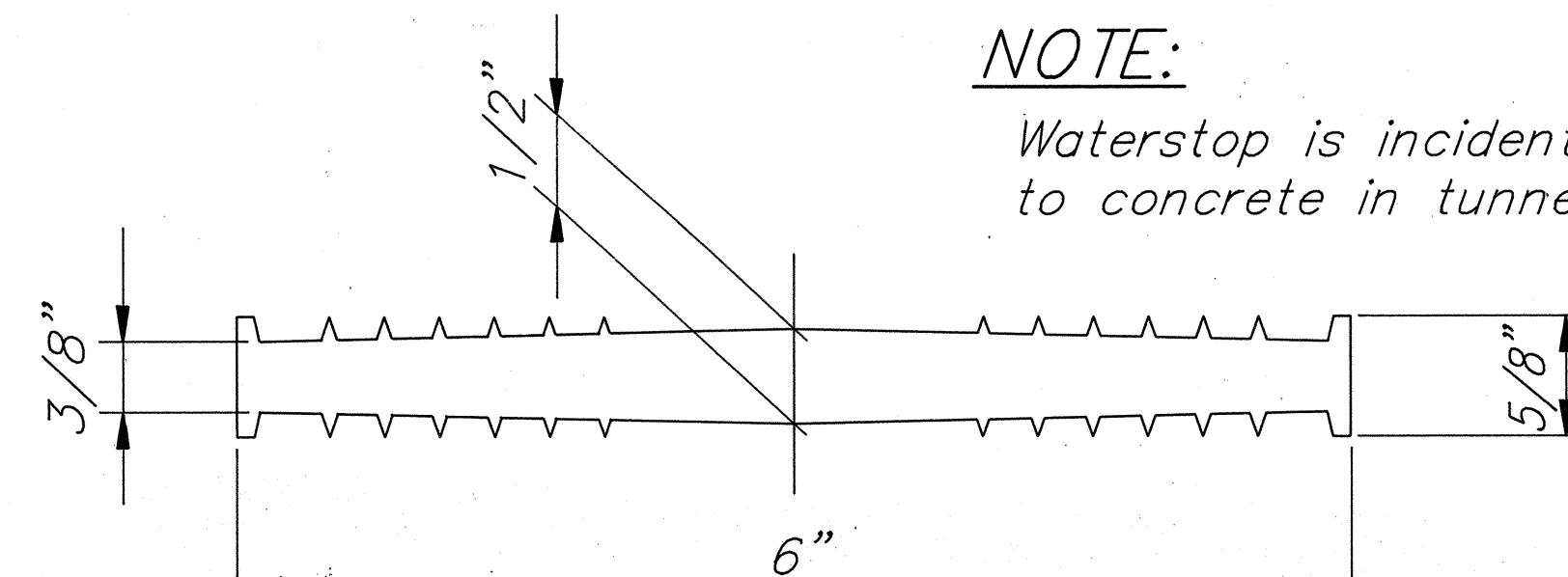
C.O. 53

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
DESIGNED BY	DRAWN BY	
CHECKED BY	TRACED BY	
NOTED BY	DESIGNED BY	
NO.	CHECKED BY	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	54	124

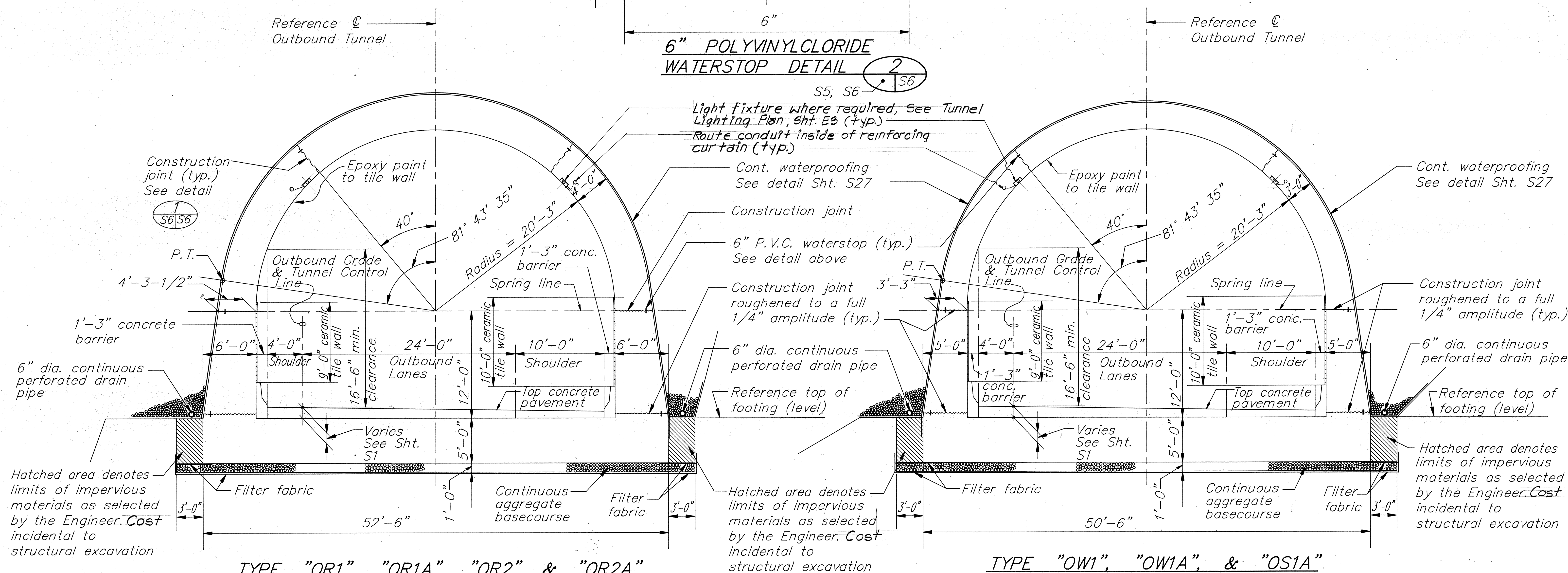
NOTE:

Waterstop is incidental to concrete in tunnel.



6" POLYVINYLCHLORIDE
WATERSTOP DETAIL

S5, S6



TYPE "OR1", "OR1A", "OR2" & "OR2A"

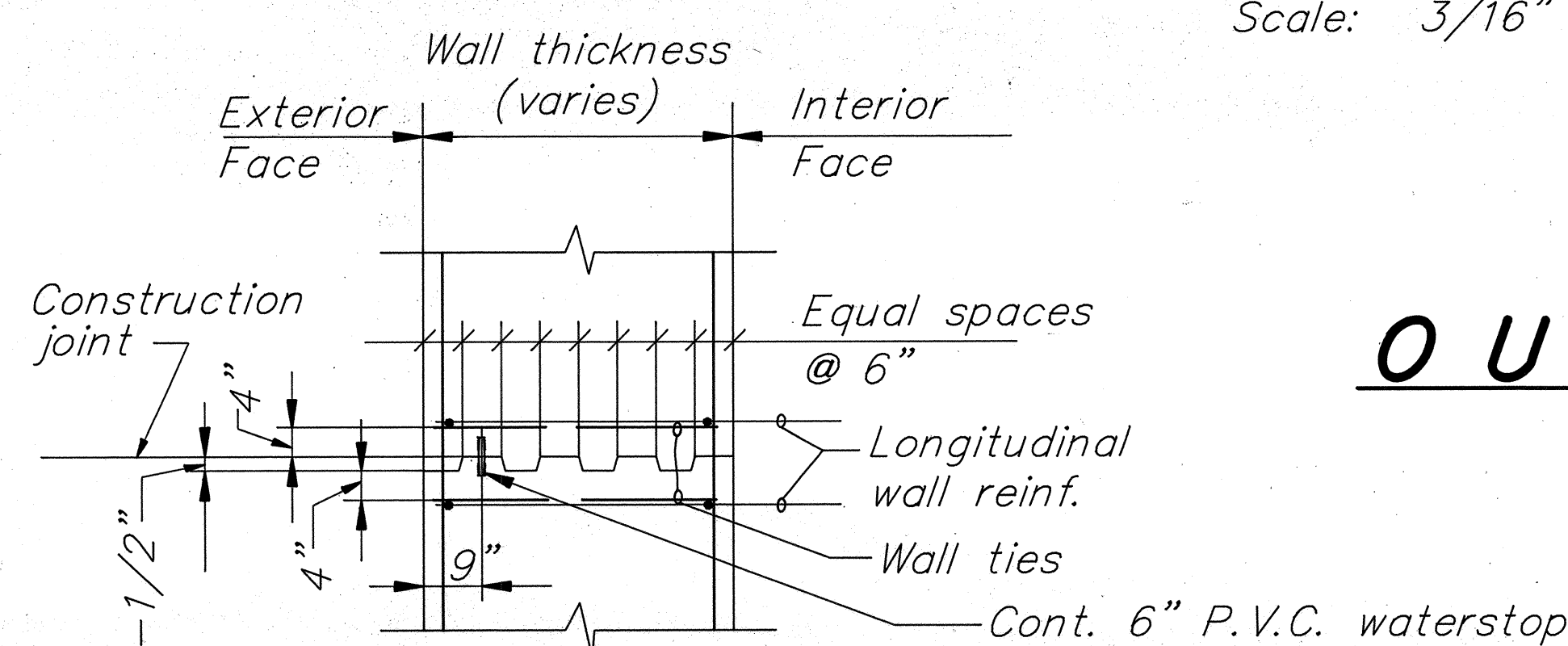
Scale: 3/16" = 1'-0"

TYPE "OW1", "OW1A", & "OS1A"
("OP1", "OP2", & "OP3" SIMILAR TO "OW1")
("OP1A", "OP2A", & "OP3A" SIMILAR TO "OS1A")

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

TYPICAL TUNNEL CROSS SECTIONS

OUTBOUND TUNNEL SECTIONS



TYPICAL TUNNEL WALL

CONSTRUCTION JOINT DETAIL

S5, S6



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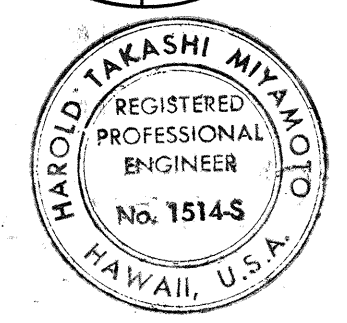
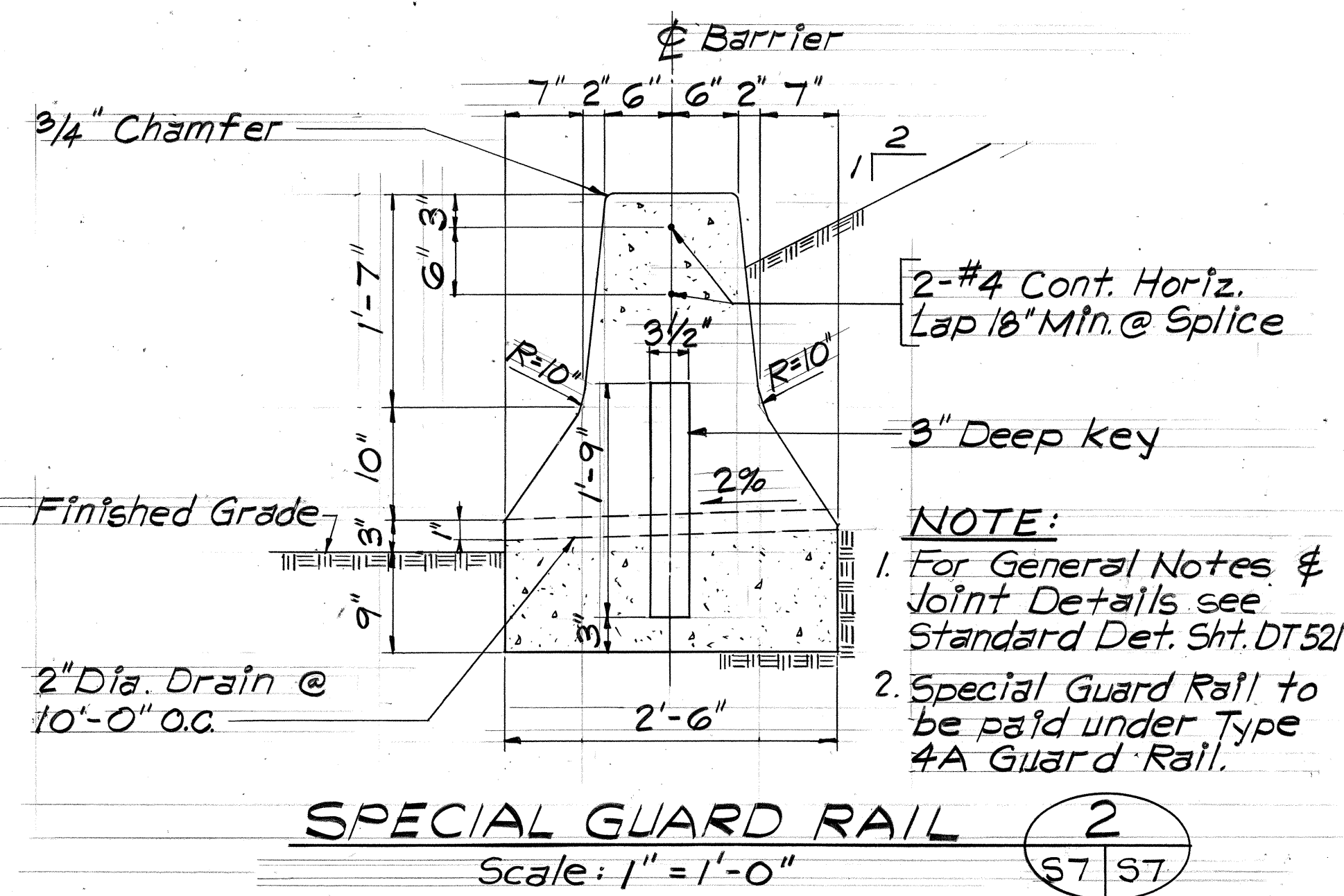
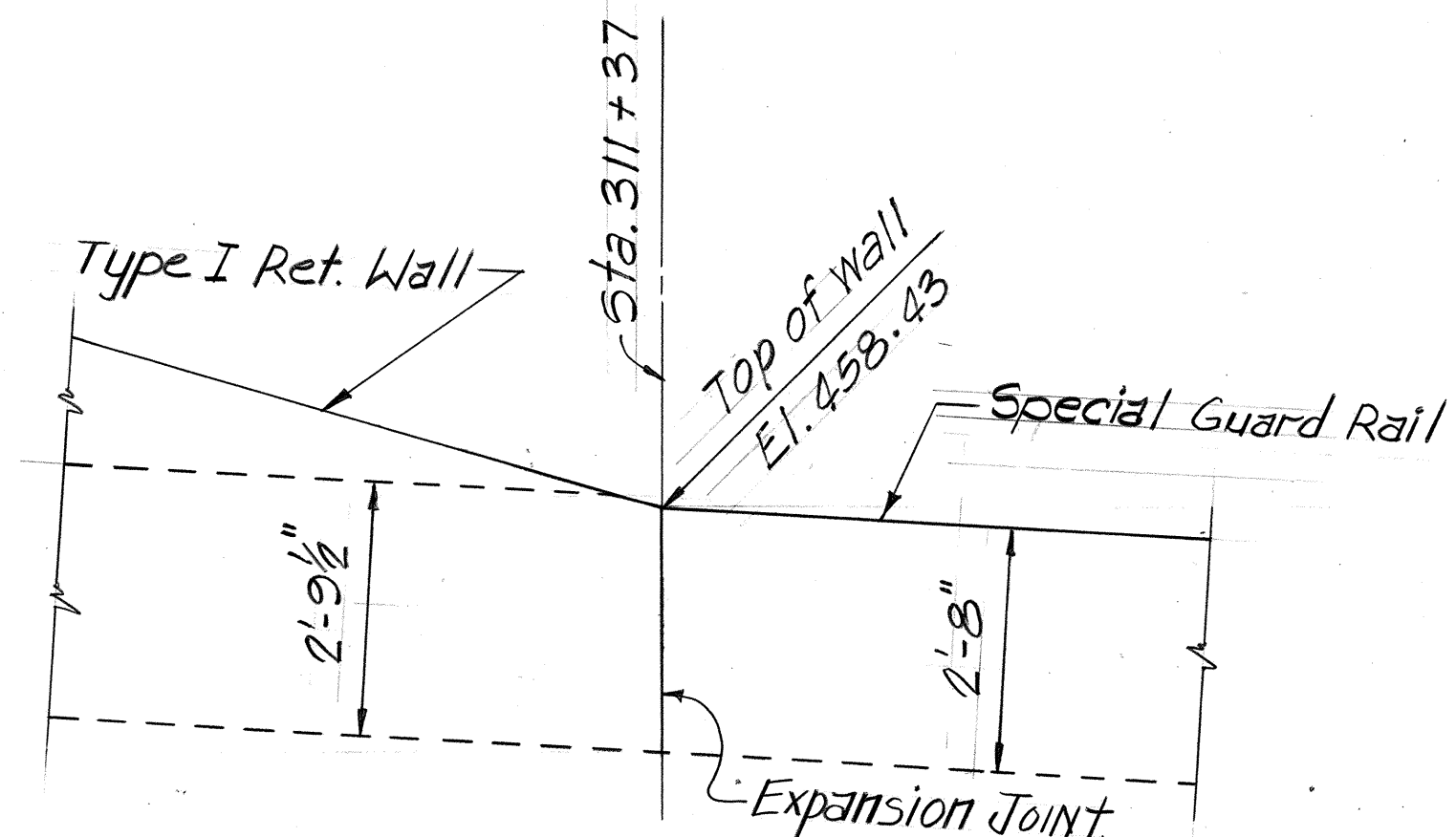
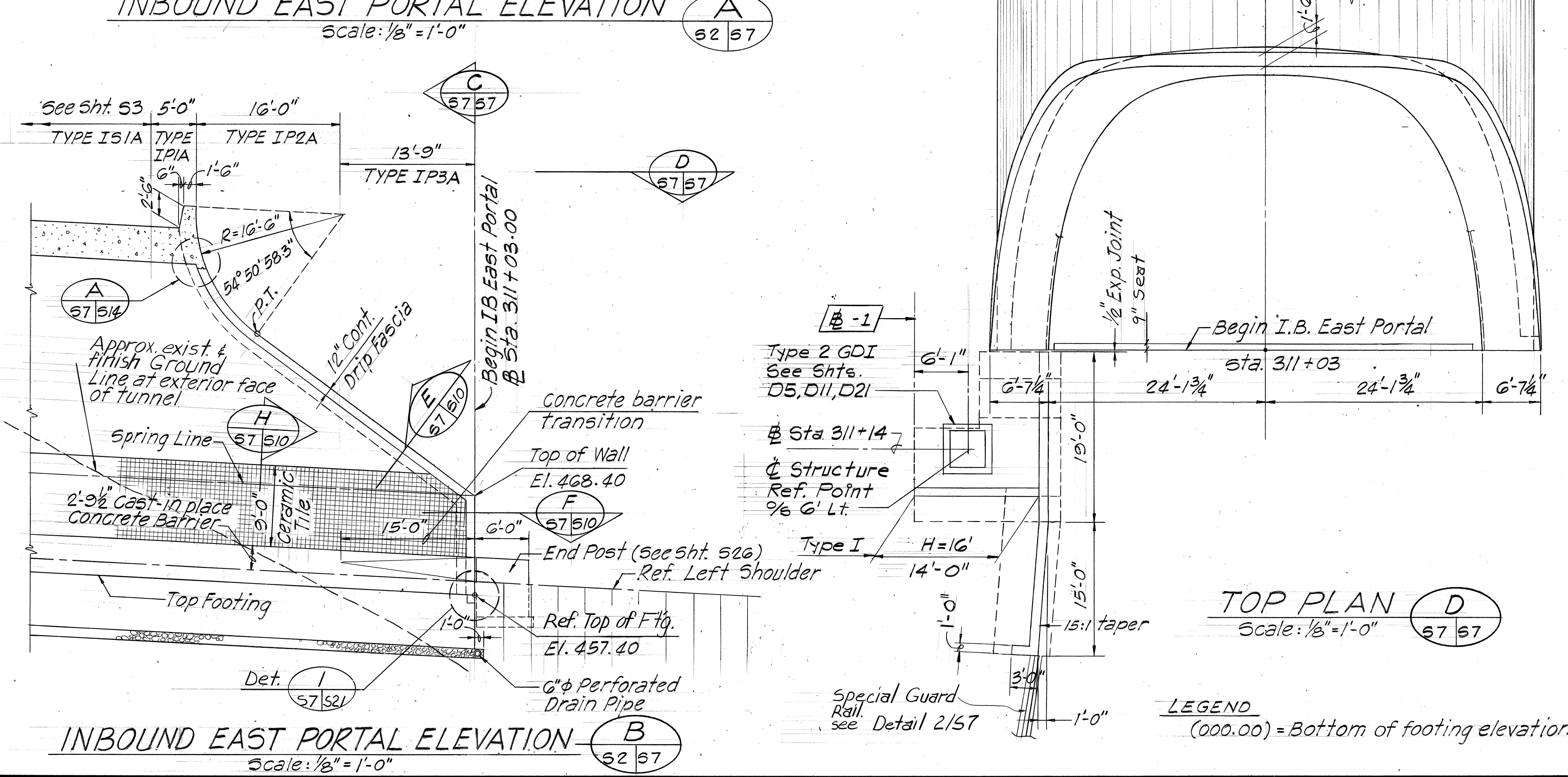
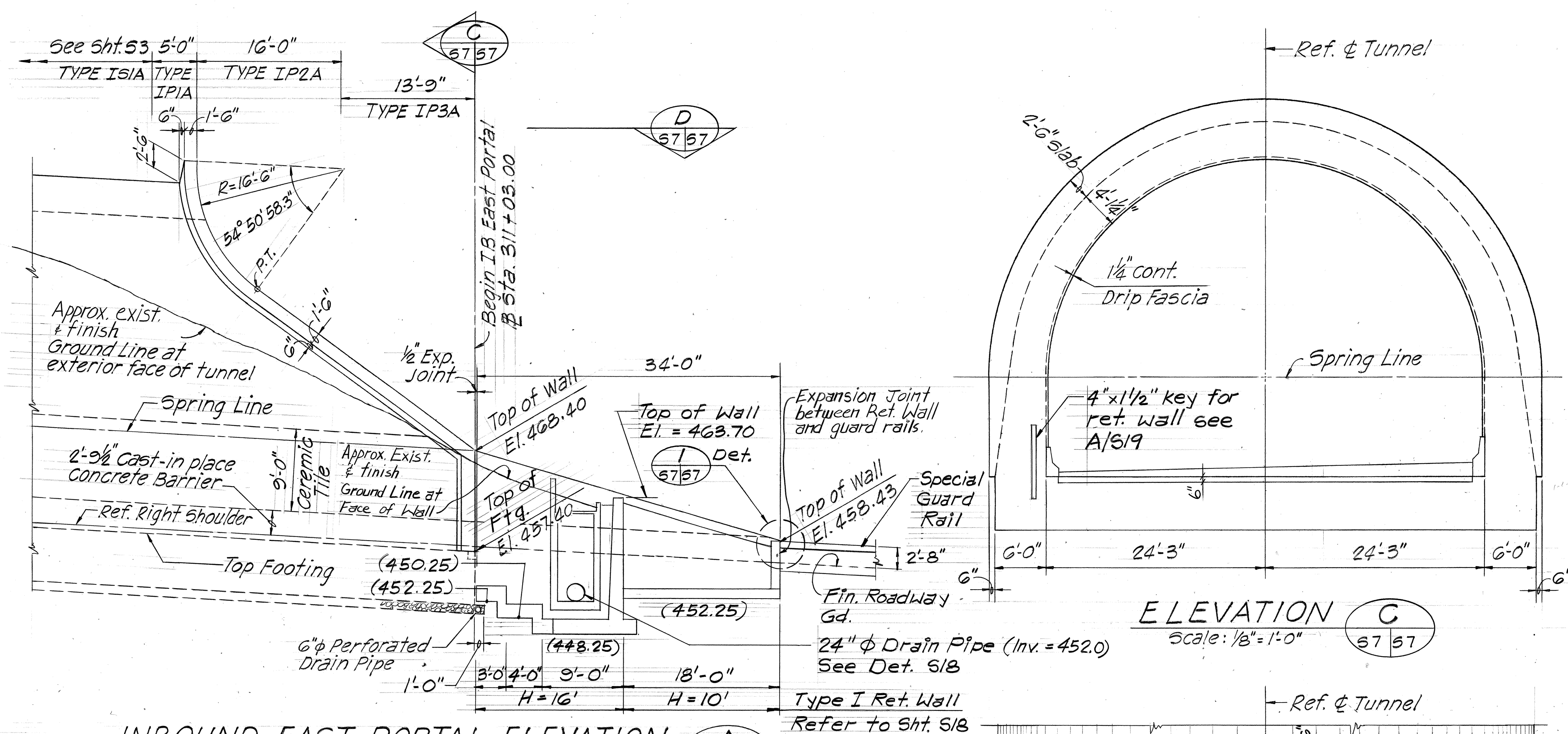
OUTBOUND TUNNEL TYPICAL CROSS SECTIONS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

SCALE: AS NOTED DATE: AUG. 1988

SHEET No. 56 OF 27 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1 (53)	1988	55	124



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

INBOUND EAST PORTAL DETAILS

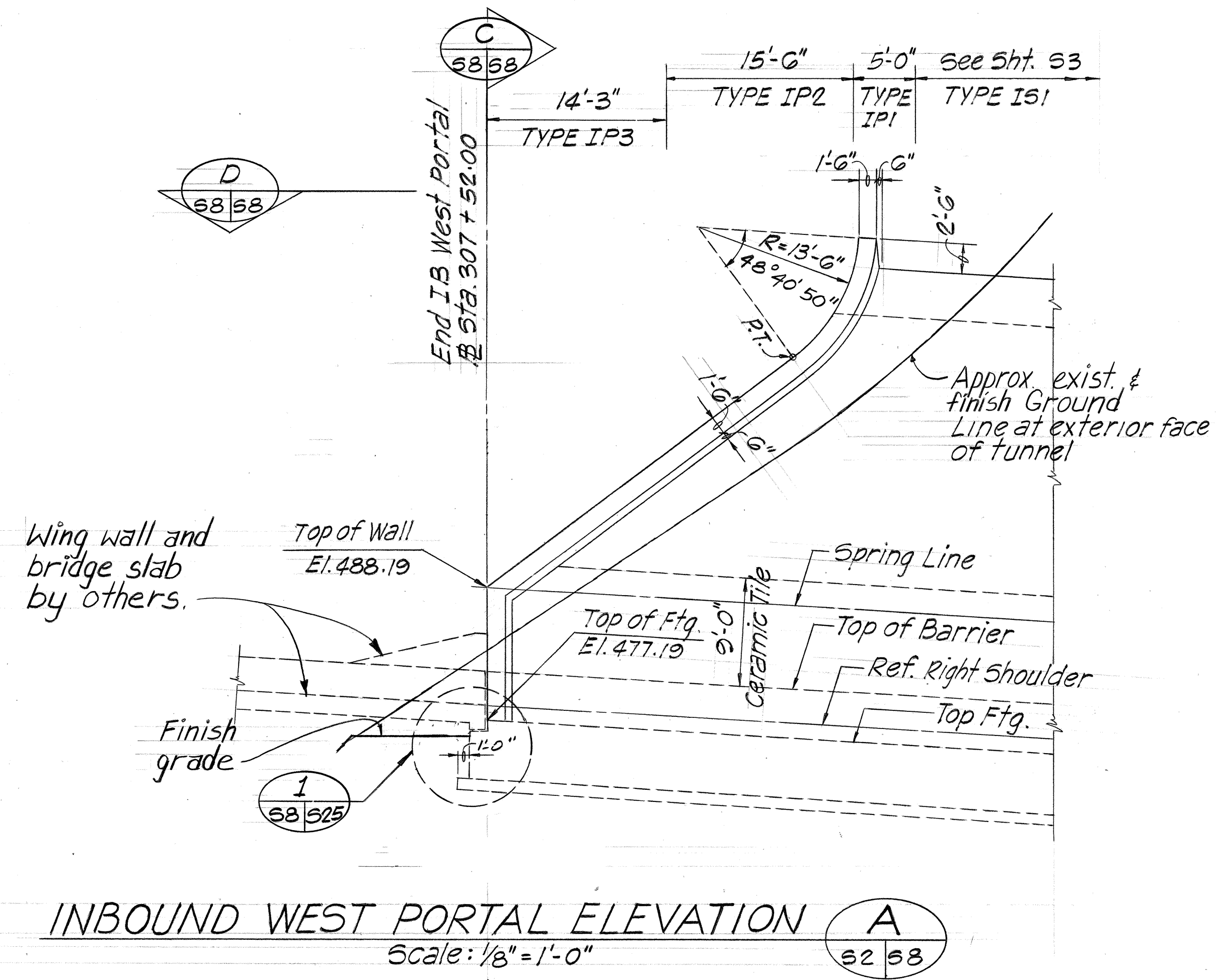
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1 (53)

SCALE: AS NOTED DATE: AUG. 1988

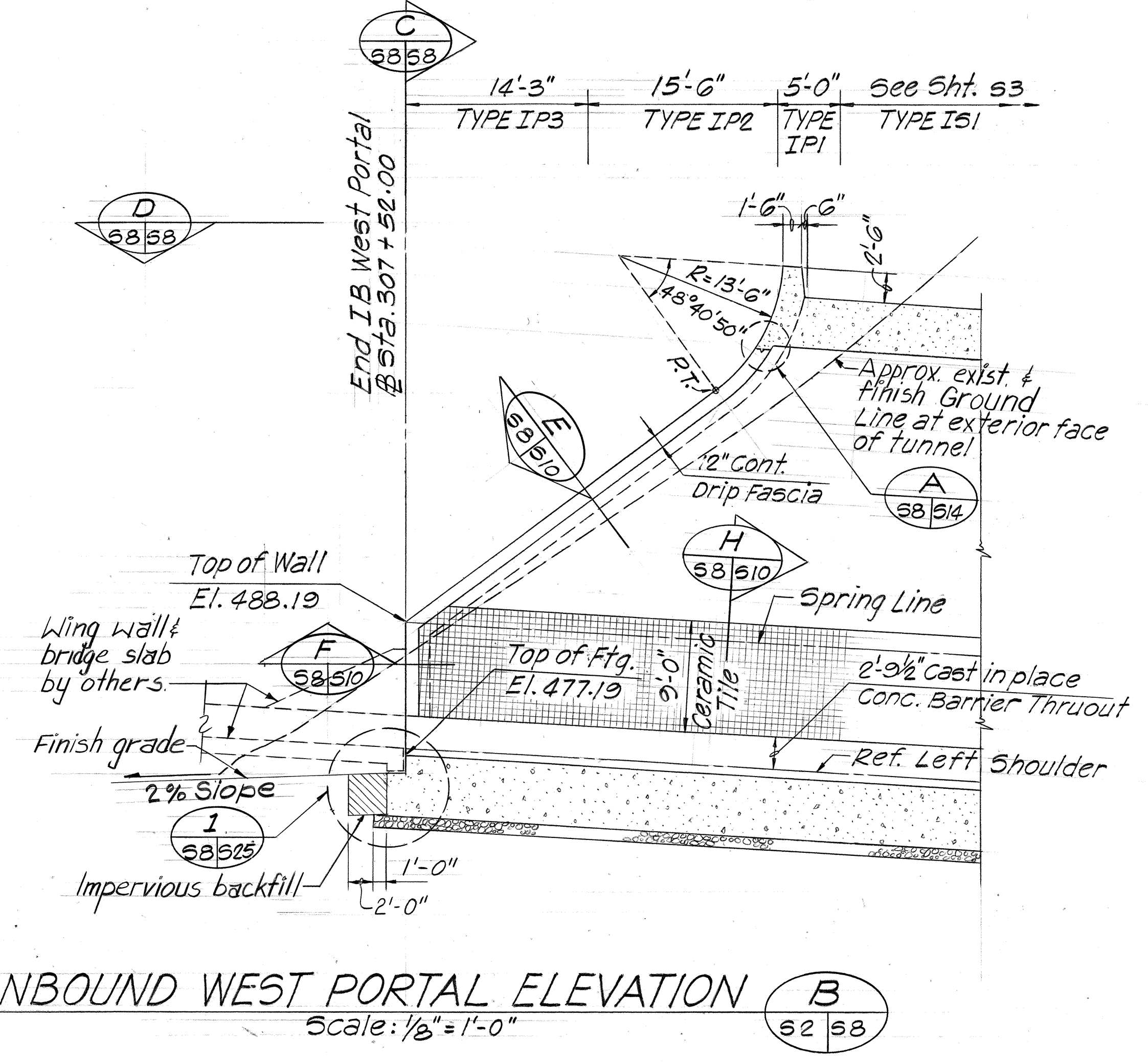
SHEET No. 57 OF 27 SHEETS

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

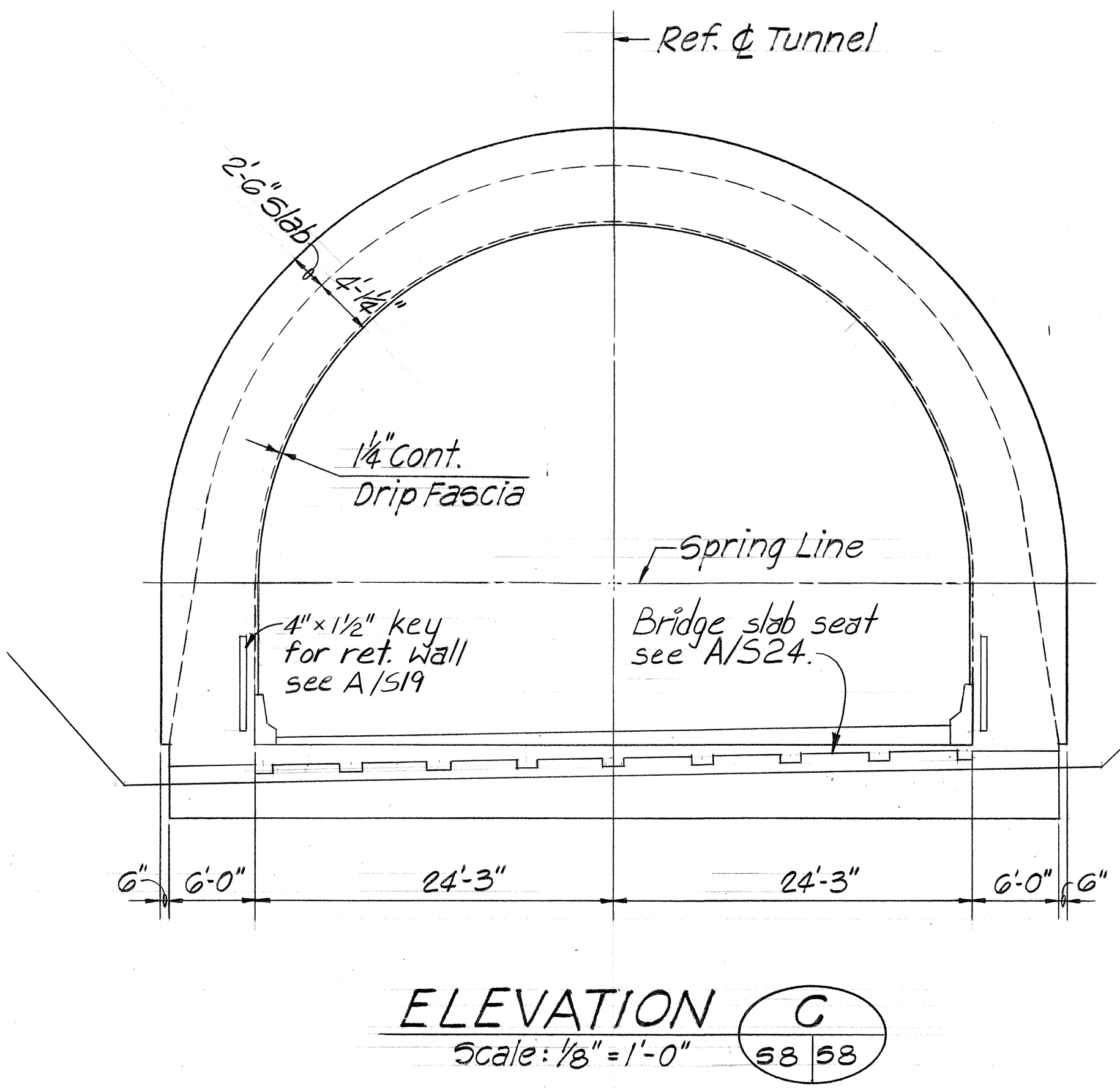
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1 (53)	1988	56	124



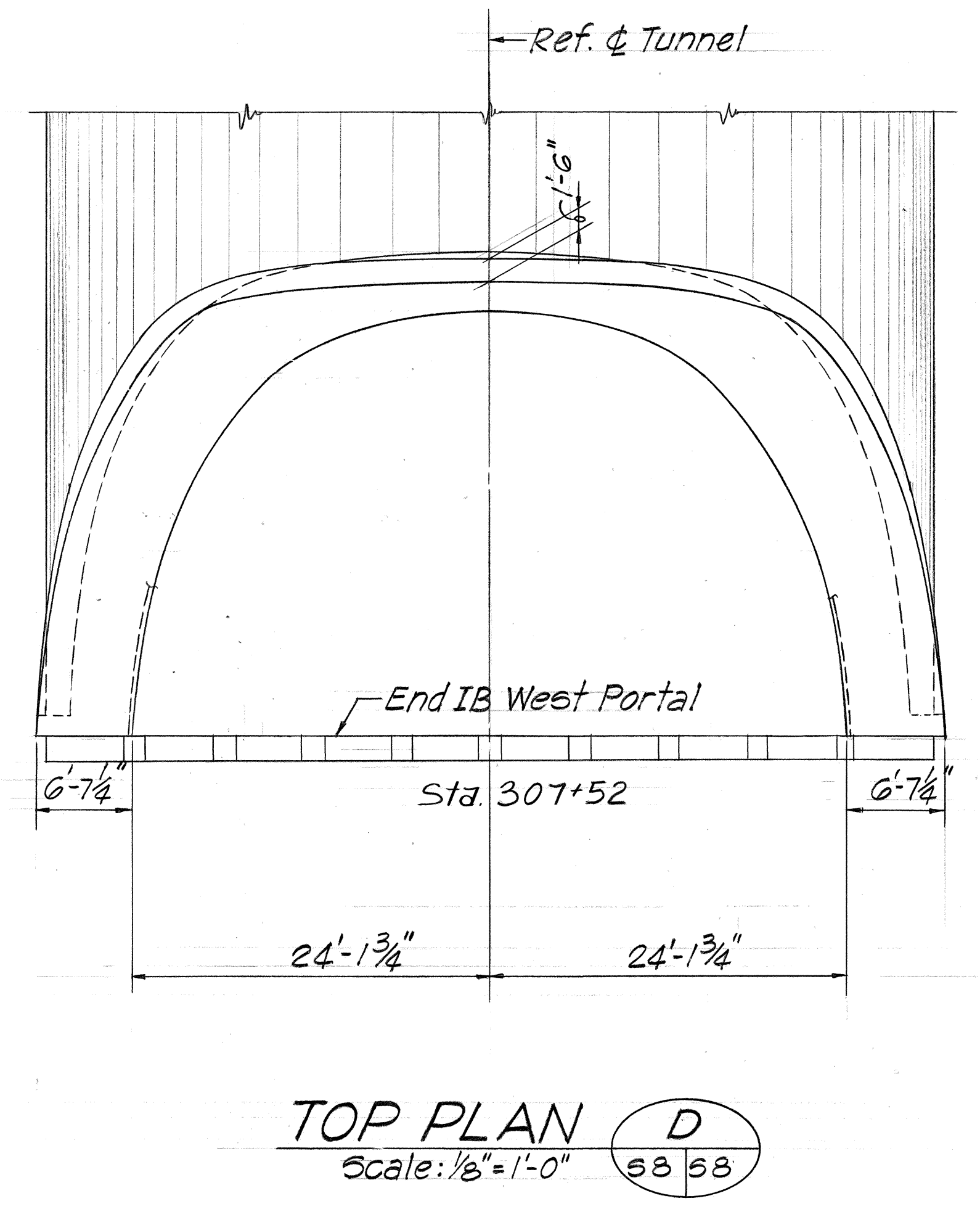
INBOUND WEST PORTAL ELEVATION **A**
Scale: 1/8" = 1'-0" 52 58



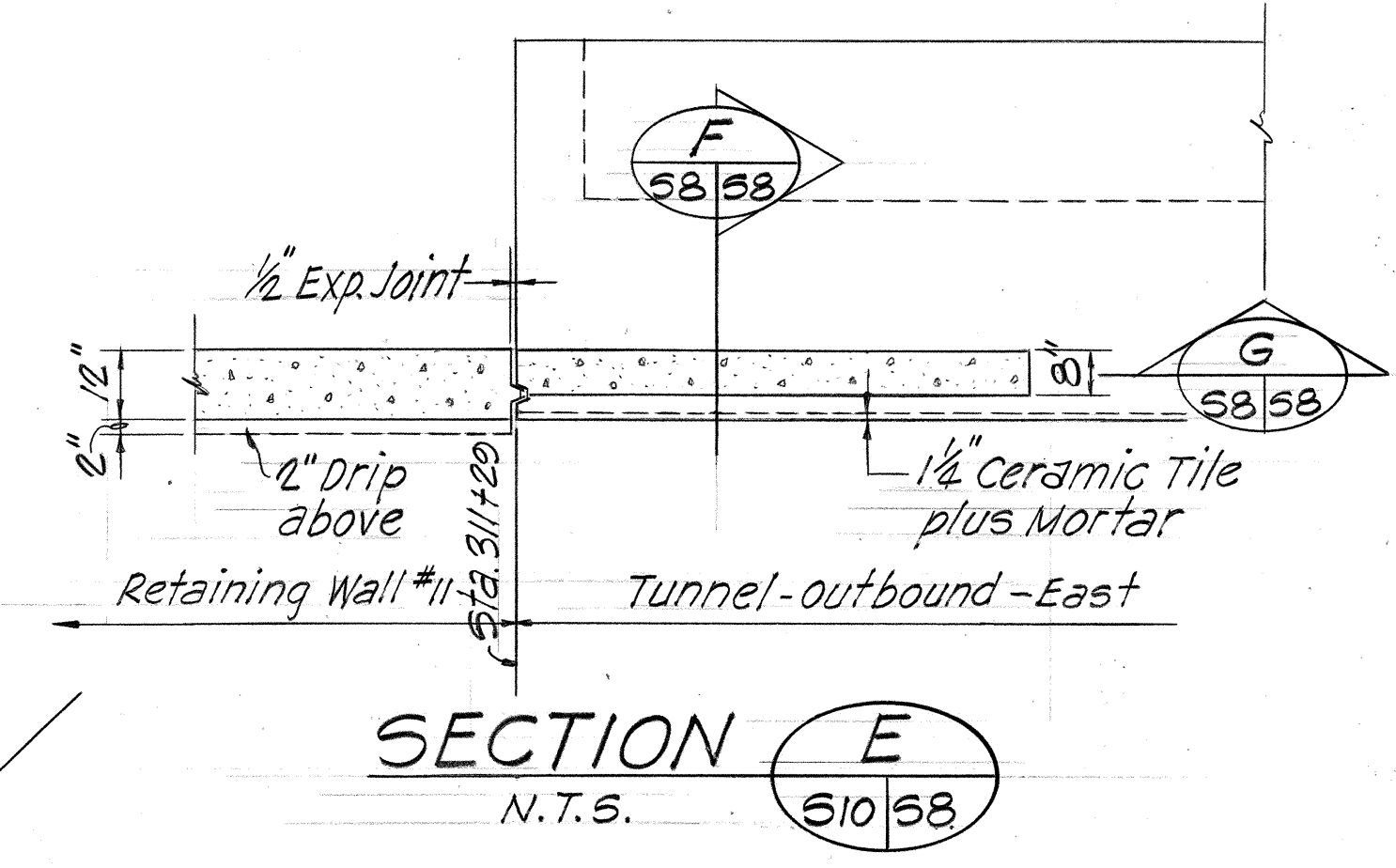
INBOUND WEST PORTAL ELEVATION **B**
Scale: 1/8" = 1'-0" 52 58



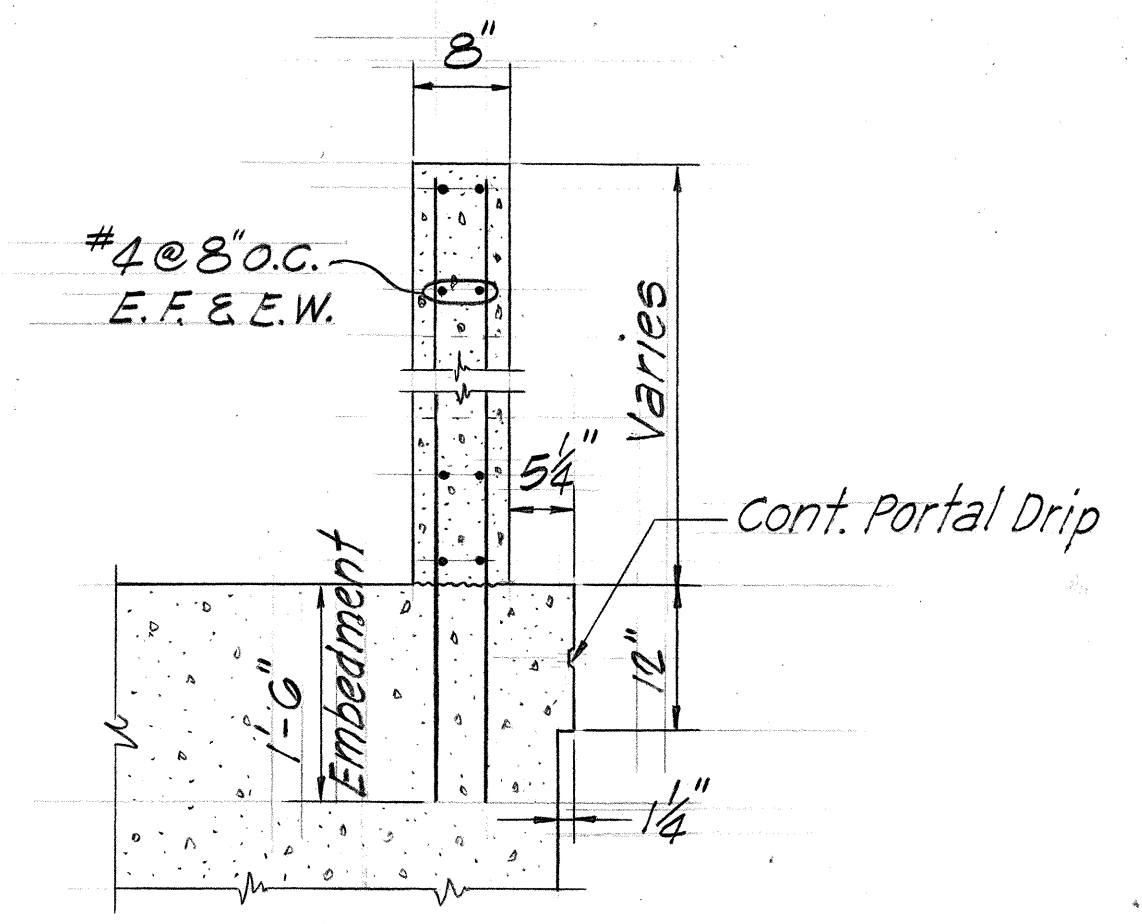
ELEVATION **C**
Scale: 1/8" = 1'-0" 58 58



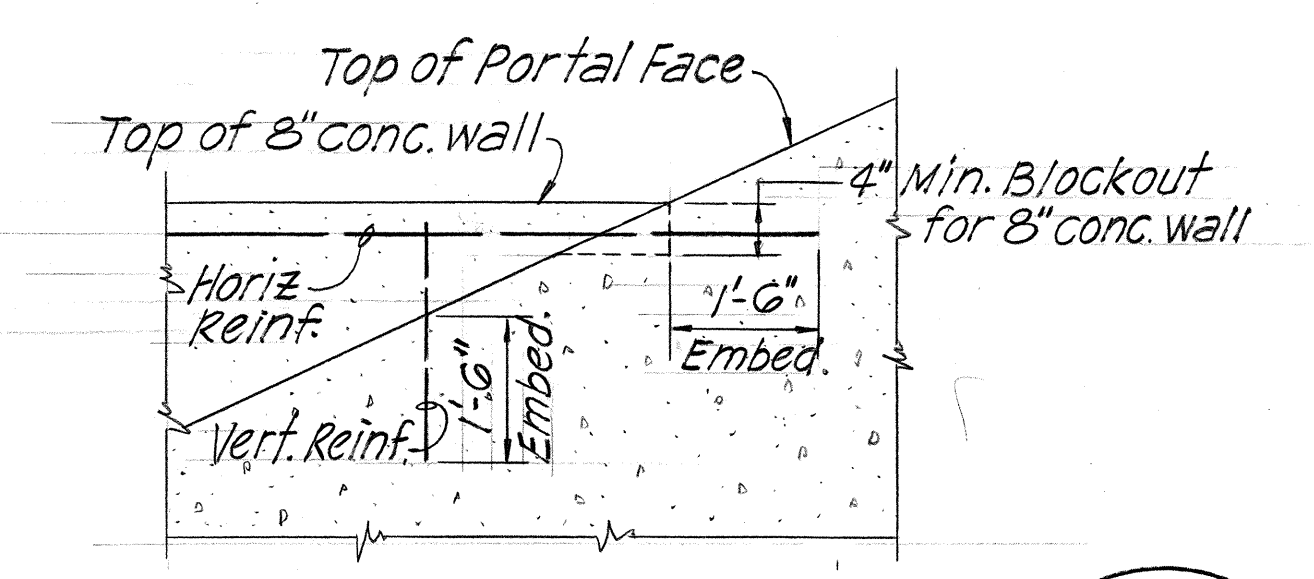
TOP PLAN **D**
Scale: 1/8" = 1'-0" 58 58



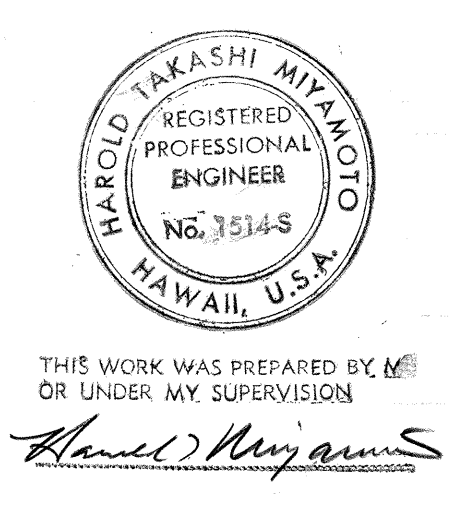
SECTION **E**
N.T.S. 510 58



SECTION **F**
Scale: 3/4" = 1'-0" 58 58



ELEVATION-SECTION **G**
N.T.S. 58,510



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HIGHWAYS DIVISION

INBOUND WEST PORTAL DETAILS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1 (53)

SCALE: AS NOTED DATE: AUG. 1988

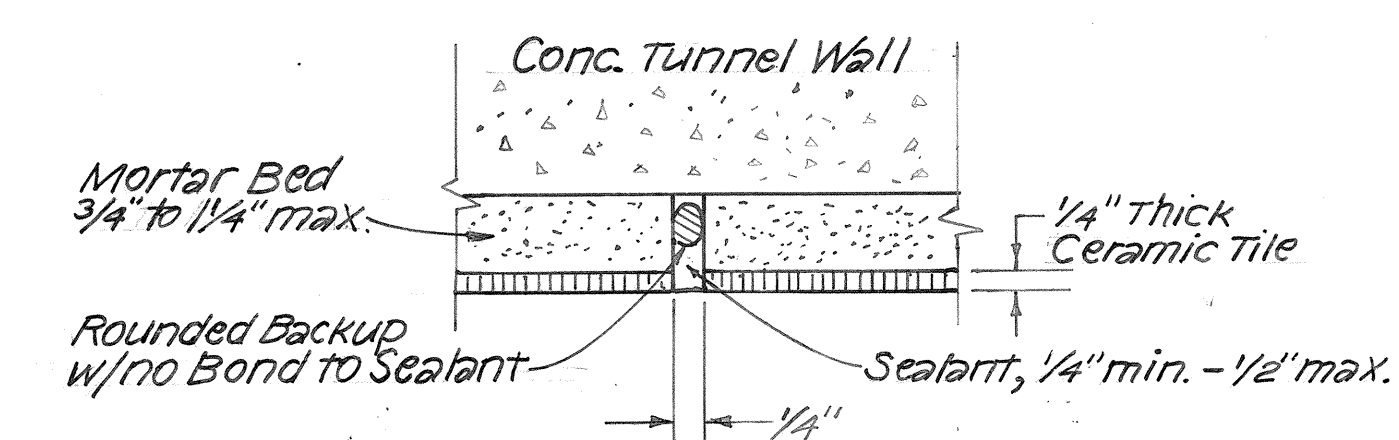
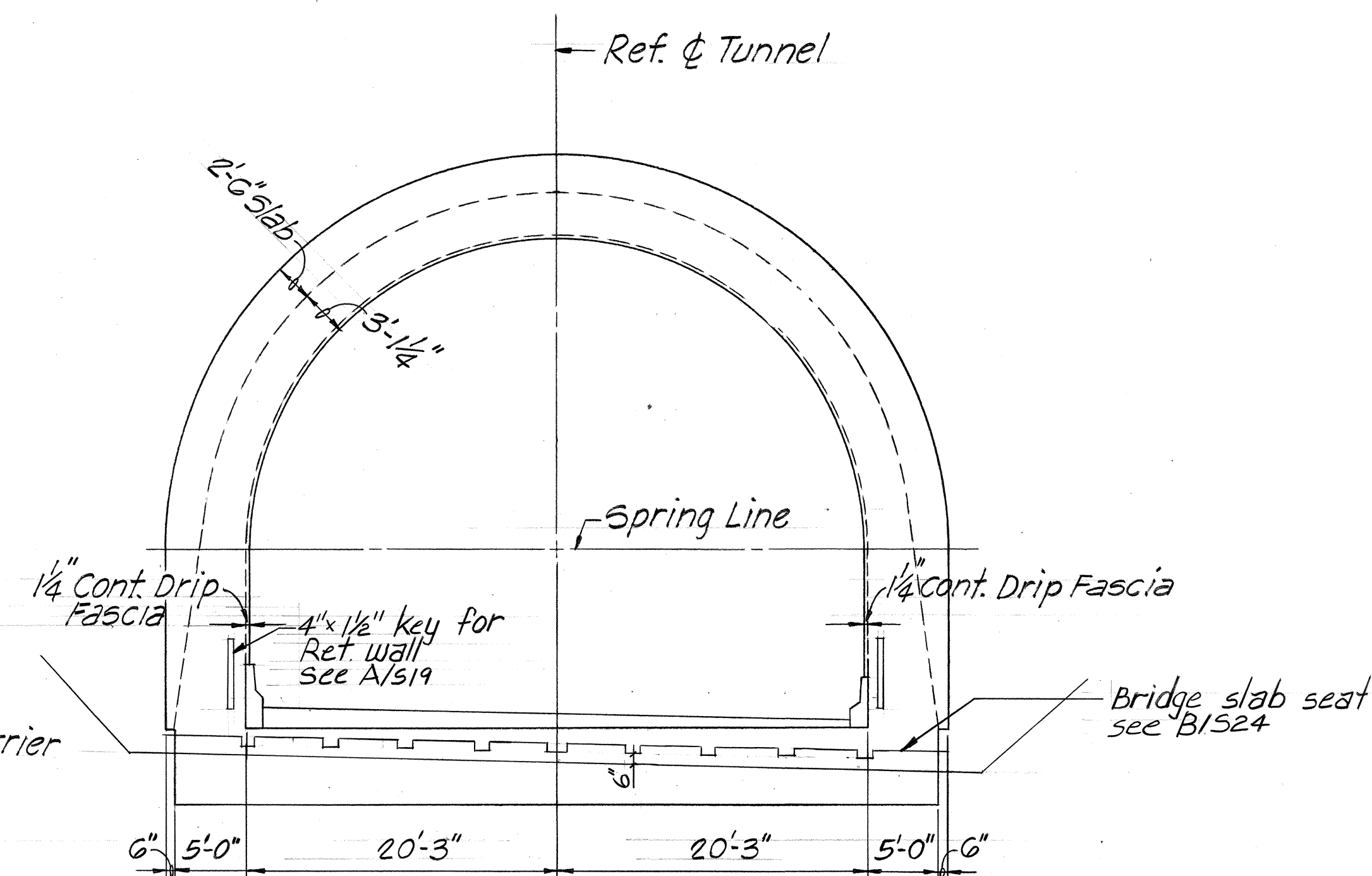
SHEET No. 58 OF 27 SHEETS

ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	
DRAWN BY	
TRACED BY	
CHECKED BY	
NOTE BOOK	
NO.	

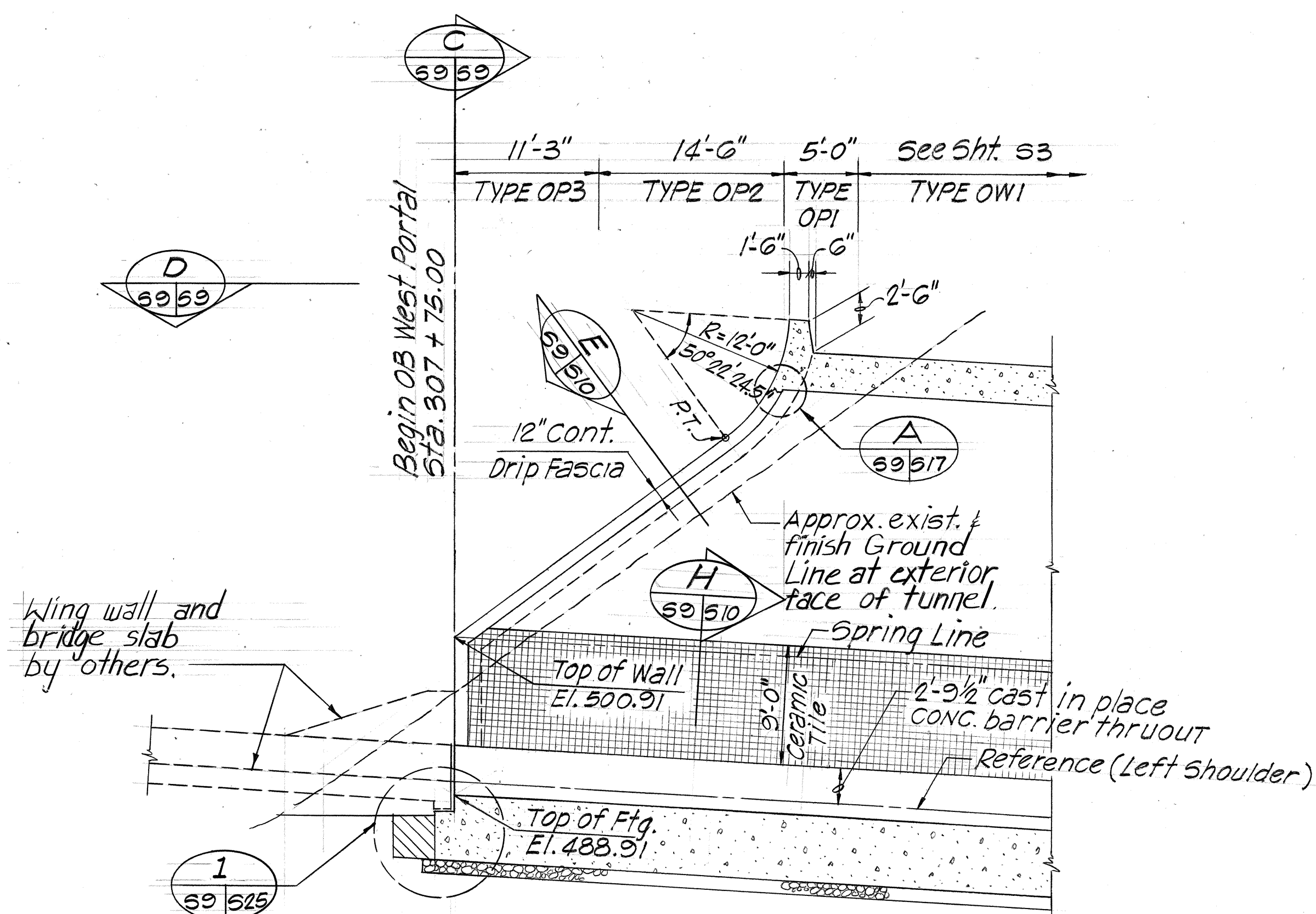
The plan view shows the horizontal alignment of the bridge approach. Key features include:

- Stationing:** The vertical axis is labeled "Begin OB West Portal Sta. 307 + 75.00".
- Horizontal Segments:** Four segments are defined by stationing: TYPE OP3 (11'-3"), TYPE OP2 (14'-6"), TYPE OP1 (5'-0"), and TYPE OWI (See Sht. 53).
- Curved Section:** A curve with a radius $R=12'-0"$ and a central angle of $50^\circ 02' 24.5"$ is shown. The point of tangency (P.T.) is indicated.
- Elevations:**
 - "Top of Wall El. 500.91"
 - "Top of Ftg. El. 488.91"
- Geometry:**
 - A "Spring Line" is shown as a dashed line parallel to the centerline.
 - A "Reference (Right Shoulder)" is indicated.
 - Dimensions of 1'-6" and 2'-6" are shown near the curve.
 - An annotation states: "Approx. exist & finish Ground Line at exterior face of tunnel".
- Control Points:**
 - Point C is located at the top of the vertical axis.
 - Point D is located to the left of the vertical axis.
 - Point E is located at the bottom of the vertical axis, near the foundation area.

A	
52	59

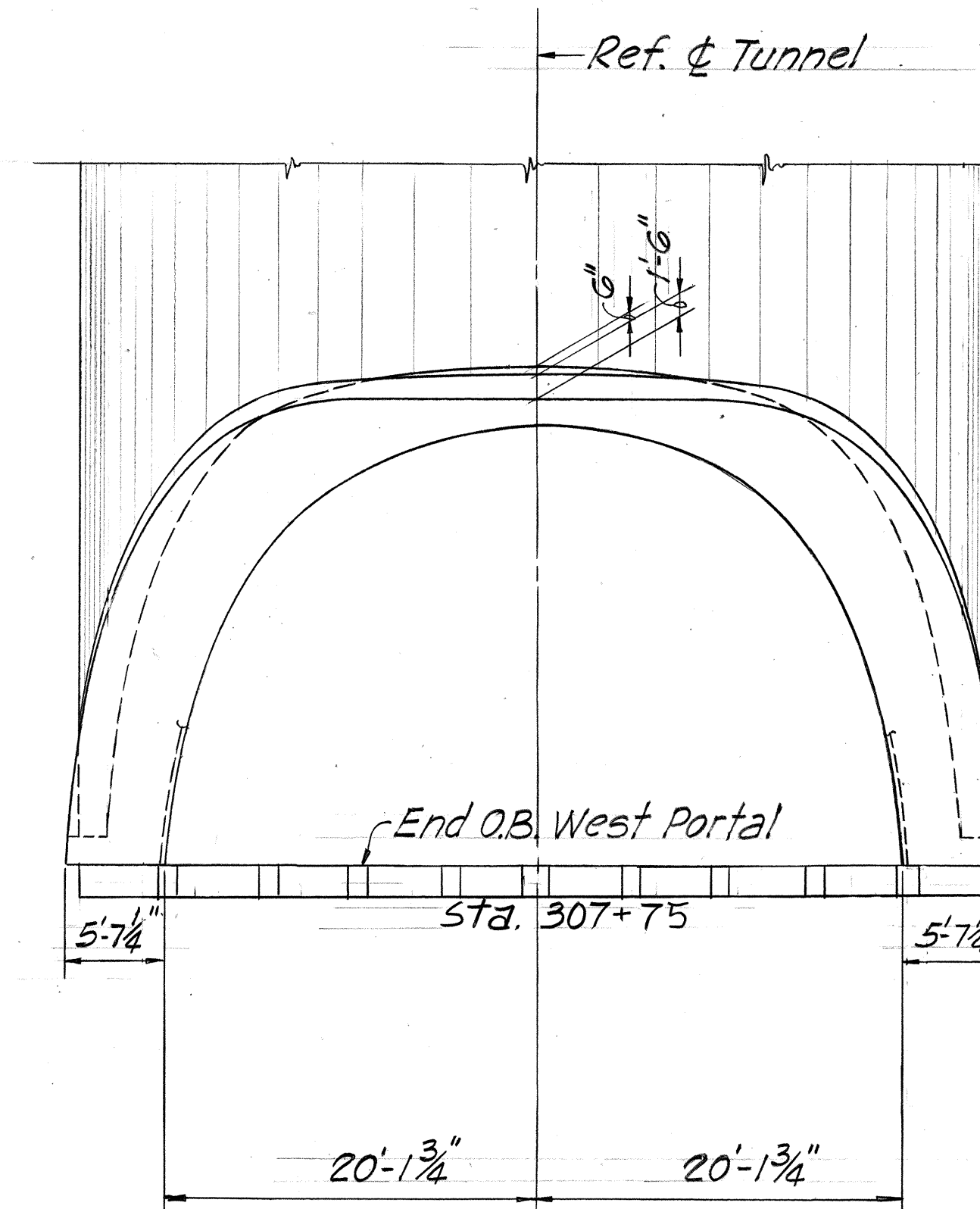


N.T.S.

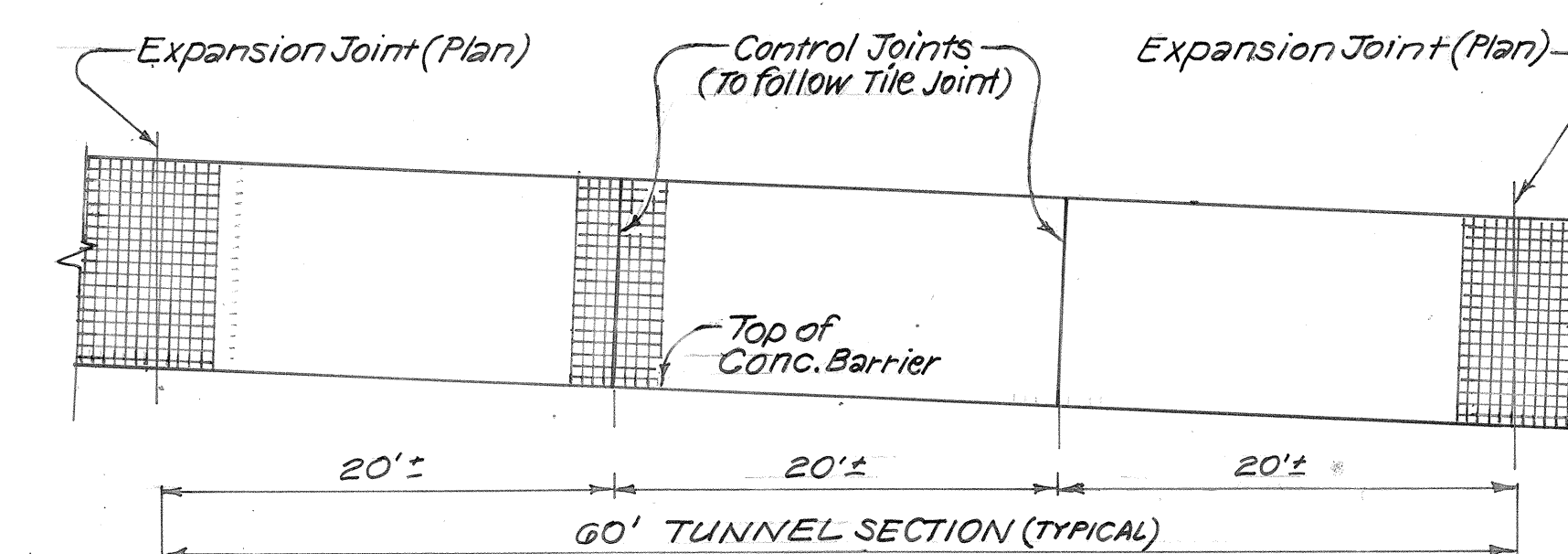


B

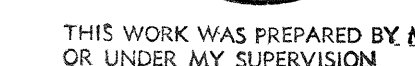
59 | 59



D
59 | 59



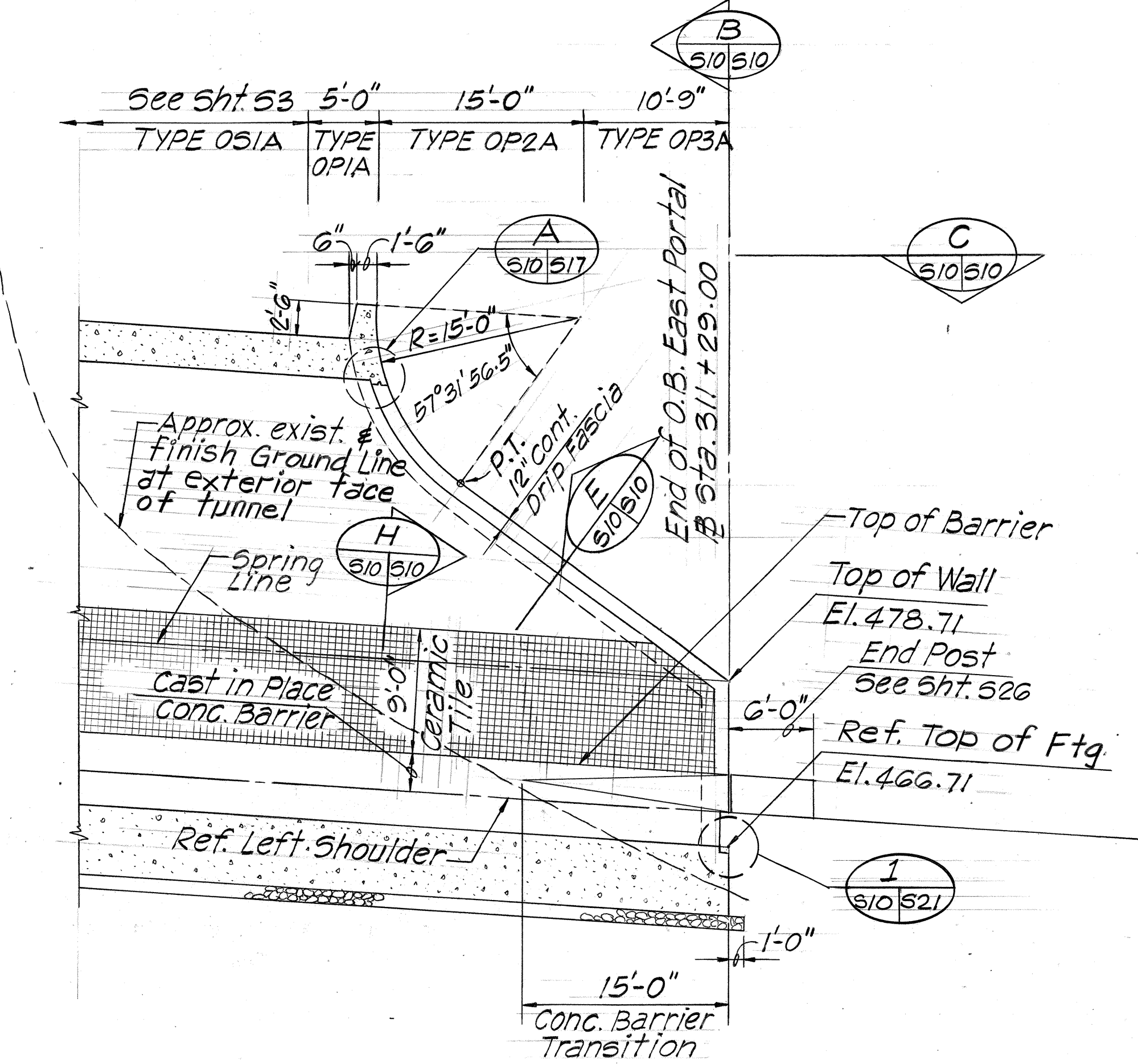
NTS



Shamuel M. M. M. M.

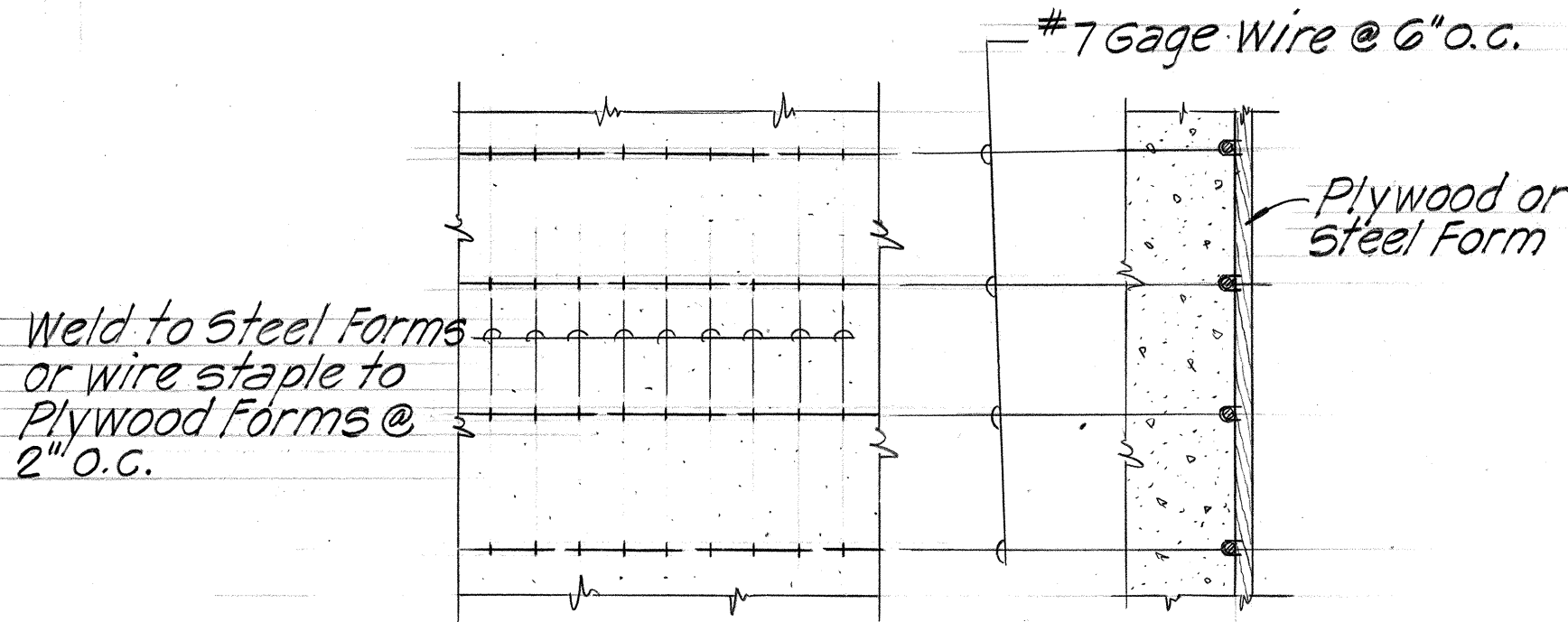
SHEET No.59 OF 27 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1 (53)	1988	58	124



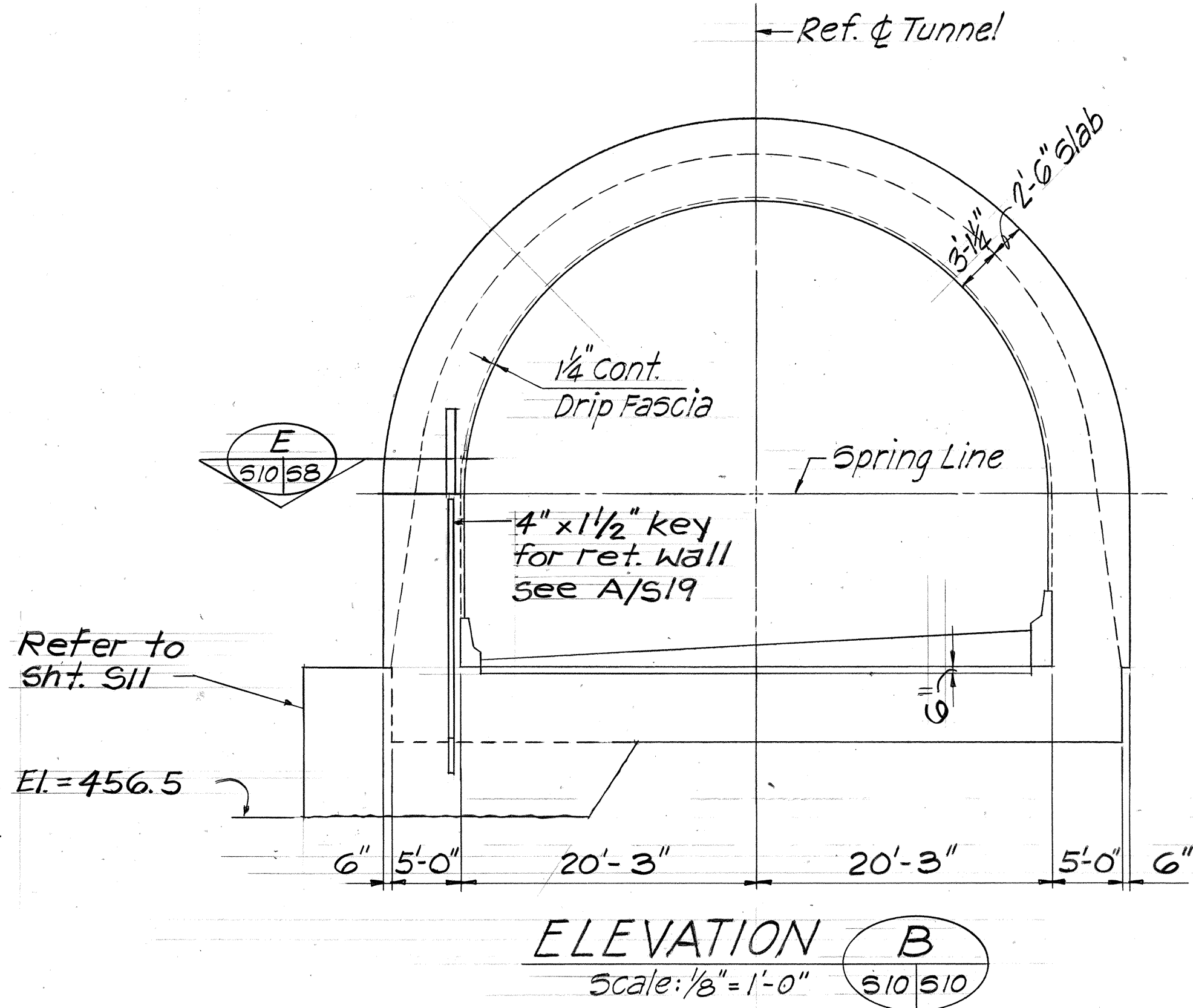
OUTBOUND EAST PORTAL ELEVATION A
Scale: 1/8" = 1'-0"

NOTE:
When the forms are stripped, the resulting roughness of the fractured grooves provide an additional bonding surface for the scratch surface.

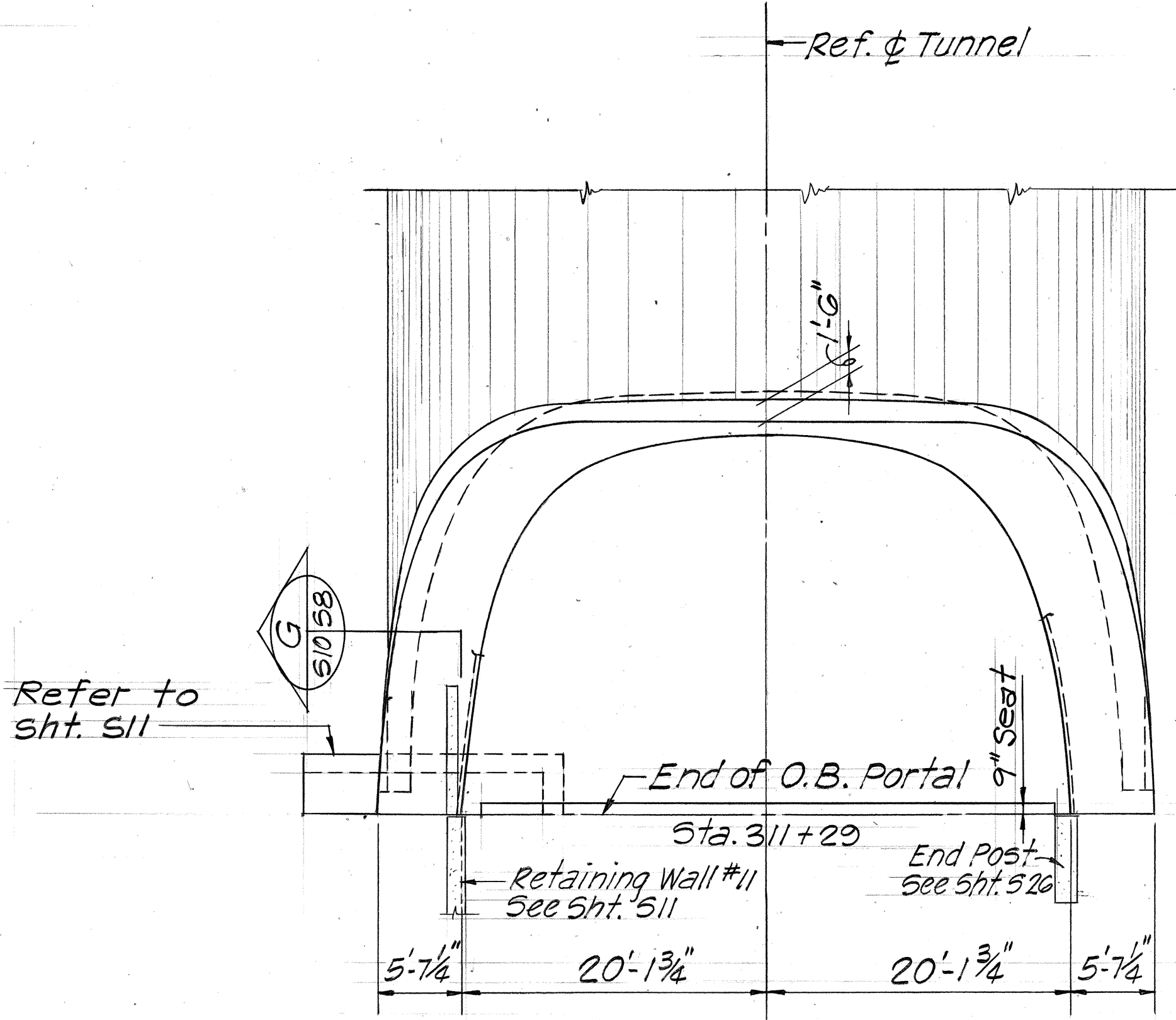


PARTIAL ELEVATION SECTION

WIRE PATTERN ON FORMS I
ALONG WALLS WITH CERAMIC TILE VENEER
Scale: 1/2" = 1'-0"

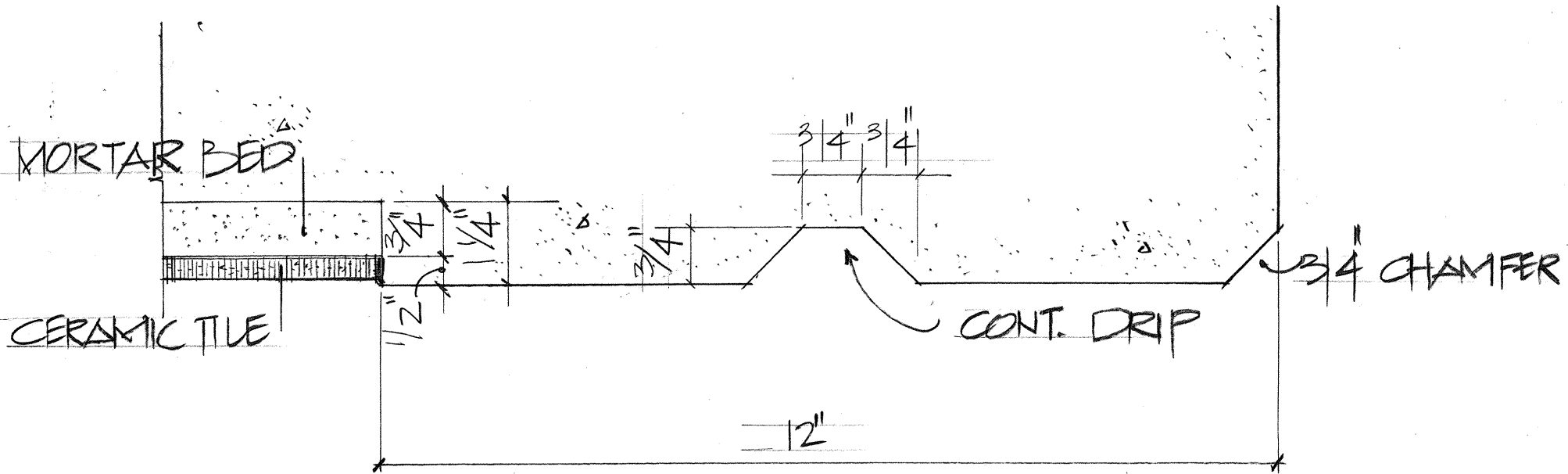


ELEVATION B
Scale: 1/8" = 1'-0"

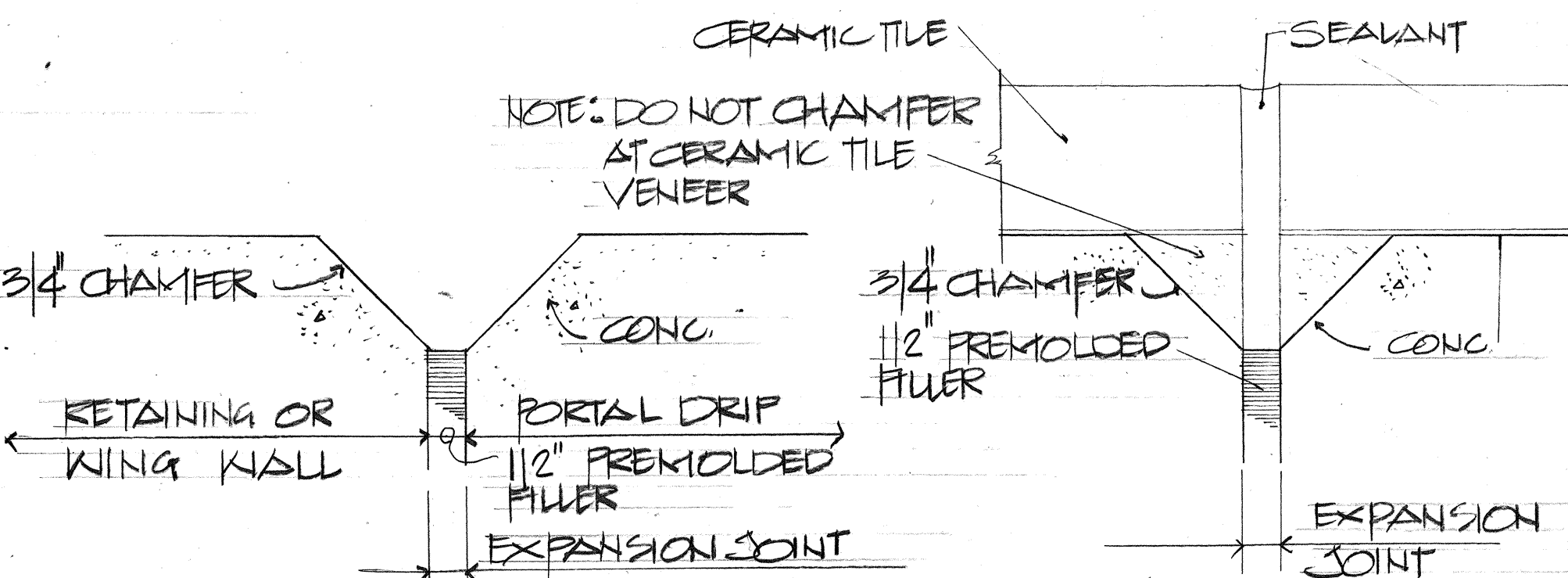


TOP PLAN C
Scale: 1/8" = 1'-0"

CERAMIC TILE AND EXPANSION JOINT DETAILS
90° AS NOTED

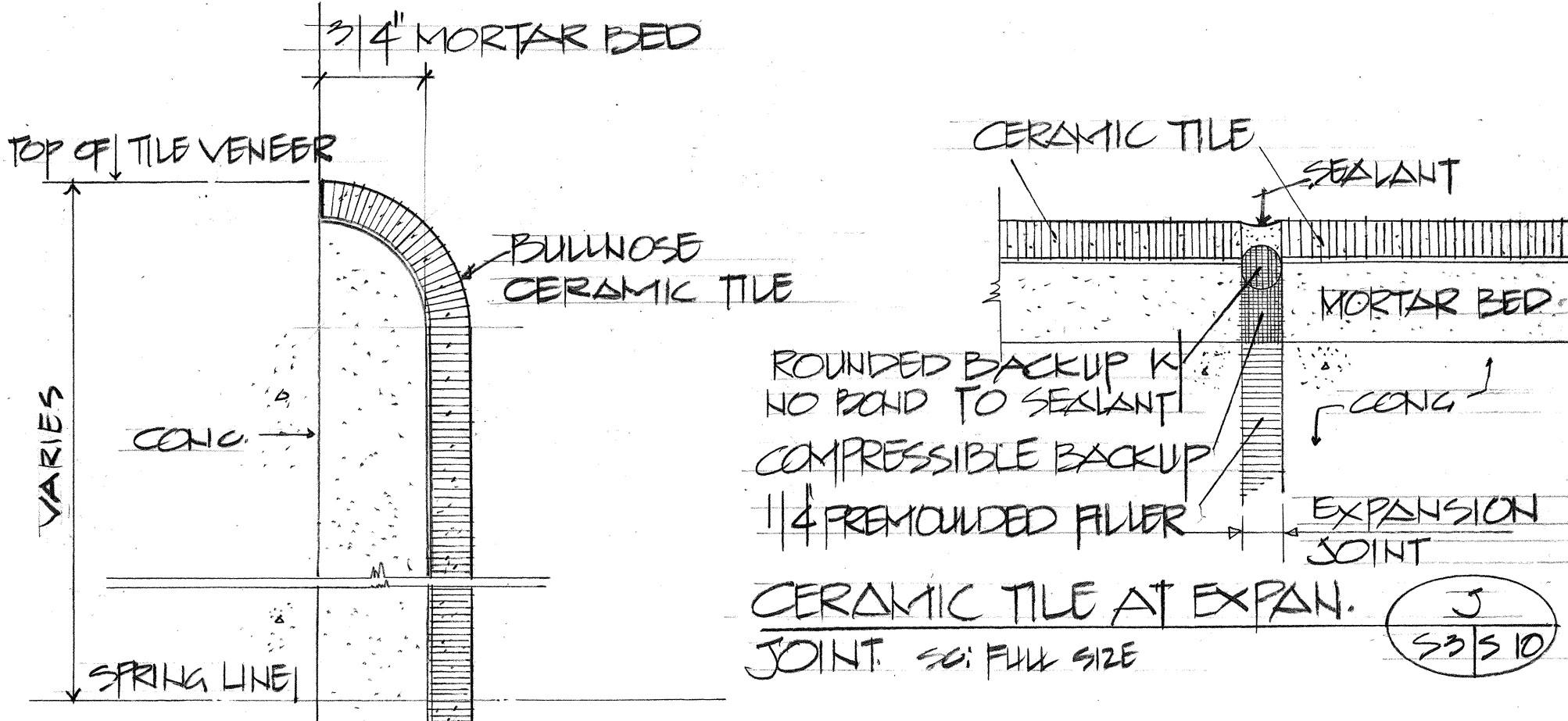


SECTION @ PORTAL DRIP E
Scale: HALF SIZE



SECTION AT END JOINT F
Scale: FULL SIZE

EXPANSION JOINT ABOVE CERAMIC TILE G
Scale: FULL SIZE



CERAMIC TILE AT TOP H
Scale: FULL SIZE

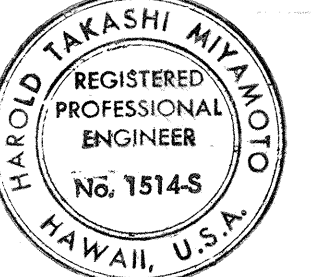
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

OUTBOUND EAST PORTAL DETAILS
AND CERAMIC TILE DETAILS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1 (53)

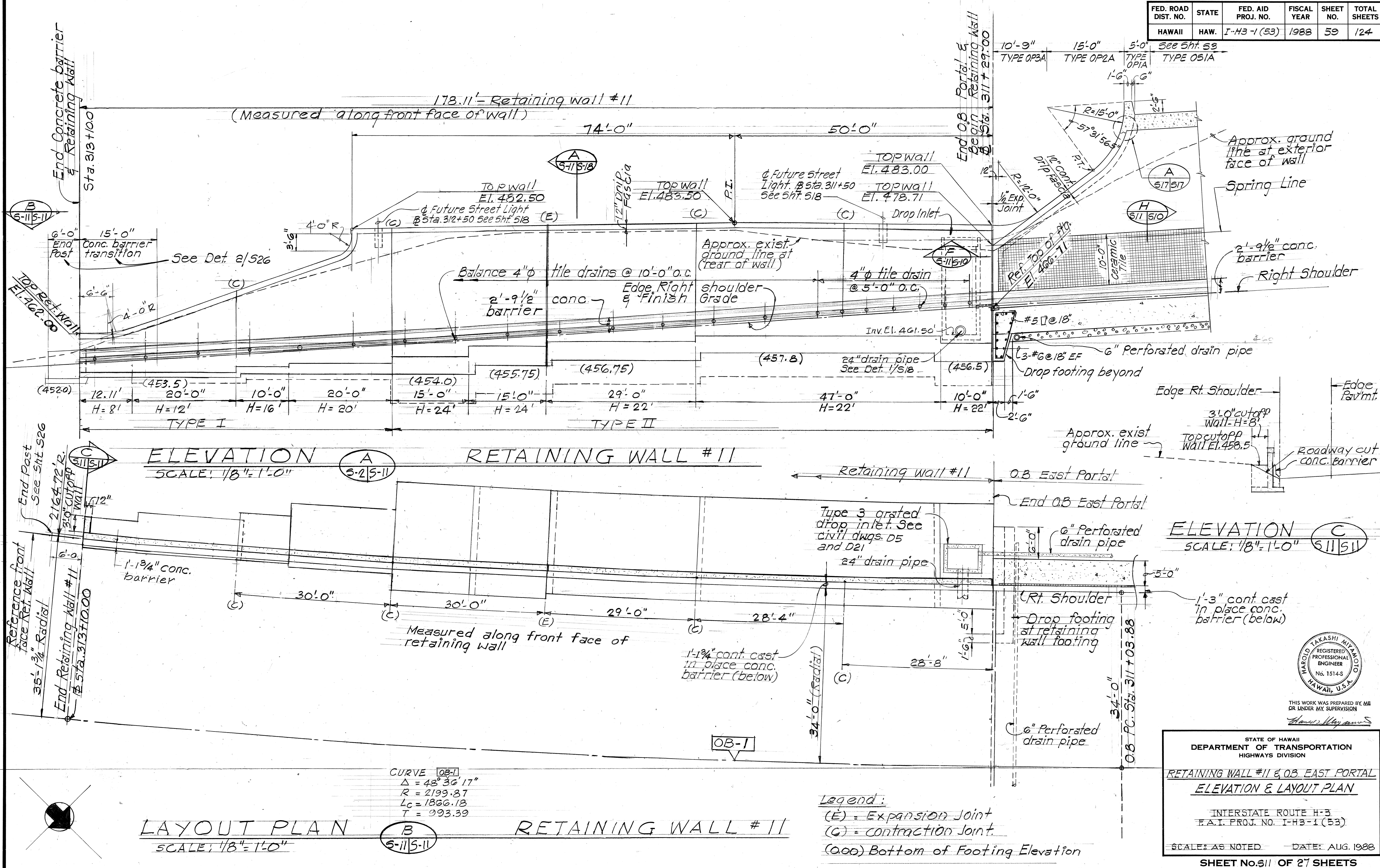
SCALE: AS NOTED DATE: AUG. 1988

SHEET No. 510 OF 27 SHEETS



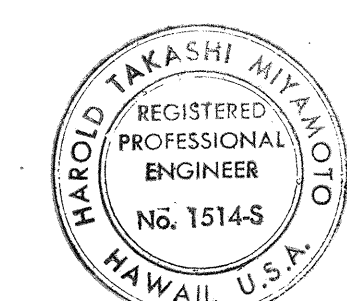
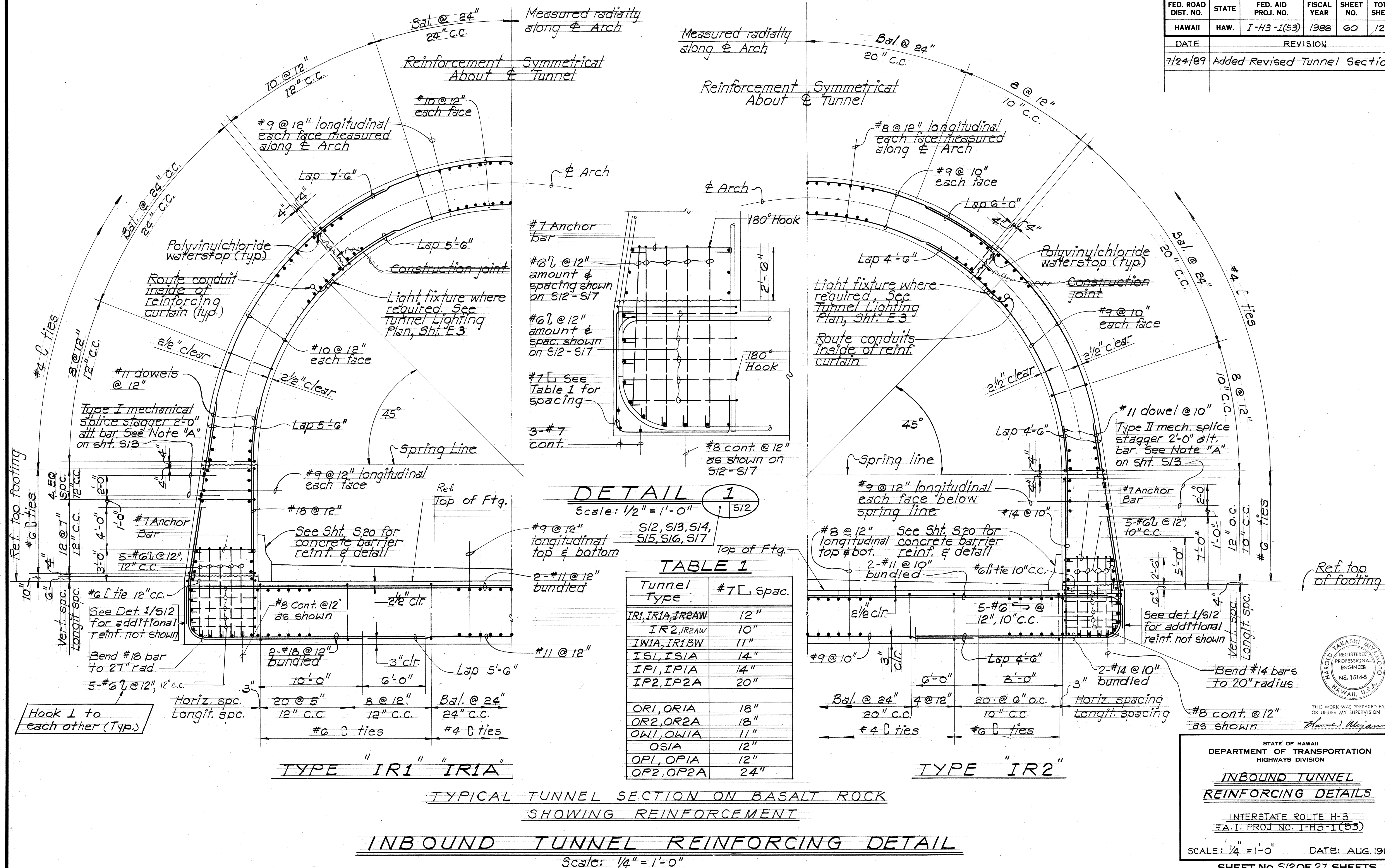
THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1 (53)	1988	59	124



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Harold Takashi Miyamoto

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	60	124
DATE	REVISION				
7/24/89	Added Revised Tunnel Sections				



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Harold Miyamoto

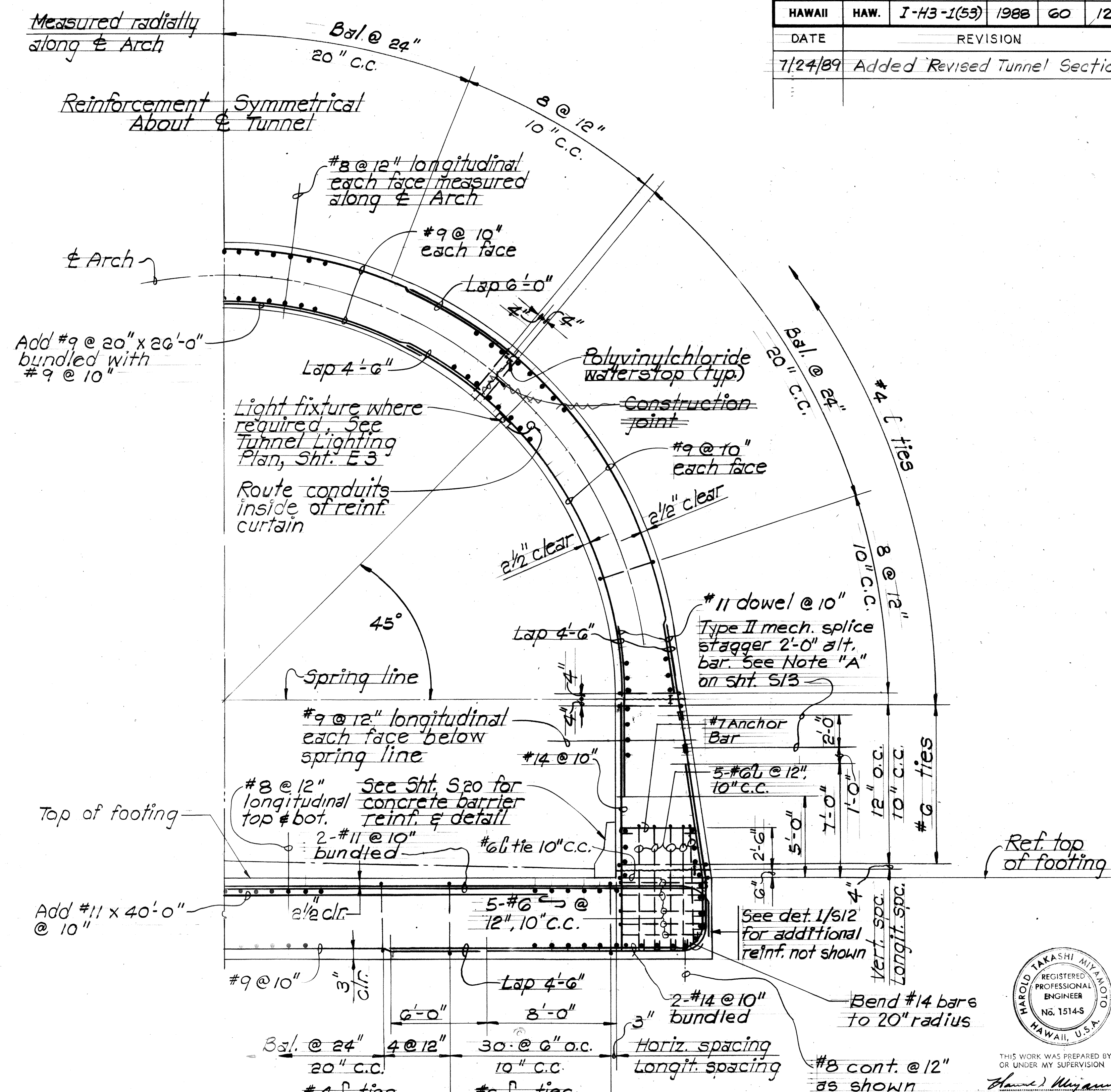
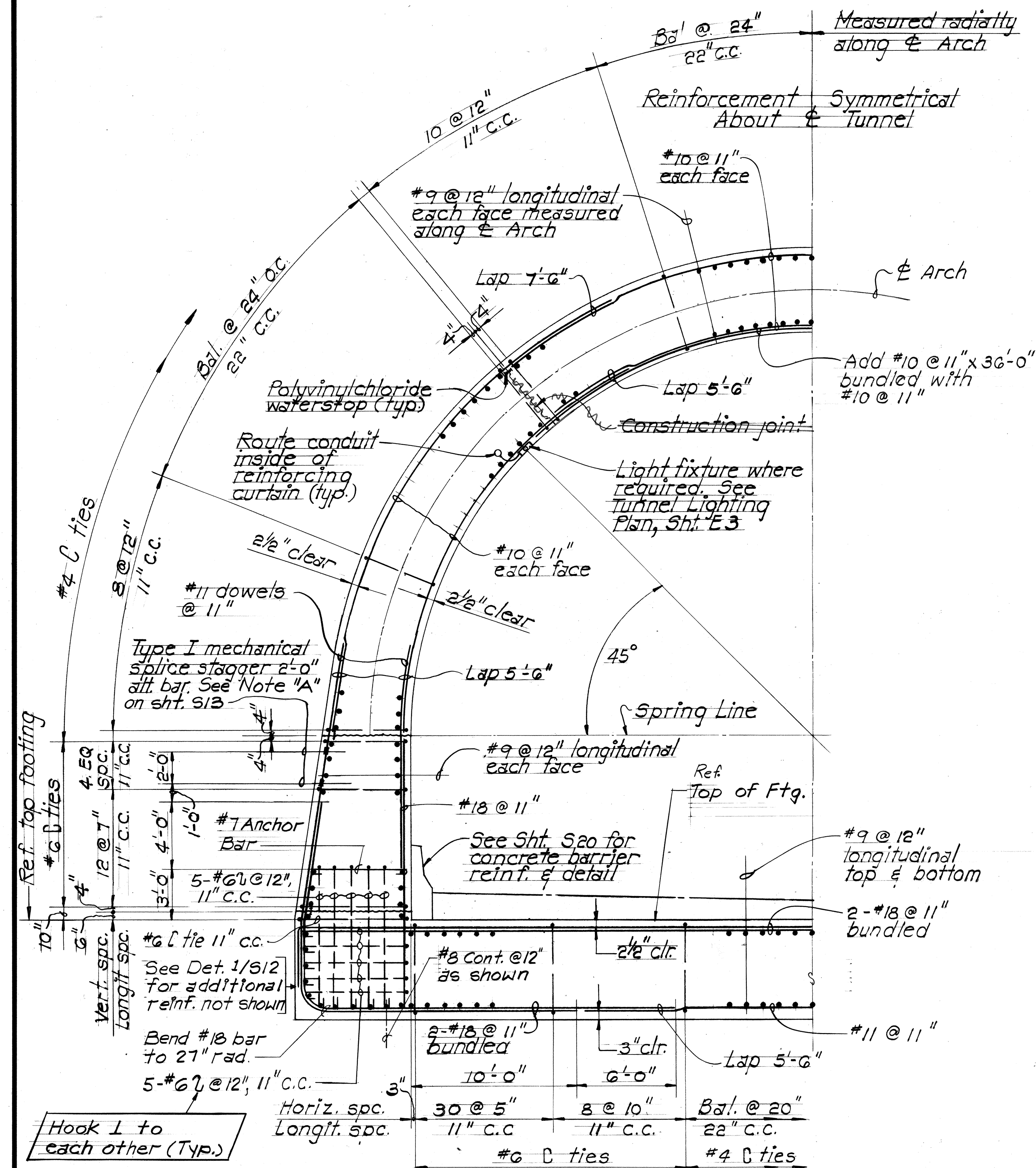
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**INBOUND TUNNEL
REINFORCING DETAILS**

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

SCALE: 1/4" = 1'-0" DATE: AUG. 1988
SHEET NO. 5/2 OF 27 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	60	124
DATE		REVISION			
7/24/89		Added Revised Tunnel Sections			



TYPE "IR1BW"

TYPE "IR2AW"

TYPICAL TUNNEL SECTION ON HIGHLY WEATHERED ROCK
SHOWING REINFORCEMENT

INBOUND TUNNEL REINFORCING DETAIL

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

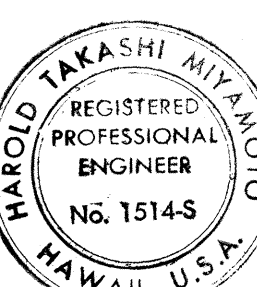
INBOUND TUNNEL
REINFORCING DETAILS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

SCALE: $\frac{1}{4}" = 1'-0"$ DATE: AUG. 1988

SHEET No. S/2A OF 27 SHEETS

C.O. 60S-1

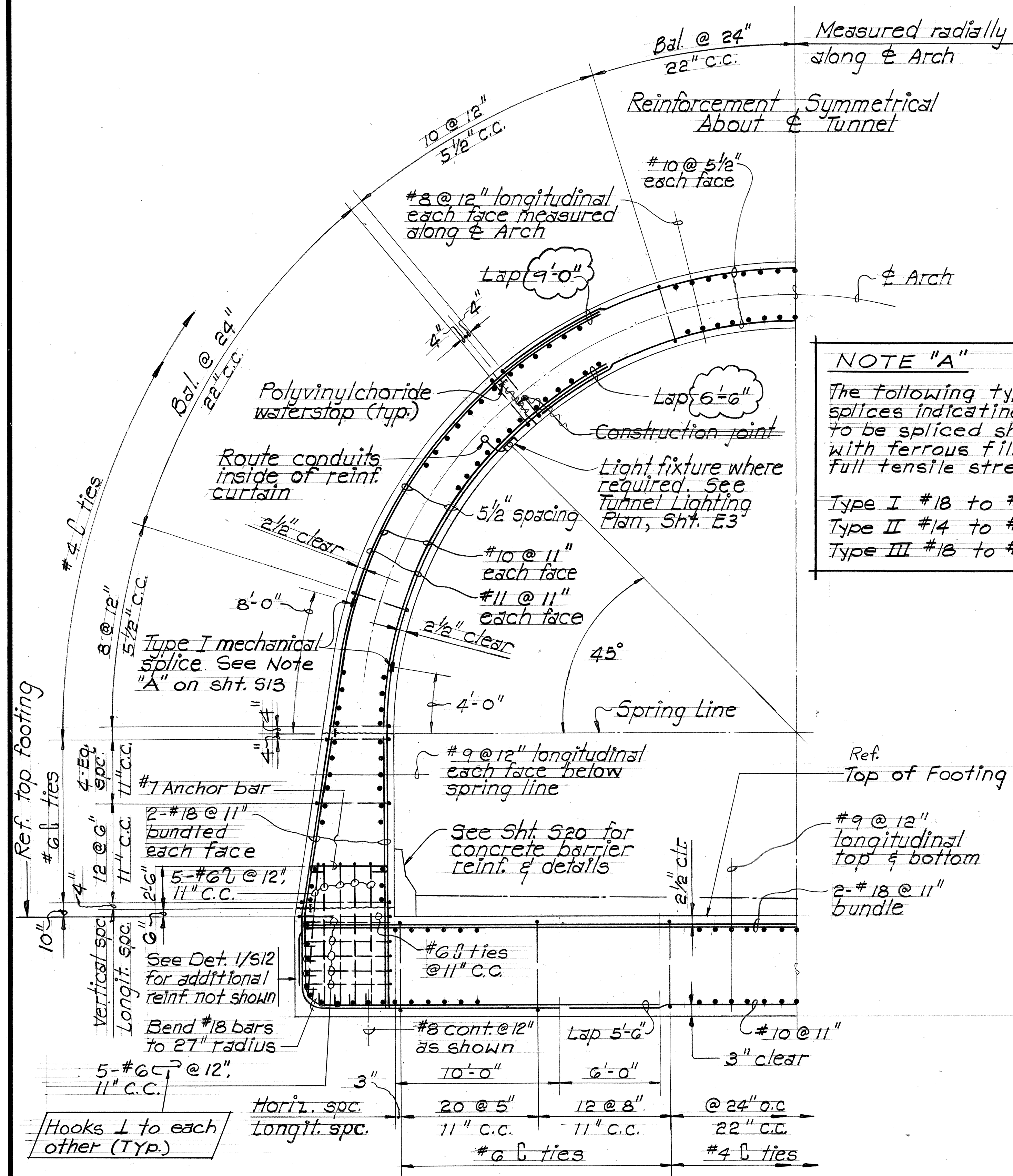


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Harold Miyamoto

DATE	
SURVEY PLOTTED BY	
DESIGNED BY	
NOTED 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-H3-1(53)	1988	61	124

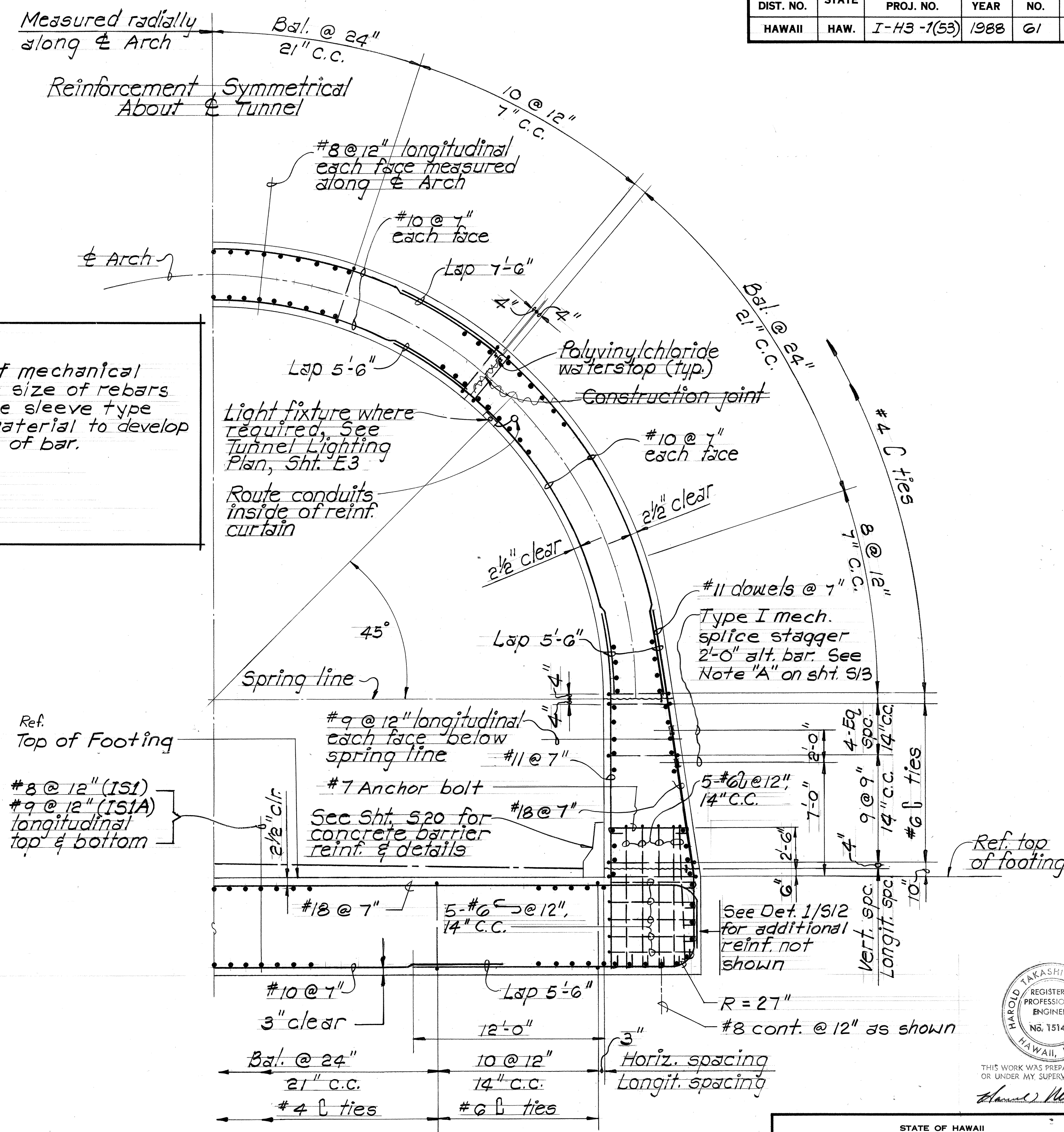


TYPE IW1A

TYPICAL TUNNEL SECTION ON HIGHLY WEATHERED ROCK
SHOWING REINFORCEMENT

INBOUND TUNNEL REINFORCING DETAIL

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



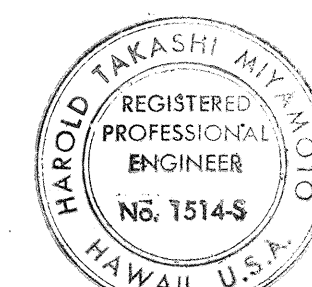
TYPE IS1 & IS1A

TYPICAL TUNNEL SECTION ON CLAYEY SILT
SHOWING REINFORCEMENT

NOTE "A"

The following types of mechanical splices indicating the size of rebars to be spliced shall be sleeve type with ferrous filler material to develop full tensile strength of bar.

Type I #18 to #11
Type II #14 to #11
Type III #18 to #14



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Signature: Harold Takashi Miyamoto

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**INBOUND TUNNEL
REINFORCING DETAILS**

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

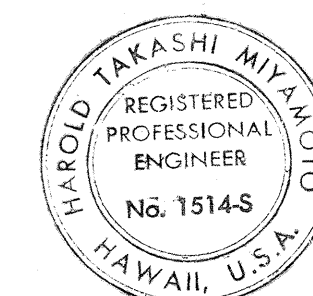
SCALE: 1/4" = 1'-0" DATE: AUG. 1988

SHEET No. 5/3 OF 27 SHEETS

DATE	REVISION
10/12/89	REVISED LAP LENGTHS

C.O.61

ORIGINAL PLAN	SURVEY PLOTTED BY _____	DATE _____
NOTE BOOK	DRAWN BY _____	" _____
	TRACED BY _____	" _____
	DESIGNED BY _____	" _____
	QUANTITIES BY _____	" _____
No. _____	CHECKED BY _____	" _____



STATE OF KAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

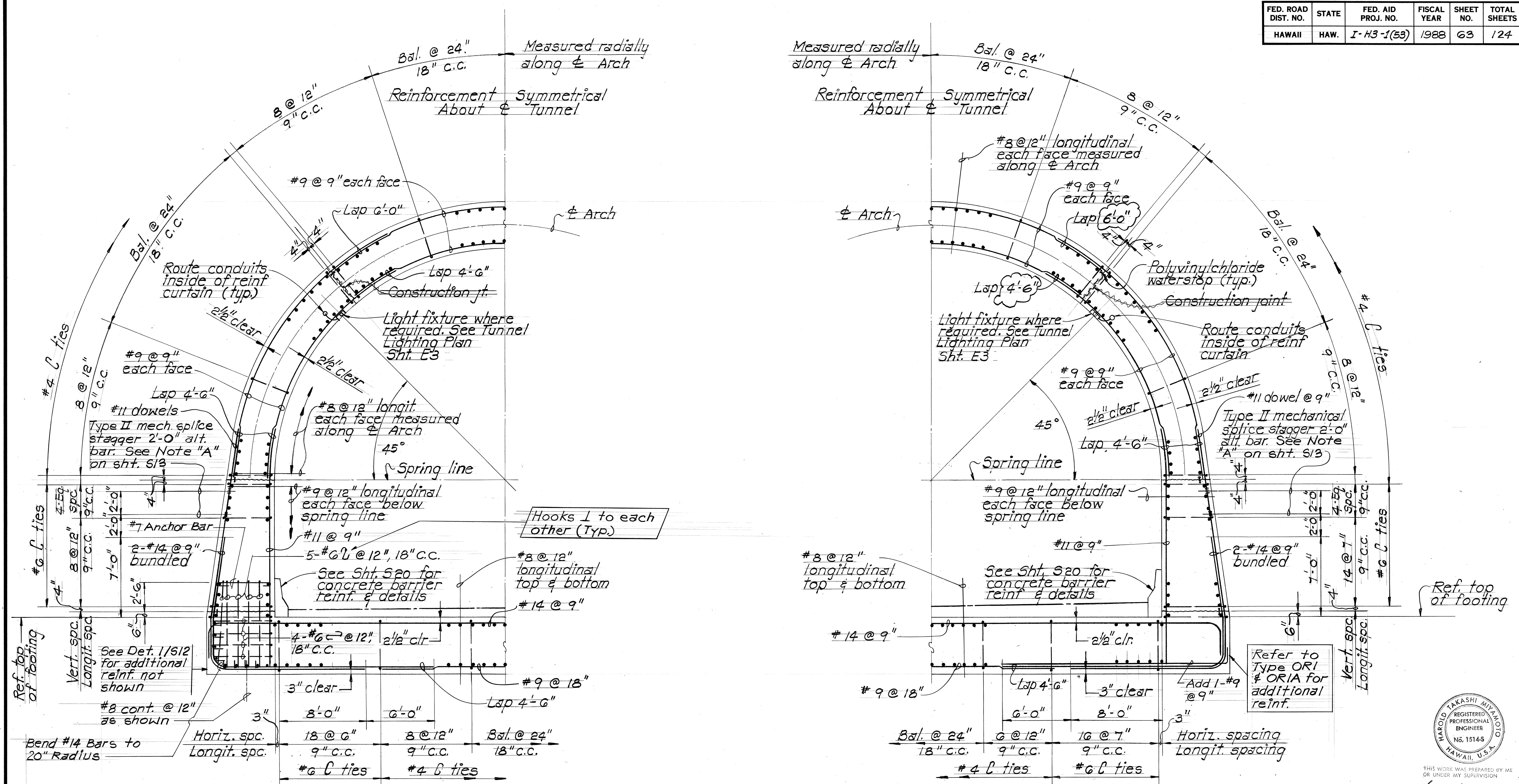
INBOUND PORTAL
REINFORCING DETAILS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1 (B3)

SCALE: $\frac{1}{4}'' = 1'-0''$ DATE: AUG. 1988

SHEET NO. 5/4 OF 27 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	63	124



SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
NO.	

TYPE OR1 & OR1A

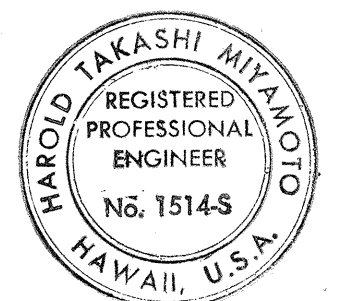
TYPE OR2 & OR2A

TYPICAL TUNNEL SECTION ON BASALT ROCK

SHOWING REINFORCEMENT

OUTBOUND TUNNEL REINFORCING DETAIL

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



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STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

OUTBOUND TUNNEL

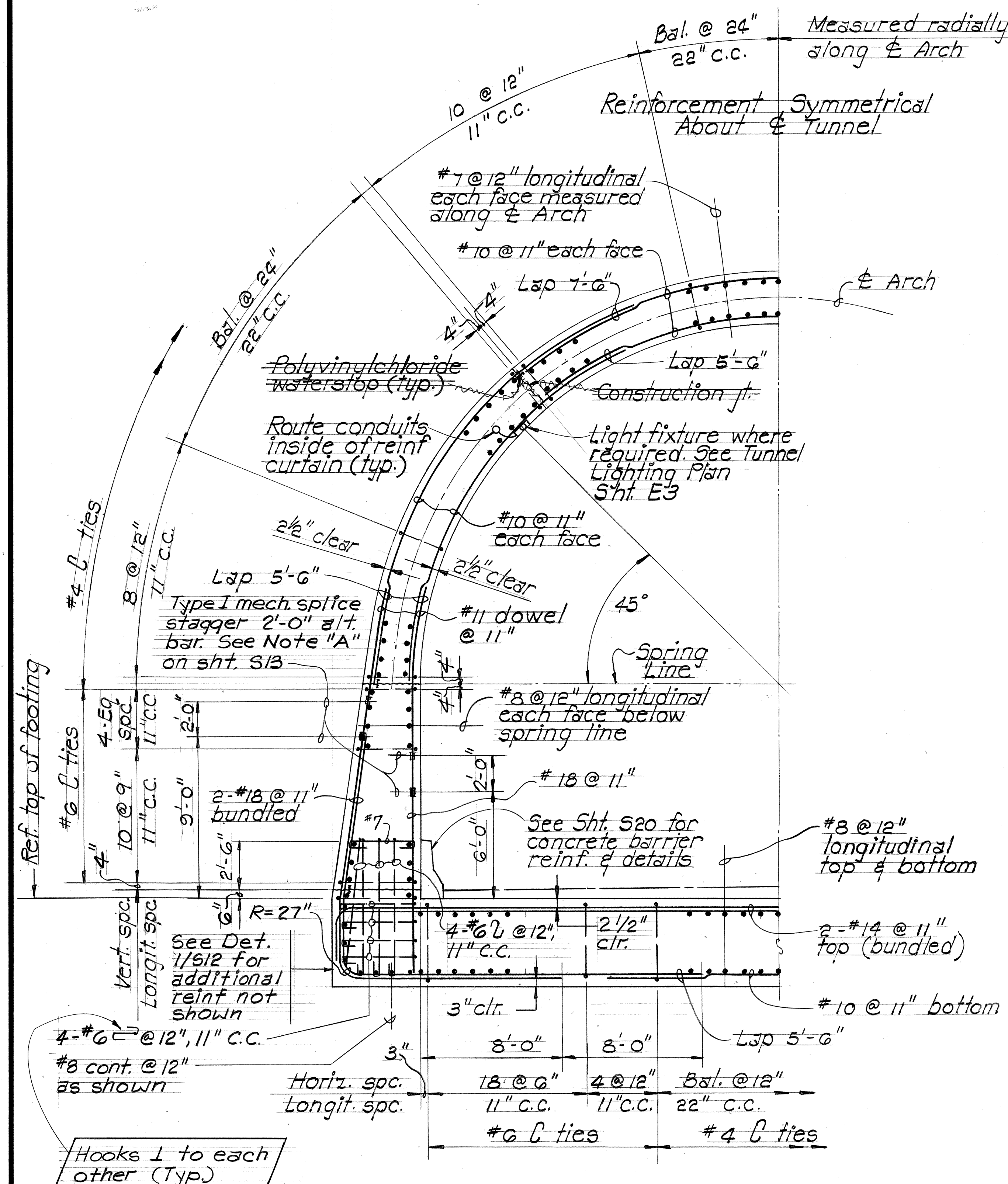
REINFORCING DETAILS

INTERSTATE ROUTE H-3

F.A.I. PROJ. NO. I-H3-1(53)

10/12/88	REVISED LAP LENGTHS	SCALE: AS NOTED	DATE: AUG. 1988
DATE	REVISION	SHEET No. 5/5 OF 27 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	64	124

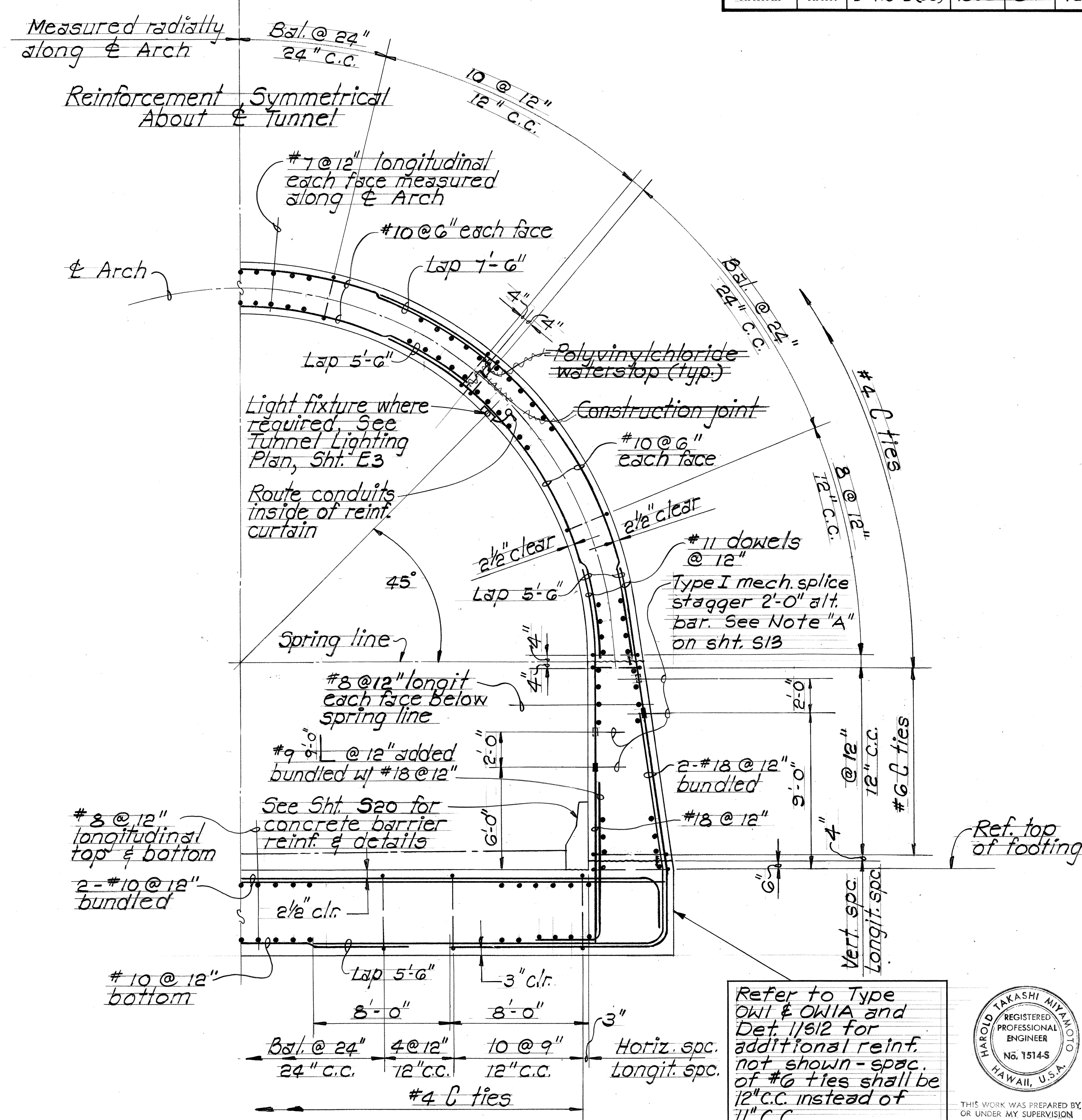


TYPE OW1 & OW1A

TYPICAL TUNNEL SECTION ON HIGHLY WEATHERED ROCK
SHOWING REINFORCEMENT

OUTBOUND TUNNEL REINFORCING DETAIL

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



TYPE OS1A

TYPICAL TUNNEL SECTION ON CLAYEY SILT
SHOWING REINFORCEMENT

Refer to Type
OW1 & OW1A and
Det. 1/6/2 for
additional reinf.
not shown - spc.
of #6 ties shall be
12" C.C. instead of
11" C.C.



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Handel, Myra

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

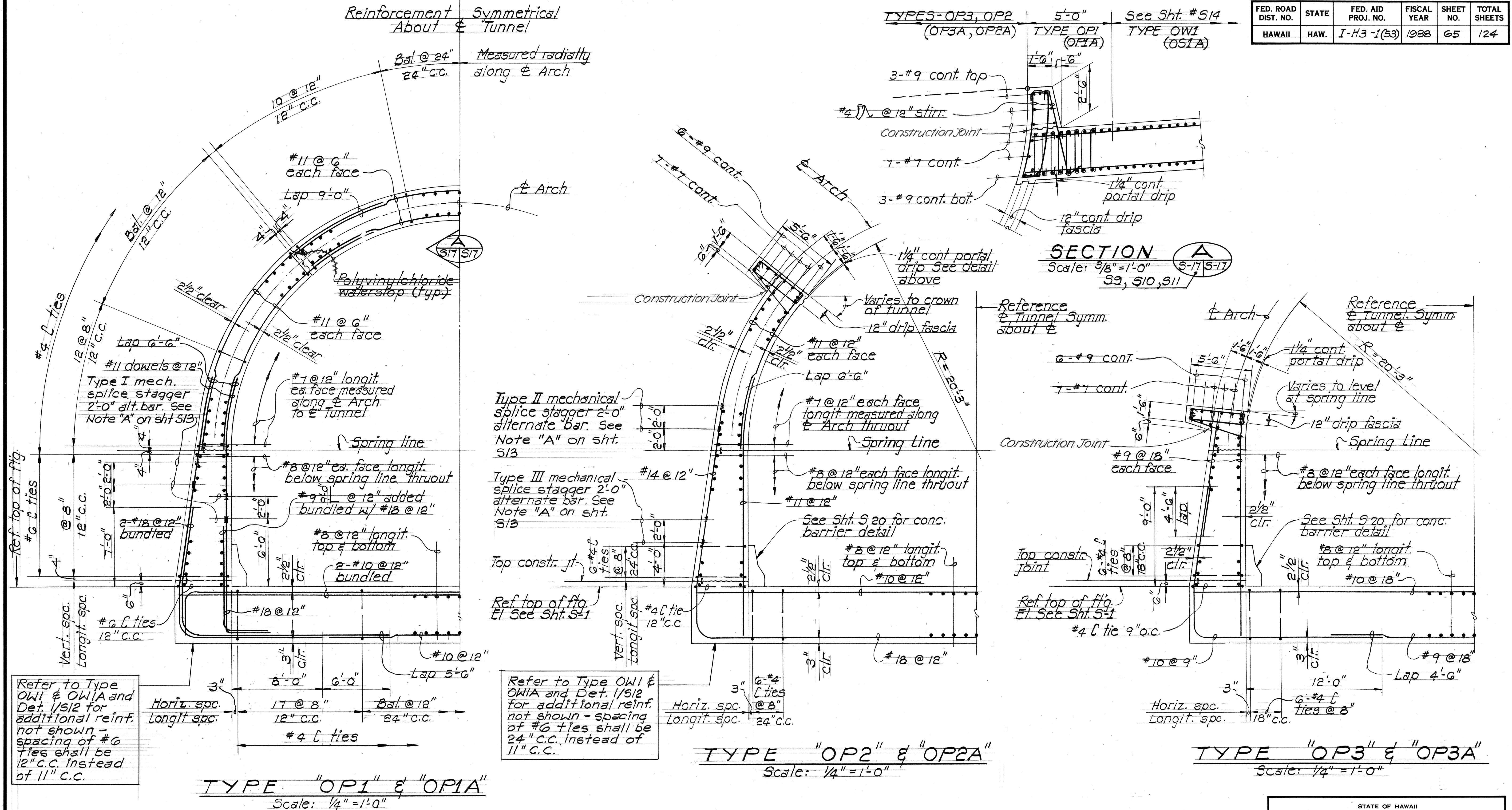
OUTBOUND TUNNEL
REINFORCING DETAILS

INTERSTATE ROUTE H-3
F.A.I. PROJ NO. I-H3-1(53)

SCALE: AS NOTED DATE: AUG. 1988

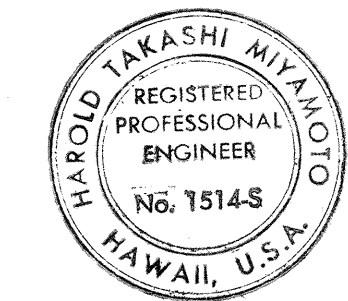
SHEET No.5/6 OF 27 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	65	124



**TYPICAL TUNNEL SECTIONS AT PORTAL
SHOWING REINFORCEMENT**

OUTBOUND TUNNEL REINFORCING DETAIL



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Harold Miyamoto

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**OUTBOUND PORTAL
REINFORCING DETAILS**

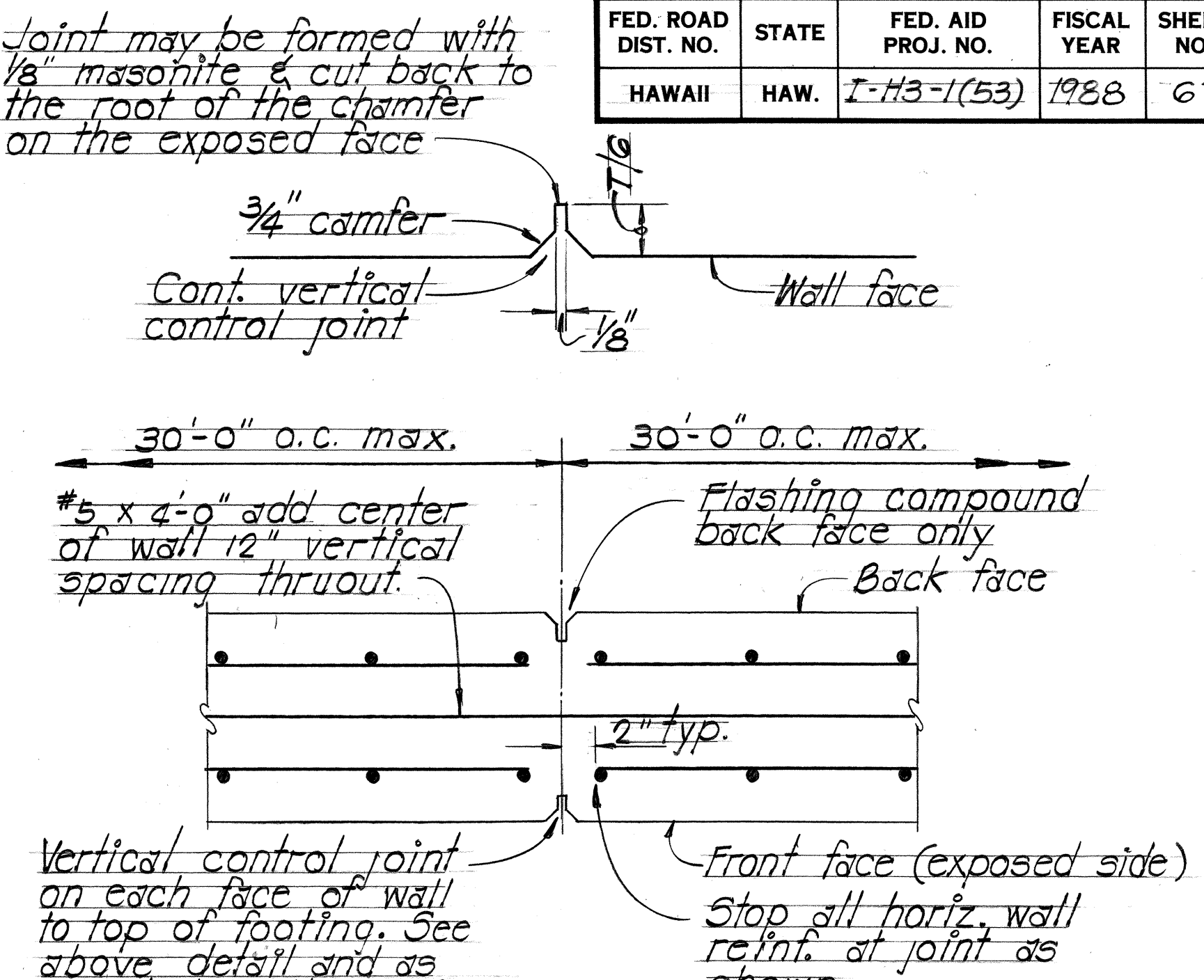
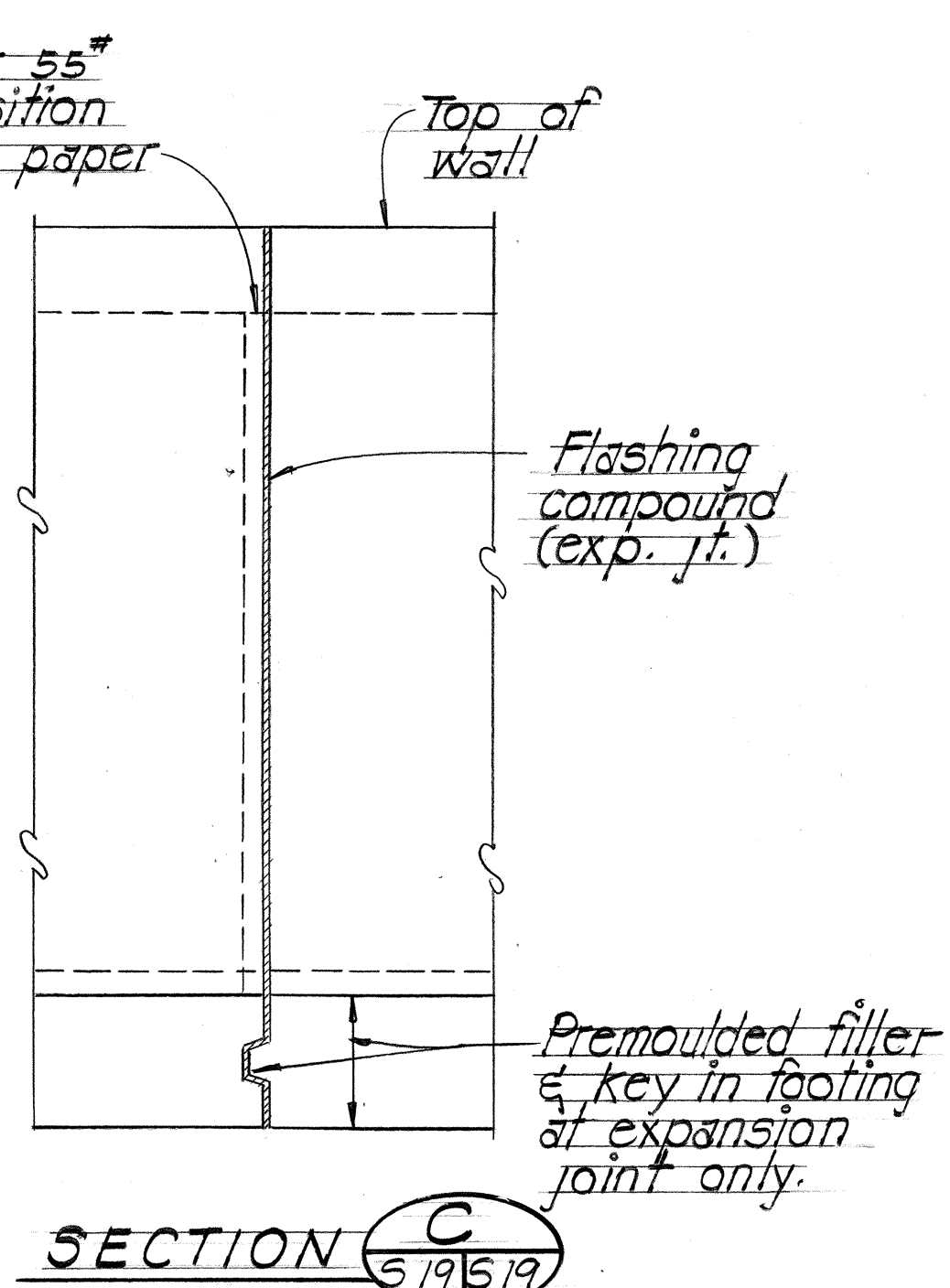
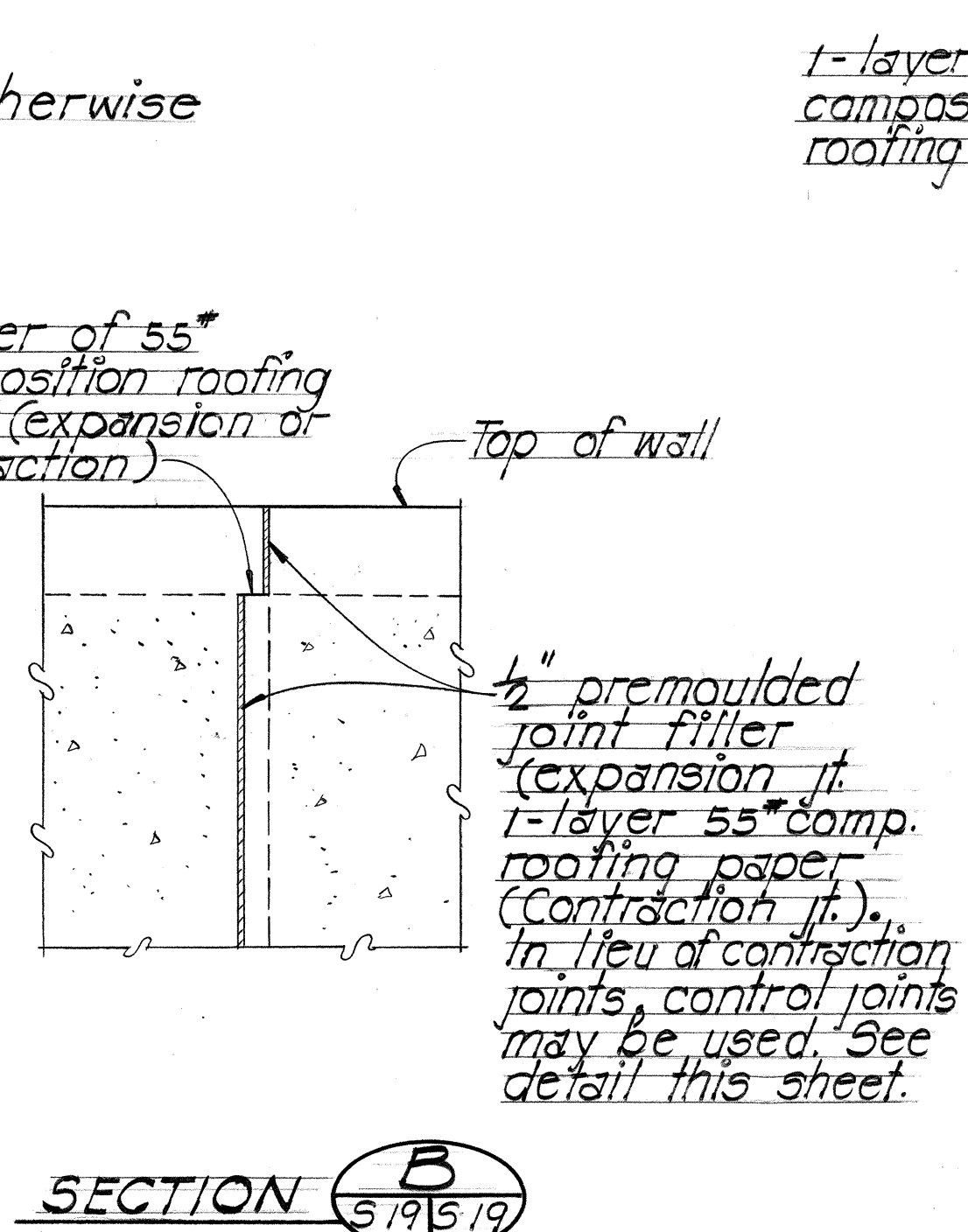
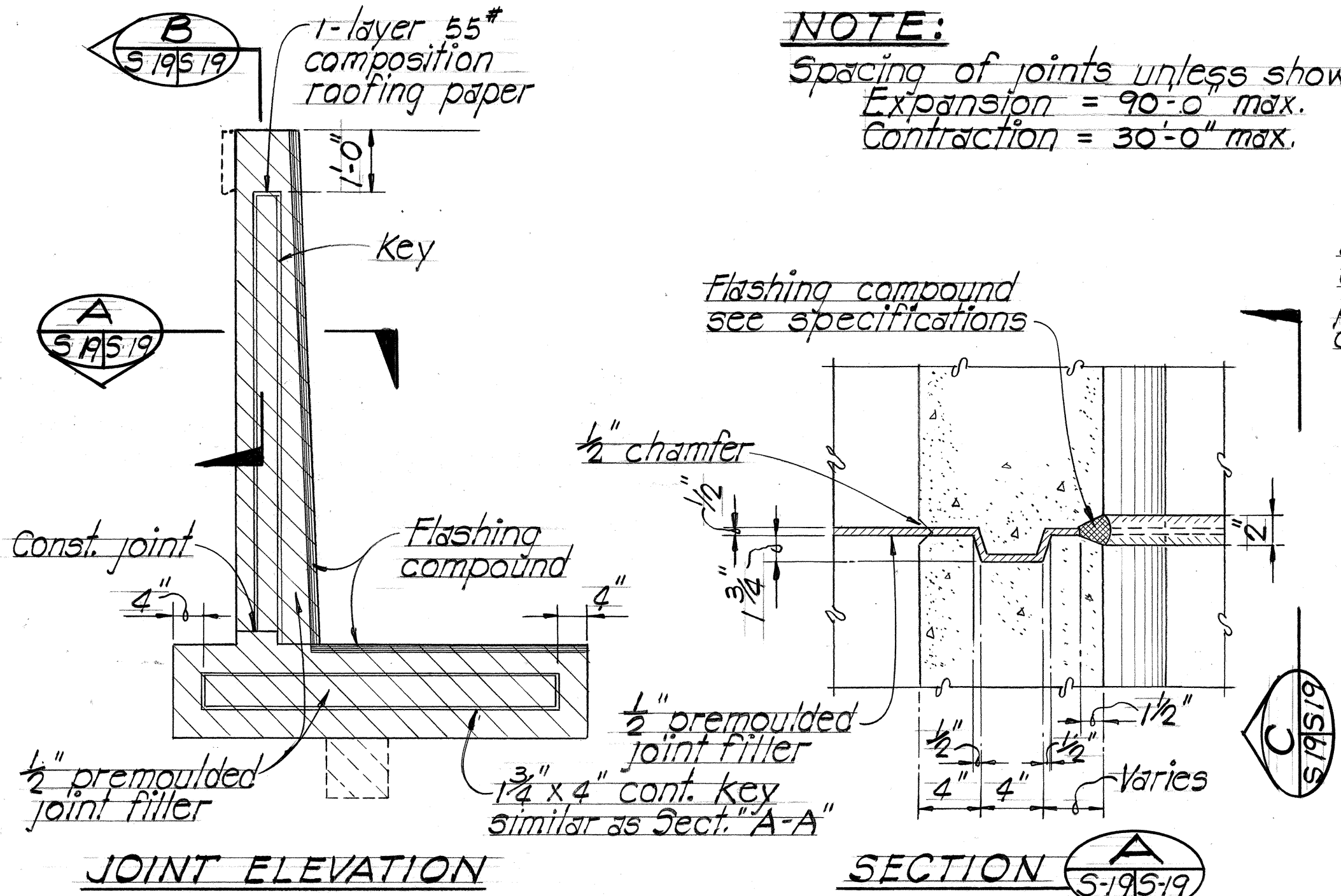
INTERSTATE ROUTE H-3
E.A.I. PROJ. NO. I-H3-1 (53)

SCALE: AS NOTED DATE: AUG. 1988

SHEET No. 517 OF 27 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	67	124

NOTE:
Spacing of joints unless shown otherwise
Expansion = 90'-0" max.
Contraction = 30'-0" max.

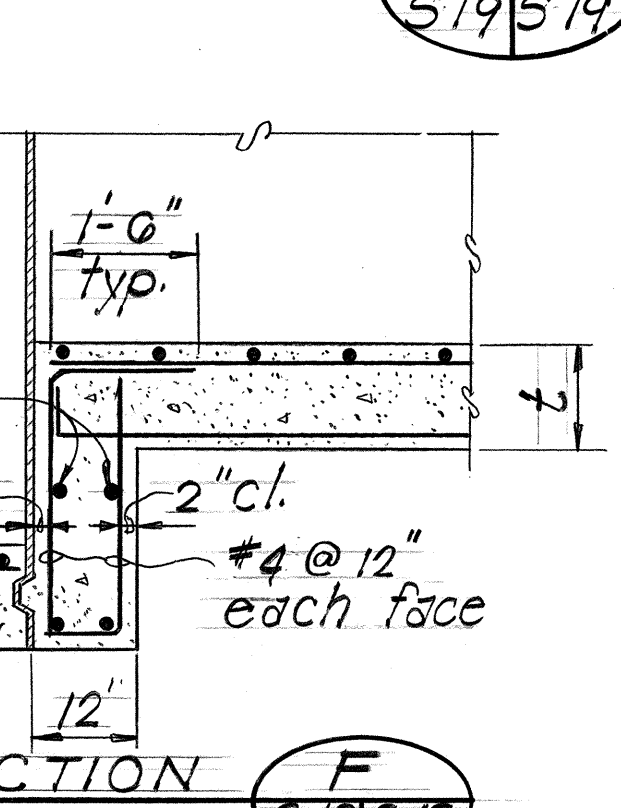
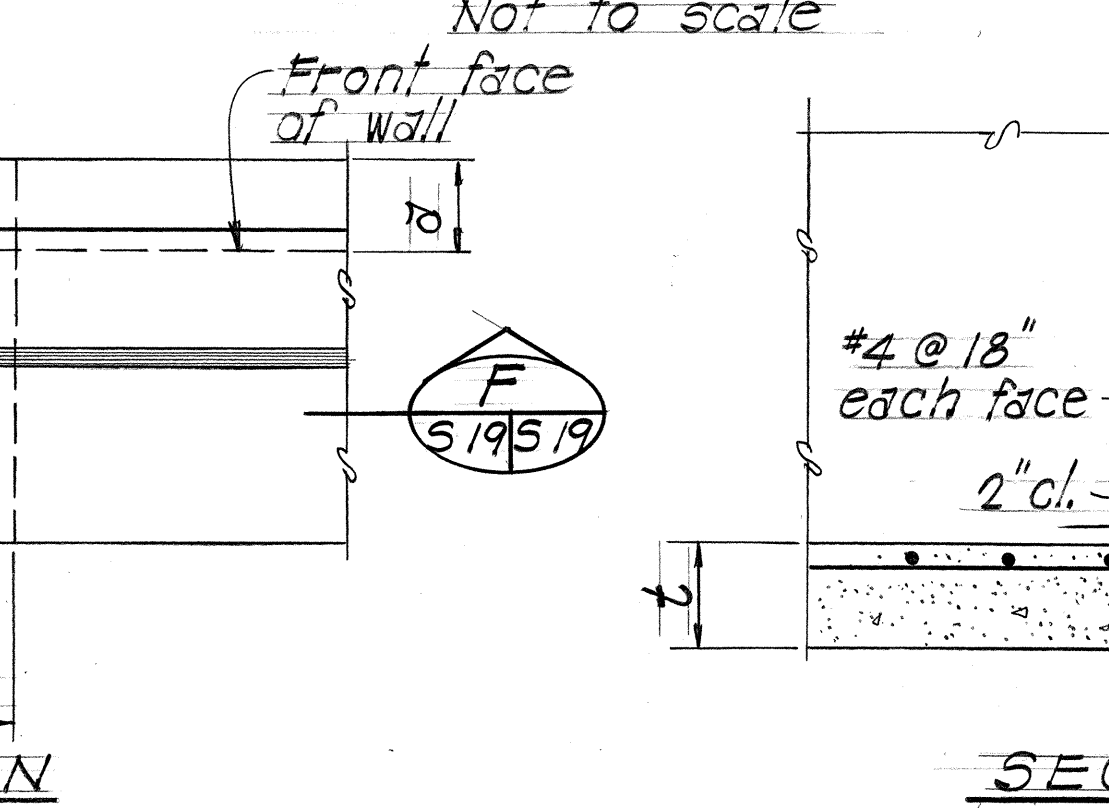
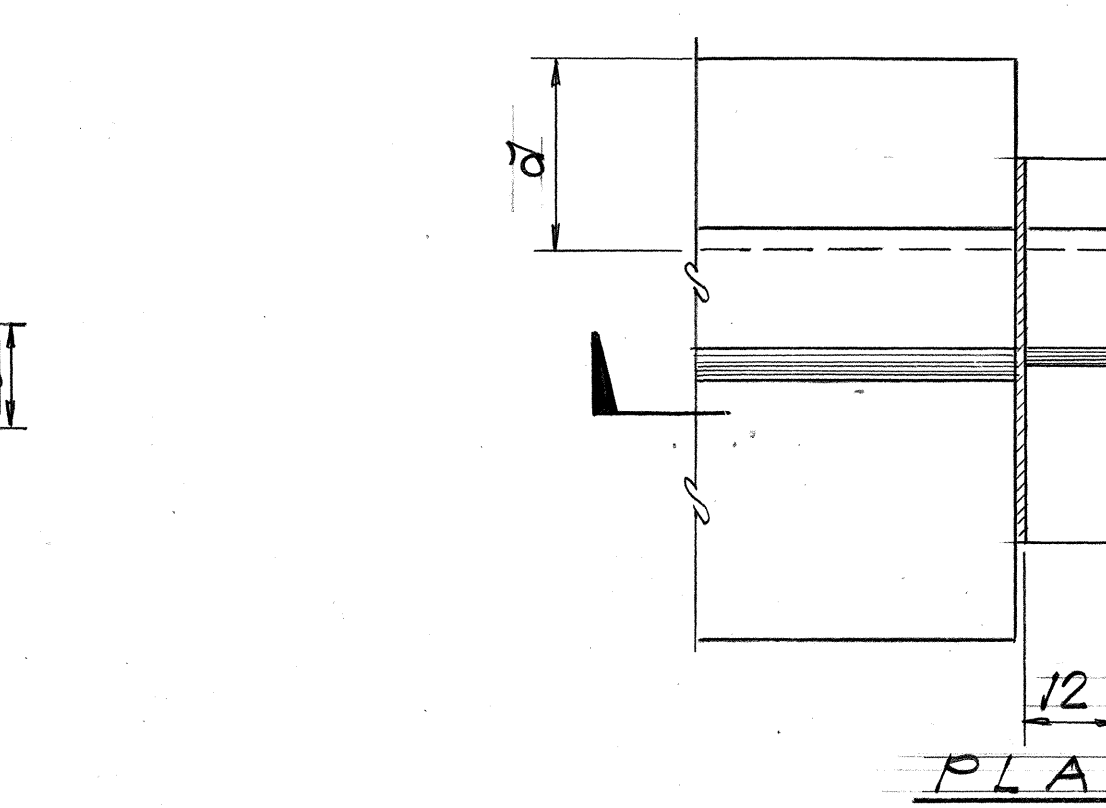
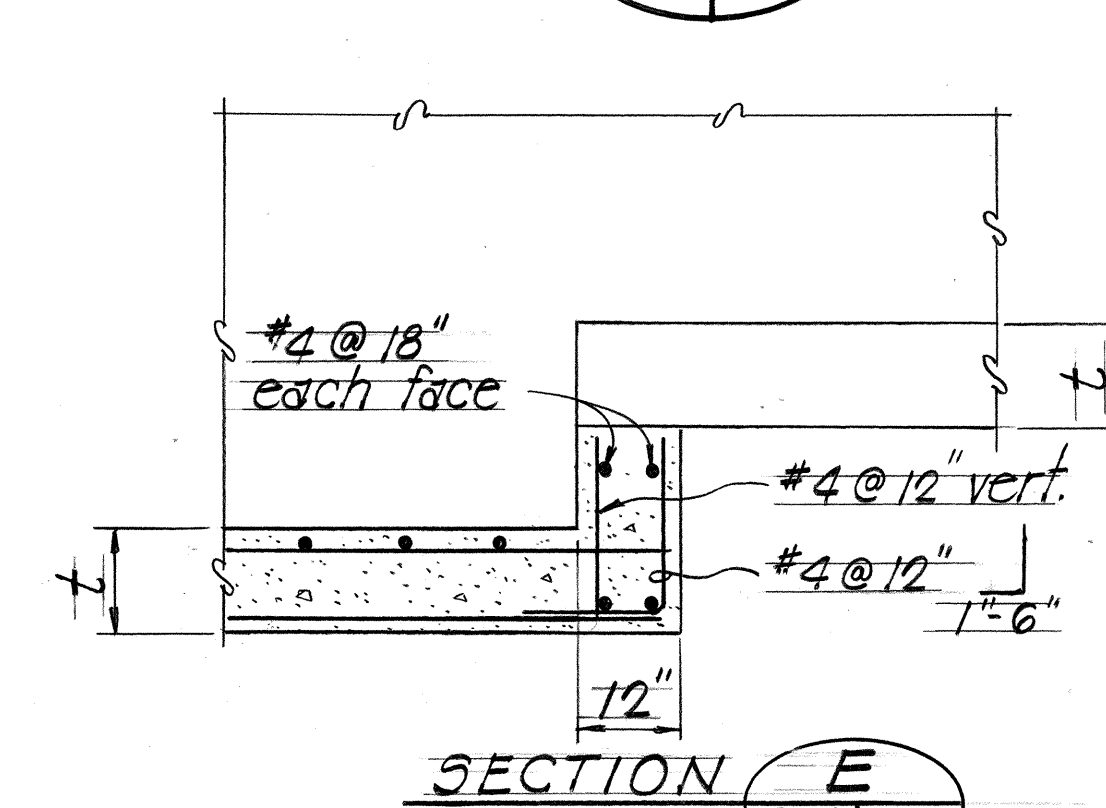
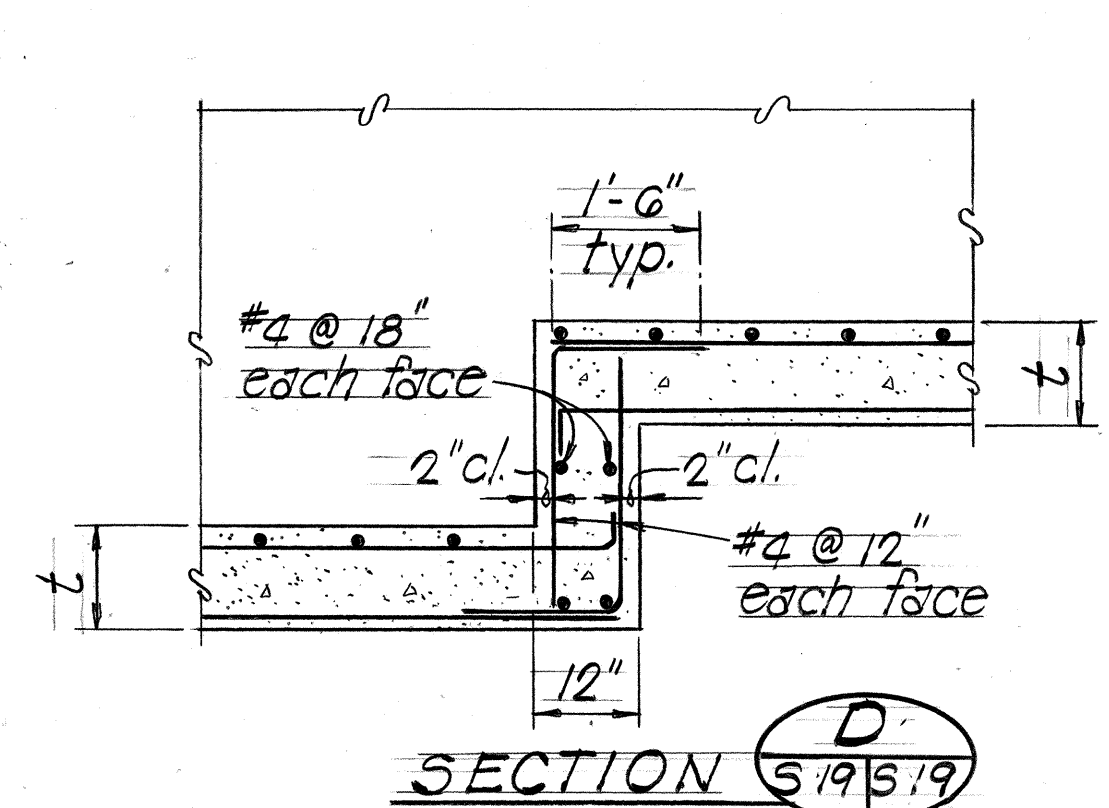
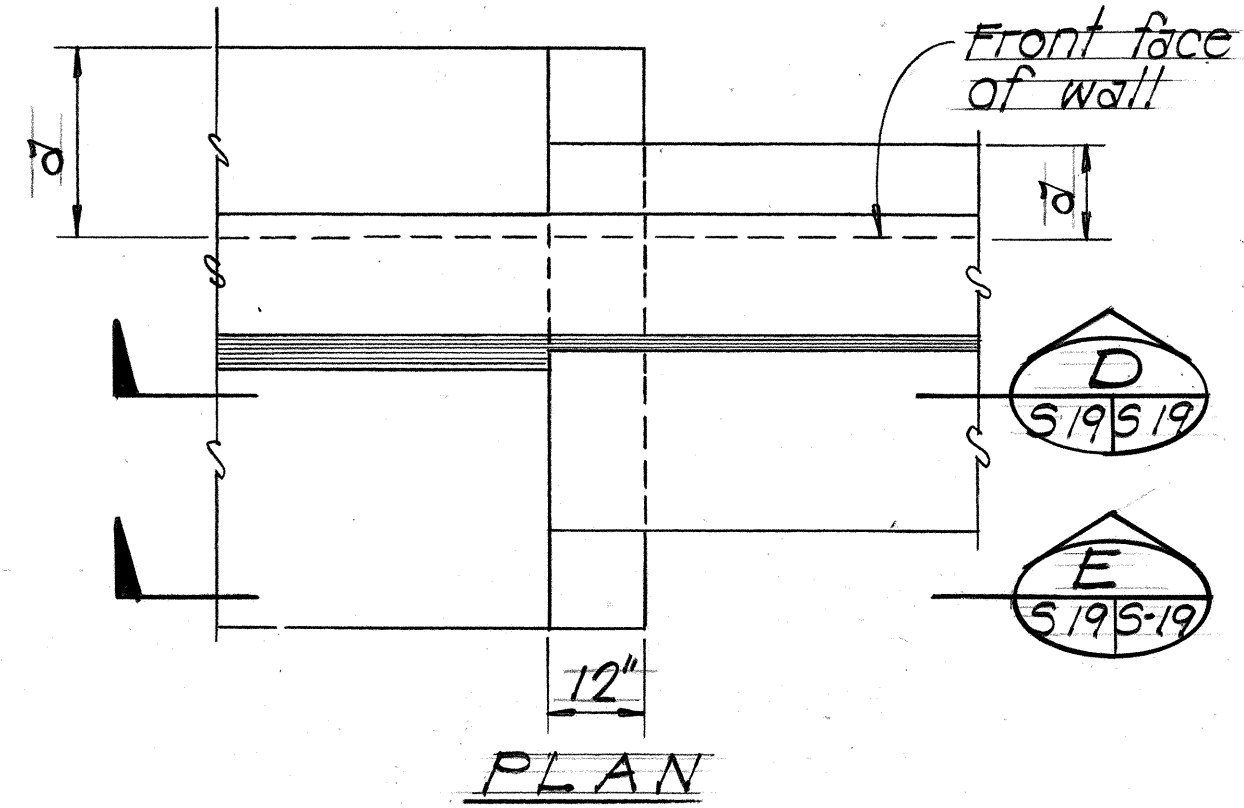


TYPICAL EXPANSION JOINT DETAILS

1
5/19/59

ALTERNATE CONTROL JOINT DETAILS

2
5/19/59

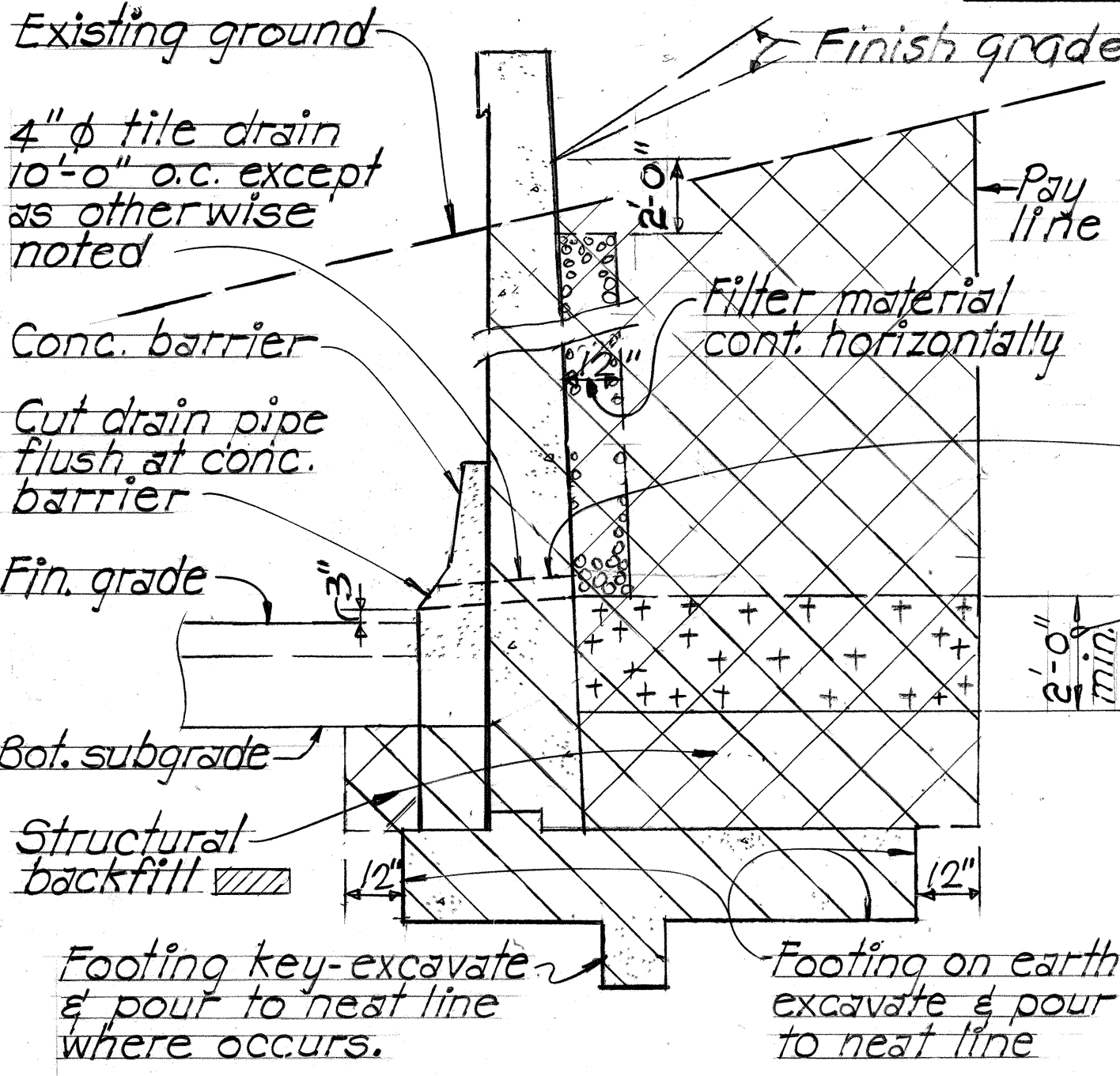


AT CONTINUOUS FOOTING

TYPICAL FOOTING STEP-UP DETAILS

3
5/19/59

AT EXPANSION JOINT

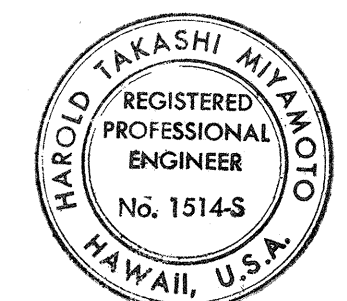


NOTE:
Hatched areas denote limits of structural excavation pay line. All other excavation shall be roadway excavation except as otherwise noted.
4" phi tile drain incidental to concrete in retaining wall.
Impervious material as selected by the Engineer incidental to structural excavation for retaining wall. The subgrade upon which filter material is to be placed shall be made as impervious as possible by pneumatic tamping or other approved methods. Impervious materials shall be incidental to roadway excavation or imported borrow when used in embankment area.

STRUCTURAL EXCAVATION & DRAINAGE DETAILS

3
5/19/59

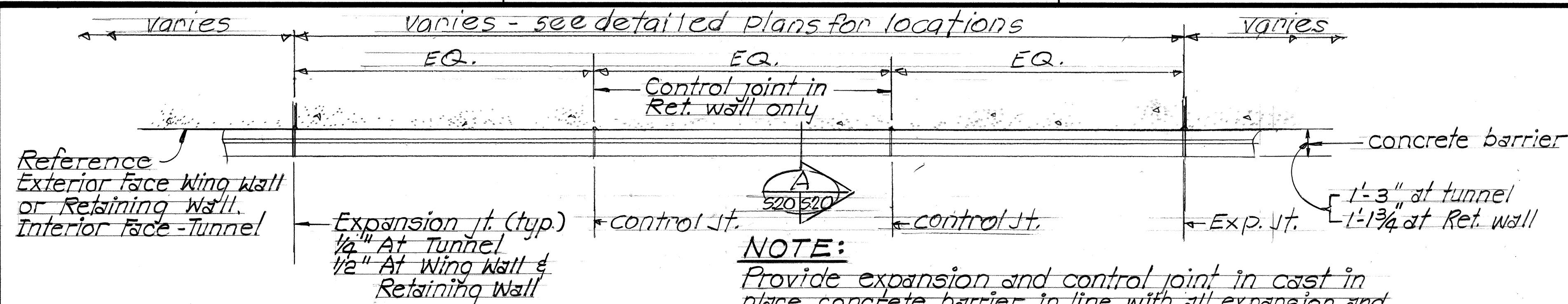
No scale



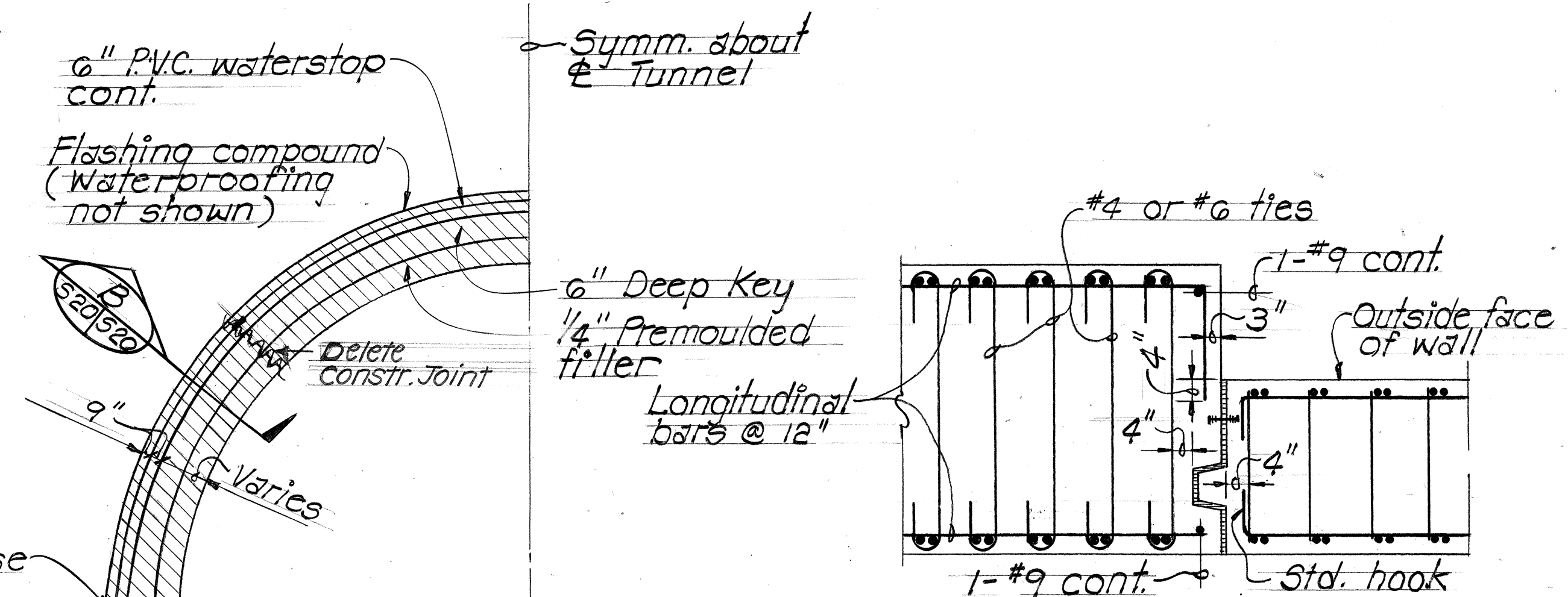
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Harold Miyamoto

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**RETAINING WALL AND
WING WALL DETAILS**
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1 (53)
SCALE: AS NOTED DATE: AUG. 1988
SHEET No. 67 OF 27 SHEETS

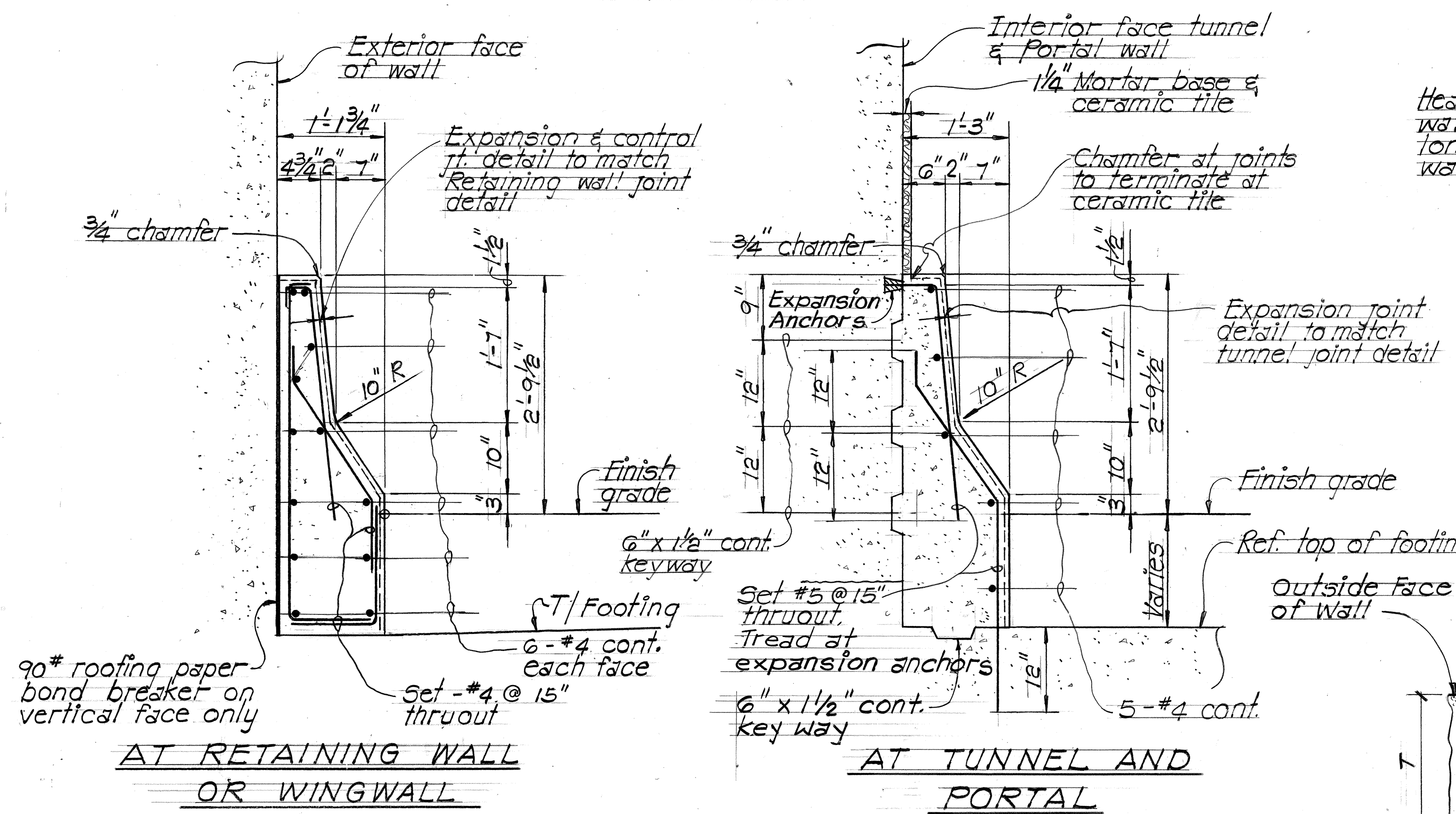
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	68	124



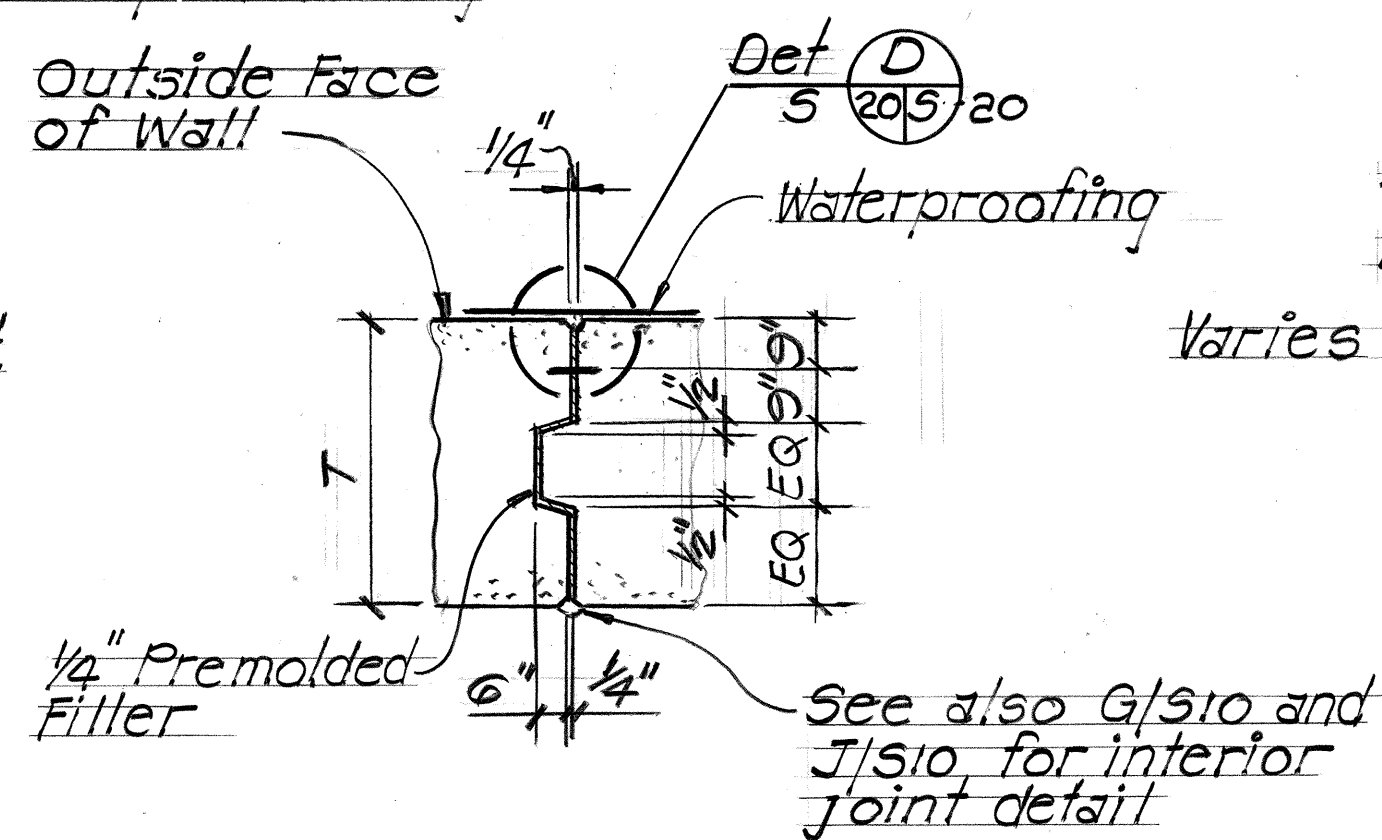
PLAN - TYPICAL CAST IN PLACE CONCRETE BARRIER
Not to scale



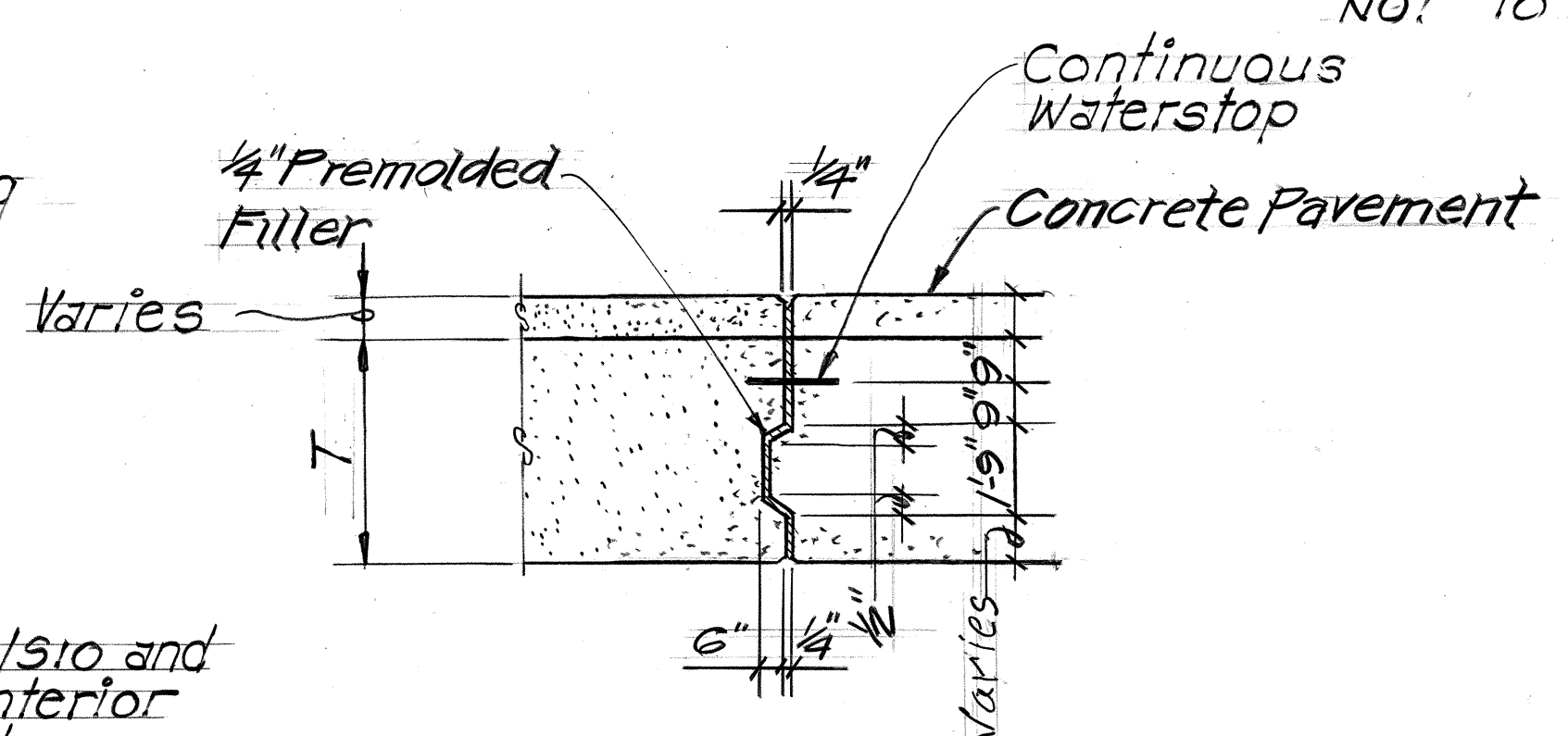
TYPICAL SECTION
Scale: 1/8" = 1'-0"



TYPICAL SECTION
Scale: 1" = 1'-0"

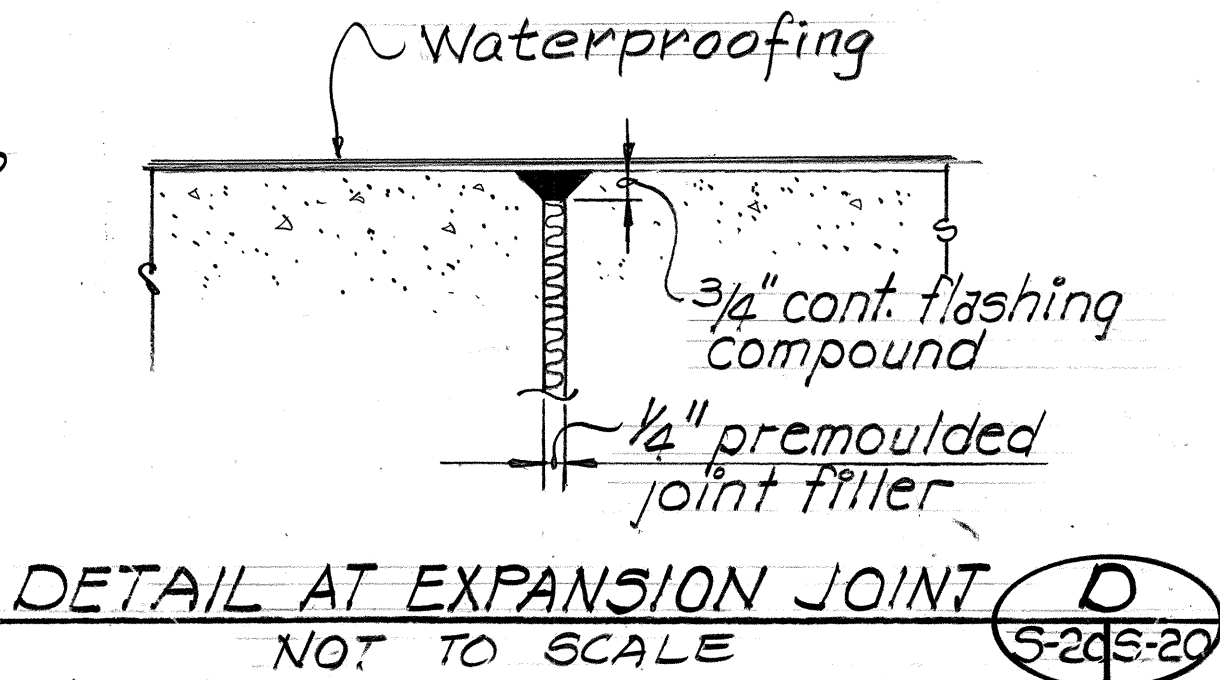


AT WALL
Scale: 3/4" = 1'-0"

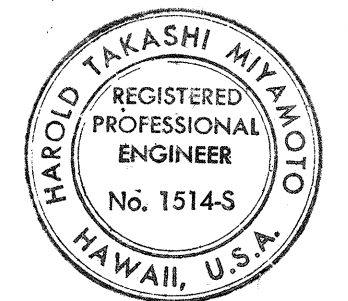


AT FOUNDATION
Scale: 3/4" = 1'-0"

EXPANSION JOINT DETAIL



DETAIL AT EXPANSION JOINT
NOT TO SCALE



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**CAST IN PLACE CONC. BARRIER
AND EXPANSION JOINT DETAIL**

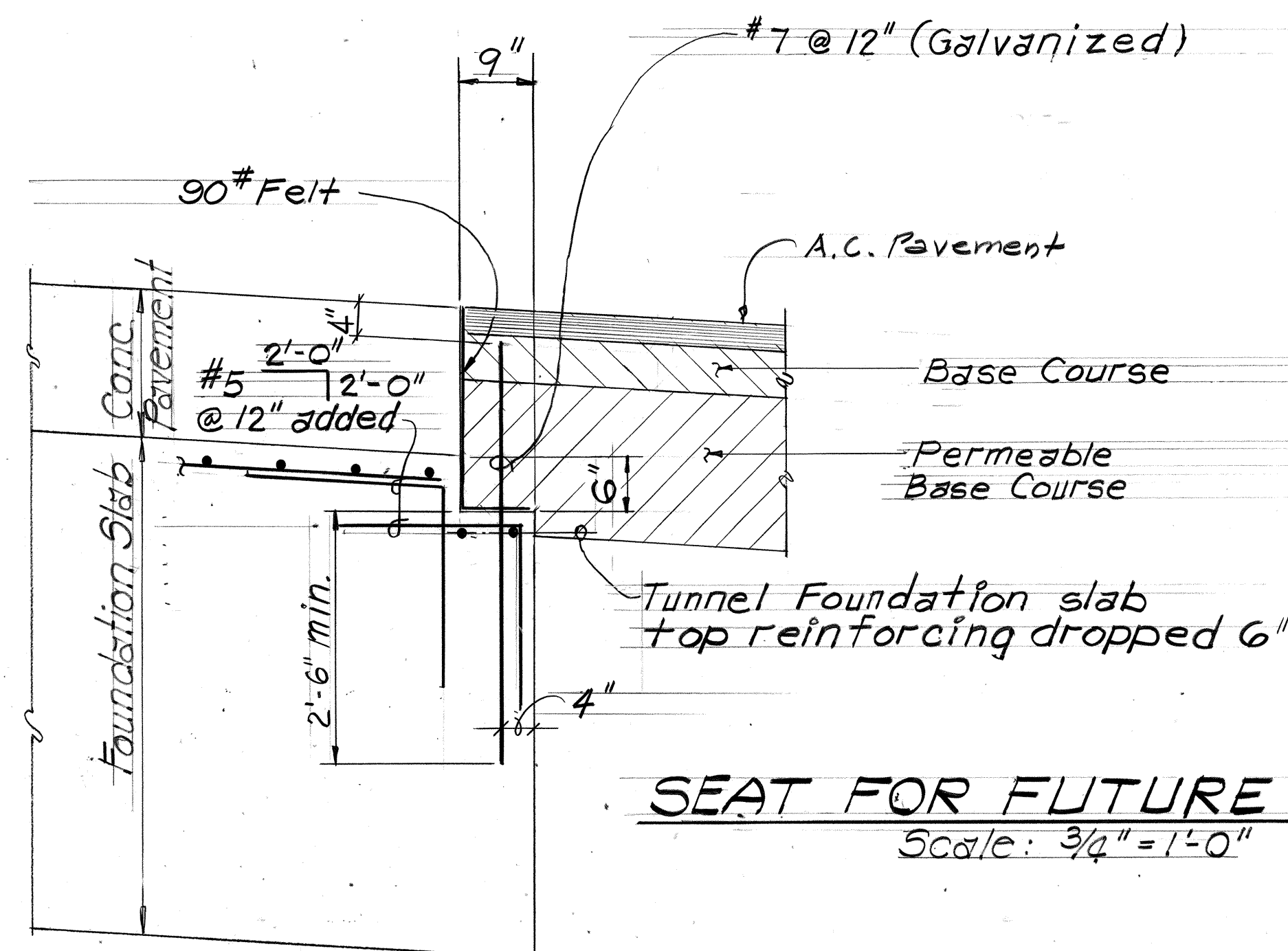
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

SCALE: AS NOTED DATE: AUG. 1988

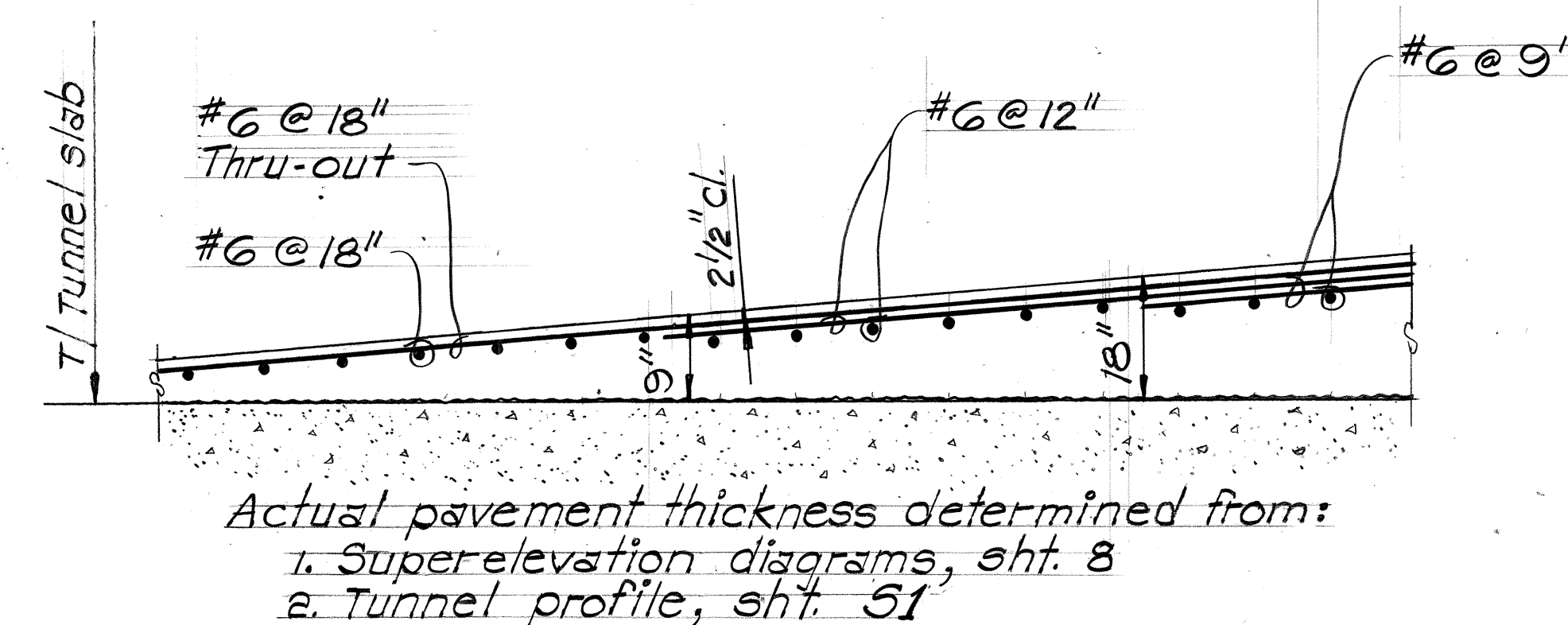
SHEET No. 520 OF 27 SHEETS

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
NO.	

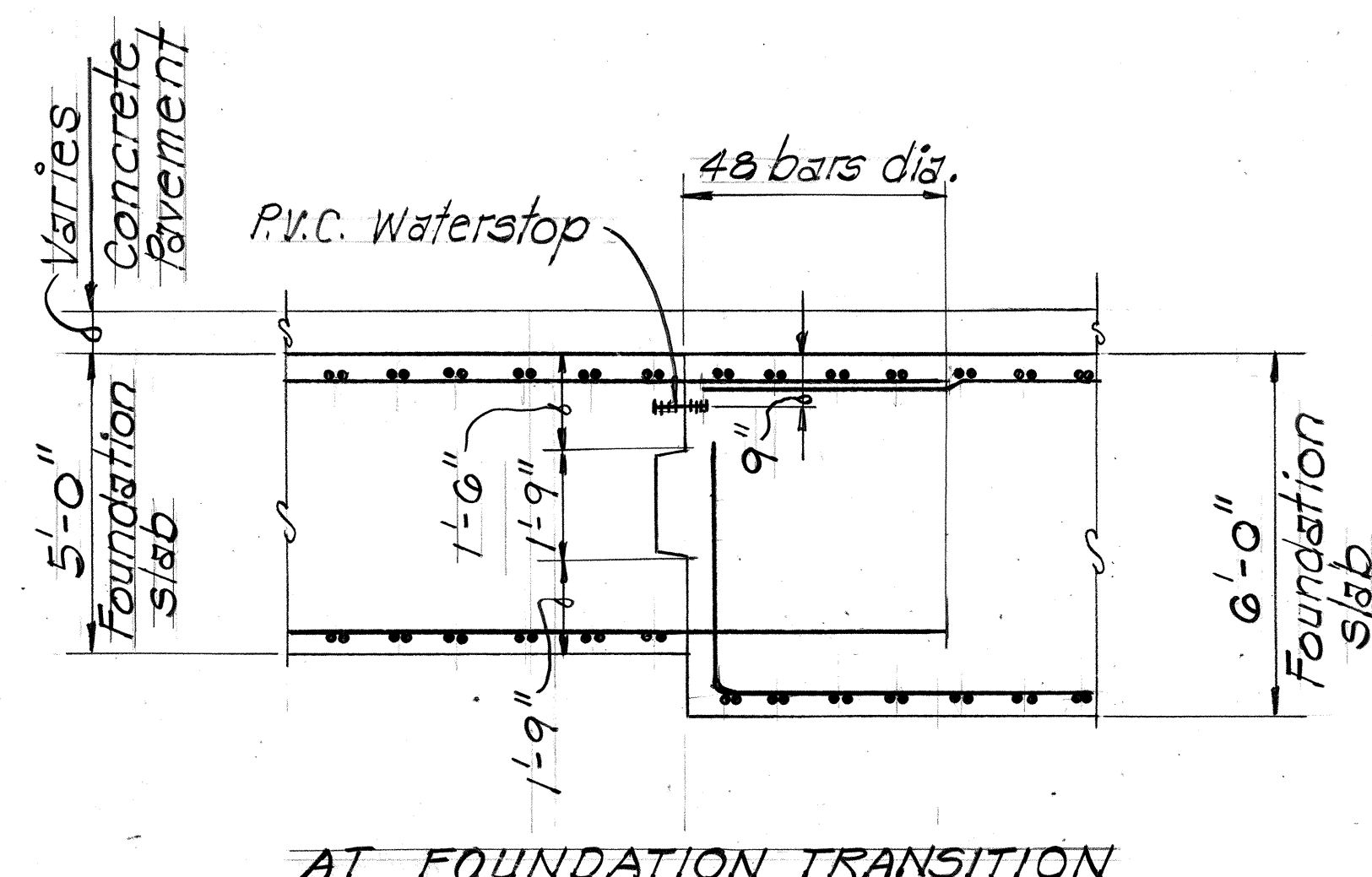
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	69	124



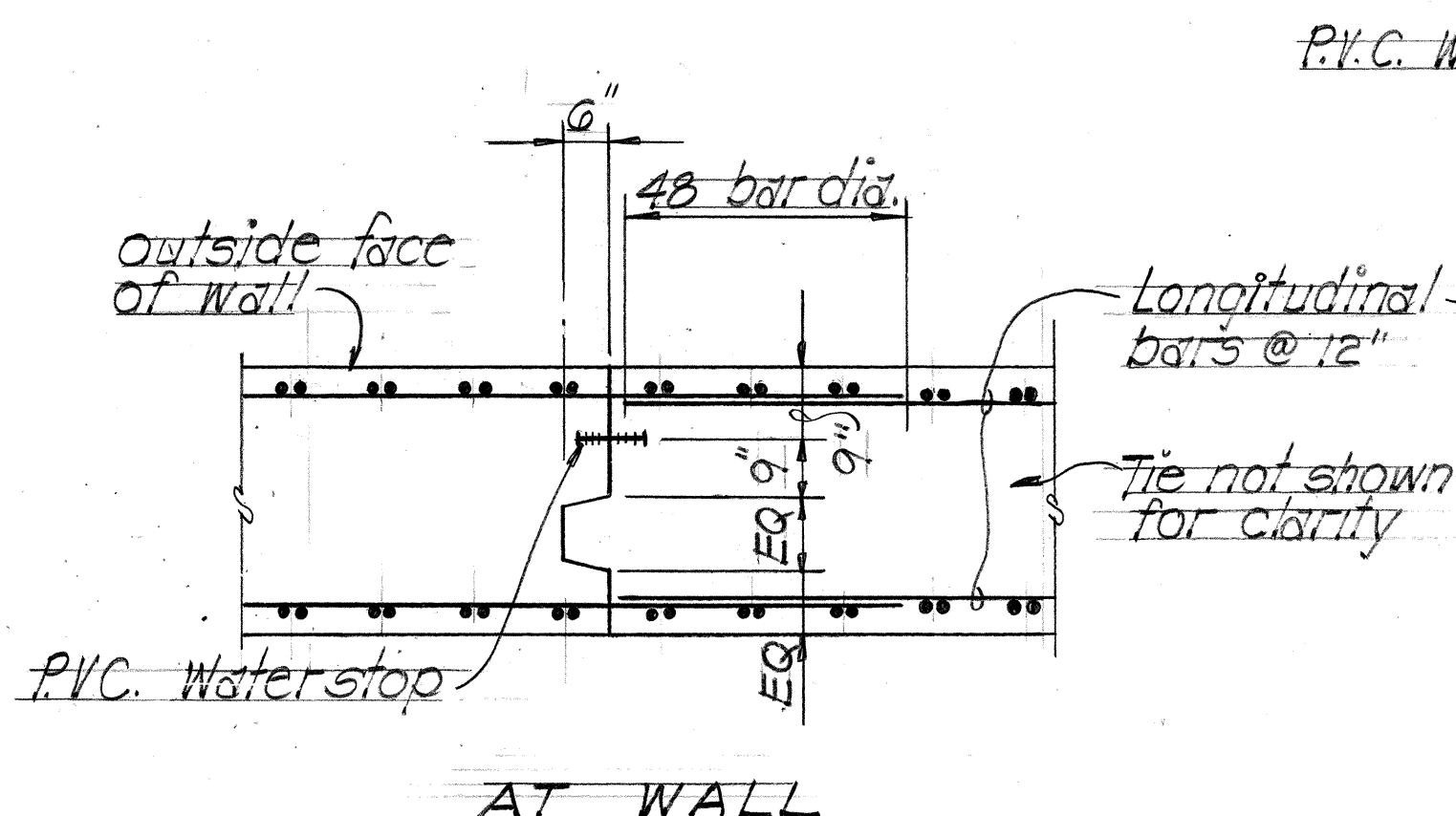
SEAT FOR FUTURE APPROACH SLAB - DETAIL 1
Scale: $\frac{3}{4}" = 1'-0"$
32, 57, 510



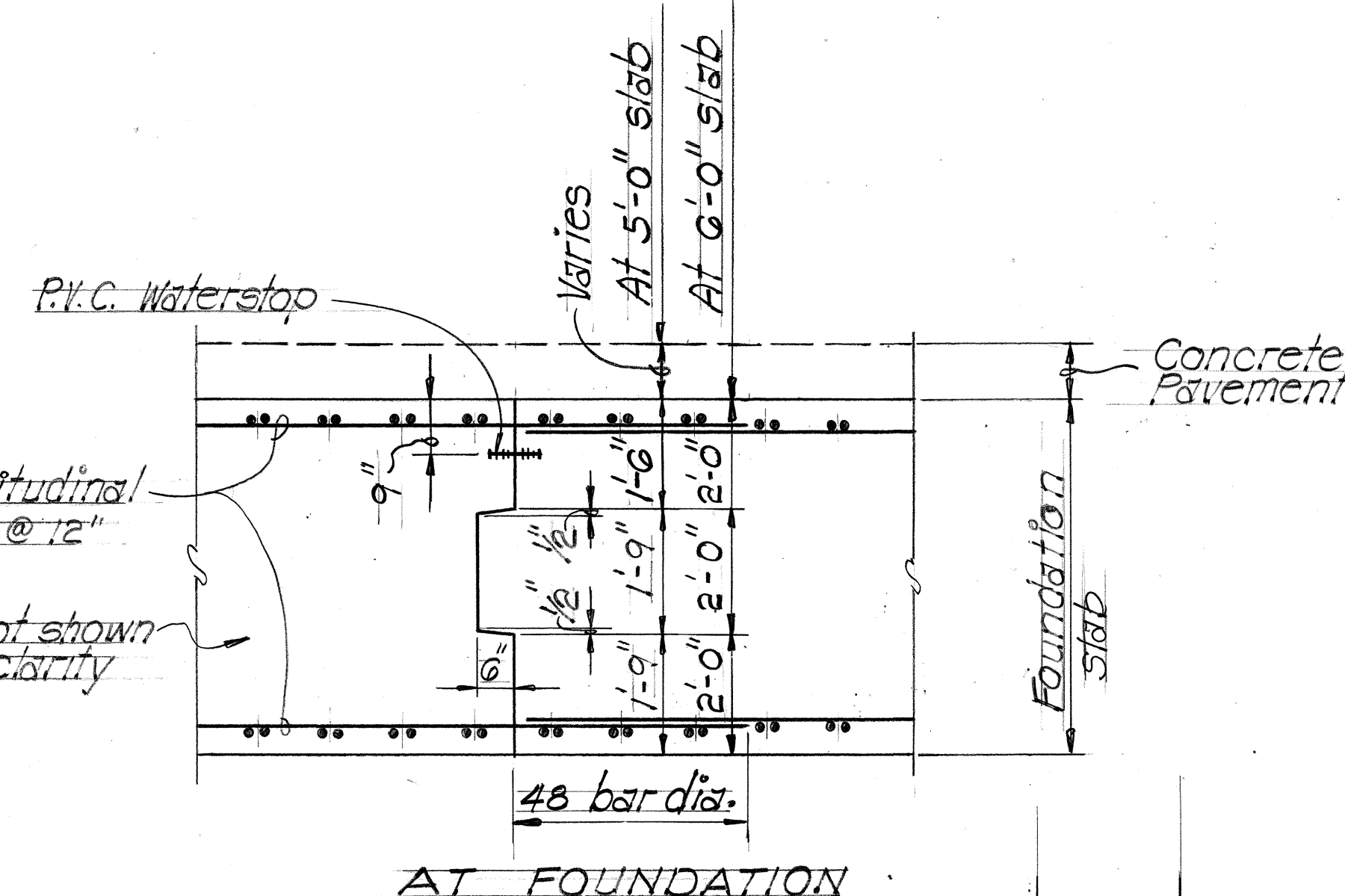
SCHEMATIC SECTION OF REINFORCED CONCRETE PAVEMENT IN TUNNEL 3
Not to scale
55, 56



AT FOUNDATION TRANSITION

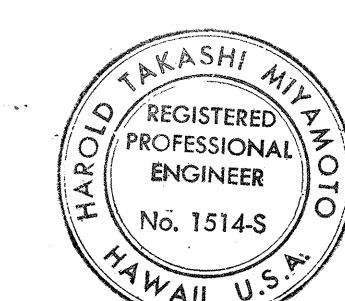


AT WALL



AT FOUNDATION

TYPICAL CONSTRUCTION JOINT DETAIL 2
Not to scale
521/521



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Harold Miyamoto

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**APPROACH SLAB DETAILS AND
TYPICAL CONSTRUCTION JOINT DETAIL**

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

SCALE: AS NOTED DATE: AUG. 1988

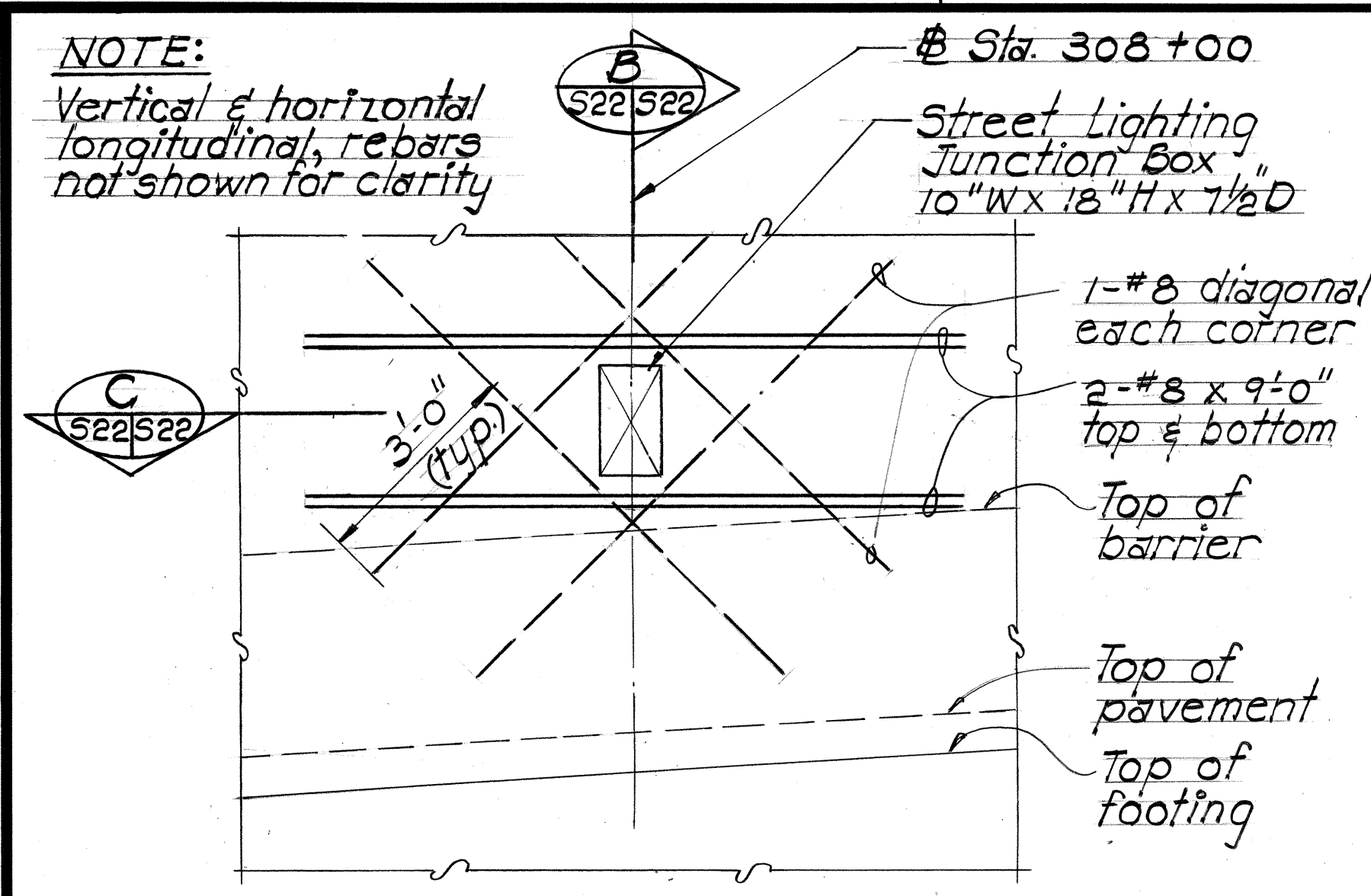
SHEET No. 52 OF 27 SHEETS

ADD. 69

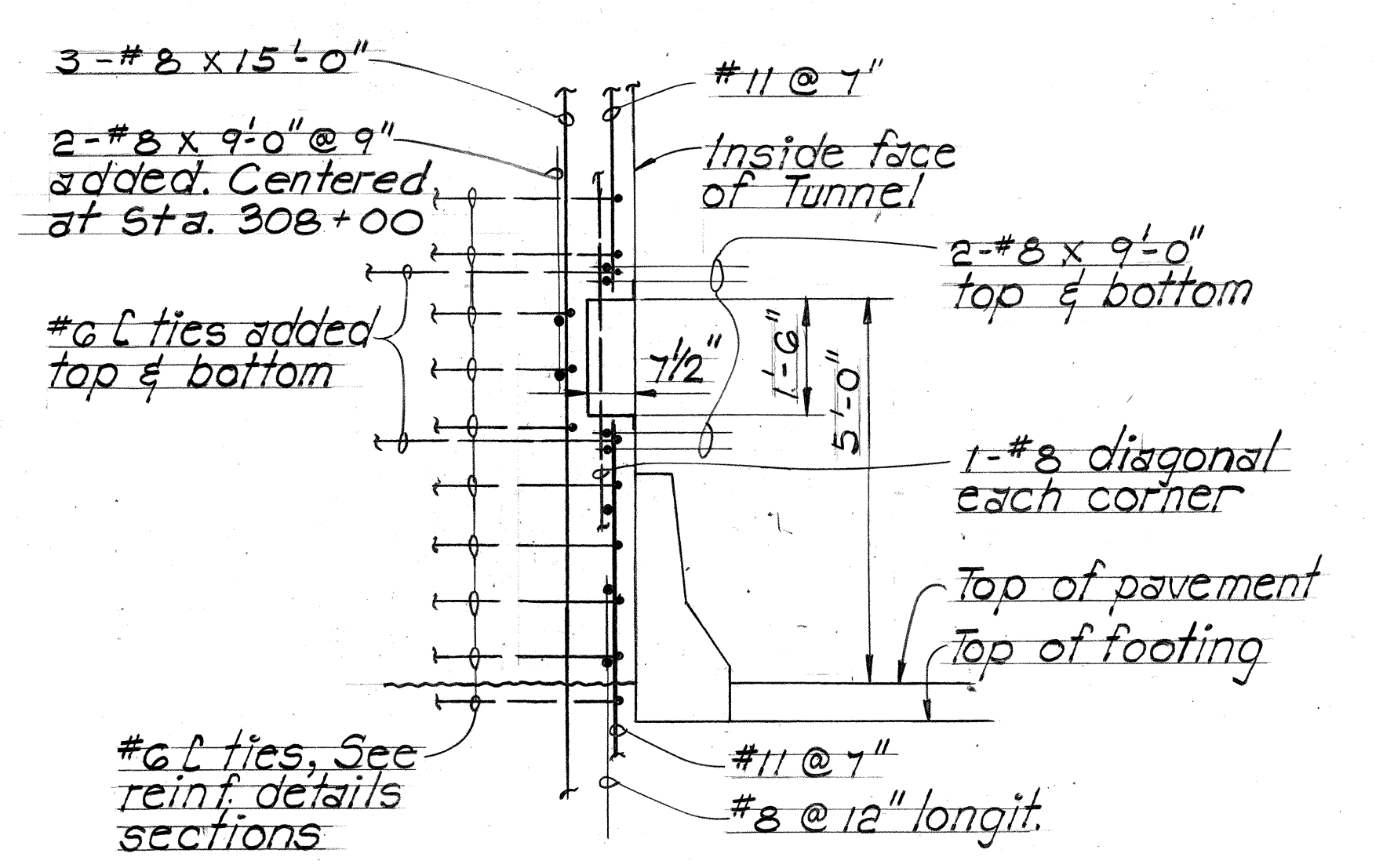
10-28-88	Clarified Base Course and Permeable Base Course Det. 1/2"
DATE	REVISION

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
NO.	

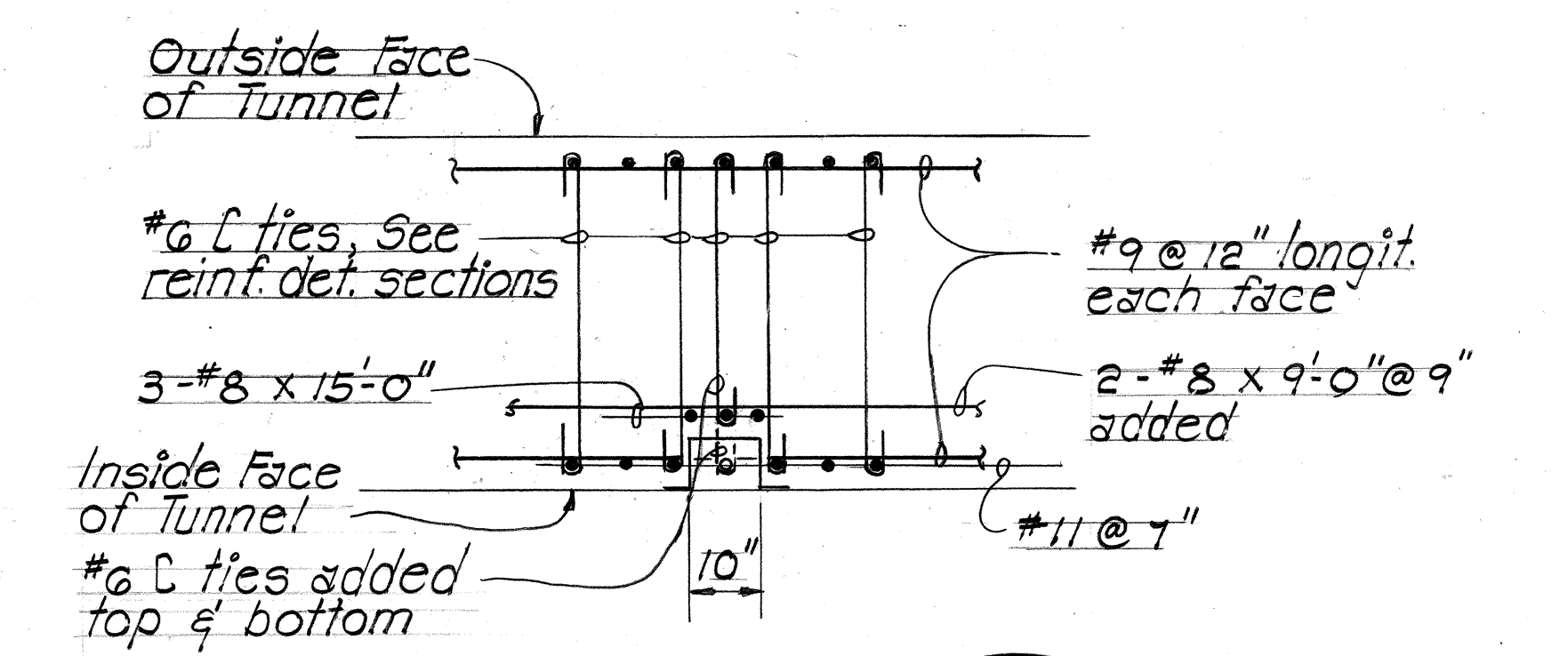
NOTE:
Vertical & horizontal
longitudinal, rebars
not shown for clarity



INBOUND TUNNEL STA. 308+00 ELEVATION
REINF. AT COMMUNICATION JUNCTION BOX
Scale: 1/2" = 1'-0"



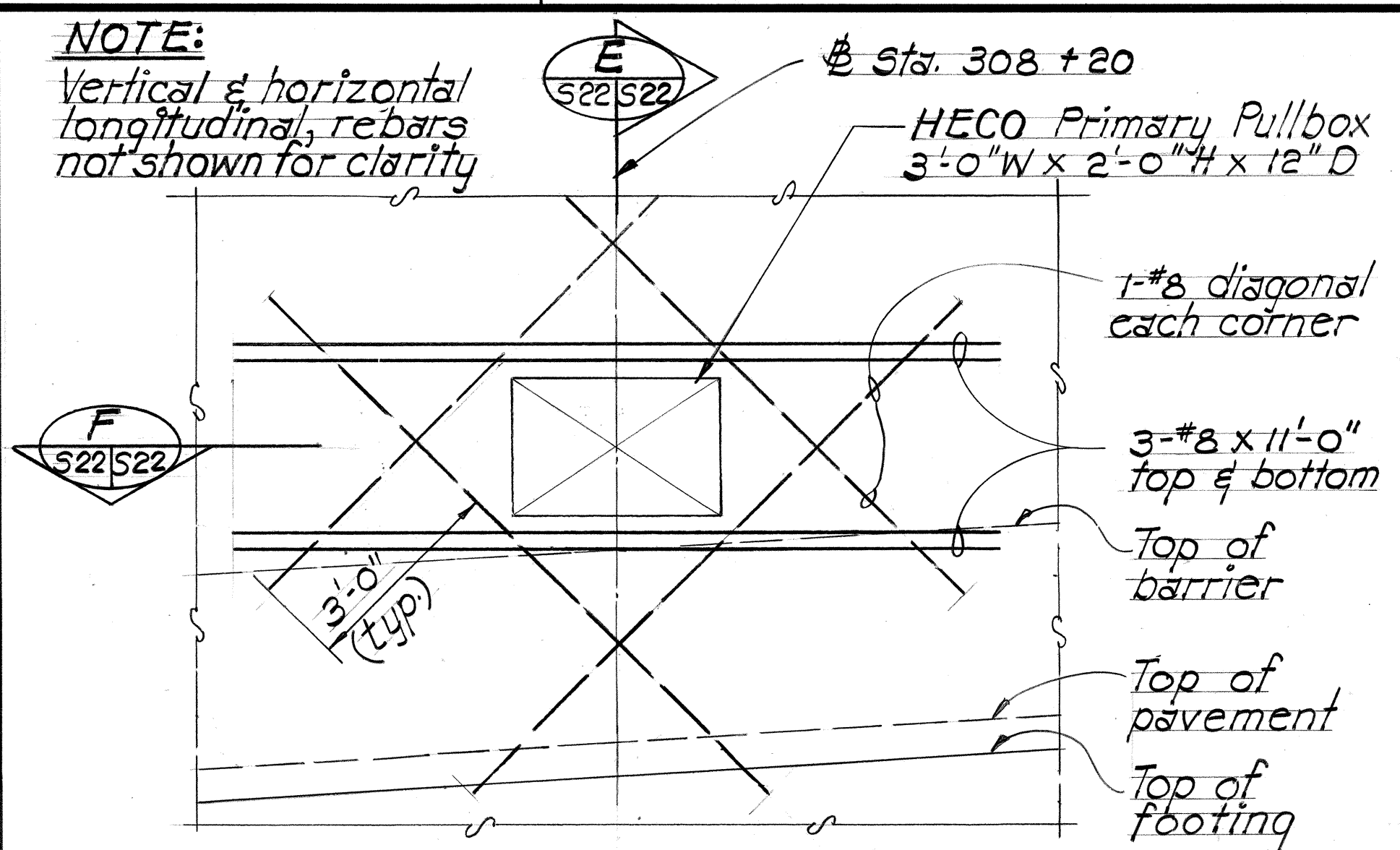
SECTION B
Scale: 1/2" = 1'-0"



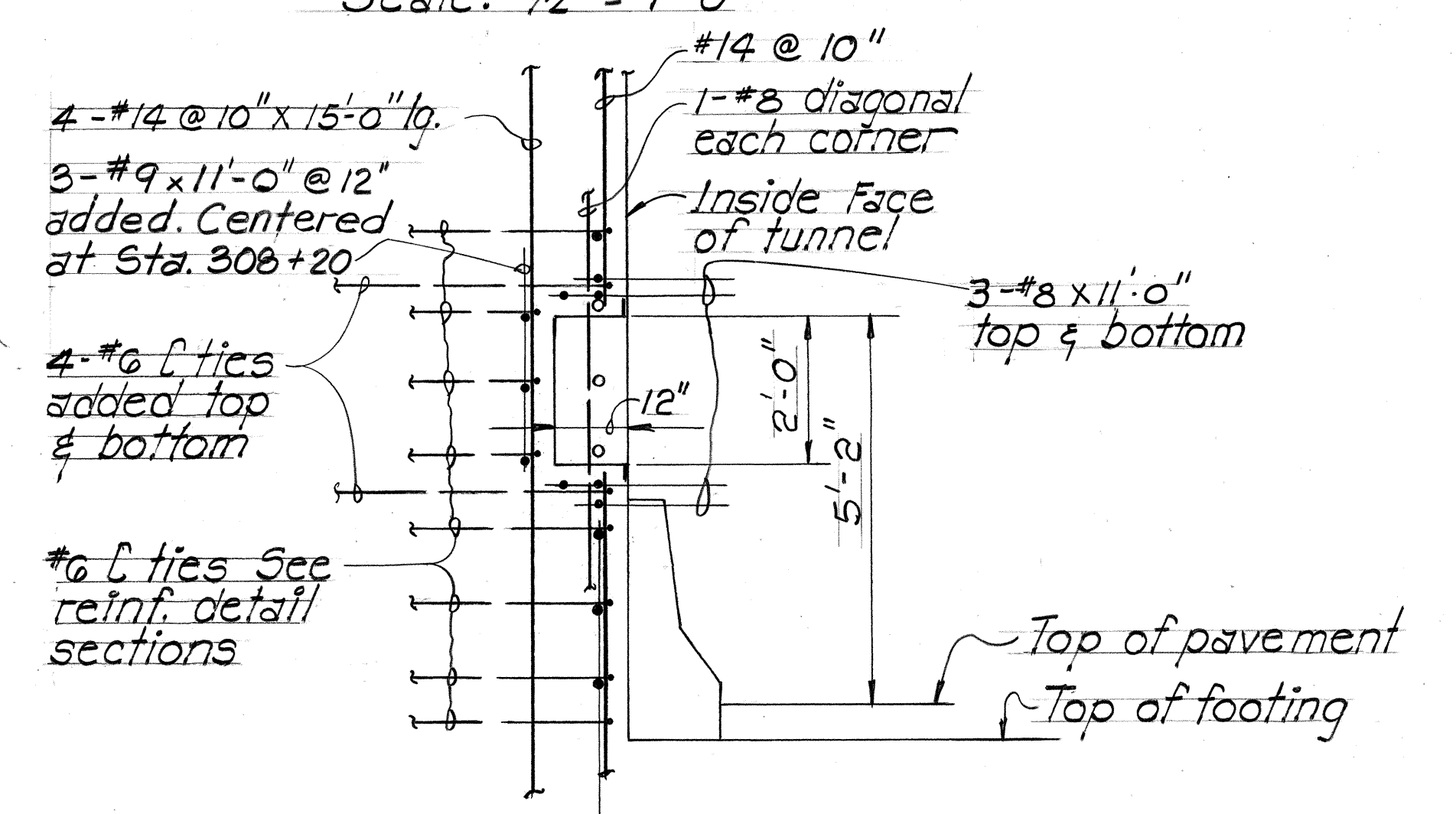
SECTION C
Scale: 1/2" = 1'-0"

NOTE:
1. For balance of reinf. refer to Tunnel reinf. detail TYPE 131 and TYPE 131A Sht. S13.
2. 10'W x 18'H x 1 1/2'D Communication Junction Box at Sta. 310+52 and Antenna System Junction Box at Sta. 310+70, use detail above (similar).

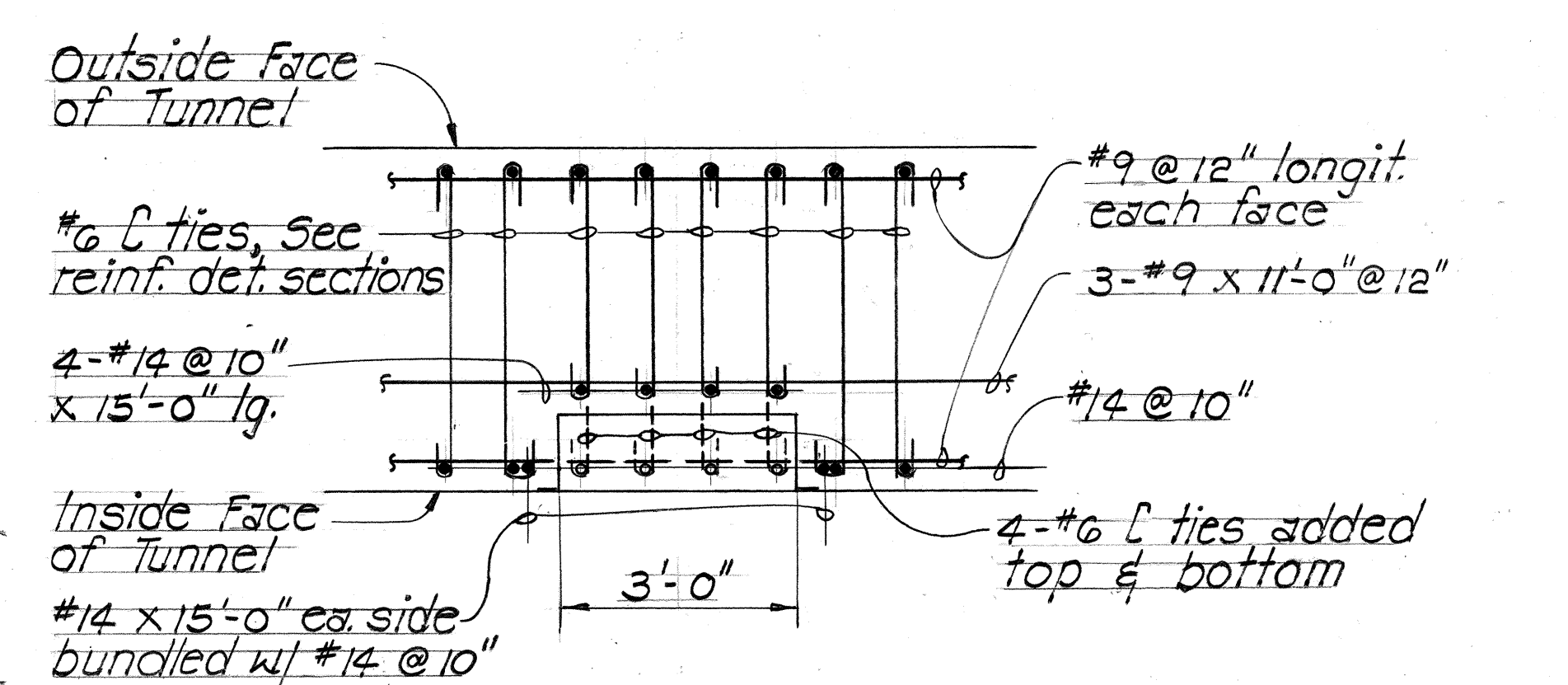
NOTE:
Vertical & horizontal
longitudinal, rebars
not shown for clarity



INBOUND TUNNEL STA. 308+20 ELEVATION
REINFORCING AT HECO PRIMARY PULLBOX
Scale: 1/2" = 1'-0"



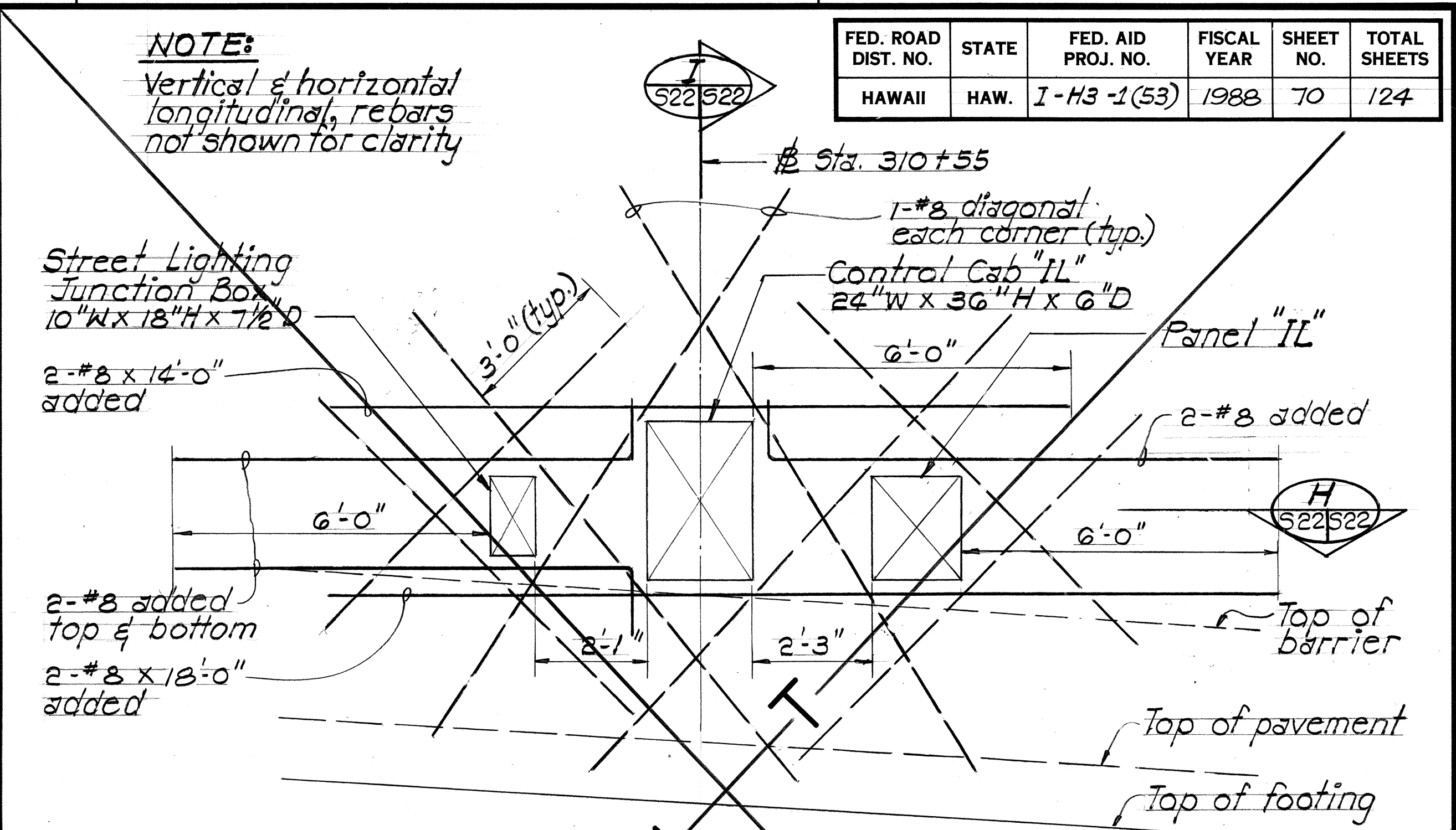
SECTION D
Scale: 1/2" = 1'-0"



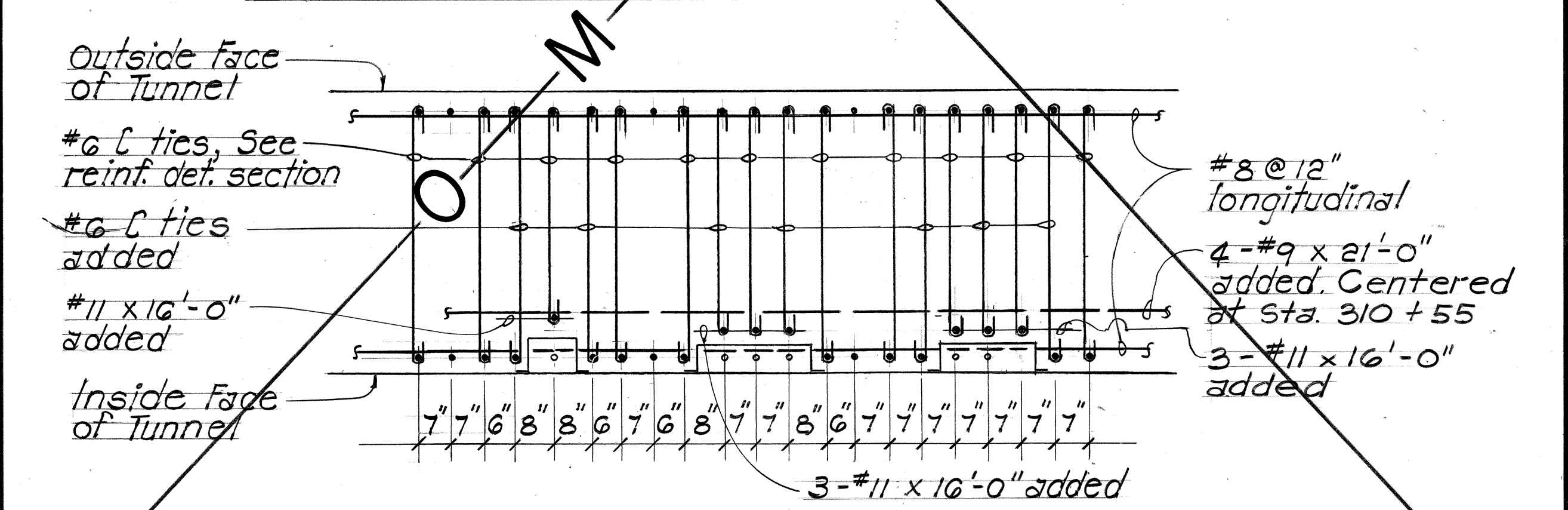
SECTION E
Scale: 1/2" = 1'-0"

NOTE:
For balance of reinf. refer to Tunnel reinf. detail TYPE 1R2AW Sht. S12

NOTE:
Vertical & horizontal
longitudinal, rebars
not shown for clarity



INBOUND TUNNEL STA. 310+55 ELEVATION
REINF. AT ELECTRICAL EQUIPMENT PANEL
Scale: 1/2" = 1'-0"

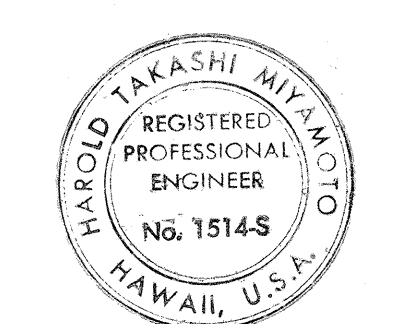


SECTION G
Scale: 1/2" = 1'-0"

NOTE:
Refer to Electrical sheets for
additional details not shown.
Verify Electrical panel
dimensions and details.

8/7/89 Electrical Box Revision
DATE REVISION

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	70	124



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
INBOUND TUNNEL
REINF. DETAILS AT ELECTRICAL PANELS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)
SCALE: AS NOTED DATE: AUG. 1988
SHEET No. 522 OF 27 SHEETS

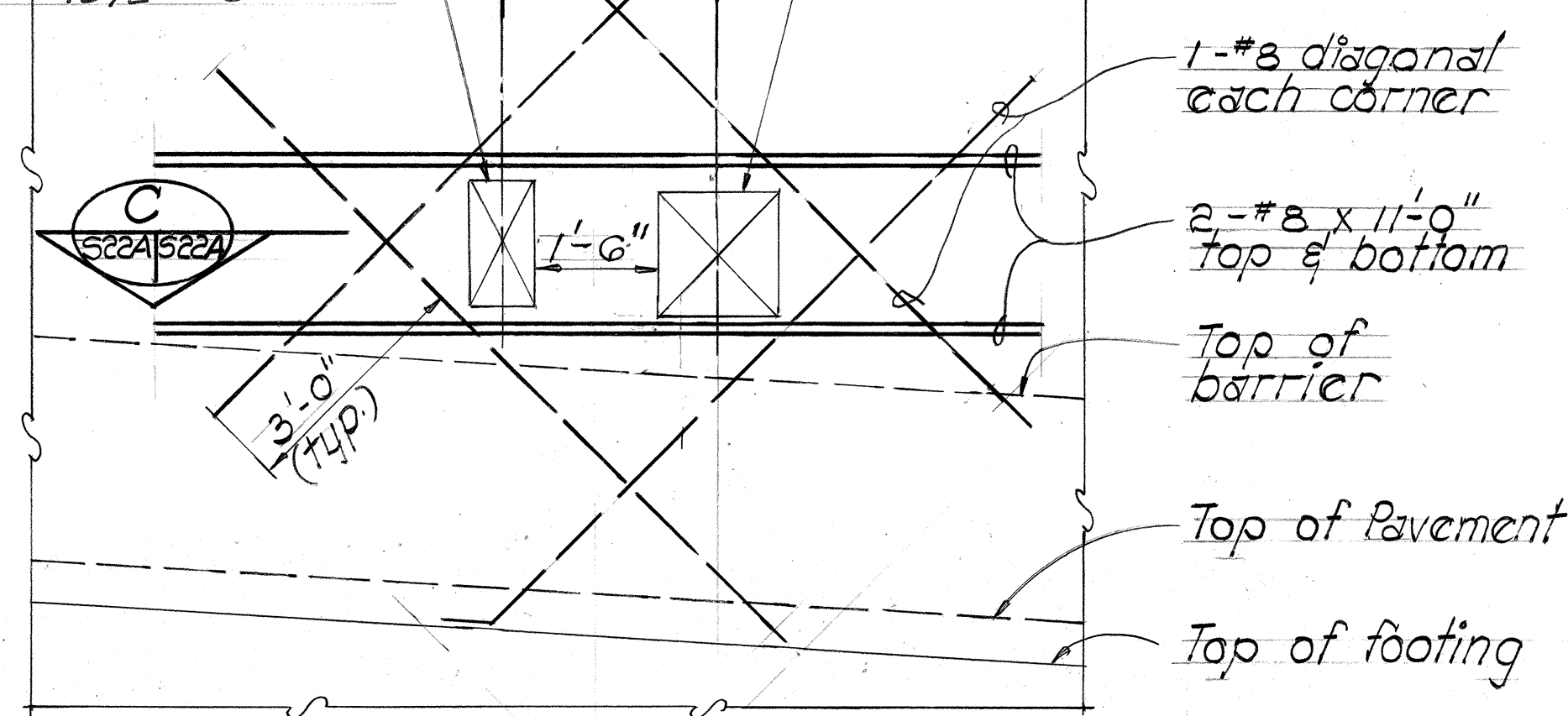
SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
NO.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	C.O. 705-1	124

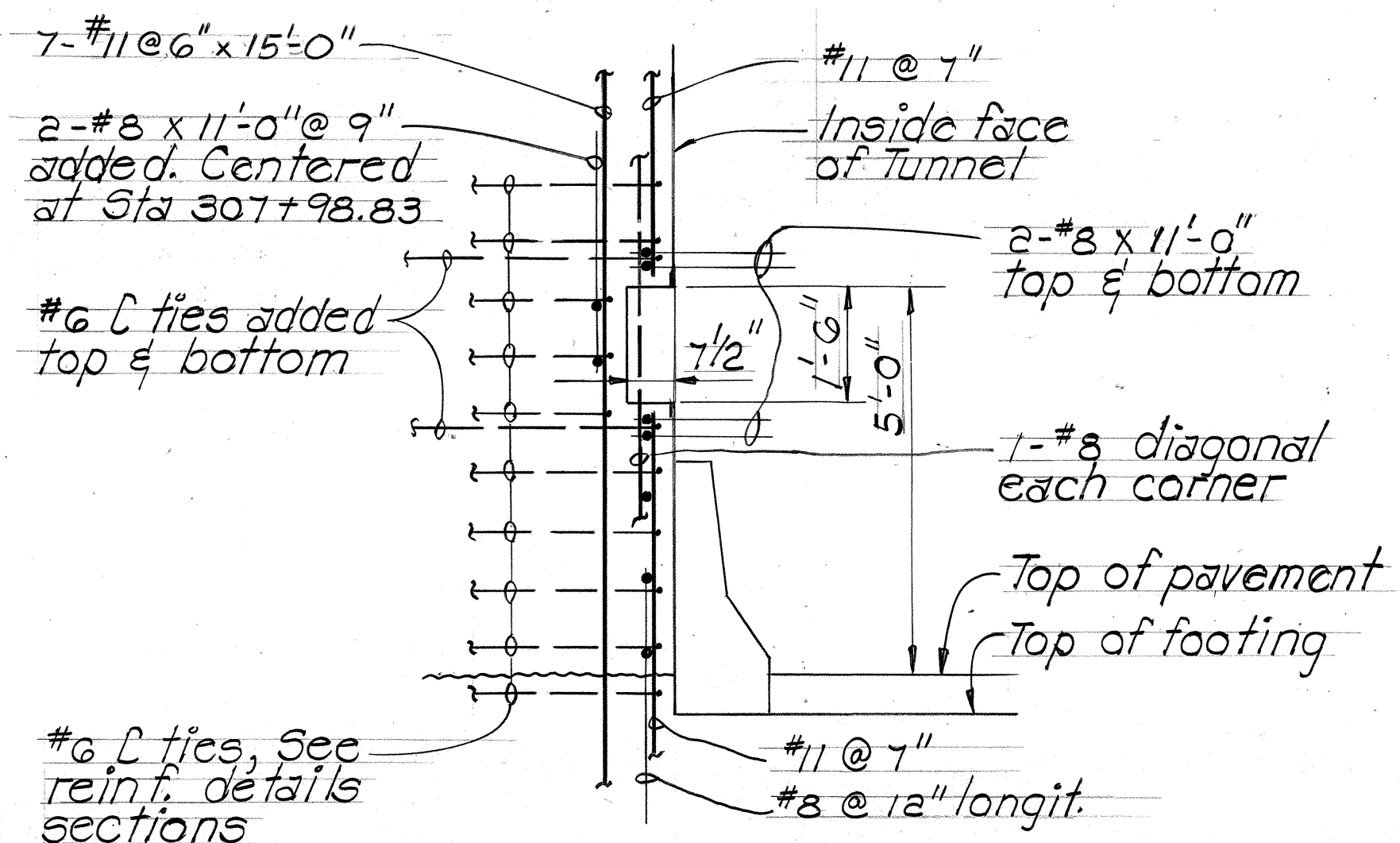
NOTE:

Vertical & horizontal longitudinal, rebar not shown for clarity.

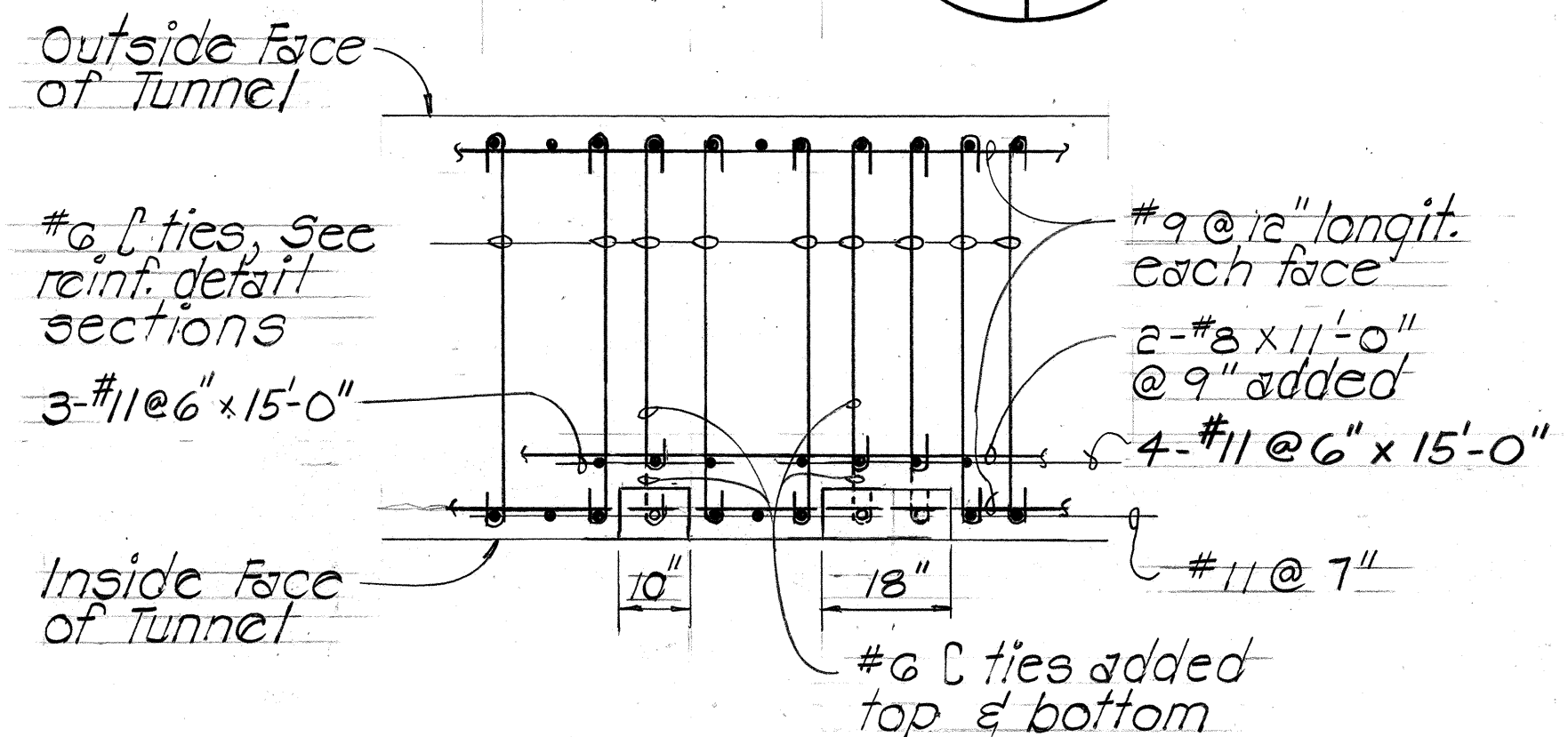
Comm. Junction Box
10" W x 18" H x 7 1/2" D



INBOUND TUNNEL ELEVATION
REINF. AT COMM. JUNCTION BOX STA. 307+97.67
AND STREET LIGHTING JUNCTION BOX STA. 308+00
Scale: 1/2" = 1'-0"



SECTION B
Scale: 1/2" = 1'-0"



NOTE:

For balance of reinf. refer to Tunnel reinf. detail TYPE IS1, Sht. S13

SECTION C
Scale: 1/2" = 1'-0"

NOTE:

Vertical & horizontal longitudinal, rebar not shown for clarity.

Control CAB "IL"
24" W x 36" H x 8 1/2" D

Street Lighting Junction Box
18" W x 18" H x 7 1/2" D

Communication Junction Box
10" W x 18" H x 7 1/2" D

2-#8 added top & bottom

2-#8 added top & bottom

2-#8 added top & bottom

2-#8 added top & bottom

2-#8 added top & bottom

2-#8 added top & bottom

2-#8 added top & bottom

2-#8 added top & bottom

2-#8 added top & bottom

2-#8 added top & bottom

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2-#8 added top & bottom

2-#8 added top & bottom

2-#8 added top & bottom

2-#8 added top & bottom

2-#8 added top & bottom

2-#8 added top & bottom

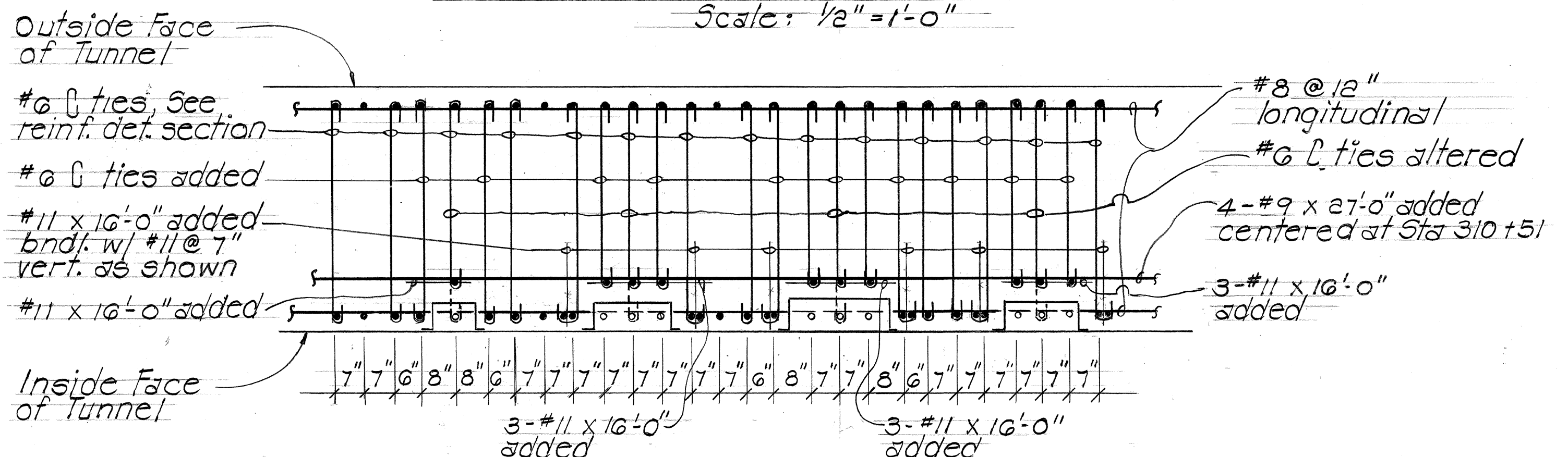
2-#8 added top & bottom

2-#8 added top & bottom

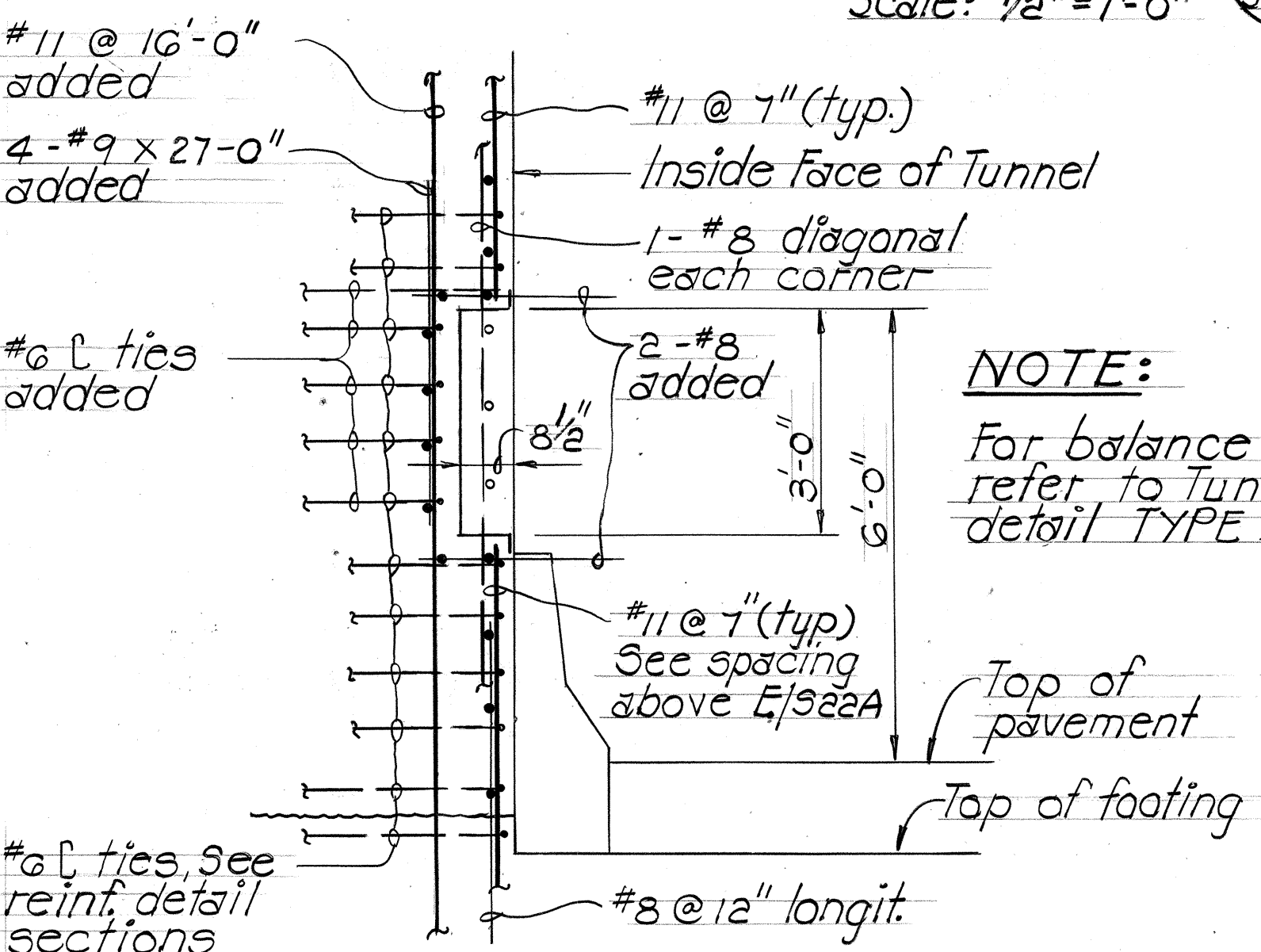
2-#8 added top & bottom

2-#8 added top & bottom

INBOUND TUNNEL STA. 310+55 ELEVATION
REINF. AT ELECTRICAL EQUIPMENT PANEL
Scale: 1/2" = 1'-0"



SECTION E
Scale: 1/2" = 1'-0"



NOTE:

For balance of reinf. refer to Tunnel reinf. detail TYPE IS1A, Sht. S13

SECTION F
Scale: 1/2" = 1'-0"

NOTE:

Refer to Electrical sheets for additional details not shown. Verify Electrical panel dimensions and details.



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Harold Takashi Miyamoto

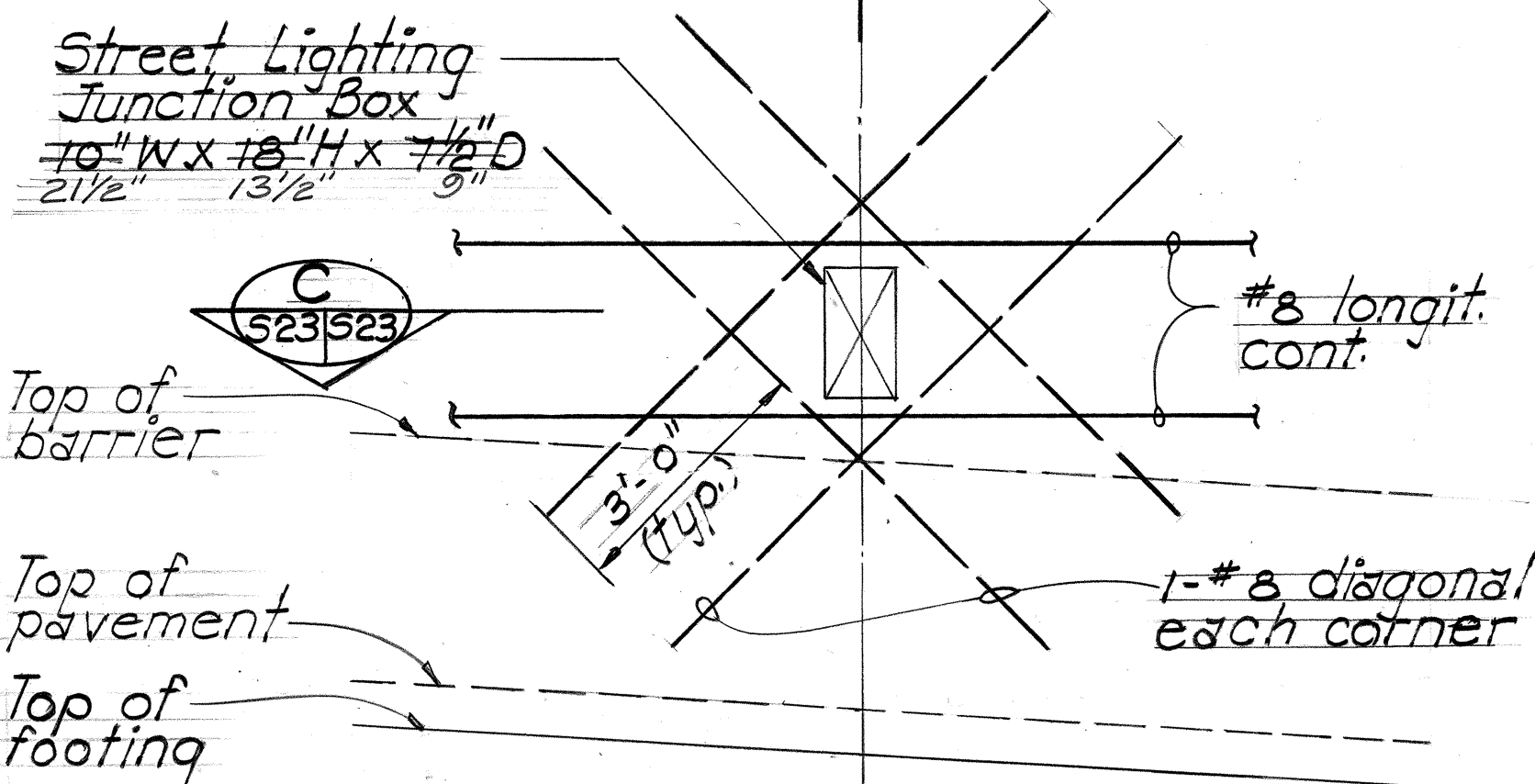
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
INBOUND TUNNEL REINF. DETAILS AT ELECTRICAL PANELS	
INTERSTATE ROUTE H-3 E.A.I. PROJ. NO. I-H3-1 (53)	
SCALE: AS NOTED	DATE: AUG.
SHEET NO. 522A OF SHEETS	

8/7/87	Sheet added to Contract Plan set for Additional Detail.
DATE	REVISION

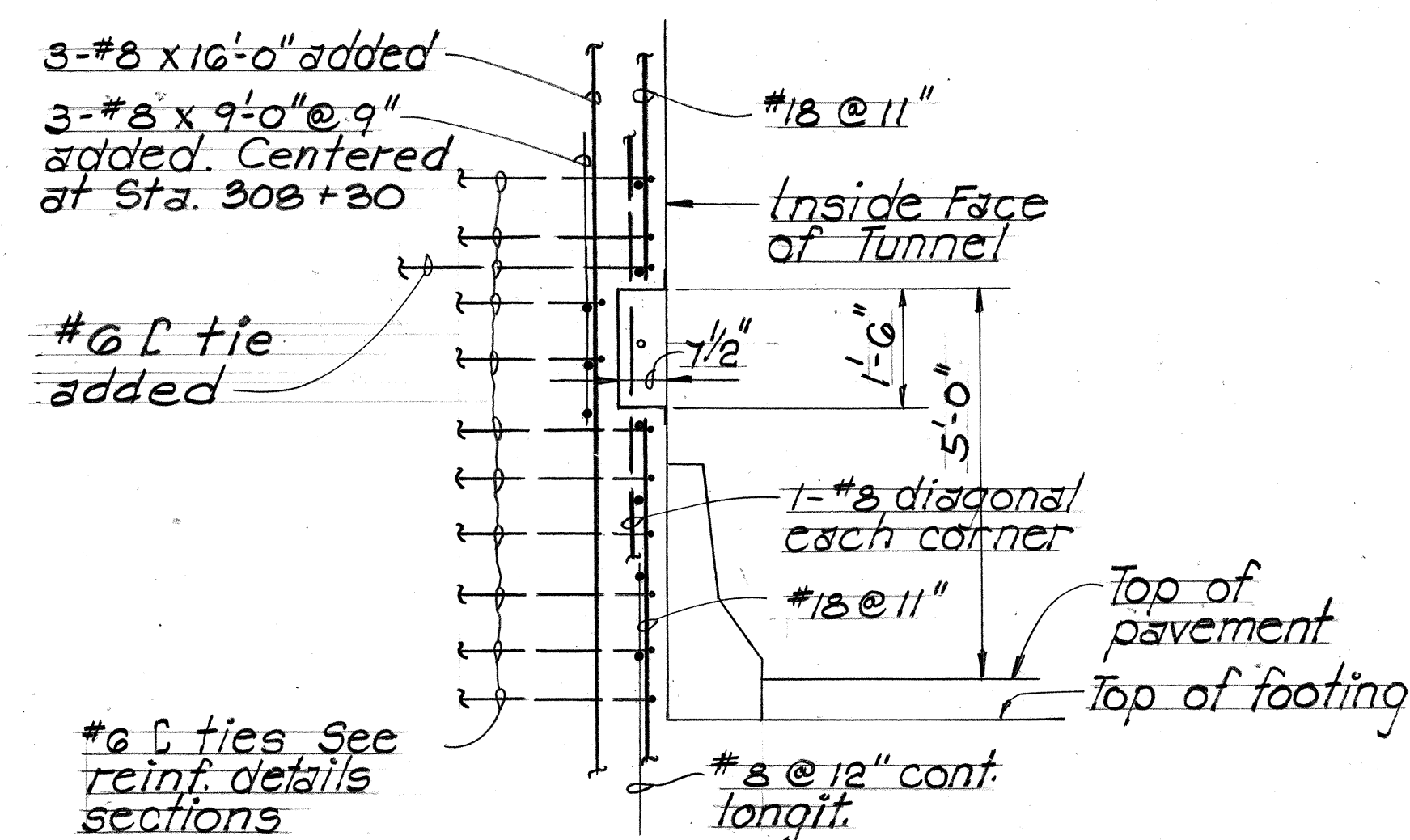
C.O. 70 S-1

NOTE:

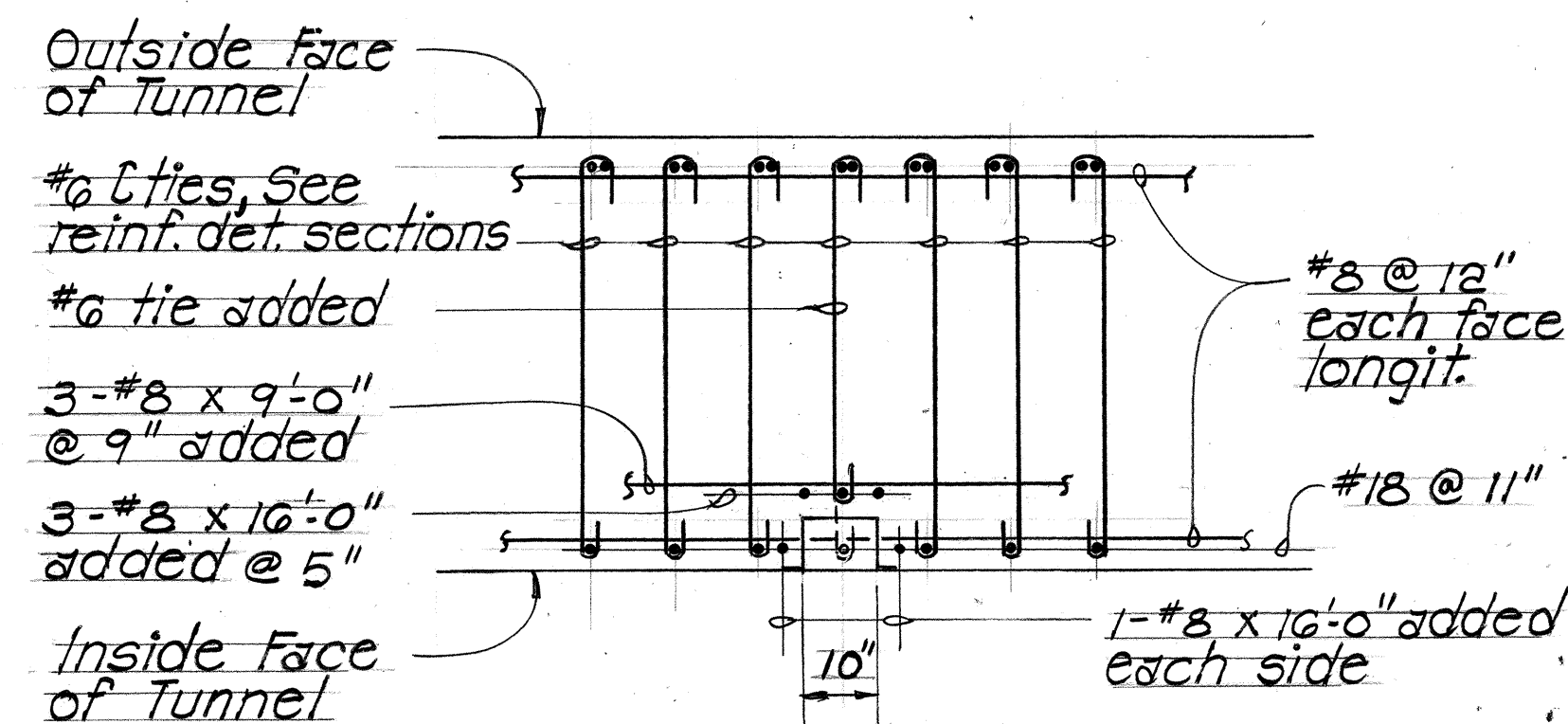
Vertical & horizontal longitudinal rebars not shown for clarity



OUTBOUND TUNNEL STA. 308+30 ELEVATION
REINF. AT COMMUNICATION JUNCTION BOX
Scale: 1/2" = 1'-0"



SECTION B
Scale: 1/2" = 1'-0"



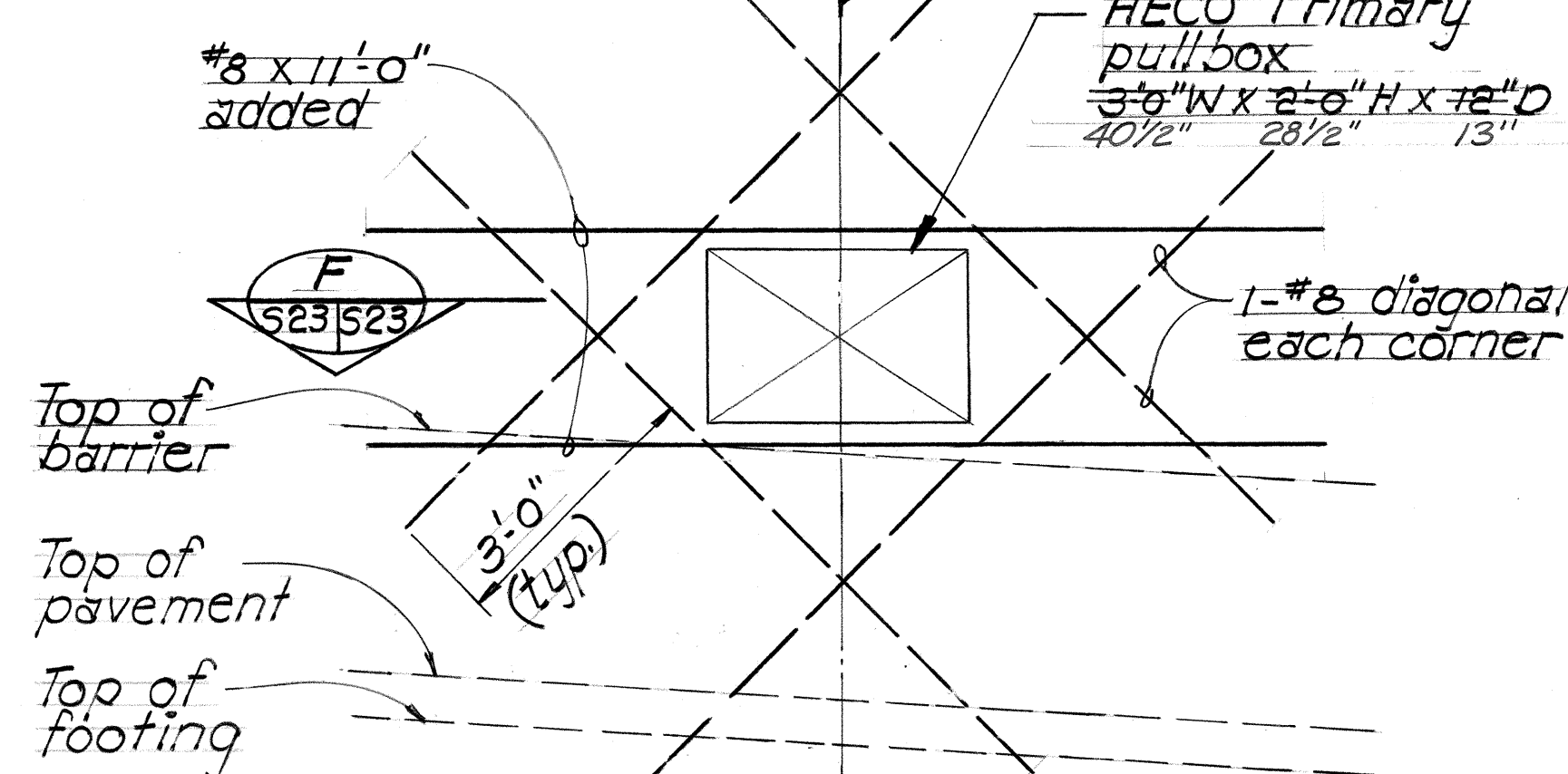
SECTION C
Scale: 1/2" = 1'-0"

NOTE:

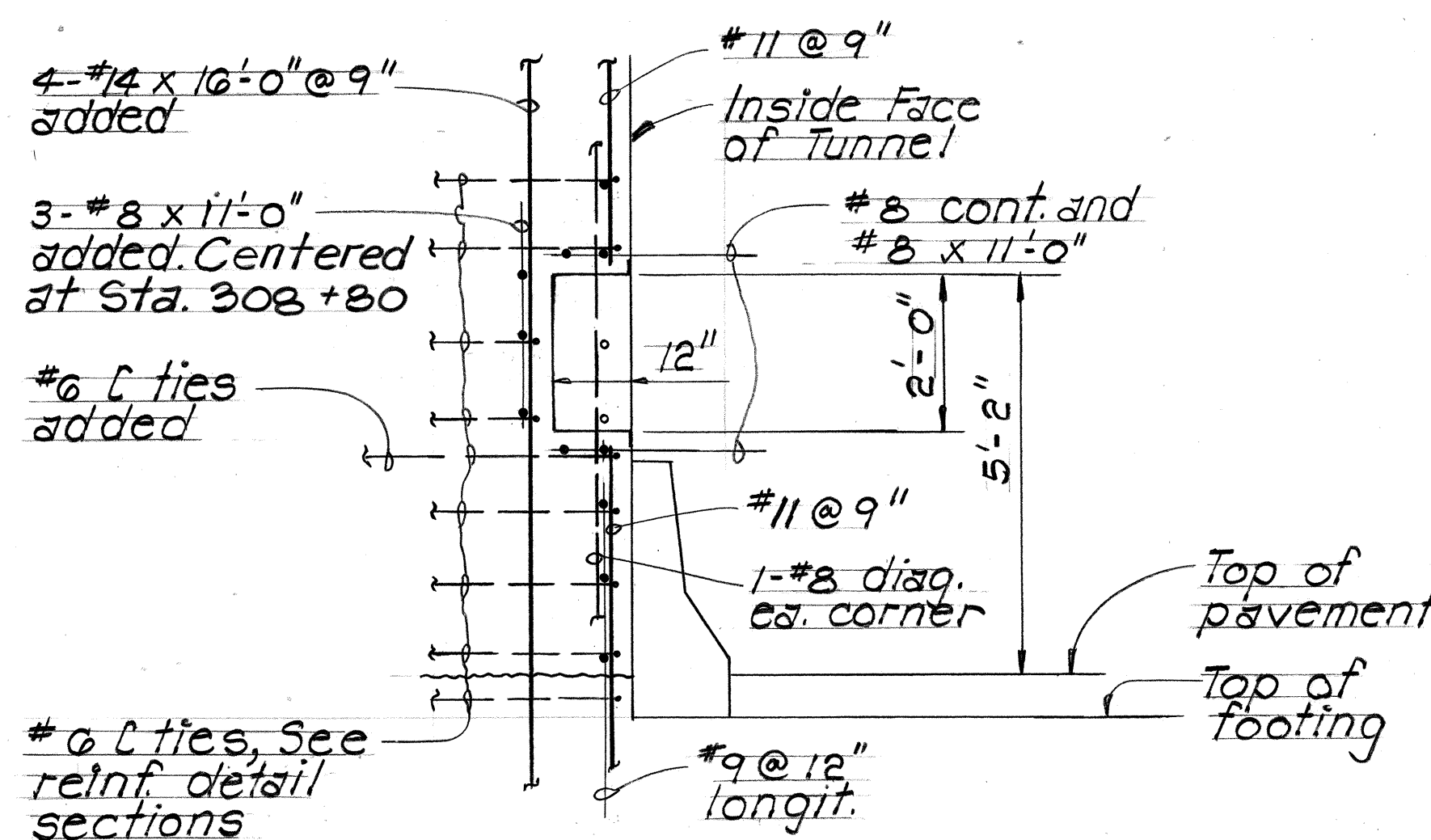
- For balance of reinf. refer to Tunnel reinf. detail TYPE OW1 and TYPE OSLA Sht. S16.
- 10'W x 18'H x 7 1/2'D Communication Junction Box at Sta. 310+81 and Antenna System Junction Box at Sta. 310+93. Use detail above (similar).

NOTE:

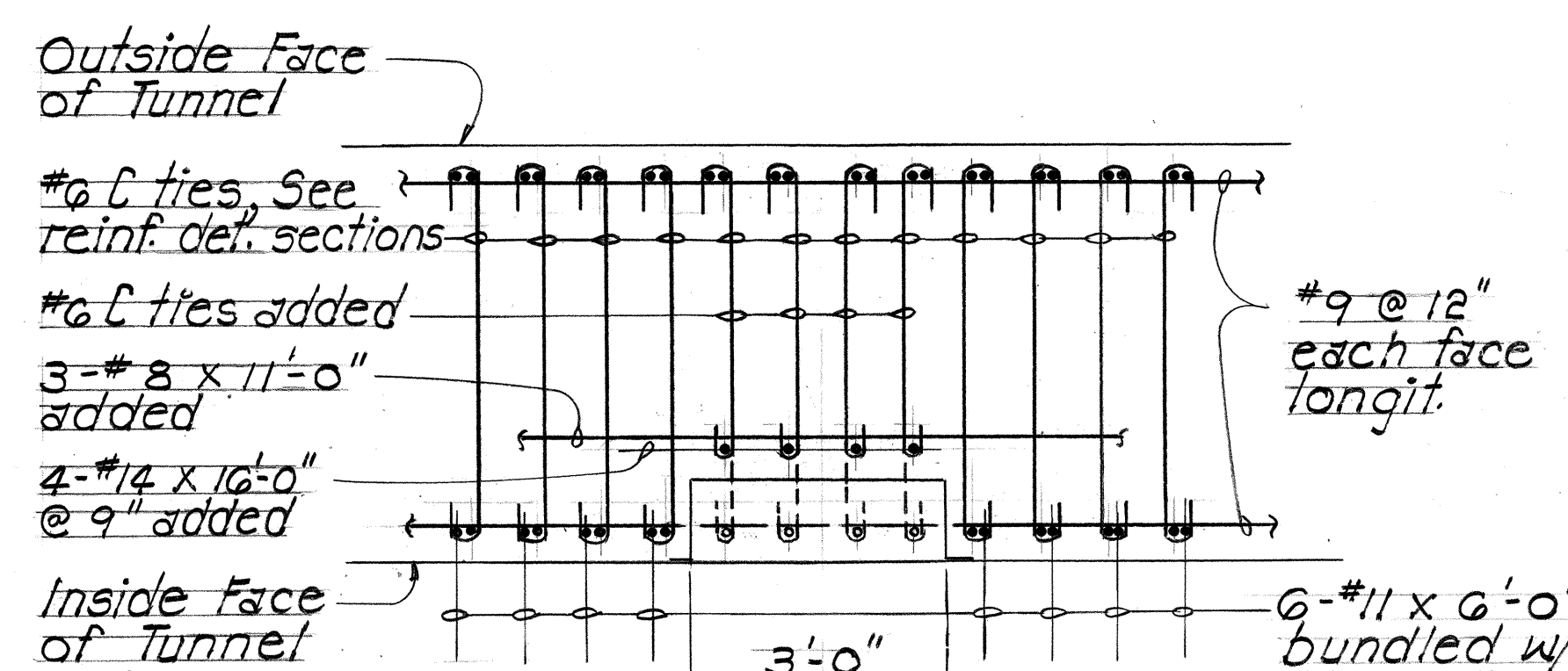
Vertical & horizontal longitudinal rebars not shown for clarity



OUTBOUND TUNNEL STA. 308+80 ELEVATION
REINFORCING AT PRIMARY PULL BOX
Scale: 1/2" = 1'-0"



SECTION E
Scale: 1/2" = 1'-0"

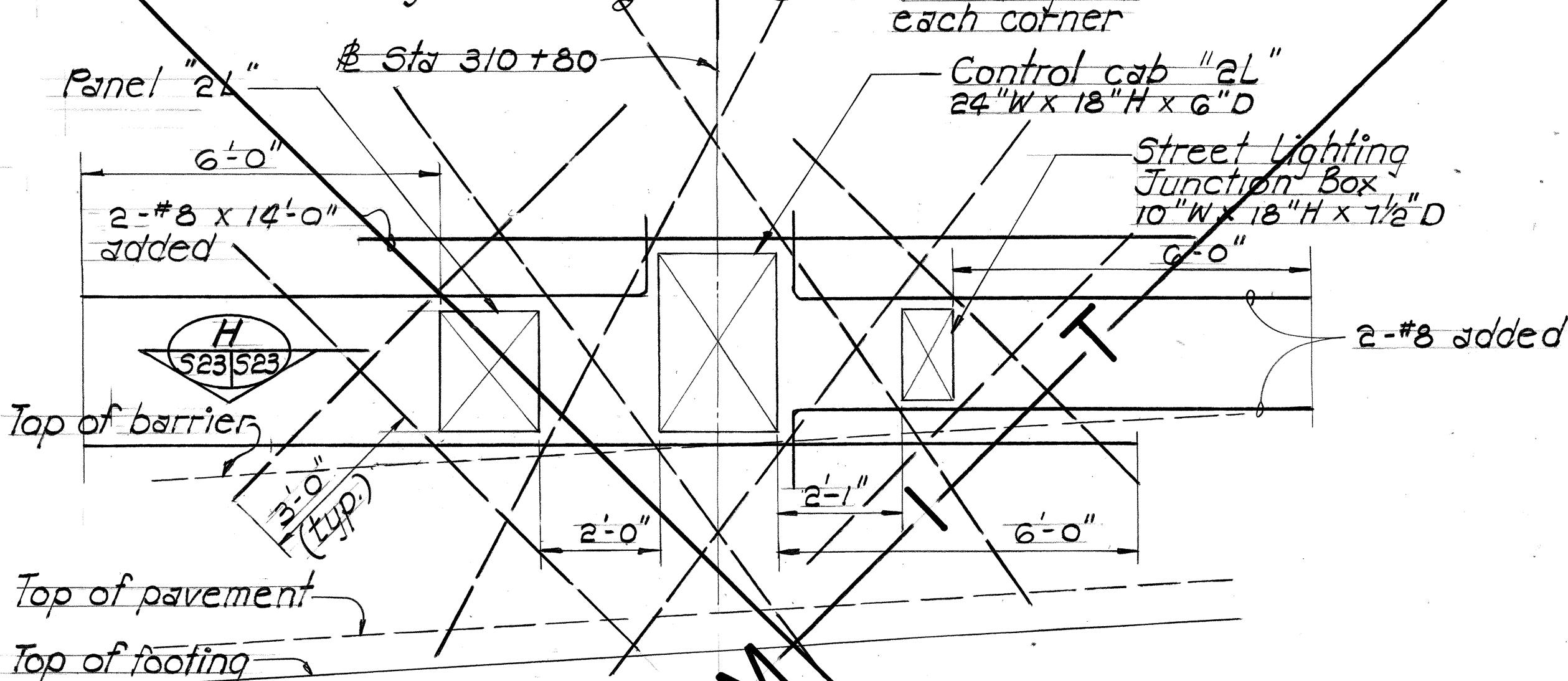


NOTE:

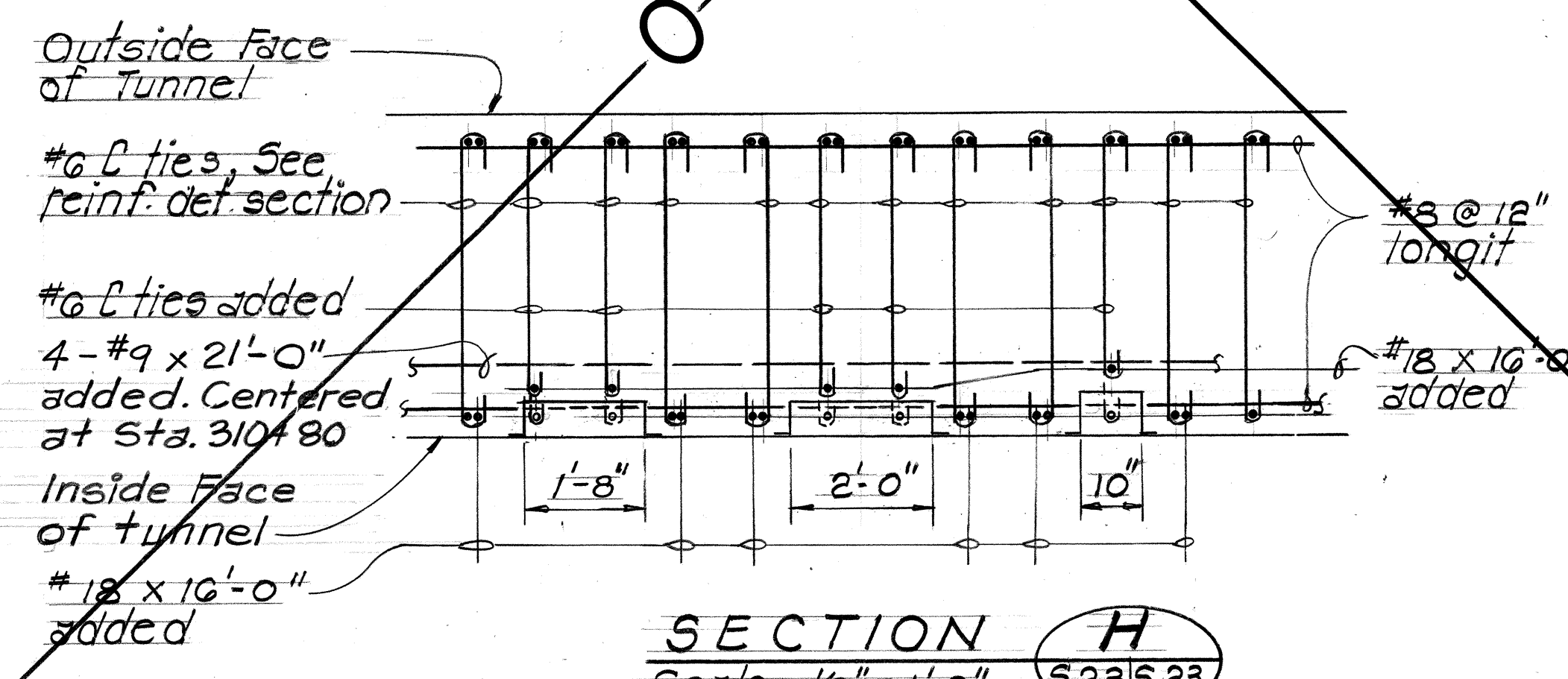
For balance of reinf. refer to Tunnel reinf. detail TYPE OR1, Sht. S15

NOTE:

Vertical & horizontal longitudinal rebars not shown for clarity



OUTBOUND TUNNEL STA. 310+80 ELEVATION
REINF. AT ELECTRICAL EQUIPMENT PANELS
Scale: 1/2" = 1'-0"



SECTION H
Scale: 1/2" = 1'-0"

NOTE:

Refer to Electrical sheets for additional details not shown. Verify Electrical panel dimensions and details.



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Harold S. Miyamoto

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

OUTBOUND TUNNEL
REINF. DETAILS AT ELECTRICAL PANELS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

SCALE: AS NOTED DATE: AUG. 1988

SHEET No. 523 OF 27 SHEETS

8/7/89 Electrical Box Revision

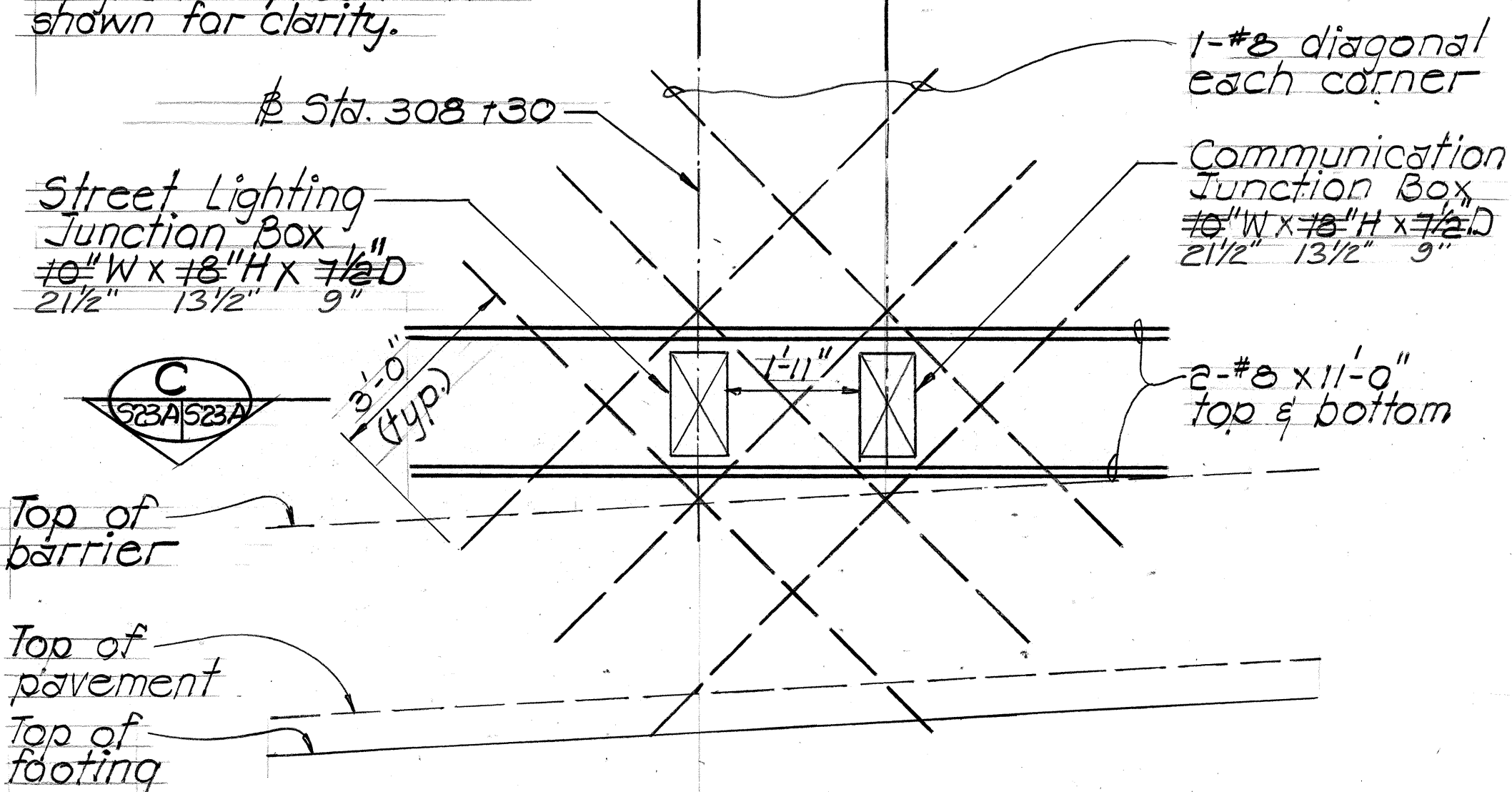
DATE REVISION

C.O. 71

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	C.O. 71S-1	124

NOTE:

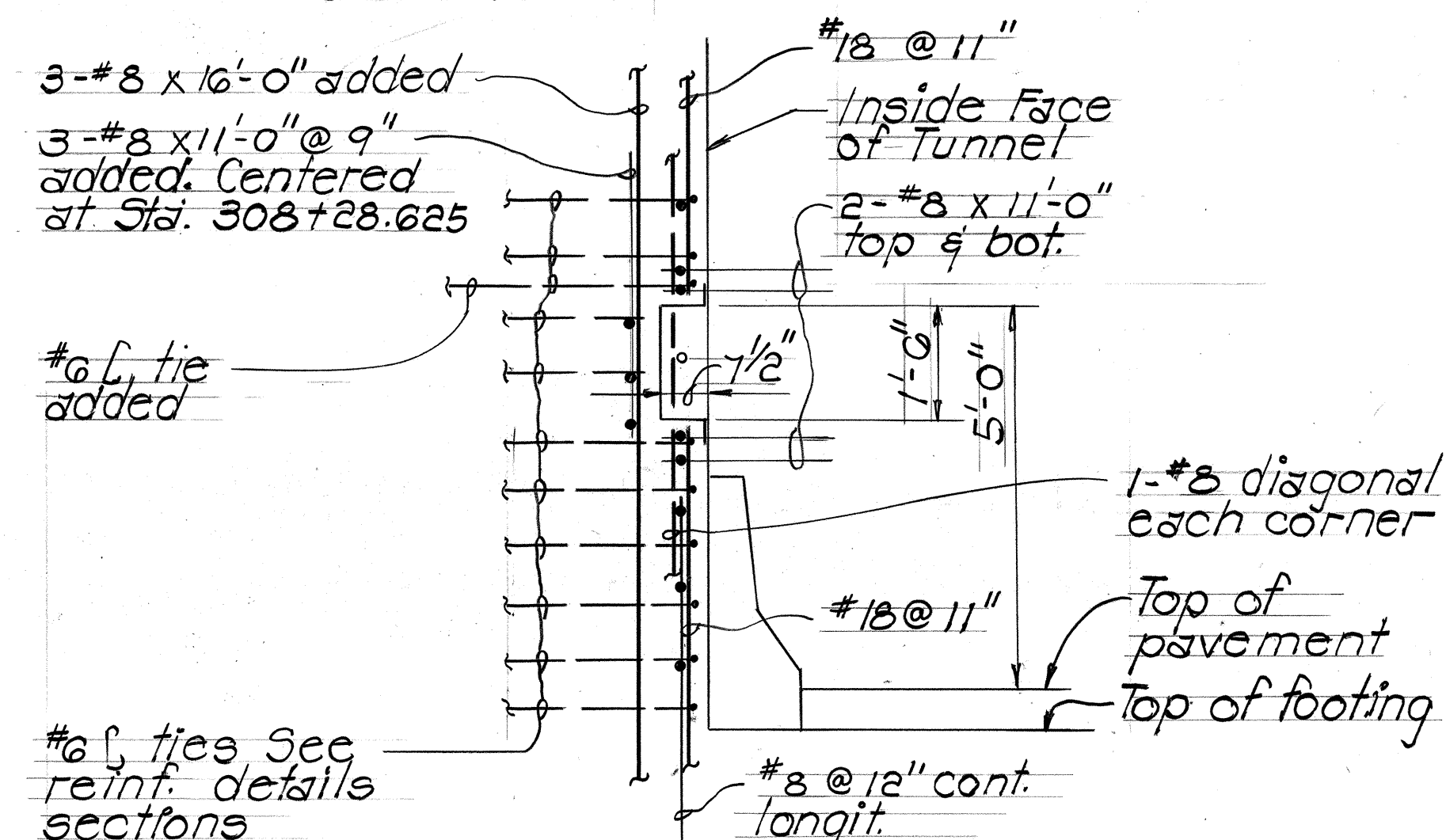
Vertical & horizontal longitudinal rebars not shown for clarity.



OUTBOUND TUNNEL ELEVATION

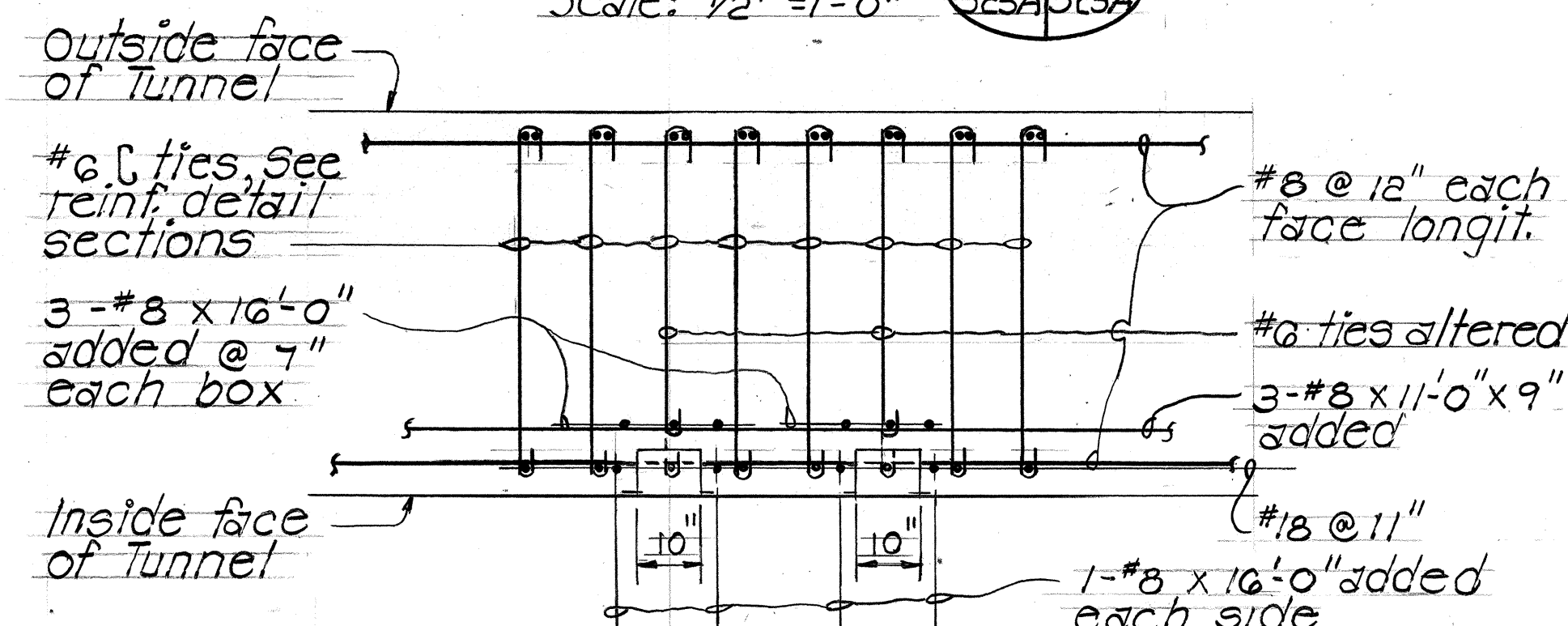
REINF. AT COMM. JUNCTION BOX STA. 308+27.25
AND STREET LIGHTING JUNCTION BOX STA. 308+30

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



SECTION B

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



SECTION C

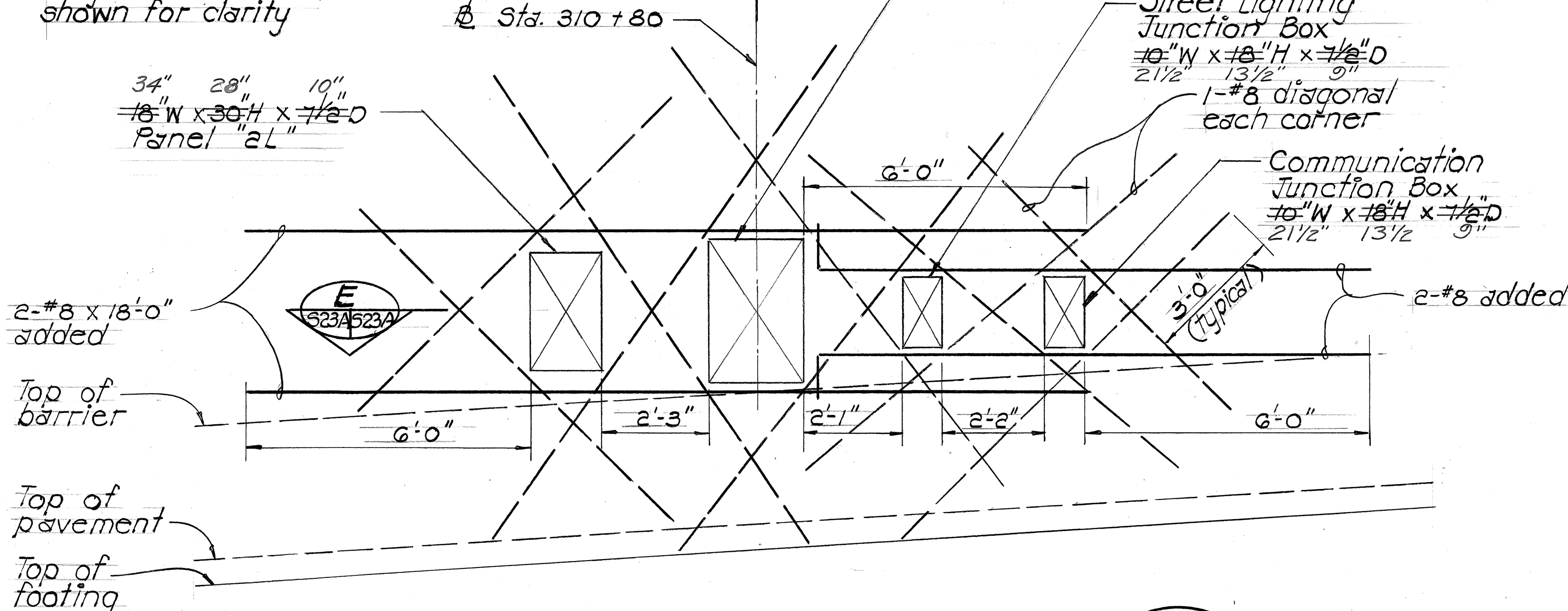
Scale: 1/2" = 1'-0"

NOTE

For balance of reinf. refer to Tunnel reinf. detail TYPE OW1, Sht. 516.

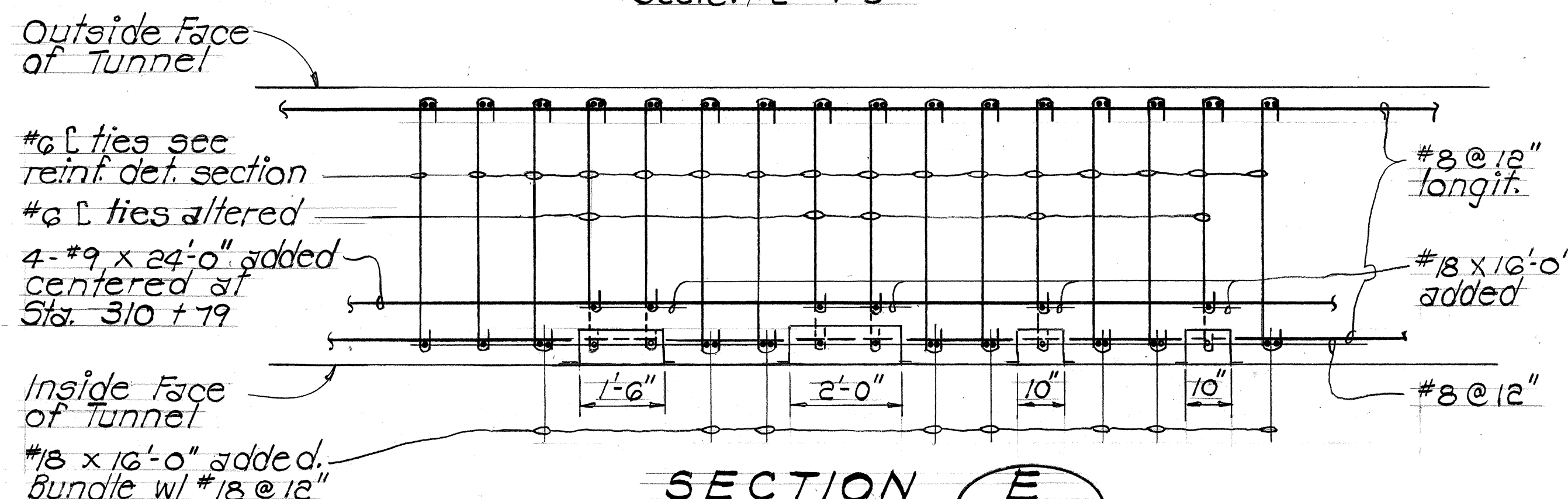
NOTE:

Vertical & horizontal longitudinal rebars not shown for clarity.



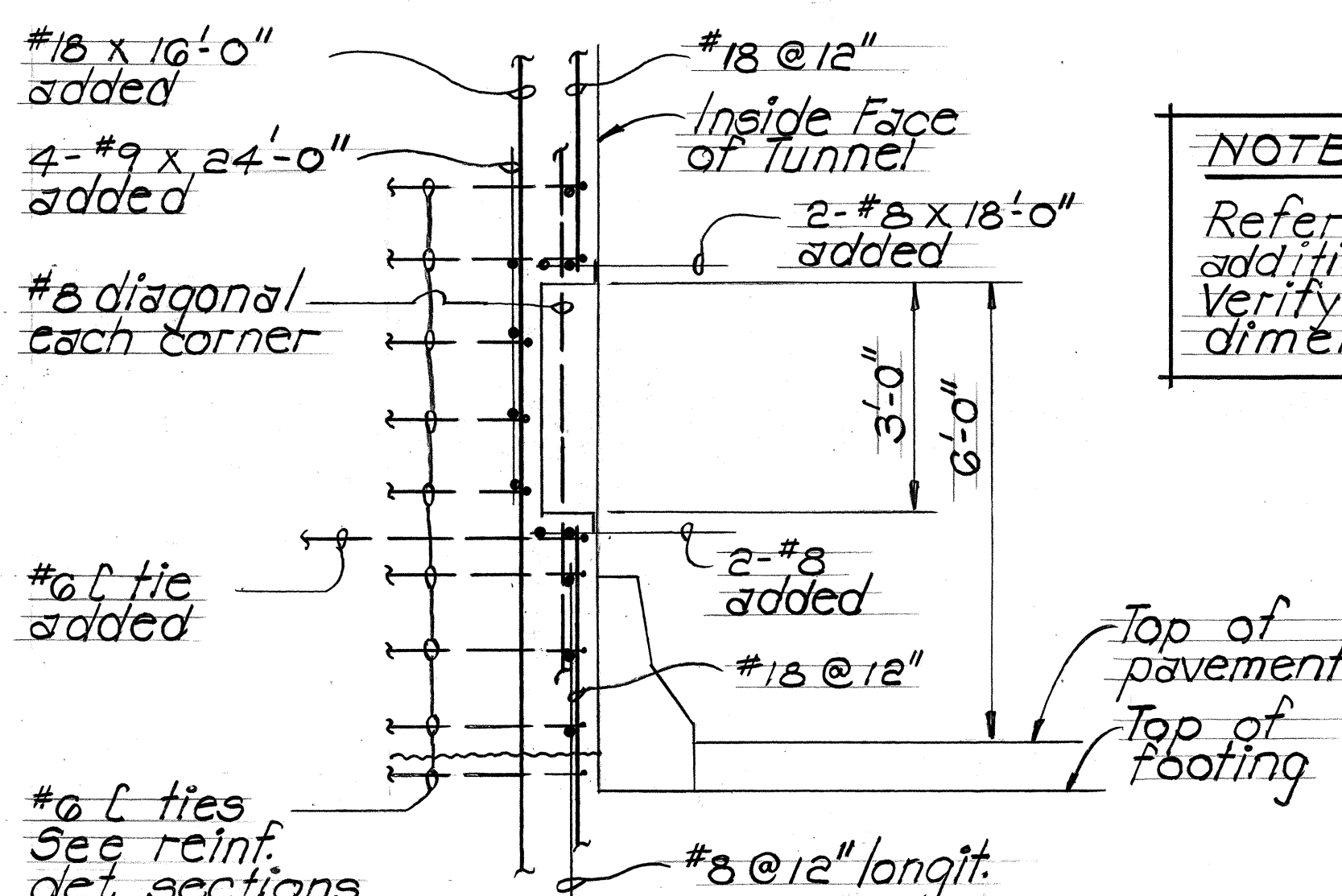
OUTBOUND TUNNEL STA. 310+80 ELEVATION
REINF. AT ELECTRICAL EQUIPMENT PANEL

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



SECTION E

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



SECTION F

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

NOTE:

For balance of reinf. refer to Tunnel reinf. detail TYPE O31A, Sht. 516.

NOTE:

Refer to Electrical sheets for additional details not shown. Verify Electrical panel dimensions and details.



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Harold Takashi Miyamoto

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

OUTBOUND TUNNEL
REINF. DETAILS AT ELECTRICAL PANELS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

SCALE: AS NOTED DATE:

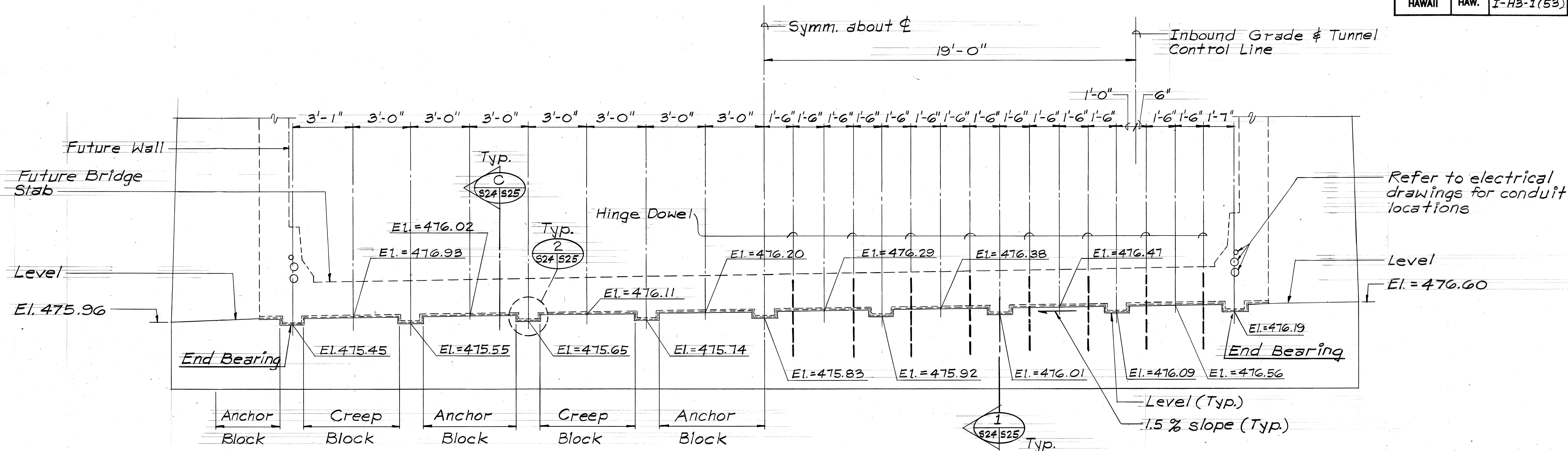
SHEET No. 523A OF SHEETS

8/7/89 Sheet added to Contract Plan set for Additional Detail.

DATE REVISION

C.O. 71S-1

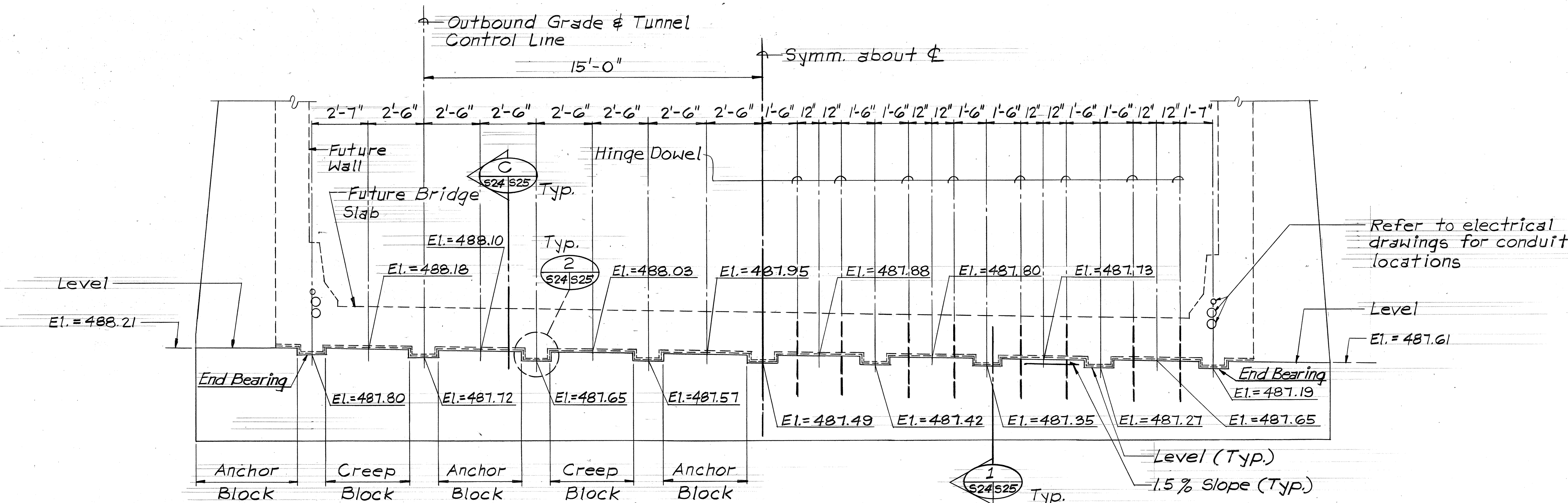
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	72	124



WEST PORTAL FUTURE BRIDGE SLAB SEAT ELEVATION - INBOUND

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

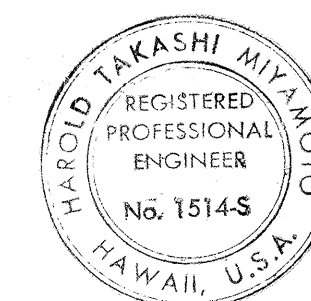
A
524/524



WEST PORTAL FUTURE BRIDGE SLAB SEAT ELEVATION - OUTBOUND

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

B
524/524



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HIGHWAYS DIVISION

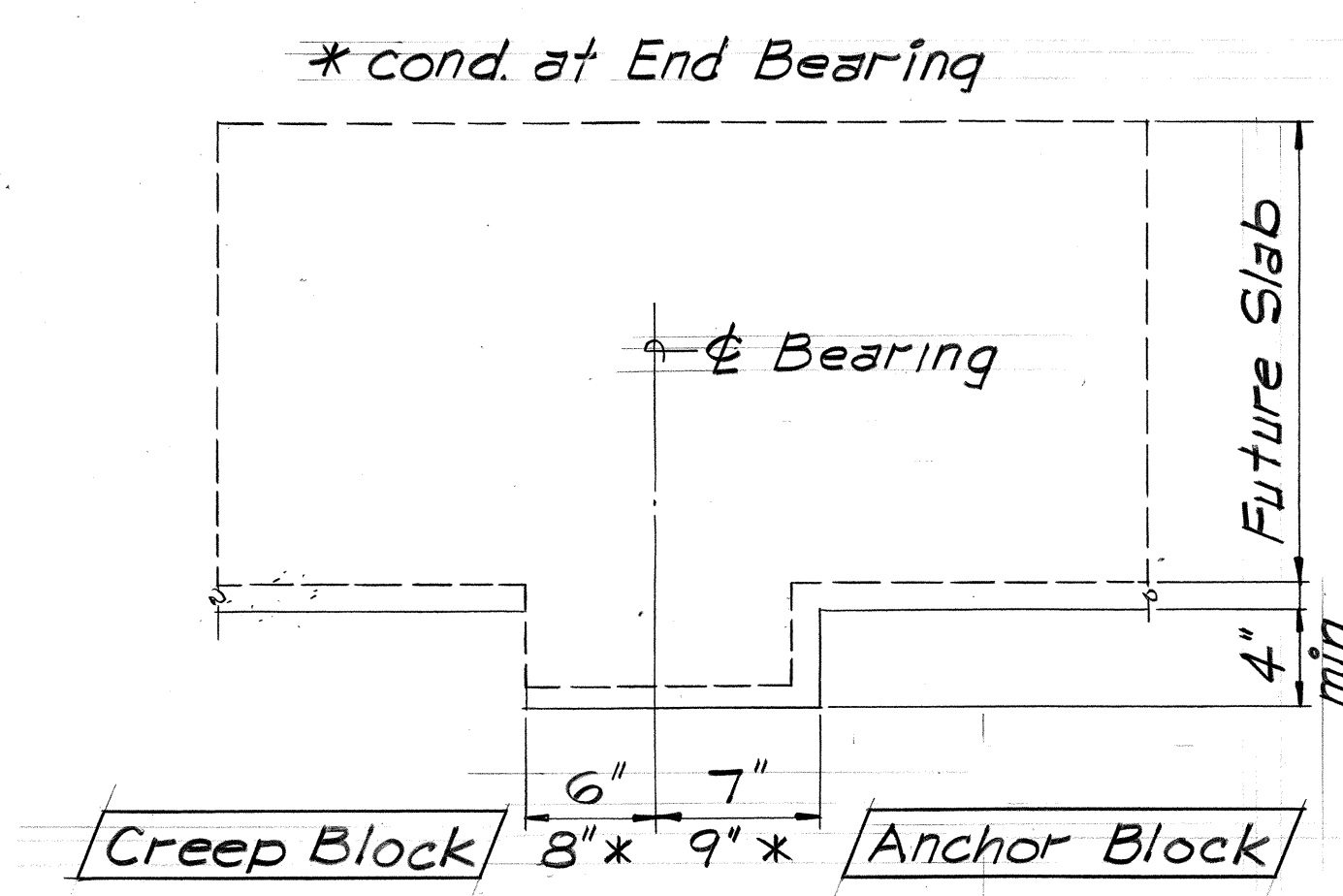
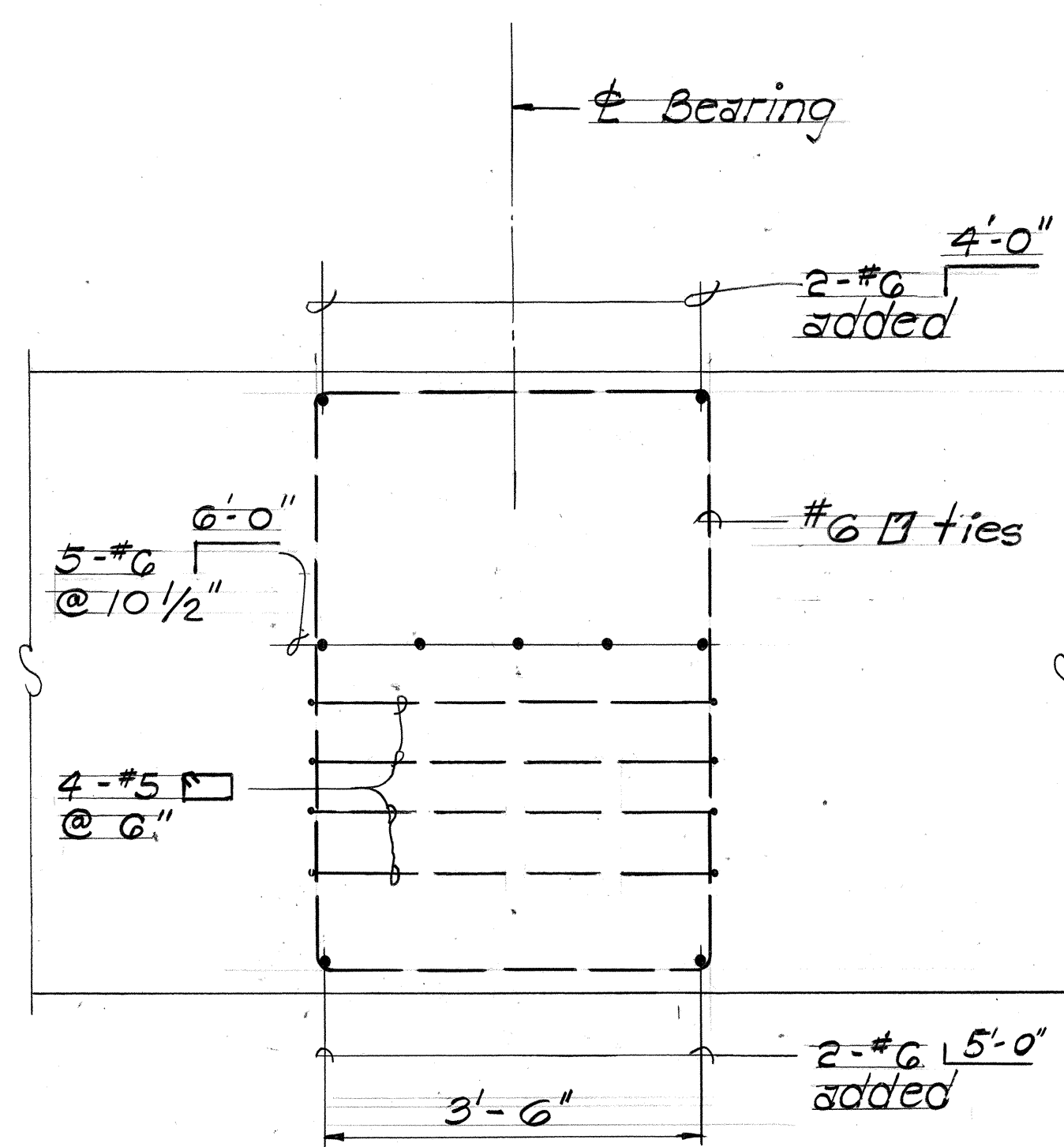
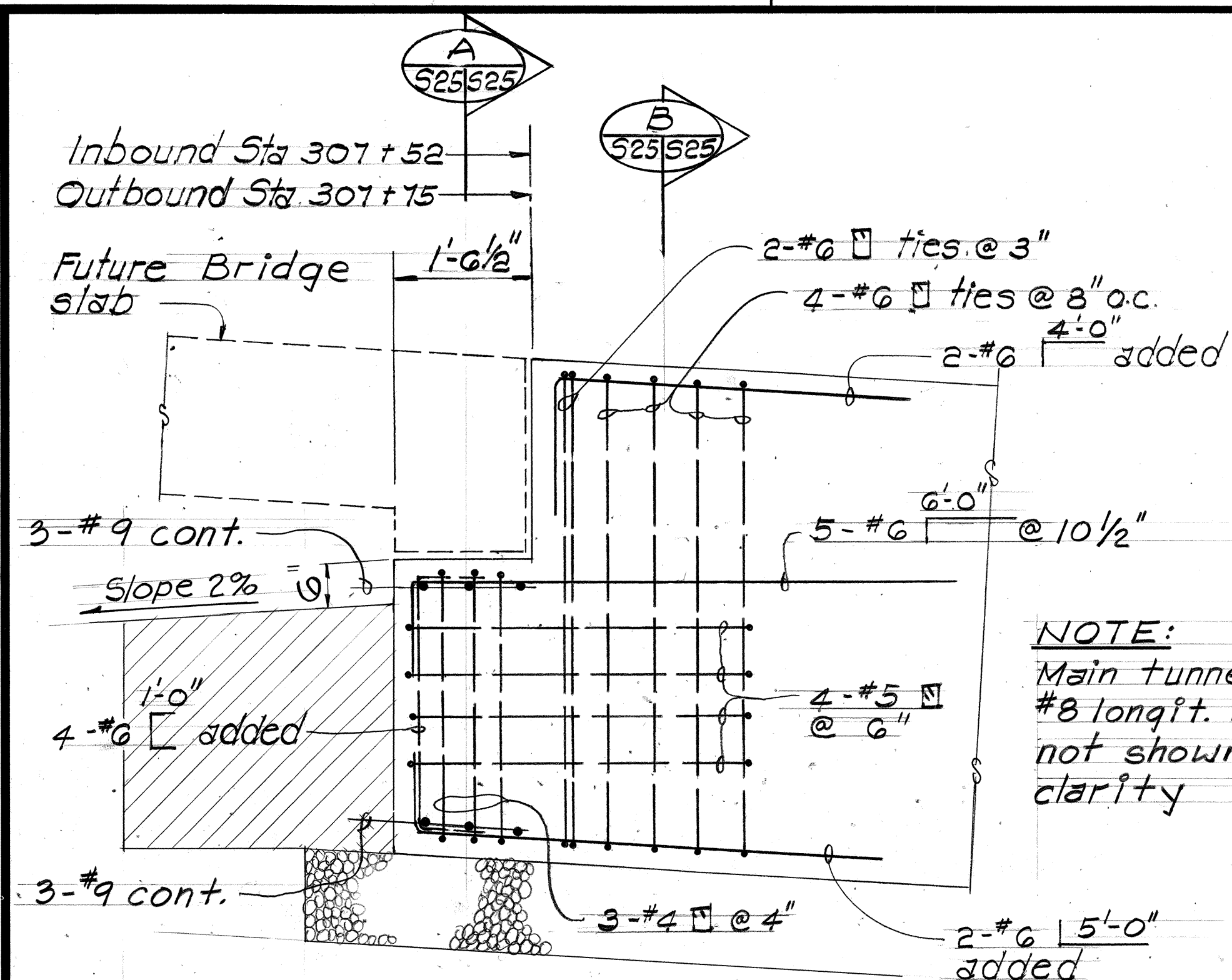
WEST PORTAL FUTURE BRIDGE
SLAB SEAT - ELEVATION

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

SCALE: AS NOTED DATE: AUG. 1988

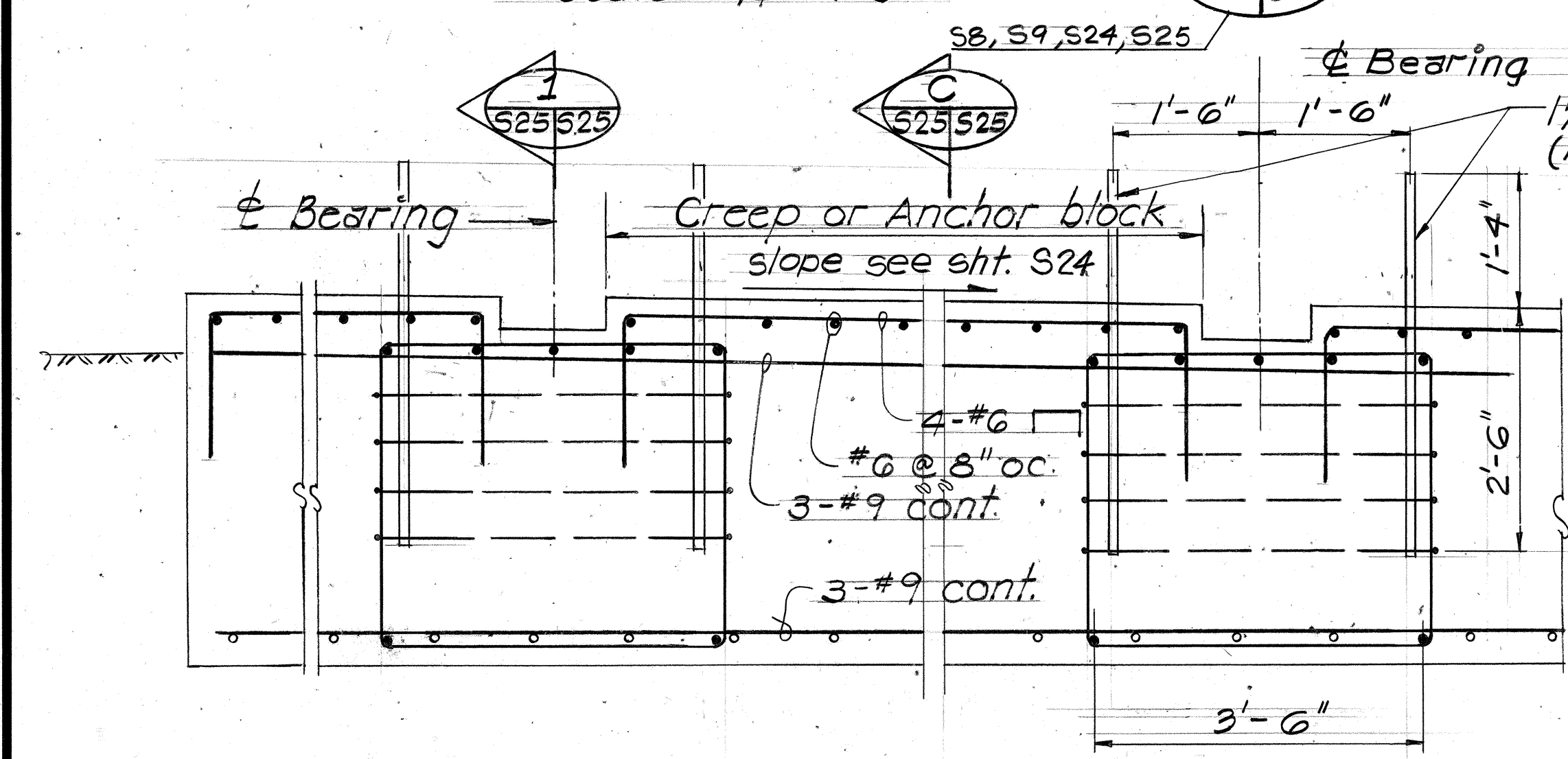
SHEET NO. 524 OF 27 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	73	124

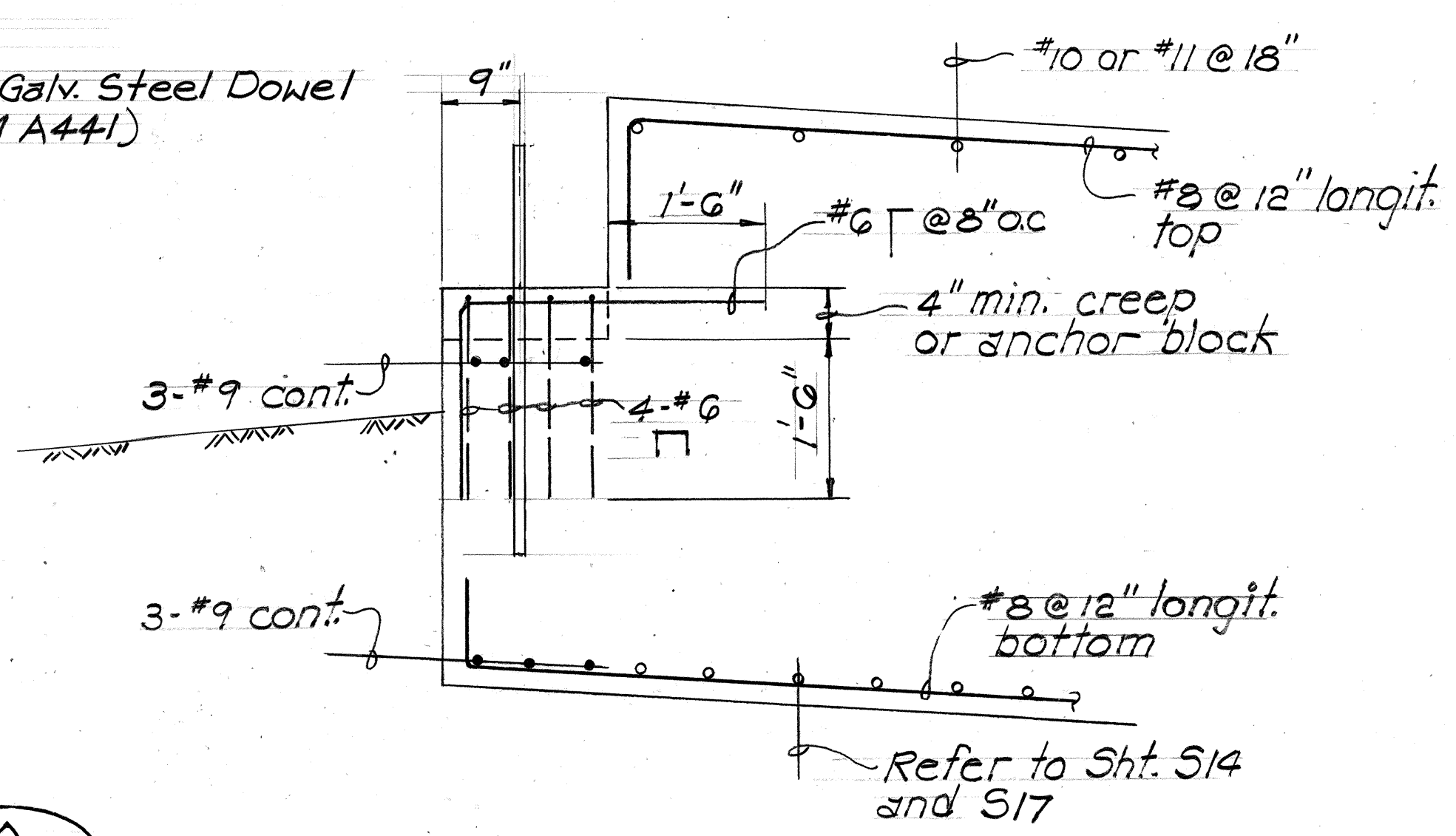


BEARING DETAIL 2
Scale: 1/2" = 1'-0" S24/S25

TYPICAL SECTION AT BEARING 1
Scale: 3/4" = 1'-0" S25



SECTION B
Scale: 3/4" = 1'-0" S25/S25



PARTIAL SECTION THRU BRIDGE SLAB LEDGE A
Scale: 3/4" = 1'-0" S25

SECTION C
Scale: 3/4" = 1'-0" S24, S25

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
NO.	



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

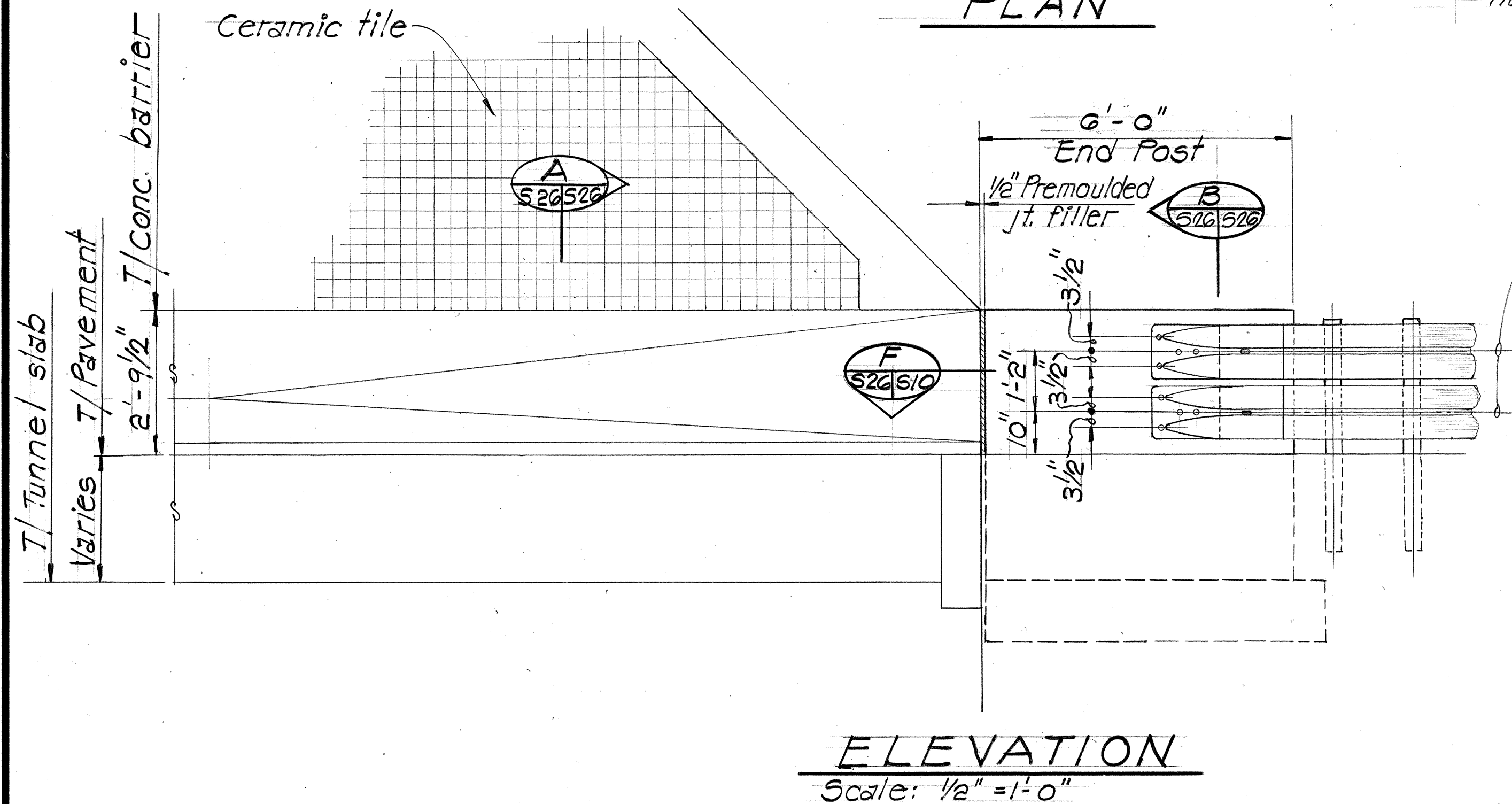
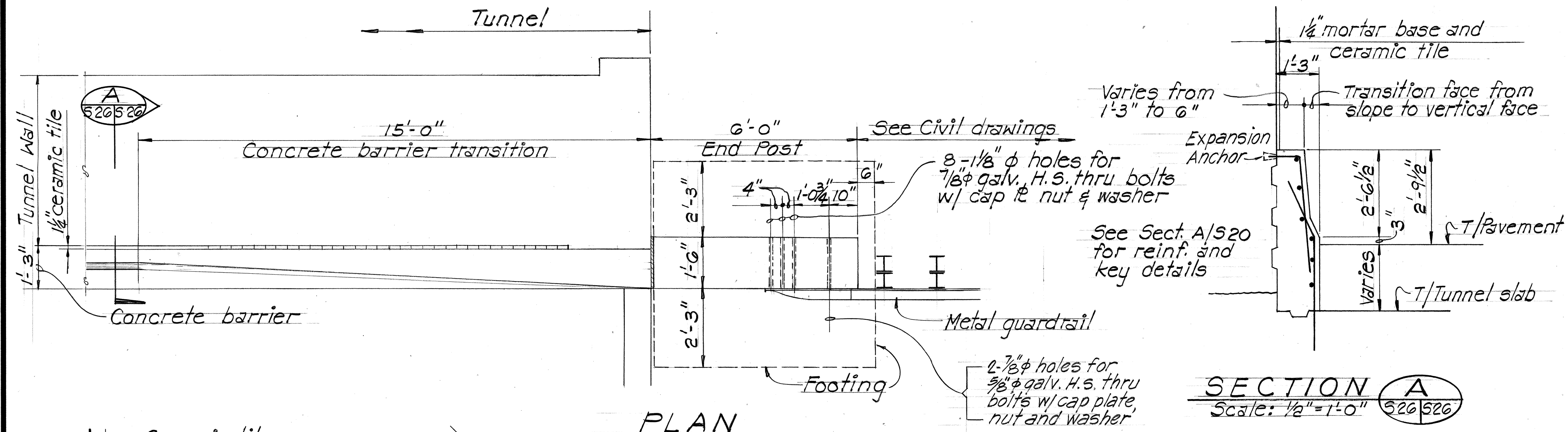
**WEST PORTAL FUTURE BRIDGE
SLAB SEAT - SECTIONS**

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

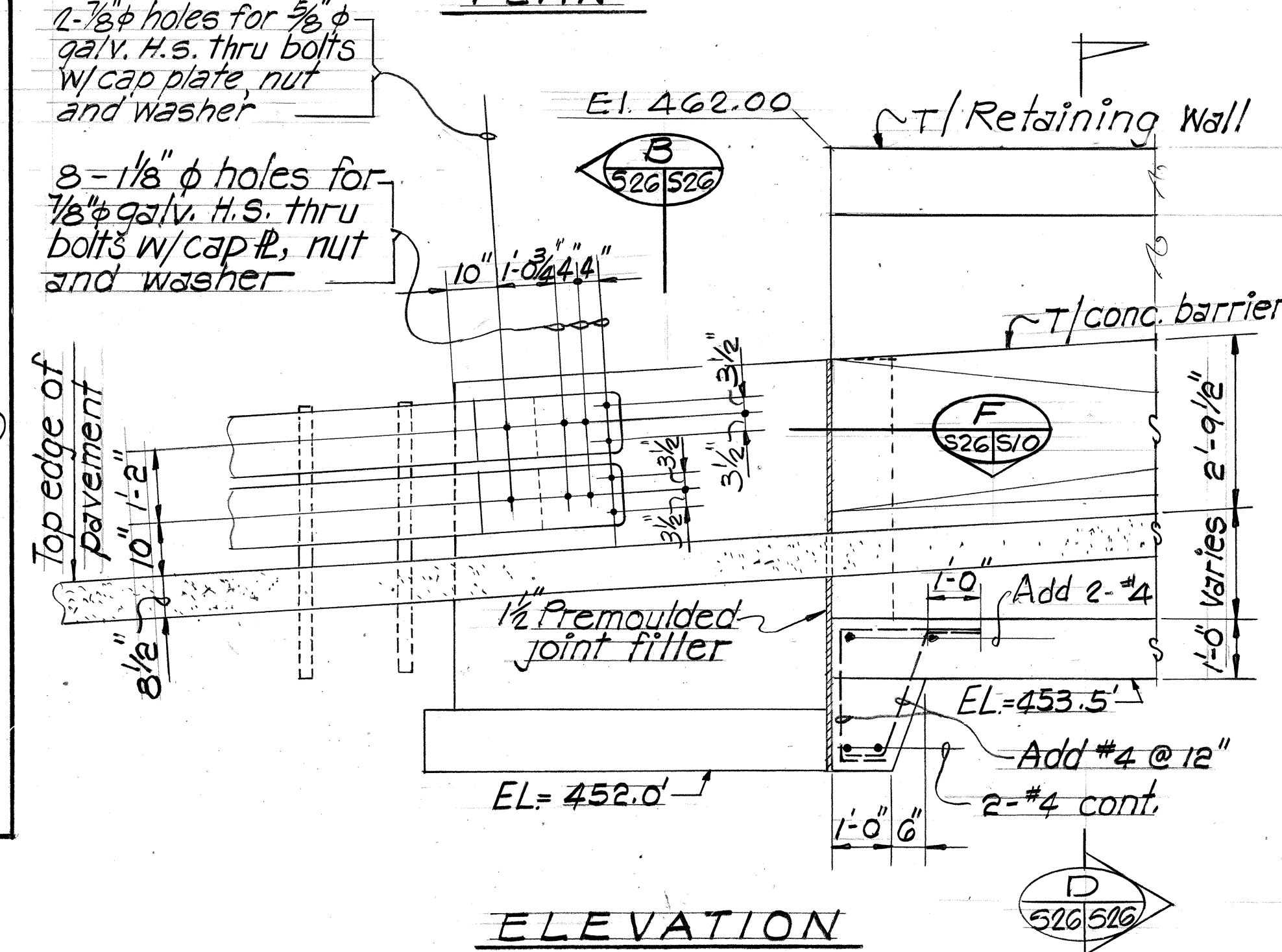
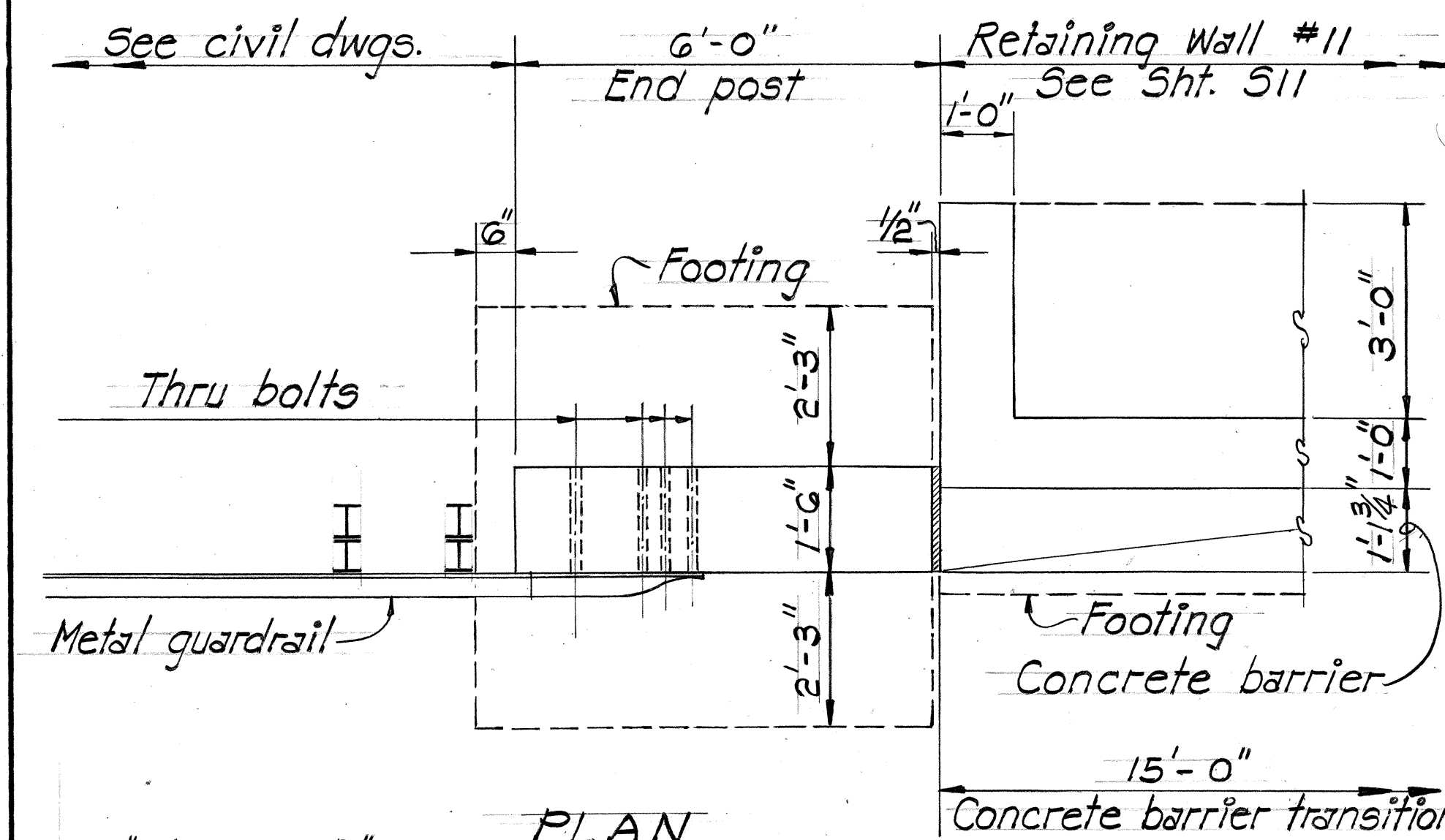
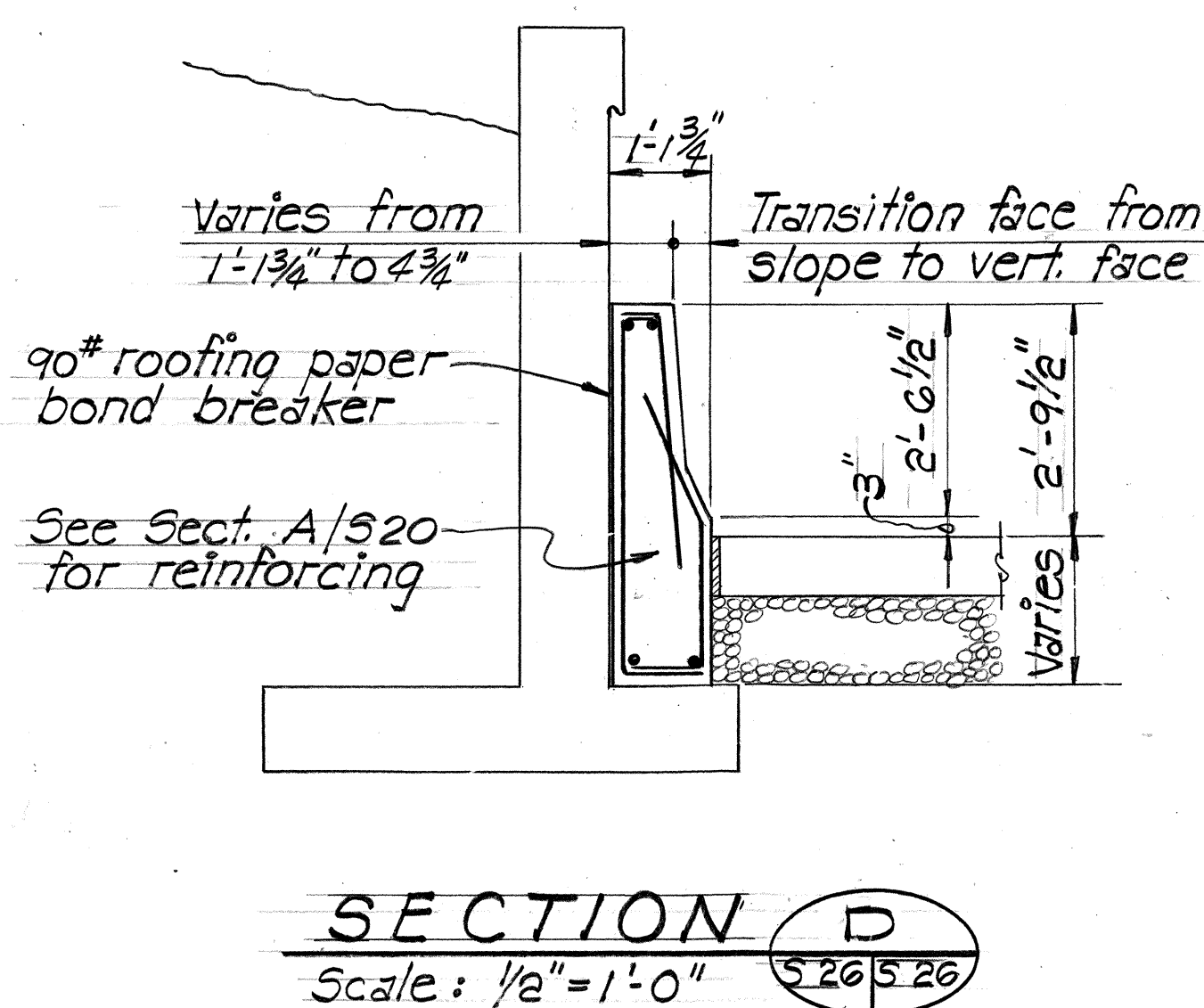
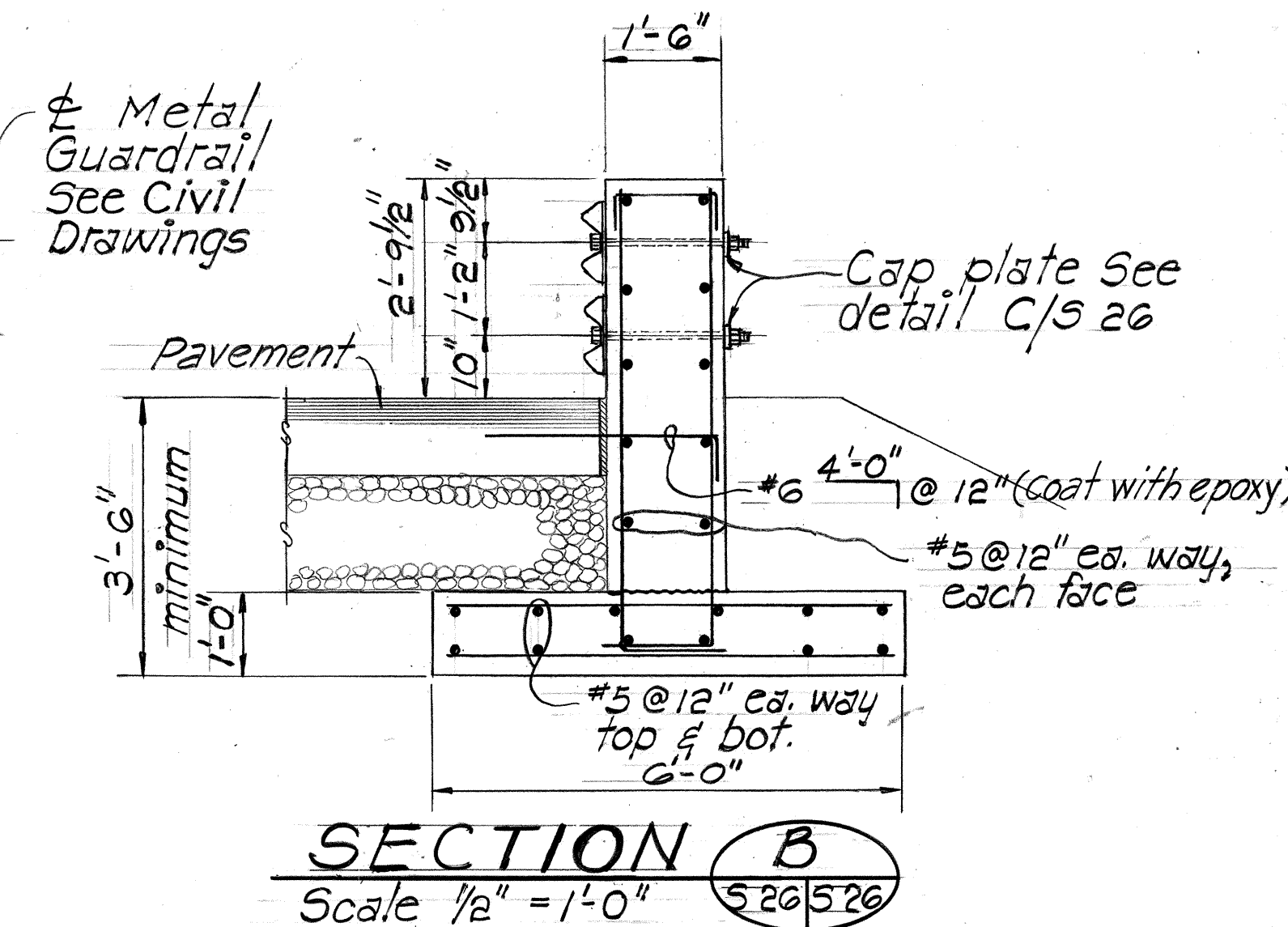
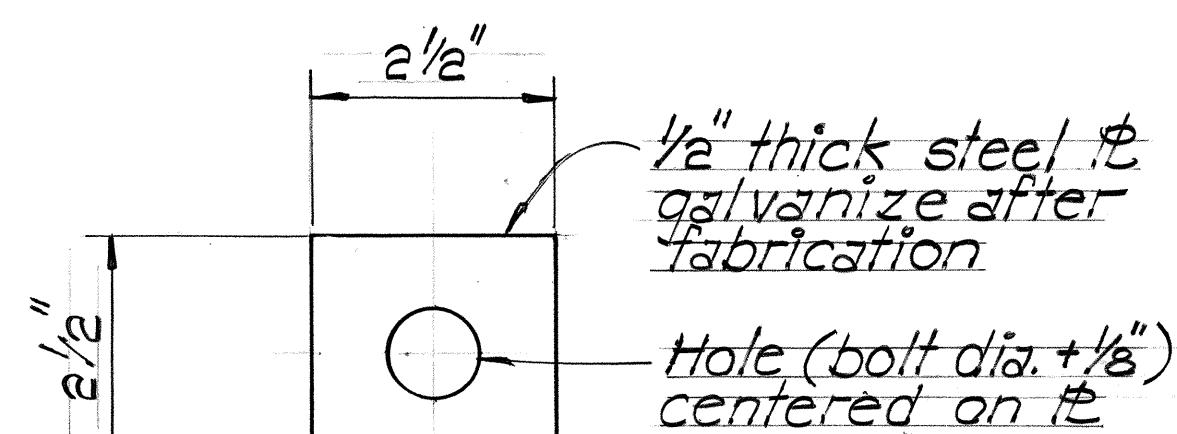
SCALE: AS NOTED DATE: AUG. 1988

SHEET No. S25 OF 27 SHEETS

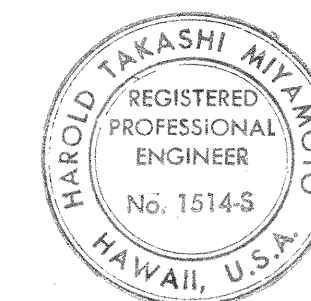
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	74	124



END POST AT EAST PORTALS
Scale: 1/2" = 1'-0"



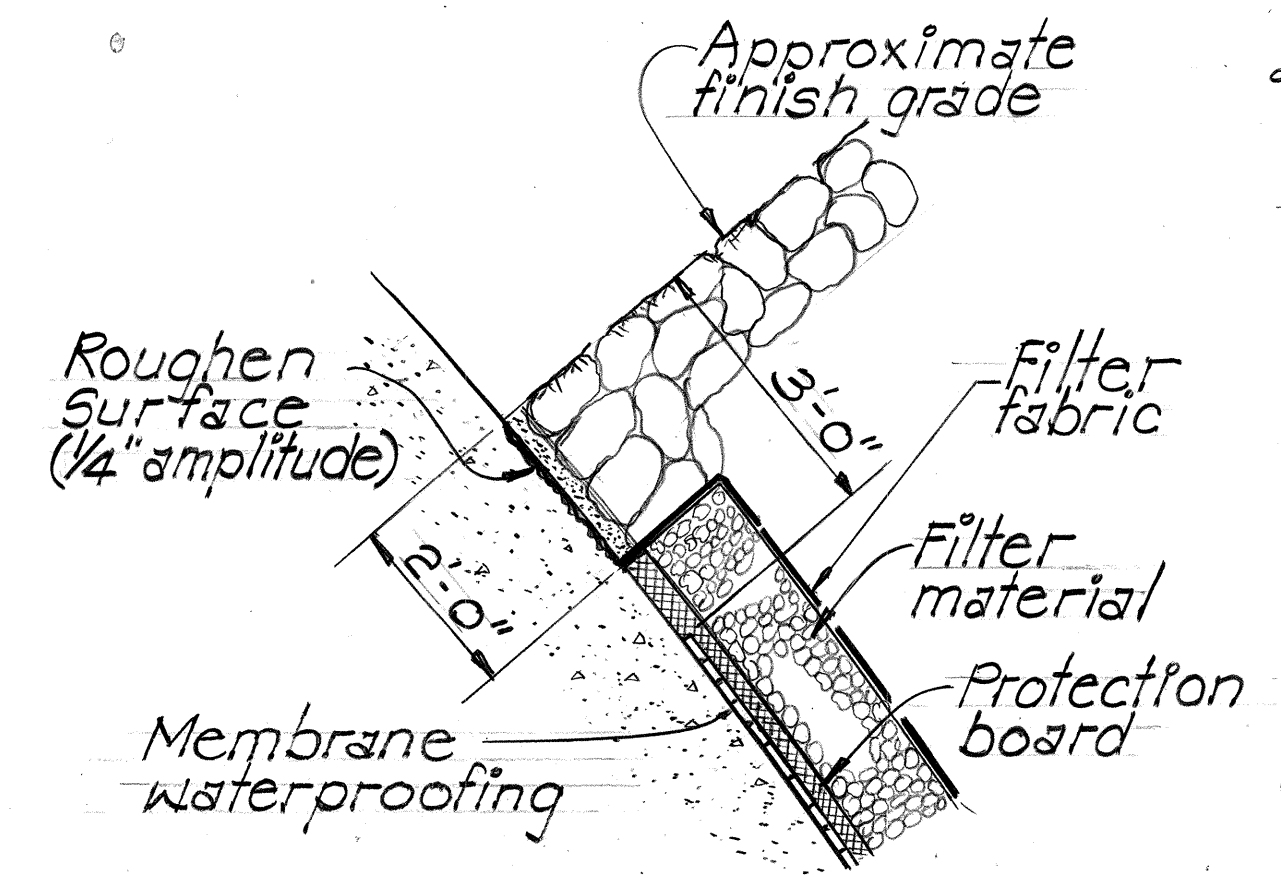
END POST AT RETAINING WALL #11
Scale: 1/2" = 1'-0"



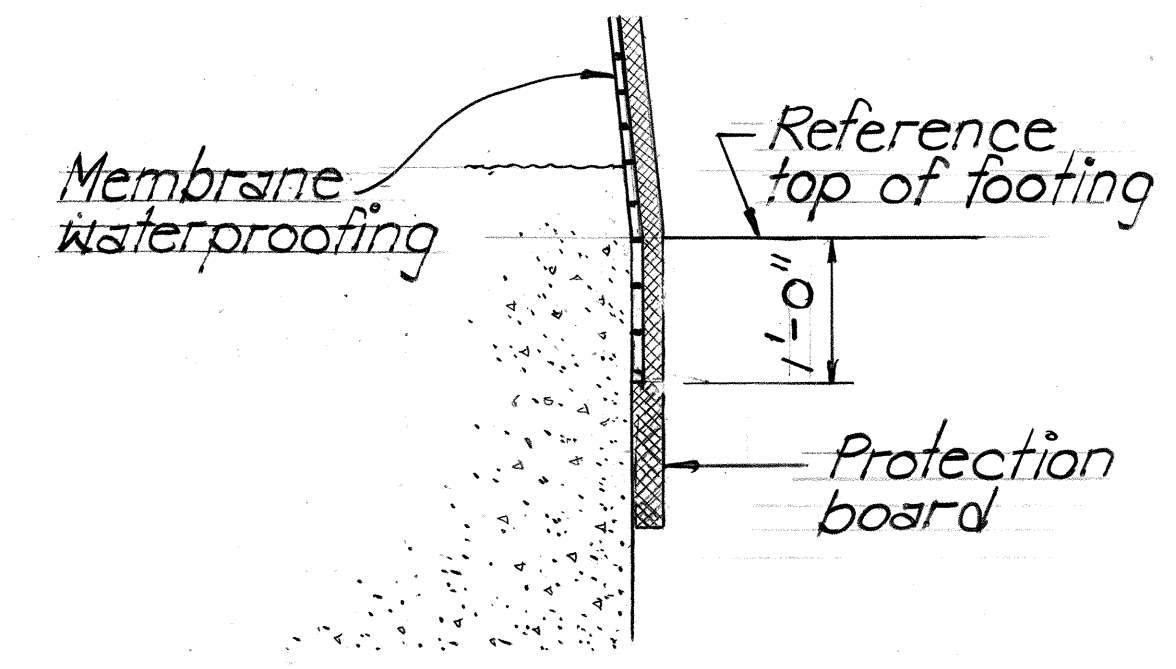
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Blaine Miyamoto

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
METAL GUARDRAIL CONNECTION TO END POST
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)
SCALE: AS NOTED DATE: AUG. 1988
SHEET No. 526 OF 27 SHEETS

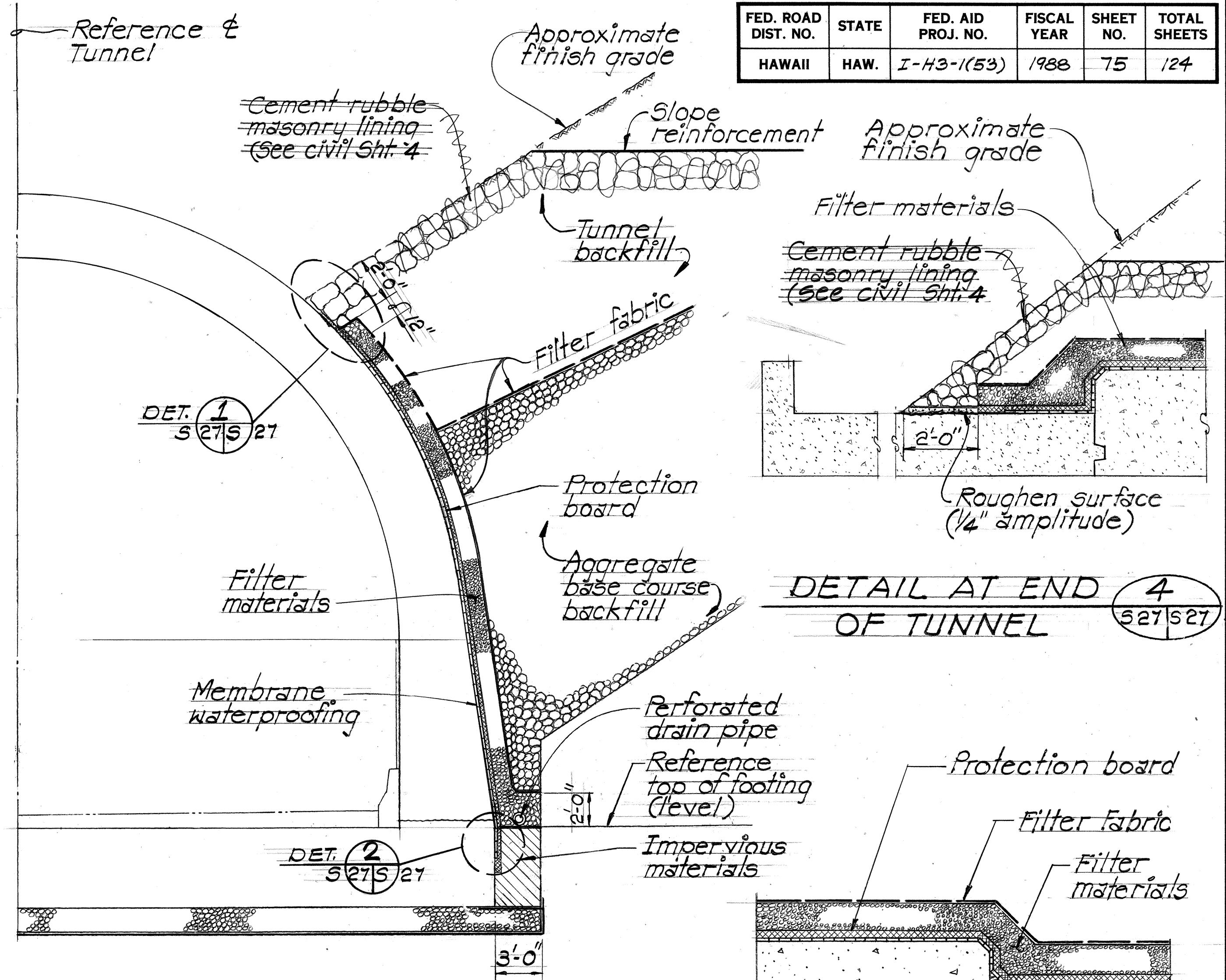
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	75	124



DETAIL 1
Not to scale 527/527



DETAIL 2
Not to scale 527/527



DETAIL AT END OF TUNNEL 4
527/527

DETAIL AT WALL OF DIFFERENT THICKNESS 3
527/527

MEMBRANE WATERPROOFING BELOW FINISH GRADE B
54/527



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STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
TUNNEL WATERPROOFING	
INTERSTATE ROUTE H-3 F.A.I. PROJ. NO. I-H3-1 (53)	
SCALE: AS NOTED	DATE: AUG. 1988
SHEET No. 527 OF 27 SHEETS	

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