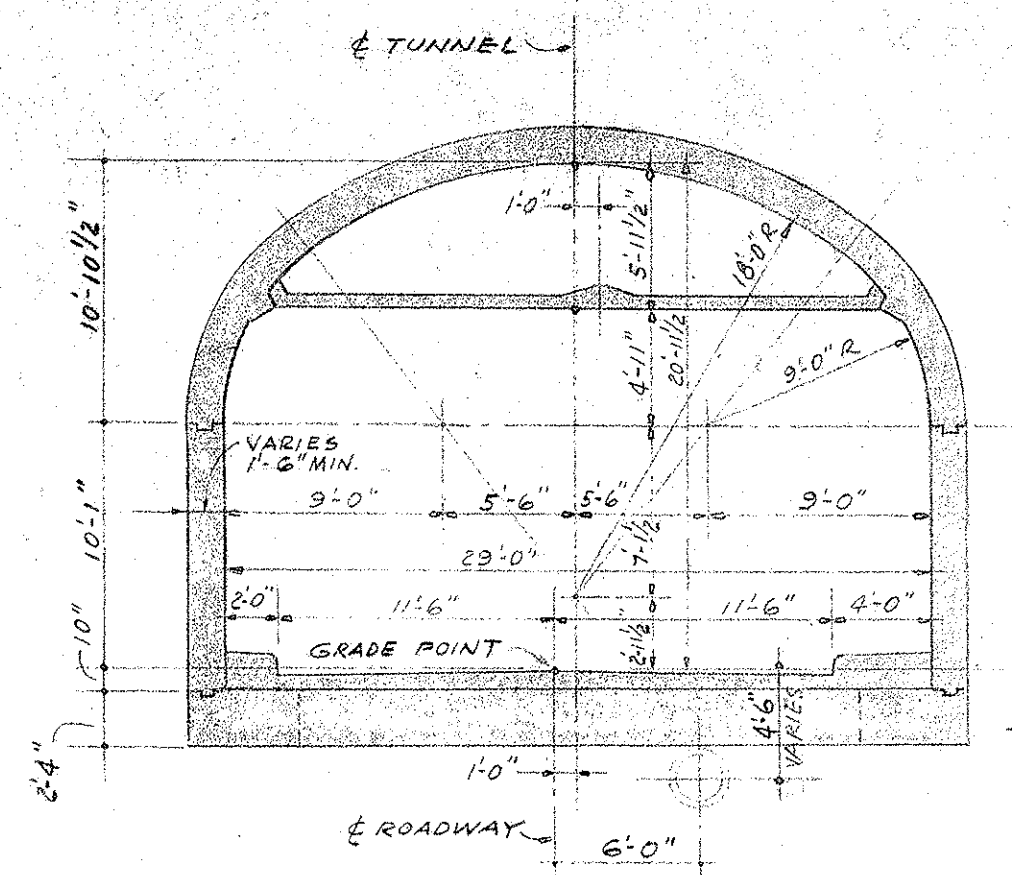
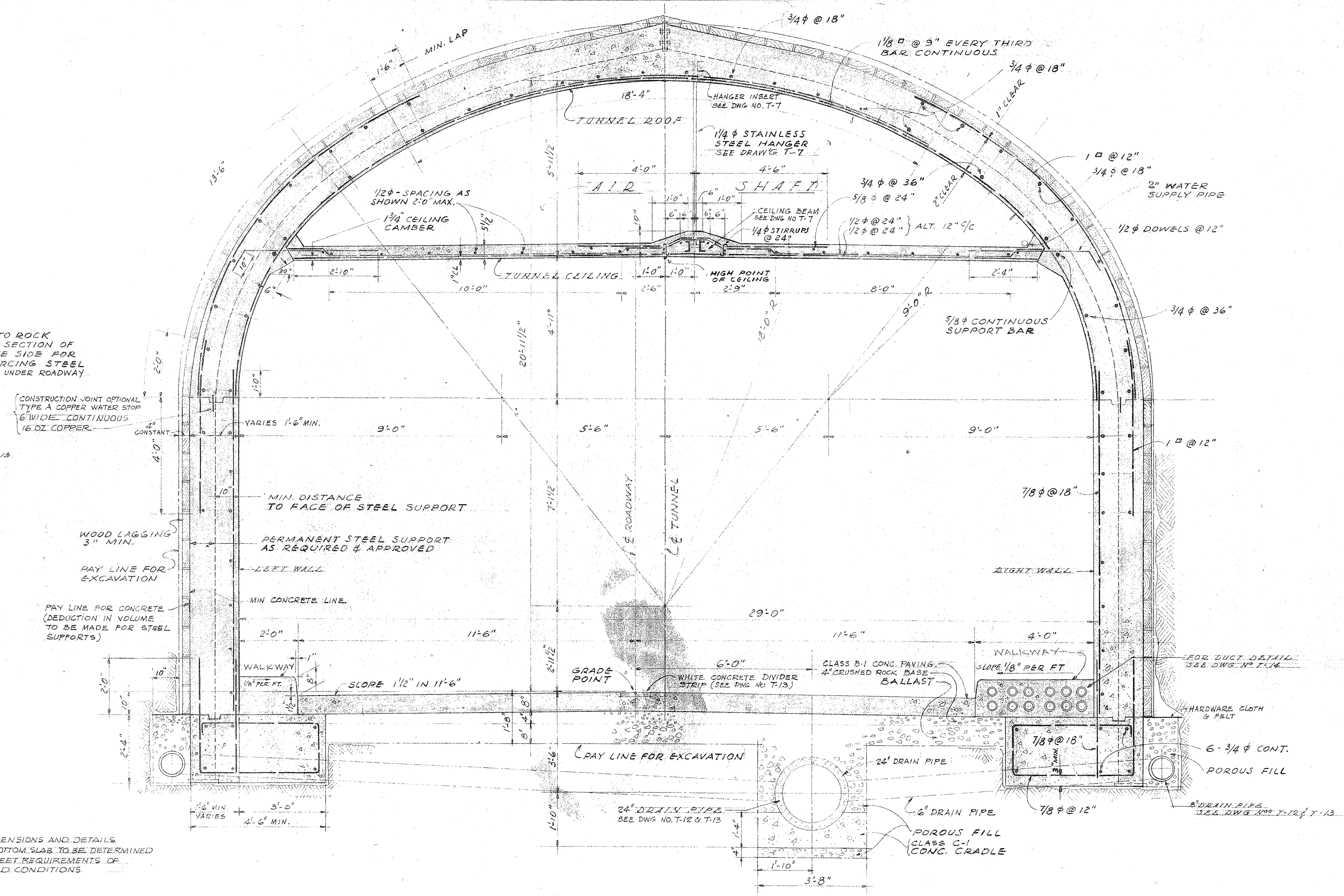


ALT SECTION IN ROCK
SCALE 1/8" = 1'-0"



ALT SECTION IN SOFT GROUND
SCALE 1/8" = 1'-0"



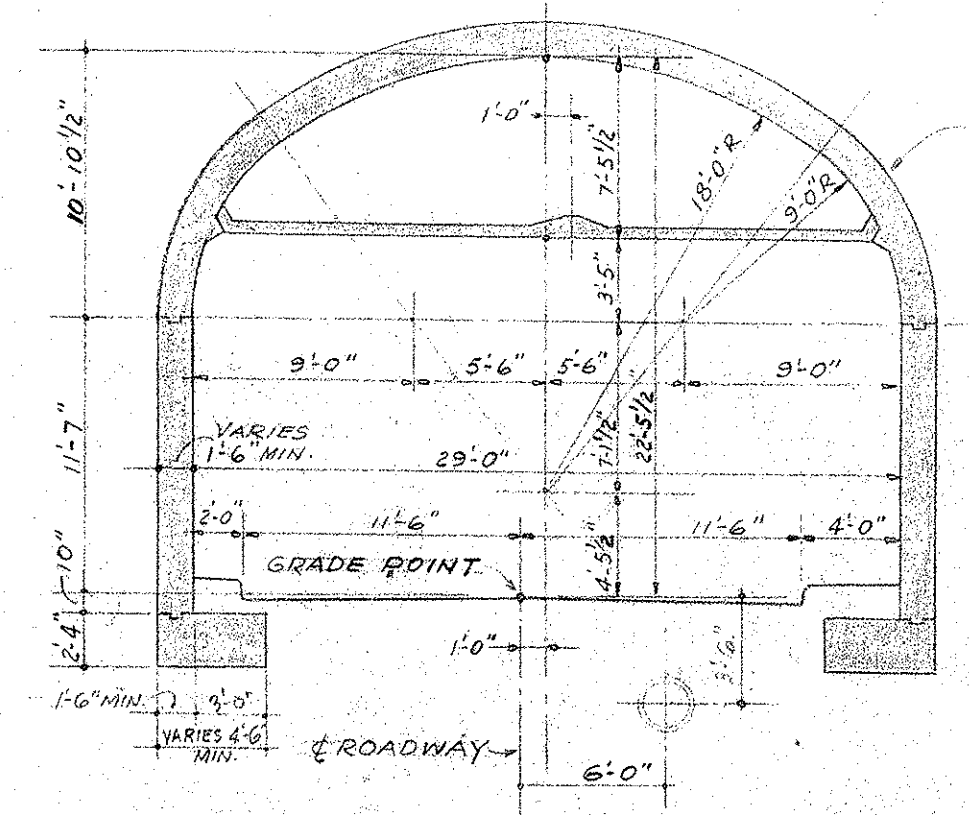
SECTION THRU FIRM GROUND
LOOKING TOWARD KANEOHE PORTAL
SCALE 1/2" = 1'-0"

- NOTE:
1. ALL REINF. BARS TO BE INTERMEDIATE GRADE NEW BILLET DEFORMED BARS.
 2. ALL CONCRETE FOR TUNNEL WALLS AND ARCH TO HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 P.S.I. AT 28 DAYS.

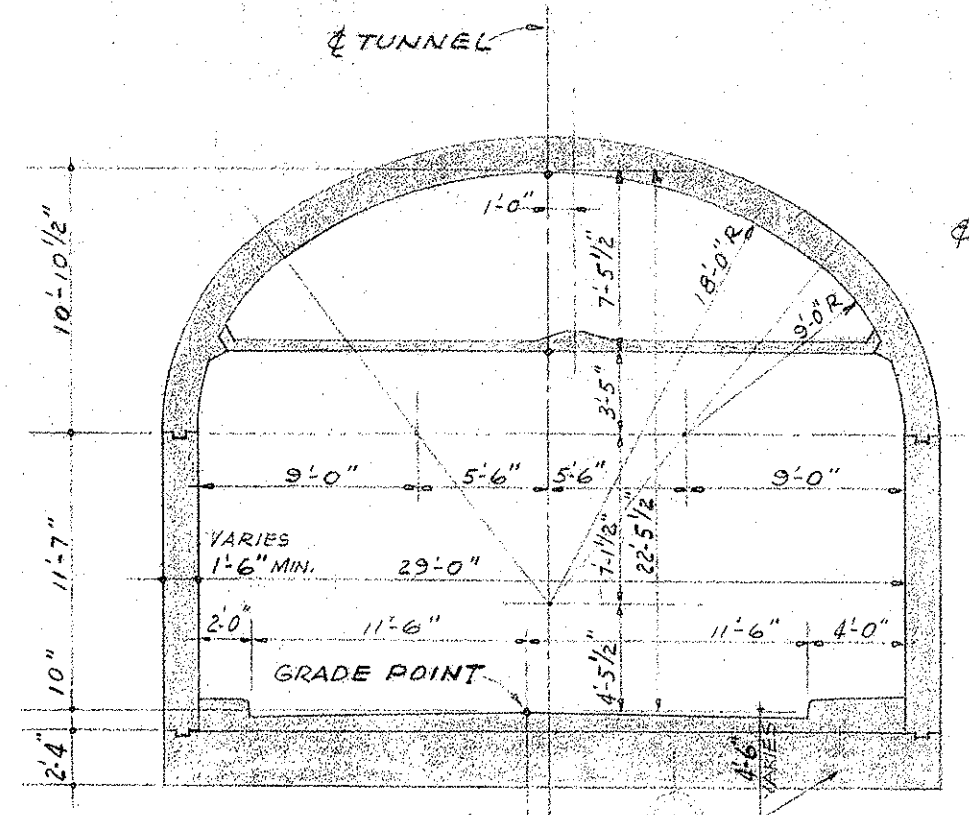
APPROVED
[Signature]
ENGINEER, KALIHI TUNNEL

DEPARTMENT OF PUBLIC WORKS CITY AND COUNTY OF HONOLULU			
BUREAU OF PLANS			
KALIHI TUNNEL			
TUNNEL & SHAFT			
TUNNEL SECTIONS			
KALIHI SIDE			
ENGINEER	<i>W. Lum</i>	DATE	JULY 15, 1953
DRAFTSMAN	<i>R. B. PO</i>	CHECKED BY	<i>W. Lum, PO</i>
SCALE	AS NOTED	TRACER	<i>R.P.</i>
APPROVED	<i>[Signature]</i>	APPROVED	<i>[Signature]</i>
CHIEF ENGINEER		BUREAU ENGINEER	
W. B.	PROFILE	C. B.	
CR. SEC.	F. B.	S. B.	
W. M. BY	F. W. BY	S. BY	

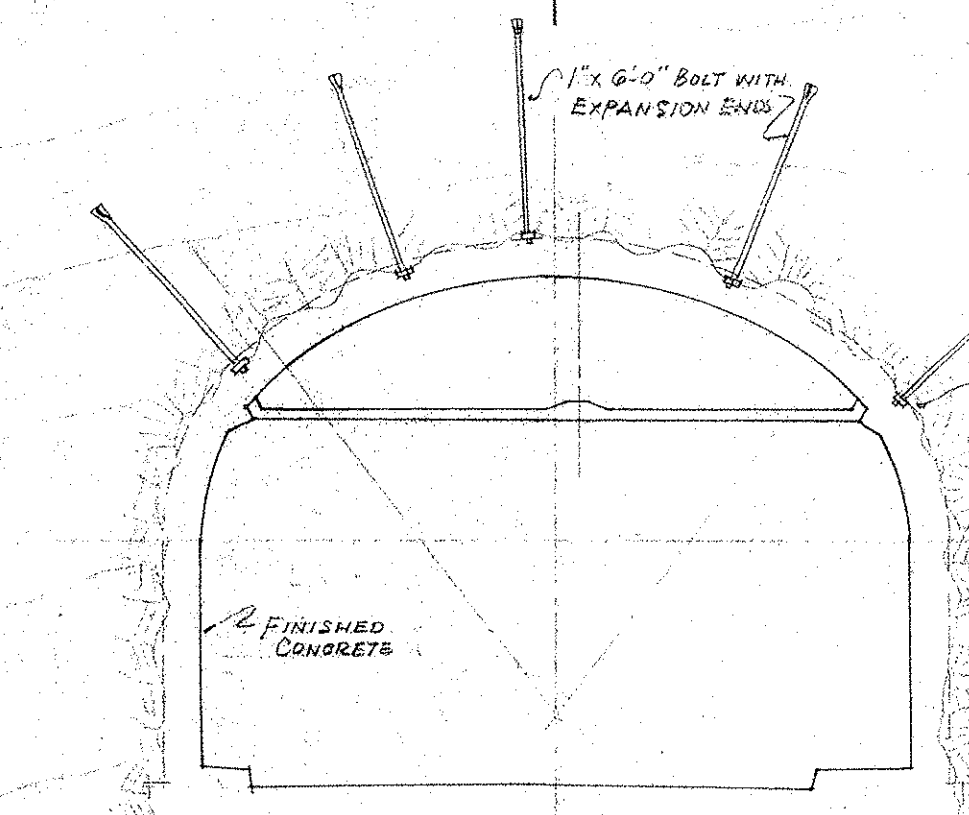
SECTION C JOB NO. 26-53 DWG. T-5



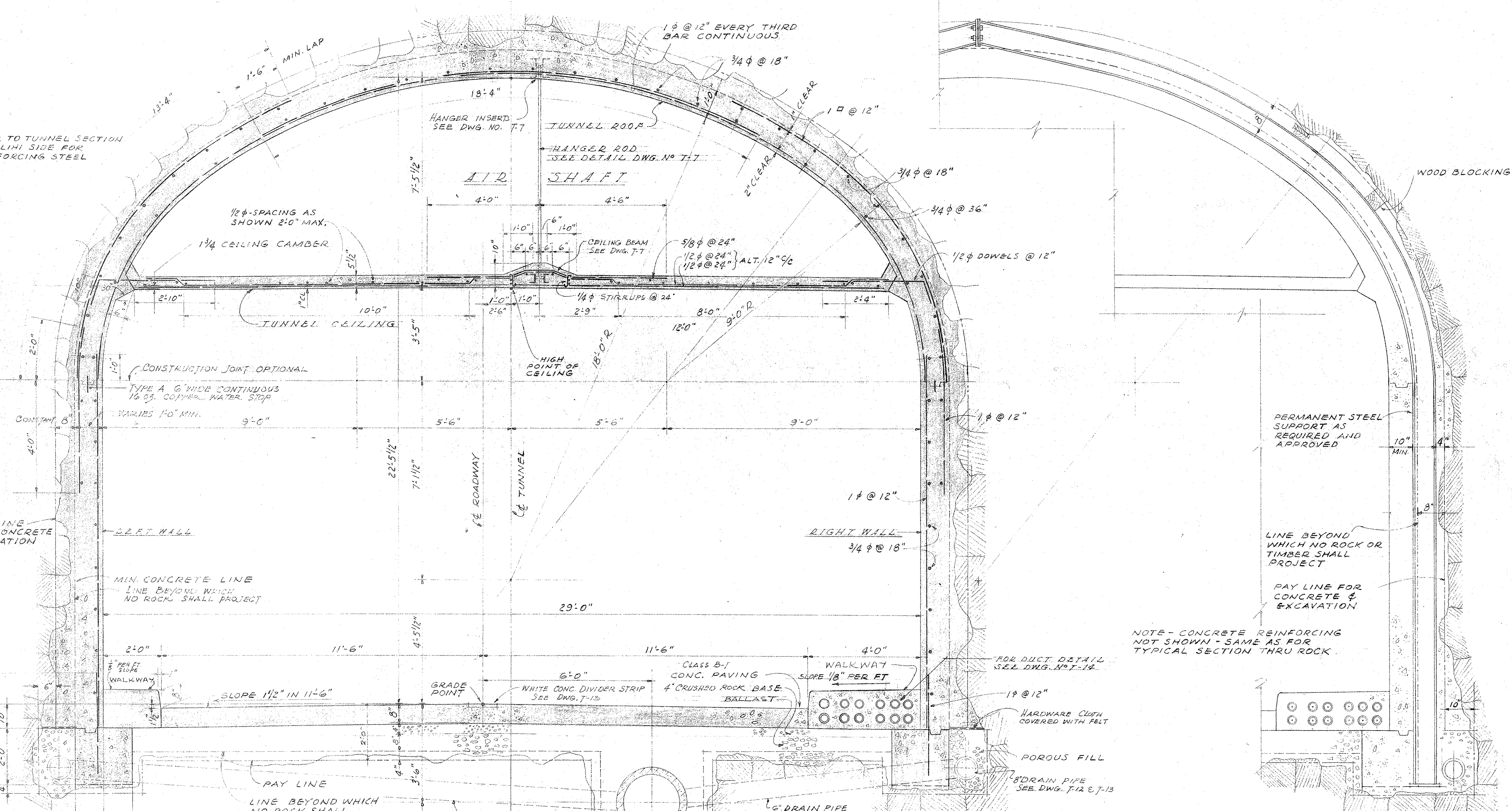
ALT. SECTION THRU FIRM GROUND
SCALE 1/8" = 1'-0"



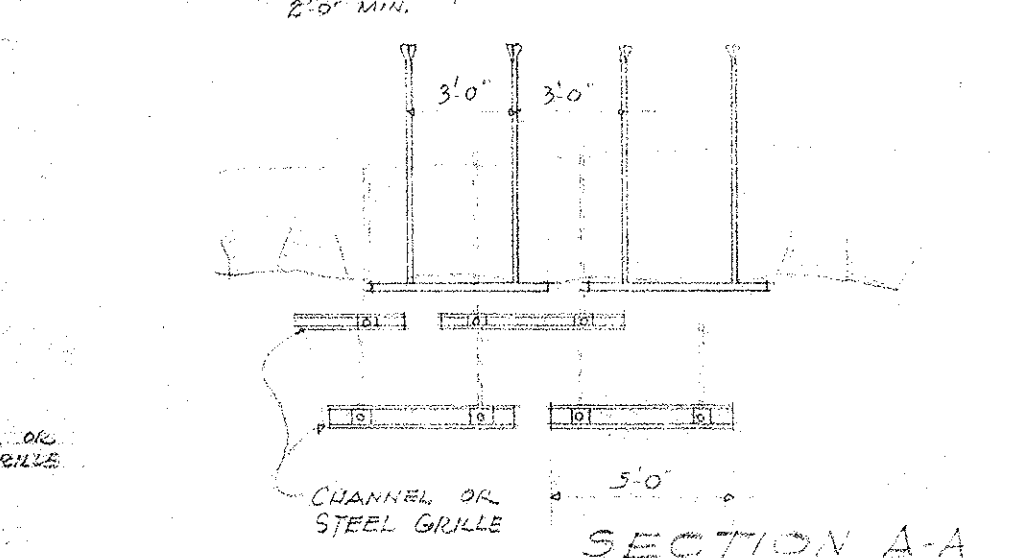
ALT. SECTION THRU SOFT GROUND
SCALE 1/8" = 1'-0"



TUNNEL CROSS SEC. A-A
SCALE 1/8" = 1'-0"



SECTION THRU ROCK
WHERE SUPPORT IS REQUIRED
SCALE 1/2" = 1'-0"



SECTION A-A
SCALE 1/2" = 1'-0"

SECTION THRU ROCK
LOOKING TOWARD KANEOHE PORTAL
SCALE 1/2" = 1'-0"

- NOTE:
1. ALL REINF. BARS TO BE INTERMEDIATE GRADE, NEW BILLET DEFORMED BARS.
 2. ALL CONCRETE FOR TUNNEL WALLS AND ARCH TO HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT TWENTY EIGHT DAYS.

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

KALIHI TUNNEL

TUNNEL & SHAFT
TUNNEL SECTIONS
KANEOHE SIDE

ENGINEER: W. L. LUM, R.P.
DRAFTSMAN: R. B., R.P.
SCALE: AS NOTED

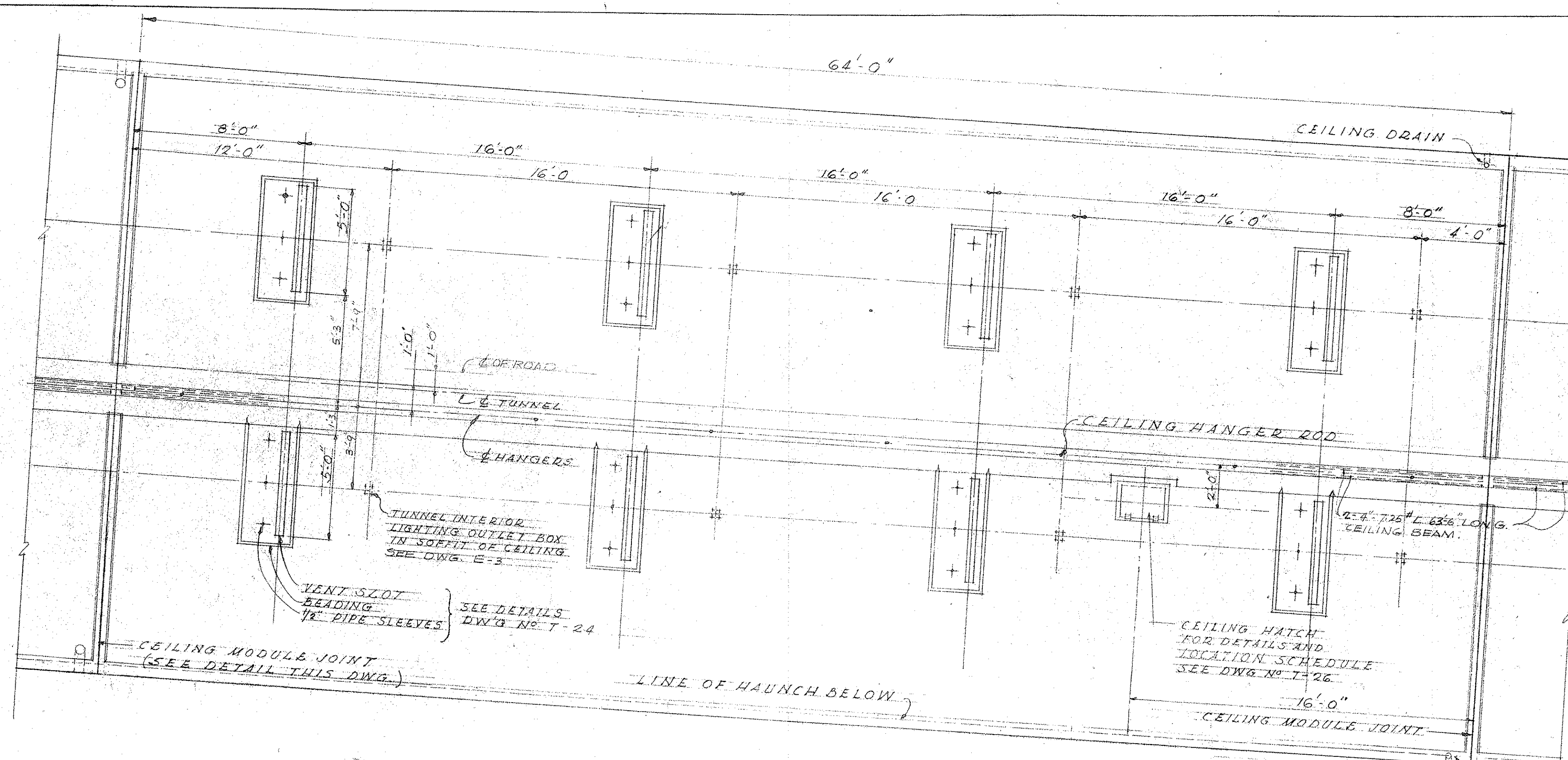
DATE: JULY 15, 1953
CHECKED BY: W. L. LUM, R.P.
TRACER: R. B.

APPROVED: *W. L. LUM*
CHIEF ENGINEER

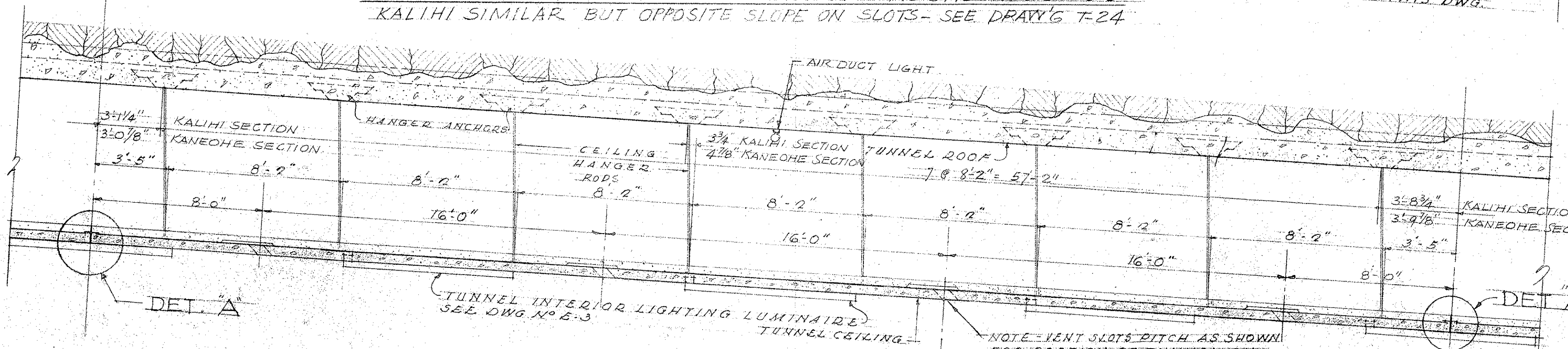
APPROVED: *W. L. LUM*
BUREAU ENGINEER

APPROVED:	PROFILE	C. B.
<i>W. L. LUM</i>		
ENGINEER, KALIHI TUNNEL		
W. M. BY:	F. W. BY:	S. BY:

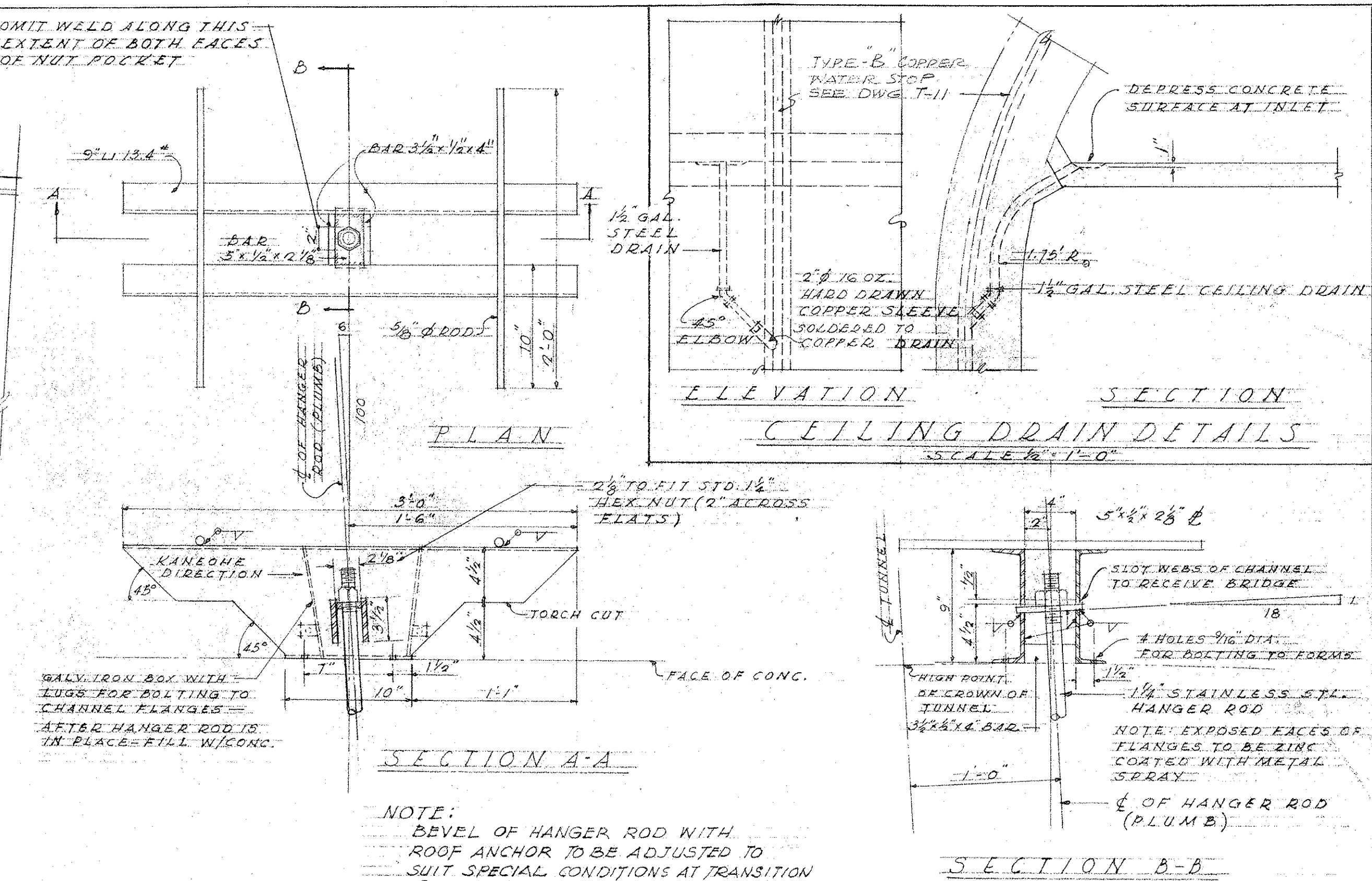
SECTION C JOB NO. 26-53 DWG. T-6



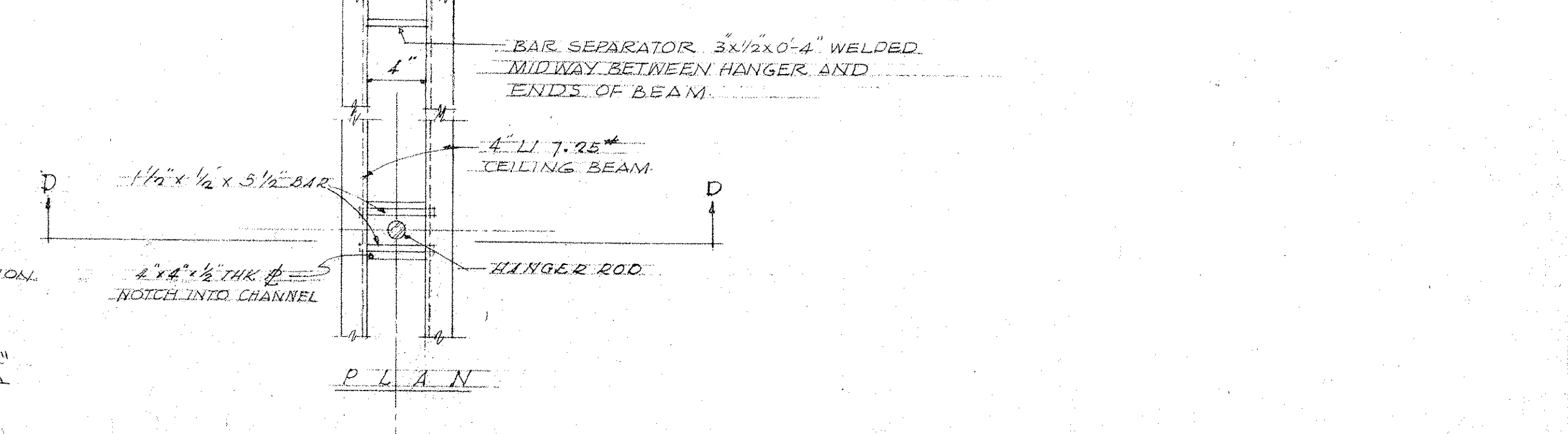
PLAN ABOVE CEILING - KANEHOE MODULE
KALIHU SIMILAR BUT OPPOSITE SLOPE ON SLOTS - SEE DRAWING T-24



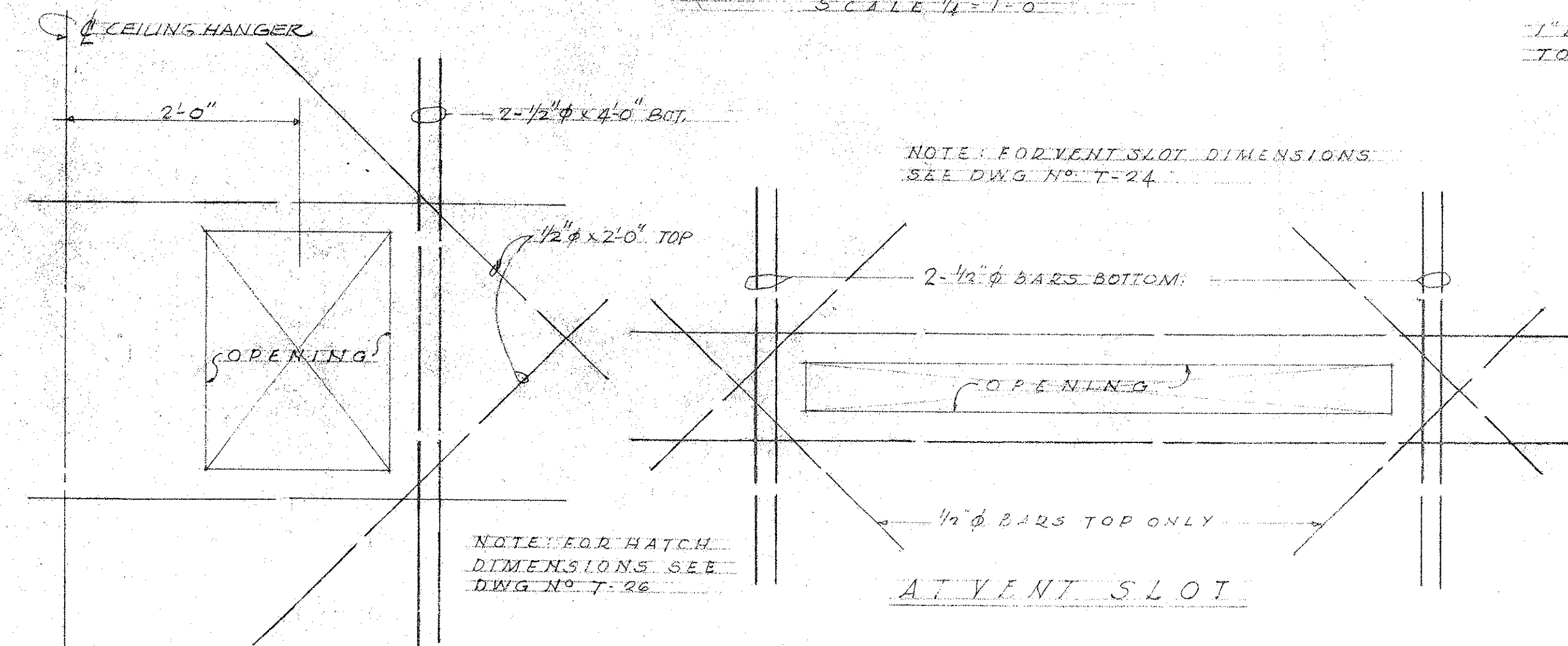
LONGITUDINAL SECTION - TYPICAL MODULE
SCALE 1/2" = 1'-0"



DETAILS: HANGER ROD INSERT AT ROOF
SCALE 1/2" = 1'-0"

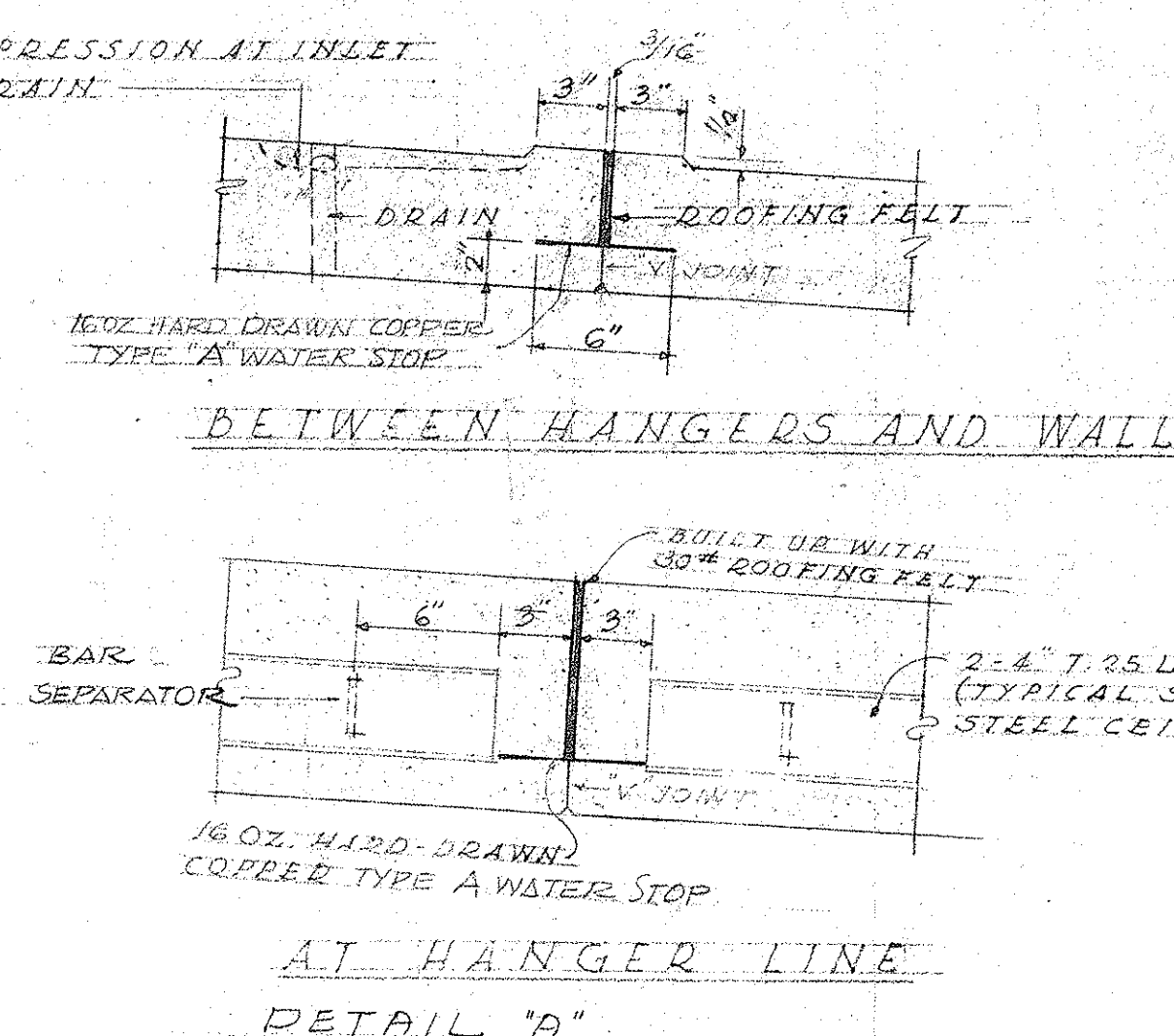


DETAIL: HANGER ROD ANCHOR @ CEILING
SCALE 1/2" = 1'-0"

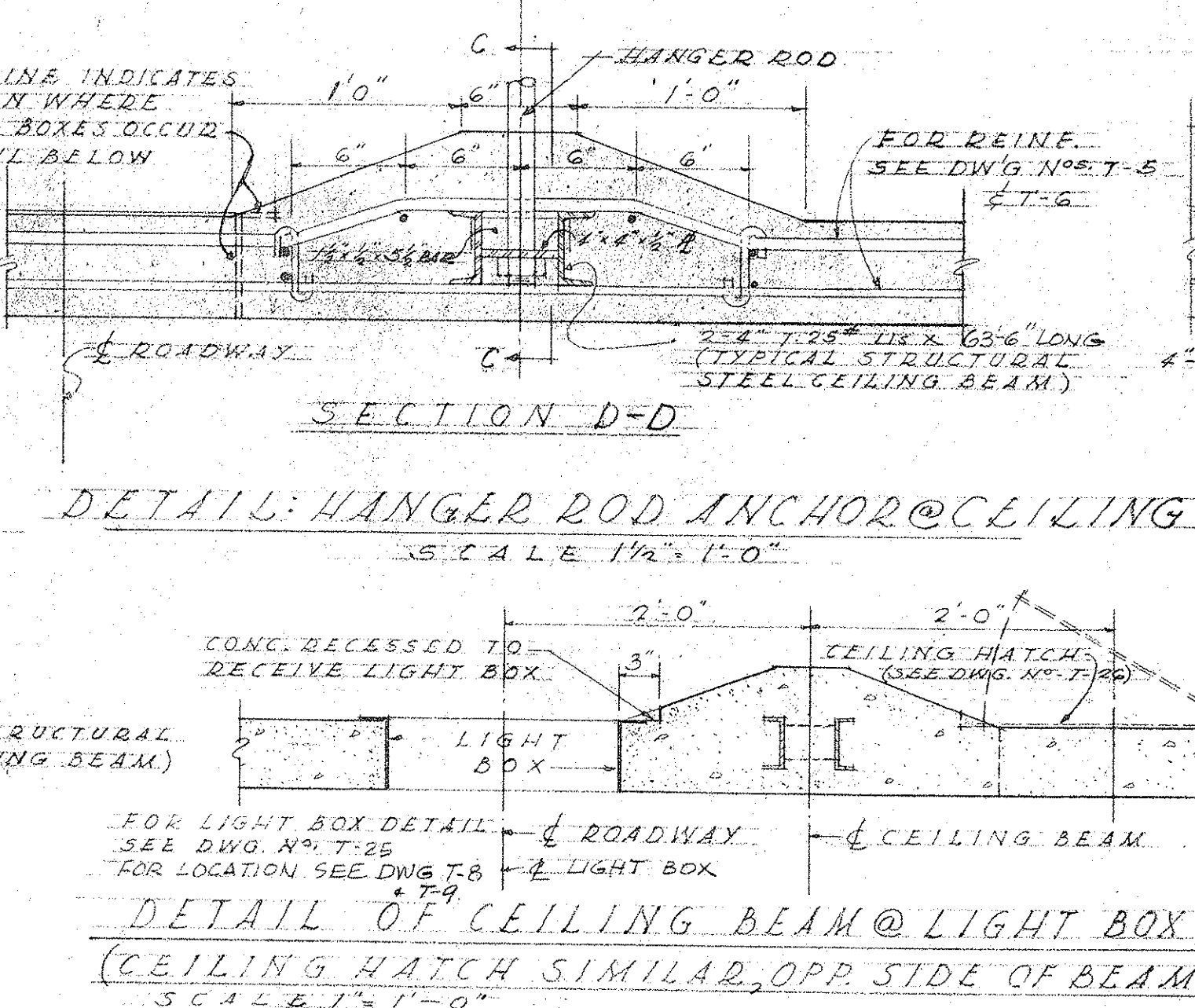


REINFORCING AT VENT SLOT
SCALE 1" = 1'-0"

REINFORCING AT HATCH OPENING
SCALE 1" = 1'-0"



DETAIL 'A' CEILING MODULE JOINT
SCALE 1/2" = 1'-0"



DETAIL OF CEILING BEAM @ LIGHT BOX
SCALE 1/2" = 1'-0"

LAW & WILSON
ARCHITECTS & ENGINEERS
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

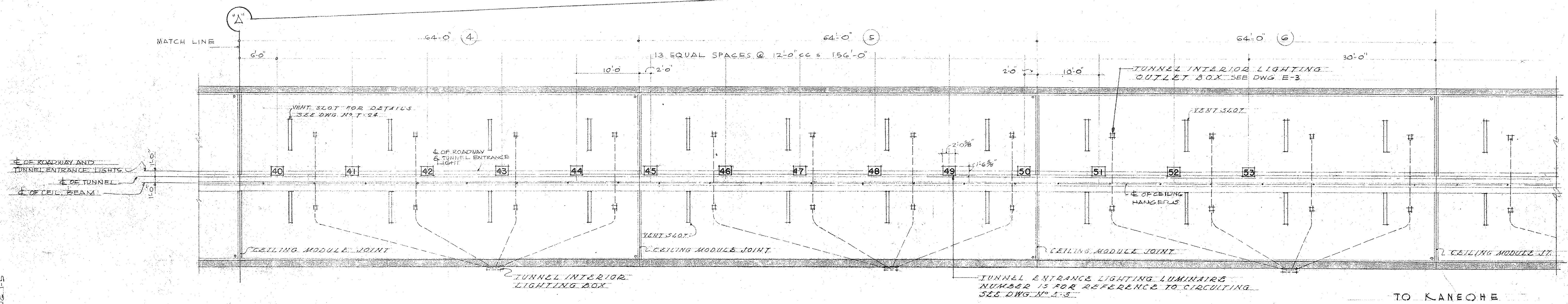
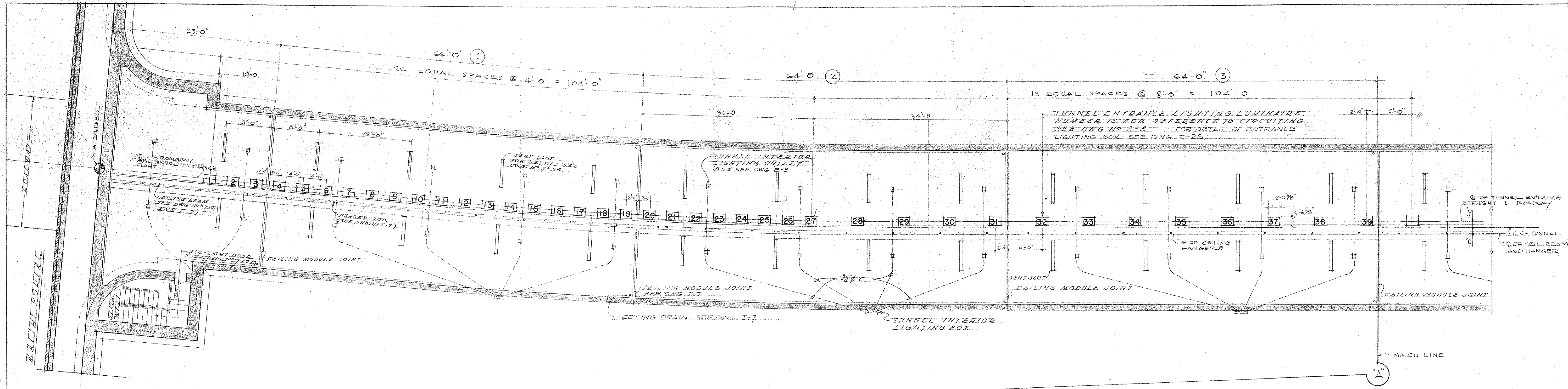
KALIHU TUNNEL TUNNEL & SHAFT TYPICAL MODULE - CEILING

ENGINEER: W. LUM
DRAFTSMAN: E.H. T. 25
SCALE: AS NOTED
APPROVED: J.W. Butzger
CHIEF ENGINEER

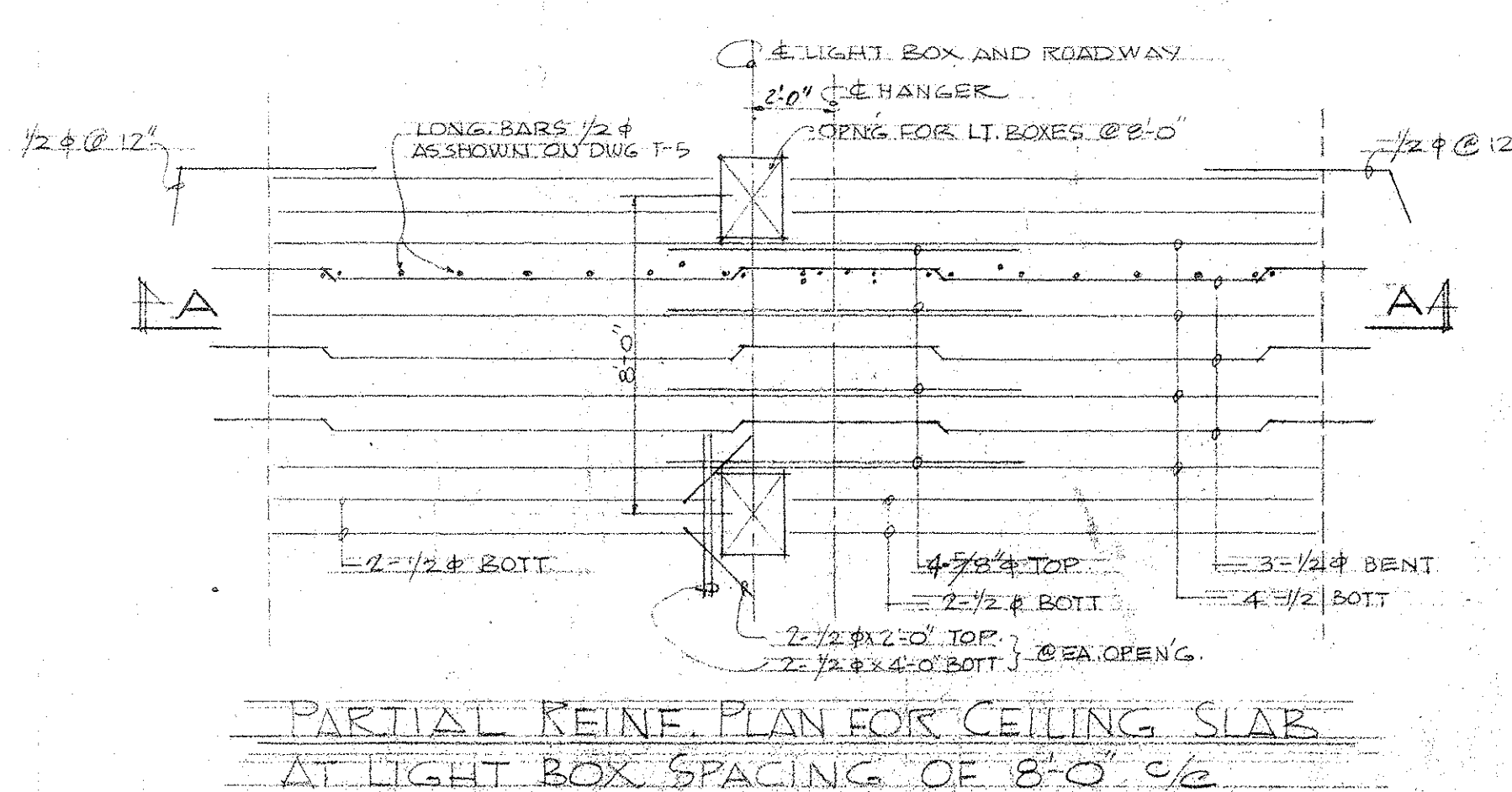
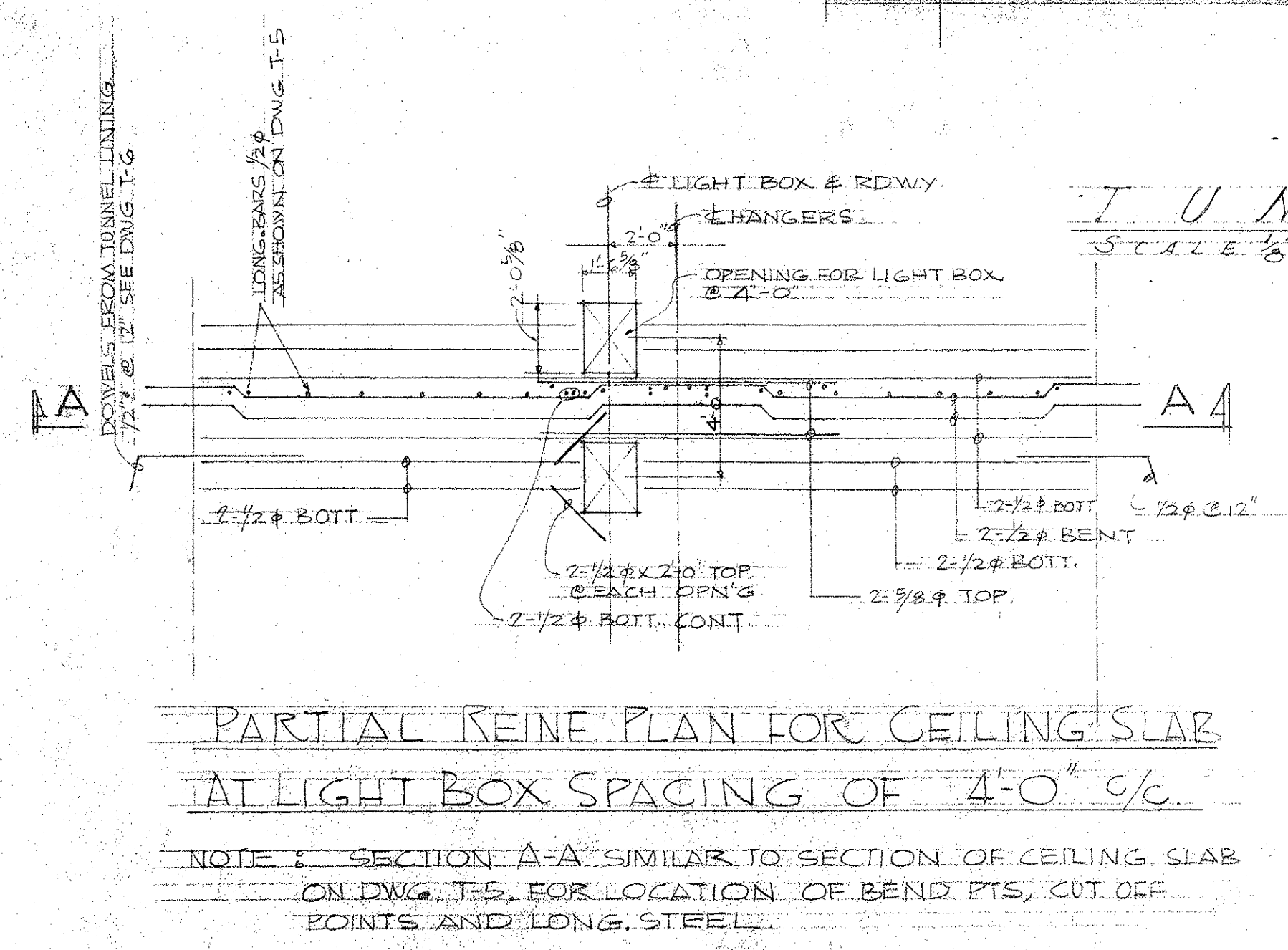
DATE: JAN 19 1953
CHECKED BY: W. LUM, JR.
TRACER:
APPROVED:

W.S.	PROFILE	C.B.
C.R. SEC.	F.W.B.	S.B.
W.M.B.V.	F.W.B.V.	S.B.V.

SECTION C JOB NO. 26-53 DWG. T-7



TUNNEL ENTRANCE CEILING PLAN (KALIHI)



LAW & WILSON
ARCHITECTS & ENGINEERS

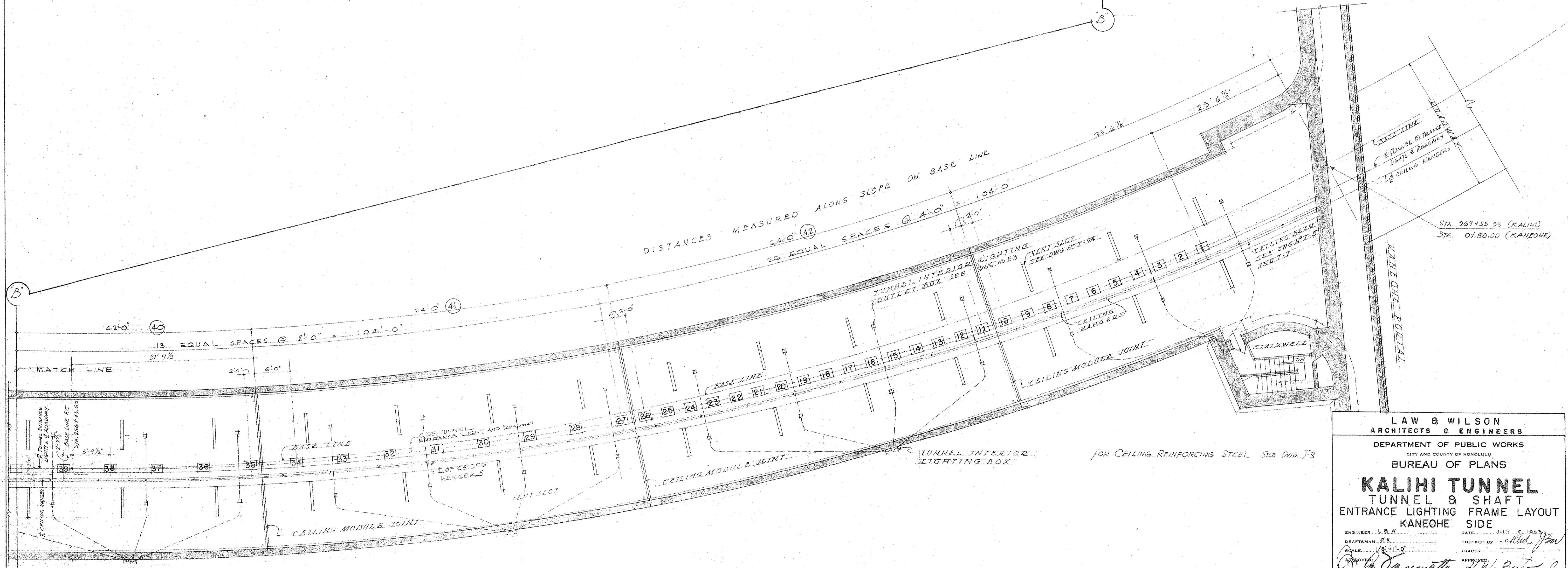
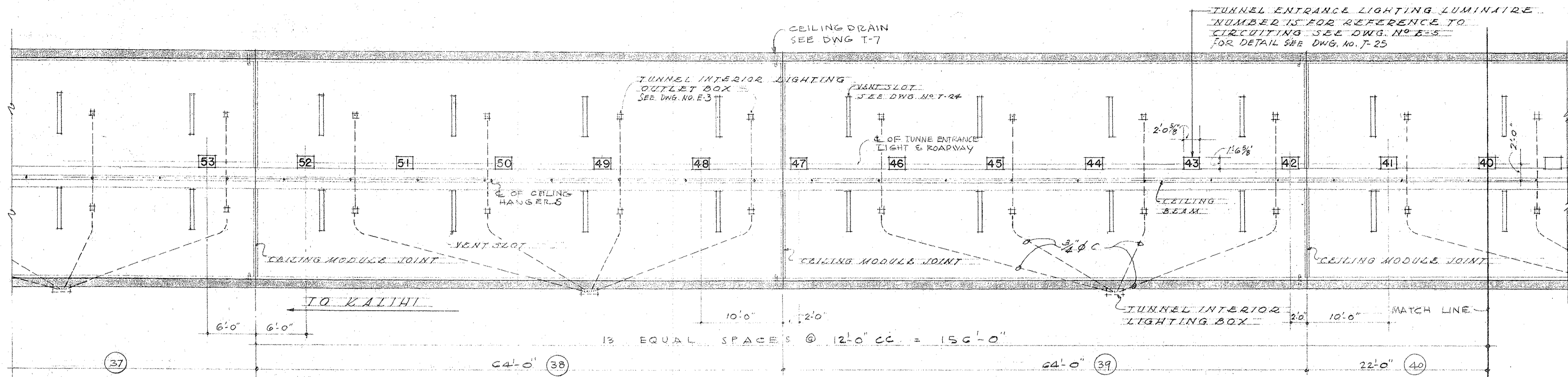
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

KALIHI TUNNEL
TUNNEL & SHAFT
ENTRANCE LIGHTING FRAME LAYOUT
KALIHI SIDE

ENGINEER: L. W. W. L. DATE: JULY 15, 1958
DRAFTSMAN: R. E. H. CHECKED BY: R. J. O.
SCALE: 1/8" = 1'-0" TRACER:
APPROVED: R. J. O. CHIEF ENGINEER
APPROVED: H. W. Butzger BUREAU ENGINEER

SECTION C JOB NO. 26-53 DWG. T-8

APPROVED
H. W. Butzger
ENGINEER, KALIHI TUNNEL



TUNNEL ENTRANCE CEILING PLAN (KANEOHE)
SCALE 1/8" = 1'-0"

LAW & WILSON
ARCHITECTS & ENGINEERS
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

**KALIHI TUNNEL
TUNNEL & SHAFT
ENTRANCE LIGHTING FRAME LAYOUT
KANEOHE SIDE**

ENGINEER: L.B.W. DATE: JULY 15, 1953
DRAFTSMAN: P.K. CHECKED BY: J.O. [Signature]
SCALE: 1/8" = 1'-0" TRACER:
APPROVED: [Signature] CHIEF ENGINEER
APPROVED: [Signature] BUREAU ENGINEER

APPROVED	PROFILE	C.B.
ENGINEER, KALIHI TUNNEL	F.B.	S.B.
SECTION C	W.M.B.Y.	F.W.B.Y.
JOB NO. 26-53	DWG. T-9	

SCHEDULE LOCATION OF INSERTS

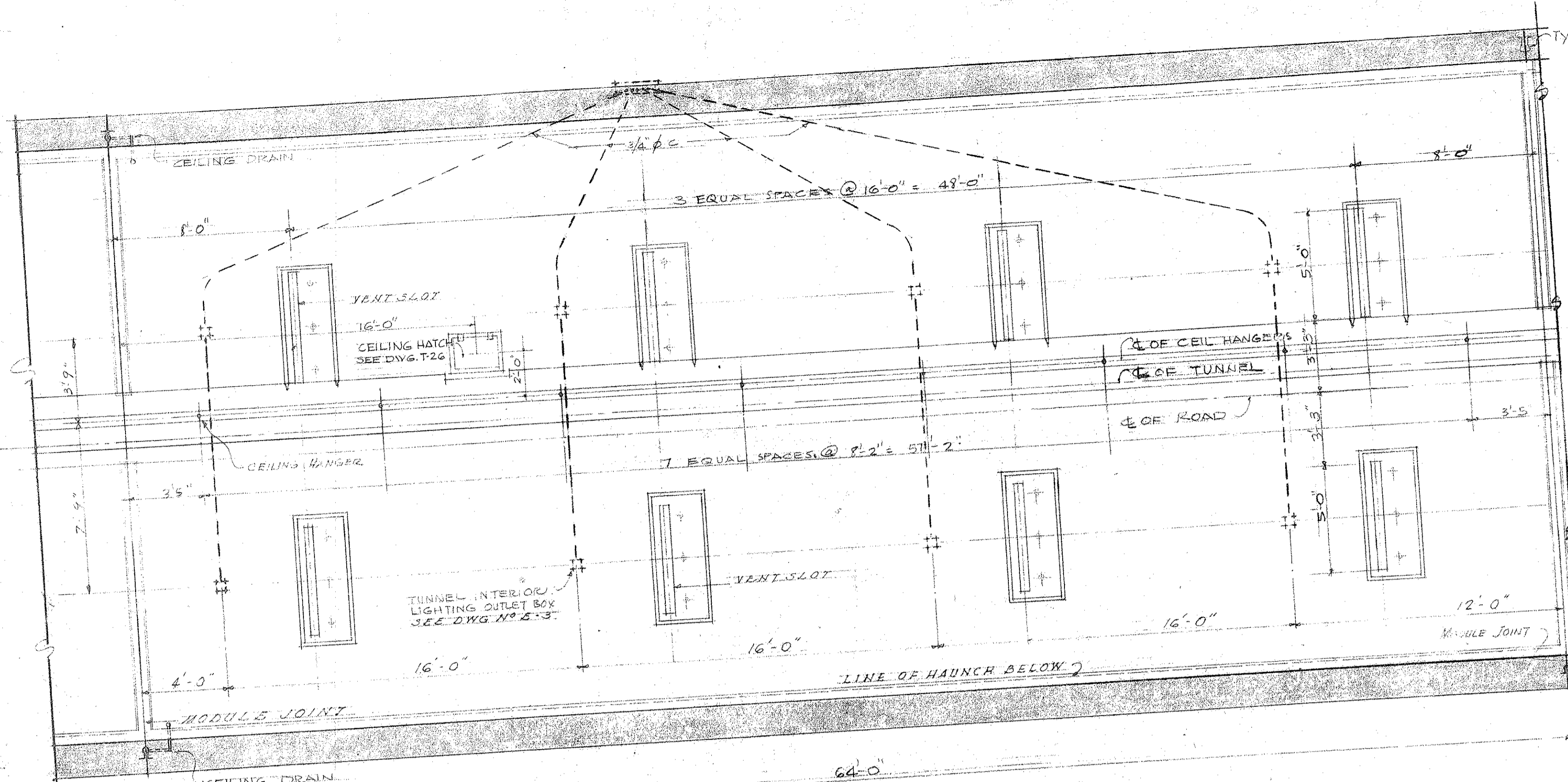
INSERT	LOCATION	REMARK
TUNNEL INT LIGHTING BOX	MODULE 1 TO MODULE 42 INCL AND ONE AT EACH PORTAL STAIRWELL	SEE DWG # T-19, T-3, T-10, T-11, T-16, T-18, E-8, E-4
COMMUNICATION BOX	MODULE 2, 6, 10, 14, 18, 22, 26, 30, 34, 38 & 42 (14) SEE TRANSITION DWG # T-41 & T-42 AND ONE IN EACH PORTAL OFFICE	SEE DWG # T-20, T-3, T-10, T-11, T-16, T-18, E-9
C+C HANDHOLE	Do EXCEPT NONE AT PORTAL OFFICES	SEE DWG # T-15, T-14
M.T.C.O. HANDHOLE	Do EXCEPT NONE AT PORTAL OFFICES	SEE DWG # T-15, T-14
SIGNAL CORPS HANDHOLE	MODULE 3, 11, 19, 27, 35 & KANEHOE PORTAL	SEE DWG # T-15, T-14
FIRE EXTINGUISHER BOX	SAME AS COMMUNICATION BOXES, EXCEPT NONE AT PORTAL OFFICES; LOCATION IN TRANSITION TO BE IN MOD. 15 (SEE DWGS. T-41, T-42)	SEE DWG # T-21, T-3, T-10, T-11, T-18
CO SAMPLING INLET	MODULE 6, 10, 14, 15, 19, 23, 26, 30, 34 & 37	SEE DWG # T-22, T-4, T-10, T-11, T-18,

FOR CEILING SLAB

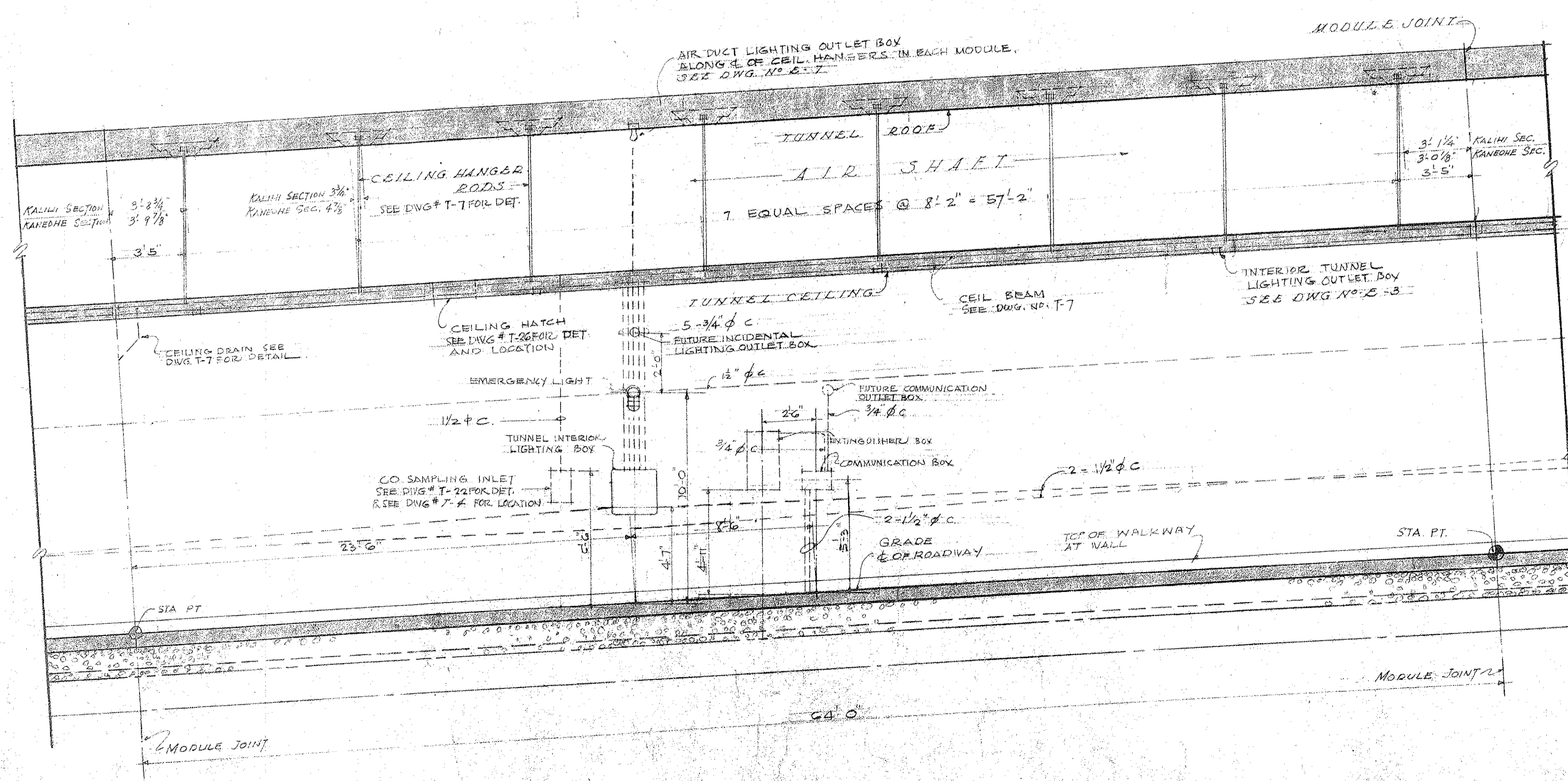
CEILING HATCH	MODULE 7, 21, 28, 35	SEE DWG. F-1, F-7, T-26
AIR SLOT	ALL MODULES	SEE DWG. T-24, T-7
LIGHTING BOX OUTLET	ALL MODULES	SEE DWG. E-3, T-7, T-10
ENTRANCE LIGHTING BOX	MODULES: KALIHI 1 THRU 6, KANEHOE 37 THRU 42	SEE DWG. T-25, T-8, T-9
CEILING BEAM	ALL MODULES	SEE DWG. T-7
CEILING DRAIN	ALL MODULES	SEE DWG. T-7
MODULE JOINT	ALL MODULES	SEE DWG. T-7
REINFORCING	ALL MODULES EXCEPT 14, 15 FOR MODULES 14 & 15	SEE DWG. T-5, T-6 SEE DWG. T-34 - T-37

NOTE:

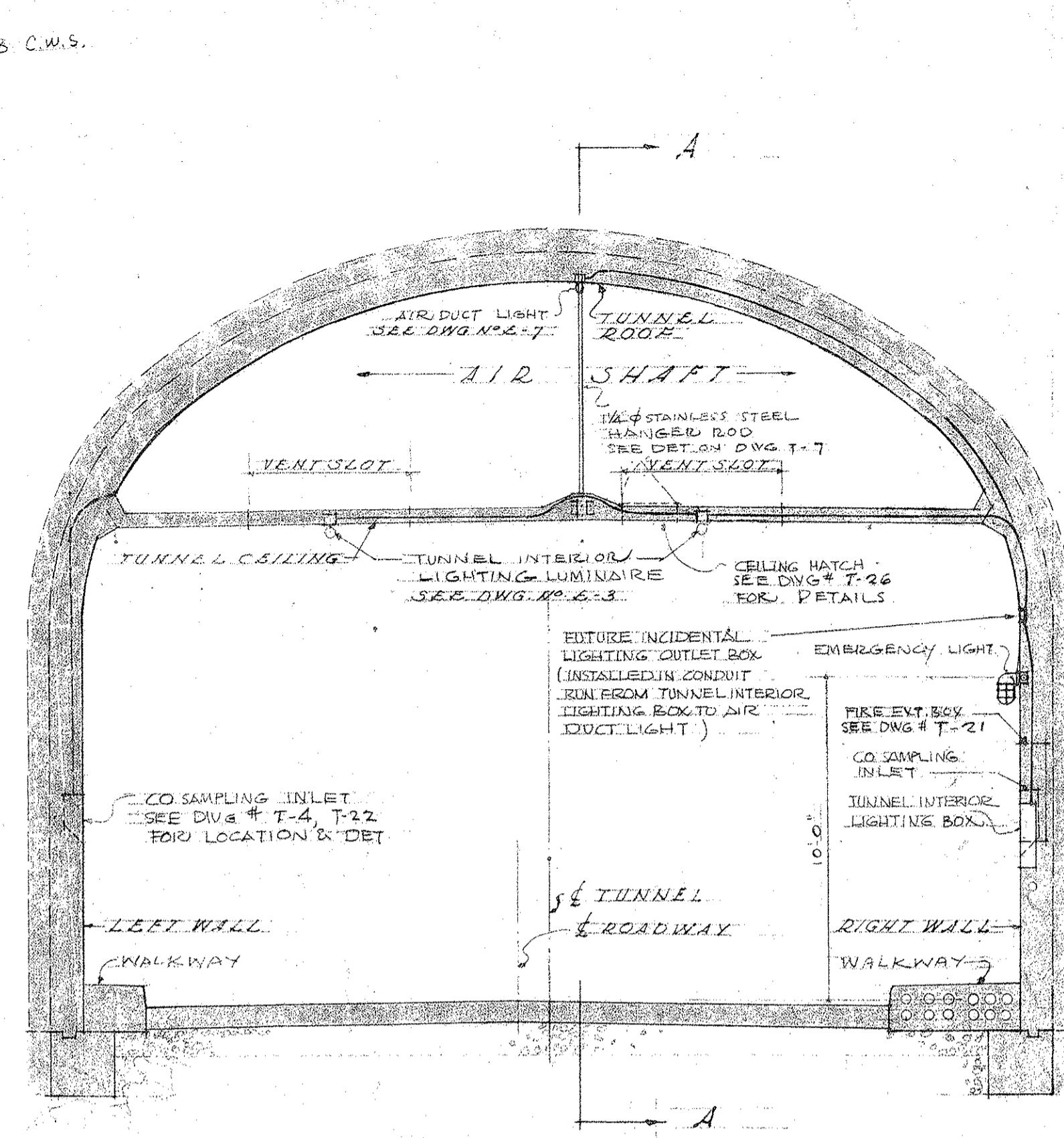
UNLESS SHOWN OTHERWISE ALL DIMENSIONS SHOW MEASUREMENTS NORMAL TO PAVEMENT
SEE DWG. NO. T-11 FOR REINFORCING AT INSERTS.



PLAN ABOVE CEILING - KANEHOE MODULE
KALIHI MODULE SIMILAR BUT OPPOSITE SLOPE ON SLOTS (SEE DRAWG T-24)
SCALE 1/4" = 1'-0"



LONGITUDINAL SECTION A-A (TYPICAL MODULE)
SCALE 1/4" = 1'-0"



TYPICAL SECTION
SCALE 1/4" = 1'-0"

NOTES:

- FOR ENTRANCE LIGHTING FRAME SEE DWG # T-23
- FOR VENT SLOT DETAILS SEE DWG # T-24

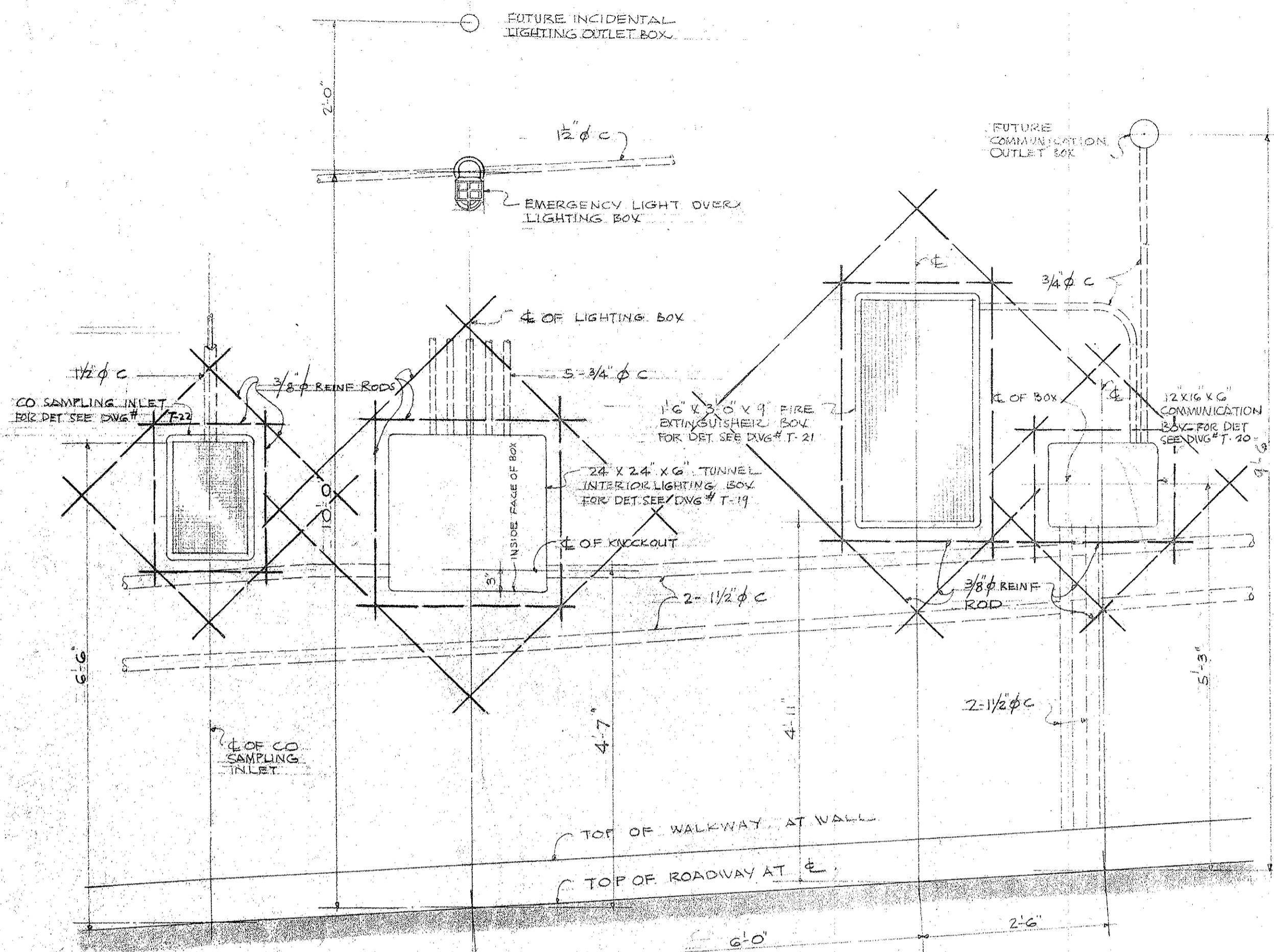
LAW & WILSON
ARCHITECTS & ENGINEERS
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIHI TUNNEL
TUNNEL & SHAFT
TYPICAL MODULE
INSERTS & CONDUIT

ENGINEER: L. B. W. DATE: JULY 15, 1963
DRAFTSMAN: P. K. CHECKED BY: J. O. E. [Signature]
SCALE: 1/4" = 1'-0" TRACER:
APPROVED: [Signature] CHIEF ENGINEER
APPROVED: [Signature] BUREAU ENGINEER

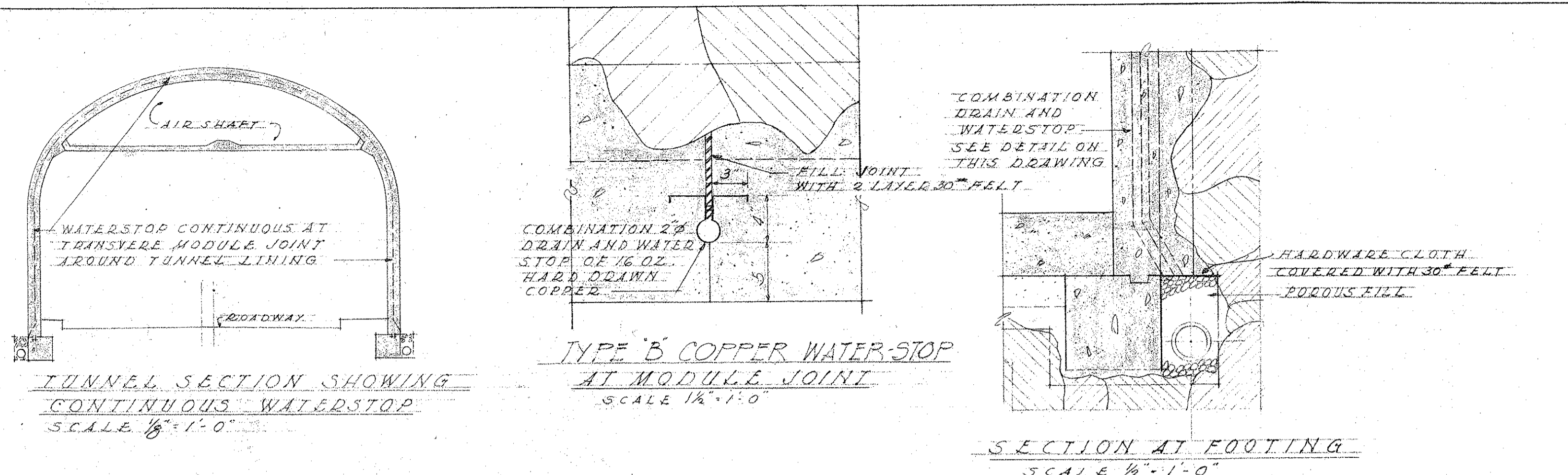
APPROVED: [Signature] ENGINEER, KALIHI TUNNEL

W.S.	PROFILE	C.B.
C.R. SEC.	F.B.	S.B.
W.M. BY:	F.W. BY:	S. BY:

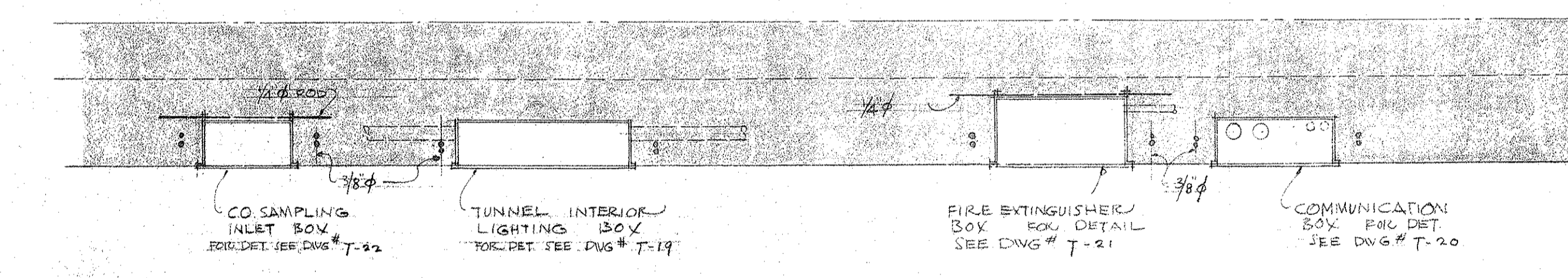
SECTION C JOB NO. 26-53 DWG. T-10



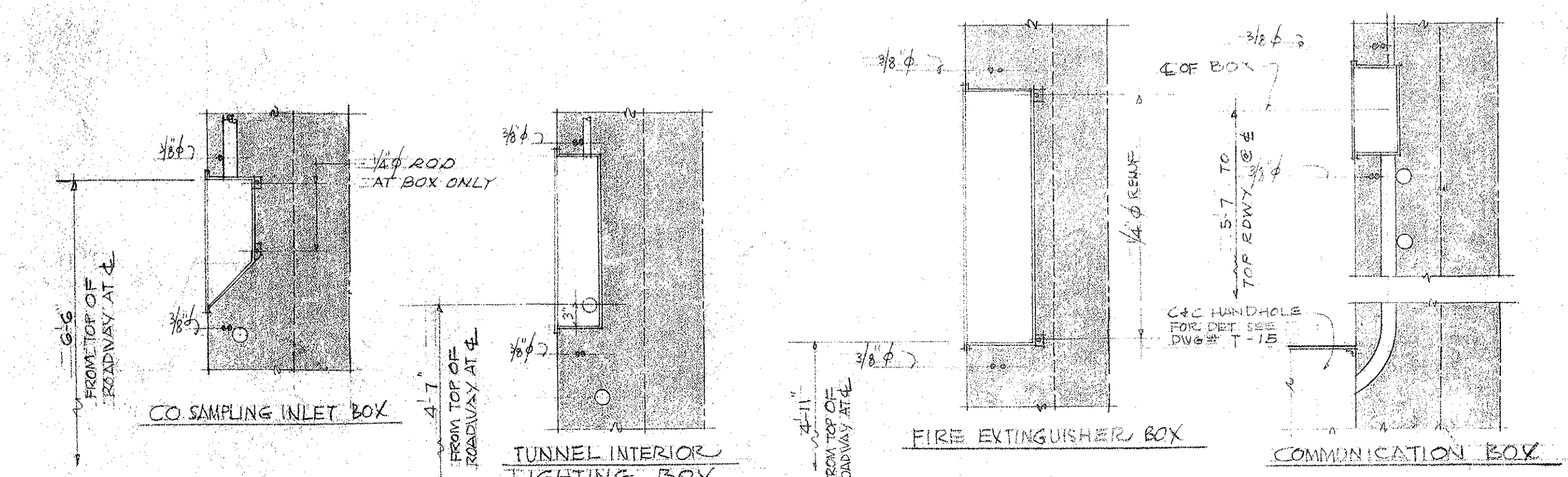
ELEVATION SCALE 3/4" = 1'-0"
 (SHOWING REINFORCEMENTS AT INSERTS)
 NOTE: FOR LOCATIONS SEE SCHEDULE ON DWG NO T-19



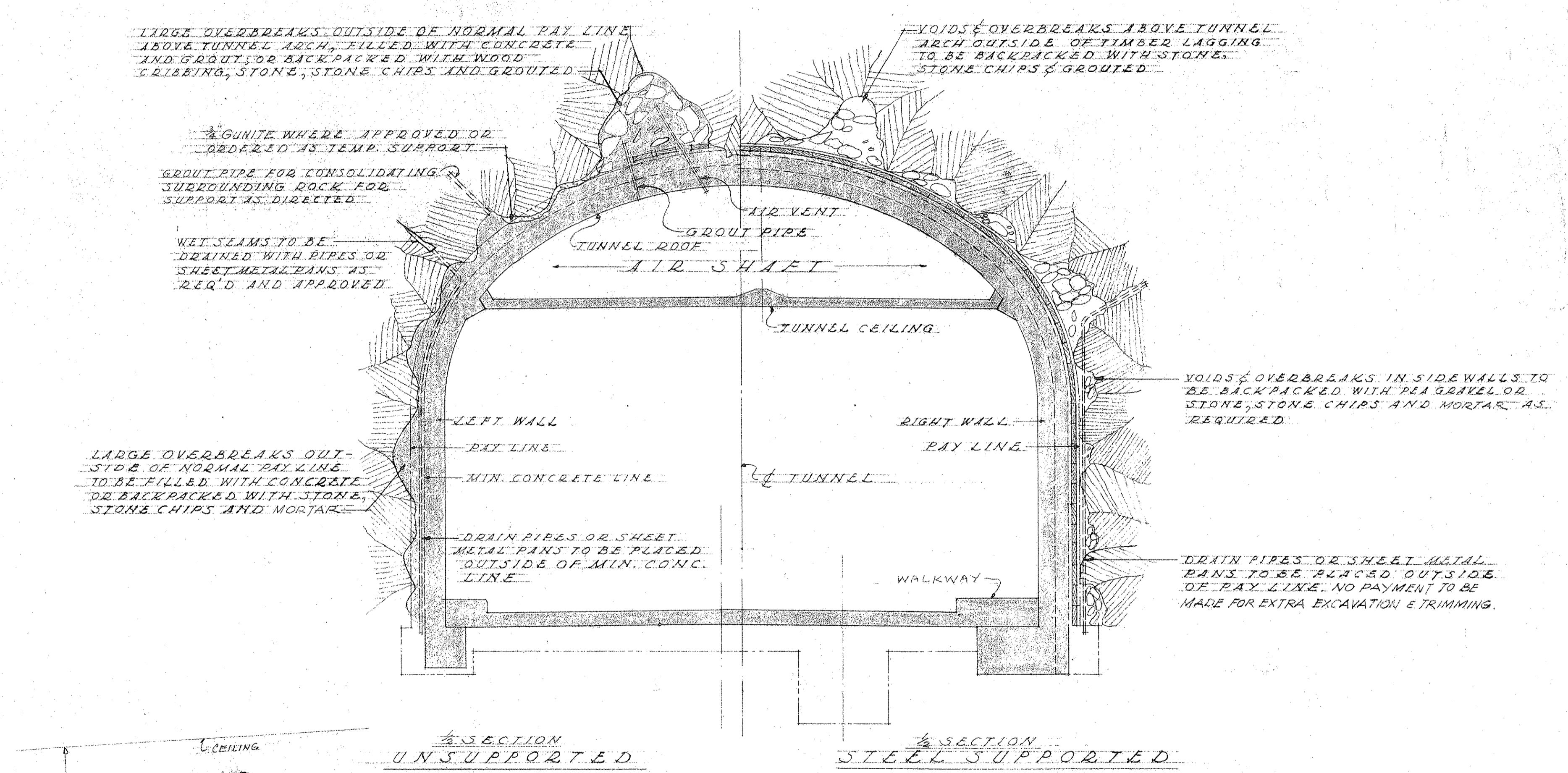
DETAILS OF COMBINATION WATERSTOP & DRAIN (TYPE "B" C.W.S.)
 SCALE AS NOTED



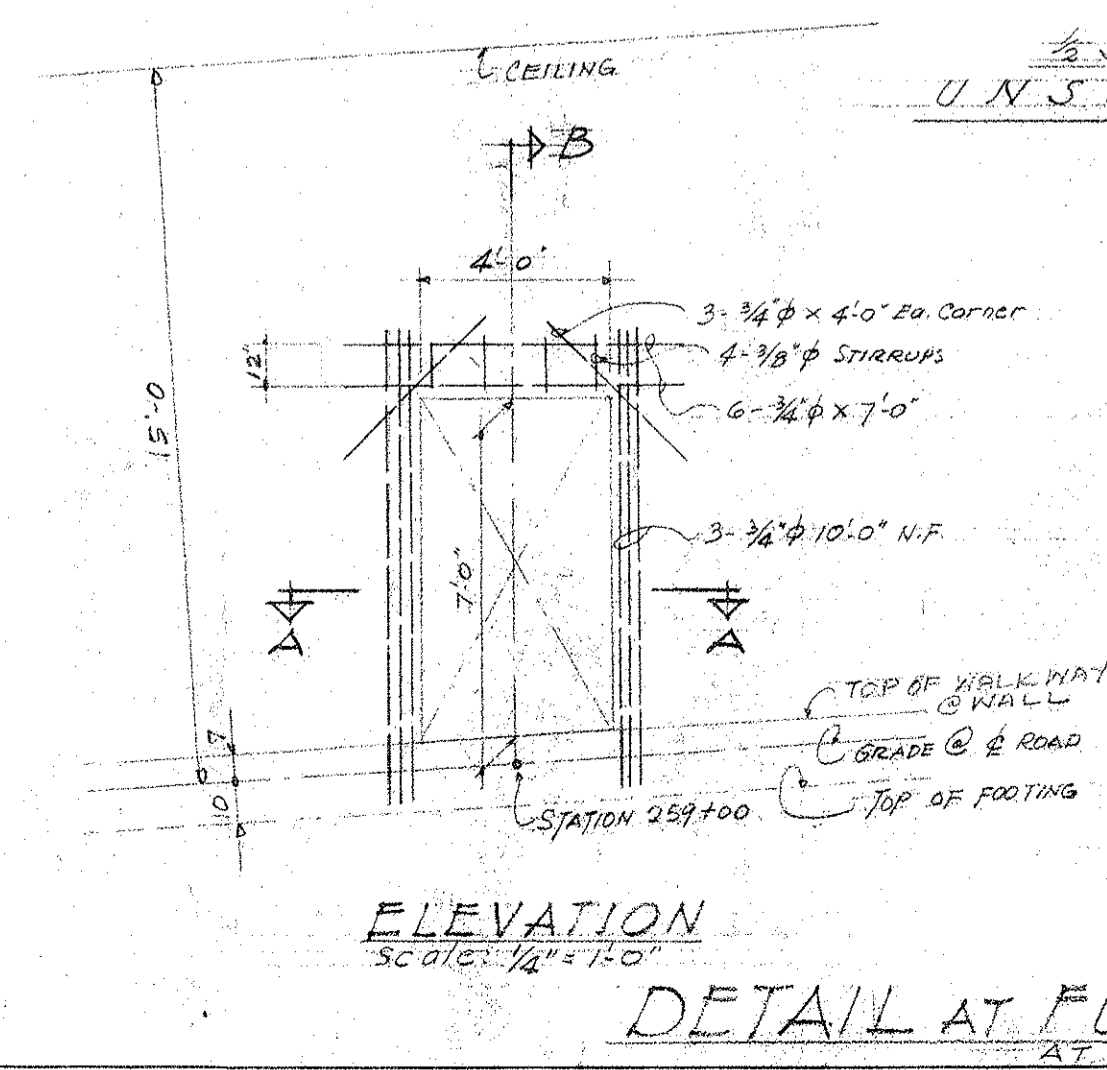
PLAN SCALE 3/4" = 1'-0"



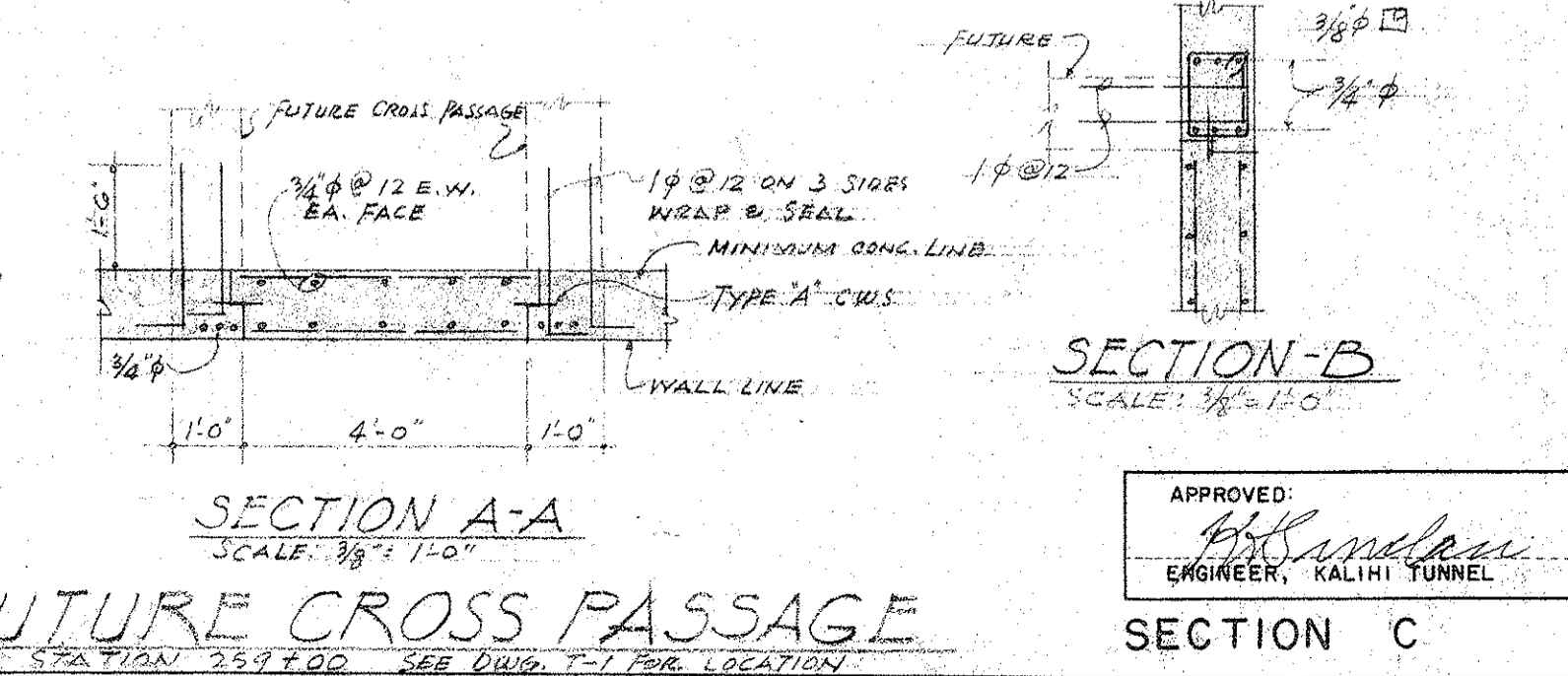
SECTIONS SCALE 3/4" = 1'-0"



DEWATERING, BACKPACKING & GROUTING DETAILS
 SCALE 1/2" = 1'-0"



ELEVATION SCALE 1/2" = 1'-0"
SECTION A-A SCALE 3/8" = 1'-0"
DETAIL AT FUTURE CROSS PASSAGE
 AT STA. PLAN 257+00 SEE DWG. T-7 FOR LOCATION



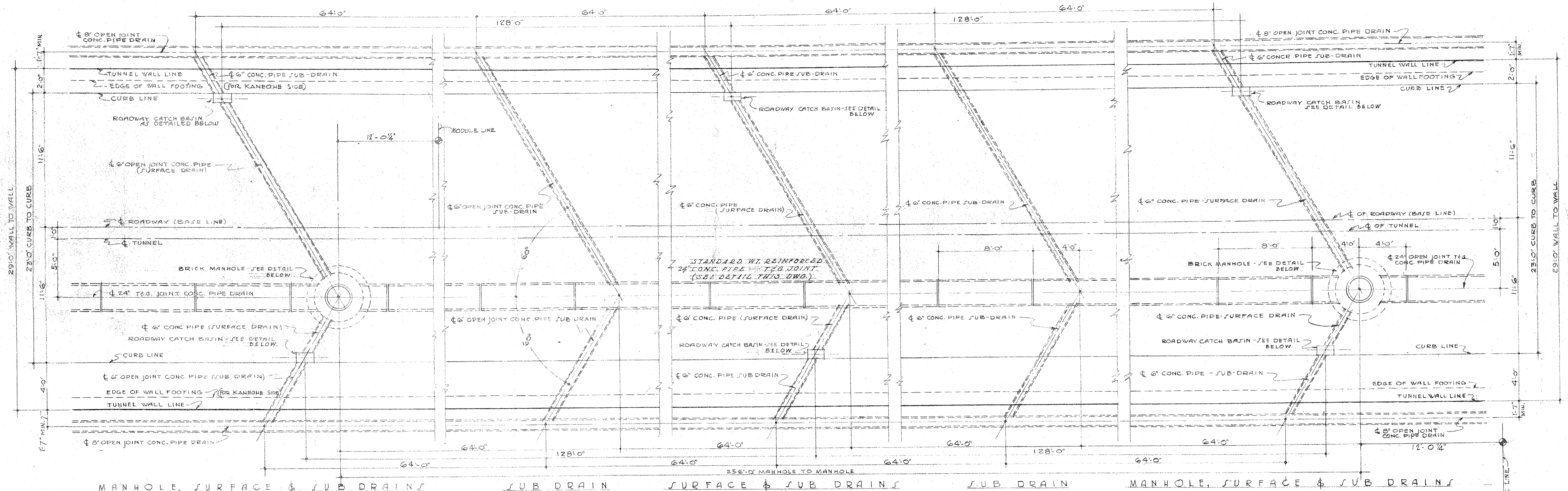
SECTION B SCALE 1/2" = 1'-0"
SECTION C

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 ARCHITECTS & ENGINEERS
 DEPARTMENT OF PUBLIC WORKS
 CITY AND COUNTY OF HONOLULU
 BUREAU OF PLANS
KALIHI TUNNEL
 TUNNEL & SHAFT
 MISCELLANEOUS DETAILS

ENGINEER: W.L. & W. DATE: JULY 15, 1953
 DRAFTSMAN: E.H. & R.O. CHECKED BY: Y.T. & W.L.
 SCALE: AS NOTED. TRACER:
 APPROVED: *W. L. Wilson* CHIEF ENGINEER
 APPROVED: *W. L. Wilson* CHIEF ENGINEER

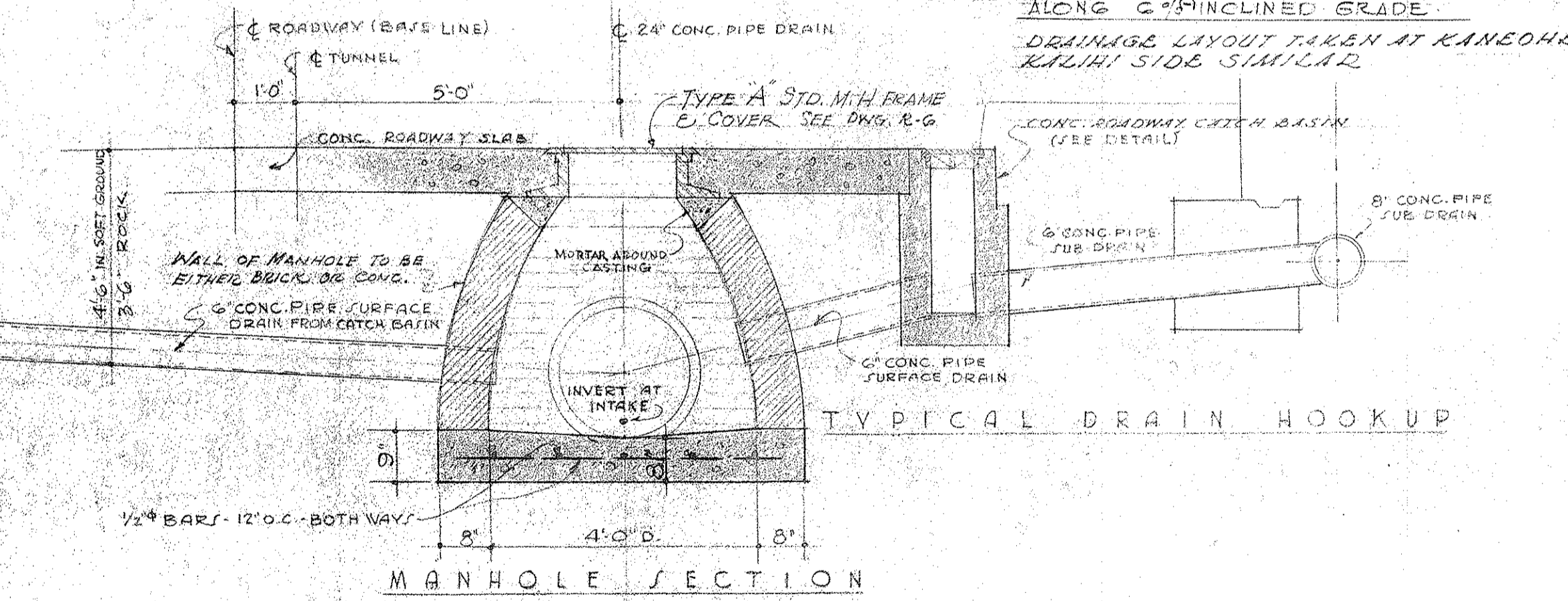
W.S.	PROFILE	C.B.
CR. SEC.	F.W. BY	S.B.
W.M. BY	F.W. BY	S.B.

SECTION C JOB NO. 26-53 DWG. T-11



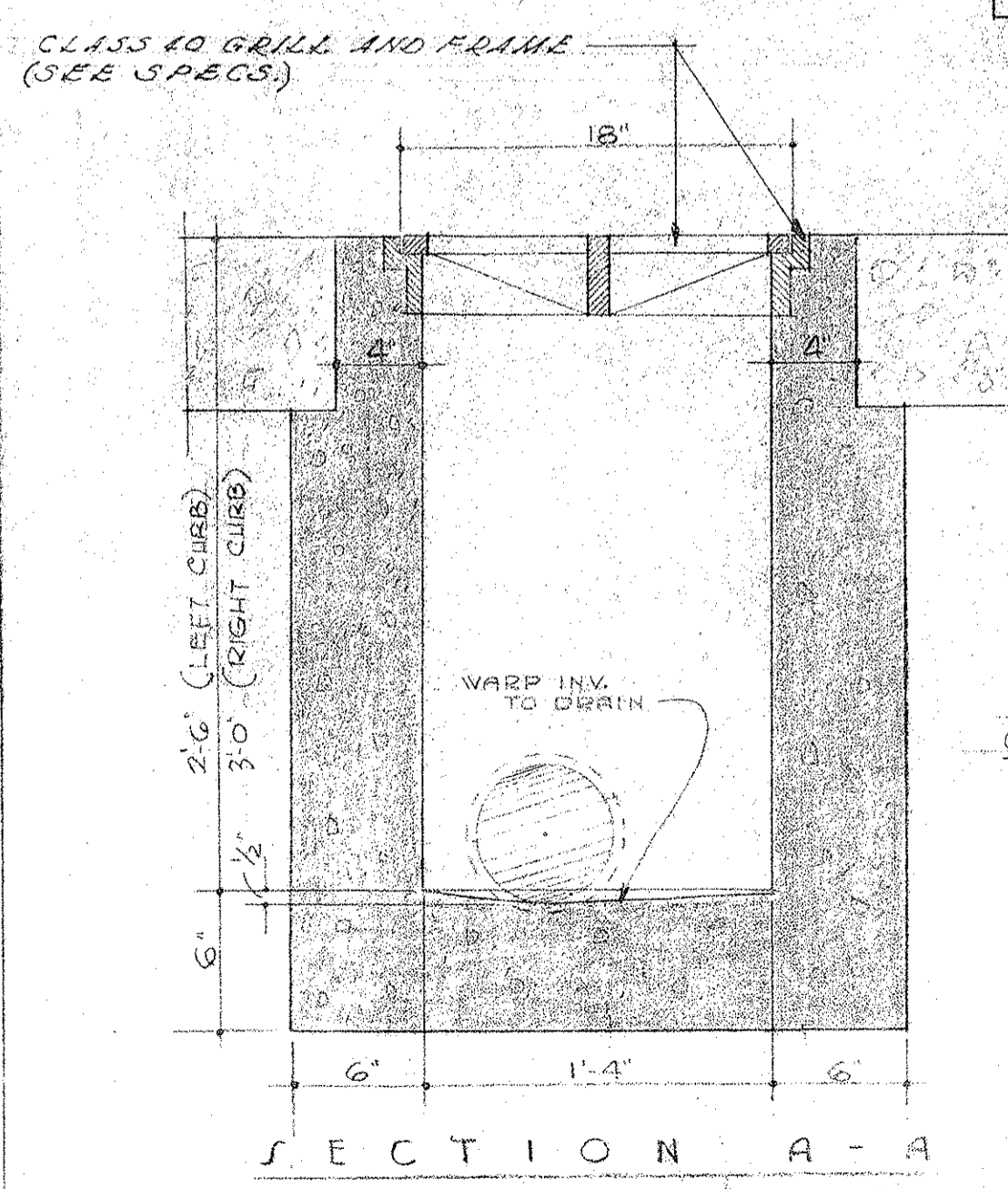
DRAINAGE LAYOUT - MANHOLE TO MANHOLE

NOTES: DISTANCES SHOWN ABOVE ARE TRUE LENGTH MEASURED ALONG 2% INCLINED GRADE. SCALE - 1/4" = 1'-0"

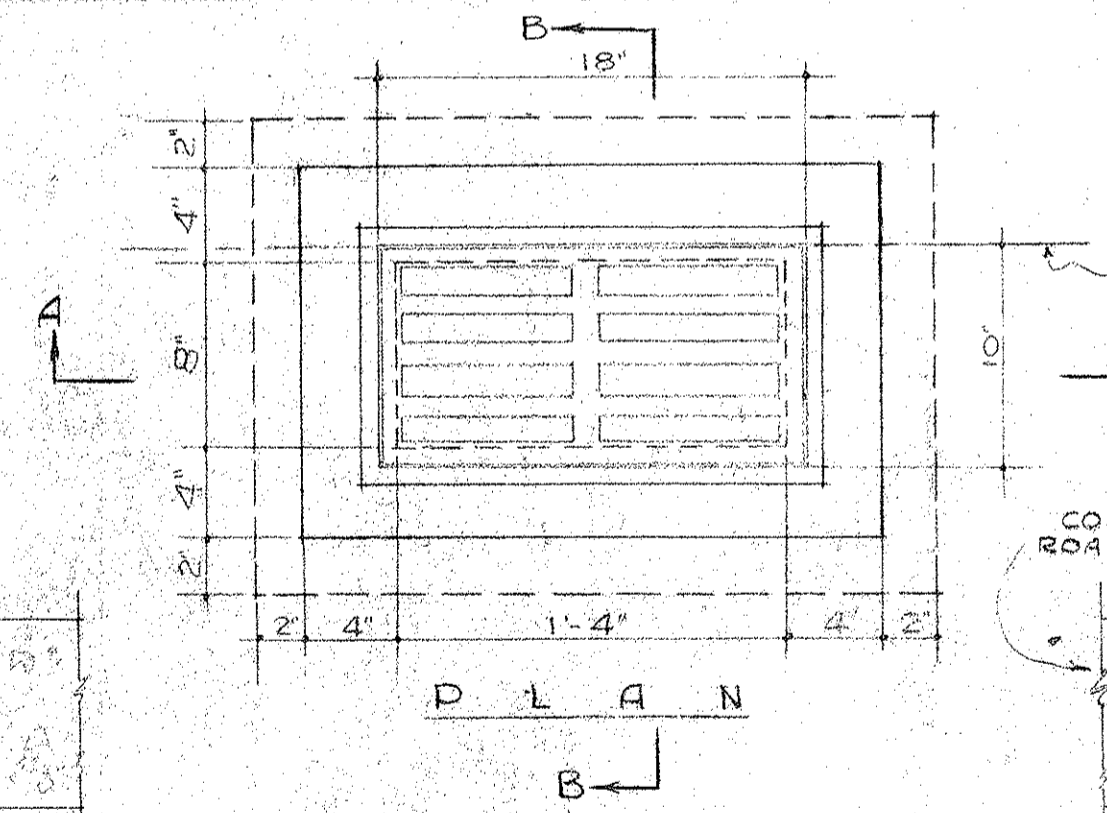


TYPICAL MANHOLE & DRAIN CONNECTION

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

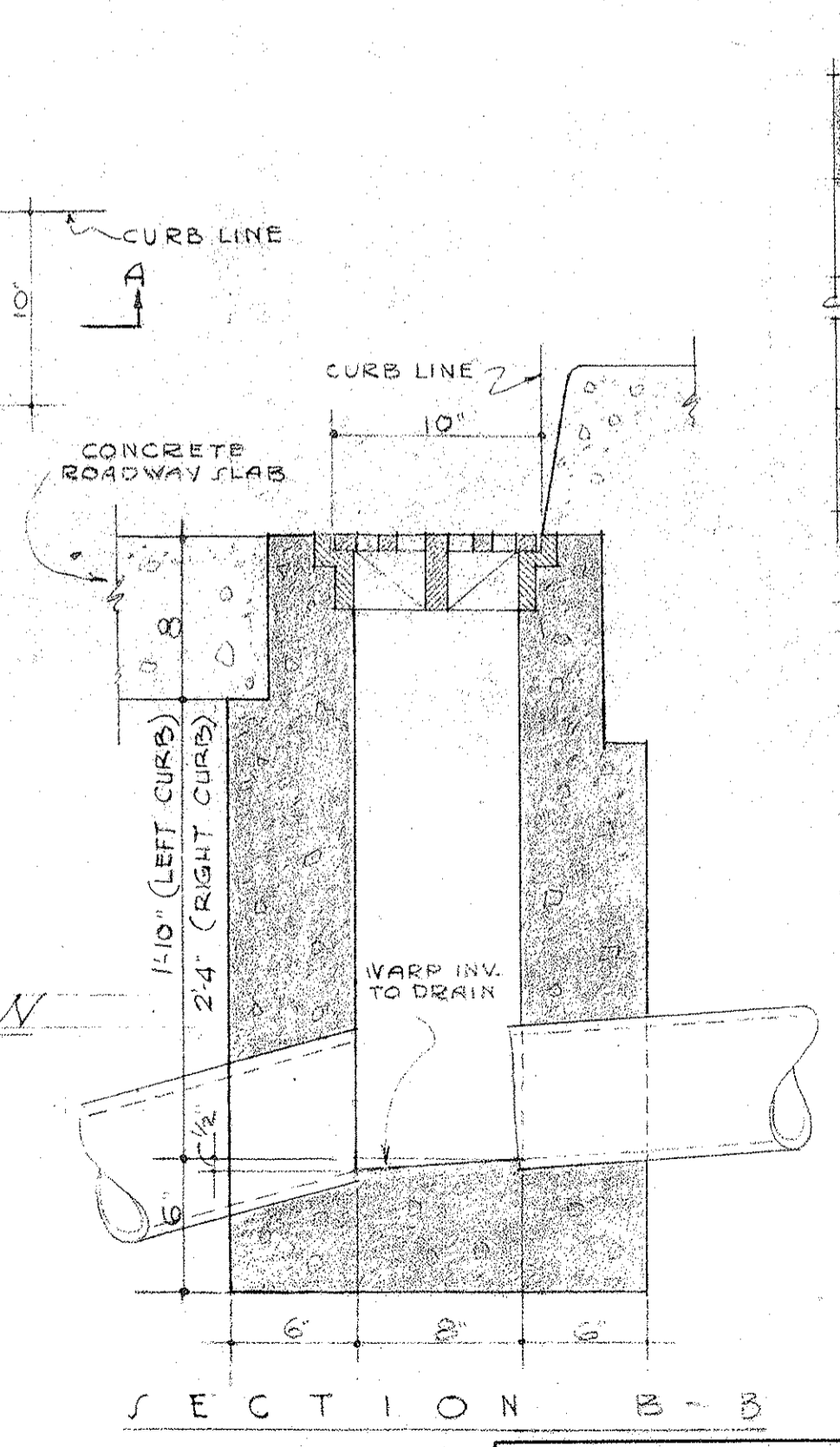


SECTION A-A

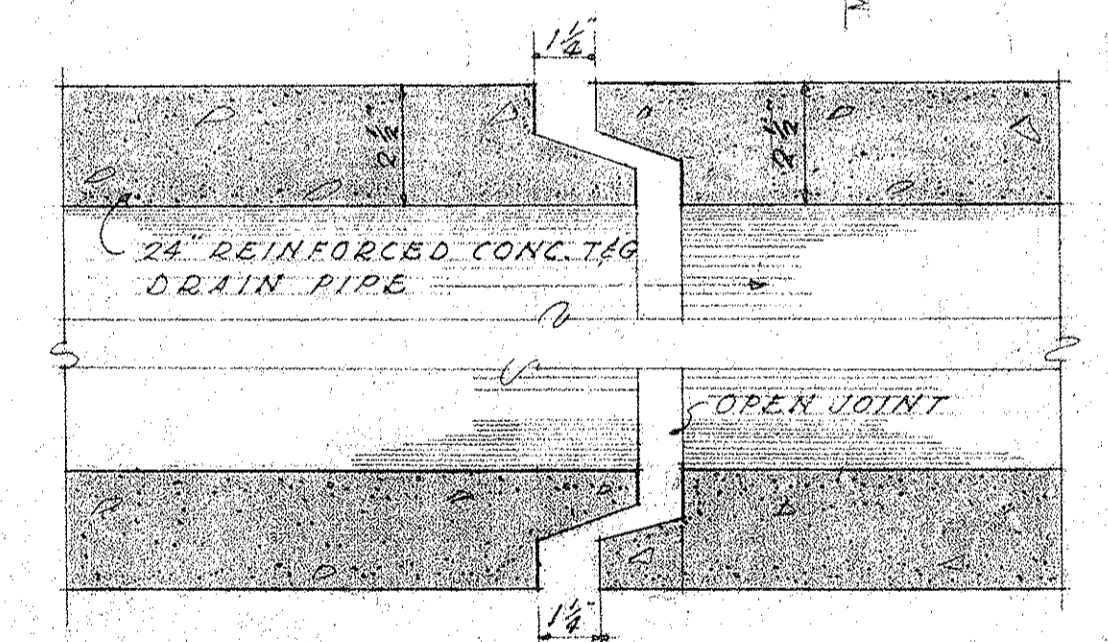


ROADWAY CATCH BASIN DETAILS

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



SECTION B-B



OPEN JOINT DETAIL OF 24\"/>

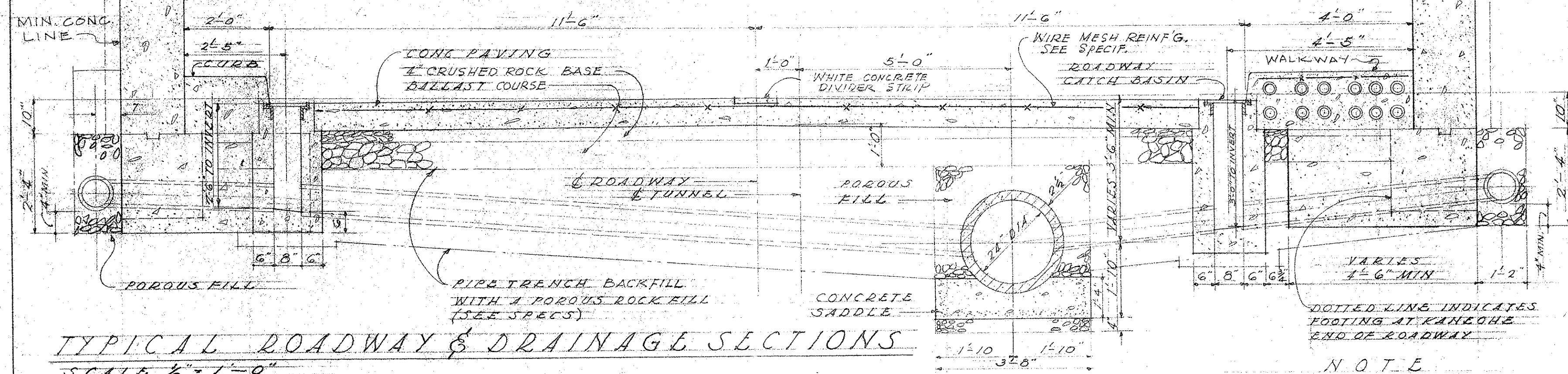
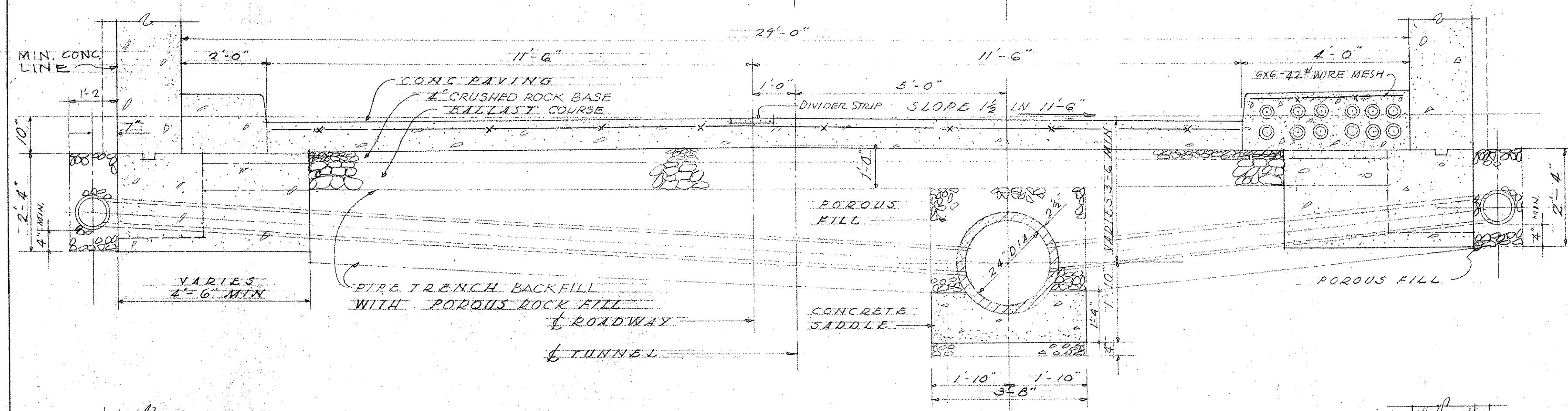
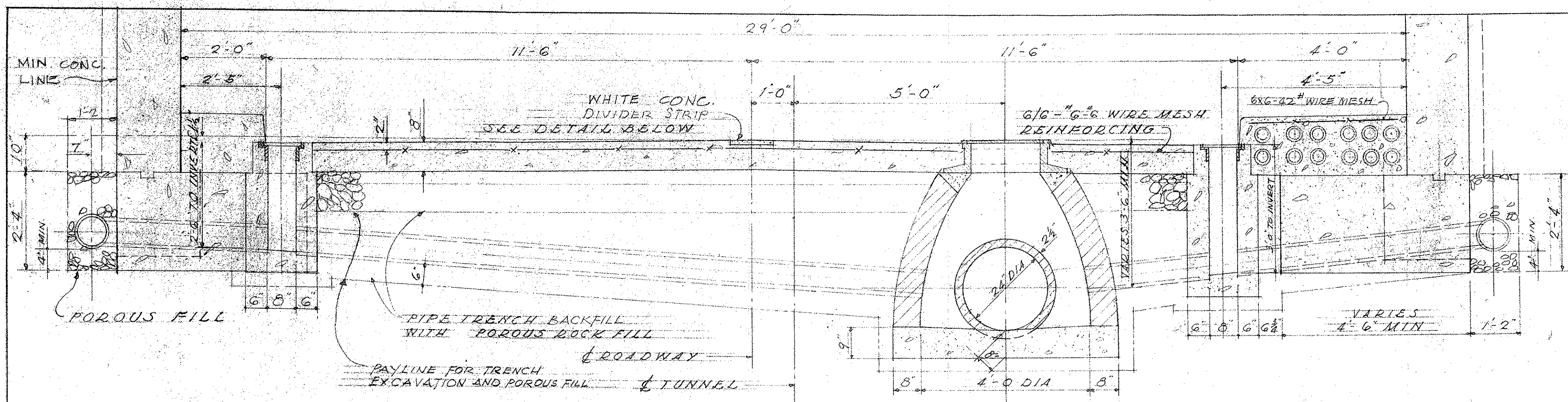
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

KALIHI TUNNEL
TUNNEL & SHAFT
ROADWAY & DRAINAGE
TYPICAL MODULES

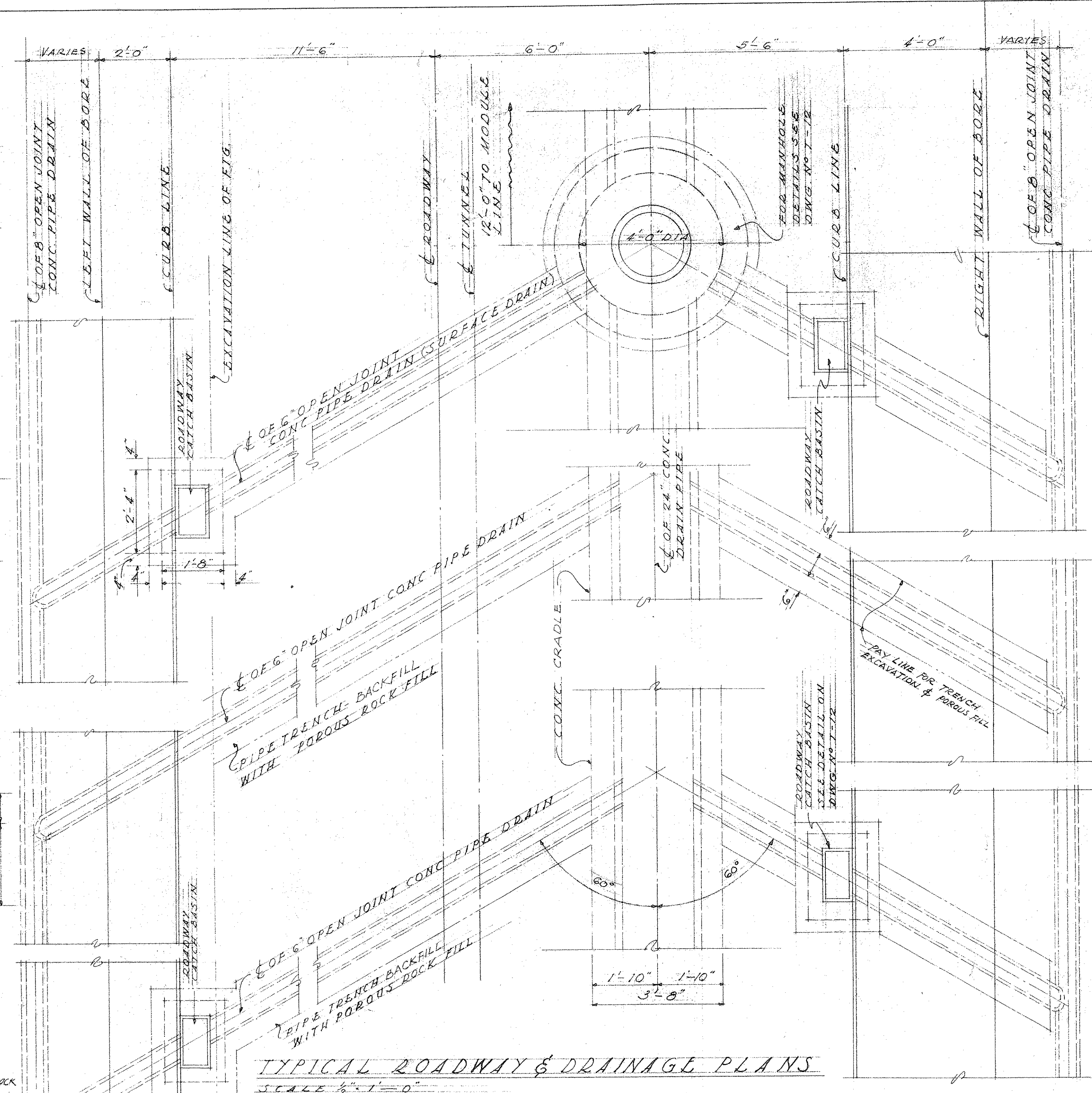
ENGINEER: W. L. ... DATE: JULY 18, 1953
DRAFTSMAN: E. K. C. ... CHECKED BY: W. LUM, Y.T.
SCALE: AS NOTED ... TRACER: G. H.

APPROVED: *W. L. ...* CHIEF ENGINEER
APPROVED: *W. Butzford* BUREAU ENGINEER

W.S.	PROFILE	C.B.
CR. SEC.	P.B.	S.B.
W.H. BY:	P.W. BY:	S.W. BY:

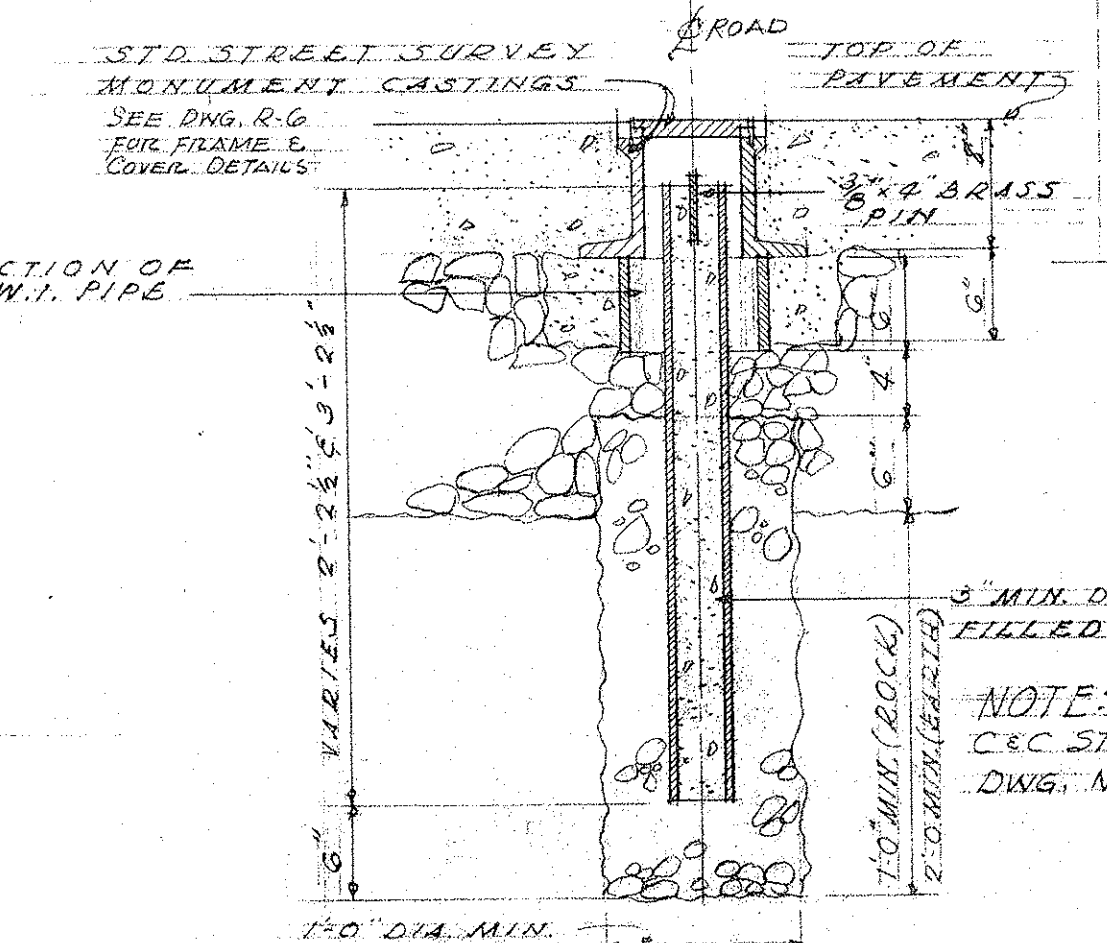


TYPICAL ROADWAY & DRAINAGE SECTIONS
SCALE 1/2" = 1'-0"

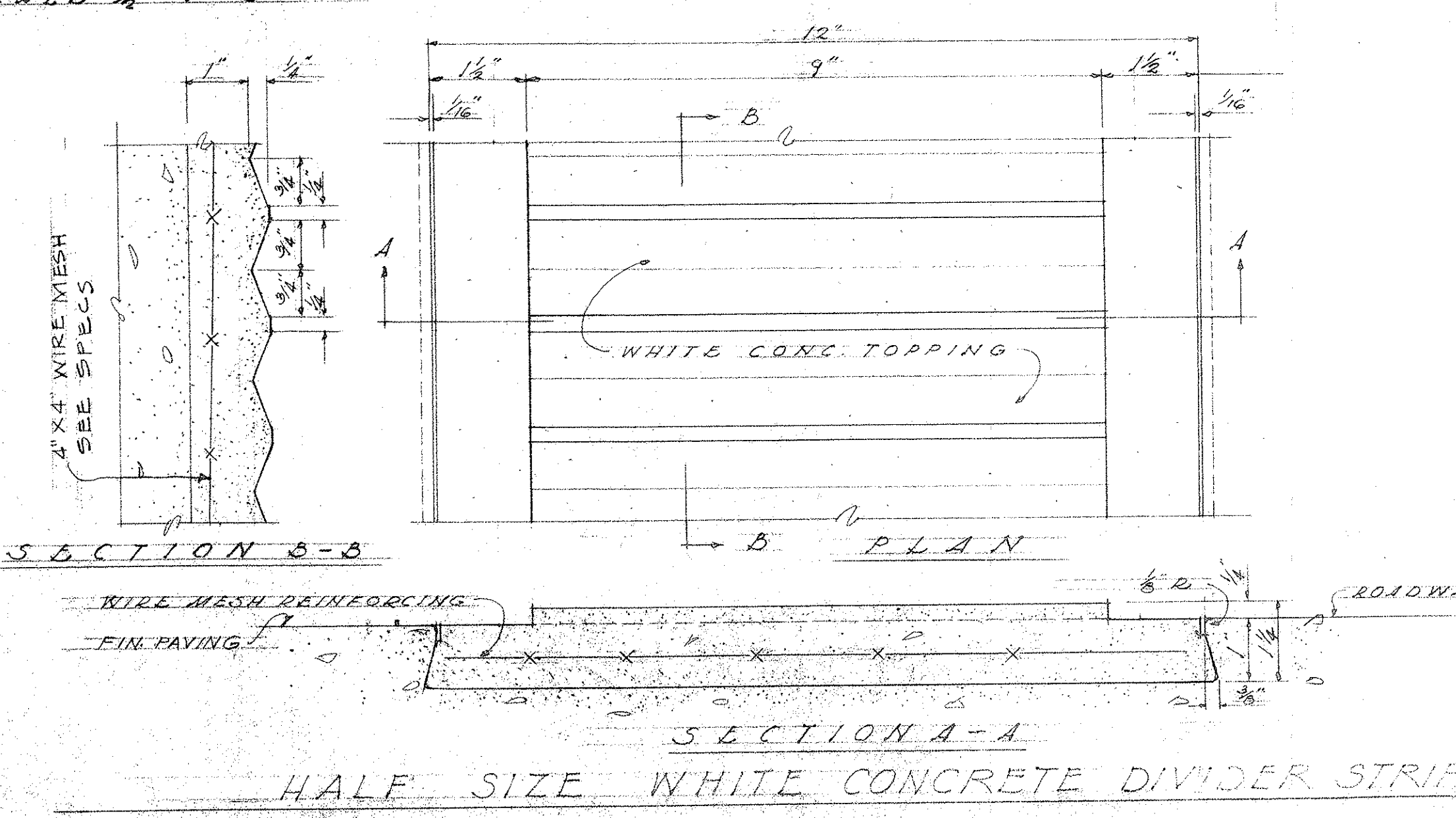


TYPICAL ROADWAY & DRAINAGE PLANS
SCALE 1/2" = 1'-0"

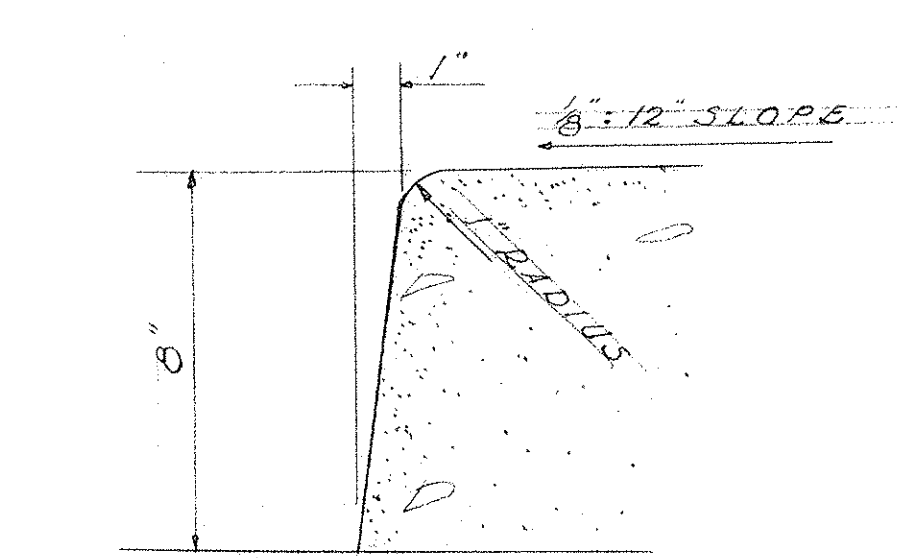
NOTE
THESE ROADWAY SECTIONS TAKEN THRU KALIHI END OF ROADWAY, KANEHE ROADWAY SECTIONS SIMILAR.
NO CONCRETE CRADLE WILL BE USED IN SECTIONS THRU ROCK.



STREET SURVEY MONUMENT DETAIL (SCALE 1" = 1'-0")



HALF SIZE WHITE CONCRETE DIVIDER STRIP



CURB DETAIL
SCALE 3" = 1'-0"

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

KALIHI TUNNEL

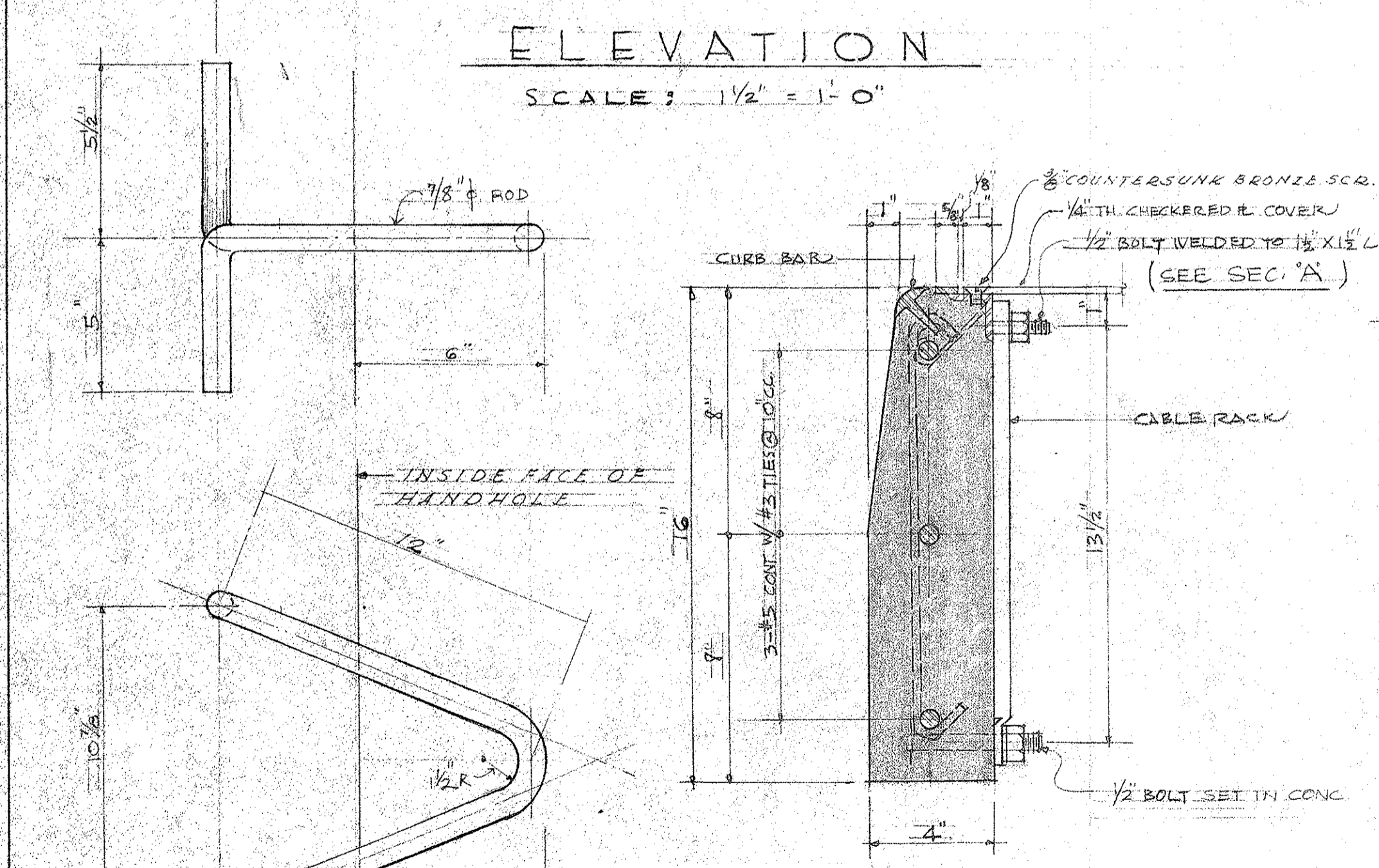
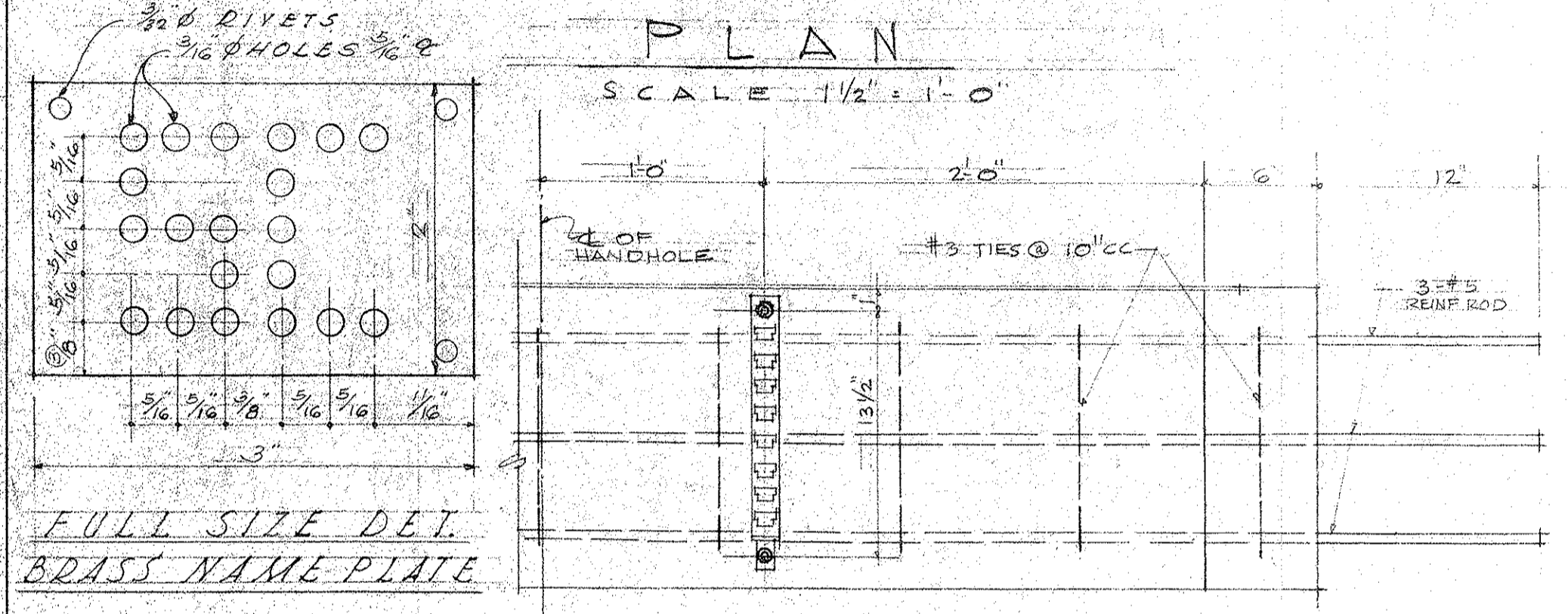
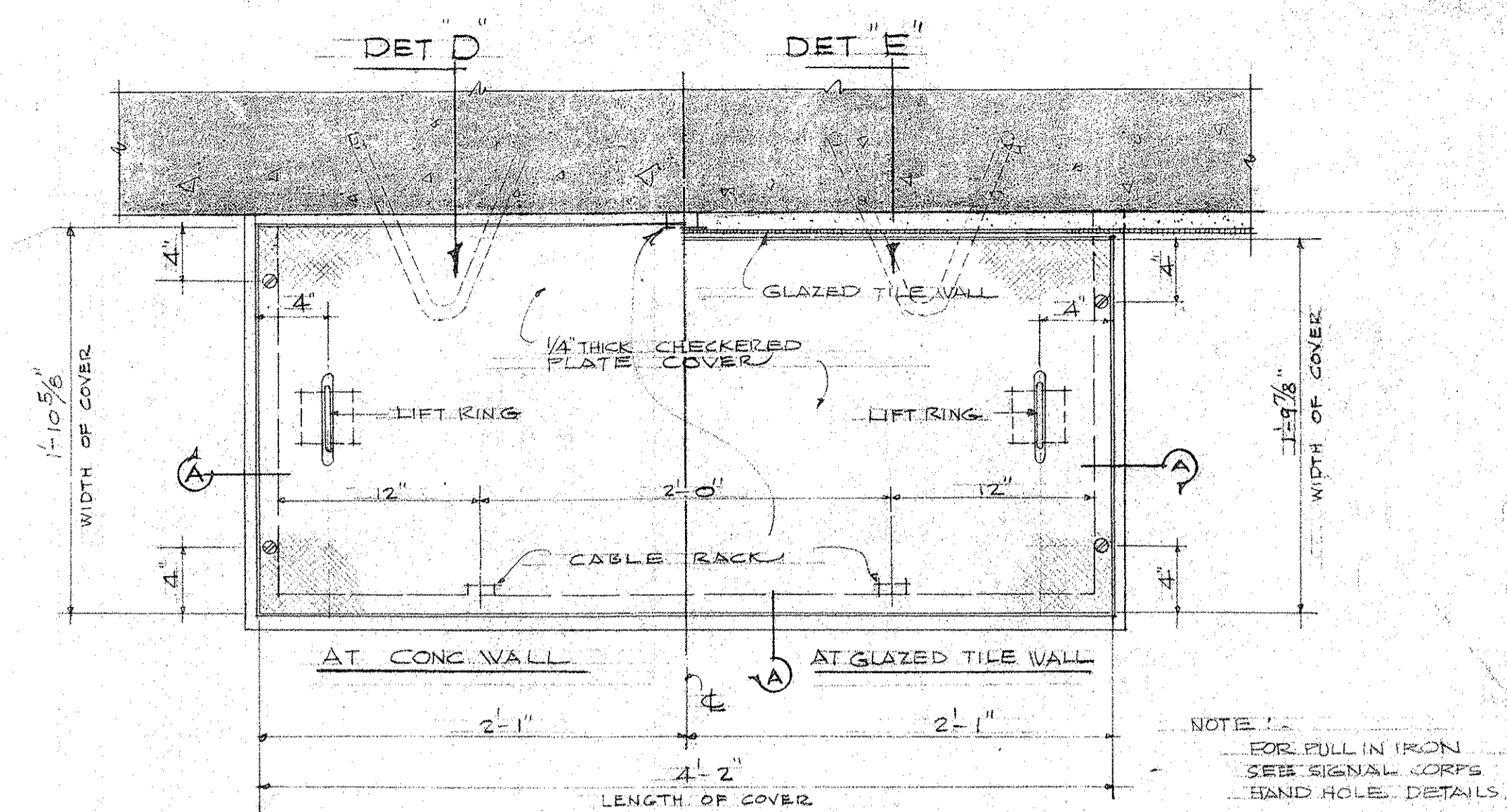
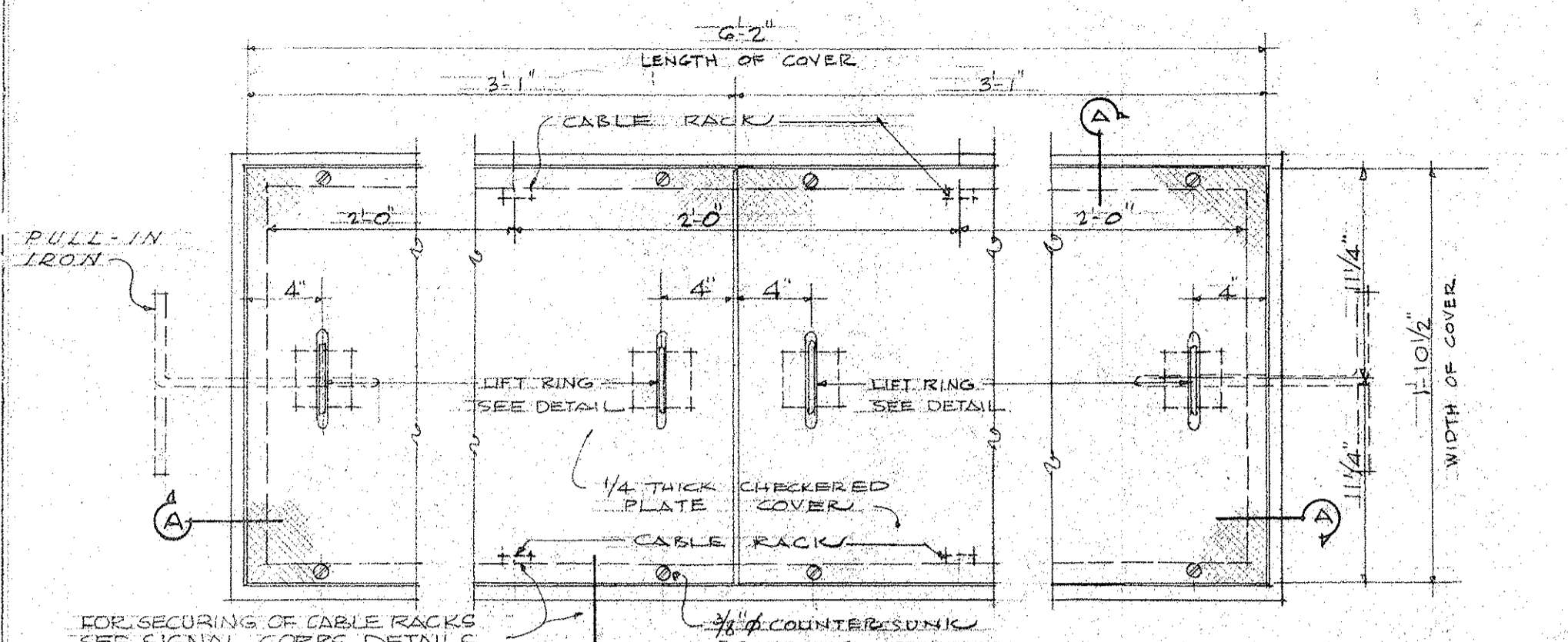
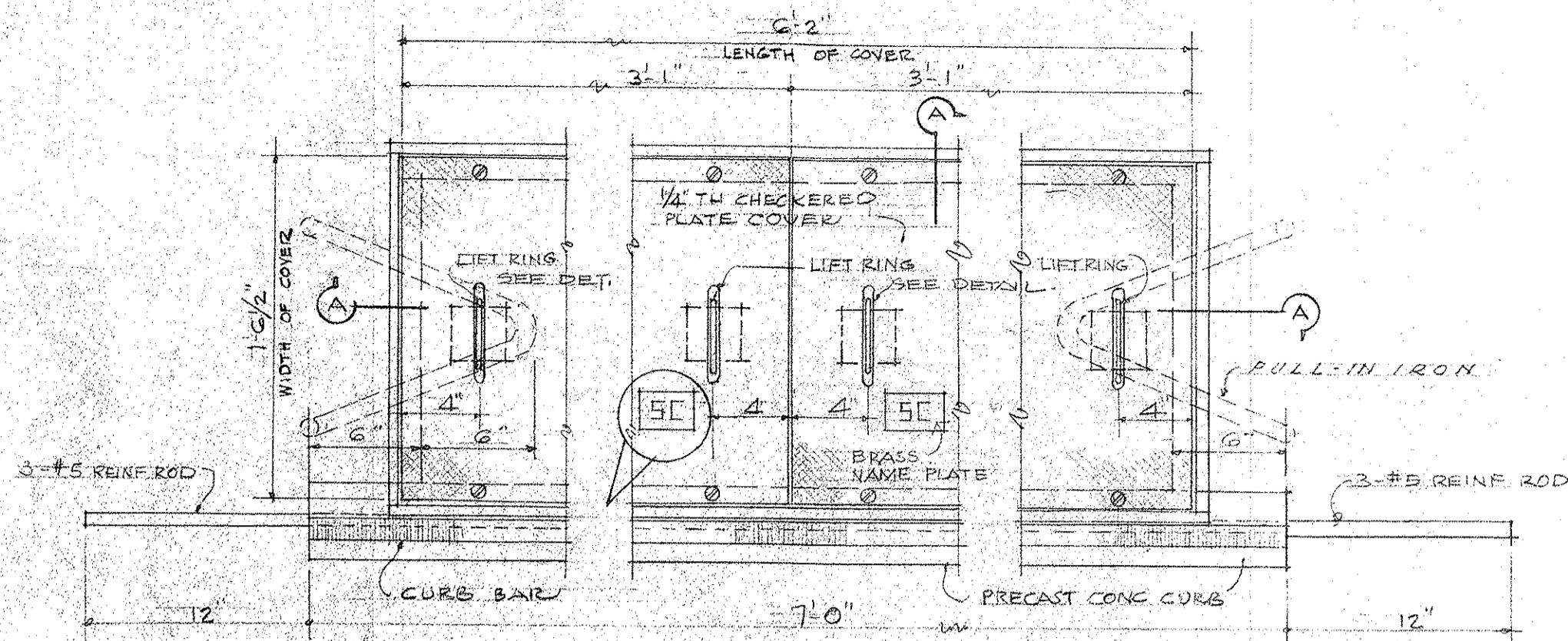
TUNNEL & SHAFT
ROADWAY & DRAINAGE
DETAILS

ENGINEER *W. L. ...* DATE *JULY 15, 1953*
 DRAFTSMAN *E. K. C.* CHECKED BY *W. L. ...*
 SCALE *AS NOTED* TRACER *E. H. C. H.*

APPROVED: *O. G. ...* APPROVED: *H. W. ...*
 CHIEF ENGINEER BUREAU ENGINEER

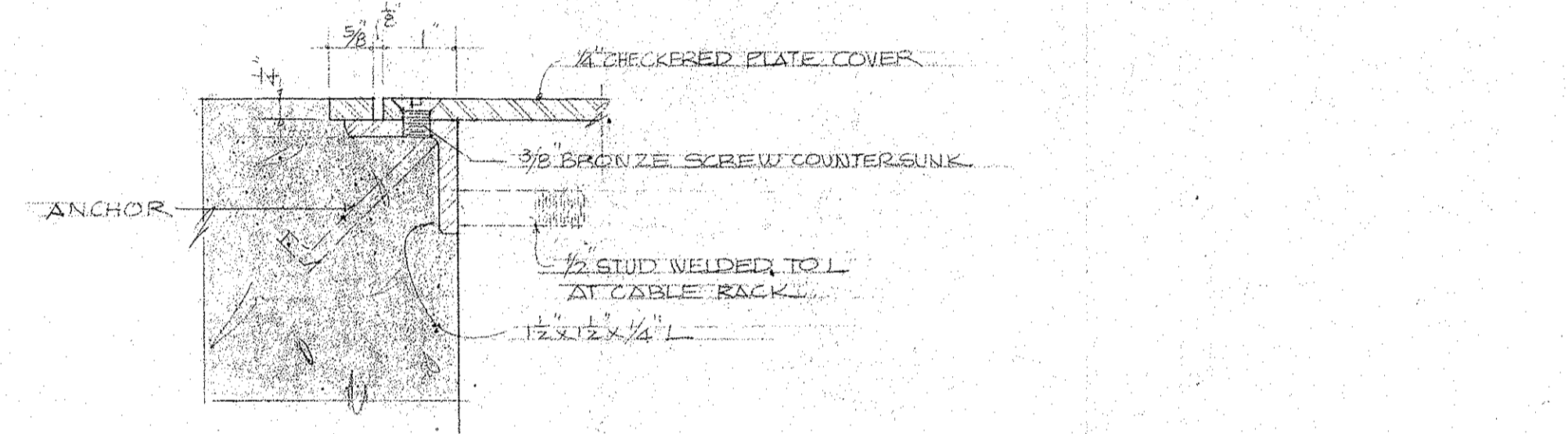
W. S.	PROFILE	C. B.
C. R. SEC.	F. B.	S. B.
W. M. BY:	F. W. BY:	S. BY:

SECTION C JOB NO. 26-53 DWG. T-13



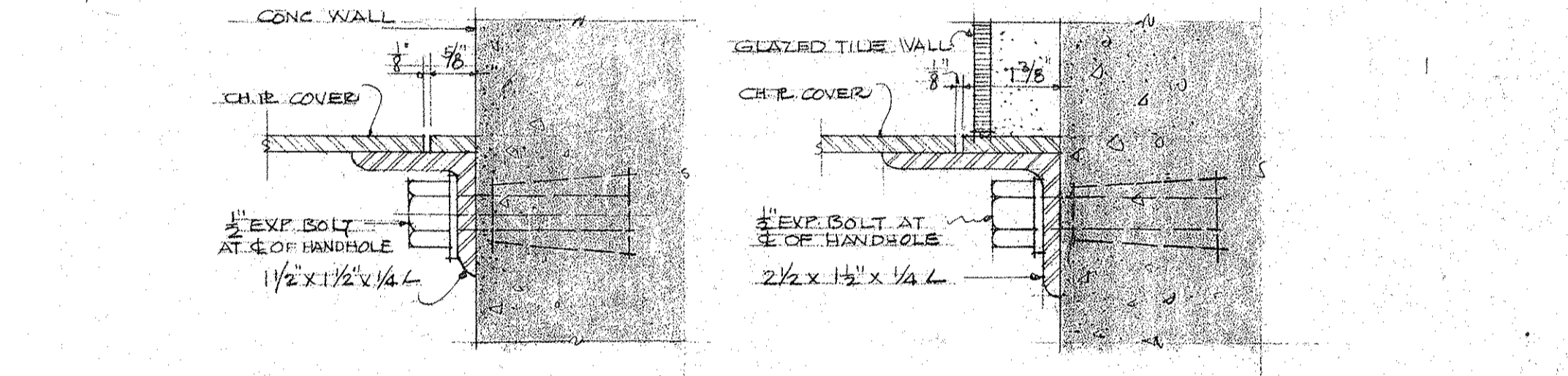
M.T. CO. HANDHOLE DETAILS
SCALE 1/2" = 1'-0"

M.T. CO. HANDHOLE DETAILS



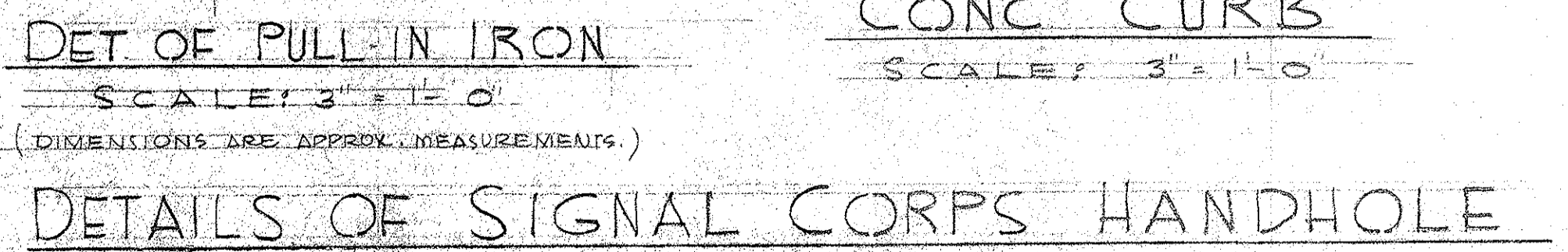
SECTION A-A
SCALE: 1/2 F.S.
COVER FRAME DET.

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

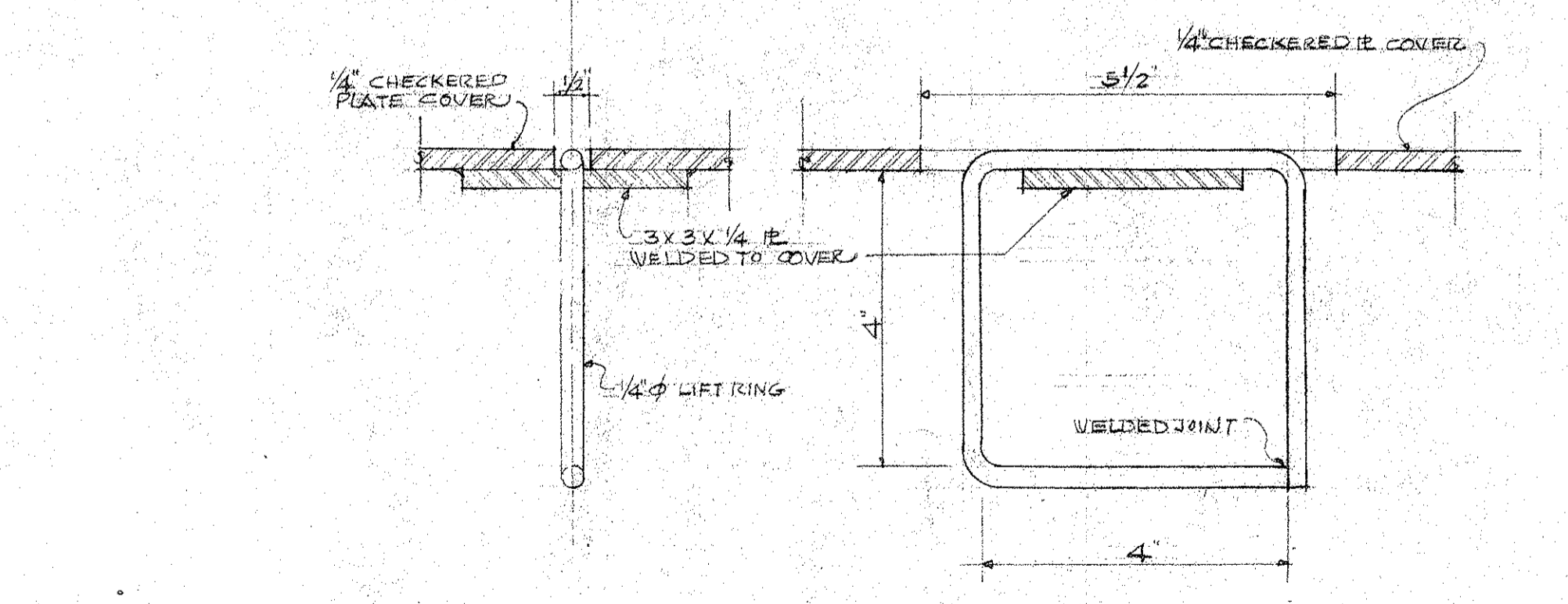


DETAIL "D" 1/2 F.S. SCALE
DETAIL "E" 1/2 F.S. SCALE

C.&C. HANDHOLE DETAIL

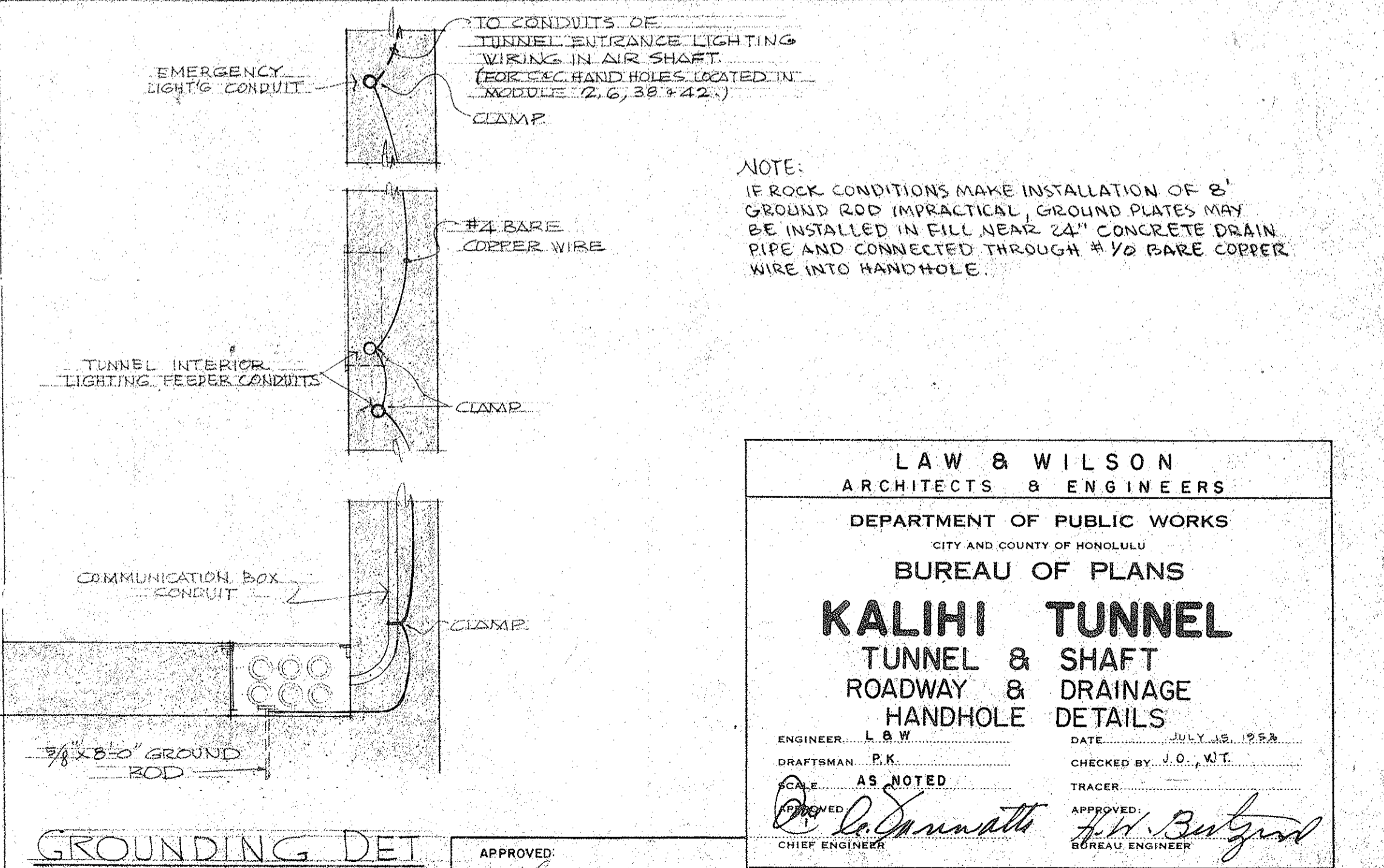


DETAILS OF SIGNAL CORPS HANDHOLE
SCALE: 3" = 1'-0"



DETAILS OF LIFT RING 1/2 F.S. SCALE

- NOTES:
- ALL METAL SURFACES OF HANDHOLE FRAMES, HARDWARE & COVERS SHALL BE GIVEN 3 COATS OF ASPHALT PAINT AFTER INSTALLATION.
 - ALL HANDHOLES SHALL BE EQUIPPED WITH 3/8" BRONZE COUNTERSUNK SCREW TO SECURE R. COVER.



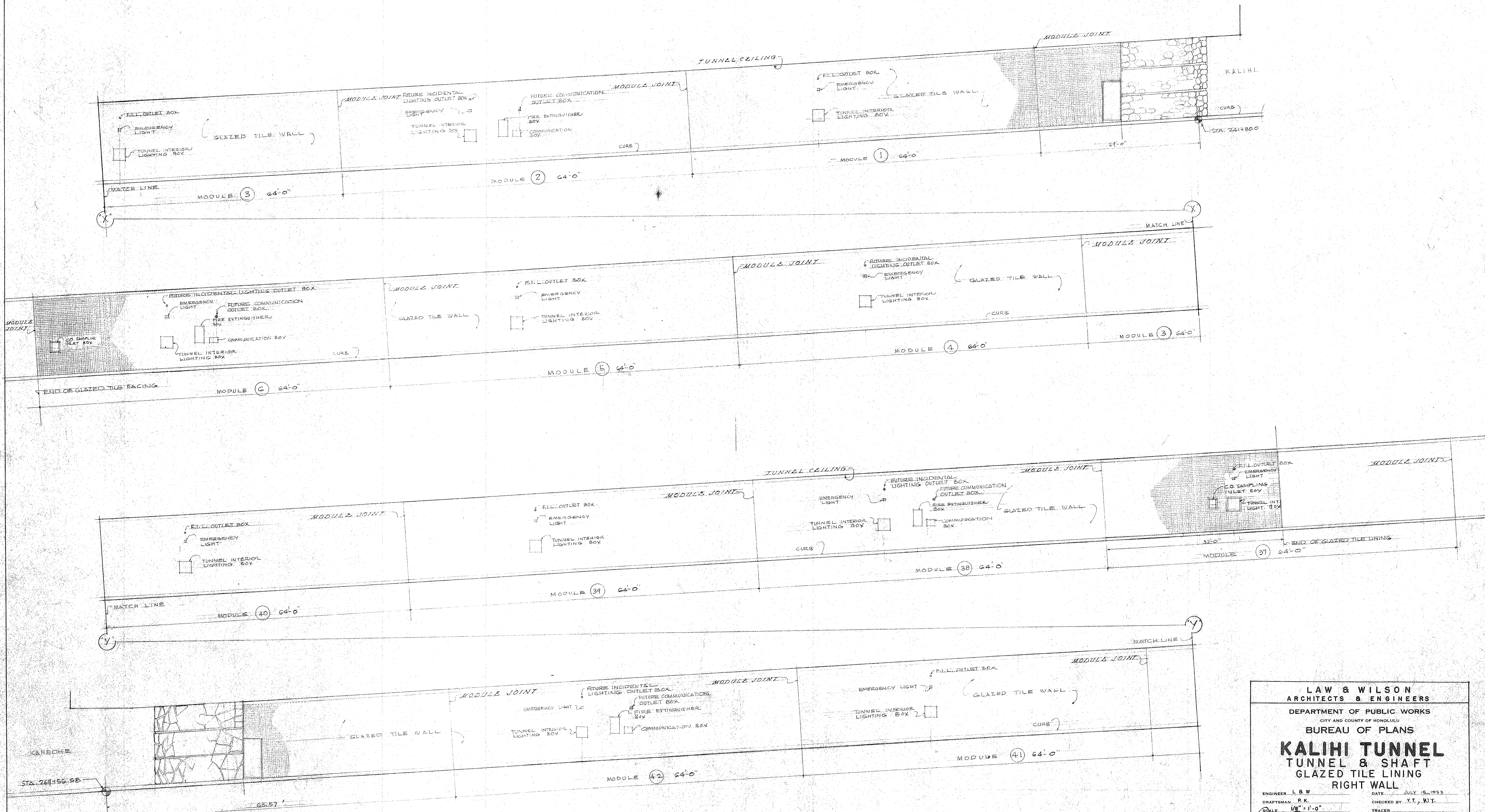
GROUNDING DET

NOTE:
IF ROCK CONDITIONS MAKE INSTALLATION OF 8' GROUND ROD IMPRACTICAL, GROUND PLATES MAY BE INSTALLED IN FILL NEAR 24" CONCRETE DRAIN PIPE AND CONNECTED THROUGH #10 BARE COPPER WIRE INTO HANDHOLE.

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BUREAU OF PLANS
KALIHI TUNNEL
TUNNEL & SHAFT
ROADWAY & DRAINAGE
HANDHOLE DETAILS

ENGINEER: L.B.W. DATE: JULY 25, 1958
DRAFTSMAN: P.K. AS NOTED CHECKED BY: J.O., N.T.
APPROVED: *L. J. Butzard* TRACER: *L. J. Butzard*
CHIEF ENGINEER BUREAU ENGINEER

W.S.	PROFILE	C.B.
CR. SEC.	F.B.	S.B.
W.M.B.Y.	F.W.B.Y.	S.B.Y.



ELEVATIONS OF GLAZED TILE - RIGHT WALL

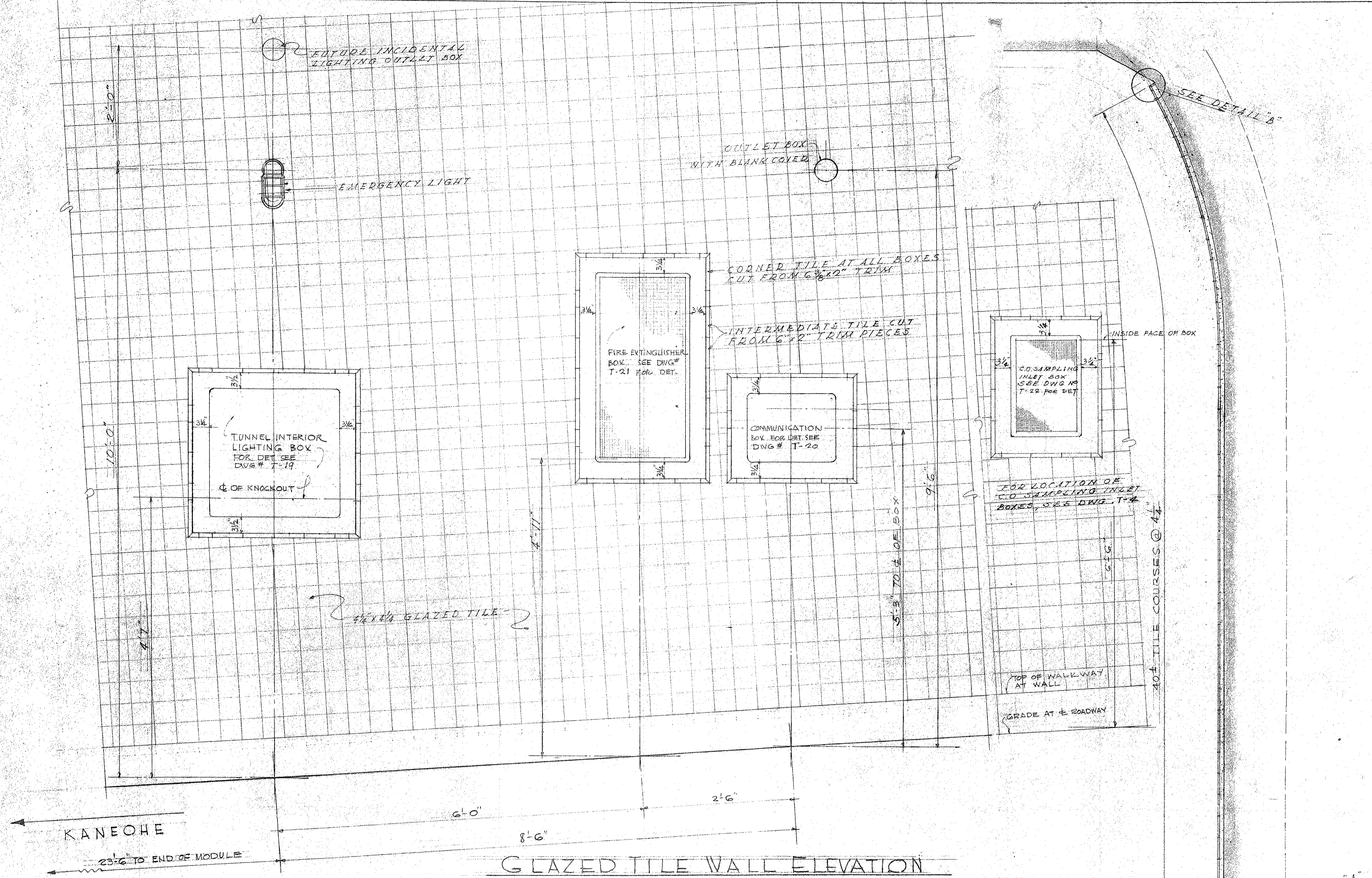
SCALE: 1/8" = 1'-0"

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 DEPARTMENT OF PUBLIC WORKS
 CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIHU TUNNEL
TUNNEL & SHAFT
GLAZED TILE LINING
RIGHT WALL

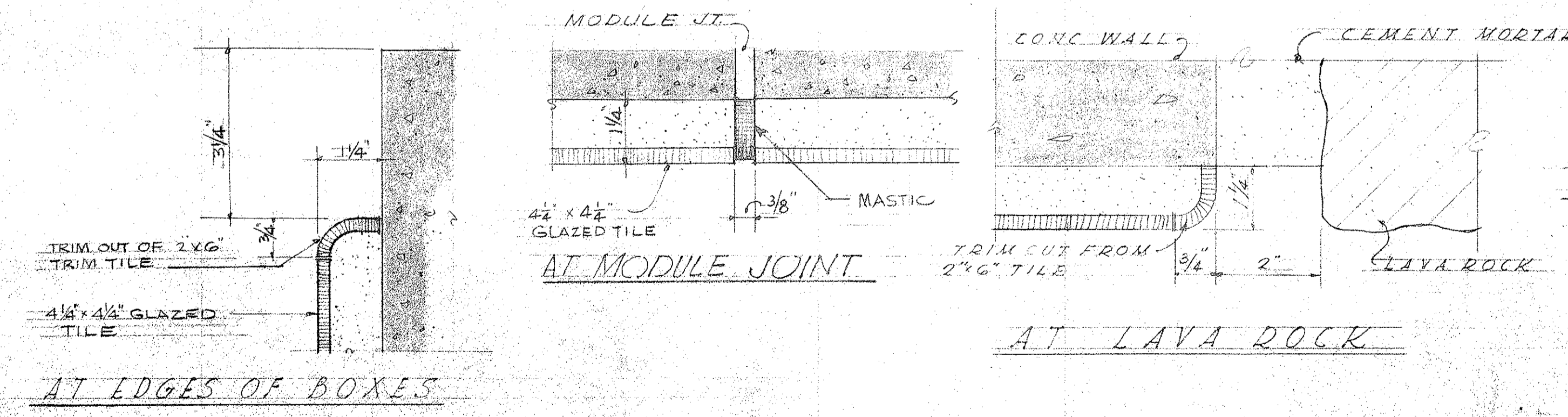
ENGINEER: L.B.W. DATE: JULY 15, 1953
 DRAFTSMAN: P.K. CHECKED BY: Y.T., W.T.
 SCALE: 1/8" = 1'-0" TRACER:
 APPROVED: *[Signature]* APPROVED: *[Signature]*
 CHIEF ENGINEER BUREAU ENGINEER

W.S.	PROFILE	C.B.
CR. SEC.	F.B.	S.B.
W.M.B.Y.	F.W.B.Y.	S.B.Y.

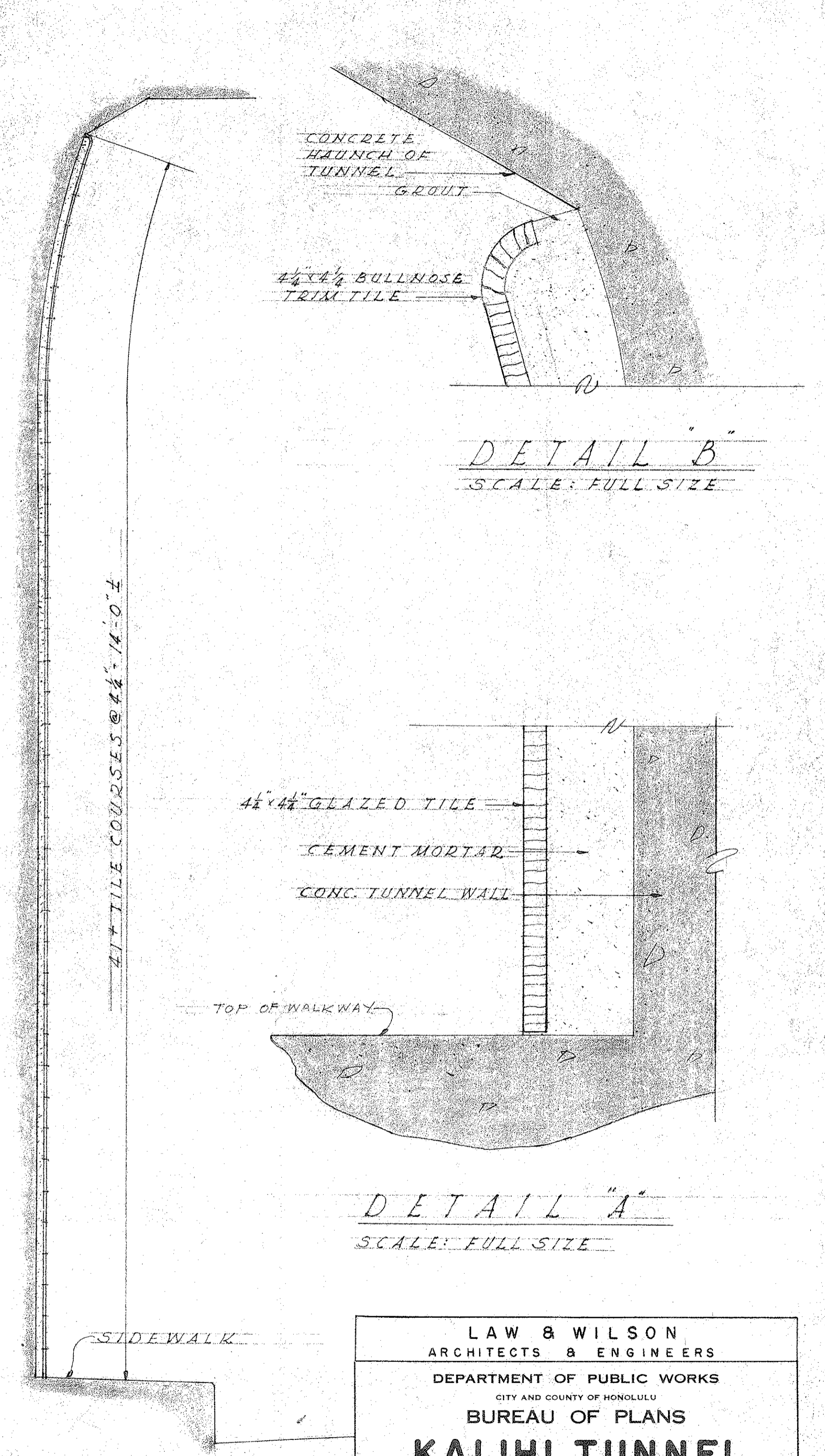
SECTION C JOB NO. 26-53 DWG. T-16



GLAZED TILE WALL ELEVATION
SCALE: 1" = 1'-0"



GLAZED TILE WALL DETAILS
SCALE: 1/2" = 1'-0"



DETAIL B
SCALE: FULL SIZE

DETAIL A
SCALE: FULL SIZE

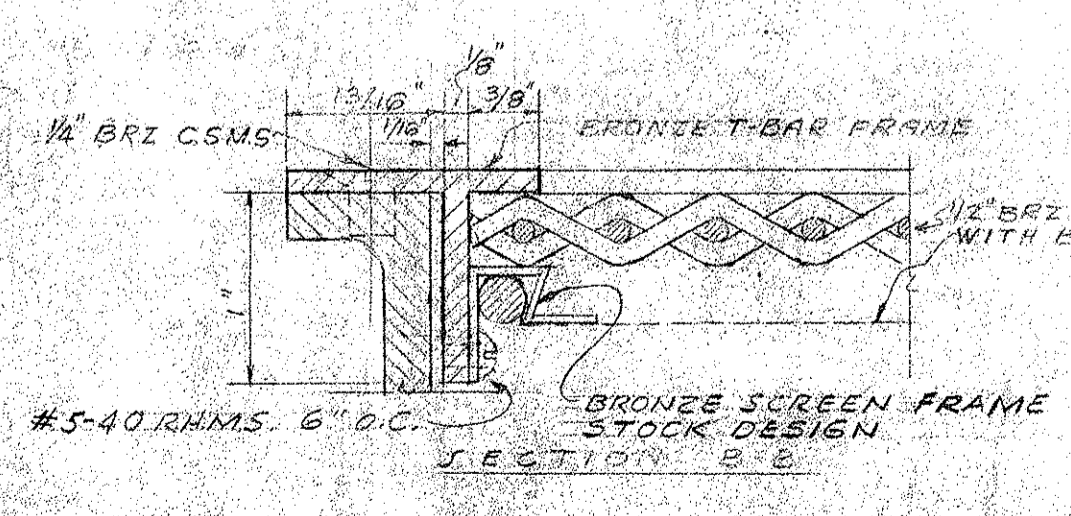
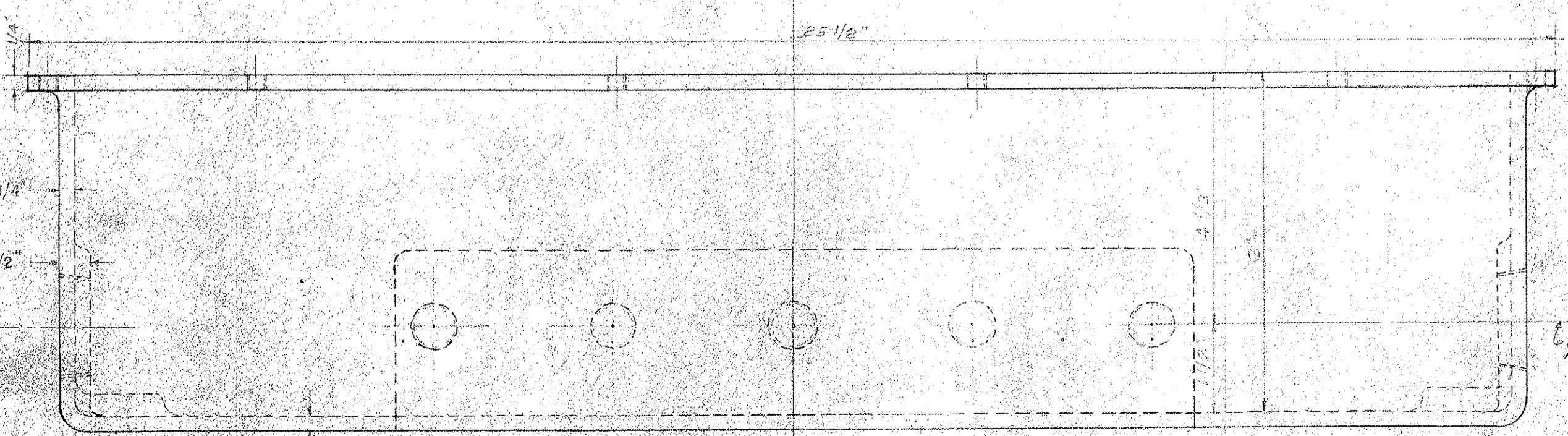
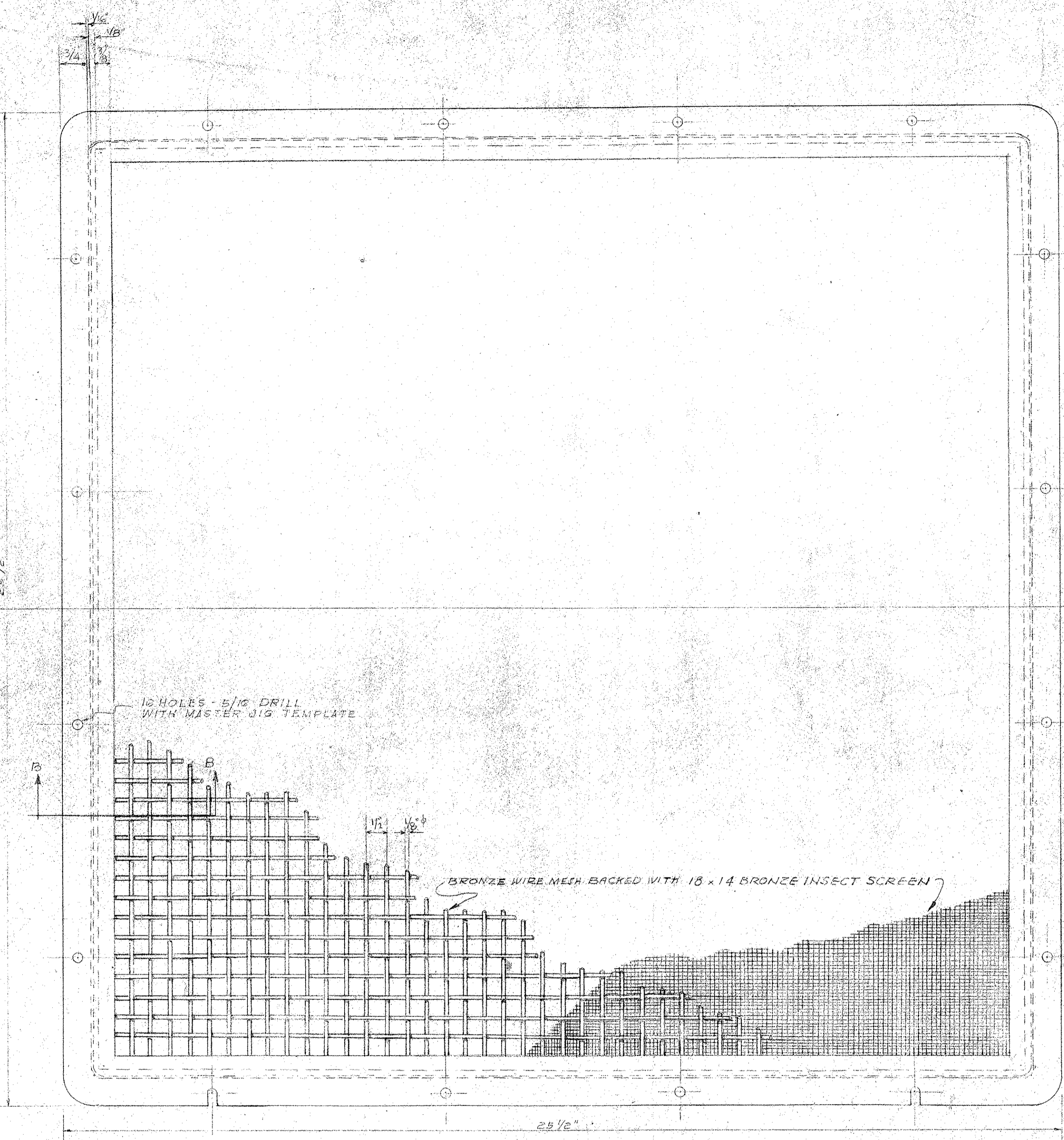
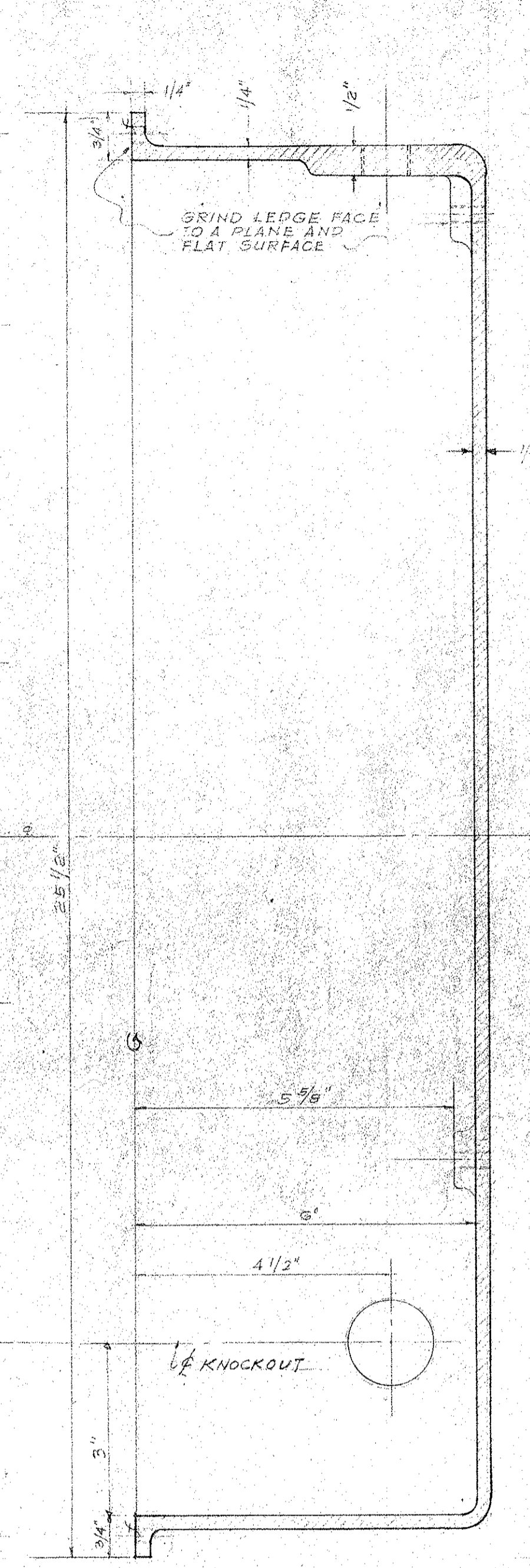
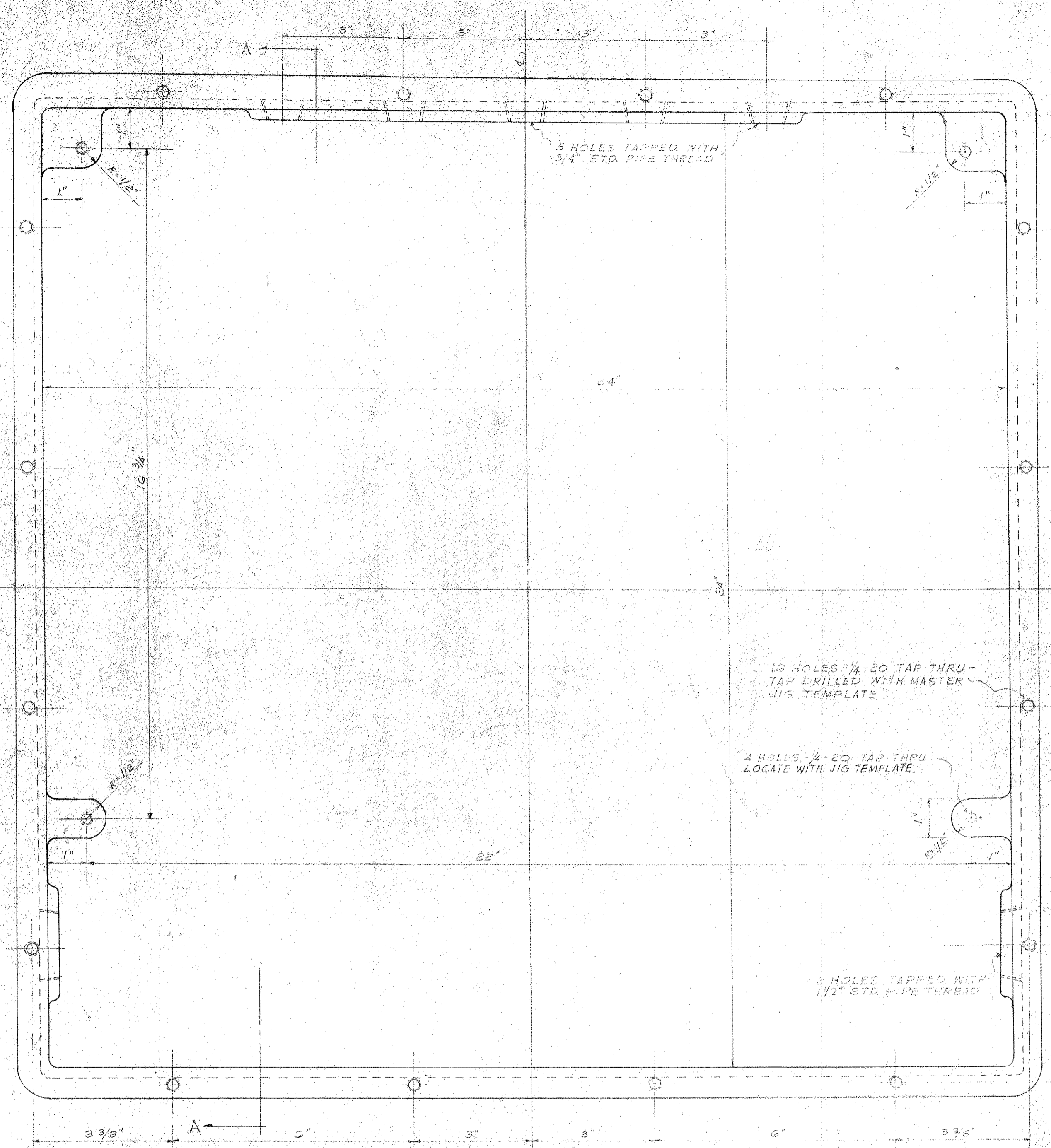
LAW & WILSON
ARCHITECTS & ENGINEERS
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIHI TUNNEL
TUNNEL & SHAFT
GLAZED TILE LINING
DETAILS

ENGINEER: L.B.W. DATE: JULY 15, 1953
DRAFTSMAN: E.H. CHECKED BY: *[Signature]*
SCALE: AS NOTED TRACER:
APPROVED: *[Signature]*
CHIEF ENGINEER: *[Signature]*
BUREAU ENGINEER

W.P.	PROFILE	C.B.
C.N. SEC.	F.B.	S.B.
W.M. BY	F.W. BY	S.W.

APPROVED: *[Signature]*
ENGINEER, KALIHI TUNNEL

SECTION C JOB NO. 26-53 DWG. T-18



COVER PLATE - BRONZE
SCALE: HALF SIZE

TUNNEL INTERIOR LIGHTING BOX - CAST IRON
SCALE: HALF SIZE

COVER ASSEMBLY DETAIL
SCALE: FULL SIZE

GENERAL NOTES

TAP HOLES IN FLANGE OF BOX AND MATCHING HOLES IN COVER AND GASKET SHALL BE LOCATED FROM A MASTER JIG TEMPLATE FOR INTERCHANGEABILITY.
CAST RADI AND FILLETS TO CONFORM TO COMMERCIAL FOUNDRY PRACTICE.
FOR EQUIPMENT ASSEMBLY TO BE INSTALLED IN THIS BOX, SEE DRAWING E-4.

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CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIHI TUNNEL
TUNNEL & SHAFT
TUNNEL INTERIOR LIGHTING BOX

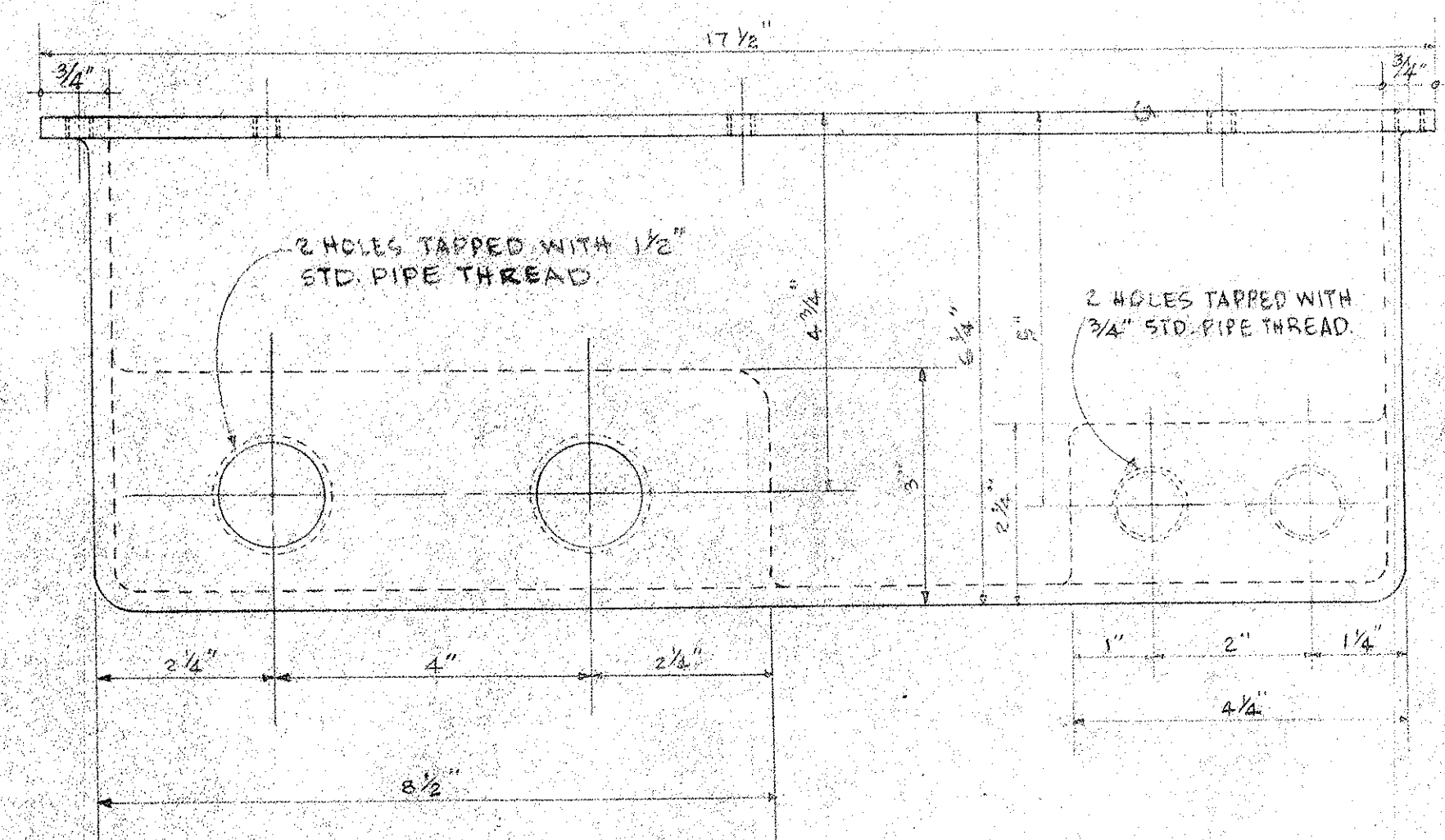
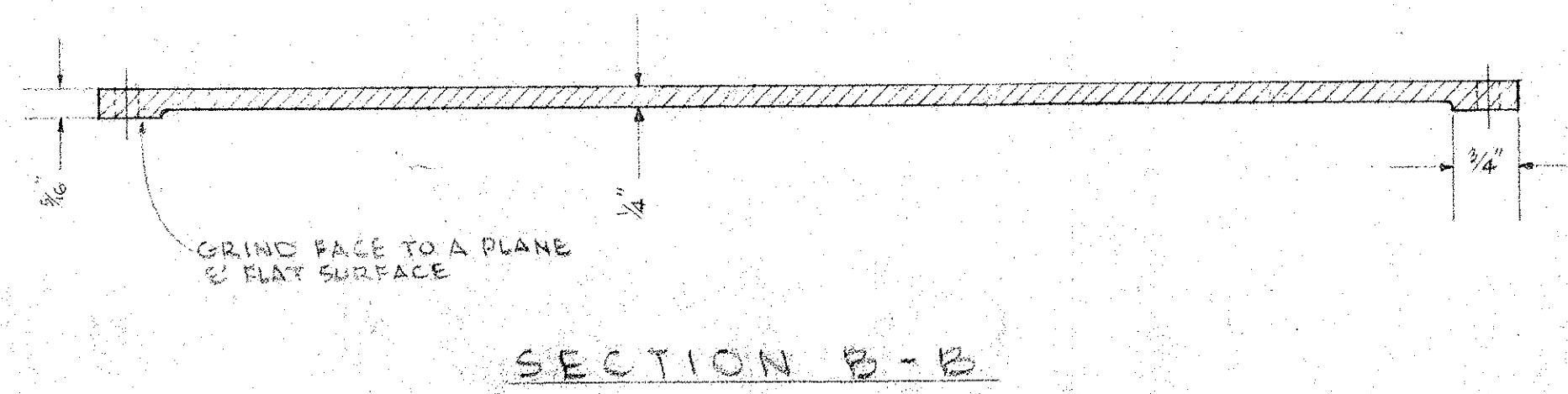
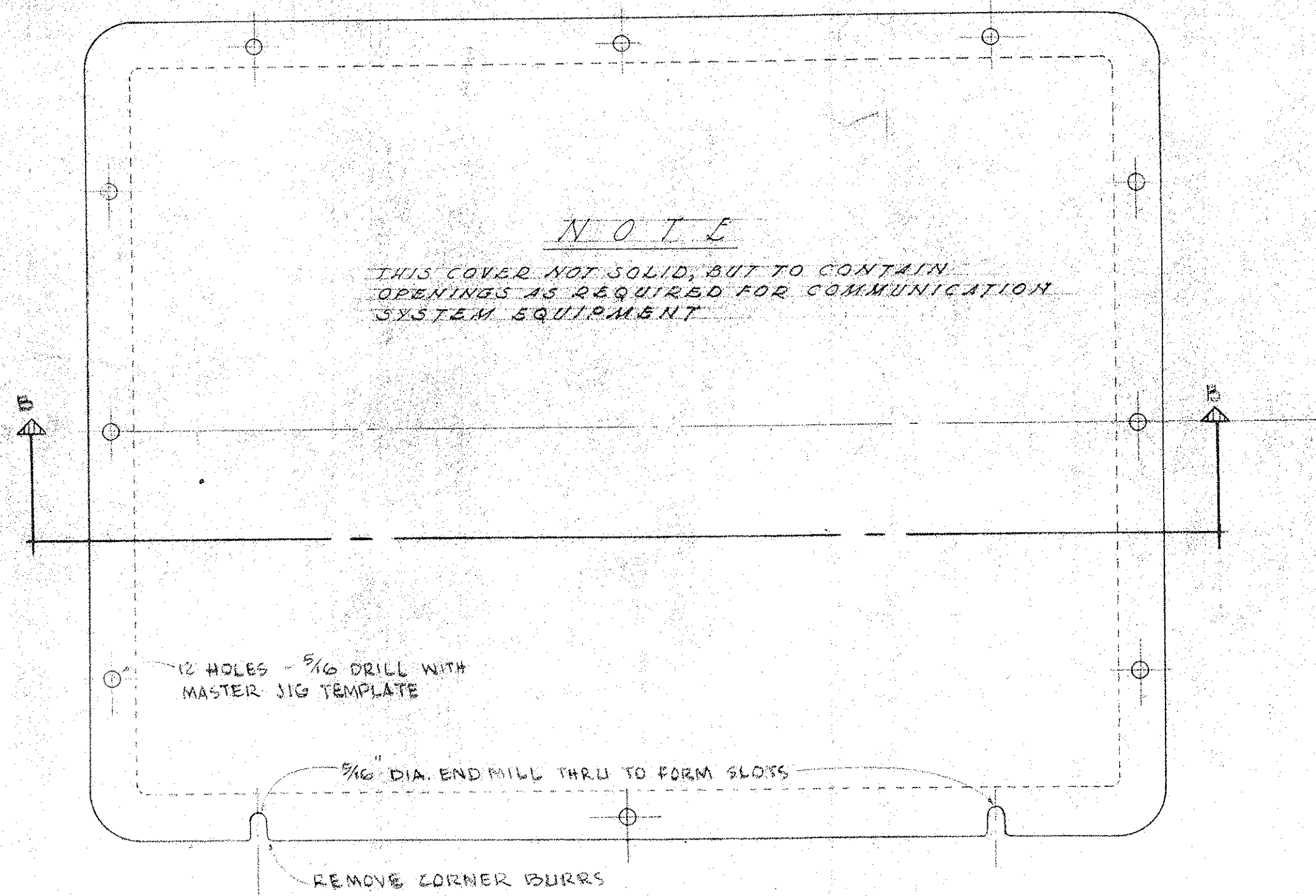
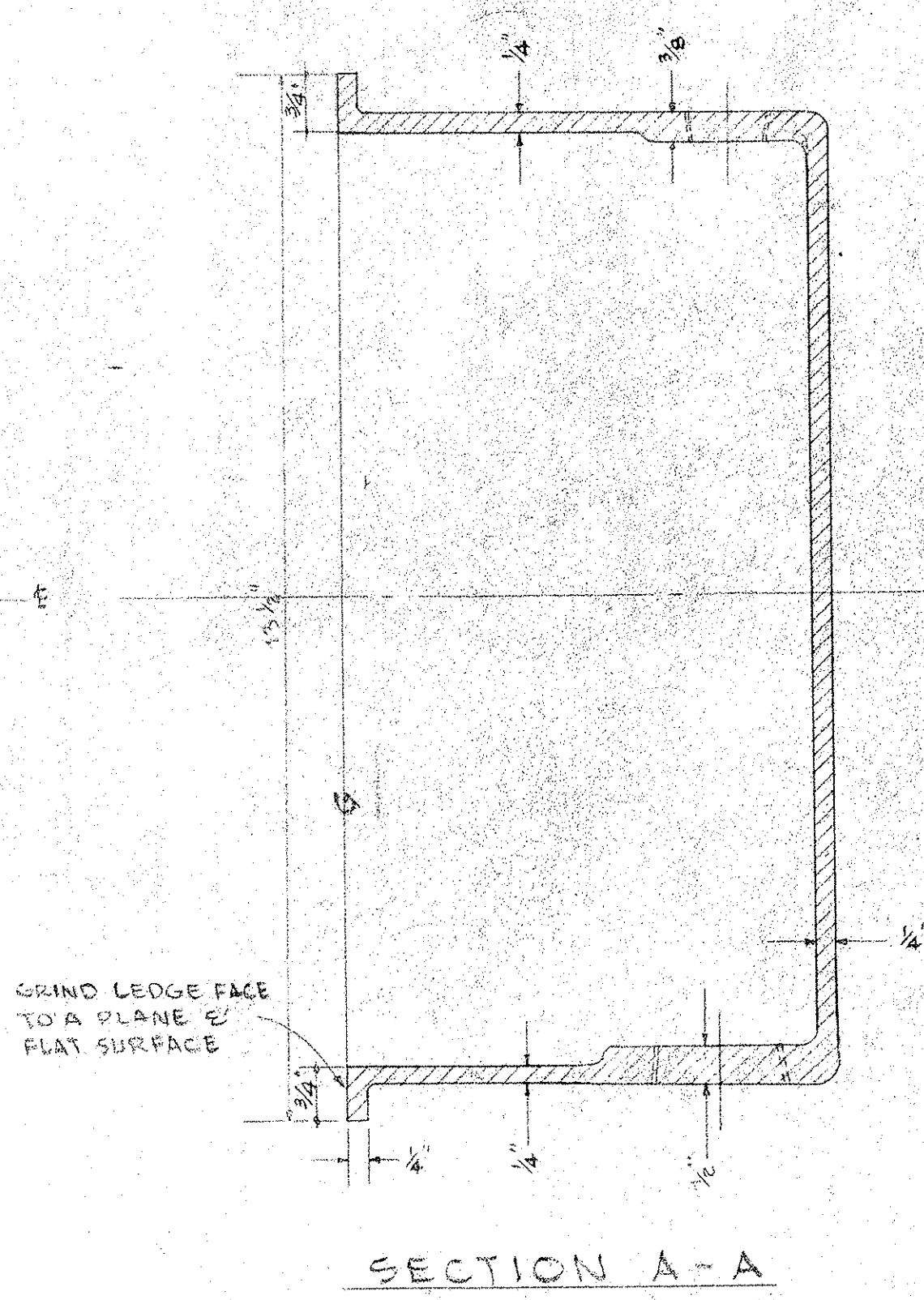
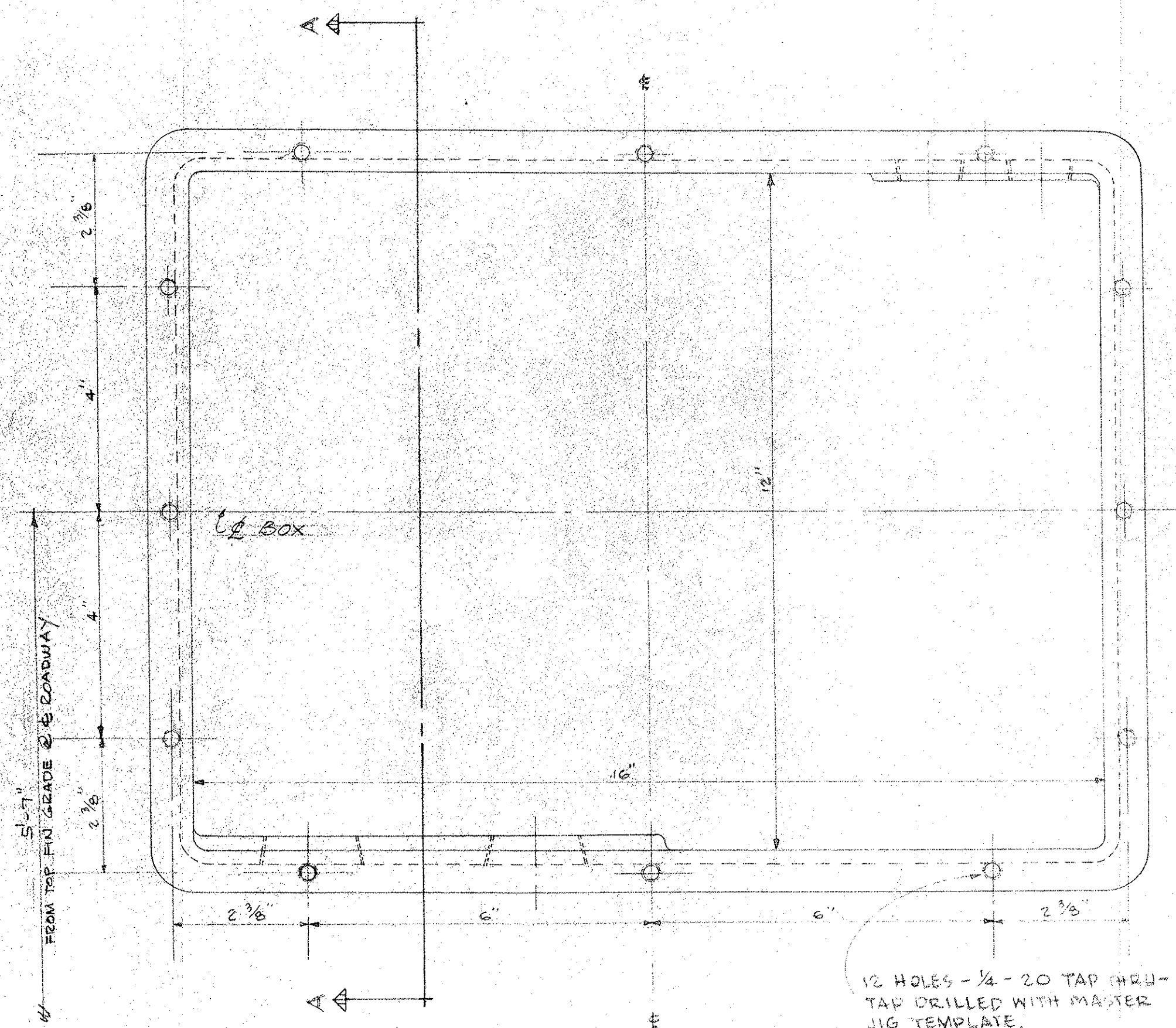
ENGINEER, L & W
DRAFTSMAN, C. H.
SCALE, AS NOTED

DATE, JULY 15, 1953
CHECKED BY, J. J. [Signature]
TRACER
APPROVED, [Signature]
CHIEF ENGINEER
BUREAU ENGINEER

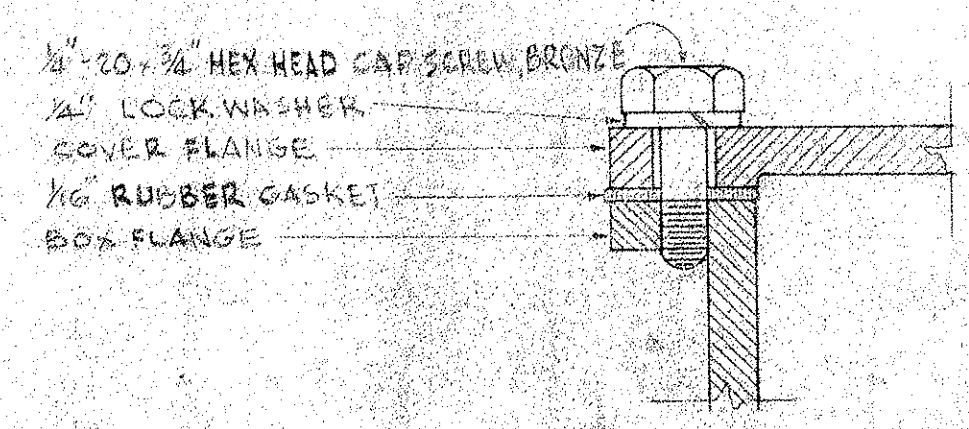
W. S.	PROFILE	C. B.
C. R. REC.	F. B.	S. B.
W. M. BY	F. W. BY	S. BY

APPROVED [Signature]
ENGINEER, KALIHI TUNNEL

SECTION C JOB NO. 26-53 DWG. T-19



COMMUNICATION STATION BOX - CAST IRON
SCALE: HALF SIZE



COVER ASSEMBLY DETAIL
SCALE: FULL SIZE

COVER PLATE - CAST BRONZE
SCALE: HALF SIZE

NOTE: FOR EQUIPMENT TO BE INSTALLED IN AND ON THIS COVER, SEE DWG. E-99.

GENERAL NOTES

TAP HOLES IN FLANGE OF BOX & MATCHING HOLES IN COVER & GASKET SHALL BE LOCATED FROM A MASTER JIG TEMPLATE FOR INTERCHANGEABILITY.

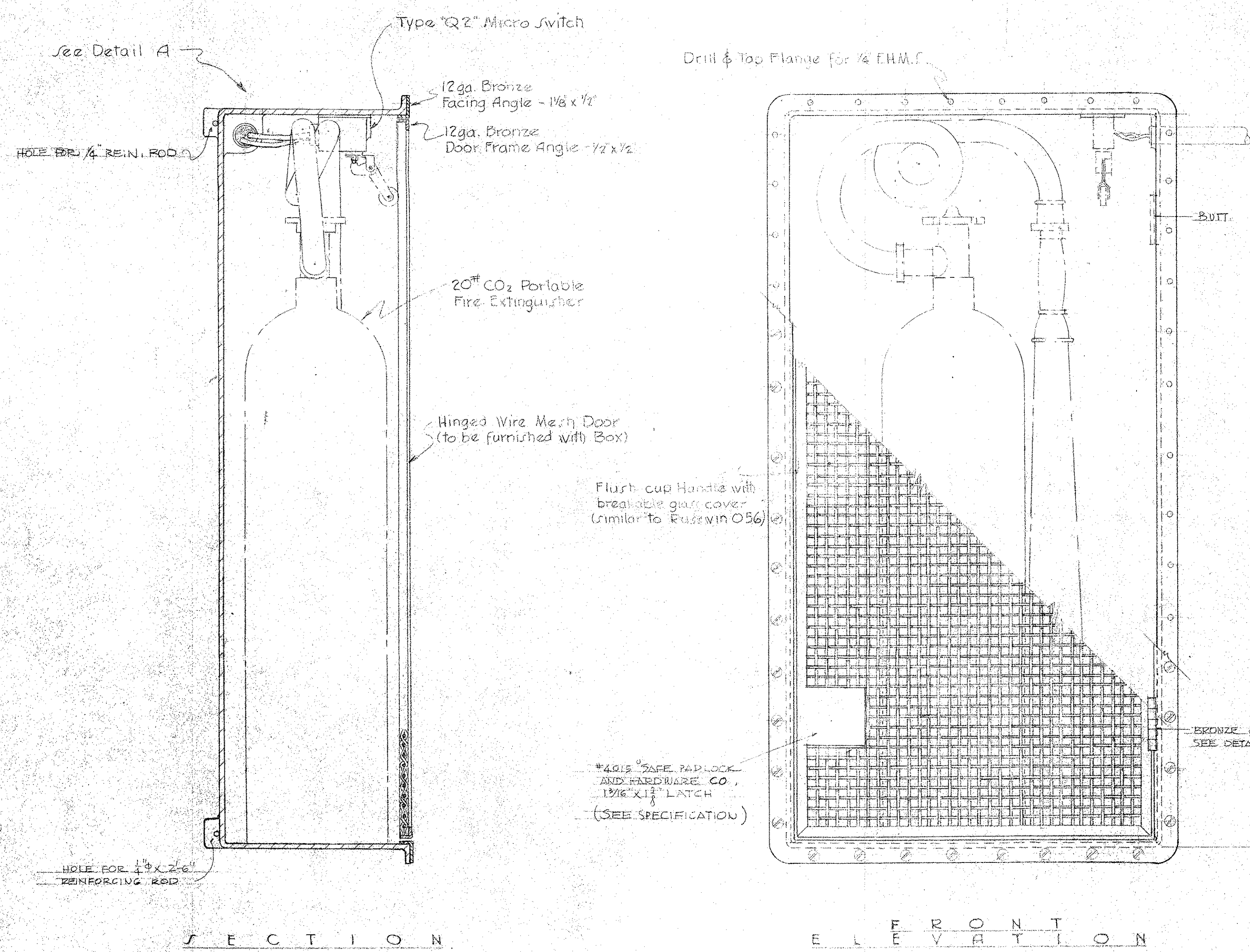
CAST RADIUS & FILLETS TO CONFORM TO COMMERCIAL BOUNDARY PRACTICE.

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CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
**KALIHI TUNNEL
TUNNEL & SHAFT
COMMUNICATION STATION BOX**

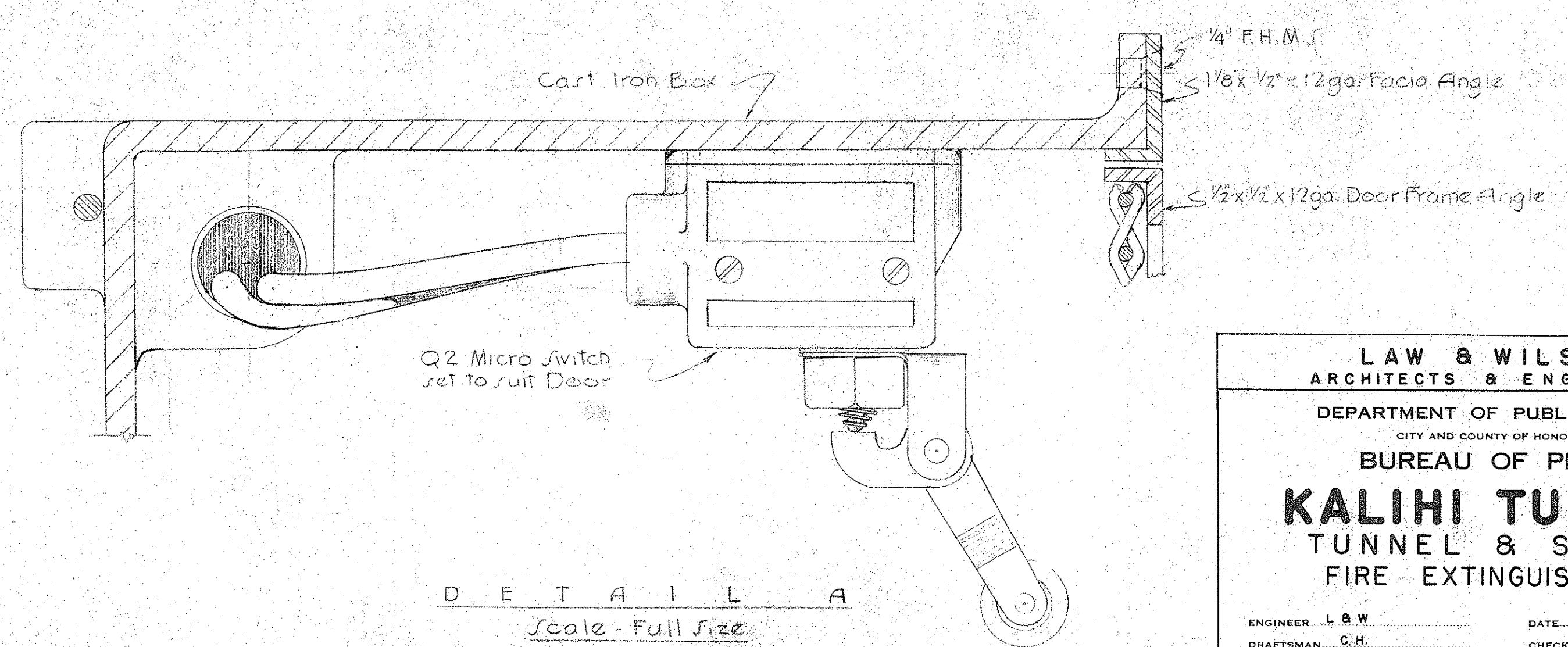
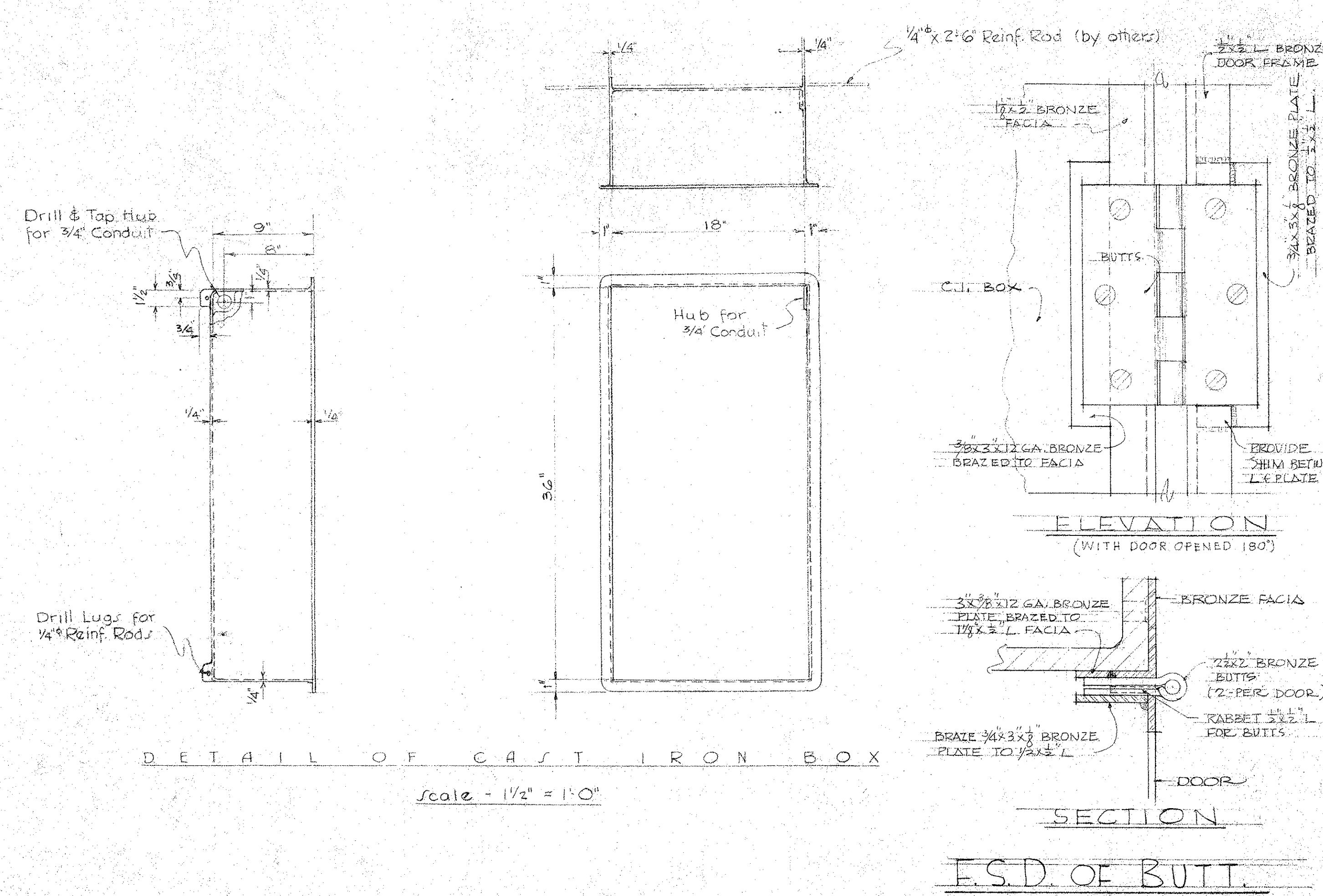
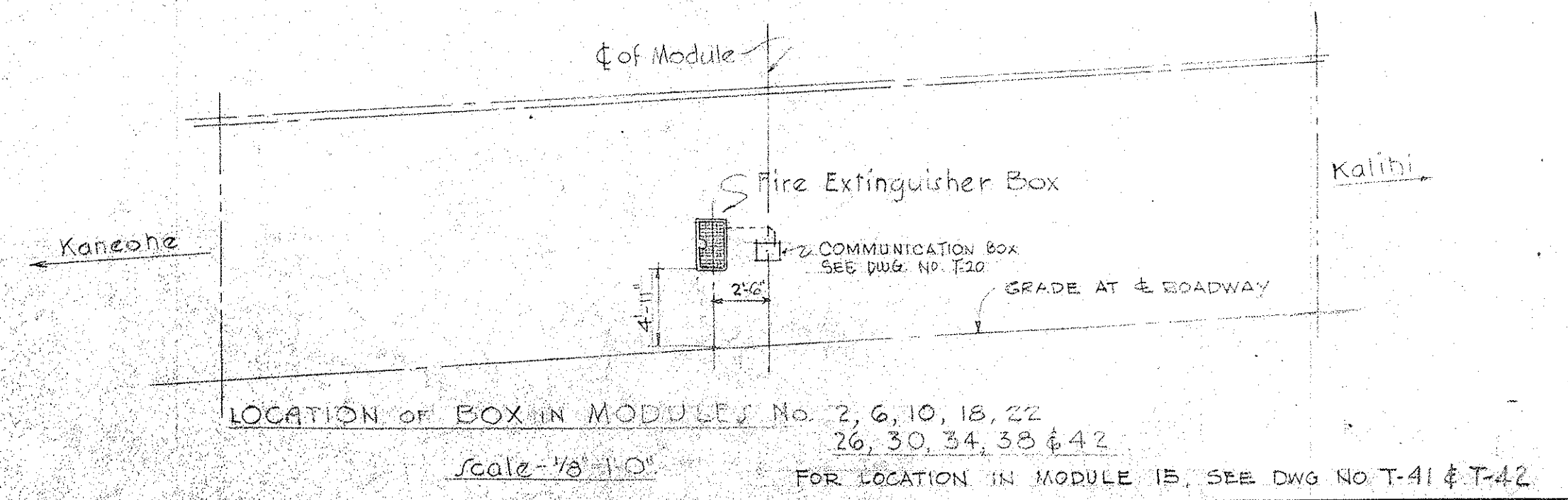
ENGINEER: L.B.W. DATE: JULY 15, 1953
DRAFTSMAN: S.H.P. CHECKED BY: Y.T. [Signature]
SCALE: AS NOTED TRACER:
APPROVED: [Signature] CHIEF ENGINEER
APPROVED: [Signature] BUREAU ENGINEER

APPROVED:	PROFILE	C.B.
[Signature]	F.B.	S.B.
ENGINEER: KALIHI TUNNEL	P.W. BY:	S. BY:

SECTION C JOB NO. 26-53 DWG. T-20



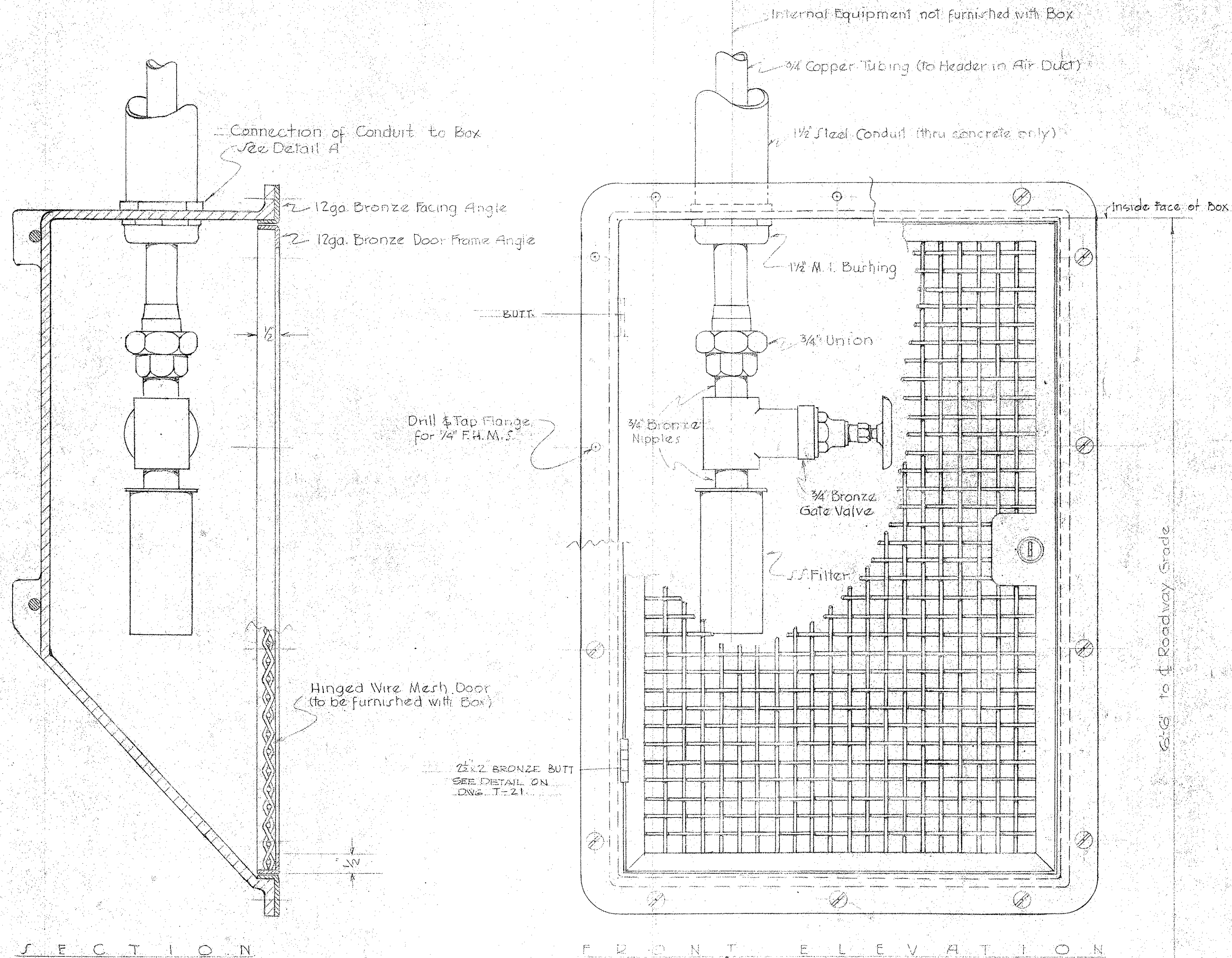
SECTION
FRONT ELEVATION
ASSEMBLY
Scale - 3" = 1'-0"
11 Required



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DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIHI TUNNEL
TUNNEL & SHAFT
FIRE EXTINGUISHER BOX

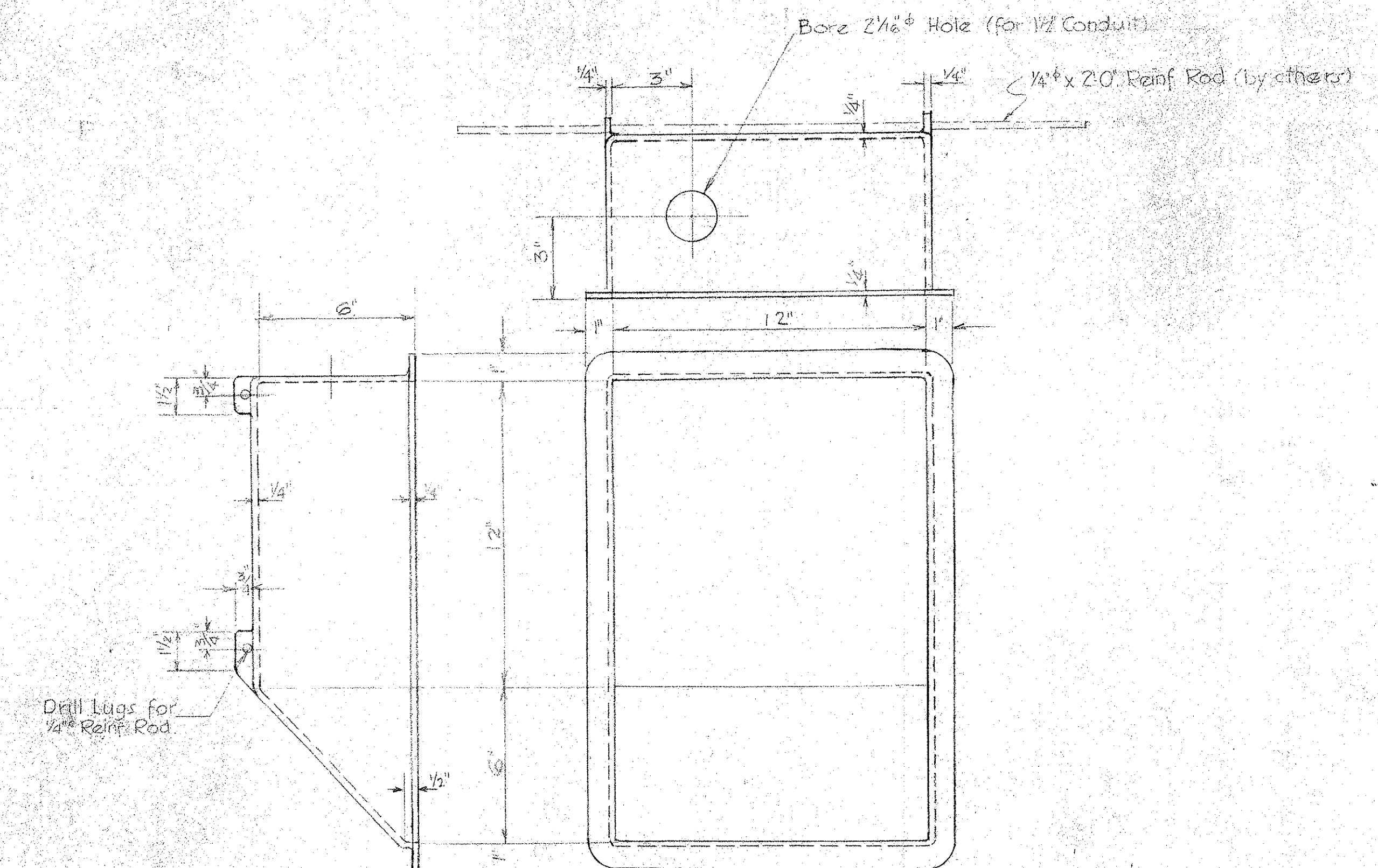
ENGINEER L. B. W. DATE JULY 15, 1953
DRAFTSMAN C. H. CHECKED BY T. M. J. J. J.
SCALE AS NOTED TRACER
APPROVED: *[Signature]* APPROVED: *[Signature]*
CHIEF ENGINEER BUREAU ENGINEER

W.S.	PROFILE	C.B.
CR. SEC.	F.B.	S.B.
W.M.B.Y.	F.W.B.Y.	S.B.Y.



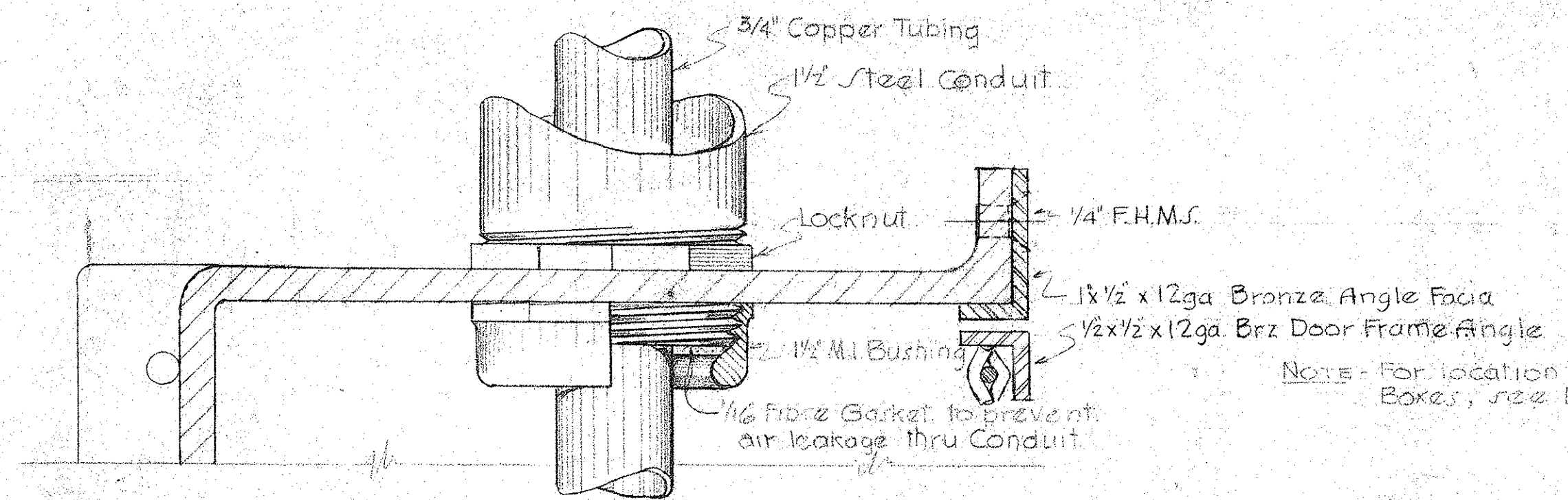
SECTION ASSEMBLY

Scale - Half size



DETAIL OF CAST IRON BOX

Scale - 3" = 1'-0"



DETAIL A

Connection of Conduit to Box

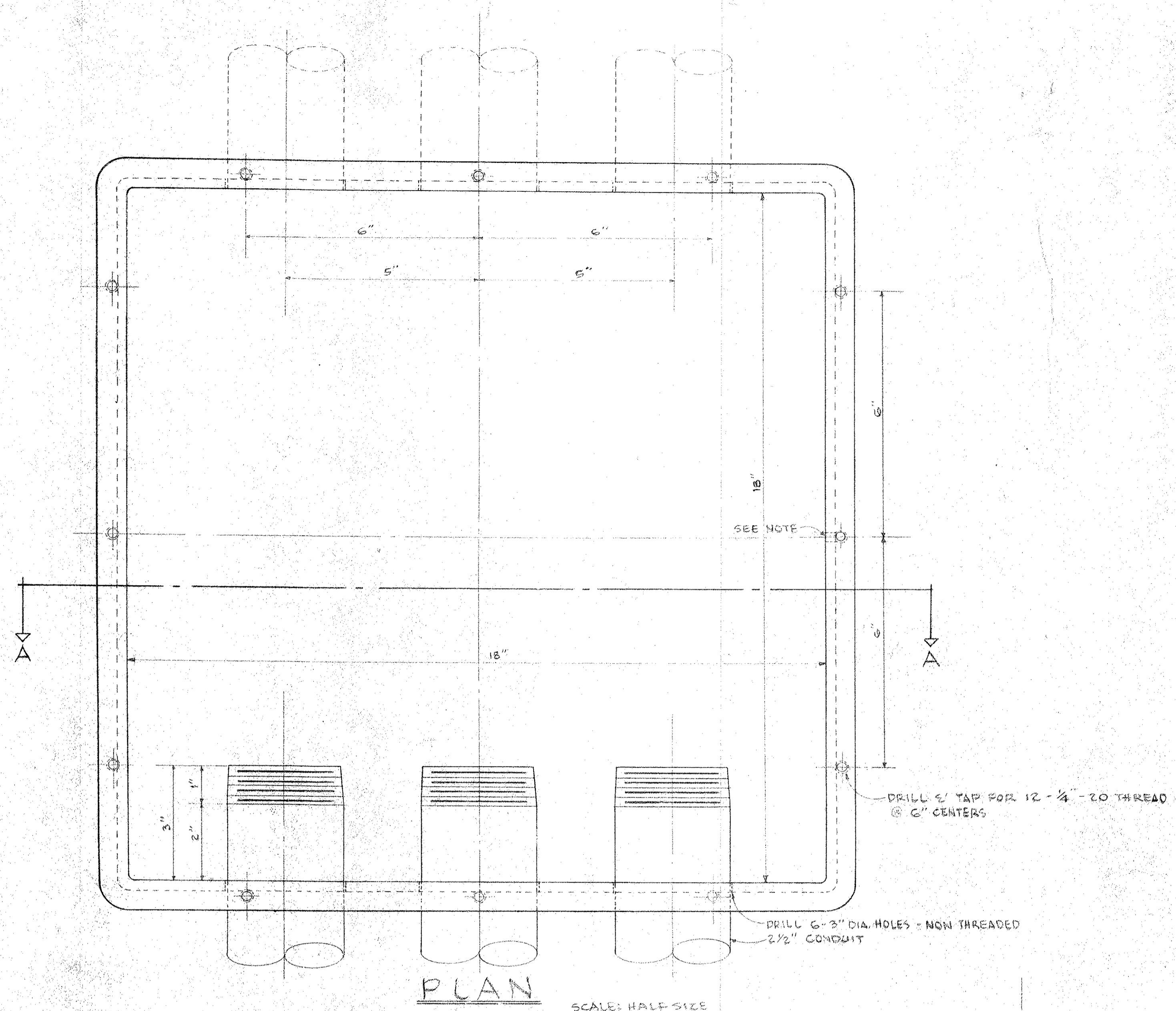
Scale - Full size

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CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIHI TUNNEL
TUNNEL & SHAFT
C.O. SAMPLING INLET BOX

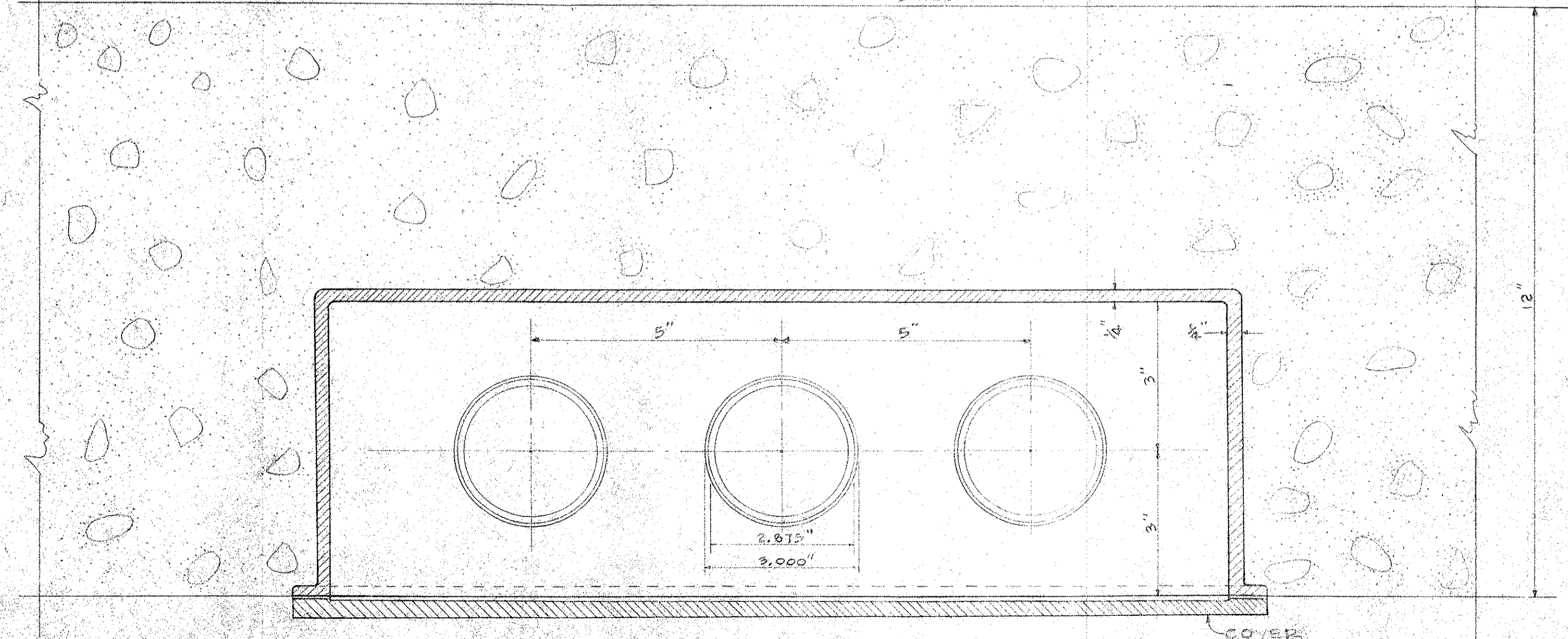
ENGINEER L.B.W. DATE July 15, 1953
DRAFTSMAN C.H. CHECKED BY E.J. [Signature]
SCALE AS NOTED TRACER
APPROVED [Signature] H.W. Butgard
CHIEF ENGINEER BUREAU ENGINEER

APPROVED	PROFILE	C.B.
ENGINEER L.B.W.	F.B.	S.B.
CH. SEC.	F.W.BY	S.BY
W.M.BY		

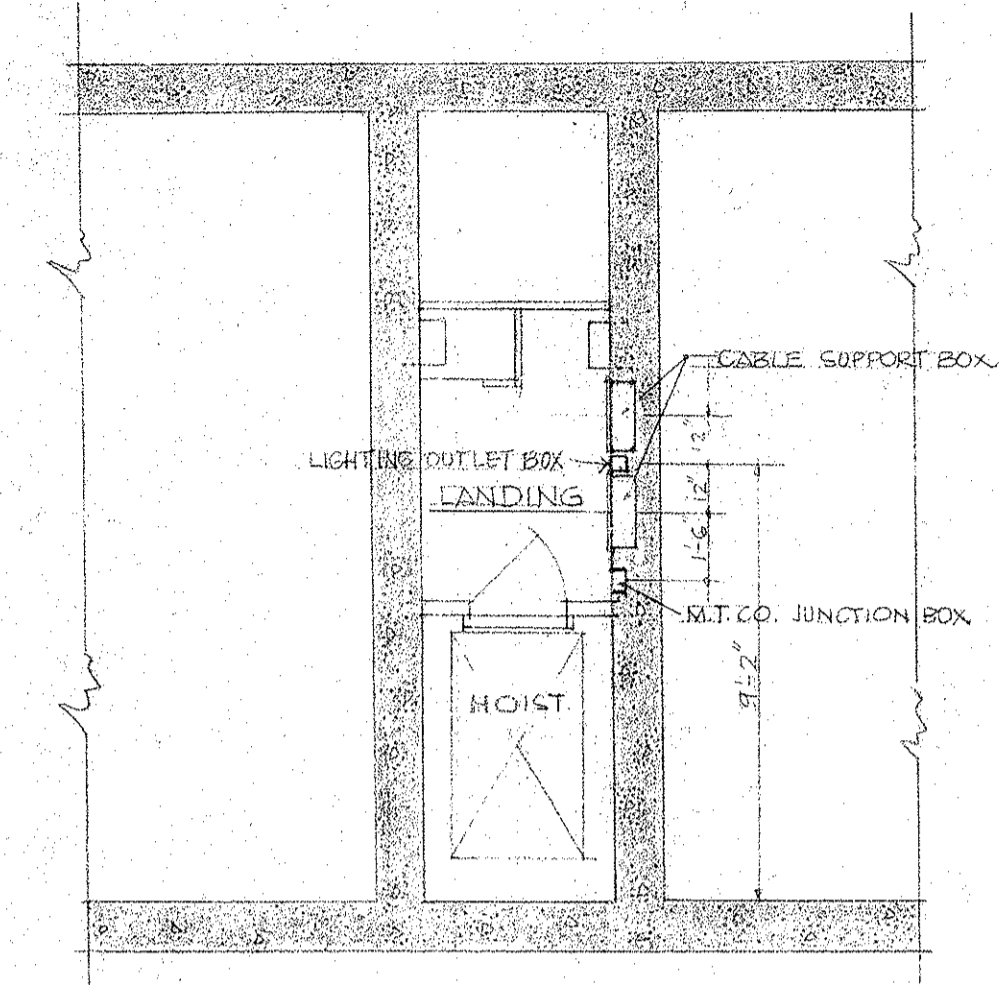
SECTION C JOB NO. 26-53 DWG. T-22



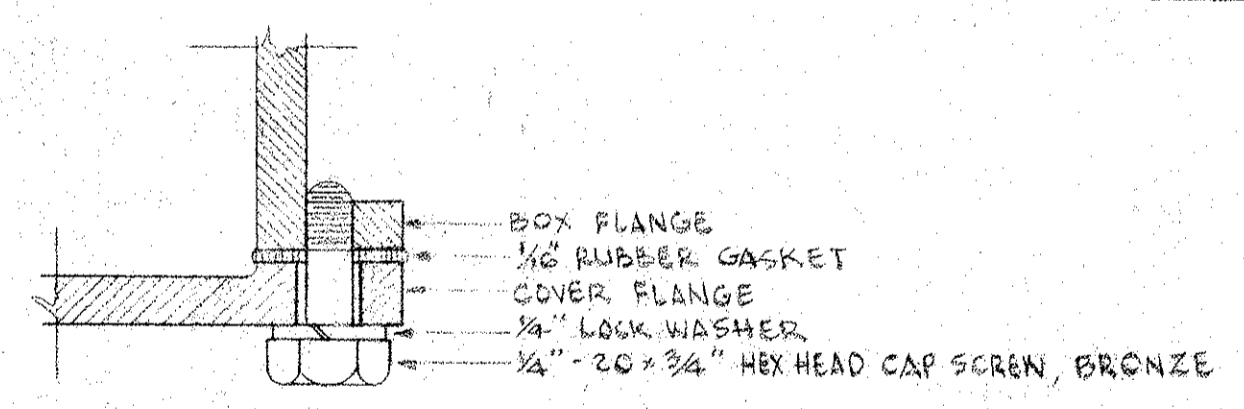
PLAN
SCALE: HALF SIZE



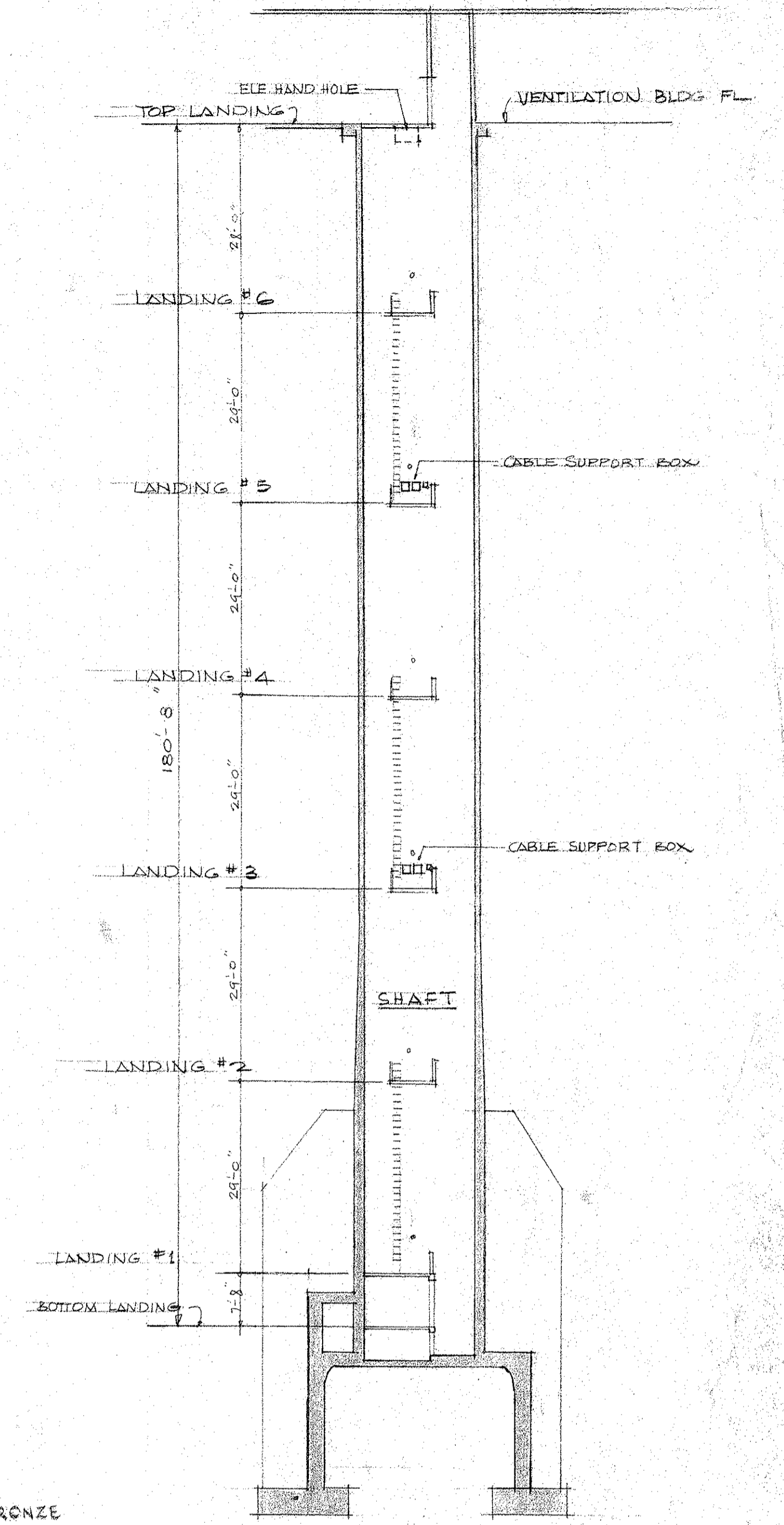
SECTION A-A
SCALE: HALF SIZE



VENT SHAFT
SCALE: 1/4" = 1'-0"



COVER ASSEMBLY DETAIL
SCALE: FULL SIZE



CABLE SUPPORT BOX LOCATION
FOR FURTHER DETAILS SEE DWG. E-12 & T-42
SCALE: 1/6" = 1'-0"

NOTES:
1. DRILL THE BOX FOR STUD TYPE GROUNDING CLAMP TO BE INSTALLED IN THE BOX PRIOR TO POURING CONCRETE.

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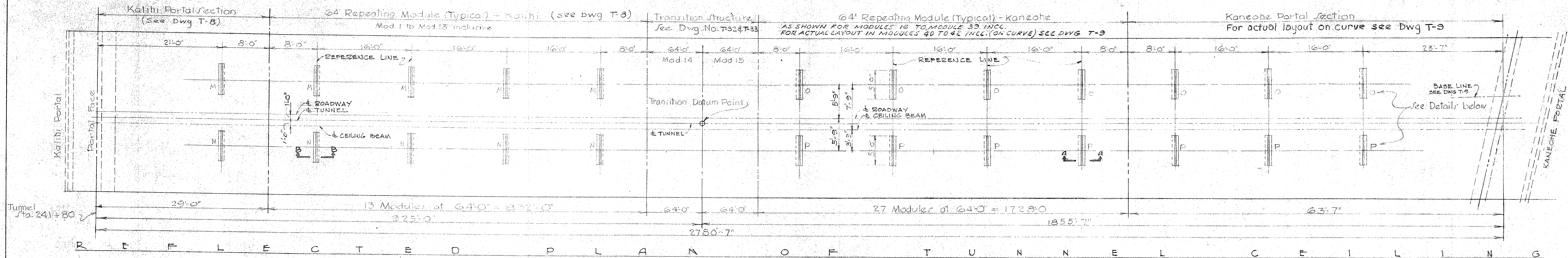
KALIHI TUNNEL
TUNNEL & SHAFT
CABLE SUPPORT BOX

ENGINEER: L.B.W. DATE: JULY 15, 1953
DRAFTSMAN: S.H.P. CHECKED BY: J. O. [Signature]
SCALE: AS NOTED TRACER: [Signature]
APPROVED: [Signature] CHIEF ENGINEER
APPROVED: [Signature] BUREAU ENGINEER

W.S.	PROFILE	C.B.
CR. SEC.	F.B.	S.B.
W.M.B.V.	F.W.B.V.	S.B.V.

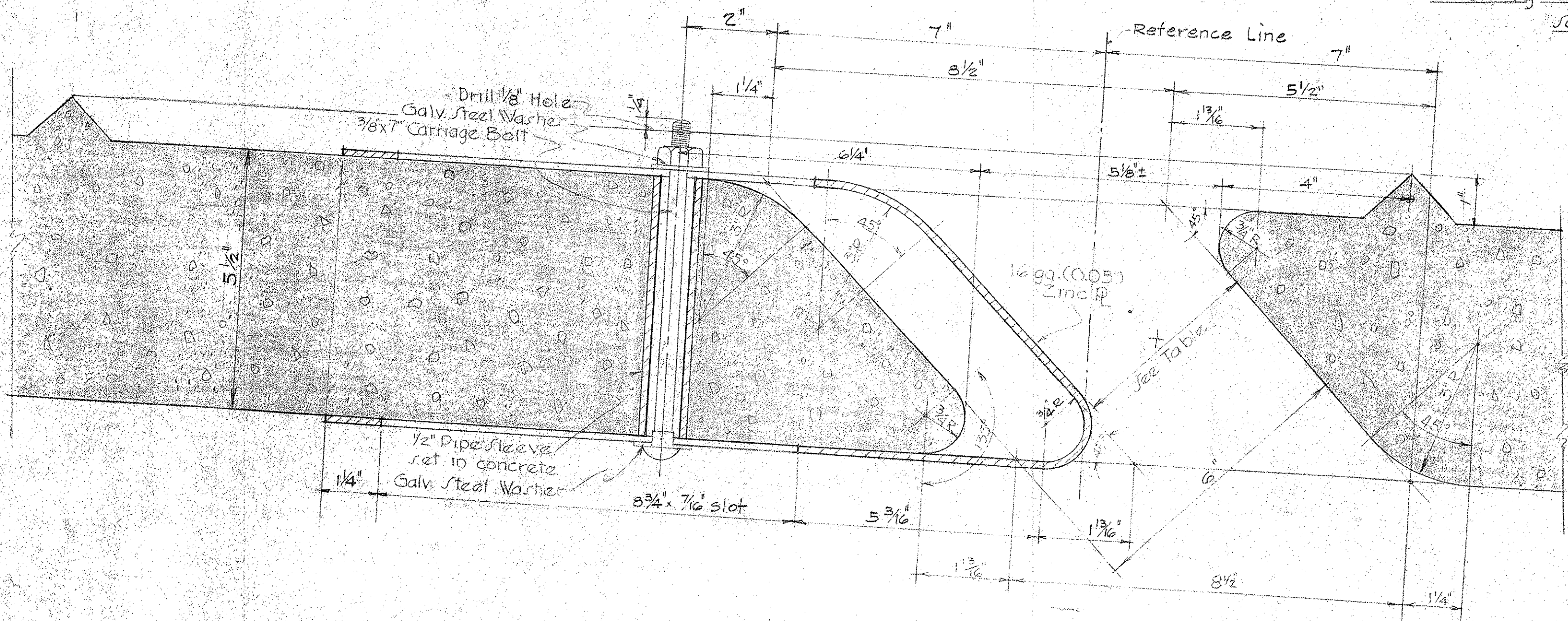
APPROVED: [Signature]
ENGINEER: KALIHI TUNNEL

SECTION C JOB NO. 26-53 DWG. T-23

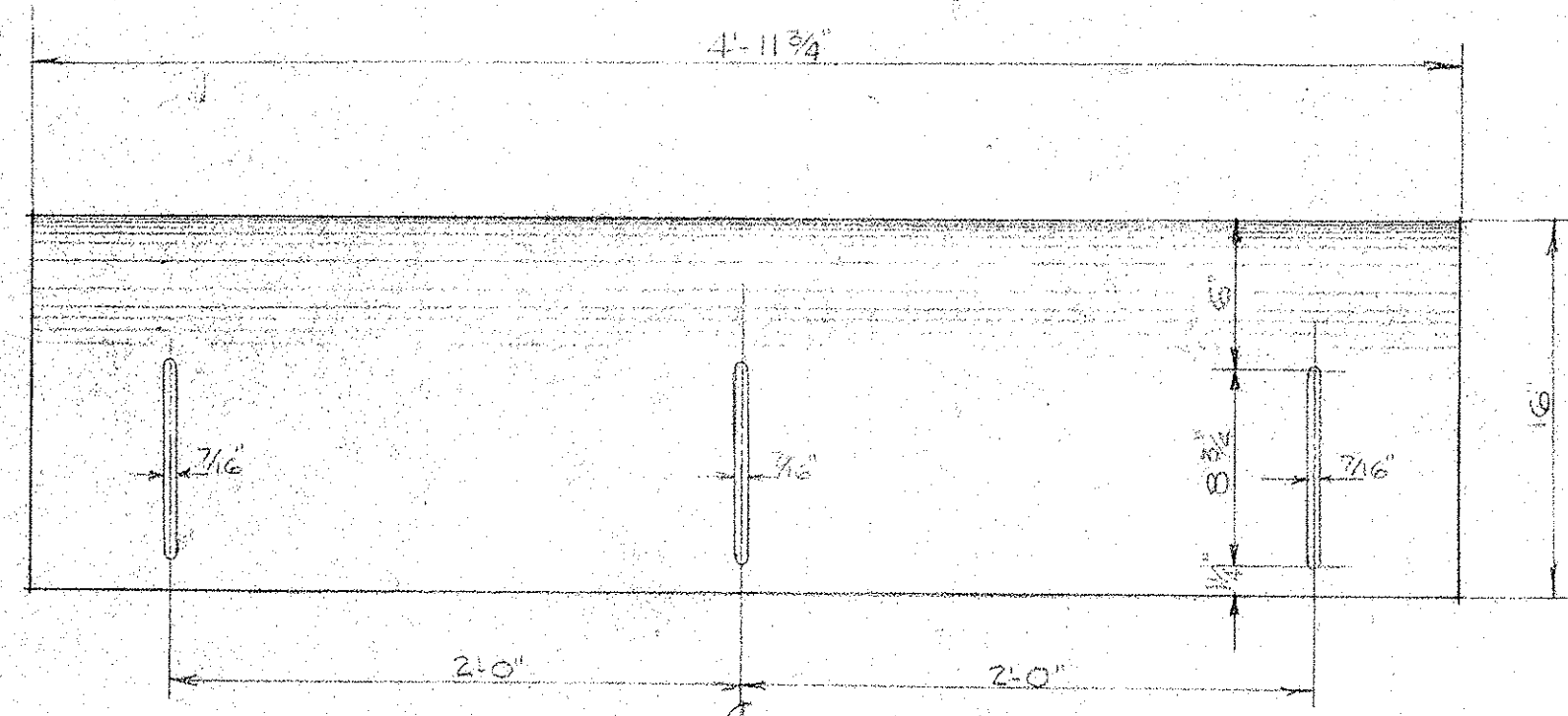


Showing Location of Slots
Scale - 1/8" = 1'-0"

NOTE - ALL DIMENSIONS MEASURED ALONG GRADE @ ϵ OF ROAD EXCEPT AS OTHERWISE NOTED
IN MODULES 40 TO 42 INCLUSIVE AND KANEOHE PORTAL SECTION, THE CENTERLINES OF SLOTS ARE TO BE NORMAL TO CURVED BASE LINE OF TUNNEL & LOCATED OVER ϵ OF ROADWAY LANES.

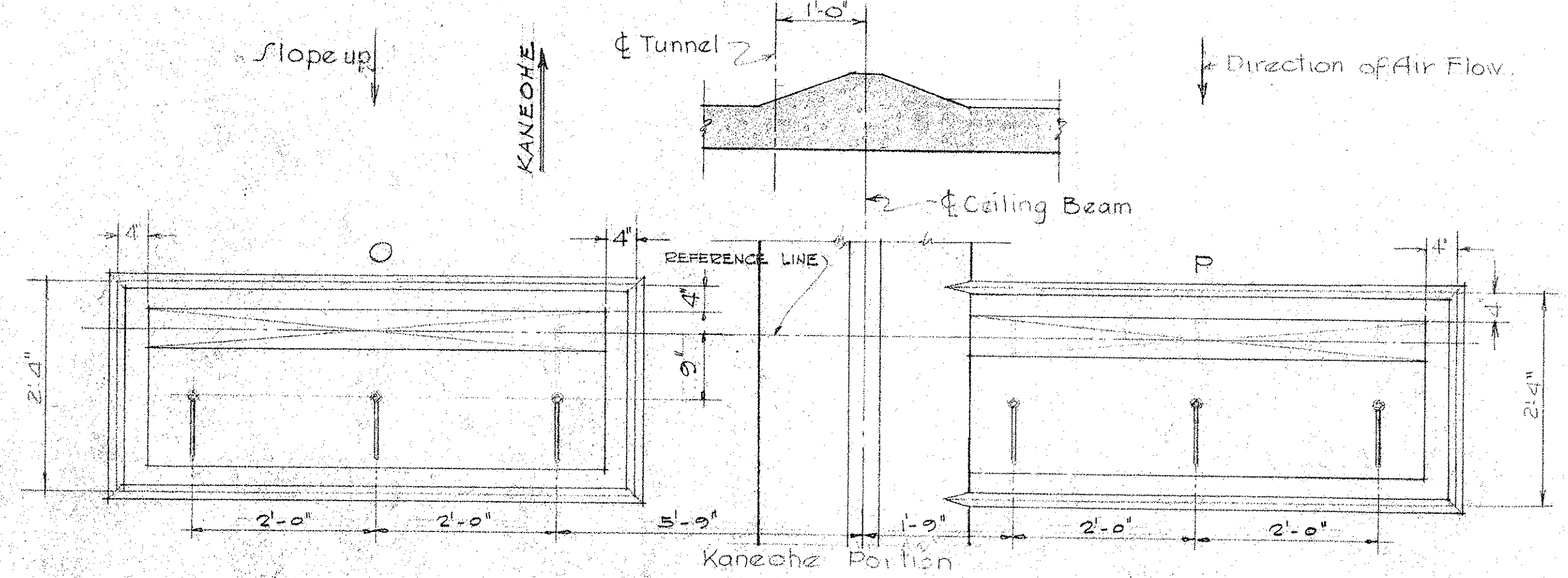
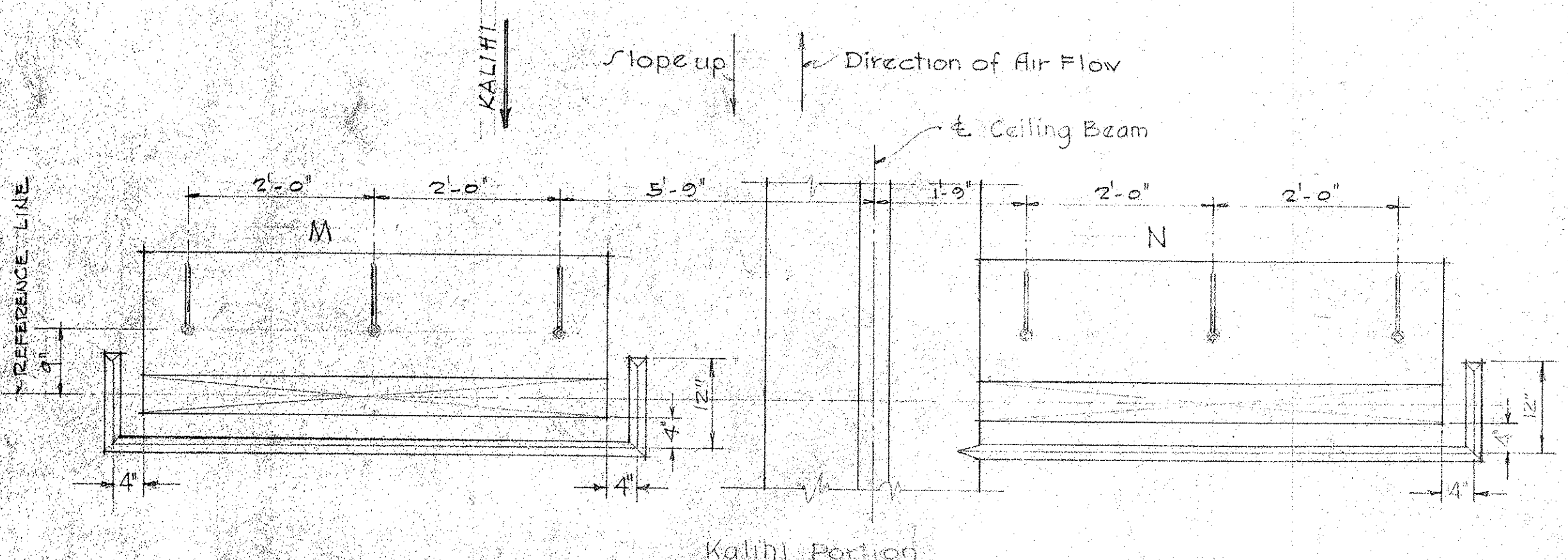


SECTION A - A
Section B-B similar but opposite slope on slots
Scale - Half - size



PLAN OF DAMPER
Scale - 1/2" = 1'-0"

DAMPER SETTING		
Module No.	Damper setting X in inches (within Module)	Distance from Kalihi Portal to end of Module - in feet
Kalihi Portal Section	4' 3/16"	29
Mod 1 & Mod 2	4' 3/4"	157
Mod 3 to Mod 12	Start 4' 3/16" & reduce each set of slots 1/4" to end with 2' 3/8"	797
Mod. 13	2' 3/16"	861
Mod. 14	2' 1/4"	925
Mod. 15	1' 1/2"	989
Mod 16	1' 9/16"	1053
Mod 17 to Mod 42	Start with 1' 3/16" first 2 sets of slots in each Module the same. Reduce every other set 1/4" to end with 4' 3/4"	2717
Kaneohe Portal Section	4' 3/4"	2780.67



PLANS OF DAMPER SHOWING BEADING

NOTE - Slots shown wide open
Scale - 3/4" = 1'-0"

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BUREAU OF PLANS

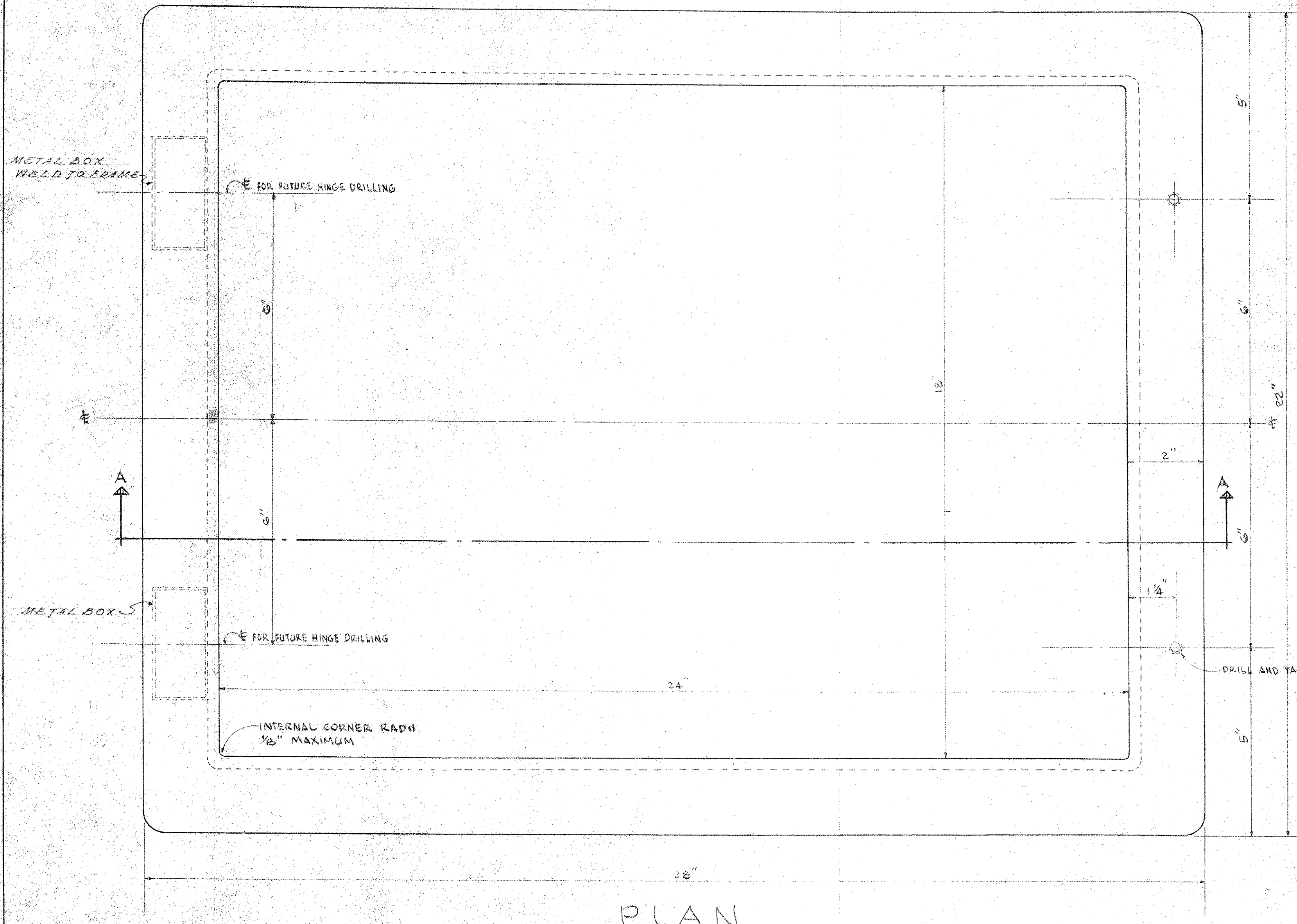
KALIHI TUNNEL TUNNEL & SHAFT VENTILATION SLOT DETAILS

ENGINEER: L. B. W. DATE: JULY 15, 1953
DRAFTSMAN: C.H. CHECKED BY: E.M., R.C.
SCALE: AS NOTED TRACER:
APPROVED: *[Signature]* APPROVED: *[Signature]*
CHIEF ENGINEER BUREAU ENGINEER

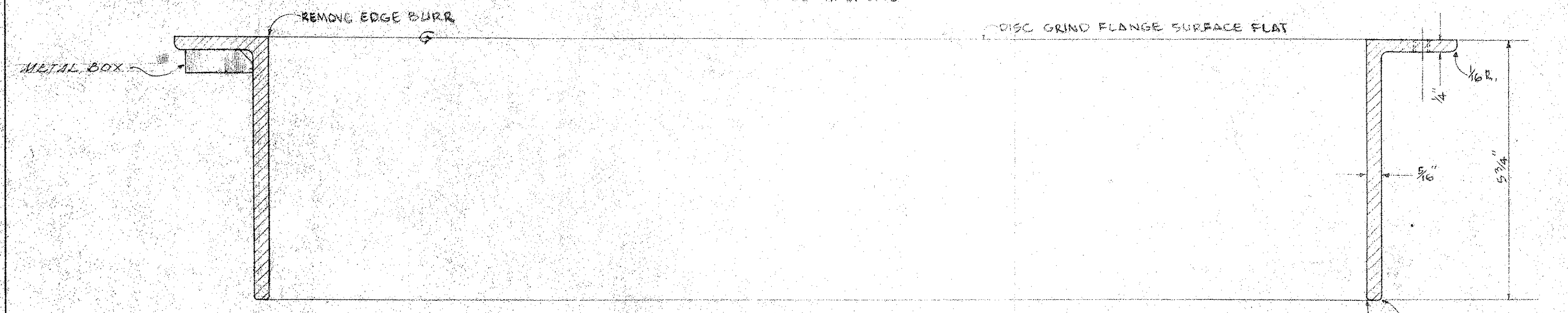
W. S.	PROFILE	C. B.
C. B. SEC.	P. E.	S. S.
W. M. BY:	F. W. BY:	S. BY:

SECTION C JOB NO. 26-53 DWG. T-24

FILE	POCKET	FOLDER	NO.
7	5	2	24

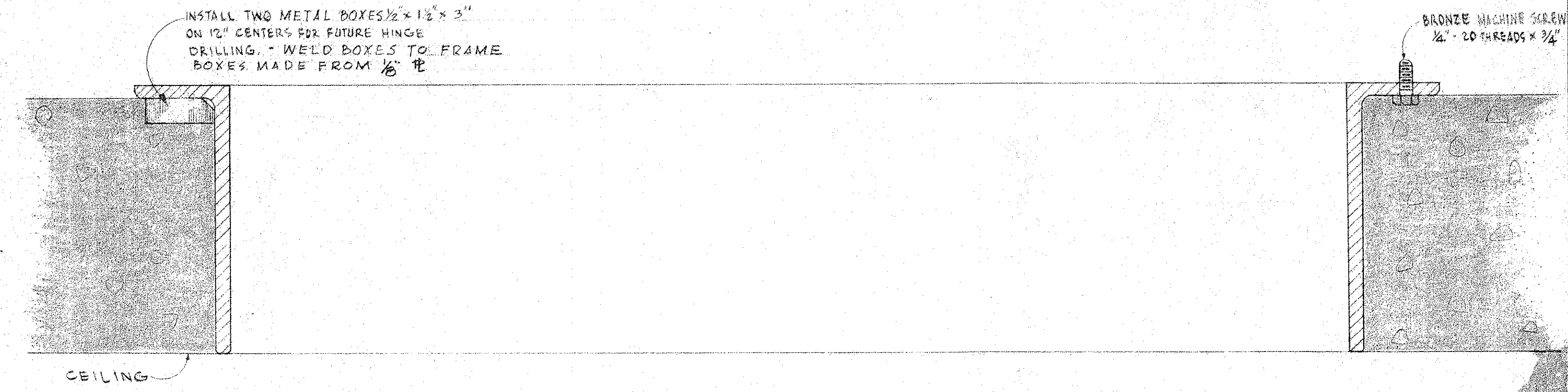


PLAN
SCALE: HALF SIZE



SECTION A-A
SCALE: HALF SIZE

MATERIAL - CAST IRON



ASSEMBLY DETAIL
SCALE: HALF SIZE

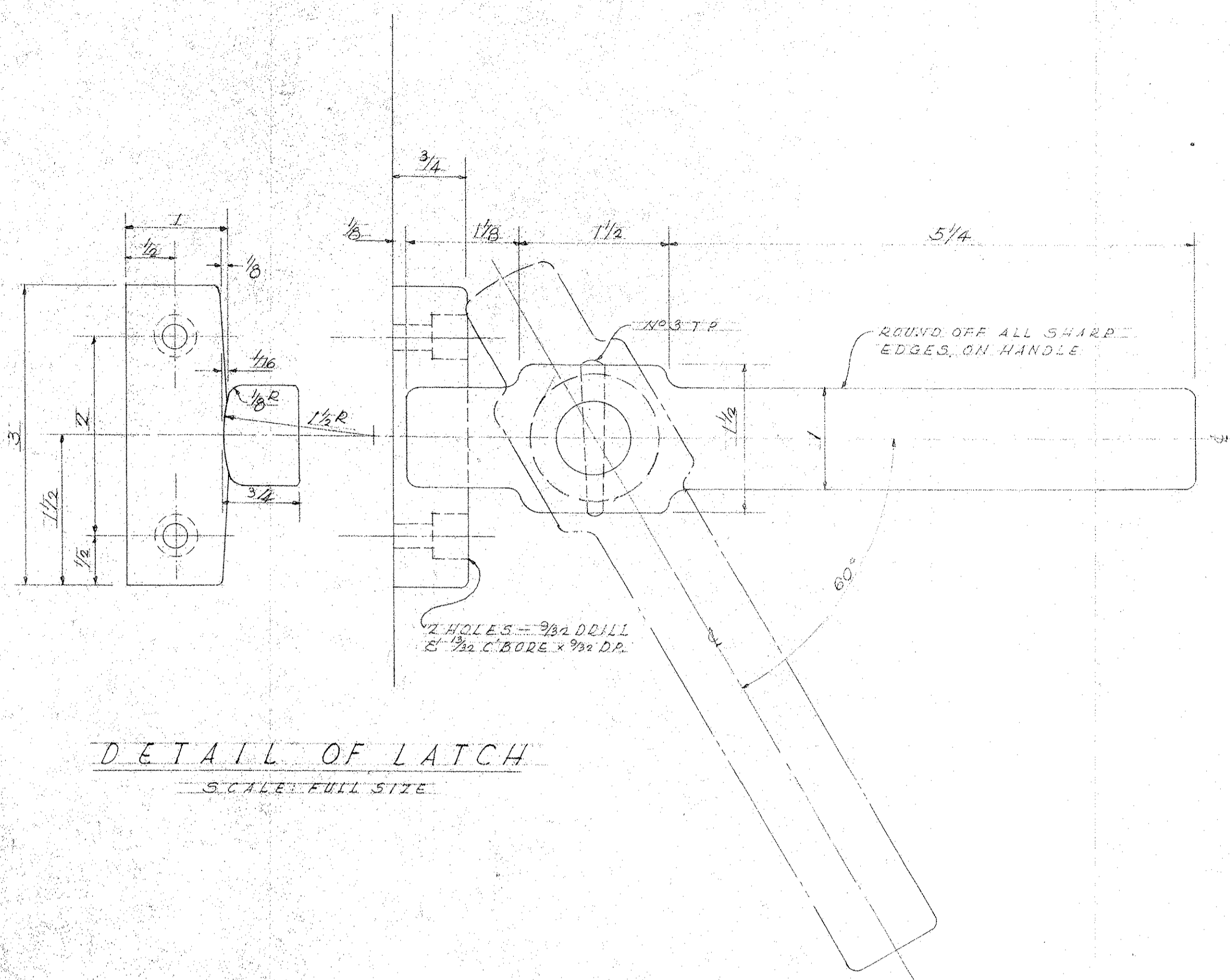
GENERAL NOTES

TAP HOLES IN FLANGE OF FRAME SHALL BE LOCATED FROM A MASTER JIG TEMPLATE.
 CAST RADIUS & FILLETS TO CONFORM TO COMMERCIAL FOUNDRY PRACTICE, EXCEPT WHERE THREAD OF SCREWS IN FLANGE TO BE PROTECTED WITH NUTS OR CAP DURING INSTALLATION.
 FOR ASSEMBLY OF TYPICAL TUNNEL ENTRANCE LIGHTING LUMINAIRE IN THIS BOX, SEE DWG. E-5.

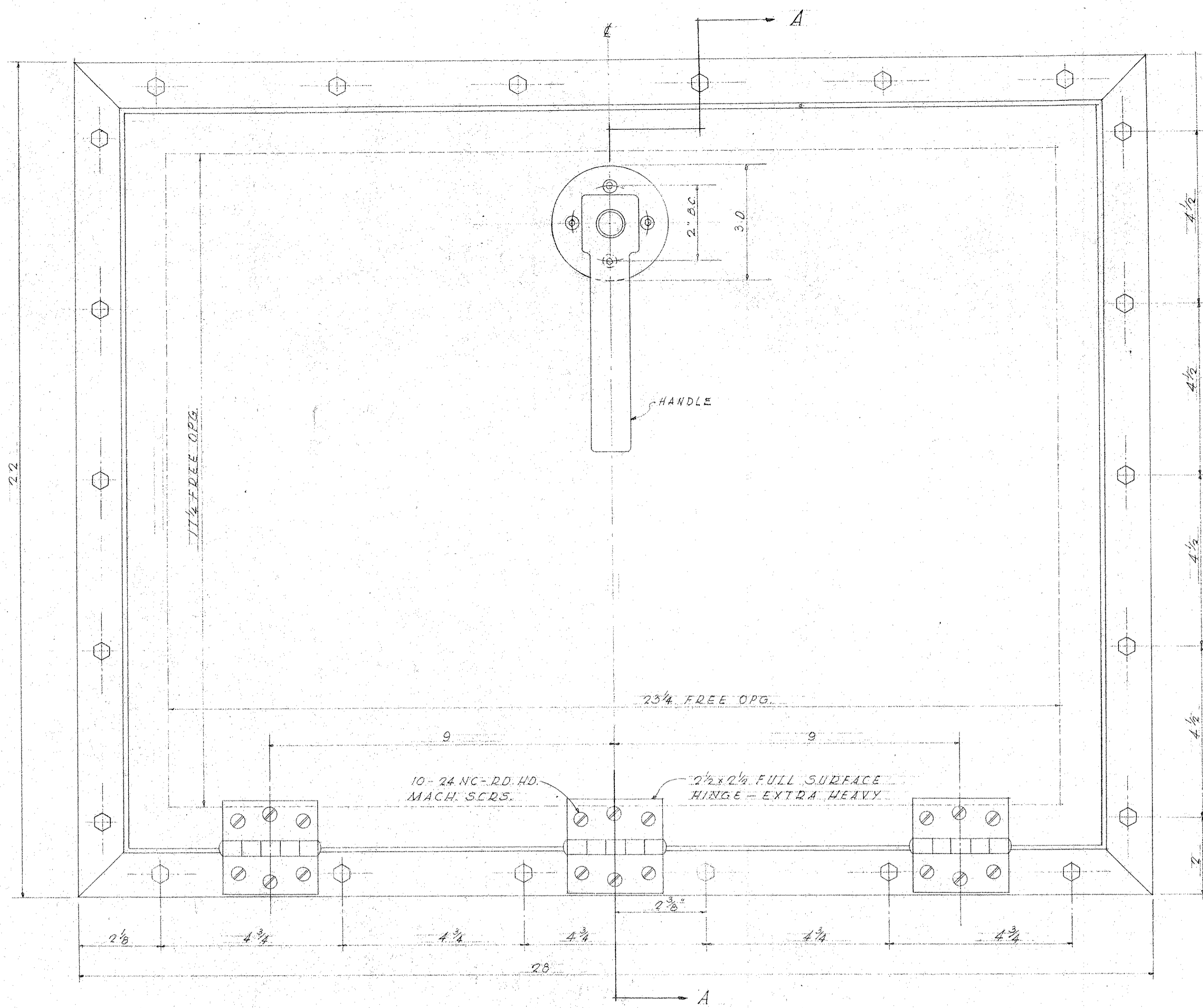
LAW & WILSON
 ARCHITECTS & ENGINEERS
 DEPARTMENT OF PUBLIC WORKS
 CITY AND COUNTY OF HONOLULU
 BUREAU OF PLANS
KALIHI TUNNEL
 TUNNEL & SHAFT
 TUNNEL ENTRANCE LIGHTING BOX
 (FRAME)

ENGINEER: L. W. DATE: JULY 15, 1955
 DRAFTSMAN: S. M. P. CHECKED BY: *[Signature]*
 TRACER: *[Signature]*
 APPROVED: *[Signature]* CHIEF ENGINEER
 APPROVED: *[Signature]* BUREAU ENGINEER

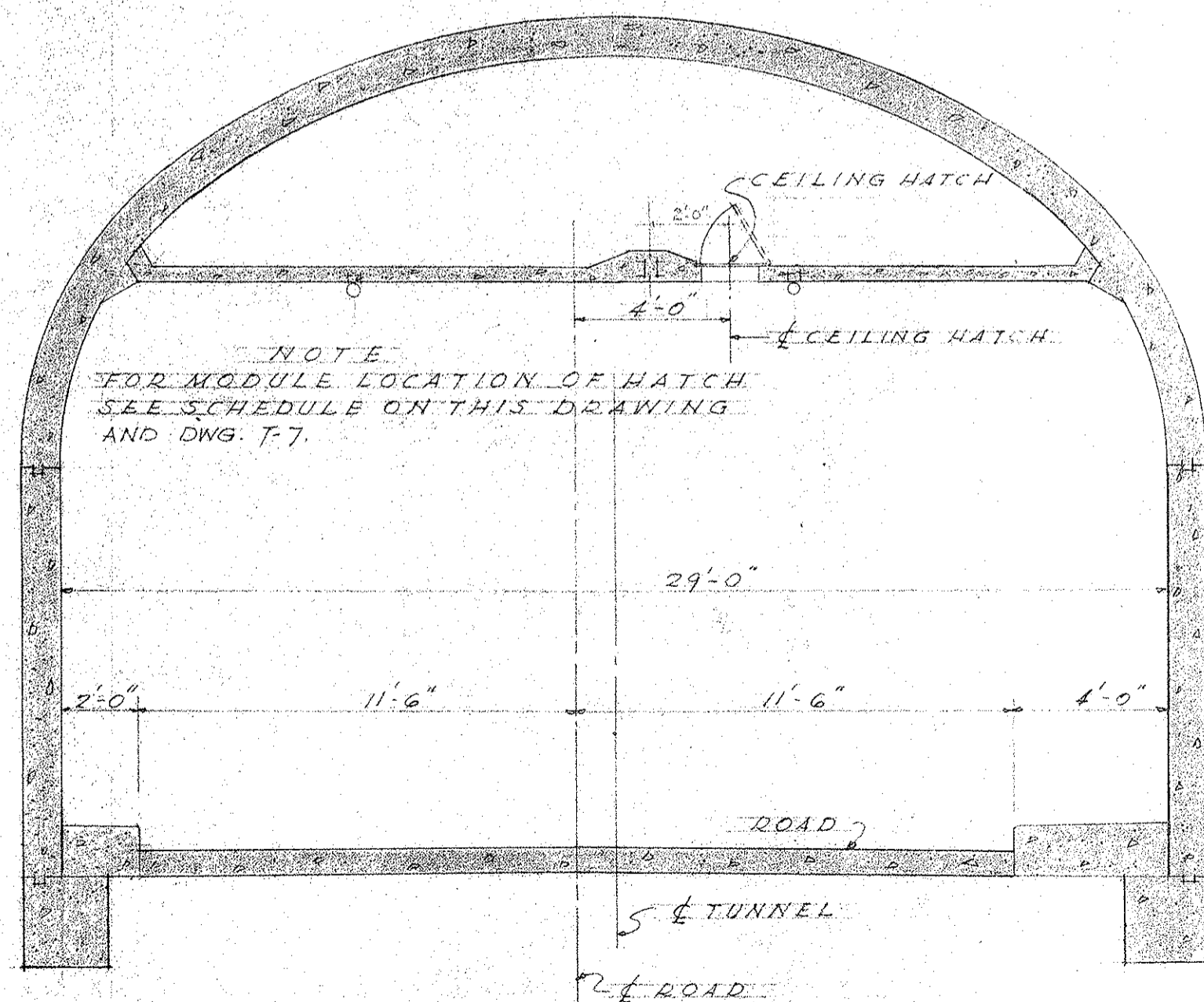
W. B.	PROFILE	C. B.
C. B.	F. B.	S. B.
W. M. BY:	F. W. BY:	S. BY:



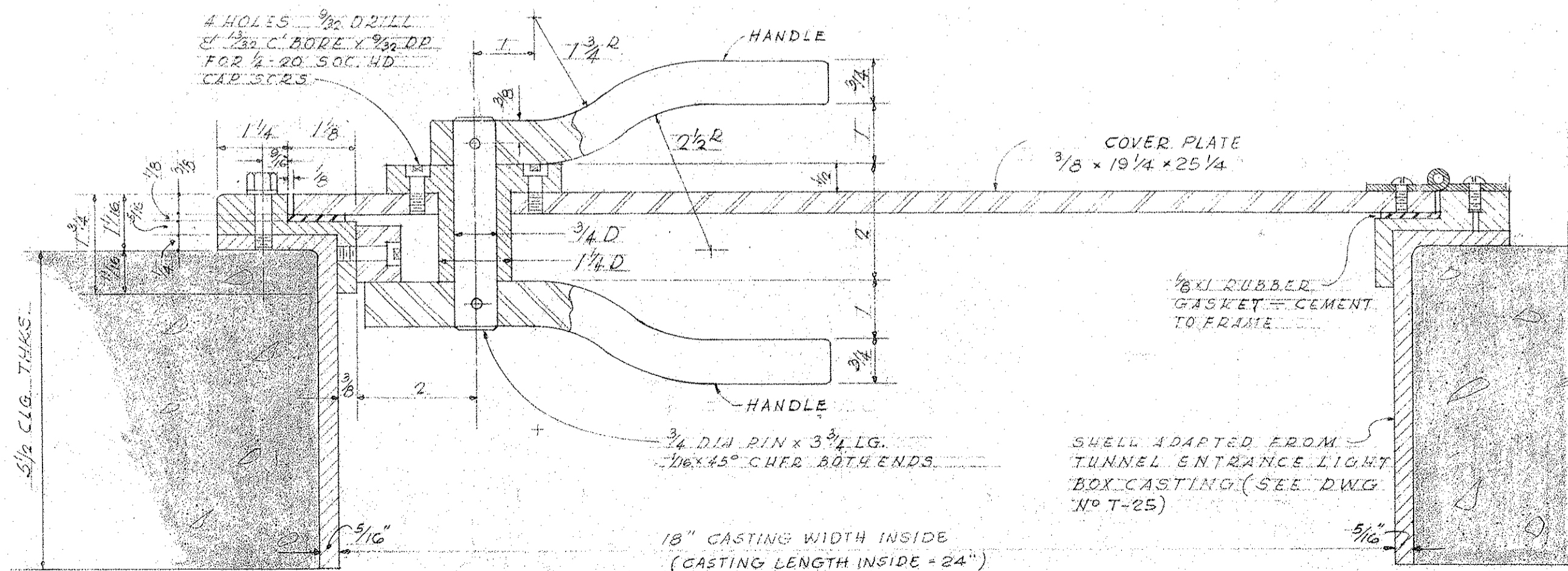
DETAIL OF LATCH
SCALE: FULL SIZE



PLAN OF CEILING HATCH
SCALE: HALF SIZE



TUNNEL SECTION SHOWING LOCATION OF CEILING HATCH
SCALE: 1/4" = 1'-0"



SECTION A-A
SCALE: HALF SIZE

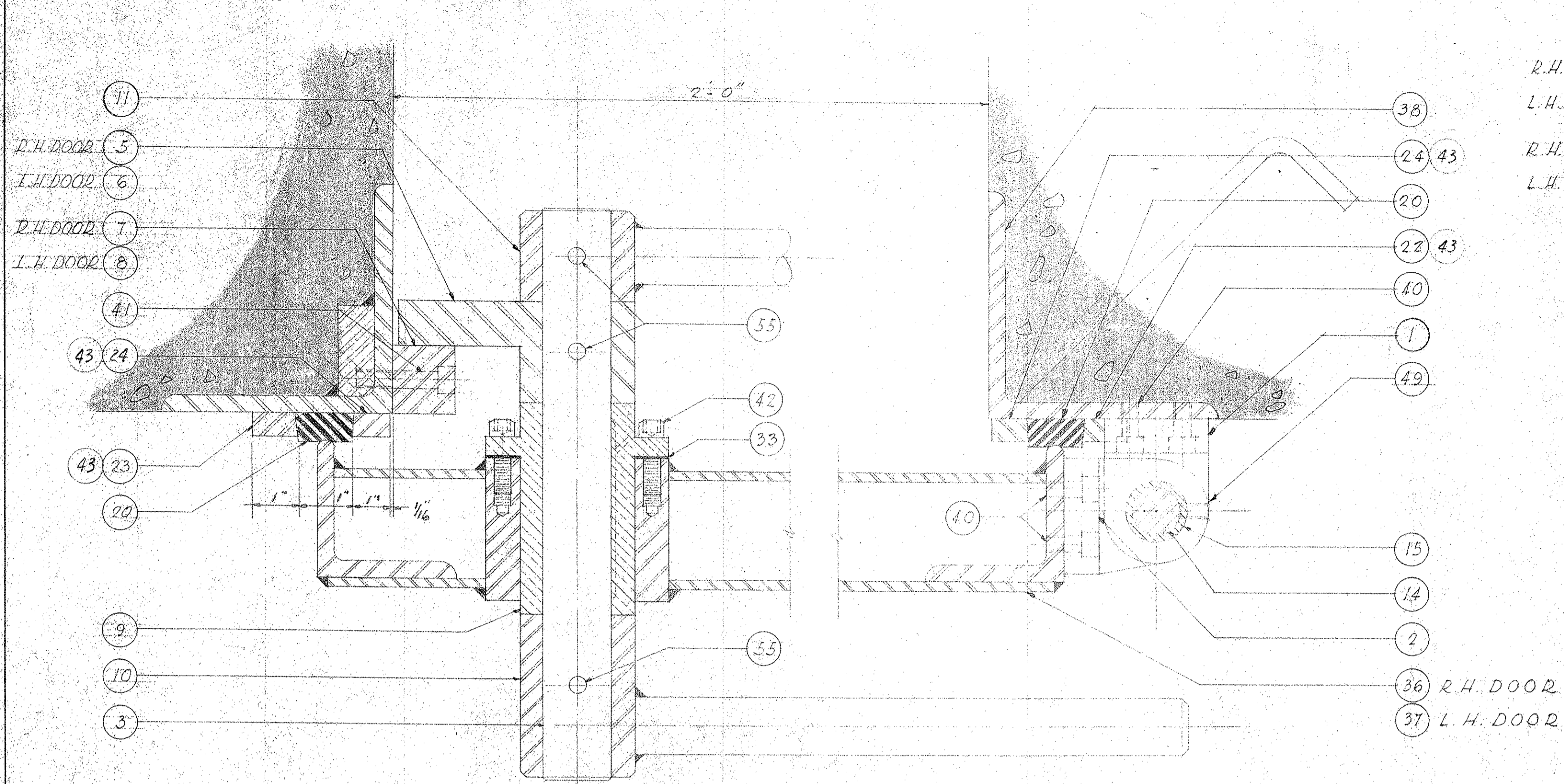
SCHEDULE OF CEILING HATCH LOCATIONS	
MODULE NUMBER	REMARKS
No. 7	KALIHI SIDE
No. 26, 28, 35	KANEONE SIDE

LAW & WILSON
ARCHITECTS & ENGINEERS
 DEPARTMENT OF PUBLIC WORKS
 CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIHI TUNNEL
TUNNEL & SHAFT
CEILING HATCH DETAILS

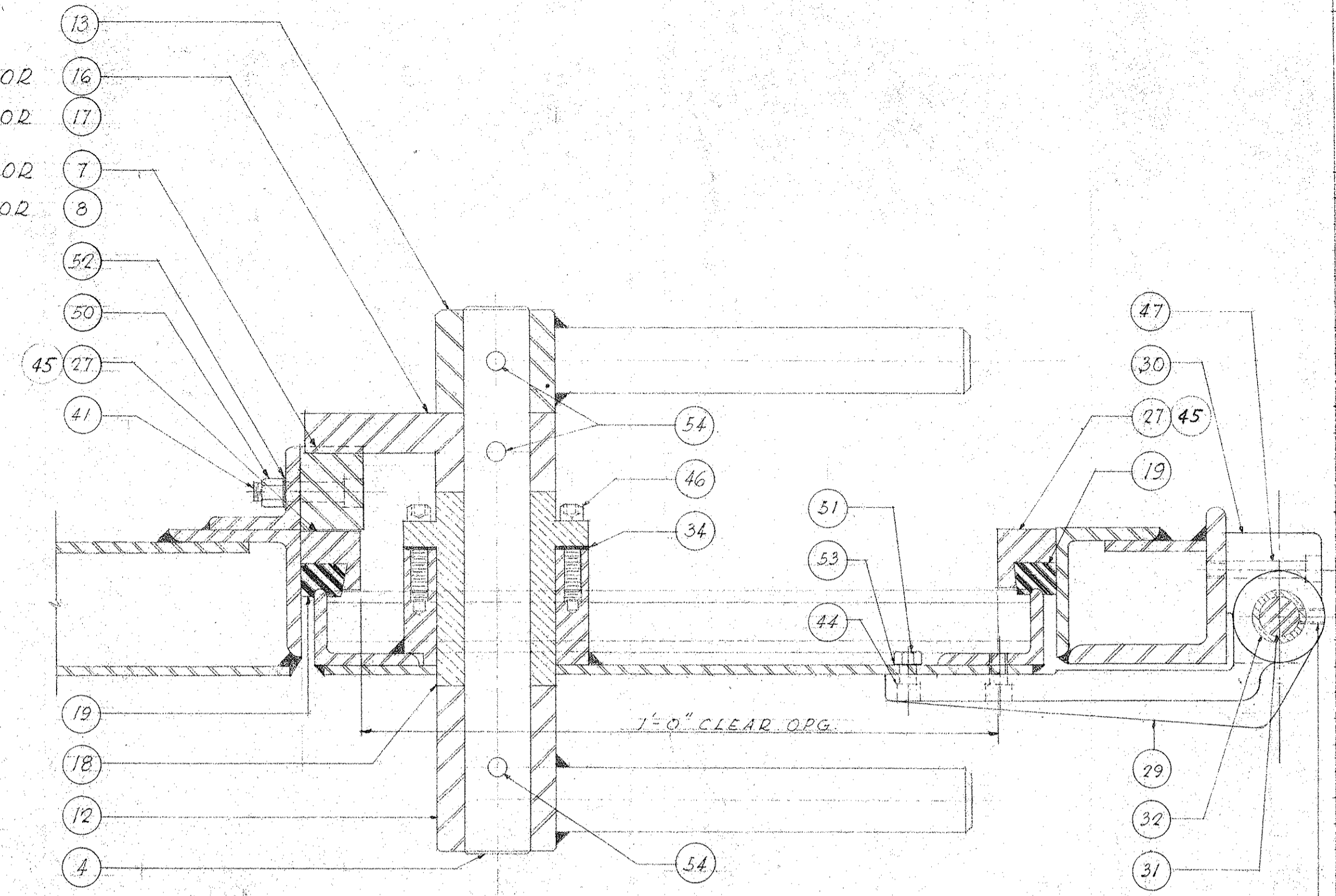
ENGINEER: L. B. W. DATE: JULY 15, 1958
 DRAFTSMAN: E. H. CHECKED BY: R. B. [Signature]
 TITLE: AS NOTED TRACER: [Signature]
 APPROVED: [Signature] CHIEF ENGINEER
 APPROVED: [Signature] BUREAU ENGINEER

W. S.	PROFILE	C. B.
CR. SEC.	F. B.	S. B.
W. M. BY:	F. W. BY:	S. BY:

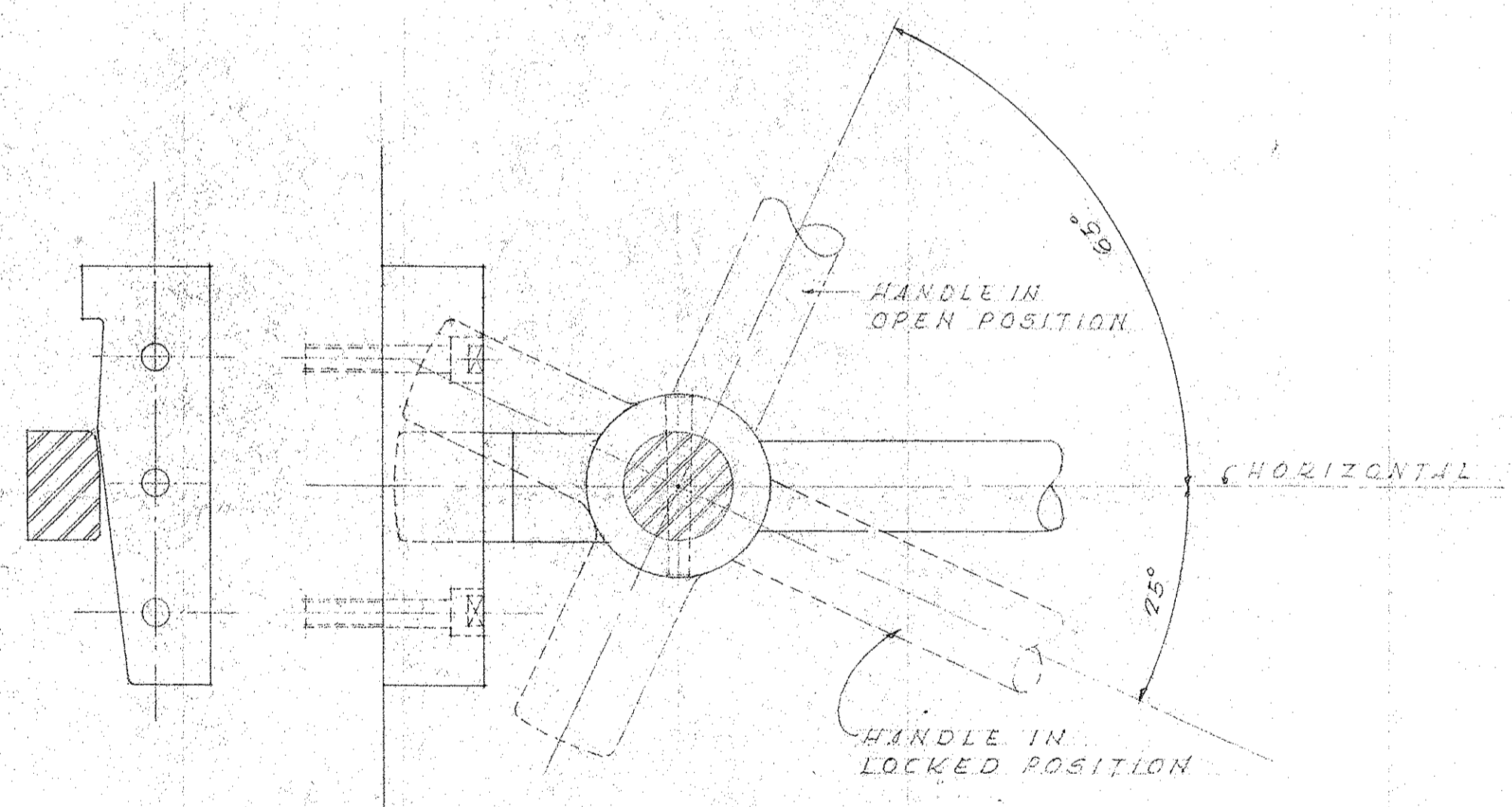
SECTION C JOB NO. 26-53 DWG. T-26



SECTION A-A - ASSEMBLY OF DOOR LATCH
R.H. DOOR AS SHOWN - L.H. DOOR OPPOSITE
SCALE - HALF SIZE



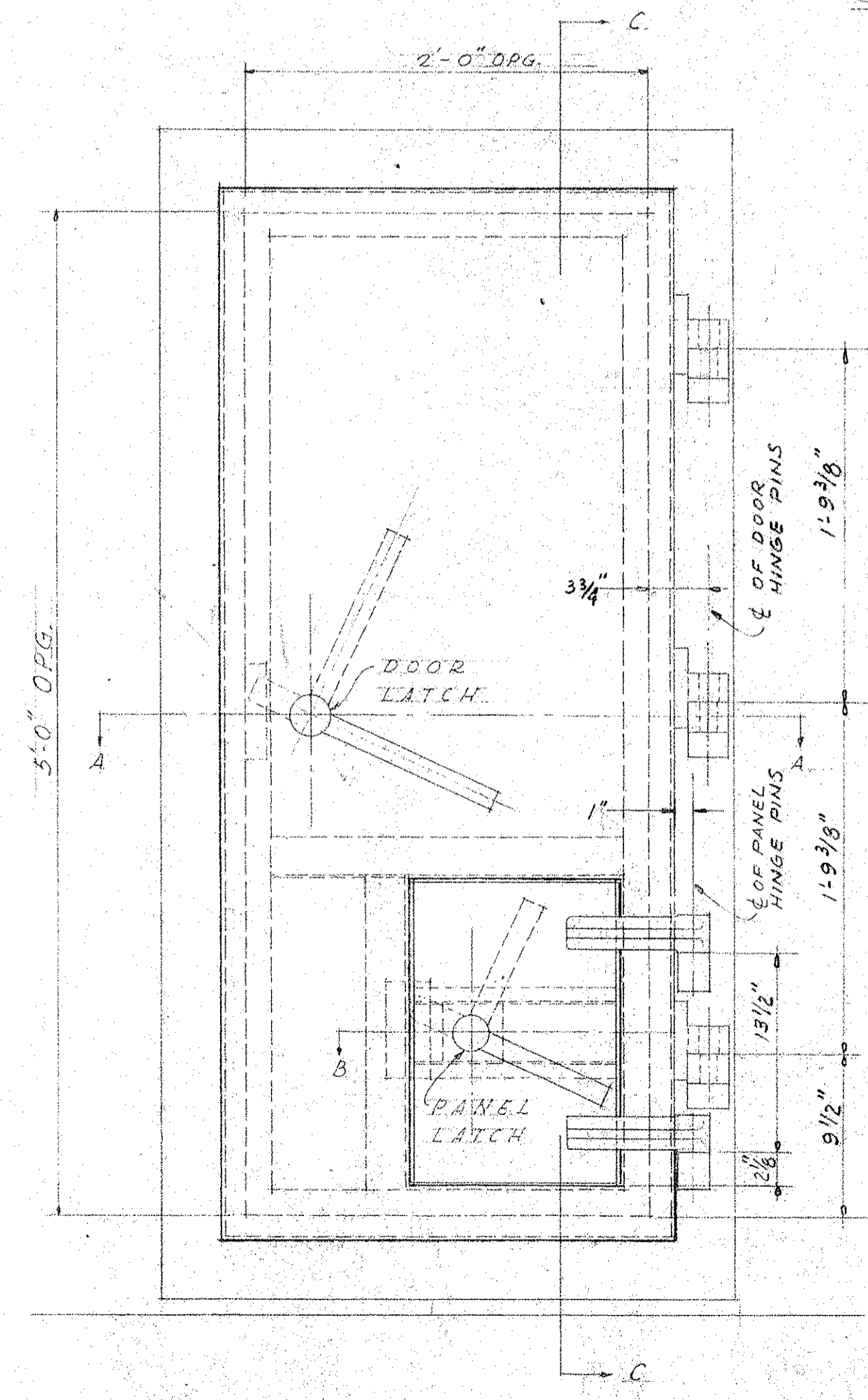
SECTION B-B - ASSEMBLY OF PANEL LATCH
SCALE - HALF SIZE



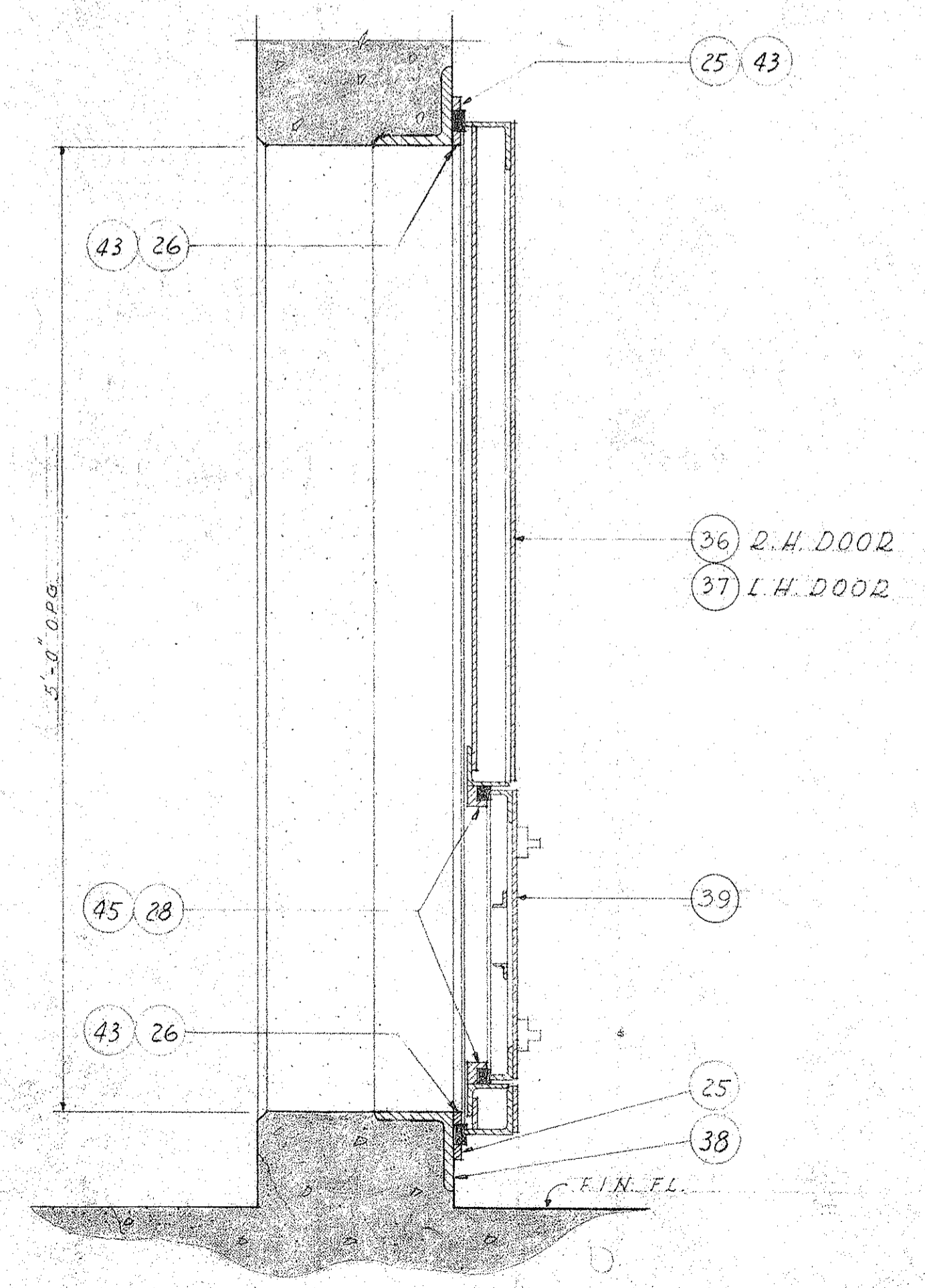
DETAIL SHOWING OPERATION OF LATCH
SCALE - HALF SIZE

GENERAL NOTES

1. AT INSTALLATION OF DOOR BUCK IN WALL OPENING, ALL SCREW HOLES SHALL BE MASKED OR OTHERWISE PROTECTED FROM CONCRETE.
2. CAUTION SHALL BE OBSERVED TO OBTAIN CORRECT ORIENTATION OF DOOR BUCK WITH REGARD TO R.H. & L.H. INSTALLATION.
3. HINGE LEAVES & BRACKETS SHALL BE POSITIONED AS DIMENSIONED (SEE ELEVATION ON THIS DWG.)



ELEVATION
AIR TIGHT DOOR - R.H. AS SHOWN - L.H. OPPOSITE
SCALE 1/4" = 1'-0"



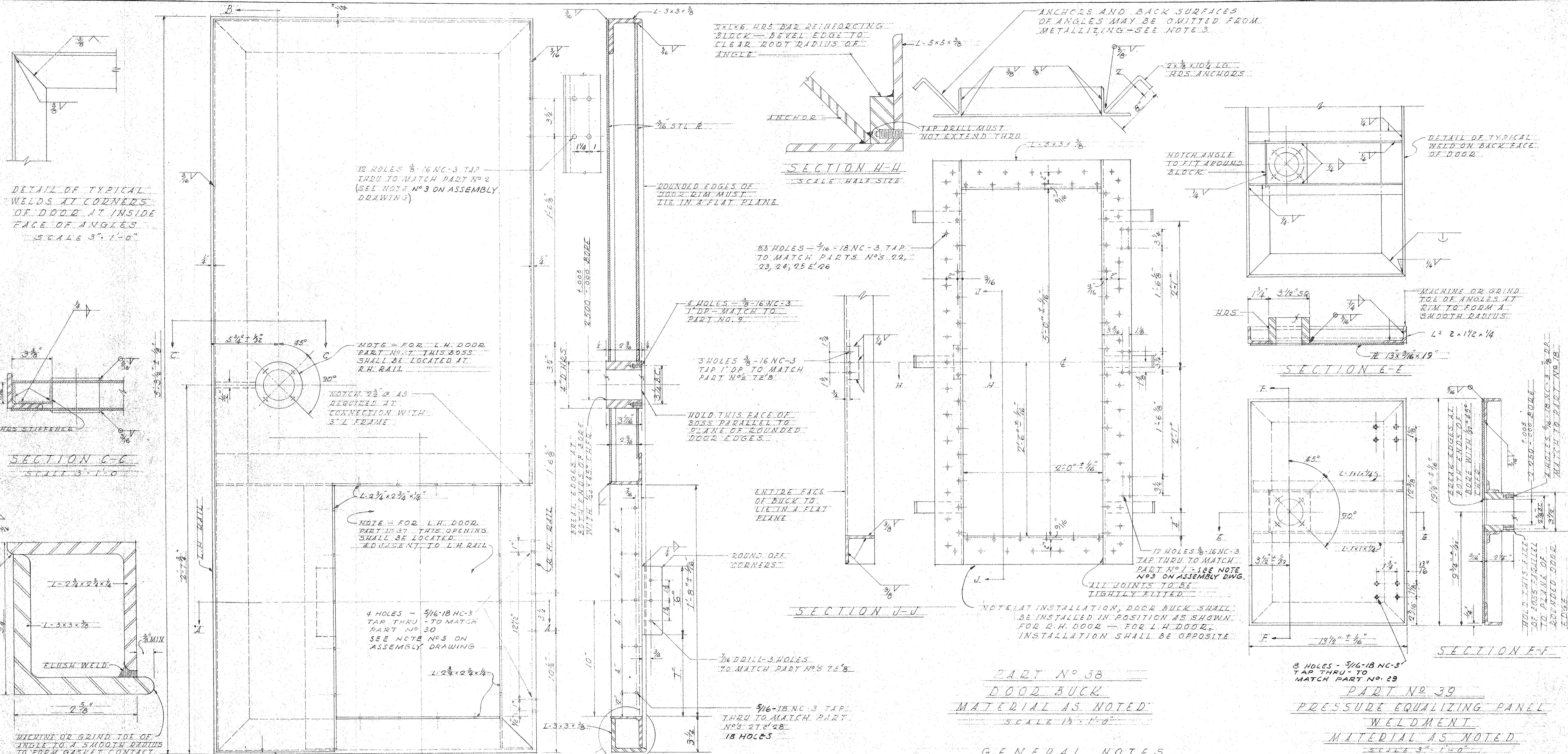
SECTION C-C

PARTS LIST					REMARKS
PART NO.	DRAWING NO.	QUAN. REQ'D FOR R.H. DOOR	QUAN. REQ'D FOR L.H. DOOR		
1	T-29	3	3		
2	T-29	3	3		
3	T-29	1	1		
4	T-29	1	1		
5	T-29	1	1		
6	T-29	1	1		
7	T-29	2	2		
8	T-29	1	1		
9	T-29	1	1		
10	T-29	1	1		
11	T-29	1	1		
12	T-29	1	1		
13	T-29	1	1		
14	T-29	3	3		
15	T-29	3	3		
16	T-29	1	1		
17	T-29	1	1		
18	T-29	1	1		
19	T-29	1	1		APPROX. 5'-6" LG.
20	T-29	1	1		APPROX. 15'-6" LG.
22	T-30	1	1		
23	T-30	1	1		
24	T-30	2	2		
25	T-30	2	2		
26	T-30	2	2		
27	T-30	2	2		
28	T-30	2	2		
29	T-30	2	2		
30	T-30	2	2		
31	T-30	2	2		
32	T-30	2	2		
33	T-30	2	2		
34	T-30	2	2		
36	T-28	1	1		
37	T-28	1	1		
38	T-28	1	1		
39	T-28	1	1		
40	T-27	24	24		3/8-16x2 1/2 SOC. HD. SCREWS
41	T-27	6	6		3/8-16x1 1/2 " " "
42	T-27	4	4		3/8-16x1 1/2 " " "
43	T-27	83	83		3/16-18x 1/2 " " "
44	T-27	8	8		5/16-18x 3/4 " " "
45	T-27	18	18		5/16-18x1 " " "
46	T-27	4	4		5/16-18x1 1/4 " " "
47	T-27	4	4		5/16-18x2 " " "
48	T-27	2	2		5/16-18x 1/2 FLAT POINT SOC. SET SCR.
49	T-27	3	3		5/16-18x 3/8 FLAT POINT SOC. SET SCR.
50	T-27	3	3		7/8-16 HEX NUT
51	T-27	4	4		3/16-18 HEX NUT
52	T-27	3	3		3/8 LOCK WASHER
53	T-27	4	4		3/16 LOCK WASHER
54	T-27	3	3		#5.24 TAPER PIN
55	T-27	3	3		#6x2 1/2 TAPER PIN

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DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIHI TUNNEL
TUNNEL & SHAFT
AIR TIGHT DOOR
ASSEMBLY

ENGINEER: L.B.W. DATE: JULY 15, 1953
DRAFTSMAN: E.H. CHECKED BY: R.W. [Signature]
SCALE: AS NOTED TRACER: [Signature]
APPROVED: [Signature] CHIEF ENGINEER APPROVED: [Signature] BUREAU ENGINEER

SECTION C JOB NO. 26-53 DWG. T-27



GENERAL NOTES

- FOR ASSEMBLY AND PARTS LIST SEE DRAWING NO 7-27
- ALL PARTS WITH MATCHING SCREW HOLES SHALL BE DRILLED FROM JIG TEMPLATES FOR INTERCHANGEABILITY
- PART NO'S 36, 37, 38 & 39 SHALL BE WELL CLEANED AND SANDBLASTED PRIOR TO COATING WITH A SPRAYED METAL FINISH BY MEANS OF METALLIZING SPRAY-SCREW HOLES, BORES, AND SURFACES INDICATED (X) SHALL REMAIN UNCOATED AND PROTECTED FROM METALLIZING (SEE SPECIFICATION FOR DETAILED REQUIREMENTS OF METALLIZING AND FINISH PAINTING)

PART NO 36 DOOR WELDMENT R.H. AS SHOWN
PART NO 37 DOOR WELDMENT L.H. (OPP HAND - SEE NOTES)
MATERIAL AS NOTED
SCALE 3" = 1'-0"

PART NO 38 DOOR BUCK
MATERIAL AS NOTED
SCALE 1 1/2" = 1'-0"

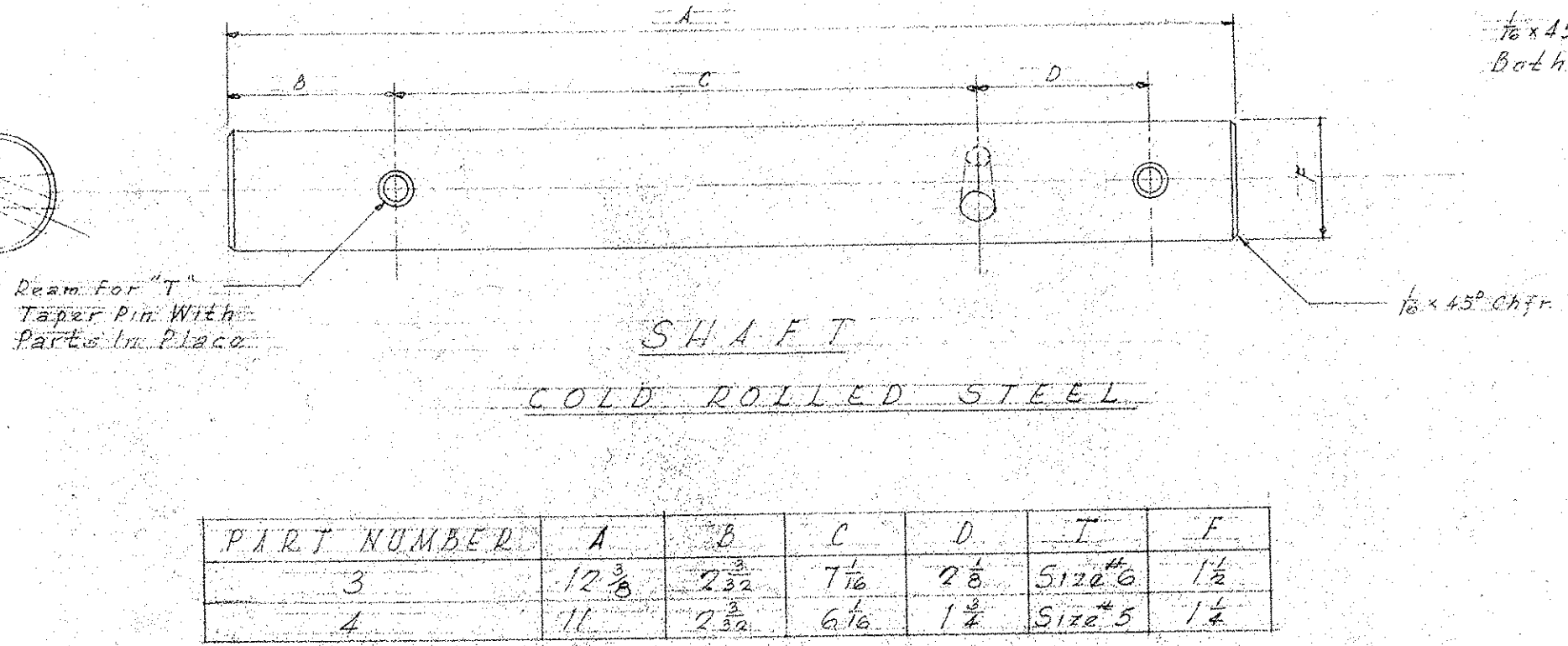
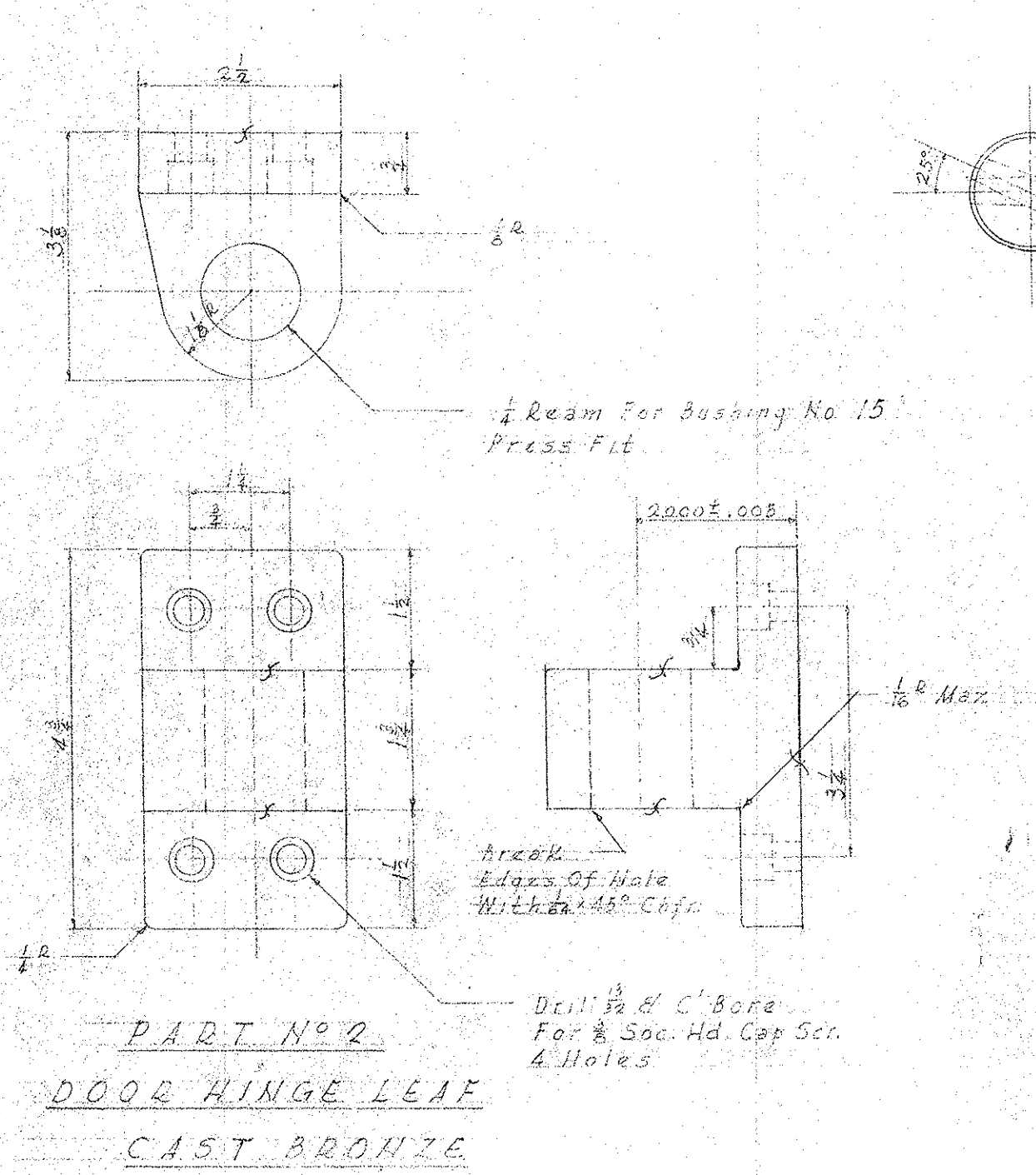
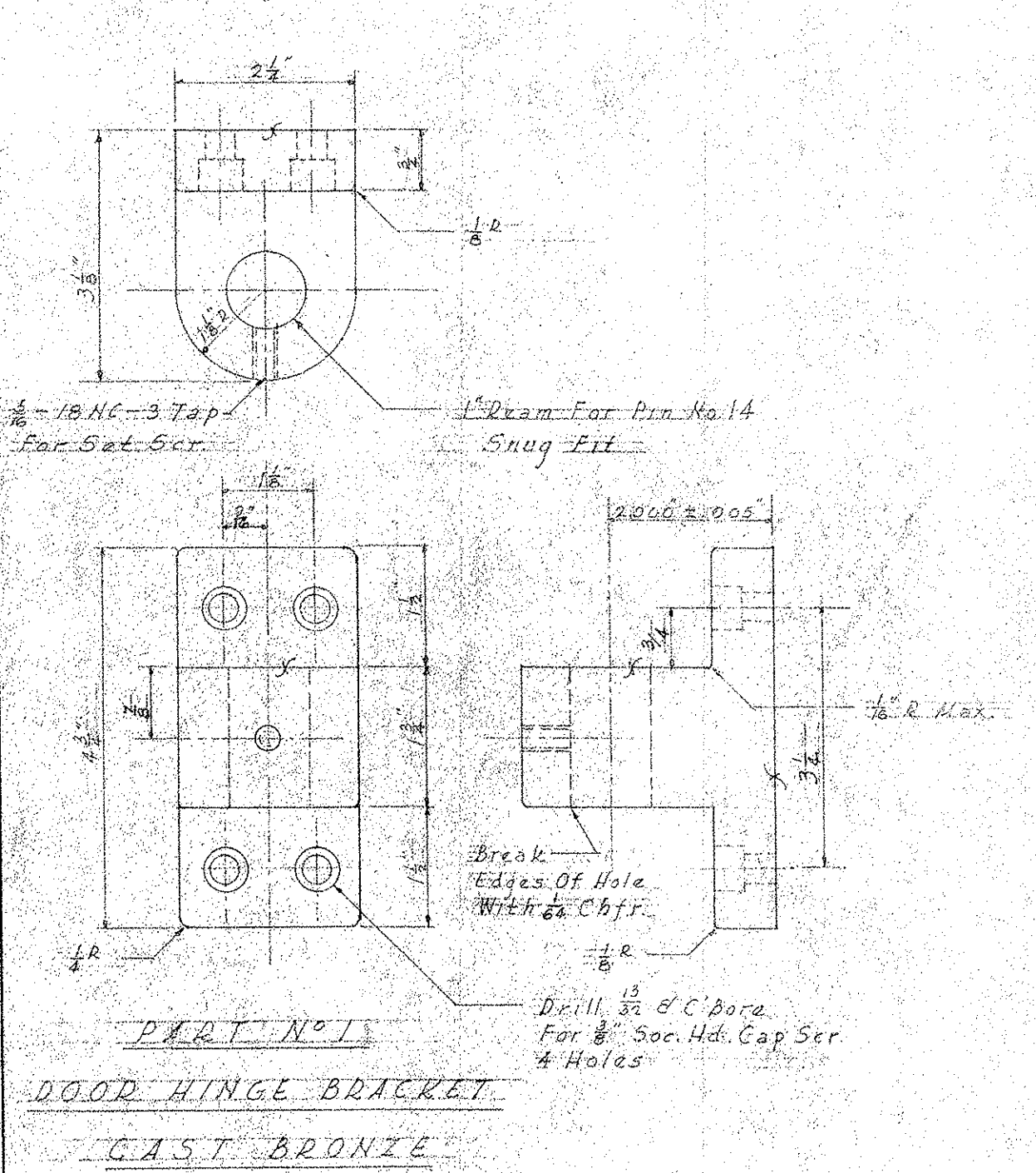
PART NO 39 PRESSURE EQUALIZING PANEL WELDMENT
MATERIAL AS NOTED
SCALE 3" = 1'-0"

LAW & WILSON ARCHITECTS & ENGINEERS
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIHI TUNNEL TUNNEL & SHAFT AIRTIGHT DOOR WELDMENTS

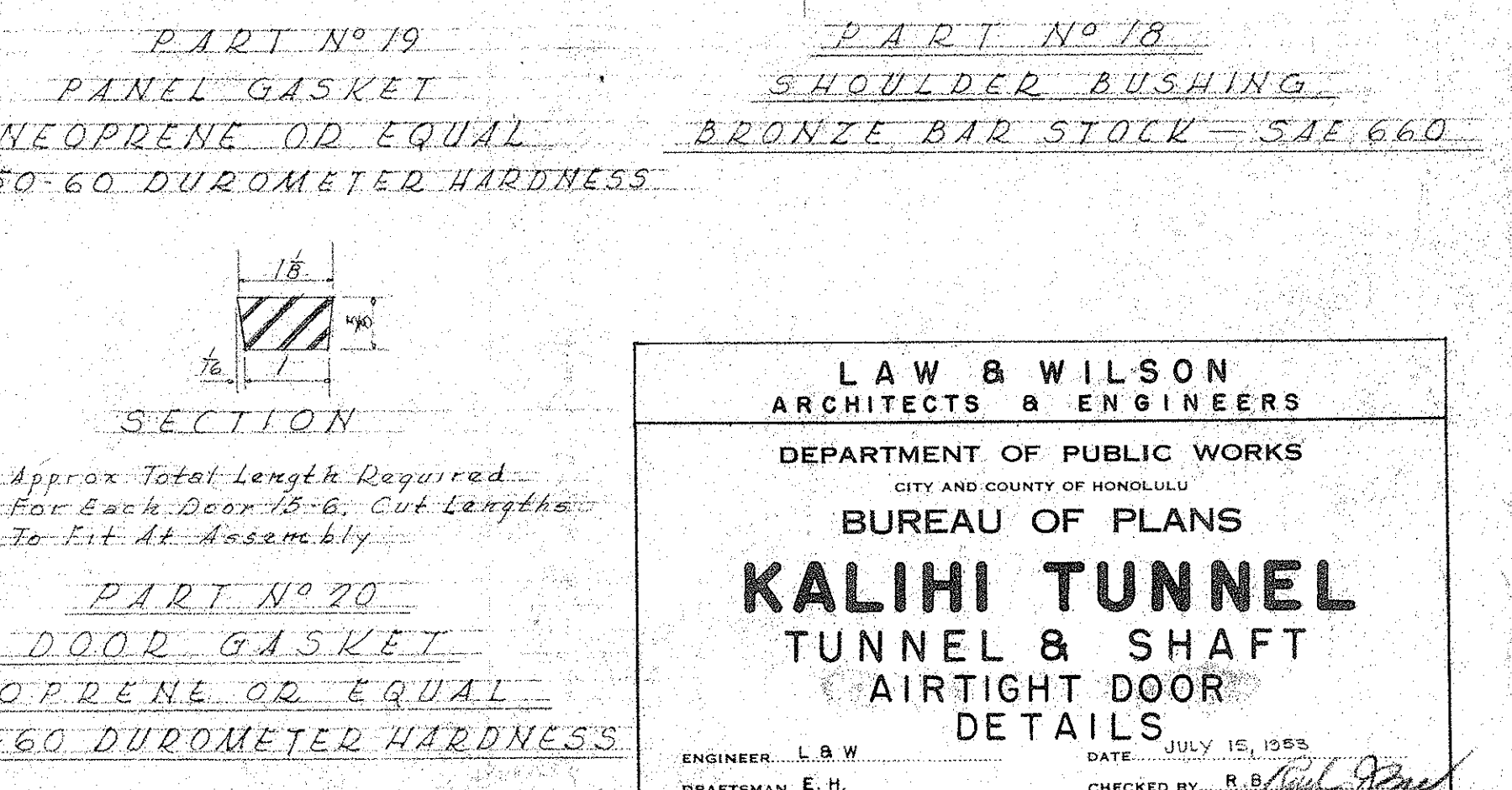
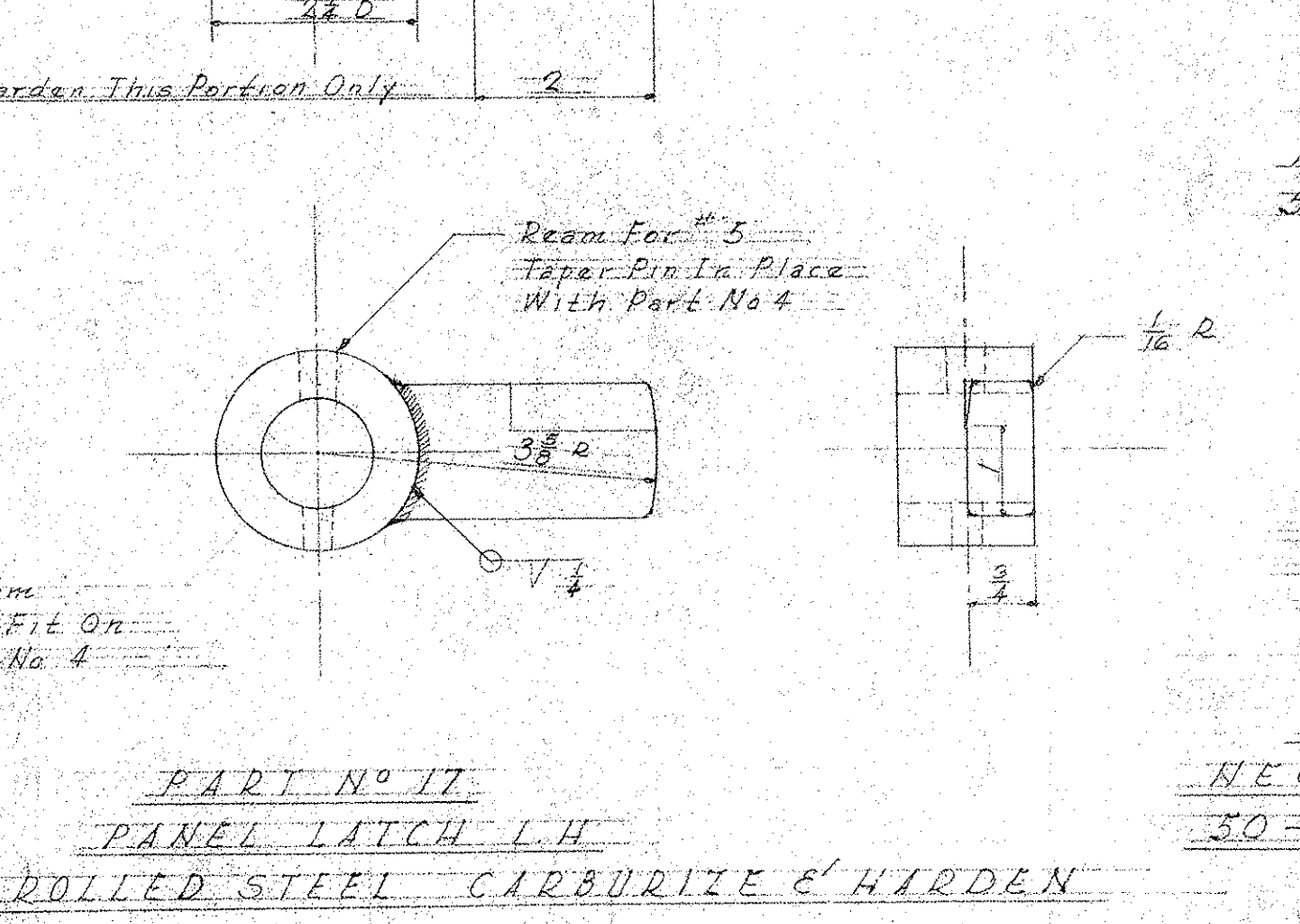
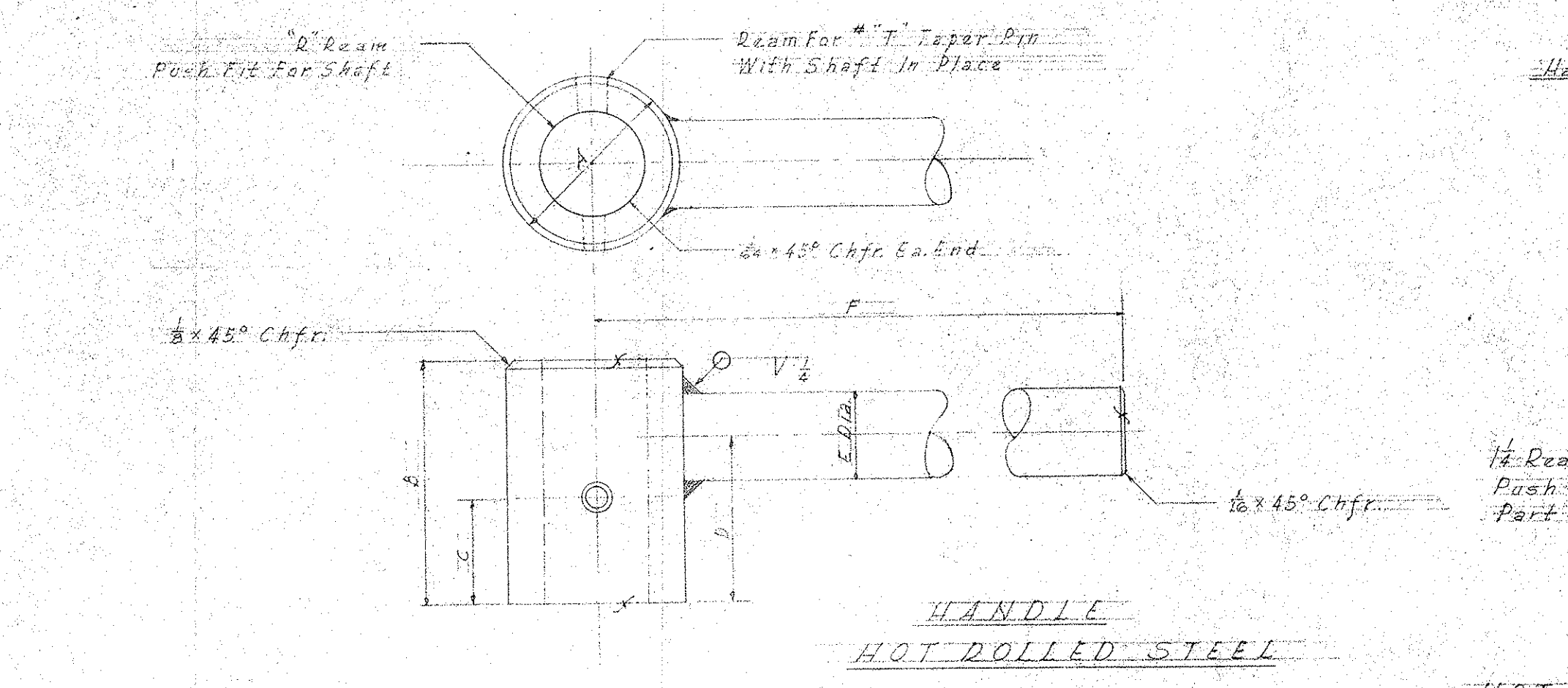
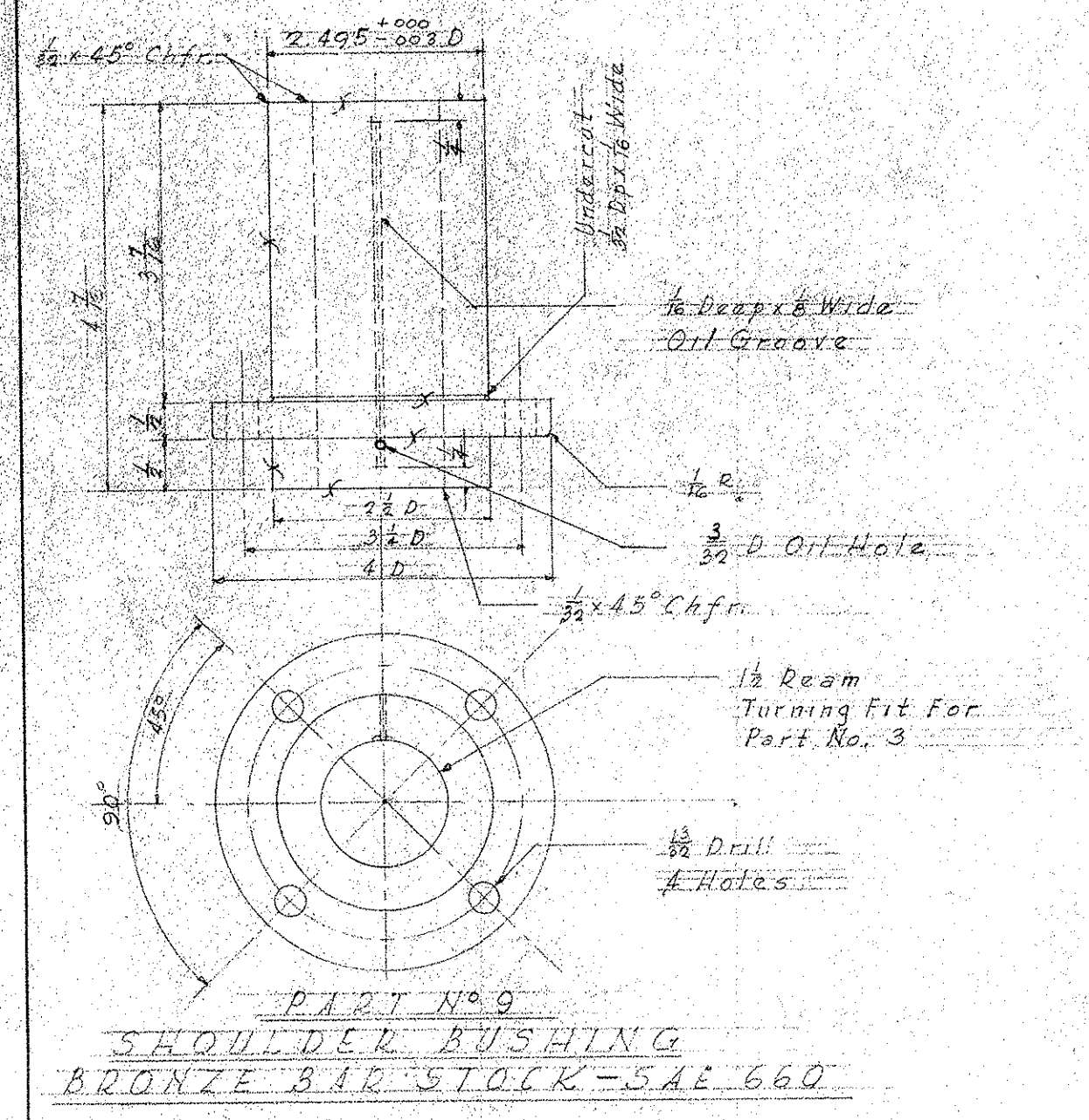
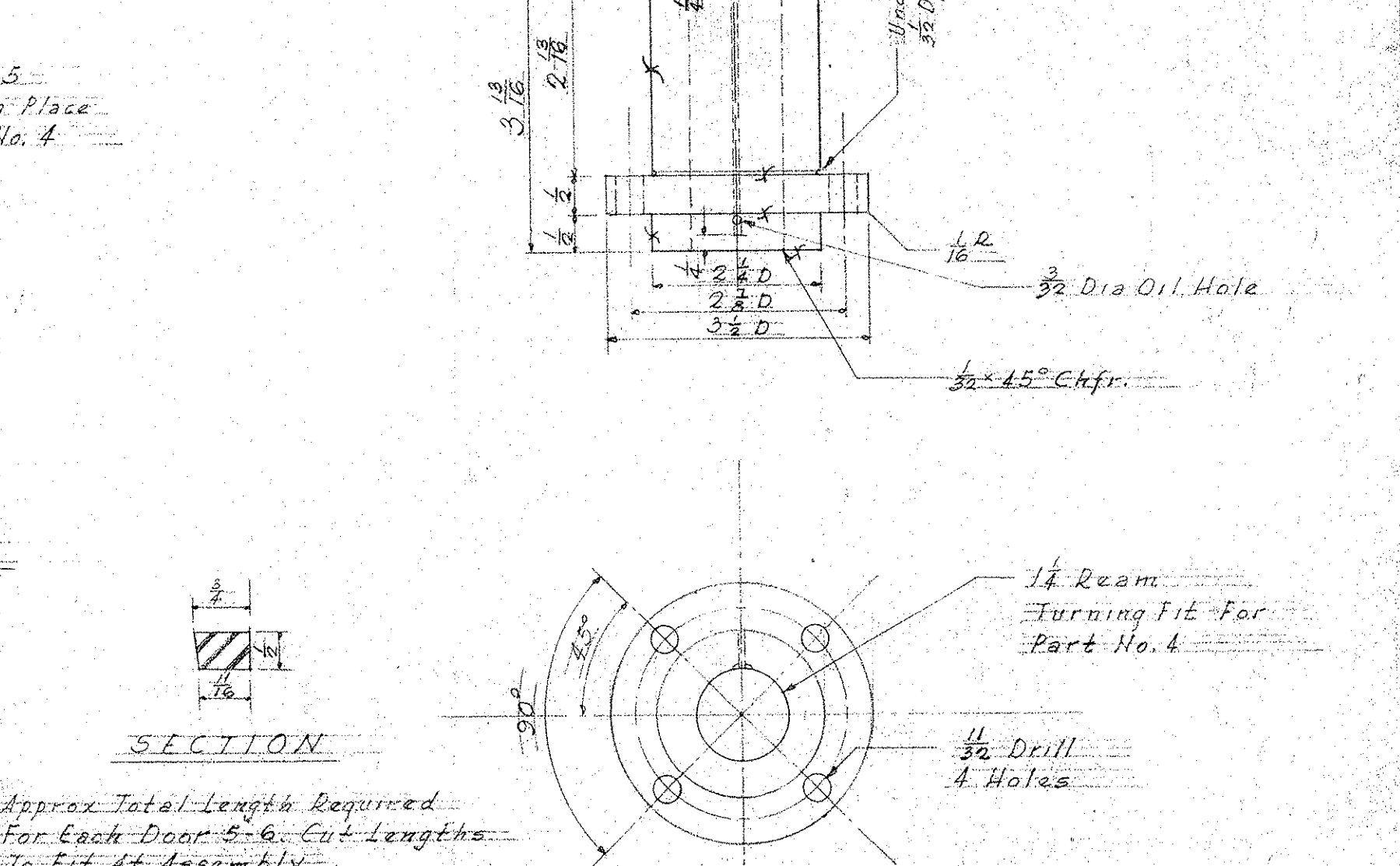
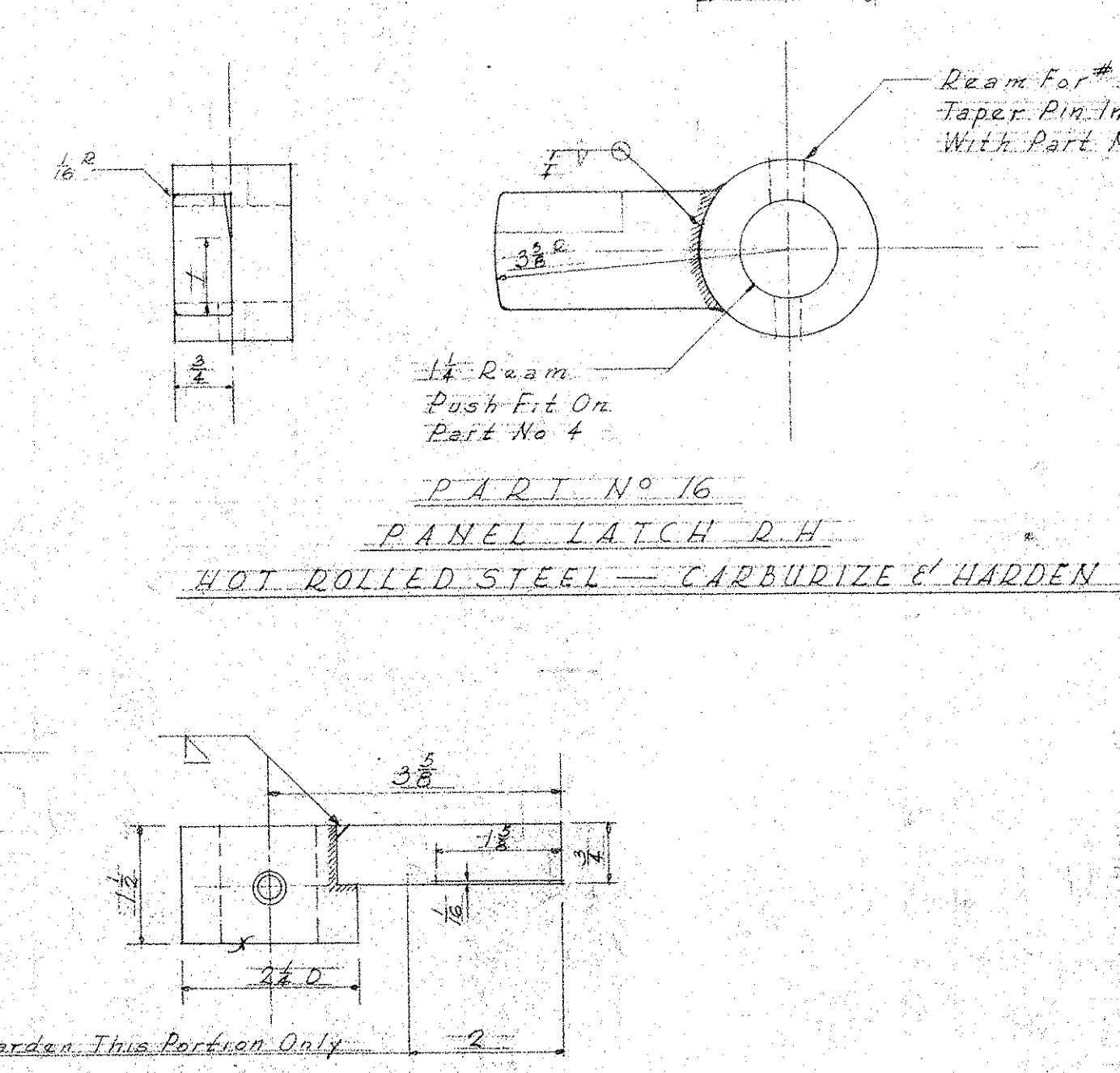
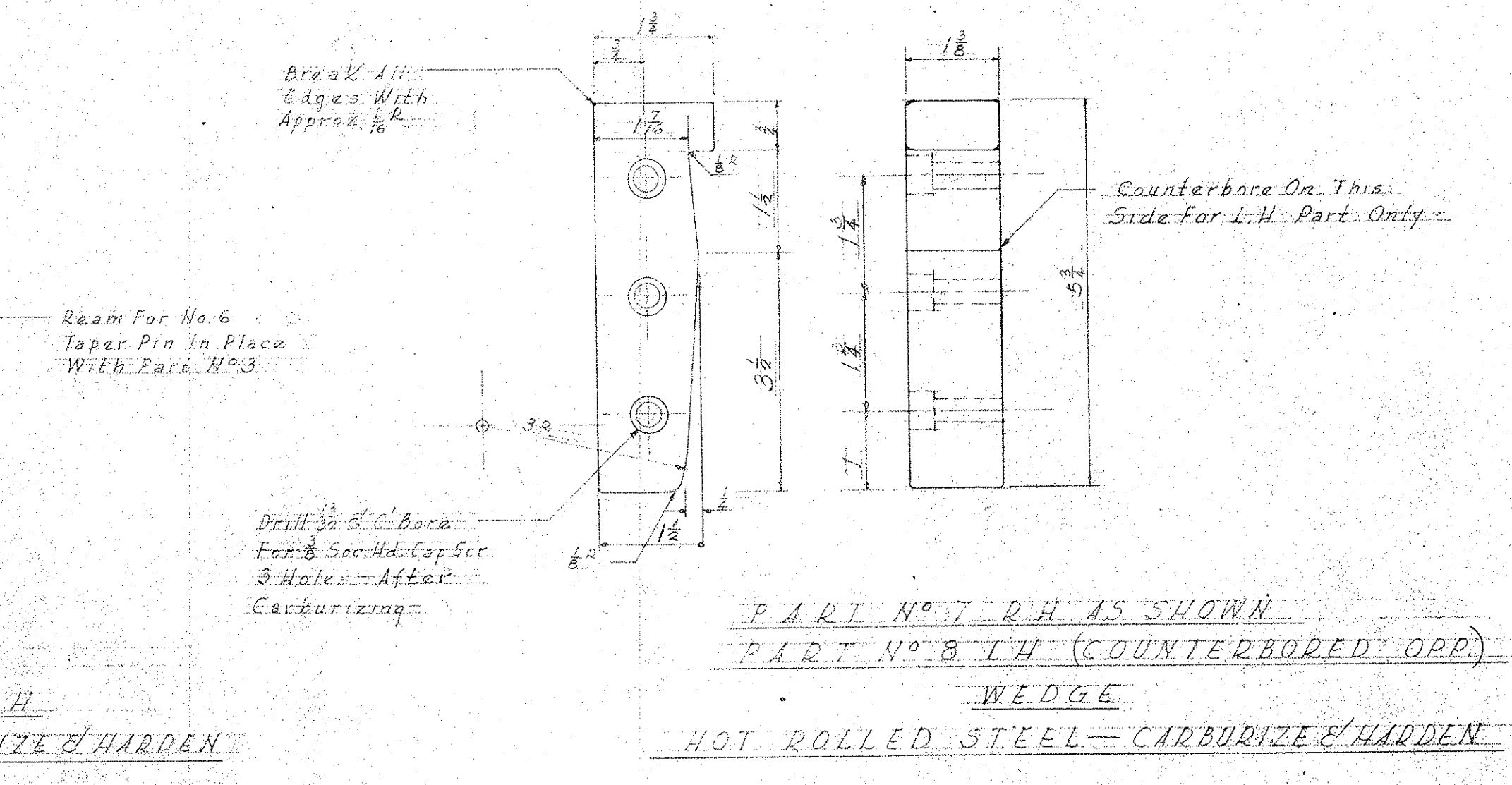
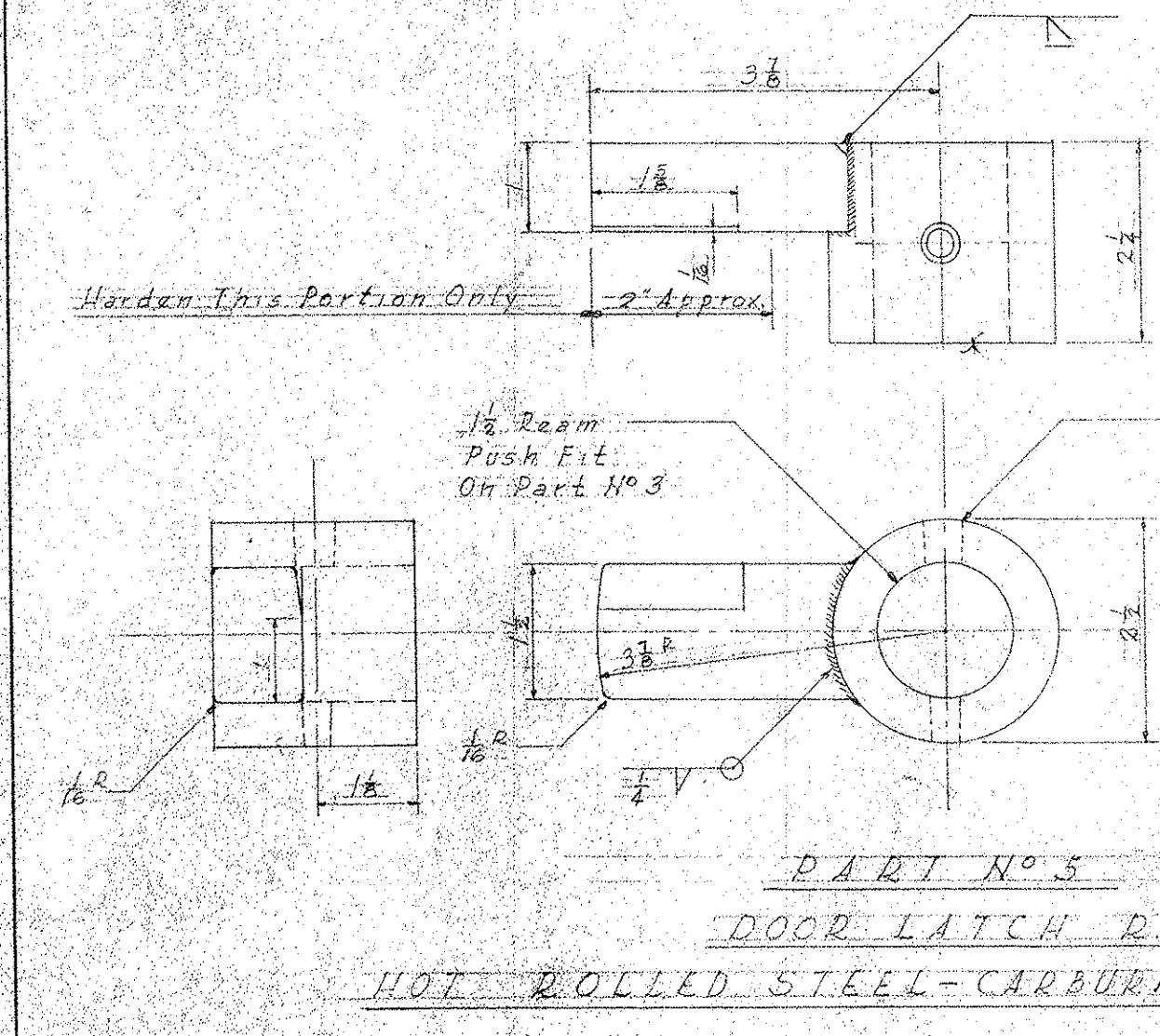
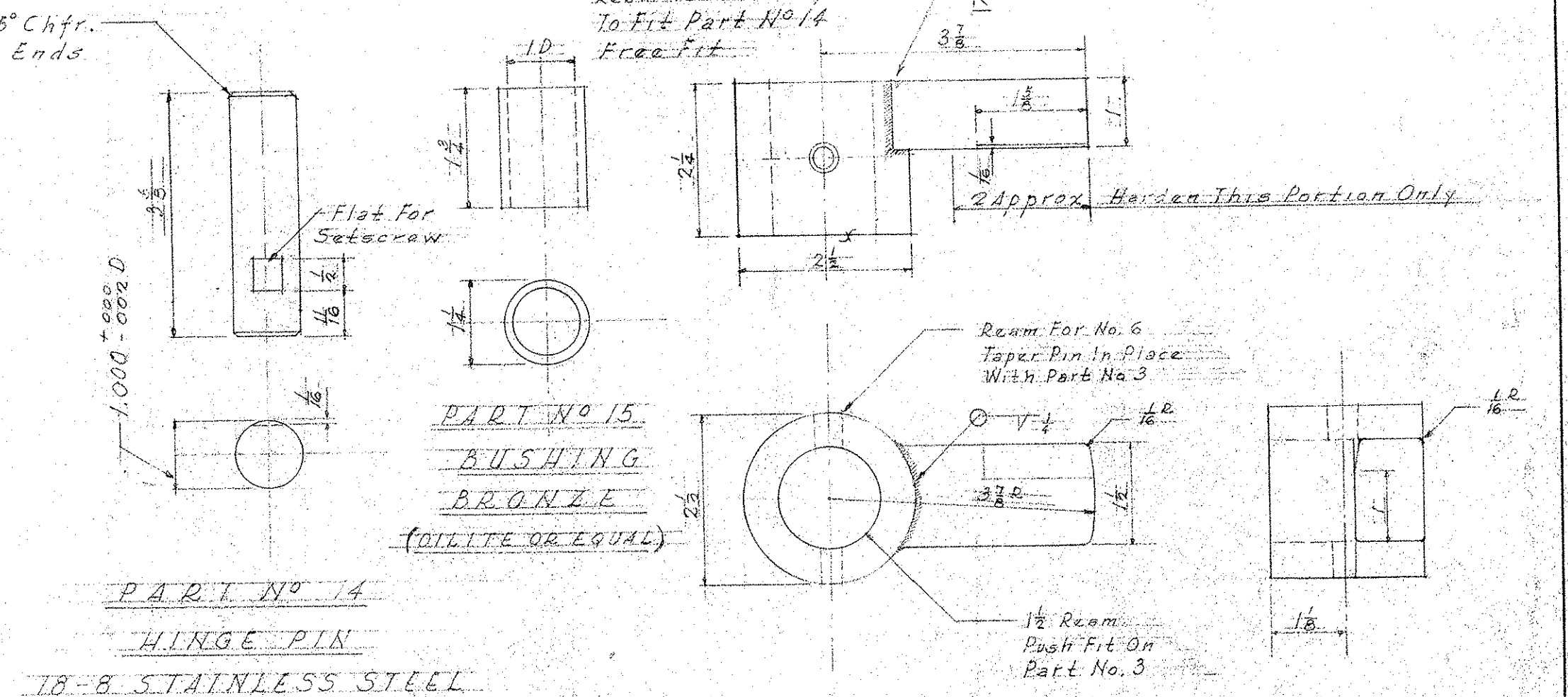
ENGINEER: L. B. W. DATE: JULY 15, 1959
DRAFTSMAN: E. H. CHECKED BY: R. B. [Signature]
SCALE: AS NOTED TRACER:
APPROVED: [Signature] CHIEF ENGINEER
APPROVED: [Signature] BUREAU ENGINEER

SECTION C JOB NO. 26-53 DWG. T-28

Sheet No. 106 of 252 Sheets



PART NUMBER	A	B	C	D	E	F
3	12 3/8	2 3/4	7 1/8	2 3/8	Size #6	1 1/2
4	11	2 3/4	6 1/8	1 1/2	Size #5	1 1/2



PART NUMBER	A	B	C	D	E	F	R	T
10	2 1/2	3 1/2	1 1/2	2 1/2	1 1/2	12	1.500	Size #6
11	2 1/2	2	1	1	1 1/2	12	1.500	Size #6
12	2 1/2	3 1/2	1 1/2	2 1/2	1 1/2	8	1.250	Size #5
13	2 1/2	2	1	1	1 1/2	8	1.250	Size #5

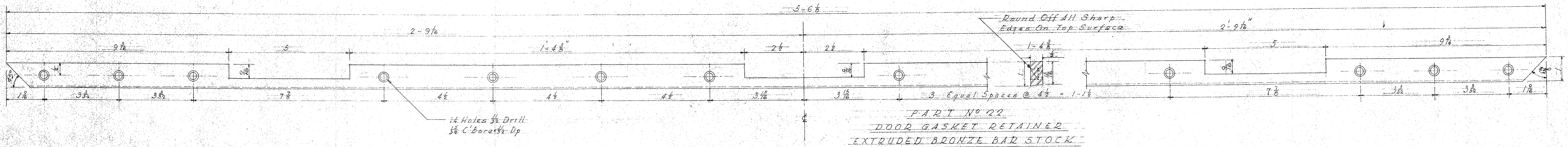
GENERAL NOTES
1. For Assembly & Parts List See Drawing No. T-27
2. All Parts With Matching Screw Holes Shall Be Drilled From Jig Templates For Interchangeability.

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DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIHI TUNNEL
TUNNEL & SHAFT
AIRTIGHT DOOR
DETAILS

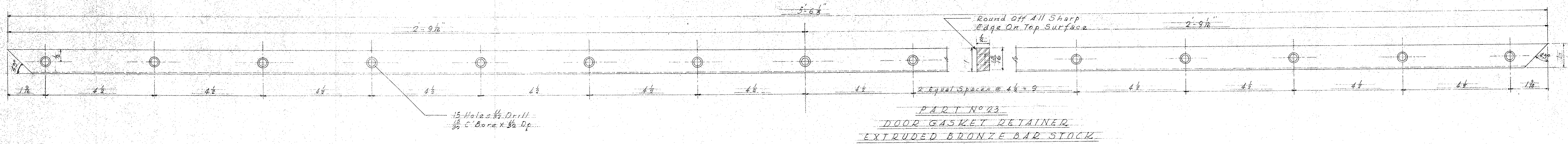
ENGINEER: L. B. W. DATE: JULY 15, 1953
DRAFTSMAN: E. H. CHECKED BY: R. B. [Signature]
SCALE: AS NOTED TRACER:
APPROVED: [Signature] APPROVED: [Signature]
CHIEF ENGINEER BUREAU ENGINEER

SECTION C JOB NO. 26-53 DWG. T-29

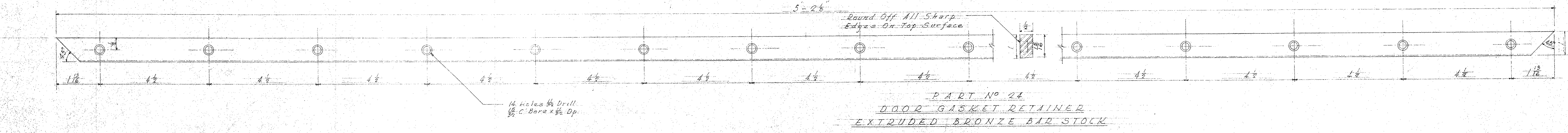
Sheet No. 107 of 252 Sheets



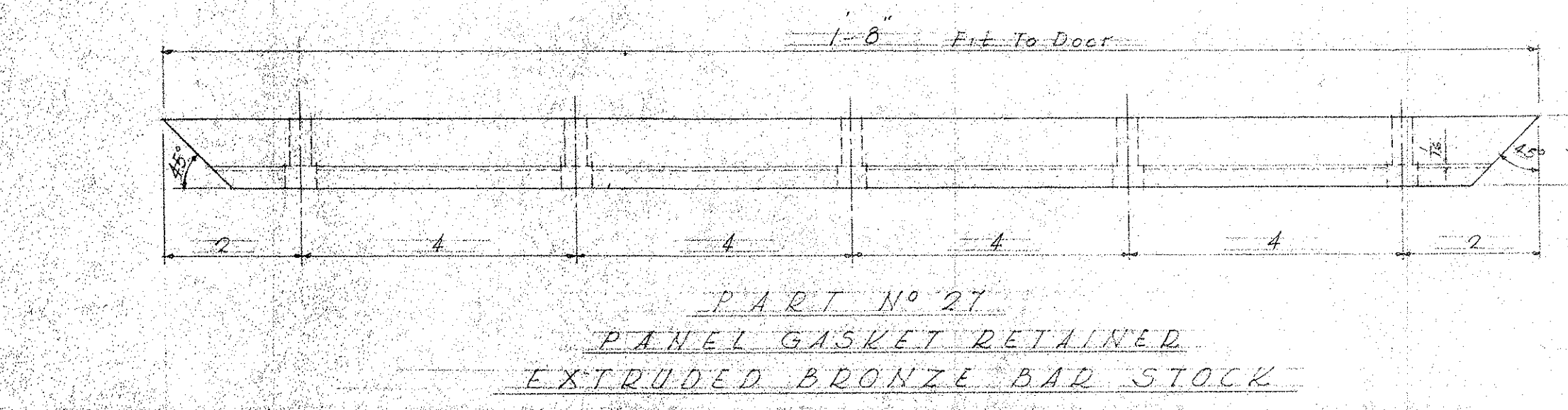
PART NO 22
DOOR GASKET RETAINER
EXTRUDED BRONZE BAR STOCK



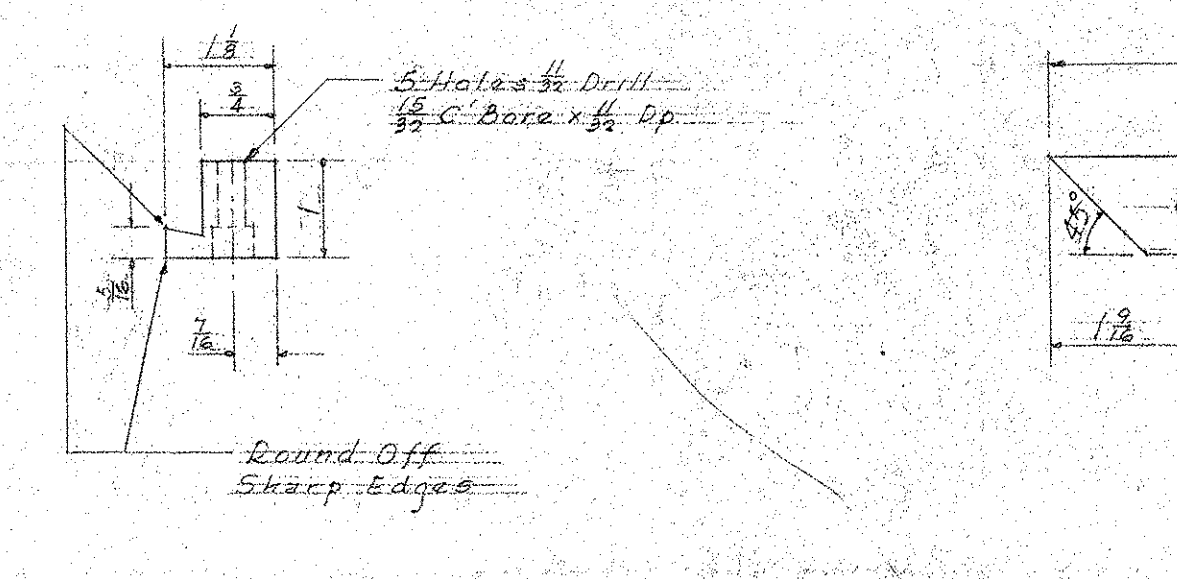
PART NO 23
DOOR GASKET RETAINER
EXTRUDED BRONZE BAR STOCK



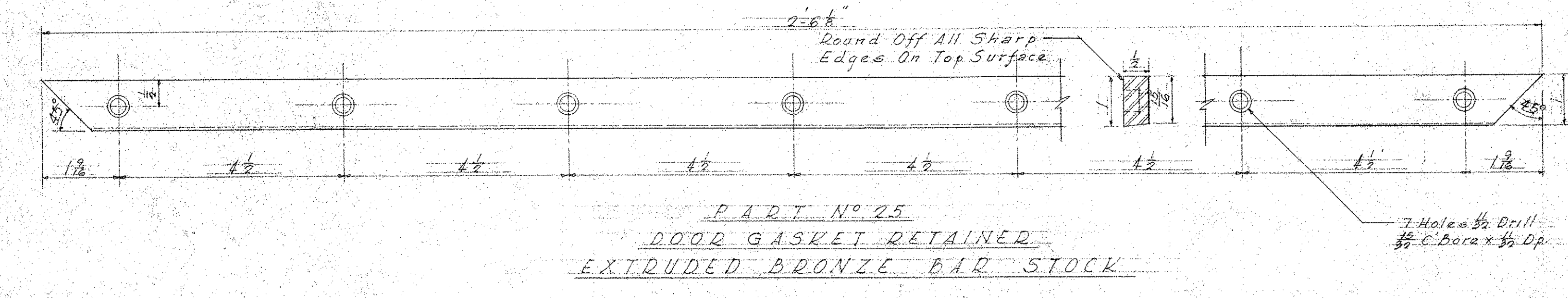
PART NO 24
DOOR GASKET RETAINER
EXTRUDED BRONZE BAR STOCK



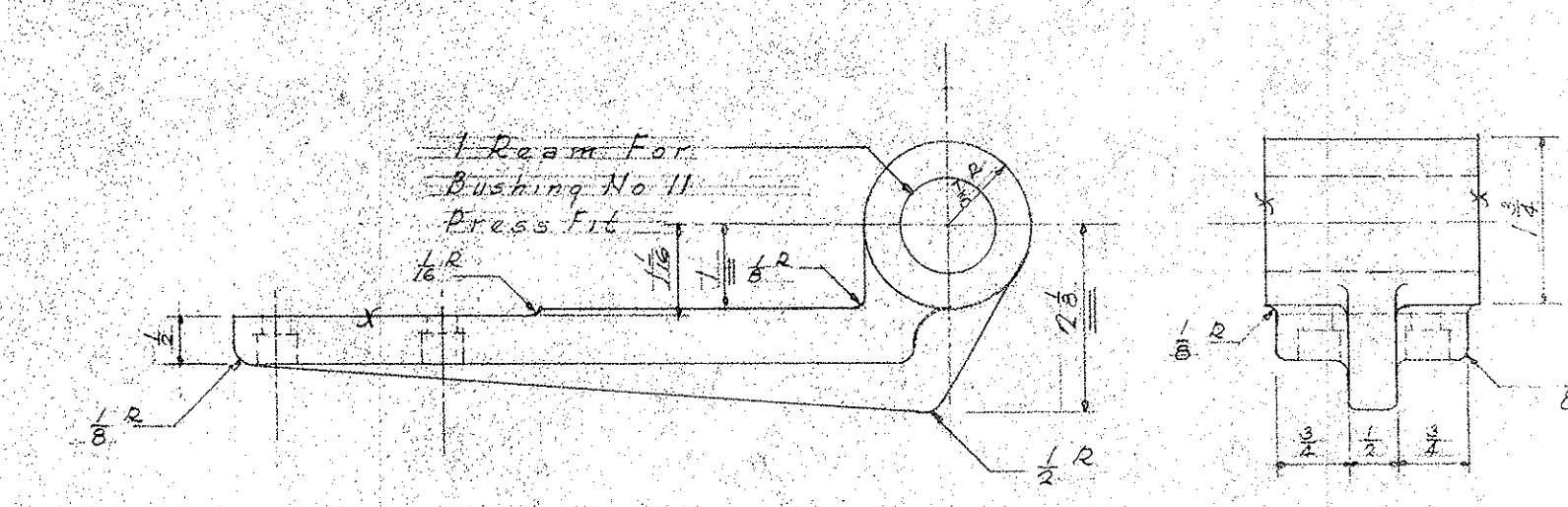
PART NO 27
PANEL GASKET RETAINER
EXTRUDED BRONZE BAR STOCK



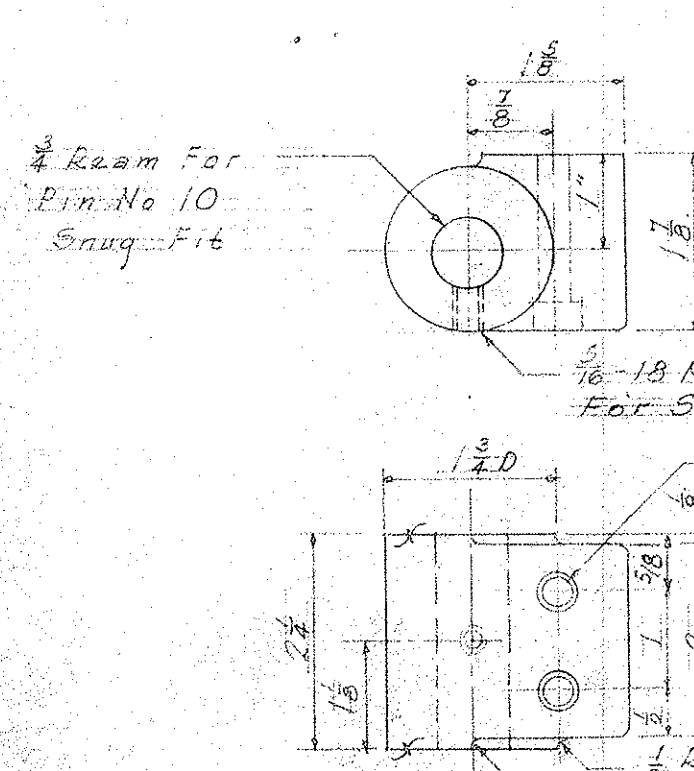
PART NO 28
PANEL GASKET RETAINER
EXTRUDED BRONZE BAR STOCK



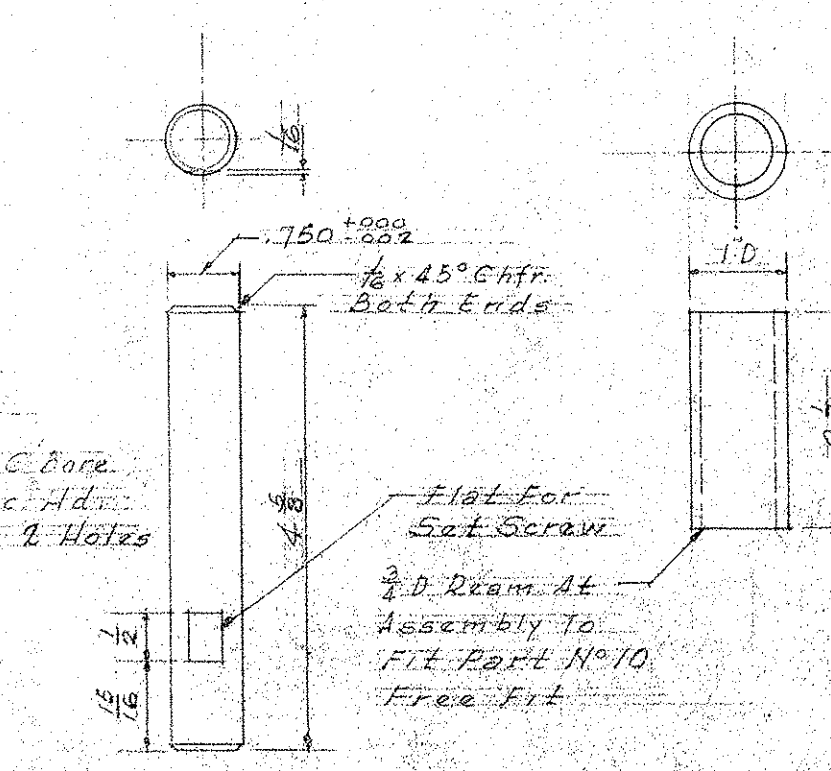
PART NO 25
DOOR GASKET RETAINER
EXTRUDED BRONZE BAR STOCK



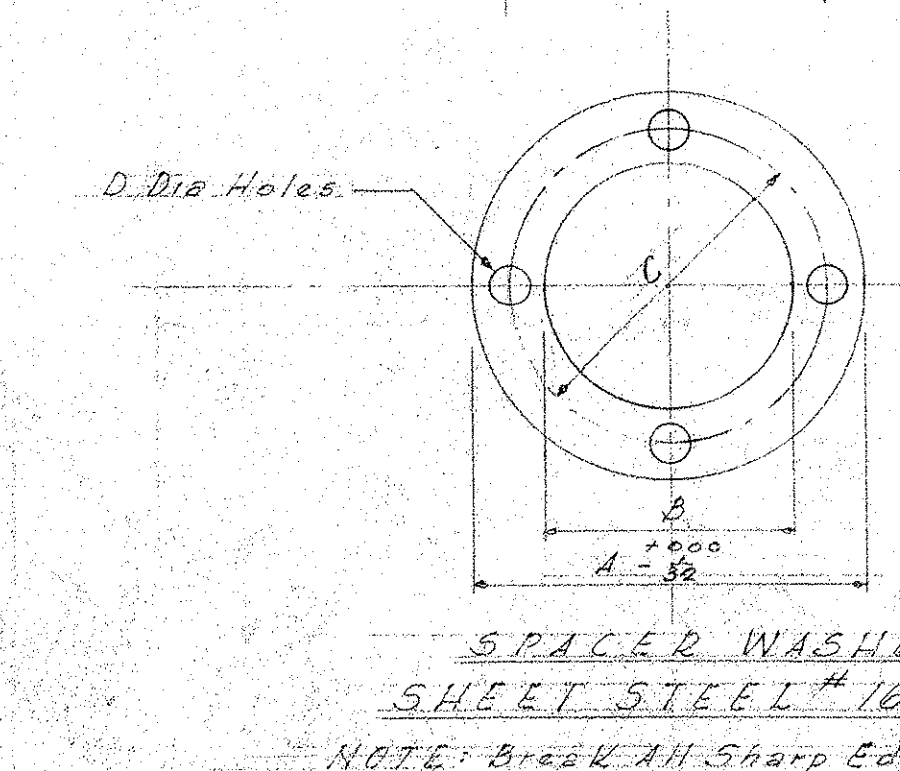
PART NO 29
PANEL HINGE LILE
CAST BRONZE



PART NO 30
PANEL HINGE BRACKET
CAST BRONZE



PART NO 31
HINGE PIN
18-8 STAINLESS STEEL
(A1LITE OR EQUAL)



PART NO 32
BUSHING
BRONZE

PART NO	A	B	C	D
33	4	2 3/8	3 1/2	1 1/8
34	3 1/2	2 3/8	2 3/8	1 1/8

- GENERAL NOTES
- For Assembly & Parts List See Dwg No 707
 - All Parts With Matching Screw Holes Shall be Drilled From Jig Templates For Interchangeability

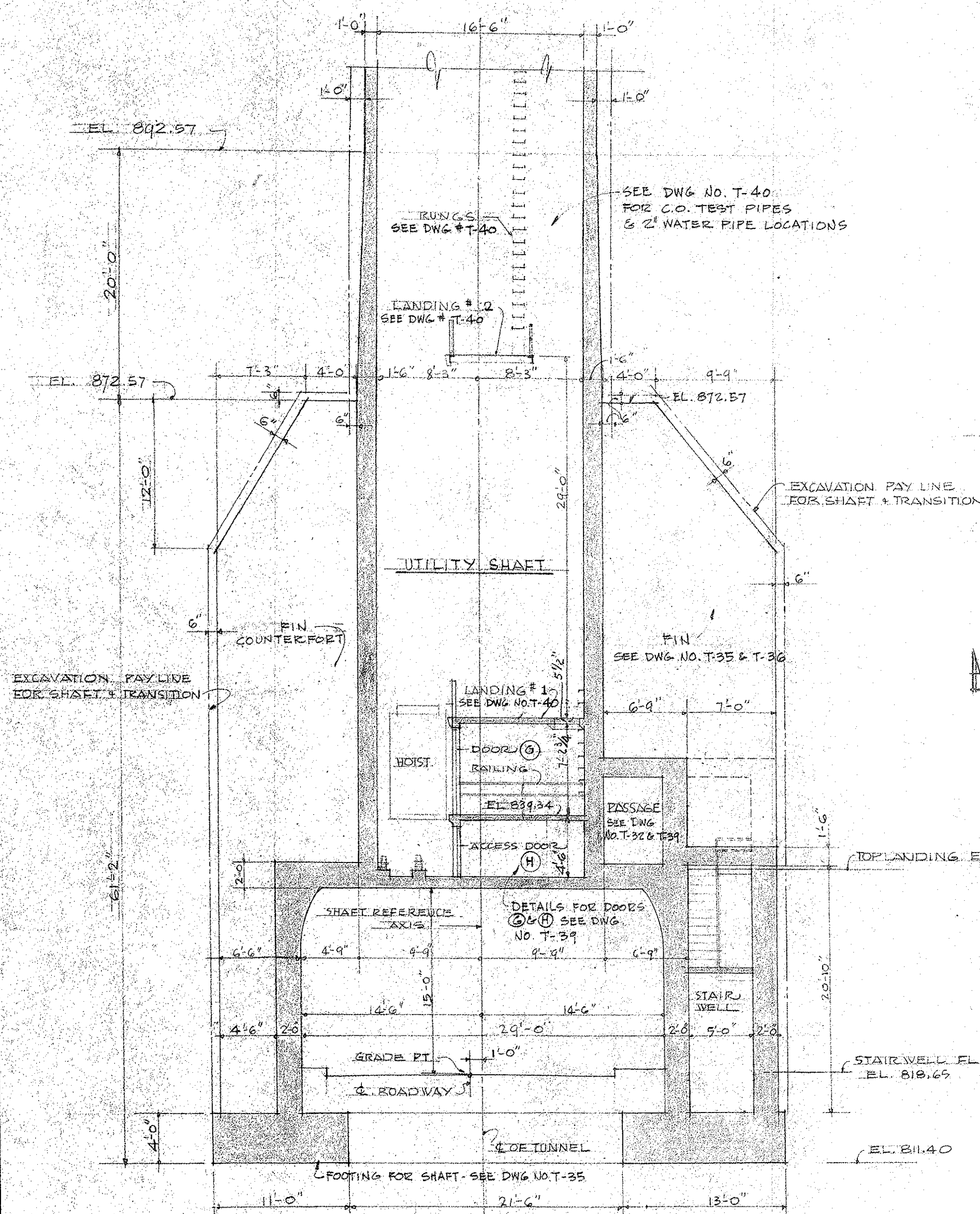
NOTE: Break All Sharp Edges

APPROVED
ENGINEER, KALIHU TUNNEL

LAW & WILSON
ARCHITECTS & ENGINEERS
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIHU TUNNEL
TUNNEL & SHAFT
AIRTIGHT DOOR
DETAILS

ENGINEER: L. B. W. DATE: JULY 15, 1953
DRAFTSMAN: E. H. CHECKED BY: R. B. [Signature]
SCALE: 1/2" = 1'-0" TRACER:
APPROVED: [Signature] CHIEF ENGINEER
APPROVED: [Signature] BUREAU ENGINEER

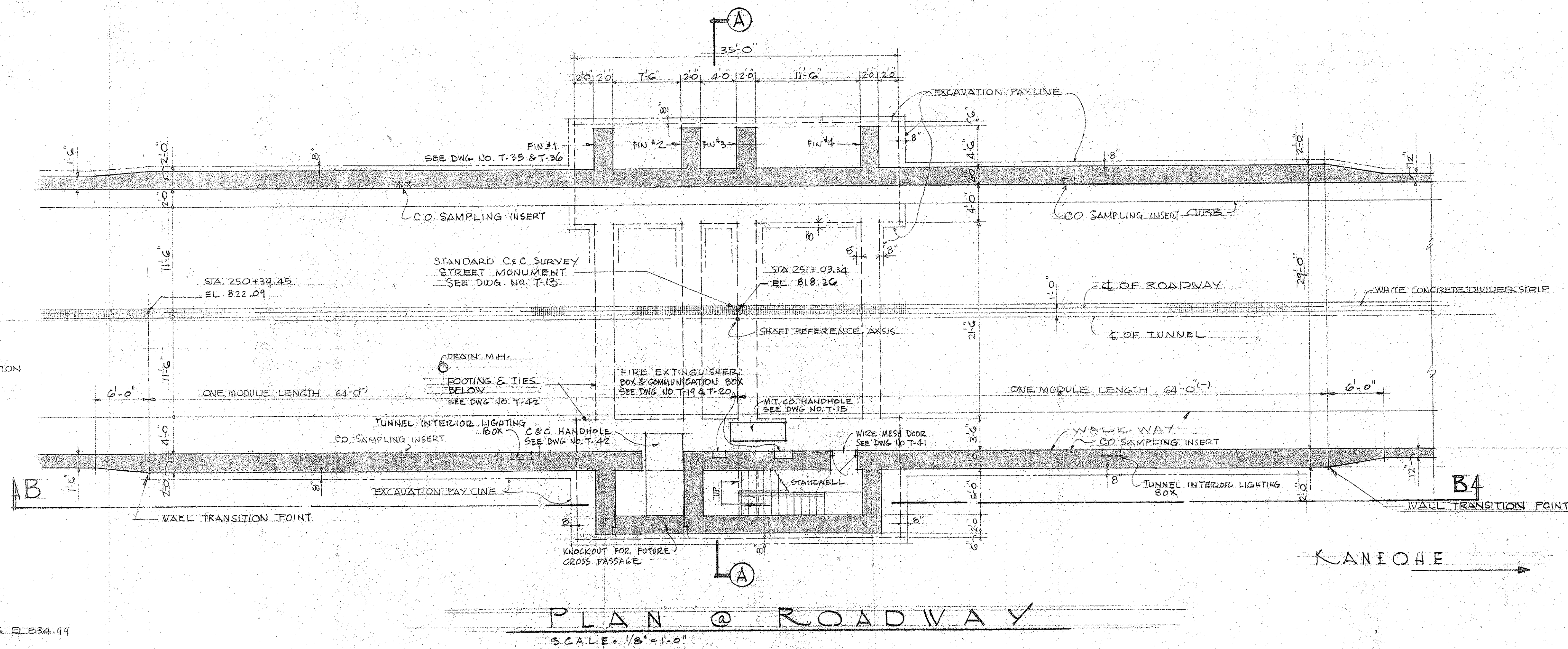
SECTION C JOB NO. 26-53 DWG. T-30



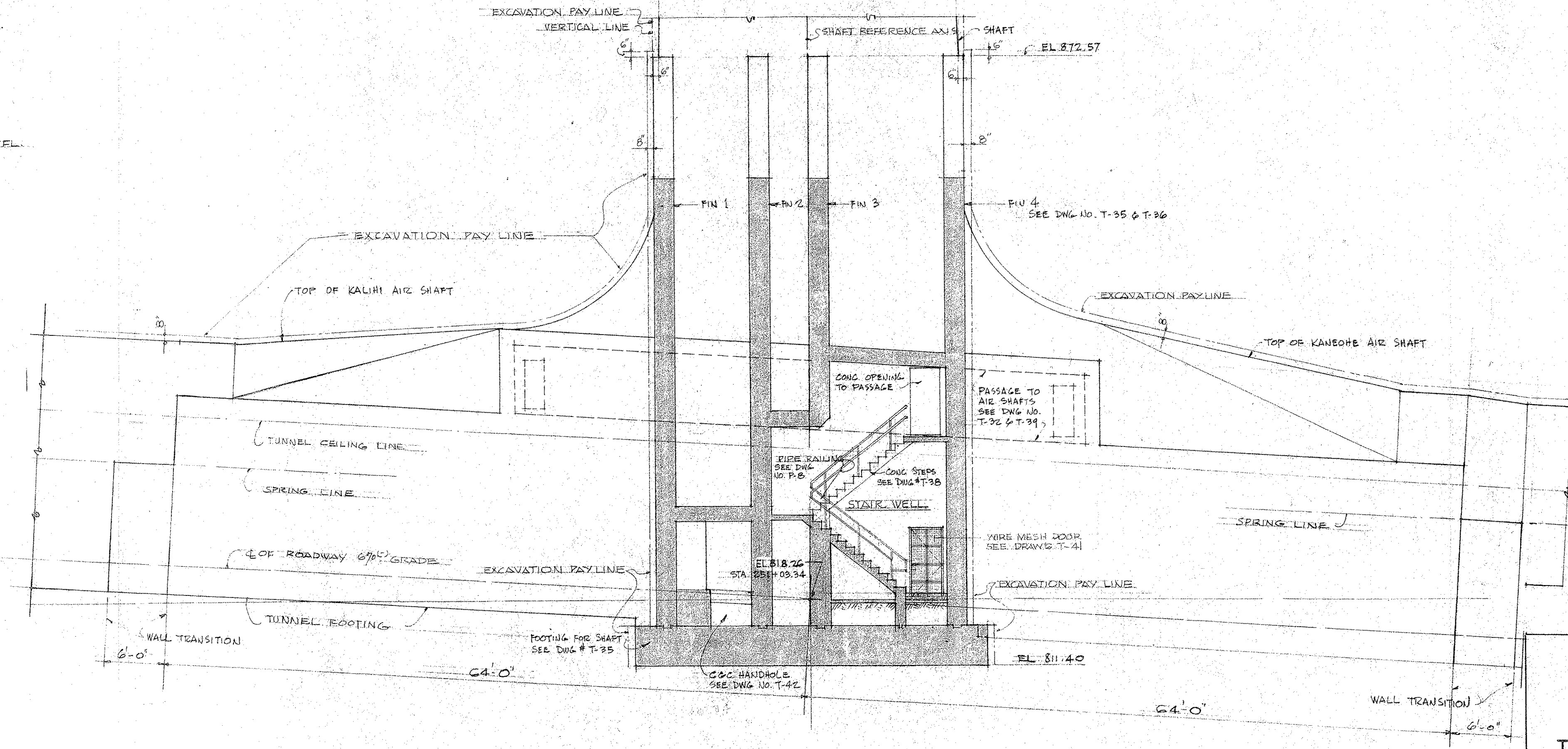
SECTION A-A
CROSS SECTION AT
UTILITY SHAFT
 SCALE: 1/8" = 1'-0"

NOTES FOR TRANSITION & SHAFT:

- UNLESS OTHERWISE INDICATED, PAY LINE FOR EXCAVATION SHALL BE A LINE 8" INCHES OUTSIDE OF THE FINISH CONCRETE SURFACES.
- PAYMENT FOR CONCRETE WHICH SHALL INCLUDE FORMWORK, SHALL BE BASED UPON THE QUANTITY OF CONCRETE WITHIN THE NEAT LINES OF THE STRUCTURE EXCEPT DEDUCTIONS SHALL BE MADE FROM THIS QUANTITY FOR EMBEDDED STRUCTURAL STEEL. STRUCTURAL STEEL SUPPORTS ORDERED LEFT IN PLACE BY THE ENGINEER SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR STEEL SUPPORTS. TO FILL THE OVER BREAKS OUTSIDE THE NEAT LINES OF THE STRUCTURE THE CONTRACTOR SHALL MAKE HIS OWN ALLOWANCES FOR CONCRETE AND BACKPACKING FOR WHICH NO PAYMENT WILL BE ALLOWED EXCEPT AS NOTED BELOW.
- SPACES BETWEEN FINIS OR COUNTERFORTS WILL BE BACKPACKED & GROUTED. PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICES FOR THE VARIOUS ITEMS OF WORK ACTUALLY MEASURED IN THE FIELD. NO PAYMENT WILL BE ALLOWED FOR FILLING OVERBREAKS OUTSIDE OF THE EXCAVATION PAY LINE.



PLAN @ ROADWAY
 SCALE: 1/8" = 1'-0"



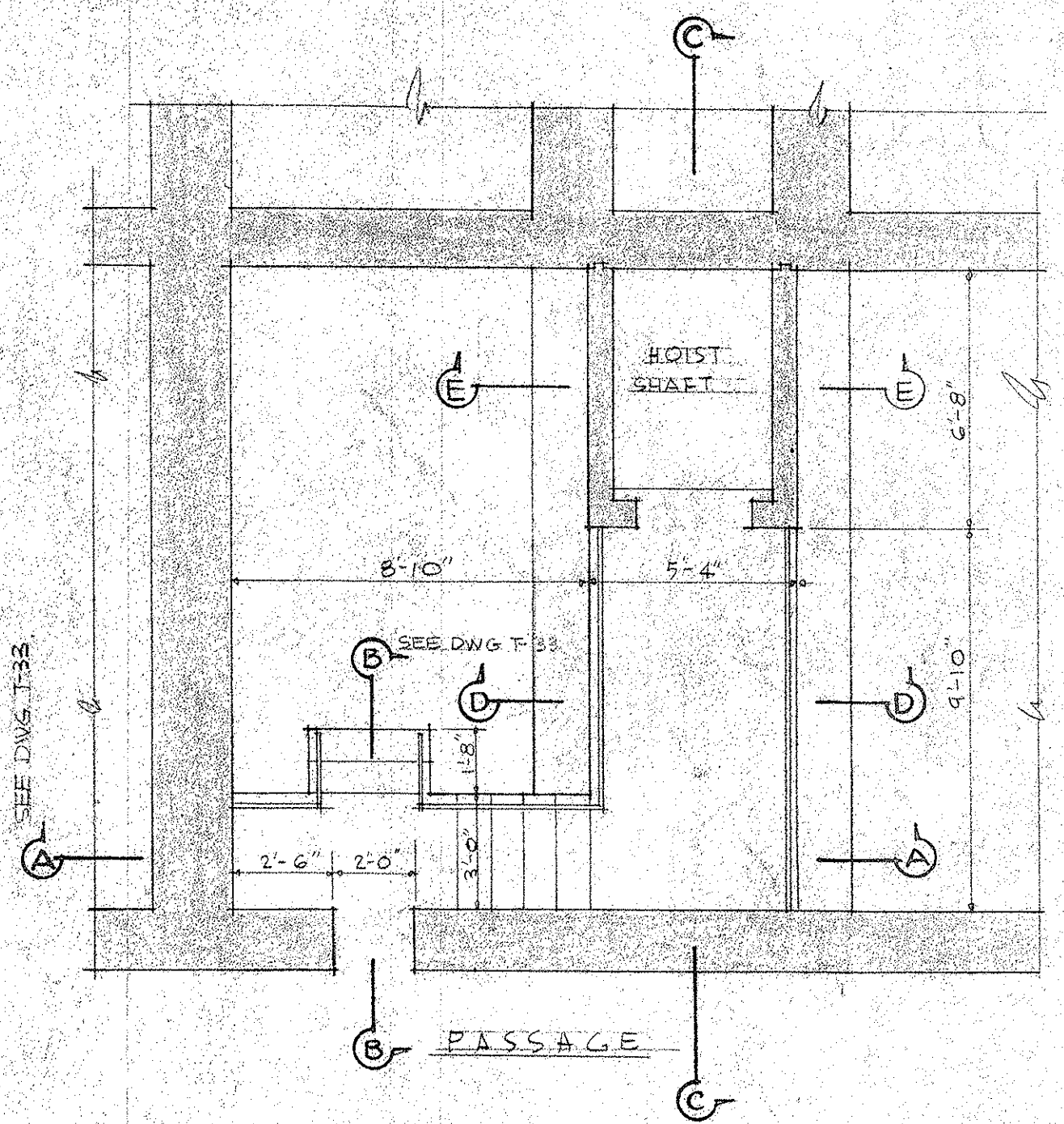
SECTION B-B
 SCALE: 1/8" = 1'-0"

DEPARTMENT OF PUBLIC WORKS
 CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIH TUNNEL
 TUNNEL & SHAFT - TRANSITION
 PLAN & SECTIONS

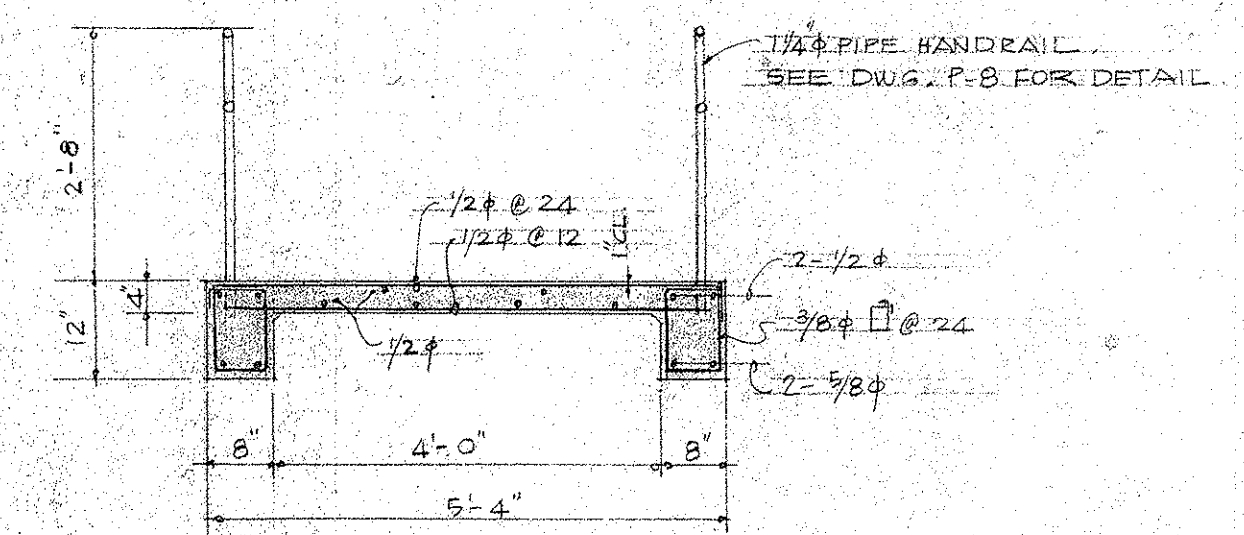
ENGINEER: W. LUM, P.E. DATE: JULY 15, 1953
 DRAFTSMAN: R. O. CHECKED BY: W. LUM, P.E.
 SCALE: 1/8" = 1'-0" TRACER: P. K.
 APPROVED: *W. L. Luman* CHIEF ENGINEER APPROVED: *W. Butzard* BUREAU ENGINEER

W. B.	PROFILE	C. B.
CR. SEC.	P. B.	S. B.
W. M. BY:	F. W. BY:	S. BY:

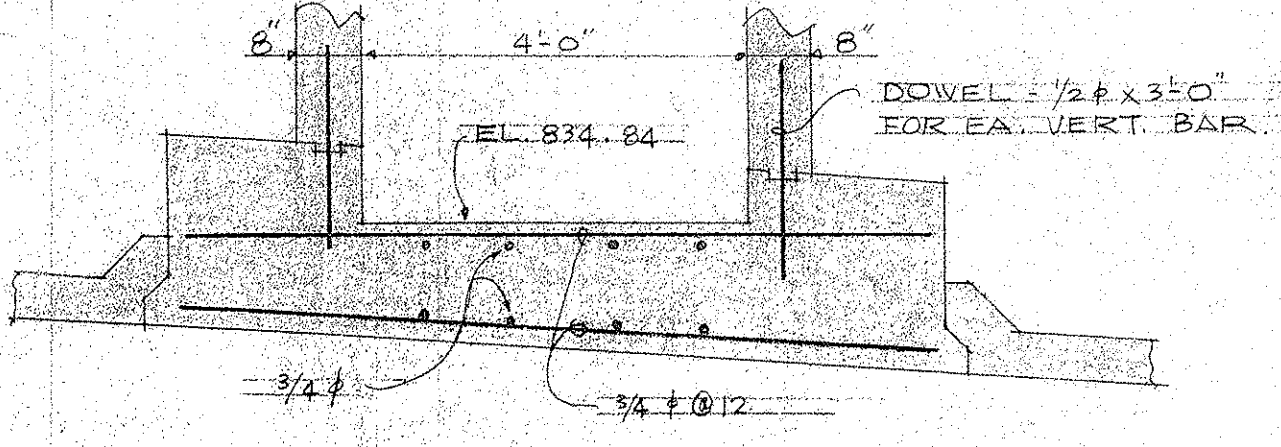
SECTION C JOB NO. 26-53 DWG. T-31



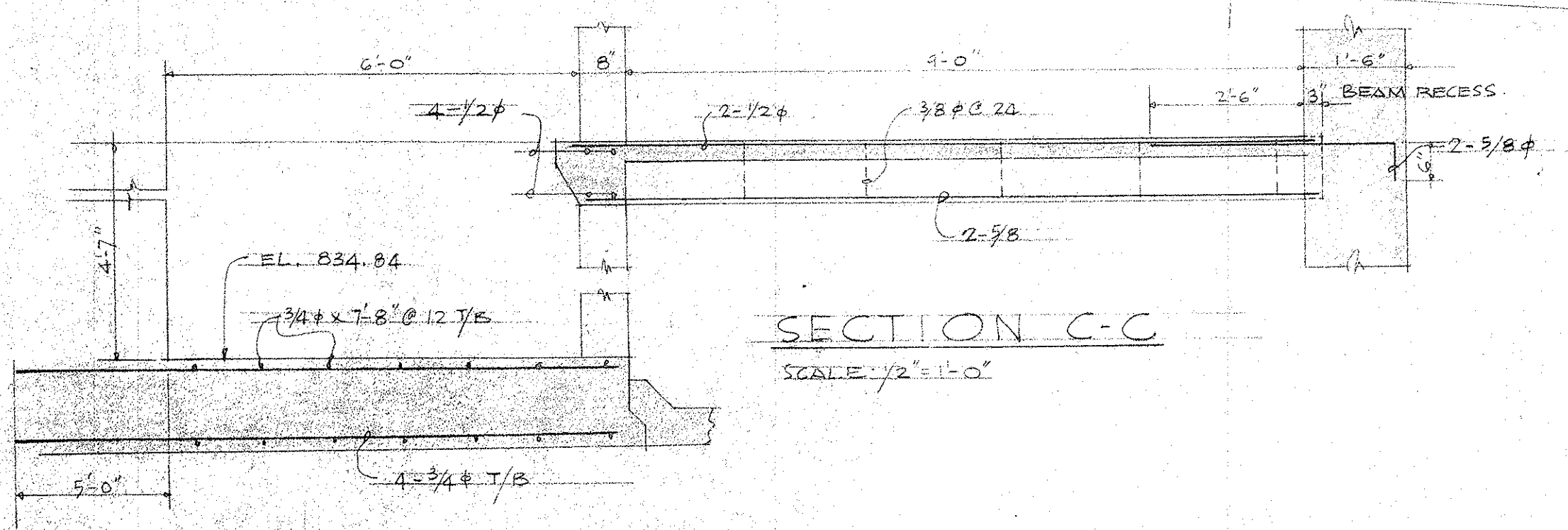
PLAN - UTILITY HOIST APPROACH ROOM
 SCALE: 1/4" = 1'-0"
 FOR DETAIL OF FLOOR SLAB SEE DWG. T-41
 FOR SECTION A-A & B-B SEE DWG. T-33



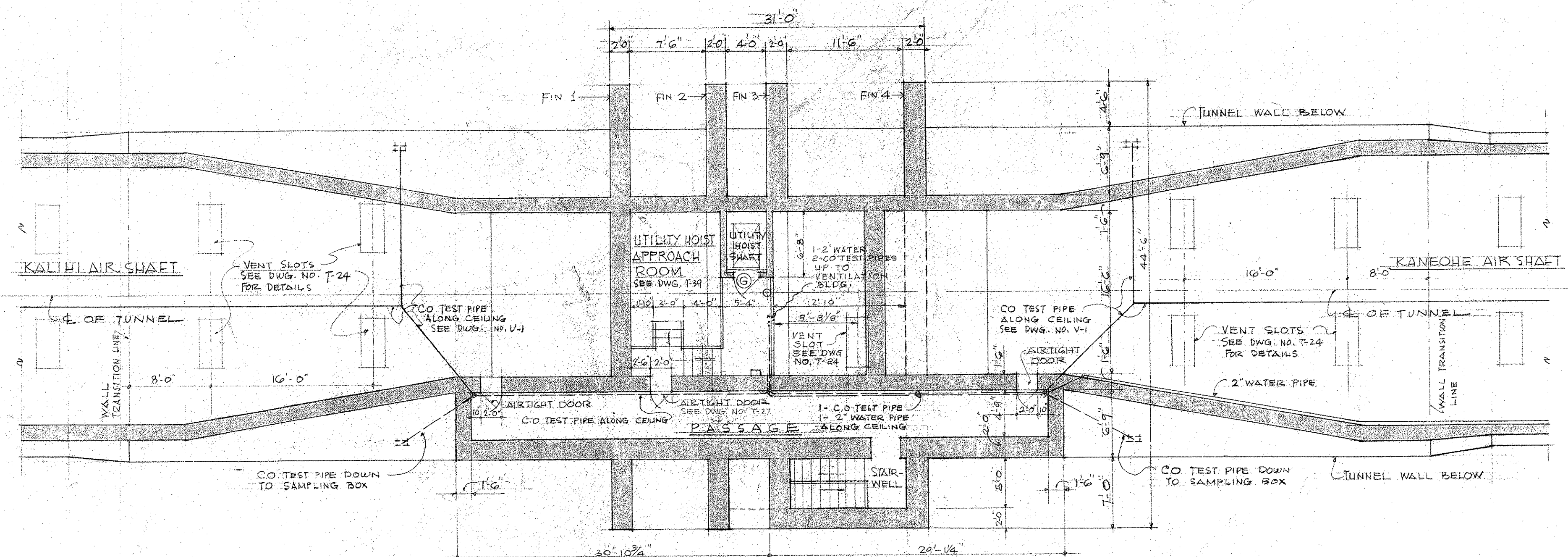
SECTION D-D
 SCALE: 1/2" = 1'-0"



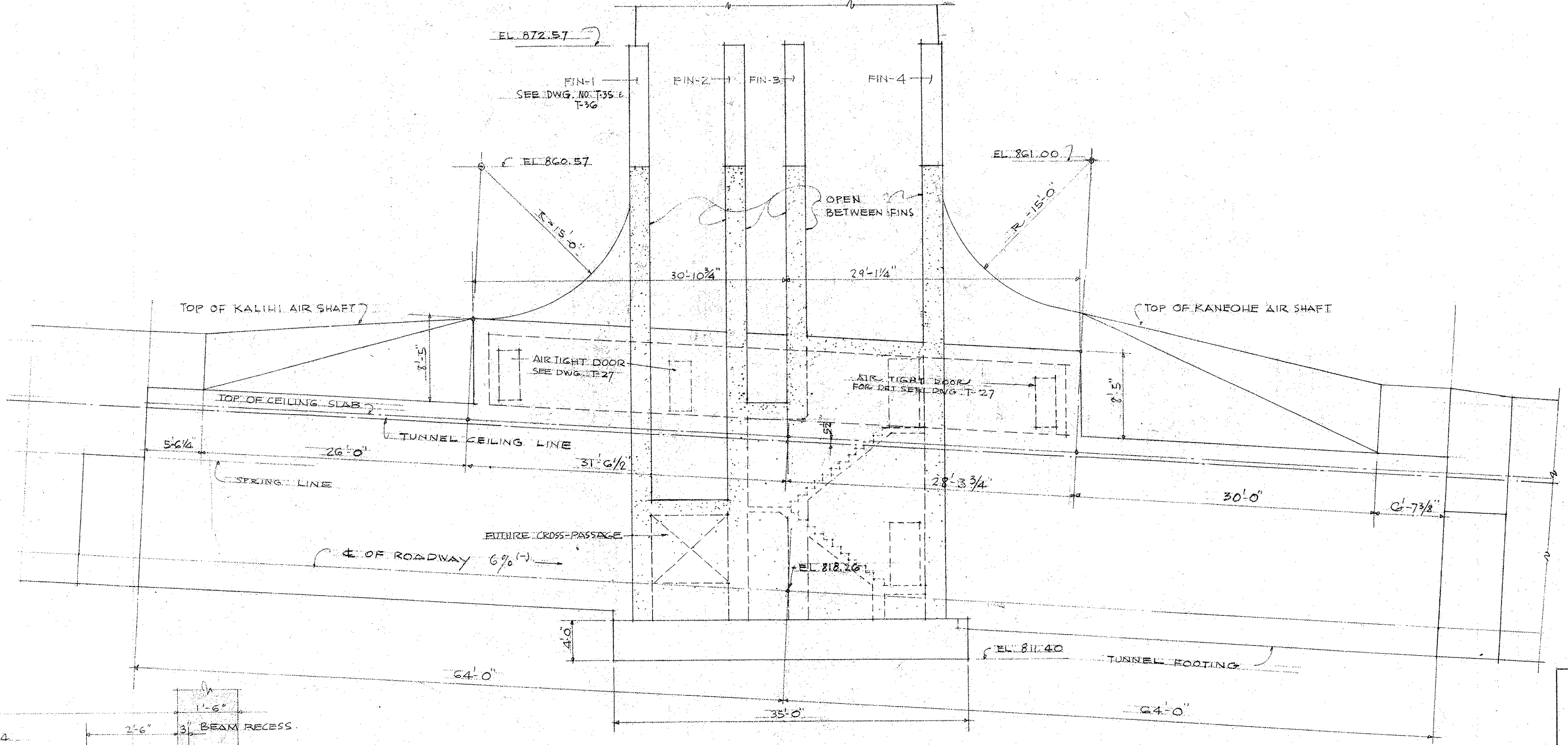
SECTION E-E
 SCALE: 1/2" = 1'-0"



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



PLAN ABOVE CEILING
 SCALE: 1/8" = 1'-0"

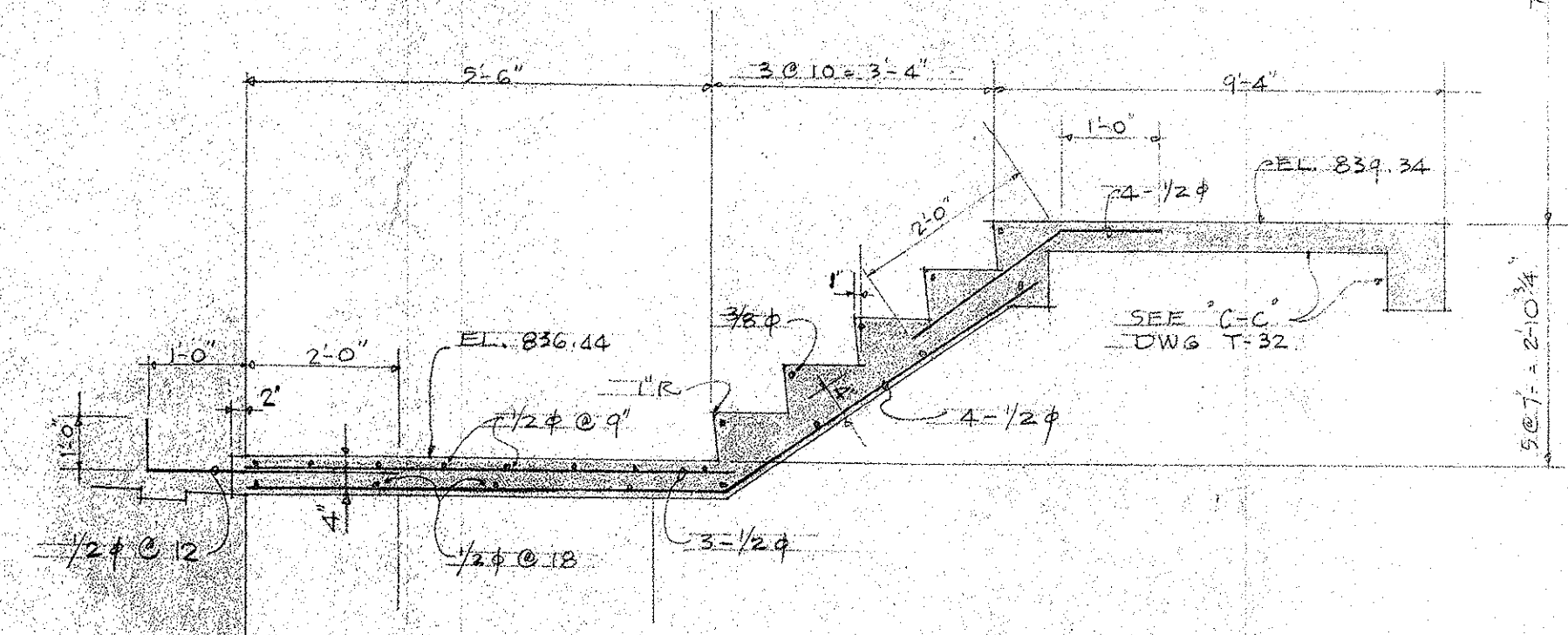
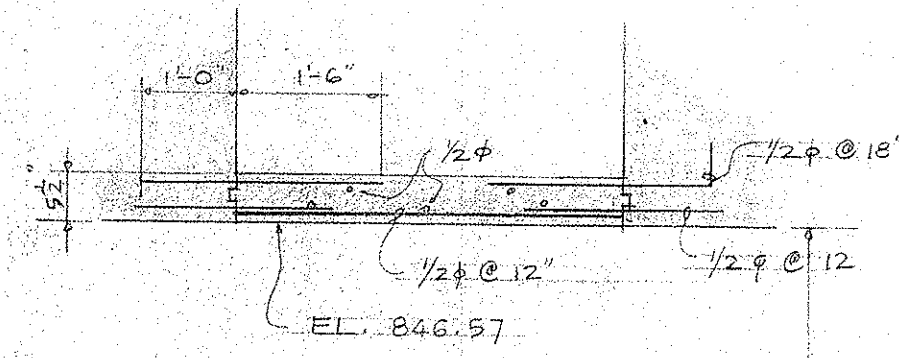


SIDE ELEVATION (A)
 SCALE: 1/8" = 1'-0"

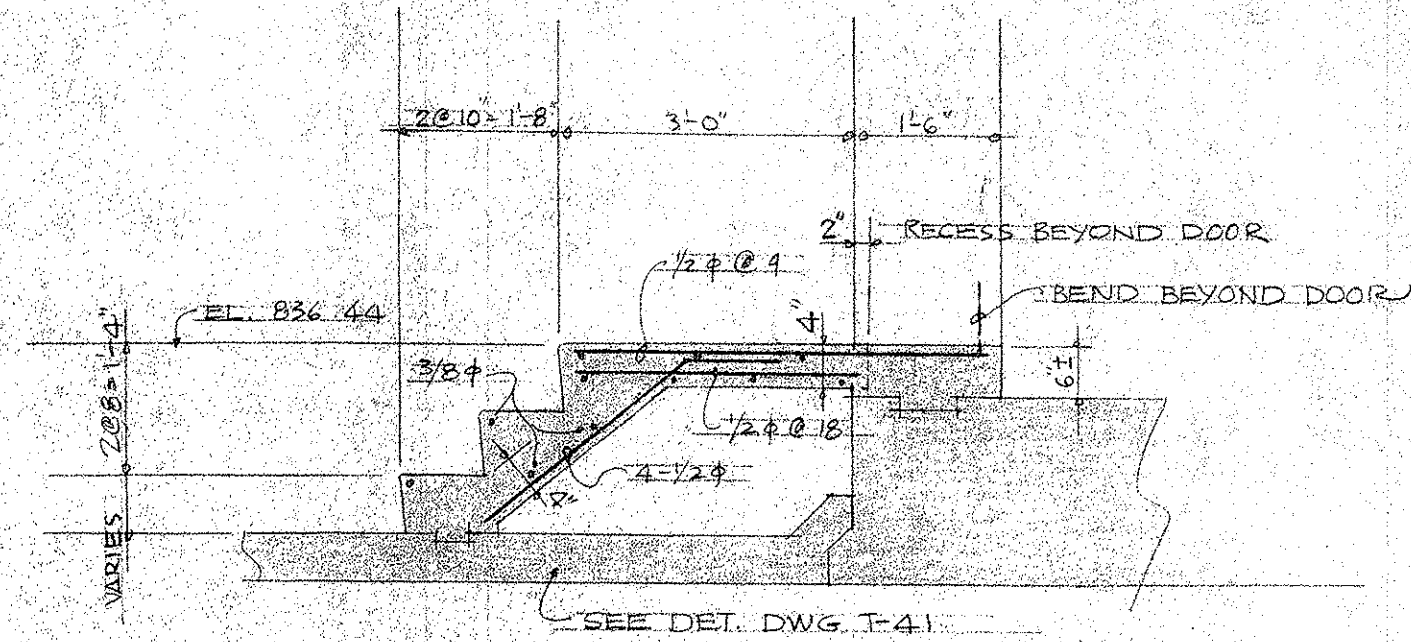
DEPARTMENT OF PUBLIC WORKS
 CITY AND COUNTY OF HONOLULU
 BUREAU OF PLANS
KALIHKI TUNNEL
 TUNNEL & SHAFT - TRANSITION
 PLAN ABOVE TUNNEL CEILING & ELEVATION

ENGINEER: W. Lum, P.E. DATE: JULY 15, 1953
 DRAFTSMAN: R.C. CHECKED BY: W. Lum, P.E.
 SCALE: AS NOTED TRACER: F.K.
 APPROVED: *W. Lum* APPROVED: *W. Butz*
 CHIEF ENGINEER BUREAU ENGINEER

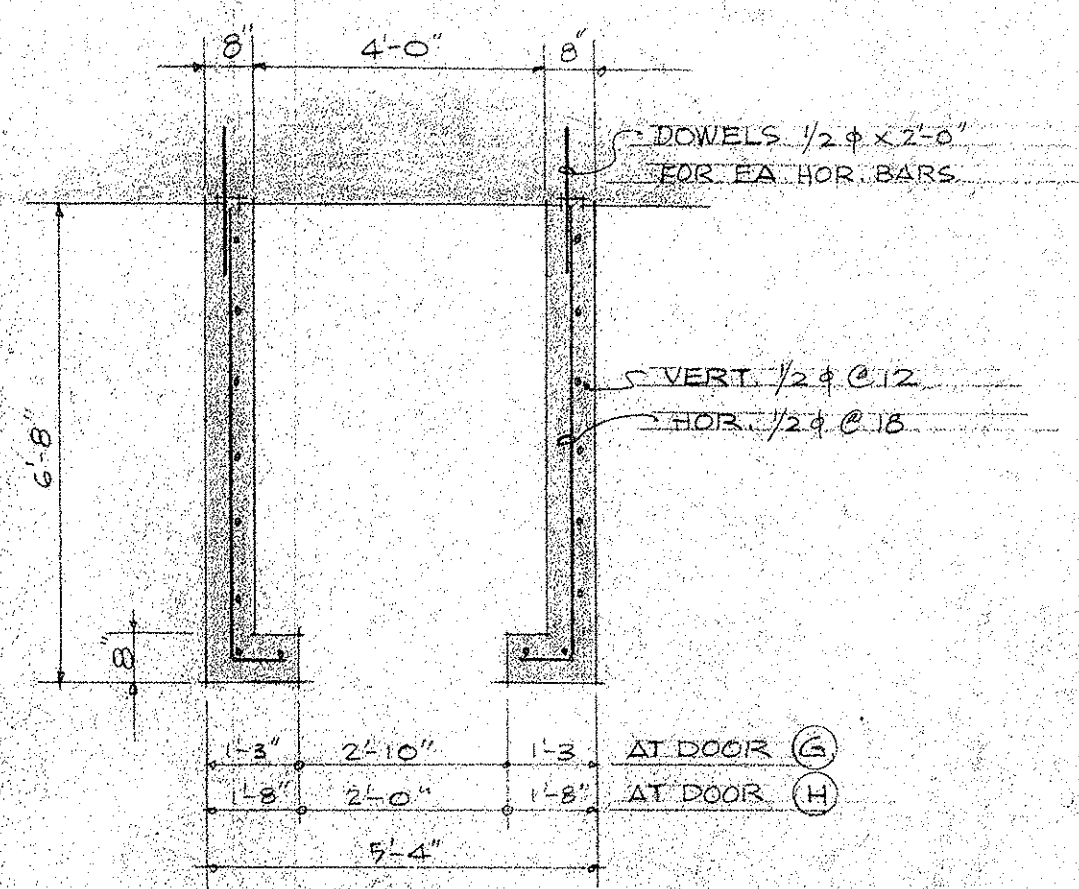
W. S.	PROFILE	C. B.
CH. SEC.	F. B.	S. B.
W. D. BY:	P. W. BY:	S. BY:



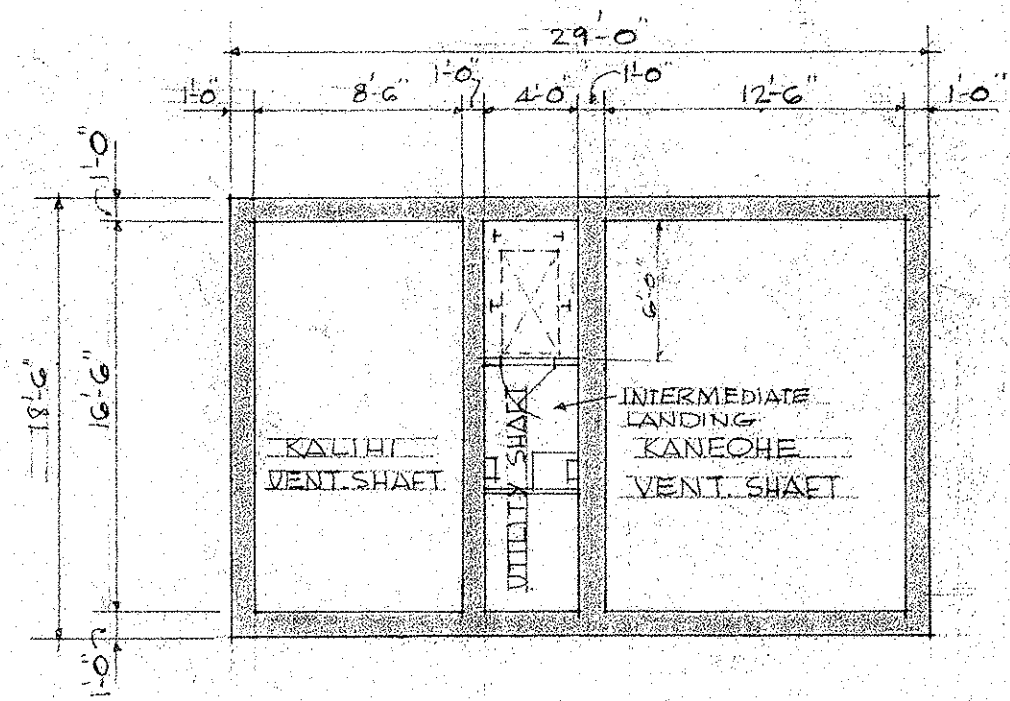
SECTION A-A
SCALE 1/2\"/>



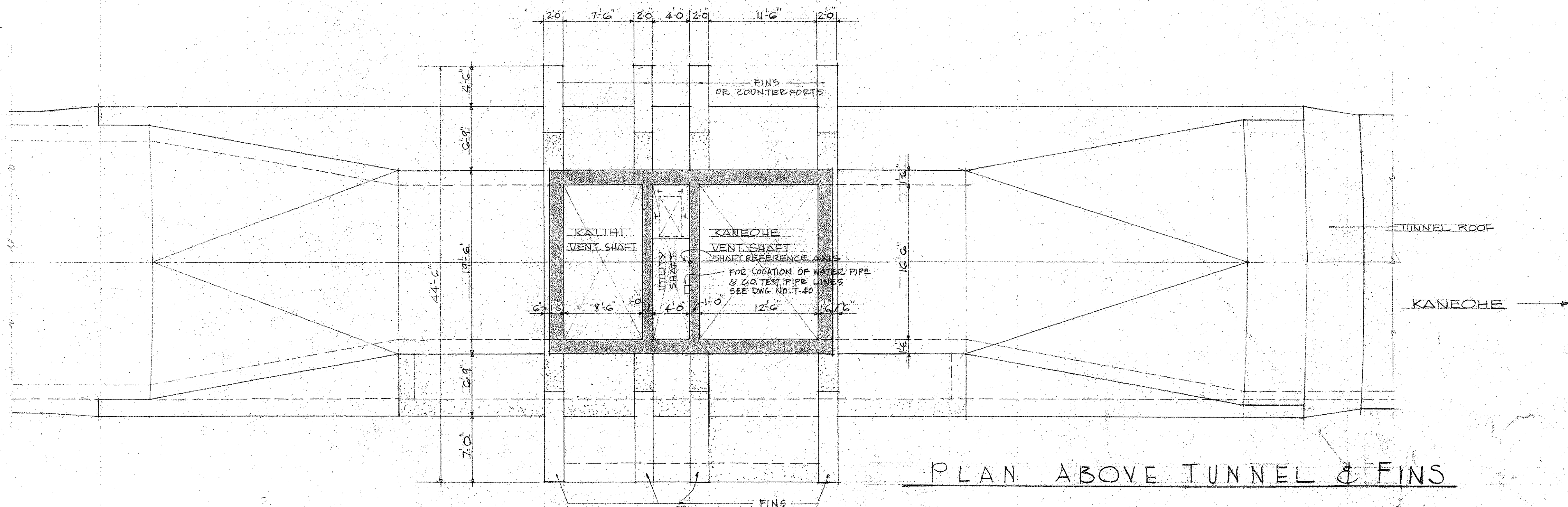
SECTION B-B
SCALE 1/2\"/>



REIN. FOR SHAFT
SCALE 5/8\"/>



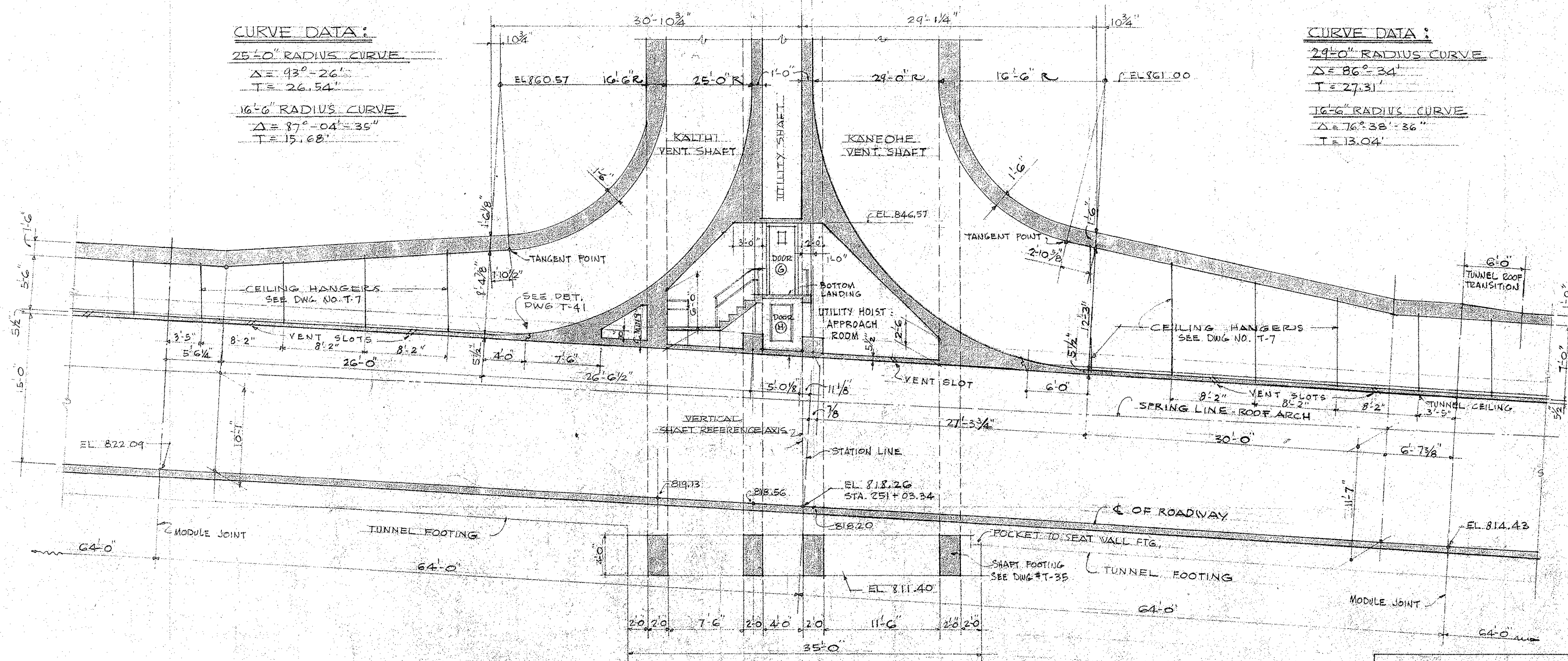
PLAN OF SHAFT
SCALE 1/8\"/>



PLAN ABOVE TUNNEL & FINS
SCALE 1/8\"/>

CURVE DATA:
25'-0\"/>

CURVE DATA:
29'-0\"/>



LONGITUDINAL SECTION
SCALE 1/8\"/>

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

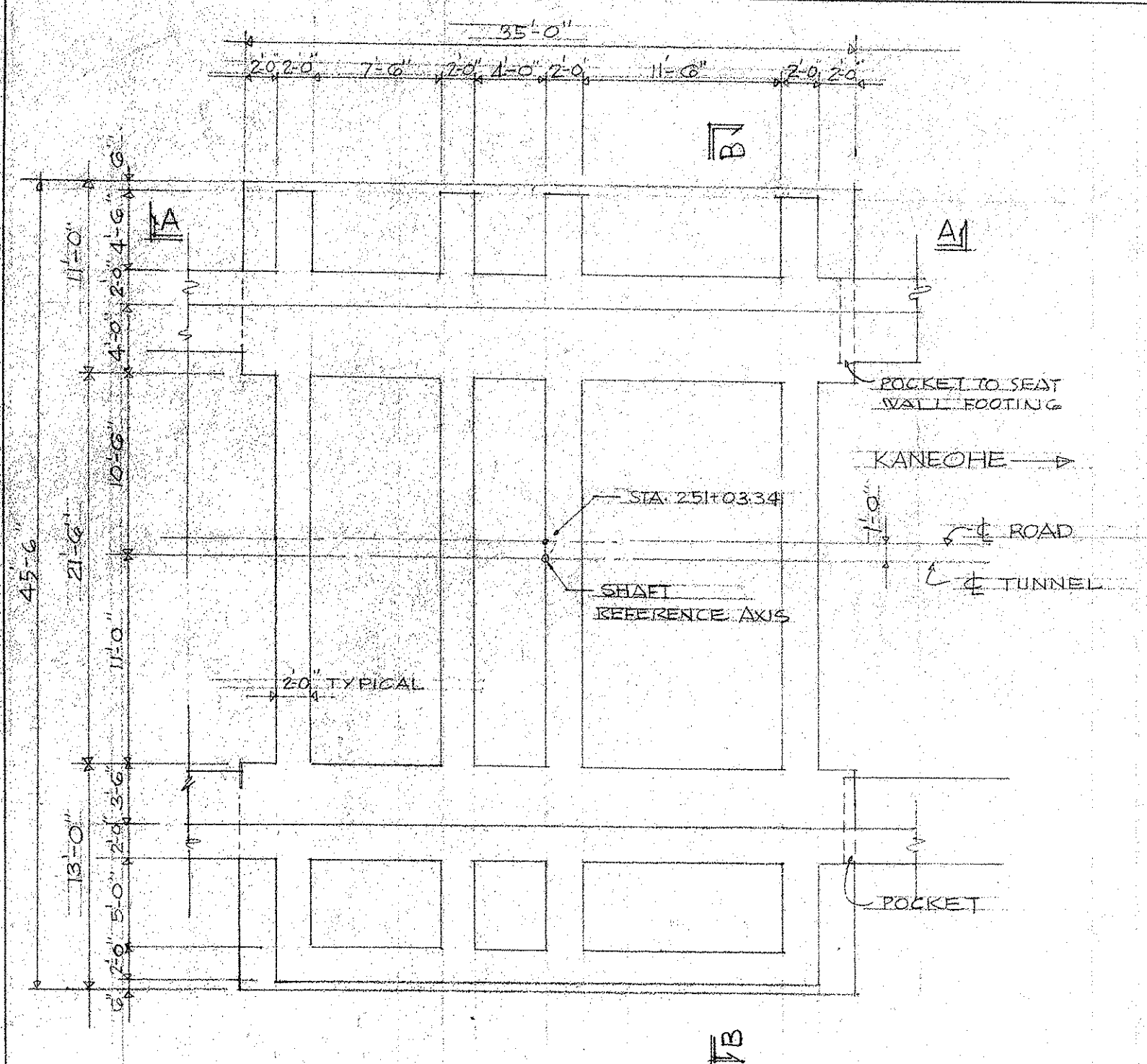
KALIHI TUNNEL

TUNNEL & SHAFT-TRANSITION
PLANS ABOVE TUNNEL & SECTION

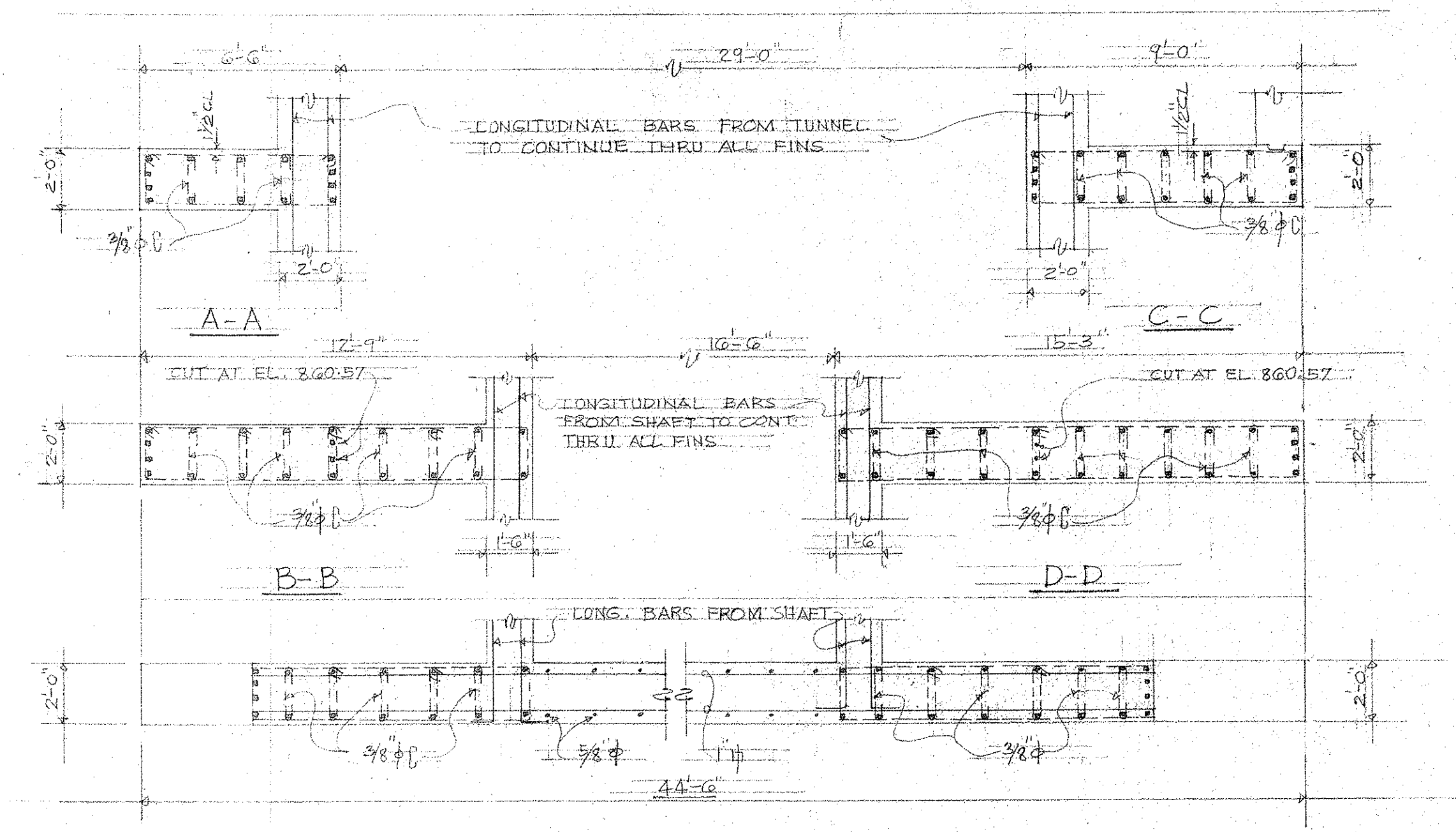
ENGINEER: W. LUM, P.E. DATE: JULY 15, 1953
DRAFTSMAN: R.O. CHECKED BY: W. LUM, P.E.
DATE: UNASSIGNED TRACER: P.K.
APPROVED: *W. LUM* APPROVED: *H. W. BURTGIN*
CHIEF ENGINEER BUREAU ENGINEER

W. P.	PROFILE	C. S.
C.B. SEC.	F. B.	S. B.
W.M. BY:	F.W. BY:	S. BY:

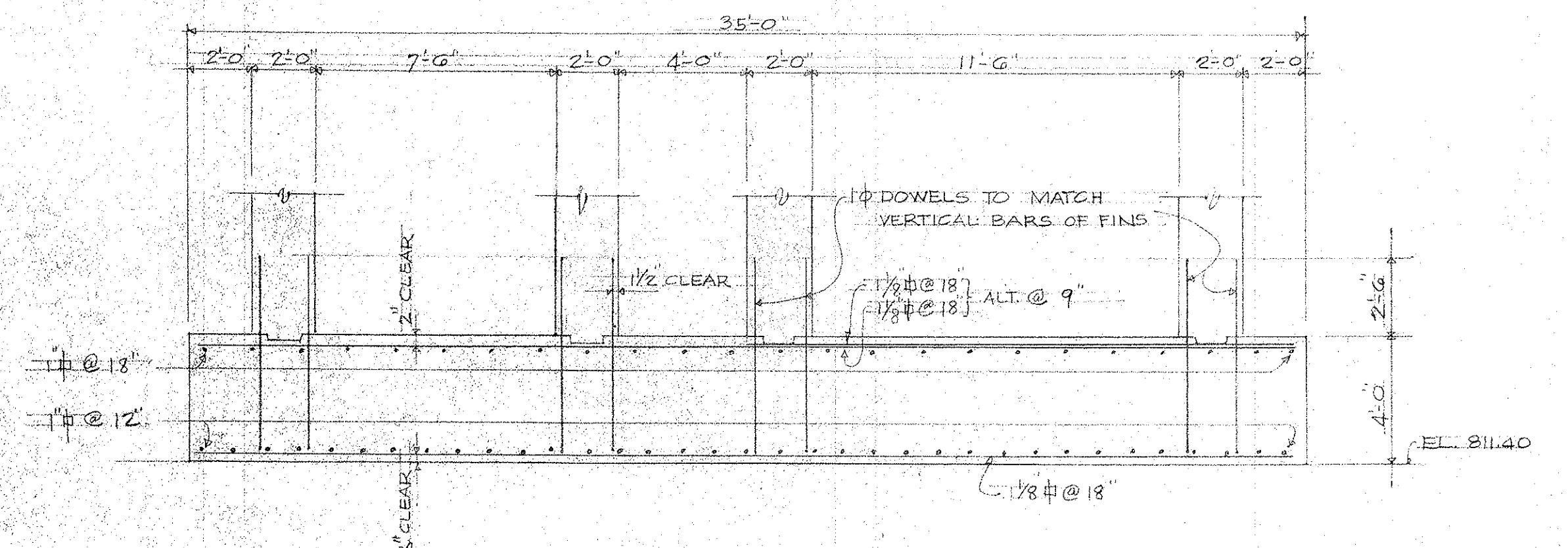
SECTION C JOB NO. 26-53 DWG. T-33



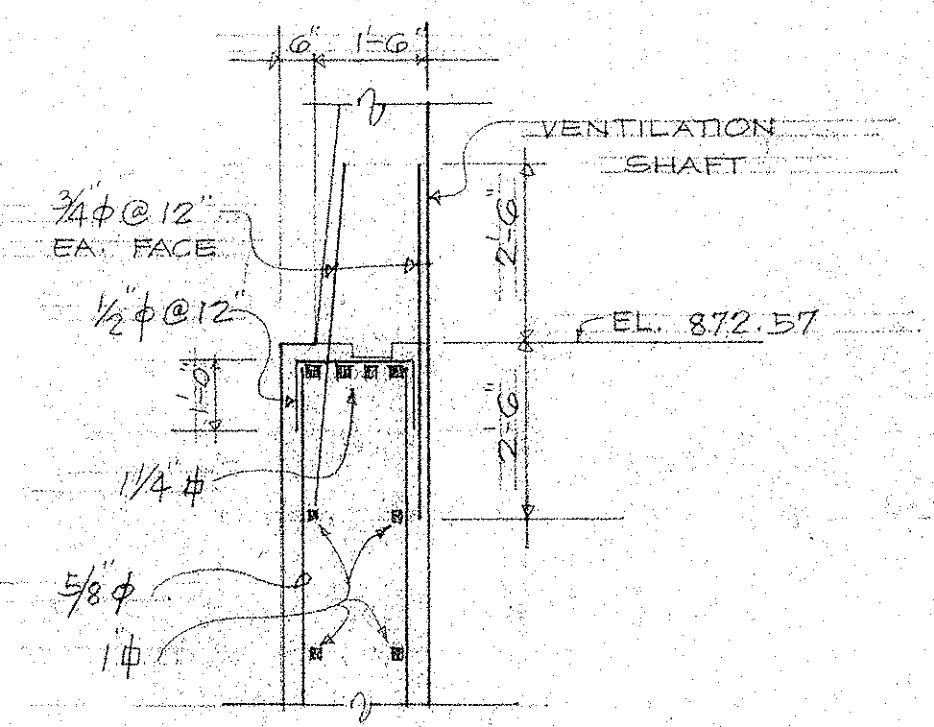
PLAN OF FOOTG AT SHAFT
SCALE 1/8" = 1'-0"



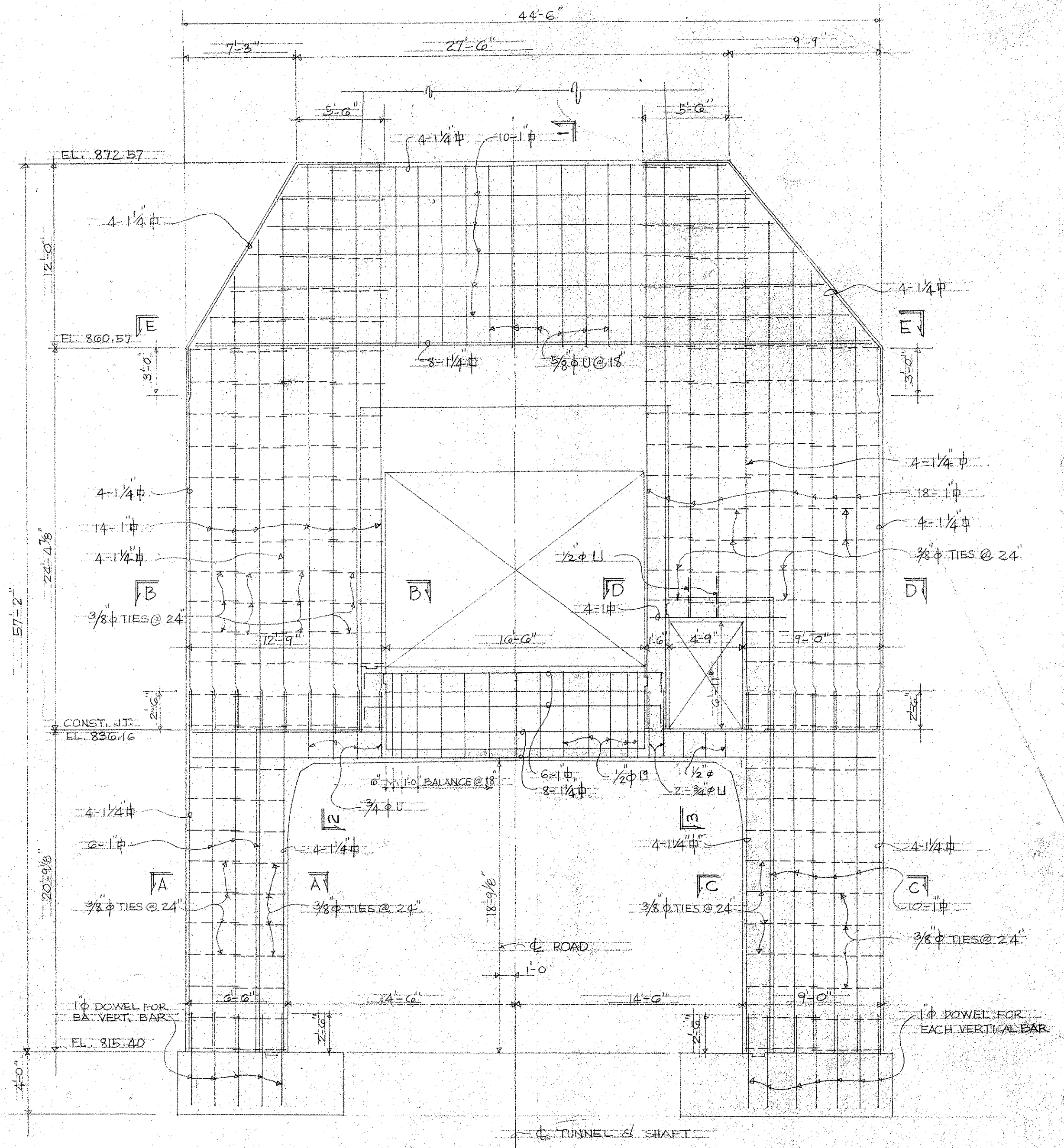
E-E
SCALE = 1/4" = 1'-0"



FOOTING SECTION A-A
SCALE 1/4" = 1'-0"

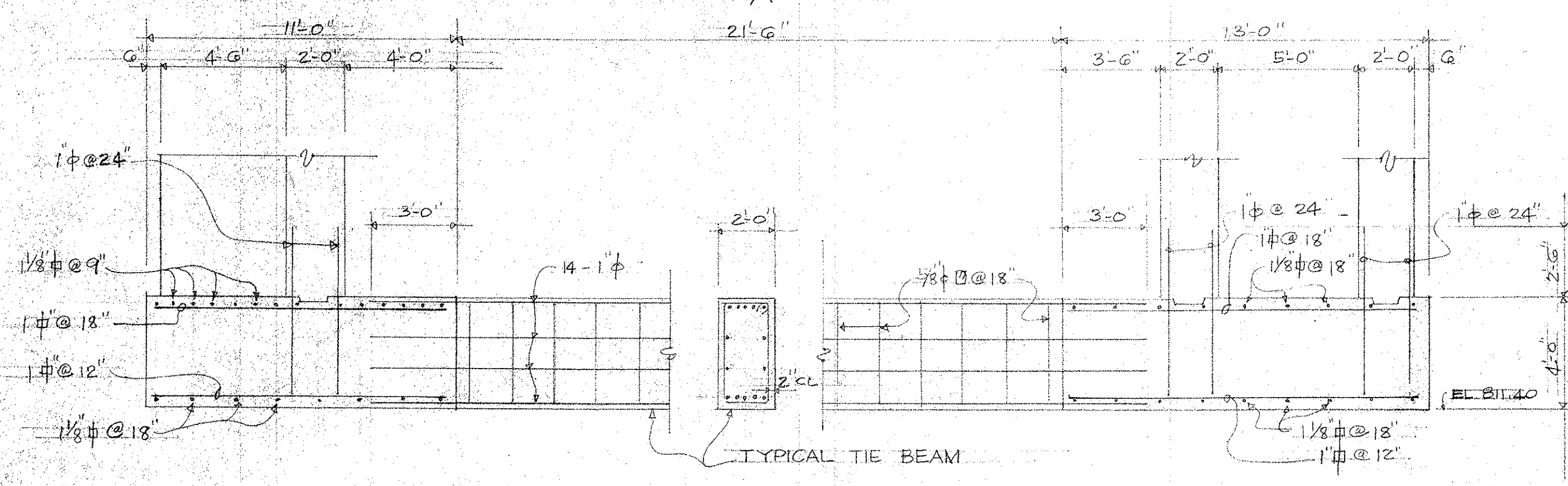


I-I
SCALE 3/8" = 1'-0"



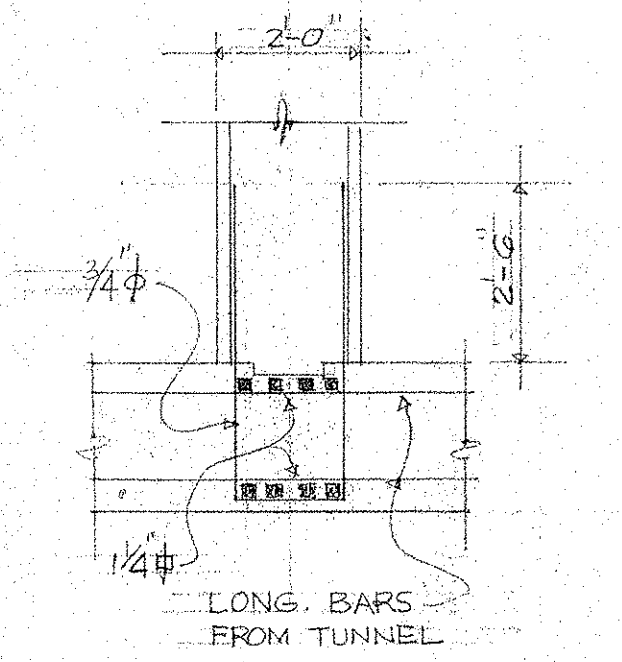
REINFORCING FOR FIN-1
SCALE 3/16" = 1'-0"

NOTE:
UNLESS OTHERWISE INDICATED, LAP ALL SPICES 30 BAR DIAMETERS.
PROVIDE 6" WIDE XIG OF TYPE 'A' COPPER WATER STOP AT
CONSTRUCTION JOINTS IN OUTSIDE WALLS.

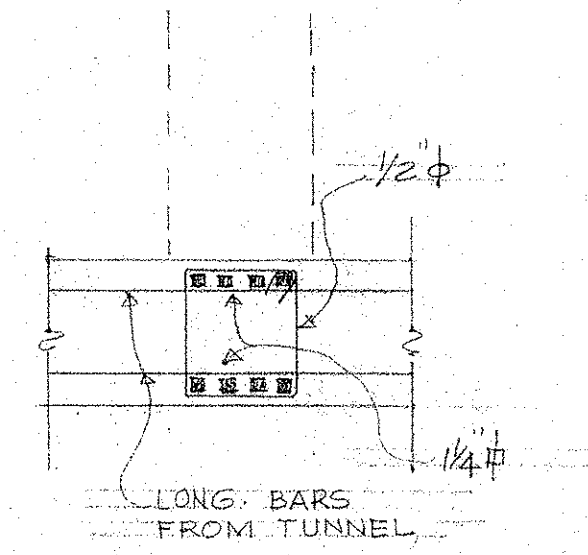


FOOTING SECTION B-B

REINF. DETAILS FOR FOOTING AT SHAFT
SCALE 1/4" = 1'-0"



2-2
SCALE 3/8" = 1'-0"



3-3

APPROVED:
[Signature]
ENGINEER, KALIHI TUNNEL

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

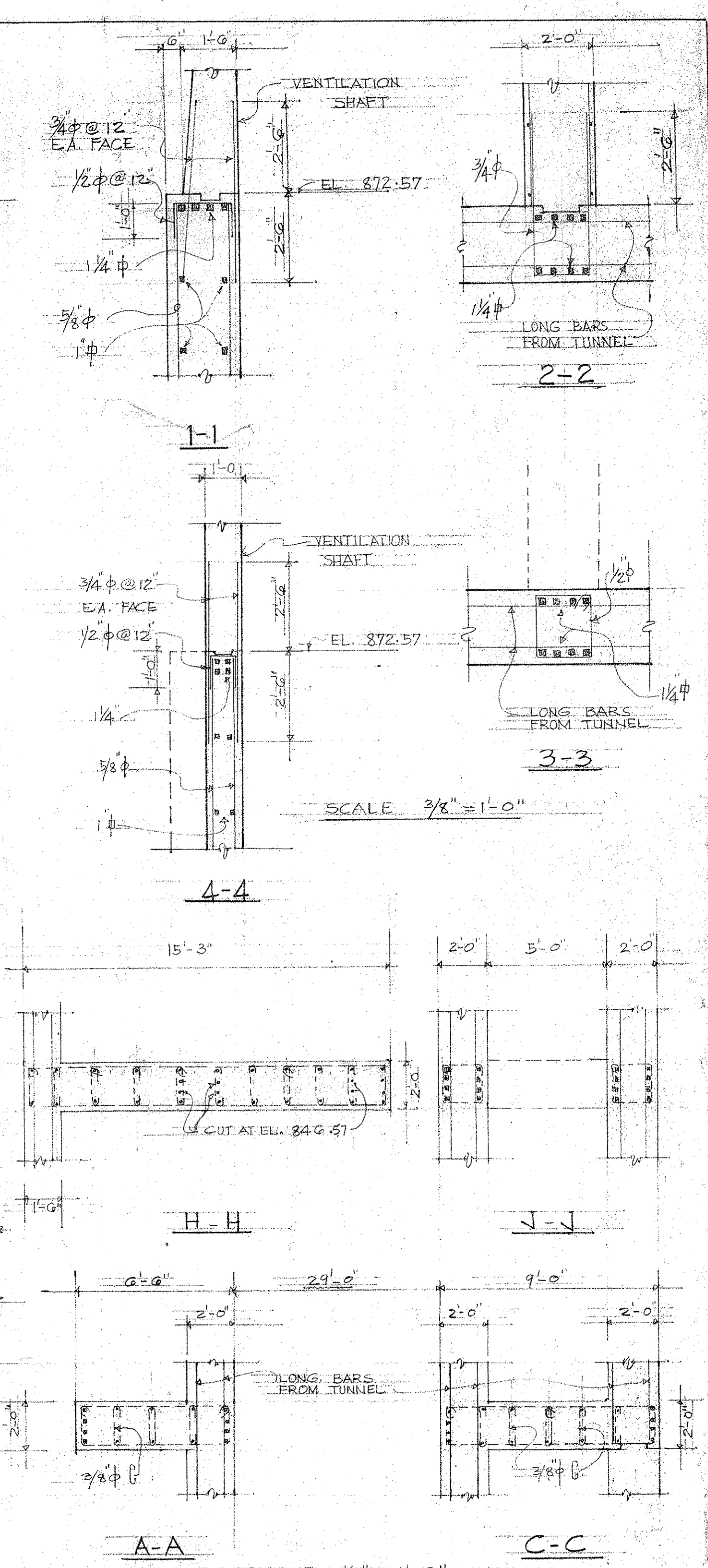
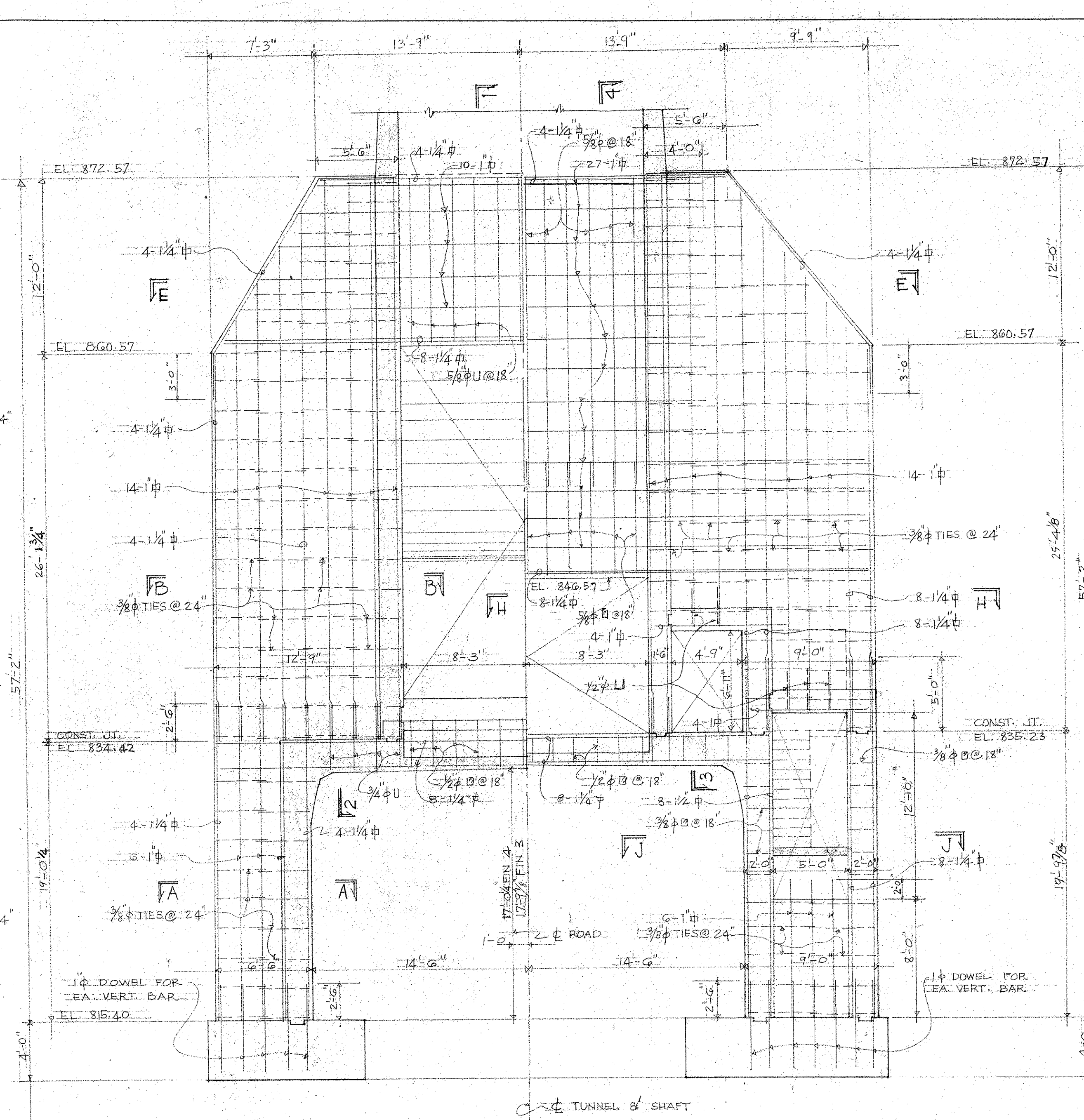
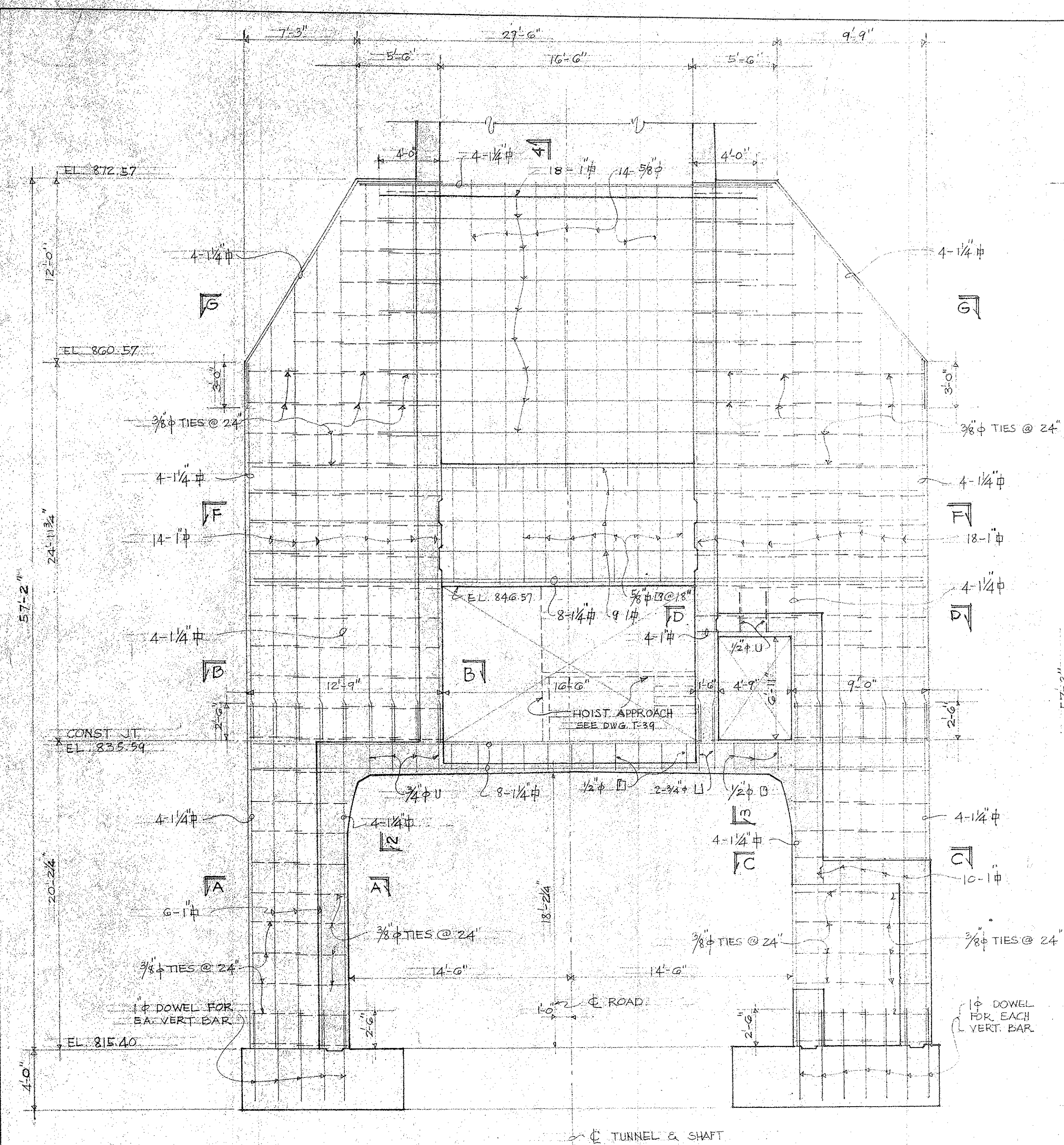
KALIHI TUNNEL

TUNNEL & SHAFT - TRANSITION
STRUCTURAL
FIN 1 & DETAILS

ENGINEER *[Signature]* DATE JULY 15 1953
DRAFTSMAN *[Signature]* CHECKED BY *[Signature]*
SCALE AS NOTED TRACER A.B.
APPROVED *[Signature]* APPROVED *[Signature]*
CHIEF ENGINEER BUREAU ENGINEER

W.S.	PROFILE	C.B.
CR. SEC.	F.B.	S.B.
W.M.BY:	F.W.BY:	S.BY:

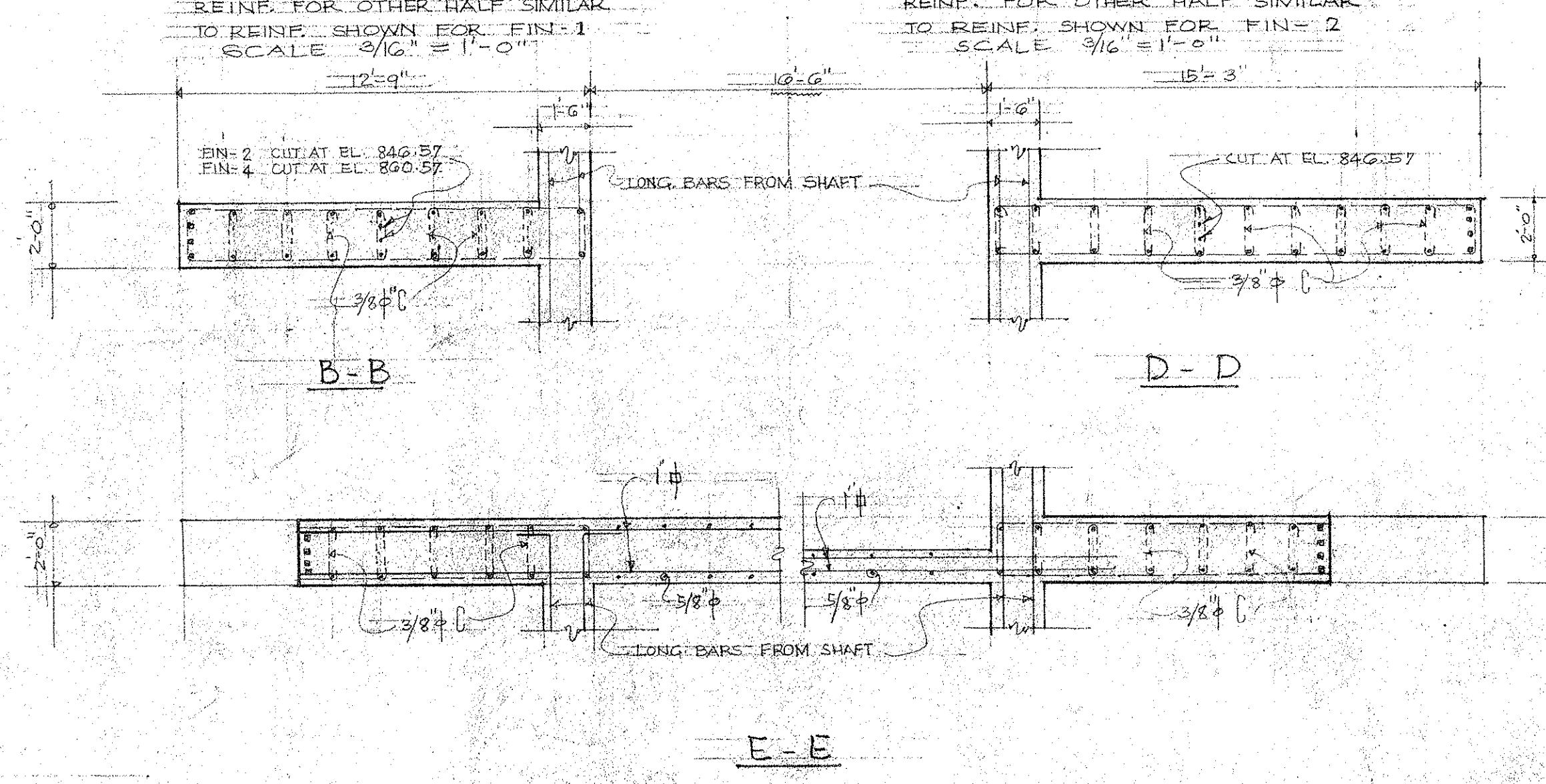
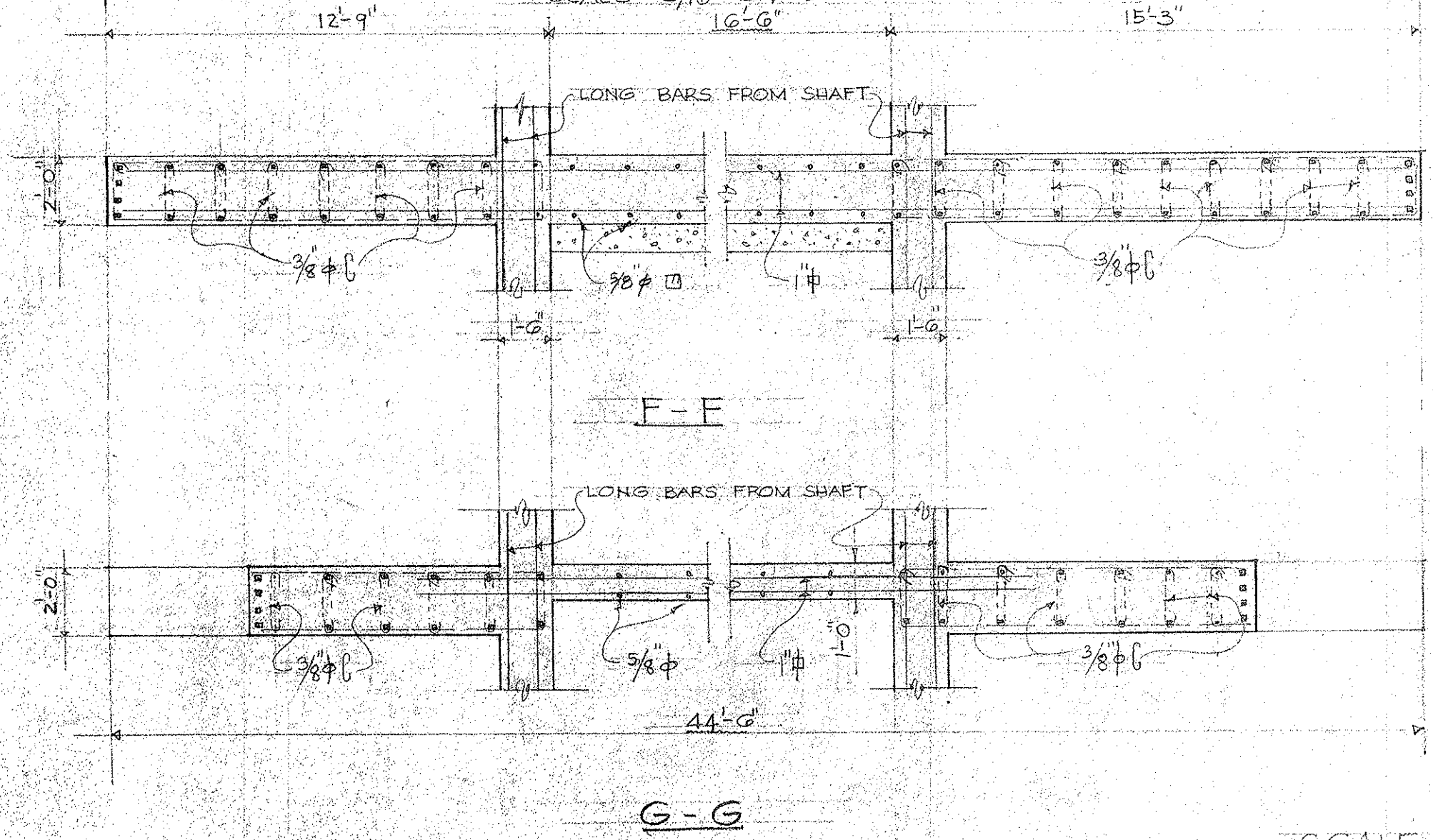
FILE	POCKET	FOLDING	NO.
7	5	3	35



REINFORCING FOR FIN 2
SCALE 3/16" = 1'-0"

REIN. FOR ONE HALF FIN. 4
REIN. FOR OTHER HALF SIMILAR TO REIN. SHOWN FOR FIN. 1
SCALE 3/16" = 1'-0"

REIN. FOR ONE HALF FIN. 3
REIN. FOR OTHER HALF SIMILAR TO REIN. SHOWN FOR FIN. 2
SCALE 3/16" = 1'-0"



NOTE:
UNLESS OTHERWISE INDICATED
TAP ALL SPLICES 30 BAR DIAMETERS
PROVIDE 6" WIDE X 160Z TYPE 'A' COPPER WATER STOP AT CONSTRUCTION JOINTS IN OUTSIDE WALLS

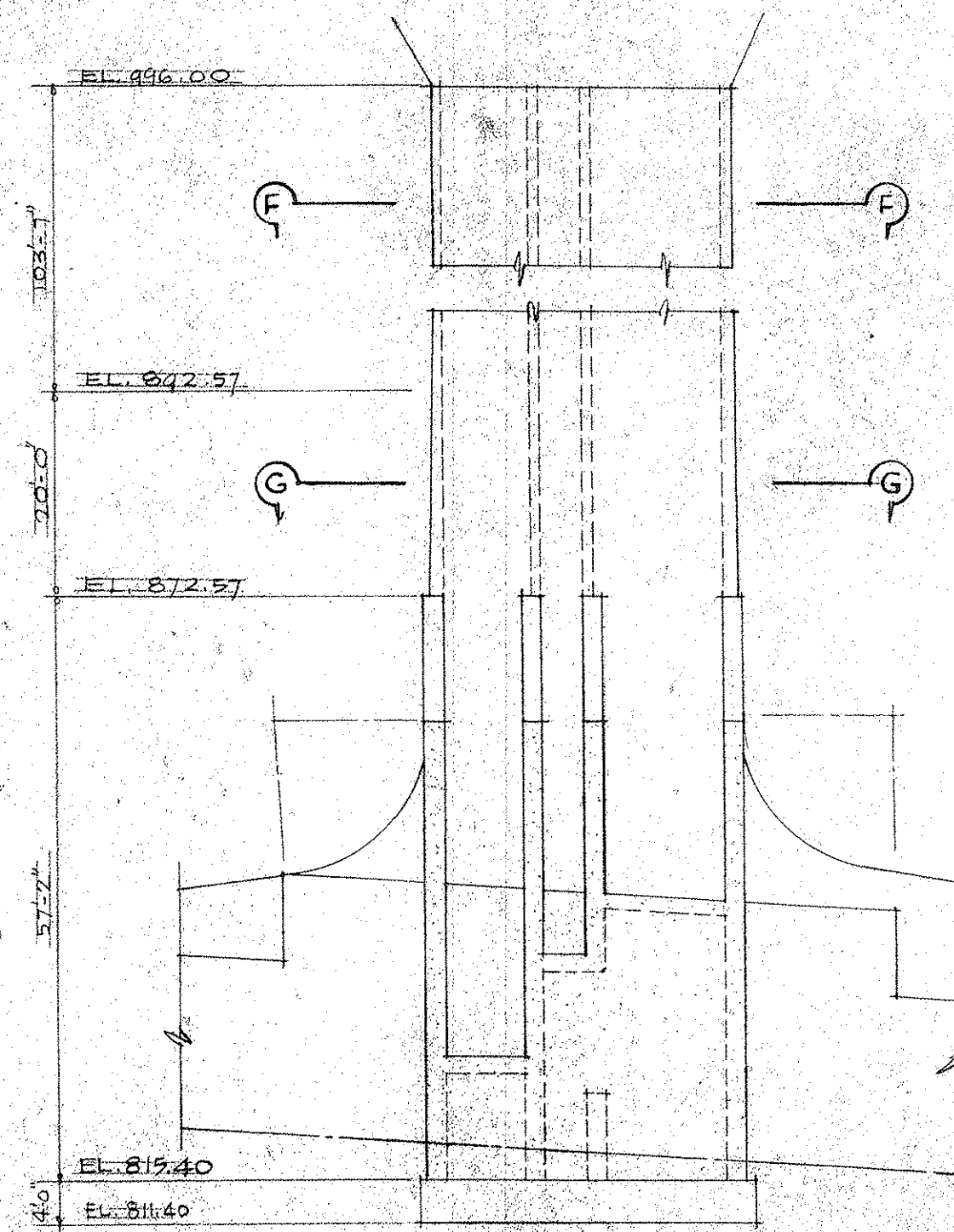
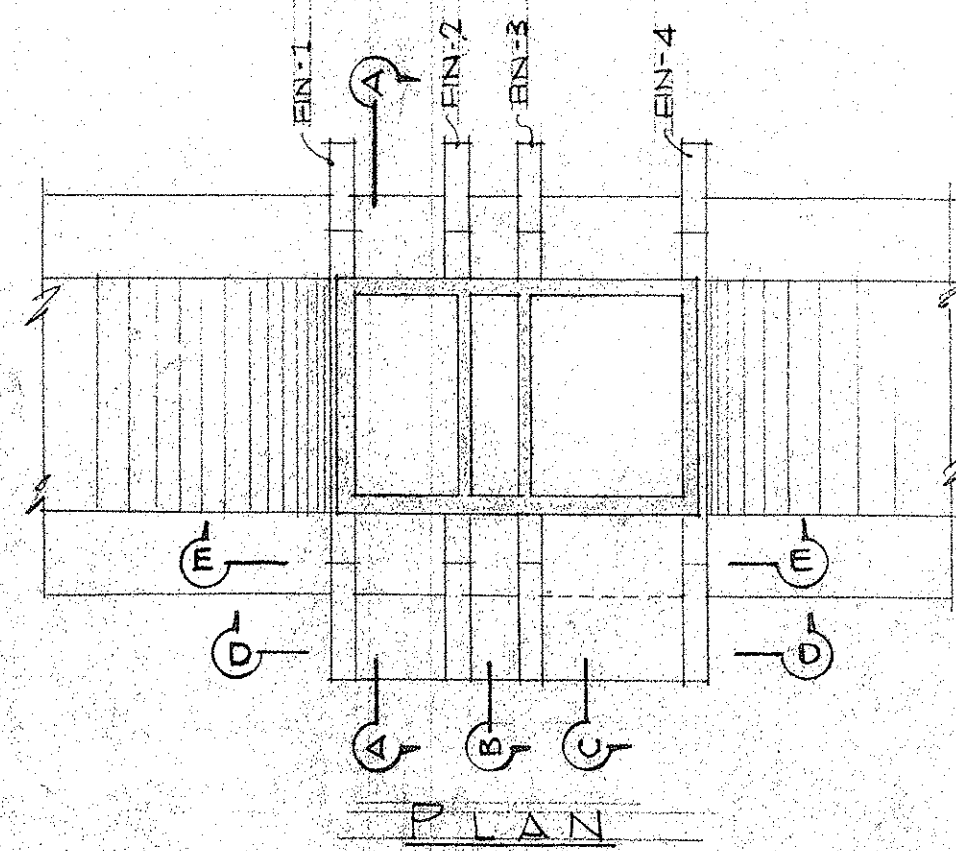
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIHI TUNNEL
TUNNEL & SHAFT-TRANSITION
STRUCTURAL
FINS 2, 3, 4, AND DETAILS

ENGINEER: *E.C.* DATE: *NOV. 1953*
DRAFTSMAN: *E.C.* CHECKED BY: *E.C.*
SCALE: *AS NOTED* TRACER: *A.S.*
APPROVED: *A. J. Damowitz* APPROVED: *H. W. Berglund*
CHIEF ENGINEER BUREAU ENGINEER

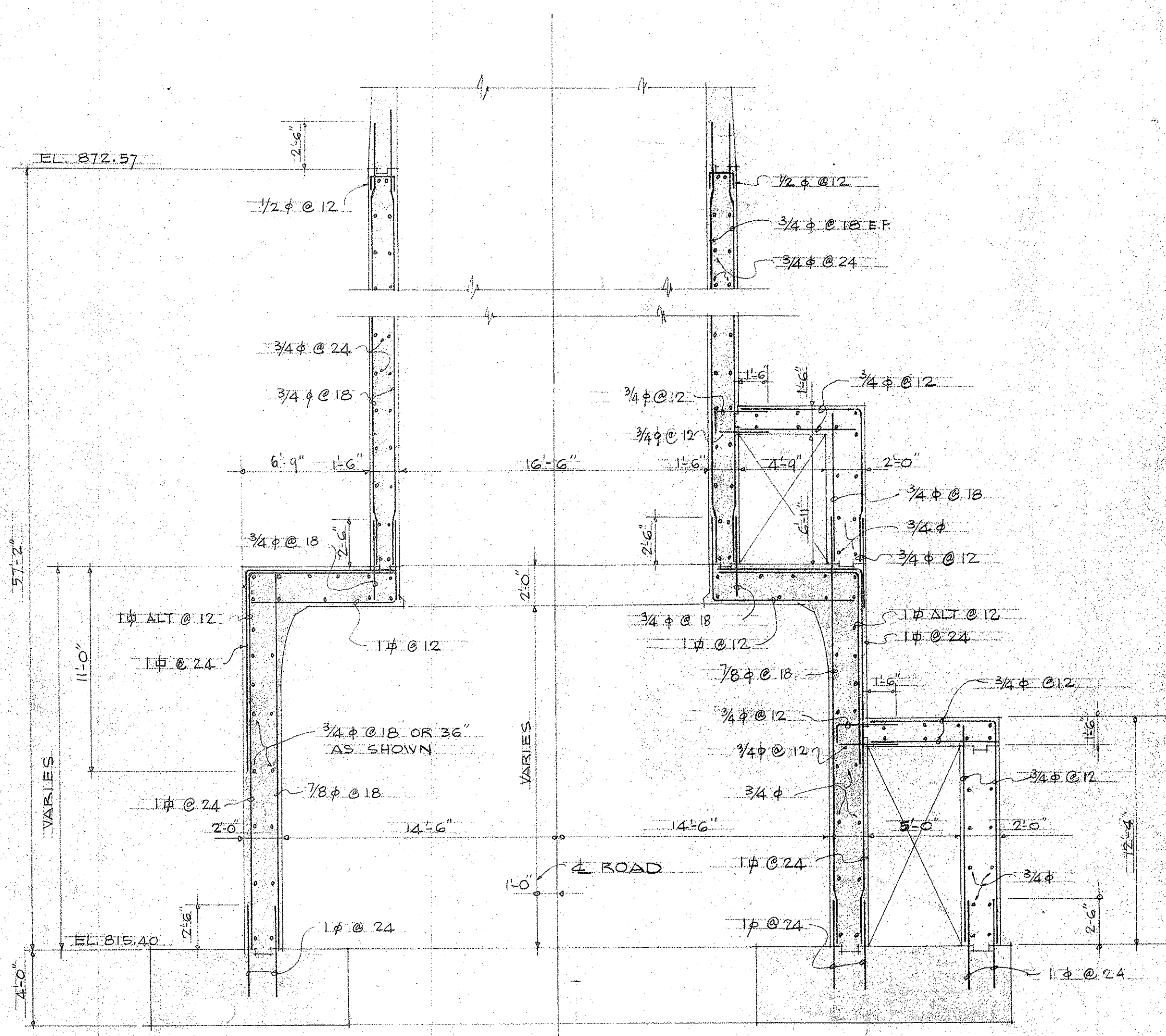
APPROVED: <i>[Signature]</i>	PROFILE	C.B.
ENGINEER, KALIHI TUNNEL	F.B.	S.B.
	F.W. BY:	S.B.

SECTION C JOB NO. 26-53 DWG. T-36

FILE	POCKET	FOLDER	NO.
7	5	3	36

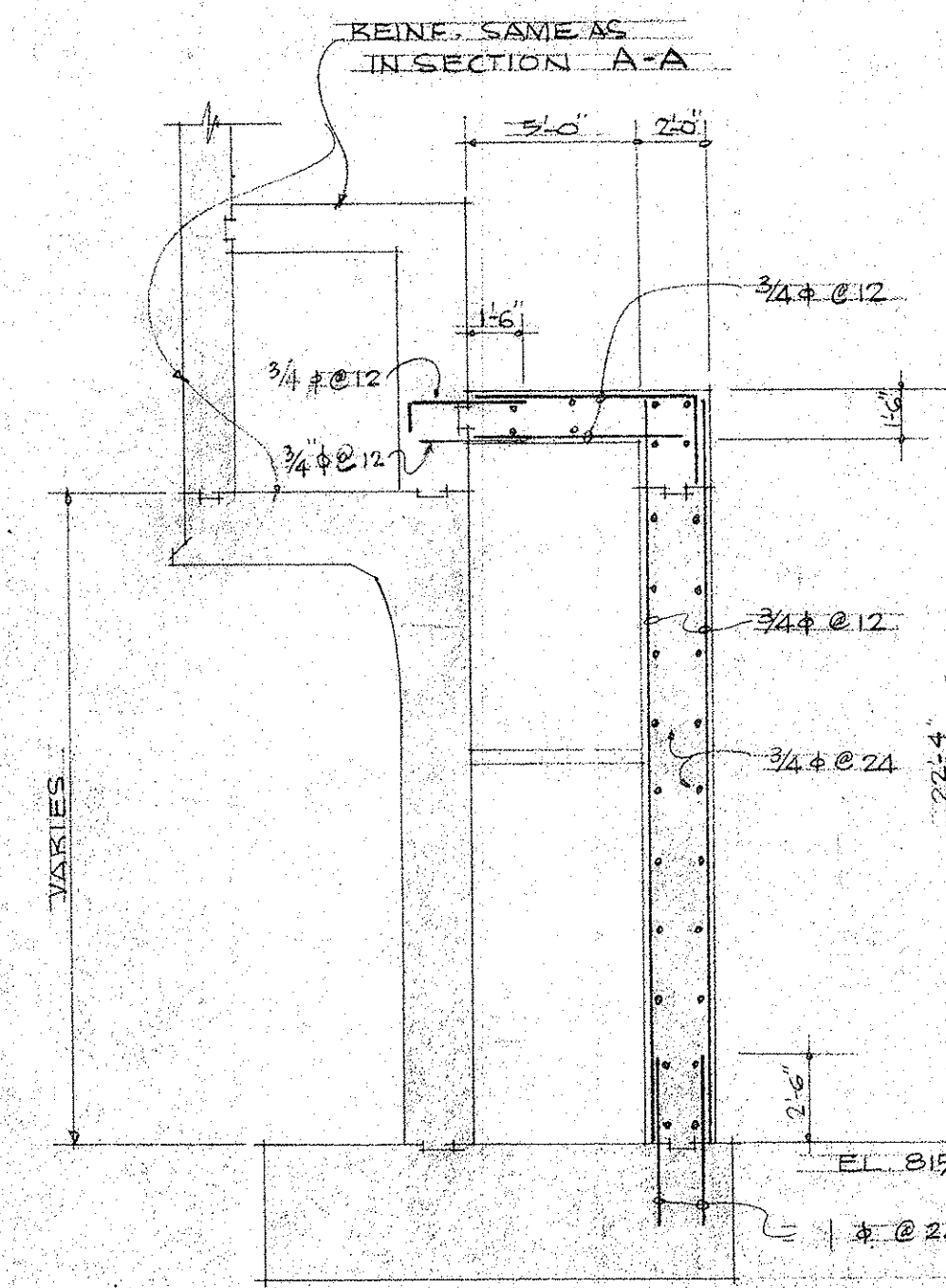


ELEVATION

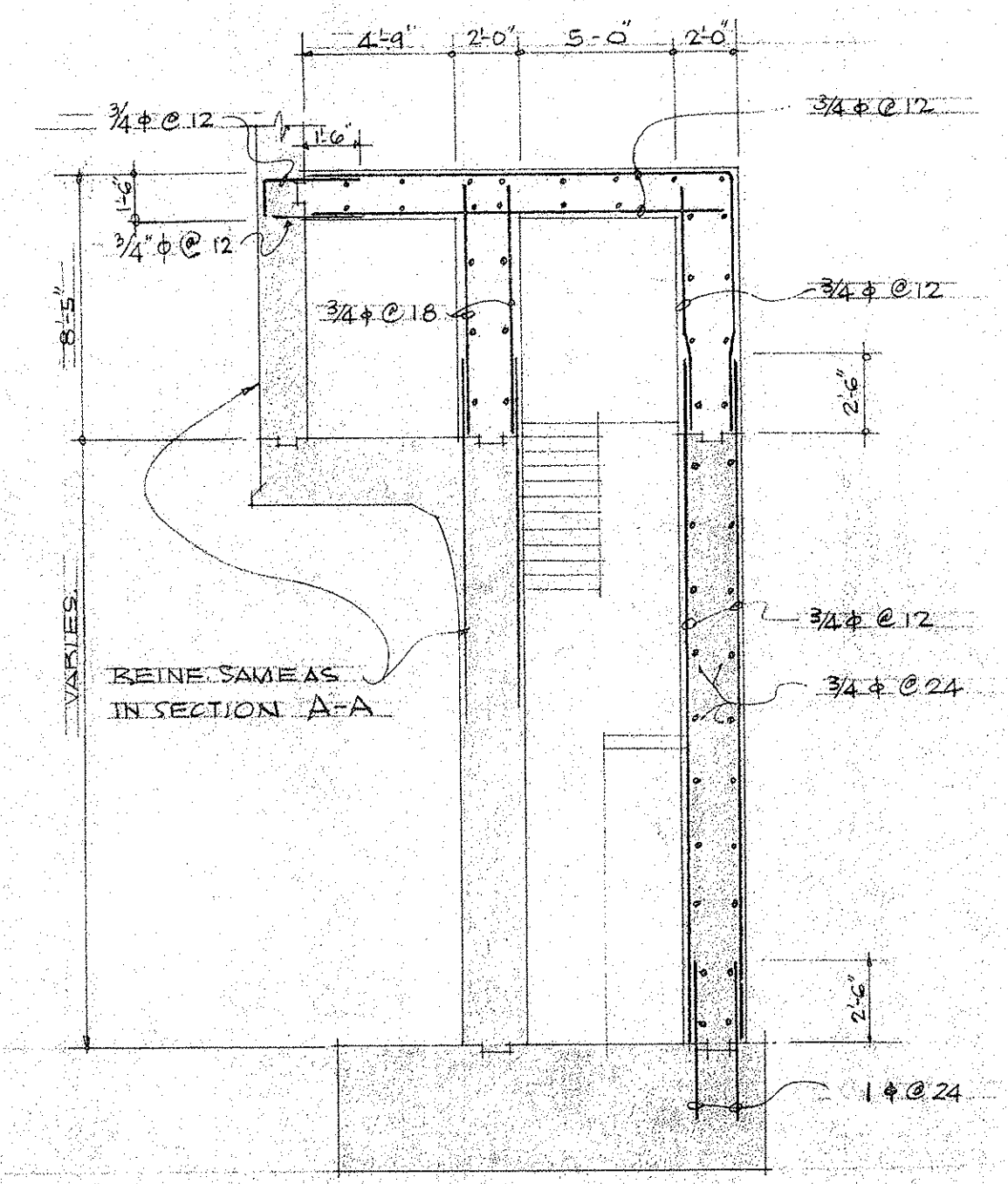


NOTE FOR FULLY SHADED PORTIONS:
 1. SHADED PORTIONS SHALL BE POURED WITH FINS
 2. LONGITUDINAL BARS SHALL BE CONTINUOUS THROUGH FINS
 3. REINFORCING SHALL BE THE SAME BETWEEN FINS

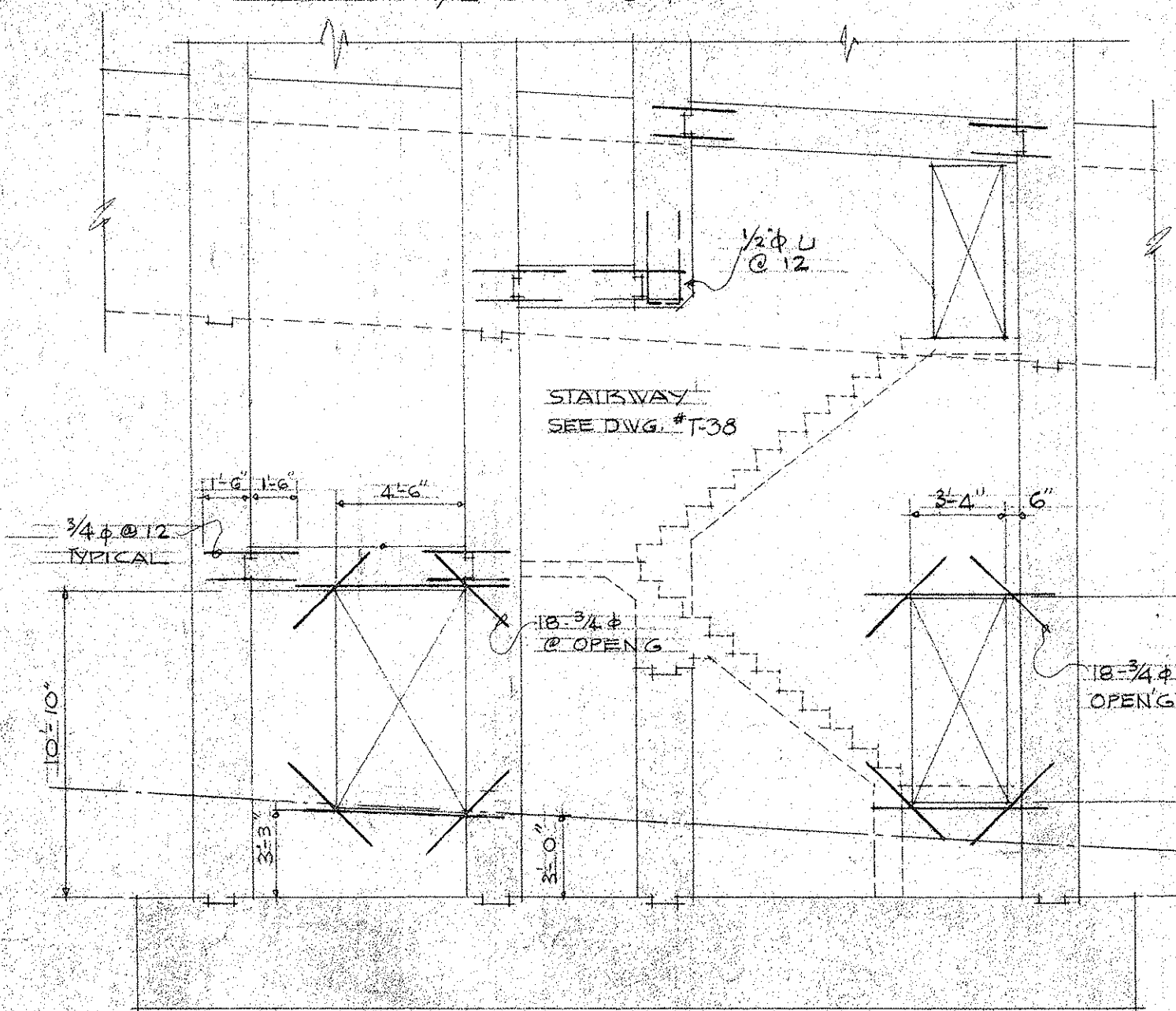
SECTION A-A
 SCALE: 3/16" = 1'-0"



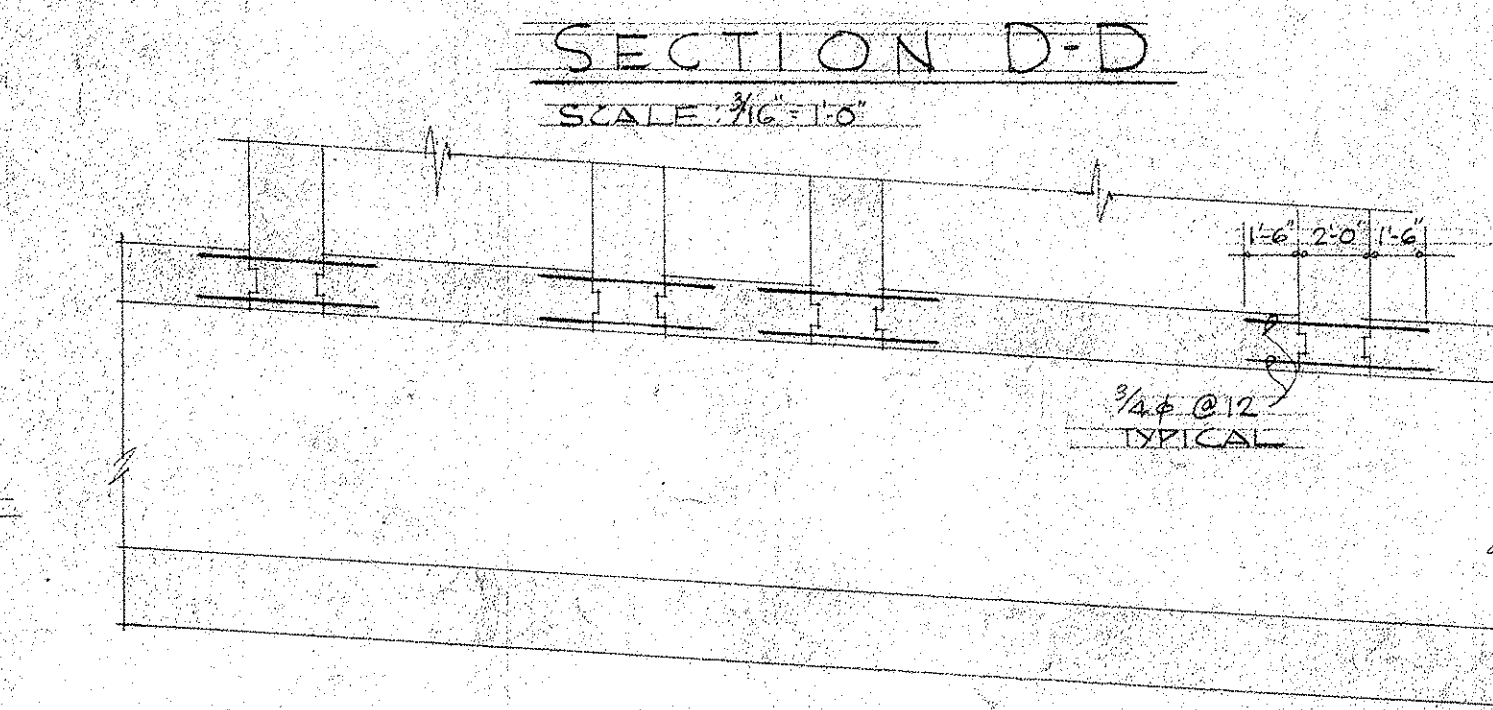
SECTION B-B
 SCALE: 3/16" = 1'-0"
 SEE NOTE 1 & 2 FOR SEC. A-A



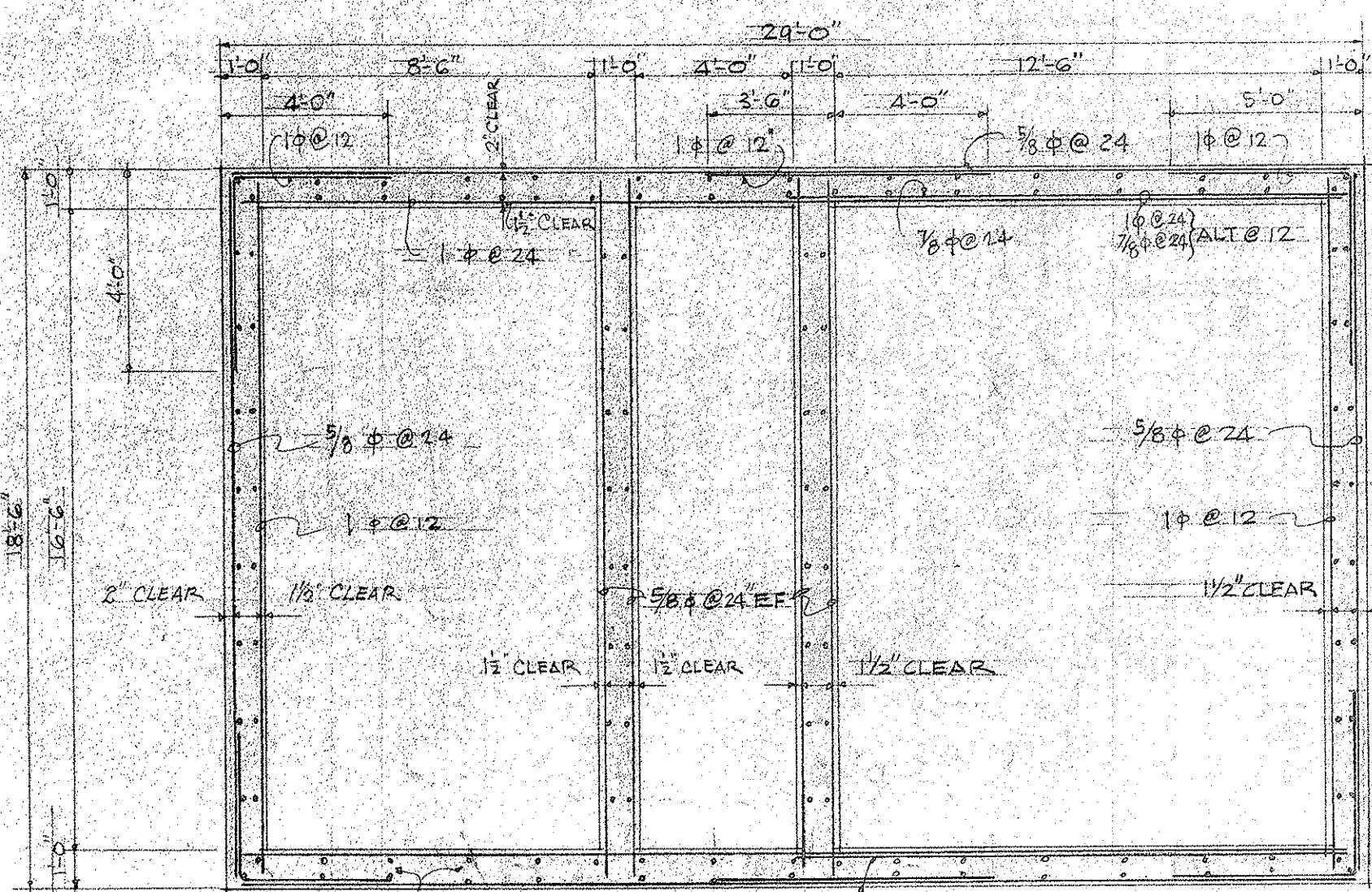
SECTION C-C
 SCALE: 3/16" = 1'-0"
 SEE NOTES 1 & 2 FOR SEC. A-A



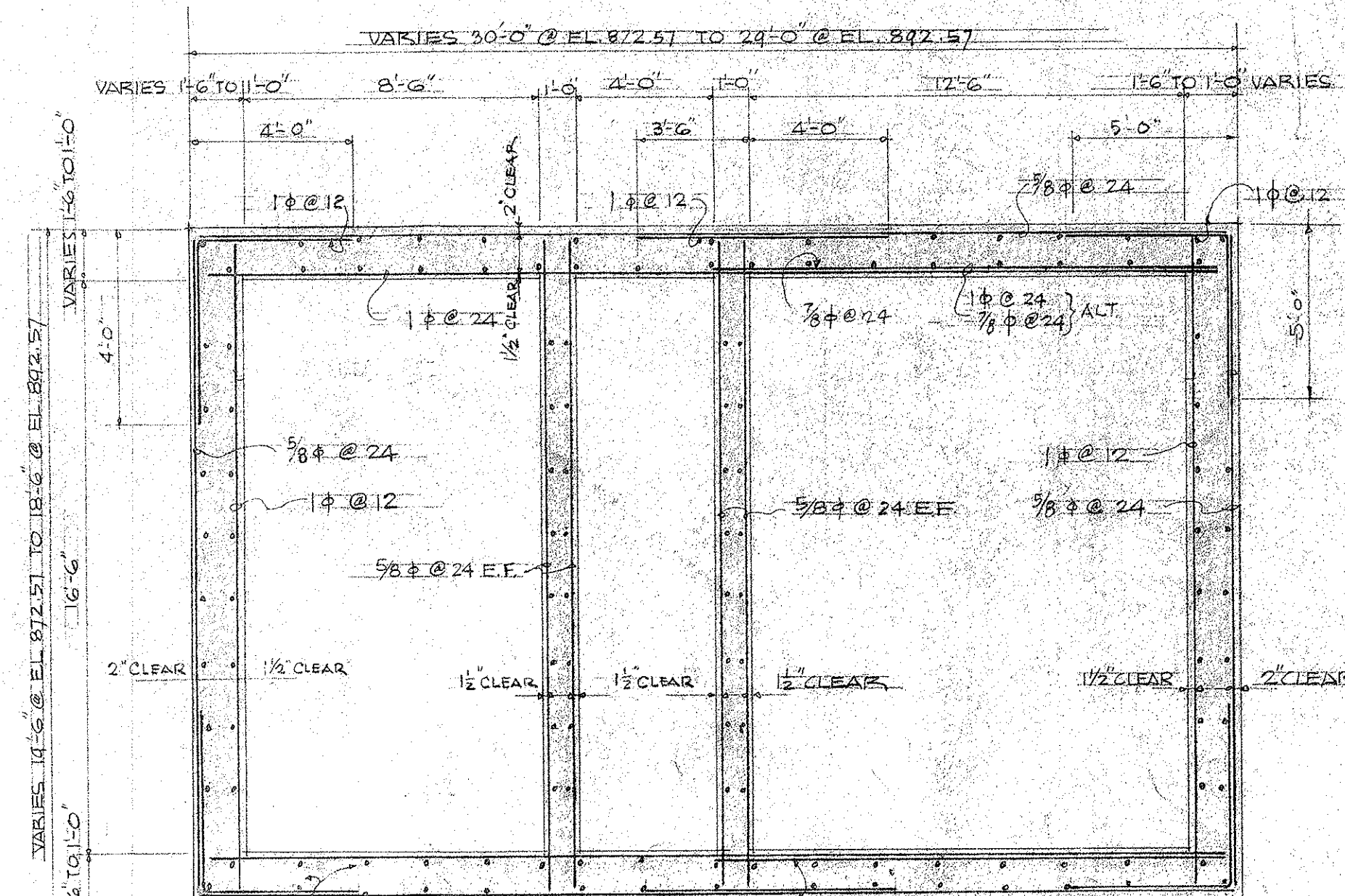
SECTION D-D
 SCALE: 3/16" = 1'-0"



SECTION E-E
 SCALE: 3/16" = 1'-0"



I-F VENTILATION SHAFT
 SCALE: 1/4" = 1'-0"
 EL. 892.57 TO EL. 996.00



G-G VENTILATION SHAFT
 SCALE: 1/4" = 1'-0"
 EL. 872.57 TO EL. 892.57

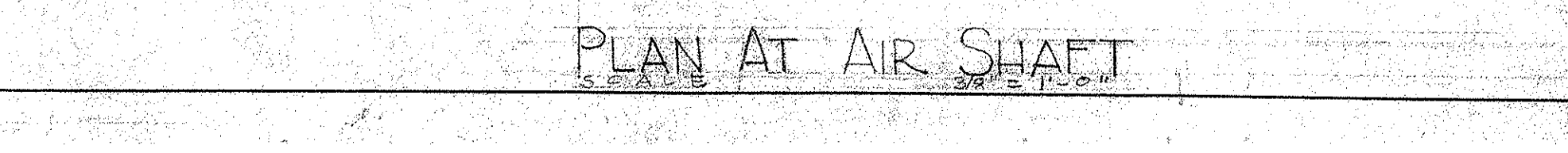
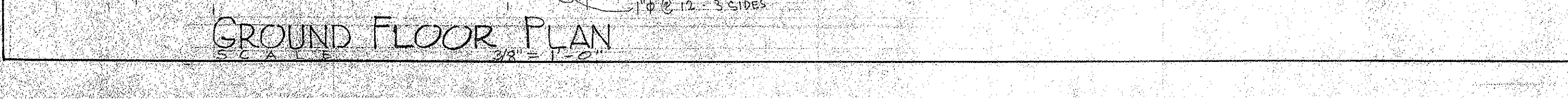
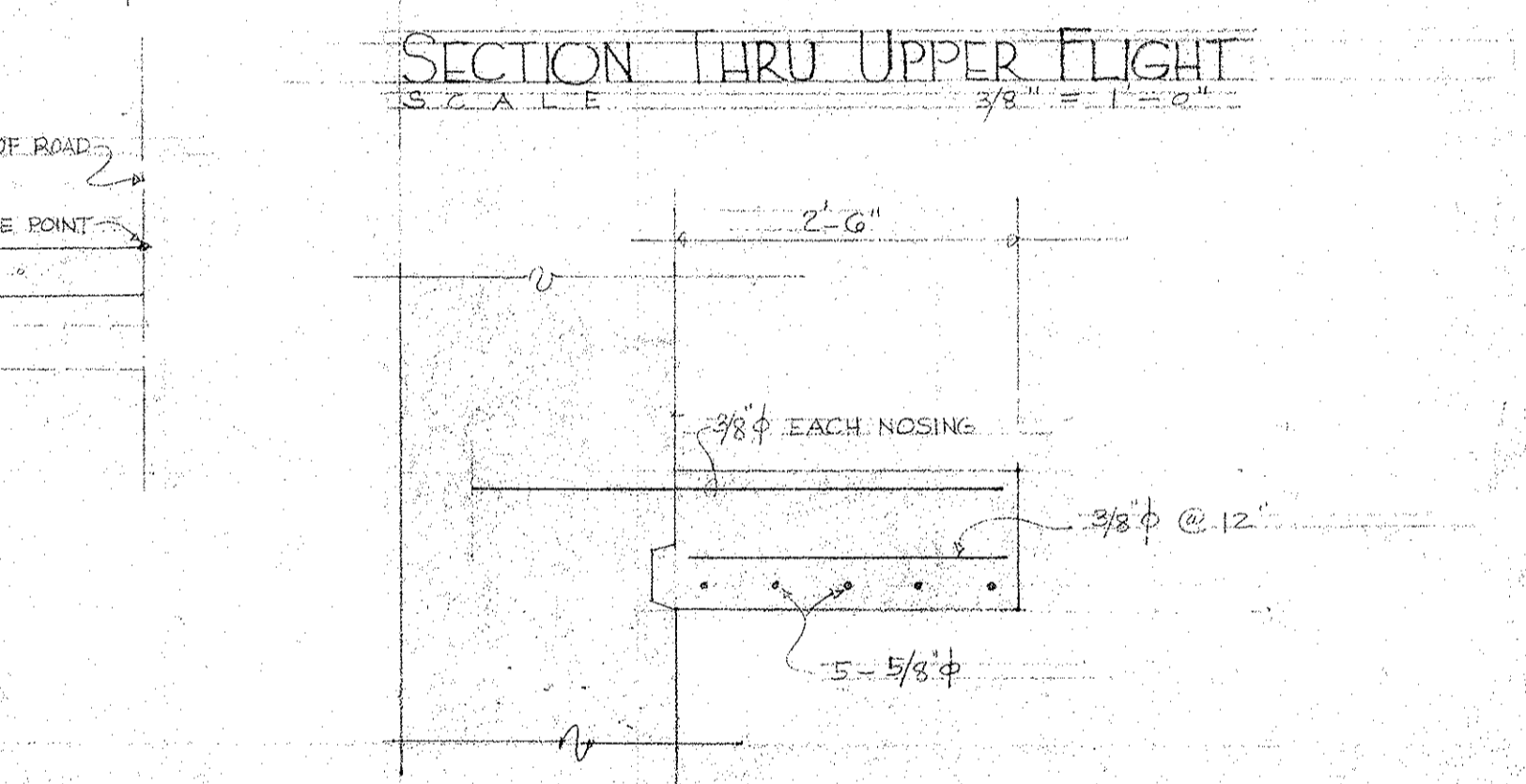
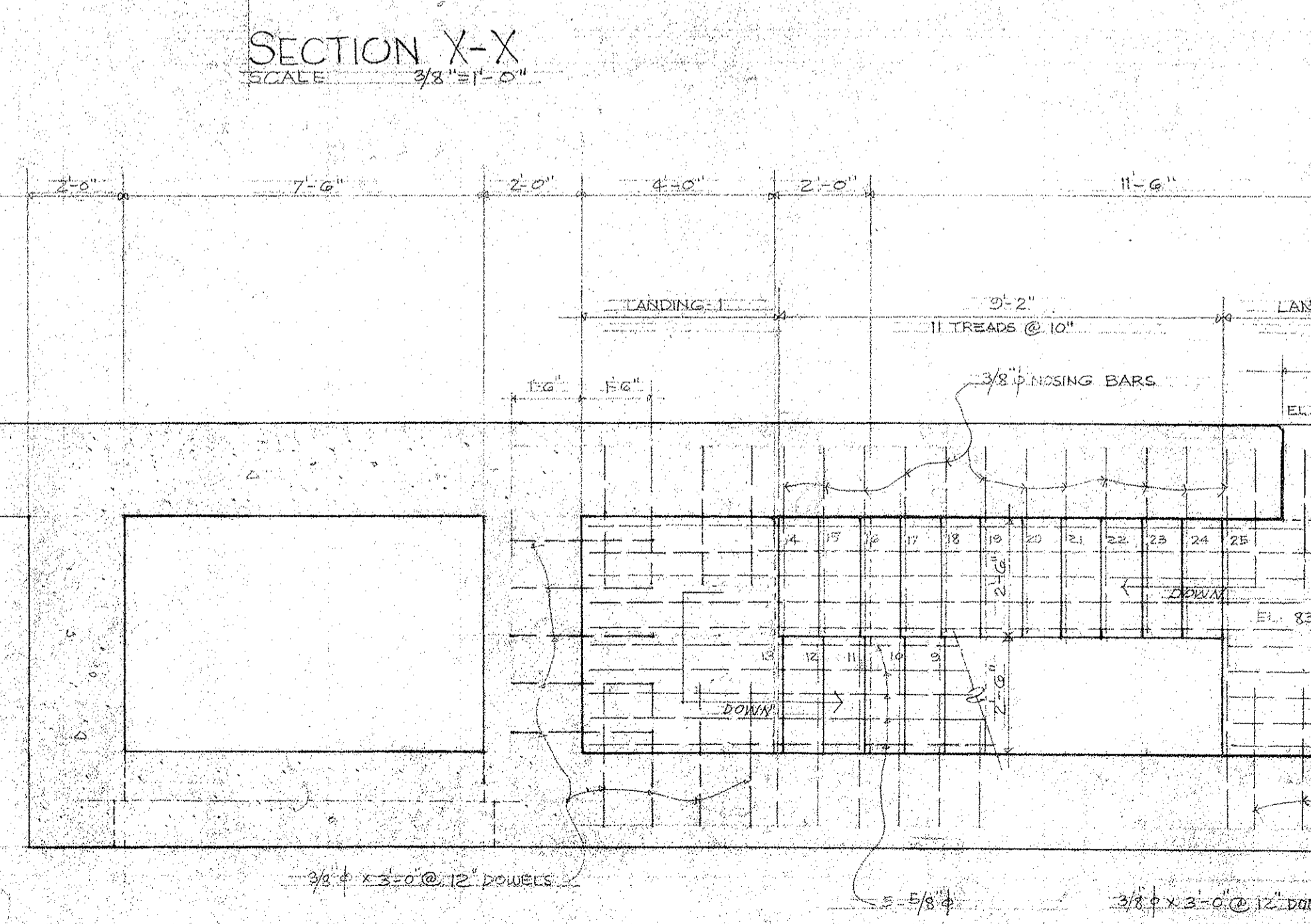
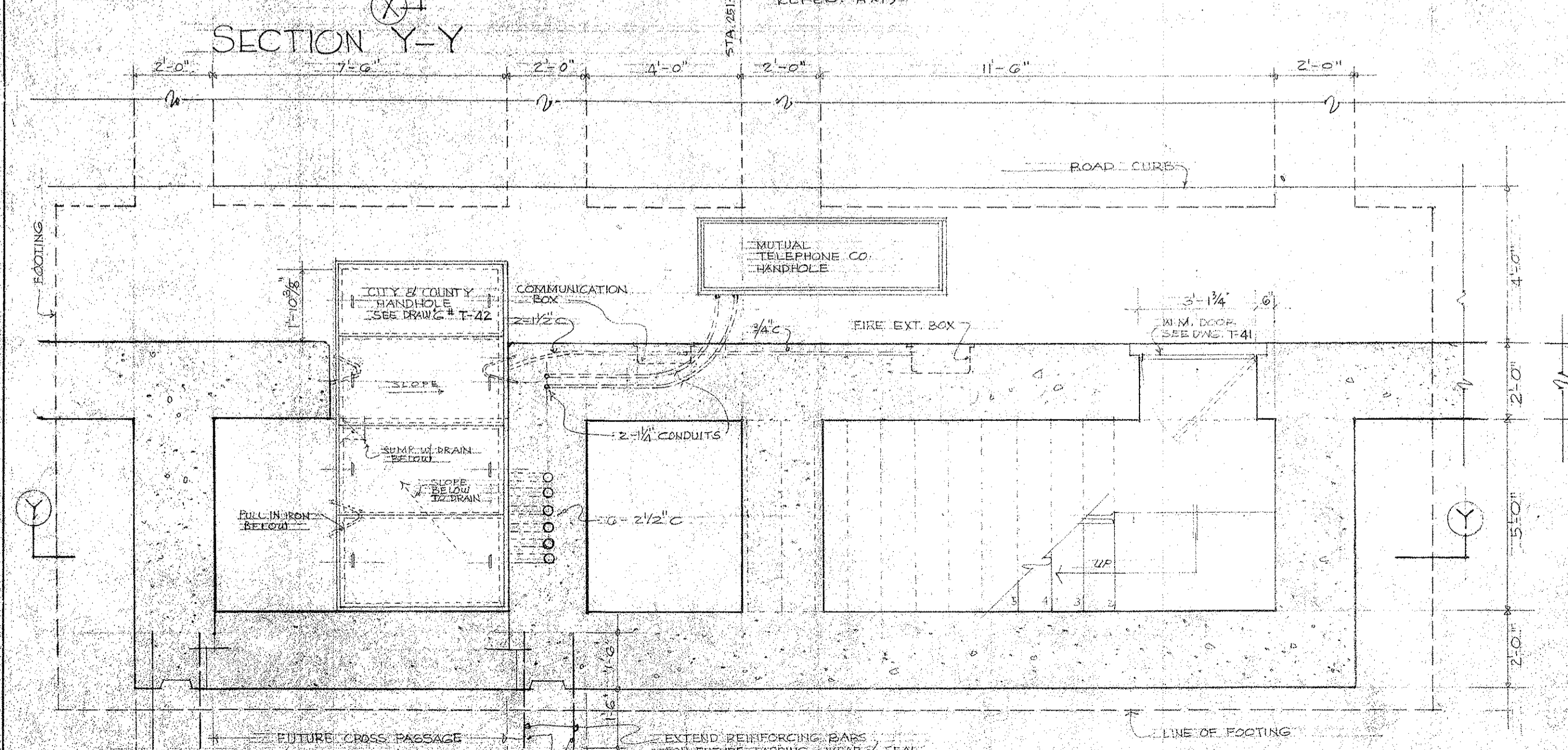
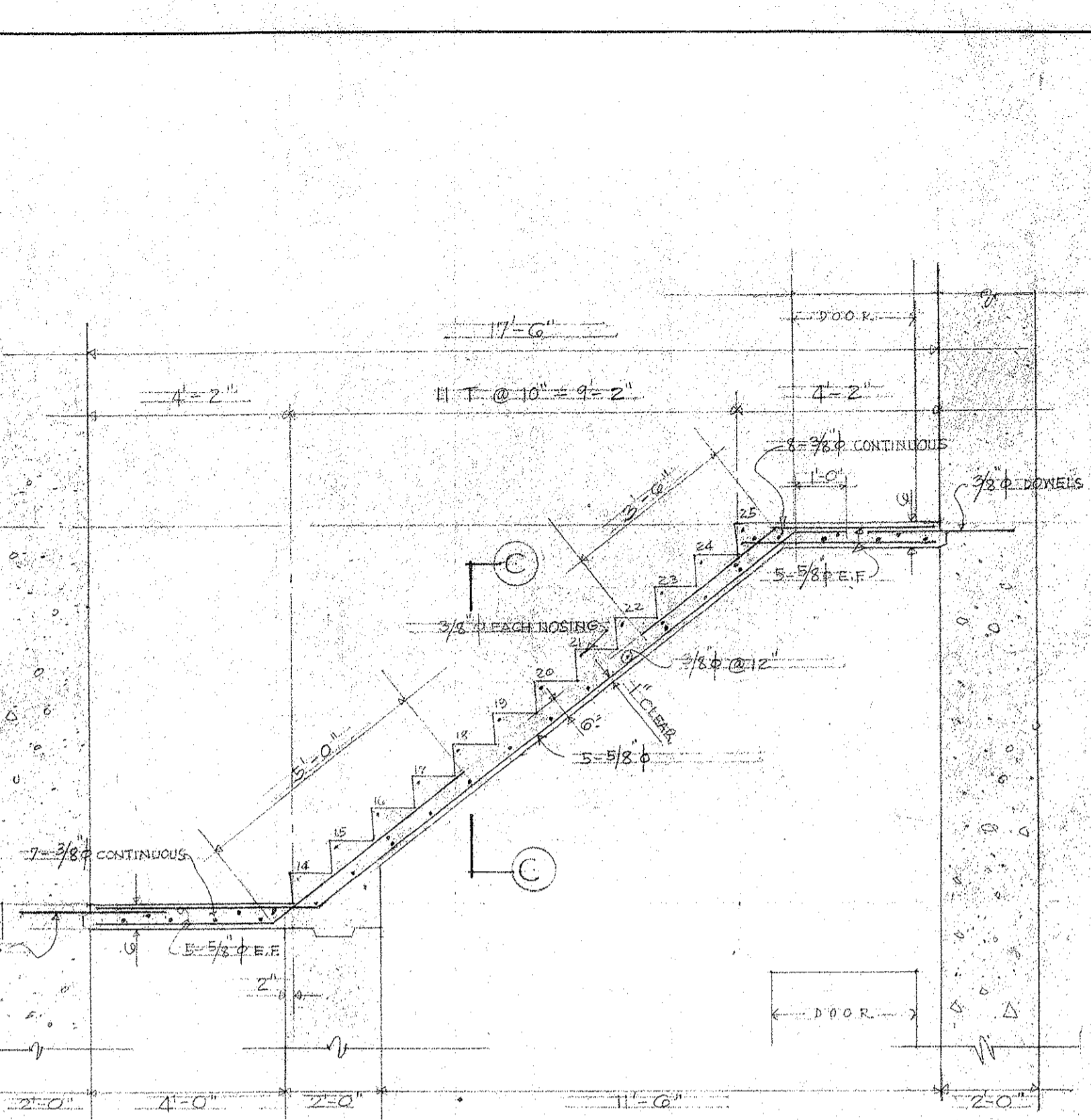
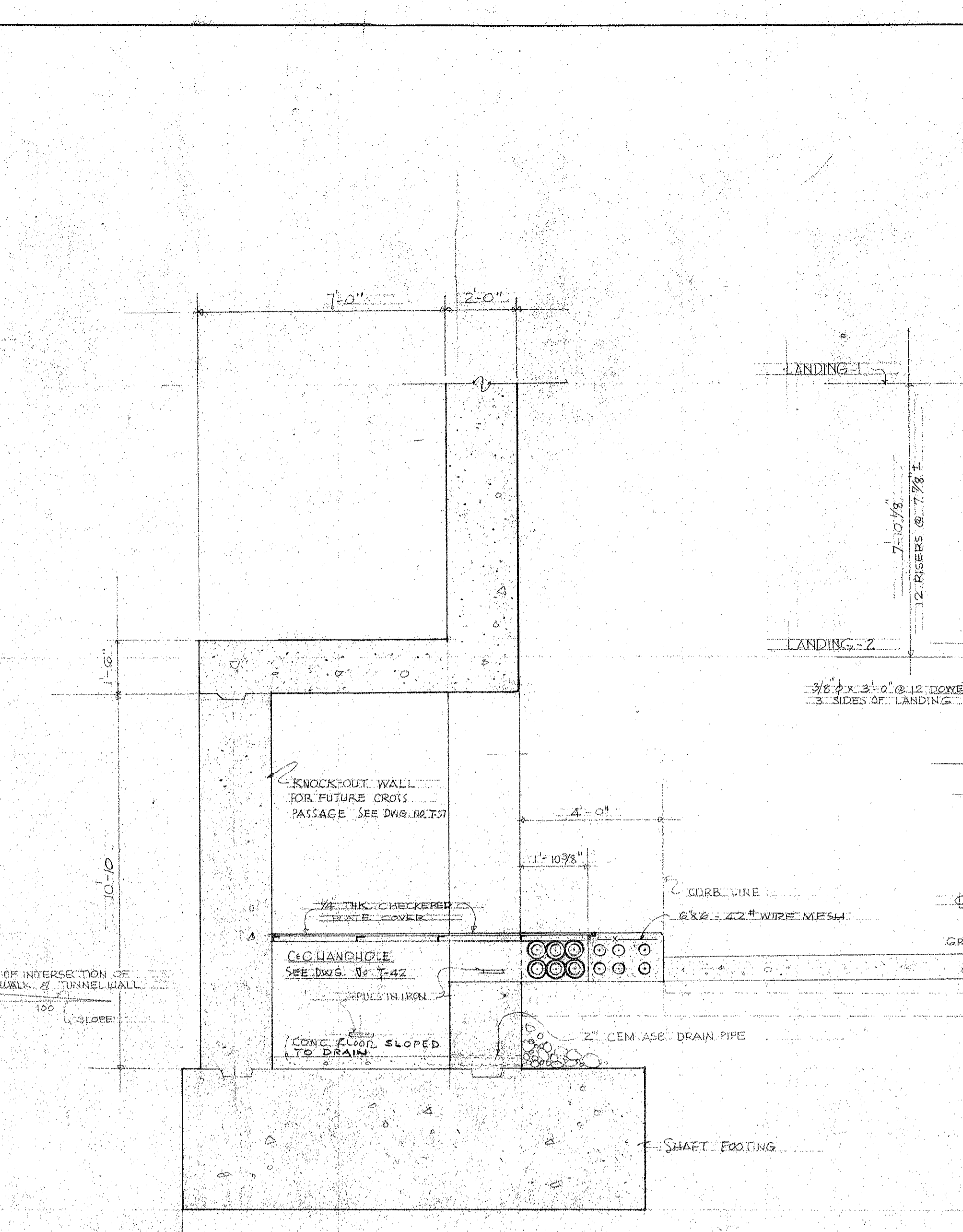
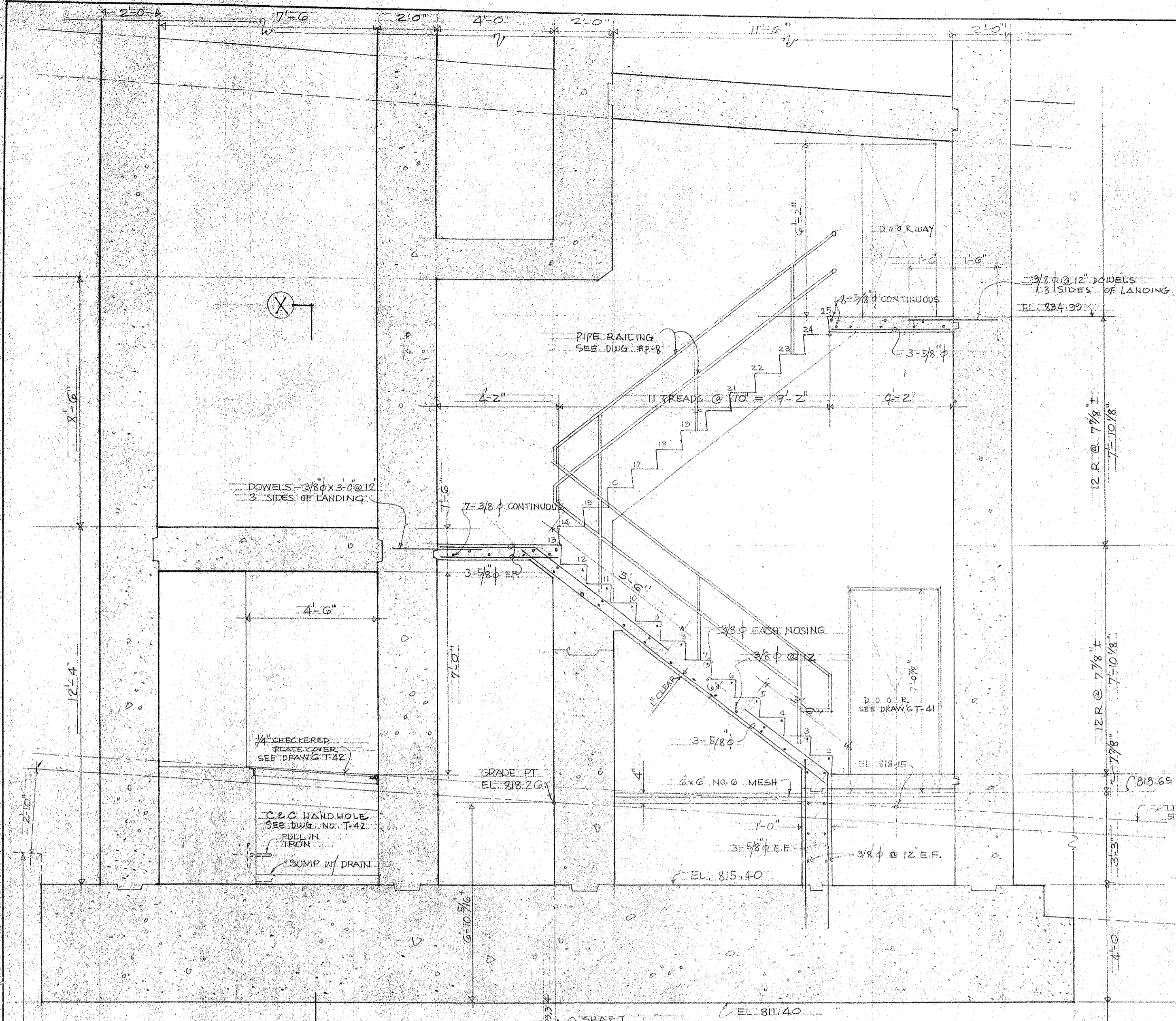
DEPARTMENT OF PUBLIC WORKS
 CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIHI TUNNEL
 TUNNEL & SHAFT - TRANSITION
 STRUCTURAL
 SHAFT & PASSAGE DETAILS

ENGINEER: W. LUM, F. C. DATE: JULY 18, 1953
 DRAFTSMAN: E. P. W. CHECKED BY: W. LUM
 SCALE: AS NOTED TRACER: _____
 APPROVED: *W. LUM* CHIEF ENGINEER APPROVED: *W. LUM* BUREAU ENGINEER

APPROVED: *W. LUM*
 ENGINEER, KALIHI TUNNEL

SECTION C JOB NO. 26-53 DWG. T-37

FILE	POCKET	FOLDER	N.O.
7	5	3	37



SECTION C

SECTION X-X
SCALE 3/8" = 1'-0"

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

SECTION THRU UPPER FLIGHT
SCALE 3/8" = 1'-0"

GROUND FLOOR PLAN

PLAN AT AIR SHAFT

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

KALIHI TUNNEL
TUNNEL & SHAFT-TRANSITION
STRUCTURAL
STAIRS & MISC. DETAILS

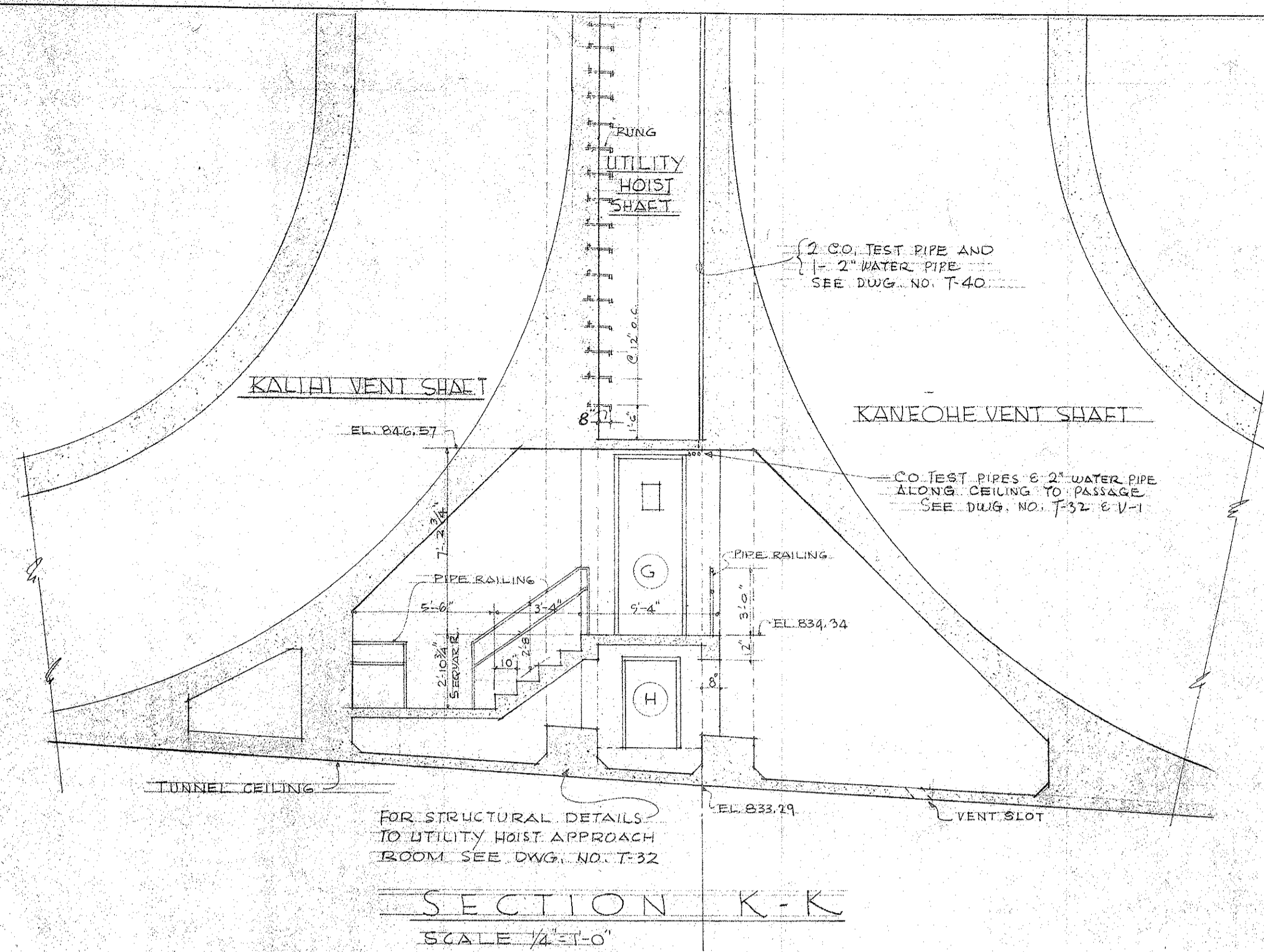
ENGINEER W. Lum, CIV. DATE: JULY 15, 1953
DRAFTSMAN A. R. CIV. CHECKED BY W. Lum
SCALE AS NOTED TRACER A. R.

APPROVED: *W. Lum* CHIEF ENGINEER
APPROVED: *A. R.* BUREAU ENGINEER

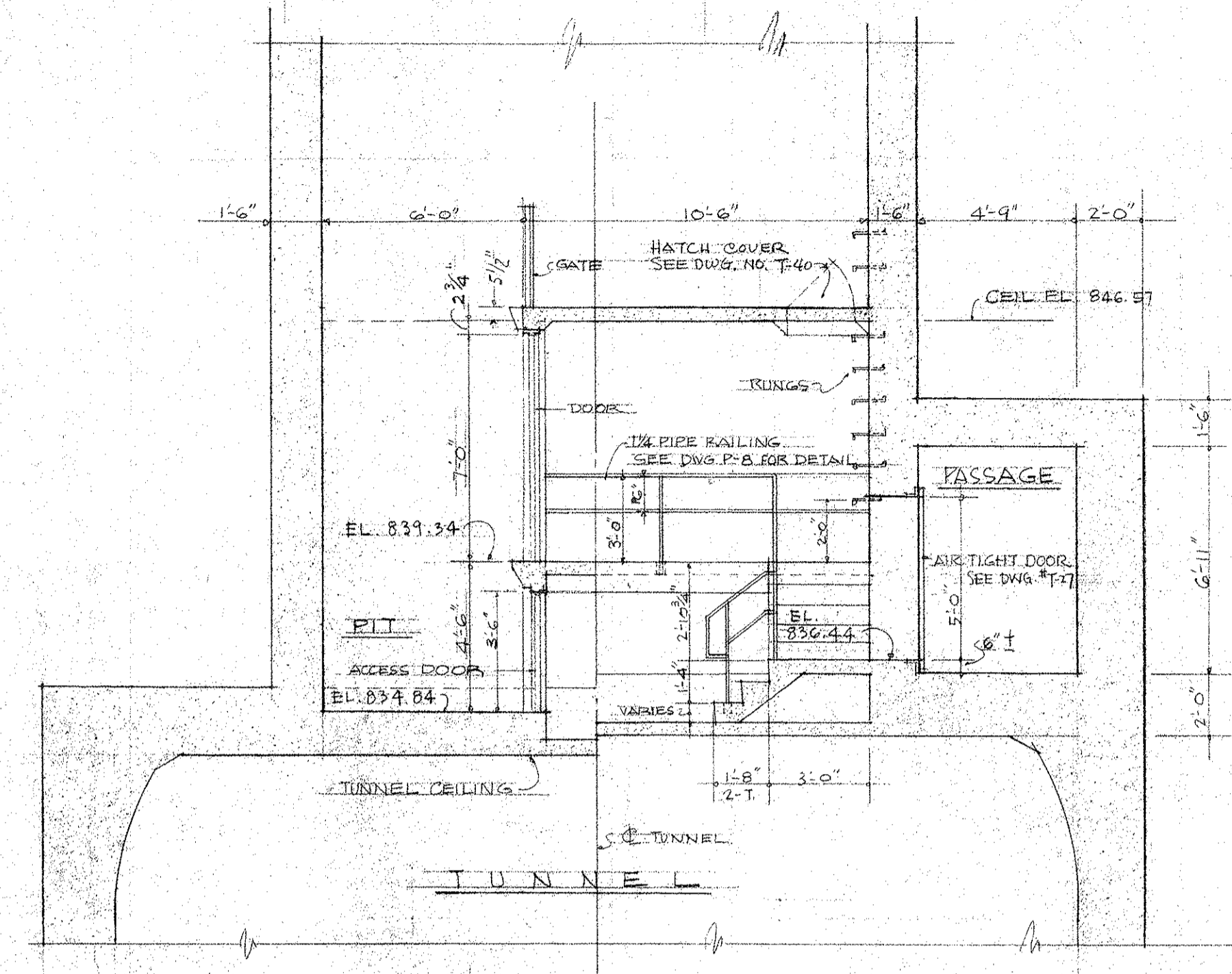
W.S.	PROFILE	C.B.
CR. SEC.	F.B.	S.B.
W.M. BY:	F.W. BY:	S. BY:

SECTION C JOB NO. 26-53 DWG. T-38

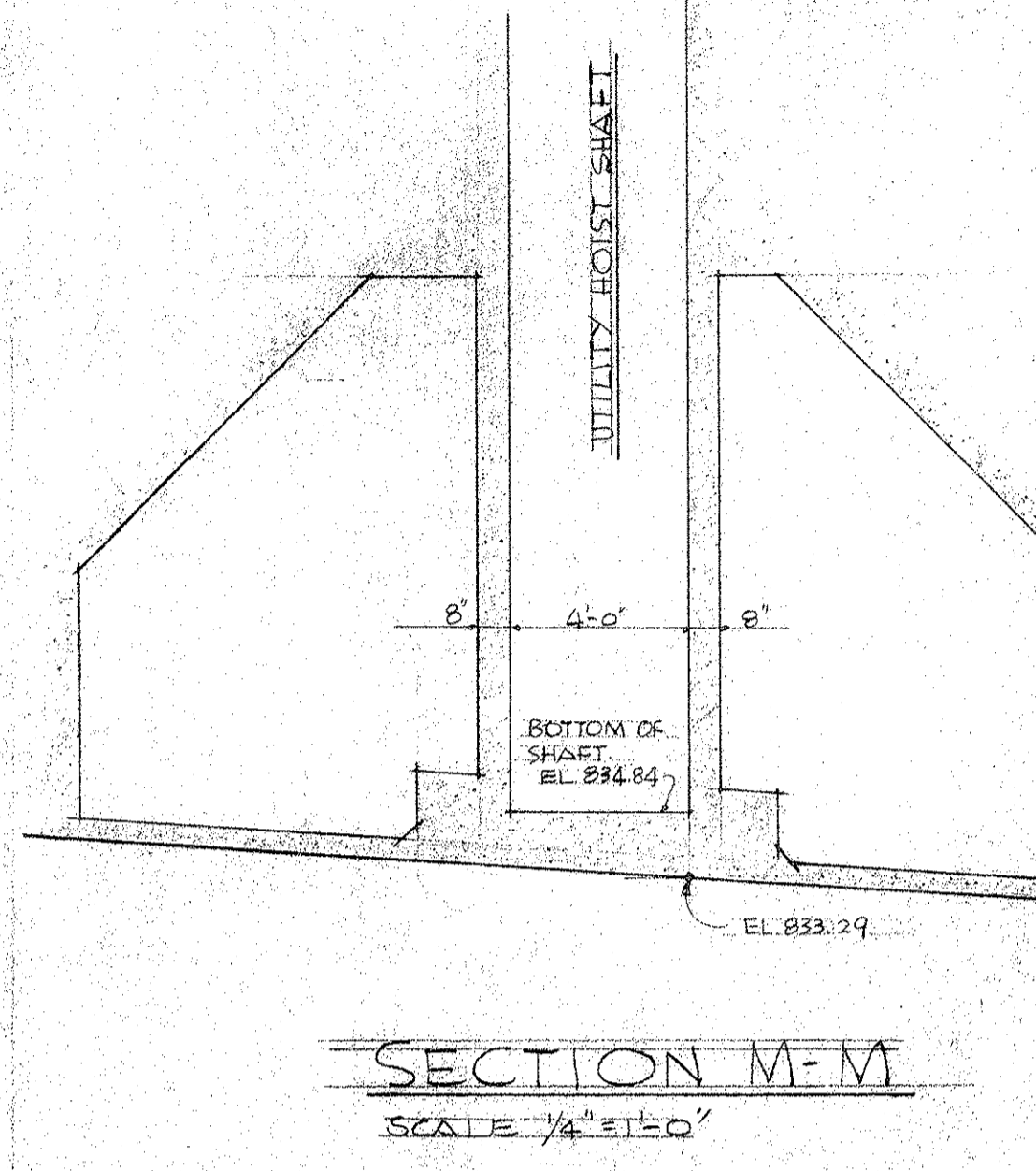
Sheet No. 116 of 252 Sheets



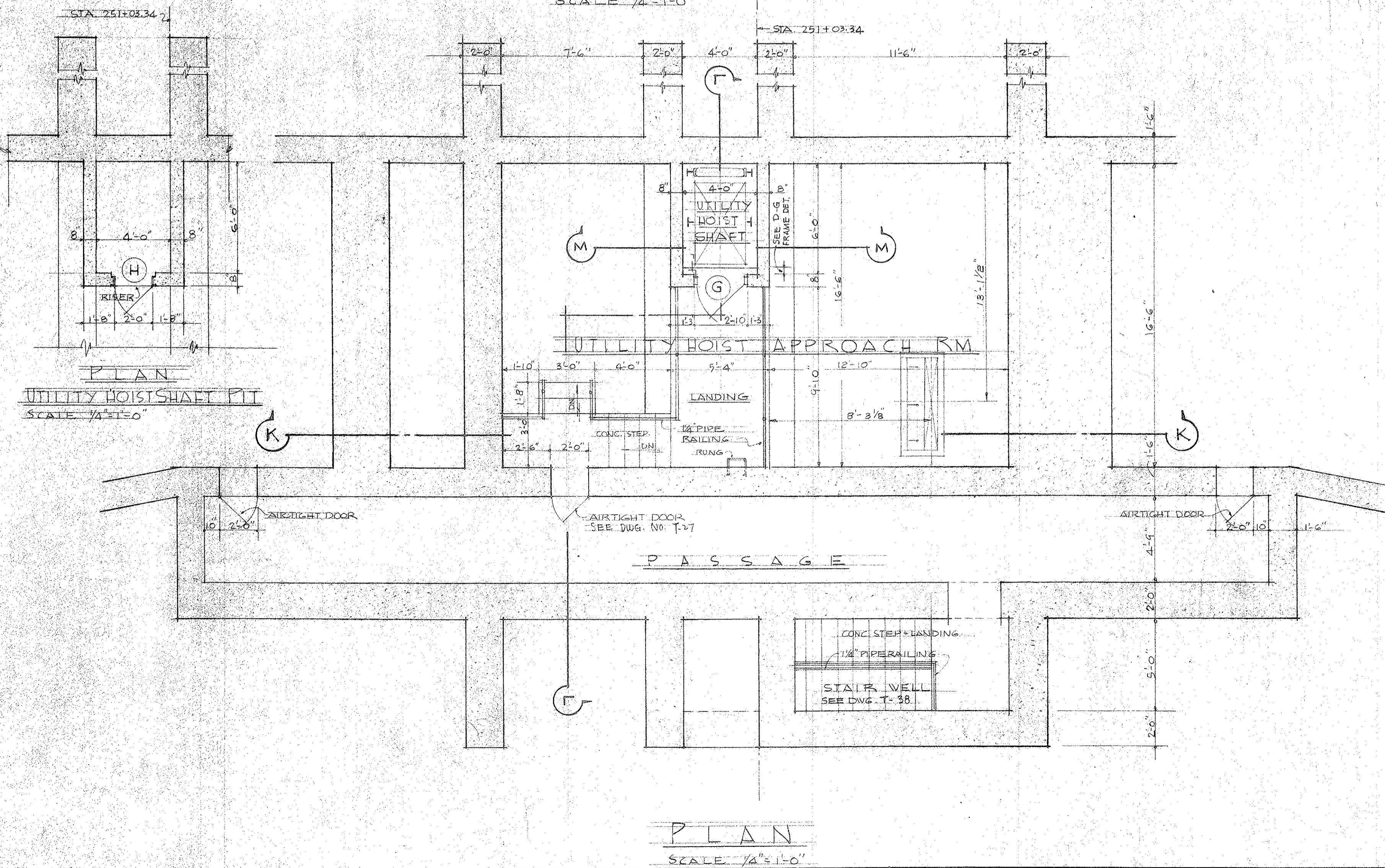
SECTION K-K
SCALE 1/4"=1'-0"



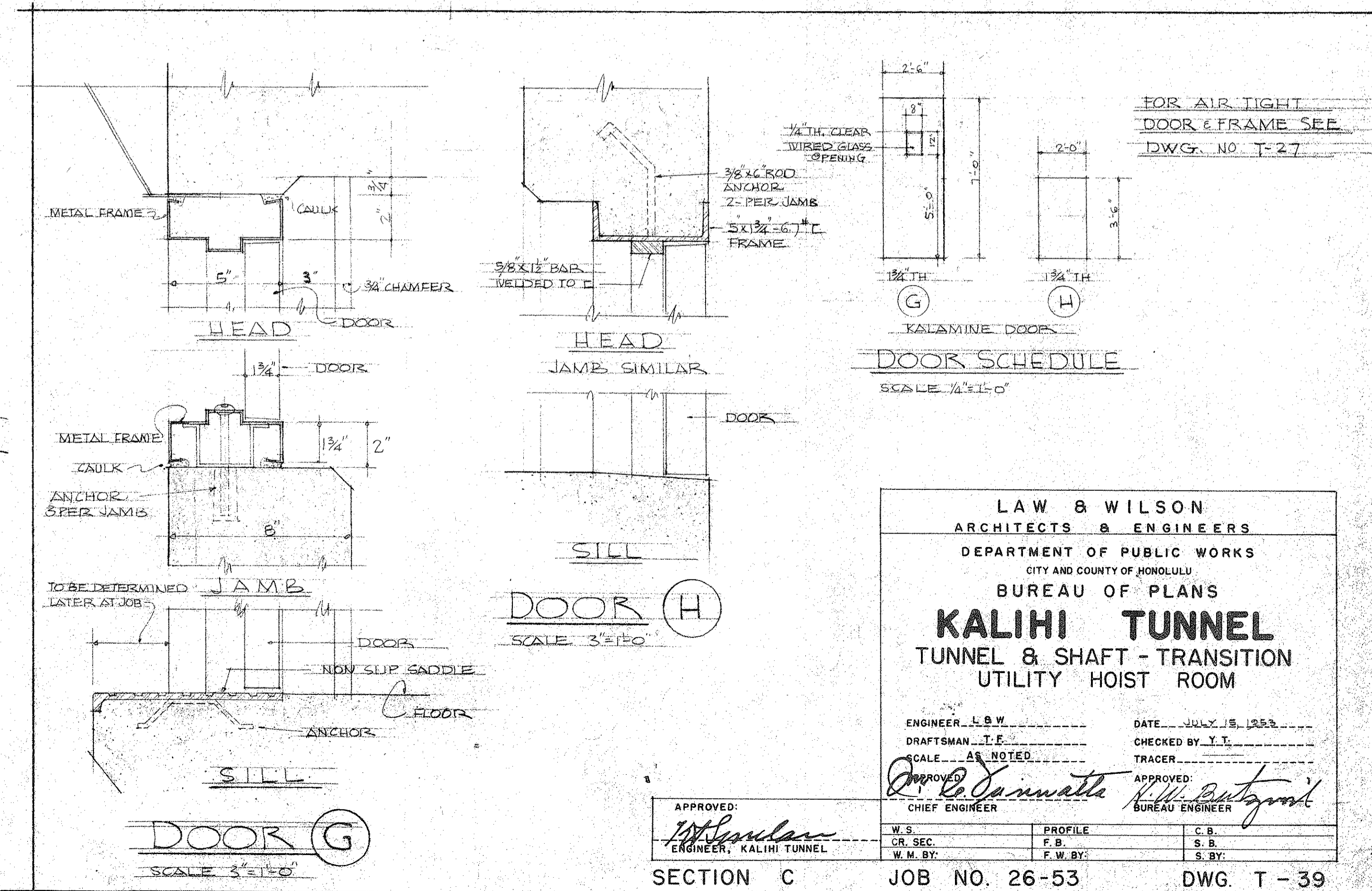
SECTION L-L
SCALE 1/4"=1'-0"



SECTION M-M
SCALE 1/4"=1'-0"



PLAN
SCALE 1/4"=1'-0"



FOR AIR TIGHT DOOR FRAME SEE DWG. NO. T-27

DOOR	SCALE
G	1/4"=1'-0"
H	3/8"=1'-0"

DOOR SCHEDULE
SCALE 1/4"=1'-0"

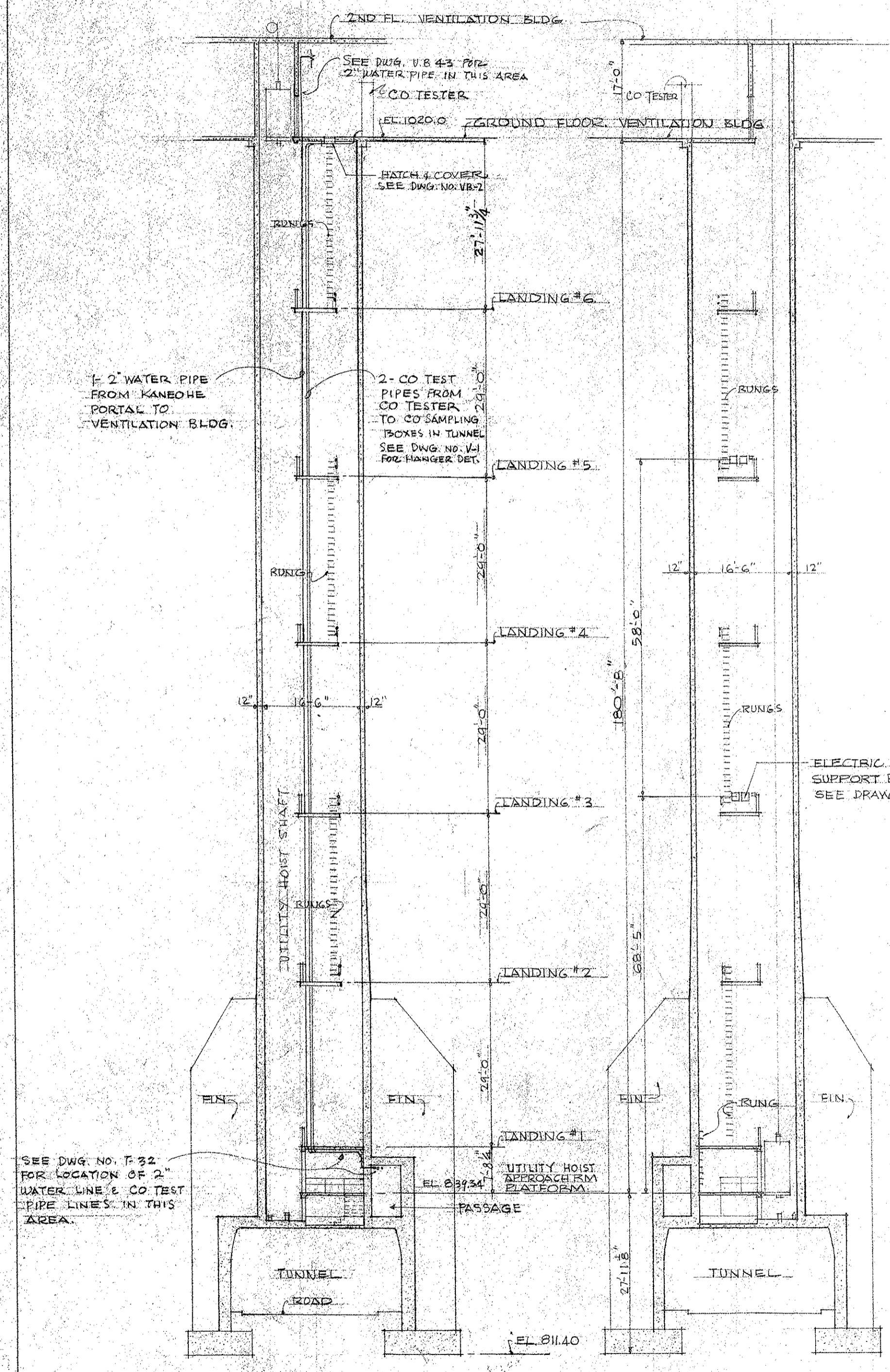
LAW & WILSON
ARCHITECTS & ENGINEERS
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

KALIAH TUNNEL
TUNNEL & SHAFT - TRANSITION
UTILITY HOIST ROOM

ENGINEER L.B.W. DATE JULY 18, 1953
DRAFTSMAN T.E. CHECKED BY Y.T.
SCALE AS NOTED TRACER
APPROVED: *D. Dainiwata* CHIEF ENGINEER
APPROVED: *K.W. Putzgrub* BUREAU ENGINEER

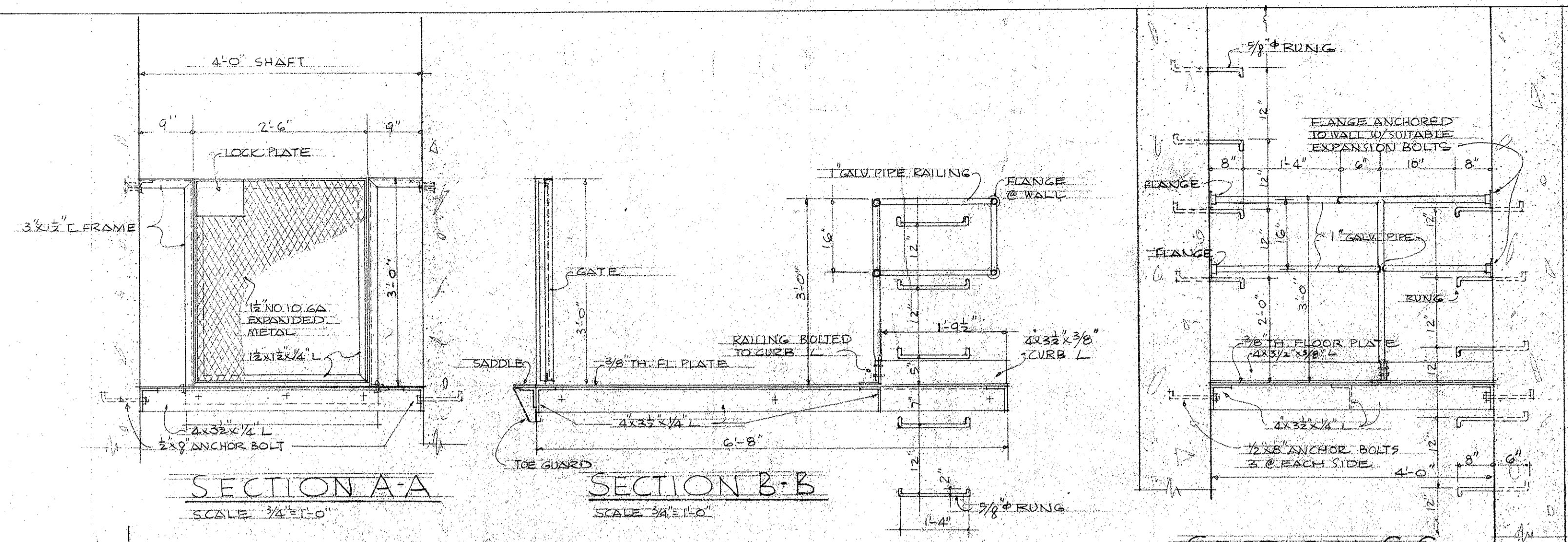
W.S.	PROFILE	C.B.
CR. SEC.	F.B.	S.B.
W.M. BY:	F.W. BY:	S. BY:

SECTION C JOB NO. 26-53 DWG. T-39



SECTION THRU SHAFT TOWARD KANEHOE
SCALE 1/16" = 1'-0"

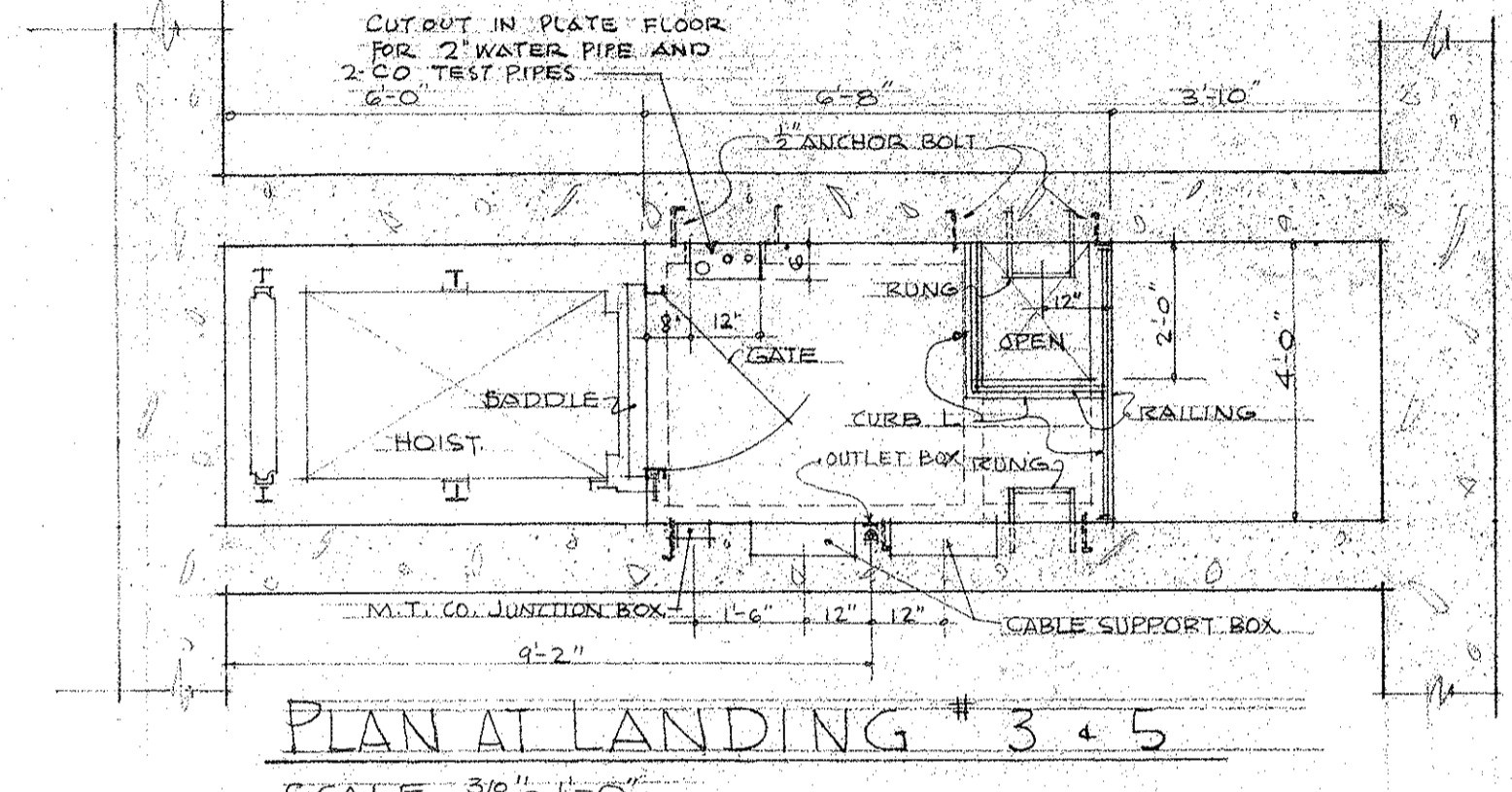
SECTION THRU SHAFT TOWARD KALIHI
SCALE 1/16" = 1'-0"



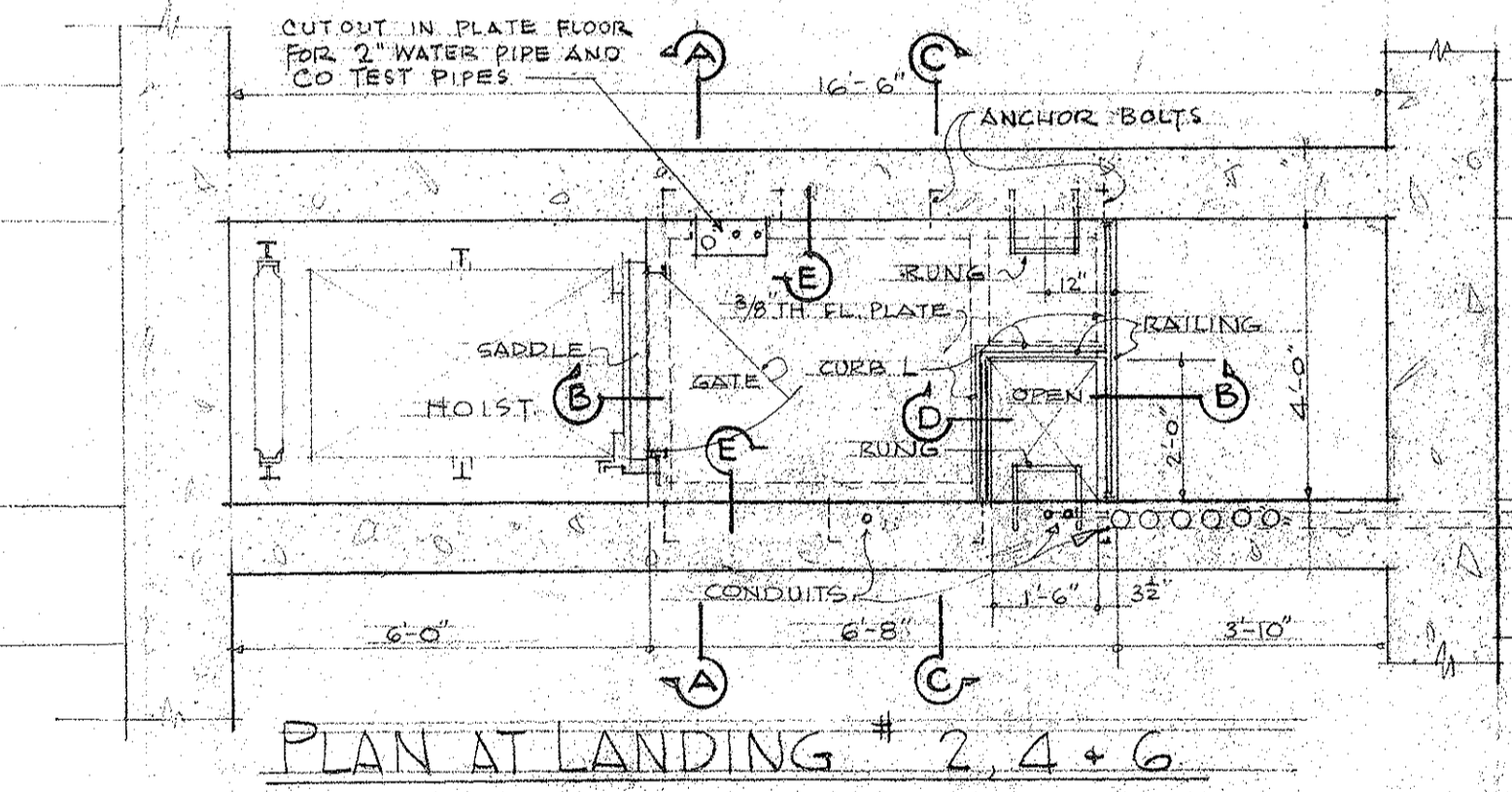
SECTION A-A SCALE 3/4" = 1'-0"

SECTION B-B SCALE 3/4" = 1'-0"

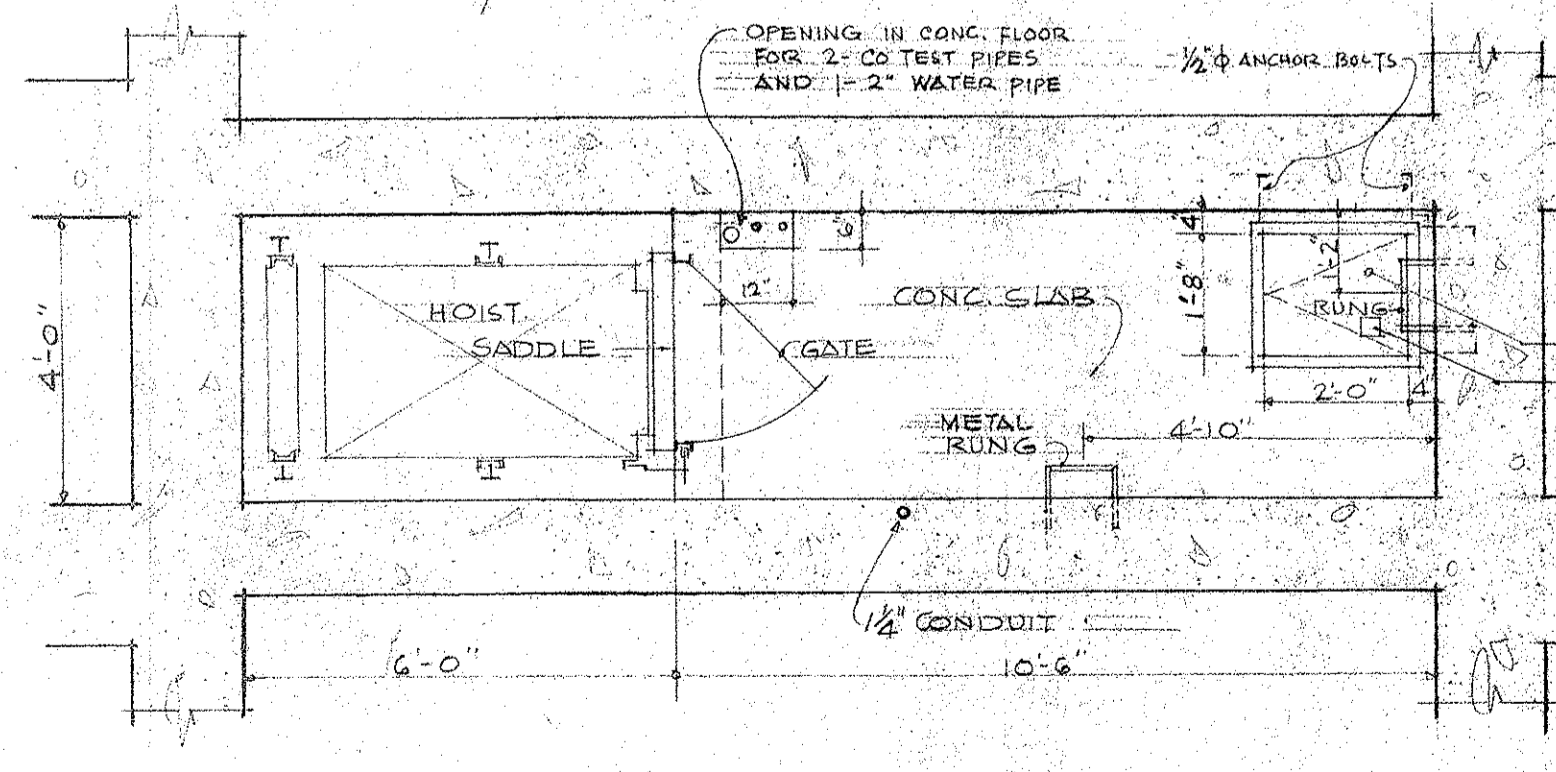
SECTION C-C SCALE 3/4" = 1'-0"



PLAN AT LANDING # 3 + 5
SCALE 3/8" = 1'-0"

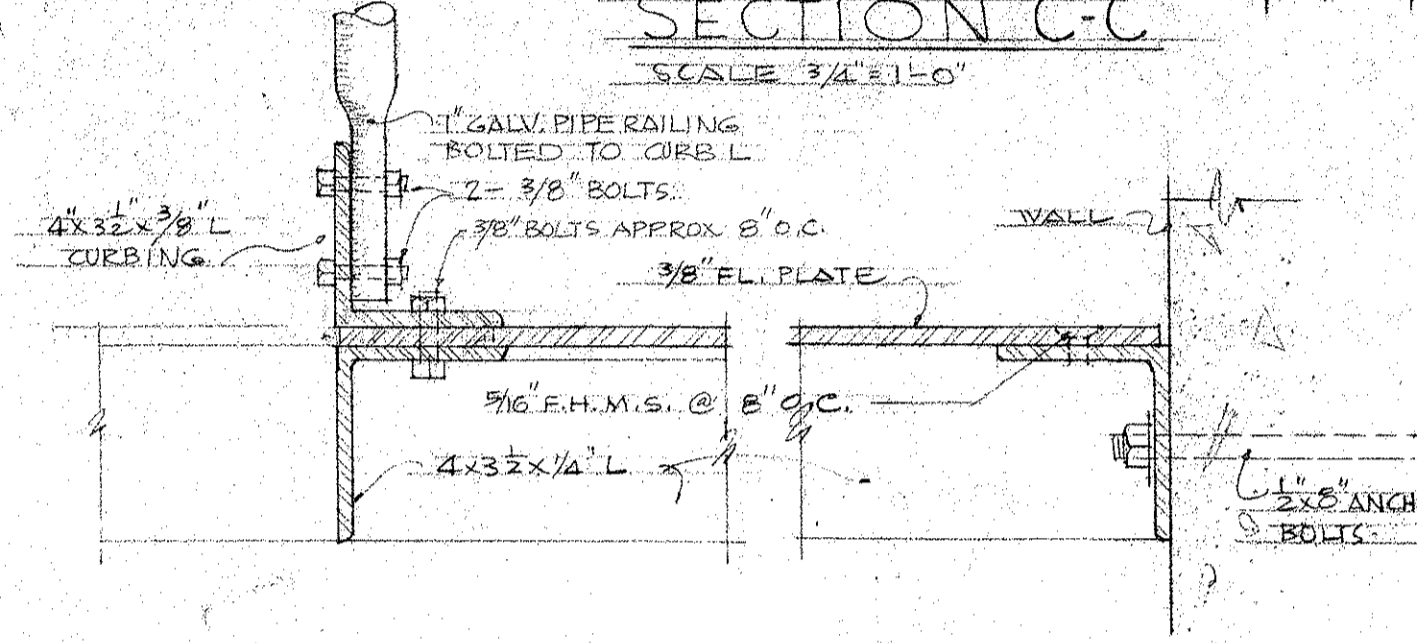


PLAN AT LANDING # 2, 4 + 6
SCALE 3/8" = 1'-0"



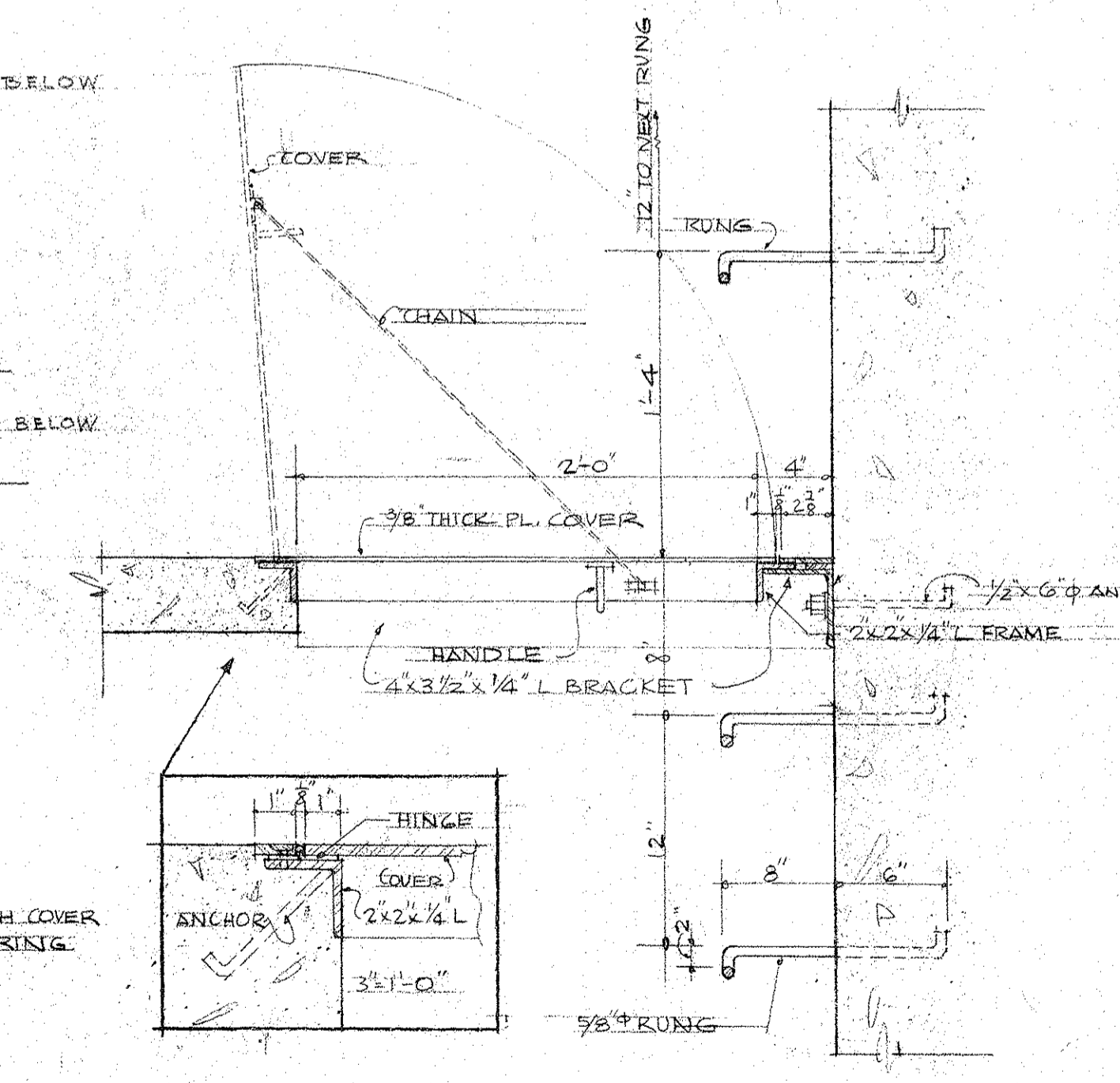
PLAN AT LANDING # 1
SCALE 3/8" = 1'-0"

NOTE: GATE JAMB, SADDLE AND TOE GUARD AT ALL LANDINGS TO BE FURNISHED AND INSTALLED WITH HOIST BY ELEVATOR COMPANY

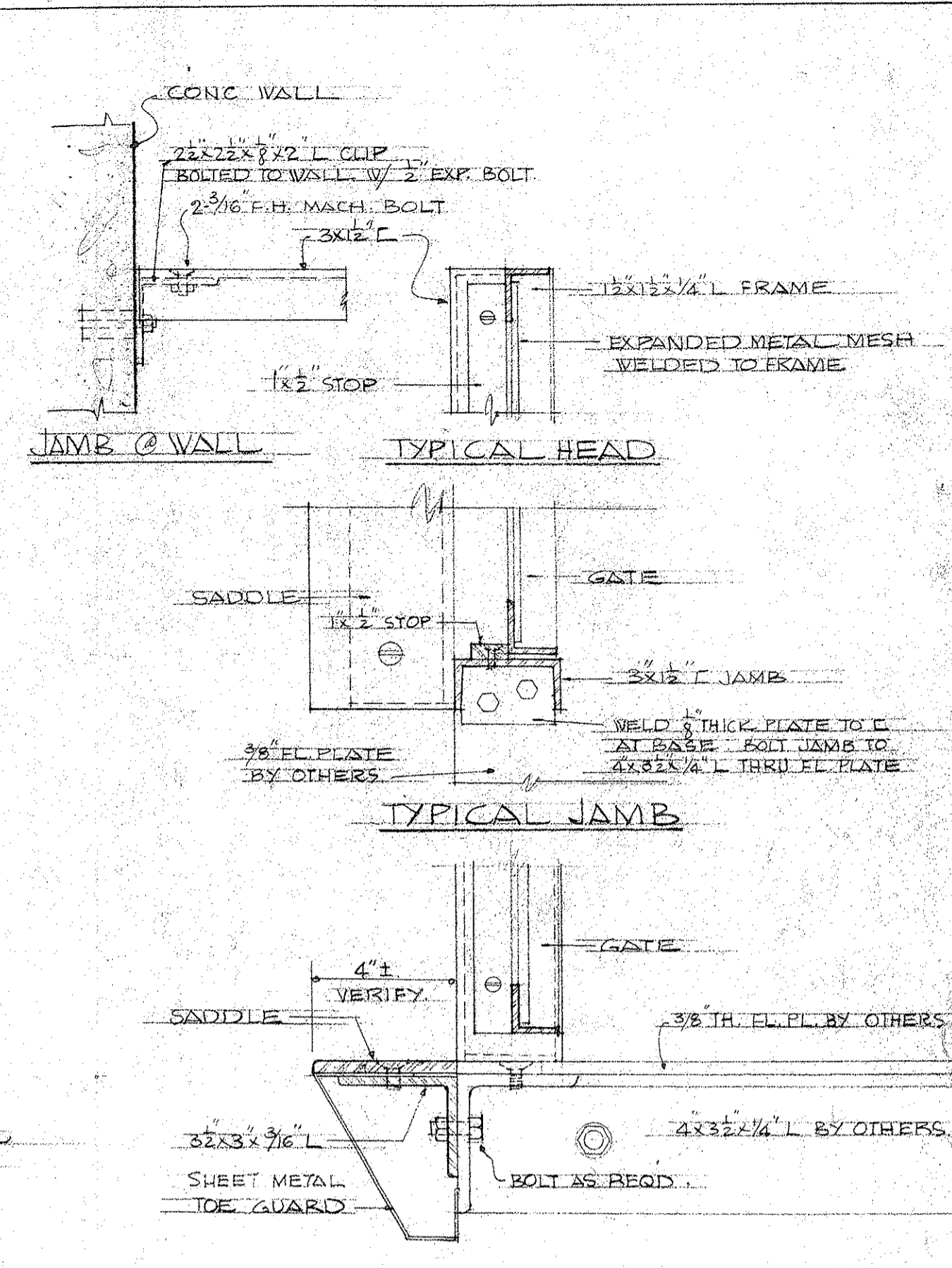


SECTION D SCALE 3" = 1'-0"

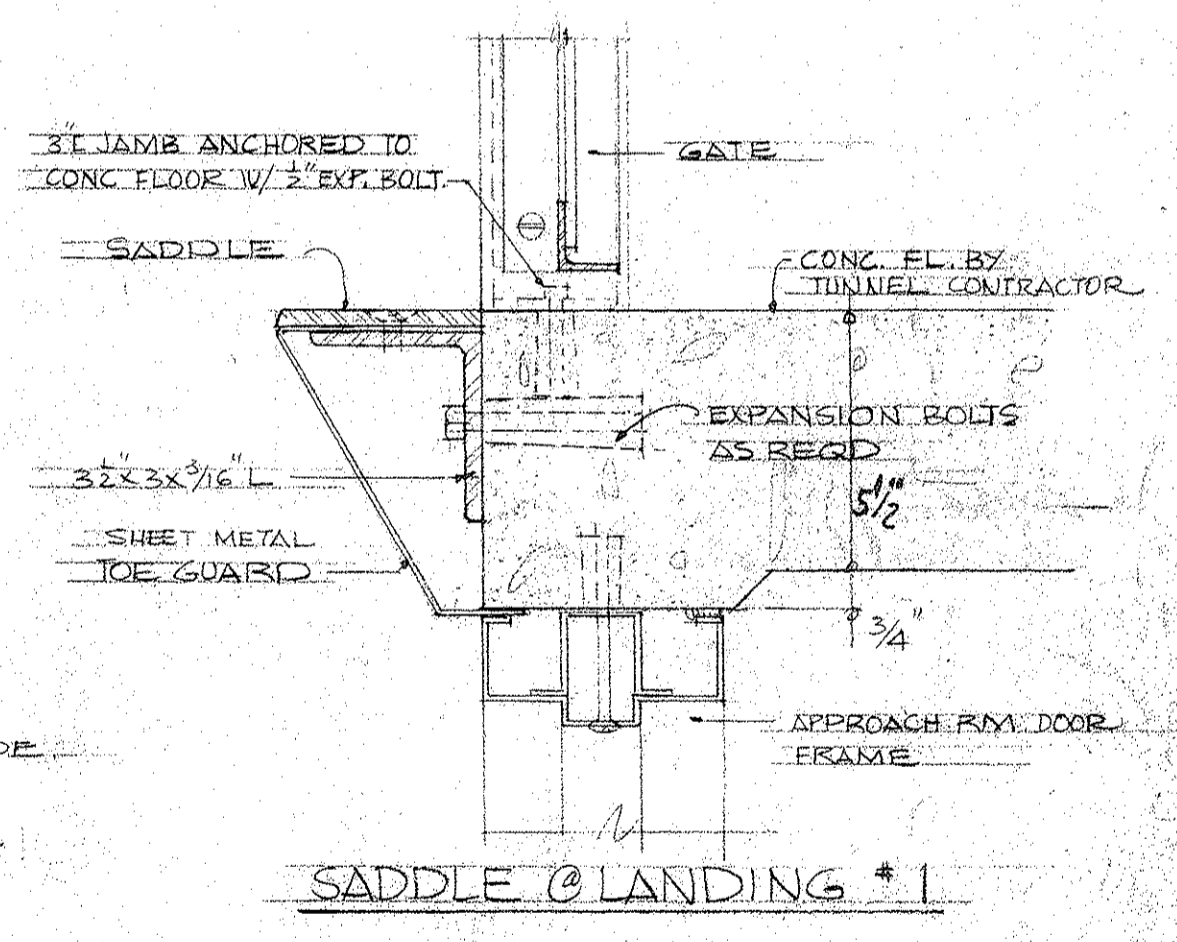
SECTION E SCALE 3" = 1'-0"



HATCH COVER DETAIL
SCALE 1 1/2" = 1'-0"



SADDLE AT LANDING # 2 to 6



SADDLE @ LANDING # 1
GATE DETAIL
SCALE 3" = 1'-0"

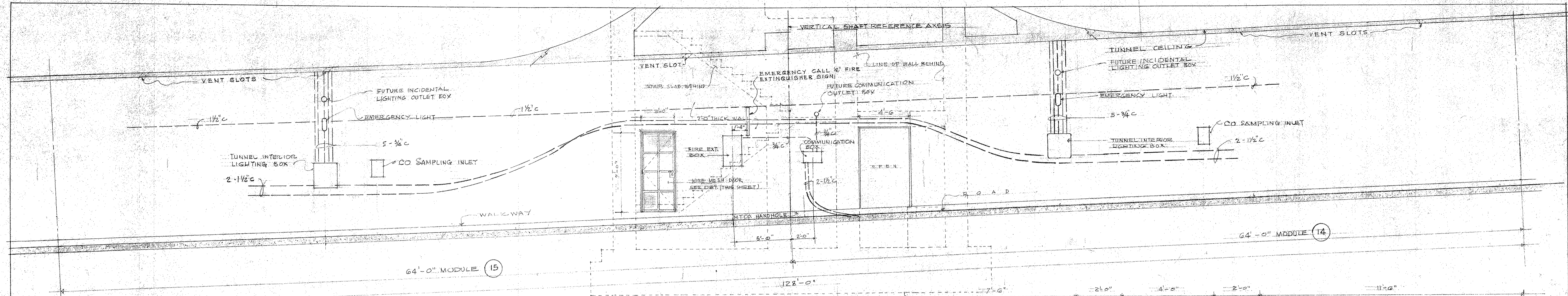
LAW & WILSON
ARCHITECTS & ENGINEERS
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

KALIHI TUNNEL
TUNNEL & SHAFT - TRANSITION
UTILITY HOIST SHAFT & STAGING

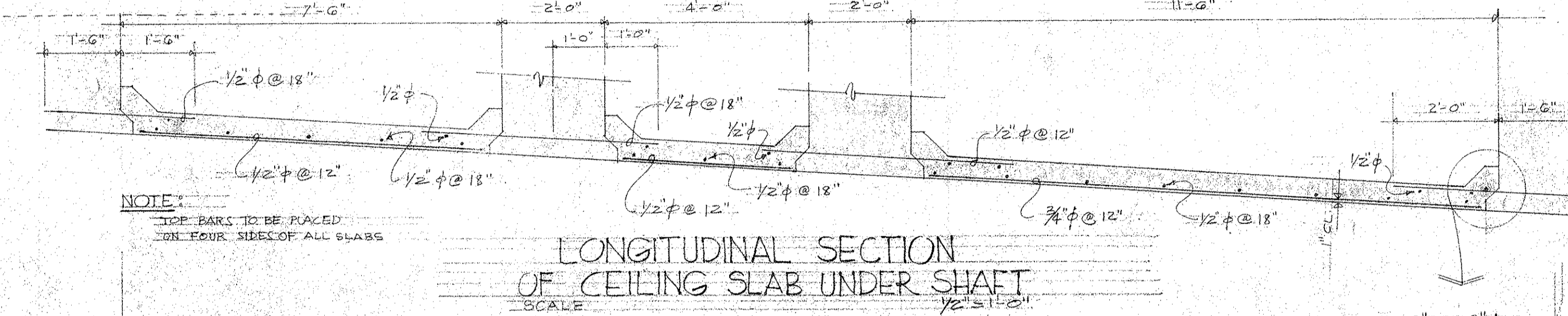
ENGINEER: L. B. W. DATE: JULY 15, 1958
DRAFTSMAN: J. E. CHECKED BY: Y. T. [Signature]
SCALE: AS NOTED TRACER:
APPROVED: [Signature] CHIEF ENGINEER
APPROVED: [Signature] BUREAU ENGINEER

W. S.	PROFILE	C. B.
CR. SEC.	F. B.	S. B.
W. N. BY:	F. W. BY:	S. BY:

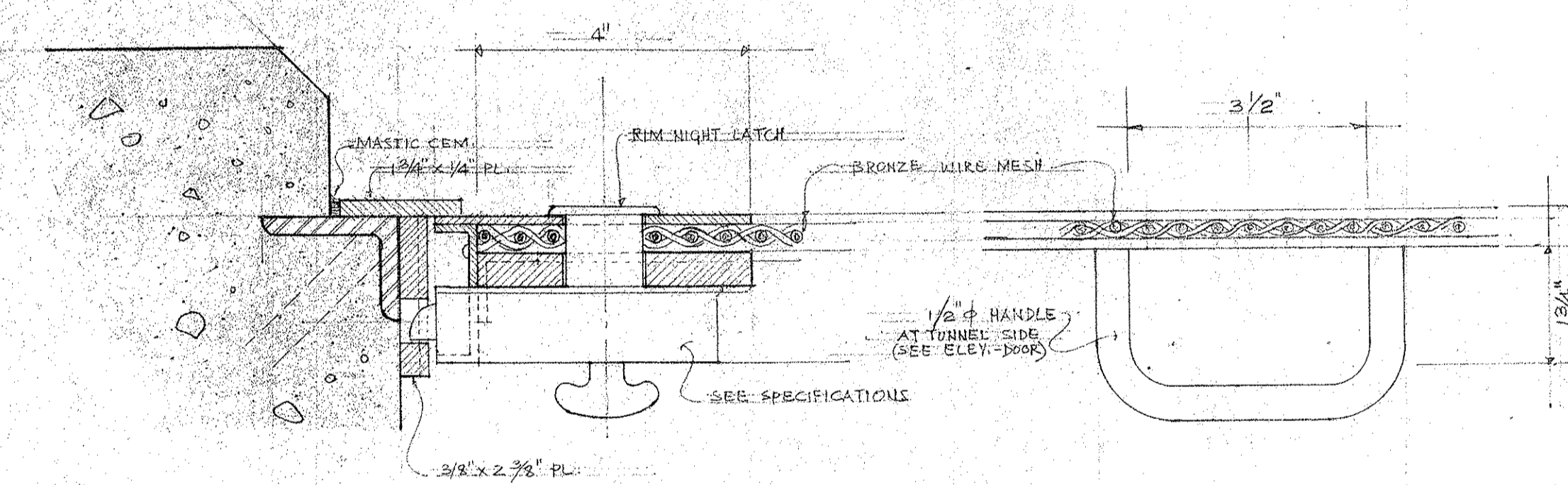
SECTION C JOB NO. 26-53 DWG. T-40



SIDE ELEVATION OF TUNNEL WALL
AT TRANSITION
SCALE 1/4" = 1'-0"

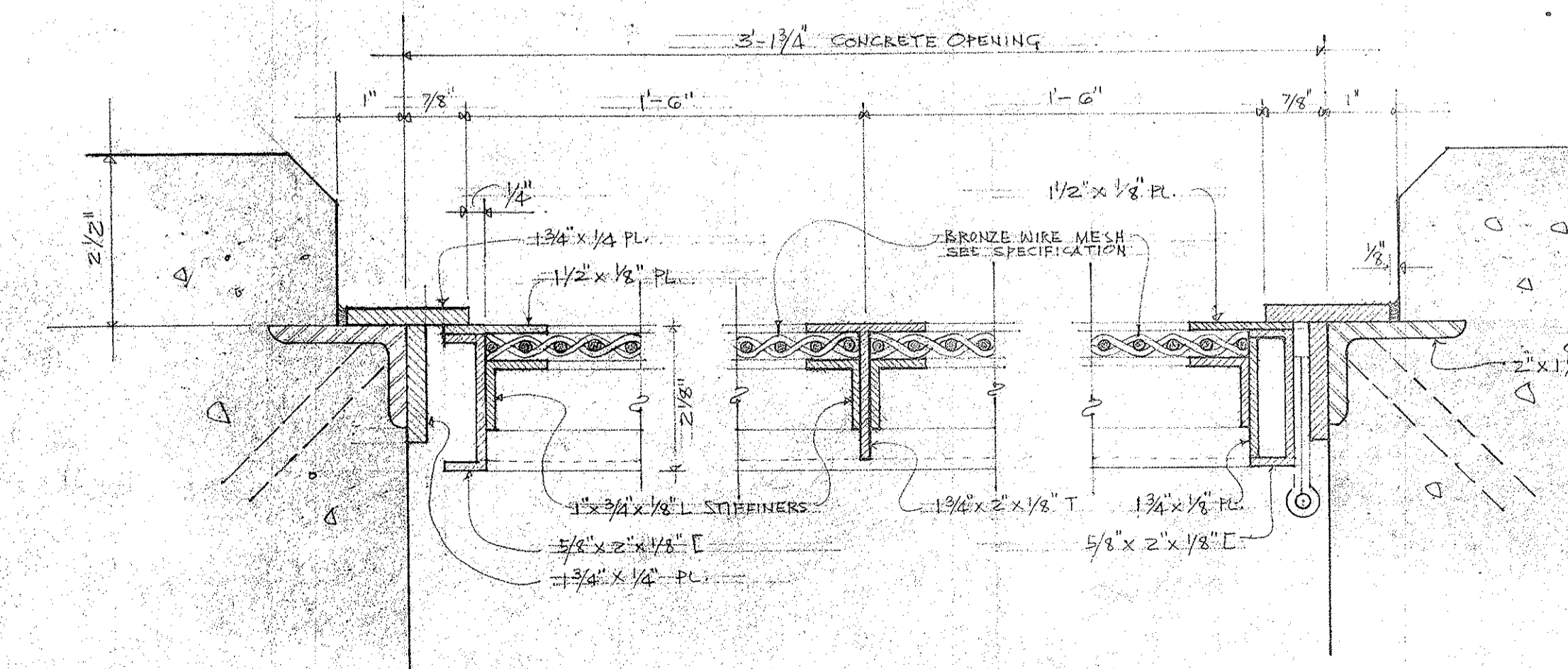


LONGITUDINAL SECTION
OF CEILING SLAB UNDER SHAFT
SCALE 1/2" = 1'-0"

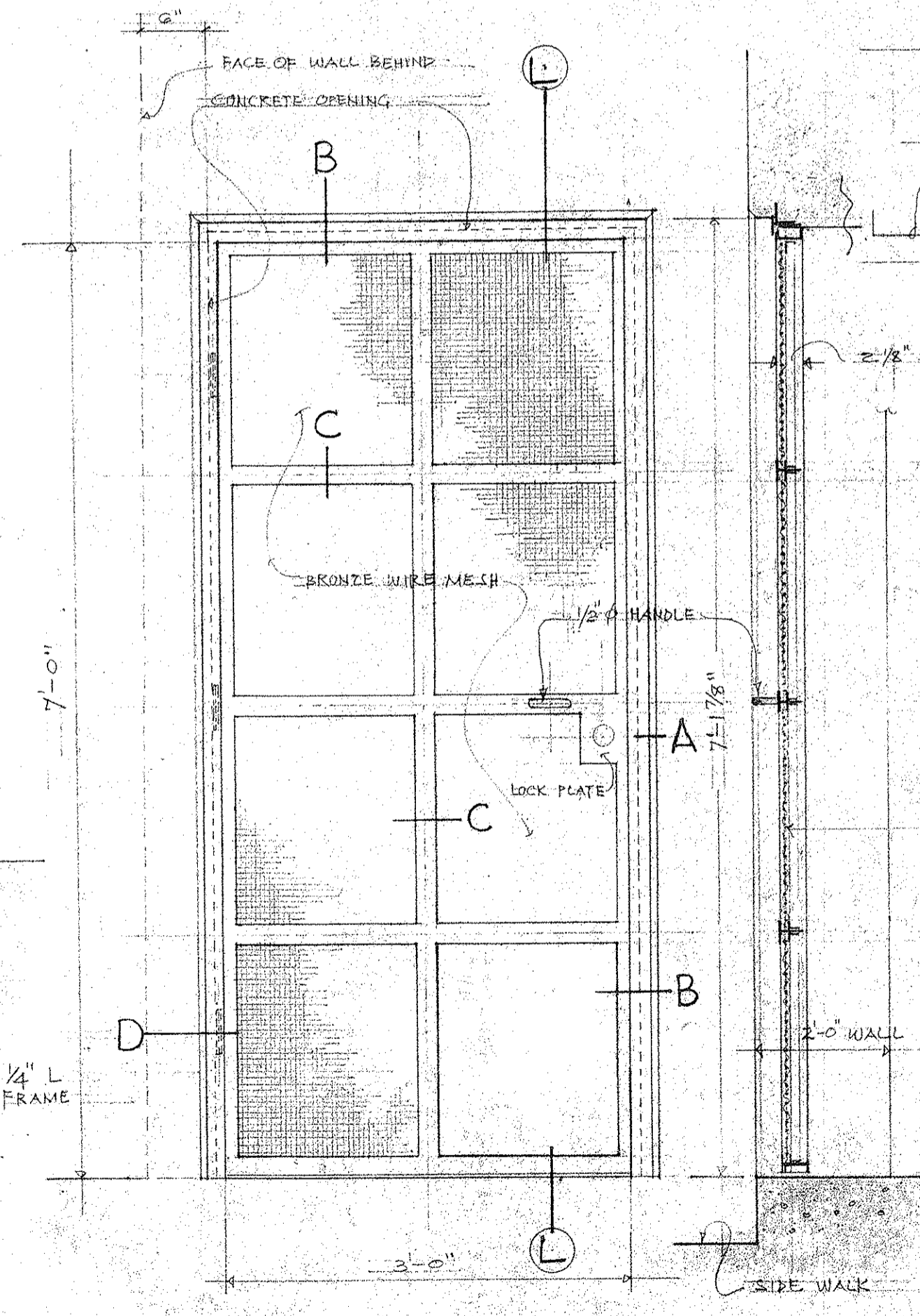


SECTION-A
JAMB AT LOCK
SCALE 1/2" FULL SIZE

DETAIL OF HANDLE
SCALE 1/2" FULL SIZE

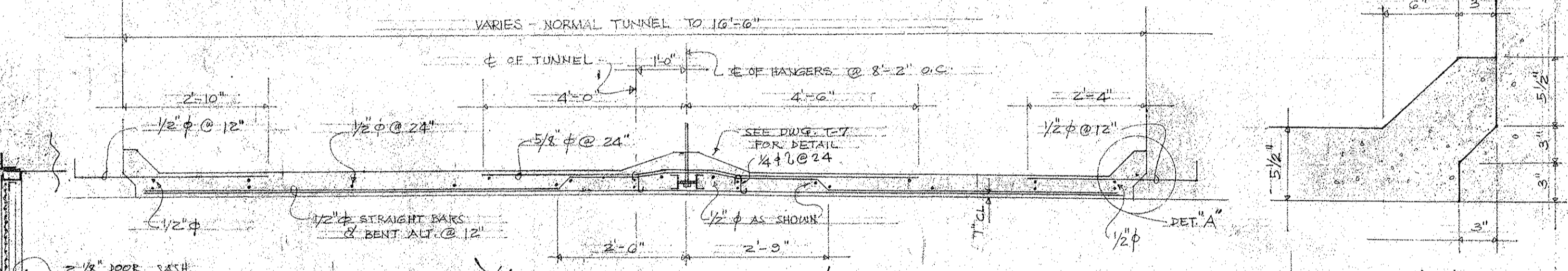


SECTION-B JAMB
SECTION-C MUNTIN
SECTION-D JAMB
SCALE 1/2" FULL SIZE

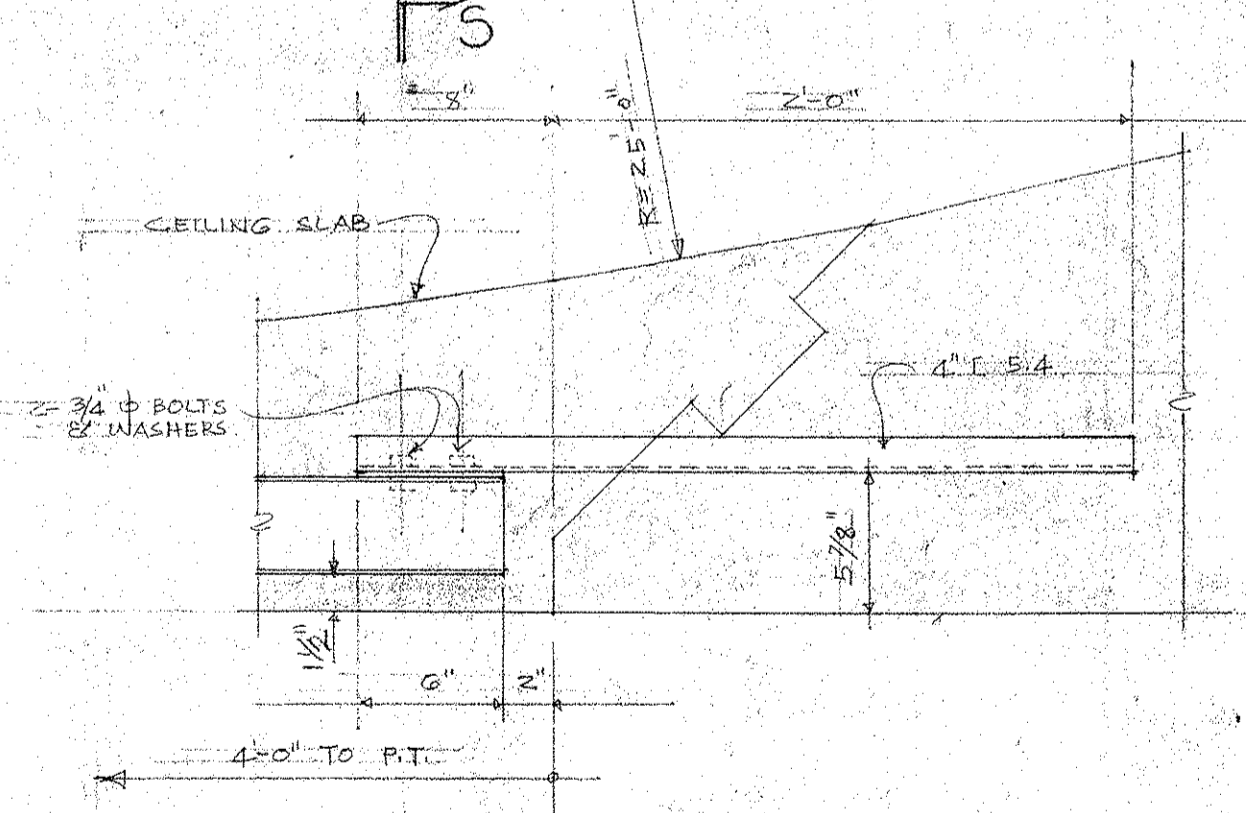


ELEVATION OF DOOR
SCALE 1" = 1'-0"

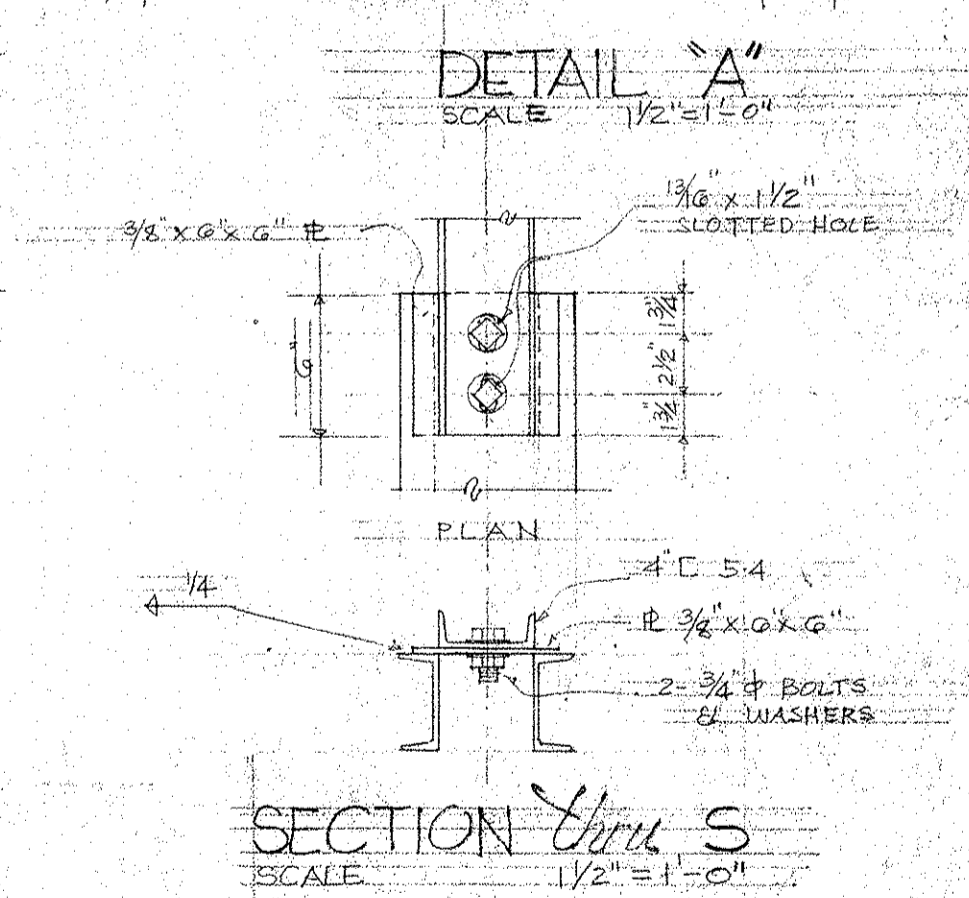
SECT. Thru L-L
SCALE 1" = 1'-0"



SECTION Thru CEILING SLAB & TRANSITION
FOR REINF. AT OPENINGS. SEE DRAWING T-7
SCALE 1/2" = 1'-0"



DETAIL AT END OF CEILING CHANNEL
KALIHI SIDE
(KANEHOE SIDE SIMILAR)
SCALE 1/2" = 1'-0"

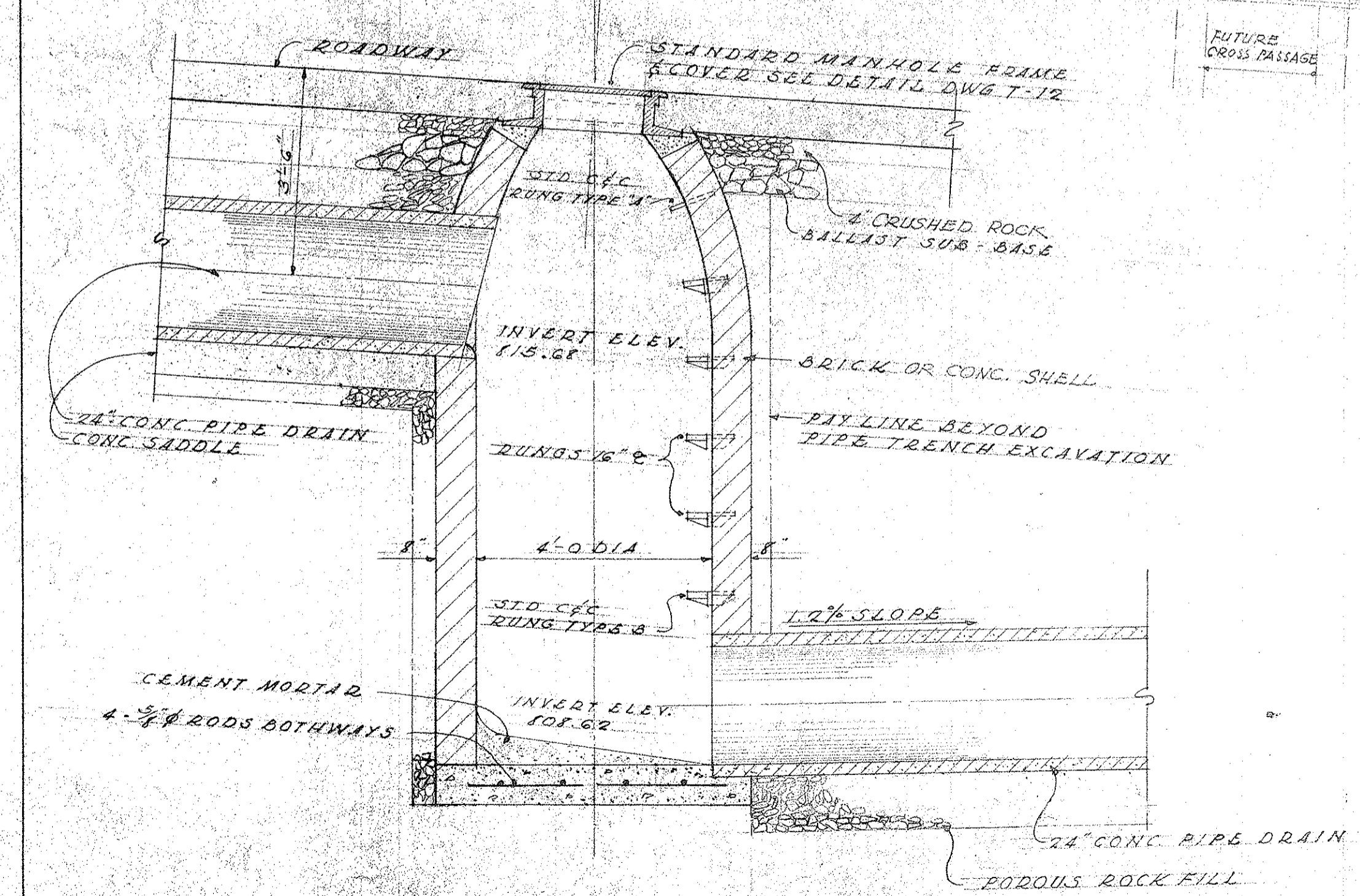
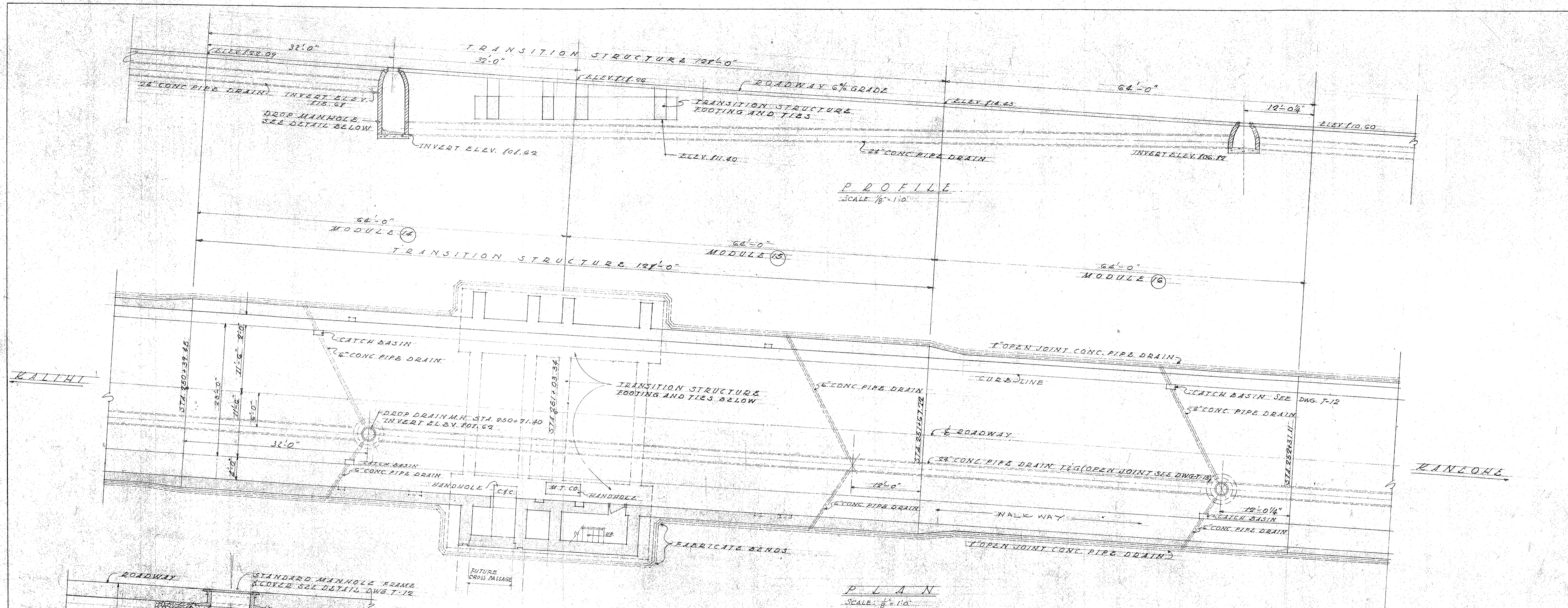


LAW & WILSON
ARCHITECTS & ENGINEERS
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

KALIHI TUNNEL
TUNNEL & SHAFT-TRANSITION
TUNNEL WALL
CEILING & MISC. DETAILS

ENGINEER L.B.W. W.L.W. DATE JULY 15, 1953
DRAFTSMAN A.R. CHECKED BY Y.T. W.L.W.
SCALE AS NOTED TRACER
APPROVED: *[Signature]* APPROVED: *[Signature]*
CHIEF ENGINEER BUREAU ENGINEER

W.S.	PROFILE	C.B.
CR. SEC.	F.B.	S.B.
W.M. BY:	F.W. BY:	S. BY:



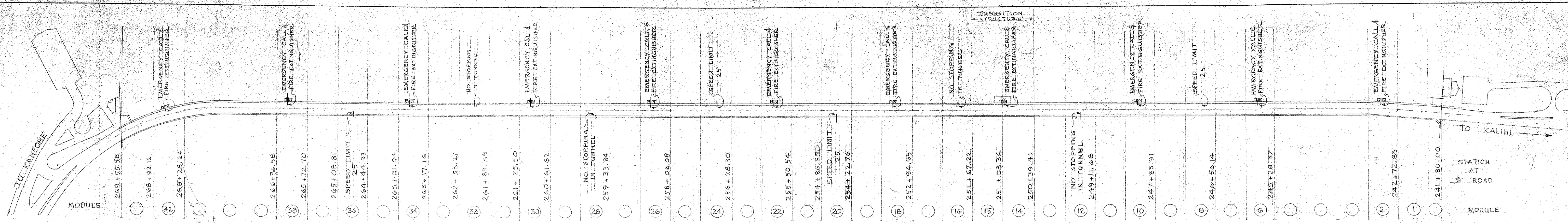
LAW & WILSON
ARCHITECTS & ENGINEERS
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

KALIHI TUNNEL
TUNNEL & SHAFT - TRANSITION
ROADWAY & DRAINAGE DETAILS

ENGINEER: L. B. W. DATE: JULY 15, 1953
DRAFTSMAN: E.H. CHECKED BY: J.T. [Signature]
SCALE: AS NOTED TRACER: E.H.
APPROVED: [Signature] APPROVED: [Signature]
CHIEF ENGINEER BUREAU ENGINEER

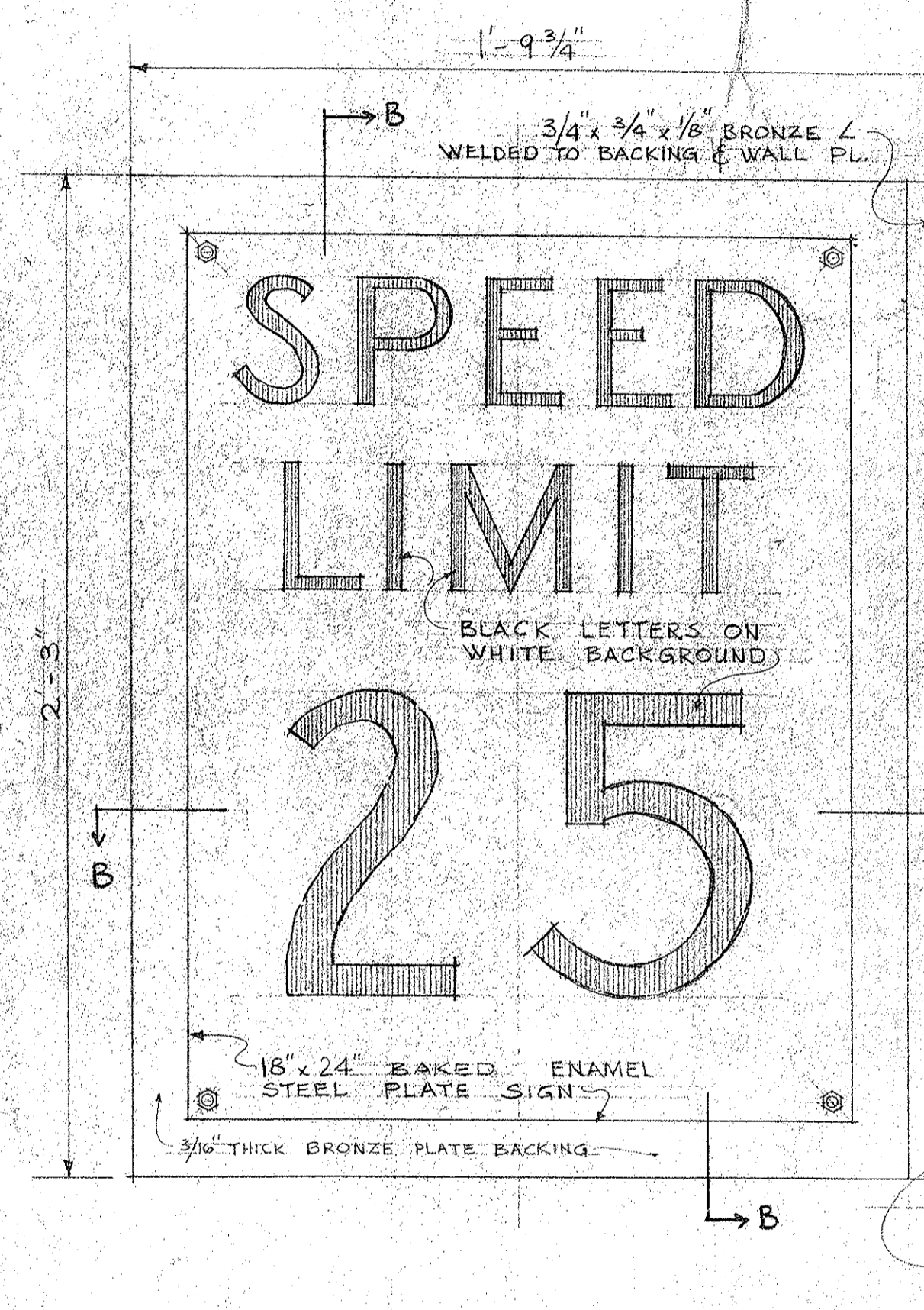
W.S.	PROFILE	C.B.
CR. SEC.	F.R.	S.B.
W.M. BY:	F.W. BY:	S. BY:

SECTION C JOB NO. 26-53 DWG. T-43

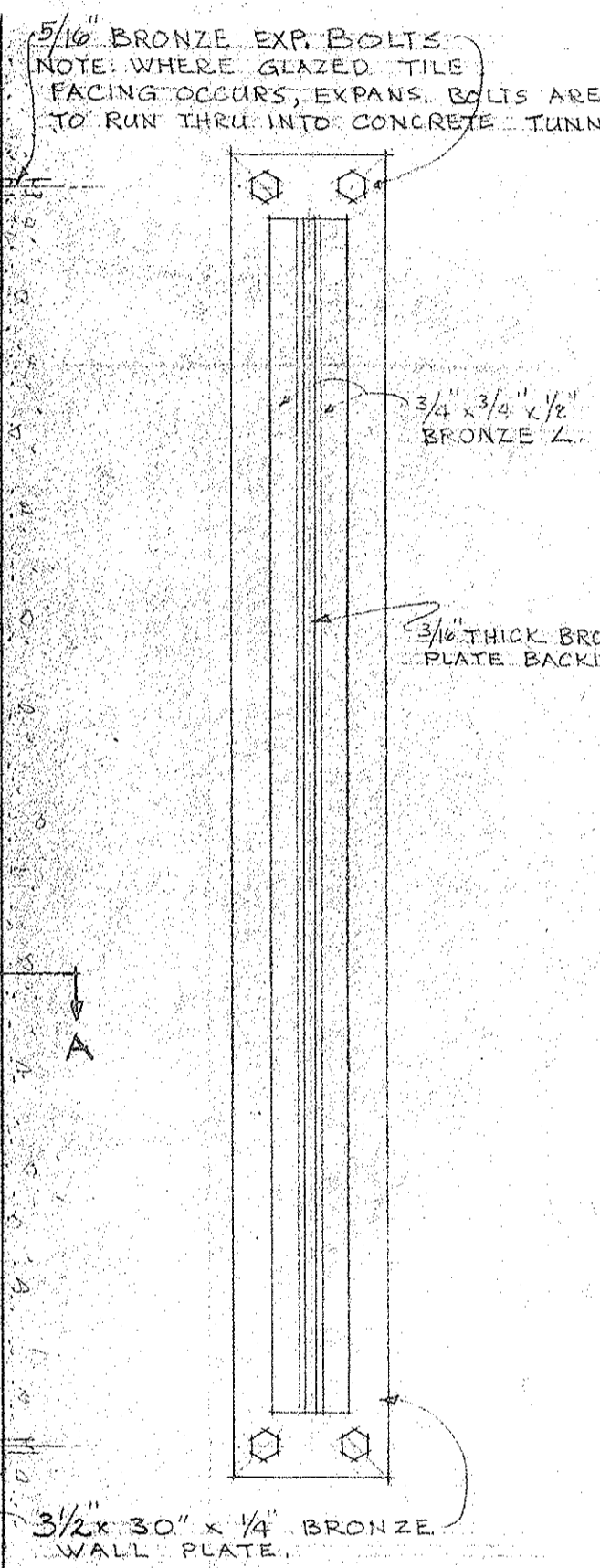


LOCATION PLAN OF SIGNS IN TUNNEL

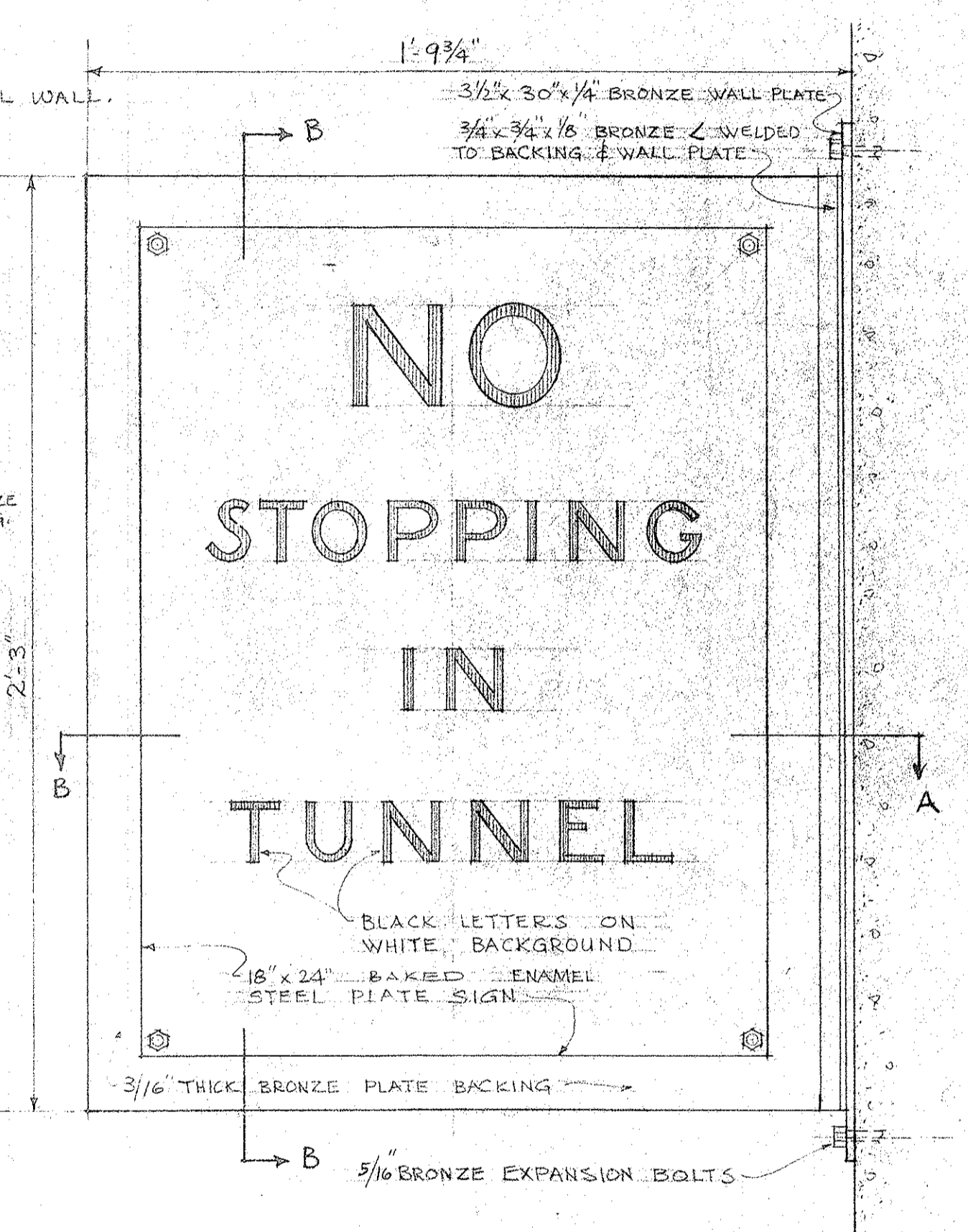
SCALE: 1" = 1'-0"



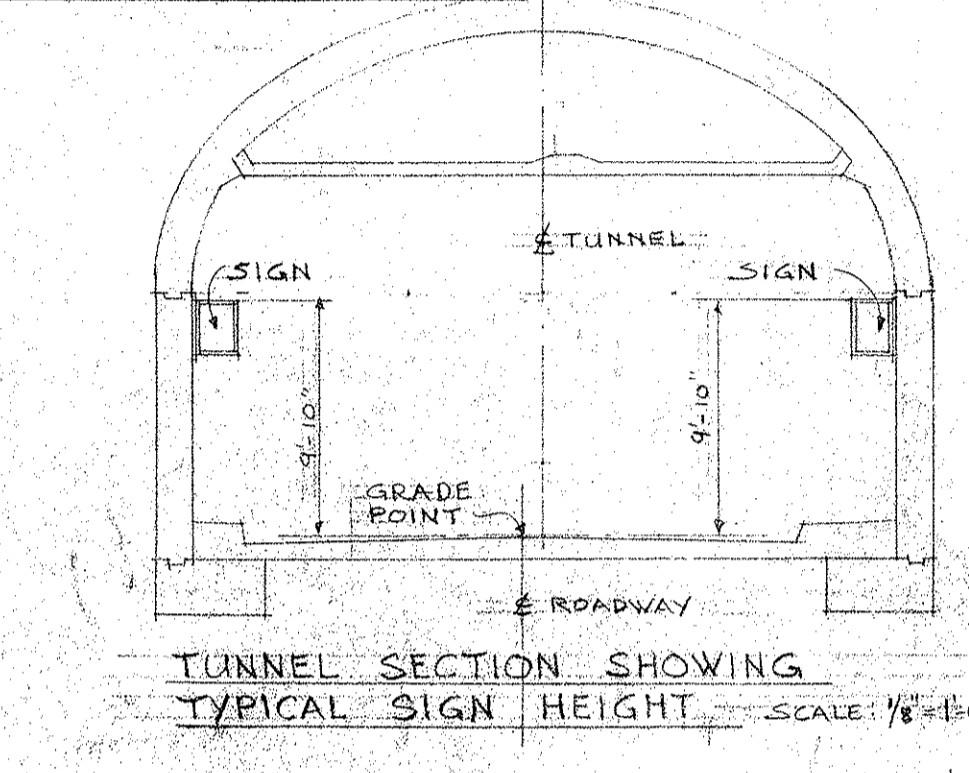
FRONT ELEVATION
18" x 24" SIGN ONE SIDE ONLY
SCALE: 3" = 1'-0"



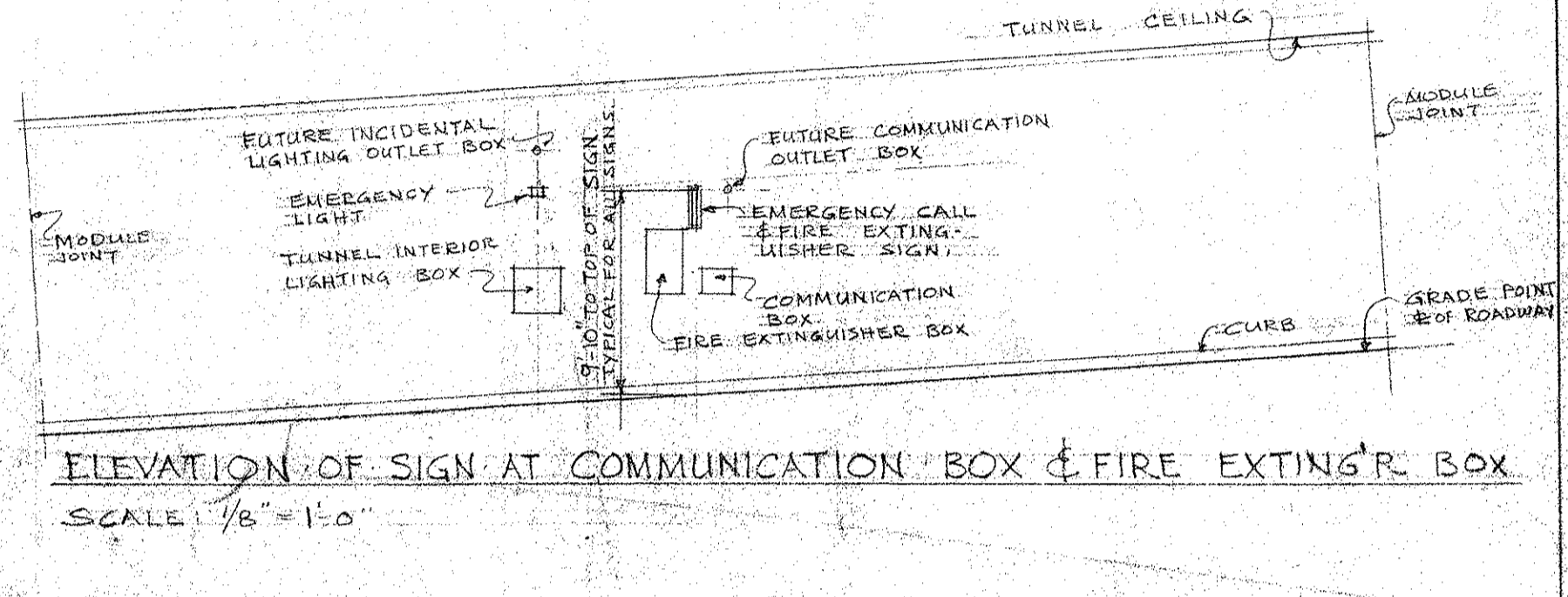
END ELEVATION
FOR 18" x 24" SIGNS



FRONT ELEVATION
18" x 24" SIGN ONE SIDE ONLY
SCALE: 3" = 1'-0"



TUNNEL SECTION SHOWING
TYPICAL SIGN HEIGHT SCALE: 1/8" = 1'-0"



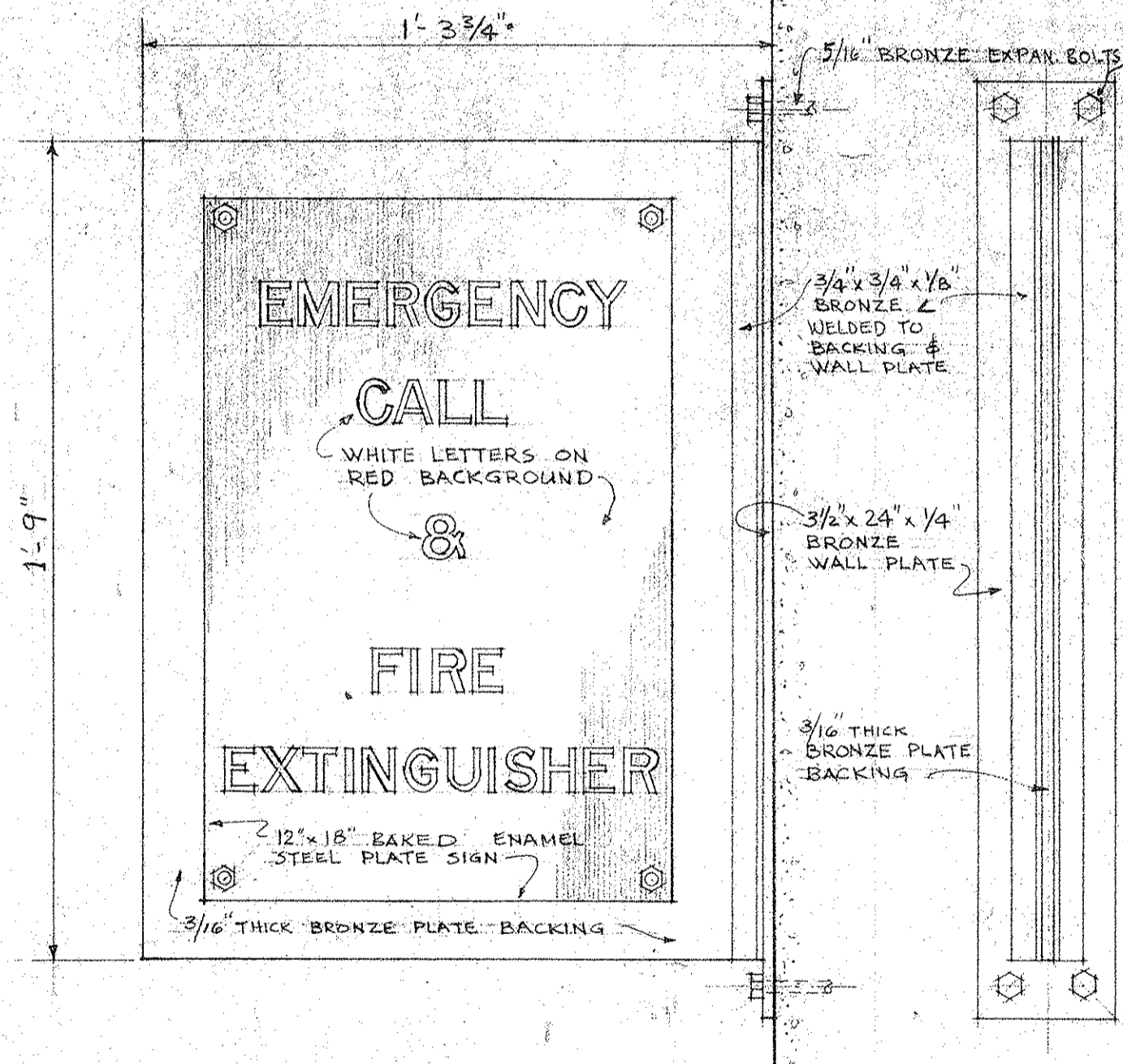
ELEVATION OF SIGN AT COMMUNICATION BOX & FIRE EXTINGUISHER BOX
SCALE: 1/8" = 1'-0"

GENERAL NOTES

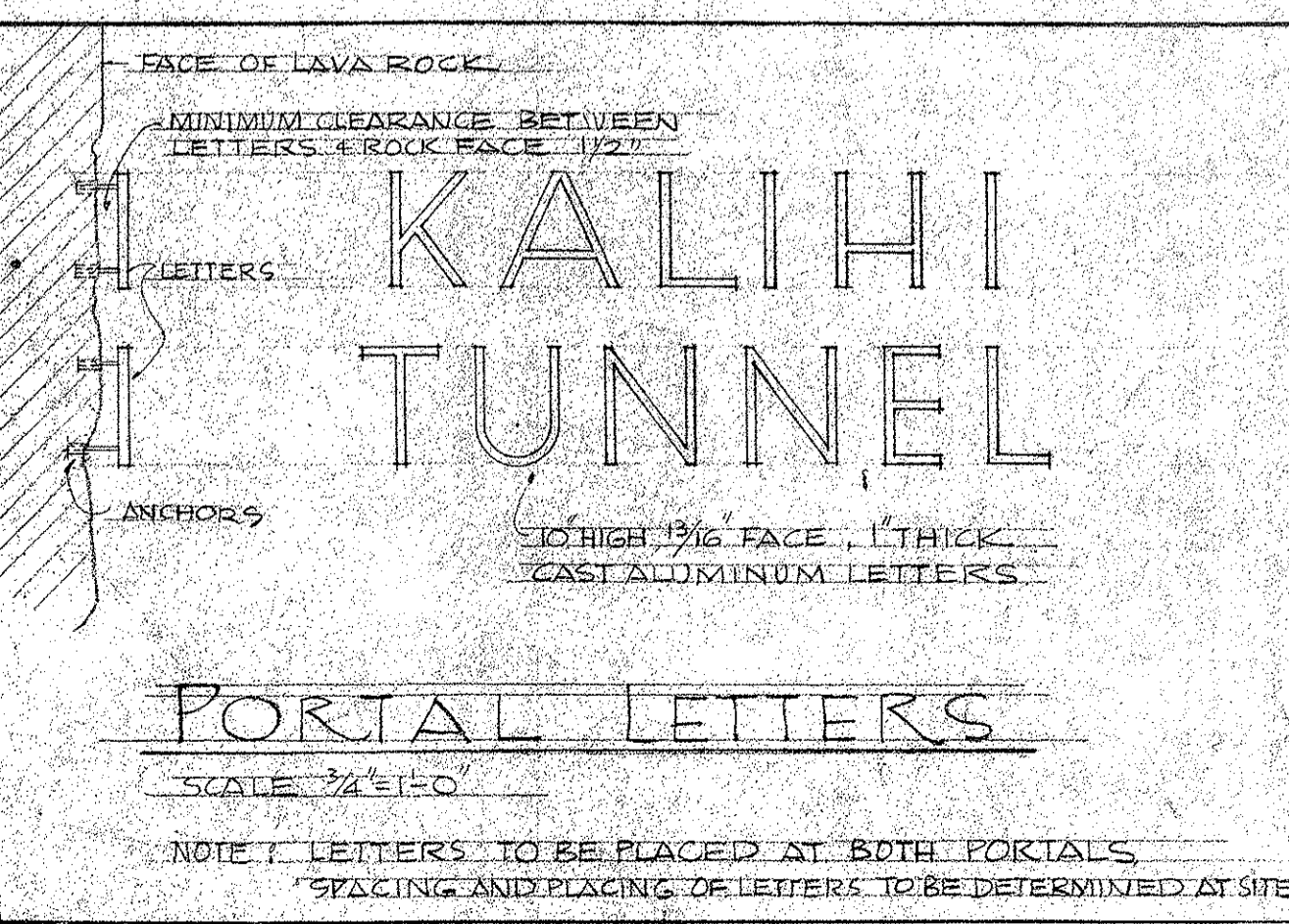
TOTAL NUMBER OF SIGNS REQUIRED:

- 4 SPEED LIMIT 25 (SIGN ON ONE SIDE ONLY)
- 4 NO STOPPING IN TUNNEL (SIGN ON ONE SIDE ONLY)
- 11 EMERGENCY CALL & FIRE EXTINGUISHER (SIGNS ON TWO SIDES)

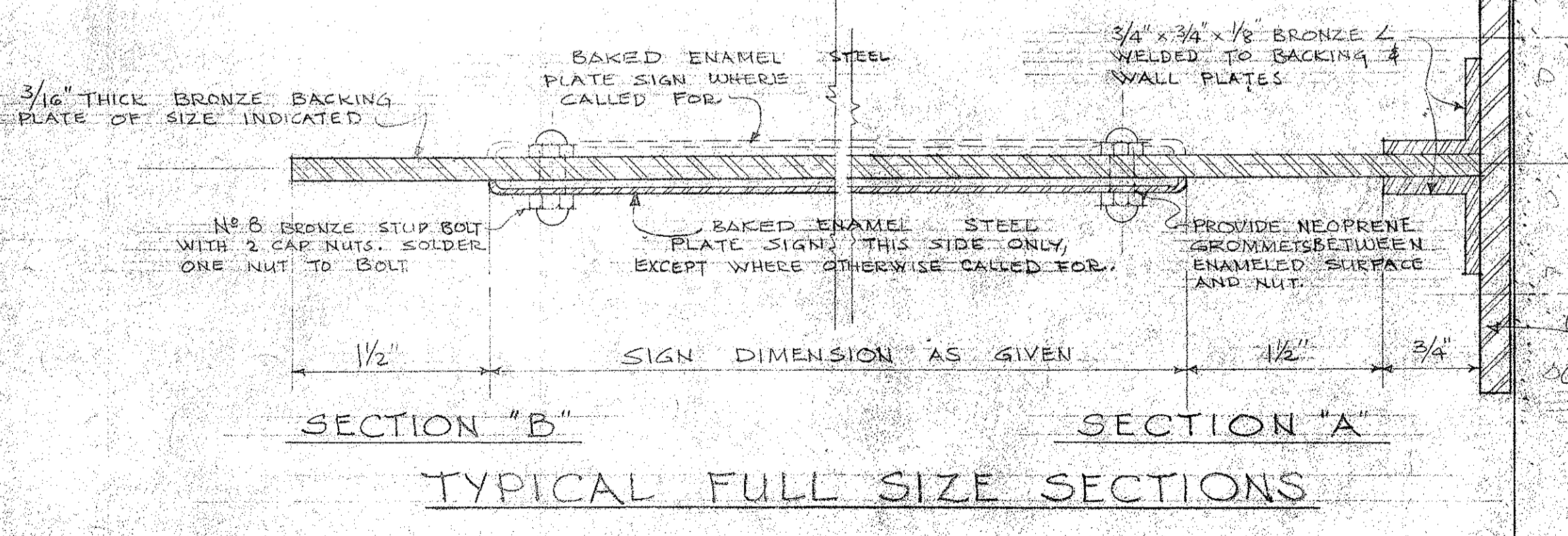
ALL LETTERS AND FIGURES SHALL BE OF SIZE AND LAYOUT SHOWN AND SHALL CONFORM WITH "STANDARD ALPHABETS FOR HIGHWAY SIGNS" AS SET FORTH BY THE PUBLIC ROADS ADMINISTRATION, FEDERAL WORKS AGENCY, SERIES "C" LETTERS AND SERIES "D" NUMERALS SHALL BE USED.



FRONT ELEVATION END ELEVATION
12" x 18" SIGNS - ONE ON EACH SIDE OF PLATE FOR 12" x 18" SIGNS
SCALE: 3" = 1'-0"



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



SECTION "B" SECTION "A"
TYPICAL FULL SIZE SECTIONS

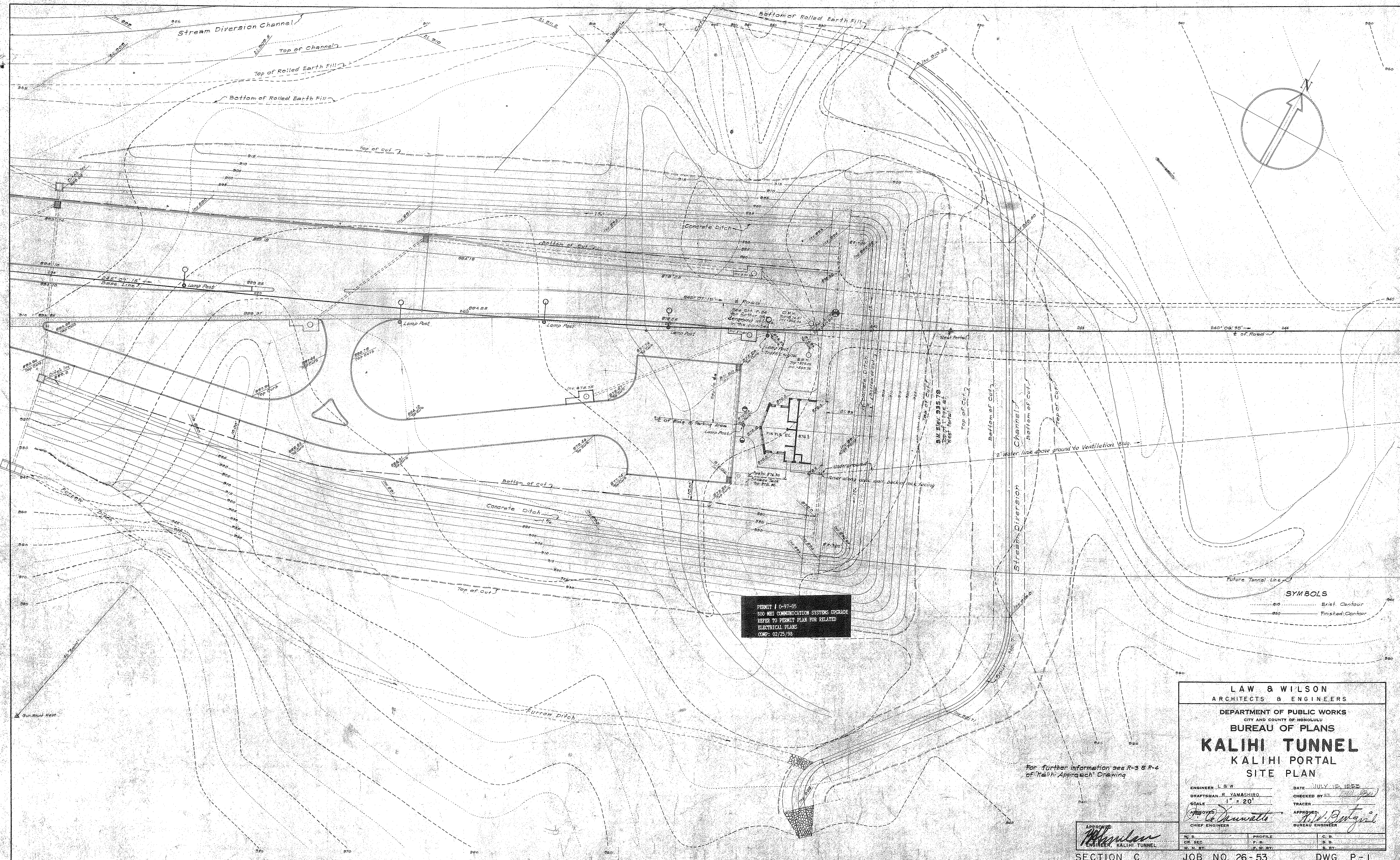
3/4" WIDE BY 1/4" THICK BRONZE WALL PLATE FASTENED TO TUNNEL WALL WITH 5/16" BRONZE EXPANSION BOLTS. WHERE GLAZED TILE FACING OCCURS, EXTEND EXPANSION BOLTS THRU INTO CONCRETE TUNNEL WALL.

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DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

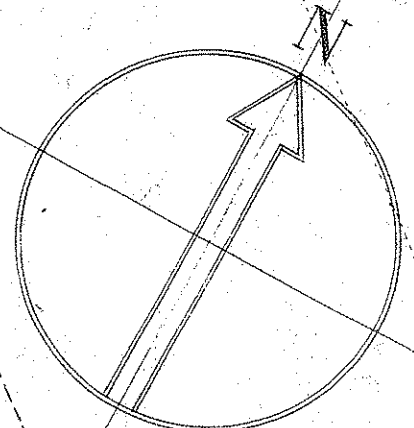
KALIHU TUNNEL
TUNNEL & SHAFT-TRANSITION
TUNNEL & PORTAL SIGNS

ENGINEER: L.W. DATE: JULY 19, 1953
DRAFTSMAN: A.S. CHECKED BY: J.C. [Signature]
SCALE: AS NOTED TRACER:
APPROVED: [Signature] CHIEF ENGINEER APPROVED: [Signature] BUREAU ENGINEER

W. S.	PROFILE	C. B.
CR. SEC.	F. S.	S. B.
W. M. BY:	F. W. BY:	S. BY:



PERMIT J 0-97-05
 300 MH COMMUNICATION SYSTEMS UPGRADE.
 REFER TO PERMIT PLAN FOR RELATED
 ELECTRICAL PLANS
 CYMP: 02/25/98



SYMBOLS
 - - - - - Exist. Contour
 ———— Finished Contour

For further information see R-3 & R-4
 of 'Kalihi Approach' Drawing

LAW & WILSON
 ARCHITECTS & ENGINEERS

DEPARTMENT OF PUBLIC WORKS
 CITY AND COUNTY OF HONOLULU
 BUREAU OF PLANS

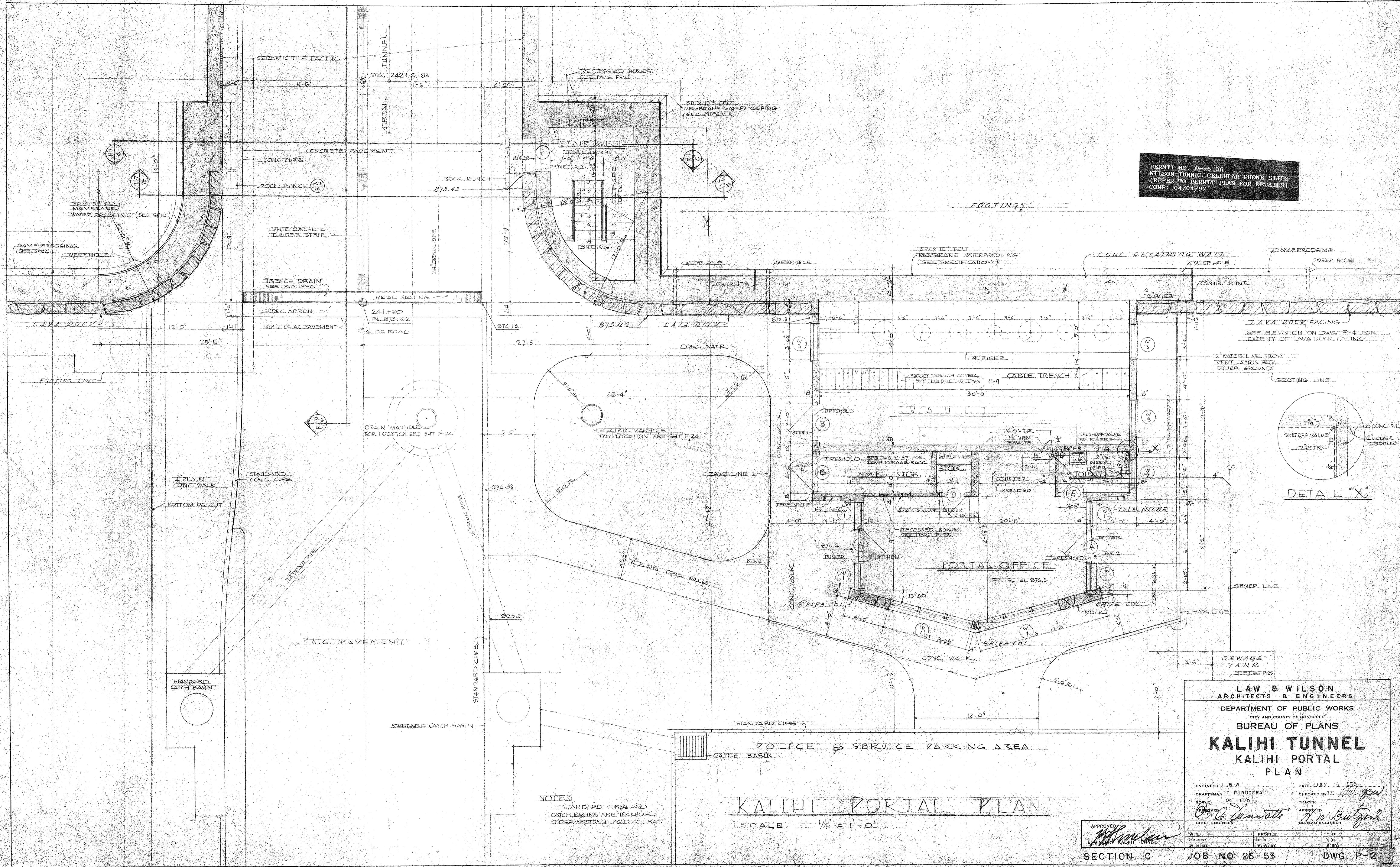
KALIHI TUNNEL
 KALIHI PORTAL
 SITE PLAN

ENGINEER: L. W.	DATE: JULY 12, 1952
DRAFTSMAN: R. YAMASHIRO	CHECKED BY: J. [Signature]
SCALE: 1" = 20'	TRACER:
APPROVED: [Signature]	APPROVED: [Signature]
CHIEF ENGINEER	BUREAU ENGINEER

W. S.	PROFILE	C. B.
CR. SEC.	F. B.	S. B.
W. N. BY.	P. W. BY.	S. BY.

SECTION C JOB NO 26-53 DWG P-1

PERMIT NO. 0-96-36
 WILSON TUNNEL CELLULAR PHONE SITES
 (REFER TO PERMIT PLAN FOR DETAILS)
 COMP: 04/04/97



NOTE:
 STANDARD CURBS AND
 CATCH BASINS ARE INCLUDED
 UNDER APPROACH ROAD CONTRACT

KALIHI PORTAL PLAN

SCALE 1/4" = 1'-0"

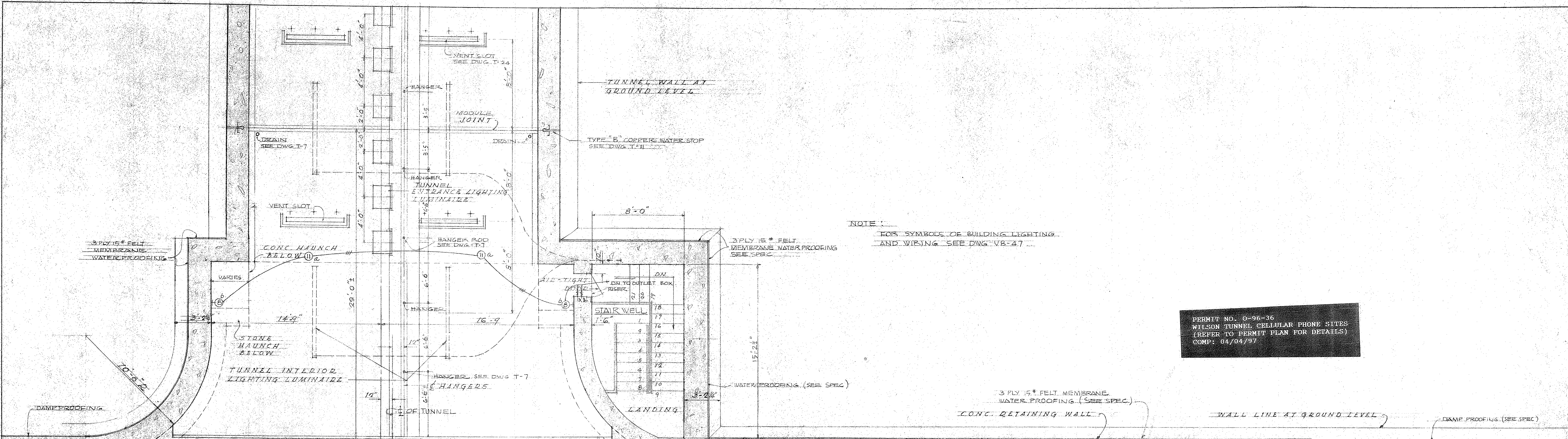
LAW & WILSON
 ARCHITECTS & ENGINEERS
 DEPARTMENT OF PUBLIC WORKS
 CITY AND COUNTY OF HONOLULU
 BUREAU OF PLANS

KALIHI TUNNEL KALIHI PORTAL PLAN

ENGINEER: L. S. W. DATE: JULY 15, 1953
 DRAFTSMAN: T. FURUDERA CHECKED BY: *[Signature]*
 SCALE: 1/4" = 1'-0" TRACER:
 APPROVED: *[Signature]* APPROVED: *[Signature]*
 CHIEF ENGINEER BUREAU ENGINEER

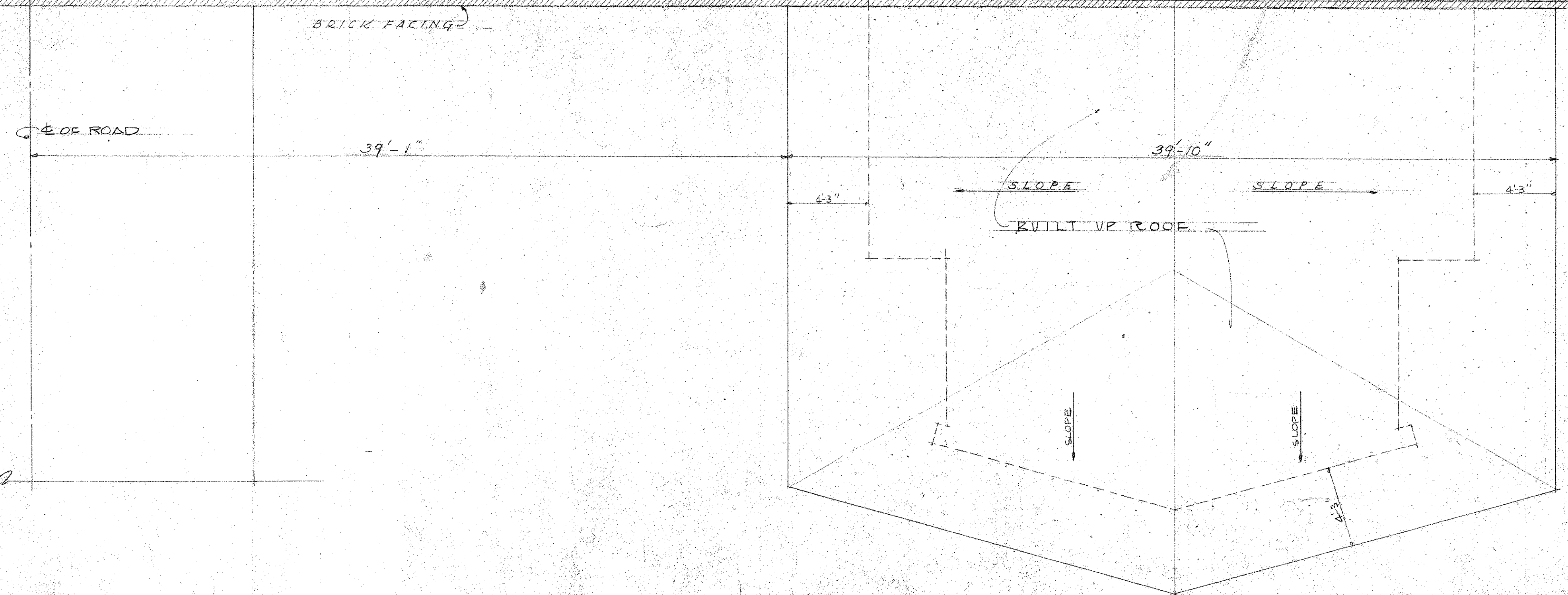
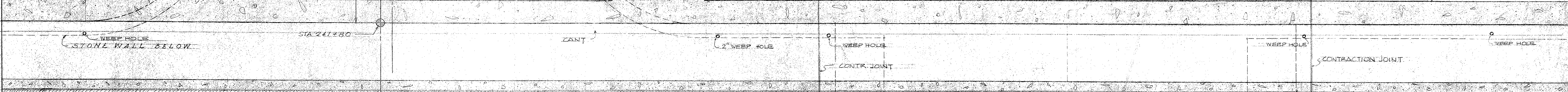
W.S.	PROFILE	C.B.
C.R. SEC.	F.B.	S.B.
W.M. BY:	F.W. BY:	S. BY:

SECTION C JOB NO. 26-53 DWG. P-2



NOTE:
FOIS SYMBOLS OF BUILDING LIGHTING
AND WIRING SEE DWG. VB-47

PERMIT NO. 0-96-36
WILSON TUNNEL CELLULAR PHONE SITES
(REFER TO PERMIT PLAN FOR DETAILS)
COMP. 04/04/97



AIR SHAFT FLOOR PLAN - KALIHU PORTAL
SCALE 1/4" = 1'-0"

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ARCHITECTS & ENGINEERS
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIHU TUNNEL
KALIHU PORTAL
PLAN ABOVE TUNNEL CEILING

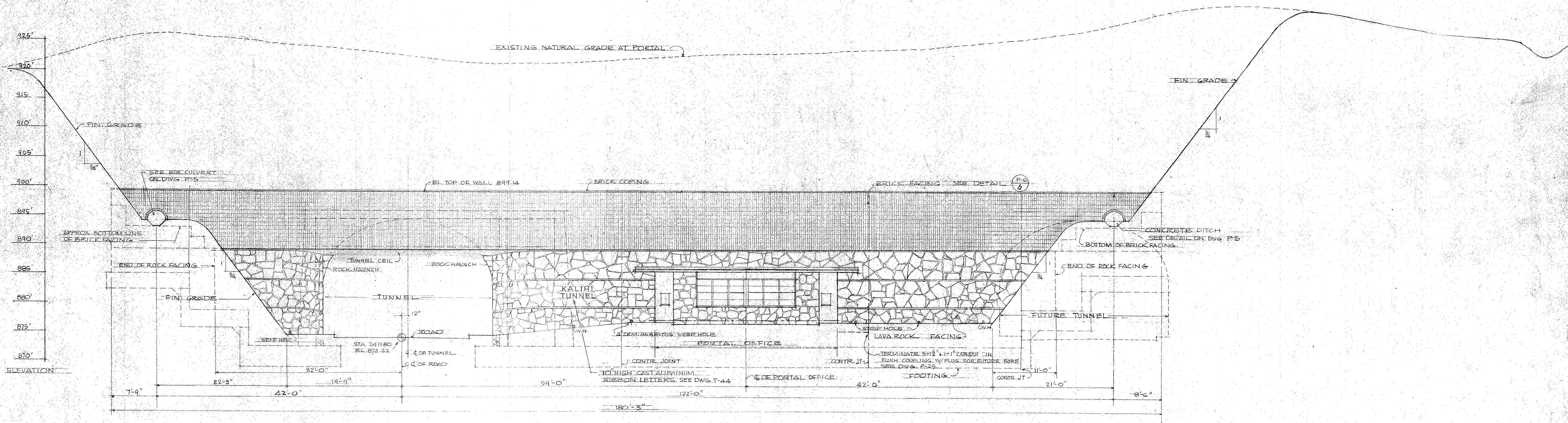
ENGINEER: L. B. W.
DRAFTSMAN: F. KANEHIRO
SCALE: 1/4" = 1'-0"
APPROVED: *[Signature]*
CHIEF ENGINEER

DATE: JULY 15, 1993
CHECKED BY: *[Signature]*
TRACER:
APPROVED: *[Signature]*
BUREAU ENGINEER

W. S.	PROFILE	C. B.
CR. SEC.	F. B.	S. B.
W. M. BY	P. W. BY	S. BY

APPROVED:
[Signature]
ENGINEER, KALIHU TUNNEL

SECTION C JOB NO 26-53 DWG. P-3



KALIHI PORTAL ELEVATION
SCALE 1/8" = 1'-0"

PERMIT NO. 0-96-36
WILSON TUNNEL CELLULAR PHONE SITES
(REFER TO PERMIT PLAN FOR DETAILS)
COMP: 04/04/97

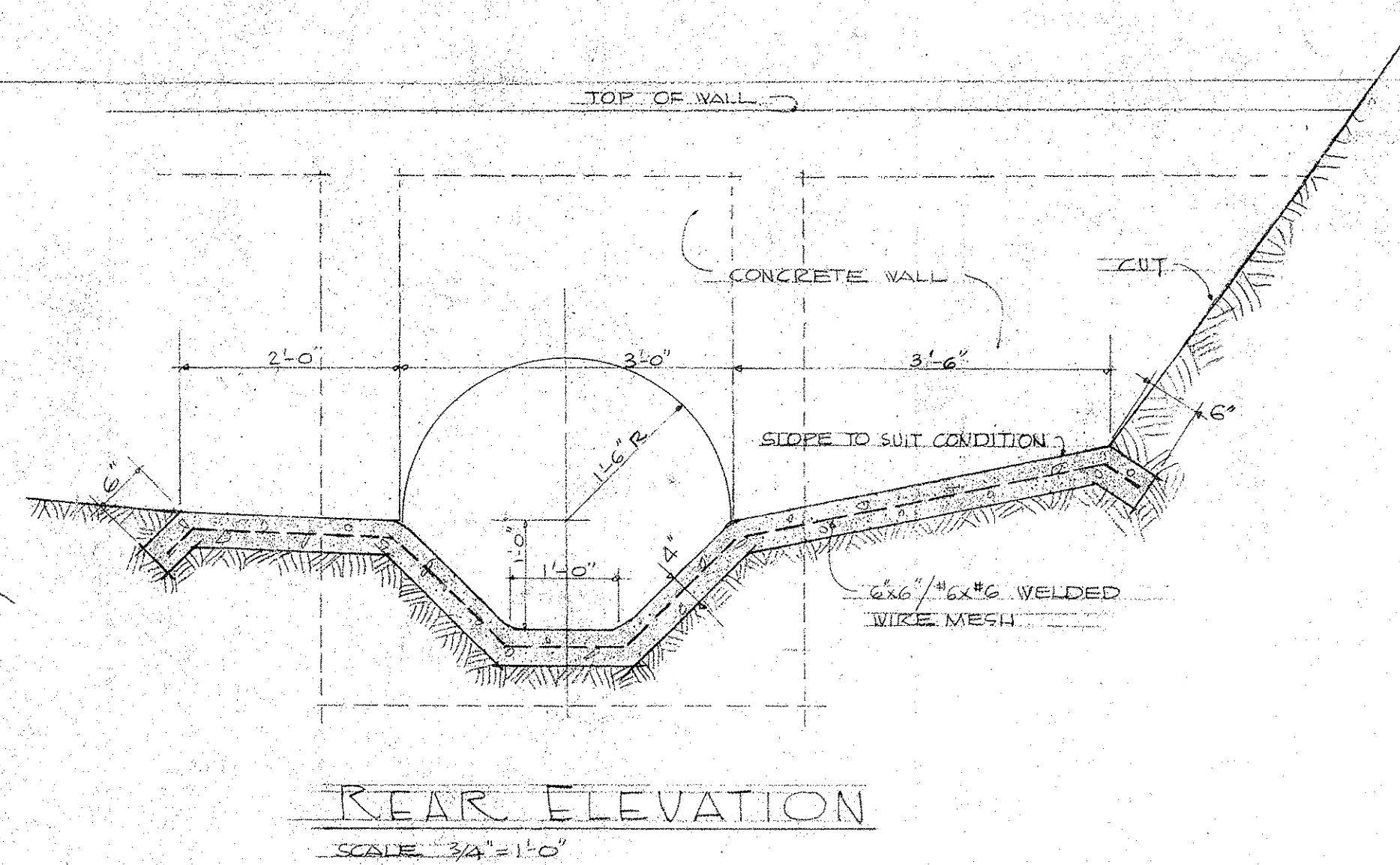
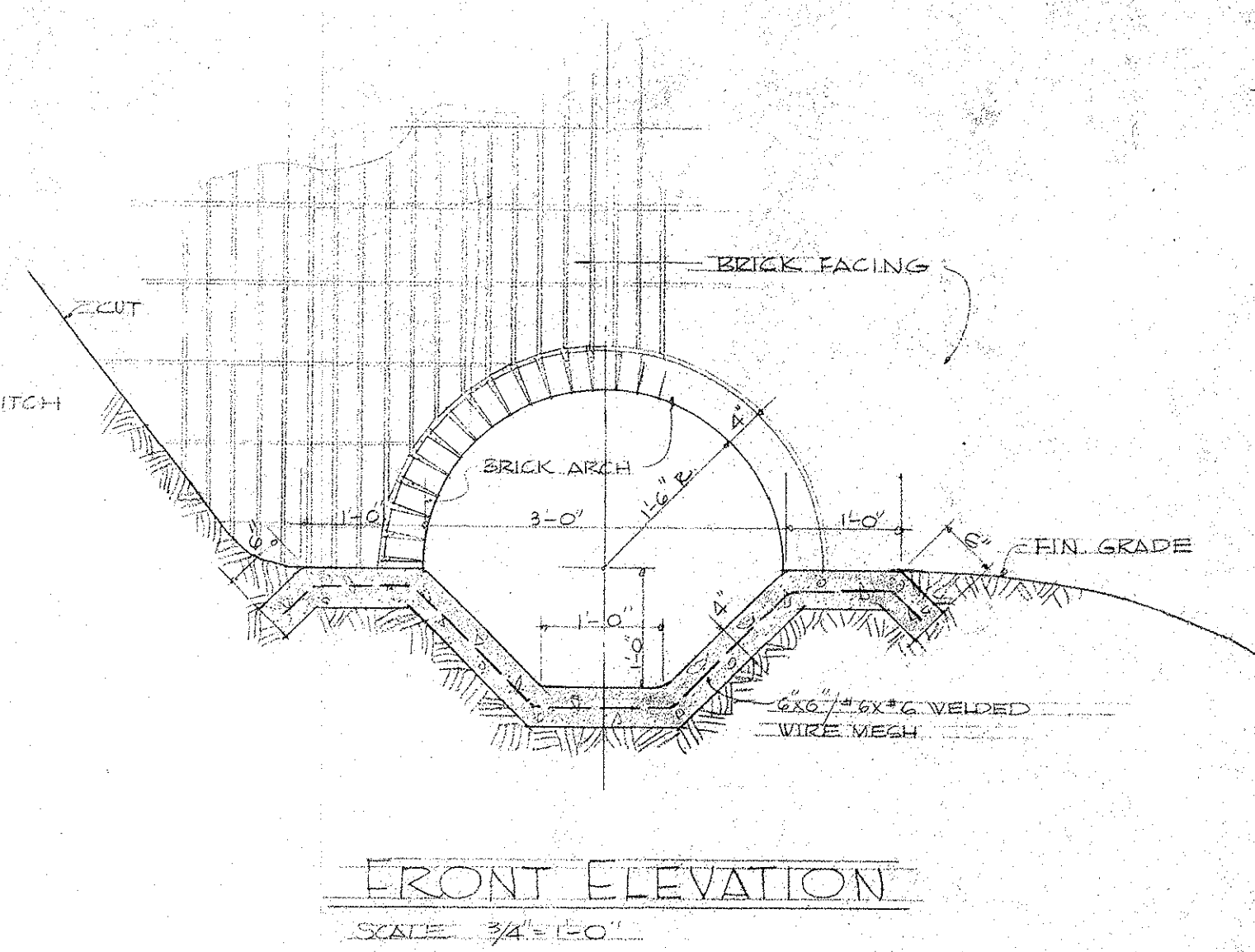
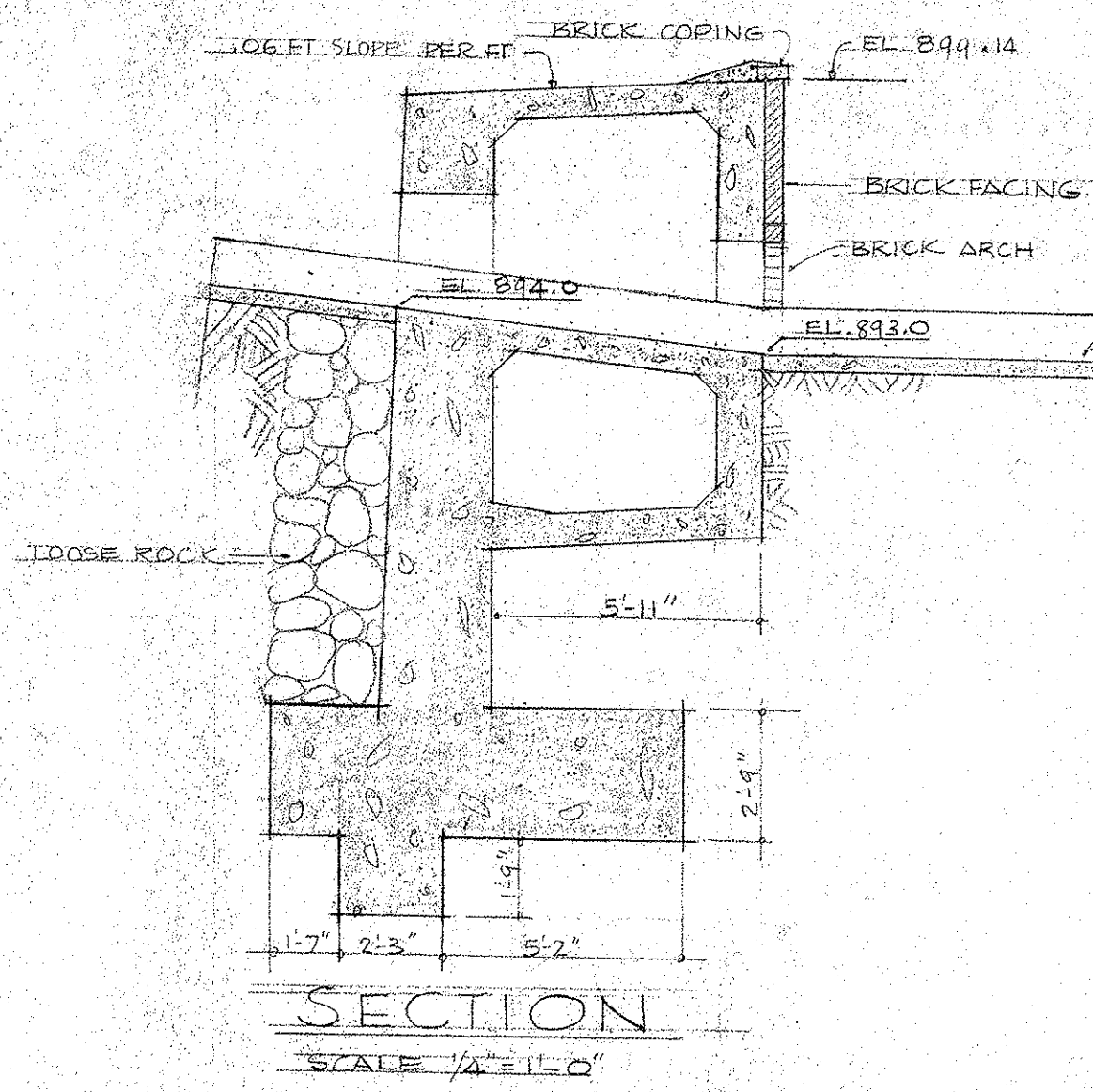
LAW & WILSON
ARCHITECTS & ENGINEERS
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIHI TUNNEL
KALIHI PORTAL
ELEVATION

ENGINEER: L. B. W. DATE: JULY 15, 1983
DRAFTSMAN: T. FURUDERA CHECKED BY: *[Signature]*
SCALE: 1/8" = 1'-0" TRACER:
APPROVED: *[Signature]* APPROVED: *[Signature]*
CHIEF ENGINEER BUREAU ENGINEER

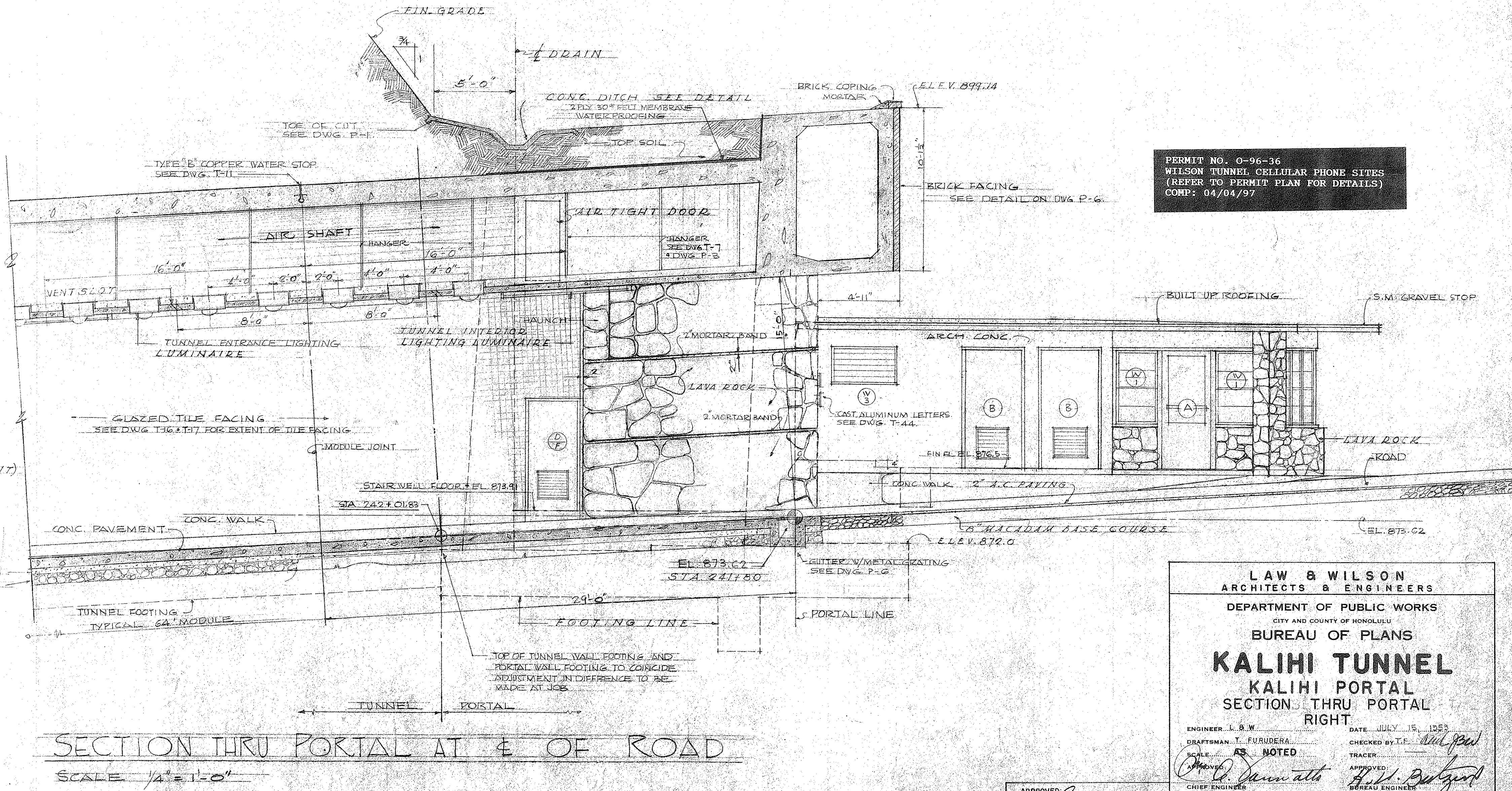
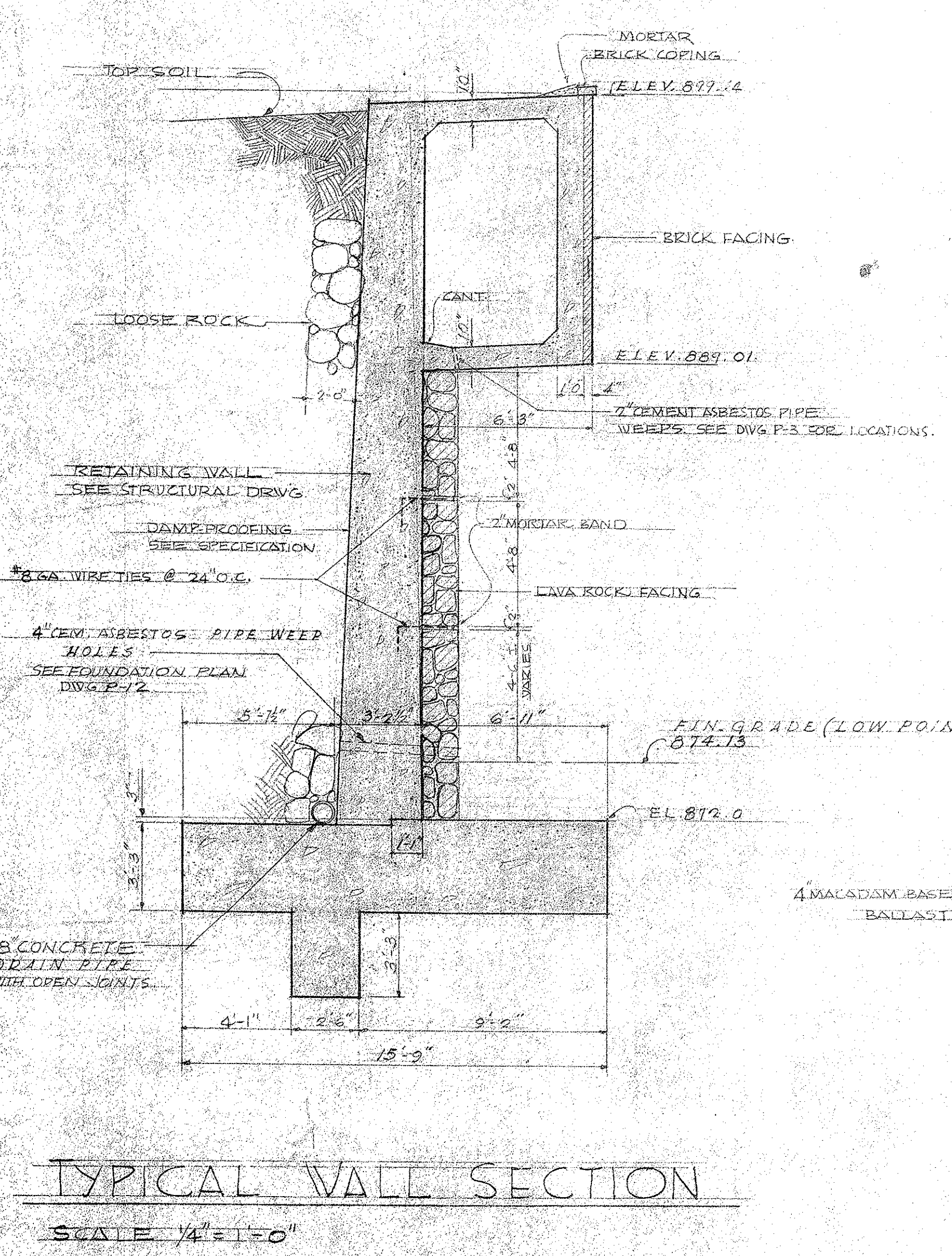
W. S.	PROFILE	C. B.
CR. SEC.	P. S.	S. P.
W. M. BY:	P. W. BY:	S. BY:

APPROVED
[Signature]
ENGINEER, KALIHI TUNNEL

SECTION C JOB NO. 26-53 DWG. P-4



DETAIL OF BOX CULVERT THRU PORTAL AND OPEN CONC. DITCH



PERMIT NO. 0-96-36
 WILSON TUNNEL CELLULAR PHONE SITES
 (REFER TO PERMIT PLAN FOR DETAILS)
 COMP: 04/04/97

TYPICAL WALL SECTION
 SCALE 1/4"=1'-0"

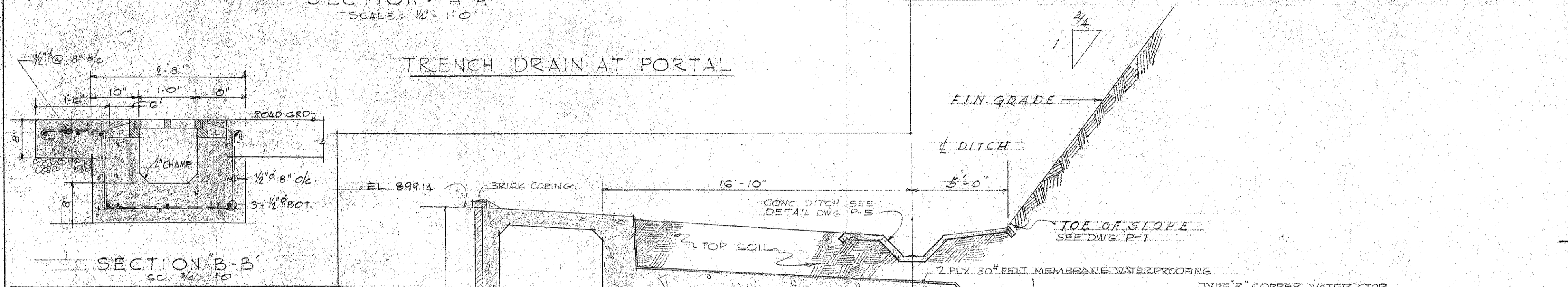
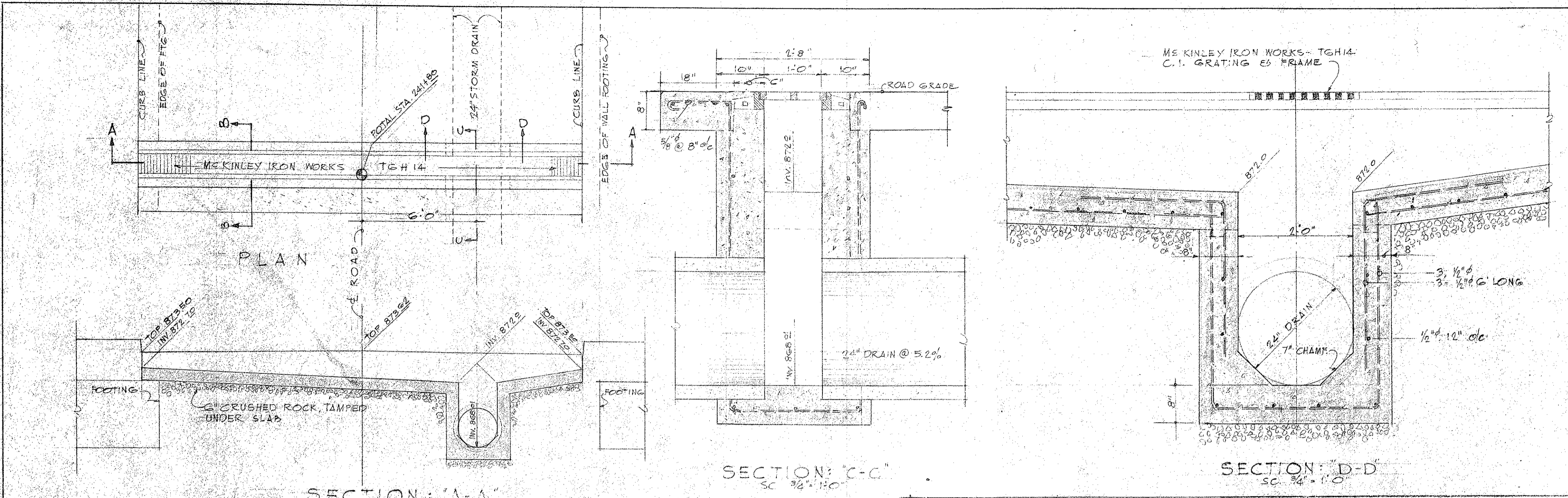
SECTION THRU PORTAL AT E OF ROAD
 SCALE 1/4"=1'-0"

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 DEPARTMENT OF PUBLIC WORKS
 CITY AND COUNTY OF HONOLULU
 BUREAU OF PLANS
KALIHI TUNNEL
 KALIHI PORTAL
 SECTION THRU PORTAL
 RIGHT

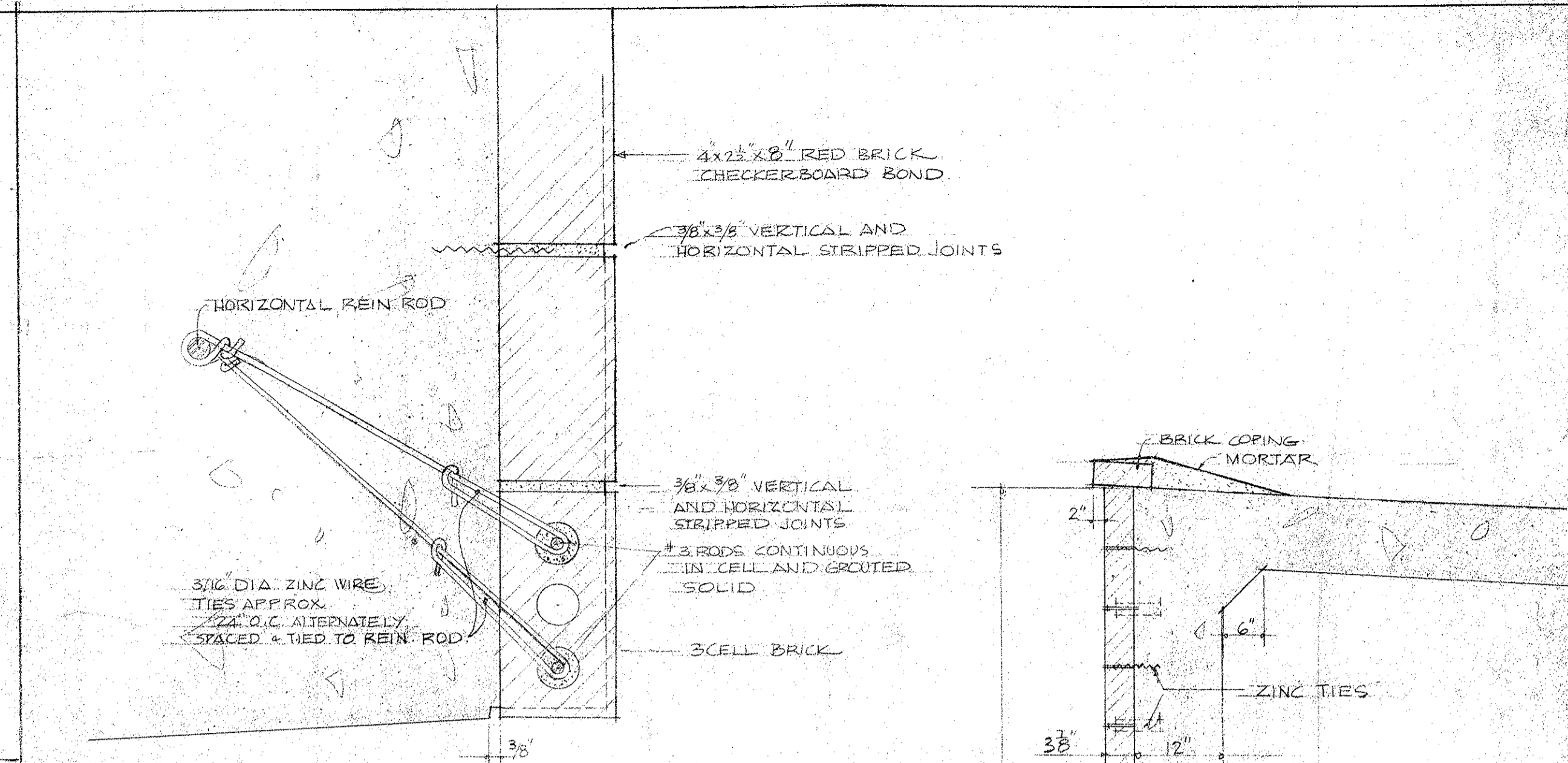
ENGINEER: L. S. W.
 DRAFTSMAN: J. FUNDARER
 SCALE: AS NOTED
 CHECKED BY: T. E. TRACER
 APPROVED: H. W. BURGERD
 BUREAU ENGINEER

DATE: JULY 15, 1953

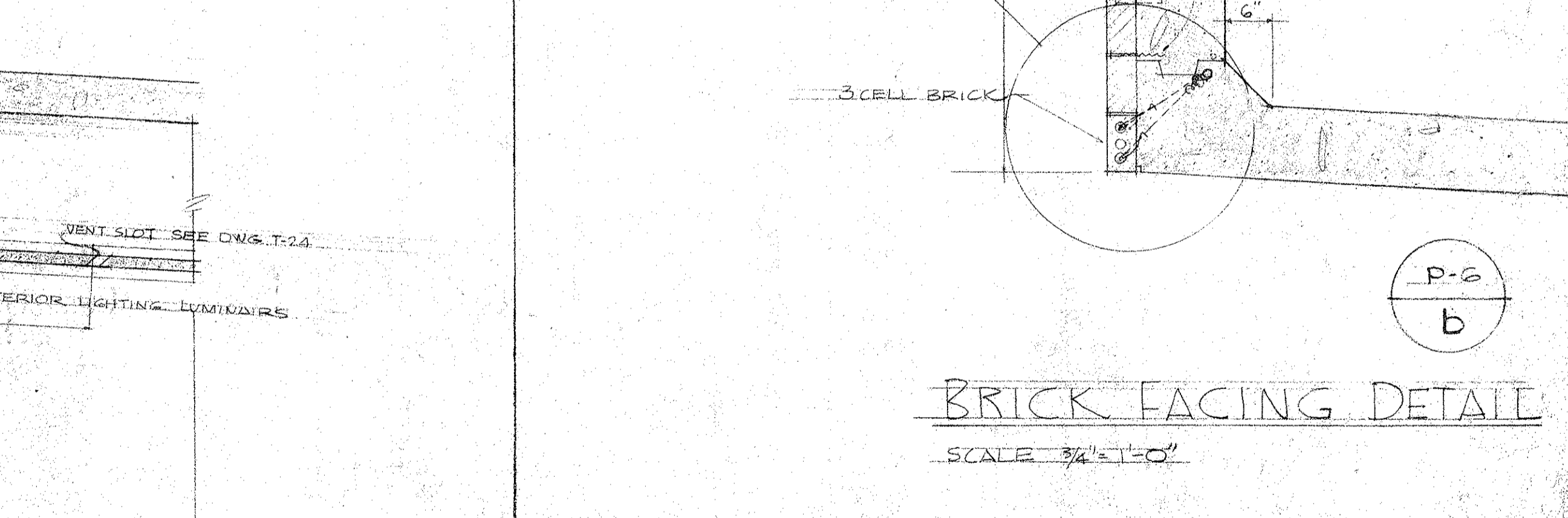
APPROVED	PROFILE	C. B.
ENGINEER, KALIHI TUNNEL	F. B.	S. B.
	F. W. BY	S. BY



PORTAL SECTION
SCALE 1/4" = 1'-0"
SEE DWG. P-2



DETAIL
SCALE 3" = 1'-0"
P-6
b1



BRICK FACING DETAIL
SCALE 3/4" = 1'-0"
P-6
b

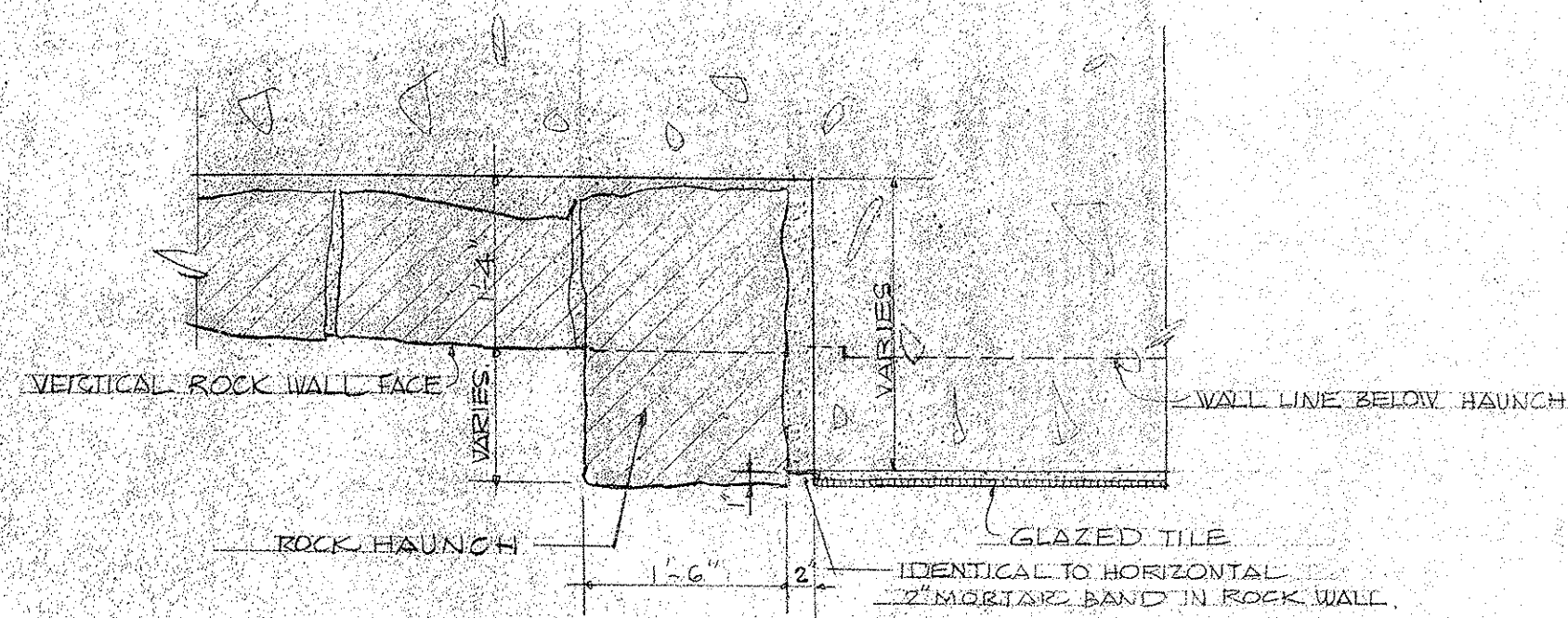
PERMIT NO. 0-96-36
WILSON TUNNEL CELLULAR PHONE SITES
(REFER TO PERMIT PLAN FOR DETAILS)
COMP. 04/04/97

LAW & WILSON
ARCHITECTS & ENGINEERS
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIHI TUNNEL
KALIHI PORTAL
SECTION THRU PORTAL
LEFT

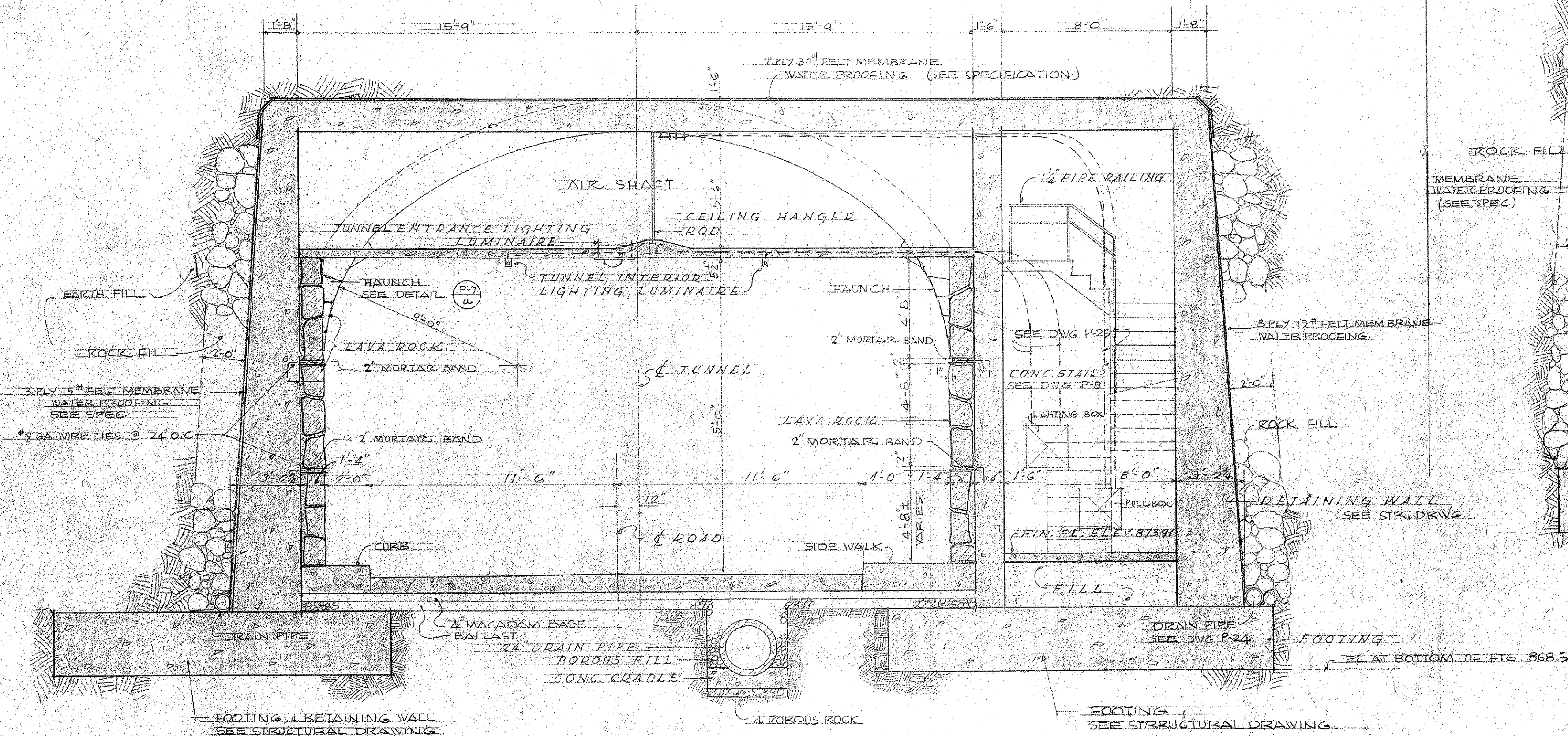
ENGINEER: L. S. W. DATE: JULY 15, 1953
DRAFTSMAN: T. FURUDERA CHECKED BY: [Signature]
SCALE: AS NOTED TRACER:
APPROVED: [Signature] CHIEF ENGINEER
APPROVED: [Signature] BUREAU ENGINEER

W. S.	PROFILE	C. B.
CR. SEC.	F. B.	S. B.
W. M. BY:	F. W. BY:	S. BY:

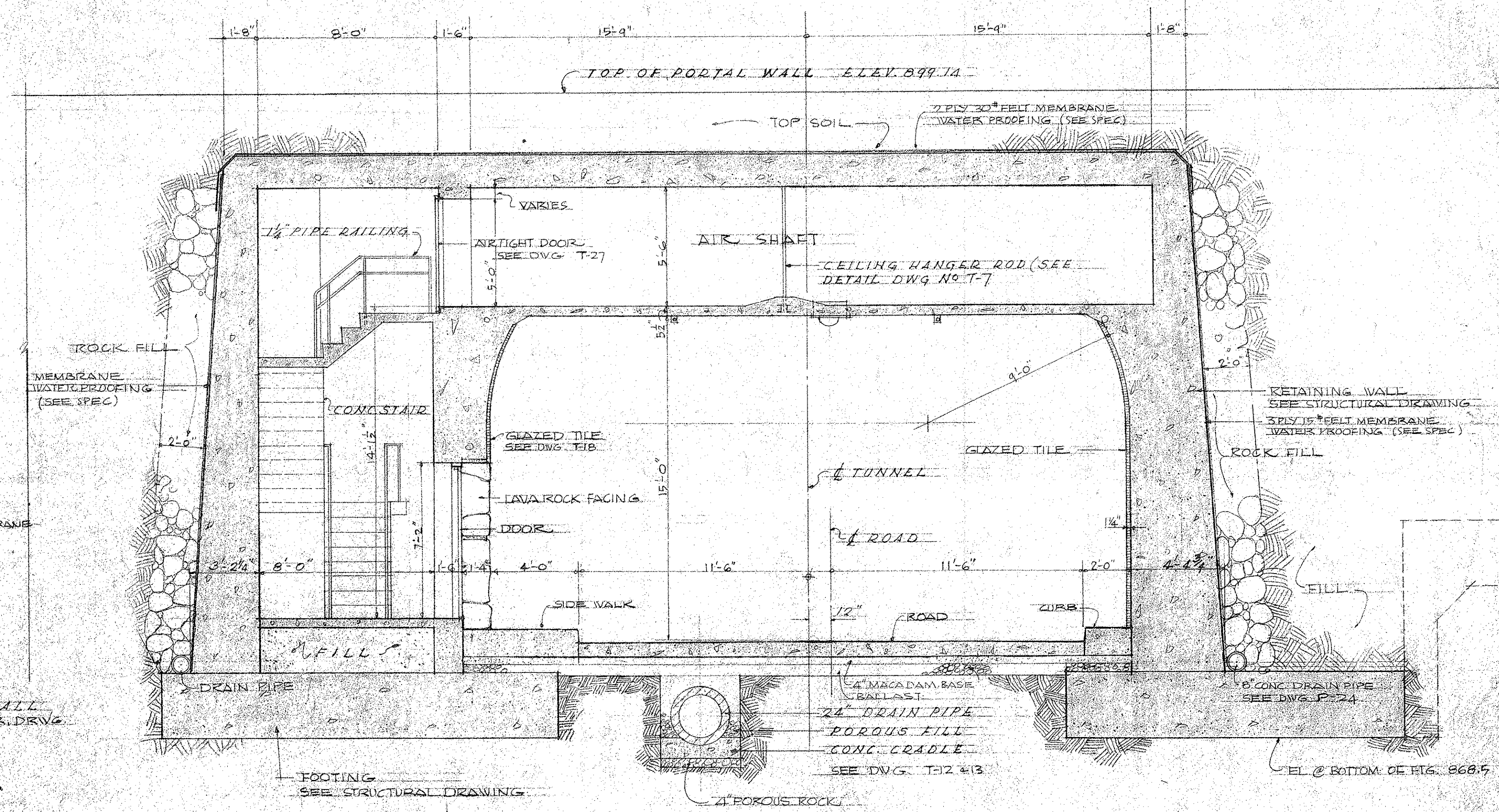
SECTION C JOB NO. 26-53 DWG. P-6



ROCK HAUNCH DETAIL (P-7 a)
SCALE 3/4" = 1'-0"



SECTION (P-7 b)
SCALE 1/4" = 1'-0"



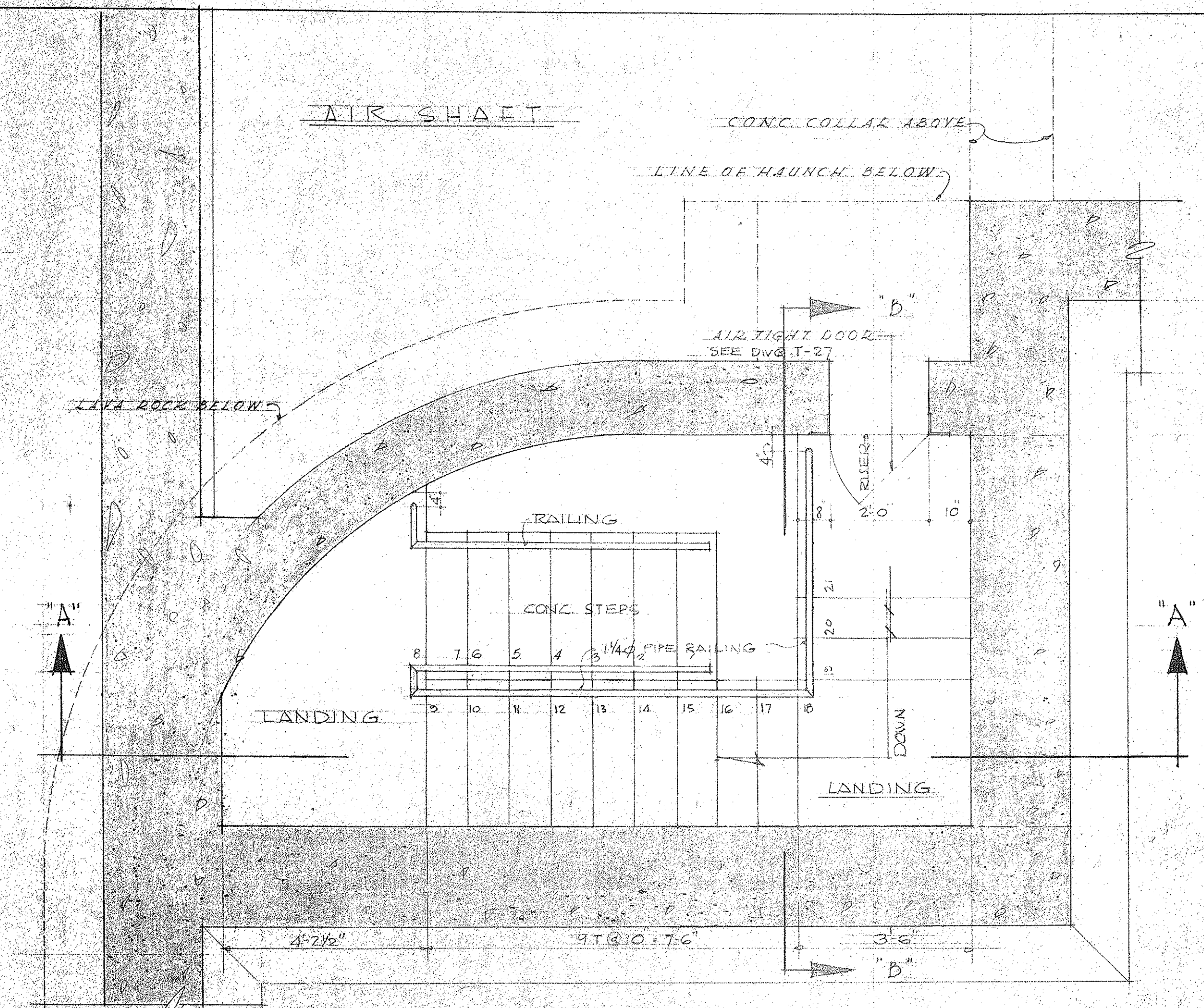
SECTION (P-7 c)
SCALE 1/4" = 1'-0"

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CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIHI TUNNEL
KALIHI PORTAL
CROSS SECTIONS

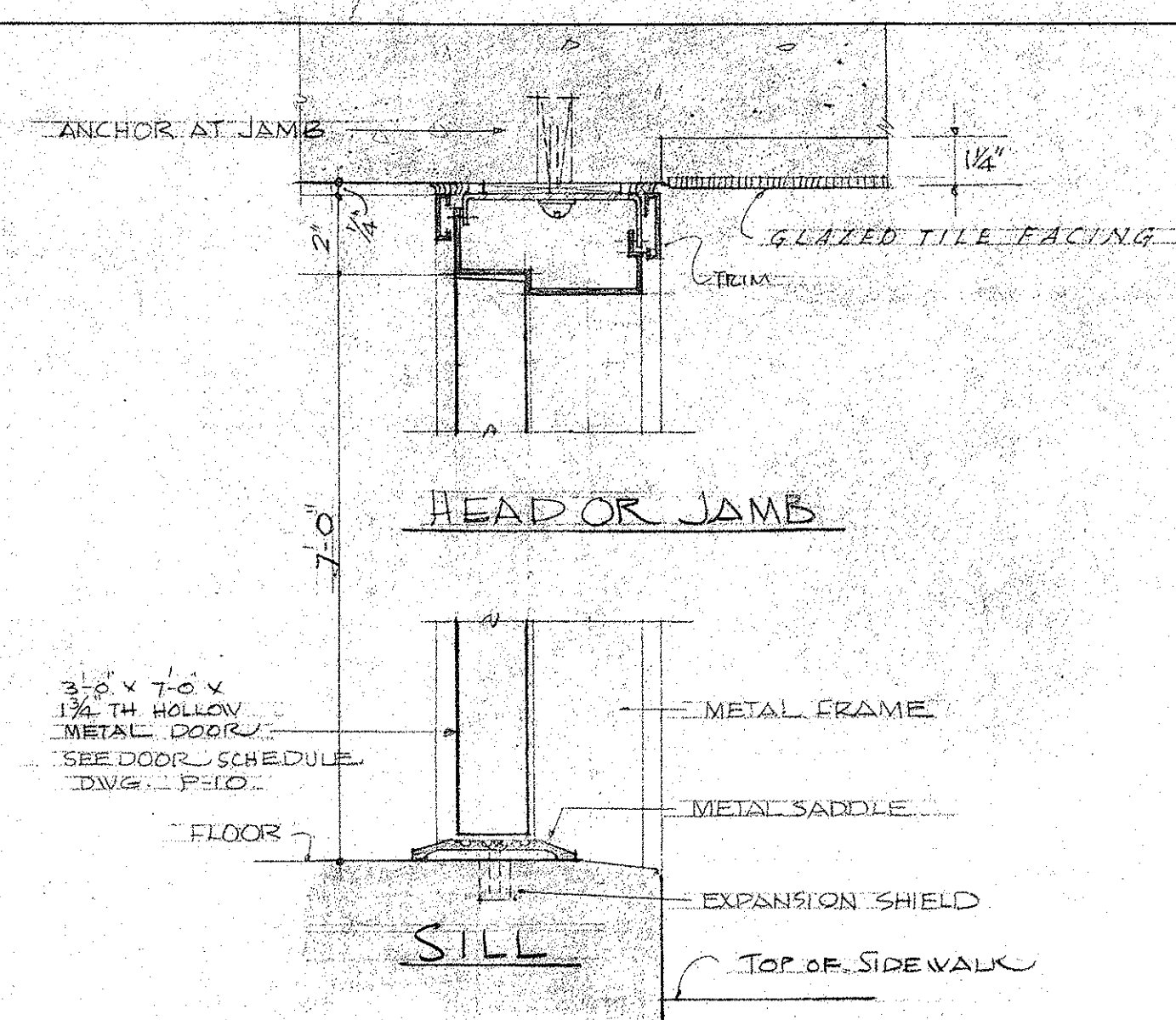
ENGINEER: L. S. W. DATE: JULY 15, 1953
DRAFTSMAN: J. FURUDERA
SCALE: AS NOTED
TRACER: [Signature]
APPROVED: [Signature] CHIEF ENGINEER
APPROVED: [Signature] BUREAU ENGINEER

W. S.	PROFILE	C. B.
CR. SEC.	P. B.	S. B.
W. M. BY	F. W. BY	S. BY

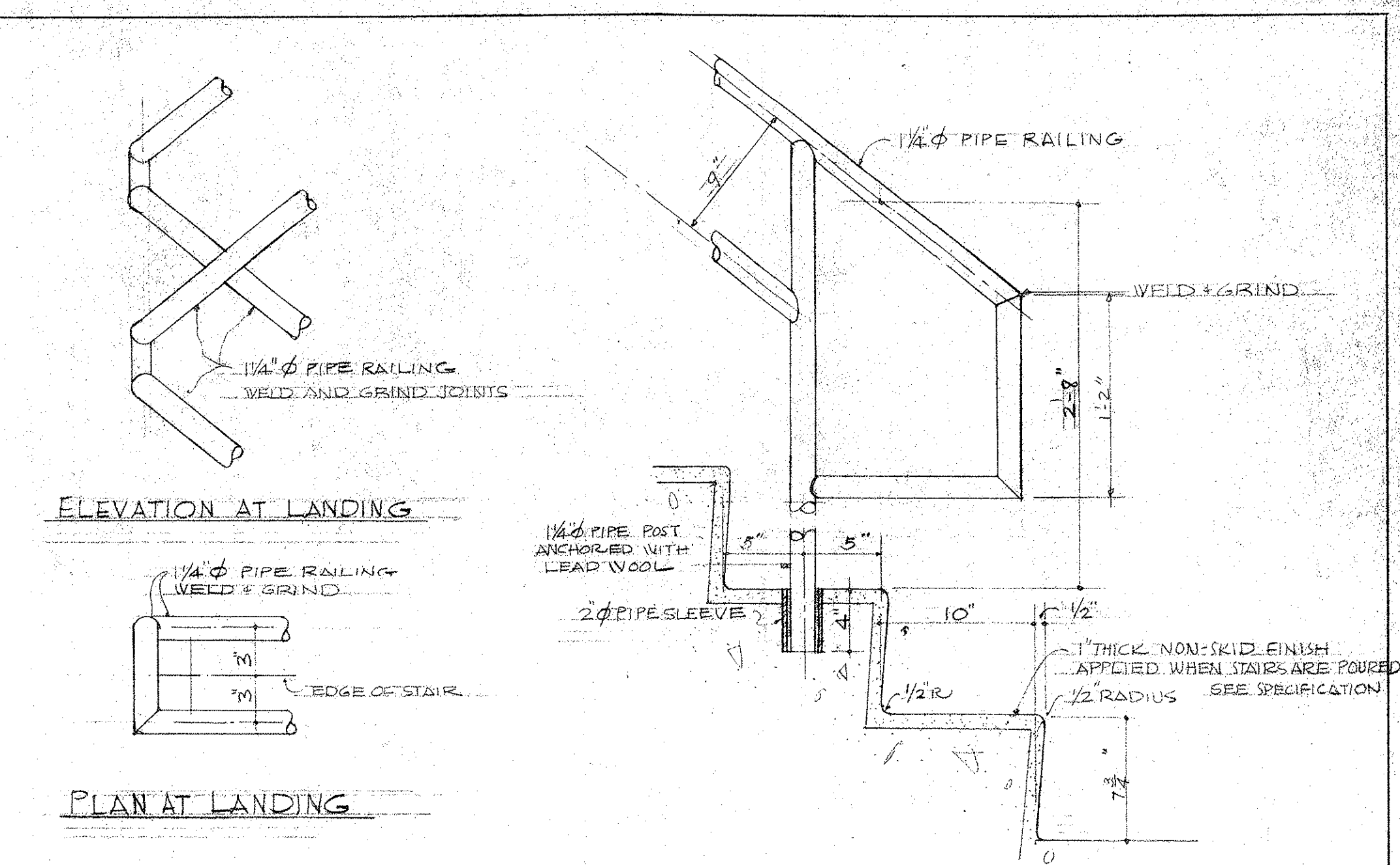
SECTION C JOB NO. 26-53 DWG. P-7



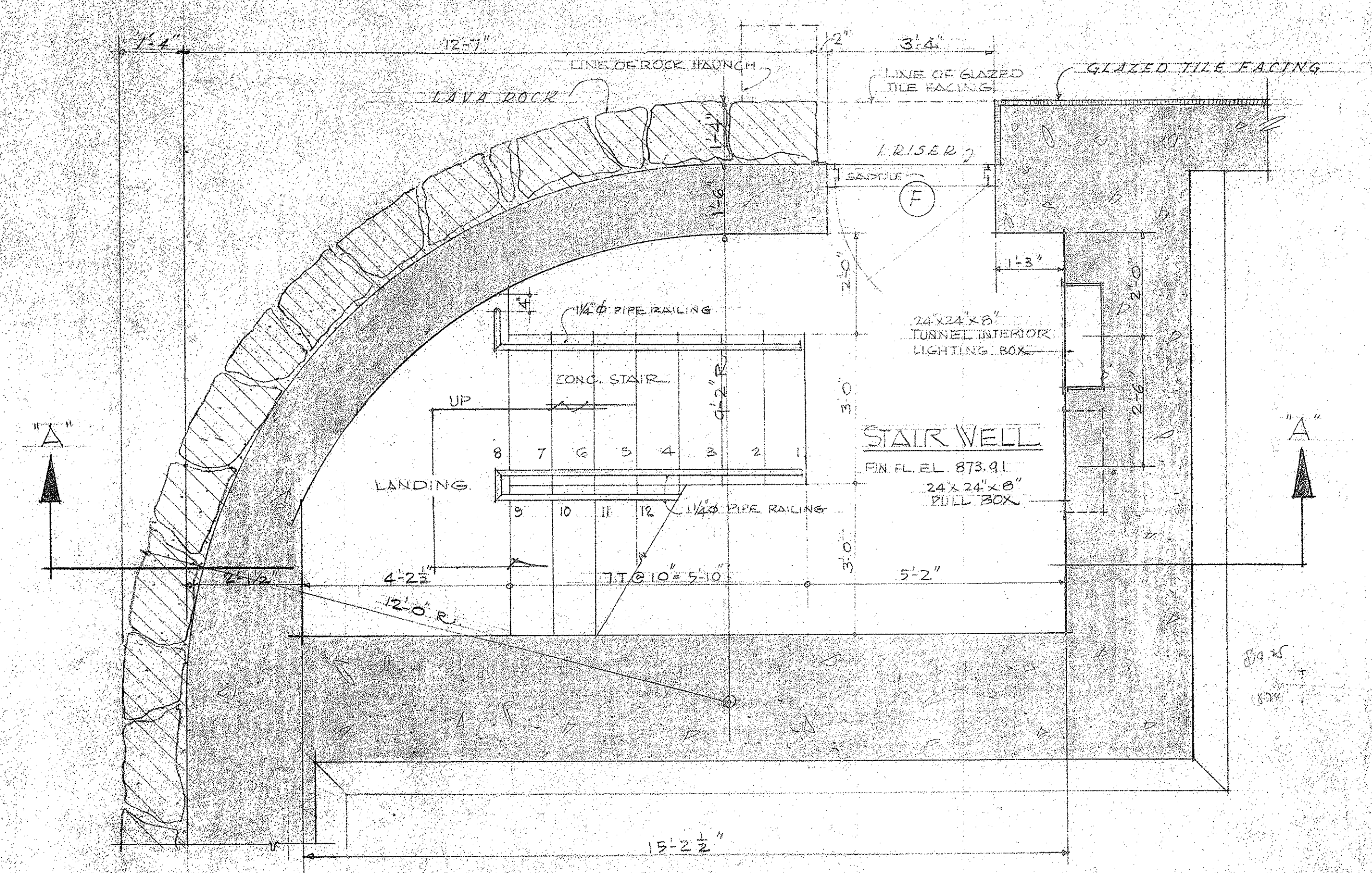
FLOOR PLAN AT AIR SHAFT
SCALE: 1/2" = 1'-0"



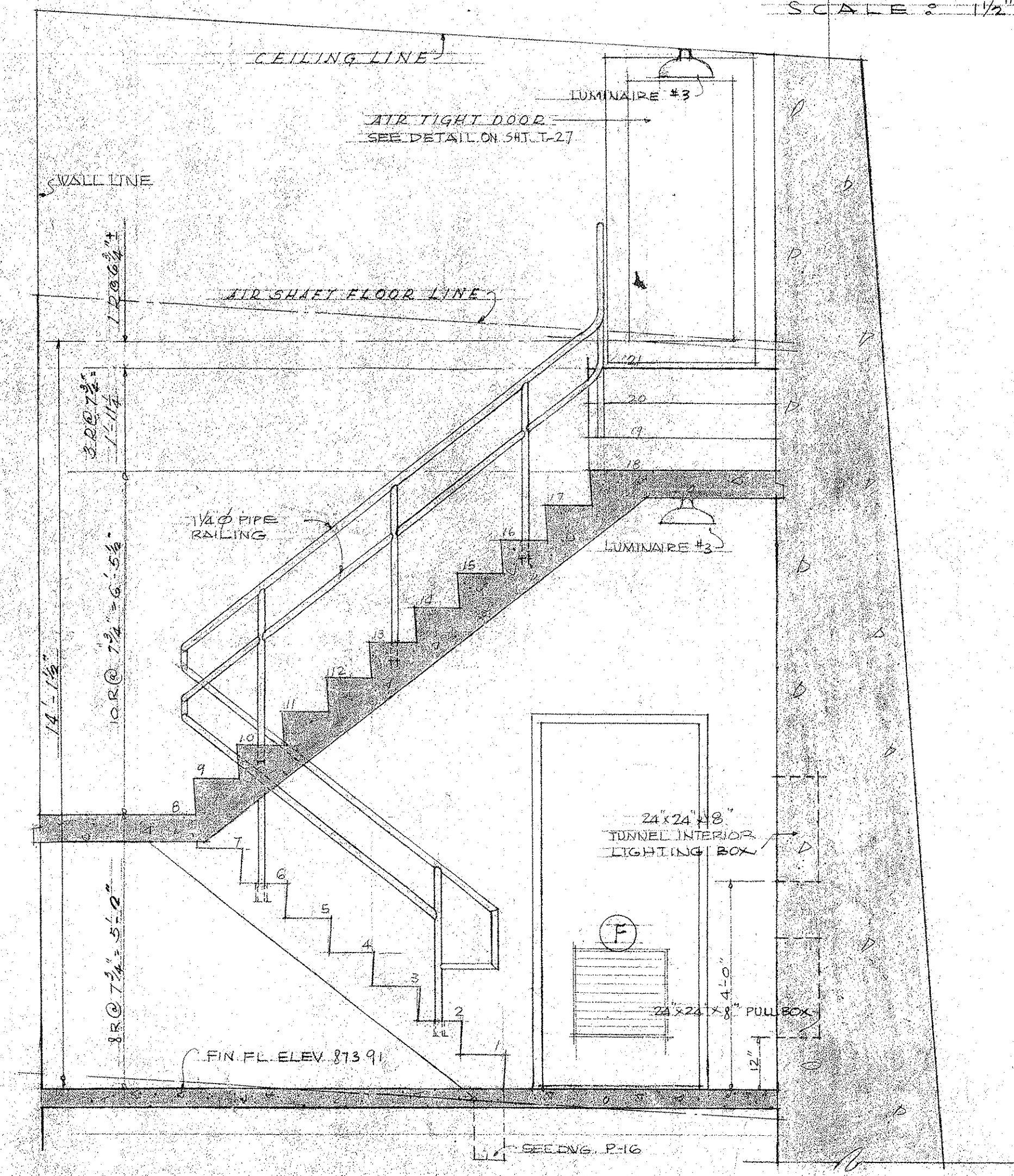
DOOR "F" DETAILS
SCALE: 3/8" = 1'-0"



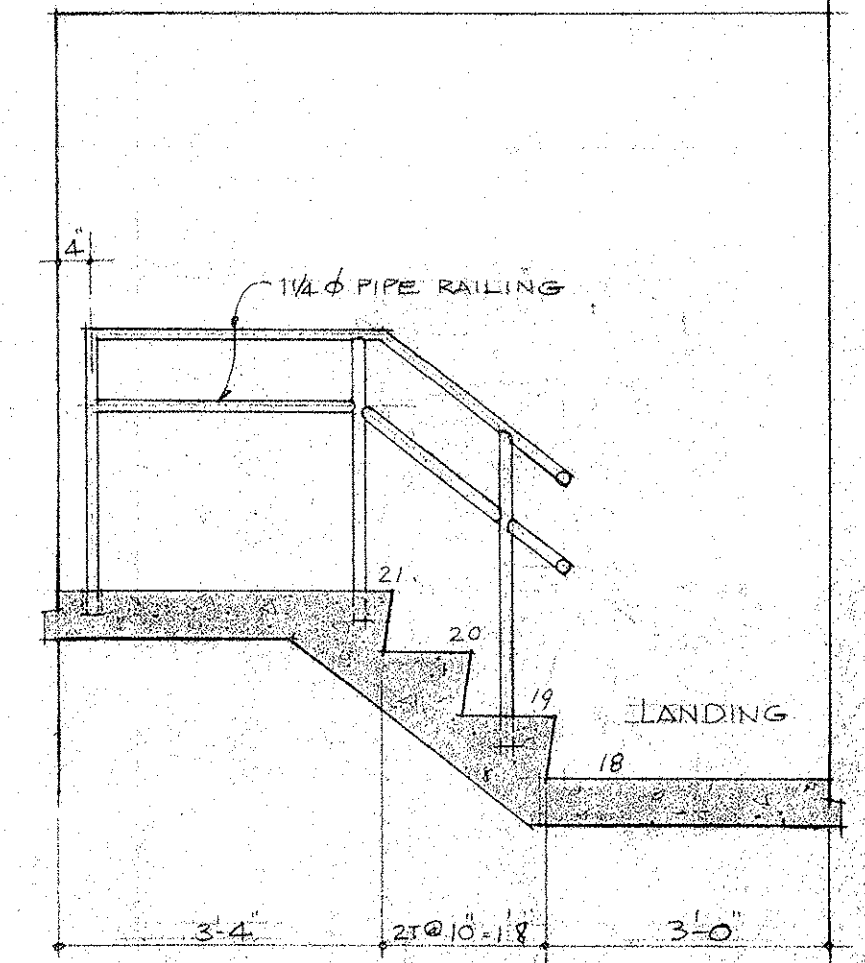
RAILING & STEP DETAILS
SCALE: 1 1/2" = 1'-0"



GROUND FLOOR PLAN
SCALE: 1/2" = 1'-0"



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



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

NOTE: SEE STRUCTURAL DRAWINGS FOR STRUCTURAL DIMENSIONS & REINFORCINGS. SEE SPECIFICATION FOR NON-SKID FINISH ON TREAD.

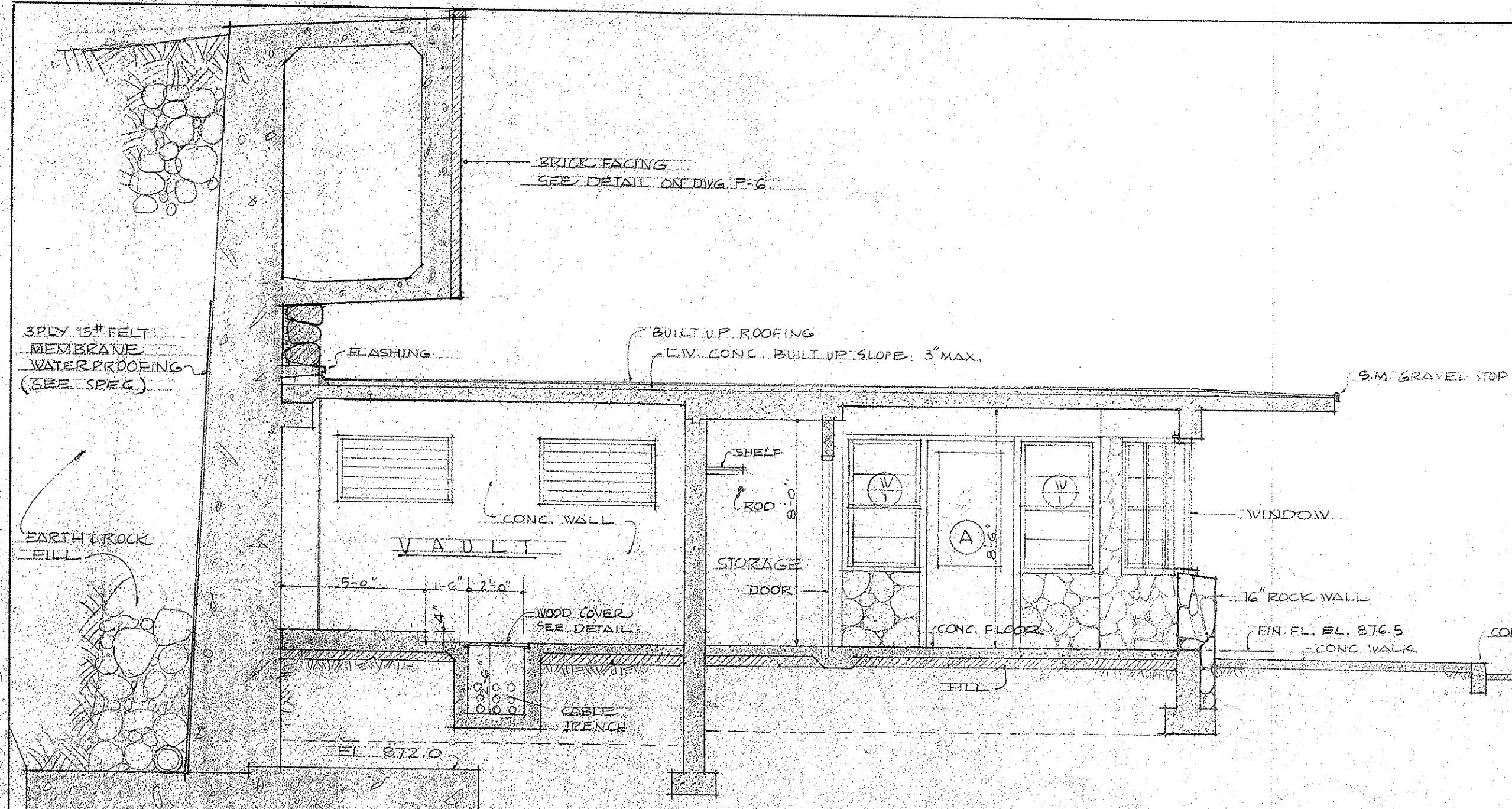
LAW & WILSON
ARCHITECTS & ENGINEERS
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIHI TUNNEL
KALIHI PORTAL
STAIR DETAILS

ENGINEER: L. B. W.
DRAFTSMAN: P. KANESHIRO
SCALE: AS NOTED
CHECKED BY: T. G.
DATE: JULY 15, 1953
TRACER:
APPROVED: W. B. Butz
BUREAU ENGINEER

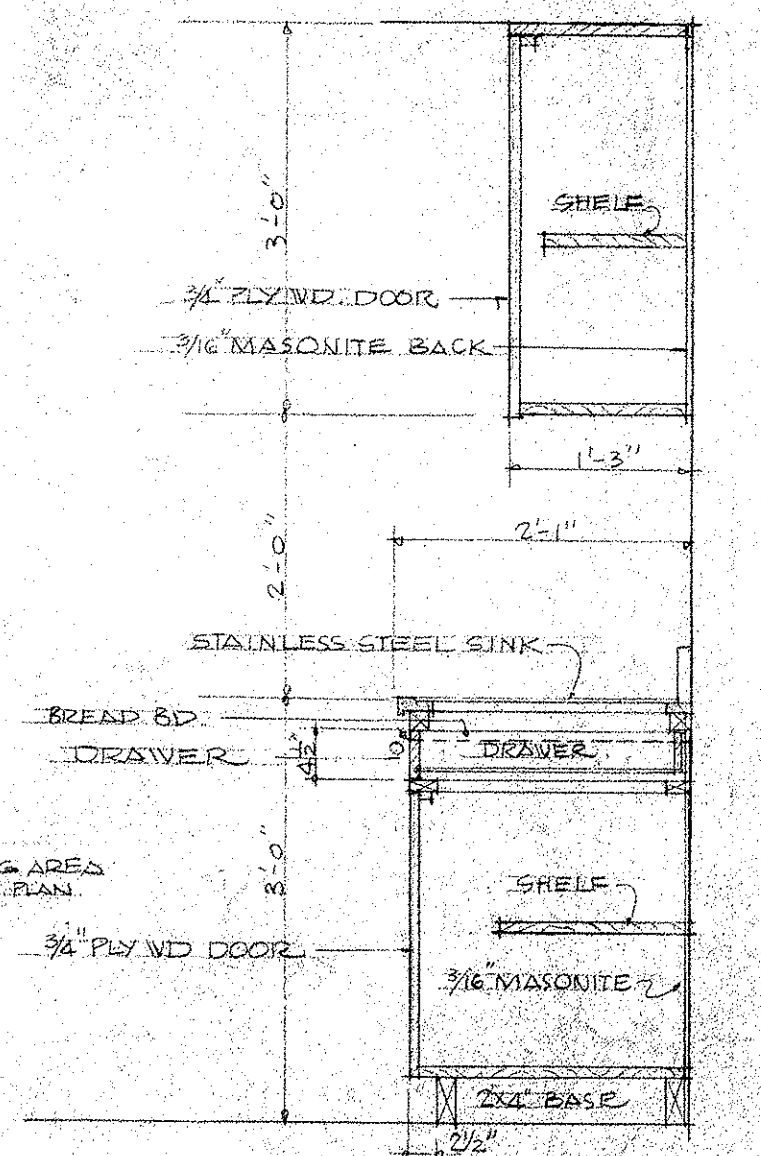
APPROVED: [Signature]
ENGINEER KALIHI TUNNEL

W. S.	PROFILE	C. B.
C. B.	F. S.	S. B.
W. M. BY	F. W. BY	S. BY

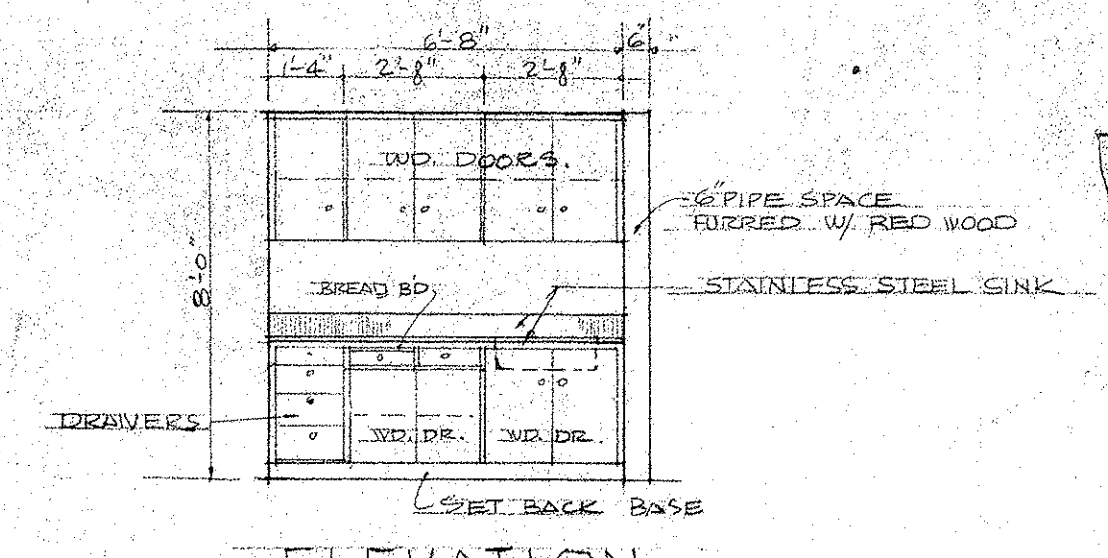
SECTION C JOB NO. 26-53 DWG. P-8



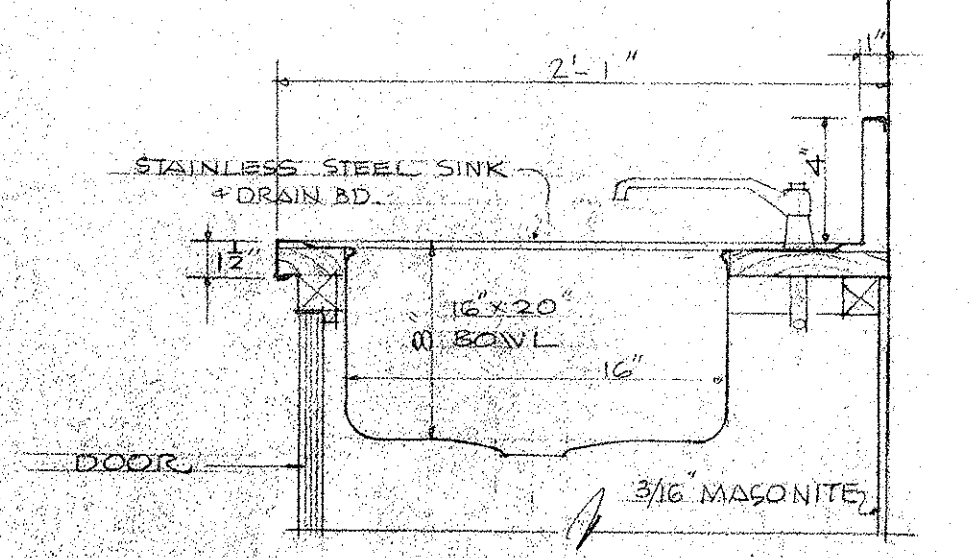
SECTION
SCALE 1/4" = 1'-0"



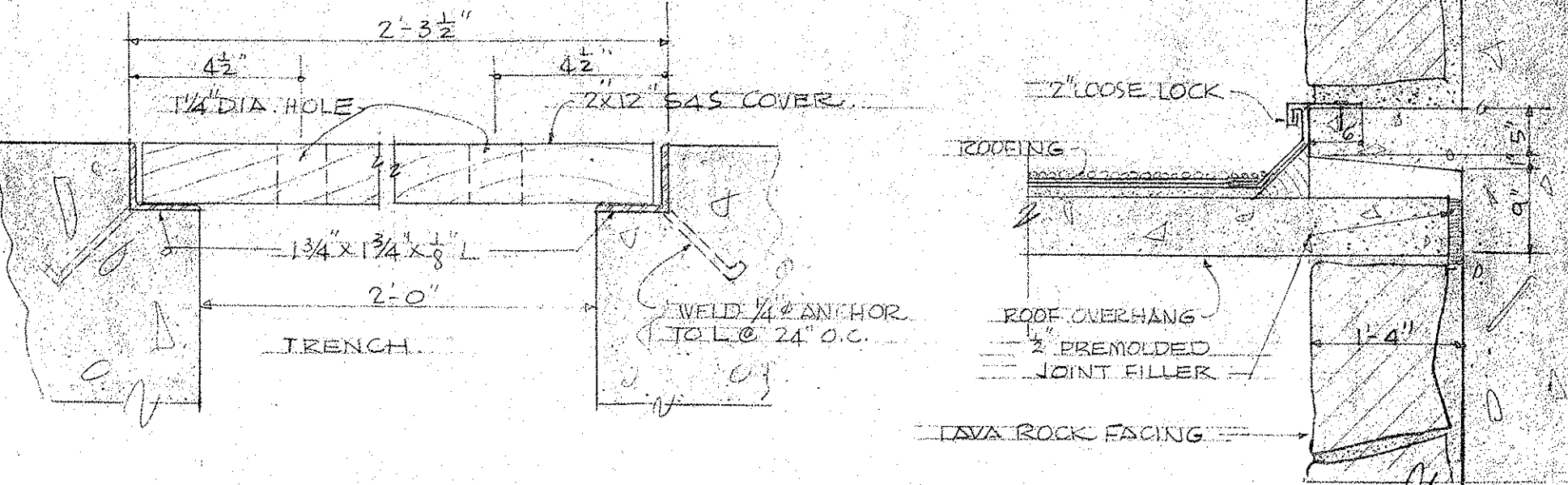
TYPICAL SECTION
SCALE 3/4" = 1'-0"



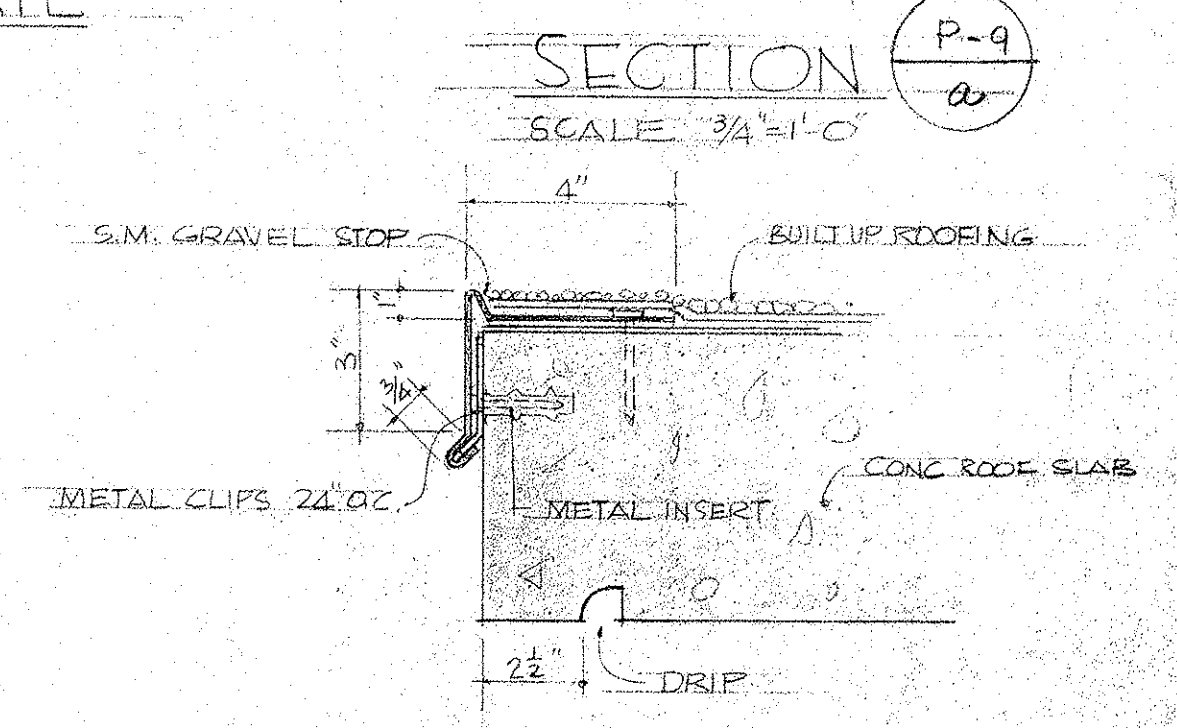
ELEVATION
SCALE 1/4" = 1'-0"



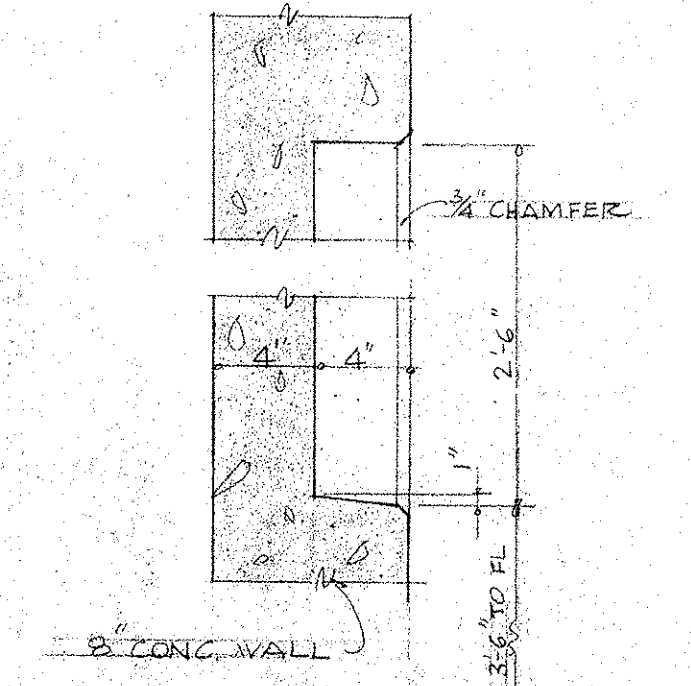
SINK AND CUPBD DETAIL
SCALE 1/2" = 1'-0"



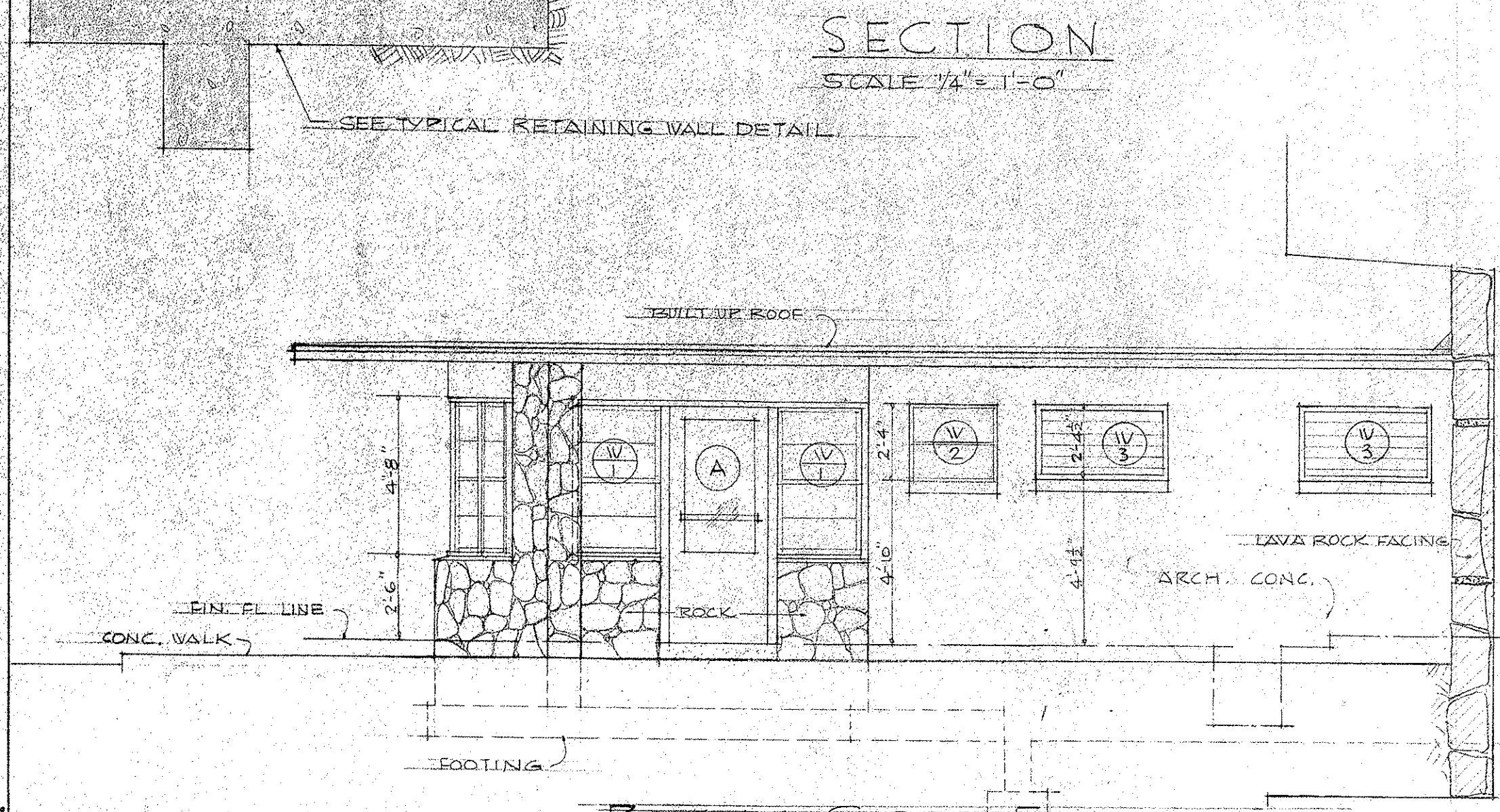
TRENCH COVER DETAIL
SCALE 3/8" = 1'-0"



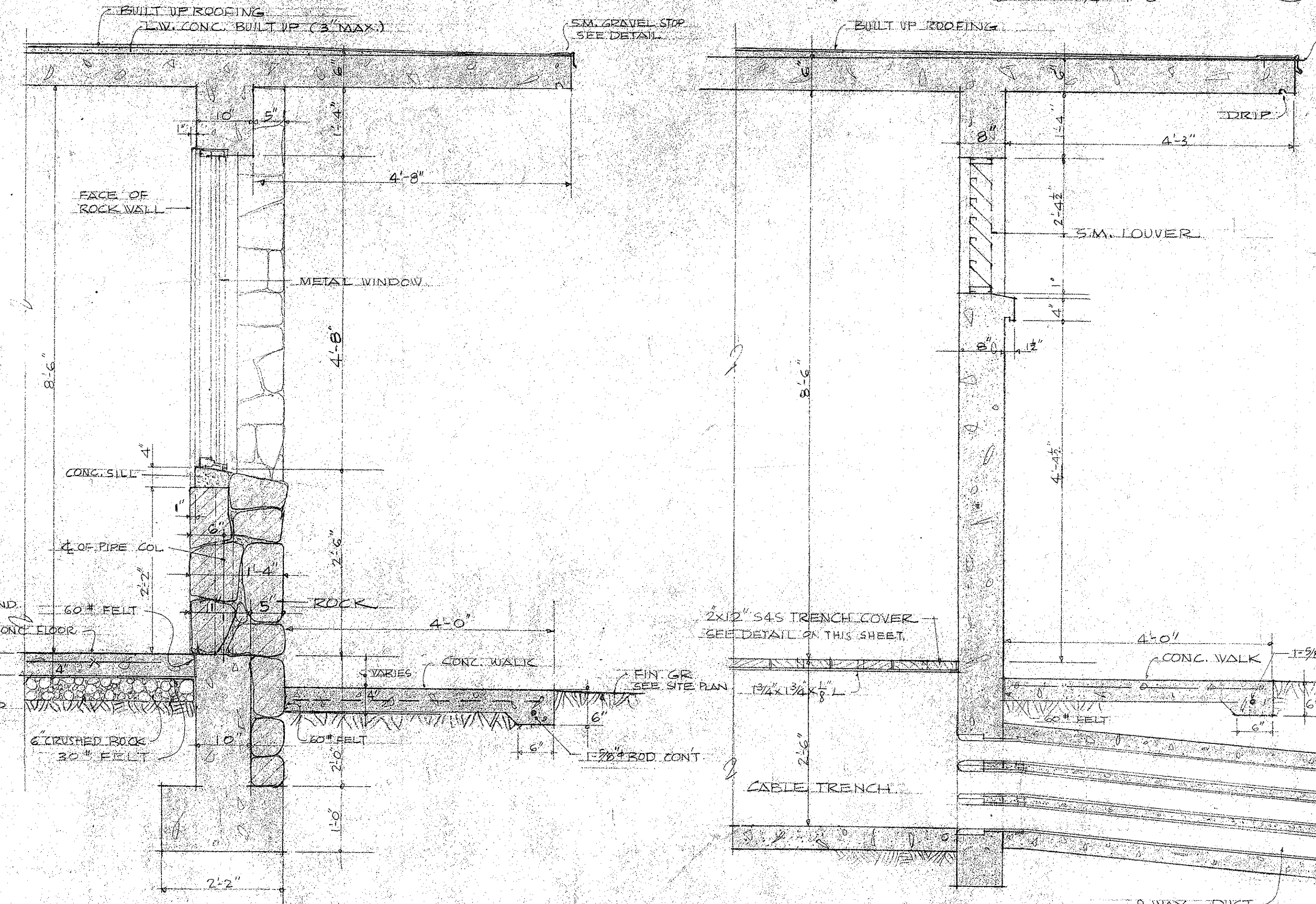
GRAVEL STOP DETAIL
SCALE 3/8" = 1'-0"



TELE NICHE SEC.
SCALE 3/4" = 1'-0"

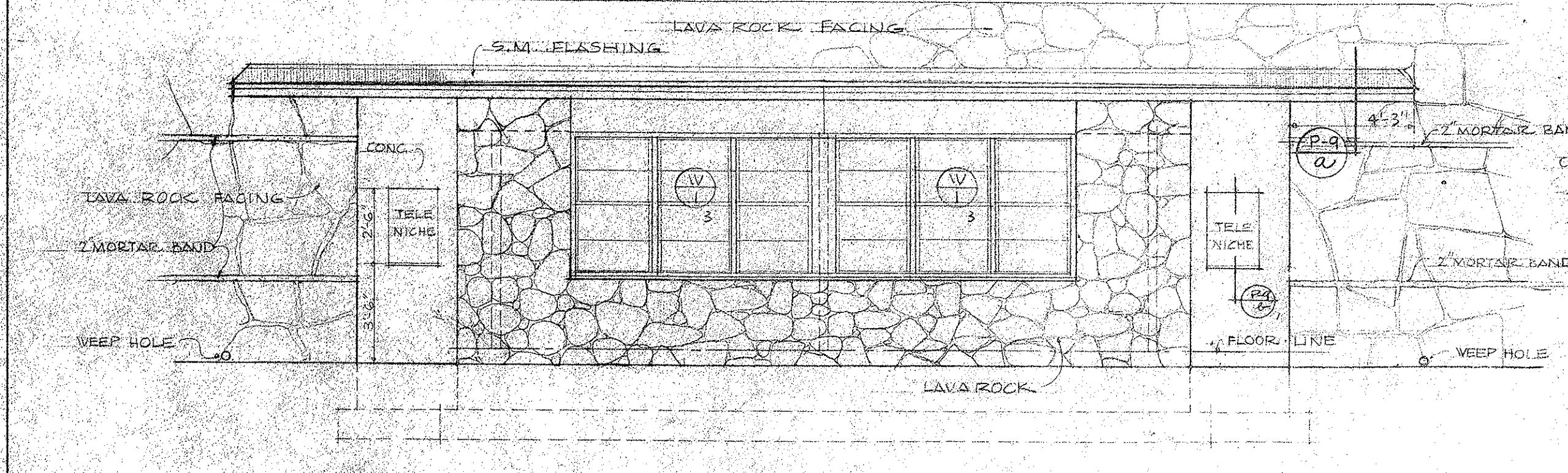


RIGHT SIDE ELEVATION
SCALE 1/4" = 1'-0"

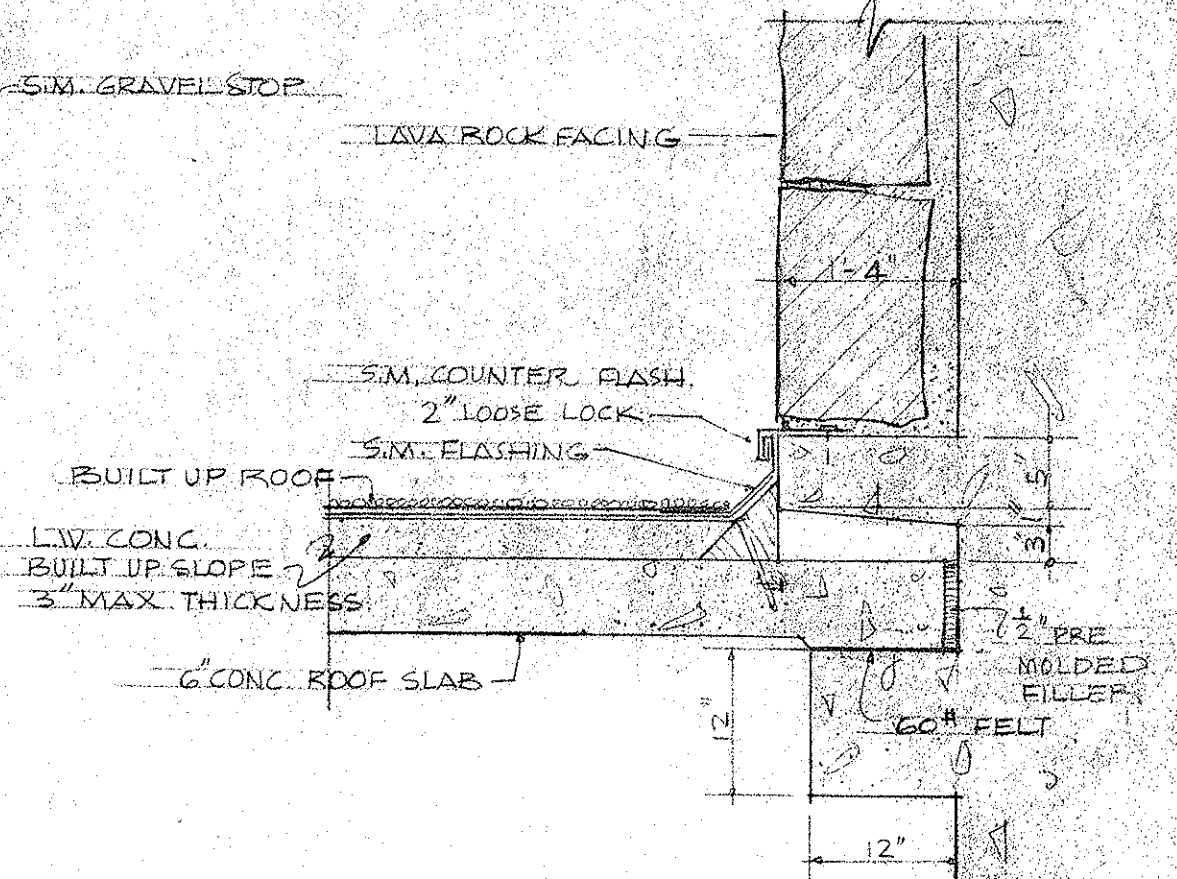


WALL SECTION
SCALE 3/4" = 1'-0"

WALL SECTION
CONC. WALL AT TRENCH
SCALE 3/4" = 1'-0"



FRONT ELEVATION
SCALE 1/4" = 1'-0"

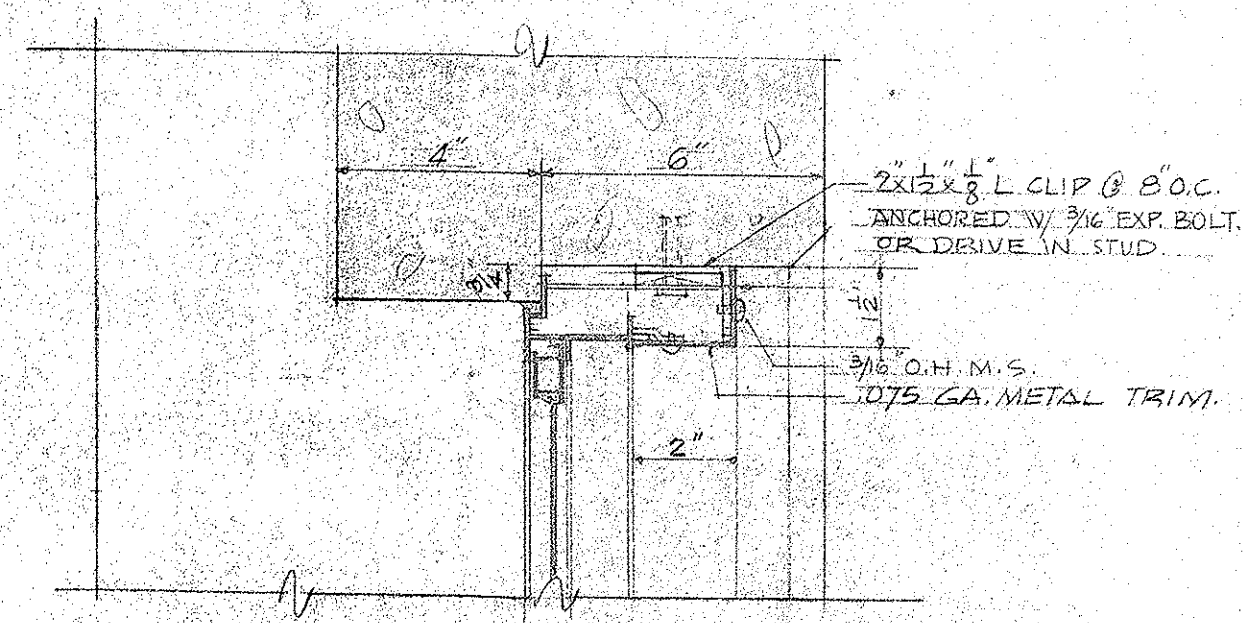


FLASHING DETAIL
SCALE 3/4" = 1'-0"

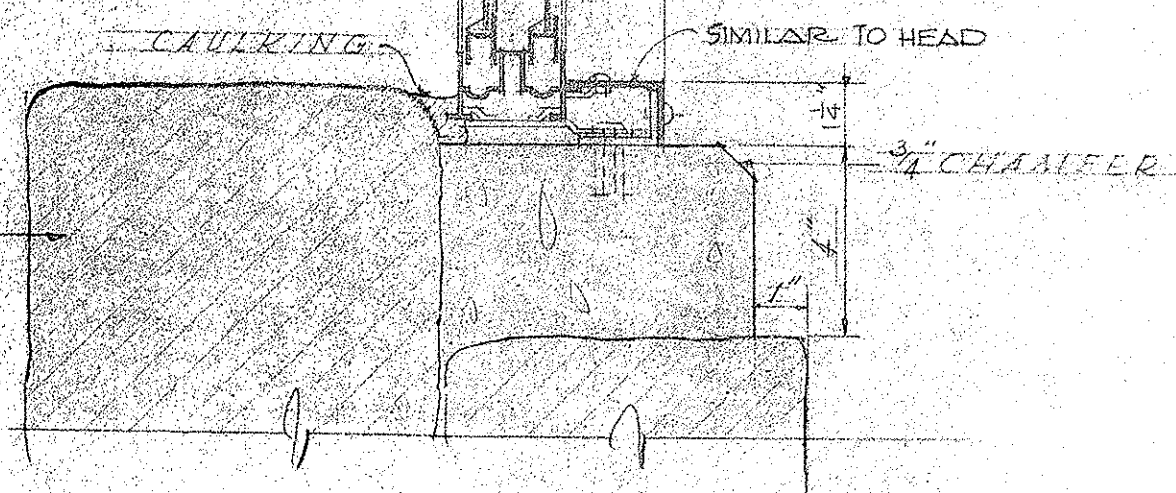
LAW & WILSON
ARCHITECTS & ENGINEERS
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIHI TUNNEL
KALIHI PORTAL
OFFICE & VAULT
ELEVATIONS, SECTIONS & DETAILS
ENGINEER L. & W.
DRAFTSMAN J. FURBERA
SCALE AS NOTED
CHECKED BY I.E. [Signature]
TRACER [Signature]
APPROVED [Signature]
CHIEF ENGINEER

APPROVED
[Signature]
ENGINEER, KALIHI TUNNEL

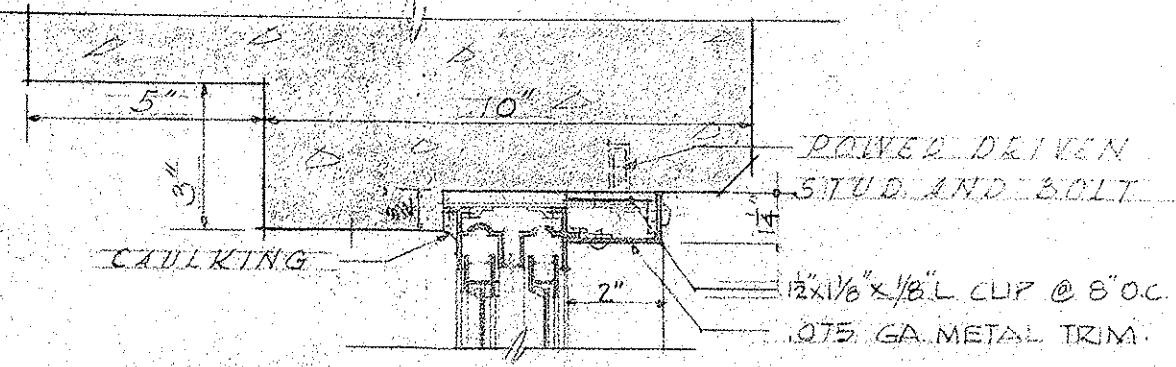
W. B.	PROFILE	C. B.
CR. SEC.	F. B.	S. B.
W. M. BY	F. W. BY	S. BY



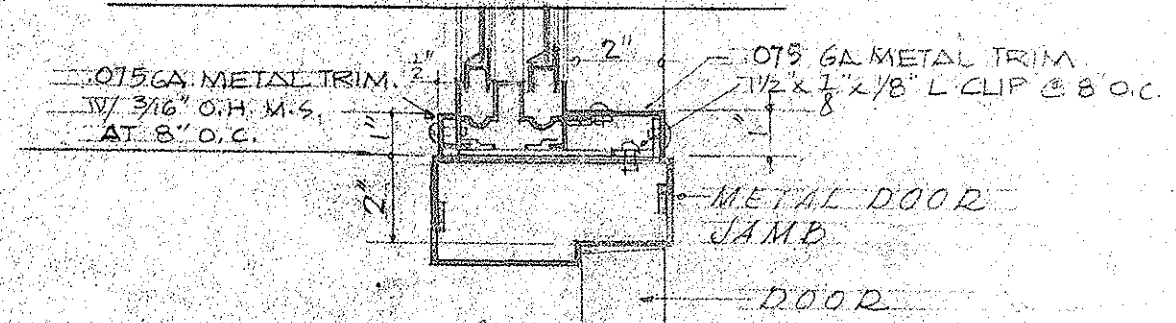
HEAD



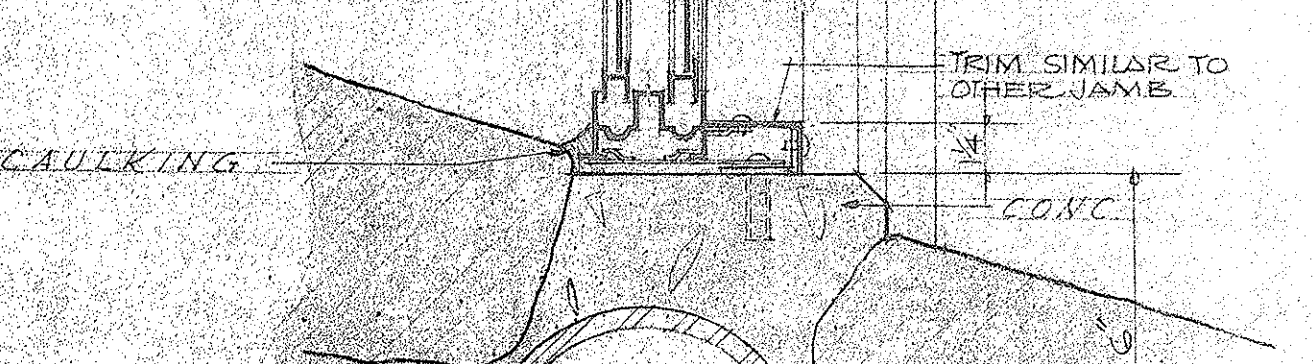
JAMB AT STONE WALL



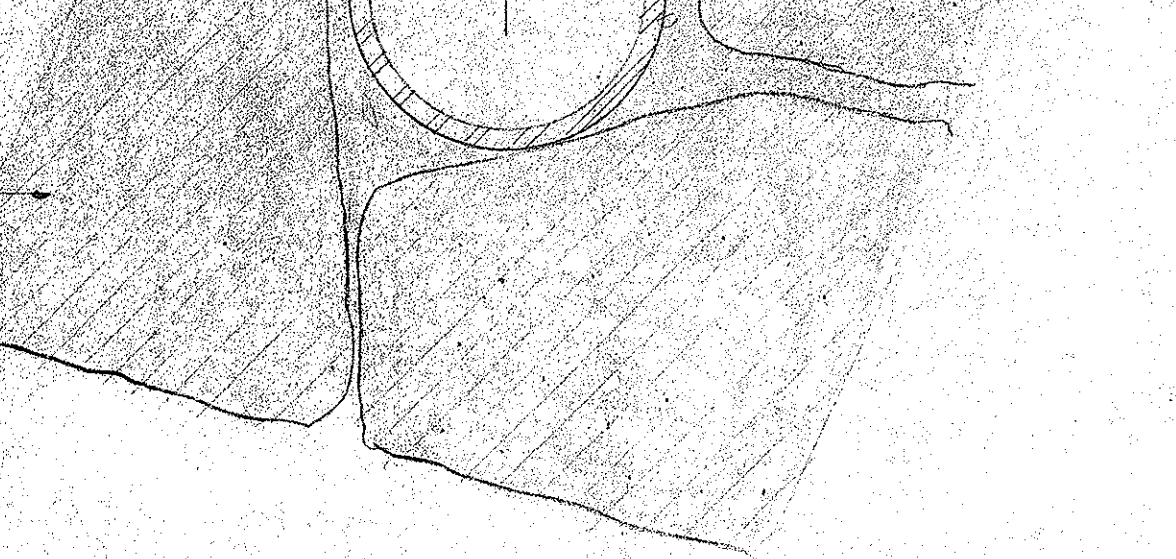
JAMB AT CONC. WALL



JAMB AT DOOR

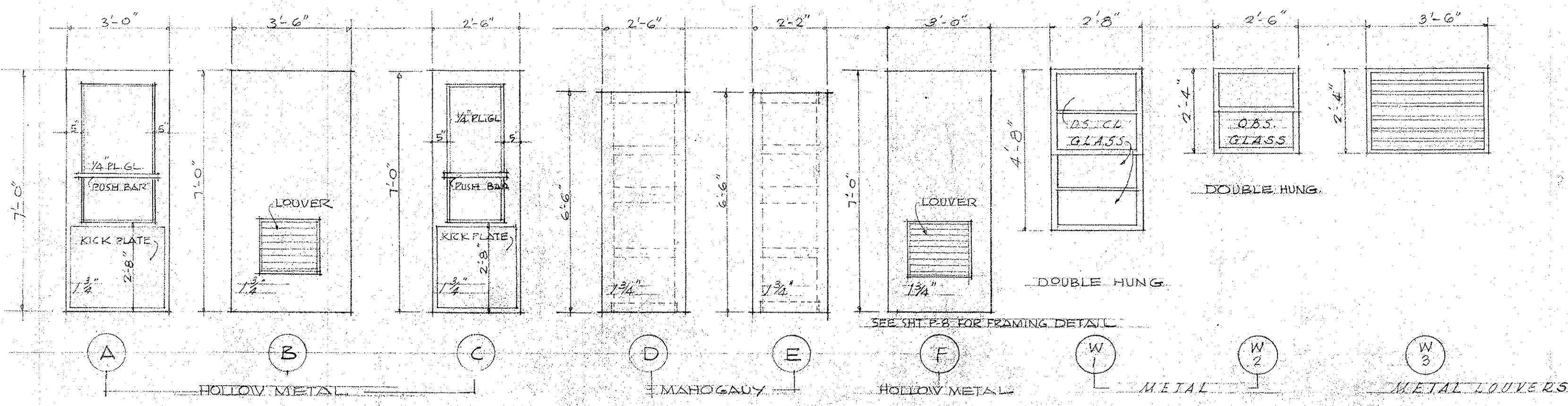


JAMB AT PIPE COL.

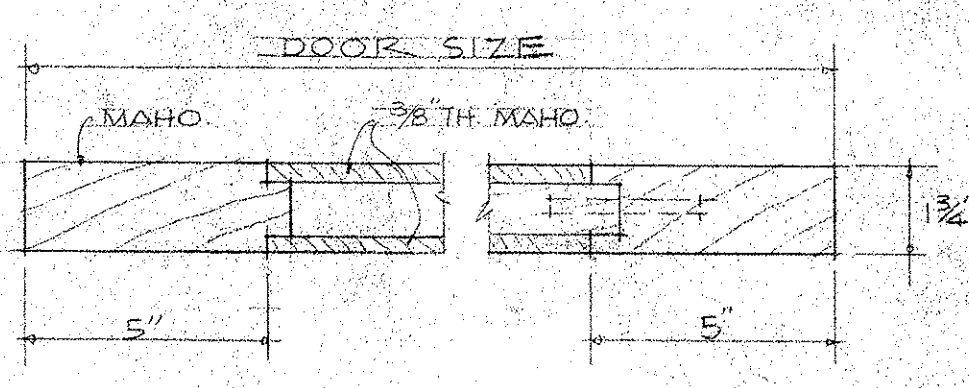


SILL

WINDOW (W 1)

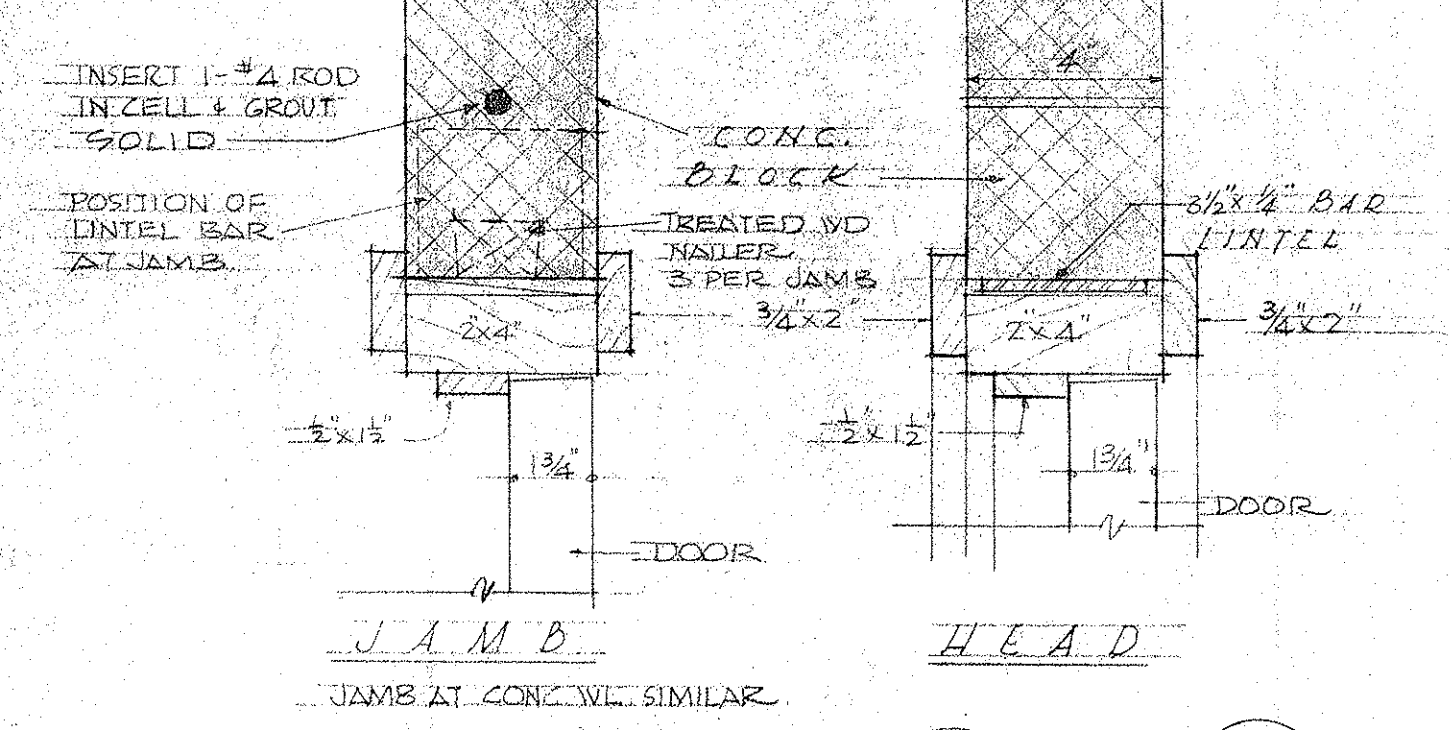


DOOR AND WINDOW SCHEDULE

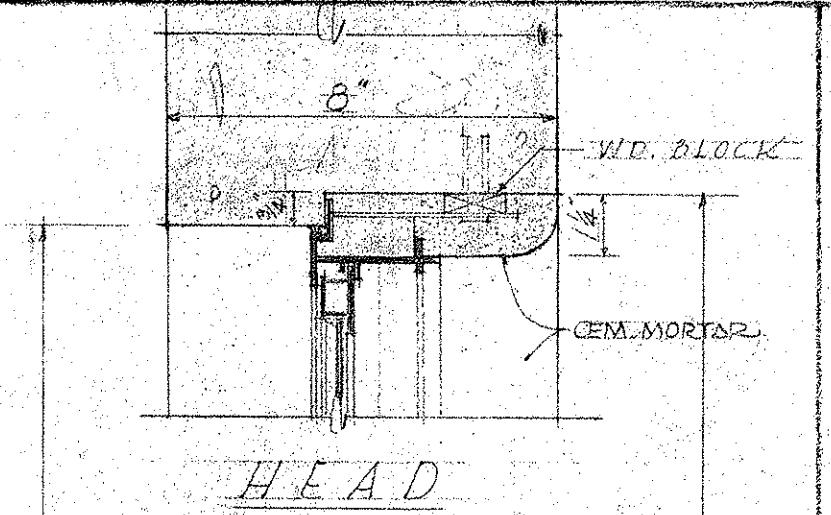


BETWEEN STILES AT FRAME

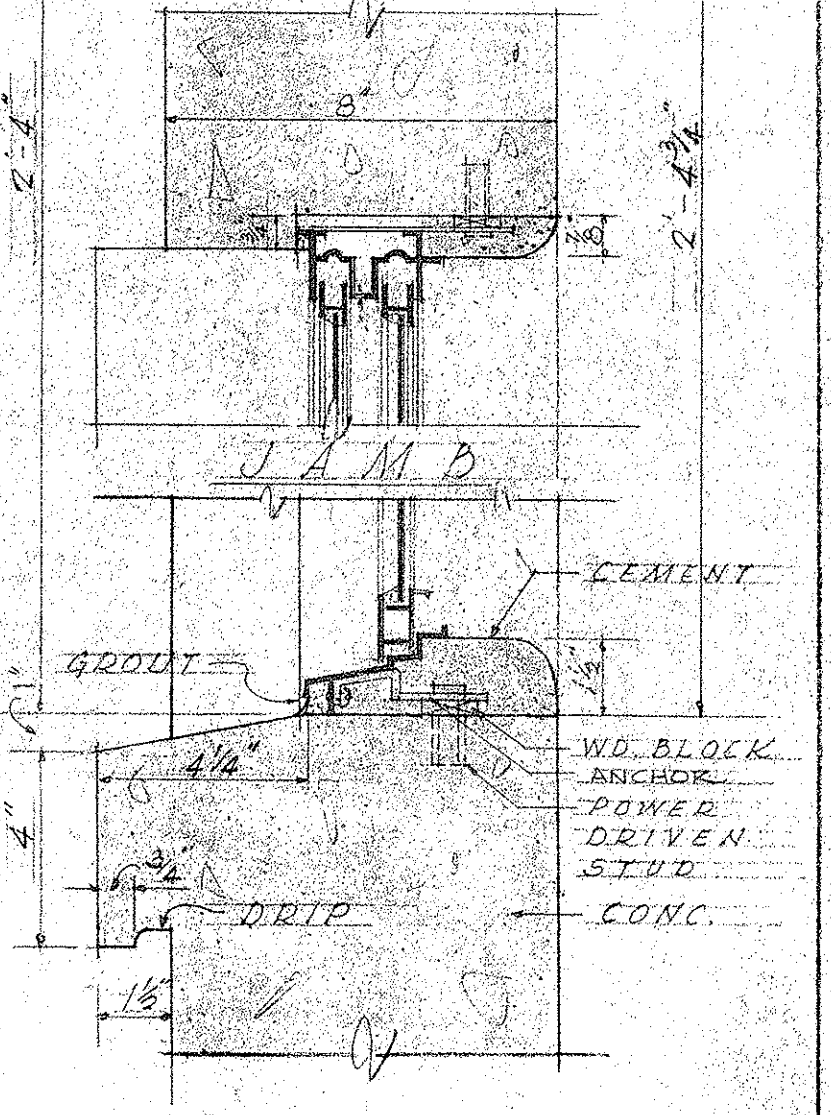
DETAIL OF DOOR (D) & (E)
SCALE 3" = 1'-0"



DOOR (D) AND (E)

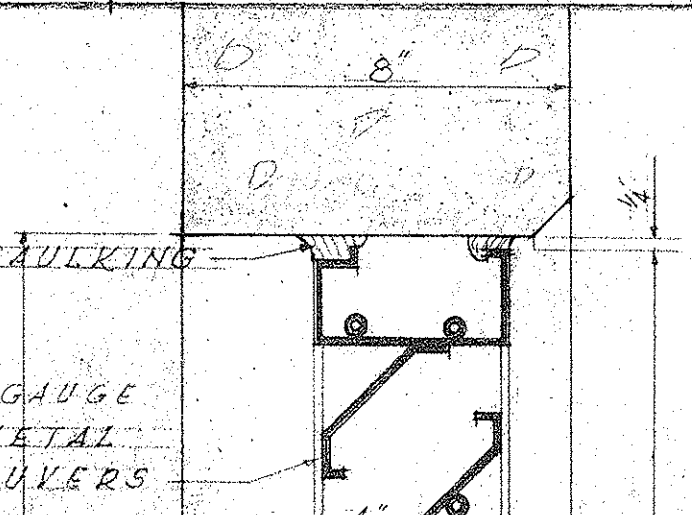


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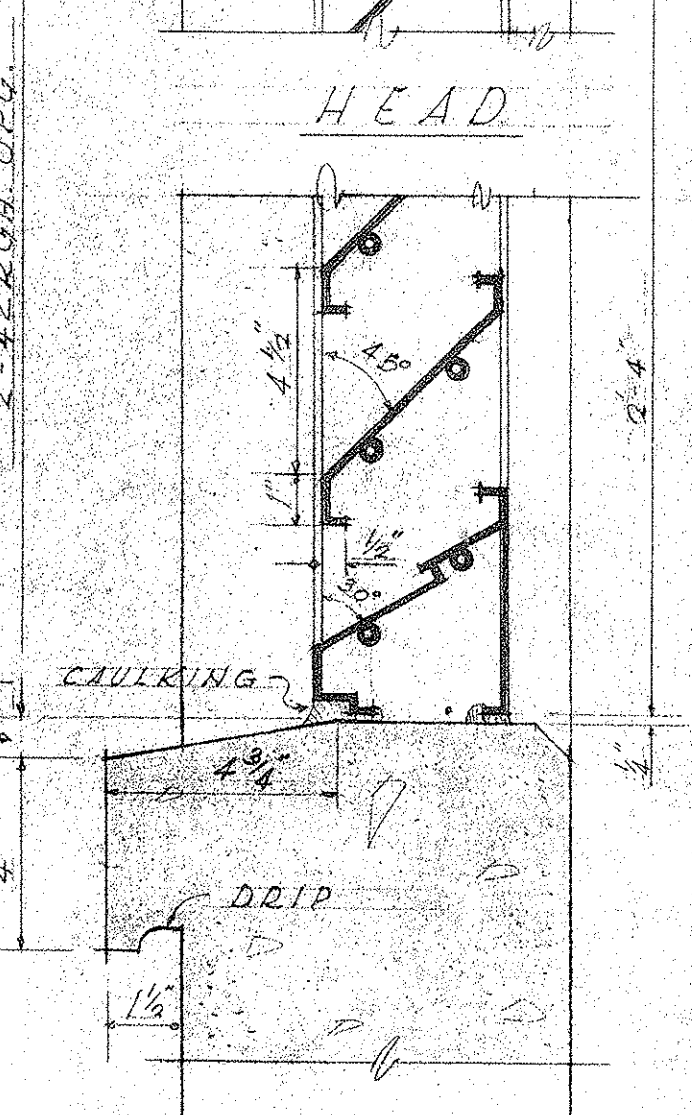


SILL

WINDOW (W 2)

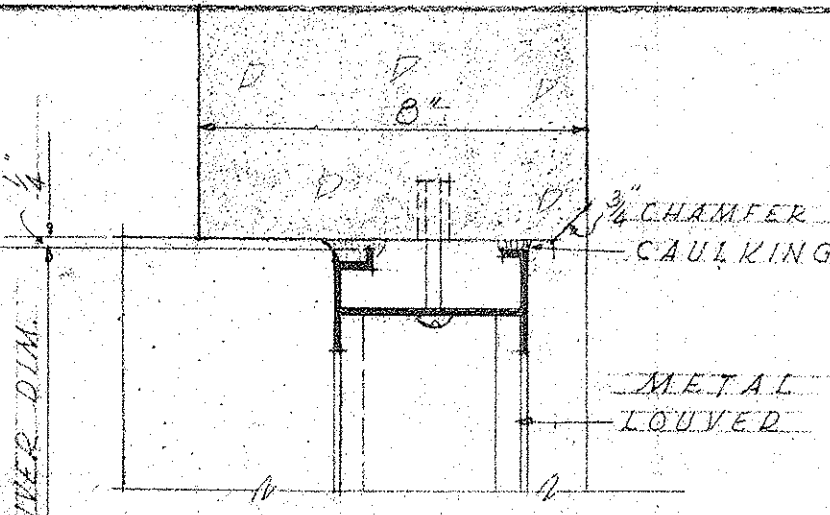


HEAD

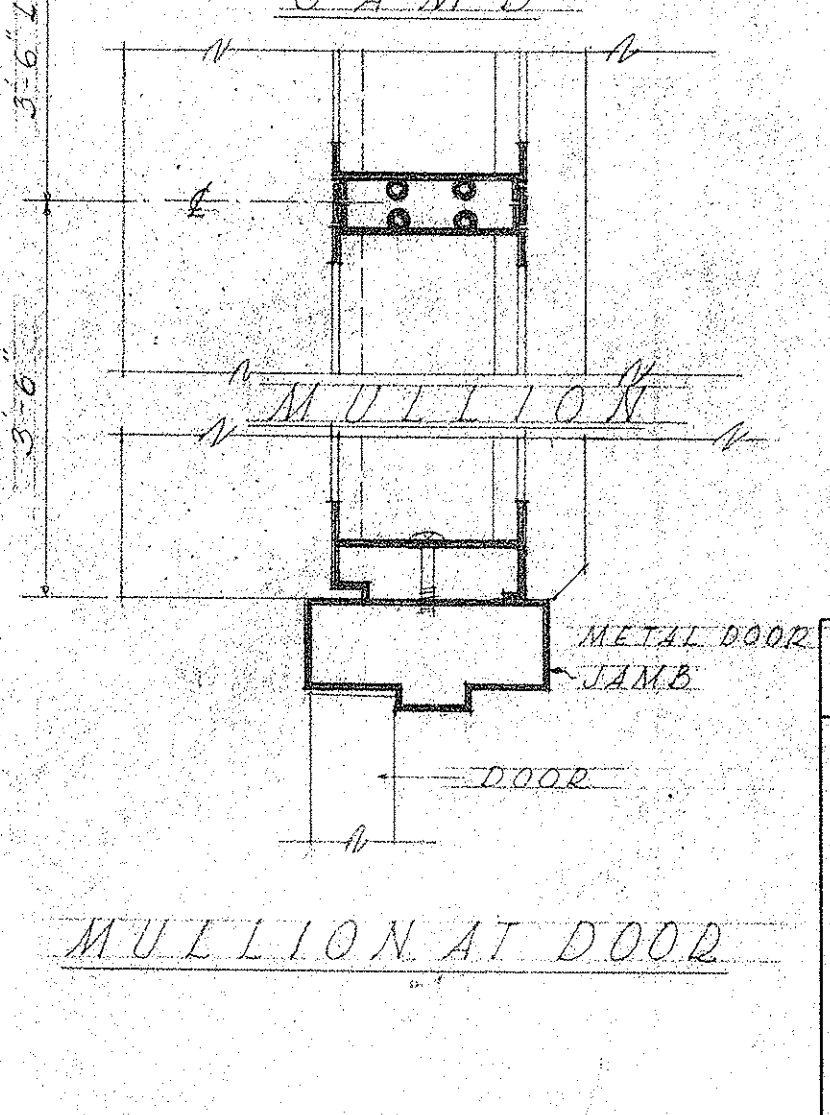


SILL

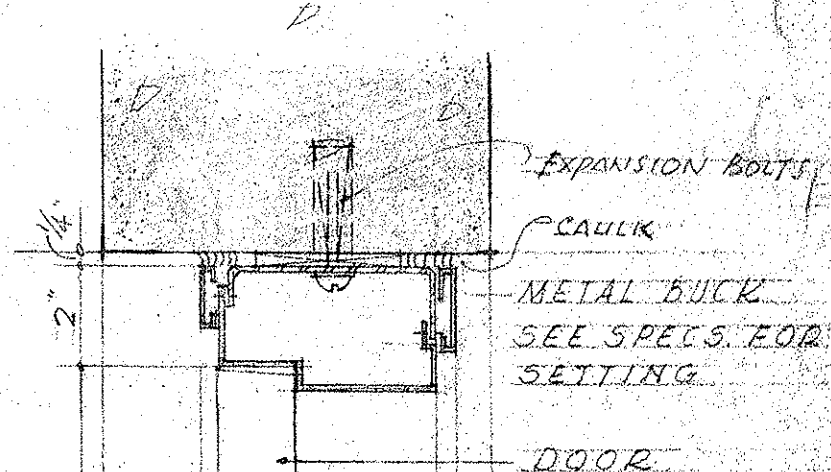
LOUVER (W 3)



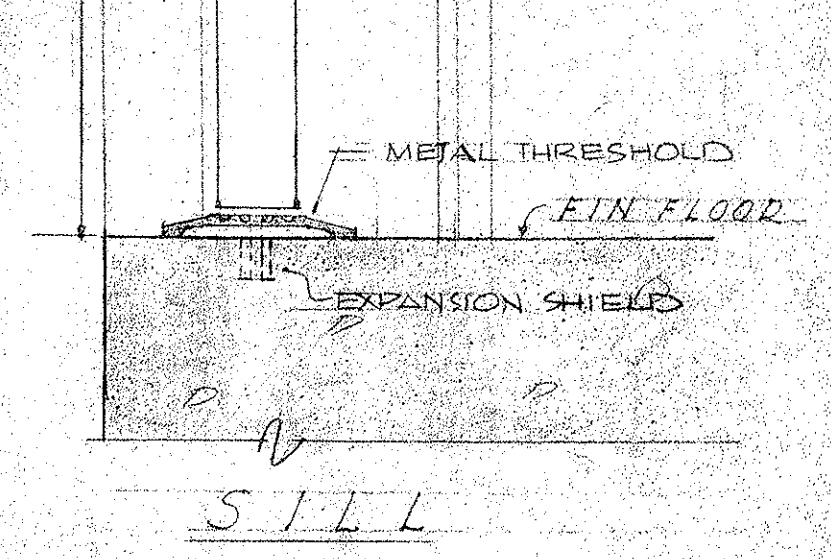
JAMB



MULLION AT DOOR

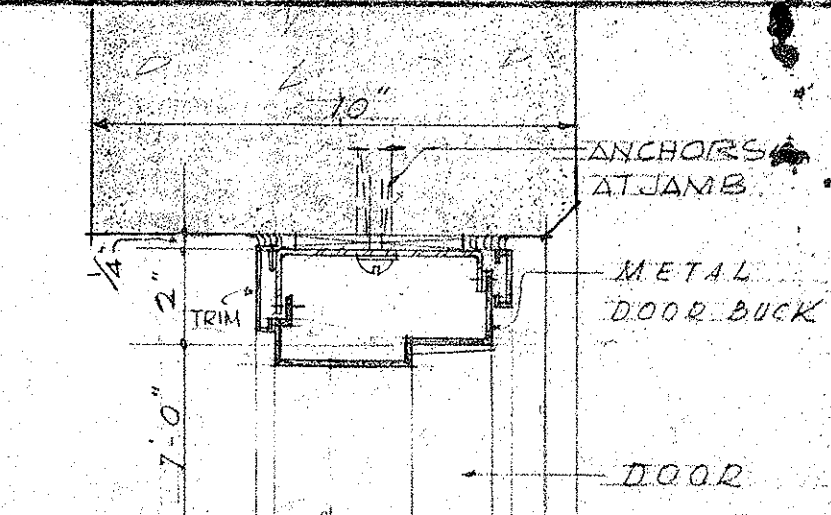


HEAD JAMB SIMILAR

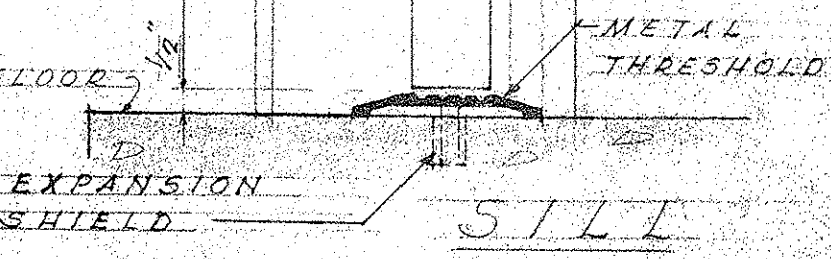


SILL

DOOR (B) & (C)



HEAD FOR JAMB SEE (W 1)



SILL

DOOR (A)

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CITY AND COUNTY OF HONOLULU

BUREAU OF PLANS

KALIHI TUNNEL
KALIHI PORTAL
OFFICE & VAULT
WINDOW, DOOR & LOUVER DETAILS

ENGINEER: L. S. W.
DATE: JULY 12, 1933

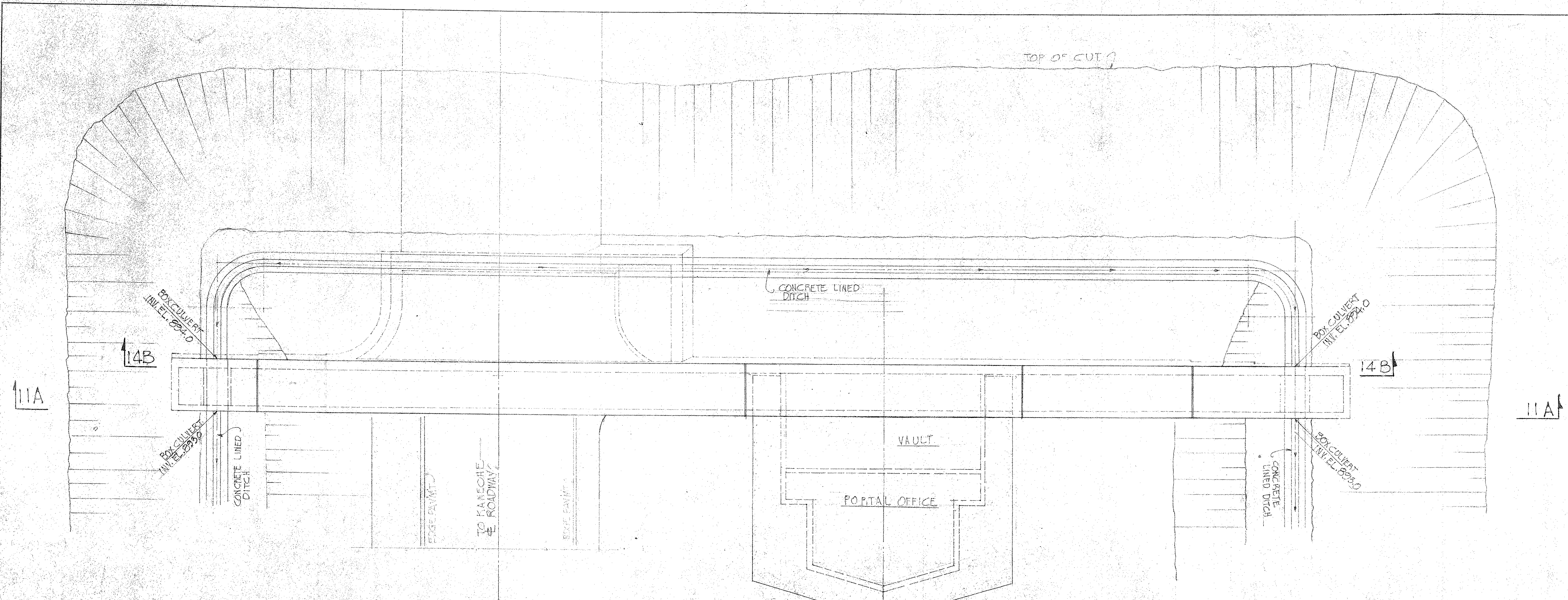
DRAFTSMAN: E. HOOD
CHECKED BY: T.F. [Signature]

SCALE: AS NOTED

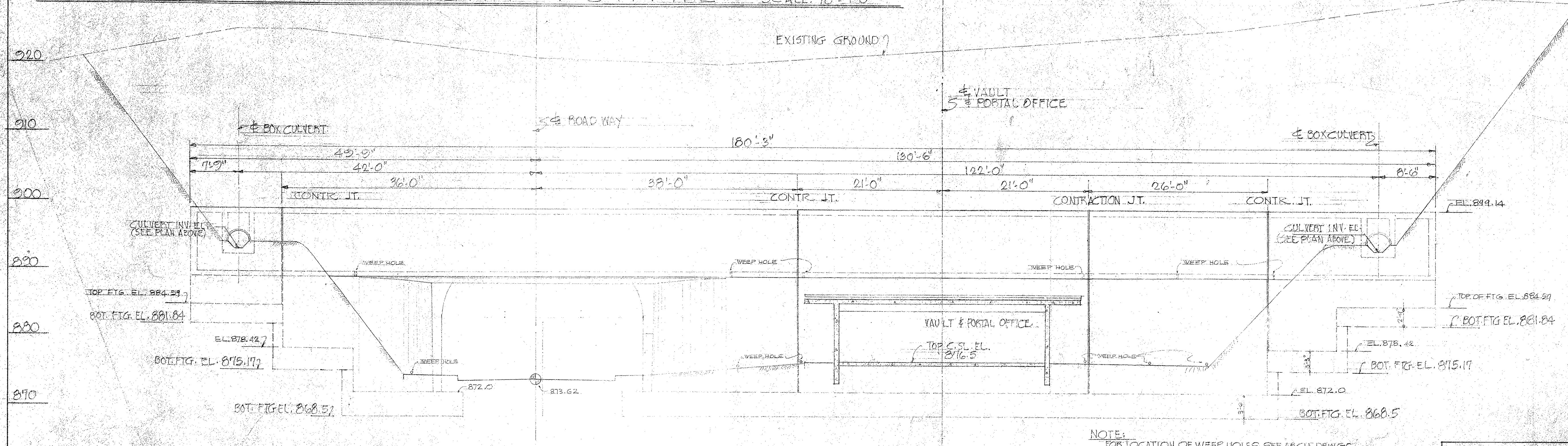
APPROVED: [Signature]
CHIEF ENGINEER

APPROVED: [Signature]
BUREAU ENGINEER

W.S.	PROFILE	C.B.
CH. SEC.	F.B.	C.B.
W.M. BY	F.W. BY	C.B.



LAYOUT PLAN - KALIHI PORTAL - SCALE: 1/8" = 1'-0"



SECTION "11A-11A" PORTAL ELEVATION - SCALE: 1/8" = 1'-0"

NOTE: FOR LOCATION OF WEEP HOLES SEE ARCH. DWGS.

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CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIHI TUNNEL
KALIHI PORTAL - STRUCTURAL
LAYOUT PLAN

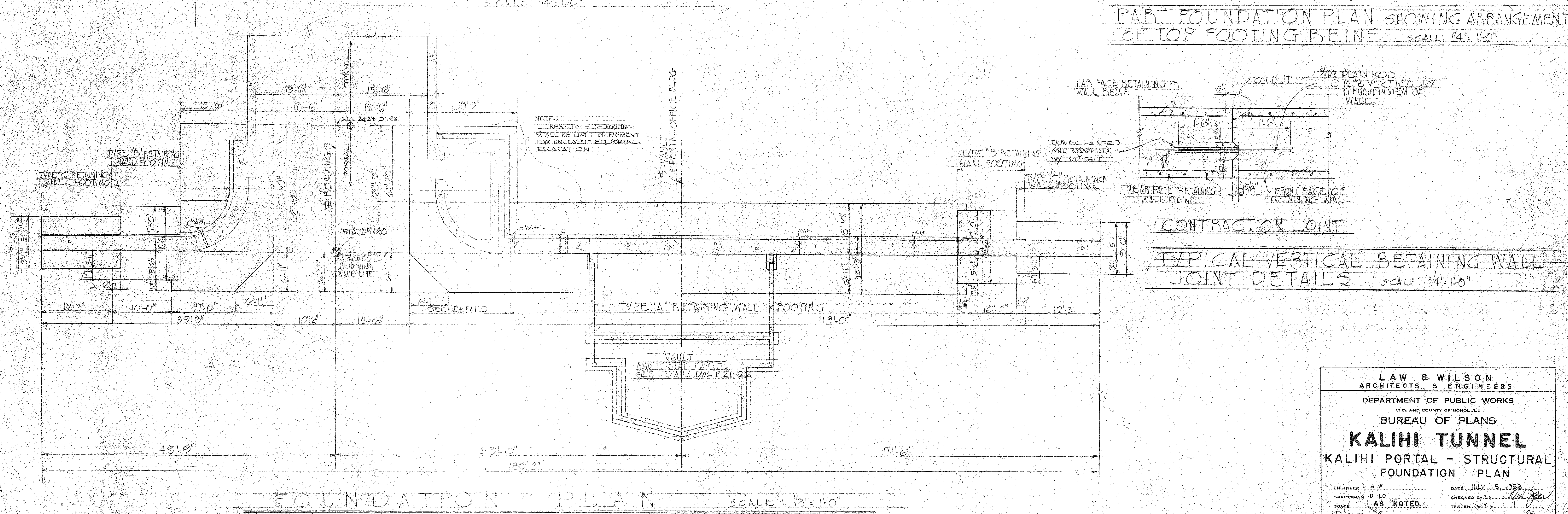
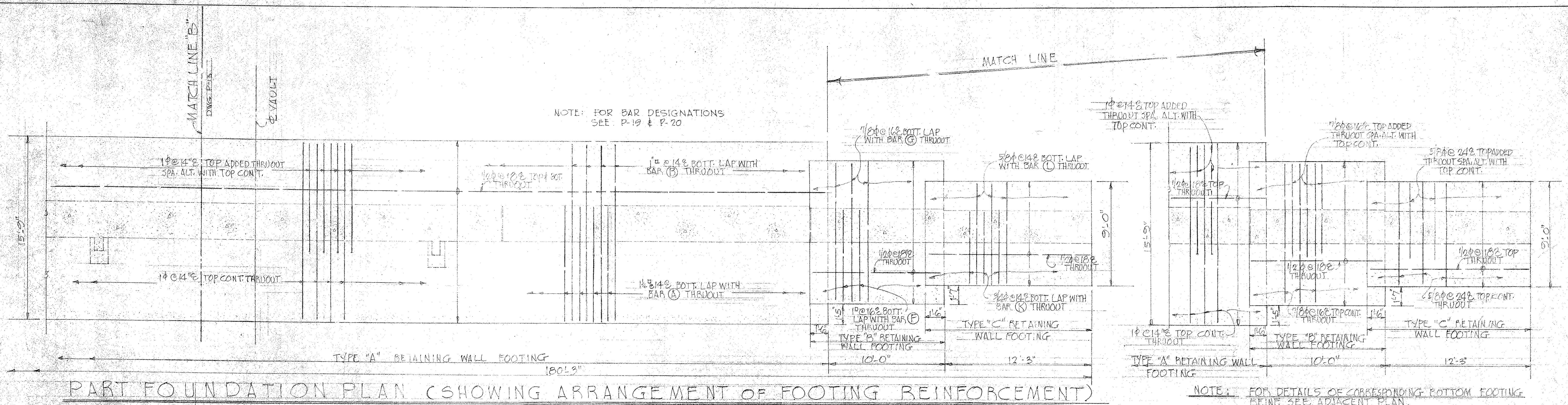
ENGINEER: I. B. W.
DRAFTSMAN: D. LO
SCALE: 1/8" = 1'-0"
APPROVED: *[Signature]*
CHIEF ENGINEER

DATE: JULY 15, 1953
CHECKED BY: *[Signature]*
TRACER: J. T. L.
APPROVED: *[Signature]*
BUREAU ENGINEER

W. S.	PROFILE	C. B.
CR. REC.	P. S.	S. B.
W. N. BY:	P. W. BY:	S. BY:

APPROVED: *[Signature]*
ENGINEER: KALIHI TUNNEL

SECTION C JOB NO. 26-53 DWG. P-11



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CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

KALIHI TUNNEL
KALIHI PORTAL - STRUCTURAL
FOUNDATION PLAN

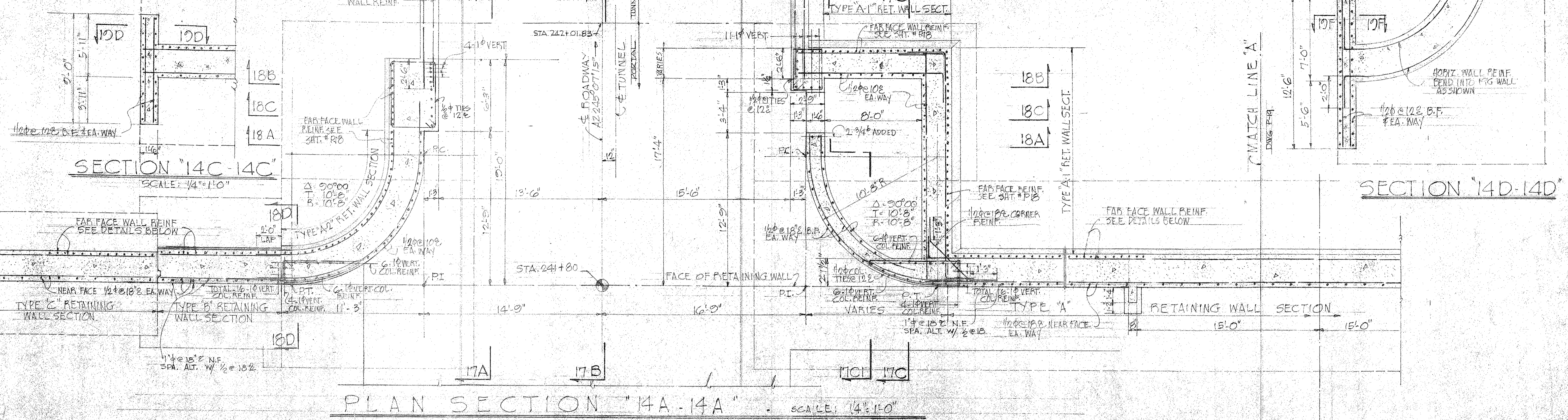
ENGINEER: L. B. W. DATE: JULY 15, 1953
DRAFTSMAN: D. L. O. CHECKED BY: T. E. [Signature]
SCALE: AS NOTED TRACER: A. Y. L.
APPROVED: [Signature] CHIEF ENGINEER
APPROVED: [Signature] BUREAU ENGINEER

W.S.	PROFILE	C.B.
CR. SEC.	F.B.	S.B.
W.M. BY:	F.W. BY:	S.B. BY:

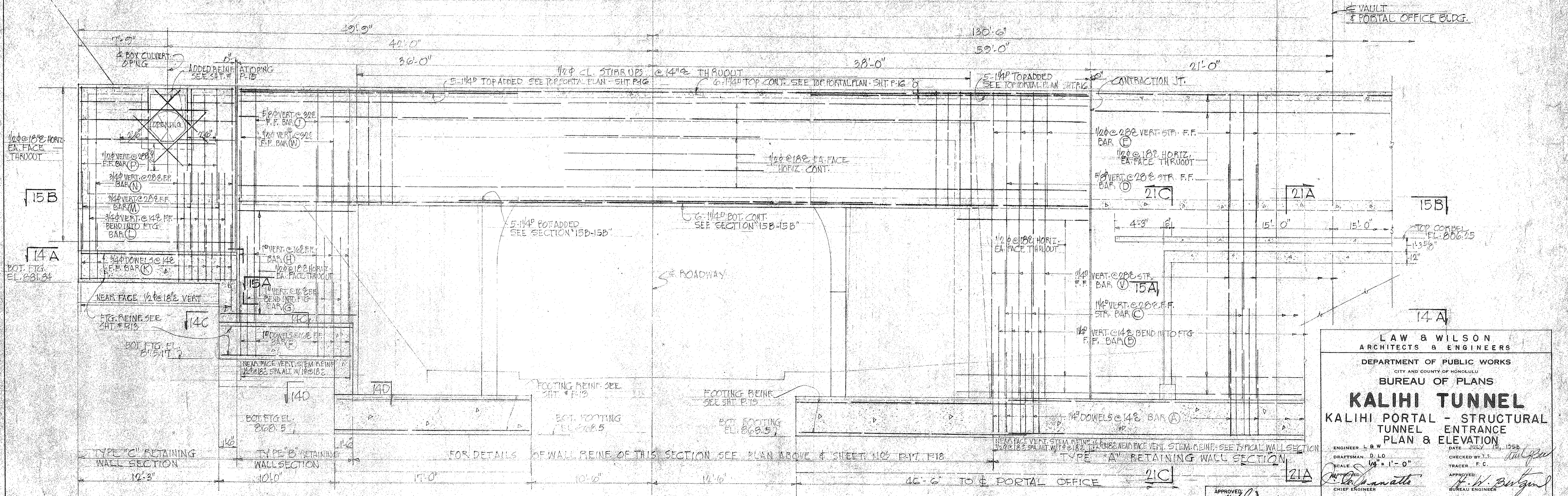
SECTION C JOB NO. 26-53 DWG. P-12

TYPE "C" RETAINING WALL SECTION TYPE "B" RET. WALL SECT.

TYPE "B" RET. WALL SECTION



PLAN SECTION "14A-14A" SCALE: 1/4"=1'-0"

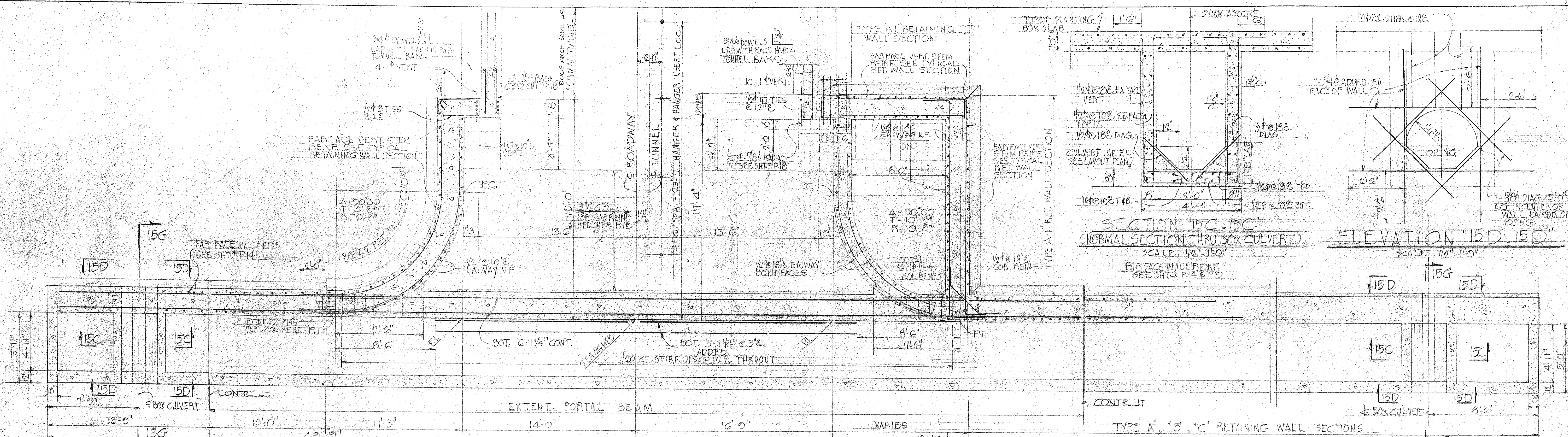


ELEVATION "14B-14B" (SHOWING ARRANGEMENT OF RETAINING WALL STEM REINF.) SCALE: 1/4"=1'-0"

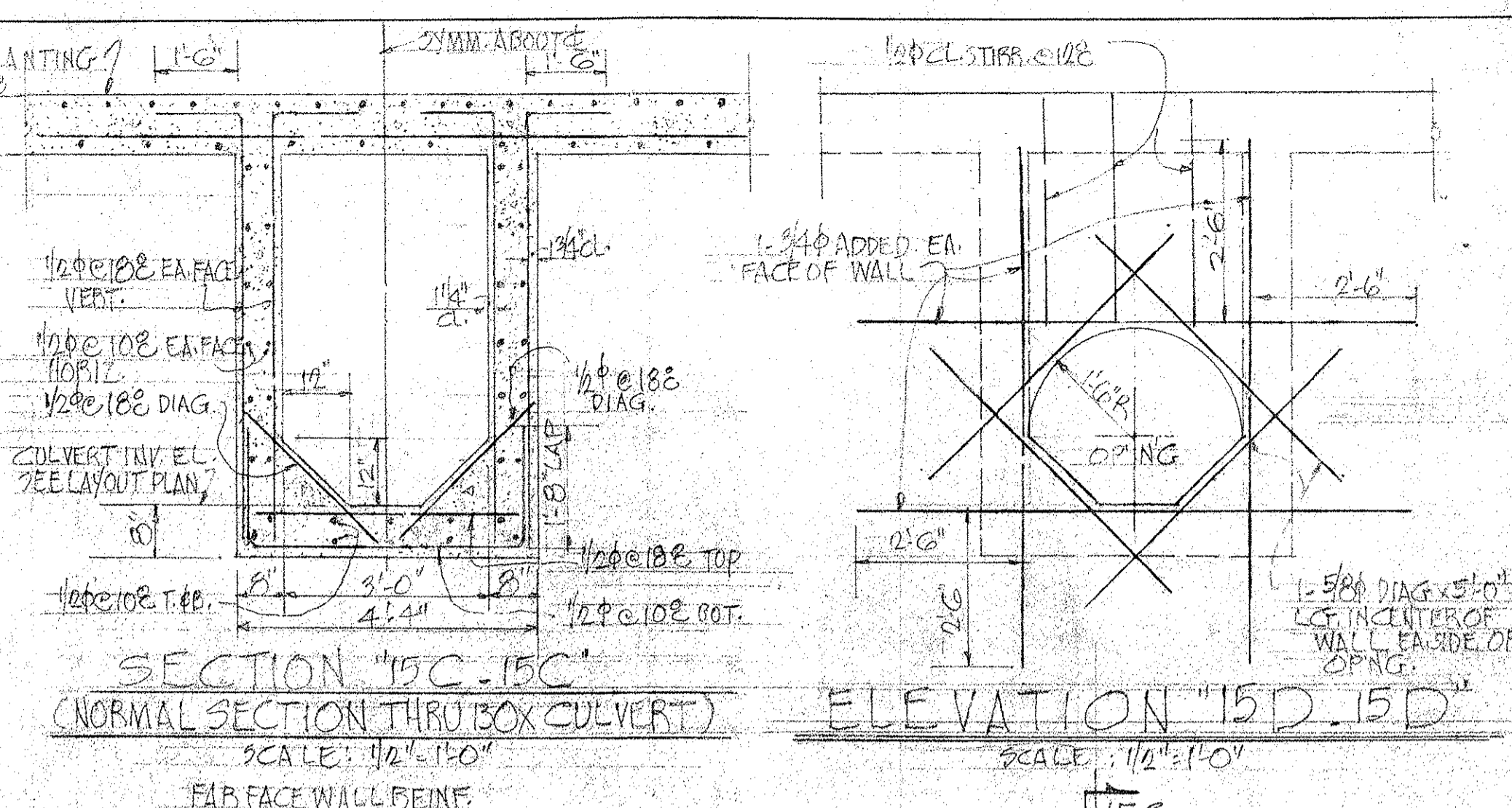
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ARCHITECTS & ENGINEERS
CITY AND COUNTY OF HONOLULU
DEPARTMENT OF PUBLIC WORKS
BUREAU OF PLANS
KALIHI TUNNEL
KALIHI PORTAL - STRUCTURAL
TUNNEL ENTRANCE
PLAN & ELEVATION
ENGINEER: L. S. W. DATE: JULY 15, 1953
DRAFTSMAN: D. L. O. CHECKED BY: T. L. [Signature]
SCALE: 1/4" = 1'-0" TRACER: F. C.
APPROVED: [Signature] CHIEF ENGINEER
APPROVED: [Signature] BUREAU ENGINEER

W. S.	PROFILE	C. B.
CR. SEC.	F. S.	S. B.
W. M. BY:	F. W. BY:	S. BY:

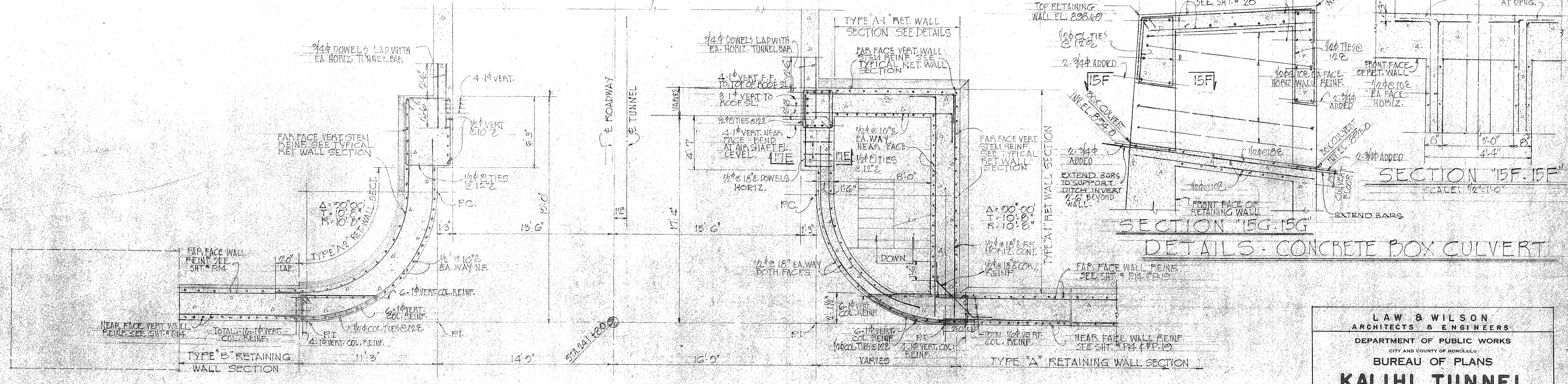
SECTION C JOB NO. 26-53 DWG. P-14



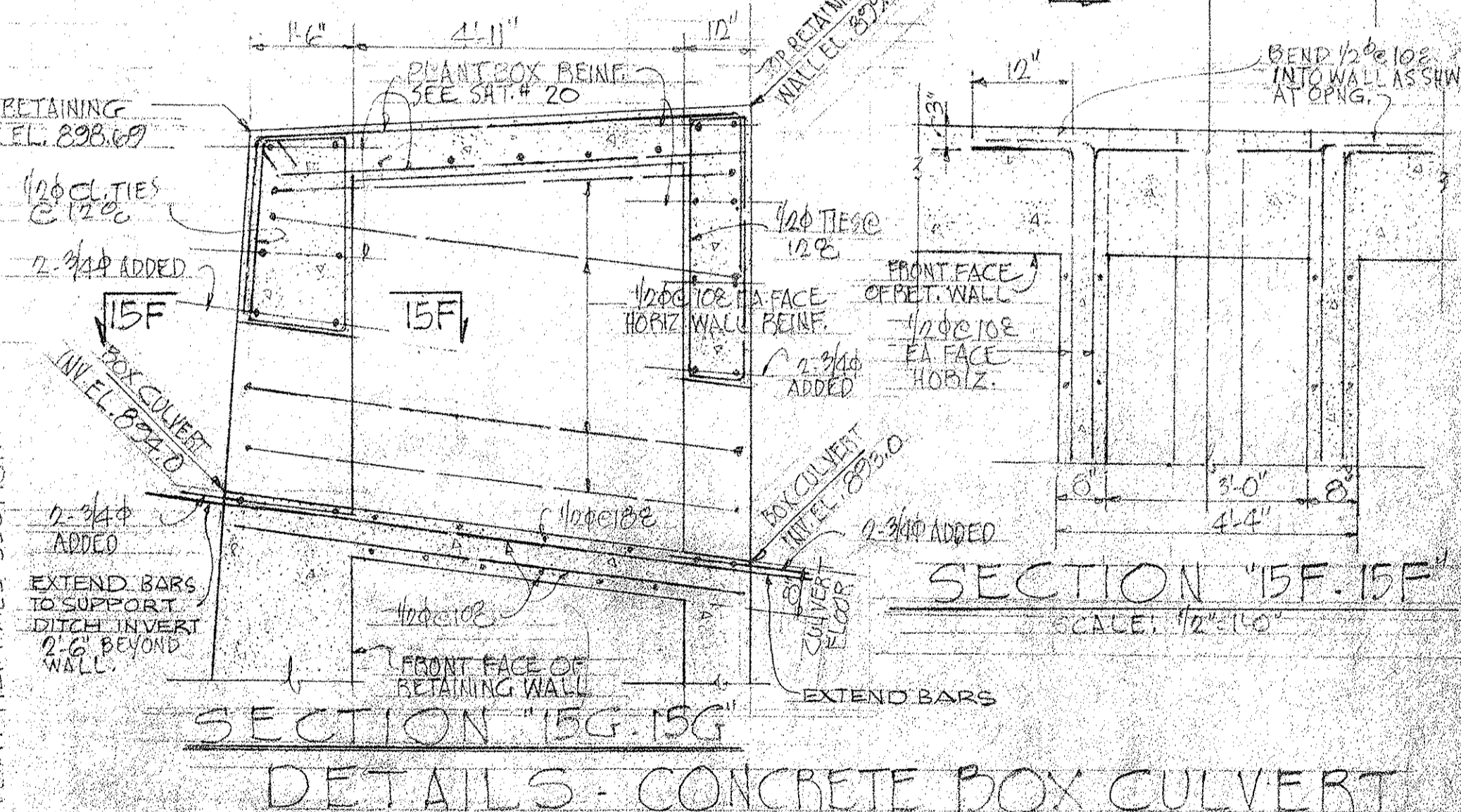
PLAN SECTION "15B-15B" (AT AIRSHAFT FLOOR SLAB LEVEL) SCALE: 1/4"=1'-0"



ELEVATION "15D-15D" (NORMAL SECTION THRU BOX CULVERT) SCALE: 1/2"=1'-0"



PLAN SECTION "15A-15A" SCALE: 1/4"=1'-0"

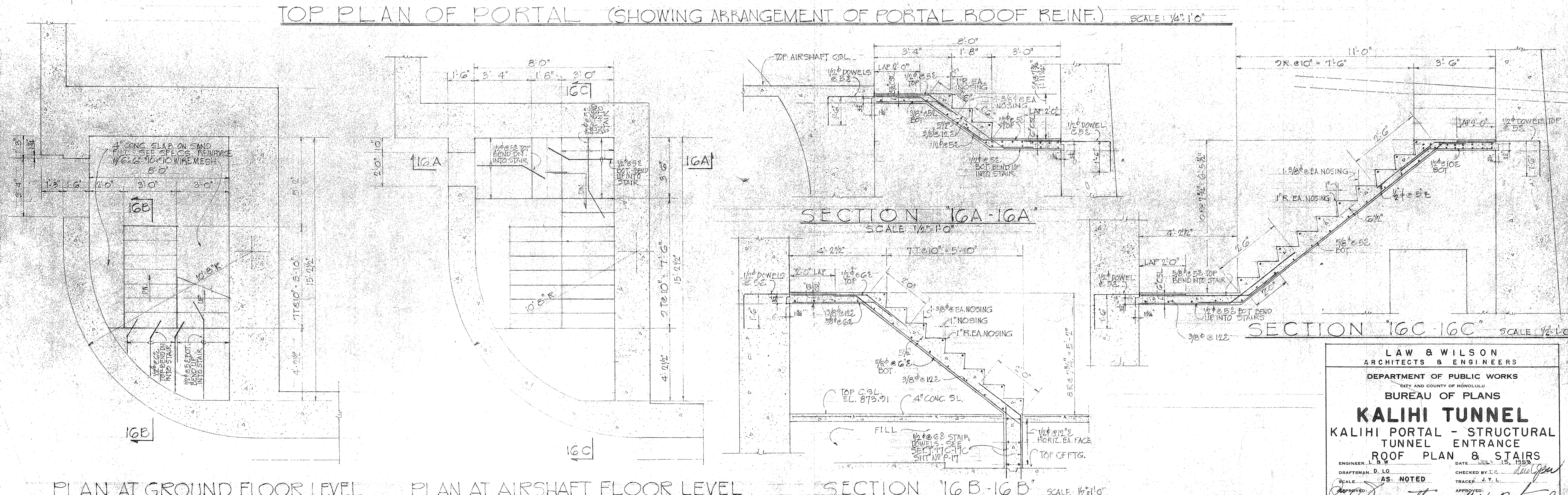
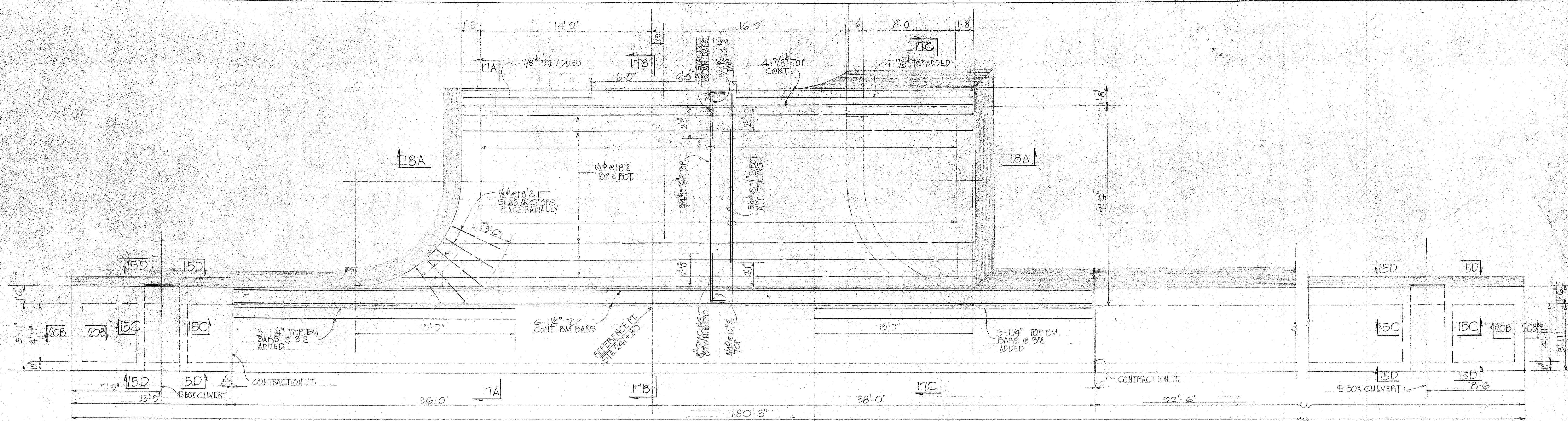


SECTION "15F-15F" SCALE: 1/2"=1'-0"

SECTION "15G-15G" DETAILS - CONCRETE BOX CULVERT

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CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIHI TUNNEL
KALIHI PORTAL - STRUCTURAL
TUNNEL ENTRANCE
PLAN SECTIONS & DETAILS
ENGINEER: L. B. W. DATE: JULY 15, 1953
DRAFTSMAN: D. L. O. CHECKED BY: T. E. [Signature]
SCALE: AS NOTED TRACER: J. Y. L.
APPROVED: [Signature] APPROVED: [Signature]
CHIEF ENGINEER BUREAU ENGINEER

APPROVED:	PROFILE	C.B.
ENGINEER, KALIHI TUNNEL	F.B.	S.B.
	W. & BY	S. BY



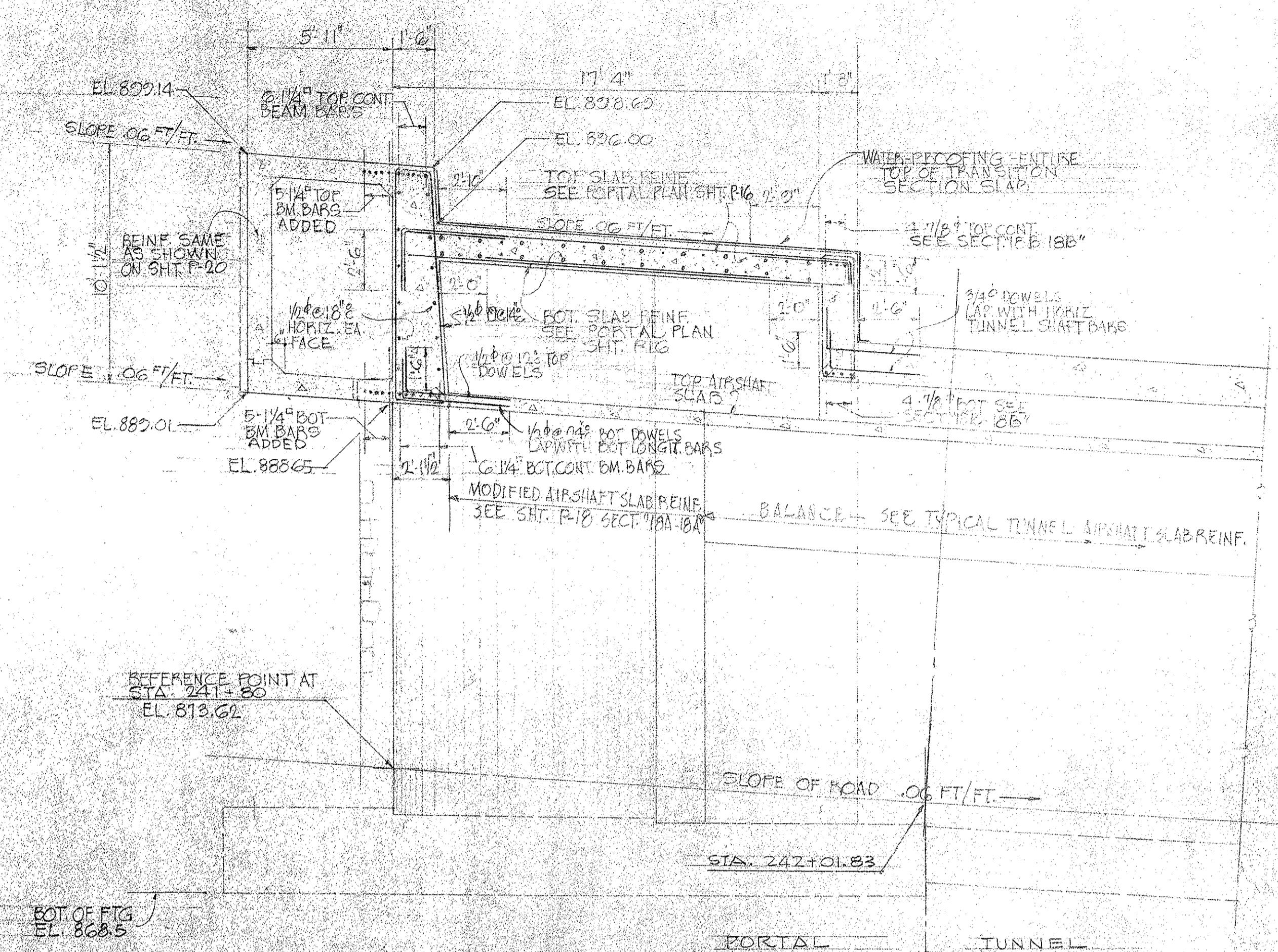
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ARCHITECTS & ENGINEERS
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

KALIHI TUNNEL
KALIHI PORTAL - STRUCTURAL
TUNNEL ENTRANCE
ROOF PLAN & STAIRS

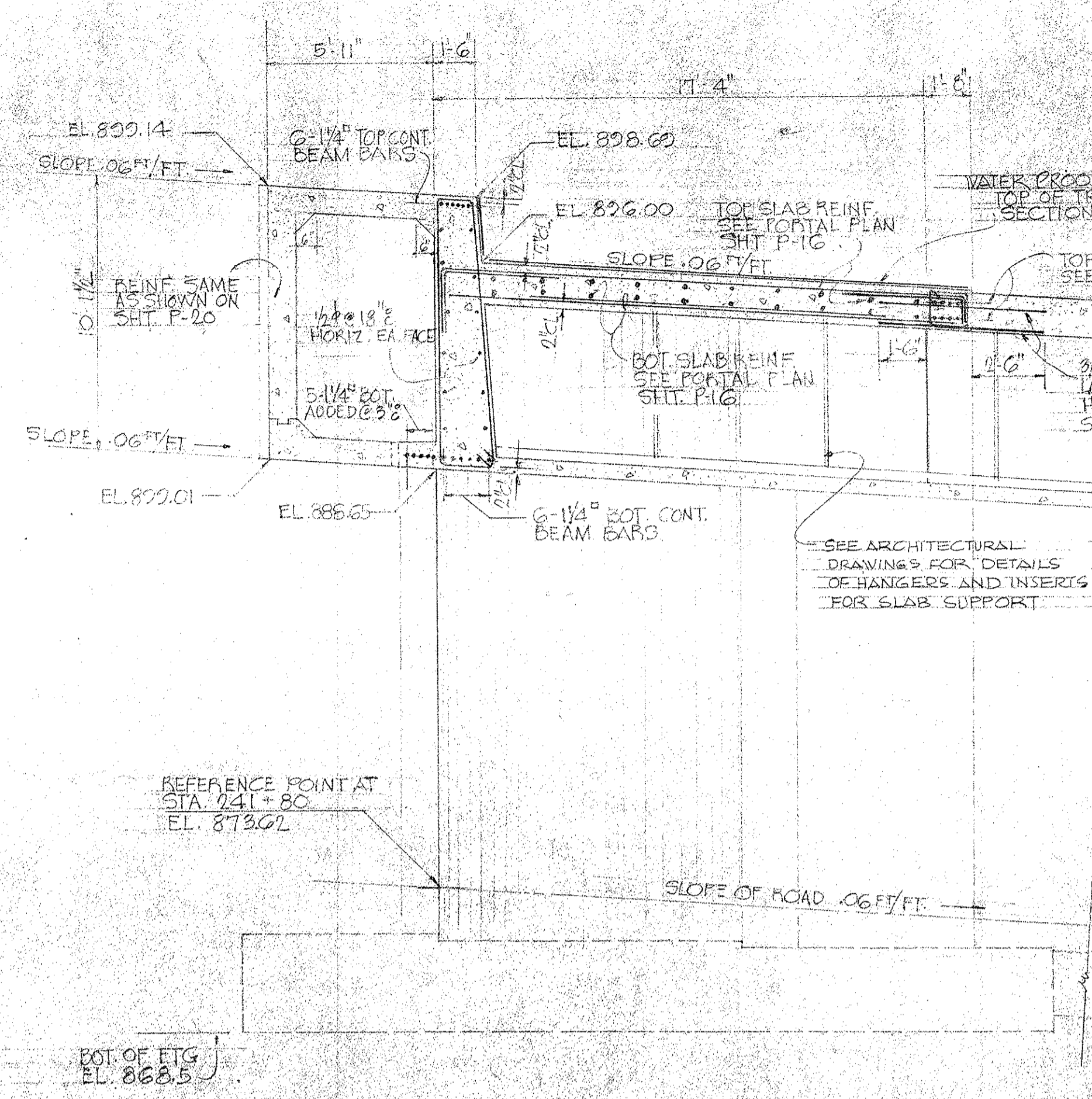
ENGINEER: L. S. W. DATE: JULY 15, 1953
DRAFTSMAN: D. L. O. CHECKED BY: J. L. L.
SCALE: AS NOTED TRACER: J. Y. L.
APPROVED: *[Signature]* APPROVED: *[Signature]*
CHIEF ENGINEER BUREAU ENGINEER

W. S.	PROFILE	C. B.
CR. SEC.	F. B.	S. B.
W. M. BY	F. W. BY	S. BY

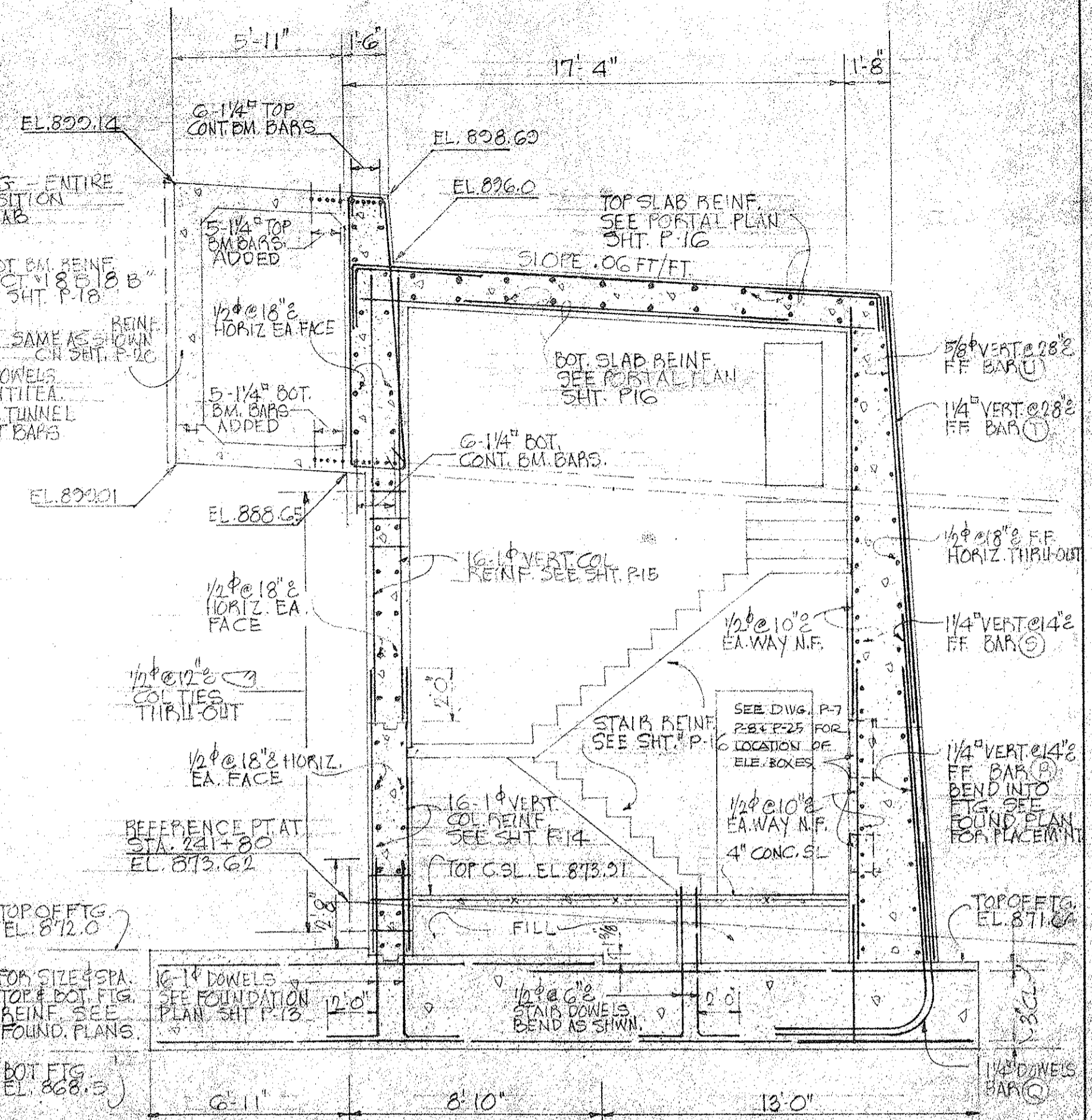
SECTION C JOB NO. 26-53 DWG. P-16



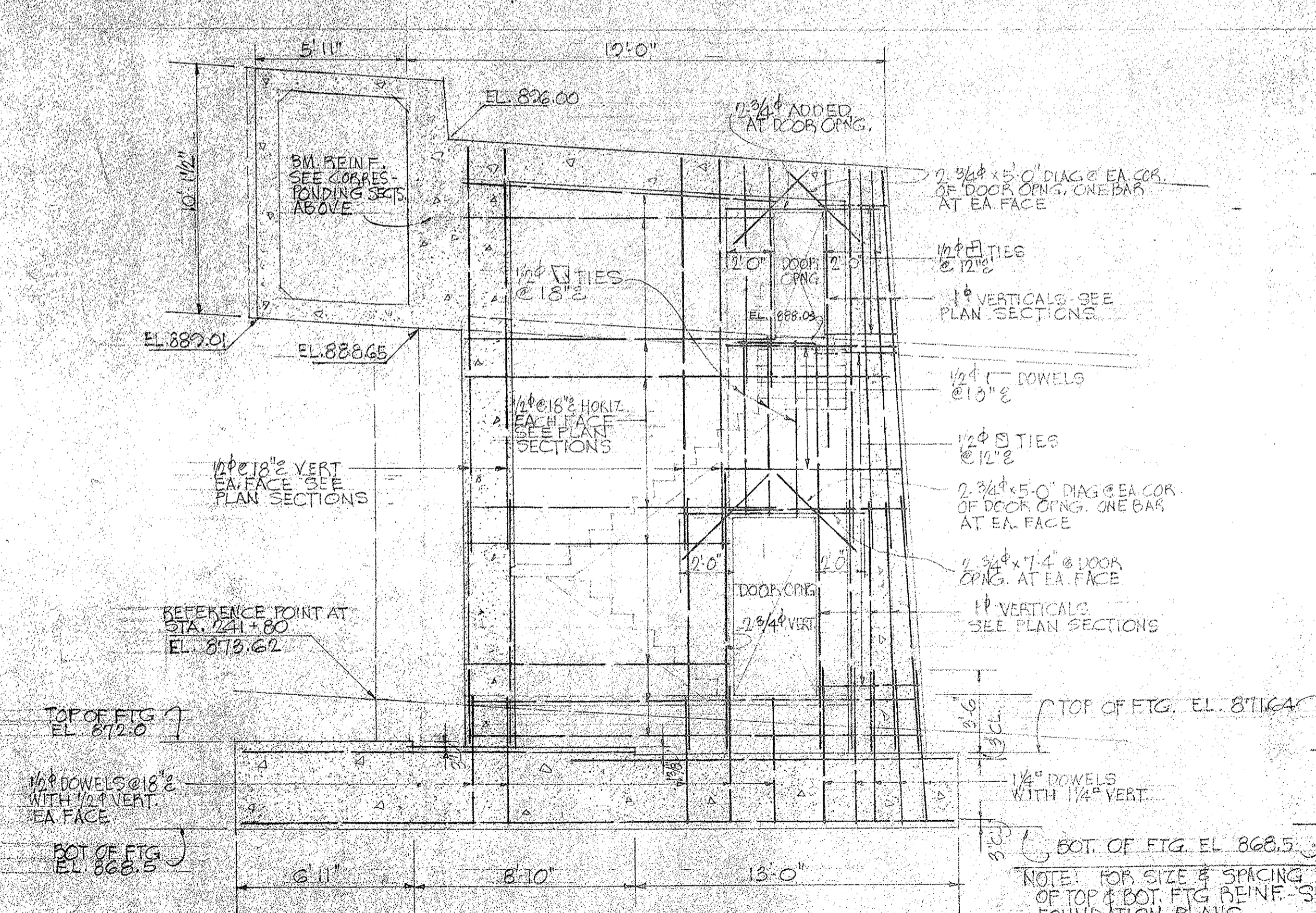
SECTION "17A-17A" SCALE: 1/4"=1'-0"



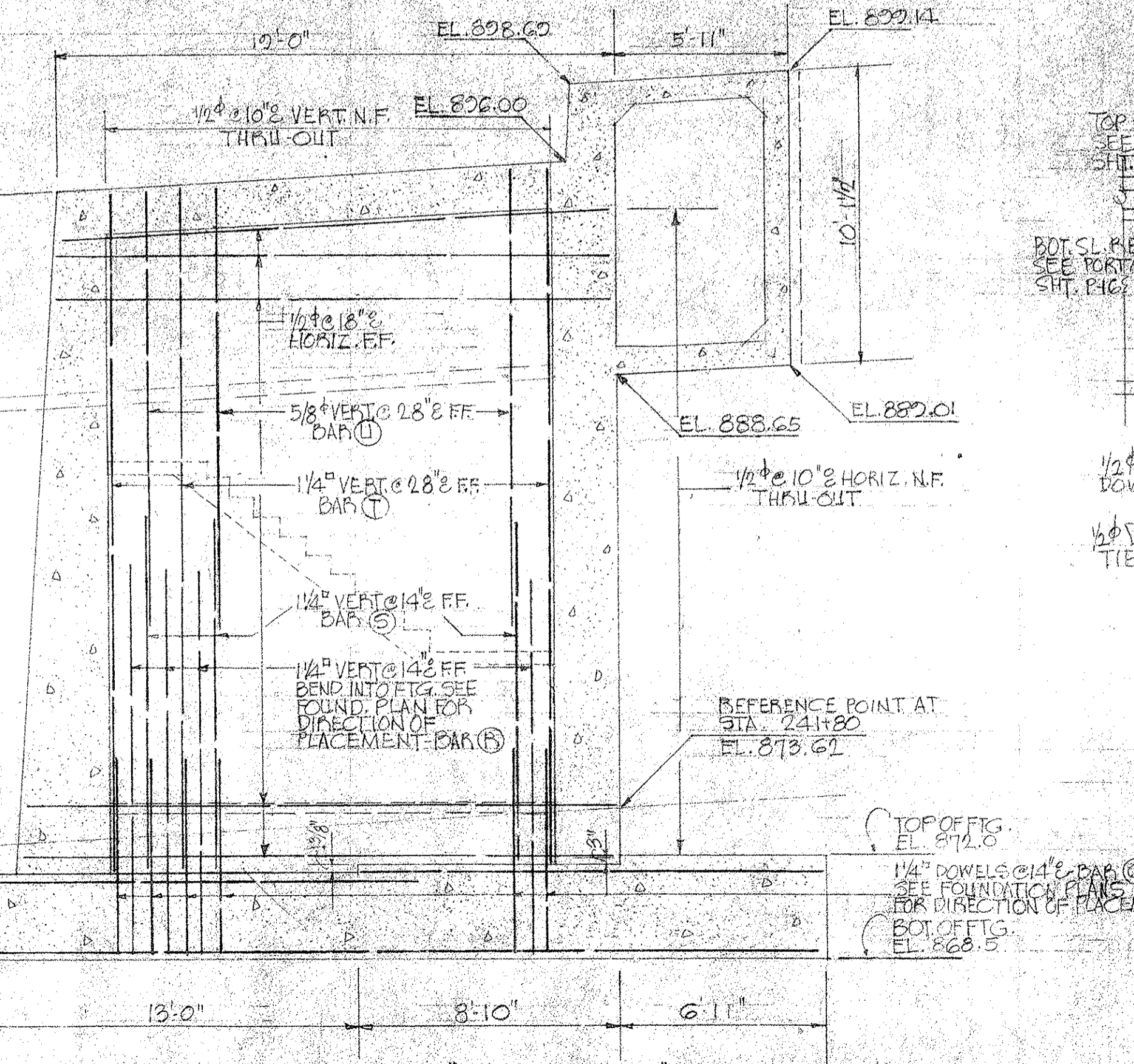
SECTION "17B-17B" SCALE: 1/4"=1'-0"



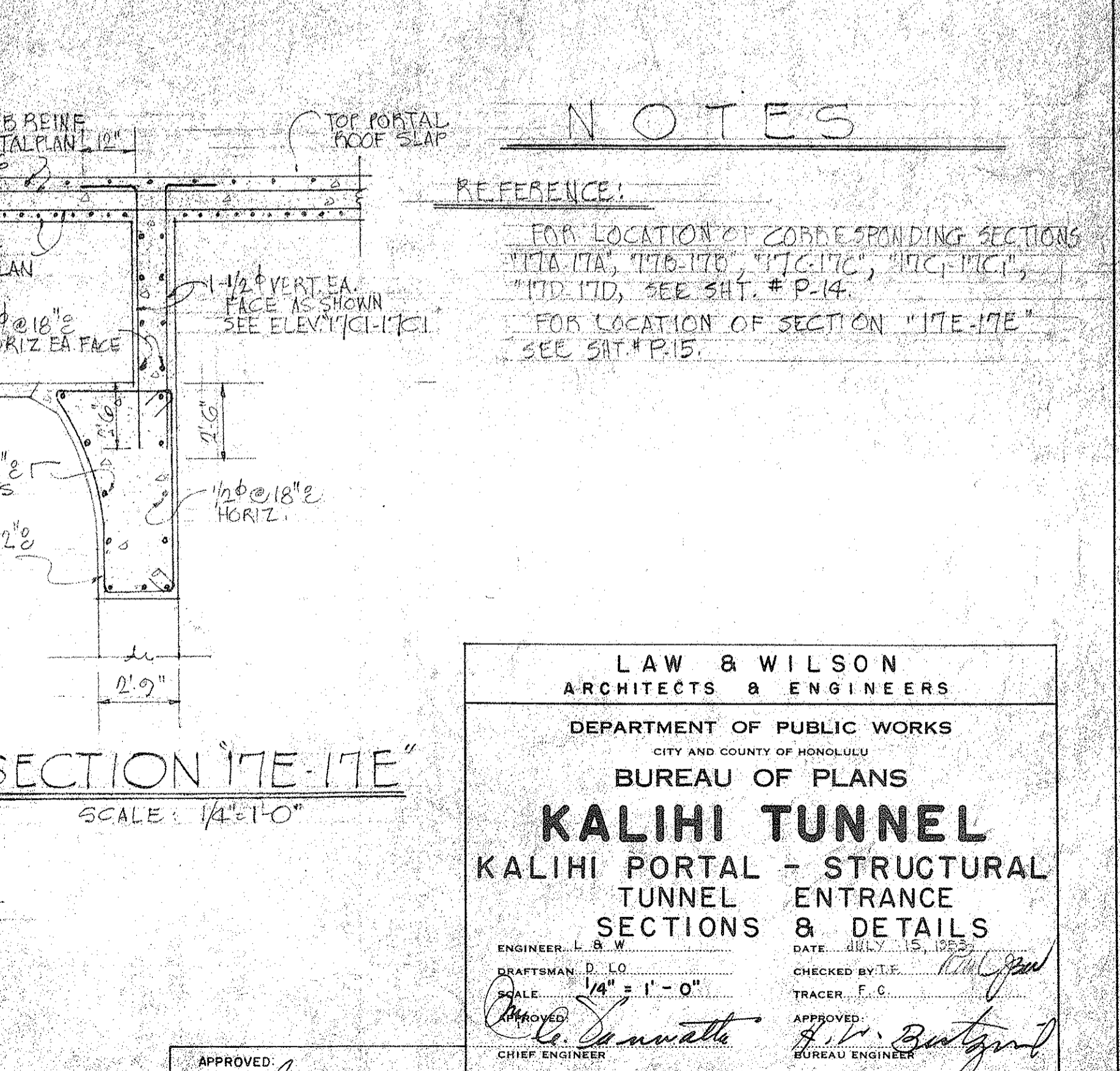
SECTION "17C-17C" SCALE: 1/4"=1'-0"



ELEVATION "17C1-17C1" WALL ELEVATIONS SHOWING ARRANGEMENT OF REINFORCEMENT SCALE: 1/4"=1'-0"



ELEVATION "17D-17D" WALL ELEVATIONS SHOWING ARRANGEMENT OF REINFORCEMENT SCALE: 1/4"=1'-0"



SECTION "17E-17E" SCALE: 1/4"=1'-0"

NOTES

REFERENCE:

FOR LOCATION OF COBBLE SPANDING SECTIONS "17A-17A", "17B-17B", "17C-17C", "17D-17D", "17E-17E", "17F-17F", "17G-17G", "17H-17H", "17I-17I", "17J-17J", "17K-17K", "17L-17L", "17M-17M", "17N-17N", "17O-17O", "17P-17P", "17Q-17Q", "17R-17R", "17S-17S", "17T-17T", "17U-17U", "17V-17V", "17W-17W", "17X-17X", "17Y-17Y", "17Z-17Z", SEE SHT. # P-14.

FOR LOCATION OF SECTION "17E-17E" SEE SHT. # P-15.

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CITY AND COUNTY OF HONOLULU

BUREAU OF PLANS

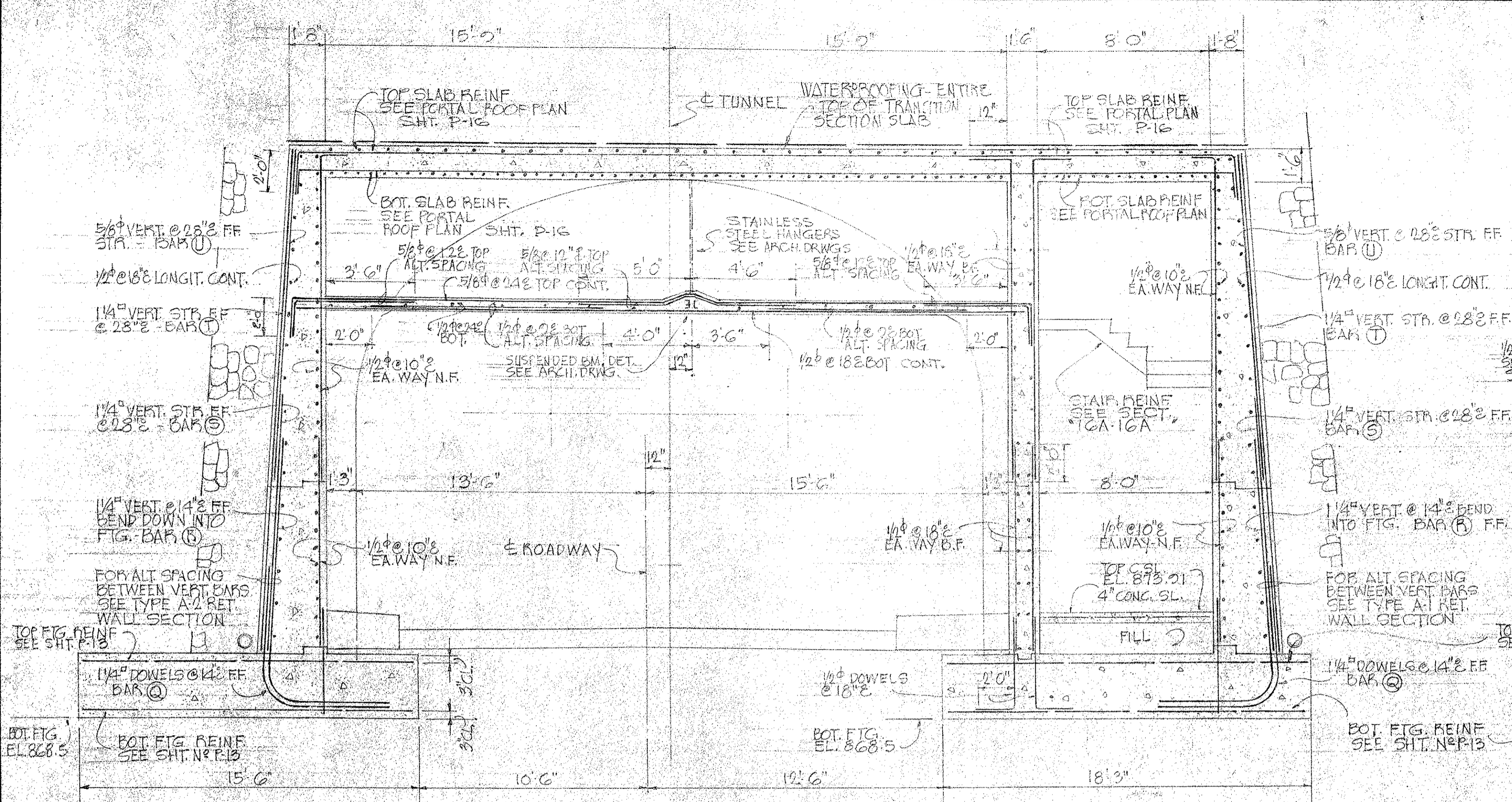
KALIHI TUNNEL
KALIHI PORTAL - STRUCTURAL
TUNNEL ENTRANCE
SECTIONS & DETAILS

ENGINEER: L. S. W.
DRAFTSMAN: D. L. O.
SCALE: 1/4" = 1'-0"
DATE: JULY 15, 1953

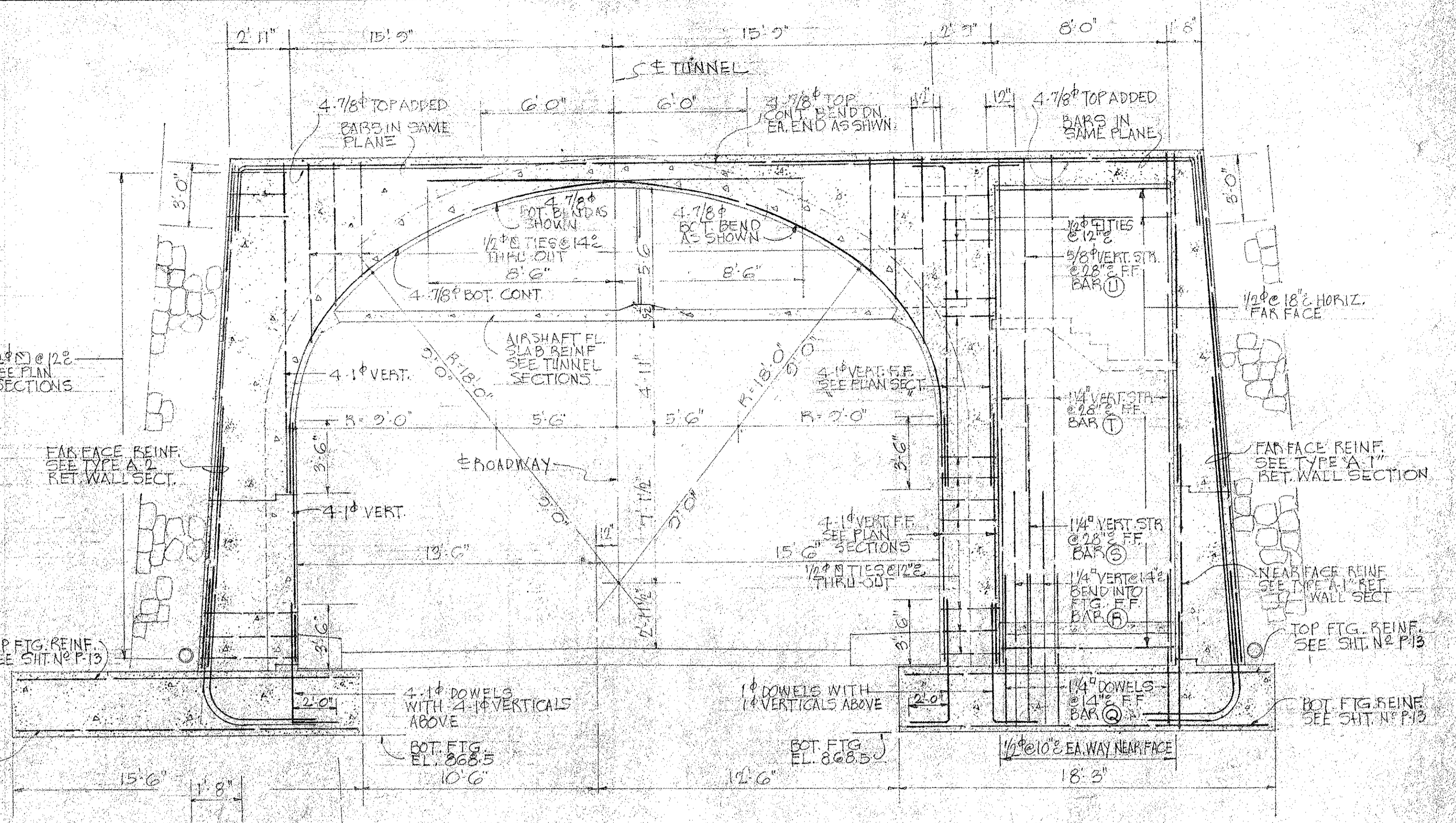
CHECKED BY: J. E. [Signature]
TRACER: F. C. [Signature]
APPROVED: J. V. [Signature]
BUREAU ENGINEER

CHIEF ENGINEER: [Signature]

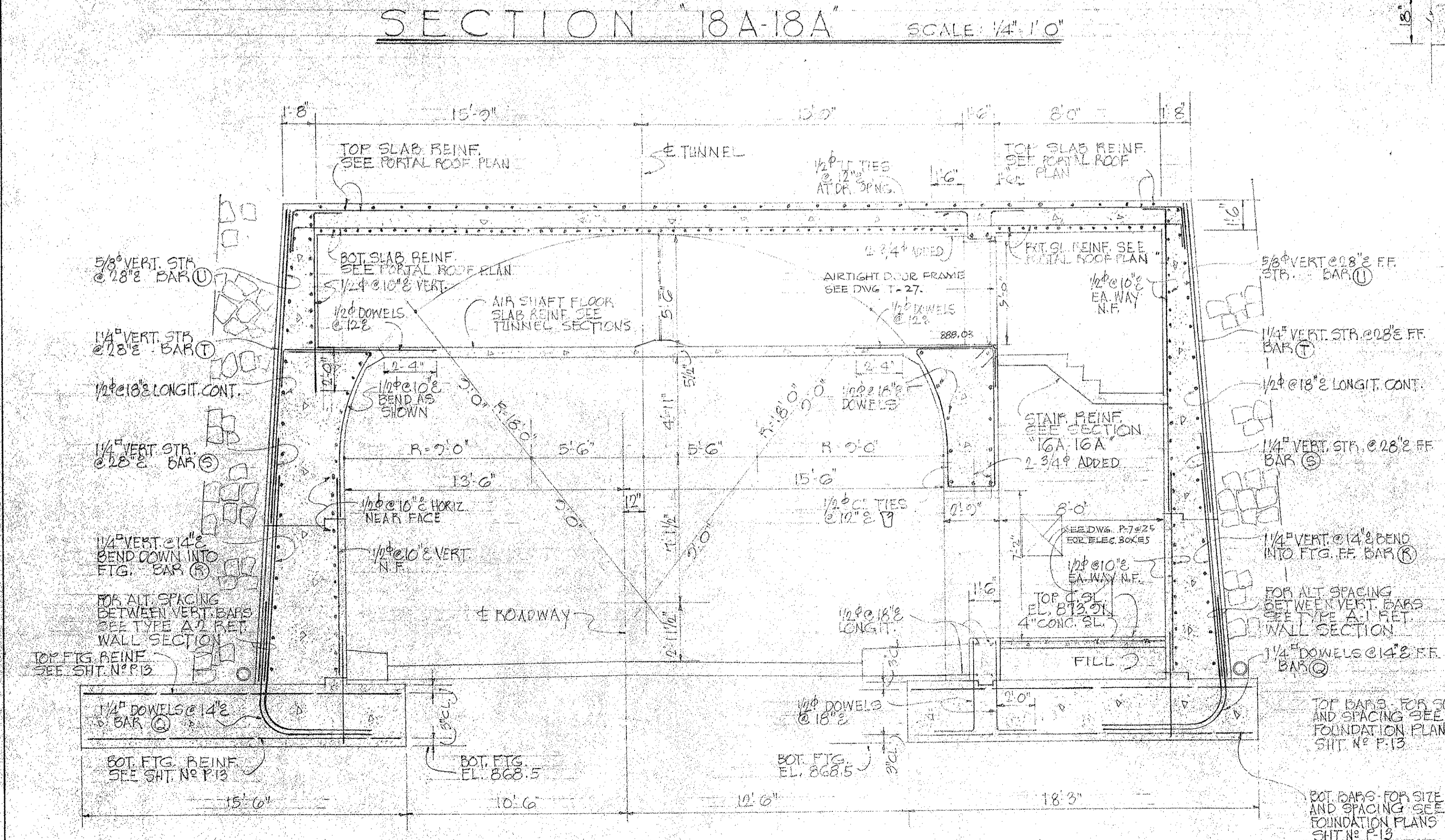
W.S.	PROFILE	C.B.
C.F. SEC.	F.B.	S.B.
W.M. BY	F.W. BY	S. BY



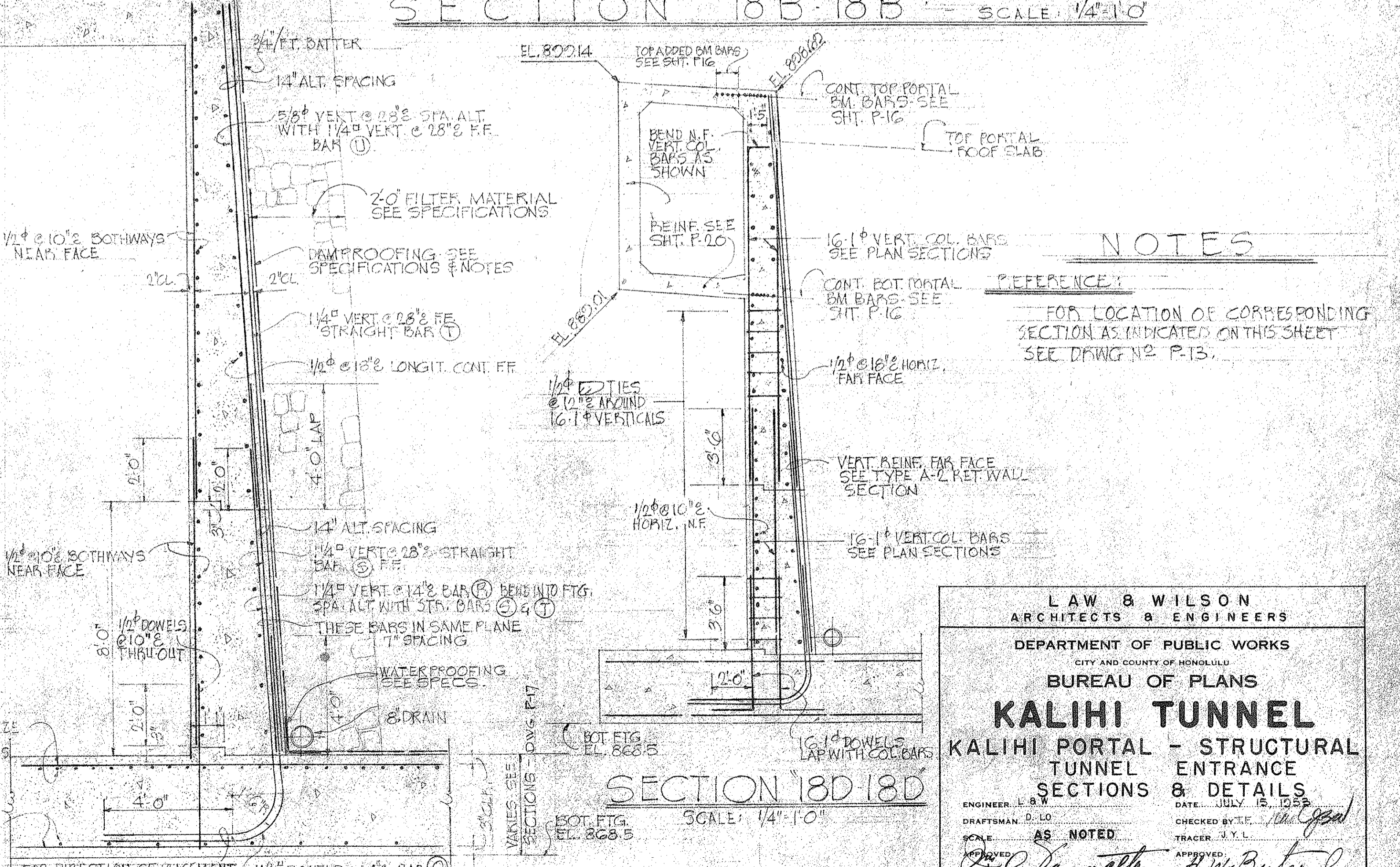
SECTION 18A-18A SCALE: 1/4"=1'-0"



SECTION 18B-18B SCALE: 1/4"=1'-0"



SECTION 18C-18C SCALE: 1/4"=1'-0"



SECTION 18D-18D SCALE: 1/4"=1'-0"

TYPE "A1" RETAINING WALL SECTION SCALE: 3/8"=1'-0"
 (TYPE "A2" RET. WALL SIMILAR EXCEPT AS NOTED ON PORTAL PLANS & SECTS. SECTION C)

NOTES

REFERENCE:
 FOR LOCATION OF CORRESPONDING SECTION AS INDICATED ON THIS SHEET SEE DRAWING NO. P-13.

LAW & WILSON
 ARCHITECTS & ENGINEERS

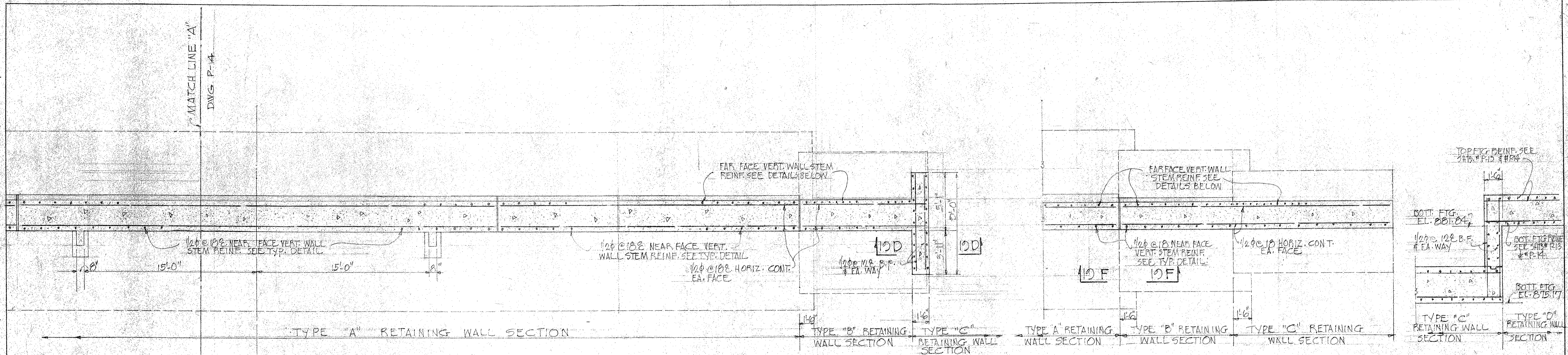
DEPARTMENT OF PUBLIC WORKS
 CITY AND COUNTY OF HONOLULU
 BUREAU OF PLANS

KALIHI TUNNEL
 KALIHI PORTAL - STRUCTURAL
 TUNNEL ENTRANCE
 SECTIONS & DETAILS

ENGINEER: L. B. W.
 DRAFTSMAN: D. LO
 SCALE: AS NOTED
 APPROVED: *[Signature]*
 CHIEF ENGINEER

DATE: JULY 15, 1953
 CHECKED BY: *[Signature]*
 TRACER: J. Y. L.
 APPROVED: *[Signature]*
 BUREAU ENGINEER

W.S.	PROFILE	C.S.
CR. SEC.	P.P.	S.S.
W.M. BY:	F.W. BY:	S.B.V.

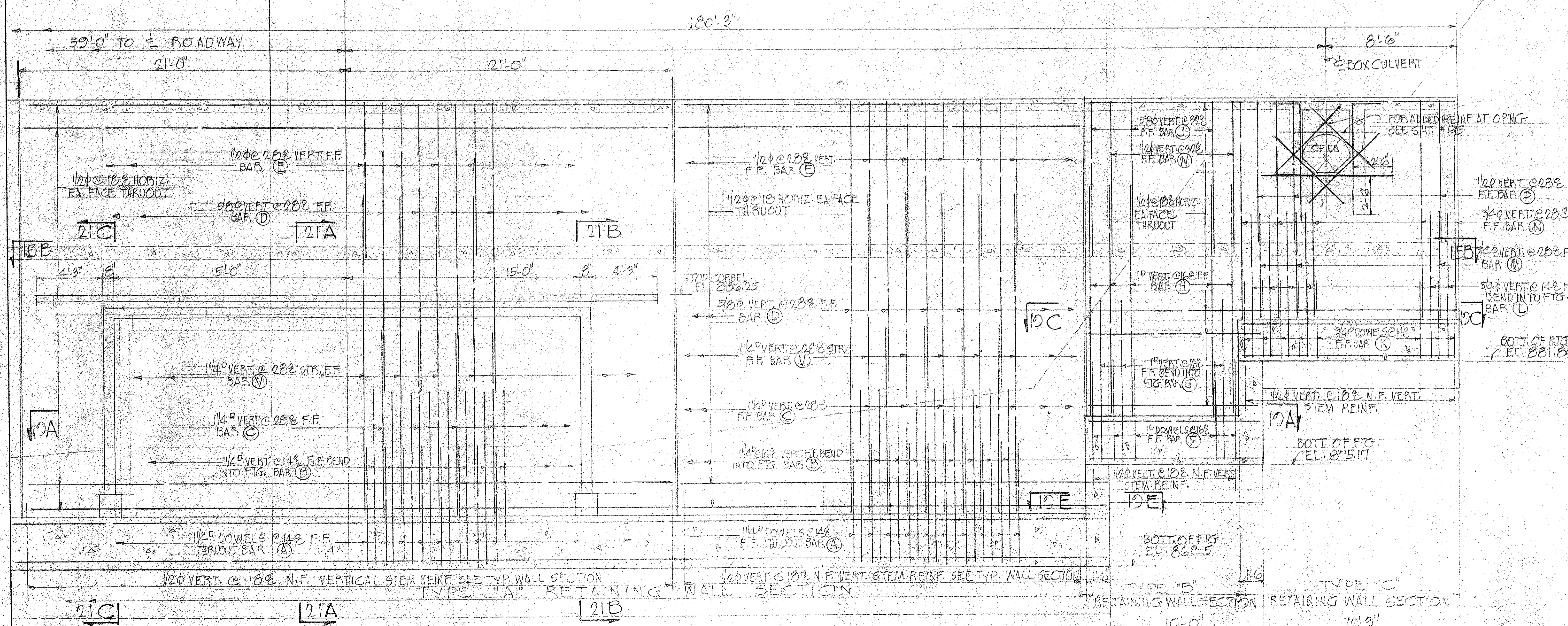


PLAN SECTION "10A-10A" - SCALE: 1/4"=1'-0"

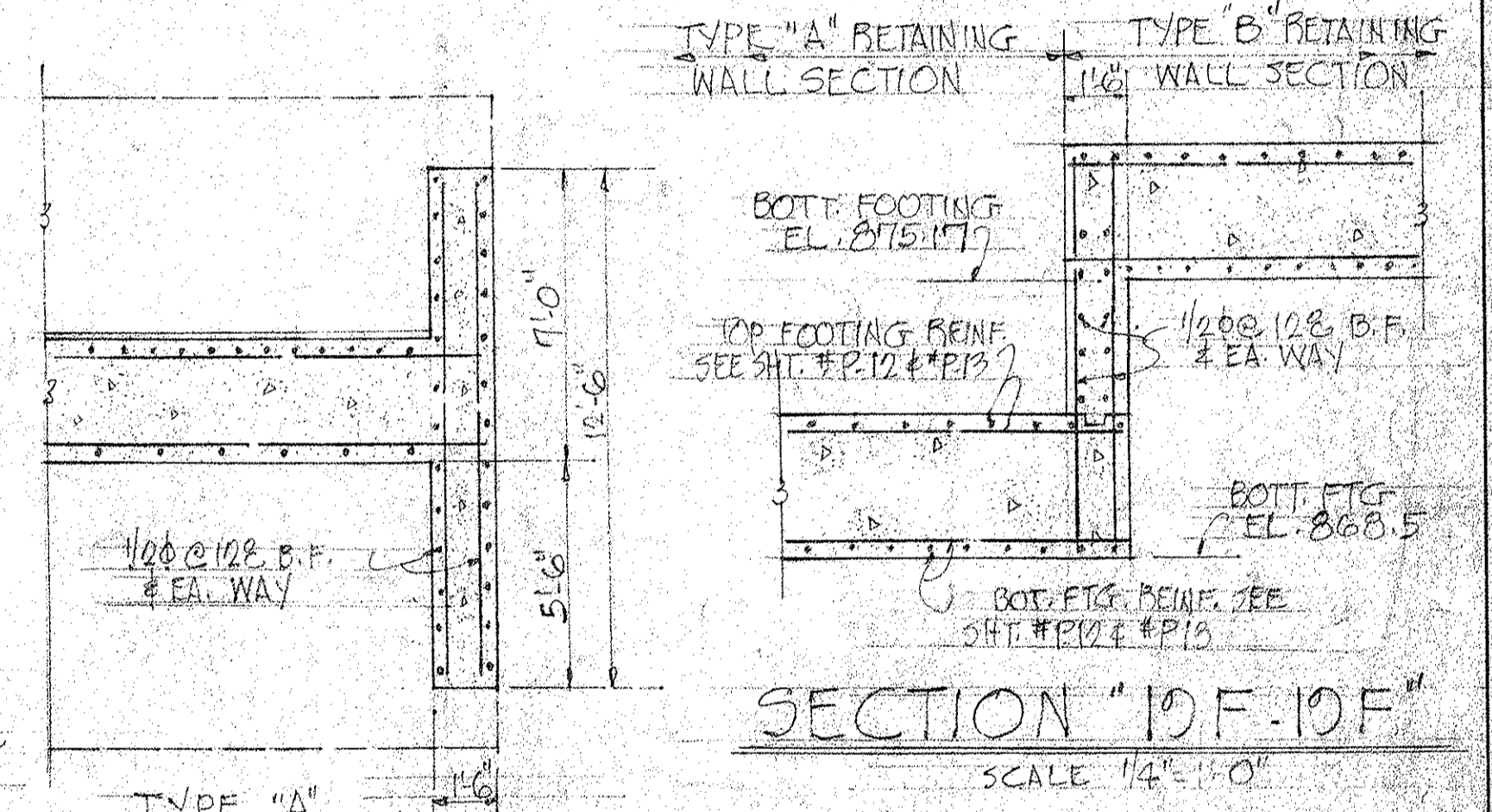
SECTION "10C-10C" SCALE: 1/4"=1'-0"

SECTION "10D-10D"

VAULT & PORTAL OFFICE BLDG.



ELEVATION "10B-10B" (SHOWING ARRANGEMENT OF RETAINING WALL REINFORCEMENT) SCALE: 1/4"=1'-0"



SECTION "10E-10E" SCALE: 1/4"=1'-0"

SECTION "10F-10F" SCALE: 1/4"=1'-0"

LAW & WILSON
ARCHITECTS & ENGINEERS

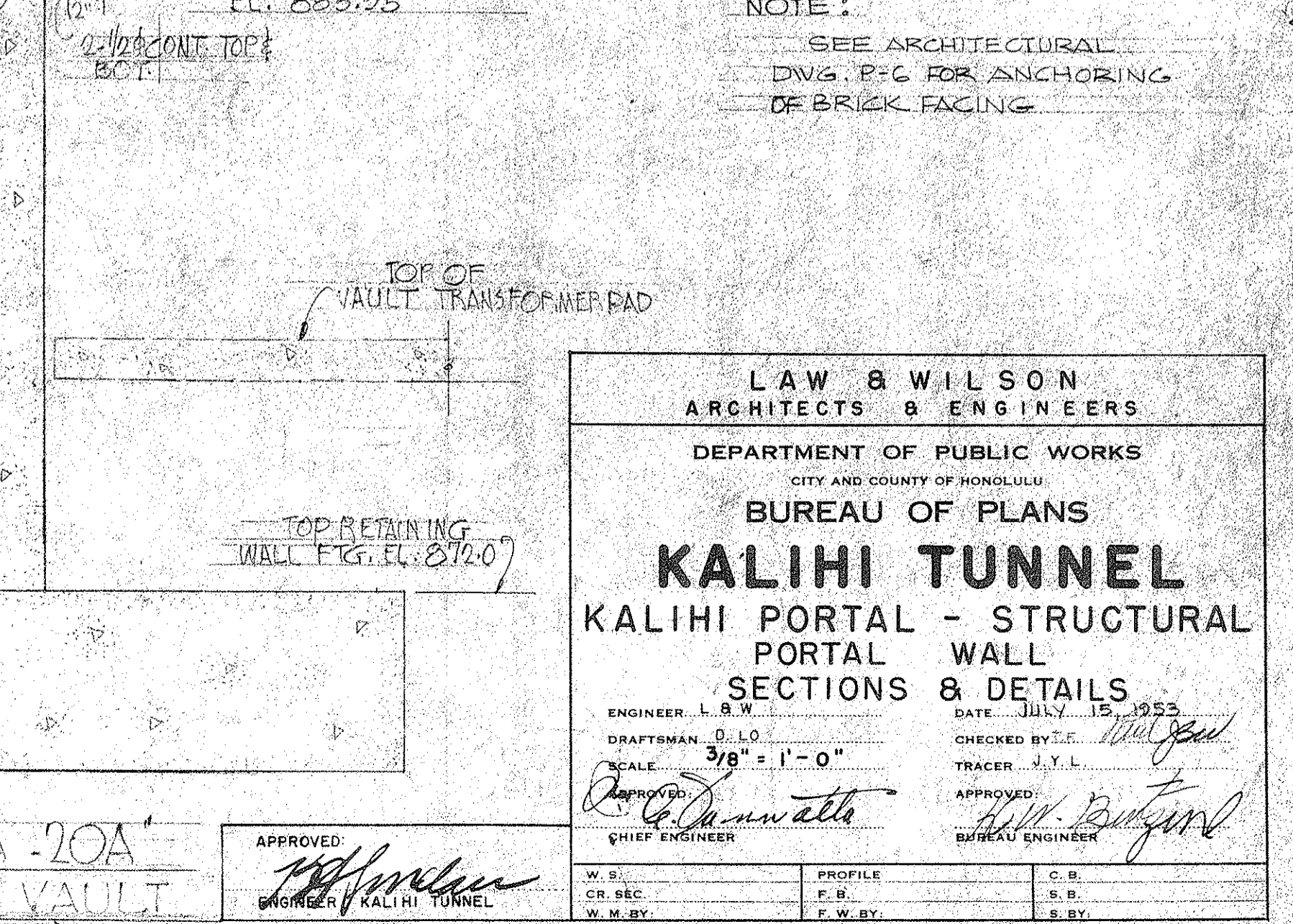
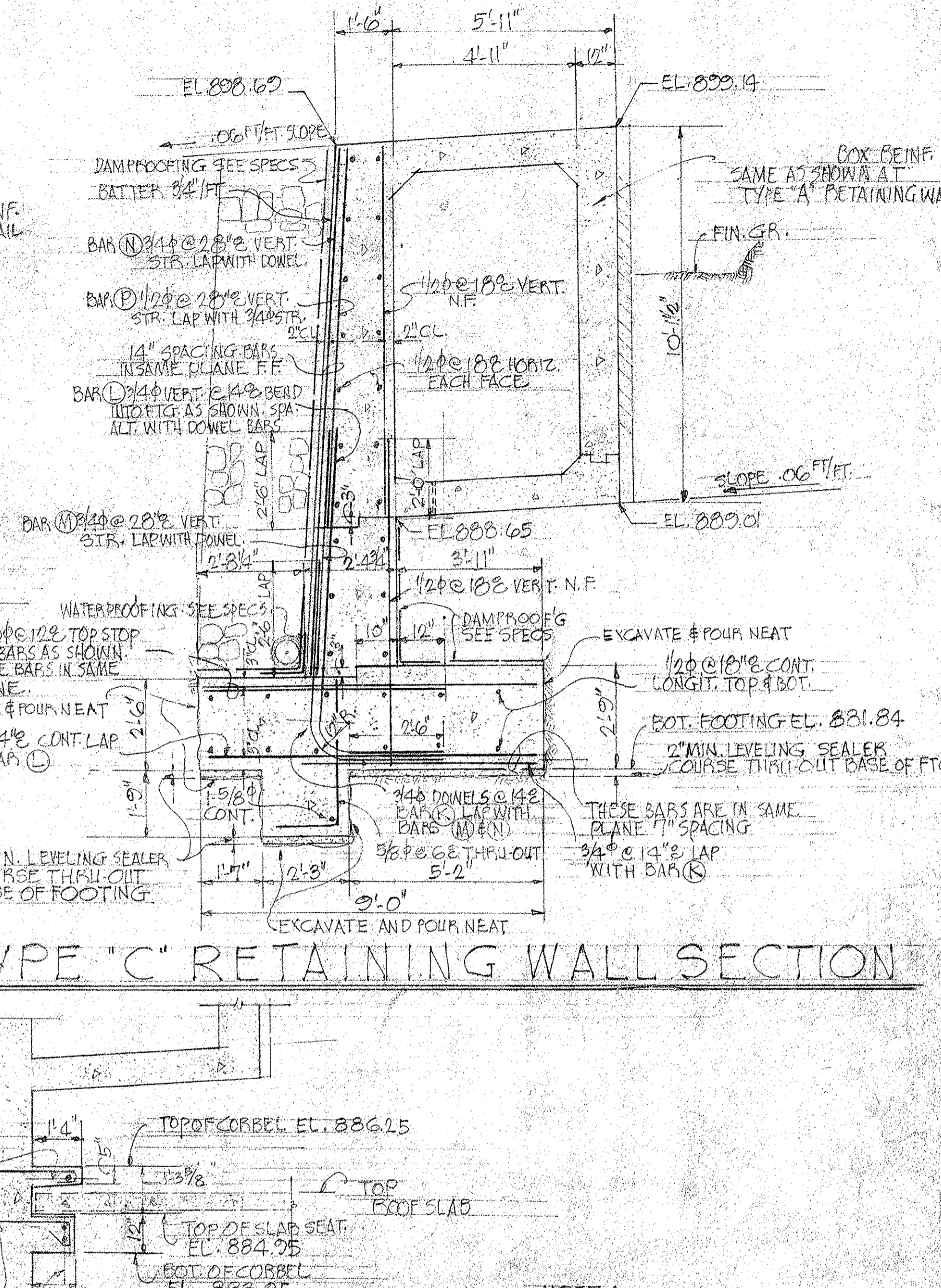
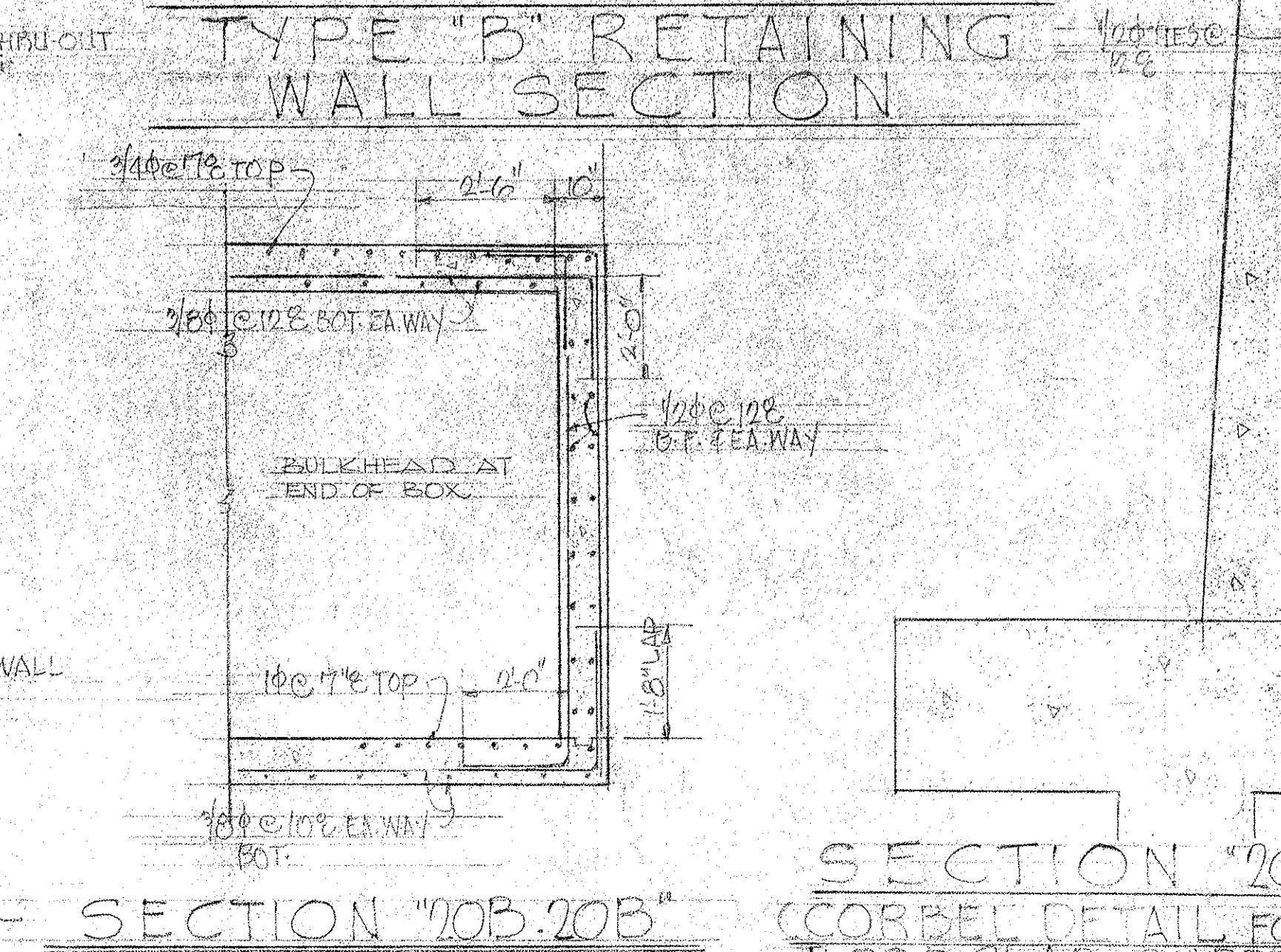
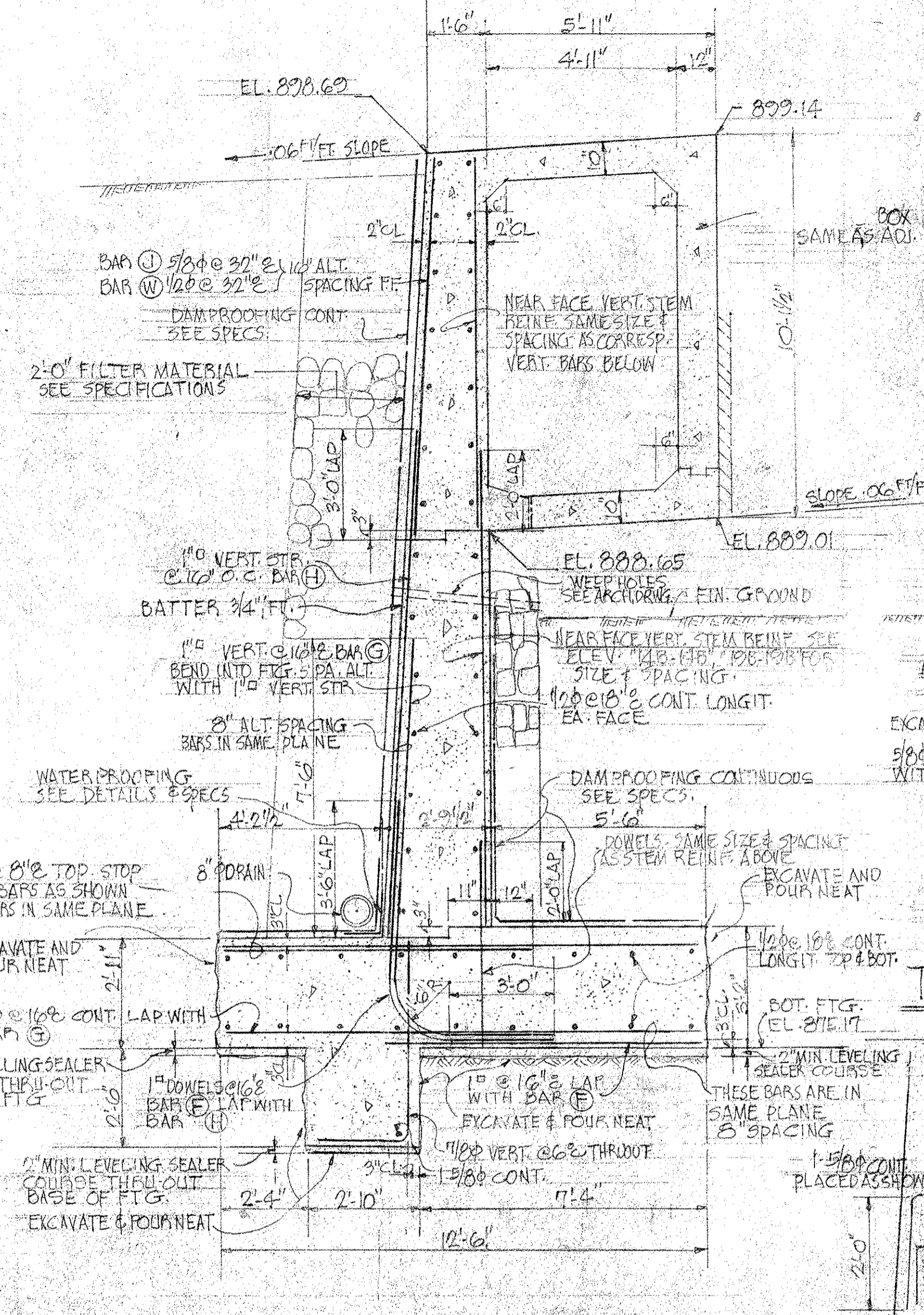
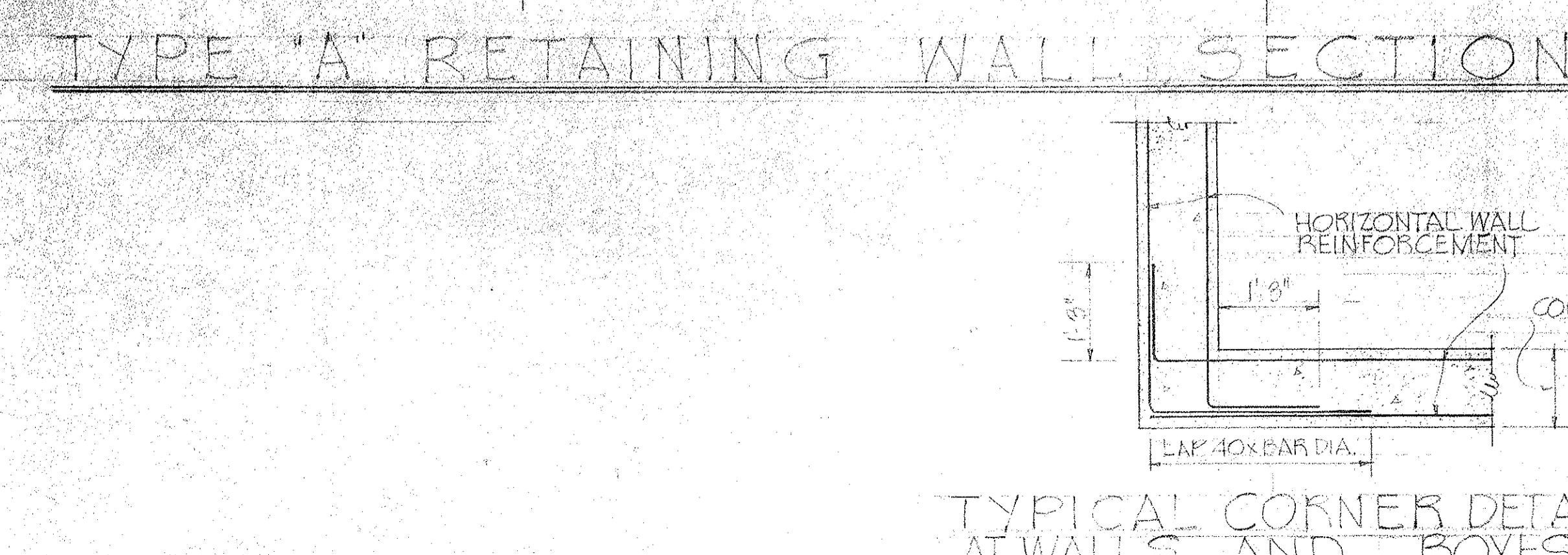
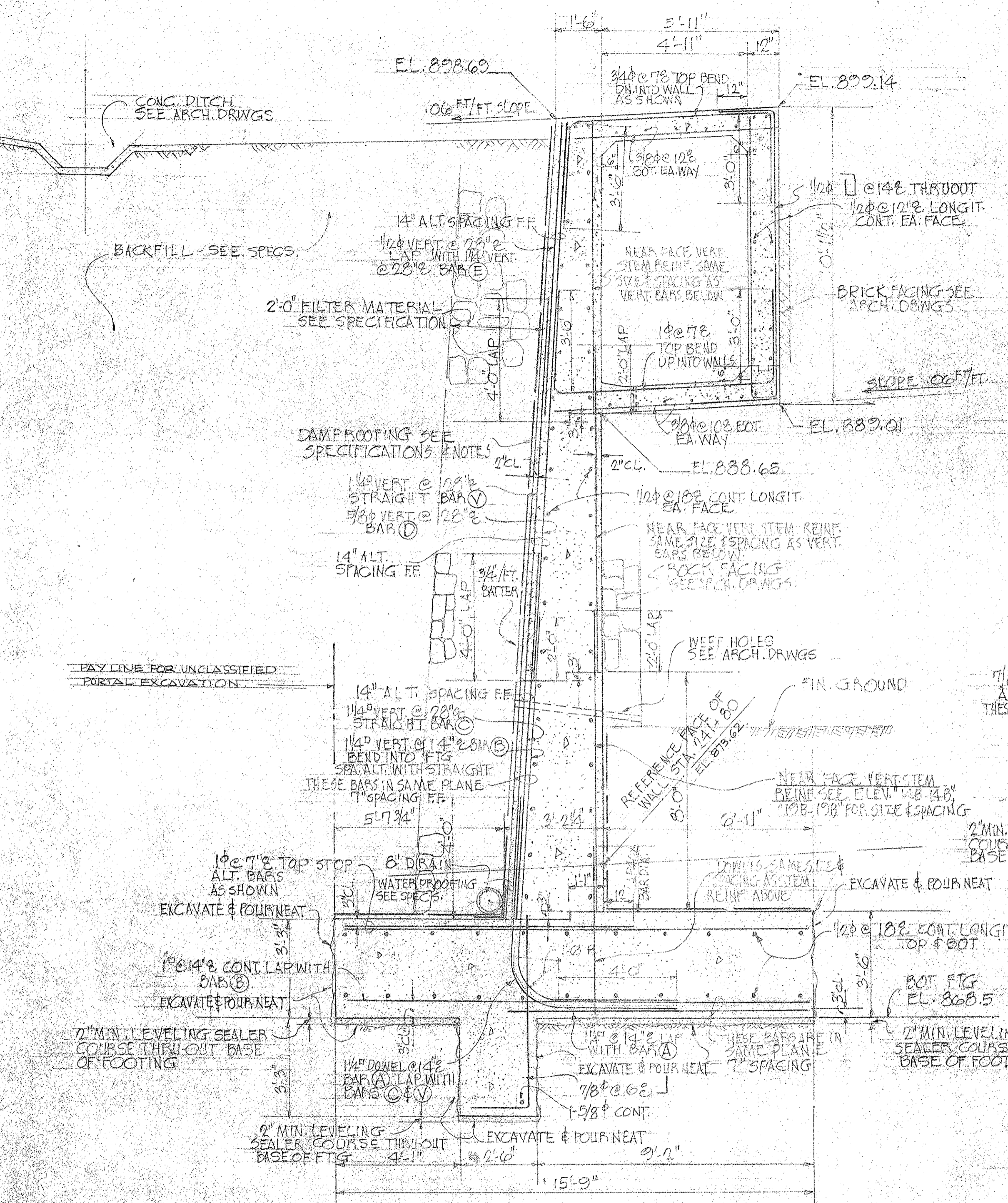
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

KALIHI TUNNEL
KALIHI PORTAL - STRUCTURAL
PORTAL WALL
PLAN, ELEVATION & DETAILS

ENGINEER: J. B. W. DATE: JULY 15, 1953
DRAFTSMAN: D. L. O. CHECKED BY: J. F. TRACER: J. Y. L.
SCALE: 1/4"=1'-0" APPROVED: *[Signature]*
CHIEF ENGINEER: *[Signature]*

APPROVED: *[Signature]*
ENGINEER: KALIHI TUNNEL

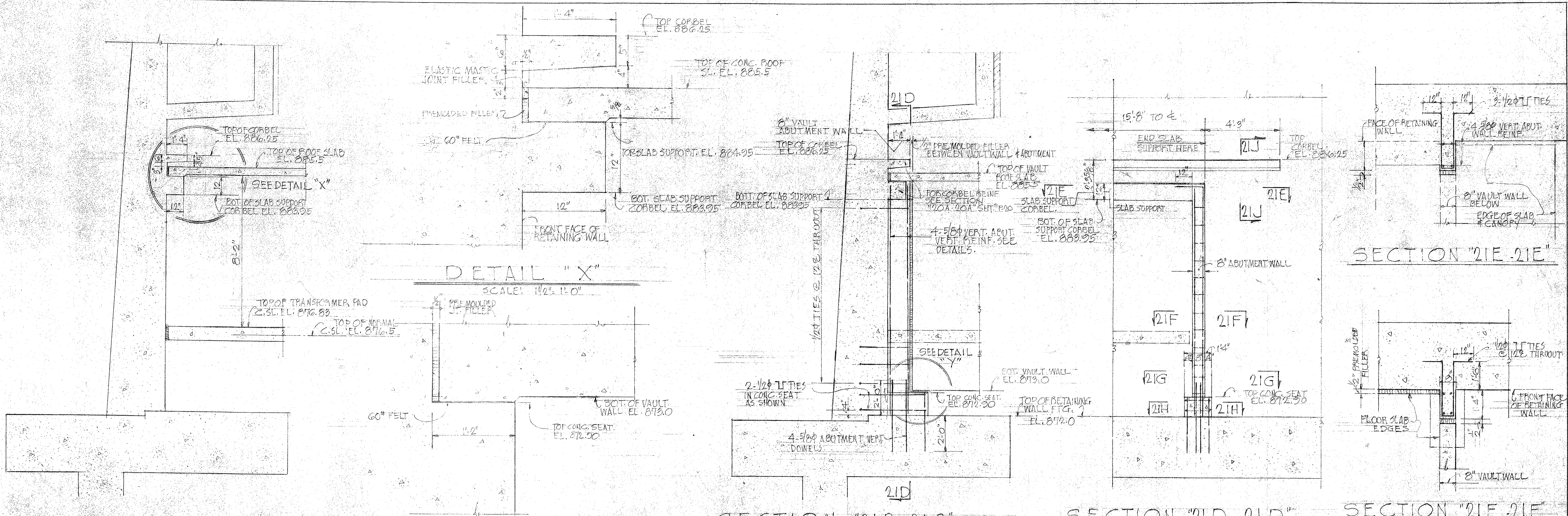
SECTION C JOB NO 26-53 DWG. P-19



NOTE:
SEE ARCHITECTURAL
DVG. P-6 FOR ANCHORING
OF BRICK FACING

LAW & WILSON
ARCHITECTS & ENGINEERS
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIHI TUNNEL
KALIHI PORTAL - STRUCTURAL
PORTAL WALL
SECTIONS & DETAILS
ENGINEER: L. B. W. DATE: JULY 15, 1953
DRAFTSMAN: D. L. O. CHECKED BY: *W. J. J.*
SCALE: 3/8" = 1'-0" TRACER: J. Y. L.
APPROVED: *W. J. J.* APPROVED: *W. J. J.*
CHIEF ENGINEER BUREAU ENGINEER

APPROVED: *W. J. J.*
ENGINEER, KALIHI TUNNEL
SECTION C JOB NO. 26-53 DWG. P-20



SECTION "21A-21A"
SCALE: 3/8" = 1'-0"

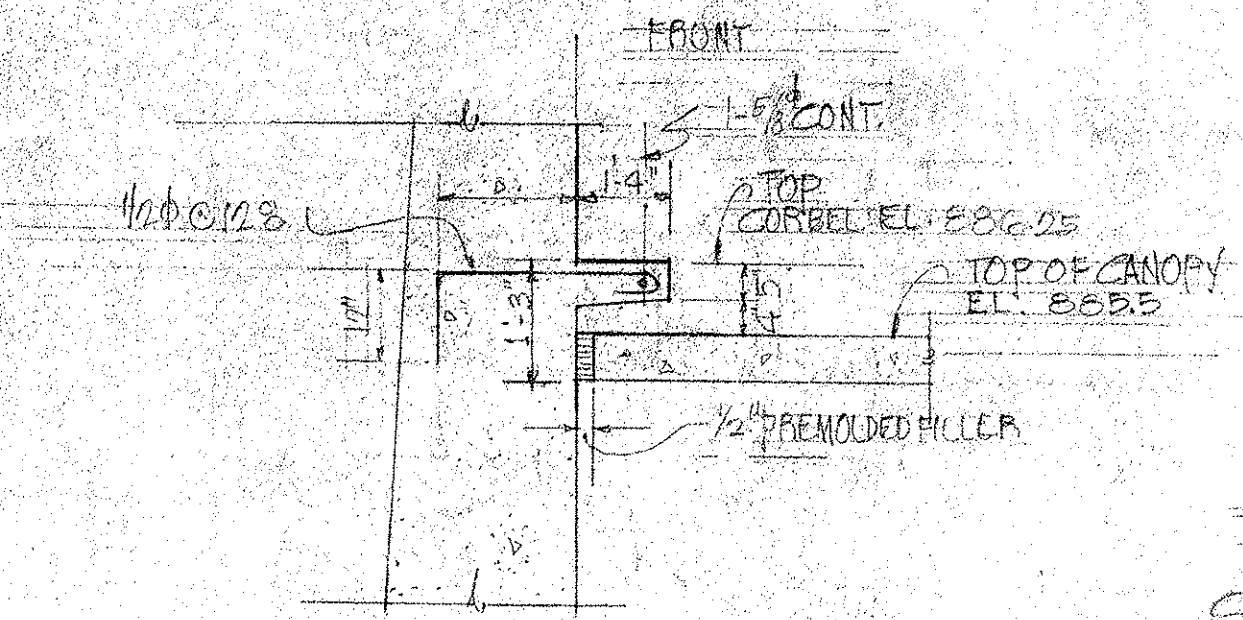
DETAIL "Y"
SCALE: 1/2" = 1'-0"

SECTION "21B-21B" AS SHOWN
(SECTION "21C-21C" SIMILAR EXCEPT
OPPOSITE HAND)

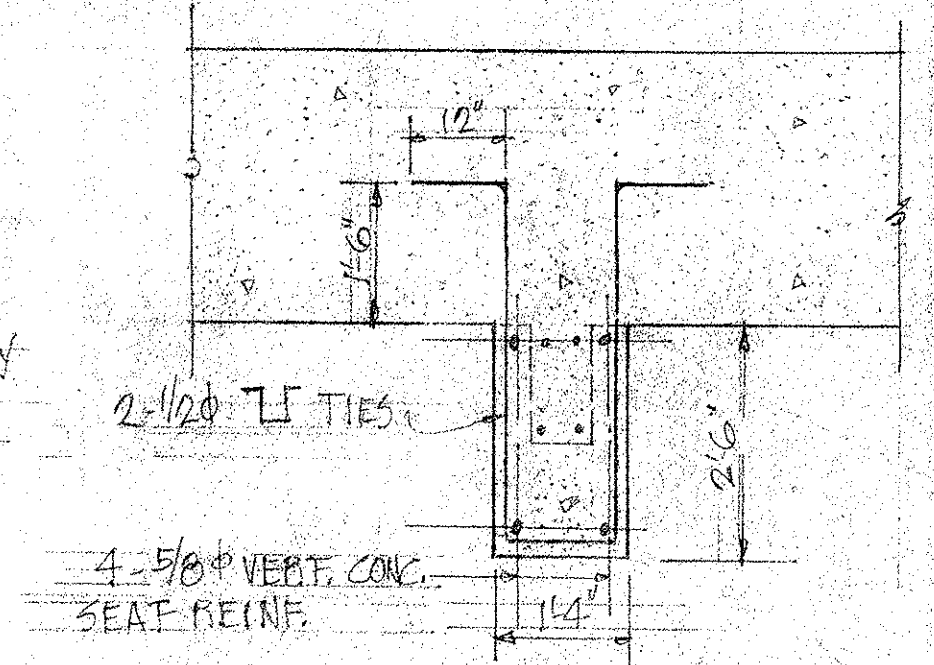
SECTION "21D-21D"

SECTION "21F-21F"

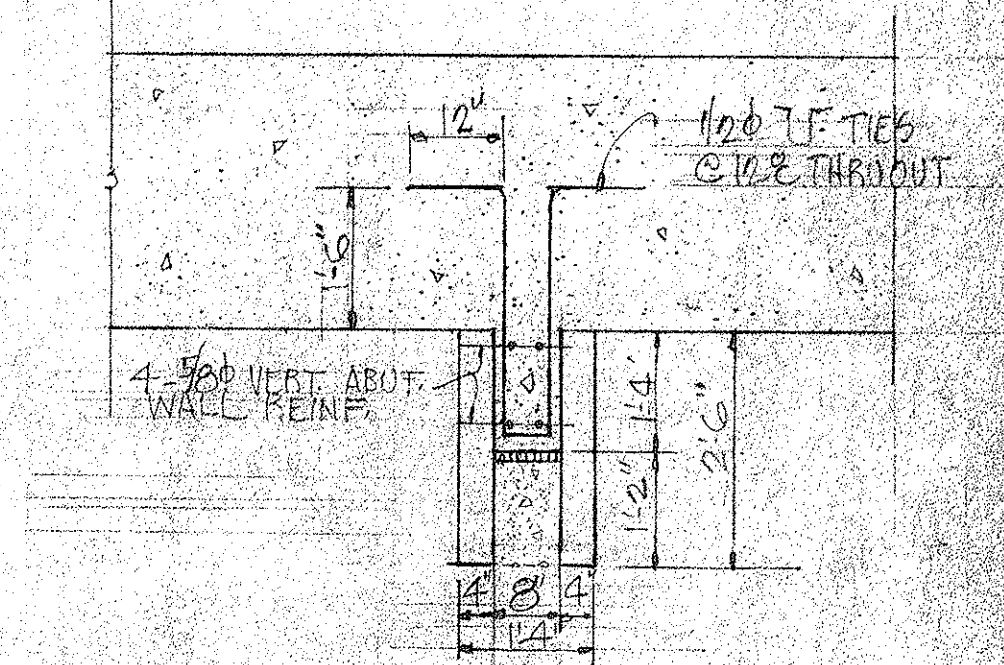
VAULT ROOF SLAB AND WALL EXPANSION DETAILS



SECTION "21I-21I"



SECTION "21H-21H"



SECTION "21G-21G"
(PLAN - CONCRETE WALL SEAT)

RETAINING WALL DETAILS
AT VAULT WALLS. SCALE: 3/8" = 1'-0"

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DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

KALIHI TUNNEL
KALIHI PORTAL - STRUCTURAL
PORTAL WALL
SECTIONS & DETAILS

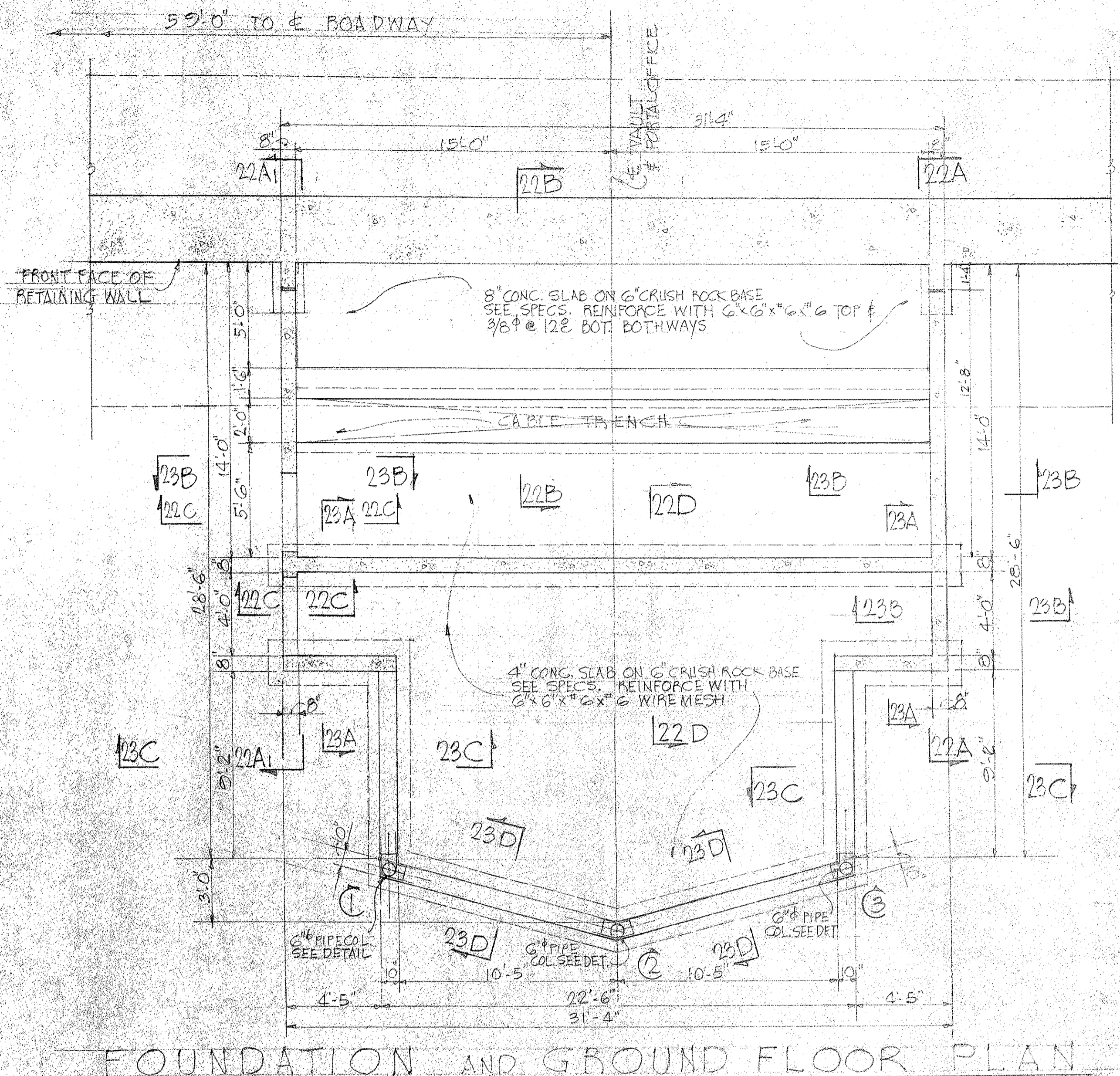
ENGINEER: L.A.W. DATE: JULY 15, 1953
DRAFTSMAN: D.L.O. CHECKED BY: *[Signature]*
SCALE: AS NOTED. TRACER: F.C.
APPROVED: *[Signature]* CHIEF ENGINEER
APPROVED: *[Signature]* BUREAU ENGINEER

APPROVED: *[Signature]*
ENGINEER: KALIHI TUNNEL

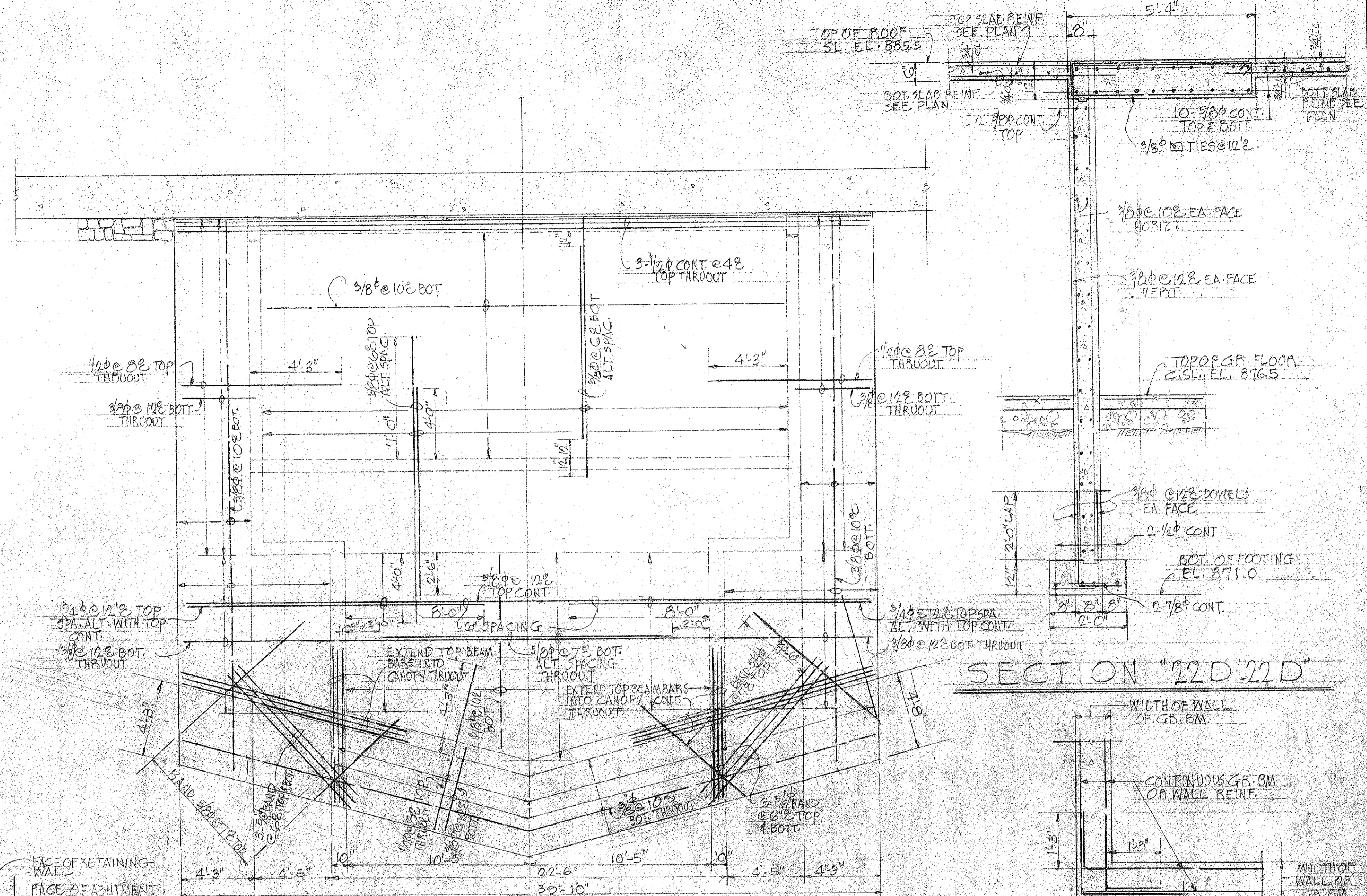
W.S.	PROFILE	C.B.
C.R. SEC.	P.B.	S.B.
W.M.B.Y.	F.W.B.Y.	S.B.Y.

SECTION C JOB NO. 26-53 DWG. P-21

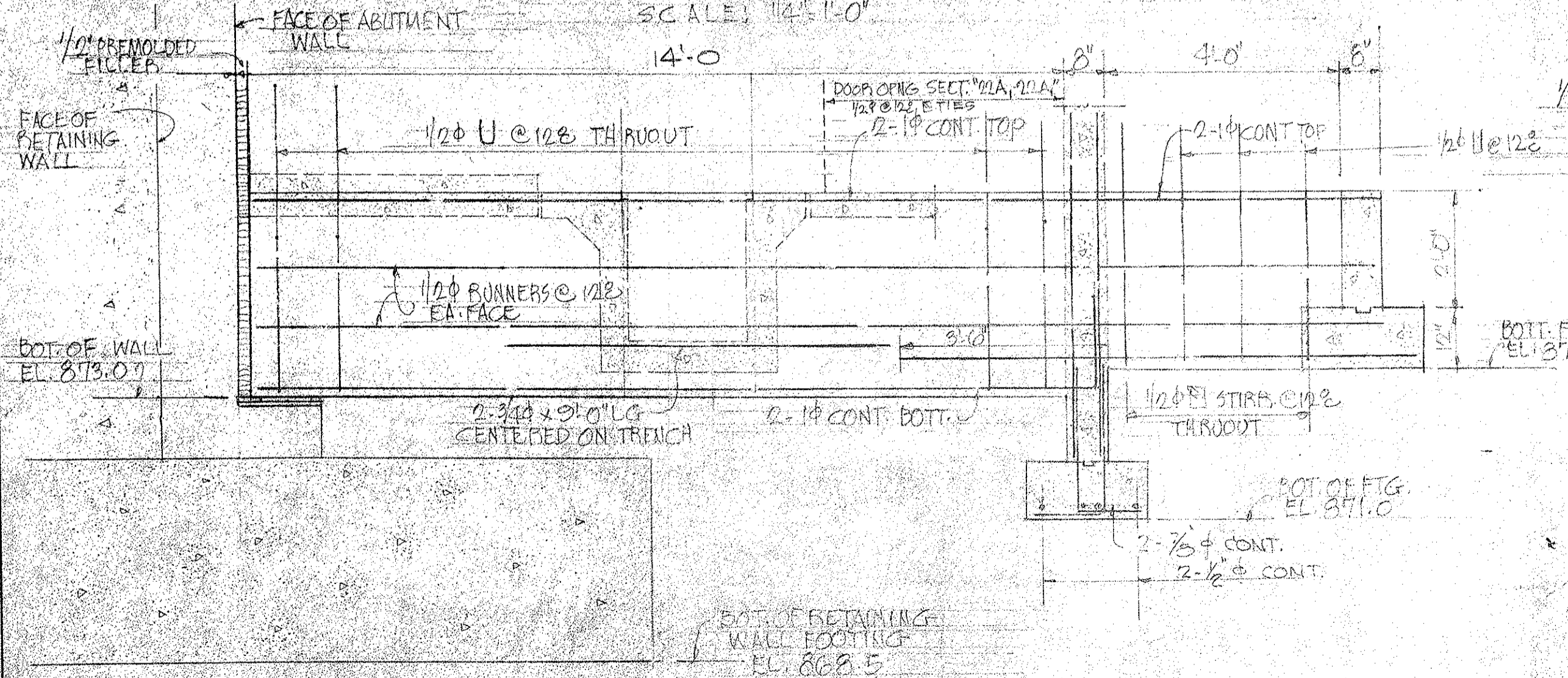
FILE	POCKET	FOLDER	NO.
7	6	1	21



FOUNDATION AND GROUND FLOOR PLAN - SCALE: 1/4\"/>

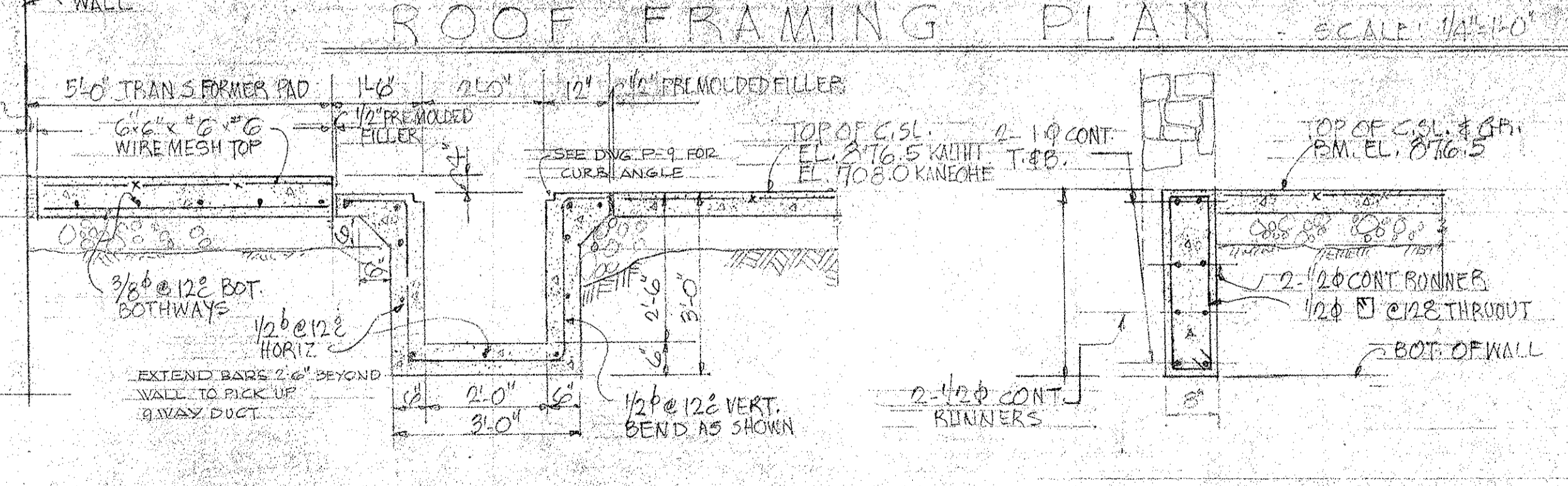


ROOF FRAMING PLAN - SCALE: 1/4\"/>

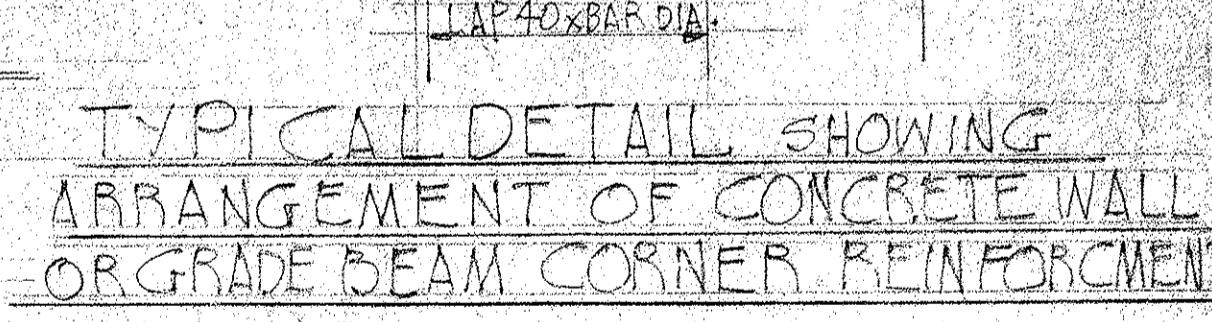


ELEVATION "22A-22A" AS SHOWN - SCALE: 1/2\"/>

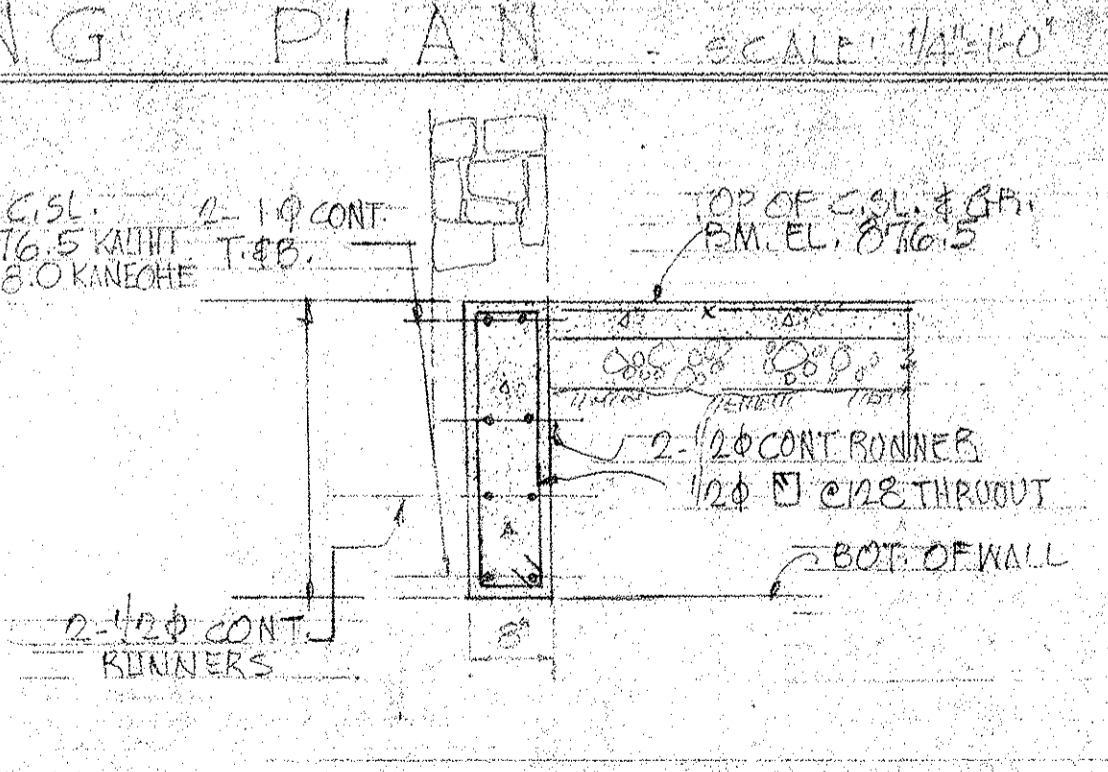
(ELEVATION "22A1-22A1" SIMILAR EXCEPT OPPOSITE HAND)
(CABLE OPENINGS NOT SHOWN)



SECTION "22B-22B" - SCALE: 1/2\"/>



TYPICAL DETAIL SHOWING ARRANGEMENT OF CONCRETE WALL OR GRADE BEAM CORNER REINFORCEMENT



SECTION "22C-22C" - SCALE: 1/2\"/>

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DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

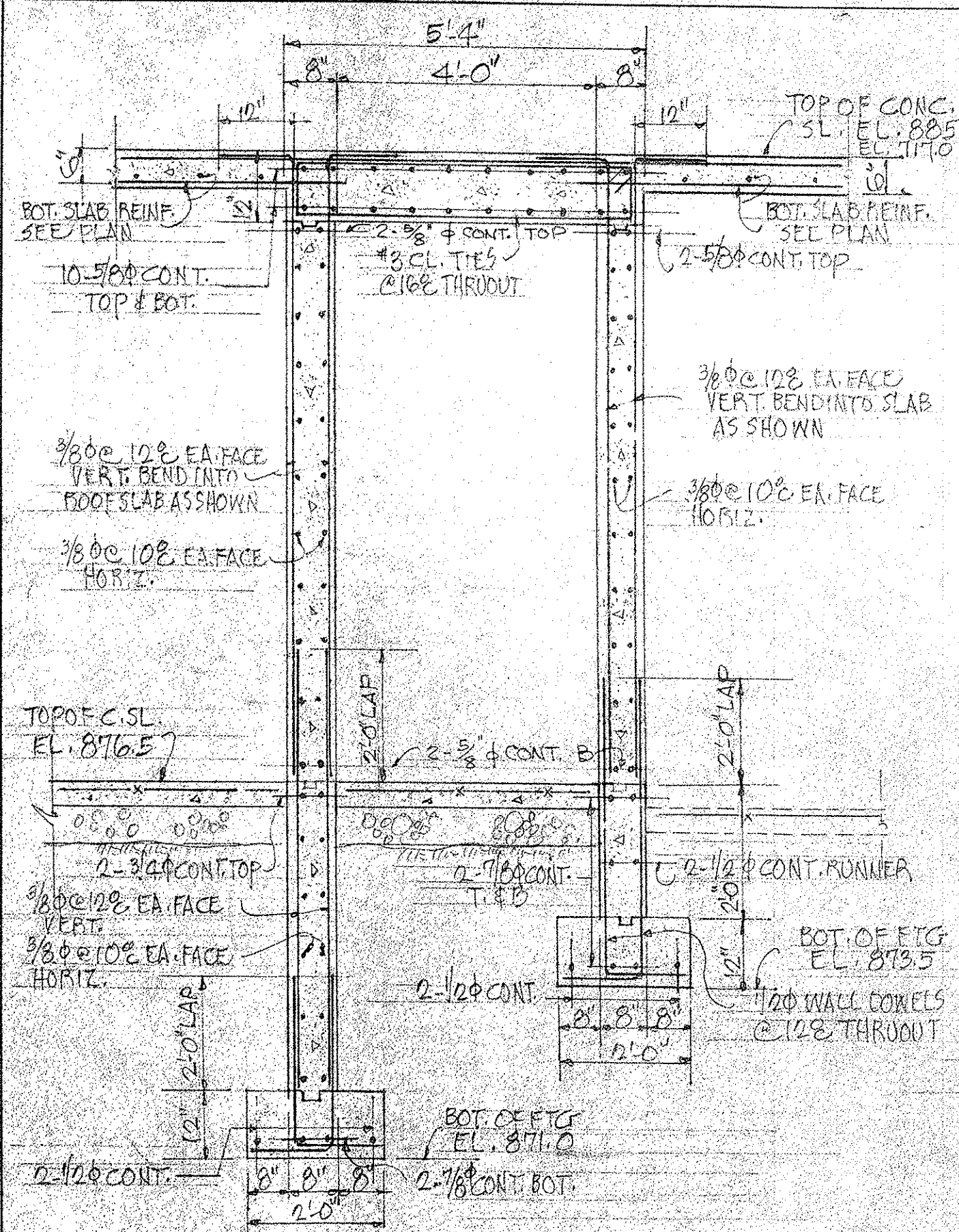
KALIHI TUNNEL
KALIHI PORTAL - STRUCTURAL
OFFICE & VAULT
PLANS, SECTIONS, & DETAILS

ENGINEER: L. B. W. DATE: JULY 19, 1953
DRAFTSMAN: D. L. O. CHECKED BY: J. F. C.
SCALE: AS NOTED TRACER: F. C.
APPROVED: *[Signature]* APPROVED: *[Signature]*
CHIEF ENGINEER BUREAU ENGINEER

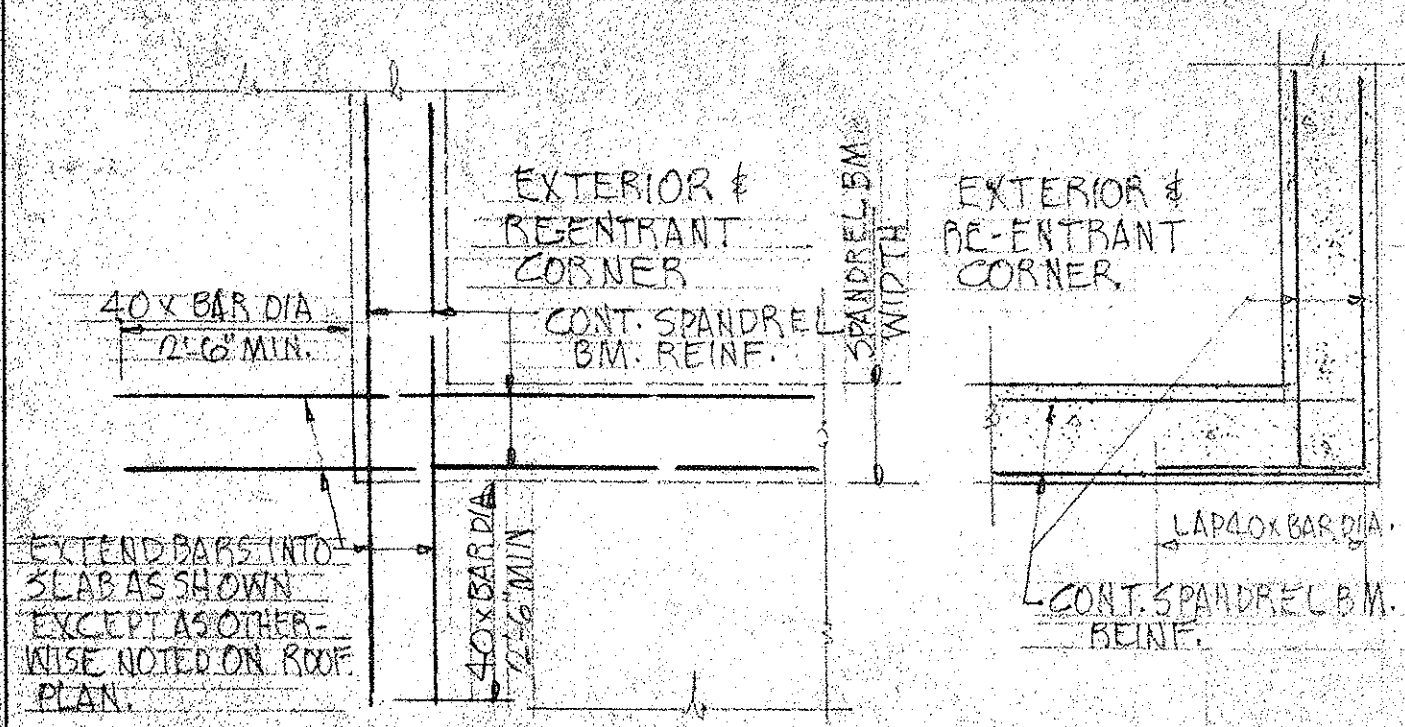
APPROVED: *[Signature]*
ENGINEER, KALIHI TUNNEL

FILE	POCKET	FOLDER	NO.
7	6	1	22

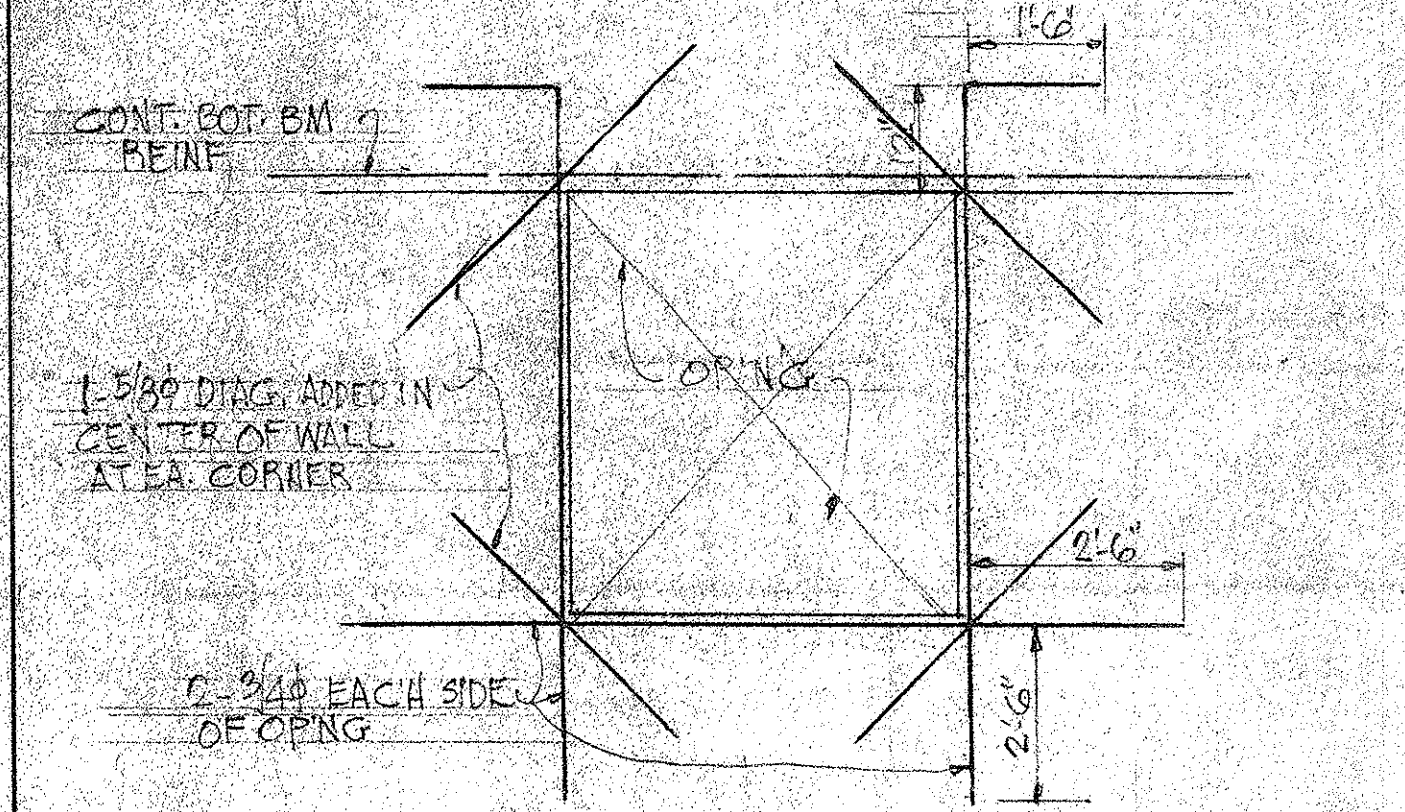
SECTION C JOB NO. 26-53 DWG. P-22



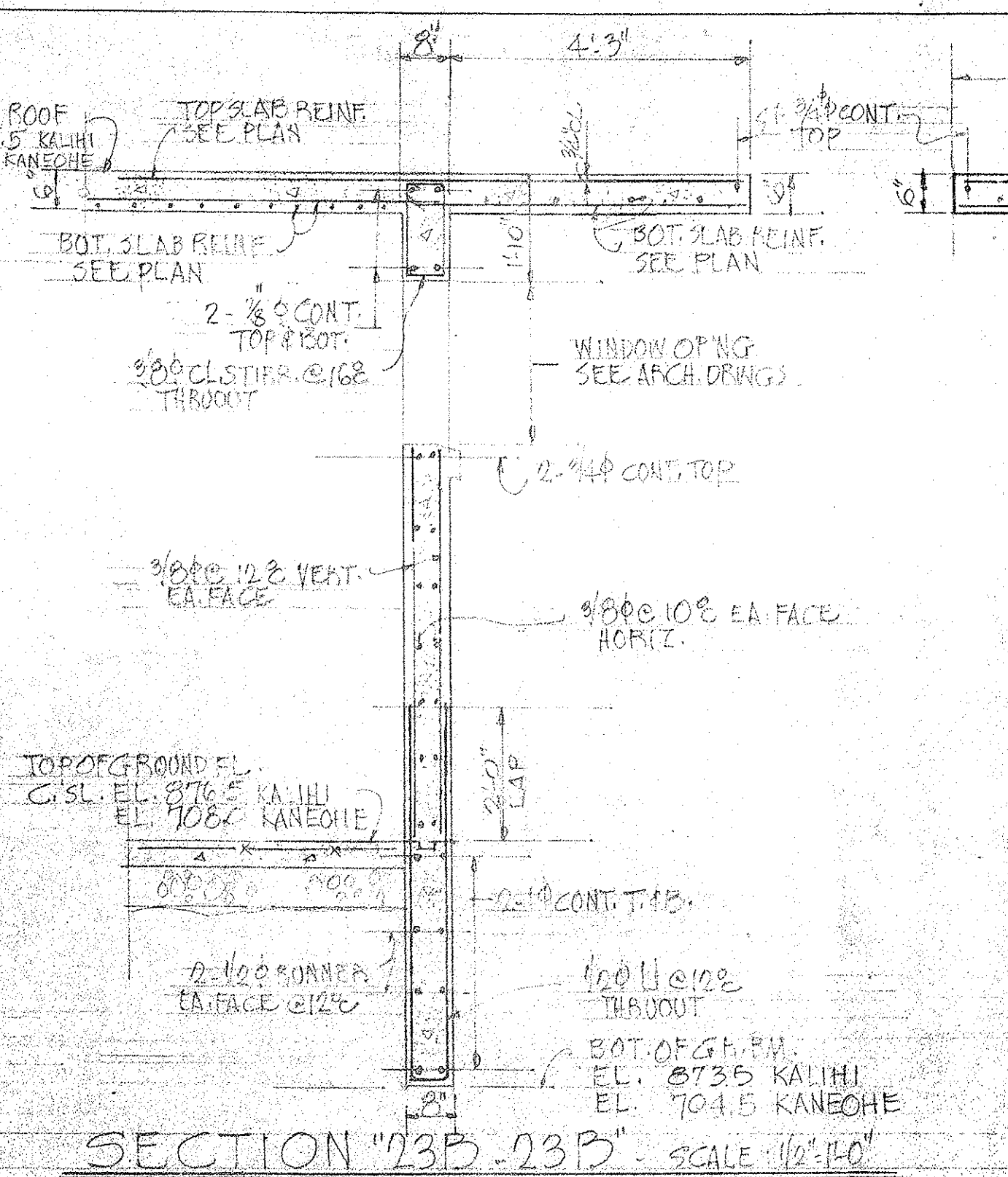
SECTION "23A-23A" SCALE: 1/2" = 1'-0"



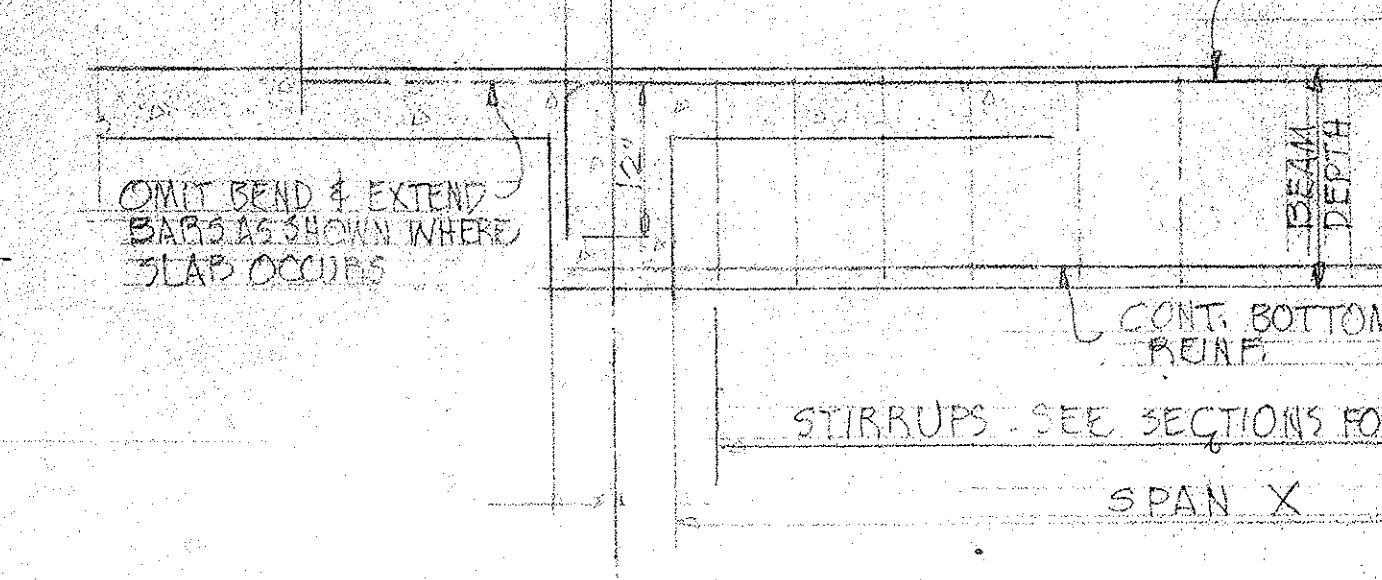
TOP REINF. BOTTOM REINF. ARRANGEMENT OF SPANDREL BEAM REINFORCEMENT AT CORNERS



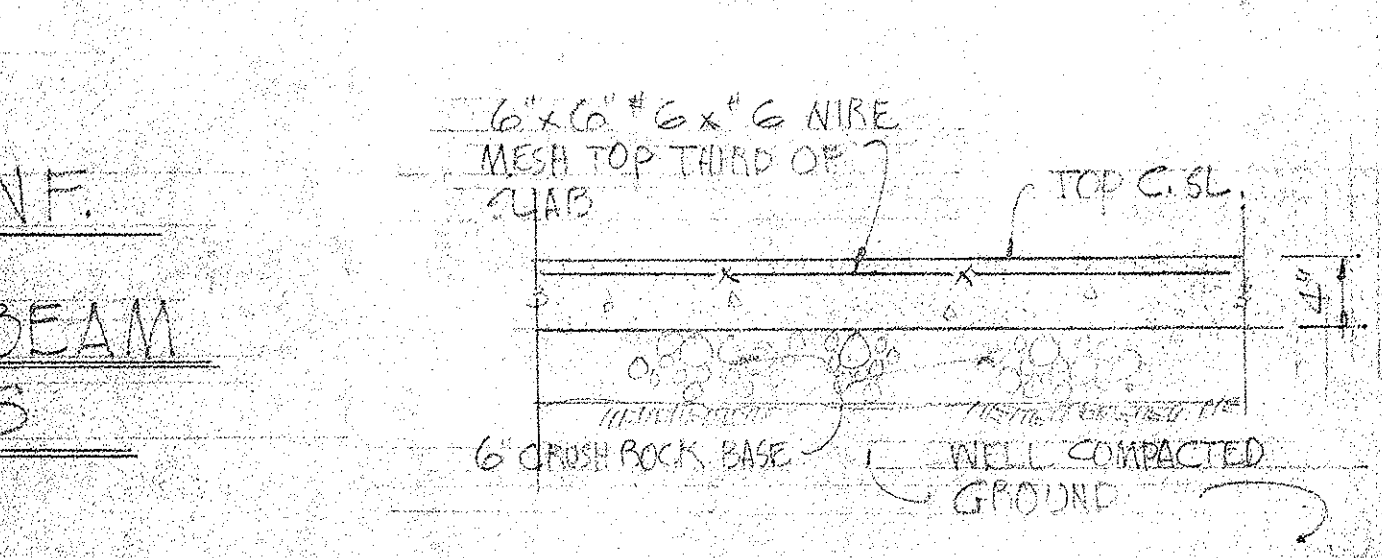
TYPICAL OPNG IN CONCRETE WALL SHOWING ADDED REINF.



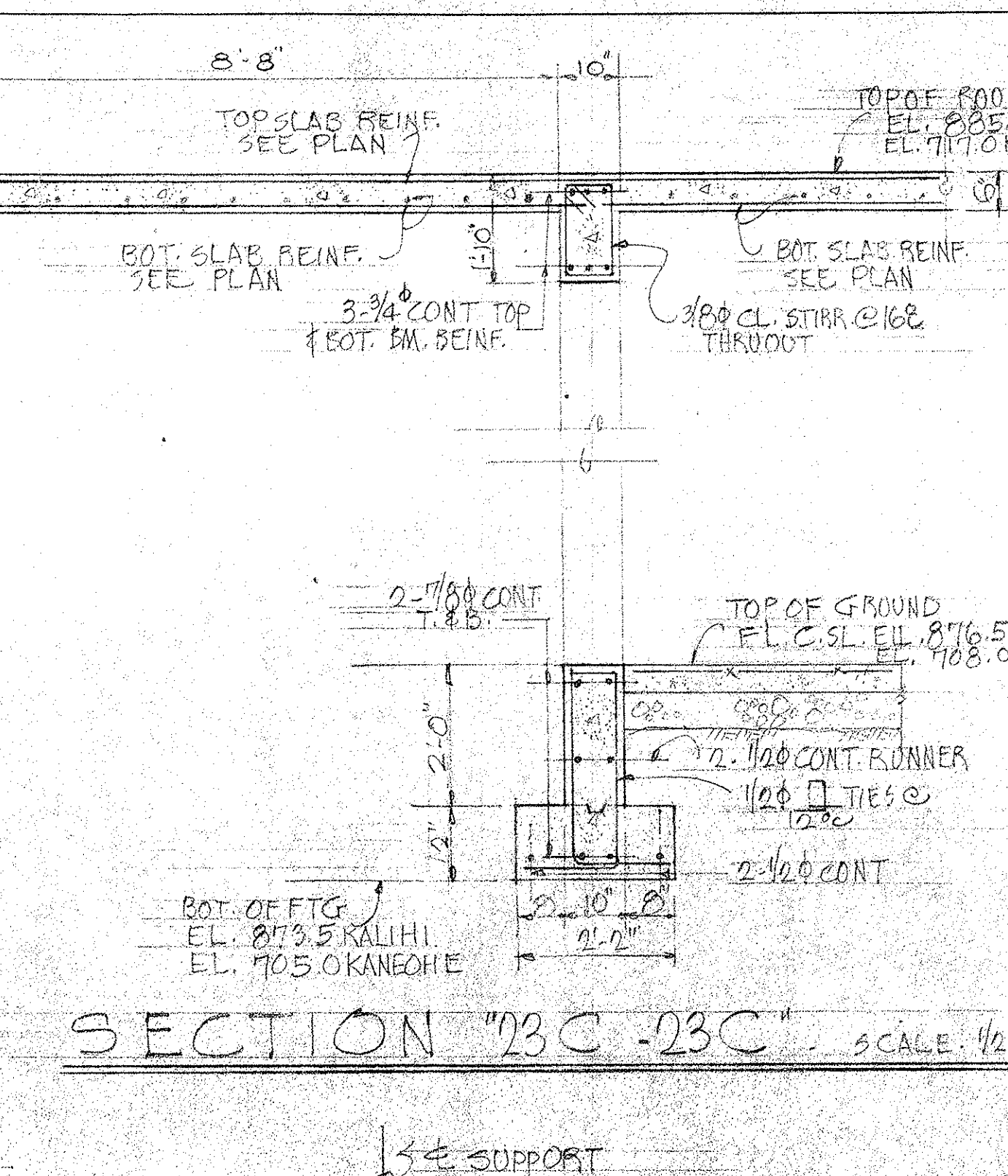
SECTION "23B-23B" SCALE: 1/2" = 1'-0"



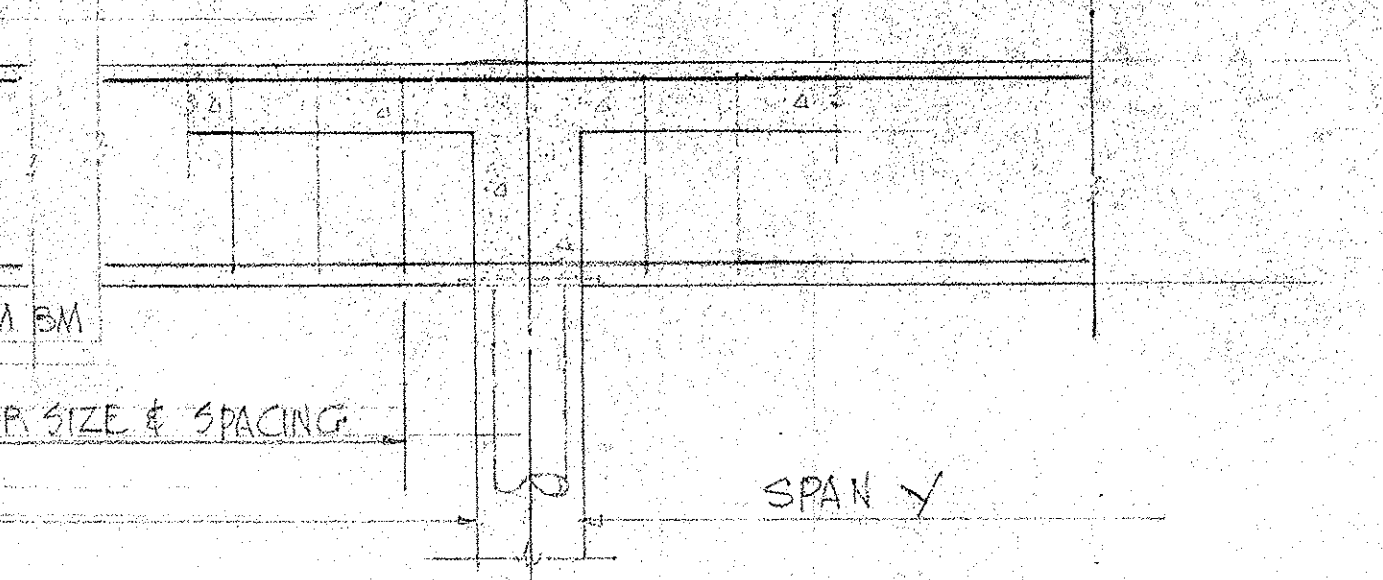
NON-CONTINUOUS SUPPORT CONTINUOUS SUPPORT TYPICAL CONCRETE BEAM DETAIL



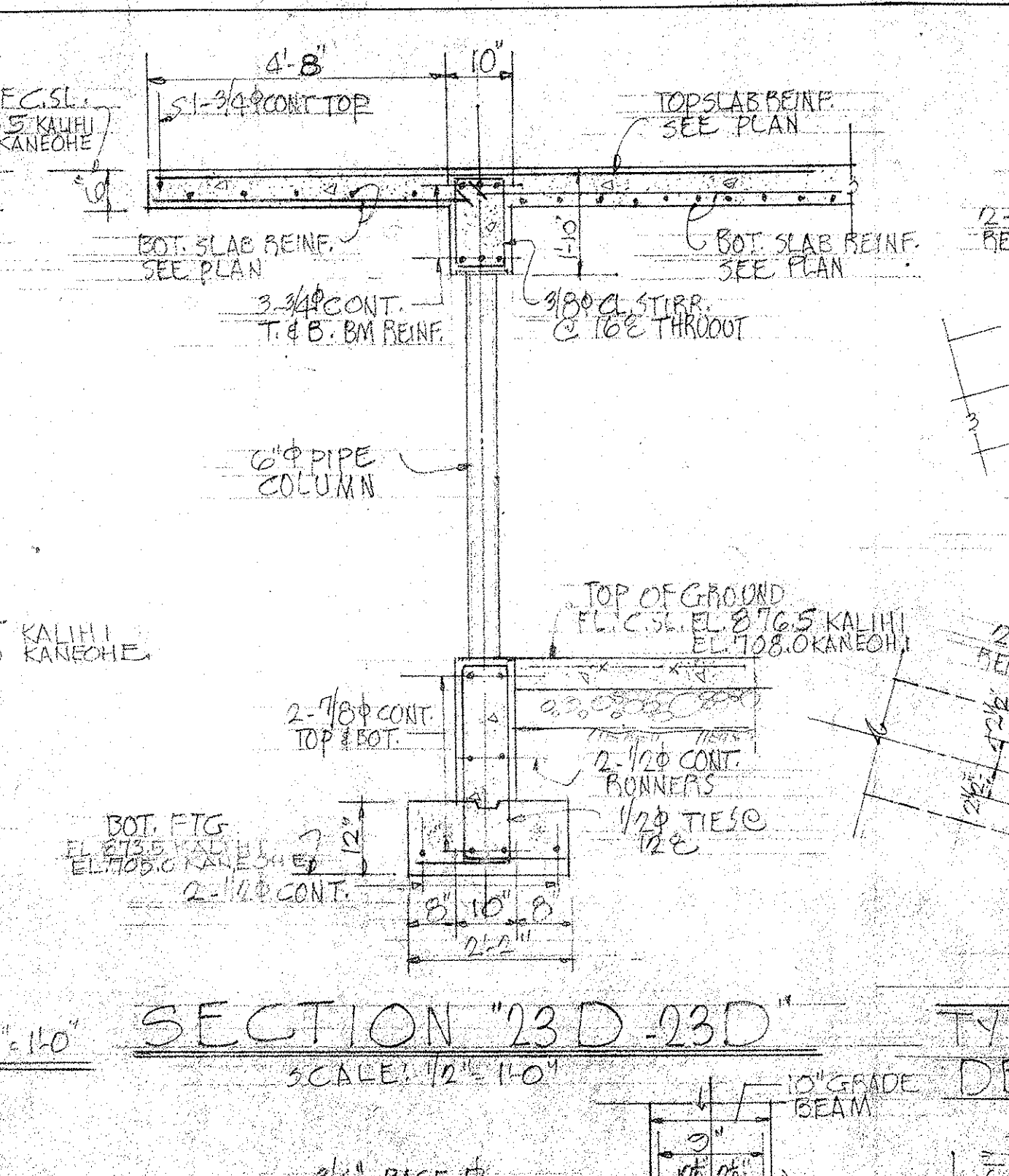
TYPICAL AT CONG. BLK WALL TYPICAL DETAILS OF SLAB ON FILL



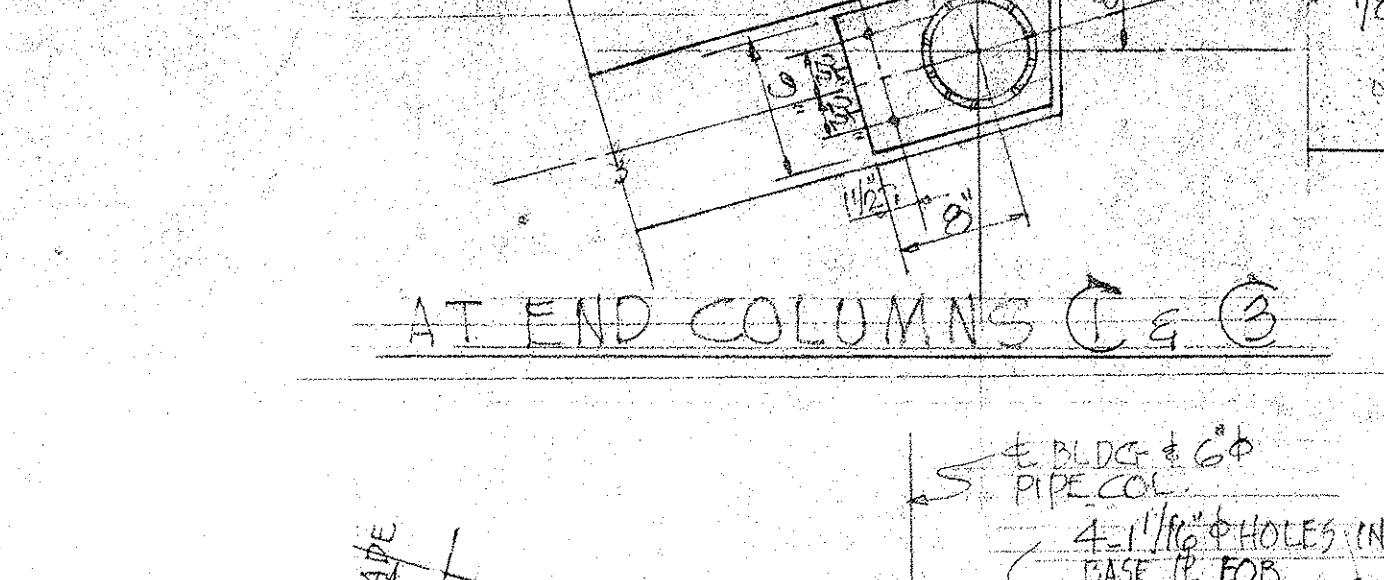
SECTION "23C-23C" SCALE: 1/2" = 1'-0"



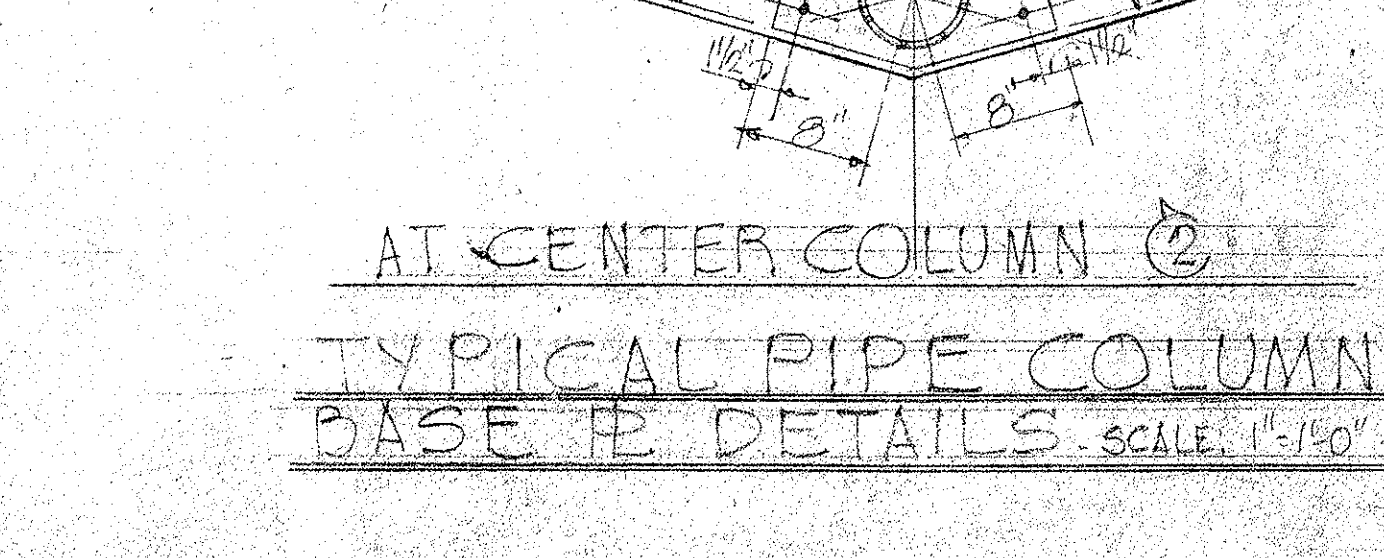
SECTION "23D-23D" SCALE: 1/2" = 1'-0"



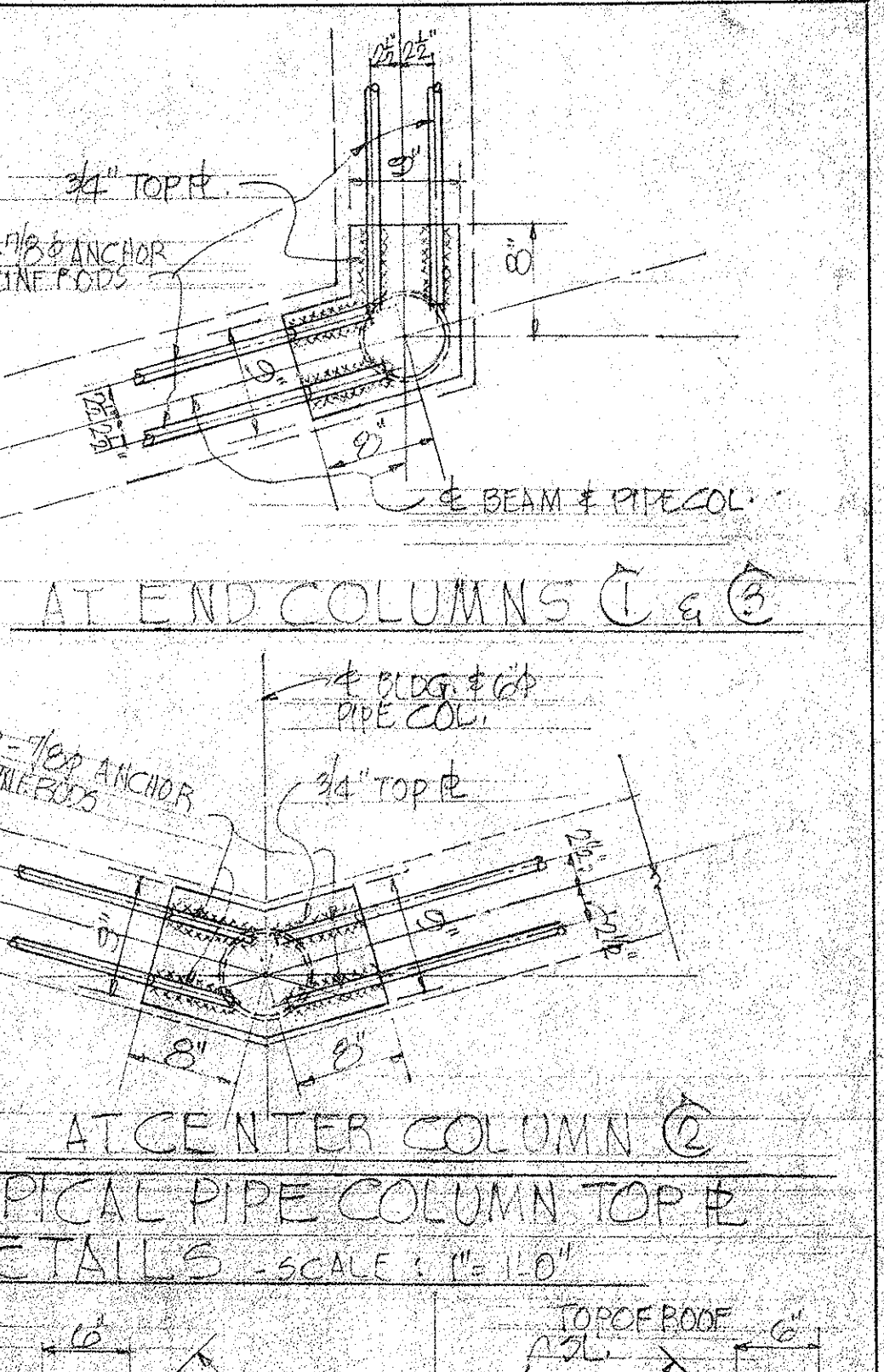
TYPICAL PIPE COLUMN TOP & DETAILS SCALE: 1" = 1'-0"



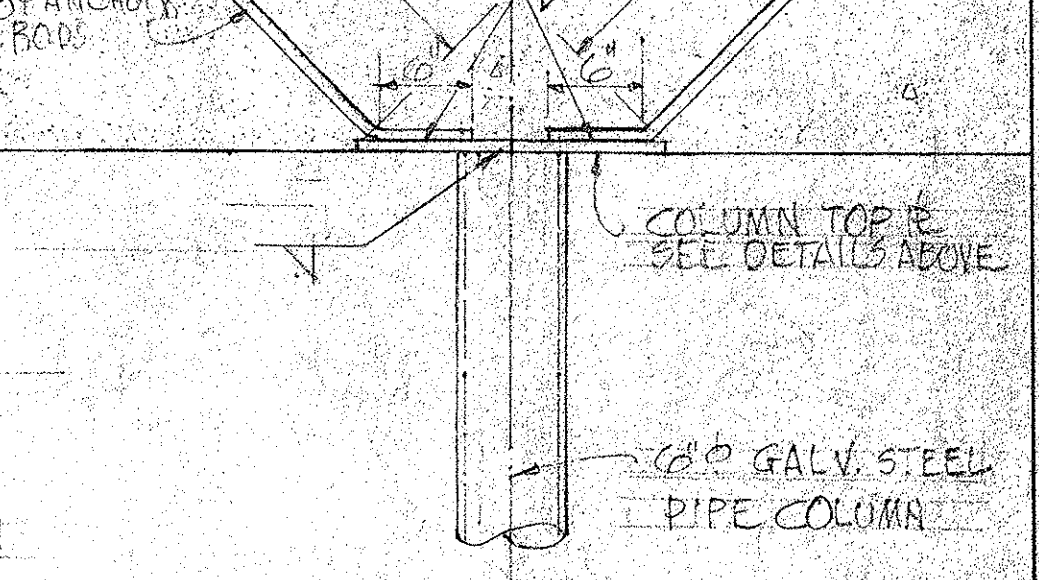
AT END COLUMNS C & C



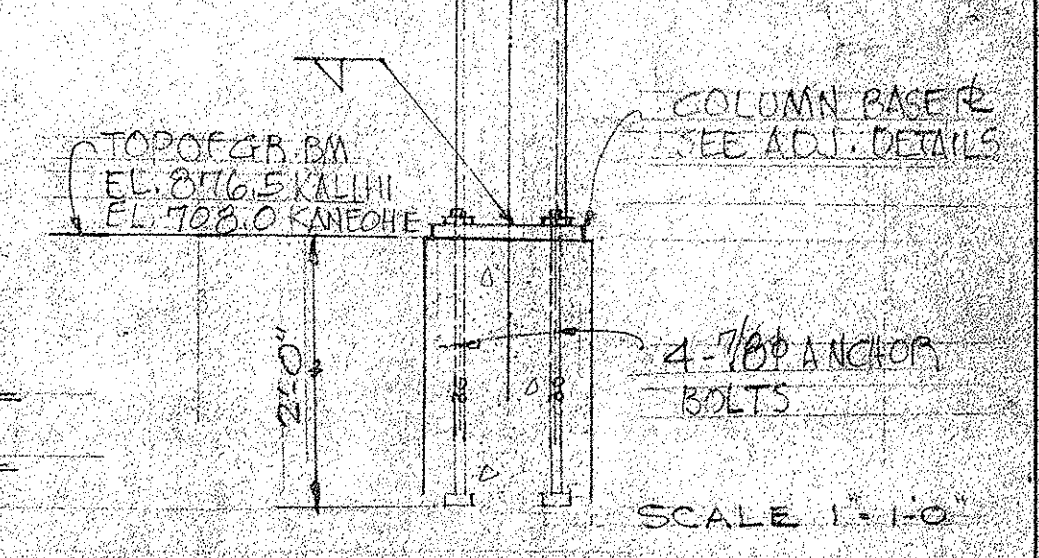
AT CENTER COLUMN C TYPICAL PIPE COLUMN BASE & DETAILS SCALE: 1" = 1'-0"



TYPICAL PIPE COLUMN TOP & DETAILS SCALE: 1" = 1'-0"



AT END COLUMNS C & C



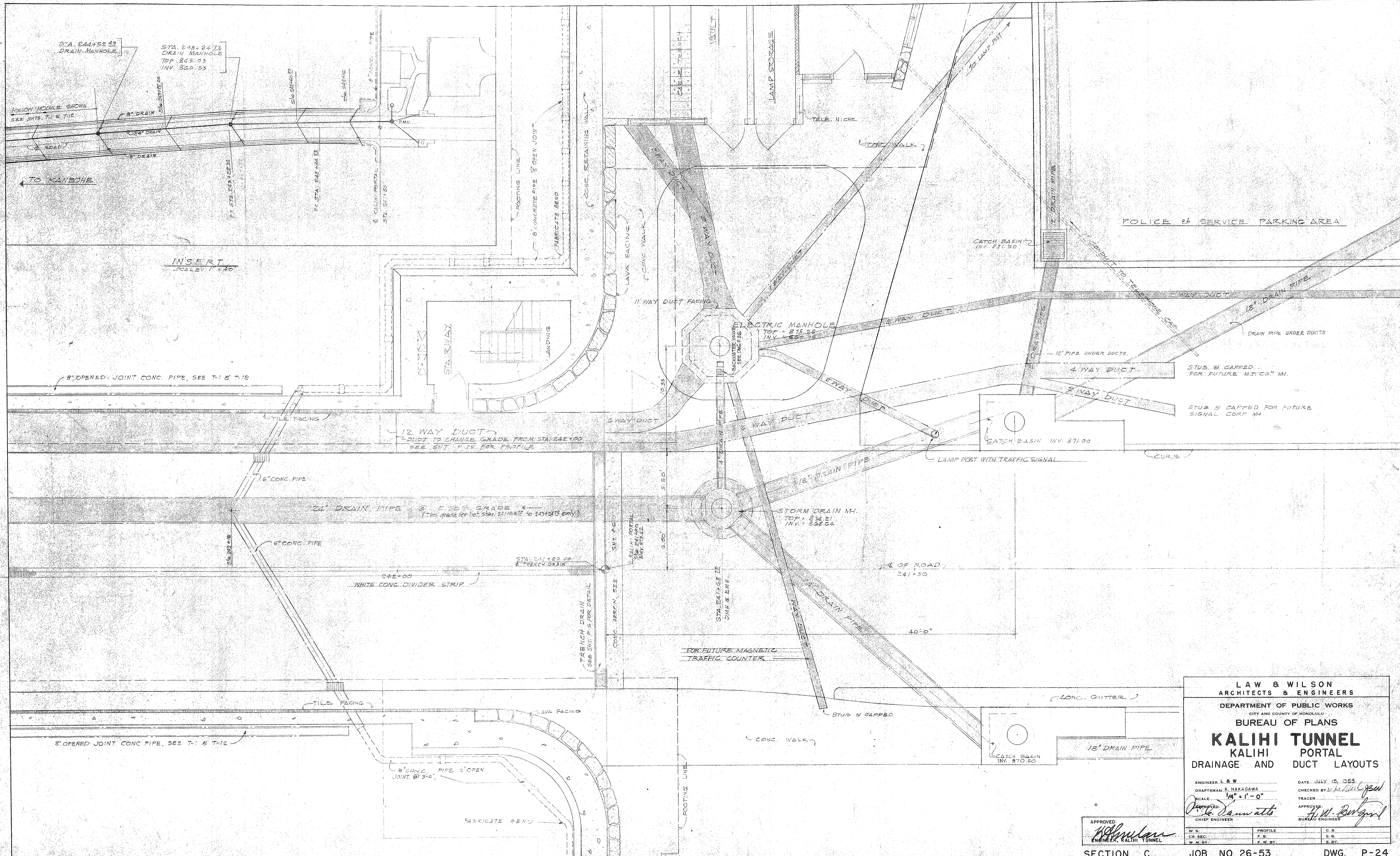
AT CENTER COLUMN C TYPICAL PIPE COLUMN BASE & DETAILS SCALE: 1" = 1'-0"

LAW & WILSON ARCHITECTS & ENGINEERS
 DEPARTMENT OF PUBLIC WORKS
 CITY AND COUNTY OF HONOLULU
 BUREAU OF PLANS
KALIHI TUNNEL
 KALIHI PORTAL - STRUCTURAL
 OFFICE & VAULT, DETAILS

ENGINEER: L. B. W. DATE: JULY 15, 1953
 DRAFTSMAN: D. L. O. CHECKED BY: J. E. WILSON
 AS NOTED TRACER: J. Y. L.
 APPROVED: [Signature] CHIEF ENGINEER
 APPROVED: [Signature] BUREAU ENGINEER

W. S.	PROFILE	C. B.
CH. SEC.	P. B.	S. B.
W. M. BY	P. W. BY	S. BY

SECTION C JOB NO. 26-53 DWG. P-23



INSERT
SCALE: 1" = 40'

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ARCHITECTS & ENGINEERS
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

KALIHI TUNNEL KALIHI PORTAL

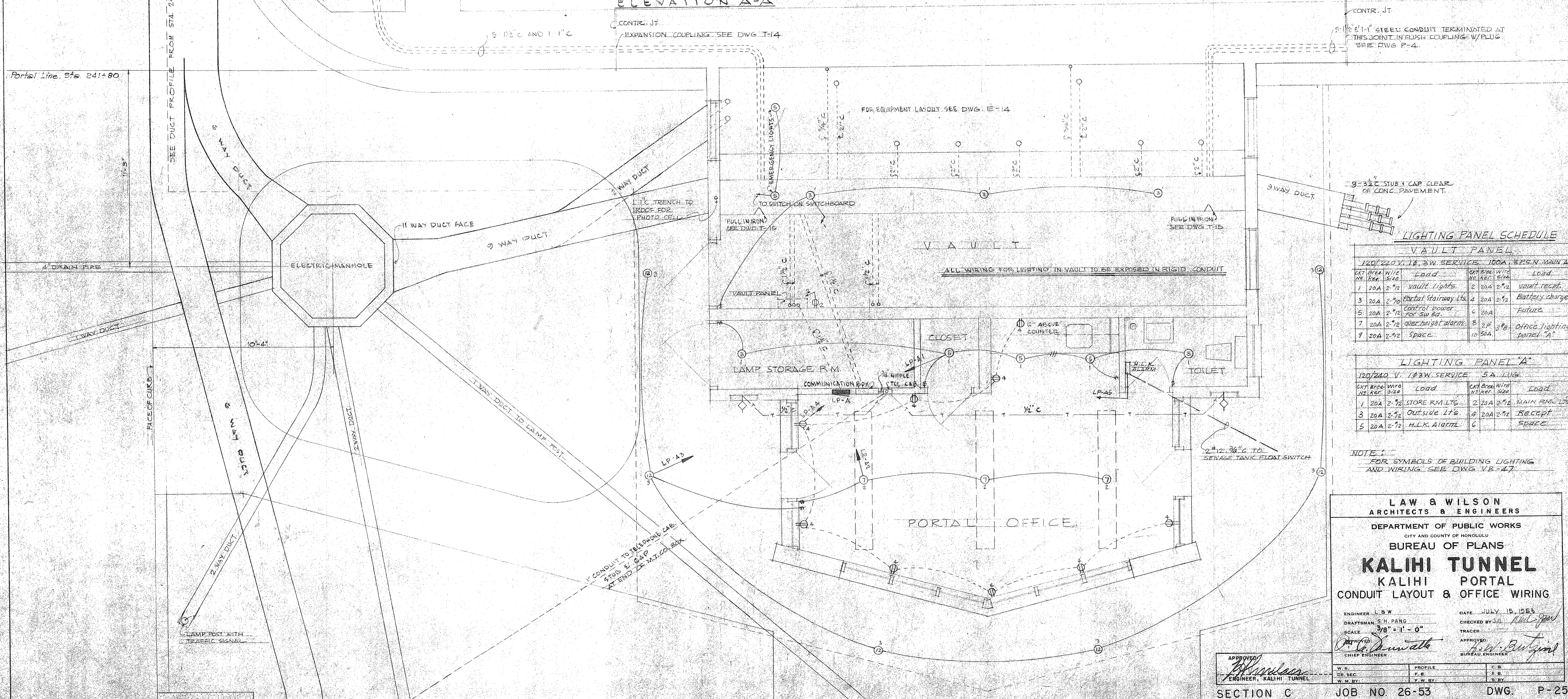
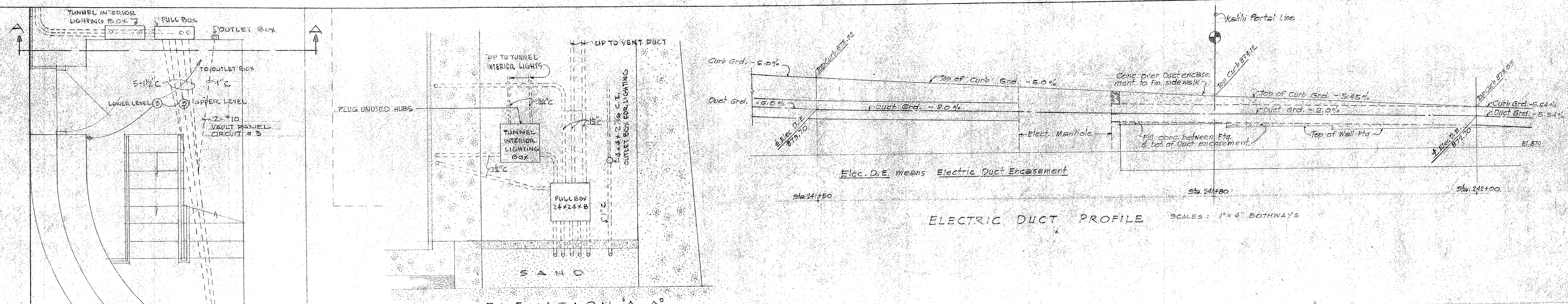
DRAINAGE AND DUCT LAYOUTS

ENGINEER: L. & W.
DRAFTSMAN: K. NAKAGAWA
SCALE: 1/4" = 1' - 0"
TRACER:
APPROVED: *[Signature]*
CHIEF ENGINEER

DATE: JULY 15, 1953
CHECKED BY: *[Signature]*
TRACER:
APPROVED: *[Signature]*
BUREAU ENGINEER

W. S.	PROFILE	C. B.
CR. SEC.	F. B.	B. B.
W. M. BY	F. W. BY	S. BY

SECTION C JOB NO. 26-53 DWG. P-24



LIGHTING PANEL SCHEDULE

VAULT PANEL

CAT. NO.	WIRE SIZE	LOAD	CAT. NO.	WIRE SIZE	LOAD
1	20A 2 1/2"	vault lights	2	20A 2 1/2"	vault recept.
3	20A 2 1/2"	partial stairway lts.	4	20A 2 1/2"	Battery charger
5	20A 2 1/2"	control power for sw. Bd.	6	20A	future
7	20A 2 1/2"	overheight alarm	8	2P	office lighting panel "A"
9	20A 2 1/2"	space	10	50A	

LIGHTING PANEL "A"

CAT. NO.	WIRE SIZE	LOAD	CAT. NO.	WIRE SIZE	LOAD
1	20A 2 1/2"	STORE RM. LTS.	2	20A 2 1/2"	MAIN RM. LTS.
3	20A 2 1/2"	Outside Lts.	4	20A 2 1/2"	Recept.
5	20A 2 1/2"	H.L.K. Alarm	6		space

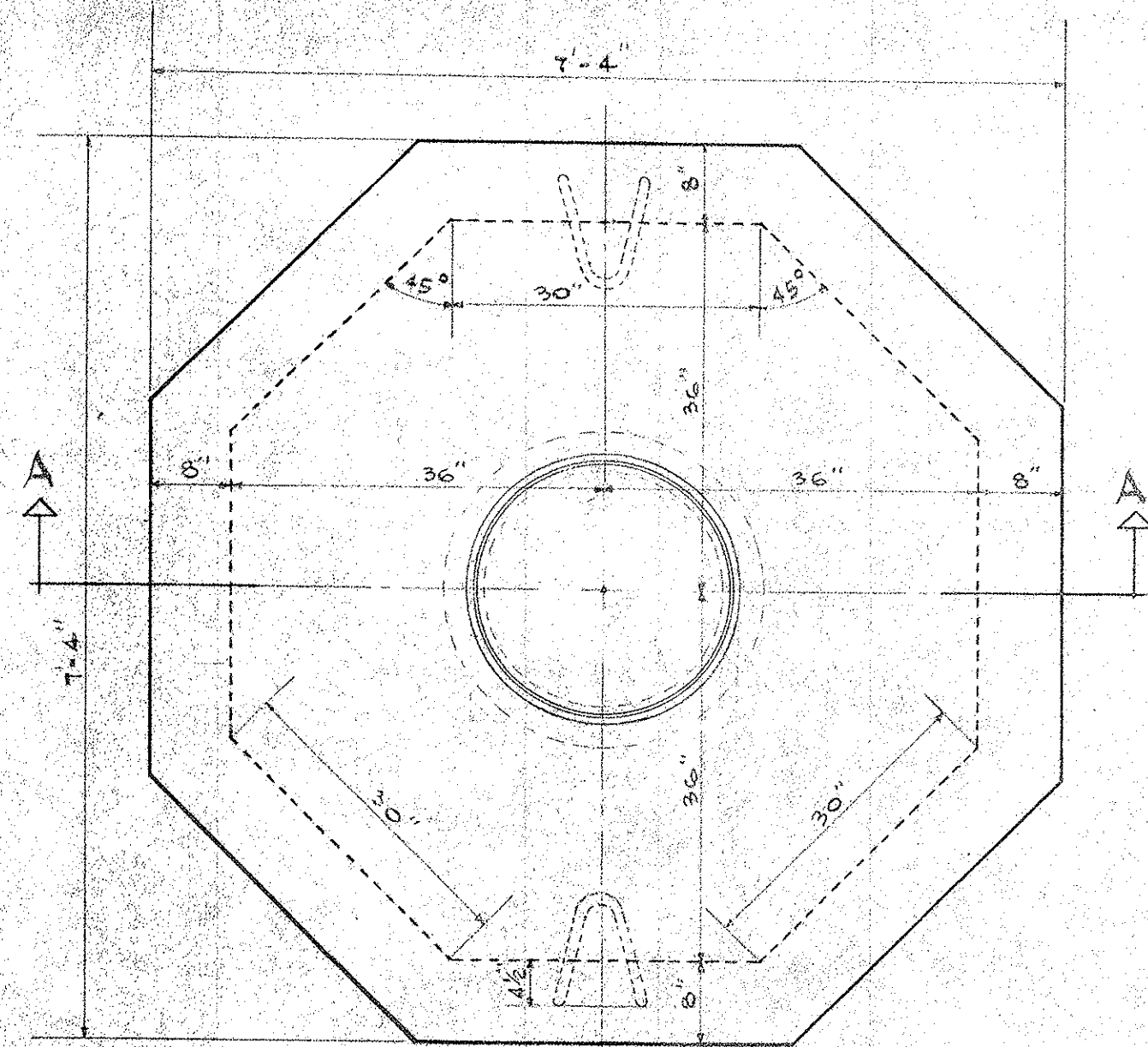
NOTE:
FOR SYMBOLS OF BUILDING LIGHTING AND WIRING SEE DWG. VB-47.

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 CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIHI TUNNEL
 KALIHI PORTAL
 CONDUIT LAYOUT & OFFICE WIRING

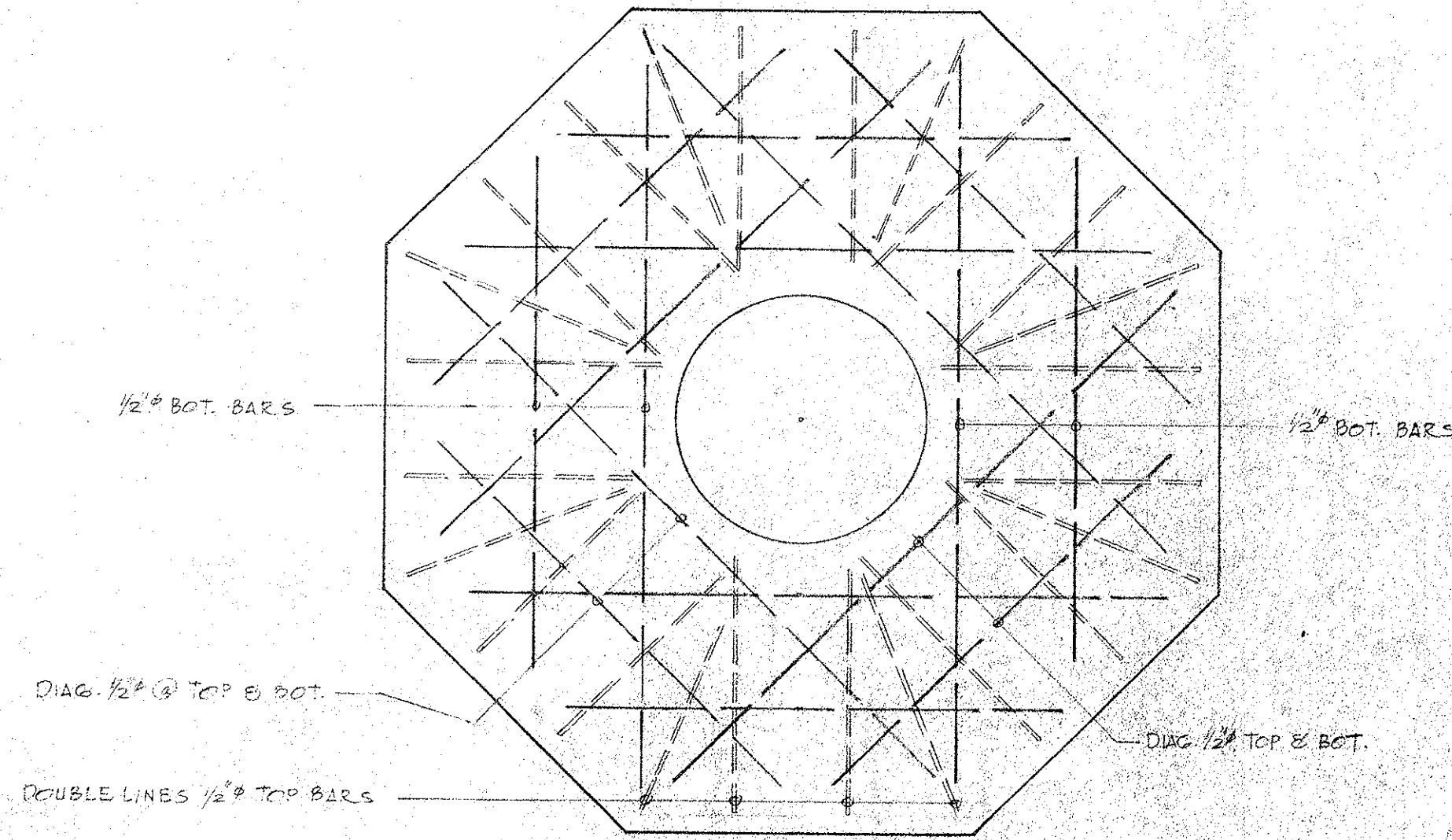
ENGINEER: L. B. W. DATE: JULY 15, 1953
 DRAFTSMAN: S. H. PANG CHECKED BY: J. S. [Signature]
 SCALE: 3/8" = 1' - 0" TRACER:
 APPROVED: [Signature] CHIEF ENGINEER APPROVED: [Signature] BUREAU ENGINEER

W.S. PROFILE C.B.
 C.H. SEC. F.B.
 W.M. BY F.W. BY S.B.Y.

SECTION C JOB NO. 26-53 DWG. P-25



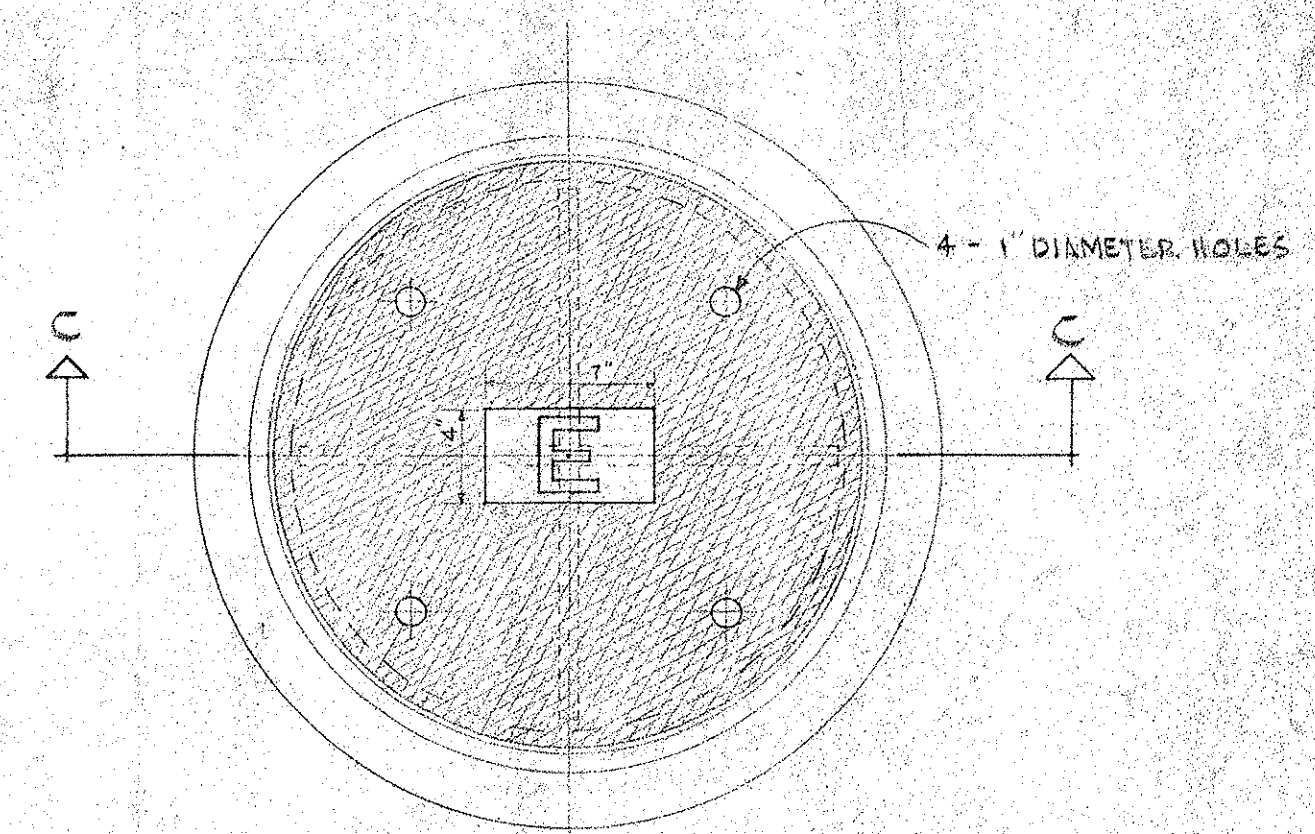
PLAN



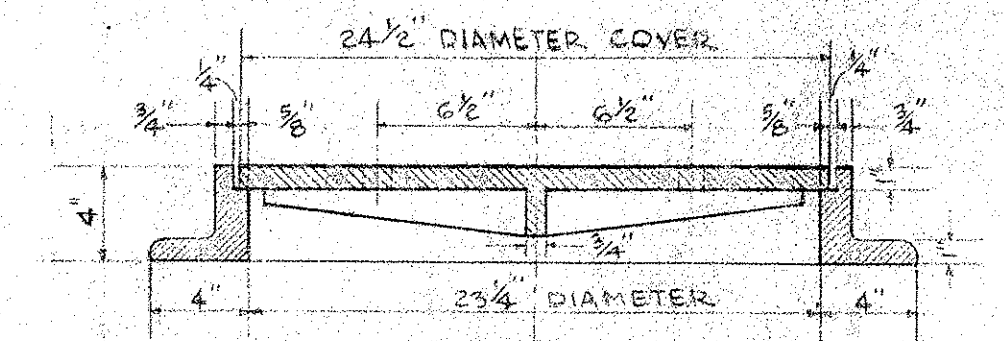
REINFORCING OF TOP SLAB

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

NOTES:
 CABLE RACKS SHALL BE INSTALLED ON MANHOLE WALLS TO WITHIN 12 INCHES OF THE BOTTOM AND BE SO SPACED THAT CABLES ARE SUPPORTED APPROX. EVERY 18 INCHES.
 PULL IN IRON TO BE INSTALLED OPPOSITE EACH ENTERING DUCT FACE.



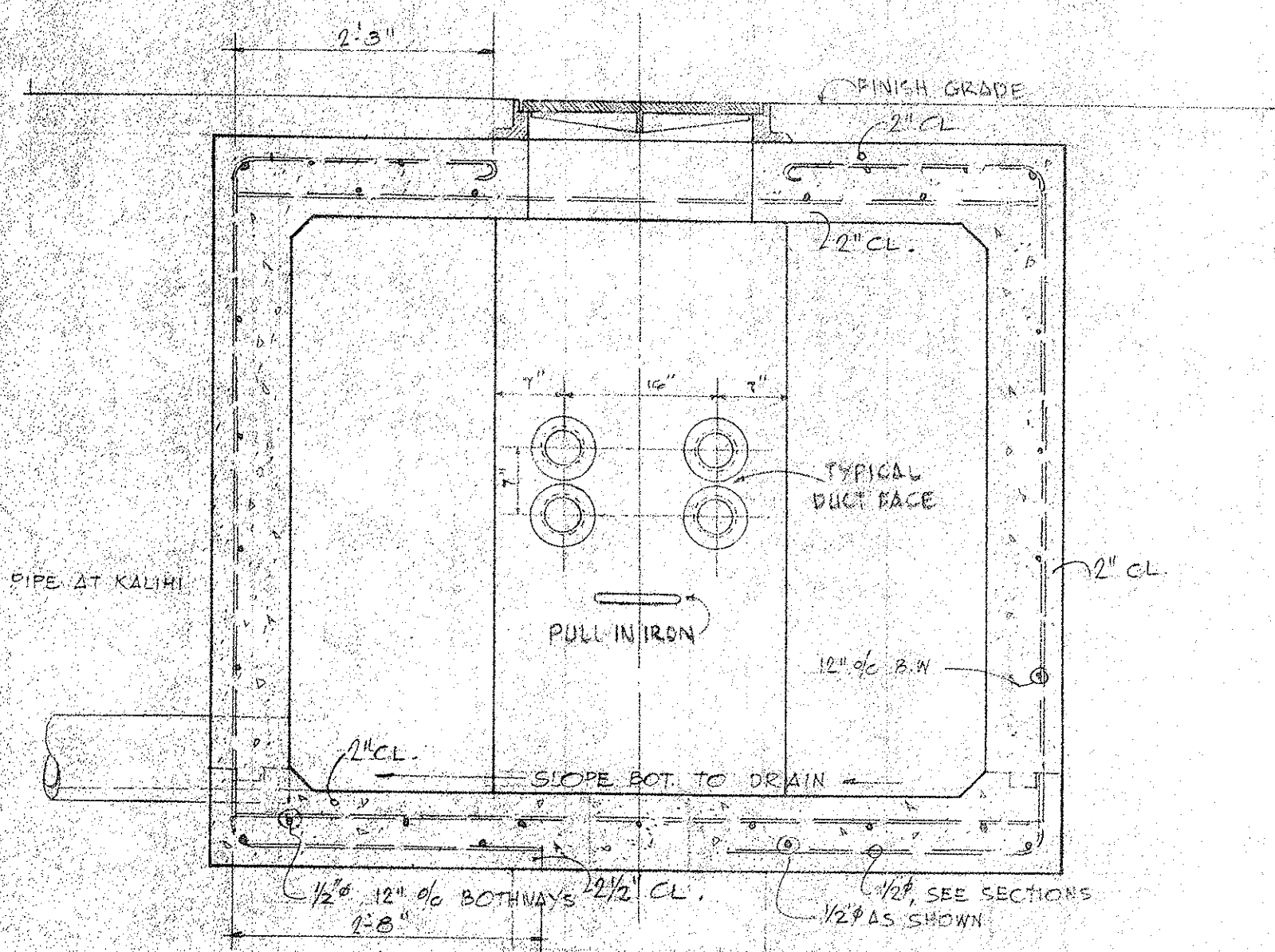
PLAN



SECTION C-C

DETAIL OF MANHOLE FRAME & COVER

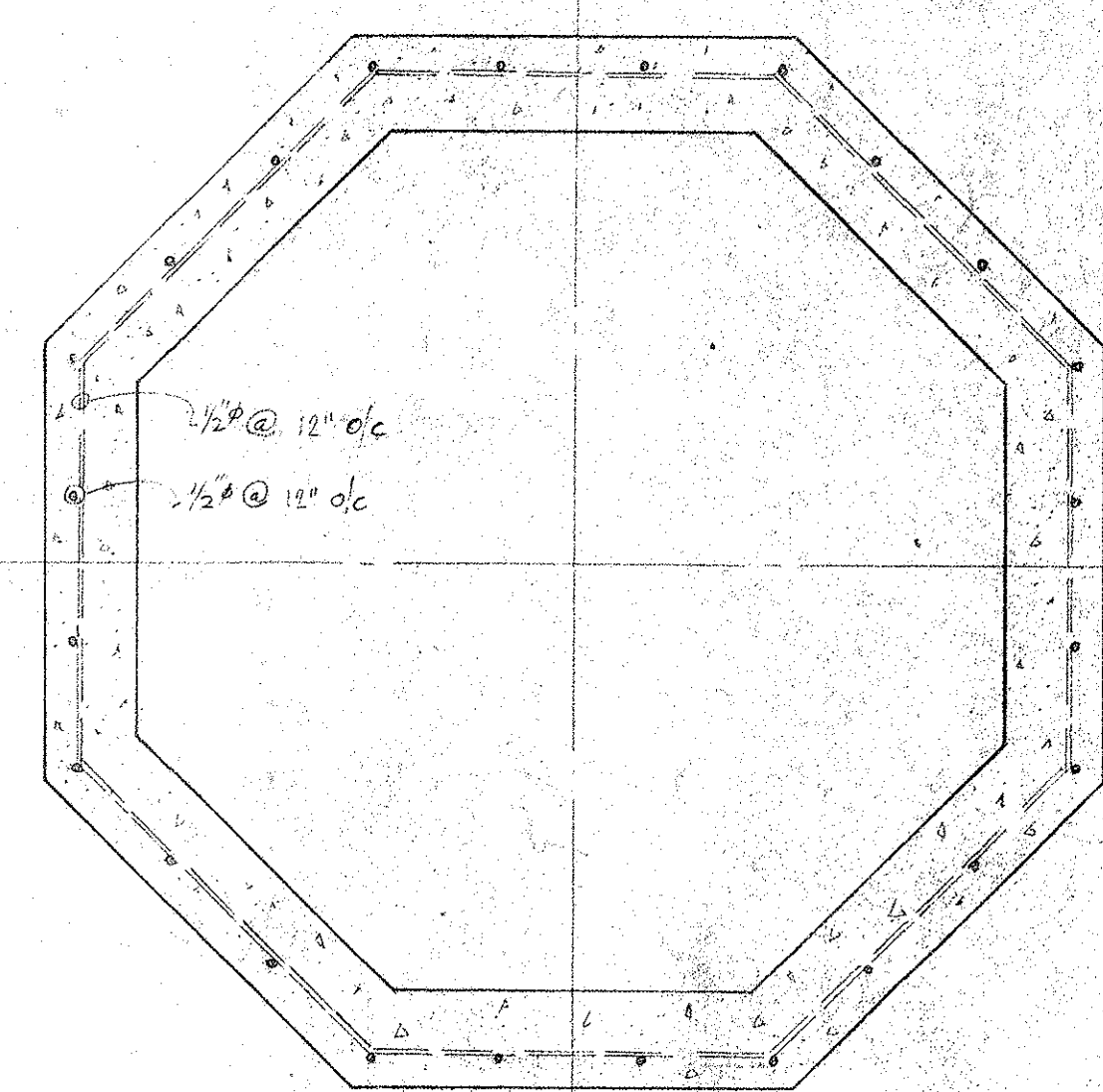
SCALE: 1/2" = 1'-0"



SECTION A-A

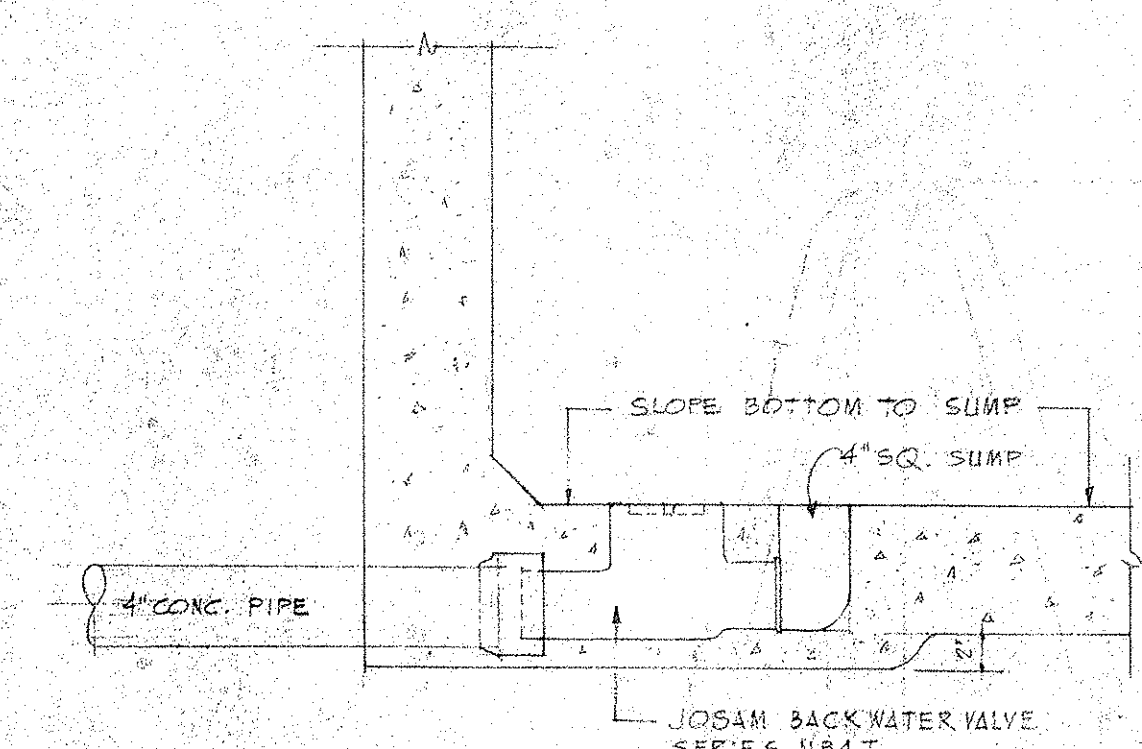
MANHOLE DETAILS

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



REINFORCING OF SECTION UNDER TOP

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



DETAIL: BACKWATER VALVE

SCALE: 1" = 1'-0"

NOTE:
 FOR LOCATION & DEPTH OF E.M.H. SEE DWG. P-24, P-53 & VB-1 FOR DETAIL OF PULL-IN IRON, SEE DWG. THIS

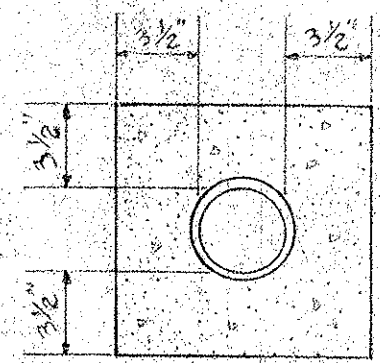
LAW & WILSON
 ARCHITECTS & ENGINEERS
 DEPARTMENT OF PUBLIC WORKS
 CITY AND COUNTY OF HONOLULU
 BUREAU OF PLANS

KALIHU TUNNEL
 KALIHU PORTAL
 ELECTRICAL MANHOLE DETAILS

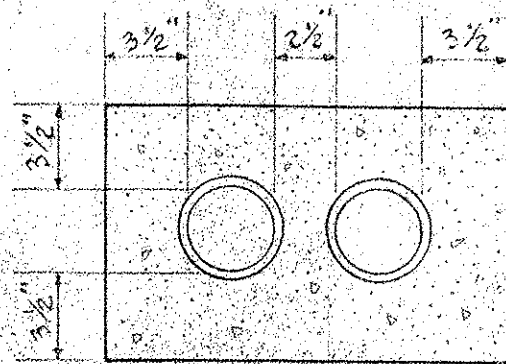
ENGINEER: L. B. W. DATE: JULY 15, 1958
 DRAFTSMAN: S. H. RANG CHECKED BY: [Signature]
 SCALE: AS NOTED
 APPROVED: [Signature] TRACER: [Signature]
 CHIEF ENGINEER BUREAU ENGINEER

APPROVED: [Signature]	PROFILE	C. B.
ENGINEER: L. B. WILSON	F. B.	S. B.
CH. SEC.	F. W. BY	S. B.
W. H. BY		

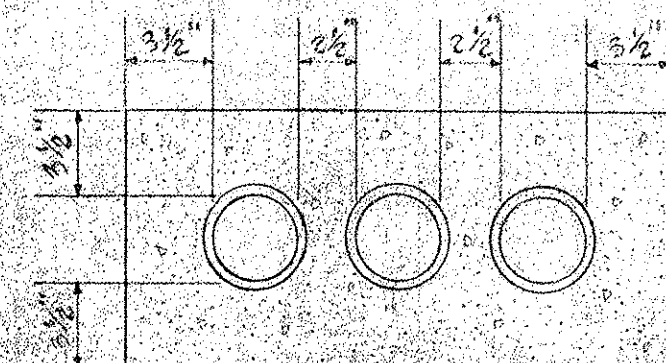
SECTION C JOB NO. 26-53 DWG. P-26



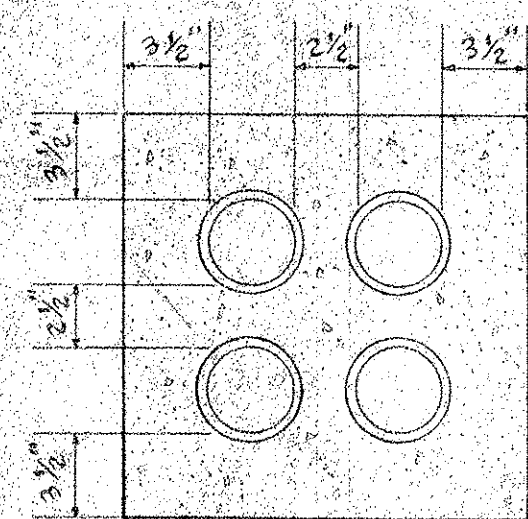
1 WAY



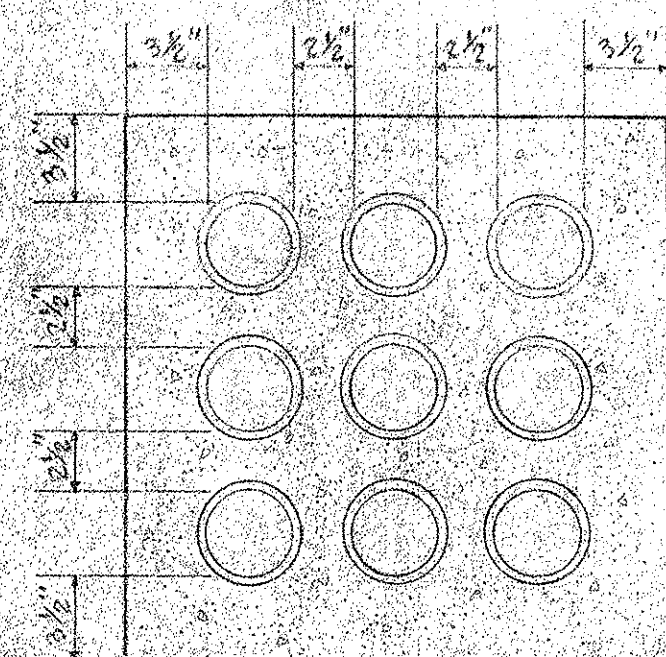
2 WAY



3 WAY

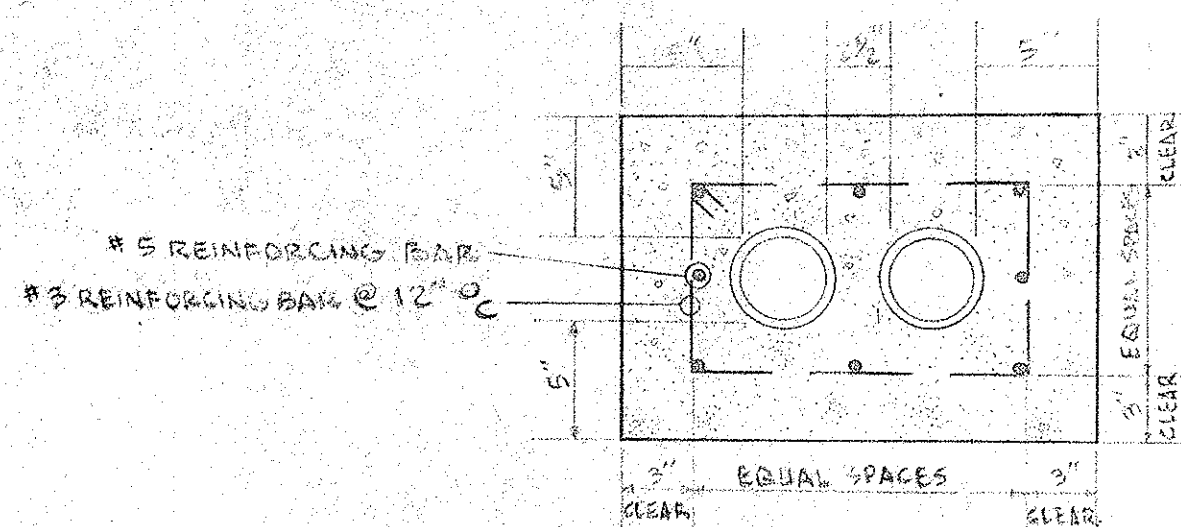


4 WAY

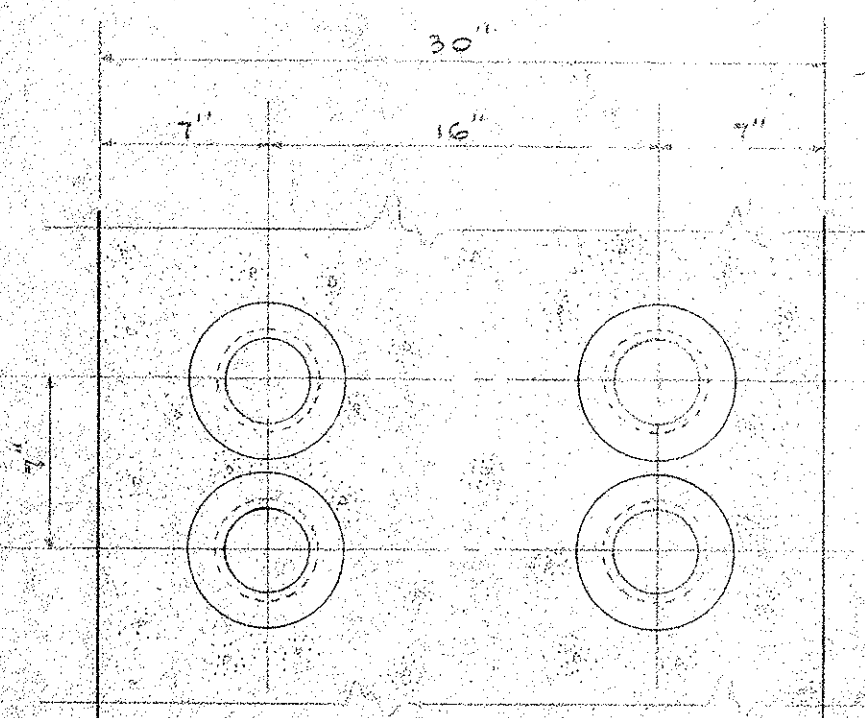


5 WAY

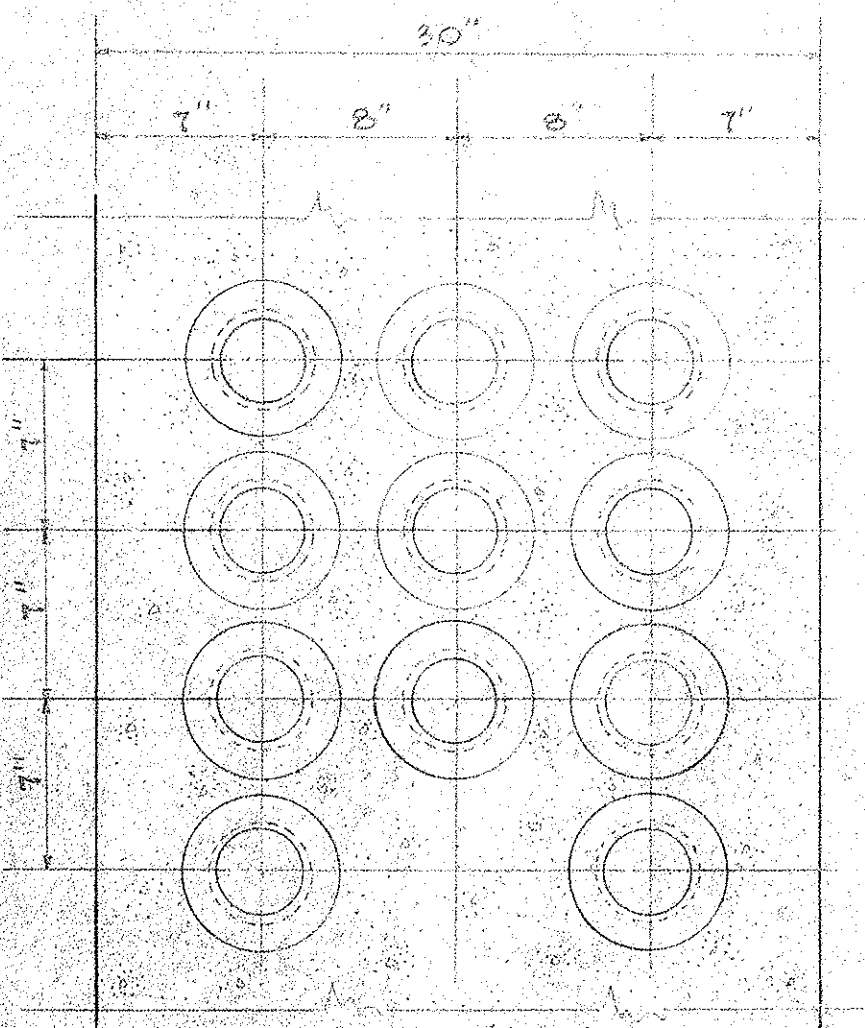
UNDERGROUND DUCT SECTIONS
SCALE: 1/2" = 1'-0"



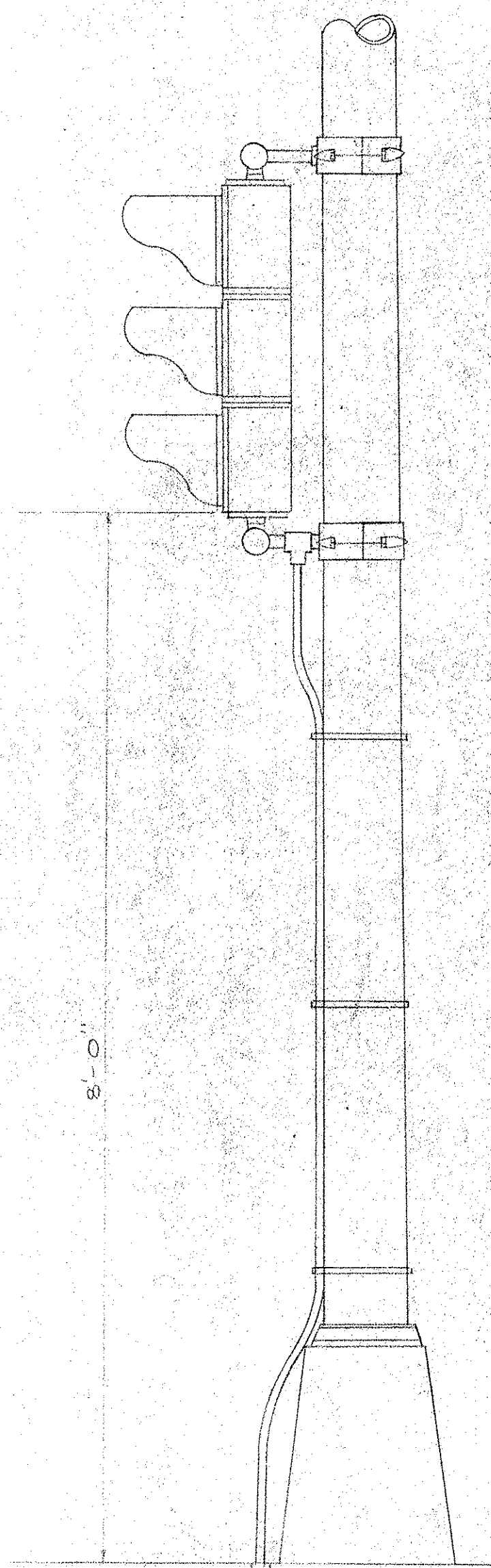
TYPICAL REINFORCED DUCTS IN ROADWAY
SCALE: 1/2" = 1'-0"



TYPICAL 2 WIDE DUCT FACE
SCALE: 1/2" = 1'-0"



TYPICAL 3 WIDE DUCT FACE
SCALE: 1/2" = 1'-0"

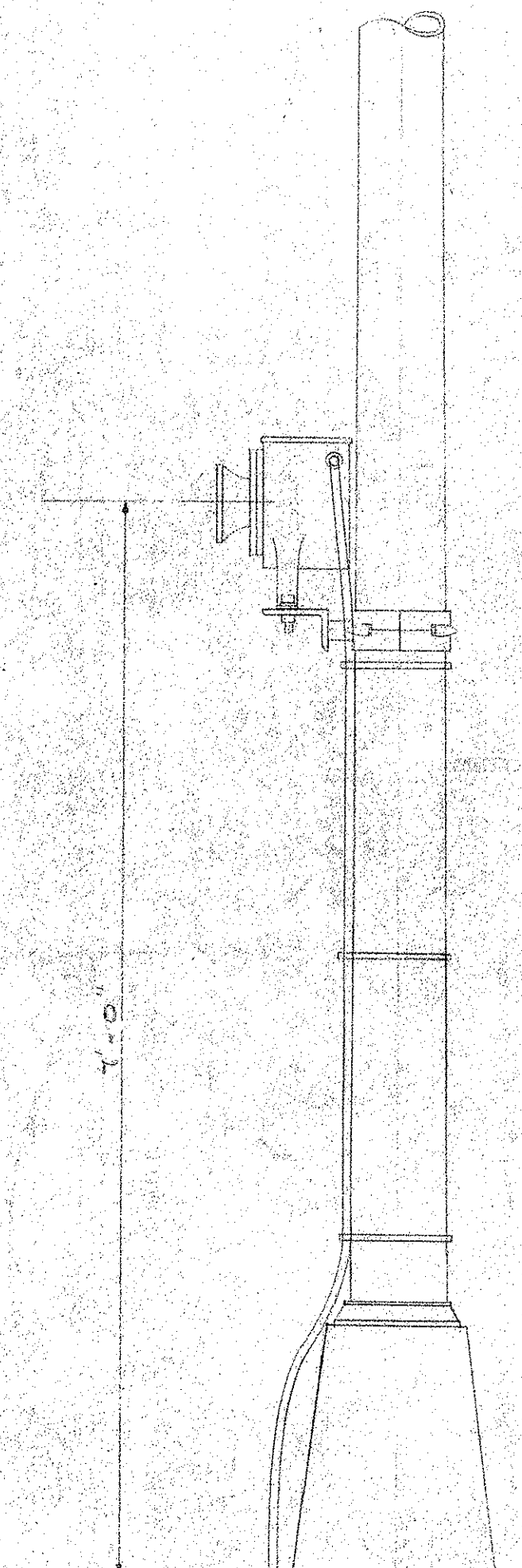


TRAFFIC SIGNAL ON METAL LAMP POST



OVERHEIGHT ALARM PHOTOELECTRIC DEVICES ON 4" EXTRA HEAVY PIPE STANDARD

OVERHEIGHT ALARM PHOTOELECTRIC DEVICES ON METAL LAMP POST



OVERHEIGHT ALARM AUDIO SIGNAL ON METAL LAMP POST

NOTE:

WHERE STEEL IS CLAMPED TO ALUMINUM, INSTALL 2 OUNCE CANVAS SATURATED IN KING CHROMATE TO MAINTAIN COMPLETE SEPARATION.

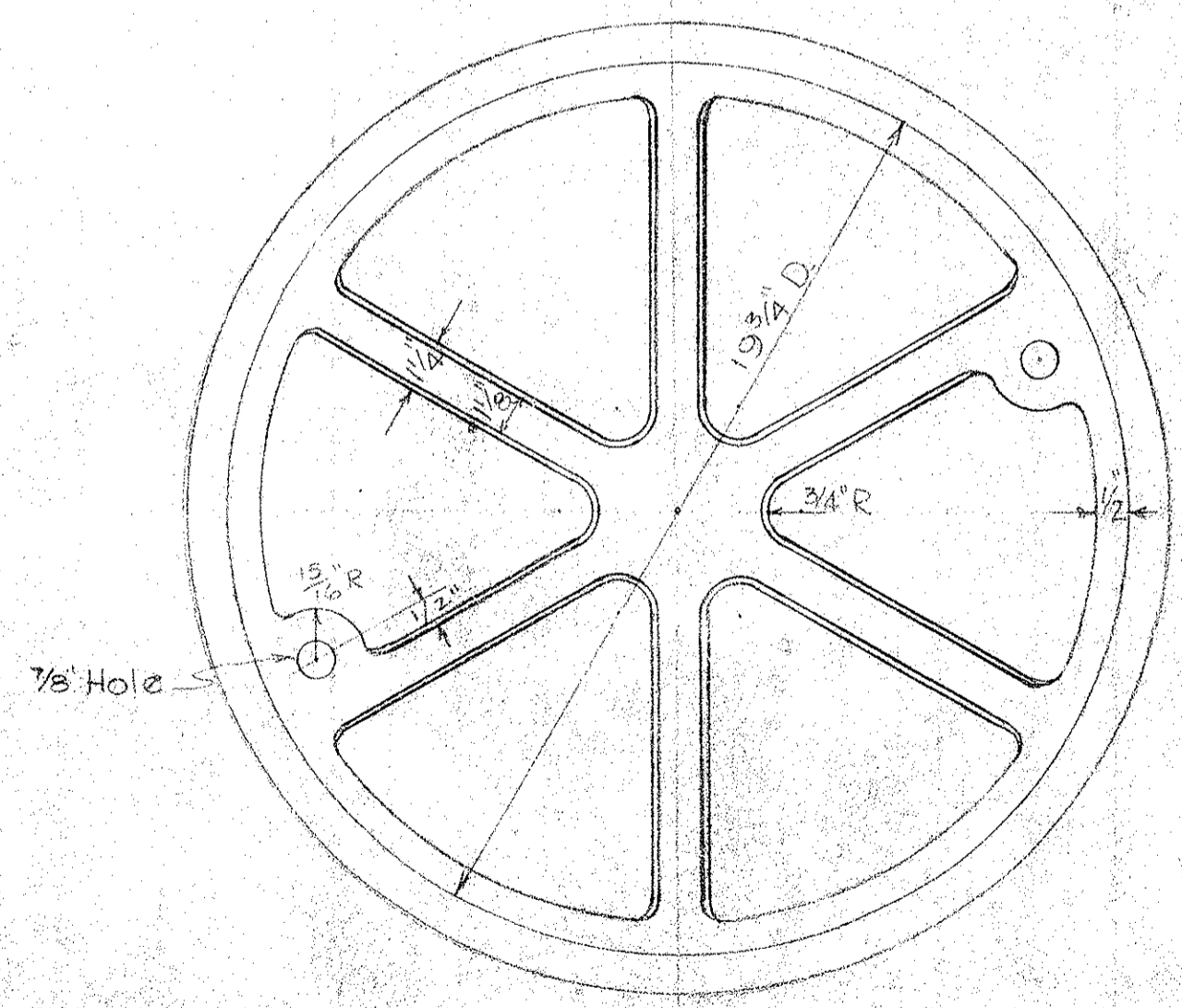
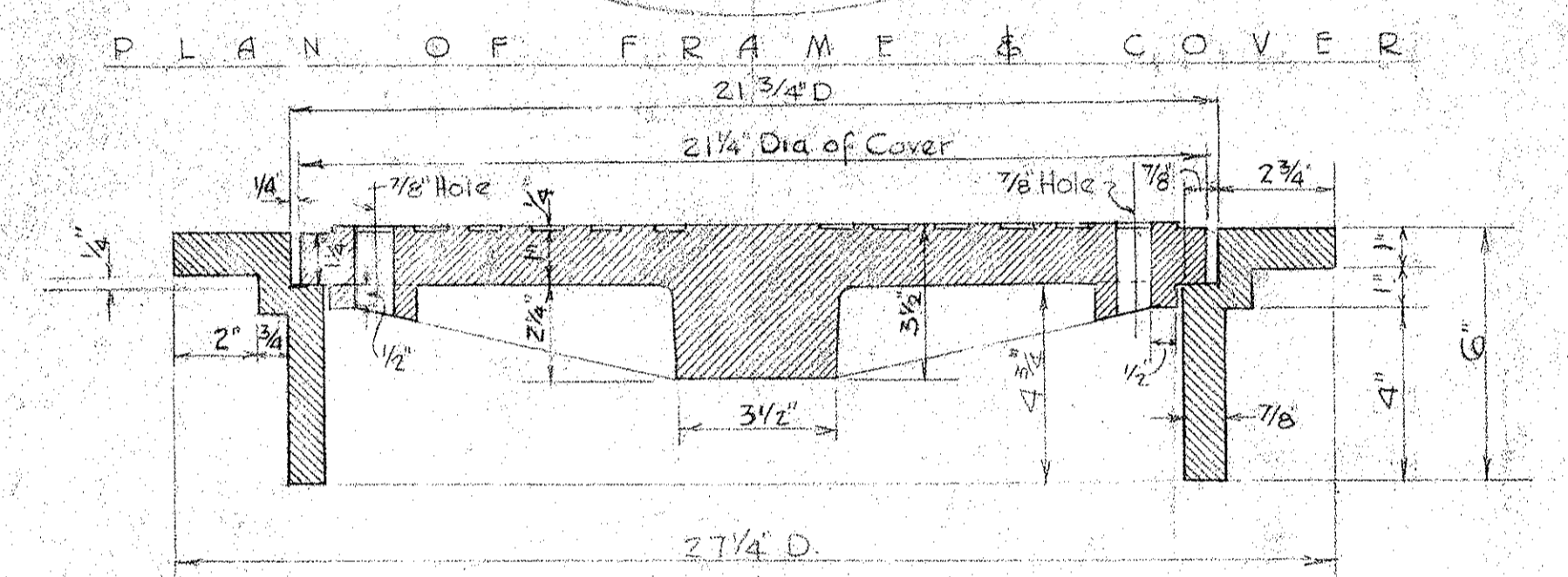
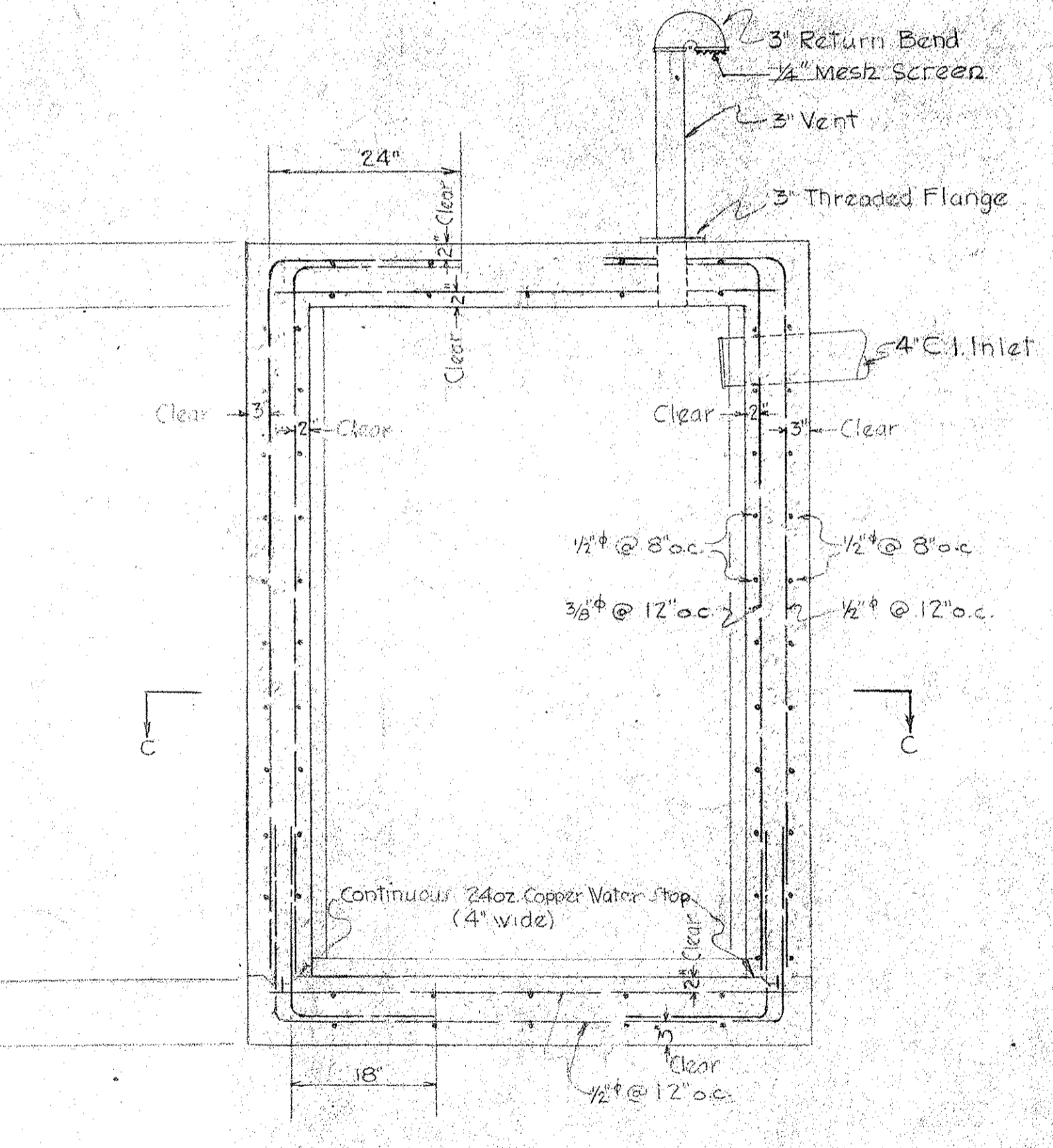
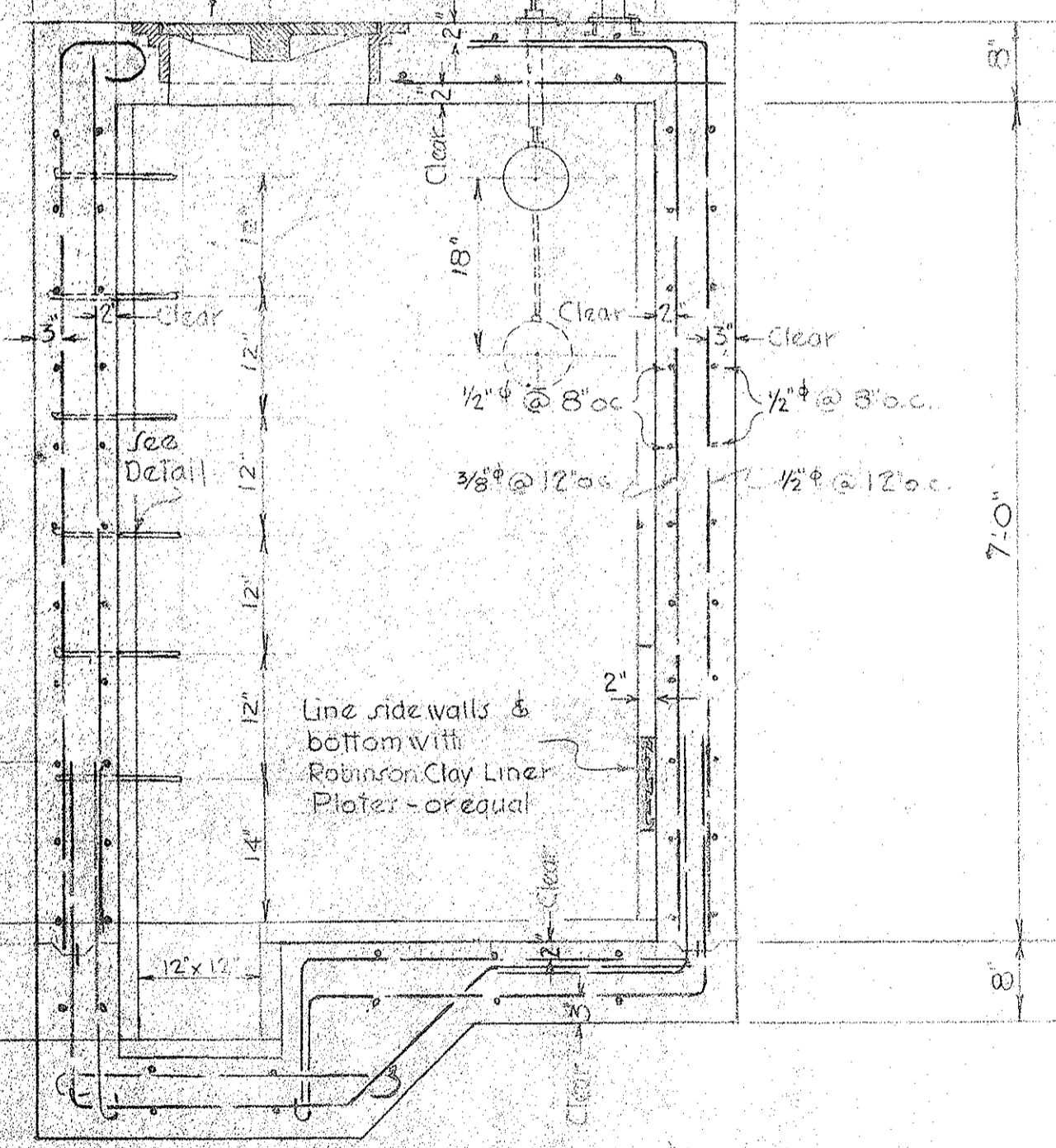
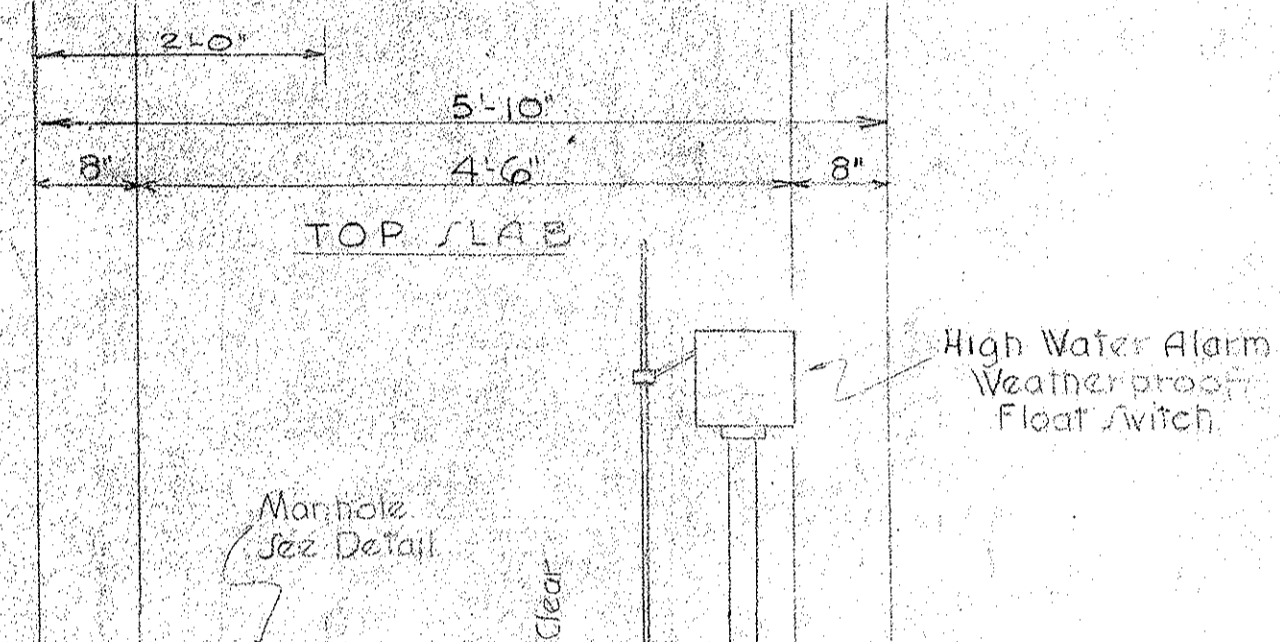
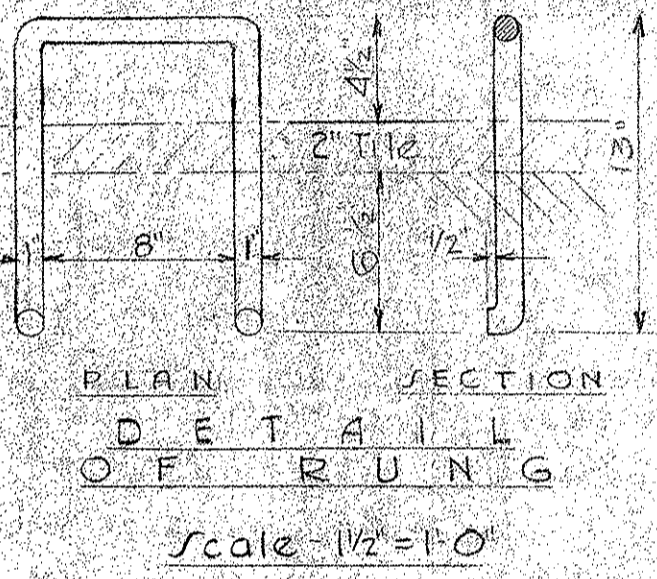
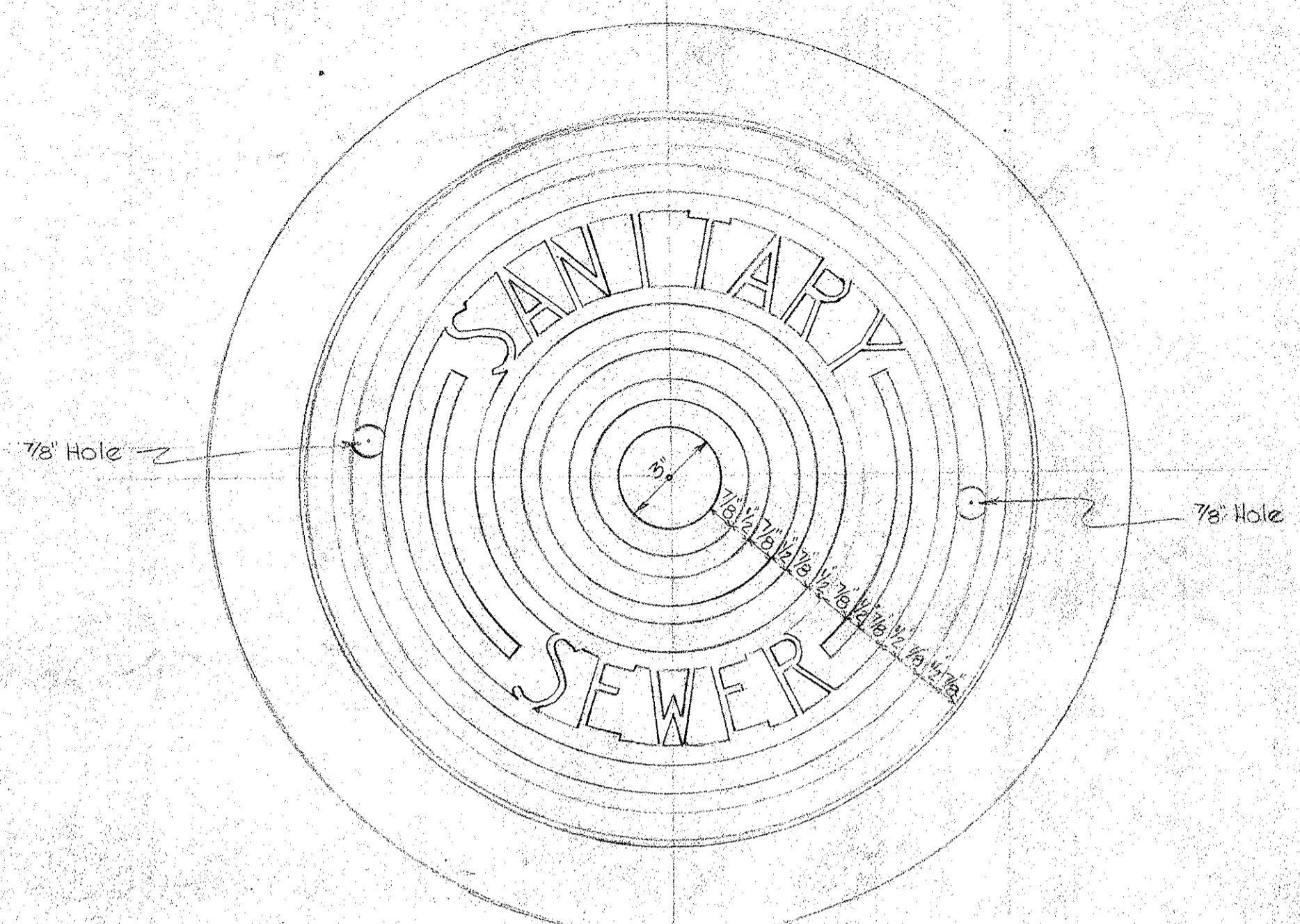
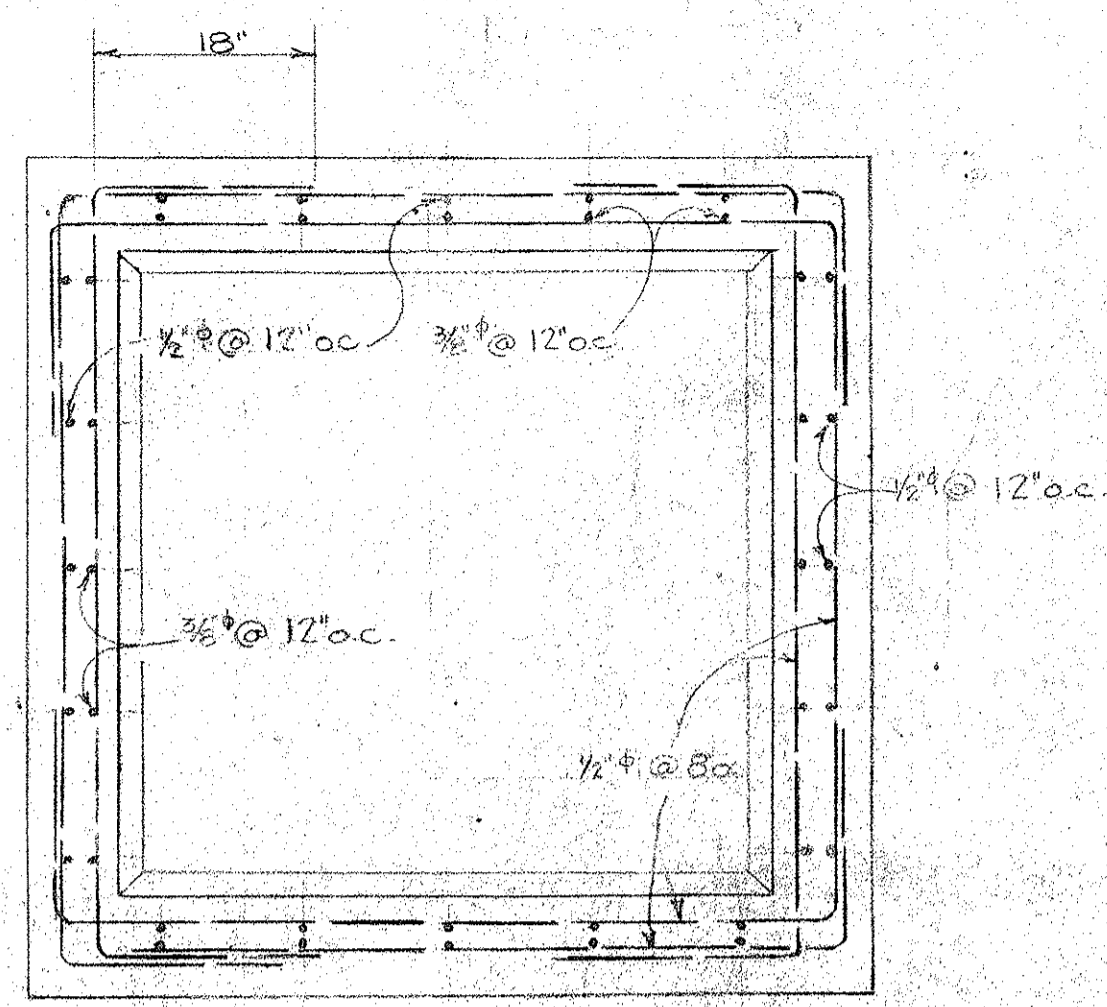
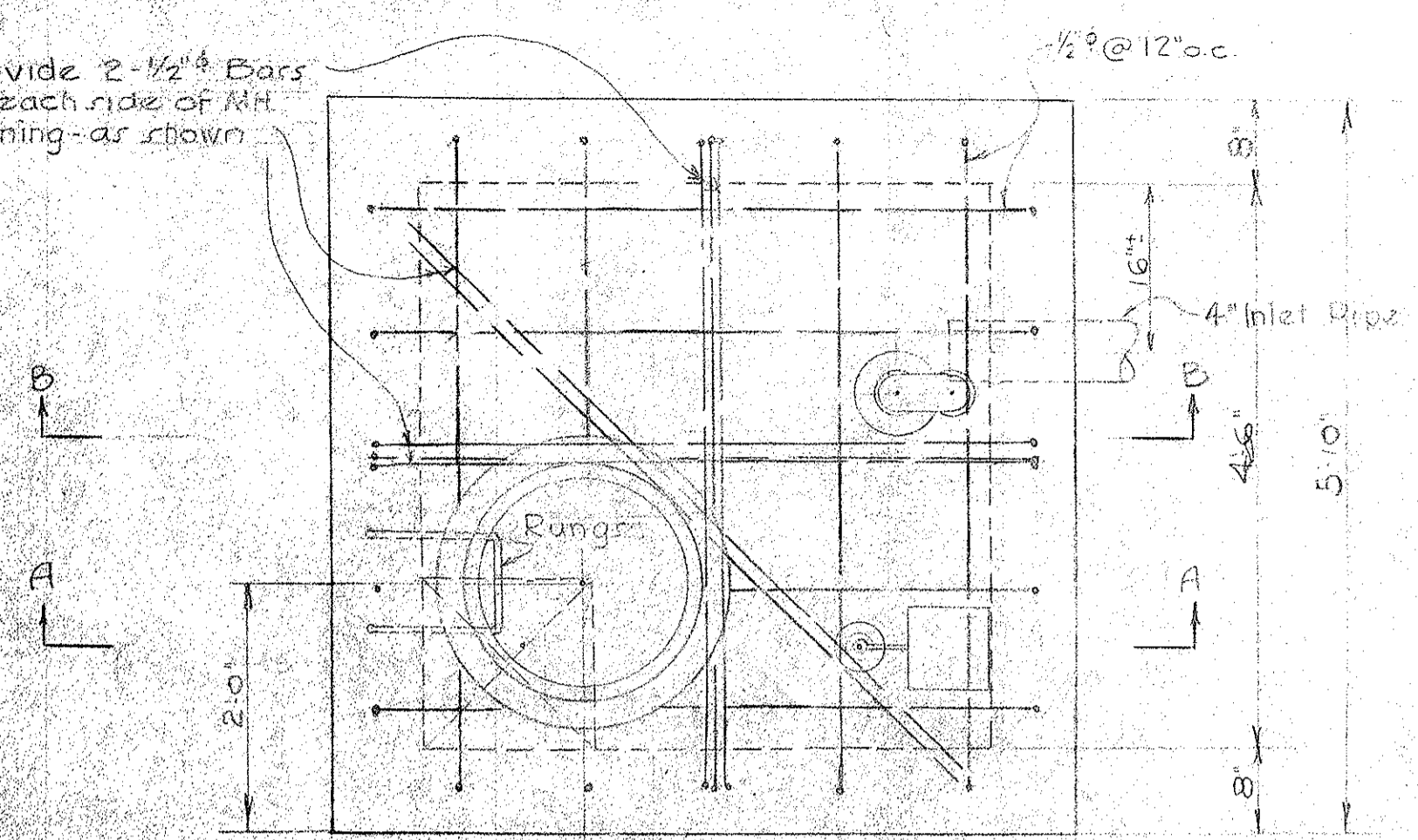
LAW & WILSON
ARCHITECTS & ENGINEERS
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIHI TUNNEL
KALIHI PORTAL
ELECTRICAL DUCTS & SIGNAL DETAILS

ENGINEER: L. B. W.
DRAFTSMAN: S. H. PANG
SCALE: 1/2" = 1'-0"
APPROVED: *[Signature]*
CHIEF ENGINEER

DATE: JULY 15, 1958
CHECKED BY: *[Signature]*
TRACER
APPROVED: *[Signature]*
BUREAU ENGINEER

W.S.	PROFILE	C.B.
C.R. SEC.	F.B.	S.B.
W.M. BY:	F.W. BY:	S. BY:

Provide 2-1/2" Bars on each side of RH opening-as shown



TANK DETAILS
(2 Required)
Scale - 3/4" = 1'-0"

REFLECTED PLAN OF COVER
MANHOLE DETAILS
TYPE C FRAME - TYPE A COVER
Scale - 3" = 1'-0"

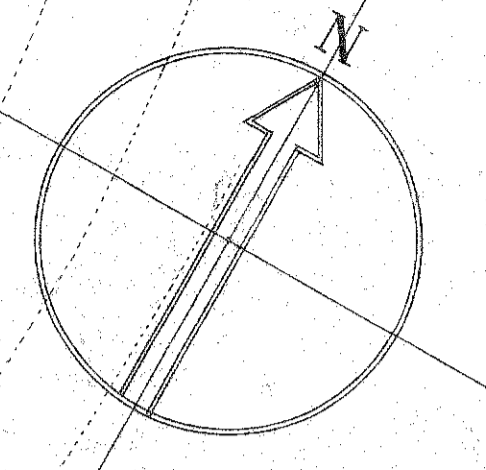
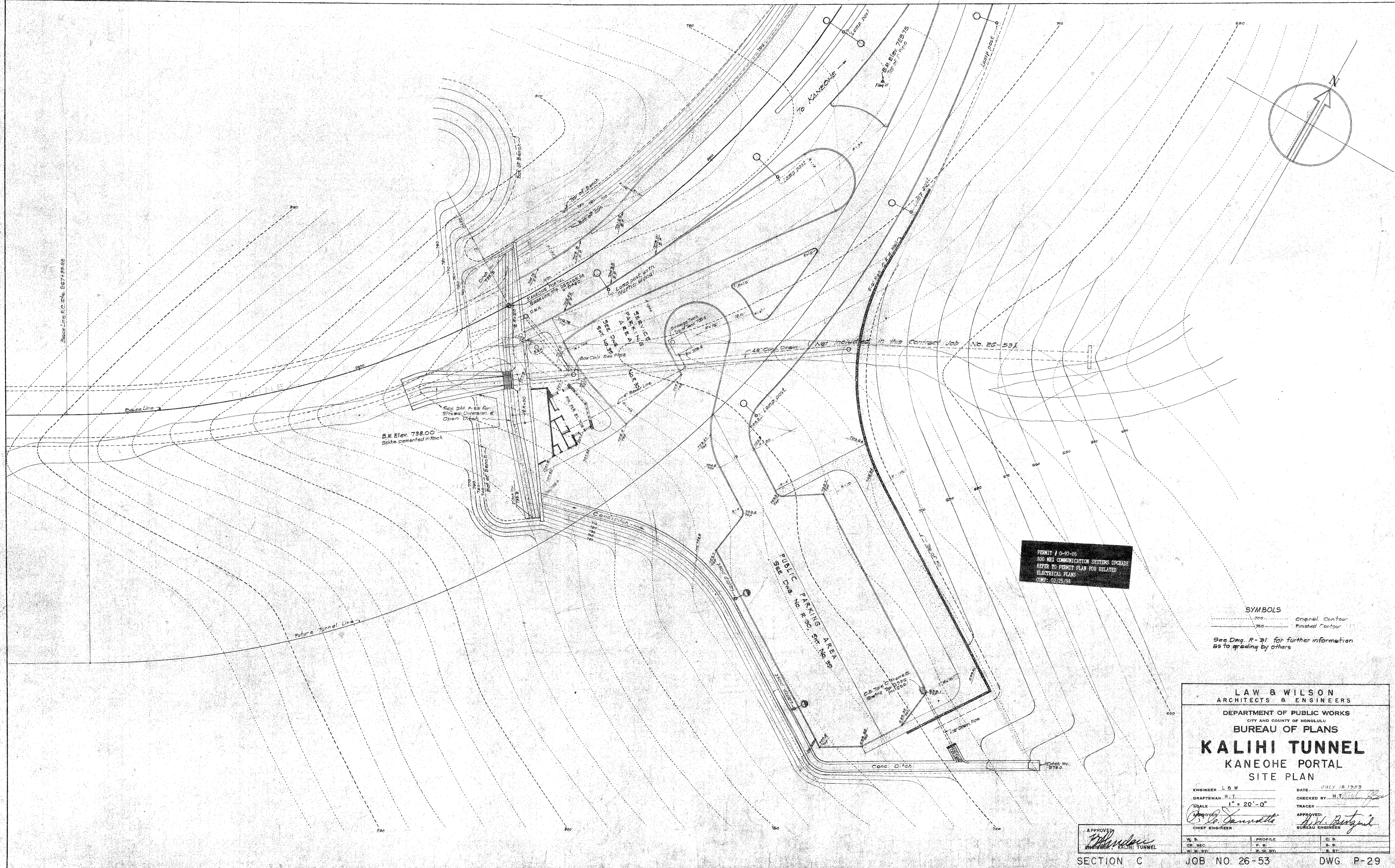
For Location of Tanks see Dwg. No. P1

LAW & WILSON
ARCHITECTS & ENGINEERS
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIHI TUNNEL
KALIHI PORTAL
WATERTIGHT SEWAGE TANK

ENGINEER: L. B. W. DATE: JULY 15, 1953
DRAFTSMAN: H. T. C. CHECKED BY: G. L. [Signature]
SCALE: AS NOTED TRACER: [Signature]
APPROVED: [Signature] CHIEF ENGINEER
APPROVED: [Signature] BUREAU ENGINEER

W.S.	PROFILE	C.E.
C.R. SEC.	F.B.	S.B.
W.M.B.V.	F.W.B.V.	S.B.V.

SECTION C JOB NO. 26-53 DWG. P-28



PERMIT 10-97-05
 300 MBZ COMMUNICATION SYSTEMS UPGRADE
 REFER TO PERMIT PLAN FOR RELATED
 ELECTRICAL PLANS
 COMP: 02/25/98

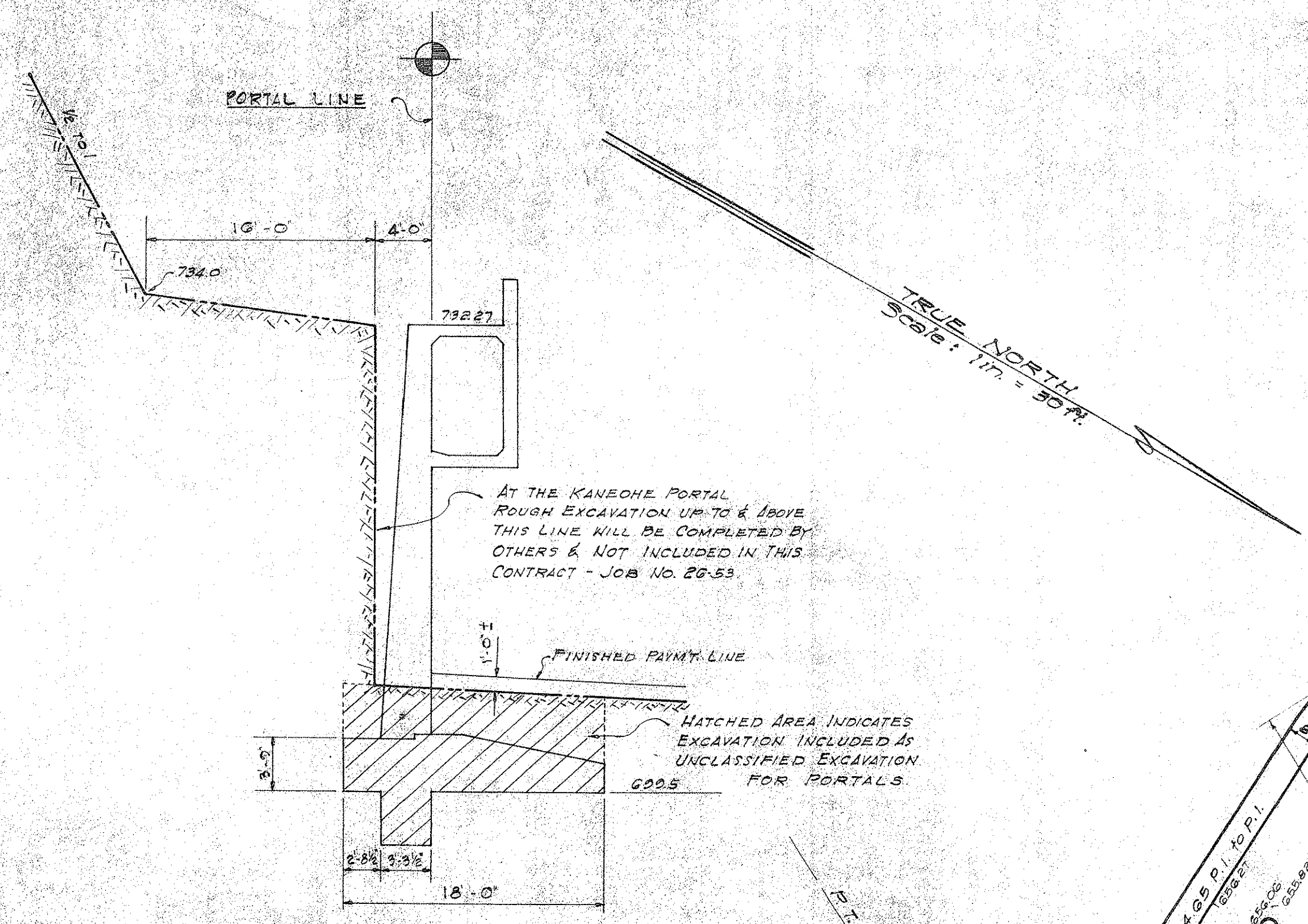
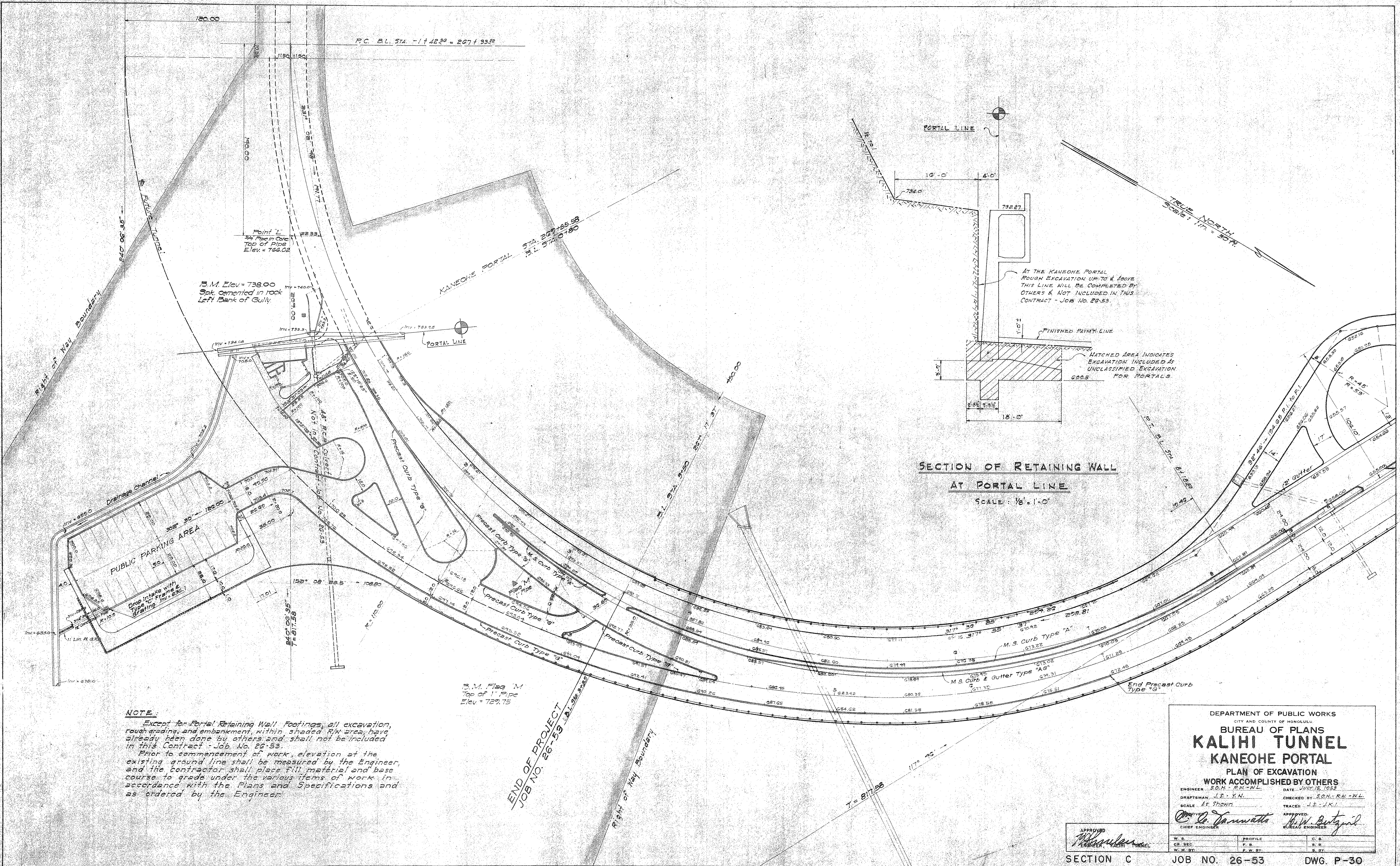
SYMBOLS
 --- Original Contour
 - - - - - Finished Contour
 See Dwg. R-31 for further information
 as to grading by others

LAW & WILSON
 ARCHITECTS & ENGINEERS
 DEPARTMENT OF PUBLIC WORKS
 CITY AND COUNTY OF HONOLULU
 BUREAU OF PLANS
KALIHI TUNNEL
 KANEOHE PORTAL
 SITE PLAN

ENGINEER L.W. DATE JULY 18 1993
 DRAFTSMAN H.T. CHECKED BY H.T.
 SCALE 1" = 20'-0" TRACER
 APPROVED: *[Signature]* APPROVED: *[Signature]*
 CHIEF ENGINEER BUREAU ENGINEER

W. B.	PROFILE	C. B.
C. B. SEC.	F. S.	F. S.
W. M. BY	F. W. BY	S. BY

SECTION C JOB NO. 26-53 DWG. P-29



SECTION OF RETAINING WALL
AT PORTAL LINE
SCALE: 1/8" = 1'-0"

NOTE:
 Except for Portal Retaining Wall Footings, all excavation, rough grading, and embankment, within shaded RW area, have already been done by others and shall not be included in this Contract - Job No. 26-53.
 Prior to commencement of work, elevation at the existing ground line shall be measured by the Engineer, and the contractor shall place fill material and base course to grade under the various items of work in accordance with the Plans and Specifications and as ordered by the Engineer.

3.M. Flag 'M'
Top of 1" Pipe
Elev = 727.75

END OF PROJECT
JOB NO. 26-59 S.L. STA. 0+245

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIHI TUNNEL
KANEHOE PORTAL
 PLAN OF EXCAVATION
 WORK ACCOMPLISHED BY OTHERS

ENGINEER: S.O.H. - R.W.-W.L. DATE: JULY 15, 1952
 DRAFTSMAN: J.S. - Y.N. CHECKED BY: S.O.H. - R.W.-W.L.
 SCALE: AS SHOWN TRACER: J.S. - J.K.I.

APPROVED: *Co. Jannawata* CHIEF ENGINEER
H.W. Butzgold BUREAU ENGINEER

W. S.	PROFILE	C. A.
CR. SEC.	F. B.	S. B.
W. M. BY:	F. W. BY:	S. BY:



PERMIT # 0-97-05
 300 MHz COMMUNICATION SYSTEMS UPGRADE
 REFER TO PERMIT PLAN FOR RELATED
 ELECTRICAL PLANS
 COMP: 02/25/98

SYMBOLS
 --- Original Contour
 - - - Finished Contour

See Dwg. R-31 for further information
 as to grading by others

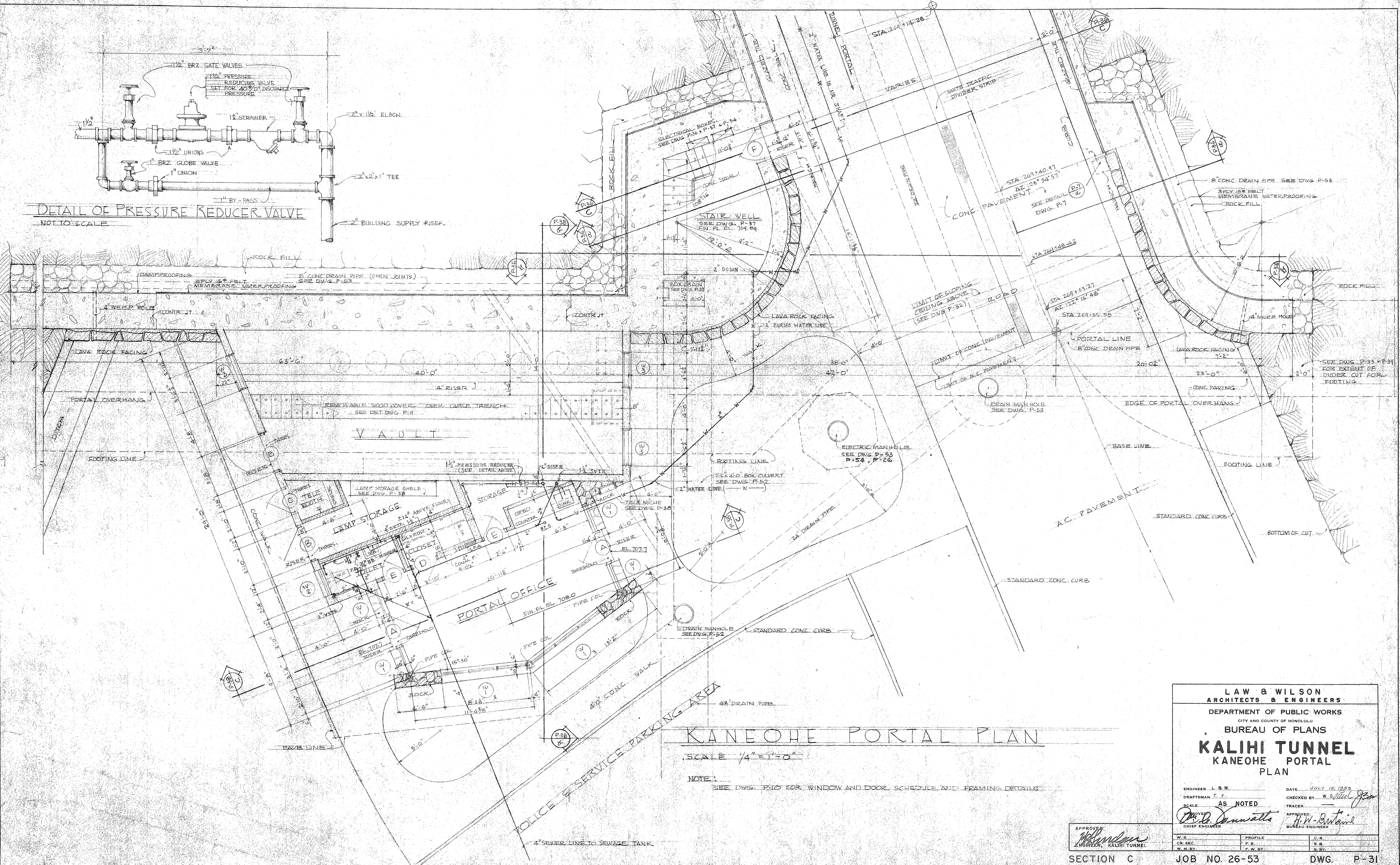
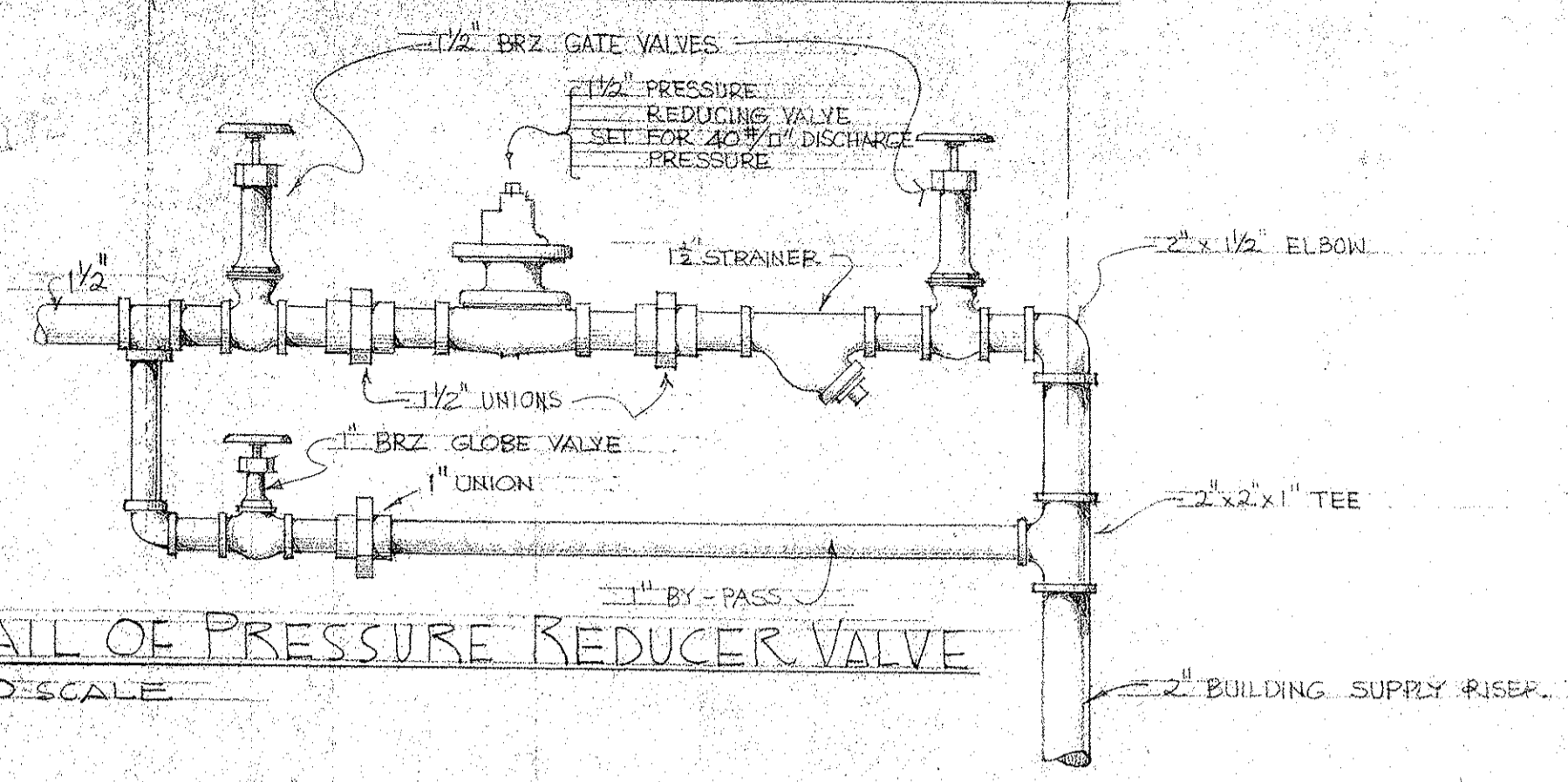
LAW & WILSON
 ARCHITECTS & ENGINEERS
 DEPARTMENT OF PUBLIC WORKS
 CITY AND COUNTY OF HONOLULU
 BUREAU OF PLANS
KALIHI TUNNEL
 KANEOHE PORTAL
 SITE PLAN

ENGINEER L. B. W. DATE JULY 15 1955
 DRAFTSMAN H. T. CHECKED BY H. T. [Signature]
 SCALE 1" = 20'-0" TRACER
 APPROVED [Signature] APPROVED [Signature]
 CHIEF ENGINEER BUREAU ENGINEER

W. S.	PROFILE	C. B.
CR. SEC.	P. B.	E. B.
W. M. BY	P. M. BY	E. M. BY

APPROVED [Signature]
 ENGINEER KALIHI TUNNEL

SECTION C JOB NO 26-53 DWG P-29



KANEOHE PORTAL PLAN

SCALE 1/4" = 1'-0"

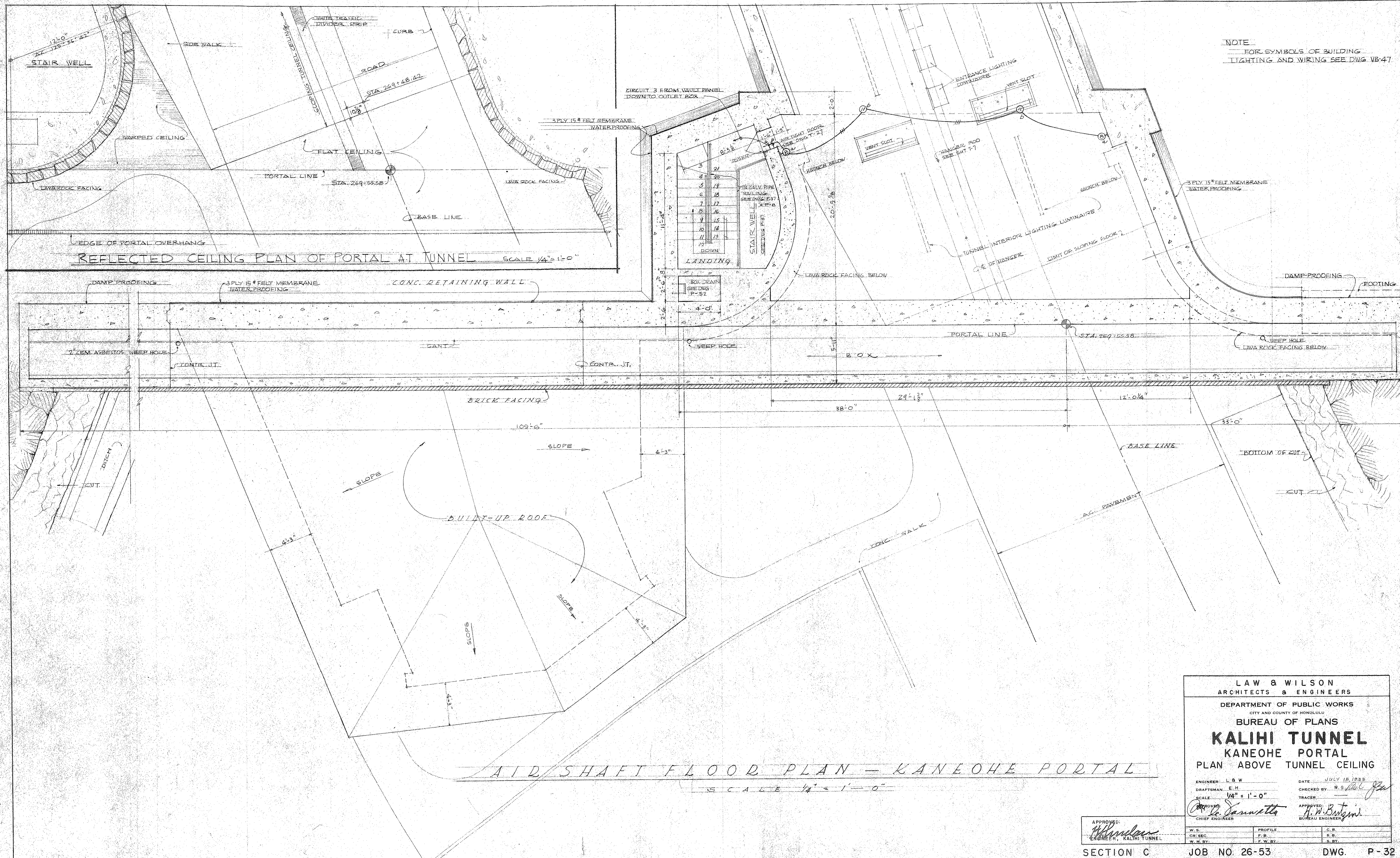
NOTE: SEE DWG. P-210 FOR WINDOW AND DOOR SCHEDULE AND FRAMING DETAILS

LAW & WILSON
ARCHITECTS & ENGINEERS
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF HONOLULU
KALIHI TUNNEL
KANEOHE PORTAL
PLAN

ENGINEER L. B. W. DATE JULY 15, 1953
DRAFTSMAN T. F. CHECKED BY W. G. [Signature]
SCALE AS NOTED TRACER
APPROVED [Signature] CHIEF ENGINEER
APPROVED [Signature] BUREAU ENGINEER

W.S.	PROFILE	C.B.
CR. SEC.	P.B.	S.H.
W.M.B.Y.	F.W.B.Y.	S.B.Y.

SECTION C JOB NO. 26-53 DWG. P-31



NOTE:
 FOR SYMBOLS OF BUILDING
 LIGHTING AND WIRING SEE DWG. VB-47

REFLECTED CEILING PLAN OF PORTAL AT TUNNEL SCALE 1/4" = 1'-0"

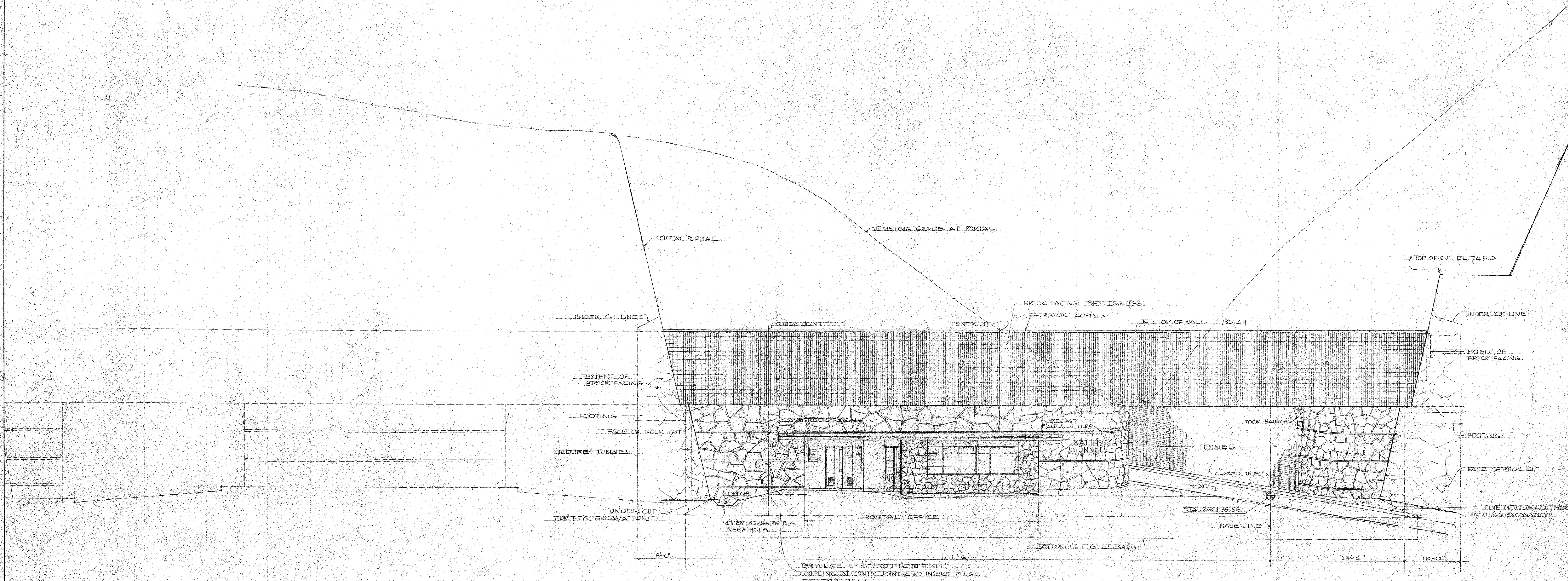
AIR SHAFT FLOOD PLAN - KANEOHE PORTAL
 SCALE 1/4" = 1'-0"

LAW & WILSON
 ARCHITECTS & ENGINEERS
 DEPARTMENT OF PUBLIC WORKS
 CITY AND COUNTY OF HONOLULU
 BUREAU OF PLANS
KALIHI TUNNEL
 KANEOHE PORTAL
 PLAN ABOVE TUNNEL CEILING

ENGINEER: L.B.W. DATE: JULY 15, 1953
 DRAFTSMAN: E.H. CHECKED BY: W.S. [Signature]
 SCALE: 1/4" = 1'-0" TRACER: [Signature]
 APPROVED: [Signature] CHIEF ENGINEER
 APPROVED: [Signature] BUREAU ENGINEER

W.S.	PROFILE	C.B.
CR: SEC.	P.B.	E.B.
W.W.B.V.	F.W.B.V.	S.B.V.

SECTION C JOB NO. 26-53 DWG. P-32



ELEVATION • KANEOHE PORTAL

SCALE 1/8" = 1'-0"

NOTES:
 SEE SITE PLAN FOR GRADES
 FOR PRECAST ALUMINUM LETTERS
 SEE DWG. T-44

LAW & WILSON
 ARCHITECTS & ENGINEERS
 DEPARTMENT OF PUBLIC WORKS
 CITY AND COUNTY OF HONOLULU
 BUREAU OF PLANS
KALIHI TUNNEL
 KANEOHE PORTAL
 ELEVATION

ENGINEER L. B. W. DATE JULY 18, 1953
 DRAFTSMAN F. E. CHECKED BY W. S. [Signature]
 SCALE AS NOTED TRACER [Signature]
 APPROVED BY [Signature] CHIEF ENGINEER
 APPROVED BY [Signature] BUREAU ENGINEER

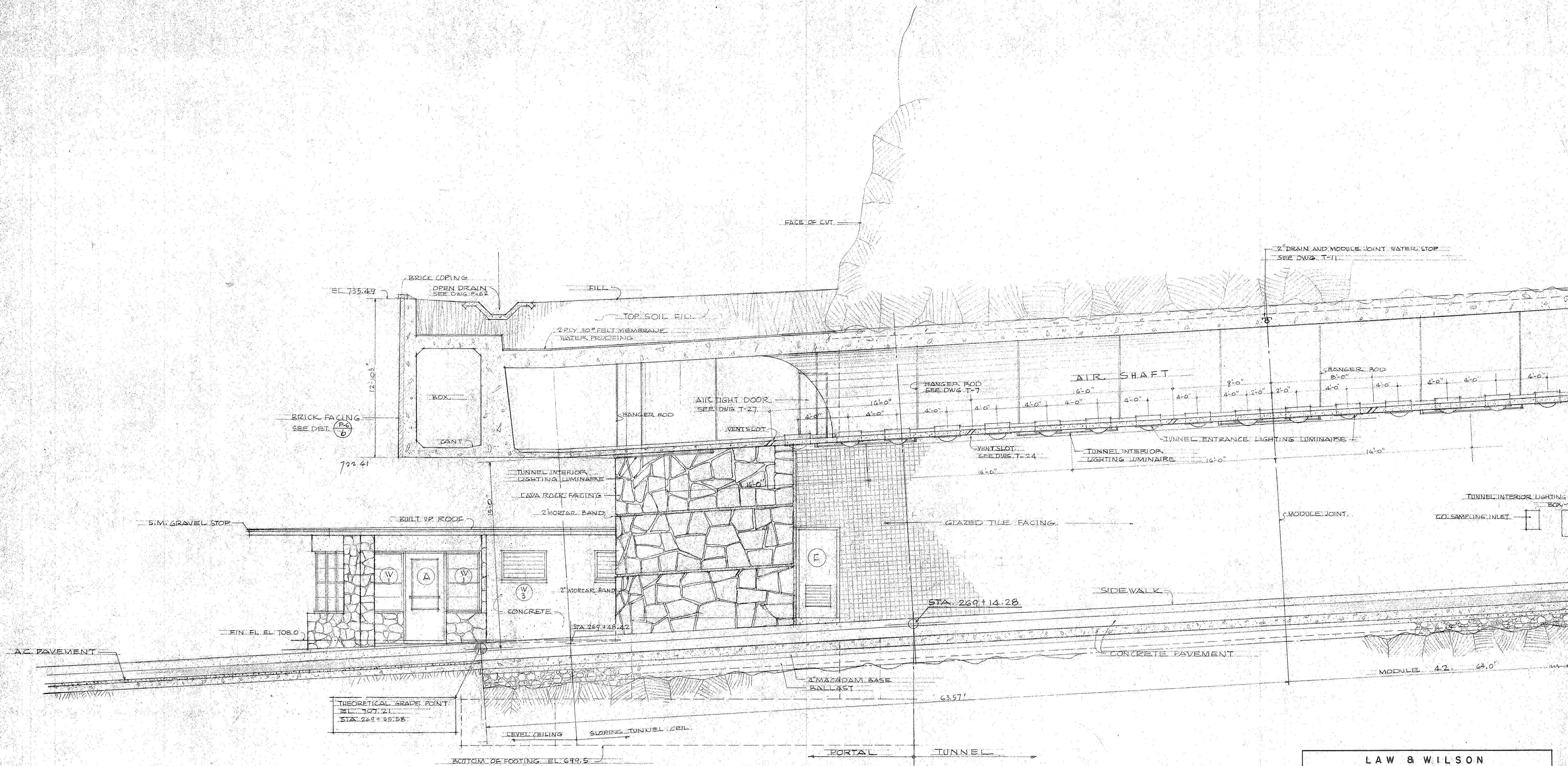
W.S.	PROFILE	C.B.
CR. SEC.	P.B.	S.B.
W.M.B.Y.	F.W.B.Y.	S.B.Y.

APPROVED
 [Signature]
 ENGINEER, KALIHI TUNNEL

SECTION C JOB NO. 26-53 DWG. P-33

Sheet No. 155 of 252 Sheets

FILE	POCKET	FOLDER	NO.
7	6	1	33



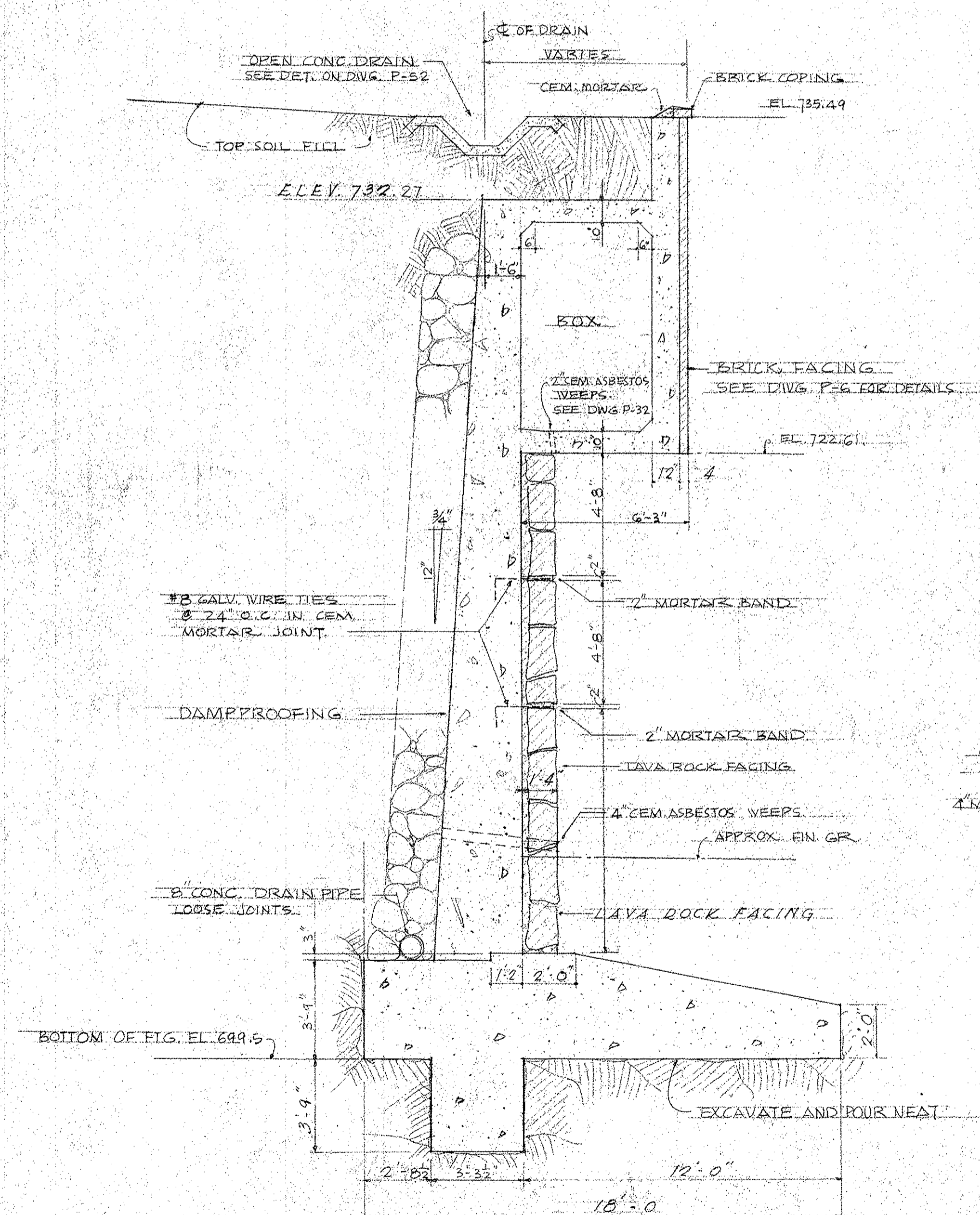
SECTION THRU KANEOHE PORTAL
 AT BASE LINE OF TUNNEL SCALE 1/4" = 1'-0"

LAW & WILSON
 ARCHITECTS & ENGINEERS
 DEPARTMENT OF PUBLIC WORKS
 CITY AND COUNTY OF HONOLULU
 BUREAU OF PLANS
KALIHI TUNNEL
 KANEOHE PORTAL
 SECTION THRU PORTAL
 RIGHT

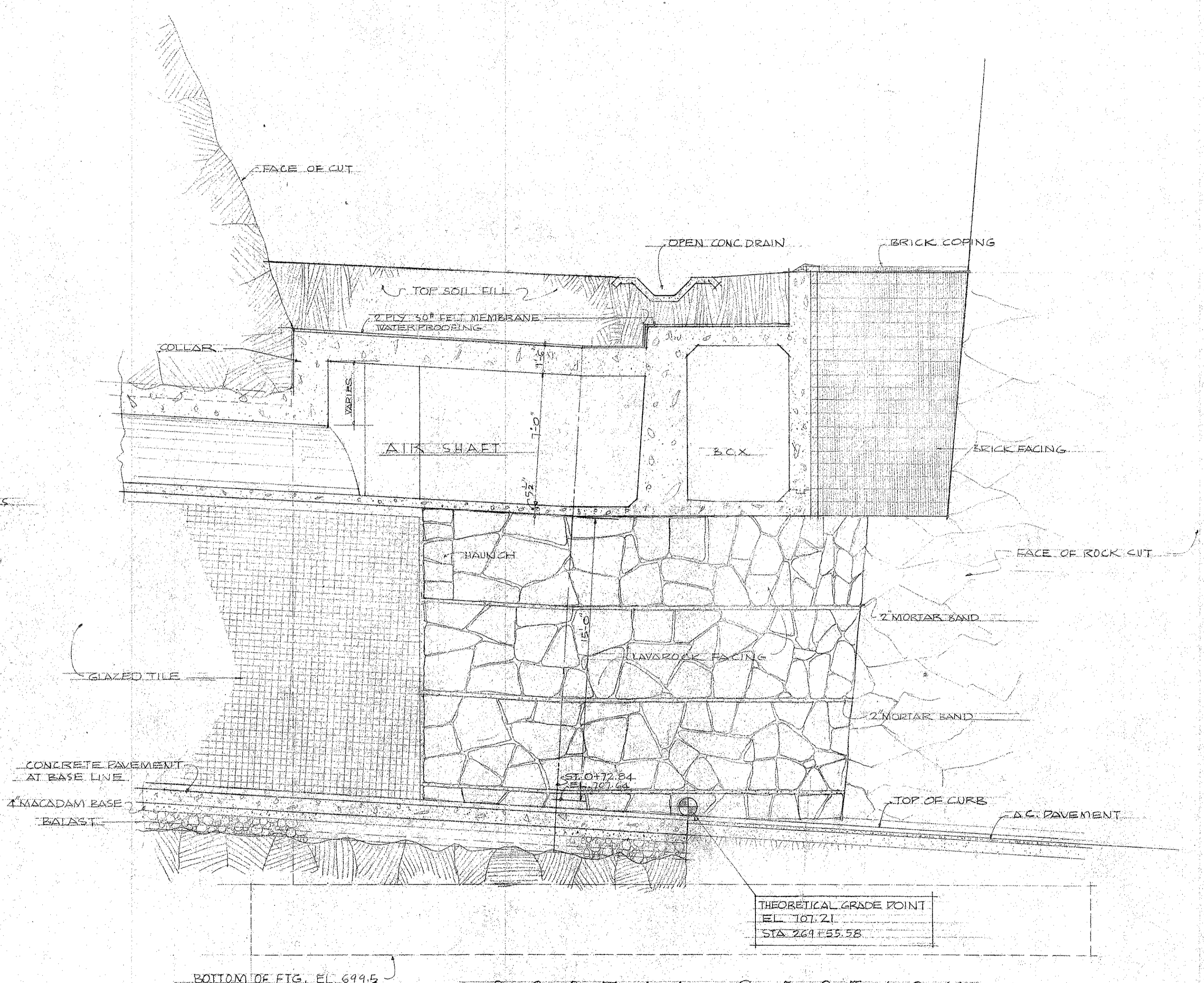
ENGINEER L. B. W. DATE JULY 15, 1933
 DRAFTSMAN T. F. CHECKED BY W. G. [Signature]
 SCALE AS NOTED TRACER
 APPROVED [Signature] APPROVED [Signature]
 CHIEF ENGINEER BUREAU ENGINEER

APPROVED:	PROFILE	C. B.
[Signature]	F. R.	S. B.
ENGINEER, KALIHI TUNNEL	F. W. BY	S. BY

SECTION C JOB NO. 26-53 DWG. P-34



TYPICAL WALL SECTION
SCALE 1/4" = 1'-0"



PORTAL SECTION
TOWARD LEFT WALL SCALE 1/4" = 1'-0"

LAW & WILSON
ARCHITECTS & ENGINEERS

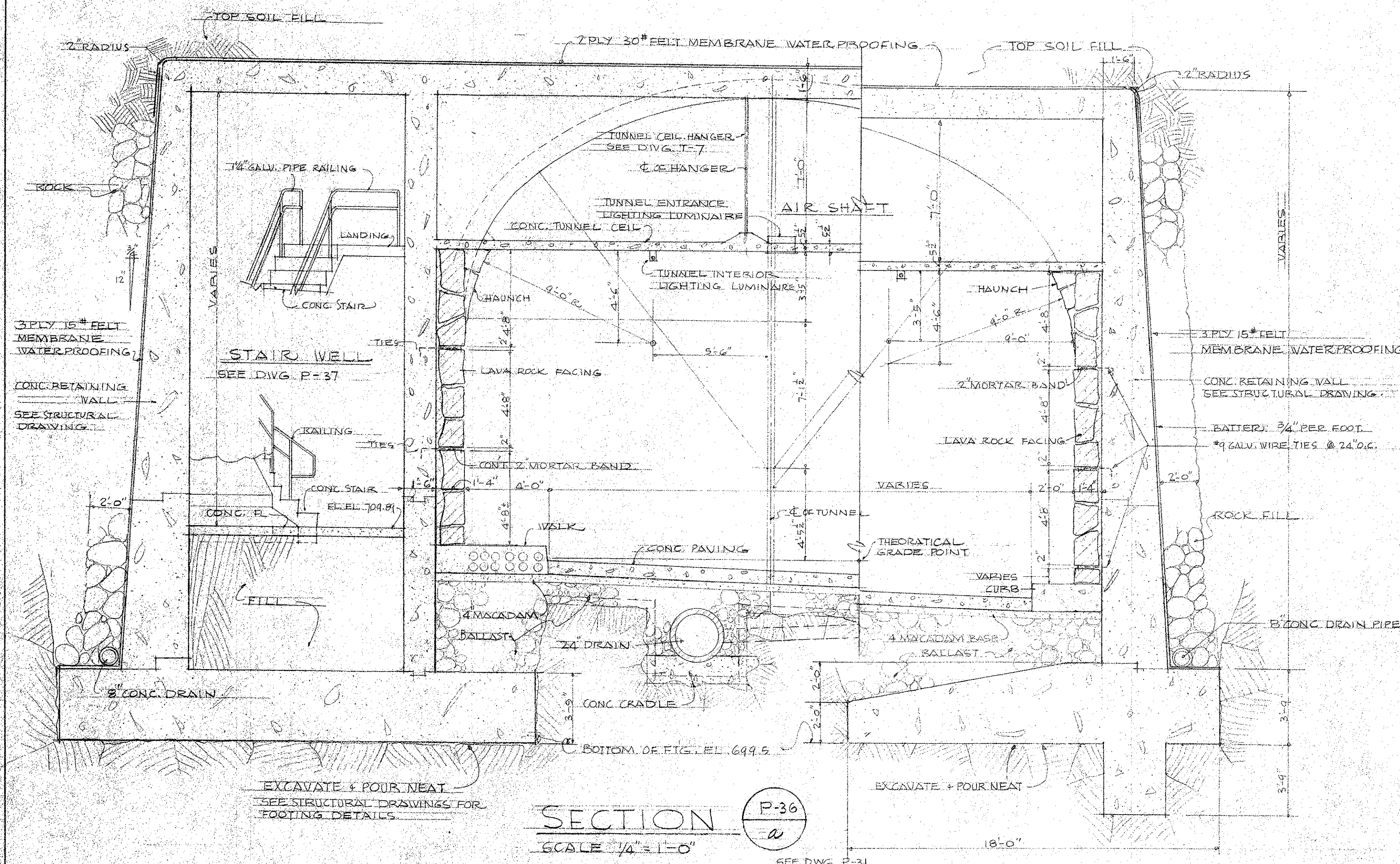
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

KALIHI TUNNEL
KANEOHE PORTAL
SECTION THRU PORTAL
LEFT

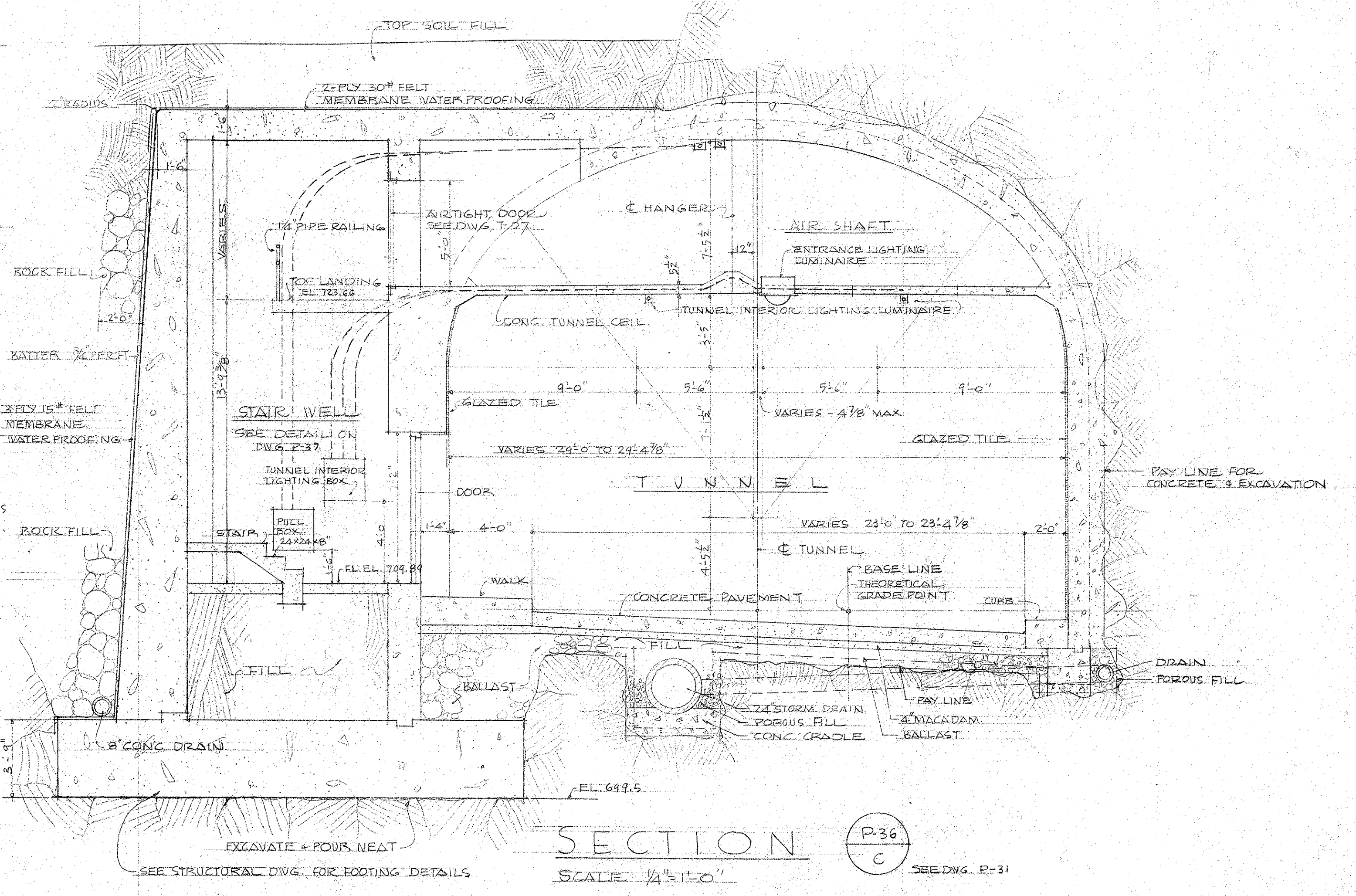
ENGINEER: L & W DATE: JULY 15, 1933
DRAFTSMAN: T. F. CHECKED BY: W. S. [Signature]
SCALE: 1/4" = 1'-0" TRACER:
APPROVED: [Signature] CHIEF ENGINEER
BUREAU ENGINEER

W. S.	PROFILE	C. B.
CH. SEC.	F. S.	S. B.
W. M. BY.	F. W. BY.	S. BY.

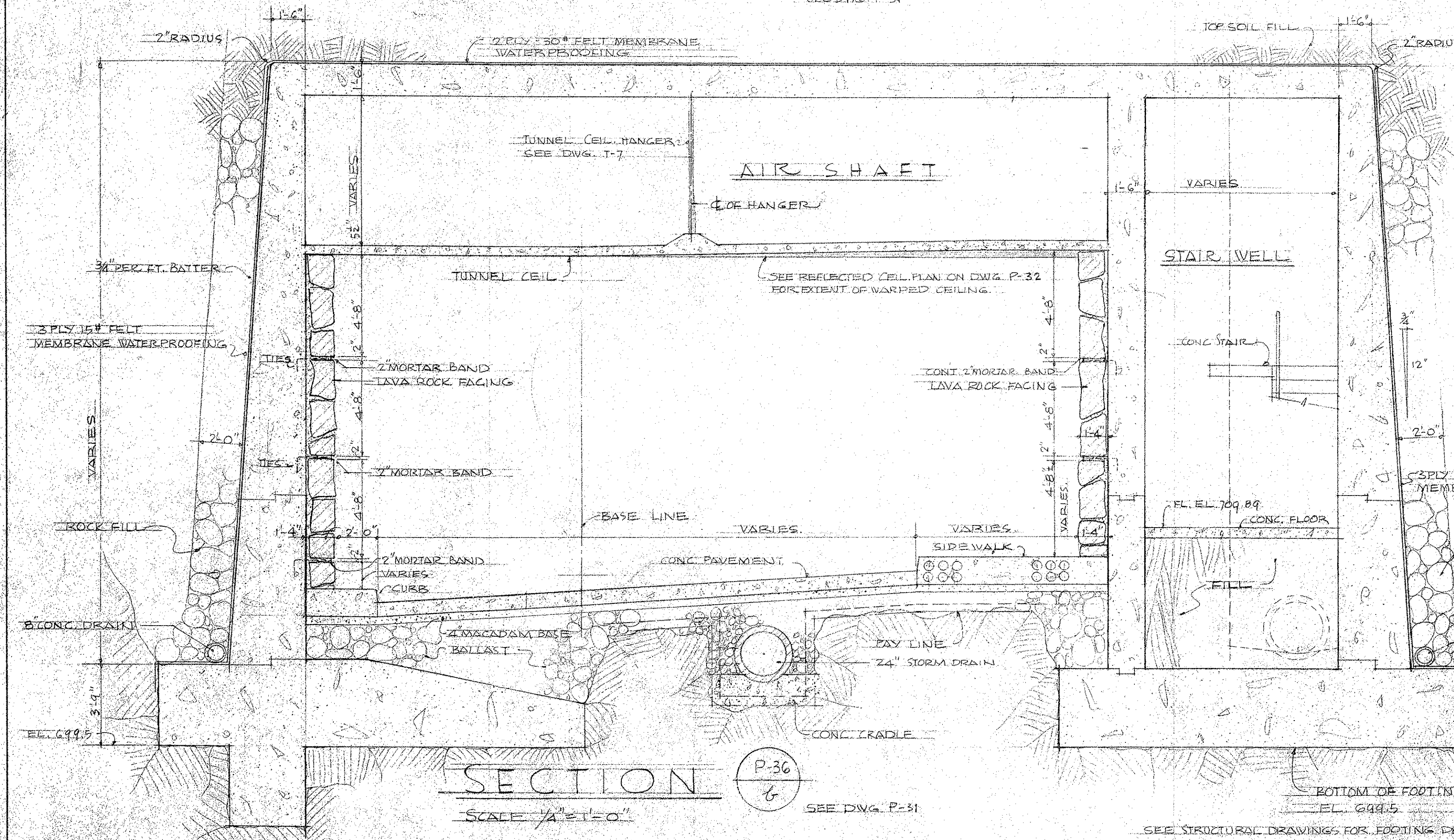
SECTION C JOB NO. 26-53 DWG. P-35



SECTION P-36
a
SCALE 1/4" = 1'-0"
SEE DWG. P-31



SECTION P-36
c
SCALE 1/4" = 1'-0"
SEE DWG. P-31



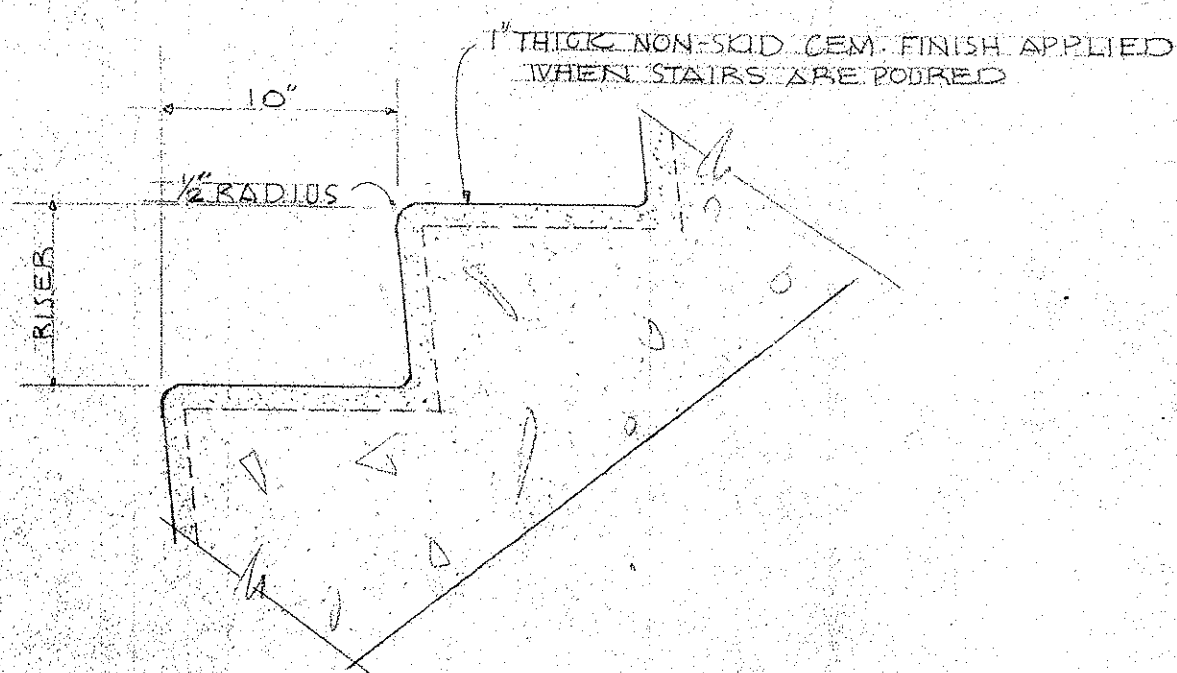
SECTION P-36
b
SCALE 1/4" = 1'-0"
SEE DWG. P-31

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DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIHI TUNNEL
KANEHOE PORTAL
CROSS SECTIONS

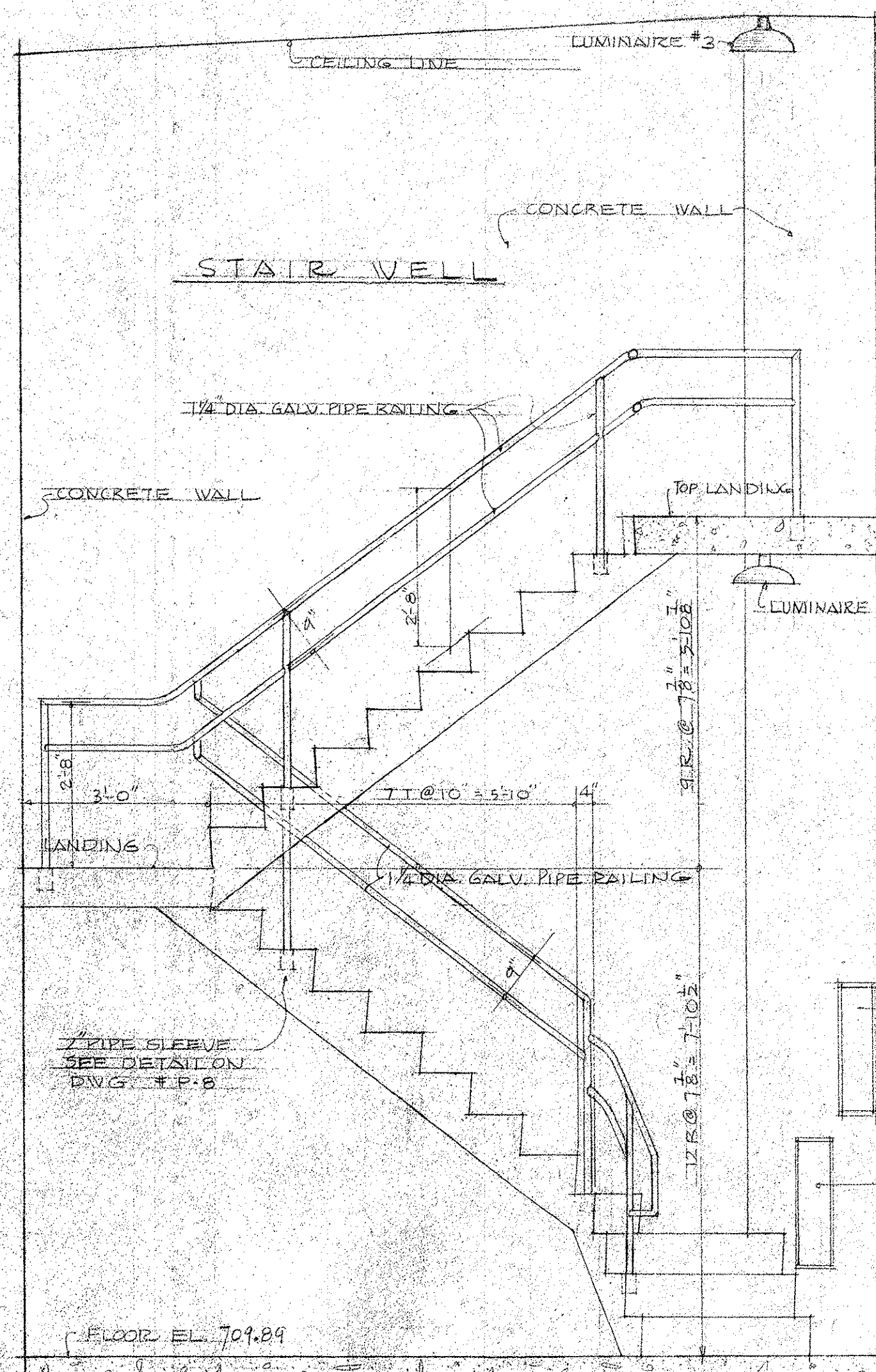
ENGINEER: I. B. W. DATE: JULY 18, 1953
DRAFTSMAN: T. F. CHECKED BY: W. S. [Signature]
SCALE: 1/4" = 1'-0"
TRACER: [Signature]
APPROVED: [Signature] CHIEF ENGINEER
APPROVED: [Signature] BUREAU ENGINEER

W. S.	PROFILE	C. B.
DR. REC.	F. R.	S. B.
W. M. BY	F. W. BY	S. BY

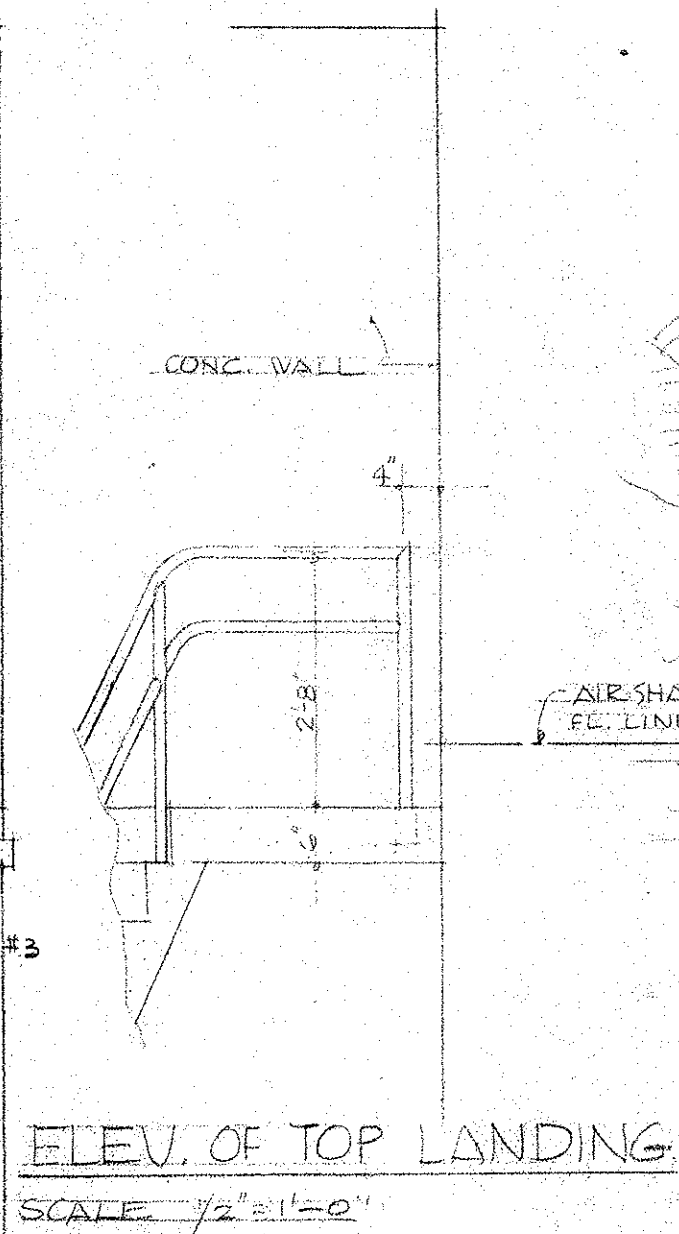
SECTION C JOB NO. 26-53 DWG. P-36



TREAD & RISER DETAIL
SCALE 1/2" = 1'-0"

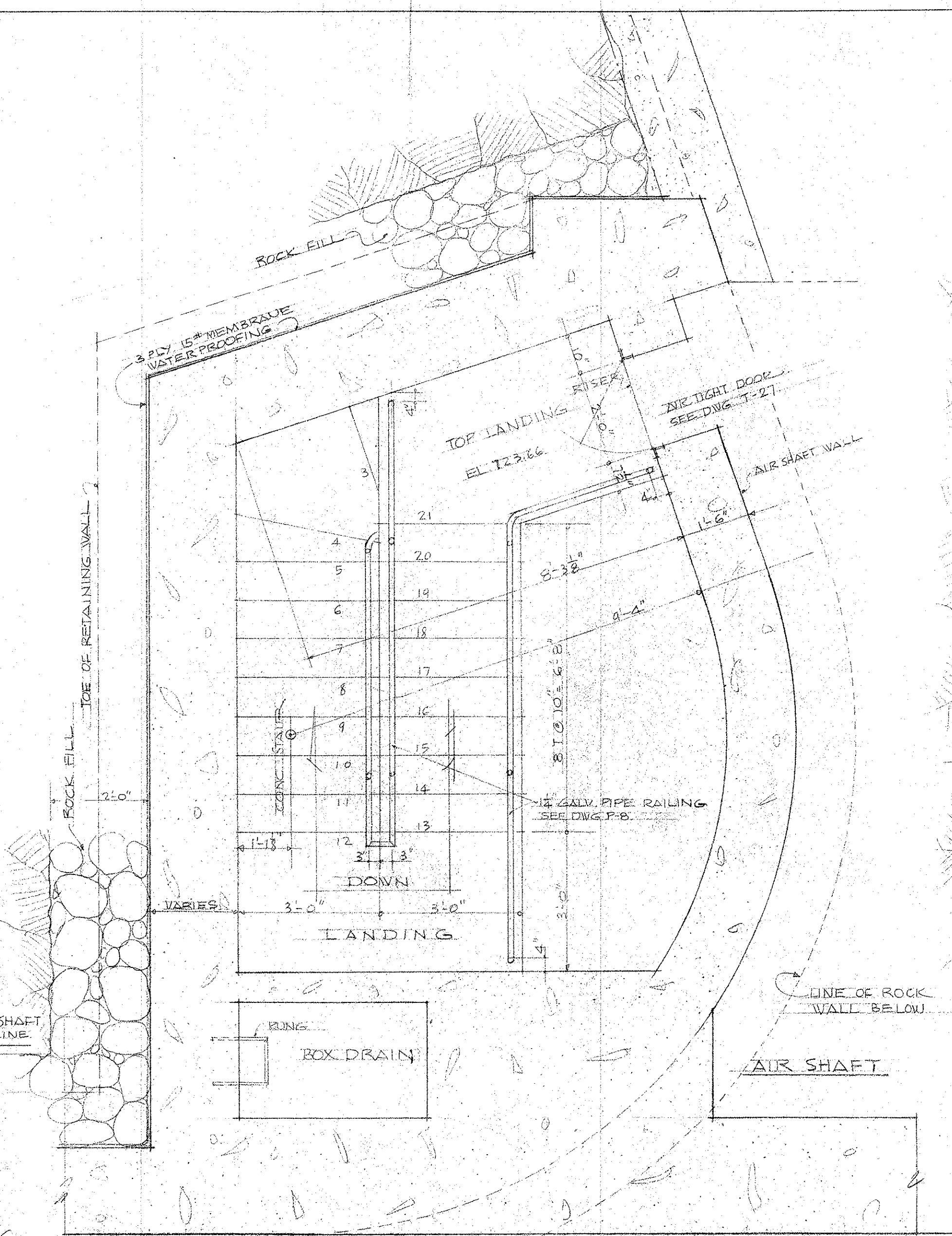


STAIR ELEVATION
SCALE 1/2" = 1'-0"

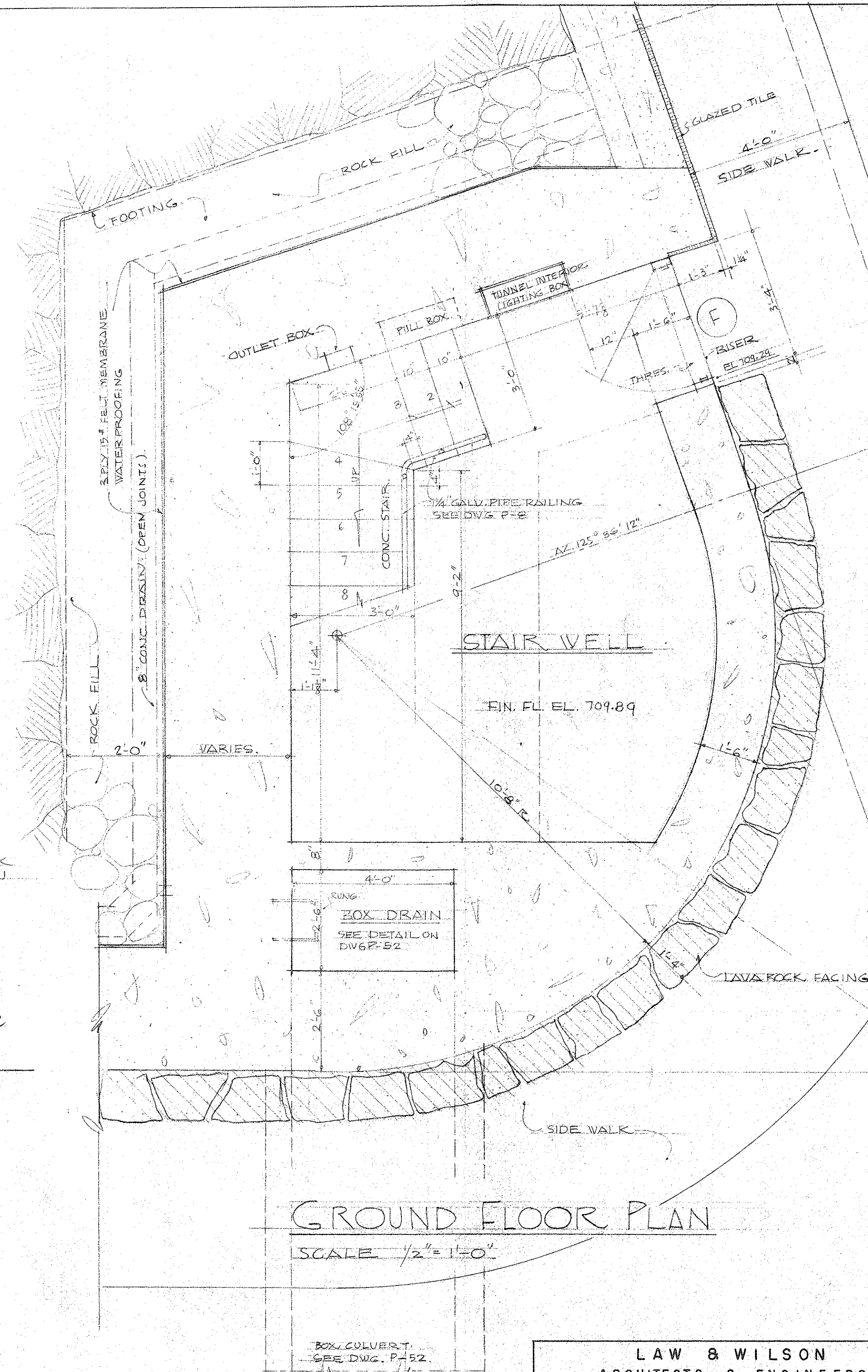


ELEV. OF TOP LANDING
SCALE 1/2" = 1'-0"

NOTE:
SEE DWG. # P-8 FOR PIPE RAILING DETAILS.
SEE DWG. P-44 FOR STRUCTURAL DETAILS.
SEE SPECIFICATION FOR NON-SKID FINISH ON TREADS.
FOR DOOR (F) SEE DWG. P-10 FOR SCHEDULE AND DWG. P-8 FOR FRAMING DETAILS.
FOR DIMENSIONS NOT SHOWN REFER TO DWG. P-31.
SEE DWG. P-44 FOR STRUCTURAL DETAILS.



PLAN AT AIR SHAFT LEVEL
SCALE 1/2" = 1'-0"



GROUND FLOOR PLAN
SCALE 1/2" = 1'-0"

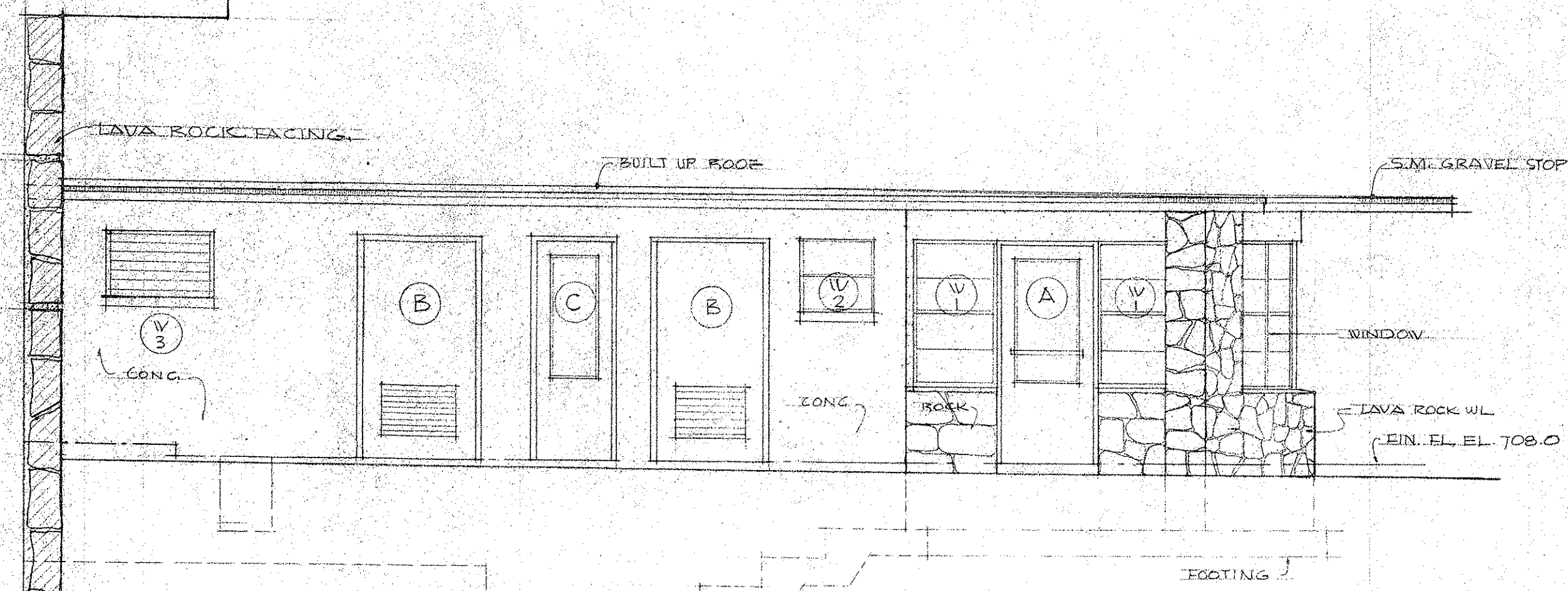
LAW & WILSON
ARCHITECTS & ENGINEERS
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIHI TUNNEL
KANEHOE PORTAL
STAIR DETAILS

ENGINEER: L. B. W. DATE: JULY 18, 1953
DRAFTSMAN: T. F. CHECKED BY: W. G. [Signature]
AS NOTED TRACER: [Signature]
APPROVED: [Signature] APPROVED: [Signature]
CHIEF ENGINEER BUREAU ENGINEER

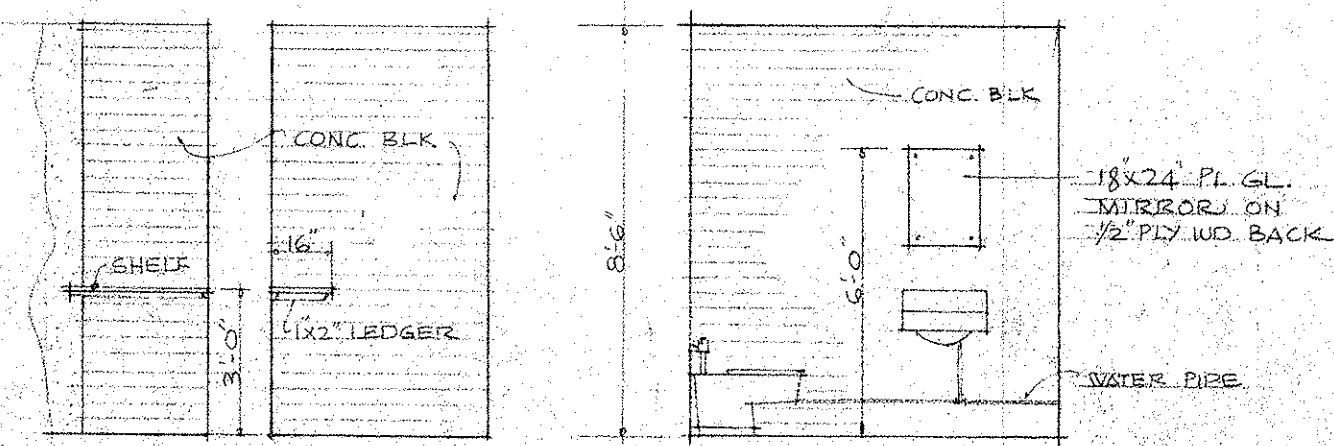
W.S.	PROFILE	C.B.
CR. SEC.	P.S.	R.S.
W.M. BY:	P.W. BY:	S. BY:

APPROVED
[Signature]
ENGINEER, KALIHI TUNNEL

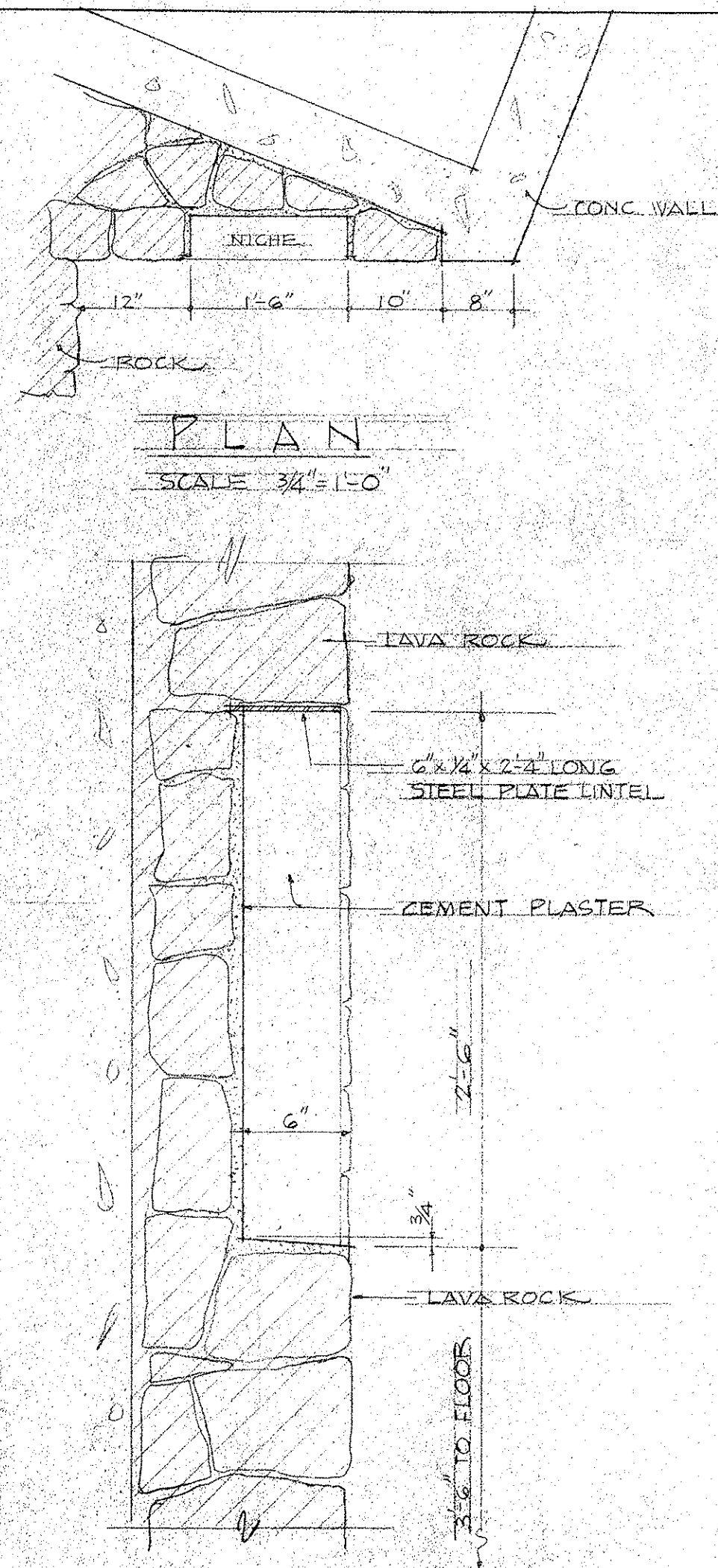
SECTION C JOB NO. 26-53 DWG. P-37



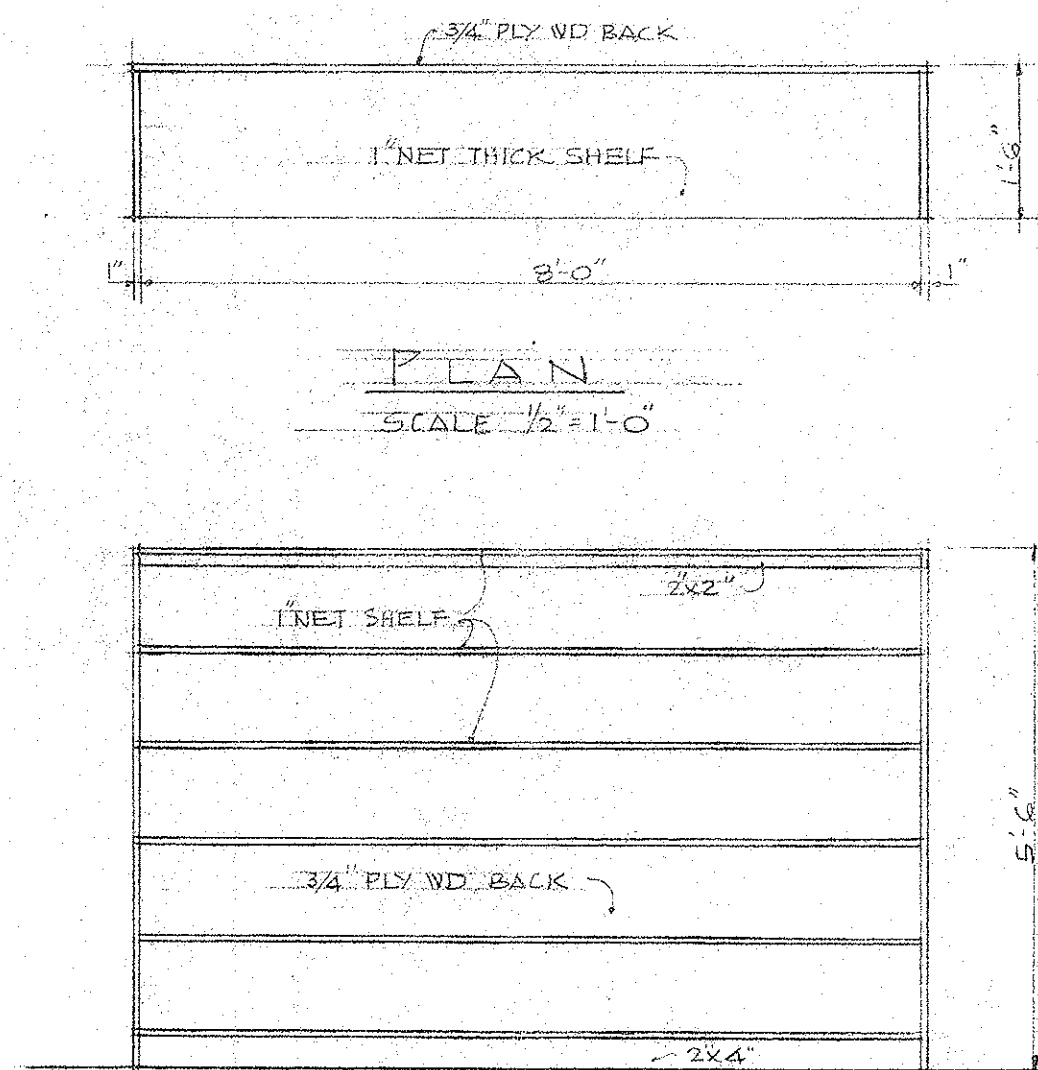
LEFT SIDE ELEVATION
SCALE 1/4" = 1'-0"



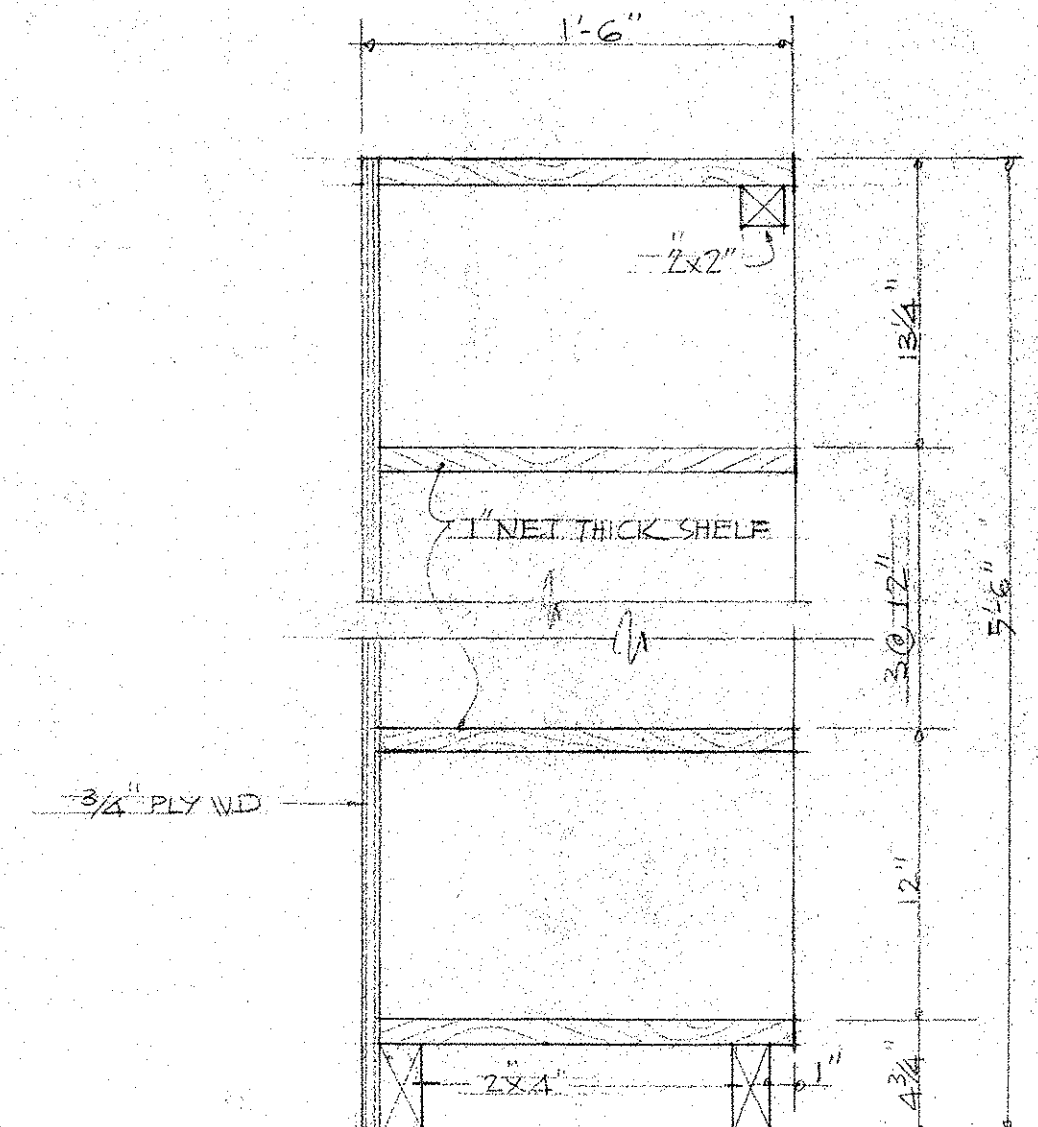
TELEPHONE BOOTH TOILET
INTERIOR ELEVATIONS
SCALE 1/4" = 1'-0"



SECTION
SCALE 1/2" = 1'-0"
P-38
a

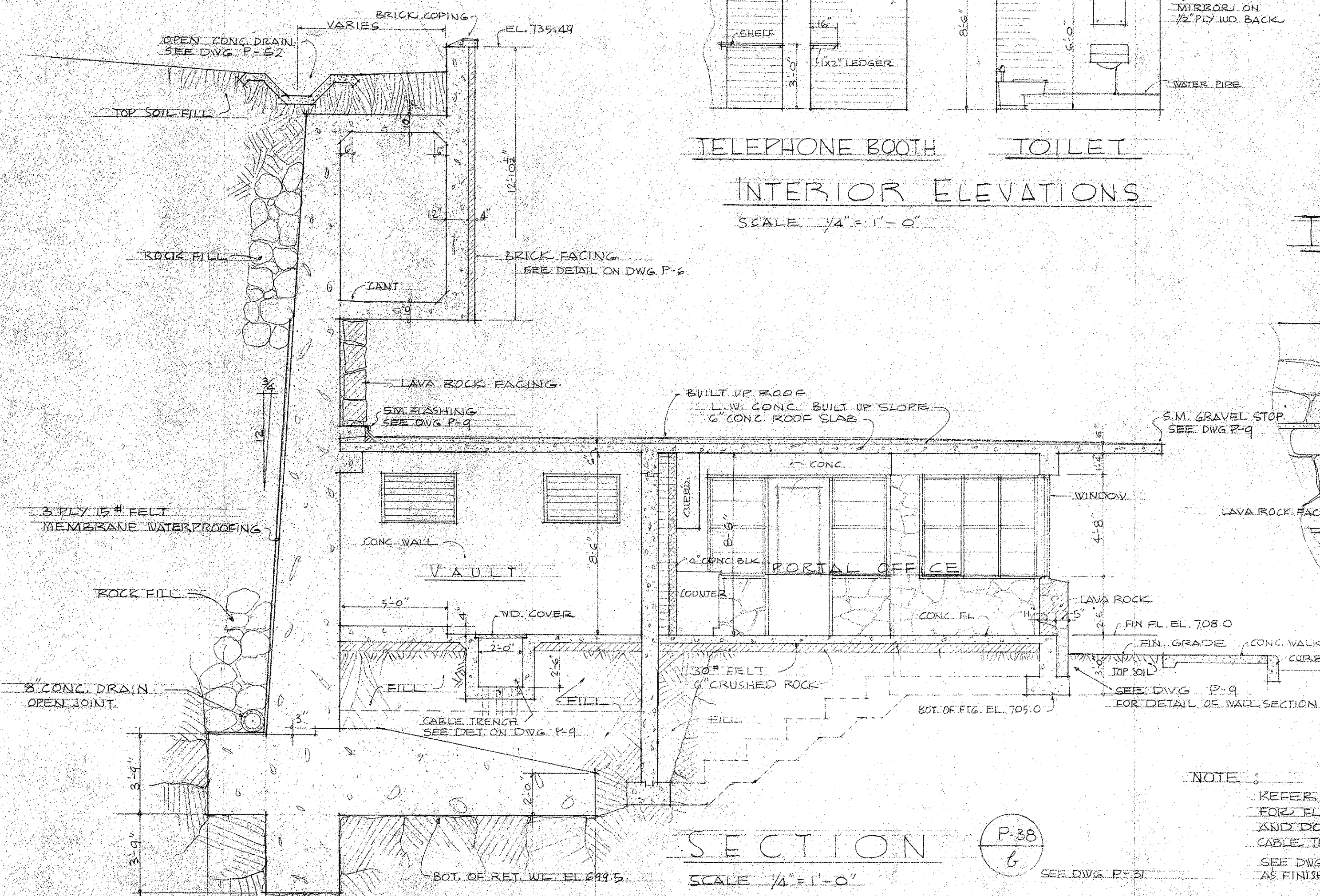


SIDE ELEV.
SCALE 1/2" = 1'-0"

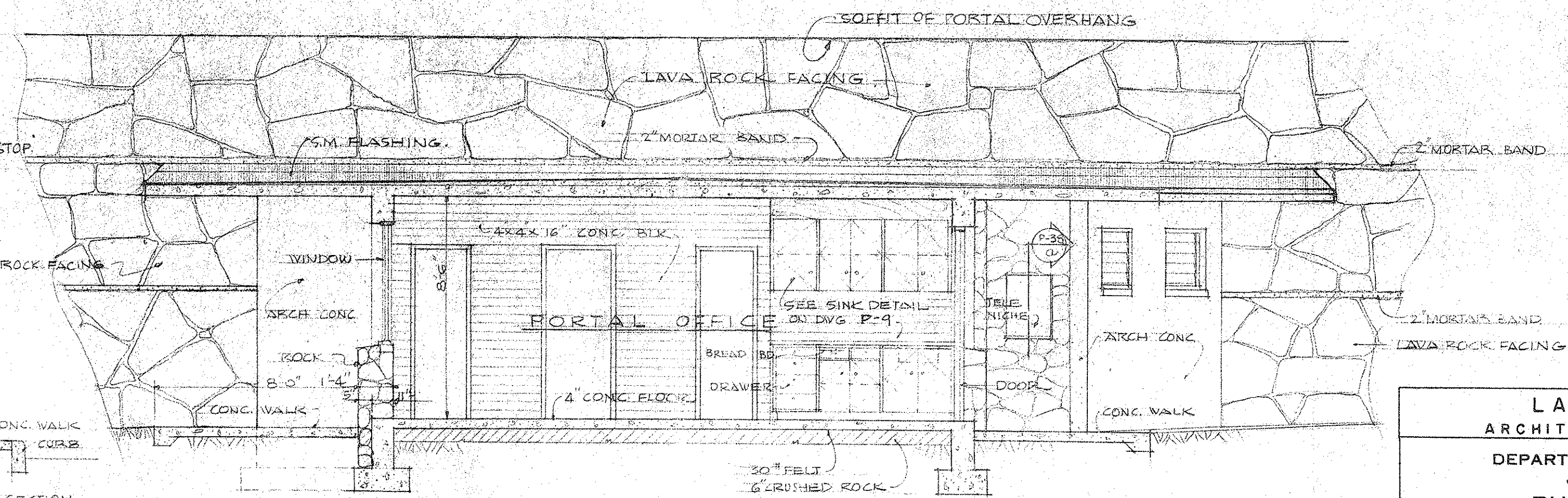


SECTION
SCALE 1/2" = 1'-0"

LAMP STORAGE RACK DETAIL



SECTION
SCALE 1/4" = 1'-0"
P-38
b

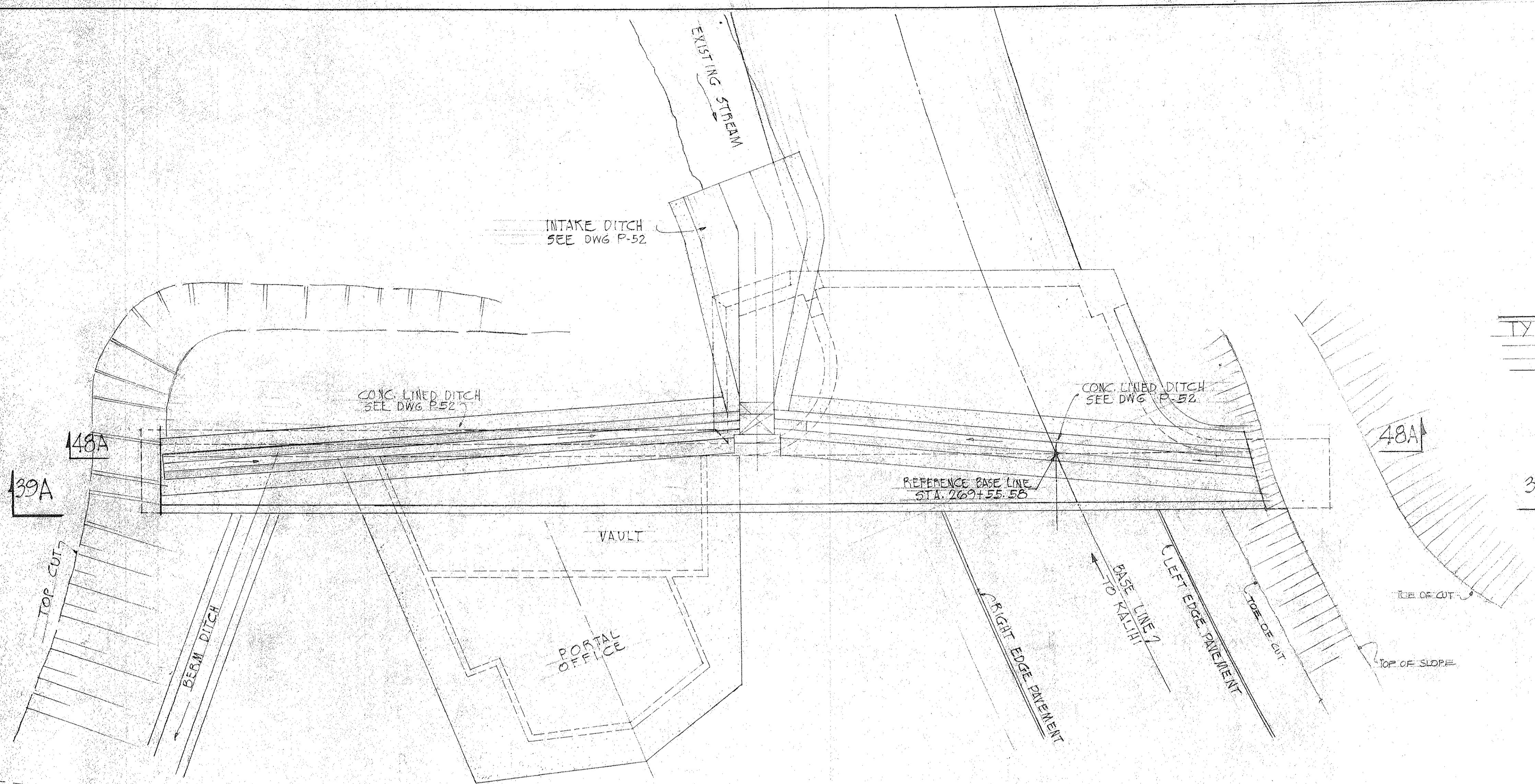


SECTION
SCALE 1/4" = 1'-0"
P-38
c

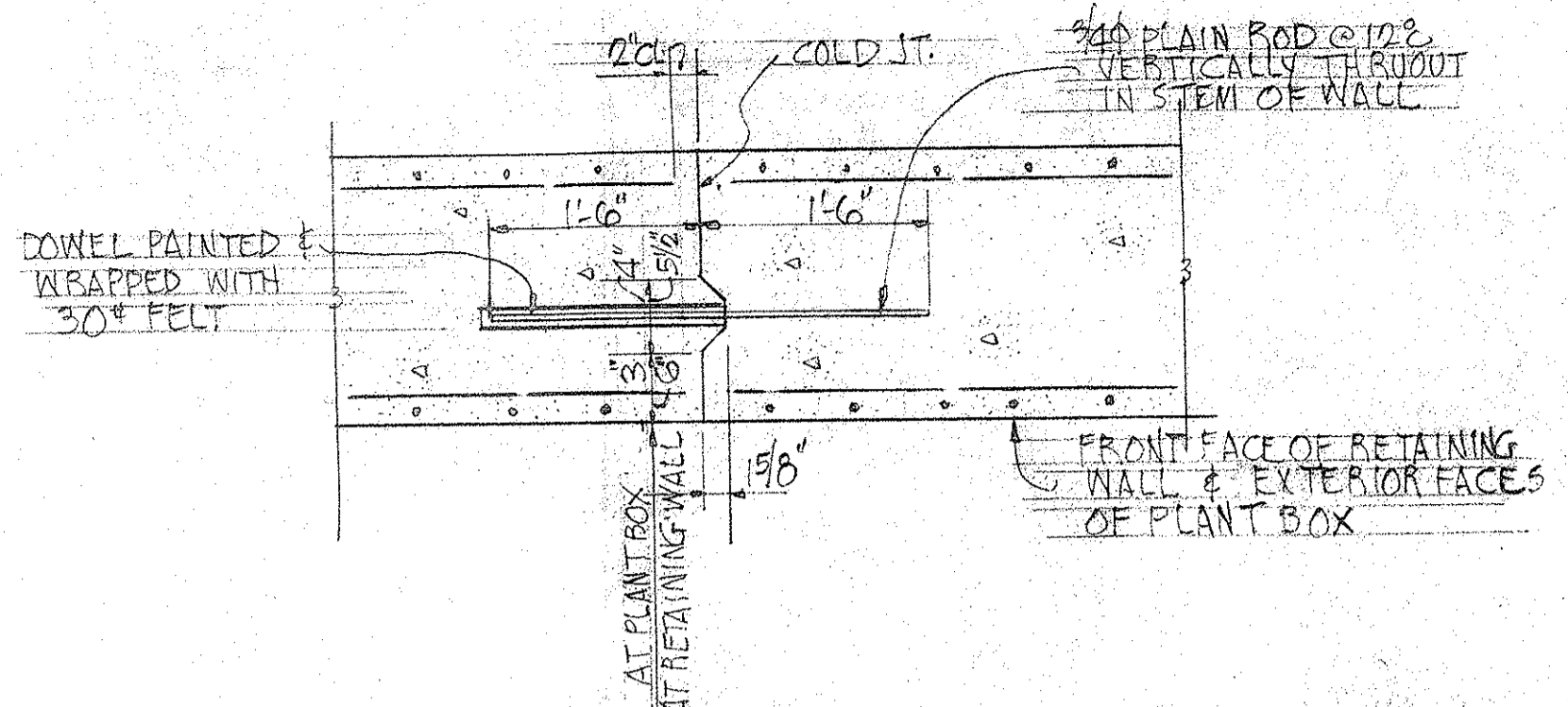
NOTE:
REFER TO DETAILS ON DWG. P-9 FOR FLASHING, NOSING, WINDOW AND DOOR FINISHING, CABINETS, CABLE TRENCH AND ETC.
SEE DWG. P-30 FOR EXISTING GRADE AS FINISHED BY OTHER CONTRACTOR.

LAW & WILSON
ARCHITECTS & ENGINEERS
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIHI TUNNEL
KANEHOE PORTAL
OFFICE & VAULT
ELEVATIONS, SECTIONS & DETAILS
ENGINEER, L.S.W. DATE: JULY 18, 1953
DRAFTSMAN, T.F. CHECKED BY: W. S. [Signature]
SCALE AS NOTED TRACER:
APPROVED: [Signature] BUREAU ENGINEER
APPROVED: [Signature] CHIEF ENGINEER

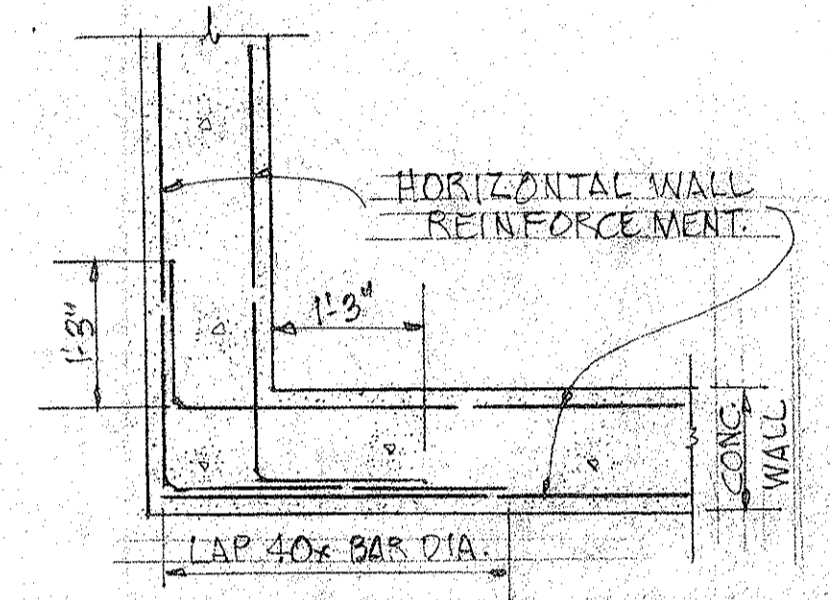
W.S.	PROFILE	C.B.
CR. SEC.	F.B.	S.B.
W.M. BY	F.W. BY	S. BY



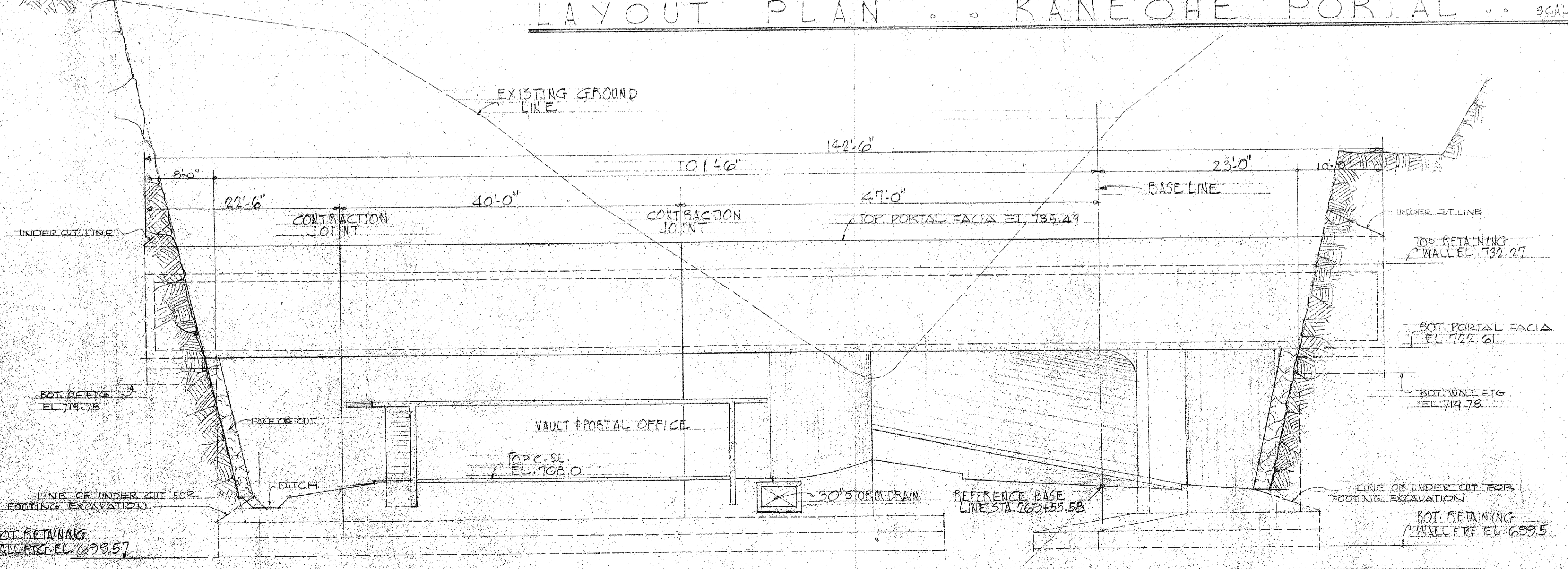
LAYOUT PLAN . . KANEOHE PORTAL . . SCALE: 1/8"=1'-0"



TYPICAL DETAIL OF VERTICAL CONTRACTION JOINTS FOR RETAINING WALL AND BOX. SCALE: 3/4"=1'-0"



TYPICAL CORNER DETAIL AT WALLS & BOX. SCALE: 3/4"=1'-0"



SECTION "39A-39A" . . PORTAL ELEVATION . . SCALE: 1/8"=1'-0"

GENERAL: FOR LOCATION OF WEEP HOLES SEE ARCH. DRNGS.

NOTES

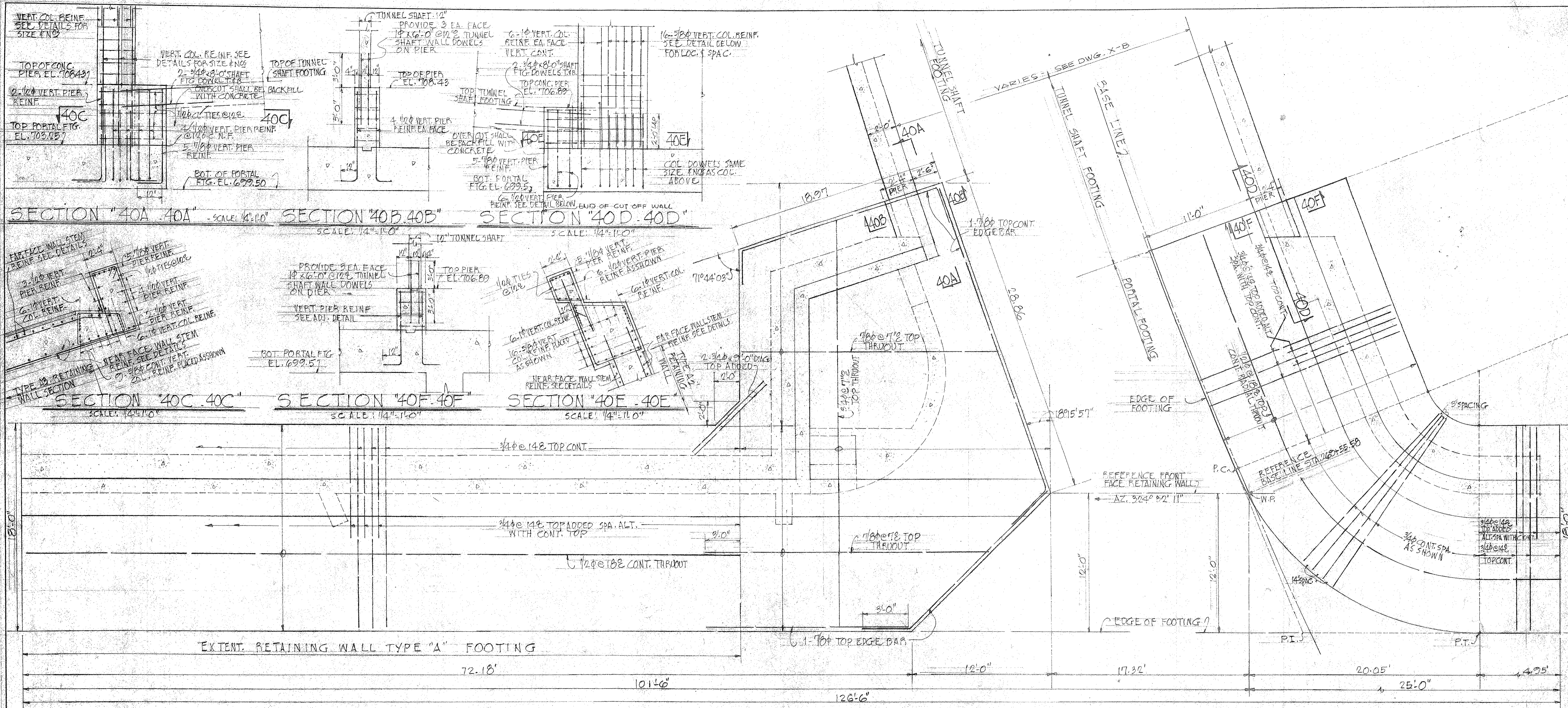
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ARCHITECTS & ENGINEERS
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIHI TUNNEL
KANEOHE PORTAL - STRUCTURAL
LAYOUT PLAN
ELEVATION & DETAILS
ENGINEER: L.B.W./D.L.
DRAFTSMAN: J.Y.L.
SCALE: AS NOTED
DATE: JULY 15, 1983
CHECKED BY: D.L.
TRACER:
APPROVED:
CHIEF ENGINEER: *[Signature]*
BUREAU ENGINEER: *[Signature]*

APPROVED:
[Signature]
ENGINEER, KALIHI TUNNEL

W.S.	PROFILE	C.S.
CR. SEC.	F.B.	S.B.
W.M.B.Y.	F.W.B.Y.	S.B.Y.

SECTION C JOB NO. 26-53 DWG. P-39

FILE	FIGURE	NO.
7	6	29



FOUNDATION PLAN (SHOWING ARRANGEMENT OF TOP FOOTING REINFORCEMENT)
SCALE: 1/4" = 1'-0"

NOTES

GENERAL: FOR ADDITIONAL FOOTING DATA, SEE DWG. P-41

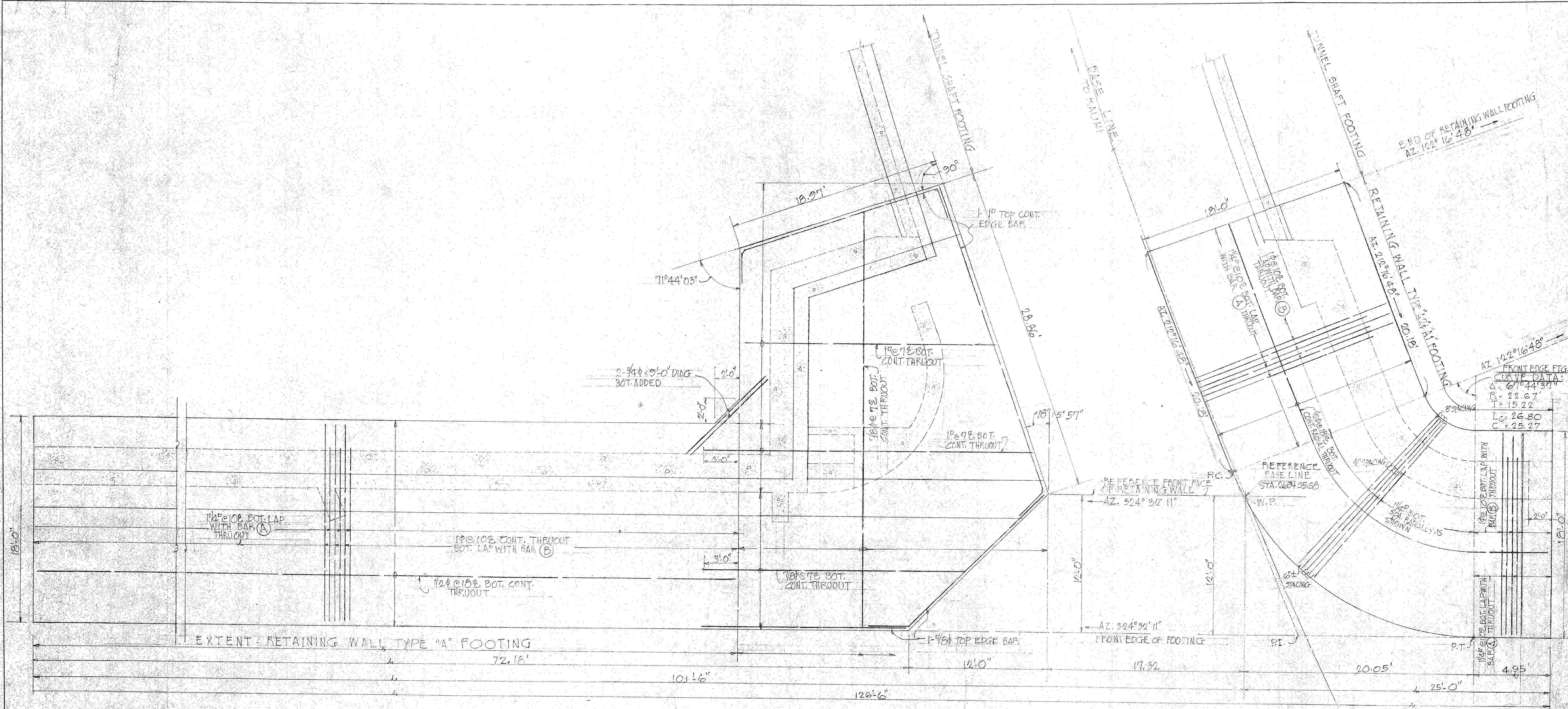
LAW & WILSON
ARCHITECTS & ENGINEERS
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIHI TUNNEL
KANEHOE PORTAL - STRUCTURAL
FOUNDATION PLAN

ENGINEER: L. B. W. D.L. DATE: JULY 15 1953
DRAFTSMAN: J. Y. L. CHECKED BY: D. L. [Signature]
SCALE: AS NOTED. TRACER: [Signature]
APPROVED: [Signature] CHIEF ENGINEER
APPROVED: [Signature] BUREAU ENGINEER

W.S.	PROFILE	C.B.
CR. SEC.	F.B.	S.B.
W.M.B.Y.	F.W.B.Y.	S.B.Y.

SECTION C JOB NO. 26-53 DWG. P-40

FILE	PROJECT	NO. SHEET	TOTAL SHEETS
7	6	1	40



KANEOHE PORTAL FOOTING DATA PLAN AND BOTTOM FOOTING REINF.

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

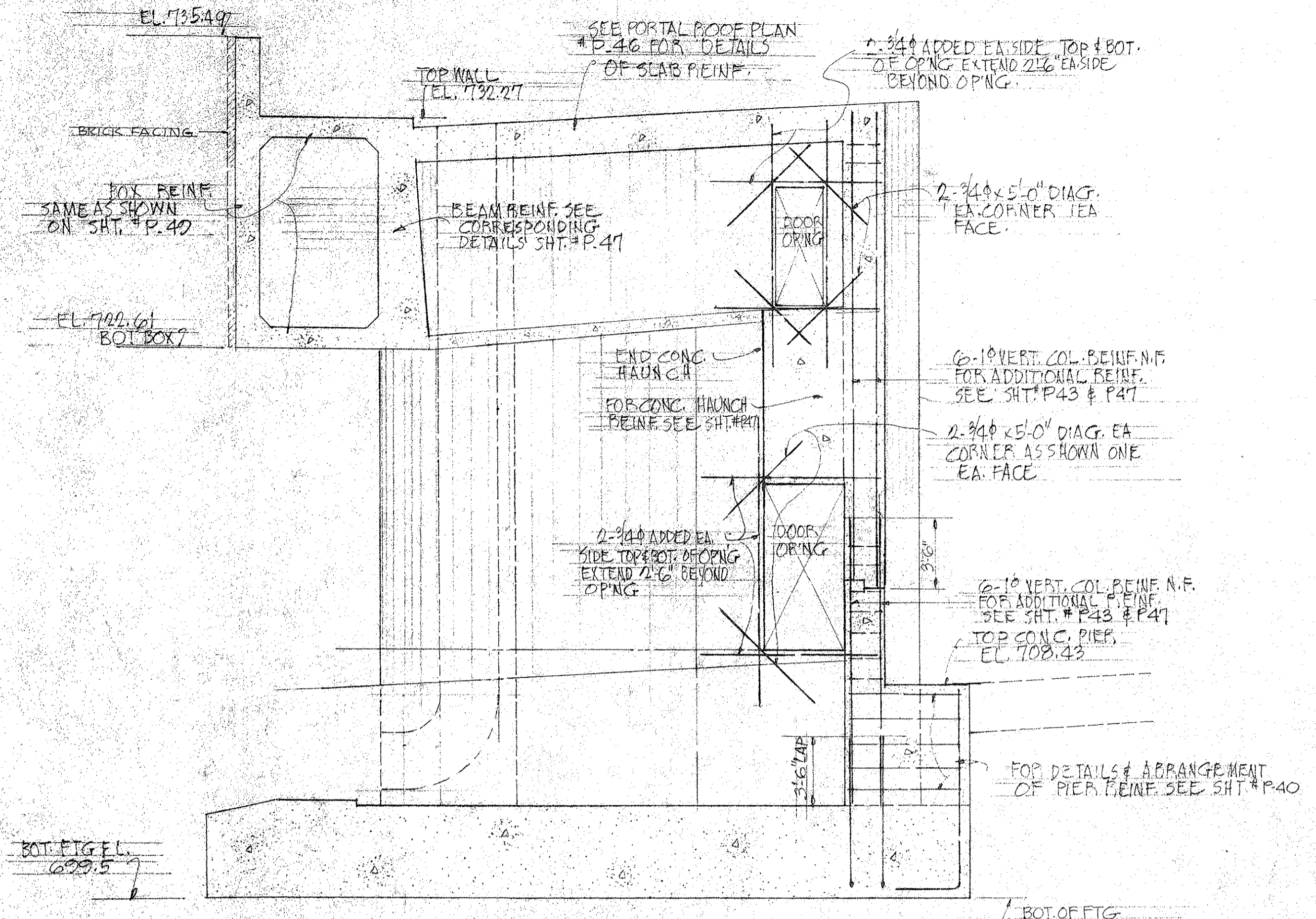
LAW & WILSON
ARCHITECTS & ENGINEERS
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

KALIHI TUNNEL
KANEOHE PORTAL - STRUCTURAL
FOOTING PLAN

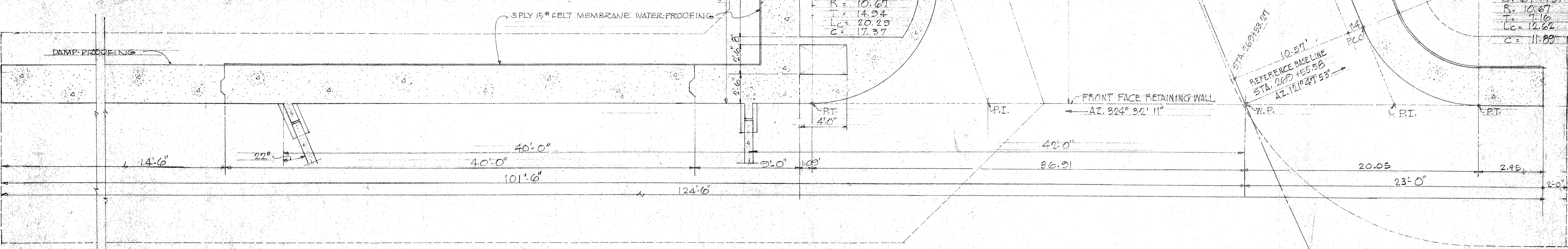
ENGINEER: L.B.W./D.L. DATE: JULY 15, 1953
DRAFTSMAN: J.Y.L. CHECKED BY: D.L. [Signature]
SCALE: 1/4" = 1'-0" TRACER:
APPROVED: [Signature] CHIEF ENGINEER
APPROVED: [Signature] BUREAU ENGINEER

W.S.	PROFILE	C.B.
CR. SEC.	F. B.	S.B.
W.M. BY	F.W. BY	S. BY

SECTION C JOB NO. 26-53 DWG. P-41



SECTION "42A - 42A" SCALE: 1/4" = 1'-0"



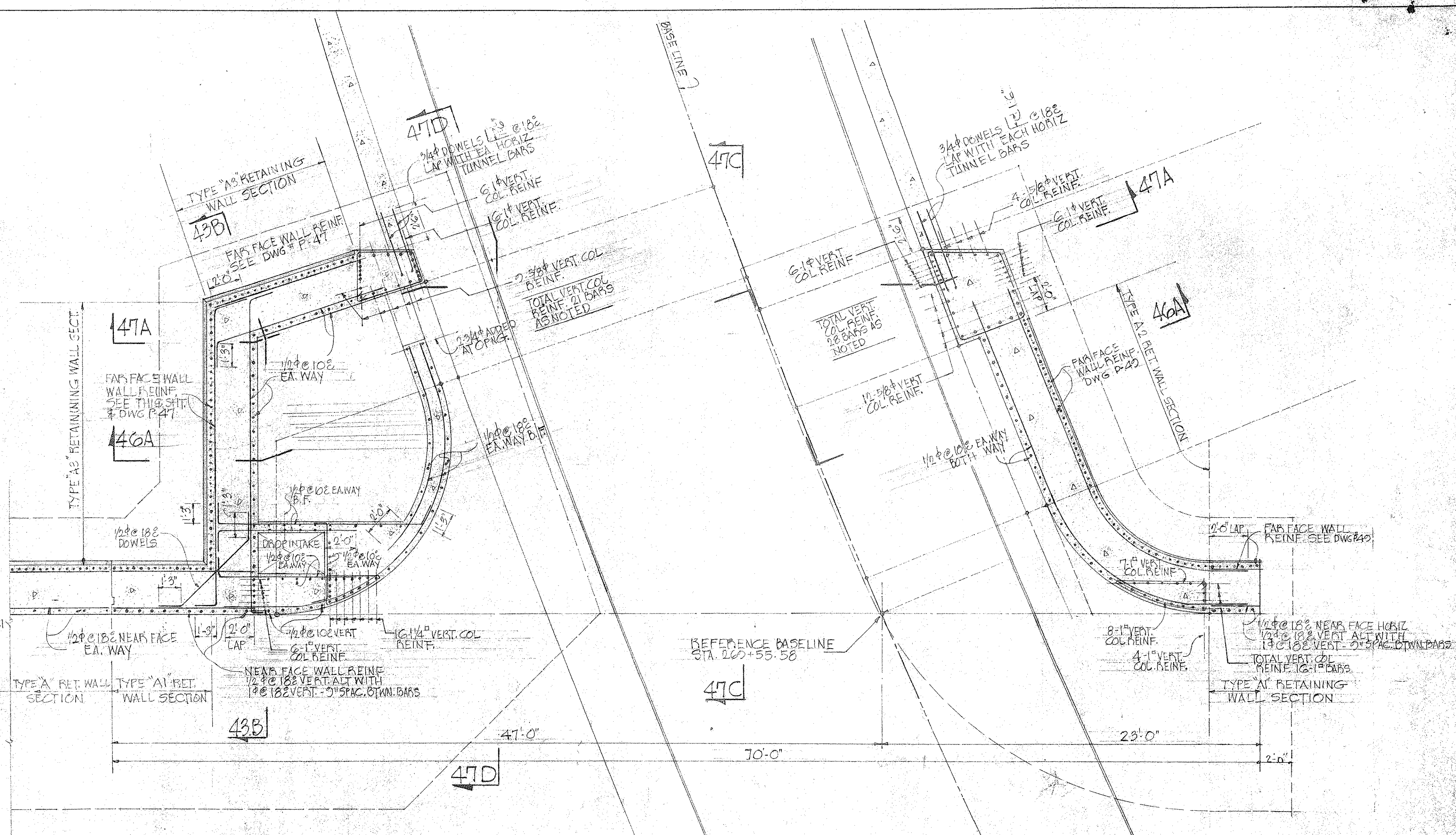
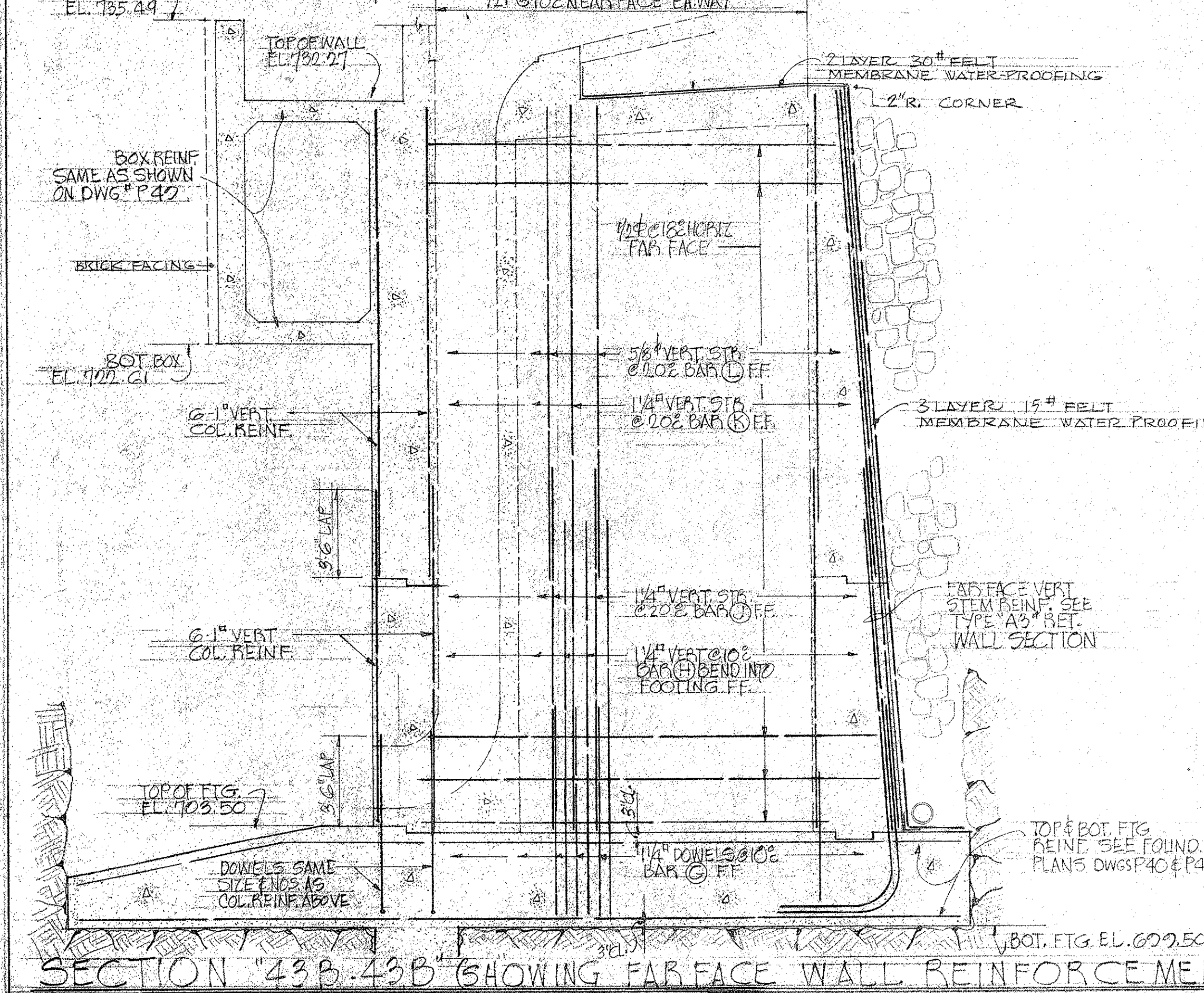
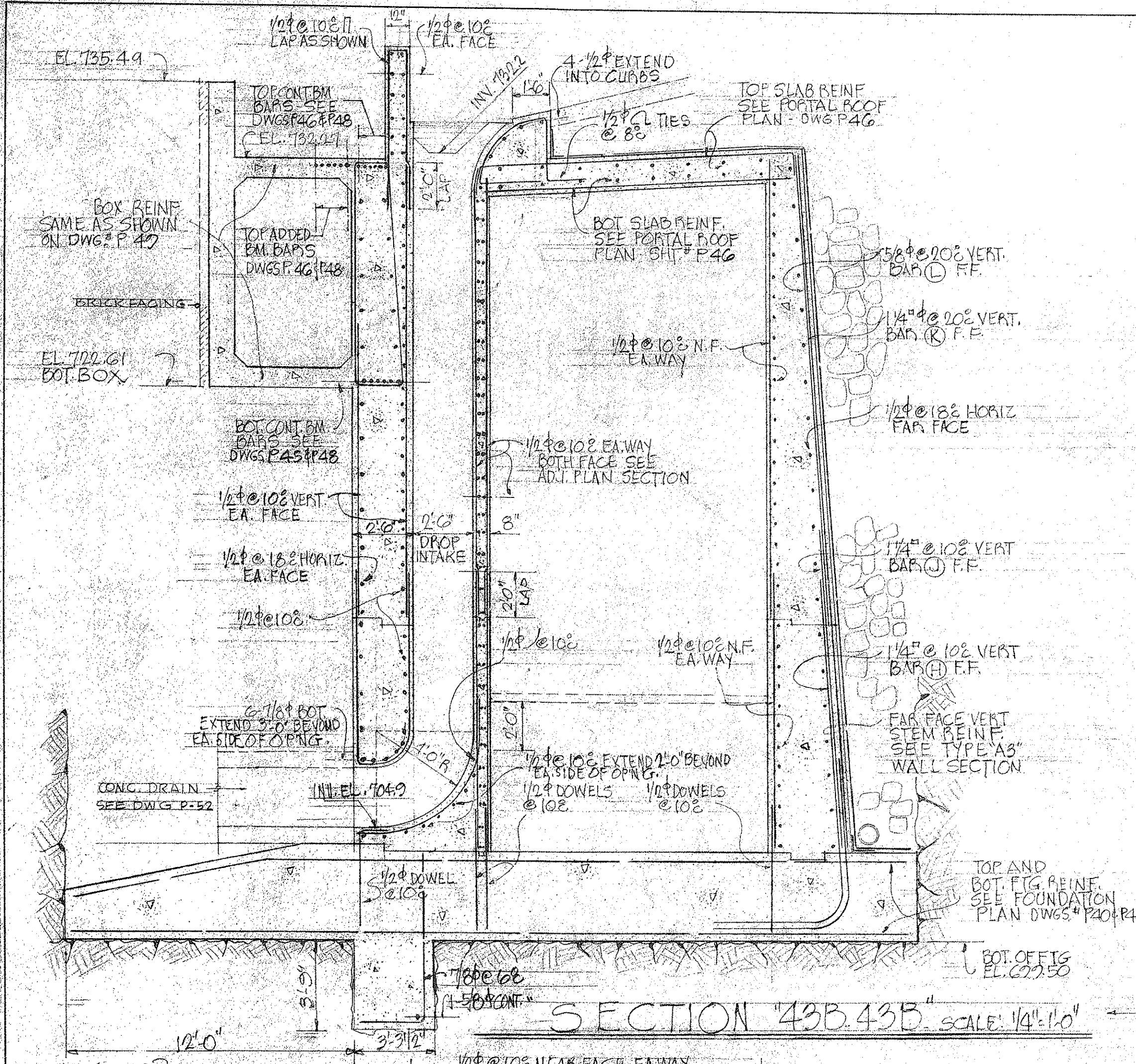
KANEOHE PORTAL WALL DATA PLAN (AT ROADWAY LEVEL) SCALE: 1/4" = 1'-0"

LAW & WILSON
ARCHITECTS & ENGINEERS
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIHI TUNNEL
KANEOHE PORTAL - STRUCTURAL
PLAN AT ROADWAY

ENGINEER: L. B. W. / D. S. DATE: JULY 15, 1959
DRAFTSMAN: J. Y. H. CHECKED BY: J. Y. H.
SCALE: 1/4" = 1'-0" TRACER:
APPROVED: *[Signature]* APPROVED: *[Signature]*
CHIEF ENGINEER BUREAU ENGINEER

W. S.	PROFILE	C. S.
CR. SEC.	F. B.	S. B.
W. M. B. Y.	F. W. B. Y.	S. B. Y.

SECTION C JOB NO. 26-53 DWG. P-42



NOTE: FOR PORTAL WALL DATA SEE DWG # P.42.

PLAN SECTION 43A-43A SCALE: 1/4"=1'-0"

NOTES

- REFERENCE:
- FOR LOCATION OF CORRESPONDING SECTION "43A-43A" SEE DWG # P.48.
 - FOR TYPICAL SECTION DETAIL OF RETAINING WALL TYPES "A", "A1", "A2" SEE DWG # P.49.
 - FOR TYPICAL SECTION DETAIL OF RETAINING WALL TYPE "A3" SEE DWG # P.47.

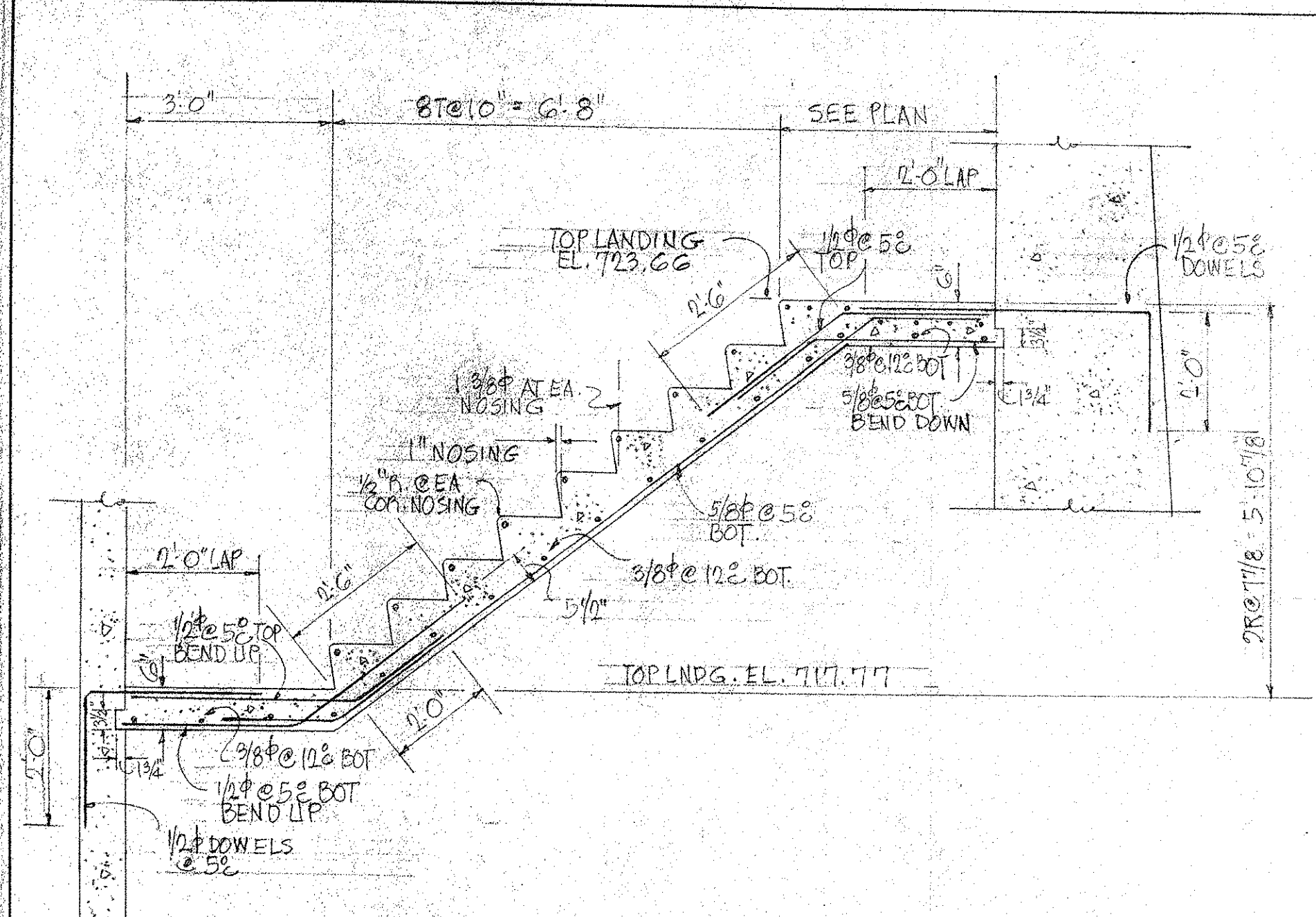
LAW & WILSON
ARCHITECTS & ENGINEERS
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

KALIHI TUNNEL
KANEHOE PORTAL-STRUCTURAL
TUNNEL ENTRANCE
PLAN & SECTIONS

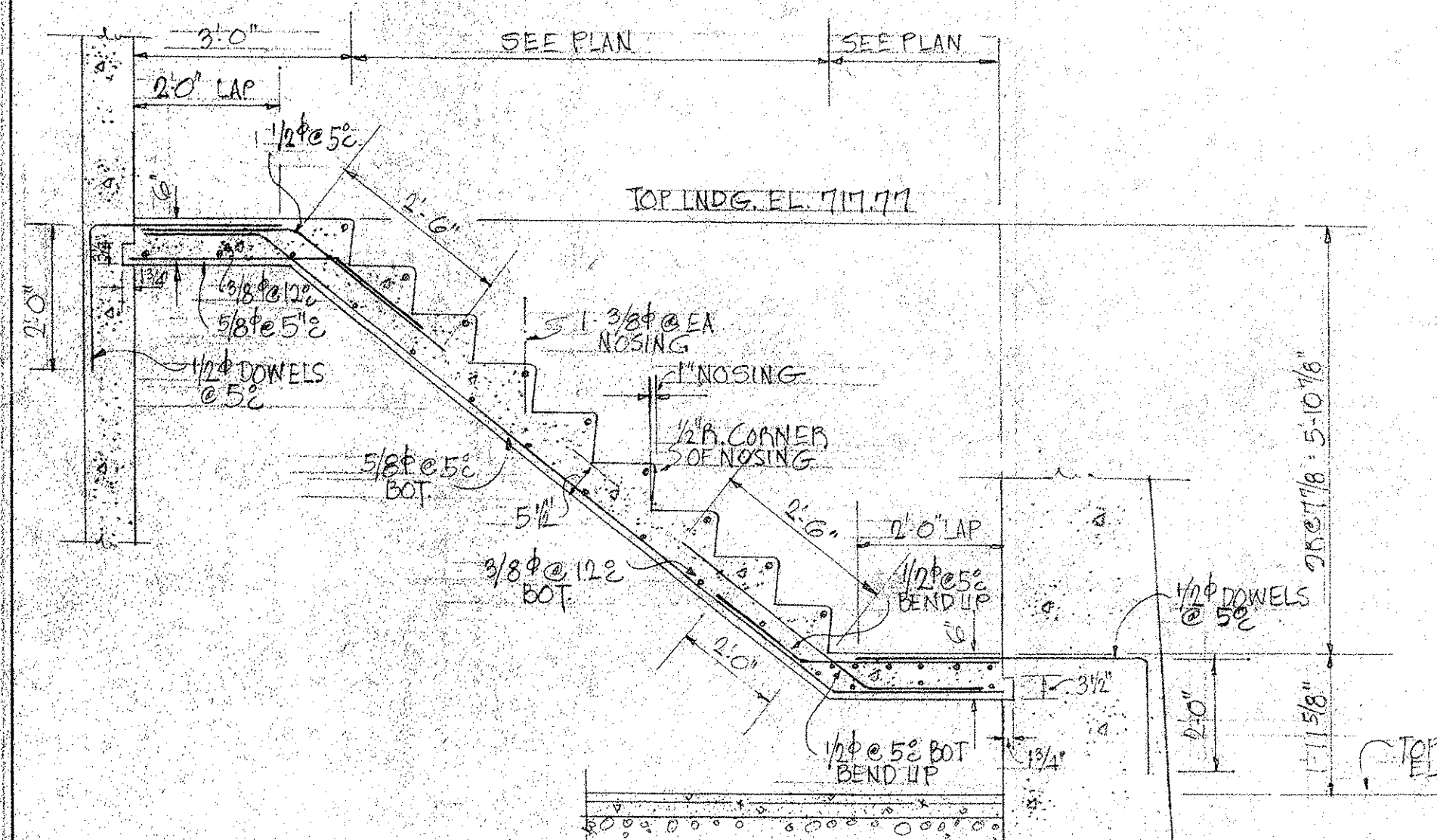
ENGINEER: J. B. W. L. D. L. DATE: JULY 15, 1959
DRAFTSMAN: J. V. L. CHECKED BY: D. L. [Signature]
SCALE: 1/4" = 1'-0" TRACER:
APPROVED: [Signature] APPROVED: [Signature]
CHIEF ENGINEER BUREAU ENGINEER

APPROVED: [Signature]	PROFILE	C. B.
ENGINEER, KALIHI TUNNEL	F. B.	S. B.
	F. W. BY:	S. BY:

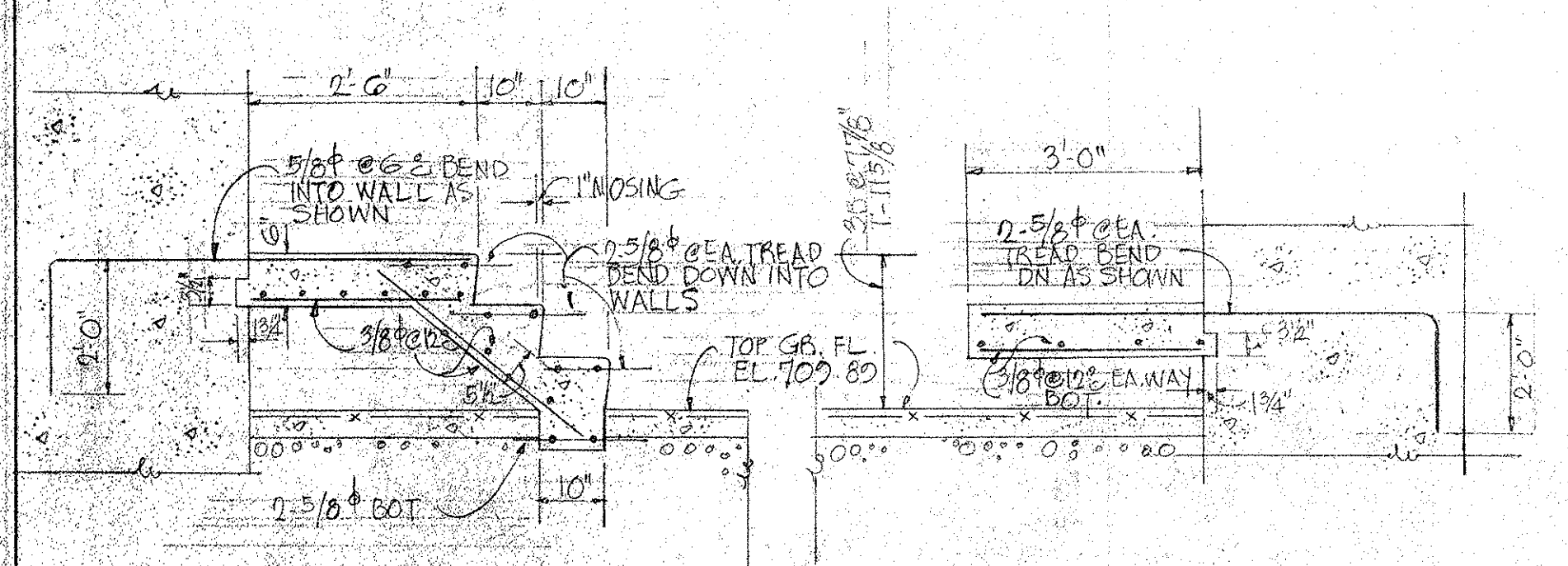
SECTION C JOB NO. 26-53 DWG. P-43



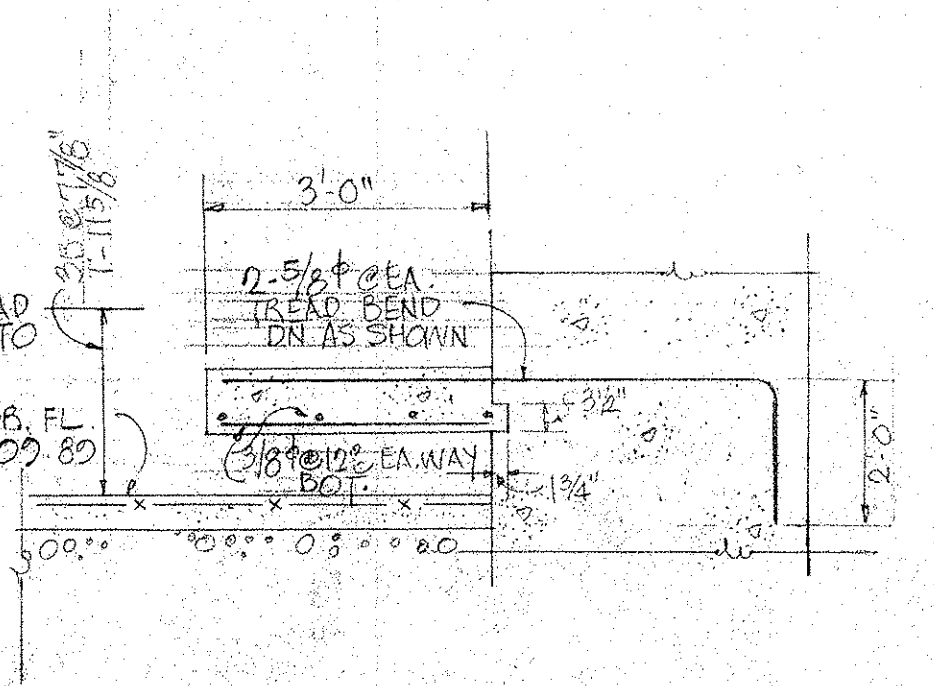
SECTION "44C-44C"
SCALE: 1/2" = 1'-0"



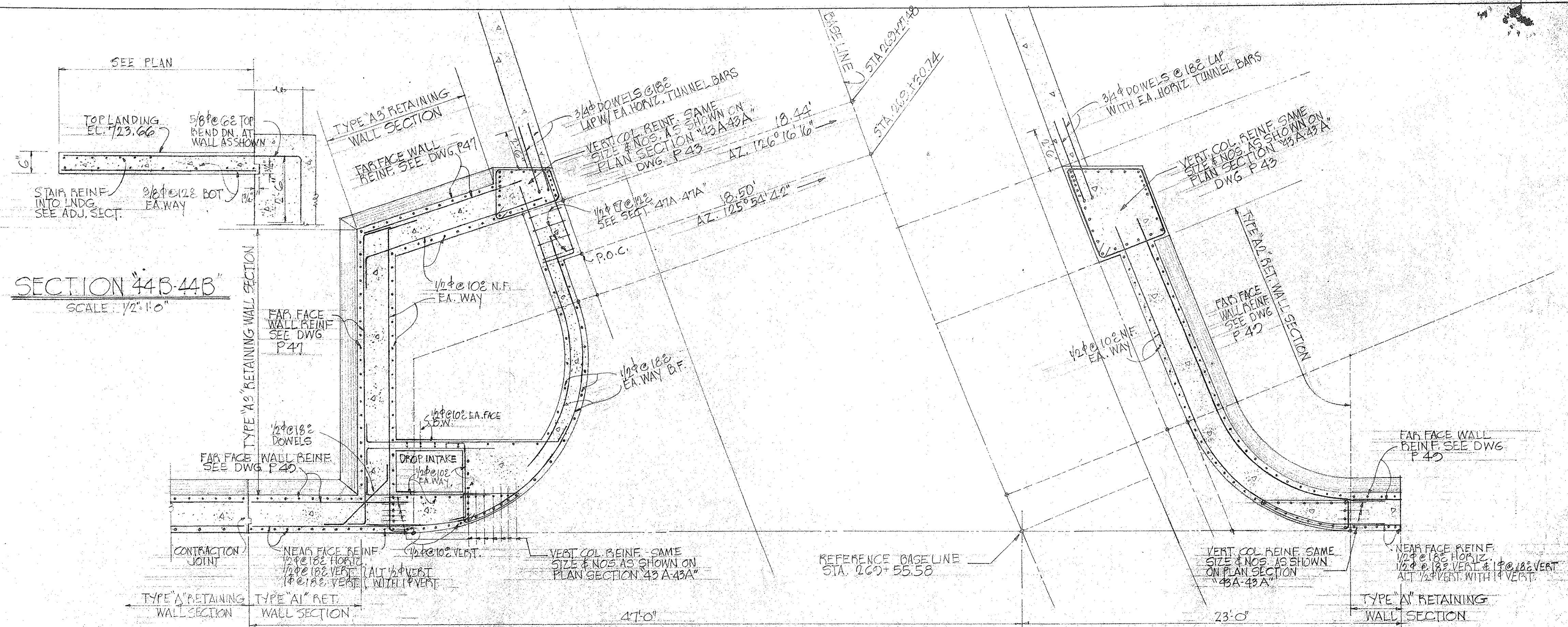
SECTION "44D-44D"
SCALE: 1/2" = 1'-0"



SECTION "44E-44E"
SCALE: 1/2" = 1'-0"

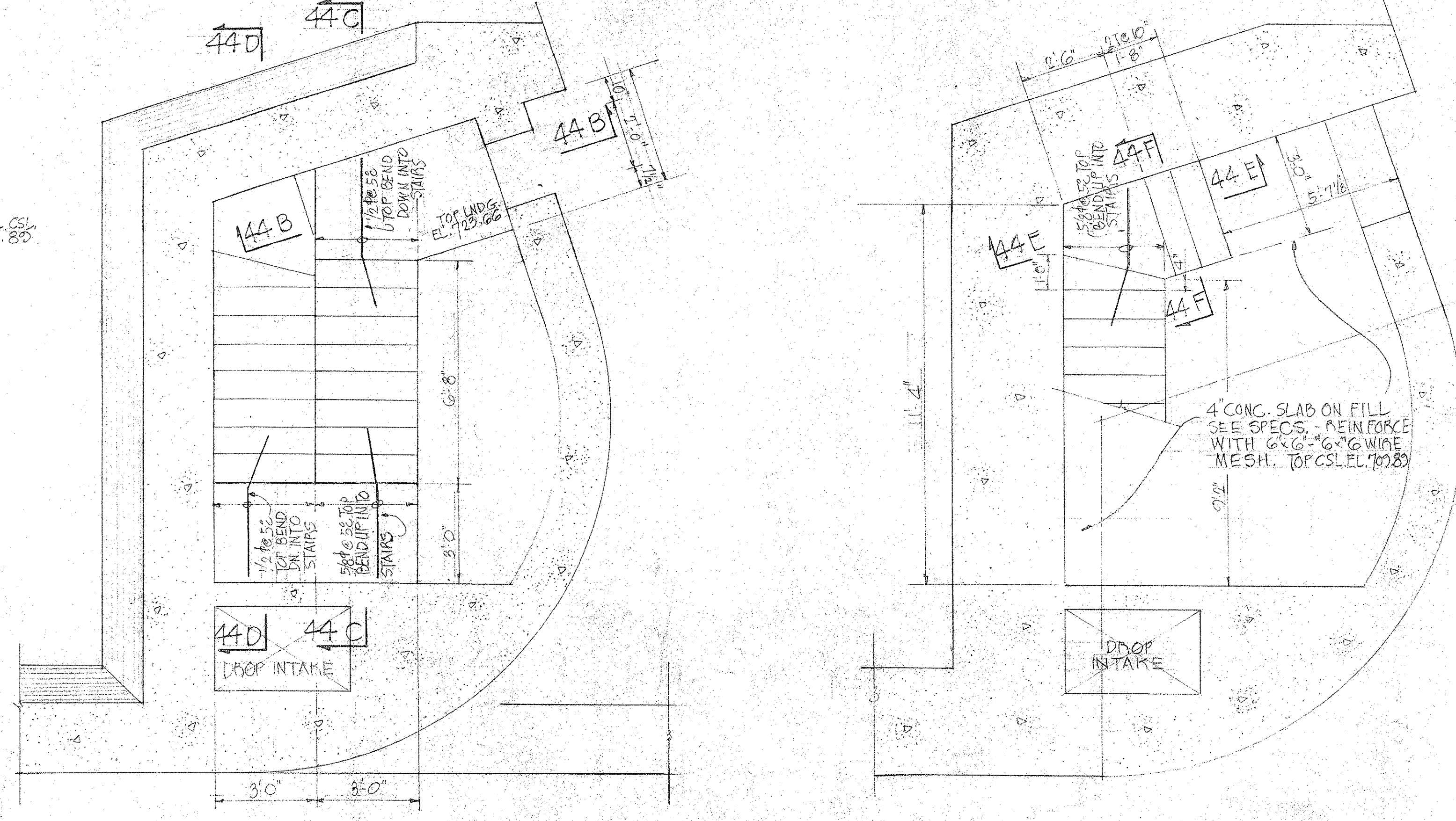


SECTION "44F-44F"
SCALE: 1/2" = 1'-0"



SECTION "44B-44B"
SCALE: 1/2" = 1'-0"

PLAN SECTION "44A-44A" SCALE: 1/4" = 1'-0"



AT AIR SHAFT FLOOR LEVEL AT GROUND FLOOR LEVEL

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

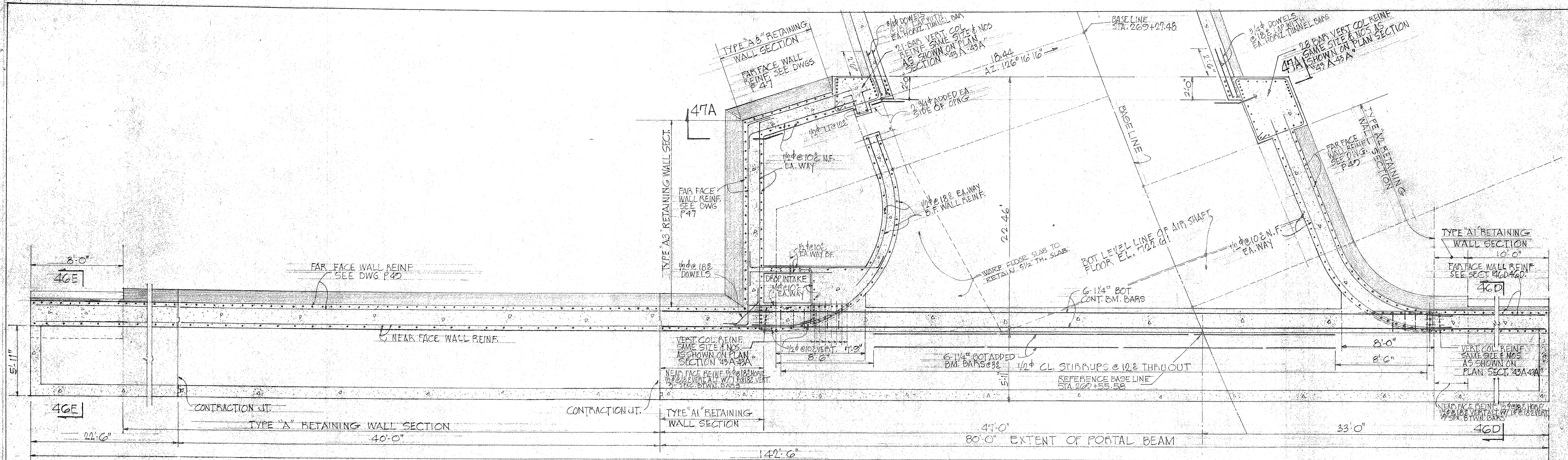
NOTES

- REFERENCE:
FOR LOCATION OF CORRESPONDING SECTION "44A-44A" SEE DWG # P. 48.
- GENERAL:
FOR PORTAL WALL DATA SEE DWG # P. 42.

LAW & WILSON
ARCHITECTS & ENGINEERS
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIHI TUNNEL
KANEOHE PORTAL-STRUCTURAL
TUNNEL ENTRANCE
FOUNDATION PLAN & STAIR DETAILS
ENGINEER: L. S. W. / D. L. DATE: JULY 18, 1953
DRAFTSMAN: J. Y. L. CHECKED BY: D. L. / J. Y. L.
SCALE: AS NOTED TRACER: [Signature]
APPROVED: [Signature] CHIEF ENGINEER
APPROVED: [Signature] BUREAU ENGINEER

W. S.	PROFILE	C. B.
CR. SEC.	F. B.	S. B.
W. M. BY.	F. W. BY.	S. BY.

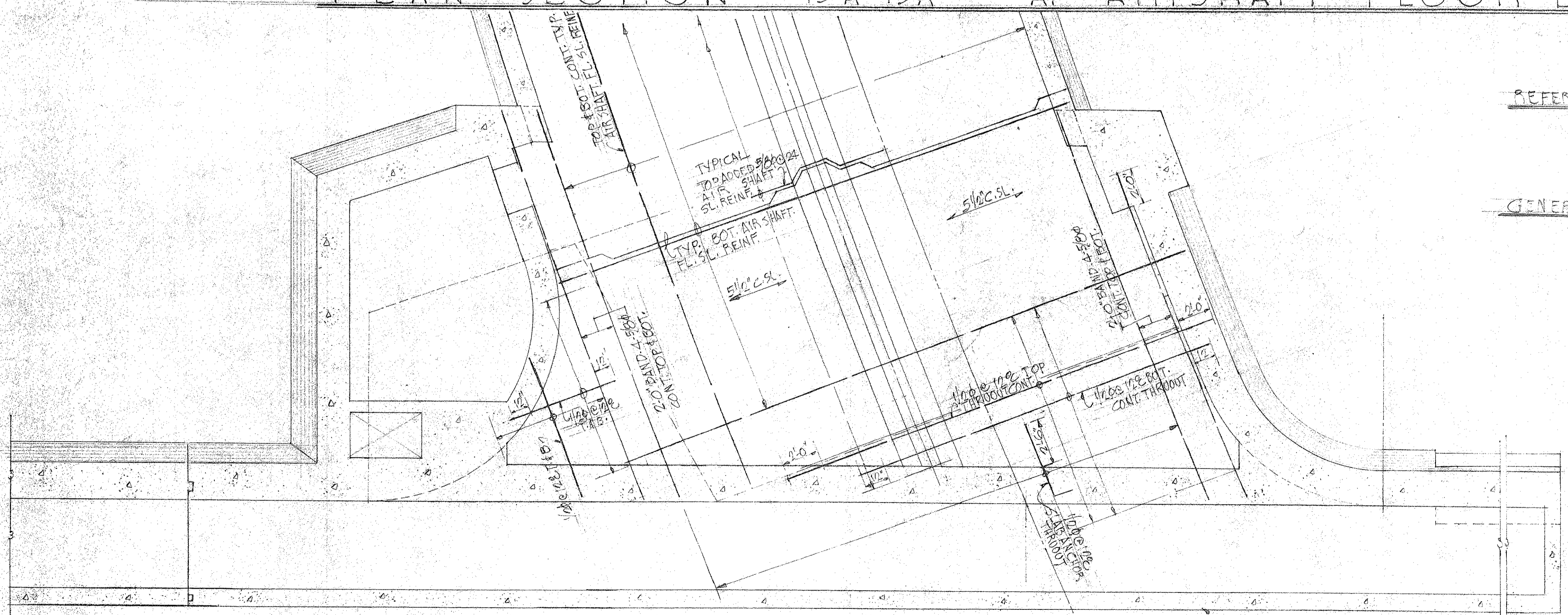
SECTION C JOB NO. 26-53 DWG. P-44



PLAN SECTION "45A-45A" AT AIRSHAFT FLOOR LEVEL SCALE: 1/4"=1'-0"

NOTES

- REFERENCE: - FOR LOCATION OF CORRESPONDING SECTION "45A-45A" SEE DWG. P.48.
- GENERAL: - FOR PORTAL WALL DATA SEE DWG # P.42

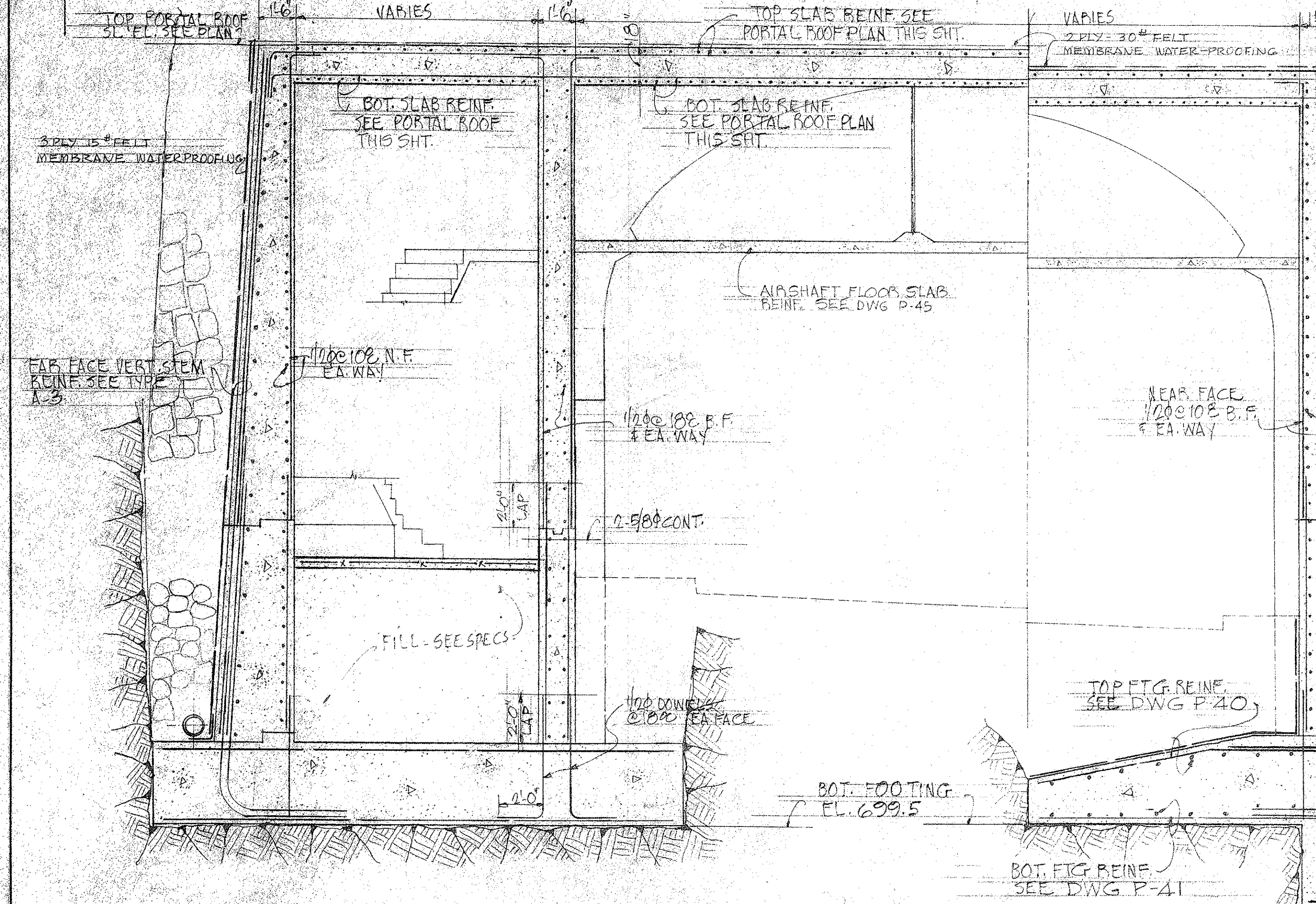
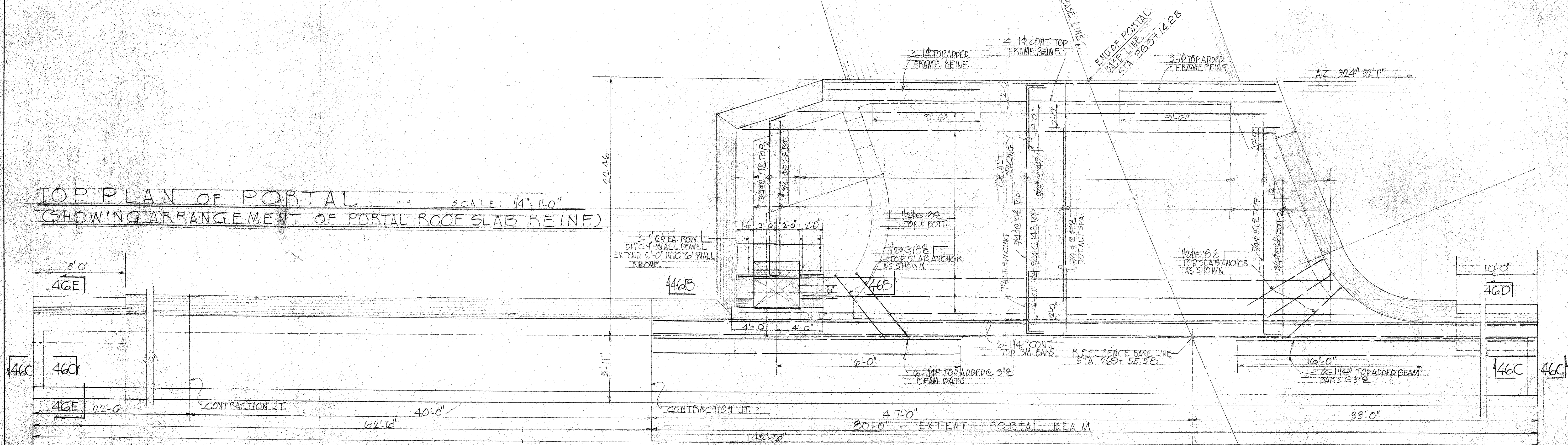


NOTE: EXCEPT AS OTHERWISE INDICATED ABOVE, AIR SHAFT FLOOR SLAB REINFORCEMENT SAME AS SHOWN ON DWG. T-6

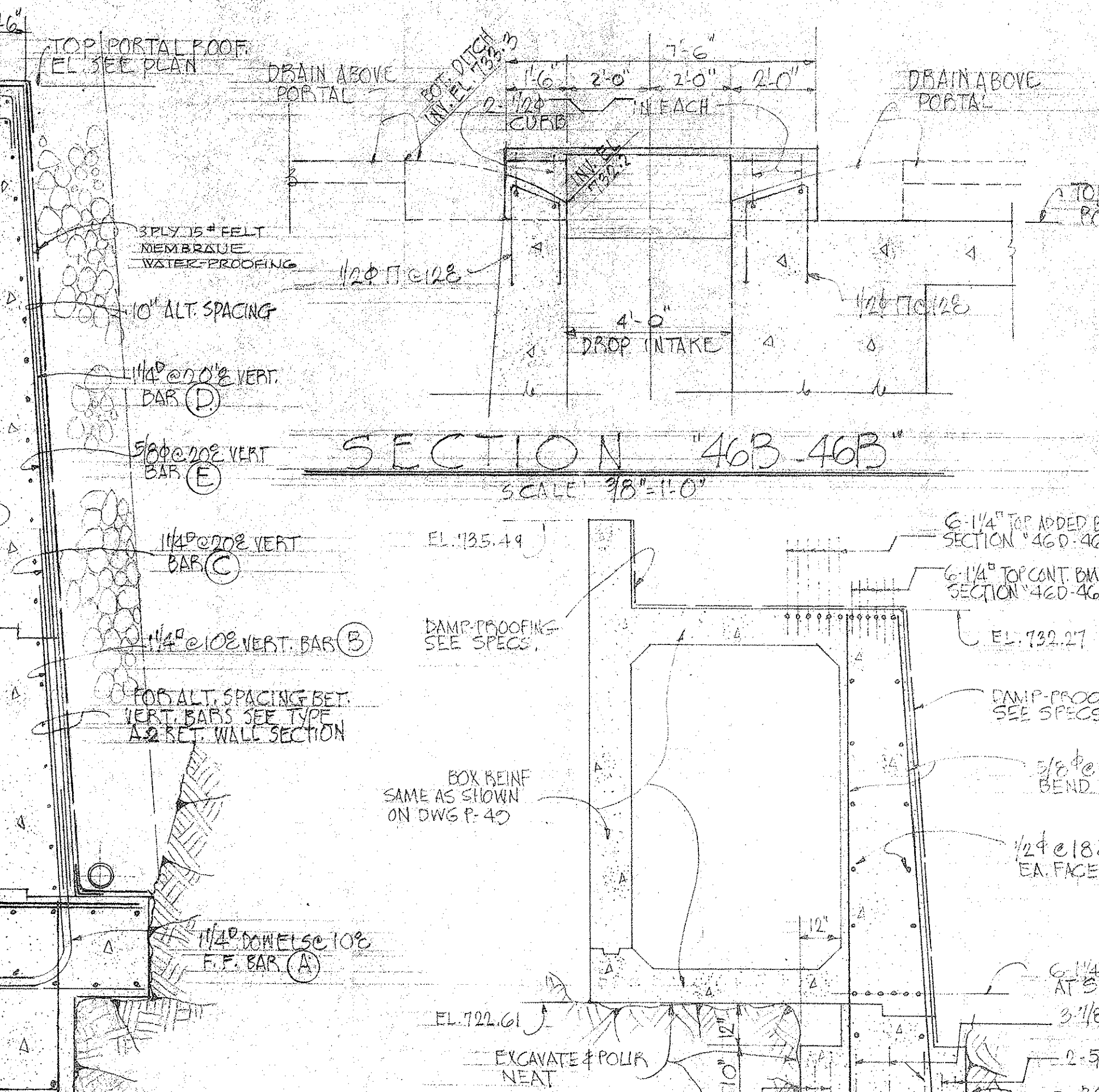
PLAN SECTION "45A-45A" (SHOWING ARRANGEMENT OF AIR SHAFT FLOOR SLAB REINFORCEMENT)

LAW & WILSON ARCHITECTS & ENGINEERS DEPARTMENT OF PUBLIC WORKS CITY AND COUNTY OF HONOLULU BUREAU OF PLANS KALIHI TUNNEL KANEHOE PORTAL - STRUCTURAL TUNNEL ENTRANCE PLANS ABOVE CEILING		
ENGINEER L.W.W./D.L. DRAFTSMAN J.Y.L. SCALE 1/4"=1'-0" APPROVED: <i>W. S. Jamveth</i> CHIEF ENGINEER	DATE JULY 15 1958 CHECKED BY: <i>D.L. Jamveth</i> TRACER APPROVED: <i>W. Butzger</i> BUREAU ENGINEER	W.S. / P.B. / F.W. BY C.B. / S.B. / S.B.Y. SECTION C JOB NO. 26-53 DWG. P-45

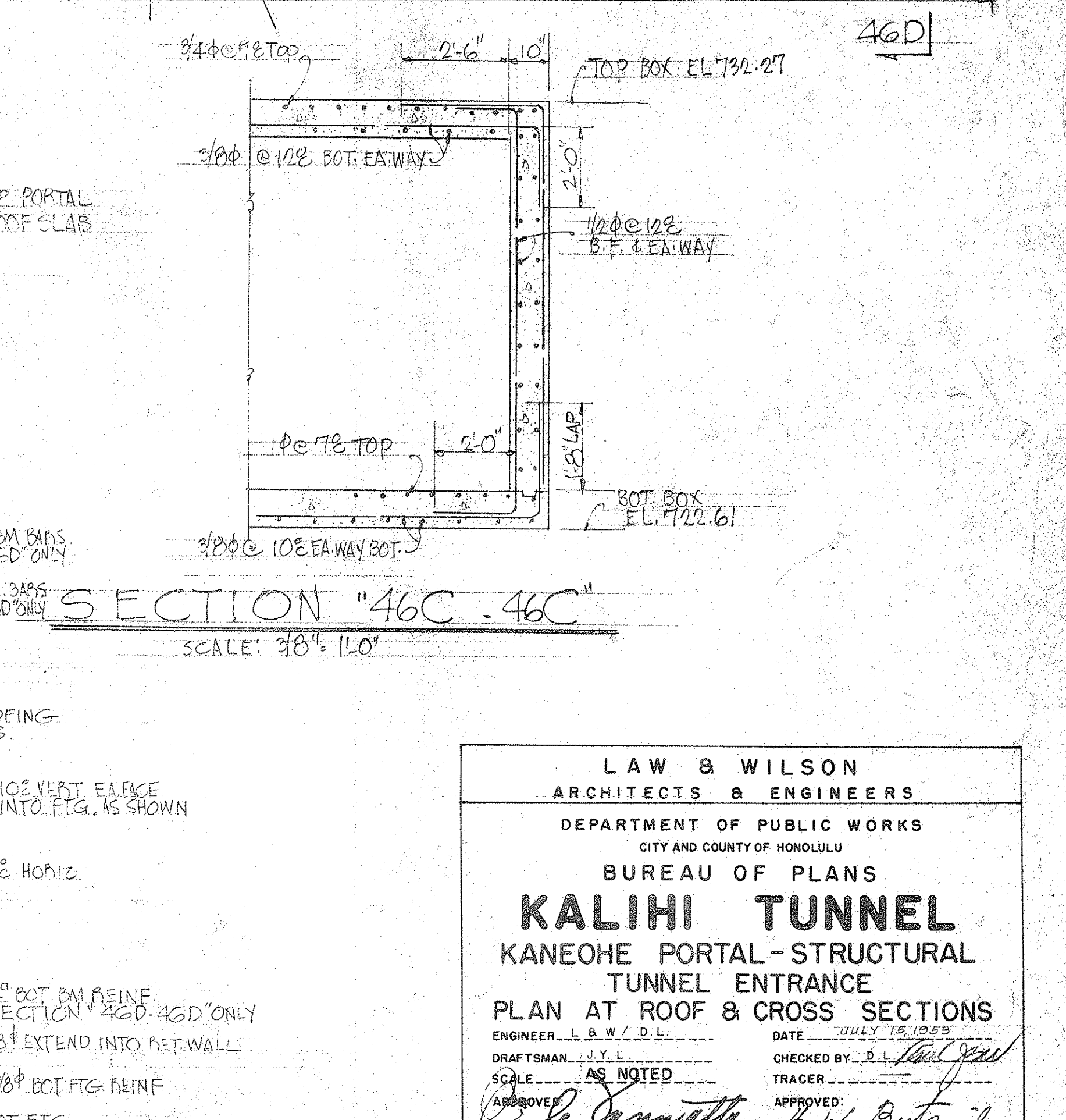
TOP PLAN OF PORTAL SCALE: 1/4" = 1'-0"
 (SHOWING ARRANGEMENT OF PORTAL ROOF SLAB REINF.)



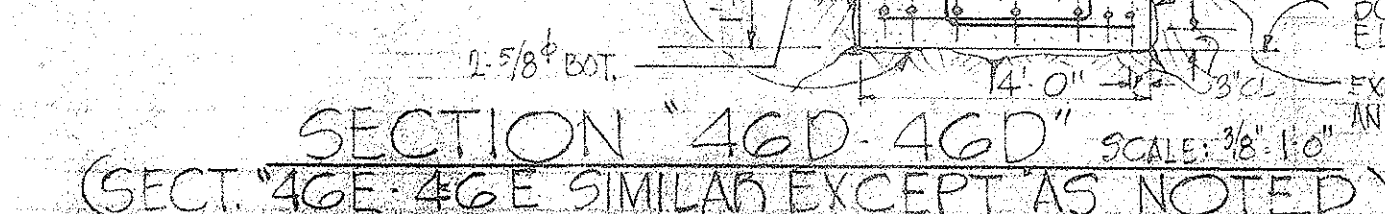
SECTION "46A-46A" SCALE: 1/4" = 1'-0"



SECTION "46B-46B" SCALE: 3/8" = 1'-0"



SECTION "46C-46C" SCALE: 3/8" = 1'-0"



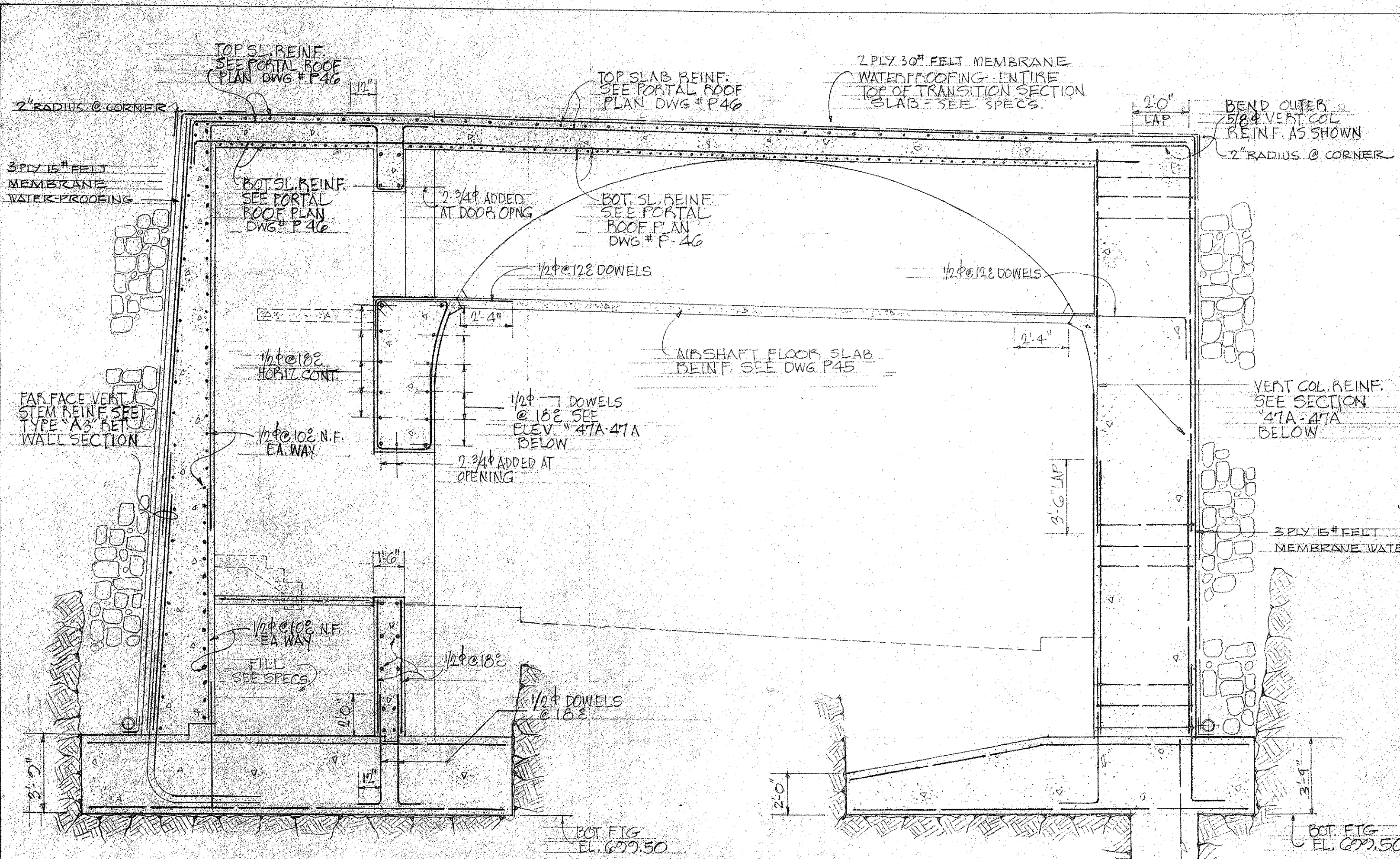
SECTION "46D-46D" SCALE: 3/8" = 1'-0"
 (SECT. 46E-46E SIMILAR EXCEPT AS NOTED)

LAW & WILSON
 ARCHITECTS & ENGINEERS
 DEPARTMENT OF PUBLIC WORKS
 CITY AND COUNTY OF HONOLULU
 BUREAU OF PLANS
KALIHI TUNNEL
 KANEOHE PORTAL - STRUCTURAL
 TUNNEL ENTRANCE
 PLAN AT ROOF & CROSS SECTIONS

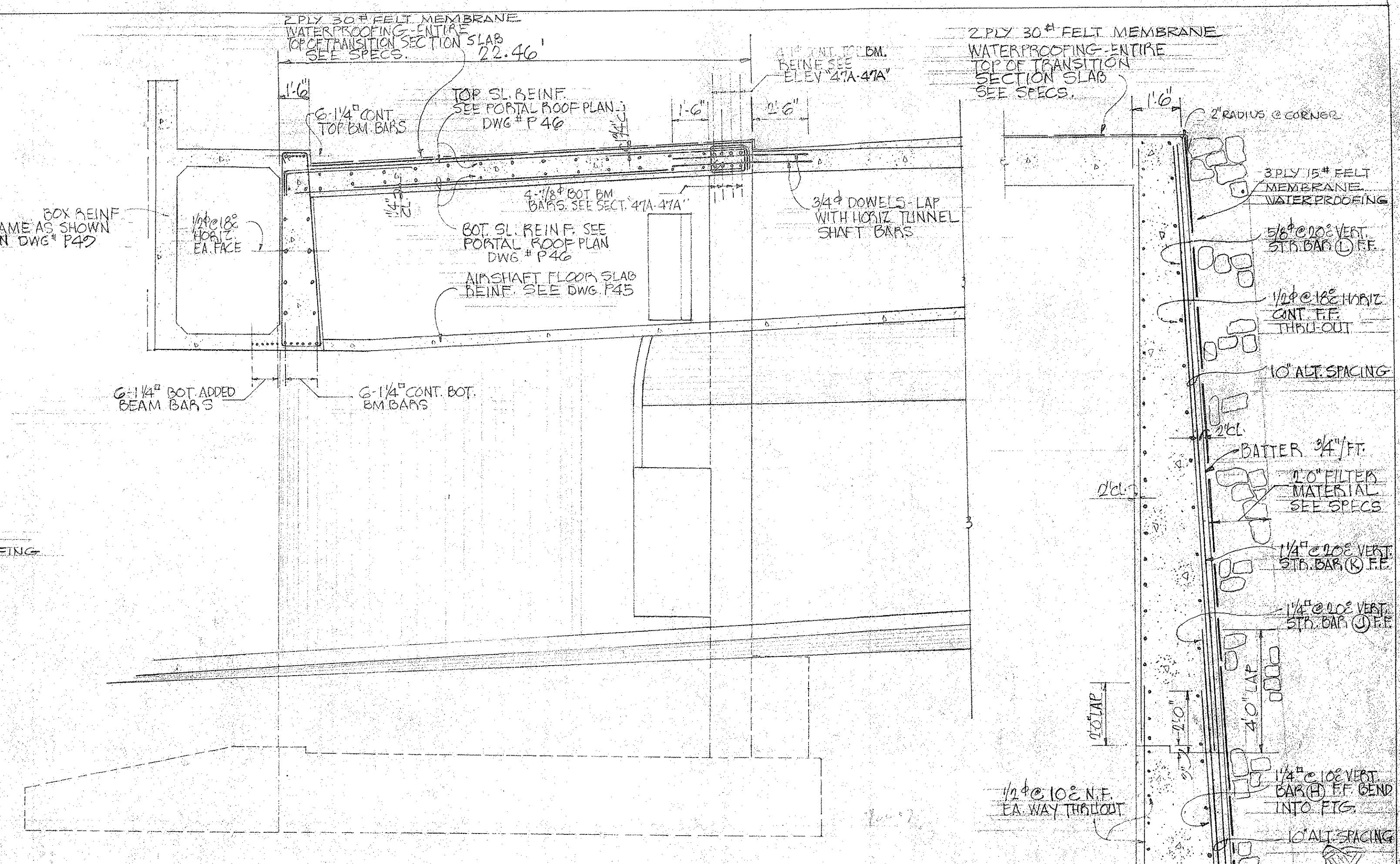
ENGINEER: L. B. W. / D. L. DATE: JULY 15, 1958
 DRAFTSMAN: J. Y. L. CHECKED BY: R. L. [Signature]
 SCALE: AS NOTED TRACER: [Signature]
 APPROVED: [Signature] CHIEF ENGINEER
 APPROVED: [Signature] BUREAU ENGINEER

W.S.	PROFILE	C.B.
CR. SEC.	F.W.	S.B.
W.M. BY:	F.W. BY:	S.B. BY:

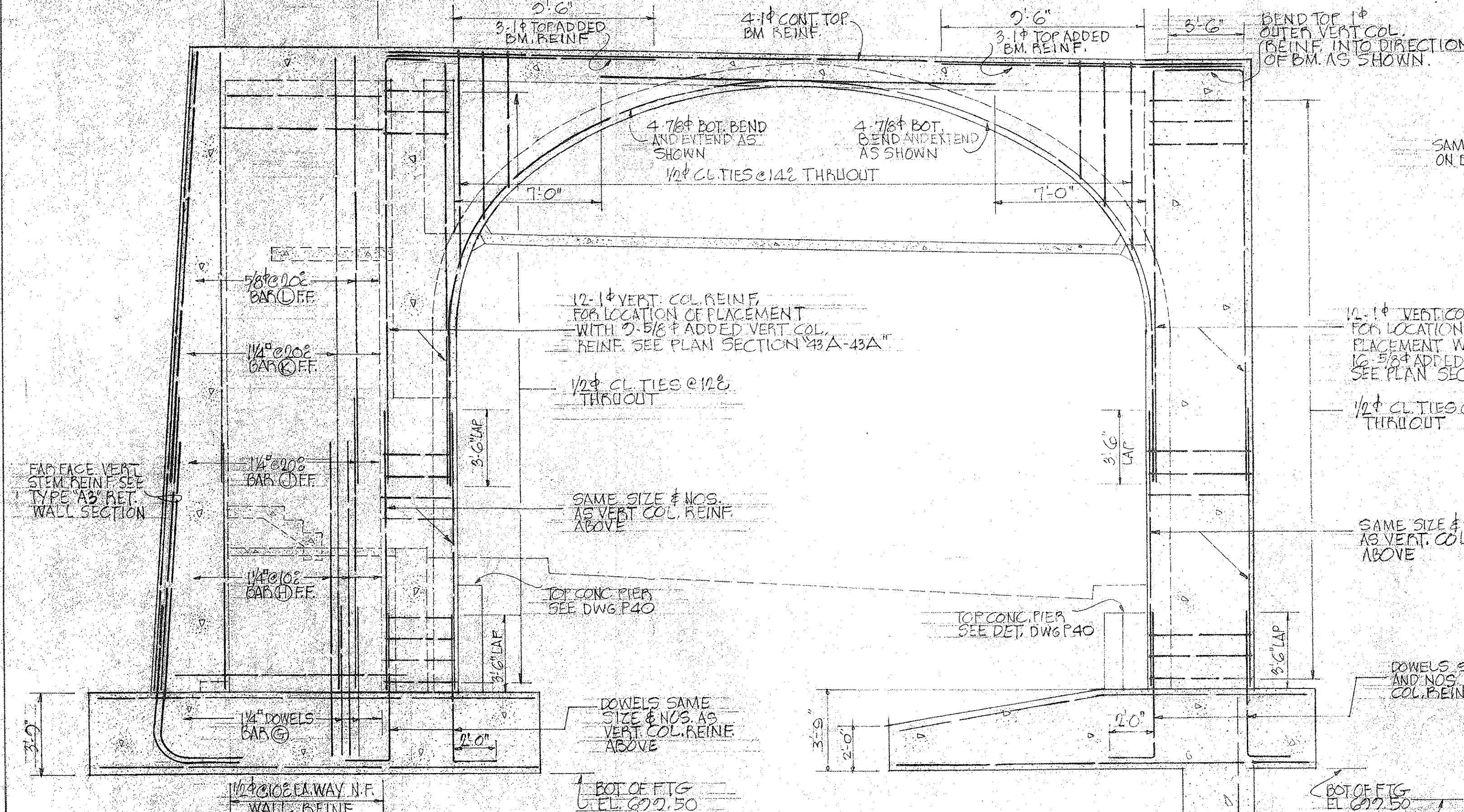
SECTION C JOB NO. 26-53 DWG. P-46



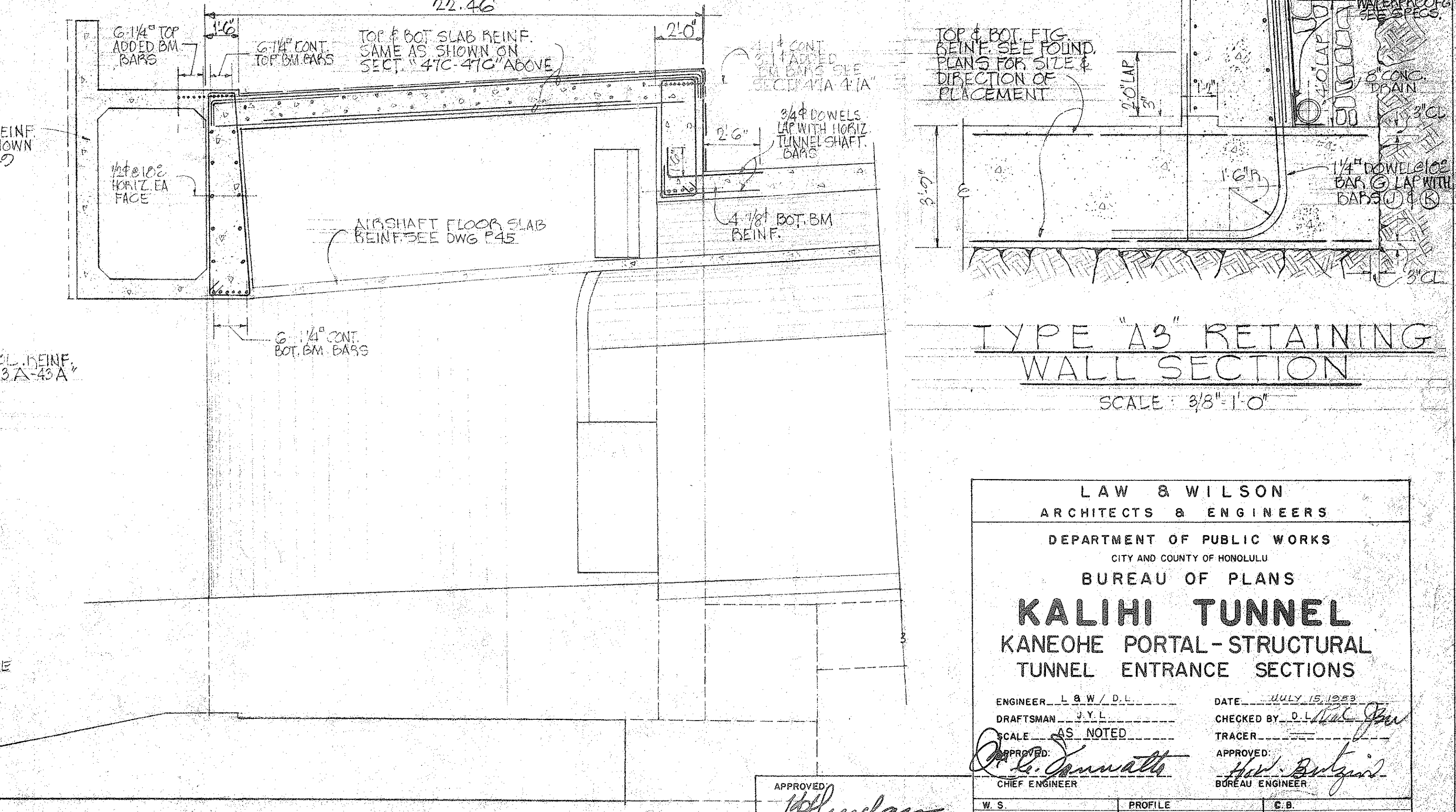
SECTION "47A-47A" SCALE: 1/4" = 1'-0"



SECTION "47C-47C" SCALE: 1/4" = 1'-0"



SECTION "47A-47A" (SHOWING FRAME AND FAR FACE WALL REINF.) SCALE: 1/4" = 1'-0"



SECTION "47D-47D" SCALE: 1/4" = 1'-0"

TYPE "A3" RETAINING WALL SECTION SCALE: 3/8" = 1'-0"

LAW & WILSON
ARCHITECTS & ENGINEERS
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

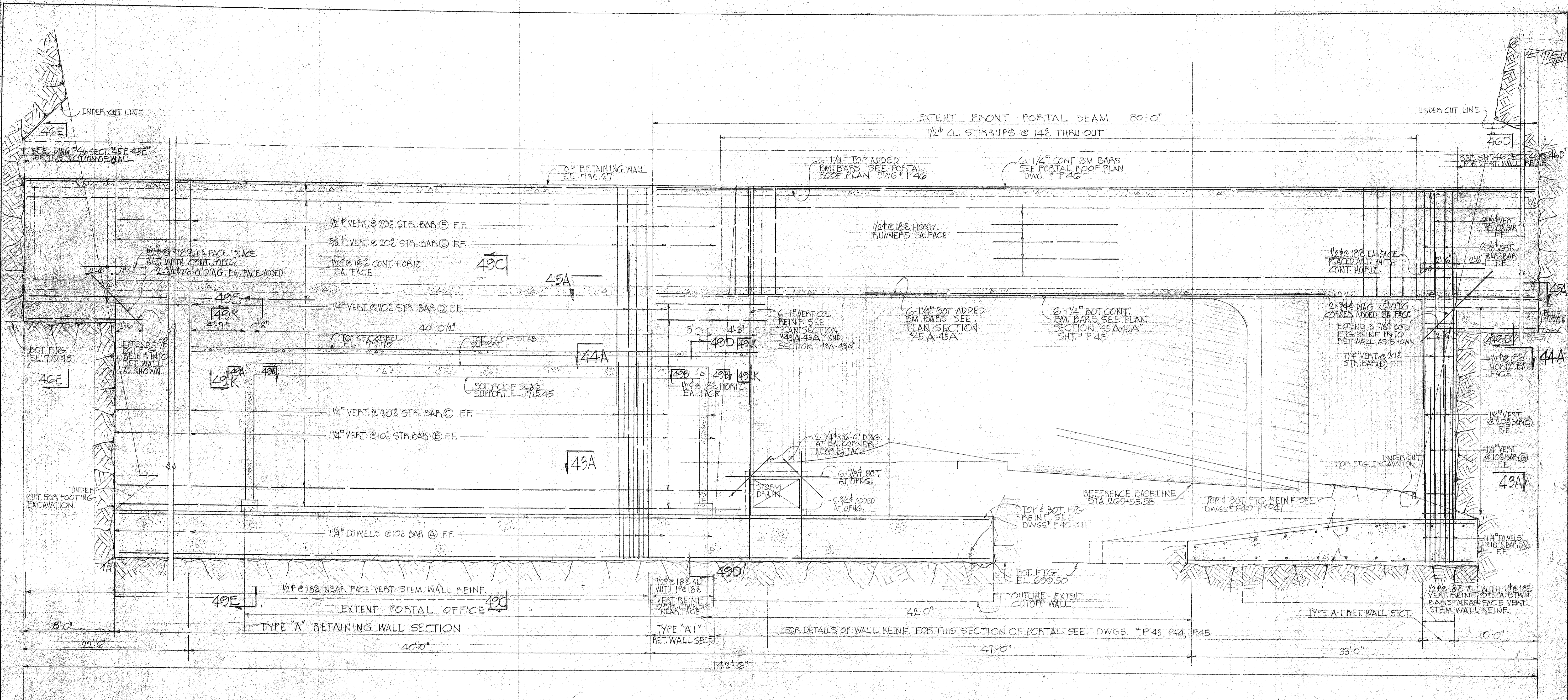
KALIHI TUNNEL
KANEHOE PORTAL - STRUCTURAL
TUNNEL ENTRANCE SECTIONS

ENGINEER: L. B. W. D.L. DATE: JULY 15, 1953
DRAFTSMAN: J.Y.L. CHECKED BY: J. W. B. J. W.
SCALE: AS NOTED TRACER:
APPROVED: *[Signature]* APPROVED: *[Signature]*
CHIEF ENGINEER BUREAU ENGINEER

W. S.	PROFILE	C. B.
CR. SEC.	F. B.	S. B.
W. M. BY:	F. W. BY:	S. BY:

APPROVED: *[Signature]*
ENGINEER, KALIHI TUNNEL

FILE	PROJECT	FIELD	NO.
7	6	1	47



ELEVATION "48A-48A" (SHOWING ARRANGEMENT OF RETAINING WALL STEM REINFORCEMENT)

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

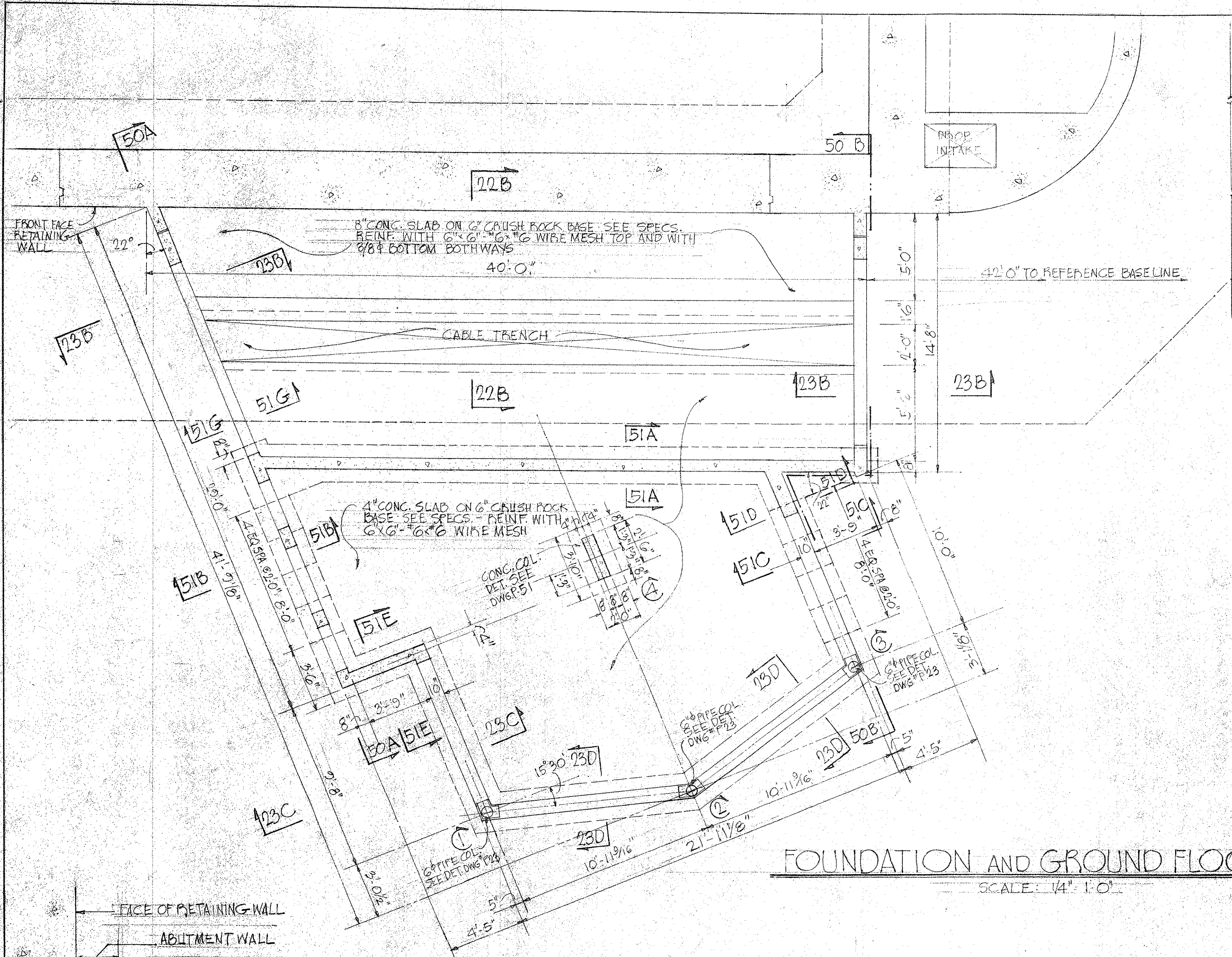
LAW & WILSON
 ARCHITECTS & ENGINEERS
 DEPARTMENT OF PUBLIC WORKS
 CITY AND COUNTY OF HONOLULU
 BUREAU OF PLANS

KALIHI TUNNEL
 KANEOHE PORTAL-STRUCTURAL
 PORTAL WALL ELEVATION

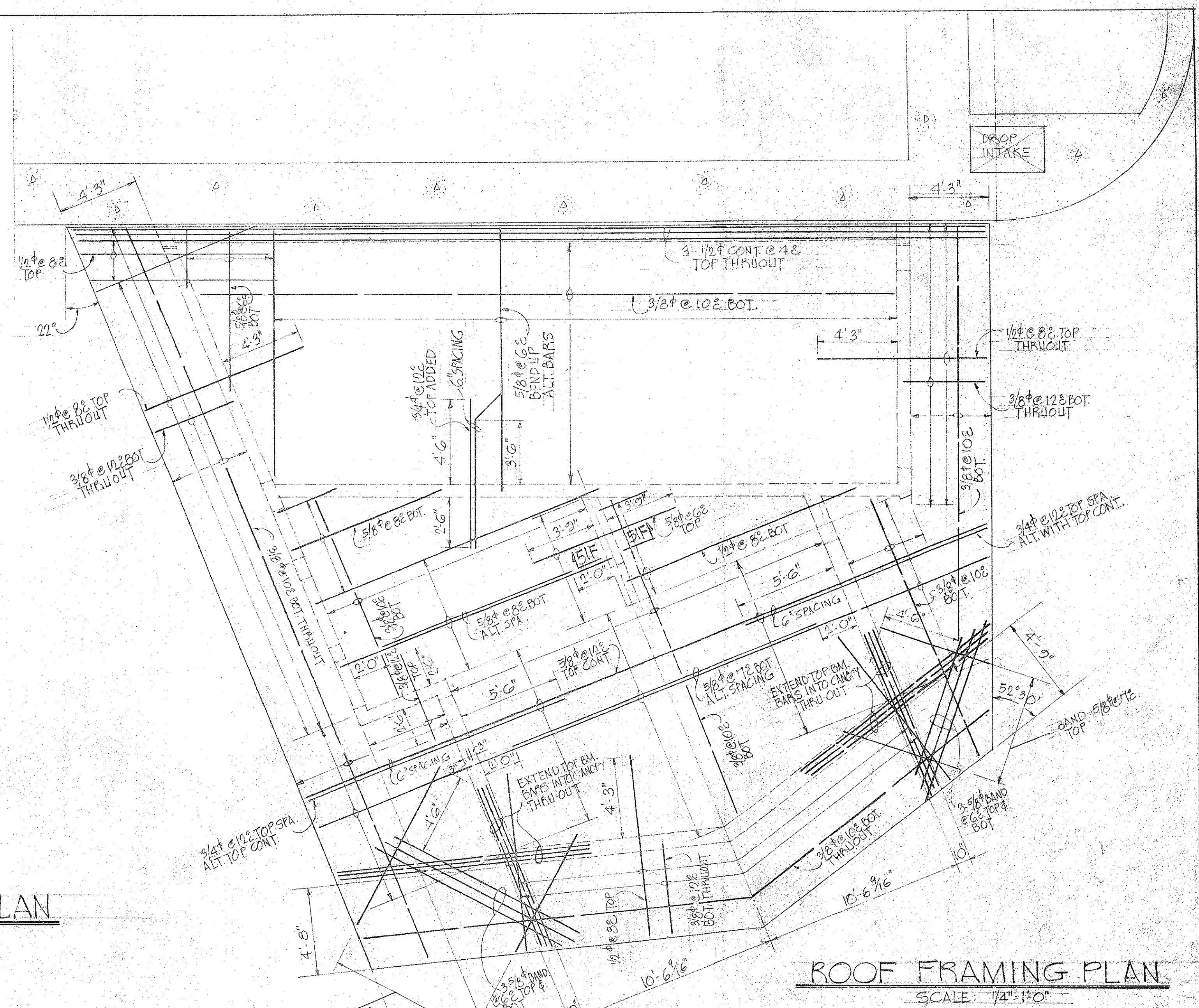
ENGINEER: J. B. W. P. L. DATE: JULY 15, 1953
 DRAFTSMAN: J. Y. L. CHECKED BY: D. J. [Signature]
 SCALE: 1/4" = 1'-0" TRACER: [Signature]
 APPROVED: [Signature] CHIEF ENGINEER
 APPROVED: [Signature] BUREAU ENGINEER

W. S.	PROFILE	C. B.
CR. SEC.	F. B.	S. B.
W. M. BY:	F. W. BY:	S. B. BY:

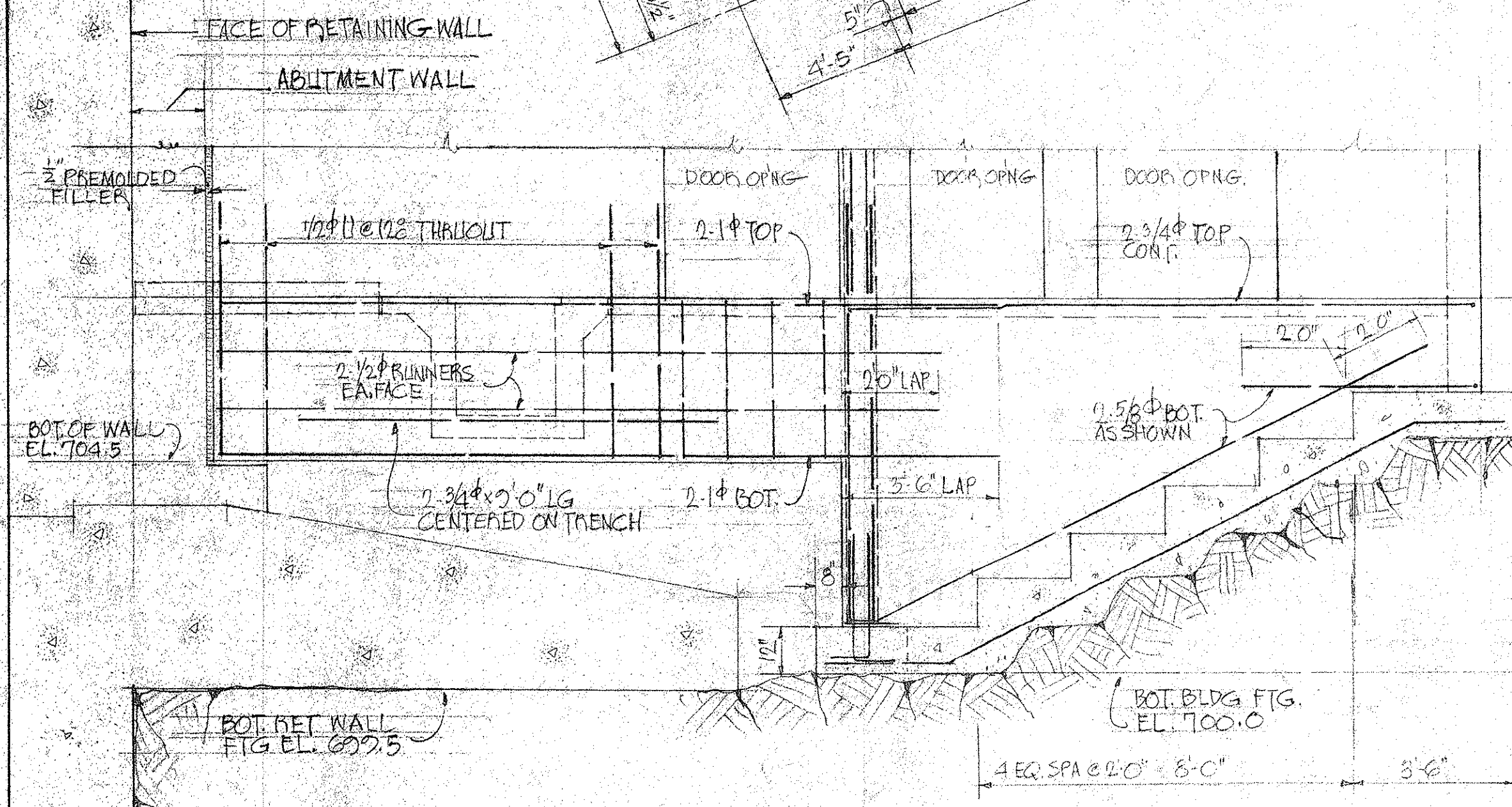
SECTION C JOB NO. 26-53 DWG. P-48



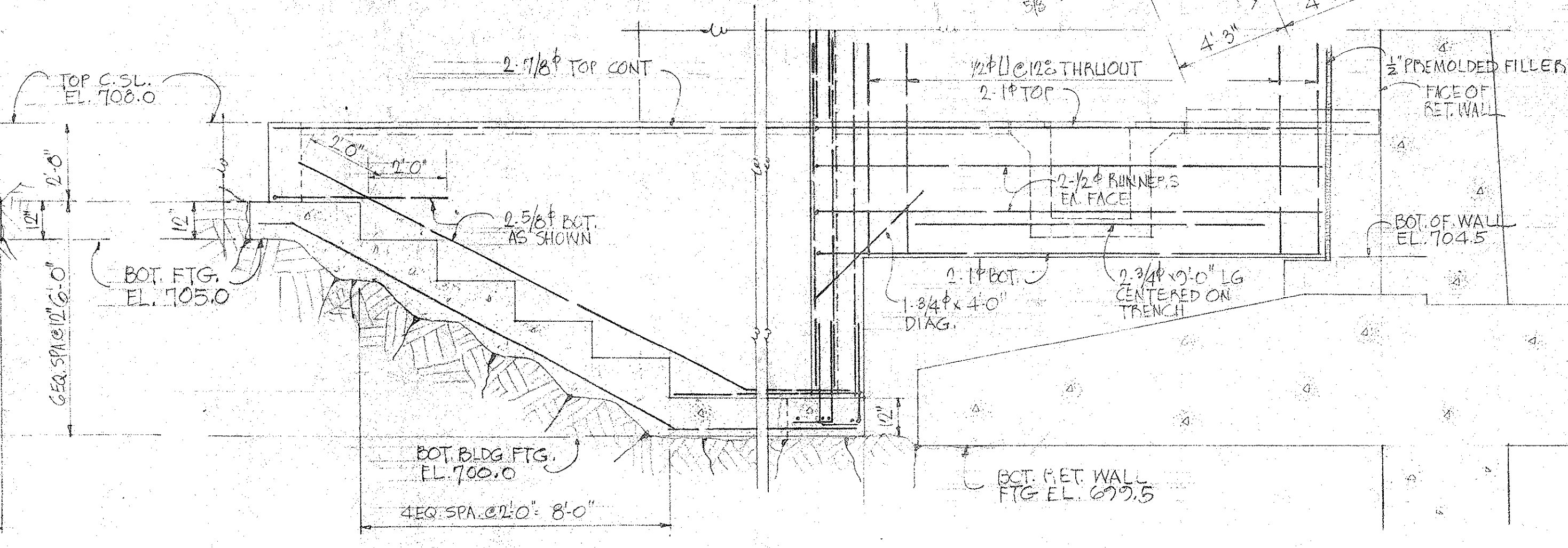
FOUNDATION AND GROUND FLOOR PLAN
SCALE: 1/4" = 1'-0"



ROOF FRAMING PLAN
SCALE: 1/4" = 1'-0"



ELEVATION "50A-50A" SCALE: 3/8" = 1'-0"



ELEVATION "50B-50B" SCALE: 3/8" = 1'-0"

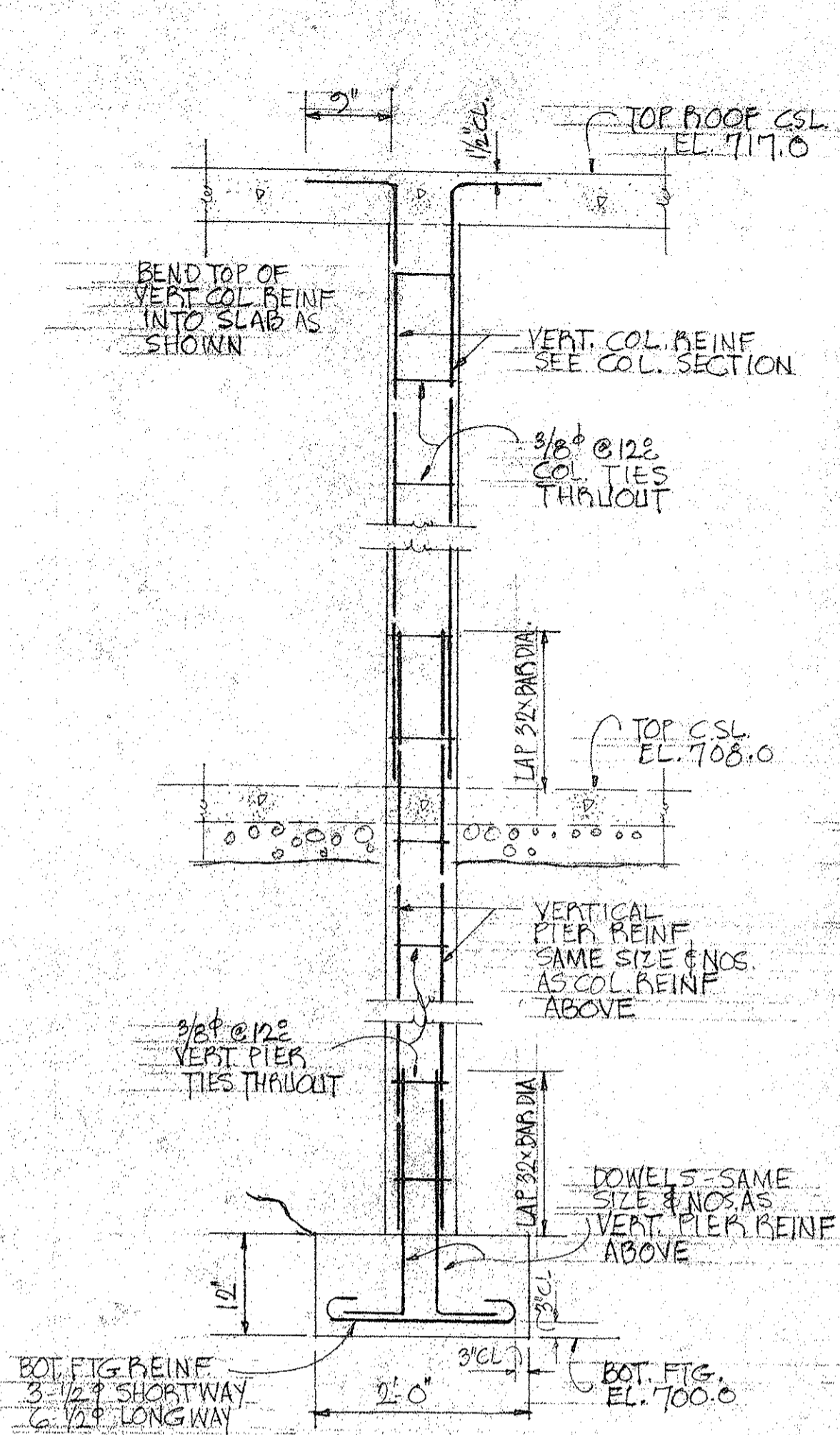
REFERENCE NOTES:
 1. TYPICAL DETAILS OF WALL CORNERS OR GRADE BEAM CORNER REINF. AND DETAILS TO SECTIONS 22B-22B. SEE DWG. P.20.
 2. FOR CORRESPONDING TYPICAL DETAILS OF CONC. BEAMS, SPANDEL BEAMS, ADDED REINFORCEMENT AT OPENING'S, PIPE COLS AND DETAILS TO SECTIONS 23B-23B, 23C-23C, 23D-23D. SEE DWG. P.23.
 3. FOR DETAILS OF SECTIONS 51A-51A, 51B-51B, 51C-51C, 51D-51D, 51E-51E, 51F-51F, 51G-51G. SEE DWG. P.51

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 ARCHITECTS & ENGINEERS
 DEPARTMENT OF PUBLIC WORKS
 CITY AND COUNTY OF HONOLULU
 BUREAU OF PLANS
KALIHI TUNNEL
 KANEHOE PORTAL-STRUCTURAL
 OFFICE & VAULT
 PLANS & DETAILS

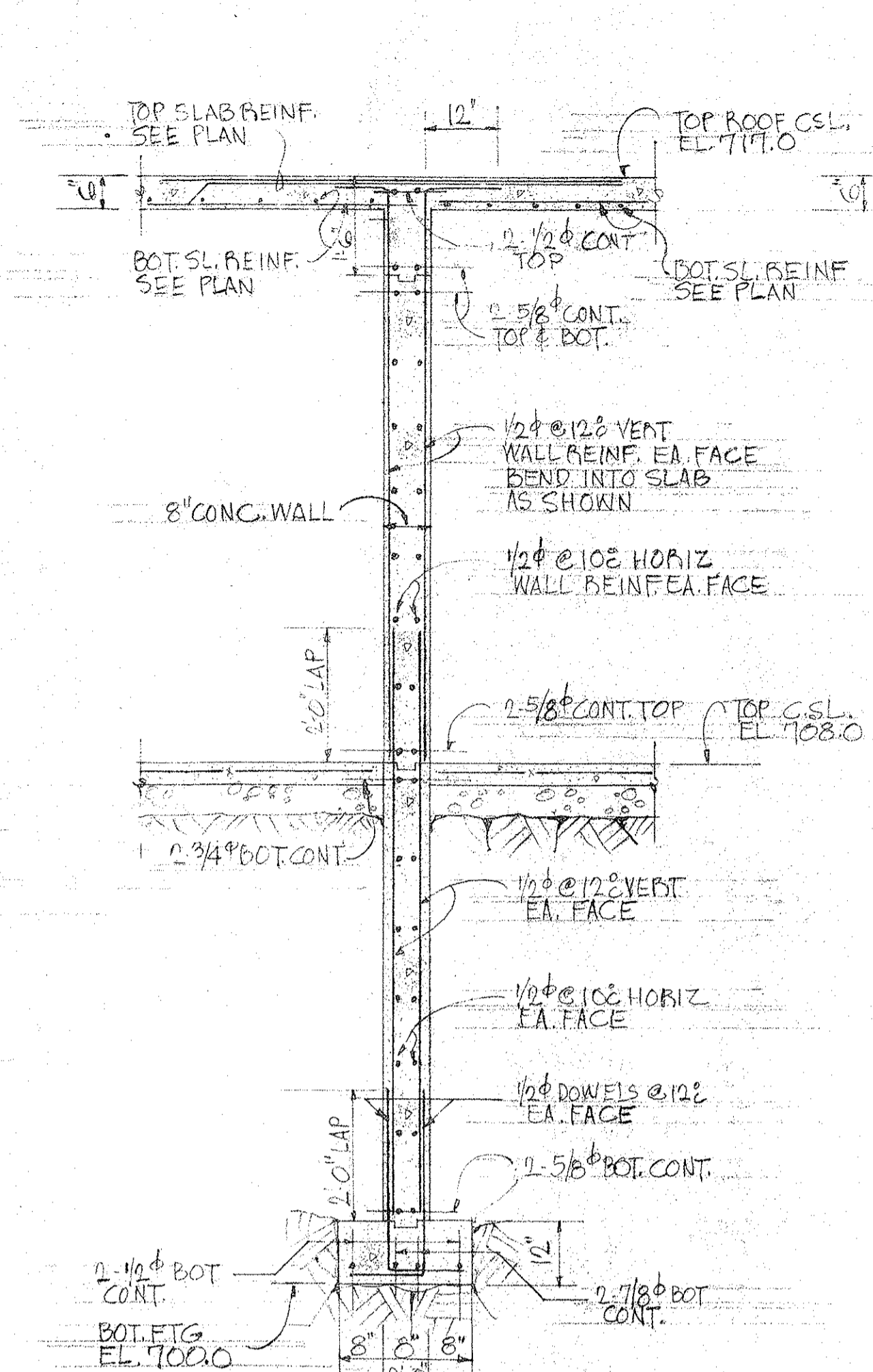
ENGINEER: L. B. W. / D. L. DATE: JULY 18, 1953
 DRAFTSMAN: J. Y. L. CHECKED BY: D. L. / J. Y. L.
 SCALE: AS NOTED TRACER: _____
 APPROVED: *Lawrence J. Wilson* APPROVED: *John W. B. Jones*
 CHIEF ENGINEER BUREAU ENGINEER

APPROVED	PROFILE	C.B.
ENGINEER, KALIHI TUNNEL	F.B.	S.B.
W.M. BY:	F.W. BY:	S. BY:

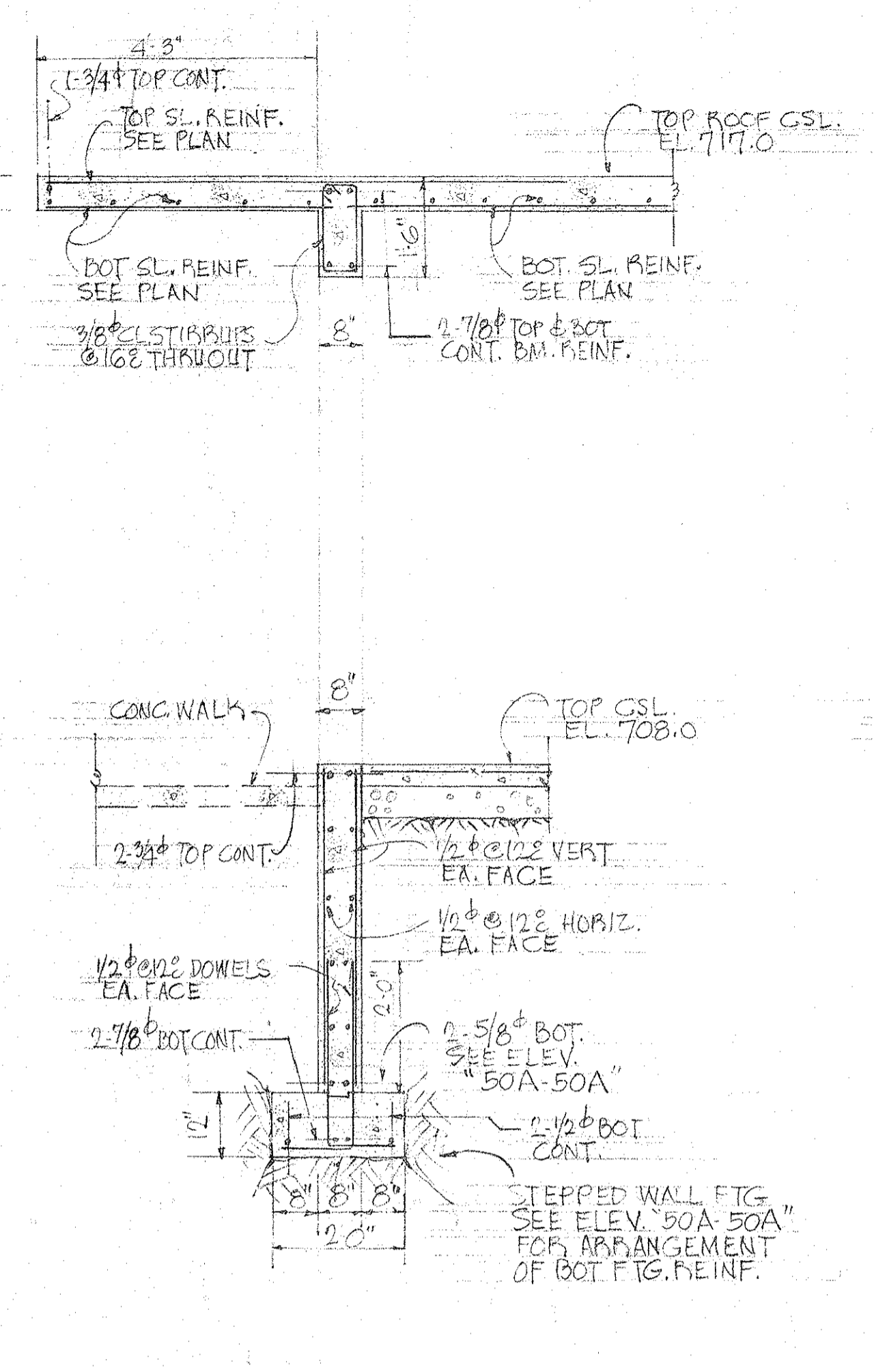
SECTION C JOB NO. 26-53 DWG. P-50



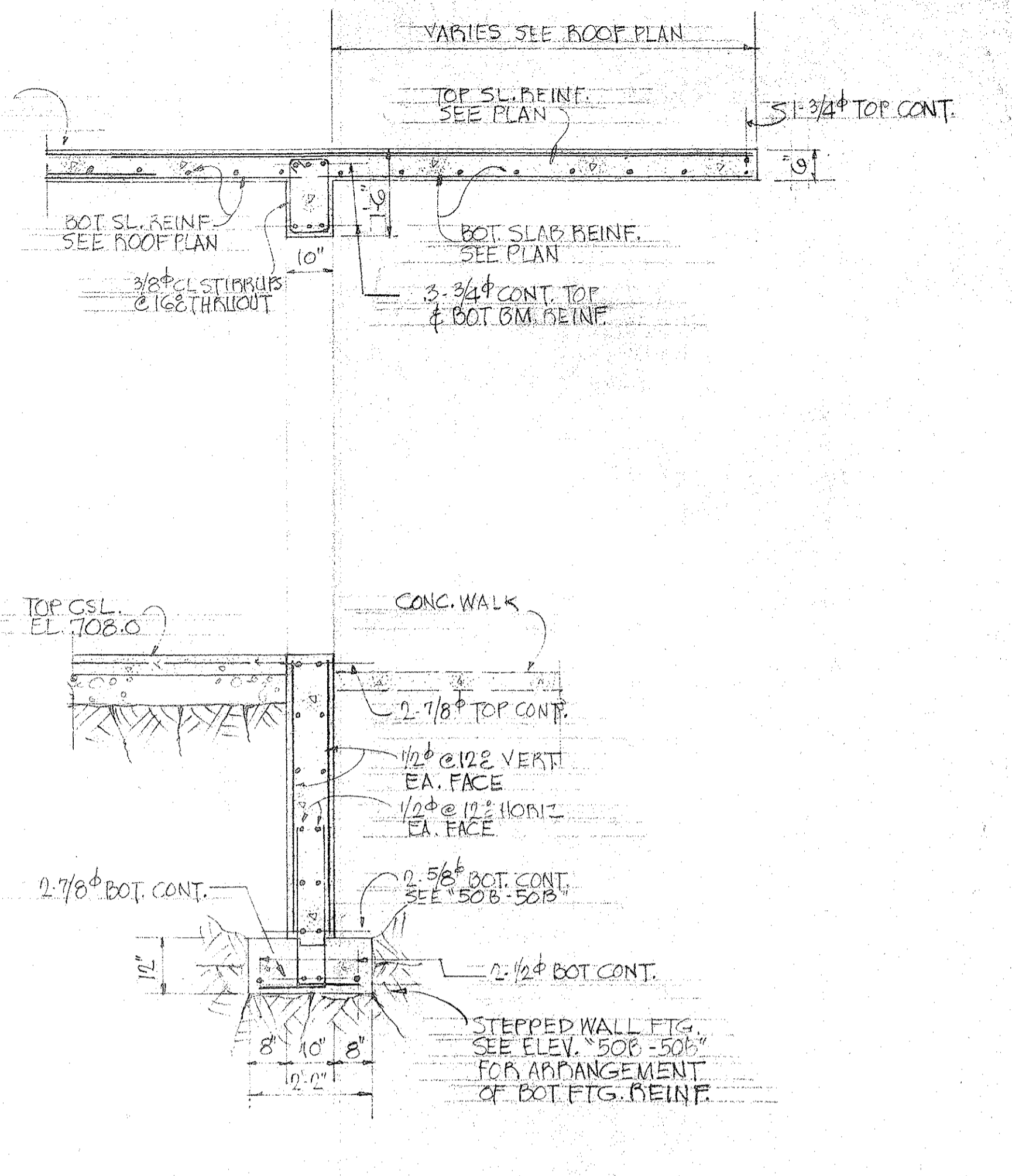
TYPICAL COLUMN SECTION (PIER SECTION SIMILAR)



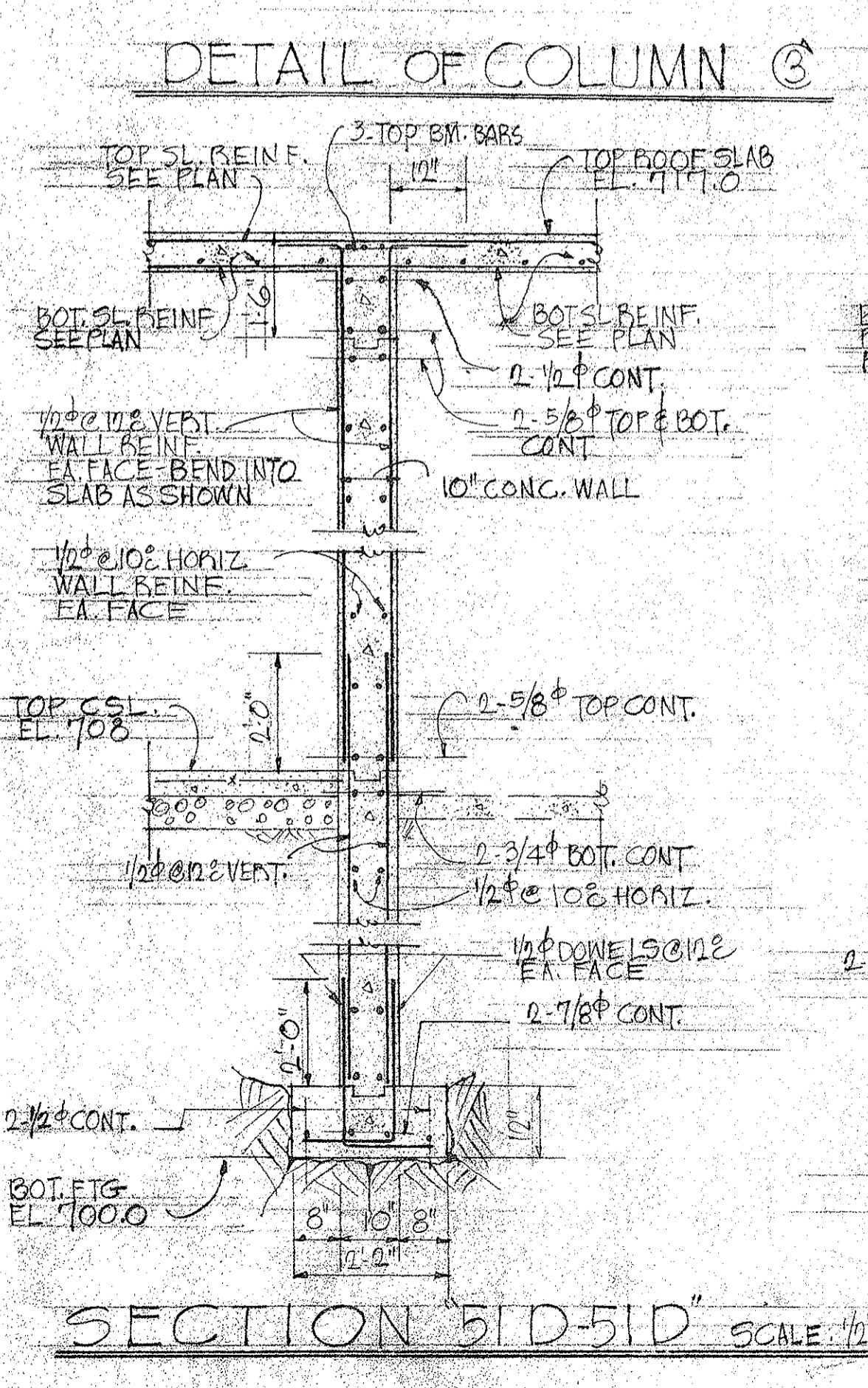
SECTION 51A-51A SCALE: 1/2"=1'-0"



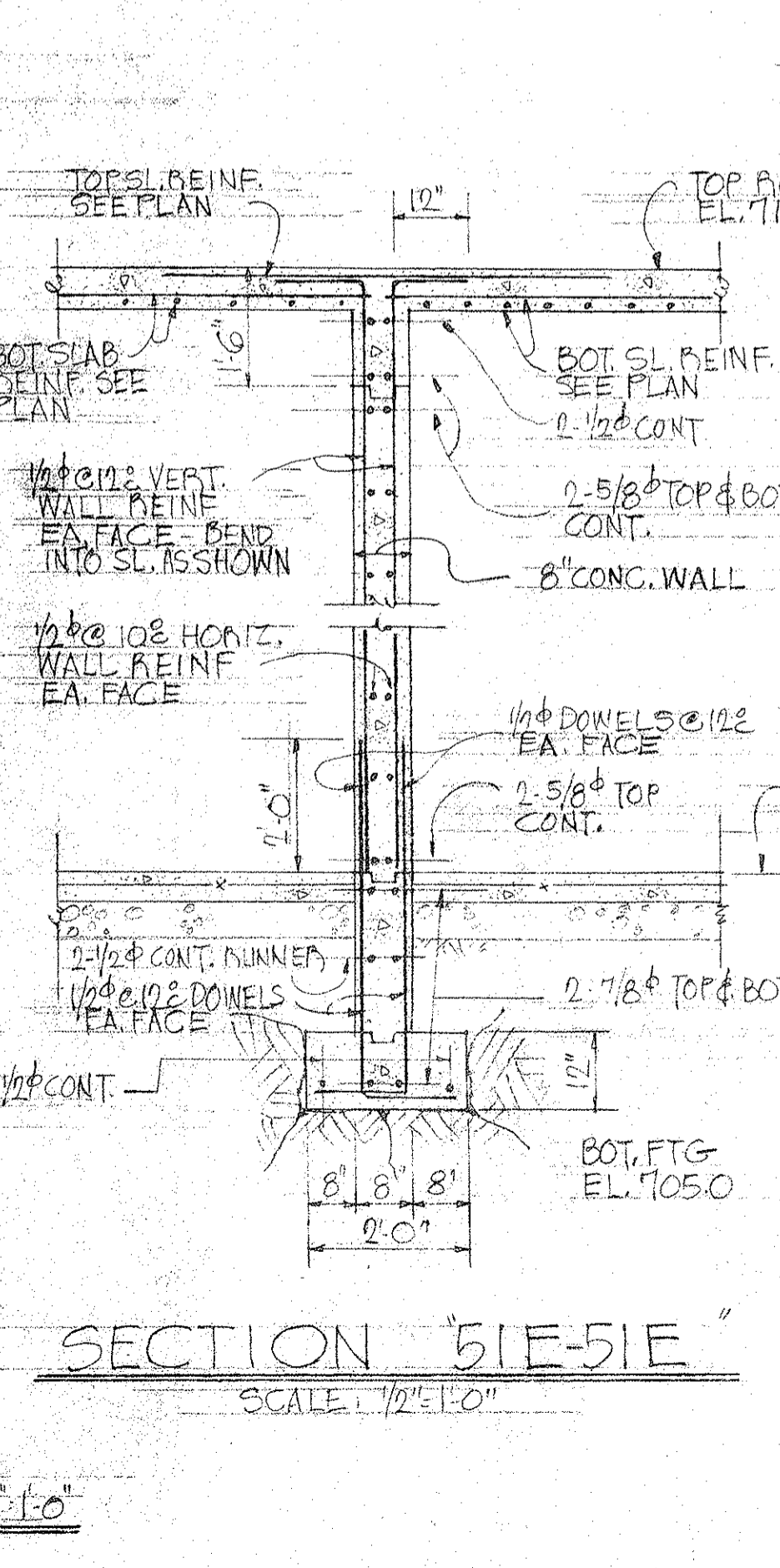
SECTION 51B-51B SCALE: 1/2"=1'-0"



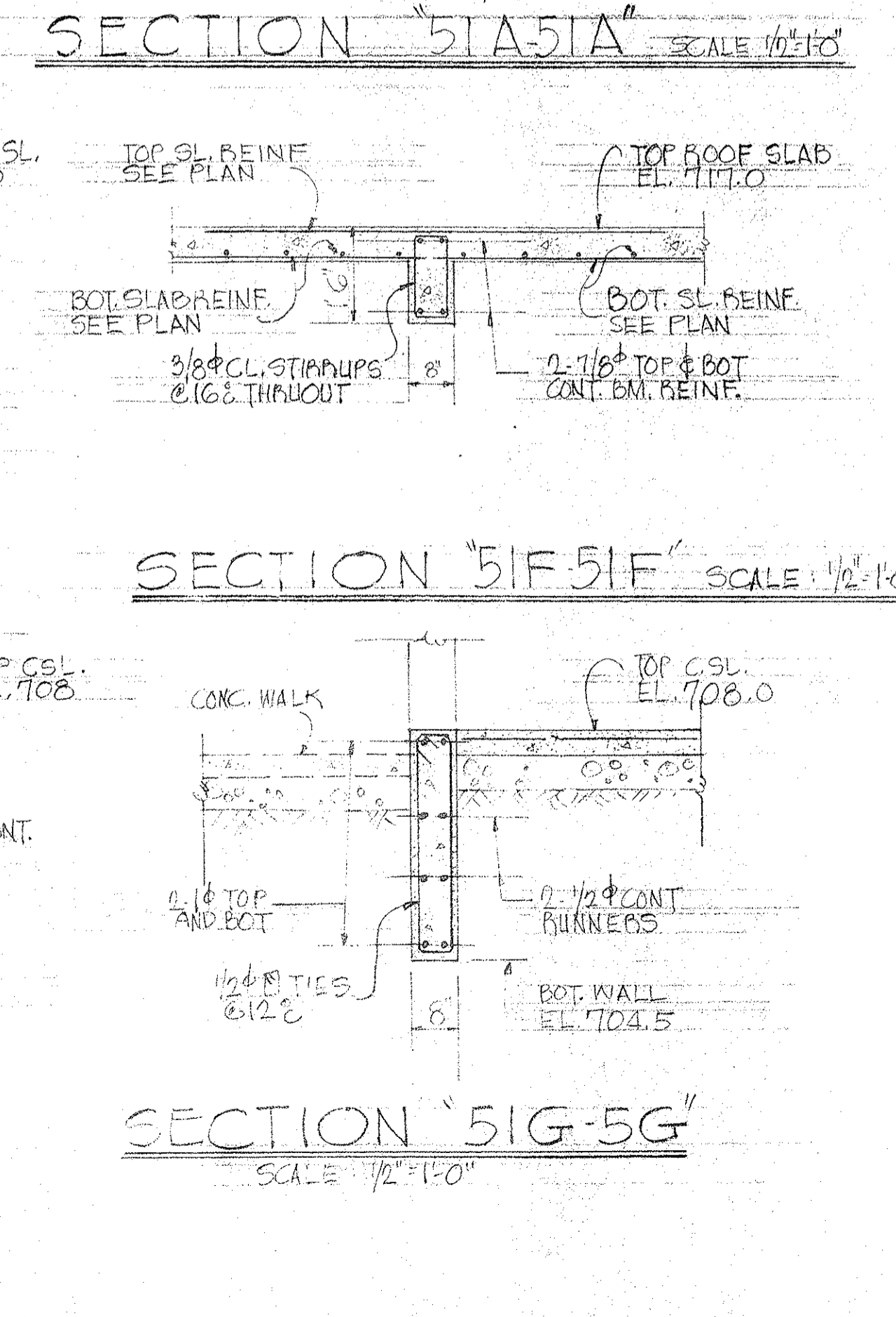
SECTION 51C-51C SCALE: 1/2"=1'-0"



SECTION 51D-51D SCALE: 1/2"=1'-0"



SECTION 51E-51E SCALE: 1/2"=1'-0"



SECTION 51F-51F SCALE: 1/2"=1'-0"



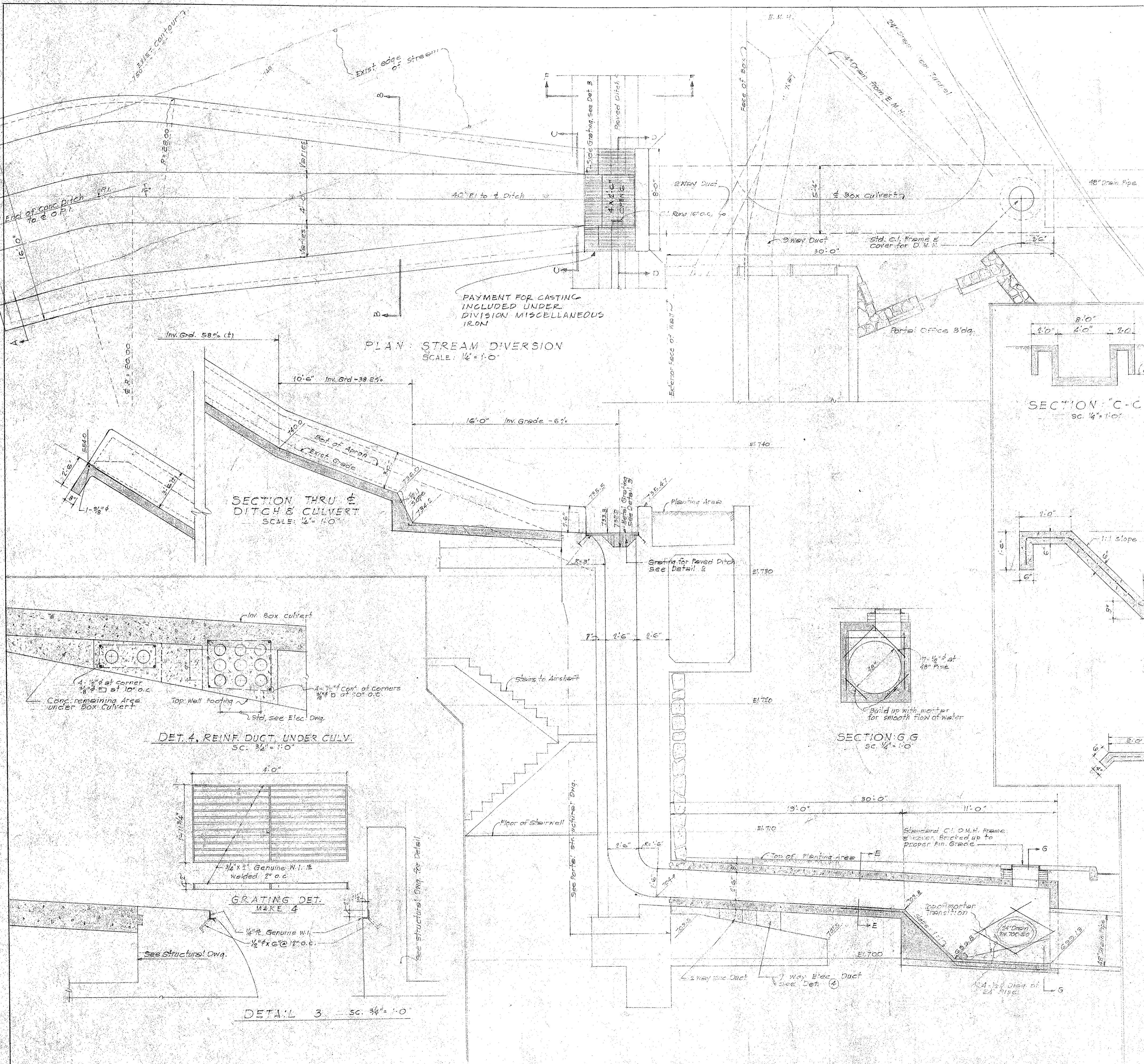
SECTION 51G-51G SCALE: 1/2"=1'-0"

REFERENCE NOTES:

- FOR TYPICAL DETAIL OF WALL CORNERS OR GRADE BEAM CORNER REINF. AND DETAILS TO SECTIONS "22B-22B" SEE DWG. #P 22
- FOR CORRESPONDING TYPICAL DETAILS OF CONC. BEAMS SPANDREL BEAMS, ADDED REINFORCEMENT AT OPENINGS, PIPE COLUMNS, AND DETAILS TO SECTIONS "23B-23B", "23C-23C" & "23D-23D" SEE DWG. #23
- FOR LOCATION OF SECTIONS "51A-51A", "51B-51B", "51C-51C", "51D-51D", "51E-51E", "51F-51F", & "51G-51G" SEE DWG. #P 50

LAW & WILSON ARCHITECTS & ENGINEERS		
DEPARTMENT OF PUBLIC WORKS CITY AND COUNTY OF HONOLULU		
BUREAU OF PLANS		
KALIHI TUNNEL		
KANEOHE PORTAL - STRUCTURAL		
OFFICE & VAULT		
SECTIONS & DETAILS		
ENGINEER L. B. WILSON	DATE 11/15/53	CHECKED BY D. L. ...
DRAFTSMAN J. J. L.	SCALE 1/2"=1'-0"	TRACER
APPROVED <i>D. L. ...</i> CHIEF ENGINEER	APPROVED <i>H. W. ...</i> BUREAU ENGINEER	
W.S. CR. SEC.	PROFILE F.B.	C.B. S.B.
W.M. BY:	F.W. BY:	S. BY:

SECTION C JOB NO. 26-53 DWG. P-51



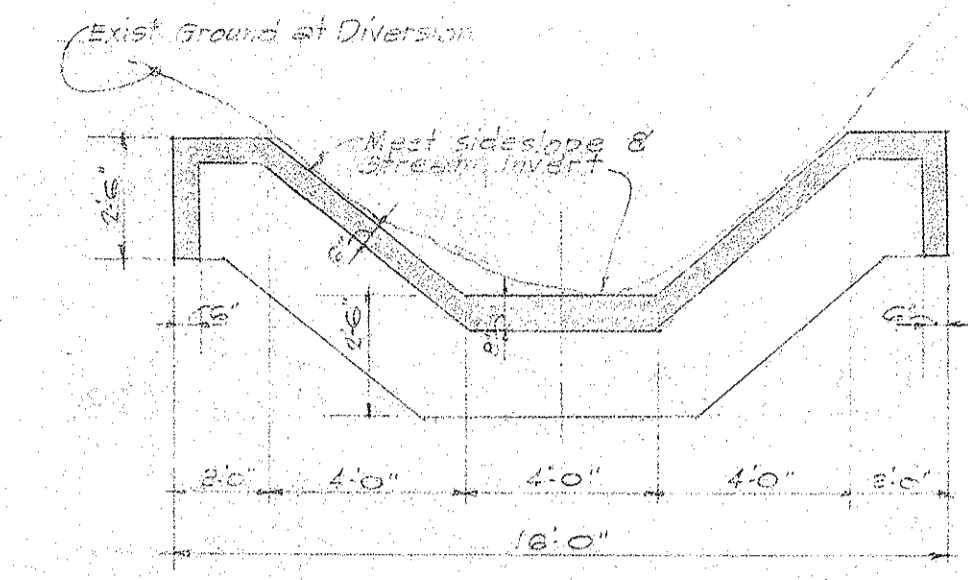
PLAN: STREAM DIVERSION
SCALE: 1/4" = 1'-0"

SECTION THRU & DITCH & CULVERT
SCALE: 1/2" = 1'-0"

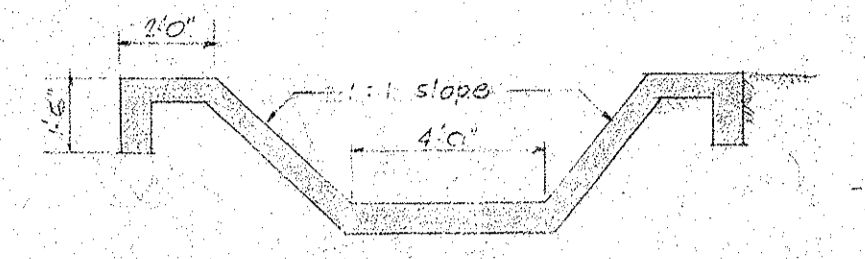
DET. 4, REINF. DUCT, UNDER CULV.
SC. 3/4" = 1'-0"

GRATING DET. MAKE 4

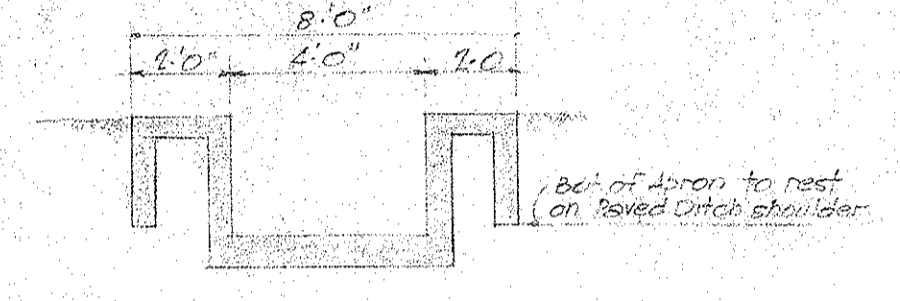
DETAIL 3 - SC. 3/4" = 1'-0"



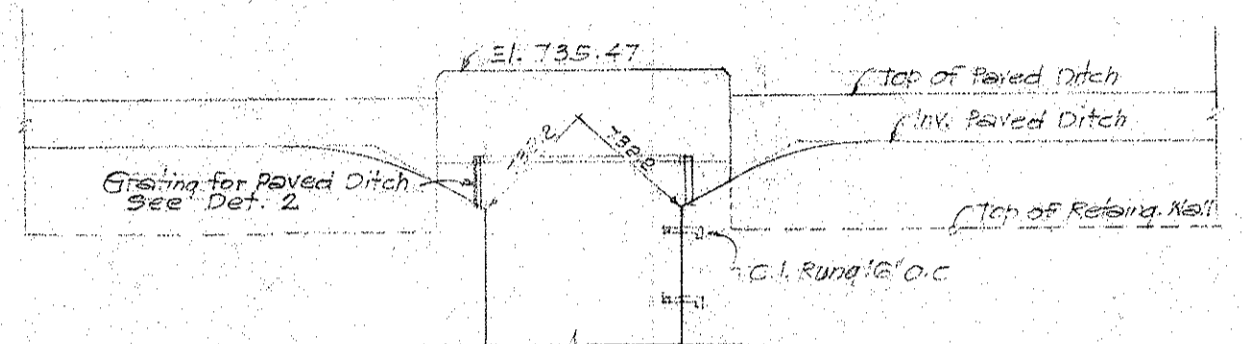
SECTION: A-A
SC. 1/4" = 1'-0"



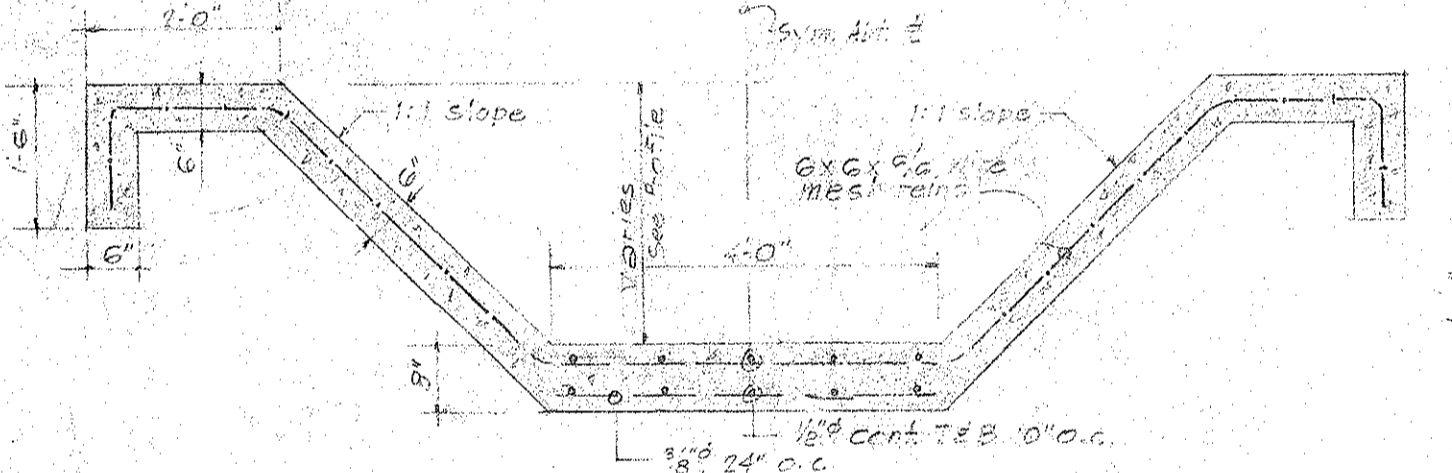
SECTION: B-B
SC. 1/4" = 1'-0"



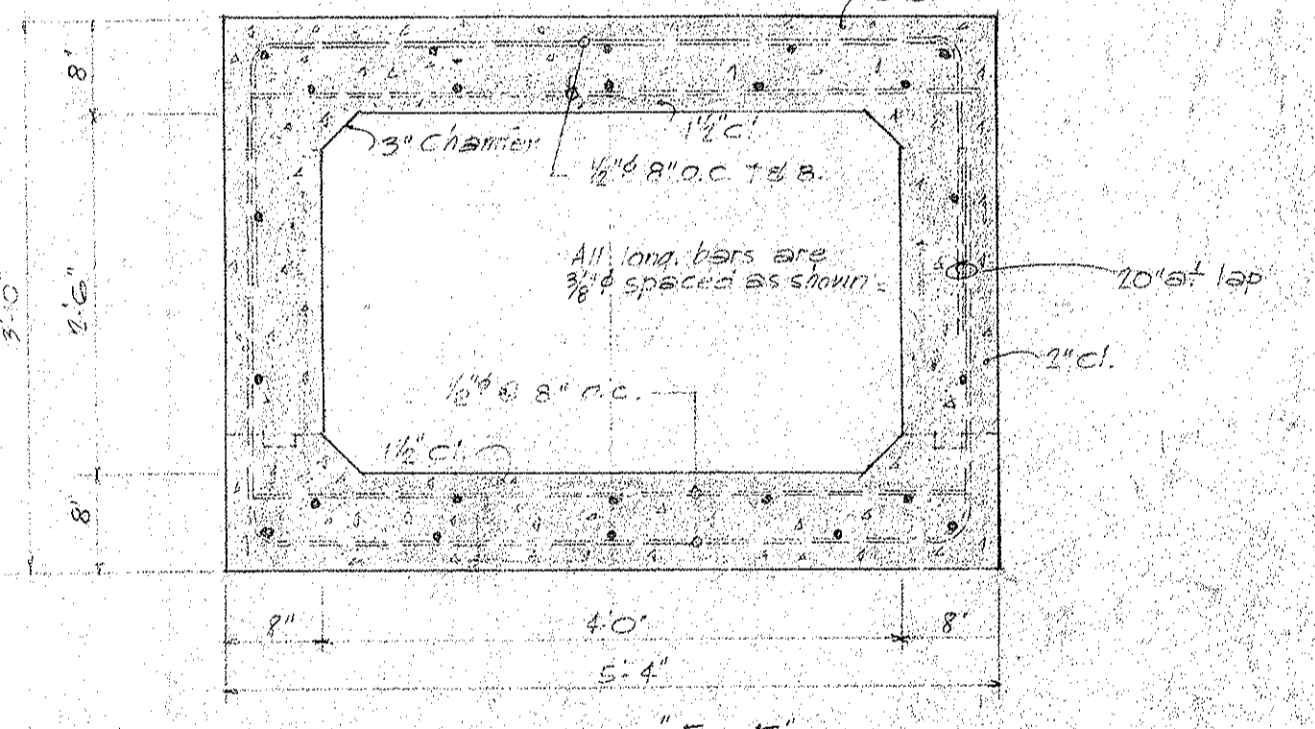
SECTION: C-C
SC. 1/4" = 1'-0"



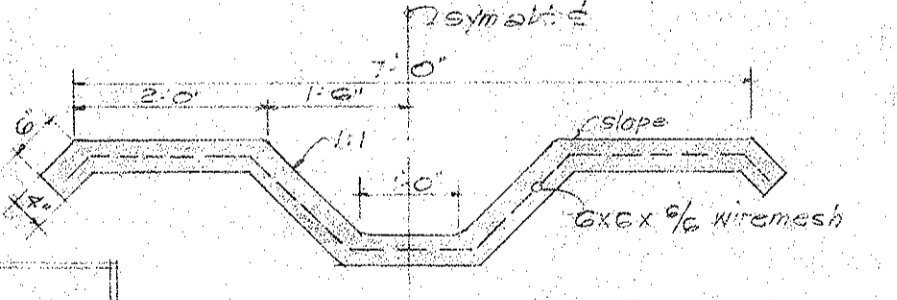
SECTION: D-D
SC. 1/4" = 1'-0"



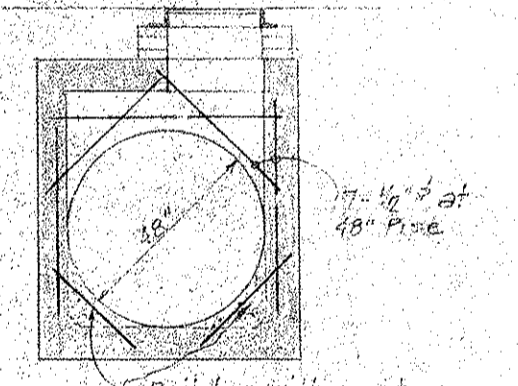
TYPICAL DITCH SECTION
SC. 1/4" = 1'-0"



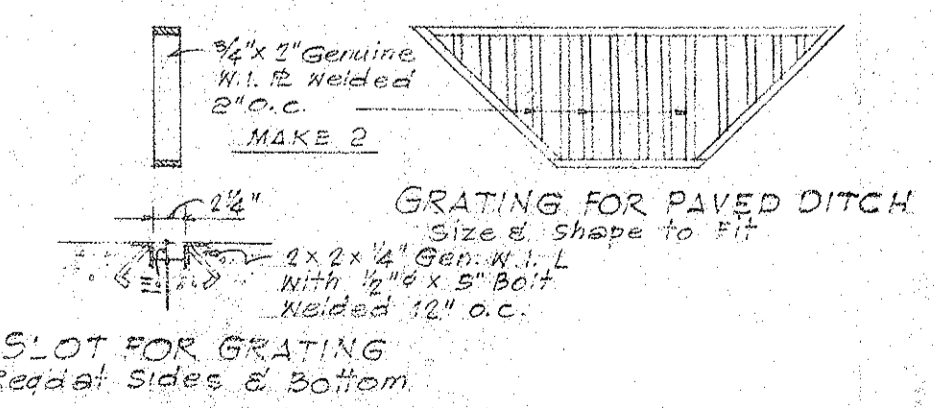
SECTION: E-E
SC. 3/4" = 1'-0"



SECTION: F-F
SC. 1/4" = 1'-0"



SECTION: G-G
SC. 1/4" = 1'-0"



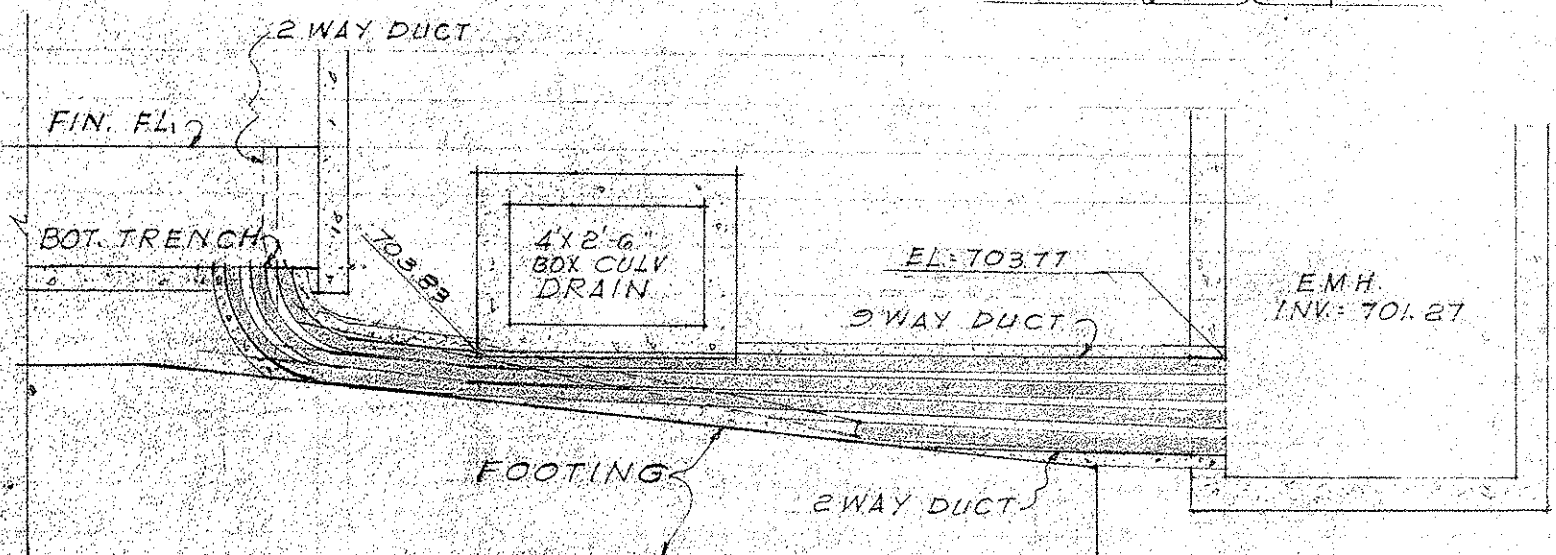
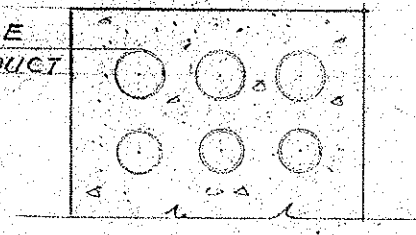
DETAIL 2
SC. 3/4" = 1'-0"

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ARCHITECTS & ENGINEERS
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
KALIHI TUNNEL
KANEHOE PORTAL
DRAINS ABOVE PORTAL WALL

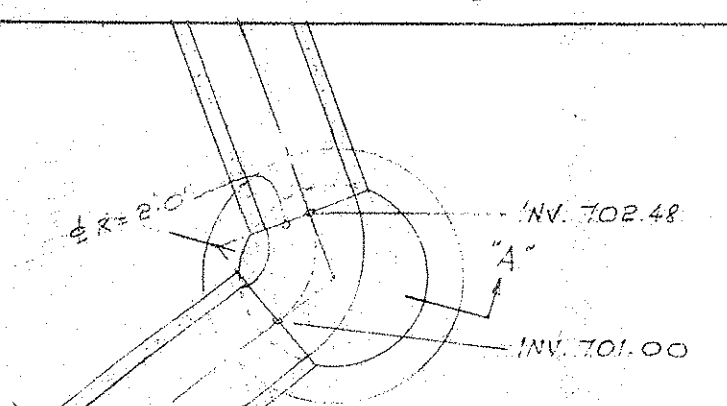
ENGINEER: L. B. W. DATE: JULY 15, 1953
DRAFTSMAN: H. T. CHECKED BY: W. S. [Signature]
AS NOTED TRACER: [Signature]
APPROVED: [Signature] CHIEF ENGINEER
APPROVED: [Signature] CHIEF ENGINEER

W. S.	PROFILE	C. B.
CR. SEC.	F. B.	S. B.
W. M. BY	E. W. BY	S. BY

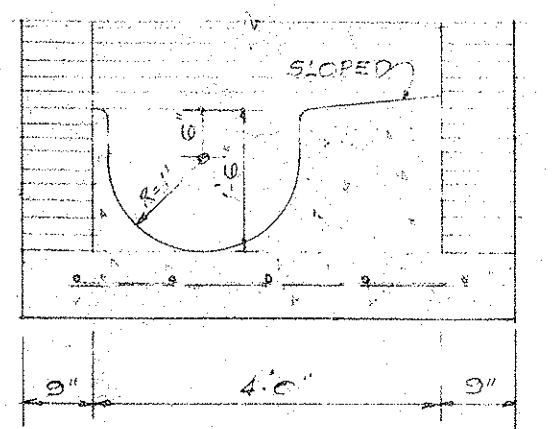
ELEVATIONS ARE GIVEN ON TOP OF DUCT



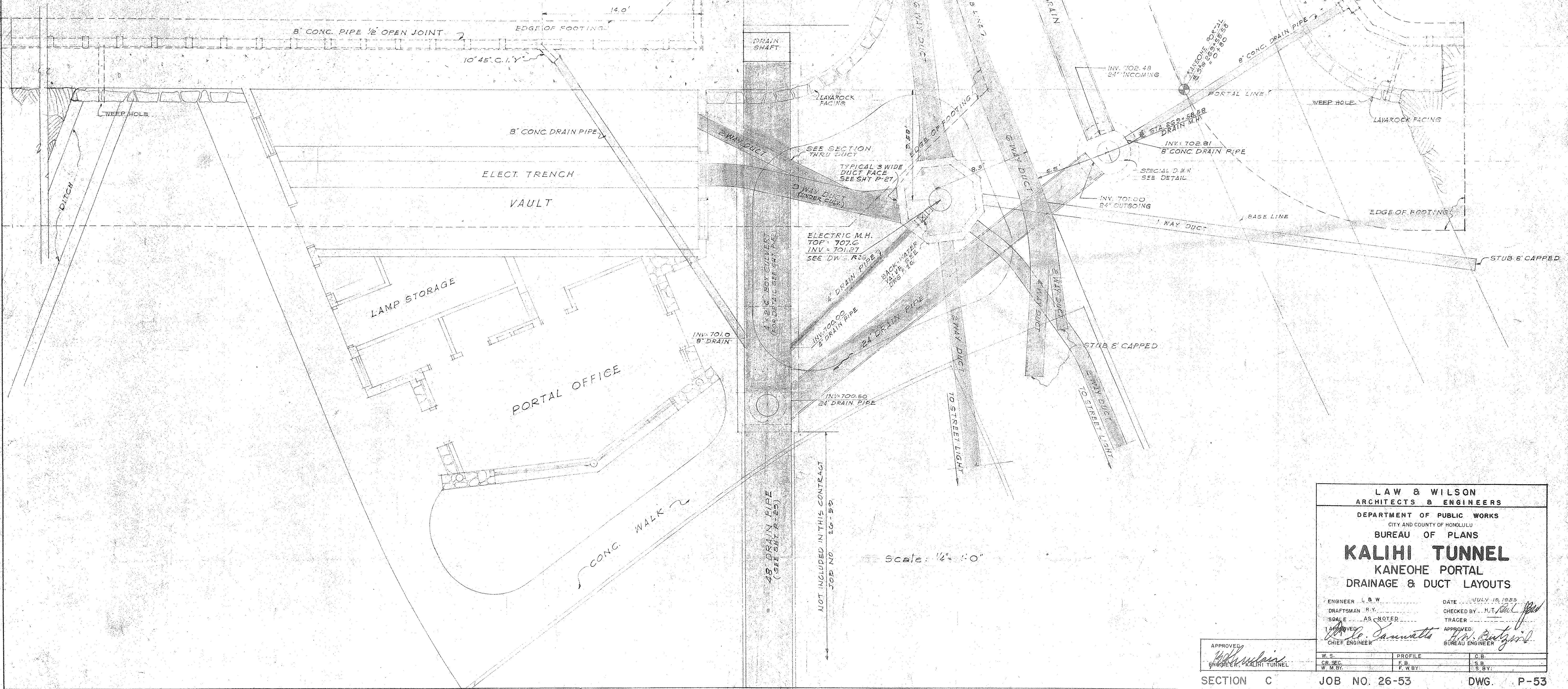
SECTION THRU DUCT TO BLDG.
SCALE: 1/4" = 1'-0"



PLAN - D.M.H.
SCALE: 1/2" = 1'-0"



SECTION A - D.M.H.
SCALE: 1/2" = 1'-0"



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

NOT INCLUDED IN THIS CONTRACT
JOB NO. 26-53

LAW & WILSON
ARCHITECTS & ENGINEERS
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

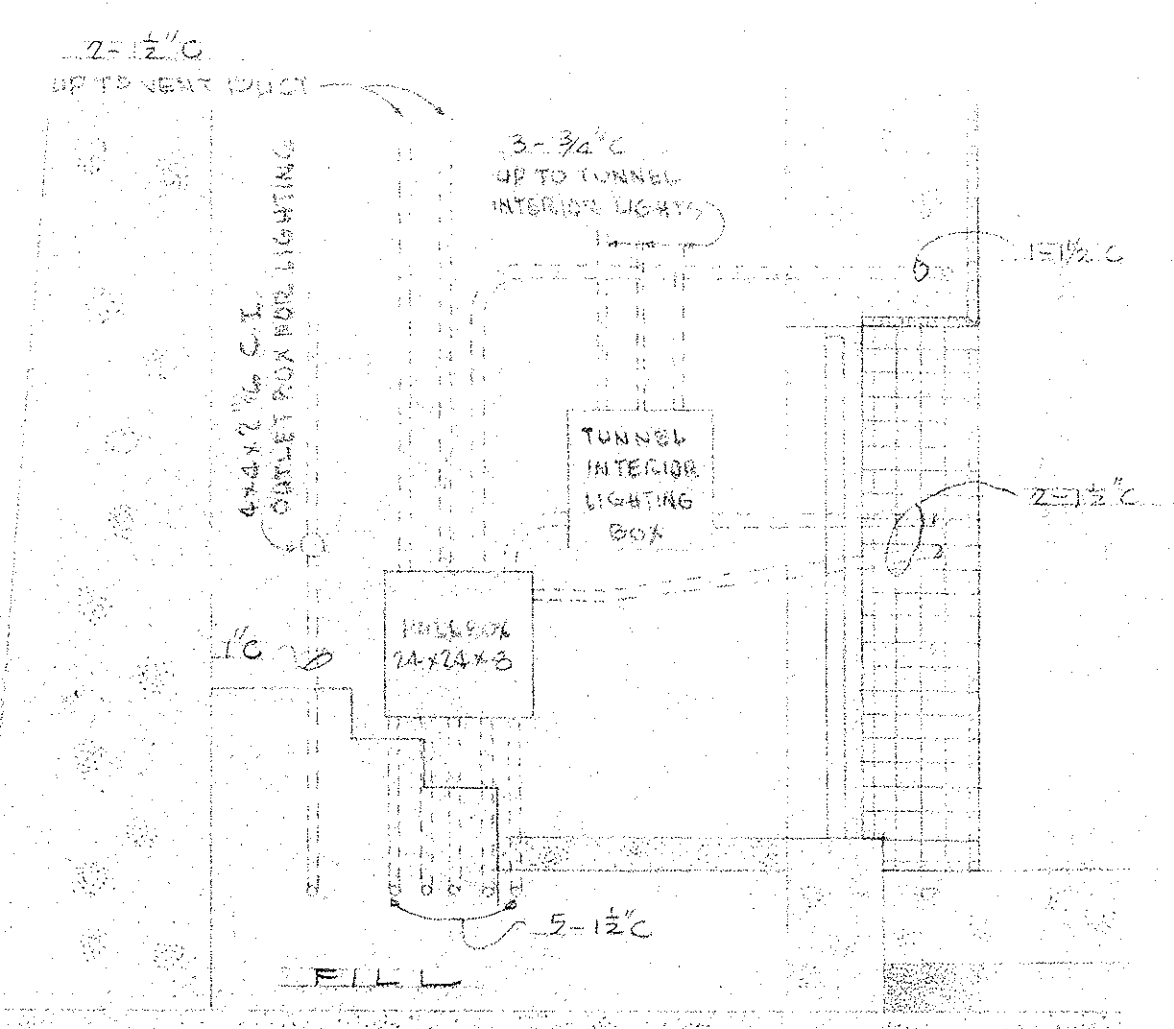
KALIHI TUNNEL KANEOHE PORTAL DRAINAGE & DUCT LAYOUTS

ENGINEER L. B. W. DATE JULY 15, 1953
DRAFTSMAN R. Y. CHECKED BY H. I. [Signature]
SCALE AS NOTED TRACER
APPROVED: [Signature] APPROVED: [Signature]
CHIEF ENGINEER BUREAU ENGINEER

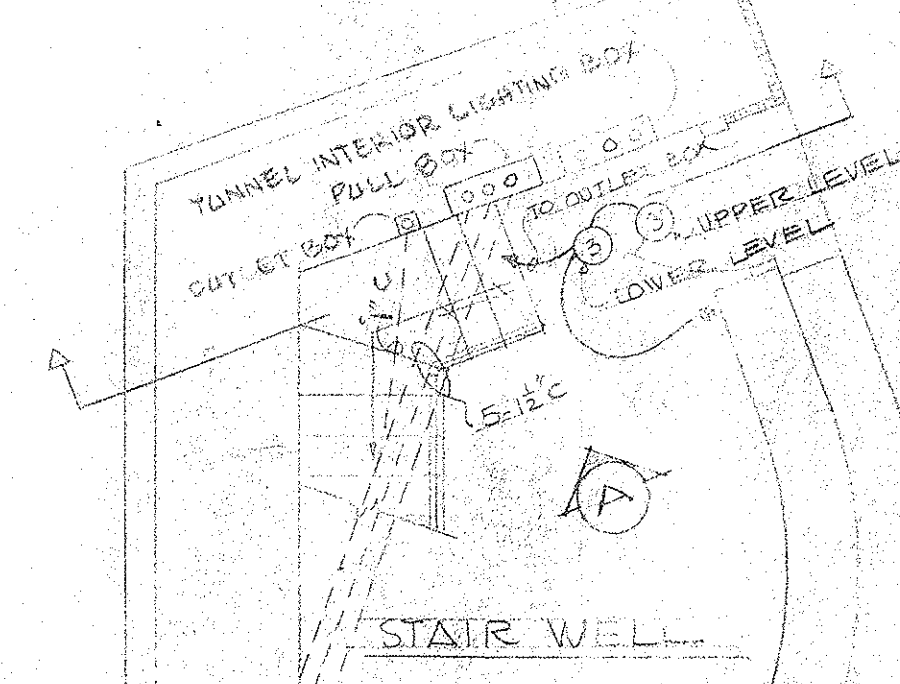
W.S.	PROFILE	C.B.
C.R. SEC.	F.B.	S.B.
W.M.B.Y.	F.W.B.Y.	S.B.Y.

SECTION C JOB NO. 26-53 DWG. P-53

FILE	PROJECT	INDEX	DATE
			53



STAIR WELL ELEVATION 'A'
SCALE: 3/8" = 1'-0"

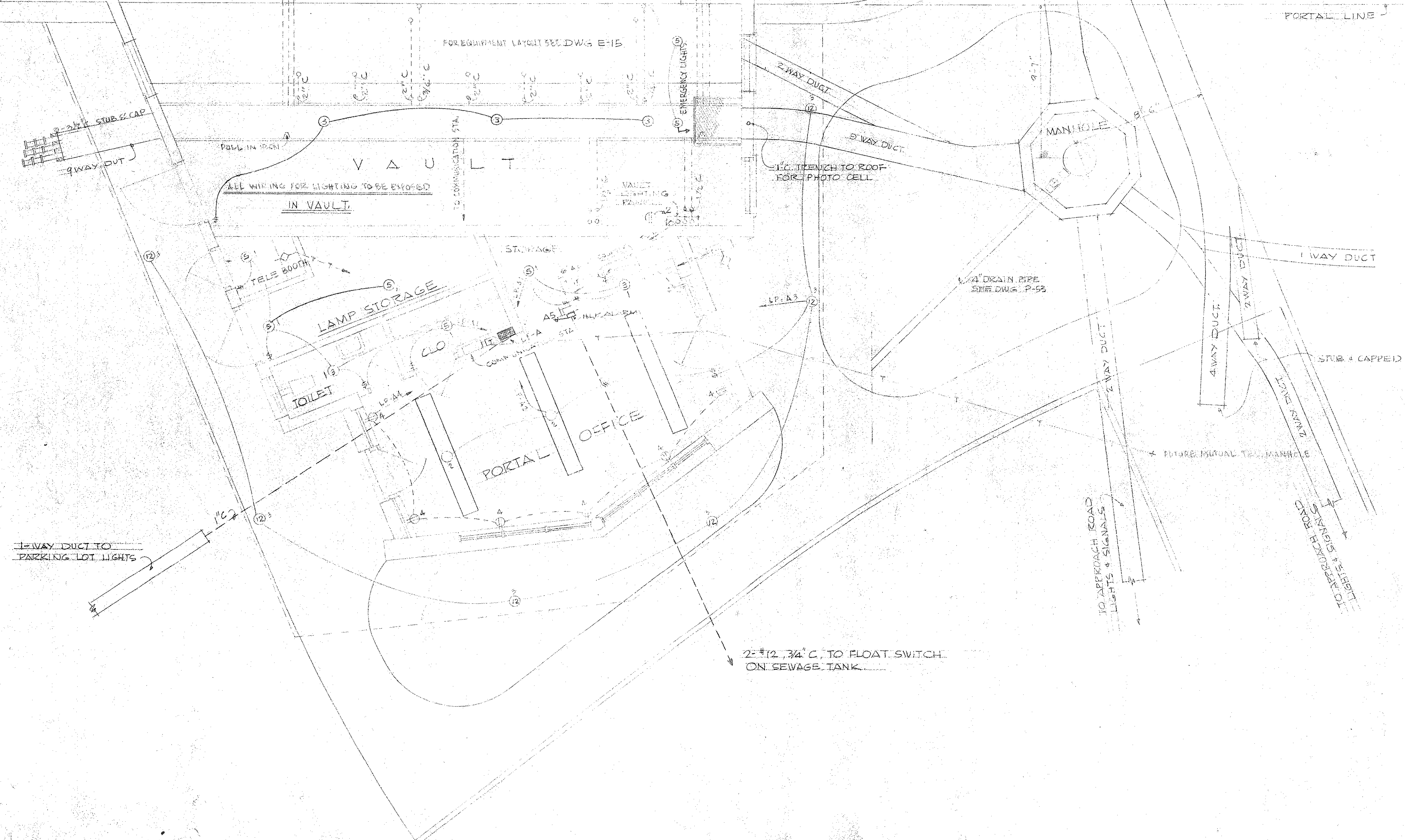


CONDUITS TERMINATED AT THIS CONTR. JOINT IN EDGE COUPLING W/PLUG. SEE DWG. P-32

CONTR. JOINT
5-1/2" C AND 1-1/2" C

5-1/2" C AND 1-1/2" C

FOR EQUIPMENT LAYOUT SEE DWG. E-15



PANEL SCHEDULE

VAULT PANEL

120/240 V. 1φ 3W. SERVICE				100A. 3 P.S.N. MAIN ACB.			
CKT. NO.	WIRE SIZE	LOAD	CKT. NO.	WIRE SIZE	LOAD		
1	20A 2#12	VAULT LIGHTS	2	20A 2#12	VAULT RECP		
3	20A 2#10	PORTAL STAIRWAY	4	20A 2#12	BATTERY CHARGER		
5	20A 2#12	CONTROL POWER FOR SWITCH BOARD	6	20A -	FUTURE		
7	20A 2#12	O.H. ALARM	8	2 POLE			
9	-	SPACE	10	50A 3#8	FEEDER TO LP-A		

LIGHTING PANEL 'A'

120/240 V. 1φ 3W. SERVICE				50A. LUGS			
CKT. NO.	WIRE SIZE	LOAD	CKT. NO.	WIRE SIZE	LOAD		
1	20A 2#12	STORE RM LTS	2	20A 2#12	MAIN RM. LTS.		
3	20A 2#12	OUTSIDE LTS	4	20A 2#12	RECP.		
5	20A 2#12	HLR. ALARM	6	20A 2#8	PARKING LOT		
7	-	SPACE	8	20A -	SPACE		

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KALIHI TUNNEL KANEHO PORTAL

CONDUIT LAYOUT & OFFICE WIRING

ENGINEER: L. B. W. DATE: JULY 16, 1953
DRAFTSMAN: H. P. CHECKED BY: J. O. [Signature]
SCALE: 3/8" = 1'-0" TRACER:
APPROVED: [Signature] CHIEF ENGINEER
APPROVED: [Signature] BUREAU ENGINEER

SECTION C JOB NO. 26-53 DWG. P-54