

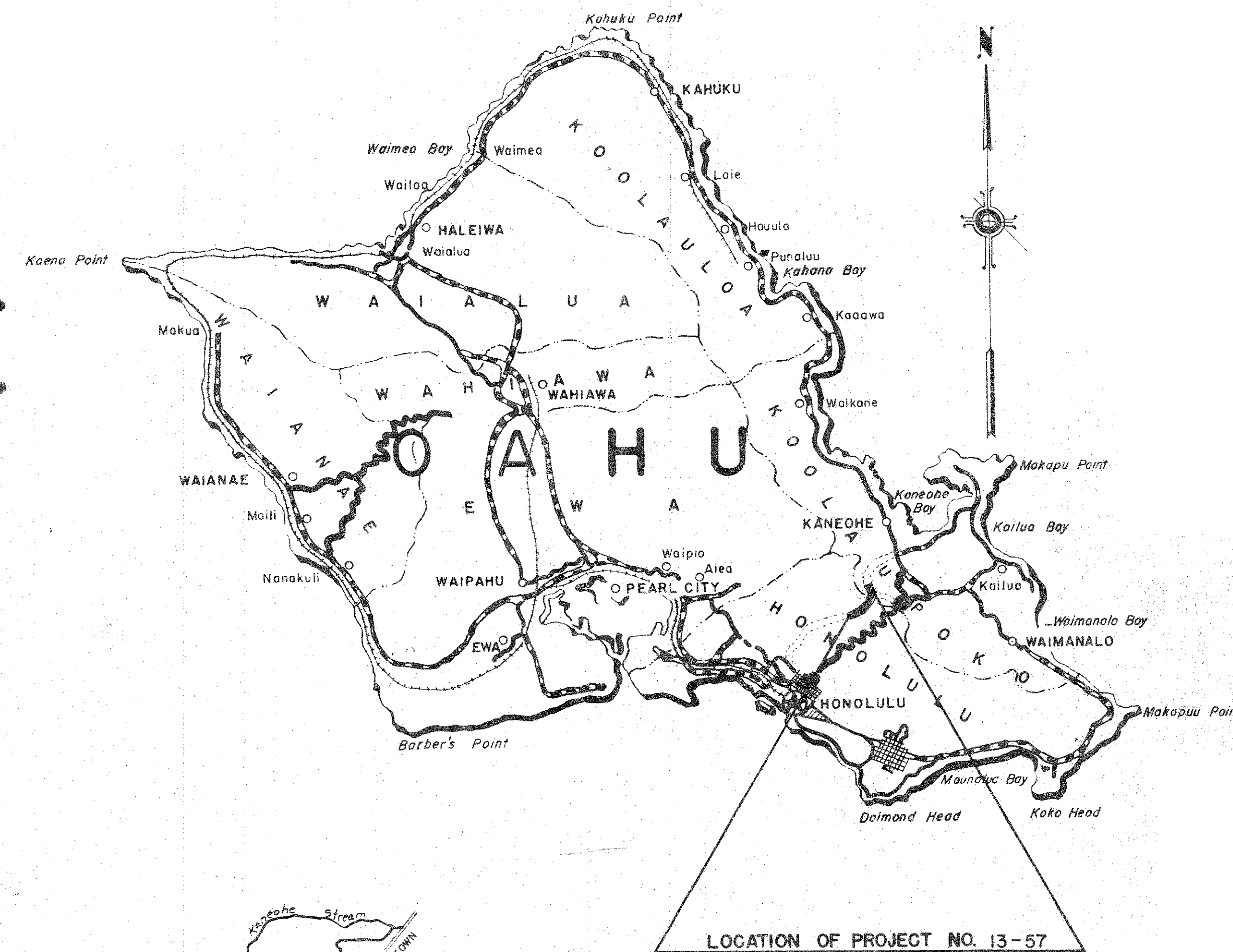
TERRITORY OF HAWAII
 CITY AND COUNTY OF HONOLULU
 DEPARTMENT OF PUBLIC WORKS

BUREAU OF PLANS

JOB NO. 13-57

WILSON TUNNEL 2ND. BORE

HONOLULU, HAWAII



LOCATION OF PROJECT NO. 13-57

CONSULTANTS:
 DR. RALPH B. PECK, URBANA, ILLINOIS
 DE LEUW, CATHER & COMPANY, CHICAGO, ILLINOIS
 J. DONOVAN JACOBS, SAN FRANCISCO, CALIFORNIA

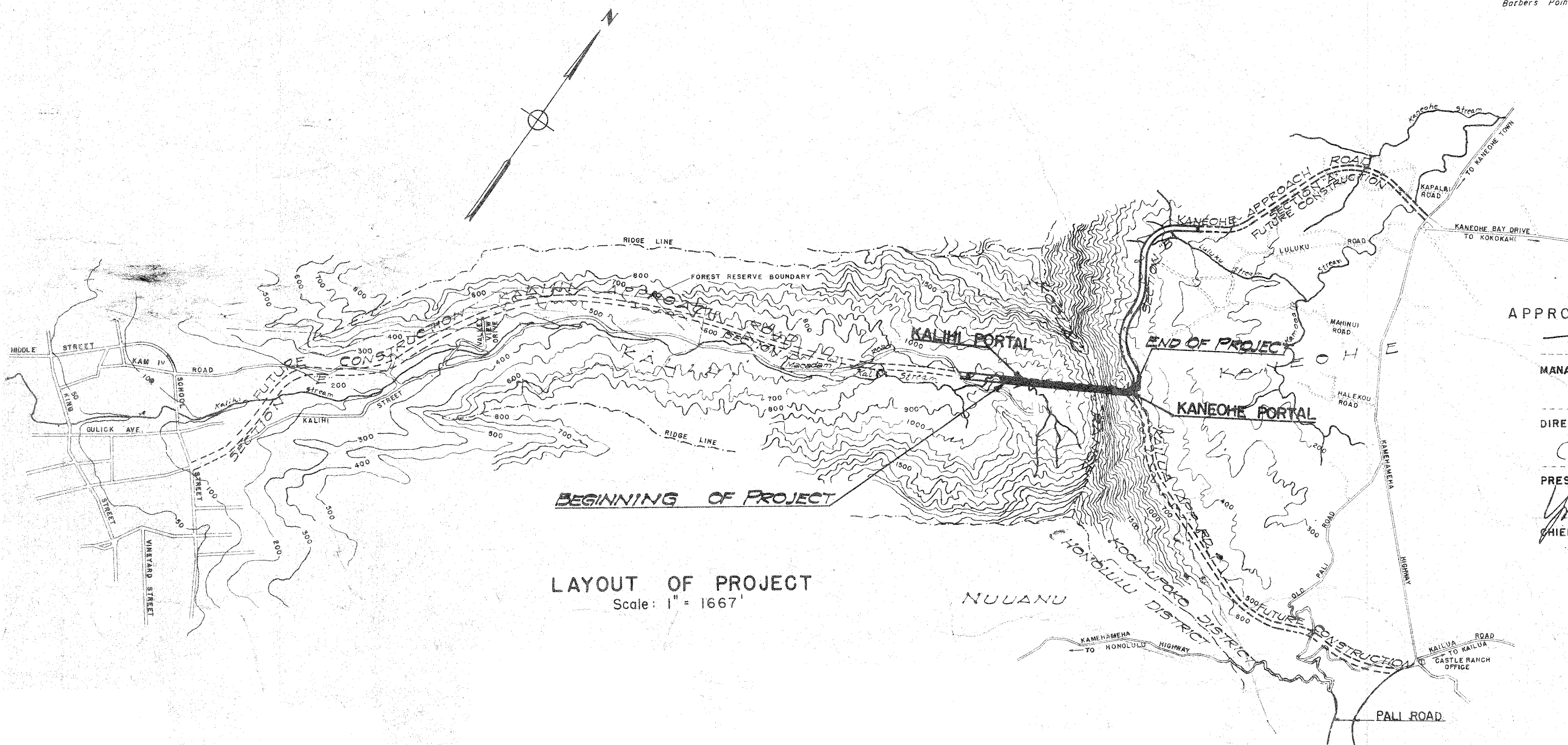
APPROVED:

[Signature] 8/12/1957
 MANAGER & CHIEF ENGINEER, BOARD OF WATER SUPPLY

[Signature] 8/9/1957
 DIRECTOR, DIVISION OF SANITATION, BOARD OF HEALTH

[Signature] 8/9/1957
 PRESIDENT, BOARD OF AGRICULTURE AND FORESTRY

[Signature] 8/9/1957
 CHIEF ENGINEER, CITY & COUNTY OF HONOLULU



LAYOUT OF PROJECT
 Scale: 1" = 1667'

DWG. NO. R-1

APPROACH ROAD DRAWINGS

1	R-1	Title Sheet
2	R-2	Schedule of Drawings
3	R-3	Vicinity Map
4	R-4	Kalihi Approach Road - Plan and Profile
5	R-5	Kalihi Approach Road - Details at Portal
6	R-6	Kaneohe Approach Road - Details at Portal
7	R-7	Typical Details
8	R-8	Typical Details

TUNNEL DRAWINGS

9	T-1	Plan and Profile
10	T-2	Data at Curves
11	T-3	Type "A"
12	T-4	Type "B" and "C"
13	T-5	Type "D"
14	T-6	Typical Details
15	T-7	Typical Details
16	T-8	Glazed Tile Details
17	T-9	Embedment Details
18	T-10	Embedment Details
19	T-11	Sign Details
20	T-12	Ventilation Cross Tunnel-Layout and General Notes
21	T-13	Ventilation Cross Tunnel-Sections and Details

KALIHI PORTAL DRAWINGS

22	P-1	Site Plan
23	P-2	Plan and Elevation
24	P-3	Portal Details
25	P-4	Structural Details
26	P-5	Structural Details

KANEOHE PORTAL DRAWINGS

27	P-6	Site Plan
28	P-7	Plan, Elevation and Details
29	P-8	Structural Details
30	P-9	Structural Details

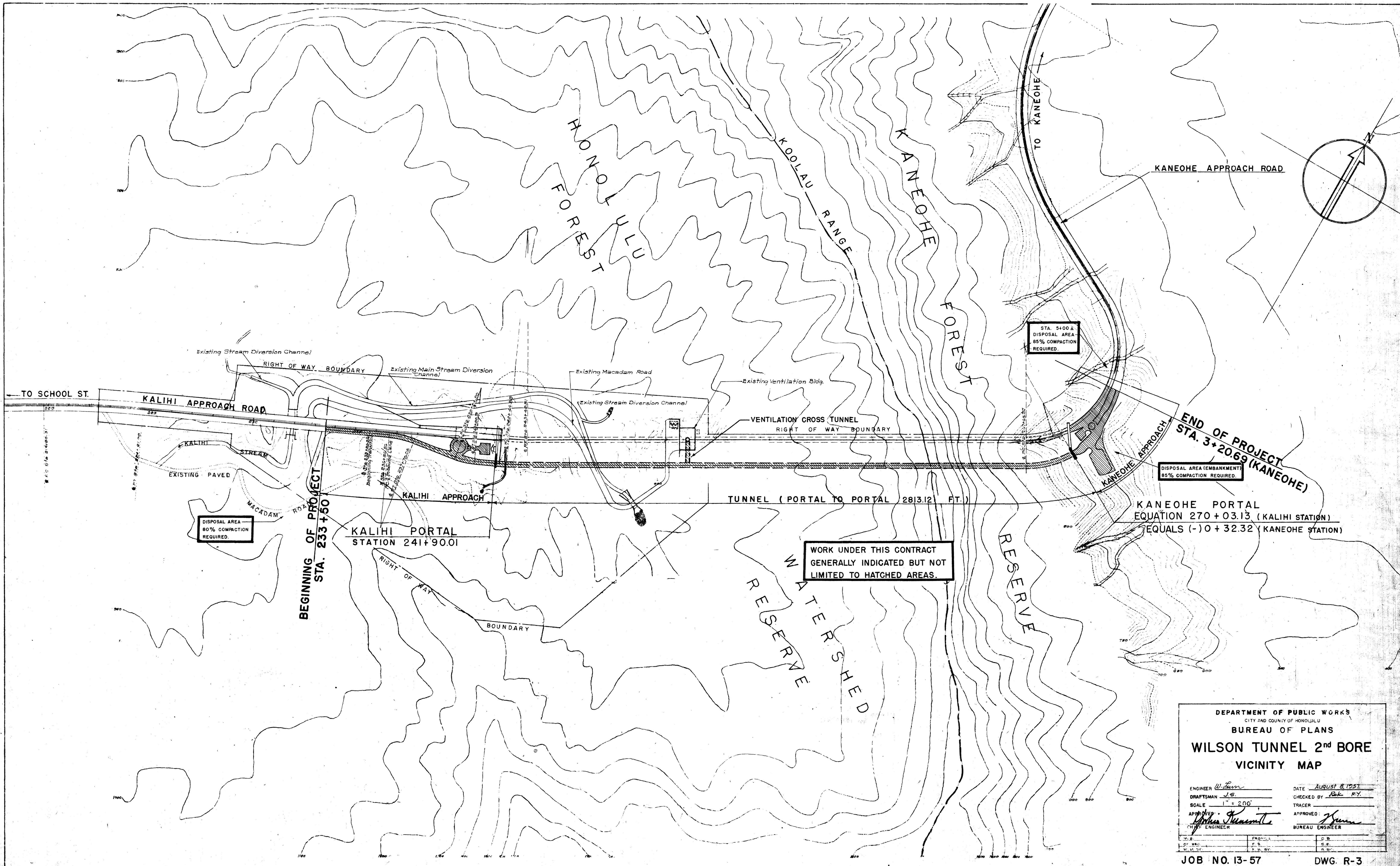
MECHANICAL DRAWINGS

31	M-1	Location Plans - Volume Regulator - Plan and Details
32	M-2	Volume Control Dampers - Plans and Details
33	M-3	Volume Control Dampers - Details
34	M-4	Turning Vanes - Plan and Details
35	M-5	Carbon Monoxide Detector System - Plan, Profile and Details

ELECTRICAL DRAWINGS

36	E-1	Schematic Wiring Diagram - Portals and General Tunnel Lighting
37	E-2	Single Line Diagram and Details - Vault Equipment
38	E-3	Location Plan - Tunnel Luminaires and General Lighting
39	E-4	Location Plan - Emergency and Airduct Lights and Lighting Panels
40	E-5	Cross Section of Tunnel Showing Electrical Work
41	E-6	Location Plan and Diagram Communication System
42	E-7	Modifications to Existing Ventilation Building and Shaft
43	E-8	Modifications to Kalihi Vault
44	E-9	Modifications to Kaneohe Vault
45	E-10	Plan and Details of Ducts - Portal Vaults to Tunnel
46	E-11	Lighting Panel, Splice Box and Cable Rack Details

DEPARTMENT OF PUBLIC WORKS					
CITY AND COUNTY OF HONOLULU					
BUREAU OF PLANS					
WILSON TUNNEL 2 nd BORE					
SCHEDULE OF DWGS					
ENGINEER <i>W. L. Linn & D.L.C.</i>			DATE <i>AUGUST 8, 1957</i>		
DRAFTSMAN			CHECKED BY <i>R.C.</i>		
SCALE			TRACER		
APPROVED <i>William Sheremata</i>			APPROVED <i>W. L. Linn</i>		
CHIEF ENGINEER			BUREAU ENGINEER		
W.S.	PROFILE	C.B.			
C.N. SEC.	F.S.	S.B.			
W.M. BY	F.W. BY	S. BY			
JOB NO. 13-57			DWG. NO. R-2		



DISPOSAL AREA - 80% COMPACTION REQUIRED.

STA. 5400 ± DISPOSAL AREA 85% COMPACTION REQUIRED.

DISPOSAL AREA (EMBANKMENT) 85% COMPACTION REQUIRED.

WORK UNDER THIS CONTRACT GENERALLY INDICATED BUT NOT LIMITED TO HATCHED AREAS.

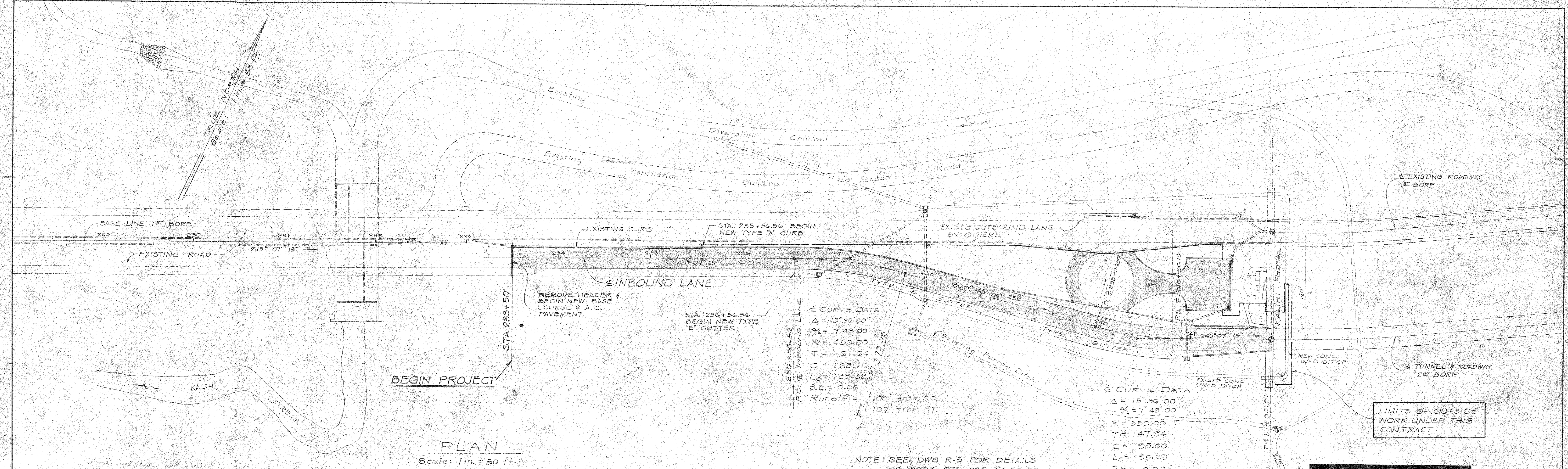
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

WILSON TUNNEL 2ND BORE VICINITY MAP

ENGINEER: *William Wilson* DATE: AUGUST 8, 1957
 DRAFTSMAN: *J.S.* CHECKED BY: *John P.Y.*
 SCALE: 1" = 200' TRACER: _____
 APPROVED: *Arthur M. Bennett* APPROVED: _____
 CHIEF ENGINEER BUREAU ENGINEER

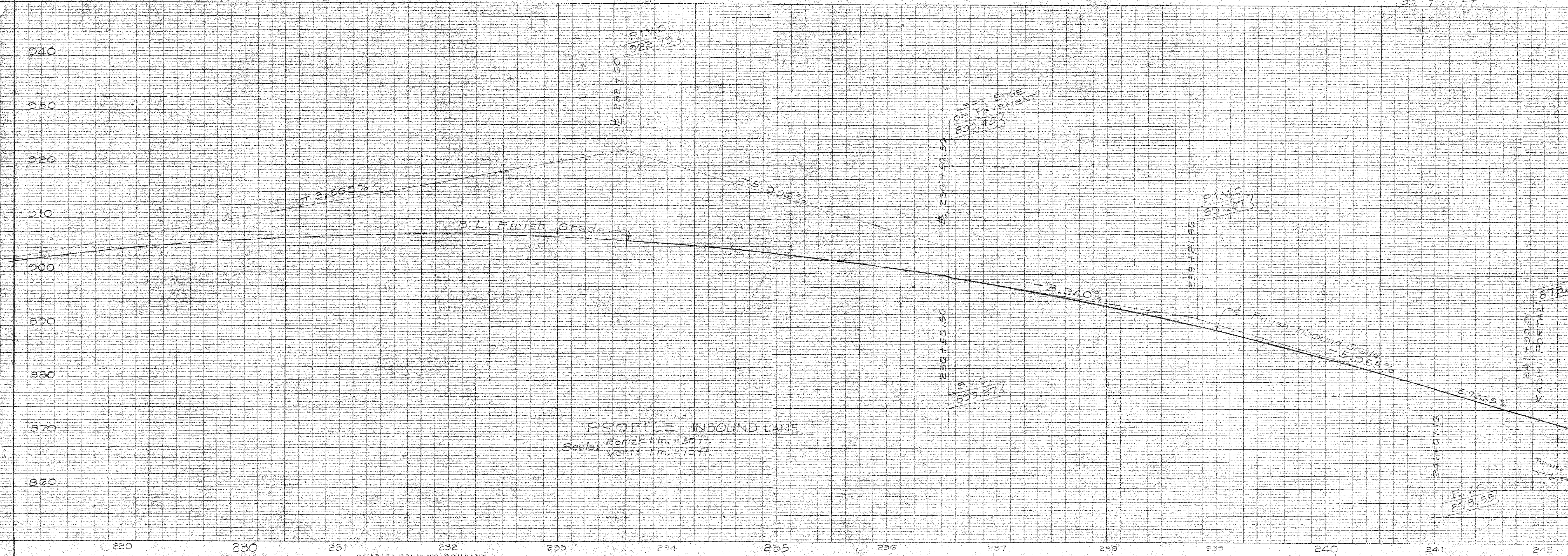
W.S.	PROJ. NO.	S.D.
D.P.	P.S.	S.E.
W.M.S.Y.	F.W.B.V.	A.S.V.

JOB NO. 13-57 DWG. R-3



NOTE: SEE DWG R-5 FOR DETAILS OF WORK STA. 235+56.56 TO STA. 241+90.01

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



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

**WILSON TUNNEL 2ND BORE
 KALHI APPROACH ROAD
 PLAN & PROFILE**

ENGINEER: W. Sumner DATE: August 19, 1951
 DRAFTSMAN: H.N. CHECKED BY: Rok
 SCALE: APPROVED: Alpha Theresita TRACER: APPROVED: Sumner
 CHIEF ENGINEER: BUREAU ENGINEER

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

JOB NO. 13-57 DWG. R-4

FILE	POCKET	FOLDER	NO.
11	1	1	4

ESTIMATED ROADWORK QUANTITIES

Excavation	500 yd. ³
Embankment	6500 yd. ³
A.C. pavement	3044 sq. yd.
Base course	3044 sq. yd.
Conc. pavem't	635 sq. yd.
Type "B" curb	839 ft.
Type "C" curb	427 ft.
Type "AG" curb	120 ft.
Type "E" gutter	212 ft.
C.R.M. wall	675 cu. yd.
Guard rail	135 ft.
Conc. Ditch	290 ft.
Conc. Sidewalk	215 sq. yd.

± 2ND BORE
 CURVE DATA #1
 $\Delta = 61^{\circ} 45' 00''$
 $\frac{1}{2} \Delta = 30^{\circ} 52' 30''$
 $R = 434.00$
 $T = 250.43$
 $C = 445.43$
 $Lc = 467.74$

± CURVE DATA #1
 $\Delta = 122^{\circ} 20' 35''$
 $\frac{1}{2} \Delta = 61^{\circ} 10' 17.5''$
 $R = 450.00$
 $T = 817.58$
 $C = 788.46$
 $Lc = 960.88$

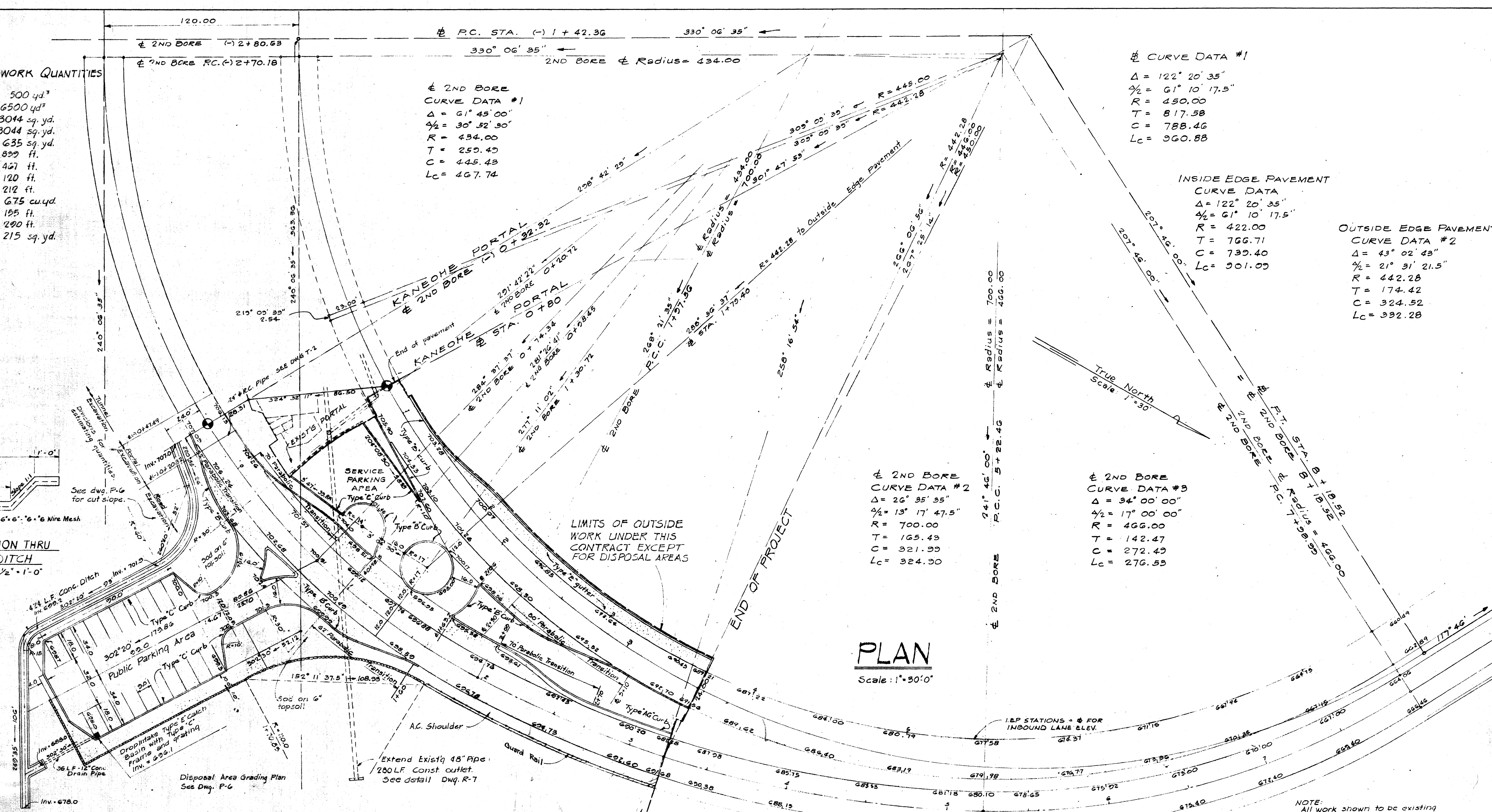
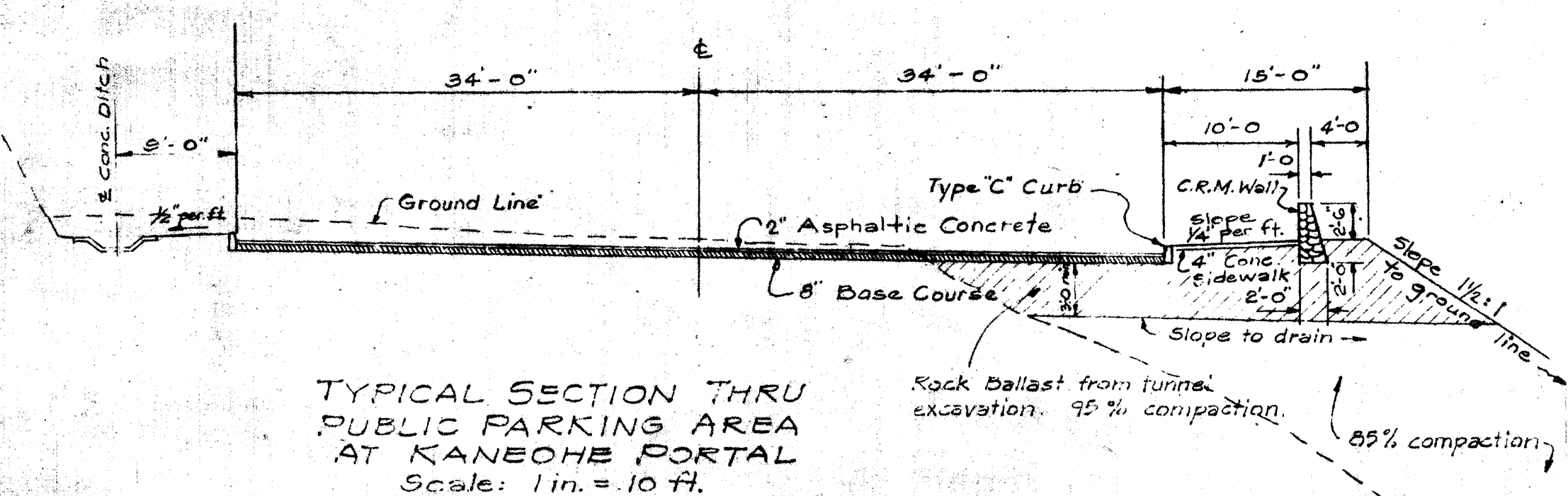
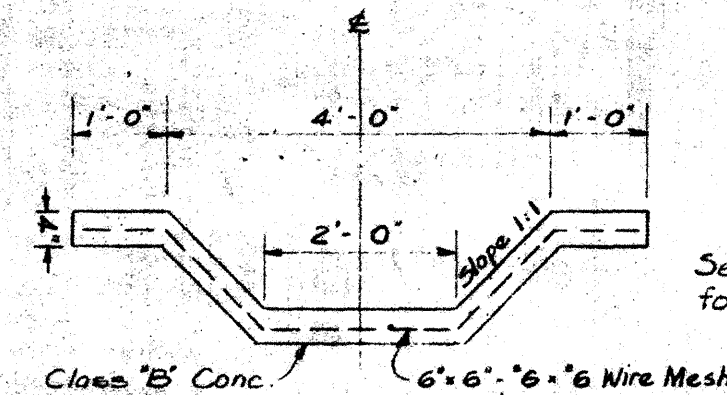
INSIDE EDGE PAVEMENT
 CURVE DATA
 $\Delta = 122^{\circ} 20' 35''$
 $\frac{1}{2} \Delta = 61^{\circ} 10' 17.5''$
 $R = 422.00$
 $T = 766.71$
 $C = 739.40$
 $Lc = 901.09$

OUTSIDE EDGE PAVEMENT
 CURVE DATA #2
 $\Delta = 43^{\circ} 02' 43''$
 $\frac{1}{2} \Delta = 21^{\circ} 31' 21.5''$
 $R = 442.28$
 $T = 174.42$
 $C = 324.52$
 $Lc = 332.28$

± 2ND BORE
 CURVE DATA #2
 $\Delta = 26^{\circ} 35' 35''$
 $\frac{1}{2} \Delta = 13^{\circ} 17' 47.5''$
 $R = 700.00$
 $T = 165.43$
 $C = 321.93$
 $Lc = 324.90$

± 2ND BORE
 CURVE DATA #3
 $\Delta = 34^{\circ} 00' 00''$
 $\frac{1}{2} \Delta = 17^{\circ} 00' 00''$
 $R = 466.00$
 $T = 142.47$
 $C = 272.49$
 $Lc = 276.53$

PLAN
Scale: 1" = 30' 0"



NOTE: All work shown to be existing to be done by others.

NOTE: Earthwork quantities shown on this sheet are approximate only. Before construction begins, the Engineer will take cross sections to determine the actual quantities.

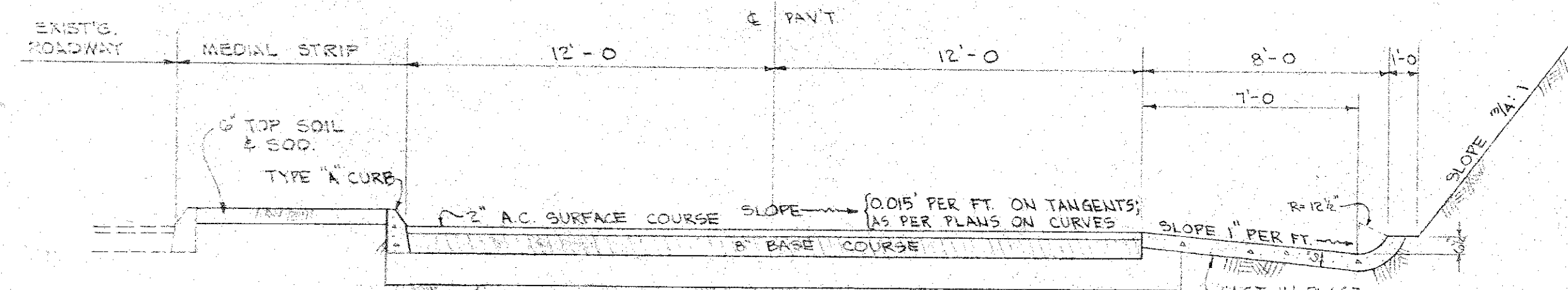
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

**WILSON TUNNEL 2ND BORE
KANEHOE APPROACH ROAD
DETAILS AT PORTAL**

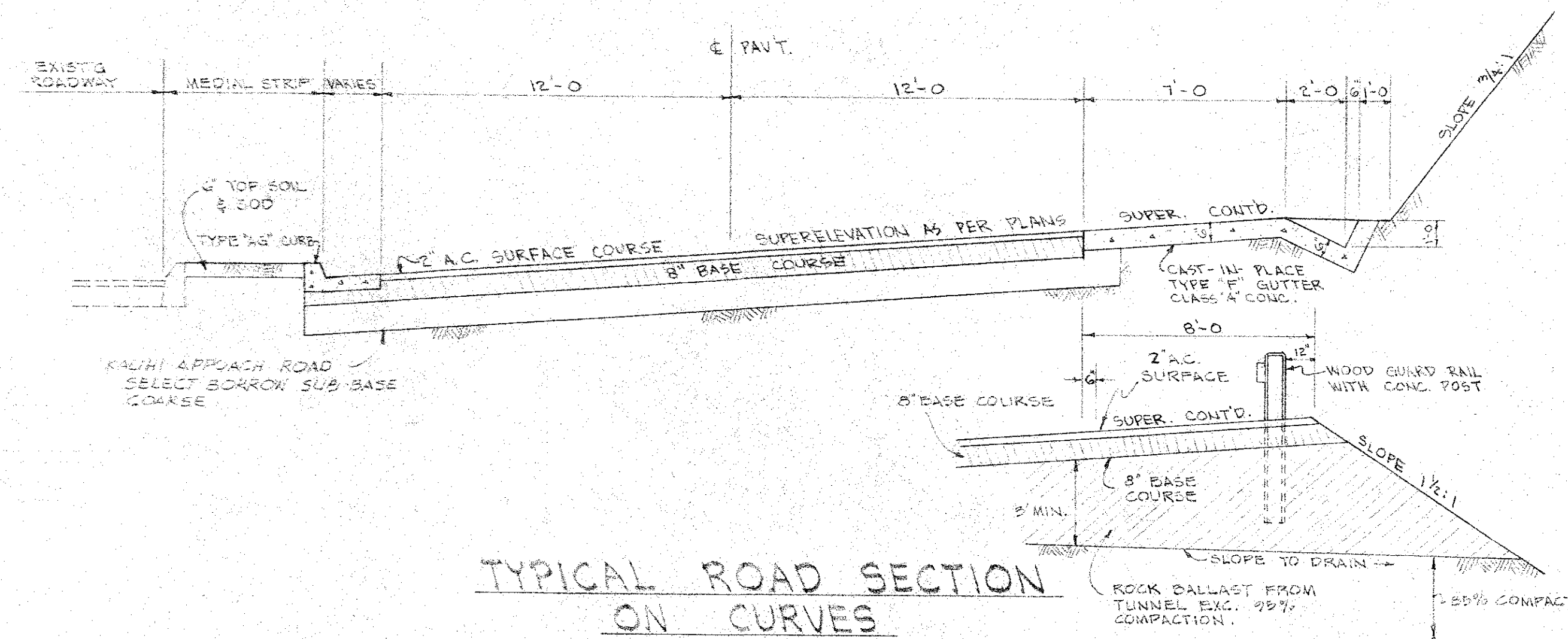
ENGINEER: *William H.N.* DATE: 8-8-57
DRAFTSMAN: *H.N.* CHECKED BY: *R.N. ReL.*
SCALE: TRACER
APPROVED: *John P. ...* APPROVED: *...*
CHIEF ENGINEER BUREAU ENGINEER

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

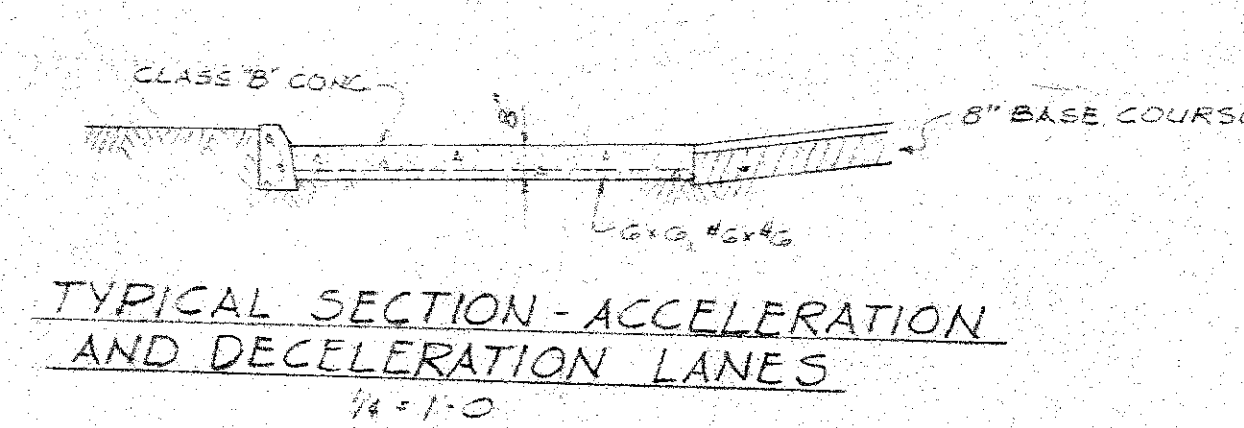
JOB NO. 13-57 DWG. NO. R-6



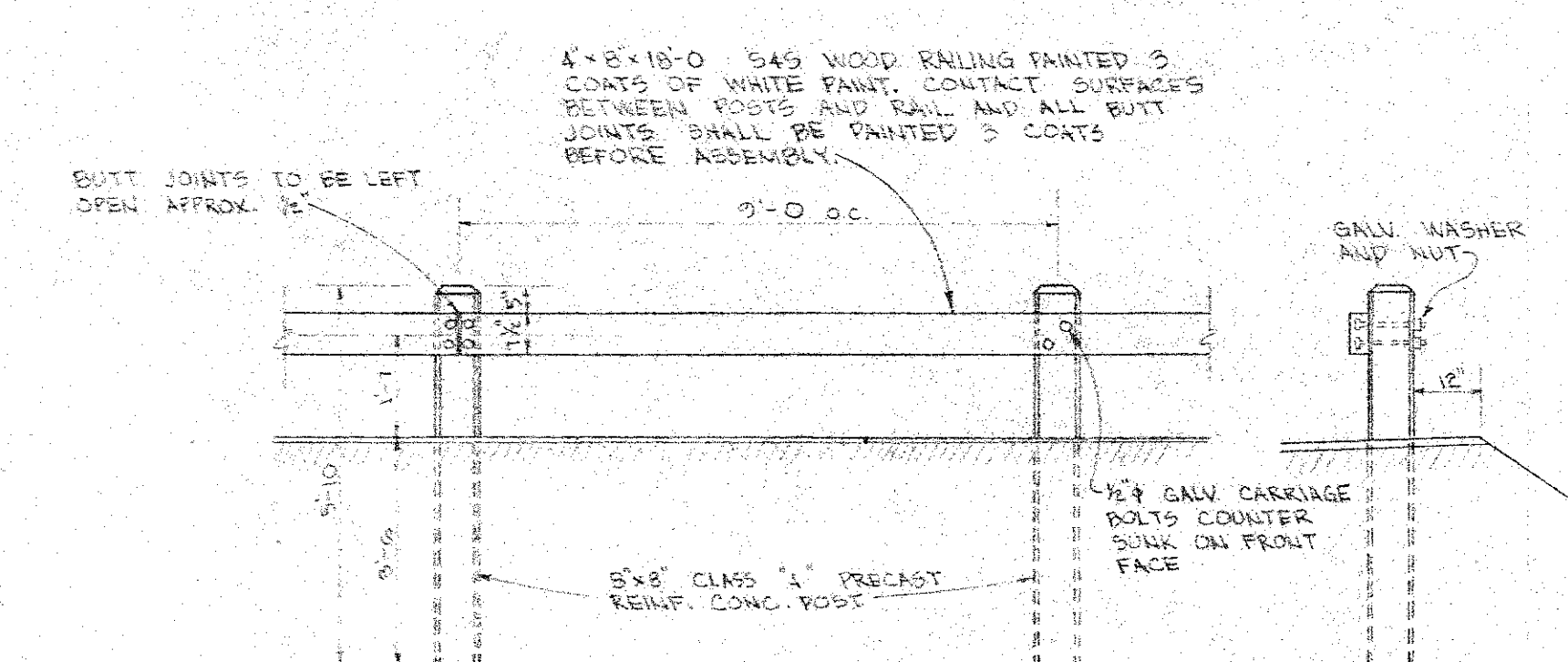
TYPICAL ROAD SECTION ON TANGENTS AND CURVES
1/4" = 1'-0"



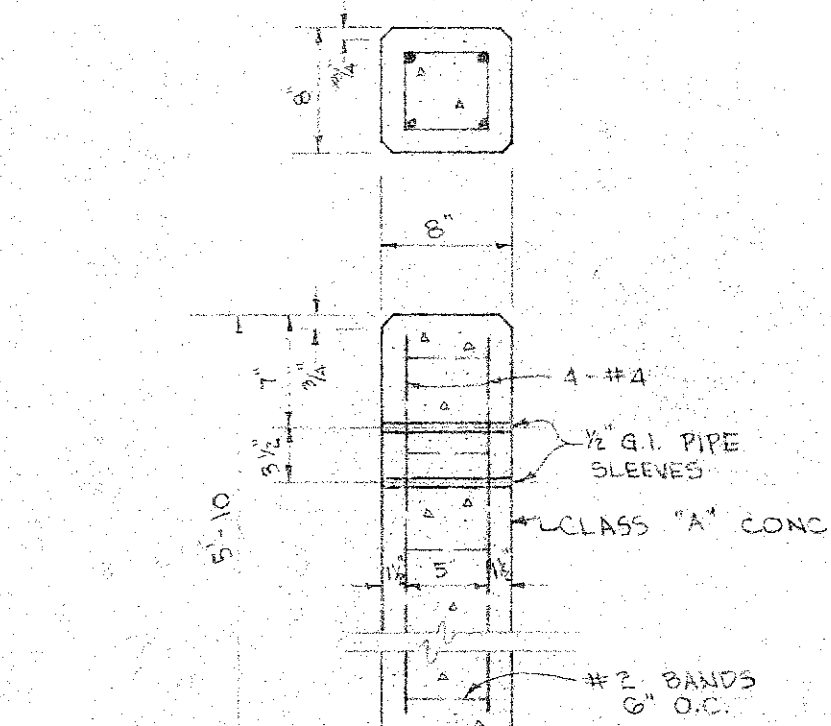
TYPICAL ROAD SECTION ON CURVES
1/4" = 1'-0"



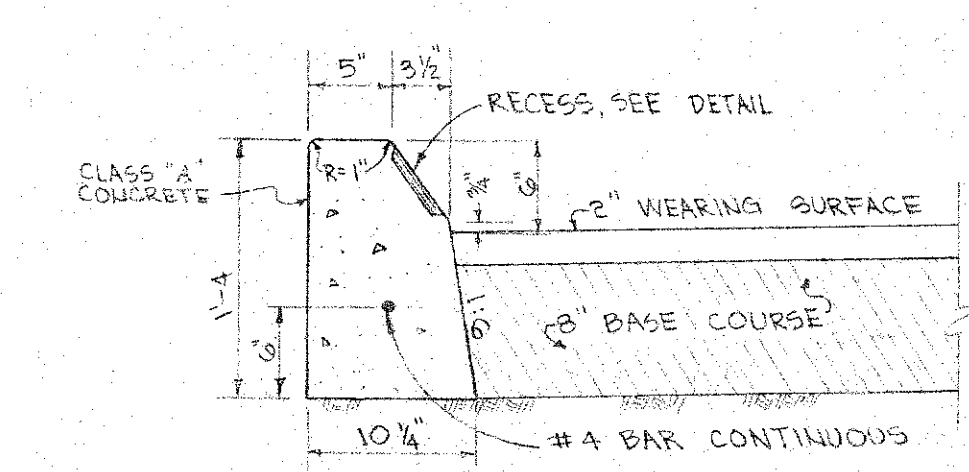
TYPICAL SECTION - ACCELERATION AND DECELERATION LANES
1/4" = 1'-0"



WOOD GUARD RAIL
1/8" = 1'-0"

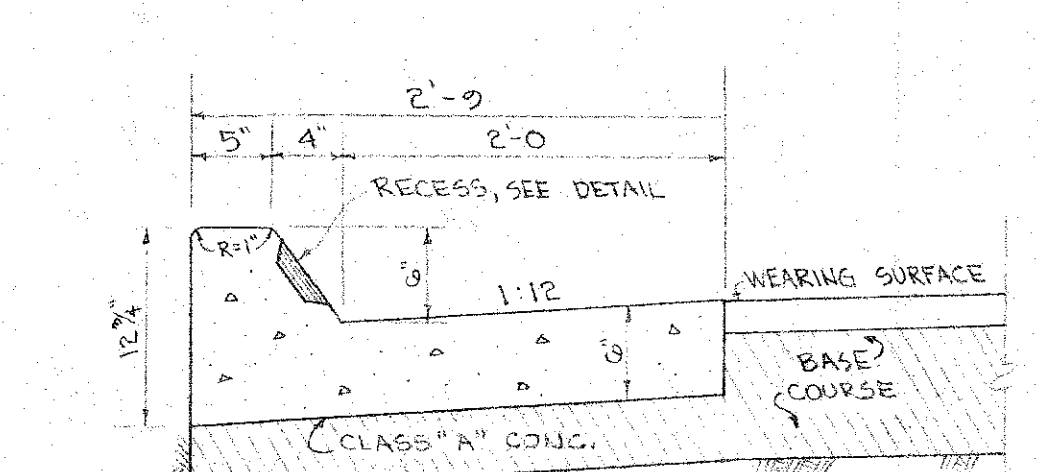


GUARD RAIL POST
1" = 1'-0"



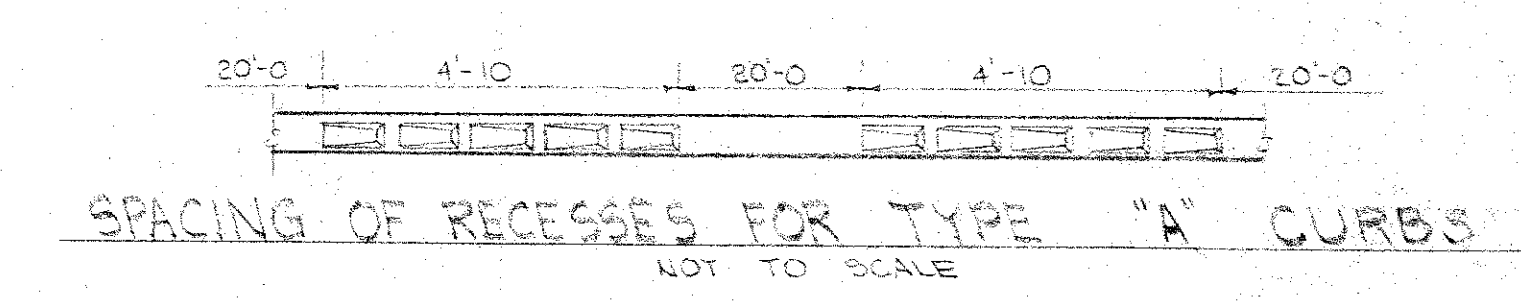
TYPE "A" & "B" CURBS
1" = 1'-0"

NOTE: OMIT RECESS FOR TYPE "B" CURBS.

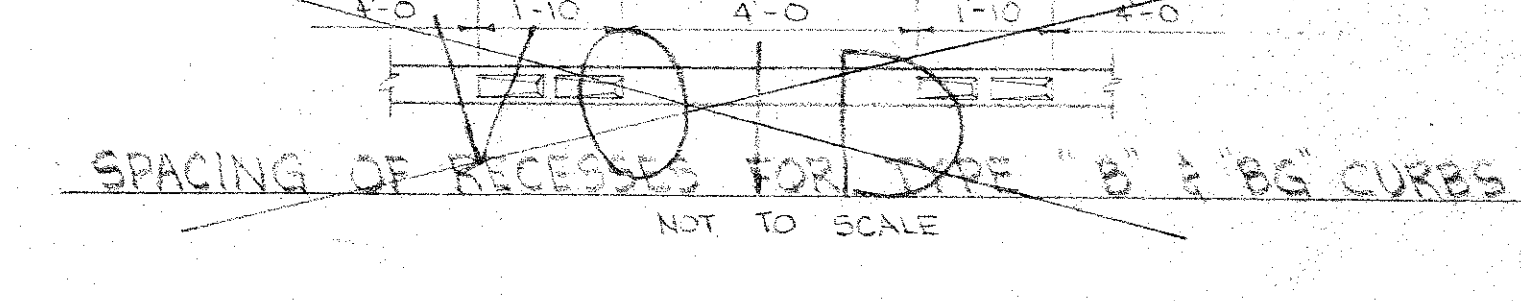


TYPE "AG" & "BG" CURBS & GUTTERS
1" = 1'-0"

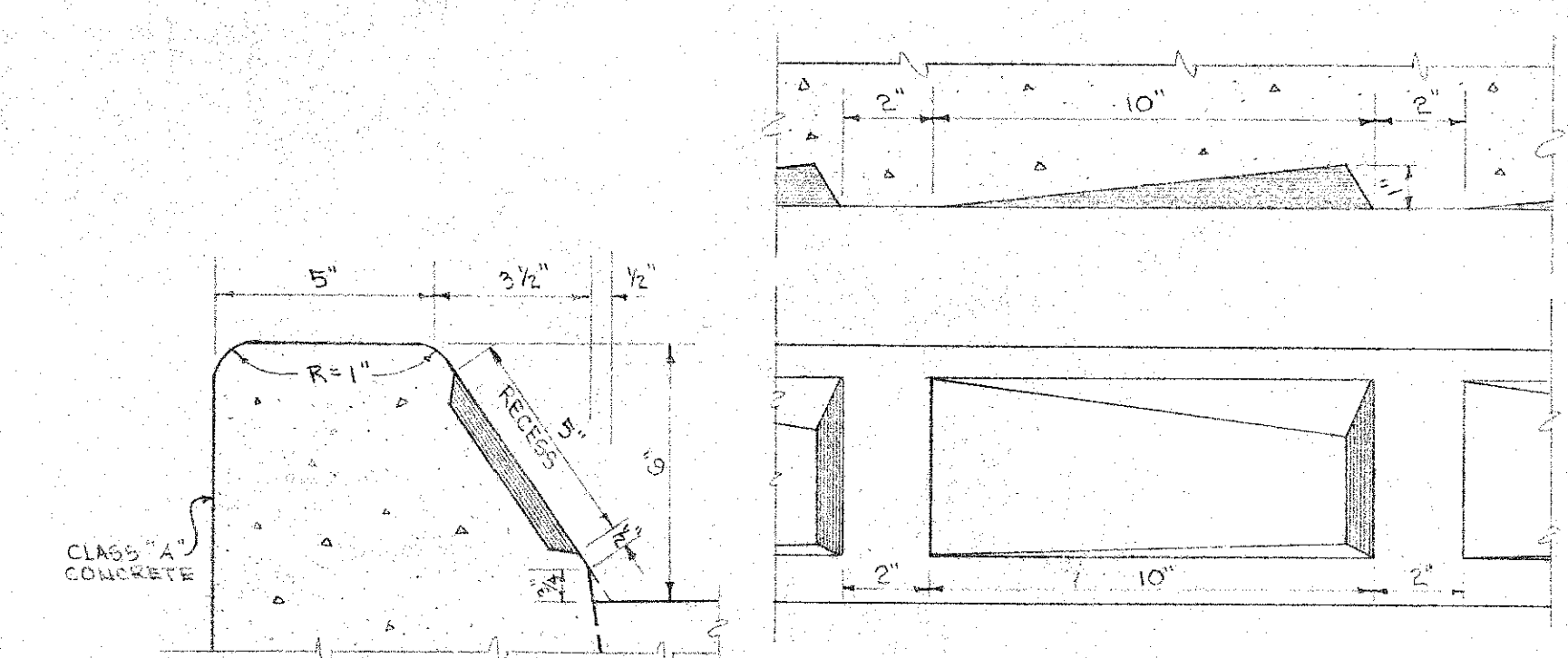
NOTE: OMIT RECESS FOR TYPE "BG" CURBS & GUTTERS.



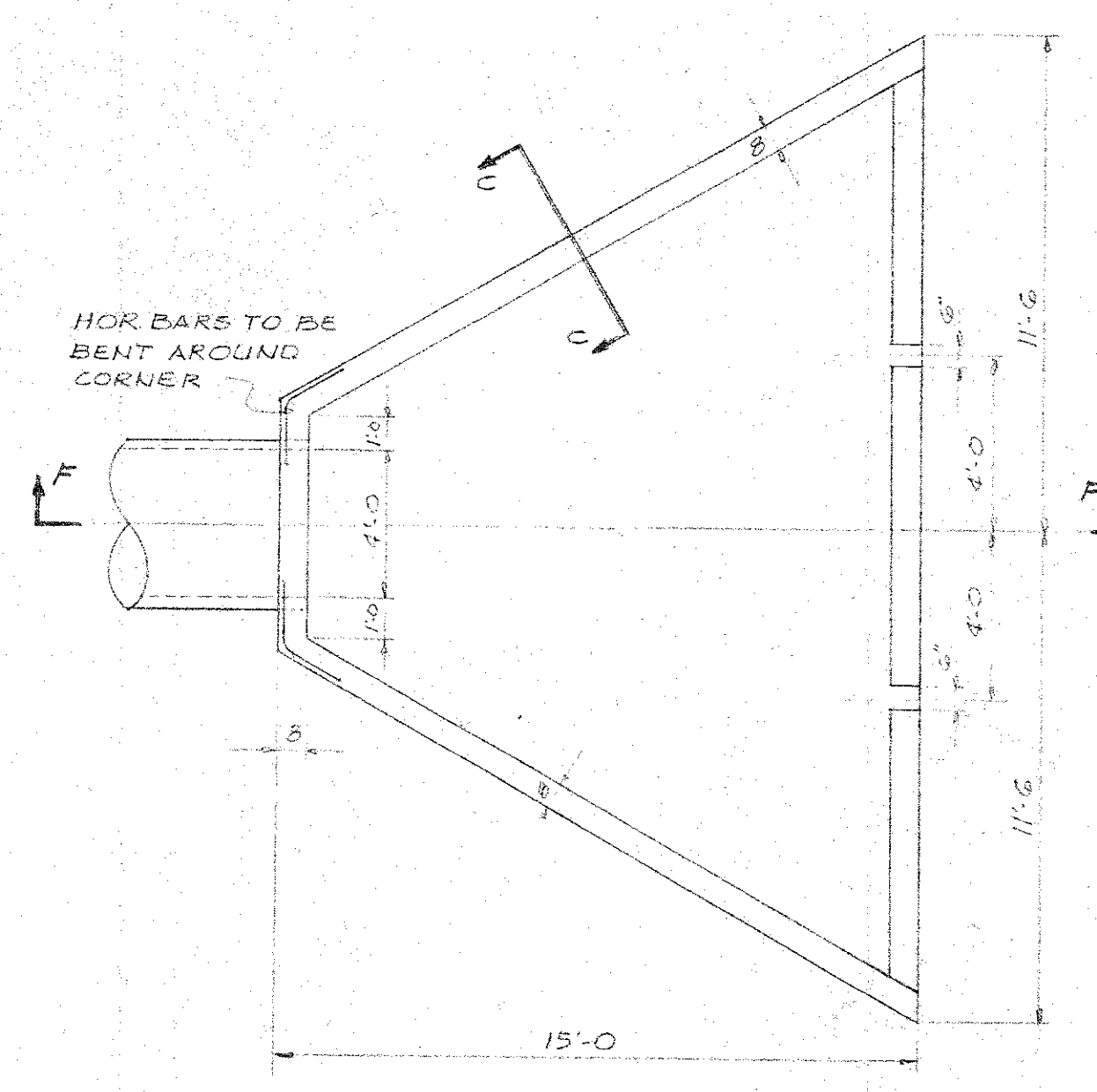
SPACING OF RECESSES FOR TYPE "A" CURBS
NOT TO SCALE



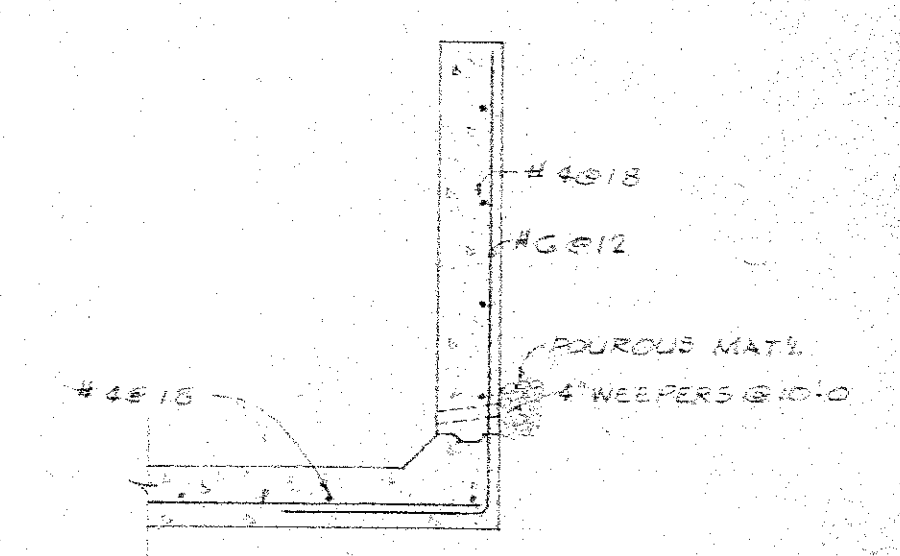
SPACING OF RECESSES FOR TYPE "B" & "BG" CURBS
NOT TO SCALE



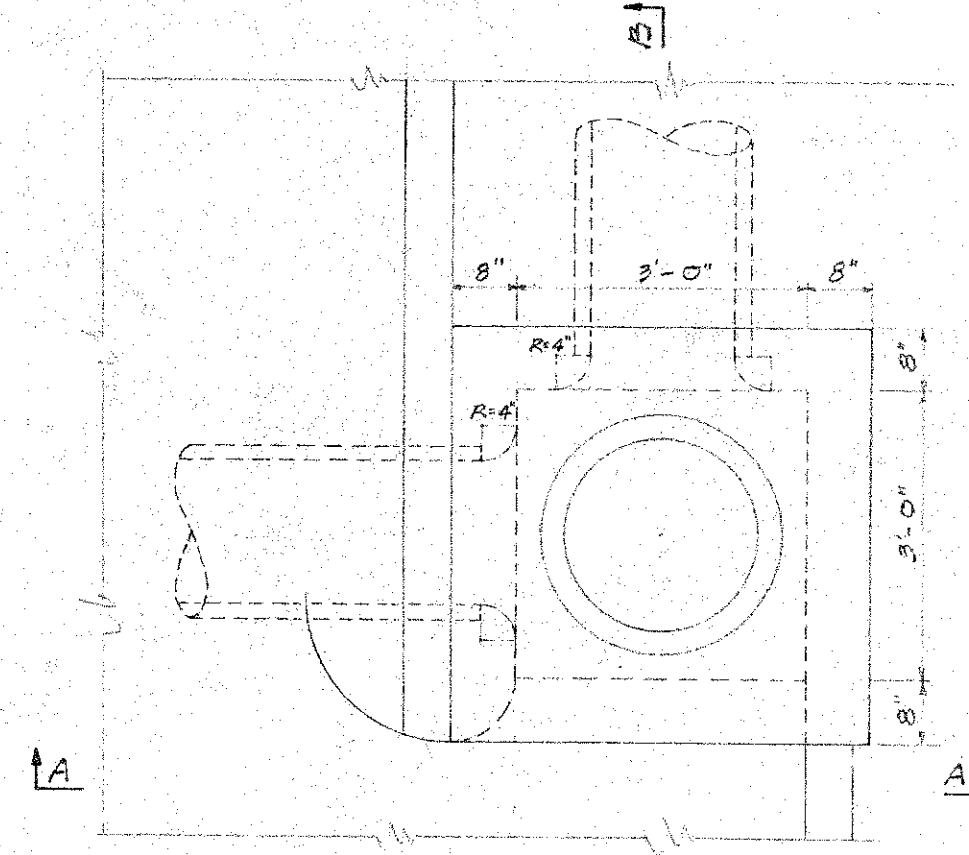
DETAIL OF RECESS FOR TYPE "A" & "AG" CURBS
3/8" = 1'-0"



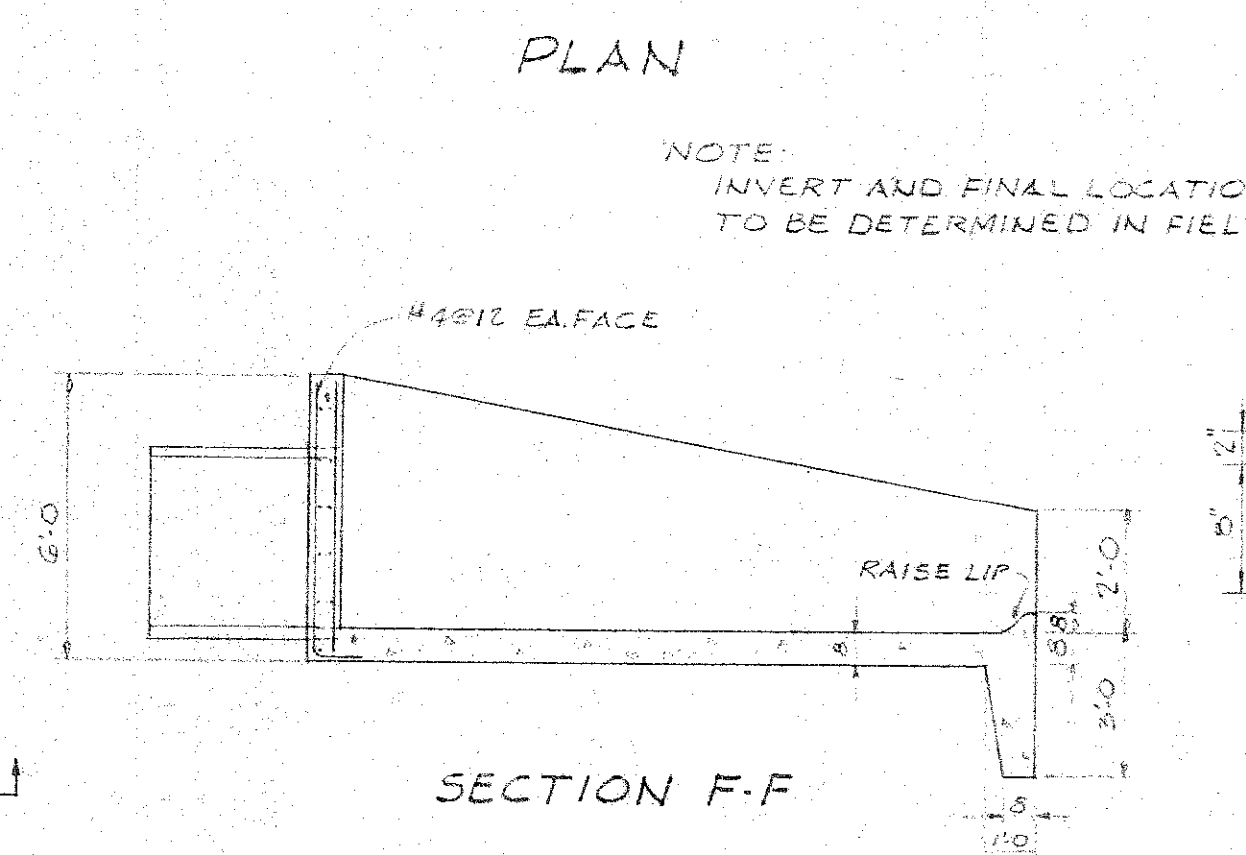
PLAN



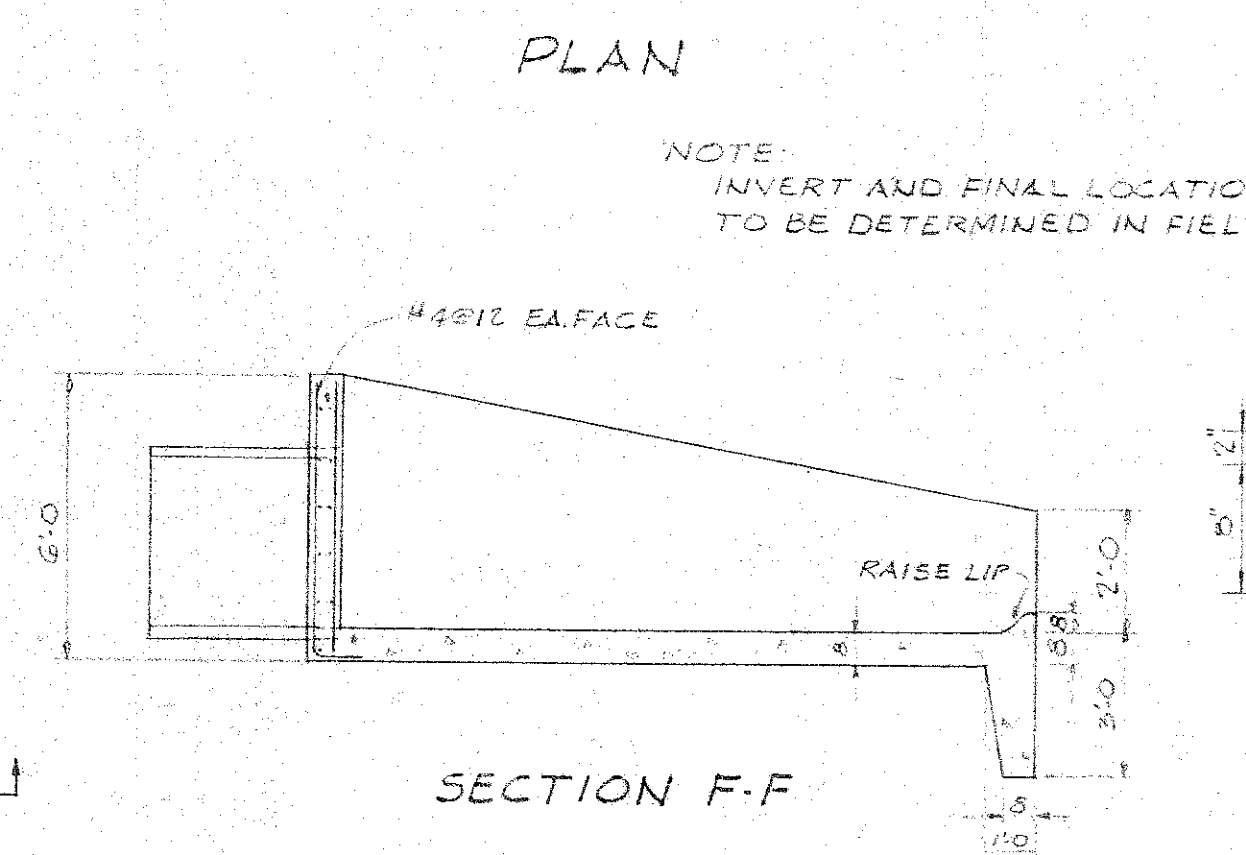
SECTION C-C
1/4" = 1'-0"



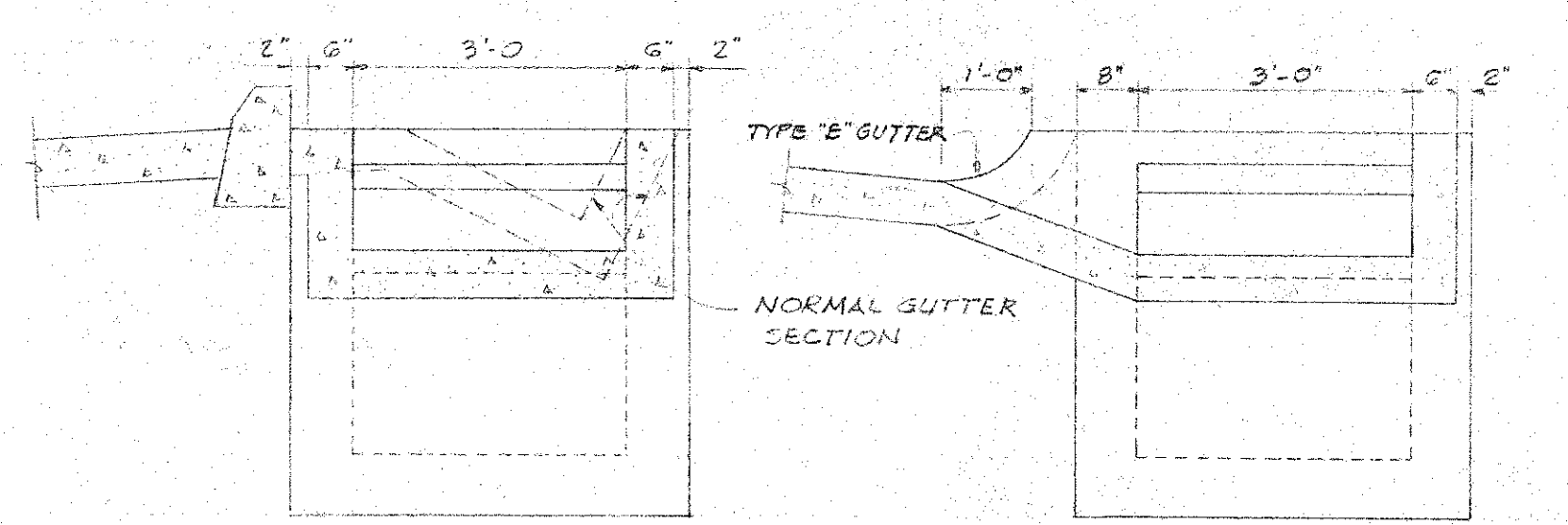
SECTION "A" FOR TYPE "F" GUTTER



SECTION "A" FOR TYPE "E" GUTTER



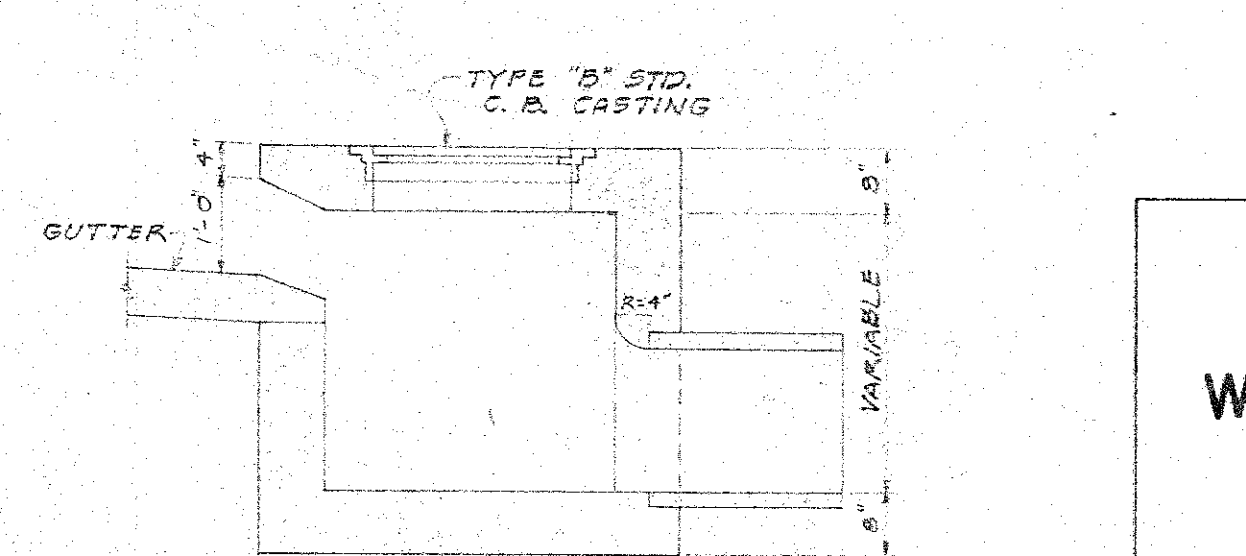
SECTION "B"



SECTION "A" FOR TYPE "F" GUTTER

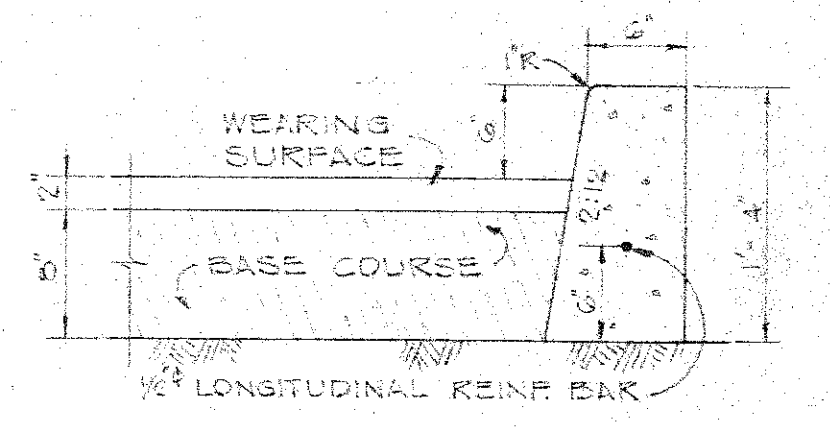
SECTION "A" FOR TYPE "E" GUTTER

CONCRETE CATCH BASIN TYPE "D"
1/2" = 1'-0"



SECTION F-F

OUTLET DETAIL
1/4" = 1'-0"



TYPE "C" CURBS
1" = 1'-0"

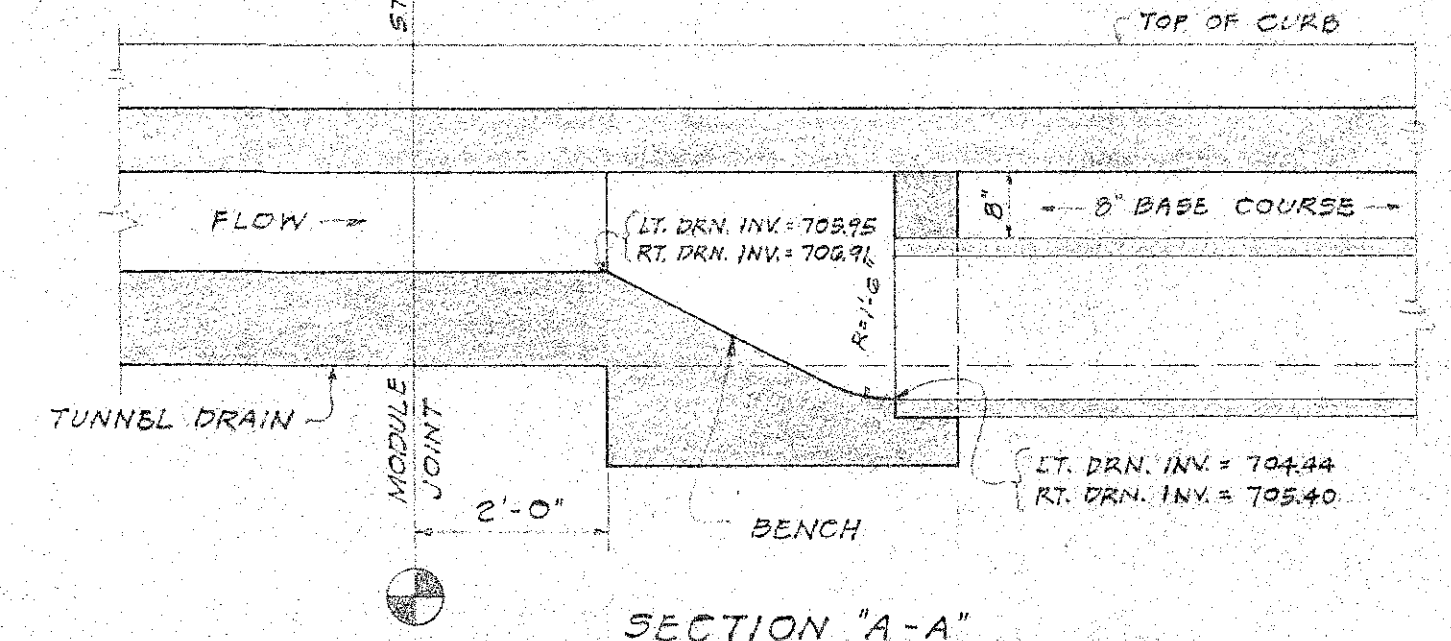
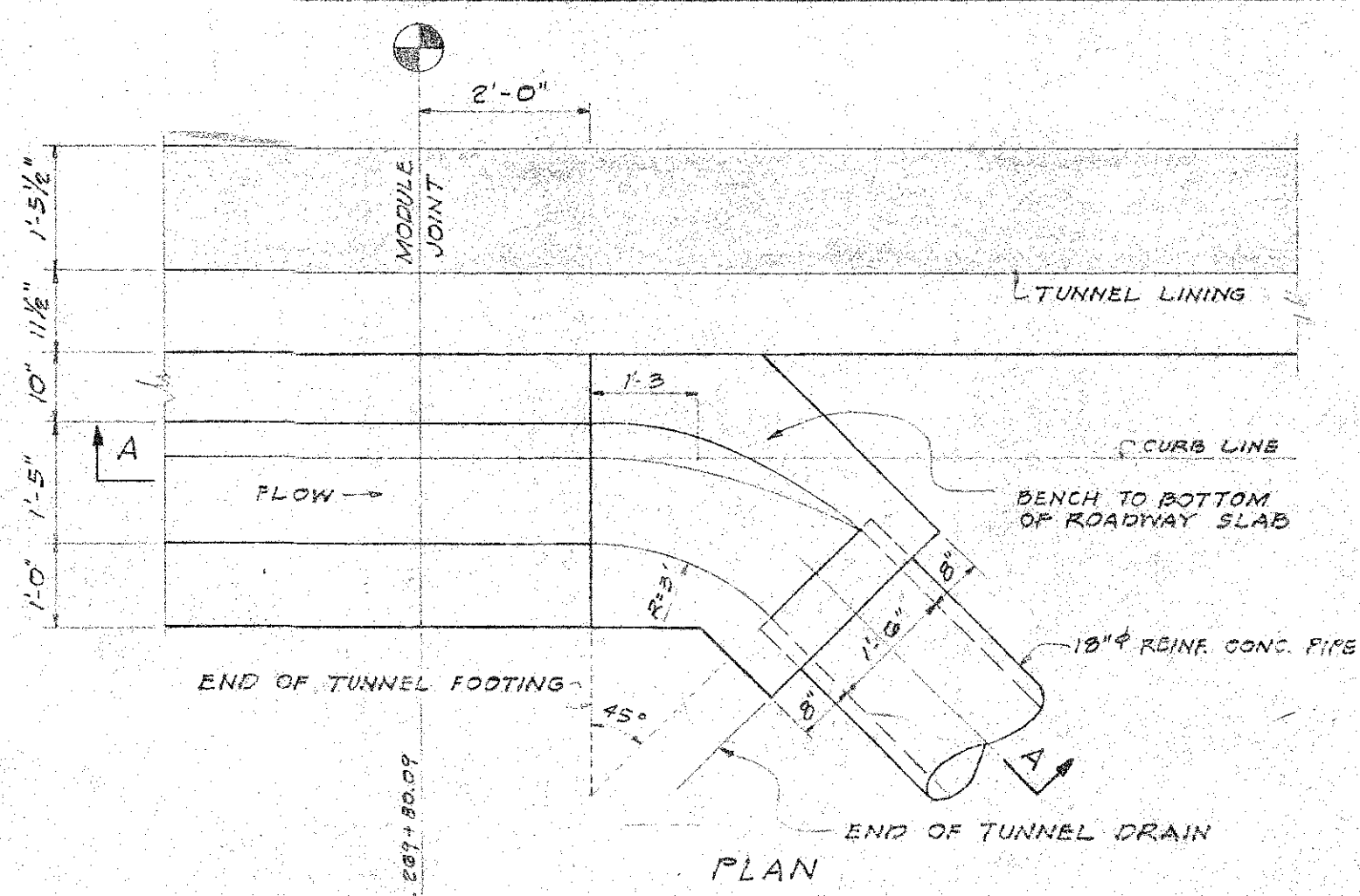
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

**WILSON TUNNEL 2ND BORE
APPROACH ROAD
TYPICAL DETAILS**

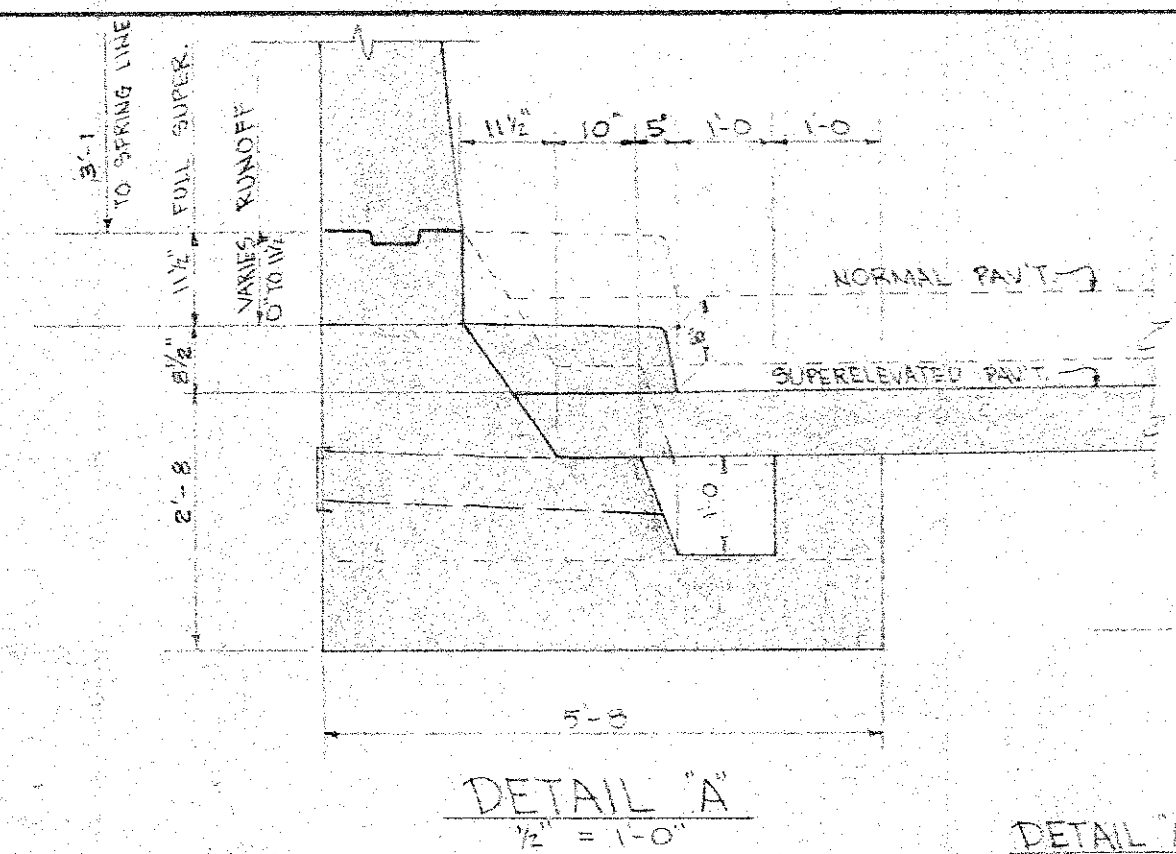
ENGINEER *W. L. Smith* DATE *8-5-57*
DRAFTSMAN *R. Y.* CHECKED BY *L. W.*
SCALE _____ TRACER _____
APPROVED *W. L. Smith* APPROVED *W. L. Smith*
CHIEF ENGINEER BUREAU ENGINEER

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

JOB NO. 13-57 DWG. R-7

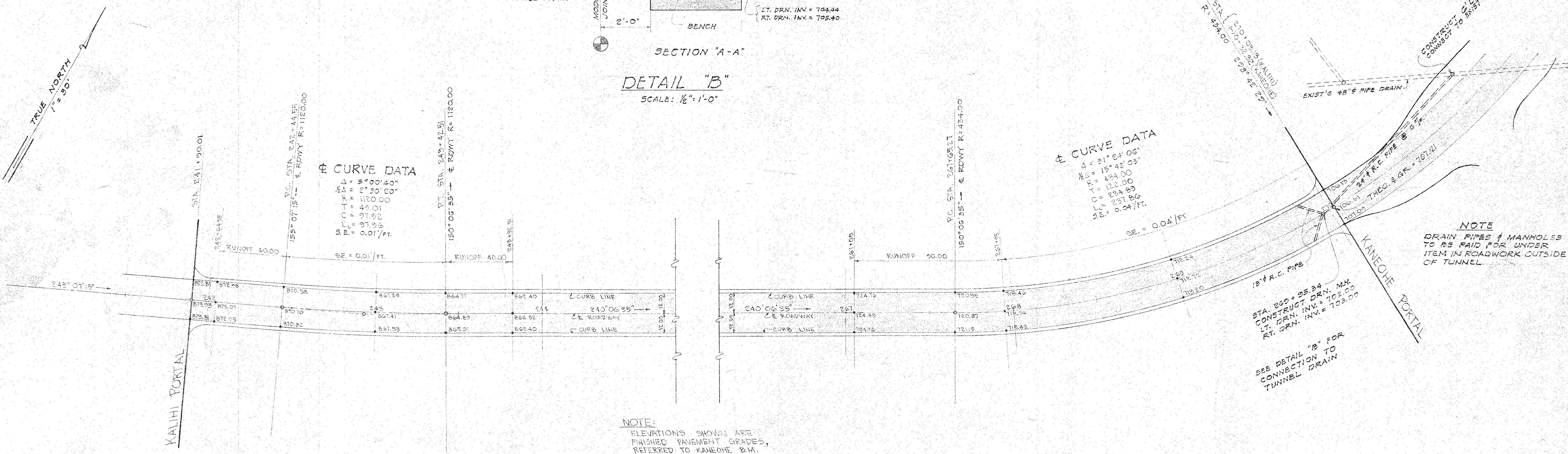


SECTION "A-A"
DETAIL "B"
SCALE: 1/2" = 1'-0"



DETAIL "A"
1/2" = 1'-0"

SUPERELEVATION OF PAVEMENT
STA 267405 (KALIHU) TO KANEHOE PORTAL



☉ CURVE DATA
 $\Delta = 5^{\circ}00'40''$
 $R\Delta = 2^{\circ}30'00''$
 $T = 1120.00$
 $C = 49.01$
 $L = 213.92$
 $E = 97.96$
 $S.E. = 0.01'/ft.$

☉ CURVE DATA
 $\Delta = 21^{\circ}24'06''$
 $R\Delta = 15^{\circ}42'03''$
 $T = 424.00$
 $C = 121.00$
 $L = 234.83$
 $E = 237.86$
 $S.E. = 0.04'/ft.$

NOTE
 DRAIN PIPES & MANHOLES
 TO BE PAID FOR UNDER
 ITEM IN ROADWORK OUTSIDE
 OF TUNNEL.

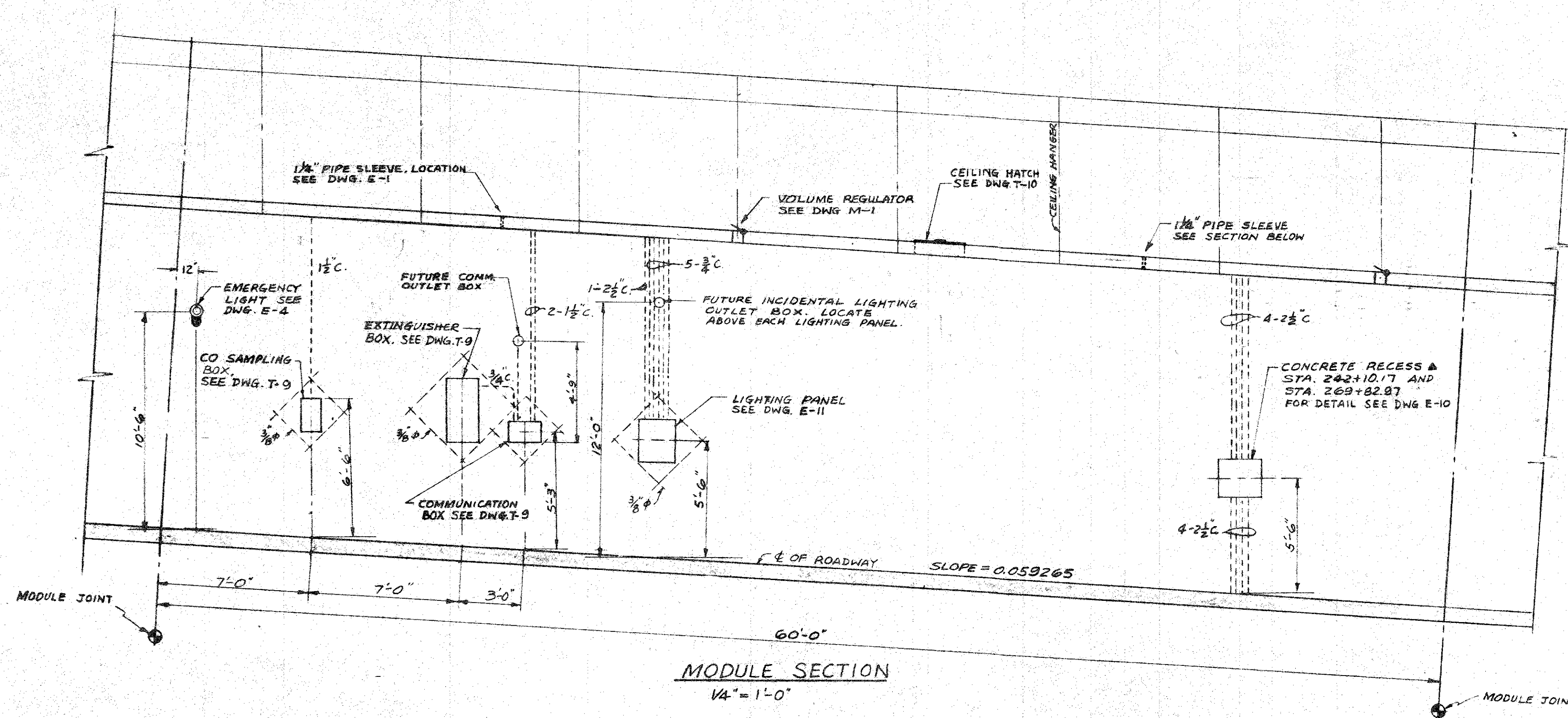
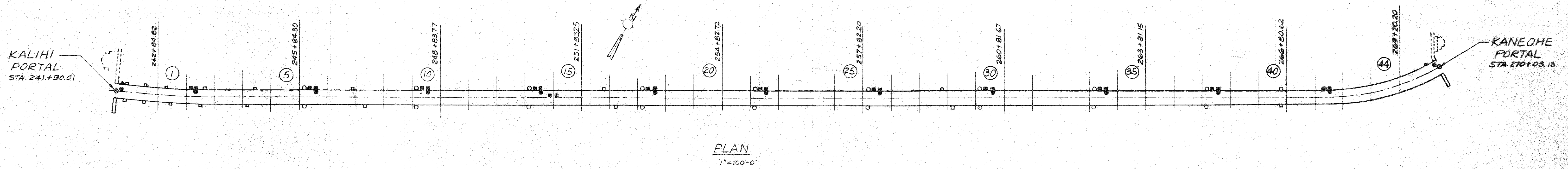
CURVE DATA TUNNEL ROADWAY

DEPARTMENT OF PUBLIC WORKS
 CITY AND COUNTY OF HONOLULU
 BUREAU OF PLANS
WILSON TUNNEL 2nd BORE
 TUNNEL
 DATA AT CURVES

ENGINEER: *W. J. ...* DATE: 5-8-57
 DRAFTSMAN: *R.Y.* CHECKED BY: *W.L.*
 SCALE: _____ TRACER: _____
 APPROVED: *W. J. ...* APPROVED: *W. J. ...*
 CHIEF ENGINEER BUREAU ENGINEER

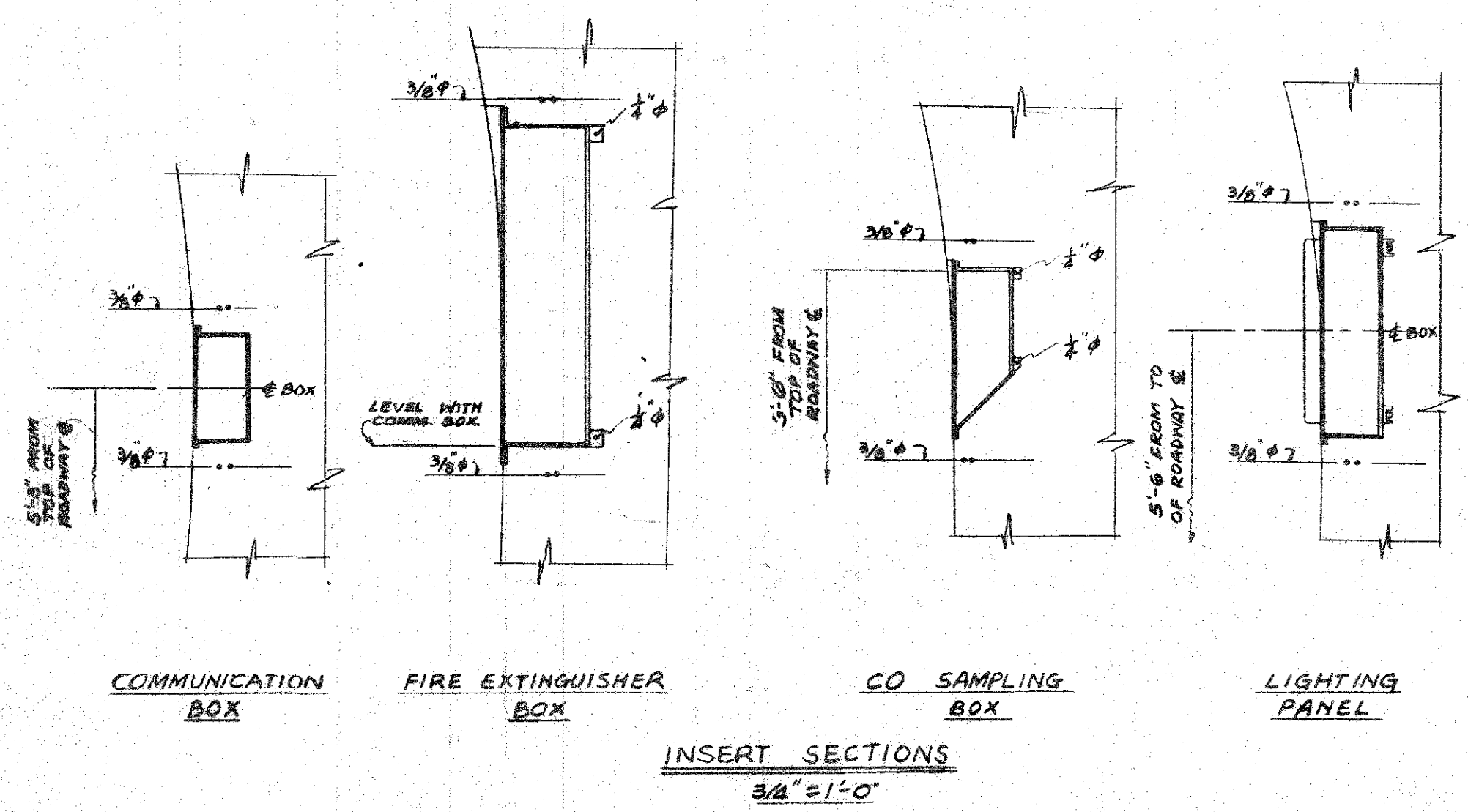
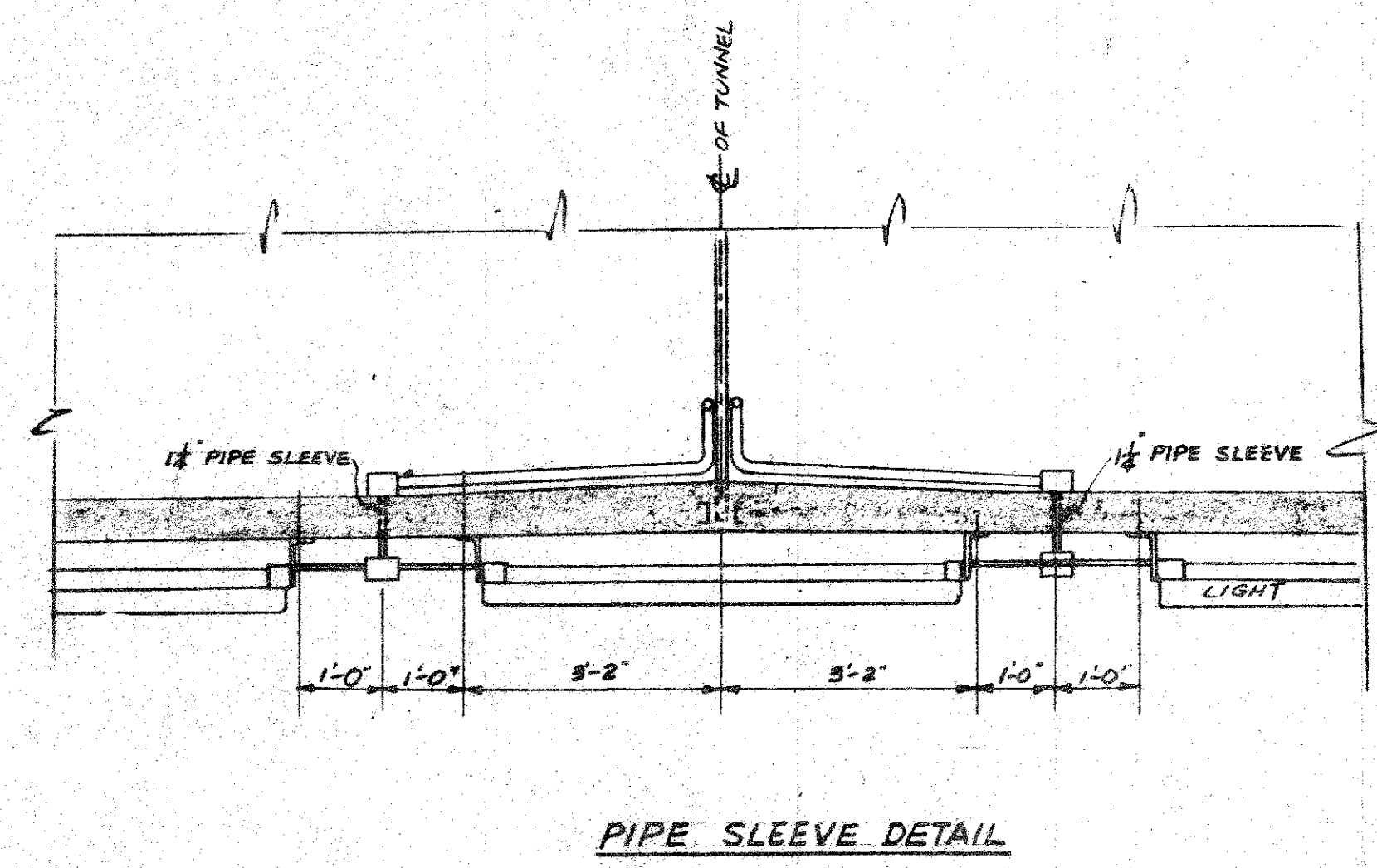
W.S.	PROFILE	C.B.
CR. SEC.	F.B.	S.B.
W.M. BY	F.W. BY	S. BY

JOB NO. 13-57 DWG. NO. T-2



STATIONING CHART

MODULE NO	CEILING HATCH	COMMUNICATION BOX	FIRE EXTINGUISHER BOX	CO SAMPLE BOX BOTH WALLS	TUNNEL INTERIOR LIGHTING PANEL NORTH WALL	TUNNEL INTERIOR LIGHTING PANEL SOUTH WALL
KALIHI PORTAL	242+24.92				242+17.96	242+17.96
1					242+60.88	242+60.88
2		243+61.68	243+58.69		243+06.80	243+10.80
3					243+74.68	243+68.70
4					244+86.49	244+74.52
5						
6		246+01.26	245+98.27	245+91.28	247+02.11	
7						
8						247+23.08
9						
10		248+40.85	248+37.85	248+30.86		
11						
12						
13						
14	251+08.37	250+80.43	250+77.43	250+70.44		
15	251+38.33					
16					252+28.19	
17						
18		253+20.01	253+17.02	253+10.03		252+58.15
19						
20						
21						
22		255+59.60	255+56.60	255+49.61		
23						
24						
25						
26		257+99.18	257+96.18	257+89.19		
27						
28					259+46.96	
29						259+76.92
30		260+38.76	260+35.77	260+28.78		
31						
32						
33						
34		262+78.34	262+75.35	262+68.36		
35						
36						
37						
38		265+74.93	265+71.93	265+64.94		
39						
40					266+65.71	266+65.71
41						
42		267+51.51	267+48.51			
43						
44						
KANEOME PORTAL	269+80.09					
TOTAL	4	11	11	18	9	9



DE LEUW CATHER & COMPANY
ENGINEERS
CHICAGO ILLINOIS

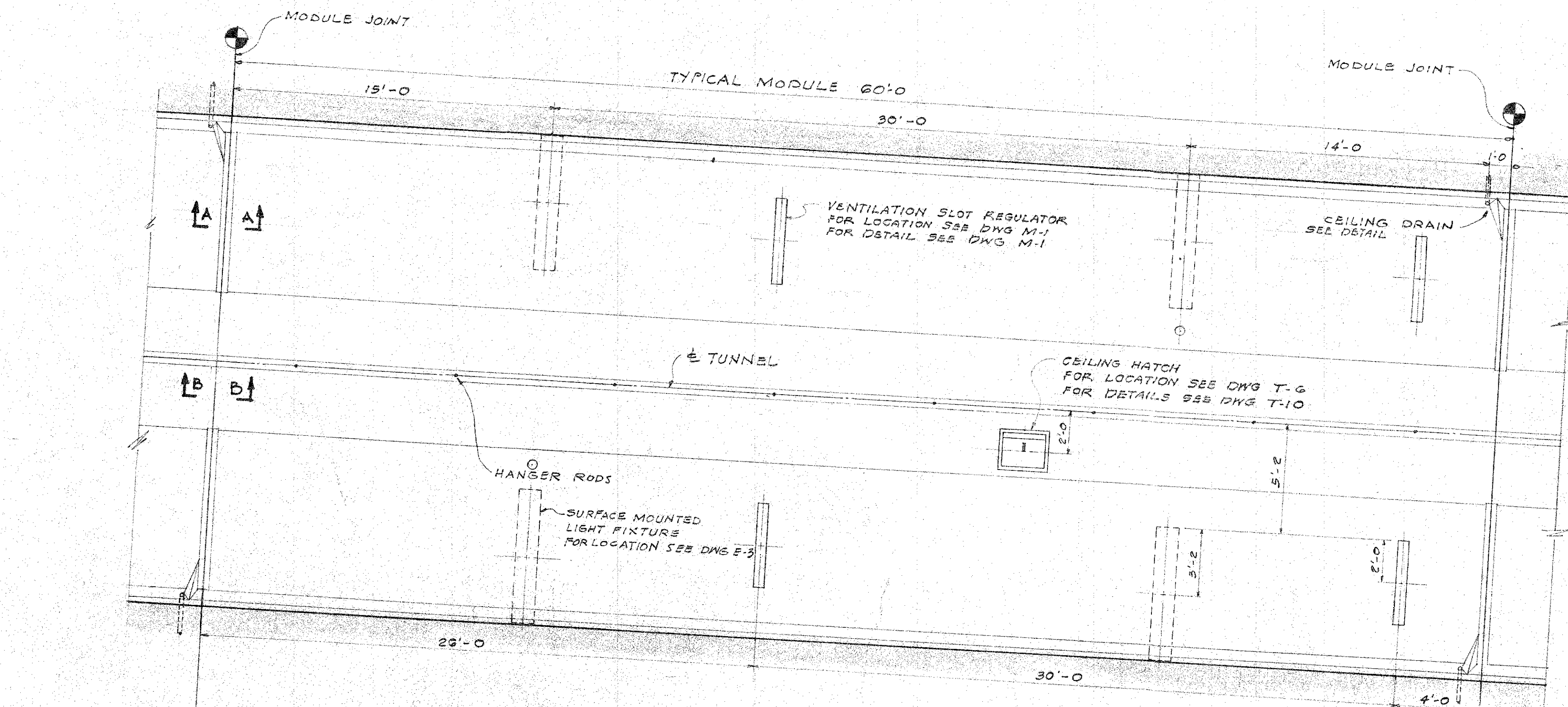
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

WILSON TUNNEL 2nd BORE
TYPICAL DETAILS

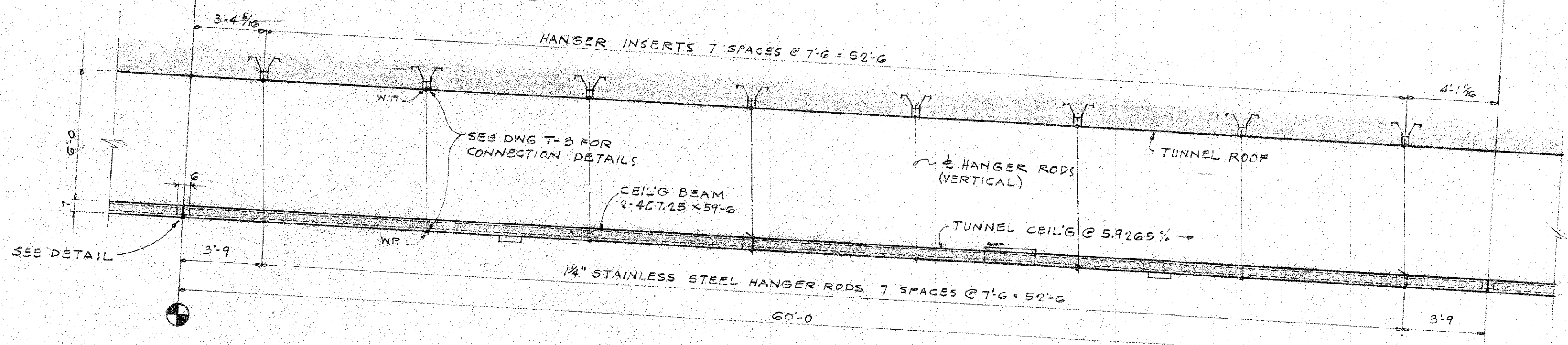
ENGINEER: G.E.J. VED DATE: AUG. 16, 1957
DRAFTSMAN: D.S.W. CHECKED BY: G.C.H.
SCALE: AS NOTED TRACER: F.S.W.
APPROVED: [Signature] APPROVED: [Signature]
CHIEF ENGINEER BUREAU ENGINEER

W.S. PROFILE C.B.
C.R. SEC. 17 B S.B.
W.M. BY F.W. BY S.B.

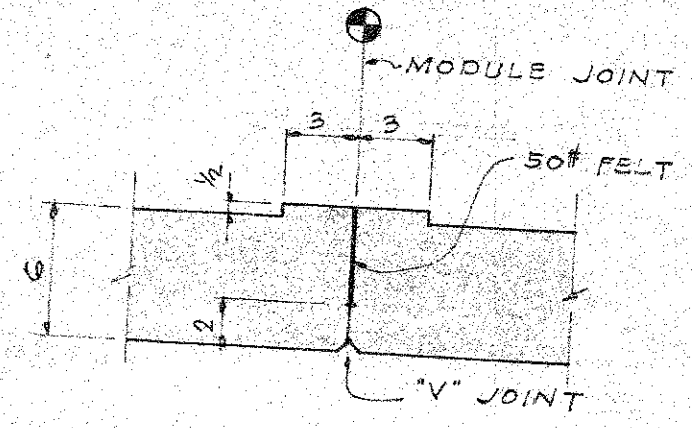
JOB NO. 13-57 DWG. NO. T-6



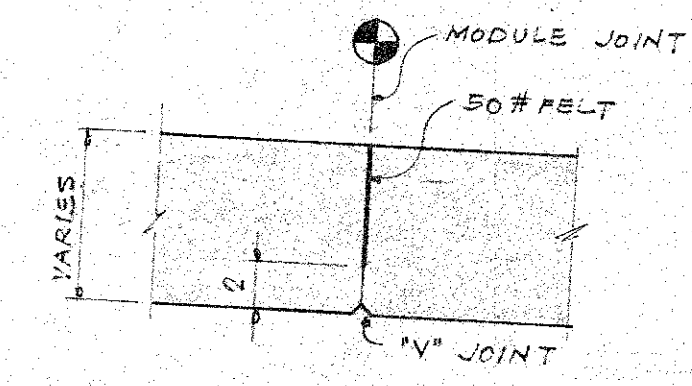
PLAN ABOVE CEILING



SECTION ALONG CENTER LINE
DETAIL - TYPICAL CEILING MODULE 1/4" = 1'-0"

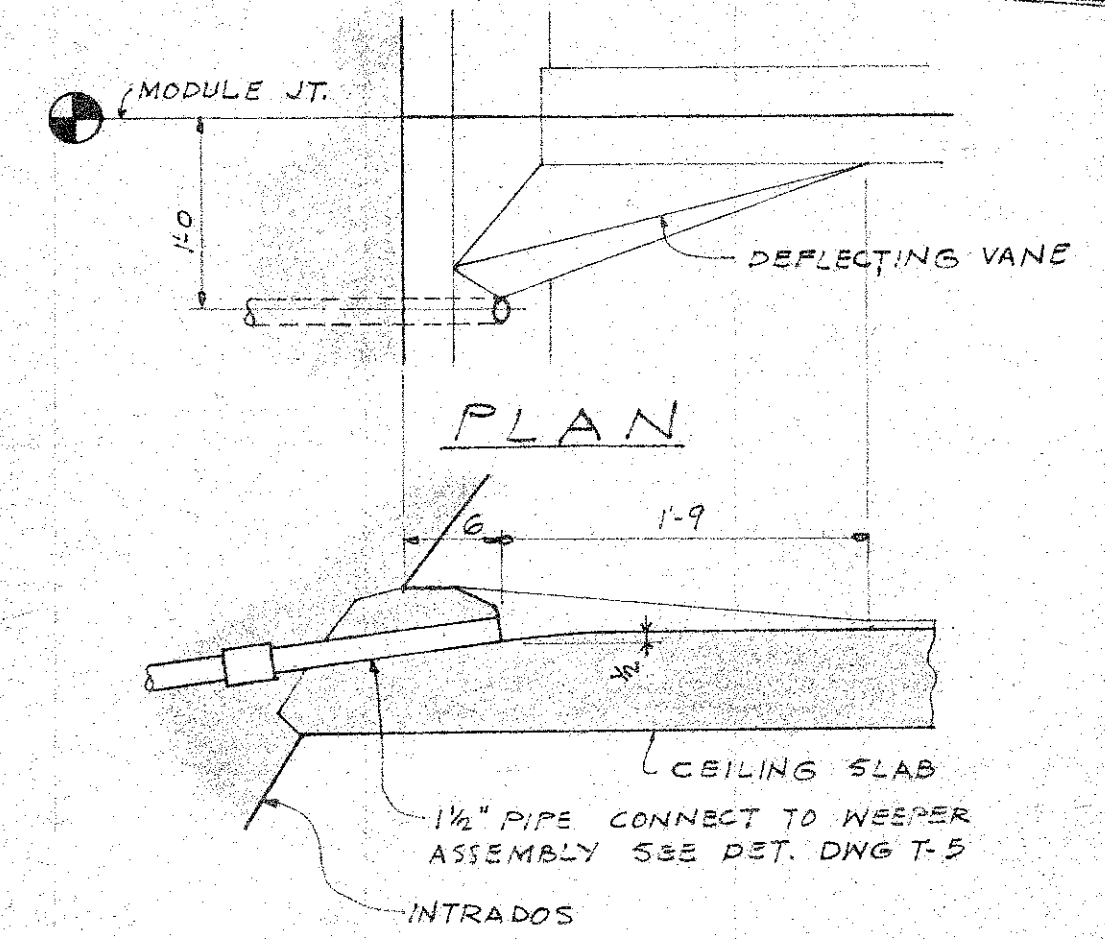


SECTION "A-A"



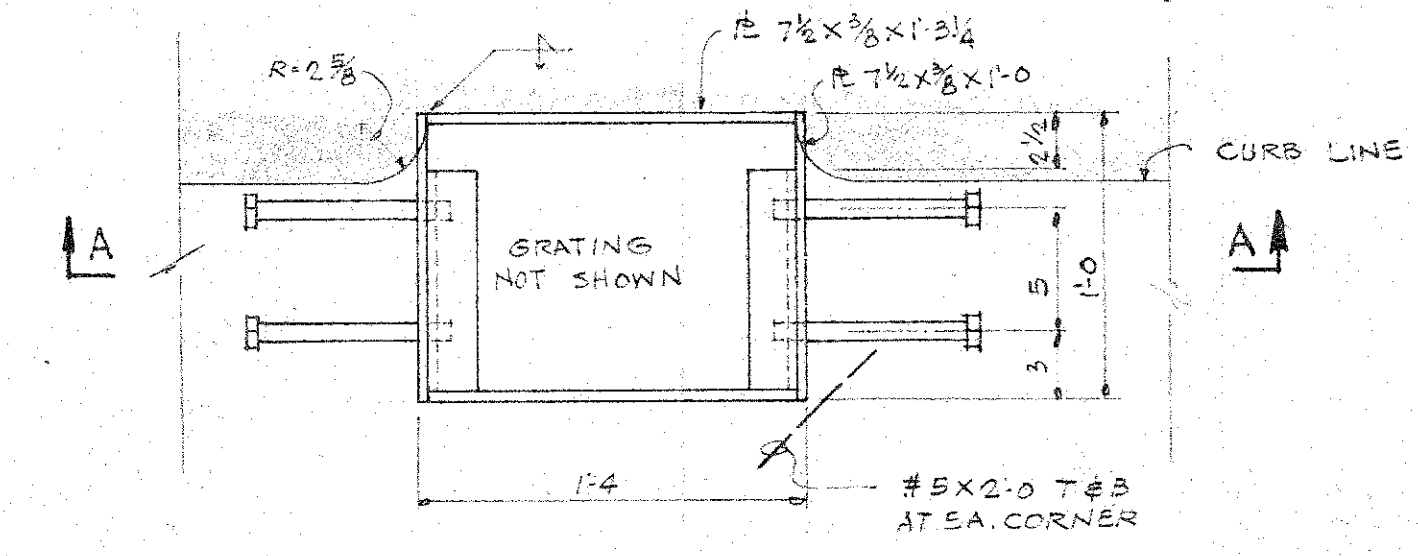
SECTION "B-B"

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

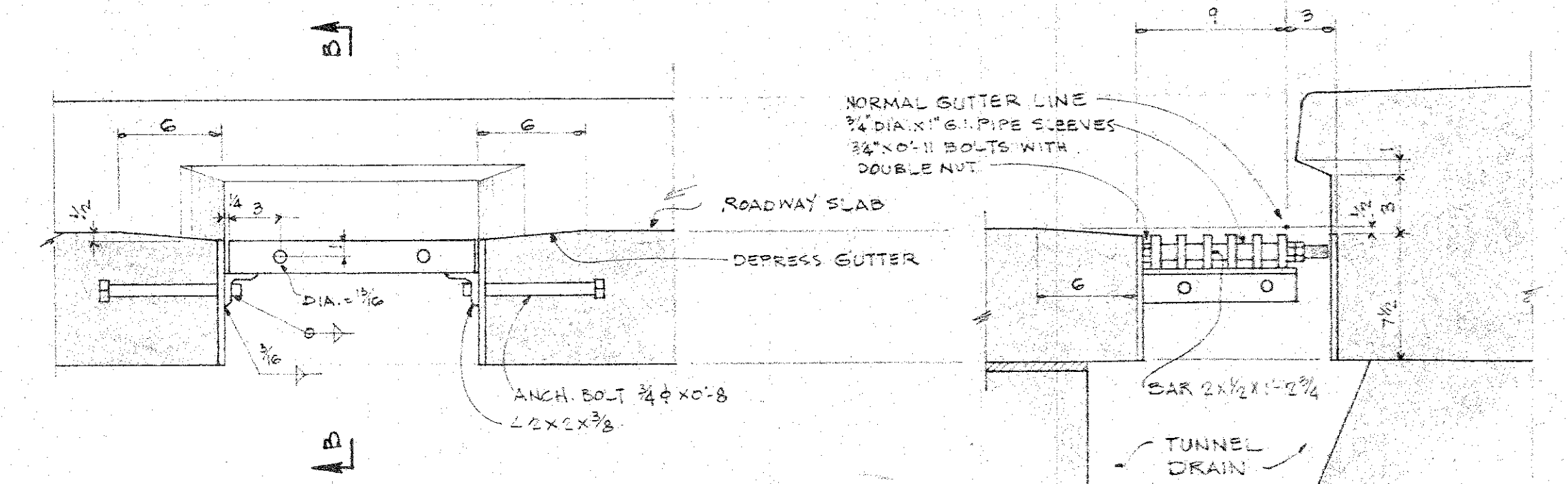


SECTION

DETAIL - CEILING DRAIN 1'-0"



PLAN



DETAIL - TUNNEL ROADWAY DRAINS 1/2" = 1'-0"

NOTE:
1. ALL PARTS OF TUNNEL ROADWAY DRAIN SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.
2. SPACE TUNNEL ROADWAY DRAINS @ 30'-0" SEE DWG T-3 FOR LOCATION.

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

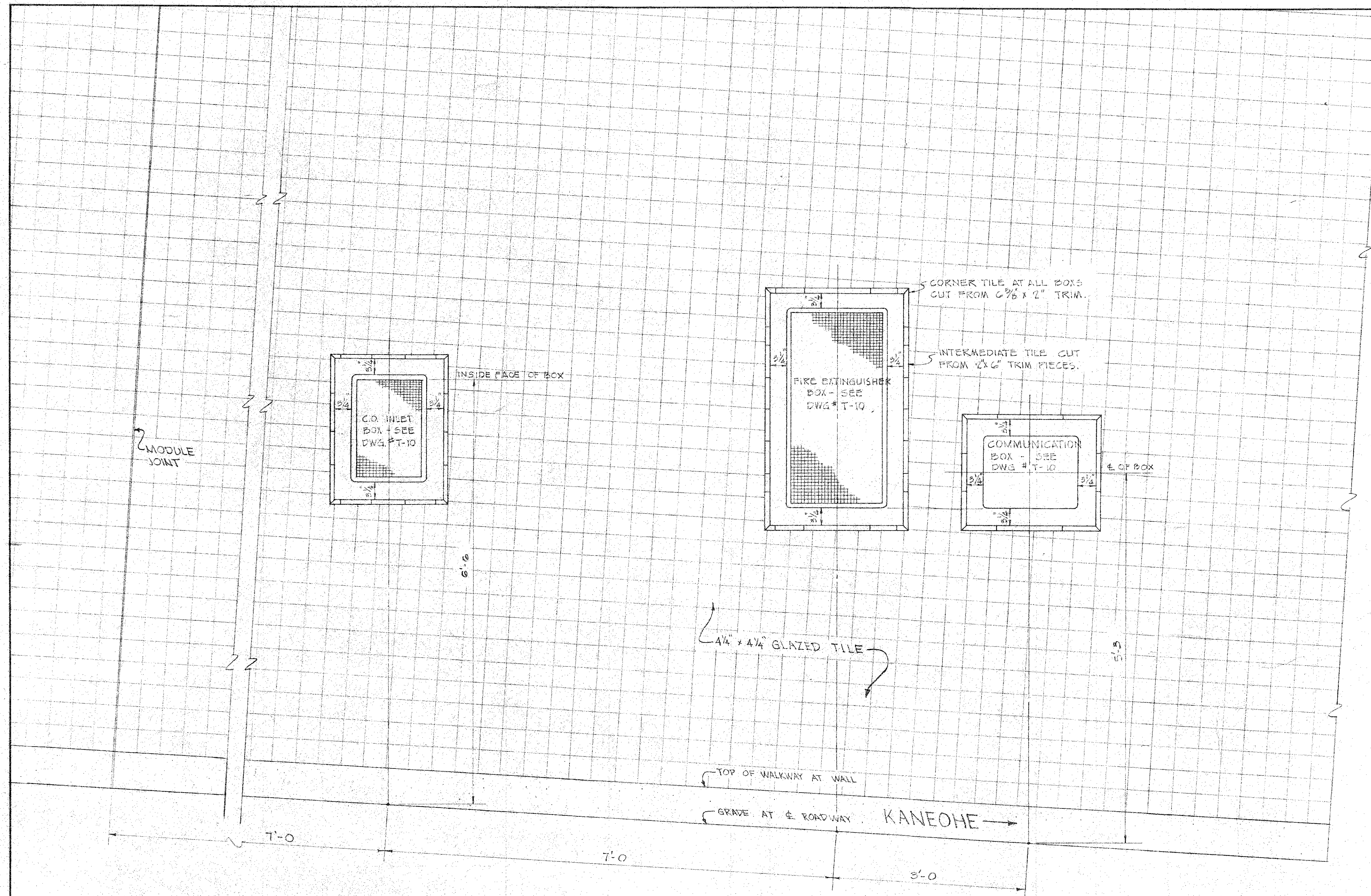
**WILSON TUNNEL 2ND BORE
TUNNEL**

TYPICAL DETAILS

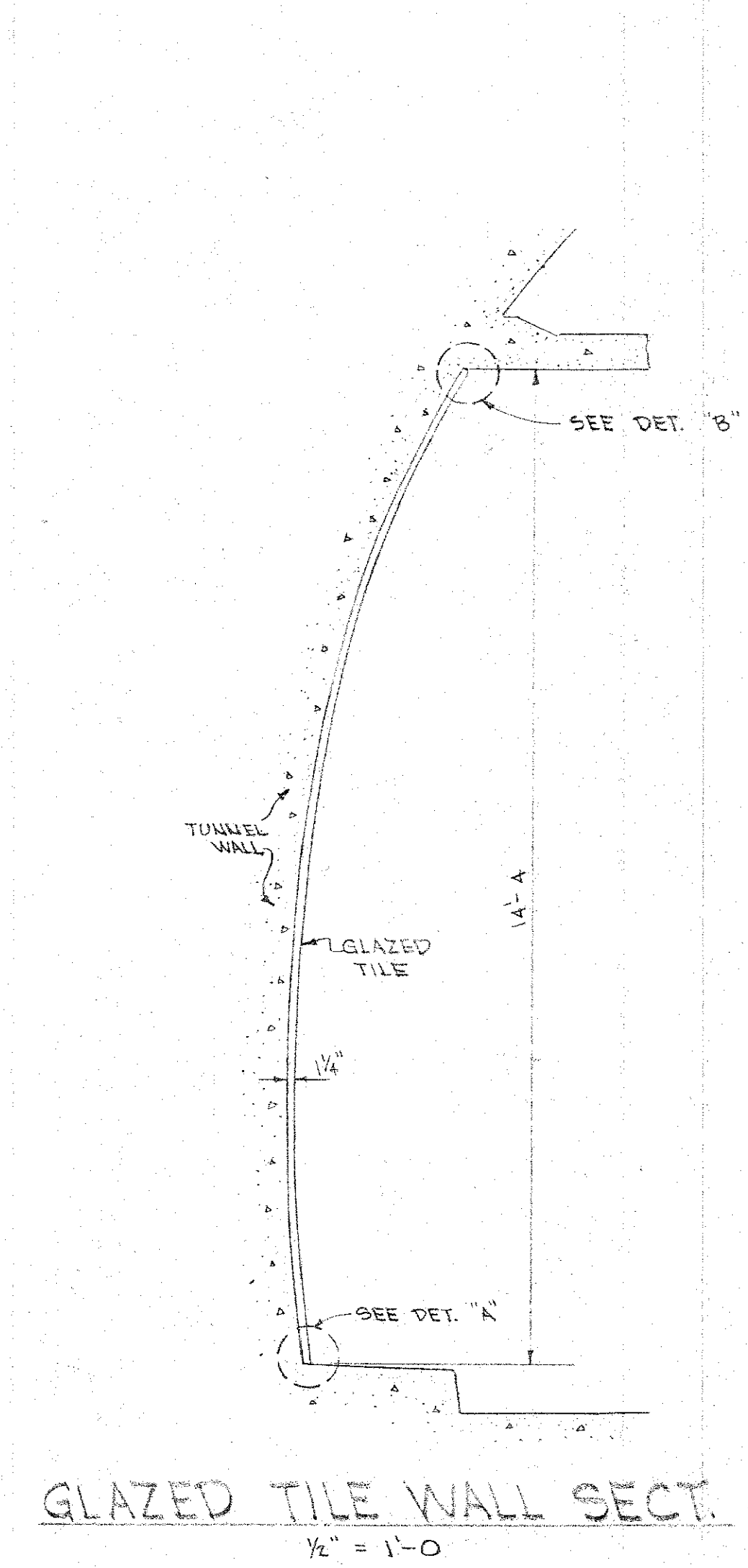
ENGINEER *[Signature]* DATE 8-8-57
DRAFTSMAN *[Signature]* CHECKED BY *[Signature]*
SCALE TRACER
APPROVED *[Signature]* APPROVED *[Signature]*
CHIEF ENGINEER BUREAU ENGINEER

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

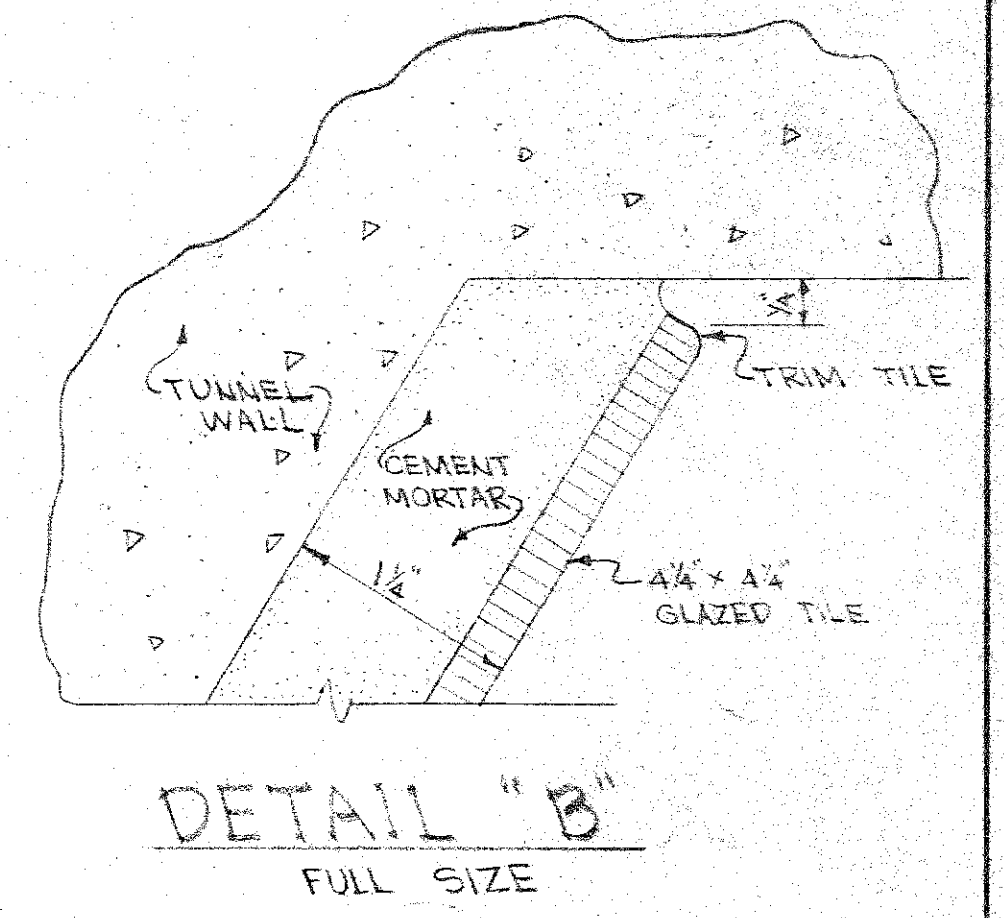
JOB NO. 13-57 DWG. NO. T-7



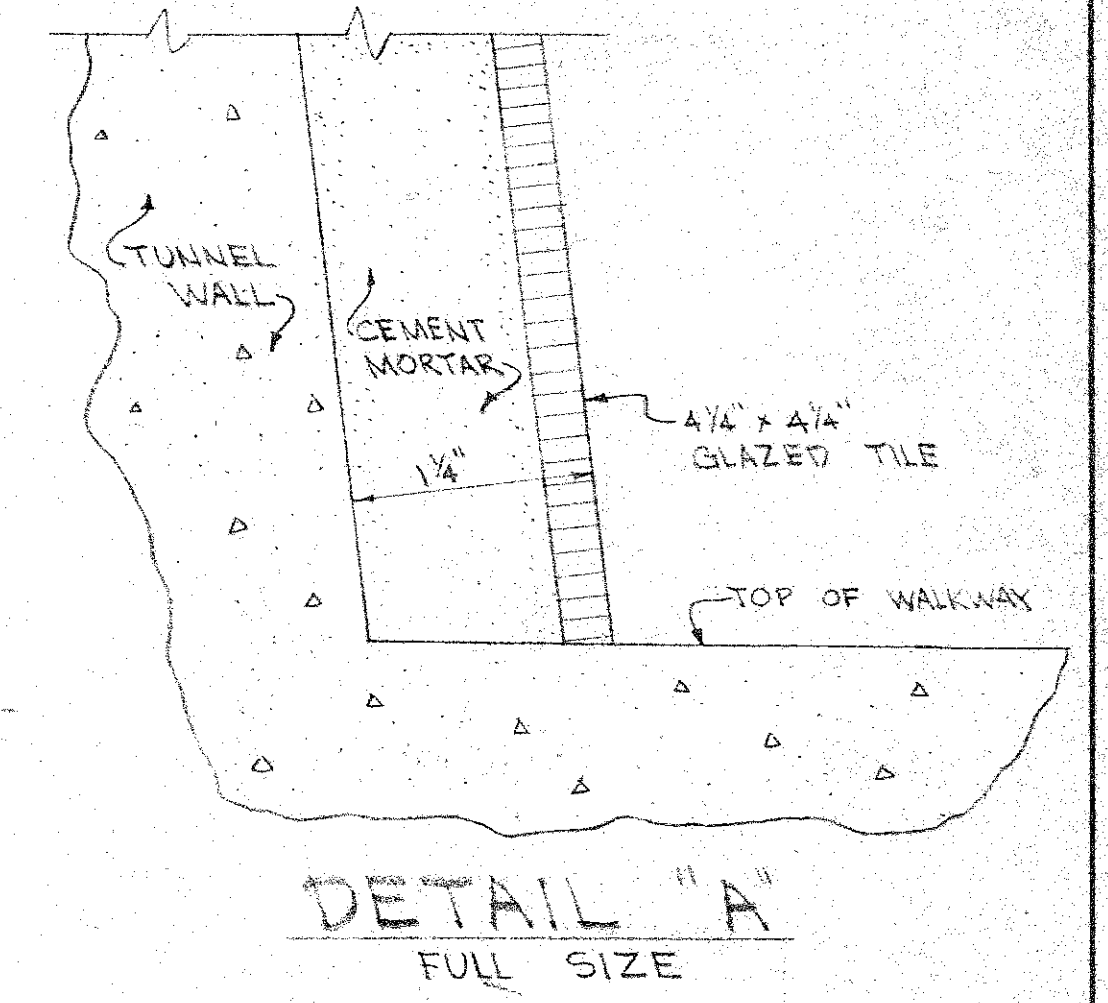
GLAZED TILE WALL ELEVATION
1" = 1'-0"



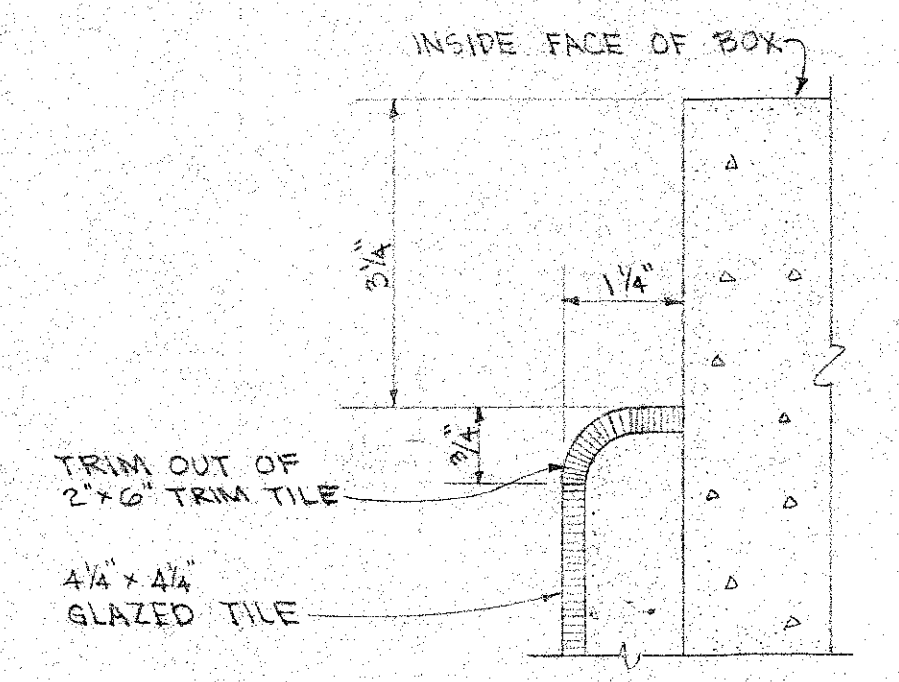
GLAZED TILE WALL SECT.
1/2" = 1'-0"



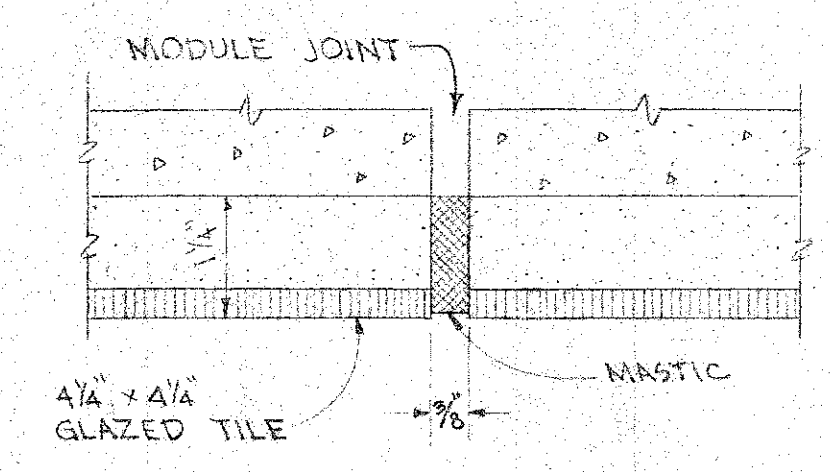
DETAIL "B"
FULL SIZE



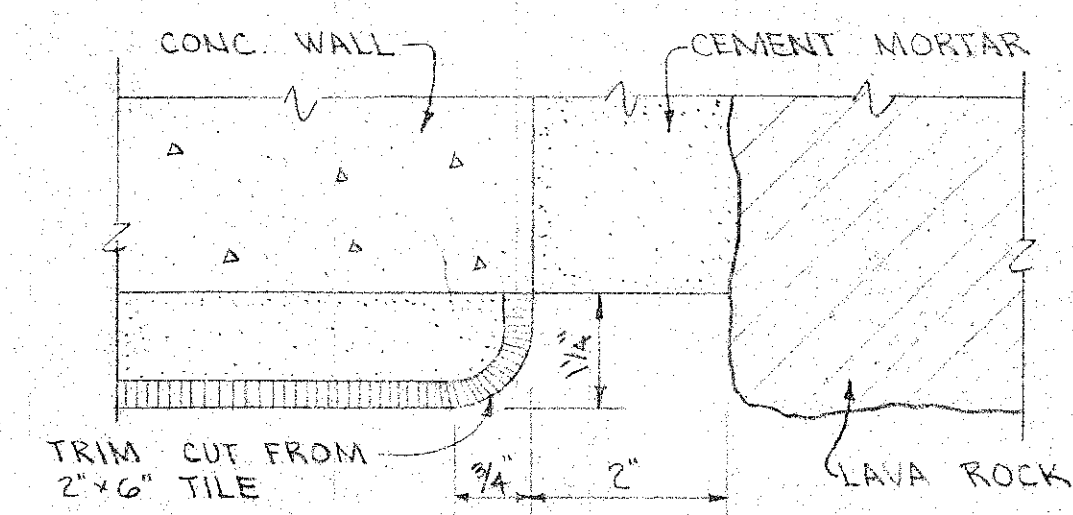
DETAIL "A"
FULL SIZE



AT EDGES OF BOXES



AT MODULE JOINT



AT LAVA ROCK

GLAZED TILE WALL DETAILS
1/2" FULL SIZE

- NOTES:
1. SEE DWG. T-1 FOR LIMITS OF GLAZED TILE WORK.
 2. SEE DWG. T-10 FOR TYPE OF INSERT BOXES IN EACH MODULE.

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

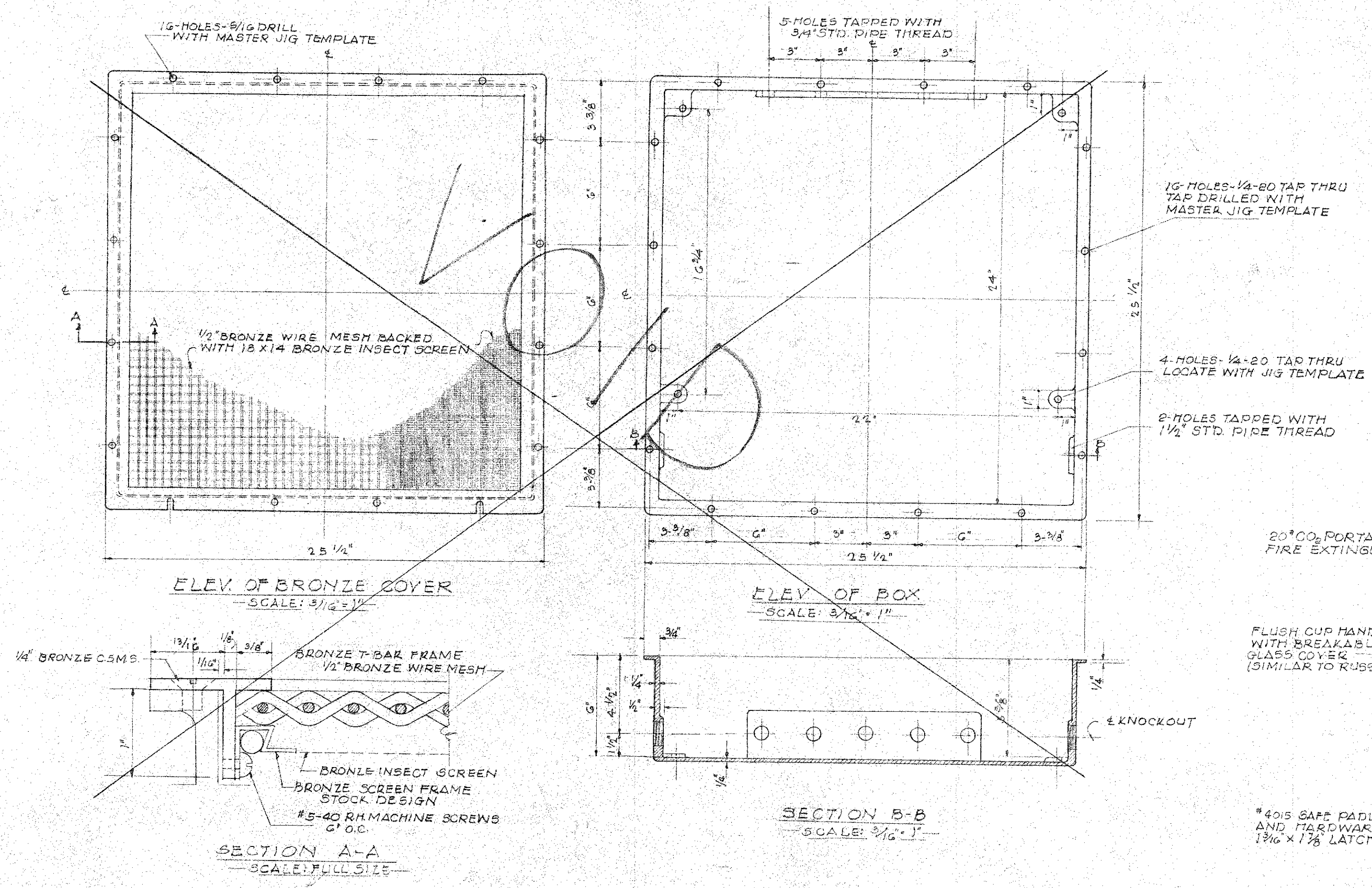
**WILSON TUNNEL 2ND BORE
TUNNEL
GLAZED TILE DETAILS**

ENGINEER *W. L. ...* DATE 8-8-57
DRAFTSMAN *R. Y. ...* CHECKED BY *N. L. ...*
SCALE TRACER
APPROVED *James H. ...* APPROVED *...*
CHIEF ENGINEER BUREAU ENGINEER

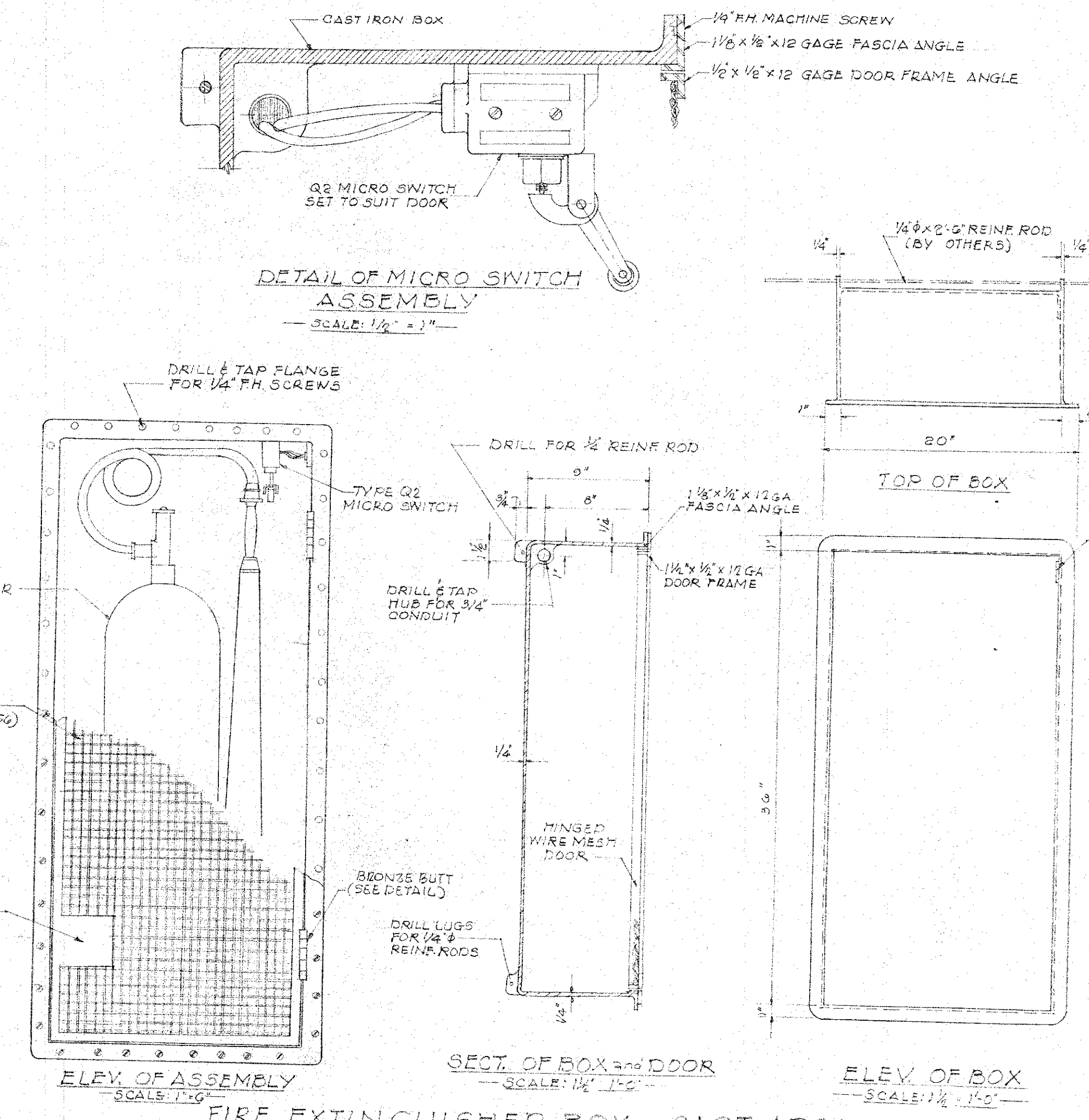
W. S.	PROFILE	C. B.
OR. SEC.	F. S.	S. B.
W. M. BY	F. W. BY	S. BY

JOB NO. 13-57 DWG. T-8

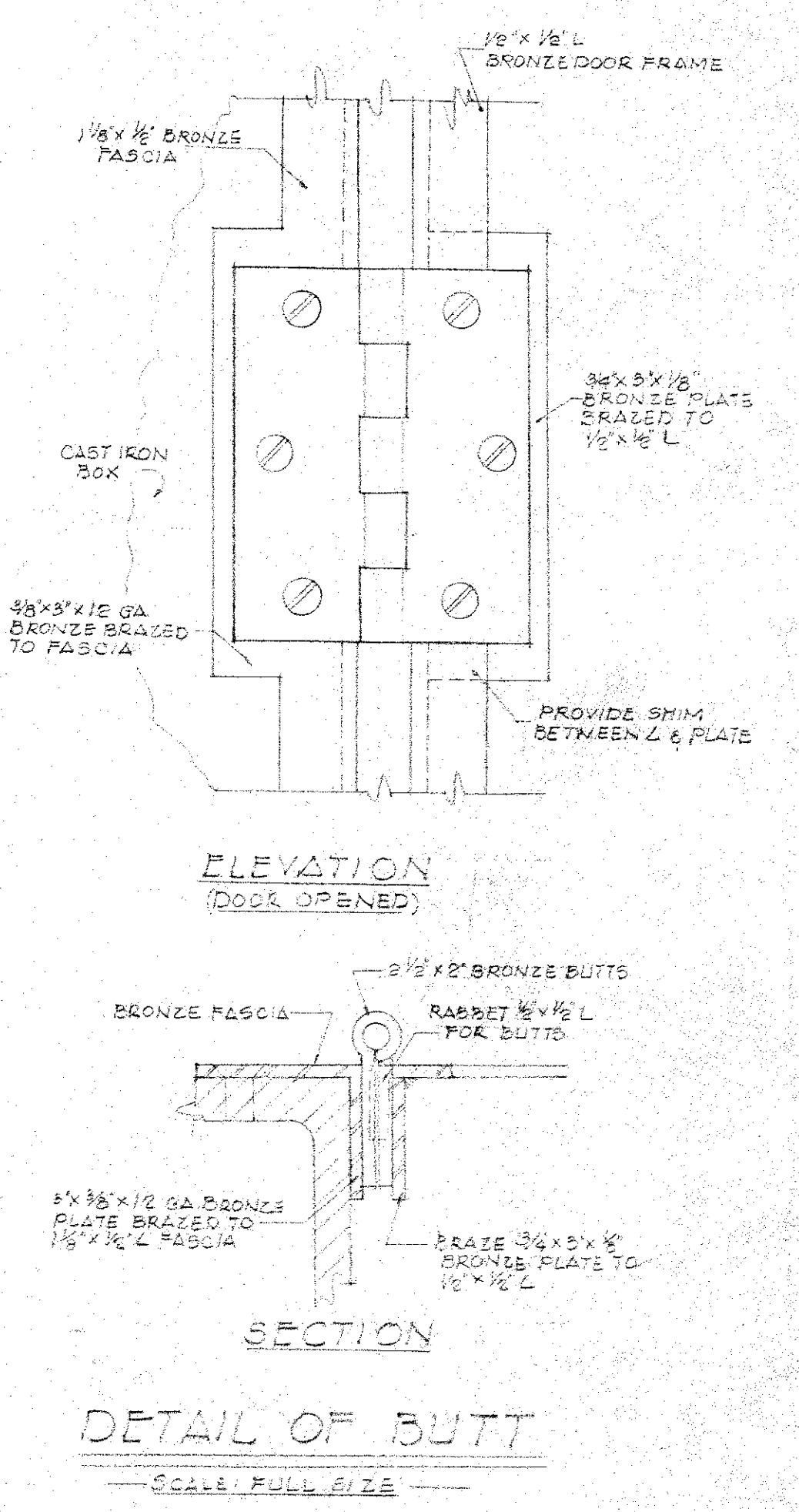
FILE	POCKET	FOLDER	NO.
11	1	1	16



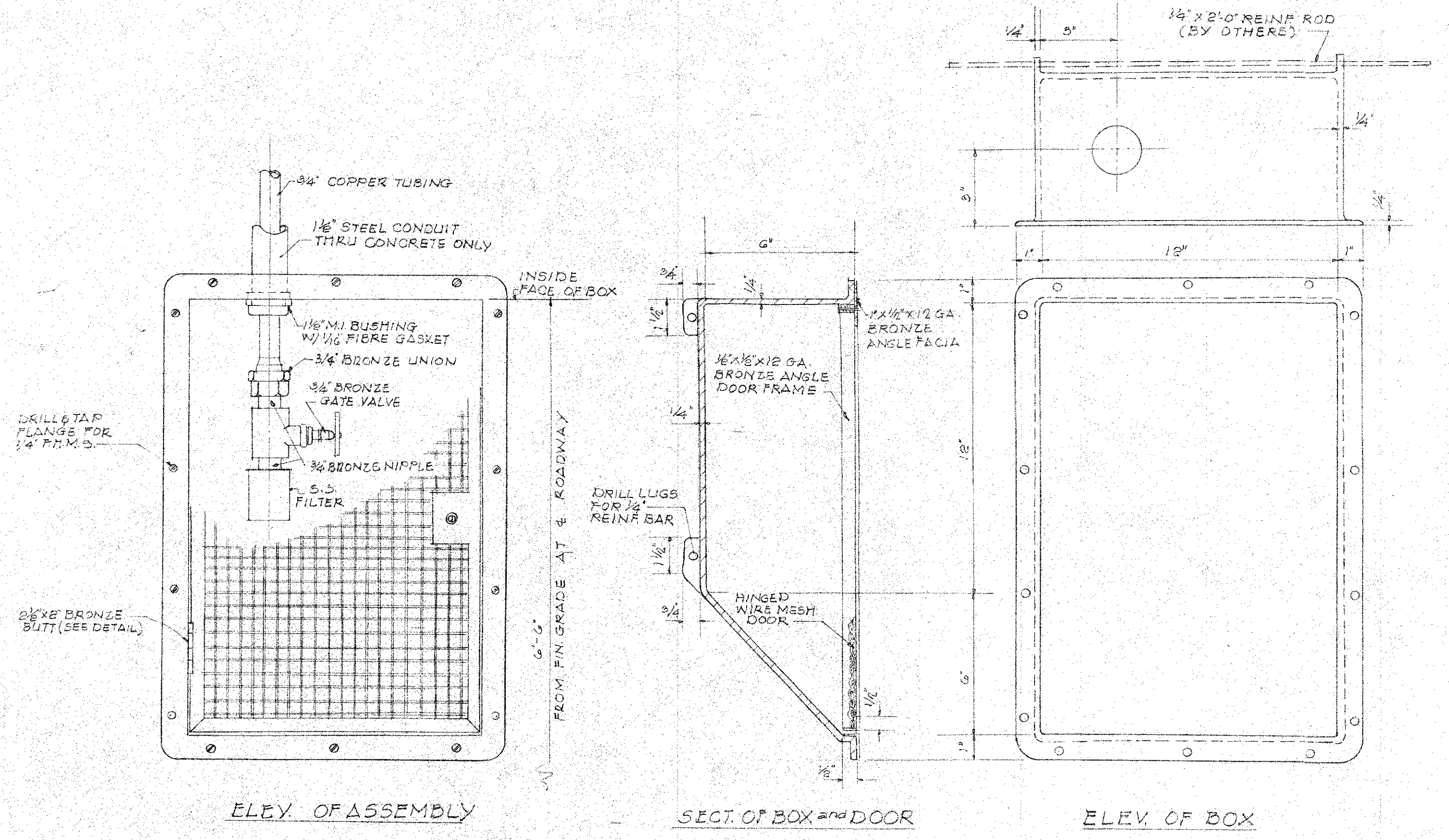
INTERIOR LIGHTING BOX - CAST IRON



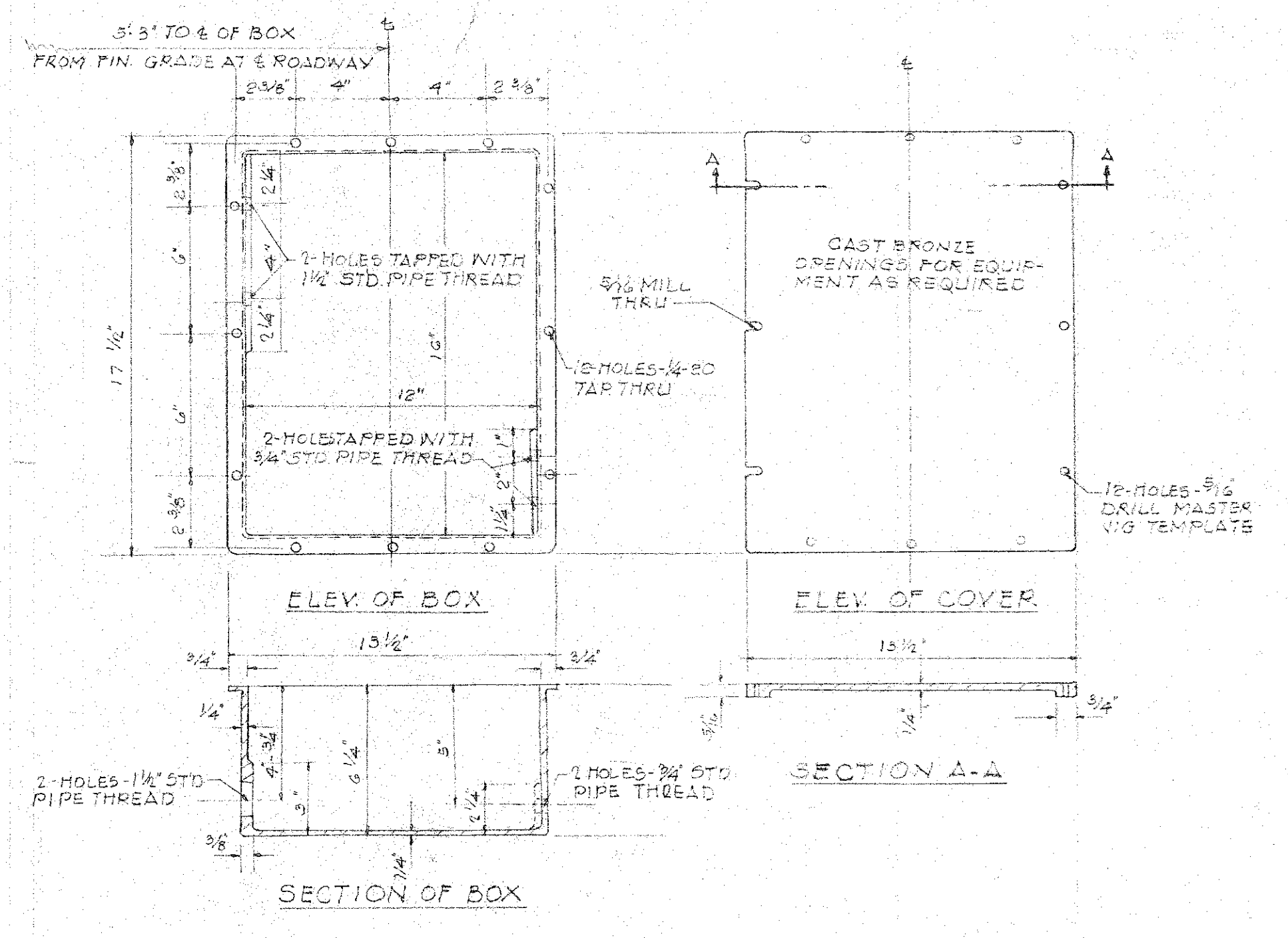
FIRE EXTINGUISHER BOX - CAST IRON



DETAIL OF BUTT



C.O. SAMPLING INLET BOX - CAST IRON



COMMUNICATION BOX - CAST IRON

FOR LOCATION OF INSERT BOXES SEE DWG T-6

GENERAL NOTES

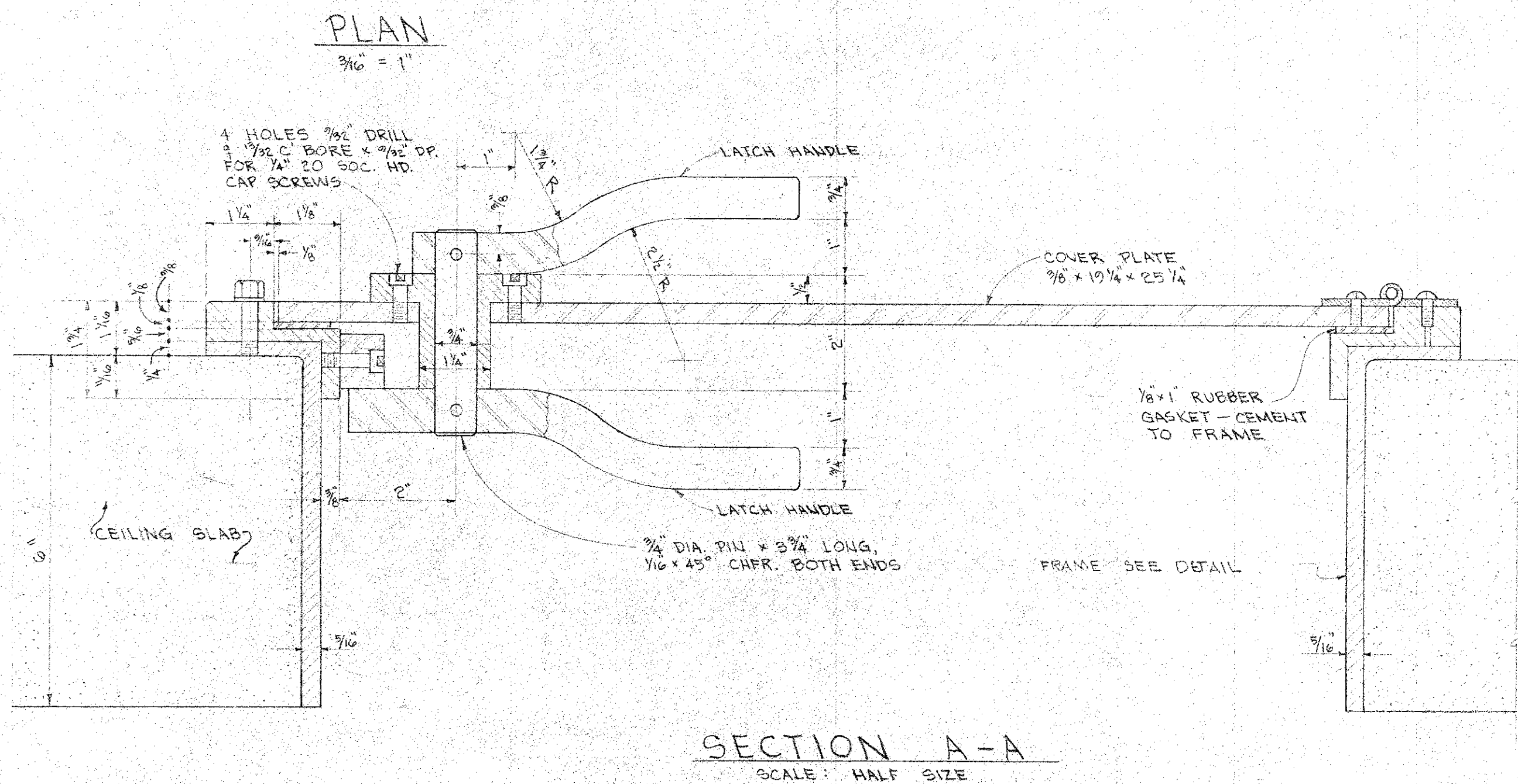
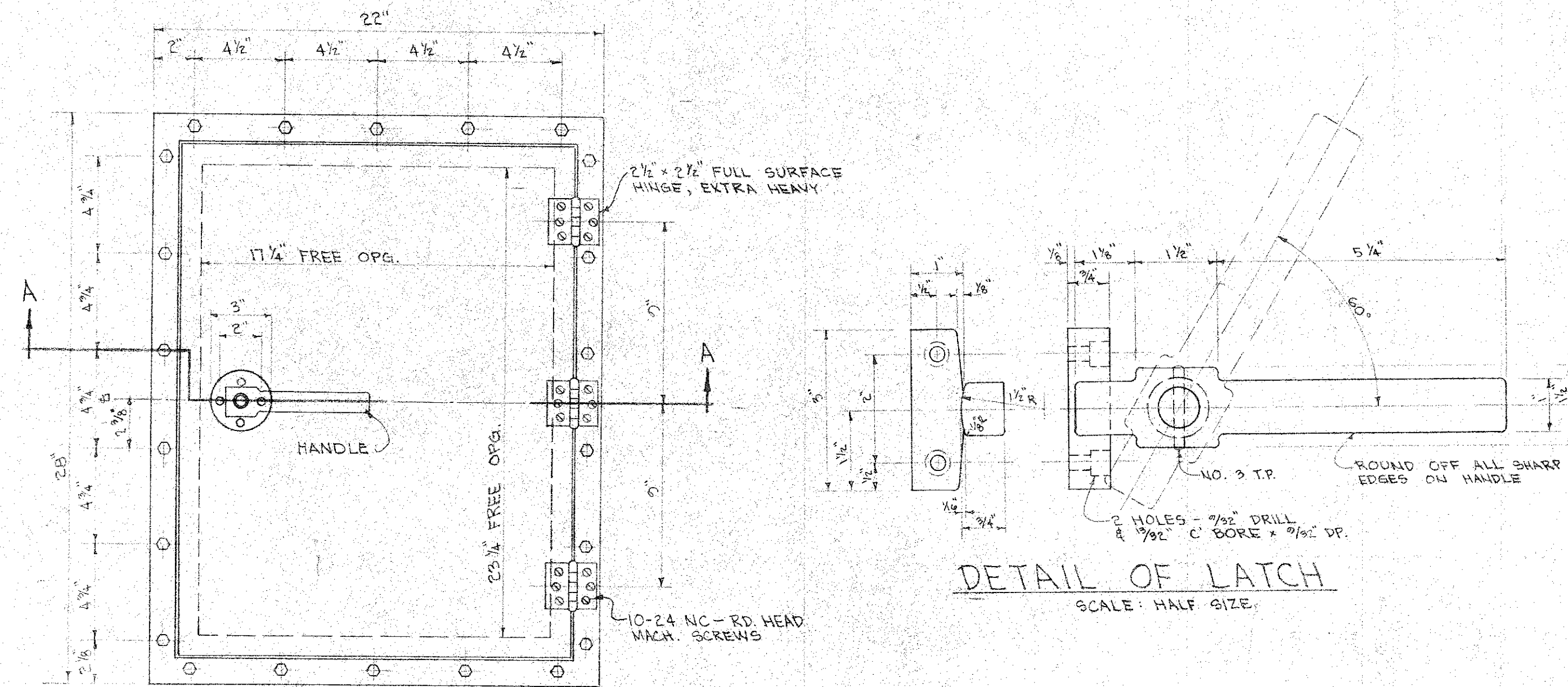
CAST RADI AND FILLETS TO CONFORM TO COMMERCIAL FOUNDRY PRACTICE

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
WILSON TUNNEL 2nd BORE TUNNEL
EMBEDMENT DETAILS

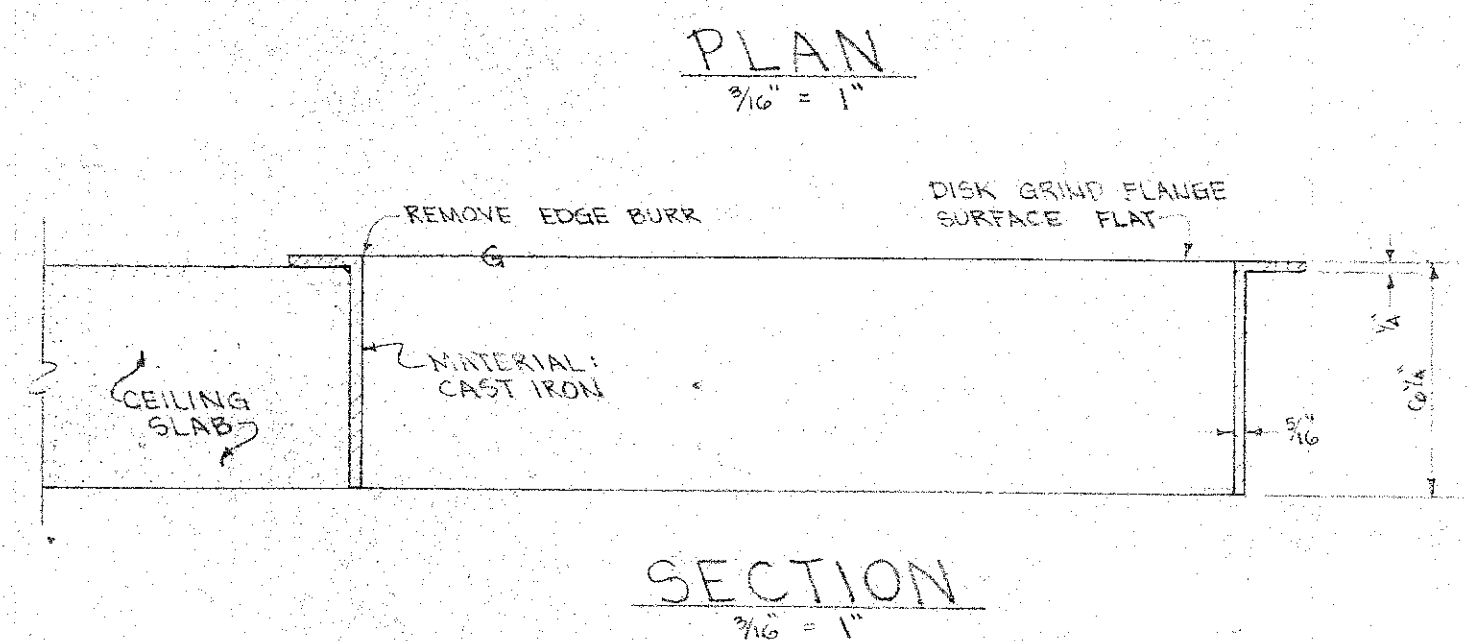
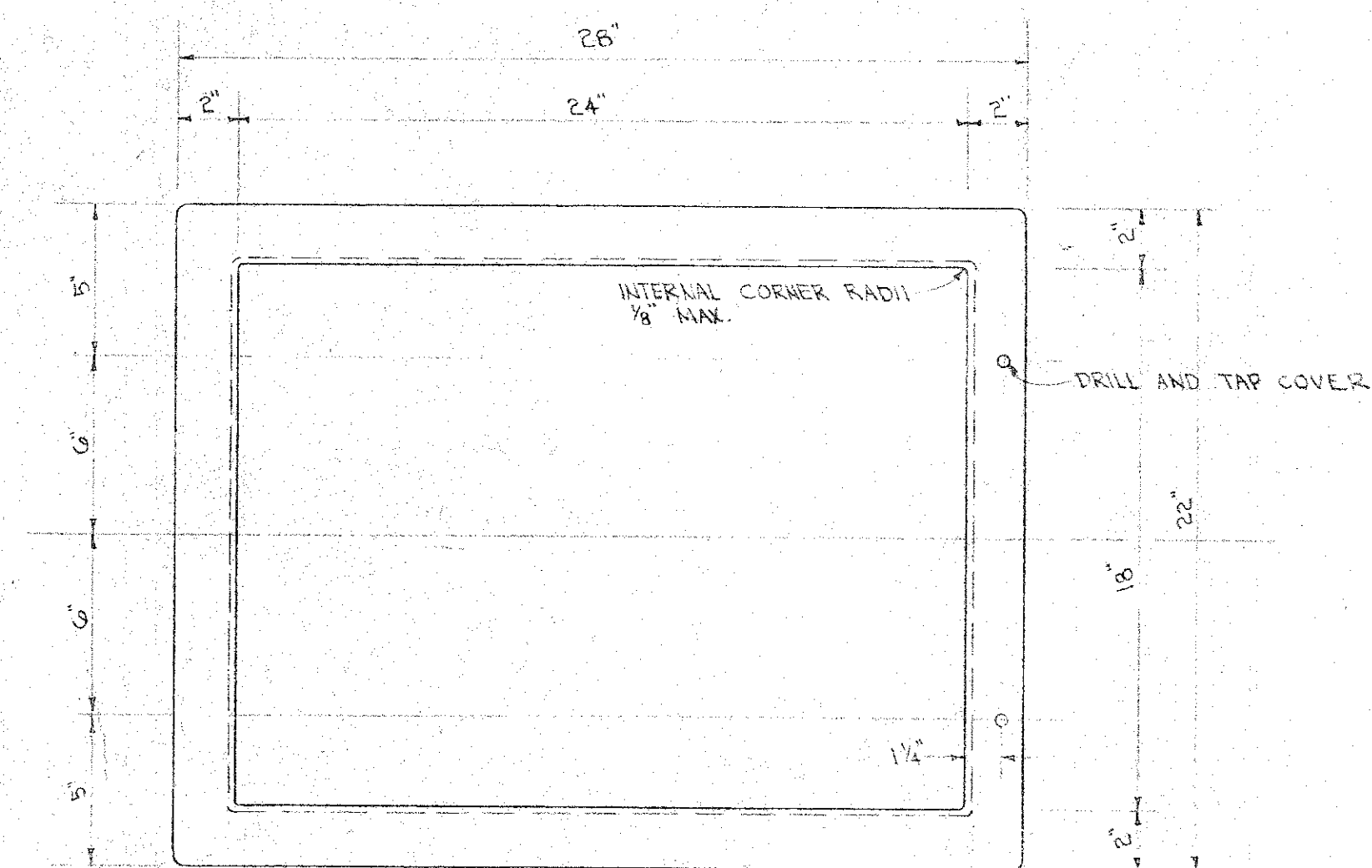
ENGINEER *De Lewin, Catherine* DATE *2-3-57*
DRAFTSMAN *L.H.* CHECKED BY *ROK*
SCALE *AS SHOWN* TRACER *AS SHOWN*
APPROVED *Asst. Engineer* APPROVED *Asst. Engineer*
CHIEF ENGINEER BUREAU ENGINEER

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

JOB NO. 13-57 DWG. T-9

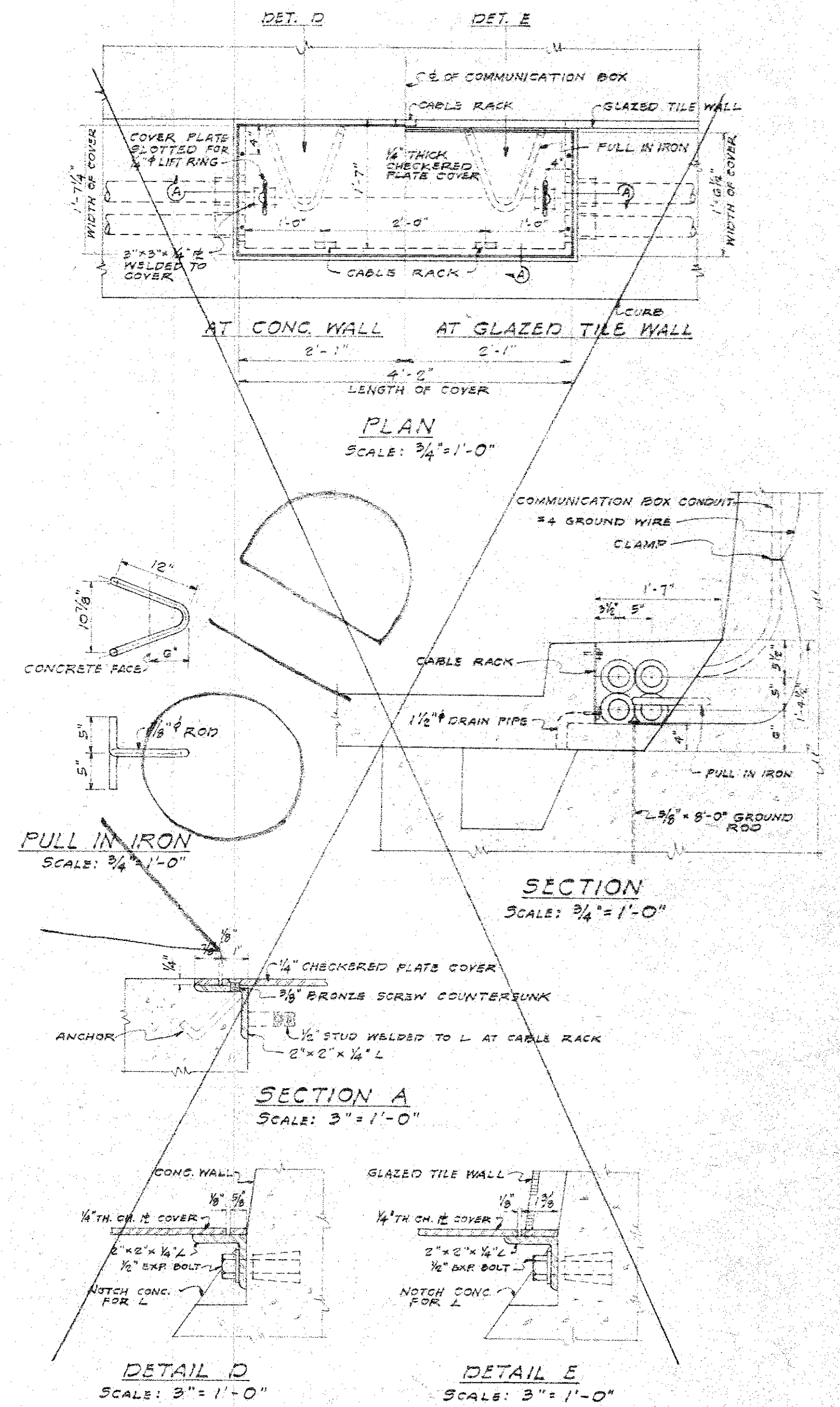


SECTION A-A
SCALE: HALF SIZE
CEILING HATCH COVER DETAIL



NOTES:
TAP HOLES IN FRAME SHALL BE LOCATED FROM A MASTER JIG TEMPLATE.
CAST RADI & FILLETS TO CONFORM TO COMMERCIAL FOUNDRY PRACTICE, EXCEPT WHERE THREAD OF SCREWS IN FLANGE TO BE PROTECTED WITH NUTS OR CAP DURING INSTALLATION.

CEILING HATCH FRAME DETAIL



HANDHOLE DETAIL

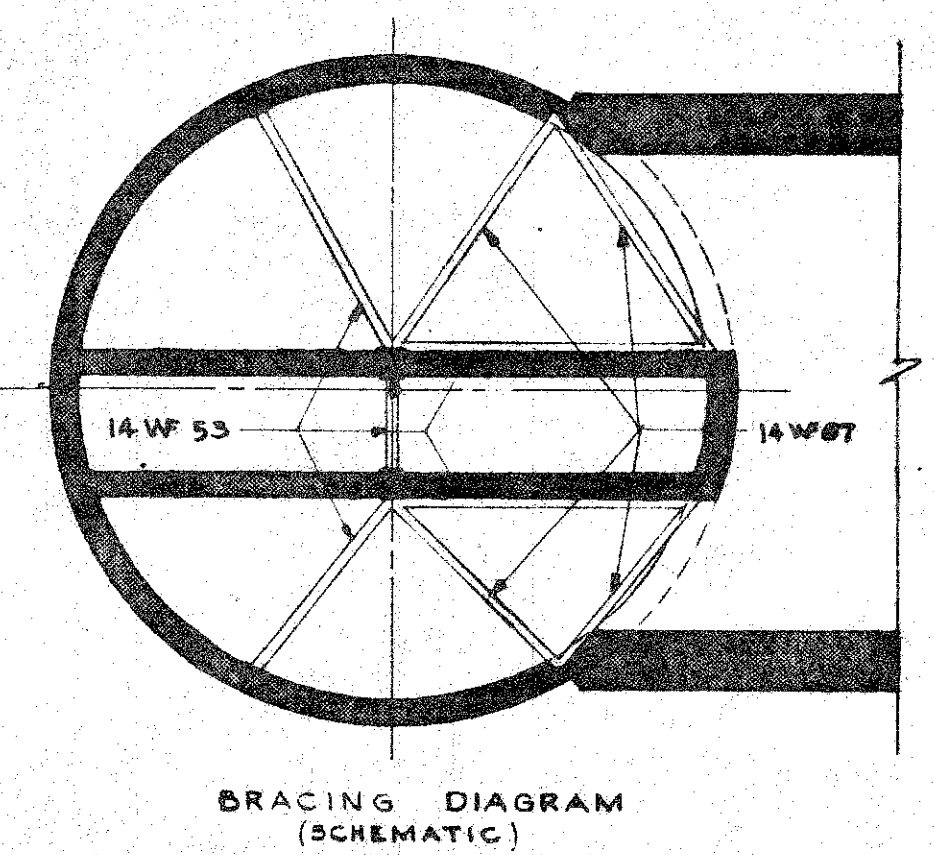
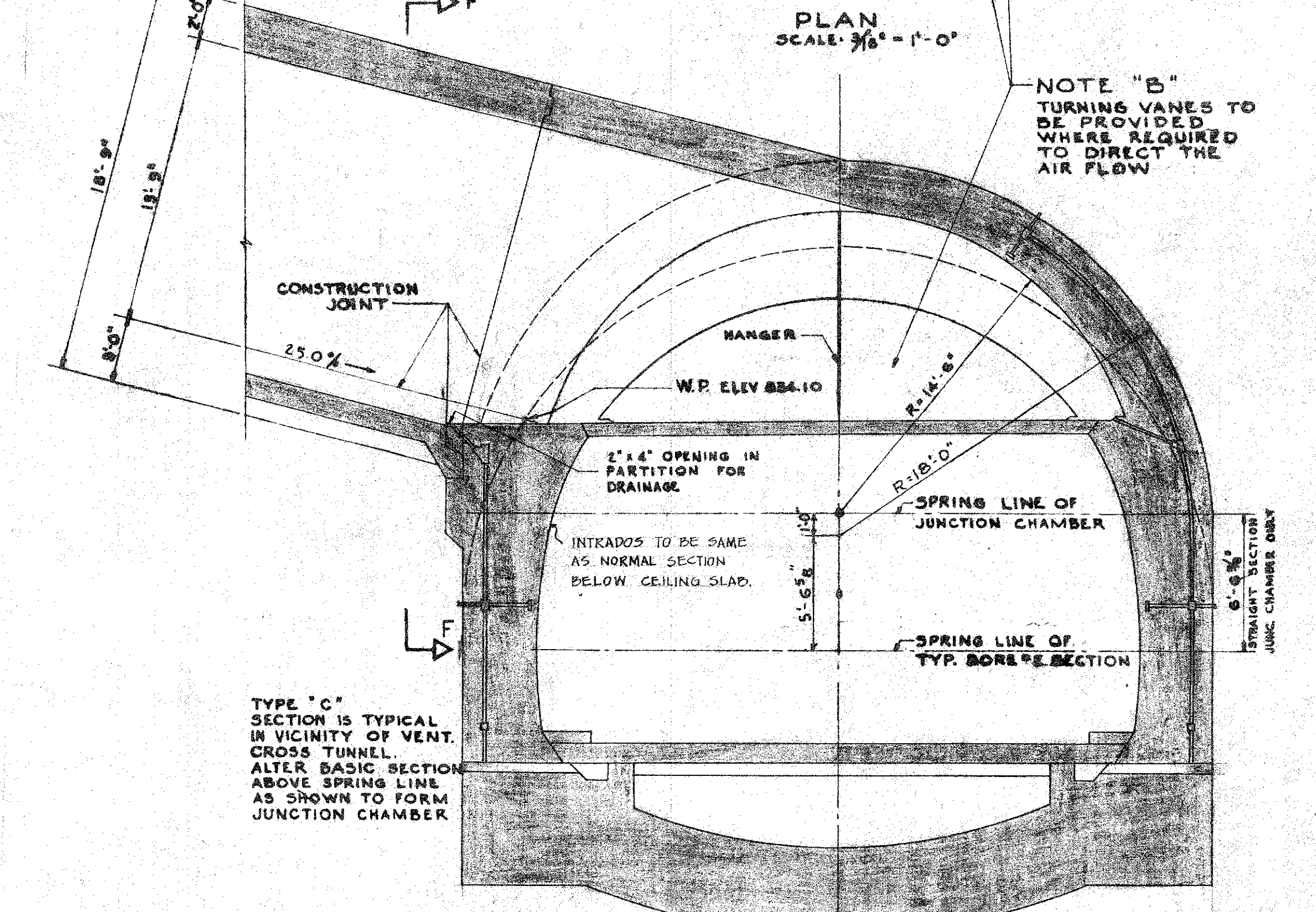
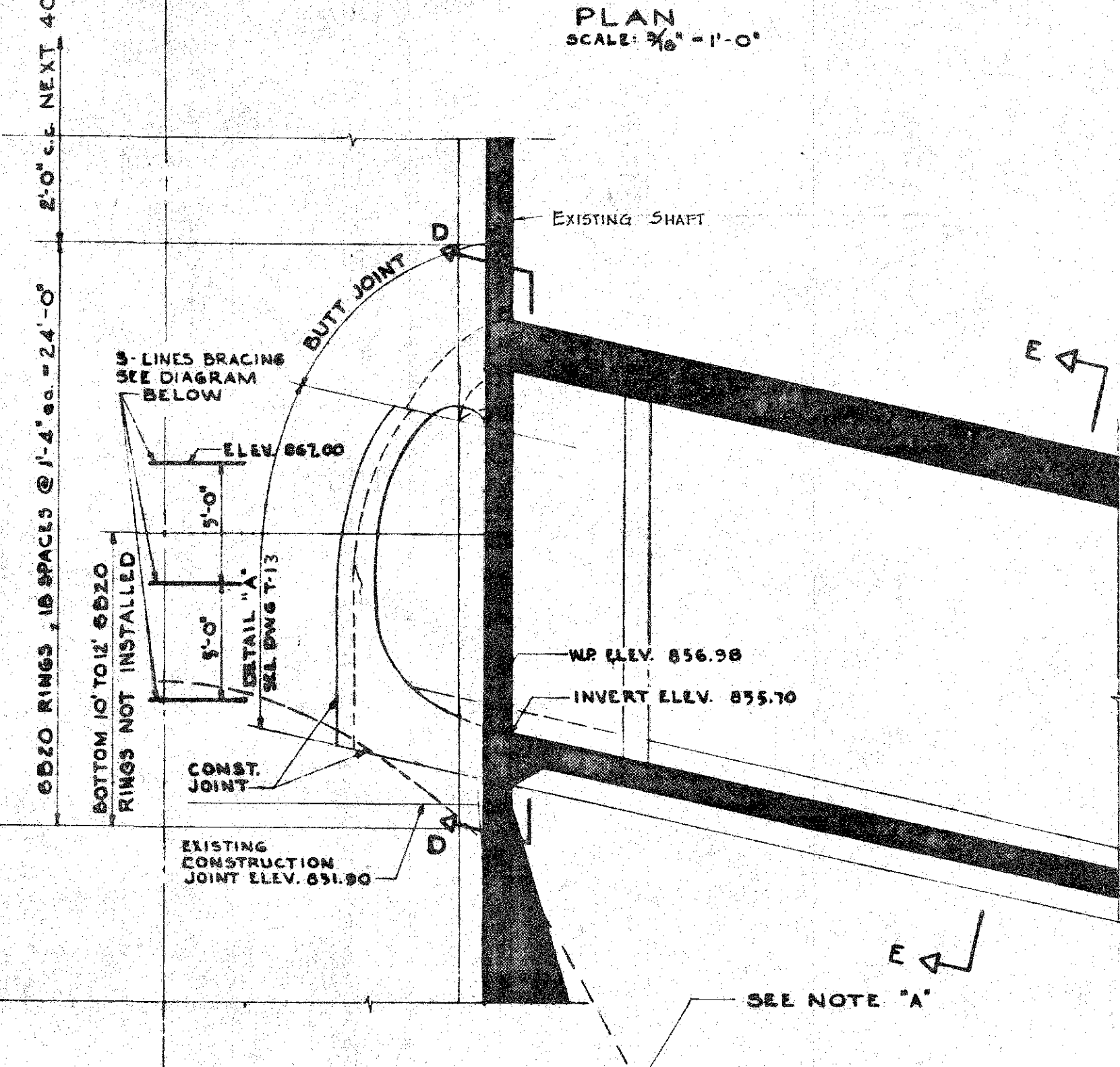
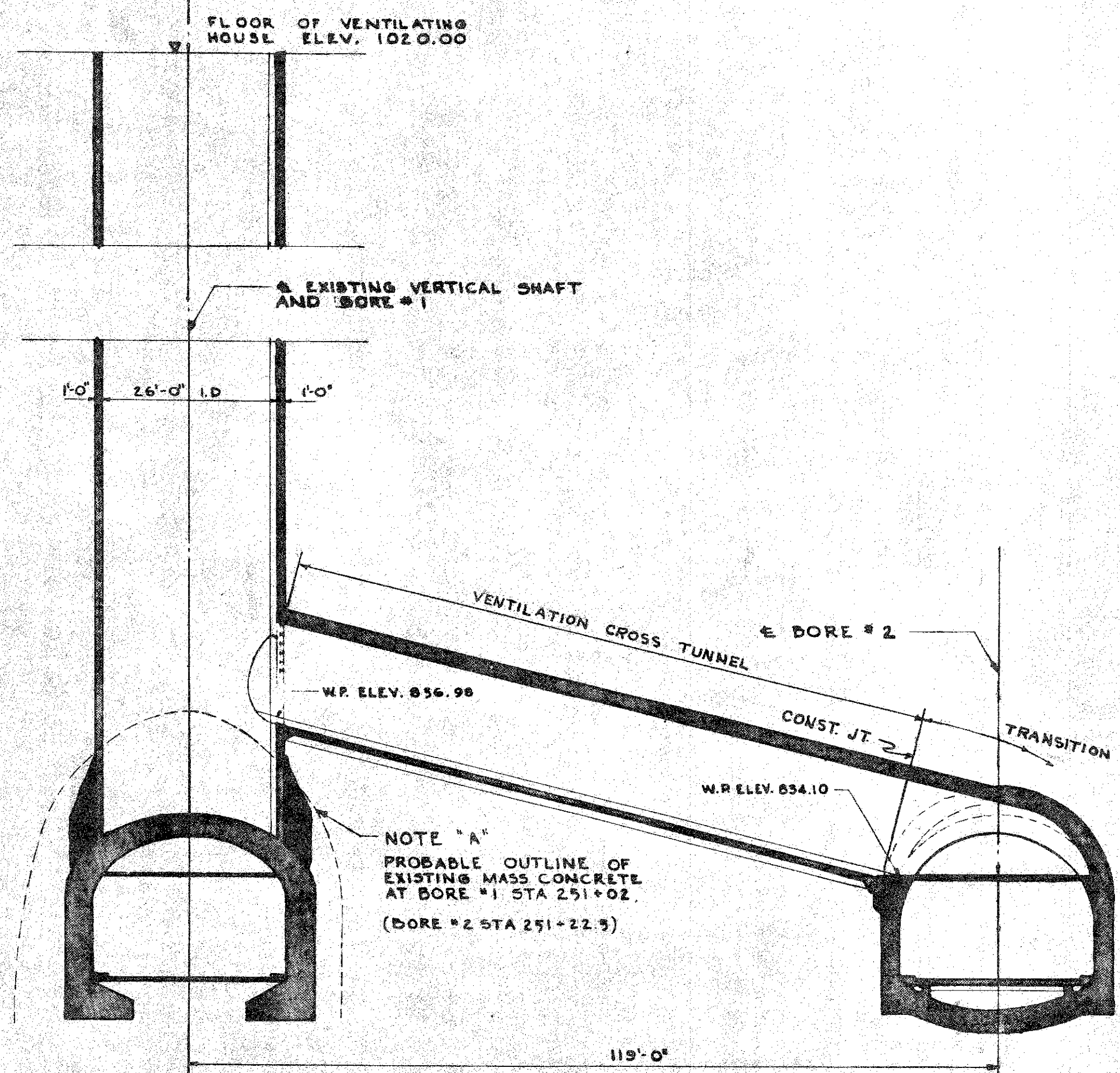
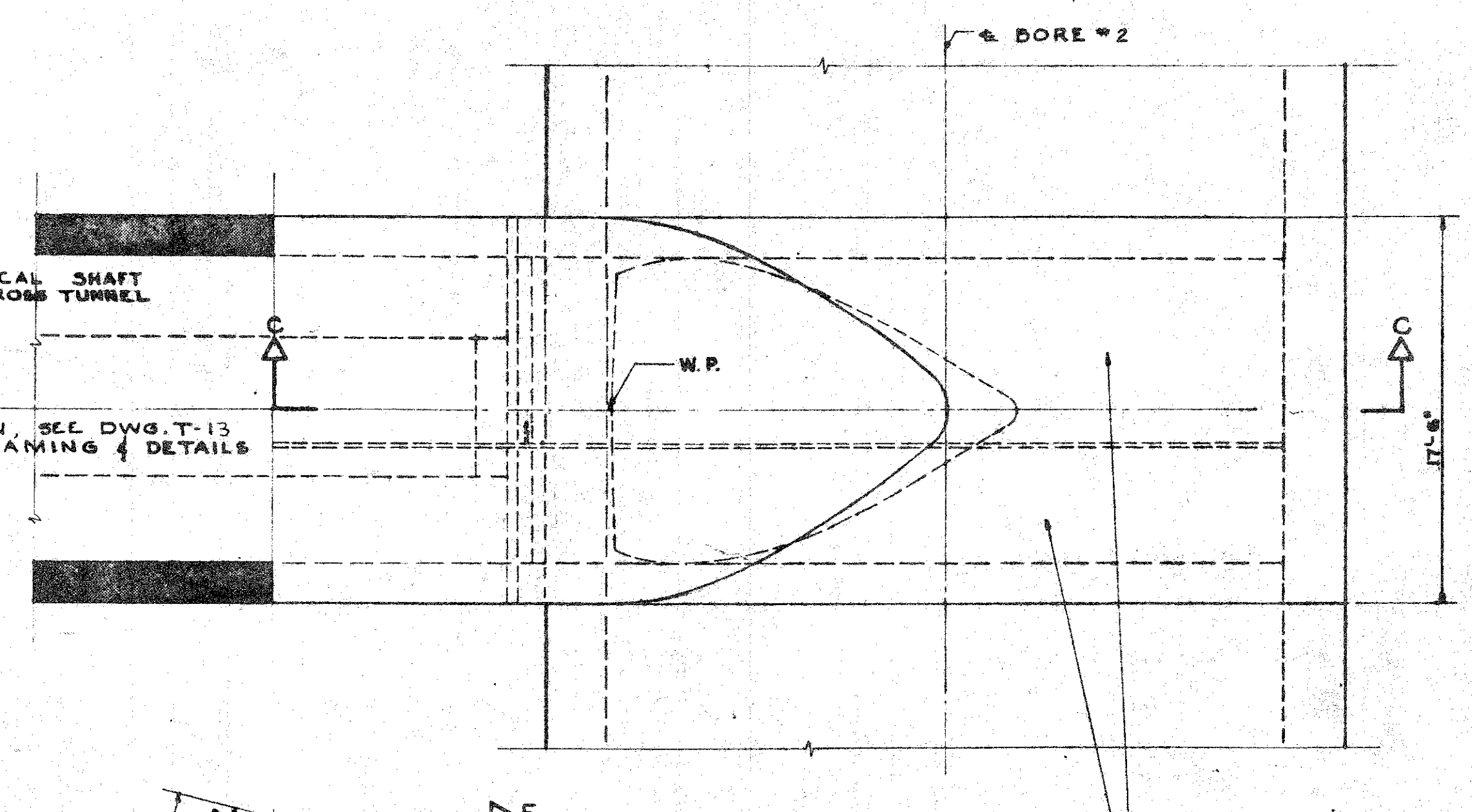
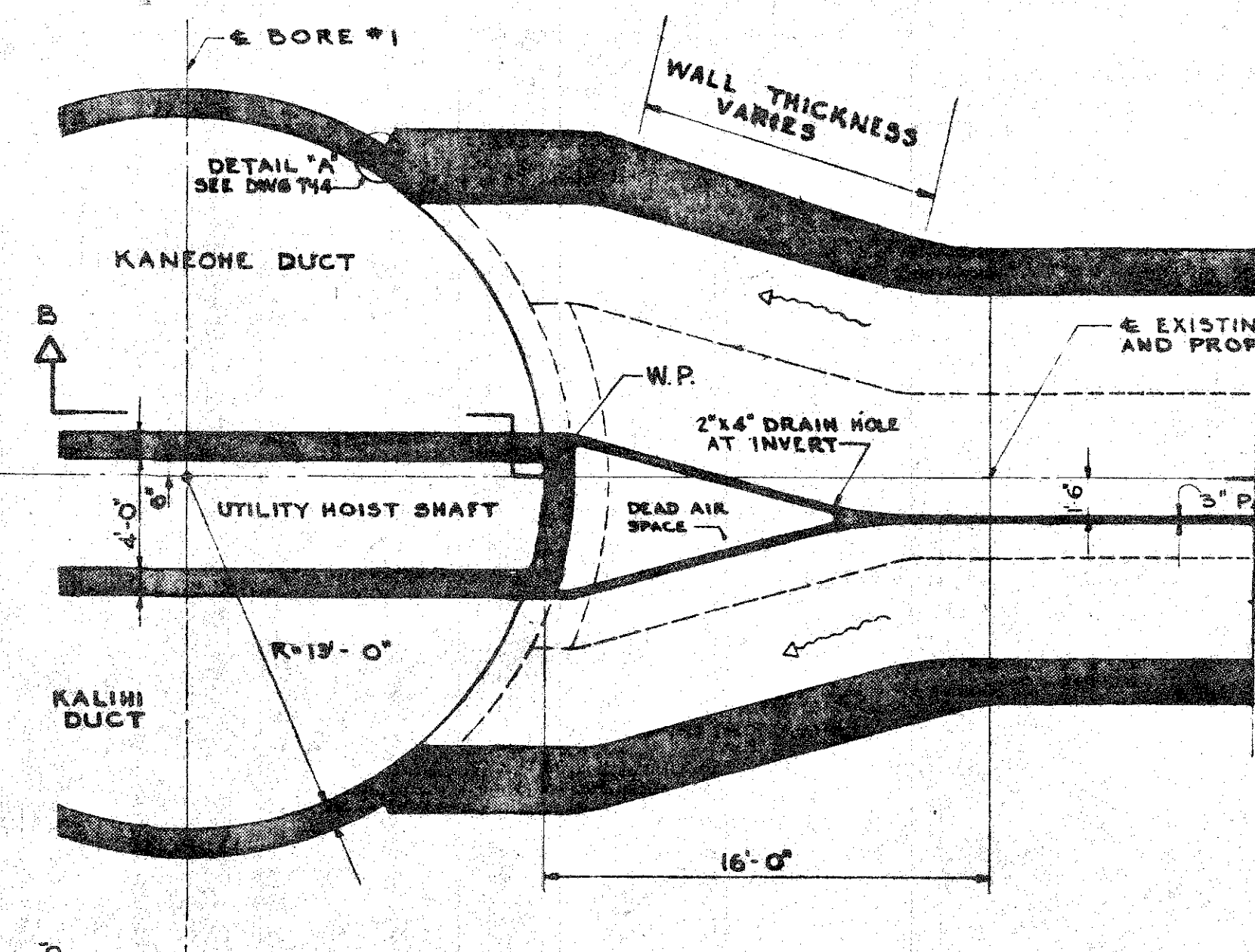
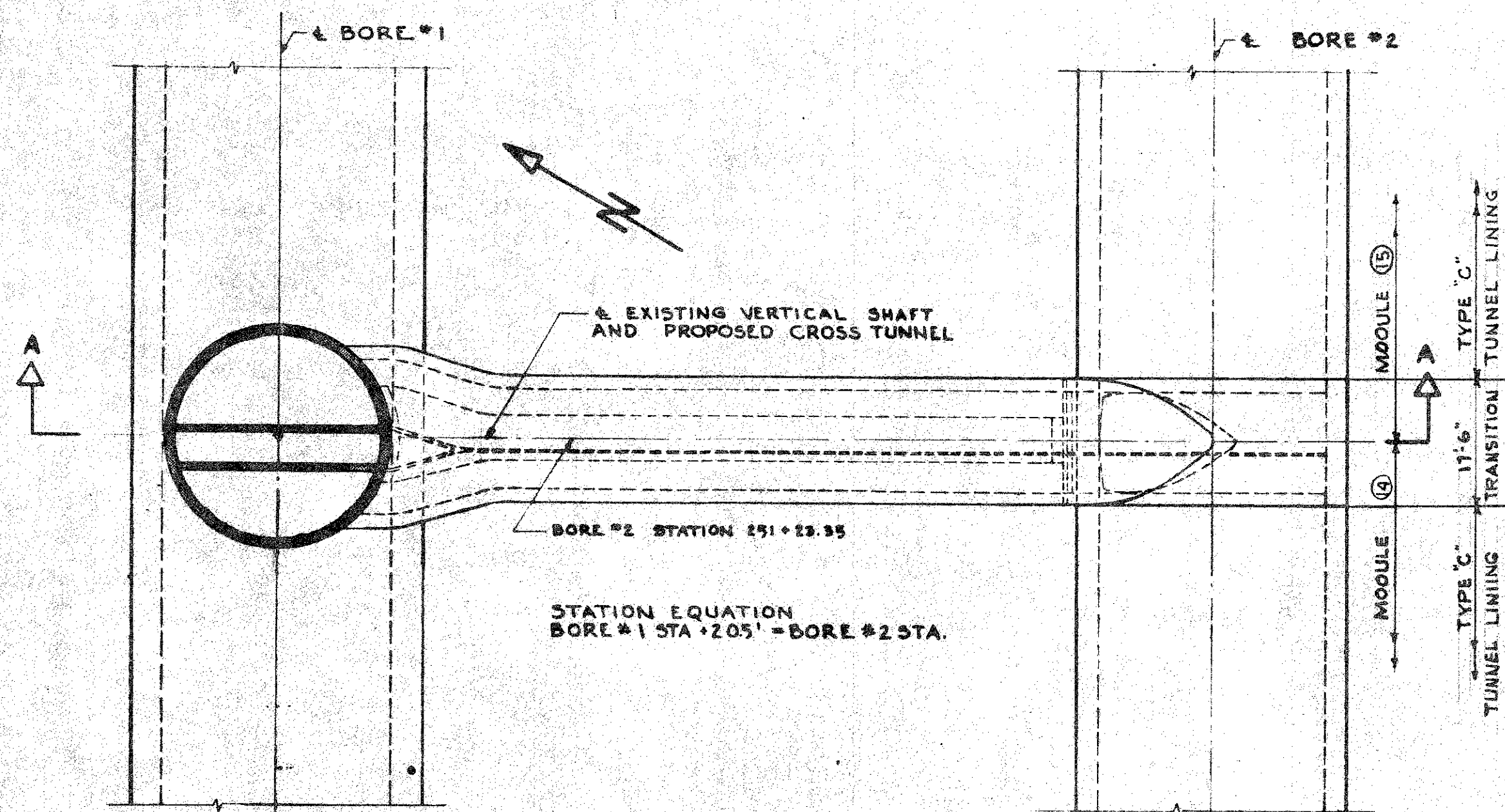
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

**WILSON TUNNEL 2nd BORE
TUNNEL
EMBEDMENT DETAILS**

ENGINEER *De Leuw, Cather & Co* DATE *8-3-57*
DRAFTSMAN *RY* CHECKED BY *ROK*
SCALE _____ TRACER _____
APPROVED *W. M. By* APPROVED *Sum*
CHIEF ENGINEER BUREAU ENGINEER

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

JOB NO. 13-57 DWG. T-10



NOTE "A"
PROBABLE OUTLINE OF
EXISTING MASS CONCRETE
AT BORE #1 STA 251+02.
(BORE #2 STA 251+22.9)

NOTE "B"
TURNING VANES TO
BE PROVIDED
WHERE REQUIRED
TO DIRECT THE
AIR FLOW

TYPE "C"
SECTION IS TYPICAL
IN VICINITY OF VENT.
CROSS TUNNEL.
ALTER BASIC SECTION
ABOVE SPRING LINE
AS SHOWN TO FORM
JUNCTION CHAMBER

DE LEUW, CATHY & COMPANY
ENGINEERS
CHICAGO ILLINOIS

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

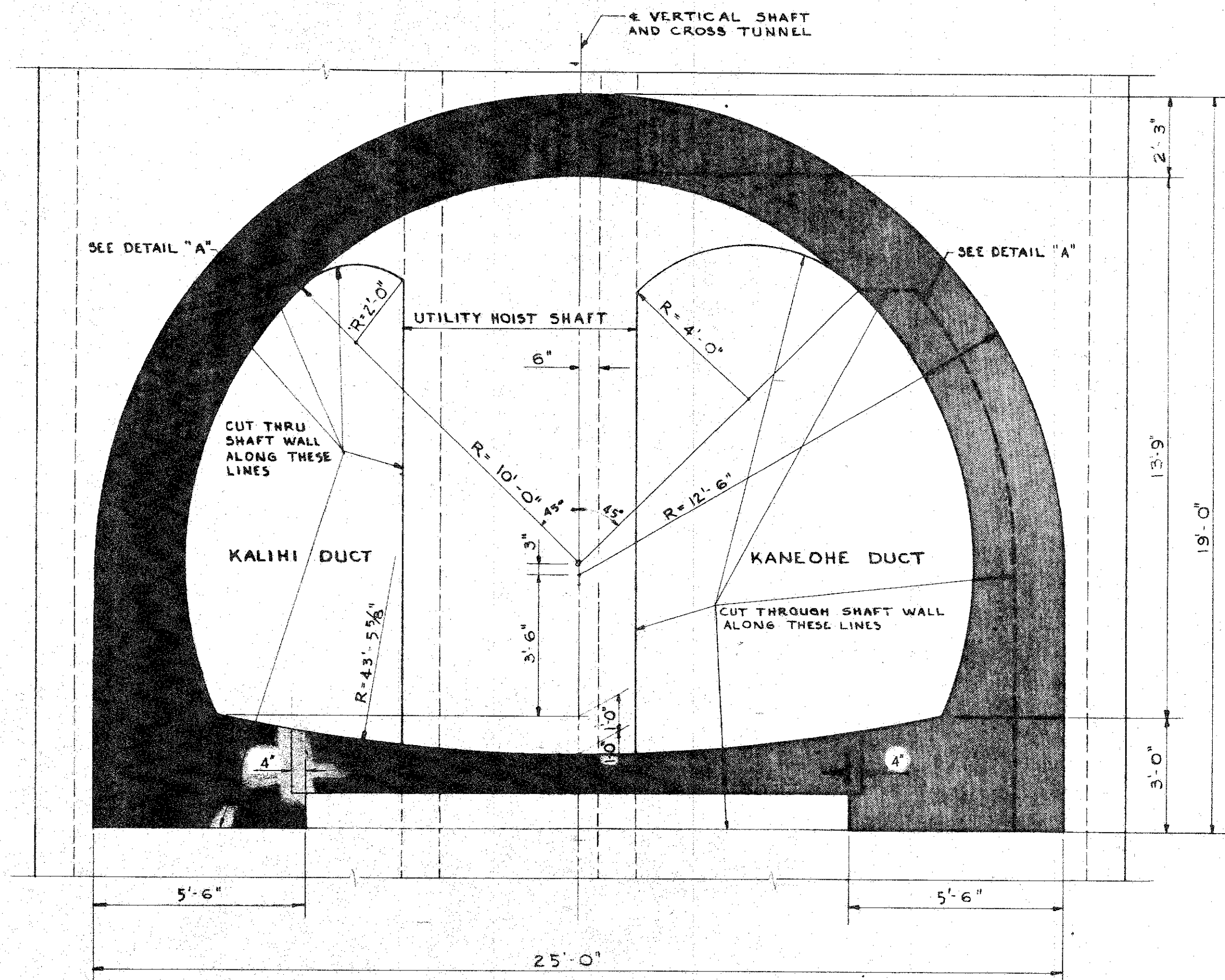
WILSON TUNNEL 2nd BORE
VENTILATION CROSS TUNNEL
LAYOUT & GENERAL NOTES

ENGINEER: C. ENSMAN DATE: JULY 26, 1987
DRAFTSMAN: J. SCHLEGEL CHECKED BY: L.N. RIAN
SCALE: AS SHOWN TRAGER
APPROVED: [Signature] APPROVED: [Signature]

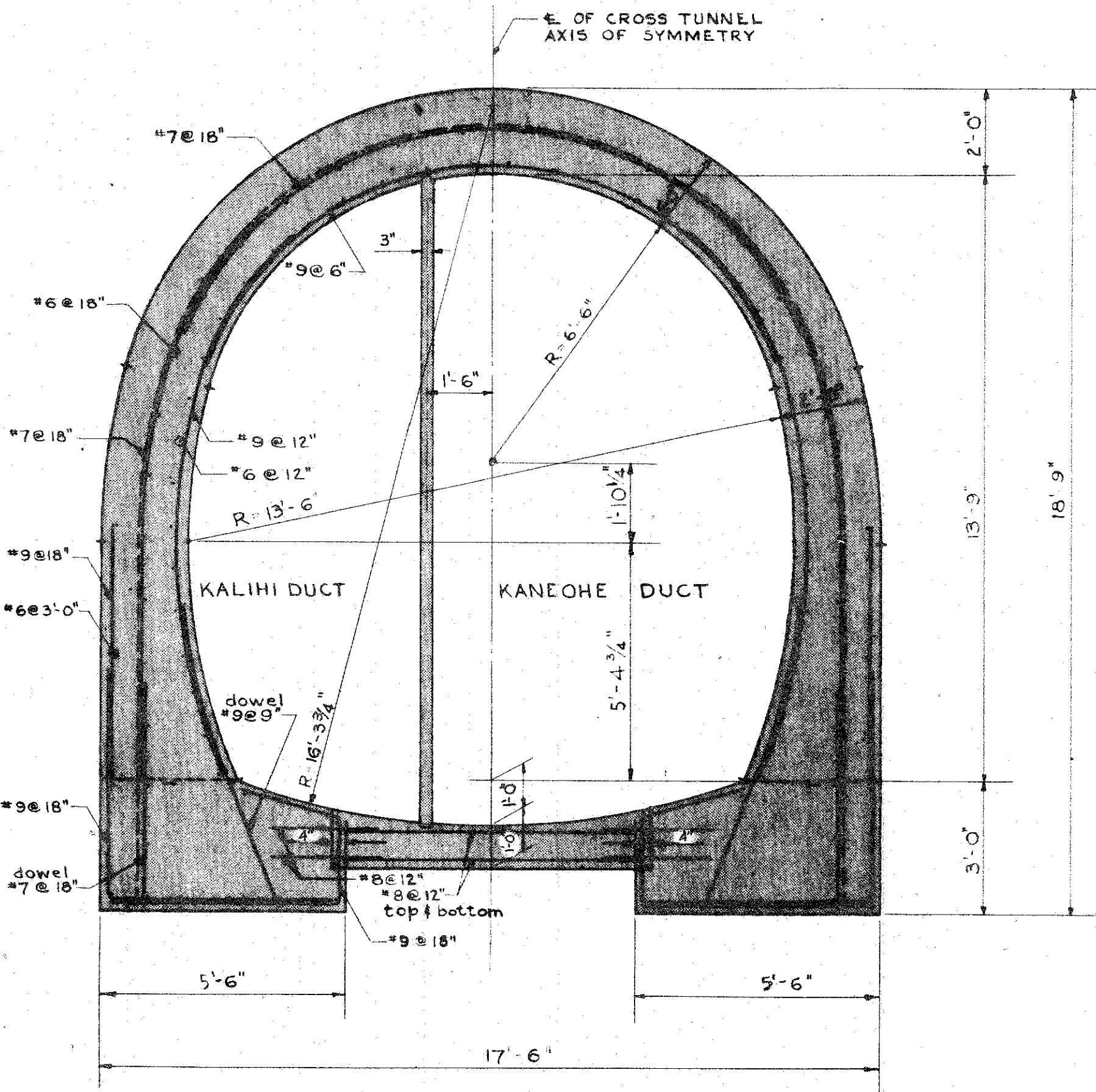
CHIEF ENGINEER BUREAU ENGINEER

PL BY	PROFILE	C.B.
CR SEC	IS	IS
W.M. BY	P.W. BY	S.B.

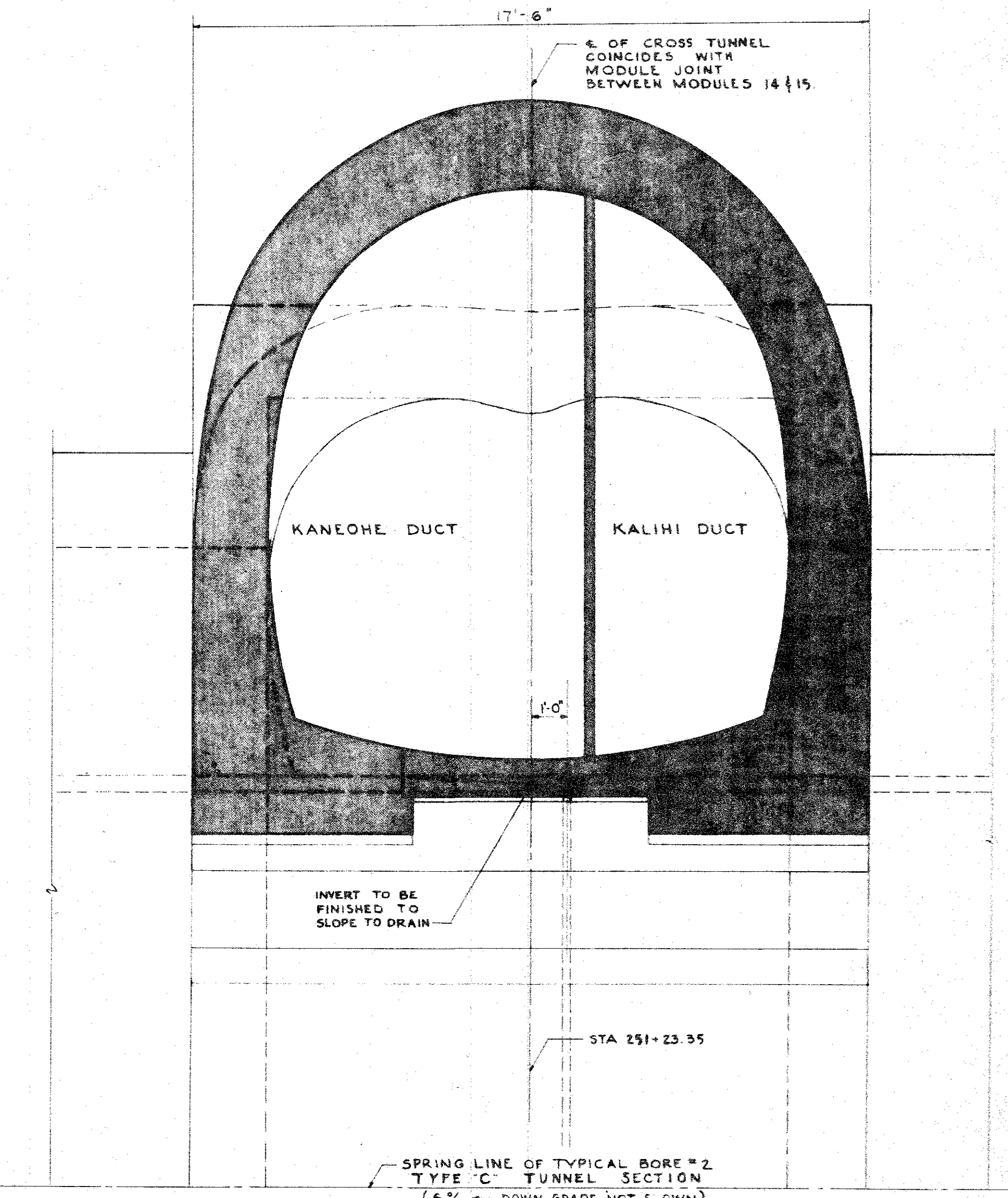
JOB NO. 13-57 DWG. NO. T-12



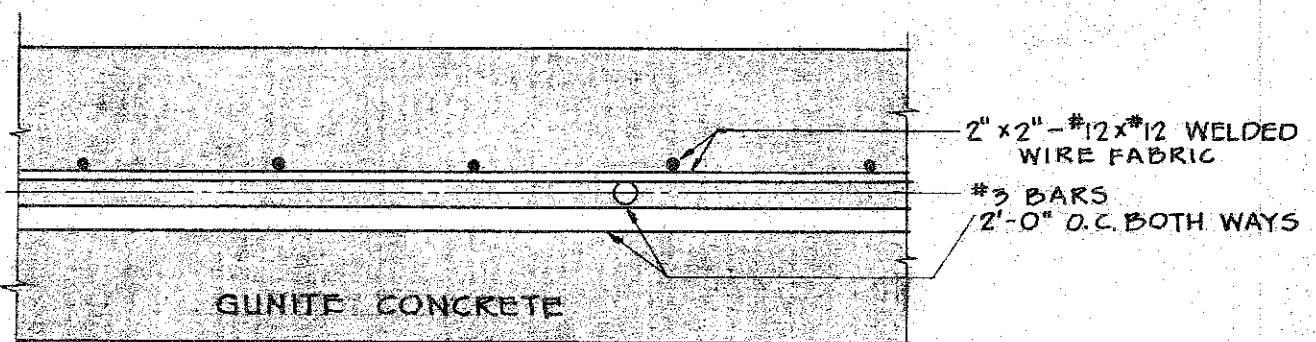
SECTION D-D (SEE DWG T-12)
SECTION THROUGH CROSS TUNNEL
AT JUNCTION WITH VERTICAL SHAFT
SCALE: 3/8" = 1'-0"



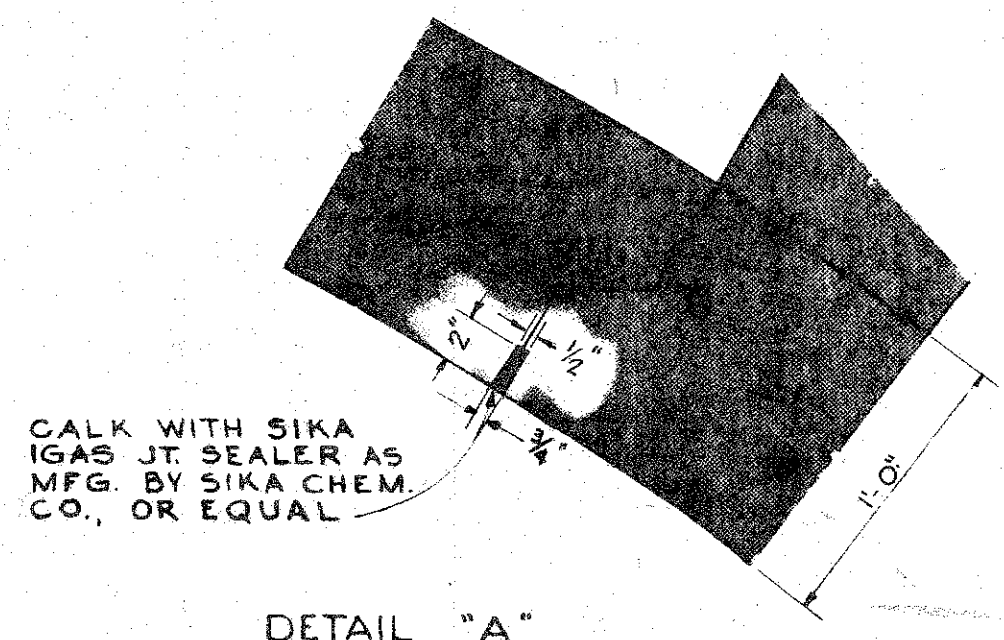
SECTION E-E (SEE DWG T-12)
TYPICAL CROSS SECTION
VENTILATING CROSS TUNNEL
SCALE: 3/8" = 1'-0"



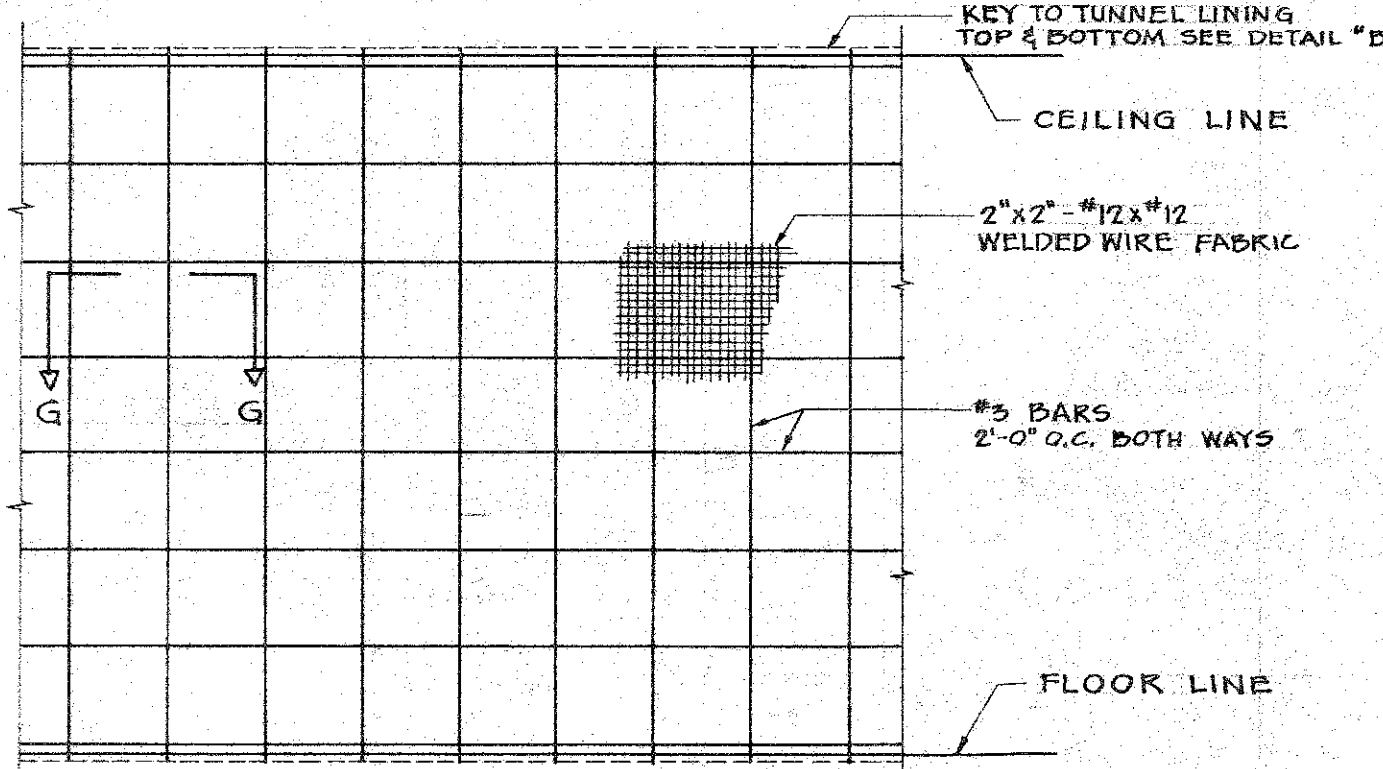
SECTION F-F (SEE DWG T-12)
SECTION THROUGH CROSS TUNNEL
AT JUNCTION WITH BORE #2
SCALE: 3/8" = 1'-0"



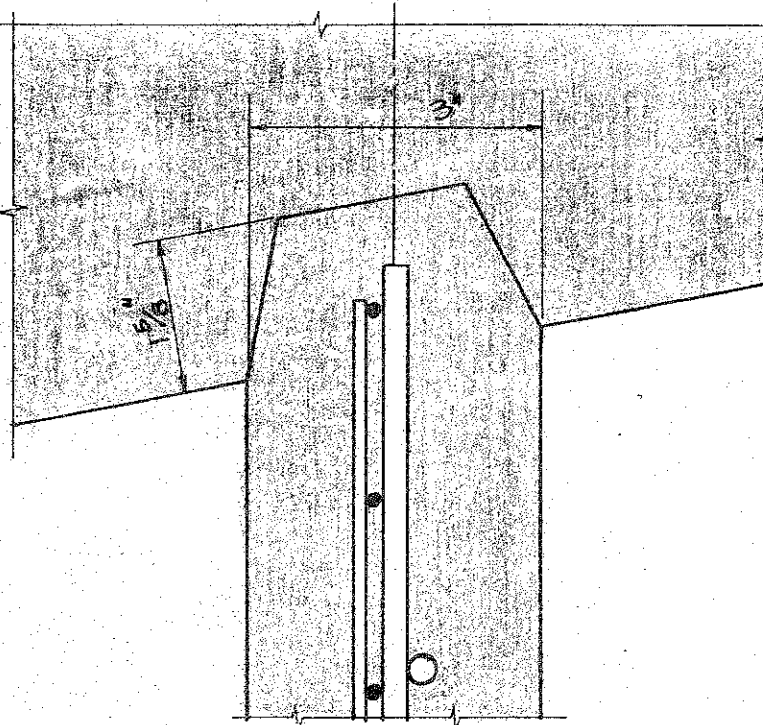
SECTION G-G
SCALE: 1/2" = 1'



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



ELEVATION OF PARTITION REINFORCEMENT
SCALE: 1/4" = 1'-0"



DETAIL "B"
SCALE: 1/2" = 1'

DE LEUW, CATHAR & COMPANY
ENGINEERS
CHICAGO ILLINOIS

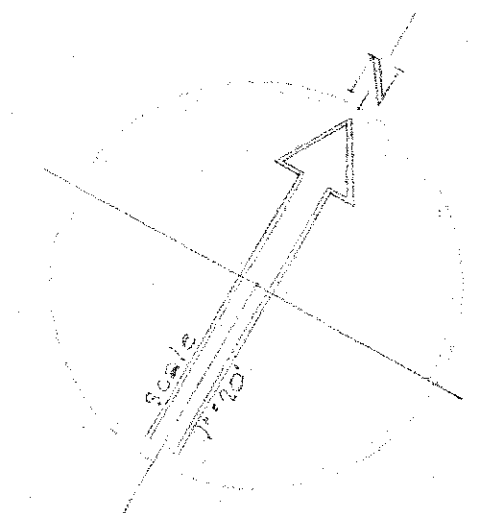
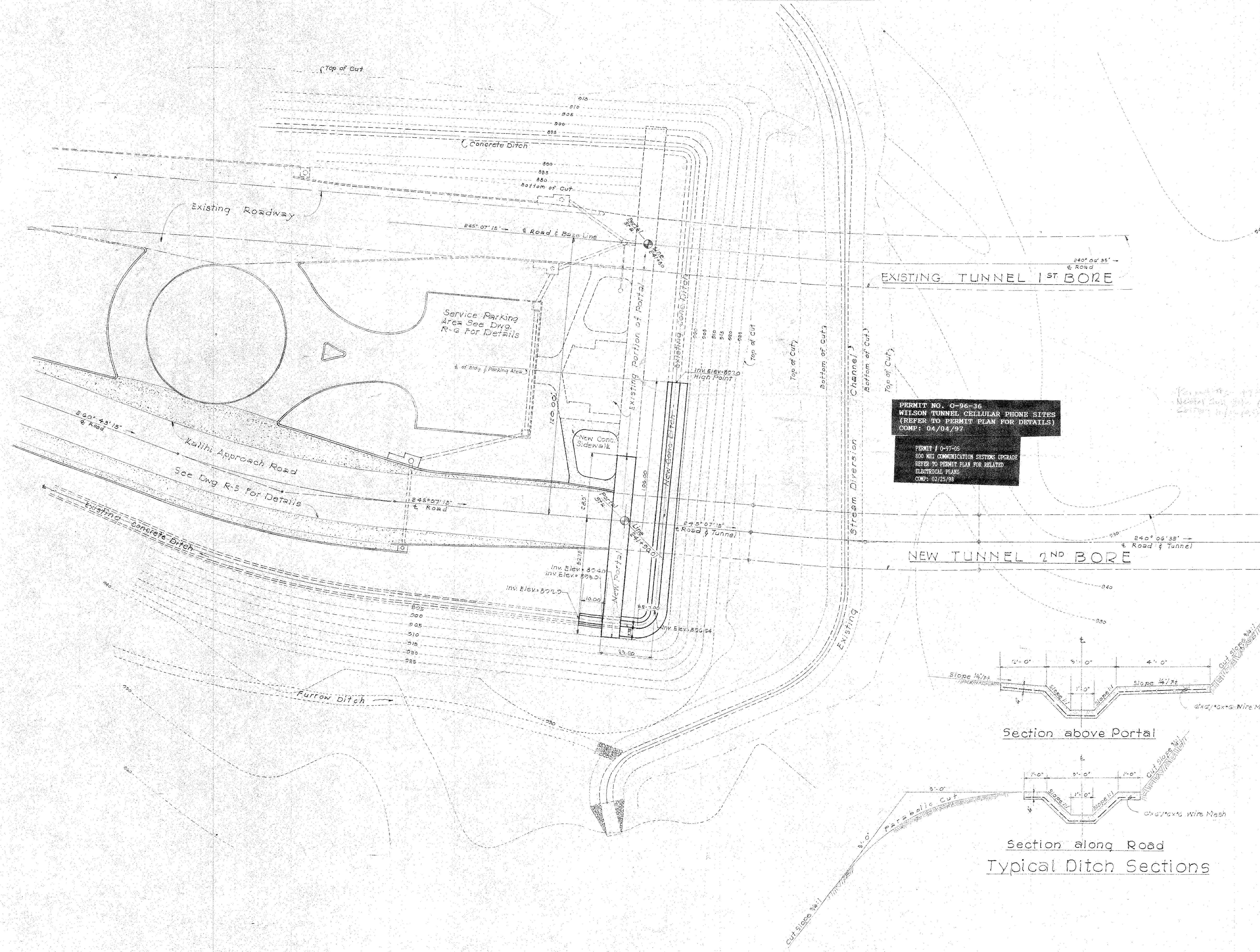
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

WILSON TUNNEL 2nd BORE
VENTILATION CROSS TUNNEL
SECTIONS & DETAILS

ENGINEER: C. ENGEMAN DATE: JULY 26, 1957
DRAFTSMAN: J. SCHLEGEL CHECKED BY: L. N. RIAN
SCALE: AS SHOWN
APPROVED: *[Signature]* APPROVED: *[Signature]*
CHIEF ENGINEER BUREAU ENGINEER

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

JOB NO. 13-57 DWG. NO. T-13



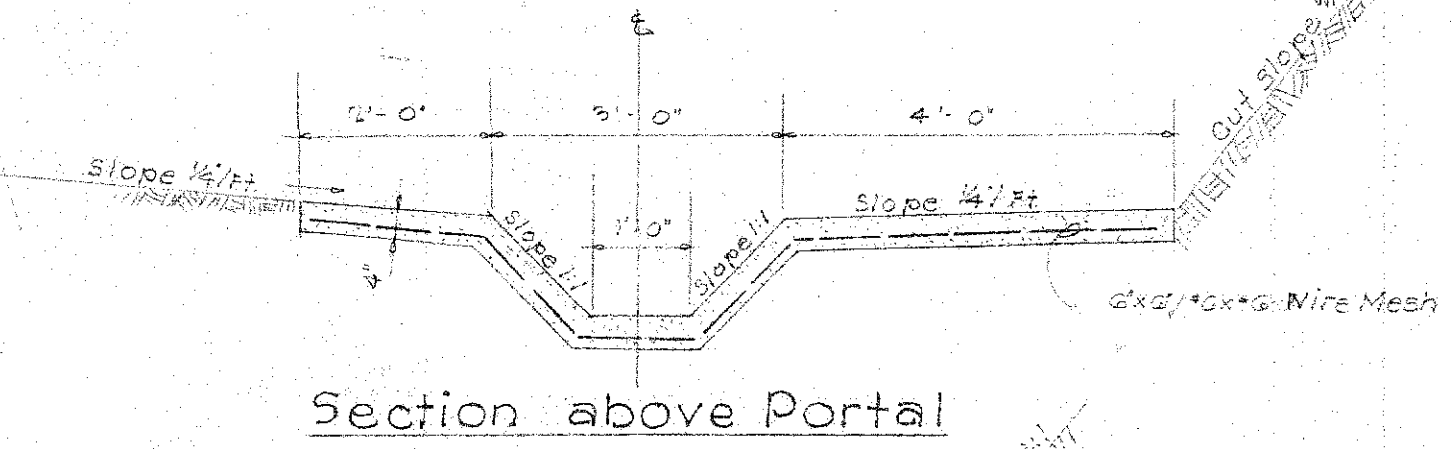
PERMIT NO. 0-96-36
 WILSON TUNNEL CELLULAR PHONE SITES
 (REFER TO PERMIT PLAN FOR DETAILS)
 COMP: 04/04/97

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

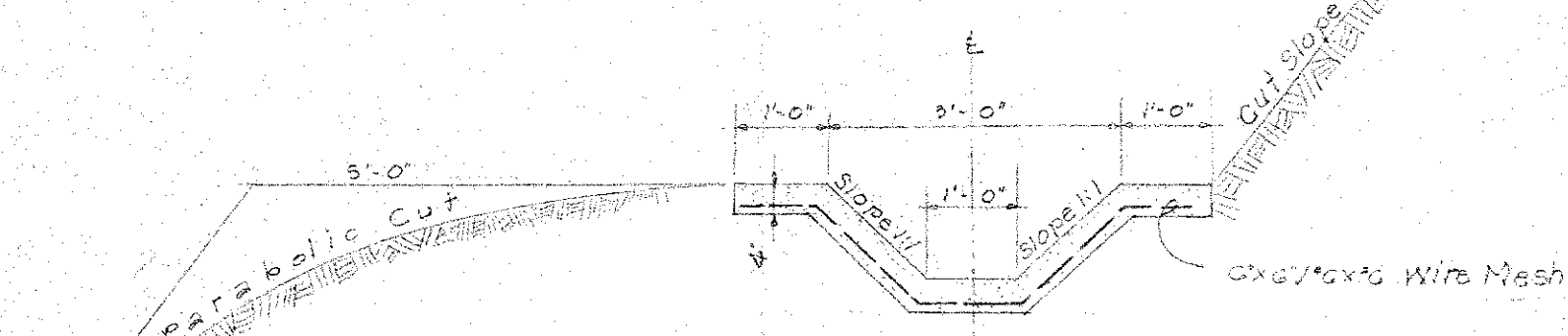
For info only - 1/17/98
 Wilson Tunnel 2nd Bore Portal
 Construction

- SYMBOLS**
- Exist Contour
 - Exist Structures
 - New Structures

NOTE:
 All work shown as existing
 shall be built by others.



Section above Portal



Section along Road
 Typical Ditch Sections

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

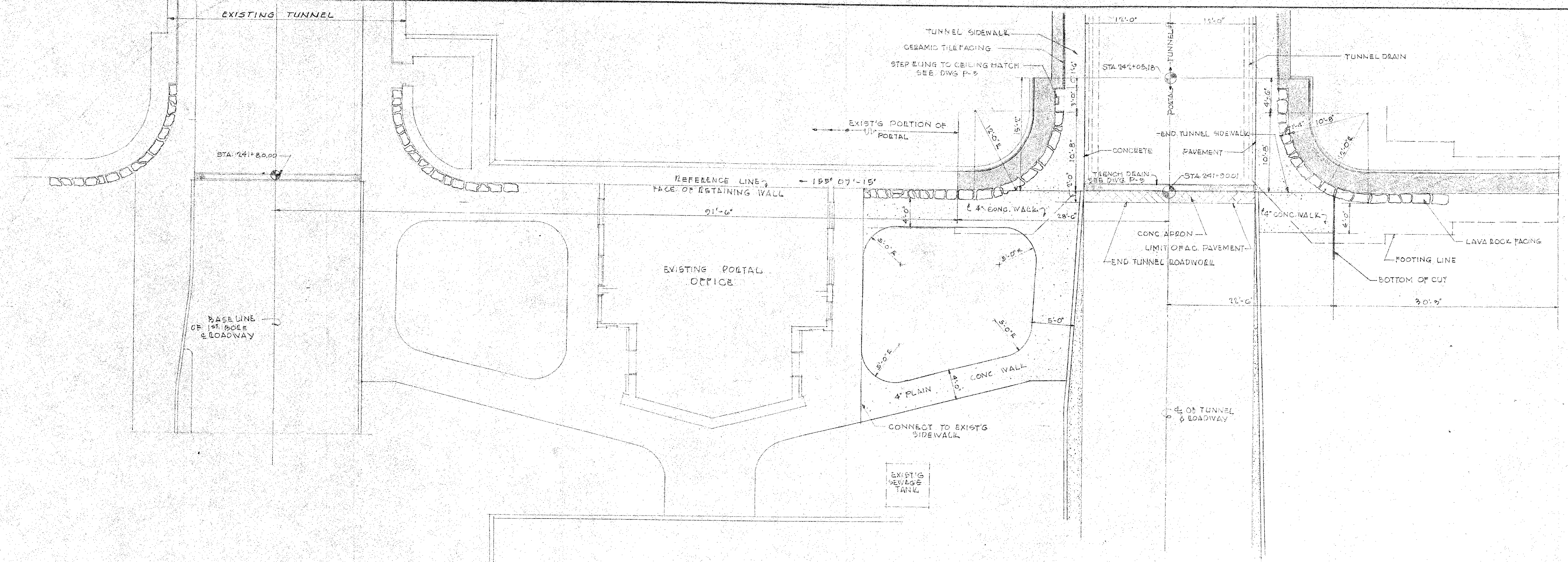
**WILSON TUNNEL 2ND BORE
 KALIHI PORTAL
 SITE PLAN**

ENGINEER *W. Sun* DATE 8-8-57
 DRAFTSMAN *L. W.* CHECKED BY *Sec*
 SCALE TRACER
 APPROVED *W. Sun* APPROVED *W. Sun*
 CHIEF ENGINEER BUREAU ENGINEER

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

JOB NO. 13-57 DWG. P-1

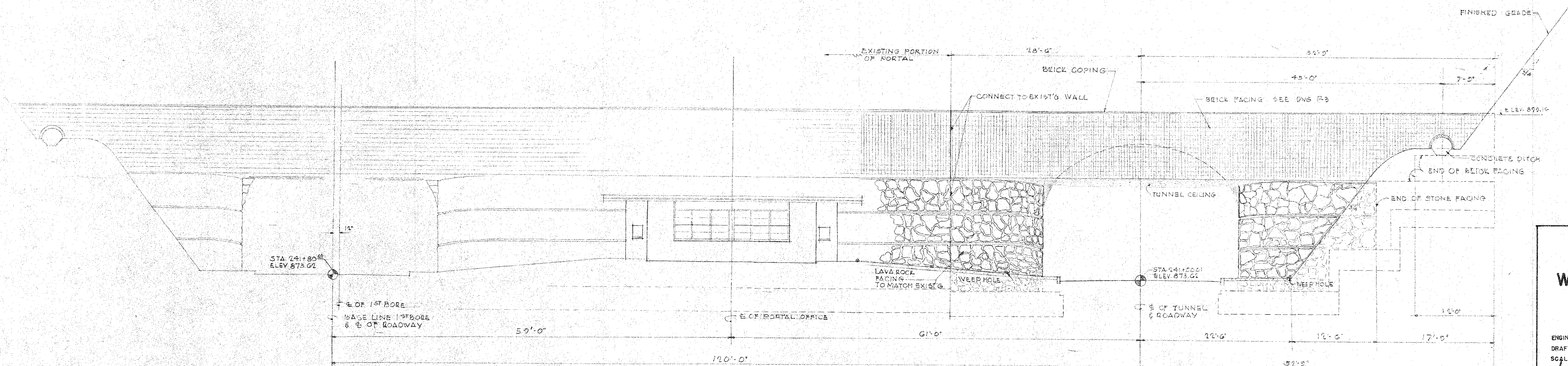
FILE	POCKET	FOLDER	N.O.
11	1	1	22



KALIHI PORTAL PLAN
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

*Permit # 0-96-36
Wilson Tunnel Cellular Phone Sites
Complete*



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

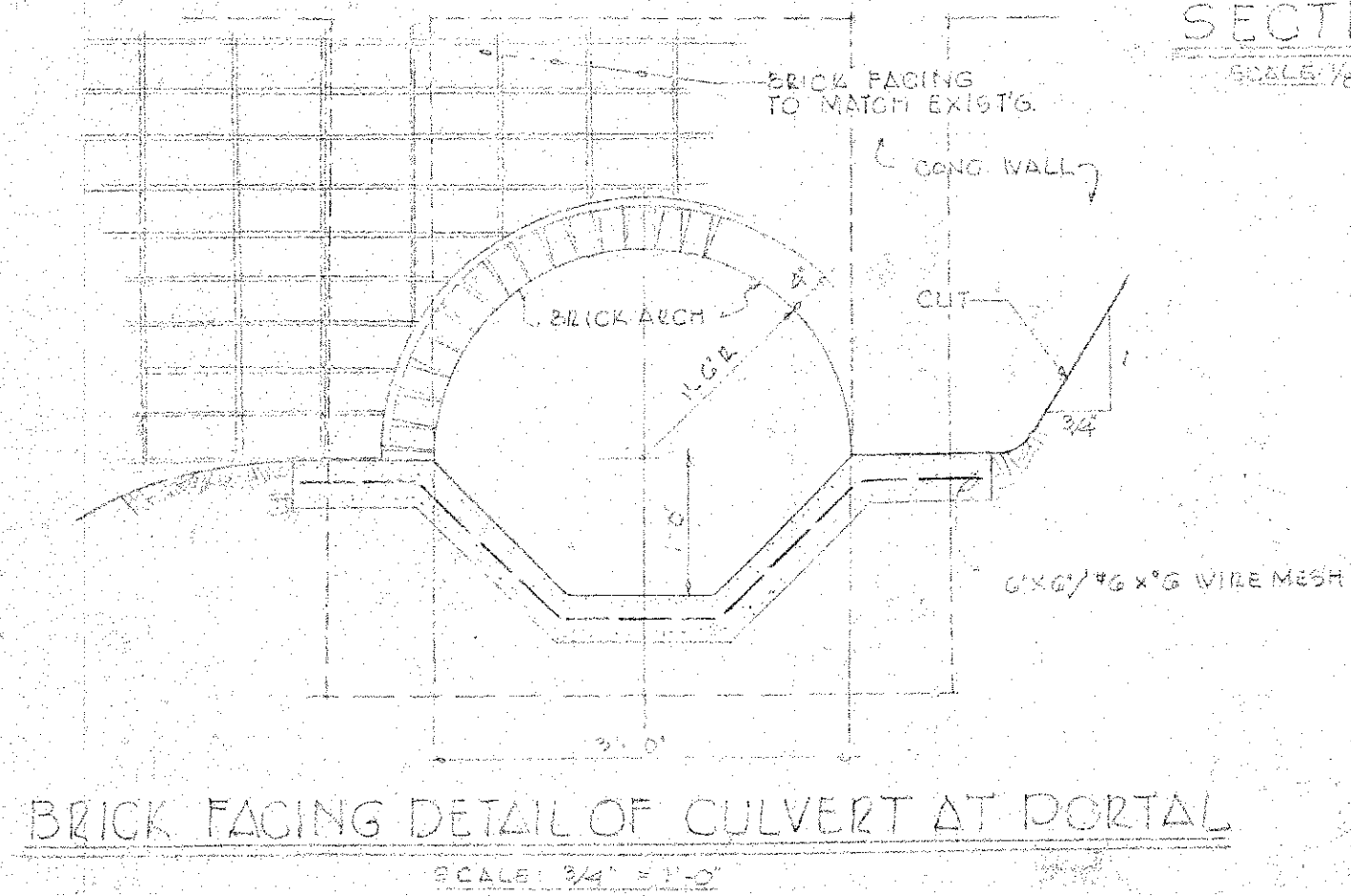
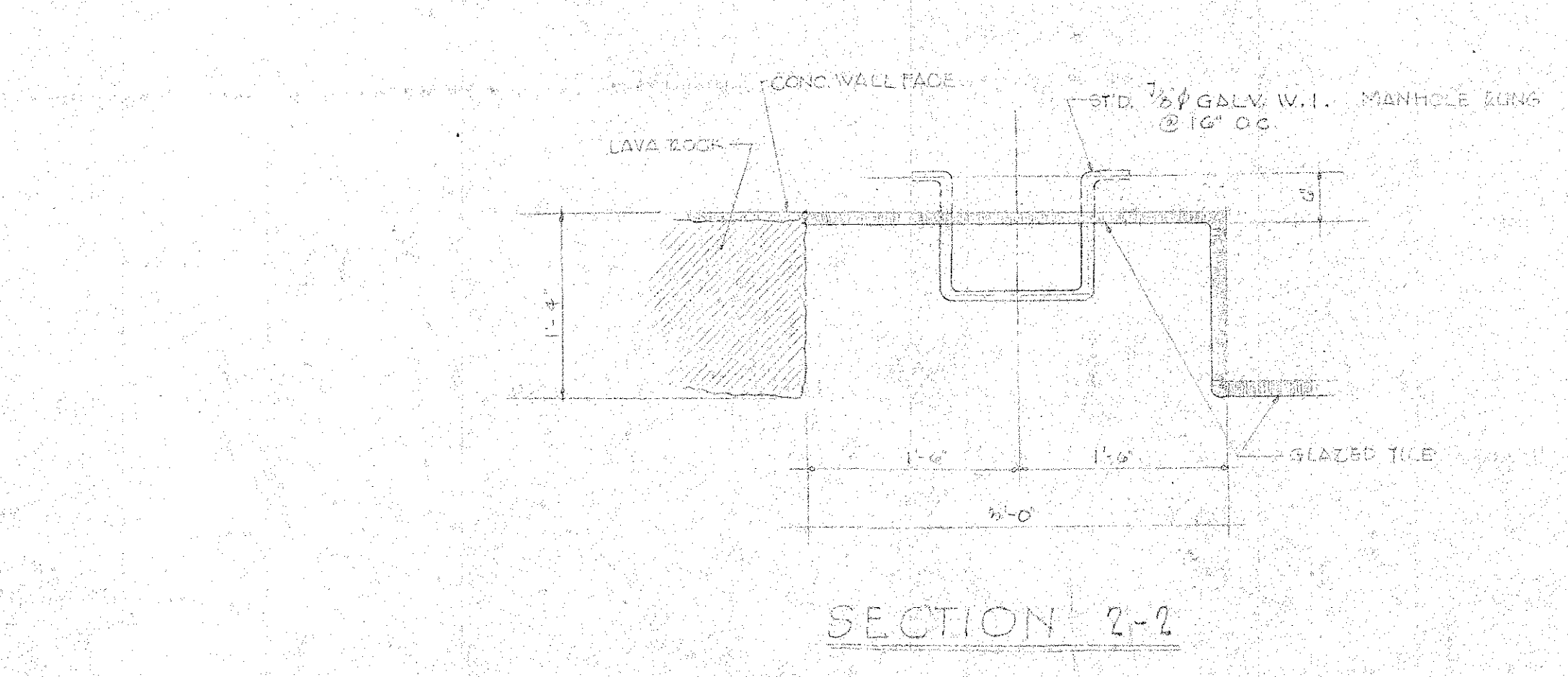
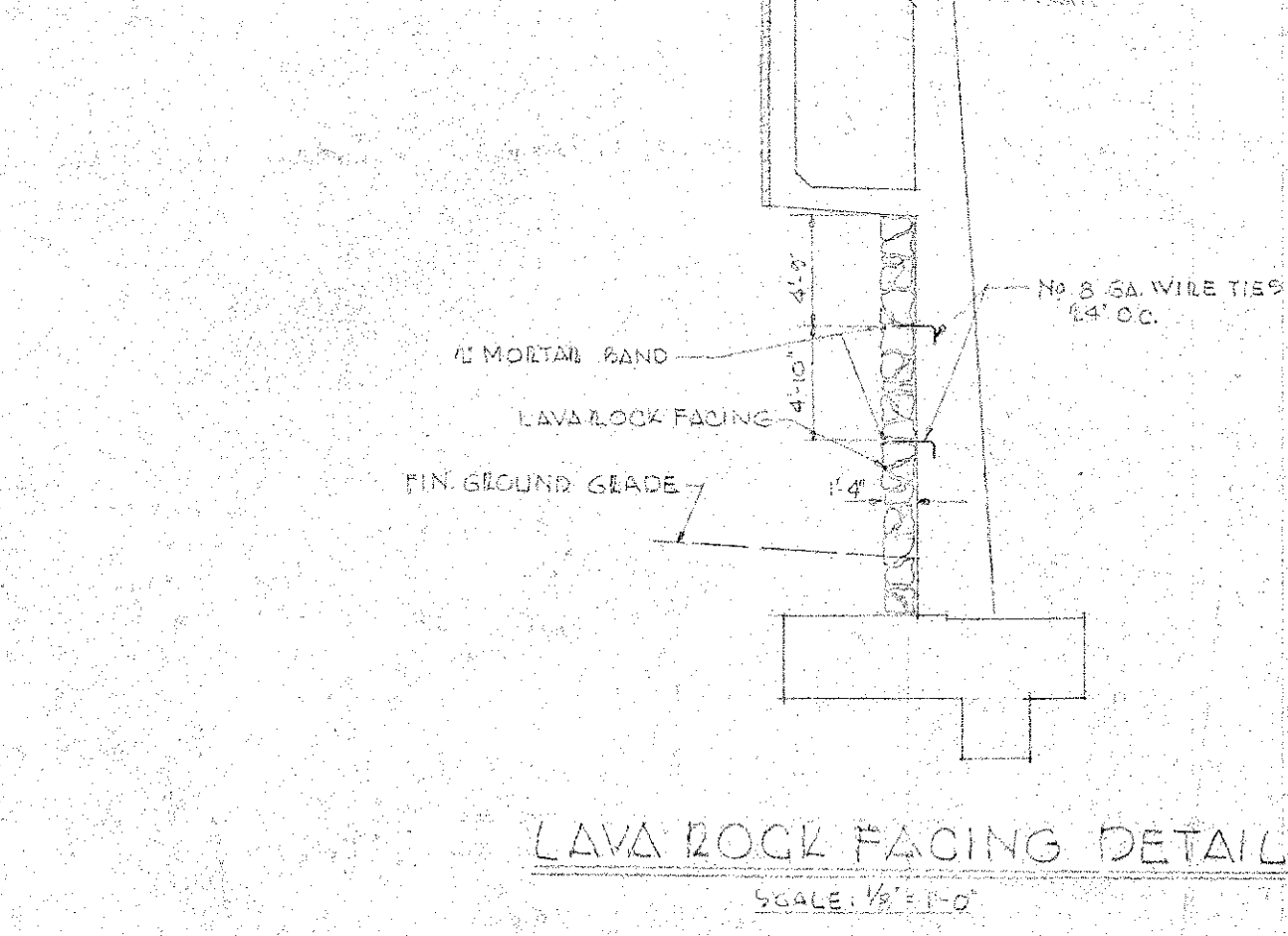
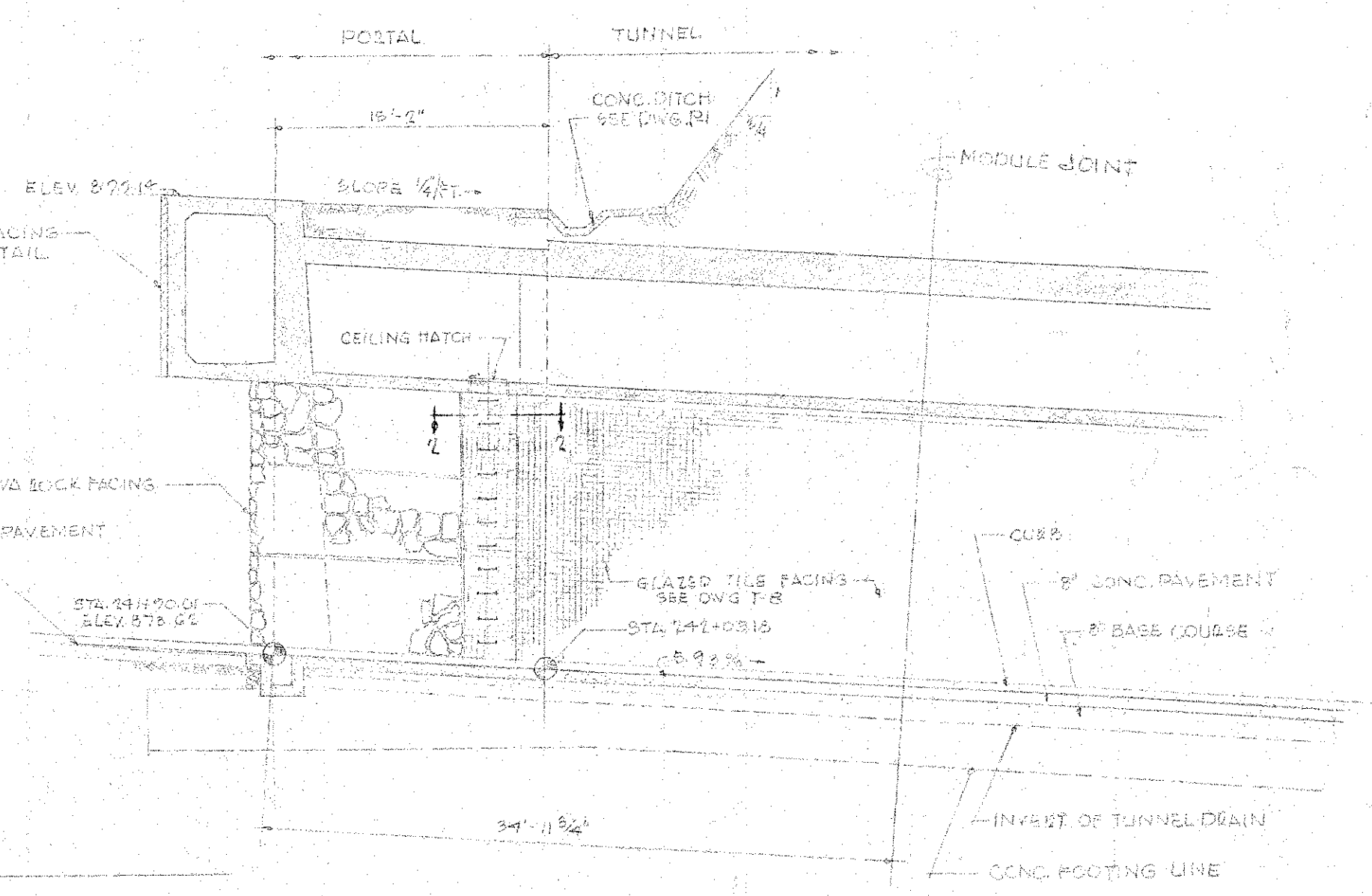
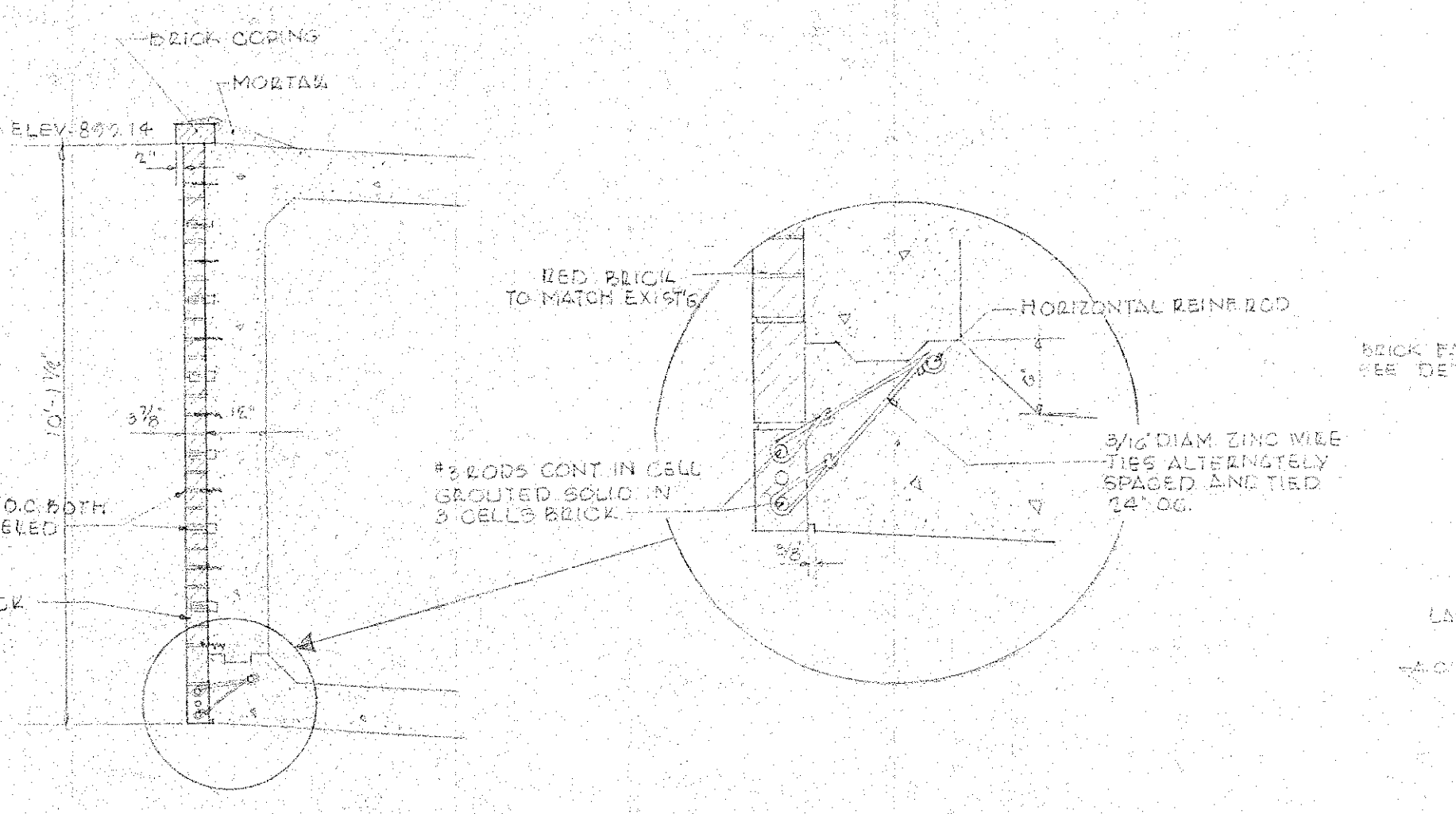
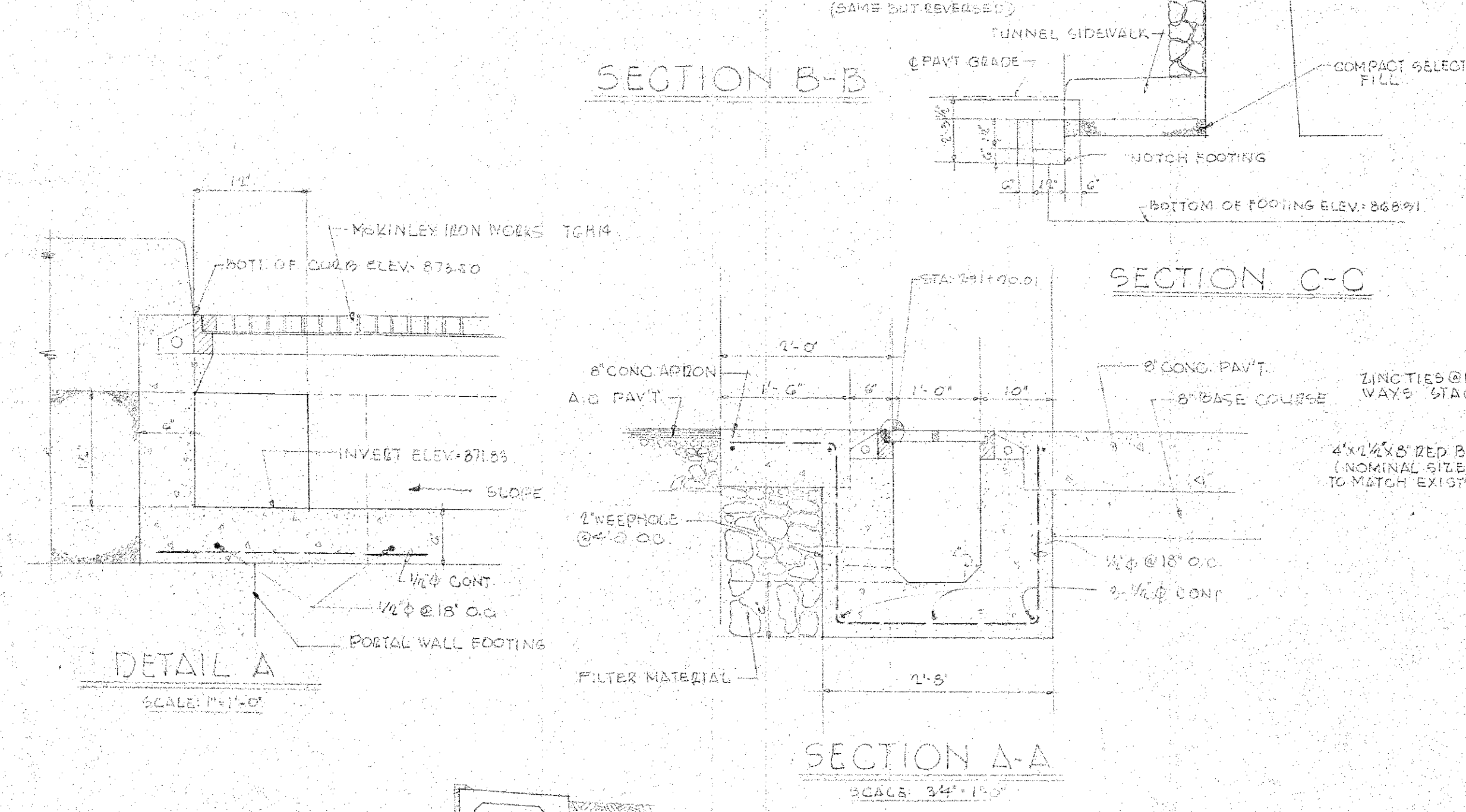
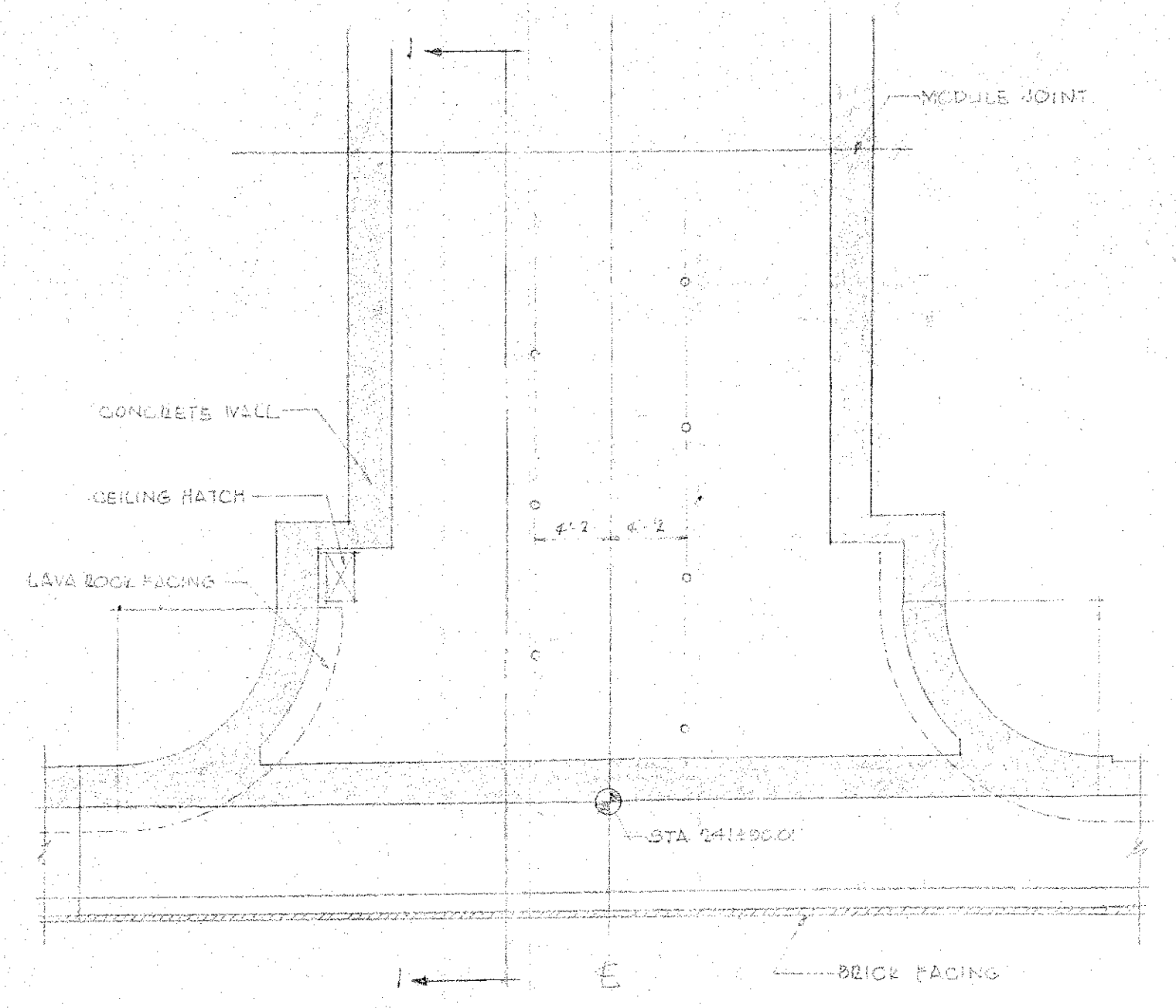
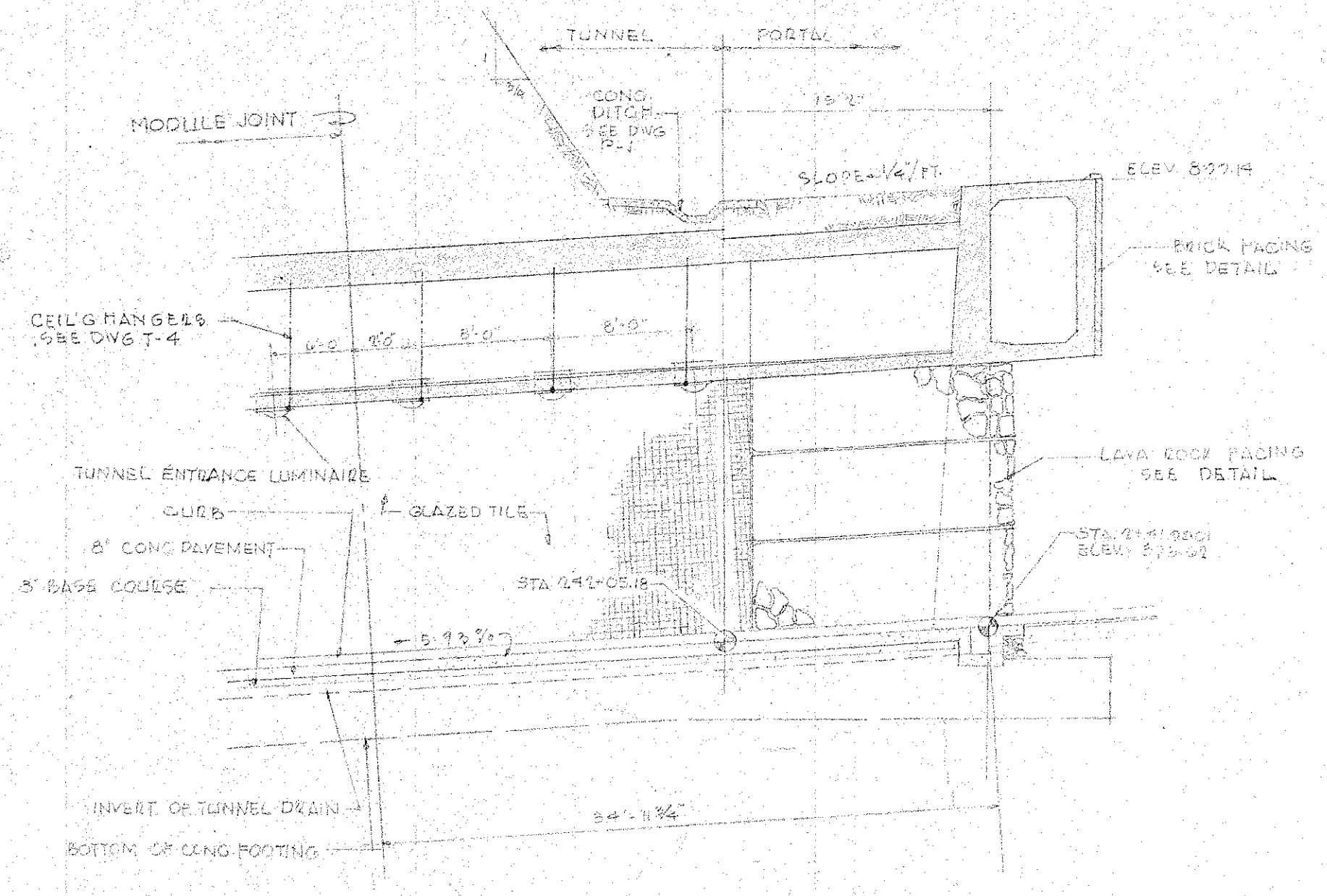
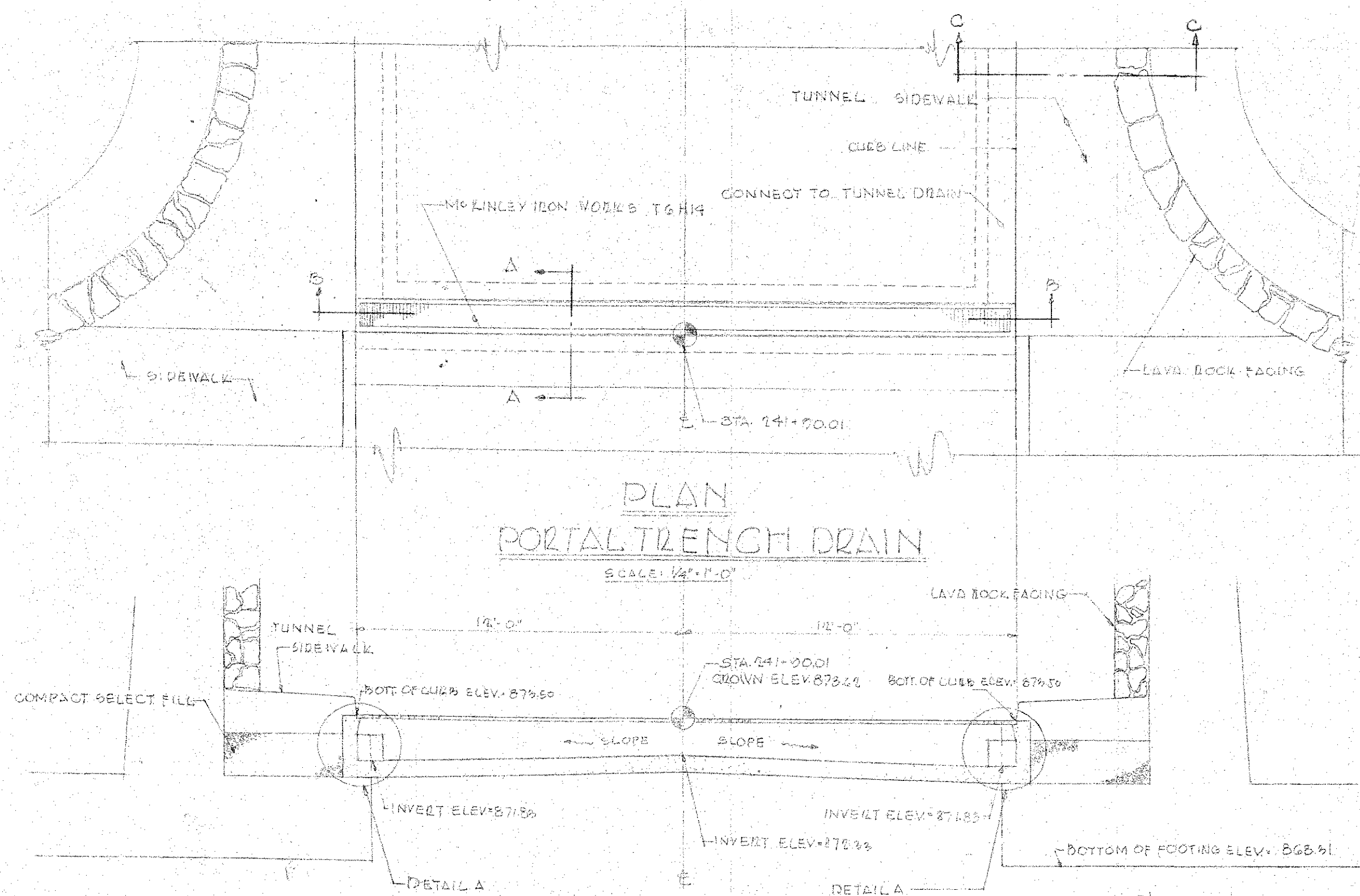
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

**WILSON TUNNEL 2ND BORE
KALIHI PORTAL
PLAN & ELEVATION**

ENGINEER *W. Linn* DATE *5-3-57*
DRAFTSMAN *L.W.* CHECKED BY *Rek*
SCALE _____ TRACER _____
APPROVED *John Kuan* APPROVED *Sum*
CHIEF ENGINEER BUREAU ENGINEER

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

JOB NO. 13-57 DWG. NO. P-2



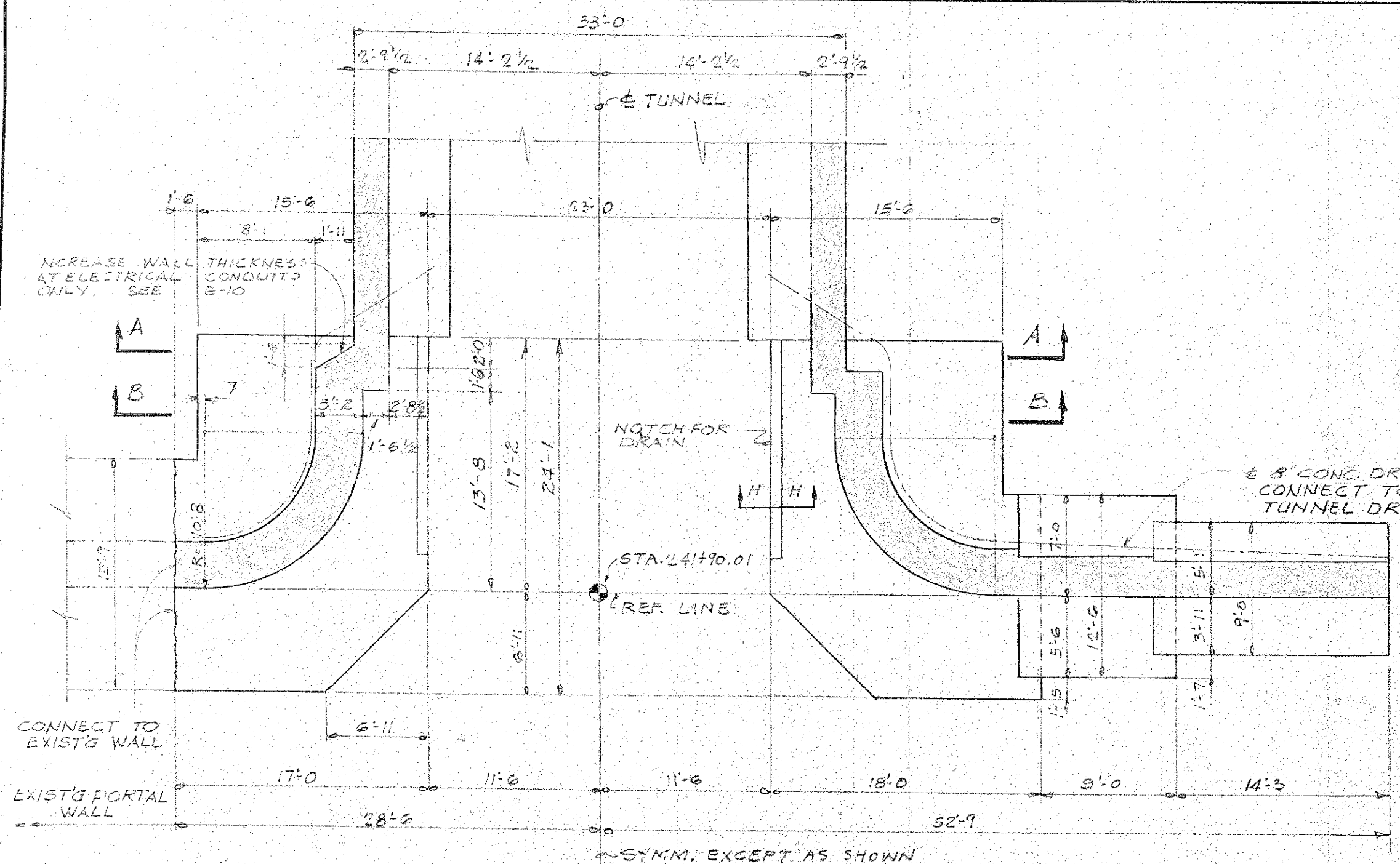
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

**WILSON TUNNEL 2ND BORE
KALIHI PORTAL
PORTAL DETAILS**

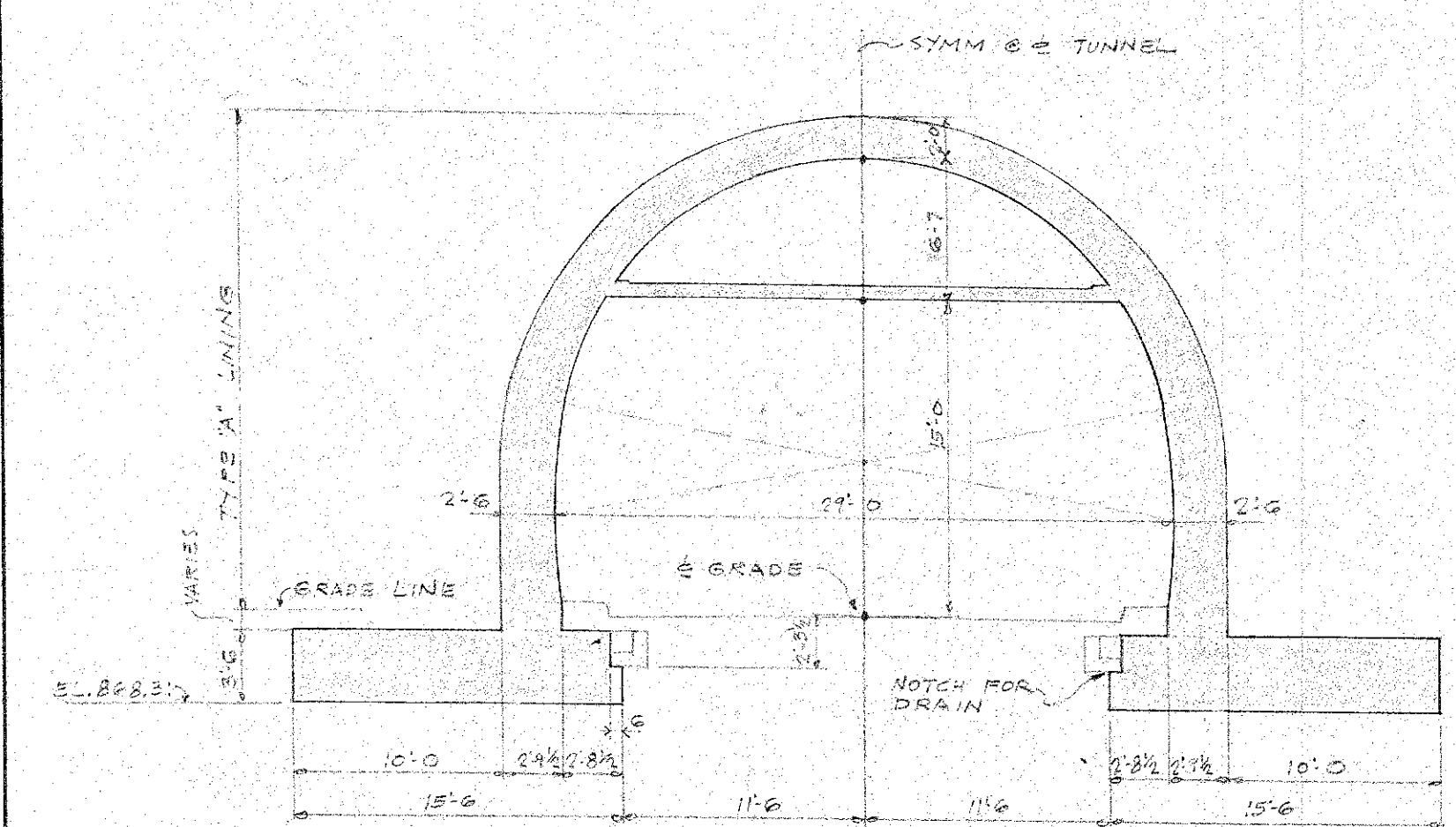
ENGINEER *W. L. W.* DATE 8-8-57
DRAFTSMAN *L.W.* CHECKED BY *KOK*
SCALE APPROVED *W. L. W.* TRACER
APPROVED *W. L. W.* APPROVED *W. L. W.*
CHIEF ENGINEER BUREAU ENGINEER

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

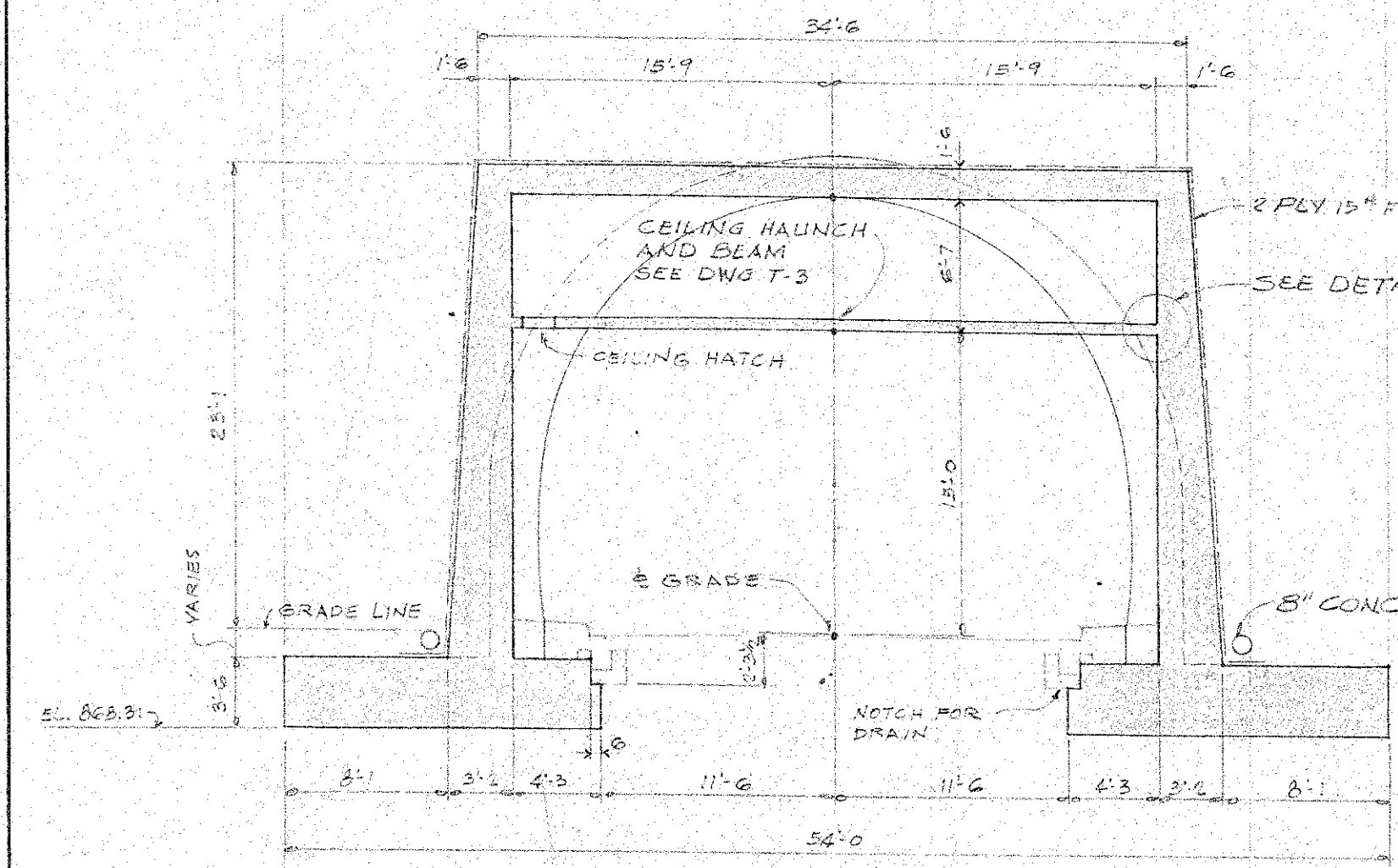
JOB NO. 13-57 DWG. P-3



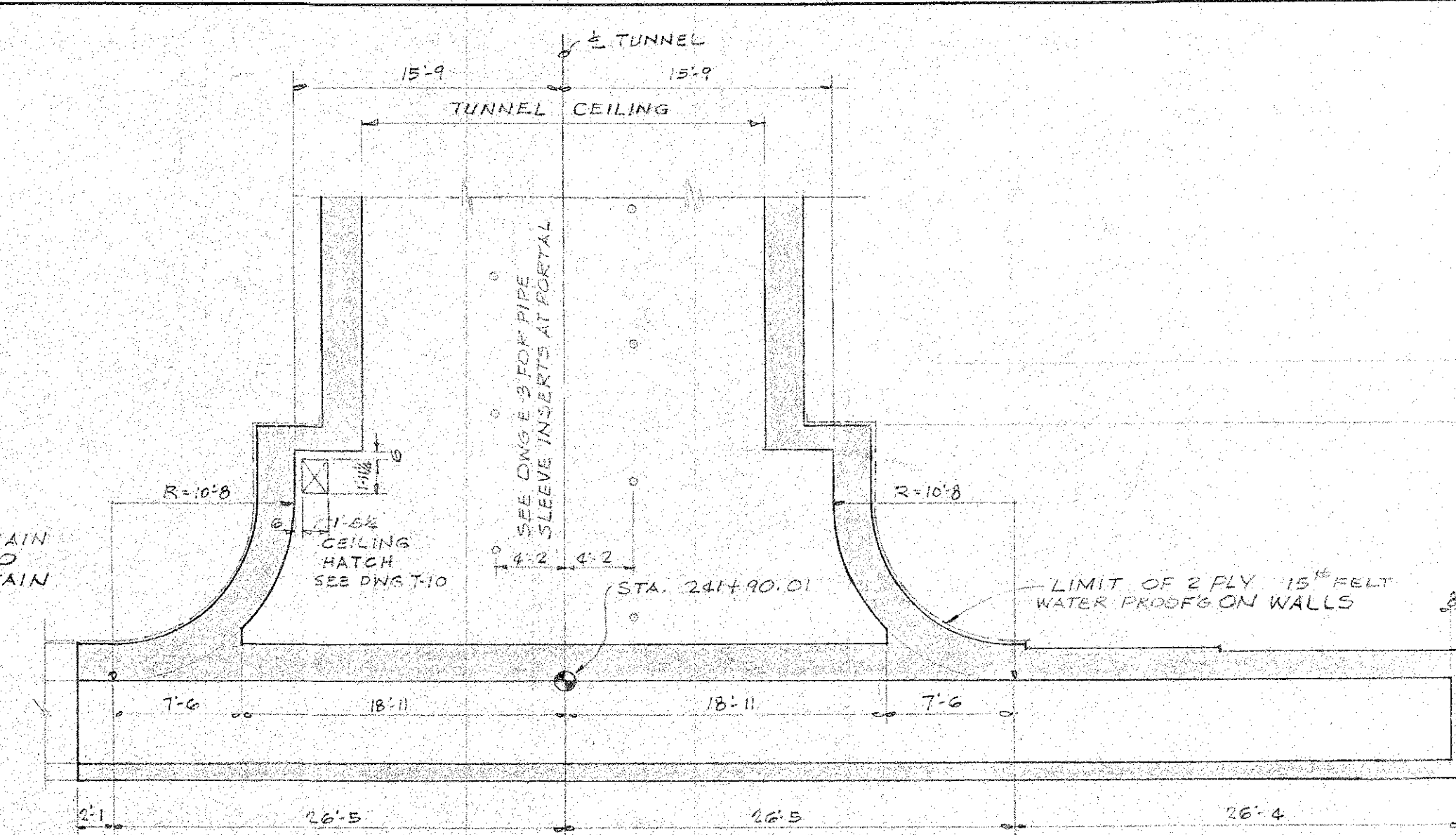
PLAN ABOVE FOOTING
1/8" = 1'-0"



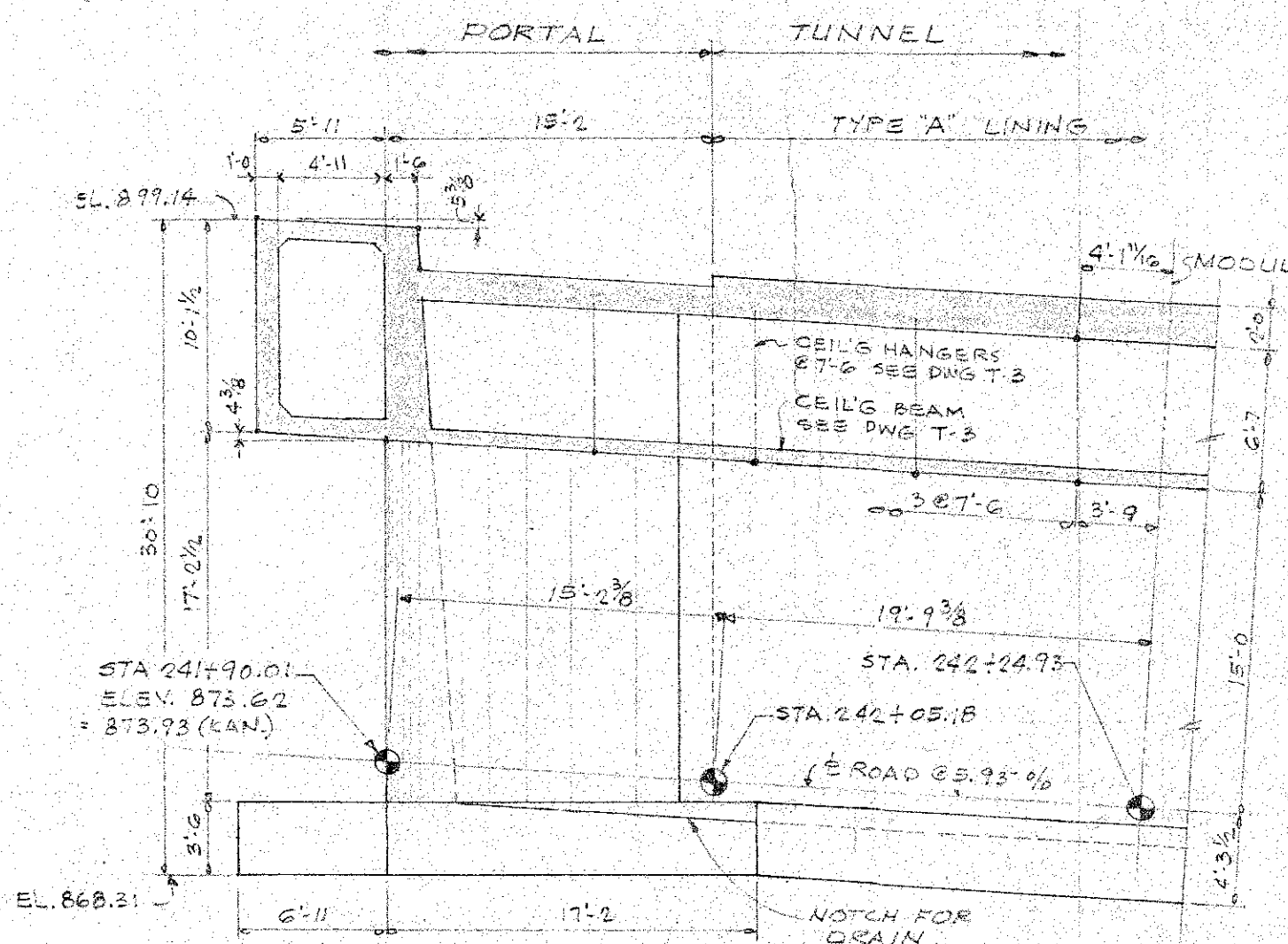
SECTION A-A
1/8" = 1'-0"



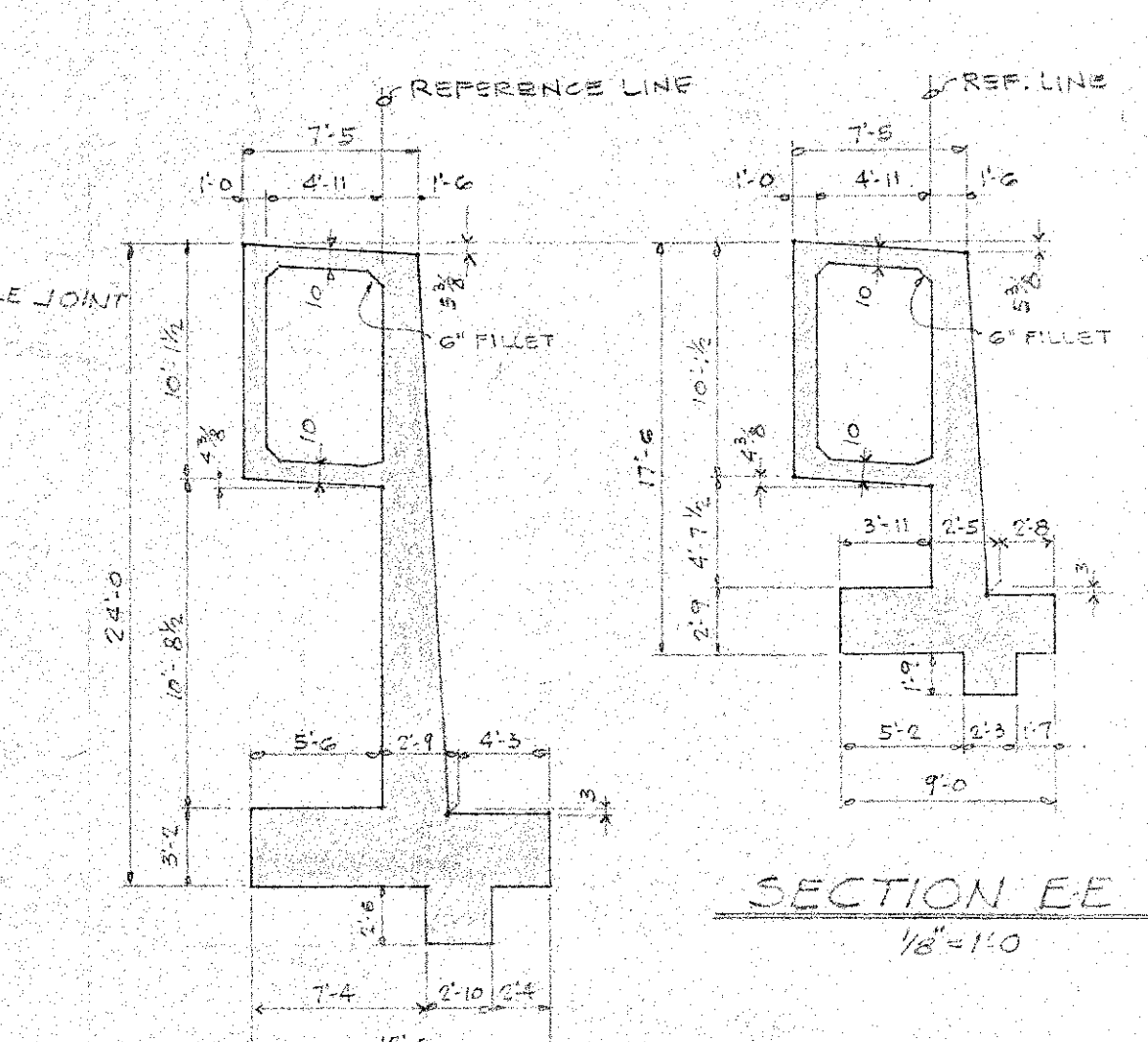
SECTION B-B
1/8" = 1'-0"



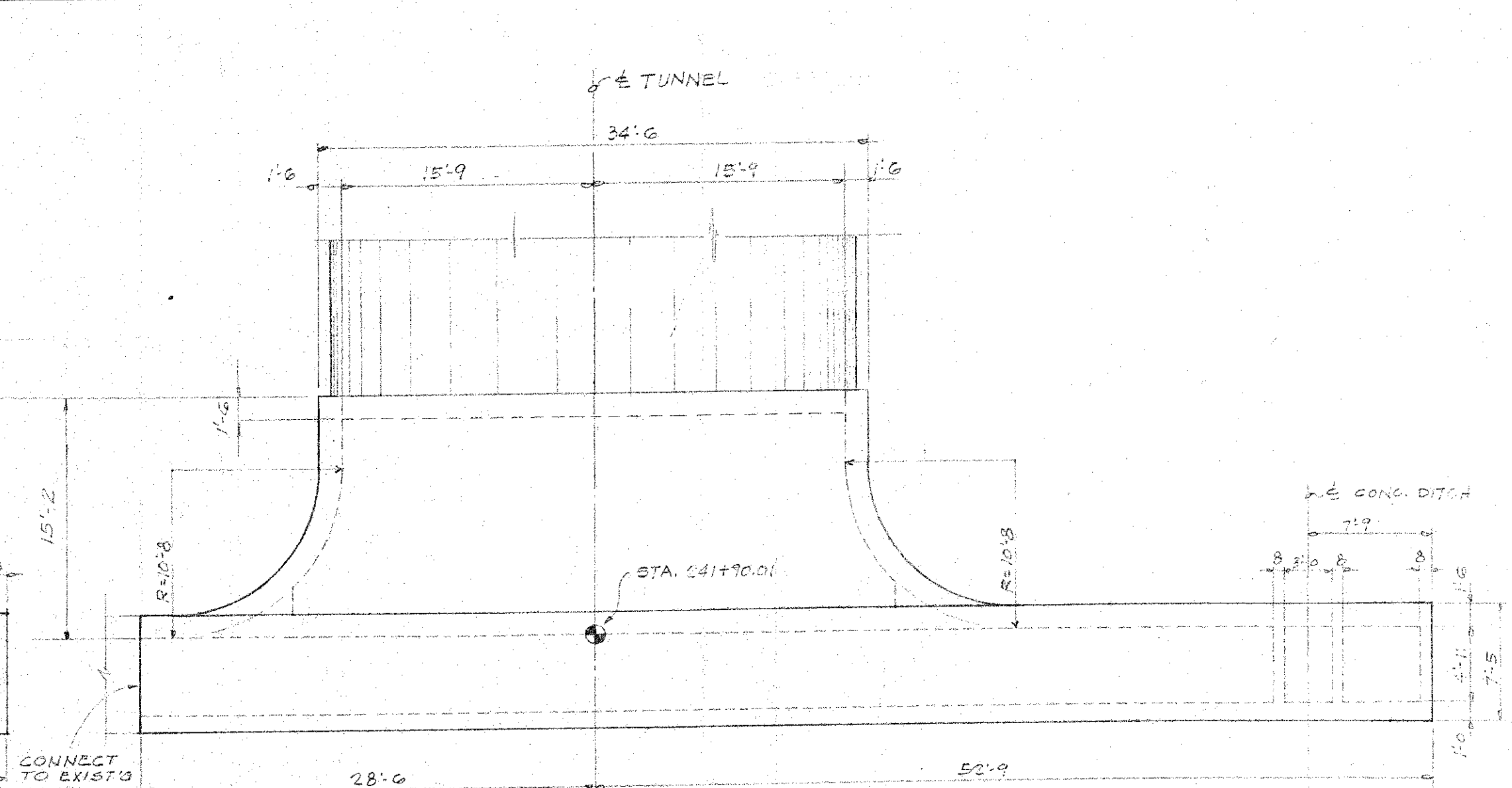
PLAN ABOVE CEILING
1/8" = 1'-0"



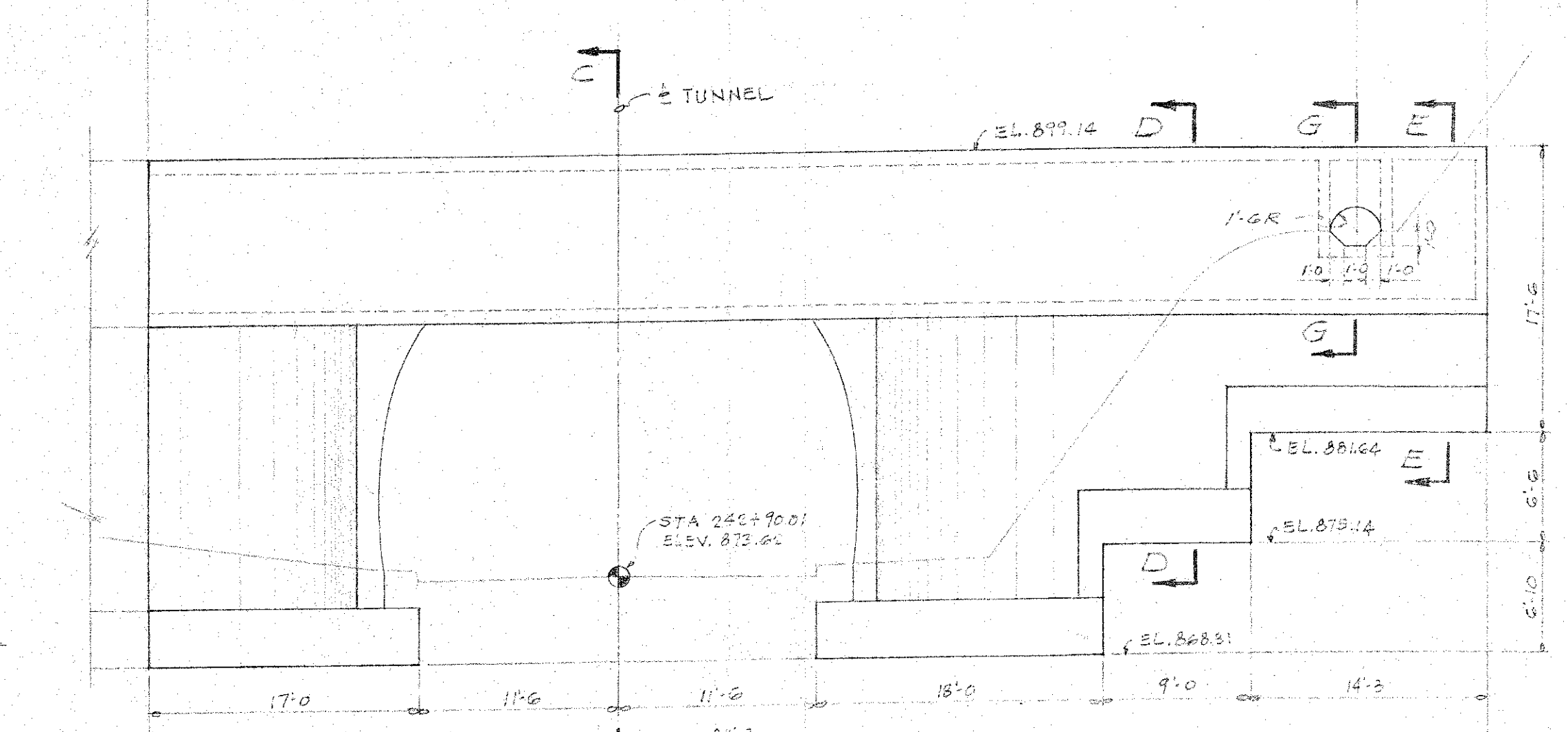
SECTION C-C
1/8" = 1'-0"



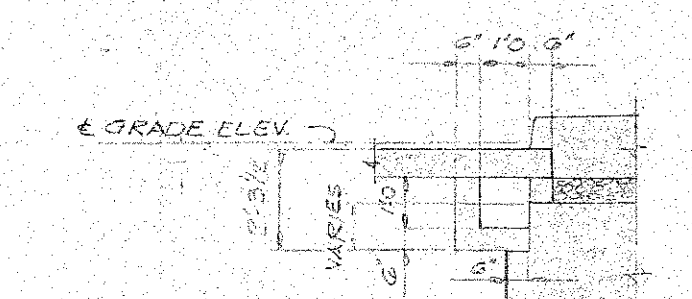
SECTION D-D
1/8" = 1'-0"



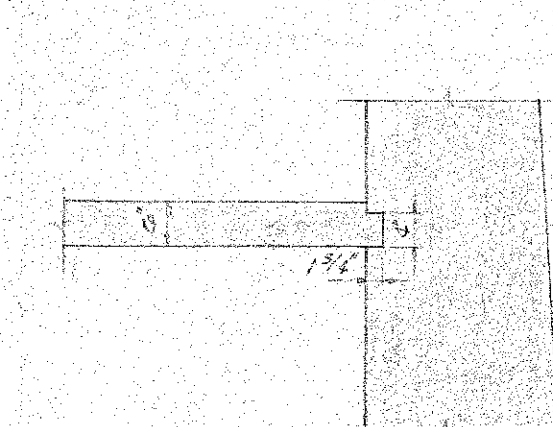
PLAN
1/8" = 1'-0"



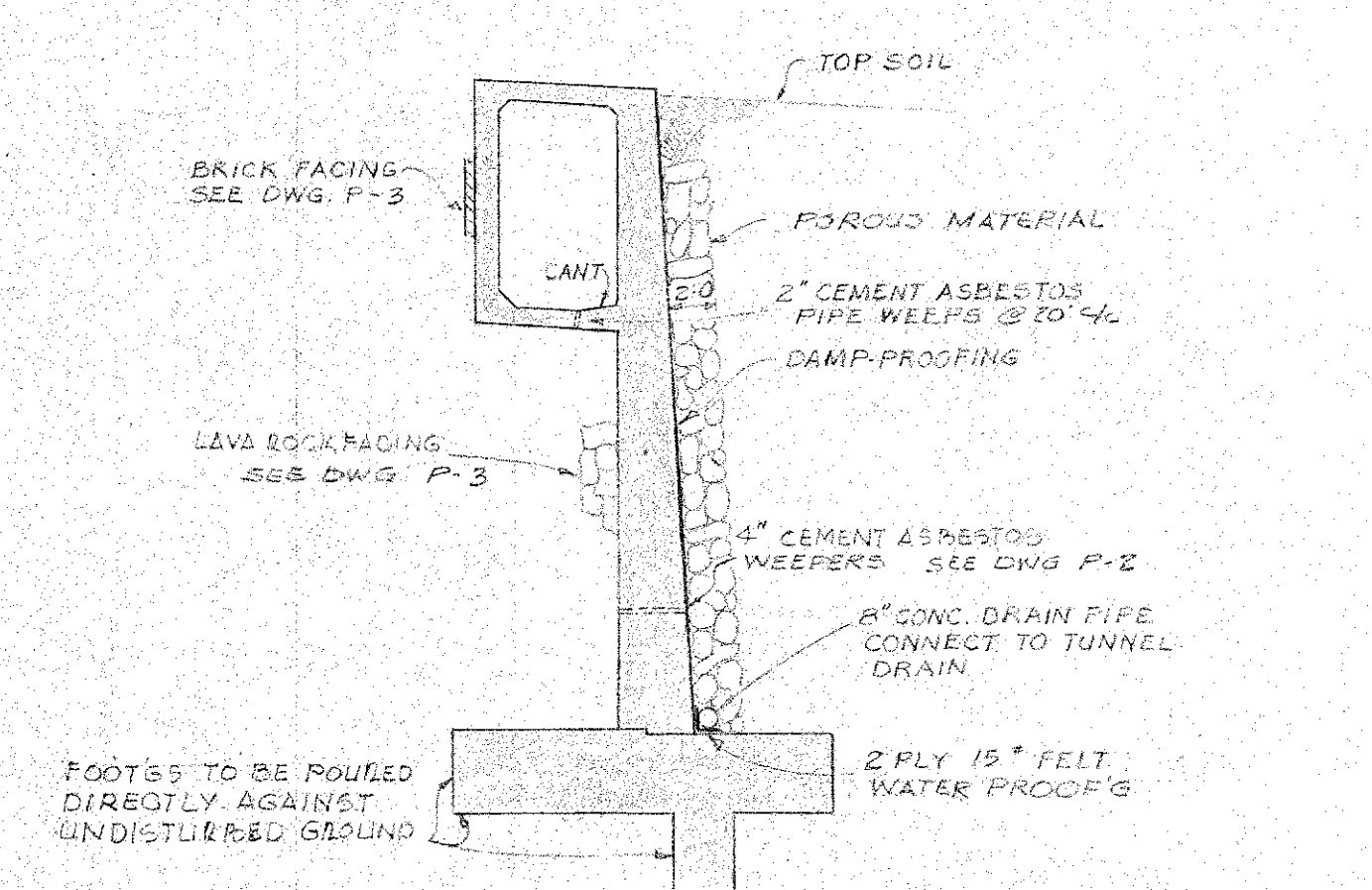
ELEVATION
1/8" = 1'-0"



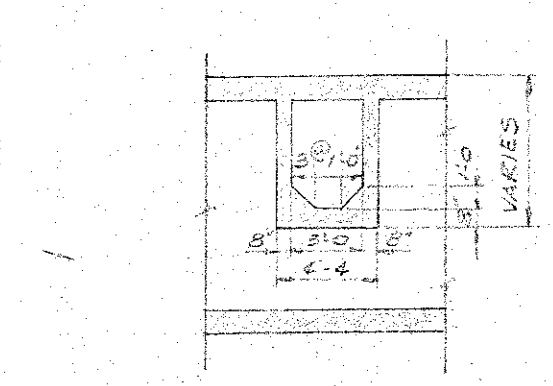
SECTION H-H
1/2" = 1'-0"



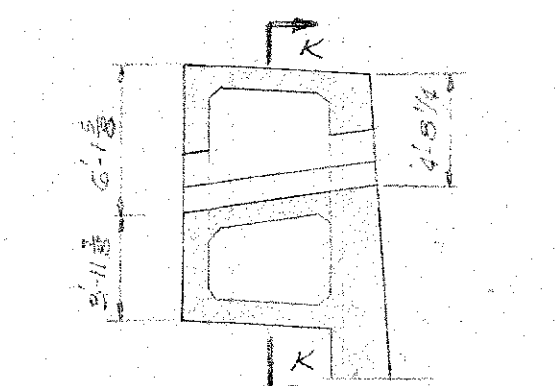
DETAIL 'A'
1/2" = 1'-0"



TYPICAL RETAINING WALL DETAILS
1/8" = 1'-0"



SECTION K-K
1/8" = 1'-0"



SECTION G-G
1/8" = 1'-0"

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

**WILSON TUNNEL 2ND BORE
KALIHI PORTAL
STRUCTURAL DETAILS**

ENGINEER: *William J. ...* DATE: 8-8-57
DRAFTSMAN: ROK CHECKED BY: ROK
SCALE: TRACER: *...*
APPROVER: *...* APPROVED: *...*
CHIEF ENGINEER: *...* BUREAU ENGINEER: *...*

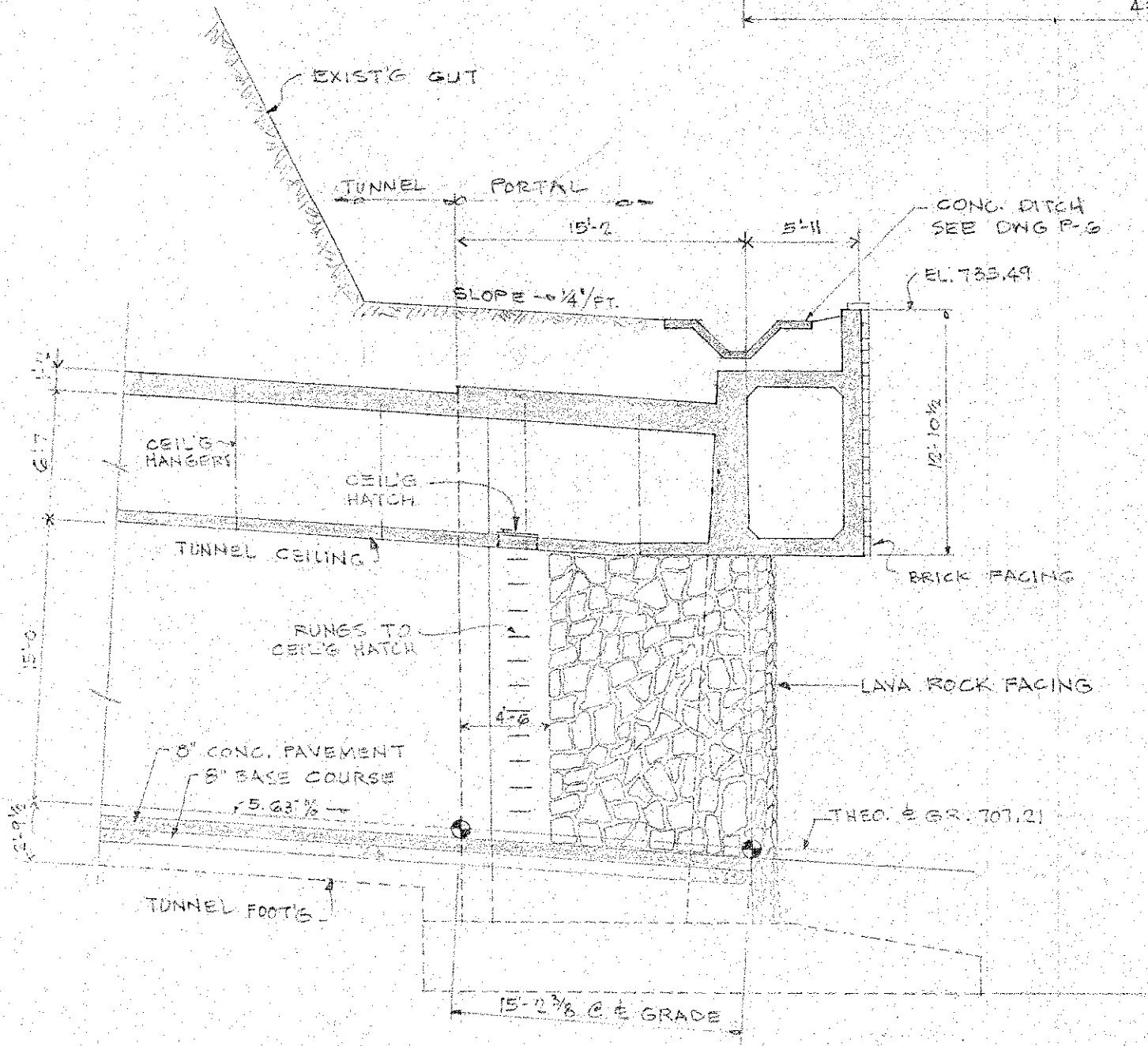
W. J. ...	PROFILE	C. B.
C. B. ...	P. S.	S. B.
W. M. BY	F. W. BY	S. BY

JOB NO. 13-57 DWG. P-4

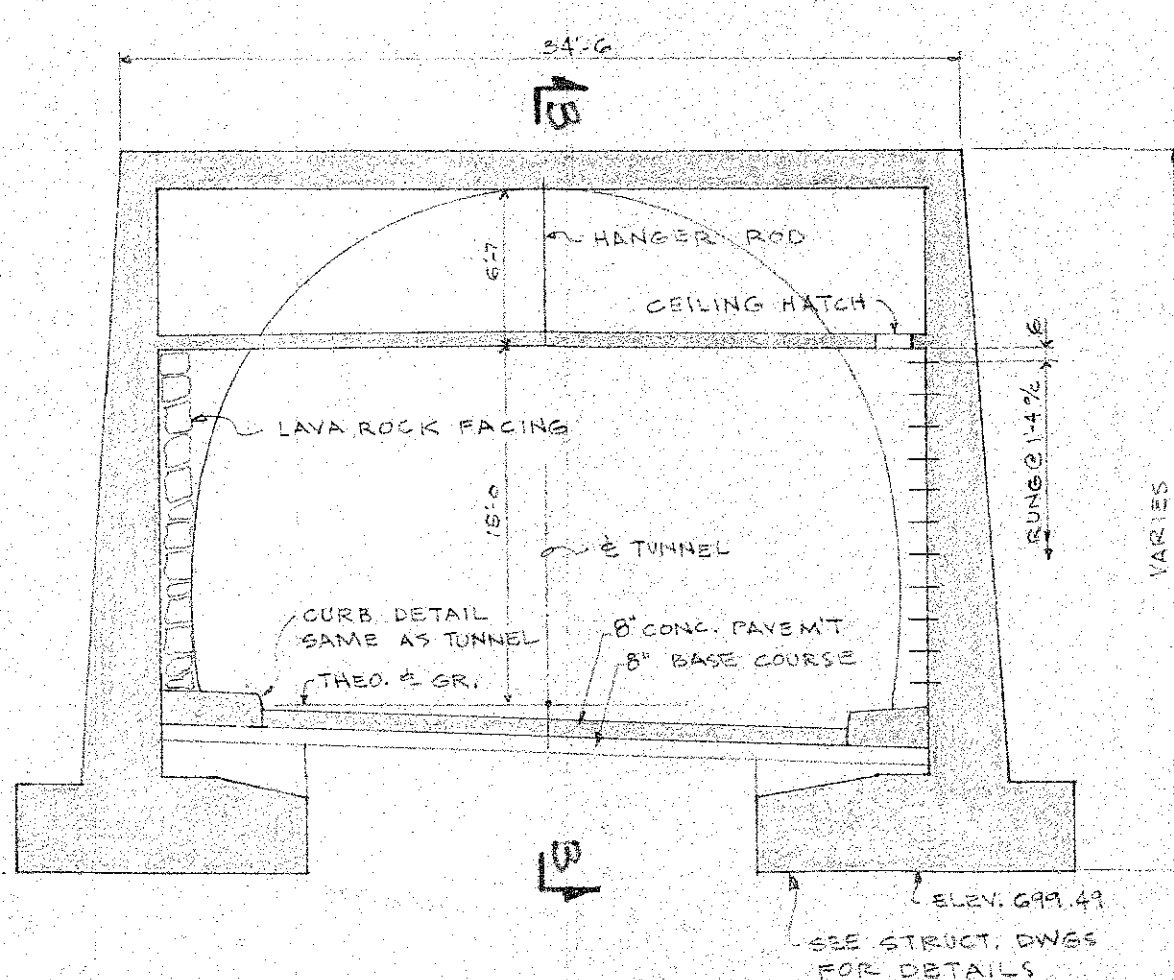


KANEOHE PORTAL
PLAN ABOVE CEILING
1/8" = 1'-0"

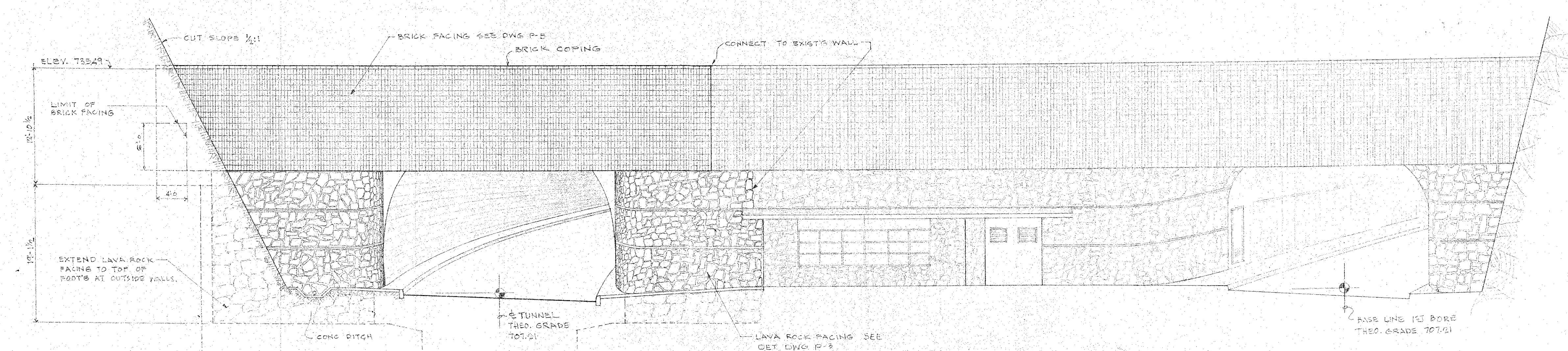
KANEOHE PORTAL
PLAN AT ROADWAY



SECTION "B-B"



SECTION "A-A"



K A N E O H E P O R T A L - E L E V A T I O N

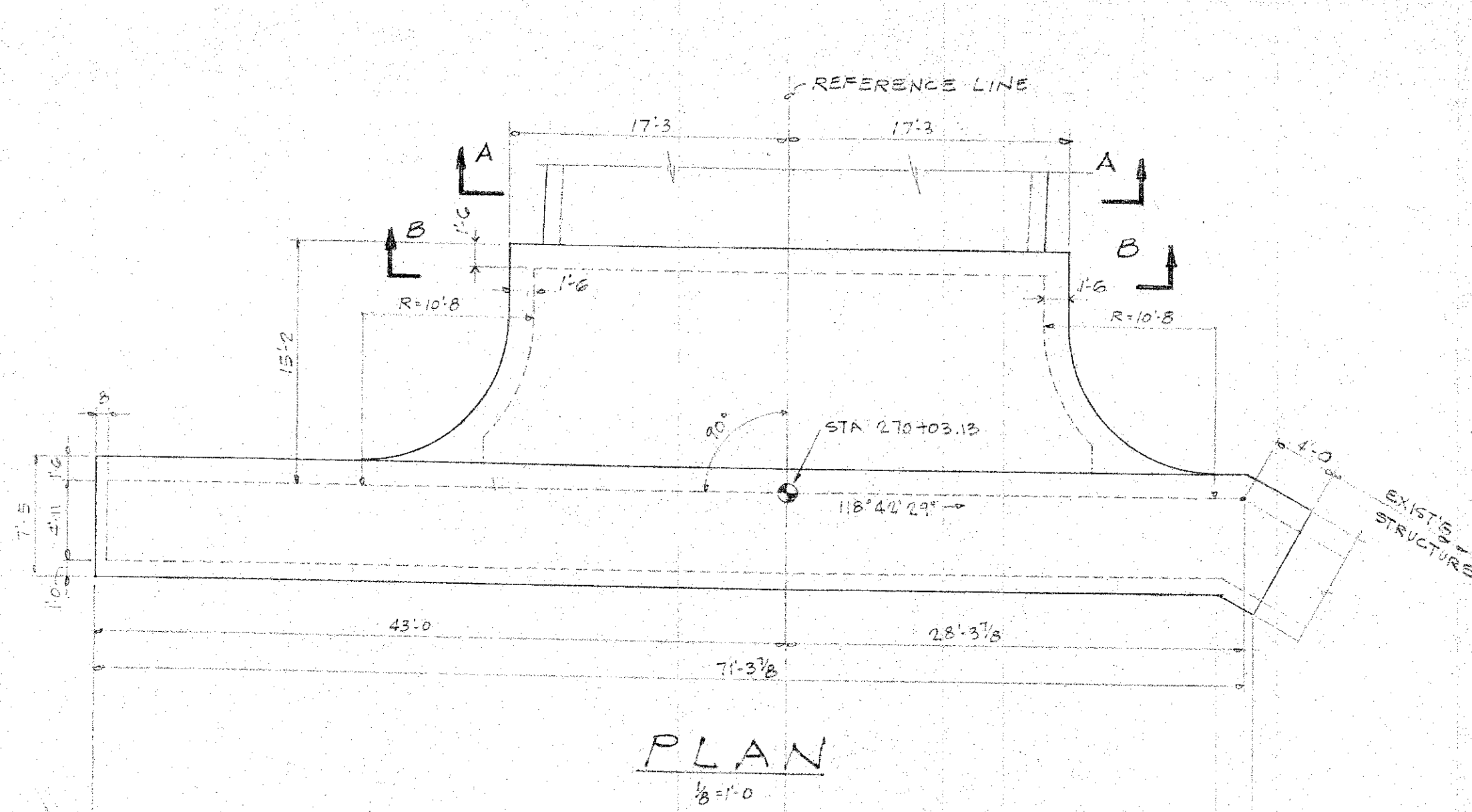
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

**WILSON TUNNEL 2ND BORE
KANEOHE PORTAL
PLAN, ELEVATION & DETAILS**

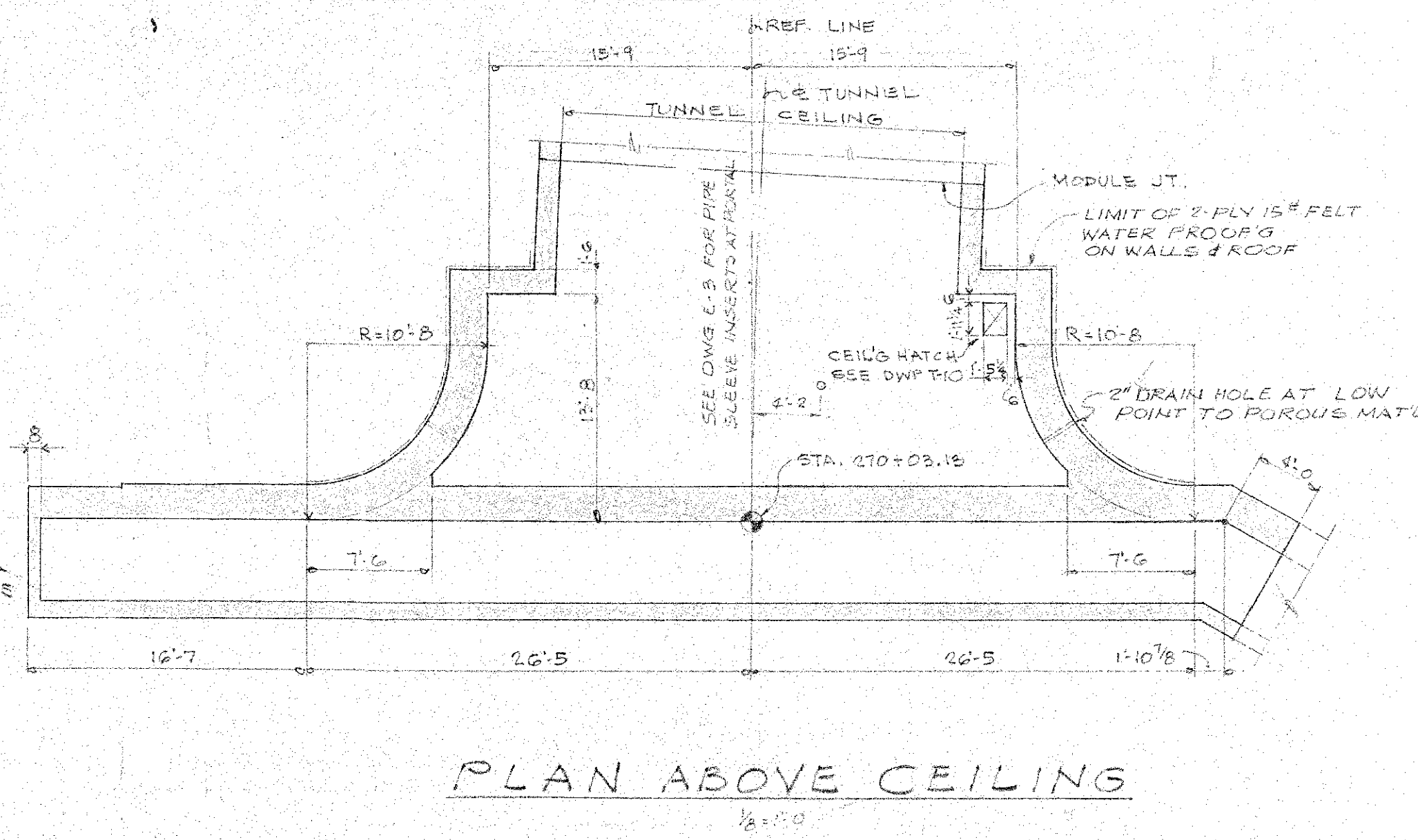
ENGINEER *W. Linn* DATE 8-8-57
DRAFTSMAN ROK CHECKED BY ROK
SCALE TRACER
APPROVED *W. Linn* APPROVED *J. Swan*
CHIEF ENGINEER BUREAU ENGINEER

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

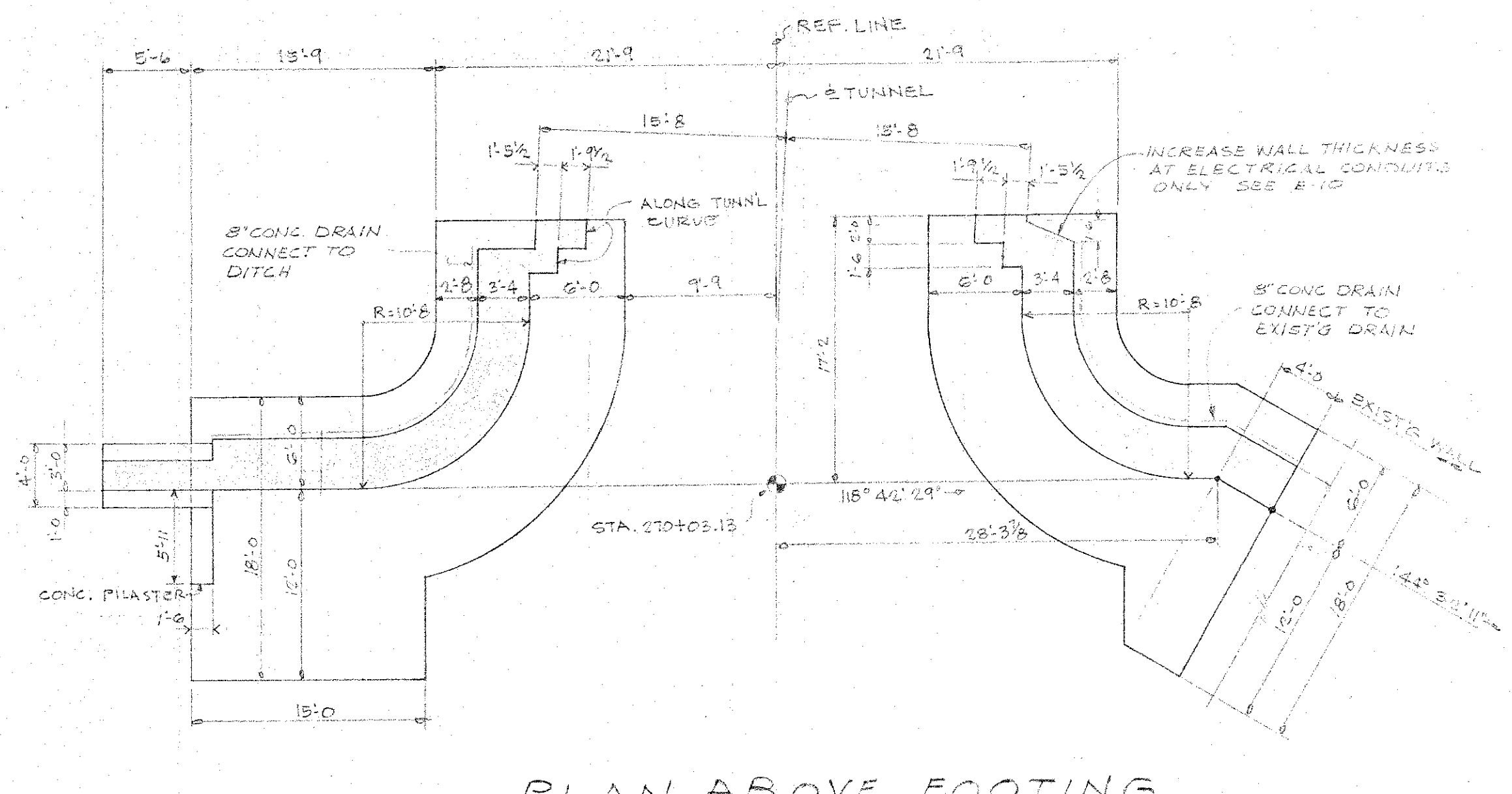
JOB NO. 13-57 DWG. P-7



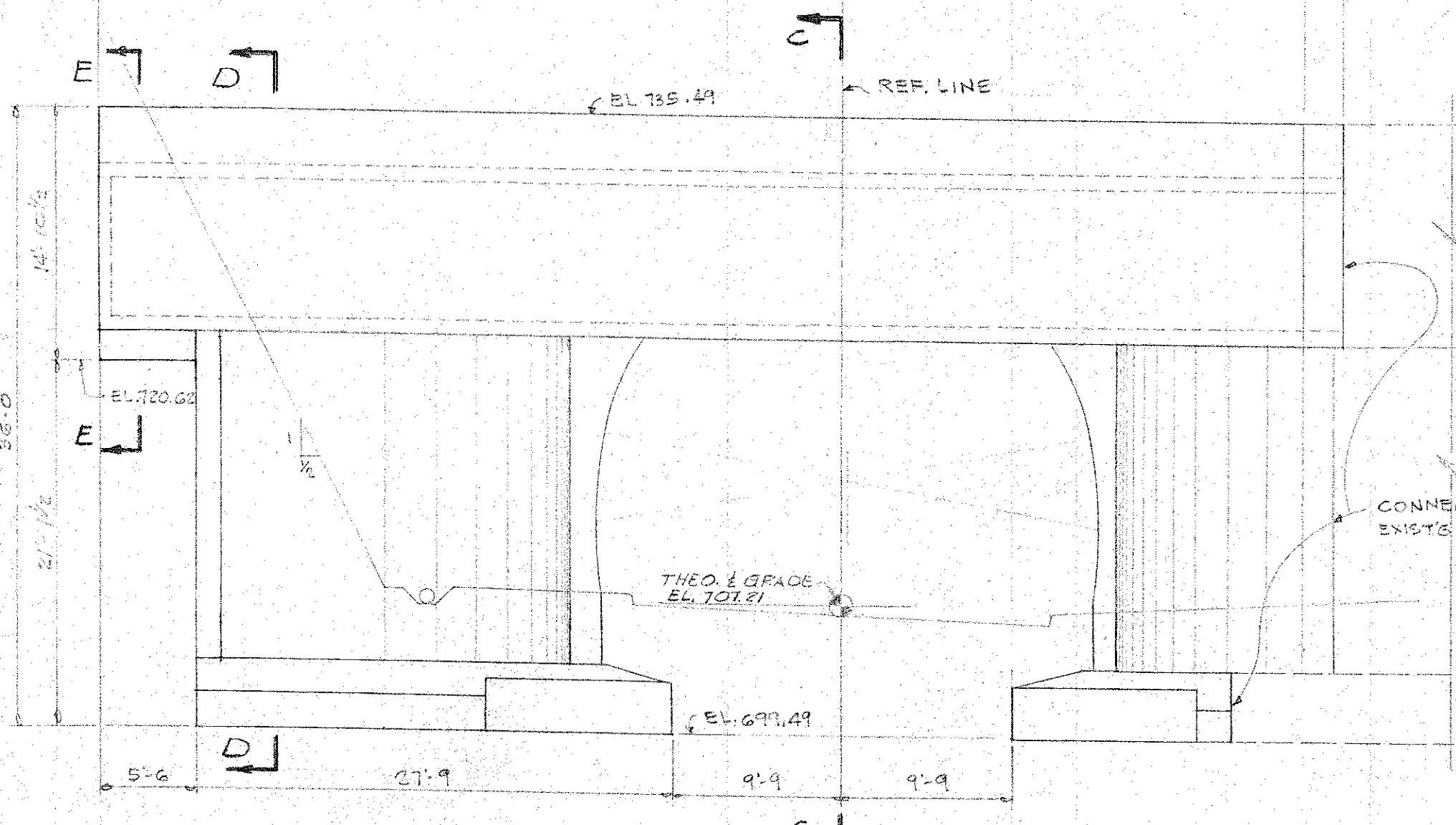
PLAN
1/8 = 1'-0



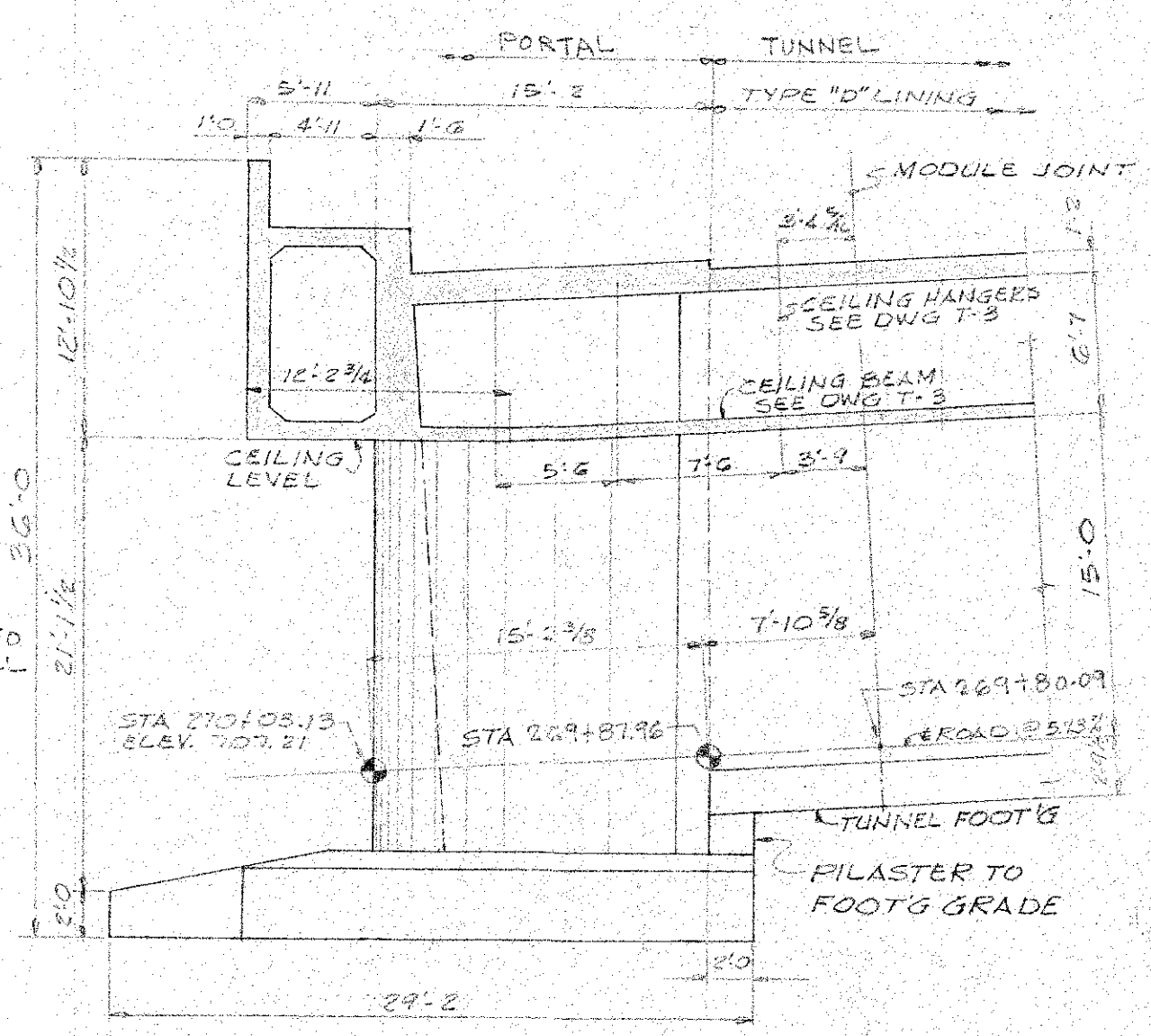
PLAN ABOVE CEILING
1/8 = 1'-0



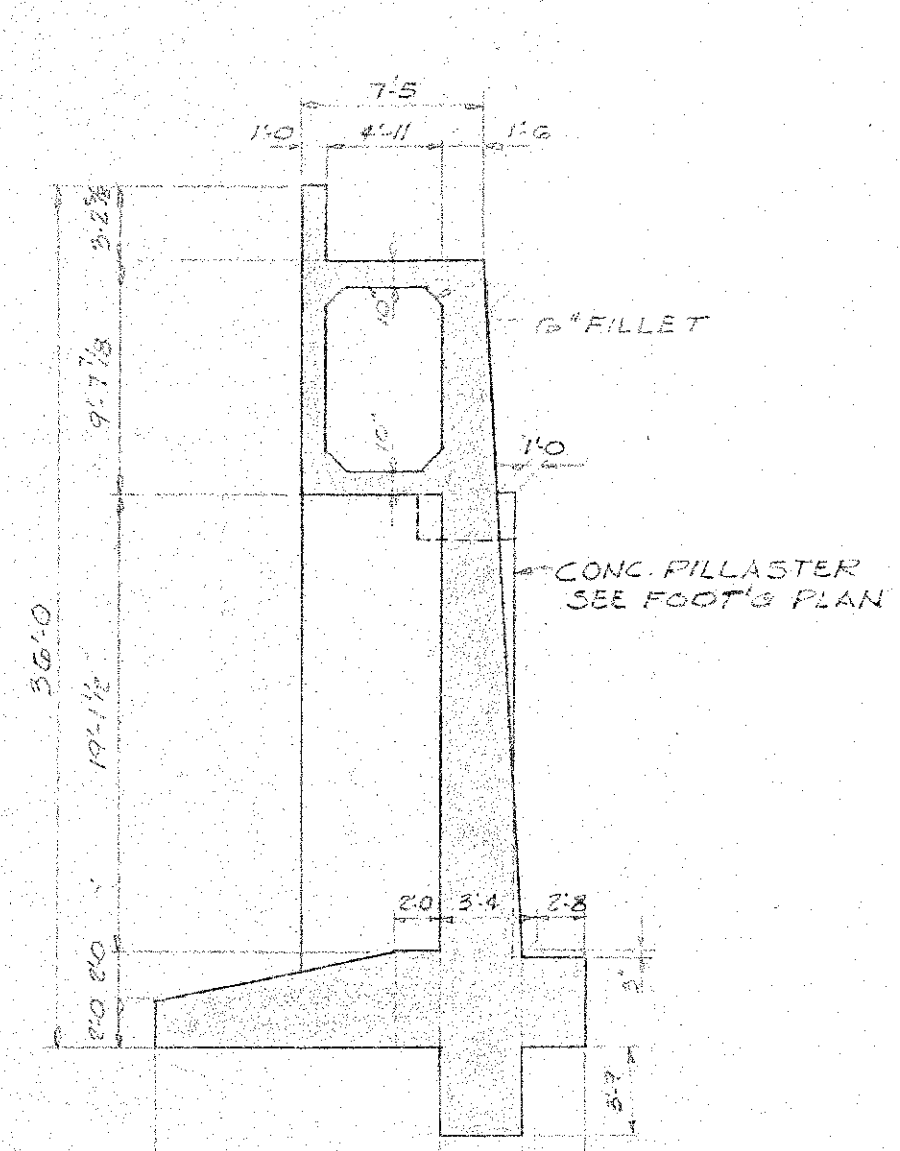
PLAN ABOVE FOOTING
1/8 = 1'-0



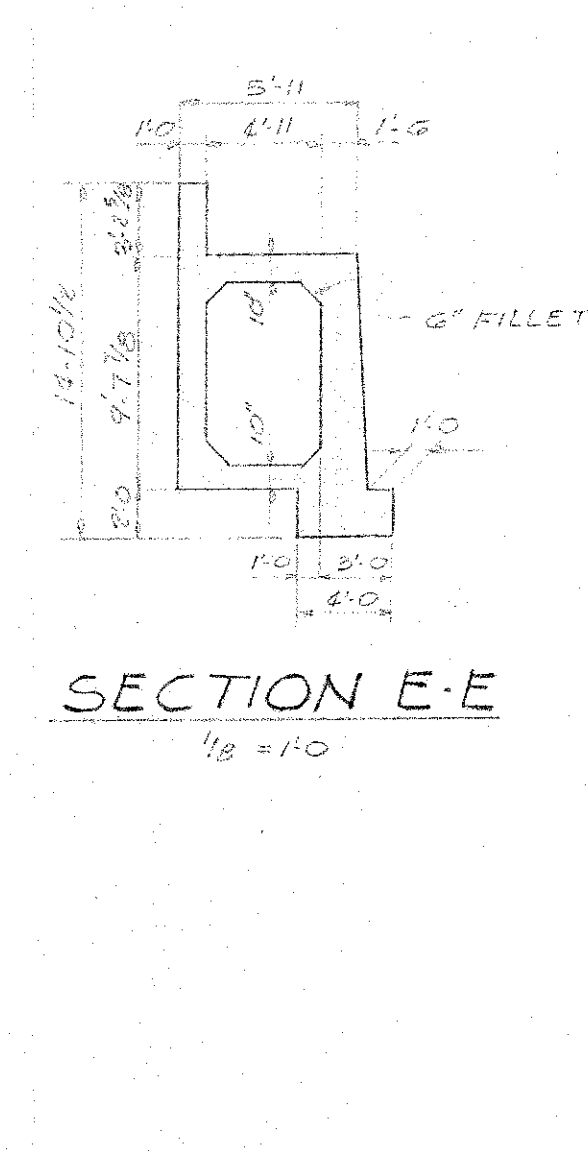
ELEVATION
1/8 = 1'-0



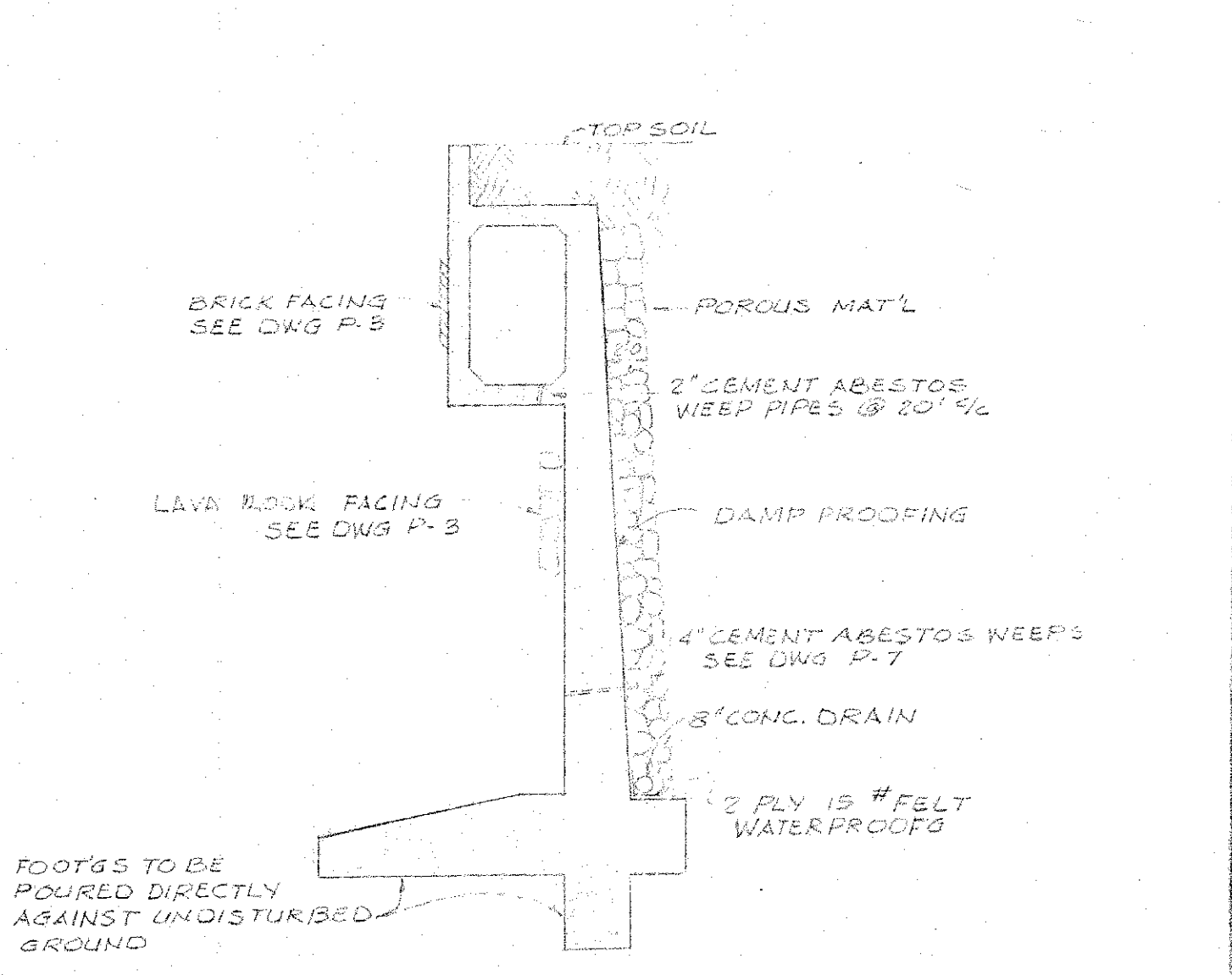
SECTION C-C
1/8 = 1'-0



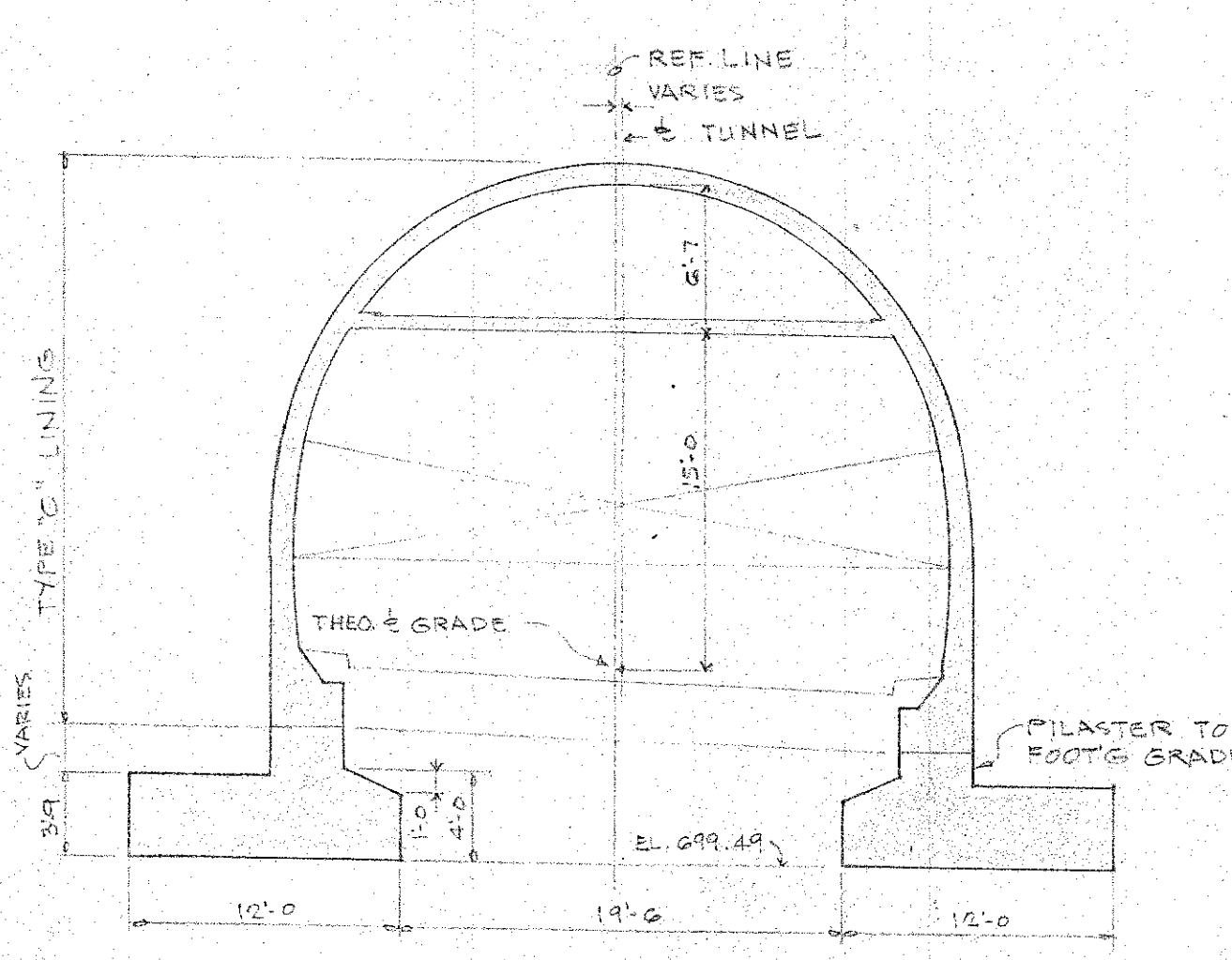
SECTION D-D
1/8 = 1'-0



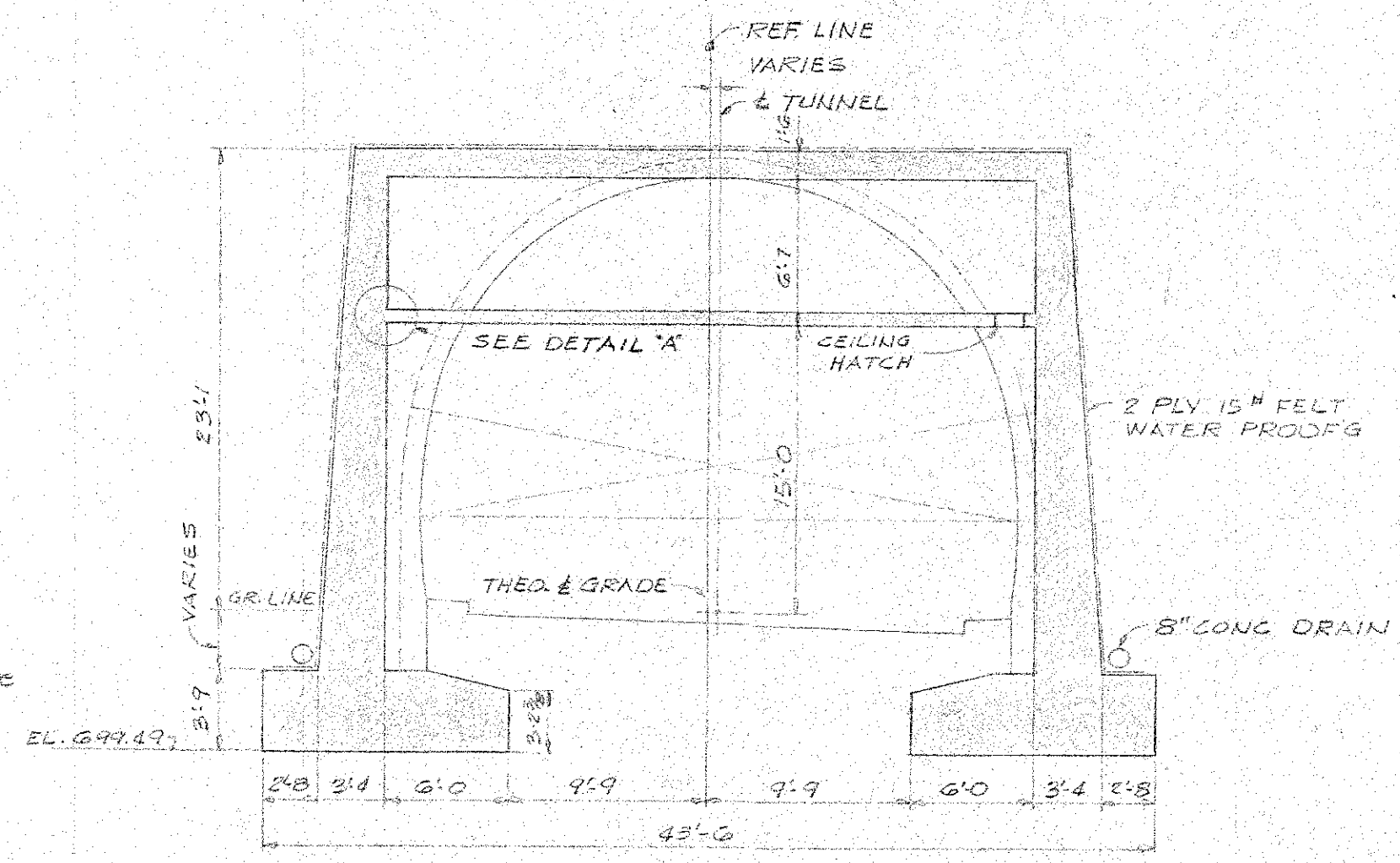
SECTION E-E
1/8 = 1'-0



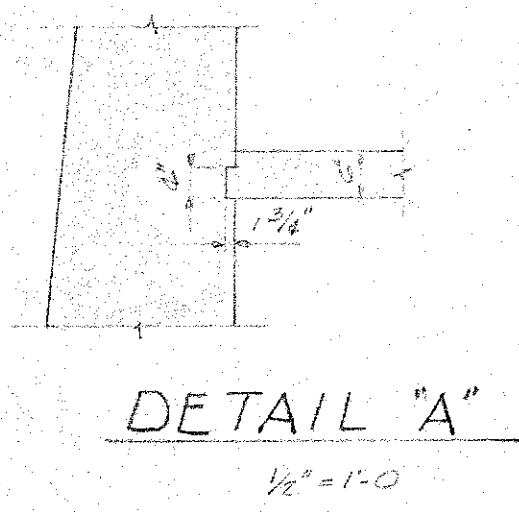
TYPICAL RETAINING WALL DETAILS
1/8 = 1'-0



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



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



DETAIL "A"
1/2 = 1'-0

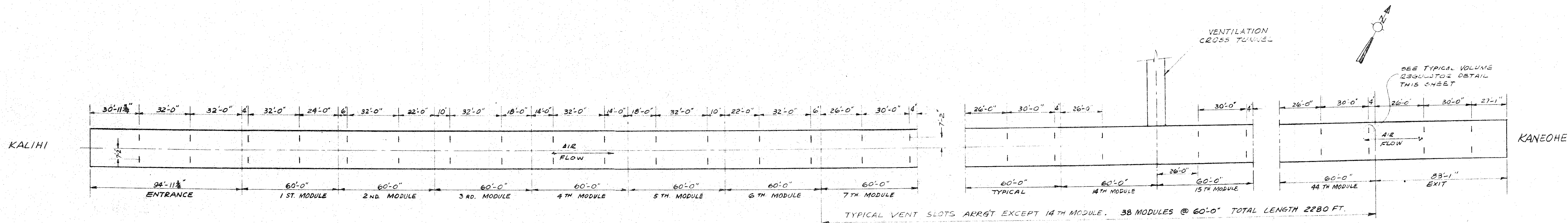
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

WILSON TUNNEL 2ND BORE KANEHOE PORTAL STRUCTURAL DETAILS

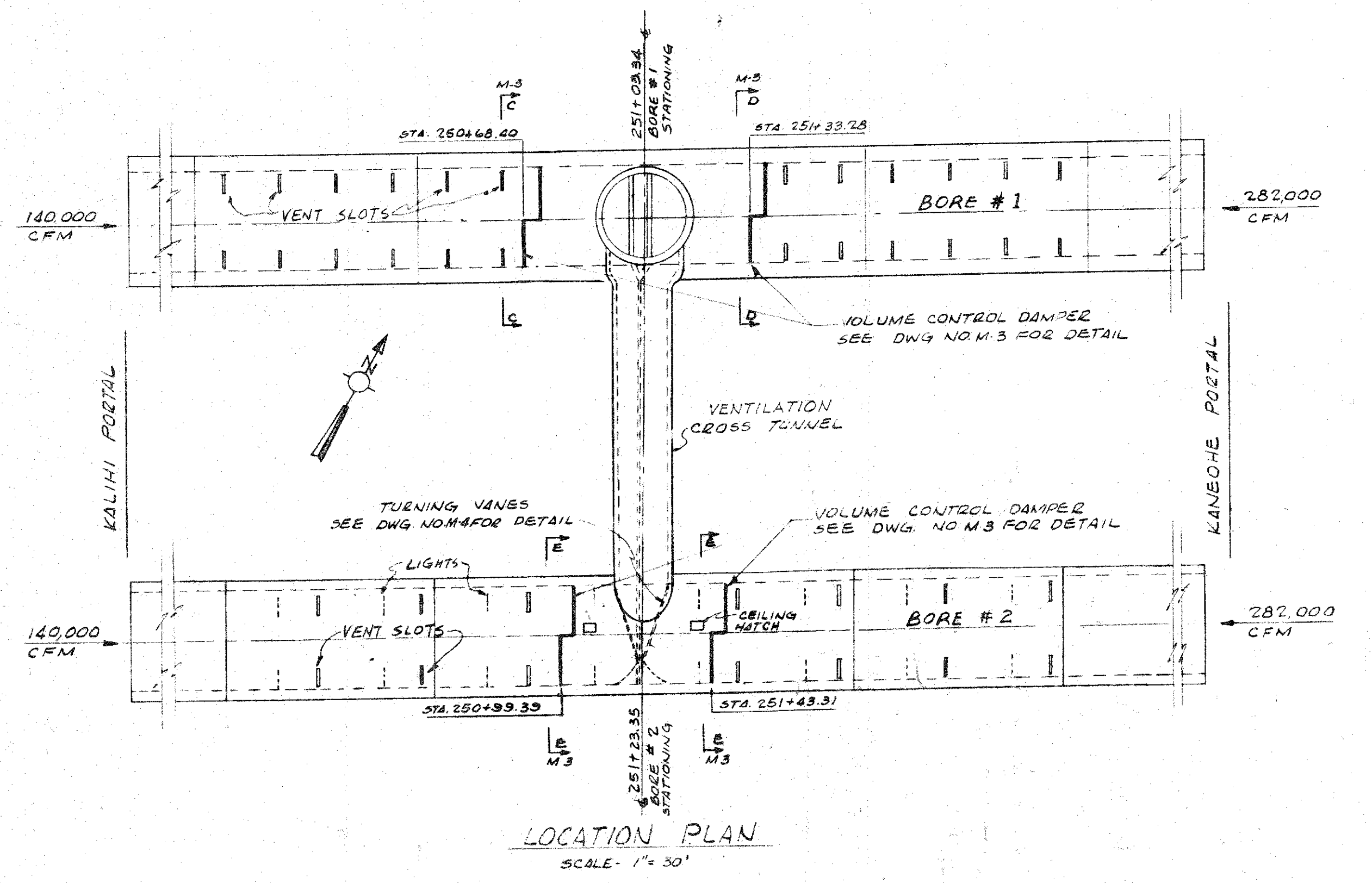
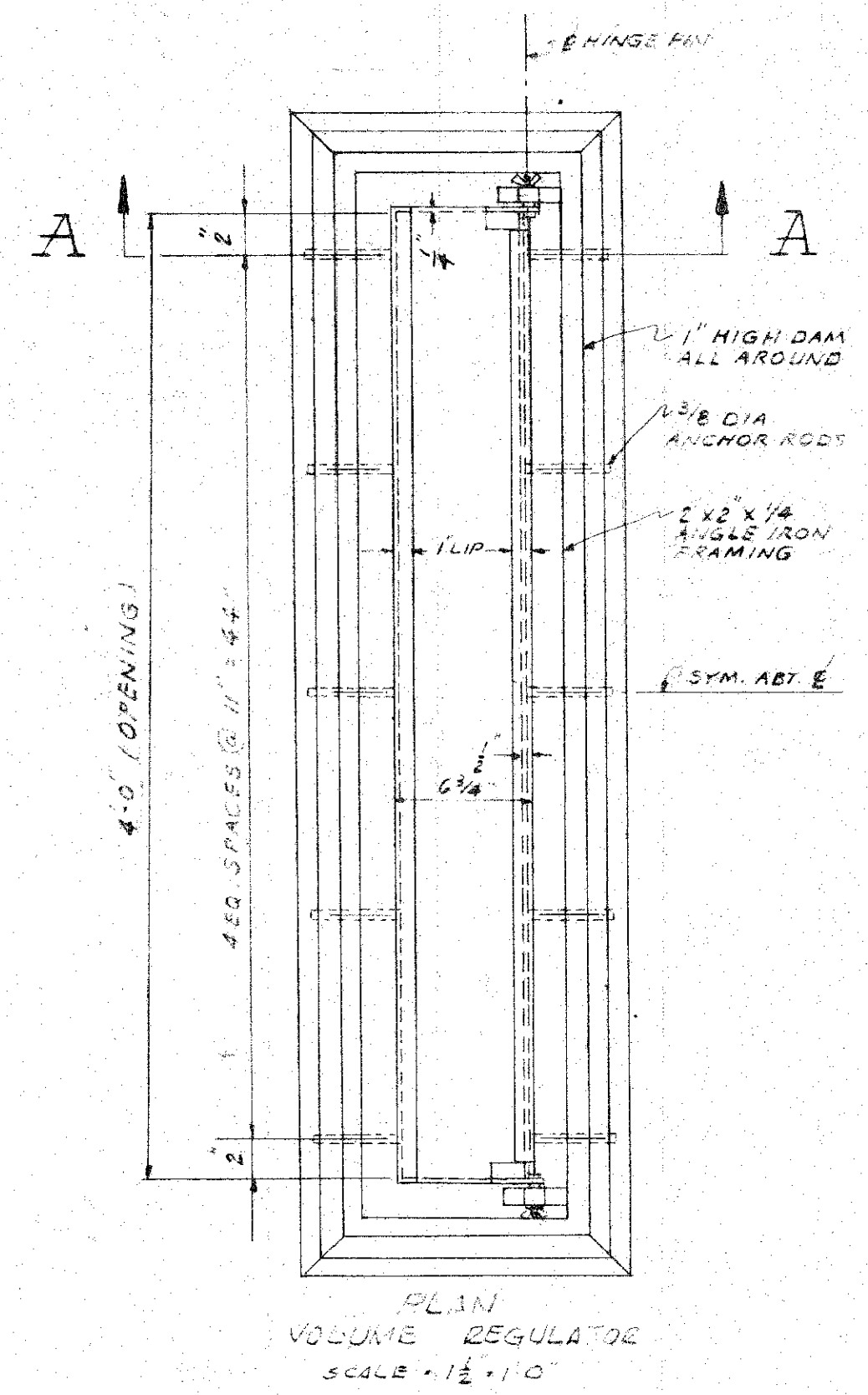
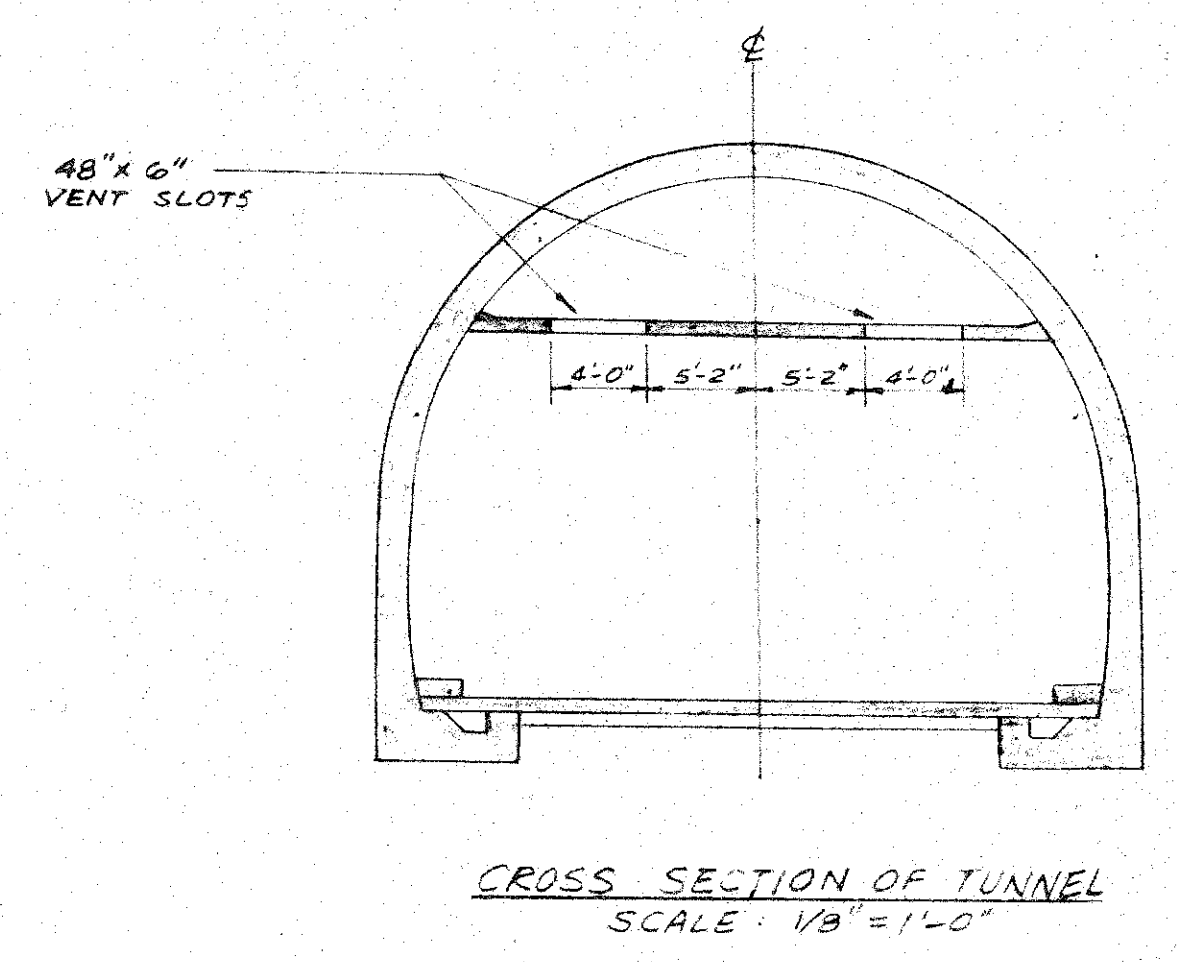
ENGINEER *W. Sun* DATE 8-3-57
DRAFTSMAN ROK CHECKED BY ROK
SCALE TRACER
APPROVED *James K. ...* APPROVED *...*
CHIEF ENGINEER BUREAU ENGINEER

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

JOB NO. 13-57 DWG. P-8

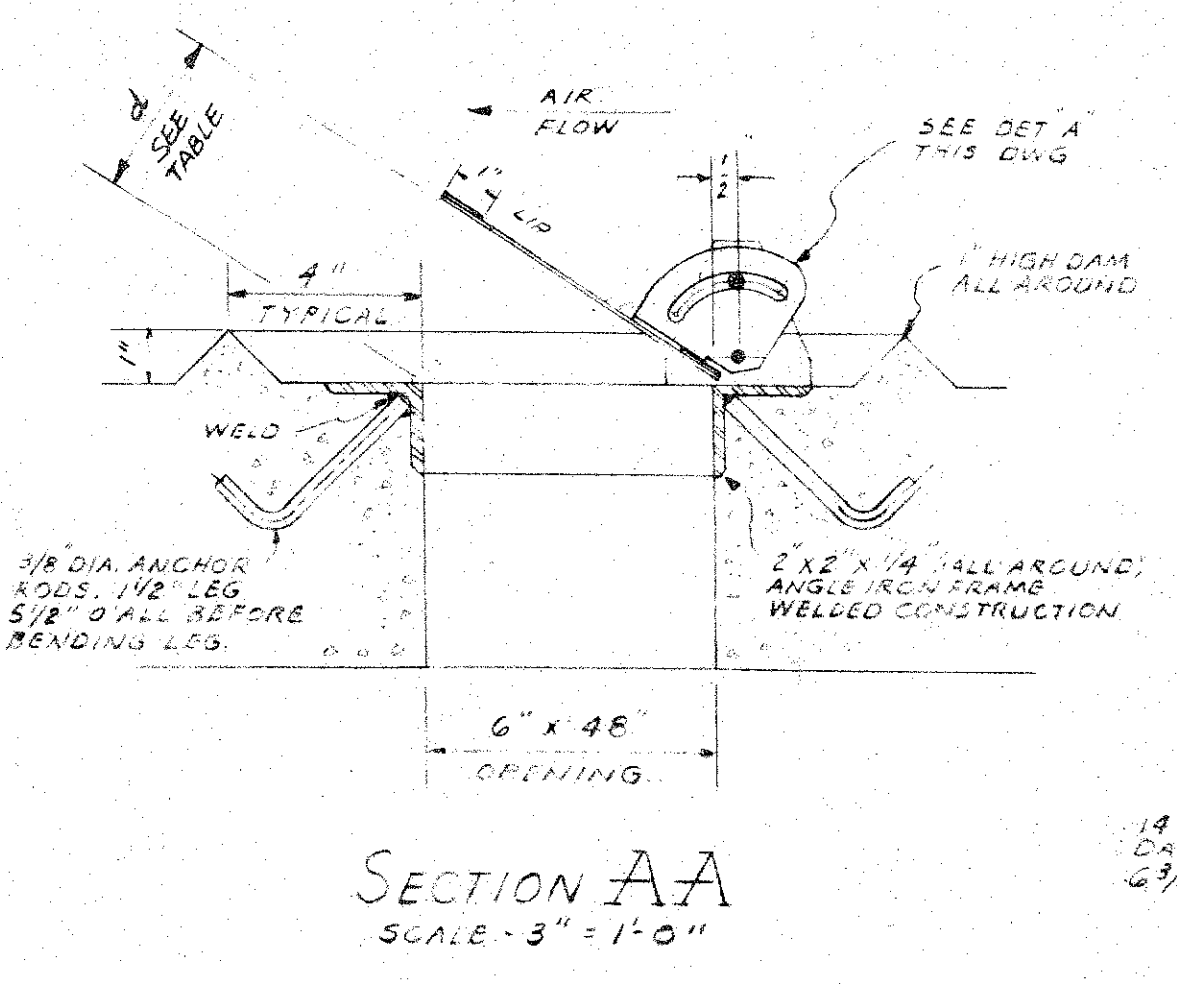


VENT SLOTS LOCATION PLAN
SCALE: 1" = 30'-0"

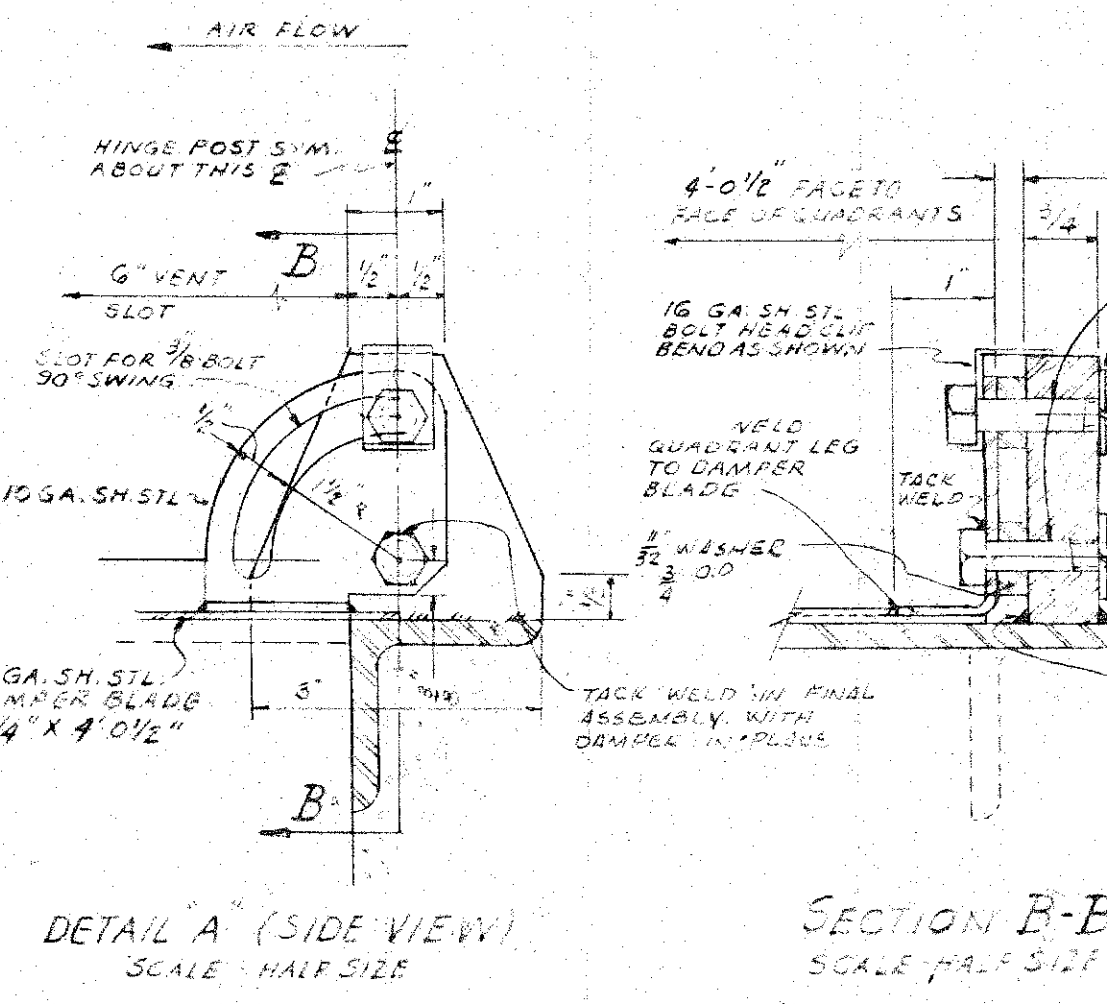


LOCATION PLAN
SCALE: 1" = 30'

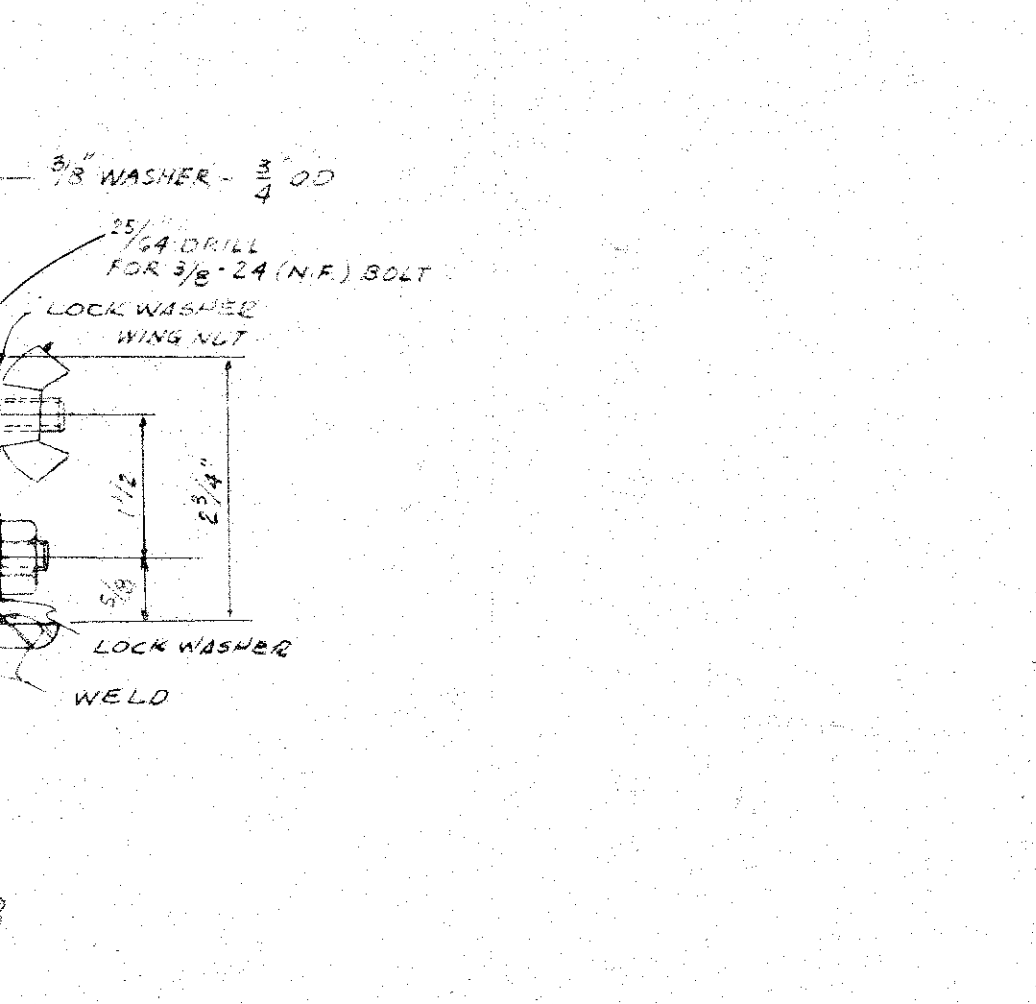
MODULE NO.	DAMPER OPENING d - IN.
ENTRANCE	6
1	6
2	6
3	6
4	5 9/16
5	5 7/8
6	5 13/16
7	5 3/4
8	5 11/16
9	5 9/16
10	5 7/16
11	5 1/2
12	5 1/8
13	4 13/16
14	4 3/4
15	4 9/16
16	2 1/4
17	2 5/16
18	2 7/16
19	2 9/16
20	2 11/16
21	2 13/16
22	2 15/16
23	3 1/16
24	3 1/4
25	3 3/16
26	3 9/16
27	3 11/16
28	3 7/8
29	4 1/16
30	4 1/4
31	4 7/16
32	4 9/16
33	4 13/16
34	5
35	5 3/16
36	5 3/8
37	5 1/2
38	5 3/4
39	5 3/8
40	5 13/16
41	5 7/8
42	5 15/16
43	6
44	6
EXIT	6



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



DETAIL A (SIDE VIEW)
SCALE: HALF SIZE



SECTION B-B
SCALE: HALF SIZE

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ENGINEERS
CHICAGO ILLINOIS

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

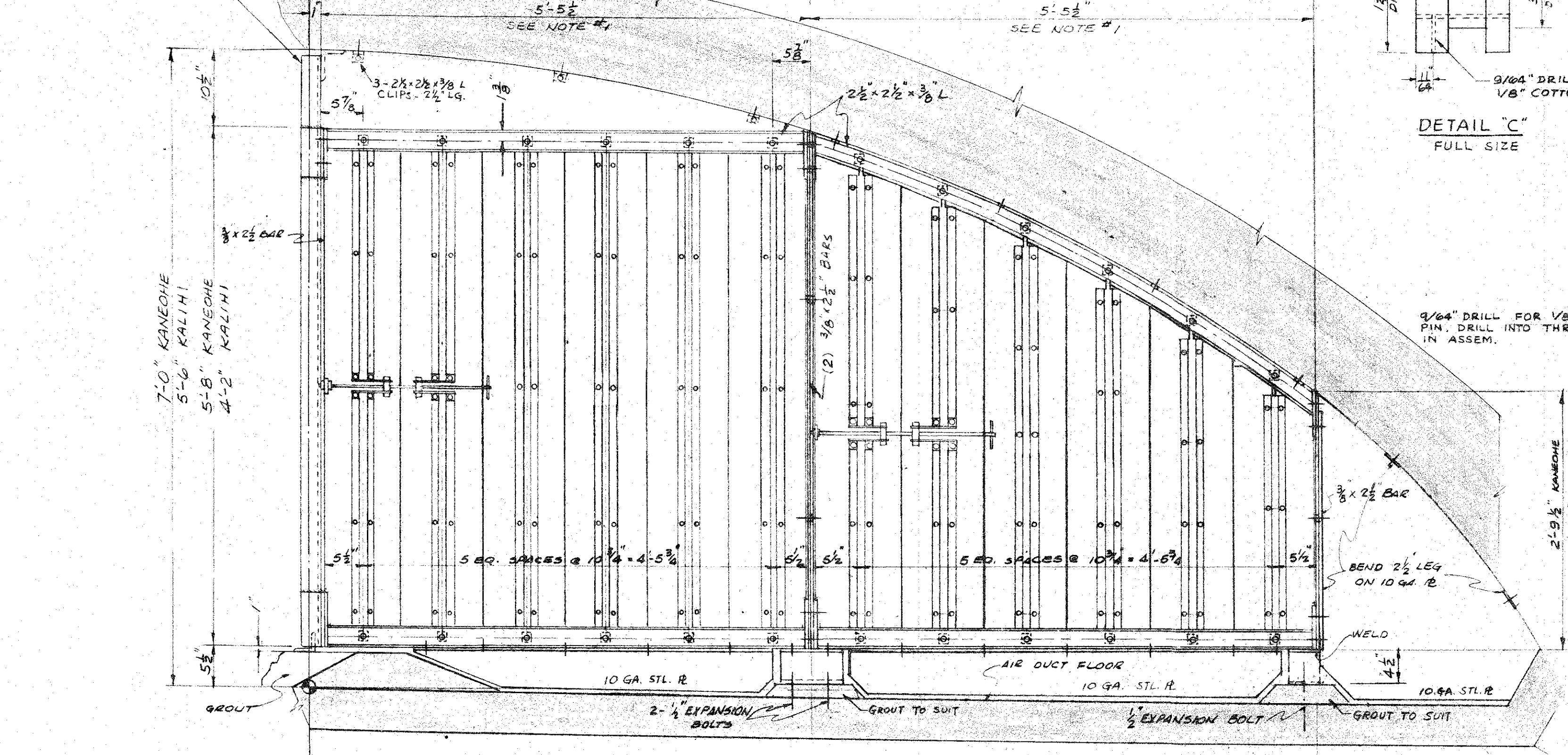
WILSON TUNNEL 2nd BORE
LOCATION PLANS
VOLUME REGULATOR PLAN & DETAILS

ENGINEER: G.C.W. VED. DATE: AUG 10, 1957
DRAFTSMAN: R.D.W. CHECKED BY: G.C.W.
SCALE: AS NOTED TRACER: R.D.W.
APPROVED: [Signature] APPROVED: [Signature]
CHIEF ENGINEER BUREAU ENGINEER

W.S. OR SEC. F.B. C.B.
W.M. BY F.W. BY S.B.Y.

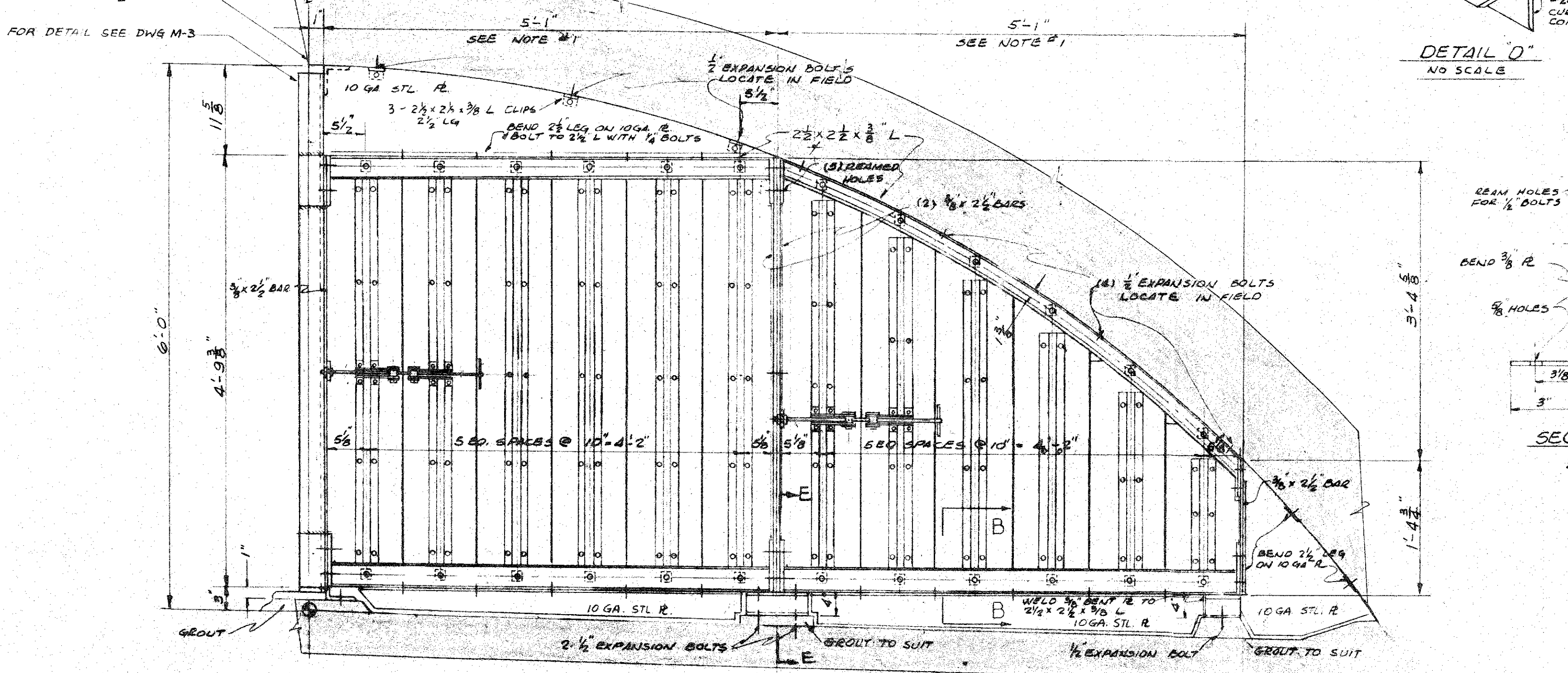
JOB NO. 13-57 DWG. NO. M-1

FOR DETAIL SEE DWG. M-3

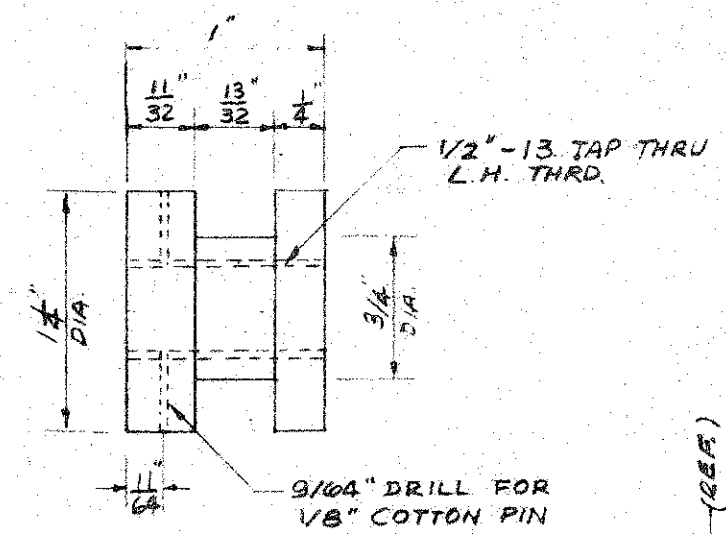


VOLUME CONTROL DAMPER (FOR BORE #1)
SCALE: 1"=1'-0"

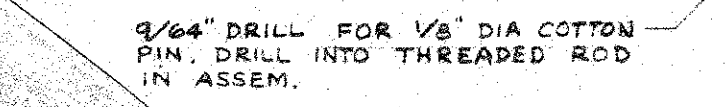
FOR DETAIL SEE DWG. M-3



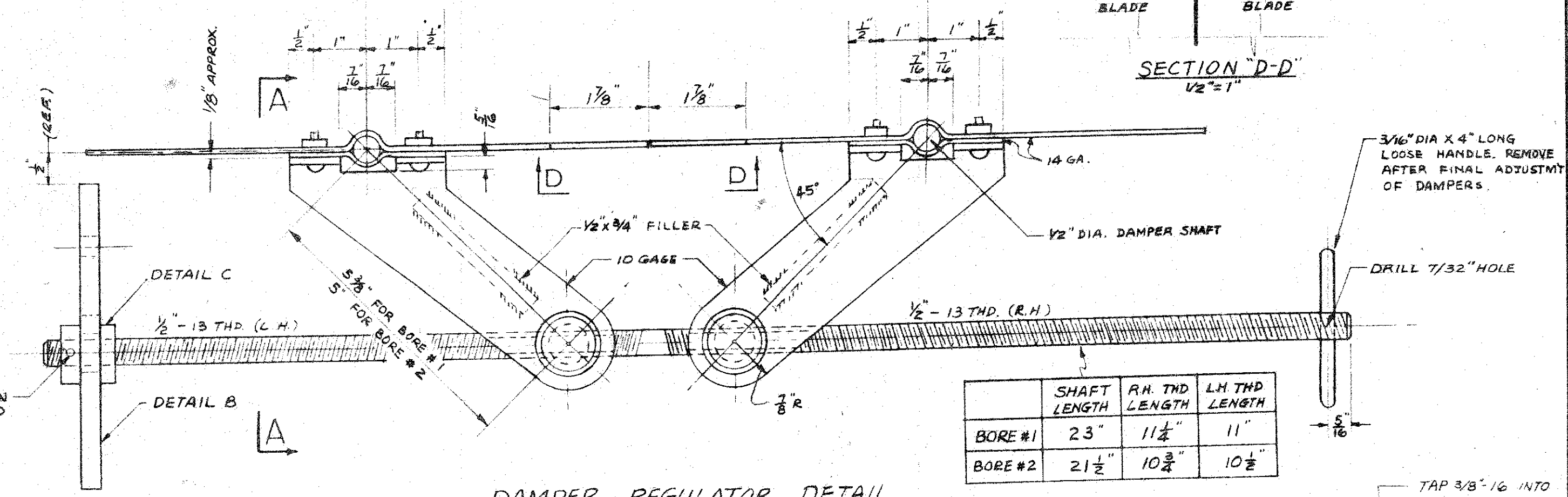
VOLUME CONTROL DAMPER (FOR BORE #2)
SCALE: 1"=1'-0"



DETAIL C
FULL SIZE

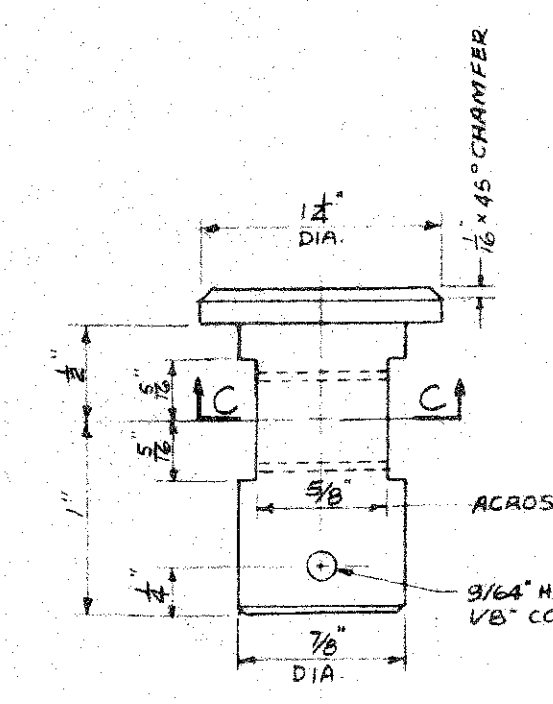


DETAIL B

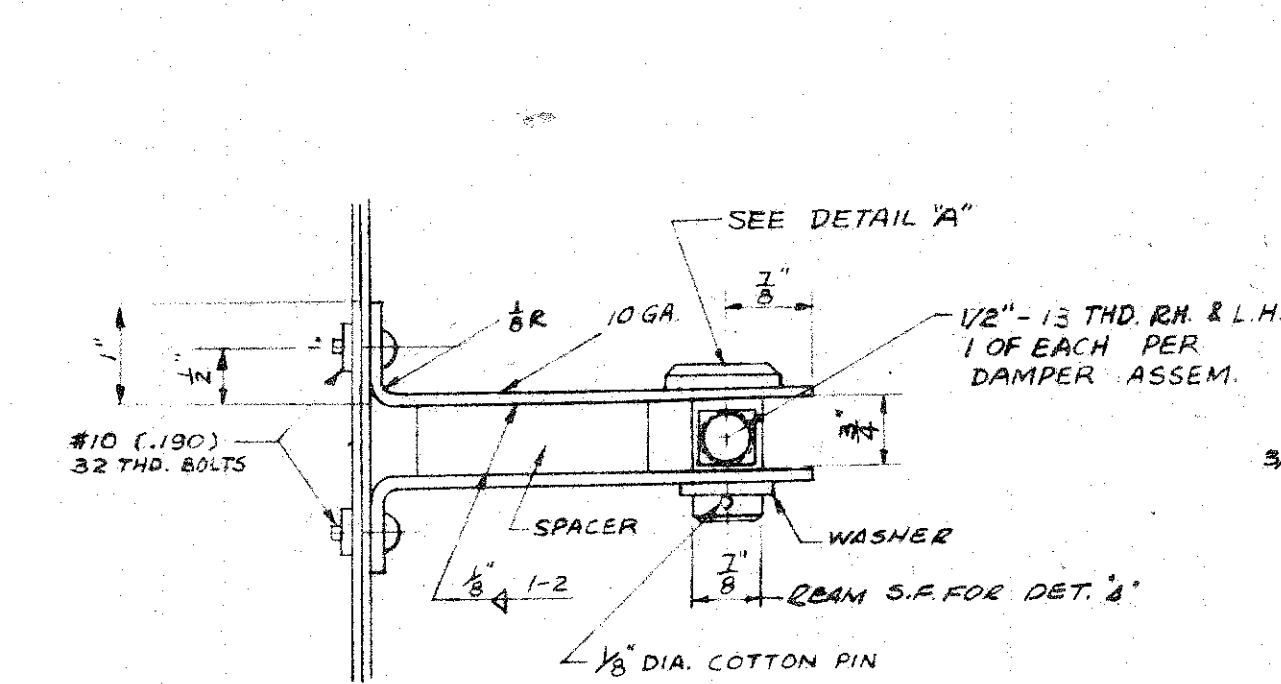


DAMPER REGULATOR DETAIL
SCALE: 1/2"=1"

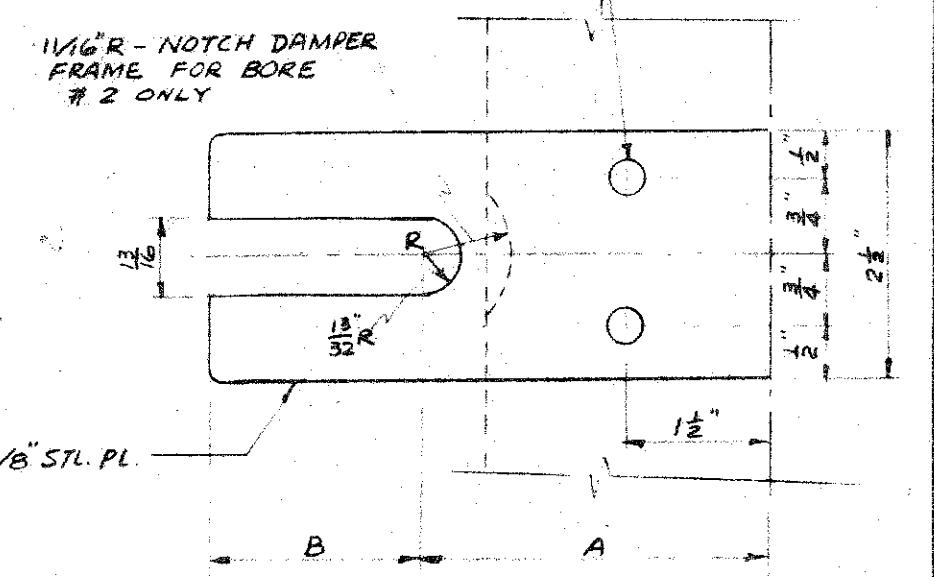
	SHAFT LENGTH	R.H. THD LENGTH	L.H. THD LENGTH
BORE #1	23"	11 1/4"	11"
BORE #2	21 1/2"	10 3/4"	10 1/2"



DETAIL A
FULL SIZE



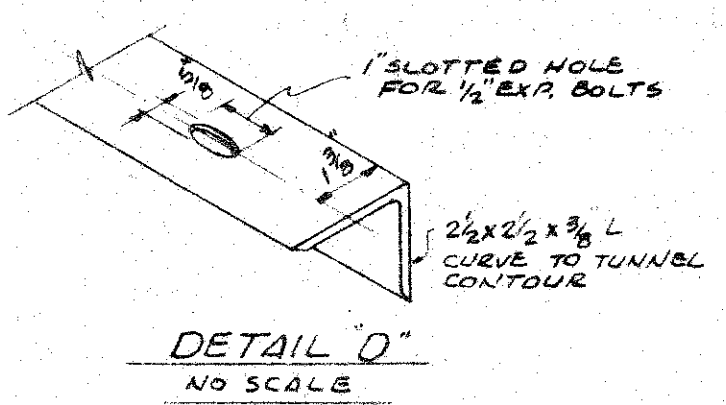
SECTION A-A
SCALE: 1/2"=1"



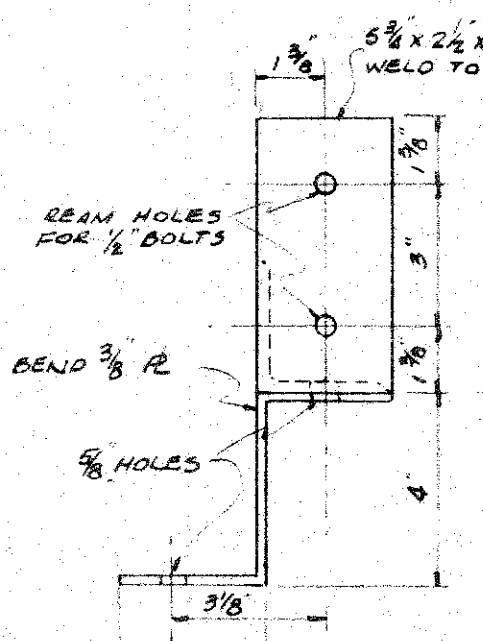
DETAIL B
YOKE PLATE
1/2"=1"

	FOR DETAIL B	
	BORE #1	BORE #2
A	3 1/2"	3"
B	2 3/8"	2 1/2"

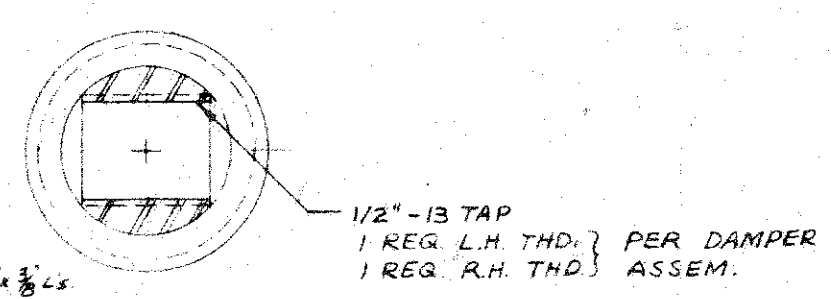
- NOTES:
- DAMPER ASSEMBLIES TO BE BOLTED CONSTRUCTION. MATING PARTS TO HAVE REAMED HOLES FOR CORRECT ALIGNMENT WHEN RE-ASSEMBLING WITHIN AIR DUCT PORTION OF TUNNEL. ALL PARTS TO CLEAR ACCESS DOORS PROVIDED IN AIR DUCT FLOOR.
 - WORK THIS SHEET WITH DWG. M-3.



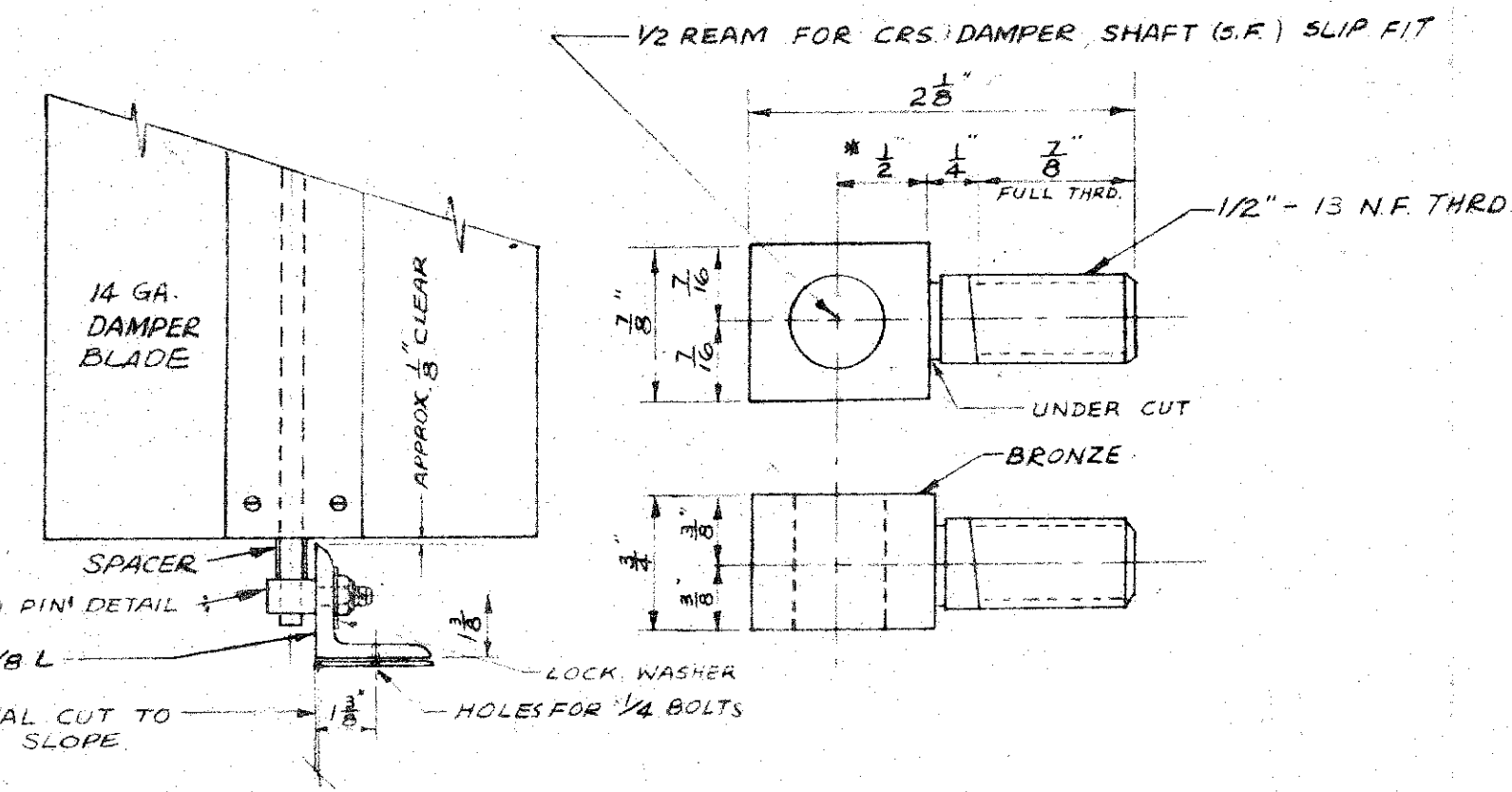
DETAIL D
NO SCALE



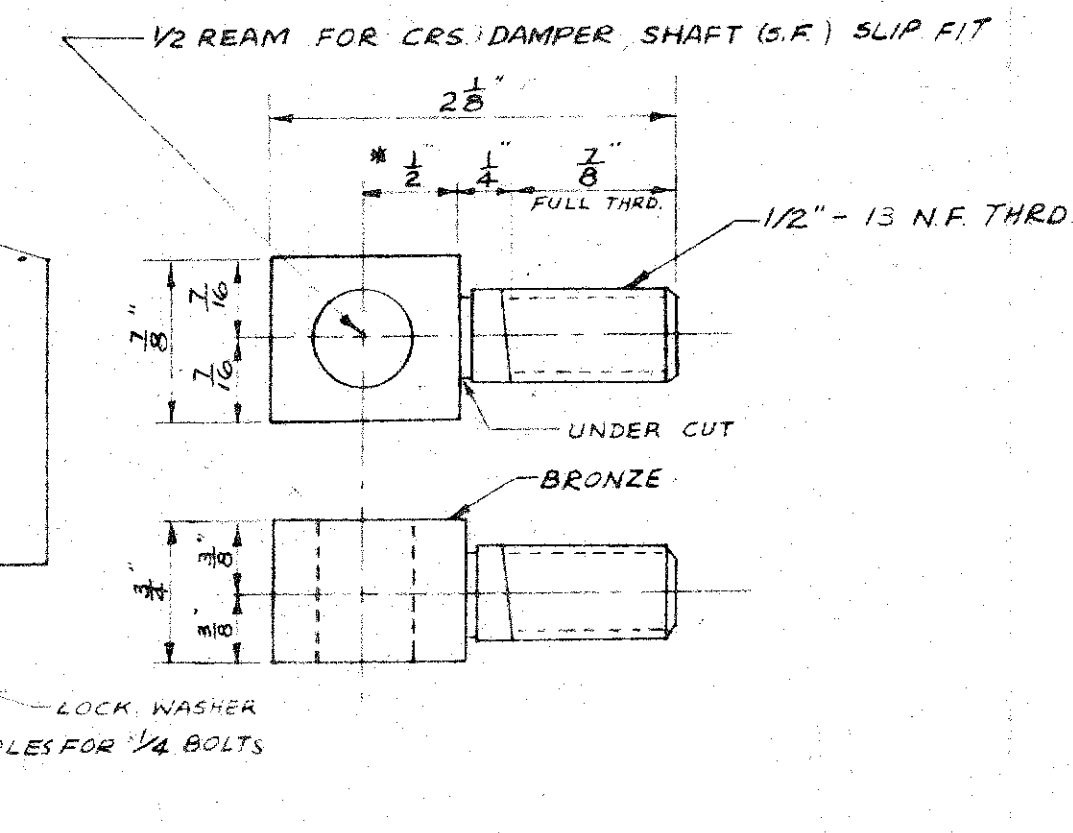
SECTION E-E
3"=1'-0"



SECTION C-C
FULL SIZE



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



STUD PIN
FULL SIZE

* DIMENSIONS ON ALL STUD PINS TO BE ALIKE. SHAFTS MUST BE IN LINE IN FINAL ASSEMBLY.

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ENGINEERS
CHICAGO ILLINOIS

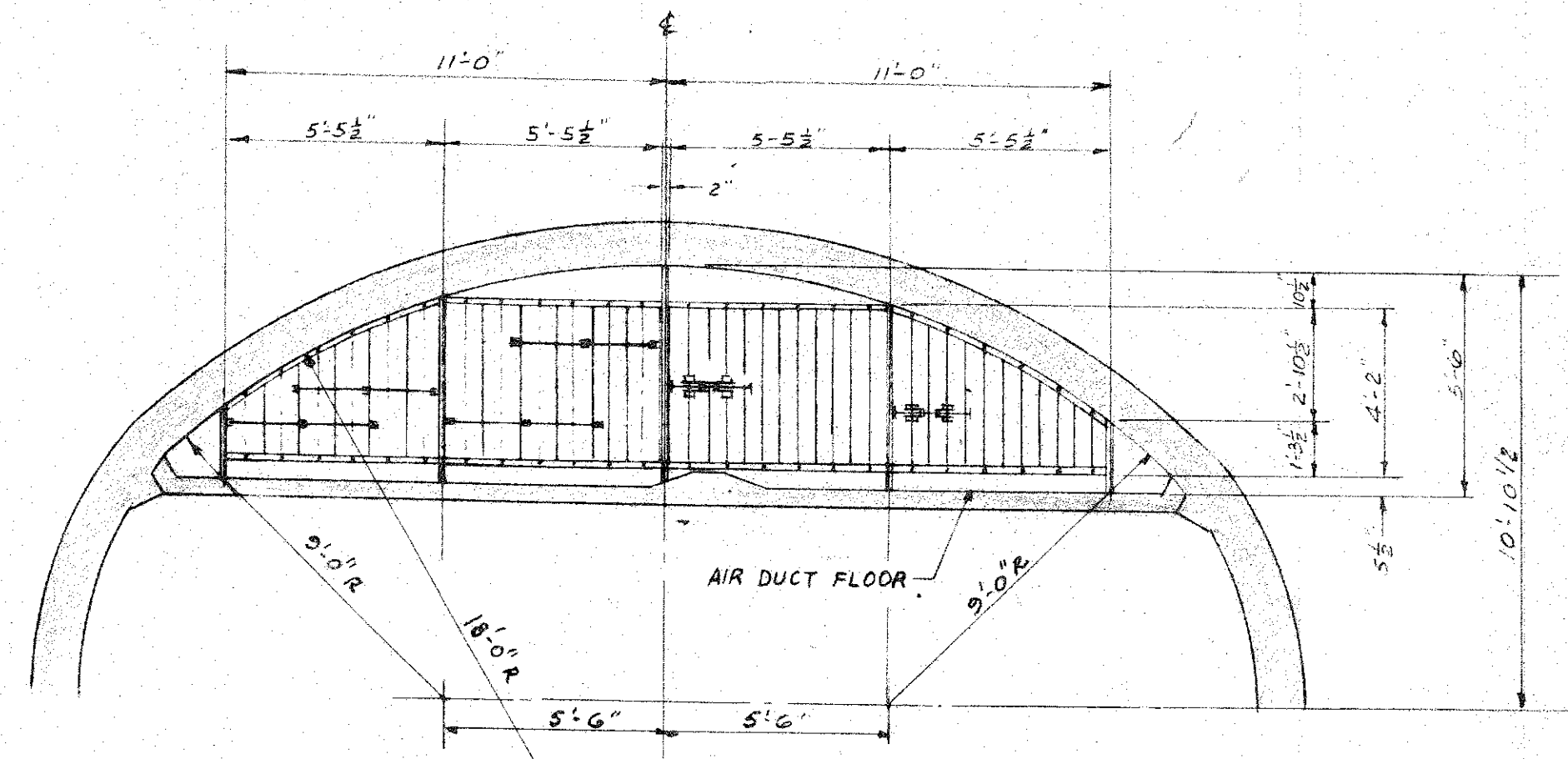
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

WILSON TUNNEL 2nd BORE
VOLUME CONTROL DAMPERS
PLAN & DETAILS

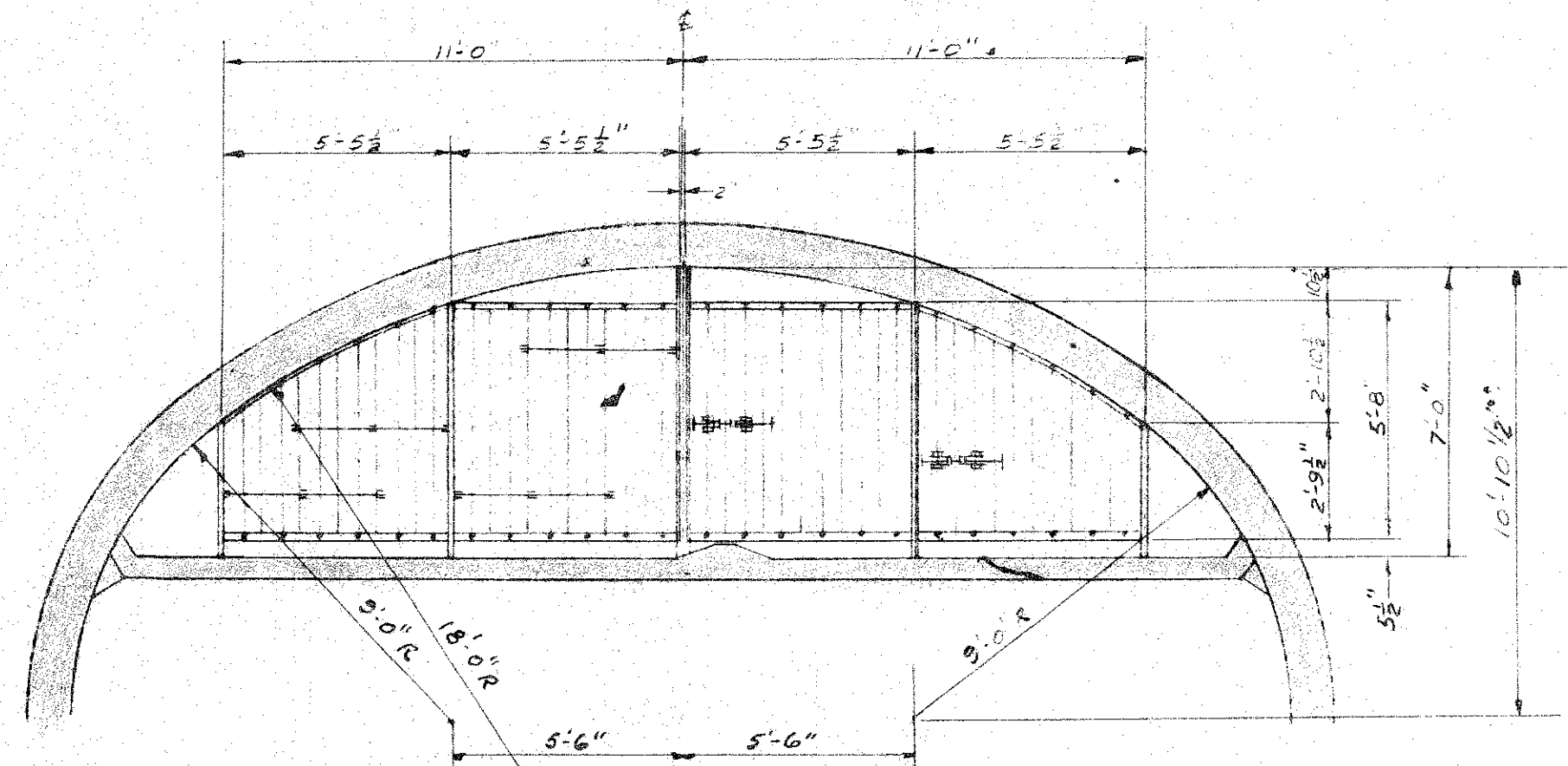
ENGINEER: L.E. W.C. DATE: AUG 16, 1957
DRAFTSMAN: P.D.W. CHECKED BY: L.E.
SCALE: AS NOTED TRACER: P.D.W.
APPROVED: [Signature] APPROVED: [Signature]
CHIEF ENGINEER BUREAU ENGINEER

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

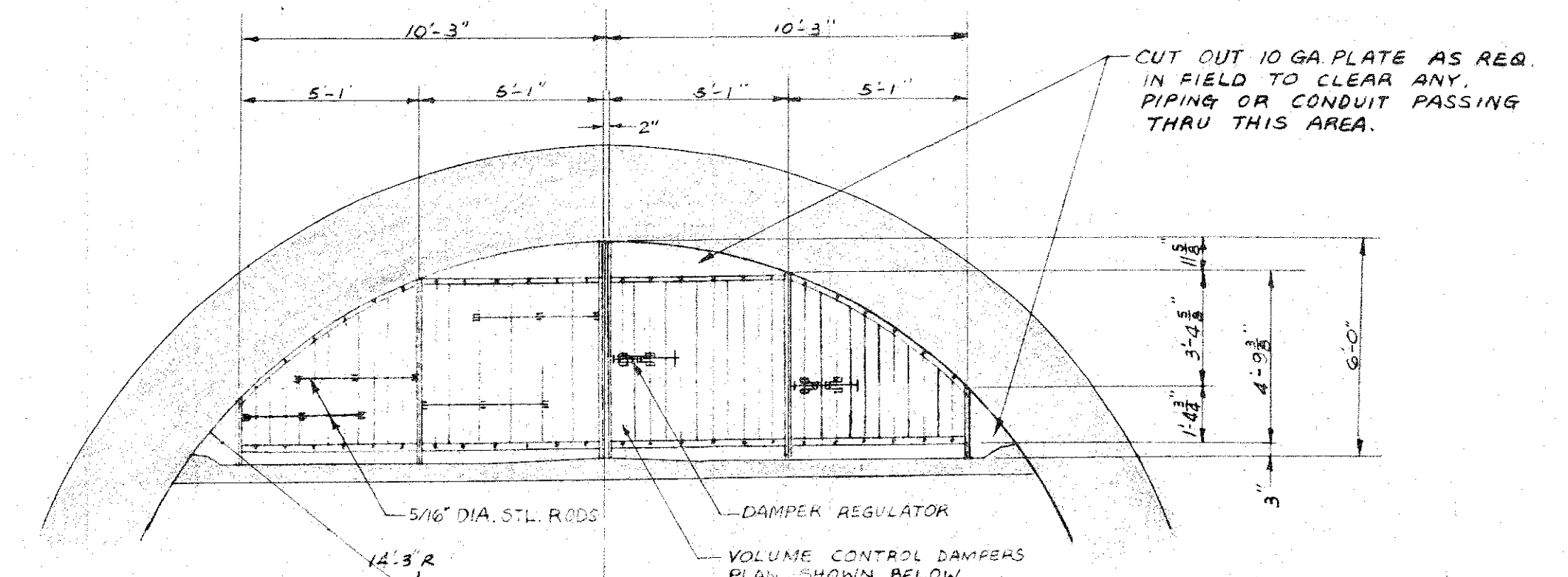
JOB NO. 13-57 DWG. NO. M-2



SECTION CC (M-1)
SCALE: 1/4" = 1'-0"
(BORE #1)

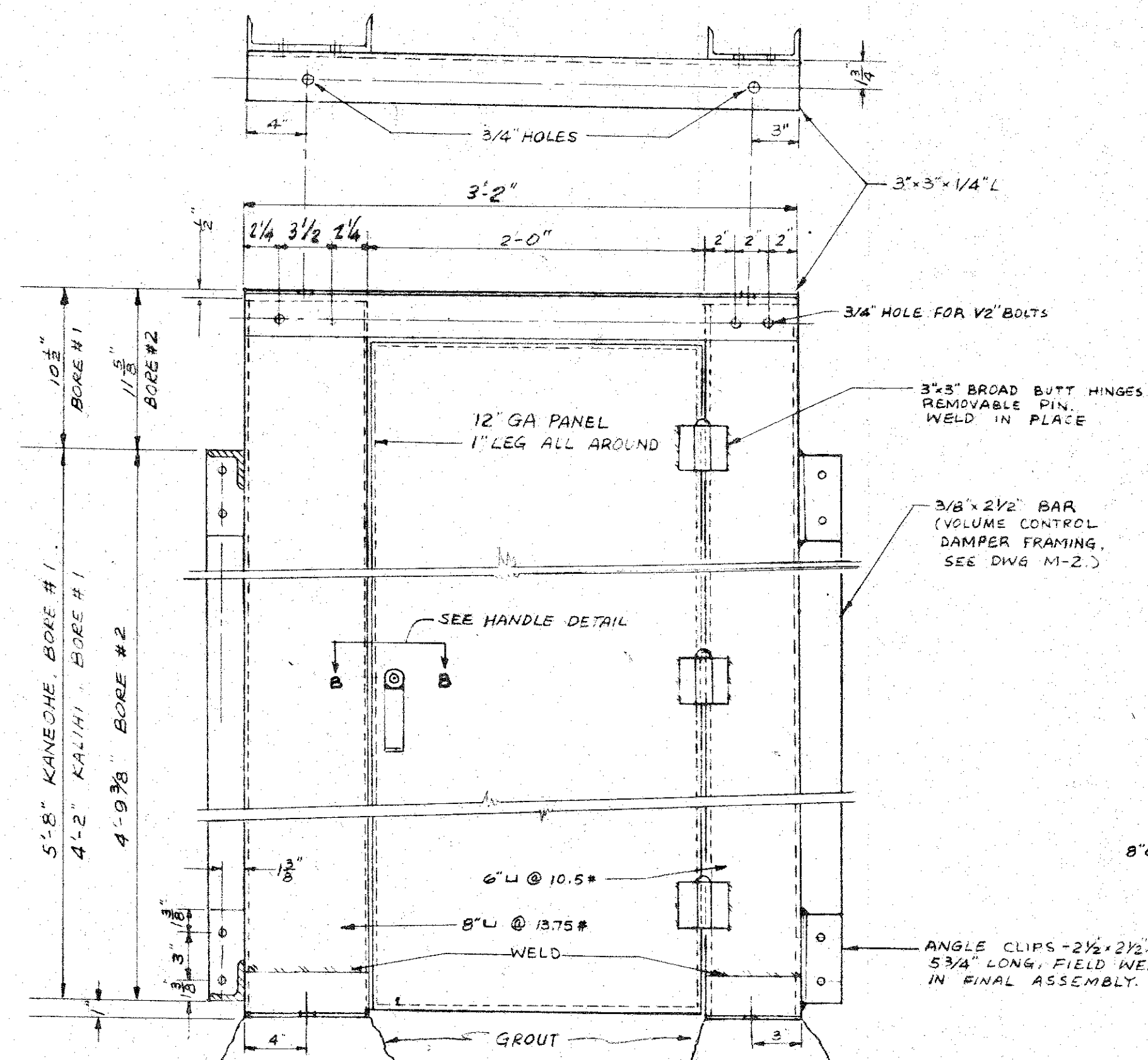
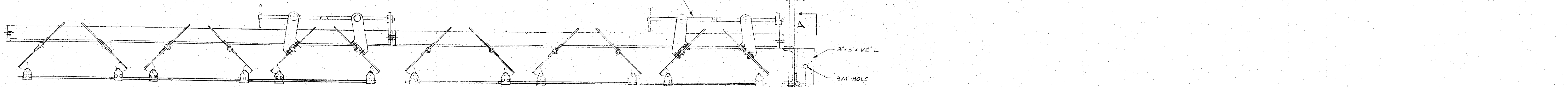


SECTION DD (M-1)
SCALE: 1/4" = 1'-0"
(BORE #1)



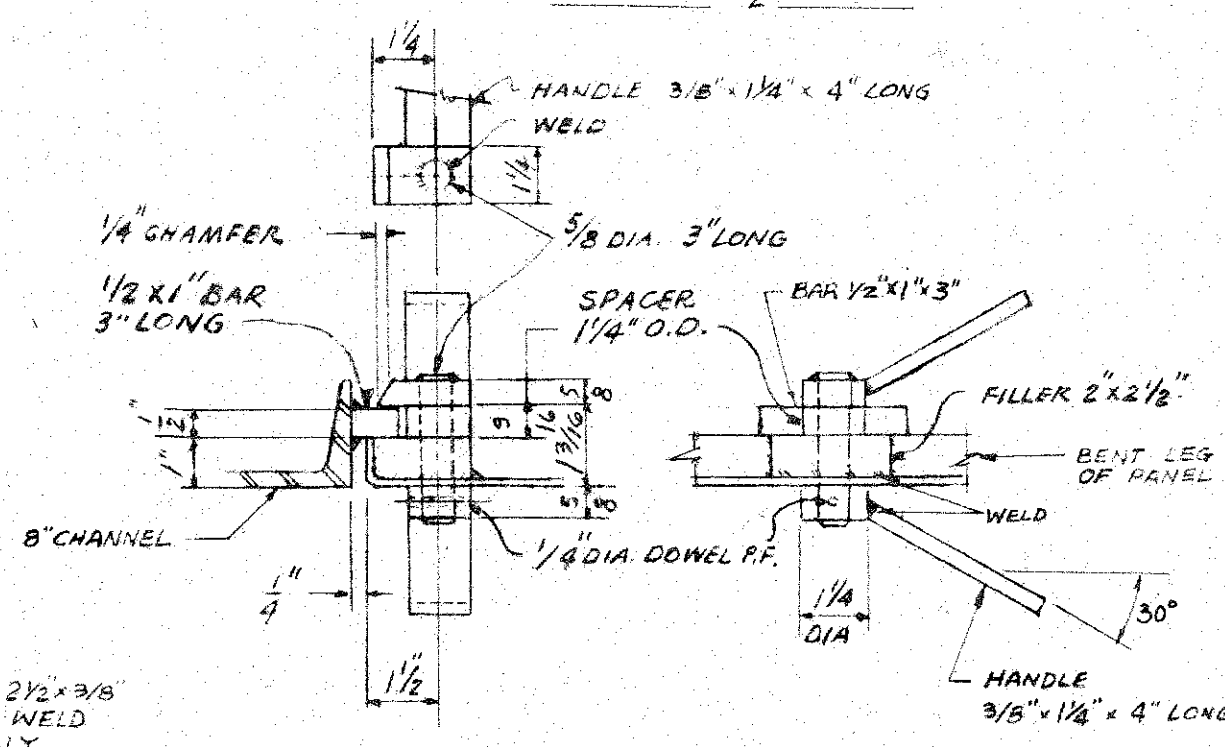
SECTION EE (M-1)
SCALE: 1/4" = 1'-0"
(BORE #2)

DAMPER REGULATOR
SEE DWG NO. M-2 DETAIL B



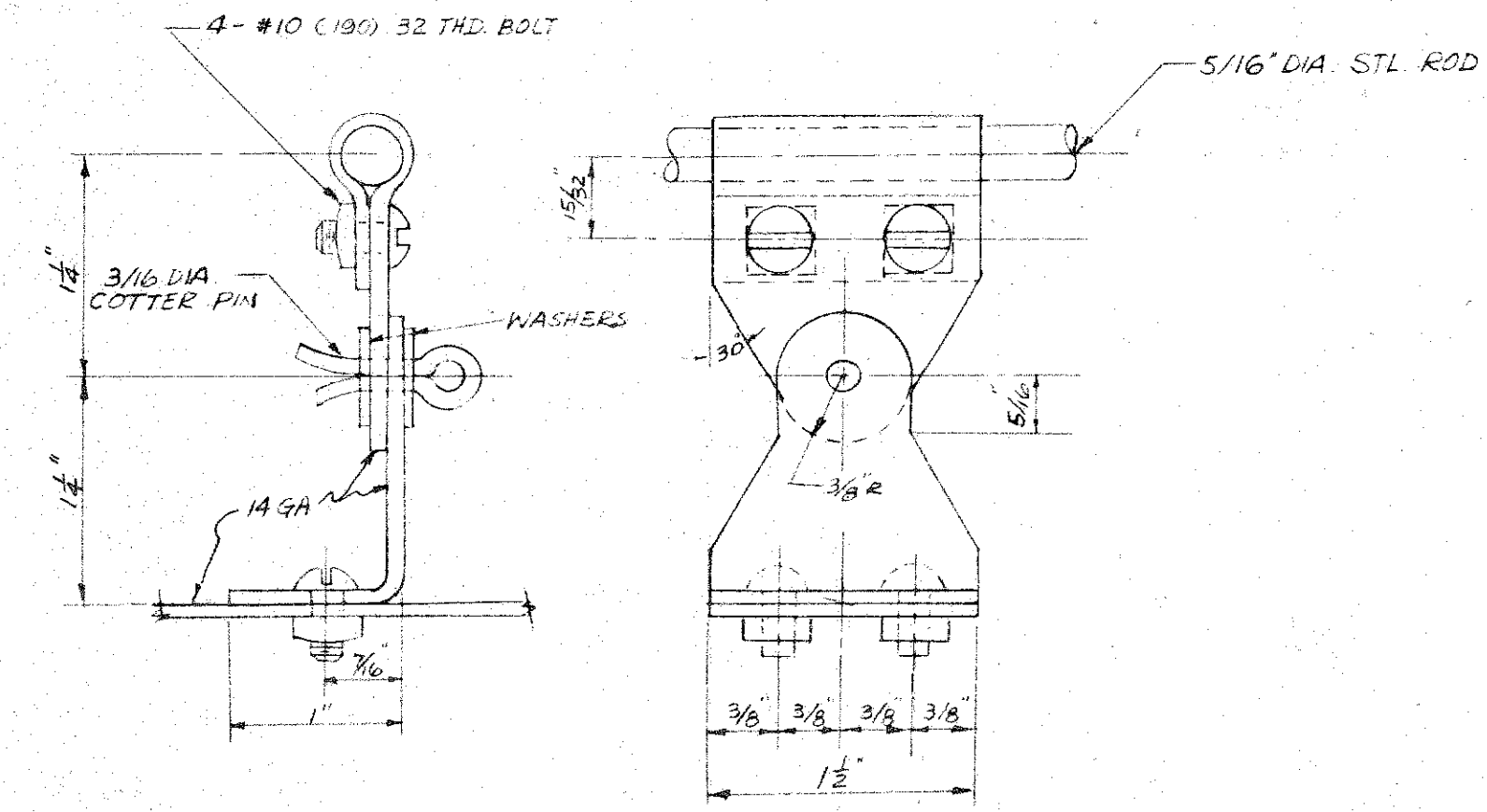
SECTION AA
PASSAGE DOOR DETAIL
SCALE: 1/2" = 1'-0"

PLAN
TYPICAL VOLUME CONTROL DAMPERS
SCALE: 1/2" = 1'-0"



SECTION B-B

DOOR HANDLE DETAIL
SCALE: 1/4" = 1"



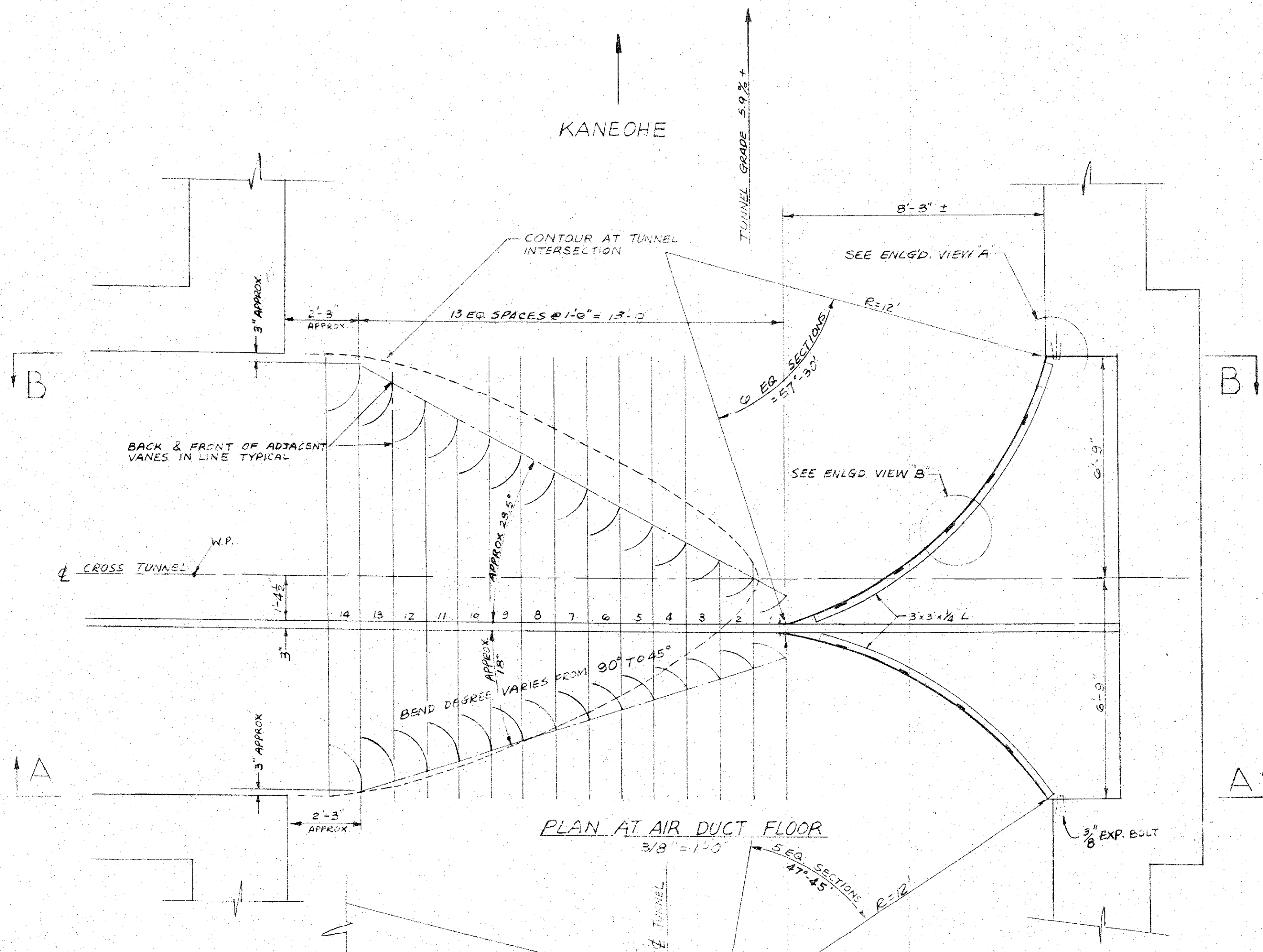
DETAIL A
SCALE: FULL SIZE

REFERENCE DRAWINGS
SEE M-2 FOR VOLUME CONTROL DAMPER ELEVATIONS & DETAILS

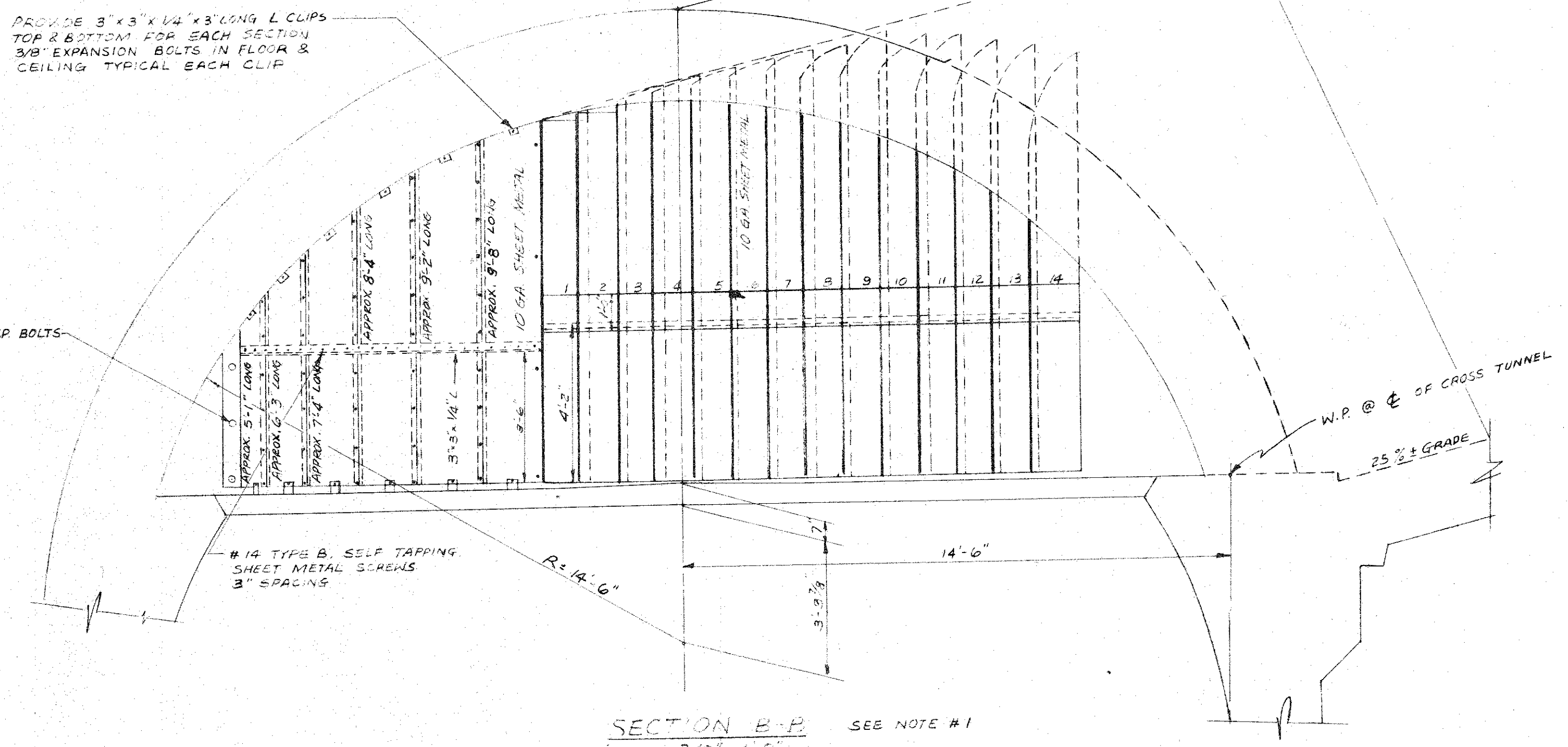
NOTE 1 -
DOOR & FRAMING, BOLTED CONSTRUCTION. ALL PARTS MUST CLEAR ACCESS DOORS PROVIDED IN AIR DUCT FLOORS.

DE LEUW, CATHY & COMPANY ENGINEERS		CHICAGO	ILLINOIS
DEPARTMENT OF PUBLIC WORKS CITY AND COUNTY OF HONOLULU BUREAU OF PLANS			
WILSON TUNNEL 2nd BORE			
VOLUME CONTROL DAMPERS			
DETAILS			
ENGINEER	W.S.D.	DATE	AUG. 16, 1957
DRAFTSMAN	P.S.	CHECKED BY	L.D.
SCALE	AS SHOWN	TRACER	P.S.W.
APPROVED	<i>[Signature]</i>	APPROVED	<i>[Signature]</i>
CHIEF ENGINEER		BUREAU ENGINEER	
W.S.V.	PROFILE	C.B.	
CR. SEC.	F.B.	S.B.	
W.M.BY	F.W.BY	S.BY	
JOB NO. 13-57		WG. NO. M-3	

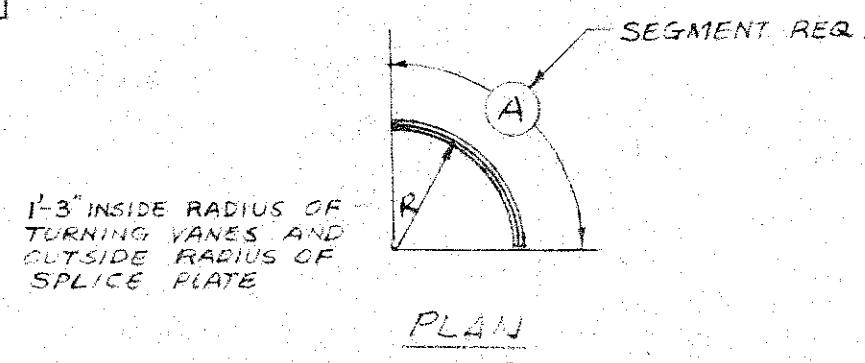
KANEHOE



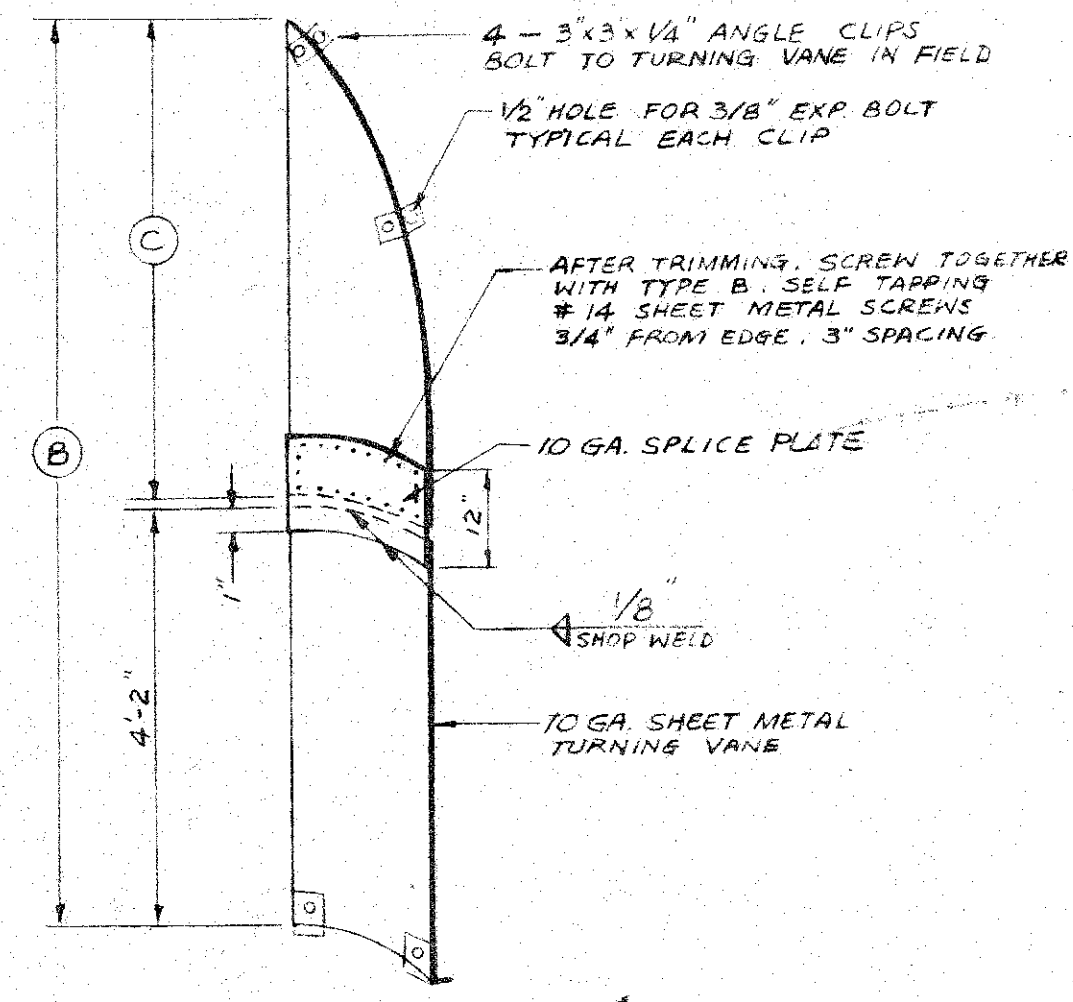
PLAN AT AIR DUCT FLOOR
3/8" = 1'-0"



SECTION B-B
3/8" = 1'-0" SEE NOTE #1



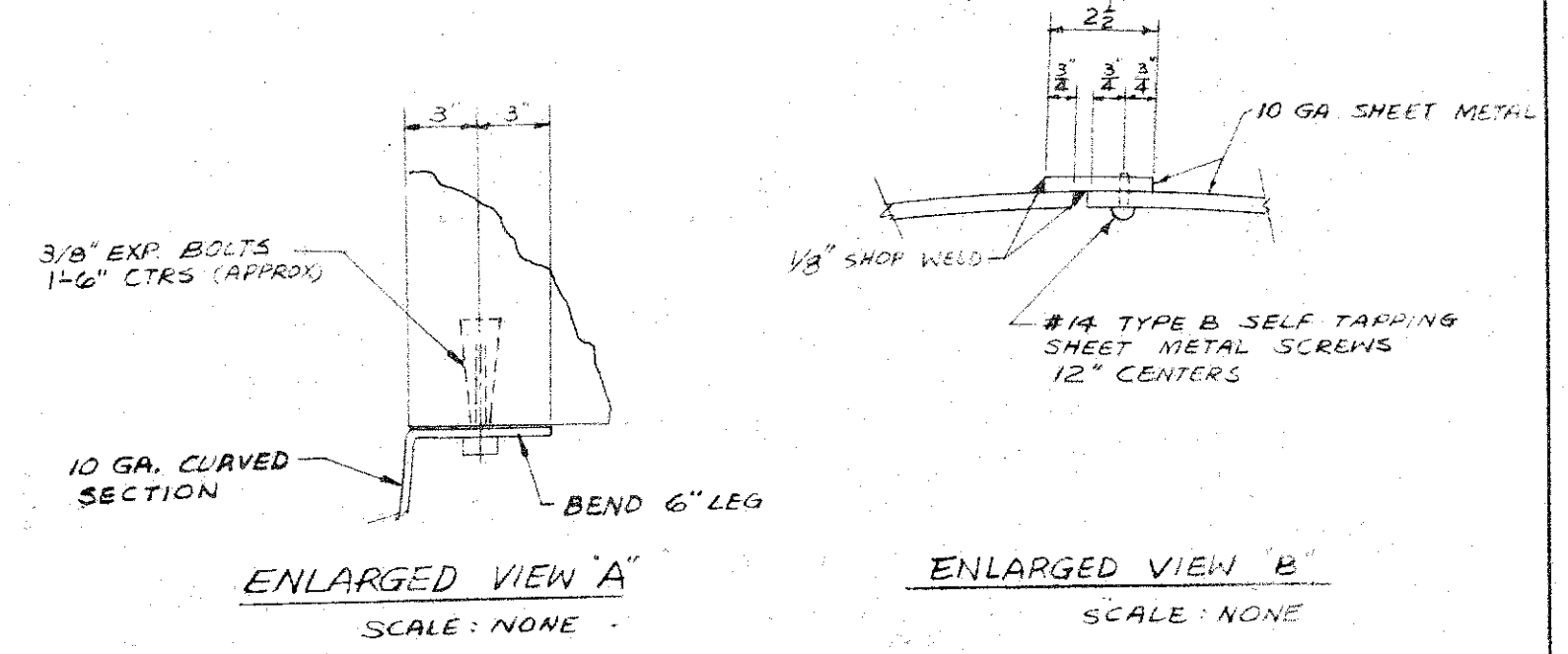
1'-3" INSIDE RADIUS OF TURNING VANES AND OUTSIDE RADIUS OF SPLICE PLATE



ELEVATION
TURNING VANE
DETAIL
SCALE: NONE

VANE NO	IN	LENGTH			
		(B) KALIHI	(B) KANEHOE	(C) KALIHI	(C) KANEHOE
1	45	9'-8"	9'-9"	5'-4"	5'-4"
2	48.5	9'-11"	9'-11"	5'-7"	5'-7"
3	52	10'-0"	10'-7"	5'-8"	6'-3"
4	55.5	10'-2"	10'-10"	5'-10"	6'-6"
5	59	10'-7"	11'-1"	5'-9"	6'-9"
6	62.5	9'-11"	11'-3"	5'-7"	6'-11"
7	65.5	9'-8"	11'-6"	5'-4"	7'-2"
8	69	9'-4"	11'-7"	5'-0"	7'-3"
9	72.5	10'-9"	11'-11"	6'-5"	7'-7"
10	76	10'-9"	11'-9"	6'-5"	7'-5"
11	79.5	10'-9"	11'-9"	6'-5"	7'-5"
12	83	10'-9"	11'-7"	6'-5"	7'-3"
13	86.5	10'-8"	11'-5"	6'-4"	7'-1"
14	90	10'-8"	11'-3"	6'-4"	6'-11"

NOTES:
* APPROXIMATE DIMENSION, END OF TURNING VANES TO BE MEASURED AND FIT IN FIELD.
4-3/8" x 1/4" x 3" LONG L CLIPS PROVIDE TO EACH TURNING VANE. FIT & FASTEN IN FIELD.

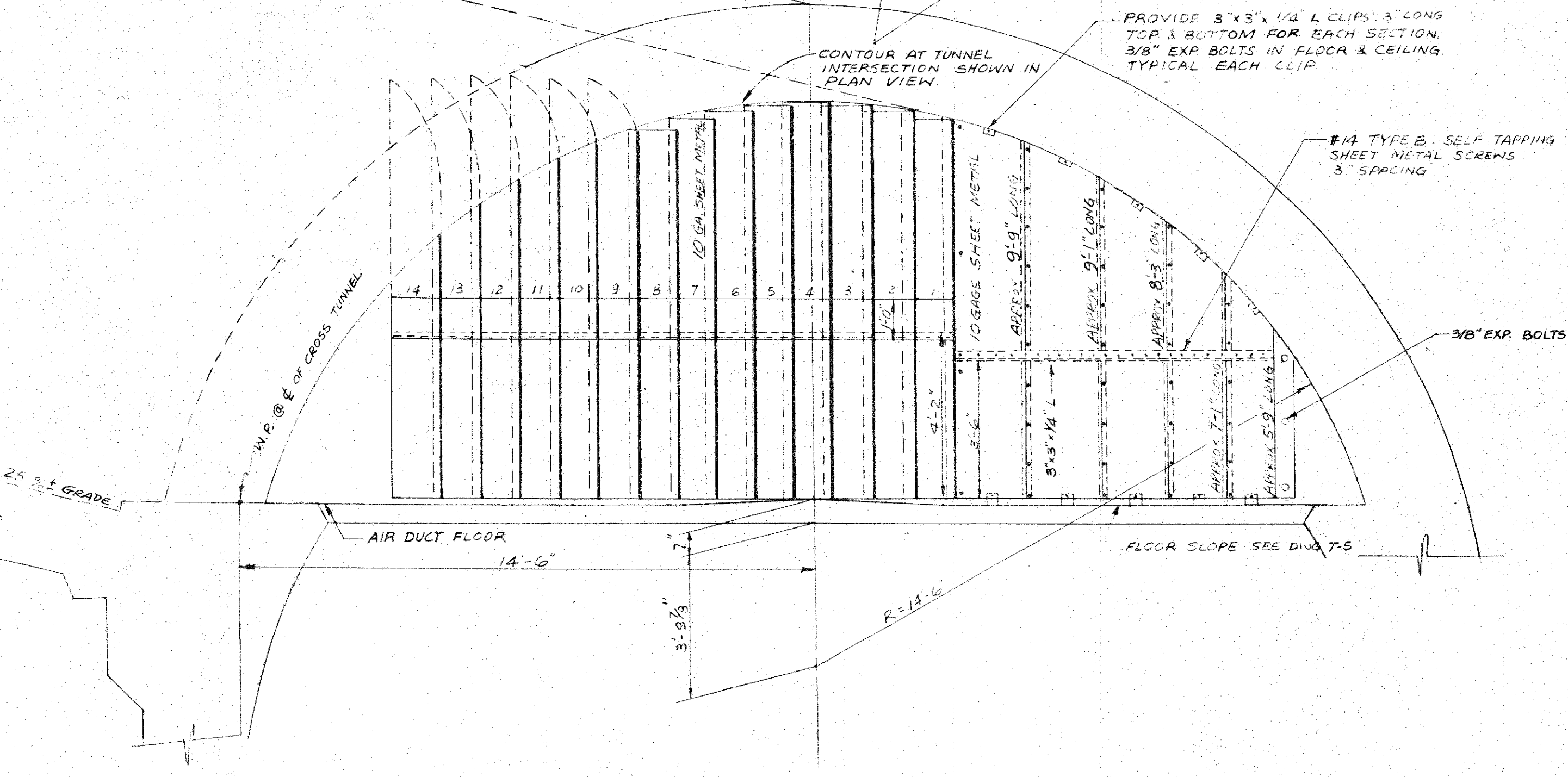


ENLARGED VIEW A
SCALE: NONE

ENLARGED VIEW B
SCALE: NONE

NOTES:
1. SECTIONS A-A & B-B SHOWN PERPENDICULAR TO FLOOR.
2. ALL EXPANSION BOLTS FOR SECURING TURNING VANES TO BE LOCATED IN FIELD.

REFERENCE DWGS. T-12 & T-13. CROSS TUNNEL LAYOUT. SECTIONS & DETAILS



SECTION A-A
3/8" = 1'-0" SEE NOTE #1

DE LEUW, CATHAR & COMPANY
ENGINEERS ILLINOIS

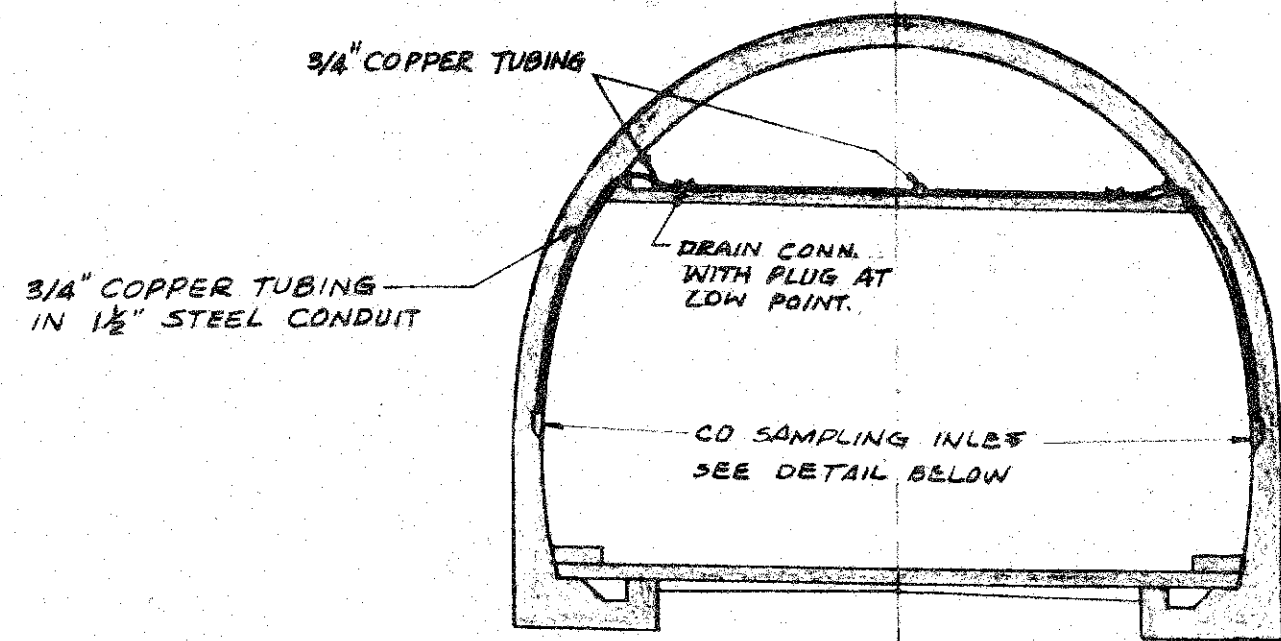
CHICAGO DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

WILSON TUNNEL 2nd BORE
TURNING VANES
PLAN & DETAILS

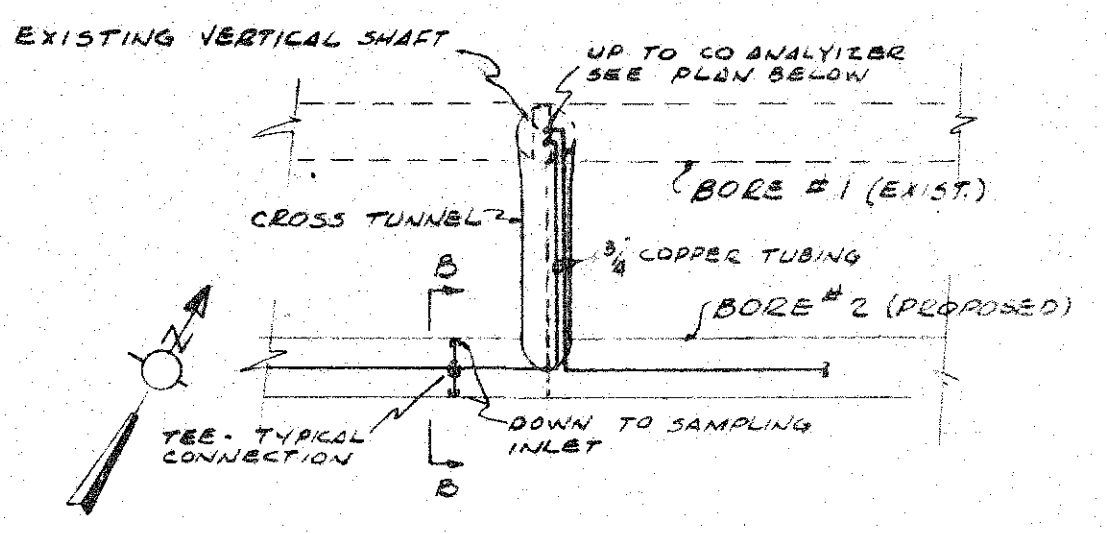
ENGINEER: *W.D.* DATE: Aug 16, 1957
DRAFTSMAN: *P.S.* CHECKED BY: *[Signature]*
SCALE: AS NOTED TRACER: *[Signature]*
APPROVED: *[Signature]* APPROVED: *[Signature]*
CHIEF ENGINEER BUREAU ENGINEER

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

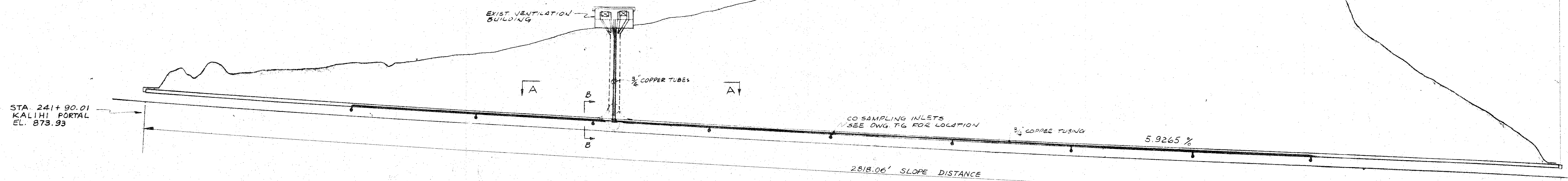
JOB NO. 13-57 DWG. NO. M-4



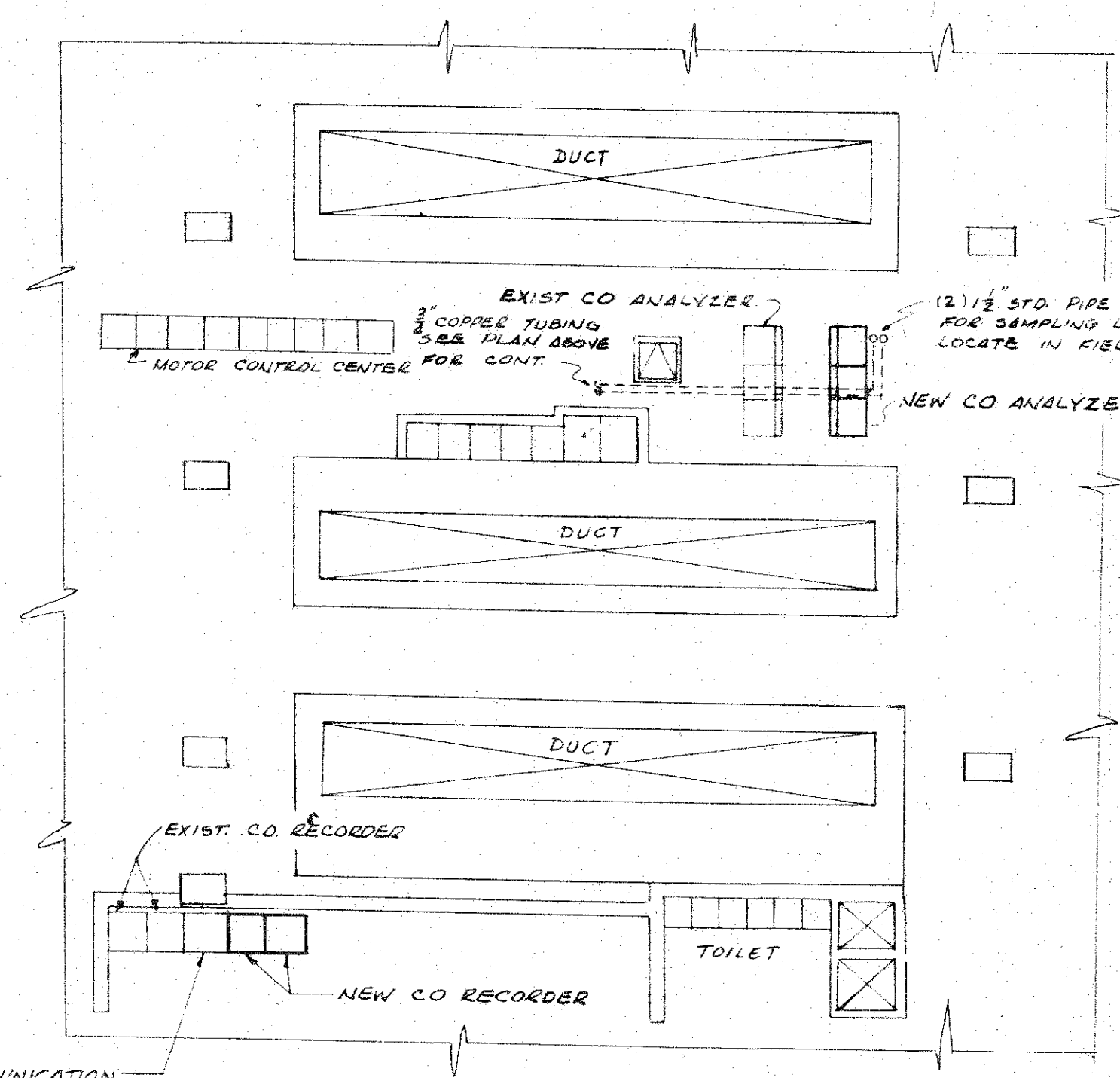
SECTION BB
SCALE - 3/8" = 1'-0"



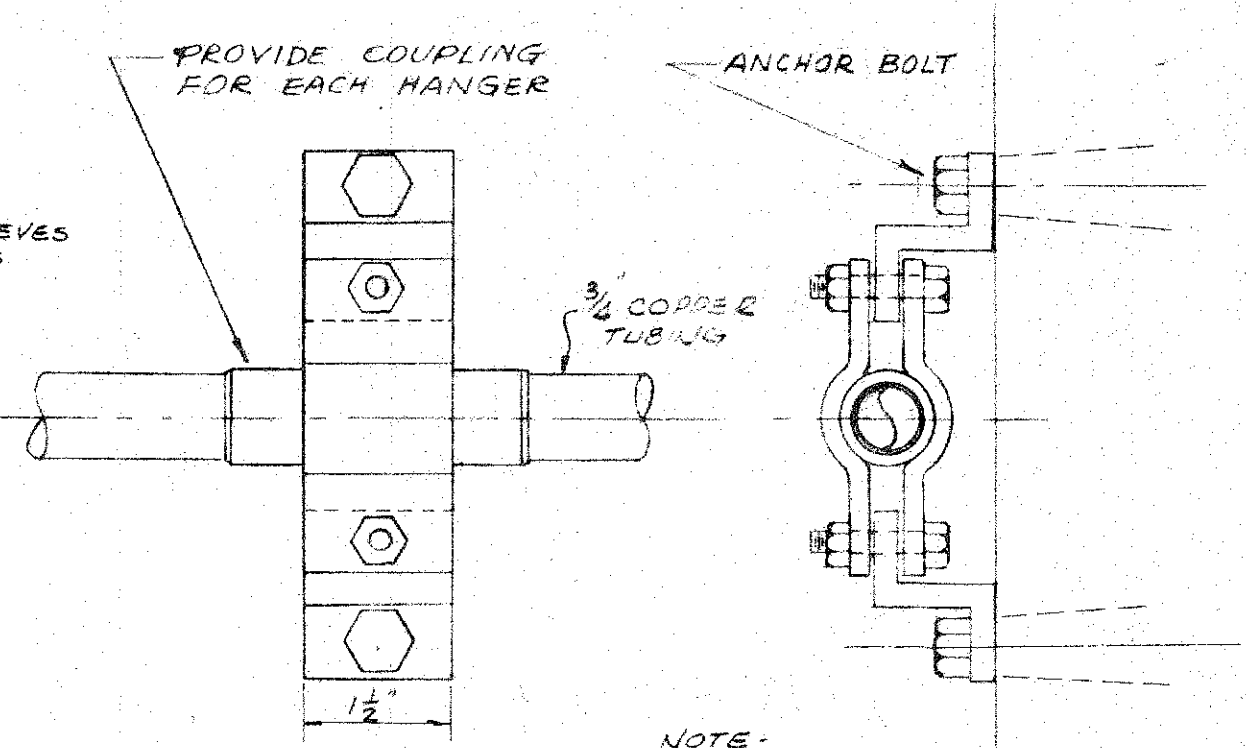
SECTIONAL PLAN A-A
SCALE - 1" = 100'



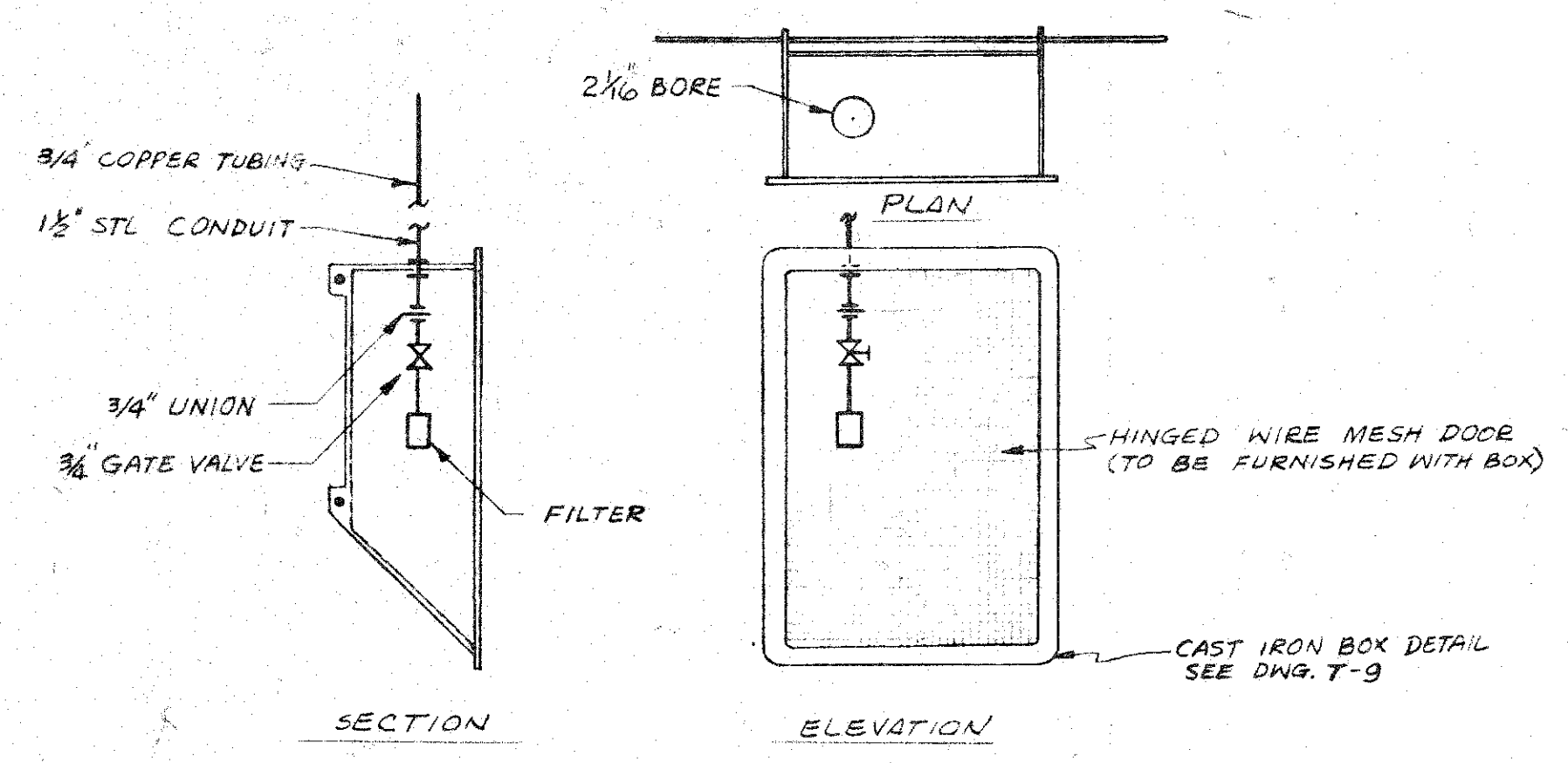
PROFILE
1" = 100'-0"



PART PLAN EL. 1020.0'
VENTILATION BLDG
1/8" = 1'-0"



HANGER DETAIL
SCALE - 1/2" = 1'



CO SAMPLING INLET DETAIL
SCALE - 3/8" = 1'-0"

DE LEUW, CATHER & COMPANY
ENGINEERS
CHICAGO ILLINOIS

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

WILSON TUNNEL 2nd BORE
CARBON MONOXIDE DETECTOR SYSTEM

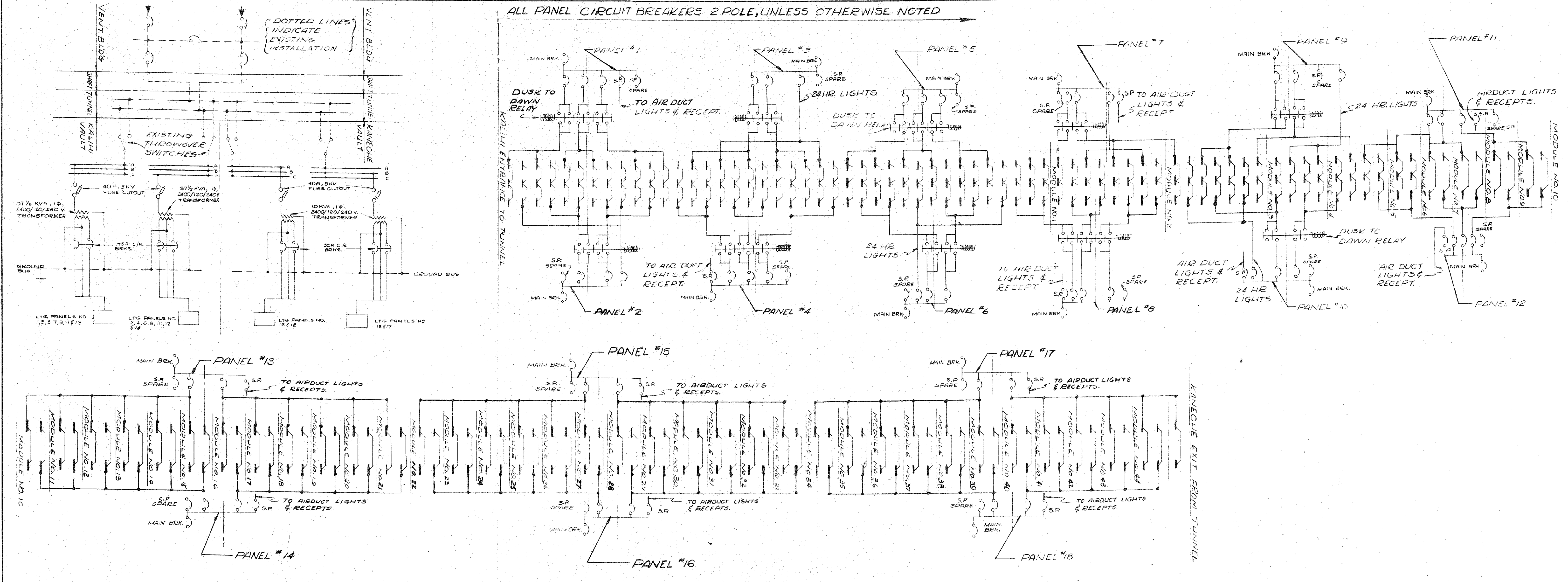
PLAN PROFILE & DETAILS

ENGINEER G.C.J. VED. DATE Aug 16, 1957
DRAFTSMAN P.S.W. CHECKED BY G.C.J.
SCALE AS NOTED TRACER P.S.W.
APPROVED [Signature] APPROVED [Signature]
CHIEF ENGINEER BUREAU ENGINEER

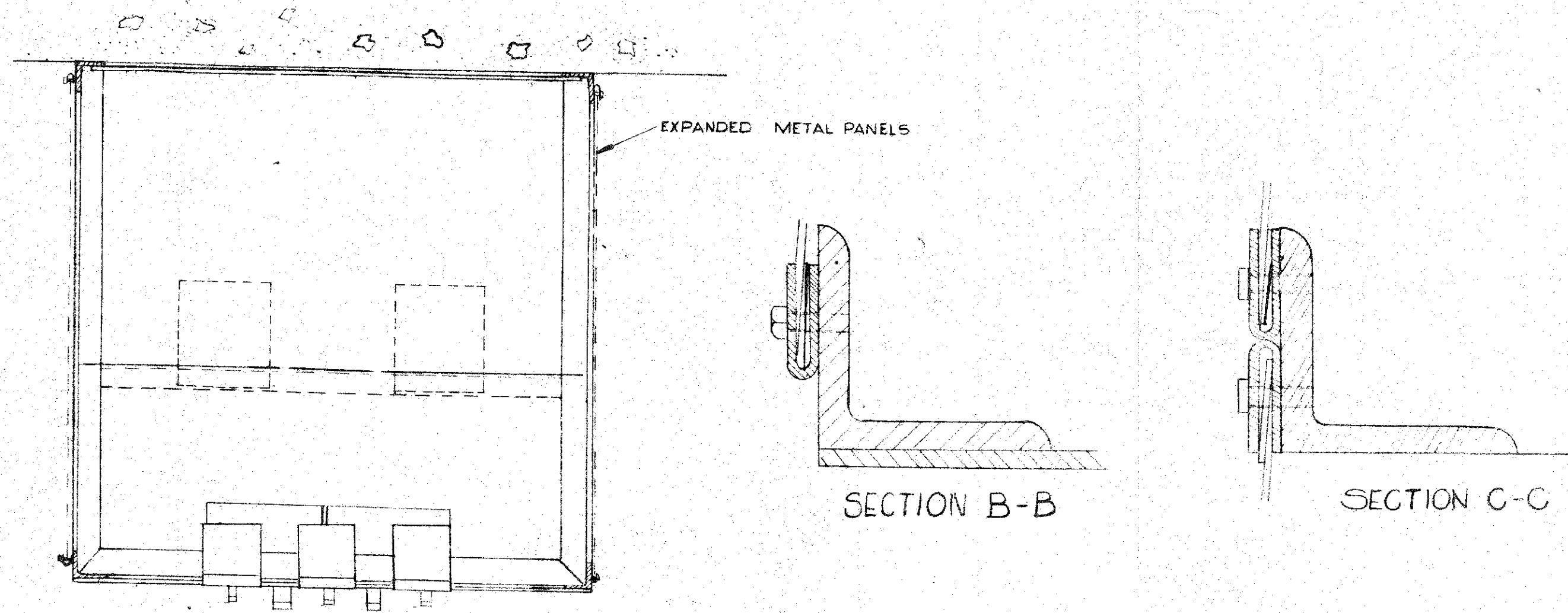
W.S.	PROFILE	G.B.
C.R. SEC.	F.B.	S.B.
W.M. BY	F.W. BY	S. BY

JOB NO. 13-57 DWG. NO. M-5

ALL PANEL CIRCUIT BREAKERS 2 POLE, UNLESS OTHERWISE NOTED



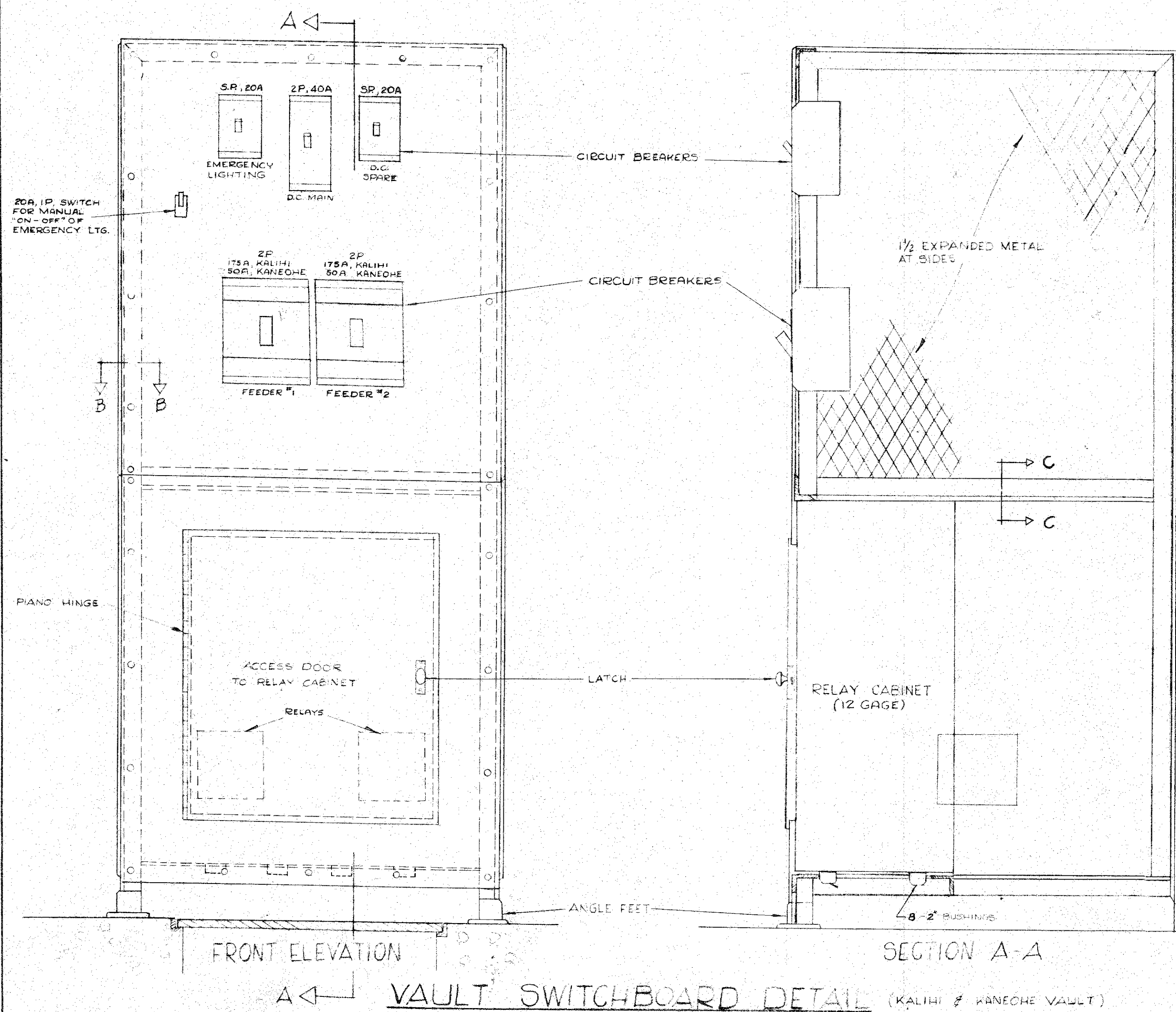
DE LEUW, CATHER & COMPANY ENGINEERS		
CHICAGO	ILLINOIS	
DEPARTMENT OF PUBLIC WORKS		
CITY AND COUNTY OF HONOLULU		
BUREAU OF PLANS		
WILSON TUNNEL 2nd BORE		
SCHEMATIC WIRING DIAGRAM		
PORTALS & GENERAL		
TUNNEL LIGHTING		
ENGINEER	W.R.H. VES	DATE
DRAFTSMAN	S.R.M.	CHECKED BY
SCALE	NONE	TRACER
APPROVED	<i>[Signature]</i>	APPROVED
CHIEF ENGINEER		BUREAU ENGINEER
W. BY	PROFILE	C. BY
CR. SEC.	F. BY	S. BY
W. M. BY	F. W. BY	S. BY
JOB NO. 13-57		DWG. NO. E-1



PLAN

WELD ALL FRAME CONNECTIONS - 1/8" FRONT PLATE SECURED WITH 1/8" C.S.M.S. - IN TWO SECTIONS AS SHOWN. CABINETS SECURED WITH 3/4" R.H.M.S.

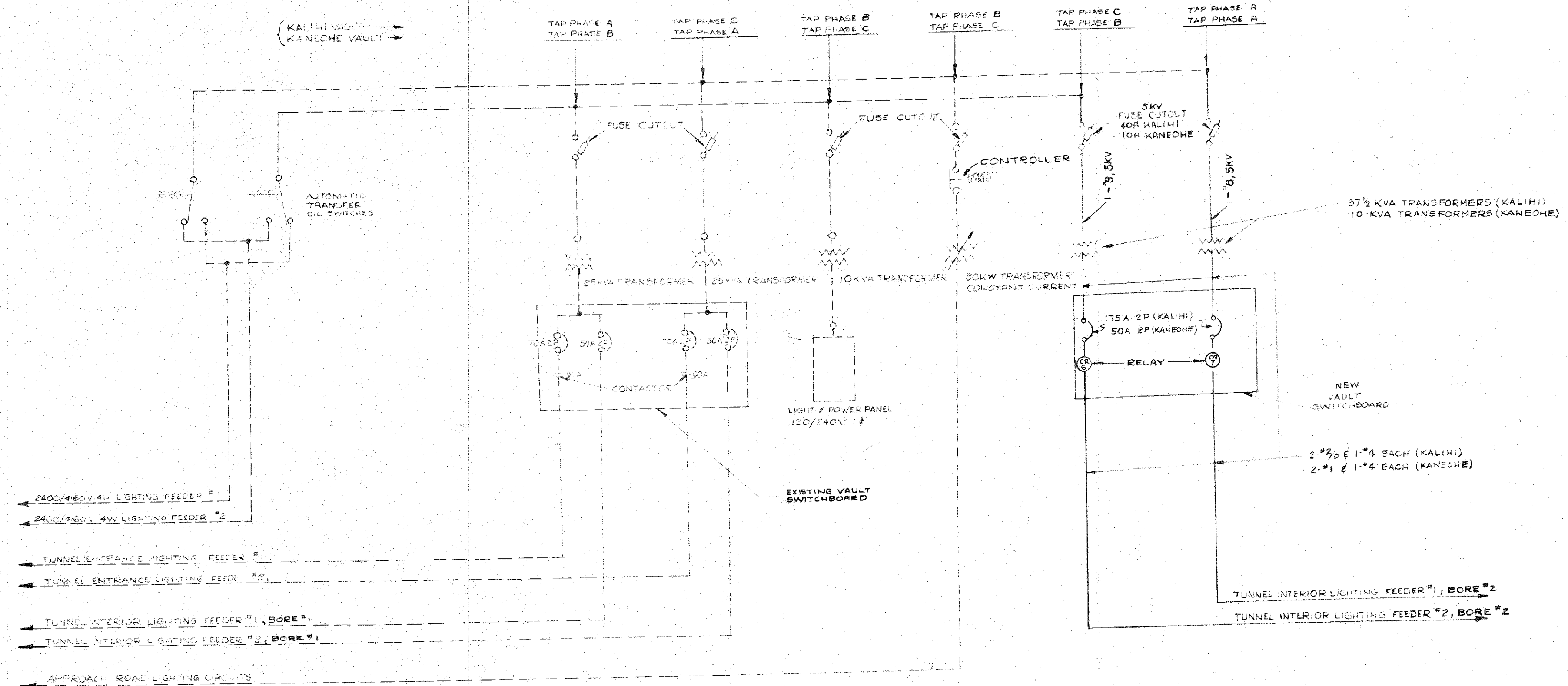
SHEET METAL BARRIERS SHALL BE INSTALLED TO ISOLATE THE D.C. APPARATUS FROM THE A.C. APPARATUS



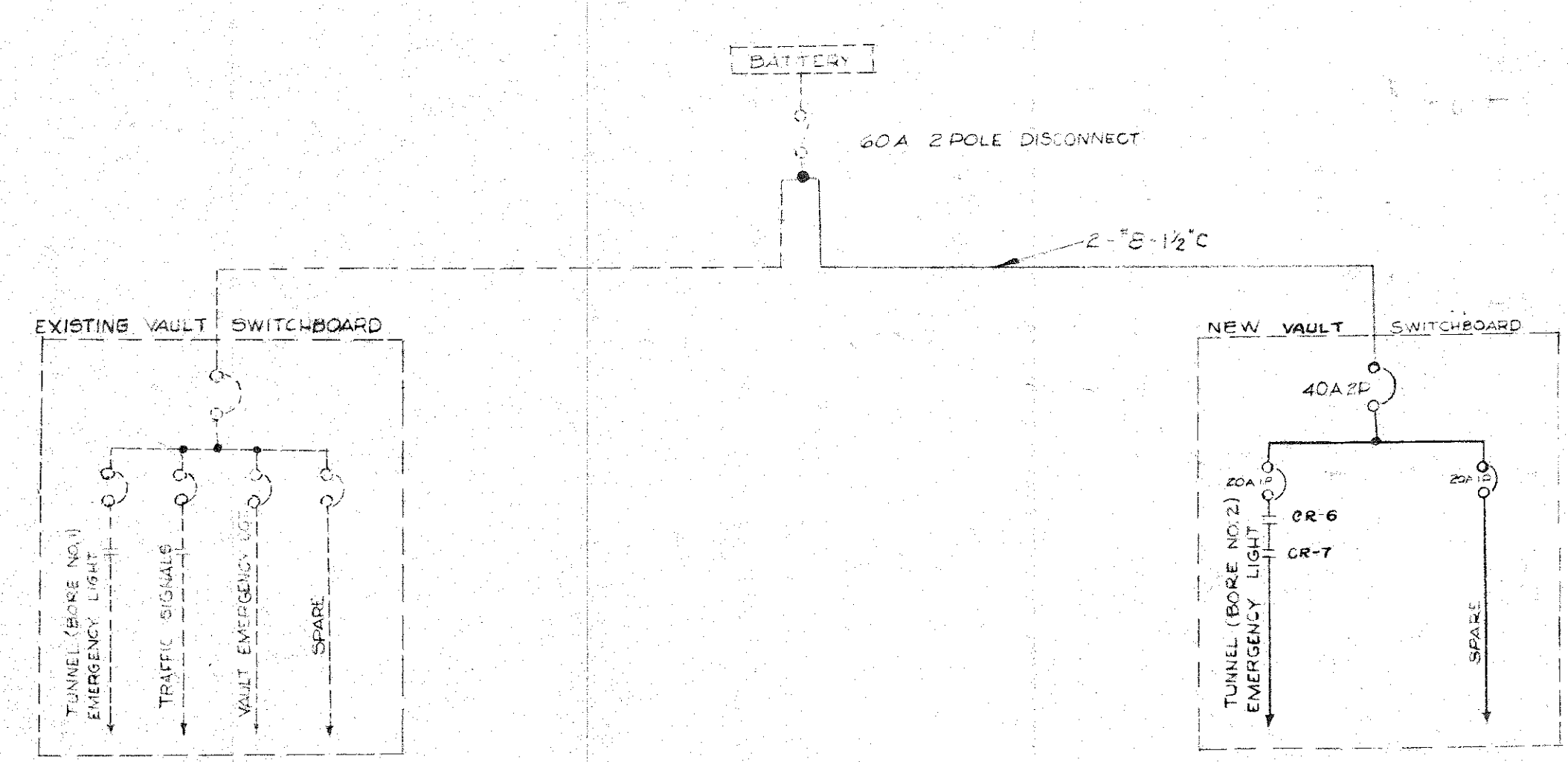
FRONT ELEVATION

SECTION A-A

VAULT SWITCHBOARD DETAIL (KALIHU & KANEHOE VAULT)



SINGLE LINE DIAGRAM
(KALIHU & KANEHOE VAULT)



D.C. SINGLE LINE DIAGRAM
(KALIHU & KANEHOE VAULT)

CHICAGO DE LEUW CATHER & COMPANY ENGINEERS ILLINOIS

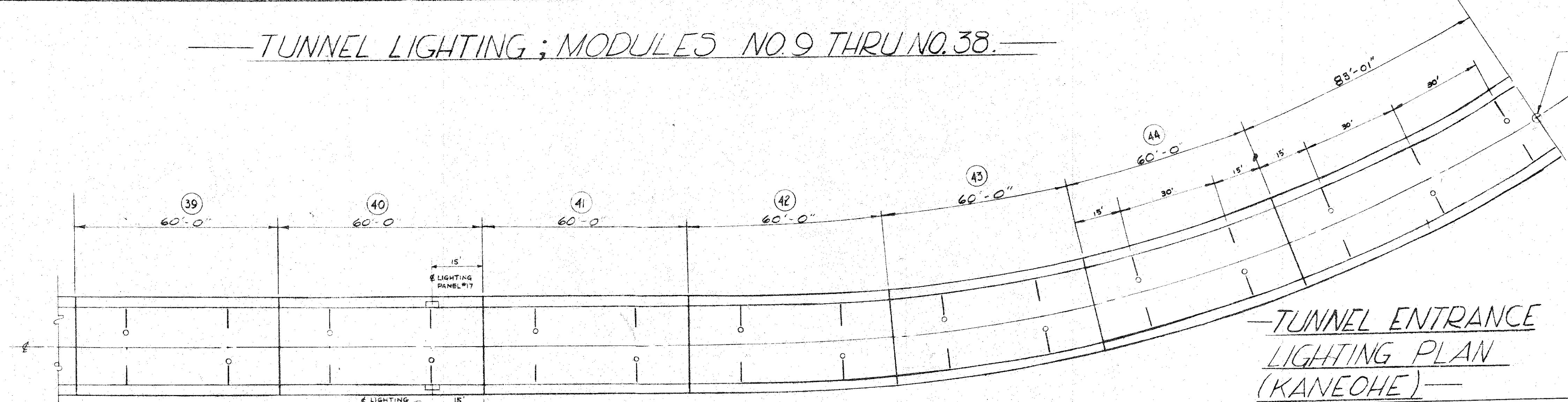
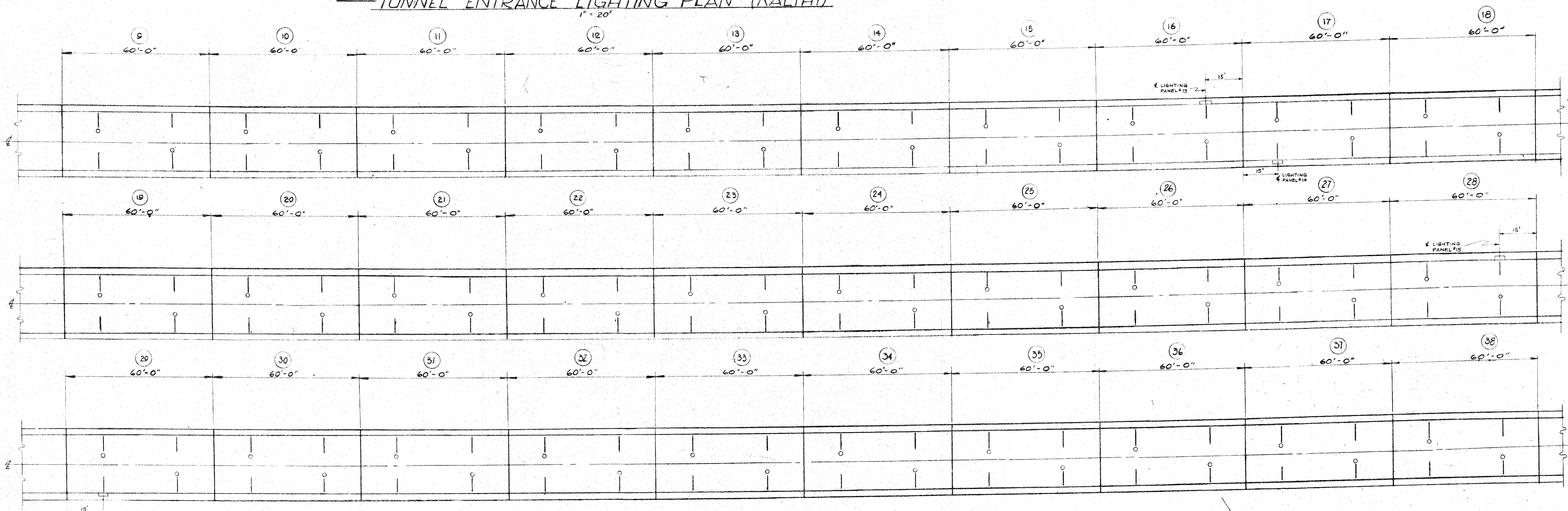
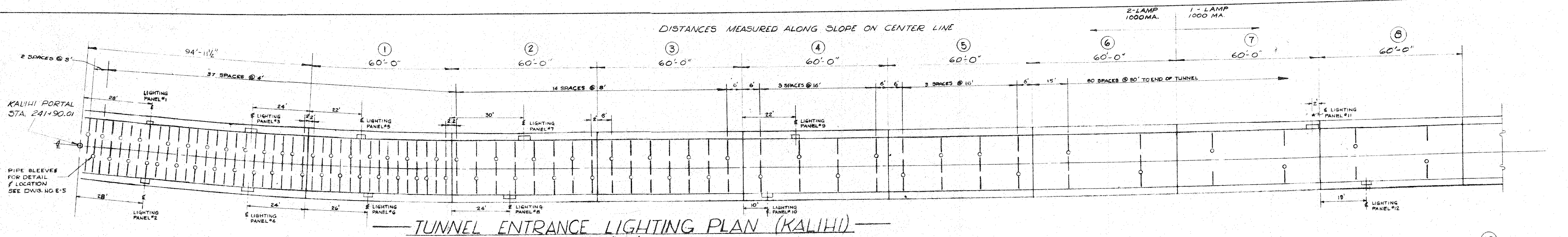
CITY AND COUNTY OF HONOLULU BUREAU OF PLANS

WILSON TUNNEL 2nd BORE
SINGLE LINE DIAGRAM
& DETAILS VAULT EQUIPMENT

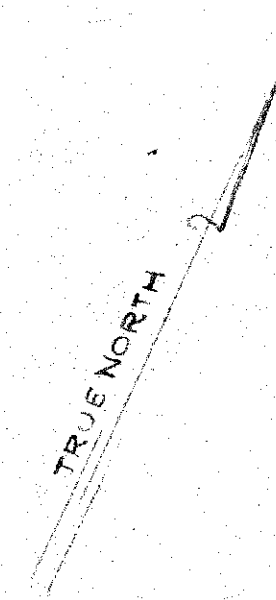
ENGINEER W.B.H. JED. DATE AUG. 16, 1957
 DRAFTSMAN G.R.M. CHECKED BY _____
 SCALE NONE TRACER _____
 APPROVED [Signature] APPROVED [Signature]
 CHIEF ENGINEER BUREAU ENGINEER

W.S.	PROFILE	C.B.
G.R.	F.B.	L.S.
W.M.B.Y.	F.W.B.Y.	S.B.Y.

JOB NO. 13-57 DWG. NO. E-2

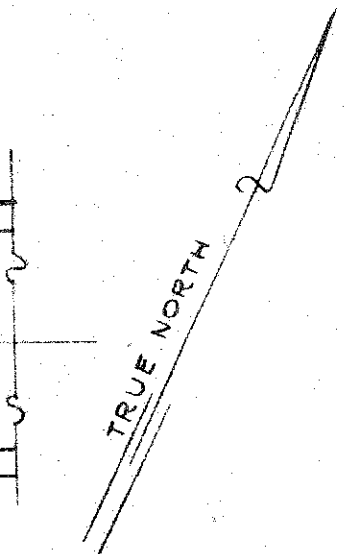
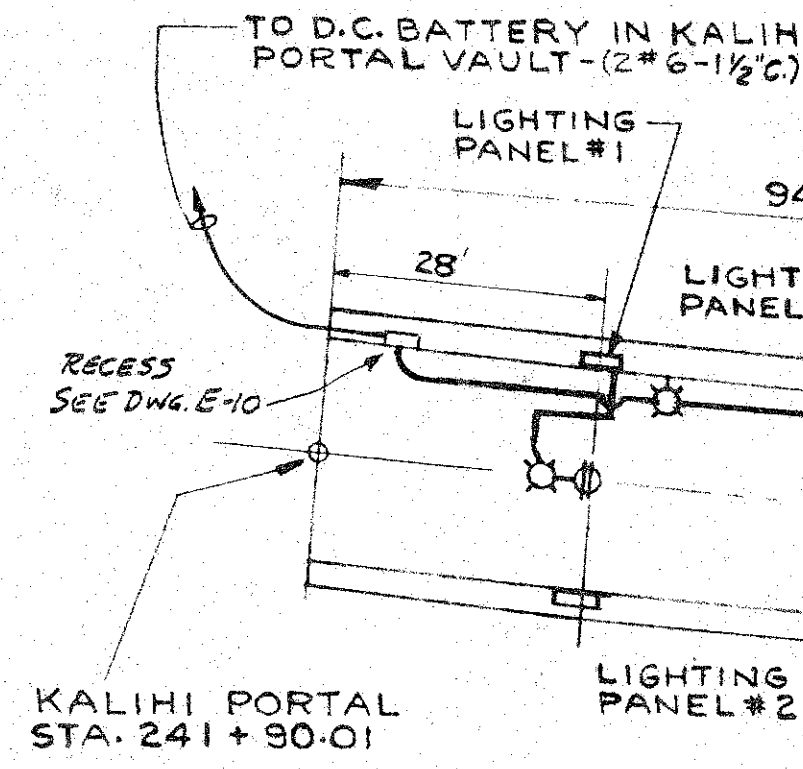


NOTE: ALL TUNNEL CENTER LINES ARE ALSO ROADWAY CENTER LINES



KANEEOHE PORTAL STA. 270+03.11

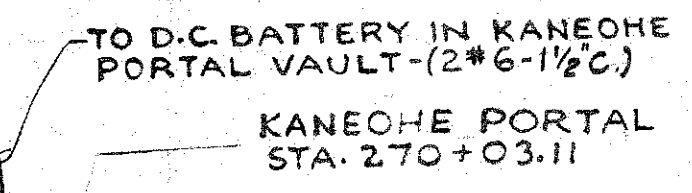
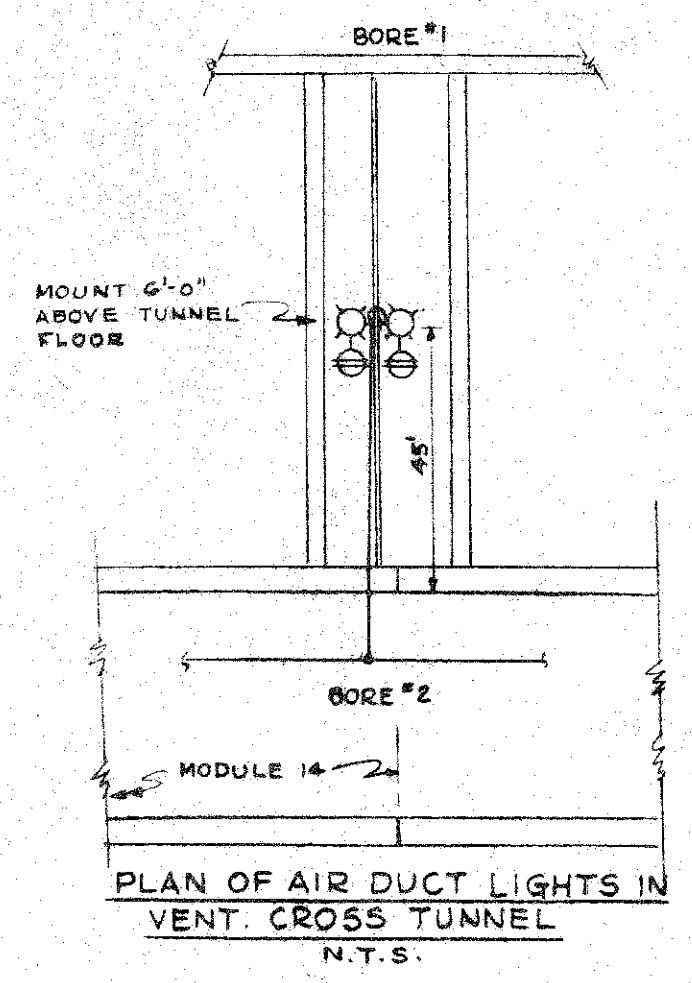
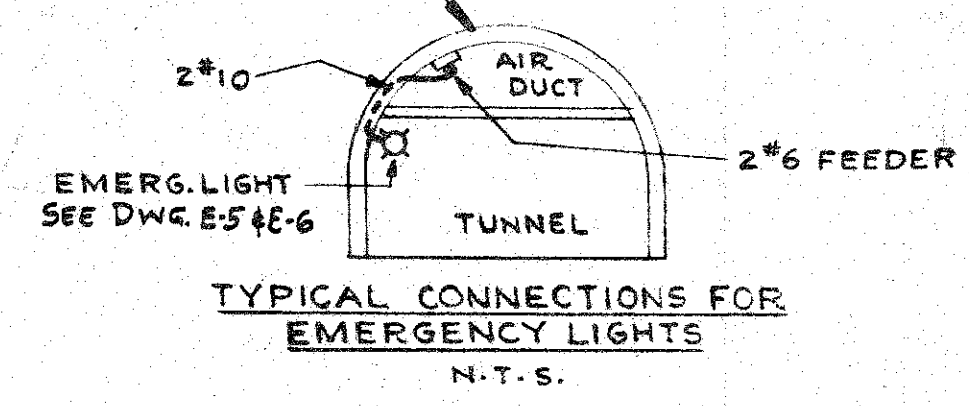
DE LEUW, CATHER & COMPANY ENGINEERS		
CHICAGO	ILLINOIS	
DEPARTMENT OF PUBLIC WORKS CITY AND COUNTY OF HONOLULU BUREAU OF PLANS		
WILSON TUNNEL 2nd BORE LOCATION PLAN TUNNEL LUMINAIRES & GENERAL LIGHTING		
ENGINEER	W.B.M.	DATE
DRAFTSMAN	G.P.M.	CHECKED BY
SCALE	1" = 20'-0"	TRACER
APPROVED	<i>[Signature]</i>	APPROVED
CHIEF ENGINEER		BUREAU ENGINEER
W.B.	PROFILE	C.B.
CR. SEC.	F.B.	S.B.
W.M. BY	F.W. BY	S. BY
JOB NO. 13-57		DWG NO. E-3



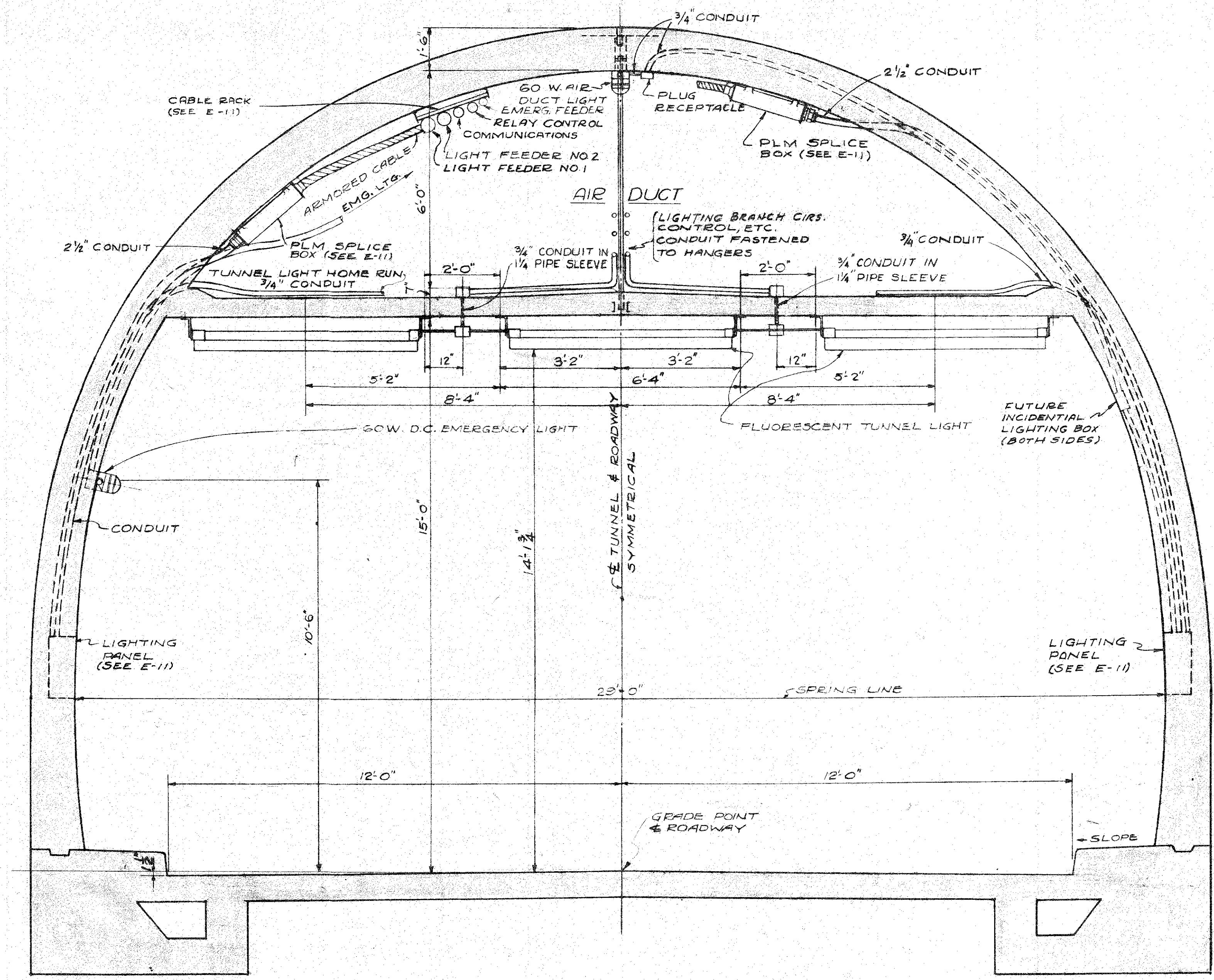
TO AIR DUCT LIGHTS IN VENT. CROSS TUNNEL. SEE PLAN BELOW

LOCATE TO CLEAR TURNING VANES

NOTE:
ALL BRANCH CIRCUIT WIRING TO AIR DUCT LIGHTS TO BE #12.

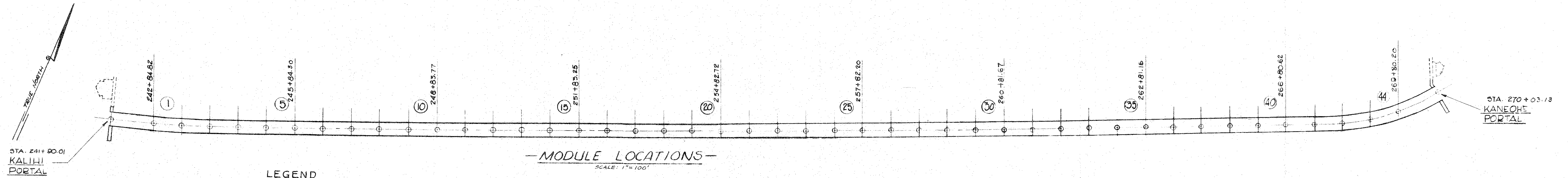


DE LEUW, CATHER & COMPANY ENGINEERS		CHICAGO	ILLINOIS
DEPARTMENT OF PUBLIC WORKS CITY AND COUNTY OF HONOLULU BUREAU OF PLANS			
WILSON TUNNEL 2ND BORE			
LOCATION PLAN EMERG. & AIR DUCT LIGHTS & LIGHTING PANELS			
ENGINEER W.B.M. [Signature]	DATE AUG 16 1957	CHECKED BY [Signature]	TRACER [Signature]
DRAFTSMAN J.M.G.	SCALE 1" = 20'-0"	APPROVED [Signature]	APPROVED [Signature]
CHIEF ENGINEER	BUREAU ENGINEER		
W.S. CR. SEC. W.M. BY	PROFILE F.B. F.W. BY	C.B. S.B. S.B.Y.	
JOB NO. 13-57		DWG. NO. E-4	



- TYPICAL -
 - CROSS SECTION OF TUNNEL -
 SCALE 1/2" = 1'-0"
 (TOWARD KANEHOHE)

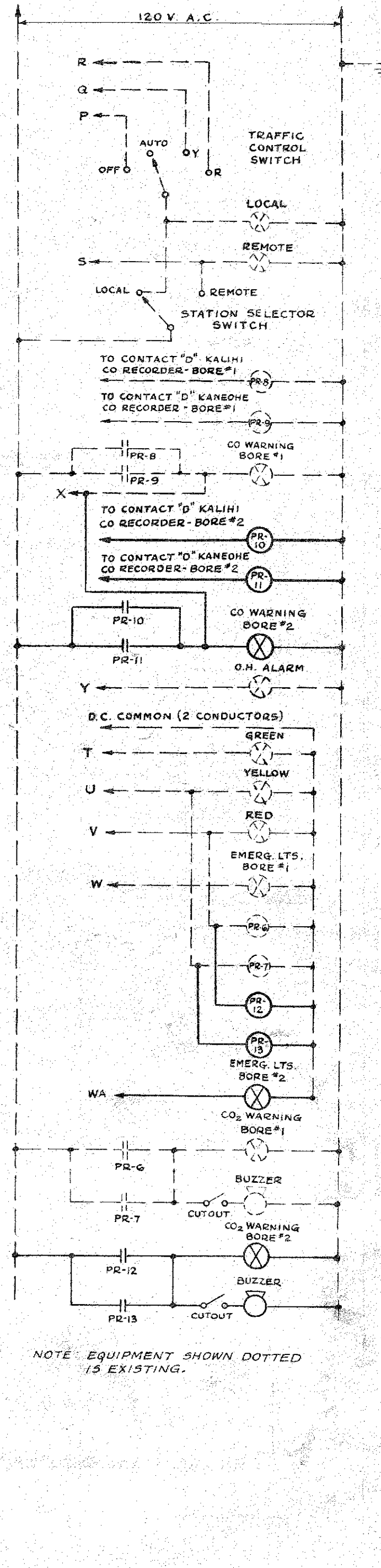
DE LEUW, CATHER & COMPANY ENGINEERS		
CHICAGO	ILLINOIS	
DEPARTMENT OF PUBLIC WORKS CITY AND COUNTY OF HONOLULU BUREAU OF PLANS		
WILSON TUNNEL 2nd BORE		
CROSS SECTION OF TUNNEL SHOWING ELECTRICAL WORK		
ENGINEER <u>W.B.H. G.D.</u>	DATE <u>Aug. 16, 1957</u>	
DRAFTSMAN <u>G.R.M.</u>	CHECKED BY _____	
SCALE <u>1/2" = 1'-0"</u>	TRACER _____	
APPROVED <u>[Signature]</u>	APPROVED <u>[Signature]</u>	
CHIEF ENGINEER	BUREAU ENGINEER	
W.S.	PROFILE	C.S.
C.R. SEC.	F.B.	S.B.
W.M. BY	E.W. BY	S. BY
JOB NO. 13-57		DWG. NO. E-5



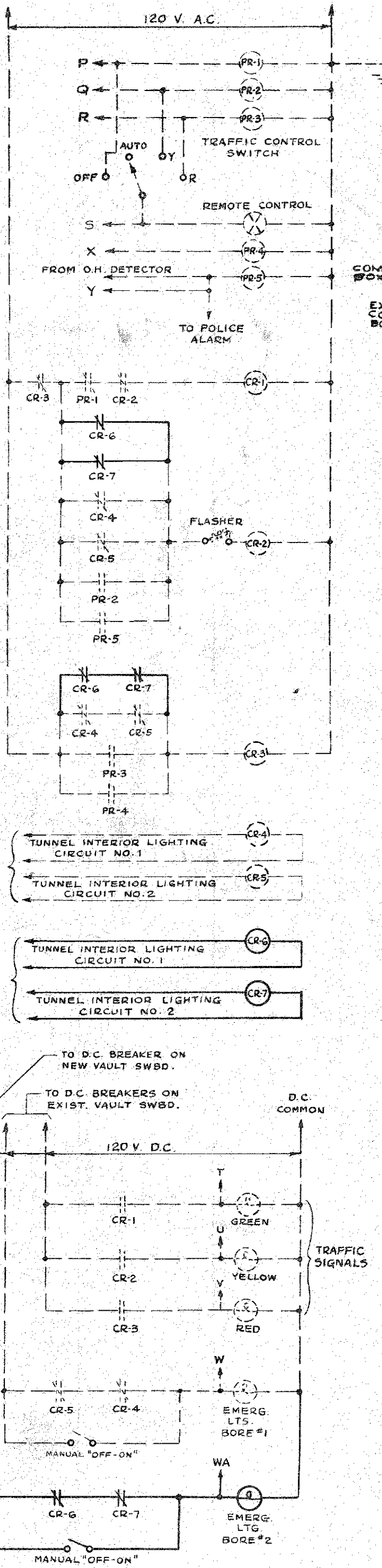
LEGEND

- (PR) PILOT RELAY
- (CR) CONTROL RELAY
- (X) PILOT LIGHT
- (L) LAMPS
- || NORMALLY OPEN RELAY CONTACTS
- ||| NORMALLY CLOSED RELAY CONTACTS

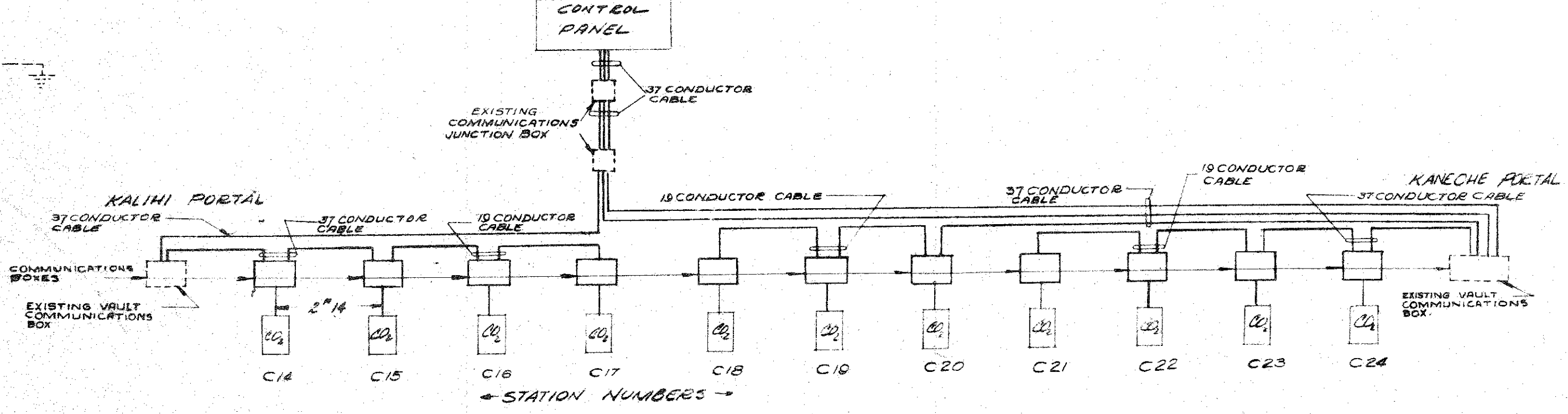
TRAFFIC SIGNAL SYSTEM SECTION OF MAIN CONTROL SWITCHBOARD



PORTAL

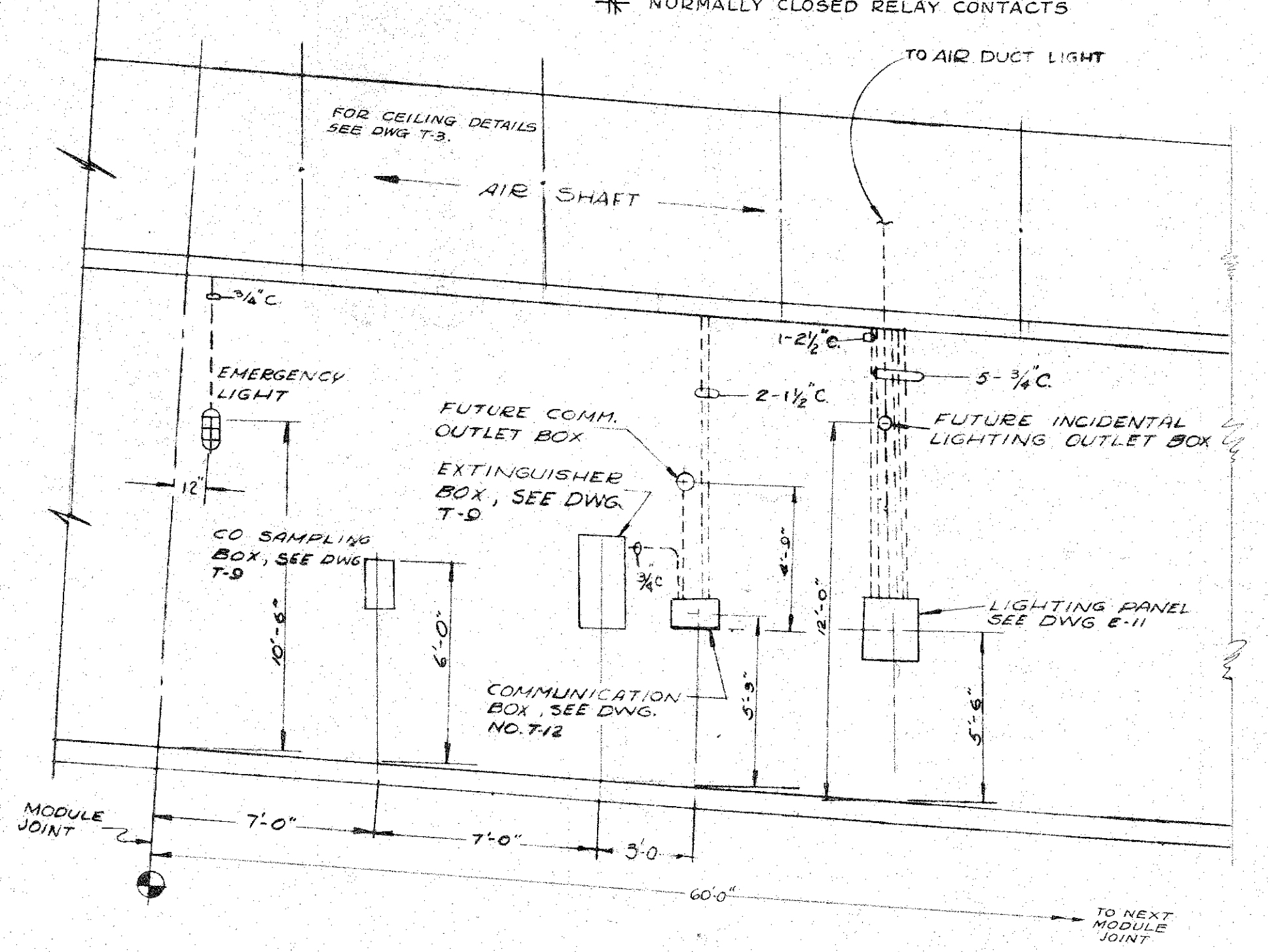


VENTILATION BUILDING

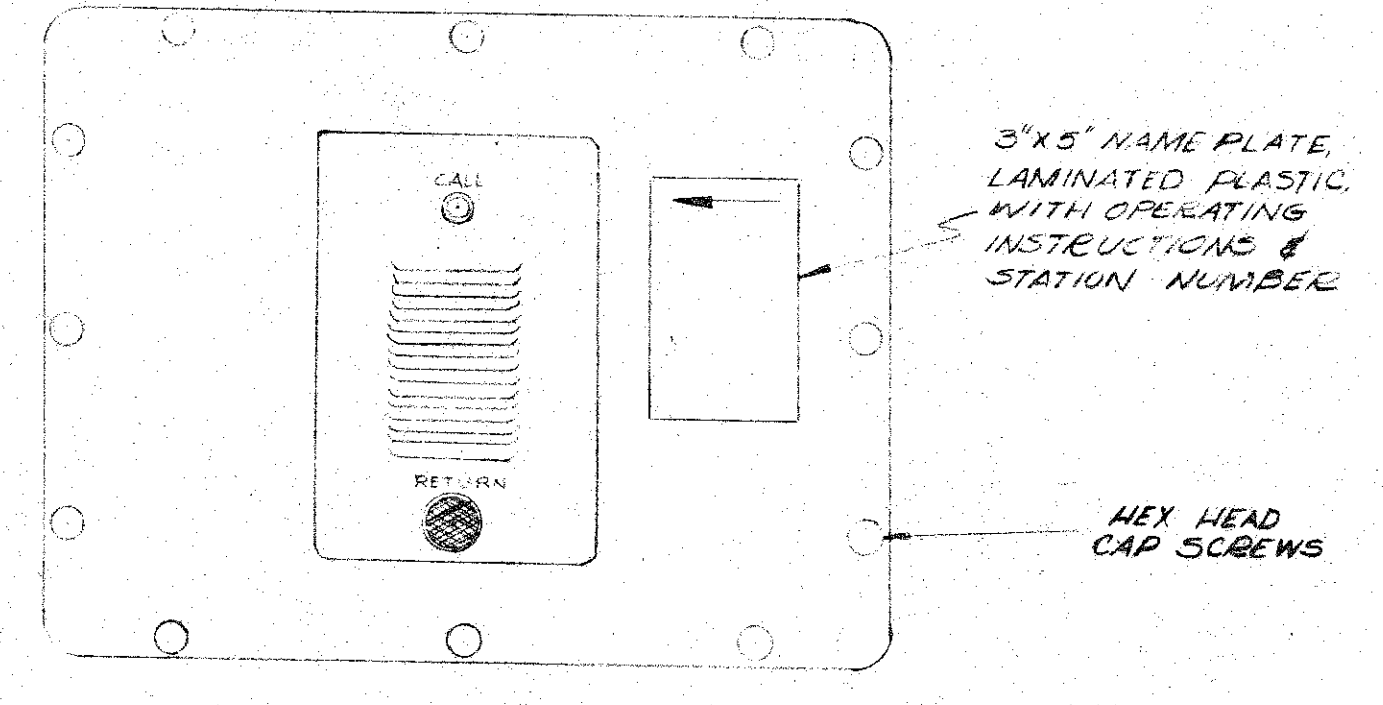


TYPICAL SINGLE LINE DIAGRAM
COMMUNICATION SYSTEM

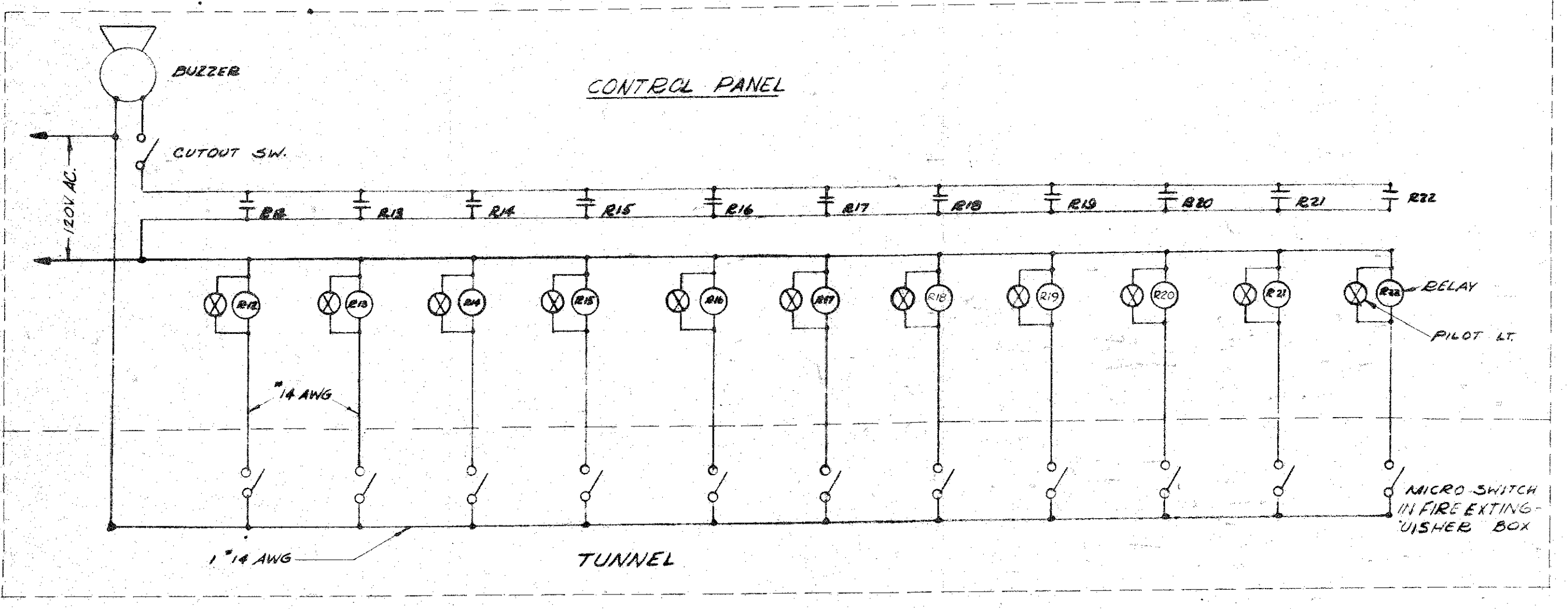
NUMBER OF CONDUCTORS SHOWN IS APPROX. SUPPLIER OF COMMUNICATION EQUIPMENT SHALL DETERMINE ACTUAL NUMBER REQUIRED.



LOCATION OF COMMUNICATIONS, CO & CO₂ PANELS
(TYPICAL)
NO SCALE

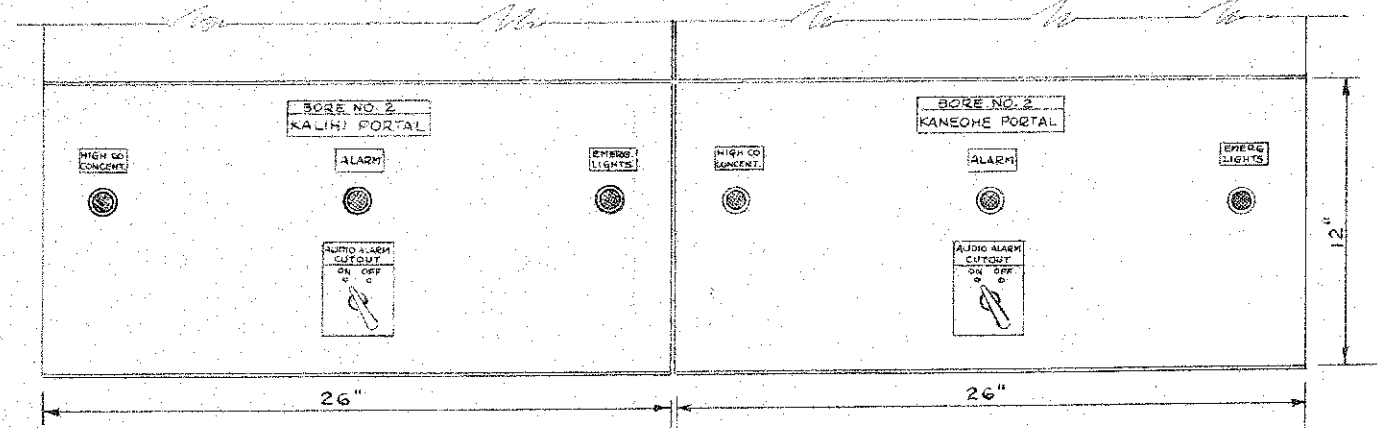


TYPICAL COMMUNICATION STATION
(TUNNEL STATION)
SCALE: 3"=1'-0"



PARTIAL SCHEMATIC
COMMUNICATION SYSTEM
(FIRE EXT. INDICATOR)

TRAFFIC SIGNAL SYSTEM SCHEMATIC WIRING DIAGRAMS



PLAN - TRAFFIC SIGNAL SECTION OF MAIN CONTROL SWITCHBOARD - BORE NO. 2
SCALE: 1 1/2"=1'-0"

DE LEUW CATHER & COMPANY
ENGINEERS ILLINOIS

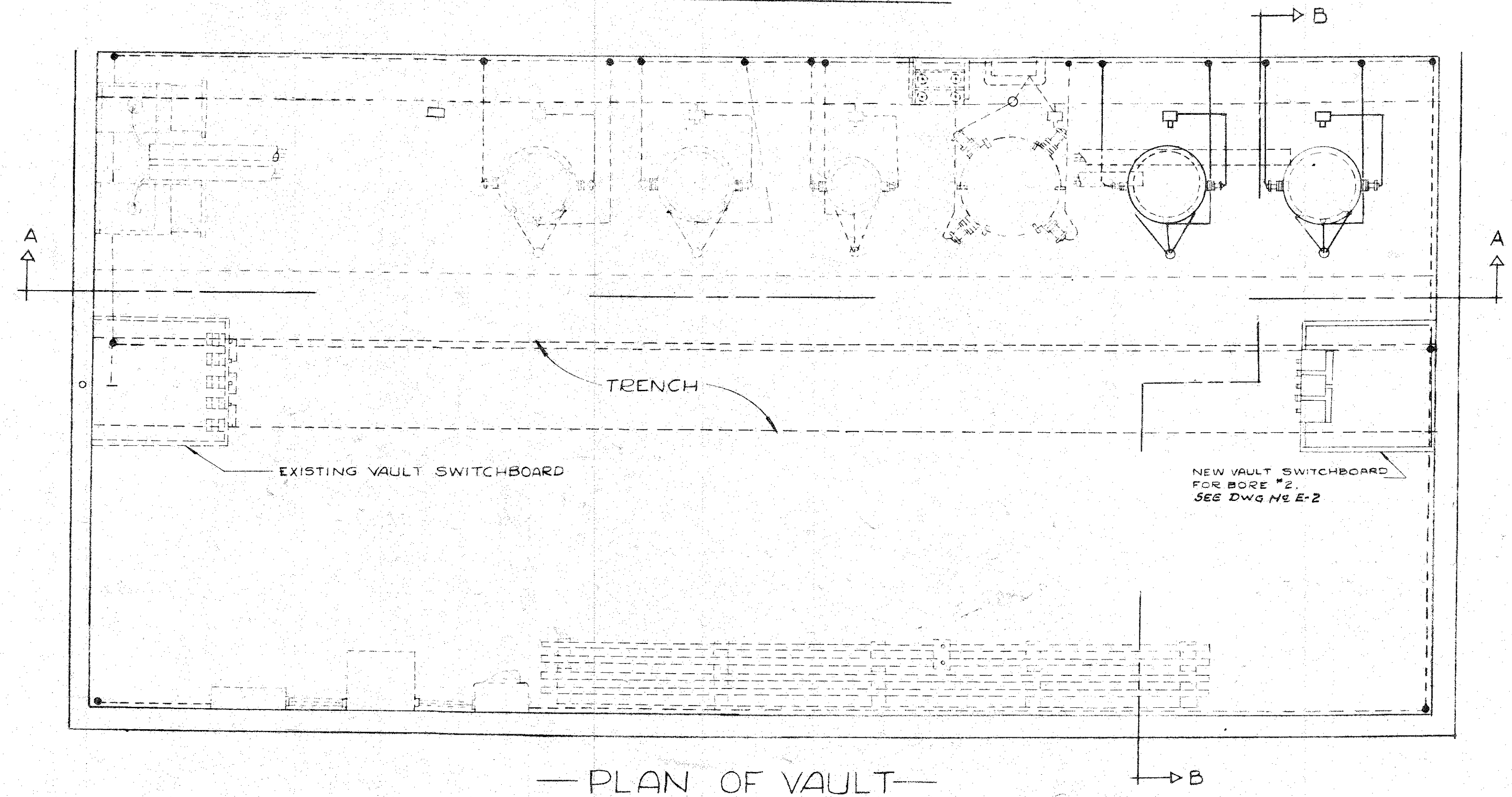
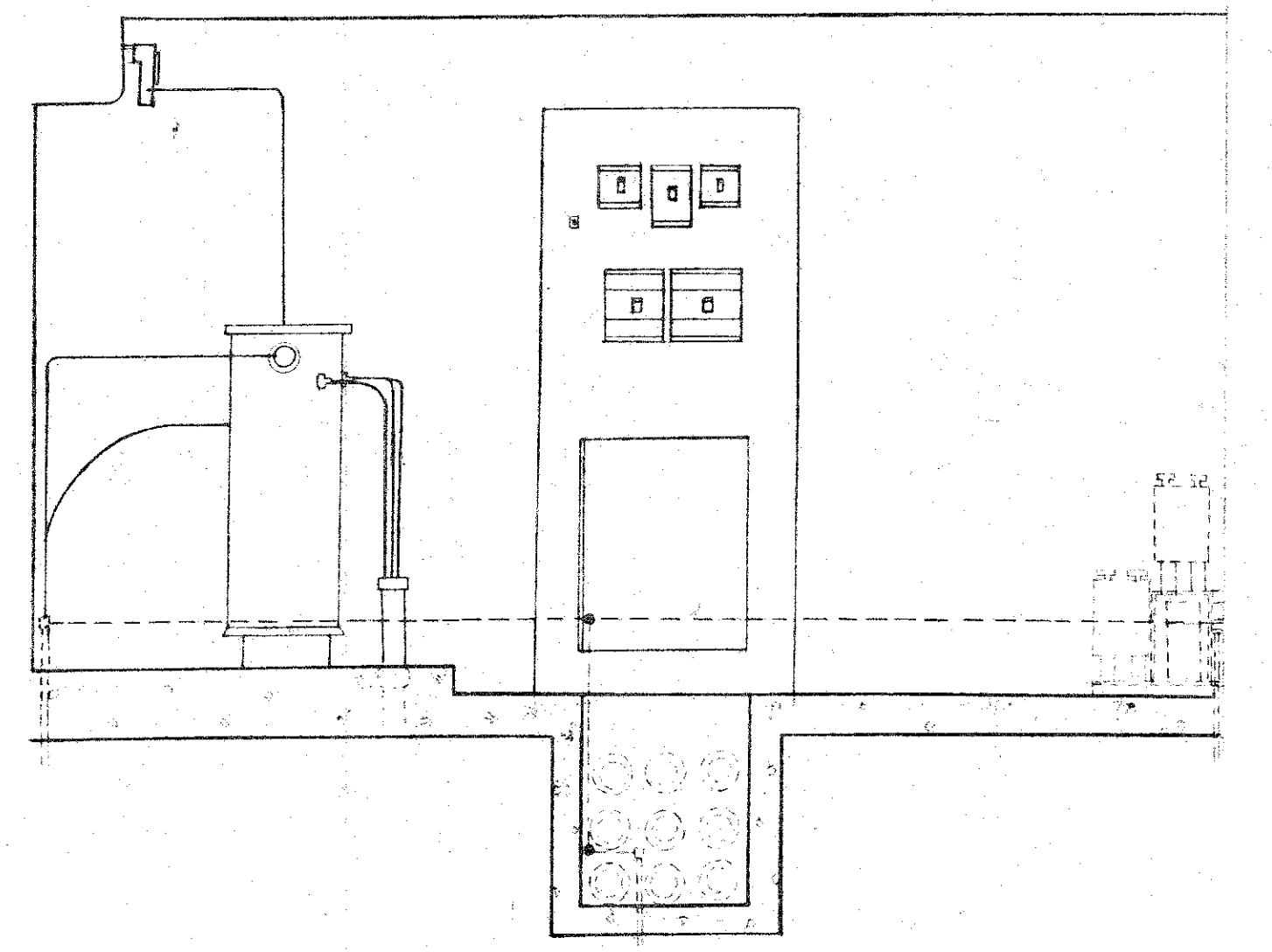
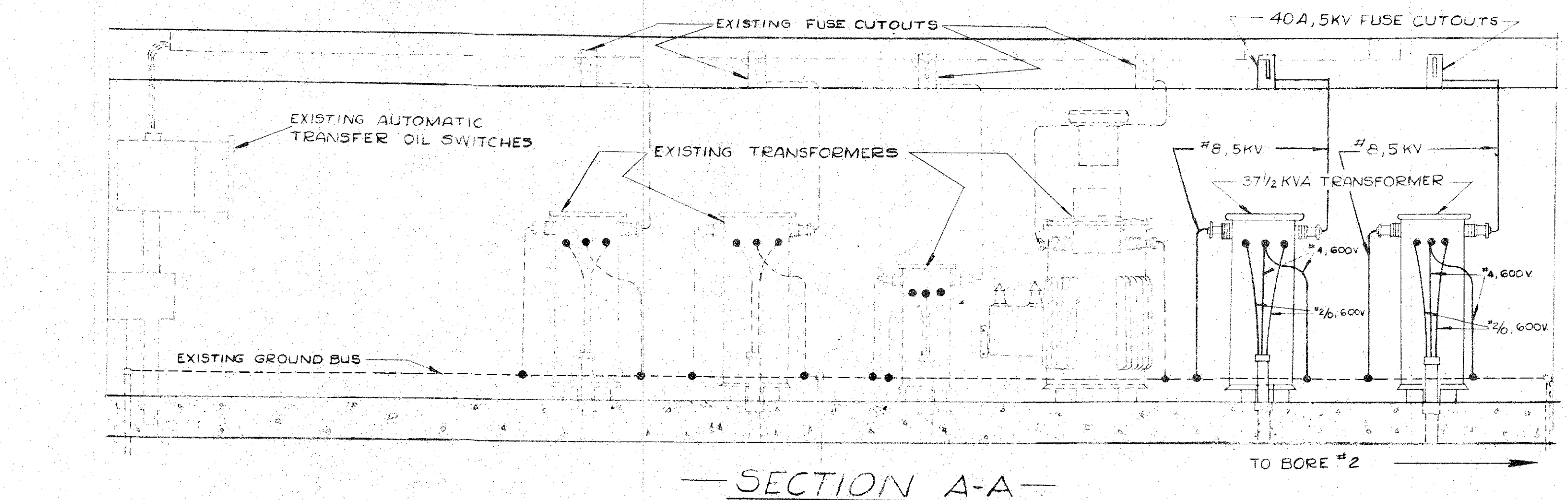
CHICAGO DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS

**WILSON TUNNEL 2nd BORE
LOCATION PLAN AND
DIAGRAM COMMUNICATIONS
SYSTEM**

ENGINEER: W.B.M. DATE: Aug. 16, 1957
DRAFTSMAN: G.B.M. CHECKED BY:
SCALE: AS NOTED TRACER:
APPROVED: [Signature] APPROVED: [Signature]
CHIEF ENGINEER BUREAU ENGINEER

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

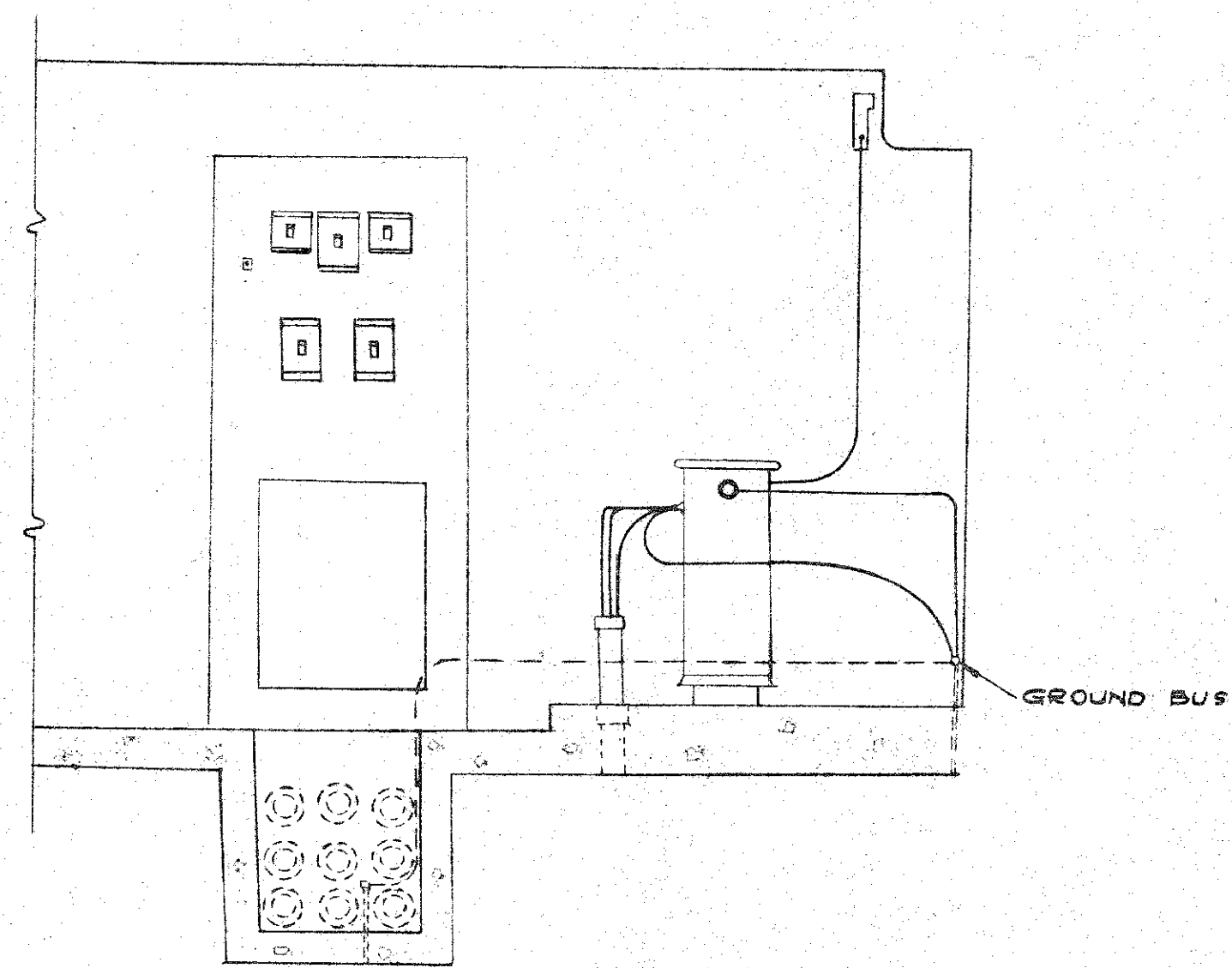
JOB NO. 13-57 DWG. NO. E-6



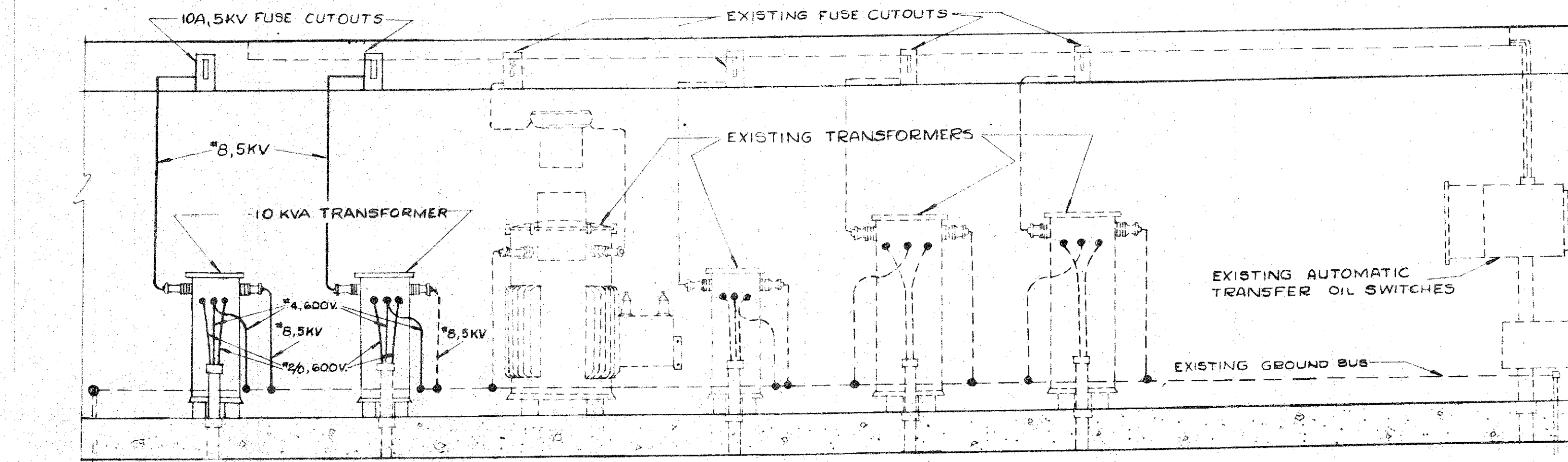
SECTION B-B

PLAN OF VAULT

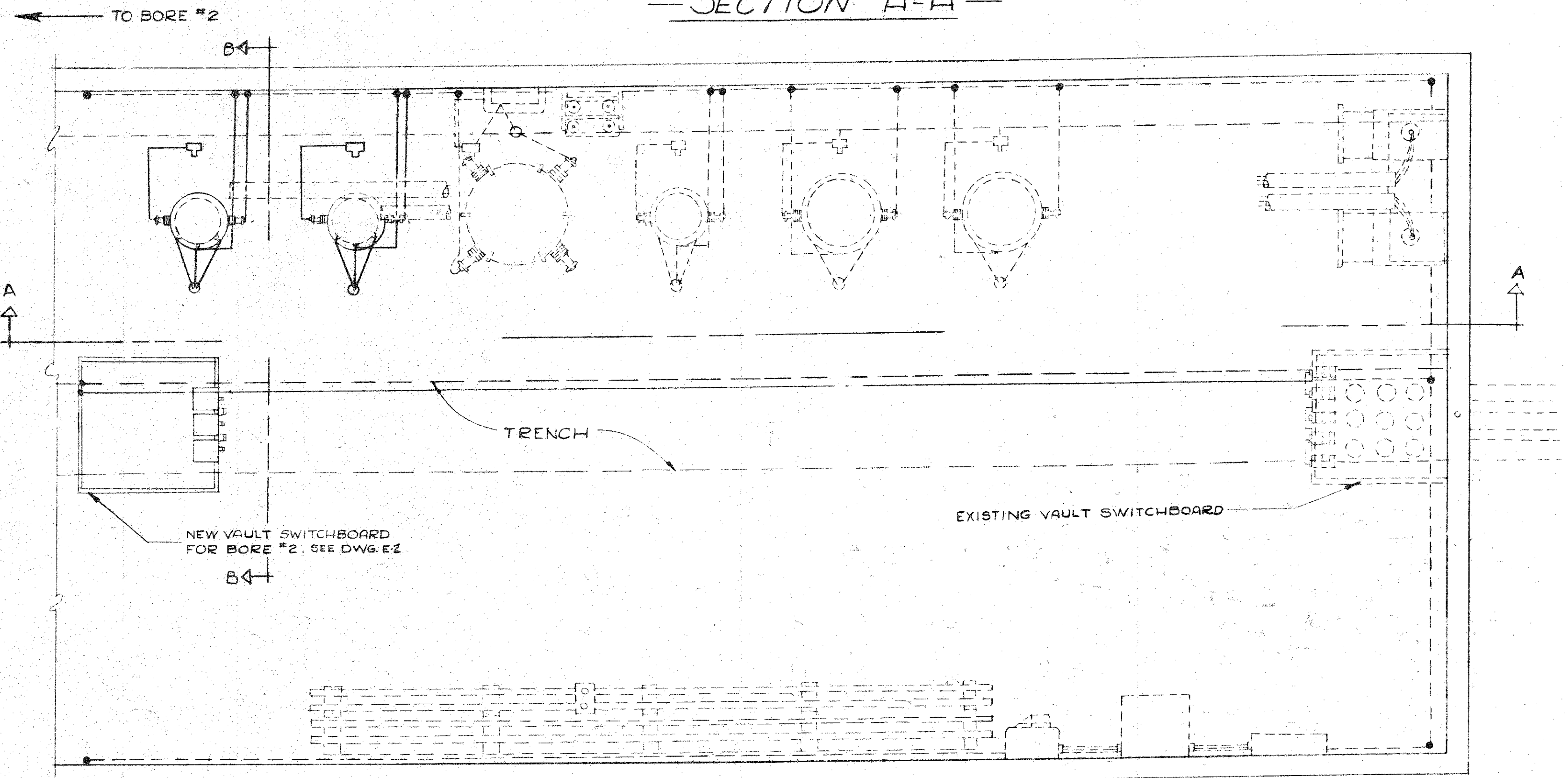
DE LEUW CATHER & COMPANY			
ENGINEERS			
CHICAGO	ILLINOIS		
DEPARTMENT OF PUBLIC WORKS			
CITY AND COUNTY OF HONOLULU			
BUREAU OF PLANS			
WILSON TUNNEL 2nd BORE			
MODIFICATIONS TO			
KALIHI VAULT			
ENGINEER	W.R.H. <i>W.R.H.</i>	DATE	AUG. 16, 1957
DRAFTSMAN	G.E.M.	CHECKED BY	
SCALE	NONE	TRACER	
APPROVED	<i>W.R.H.</i>	APPROVED	<i>[Signature]</i>
CHIEF ENGINEER		BUREAU ENGINEER	
W.S.	PROFILE	C.B.	
C.R. SEC.	F.B.	S.B.	
W.M. BY	F.W. BY	S. BY	
JOB NO. 13-57		DWG NO. E-8	



SECTION B-B



SECTION A-A



PLAN OF VAULT

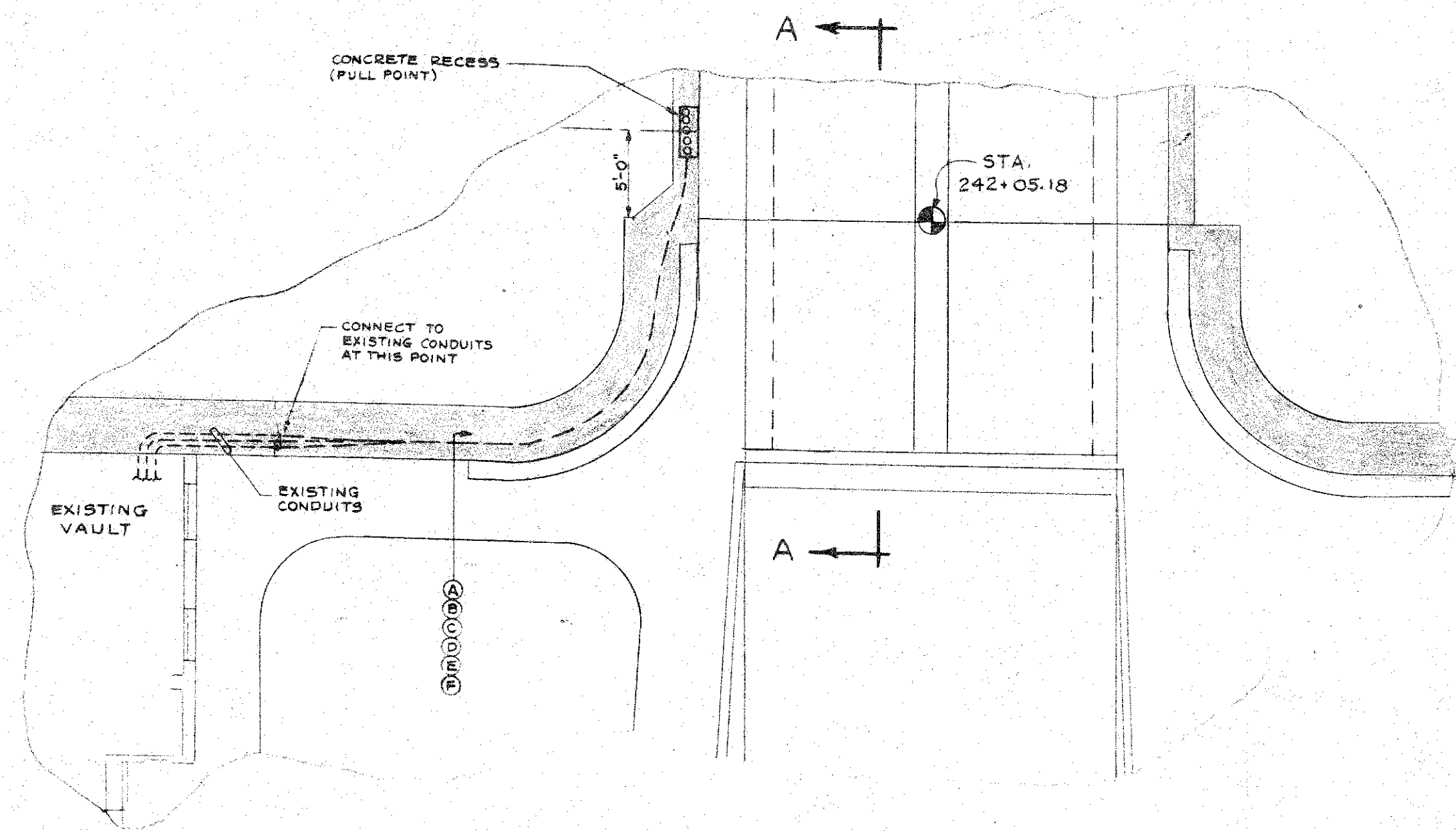
DEPARTMENT OF PUBLIC WORKS
 CITY AND COUNTY OF HONOLULU
 BUREAU OF PLANS

**WILSON TUNNEL 2nd BORE
 MODIFICATIONS TO
 KANEOHE VAULT**

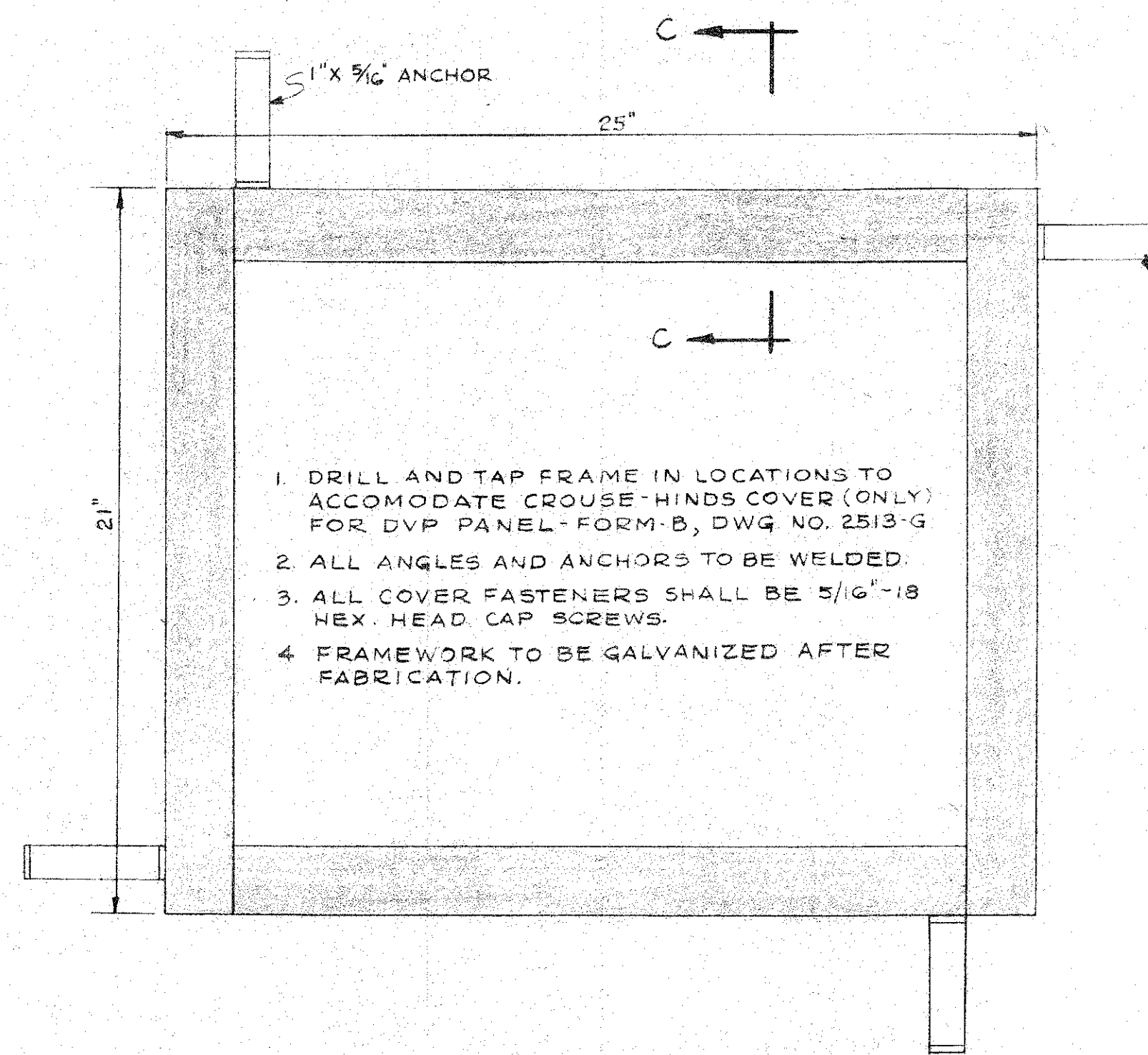
ENGINEER W.R.H. DATE AUG. 16, 1957
 DRAFTSMAN G.M. CHECKED BY _____
 SCALE NONE TRACER _____
 APPROVED: [Signature] APPROVED: [Signature]
 CHIEF ENGINEER BUREAU ENGINEER

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

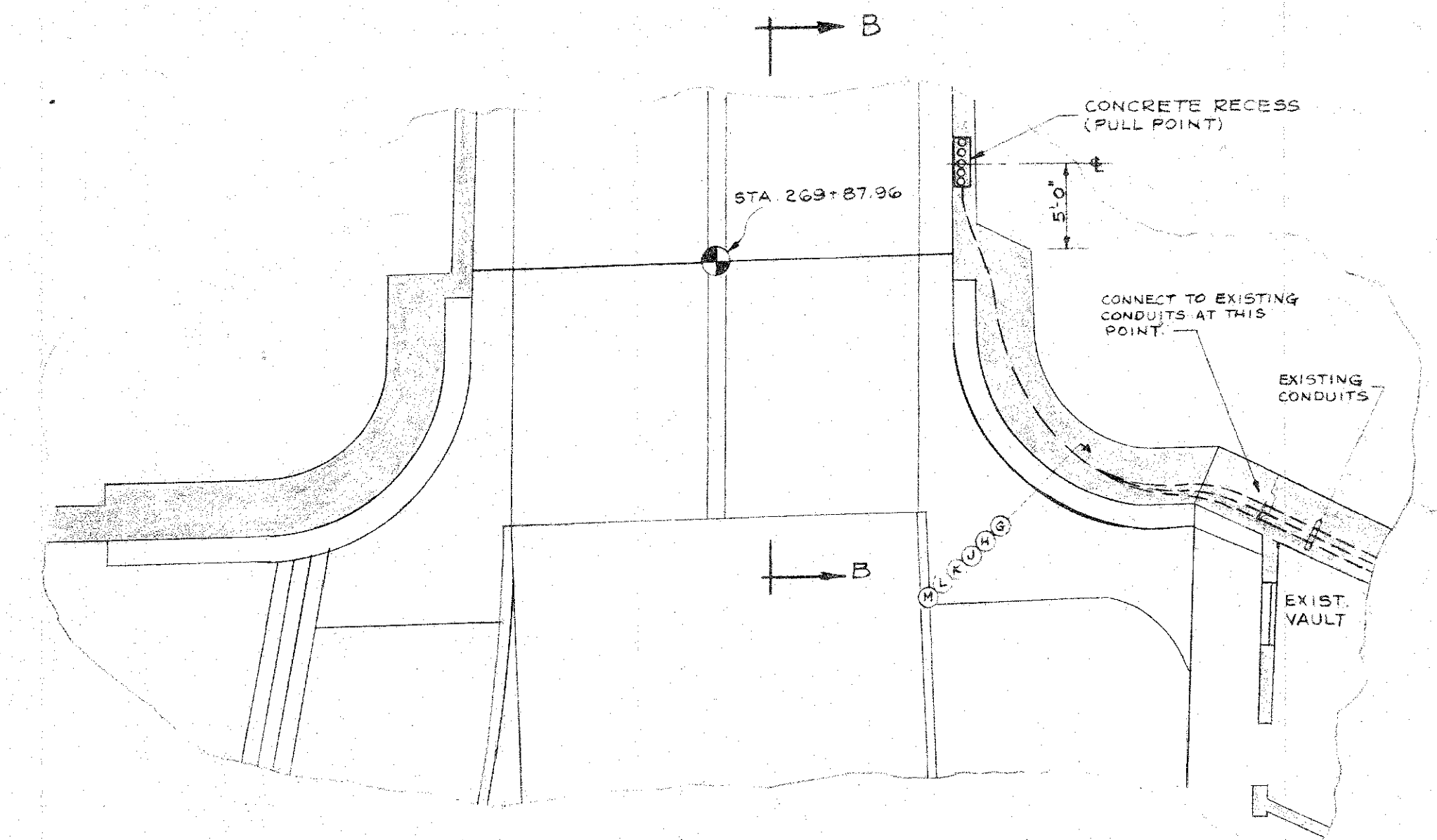
JOB NO. 13-57 DWG. NO. E-9



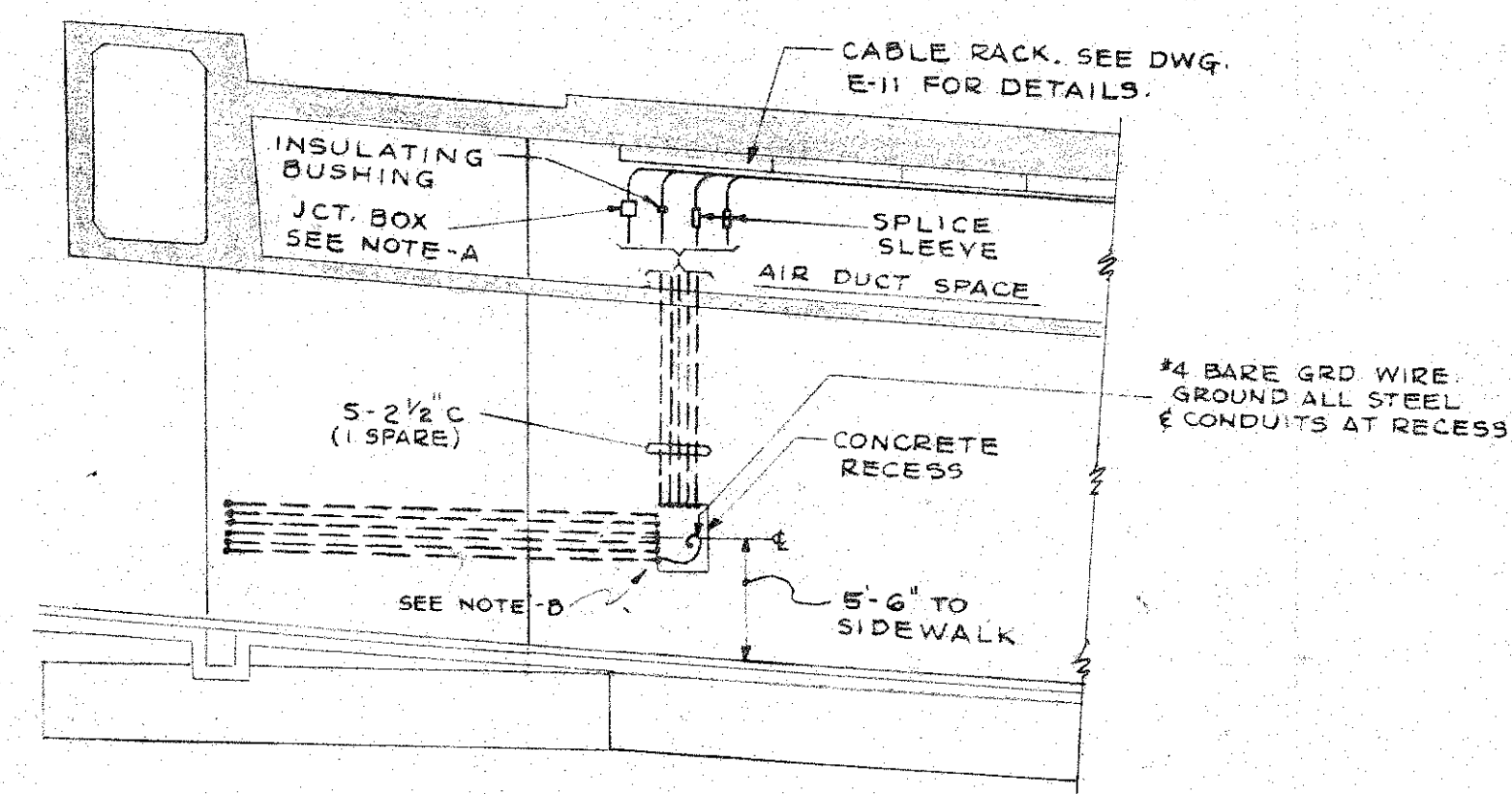
FEEDER CONDUIT ARRANGEMENT
KALIHI PORTAL
SCALE: 1/8" = 1'-0"



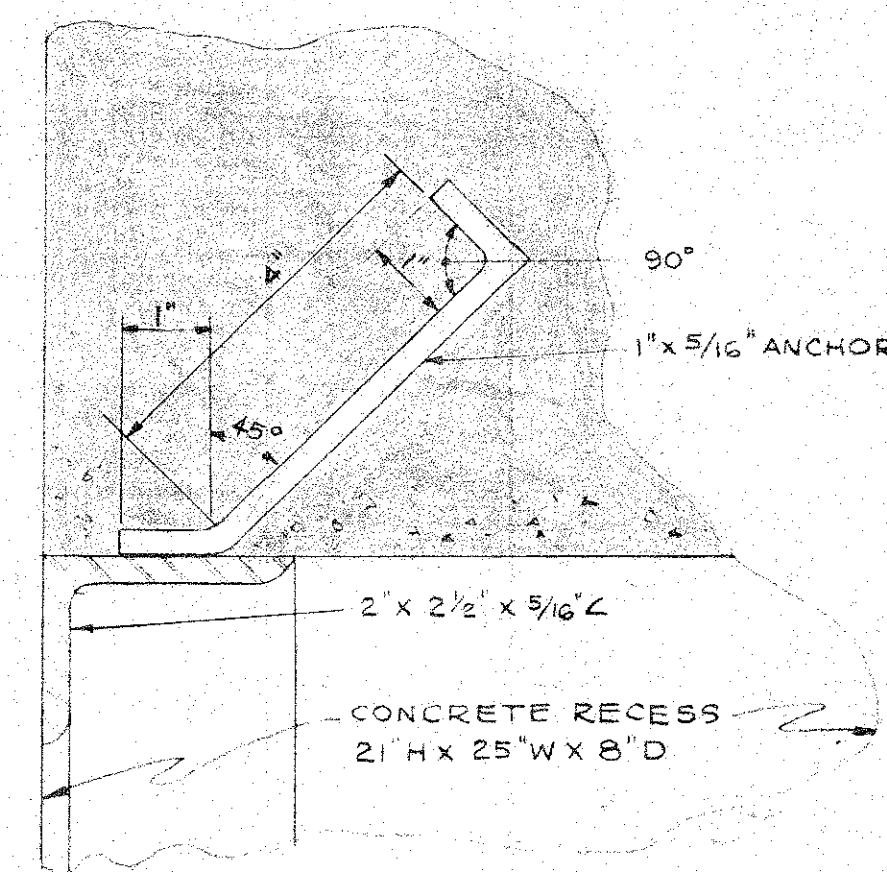
DETAIL OF FRAME FOR CONCRETE RECESS
SCALE: 3/8" = 1'-0"
(SEE DWG. E-11 FOR COVER DETAILS)



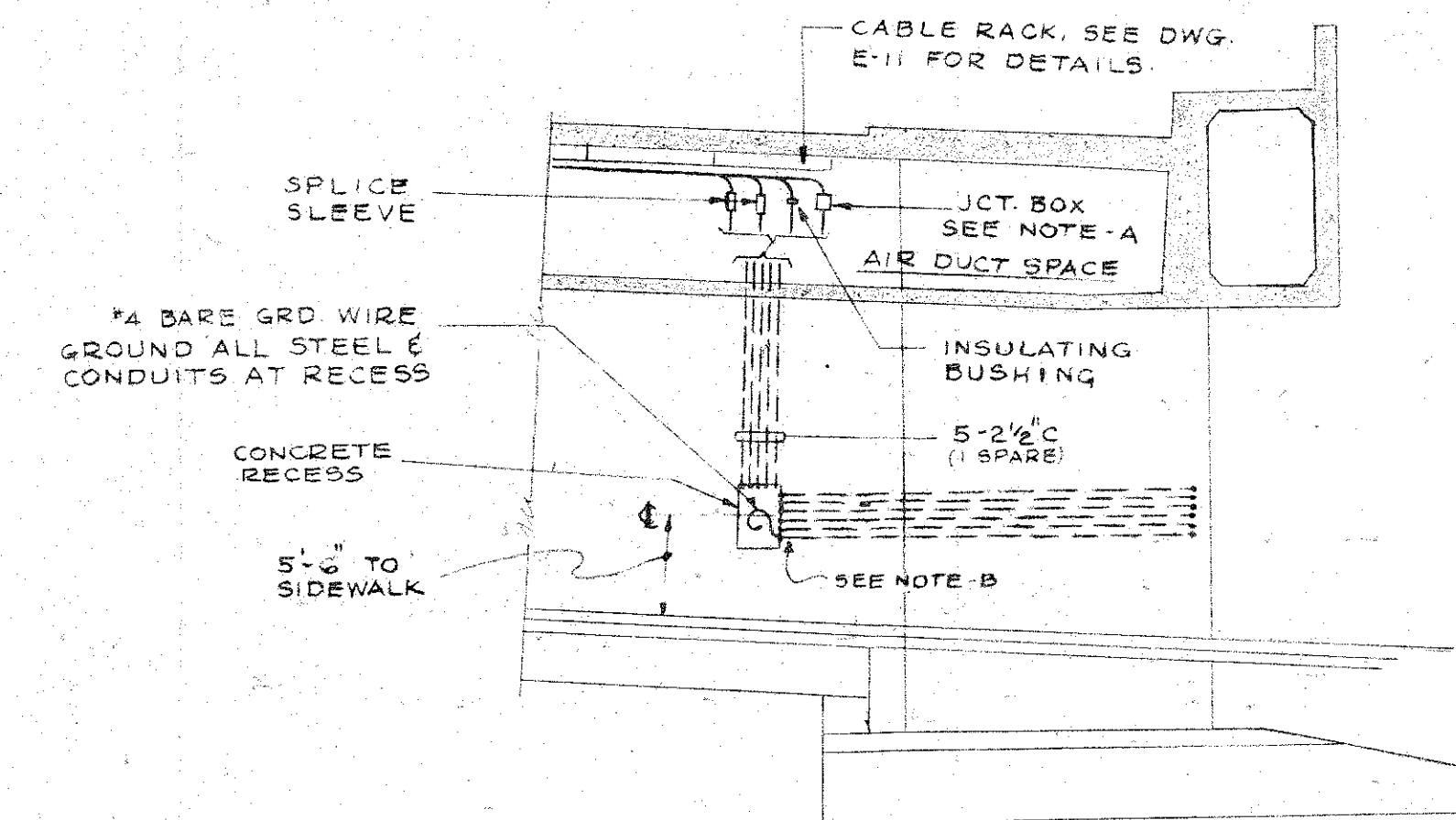
FEEDER CONDUIT ARRANGEMENT
KANEOHE PORTAL
SCALE: 1/8" = 1'-0"



SECTION "A-A"



SECTION "C-C"
SCALE: 6" = 1'-0"



SECTION "B-B"

CONDUIT AND CABLE SCHEDULE					
CONDUIT	CONDUIT SIZE	WIRE NO	WIRE SIZE	DESCRIPTION	REMARKS
(A)	1 1/2"	2	#6	EMERG. LIGHTING	ALSO #4 BARE GROUND WIRE
		2	#10	RELAY CONTROL	
(B)	1 1/2"	2	#2/0	LIGHTING FEEDER	
		1	#4	#2	
(C)	1 1/2"	2	#2/0	LIGHTING FEEDER	
		1	#4	#1	
(D)	1 1/2"	1-37/c	#14	COMMUNICATIONS	
(E)	1 1/2"			SPARE	
(F)	1"			SPARE	
(G)	1 1/2"	2	#6	EMERG. LIGHTING	ALSO #4 BARE GROUND WIRE
(H)	1 1/2"	2	#1	LIGHTING FEEDER	
		1	#4	#1	
(J)	1 1/2"	2	#1	LIGHTING FEEDER	
		1	#4	#2	
(K)	1 1/2"	1-37/c	#14	COMMUNICATIONS	
(L)	1 1/2"	1-37/c	#14	COMMUNICATIONS	
(M)	1"			SPARE	

NOTE-A: 12" x 8" x 8" GALV. CAST IRON JUNCTION BOX WITH MOUNTING LUGS AND COVER. PROVIDE CONDUIT BUSHINGS AS FOLLOWS: DRILL AND TAP ONE "B" SIDE FOR 2 1/2" CONDUIT, OPPOSITE SIDE FOR (3) 1" CONDUITS. PLUG UNUSED OPENINGS.

NOTE-B: PROVIDE CONDUIT BUSHINGS AT ALL CONDUIT TERMINATIONS.

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
BUREAU OF PLANS
WILSON TUNNEL 2ND BORE
PLAN & DETAILS OF DUCTS
PORTAL VAULTS TO TUNNEL

ENGINEER: W.R.H. [Signature] DATE: Aug 16 1957
DRAFTSMAN: H.J.M. CHECKED BY: [Signature]
SCALE: AS NOTED TRACED: [Signature]
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.B.Y.

JOB NO. 13-57 DWG. NO. E-10

