FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HONG.	HAW.	S216(5)	54	43	112

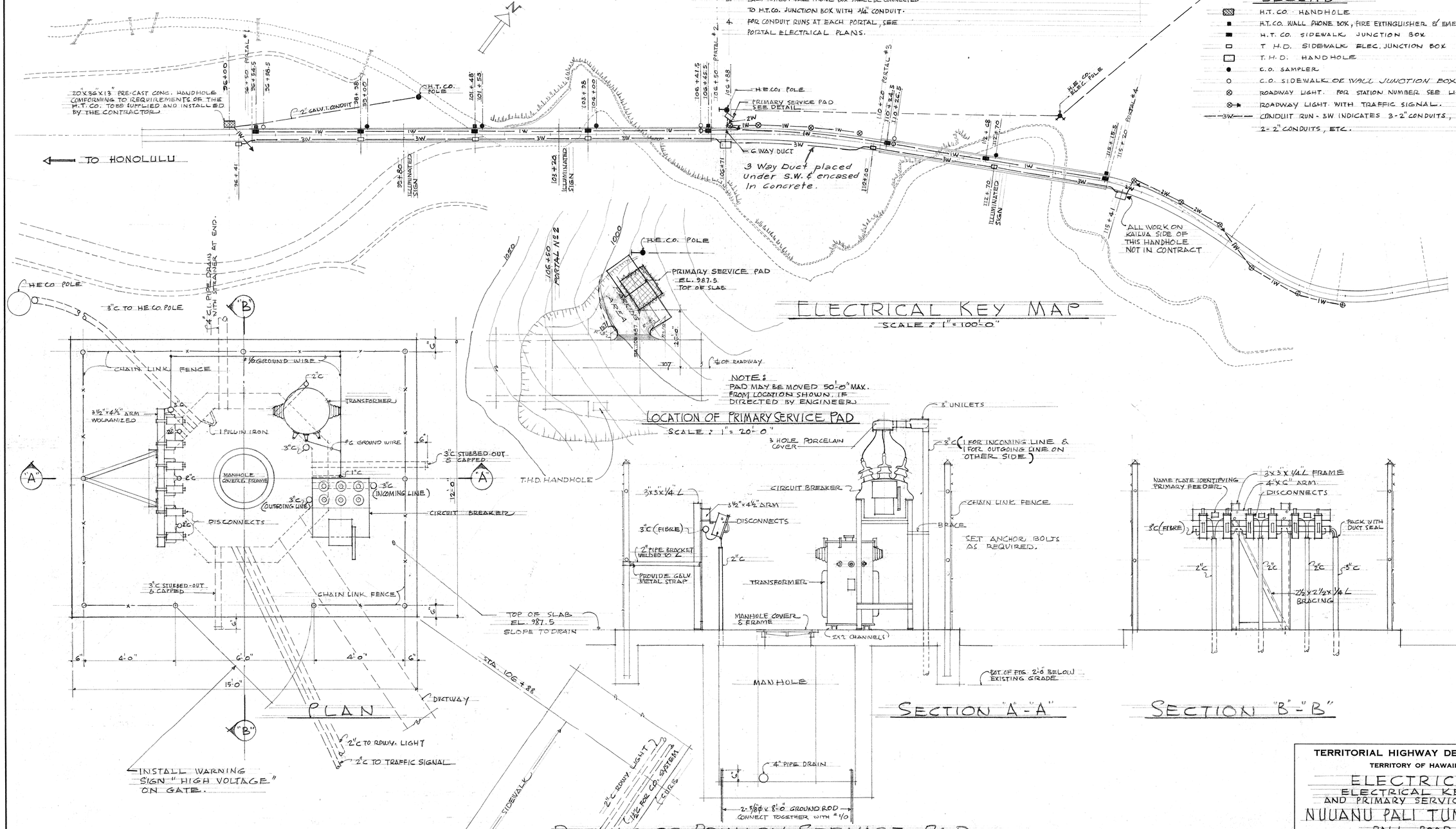
Dec. 8, 1954

GENERAL CONDUIT DATA

1. 3-2" CONDUITS SHALL BE INSTALLED BETWEEN T H.D. SIDEWALK JUNCTION BOXES & HANDHOLES FROM PORTAL #1 TO PORTAL #2.
2. 1-2" CONDUIT SHALL BE INSTALLED BETWEEN H.T.CO. JUNCTION BOX FROM PORTAL #1 TO PORTAL #4.
3. EACH H.T.CO. WALL PHONE BOX SHALL BE CONNECTED TO H.T.CO. JUNCTION BOX WITH 3/4" CONDUIT.
4. FOR CONDUIT RUNS AT EACH PORTAL, SEE PORTAL ELECTRICAL PLANS.
5. FOR CONDUITS REQUIRED FOR C.O. SAMPLING SYSTEM, SEE C.O. SAMPLING SYSTEM DWG.
6. ALL UNUSED CONDUITS TO BE EQUIPPED WITH #12 GALVANIZED PULL WIRE.

LEGEND

- H.T.CO. HANDHOLE
- H.T.CO. WALL PHONE BOX, FIRE EXTINGUISHER & EMERGENCY LIGHT STATION.
- H.T.CO. SIDEWALK JUNCTION BOX
- T H.D. SIDEWALK ELEC. JUNCTION BOX
- T. H. D. HANDHOLE
- C.O. SAMPLER
- C.O. SIDEWALK OR WALL JUNCTION BOX
- ROADWAY LIGHT. FOR STATION NUMBER SEE LIGHTING PLAN
- ROADWAY LIGHT WITH TRAFFIC SIGNAL.
- —3W— CONDUIT RUN - 3W INDICATES 3-2" CONDUITS, 2W INDICATES 2-2" CONDUITS, ETC.



ELECTRICAL KEY MAP

SCALE: 1" = 100'-0"

LOCATION OF PRIMARY SERVICE PAD

SCALE: 1" = 20'-0"

SECTION "A"-"A"

SECTION "B"-"B"

DETAILS OF PRIMARY SERVICE PAD

SCALE: ½" = 1'-0"

NOTE: See Sheet 50 for Structural Details of Manhole and Pad.

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

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

ELECTRICAL
ELECTRICAL KEY MAP AND PRIMARY SERVICE PAD
NUUANU PALI TUNNELS
PALI ROAD

PROJ. NO. S 216 (5)

SCALES: AS NOTED DATE: AUG. 27, 1954

JAMES J. OBERHAUSEN
ELECTRICAL ENGINEER

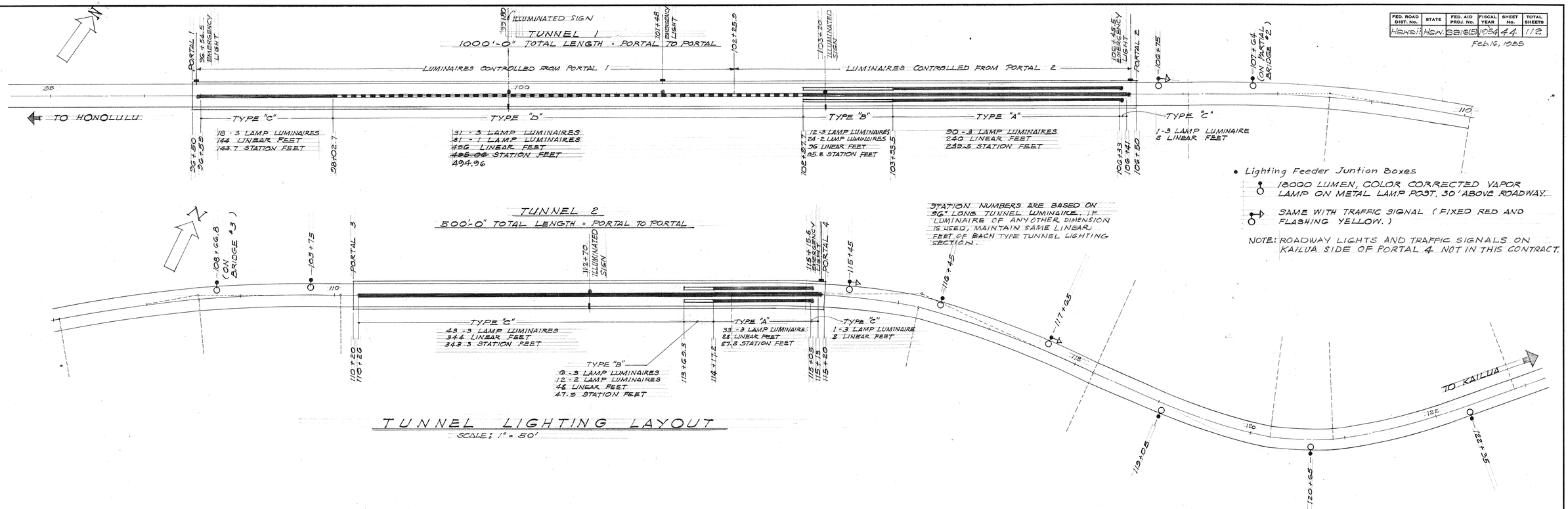
SHEET No. 1 OF 5 SHEETS

5705.43

5705. X1

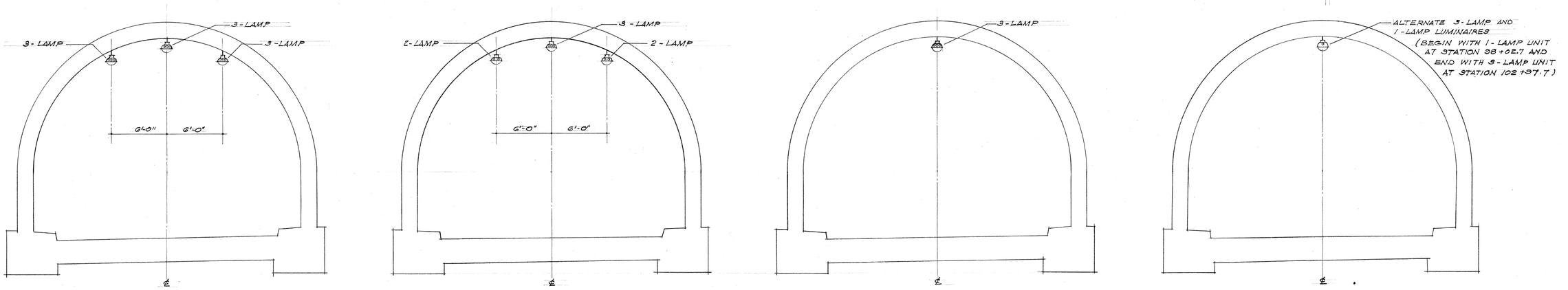
FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HSNS-1	HAW.	S216(5)	1954	44	112

Feb. 16, 1955



TUNNEL LIGHTING LAYOUT

SCALE: 1" = 50'



TYPICAL TUNNEL LIGHTING SECTIONS

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

WIRE SIZE AND LAMP HOOK-UP SCHEDULE (BASE ON 96" LAMP)

	PORTAL 1				PORTAL 2								PORTAL 4							
	CENTER ROW				NORTH ROW	CENTER ROW				SOUTH ROW			NORTH ROW	CENTER ROW				SOUTH ROW		
CIRCUIT NUMBER	N	1	3	E	4	N	5	7	N	1	3	2	4	N	6	8	N	5	7	N	1	3	2	4	N	6	8
AWG WIRE SIZE	#1	#1	#1	#2	#6	#1	#1	#1	#1	#1	#1	#4	#4	#1	#1	#1	#4	#4	#4	#1	#1	#1	#4	#4	#4	#4	#4	#4
CONTINUOUS SCHEDULE LAMPS			36									26											31				
DAY SCHEDULE LAMPS		44	44				56	58		48	48				56	58		22	23		60	62				22	23
DAY (FUTURE CONTINUOUS) SCHEDULE LAMPS				35								26											30				

ROADWAY LIGHTING CIRCUITS FED FROM PORTAL 2 AND PORTAL 4 SHALL BE 240 V, 1φ, AND SHALL BE #6 AWG WIRE.

TRAFFIC SIGNAL CIRCUITS FED FROM PORTAL 2 AND PORTAL 4 SHALL BE 120 V, 1φ, AND SHALL BE #10 AWG. WIRE. (3 SINGLE CONDUCTORS)

ORIGINAL PLAN
NOTE BOOK No.

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

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
ELECTRICAL
LIGHTING PLAN
NUUANU PALI TUNNELS
PALI ROAD
PROJ. NO. S 216(5)
SCALES: AS NOTED DATE: AUG. 27, 1954

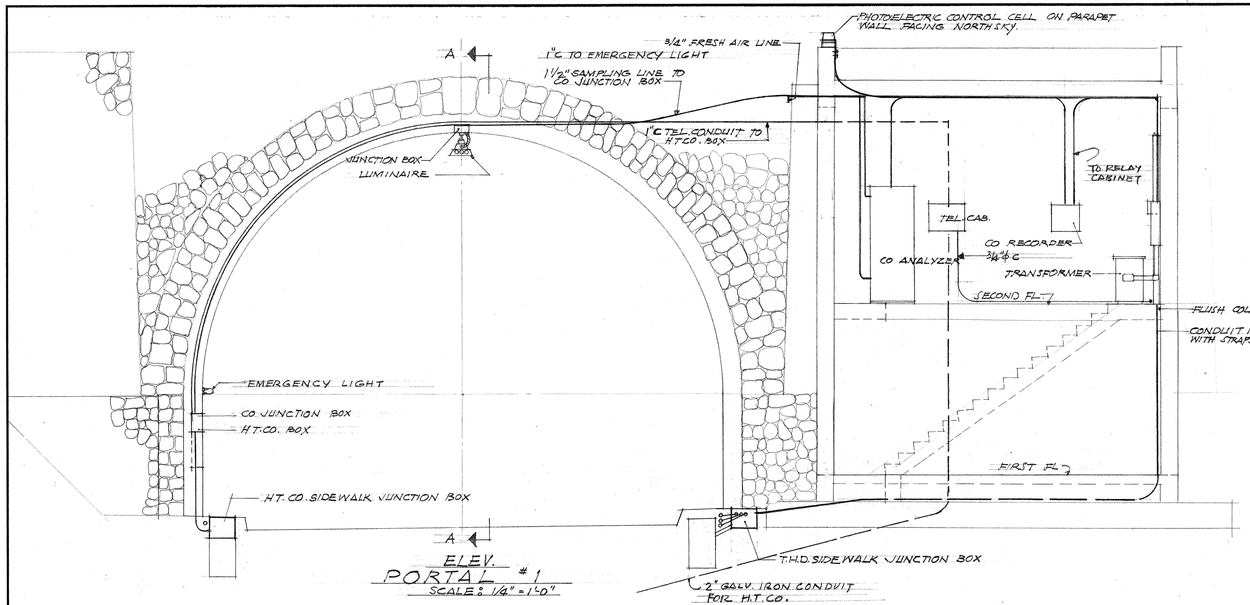
JAMES J. OBERHAUSEN
ELECTRICAL ENGINEER

SHEET No. 2 OF 5 SHEETS

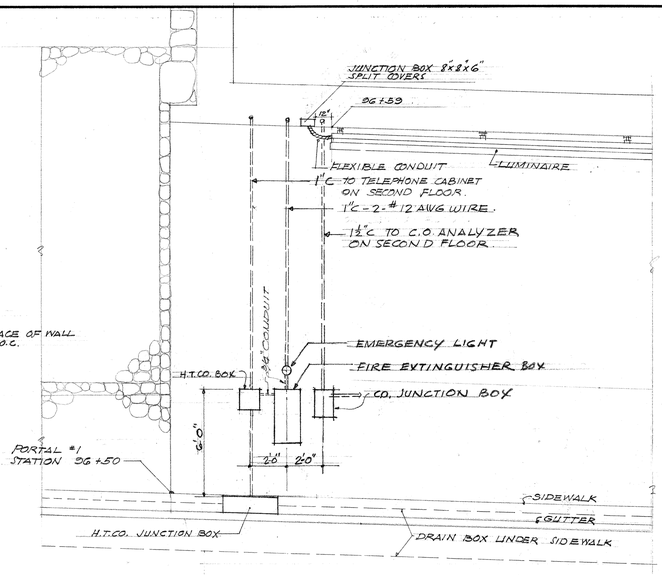
5705.44

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	S216(3)	1954	45	112

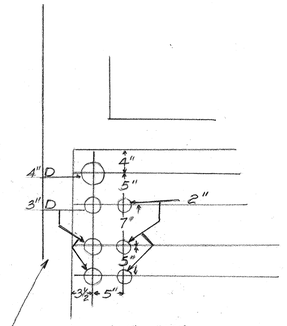
DEC. 8, 1954



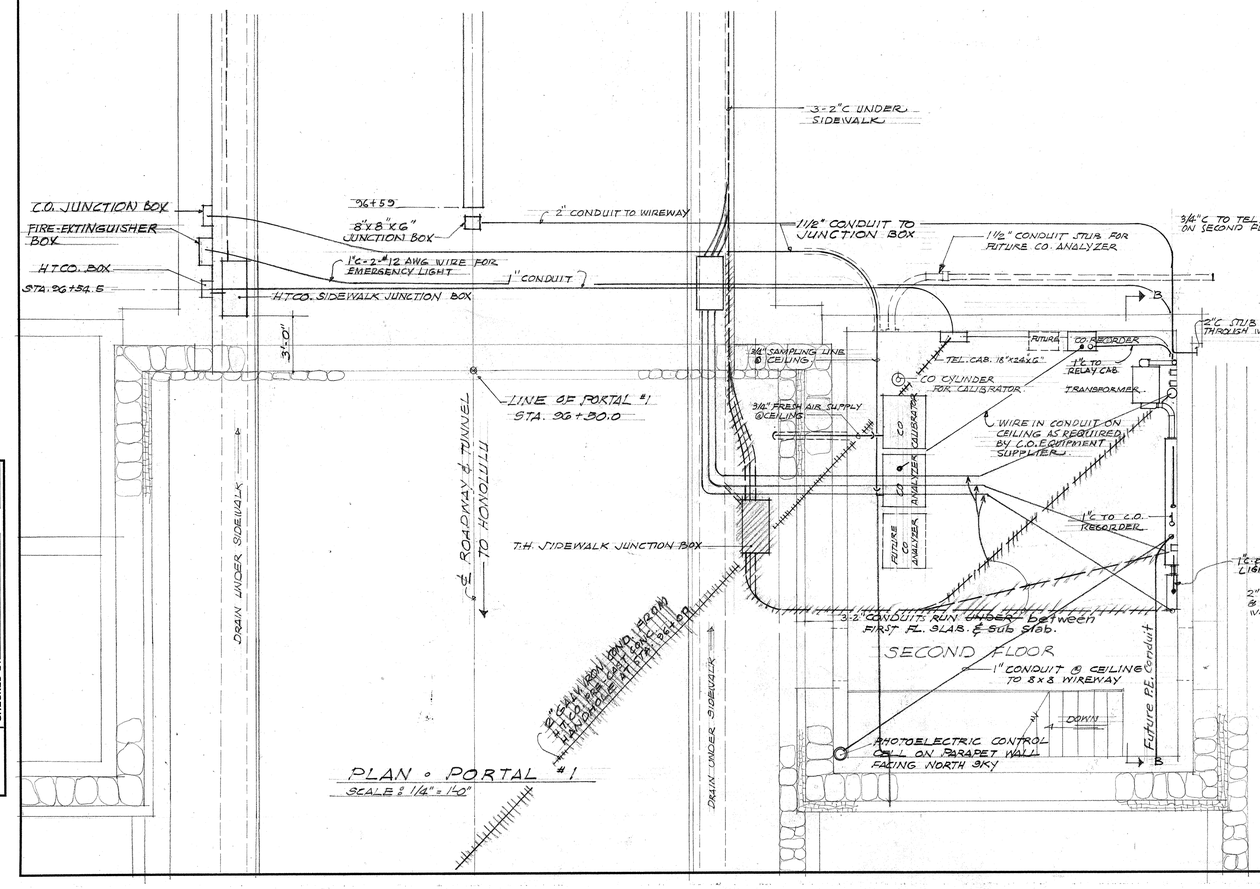
ELEV. PORTAL #1
SCALE: 1/4" = 1'-0"



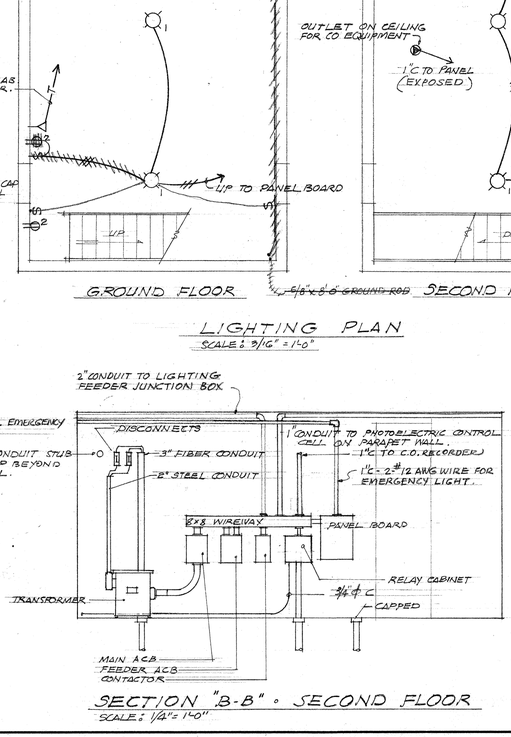
SECTION "A-A" ◦ PORTAL #1
SCALE: 1/4" = 1'-0"



SEC. "Y"-"Y"



PLAN ◦ PORTAL #1
SCALE: 1/4" = 1'-0"



LIGHTING PLAN
SCALE: 3/16" = 1'-0"

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

LEGEND

- RLM STANDARD DOME REFLECTOR FOR OUTLET BOX MOUNTING WITH 200 WATT I.F. LAMP.
- DUPLEX CONVENIENCE OUTLET, FLUSH IN WALL, 30" HIGH, STAINLESS STEEL PLATE.
- 20 AMPERE SINGLE POLE WALL SWITCH, FLUSH, 4'-0" ABOVE FLOOR, STAINLESS STEEL PLATE.
- BRANCH CIRCUIT IN CONCEALED CONDUIT EXCEPT AS NOTED, #12 AWG, TYPE TW.
- 4" SQUARE BY 2 1/8" DEEP BOX FLUSH IN WALL WITH STAINLESS STEEL COVER WITH SINGLE BUSHED HOLE.
- 3/4" CONCEALED CONDUIT (WITH PULL WIRE.) FOR TELEPHONE.
- OUTLET ON CEILING FOR POWER TO CO EQUIPMENT. WIRE SIZE TO BE AS SPECIFIED BY CO EQUIPMENT SUPPLIER. CONNECT TO EQUIPMENT WITH FLEXIBLE CONDUIT.

See Sheet 45.A for Revised Arrangement of Equipment and additional stubs for future tunnel.

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

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

ELECTRICAL

PORTAL #1 ELECTRICAL PLAN

NUUANU PALI TUNNELS

PALI ROAD

PROJ. NO. S 216 (5)

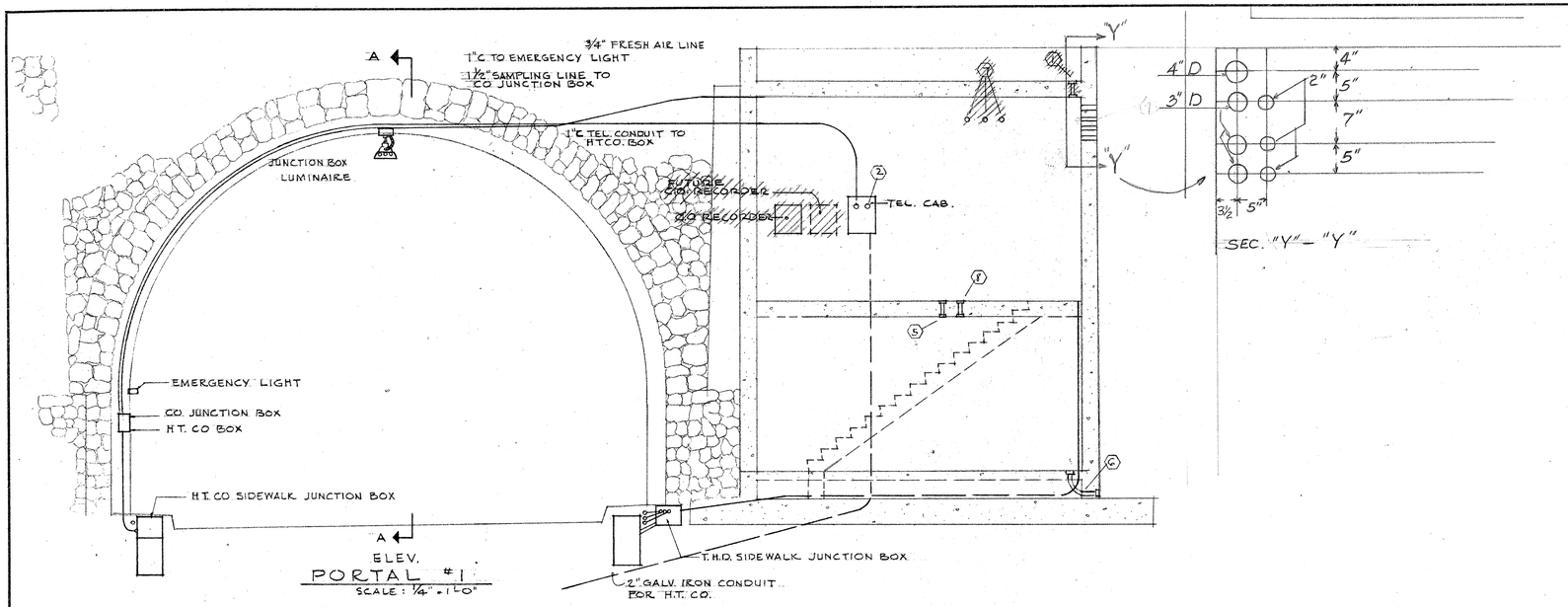
SCALES: AS NOTED DATE: AUG 27, 1954

JAMES J. OBERHAUSEN
ELECTRICAL ENGINEER

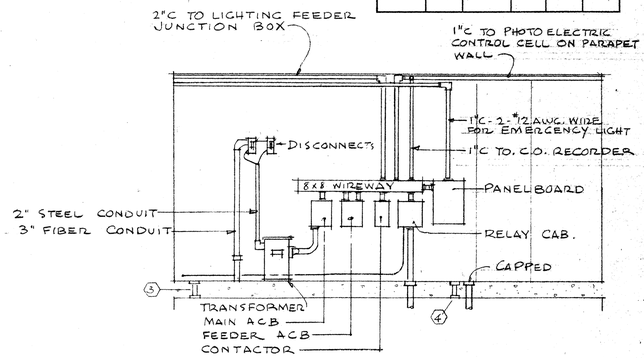
SHEET No. 3 OF 9 SHEETS

570S. 45

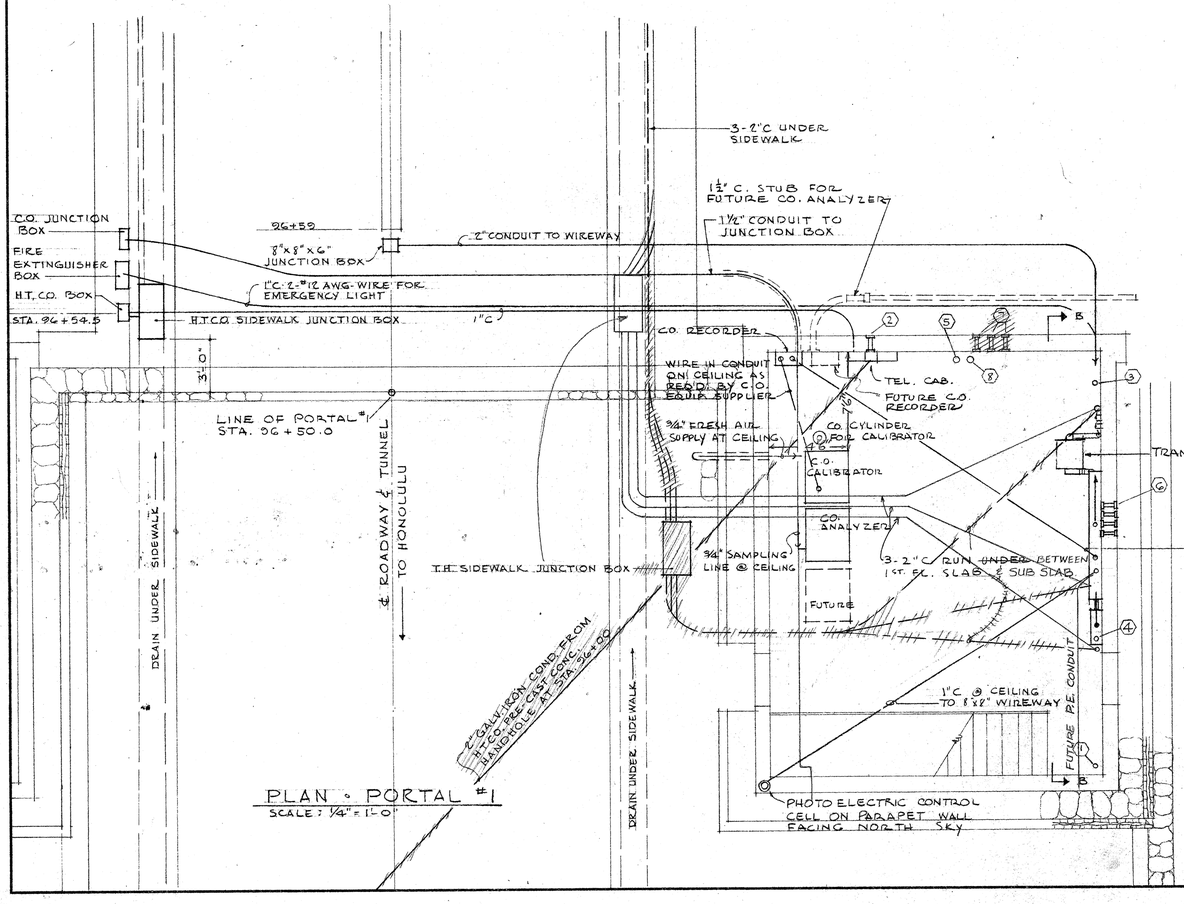
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET No.	TOTAL SHEETS



ELEV.
PORTAL #1
SCALE: ¼" = 1'-0"



2ND. FLOOR
SECTION "B-B"



PLAN - PORTAL #1
SCALE: ¼" = 1'-0"

SCHEDULE OF CONDUIT SLEEVES TO BE ADDED TO PROVIDE FOR SECOND BORE

1. 1" CONDUIT THROUGH ROOF FOR FUTURE PHOTO-CELL CONTROL.
2. 1" CONDUIT THROUGH WALL FOR FUTURE H.T.CO. SERVICE TO EMERGENCY PHONES.
3. 2" CONDUIT THROUGH 2nd FLOOR SLAB FOR FUTURE ROADWAY LIGHTING
4. 2" CONDUIT THROUGH 2nd FLOOR SLAB FOR SPARE
5. 2" CONDUIT THROUGH 2nd FLOOR SLAB FOR FUTURE CONTROL.
6. 4 - 2" CONDUITS THROUGH FIRST FLOOR SLAB TO OUTSIDE FOR FUTURE CONTROL, ROADWAY LIGHTING, TRAFFIC SIGNALS, AND SPARE.
7. 3-2" CONDUITS THROUGH WALL FOR FUTURE TUNNEL LIGHTING
8. 2" CONDUIT THROUGH 2nd FLOOR SLAB FOR FUTURE TRAFFIC SIGNALS.
9. 1" CONDUIT THROUGH WALL FOR FUTURE EMERGENCY LIGHT.

CHASES MAY BE INSTALLED INSTEAD OF CONDUITS. EACH CONDUIT EMERGING FROM MASONRY SHALL BE TERMINATED IN A FLUSH THREADED COUPLING.

THIS SHEET REARRANGES EQUIPMENT LAYOUT SHOWN ON SHEET ST08.45 AND INDICATES ADDITIONAL CONDUIT SLEEVES WHICH WILL BE USED FOR SECOND BORE. WITH SYMBOLS SUCH AS (5) - SEE SCHEDULE.

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

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

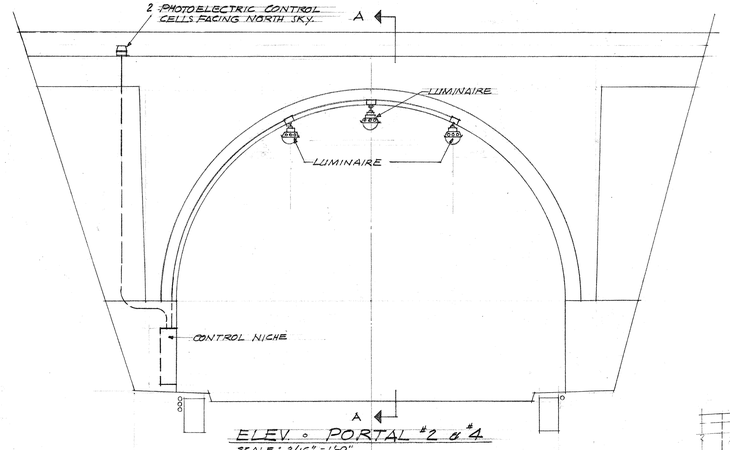
JAN. 10, 1957

SHEET No. OF SHEETS

5708 45A

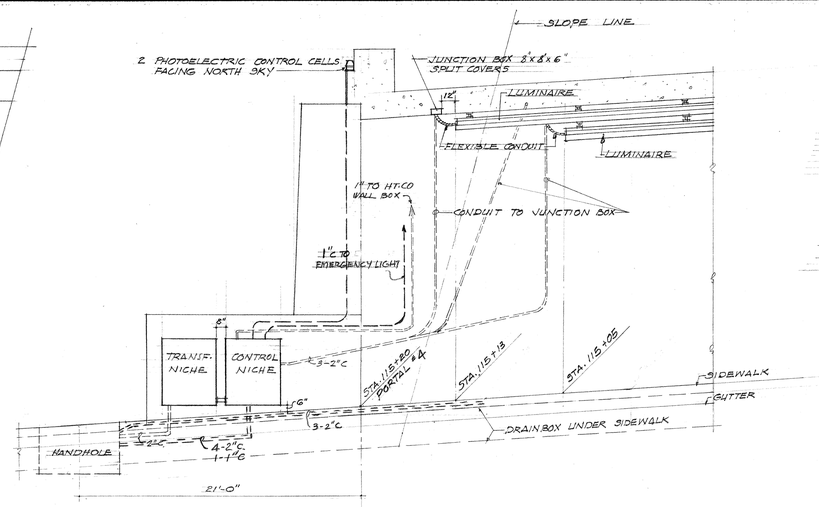
FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HIGHWAY	HDW.	S216(1)	1954	46	112

Feb. 16, 1955



ELEV. ◦ PORTAL #2 & #4

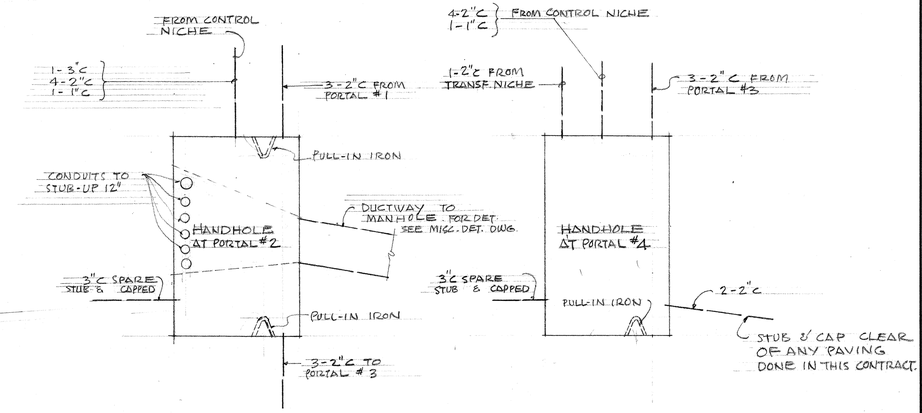
SCALE: 9/16" = 1'-0"



SECTION "A-A" ◦ PORTAL #4

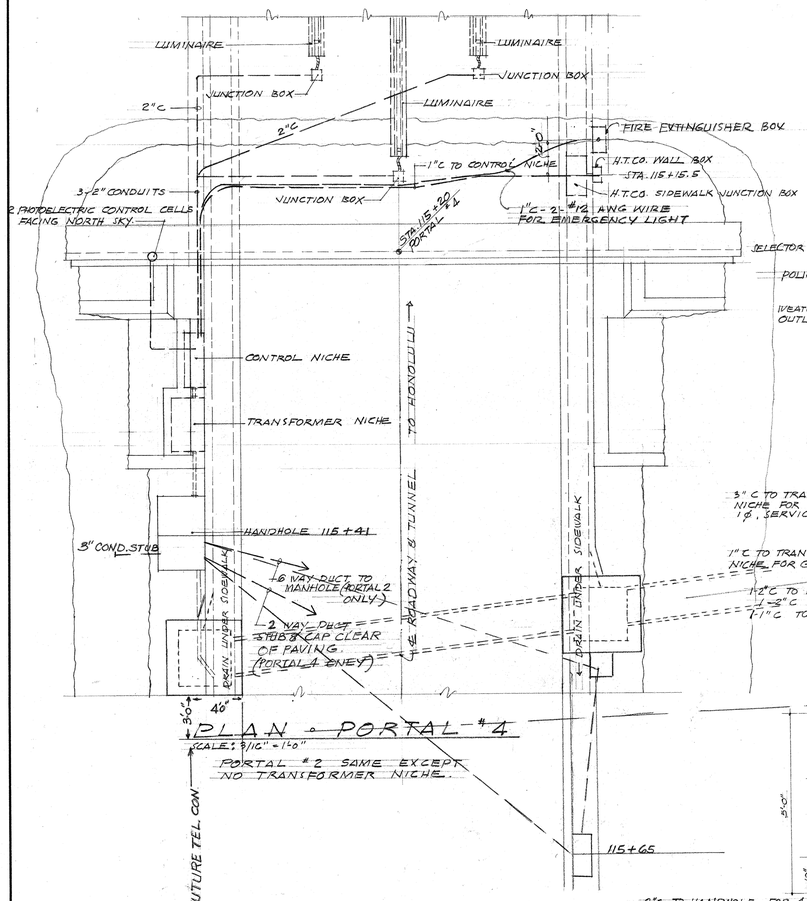
SCALE: 3/16" = 1'-0"

PORTAL #2 SAME EXCEPT NO TRANSFORMER NICHE.



HANDHOLE PLANS

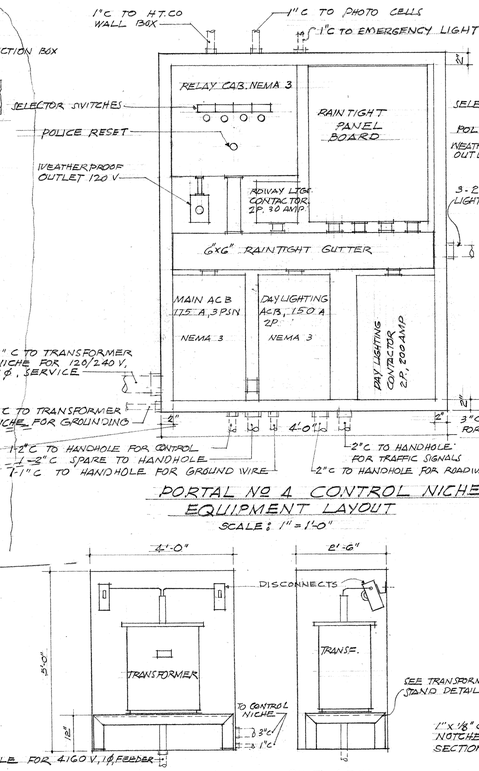
NOT TO SCALE



PLAN ◦ PORTAL #4

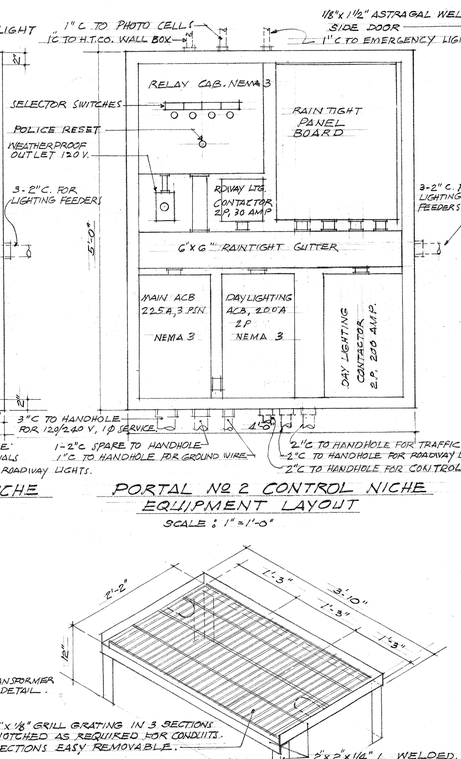
SCALE: 9/16" = 1'-0"

PORTAL #2 SAME EXCEPT NO TRANSFORMER NICHE.



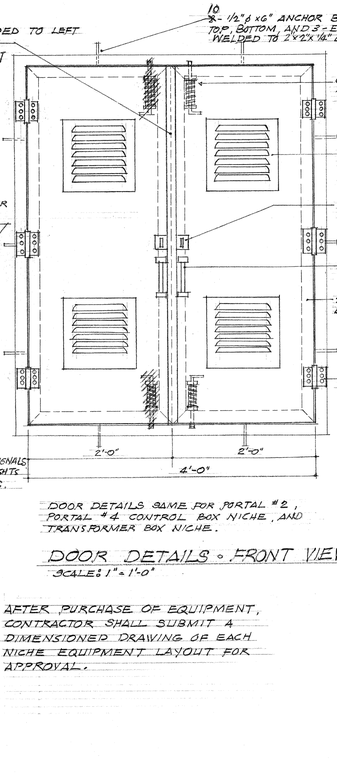
PORTAL NO 4 CONTROL NICHE EQUIPMENT LAYOUT

SCALE: 1" = 1'-0"



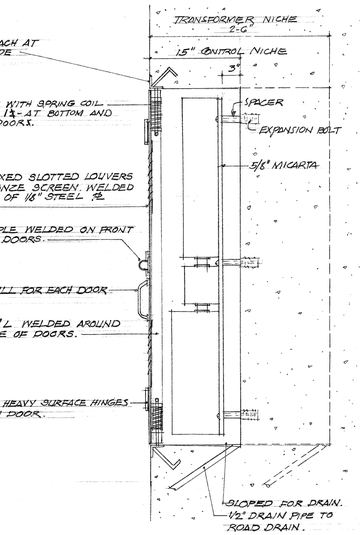
PORTAL NO 2 CONTROL NICHE EQUIPMENT LAYOUT

SCALE: 1" = 1'-0"



DOOR DETAILS ◦ FRONT VIEW

SCALE: 1" = 1'-0"



CONTROL & TRANSFORMER NICHE SECTION ◦ SIDE VIEW

SCALE: 1" = 1'-0"

FRONT VIEW SIDE VIEW

EQUIPMENT LAYOUT TRANSFORMER NICHE ◦ SCALE: 1½" = 1'-0"

PORTAL #4 ONLY

TRANSFORMER STAND

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

AFTER PURCHASE OF EQUIPMENT, CONTRACTOR SHALL SUBMIT A DIMENSIONED DRAWING OF EACH NICHE EQUIPMENT LAYOUT FOR APPROVAL.

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

TERRITORIAL HIGHWAY DEPARTMENT

TERRITORY OF HAWAII

ELECTRICAL

PORTAL #2 & #4 ELECTRICAL PLAN

NUUANU PALI TUNNELS

PALI ROAD

PROJ. NO. S 216(S)

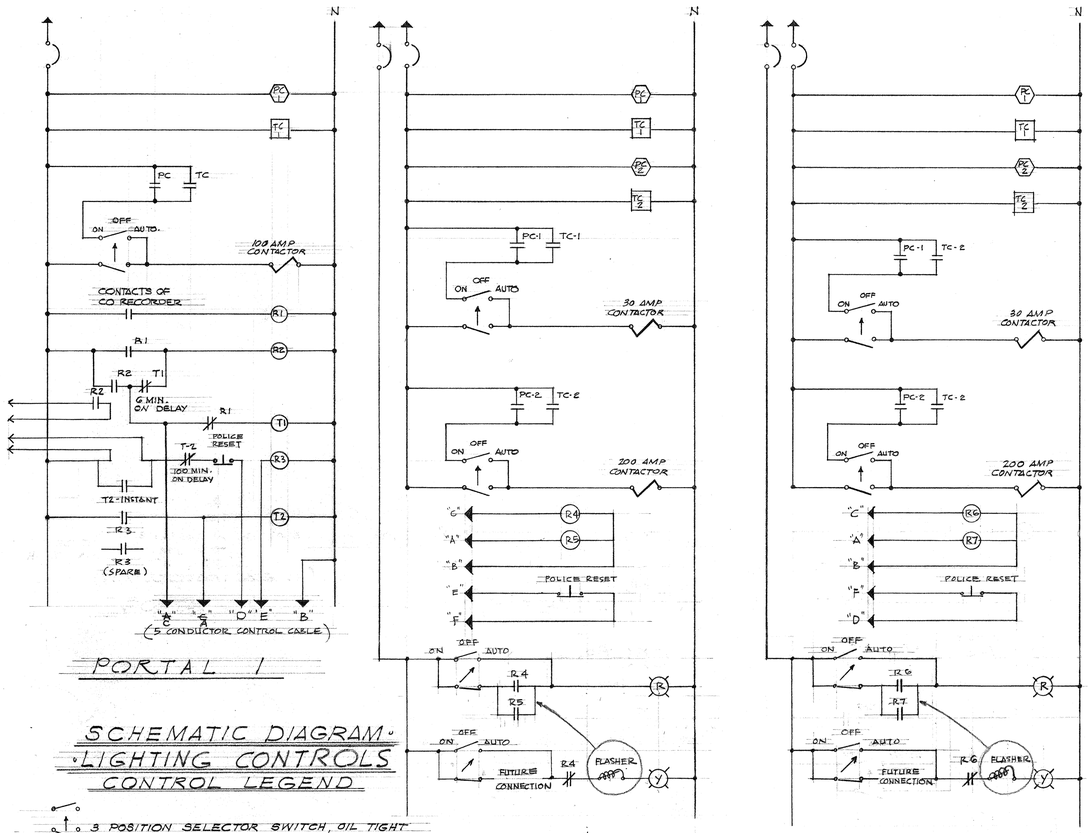
SCALES: AS NOTED DATE: AUG 27, 1954

JAMES J OBERHAUSEN
ELECTRICAL ENGINEER

SHEET No. 4 OF 5 SHEETS

5705.46

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Hawaii	HGW.	S216(5)	1954	47	112



PORTAL 1 | PORTAL 2 | PORTAL 4

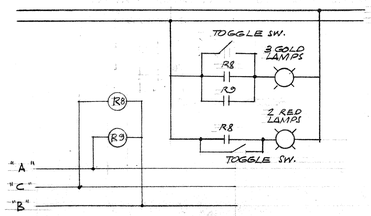
SCHEMATIC DIAGRAM "LIGHTING CONTROLS"

CONTROL LEGEND

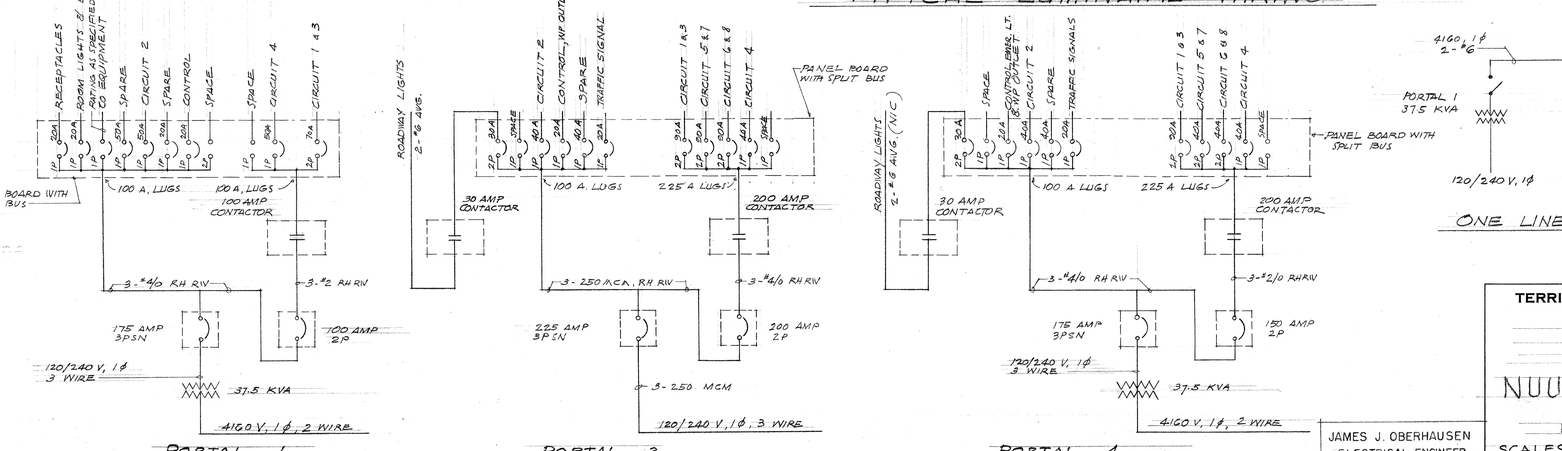
- 3 POSITION SELECTOR SWITCH, OIL TIGHT
- RELAY - FOR CHARACTERISTICS, SEE RELAY SCHEDULE.
- TRAFFIC SIGNAL OR ILLUMINATED SIGN
- OPERATING COIL OF MAGNETICALLY HELD CONTACTOR.
- PHOTO - CELL
- TIME SWITCH
- NORMALLY OPEN CONTACTS
- NORMALLY CLOSED CONTACTS
- CIRCUIT BREAKER
- PUSH BUTTON, NORMALLY CLOSED, OIL TIGHT

RELAY SCHEDULE

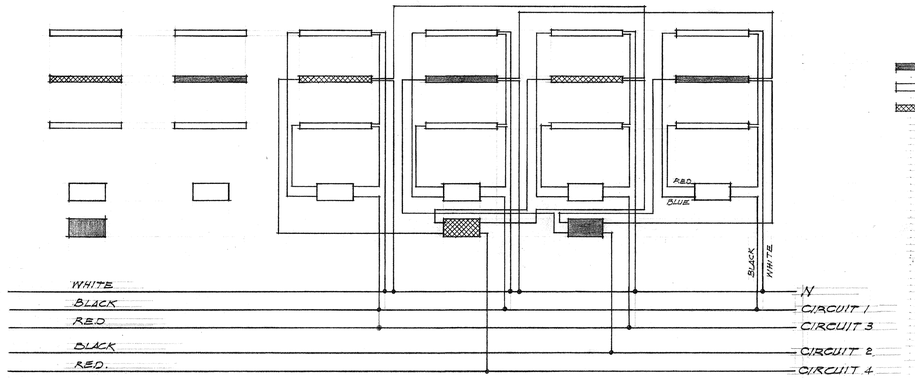
R1, R4, R6 = 1 SET OF N.O. & 1 SET OF N.C. CONTACTS
R5, R7, R9 = 1 SET OF N.O. CONTACTS
R2, R3, R8 = 2 SETS OF N.O. CONTACTS
T-1, T-2, = TIMING RELAY, 3 TO 100 MIN., 1 INSTANTANEOUS CONTACT, 1 N.O., AND 1 N.C. TIMED CONTACTS.



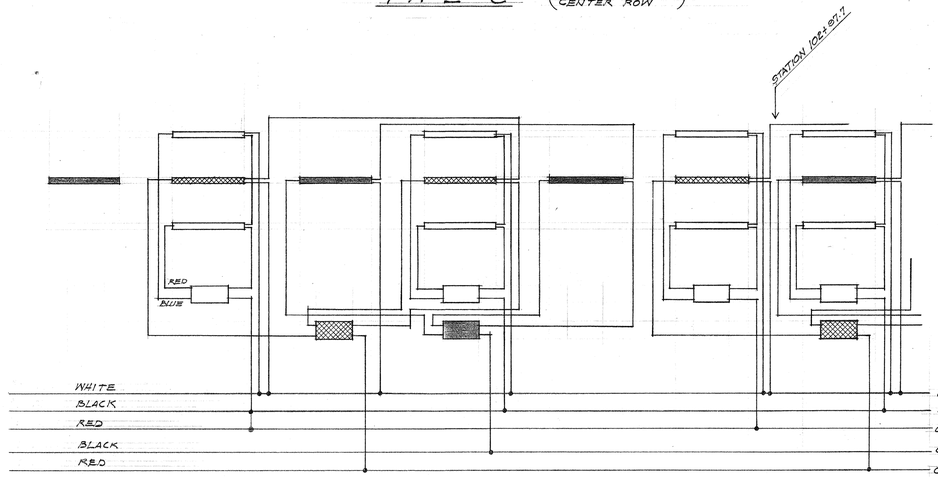
ILLUMINATED SIGN WIRING



ONE LINE DIAGRAMS ◦ 120/240 VOLT, SINGLE PHASE SYSTEM



TYPE "C" (AND TYPE "A" & "B" CENTER ROW)

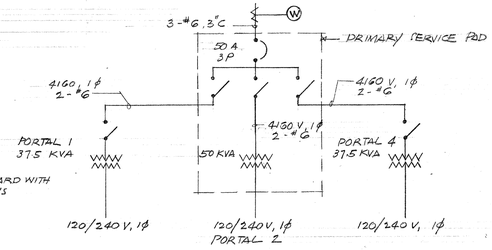


TYPE "D"

TYPICAL LUMINAIRE WIRING ◦

LAMP ON CONTINUOUS SCHEDULE.
LAMP ON DAY SCHEDULE.
LAMP ON DAY SCHEDULE WITH PROVISION FOR CONNECTING TO CONTINUOUS SCHEDULE AT PORTAL.
BALLAST FOR 2 LAMPS ON CONTINUOUS SCHEDULE.
BALLAST FOR 2 LAMPS ON DAY SCHEDULE.
BALLAST FOR 2 LAMPS ON DAY SCHEDULE WITH PROVISION FOR CONNECTING TO CONTINUOUS SCHEDULE AT PORTAL.

1. CENTER LAMP IN LUMINAIRE CLOSES TO PORTAL 2 AND 4 AND THEN IN EVERY OTHER LUMINAIRE THROUGHOUT TUNNEL SHALL BE ON CONTINUOUS SCHEDULE.
2. ALL WIRING BETWEEN BALLASTS AND LAMPS SHALL BE #14 AWG, 1000 VOLT, THERMOPLASTIC FIXTURE WIRE, WITH UL APPROVED INSULATION FOR 80°C. WIRE SHALL BE CODED AS INDICATED.
3. EACH CUTOUT TYPE LAMPHOLDER SHALL BE TOWARD KAILUA END OF TUNNEL.
4. ONE SINGLE LAMP HIGH POWER FACTOR BALLAST SHALL BE INSTALLED ON EACH CIRCUIT HAVING AN UNEVEN NUMBER OF LAMPS.
5. FOR WIRE SIZE OF LIGHTING FEEDERS FROM EACH PORTAL, SEE SCHEDULE ON "LIGHTING PLAN."



ONE LINE DIAGRAM ◦ 4160 VOLT SYSTEM

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

JAMES J. OBERHAUSEN
ELECTRICAL ENGINEER

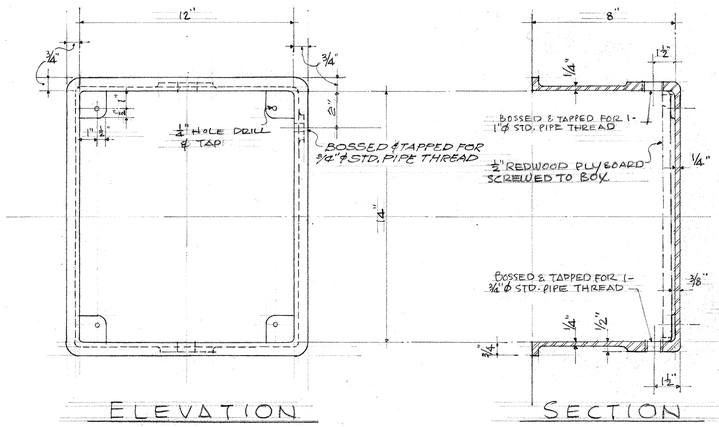
TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
ELECTRICAL
WIRING DIAGRAMS
NUUANU PALI TUNNELS
PALI ROAD
PROJ. NO. S 216(5)
SCALES: AS NOTED DATE: AUG. 27, 1954

SHEET No. 5 OF 9 SHEETS

5705.47

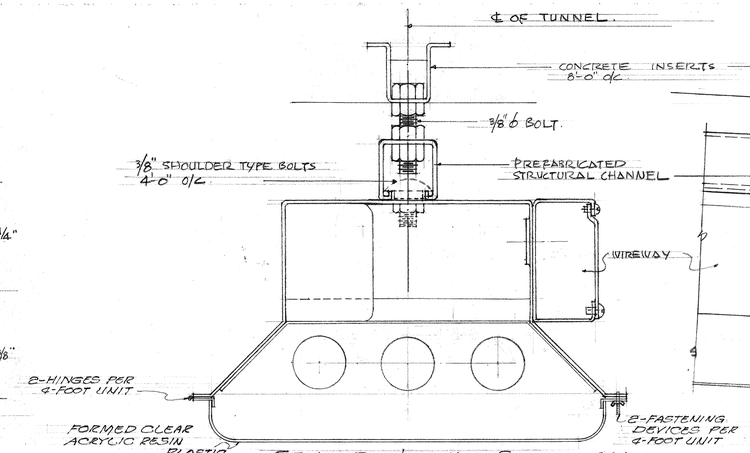
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	SEIGE)	1954	48	112

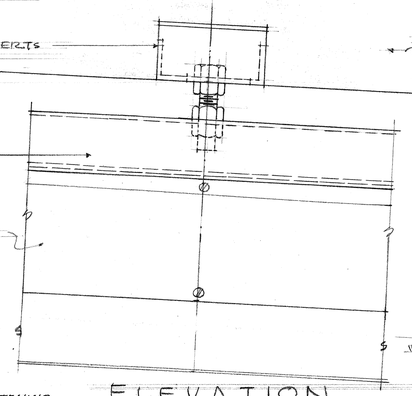
DEC. 3, 1954
FEB. 10, 1955

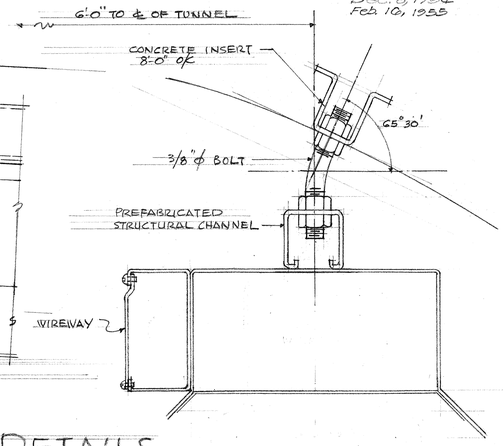


DETAILS OF H.T.CO. WALL PHONE BOX

SCALE: 3" = 1'-0"

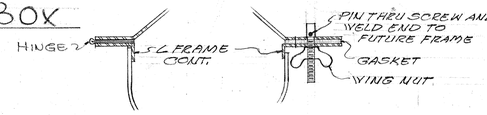






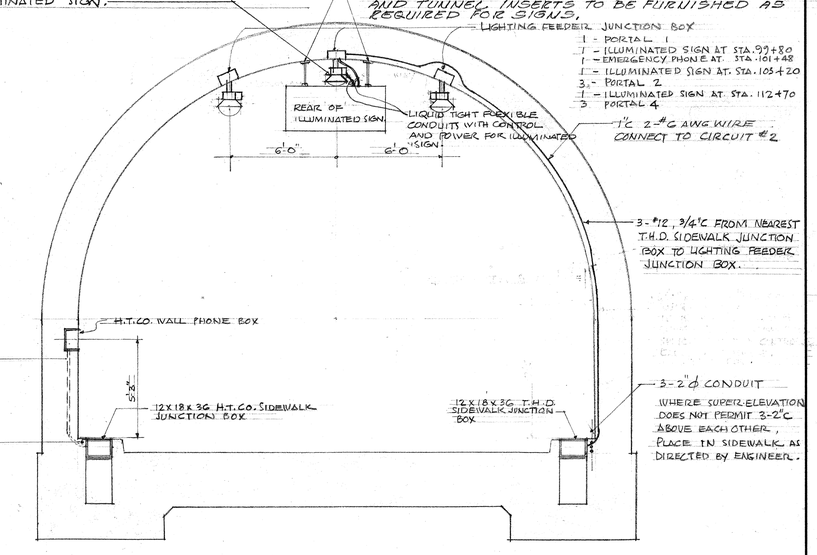
TYPICAL LIGHT MOUNTING DETAILS

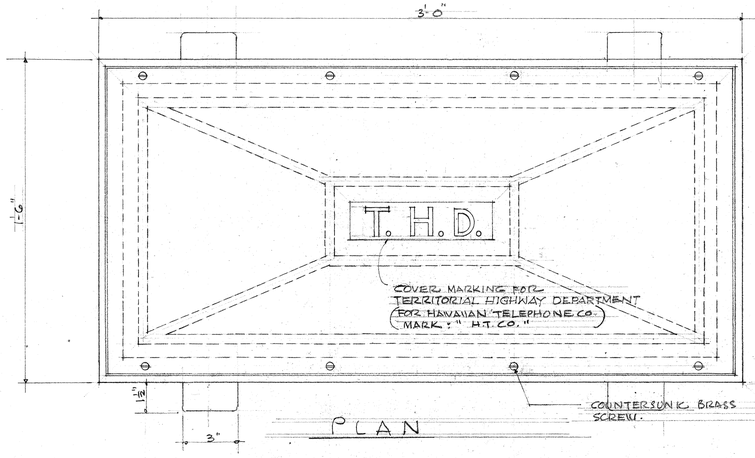
½ F.S.S.

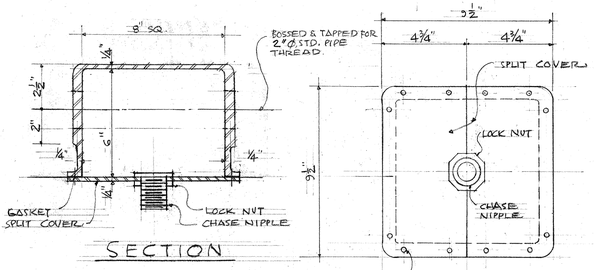


NOTE: A 4 FOOT LONG REMOVABLE FORMED LOUVER SECTION 8" WIDE 18 GAUGE TRANSVERSE ALUMINUM STRIPS ON 2" CENTERS AND PAINTED BLACK SHALL BE INSTALLED ON THE TUNNEL LIGHTING LUMINAIRE IMMEDIATELY IN FRONT OF EACH ILLUMINATED SIGN.

SIDE LIGHT SECTION

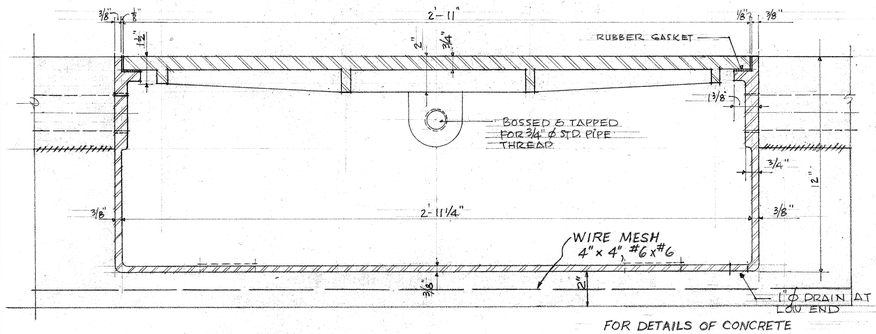




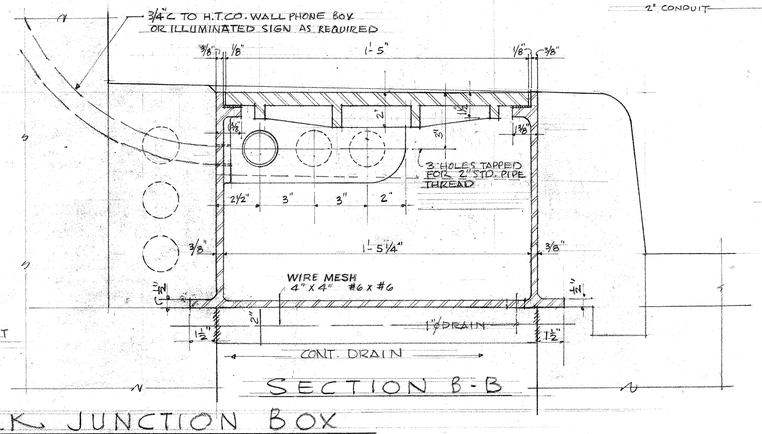


LIGHTING FEEDER JUNCTION BOX

SCALE: 3" = 1'-0"



FOR DETAILS OF CONCRETE ENCLOSEMENT SEE SHEET #5708.9



DETAILS OF SIDEWALK JUNCTION BOX

SCALE: 3" = 1'-0"

NOTE: HAWAIIAN TELEPHONE CO. SIDEWALK JUNCTION BOX SIMILAR

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

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

ELECTRICAL
TUNNEL INSERTS
NUUANU PALI TUNNELS
PALI ROAD
PROJ. NO. S 216 (5)

JAMES J. OBERHAUSEN
ELECTRICAL ENGINEER

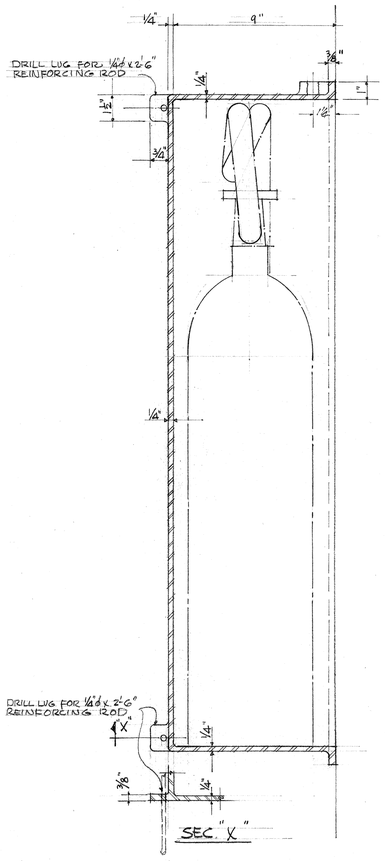
SCALES: AS NOTED DATE: AUG. 27, 1954

SHEET No. 6 OF 9 SHEETS

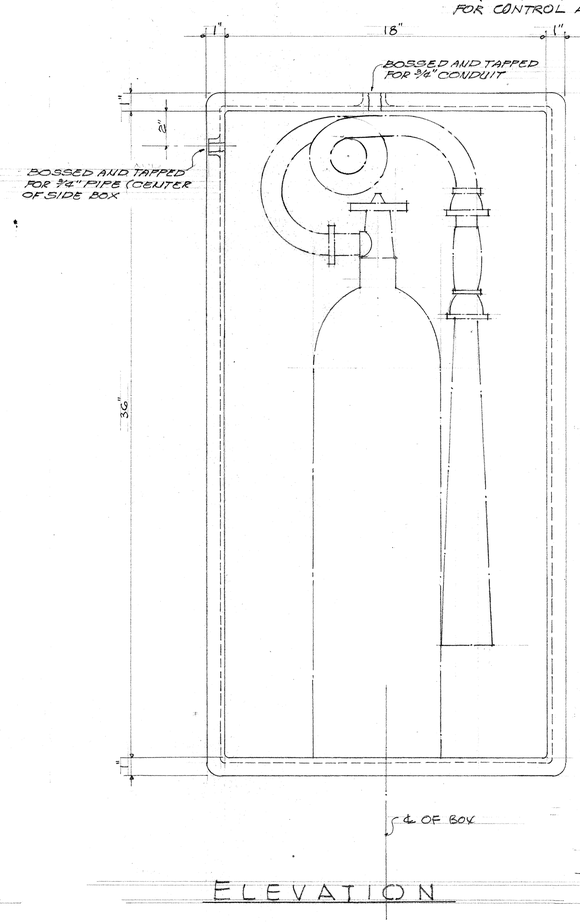
5708.48

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Hawaii	HAW	S216(5)	1954	49	112

Dec. 8, 1954



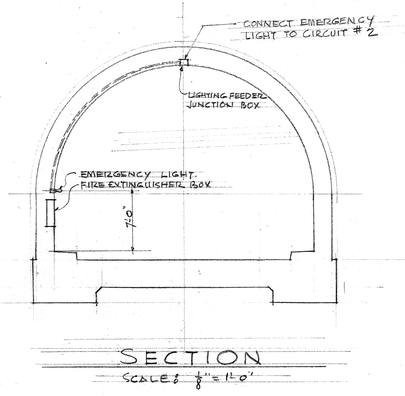
SECTION



ELEVATION

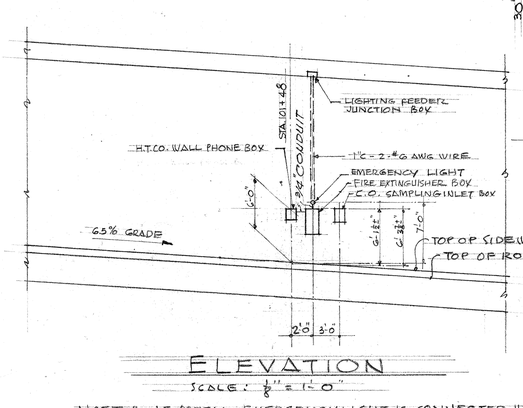
DETAILS OF FIRE EXTINGUISHER BOX

SCALE: 3" = 1'-0"



SECTION

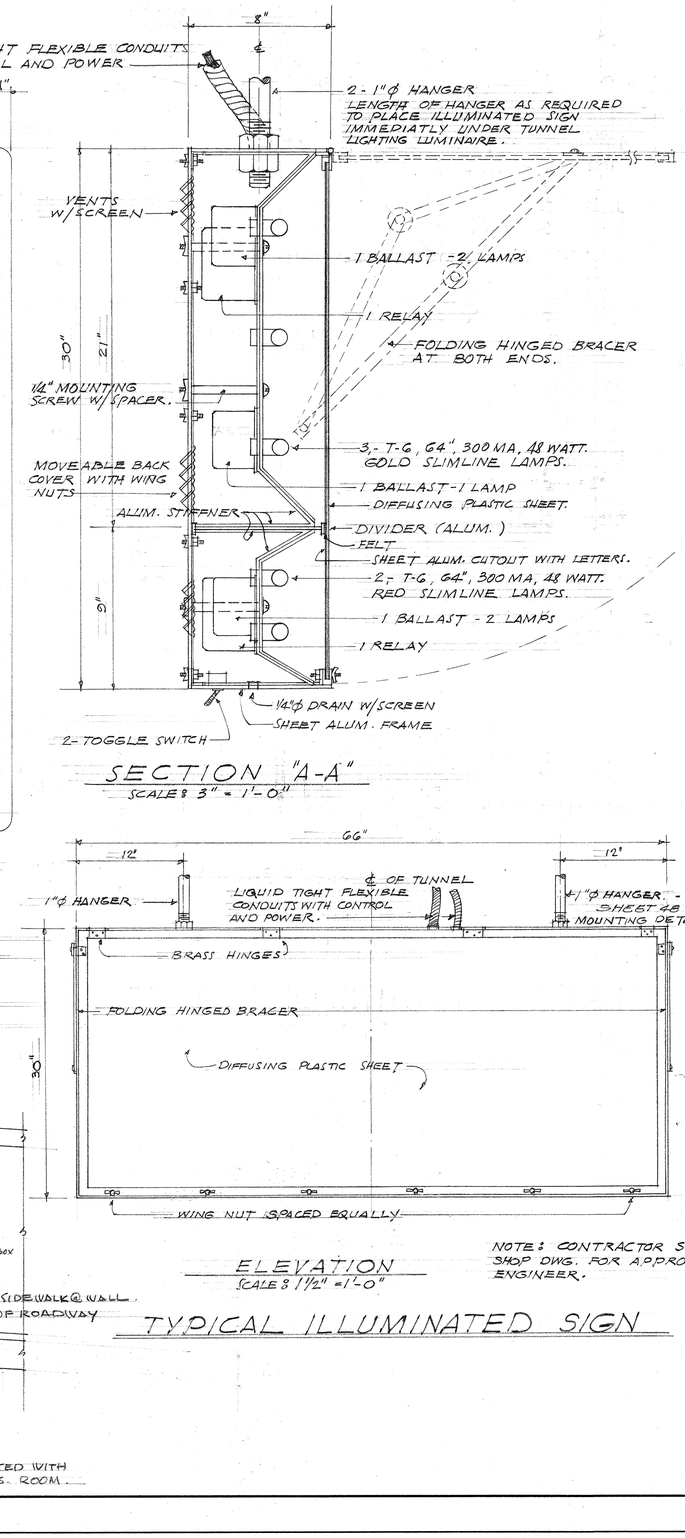
SCALE: 1/2" = 1'-0"



ELEVATION

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

NOTE: AT PORTAL, EMERGENCY LIGHT IS CONNECTED WITH 2-#12 AWG WIRE FROM NICHE OR TRANS. ROOM.



SECTION "A-A"

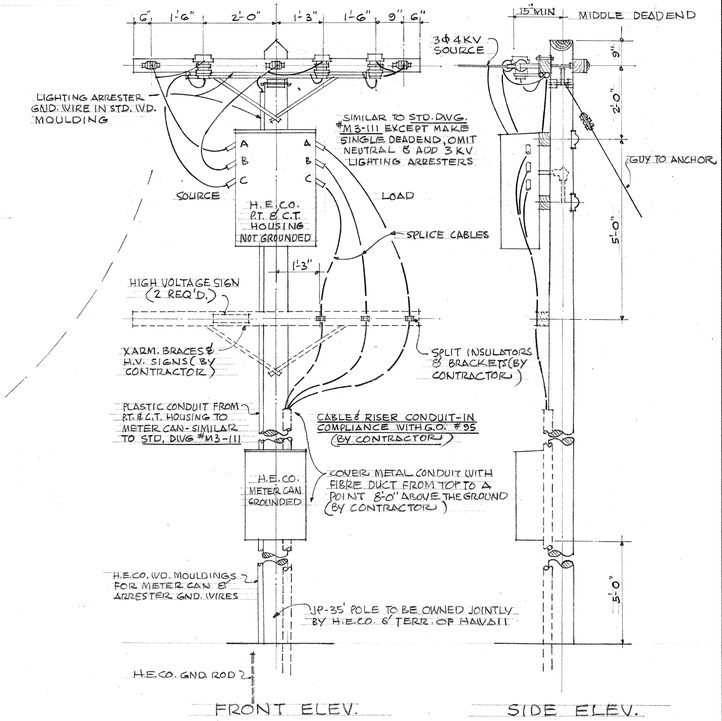
SCALE: 3" = 1'-0"

ELEVATION

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

NOTE: CONTRACTOR SHALL SUBMIT SHOP DWG. FOR APPROVAL BY ENGINEER.

TYPICAL ILLUMINATED SIGN



DETAILS OF POWER-METER POLE

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

NOTE: POLE AND METERING EQUIPMENT TO BE INSTALLED BY THE HAWAIIAN ELECTRIC CO., LTD. CONTRACTOR TO INSTALL CABLE AND RISER CONDUIT AS SHOWN. (3-#6, 5KV, SHIELDED IN 3" CONDUIT)

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

TERRITORIAL HIGHWAY DEPARTMENT

TERRITORY OF HAWAII

ELECTRICAL

FIRE EXTINGUISHER BOX & TYP. ILLUMINATED SIGN AND POWER - METER POLE

NUUANU PALI TUNNELS

PALI ROAD

PROJ. NO: S 216 (5)

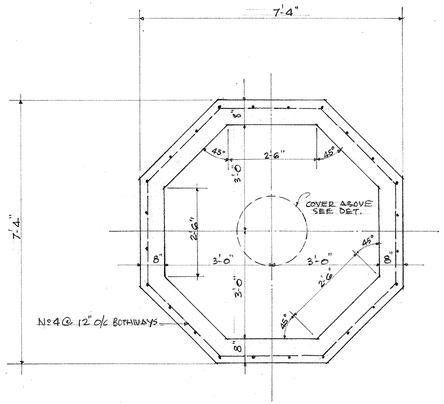
SCALES: AS NOTED DATE: AUG. 27, 1954

JAMES J. OBERHAUSEN
ELECTRICAL ENGINEER

SHEET No. 7 OF 5 SHEETS

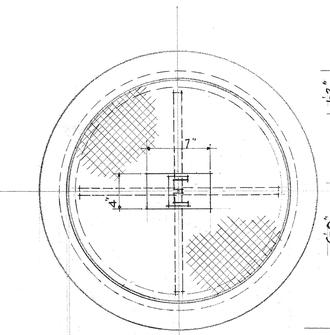
570S.49

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HSN911	HSN	S216(5)	1954	80	112

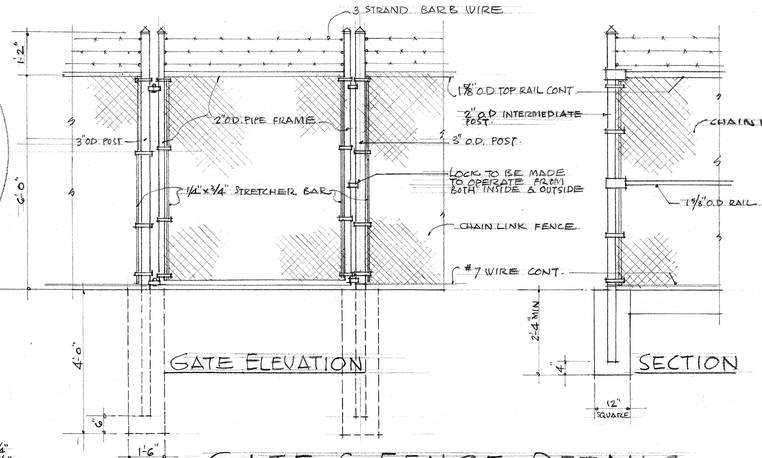


PLAN

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



PLAN

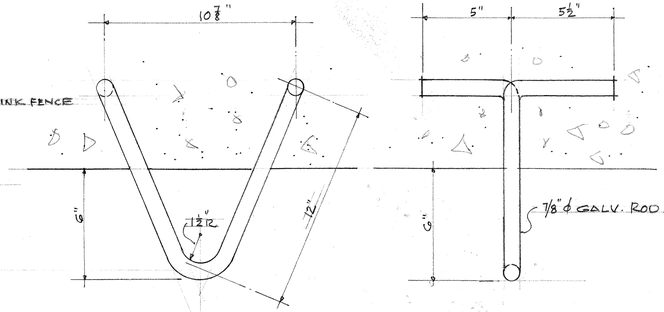


GATE ELEVATION

SECTION

GATE & FENCE DETAILS

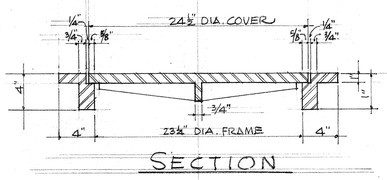
SCALE: 1/2" = 1'-0"



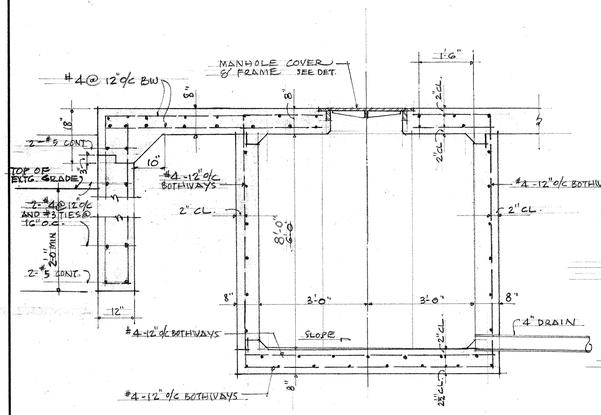
DETAIL OF PULL-IN IRON

SCALE: 3" = 1'-0"

(DIMENSIONS ARE APPROX. MEASUREMENTS.)



SECTION

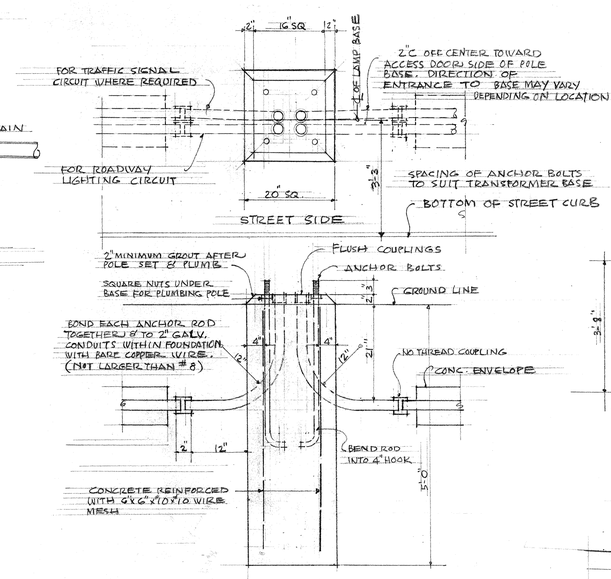


SECTION

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

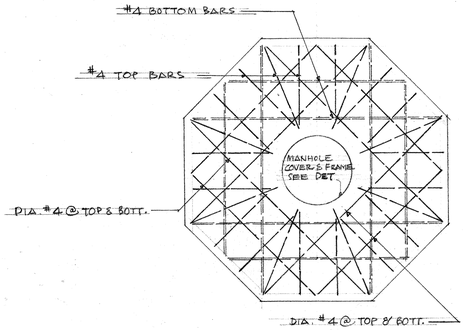
MANHOLE FRAME & COVER DETAILS

SCALE: 1½" = 1'-0"



CONCRETE FOUNDATION FOR LAMP POST

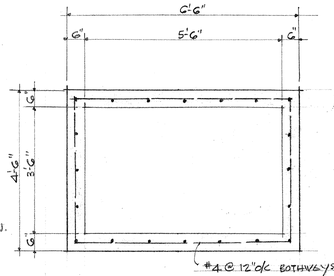
SCALE 3/4" = 1'-0" (FOR FOUNDATION ON BRIDGE, SEE BRIDGE #3 SHEET 11.)



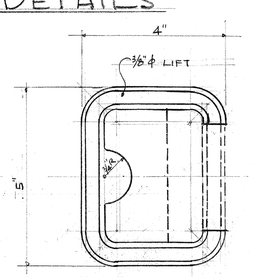
TOP SLAB REINFORCING

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

MANHOLE DETAILS

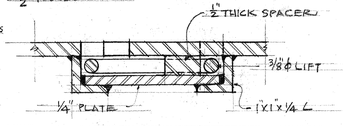


PLAN

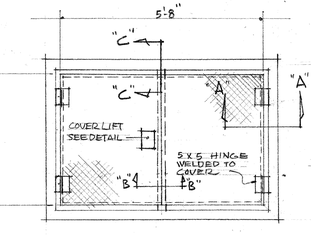


HANDHOLE COVER LIFT PLAN

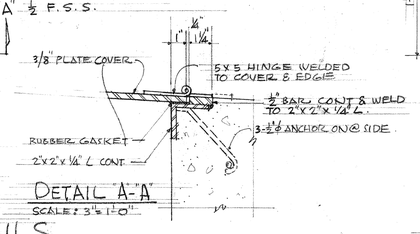
½ F.S.S.



HANDHOLE COVER LIFT SECTION



COVER PLAN

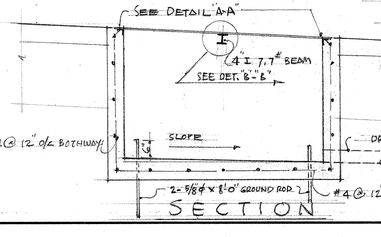


DETAIL A-"A"

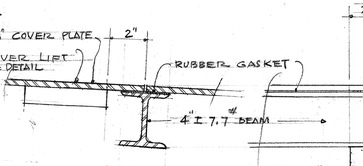
SCALE: 3" = 1'-0"

HANDHOLE DETAILS

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

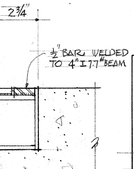


SECTION

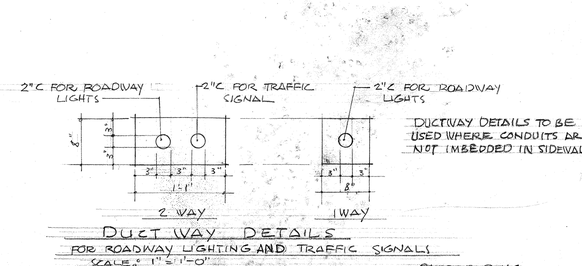


DETAIL "B"-"B"

SCALE: 3" = 1'-0"



DETAIL "C"-"C"

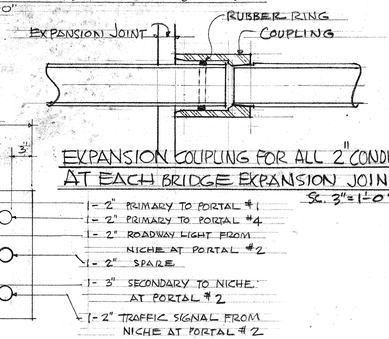


DUCTWAY DETAILS TO BE USED WHERE CONDUITS ARE NOT EMBEDDED IN SIDEWALK.

DUCT WAY DETAILS

FOR ROADWAY LIGHTING AND TRAFFIC SIGNALS

SCALE: 1" = 1'-0"



EXPANSION COUPLING FOR ALL 2" CONDUITS AT EACH BRIDGE EXPANSION JOINT

Sc. 3"=1'-0"

1- 2" PRIMARY TO PORTAL #1
1- 2" PRIMARY TO PORTAL #4
1- 2" ROADWAY LIGHT FROM NICHE AT PORTAL #2
1- 2" SPARE
1- 3" SECONDARY TO NICHE AT PORTAL #2
1- 2" TRAFFIC SIGNAL FROM NICHE AT PORTAL #2

DUCTWAY DETAIL. ⊕ FROM MANHOLE

SCALE: 1"=1'-0"

ORIGINAL PLAN	NOTE BOOK	DATE
SURVEY PLOTTED BY:		
DESIGNED BY:		
DRAWN BY:		
TRACED BY:		
QUANTITIES BY:		
QUANTITIES CHECKED BY:		
CHECKED BY:		

TERRITORIAL HIGHWAY DEPARTMENT

TERRITORY OF HAWAII

ELECTRICAL

MISC. ELECTRICAL DETAILS

NUUANU PALI TUNNELS

PALI ROAD

PROJ. NO. S 216(5)

SCALES: AS NOTED DATE: AUG. 27, 1954

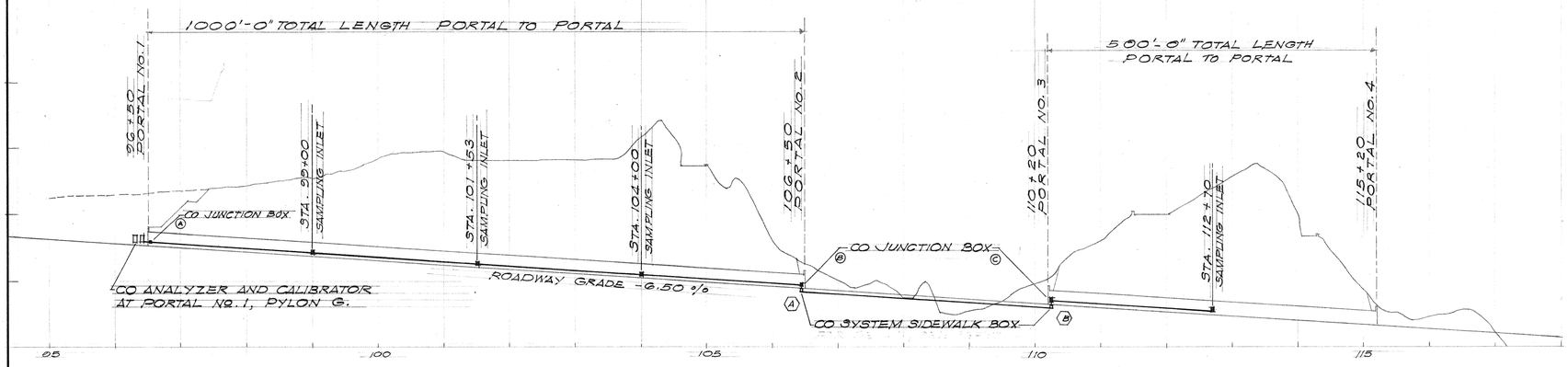
JAMES J OBERHAUSEN
ELECTRICAL ENGINEER

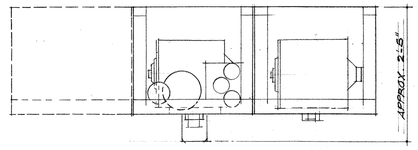
SHEET No. 8 OF 9 SHEETS

570S.50

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	S 216 (5)	1954	51	112

Dec. 3, 1954

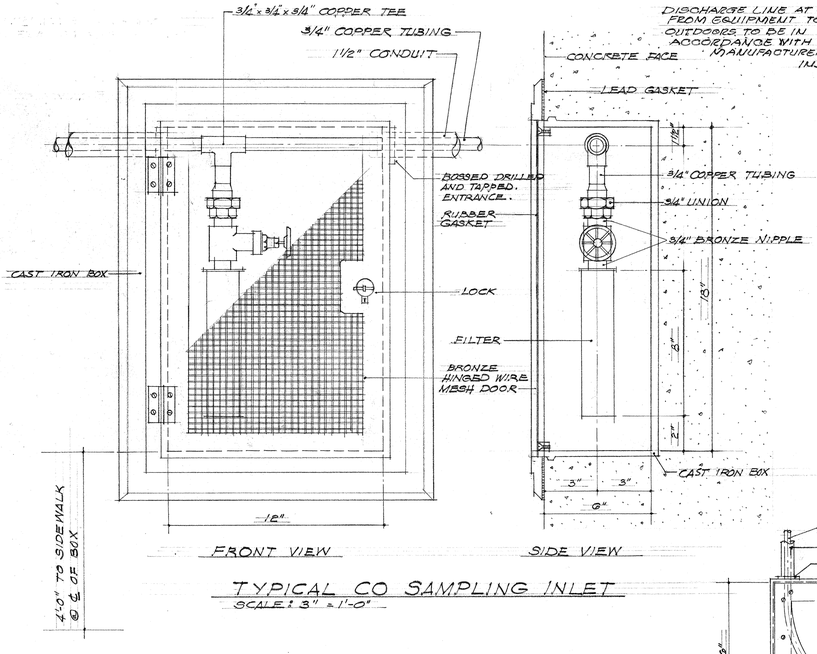




PLAN

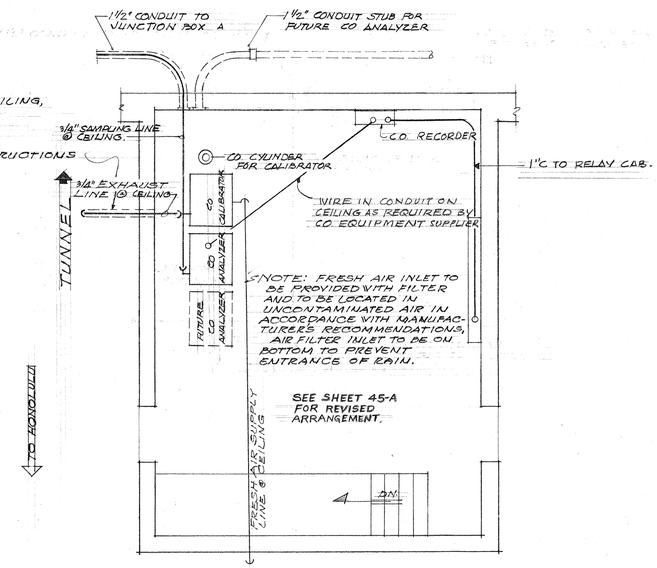
TUNNEL NO. 1 — SECTION ALONG ℄ — TUNNEL NO. 2

SHOWING CO SAMPLING SYSTEM & SAMPLING INLET LOCATIONS

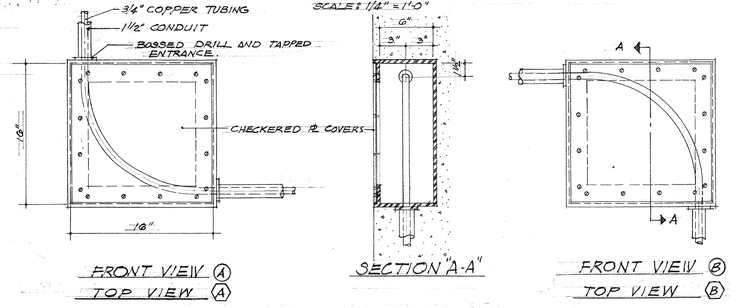


FRONT VIEW — SIDE VIEW

TYPICAL CO SAMPLING INLET
SCALE: 3" = 1'-0"

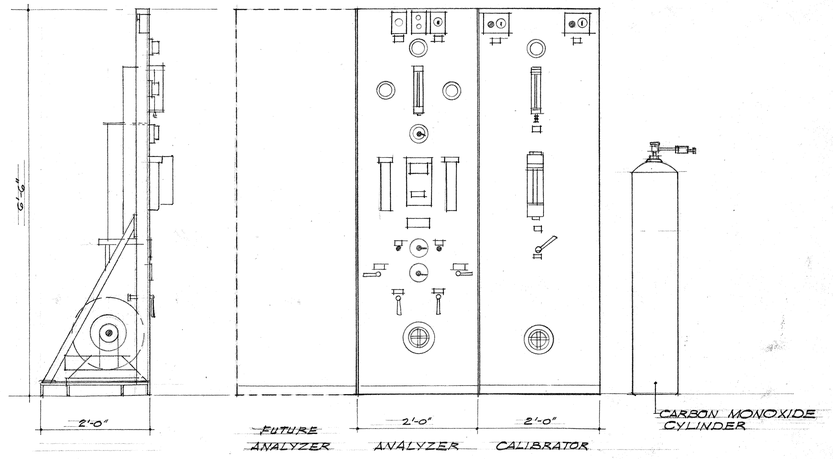


EQUIPMENT LAYOUT
PORTAL NO. 1 - PYLON G
SCALE: 1/4" = 1'-0"



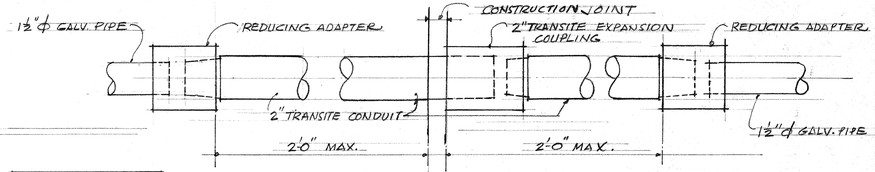
FRONT VIEW (A)
TOP VIEW (A)
SECTION "A-A"
FRONT VIEW (B)
TOP VIEW (B)

TYPICAL JUNCTION BOX
SCALE: 1 1/2" = 1'-0"

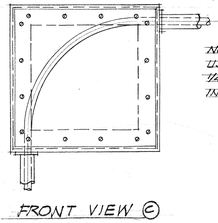


END VIEW — FRONT ELEVATION

TYPICAL CO ANALYZER & CALIBRATOR ASSEMBLY
SCALE: 3/4" = 1'-0"



EXPANSION COUPLING AT EACH TUNNEL CONSTRUCTION JOINT & BRIDGE EXPANSION JOINT
SCALE: 3" = 1'-0"



FRONT VIEW (C)

NOTE: WHERE JUNCTION BOX IS USED AS SIDEWALK BOX, DRILL 1/4" WEEPHOLE IN LOWEST CORNER INTO BOX DRAIN UNDER SIDEWALK.

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

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
ELECTRICAL
CARBON MONOXIDE SAMPLING
NUUANU PALI TUNNELS
PALI ROAD
PROJ. NO. S 216 (5)
SCALES: AS NOTED DATE: AUG. 27, 1954

JAMES J. OBERHAUSEN
ELECTRICAL ENGINEER

SHEET No. 51 OF 112 SHEETS

51 OS. 51