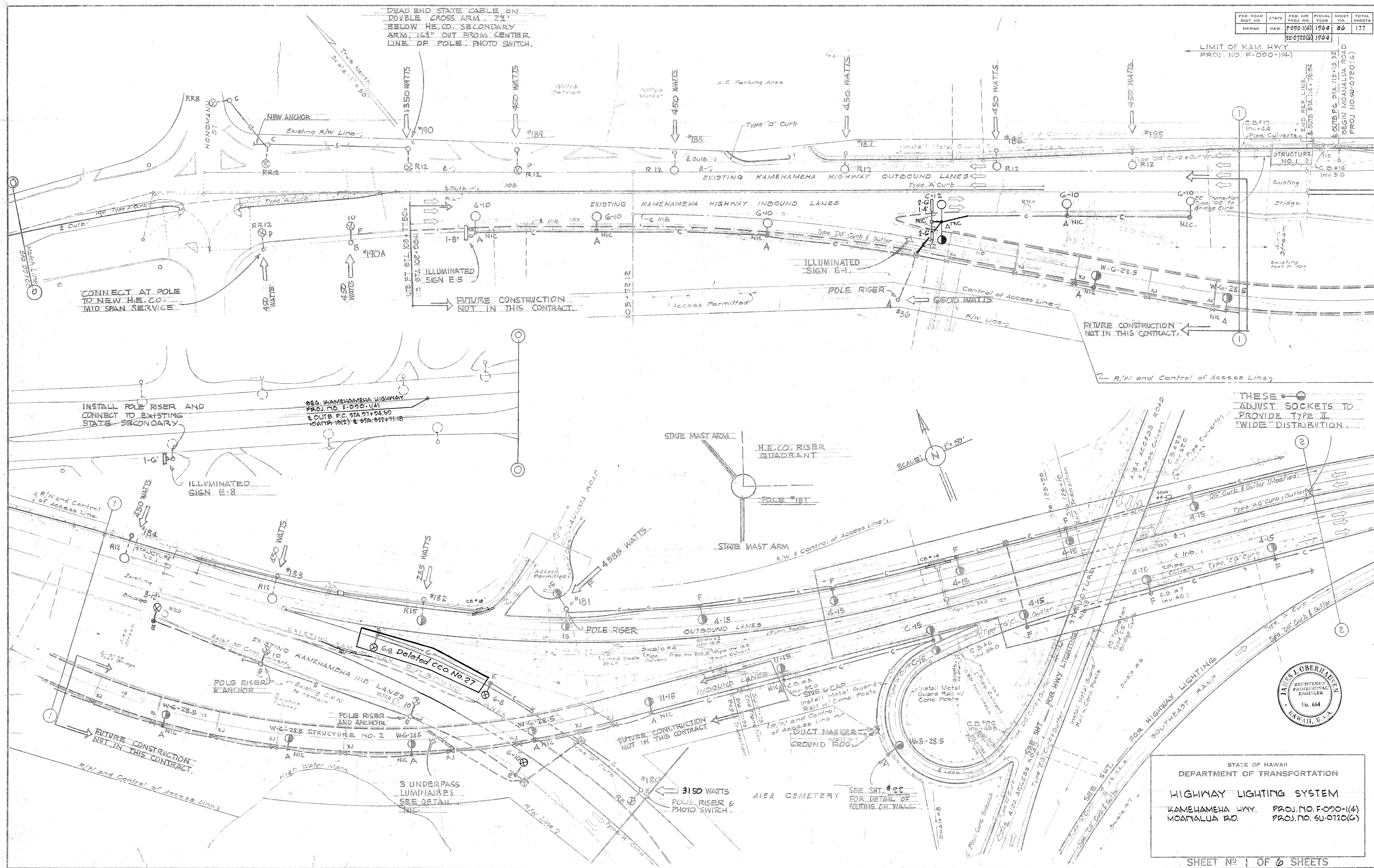


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEET
HAWAII	HAW.	F-090-1(4)	1964	86	177
		CU-090-1(6)	1964		



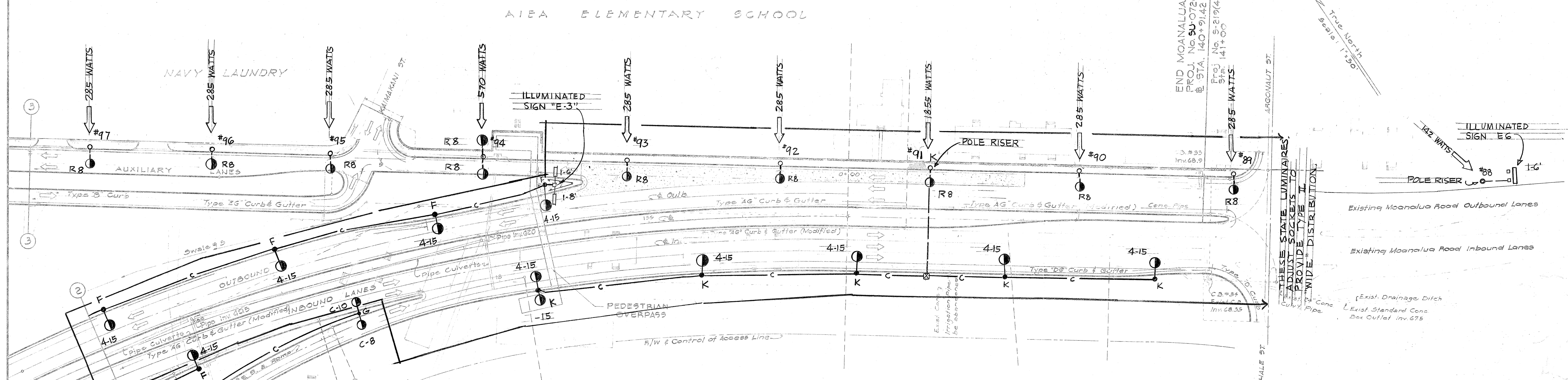
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION

HIGHWAY LIGHTING SYSTEM

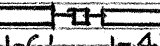
ZAMEHAMEHA HWY. PROJ. NO. F-020-(14)
MOANALUA RD. PROJ. NO. SU-0720(G)

SHEET No 1 OF 6 SHEETS

§ 6



S Y M B O L S

- | | |
|---|---|
|  | ILLUMINATED SIGN, 1-6' AND 1-4' INDICATES 1-6' SIGN LUMINAIRE AND 1-4' SIGN LUMINAIRE. WITH PHOTO CELL EXCEPT AS NOTED. |
|  | MULTIPLE CIRCUIT UNDERGROUND CABLE - DIRECT BURIED 3 CONDUCTORS EXCEPT 2 CONDUCTORS TO LAST LIGHT. |
|  | MULTIPLE CIRCUIT UNDERGROUND CABLE IN 1 1/2" GALV. STEEL CONDUIT. 3 CONDUCTORS EXCEPT 2 CONDUCTORS TO LAST LIGHT. |
|  | SINGLE CIRCUIT OVERHEAD WIRE. |
|  | NEW GUY AND ANCHOR. |
|  | EXISTING MULTIPLE CIRCUIT OVERHEAD WIRE TO REMAIN. |
|  | EXPANSION COUPLING FOR CONDUIT IN CONSTRUCTION (EXPANSION) JOINT AT STRUCTURE. |
|  | DUCT MARKER |

- NEW STATE MAST ARM AND LUMINAIRE ON WOOD POLE (POLE INSTALLED BY OTHERS.). NUMERAL INDICATES MAST ARM LENGTH.
- NEW METAL LAMP POST AND LUMINAIRE. LETTER INDICATES H.E.CO. SERVICE CONNECTION CIRCUIT. 4-15 INDICATES FACE OF LAMP POST 4' BACK OF EDGE OF GUTTER OR FACE OF CURB WHERE THERE IS NO GUTTER, WITH 15' BRACKET AND WITH 30' NOMINAL LUMINAIRE MOUNTING HEIGHT.
- EXISTING STATE MAST ARM AND 20,000 LUMEN LUMINAIRE ON WOOD POLE.
R INDICATES RELOCATED MAST ARM.
RR INDICATES EXISTING MAST ARM TO REMAIN PLACE
B NUMERAL INDICATES MAST ARM LENGTH.
- ⊗
P RELOCATED OR REMOUNTED EXISTING 20,000 LUMEN LUMINAIRE WITHOUT PHOTO CELL (UNLESS OTHERWISE NOTED.)
P INDICATES WITH PHOTO CELL.
- NEW 11,000 LUMEN LUMINAIRE WITH PHOTO CELL UNLESS OTHERWISE NOTED, TYPE II DISTRIBUTION, 285 WATTS.
- NEW 20,000 LUMEN LUMINAIRE WITH PHOTO CELL UNLESS NOTED OTHERWISE, TYPE III DISTRIBUTION, 450 WATTS.

CIRCUITS F, K, H AND G CONTROLLED BY PHOTO
ELECTRIC RELAYS AT SOURCE OF POWER.

F →
4500 WATTS

H.E.CO. SERVICE POINT, LETTER IS SERVICE POINT DESIGNATION USED WHERE STATE CONNECTS MORE THAN ONE LIGHT. TOTAL WATTS IS INDICATED. CIRCUIT BREAKER REQUIRED. EXISTING PHOTO SWITCH RELOCATED TO THIS LOCATION WHERE INDICATED.

EXISTING STATE POLES AND CIRCUITS TO BE REMOVED ARE NOT SHOWN BUT MAY BE OBSERVED IN FIELD. SEE SPECIFICATIONS.

IN AREAS SUBJECT TO VEHICULAR TRAFFIC
CONDUIT SHALL BE CONCRETE ENCASED.
ALL CONDUIT UNDERGROUND SHALL HAVE
2 COATS OF BITUMASTIC PAINT.

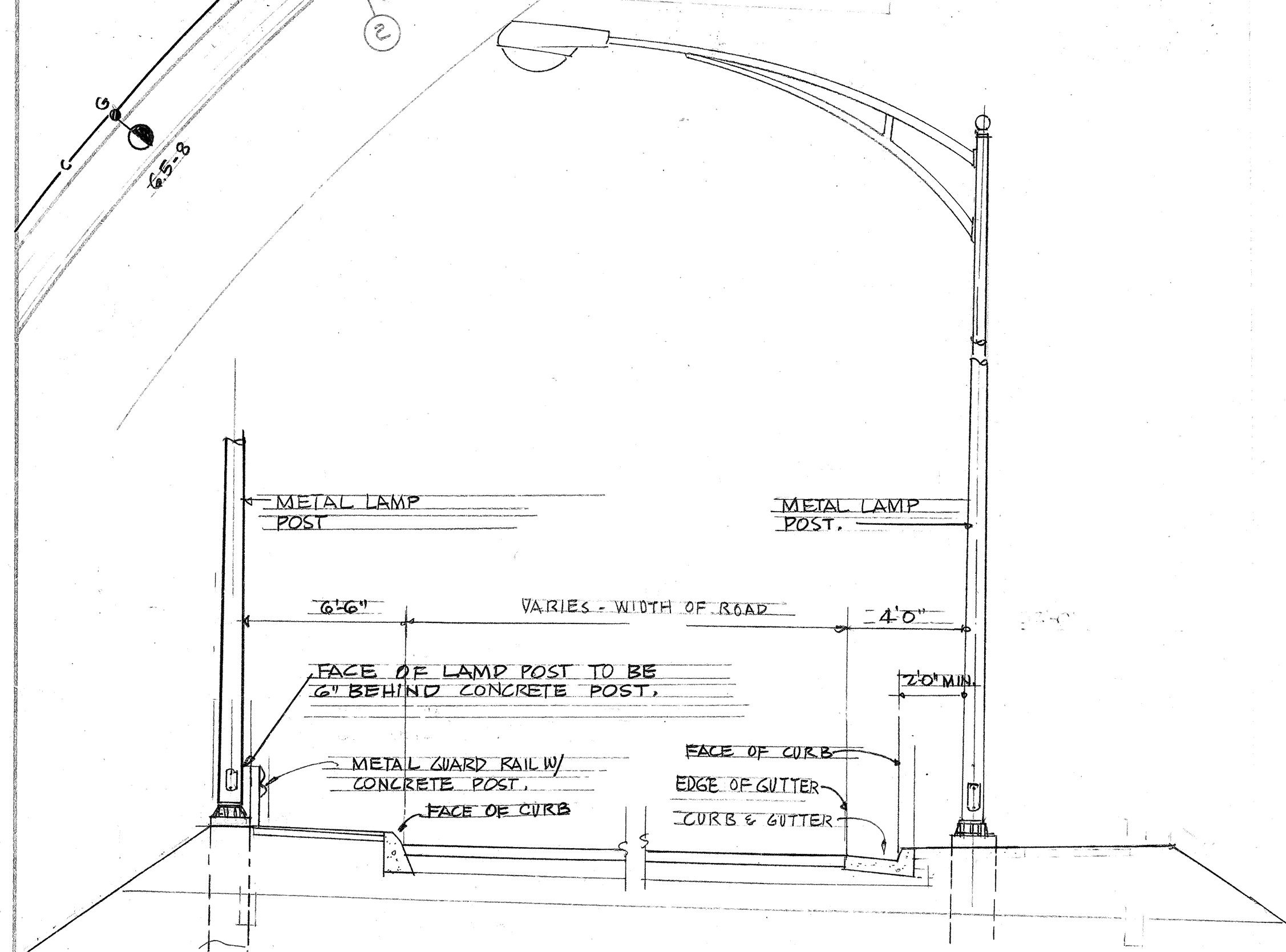
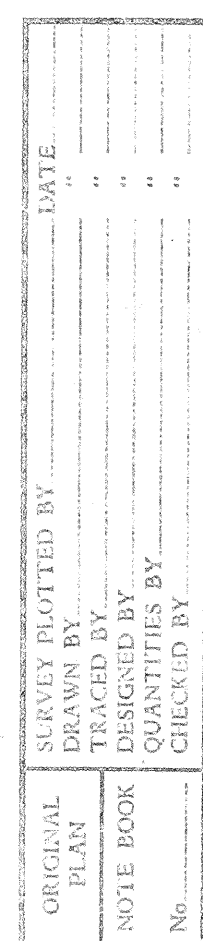
W-6-28.5 INDICATES LAMP POST FOUNDATION IS PART OF
STRUCTURE, WITH 6' BRACKET, AND WITH
28.5' NOMINAL HEIGHT FROM POLE BASE
TO LUMINAIRE CENTER

 INDICATES LAMPOST IS CENTERED IN MEDIAN
BETWEEN EDGES OF GUTTER OR CURBS.
WITH 10' BRACKET AND WITH 30' NOMINAL
LUMINAIRE MOUNTING HEIGHT.

N.I.C. NOT IN CONTRACT.

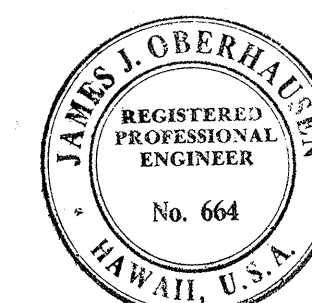
NOTE

All work on existing City and County Street lighting equipment and circuits will be done by the City and County Street Lighting Division. The Contractor shall notify the City and County Street Lighting Division at least one week prior to the date any work on the City and County System is required.



TYPICAL ROAD CROSS-SECTION

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

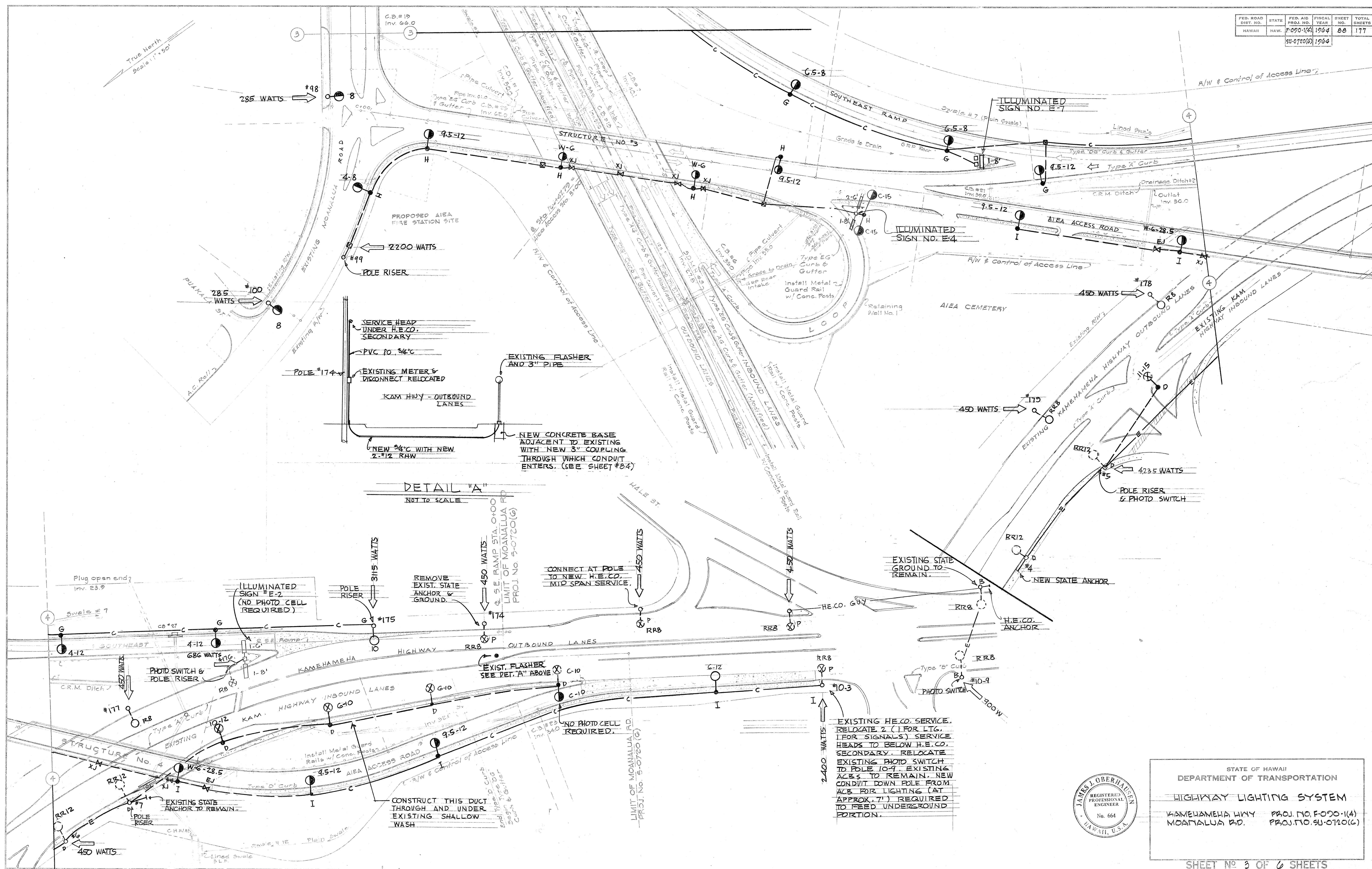


STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION

HIGHWAY LIGHTING SYSTEM
MOANALUA RD. PROJ. NO. SU-0720(6)

SHEET No 2 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEET
HAWAII	HAW.	F-090-1(4)	1964	88	177
		5U-0720(6)	1964		

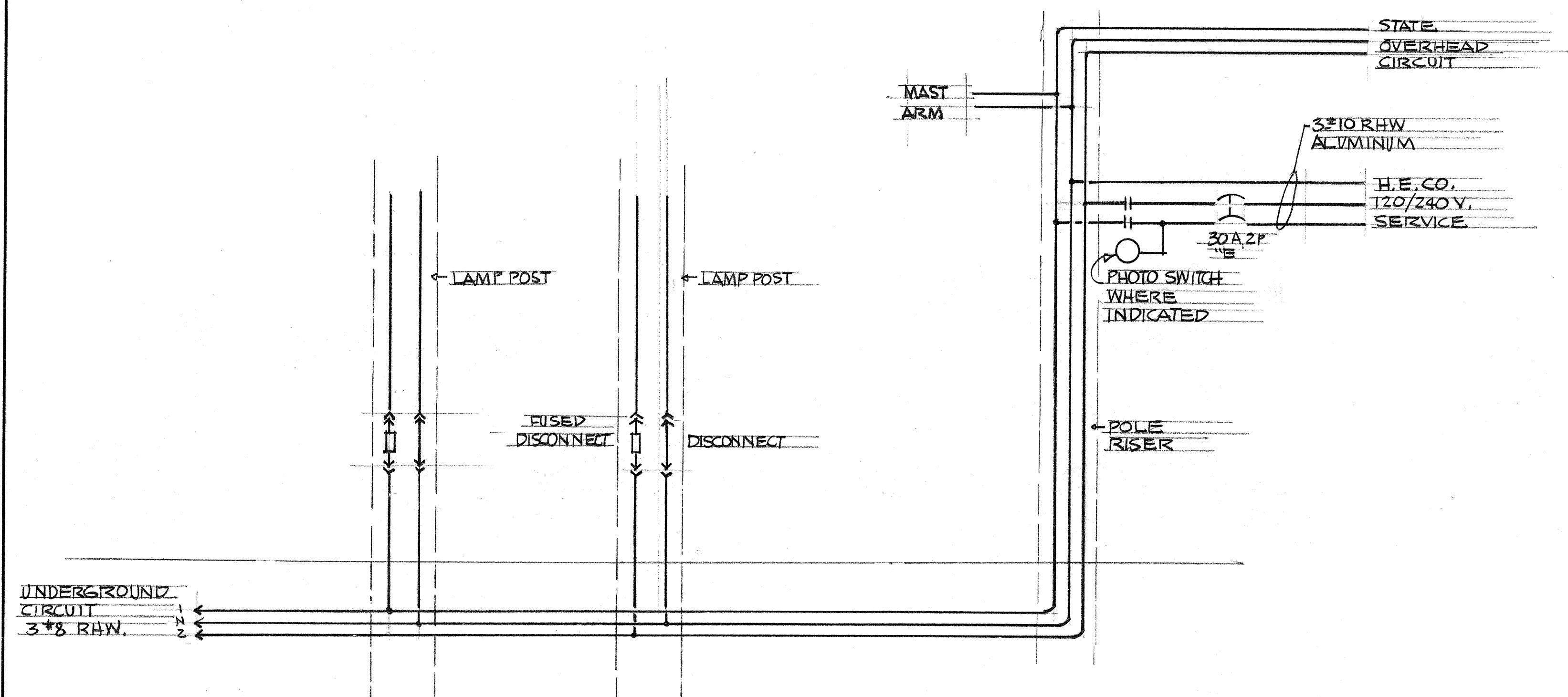


SHEET No 3 OF 6 SHEETS

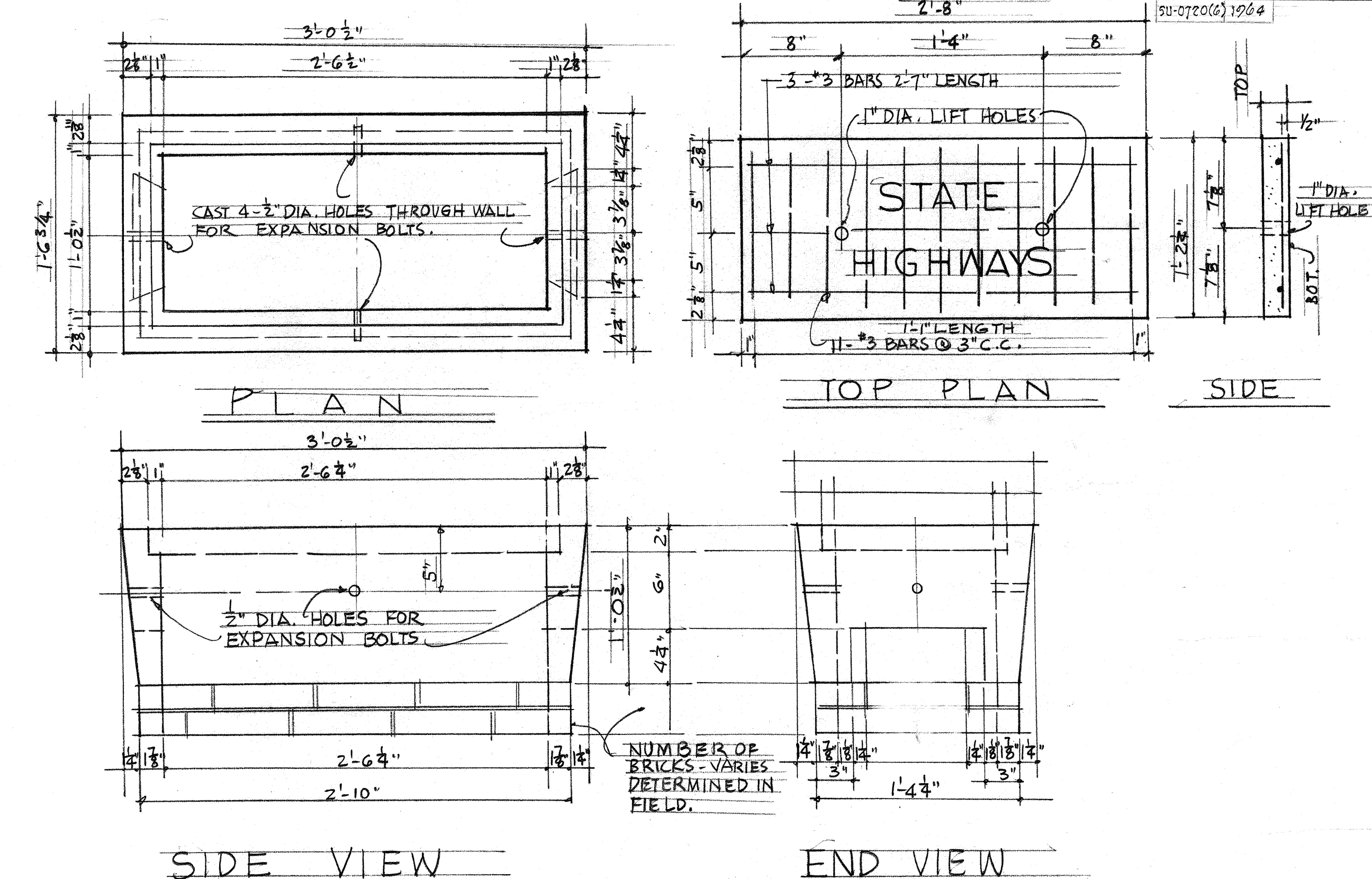
KAMEHAMEHA HWY PROJ. NO. F-090-1(4)
MOANALUA RD. PROJ. NO. SU-0720(6)



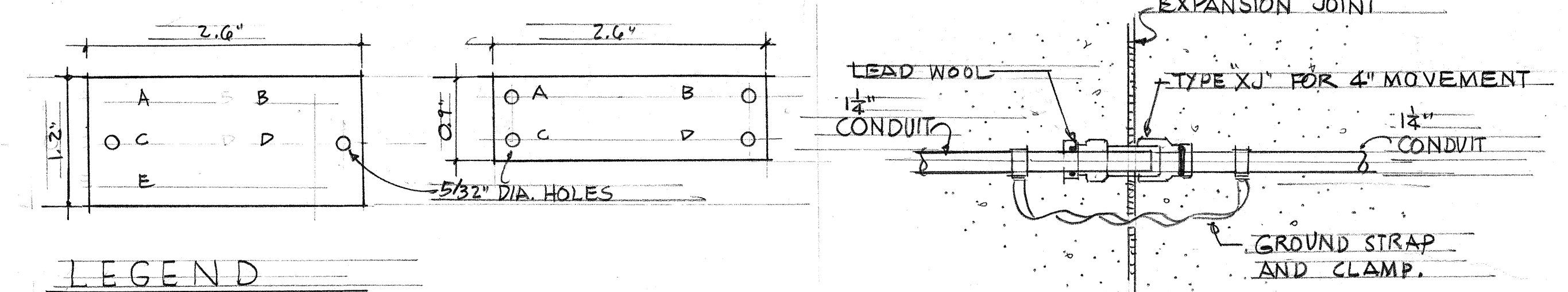
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-090-1(4)	1964	89	177



TYPICAL STREET LIGHTING CIRCUIT - ONE LINE DIAGRAM



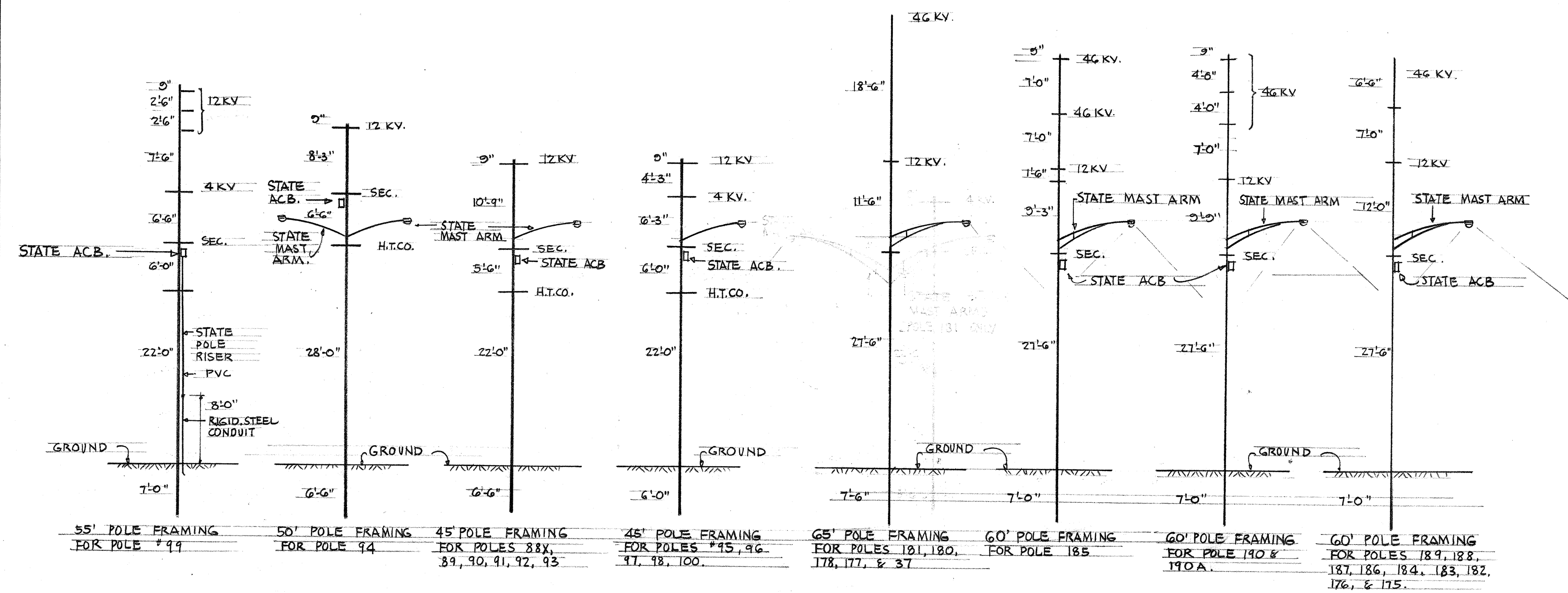
TYPICAL PULL BOX TYPE "C"
SCALE: 1/4" = 1'-0"



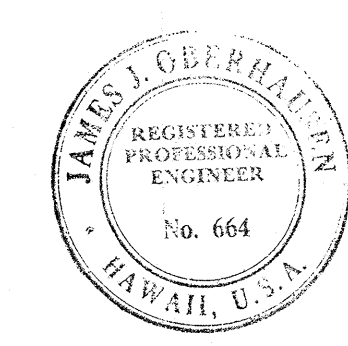
TYPE "XJ" EXPANSION JOINT
INSTALLED WITH GROUNDING
STRAP & CLAMP. *NOT TO SCALE*

- LEGEND**
- A = CONTRACT NUMBER, OBTAIN FROM STATE OR H.E.CO. LTD.
 - B = LIGHT NUMBER, FROM CONTRACT DRAWINGS, STATE OR H.E.CO.
 - C = LAMP DATA, SEE NOTE #5 BELOW.
 - D = REFRACTOR DATA, USE ROMAN NUMERAL "IES" TYPE AS INDICATED ON DRAWING OR IN SPECIFICATIONS I-V.
 - E = POST NUMBER, OBTAIN FROM STATE OR H.E.CO. LTD.
- NOTES:**
1. MAKE FROM LAMINATED "GRAVOFLEX" BLACK ON WHITE.
 2. ATTACH TO ALUMINUM POST WITH NO.7 ALUMINUM DRIVE SCREWS. ATTACH TO WOOD POLES WITH 4D ALUMINUM NAILS.
 3. ATTACH 8'-0" ABOVE CURB; IF NO CURB, 8'-0" ABOVE FINISH GRADE.
 4. LETTERS NO. 5 REDUCTION VS ENGRAVED OR STENCILED.
 5. ATTACH TO ALL POLES WITH STATE MULTIPLE SYSTEM LUMINAIRES LAMP DATA CODE. H 250 (250 WATT) OR H 400 (400 WATT) IF POST IS DOUBLE BRACKET CODE SHALL INDICATE NUMBER & TYPE OF LUMINAIRES. 2-H 250 (TWO 250 WATT) OR 2-H 400 (TWO 400 WATT).
 6. FOR NOMENCLATURE OF TAGS AT ILLUMINATED SIGNS, SEE H.E.CO.

MULTIPLE STREET LIGHTING
IDENTIFICATION TAG.



SURVEY PLOTTED BY	DATE
DESIGNED BY	
TRACED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	

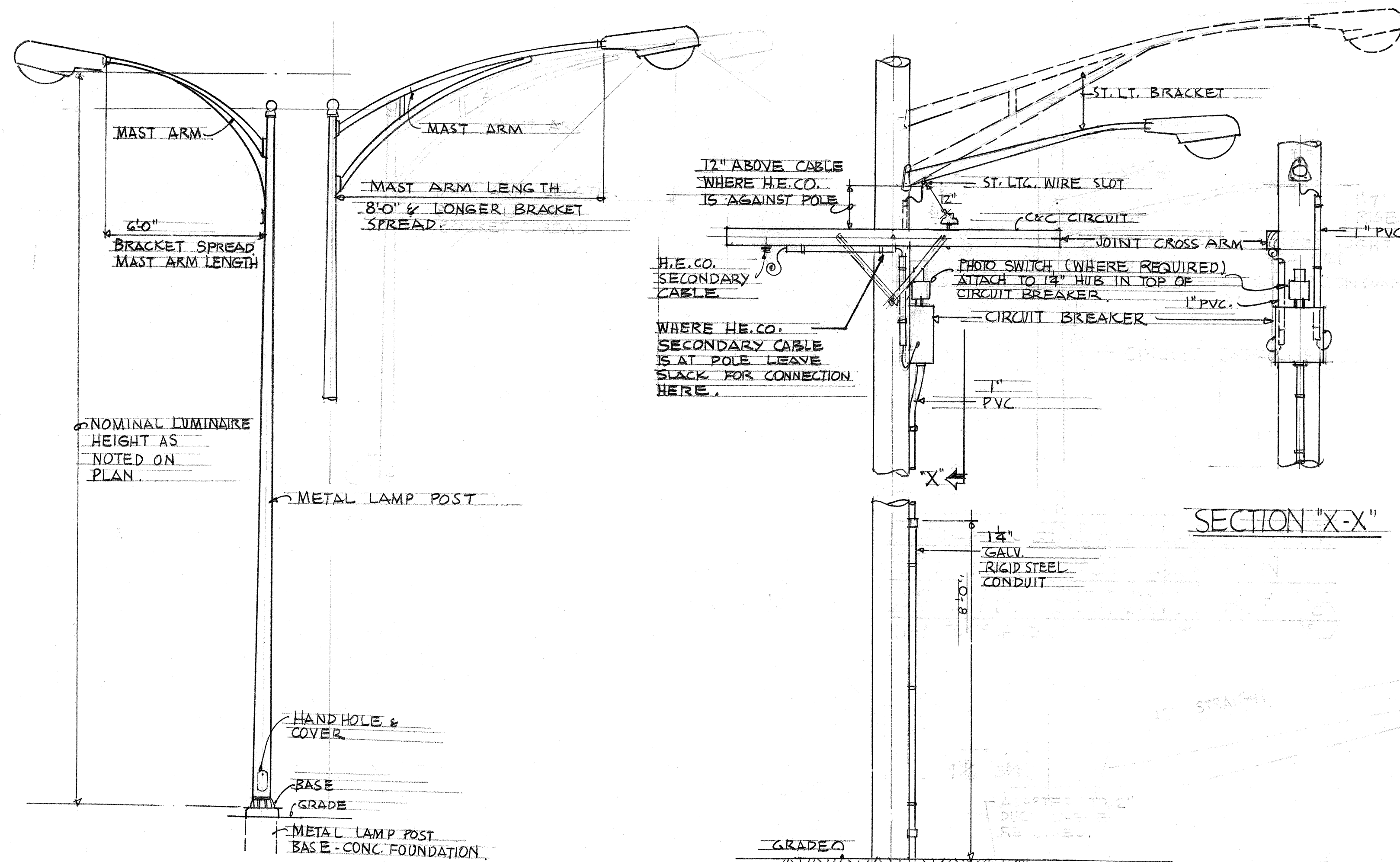


STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**SPECIAL DETAILS
HIGHWAY LIGHTING SYSTEM**

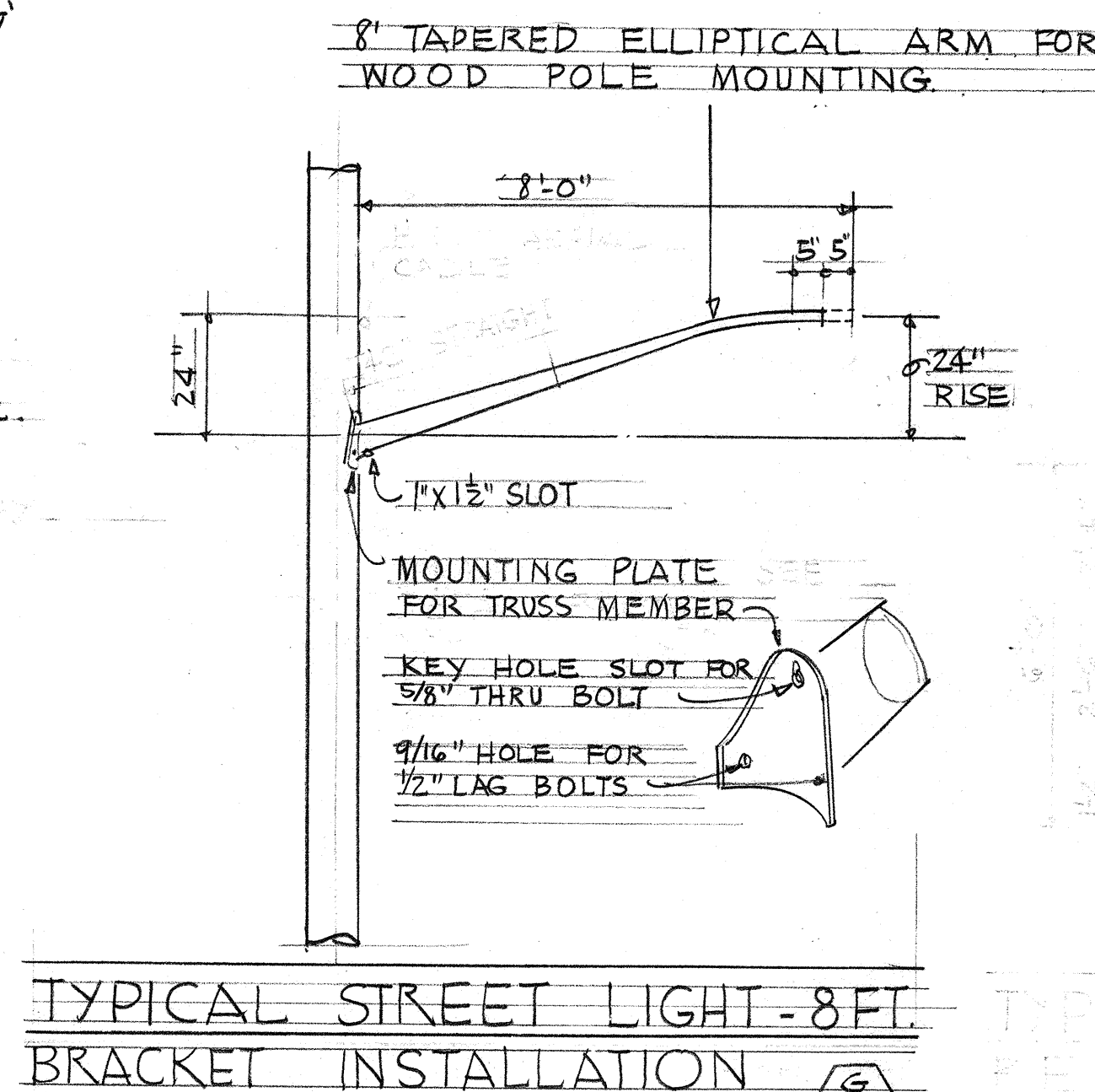
KAMEHAMEHA HWY. PROJ. NO. F-090-1(4)
MOANALUA RD. PROJ. NO. SU-0720(6)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-090-1(4)	1964	90	177
SU-0720(6), 1964					

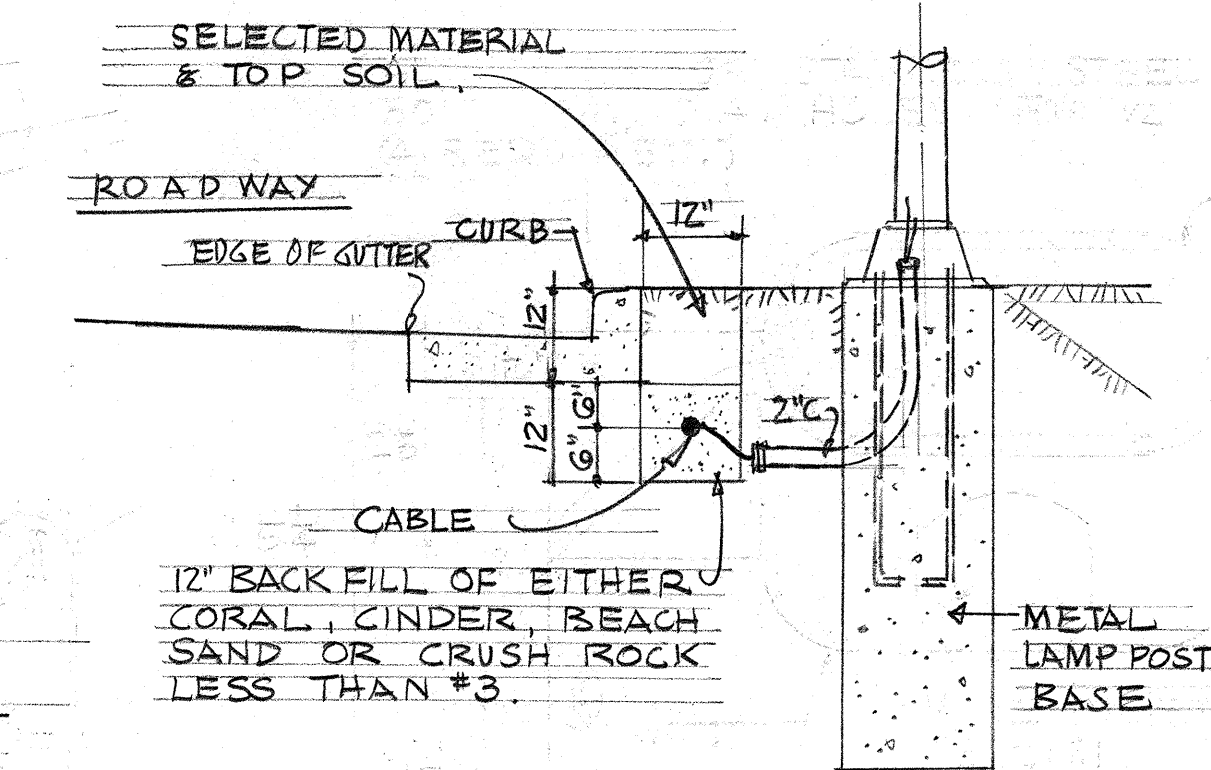


TYPICAL STREET LIGHTING
METAL LAMP POST
NOT TO SCALE

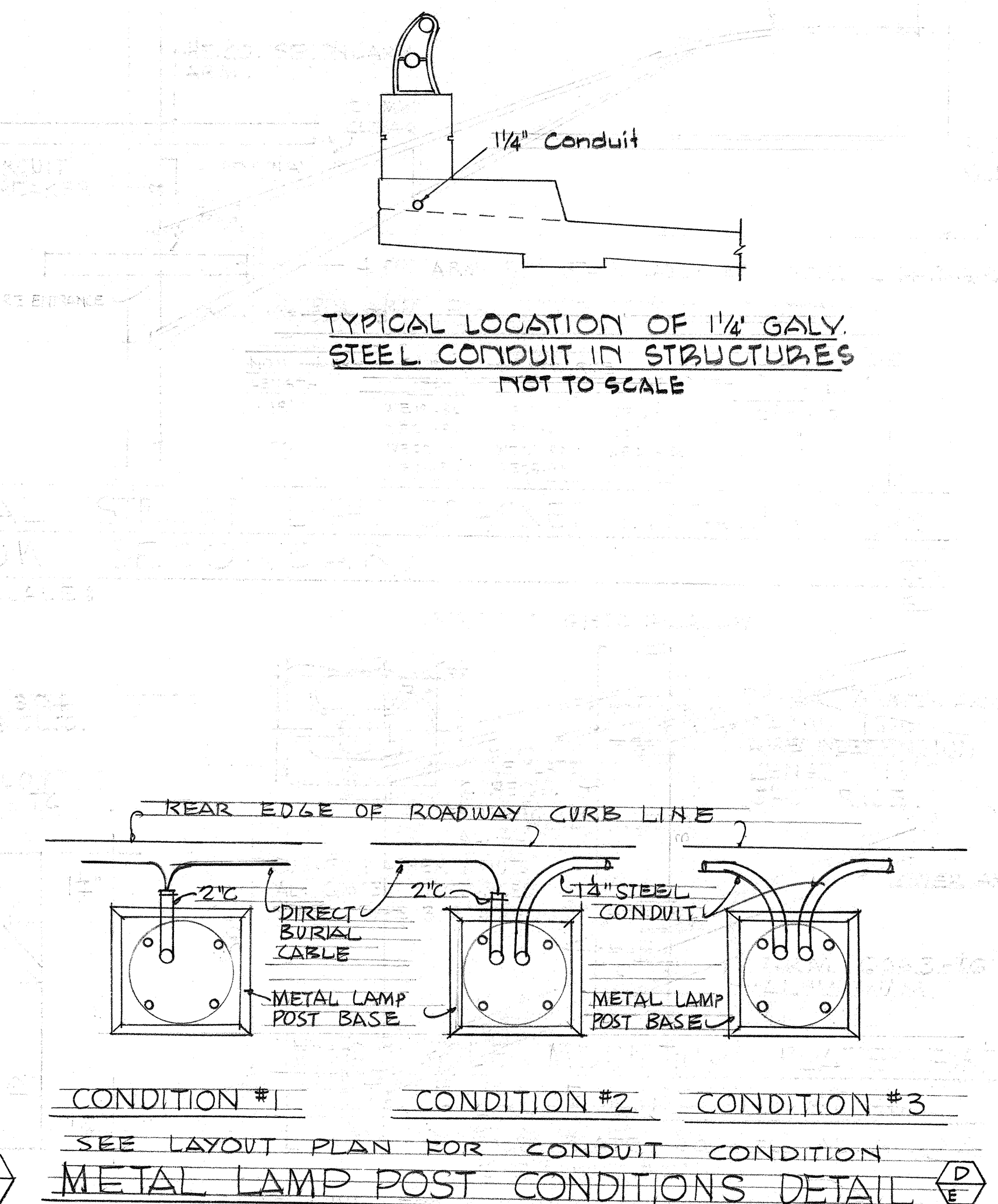
TYPICAL LOCATION OF STATE EQUIP.
ON WOOD POLE.
NOT TO SCALE



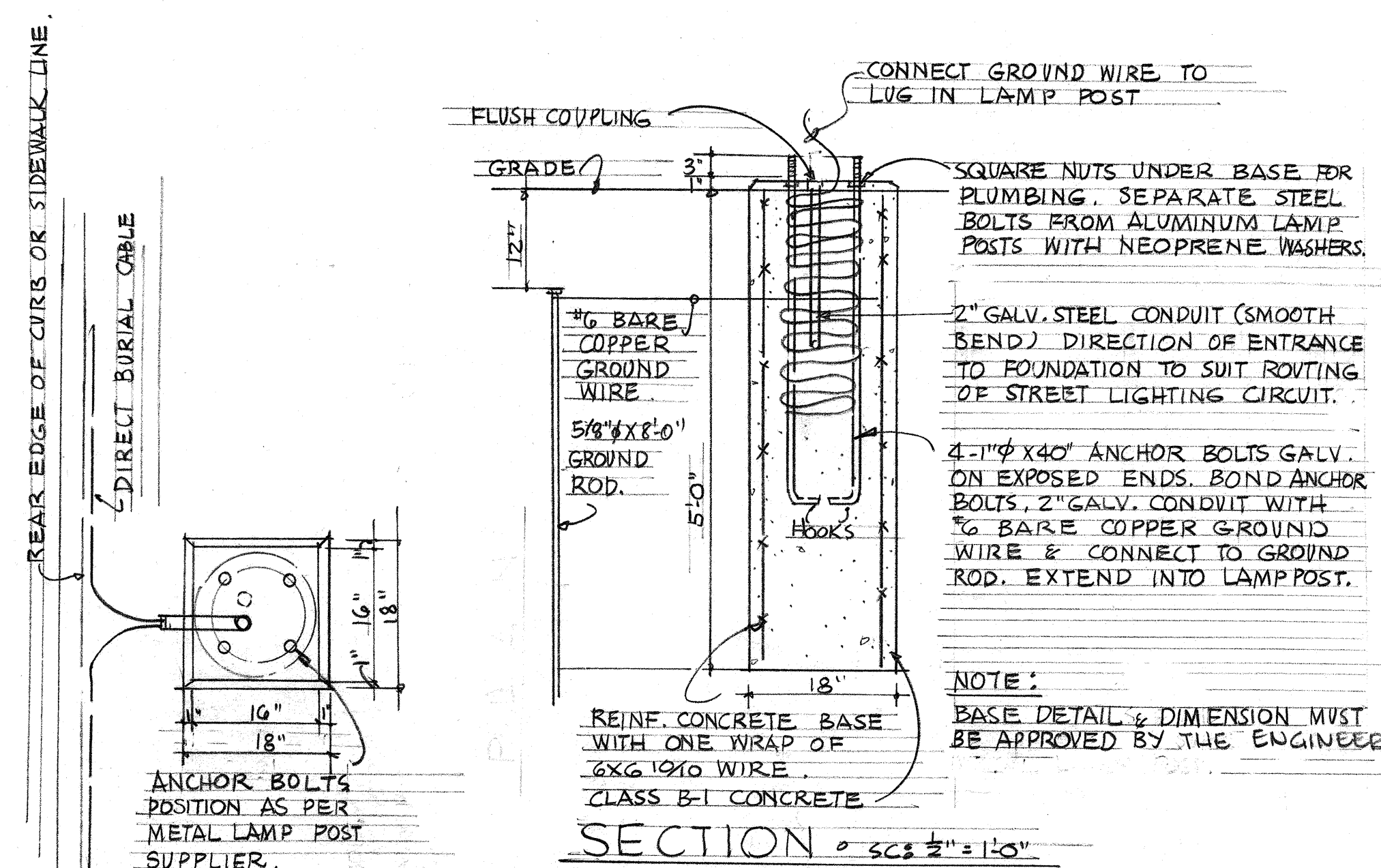
TYPICAL STREET LIGHT-8FT
BRACKET INSTALLATION



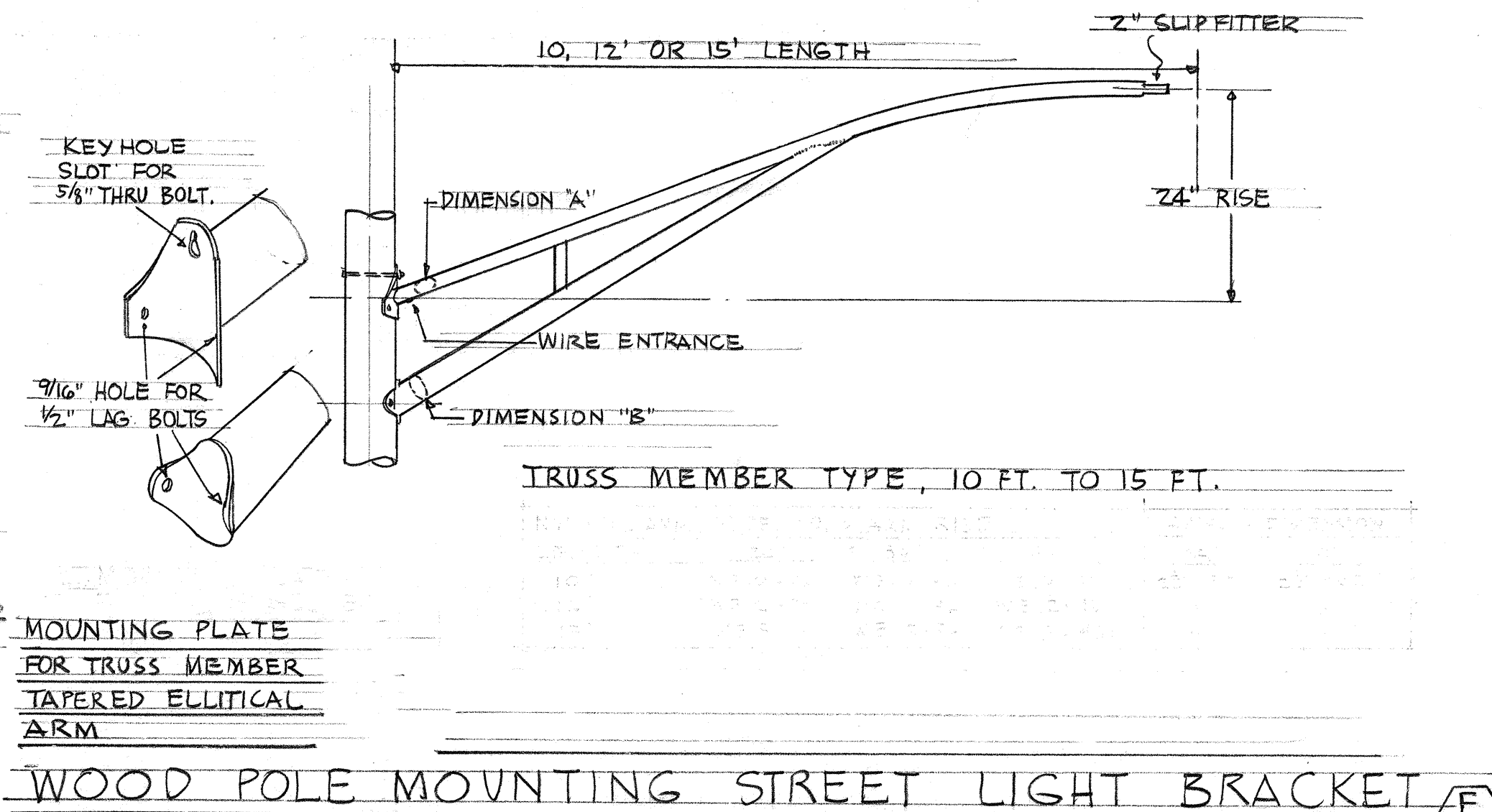
DIRECT BURIAL CABLE DET.
SCALE: 1/2" = 1'-0"



CONDITION #1 CONDITION #2 CONDITION #3
SEE LAYOUT PLAN FOR CONDUIT CONDITION
METAL LAMP POST CONDITIONS DETAIL



SECTION "X-X"
TYPICAL LAMP POST BASE



WOOD POLE MOUNTING STREET LIGHT BRACKET

DESIGNED BY	DATE
DRAWN BY	" "
CHECKED BY	" "
NOTED BY	" "
QUANTITIES BY	" "
CHECKED BY	" "
ORIGINAL PLAN	" "
NOTE BOOK	" "
No.	" "



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SPECIAL DETAILS
HIGHWAY LIGHTING SYSTEM
KAMEHAMEHA HWY. PROJ. NO. F-090-1(4)
MOANALUA R.D. PROJ. NO. SU-0720(6)

Technical drawing showing the underpass lighting at Bridge Structure #2. The drawing includes a plan view (top left) and a section view (bottom right).

Plan View (Top Left):

- BRIDGE STRUCTURE #2
- CONCRETE BEAM
- COLUMN
- UNDERPASS LIGHTING LUMINAIRE
- JB. RECESSED & EXTENSION BOX
- 3/4" CONDUIT TO PULL BOX

Section View (Bottom Right):

- STRUCTURE #2 ROADWAY
- STIFFENER
- BUILT UP GIRDER
- CONCRETE BEAM
- 3/4" CONDUIT STRAPPED
- 3/4" CONDUIT IN COLUMN
- UNDERPASS LIGHTING LUMINAIRE & SKIMLINE FLUORESCENT LAMP
- 18" DIA. HOLE FOR 3/4" CONDUIT
- ADJUSTABLE SUPPORT
- WALL
- 3/4" CONDUIT TO PULL BOX
- CONCRETE BEAM
- JB. EXTENSION
- 3/4" IN COLUMN

Details (Bottom Left):

- DOWN GUY HOOK GALV.
- THRU BOLT GALV.
- SPAN GUY HOOK GALV.
- PREFORMED GUY GRIP STEEL
- PREFORMED MESSENGER GRIP ALUMINUM ALLOY
- ANCHOR GUY WIRE 2000* MIN. BREAKING STRENGTH
- ANCHOR GUY ASSEMBLY

Section A-A (Bottom Right):

BRIDGE STRUCTURE #2

SECTION "A-A"

Notes:

- TYPICAL LOCATION OF 12" CONDUIT IN STRUCTURES
- SCALE: 1" = 1'-0"
- DIA. OF HOLE TO BE THE SIZE TO ADMIT 18" DIA.

Project Information (Top Right):

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR
HAWAII	HAW.	F-090-1(4)	1966

50-0720(6), 1966

SCALE: 1" = 1'-0"



NOT TO SCALE:



NOT TO SCALE



NOT TO SCALE:



SHEET No. 6 OF 6 SHEETS