LIGHT STANDARD SCHEDULE								
POLE NUMBER	APPROXIMATE STATION (2)	LIGHT NUMBER	BRACKET ARM LENGTH	BASE ANCHOR			REMARKS	
1	40+93H	1	10'		• 4	#	250W HPS, TYPE II	
2	41+03W	2	10'		• 4	i g	250W HPS, TYPE II	
.3	42+34H	3	10'		• 4	77. 4°	250W HPS, TYPE II	
4	42+43W	4	10'		• 4	٠	250W HPS, TYPE II	
5	43+75H	5	10'		• 4	p.p. va	250W HPS, TYPE II	
6	43+84W	6	10'		• 4		250W HPS, TYPE II	
7	45+11H	7	10'		• 4		250W HPS, TYPE II	
8	45+22W	8	10'		• 4	۰ .	250W HPS, TYPE II	
9	46+53H	9	10'		• 4	^ '	250W HPS, TYPE II	
10	46+65W	10	10'		• 4	A	250W HPS, TYPE II	
11	47+72H	11	10'	. ,	• 4	,	250W HPS, TYPE II	
12	48+07W	12	10'		• 4		250W HPS, TYPE II	
13	49+35H	13	10'		• 4	p.	250W HPS, TYPE II	
14	49+47W	14	10'		• 4		250W HPS, TYPE II	
15	50+75H	15	10'		• 4	p = -	250W HPS, TYPE II	
16	50+86W	16	10'		• 4	e	250W HPS, TYPE II	
17	52+07H	17	10'		• 4		250W HPS, TYPE II	
18	52+26W	18	10'		• 4		250W HPS, TYPE II	
19	53+41H	19	10'		• 4.	* ·	250W HPS, TYPE II	
20	53+67W	20	10'		• 4	r	250W HPS, TYPE II	
21	54+80H	21	10'		• 4		250W HPS, TYPE II	
22	59+55H	22	10'		• 4	* * * A-	250W HPS, TYPE III 5	
23	59+30W	23	10'	• 4			250W HPS, TYPE III, LOCATE POLE ON 5	
24	60+40H	24	10'		• 4	A	250W HPS, TYPE III 6	
25	60+07W	25	10'	• 4			250W HPS, TYPE III, (3) (6)	
26	61+27H	26	10'		• 4	^ ^	250W HPS, TYPE III 7	
27	60+86W	27	10'	• 4		2 8	250W HPS, TYPE III, (3) (7)	
28	62+08H	28	10'		• 4	n + 797	250W HPS, TYPE III 8	
29	61+62W	29	10'	• 4		r +	250W HPS, TYPE III, (3) (8)	
30	62+42W	30	10'	• 4		A A AP.	250W HPS, TYPE III, (3) (9)	
31	62+96H	31	10'		• 4	· 6 .70	250W HPS, TYPE III 9	
32	63+20W	32	10'	• 4		* * 45	250W HPS, TYPE III, (3) (10)	
33	63+80H	33	10'	• 4		The second secon	250W HPS, TYPE III 10	
34	64+38W	34	10'	• 4			250W HPS, TYPE III, (3) (1)	
35	64+65H	35	10'	• 4		4 14 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	250W HPS, TYPE III, (3) (1)	

<u>P</u> .	ANE	<u>"</u>	<u>'K"</u>	• ;	120/240 VOLTS, 1 F 2P100A. MAIN BREA SURFACE MOUNTED 10,000 MIN. AIC.		3 WSN		
CKT.	CKT. BKR.			USE	10,000 MIN. AIO.	CONN LOAD (KVA)		WIRE	GND
No.	POLE	AMPS		OOL		A	В	SIZE	SIZI
1	2	30	HIGHWAY LIGHTS			1.0	1.0	4	
2	2	30	HIGHWAY LIGHTS			0.9	0.9	4	
3	2	30	HIGHWAY LIGHTS			0.9	0.9	4	
4	2	30	HIGHWAY LIGHTS			0.9	0.9	4	
5	2	30	HIGHWAY LIGHTS	(12)		1.2	1.2	4	
6	2	30	HIGHWAY LIGHTS	(12) (12)		1.2	1.2	4	
7	2	20	TIME SWITCH			0.1	0.1	12	-
8	2	ş <b>—————</b>	PFB			****			-
9	1	4000 comp	PFB			-		emple duran	***************************************
10	1	***************************************	PFB			***************************************			
11	1		PFB				-	quent contro	
12	1	-	PFB	\$ ·					
13	1	•	PFB .					term com	,
14	1		PFB		```	*****		CONTROL CARDINO	****
15	1		PFB				-	entero mietro	*****
16	1		PFB			-	••••		
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39			,						
40	***************************************								
41									
42									
1 4									
			TOTAL LOAD/PH	ASE		6.2	6.2		
			TOTAL LOAD			12.4 k			
, ,			DEMAND FACTOR	· · · · · · · · · · · · · · · · · · ·	,	1.0			
			DEMAND LOAD			12.4 k	(VA		
			DEMAND AMPS			52 A			

FED. ROAD DIST. NO. STATE		FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	99C-01-92	1992	6	10

#### NOTES:

- 1) POLE NUMBERS ARE FOR REFERENCE ONLY.
- (2) H = HONOLULU BOUND LANES. W = WAHIAWA BOUND LANES.
- 3 LOCATE POLE ON HOUSE SIDE OF SIDEWALK.
- 4 CONCRETE BASE DETAIL "A".
- 5 DEDUCTIVE #7
- 6 DEDUCTIVE #6
- 7 DEDUCTIVE #5
- 8 DEDUCTIVE #4
- 9 DEDUCTIVE #3
- 10 DEDUCTIVE #2
- 11) DEDUCTIVE #1
- 12 SHOULD ALL 7 DEDUCTIVE ITEMS BE ELIMINATED FROM THE PROJECT, THE CIRCUIT BREAKERS AT CIRCUIT #5 & #6 SHALL BE INSTALLED AS SPARE BREAKERS.



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. By Lennor K M shumine

Its PROJECT ENGINEER
Date DEC 9, 1991

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

## LIGHT STANDARD SCHEDULE,

PANEL SCHEDULE

KAMEHAMEHA HIGHWAY — INSTALLATION OF HIGHWAY LIGHTS

MEHEULA PARKWAY TO KIPAPA STREET

PROJECT NO. 99C-01-92

SCALE: NO SCALE

SHEET No. 6 OF 10 SHEETS

6

FED. ROAD DIST. NO. STATE		FED. AID	FISCAL	SHEET	TOTAL	
		PROJ. NO.	YEAR	NO.	SHEETS	
HAWAII	HAW.	99C-01-92	1992	7	10	

INTO THE PULLBOX, TYPICAL.

- SYMMETRICAL ∕NEW 4" THICK A.C. PAVEMENT MIX ∑ FINISHED OVERCUT GRADE-- TACK COAT -EXISTING PAVEMENT -EXISTING BASE COURSE SAWCUT - NEW 7-1/2" PLANT MIX A.C. BASE COURSE - COMPACTED BACKFILL -3" CONC. JACKET ALL AROUND 3000 PSI IN 28 DAYS RACEWAYS-

VARIES (TO BE DETERMINED IN THE FIELD)

CLASS A CONC. -

NOTE: STEEL RIM SHALL BE WELDED TO BOTTOM OF STEEL COVER IF NECESSARY SO THAT TOP OF COVER AND FRAME ARE FLUSH 1'-8" 2-1/8"-1'-7-3/4" 1-3/8"-√4-3" DIA. HOLES - CAST IRON OR 3/8" ROLLED STEEL PLATE WITH NON-SLIP ABRASIVE SURFACING. CAST IRON FRAME 2-1/8" PLAN PLAN OF COVER 2'-4" 1'-7" 1-3/8" COVER - DUCTS ENTERING PULLBOX SHALL PROTRUDE 3" TO 6"

TYPE "B" PULLBOX

BRICKS WITH MORTAR.

MORTAR BETWEEN ALL CONTACT SURFACES —

-8"X8"X8" COARSE
AGGREGATE NO. 67 ----

TYPICAL DUCT SECTION NOT TO SCALE

DUCT SECTION SCHEDULE

DESCRIPTION

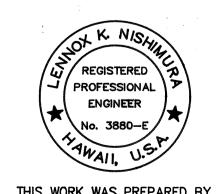
2" PVC CONDUIT, ELECTRICAL SECONDARY,

2" PVC CONDUIT, HIGHWAY LIGHTING,

2" PVC CONDUIT, HIGHWAY LIGHTING, 2#4 AWG, 1#6 GROUND.

4#4 AWG, 1#6 GROUND.

3#2 AWG.



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. ECS, INC.

Bylennox K. Mishim Its PROJECT ENGINEER Date DEC. 9, 1991

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

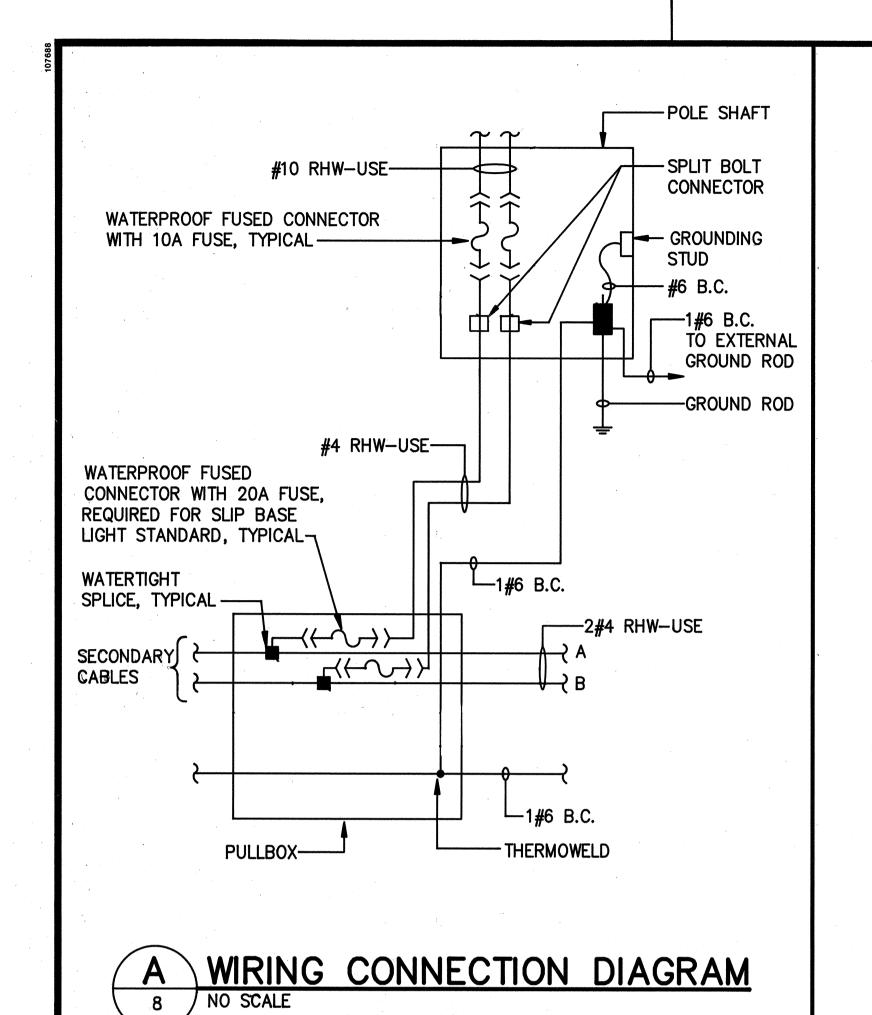
### MISCELLANEOUS DETAILS

KAMEHAMEHA HIGHWAY - INSTALLATION OF HIGHWAY LIGHTS MEHEULA PARKWAY TO KIPAPA STREET PROJECT NO. 99C-01-92

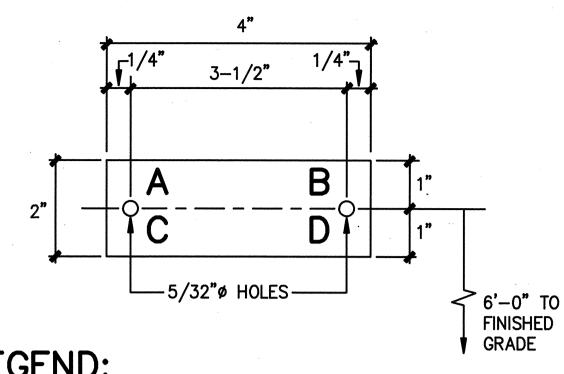
SCALE: NOT TO SCALE

END ELEVATION

DATE: SHEET No. 7 OF 10 SHEETS



METAL STANDARD -



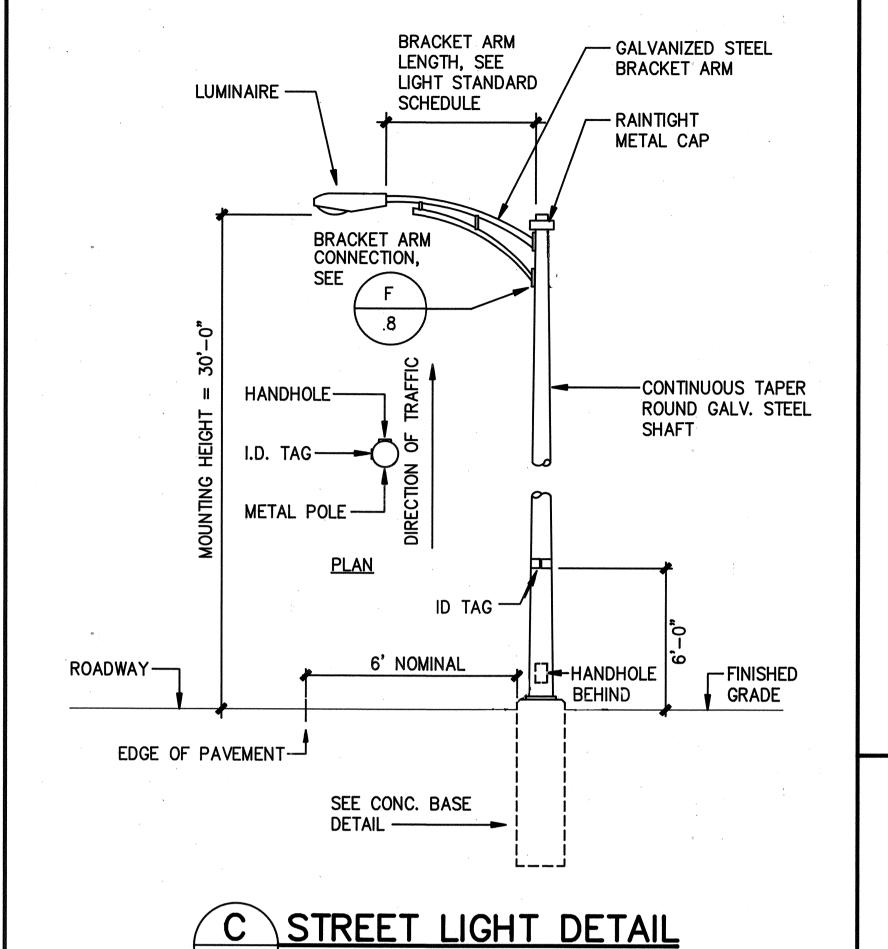
### **LEGEND:**

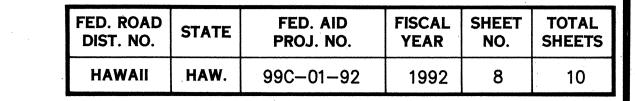
- A CONTRACT NUMBER :
- B LIGHT NUMBER \*
- C LAMP DATA ("N" FOR H.P.S.)
- D REFRACTOR DATA
- \* DATA TO BE COORDINATED WITH DEPARTMENT OF TRANSPORTATION PRIOR TO CONSTRUCTION

#### NOTES:

- 1. I.D. TAG SHALL BE 3-PLY BLACK/WHITE/BLACK LAMINATED PLASTIC (E-Z-GRAV TYPE TAG) WITH 5/16" HIGH COMMERCIAL GOTHIC ENGRAVED LETTERS.
- 2. ATTACH TO STEEL POLE WITH NO. 7 CADIUM PLATED DRIVE SCREWS, NO. 29 DRILL HOLES IN POLE.

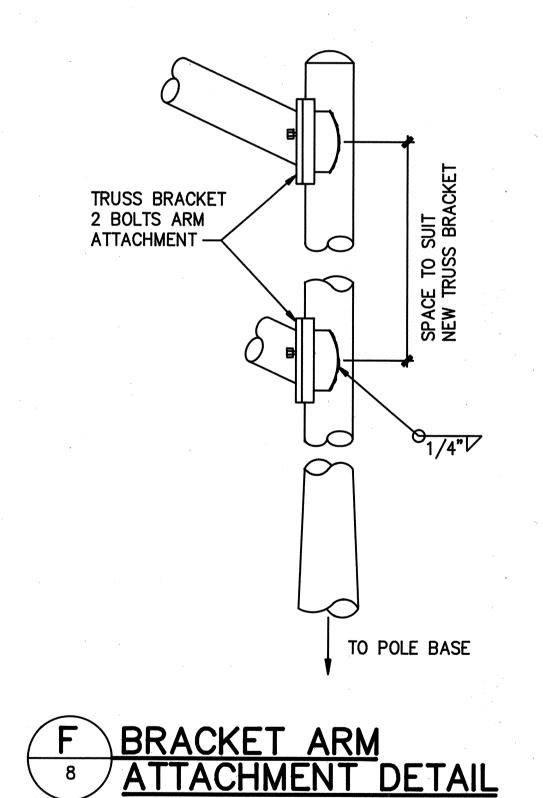






### **GENERAL NOTES**

- 1. ALL LUMINAIRES SHALL BE HIGH PRESSURE SODIUM WITH WATTAGE & IES TYPE LIGHT DISTRIBUTION AS SHOWN ON
- 2. THE CONTRACTOR SHALL NOTIFY AND COORDINATE WORK WITH THE STATE ELECTRICAL MAINTENANCE SECTION, ADD: 727 KAKOI ST., PHONE NO. 834-4581, 72 HOUSE IN ADVANCE OF COMMENCING INSTALLATION OF STREET LIGHT SYSTEM.





STATE OF HAWAII DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

### STREET LIGHT POLE DETAILS

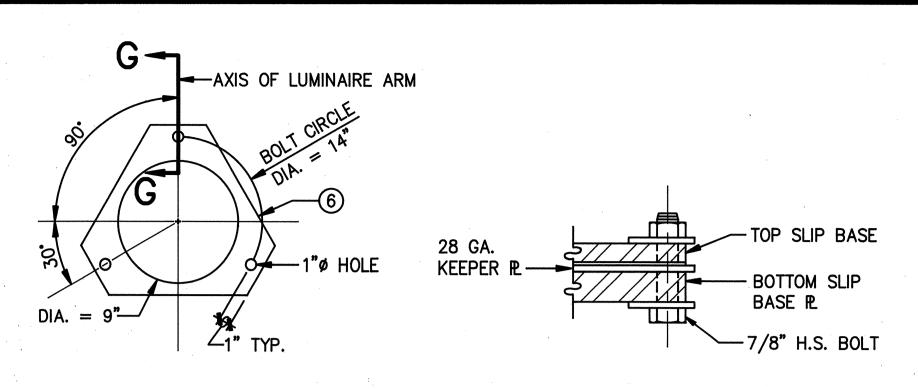
KAMEHAMEHA HIGHWAY - INSTALLATION OF HIGHWAY LIGHTS MEHEULA PARKWAY TO KIPAPA STREET PROJECT NO. 99C-01-92

SCALE: NOT TO SCALE DATE: SHEET NO. 8 OF 10 SHEETS

NO. 10 RHW-USE (BLACK) NO. 10 RHW-USE (BLACK) WATERPROOF ELASTIMOLD OR EQUAL IN-LINE FUSE CONNECTOR, STYLE 64 WITH 10A FUSE NO. 6 BARE COPPER — - SPLICE (SPLIT-BOLT CONNECTOR)
TAPE AFTER INSTALLATION GROUNDING STUD-- CONDUIT SEALING COMPOUND -GROUNDING BUSHING OR PLASTIC BUSHING AS REQUIRED 2 NO. 4 RHW-USE-- BASE COVER (FOR ANCHOR BASE) -2" LEVELING GROUT AND CHAMFER TO FINISH FINISHED GRADE-AFTER POLE IS LEVEL AND PLUMB -1/2" WEEPHOLE ON STREET SIDE - 1/2" CONDUIT SLEEVE GROUND ROD WITH CLAMP POLE BASE DETAIL

-PROVIDE 24" SLACK

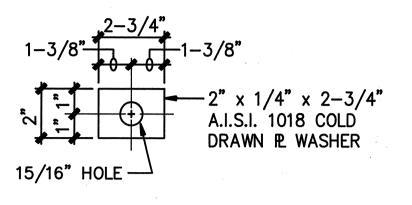
GROUNDING TYPE BUSHING 5/8"ø X 10'-0" OR PLASTIC BUSHING AS COPPERWELD REQUIRED -GROUND ROD -1/2"ø CONDUIT SLEEVE -THERMOWELD CONNECTION 18" SQ. SECTION 1-#8 BARE COPPER WIRE 4-1"ø x 40" ANCHOR BOLTS --2" CONDUIT TO PULLBOX  $6 \times 6 \times 10/10$  GALV. WIRE MESH-CONCRETE, MIN. 3000 PSI IN 28 DAYS -8'-0" MINIMUM PROVIDE ONE ADDITIONAL 5/8"ø X 8'-0"
COPPPERWELD GROUND ROD IF RESISTANCE EXCEEDS 25 OHMS 22"ø MIN. CONCRETE BASE DETAIL "A"



SECTION G-G

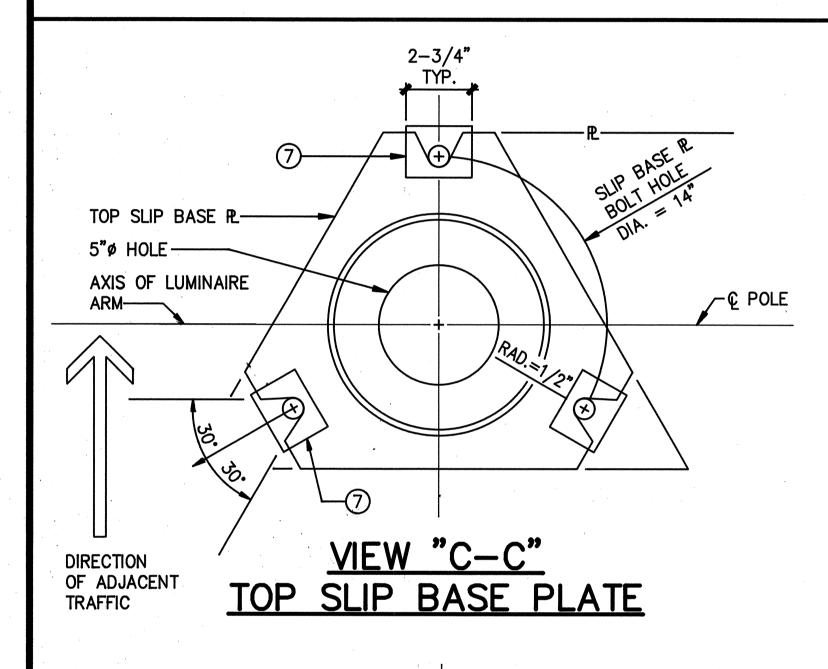


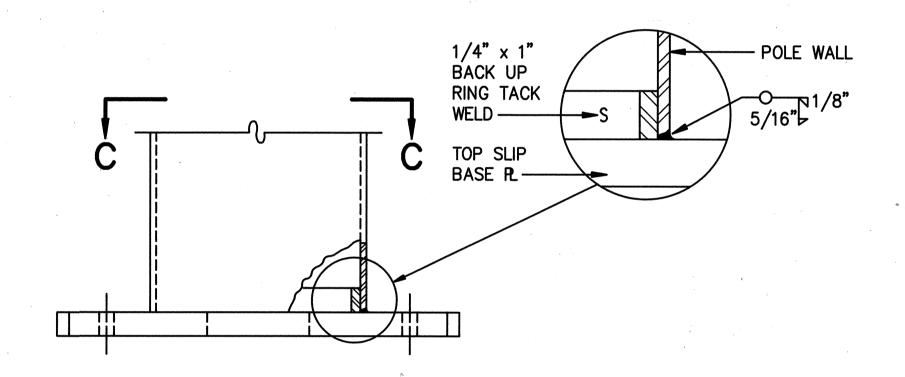
DETAIL "F"



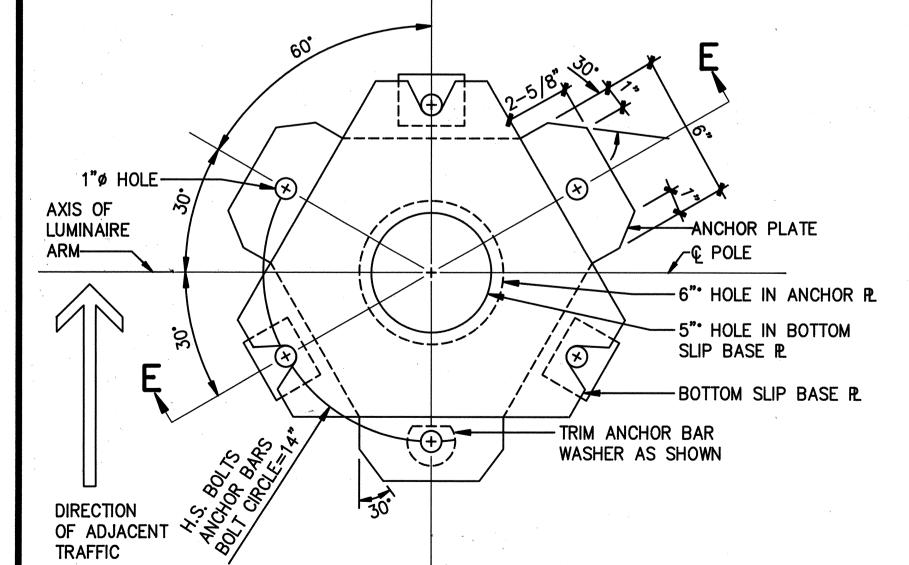
B PLATE WASHER

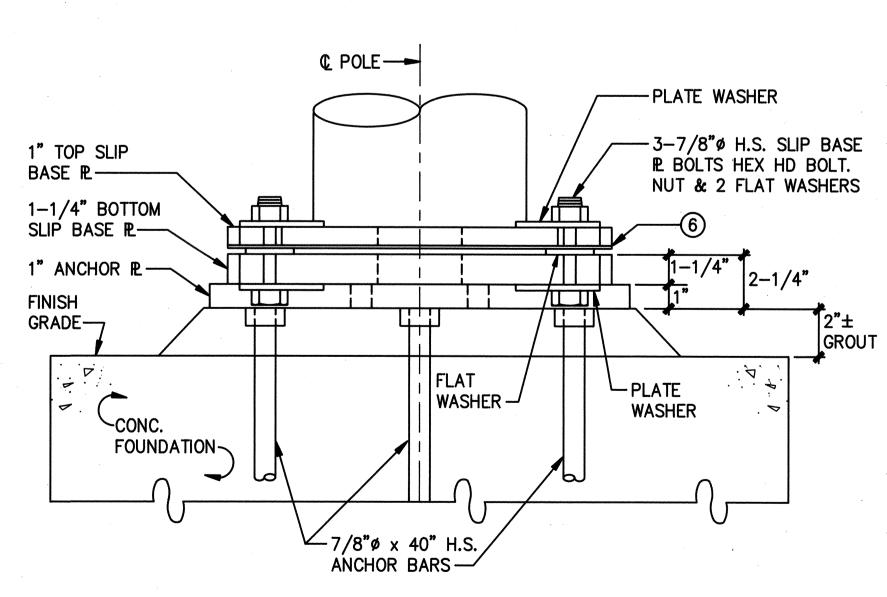
9 NOT TO SCALE





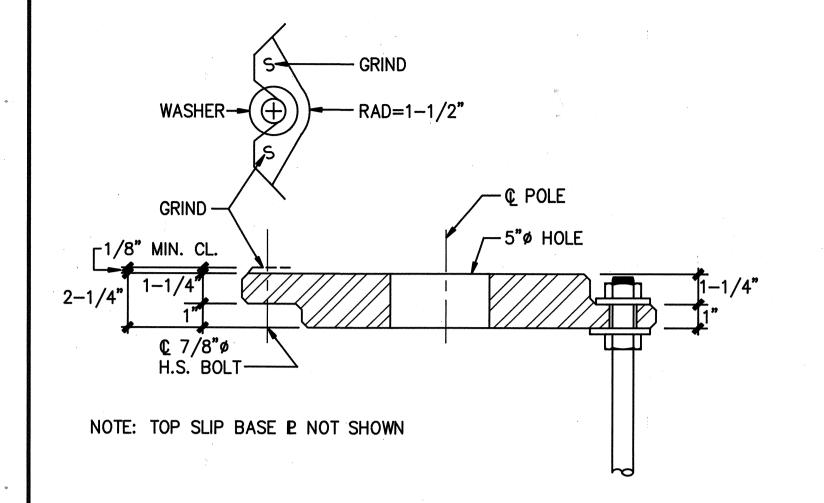
### TOP SLIP BASE PLATE





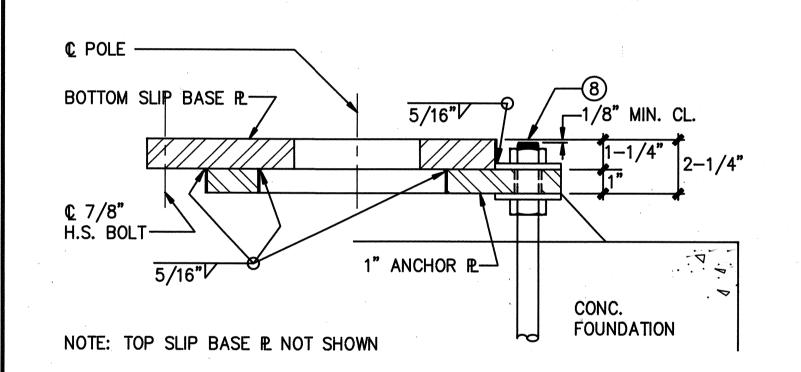
<u>PLAN-BOTTOM PLATES</u>
<u>BOTTOM SLIP BASE PLATE</u>

SCALE: 3" = 1'-0"



### VIEW "E-E"





### VIEW "E-E"

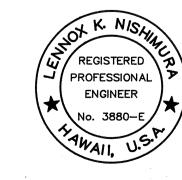
E WELDED OPTION

9 SCALE: 3" = 1'-0"

FED. ROAD	STATE	FED. AID	FISCAL	SHEET	TOTAL
DIST. NO.		PROJ. NO.	YEAR	NO.	SHEETS
HAWAII	HAW.	99C-01-92	1992	9	10

### **NOTES**

- 1 ALL STEEL SHAFTS, R'S, MAST ARMS, BOLTS, SCREWS NUTS AND WASHERS TO BE GALV. AFTER FAB. OR MODIFICATION.
- 2 P'S TO CONFORM TO ASTM A-36.
- 3 CAST OPTION TO CONFORM TO ASTM A-486 CL. 90.
- 4 TORQUE 7/8" # H.S. SLIP BASE IP BOLTS TO 84 FT. LBS 7/8" # H.S. ANCHOR BARS, WRENCH TIGHTEN-TORQUE.
- 5 FABRICATORS ELECTING LARGER THAN MINIMUM ARM DIMETERS MUST ADJUST DETAILS AS REQUIRED TO PERMIT SOLID SEATING OF CAP SCREWS IN LIEU OF TORQUE REQUIREMENTS FOR H.S. BOLTS, CAP SCREWS SHALL BE TIGHTENED BY THE TURN OF NUT METHOD 1/6 TURN FROM SNUG TIGHT CONDITION. NO WASHER WILL BE REQUIRED.
- 6 28 GA. KEEPER P., PLACE ON TOP OF MIDDLE FLAT WASHER ASTM A-526 125 COMMERCIAL.
- 7 PLATE WASHER
- 8 3-7/8" # H.S. BARS, THREAD 6" AND GALV. 10", WITH HEX HD NUT LEVELING NUT AND WASHER.
- 9 HEX HD NUT SHOWN OR AS AN ALT. DET. ANCHOR R'S MAY BE RETAINED WITH 5/16" FILLET WELDS ALL ROUND OR FORMED HEADS.
- 10 TOP OF CONDUITS SHALL NOT EXTEND ABOVE BOTTOM SLIP BASE PLATE UPPER SURFACE.
- (1) ORIENTATION OF SLIP BASE SUPPORT WITH RESPECT TO LUMINAIRE MAST ARM AND TRAFFIC DIRECTION SHALL BE IN ACCORDANCE WITH THE LATEST FEDERAL HIGHWAY ADMINISTRATION GUIDELINES.



This work was prepared by me or under my supervision ECS INC.

By Ferrox K Vishering PROJECT ENGINEER

Date PEC. 9, 1991

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

# SLIP BASE DETAILS

KAMEHAMEHA HIGHWAY — INSTALLATION OF HIGHWAY LIGHTS

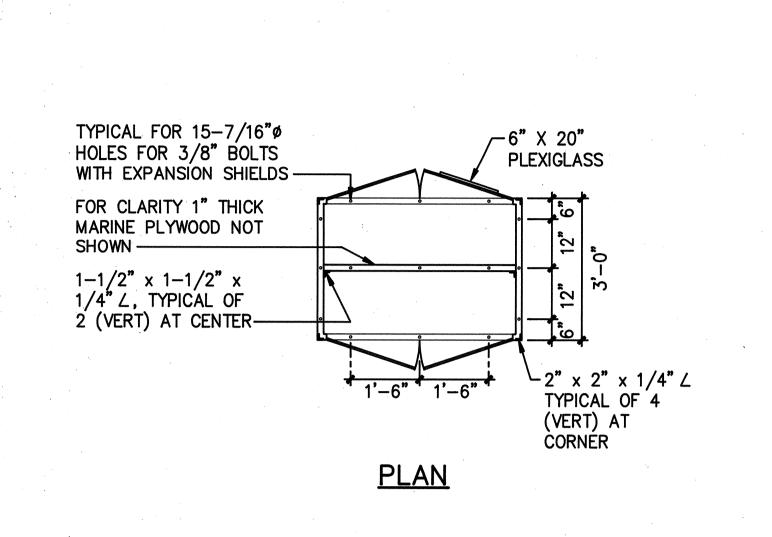
MEHEULA PARKWAY TO KIPAPA STREET

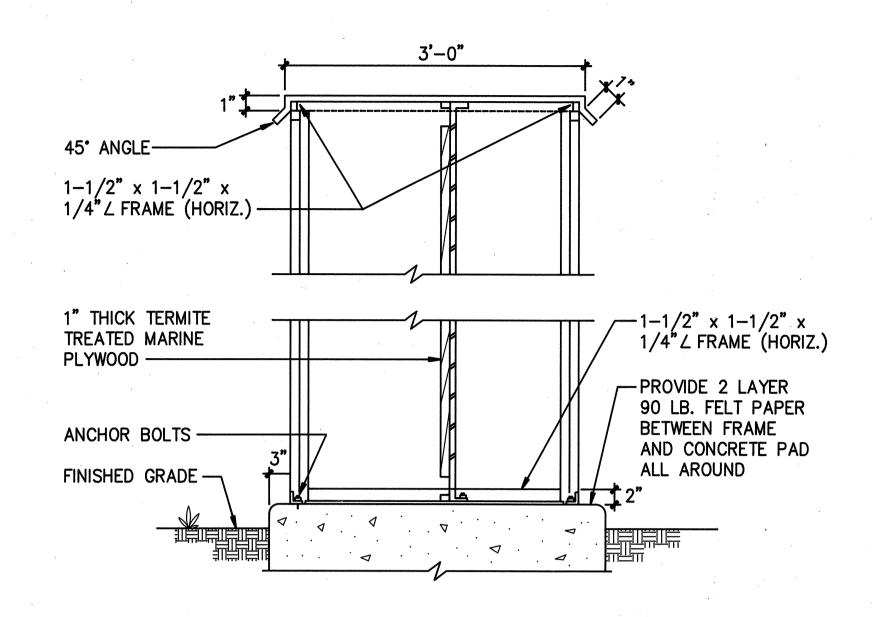
PROJECT NO. 99C-01-92

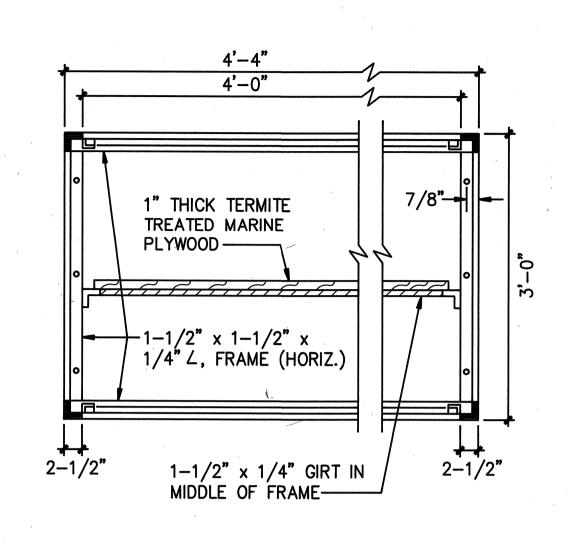
SCALE: 3'' = 1'-0''

DATE:

SHEET No. 9 OF 10 SHEETS

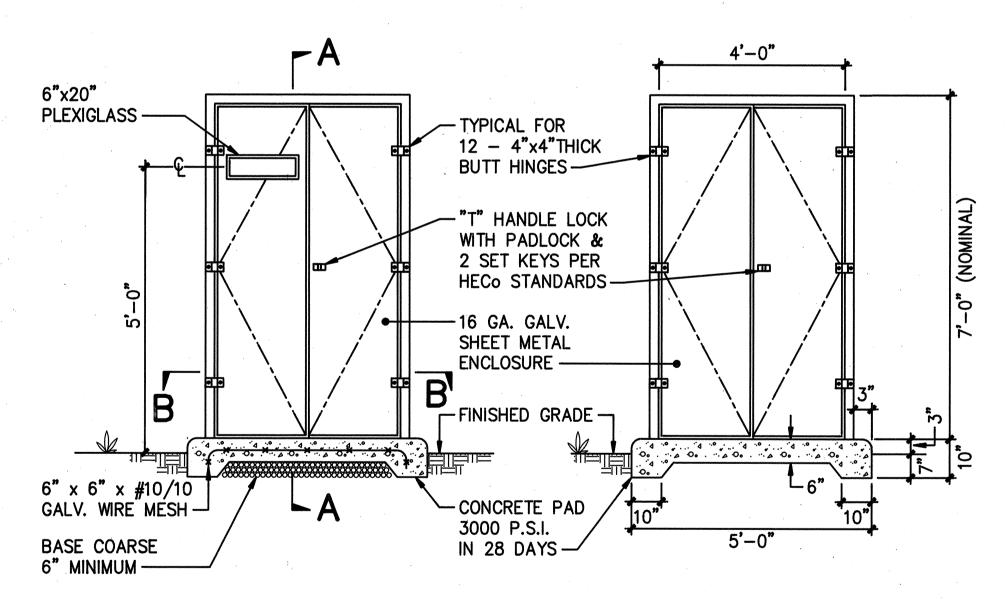




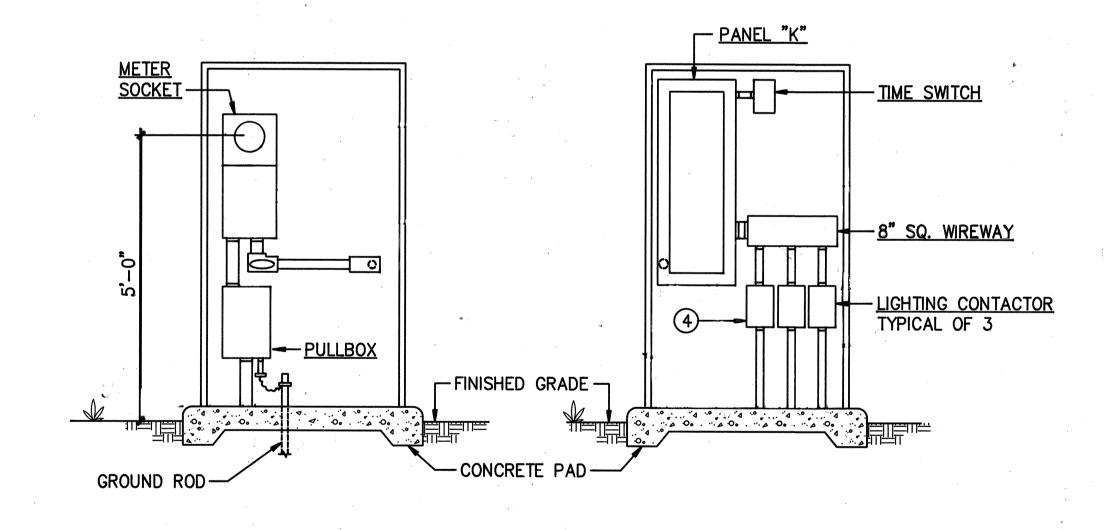


SECTION "A-A"

SECTION "B-B"

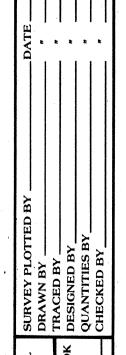






ELEVATION SERVICE EQUIPMENT

ELEVATION PANEL "K"



A ELECTRICAL SERVICE EQUIPMENT ENCLOSURE 10 NOT TO SCALE



This work was prepared by me or under my supervision ECS INC.

By Jenney & Mishim

Its PROJECT ENGINEER

Date DEC 9,1991 STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

### **ELECTRICAL SERVICE** EQUIPMENT ENCLOSURE

KAMEHAMEHA HIGHWAY - INSTALLATION OF HIGHWAY LIGHTS
MEHEULA PARKWAY TO KIPAPA STREET PROJECT NO. 99C-01-92

SCALE: NO SCALE

FED. ROAD DIST. NO.

HAWAII

NOTES:

LIGHTING CONTACTOR.

STATE

HAW.

FISCAL SHEET TOTAL YEAR NO. SHEETS

10

1992

FED. AID PROJ. NO.

99C-01-92

1) PAINT ENCLOSURE INSIDE AND OUTSIDE WITH MARINE GREEN EPOXY ENAMEL.

(2) PROVIDE SHOP DRAWINGS PRIOR TO FABRICATION.

3 GALVANIZED ANGLE BRACKET PVC PAINT FINISH.

4 SHOULD ALL 7 DEDUCTIVE ITEMS BE ELIMINATED FROM THE PROJECT, THE LIGHTING CONTACTOR ASSOCIATED

WITH CIRCUITS #5 & #6 SHALL NOT BE PROVIDED.
PROVIDE SPACE FOR FUTURE INSTALLATION OF THIS

SHEET No. 10 OF 10 SHEETS

10

DATE: