

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	IR-H1-1 (212)	1992	3	29

GENERAL NOTES:


- THE LOCATION OF OVERHEAD AND UNDERGROUND FACILITIES SHOWN ON THE PLANS ARE FROM EXISTING RECORDS WITH VARYING DEGREES OF ACCURACY AND ARE NOT GUARANTEED AS SHOWN. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHENEVER CONSTRUCTION CROSSES OR IS IN CLOSE PROXIMITY OF UNDERGROUND LINES AND SHALL MAINTAIN ADEQUATE CLEARANCE WHEN OPERATING EQUIPMENT WITHIN OR UNDER ANY OVERHEAD LINES.
- THE CONTRACTOR SHALL OBTAIN AN EXCAVATION PERMIT FROM HECO'S MAPPING AND RECORDS DIVISION LOCATED AT 820 WARD AVENUE, 4TH FLOOR, TWO WEEKS PRIOR TO STARTING CONSTRUCTION.
- THE CONTRACTOR SHALL BE LIABLE FOR ANY DAMAGES TO HAWAIIAN ELECTRIC Co.'S FACILITIES AND SHALL IMMEDIATELY REPORT SUCH DAMAGES TO HAWAIIAN ELECTRIC Co.'S TROUBLE DISPATCHER AT 548-7961.
- THE CONTRACTOR SHALL COMPLY WITH THE DIRECTIVES OF THE STATE OF HAWAII OCCUPATIONAL SAFETY AND HEALTH LAW (DOSH).
- FOR VERIFYING THE LOCATION OF UNDERGROUND DUCT LINES AND FOR ASSISTANCE IN PROVIDING PROPER SUPPORT AND PROTECTION OF THE UNDERGROUND DUCT LINES, THE CONTRACTOR IS TO CONTACT HAWAIIAN ELECTRIC Co. UNDERGROUND DIVISION AT 548-7395 A MINIMUM OF 72 HOURS IN ADVANCE.
- THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN THE EXCAVATION AND CONSTRUCTION CROSSES OR IS IN CLOSE PROXIMITY OF UNDERGROUND TELEPHONE AND SIGNAL CABLE FACILITIES AND SHALL MAINTAIN ADEQUATE CLEARANCE FOR HIS EQUIPMENT WHILE WORKING CLOSE TO AND/OR UNDER OVERHEAD FACILITIES. ANY DAMAGES TO THE EXISTING UNDERGROUND FACILITIES SHALL BE REPAIRED AND PAID FOR BY THE CONTRACTOR.
- FOR FIELD LOCATION OF HAWAIIAN TELEPHONE Co. FACILITIES, CONTACT HAWAIIAN TELEPHONE OUTSIDE PLANT ENGINEERING SECTION, A MINIMUM OF 72 HOURS IN ADVANCE, PRIOR TO START OF EXCAVATION.
- SHOULD FIELD CONDITIONS AND CONSTRUCTION PROCEDURES REQUIRE THAT UTILITY POLES BE BRACED, THE CONTRACTOR SHALL CONTACT THE FOLLOWING PERSON FOR POLE BRACING INSTRUCTIONS A MINIMUM OF 72 HOURS IN ADVANCE OF ACTUAL REQUIRED BRACING - HAWAIIAN TELEPHONE Co. - CALVIN CHOY - AREA CONSTRUCTION SUPERVISOR AT 546-3381.
- WHEN TRENCH EXCAVATION IS ADJACENT TO EXISTING STRUCTURES OR FACILITIES, THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SHEETING AND BRACING THE EXCAVATION AND STABILIZING THE EXISTING GROUND TO RENDER IT SAFE AND SECURE FROM POSSIBLE SLIDES, CAVE-INS, AND SETTLEMENT, AND FOR PROPERLY SUPPORTING EXISTING STRUCTURES AND FACILITIES WITH BEAMS, STRUTS, OR UNDERPINNING TO FULLY PROTECT IT FROM DAMAGE.
- SHOULD IT BECOME NECESSARY, ANY WORK REQUIRED TO RELOCATE HAWAIIAN ELECTRIC Co. FACILITIES SHALL BE DONE BY HAWAIIAN ELECTRIC Co. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION.


ABBREVIATIONS

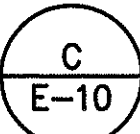

A	AMPERE	GRS	GALVANIZED RIGID STEEL
B.C.	BARE COPPER	H	HEIGHT
BL	BASE LINE	HH	HANDHOLE
CL	CENTER LINE	HECO	HAWAIIAN ELECTRIC COMPANY
CMP	CORRUGATED METAL PIPE	HPS	HIGH PRESSURE SODIUM
C	CONDUIT	H.S.	HARDENED STEEL
CAB	CABINET	HWY	HIGHWAY
C.B.	CIRCUIT BREAKER	I.C.	INTERCHANGE
CKT	CIRCUIT	I.D.	IDENTIFICATION
CO	CONDUIT ONLY	J.B.	JUNCTION BOX
CONC	CONCRETE	KV	KILOVOLT
D	DEPTH	KVA	KILOVOLT AMPERE
DIA	DIAMETER	KW	KILOWATT
DET	DETAIL	KWH	KILOWATT-HOUR
DUCT	DUCTLINE, DUCTBANK	MANUF.	MANUFACTURER
DWG	DRAWING	MAX	MAXIMUM
ENCL	ENCLOSURE	MIN	MINIMUM
EQUIP.	EQUIPMENT	MTD.	MOUNTED
EXIST	EXISTING	MTG.	MOUNTING
EXP	EXPANSION	MH	MANHOLE, METAL HALIDE
GCM	GALAVIZED CORRUGATED METAL	N.T.S.	NOT TO SCALE
GALV.	GALVANIZED	O.C.	ON CENTER
GND	GROUND	P.B.	PULLBOX

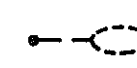
PH	PHASE
PNL	PANEL
PVC	POLYVINYL CHLORIDE
PWR	POWER
QTY	QUANTITY
REF	REFERENCE
REINF	REINFORCED
REQ'MTS	REQUIREMENTS
SEC	SECONDARY
SHT	SHEET
STA	STATION
ST	STREET
STD	STANDARD
SW	SWITCH
TH	THICK
TYP	TYPICAL
U.G.	UNDERGROUND
U.O.N.	UNLESS OTHERWISE NOTED
V	VOLT
W	WATT, WIRE, WIDTH
W/	WITH
WP	WEATHERPROOF
XFMR	TRANSFORMER


SYMBOL LIST:


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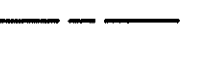
NEW STREET LIGHT STANDARD ON CONCRETE BASE.
250 WATT, HIGH PRESSURE SODIUM, 480 VOLT.
TYPE "A" OR TYPE "B" POLE MOUNTING AS INDICATED.
LUMINAIRE SHALL BE:
A. DIE-CAST ALUMINUM HOUSING WITH ELECTROCOAT GRAY PAINT FINISH.
B. POWER/MODULE BALLAST ASSEMBLY
C. 1-1/4 TO 2-INCH UNIVERSAL FOUR-BOLT SLIPFITTER
D. ADJUSTABLE MOGUL BASE SOCKET
E. ALUMINUM REFLECTOR WITH ALGLAS FINISH
F. PLUG-IN IGNITOR
G. EXTERNAL STAILESS STEEL BAIL LATCH.
H. MANUFACTURED BY GENERAL ELEC. CO., M-400A2 POWR/DOOR
M4AR-25-S-5-A-1-G-MS3-2-F
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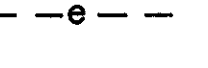
NEW STREET LIGHT STANDARD. LOCATED IN MEDIAN.
SAME AS ABOVE EXCEPT TWIN LUMINAIRE MOUNTING.
SEE DETAIL 
- 


NEW GUIDE SIGN LUMINAIRE:
175 WATT, METAL HALIDE, 480 VOLT.
LUMINAIRE SHALL BE:
A. LOW PROFILE EXTERIOR WALL WASH TYPE
B. 2-PIECE CAST ALUMINUM
C. FIXED ASYMMETRIC LIGHT PATTERN CONFINED TO A VERTICAL AND HORIZONTAL BASED QUARTER SPHERE ZONE WITH MAX INTENSITY AT 58° ABOVE HORIZONTAL.
D. HYDROFORMED ALZAK ALUMINUM REFLECTOR.
E. REMOTE WEATHERPROOF BALLAST AND ENCLOSURE MANUFACTURED BY GUTH, SIGNLIGHTER #B17633/480, OR APPROVED EQUAL, U.O.N.
- 


EXISTING STREET LIGHT STANDARD, TO REMAIN.
- 

EXISTING HIGHWAY GUIDE SIGN, AS INDICATED.
- 

STREET LIGHTING PULLBOX
- 

NEW UNDERGROUND DUCT/CONDUIT
- 

EXISTING UNDERGROUND TELEPHONE/ELECTRICAL SERVICE, TO REMAIN.
- 

JUNCTION BOX, SURFACE MOUNTED, TYPE AS INDICATED
- 

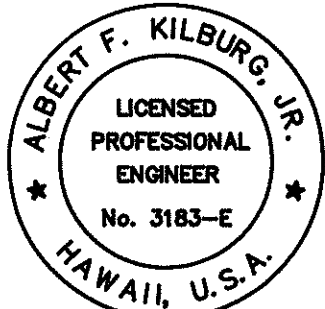
DUCT SECTION INDICATOR
- | | |
|---|--------|
| 1 | 350+00 |
| 2 | * 18' |
| 3 | 1 |
| 4 | 15' |
| 5 | 35' |
| 6 | A |
| 7 | 1 AB |

← STATION NUMBER
← POLE CENTERLINE LOCATION FROM EDGE OF TRAVELWAY
← HIGHWAY LIGHT & POLE NUMBER
← BRACKET ARM SPAN IN FEET
← LUMINAIRE HEIGHT ABOVE PAVEMENT
← POLE BASE MOUNTING TYPE
← LIGHTING CIRCUIT NUMBER AND (PHASE TO PHASE) CONNECTION

POLE MTG. TYPE "A": ANCHOR BASE

POLE MTG. TYPE "B": SLIP BASE

* MEANS POLE LOCATION FROM GUARDRAIL



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION

DVM JOB No.: 89104
CAD FILE No.: 89104E1-A

APPROVED:

HAWAIIAN ELECTRIC CO.

DATE

HAWAIIAN ELECTRIC COMPANY NOTES:

- HECO IS TO COORDINATE ITS WORK WITH THE STATE'S CONTRACTOR IN A MANNER WHICH DOES NOT IMPEDE CONSTRUCTION.
- THE EXISTING FACILITIES SHOWN THROUGHOUT THESE DRAWNGS ARE APPROXIMATE ONLY. THE STATE'S CONTRACTOR SHALL VERIFY THEIR ACTUAL LOCATIONS.
- ADJUSTMENTS TO ANY NEW OR EXISTING HECO FACILITIES SHALL BE MADE AS DIRECTED BY HECO ENGINEERS AND APPROVED BY THE STATE'S RESIDENT ENGINEER.
- ALL EXISTING HECO FACILITIES SHALL REMAIN IN PLACE UNTIL PROPOSED PERMANENT FACILITIES ARE PROVIDED. ANY COST FOR TEMPORARY RELOCATIONS ARISING DURING CONSTRUCTION FOR THE STATE'S CONTRACTOR'S BENEFIT, SHALL BE BORNE BY STATE'S CONTRACTOR.
- THE CONSTRUCTION OF THE NEW UNDERGROUND FACILITIES IS SUBJECT TO HECO OBTAINING SATISFACTORY RIGHTS OF ENTRY AND EASEMENTS.
- THE STATE'S CONTRACTOR SHALL BE LIABLE FOR ANY AND ALL DAMAGES TO HECO FACILITIES WHITH IS CAUSED BY HIS OPERATIONS. DAMAGES WILL BE CORRECTED BY HECO AT STATE'S CONTRACTOR'S EXPENSE.
- HECO SHALL FURNISH AND INSTALL KWH METER FOR THE NEW XFMR AND IT'S DISTRIBUTION PANEL.
- THE EXCAVATION OF LIGHTING POLES HOLES, LIGHTING POLE ANCHOR HOLES, TRENCHES AND INSTALLATION ARE TO BE DONE BY THE STATE'S CONTRACTOR.
- THE STATE'S CONTRACTOR SHALL PROVIDE EXISTING AND FINISHED GRADE INFORMATION AT EACH POLE AND ANCHOR LOCATION. DEPTH OF POLES AND ANCHORS WILL BE TAKEN FROM FINISHED GRADES.
- HECO SHALL FUNRNISH AND INSTALL ALL MATERIALS TO COMPLETE CONSTRUCTION OF HECO'S UNDERGROUND DUCTLINE SYSTEM.
- THE STAKEOUT AND INSTALLATION OF DUCTS AND HANDHOLES ARE TO BE DONE BY THE STATE'S CONTRACTOR.
- THE LOCATION AND DEPTH OF HANDHOLES, SERVICE AND SPLICE BOXES AND DUCTLINES ARE TO BE VERIFIED AND APPROVED IN THE FIELD BY THE STATE'S RESIDENT ENGINEER PRIOR TO CONSTRUCTION OR INSTALLATION.
- ALL DUCTS AND CONDUITS TO BE INSTALLED IN CONCRETE JACKET SHALL BE INSPECTED AND APPROVED BY THE STATE'S RESIDENT ENGINEER BEFORE PLACING CONCRETE. NOTIFY THE STATE'S RESIDENT ENGINEER 24 HOURS MINIMUM BEFORE PLACING CONCRETE.

NOTES:

- WOODEN STAKES HAVE BEEN PLACED IN THE FIELD AT STATION LOCATIONS OF LIGHT STANDARDS. PLACEMENT OF STAKES ARE APPROXIMATE AND ARE FOR ENGINEERING DESIGN PURPOSES ONLY. THE CONTRACTORS SHALL PERFORM A DETAILED SURVEY TO PROVIDE THE EXACT LOCATION AS SPECIFIED AND SHOWN. LOCATION SHOWN ARE REFERENCED TO THE DOT HIGHWAYS CENTER LINE STATIONING.
- AFTER THE EXACT LOCATION IS DETERMINED, PLACE 2" x 2" x 18" HUBS AT THESE LOCATIONS. INFORM THE CONTRACTING OFFICER FOR FINAL LOCATION APPROVAL PRIOR TO CONSTRUCTION OF LIGHT BASES. ACTUAL CONSTRUCTION OF THE PAIWA STREET INTERCHANGE. ACTUAL, COMPLETE FIELD CONDITIONS MAY DIFFER FROM THAT SHOWN ON THESE DRAWNGS. USE EXTREME CAUTION WHEN EXCAVATING FOR NEW DUCTLINES.
- PROVIDE CONDUIT EXPANSION FITTING TO ACCOMMODATE EXPANSION AND DEFLECTION WHERE CONDITS CROSS SEISMIC, CONTROL AND EXPANSION JOINTS OF BRIDGE STRUCTURES. EXPANSION FITTING SHALL BE:
A. WEATHERTIGHT CONSTRUCTION.
B. INSULATOR BUSHING ON END OF MOVEABLE CONDUIT.
C. FACTORY-FORMED COPPER BRAID RING ALLOWING CONDUIT EXPANSION AND CONTRACTION.
D. END FITTINGS OF FERALOY.
E. STEEL CONDUIT BODY.
F. ZINC ELECTROPLATE AND ALUMINUM CELLULOSE LACQUER FINISH.
G. 8" MAXIMUM CONDUIT MOVEMENT CROUSE-HINDS XJ SERIES OR APPROVED EQUAL.

E-1

7/6/92

△ REVISED SYMBOL LIST.

DATE

REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
GENERAL NOTES
SYMBOL LIST
INTERSTATE ROUTE H-1
KUNIA I.C. TO WAIAWA I.C.
PROJECT No. IR-H1-1(212)

SCALE: AS NOTED

SHEET No. 2 OF 2 SHEETS

ADD. 3