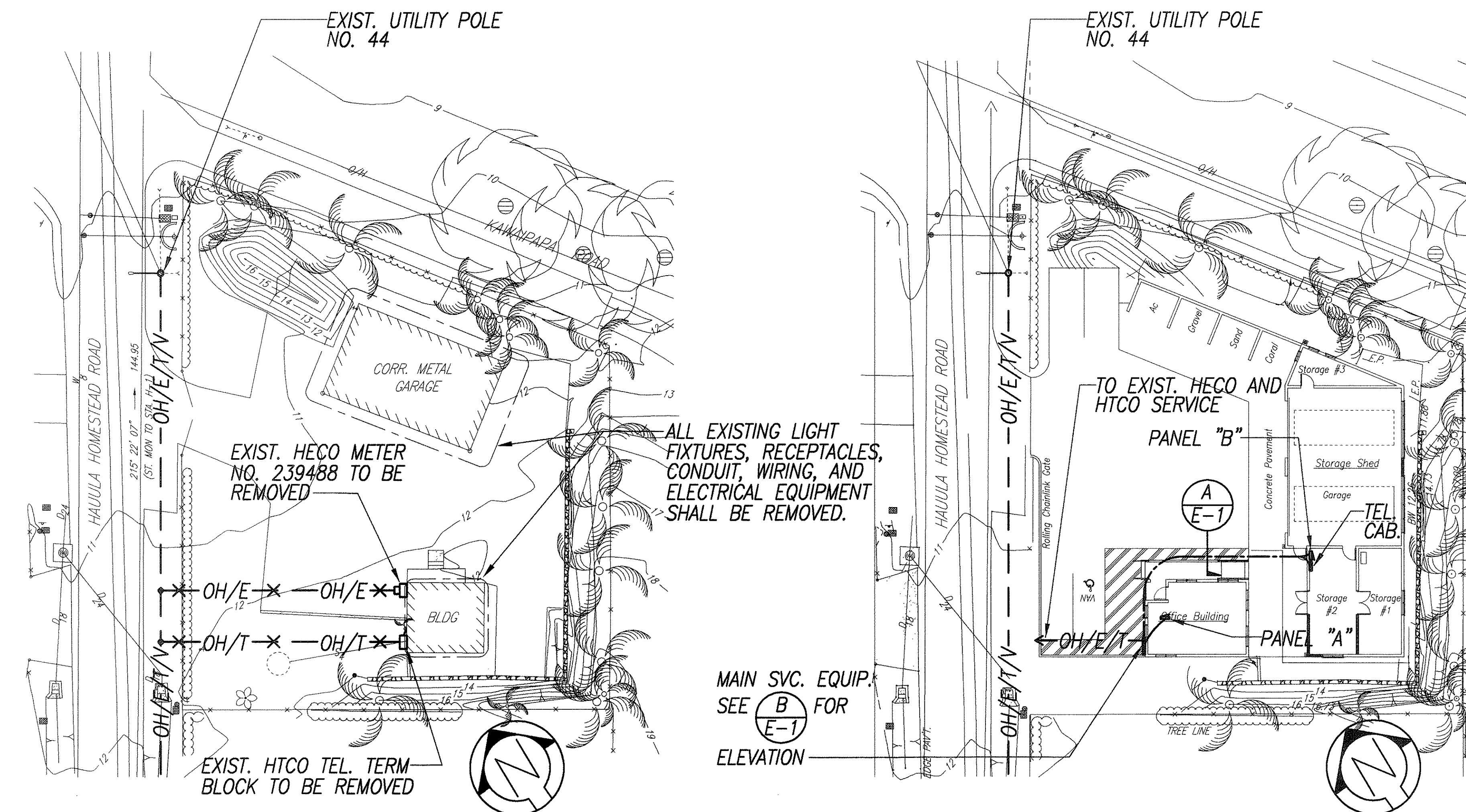


ELECTRICAL SYMBOLS

- | | | | |
|--|--|--|---|
| | FLOODLIGHT | | WEATHERPROOF |
| | CEILING LUMINAIRE | | MOTOR OUTLET |
| | WALL LUMINAIRE, NIGHT LIGHT | | MOTOR CONTROLLER |
| | CEILING FLUORESCENT LUMINAIRE | | SAFETY SWITCH |
| | CEILING FLUORESCENT LUMINAIRE WITH EMERGENCY BATTERY PACK | | LUMINAIRE DESIGNATION, TYPE "A-2/48" INDICATED |
| | SWITCH, 1P20A, +4'-0" | | EXISTING OVERHEAD ELECTRICAL, TELEPHONE AND CATV WIRING |
| | SWITCH, 3W20A, +4'-0" | | EXISTING OVERHEAD TELEPHONE WIRING TO BE REMOVED |
| | DUPLEX CONVENIENCE OUTLET, 3W20A, GROUNDING TYPE, +16" UNLESS OTHERWISE NOTED | | EXISTING OVERHEAD ELECTRICAL WIRING TO BE REMOVED |
| | DUPLEX CONVENIENCE OUTLET, 3W20A, GROUND FAULT INTERRUPTER TYPE, +16" UNLESS OTHERWISE NOTED | | NEW OVERHEAD ELECTRICAL AND TELEPHONE WIRING |
| | WATER HEATER CONNECTION | | WIRING IN RACEWAY CONCEALED IN FLOOR OR BELOW GRADE |
| | JUNCTION BOX, WALL, 4-11/16" SQUARE MINIMUM | | WIRING IN RACEWAY CONCEALED IN WALL OR CEILING |
| | JUNCTION BOX, CEILING, 4-11/16" SQUARE MINIMUM | | WIRING IN FLEXIBLE RACEWAY |
| | JUNCTION BOX, LARGE | | |
| | PANELBOARD | | |
| | TELEPHONE OUTLET, +16" | | |
| | TELEPHONE CABINET | | |

- NOTES
- ANY CIRCUIT WITH NO FURTHER DESIGNATION INDICATES A TWO WIRE CIRCUIT. CIRCUITS WITH ADDITIONAL WIRES ARE INDICATED AS FOLLOWS: , 3 WIRES: , 4 WIRES, ETC.
 - GROUND WIRE PER NATIONAL ELECTRICAL CODE INDICATED AS FOLLOWS: .
 - ALL EXPOSED CONDUIT AND BOXES SHALL BE PAINTED TO MATCH ADJACENT WALL OR CEILING FINISHES.

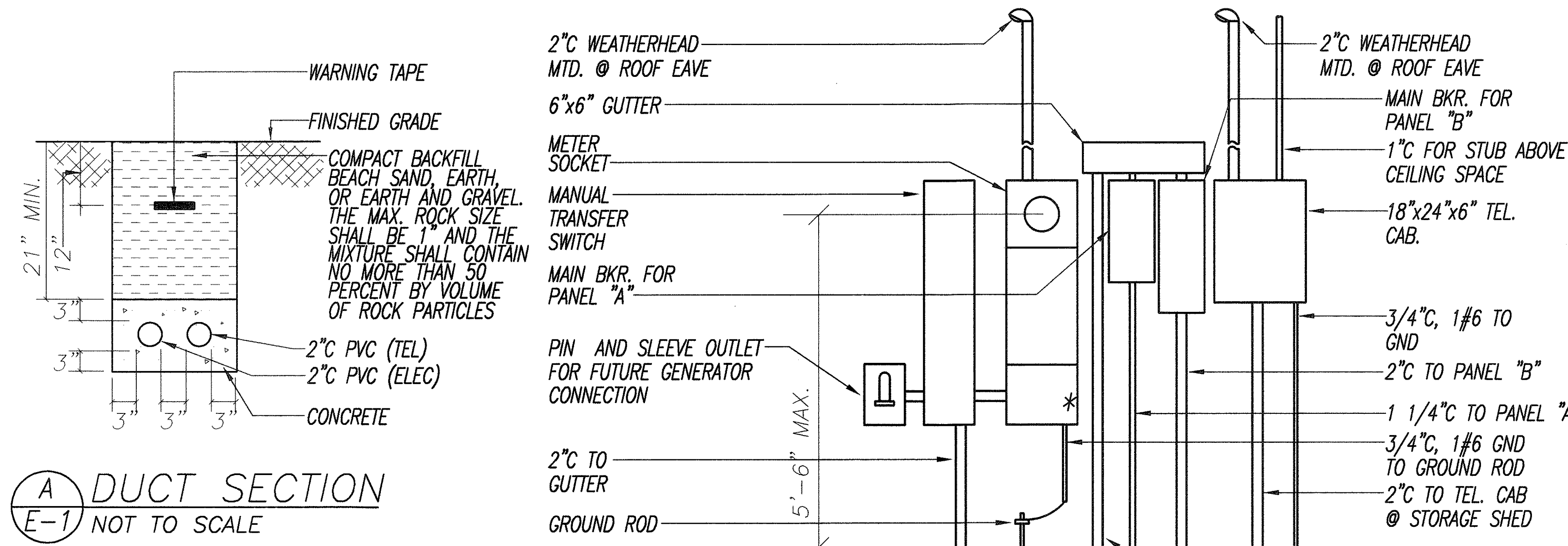


ELECTRICAL SITE DEMOLITION PLAN

Scale 1' = 20' - 0"

ELECTRICAL SITE PLAN - NEW WORK

Scale 1' = 20' - 0"



- NOTES:
- * - INDICATES SEALABLE ENCLOSURE.
 - ALL EQUIPMENT AND ENCLOSURES SHALL BE NEMA 4X, STAINLESS STEEL.

(B) MAIN SERVICE EQUIPMENT ELEVATION

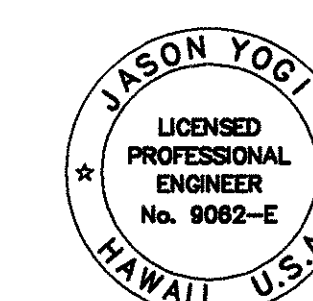
SCALE: 3/4" = 1'-0"

ORIGINAL SURVEY PLOTTED BY DATE
PLAN DRAWN BY 4/14/00
NOTE BOOK DESIGNED BY JX 4/14/00
QUANTITIES BY JX 4/14/00
NO.

(A) DUCT SECTION

NOT TO SCALE

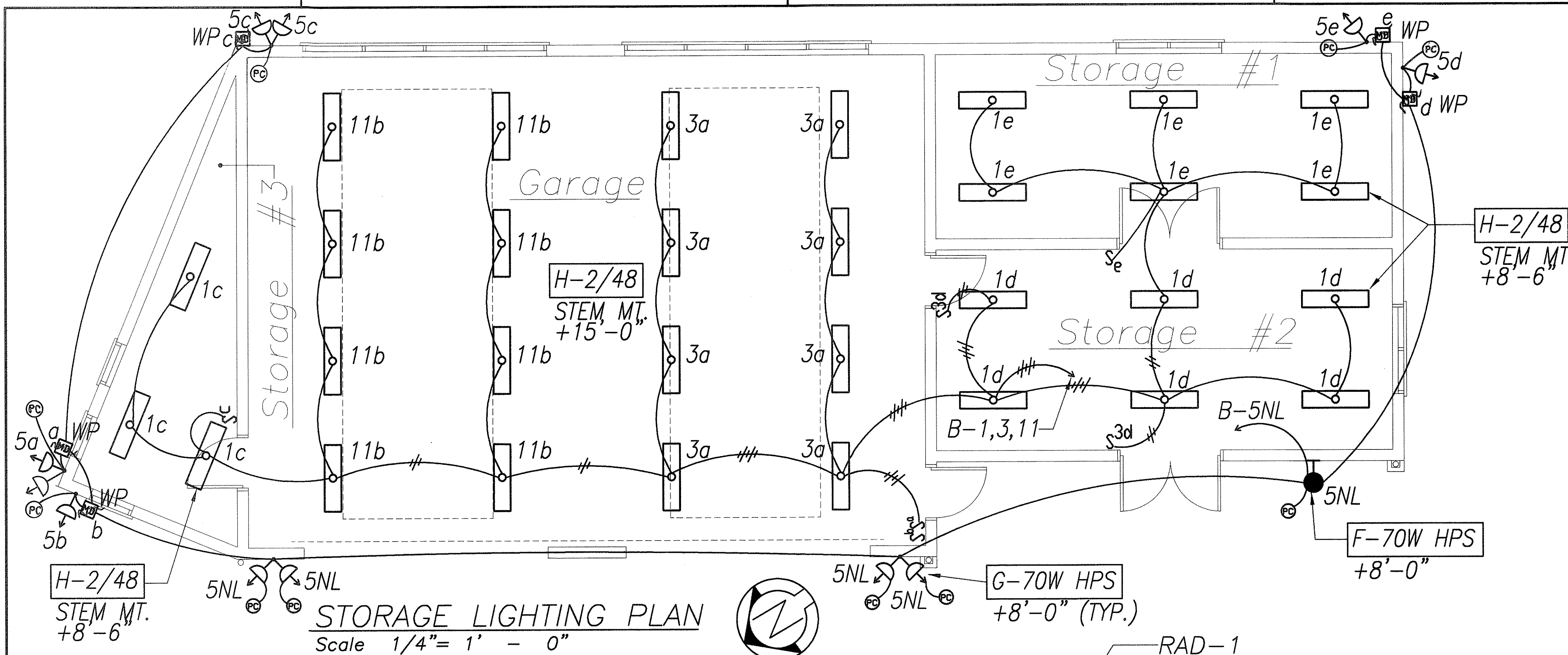
E-1



THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.

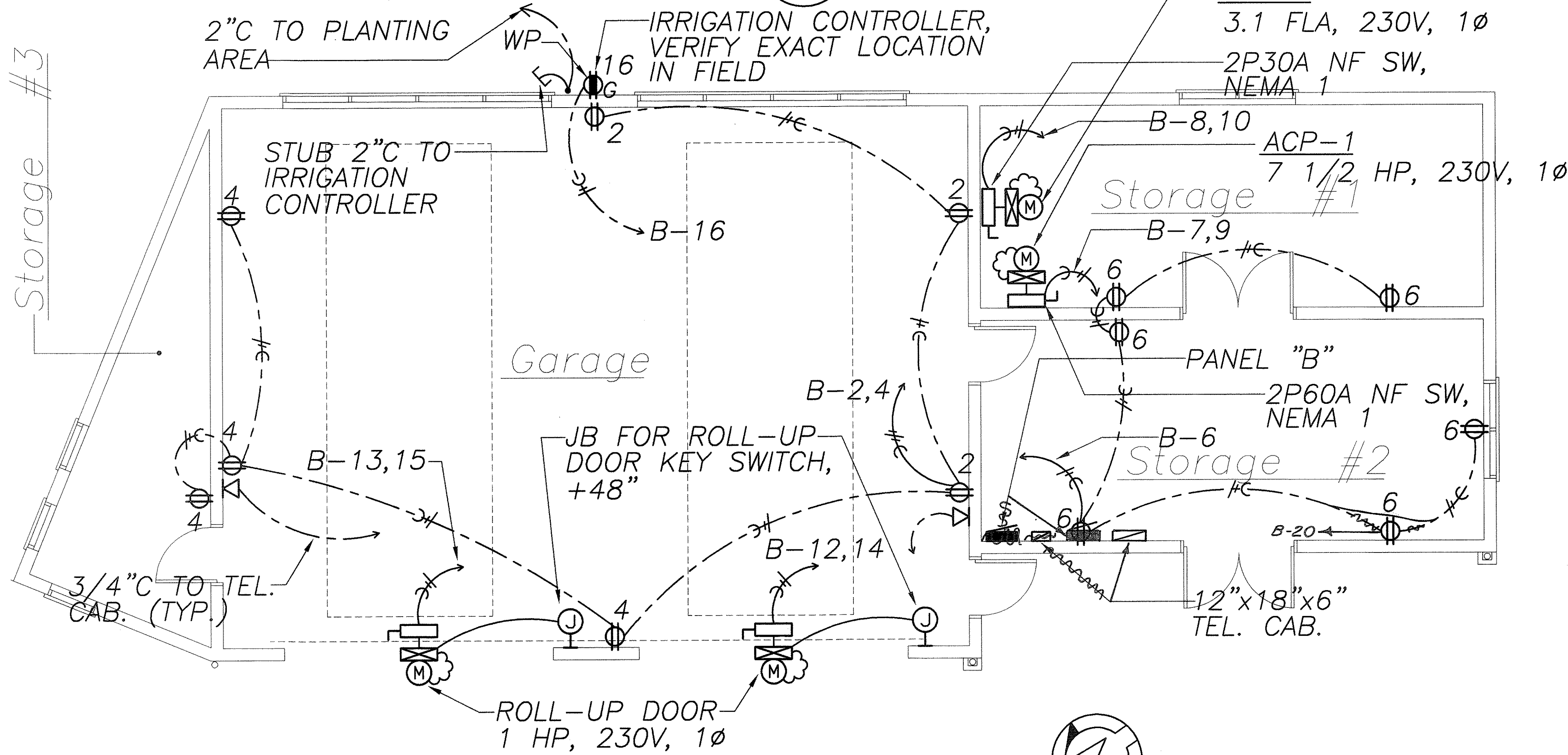
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
ELECTRICAL SITE DEMOLITION PLAN, ELECTRICAL SITE PLAN - NEW WORK, ELECTRICAL SYMBOLS, DETAILS	
HAUULA BASEYARD	
IMPROVEMENTS	
Project No. HWY-0-03-98	
Scale: AS SHOWN	Date: APRIL 2000
SHEET No. E-1 OF 60 SHEETS	

ADD. 56



STORAGE LIGHTING PLAN
Scale 1/4" = 1' - 0"

PANEL "B"		240/120 VOLTS	1Ø, 3WSN		
125A MAIN BKR.		BRANCH BKR I.C.	10,000A		
SURFACE, 20" WIDE CABINET, INDUSTRIAL-BOLTED					
CKT NO.	BKR	L O A D	KVA		WIRE
			L1	L2	
1	1P20A	LTS	1.5		12
2		RECEP	1.0		
3		LTS		0.8	
4		RECEP		1.0	
5		LTS	0.8		
6		RECEP	1.0		
7,9	2P100A	ACP-1	4.6	4.6	6
8,10	2P20A	RAD-1	0.4	0.4	12
11	1P20A	LTS		0.8	12
12,14	2P30A	ROLL-UP DOOR	1.0	1.0	10
13,15		ROLL-UP DOOR	1.0	1.0	10
16	1P20A	RECEP-IRRIGATION CONTROLLER		1.0	12
17		SPARE			
18		SPARE			
19	1P	PFB			
20	1P20A	ICE MACHINE			
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					
41					
42					



STORAGE SHED POWER AND SIGNAL PLAN
Scale 1/4" = 1' - 0"

5-30-00	REVISED LOCATION OF OUTLET, REVISED STUB-OUT LOCATION, REVISED PROJECT NO.
DATE	REVISION

E-3



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STORAGE SHED LIGHTING AND POWER AND SIGNAL PLAN
HAULA BASEYARD
IMPROVEMENTS

Project No. HWY-0-03-98
Scale: AS SHOWN Date: APRIL 2000

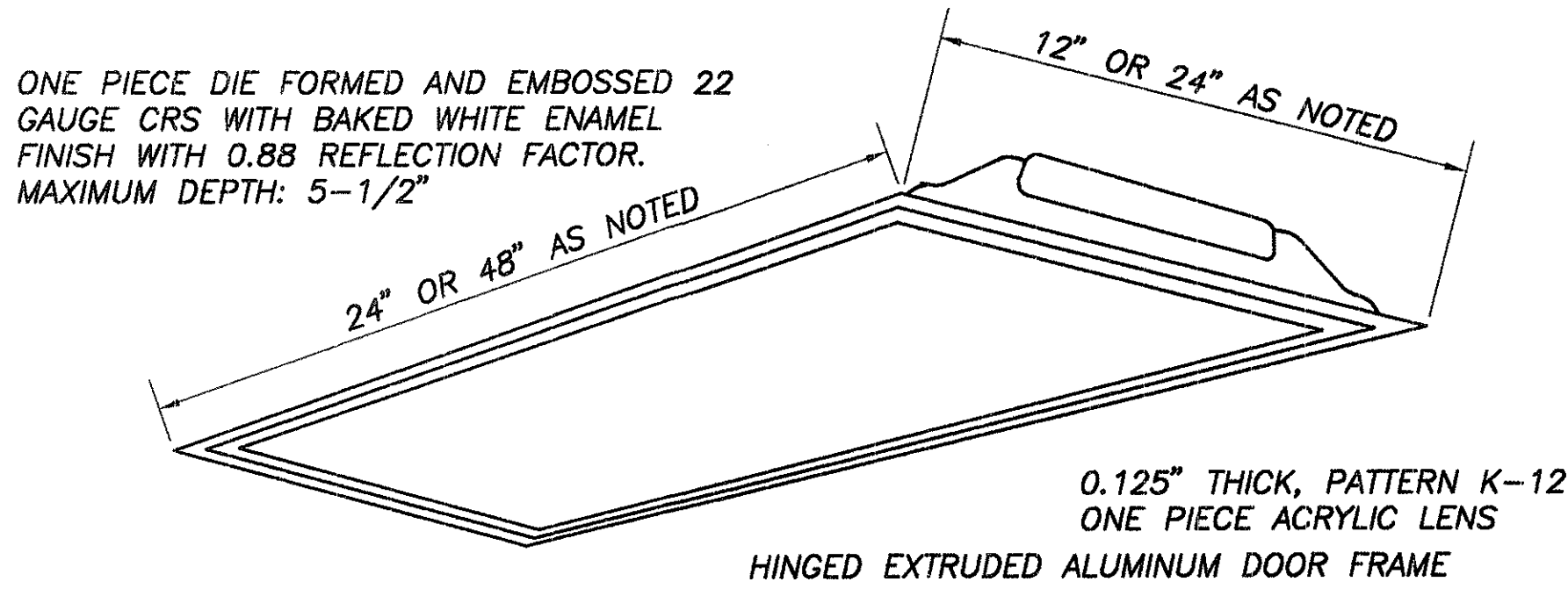
SHEET No. E-3 OF 60 SHEETS

"AS-BUILT"

ADD. 58

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	4/14/00
No.	DESIGNED BY	4/14/00
	CHECKED BY	4/14/00

DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-03-98	2000	59	60



VERIFY CEILING TYPES FOR RECESSED LIGHT FIXTURES AND PROVIDE PROPER FRAMES AND ACCESSORIES.

UNPAINTED PARTS - ZINC PLATED OR STAINLESS STEEL. CUT EDGES OF METAL TO BE PRIMED AND PAINTED SIMILAR TO BODY PAINTING.

BODY TO BE EMBOSSED TOP AND ENDS TO ASSURE RIGIDITY. CORNERS TO BE FOLDED AND WRAPPED TO ELIMINATE OPEN SEAMS

ALL ELECTRICAL COMPONENTS TO BE EASILY ACCESSIBLE WITHOUT REMOVAL OF TROFFER FROM CEILING. BALLASTS TO BE BOLTED TO CHASSIS WITH BOLTS AND SELF-LOCKING NUTS

PROVIDE GASKETS TO PREVENT LIGHT LEAKS

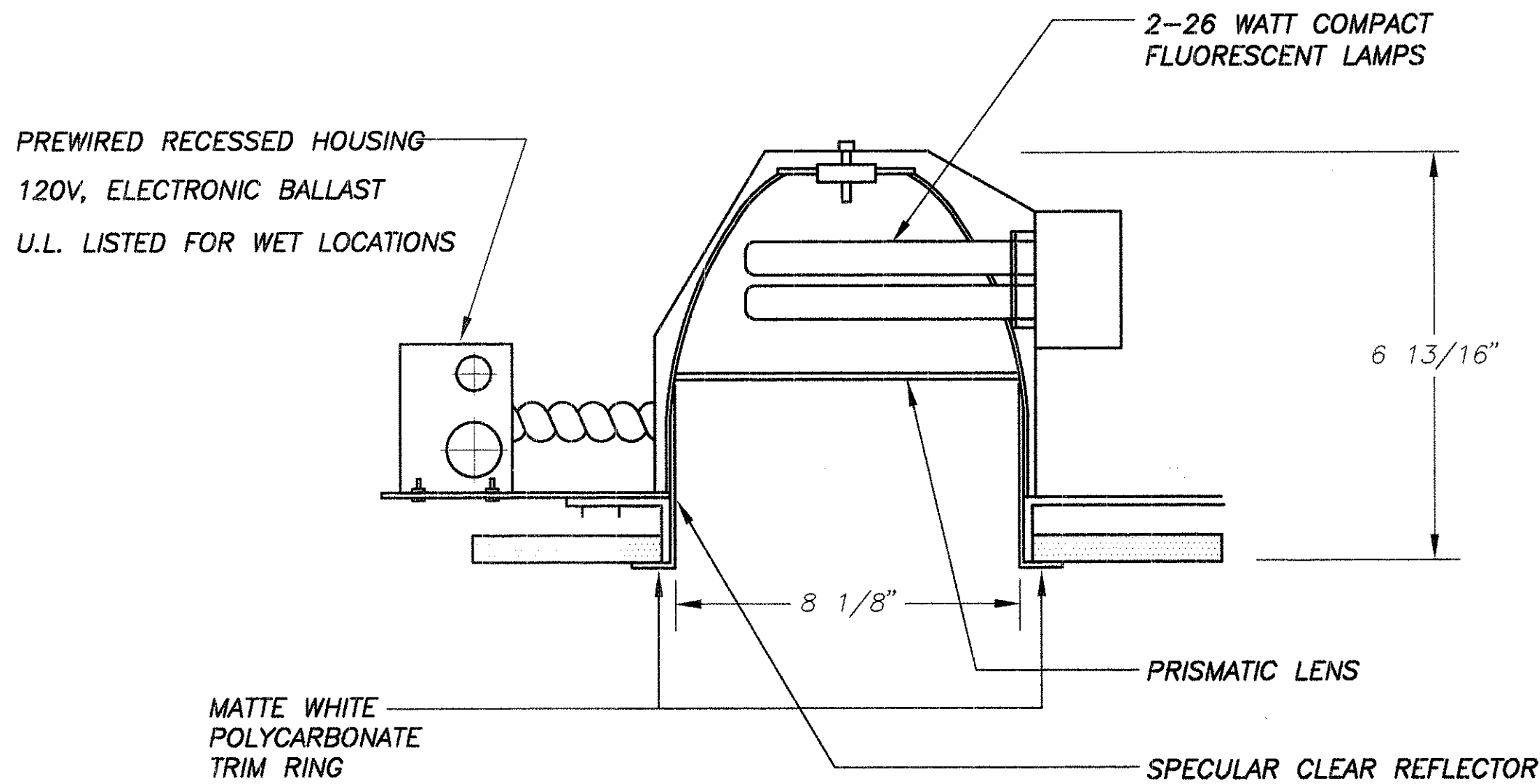
120V, ELECTRONIC BALLAST

LUMINAIRE TYPE "A" (24"x48") - 3/32WT8 COOL WHITE FLUORESCENT LAMPS

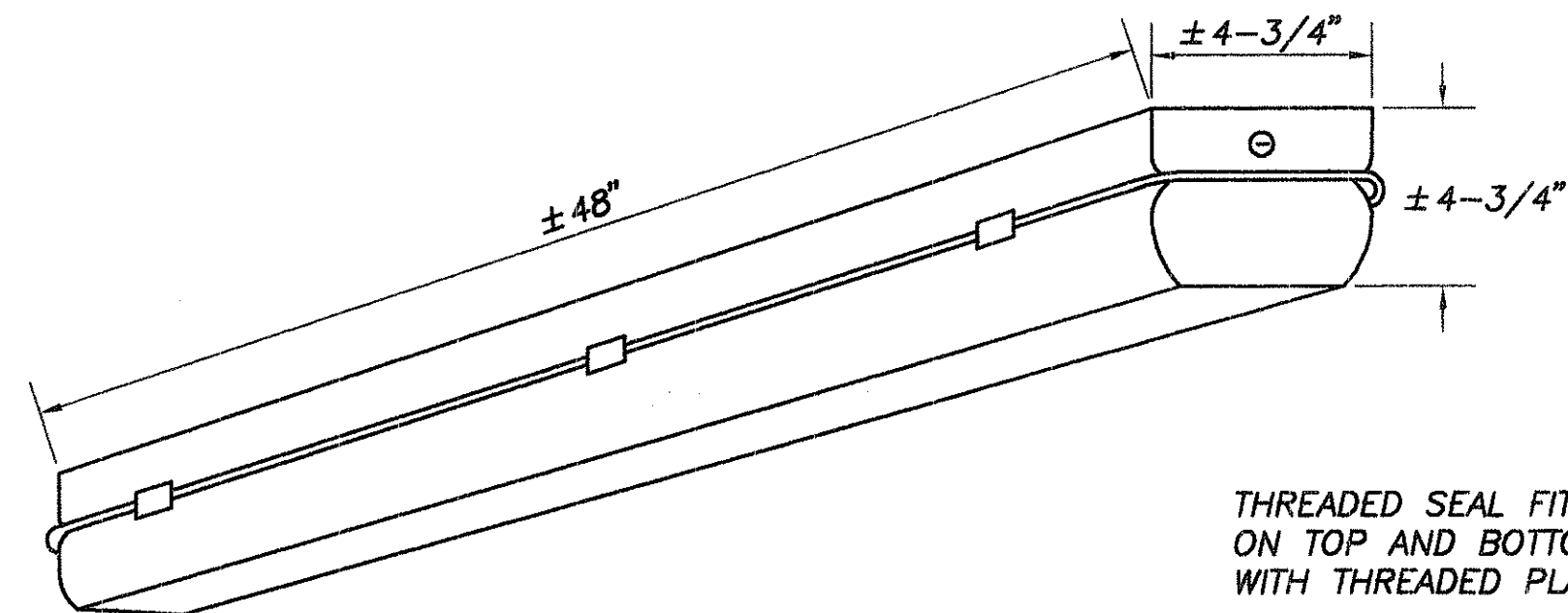
LUMINAIRE TYPE "B" (24"x48") - SIMILAR TO TYPE "A" EXCEPT WITH EMERGENCY BATTERY PACK

LUMINAIRE TYPE "C" (24"x24") - 2/32WU6T8 COOL WHITE FLUORESCENT LAMPS

LUMINAIRE TYPE "D" (12"x48") - 2/32WT8 COOL WHITE FLUORESCENT LAMPS



LUMINAIRE TYPE "E" - 2/26W COOL WHITE COMPACT FLUORESCENT LAMPS



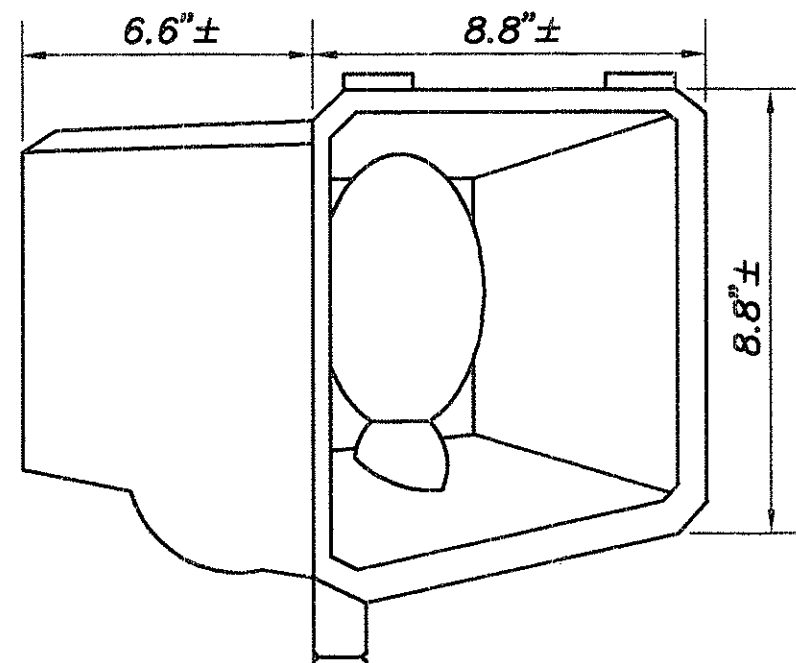
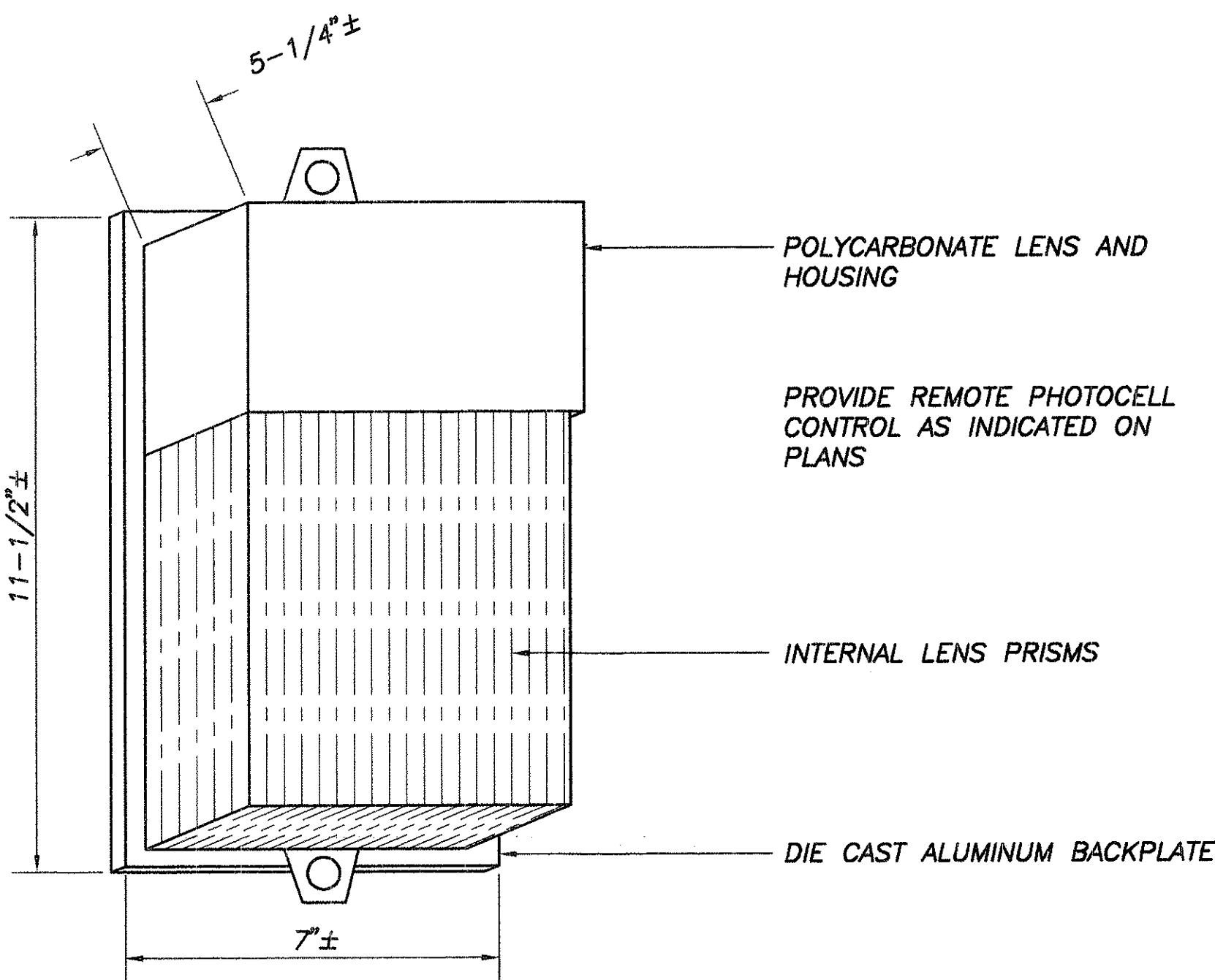
HIGH IMPACT, 0.125" CLEAR ACRYLIC ENCLOSURE. ONE PIECE NEOPRENE GASKET. HIGH-IMPACT PLASTIC BODY SUITABLE FOR WET LOCATIONS PER NATIONAL ELECTRICAL CODE. GASKET TO BE 0.125" CONTINUOUS COMPRESSIBLE NEOPRENE. INTERNAL METAL WIRING COMPARTMENT TREATED WITH 5-STAGE ZINC PHOSPHATE AND HOT-BONDED ENAMEL PAINT. REFLECTING SURFACES FINISHED WITH HIGH-REFLECTANCE WHITE ENAMEL.

FIXTURE SHALL BE SUITABLE FOR WET LOCATIONS.

120V, ELECTRONIC BALLAST

LUMINAIRE TYPE "H" - 2/32WT8 COOL WHITE FLUORESCENT LAMPS

E-4



DURABLE CAST ALUMINUM HOUSING, INTEGRAL HIGH POWER FACTOR BALLAST

1/2" THREADED SWIVEL MOUNTING, DEGREE MARKED

TEMPERED GLASS LENS IN BOTTOM HINGED ACCESS DOOR

PROVIDE REMOTE PHOTOCELL OR MOTION DETECTOR CONTROL AS INDICATED ON PLANS

FORMED ALUMINUM REFLECTOR

LUMINAIRE TYPE "G" - 70W HIGH PRESSURE SODIUM LAMP

LUMINAIRE TYPE "F" - 70W HIGH PRESSURE SODIUM LAMP

ORIGINAL PLAN	DATE
NO.	4/14/00
DESIGNED BY	JY
CHECKED BY	JY
QUANTITIES BY	JY
NOTE BOOK	4/14/00
DATE	4/14/00

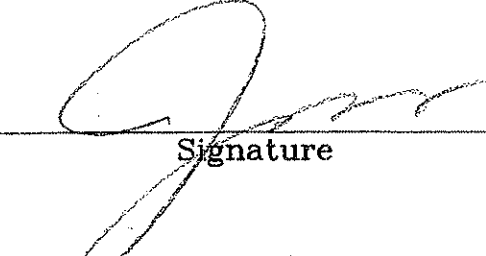



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
LUMINAIRE DETAILS	
HAUULA BASEYARD IMPROVEMENTS	
Project No. HWY-0-03-98	Date: APRIL 2000
Scale: AS SHOWN	

DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-03-98	2000	60	60

BUILDING ENERGY EFFICIENCY STANDARDS	
EXTERIOR LIGHTING POWER ALLOWANCE	1520 INSTALLED 1330
INTERIOR LIGHTING POWER ALLOWANCE	2790 INSTALLED 2708
METHOD USED:	PREScriptive <u>X</u> SYSTEM PERFORMANCE _____
(CHECK ONE)	
CALCULATIONS:	SEPARATE _____ ON DRAWINGS <u>X</u>
(CHECK ONE)	

REVISED ORDINANCES OF HONOLULU CHAPTER 32 BUILDING ENERGY EFFICIENCY STANDARDS	
THE BUILDING ENERGY EFFICIENCY STANDARDS HAVE BEEN REVIEWED AND TO THE BEST OF MY KNOWLEDGE THIS DESIGN SUBSTANTIALLY CONFORMS TO ELECTRICAL AND LIGHTING REQUIREMENTS OF SECTIONS 5.3 AND 6.3.	
 Signature	
Jason Yogi, P. E. Name (Print)	
Principal Title	

BUILDING ENERGY EFFICIENCY STANDARDS CALCULATIONS		
BUILDING TYPE	AREA	BUILDING
F SERVICE ESTABLISHMENT	728 sq ft	DATE APRIL 13, 2000
NA	2624 sq ft	YEAR 1993
NA	0 sq ft	
	3352 Gross sq ft	
BUILDING DESIGN		
Interior Lighting Power	2708 W	0.808 W/Gross sq ft
Exterior Lighting Power	1330 W	

PREScriptive CRITERIA		
Unit Lighting Power Allowance	0.832 W/Gross sq ft	
Interior Lighting Power Allowance	2790 W	
SYSTEM PERFORMANCE CRITERIA		
Unit Power Density	NA W/Gross sq ft	
Interior Lighting Power Allowance	NA W	
EXTERIOR LIGHTING CRITERIA		
Exterior Lighting Power Allowance	1520 W	
***** PASSES *****		

ORIGINAL	SURVEY PLOTTED BY	DATE
PLAN	JY	4/14/00
NOTE BOOK	DESIGNED BY	JY
No.	QUANTITIES BY	JY
	CHECKED BY	JY



THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.



E-5	
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
BUILDING ENERGY EFFICIENCY CALCULATIONS	
HAUULA BASEYARD IMPROVEMENTS	
Project No. HWY-0-03-98	
Scale: AS SHOWN	Date: APRIL 2000
SHEET No. E-5 OF 60 SHEETS	