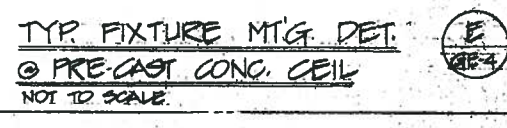
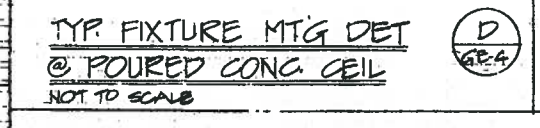
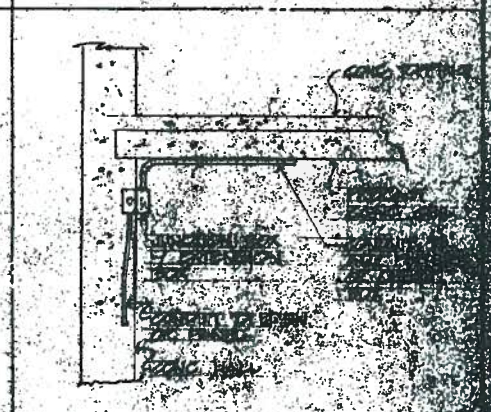
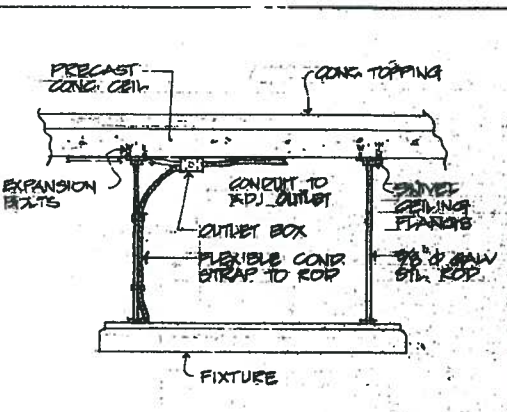
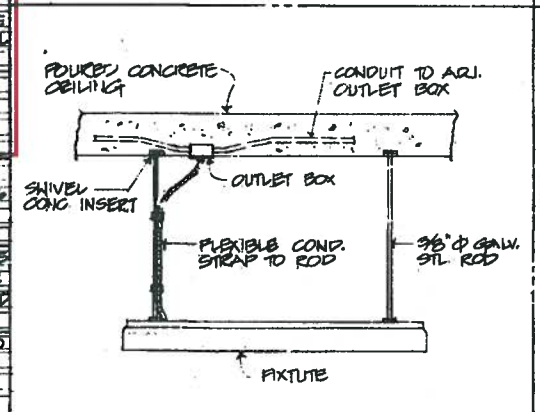
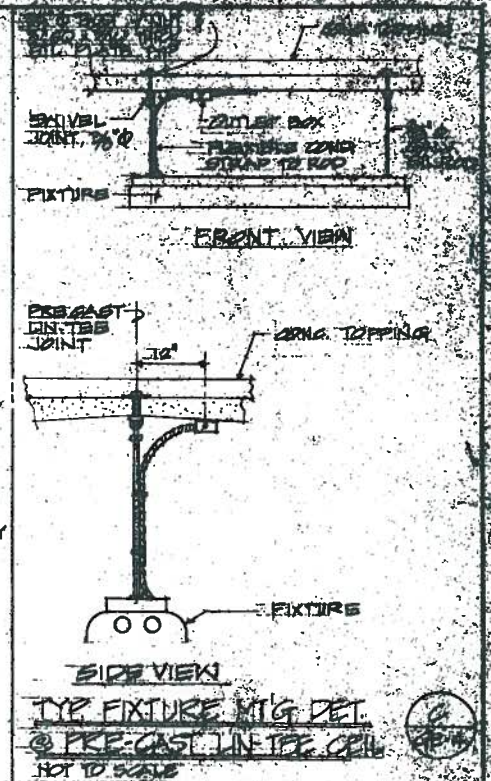
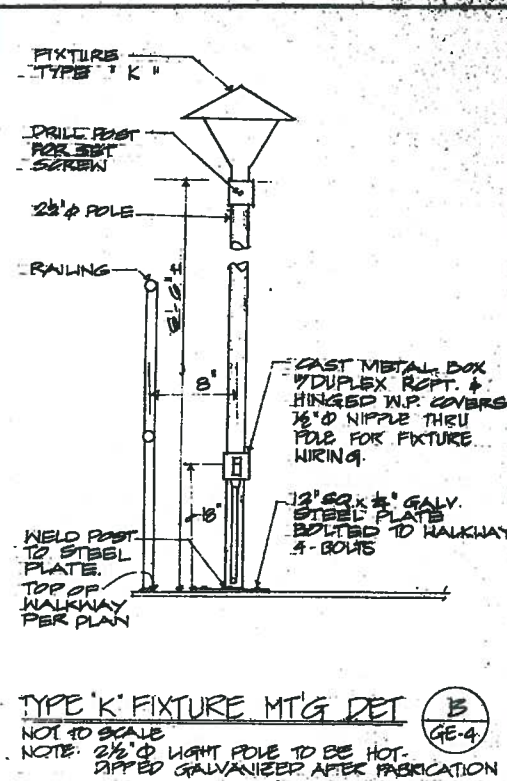
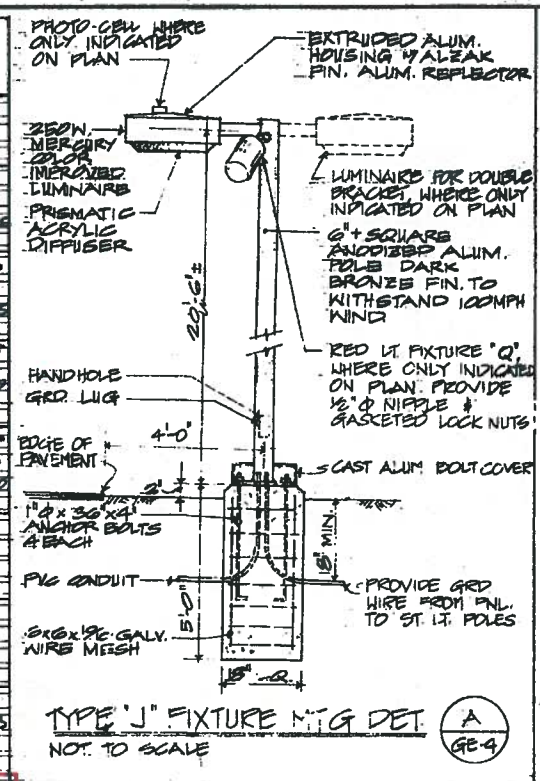


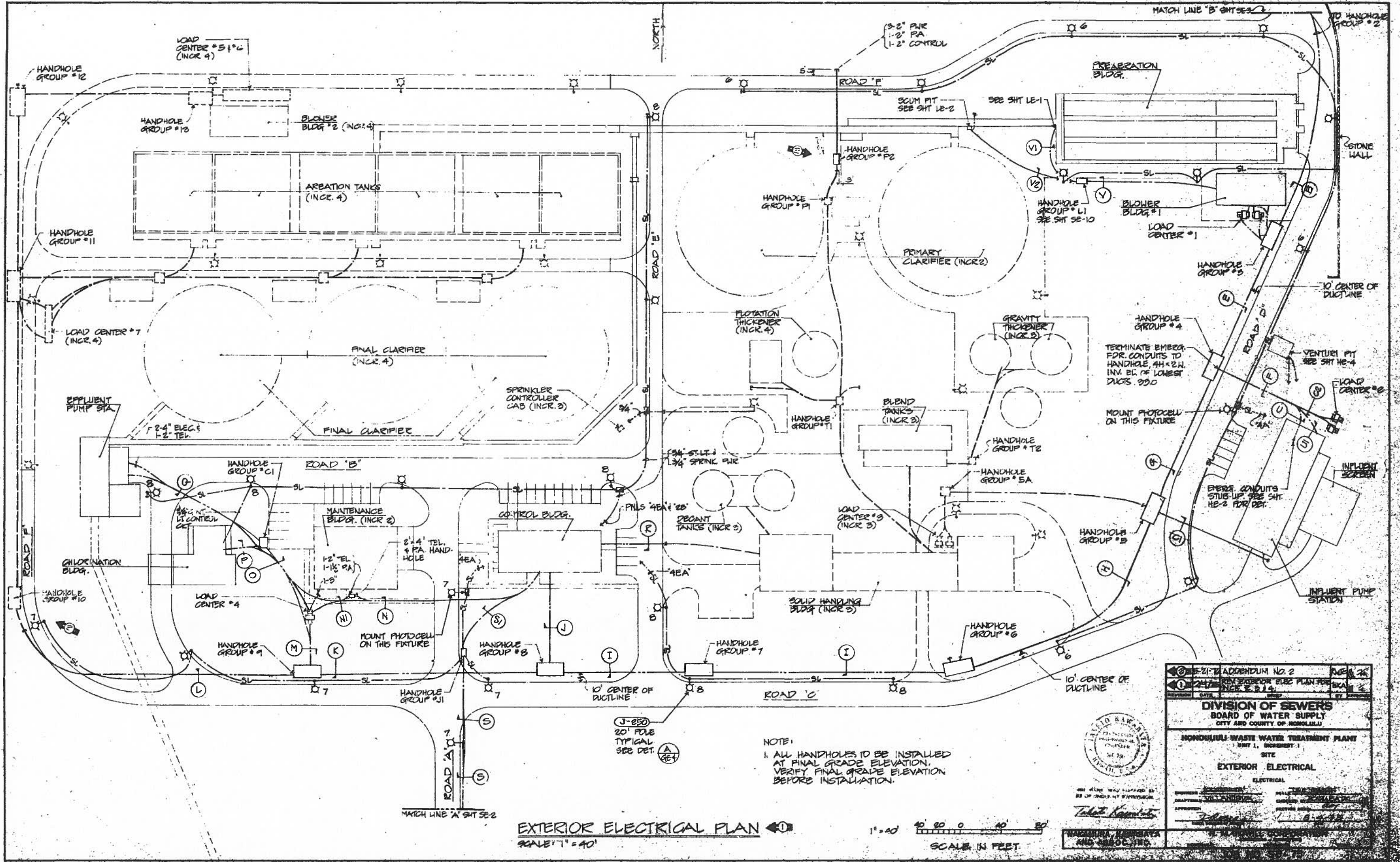
**FIXTURE SCHEDULE**

TYPE	LAMP OR WATTAGE & BALLAST VOLTAGE	DESCRIPTION	MANUFACTURER OR APPROVED EQUAL	TYPE	LAMP OR WATTAGE & BALLAST VOLTAGE	DESCRIPTION	MANUFACTURER OR APPROVED EQUAL
A	4-40" T-12 RS. 40W. 277V.	FLUOR. RECESSED ACRYLIC PRISMATIC LENS, STEEL BODY, FLAT ALUM. HOOD FRAME (NOT RECESSED) HINGE FLATS ON EITHER SIDE FOR EXPOSED GEL TYPE G.E. UNIT	GLOBE - SERIES 2250 DAYRITE - TRAFFER & MOBILEX COLUMBIA - 5000 SERIES	B	4-40" T-12 RS. 40W. 277V.	FLUOR. SURFACE PRISMATIC ACRYLIC LENS, METAL BODY METAL DR. FRAMES W/ HINGES & LATCH ON EITHER SIDE 3'x4' UNIT	GLOBE - SERIES 2250 DAYRITE - DAYLINE COLUMBIA - 5000 SERIES
A1	2-40" T-12 RS. 40W. 277V.	FLUOR. SIMILAR TO TYPE "A" EXCEPT 1'x4' UNIT.	GLOBE - SERIES 2250 DAYRITE - TRAFFER & MOBILEX COLUMBIA - 5000 SERIES	E1	2-40" T-12 RS. 40W. 277V.	FLUOR. SURFACE, SIMILAR TO TYPE "B" EXCEPT 2'x2' UNIT.	GLOBE - SERIES 2250 DAYRITE - DAYLINE COLUMBIA - 5000 SERIES
A2	2-40" T-12 RS. 40W. 277V.	FLUOR. SIMILAR TO TYPE "A" EXCEPT 2'x2' UNIT.	GLOBE - SERIES 2250 DAYRITE - TRAFFER & MOBILEX COLUMBIA - 5000 SERIES	F	2-40" T-12 RS. 40W. 277V.	FLUOR. SURF. OR STEM MTD. ONE-PIECE INTEGRATION MOUNTED THERMOPLASTIC BODY, GASKETED 200012 DIFFUSERS SUITABLE FOR SAME LOCATION BY LATCH & HINGE ON EITHER SIDE.	DAYRITE - VAPORLINE GLOBE - SERIES 7400 BENJAMIN - STRAUBER-10 LITHONIA - PL 240A
B	2-40" T-12 RS. 40W. 277V.	FLUOR. STRIP LITE BAKED WHITE ENAMEL FINISH BODY.	GLOBE - 1802-4R SYLVANIA - LS 2404 LITE DRAFT - TSE 2405 PRUDENTIAL - P102	G	100W. I.F.	INCAND. OPAL GLOBE DIFFUSER CELL MOUNT. DIE CAST ALUM. BODY.	PRERITE - GE-10 HALO - H 2400
B1	2-40" T-12 RS. 40W. 277V.	FLUOR. STRIP LITE WITH GALV. WIRE GUARD, BAKED WHITE ENAMEL FINISH BODY.	GLOBE - 1802-4R SYLVANIA - LS 2404 LITE DRAFT - TSE 2405 PRUDENTIAL - P102	H	100W. I.F.	INCAND. NAIL BRACKET ANODIZED CAST ALUM. BODY OPAL GLASS DIFFUSER VAPOR LIGHT.	DEVINE - B320 MOLDCAST - McPHILBEN
B2	2-40" T-12 RS. 40W. 277V.	FLUOR. STRIP LITE BAKED WHITE ENAMEL FINISH BODY.	PRUDENTIAL - P102 SYLVANIA - BS 4408 LITE DRAFT - SE 4408	I	AS SHOWN I.F. 100W. 8500 H.L. LAMP	INCAND. RECESSED ANODIZED ALUM. TRM. SATIN ALUM. FINISH NEOPRENE GASKETED ABALITE GL. LENS. NEARLIGHT PLASTER FRAME.	DEVINE - D16-226 McPHILBEN - 4 222 PETS MOLDCAST - V-57
B3	2-40" T-12 RS. 40W. 120V.	FLUOR. SIMILAR TO TYPE "B" EXCEPT WITH 120V. BALLAST.	GLOBE - 1802-4R SYLVANIA - LS 2404 LITE DRAFT - TSE 2405 PRUDENTIAL - P102	J	250 W. MERCURY 277V.	MERCURY POLE MTD. INTEGRAL BALLAST ANODIZED ALUM. BODY, DARK BRONZE FINISH. 6" SQ. POLE 22FT. HEIGHT. SEE DET. A/GE-4	DEVINE - SITE TREND STERNER - MARQUETTE MOLDCAST - SITE MOLDING ARCH - AL3.07 (MDD)
B4	2-40" T-12 RS. 40W. 120V.	FLUOR. SIMILAR TO TYPE "B" EXCEPT WITH 120V. BALLAST.	GLOBE - 1802-4R SYLVANIA - LS 2404 LITE DRAFT - TSE 2405 PRUDENTIAL - P102	K	150W. I.F. 120V.	INCAND. POLE MTD. ANODIZED ALUM. CANOPY, PRISMATIC GLASS DIFFUSER. SEE DET. B/GE-4	McPHILBEN - 5-25 DEVINE - 2-3025 NP
B5	1-40" T-12 RS. 40W. 277V.	FLUOR. STRIP LITE WITH GALV. WIRE GUARD BAKED WHITE ENAMEL FINISH BODY.	GLOBE - 1802-4R SYLVANIA - LS 4009 LITE DRAFT - T4015H PRUDENTIAL - P101	L	100W. 120V. A 21/4M	INCAND. DOUBLE OBSTRUCTION LIGHT. RED LENS. SEE DETAIL.	HUBBELL - BTH-3602 GROUSE - HINE - 1220-3400 NESTINGHOUSE - 43222
B6	1-40" T-12 RS. 40W. 120V.	FLUOR. SIMILAR TO TYPE "B5" EXCEPT 120V. BALLAST.	GLOBE - 1802-4R SYLVANIA - LS 4009 LITE DRAFT - T4015H PRUDENTIAL - P101	M	1-40" T-12 RS. 110W. 120V.	FLUOR. SIGN LI. REMOTE BALLAST. DIE CAST ALUM. ZONK. WEATHERTIGHT ENCLOSURE. BUTYRATE. PLASTIC SHIELD LIGHT. GEL BAKED ENAMEL FIN.	COLUMBIA - SEC-127-12 HUBBELL - 705-142 GROUSE HINE - 282500
B7	1-40" T-12 R.S. 40W. 277V.	FLUOR. STRIP LITE W/ ASYMMETRICAL REFLECTOR.	LITE DRAFT - T4015H COLUMBIA - PARI 40MA SYLVANIA - 34210	N	2-40" T-12 R.S. 40W. 120V.	FLUOR. SIMILAR TO TYPE "D" EXCEPT 120V. BALLAST.	GLOBE - SERIES 3800 MILLER - INDIGO
C	2-40" T-12 RS. 40W. 277V.	FLUOR. INDUSTRIAL TYPE FIXTURE W/ PORCELAIN ENAMELED STEEL REFLECTOR. 25% UP LIGHT COMPONENT.	DAYRITE - CFI-12 GLOBE - 2162-4R BENJAMIN - FL 2014-4U SYLVANIA - QP10-2404	P	150 W PAR. 98	EXTERIOR FLOODLIGHT CLUSTERS ADJUSTABLE H.P. LAMPHOLDER DIE CAST ALUM. CONSTRUCTION. NEOPRENE GASKETED.	HUBBELL - 109 STINCO - 1801 MOLDCAST - 11480
C1	2-40" T-12 RS. 40W. 277V.	FLUOR. INDUSTRIAL TYPE FIXTURE W/ PORCELAIN ENAMELED STEEL REFLECTOR. 25% UP LIGHT COMPONENT.	SYLVANIA - QP25-3404 LITHONIA - AF 340	Q	75 W. 220/0/5	INCAND. 3/8" x 3/8" L. CYLINDER. CAST ALUM. CONSTRUCTION AND DIEED FOR EXTERIOR USE. END SHIELD. DARK BRONZE FIN.	
C2	2-40" T-12 RS. 40W. 120V.	FLUOR. SIMILAR TO TYPE "C" EXCEPT W/ 120V. BALLAST.	DAYRITE - CFI-10 GLOBE - SERIES 2102 BENJAMIN - FL 2014-4U SYLVANIA - QP10-2404	R	2-16" 1/2 20W	EXIT LIGHT WITH CAST ALUMINUM BODY. SATIN FINISH. APPROX. SIZE 8" x 8" x 1 1/2" D. CEILING MOUNTED. SHIELD FACE WITH G. RED SIGNAL LETTERS. ECKT. 2 TTY. 30000 BR. LAMP.	
D	2-40" T-12 RS. 40W. 277V.	FLUOR. WRAP AROUND PRISMATIC ACRYLIC LENS. W/ HINGED FROM EITHER SIDE.	GLOBE - SERIES 3800 MILLER - INDIGO	S	2-16" 1/2	SAME AS TYPE "R" EXCEPT 2-FACE WITH ARROWS.	
D1	4-40" T-12 RS. 40W. 277V.	FLUOR. WRAP AROUND PRISMATIC ACRYLIC LENS. W/ HINGED FROM EITHER SIDE.	GLOBE - SERIES 3800 MILLER - INDIGO				



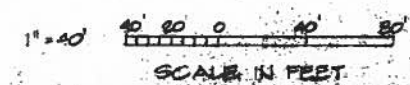
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.  
 T. Kawabata  
 NAKAMURA, KAWABATA & ASSOCIATES, INC.

APPENDIX NO. 3  
 DIVISION OF SEWERS  
 BOARD OF WATER SUPPLY  
 CITY AND COUNTY OF HONOLULU  
 HONOLULU WASTE WATER TREATMENT PLANT  
 UNIT 1, PROJECT  
 GENERAL  
 FIXTURE SCHEDULE & MOUNTING DETAILS  
 ELECTRICAL



NOTE:  
 1. ALL HANDHOLES TO BE INSTALLED AT FINAL GRADE ELEVATION. VERIFY FINAL GRADE ELEVATION BEFORE INSTALLATION.

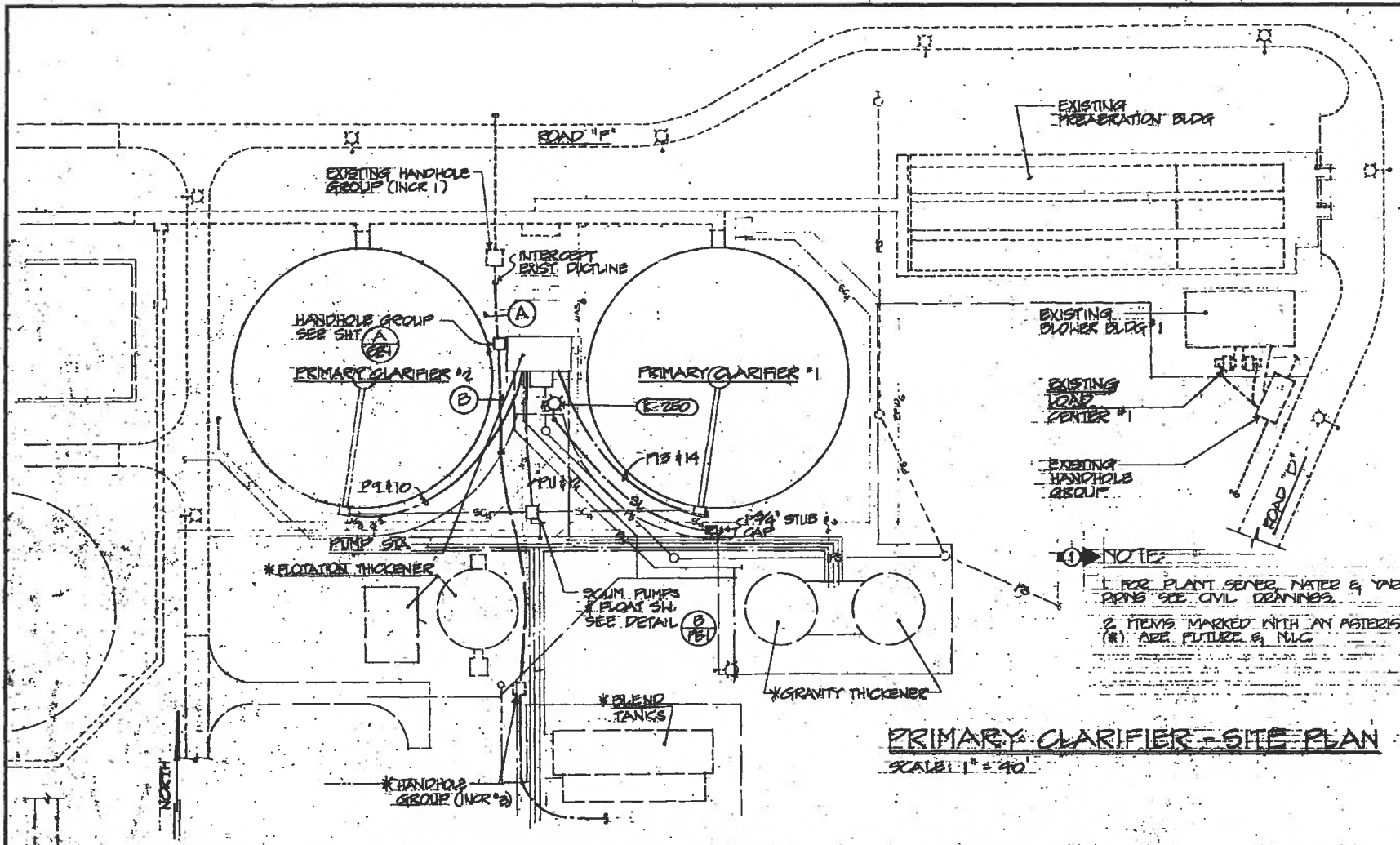
**EXTERIOR ELECTRICAL PLAN**  
 SCALE 1" = 40'



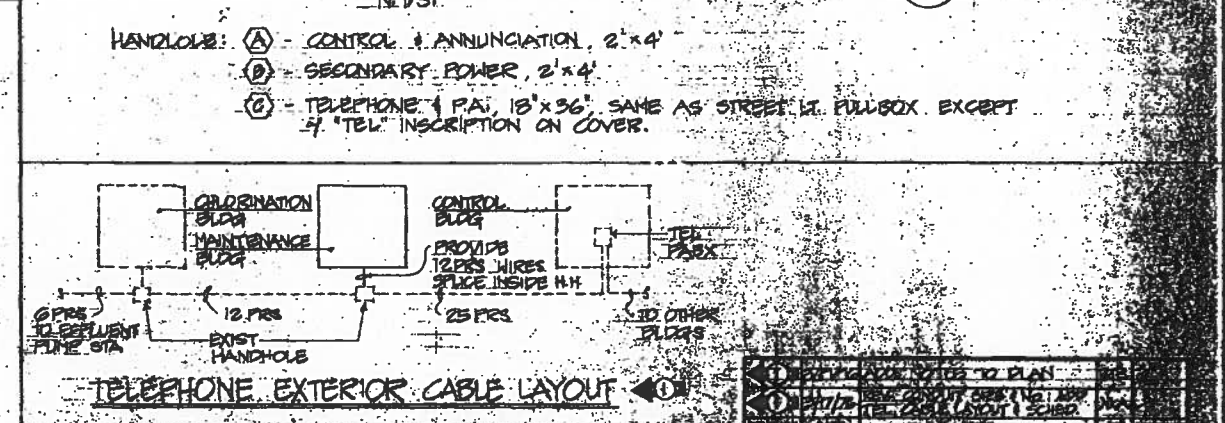
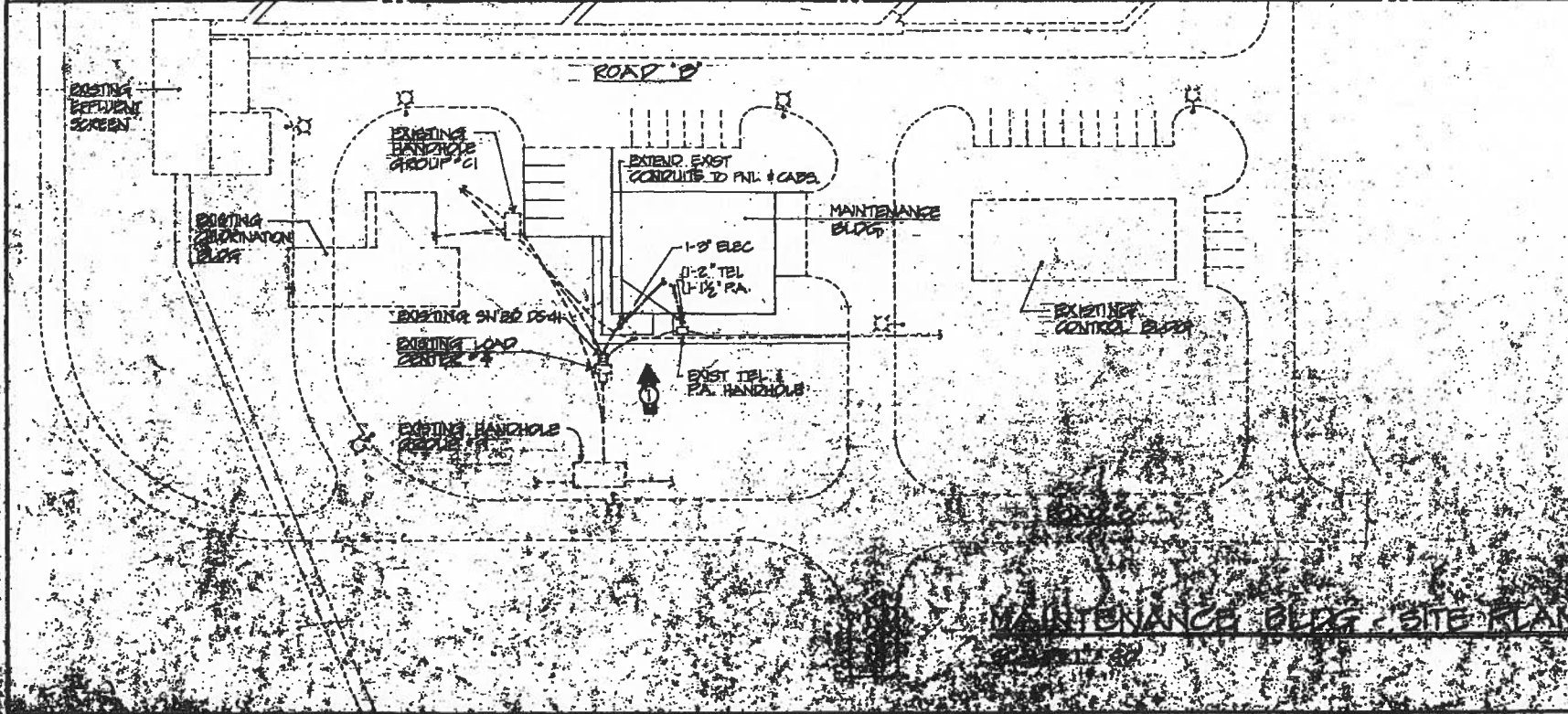
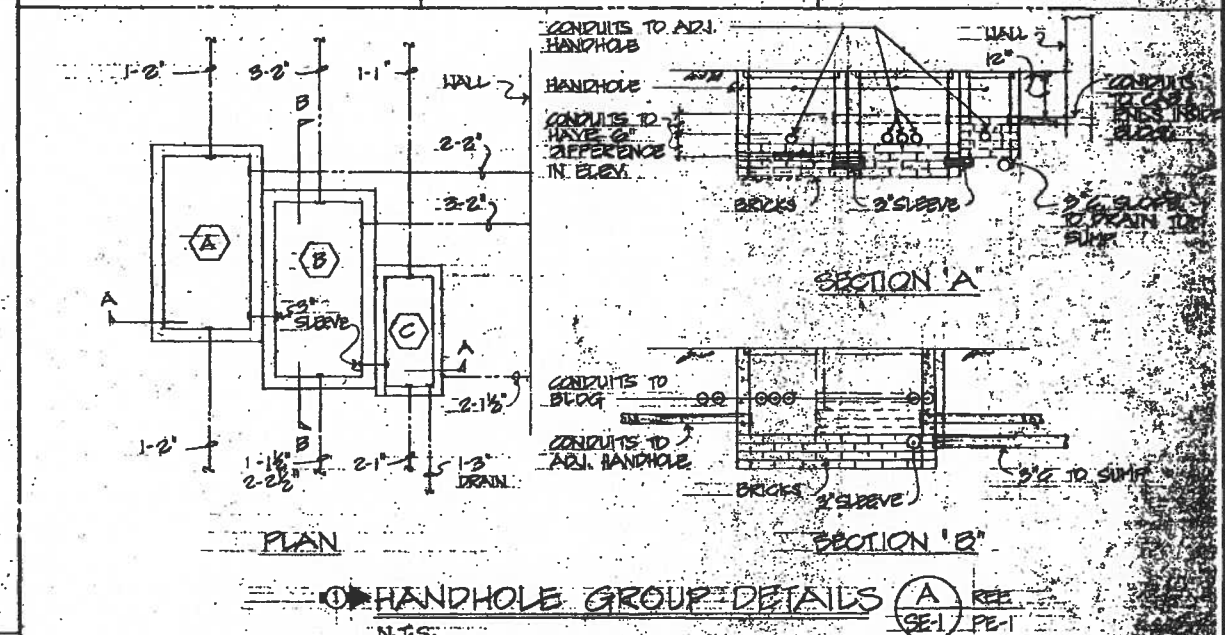
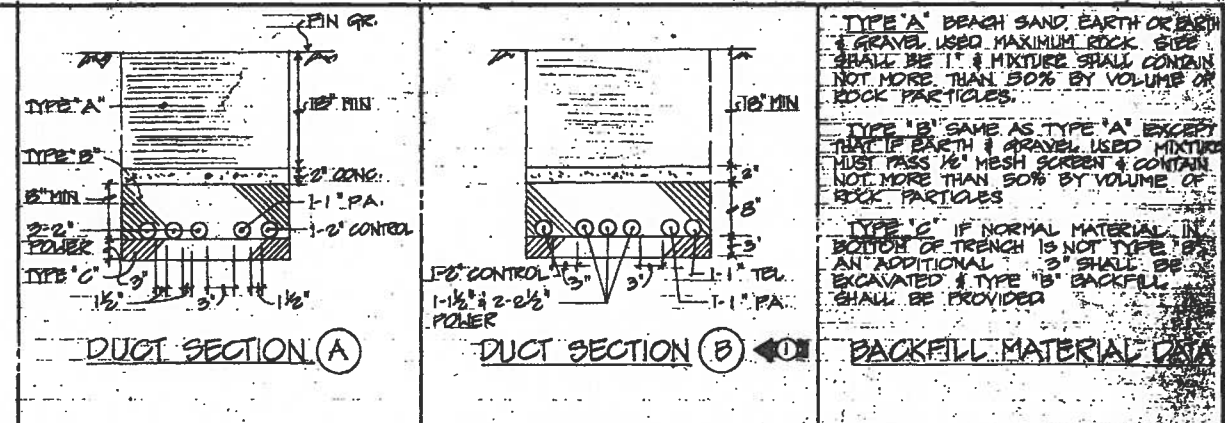
SEE ALSO: SEE SHEET 118-1 FOR ELECTRICAL PLAN FOR THE INTERIOR OF THE MAINTENANCE BUILDING.

*T. K. Kamata*  
 T. K. KAMATA AND ASSOCIATES

21-21-21 ADDENDUM NO. 2 21-21-21 EXTERIOR ELEC PLAN FOR DIVISION OF SEWERS BOARD OF WATER SUPPLY CITY AND COUNTY OF HONOLULU HONOLULU WASTE WATER TREATMENT PLANT UNIT I, INCORPORATED SITE EXTERIOR ELECTRICAL ELECTRICAL	DATE: _____ DRAWN BY: _____ CHECKED BY: _____ APPROVED BY: _____ DATE: 11/8/2018
---	--

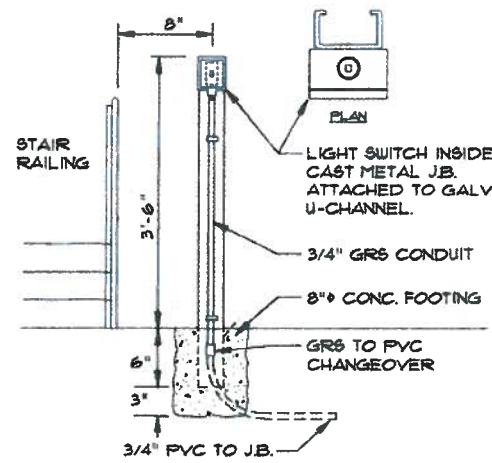


**NOTE:**  
1. FOR PLANT SEWER, WATER & YARD PIPES SEE CIVIL DRAWINGS.  
2. ITEMS MARKED WITH AN ASTERISK (\*) ARE FUTURE & N/C.

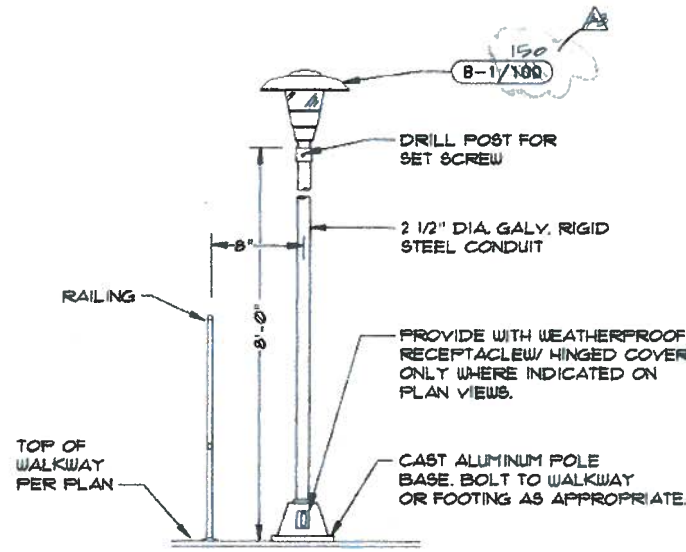


BUILDING & ROOM No.	TEL. INTR. WALL	TEL. NUMBERS	TEL. NUMBERS
MAINTENANCE BLDG			
ORDINATION BLDG			
CONTROL BLDG			
TELEPHONE EXTERIOR CABLE LAYOUT			

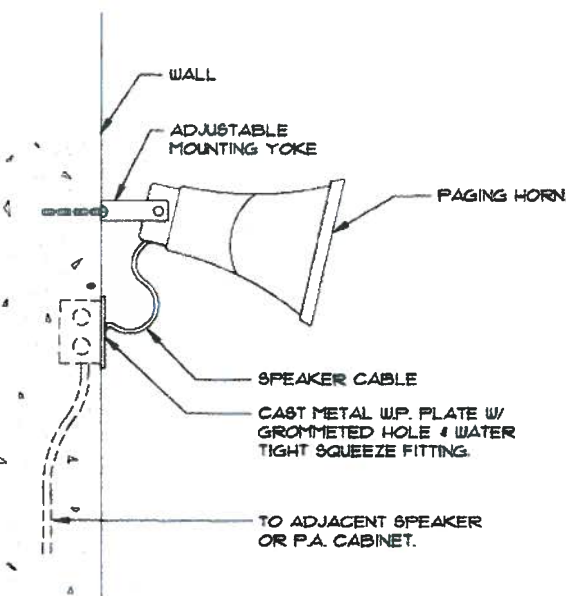
**DIVISION OF SEWERS**  
DIVISION OF WATER SUPPLY  
COUNTY OF HONOLULU  
HONOLULU WASTE WATER TREATMENT PLANT  
SITE  
EXTERNAL ELECTRICAL & DUCT SECTION



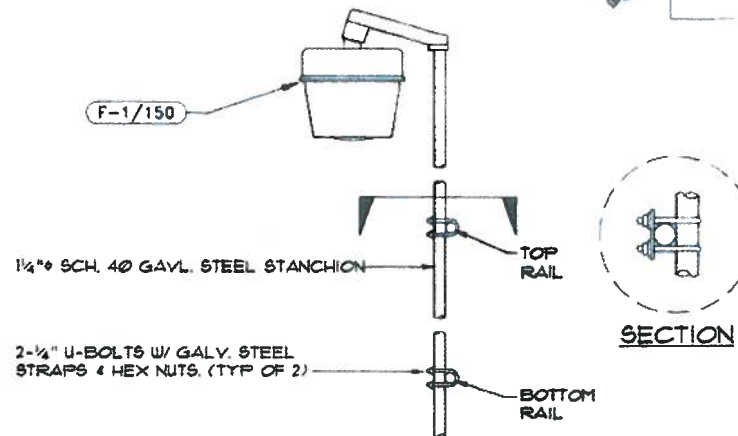
**1 LIGHT SWITCH MTG. DETAIL**  
E006 NOT TO SCALE



**2 TYPE "B" FIXTURE MTG DETAIL**  
E006 NOT TO SCALE



**3 SPEAKER MTG. DETAIL**  
E006 NOT TO SCALE



**4 TYPE "F" FIXTURE MTG DETAIL**  
E006 NOT TO SCALE

LIGHTING FIXTURE SCHEDULE				
SYMBOL	DESCRIPTION	TOTAL INPUT WATTS	REFERENCE	
A-2/40	FLUORESCENT-INDUSTRIAL 1' X 4' NOMINAL, UP-LIGHTING APERTURES, SYMMETRICAL PORCELAIN REFLECTOR, 120 VAC. 2-F40 R.S. LAMPS	100	DAY-BRITE 40211-4	
B-1/150	150W HIGH PRESSURE SODIUM, 120V AC. POLE MOUNTED ON 8' POLE WITH WEATHERPROOF DUPLEX RECEPTACLE WHERE INDICATED ON PLANS.	175	SPAULDING PT-150HPS POLE: 41003-054-ER4	
C-2/40	FLUORESCENT-INDUSTRIAL VAPORTITE, CORROSION-RESISTANT. 1' X 4' NOMINAL 120V AC. 2-F40 R.S. LAMPS	100	APPLETON VRS240-118	
D-1/100	100W HIGH PRESSURE SODIUM WALL MOUNTED, 120 VAC W/ INDIVIDUAL PHOTOCCELL CONTROL	125	HOLOPHANE WL2K-100HP-12GR-WL2K-PR12	
E-1/150	ENCLOSED LUMINAIRE, SUITABLE FOR WET LOCATIONS, PRISMATIC GLASS REFRACTOR, ALUMINUM BALLAST HOUSING, REACTOR BALLAST. 150 WATT HIGH PRESSURE SODIUM LAMP. PENDANT MOUNTED.	175	HOLOPHANE PETL-5AHP-12-545-P MM115S0HE5A4	
F-1/150	ENCLOSED LUMINAIRE, SUITABLE FOR WET LOCATIONS, PRISMATIC GLASS REFRACTOR, ALUMINUM BALLAST HOUSING, REACTOR BALLAST. 150 WATT HIGH PRESSURE SODIUM LAMP. STANCHION MOUNTED.	175	HOLOPHANE PETL-15AHP-12-545-S MM115S0HE5A7	
G-1/150	HPS 277V, 150W W/ INTEGRAL BALLAST, ANODIZED ALUMINUM BODY AND DARK BRONZE FINISH. LIGHTING FIXTURE SHALL BE TYPE II DISTRIBUTION UNLESS NOTED OTHERWISE BY ROMAN NUMERAL. SQUARE ANODIZED ALUMINUM POLE FOR 20' MOUNTING HEIGHT W/ DARK BRONZE FINISH TO WITHSTAND 100 MPH WIND.	180	ARCHITECTURAL LIGHTING CO. #ALS-187	

**AS BUILT**



THIS WORK WAS PREPARED BY ME OR UNDER MY CLOSE PERSONAL SUPERVISION AND I AM A duly Licensed Professional Engineer in the State of Hawaii.

Signature: *[Signature]* Date: 3/19/90

AS BUILT 3-21-95

REVISION	DATE	DESCRIPTION	BY	APPROVED
1	7-8-91	ADDENDUM No. 1	GMP	

DIVISION OF WASTEWATER MANAGEMENT  
DEPARTMENT OF PUBLIC WORKS  
CITY AND COUNTY OF HONOLULU

PROJECT: HONOLULU WWTP EXPANSION PHASE 1; PART A

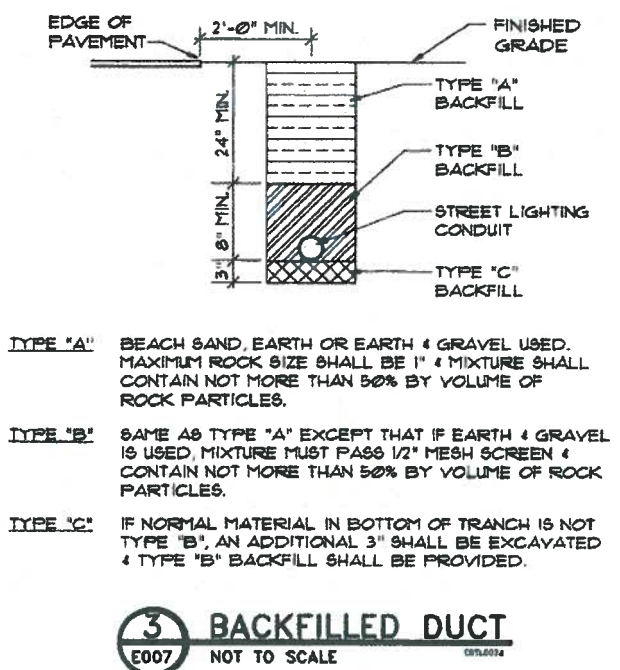
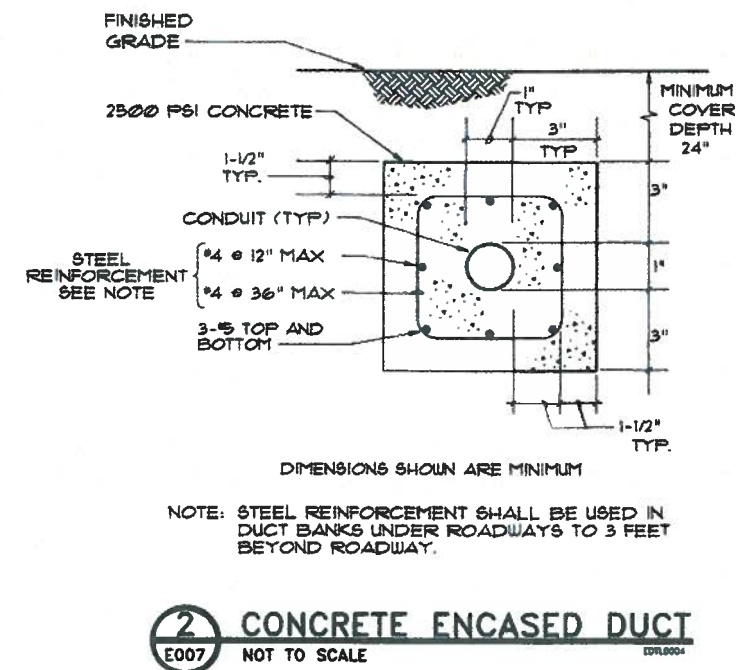
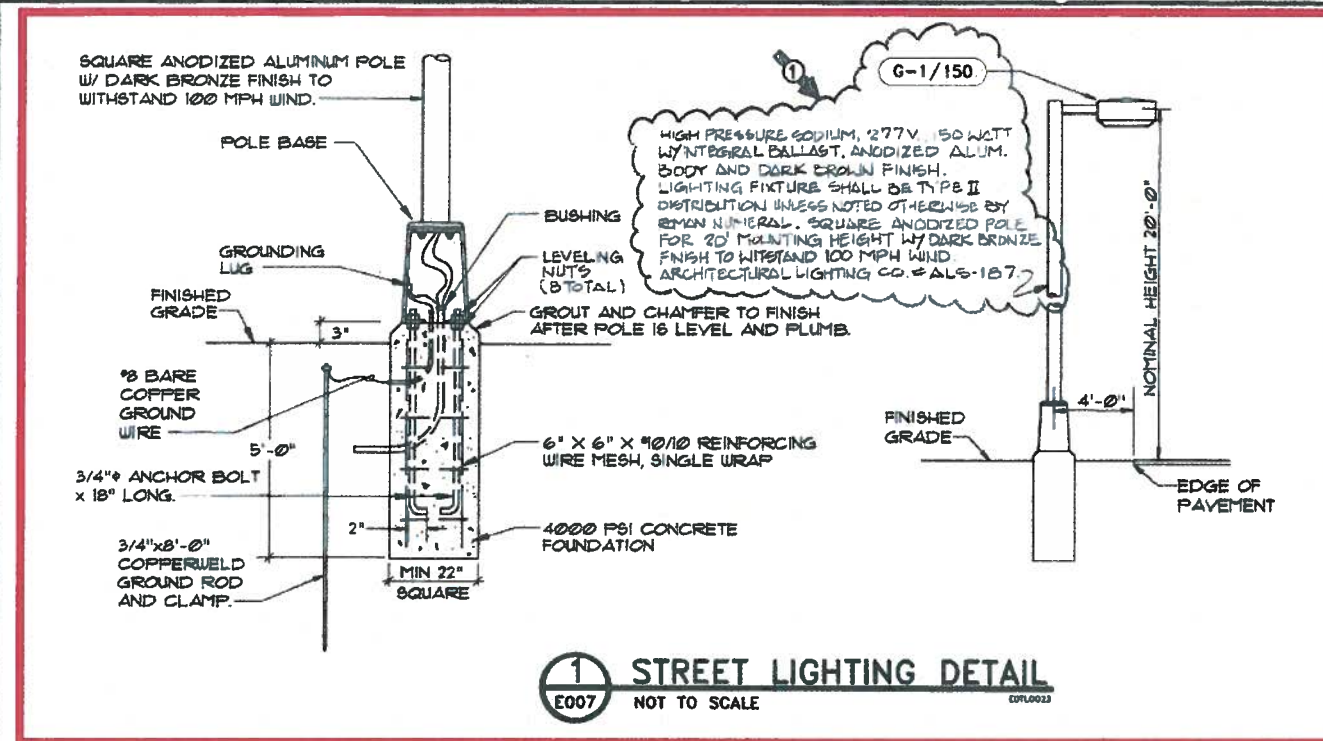
ITEM: ELECTRICAL DETAILS-4

R.C. \_\_\_\_\_ SCALE: AS NOTED  
DRAFTSMAN: M.T. \_\_\_\_\_ CHECKED BY: \_\_\_\_\_  
APPROVED: *[Signature]* BRANCH HEAD: *[Signature]*

GMP ASSOCIATES, INC.  
JOB NO. W1-90

FILE	DATE	STATUS	BY

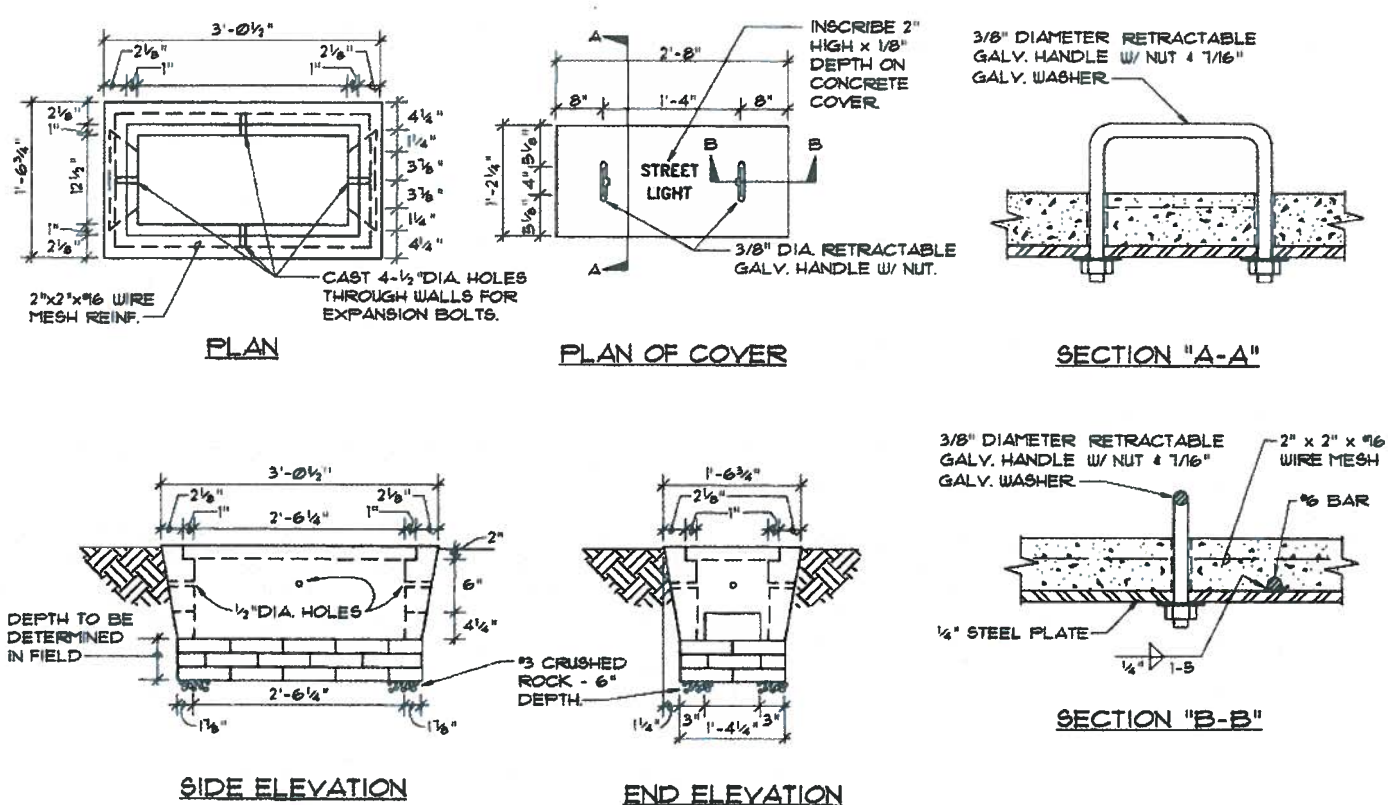
2151A320



**TYPE "A"** BEACH SAND, EARTH OR EARTH & GRAVEL USED. MAXIMUM ROCK SIZE SHALL BE 1" & MIXTURE SHALL CONTAIN NOT MORE THAN 50% BY VOLUME OF ROCK PARTICLES.

**TYPE "B"** SAME AS TYPE "A" EXCEPT THAT IF EARTH & GRAVEL IS USED, MIXTURE MUST PASS 1/2" MESH SCREEN & CONTAIN NOT MORE THAN 50% BY VOLUME OF ROCK PARTICLES.

**TYPE "C"** IF NORMAL MATERIAL IN BOTTOM OF TRANCH IS NOT TYPE "B", AN ADDITIONAL 3" SHALL BE EXCAVATED & TYPE "B" BACKFILL SHALL BE PROVIDED.



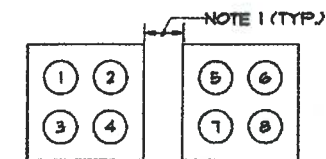
REVISION	DATE	APPENDUM No. 1	GMP
7-8-91			
DIVISION OF WASTEWATER MANAGEMENT DEPARTMENT OF PUBLIC WORKS CITY AND COUNTY OF HONOLULU			
PROJECT: HONOLULU WWTP EXPANSION PHASE 1; PART A			
ITEM: SITE LIGHTING DETAILS			
ENGINEER	R.C.	SCALE	AS NOTED
DRAWN BY	M.T.	CHECKED BY	J.P.
APPROVED	<i>[Signature]</i>	BRANCH HEAD	<i>[Signature]</i>
		DATE	4-20-90
GMP ASSOCIATES, INC.			
JOB NO. W1-90			

**AS BUILT**

Doc. No. **E007**

2151B068

**NOTES:**  
 1. MAINTAIN CLEARANCE BETWEEN POWER AND SIGNAL CONDUITS PER THE SPECIFICATIONS.



**SECTION A-A**

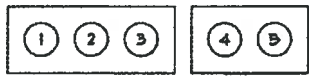
REF. NO.	CONDUIT NUMBER
1	P212A
2	P212B
3	P212C
4	P212D
5	X201A
6	X201A
7	S201B
8	X201B

**SECTION B-B**

REF. NO.	CONDUIT NUMBER
1	S200D
2	X200F

**SECTION C-C**

REF. NO.	CONDUIT NUMBER
1	S200D
2	X200F
3	S311B
4	X311

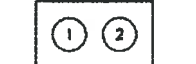


**SECTION D-D**

REF. NO.	CONDUIT NUMBER
1	P200A
2	P200B
3	X200G
4	S200A
5	S200B

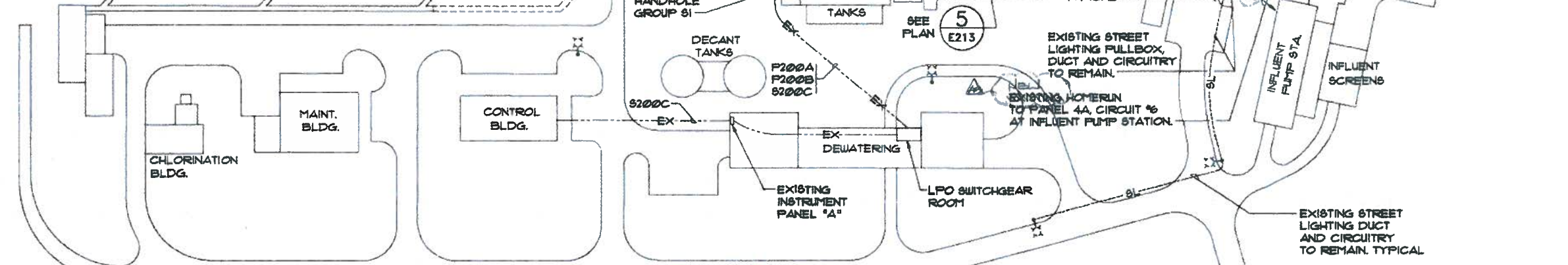
**SECTION E-E**

REF. NO.	CONDUIT NUMBER
1	P200A
2	P200B
3	X200A
4	X200B
5	X200C
6	S200C
7	X200D
8	X200E



**SECTION F-F**

REF. NO.	CONDUIT NUMBER
1	S100D
2	X100E

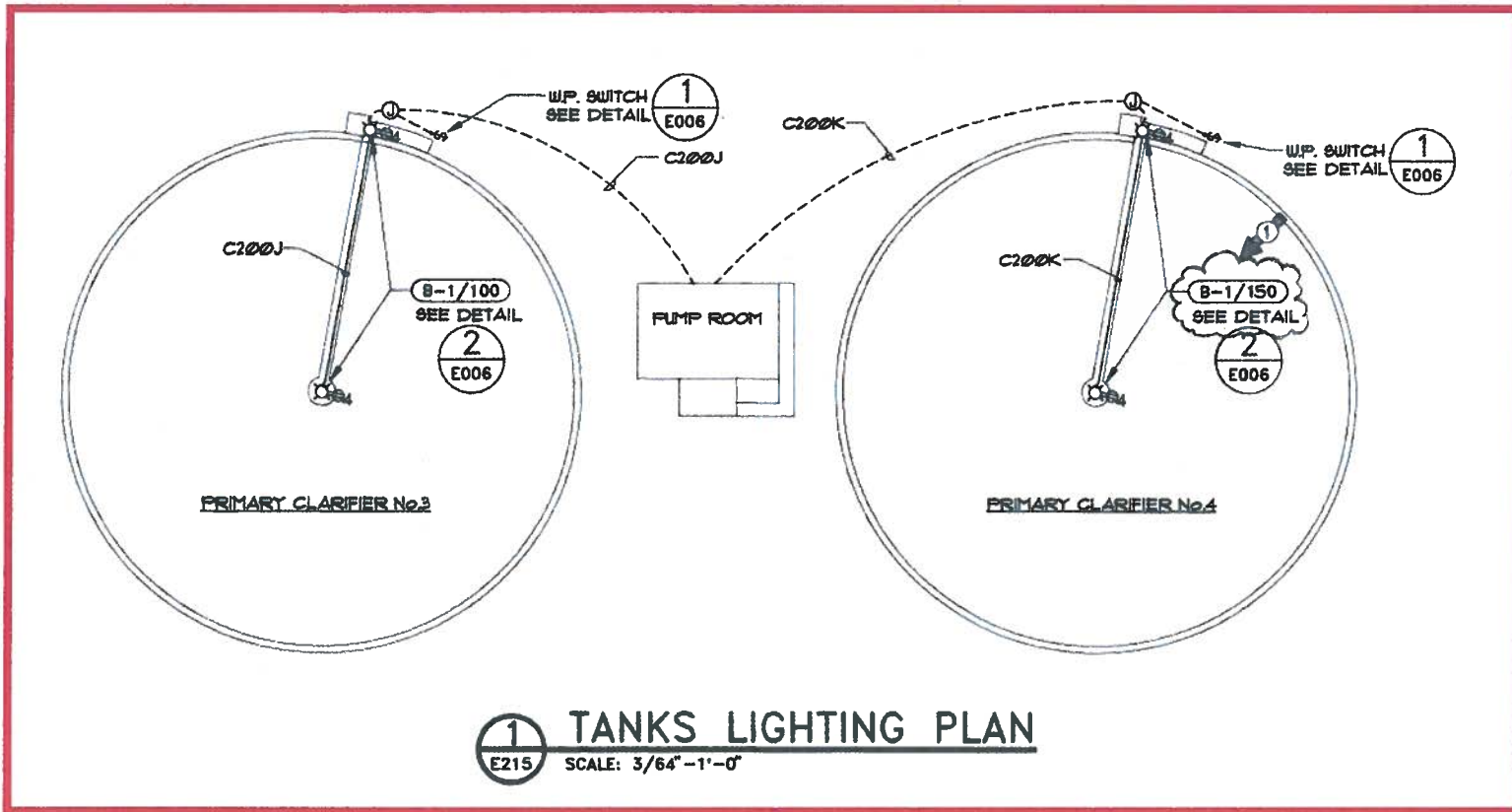


**NOTE:**  
 1. CONDUIT X200A & X200B TERMINATE AT THE POWER HANDHOLE. CONDUIT X200C, X200D AND X200E TERMINATE AT THE COMMUNICATION HANDHOLE.  
 2. THE FOLLOWING CONDUITS GO BETWEEN HANDHOLE GROUP S1 TO HANDHOLE GROUP P1: P200A, P200B, P200C PLUS THE SPARE CONDUITS X200A, X200B, X200C, X200D, AND X200E. THERE ARE ALSO EXISTING CONDUITS GOING FROM HANDHOLE GROUP S1 TO HANDHOLE GROUP P1.

**1 SITE ELECTRICAL PLAN**  
 E008 SCALE: 1"=60'

**AS BUILT**

REVISION	DATE	BRIEF	BY	APPROVED
1	7-8-91	ADDENDUM No. 1		GMP
DIVISION OF WASTEWATER MANAGEMENT DEPARTMENT OF PUBLIC WORKS CITY AND COUNTY OF HONOLULU				
<b>PROJECT:</b> HONOLULU WWT EXPANSION PHASE 1; PART A				
<b>ITEM:</b> SITE ELECTRICAL PLAN				
ENGINEER	R.C.	SCALE	AS NOTED	
DRAFTER	M.T.	CHECKED BY	[Signature]	
APPROVED	[Signature]	BRANCH HEAD	[Signature]	
<b>GMP ASSOCIATES, INC.</b>				
JOB NO. W1-90				



**NOTES:**

- CONNECT EXISTING REPEATER CONTACT FROM EACH MODIFIED EXISTING ANNUNCIATOR WINDOW OR REPEATER CONTACTS FROM EACH NEW ANNUNCIATOR WINDOW TO AN INDEPENDENT DISCRETE CONTROLLER INPUT, SEE 1/E002. PROGRAM CONTROLLER TO PROVIDE ON SCREEN DISPLAY MESSAGE AND HARD COPY PRINTOUT MESSAGE WITH TIME AND DATE ON ANY ALARM. ABANDON ANY EXISTING WIRING CONNECTED TO EXISTING MODIFIED ANNUNCIATOR WINDOW REPEATER CONTACTS.

	1	2	3	4
A				
B				
C				
D				

SEE NOTE 1

	1	2	3	4
A				
B				

SEE NOTE 1

WINDOW ROW/COLUMN	REF.	WINDOW ENGRAVING
A1	4/E212	PRIMARY SLUDGE PUMP No.5
A2	4/E212	PRIMARY SLUDGE PUMP No.6
A3	4/E212	PRIMARY SLUDGE PUMP No.7
A4	4/E212	PRIMARY SLUDGE PUMP No.8
B1	5/E212	PRIMARY SLUDGE GRINDER No.5
B2	5/E212	PRIMARY SLUDGE GRINDER No.6
B3	5/E212	PRIMARY SLUDGE GRINDER No.7
B4	5/E212	PRIMARY SLUDGE GRINDER No.8
C1	2/E211	SCUM PUMP No.1 & No.2 HIGH LEVEL
C2	2/E211	SCUM PUMP No.3 & No.4 HIGH LEVEL
C3	---	(SPARE FOR FUTURE ALARM)
C4	1/E212	SUMP PUMP HIGH LEVEL
D1	3/E212	PRIMARY CLARIFIER No.3 HIGH TORQUE
D2	3/E212	PRIMARY CLARIFIER No.4 HIGH TORQUE
D3	---	(SPARE FOR FUTURE ALARM)
D4	---	(SPARE FOR FUTURE ALARM)

	1	2	3	4
A				
B	*	*	*	*

\* EXISTING WINDOW TO BE MODIFIED SEE NOTE 1

WINDOW ROW/COLUMN	REF.	WINDOW ENGRAVING
B1	4/E212	PRIMARY SLUDGE PUMP No.1
B2	4/E212	PRIMARY SLUDGE PUMP No.2
B3	4/E212	PRIMARY SLUDGE PUMP No.3
B4	4/E212	PRIMARY SLUDGE PUMP No.4

WINDOW ROW/COLUMN	REF.	WINDOW ENGRAVING
A1	5/E212	PRIMARY SLUDGE GRINDER No.1
A2	5/E212	PRIMARY SLUDGE GRINDER No.2
A3	5/E212	PRIMARY SLUDGE GRINDER No.3
A4	5/E212	PRIMARY SLUDGE GRINDER No.4
B1	3/E211	SCUM PUMP No.5 HIGH LEVEL
B2	3/E211	SCUM PUMP No.6 HIGH LEVEL
B3	---	(SPARE FOR FUTURE ALARM)
B4	---	(SPARE FOR FUTURE ALARM)

**AS BUILT**

REVISION	DATE	BY	APPROVED
1	7-8-91		SMP
ADDENDUM No.1			
DIVISION OF WASTEWATER MANAGEMENT DEPARTMENT OF PUBLIC WORKS CITY AND COUNTY OF HONOLULU			
PROJECT: HONOLULU WWTP EXPANSION PHASE 1; PART A			
ITEM: NEW PRIMARY CLARIFIERS LIGHTING PLAN AND ANNUNCIATOR DETAILS			
ENGINEER	R.C.	SCALE	AS NOTED
DRAWN	MT	CHECKED BY	J.F.
APPROVED	<i>[Signature]</i>	BRANCH HEAD	<i>[Signature]</i>
GMP ASSOCIATES, INC.			

**2 ANNUNCIATOR MODIFICATION**  
NO SCALE










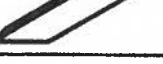


**3 EXISTING SLUDGE PUMPING STATION NEW ANNUNCIATOR**  
NO SCALE

**4 NEW SLUDGE PUMPING STATION NEW ANNUNCIATOR**  
NO SCALE

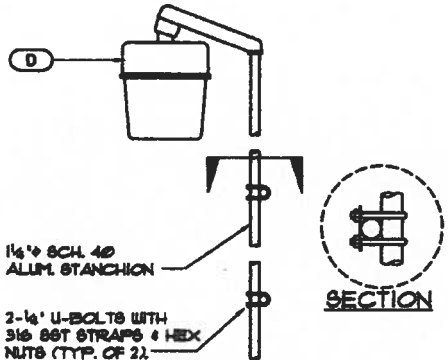
Doc. No. **E215**

JOB NO. W1-90

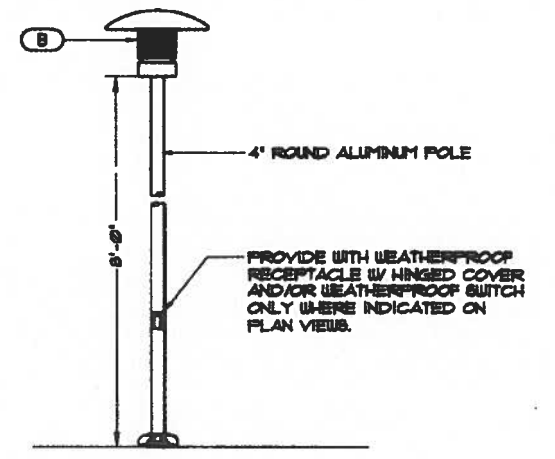
2151A333

LIGHTING FIXTURE SCHEDULE			
SYMBOL	DESCRIPTION	INPUT WATTS	MANUFAC. CAT. NO.
(A)	 FLUORESCENT, INDUSTRIAL SURFACE MOUNTED, 120VAC W/ ENERGY SAVING BALLAST. 2-F40 RS LAMPS	100	COLUMBIA KP240-120 -LE-PAF
(B)	 150W HIGH PRESSURE SODIUM, 120VAC W/ POLYCARBONATE LENS MOUNTED ON 8" ALUMINUM POLE. PROVIDE POLE MOUNTED WEATHERPROOF GF1 TYPE DUPLEX RECEPTACLE AND/OR WEATHERPROOF SWITCH AS INDICATED ON PLANS.	175	CROUSE-HINDS PMS18SR255-A01030-A01043 POLE: RSA4T08NA
(C)	 70W HIGH PRESSURE SODIUM WALLPACK, 120VAC WITH INDIVIDUAL PHOTOCCELL CONTROL	100	GE LIGHTING WM7M-07-S-1 -A-1-SW4-DB -PEK120
(D)	 HIGH PRESSURE SODIUM, 150W ENCLOSED LUMINAIRE, SUITABLE FOR WET LOCATIONS, GLASS REFRACTOR, ALUMINUM BALLAST HOUSING, REACTOR BALLAST, PENDANT MTD, 120VAC	175	GE LIGHTING MM1-15-S-1-A -5-ESG-3
(E)	 FLUORESCENT WALL BRACKET 48" LONG, 120VAC 1-F40RS LAMP	50	COLUMBIA W140-A-120 -LE-PAF
(F)	 FLUORESCENT, 2'x4' STATIC RECESSED TROFFER 2-F40RS LAMPS, 120VAC W/ENERGY SAVING BALLAST	100	COLUMBIA 2J240-EXA-120 -LE-PAF
(G)	 DUAL HEAD EMERGENCY LIGHT 6 VOLT WITH SEALED MAINTENANCE FREE BATTERY	20	PRESCOLITE ELB4-NB
(H)	 LOW BAY HID LUMINAIRE W/ 400W HIGH PRESSURE SODIUM LAMP	450	GE LIGHTING GLB-40-S-O-A -4-1B-TA
(J)	 FLUORESCENT, 2'x4' STATIC RECESSED TROFFER 4-F40RS LAMPS, 120VAC W/ENERGY SAVING BALLAST	200	COLUMBIA 2J440-EXA-120 -LE-PAF
(K)	 HPS, 277V, 150W W/ INTEGRAL BALLAST, INDIVIDUAL PHOTOCCELL CONTROL, ANODIZED ALUMINUM BODY AND BARK BRONZE FINISH. LIGHTING FIXTURE SHALL BE TYPE II DISTRIBUTION UNLESS NOTED OTHERWISE BY ROMAN NUMERAL. SQUARE ANODIZED ALUMINUM POLE FOR 20' MOUNTING HEIGHT W/ DARK BRONZE FINISH TO WITHSTAND 100 MPH WIND.	300	ARCHITECTURAL AREA LIGHTING CO. #ALS-187
(L)	 LOW BAY HID LUMINAIRE W/ 150W HIGH PRESSURE SODIUM LAMP	200	GENERAL ELECTRIC STMM155
(M)	 400 WATT MERCURY VAPOR FLOODLIGHT W/ SEAM WELDED STAINLESS STEEL HOUSING, INTEGRAL BALLAST, HIGH IMPACT TEMPERED GLASS & ALZAK ALUMINUM REFLECTOR. SUITABLE FOR INSTALLATION IN CLASS 1, DIVISION 2 HAZARDOUS AREA. 120V.	450	PAULHIN ELEC. MFG. CO. HDM548

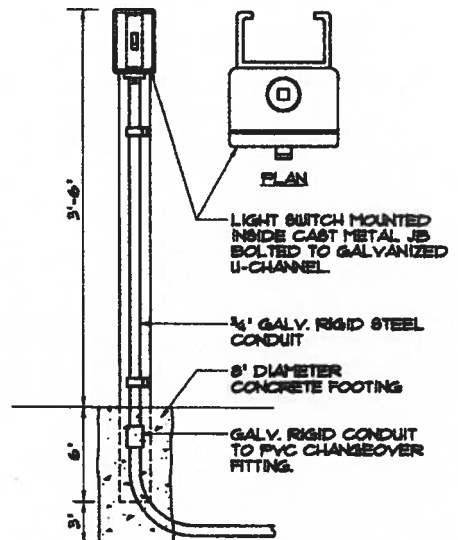
NOTE: ALL EXTERIOR HARDWARE FOR LIGHTING FIXTURES SHALL BE STAINLESS STEEL.



1 FIXTURE MOUNTING DETAIL  
SCALE: NONE  
E504 E002



2 FIXTURE MOUNTING DETAIL  
SCALE: NONE  
E010 E203 E301 E503



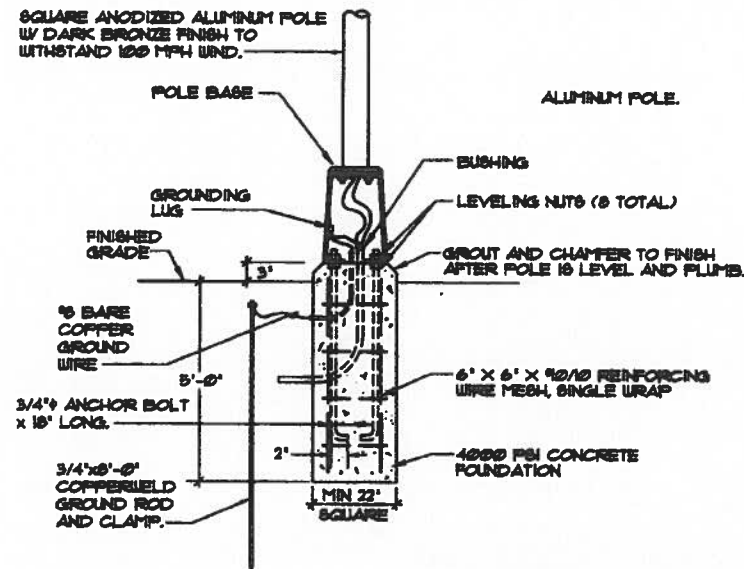
3 LIGHT SWITCH MOUNTING DETAIL  
SCALE: NONE  
E503 E002

**AS-BUILT PLAN**  
Project Completed: December 14, 1991  
As-Built Revision: January 1997  
Made by: Lewis C. Gray, Brian J. Caldwell  
Inspector: Lewis C. Gray, Brian J. Caldwell

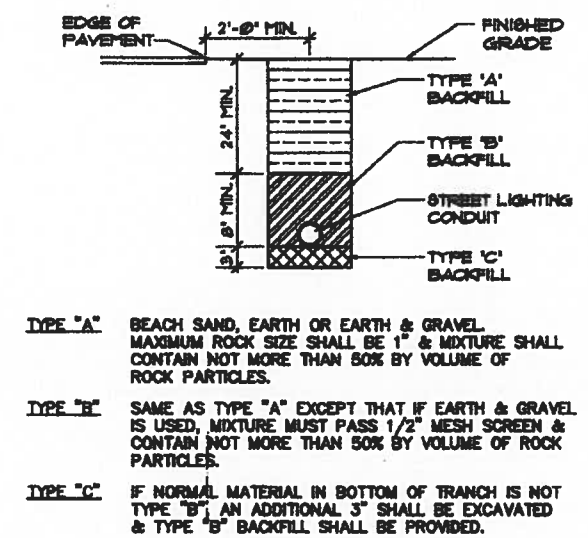
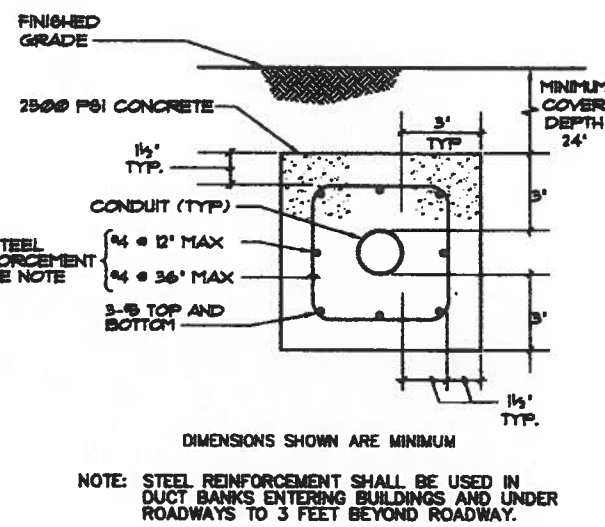
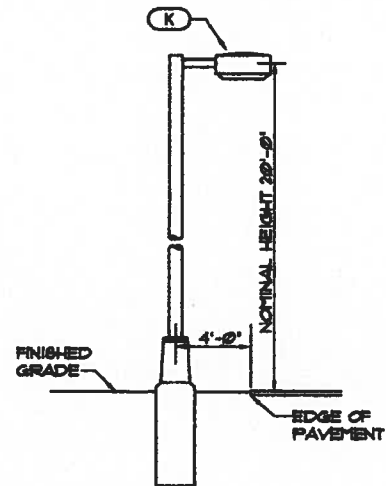
**RONALD Y. YAMAMOTO**  
REGISTERED PROFESSIONAL ENGINEER  
No. 8297-E  
HAWAII, U.S.A.  
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

DIVISION OF ENGINEERING AND CONSTRUCTION  
DEPARTMENT OF TRANSPORTATION MANAGEMENT  
CITY AND COUNTY OF HONOLULU  
PROJECT: HONOLULU WWTP  
UNIT 1A - SECONDARY TREATMENT FACILITIES  
ELECTRICAL DETAILS - 1  
AND LIGHTING FIXTURE SCHEDULE  
DESIGNED BY: SHVL CHECKED BY: DTY  
DRAWN BY: HLT  
GMP ASSOCIATES, INC.  
JOB NO. W16-93



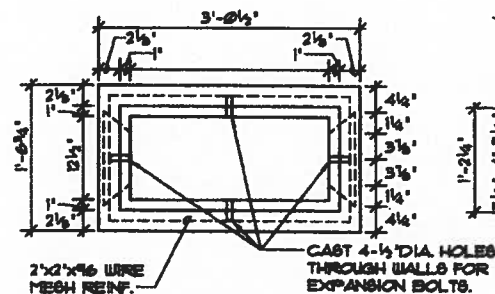


**1 STREET LIGHTING DETAIL**  
SCALE: NONE  
E010 E009

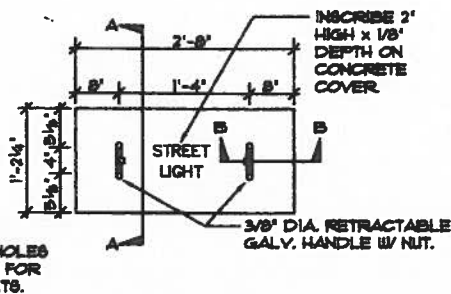


**2 STREET LIGHTING CONCRETE ENCASED DUCT**  
SCALE: NONE  
E010 E009

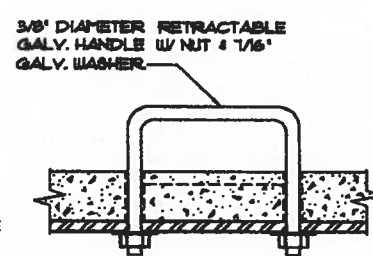
**3 STREET LIGHTING BACKFILLED DUCT**  
SCALE: NONE  
E010 E009



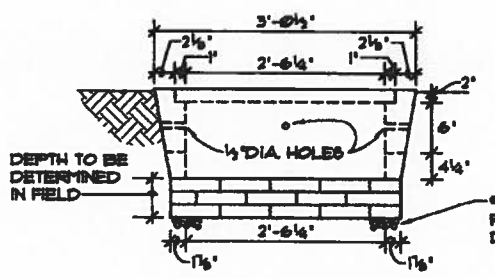
PLAN



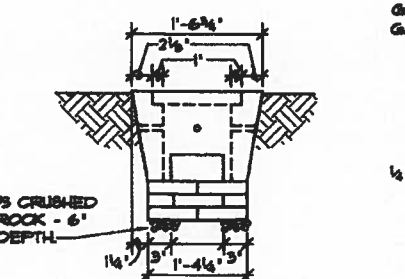
PLAN OF COVER



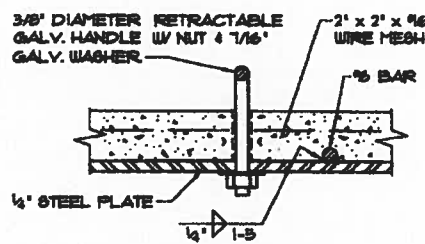
SECTION "A-A"



SIDE ELEVATION



END ELEVATION

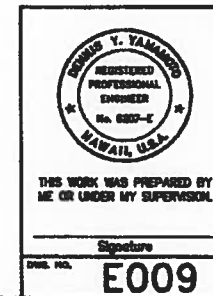


SECTION "B-B"

**4 STREET LIGHTING PULLBOX**  
SCALE: NONE  
E010 E009

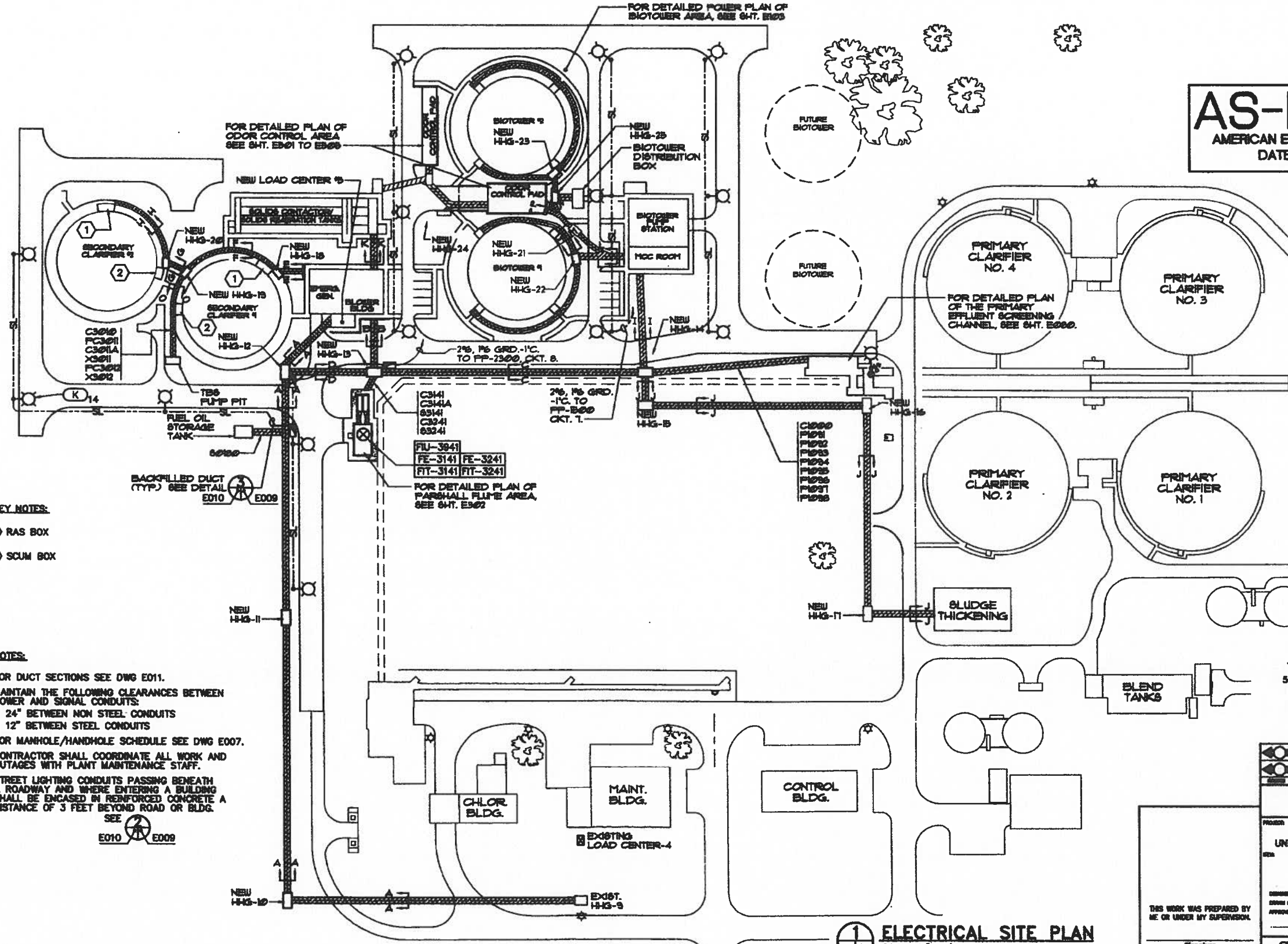
**AS-BUILT PLAN**

Project Complete	December 19 1996
As-Built Issued	January 1997
Made By	Louis C. Gray, Brian Caldwell
Inspected	Louis C. Gray, Brian Caldwell



DIVISION OF ENGINEERING AND CONSTRUCTION DEPARTMENT OF WASTE WATER MANAGEMENT CITY AND COUNTY OF HONOLULU	
PROJECT: HONOLULU WWTW UNIT 1A - SECONDARY TREATMENT FACILITIES	
DRAWING: ELECTRICAL DETAILS - 8	
DESIGNED BY: SHYL	CHECKED BY: DTY
DRAWN BY: HLT	DATE: 08/01/94
GMP ASSOCIATES, INC.	
JOB NO. W16-93	

**AS-BUILT**  
 AMERICAN ELECTRIC CO., LTD  
 DATE: 10/18/96

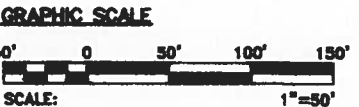


- KEY NOTES:**
- ① RAS BOX
  - ② SCUM BOX

- NOTES:**
1. FOR DUCT SECTIONS SEE DWG E011.
  2. MAINTAIN THE FOLLOWING CLEARANCES BETWEEN POWER AND SIGNAL CONDUITS:  
 24" BETWEEN NON STEEL CONDUITS  
 12" BETWEEN STEEL CONDUITS
  3. FOR MANHOLE/HANDHOLE SCHEDULE SEE DWG E007.
  4. CONTRACTOR SHALL COORDINATE ALL WORK AND OUTAGES WITH PLANT MAINTENANCE STAFF.
  5. STREET LIGHTING CONDUITS PASSING BENEATH A ROADWAY AND WHERE ENTERING A BUILDING SHALL BE ENCASED IN REINFORCED CONCRETE A DISTANCE OF 3 FEET BEYOND ROAD OR BLDG.  
 SEE E010 E009

**AS-BUILT PLAN**

Project Completed	December 14, 1995
As-Built Revision	January 1997
Made By	Leslie C. Gray, Brian J. Caldwell
Inspector	Leslie C. Gray, Brian J. Caldwell



**ELECTRICAL SITE PLAN**  
 SCALE: 1"=50'

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Signature: \_\_\_\_\_  
 Title: \_\_\_\_\_

DIVISION OF ENGINEERING AND CONSTRUCTION DEPARTMENT OF WASTEWATER MANAGEMENT CITY AND COUNTY OF HONOLULU	
PROJECT: HONOLULU WWTP UNIT 1A - SECONDARY TREATMENT FACILITIES	
DRAWING: ELECTRICAL SITE PLAN	
DESIGNED BY: EHWL	CHECKED BY: DYY
DRAWN BY: H.T.	CHECKED BY: _____
DATE: _____	DATE: _____
GMP ASSOCIATES, INC.	
JOB NO. W16-93	



Job No. 1513/05

LIGHTING FIXTURE SCHEDULE			
SYMBOL	DESCRIPTION	INPUT WATTS	MANUFAC. CAT. NO.
A	Recessed 2x4 fluorescent troffer, 0.28" thick injection molded virgin acrylic refractive grid lens, high efficiency welded interface, Alanod Miro 4 specular reflector, two 32 watt T-8 lamps with electronic parallel HPF ballast, 1.2 ballast factor.	78	Holophane HEGS24XSH48042YP1U or approved equal
AE	Recessed 2x4 fluorescent troffer, 0.28" thick injection molded virgin acrylic refractive grid lens, high efficiency welded interface, Alanod Miro 4 specular reflector, two 32 watt T-8 lamps with electronic parallel HPF ballast, 1.2 ballast factor and Bodine emergency battery backup.	78	Holophane HEGS24XSH48042YP1U-BPAKB70A or approved equal
D	Pendant mounted metal halide fixture, borosilicate glass refractor, narrow horizontal asymmetric distribution, 360.1 die-cast aluminum alloy housing, UL listed 1598 for Damp Location and 55 degrees C.	295	Holophane CG250MPMTPM1 or approved equal
DE	Pendant mounted metal halide fixture, borosilicate glass refractor, narrow horizontal asymmetric distribution, 360.1 die-cast aluminum alloy housing, emergency standby restrike tungsten halogen lamp, UL listed 1598 for Damp Location and 55 degrees C.	295	Holophane CG250MPMTPM1 or approved equal
E	Pendant mounted Metal halide enclosed fixture, borosilicate glass refractor, symmetrical distribution, 360.1 die cast aluminum alloy housing, UL listed 1598 for Damp Locations and 40 degrees C. Overall fixture and mounting hardware not to exceed 15.5 inches.	215	Holophane BA17DPMMPA or approved equal
EE	Pendant mounted Metal halide enclosed fixture, borosilicate glass refractor, symmetrical distribution, 360.1 die cast aluminum alloy housing, emergency standby restrike tungsten halogen lamp, UL listed 1598 for Damp Locations and 40 degrees C. Overall fixture and mounting hardware not to exceed 15.5 inches.	215	Holophane BA17DPMMPAEM or approved equal
F	Stanchion mounted High pressure sodium fixture, borosilicate glass refractor symmetrical distribution, 360.1 die-cast aluminum alloy housing, protected starter, UL listed 1572 for Wet Location and 55 degrees C.	185	Holophane PTA15AHPMTA545PS or approved equal
G	Stanchion mounted High pressure sodium fixture, borosilicate glass refractor, long and narrow distribution, 360.1 die-cast aluminum alloy housing, protected starter, UL listed 1572 for Wet Location and 55 degrees C.	185	Holophane PTA15AHPMTA541PS or approved equal
J	Ceiling mounted Metal halide enclosed fixture, borosilicate glass refractor, symmetrical distribution, 360.1 die-cast aluminum alloy housing, UL listed 844 for Class 1 Division 1 Hazardous Atmospheres and 595 for Marine Outside.	295	Holophane PETM250MHXXSYCE or approved equal
K	Ceiling mounted Metal halide enclosed fixture, borosilicate glass refractor, symmetrical distribution, 360.1 die-cast aluminum alloy housing, UL listed 1598 for Damp Location and 40 degrees C. Overall fixture and mounting hardware not to exceed 15.5 inches.	215	Holophane BA17DPMMTCA or approved equal
KE	Ceiling mounted Metal halide enclosed fixture, borosilicate glass refractor, symmetrical distribution, 360.1 die-cast aluminum alloy housing, emergency standby restrike tungsten halogen lamp, UL listed 1598 for Damp Locations and 40 degrees C. Overall fixture and mounting hardware not to exceed 15.5 inches.	215	Holophane BA17DPMMTCAEM or approved equal
M	Stanchion mounted High pressure sodium enclosed fixture, borosilicate glass refractor, symmetrical distribution, 360.1 die-cast aluminum alloy housing, UL listed 844 for Class 1 Division 1 Hazardous Atmospheres and 595 for Marine Outside.	188	Holophane PETM15AHP20SYST or approved equal
O	Wall mounted high pressure sodium fixture, borosilicate glass lens, 360.1 die-cast aluminum alloy housing, protected starter, UL listed 1572 for Wet Location and 40 degrees C.	128	Holophane WL2K100HPMTBZPS or approved equal

LIGHTING FIXTURE SCHEDULE			
SYMBOL	DESCRIPTION	INPUT WATTS	MANUFAC. CAT. NO.
S	Pole mounted High pressure sodium fixture, one piece 18 gauge formed aluminum housing, Miro 4 specular reflector, horizontal lamp, IES full cutoff Type 5 square distribution, 1/8" thick tempered glass lens, protected starter, seven stage cleaning and iron phosphate pretreatment prior to polyester powder coat finish. UL listed 1572 for Wet Location and 40 degrees C.	305	Holophane MS2A250HPMTHQNNZPS or approved equal SSA2066G-D1-J4-AZ
T	Pole mounted High pressure sodium fixture, one piece 18 gauge formed aluminum housing, Miro 4 specular reflector, horizontal lamp, IES full cutoff Type 3 distribution, 1/8" thick tempered glass lens, protected starter, seven stage cleaning and iron phosphate pretreatment prior to polyester powder coat finish. UL listed 1572 for Wet Location and 40 degrees C.	305	Holophane MS2A150HPMTH3NNZPS or approved equal SSA2066G-D1-J4-AZ
U	Universal mount white thermoplastic exit, LED, lead calcium emergency 18 watt head capacity 120/277VAC input, thermoplastic stencil face, red letter, single face.	18	Holophane MQTD-L-18-W-SR-S-C or approved equal
V	Wall mount exit sign, Class 1 Division 1, 120/277 volt input, copper free aluminum enclosure, 7w compact fluorescent lamp, 6 volt nickel cadmium, AC and emergency load. UL 924 and 844 listed.	18	Holophane DSHRW-P7-E-DSHZP14N or approved equal
W	Wall mount emergency Class 1 Division 1 emergency lamp heads with emergency battery backup, 12 volt nickel cadmium, emergency load only, two 12volt 12 watt halogen lamp heads, copper free aluminum enclosure, UL 924 and 844 listed.	24	Holophane DSHZ50N-(2)DSHRD or approved equal

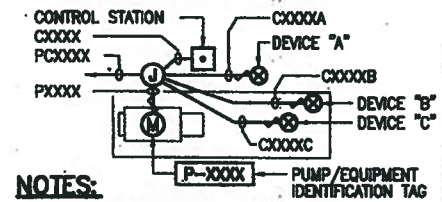
**NOTES:**

- ALL EXTERIOR HARDWARE FOR LIGHTING FIXTURES SHALL BE STAINLESS STEEL.
- ALL FLUORESCENT LAMPS SHALL HAVE MINIMUM 75% CRI. (COLOR RENDERING INDEX) AND COLOR SHALL BE 4100K.

**BASE BID**

**GENERAL NOTES:**

- PLANS DO NOT INDICATE COMPLETE EXISTING ELECTRICAL CONDITIONS. CONTRACTOR SHALL VISIT JOBSITE TO BECOME FAMILIAR WITH ALL EXISTING CONDITIONS AND EXTENT OF DEMOLITION AND NEW WORK PRIOR TO THE START OF WORK.
- DETAILS ARE INTENDED TO SHOW METHOD AND MANNER OF ACCOMPLISHING WORK. MINOR MODIFICATION MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK.
- PRIOR TO THE START OF WORK, CONTRACTOR SHALL VISIT JOBSITE AND REPORT ANY DISCREPANCIES AND/OR DIFFERENCE IN DRAWINGS, IN RESPECT TO EXISTING CONDITION, TO ENGINEER AND/OR THE OWNERS.
- PROVIDE ALL WIRING AND CONNECTIONS, PER NEC REQUIREMENTS, TO ENSURE CONTINUITY OF ELECTRICAL AND TELEPHONE EQUIPMENT TO REMAIN IN USE AT NO ADDITIONAL COST TO THE OWNERS.
- ALL POWER OUTAGES SHALL BE COORDINATED AND APPROVED BY THE PLANT SUPERVISOR. OUTAGES SHALL BE SCHEDULED AND LIMITED PER THE OWNER'S REQUIREMENTS.
- BEFORE ANY ELECTRICAL WIRING IS CUT, CONTRACTOR SHALL VERIFY USAGE OF WIRING TO ENSURE THAT REQUIRED SERVICES ARE NOT DISCONTINUED.
- REMOVE ALL EXISTING EXPOSED CONDUIT AND WIRES NOT TO REMAIN IN SERVICE; CONCEALED RACEWAYS NO LONGER REQUIRED SHALL BE CAPPED AND ABANDONED IN PLACE WITH ALL WIRES REMOVED.
- WHERE POSSIBLE CONCEAL ALL RACEWAY IN WALLS, ABOVE CEILINGS OR IN SLAB, GROUT, PATCH, AND PAINT AFFECTED AREAS TO MATCH ADJACENT FINISH. PAINT EXPOSED RACEWAY AND BOXES TO MATCH ADJACENT FINISH.
- RETURN ALL SALVABLE APPARATUS, AS DETERMINED BY THE PLANT SUPERVISOR, TO A SITE DESIGNATED BY THE PLANT SUPERVISOR, AT NO ADDITIONAL COST TO THE OWNERS. DISPOSE OF ALL UNWANTED MATERIALS.
- CONTRACTOR SHALL VERIFY LOCATION OF EXISTING PIPING AND CONDUITS IN THE PATH OF NEW UNDERGROUND DUCTS. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REPAIRS TO PIPING AND CONDUIT RESULTING FROM THE FAILURE TO BECOME FAMILIAR WITH EXISTING CONDITIONS.
- ALL A.C. AND CONCRETE PAVEMENT TO BE TRENCHED FOR DUCTBANKS SHALL BE "SAW-CUT" TO THE REQUIRED WIDTH PRIOR TO REMOVAL RESTORATION OF PAVEMENT SHALL BE IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS" FOR CITY & COUNTY OF HONOLULU.
- MAINTAIN THREE (3) INCH CLEARANCE BETWEEN SIGNAL CONDUITS AND POWER/CONTROL CONDUITS.
- ALL ITEMS SPECIFIED AS NEMA 4X SHALL BE STAINLESS STEEL TYPE 316 (SS 316) UNLESS OTHERWISE INDICATED. ALL C-CHANNELS AND FASTENING HARDWARE: SCREWS, NUTS, BOLTS, WASHERS, ETC SHALL BE SS 316. ALL EXPOSED FACTORY PROVIDED HARDWARE NOT SS 316 SHALL BE REPLACED WITH SS 316 HARDWARE.
- HAZARDOUS LOCATIONS: WORK IN HAZARDOUS LOCATIONS, AS DEFINED BY NFPA 70 AND 820, SHALL BE PERFORMED IN STRICT ACCORDANCE WITH NFPA 70 FOR PARTICULAR "CLASS", "DIVISION" AND "GROUP" OF HAZARDOUS LOCATIONS INVOLVED. PROVIDE CONDUIT AND CABLE SEALS WHERE REQUIRED BY NFPA 70. EVEN THOUGH SEALS ARE NOT INDICATED ON DRAWINGS, CONDUIT SHALL HAVE TAPERED THREADS.



**NOTES:**

- PLANS SHOW HOMERUN TO MCC ONLY (PCXXXX)
- THIS DETAIL AND TABLE IS AN EXAMPLE ONLY. ACTUAL NUMBER OF DEVICES ARE SHOWN ON PLANS.
- PROVIDE CONDUIT AND WIRING TO ALL DEVICES. SEE CONDUIT SCHEDULE FOR WIRE QUANTITY, WIRE SIZES AND CONDUIT SIZES.

EXAMPLE ADAPTER TABLE	
RACEWAY NO.	DESCRIPTION
PCXXXX	HOMERUN TO MCC
PXXXX	POWER TO MOTOR
CXXXX	CONTROL STATION
CXXXXA	DEVICE (WHERE SHOWN ON PLANS), INSTRUMENT, SOLENOID VALVE, ETC.
CXXXXB	ADDITIONAL DEVICES WHERE SHOWN
CXXXXC	ADDITIONAL DEVICES WHERE SHOWN



W. M. ARMANI  
LICENSED PROFESSIONAL ENGINEER  
No. 11233  
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Signature: [Signature]

DATE: OCT 18 2004

DWG. NO. **E002**

WASTEWATER DIVISION  
DEPARTMENT OF DESIGN & CONSTRUCTION  
CITY AND COUNTY OF HONOLULU

PROJECT: **HONOLULU WWTP  
NEW SOLIDS HANDLING FACILITIES**

ITEM: **LIGHTING FIXTURES SCHEDULE & GENERAL NOTES**

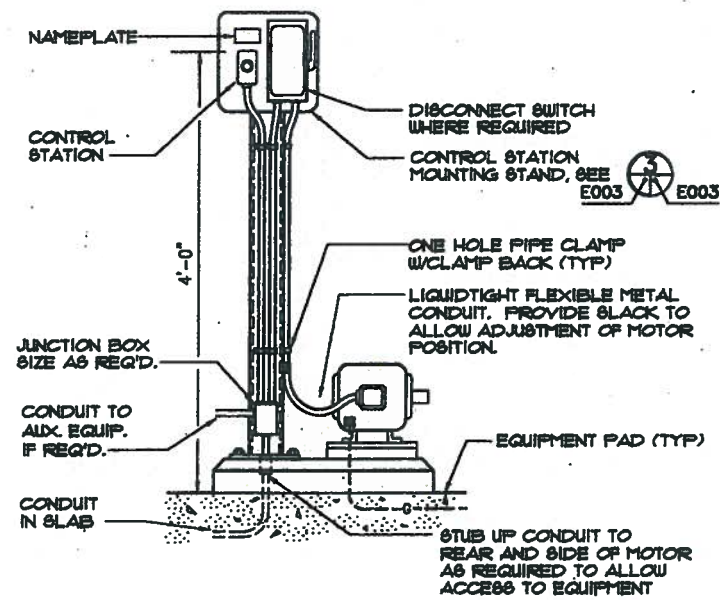
DESIGNED BY: RAI  
DRAWN BY: CHB  
APPROVED: [Signature]  
DATE: OCT 18 2004

CHECKED BY: [Signature]  
SECTION HEAD: [Signature]  
BRANCH HEAD: [Signature]  
DATE: OCT 18 2004

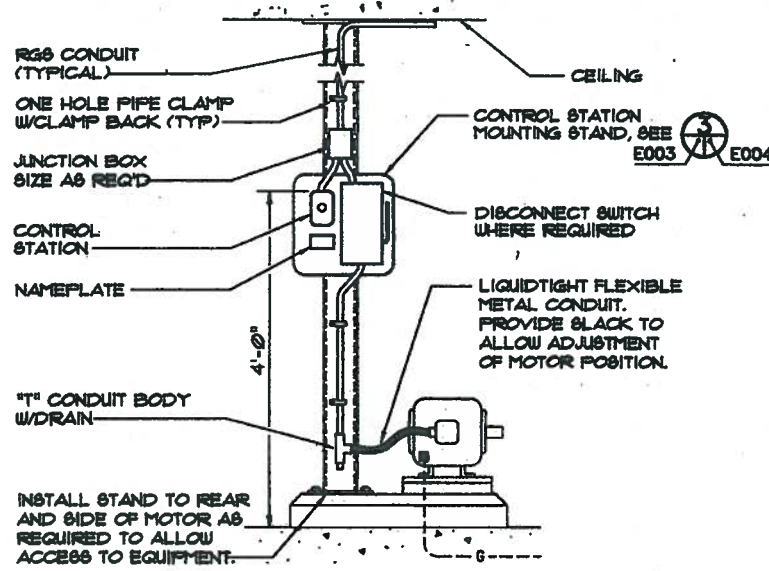
**GMP HAWAII, INC.**

JOB NO. **W7 - 03**

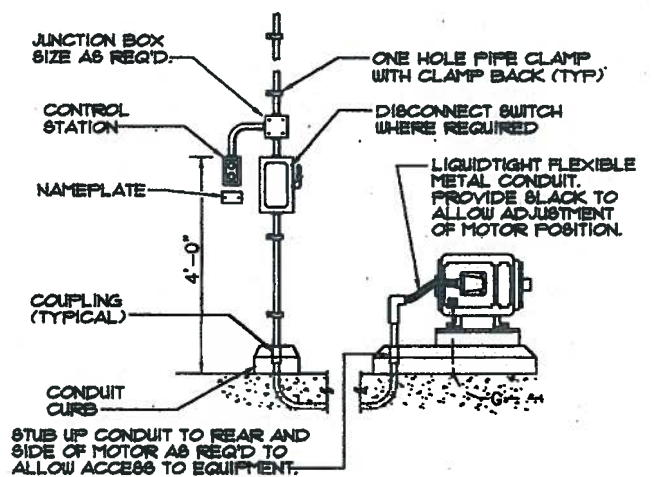
151305E007.DWG 10/05/04 10:44 Final Submitted



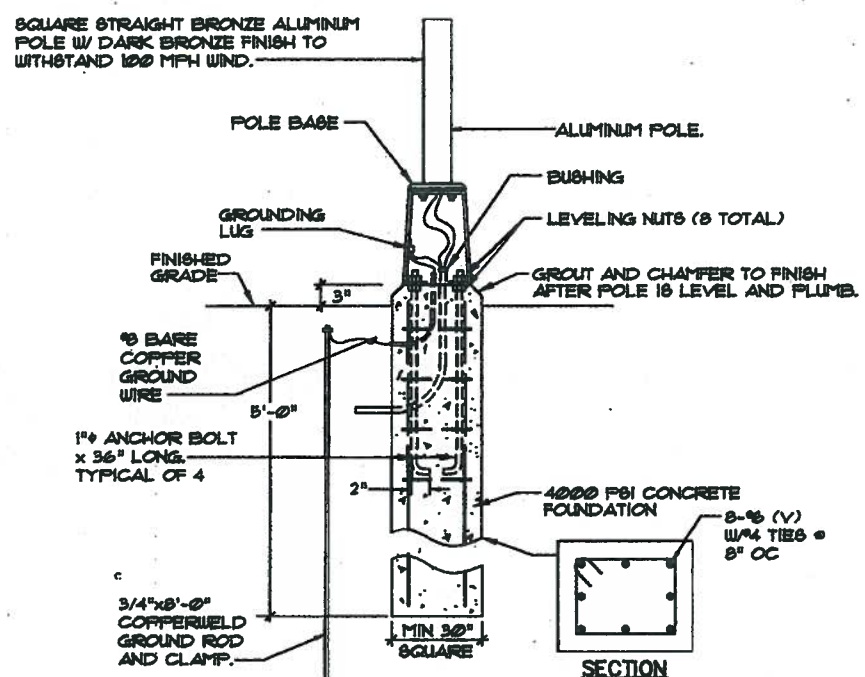
**1 MOTOR FEED FROM BELOW**  
SCALE: NONE  
E004



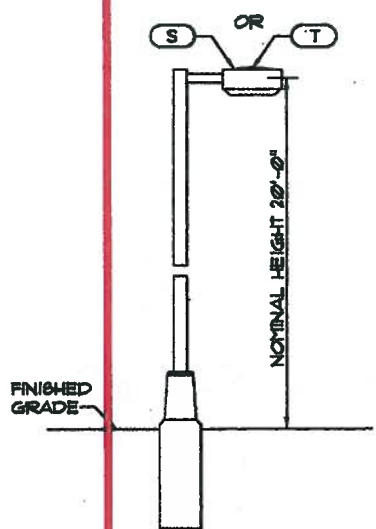
**2 MOTOR FEED FROM OVERHEAD**  
SCALE: NONE  
E004



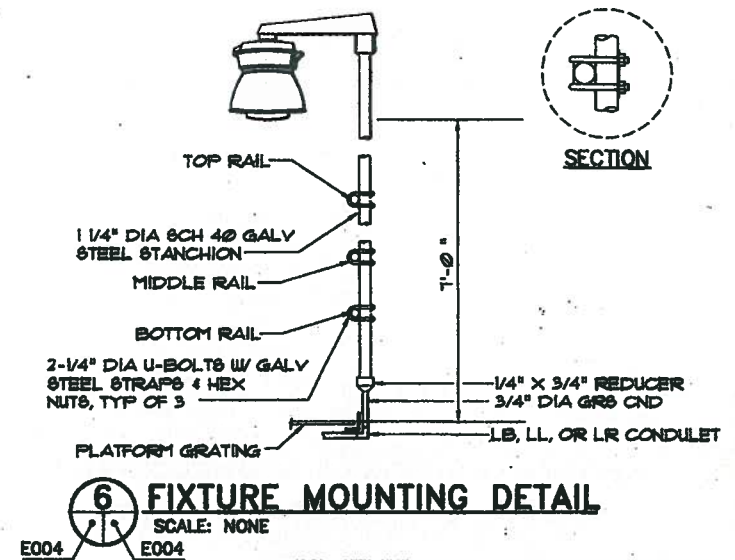
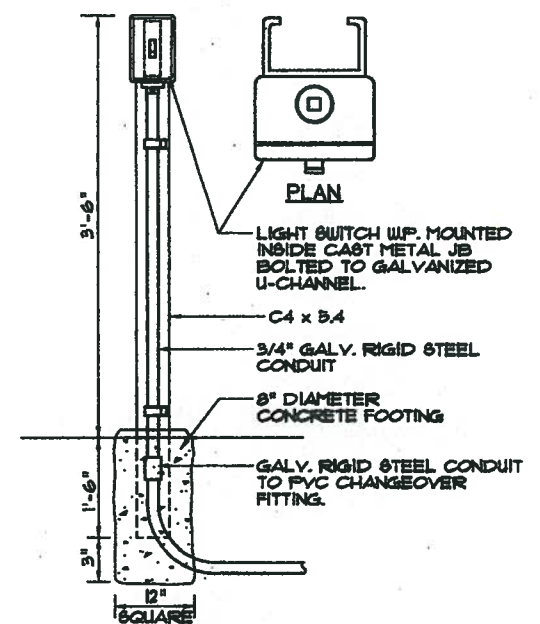
**3 WALL MOUNTED CONTROL STATION**  
SCALE: NONE  
E004



**4 AREA LIGHTING DETAIL**  
SCALE: NONE  
E010 E004



**5 LIGHT SWITCH MOUNTING DETAIL**  
SCALE: NONE  
E004



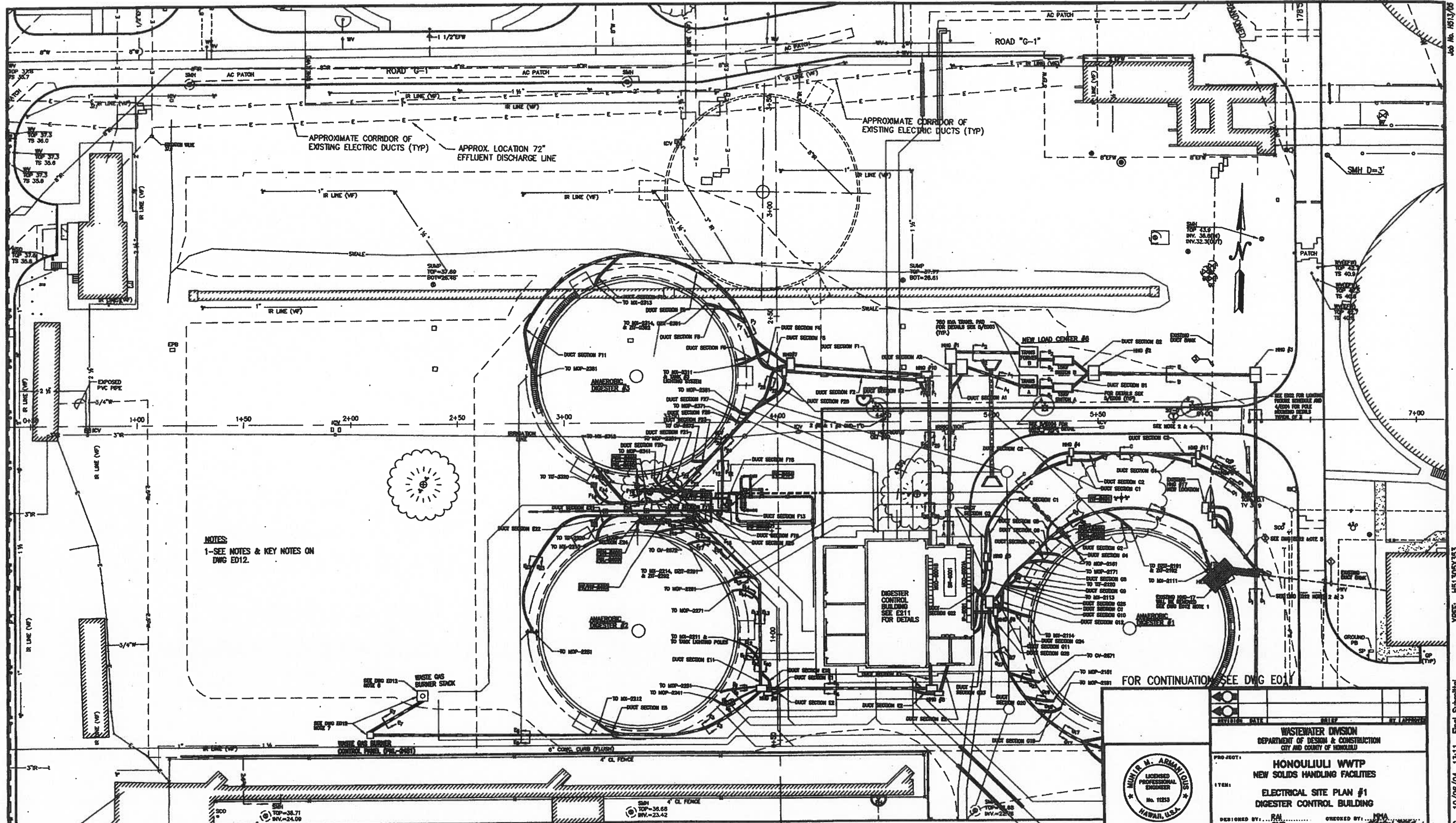
**6 FIXTURE MOUNTING DETAIL**  
SCALE: NONE  
E004

**BASE BID**

WALTER M. ARMANIOLIS  
LICENSED PROFESSIONAL ENGINEER  
No. 12213  
HAWAII, U.S.A.  
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.  
Signature  
DATE

REVISION	DATE	BY	APPROVED
WASTEWATER DIVISION DEPARTMENT OF DESIGN & CONSTRUCTION CITY AND COUNTY OF HONOLULU			
PROJECT: <b>HONOLULU WWTP                  NEW SOLIDS HANDLING FACILITIES</b>			
ITEM: <b>ELECTRICAL DETAILS - 2</b>			
DESIGNED BY:	RAI	CHECKED BY:	RAI
DRAWN BY:	GHB	SECTION HEAD:	[Signature]
APPROVED:	[Signature]	BRANCH HEAD:	[Signature]
		DATE:	NOV 13 2009
<b>GMP HAWAII, INC.</b>			
JOB NO. W7 - 03			

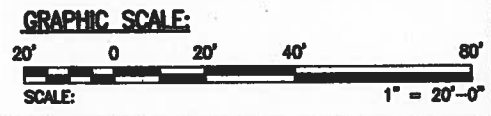
Job No. H513/05 H51305E009.DWG 09/27/04 13:51 Final Submittal



NOTES:  
1-SEE NOTES & KEY NOTES ON DWG ED12.

**ELECTRICAL SITE PLAN**  
SCALE: 1"=20'

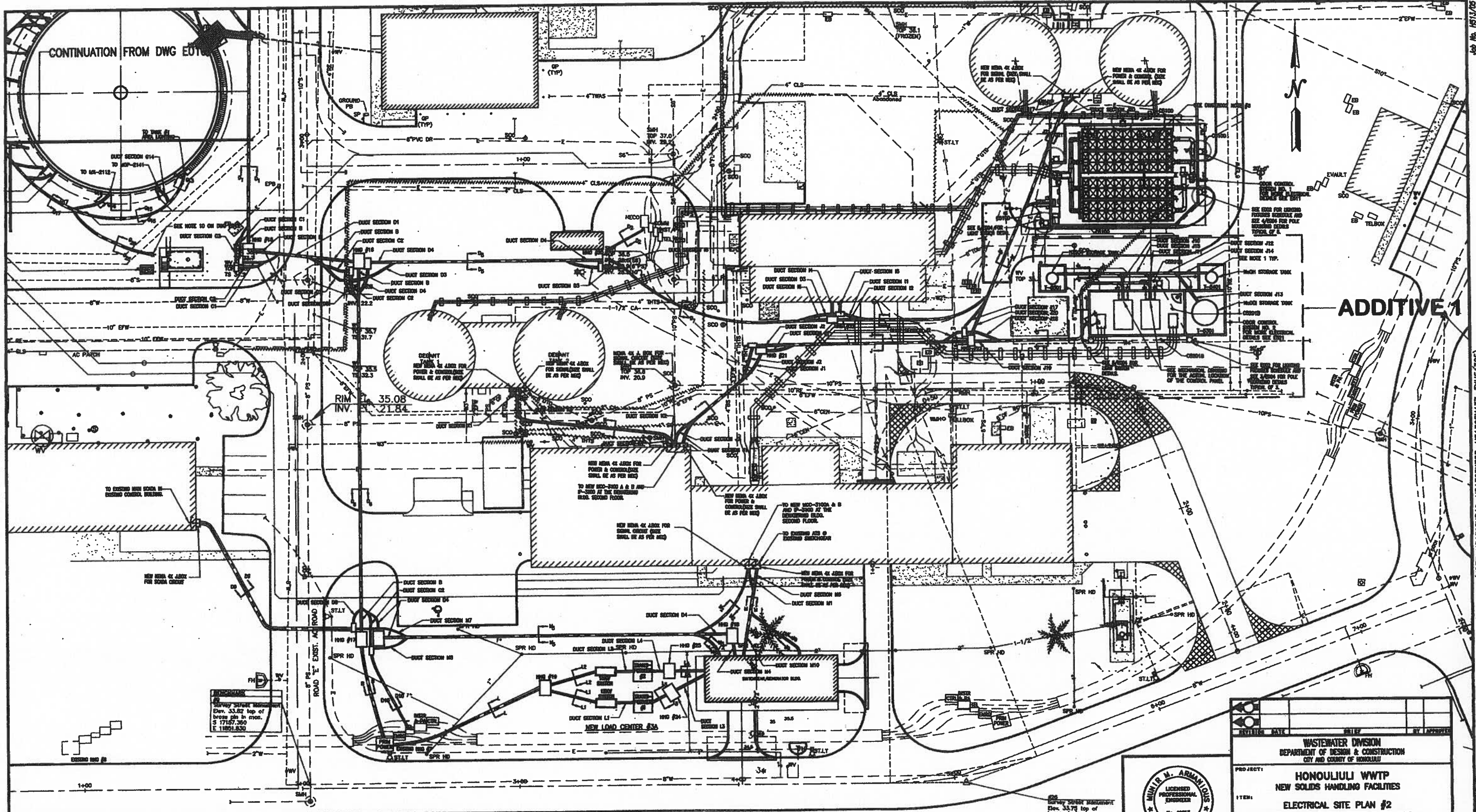
**BASE BID**



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.  
Signature: [Signature]  
DATE: [Date]  
DWG. NO. **E010**

REVISION	DATE	BY	APPROVED
<b>WASTEWATER DIVISION</b> DEPARTMENT OF DESIGN & CONSTRUCTION CITY AND COUNTY OF HONOLULU			
PROJECT:	<b>HONOLULUI WWTP          NEW SOLIDS HANDLING FACILITIES</b>		
ITEM:	<b>ELECTRICAL SITE PLAN #1          DIGESTER CONTROL BUILDING</b>		
DESIGNED BY:	RAI	CHECKED BY:	[Signature]
DRAWN BY:	GW	SECTION HEAD:	[Signature]
APPROVED:	[Signature]	BRANCH HEAD:	[Signature]
		DATE:	OCT 18 2004
<b>GMP HAWAII, INC.</b> JOB NO. W7 - 03			

JOB NO. H513/05  
H51305C333  
H51305E054-DWG 10/08/04 13:11 Find Submitted

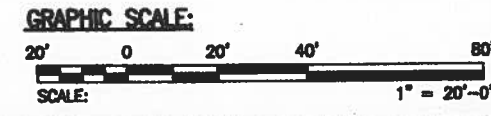


**ADDITIVE 1**

Survey Stake Monument  
 Elev. 33.82 top of  
 brass pin in iron.  
 S 17187.360  
 E 11851.830

**ELECTRICAL SITE PLAN**  
 SCALE: 1"=20'

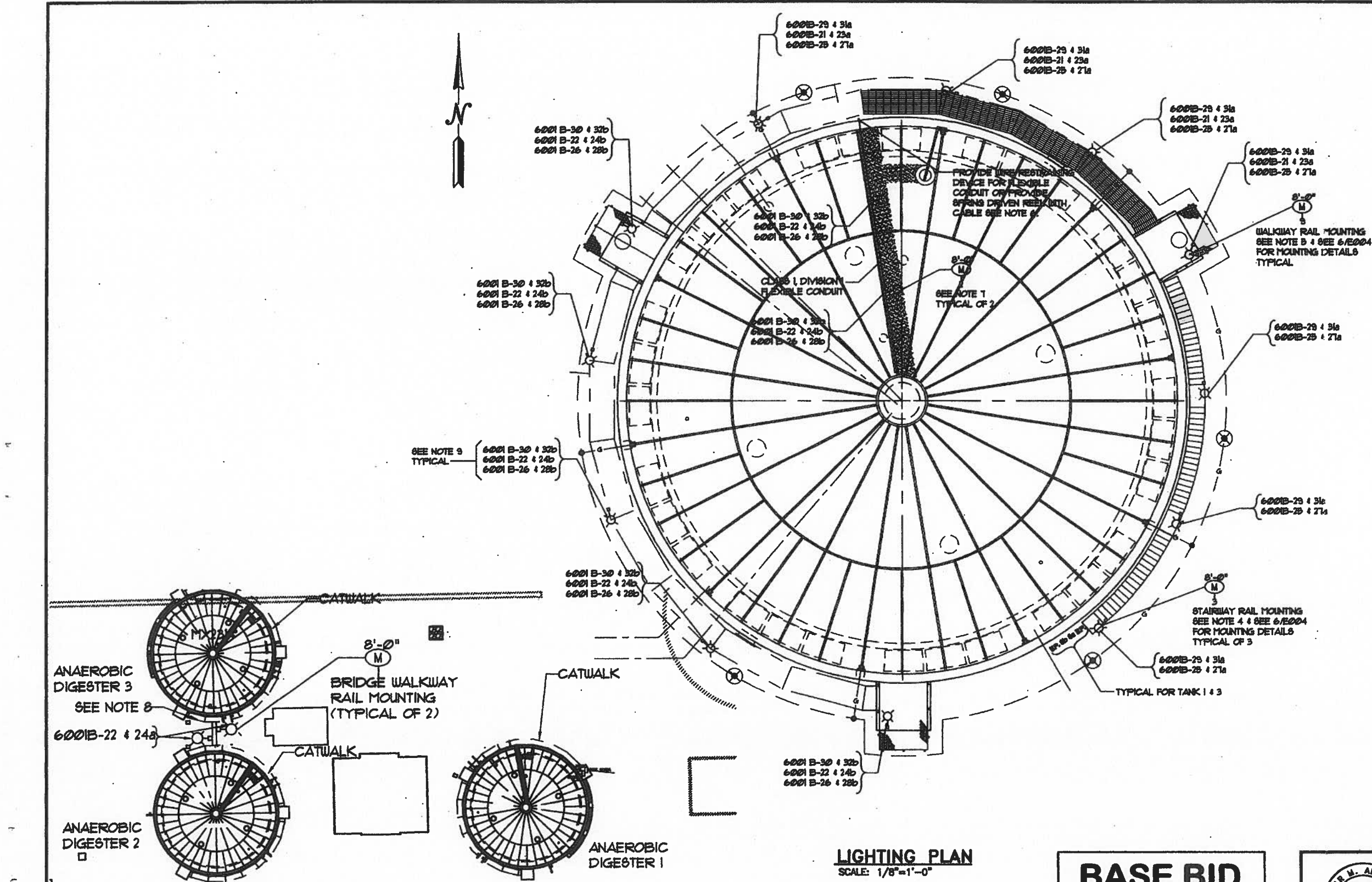
**BASE BID**  
**ADDITIVE 1**



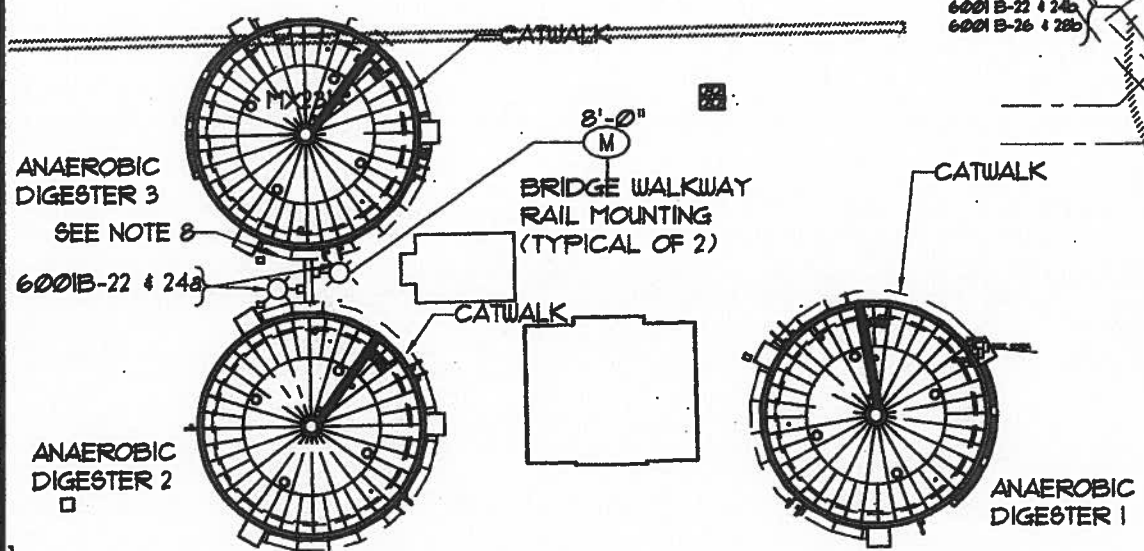
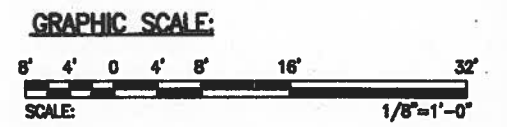
**WALTER M. ARMANDOUS**  
 LICENSED PROFESSIONAL ENGINEER  
 No. 11253  
 HAWAII, U.S.A.  
 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.  
 Signature  
 E011

REVISION	DATE	BY	APPROVED
<b>WASTEWATER DIVISION</b>			
<b>DEPARTMENT OF DESIGN &amp; CONSTRUCTION</b>			
<b>CITY AND COUNTY OF HONOLULU</b>			
PROJECT: <b>HONOLULU WWTP</b>			
SUBJECT: <b>NEW SOLIDS HANDLING FACILITIES</b>			
ITEM: <b>ELECTRICAL SITE PLAN #2</b>			
<b>EXISTING SOLID HANDLING FACILITIES</b>			
DESIGNED BY: RAI	CHECKED BY: JMA		
DRAWN BY: JRM	SECTION HEAD: JMA		
APPROVED: [Signature]	BRANCH HEAD: [Signature]		
		OCT 1, 2004	
<b>GMP HAWAII, INC.</b>			
JOB NO. <b>W7 - 03</b>			

10/06/2004 17:54 Final Submittal XREF: H51305E082.dwg XREF: H51305K346, H51305K353, H51305K437, TXH51305



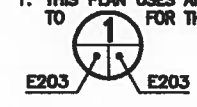
- NOTES:**
1. ALL ELECTRICAL EQUIPMENT, INSTRUMENTATION AND WIRING ON THE DIGESTER TANK AND WITHIN 10 (TEN) FEET RADIUS OF THE DIGESTER TANK AND 25 (TWENTY-FIVE) FEET ABOVE THE HIGHEST ELEVATION OF TANK, SHALL CONFORM TO NEG. NFPA 70 FOR CLASS 1 DIVISION 1 HAZARDOUS LOCATIONS. SEE DRAWING #E202 GENERAL NOTES #14.
  2. DIGESTER COVER TRAVELS VERTICALLY APPROXIMATELY 7'-0" PROVIDE ADEQUATE LENGTH OF FLEXIBLE CONDUIT FOR COVER TRAVEL. ANCHOR FLEXIBLE CONDUIT TO COVER BEFORE ENTERING J. BOX AT THE MOUNTING STAND.
  3. MULTIPLE EQUIPMENT AND CONDUIT NUMBERS REPRESENT NUMBERS FOR THE THREE ANAEROBIC DIGESTER TANKS.
  4. STAIRWAY LIGHTING AREA WILL BE TYPICAL FOR TANK #1 STAIR & TANK #3 STAIR.
  5. WALKWAY AREA AND TANK ROOF LIGHTING AREA WILL BE TYPICAL FOR TANK #1, #2 & #3
  6. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR WIRE RESTRAINING DEVICE FOR FLEXIBLE CONDUIT OR DRIVEN REEL WITH CABLE FOR APPROVAL.
  7. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH TANK COVER SUPPLIER FOR THE SUPPORT OF STEEL STANCHION OF THE LIGHTING FIXTURES TO THE TANK COVER CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF THE SUPPORT FOR APPROVAL.
  8. AT TANK #3 WALL IN FRONT OF THE BRIDGE WALKWAY ELECTRICAL CONTRACTOR SHALL PROVIDE TWO E.P. LIGHTING SWITCHES FOR TANK #2 CKT a & b FOR LIGHTING FIXTURES.
  9. MULTIPLE CONDUIT NUMBERS REPRESENT NUMBERS FOR THE THREE ANAEROBIC DIGESTER TANKS.



**LIGHTING PLAN**  
SCALE: 1/8"=1'-0"

**BASE BID**

- NOTES:**
1. THIS PLAN USES ANAEROBIC DIGESTER 1 AS THE REFERENCE. REFER TO THE LOCATION OF EQUIPMENT ON ANAEROBIC DIGESTER 2 AND 3.



**ANAEROBIC DIGESTERS ORIENTATION UPPER PLAN**  
SCALE: NOT TO SCALE

MULLEN M. ARMSTRONG  
LICENSED PROFESSIONAL ENGINEER  
No. 12235  
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

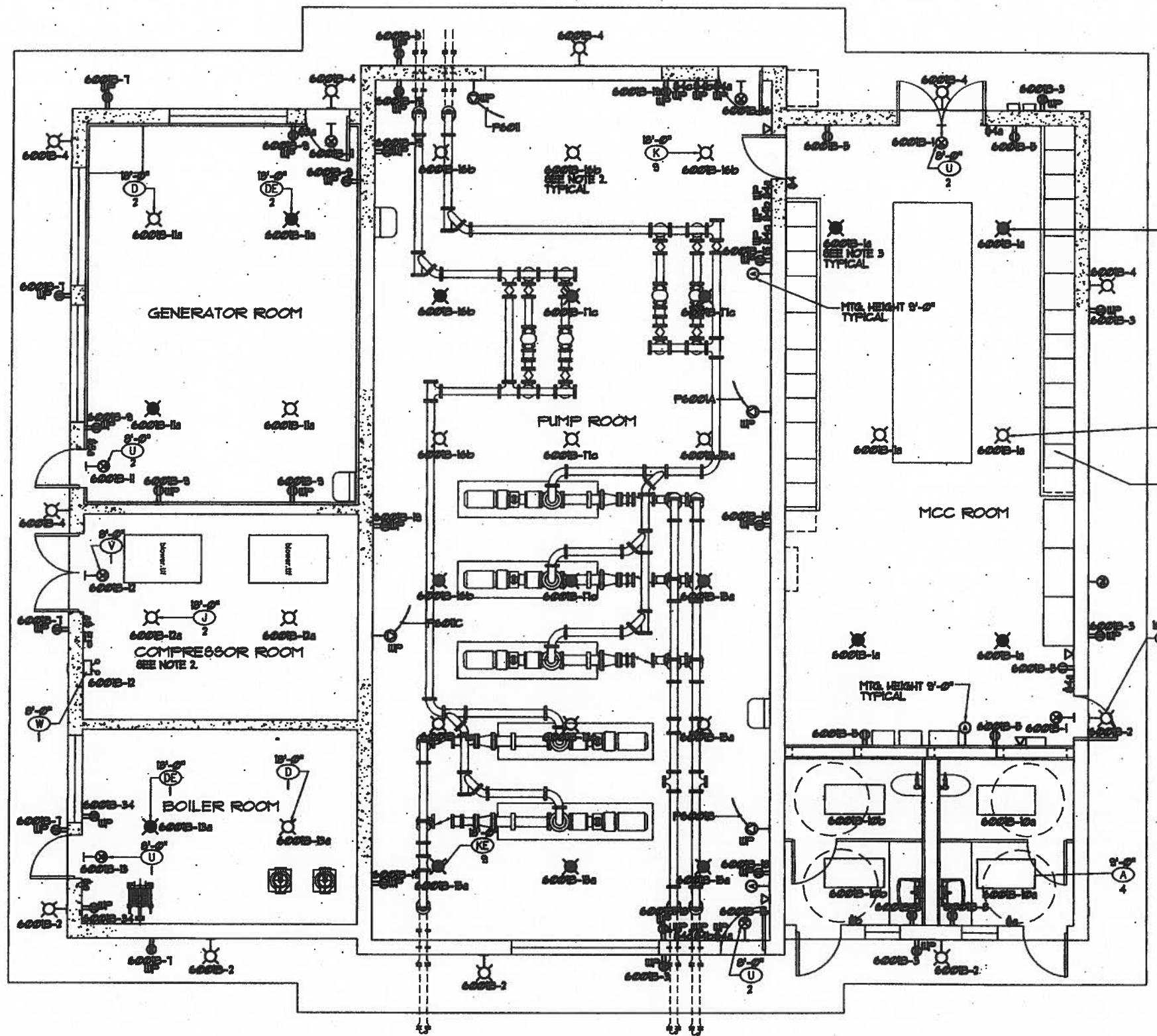
Signature: *[Signature]*  
Date: *[Date]*

**E203**

REVISION	DATE	BY	APPROVED
WASTEWATER DIVISION DEPARTMENT OF DESIGN & CONSTRUCTION CITY AND COUNTY OF HONOLULU			
PROJECT: <b>HONOLULU WWTP NEW SOLIDS HANDLING FACILITIES</b>			
ITEM: <b>ANAEROBIC DIGESTER TANK NO.1 (UPPER) LIGHTING PLAN</b>			
DESIGNED BY: RAI	CHECKED BY: HHA		
DRAWN BY: RAI	SECTION HEAD: [Signature]		
APPROVED: [Signature]	BRANCH HEAD: [Signature]		
		DATE: OCT 14 2004	
<b>GMP HAWAII, INC.</b>			
JOB NO. W7 - 03			



Job No. H513705



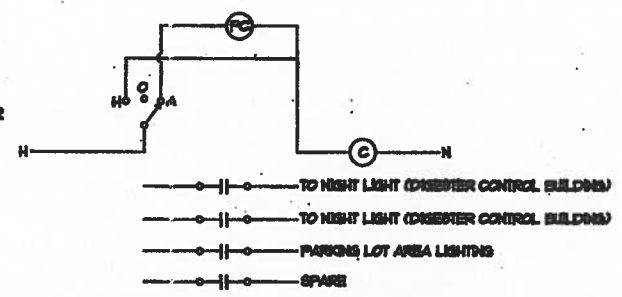
**NOTES:**

1. COMPRESSOR ROOM AREA IS CLASSIFIED AS CLASS 1, DIVISION 1, GROUP D HAZARDOUS LOCATION, ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE NEC FOR THIS CLASSIFICATION. SEE DRAWING E002 FOR GENERAL NOTES.
2. ELECTRICAL CONTRACTOR TO COORDINATE WITH MECHANICAL CONTRACTOR FOR THE CLEARANCE BETWEEN THE LIGHTING FIXTURES AND THE BRIDGE CRANE & HOIST.
3. ELECTRICAL CONTRACTOR TO COORDINATE WITH MECHANICAL CONTRACTOR FOR THE CLEARANCE BETWEEN THE LIGHTING FIXTURES AND THE AIR CONDITIONING DUCT WORK.

SEE DWS E002 FOR LIGHTING FIXTURE SCHEDULE. TYPICAL

PROVISION FOR FUTURE EXTENSION SIZE PAD TO INCLUDE FUTURE EXTENSION SEE E002 TYP. OF 2

SEE W222 FOR NIGHT LIGHT CONTROLLER



**NOTE:**

ELECTRICALLY HELD, NEMA 1 ENCL, 30AMP CONTACTS, 120V COIL, 60HZ, WITH I-O-A SELECTOR SWITCH ON FRONT COVER.

**NIGHT LIGHT CONTROLLER**

SCALE: NONE  
E212

**BASE BID**



**MINOR M. ARMANDIOS**  
LICENSED PROFESSIONAL ENGINEER  
No. 12253  
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

*Signature*  
DATE: OCT 1 2004

DWG. NO. **E212**

REVISION DATE	FILED	BY	APPROVED
WASTEWATER DIVISION DEPARTMENT OF DESIGN & CONSTRUCTION CITY AND COUNTY OF HONOLULU			
PROJECT: <b>HONOLULU WWTP NEW SOLIDS HANDLING FACILITIES</b>			
ITEM: <b>DIGESTER CONTROL BUILDING LIGHTING &amp; RECEPTACLES PLAN</b>			
DESIGNED BY: <b>RAI</b>	CHECKED BY: <b>RAI</b>		
DRAWN BY: <b>DEM</b>	SECTION HEAD: <b>RAI</b>		
APPROVED: <i>Signature</i>	BRANCH HEAD: <i>Signature</i>		
OCT 1 2004			
<b>GMP HAWAII, INC.</b>			
JOB NO. <b>W7 - 03</b>			

**DIGESTER CONTROL BUILDING LIGHTING AND RECEPTACLES PLAN**  
SCALE: 1/4"=1'-0"

H51305E112.DWG 10/08/04 10:18 Final Submitted (CORE: H5130346, TXH51301)

MOUNTING HEIGHT FROM FLOOR TO		ELECTRICAL SYMBOLS			
TOP	CL	EXISTING	NEW	DESCRIPTION	
	48" UON			DISCONNECT SWITCH, HEAVY-DUTY, HP-RATED, NEMA 4X STAINLESS STEEL (TYPE 316) UNLESS OTHERWISE INDICATED	
				COMBINATION STARTER/DISCONNECT SWITCH, HEAVY-DUTY, HP-RATED, NEMA 4X STAINLESS STEEL (TYPE 316) UNLESS OTHERWISE INDICATED	
				EQUIPMENT CONNECTION	
	48" UON			MANUAL STARTER, TOGGLE OPERATED, HP-RATED, WITH ADJUSTABLE OVERLOAD PROTECTION AND PROVISIONS FOR PADLOCKING OPERATOR HANDLE	
				ELECTRICAL CONNECTION, MOTOR	
				JUNCTION BOX, LARGE, WALL/FLOOR OR CEILING MTD RESPECTIVELY, NEMA 4X STAINLESS STEEL (TYPE 316)	
				JUNCTION BOX, WALL/FLOOR OR CEILING MOUNTED RESPECTIVELY, 4-11/16" SQ. NOM., EXPOSED SHALL BE NEMA 4X (TYPE 316)	
	24" UON			JUNCTION BOX, NEMA 4X, (TYPE 316) LARGE, CONDUIT MOUNTED WITH PVC COATED GRS DUMMY LEG OR AS NOTED	
	8'-6" UON			TRANSFORMER, WALL/FLOOR MOUNTED RESPECTIVELY	
	24" UON			DUPLEX RECEPTACLE, GFCI TYPE, NEMA 5-20R, 120V, WALL MTD	
	24" UON			DUPLEX RECEPTACLE, NEMA 5-20R, 120V, WALL SURFACE MTD	
	48" UON			TELEPHONE OUTLET, 4-PIN, CAT-5 RJ-11 JACK, WALL MOUNTED	
	48" UON			LIGHT SWITCH, 1P20A, 120/277V, 1HP MAXIMUM, ALL OTHERS SIMILAR	
	48" UON			LIGHT SWITCH, 3-WAY	
	48" UON			HAND SWITCH WITH HAND-OFF-AUTO SELECTOR FUNCTION UNLESS OTHERWISE INDICATED	
				LIGHT FIXTURE WALL MOUNTED	
	120" UON			LIGHT FIXTURE, SURFACE, CEILING MTD	
	120" UON			LIGHT FIXTURE, PENDANT, CEILING MTD	
				LIGHT FIXTURE, RECESSED, CEILING MOUNTED	
				LIGHT FIXTURE EQUIPPED WITH SINGLE LAMP EMERGENCY BALLAST. CEILING MOUNTED	
				LIGHT FIXTURE, CEILING MOUNTED	
				LIGHT FIXTURE, WALL MOUNTED	
				EXIT SIGN, CEILING/WALL MOUNTED, SHADING & ARROW INDICATES FACE & DIRECTION RESPECTIVELY	
	7'-6"			EMERGENCY LIGHTING UNIT, TYPE B/B1 AS APPLICABLE, SEE LIGHT FIXTURE SCHEDULE FOR DETAILS	
				CONTROL PANEL/CABINET, NEMA 4X STAINLESS STEEL (TYPE 316L) WITH CABINET COOLER. SEE GENERAL NOTE 11	
	6'-0"			ELECTRIC PANELBOARD, NEMA 4X STAINLESS STEEL (TYPE 316L) WITH CABINET COOLER. SEE GENERAL NOTE 11	
				ELECTRICAL EQUIPMENT, NEMA 4X STAINLESS STEEL (TYPE 316L) WITH CABINET COOLER. SEE GENERAL NOTE 11	
				MOTOR STARTER, NEMA 4X STAINLESS STEEL (TYPE 316L)	
				SPECIAL PURPOSE RECEPTACLE PROVIDE MATCHING PLUG DUPLEX GFCI RECEPTACLE, WEATHERPROOF, CONDUIT MOUNTED, SEE DETAIL ON E63, UNLESS OTHERWISE INDICATED.	
				FLOOR/CEILING CORING	
	48" UON			LIGHT SWITCH BANK	
				LIGHT FIXTURE DESIGNATOR, TYPE "E" WITH THREE-32 WATT LAMPS INDICATED, SEE LIGHT FIXTURE SCHEDULE FOR DETAILS	
				LIGHT FIXTURE DESIGNATOR, TYPE "A" WITH 49 WATT NOMINAL LED INDICATED, SEE LIGHT FIXTURE SCHEDULE FOR DETAILS	
				NOTE INDICATOR, NOTE 1 INDICATED, ALL OTHERS SIMILAR	
				DUCT SECTION INDICATOR, SECTION "A" INDICATED	

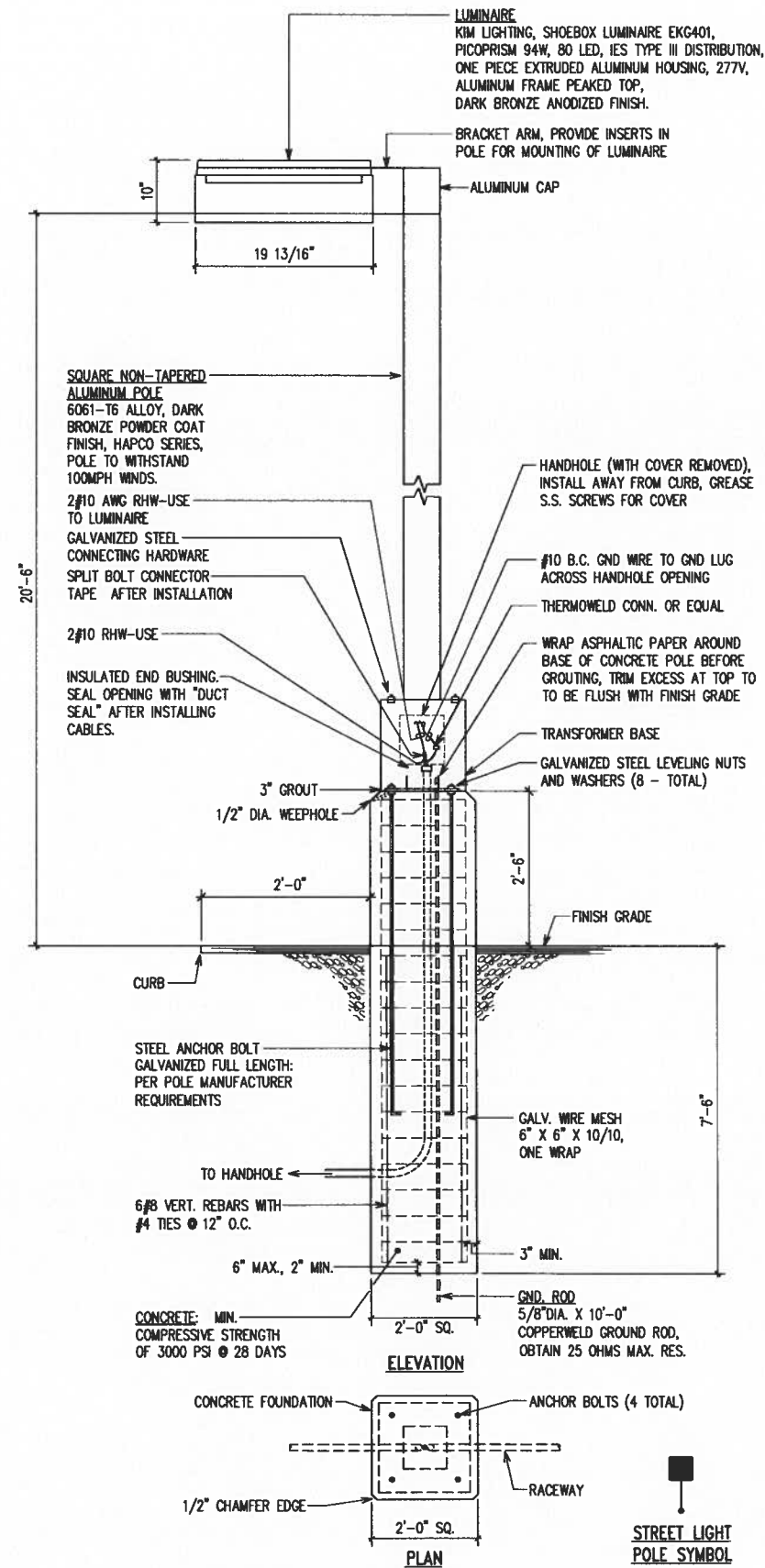
EXISTING	NEW	DESCRIPTION
		CONDUIT CONCEALED ABOVE FINISH GRADE
		EXPOSED CONDUIT, CEILING OR WALL MOUNTED
		FLEXIBLE CONDUIT, LIQUIDTIGHT
		CONDUIT, CONCEALED BELOW FIN. FLR. OR DUCTLINE FOR EXT LOCATIONS
		TELEPHONE CONDUIT, WITH ONE CAT 5 4-PAIR 24 GAUGE CABLE PER TEL OUTLET
		CONTROL/INSTRUMENTATION CONDUIT, 1" MINIMUM UNLESS OTHERWISE INDICATED, CONDUCTORS AND/OR CABLES AS REQUIRED
		DEVICENET CONDUIT, 1" MINIMUM UNLESS OTHERWISE INDICATED, CABLES AS REQUIRED
		SCADA CONDUIT, 1" MINIMUM UNLESS OTHERWISE INDICATED, CONDUCTORS AND/OR CABLES AS REQUIRED
		CONDUIT SEAL FITTING WITH APPROVED SEALING COMPOUND
		MOLDED-CASE CIRCUIT BREAKER
		MOTOR CIRCUIT PROTECTOR TYPE MOLDED-CASE CIRCUIT BREAKER
		FULL-VOLTAGE NON-REVERSING MOTOR STARTER
		SOLID-STATE REDUCED-VOLTAGE MOTOR STARTER
		MOTOR STARTER
		AUTOMATIC TRANSFER SWITCH
		DISCONNECT SWITCH, HEAVY DUTY, HP-RATED, NON-FUSIBLE
		AFD ADJUSTABLE FREQUENCY DRIVE
		AFF DENOTES "ABOVE FINISHED FLOOR"
		AFG DENOTES "ABOVE FINISHED GRADE"
		ATS AUTOMATIC TRANSFER SWITCH
		CHH CONTROL HANDHOLE
		EHH ELECTRICAL HANDHOLE
		EP DENOTES "EXPLOSION PROOF-RATED" ITEM
		FCAN FULL CAPACITY ABOVE NORMAL
		FCBN FULL CAPACITY BELOW NORMAL
		GFCI DENOTES "GROUND FAULT CIRCUIT INTERRUPTER"
		GRS GALVANIZED RIGID STEEL
		HS HAND SWITCH
		LK LOCKABLE IN OPEN POSITION
		LIT LEVEL INDICATOR TRANSMITTER
		MCP MOTOR CIRCUIT PROTECTOR
		MH MOUNTING HEIGHT
		N.C. NORMALLY CLOSED
		NL DENOTES "NIGHT LIGHT", CONTROLLED BY SCADA
		N.O. NORMALLY OPEN
		OCS ODOR CONTROL SYSTEM
		PAHH PUBLIC ADDRESS HANDHOLE
		PFCC POWER FACTOR CORRECTION CAPACITOR
		PLC PROGRAMMABLE LOGIC CONTROLLER
		PS POWER SUPPLY
		SHH SECURITY HANDHOLE
		SPD SURGE PROTECTION DEVICE
		SWGR SWITCHGEAR
		T/C TIMER/CONTINUOUS
		THH TELEPHONE HANDHOLE
		TS TOUCH SCREEN
		UON DENOTES "UNLESS OTHERWISE NOTED"
		WP DENOTES "WEATHERPROOF-RATED" ITEM

EXTERIOR ELECTRICAL SYMBOLS		
EXISTING	NEW	DESCRIPTION
		PAD-MOUNTED TRANSFORMER
		POLE OR STANCHION MOUNTED AREA LIGHT, DOT INDICATES POLE
		EQUIPMENT AS INDICATED
		ELECTRICAL HANDHOLE, 2' X 4'
		LIGHTING HANDHOLE, 2' X 4'
		CONTROL HANDHOLE, 2' X 4'
		TELECOM HANDHOLE, 2' X 4'
		ELECTRICAL MANHOLE, 5' X 7'
		CONTROL/SCADA HANDHOLE, 3' X 5'
		ELECTRICAL HANDHOLE, 3' X 5'
		PRIMARY ELECTRIC HANDHOLE, 4' X 6'
		PRIMARY ELECTRIC MANHOLE, 6' X 11'
		PRIMARY ELECTRICAL MANHOLE, 6' X 14'
		TEMPORARY CABLES, SO TYPE
		DUCT SECTION INDICATOR, SECTION "A" INDICATED
		UNDERGROUND ELECTRIC DUCTLINE
		UNDERGROUND STREET LIGHT DUCTLINE
		UNDERGROUND TRAFFIC SIGNAL DUCTLINE
		UNDERGROUND HECO OR ELECTRIC DUCTLINE
		UNDERGROUND HECO OR CATV DUCTLINE
		OVERHEAD TELEPHONE LINE
		OVERHEAD HECO LINE
		"X" THROUGH SYMBOLS INDICATES REMOVAL

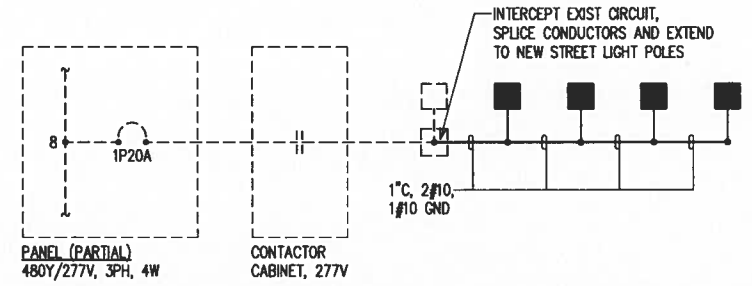
- SYMBOL NOTES:**
- NO HASH MARKS ON CONDUIT SYMBOL INDICATES 2-WIRES; INDICATES 3-WIRES; INDICATES 4-WIRES, ETC. HASH MARKS ARE NOT SHOWN FOR GROUND AND CONTROL CONDUCTORS. PROVIDE SEPARATE INSULATED GROUND CONDUCTOR IN ALL CONDUITS (SIZE PER NEC ARTICLE 250.122). FOR LIGHTING CIRCUITS, HASH MARKS NOT INDICATED. PROVIDE NUMBER OF CONTROL CONDUCTORS AND GROUND CONDUCTOR AS REQUIRED.
  - "X" THRU SYMBOL DENOTES EXISTING ITEM TO BE REMOVED OR AS NOTED.
  - SPECIAL MOUNTING HEIGHTS INDICATED ON PLANS.
  - UNLESS OTHERWISE NOTED, DASHED SYMBOLS DENOTE "EXISTING" ITEMS AND SOLID SYMBOLS DENOTE "NEW" ITEMS.

REVISION	DATE	BRIEF	BY	APPROVED
<b>WASTEWATER DIVISION</b> DEPARTMENT OF DESIGN & CONSTRUCTION CITY AND COUNTY OF HONOLULU				
PROJECT: <b>HONOLULU WWTP SECONDARY TREATMENT PHASE 1B - SECONDARY COMPLIANCE FACILITIES</b> HONOLULU, EWA, OAHU, HAWAII				
<b>ELECTRICAL LEGEND 1</b>				
DESIGNED BY: <u>SLB</u>	CHECKED BY: <u>DT</u>			
DRAWN BY: <u>CAD</u>	SECTION HEAD:			
APPROVED:	BRANCH HEAD:			
<b>JOB NO. WX-XX</b>				
PRINCIPAL-IN-CHARGE 2017.07.25 RONALD N. S. HO & ASSOC., INC. Electrical Engineers		SIGNATURE 2017.07.25 4/30/18 EXPIRATION DATE OF THE LICENSE		

Tue, 25 Jul 2017 - 11:15am  
 Z:\Users\PROJENR\150928\_V\_02\_2150928\_symbols.dwg



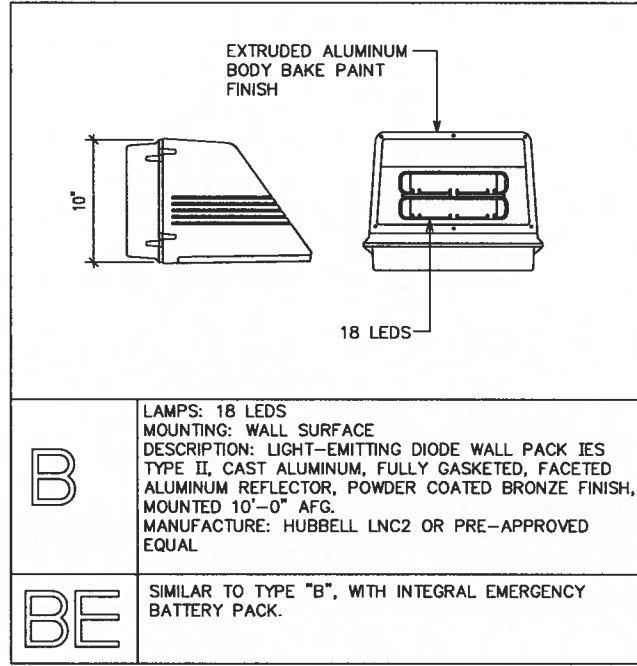
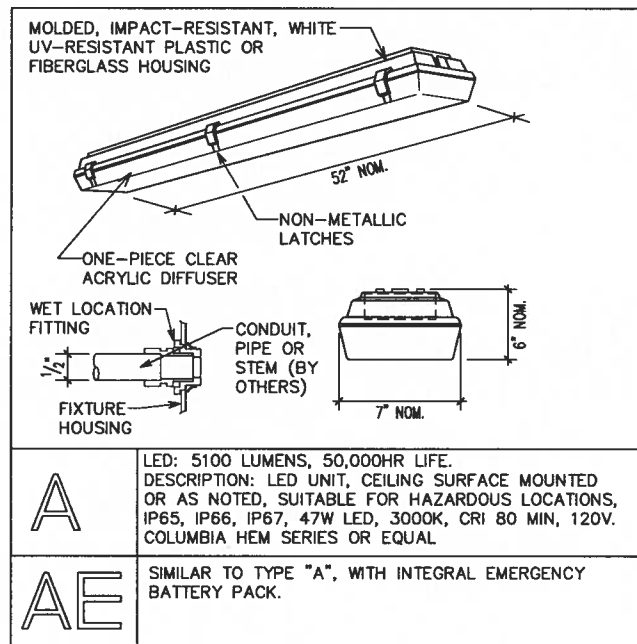
**1 STREET LIGHT POLE DETAIL**  
E92 NOT TO SCALE



**2 TYPICAL STREET LIGHT POLE CONTROL DIAGRAM**  
E92 NO SCALE

Tue, 25 Jul 2017 - 12:40pm  
Z:\acord\PROJECTS\150928\C\_02\_2150928\_light\_pole\_dtl.dwg

PRINCIPAL-IN-CHARGE  2017.07.25 RONALD N. S. HO & ASSOC., INC. Electrical Engineers	SIGNATURE 2017.07.25 4/30/18 EXPIRATION DATE OF THE LICENSE	REVISION DATE BY APPROVED	
		BRIEF WASTEWATER DIVISION DEPARTMENT OF DESIGN & CONSTRUCTION CITY AND COUNTY OF HONOLULU	
		PROJECT HONOLULU WWTP SECONDARY TREATMENT PHASE 1B - SECONDARY COMPLIANCE FACILITIES HONOLULU, EWA, OAHU, HAWAII	
		ITEM LIGHT POLE DETAILS	
DESIGNED BY: <u>SLJ</u> DRAWN BY: <u>CAD</u> APPROVED: _____		CHECKED BY: <u>DT</u> SECTION HEAD: _____ BRANCH HEAD: _____	
JOB NO. WX-XX			
FILE	DRAWING	NO.	



Tue, 25 Jul 2017 12:41pm  
Z:\Acad\PROJECTS\215092B\E\_03\_215092B\_light\_sched.dwg

215092B.dwg  
User: EAGLE  
Date: 07/25/17 11:52:18 AM

REVISION	DATE	BRIEF	BY	APPROVED
<b>WASTEWATER DIVISION</b> DEPARTMENT OF DESIGN & CONSTRUCTION CITY AND COUNTY OF HONOLULU				
PROJECT: <b>HONOLULU WWTP SECONDARY TREATMENT PHASE 1B - SECONDARY COMPLIANCE FACILITIES</b> HONOLULU, EWA, OAHU, HAWAII				
ITEM: <b>LIGHT FIXTURE SCHEDULE</b>				
DESIGNED BY: <u>SE</u>	CHECKED BY: <u>DT</u>			
DRAWN BY: <u>CAD</u>	SECTION HEAD:			
APPROVED:	BRANCH HEAD:			
<b>JOB NO. WX-XX</b>				
PRINCIPAL-IN-CHARGE	SIGNATURE	DATE		
RONALD N. S. HO & ASSOC., INC. Electrical Engineers	2017.07.25 4/30/18	2017.07.25		
EXPIRATION DATE OF THE LICENSE				
FILE CABINET	DRAWER	FILE	FOLDER	NO.