

**ELECTRICAL ONE-LINE DIAGRAM**  
NO SCALE

**ELECTRICAL SERVICE LOAD CALCULATIONS**

CONNECTED LOAD:	10 KVA
NEW RESTROOM LOADS	10 KVA
TOTAL CURRENT LOAD =	10 KVA / 230V-1φ = 43A x 1.25 = 54 AMPS
FUTURE LOAD (I.E. LUMBERACK CAMP, ETC.) =	25 KVA
TOTAL FUTURE LOAD =	35 KVA
	35 KVA / 230V-1φ = 152A x 1.25 = 190 AMPS

**ADDENDUM #1**  
5-8-2012

PANEL A	200 A MBK	BUSING SIZE 225 A	FED FROM UTILITY
# OF POLES	30	VOLTS 120/240	NEUTRAL BUS 225 A
PHASE	1	GROUND BUS? YES	TVSS? NO
HERTZ	60	ISOLATED GRD? NO	AIC RMS AMPS 14,000
LOCATION	UTILITY ROOM	REMARKS	

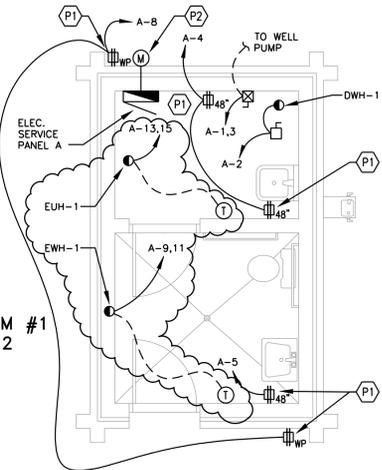
  

CIRCUIT	BREAKER	DESCRIPTION	A	B
1	20A	WELL PUMP	600	
3	2P	(ASSUMED 1-1/2 HP - COORD. WITH WELL SUPPLIER)		600
5	20A	RECEPT - RESTROOM	200	
7	20A	LIGHTS & FAN		250
9	20A	ELECTRIC WALL HEATER EWH-1 (BY MECHANICAL)	1500	
11	2P	3 KW		1500
13	20A	ELECTRIC UNIT HEATER EUH-1 (BY MECHANICAL)	1650	
15	2P	3.3 KW		1650
17		SPACE		
19		SPACE		
21		SPACE		
23		SPACE		
25		SPACE		
27		SPACE		
29		SPACE		
2	20A	ELECTRIC DOMESTIC WATER HEATER (DWH-1)	1650	
4	20A	RECEPTS - UTILITY ROOM		200
6	20A	SPARE	0	
8	20A	RECEPTS - EXTERIOR		200
10	20A	SPARE	0	
12	20A	SPARE		0
14		SPACE		
16		SPACE		
18		SPACE		
20		SPACE		
22		SPACE		
24		SPACE		
26		SPACE		
28		SPACE		
30		SPACE		
KVA	10	CONNECTED AMPS	44	PHASE WATTS
				5,600
				4,400

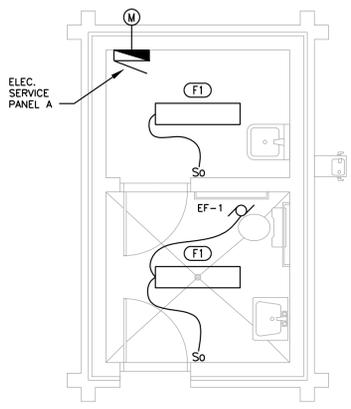
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NOTES:  
 1. PANEL SHALL BE SQUARE D NO TYPE WITH A 200A MBK, SERVICE ENTRANCE RATED.  
 2. COORDINATE AIC RATING WITH UTILITY PRIOR TO ORDER.



**POWER PLAN**  
SCALE: 1/4" = 1'-0"



**LIGHTING PLAN**  
SCALE: 1/4" = 1'-0"

**KEYED POWER CONSTRUCTION NOTES:**

- (P1) COORDINATE RECEPT. LAYOUT WITH OWNER PRIOR TO ROUGH-IN.
- (P2) COORDINATE NEW 200A 120/240V-1φ ELECTRICAL SERVICE WITH UTILITY.

**GENERAL ELECTRICAL POWER & LIGHTING NOTES:**

- THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF WORK. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MATERIALS (I.E. CONDUIT, WIRE, PULL BOXES, FIXTURES, ETC.) REQUIRED FOR A COMPLETE AND FUNCTIONAL SYSTEM.
- ALL ELECTRICAL SYSTEMS SHALL BE PROVIDED/INSTALLED TO MEET APPLICABLE BUILDING CODES: MICHIGAN BUILDING CODE, MICHIGAN ELECTRICAL CODE, N.E.C., LIFE SAFETY CODE NFPA 101, MICHIGAN ENERGY CODE, ETC.
- VERIFY REQUIREMENTS OF ALL MECHANICAL/ELECTRICAL EQUIPMENT WITH SHOP DRAWING SUBMITTALS PRIOR TO INSTALLATION. NOTIFY THE ENGINEER OF ANY CONFLICTS BETWEEN SHOP DRAWINGS AND PLANS.
- COORDINATE LOCATIONS AND MOUNTING HEIGHTS OF ALL OUTLETS WITH LOCATIONS/HEIGHTS OF COUNTERTOPS, SINKS, FURNITURE, CABINETS, ETC. WITH ARCHITECTURAL ELEVATIONS AND OTHER TRADES.
- CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL ELECTRICAL WORK WITH ALL OTHER TRADES. CONTRACTOR SHALL VERIFY ALL MECHANICAL AND ELECTRICAL CLEARANCES PRIOR TO FABRICATION OF ANY NEW WORK. ELECTRICAL EQUIPMENT, WIRING, ETC. SHALL NOT INTERFERE WITH MECHANICAL EQUIPMENT CLEARANCE SPACES.
- ALL CIRCUITS FOR POWER, LIGHTING, ETC. SHALL BE INSTALLED IN CONDUIT AS SPECIFIED. ALL CIRCUITS SHALL BE CONCEALED IN WALLS. SURFACE MOUNTED RACEWAY MAY BE USED IN THE UTILITY ROOM.
- ALL NIGHT LIGHTS, EMERGENCY LIGHTS, AND EXIT LIGHTS SHALL BE CIRCUITED TO UNSWITCHED/HOT LEG OF THE GENERAL LIGHTING CIRCUIT OF THE AREA SERVED BY THE NIGHT/EMERGENCY/EXIT LIGHTS.

**LIGHTING FIXTURE SCHEDULE**

TYPE	DESCRIPTION	MANUFACTURERS	LAMPS	VOLTS/WATTS	REMARKS
(FI)	50.5" LONG x 4" HIGH, (3) LAMP, VANDEL RESISTANT FIXTURE WITH A POLYCARBONATE CLEAR PRISMATIC DIFFUSER; UL LISTED FOR WET LOCATIONS	1. FAIL-SAFE "FPS" SERIES #FPS-332-120-EBB1 2. ENGINEER APPROVED EQUAL	(2)-F32W8/RS	120V / 64W	

**ELECTRICAL SYMBOL LIST**

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
(FA)	FIXTURE TYPE	○	SINGLE PHASE MOTOR	⎓	CIRCUIT BREAKER
□	RECESSED OR SURFACE MOUNTED FLUORESCENT LIGHTING FIXTURE	⊠	COMBINATION MOTOR STARTER WITH DISCONNECT SWITCH	⊥	GROUND
▬	RECESSED OR SURFACE MOUNTED FLUORESCENT EMERGENCY LIGHTING FIXTURE	□	NON-FUSIBLE DISCONNECT SWITCH	A-3	CIRCUIT HOMERUN TO PANEL "A" - CKT #3
⊥	SURFACE OR PENDANT MOUNTED FLUORESCENT LIGHTING FIXTURE	⊠	FUSIBLE DISCONNECT SWITCH	LP	LIGHTING PANEL (LP)
⊥	SURFACE OR PENDANT MOUNTED FLUORESCENT EMERGENCY LIGHTING FIXTURE	SM	HORSE POWER RATED SWITCH	T	TRANSFORMER
⊥	WALL MOUNTED FLUORESCENT LIGHTING FIXTURE	⊙	JUNCTION BOX	M	UTILITY METER
⊥	OUTDOOR WALL MOUNTED LIGHTING FIXTURE	●	HARD WIRE POWER CONNECTION	CT	UTILITY CT CABINET
⊥	EMERGENCY LIGHTING UNIT	⊕	DUPLEX RECEPTACLE	LC	LIGHTING CONTROLLER/CONTRACTOR
⊥	EXIT LIGHTING FIXTURE WITH EMERGENCY EGRESS LIGHTING AND BATTERY	⊕ 48"	DUPLEX RECEPTACLE MOUNTED AT 48" ABOVE FLOOR (UNLESS NOTED OTHERWISE) (SIMILAR FOR ISOLATED GROUND, EMERGENCY AND GFI RECEPTACLES)	C	CONTACTOR
S	SINGLE POLE TOGGLE SWITCH	⊕	DUPLEX RECEPTACLE-GROUND FAULT INTERRUPTER	P	PHOTOELECTRIC CONTROLLER
S2	TWO POLE TOGGLE SWITCH	⊕	SPECIAL RECEPTACLE-NEMA CONFIGURATION AS NOTED		
S3	3 WAY TOGGLE SWITCH	T	T-STAT (BY OTHERS) ROUGHED IN BY E.C. @ 52" AFF WITH CONDUIT PATHWAY TO EQUIPMENT CONTROLS CONNECTION - COORD. WITH MECHANICAL TRADES		
So	OCCUPANCY SENSOR WALL SWITCH (LEVITON #OSSMT-MDW)				

**ELECTRICAL ABBREVIATION LIST**

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
AFF	ABOVE FINISHED FLOOR	LP	LIGHTING PANEL
AIC	AMPS INTERRUPTING CAPACITY	LC	LIGHTING CONTROLLER
BKR	BREAKER	M.C.	MECHANICAL CONTRACTOR
C	CONDUIT	MCA	MINIMUM CIRCUIT AMPS
CB	CIRCUIT BREAKER	MCB	MAIN CIRCUIT BREAKER
CKT	CIRCUIT	MLO	MAIN LUGS ONLY
COORD.	COORDINATION	MTD	MOUNTED
DWG	DRAWING	MTR	MOTOR
E.C.	ELECTRICAL CONTRACTOR	N.E.C.	NATIONAL ELECTRIC CODE
EF	EXHAUST FAN	NL	NIGHT LIGHT
EHD	ELECTRIC HAND DRYER	NTS	NOT TO SCALE
EUH	ELECTRIC UNIT HEATER	P-A	PANEL "A"
EWC	ELECTRIC WATER COOLER	P.C.	PLUMBING CONTRACTOR
EWH	ELECTRIC WALL HEATER	RECEPT.	RECEPTACLE
(E)	EXISTING	(R)	RELOCATED
EM	EMERGENCY LIGHT	SD	SMOKE DETECTOR
FLA	FULL LOAD AMPS	SPEC	SPECIFICATION
(F)	FUTURE	S.S.	STAINLESS STEEL
FU	FUSE	TYP	TYPICAL
GFI	GROUND FAULT INTERRUPTER	U/G	UNDERGROUND (BELOW GRADE)
GRD	GROUND	WP	WEATHERPROOF
GRS	GALVANIZED RIGID STEEL	WG	WIRE GUARD
HP	HORSEPOWER	XFMR	TRANSFORMER
JB	JUNCTION BOX		
KW	KILOWATT		
KWH	KILOWATT - HOURS		
KVA	KILO VOLT-AMPERES		