

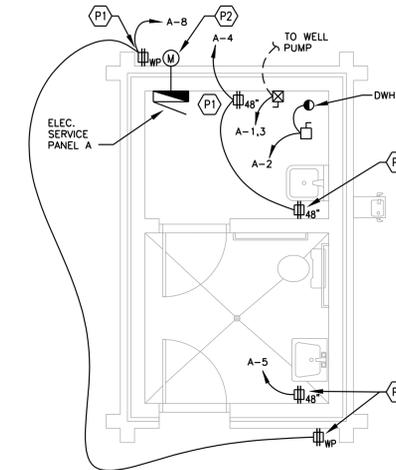
ELECTRICAL ONE-LINE DIAGRAM
NO SCALE

ELECTRICAL SERVICE LOAD CALCULATIONS

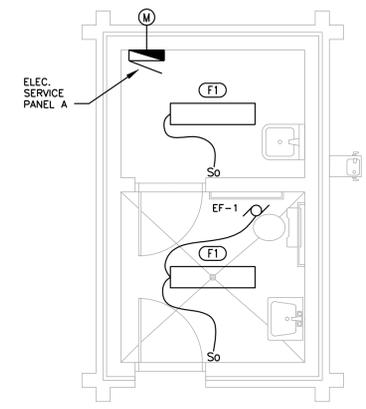
	CONNECTED LOAD:
NEW RESTROOM LOADS	3.7 KVA
TOTAL CURRENT LOAD =	3.7 KVA / 230V-1ϕ = 16A x 1.25 = 20 AMPS
FUTURE LOAD (I.E. LUMBERACK CAMP, ETC.) =	30 KVA
TOTAL FUTURE LOAD =	33.7 KVA
	33.7 KVA / 230V-1ϕ = 146A x 1.25 = 183 AMPS

PANEL A		200 A MBK	BUSING SIZE 225 A	FED FROM UTILITY
# OF POLES	30	VOLTS 120/240	NEUTRAL BUS 225 A	MOUNTING SURFACE
PHASE	1	GROUND BUS? YES	TVSS? NO	AIC RMS AMPS 14,000
HERTZ	60	ISOLATED GRD? NO		
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		SPACE		
11		SPACE		
13		SPACE		
15		SPACE		
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	3.7	CONNECTED AMPS 16	PHASE WATTS 2,450	1,250

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:

1. 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.
2. 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.
3. 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.
4. COORDINATE LOCATIONS AND MOUNTING HEIGHTS OF ALL OUTLETS WITH LOCATIONS/HEIGHTS OF COUNTERTOPS, SINKS, FURNITURE, CABINETS, ETC. WITH ARCHITECTURAL ELEVATIONS AND OTHER TRADES.
5. 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.
6. 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.
7. 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-EB81 2. ENGINEER APPROVED EQUAL	(2)-F32W8/RS	120V / 64W	

ELECTRICAL SYMBOL LIST

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
(FA)	FIXTURE TYPE	⊗	SINGLE PHASE MOTOR
□	RECESSED OR SURFACE MOUNTED FLUORESCENT LIGHTING FIXTURE	⊗	COMBINATION MOTOR STARTER WITH DISCONNECT SWITCH
▬	RECESSED OR SURFACE MOUNTED FLUORESCENT EMERGENCY LIGHTING FIXTURE	⊞	NON-FUSIBLE DISCONNECT SWITCH
⊞	SURFACE OR PENDANT MOUNTED FLUORESCENT LIGHTING FIXTURE	⊞	FUSIBLE DISCONNECT SWITCH
⊞	SURFACE OR PENDANT MOUNTED FLUORESCENT EMERGENCY LIGHTING FIXTURE	Sm	HORSE POWER RATED SWITCH
⊞	WALL MOUNTED FLUORESCENT LIGHTING FIXTURE	⊙	JUNCTION BOX
⊞	OUTDOOR WALL MOUNTED LIGHTING FIXTURE	●	HARD WIRE POWER CONNECTION
⊞	EMERGENCY LIGHTING UNIT	⊕	DUPLEX RECEPTACLE
⊞	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)
S	SINGLE POLE TOGGLE SWITCH	⊕	DUPLEX RECEPTACLE-GROUND FAULT INTERRUPTER
S2	TWO POLE TOGGLE SWITCH	⊕	SPECIAL RECEPTACLE-NEMA CONFIGURATION AS NOTED
S3	3 WAY TOGGLE SWITCH	⊕	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 COORDINATION	MLO	MAIN LUGS ONLY MOUNTED
COORD.		MTD	MOUNTED MOTOR
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		
EWC	ELECTRIC WATER COOLER	P-A	PANEL "A"
EWL	ELECTRIC WALL HEATER	P.C.	PLUMBING CONTRACTOR
(E)	EXISTING	RECEPT.	RECEPTACLE
EM	EMERGENCY LIGHT	(R)	RELOCATED
FLA	FULL LOAD AMPS	SD	SMOKE DETECTOR
(F)	FUTURE	SPEC	SPECIFICATION
FU	FUSE	S.S.	STAINLESS STEEL
GFI	GROUND FAULT INTERRUPTER	TYP	TYPICAL
GRD	GROUND	U/G	UNDERGROUND (BELOW GRADE)
GRS	GALVANIZED RIGID STEEL	WP	WEATHERPROOF
HP	HORSEPOWER	WG	WIRE GUARD
JB	JUNCTION BOX	XFMR	TRANSFORMER
KW	KILOWATT		
KWH	KILOWATT - HOURS		
KVA	KILO VOLT-AMPERES		