1 ONE LINE DIAGRAM

PH4.2 208Y/120v 3P/4w

2 LIGHTING - WIRING DIAGRAM

SCALE: NTS

ELECTRICAL KEY NOTES:

1. EMERGENCY GENERATOR SHALL BE 120/208 VOLT, 3 PHASE, 4 WIRE WYE UNIT, 150KW NOMINAL OUTPUT, DIESEL FIRED STANDBY ENGINE/GENERATOR UNIT SHALL BE COMPLETE WITH TRANSFER SWITCH, LOW OIL, HIGH TEMP, FUEL LEVEL, OVER SPEED, VOLTAGE CONTROLS AND GAUGES, STARTING BATTERIES, CONTINUOUS CHARGING HARDWARE, OUTPUT CIRCUIT PROTECTION, WATER JACKET HEATER AND WEATHERPROOF ENCLOSURE. PROVIDE REMOTE ANNUNCIATOR WITH BACK-UP BATTERY LOCATED IN OFFICE. UNIT SHALL BE COMPLETE WITH ALL ACCESSORIES AS RECOMMENDED BY THE MANUFACTURER, AND SHALL BE FURNISHED COMPLETE WITH MANUFACTURERS START-UP SERVICE. ALL EQUIPMENT AND INSTALLATION SHALL CONFORM TO ARTICLE 445 ON THE NEC AND NFPA 110. GENERATOR SHALL BE SEISMIC CERTIFIED. FUEL CAPACITY FOR MINIMUM 24 HOUR RUNTIME AT FULL LOAD. CUMMINS, FURNISHED BY OWNER, INSTALLED, CONNECTED AND TESTED BY ELECTRICAL CONTRACTOR.
2. MOUNT ON CONCRETE PAD IN LOCATION INDICATED ON SITE PLAN. CIRCUIT TO TRANSFER SWITCH AS SHOWN BY ONE-LINE DIAGRAM. INTEGRAL GENERATOR BREAKERS SHALL BE COORDINATED WITH DISTRIBUTION EQUIPMENT. BREAKERS SHALL BE BY SAME MANUFACTURER AS THE PANELS/SWITCHBOARD TO ASSURE SELECTIVE COORDINATION. PROVIDE BREAKER, INCLUDE FORM C AUXILIARY CONTACT.
3. CONFIRM ALL LUG SIZE WITH MANUFACTURE PRIOR TO INSTALLING ANY FEEDERS.
4. CONFIRM ALL BOOST PUMP CONNECTION REQUIREMENTS WITH INSTALLER AND MANUFACTURE.

ELECTRICAL GENERAL NOTES:

1. OUTSIDE THE BUILDING AND BELOW GRADE, WIRING MAY BE IN SCHEDULE-40 PVC CONDUIT WITH GROUNDING CONDUCTOR IF ACCEPTABLE BY LOCAL CODES. NOT LESS THAN 3/4" CONDUIT.
2. INSTALL EXTERIOR CIRCUITS UNDERGROUND. DIRECT BURIED BRANCH CIRCUIT WIRING OUTSIDE THE BUILDING AND BELOW GRADE MY BE IN TYPE UF MOISTURE RESISTANT CABLE, NOT LESS THAN 10AWG CONDUCTORS OR AS NOTED. COMPLY WITH ELECTRICAL CODE AS REQUIRED AND NOTED ON COVER.

PANEL SCHEDULE

panel	mounting	location	connected load amps
PH	SURFACE	Pump House	334
voltage	**phase**	**bus & main**	**calculated load amps**
120/208	3	400 AMP MLO	334

	service	wire	va	a/p	no	a b c	no.	a/p	va	wire	service
1	LIGHTING	12	559	20/1	1	*	2				SPACE
5	EF-1	12	864	15/1	3	*	4				SPACE
2	RECEPTACLES	12	540	20/1	5	*	6				SPACE
2	RECEPTACLES	12	360	20/1	7	*	8				SPACE
5	HEATER	12	1667	20/3	9	*	10				SPACE
5	*	12	1667	*	11	*	12				SPACE
5	*	12	1667	*	13	*	14				SPACE
	SPACE				15	*	16				SPACE
	SPACE				17	*	18				SPACE
	SPACE				19	*	20				SPACE
	SPACE				21	*	22				SPACE
	SPACE				23	*	24				SPACE
	SPACE				25	*	26				SPACE
	SPACE				27	*	28				SPACE
	SPACE				29	*	30				SPACE
	SPACE				31	*	32				SPACE
	SPACE				33	*	34				SPACE
	SPACE				35	*	36				SPACE
5	BOOSTER PUMP		37564	350/3	37	*	38				SPACE
4 5			37564	*	39	*	40				SPACE
5			37564	*	41	*	42				SPACE

Phase A	40149 VA	NOTES:	line-line voltage
Phase B	40094 VA	NEMA 3R	208
Phase C	39770 VA		largest motor (va)
Total Connected	120014 VA		0

load code:	ph. A	ph. B	ph. C	total	factor	calculated load (va)
1. LIGHTS=	559	0	0 VA	559	1.25	699
2. RECEPT.=	360	0	540 VA	900	1 + 0.5	900
3. HEATING=	0	0	0 VA	0	1.00	0
4. KITCHEN=	0	0	0 VA	0	1.00	0
5. EQUIP.=	39230	40094	39230 VA	118555	1.00	118555
6. MOTORS=	0	0	0 VA	0	*	0
7. RESIDENTIAL=	0	0	0 VA	0	1.00	0
(* 125% of the largest motor + 100% of the balance)				TOTAL =		120154

LUMINAIRE SCHEDULE

TYPE	DISCRIPTION		LAMP		MANUFACTURE
S2	CATEGORY:	VAPOR TIGHT STRIP	TYPE:	LED	LITHONIA DMW2-L24-4000LM-PFL-WD-MVOLT-GZ1-50K-
	HOUSING:	FIBERGLASS 24"x5.88"x3.74"(LxWxH)	QUANTITY:		80CRI
	LENS/REFL:	FROSTED POLYCARBONATE, 0.08" MIN	CCT (K):	5000	OR APPROVED
	BALLAST:	ELECTRONIC	CRI:	40	
	VOLTAGE:	MVOLT	LUMENS:	1691	
	WATTAGE	40	MISC:	65%+ OUTPUT AT 60,000HRS	
	LISTING/STND:	IP 66, NSF SPLASH ZONE II			
	FINISH:				
	MISC:	1500 PSI HOSE DOWN RATED			
TP	CATEGORY:	16" TAPE LIGHT, FIELD CUTTABLE @ <4"	TYPE:	LED	AMERICAN LIGHTING HTL68-WW, LED-DR100-24
	HOUSING:	FLEXIBLE	QUANTITY:	@ 0.63" OC	OR APPROVED
	LENS/REFL:		CCT (K):	3000	
	BALLAST:	REMOTE ELECTRONIC	CRI:	90	
	VOLTAGE:	120	LUMENS:	>220 LUMENS PER FOOT	
	WATTAGE	70.4	MISC:		
	LISTING/STND:	IP 68			
	MISC:	PROVIDE CONNECTION HARDWARE, CLIPS			
		AND ALL OTHER HARDWARE NEEDED			
SW	CATEGORY:	WALL MOUNTED RESIDENCES	TYPE:	LED	WAC LIGHTING WS-W24509
	HOUSING:	ALUMINUM 6" DIA DECROTIVE	QUANTITY:		OR APPROVED
	LENS/REFL:	CLEAR HAMMERED SEEDED GLASS	CCT (K):	3000	
	BALLAST:	ELECTRONIC	CRI:	90	
	VOLTAGE:	120	LUMENS:	365	
	WATTAGE	10	MISC:		
	LISTING/STND:	IP 65			
	FINISH:	BRONZE			
	MISC:				
SW2	CATEGORY:	LED WALL MOUNT	TYPE:	LED	LITHONIA OLWX2LED-90W-50K-PE-DDB
	HOUSING:	ALUMINUM 12-3/4"x14-1/2"x5-1/2" (HxWxD)	QUANTITY:	4	OR APPROVED
	LENS/REFL:	TEMPERED GLASS	CCT (K):	4000	
	BALLAST:	ELECTRONIC	CRI:	80	
	VOLTAGE:	120	LUMENS:	2300	
	WATTAGE	90	MISC:	L76/100,000	
	LISTING/STND:	IP65			
	FINISH:	BRONZE			
	MISC:	INTEGRAL PHOTOCELL			
SF	CATEGORY:	SITE FLOODLIGHT	TYPE:	LED	KIM LIGHTING EL218-W-
	HOUSING:	ALUMINUM 3" DIA BY 5-1/2" LONG	QUANTITY:	8	5-8L-4K-UV-BD215DB-
	LENS/REFL:	BARN DOORS	CCT (K):	4000	BD215DB
	BALLAST:	ELECTRONIC	CRI:	72	
	VOLTAGE:	MVOLT	LUMENS:	1386	
	WATTAGE	16	MISC:	95%+ OUTPUT AT 100000HRS	
	LISTING/STND:	IP 66			
	FINISH:	BRONZE			
	MISC:				
SS	CATEGORY:	SITE SPOTLIGHT	TYPE:	LED	KIM LIGHTING EL218-S-
	HOUSING:	ALUMINUM 3" DIA BY 5-1/2" LONG	QUANTITY:	8	5-8L-4K-UV-BD215DB-
	LENS/REFL:	FIXED HOOD	CCT (K):	4000	FH215DB
	BALLAST:	ELECTRONIC	CRI:	72	
	VOLTAGE:	MVOLT	LUMENS:	1691	
	WATTAGE	16	MISC:	95%+ OUTPUT AT 100000HRS	
	LISTING/STND:	IP 66			
	FINISH:	BRONZE			
	MISC:				

3 FEEDER SCHEDULE

		COPPER - 75°C			ALUMINUM - 75°C		
TAG	AMPERAGE	CONDUCTOR (A)	GROUND (B)	CONDUIT (C)	CONDUCTOR (A)	GROUND (B)	CONDUIT (C)
60	60	(4) #6	(1) #10	1"	(4) #4	(1) #8	1-1/4"
80	80	(4) #4	(1) #8	1-1/4"	(4) #2	(1) #6	1-1/4"
100	100	(4) #2	(1) #8	1-1/4"	(4) #1	(1) #6	1-1/2"
125	125	(4) #1	(1) #6	1-1/2"	(4) #2/0	(1) #4	2"
150	150	(4) #1/0	(1) #6	1-1/2"	(4) #3/0	(1) #4	2"
200	200	(4) #3/0	(1) #6	2"	(4) #250	(1) #4	2-1/2"
225	225	(4) #4/0	(1) #4	2-1/2"	(4) #300	(1) #2	3"
225G	225	(4) #250	(1) #4	4"	(4) #400	(1) #2	4"
250	250	(4) #250	(1) #4	2-1/2"	(4) #400	(1) #2	3"
300	300	(4) #350	(1) #4	4"	(4) #500	(1) #2	4"
350	350	(3) #500	(1) #3	4"	(4) #700	(1) #1	4"
350G	350	(4) #600	(1) #3	(2) 4"	N/A	N/A	N/A
400	400	(4) #600	(1) #3	4"	(4) #900	(1) #1	4"
400U	400	(3) #600	(1) #3	4"	-	-	-
1200	1200	4 SETS (4) #350	--	4 SETS 4"	4 SETS (4) #500	--	4 SETS 4"
1600	1600	5 SETS (4) #400	--	5 SETS 4"	5 SETS (4) #600	--	5 SETS 4"
2000	2000	6 SETS (4) #400	--	6 SETS 4"	6 SETS (4) #600	--	6 SETS 4"
2500	2500	8 SETS (4) #400	--	8 SETS 4"	8 SETS (4) #600	--	8 SETS 4"
3000	3000	8 SETS (4) #500	--	8 SETS 4"	8 SETS (4) #700	--	8 SETS 4"

(A) - BASED ON NEC TABLE 310.15(B)(16)
(B) - BASED ON NEC TABLE 250.122
(C) - BASED ON 40 PERCENT FILL

STATE OF MAINE Robert J. Hartley LICENSED PROFESSIONAL ENGINEER
Date: 09/20/16
Reviewed for Code Compliance Department Division of Engineering Services

lenity architecture
3150 Kettle Court SE, Salem, Oregon 97301
P 503 399 0590 F 503 399 0565 W lenityarchitecture.com

COLSON AND COLSON GENERAL CONTRACTOR, INC.
2260 McGILCHRIST STREET SE, SUITE 200
SALEM, OREGON, 97302
PHONE (503) 586-7401

PORTLAND RETIREMENT RESIDENCE
802 OCEAN AVE. PORTLAND, MAINE 04103

LEGEND, DETAILS, AND SCHEDULRES - MECH, ELEC, PLMB

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DATE 5/27/2016

REVISED DATE

SHEET PH4.2

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