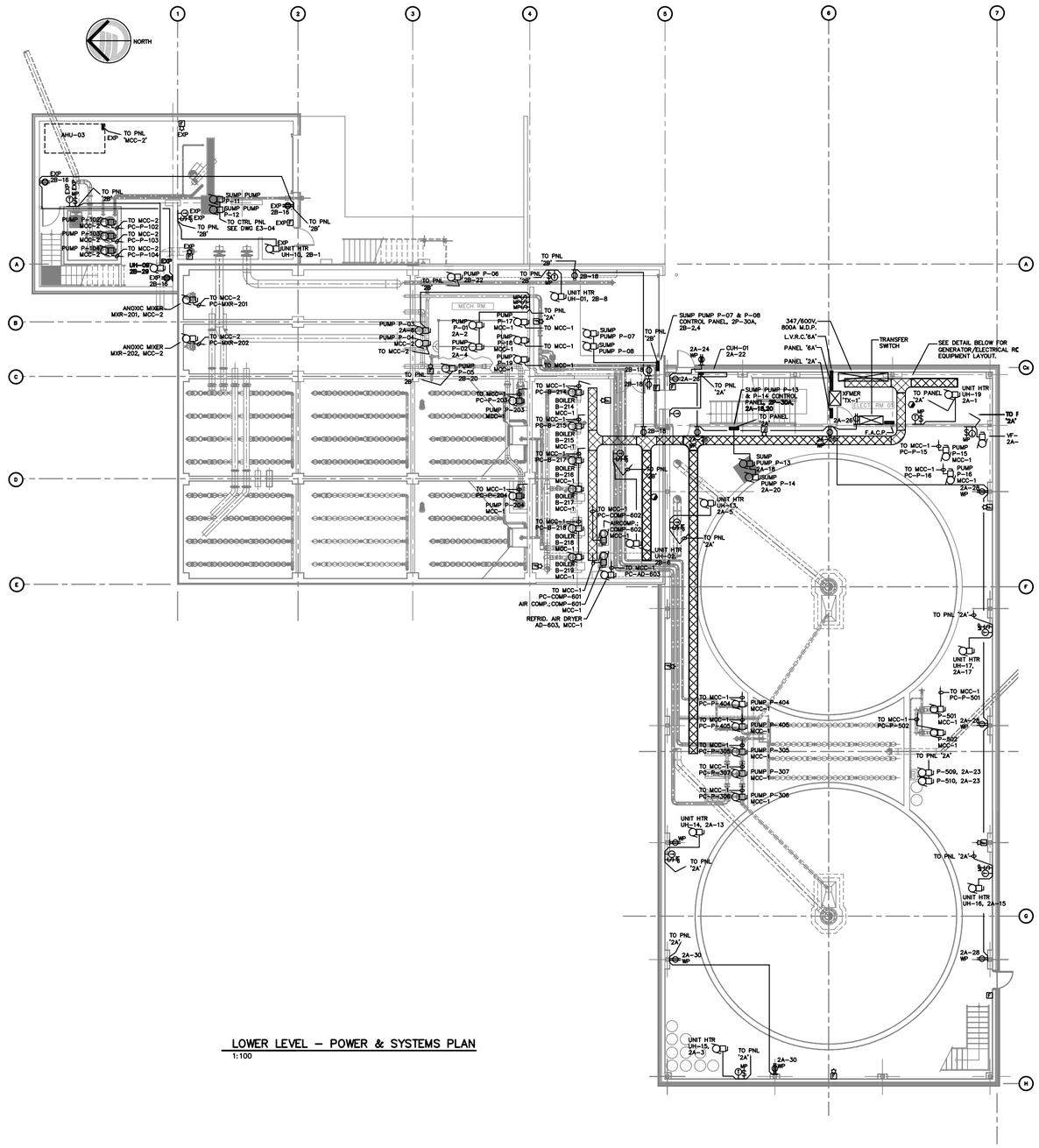
MOTOR STARTER AND CONTROL SCHEDULE

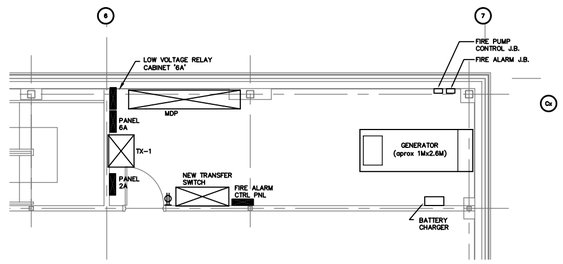
E – DIVISION 16
M – DIVISION 15
U – USERS EQUIPMENT
X – PROVIDE

1 - STOP-START
2 - ON-OFF
3 - HAND-OFF-AUTO
4 - PILOT LIGHTS
5 - CONTROL RELAY
6 - TIMING RELAY
7 - DOUBLE VOLTAGE RELAY
8 - THERMISTORS
9 - ELAPSED TIME METER
10-
11 - SOLENOID
12 - MOTORIZED DAMPER
13 - FLOAT SWITCH
14 - PRESSURE SWITCH
15 - FLOW SWITCH
16 - SAIL SWITCH
17 - CONTROL TRANSFORMER
18 - THERMOSTAT
19 - INTEGRAL CONTROL PANEL
20 - FIRE ALARM SHUT DOWN
21 - FREEZE PROTECTION
22 - FIRE PROTECTION
23 - HIGH LIMIT
24 - LOW LIMIT
25-
26 - L.V. THERMOSTAT
27 - C.O. DETECTOR
28 - VARIABLE SPEED SW.
29 - VFD IN MCC
30 - VFD AT EQUIPMENT
31 - REDUCED VOLTAGE STARTER IN MCC
32 - REDUCED VOLTAGE STARTER AT EQUIPMENT

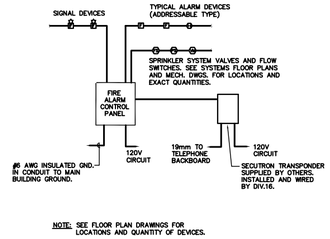
EQUIPMENT No.	LOCATION	EQUIPMENT	SUPPLIED UNDER	INSTALLED UNDER	WIRED UNDER	EQUIP'T RATING HP	TOTAL kW	RUNNING kW	STANDBY kW	VOLTAGE	PHASE	PANEL AND CIRCUIT No.	MAGNETIC STARTER IN COVER: MANUAL	KEY	PUSH BUTTON	PILOT LIGHT	MAGNETIC	REDUCED VOLTAGE	BREAKER TYPE	FUSE TYPE	CSA TRANSFORMER	AUXILIARY CONTACT	STOP-START	ON-OFF-AUTO	ON LIGHT - RED	CSA DISCONNECT TYPE	NOTES	SUPPLIED UNDER	INSTALLED UNDER	LOCATE AT MOTOR: DISCONNECT SWITCH	TOGGLE SWITCH	RECEPTACLE	LEGEND ABOVE	LEGEND ABOVE	LEGEND ABOVE	SUPPLIED UNDER	INSTALLED UNDER	REMOTE CONTROL: WIRED UNDER	LEGEND ABOVE	LEGEND ABOVE	LEGEND ABOVE	SUPPLIED UNDER	INSTALLED UNDER	INTERMEDIATE LOOP	INTERLOCK WITH EQUIP. NO.	FEEDER TAG	FEEDER DETAILS	NOTES
AHU-1	SOUTH END OF EXISTING BUILDING	2nd FL. AEROBIC TANK SPACE, SUPPLY FAN #1	M	M	E	3.0	2.24			600	3	MCC-1					X	X		X	X	X			X	X	X			E	E	E	X			E	E	E								3C#12 + GND	EXISTING UNIT
AHU-1	SOUTH END OF EXISTING BUILDING	2nd FL. AEROBIC TANK SPACE, SUPPLY FAN #2	M	M	E	3.0	2.24			600	3	MCC-1					X	X		X	X	X			X	X	X			E	E	E	X			E	E	E								3C#12 + GND	EXISTING UNIT
AHU-1	SOUTH END OF EXISTING BUILDING	2nd FL. AEROBIC TANK SPACE, RETURN FAN #1	M	M	E	3.0	2.24			600	3	MCC-1					X	X		X	X	X			X	X	X			E	E	E	X			E	E	E								3C#12 + GND	EXISTING UNIT
AHU-2	CLARIFIER ROOM, UPPER LEVEL, CENTRE OF SOUTH WALL	CLARIFIER ROOM VENTILATION SYSTEM SUPPLY FAN & EXHAUST FAN	M	M	E	3.0	2.24			600	3	MCC-1								X	X	X			X	X	X			E	E	E	X			E	E	E								6C#12 + GND	SINGLE POINT CONNECTION
AHU-3	2nd FL. SCREENS BUILDING	SCREENS BUILDING VENTILATION SYSTEM SUPPLY FAN & EXHAUST FAN	M	M	E	5.0	3.75			600	3	MCC-2								X	X	X			X	X	X			E	E	E	X			E	E	E								6C#12 + GND	2 SPEED MOTOR SINGLE POINT CONNECTION
VF-01	Elect Rm.	ELECTRICAL ROOM VENTILATION	M	M	E	.25	.19			120	1	2B-19	X	X		X				X				X						E	E	E	X			E	E	E						UH-15		3C#12 + GND	THERMOSTAT
EF-1	2nd FL. NORTH WALL	AEROBIC TANK#1 EXHAUST	M	M	E	1.5	1.13			600	3	MCC-2					X	X		X	X	X			X	X	X			E	E	E	X			E	E	E								3C#12 + GND	
EF-2	2nd FL. NORTH WALL	AEROBIC TANK#2 EXHAUST	M	M	E	1.5	1.13			600	3	MCC-2					X	X		X	X	X			X	X	X			E	E	E	X			E	E	E								3C#12 + GND	
EF-3	2nd FL. NORTH WALL	ANOXIC TANK#1 EXHAUST	M	M	E	.5	.38			120	1	2B-12	X	X		X				X				X						E	E	E	X			E	E	E								3C#12 + GND	
EF-4	2nd FL. NORTH WALL	ANOXIC TANK#2 EXHAUST	M	M	E	.5	.38			120	1	2B-14	X	X		X				X				X						E	E	E	X			E	E	E								3C#12 + GND	
EF-5	2nd FL. SCREENS BUILDING	SCREENS BUILDING EXHAUST	M	M	E	FRAC				120	1	2B-10	X	X		X				X				X						E	E	E	X			E	E	E								3C#12 + GND	
EF-6	CAKE BIN ROOM	EXHAUST FAN	M	M	E	FRAC				120	1	2B-26	X	X		X				X				X						E	E	E	X			E	E	E								3C#12 + GND	
EF-7	2nd FL SOUTH	EXHAUST FAN	M	M	E	FRAC				120	1	2B-24	X	X		X				X				X						E	E	E	X			E	E	E								3C#12 + GND	
P-01	BOILER ROOM	GLYCOL HEATING PUMP	M	M	E	.5	.38			120	1	2A-2	X	X		X				X				X						E	E	E	X			E	E	E								3C#12 + GND	
P-02	BOILER ROOM	GLYCOL HEATING PUMP	M	M	E	.5	.38			120	1	2A-4	X	X		X				X				X						E	E	E	X			E	E	E								3C#12 + GND	
P-03	BOILER ROOM	EXISTING HEATING LOOP GLYCOL PUMP	M	M	E	.5	.38			120	1	2A-6	X	X		X				X				X						E	E	E	X			E	E	E								3C#12 + GND	
P-04	BOILER ROOM	EXISTING HEATING LOOP GLYCOL PUMP	M	M	E	.75	.56			600	3	MCC-2					X	X		X	X	X			X	X	X			E	E	E	X			E	E	E								3C#12 + GND	
P-05	BOILER ROOM	GLYCOL FILL PUMP	M	M	E	.5	.38			120	1	2B-20	X	X		X				X				X						E	E	E	X			E	E	E								3C#12 + GND	
P-06	BOILER ROOM	DOMESTIC COLD WATER PRESSURE PUMP	M	M	E	.5	.38			120	1	2B-22	X	X		X				X				X						E	E	E	X			E	E	E								3C#12 + GND	
P-07	CAKE BIN ROOM	SUMP PUMP	M	M	E	.6	.45			120	1	2B-2,4	X	X		X				X				X						E	E	E	X			E	E	E		13	M	E				3C#12 + GND	EXIST. TO BE REPLACED Duty/Standby
P-08	CAKE BIN ROOM	SUMP PUMP	M	M	E	.6	.45			120	1	2B-2,4	X	X		X				X				X						E	E	E	X			E	E	E		13	M	E				3C#12 + GND	EXIST. TO BE REPLACED Duty/Standby
P-09	CLARIFIER ROOM	FUEL OIL PUMP	M	M	E	3	2.29			600	3	MCC-1					X	X		X	X	X			X	X	X			E	E	E	X			E	E	E								3C#12 + GND	
P-10	CLARIFIER ROOM	FUEL OIL PUMP	M	M	E	3	2.29			600	3	MCC-1					X	X		X	X	X			X	X	X			E	E	E	X			E	E	E								3C#12 + GND	
P-11	HEADWORKS LOWER FLOOR SUMP	SUMP PUMP	M	M	E	.75	.56			120	1	2B-3,5	X	X		X				X				X						E	E	E	X			E	E	E		13	M	E				3C#12 + GND	P-11 & P-12 CTRL PANEL
P-12	HEADWORKS LOWER FLOOR SUMP	SUMP PUMP	M	M	E	.75	.56			120	1	2B-3,5	X	X		X				X				X						E	E	E	X			E	E	E		13	M	E				3C#12 + GND	P-11 & P-12 CTRL PANEL Duty/Standby
P-13	CLARIFIER ROOM	SUMP PUMP	M	M	E	.75	.56			120	1	2A-18,20	X	X		X				X				X						E	E	E	X			E	E	E		13	M	E				3C#12 + GND	P-13 & P-14 CTRL PANEL
P-14	CLARIFIER ROOM	SUMP PUMP	M	M	E	.75	.56			120	1	2A-18,20	X	X		X				X				X						E	E	E	X			E	E	E		13	M	E				3C#12 + GND	P-13 & P-14 CTRL PANEL Duty/Standby
P-15	CLARIFIER ROOM	FUEL OIL PUMP	M	M	E	1.0	.75			600	3	MCC-1					X	X		X	X	X			X	X	X			E	E	E	X			E	E	E								3C#12 + GND	
P-16	CLARIFIER ROOM	FUEL OIL PUMP	M	M	E	1.0	.75			600	3	MCC-1					X	X		X	X	X			X	X	X			E	E	E	X			E	E	E								3C#12 + GND	
P-17	BIO AREA	EFFLUENT WATER BOOSTER PUMP	M	M	E	5.0	3.75			600	3	MCC-1					X	X		X	X	X			X	X	X			E	E	E	X			E	E	E								3C#12 + GND	
P-18	BIO AREA	EFFLUENT WATER BOOSTER PUMP	M	M	E	5.0	3.75			600	3	MCC-1					X	X		X	X	X			X	X	X			E	E	E	X			E	E	E								3C#12 + GND	
P-19	BIO AREA	EFFLUENT WATER BOOSTER PUMP	M	M	E	5.0	3.75			600	3	MCC-1					X	X		X	X	X			X	X	X			E	E	E	X			E	E	E								3C#12 + GND	
UH-01	CAKE BIN ROOM	UNIT HEATER	M	M	E	.33	.25			120	1	2B-8	X	X		X				X				X						E	E	E	X			E	E	E								3C#12 + GND	
UH-02	EXISTING GENERATOR RM	UNIT HEATER	M	M	E	.33	.25			120	1	2B-6	X	X		X				X				X						E	E	E	X			E	E	E								3C#12 + GND	
UH-03	2ND FL SOUTH	UNIT HEATER	M	M	E	.13	.09			120	1	2B-7	X	X		X				X				X						E	E	E	X			E	E	E								3C#12 + GND	
UH-04	2ND FL. NORTH	UNIT HEATER	M	M	E	.33	.25			120	1	2B-13	X	X		X				X				X						E	E	E	X			E	E	E								3C#12 + GND	
UH-05	EXISTING SCREENS RM	UNIT HEATER	M	M	E	.13	.09			120	1	2B-17	X	X		X				X				X						E	E	E	X			E	E	E								3C#12 + GND	
UH-06	2ND FL. EAST	UNIT HEATER	M	M	E	.33	.25			120	1	2B-11	X	X		X				X				X						E	E	E	X			E	E	E								3C#12 + GND	
UH-07	EXISTING PRESS RM	UNIT HEATER	M	M	E	.13	.09			120	1	2B-9	X	X		X				X				X						E	E	E	X			E	E	E								3C#12 + GND	
UH-08	2ND FL. NORTH EAST	UNIT HEATER	M	M	E	.13	.09			120	1	2B-15	X	X		X				X				X						E	E	E	X			E	E	E								3C#12 + GND	
UH-09	HEADWORKS, LOWER FLOOR	UNIT HEATER	M	M	E	.5	.38			120	1	2B-29	X	X		X				X				X						E	E	E	X			E	E	E								3C#12 + GND	
UH-10	HEADWORKS, LOWER FLOOR	UNIT HEATER	M	M	E	.5	.38			120	1	2B-1	X	X		X				X				X						E	E	E	X			E	E	E								3C#12 + GND	
UH-11	REMOVED	UNIT HEATER																																													
UH-12	HEADWORKS, UPPER FLOOR	UNIT HEATER	M	M	E	.5	.38			120	1	2B-25	X	X		X				X				X						E	E	E	X			E	E	E								3C#12 + GND	
UH-13	CLARIFIER ROOM	UNIT HEATER	M	M	E	.5	.38			120	1	2A-5	X	X		X				X				X						E	E	E	X			E	E	E								3C#12 + GND	
UH-14	CLARIFIER ROOM	UNIT HEATER	M	M	E	.5	.38			120	1	2A-13	X	X		X				X				X						E	E	E	X			E	E	E								3C#12 + GND	
UH-15	CLARIFIER ROOM	UNIT HEATER	M	M	E	.5	.38			120	1	2A-3	X	X		X				X				X						E	E	E	X			E	E	E								3C#12 + GND	
UH-16	CLARIFIER ROOM	UNIT HEATER	M	M	E	.5	.38			120	1	2A-15	X	X		X				X				X						E	E	E	X			E	E	E								3C#12 + GND	
UH-17	CLARIFIER ROOM	UNIT HEATER	M	M	E	.5	.38			120	1	2A-17	X	X		X				X				X						E	E	E	X			E	E	E								3C#12 + GND	
UH-18	CLARIFIER ROOM, MECH. RM.	UNIT HEATER	M	M	E	.5	.38			120	1	2A-19	X	X		X				X				X						E	E	E	X			E	E	E								3C#12 + GND	
UH-19	ELECTRICAL RM. 01	UNIT HEATER	M	M	E	.5	.38			120	1	2A-1	X	X		X				X				X						E	E	E	X			E	E	E								3C#12 + GND	
CUH-01	CLARIFIER ENTRANCE	CABINET UNIT HEATER	M	M	E	FMP	2			120	1	2A-22	X	X				X				X		X																							
B-03	BOILER ROOM	GLYCOL HEATING BOILER	M	M	E	.75	.56			120	1	2A-14																																		3C#12 + GND	BOILER CTRL PANEL FOR B-03 & B-04
B-04	BOILER ROOM	GLYCOL HEATING BOILER	M	M	E	.75	.56			120	1	2A-16																																		3C#12 + GND	BOILER CTRL PANEL FOR B-03 & B-04
AREA 100 HEADWORKS	P-102	RAW WASTEWATER LIFT STATION	RAW WASTEWATER PUMP	M	M	E		11.25		Y	600	3	MCC-2																							29	E	E					PC-P-102	3C#10 + GND	
	P-103	RAW WASTEWATER LIFT STATION	RAW WASTEWATER PUMP	M	M	E		11.25		Y	600	3	MCC-2																							29	E	E					PC-P-103	3C#10 + GND	
	P-104	RAW WASTEWATER LIFT STATION	RAW WASTEWATER PUMP	M	M	E		11.25		Y	600	3	MCC-2																							29	E	E					PC-P-104	3C#10 + GND	
	SSCR-105	NEW HEADWORKS ROOM	SCREW SCREEN	M	M	E		1.5		Y	600	3	MCC-2																														PC-SSCR-105	3C#12 + GND	
	SSCR-106	NEW HEADWORKS ROOM	SCREW SCREEN	M	M	E		1.5		Y	600	3	MCC-2																														PC-SSCR-106	3C#12 + GND	
	PF-108	NEW HEADWORKS ROOM	PRIMARY FILTER	M	M	E		10.1		Y	600	3	MCC-2																														PC-PF-108	3C#10 + GND	
AREA 200 BIOREACTOR 1	MIXR-201	BIOREACTOR 1	ANOXIC 1 CELL MIXER	M	M	E		1.87		Y	600	3	MCC-2																														PC-MIXR-201	3C#12 + GND	
	P-203	BIOREACTOR 1	NITRIFIED MIXED LIQUOR RECYCLE PUMP	M	M	E		5.63		Y	600	3	MCC-1																							29	E	E					PC-P-203	3C#12 + GND	
	P-205	BIOREACTOR 1	WAS PUMP	M	M	E		2.25		N	600	3	MCC-1																							29	E	E					PC-P-205	3C#12 + GND	
AREA 200 BIOREACTOR 2	MIXR-202	BIOREACTOR 2	ANOXIC 1 CELL MIXER	M	M	E		1.87		Y	600	3	MCC-2																														PC-MIXR-202	3C#12 + GND	
	P-204	BIOREACTOR 2	NITRIFIED MIXED LIQUOR RECYCLE PUMP	M	M	E		5.63		Y	600	3	MCC-1																							29	E	E					PC-P-204	3C#12 + GND	
	P-206	BIOREACTOR 2	WAS PUMP	M	M	E		2.25		N	600	3	MCC-1																							29	E	E					PC-P-206	3C#12 + GND	
	B-214	BLOWER ROOM	AERATION BLOWER	M	M	E		18.75		N	600	3	MCC-1																							29	E	E					PC-B-214	3C#4 + GND	
	B-215	BLOWER ROOM	AERATION BLOWER	M	M	E		18.75		N	600	3	MCC-1																							29	E	E					PC-B-215	3C#4 + GND	
	B-217	BLOWER ROOM	AERATION BLOWER	M	M	E		37.5		Y	600	3	MCC-1																							29	E	E				B-216	PC-B-217	3C#8 + GND	
	B-218	BLOWER ROOM	AERATION BLOWER	M	M	E		37.5		Y	600	3	MCC-1																							29	E	E				B-219	PC-B-218	3C#8 + GND	
	LFS-207	ABOVE BIOREACTORS	HYDRATED LIME SYSTEM	M	M	E		30.0		Y	600	3	MCC-2																														PC-LFS-207	3C#8 + GND	PACKAGED UNIT C/W CTR PANEL
AREA 300 SECONDARY CLARIFIERS 1&2	CM-301	SC ROOM – 2nd FLOOR	SECONDARY CLARIFIER MECHANISM	M	M	E		1.5		Y	600	3	MCC-1																														PC-CM-301	3C#12 + GND	
	CM-303	SC ROOM – 2nd FLOOR	SECONDARY CLARIFIER MECHANISM	M	M	E		1.5		Y	600	3	MCC-1																														PC-CM-303	3C#12 + GND	
	P-305	SC ROOM – 1st FLOOR	RAS PUMP	M	M	E		2.25		Y	600	3	MCC-1																							29	E	E					PC-P-305	3C#12 + GND	
	P-306	SC ROOM – 1st FLOOR	RAS PUMP	M	M	E		2.25		Y	600	3	MCC-1																							29	E	E					PC-P-306	3C#12 + GND	
	P-307	SC ROOM – 1st FLOOR	RAS PUMP	M	M	E		2.25		Y	600	3	MCC-1																							29	E	E					PC-P-307	3C#12 + GND	
AREA 400 THICKENING & DEWATERING	DAF-402	EXISTING BUILDING – 2nd FL.	DISSOLVED AIR FLOTATION THICKENER PACKAGED UNIT	M	M	E		4.5		N	600	3	MCC-1																														PC-DAF-402	3C#12 + GND	DAF PACKAGE
	P-404	SC ROOM – 1st FLOOR	TWAS PUMP	M	M	E		2.25		N	600	3	MCC-1																							29	E	E					PC-P-404	3C#12 + GND	
	P-405	SC ROOM – 1st FLOOR	TWAS PUMP	M	M	E		2.25		N	600	3	MCC-1																							29	E	E					PC-P-405	3C#12 + GND	
	BFP-407	EXISTING BUILDING – 2nd FL.	BELT FILTER PRESS	M	M	E		9		N	600	3	MCC-1																														PC-BFP-407	3C#12 + GND	BFP PACKAGE
AREA 500 EFFLUENT TRIM SYSTEM	P-501	SC ROOM – 1st FLOOR	EFFLUENT WATER PUMP	M	M	E		1.12		Y	600	3	MCC-1																														PC-P-501	3C#12 + GND	
	P-502	SC ROOM – 1st FLOOR	EFFLUENT WATER PUMP	M	M	E		1.12		Y	600	3	MCC-1																														PC-P-502	3C#12 + GND	
	STR-503	SC ROOM – 2nd FLOOR	AUTOMATIC SELF CLEANING STRAINER	M	M	E		.188		Y	120	1	2A-23																														PC-STR-503	3C#12 + GND	STRAINER PACKAGE
	P-509	SC ROOM – 1st FLOOR	SODIUM HYPOCHLORITE DOSING PUMP	M	M	E		FRAC			120	1	2A-23																																3C#12 + GND	
	P-510	SC ROOM – 1st FLOOR	SODIUM HYPOCHLORITE DOSING PUMP	M	M	E		FRAC		N	120	1	2A-23																																	
AREA 600 SERVICE AIR	COMP-601	BLOWER ROOM	AIR COMPRESSOR	M	M	E		5.6		Y	600	3	MCC-1																														PC-COMP-601	3C#12 + GND	
	COMP-602	BLOWER ROOM	AIR COMPRESSOR	M	M	E		5.6		N	600	3	MCC-1																														PC-COMP-602	3C#12 + GND	
	AD-603	BLOWER ROOM	REFRIGERATED AIR DRYER	M	M	E		.65		Y	600	3	MCC-1																														PC-AD-603	3C#12 + GND	



LOWER LEVEL – POWER & SYSTEMS PLAN
1:100



GENERATOR ROOM EQUIPMENT LAYOUT
1:50



NOTE: SEE FLOOR PLAN DRAWINGS FOR LOCATIONS AND QUANTITY OF DEVICES.

FIRE ALARM SYSTEM SCHEMATIC
N.T.S.

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PRELIMINARY
Not For Construction
OCT.15.2004

No.	Date	Description
A	2004 OCT 15	ISSUED FOR 95% REVIEW

REVISIONS

CITY of IQALUIT, Nunavut

Design: WA
Drawn: YLC
Approved: Chief
Director
Project Title: CITY OF IQALUIT WASTEWATER TREATMENT PLANT

Drawing Title: **ELECTRICAL LOWER LEVEL POWER & SYSTEMS PLAN**

Scale: AS SHOWN
Project No.: 75360
Date: SEPT 2004
Drawing No.: E3.03
Revision: A