

SYMBOLS LEGEND	
SYMBOL	DESCRIPTION
ELECTRICAL POWER AND DISTRIBUTION	
	DISCONNECT, FUSED (ONE-LINE DIAGRAM).
	CIRCUIT BREAKER, MOLDED CASE (ONE-LINE DIAGRAM).
	TRANSFORMER (ONE-LINE DIAGRAM).
	PANELBOARD WITH MAIN LUGS ONLY. BUS SIZE AND PHASE AS SHOWN (ONE-LINE DIAGRAM).
	PANELBOARD WITH MAIN CIRCUIT BREAKER. SIZE AND PHASE AS SHOWN (ONE-LINE DIAGRAM).
	PANELBOARD WITH CIRCUIT BREAKER AND SUB FEED LUGS (ONE-LINE DIAGRAM).
	DISCONNECT SWITCH, FUSED.
	DISCONNECT SWITCH, UNFUSED.
	STARTER, COMBINATION WITH DISCONNECT SWITCH.
	STARTER OR MOTOR CONTROLLER.
	PUSHBUTTON.
	PUSHBUTTONS, MOTOR CONTROL.
	PANELBOARD CABINET, FLUSH MOUNTED.
	PANELBOARD CABINET, SURFACE MOUNTED, 1 SECTION.
	PANELBOARD CABINET, SURFACE MOUNTED, 2 SECTION.
	DISTRIBUTION PANEL OR SWITCHBOARD.
	LIGHTING RELAY, CONTACTOR PANEL, OR DIMMING ENCLOSURE.
	LIGHTING CONTROL STATION.
	DIMMING ENTRY STATION OR CONTROL STATION, FLUSH MOUNTED.
	CENTRAL PROCESSOR UNIT.
	SWITCH, TOGGLE MOTOR STARTER WITH OVERLOAD PROTECTION.
	TRANSFORMER. NUMBER INDICATES KVA.

SYMBOLS LEGEND	
SYMBOL	DESCRIPTION
FIRE ALARM	
	FIRE SYSTEM ANNUNCIATOR.
	FIRE ALARM CONTROL PANEL, SEMI-RECESSED.
	FIRE ALARM NOTIFICATION POWER SUPPLY.
	FIRE ALARM TRANSDUCER OR TRANSMITTER.
	SMOKE CONTROL PANEL.
	AUTOMATIC DOOR CLOSERS. DOOR CLOSERS SHALL BE FURNISHED WITH DOOR HARDWARE AND CONNECTED TO BY FIRE ALARM INSTALLERS.
	CONTROL MODULE.
	MONITOR MODULE.
	FIRE ALARM MANUAL PULL STATION.
	SHUT DOWN RELAY. INSTALL RELAY IN CONTROL CIRCUIT OF EQUIPMENT TO BE CONTROLLED IN THE EVENT OF A FIRE.
	MAGNETIC DOOR HOLDER.
	DETECTOR, SMOKE.
	DETECTOR, SMOKE WITH AUXILIARY CONTACT.
	DETECTOR, SMOKE, BEAM RECEIVER.
	DETECTOR, SMOKE, BEAM TRANSMITTER.
	DETECTOR, SMOKE, ELEVATOR RECALL DESIGNATION.
	DETECTOR, SMOKE WITH GUARD.
	DETECTOR, SMOKE, DUCT WITH HOUSING AND SAMPLING TUBE.
	DETECTOR, HEAT.
	STROBE.
	STROBE. SUBSCRIPT INDICATES CANDELA RATING.
	ALARM, HORN/SPEAKER, WEATHERPROOF.
	ALARM, HORN/STROBE, ONE ASSEMBLY.
	ALARM, HORN/STROBE, ONE ASSEMBLY. SUBSCRIPT INDICATES CANDELA RATING.
	ALARM, CHIME/STROBE, ONE ASSEMBLY.
	ALARM, HORN/STROBE WITH GUARD, ONE ASSEMBLY.
	ALARM, MINI HORN/STROBE, ONE ASSEMBLY.
	SPEAKER, EVACUATION.
	SPEAKER, EVACUATION, COMBINATION STROBE.
	DETECTOR, FLOW SWITCH. FLOW SWITCHES SHALL BE PROVIDED AND INSTALLED WITH FIRE SPRINKLER SYSTEM AND SHALL BE CONNECTED TO LOCATIONS SHOWN ON THE FIRE SPRINKLER SHOP DRAWINGS.
	DETECTOR, TAMPER SWITCH WITH VALVE. TAMPER SWITCHES SHALL BE PROVIDED AND INSTALLED WITH FIRE SPRINKLER SYSTEM AND SHALL BE CONNECTED TO LOCATIONS SHOWN ON THE FIRE SPRINKLER SHOP DRAWINGS.
	SMOKE DAMPER.
	FIRE AND SMOKE DAMPER.
	BELL (GONG).
	DETECTOR, CARBON MONOXIDE.
	DETECTOR, SMOKE/STROBE, RESIDENTIAL.
	ALARM, HORN/STROBE, ONE ASSEMBLY, CEILING MOUNTED. SUBSCRIPT INDICATES CANDELA RATING.
	ALARM, HORN, CEILING MOUNTED. SUBSCRIPT INDICATES CANDELA RATING.
	ALARM, STROBE, CEILING MOUNTED. SUBSCRIPT INDICATES CANDELA RATING.

SYMBOLS LEGEND	
SYMBOL	DESCRIPTION
TECHNOLOGY SYSTEMS	
	TECHNOLOGY SYSTEM CABLE. SEE SPECIFIC JOB EQUIPMENT LIST FOR APPLICABLE DESIGNATIONS. EXAMPLES: C = CONTROL CABLE G = GROUND CABLE, 10 AWG, 1 CONDUCTOR, GREEN M = INSULATED MICROPHONE CABLE S = SPEAKER CABLE, 70 VOLT SYSTEM Z = SPEAKER CABLE, 8 OHM SYSTEM
	SPEAKER, CEILING MOUNTED.
	SPEAKER, WALL MOUNTED.
	EQUIPMENT CABINET.
	MEDIA CONNECTION PLATE.
	AUDIOVISUAL OUTLET.
	SCREEN, PROJECTION, CEILING MOUNTED.
	PROJECTOR, CEILING MOUNTED.
	VIDEO CONFERENCING CAMERA.
	CONTROL PANEL.
	MICROPHONE INPUT.
	MICROPHONE INPUT, FLOOR MOUNTED.
	REMOTE CONTROL INPUT.
	POWER SWITCH.
	SPEAKER SWITCH OR INPUT.
	SOURCE SWITCH/VOLUME CONTROL.
	TAPE RECORD OUTPUT.
	VOLUME CONTROL.
	HUB CABINET.
	VIDEO MONITOR.
	AUDIO DISTRIBUTION AMPLIFIER.
	AUDIO PATCH PANEL.
	CONNECTION PANEL.
	DIGITAL VERSATILE DISC (DVD) PLAYER.
	ASSISTED LISTENING EMITTER PANEL.
	SIGNAL RELAY DPDT WITH SOCKET.
	LINE DRIVER (VARIZONE DIGITAL PAGING SYSTEM).
	POWER AMP MODULE (VARIZONE DIGITAL PAGING SYSTEM).
	RGBV DISTRIBUTION AMPLIFIER.
	REMOTE CONTROL PANEL.
	RGBV MATRIX SWITCHER.
	TRANSIENT VOLTAGE SURGE SUPPRESSOR, AC LINE CONDITIONER.
	VIDEO CASSETTE RECORDER.
	COMPOSITE VIDEO DISTRIBUTION AMPLIFIER.
	COMPOSITE VIDEO MATRIX SWITCHER.
	VIDEO PATCH PANEL.
	S-VIDEO MATRIX SWITCHER.
	AMPLIFIER (ONE-LINE DIAGRAM).
	POWER BRIDGE (VARIZONE DIGITAL PAGING SYSTEM).
	TERMINATOR (VARIZONE DIGITAL PAGING SYSTEM).
	TRANSFORMER, ISOLATION/MATCHING (ONE-LINE DIAGRAM).
	TRANSFORMER, # WATT (ONE-LINE DIAGRAM).
	MICROPHONE, HANDHELD (ONE-LINE DIAGRAM).
	AUXILIARY INPUT.
	INFRARED SENSOR.

SYMBOLS LEGEND	
SYMBOL	DESCRIPTION
CLOCK	
	CLOCK.
	CLOCK, SURFACE WITH WIRE GUARD.
CCTV	
	CCTV CABLE, POWER.
	CCTV CABLE, VIDEO SIGNAL.
	CCTV HEADEND EQUIPMENT.
	CCTV MONITOR.
	CCTV CAMERA ENCLOSURE WITH LENS, TYPICAL. SEE SCHEDULE.
	CCTV CAMERA WITH PAN, TILT AND ZOOM.
	PANNING CAMERA TRANSVERSE ANGLE.
SECURITY	
	SECURITY CABLE. SEE EQUIPMENT SCHEDULE FOR CABLE TYPE.
	ACCESS CONTROL HEADEND EQUIPMENT.
	SECURITY CONTROL PANEL.
	INTRUSION DETECTION HEADEND EQUIPMENT.
	CARD ACCESS DOOR TYPE #1 OR AS NOTED. SEE SCHEDULE.
	CARD READER.
	KEYPAD/CARD READER COMBINATION.
	DOOR SWITCH, BALANCED MAGNETIC CONTROL.
	EXIT REQUEST.
	REMOTE DOOR RELEASE BUTTON.
	BELL.
	BUZZER.
	BUZZER, COMBINATION BELL.
	SENSOR, BURIED VEHICULAR.
	SENSOR, GLASS BREAK.
	SENSOR, VOLUMETRIC.
	CONTROLLED ACCESS POINT.
	INTERCOM STATION.
	DUAL TECHNOLOGY PASSIVE INFRARED SENSOR AND ULTRASONIC MOTION DETECTOR.
	PASSIVE INFRARED SENSOR.
	PANIC DURESS SWITCH.
	ULTRASONIC MOTION DETECTOR.
	ANNUNCIATOR PANEL.
	MASTER STATION, INTERCOM.
TV DISTRIBUTION	
	TV DISTRIBUTION CABLE, INDIVIDUAL DROPS.
	TV DISTRIBUTION CABLE, TRUNK.
	COMBINER.
	DIRECTIONAL COUPLER.
	DISTRIBUTION AMPLIFIER (ONE-LINE DIAGRAM).
	SPLITTER (ONE-LINE DIAGRAM).
	TV OUTLET.
	SATELLITE ANTENNA.
	TV ANTENNA (ONE-LINE DIAGRAM).
	TERMINATOR, 75 OHM (TV DISTRIBUTION).

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SPECTRUM ENGINEERS

REV. NO. COMMENTS DATE

PROFESSIONAL SEAL: No. 5497590-22002, Christopher M. ...

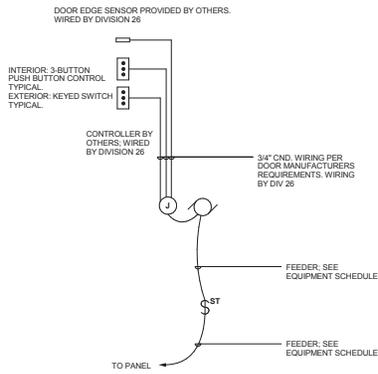
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OGDEN CITY

WATER TREATMENT PLANT RECONST. SYMBOLS LEGEND

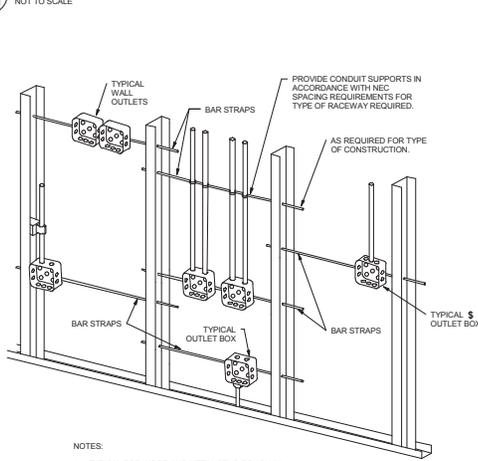
REV. NO. 04655 DESIGNER ARB DRAWN ARB CHECKED ARB PLOT NO. 199 - 241 SHEET NO. EE002

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TYPICAL OVERHEAD DOOR WIRING DIAGRAM

B1
EE501
NOT TO SCALE

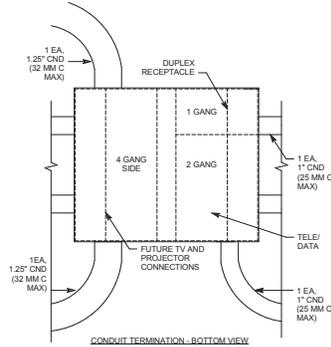


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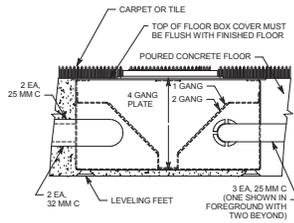
1. TYPICAL FOR WOOD AND METAL STUD ROUGH-IN.
2. PLASTER RINGS NOT SHOWN.
3. LOCATE ALL OUTLET BOXES IN ACCORDANCE WITH ARCHITECTURAL AND MECHANICAL DRAWINGS AND WITH ALL APPLICABLE SHOP DRAWINGS.
4. IN ACCORDANCE WITH IBC 711.3.2 EXCEPTION 1, OUTLETS ON OPPOSITE SIDES OF WALLS OR PARTITIONS IN THE SAME STUD SPACE IN A RATED FIRE SEPARATION WALL MUST BE SEPARATED BY A MINIMUM OF 24" HORIZONTAL DISTANCE.
5. IN NON-RATED WALLS, OUTLETS ON OPPOSITE SIDES OF WALLS OR PARTITIONS MUST BE SEPARATED BY 16" FOR SOUND ATTENUATION.

TYPICAL ROUGH-IN REQUIREMENTS DETAIL

A1
EE501
NOT TO SCALE



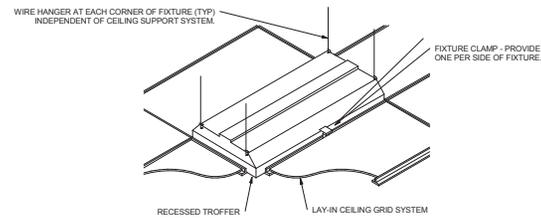
CONDUIT TERMINATION - BOTTOM VIEW



CONDUIT TERMINATION - SIDE VIEW

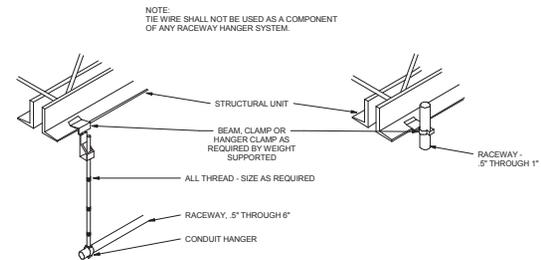
FLOOR BOX #61

A2
EE501
NOT TO SCALE



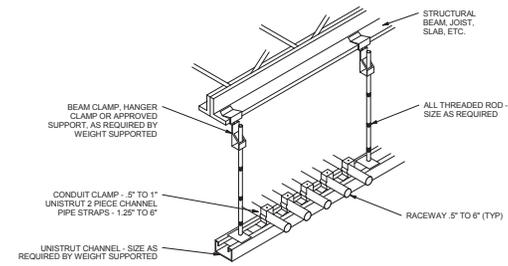
RECESSED FIXTURE MOUNTING DETAIL

C3
EE501
NOT TO SCALE



TYPICAL RACEWAY SUPPORT METHODS DETAIL

B3
EE501
NOT TO SCALE



TYPICAL CONDUIT RACK DETAIL

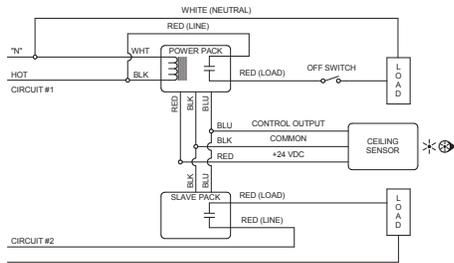
A3
EE501
NOT TO SCALE

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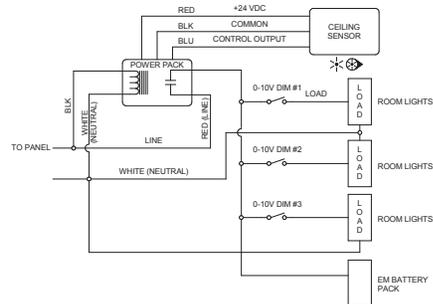


REV. NO.	COMMENTS	DATE

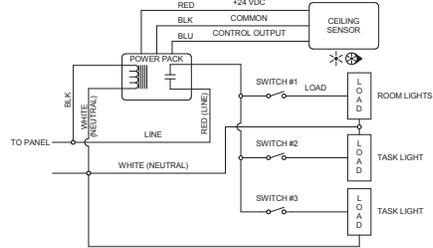
		2036 LINCOLN AVE., SUITE 104 OGDEN, UTAH 84401 TEL 801-656-8109 • FAX 801-523-0990 www.sunrise-eng.com												
		OGDEN CITY												
WATER TREATMENT PLANT RECONST. DETAILS														
<table border="1"> <tr> <th>REV. NO.</th> <th>ISSUED BY</th> <th>CHKD BY</th> <th>APPROVED BY</th> <th>SHEET NO.</th> <th>TOTAL SHEETS</th> </tr> <tr> <td>04655</td> <td>ARB</td> <td>ARB</td> <td>ARB</td> <td>200</td> <td>241</td> </tr> </table>	REV. NO.	ISSUED BY	CHKD BY	APPROVED BY	SHEET NO.	TOTAL SHEETS	04655	ARB	ARB	ARB	200	241	EE501	
REV. NO.	ISSUED BY	CHKD BY	APPROVED BY	SHEET NO.	TOTAL SHEETS									
04655	ARB	ARB	ARB	200	241									



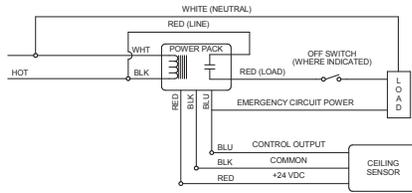
C1
EE502
TYPICAL ROOM WITH ONE CEILING
SENSOR, CONTROLLING TWO CIRCUITS
NOT TO SCALE



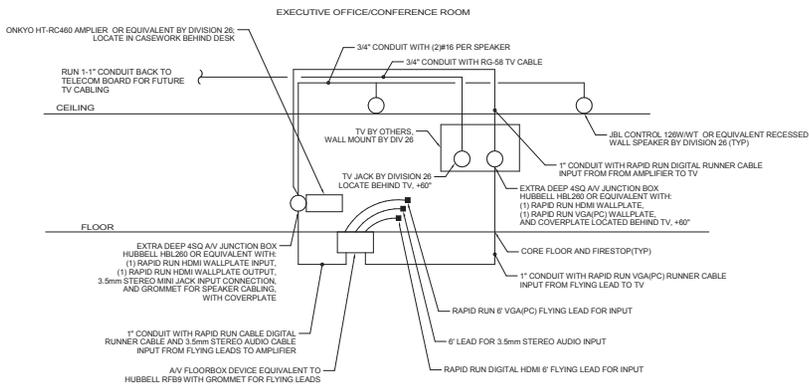
C2
EE502
CONFERENCE ROOM LIGHTING DETAIL
NOT TO SCALE



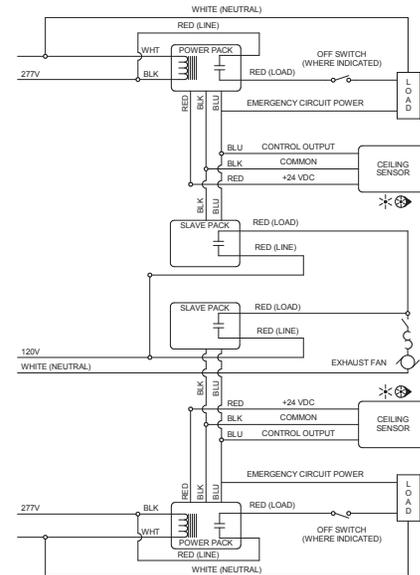
B1
EE502
TYPICAL ROOM WITH ONE CEILING
SENSOR, ONE CIRCUIT AND MULTIPLE
SWITCHED LOADS
NOT TO SCALE



B2
EE502
TYPICAL ROOM WITH ONE CEILING
SENSOR, WITH OR WITHOUT WALL SWITCH
NOT TO SCALE



1
EE502
AV RISER DIAGRAM
NOT TO SCALE



A4
EE502
TWO RESTROOM SENSORS CONTROLLING
A COMMON EXHAUST FAN
NOT TO SCALE

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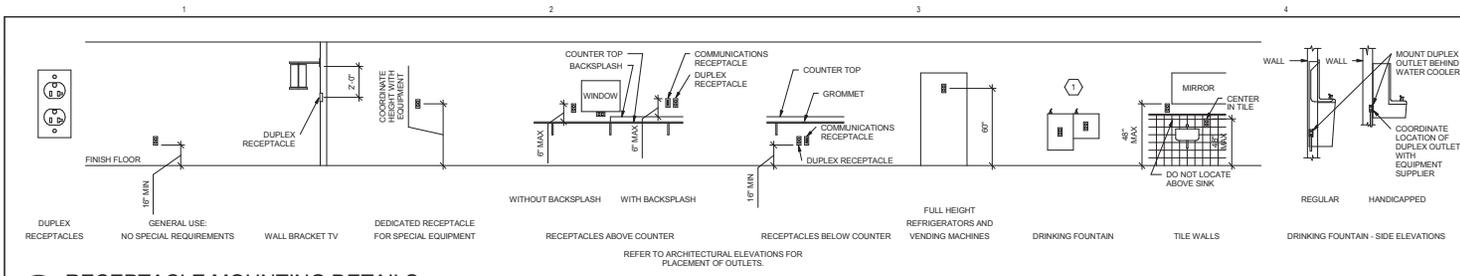
REV. NO.	COMMENTS	DATE
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04659	ARB	ARB
04660	ARB	ARB
04661	ARB	ARB
04662	ARB	ARB
04663	ARB	ARB
04664	ARB	ARB
04665	ARB	ARB
04666	ARB	ARB
04667	ARB	ARB
04668	ARB	ARB
04669	ARB	ARB
04670	ARB	ARB
04671	ARB	ARB
04672	ARB	ARB
04673	ARB	ARB
04674	ARB	ARB
04675	ARB	ARB
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04799	ARB	ARB
04800	ARB	ARB

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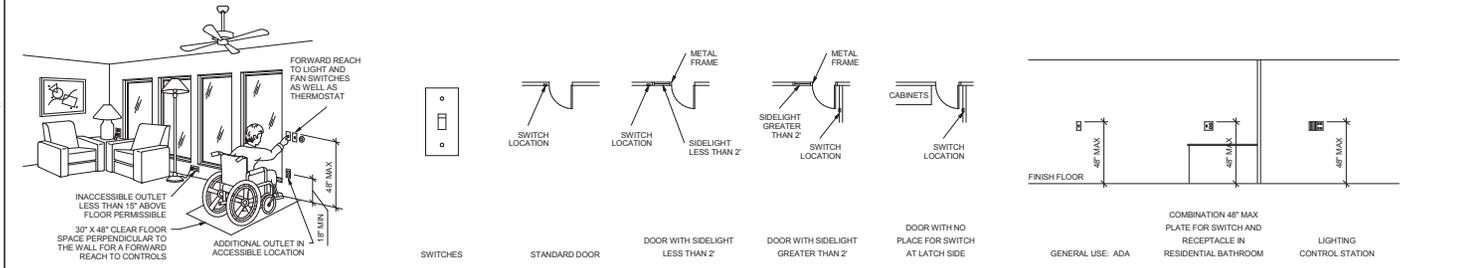
OGDEN CITY
WATER TREATMENT PLANT RECONST.
DETAILS & DIAGRAMS

REV. NO. COMMENTS DATE
04655 ARB ARB
04656 ARB ARB
04657 ARB ARB
04658 ARB ARB
04659 ARB ARB
04660 ARB ARB
04661 ARB ARB
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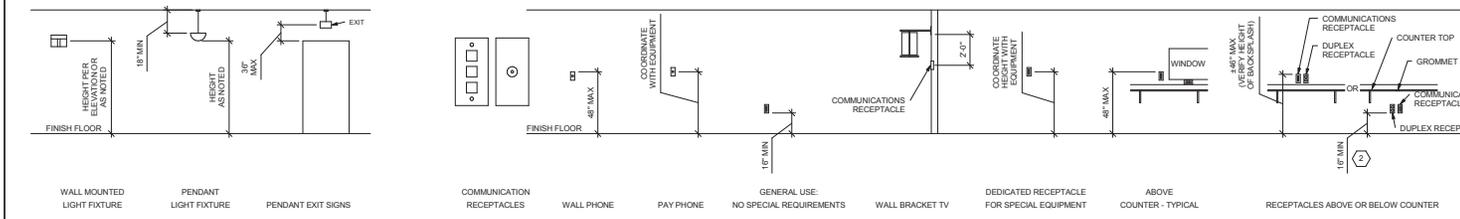


D1 RECEPTACLE MOUNTING DETAILS
EE701 NOT TO SCALE



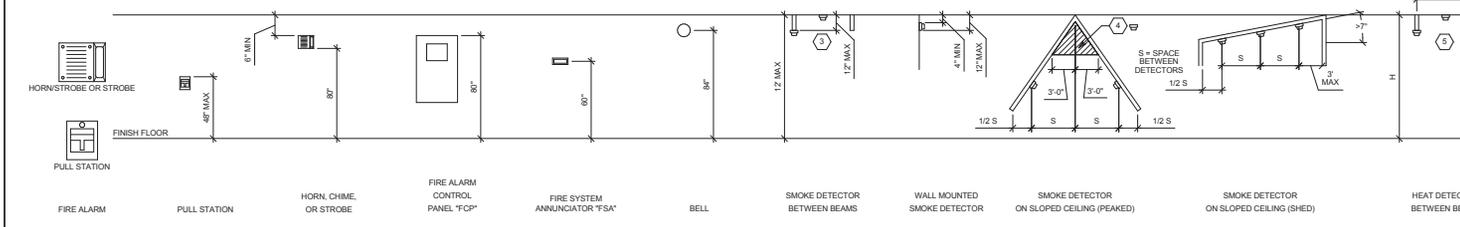
C1 ADA DETAIL
EE701 NOT TO SCALE

C2 SWITCH MOUNTING DETAILS
EE701 NOT TO SCALE



B1 LIGHTING MOUNTING DETAILS
EE701 NOT TO SCALE

B2 COMMUNICATIONS MOUNTING DETAILS
EE701 NOT TO SCALE



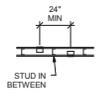
A1 FIRE ALARM MOUNTING DETAILS
EE701 NOT TO SCALE

GENERAL SHEET NOTES

1. DETERMINE MOUNTING HEIGHTS OF ELECTRICAL AND ELECTRONIC EQUIPMENT IN THE FOLLOWING ORDER OF PRIORITY:
 - 1 - ELEVATIONS (ARCHITECTURAL, ELECTRICAL, MECHANICAL, ETC.)
 - 2 - EQUIPMENT SHOP DRAWINGS.
 - 3 - FIELD INSTRUCTIONS.
2. LOCATE RECEPTACLES SERVING THE SAME TYPE OF USE AT A UNIFORM HEIGHT UNLESS DIRECTED OTHERWISE.
3. MECHANICAL, ELECTRICAL, AND COMMUNICATION ROOMS: COORDINATE LOCATION OF LIGHTING AND POWER RECEPTACLES WITH EQUIPMENT, PIPING, AND DUCTWORK. DO NOT INSTALL RECEPTACLES BEHIND EQUIPMENT OR WHERE OTHERWISE UNACCESSIBLE. POSITION LIGHTING REGARDLESS OF WHERE SHOWN ON DRAWING TO PROVIDE PROPER ILLUMINATION.
4. MOUNT RECEPTACLE BOXES FOR SWITCHES AND RECEPTACLES WITH LONG AXIS OF THE DEVICE VERTICAL UNLESS OTHERWISE INDICATED.
5. SET BOXES WITH PLASTER RINGS FLUSH WITH FINISHED SURFACE.
6. LOCATE BOX COVERS OR DEVICE PLATES SO THEY WILL NOT SPAN DIFFERENT TYPES OF BUILDING FINISHES EITHER VERTICALLY OR HORIZONTALLY.
7. VERIFY ALL DOOR CONDITIONS ON ARCHITECTURAL DRAWINGS PRIOR TO INSTALLING SWITCHES.
8. LOCATE WIRING DEVICES WHICH ARE ADJACENT AND ARE COMPATIBLE VOLTAGES IN ONE PLATE.

SHEET KEYNOTES

1. LOCATE RECEPTACLES BEHIND DRINKING FOUNTAINS.
2. REFER TO ARCHITECTURAL ELEVATIONS FOR PLACEMENT OF OUTLETS.
3. LOCATE AT BOTTOM OF BEAMS (OR JOISTS) OR AT CEILING. (REDUCE SPACING BY 5 PERPENDICULAR TO BEAM OR JOIST DIRECTION.) FOR OTHER CONDITIONS, REFER TO NFPA 72.
4. LOCATE DETECTOR ANYWHERE IN SHADED AREA BUT NOT IN TOP 4" OF PEAK.
5. LOCATE AT BOTTOM OF BEAMS IF DH < 1 OR WH < 4. OTHERWISE, LOCATE IN BEAM POCKET. FOR D > 4 DUE TO SPACING 33 PERPENDICULAR TO BEAMS.



B5 BOX MOUNTING DETAILS
EE701 NOT TO SCALE

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SPECTRUM ENGINEERS

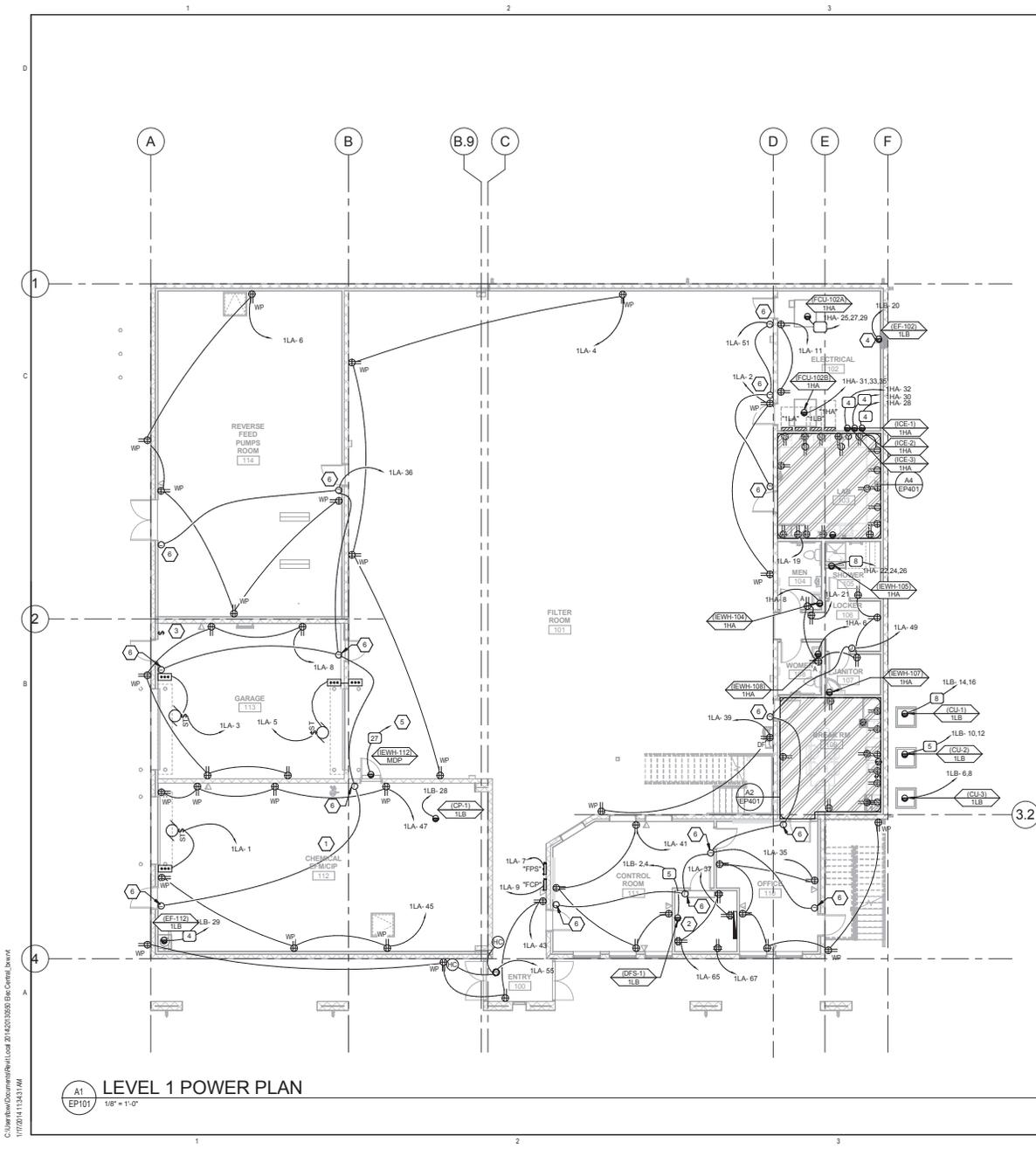
REV. NO.	COMMENTS	DATE

SUNRISE ENGINEERING
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OGDEN, UTAH 84401
TEL 801-656-8159 - FAX 801-523-0990
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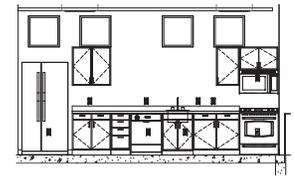
OGDEN CITY
WATER TREATMENT PLANT RECONST.
TYPICAL MOUNTING DETAILS

REV. NO.	ISSUED BY	CHKD BY	APPROVED BY	SHEET NO.	TOTAL SHEETS
04655	ARB	ARB	ARB	202	241

EE701



A1
EP101
LEVEL 1 POWER PLAN
1/8" = 1'-0"



D5
EP101
BREAKROOM 109 EAST
1/4" = 1'-0"

GENERAL SHEET NOTES

SHEET KEYNOTES

- 1 PROVIDE PVC COATED RIGID CONDUIT FOR ALL EXPOSED CONDUIT IN CHLORINE ROOM.
- 2 INDOOR UNIT FED FROM OUTDOOR UNIT. DIV 26 TO RUN 3/4" CONDUIT WITH 3/8" FROM THE OUTDOOR UNIT TO THE INDOOR UNIT. COORDINATE EXACT LOCATION OF UNITS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH IN.
- 3 SWITCH FOR EXHAUST FAN FC-113. PROVIDE P-TOUCH LABEL ON SWITCH PLATE STATING THAT IT CONTROLS EXHAUST FAN FOR ROOM.
- 4 EXHAUST FAN CONTROLLED BY LIGHTING PROVIDE ADDITIONAL POWER PACKS FOR 120V POWER TO EXHAUST FAN AS REQUIRED.
- 5 RUN TO 200 AMP 3 POLE BREAKER IN 480V GEAR LOCATED IN ELECTRICAL ROOM. GEAR SHOWN ON PROCESS ELECTRICAL DRAWINGS.
- 6 J-BOX FOR POWER CONNECTION TO DOOR HARDWARE.

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REV NO.	COMMENTS	DATE

Professional Engineer
Christopher M. Hays
STATE OF UTAH
01/17/2014

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OGDEN CITY
WATER TREATMENT PLANT RECONSTR.
POWER PLAN - LEVEL 01

REV. NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	TOTAL SHEETS
04655	ARB	ARB	ARB	203	241

EP101

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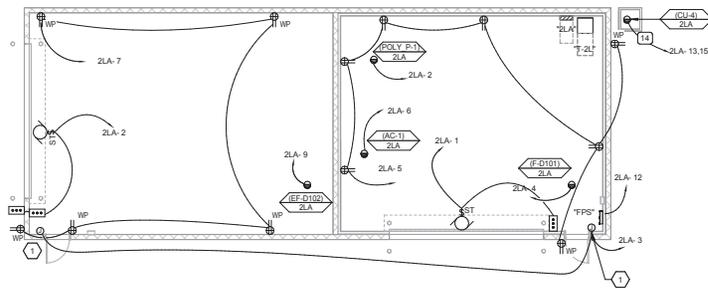
1 2 3 4 5

D

C

B

A



A1
EP102 LEVEL 1 POWER PLAN - DEWATER
 1/8" = 1'-0"

GENERAL SHEET NOTES

SHEET KEYNOTES

1 J-BOX FOR POWER CONNECTION TO DOOR HARDWARE.

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REV. NO.	COMMENTS	DATE

01/17/2014

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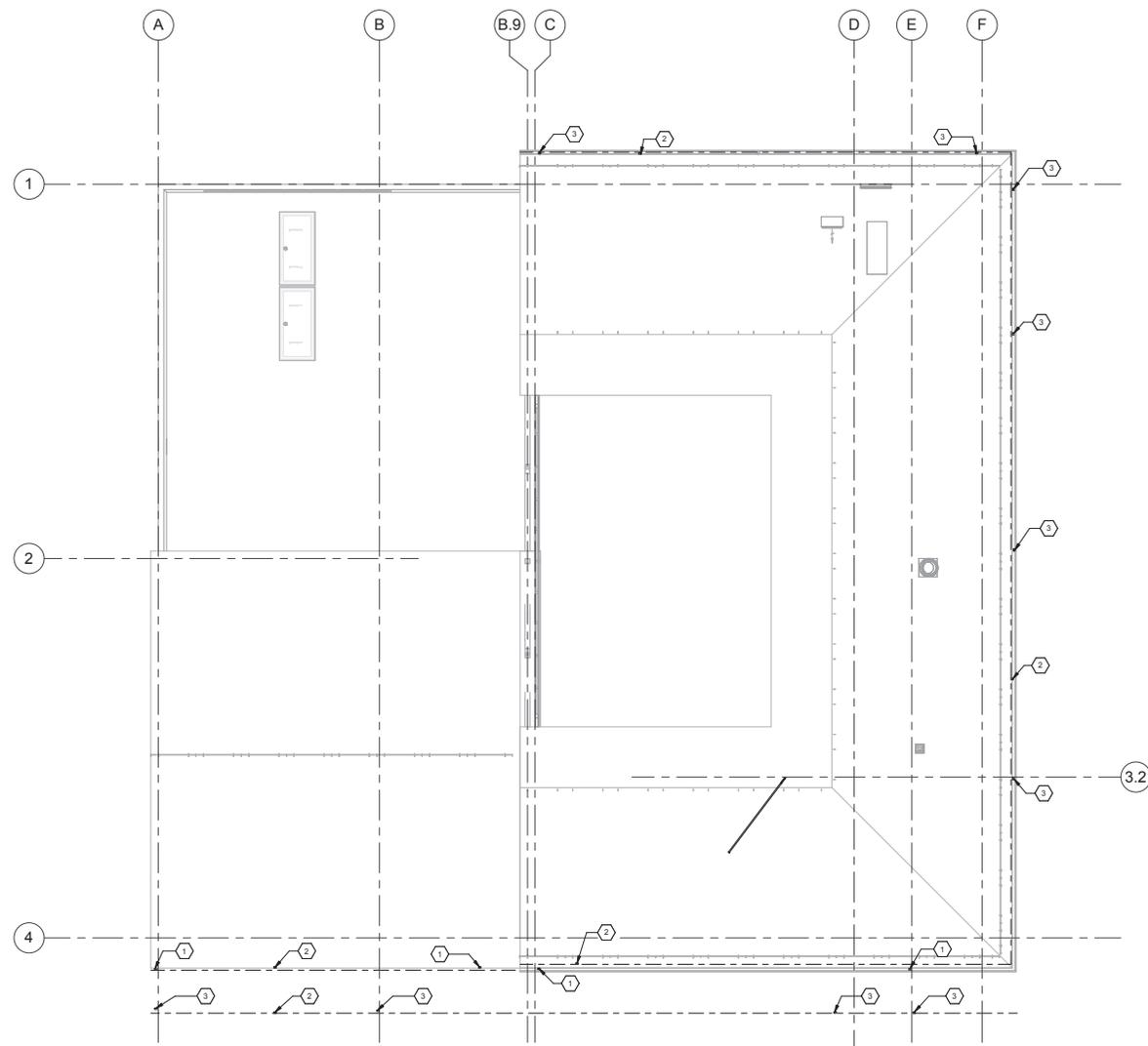
OGDEN CITY

**WATER TREATMENT PLANT RECONST.
 DEWATER POWER PLAN**

REV. NO.	DESIGNED	IN CH.	CHECKED	SHEET NO.	TOTAL SHEETS
04655	ARB	ARB	ARB	204	241

EP102

1 2 3 4 5



A1
EP104
1/8" = 1'-0"

GENERAL SHEET NOTES

SHEET KEYNOTES

- 1 DOWNSPOUT TO CANOPY.
- 2 SELF REGULATING HEAT TAP RAYCHEM GM-2XT OR GM-3XT OR OTHER MANUFACTURER EQUAL RUN CABLE IN GUTTER AND DOWNSPOUT. LOCKABLE DISCONNECT LOCATED IN ELECTRICAL ROOM.
- 3 DOWNSPOUT TO GRADE.

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REV. NO.	COMMENTS	DATE

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OGDEN CITY

WATER TREATMENT PLANT RECONST.
POWER PLAN - ROOF

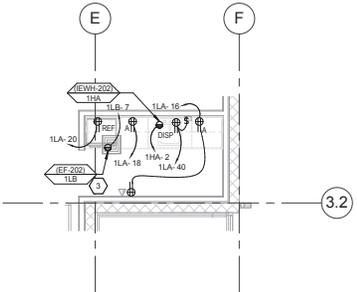
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EP104

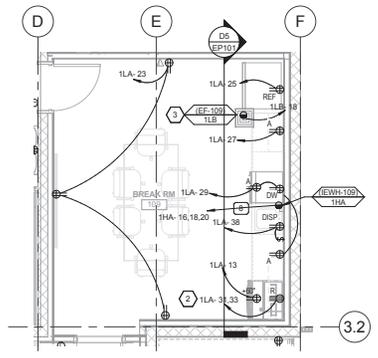
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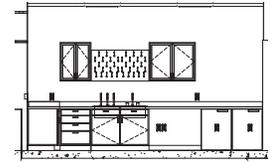
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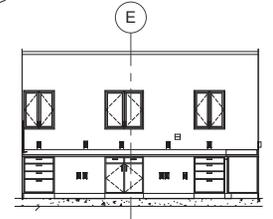
A1
EP401 1/4" = 1'-0"
ENLARGED BREAK RM 202 POWER PLAN



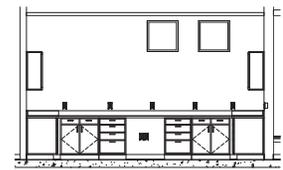
A2
EP401 1/4" = 1'-0"
ENLARGED BREAK RM 109 POWER PLAN



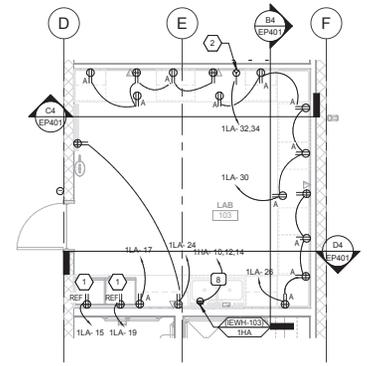
D4
EP401 1/4" = 1'-0"
103 LAB SOUTH



C4
EP401 1/4" = 1'-0"
103 LAB NORTH



B4
EP401 1/4" = 1'-0"
103 LAB EAST



A4
EP401 1/4" = 1'-0"
ENLARGED LAB 103 POWER PLAN

GENERAL SHEET NOTES

SHEET KEYNOTES

- 1 RECEPTACLE FOR UNDER COUNTER FREEZER
- 2 RUN 4#10 AWG TO SPECIAL EQUIPMENT OUTLET. CONFIRM NEMA CONFIGURATION WITH EQUIPMENT PRIOR TO ORDERING DEVICE.
- 3 EXHAUST FAN CONTROLLED BY LIGHTING PROVIDE ADDITIONAL POWER PACKS FOR 120V POWER TO EXHAUST FAN AS REQUIRED.

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REV. NO.	COMMENTS	DATE

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OGDEN CITY
WATER TREATMENT PLANT RECONSTR.
ENLARGED POWER PLANS

REV. NO.	DESIGNED	IN CH.	CHECKED	SHEET NO.	TOTAL SHEETS
04655	ARB	ARB	ARB	207	241

EP401

PANEL: "1LA"																				
VOLTS/PHASE/WIRE:		PANEL SIZE & TYPE:		MAIN SIZE AND TYPE:		LOCATION:		CABINET:		NOTES:		ACCESSORIES:								
120/208V, 3 PH 4 WIRE		22" W x 6" D, BOLT-ON		225 AMPERE LUGS		ELECTRICAL 102		SURFACE												
PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR						PHASE LOAD						AIC RATING:								
CKT	OCIP	LOAD (kVA)	PHASE LOAD			DESCRIPTION	LOAD (kVA)			OCIP	CKT									
NO	AMP	POLE	LTG	PWR	CO	A	B	C	CO	PWR	LTG	POLE	AMP	NO						
1	20	1	0	1.5	0				0.4	0	0	1	20	2						
2	20	1	0	1.5	0				0.7	0	0	1	20	4						
3	20	1	0	1.5	0				0.9	0	0	1	20	6						
4	20	1	0	1.5	0				0.9	0	0	1	20	8						
5	20	1	0	0.5	0				0.9	0	0	1	20	8						
6	20	1	0	0.5	0				0.9	0	0	1	20	8						
7	20	1	0	0.5	0				0.9	0	0	1	20	8						
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11	20	1	0	0.5	0				0.9	0	0	1	20	8						
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MARK	QTY	ITEM DESCRIPTION	LOAD DATA							OVERCURRENT PROTECTION			DISCONNECT			STARTER							NOTES	MARK			
			HP	KW	MCA	FLA	VOLT	PH	Hz	WIRE AND CONDUIT SIZE	FURN BY	DEVICE	LOCATION	FURN BY	DEVICE	LOCATION	FURN BY	DEVICE	SIZE S	SELECTOR SWITCH	PILOT LAMP	NORMALLY OPEN CONTACT			NORMALLY CLOSED CONTACT	PHASE FAILURE RELAY	
(AC-1)	1	AIR COMPRESSOR	-	1.5	-	12.5	120	1	60	2 #10, 10 GR 0.75" CND	E	20/1 CB	2LA	E	THERMAL SWITCH	2LA	Q										(AC-1)
(CP-1)	1	CHLORINE PUMP	-	.1	-	1	120	1	60	2 #12, 12 GR 0.75" CND	E	20/1 CB	1LB	E	THERMAL SWITCH	1LB	-										(CP-1)
(CU-1)	1	CONDENSING UNIT	-	-	23	23	208	2	60	3 #8, 10 GR 0.75" CND	E	40/2 CB	1LB	E	40A/2P NF	ADJ TO EQUIP	Q										(CU-1)
(CU-2)	1	CONDENSING UNIT	-	-	15	15	208	2	60	3 #10, 10 GR 0.75" CND	E	30/2 CB	1LB	E	30A/2P NF	ADJ TO EQUIP	Q										(CU-2)
(CU-3)	1	CONDENSING UNIT	-	-	9	9	208	2	60	3 #12, 12 GR 0.75" CND	E	20/2 CB	1LB	E	30A/2P NF	ADJ TO EQUIP	Q										(CU-3)
(CU-4)	1	CONDENSING UNIT	-	-	23	35	240	2	60	3 #4, #8 GR 1.25" CND	E	60/2 CB	2LA	E	60A/2P NF	ADJ TO EQUIP	Q										(CU-4)
(DFS-1)	1	DUCT FREE SPLIT	-	-	18	18	208	2	60	3 #10, 10 GR 0.75" CND	E	30/2 CB	1LB	E	30A/2P FRS-30	ADJ TO EQUIP	Q										(DFS-1)
(EF-102)	1	EXHAUST FAN	-	.1	-	1	120	1	60	2 #12, 12 GR 0.75" CND	E	20/1 CB	1LB	E	THERMAL SWITCH	1LB	-										(EF-102)
(EF-109)	1	EXHAUST FAN	-	.066	-	3.7	120	1	60	2 #12, 12 GR 0.75" CND	E	20/1 CB	1LB	E	THERMAL SWITCH	ADJ TO EQUIP	-										(EF-109)
(EF-112)	1	EXHAUST FAN	1	-	-	16	120	1	60	2 #10, 10 GR 0.75" CND	E	30/1 CB	1LB	E	THERMAL SWITCH	ADJ TO EQUIP	E	FVNR	0	HOA	R.G	2	2	YES		(EF-112)	
(EF-113)	1	EXHAUST FAN	1/2	-	-	9.8	120	1	60	2 #12, 12 GR 0.75" CND	E	20/1 CB	1LB	E	THERMAL SWITCH	ADJ TO EQUIP	-										(EF-113)
(EF-114)	1	EXHAUST FAN	1/8	-	-	2.5	120	1	60	2 #12, 12 GR 0.75" CND	E	15/1 CB	1LB	E	THERMAL SWITCH	ADJ TO EQUIP	-										(EF-114)
(EF-202)	1	EXHAUST FAN	-	.066	-	3.7	120	1	60	2 #12, 12 GR 0.75" CND	E	20/1 CB	1LB	E	THERMAL SWITCH	ADJ TO EQUIP	-										(EF-202)
(EF-D102)	1	EXHAUST FAN	4-Jan	-	-	5.8	120	1	60	2 #12, 12 GR 0.75" CND	E	15/1 CB	2LA	E	THERMAL SWITCH	2LA	-										(EF-D102)
(EF-TOIL)	1	EXHAUST FAN	1/8	-	-	2.5	120	1	60	2 #12, 12 GR 0.75" CND	E	15/1 CB	1LB	E	THERMAL SWITCH	ADJ TO EQUIP	-										(EF-TOIL)
(F-D101)	2	FURNACE	1/8	-	-	2.5	120	1	60	2 #12, 12 GR 0.75" CND	E	15/1 CB		E	THERMAL SWITCH		-										(F-D101)
(FCU-102A)	1	FAN COIL UNIT	1.5	-	-	3	480	3	60	3 #12, #12GR 0.75" CND	E	20/3 CB	1HA	E	30A/3P FRS-6	1HA	Q										(FCU-102A)
(FCU-102B)	1	FAN COIL UNIT	1.5	-	-	3	480	3	60	3 #12, #12GR 0.75" CND	E	20/3 CB	1HA	E	30A/3P FRS-6	1HA	Q										(FCU-102B)
(FCU-114A)	1	FAN COIL UNIT	3	-	-	4.8	480	3	60	3 #12, #12GR 0.75" CND	E	20/3 CB	1HA	E	30A/3P FRS-10	ADJ TO EQUIP	Q										(FCU-114A)
(FCU-114B)	1	FAN COIL UNIT	3	-	-	4.8	480	3	60	3 #12, #12GR 0.75" CND	E	20/3 CB	1HA	E	30A/3P FRS-10	ADJ TO EQUIP	Q										(FCU-114B)
(FURN-1)	1	FURNACE	1/2	-	-	9.8	120	1	60	2 #12, 12 GR 0.75" CND	E	20/1 CB	1LB	E	THERMAL SWITCH	ADJ TO EQUIP	-										(FURN-1)
(FURN-2)	1	FURNACE	1/3	-	-	7.2	120	1	60	2 #12, 12 GR 0.75" CND	E	20/1 CB	1LB	E	THERMAL SWITCH	ADJ TO EQUIP	-										(FURN-2)
(FURN-3)	1	FURNACE	1/3	-	-	7.2	120	1	60	2 #12, 12 GR 0.75" CND	E	20/1 CB	1LB	E	THERMAL SWITCH	ADJ TO EQUIP	-										(FURN-3)
(ICE-1)	1	HEAT TRACE	-	4.8	-	12.5	277	1	60	2 #10, #10GR 0.75" CND	E	30/1 CB	1HA	E	30A/1P NF		Q										(ICE-1)
(ICE-2)	1	HEAT TRACE	-	4.8	-	12.5	277	1	60	2 #10, #10GR 0.75" CND	E	30/1 CB	1HA	E	30A/1P NF		Q										(ICE-2)
(ICE-3)	1	HEAT TRACE	-	4.8	-	12.5	277	1	60	2 #10, #10GR 0.75" CND	E	30/1 CB	1HA	E	30A/1P NF		Q										(ICE-3)
(IEWH-103)	1	INSTANT ELECTRIC WATER HEATER	23	-	-	27.7	480	3	60	3 #8, #10 GR 1" CND	E	40/3 CB	1HA	E	60A/3P FRS-50	ADJ TO EQUIP	-										(IEWH-103)
(IEWH-104)	1	INSTANT ELECTRIC WATER HEATER	4.1	-	-	14.8	277	1	60	2 #12, #12GR 0.75" CND	E	20/1 CB	1HA	E	30A/1P FRS-25	ADJ TO EQUIP	-										(IEWH-104)
(IEWH-105)	1	INSTANT ELECTRIC WATER HEATER	23	-	-	27.7	480	3	60	3 #8, #10 GR 1" CND	E	40/3 CB	1HA	E		ADJ TO EQUIP	-										(IEWH-105)
(IEWH-107)	1	INSTANT ELECTRIC WATER HEATER	4.1	-	-	14.8	277	1	60	2 #12, #12GR 0.75" CND	E	20/1 CB	1HA	E	30A/1P FRS-25	ADJ TO EQUIP	-										(IEWH-107)
(IEWH-108)	1	INSTANT ELECTRIC WATER HEATER	4.1	-	-	14.8	277	1	60	2 #10, #10GR 0.75" CND	E	20/1 CB	1HA	E	30A/1P FRS-25	ADJ TO EQUIP	-										(IEWH-108)
(IEWH-109)	1	INSTANT ELECTRIC WATER HEATER	23	-	-	27.7	480	3	60	3 #8, #10 GR 1" CND	E	40/3 CB	1HA	E	60A/3P FRS-50	ADJ TO EQUIP	-										(IEWH-109)
(IEWH-112)	1	INSTANT ELECTRIC WATER HEATER	126	-	-	152	480	3	60	3 #30, #6 GR 2" CND	E	200/3 CB		E	400A/3P FRS-200	ADJ TO EQUIP	-										(IEWH-112)
(IEWH-202)	1	INSTANT ELECTRIC WATER HEATER	4.1	-	-	14.8	277	1	60	2 #12, #12GR 0.75" CND	E	20/1 CB	1HA	E	30A/1P FRS-25	ADJ TO EQUIP	-										(IEWH-202)
(MAU-101)	1	MAKE UP AIR UNIT	5	-	-	16.7	208	3	60	3 #10, #10 GR 0.75" CND	E	30/3 CB	1LB	E	30A/3P FRS-30	ADJ TO EQUIP	Q	FVNR	1	HOA	R.G	2	2	YES		(MAU-101)	
(POLY_P-1)	1	LIQUID POLYMER PUMP	-	.6	-	5	120	1	60	2 #12, 12 GR 0.75" CND	E	20/1 CB	2LA	E	THERMAL SWITCH	2LA	Q										(POLY_P-1)
(PP-1)	1	PROPANE PUMP	-	1.5	-	12.5	120	1	60	2 #8, #10 GR 1" CND	E	20/1 CB	1LB	E	30A/1P FRS-20										EXPLOSION PROOF DISCONNECT. SEE SHEET MECH FOR LOCATION	(PP-1)	
(UH-101)	1	UNIT HEATER	1/2	-	-	9.8	120	1	60	2 #12, 12 GR 0.75" CND	E	20/1 CB	1LB	E	THERMAL SWITCH	ADJ TO EQUIP	-										(UH-101)
(UH-112)	1	UNIT HEATER	3/4	-	-	13.8	120	1	60	2 #10, 10 GR 0.75" CND	E	30/1 CB	1LB	E	THERMAL SWITCH	ADJ TO EQUIP	-										(UH-112)
(UH-113)	1	UNIT HEATER	1/2	-	-	9.8	120	1	60	2 #12, 12 GR 0.75" CND	E	20/1 CB	1LB	E	THERMAL SWITCH	ADJ TO EQUIP	-										(UH-113)
(UH-114)	1	UNIT HEATER	1/2	-	-	9.8	120	1	60	2 #12, 12 GR 0.75" CND	E	20/1 CB	1LB	E	THERMAL SWITCH	ADJ TO EQUIP	-										(UH-114)
(V-1)	1	PROPANE VAPORATOR	-	.066	-	3.7	120	1	60	2 #12, 12 GR 0.75" CND	E	20/1 CB	1LB	E	30A/1P FRS-5	1LB	Q								EXPLOSION PROOF DISCONNECT. SEE SHEET MECH FOR LOCATION	(V-1)	
(V-2)	1	PROPANE VAPORATOR	-	.066	-	3.7	120	1	60	2 #12, 12 GR 0.75" CND	E	20/1 CB	1LB	E	30A/1P FRS-5	1LB	Q								EXPLOSION PROOF DISCONNECT. SEE SHEET MECH FOR LOCATION	(V-2)	

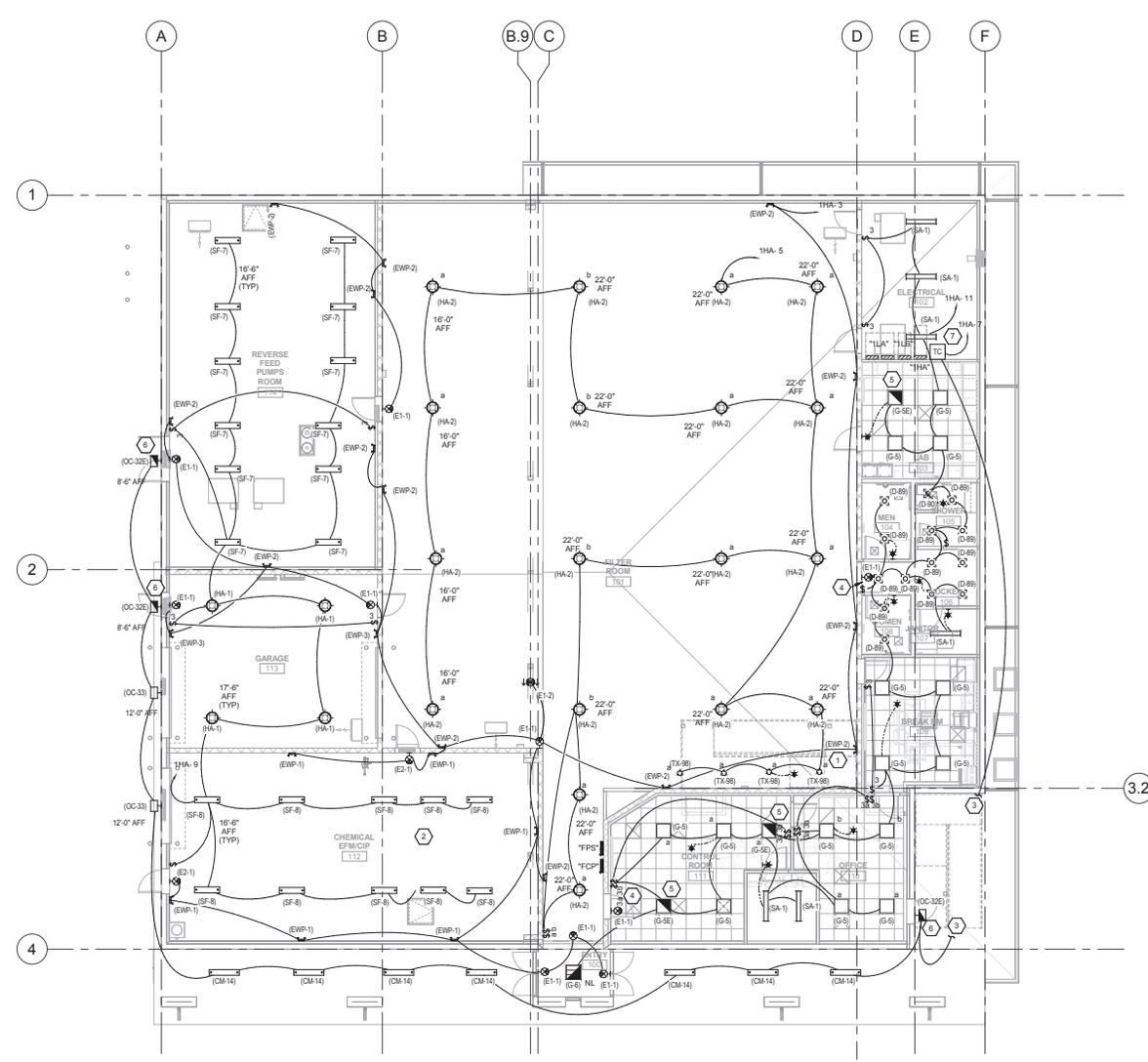
EQUIPMENT SCHEDULE KEY

E	DIVISION 28
Q	FURNISHED WITH THE EQUIPMENT INSTALLER
-	COORDINATE WITH THE DIVISION 23 TEMPERATURE CONTROL
**	AUTOMATIC CONTROL WIRING BY DIVISION 23

324 S. State St., Suite 400
Salt Lake City, UT 84111
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REV. NO.	COMMENTS	DATE			
2036 LINCOLN AVE., SUITE 104 OGDEN, UTAH 84401 TEL 801-656-8199 • FAX 801-523-0990 www.sunrise-eng.com					
OGDEN CITY					
WATER TREATMENT PLANT RECONST. EQUIPMENT SCHEDULES					
REV. NO.	ISSUED BY	CHKD BY	APPROVED BY	SHEET NO.	TOTAL SHEETS
04655	ARB	ARB	ARB	209	241
					EP603



A1 LEVEL 1 LIGHTING PLAN
EL101 1/8" = 1'-0"

GENERAL SHEET NOTES

- 1 RUN UNSWITCHED HOT LET FOR EMERGENCY AND EXIT LIGHTING.

SHEET KEYNOTES

- 1 MOUNT EMERGENCY LIGHT 7" ABOVE STAIR LANDING.
- 2 PROVIDE PVC COATED RIGID CONDUIT FOR ALL EXPOSED CONDUIT IN THIS ROOM.
- 3 CIRCUIT CONTINUED ON LEVEL ABOVE.
- 4 RUN UNSWITCHED HOT TO EXIT/EMERGENCY LIGHT
- 5 RUN UNSWITCHED HOT TO EMERGENCY BATTERY PACK
- 6 INSTALL REMOTE BATTERY PACK ON THE INSIDE WALL WITHIN 30" OF FIXTURE.
- 7 TORX EMV201 MULTIVOLT 7 DAY ASTRONOMICAL TIME CLOCK OR OTHER MANUFACTURER EQUAL.

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REV. NO.	COMMENTS	DATE

PROFESSIONAL
No. 5497590-22002
Christopher M. ...
STATE OF UTAH
01/17/2014

SUNRISE ENGINEERING

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TEL 801-656-8109 • FAX 801-523-0990
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OGDEN CITY
WATER TREATMENT PLANT RECONST.
LIGHTING PLAN - LEVEL 01

REV. NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	TOTAL SHEETS
04655	ARB	ARB	ARB	210	241

EL101

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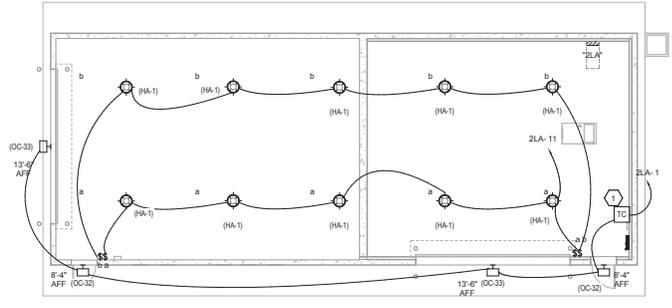
1 2 3 4 5

D

C

B

A



A1
EL102
LEVEL 1 LIGHTING PLAN - DEWATER
 1/8" = 1'-0"

GENERAL SHEET NOTES

1 RUN UNSWITCHED HOT LET FOR EMERGENCY AND EXIT LIGHTING.

SHEET KEYNOTES

1 TORK EW2201 MULTIVOLT 7 DAY ASTRONOMICAL TIME CLOCK OR OTHER MANUFACTURER EQUAL.

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 Salt Lake City, UT 84111
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 fax: 801-328-5155
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REV. NO.	COMMENTS	DATE

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OGDEN CITY

**WATER TREATMENT PLANT RECONST.
 DEWATER LIGHTING PLAN**

REV. NO.	DESIGNED	CHK'D	CHECKED	SHEET NO.	TOTAL SHEETS
04655	ARB	ARB	ARB	211	241

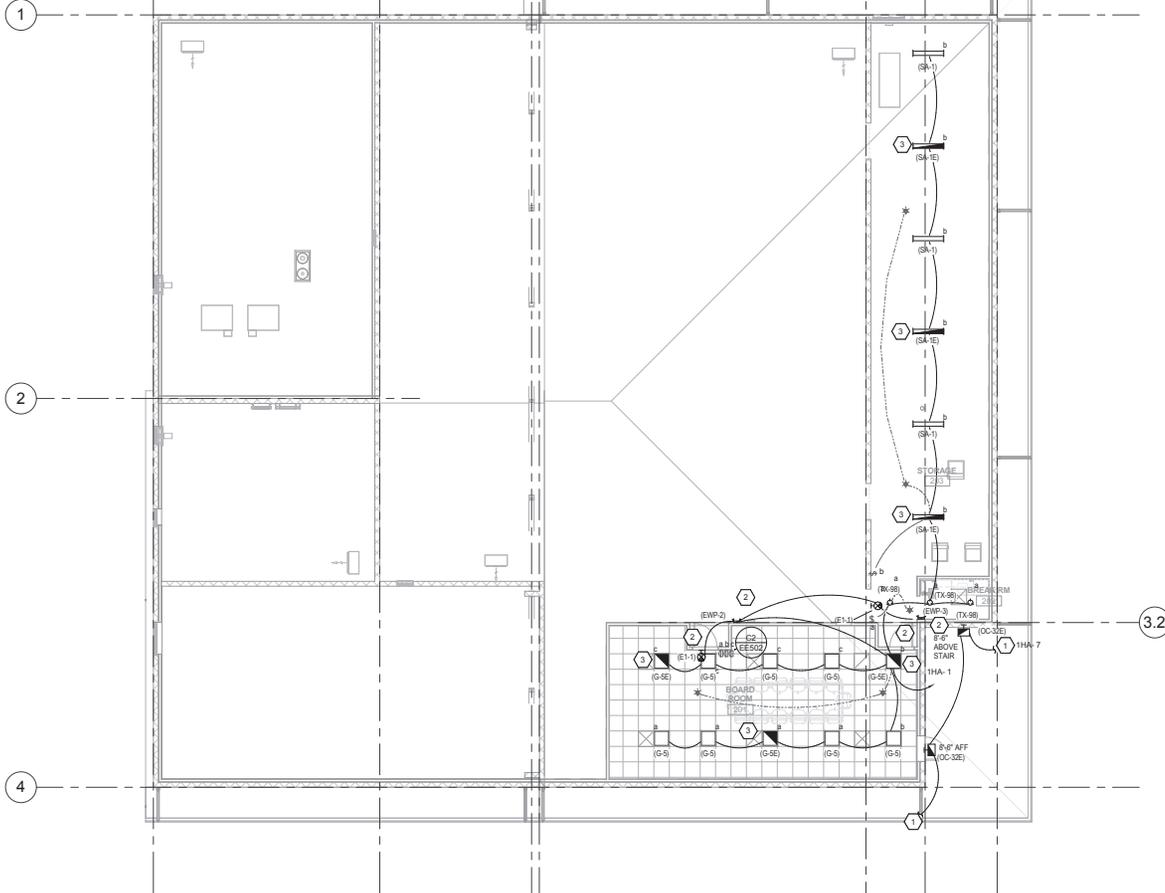
EL102

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A B B.9 C D E F



A1
EL103
LEVEL 2 LIGHTING PLAN
1/8" = 1'-0"

GENERAL SHEET NOTES

- 1 RUN UNSWITCHED HOT LET FOR EMERGENCY AND EXIT LIGHTING.

SHEET KEYNOTES

- 1 CIRCUIT CONTINUED ON LEVEL BELOW.
- 2 RUN UNSWITCHED HOT TO EXIT/EMERGENCY LIGHT
- 3 RUN UNSWITCHED HOT TO EMERGENCY BATTERY PACK

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REV. NO.	COMMENTS	DATE

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OGDEN CITY

WATER TREATMENT PLANT RECONST.
LIGHTING PLAN - LEVEL 02

REV. NO.	DESIGNED	IN CH.	CHECKED	SHEET NO.	TOTAL SHEETS
04655	ARB	ARB	ARB	212	241

EL103

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LIGHTING FIXTURE SCHEDULE

NOTE TO BIDDERS: COMPLY WITH ALL OF THE SPECIFICATIONS. REFERS TO SPECIFICATIONS FOR IMPORTANT TECHNICAL REQUIREMENTS FOR LIGHTING FIXTURES, BALLASTS, AND LAMPS. THE CATALOG NUMBERS LISTED BELOW HAVE BEEN CAREFULLY PREPARED TO ASSIST BIDDERS IN SELECTING PRODUCTS TO ACHIEVE THE DESIGN CONCEPT. HOWEVER, PRIOR TO BIDDING, EACH MANUFACTURER SHALL COMPLETE THE CATALOG NUMBERS SHOWN WITH THE DESCRIPTION AND REQUIREMENTS ON THE DRAWINGS, AND SHALL NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES. SPECIFICALLY INCLUDED IN THIS EVALUATION SHALL BE THE VERIFYING OF PROPER MOUNTING KITS OR ACCESSORIES TO FACILITATE INSTALLATION AS SHOWN AT EACH LOCATION ON THE DRAWINGS. NO ALLOWANCE OR REDRESS WILL BE ALLOWED FOR DISCREPANCIES THAT WERE NOT REPORTED TO THE ARCHITECT/ENGINEER IN TIME FOR CORRECTION OR CLARIFICATION BEFORE THE BID. THE REPORTING OF ANY AMBIGUITY IS THE RESPONSIBILITY OF THE BIDDER. PROVIDE UNIT PRICES AND FIXTURE BRAND SELECTED FOR ADD/DELETE CHANGES FOR EACH FIXTURE TYPES SHOWN WITHIN 48 BUSINESS HOURS OF THE BID DATE. FAILURE TO COMPLY WITH THIS REQUIREMENT MAY DISQUALIFY THE PRODUCTS AND IMPROVE THE ENGINEER TO DETERMINE FAIR VALUE FOR FIXTURE AND INSTALLATION CHANGES, WITHOUT FURTHER INPUT FROM THE CONTRACTOR OR INSTALLER. SUBMITTAL PACKAGE SHALL INCLUDE LAMP MANUFACTURER AND CATALOG NUMBER ON EACH FIXTURE SHEET. ON ALL PENDANT MOUNTED FIXTURES, PROVIDE A SECOND SET OF DIMENSIONS OF A DIFFERENT LENGTH, AS DIRECTED BY THE ARCHITECT/ENGINEER, PROVIDED AND INSTALLED AT NO ADDITIONAL CHARGE. ALL FIXTURES SHALL BE APPROVED BY UL OR ANOTHER ACCEPTABLE TESTING LAB FOR THE PURPOSE INTENDED AND WITH THE LAMP AND BALLAST PROPOSED. CONTRACTOR ALLOWANCE PRICES ARE ACCURATE WHEN THIS JOB WAS SPECIFIED. CONTRACTOR AND ELECTRICAL DISTRIBUTOR SHALL VERIFY THIS ALLOWANCE AND REPORT ANY PROBLEMS TO THE ENGINEER BEFORE THE BID. ALLOWANCE PRICE MAY OR MAY NOT INCLUDE LAMP(S) OR FREIGHT AS NOTED, AND DO NOT INCLUDE ANY TAXES. UNIVERSAL VOLTAGE (120/277) BALLASTS REQUIRED UNLESS NOTED OTHERWISE. DIMENSION SEQUENCE = (LENGTH X WIDTH X DEPTH) IN INCHES.

FIXTURE CHARACTERISTICS		LAMP		WATTS		VOLTS		MANUFACTURER		CATALOG NUMBER		NOTES	
SYMBOL	MARK	LENS/COVER/REFLECTOR/OTHER	TYPE	WATTAGE	VOLTS	MANUFACTURER	CATALOG NUMBER	INSET	INSET	INSET	INSET	INSET	INSET
CM-14		AMBIABLE LINEAR ASYMETRIC WALL WASH COLD WEATHER BALLAST/LAMP COMBINATION DAMP LOCATION LISTED 3.38" X 4.2" X 7.12"	Y540	4000-4100K 90 CR	56	120/277	INSIGHT	PINNACLE LIGHTING		EXS S85 SA 1910 54W 2 SF PC			
D-88		RECESSED LED DOWNLIGHT NOMINAL 1000 DELIVERED LUMENS CLEAR APERTURE, SEMI-SPECULAR, 6" APERTURE	WHITE LED	4000-4100K 90 CR	22W	120/277	GOTHAM ATLANTIC			EVO 4110 6AR MVOLT			
D-88E		SAME AS D-88 EXCEPT FOR EMERGENCY BATTERY PACK											
D-89		RECESSED LED DOWNLIGHT NOMINAL 1000 DELIVERED LUMENS CLEAR APERTURE, SEMI-SPECULAR, 6" APERTURE	WHITE LED	4000-4100K 90 CR	22W	120/277	GOTHAM ATLANTIC			EVO 41 10 6AR MVOLT			
D-90		RECESSED LED DOWNLIGHT SHOWER LOCATION NOMINAL 1400 DELIVERED LUMENS CLEAR APERTURE, SEMI-SPECULAR, 6" APERTURE	WHITE LED	4000-4100K 90 CR	18.4W	120/277	GOTHAM ATLANTIC			EVO 41 10 6DR MVOLT			
E1		EXIT SIGN DIE CAST ALUMINUM, STENCIL, UNIVERSAL SURFACE MOUNTING, UNIVERSAL ARROWS PER PLANS WITH 10 YEAR PRO-RATA WARRANTY, LED, WHITE HOUSING, GREEN LETTERS, MUST MEET NFPA ILLUMINATION STANDARDS											
E1-1		SINGLE FACE, CEILING MOUNT OR WALL MOUNT	LED		1W	120/277V	LITHONIA SURELITES			LES-W-1-G-120277			
E1-2		DUAL FACE, CEILING MOUNT OR WALL MOUNT	LED		2W	120/277V	LITHONIA SURELITES			LES-W-2-G-120277			
E2		EXIT SIGN HAZARDOUS LOCATION, DIE-CAST, NEMA 4X, UNIVERSAL SURFACE MOUNTING, UNIVERSAL ARROWS PER PLANS WITH 10 YEAR PRO-RATA WARRANTY, LED, WHITE HOUSING, GREEN LETTERS, MUST MEET NFPA ILLUMINATION STANDARDS											
E2-1		SINGLE FACE, CEILING MOUNT OR WALL MOUNT	LED		1W	120/277V	SURELITES			LX7 0 00 G HAZ			
EWP-1		HAZARDOUS LOCATION EMERGENCY LIGHT IMPACT RESISTANT FIBERGLASS REINFORCED POLYESTER HOUSING SELF DIAGNOSTICS	FLUORESCENT		20W	120/277	RIG-A-LITE			HLEL 25 N12 2 H1212 8D			
EWP-2		EMERGENCY LIGHT, WET LOCATION HOUSING, DIE-CAST ALUMINUM SELF DIAGNOSTICS FINISH: STANDARD COLOR BY ARCHITECT	WHITE LED	4000-4100K 90 CR	18.4W	120/277	DUAL-LITE			PG			
EWP-3		EMERGENCY LIGHT BUG EYE HOUSING, THERMOPLASTIC SELF DIAGNOSTICS	WHITE LED	4000-4100K 90 CR	18.4W	120/277	DUAL-LITE			CVCC30			
G		LED RECESSED FOR LAV-IN GRD, EARTHQUAKE CLIPS											
G-5		2X2 LAY IN LED TROFFER SIZE: 2' X 2' X 5' DEEP VOLUMETRIC ACRYLIC NOMINAL DELIVERED LUMENS: 3000 0-10V DIMMING	WHITE LED	4000-4100K 90 CR	37W	120/277V	METALLUX			22SR-LD1-29-C-UNV-L840-CDD-U			
G-6		2X2 SURFACE LED TROFFER SIZE: 2' X 2' X 3.3' DEEP VOLUMETRIC ACRYLIC NOMINAL DELIVERED LUMENS: 3000	WHITE LED	400-4100K 90 CR	37W	120/277V	LITHONIA AXIS			2AL1S2 37L D37 LP840 NX EL 14L			
HA-1		LED HIGH BAY HOUSING, CAST ALUMINUM HOUSING SIZE: 22" DIAMETER X 32" HIGH FINISH: STANDARD FINISH BY ARCHITECT, POWDER COAT MOUNTING: CUSTOM LENGTH PENDANT REQUIRED OUTPUT: 12,000 LUMEN OUTPUT DISTRIBUTION: WIDE DIMMING: 0-10V DIMMING DRIVER SURGE PROTECTION	WHITE LED	4000-4100K 90 CR	130W	120/277V	HOLOPHANE HUBBELL			PHZ 12L 4K AS P W SFAS D			
HA-2		LED HIGH BAY HOUSING, CAST ALUMINUM HOUSING SIZE: 22" DIAMETER X 32" HIGH FINISH: STANDARD FINISH BY ARCHITECT, POWDER COAT MOUNTING: CUSTOM LENGTH PENDANT	WHITE LED	4000-4100K 90 CR	190W	120/277V	HOLOPHANE HUBBELL			PHZ 18L 4K AS P W SFAS D			

REQUIRED OUTPUT: 18,000 LUMEN OUTPUT DISTRIBUTION: WIDE DIMMING: 0-10V DIMMING DRIVER SURGE PROTECTION

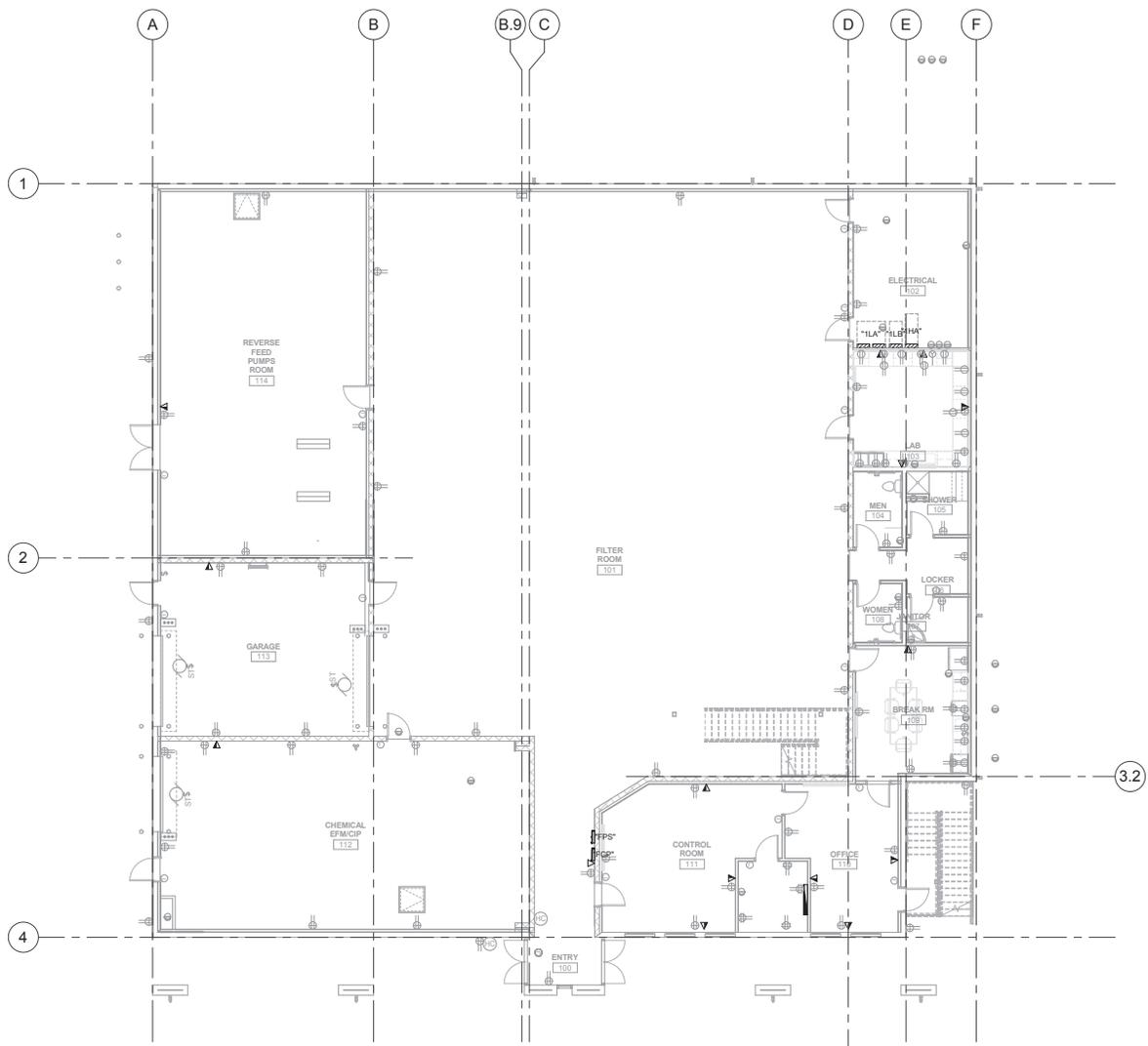
OC-32		EXTERIOR WALL PACK FULL CUT OFF DIE CAST ALUMINUM SIZE: 16-1/4" WIDE X 8-1/8" DEEP X 7-1/4" TALL FINISH: STANDARD FINISH BY ARCHITECT LENS: ACRYLIC UL WET LISTED, INTEGRAL BALLAST REQUIRED OUTPUT: 3000 LUMEN OUTPUT MOUNTING: WALL MOUNT	WHITE LED	4000-4100K 90 CR	24W	120/277V	LITHONIA ELCAST			WSQ LED 110A070040K SR3 MVOLT PE SCBA			
OC-32E		SAME AS TYPE OC-32 EXCEPT FOR REMOTE BATTERY PACK FOR EMERGENCY BATTERY BACKUP											
OC-33		EXTERIOR WALL PACK FULL CUT OFF DIE CAST ALUMINUM SIZE: 16-1/4" WIDE X 8-1/8" DEEP X 7-1/4" TALL FINISH: STANDARD FINISH BY ARCHITECT LENS: ACRYLIC UL WET LISTED, INTEGRAL BALLAST REQUIRED OUTPUT: 4000 LUMEN OUTPUT MOUNTING: WALL MOUNT INTEGRAL PHOTOCELL	WHITE LED	4000-4100K 90 CR	47W	120/277V	LITHONIA ELCAST			WSQ LED 210A070040K SR3 MVOLT PE SCBA			
SA		GENERAL PURPOSE INDUSTRIAL, WHITE ENAMEL, APERTURED REFLECTOR, PROGRAM START ELECTRONIC BALLASTS, T8 LAMPS, ONE BALLAST PER FIXTURE WHERE POSSIBLE, UNLESS TWO LEVEL SWITCHING IS SHOWN ON THE PLANS; STEM MOUNTED WITH LONG HANGERS.											
SA-1		4, 2-LAMP	2 F32T8	REBUS	56W	277/120V	LITHONIA LIGHTLIER			EJA232 MVOLT MVOLT GEB10FS			
SA-1E		SAME AS SA-1 EXCEPT FOR EMERGENCY BATTERY PACK											
SF-7		4 ENCLOSED AND GASKETED LED HOUSING, FIBERGLASS HOUSING UL WET LISTED REQUIRED OUTPUT: 3000 LUMENS MOUNTING: SURFACE FOR HARD CEILINGS, SUSPENDED JUST BELOW WEB, JUST IN OPEN CEILING	WHITE LED	4000-4100K	39W	120/277V	HOLOPHANE COLUMBIA			EM54LED 8M4CD			
SF-8		4 HANGING ORANGE HAZARDOUS LOCATION LED HOUSING, STAINLESS STEEL UL WET LISTED IP66 REQUIRED OUTPUT: 7700 LUMENS MOUNTING: SURFACE FOR HARD CEILINGS, SUSPENDED JUST BELOW WEB, JUST IN OPEN CEILING	WHITE LED	4000-4100K	80W	120/277V	RIG-A-LITE			MHDS 10-L-4-3XX			
TX-98		CYLINDRICAL PENDANT SIZE: 6" APERTURE DIFFUSER: MATTE WHITE ACRYLIC FINISH: STANDARD COLOR PAINT BY ARCHITECT	WHITE LED	4000-4100K 90 CR	28W	120/277V	GOTHAM ATLANTIC			100 CYL 4020 6AR 70 ACC			

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OGDEN CITY				
WATER TREATMENT PLANT RECONST. FIXTURE SCHEDULE				
REV. NO.	ISSUED BY	IN CH.	CHECKED BY	SHEET NO.
04655	ARB	ARB	ARB	213 / 241
EL601				

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LEVEL 1 TELECOMMUNICATIONS FLOOR

A1
ET101
1/8" = 1'-0"

GENERAL SHEET NOTES

○ SHEET KEYNOTES

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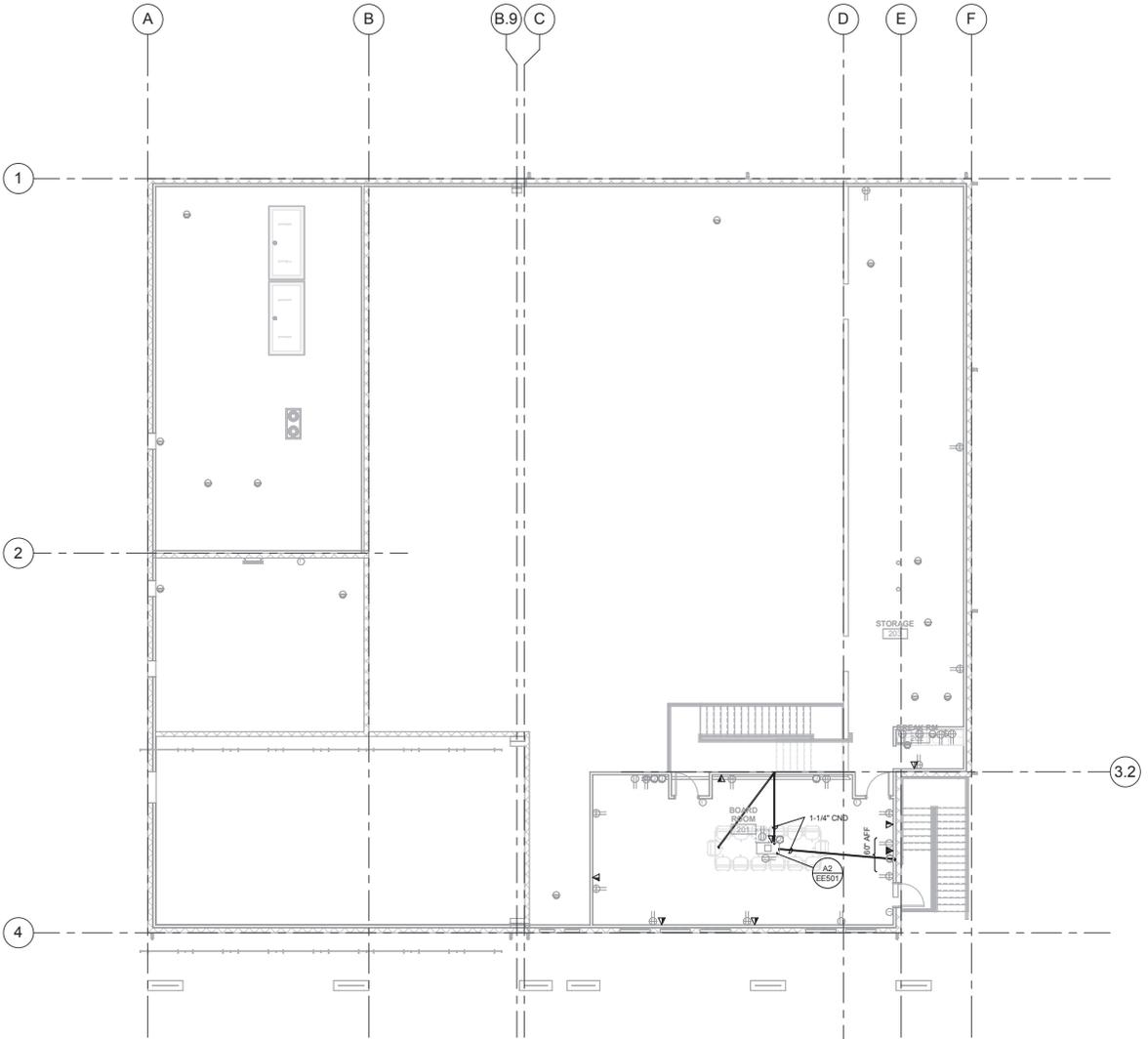
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WATER TREATMENT PLANT RECONST.
TELECOM PLAN - LEVEL 01

REV. NO.	DESIGNED BY	CHECKED BY	DATE	SHEET NO.	TOTAL SHEETS
04655	ARB	ARB	214	241	ET101

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LEVEL 2 TELECOMMUNICATIONS FLOOR
PLAN

A1
ET102
1/8" = 1'-0"

GENERAL SHEET NOTES

○ SHEET KEYNOTES

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OGDEN CITY
WATER TREATMENT PLANT RECONST.
TELECOM PLAN - LEVEL 02

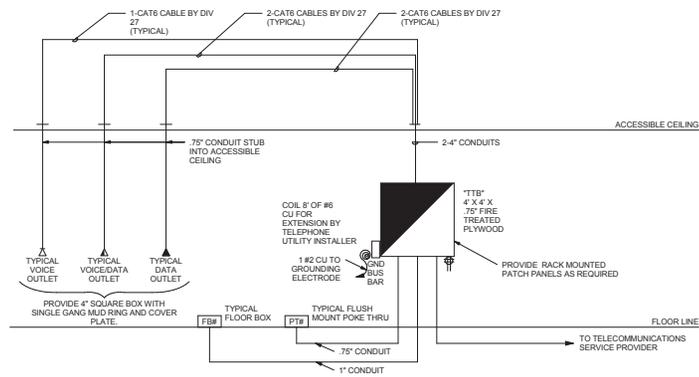
REV. NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	TOTAL SHEETS
04655	ARB	ARB	ARB	215	241

ET102

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D
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A



VOICE/DATA RISER DIAGRAM TYPICAL
A3
ET601
NOT TO SCALE

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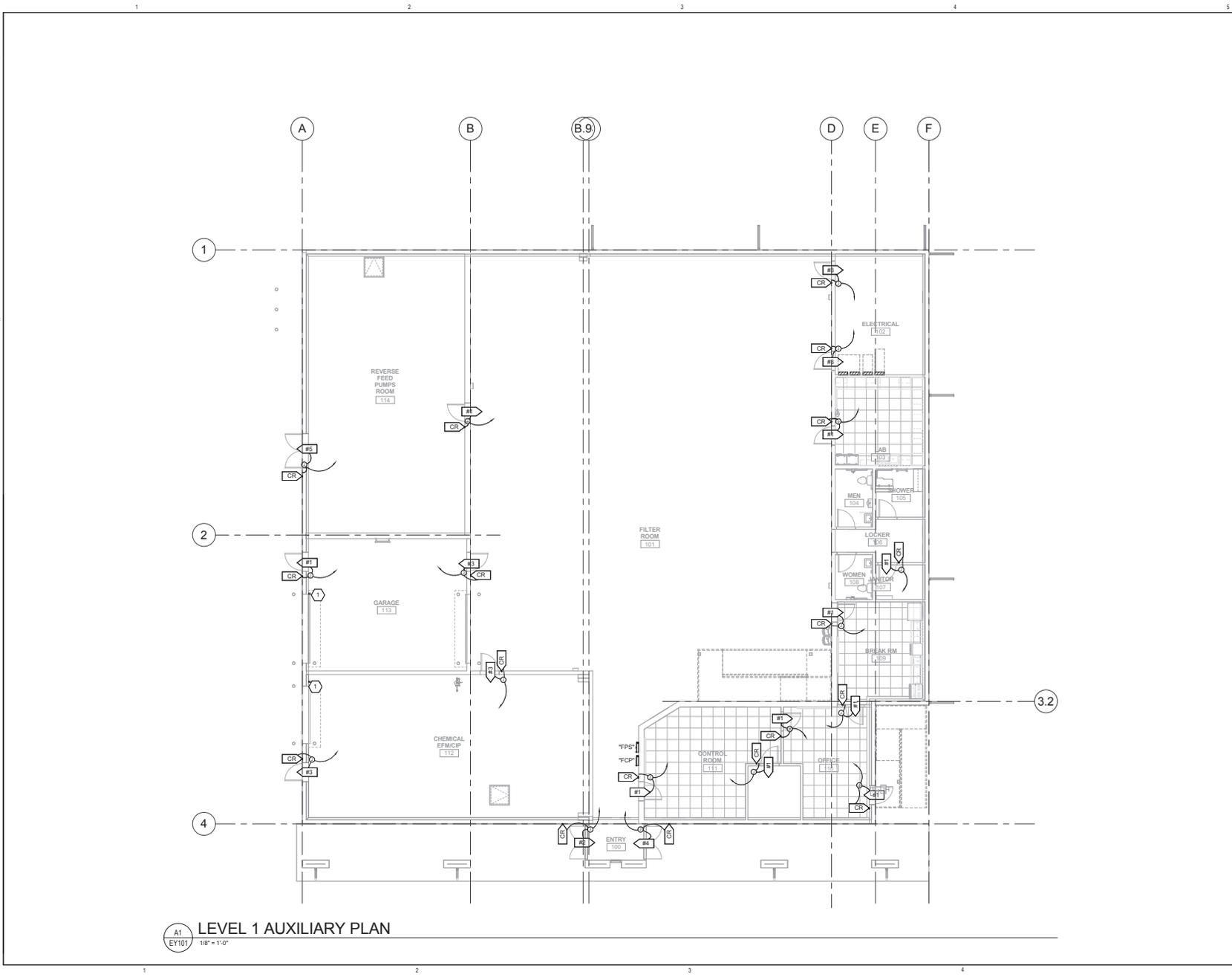
REV. NO.	COMMENTS	DATE

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		OGDEN CITY WATER TREATMENT PLANT RECONST. TELECOM RISER
01/17/2014	CHECKED ARB	DRAWN ARB
DESIGNED ARB	PROJECT NO. 04655	SHEET NO. 216 - 241

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A1
EY101
LEVEL 1 AUXILIARY PLAN
1/8" = 1'-0"

GENERAL SHEET NOTES

SHEET KEYNOTES

1 RUN (1) 3/4" CONDUIT TO LOWER PART OF ROLL UP DOOR FOR DOOR CONTACT.

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REV. NO.	COMMENTS	DATE

No.
5497590-2202
Professional
Seal
State of Utah
01/17/2014

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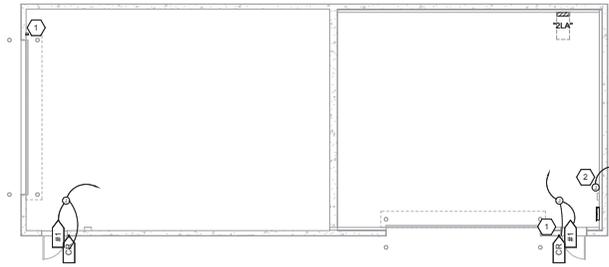
OGDEN CITY

**WATER TREATMENT PLANT RECON.
AUXILIARY PLAN - LEVEL 1**

BL. NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
04655	ARB	ARB	ARB	217	241
					EY101

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AT
EY102 LEVEL 1 AUXILIARY PLAN - DEWATER
1/8" = 1'-0"

GENERAL SHEET NOTES

SHEET KEYNOTES

- 1 RUN (1) 3/4" CONDUIT TO LOWER PART OF ROLL UP DOOR FOR DOOR CONTACT.
- 2 JUNCTION BOX TO BRING ALL SECURITY WIRES TOGETHER TO RUN TO THE FILTER BUILDING. SEE SHEET CE3 FOR DISTANCE TAKE-OFFS.

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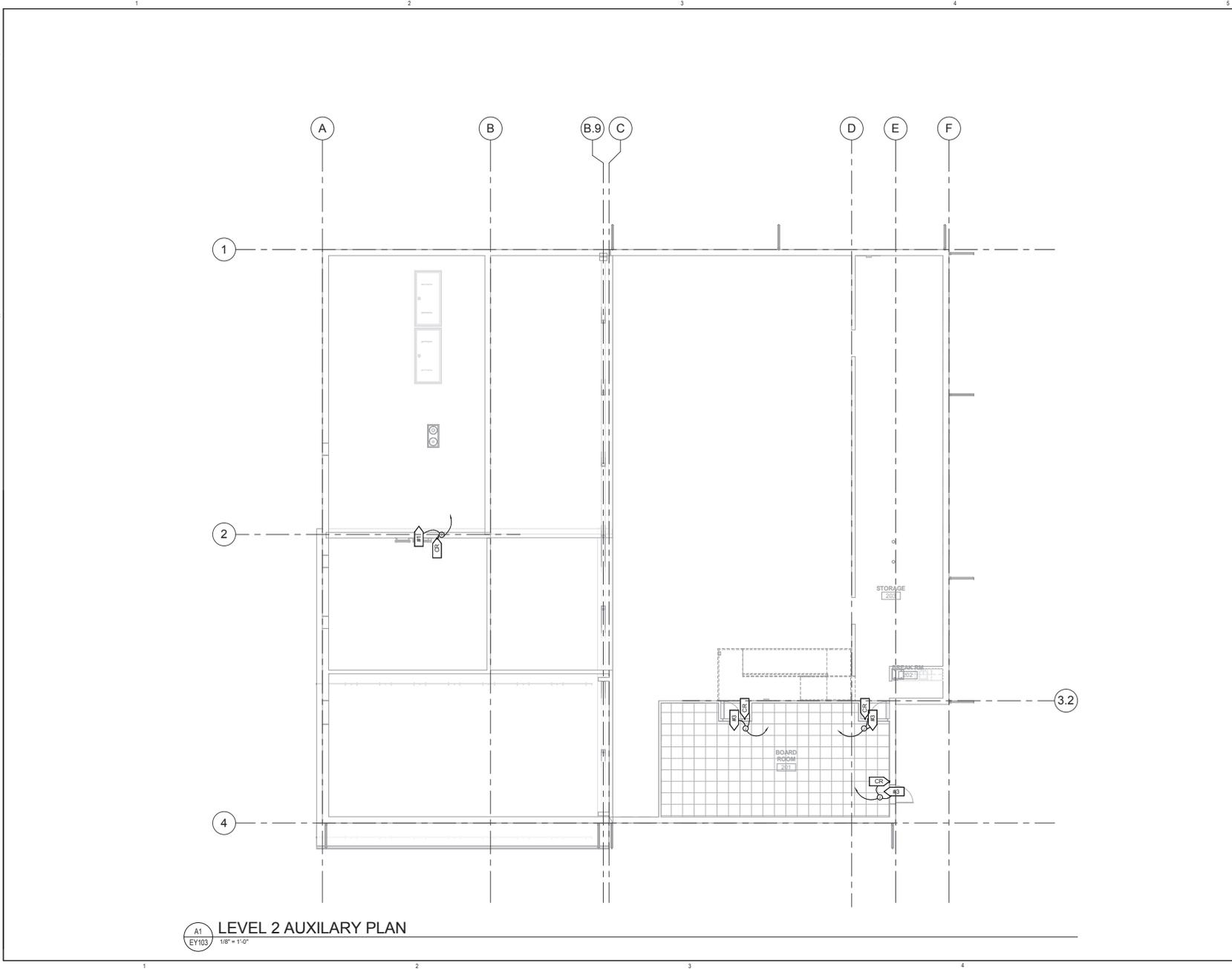
OGDEN CITY

**WATER TREATMENT PLANT RECONST.
DEWATER AUXILIARY PLAN**

REV. NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	TOTAL SHEETS
04655	ARB	ARB	ARB	218	241

EY102

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A1
EY103 **LEVEL 2 AUXILIARY PLAN**
1/8" = 1'-0"

GENERAL SHEET NOTES

SHEET KEYNOTES

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Professional Engineer
No. 5497550-2202
Christopher M. ...
STATE OF UTAH
01/17/2014

OGDEN CITY
WATER TREATMENT PLANT RECONSTRUCTION
AUXILIARY PLAN - LEVEL 2

REV. NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	TOTAL SHEETS
04655	ARB	ARB	ARB	219	241

EY103

NOTES

1. PROVIDE RACEWAY AND EQUIPMENT AS INDICATED FOR CARD ACCESS DOOR TYPE INDICATED.
2. PROVIDE CONCEALED 75° C TYPICAL FOR LINES SHOWN TO DEVICE BOXES ON PROTECTED SIDE AND UNPROTECTED SIDE ELEVATIONS.
3. CONFIRM CORRECT CARD ACCESS DOOR RACEWAY WITH DIV. 8 FURNISHED CARD ACCESS DOOR HARDWARE PER DIV. 8 DOOR HARDWARE SPECIFICATIONS.
4. LOCATE CARD READER BOX AS INDICATED ON FLOOR PLANS. RACEWAY AND BOXES BY DIV. 26.
5. DOUBLE 4SQ J-BOX ON PROTECTED SIDE OF DOORWAY (SIDE OPPOSITE OF CARD READER) ABOVE ACCESSIBLE CEILING OR IN OTHER ACCESSIBLE LOCATION. PROVIDE COVER FOR J-BOX.
6. ELECTRIC LOCKING HARDWARE (MAG LOCKS, ELECTRIC STRIKES, POWER TRANSFER HINGES, ETC.) BY DIV. 8. REVIEW DOOR HARDWARE FURNISHED AND VERIFY LOCK VOLTAGES AND OPERATIONAL FUNCTIONALITY OF LOCKS. CONTACT ENGINEER WITH QUESTIONS OR CONCERNS.

ABBREVIATIONS

- DBL = DOUBLE
 DIR = DIRECTION
 HWWR = HARDWARE
 C = CONDUIT
 4SQ = FOUR SQUARE
 W/ = WITH
 1G = 1 GANG
 PWR = POWER
 ACC = ACCESSIBLE
 OCC = OCCUPANCY
 TYP = TYPICAL
 LPS = LOCK POWER SUPPLY
 CR = CARD READER
 CI = DOOR CONTACT INDICATOR
 EPT = ELECTRIC POWER TRANSFER
 ES = ELECTRIC STRIKE
 PH = PANIC HARDWARE
 ML = ELECTROMAGNETIC LOCK
 KS = KEY SWITCH
 ACS = ACCESS CONTROL SYSTEM
 EL = ELECTRIC LOCKSET
 MD = MOTION DETECTOR
 TLC = TIME SYSTEM LOCK CONTROL
 ELC = EMERGENCY LOCK CONTROL
 IDS = INTRUSION DETECTION SYSTEM
 ADA = AUTO DOOR OPENER
 REX = REQUEST TO EXIT
 FA = FIRE ALARM SYSTEM
 OFP = OBTAIN FROM PLANS
 AR = AS REQUIRED
 MHO = MAGNETIC HOLD OPEN

CARD ACCESS DOOR TYPE SCHEDULE

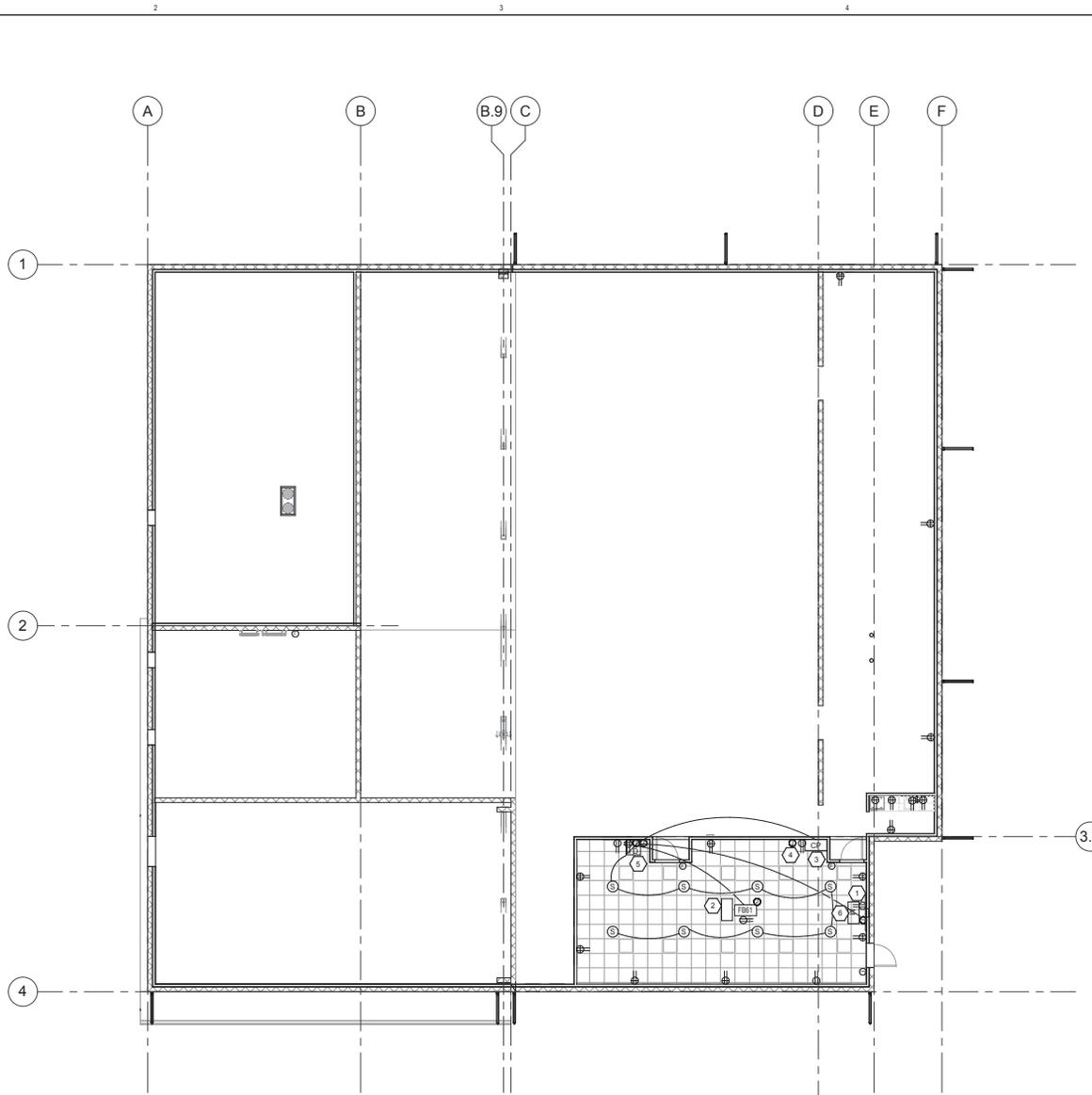
DOOR TYPE	SYMBOL	DESCRIPTION	PROTECTED SIDE ELEVATION	UNPROTECTED SIDE ELEVATION	LOCK TYPE(S)	DIVISION OF WORK AND COMMENTS
TYPE 1		SINGLE DOOR, 1 CARD READER, WITH AUTO OPENER			ELECTRIC STRIKE	SECURITY CONTRACTOR PROVIDES: • CR, LPS HARDWARE CONTRACTOR PROVIDES: • ES, MD, C LOCK CONTROLLED BY: • CR ROUGH-IN BY DIV. 26, SECURITY DEVICES & WIRING BY OTHERS
TYPE 2		DOUBLE DOOR WITH AUTO OPENER			SWITCHED EXIT HARDWARE	SECURITY CONTRACTOR PROVIDES: • LPS HARDWARE CONTRACTOR PROVIDES: • EPT, PH, CI, ADA LOCK CONTROLLED BY: • TLC ROUGH-IN BY DIV. 26, SECURITY DEVICES & WIRING BY OTHERS
TYPE 3		SINGLE DOOR, 1 CARD READER, (FREE EGRESS)			SWITCHED EXIT HARDWARE	SECURITY CONTRACTOR PROVIDES: • CR, LPS HARDWARE CONTRACTOR PROVIDES: • PH, CI, EPT LOCK CONTROLLED BY: • CR, TLC, FA ROUGH-IN BY DIV. 26, SECURITY DEVICES & WIRING BY OTHERS
TYPE 4		DOUBLE DOOR, 1 CARD READER			SWITCHED EXIT HARDWARE	SECURITY CONTRACTOR PROVIDES: • CR, LPS HARDWARE CONTRACTOR PROVIDES: • EPT, PH, CI LOCK CONTROLLED BY: • CR, TLC ROUGH-IN BY DIV. 26, SECURITY DEVICES & WIRING BY OTHERS
TYPE 5		DOUBLE DOOR, 1 CARD READER, (FREE EGRESS)			ELECTRIC LOCKSET	SECURITY CONTRACTOR PROVIDES: • CR, LPS HARDWARE CONTRACTOR PROVIDES: • EL, CI, EPT LOCK CONTROLLED BY: • CR ROUGH-IN BY DIV. 26, SECURITY DEVICES & WIRING BY OTHERS

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OGDEN CITY					
WATER TREATMENT PLANT RECON. AUXILIARY DETAILS					
REV. NO.	DESIGNER	IN. NO.	CHECKED	SHEET NO.	
04655	ARB	ARB	ARB	220 / 241	EY601

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1
 EJ101
 LEVEL 2 AUDIO VIDEO PLAN
 1/8" = 1'-0"

○ SHEET KEYNOTES

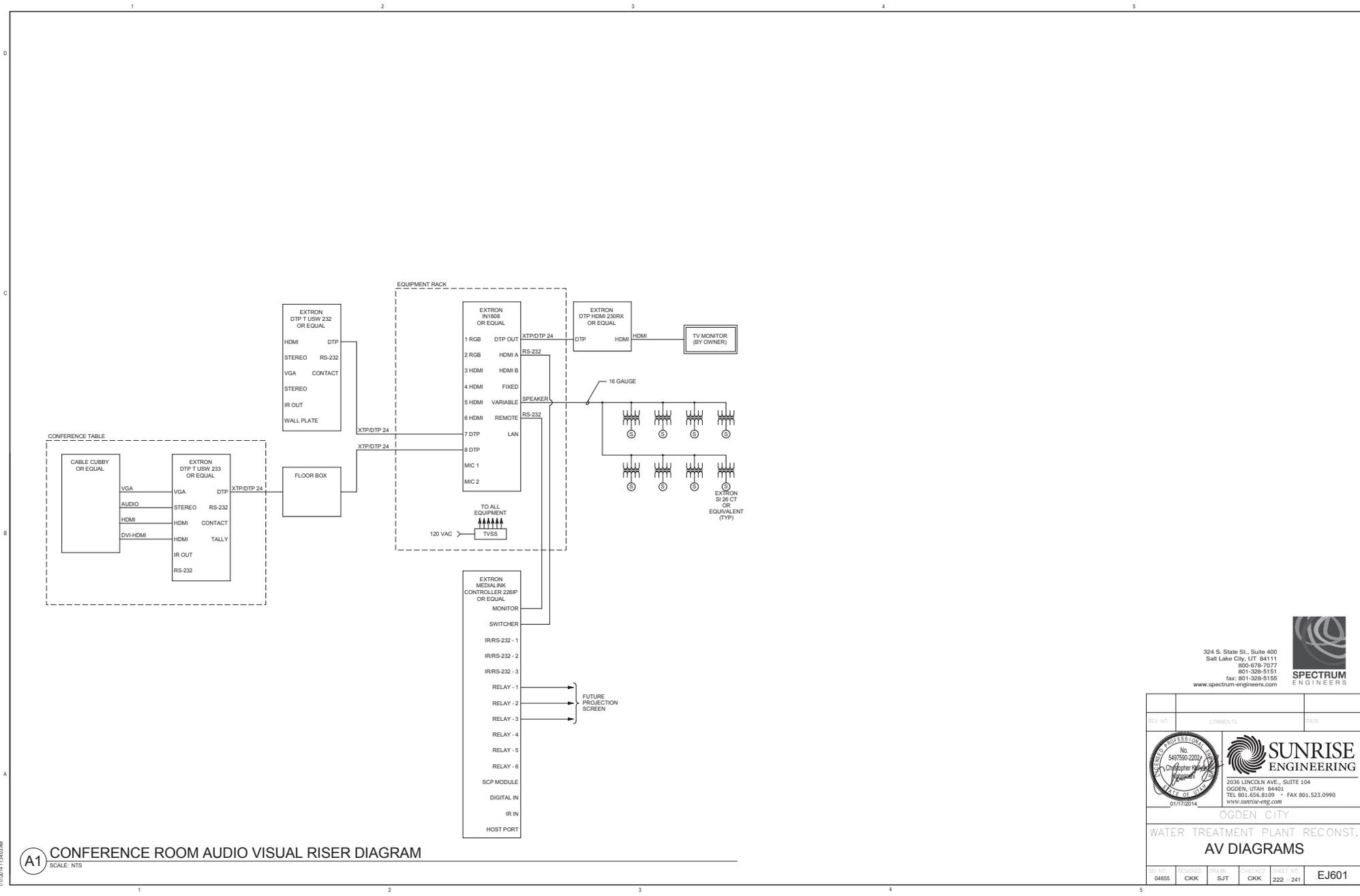
- 1 PROVIDE RECESSED AVRECEPTACLE WALL BOX CHIEF 516 OR OTHER MANUFACTURER EQUIVALENT.
- 2 EXTRON CABLE CUBBY (OR OTHER MANUFACTURER EQUAL) INSTALLED IN CONFERENCE ROOM TABLE.
- 3 WALL STATION CONTROL BOX. INSTALL 5 GANG BOX FOR ROUGH IN.
- 4 WALL PLATE FOR AV INPUT. INSTALL 4 GANG WALL BOX FOR ROUGH IN.
- 5 RUN (1) 1" CONDUIT WITH PULL STRING FROM THE AV RACK BACK TO THE TELECOM ROOM FOR FUTURE TV CABLE.
- 6 TV MONITOR PROVIDED BY OWNER.

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		OGDEN CITY WATER TREATMENT PLANT RECONST. AV PLAN - LEVEL 2		
REV. NO. 04655	DESIGNER ARB	CHECKER ARB	SHEET NO. 221 / 241	SHEET TITLE EJ101



A1 CONFERENCE ROOM AUDIO VISUAL RISER DIAGRAM
SCALE: NTS

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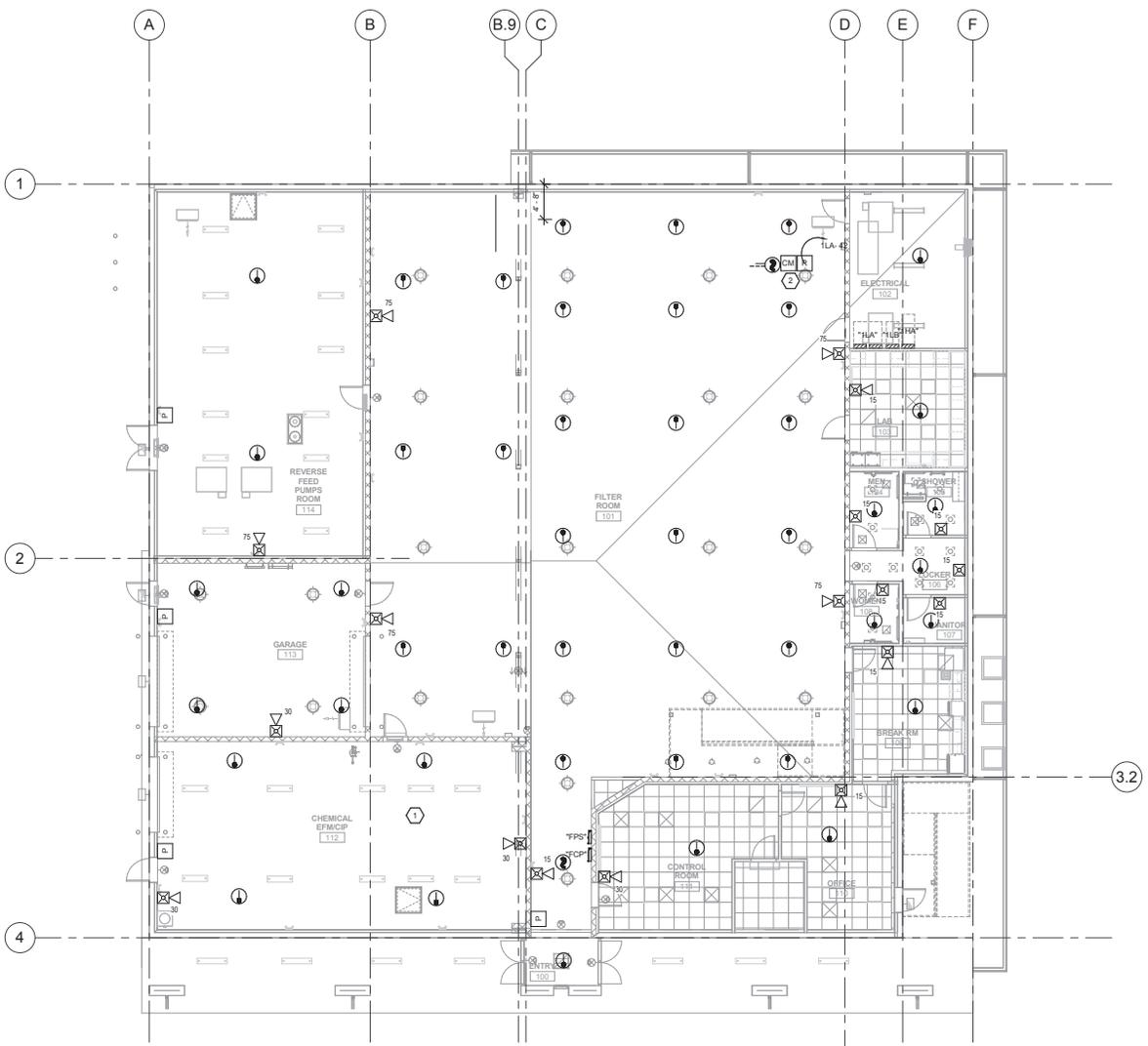
OGDEN CITY

WATER TREATMENT PLANT RECONST.
AV DIAGRAMS

REV. NO.	DESIGNER	DR. IN CH.	CHECKER	SHEET NO.	TOTAL SHEETS
04655	CKK	SJT	CKK	222	241

EJ601

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A1
FA101
LEVEL 1 FIRE ALARM PLAN
1/8" = 1'-0"

GENERAL SHEET NOTES

SHEET KEYNOTES

- 1 PROVIDE PVC COATED RIGID CONDUIT FOR ALL EXPOSED CONDUIT IN THIS ROOM.
- 2 RELAY AND CONTROL MODULE FOR FAN SHUTDOWN.

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OGDEN CITY

**WATER TREATMENT PLANT RECONST.
FIRE ALARM PLAN - LEVEL 01**

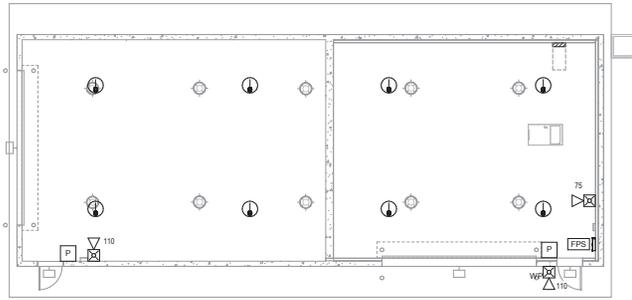
REV. NO.	DESIGNED BY	DRAWN BY	CHECKED BY	SHEET NO.	TOTAL SHEETS
04655	ARB	ARB	ARB	223	241

FA101

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C
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A



A1
FA102
LEVEL 1 FIRE ALARM PLAN - DEWATER
1/8" = 1'-0"

GENERAL SHEET NOTES

SHEET KEYNOTES

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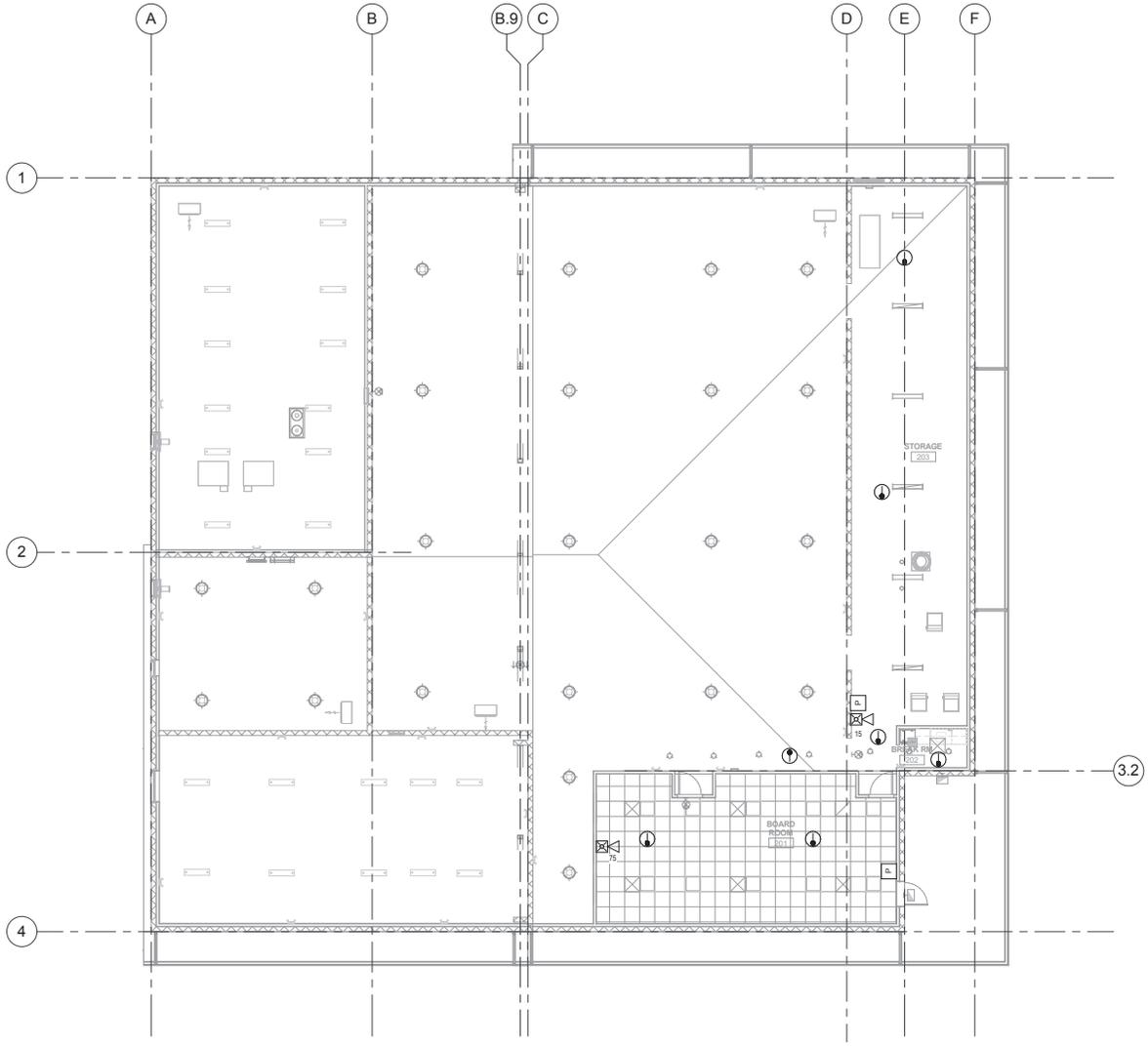
OGDEN CITY

**WATER TREATMENT PLANT RECONST.
DEWATER FIRE ALARM PLAN**

REV. NO.	DESIGNED	IN CH.	CHECKED	SHEET NO.	TOTAL SHEETS
04655	ARB	ARB	ARB	224	241

FA102

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A1
FA103
LEVEL 2 FIRE ALARM PLAN
1/8" = 1'-0"

GENERAL SHEET NOTES

SHEET KEYNOTES

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OGDEN CITY

**WATER TREATMENT PLANT RECONSTR.
FIRE ALARM PLAN - LEVEL 02**

REV. NO.	DESIGNED BY	IN CH.	CHECKED BY	SHEET NO.	TOTAL SHEETS
04655	ARB	ARB	ARB	226	241

FA103

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NOTIFICATION SCHEDULE					
SYMBOL	STROBE SIZE	COVERAGE	AVERAGE CURRENT	MAXIMUM PER CIRCUIT ALONE	
☒	15	15 CD	20x20'	085A	17
☒	30	30 CD	30x30'	135A	11
☒	75	75 CD	40x40'	200A	7
☒	110	110 CD	50x50'	225A	6

WIRING SCHEDULE				
FUNCTION	< 500'	< 1000'	1000'-3000'	> 3000'
ADDRESSABLE LOOP	#18 TSP	#18 TSP	#16 TSP	#14 TSP
POWER LOOP	#14 THWN	#14 THWN	#12 THWN	#10 THWN
SPARE LOOP	#14 THWN	#14 THWN	#12 THWN	#10 THWN
STROBE HORNS	#14 THWN	#14 THWN	#12 THWN	#10 THWN
MAGNETIC DOOR HOLDER	#12 THWN	#10 THWN		
SPEAKERS	#16 TSP	#16 TSP	#14 TSP	#14 TSP

GENERAL SHEET NOTES

- PLANS ARE BASED UPON 98 MONITOR AND CONTROL DEVICES PER ADDRESSABLE LOOP. OTHER CONFIGURATIONS ARE ACCEPTABLE SUBJECT TO CONTRACTOR ALLOWING FOR INCREASED WIRING REQUIREMENTS AND SUBMITTAL DRAWINGS SHOWING NEW WIRING CONFIGURATION. MAXIMUM INITIAL DEVICES PER LOOP SHALL NOT EXCEED 75% MAXIMUM ALLOWABLE.
- PLANS ARE BASED UPON THE WIRING SCHEDULE SHOWN. WHERE MANUFACTURER'S REQUIREMENTS EXCEED REQUIREMENTS SHOWN, INCLUDE ADDITIONAL ASSOCIATED COSTS AND SUBMITTAL DRAWINGS INDICATING NEW WIRING CONFIGURATION.
- PLANS ARE BASED UPON 2 AMPS AT 24 VDC. NOT TO EXCEED 75% (1.50 AMPS AVAILABLE) POWER SUPPLY CAPACITY PER NOTIFICATION CIRCUIT. NOTIFICATION DEVICE LOADS ARE BASED UPON NOTIFICATION DEVICE SCHEDULE SHOWN. INCLUDE ADDITIONAL ASSOCIATED COSTS FOR INCREASED WIRING AND POWER SUPPLY CAPACITY IF LOADS OF ACTUAL DEVICES PROVIDED EXCEED CIRCUIT CAPACITY, OR IF LOAD OUTPUT OF ACTUAL POWER SUPPLIES PROVIDED IS SIZED DIFFERENTLY. PROVIDE SUBMITTAL DRAWINGS SHOWING NEW WIRING CONFIGURATION.
- FLOW AND TAMPER CONFIGURATION BASED UPON FIRE SPRINKLER DESIGN CONCEPT. FIELD VERIFY ACTUAL REQUIREMENTS. INCLUDE ANY ADDITIONAL MONITOR MODULES REQUIRED BY ACTUAL DESIGN REQUIREMENTS.
- HEAT DETECTORS WHEN INSTALLED IN ELEVATOR SHAFTS OR MECHANICAL ROOMS FOR ELEVATOR SHUT DOWN SHALL HAVE HEAT DETECTOR WITH LOWER RESPONSE TIME INDEX THAN SPRINKLER HEAD.
- PROVIDE POWER SUPPLY CAPACITY AS REQUIRED FOR DOOR HOLD OPENS SHOWN.
- BATTERY CAPACITY TO BE ADEQUATE TO OPERATE 15 MINUTES AFTER 24 HOURS PLUS 25% SPARE CAPACITY.
- RUN SPARE LOOPS IN SAME CONDUIT. DO NOT EXCEED 40% AREA FILL OF CONDUITS.
- PROVIDE DUCT DETECTORS FOR SUPPLY AND RETURN AIR SYSTEMS OVER 3000 CFM. INSTALL DUCT DETECTORS PER NFPA 72 REQUIREMENTS AND PROVIDE ADDITIONAL DUCT DETECTORS DEPENDING UPON FINAL DUCT ARRANGEMENT.
- PROVIDE DUCT DETECTOR AT EACH FLOOR. PRIOR TO CONNECTION TO A COMMON RETURN AND PRIOR TO RECIRCULATING OR FRESH AIR INLET IN AIR RETURN SYSTEMS OVER 15,000 CFM CAPACITY AND SERVING MORE THAN ONE STORY.
- PROVIDE MANUAL PULL STATIONS IN BOILER ROOMS AND KITCHENS.
- PROVIDE ONE YEAR OFF SITE MONITORING INCLUDING ALL INTERFACE DEVICES AND MONITORING CHARGES. COORDINATE WITH BUILDING OWNER'S OFF SITE MONITORING COMPANY.
- LOCATE SMOKE DETECTORS MINIMUM 3' FROM AIR SUPPLY AND RETURN LOUVERS.
- PROVIDE SYNCHRONIZED STROBES THROUGHOUT FACILITY. PROVIDE SYNCHRONIZATION MODULES PER MANUFACTURER'S REQUIREMENTS. INCLUDE ADDITIONAL WIRING, IF REQUIRED.
- INITIATING AND INDICATING LOOPS SHALL NOT SERVE AN AREA OF GREATER THAN 22,500 SQUARE FEET. PROVIDE ADDITIONAL LOOPS FOR AREAS LARGER THAN THIS.
- ALL OUTPUT DEVICES ARE DESIGNED ON SYSTEMS WITH 2 AMP POWER SUPPLY.
- HORN/STROBE BASED ON 120 MILLIAMPS. DOOR HOLDERS BASED ON 70 MILLIAMPS.
- INSTALL DUCT DETECTORS PER NFPA 72 REQUIREMENTS AND PROVIDE ADDITIONAL DUCT DETECTORS DEPENDING UPON FINAL DUCT ARRANGEMENT.

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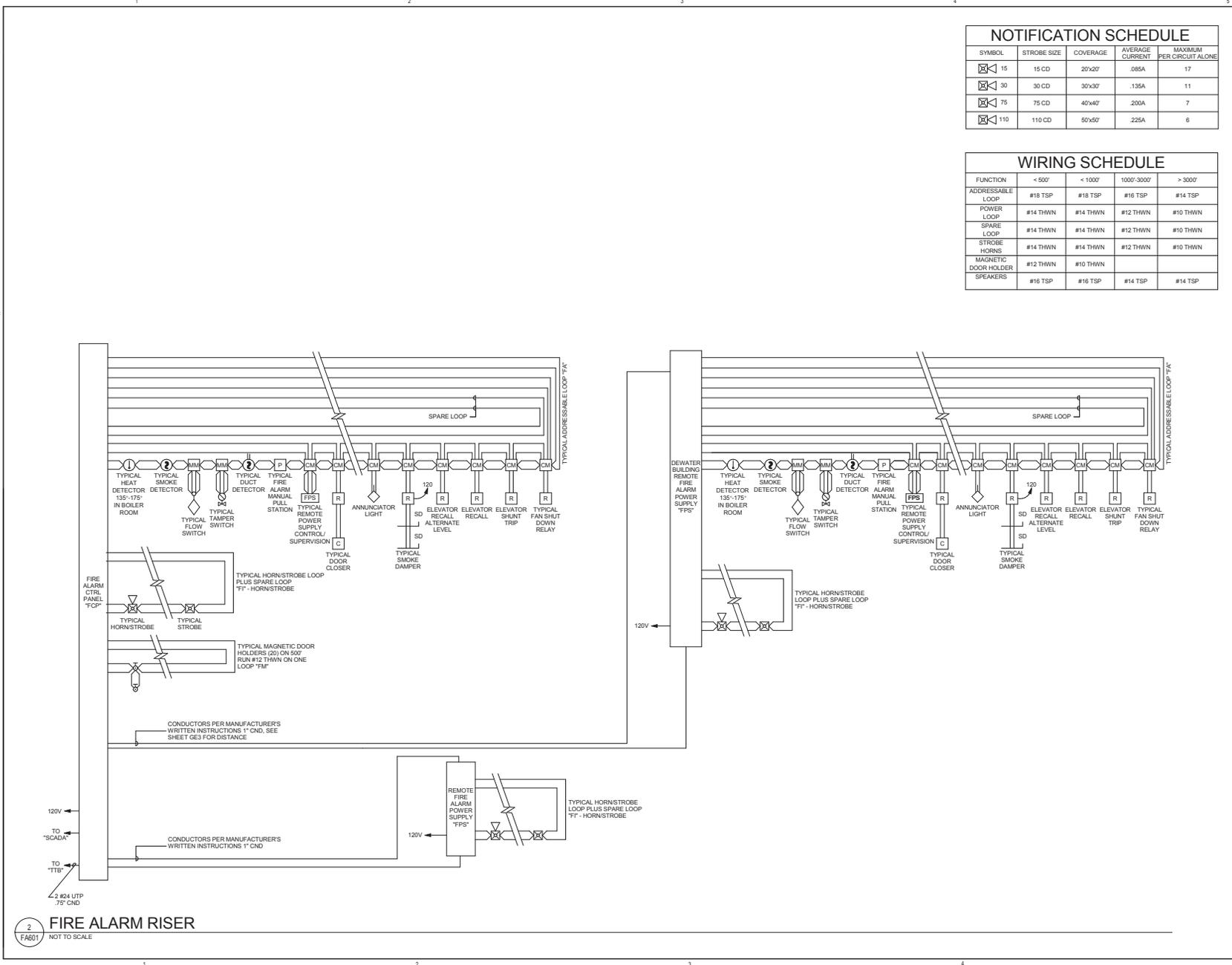


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OGDEN CITY WATER TREATMENT PLANT CONST. FIRE ALARM RISER DIAGRAM

REV. NO.	DESIGNED BY	DRAWN BY	CHECKED BY	SHEET NO.	TOTAL SHEETS
04655	ARB	ARB	ARB	226	241

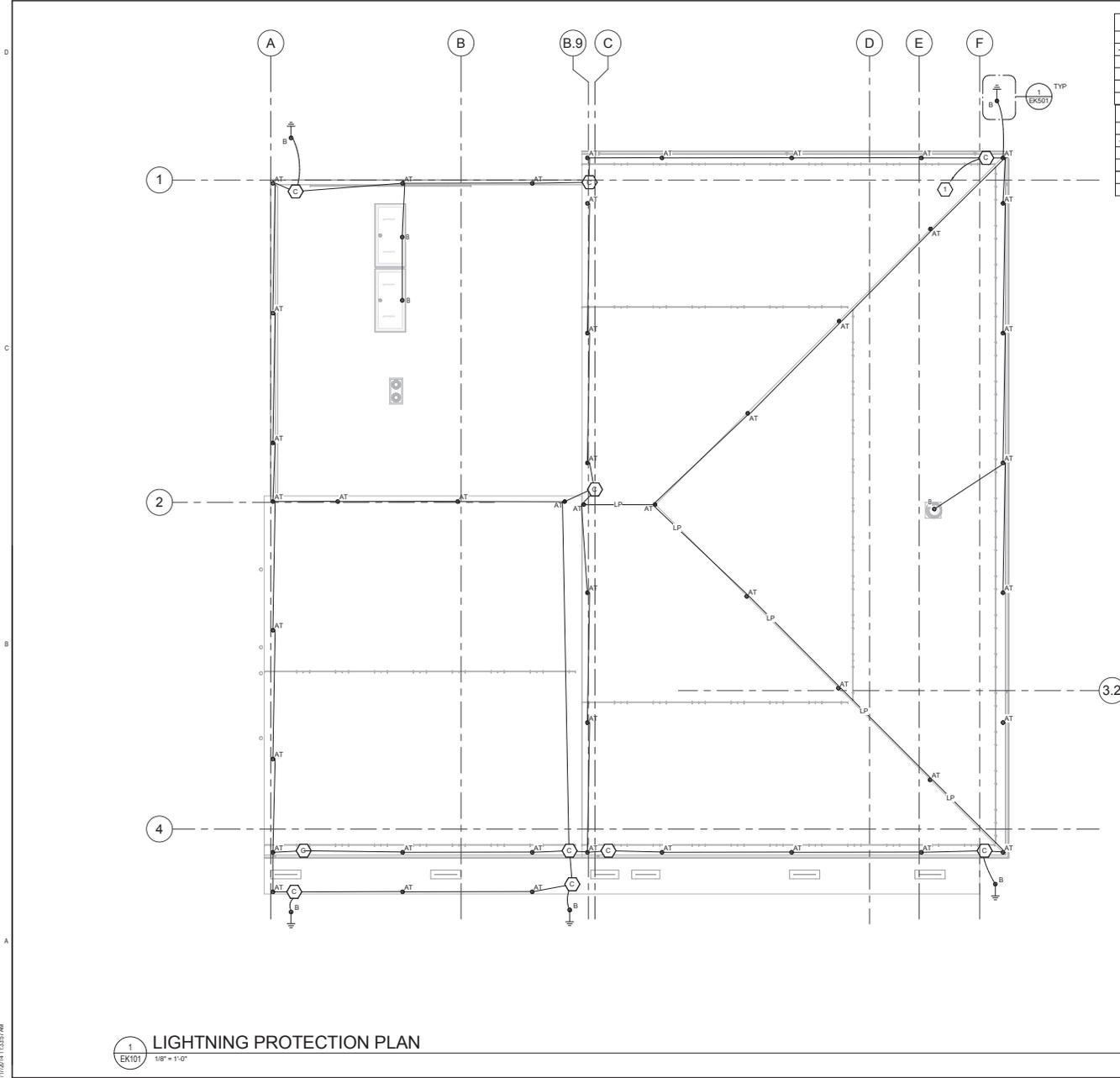
FA601



FIRE ALARM RISER
 NOT TO SCALE

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LIGHTNING PROTECTION LEGEND	
SYMBOL	DESCRIPTION
— L —	CLASS 1 ALUMINUM CONDUCTOR
• AT	AIR TERMINAL DETAIL(S) C1, C2, C3, SHEET EK501
■	PARALLEL CLAMP DETAIL C4, SHEET EK501
⊙	THROUGH ROOF SPRUCE DETAIL AT, SHEET EK501
→	BOND TO STEEL DETAIL(S) A1, B1, SHEET EK501
GROUNDING PROTECTION LEGEND	
SYMBOL	DESCRIPTION
— CP —	NO. 4/0 BARE COPPER
• A	NO. TAC - 2020 - CADWELD MOLD. DETAIL A5, SHEET EJ501
• B	NO. GTC - 1820 - CADWELD MOLD. DETAIL A4, SHEET EJ501
• C	NO. VSC - 20 - CADWELD MOLD. DETAIL B3, SHEET EJ501
≡	NO. 3410 - 3/4" X 10' COPPER CLAD GROUND ROD

GENERAL SHEET NOTES

1 BOND TO MAIN BUILDING GROUNDING ELECTRODE SYSTEM.

SHEET KEYNOTES

1 BOND TO MAIN BUILDING GROUNDING ELECTRODE SYSTEM.

1 LIGHTNING PROTECTION PLAN
1/8" = 1'-0"

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OGDEN CITY

**WATER TREATMENT PLANT RECONST.
LIGHTNING PROT. PLAN**

REV. NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	TOTAL SHEETS
04655	ARB	ARB	ARB	227	241

EK101

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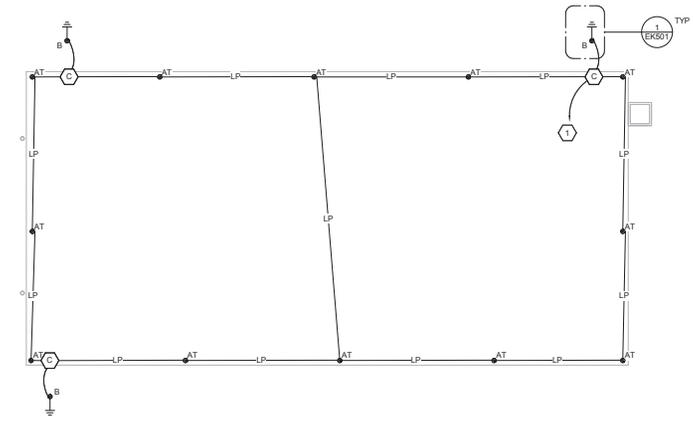
1 2 3 4 5

LIGHTNING PROTECTION LEGEND	
SYMBOL	DESCRIPTION
— L —	CLASS 1 ALUMINUM CONDUCTOR
● AT	AIR TERMINAL DETAIL(S) C1, C2, C3, SHEET EK501
■	PARALLEL CLAMP DETAIL C4, SHEET EK501
⊙	THROUGH ROOF SPRUCE DETAIL, AT, SHEET EK501
→	BOND TO STEEL DETAIL(S) A1, B1, SHEET EK501
GROUNDING PROTECTION LEGEND	
SYMBOL	DESCRIPTION
— CP —	NO. 4/0 BARE COPPER
● A	NO. 7/8" - 20/20 - CADWELD MOLD, DETAIL A5, SHEET EJ501
● B	NO. 5/8" - 18/20 - CADWELD MOLD, DETAIL A4, SHEET EJ501
● C	NO. VSC - 20 - CADWELD MOLD, DETAIL B3, SHEET EJ501
≡	NO. 3/4" - 3/4" X 1/2" COPPER CLAD GROUND ROD

GENERAL SHEET NOTES

SHEET KEYNOTES

1 BOND TO MAIN BUILDING GROUNDING ELECTRODE SYSTEM.



A1
EK102 LIGHTNING PROTECTION PLAN - DEWATER
1/8" = 1'-0"

324 S. State St., Suite 400
Salt Lake City, UT 84111
800-678-7077
801-328-5151
fax: 801-328-5155
www.spectrum-engineers.com



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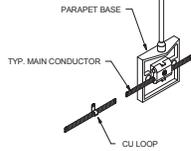
OGDEN CITY

**WATER TREATMENT PLANT RECONST.
LIGHTNING PROT. PLAN**

REV. NO.	DESIGNED	CHKD.	CHECKED	SHEET NO.	TOTAL SHEETS
04655	ARB	ARB	ARB	228	241

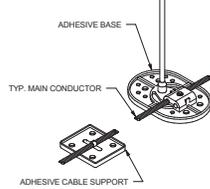
EK102

1
3/75" THRU 625" X 12" THRU 24"
TYP. AIR TERMINAL



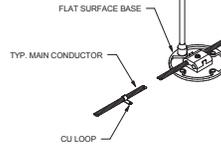
C1
EK501
PARAPET BASE
NOT TO SCALE

2
3/75" THRU 625" X 12" THRU 24"
TYP. AIR TERMINAL

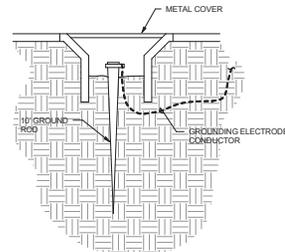


C2
EK501
ADHESIVE BASE
NOT TO SCALE

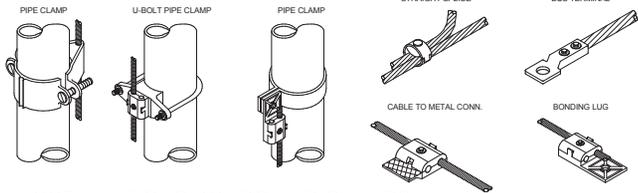
3
3/75" THRU 625" X 12" THRU 24"
TYP. AIR TERMINAL



C3
EK501
FLAT SURFACE BASE
NOT TO SCALE



1
EK501
GROUND WELL DETAIL
1/8" = 1'-0"



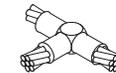
B1
EK501
MISCELLANEOUS BONDS AND CLAMPS
NOT TO SCALE

B3
EK501
VSC - 2Q - CADWELL MOLD
NOT TO SCALE

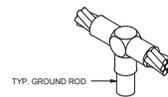
C4
EK501
PARALLEL CLAMP
NOT TO SCALE



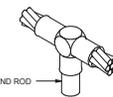
B4
EK501
BURNDEY YGH528 CONDUCTOR SPLICE
NOT TO SCALE



A5
EK501
TAC - 2Q2Q CADWELL MOLD
NOT TO SCALE



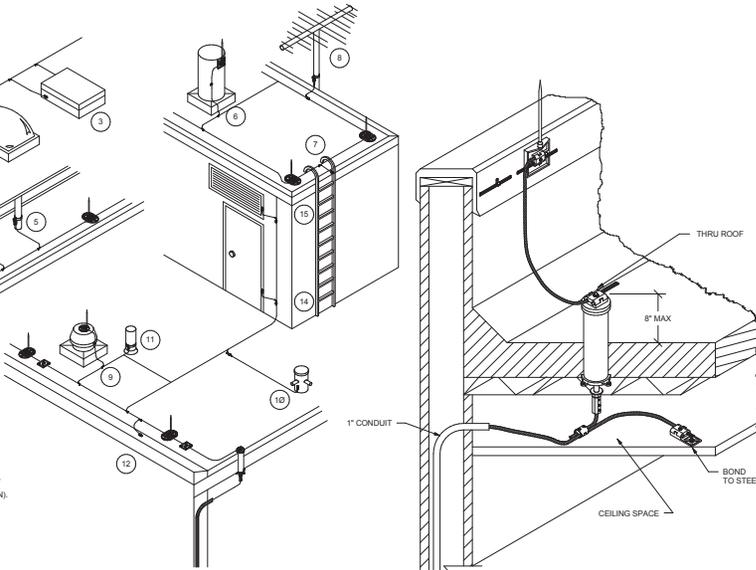
A4
EK501
GTC - 182Q CADWELD MOLD
NOT TO SCALE



NOTES

- ITEMS 1-10 ARE TYPICAL BODIES OF CONDUCTANCE AS NOTED BELOW. USE FULL SIZE CONDUCTOR AND APPROPRIATE FITTING SHOWN FOR CONNECTION.
- ITEM 11 (PLUMBING STACK) REQUIRES BONDING WITH MAIN SIZE CABLE ONLY IF WITHIN 6'-0" OF SYSTEM.
- ITEMS 12-15 ARE TYPICAL BODIES OF INDUCTANCE AS NOTED BELOW. USE SECONDARY SIZE SMALLER CONDUCTOR AND APPROPRIATE FITTING SHOWN FOR CONNECTION. ITEM 12 TYPICALLY OCCURS AT EACH DOWN-LEAD AND ROOF LEVEL CHANGE AS SHOWN.
- BONDING CONNECTIONS AND FITTINGS SHOWN ARE TYPICAL EXAMPLES - MAKE ALL CONNECTIONS REQUIRED TO MEET CODES AS NOTED BELOW. ADJUST FITTING TYPE AS REQUIRED TO SUIT FIELD CONDITIONS.

A1
EK501
BONDING DETAIL
NOT TO SCALE



GENERAL AND INSTALLATION NOTES (LPRO)

- LOCATE AIR TERMINALS AS SHOWN. TAKE CARE TO INSURE THAT ALL POINTS ARE WITHIN 2'-0" OF OUTSIDE BUILDING EDGE, OUTSIDE CORNERS, AND RIDGE ENDS, AND THAT MAXIMUM SPACING DOES NOT EXCEED 25'-0", AND THAT MINIMUM PROTECTION ABOVE OBJECT PROTECTED IS 10", (POINTS PROJECTING 24" MAY BE SPACED @ 25' MAX).
- MAINTAIN HORIZONTAL OR DOWNWARD CURSING OF MAIN CONDUCTOR AND INSURE THAT ALL BENDS HAVE AT LEAST AN 8" RADIUS AND DO NOT EXCEED 90 DEGREES.
- ATTACH ALL EXPOSED ROOF DOWNLEAD AND BONDING CABLES AT 3'-0" ON CENTER MAXIMUM. VERIFY COMPATIBILITY OF ADHESIVE ON MEMBRANE ROOF APPLICATION PRIOR TO INSTALLATION.
- BOND TO WATER SERVICE AND OTHER PIPING SYSTEMS AS SHOWN AND AS REQUIRED BY CODES.
- INTERCONNECT LIGHTNING PROTECTION GROUND TO ELECTRIC, TELEPHONE, AND OTHER BUILDING GROUND SYSTEMS AS SHOWN OR AS REQUIRED BY CODE.
- SYSTEM SHALL BE INSTALLED AS SHOWN TO INSURE PROPER CODE COMPLIANCE AND SYSTEM CERTIFICATION. ANY MAJOR VARIANCE SHALL ENTAIL RESUBMITAL AND NEW APPROVAL.
- *AS BUILT* DRAWINGS SHALL BE SUBMITTED IN ACCORDANCE WITH CERTIFICATION PROCEDURES.
- ALL MATERIALS TO BE UNDERWRITERS LABORATORIES APPROVED WITH "A" LABELS ON CONDUCTORS @ 10' 0" INTERVALS AND "B" LABELS ON ALL AIR TERMINALS.
- COMPLETED INSTALLATION AS SHOWN SHALL BEAR U.L. MASTER LABEL "C" TO BE SECURED BY SYSTEM INSTALLER PER UL96A.
- INSTALLATION SHALL COMPLY IN ALL RESPECTS TO L.P.J. CODE 175. INSTALLATION SHALL BE MADE OR UNDER THE SUPERVISION OF AN L.P.J. CERTIFIED MASTER INSTALLER.

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801-328-5151
fax: 801-328-5155
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PROFESSIONAL
No. 5497590-2202
Christopher H. Hays
REGISTERED ELECTRICAL ENGINEER
STATE OF UTAH
01/17/2014

SUNRISE ENGINEERING

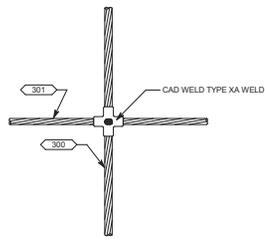
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OGDEN CITY

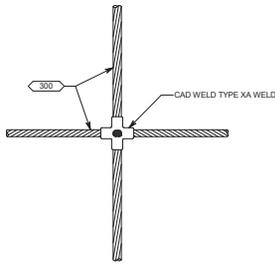
WATER TREATMENT PLANT RECONST. LIGHTNING PROT. DETAILS

REV. NO.	DESIGNED BY	DRAWN BY	CHECKED BY	SHEET NO.	TOTAL SHEETS
04655	ARB	ARB	ARB	229	241

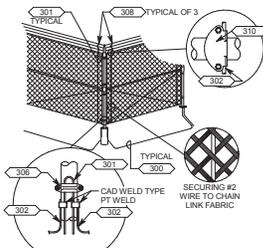
EK501



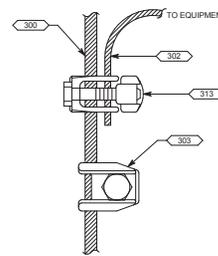
#2/0 - #4/0 B.C. CONNECTION
D3 EK502 NOT TO SCALE



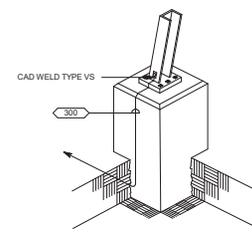
#2/0 - #2/0 B.C. CONNECTION
E3 EK502 NOT TO SCALE



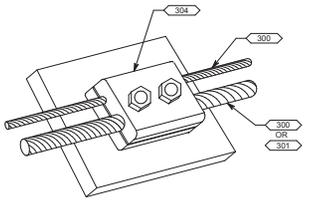
CORNER POST GROUNDING
D4 EK502 NOT TO SCALE



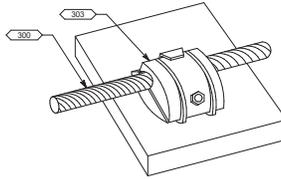
EQUIPMENT GROUNDING 2/0 RUN WITH #2 TAP
D6 EK502 NOT TO SCALE



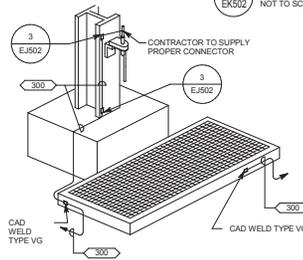
STRUCTURE BASE GROUNDING TERMINATION
E4 EK502 NOT TO SCALE



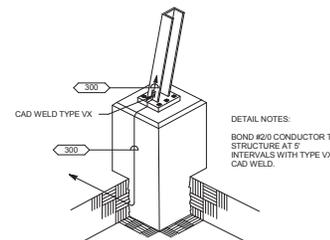
STRUCTURE GROUNDING - 4/0 OR 2/0 RUN WITH 2/0 TAP
C3 EK502 NOT TO SCALE



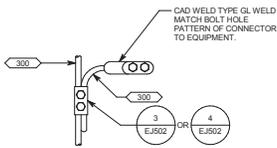
STRUCTURE GROUNDING - SINGLE RUN
C4 EK502 NOT TO SCALE



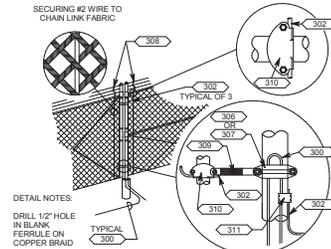
SWITCH HANDLE & PLATFORM GROUNDING
C5 EK502 NOT TO SCALE



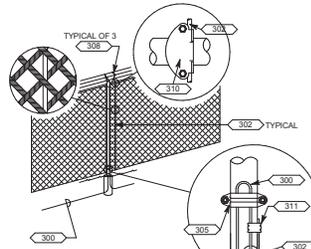
STRUCTURE BASE GROUNDING TRANSITION
E5 EK502 NOT TO SCALE



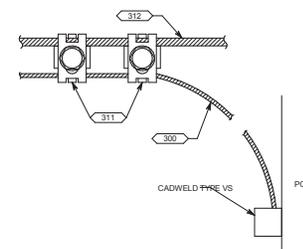
EQUIPMENT GROUNDING CONNECTION
B3 EK502 NOT TO SCALE



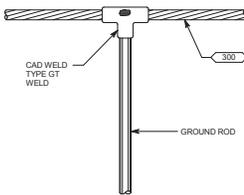
GATE POST GROUNDING
B4 EK502 NOT TO SCALE



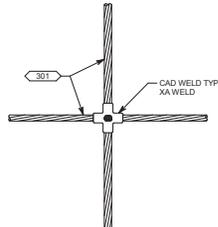
LINE POST GROUNDING
B5 EK502 NOT TO SCALE



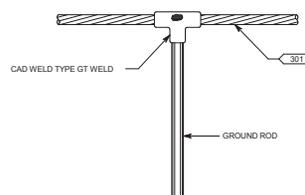
OH STATIC WIRE GROUNDING
B6 EK502 NOT TO SCALE



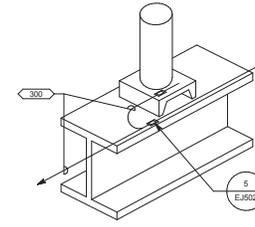
#2/0 B.C. - GROUND ROD CONNECTION
A3 EK502 NOT TO SCALE



#4/0 - #4/0 B.C. CONNECTION
A4 EK502 NOT TO SCALE



#4/0 B.C. - GROUND ROD CONNECTION
A5 EK502 NOT TO SCALE



CABLE TERMINATION, SURGE ARRESTOR, C.T. & P.T. GROUNDING
A6 EK502 NOT TO SCALE

GENERAL AND INSTALLATION NOTES (GROUNDING)

- GROUND ELECTRODES SHALL BE INSTALLED AS SHOWN BUT IN NO INSTANCE SHALL THEY BE LESS THAN 1'-0\"/>

GROUND GRID EQUIPMENT LIST				
EQUIP. NO.	QTY.	DESCRIPTION	MFG.	CATALOG NO.
300	AS REQ'D	# 2/0 AWG, STRANDED, SOFT DRAWN COPPER CONDUCTOR	TBD	TBD
301	AS REQ'D	# 4/0 AWG, STRANDED, SOFT DRAWN COPPER CONDUCTOR	TBD	TBD
302	AS REQ'D	# 2 AWG, SOLID, SOFT DRAWN COPPER CONDUCTOR THINNED OR 4/0 CABLE TO FLAT GALVANIZED STEEL HARDWARE	TBD	TBD
303	AS REQ'D	BRONZE GROUND CLAMP - 2/0 OR 3 CABLES TO 2-1/2\"/>	TBD	TBD
304	AS REQ'D	BRONZE GROUND CLAMP - 1.2 OR 3 CABLES TO 3\"/>	TBD	TBD
305	AS REQ'D	BRONZE GROUND CLAMP - 1.2 OR 3 CABLES TO 2-1/2\"/>	TBD	TBD
306	AS REQ'D	BRONZE GROUND CLAMP - 1.2 OR 3 CABLES TO 3\"/>	TBD	TBD
307	AS REQ'D	BRONZE GROUND CLAMP - 1.2 OR 3 CABLES TO 4\"/>	TBD	TBD
308	AS REQ'D	BRONZE PARALLEL CONNECTOR - SPLIT BOLT TYPE C, FOR #2 SOLID COPPER	TBD	TBD
309	AS REQ'D	FLEXIBLE COPPER GROUNDING BRAID	TBD	TBD
310	AS REQ'D	BRONZE GROUND CLAMP - 1 CABLE TO 1-3/4\"/>	TBD	TBD
311	AS REQ'D	BRONZE PARALLEL CONNECTOR - SINGLE CENTER BOLT TYPE ST	TBD	TBD
312	AS REQ'D	3/8\"/>	TBD	TBD
313	AS REQ'D	BRONZE PARALLEL CONNECTOR - TYPE RR WITH CABLE SEPARATOR 2/0 MAIN TO #2 TA	TBD	TBD
314	AS REQ'D	BRONZE TERMINAL - CABLE TO TWO-HOLE FLAT PAD	TBD	TBD
315	AS REQ'D	-	TBD	TBD
316	AS REQ'D	-	TBD	TBD
317	AS REQ'D	-	TBD	TBD
318	AS REQ'D	-	TBD	TBD
319	AS REQ'D	-	TBD	TBD
320	AS REQ'D	-	TBD	TBD

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OGDEN CITY WATER TREATMENT PLANT RECONST. GROUNDING DETAILS

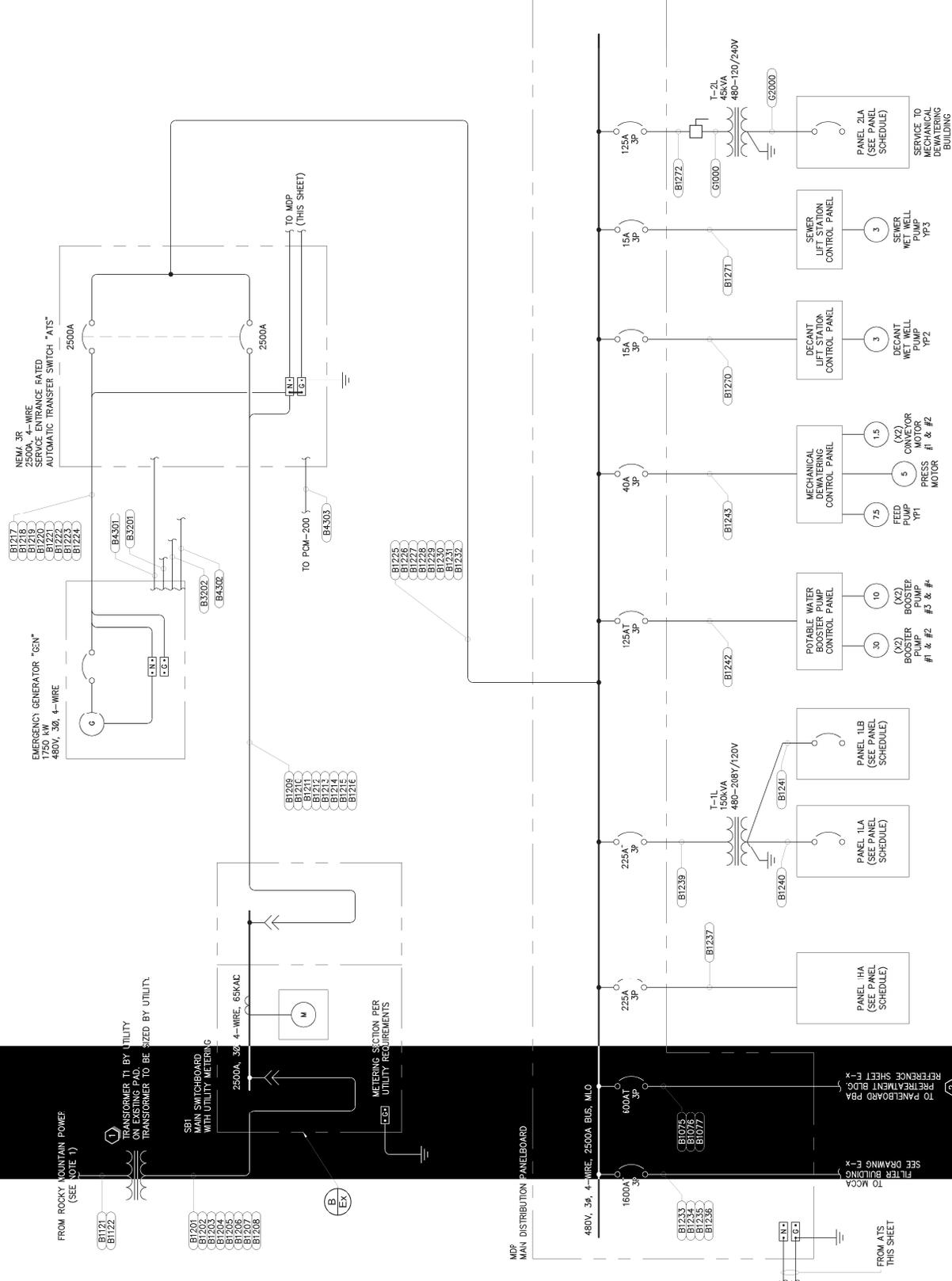
REV. NO.	APPROVED	DATE	REV. NO.	APPROVED	DATE
04655	ARB		230	ARB	241

GENERAL NOTES:

1. THE CONTRACTOR WILL BE RESPONSIBLE TO COORDINATE THE NEW SERVICE ENTRANCE INSTALLATION WITH ROCKY MOUNTAIN POWER PRIOR TO AND DURING CONSTRUCTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF CONDUIT AND PADS AS SHOWN ON THIS SHEET. THE CONTRACTOR SHALL PROVIDE AND INSTALL MAIN TRANSFORMER AND THE CONDUCTORS FROM THE TRANSFORMER TO THE METERING EQUIPMENT. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ROCKY MOUNTAIN POWER AND LATEST NEC REQUIREMENTS.
3. REFER TO CONDUIT SCHEDULE FOR CONDUIT SIZE, QUANTITY AND FILL.
4. THE SIZES OF SERVICE ENTRANCE CONDUCTORS AND CONDUITS ARE ESTIMATED. CONTRACTOR SHALL VERIFY ACTUAL REQUIREMENTS WITH UTILITY PRIOR TO CONSTRUCTION.

KEY NOTES:

1. CONTRACTOR SHALL PROVIDE AND INSTALL ALL ELECTRICAL FACILITIES IN ACCORDANCE WITH ROCKY MOUNTAIN POWER STANDARDS AND ALL OTHER APPLICABLE CODES.
2. CONNECT TO EXISTING CONDUIT SYSTEM TO PRETREATMENT BUILDING. SPlice TO EXISTING CONDUIT AT LOCATION SUITABLE TO FIELD CONDITIONS. PROVIDE AND INSTALL NEW CONDUIT AS SHOWN IN CONDUIT SCHEDULE.

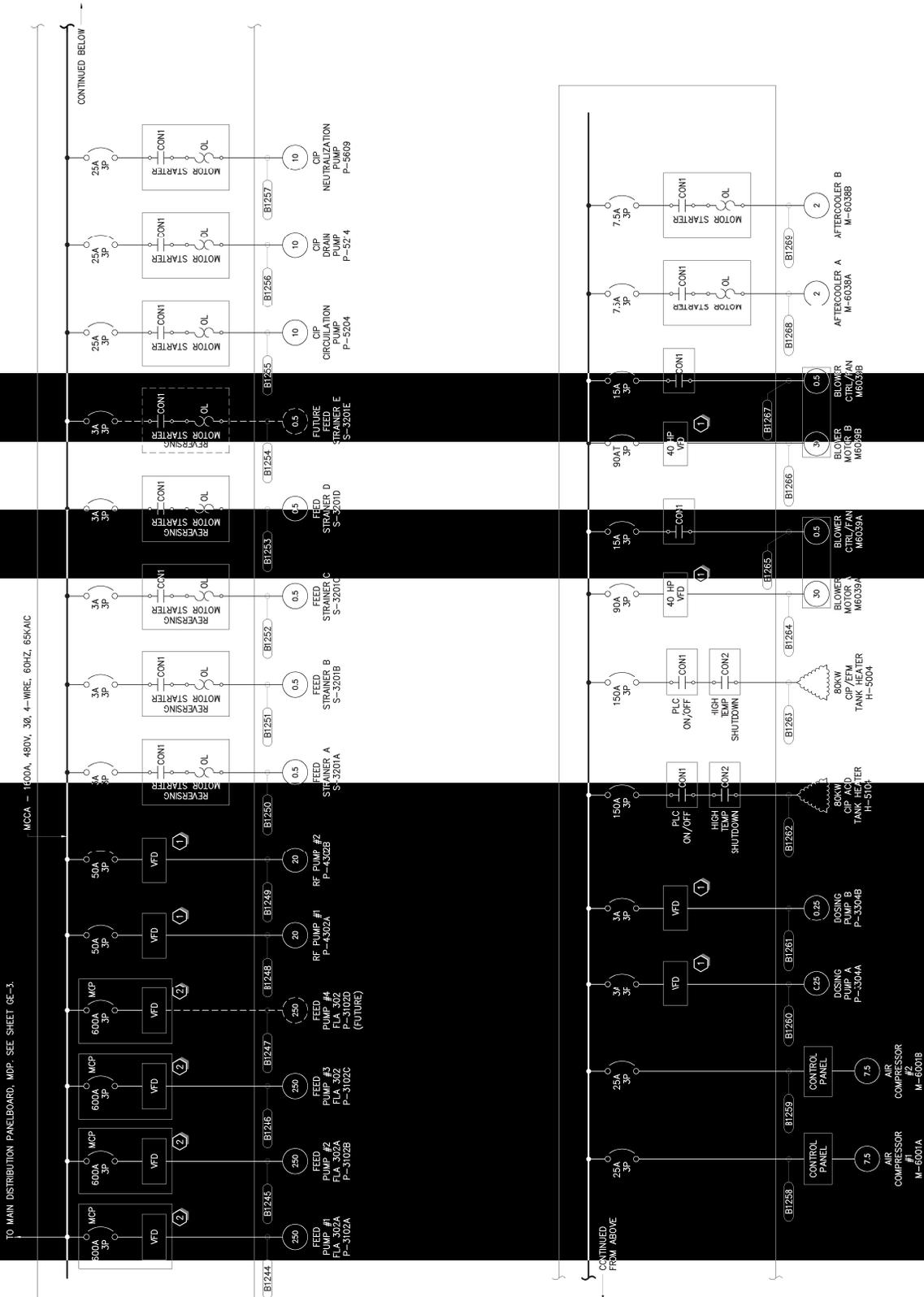


GENERAL NOTES:

1. THE CONTRACTOR WILL BE RESPONSIBLE TO COORDINATE THE NEW SERVICE ENTRANCE INSTALLATION WITH ROCKY MOUNTAIN POWER PRIOR TO AND DURING CONSTRUCTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF CONDUIT AND PADS AS SHOWN ON THIS DRAWING. ALL CONDUIT SHALL BE PROVIDED AND INSTALLED MAIN TRANSFORMER AND THE METERING EQUIPMENT. ALL WORK SHALL BE ACCORDING TO THE NATIONAL ELECTRICAL CODE AND ALL REQUIREMENTS.
3. REFER TO CONDUIT SCHEDULE FOR CONDUIT SIZE, QUANTITY AND FILL.

KEY NOTES

- ① VFD WILL BE SUPPLIED BY THE PROCESS EQUIPMENT PROVIDER. VFD SHALL BE FIELD INSTALLED BY ELECTRICAL CONTRACTOR. CONTRACTOR SHALL COORDINATE INSTALLATION WITH EQUIPMENT PROVIDER.
- ② VFD'S SHALL BE ALLEN BRADLEY SERIES 7 TO MATCH OTHER VFD'S BEING SUPPLIED BY THE PROCESS EQUIPMENT PROVIDER. COORDINATE WITH EQUIPMENT SUPPLIER.



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 WWW.SUNRISE-ENG.COM

ODGEN CITY
WATER TREATMENT PLANT RECONSTRUCTION
MAIN ELECTRIC SERVICE ONE-LINE DIAGRAM

REV. NO. 1
 DATE 10/23/2024
 DRAWN BY SWA/ESS
 CHECKED BY JPK
 DESIGNED BY JPK
 PROJECT NO. 2331-224

GE-3

GENERAL NOTES:

- CONTRACTOR SHALL INSTALL CONDUITS AND CONDUCTORS AS INDICATED IN THE CONDUIT AND CONDUCTOR SCHEDULE AND IN THE PLANS. CONTRACTOR SHALL NOT COMBINE CONDUITS AND CIRCUITS WITHOUT PERMISSION.

CONDUIT AND CONDUCTOR SCHEDULE

CONDUIT TAG	DESCRIPTION	ROUTING		CONDUIT		CONDUCTORS (CU) PER C.		VOLTAGE	REMARKS OR REFERENCE DRAWING
		FROM	TO	QTY	SIZE	(QTY) & SIZE	END		
B1201	UTILITY SERVICE TO TRANSFORMER	UTILITY SOURCE	UTILITY TRANSFORMER	1				12.47KV	SERVICE TO BE PULLED INTO EXISTING CONDUIT. UTILITY TO VERIFY.
B1202	UTILITY SERVICE TO TRANSFORMER	UTILITY SOURCE	UTILITY TRANSFORMER	1				12.47KV	SERVICE TO BE PULLED INTO EXISTING CONDUIT. UTILITY TO VERIFY.
B1203	SERVICE TO BACKPOINT PVB	MDP	BACKPOINT PVB CONTROL PANEL	1	1"	(2) #6 AWG	#1	480	
B1204	SERVICE TO PANELBOARD "PBA"	MDP	PBA	1	2"	(3) #5/0 AWG	#1	480	PBA LOCATED IN PRETREATMENT BUILDING
B1205		MDP	PBA	1	2"	(3) #5/0 AWG	#1	480	
B1206		MDP	PBA	1	2"	(3) #5/0 AWG	#1	480	
B1207	SERVICE TO METERING SWITCHBOARD "SBI"	UTILITY TRANSFORMER	UTILITY TRANSFORMER	1	3"	(3) 500 ECML	#1/0	480	
B1208		UTILITY TRANSFORMER	UTILITY TRANSFORMER	1	3"	(3) 500 ECML	#1/0	480	
B1209	UTILITY SERVICE TO AUTOMATIC TRANSFER SWITCH "ATS"	SBI	ATS	1	3"	(3) 500 ECML	#1/0	480	CONDUIT AND CONDUCTOR SIZED ESTIMATED. COORDINATE ACTUAL REQUIREMENTS WITH UTILITY PRIOR TO PROCUREMENT AND INSTALLATION.
B1210		SBI	ATS	1	3"	(3) 500 ECML	#1/0	480	SPARE CONDUIT
B1211		SBI	ATS	1	3"	(3) 500 ECML	#1/0	480	
B1212		SBI	ATS	1	3"	(3) 500 ECML	#1/0	480	
B1213		SBI	ATS	1	3"	(3) 500 ECML	#1/0	480	
B1214		SBI	ATS	1	3"	(3) 500 ECML	#1/0	480	
B1215		SBI	ATS	1	3"	(3) 500 ECML	#1/0	480	
B1216		SBI	ATS	1	3"	(3) 500 ECML	#1/0	480	
B1217	GENERATOR SERVICE TO AUTOMATIC TRANSFER SW. "ATS"	GENERATOR	ATS	1	3"	(3) 500 ECML	#1/0	480	
B1218		GENERATOR	ATS	1	3"	(3) 500 ECML	#1/0	480	
B1219		GENERATOR	ATS	1	3"	(3) 500 ECML	#1/0	480	
B1220		GENERATOR	ATS	1	3"	(3) 500 ECML	#1/0	480	
B1221		GENERATOR	ATS	1	3"	(3) 500 ECML	#1/0	480	
B1222		GENERATOR	ATS	1	3"	(3) 500 ECML	#1/0	480	
B1223		GENERATOR	ATS	1	3"	(3) 500 ECML	#1/0	480	
B1224		GENERATOR	ATS	1	3"	(3) 500 ECML	#1/0	480	
B1225	SERVICE TO MAIN DISTRIBUTION PANEL "MDP"	MDP	MDP	1	3"	(3) 500 ECML	#1/0	480	SPARE CONDUIT
B1226		MDP	MDP	1	3"	(3) 500 ECML	#1/0	480	
B1227		MDP	MDP	1	3"	(3) 500 ECML	#1/0	480	
B1228		MDP	MDP	1	3"	(3) 500 ECML	#1/0	480	
B1229		MDP	MDP	1	3"	(3) 500 ECML	#1/0	480	
B1230		MDP	MDP	1	3"	(3) 500 ECML	#1/0	480	
B1231		MDP	MDP	1	3"	(3) 500 ECML	#1/0	480	
B1232		MDP	MDP	1	3"	(3) 500 ECML	#1/0	480	
B1233		MCCA	MCCA	1	4"	(3) 600 ECML	#2	480	
B1234	SERVICE TO "MCCA"	MCCA	MCCA	1	4"	(3) 600 ECML	#2	480	
B1235		MCCA	MCCA	1	4"	(3) 600 ECML	#2	480	
B1236		MCCA	MCCA	1	4"	(3) 600 ECML	#2	480	
B1237	SERVICE TO PANEL "IHA"	MDP	PANEL IHA	1	2"	(3) #4/0 AWG	#4	480	NOT USED
B1238		MDP	TRANSFORMER T-1L	1	2"	(3) #4/0 AWG	#4	480	
B1239	SERVICE TO TRANSFORMER "T-1L"	T-1L	PANEL TLA	1	2"	(3) #4/0 AWG	#2	480	
B1240	SERVICE TO PANEL "TLA"	T-1L	PANEL TLA	1	2"	(3) #4/0 AWG	#2	480	
B1241	POTABLE WATER BOOSTER STATION	MDP	POTABLE WATER DISCONNECT SW.	1	2"	(3) #4/0 AWG	#5	480	LOCATED IN MECHANICAL DEWATERING BUILDING
B1242		MDP	POTABLE WATER DISCONNECT SW.	1	2"	(3) #4/0 AWG	#5	480	
B1243	MECHANICAL DEWATERING	MCCA	MECH DEWATERING DISCONNECT SW.	1	1"	(3) #2 AWG	#10	480	
B1244	FEED PUMP #1	MCCA	FEED PUMP #1 MOTOR	1	4"	(3) 500 kcmil	#1	480	
B1245	FEED PUMP #2	MCCA	FEED PUMP #2 MOTOR	1	4"	(3) 500 kcmil	#1	480	
B1246	FEED PUMP #3	MCCA	FEED PUMP #3 MOTOR	1	4"	(3) 500 kcmil	#1	480	
B1247	FEED PUMP #4	MCCA	FEED PUMP #4 MOTOR	1	4"	(3) 500 kcmil	#1	480	
B1248	RF PUMP #1	MCCA	RF PUMP MOTOR	1	3/4"	(3) #8 AWG	#10	480	FUTURE. PROVIDE CONDUIT ONLY
B1249	RF PUMP #2	MCCA	RF PUMP MOTOR	1	3/4"	(3) #8 AWG	#10	480	
B1250	FEED STRAINER 'A'	MCCA	FEED STRAINER MOTOR	1	3/4"	(3) #12 AWG	#12	480	
B1251	FEED STRAINER 'B'	MCCA	FEED STRAINER MOTOR	1	3/4"	(3) #12 AWG	#12	480	
B1252	FEED STRAINER 'C'	MCCA	FEED STRAINER MOTOR	1	3/4"	(3) #12 AWG	#12	480	
B1253	FEED STRAINER 'D'	MCCA	FEED STRAINER MOTOR	1	3/4"	(3) #12 AWG	#12	480	
B1254	FEED STRAINER 'E'	MCCA	FEED STRAINER MOTOR	1	3/4"	(3) #12 AWG	#12	480	
B1255	CIP CIRCULATION PUMP	MCCA	CIP CIRCULATION MOTOR	1	3/4"	(3) #12 AWG	#12	480	FUTURE. PROVIDE CONDUIT ONLY
B1256	CIP DRAIN PUMP	MCCA	CIP DRAIN MOTOR	1	3/4"	(3) #12 AWG	#12	480	
B1257	CIP NEUTRALIZATION PUMP	MCCA	CIP NEUTRALIZATION PUMP	1	3/4"	(3) #12 AWG	#12	480	
B1258	AIR COMPRESSOR #1 SKID	MCCA	AIR COMPRESSOR #1	1	3/4"	(3) #12 AWG	#12	480	
B1259	AIR COMPRESSOR #2 SKID	MCCA	AIR COMPRESSOR #2	1	3/4"	(3) #12 AWG	#12	480	
B1260	DOSING PUMP 'A'	MCCA	DOSING PUMP 'A'	1	3/4"	(3) #12 AWG	#12	480	
B1261	DOSING PUMP 'B'	MCCA	DOSING PUMP 'B'	1	3/4"	(3) #12 AWG	#12	480	

SCHEDULE-CONDUIT AND CONDUCTOR SCHEDULE

NS

REV. NO. COMMENT DATE



SUNRISE ENGINEERING
 12222 S. BUSINESS PARK DR. SUITE 200
 DAPER, UTAH 84008
 WWW.SUNRISE-ENG.COM TEL: 801.533.0999

OGDEN CITY

WATER TREATMENT PLANT RECONSTRUCTION
MAIN ELECTRIC SERVICE
CONDUIT & CONDUCTOR SCHEDULE

REV. NO. 1
 DATE 12/23/2023
 DRAWN BY JRK
 CHECKED BY JRK
 DESIGNED BY JRK
 PROJECT NO. 234-1224
GE-4

GENERAL NOTES:

- CONTRACTOR SHALL INSTALL CONDUITS AND CONDUCTORS AS INDICATED IN THE CONDUIT AND CONDUCTOR SCHEDULE AND IN THE PLANS. CONTRACTOR SHALL NOT COMBINE CONDUITS AND CIRCUITS WITHOUT PERMISSION.

CONDUIT AND CONDUCTOR SCHEDULE

CONDUIT TAG	DESCRIPTION	FROM	TO	QUANTITY	SIZE	CONDUCTORS (CU) PER C.	VOLTAGE	REMARKS OR REFERENCE DRAWING
B1262	CIP ACID TANK HEATER	MCCA	CIP ACID TANK HEATER	1	1-1/2"	(3) #2/0 AWG #6	480	
B1263	CIP/EPM CAUSTIC TANK HEATER	MCCA	CIP/EPM CAUSTIC TANK HEATER	1	1-1/2"	(3) #2/0 AWG #6	480	
B1264	BLOWER MOTOR 'A'	MCCA	AFTERCOOLER 'A' MOTOR	1	1"	(3) #6 AWG #6	480	
B1265	BLOWER MOTOR 'A'	MCCA	BLOWER 'B' CONTROL/FAN	1	3/4"	(3) #12 AWG #12	480	
B1266	BLOWER MOTOR 'B'	MCCA	BLOWER MOTOR 'B'	1	1"	(3) #6 AWG #6	480	
B1267	BLOWER MOTOR 'B'	MCCA	BLOWER 'A' CONTROL/FAN	1	3/4"	(3) #12 AWG #12	480	
B1268	AFTERCOOLER 'A'	MCCA	AFTERCOOLER 'A' MOTOR	1	3/4"	(3) #12 AWG #12	480	
B1269	AFTERCOOLER 'B'	MCCA	AFTERCOOLER 'B' MOTOR	1	3/4"	(3) #12 AWG #12	480	
B1270	DECANT LIFT STATION SERVICE	MDP	DECANT LIFT STATION CTRL PANEL	1	1"	(3) #6 AWG #10	480	LOCATED SOUTH OF MECH DEWATERING BUILDING
B1271	SEWER LIFT STATION SERVICE	MDP	SEWER LIFT STATION CTRL PANEL	1	1"	(3) #10 AWG #12	480	LOCATED SOUTH OF NEW FILTER BUILDING
B1272	480V SERVICE TO MECHANICAL DEWATERING SERVICE TO EXISTING RWM PUMP STATION AREA	MDP	MECH DEWATERING SAFETY SW.	1	1-1/2"	(2) #1 AWG #6	480	
B1273	SERVICE TO EXISTING RWM PUMP STATION AREA	THB	RWM PUMP CONTROL PANEL	1	1"	(3) #6 AWG #10 (2) #10 AWG	480	PUMP P-004, RECEPTACLE
B2000	SERVICE TO EXISTING RWM PUMP STATION AREA	PANEL 11B	RWM LIGHTING - JUNCTION BOX	1	1"	(2) #10 AWG #10	277	535 W
B3014	SERVICE TO EXISTING METER BOX ON WEST END	PANEL 11B	METER BOX P-722	1	1"	(2) #6 AWG #12	120	1176 W
B3201	GENERATOR BLOCK HEATER	PANEL 11B	GENERATOR	1	1"	(2) #6 AWG #10	208	
B3202	GENERATOR BATTERY CHARGER	PANEL 11B	GENERATOR	1	1"	(2) #12 AWG #12	120	
B3203	OUTSIDE LIGHTING	PANEL 11A	LIGHTING - JUNCTION BOX	1	1"	(2) #10 AWG #10	277	
B3204	OUTSIDE LIGHTING	LIGHTING JUNCTION BOX	LIGHT FIXTURE	1	1"	(2) #10 AWG #10	277	
B3205	POWER TO EXTERIOR MOTORIZED GATE	PANEL 11A	MOTORIZED GATE - JUNCTION BOX	1	1"	(2) #12 AWG #12	120	
B3211	MF RACK #1 PS	MAIN CONTROL PANEL (3Y PALL)	RACK #1 POWER SUPPLY	1	3/4"	6C #14 AWG #14	120	
B3212	MF RACK #2 PS	MAIN CONTROL PANEL (3Y PALL)	RACK #2 POWER SUPPLY	1	3/4"	6C #14 AWG #14	120	
B3213	MF RACK #3 PS	MAIN CONTROL PANEL (3Y PALL)	RACK #3 POWER SUPPLY	1	3/4"	6C #14 AWG #14	120	
B3214	MF RACK #4 PS	MAIN CONTROL PANEL (3Y PALL)	RACK #4 POWER SUPPLY	1	3/4"	6C #14 AWG #14	120	1176 W
B3215	MF RACK #5 PS	MAIN CONTROL PANEL (3Y PALL)	RACK #5 POWER SUPPLY	1	3/4"	6C #14 AWG #14	120	
B3216	MF RACK #6 PS	MAIN CONTROL PANEL (3Y PALL)	RACK #6 POWER SUPPLY	1	3/4"	6C #14 AWG #14	120	
B3217	MF RACK #7 PS	MAIN CONTROL PANEL (3Y PALL)	RACK #7 POWER SUPPLY	1	3/4"	6C #14 AWG #14	120	
B3218	MF RACK #8 PS	MAIN CONTROL PANEL (3Y PALL)	RACK #8 POWER SUPPLY	1	3/4"	6C #14 AWG #14	120	
B3219	MF RACK #9 PS	MAIN CONTROL PANEL (3Y PALL)	RACK #9 POWER SUPPLY	1	3/4"	6C #14 AWG #14	120	
B3220	FEED AREA PS	MAIN CONTROL PANEL (3Y PALL)	FEED AREA POWER SUPPLY	1	3/4"	3C #14 AWG #14	120	
B3221	CIP AREA PS	MAIN CONTROL PANEL (3Y PALL)	CIP AREA POWER SUPPLY	1	3/4"	3C #14 AWG #14	120	
B3222	CIP YEFE AREA PS	MAIN CONTROL PANEL (3Y PALL)	CIP YEFE AREA POWER SUPPLY	1	3/4"	3C #14 AWG #14	120	
B3223	CIP CIRC AREA PS	MAIN CONTROL PANEL (3Y PALL)	CIP CIRC AREA POWER SUPPLY	1	3/4"	8C #14 AWG #14	120	
B3224	120 VAC TO PALL CONTROL CABINET	PANEL 11A	PALL CONTROL CABINET	1	3/4"	(2) #12 AWG #12	120	
B3225	120 VAC TO CHLORINE PUMP	PANEL 11A	CHLORINE PUMP	1	3/4"	(2) #12 AWG #12	120	
B3226	120 VAC TO PDM-200	PANEL 11A	PDM-200	1	3/4"	(2) #12 AWG #12	120	

SCHEDULE-CONDUIT AND CONDUCTOR SCHEDULE



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J. RANDALL KNAPP
 PROFESSIONAL ENGINEER
 STATE OF UTAH
 LICENSE NO. 38331

OGDEN CITY
WATER TREATMENT PLANT RECONSTRUCTION
MAIN ELECTRIC SERVICE CONDUIT AND CONDUCTOR SCHEDULE
 SHEET NO. **GE-5**
 DATE: 12/23/24
 DRAWN BY: JRK
 CHECKED BY: JRK
 DESIGNED BY: JRK

GENERAL NOTES:

- CONTRACTOR SHALL INSTALL CONDUITS AND CONDUCTORS AS INDICATED IN THE CONDUIT AND CONDUCTOR SCHEDULE AND IN THE PLANS. CONTRACTOR SHALL NOT COMBINE CONDUITS AND CIRCUITS WITHOUT PERMISSION.

CONDUIT AND CONDUCTOR SCHEDULE

CONDUIT TAG	DESCRIPTION	FROM	TO	CONDUIT QTY	SIZE	CONDUCTORS (CU) PER C.	VOLTAGE	REMARKS OR REFERENCE DRAWING
B4084	SAMPLER TO ANALYZER PANEL	TO BE DETERMINED	METER BOX P-722	1	1"	(2) #2 AWG	CTRL	COORDINATE WITH OWNER FOR CONNECTION TO NEW SYSTEM
B4085	EXISTING RWV SERVICE AREA	MDP	EXISTING CONDUIT SYSTEM	1	1"		CTRL	SPARE
B4089	METER BOX P-722 CONTROLS	LCP-2 AT METER BOX LOCATION		1	1-1/2"	(8) BELDEN 8719	CTRL	COORDINATE WITH OWNER FOR CONNECTION TO NEW SYSTEM
B4105	FILTER BUILDING TO PRETREATMENT BLDG. (PB) CONTROL	POM-200 (FILTER BLDG. CTRL RM.)	POM-300 IF PB ELECTRICAL RM.	1	2	(2) DATA HIGHWAY	CTRL	MATCH AND CONNECT TO EX. CABLING.
B4107	FILTER BUILDING TO PRETREATMENT BLDG. (PB) CONTROL	POM-200 (FILTER BLDG. CTRL RM.)	POM-300 IF PB ELECTRICAL RM.	1	2	MATCH EXISTING	CTRL	SPARE. RECONNECT TO EXISTING CONDUIT
B4110	FILTER BUILDING TO PRETREATMENT BLDG. (PB) CONTROL	POM-200 (FILTER BLDG. CTRL RM.)	POM-300 IF PB ELECTRICAL RM.	1	2	MATCH EXISTING	CTRL	MATCH AND CONNECT TO EX. CABLING FOR EXISTING SECURITY
B4115	PRETREATMENT BUILDING COMMUNICATIONS	FILTER BUILDING SERVER ROOM	PB ELEC. RM. TELECOM ENCLOSURE	1	2	MATCH EXISTING	CTRL	MATCH AND CONNECT TO EX. CABLING FOR TELECOM
B4301	GENERATOR CONTROL	GENERATOR	AUTOMATIC TRANSFER SWITCH	1	1"	10C #14 AWG	CTRL	
B4302	GENERATOR CONTROL	GENERATOR	CONTROL PANEL POM-200	1	1"	10C #14, (2) #18 TSP	CTRL	TO BE DETERMINED
B4303	AUTOMATIC TRANSFER SWITCH CONTROL	AUTOMATIC TRANSFER SWITCH	CONTROL PANEL POM-200	1	1"	(2) CAT6+, (2) #18 TSP	CTRL	TO BE DETERMINED
B4304	NETWORK TO MECHANICAL DEWATERING	MECH. LEAWATERING BLDG.	SERVER ROOM	1	1"	(6) CA 6+	CTRL	3-SPARE CAT6+
B4305	CONTROL TO MECHANICAL DEWATERING	MECH. LEAWATERING BLDG.	MAIN CONTROL PANEL (BY PALL)	1	1"		CTRL	SPARE CONDUIT
B4306	CONTROL TO MECHANICAL DEWATERING	MECH. LEAWATERING BLDG.	FIRE ALARM CONTROL PANEL	1	1"		CTRL	COORDINATE WITH FACP PROVIDER
B4307	CONTROL TO MECHANICAL DEWATERING	MECH. LEAWATERING BLDG.	FIRE ALARM CONTROL PANEL	1	1"		CTRL	COORDINATE WITH FACP PROVIDER
B4308	CONTROL TO BEGANT LIFT STATION	BEGANT LIFT STATION CTRL PANEL	POM-200	1	1"		CTRL	SPARE CONDUIT
B4309	CONTROL TO SEWER LIFT STATION	SEWER LIFT STATION CTRL PANEL	POM-200	1	1"		CTRL	SPARE CONDUIT
B4311	MF RACK #1 COMMUNICATIONS	MAIN CONTROL PANEL (BY PALL)	RACK #1	1	3/4"	(1) CA 6+	CTRL	
B4312	MF RACK #2 COMMUNICATIONS	MAIN CONTROL PANEL (BY PALL)	RACK #2	1	3/4"	(1) CA 6+	CTRL	
B4313	MF RACK #3 COMMUNICATIONS	MAIN CONTROL PANEL (BY PALL)	RACK #3	1	3/4"	(1) CA 6+	CTRL	
B4314	MF RACK #4 COMMUNICATIONS	MAIN CONTROL PANEL (BY PALL)	RACK #4	1	3/4"	(1) CA 6+	CTRL	
B4315	MF RACK #5 COMMUNICATIONS	MAIN CONTROL PANEL (BY PALL)	RACK #5	1	3/4"	(1) CA 6+	CTRL	
B4316	MF RACK #6 COMMUNICATIONS	MAIN CONTROL PANEL (BY PALL)	RACK #6	1	3/4"	(1) CA 6+	CTRL	
B4317	MF RACK #7 COMMUNICATIONS	MAIN CONTROL PANEL (BY PALL)	RACK #7	1	3/4"	(1) CA 6+	CTRL	
B4318	MF RACK #8 COMMUNICATIONS	MAIN CONTROL PANEL (BY PALL)	RACK #8	1	3/4"	(1) CA 6+	CTRL	
B4319	MF RACK #9 COMMUNICATIONS	MAIN CONTROL PANEL (BY PALL)	RACK #9	1	3/4"	(1) CA 6+	CTRL	
B4320	FEED AREA	MAIN CONTROL PANEL (BY PALL)	FEED AREA	1	3/4"	(1) CA 6+	CTRL	
B4321	CIP AREA	MAIN CONTROL PANEL (BY PALL)	FEED AREA	1	3/4"	(1) CA 6+	CTRL	
B4322	CIP XEER AREA	MAIN CONTROL PANEL (BY PALL)	CIP XEER AREA	1	3/4"	(1) CA 6+	CTRL	
B4323	CIP CIRC. AREA PS	MAIN CONTROL PANEL (BY PALL)	CIP XEER AREA	1	3/4"	(1) CA 6+	CTRL	
B4324	AIR COMPRESSOR AREA	MAIN CONTROL PANEL (BY PALL)	MDP	1	3/4"	(3) #18 TSP (2) #14 AWG	CTRL	
B4325	AIR COMPRESSOR AREA	MAIN CONTROL PANEL (BY PALL)	AIR COMPRESSORS	1	3/4"	(1) BELDEN 031A	CTRL	
B4326	AIR COMPRESSOR AREA	MAIN CONTROL PANEL (BY PALL)	AIR COMPRESSORS	1	3/4"	3C #18 AWG	CTRL	
B4327	TANK HEATER THERMOCOUPLE	MAIN CONTROL PANEL (BY PALL)	AIR COMPRESSORS	1	3/4"	(12) #16 AWG	CTRL	
B4328	FEED STRAINER LIMIT SWITCH CONTACTS	MAIN CONTROL PANEL (BY PALL)	CIP CHEMICAL TANKS	1	3/4"	(2) BELDEN 3112A	CTRL	
B4329	CLEARWELL TANK LIMIT SWITCH	MAIN CONTROL PANEL (BY PALL)	FEED STRAINER SKID	1	1-1/2"	(4) 4C #18	CTRL	
B4330	PLANT SCADA/PALL CONNECT	MAIN CONTROL PANEL (BY PALL)	CLEARWELL TANK	1	3/4"	(1) #18 TSP, (2) #16 AWG	CTRL	
B4331	HMI PC	MAIN CONTROL PANEL (BY PALL)	POM-200	1	3/4"	(1) BELDEN 7851A	CTRL	
B4332	DISCRETE I/O MCC	MAIN CONTROL PANEL (BY PALL)	OFFICE DESK AREA	1	3/4"	(1) BELDEN 7851A	CTRL	
B4333	ETHERNET TO MCC CONNECT	MAIN CONTROL PANEL (BY PALL)	MCCA	1	1"	(12) #14 AWG	CTRL	
B4334	DISCRETE I/O MCC TO POM-200	MAIN CONTROL PANEL (BY PALL)	MCCA	1	3/4"	(1) BELDEN 7851A	CTRL	
G1000	480V SERVICE TO MECHANICAL DEWATERING BLDG.	MECH DEWATERING BLDG. SAFETY SW.	TRANSFORMER T-2L	1	1-1/2"	(2) #1 AWG	#6	MECHANICAL DEWATERING BUILDING
G1001	480V SERVICE TO MECHANICAL DEWATERING CTR. PANEL	MECH DEWATERING PANEL SAFETY SW.	MECH DEWATERING CTR. PANEL	1	3/4"	(3) #2 AWG	#6	MECHANICAL DEWATERING BUILDING
G1002	480V SERVICE TO POTABLE WATER PUMP STATION	POTABLE WATER PANEL SAFETY SW.	POTABLE WATER PUMP CTR. PANEL	1	1-1/2"	(3) #1 AWG	#6	MECHANICAL DEWATERING BUILDING
G2000	120/240V SERVICE TO MECH. DEWATERING BLDG.	TRANSFORMER T-2L	PANEL 21A	1	3"	(3) #2 AWG	#6	MECHANICAL DEWATERING BUILDING

SCHEDULE-CONDUIT AND CONDUCTOR SCHEDULE



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STATE OF UTAH
LICENSE NO. 36523



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ODGEN CITY

WATER TREATMENT PLANT RECONSTR.
MAIN ELECTRIC SERVICE
ELECTRICAL NOTES AND SYMBOLS

REV. NO. | COMMENTS | DATE

SW4655 | JRK | 05/04/23

JRK

EXISTING
PRETREATMENT BUILDING

E3

PROPOSED
FILTER BUILDING

HWY 39

OGDEN RIVER

PROPOSED
MECHANICAL DEWATERING
BUILDING

E2



SCALE
0 40 80
HORIZ: 1" = 40' 22x34
VERT: 1" = 80' 11x17



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WWW.SUNRISE-ENG.COM

REV. NO. COMMENT DATE
DATE

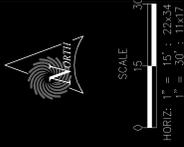
OGDEN CITY
WATER TREATMENT PLANT RECONSTR.
ELECTRICAL SERVICE
ELECTRICAL SITE PLAN OVERVIEW

DESIGNED BY: JRK
CHECKED BY: JRK
DATE: 12/17/24
E-1

P:\ogden city\water\ogden treatment plant\electrical\ogden treatment plant\overview.dwg (July 11, 2014 2:35pm) mknapp

EQUIPMENT SCHEDULE

ITEM #	DESCRIPTION	QUANTITY	MODEL #	MANUFACTURE	FURNISHED BY	COMMENTS
①	HD DISCONNECT SWITCH, 30A, 3-POLE, NEMA 3R	1	HU361RE	SQUARE-D, OR APPROVED EQUAL	CONTRACTOR	SERVICE TO DECANT WELL



GENERAL NOTES:

- THE CONTRACTOR IS RESPONSIBLE FOR ALL TRENCHING, BACKFILL AND COMPACTION. INSTALLATION OF CONDUIT FROM ROCKY MOUNTAIN POWER POLE TO METER, ROCKY MOUNTAIN POWER METER AND INSTALLATION OF CONDUCTORS FROM EXISTING TRANSFORMER TO METER.
- THE CONTRACTOR WILL BE RESPONSIBLE TO LOCATE ALL NEW AND OR EXISTING UNDERGROUND UTILITIES BEFORE ANY EXCAVATION IS PERFORMED. ANY DAMAGE TO EXISTING UTILITIES SHALL BE IMMEDIATELY REPAIRED TO NEW CONDITION OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- CONDUIT ROUTING SHOWN IS DIAGRAMATIC. CONTRACTOR SHALL FIELD ROUTE AS NECESSARY DEPENDING ON EXISTING CONDITIONS AND TO AVOID OBSTACLES.

KEY NOTES

- EXISTING CONDUITS BETWEEN ELECTRIC HANDHOLE AND BUILDING SHALL BE REMOVED. REUSE OF ABANDONED CONDUITS SHOWN IN DRAWINGS AND CONDUIT SCHEDULE.
- LOCATE CONDUIT B074 FOR POWER TO EXISTING METER. LOCATE CONDUIT B074 NEW CONDUCTOR FOR PRV SERVICE FROM MOP TO THIS LOCATION PER CONDUIT SCHEDULE AND SPLICE TO EXISTING CONDUCTOR IN VAULT.
- CONTINUATION OF CONDUIT B1074, CONDUIT TO BE INSTALLED UNDER SEPARATE CONTRACT. CONTRACTOR SHALL VERIFY ACQUISITION OF ALL NECESSARY PERMITS FOR THE CONSTRUCTION AND COORDINATE.
- OVERFLOW STRUCTURE. LEVEL SENSOR TO REMAIN IN USE.
- PUMP P-904 TO REMAIN. REROUT CONDUIT AND CONDUCTOR FROM EXISTING CONTROL PANEL TO NEW FILTER BUILDING AS SHOWN.
- CONDUIT B2000 TO BE ABANDONED. REMOVE AND DISCARD EXISTING CONDUCTOR.
- EQUIPMENT LOCATED IN EXISTING METER BOX TO REMAIN IN SERVICE. ROUTE EXISTING CONDUITS AND CONDUCTORS TO NEW FILTER BUILDING AS INDICATED IN DRAWINGS AND CONDUIT SCHEDULE.
- INSTALL BUILDING GROUND BUS. FIELD LOCATE TO AVOID OBSTACLES AND EQUIPMENT. PROVIDE BARE #4/0 AWG. SLEEVE INTO BUILDING. BOND TO GROUNDING ELECTRODE SYSTEM IN FILTER BUILDING.

- ① B1065
- B1074
- B2000
- B2000
- B3016
- B4076
- B4083
- B4089
- B4089
- B4089

- B3014
- B3015
- B4088
- B4088
- B4226

- B1273
- ⑤
- B1270
- B4308
- B2000
- B4090

- ⑥
- ④
- ④

- ②
- ③

- EXISTING HANDHOLE
- EXISTING POLE
- EXISTING VAULT
- EXISTING HANDHOLE
- DECANT LIFT STATION
- PROPOSED MECHANICAL DEWATERING BUILDING
- EXISTING MECHANICAL DEWATERING BUILDING (P-904)
- GROUND BUS
- SEE DRAWING E-6 FOR MECHANICAL DEWATERING CONDUIT IDENTIFICATION.
- SEE DRAWING E-5 FOR MECHANICAL DEWATERING ELECTRICAL SERVICE PLAN

REV. NO. COMMENT DATE

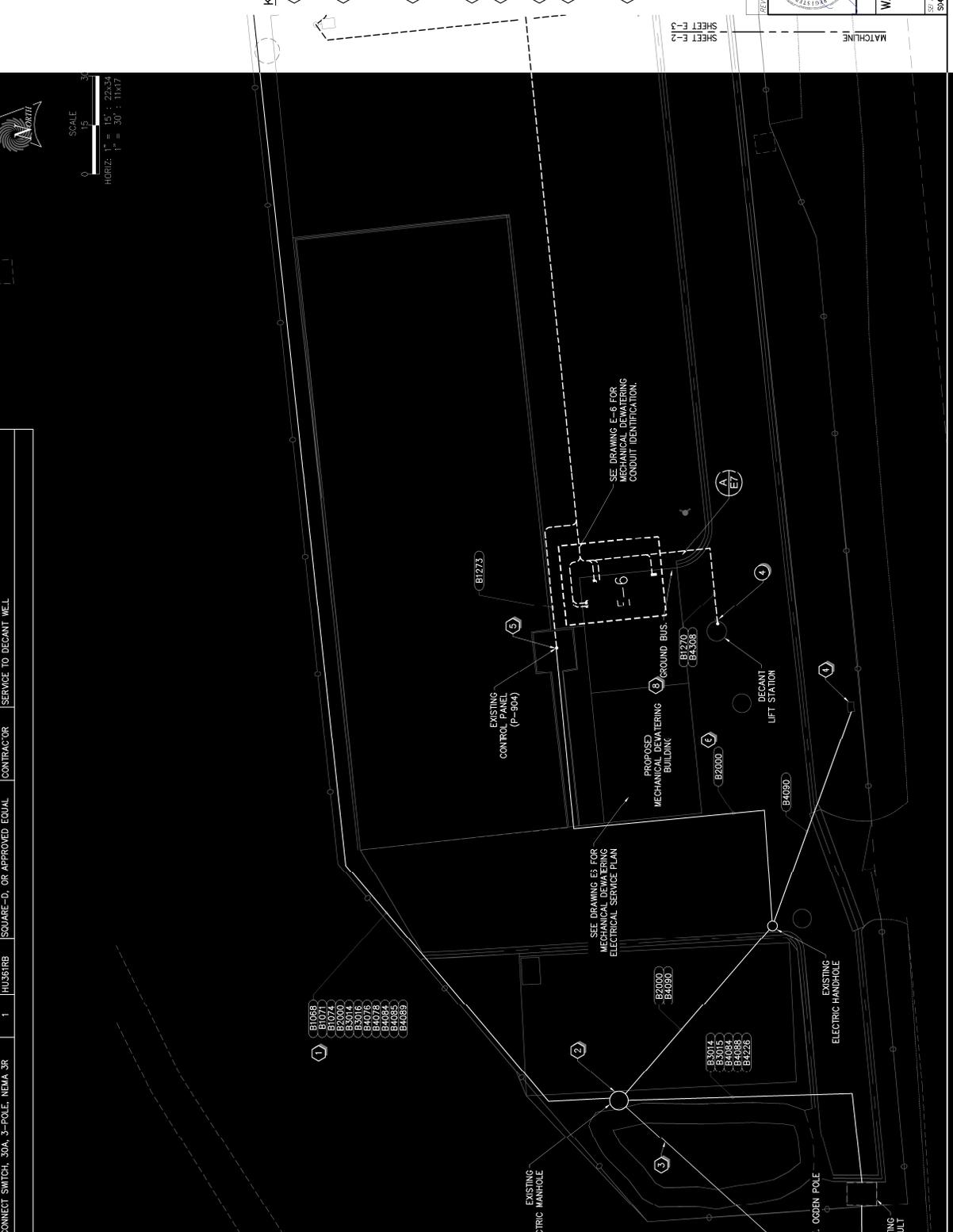
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UTAH PROFESSIONAL ENGINEERING BOARD
 STATE OF UTAH
 J. RANDALL KRAMER
 LICENSE NO. 48300
 EXPIRES 12/31/2024

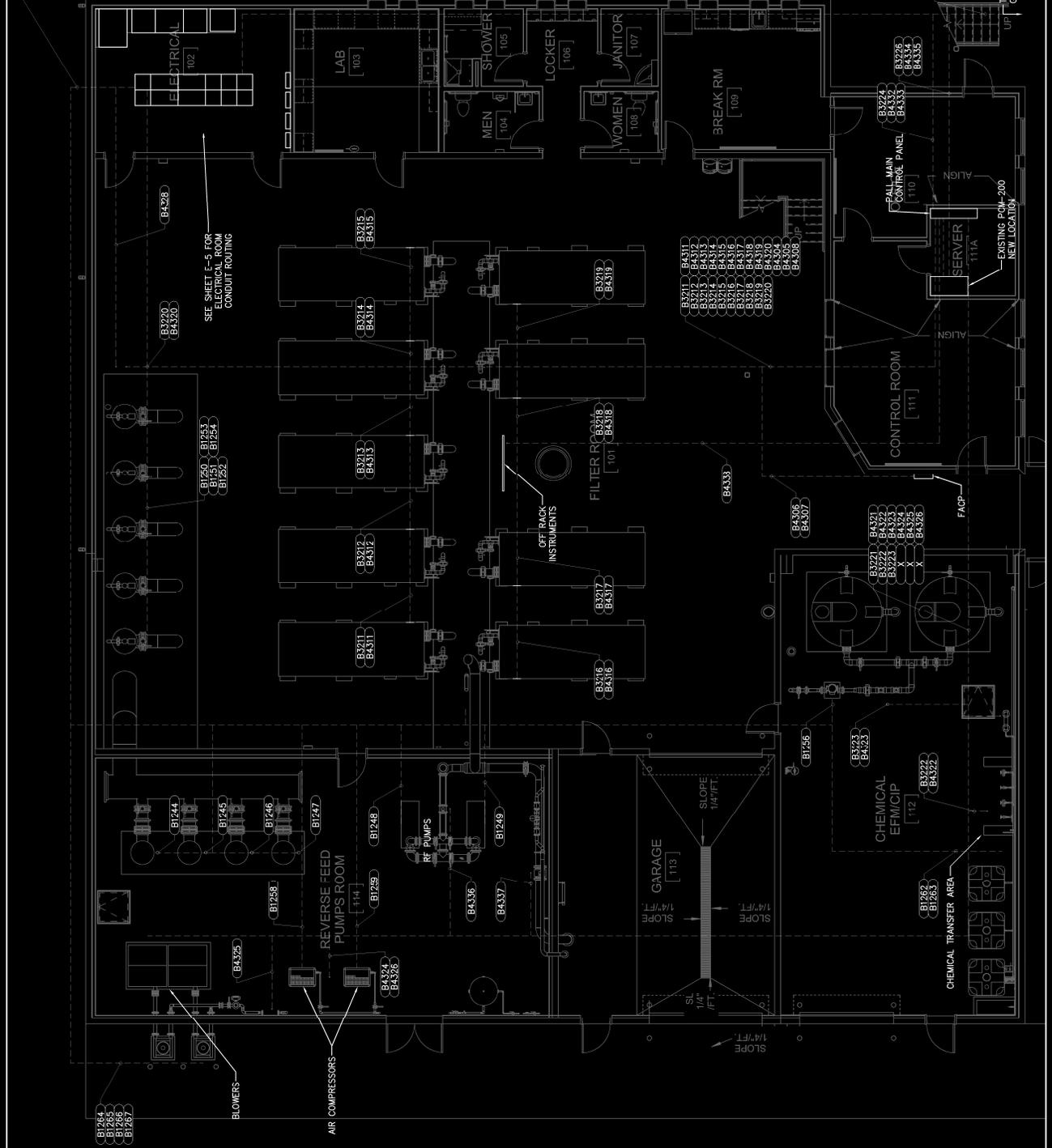
OGDEN CITY
WATER TREATMENT PLANT RECONSTRUCTION
ELECTRICAL SERVICE
ELECTRICAL SITE CONDUIT PLAN

SHEET NO. 238 OF 244
 SWAES JPK JPK

E-2



- B1244
- B1245
- B1246
- B1247
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REV. NO.	COMMENT	DATE

J. RANDALL KNAPP
PROFESSIONAL ENGINEER
STATE OF UTAH
LICENSE NO. 12345

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OGDEN CITY

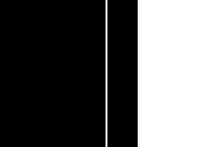
**WATER TREATMENT PLANT RECONSTRUCTION
ELECTRICAL SERVICE
FILTER BUILDING CONDUIT PLAN**

BY: SW/ESS	CHECKED: PM	DATE: 10/24/24
DESIGNED: PM	APPROVED: PM	DATE: 10/24/24

E-4

- GENERAL NOTES:**
1. CONTRACTOR TO COMPLY WITH GENERAL ELECTRICAL REQUIREMENTS ON DRAWING GE-1 AND AS FOUND ON OTHER DRAWINGS IN THE COMPLETE SET OF PLANS AND SPECIFICATIONS.
 2. CONDUITS SHOWN ARE SCHEMATIC ONLY. CONTRACTOR SHALL VERIFY ALL CONDUIT ROUTING AS NECESSARY TO AVOID OBSTACLES AND OTHER EQUIPMENT.
 3. FOR CLARITY, NOT ALL CONDUITS ARE SHOWN. REFER TO CONDUIT SCHEDULE AND DETAILS ON DRAWING E-7 FOR ROUTING INFORMATION.
 4. DIMENSIONS SHOWN ARE APPROXIMATE ONLY AND SHOULD NOT BE USED TO LOCATE STUB-UP LOCATIONS FOR EQUIPMENT. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND LOCATIONS FROM DRAWINGS TO VERIFY EQUIPMENT PLACEMENT AND CONDUIT ENTRY LOCATIONS FOR ALL EQUIPMENT.
 5. CONTRACTOR SHALL VERIFY THAT ALL EQUIPMENT FITS IN THE SPACE PROVIDED.

REV	NO.	COMMENT	DATE



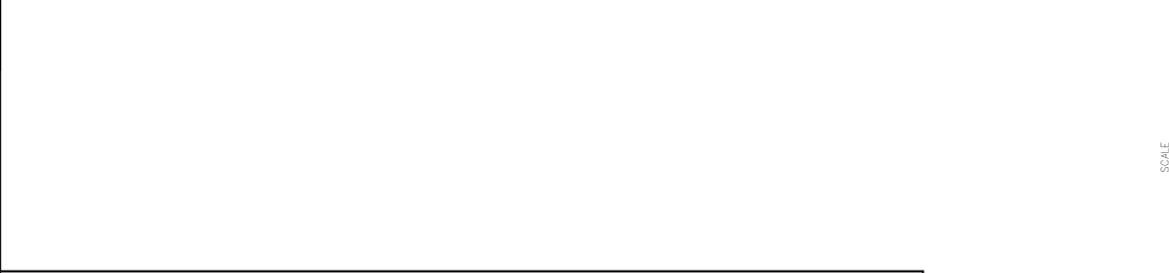
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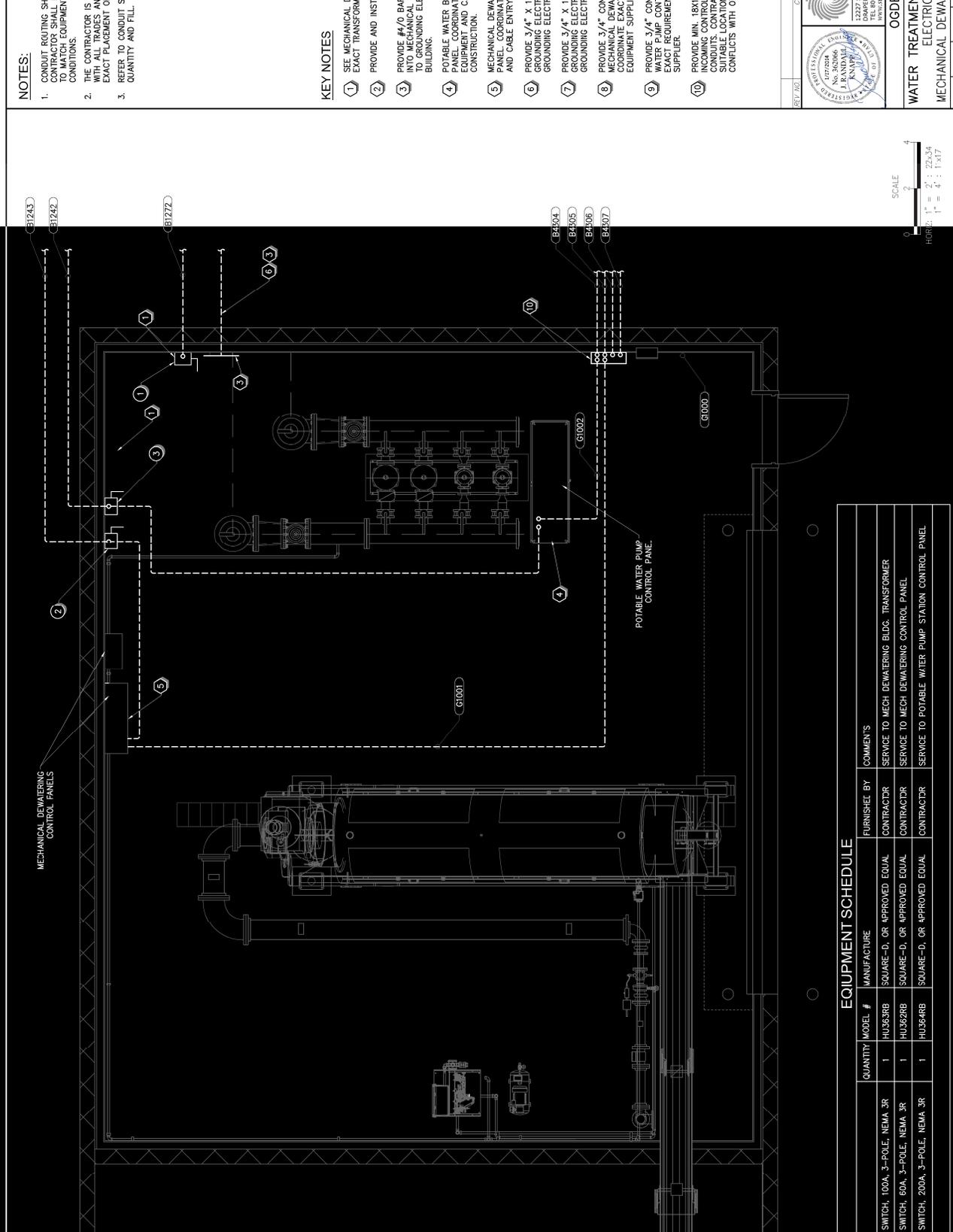
WATER TREATMENT PLANT RECONSTRUCT.

ELECTRICAL SERVICE

ENLARGED ELECTRICAL ROOM PLAN



A PLAN-TYPICAL ELECTRICAL ROOM LAYOUT



NOTES:

- CONDUIT ROUTING SHOWN IS DIAGRAMATIC. CONTRACTOR SHALL FIELD ROUTE AS REQUIRED TO MATCH EQUIPMENT LOCATIONS AND FIELD CONDITIONS.
- THE CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH ALL TRADES AND SHOP DRAWINGS FOR EXACT PLACEMENT OF CONDUITS AND EQUIPMENT. REFER TO CONDUIT SCHEDULE FOR CONDUIT SIZE, QUANTITY AND FILL.

KEY NOTES

- SEE MECHANICAL DEWATERING POWER PLAN FOR EXACT TRANSFORMER LOCATION.
- PROVIDE AND INSTALL GROUND BUS
- PROVIDE #4/0 BARE CU GROUND AND SLEEVE INTO MECHANICAL DEWATERING BUILDING BOND TO GROUNDING ELECTRODE SYSTEM AT FILTER BUILDING.
- POTABLE WATER BOOSTER PUMP CONTROL PANEL COORDINATE EXACT LOCATION OF PANEL, CONDUIT ENTRY AND CABLE ENTRY REQUIREMENTS.
- MECHANICAL DEWATERING EQUIPMENT CONTROL PANEL COORDINATE EXACT LOCATION OF PANEL AND CABLE ENTRY REQUIREMENTS.
- PROVIDE 3/4" X 10' GROUND ROD. BOND ALL GROUNDING ELECTRODE SYSTEM PER NEC.
- PROVIDE 3/4" X 10' GROUND ROD. BOND ALL GROUNDING ELECTRODES PRESENT TO GROUNDING ELECTRODE SYSTEM PER NEC.
- PROVIDE 3/4" CONTROL CONDUIT TO MECHANICAL DEWATERING CONTROL PANEL. REQUIREMENTS WITH EQUIPMENT SUPPLIER.
- PROVIDE 3/4" CONTROL CONDUIT TO POTABLE WATER BOOSTER PUMP CONTROL PANEL. REQUIREMENTS WITH EQUIPMENT SUPPLIER.
- PROVIDE MIN. 18"X18" X 3/8" FILL BOX FOR CONDUITS. CONTRACTOR SHALL FIELD LOCATE SUITABLE LOCATION INSIDE BUILDING TO AVOID CONFLICTS WITH OTHER EQUIPMENT.

REV	NO.	COMMENT	DATE



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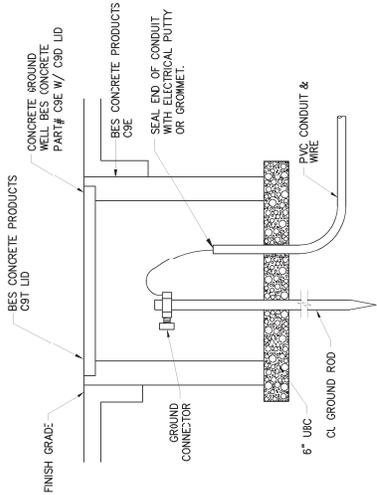
OGDEN CITY

WATER TREATMENT PLANT RECONSTRUCTION
 ELECTRICAL SERVICE
 MECHANICAL DEWATERING, ELEC. SERVICE

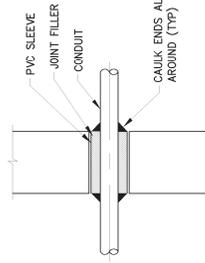
DATE: 11/25/2013
 DRAWN: JRM
 CHECKED: JRM
 PROJECT NO: 142 / 24
 SHEET NO: E-6

EQUIPMENT SCHEDULE

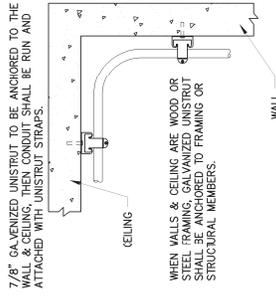
ITEM #	DESCRIPTION	QUANTITY	MODEL #	MANUFACTURE	FURNISH BY	COMMENTS
①	HD DISCONNECT SWITCH, 100A, 3-POLE, NEMA 3R	1	HU363RB	SQUARE-D, OR APPROVED EQUAL	CONTRACTOR	SERVICE TO MECH DEWATERING BLDG. TRANSFORMER
②	HD DISCONNECT SWITCH, 60A, 3-POLE, NEMA 3R	1	HU362RB	SQUARE-D, OR APPROVED EQUAL	CONTRACTOR	SERVICE TO MECH DEWATERING CONTROL PANEL
③	HD DISCONNECT SWITCH, 200A, 3-POLE, NEMA 3R	1	HU364RB	SQUARE-D, OR APPROVED EQUAL	CONTRACTOR	SERVICE TO POTABLE WATER PUMP STATION CONTROL PANEL



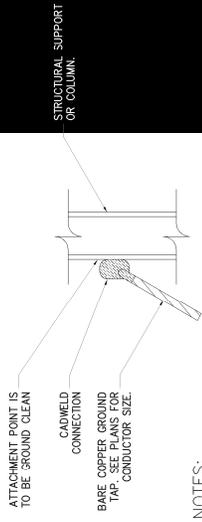
A DETAIL-GROUND WELL
N.T.S.



B DETAIL-CONDUIT PENETRATION
AT WALL OR SLAB N.T.S.



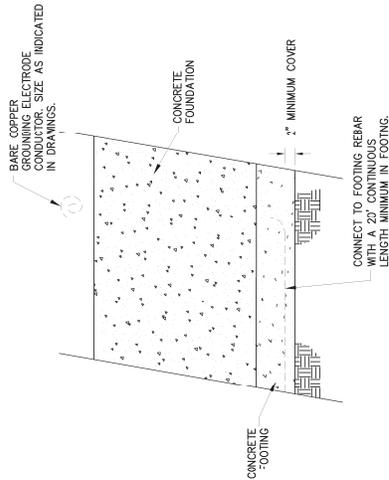
C DETAIL-CONDUIT MOUNT
N.T.S.



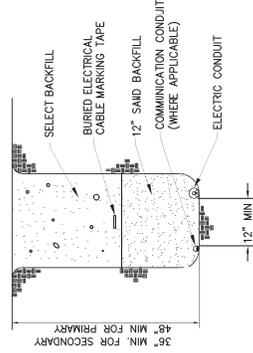
NOTES:

1. ALL GROUNDING CONNECTIONS MADE ON MAIN STRUCTURAL VERTICAL COLUMNS WILL BE CADWELD TYPE ONLY.
2. ANY DAMAGED GALVANIZED SURFACES WILL BE COVERED WITH ZINC ENRICHED PAINT.

D DETAIL-STRUCTURAL GROUNDING
N.T.S.



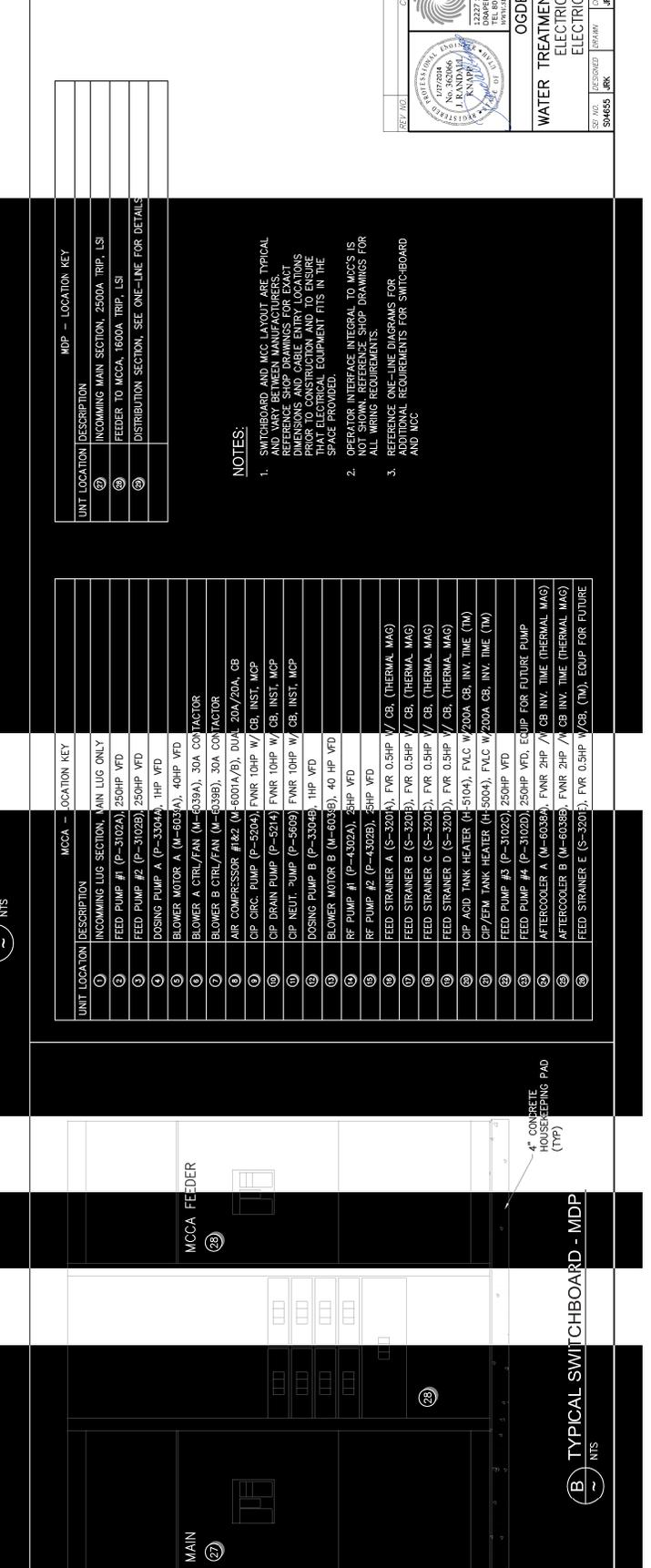
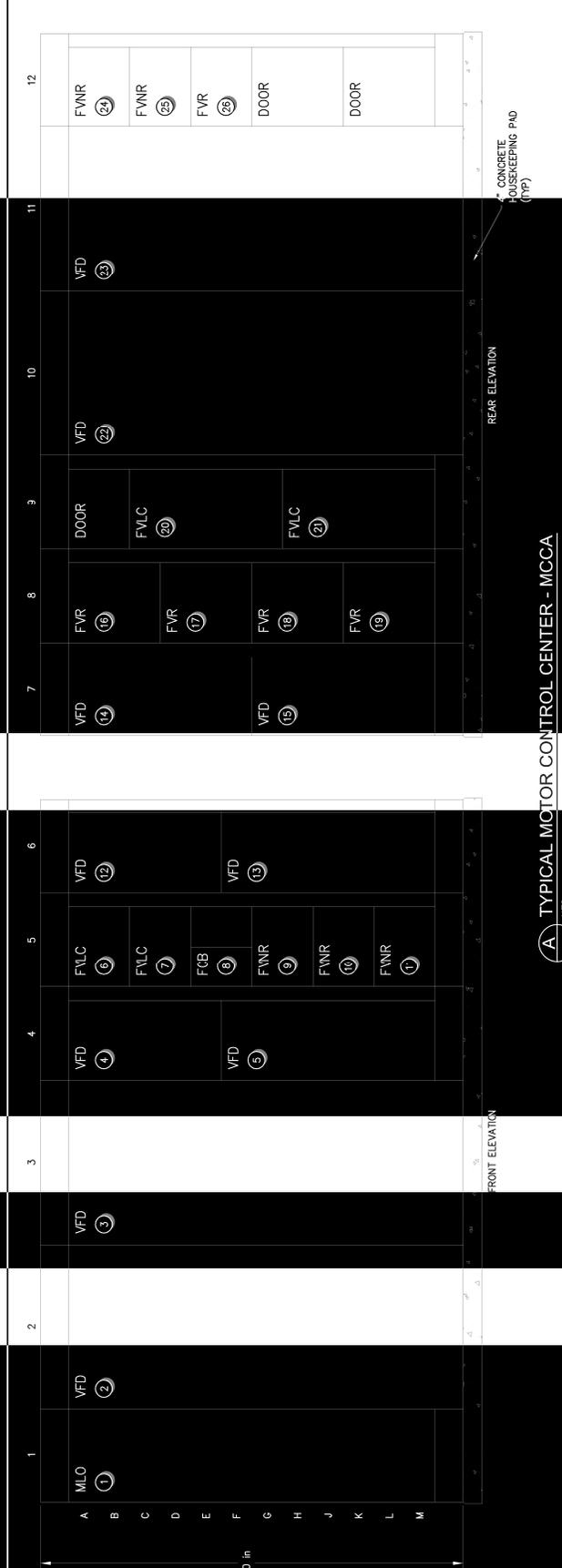
E DETAIL-UFER GROUND
N.T.S.



1. WARNING TAPE MUST BE PLACED ON TOP OF CONDUIT FOLLOWED BY 3" WIDE RED DETECTABLE-FOLI, ELECTRICAL WARNING TAPE (5 MILS THICKNESS)
2. ALL TRENCHES MUST BE INSPECTED PRIOR TO BACKFILLING
3. TRENCHES SHOULD BE SPOT BACKFILLED TO PREVENT MOVEMENT OF TAPE DURING BACKFILL.
4. SELECT BACKFILL MUST BE COMPACTED IN 1 FOOT LIFTS TO PREVENT SETTLING.

F DETAIL-UNDERGROUND CONDUIT POWER CABLE TRENCH
N.T.S.

REV. NO.	DATE
COMMENTS	
	
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OGDEN CITY	
WATER TREATMENT PLANT RECONSTRUCT.	
ELECTRICAL SERVICE	
ELECTRICAL DETAILS	
DESIGNED BY	DATE
CHECKED BY	
APPROVED BY	
SCALE	
PROJECT NO.	243 / 244
DATE	E-7



UNIT LOCATION	DESCRIPTION	MCC-A - LOCATION KEY
1	INCOMING LUG SECTION, MAIN LUG ONLY	
2	FEED PUMP #1 (P-3102A), 250HP VFD	
3	FEED PUMP #2 (P-3102B), 250HP VFD	
4	DOSING PUMP A (P-3304A), 1HP VFD	
5	BLOWER MOTOR A (M-6039A), 40HP VFD	
6	BLOWER A CTRL/FAN (M-6039A), 30A CONTACTOR	
7	BLOWER B CTRL/FAN (M-6039B), 30A CONTACTOR	
8	AIR COMPRESSOR #1&2 (M-6001A/B), DUAL 20A/20A, CB	
9	CIP CIRC. PUMP (P-5204), FVNR 10HP W/ CB, INST, MCP	
10	CIP DRAIN PUMP (P-5214), FVNR 10HP W/ CB, INST, MCP	
11	CIP NEUT. PUMP (P-5609), FVNR 10HP W/ CB, INST, MCP	
12	DOSING PUMP B (P-3304B), 1HP VFD	
13	BLOWER MOTOR B (M-6039B), 40 HP VFD	
14	RF PUMP #1 (P-4302A), 2HP VFD	
15	RF PUMP #2 (P-4302B), 2HP VFD	
16	FEED STRAINER A (S-3201A), FWR 0.5HP / CB, (THERMAL MAG)	
17	FEED STRAINER B (S-3201B), FWR 0.5HP / CB, (THERMAL MAG)	
18	FEED STRAINER C (S-3201C), FWR 0.5HP / CB, (THERMAL MAG)	
19	FEED STRAINER D (S-3201D), FWR 0.5HP / CB, (THERMAL MAG)	
20	CIP ACID TANK HEATER (H-510A), FVLC W/200A, CB, INV. TIME (TV)	
21	CIP/EFM TANK HEATER (H-500A), FVLC W/200A, CB, INV. TIME (TV)	
22	FEED PUMP #3 (P-3102C), 250HP VFD	
23	FEED PUMP #4 (P-3102D), 250HP VFD, EQUIP FOR FUTURE PUMP	
24	AFTERCooler A (M-6039A), FVNR 2HP / CB INV. TIME (THERMAL MAG)	
25	AFTERCooler B (M-6039B), FVNR 2HP / CB INV. TIME (THERMAL MAG)	
26	FEED STRAINER E (S-3201E), FWR 0.5HP / CB, (TV), EQUIP FOR FUTURE	

NOTES:

- SWITCHBOARD AND MCC LAYOUT ARE TYPICAL AND MAY VARY BETWEEN MANUFACTURERS. REFERENCE SHOP DRAWINGS FOR EXACT DIMENSIONS AND CABLE ENTRY LOCATIONS PRIOR TO CONSTRUCTION AND TO ENSURE ALL EQUIPMENT FITS IN THE SPACE PROVIDED.
- OPERATOR INTERFACE, INTERVAL TO MCC'S IS NOT SHOWN. REFERENCE SHOP DRAWINGS FOR ALL WIRING REQUIREMENTS.
- REFERENCE ONE-LINE DIAGRAMS FOR ADDITIONAL REQUIREMENTS FOR SWITCHBOARD AND MCC.

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OGDEN CITY
WATER TREATMENT PLANT RECONSTRUCTION
ELECTRICAL SERVICE
ELECTRICAL DETAILS

REV. NO. 1
REVISED 1/24/24
SW/ESS JRK

REV. NO. 2
REVISED 1/24/24
SW/ESS JRK