

MOUNTAIN GREEN SEWER IMPROVEMENT DISTRICT

BNR WASTEWATER TREATMENT 2022

MOUNTAIN GREEN SEWER IMPROVEMENT DISTRICT

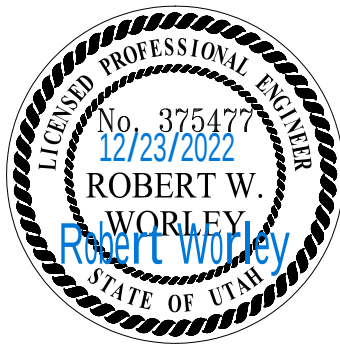
WILLIAM C. COUTTS ----- CHAIR
LARRY NANCE ----- VICE CHAIR
ZANE GRAY----- BOARD MEMBER
NATHAN HILL----- BOARD MEMBER
TAYLOR NIELSEN, P.E.----- BOARD MEMBER
JEREMY SORENSON----- MGSID MANAGER

SUNRISE ENGINEERING

ROBERT WORLEY, P.E. ----- PRINCIPAL ENGINEER
CLIFF LINFORD, P.E. ----- PROJECT MANAGER
STEVE HANSEN, P.E., S.E. ----- STRUCTURAL ENGINEER
RANDY KNAPP, P.E. ----- ELECTRICAL ENGINEER

BHD ARCHITECTS

MIKE DAVEY----- BUTLER HARRIS DAVEY ARCHITECTS



APPROVED

ROBERT WORLEY, P.E.
PRINCIPAL ENGINEER



APPROVED

CLIFF LINFORD, P.E.
PROJECT MANAGER



APPROVED

STEVE HANSEN, P.E., S.E.
PROJECT ENGINEER



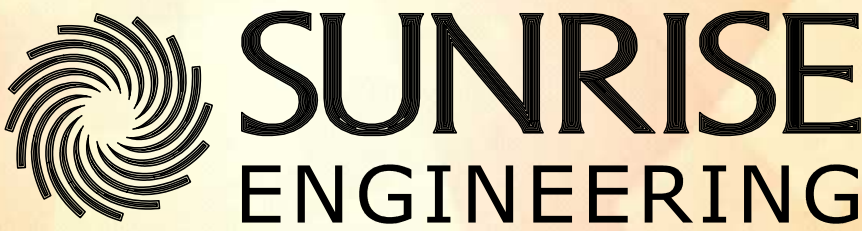
APPROVED

KIRK WINEGAR, P.E.
PROJECT ENGINEER



APPROVED

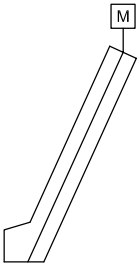
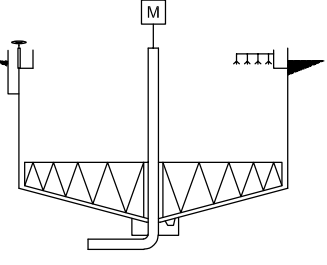
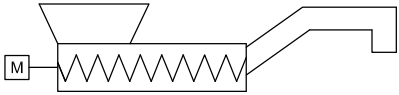
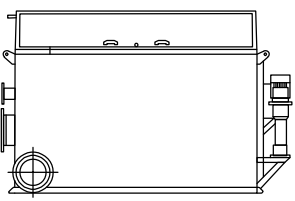
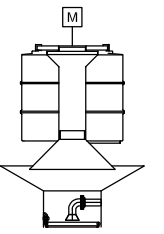
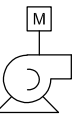
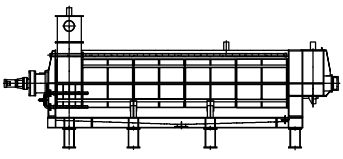
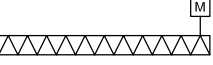
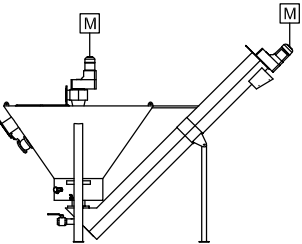
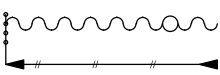
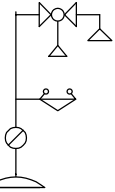
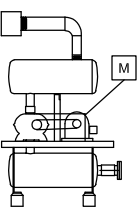
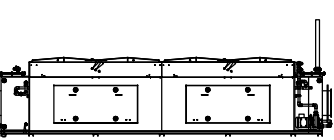
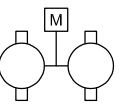
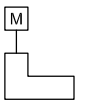
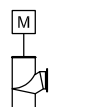
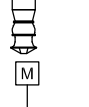
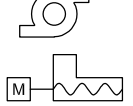
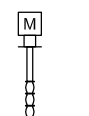
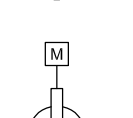
RANDY KNAPP, E.E.
PROJECT ENGINEER



6875 SOUTH 900 EAST
SALT LAKE CITY, UTAH 84047
TEL 801.523.0100 • FAX 801.523.0990
www.sunrise-eng.com

DRAWING SHEET INDEX

[illegible]

VALVES		ACTUATORS		FLOW ELEMENTS		MISCELLANEOUS				PRIMARY ELEMENT SYMBOLS	
	3 WAY VALVE		ACTUATOR: H=HYDRAULIC, M=MOTOR, P=PNEUMATIC, S=SOLENOID		MAGNETIC FLOW ELEMENT		BAR SCREEN		CLASSIFIER		ANALYZER ELEMENT
	4 WAY VALVE		MANUAL		MASS FLOW ELEMENT ANNUBAR (INSERTION)						DO ANALYZER
	ANGLE VALVE		PNEUMATIC DIAPHRAGM		MASS FLOW ELEMENT ANNUBAR (SPOOL)						DO SENSOR
	BACK PRESSURE RELIEF VALVE		PNEUMATIC DIAPHRAGM WITH POSITIONER								FLOAT SWITCH
	BALANCING VALVE	PIPING			MASS FLOW ELEMENT ANNUBAR (SPOOL)						ORP ANALYZER
	BALL VALVE				PITOT TUBE		WASH PRESS		DISK FILTER		ORP SENSOR
	BUTTERFLY VALVE				PROPELLER FLOW ELEMENT (INSERTION)		DUMPSTER				pH ANALYZER
	CHECK VALVE		BLIND FLANGE		PROPELLER FLOW ELEMENT (SPOOL)		GRIT CHAMBER		BUBBLE DIFFUSER		pH SENSOR
	DIAPHRAGM VALVE		CAPPED OR PLUGGED END		ROTAMETER		CENTRIFUGAL BLOWER		SCREW PRESS		ULTRASONIC LEVEL TRANSDUCER
	ECCENTRIC PLUG VALVE		DRAIN		THERMAL MASS FLOW ELEMENT (INSERTION)				CONVEYOR		RADAR LEVEL TRANSDUCER
	GATE VALVE		QUICK CONNECT/DISCONNECT		THERMAL MASS FLOW ELEMENT (SPOOL)		GRIT CLASSIFIER		CHEMICAL TOTE		
	GLOBE VALVE		REDUCER		ULTRASONIC FLOW ELEMENT (INSERTION)		MIXER		CALIBRATION COLUMN		
	KNIFE VALVE		Y-STRAINER		ULTRASONIC FLOW ELEMENT (SPOOL)		BNR DIFFUSER		SAFETY EYEWASH AND SHOWER		
	LUBRICATED PLUG VALVE		FLEXIBLE CONNECTOR				POSITIVE DISPLACEMENT BLOWER				
	MIX VALVE	PUMPS					UV REACTOR				
	MUD VALVE		CENTRIFUGAL PUMP								
	NEEDLE VALVE		MECHANICAL DIAPHRAGM PUMP								
	PINCH VALVE		METERING PUMP								
	PRESSURE REDUCING VALVE		MIXED FLOW PUMP								
	PRESSURE RELIEF VALVE		PERISTALTIC PUMP								
	SLEEVE VALVE		PROGRESSIVE CAVITY PUMP								
	TELESCOPING VALVE		ROTARY LOBE PUMP								
	VACUUM VALVE		SUBMERSIBLE PUMP								
			VERTICAL TURBINE PUMP								
			AIR DIAPHRAGM PUMP								
HVAC											
	AIR COMPRESSOR										
	AIR FILTER										
	DAMPER										
	FILTER										
	GUIDE VANES										
	HEAT EXCHANGER										
	LOUVER WITH HOOD										
	SILENCER										
	UNIT HEATER										
GATES											
	FLAPPER GATE										
	SLIDE GATE										
	SLUICE GATE										
	STOP GATE										

DRAWING IS TO SCALE IF BAR MEASURES: 1" = FULL SCALE 1/2" = HALF SCALE				ORIGINAL				REVISIONS			
NO.	DATE	DESIGN	DRAWN	CHECKED	MT	TVH	MPJ				
0	09/2022										

MOUNTAIN GREEN SEWER IMPROVEMENT DISTRICT

5455 WEST OLD HWY ROAD MORGAN, UT 84050

BNR WASTEWATER TREATMENT 2022

INSTRUMENTATION - GENERAL

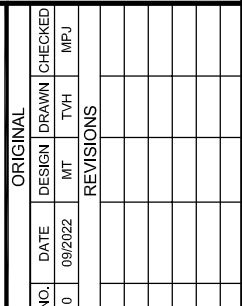
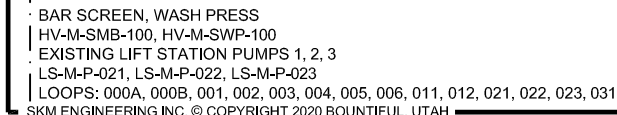
SYMBOLS

533 W 2600 S, Suite 25
Bountiful, Utah 84010
Phone: (801) 677-0011
www.skmeng.com

DRAWING NO.

1002

SHEET

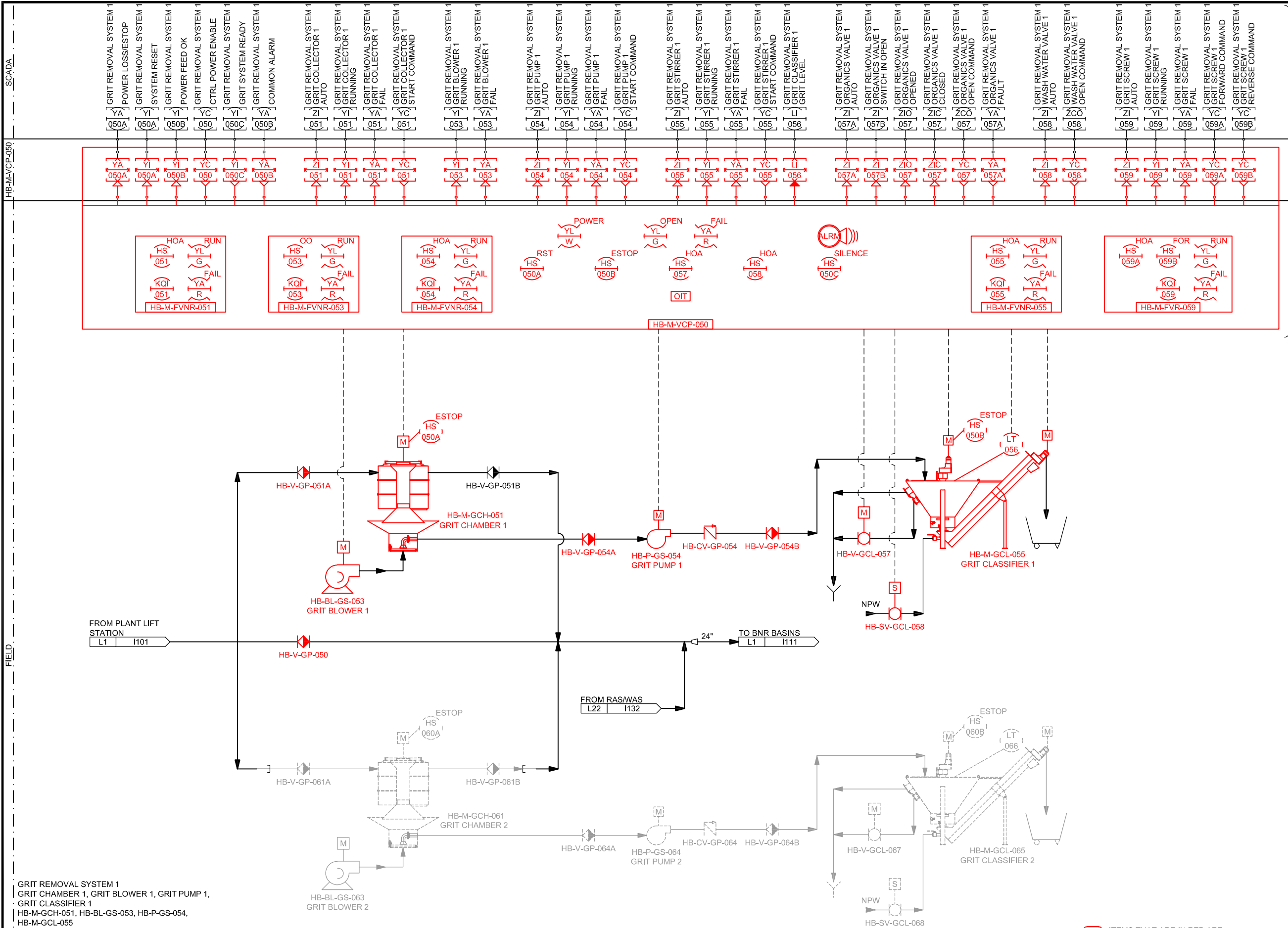


DRAWING NO.

SHEET

skm

1 ITEMS THAT ARE IN RED ARE SUPPLIED AS A VENDOR PACKAGE. IF THIS NOTE IS NOT IN RED THE DRAWING HAS NOT BEEN COPIED IN COLOR.



TYPICAL OF 2
GRIT REMOVAL
SYSTEMS: 1 NEW
AND 1 FUTURE

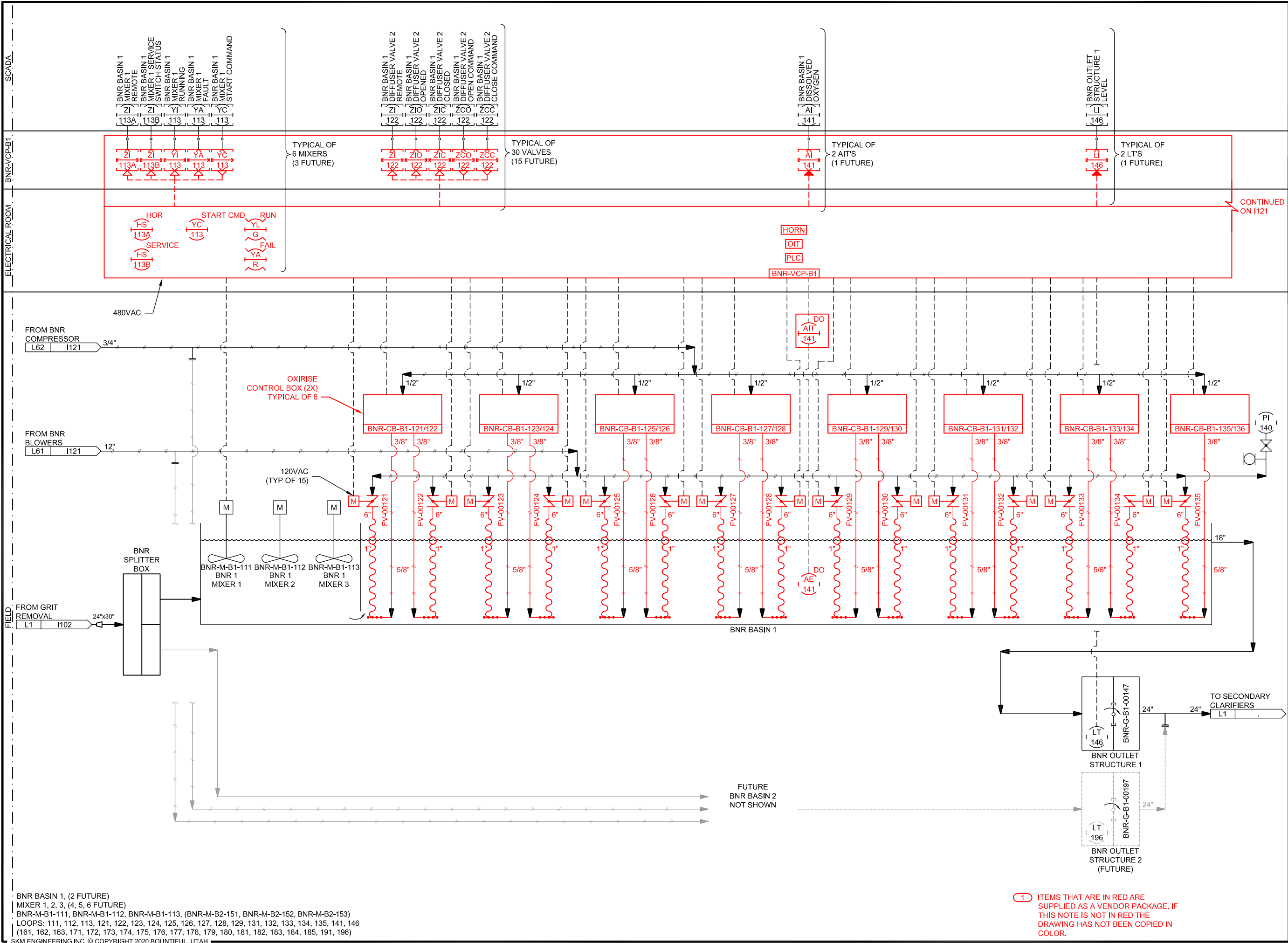
DRAWING IS TO SCALE
IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

ORIGINAL			
NO.	DATE	DESIGN	CHECKED
0	09/2022	MT	MPJ
REVISIONS			

MOUNTAIN GREEN SEWER IMPROVEMENT DISTRICT
5455 WEST OLD HWY ROAD MORGAN, UT 84050
BNR WASTEWATER TREATMENT 2022
INSTRUMENTATION - P&ID
GRIT REMOVAL SYSTEM

skm
533 W 2600 S, Suite 25
Bountiful, Utah 84010
Phone: (801) 677-0011
www.skmeng.com

DRAWING NO.
I102
SHEET



DRAWING IS TO SCALE
IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

ORIGINAL				REVISIONS			
NO.	DATE	DESIGN	DRAWN	CHECKED	MT	TVH	MPJ
0	09/2022						

MOUNTAIN GREEN SEWER IMPROVEMENT DISTRICT
5455 WEST OLD HWY ROAD MORGAN, UT 84050
BNR WASTEWATER TREATMENT 2022
INSTRUMENTATION - P&ID
BNR BASINS



533 W 2600 S, Suite 25
Bountiful, Utah 84010
Phone: (801) 677-0011
www.skmeng.com

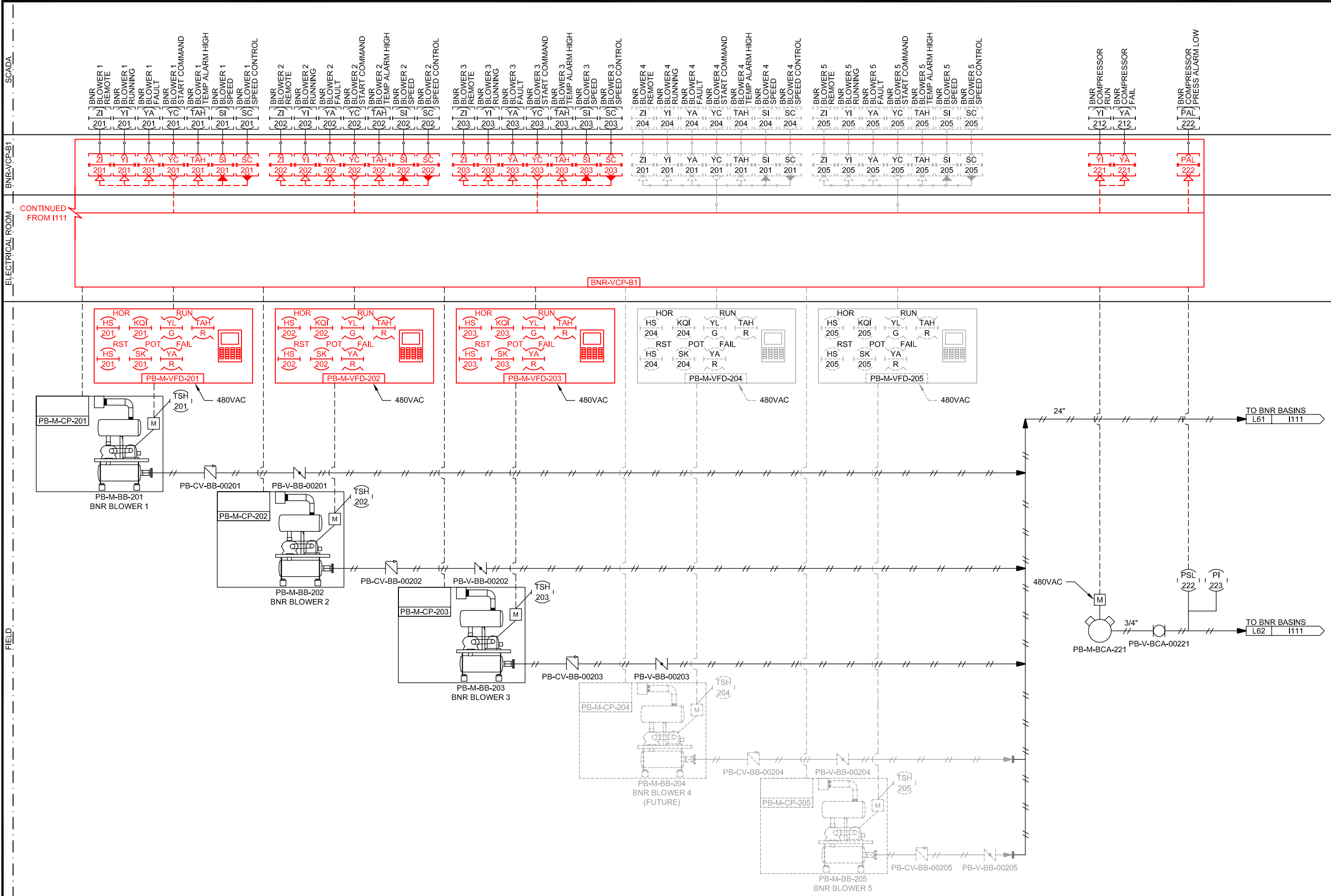
DRAWING NO.

I111

SHEET

C:\USERS\THOMAS.VANHOOKAQUA\ENGINEERING\WGSID - 002191.P\WGSID I AND C DESIGN\050 DRAFTING\988 INSTRUMENTATION\MOUNTAIN GREEN SEWER IMPROVEMENT DISTRICT\PID DWG\I121.DWG

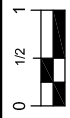
10/3/2022



BNR BLOWERS 1, 2, 3, (4, 5 FUTURE)
PB-M-BB-201, PB-M-BB-202, PB-M-BB-203, (PB-M-BB-204, PB-M-BB-205)
AIR COMPRESSOR PB-M-CPA-221
LOOPS: 201, 202, 203, (204, 205), 221, 222

SKM ENGINEERING INC. © COPYRIGHT 2020 BOUNTIFUL, UTAH

DRAWING IS TO SCALE
IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE



ORIGINAL				REVISIONS			
NO.	DATE	DESIGN	DRAWN	CHECKED	MT	TVH	MPJ
0	09/2022						

MOUNTAIN GREEN SEWER IMPROVEMENT DISTRICT
5455 WEST OLD HWY ROAD MORGAN, UT 84050
BNR WASTEWATER TREATMENT 2022
INSTRUMENTATION - P&ID
BNR BLOWERS & COMPRESSOR

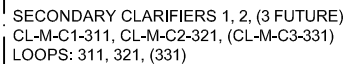
skm
533 W 2600 S, Suite 25
Bountiful, Utah 84010
Phone: (801) 677-0011
www.skmeng.com

DRAWING NO.

I121

SHEET

1 ITEMS THAT ARE IN RED ARE
SUPPLIED AS A VENDOR PACKAGE. IF
THIS NOTE IS NOT IN RED THE
DRAWING HAS NOT BEEN COPIED IN
COLOR.



MOUNTAIN GREEN SEWER IMPROVEMENT DISTRICT
5455 WEST OLD HWY ROAD MORGAN, UT 84050
BNR WASTEWATER TREATMENT 2022
INSTRUMENTATION - P&ID
SECONDARY CLARIFIERS

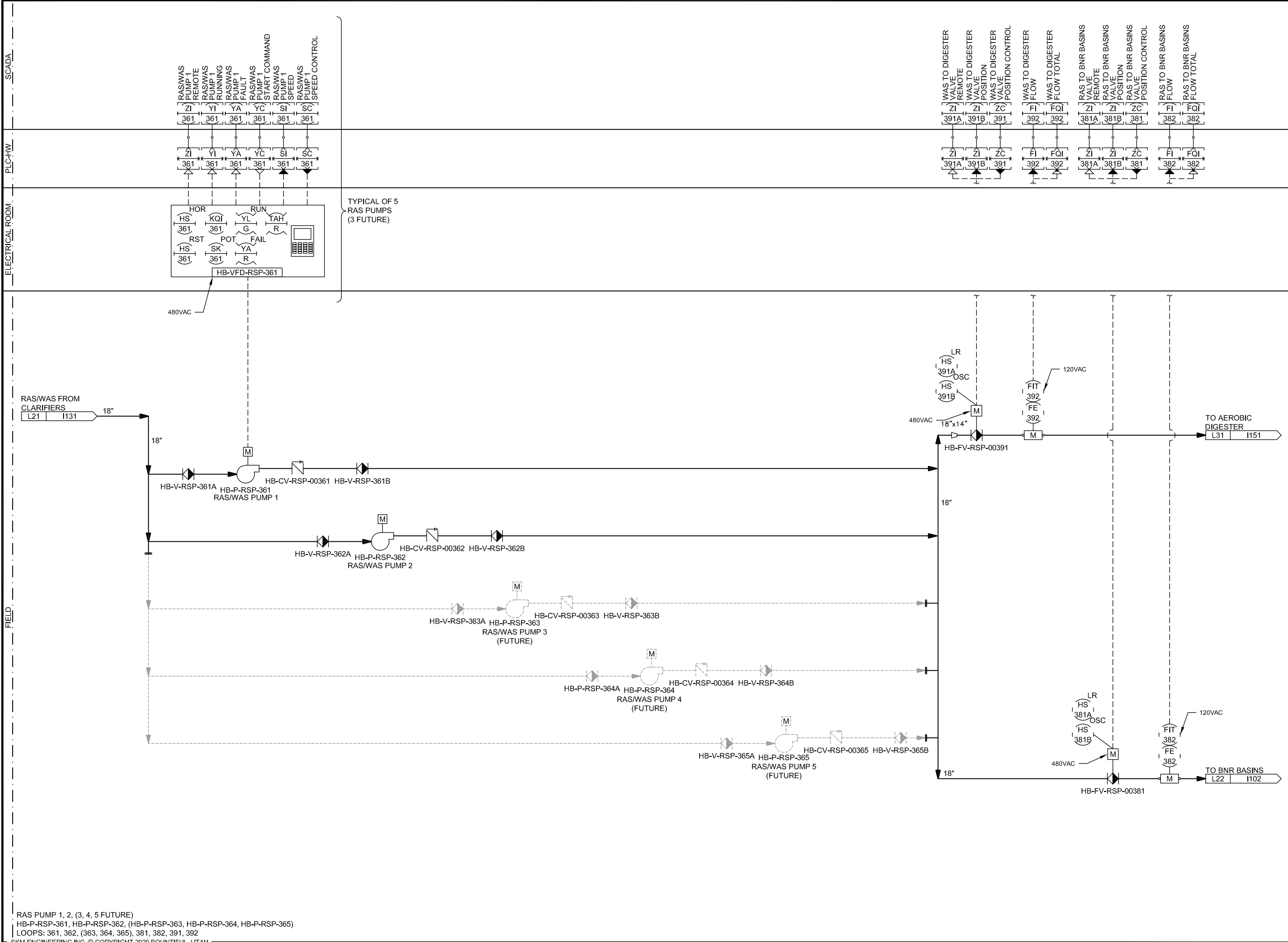
skm 533 W 2600 S, Suite 25
Bountiful, Utah 84010
Phone: (801) 677-0011
www.skmeng.com

DRAWING NO.

1131

SHEET

8/30/2022 C:\USERS\DANIEL\LEAVITT\AQUA ENGINEERING\MGSID - DOCUMENTS\002191.P\MGSID 1 AND C DESIGN\050 DRAFTING\998 INSTRUMENTATION\MOUNTAIN GREEN SEWER IMPROVEMENT DISTRICT\PID DWG\I132.DWG



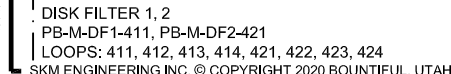
DRAWING IS TO SCALE
IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

ORIGINAL				REVISIONS			
NO.	DATE	DESIGN	DRAWN	CHECKED	MT	TVH	MPJ
0	09/2022						

MOUNTAIN GREEN SEWER IMPROVEMENT DISTRICT
5455 WEST OLD HWY ROAD MORGAN, UT 84050
BNR WASTEWATER TREATMENT 2022
INSTRUMENTATION - P&ID
RAS/WAS PUMPS

skm
533 W 2600 S, Suite 25
Bountiful, Utah 84010
Phone: (801) 677-0011
www.skmeng.com

DRAWING NO.
I132
SHEET



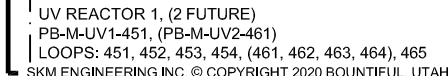
MOUNTAIN GREEN SEWER IMPROVEMENT DISTRICT
5455 WEST OLD HWY ROAD MORGAN, UT 84050
BNR WASTEWATER TREATMENT 2022
INSTRUMENTATION - P&ID
DISK FILTERS

533 W 2600 S, Suite 25
Bountiful, Utah 84010
Phone: (801) 677-0011
www.skmeng.com

DRAWING NO.

I141

SHEET



1 ITEMS THAT ARE IN RED ARE SUPPLIED AS A VENDOR PACKAGE. IF THIS NOTE IS NOT IN RED THE DRAWING HAS NOT BEEN COPIED IN COLOR.

[illegible]

MOUNTAIN GREEN SEWER IMPROVEMENT DISTRICT

5455 WEST OLD HWY ROAD MORGAN, UT 84050
BNR WASTEWATER TREATMENT 2022
INSTRUMENTATION - P&ID
UV DISINFECTION SYSTEM

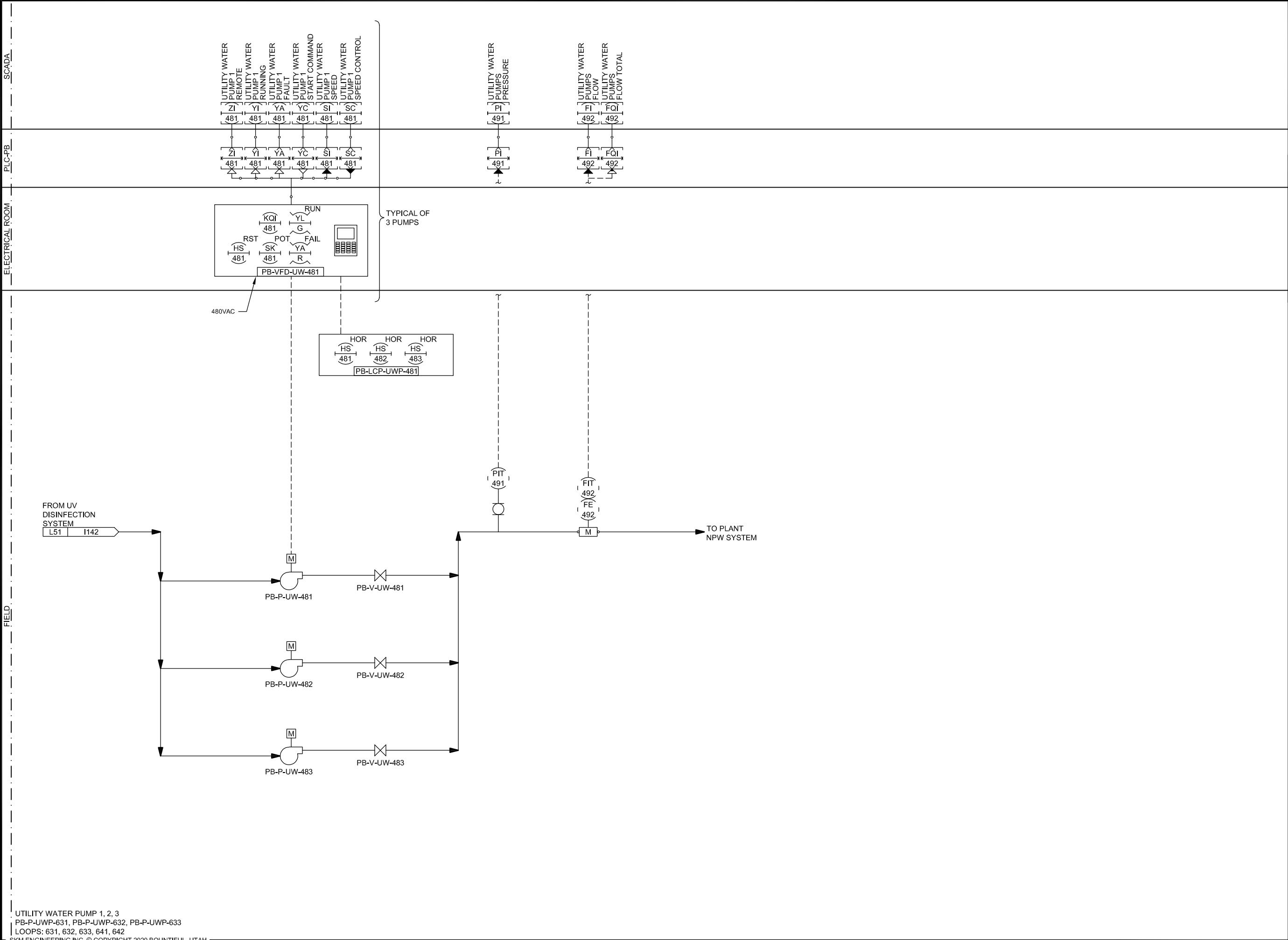
skm 533 W 2600 S, Suite 25
Bountiful, Utah 84010
Phone: (801) 677-0011
www.skmeng.com

DRAWING NO.

1142

SHEET

10/3/2022 C:\USERS\THOMAS.VANHOOKAQUA\ENGINEERING\MGSD - 002191.P\MGSD I AND C DESIGN\050 DRAFTING\988 INSTRUMENTATION\MOUNTAIN GREEN SEWER IMPROVEMENT DISTRICT\PID DWG\I143.DWG



UTILITY WATER PUMP 1, 2, 3
PB-P-UWP-631, PB-P-UWP-632, PB-P-UWP-633
LOOPS: 631, 632, 641, 642

SKM ENGINEERING INC. © COPYRIGHT 2020 BOUNTIFUL, UTAH

DRAWING IS TO SCALE
IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE



ORIGINAL				REVISIONS			
NO.	DATE	DESIGN	DRAWN	CHECKED	MT	TVH	MPJ
0	09/2022						

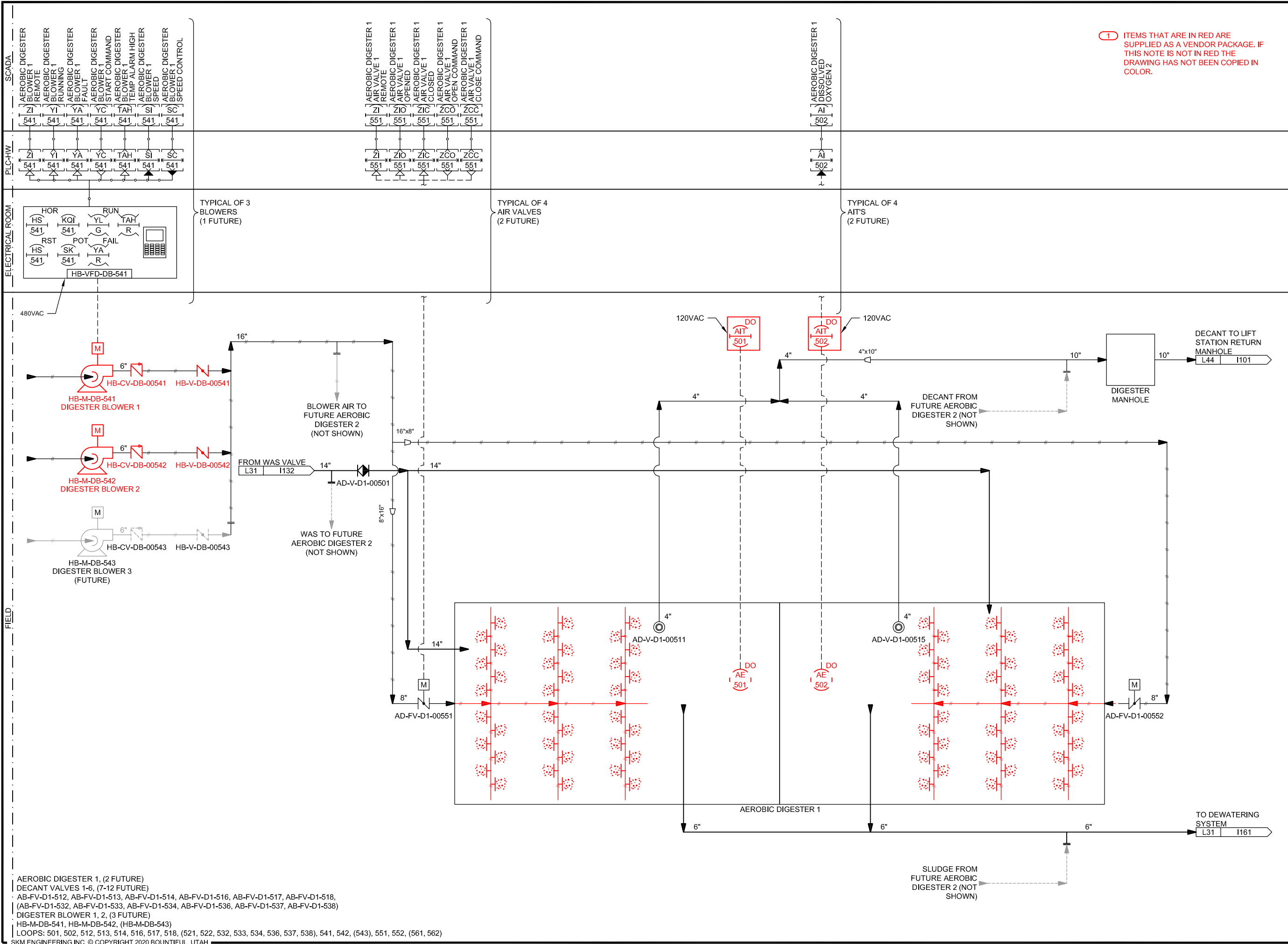
MOUNTAIN GREEN SEWER IMPROVEMENT DISTRICT
5455 WEST OLD HWY ROAD MORGAN, UT 84050
BNR WASTEWATER TREATMENT 2022
INSTRUMENTATION - P&ID
UTILITY WATER PUMPS

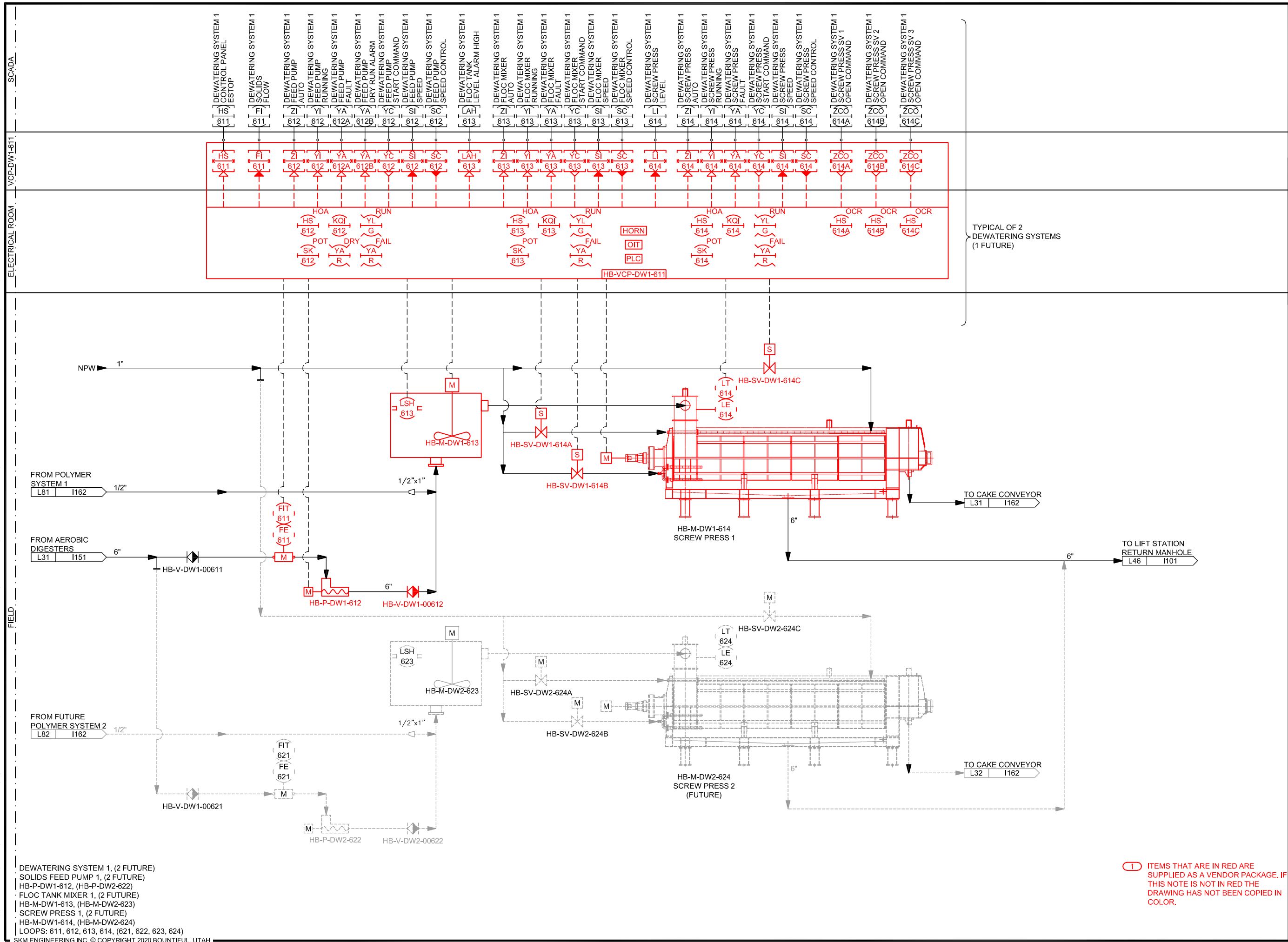
skm
533 W 2600 S, Suite 25
Bountiful, Utah 84010
Phone: (801) 677-0011
www.skmeng.com

DRAWING NO.

I143

SHEET



[illegible]

MOUNTAIN GREEN SEWER IMPROVEMENT DISTRICT

5455 WEST OLD HWY ROAD MORGAN, UT 84050
BNR WASTEWATER TREATMENT 2022
INSTRUMENTATION - P&ID
DEWATERING SYSTEM

skm 533 W 2600 S, Suite 25
Bountiful, Utah 84010
Phone: (801) 677-0011
www.skmeng.com

1 ITEMS THAT ARE IN RED ARE SUPPLIED AS A VENDOR PACKAGE. IF THIS NOTE IS NOT IN RED THE DRAWING HAS NOT BEEN COPIED IN COLOR.

DRAWING NO.

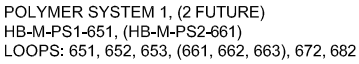
1161

SHEET

FIELD

FROM FUTURE
SCREW PRESS 2

L32	I161
-----	------



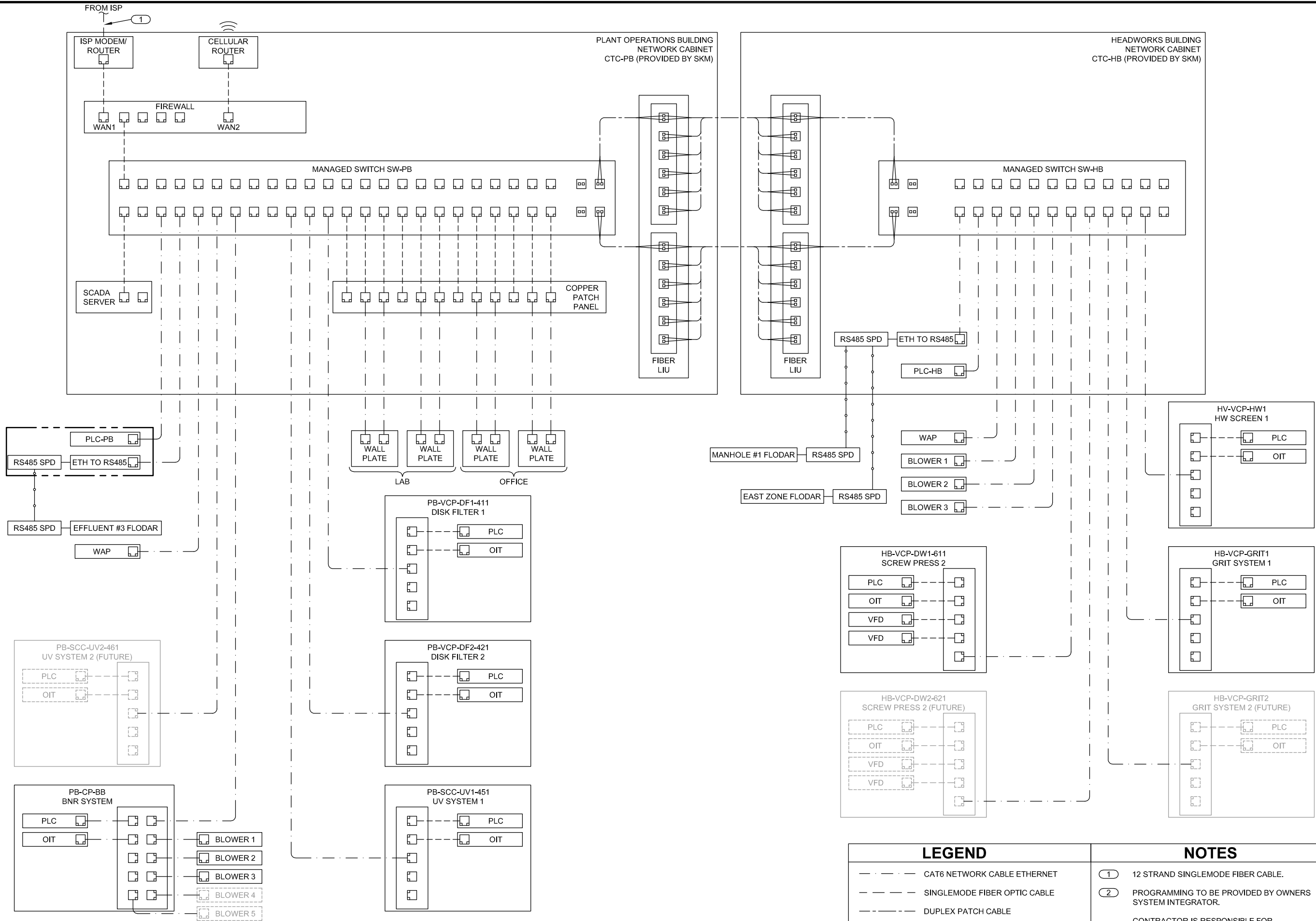
SKM ENGINEERING INC, © COPYRIGHT 2020 BOUNTIFUL, UTAH

[illegible]

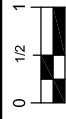
skm 533 W 2600 S, Suite 25
Bountiful, Utah 84010
Phone: (801) 677-0011
www.skmeng.com

SHEET

10/5/2022 C:\USERS\TYANHAQUA\ENGINEERING\WGMSID - 002191.P\WGMSID1 AND C DESIGN\050 DRAFTING\998 INSTRUMENTATION\998-1201.DWG



DRAWING IS TO SCALE
IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE



ORIGINAL				REVISIONS			
NO.	DATE	DESIGN	DRAWN	CHECKED	MT	DCL	MPJ
0	09/2022						

MOUNTAIN GREEN SEWER IMPROVEMENT DISTRICT
5455 WEST OLD HWY ROAD MORGAN, UT 84050
BNR WASTEWATER TREATMENT 2022
INSTRUMENTATION - NETWORK
NETWORK DIAGRAM SHEET 1

LEGEND

- CAT6 NETWORK CABLE ETHERNET
- SINGLEMODE FIBER OPTIC CABLE
- DUPLEX PATCH CABLE
- SERIAL CABLE
- ETHERNET PORT
- LC TYPE FIBER OPTIC CONNECTOR

NOTES

- 12 STRAND SINGLEMODE FIBER CABLE.
- PROGRAMMING TO BE PROVIDED BY OWNERS SYSTEM INTEGRATOR.
- CONTRACTOR IS RESPONSIBLE FOR TERMINATING, INSTALLING, AND TESTING ALL COMMUNICATION CABLING ENTERING AND EXITING THE CTC.

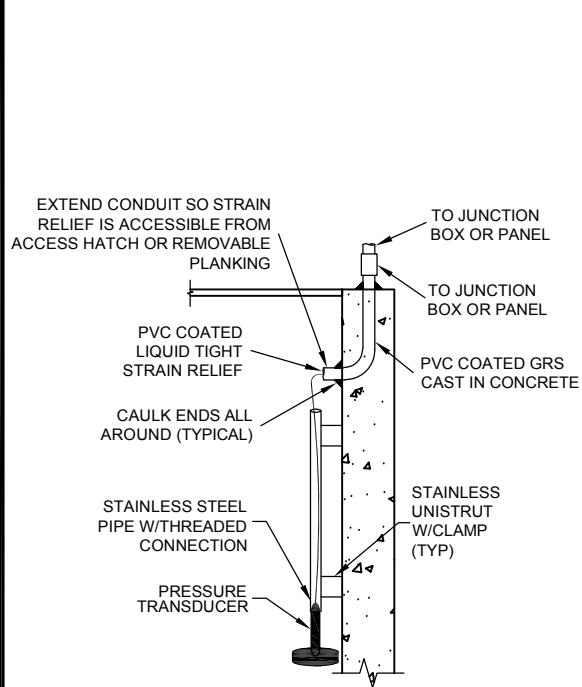
skm 533 W 2600 S, Suite 25
Bountiful, Utah 84010
Phone: (801) 677-0011
www.skmeng.com

DRAWING NO.

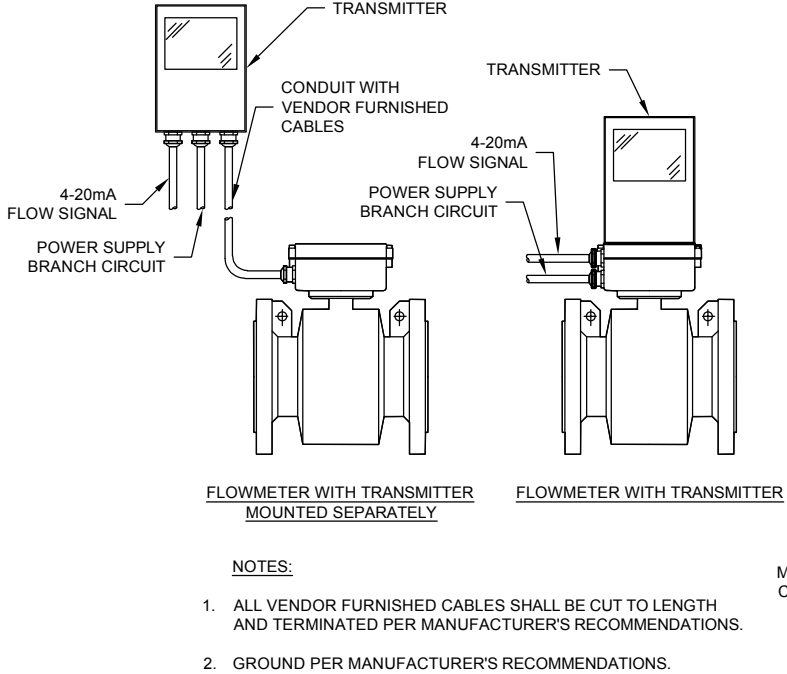
1201

SHEET

8/30/2022 C:\USERS\DANIEL\LEAVITT\AQUA ENGINEERING\MG\SID - DOCUMENTS\002191.P.MG\SID 1 AND C DESIGN\050 DRAFTING\998 INSTRUMENTATION\998-1901.DWG



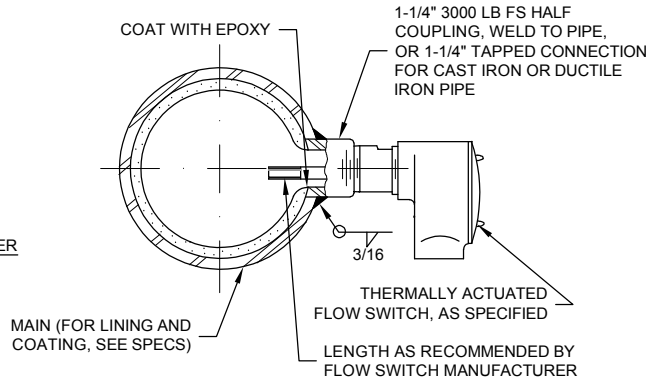
526
TYP **PRESSURE TRANSDUCER
(LARGE HEAD) DETAIL**
SCALE: NONE



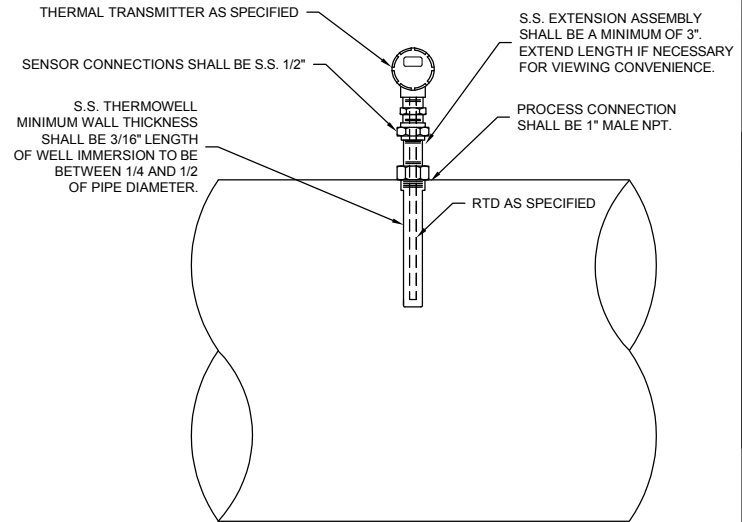
NOTES:

1. ALL VENDOR FURNISHED CABLES SHALL BE CUT TO LENGTH AND TERMINATED PER MANUFACTURER'S RECOMMENDATIONS.
2. GROUND PER MANUFACTURER'S RECOMMENDATIONS.

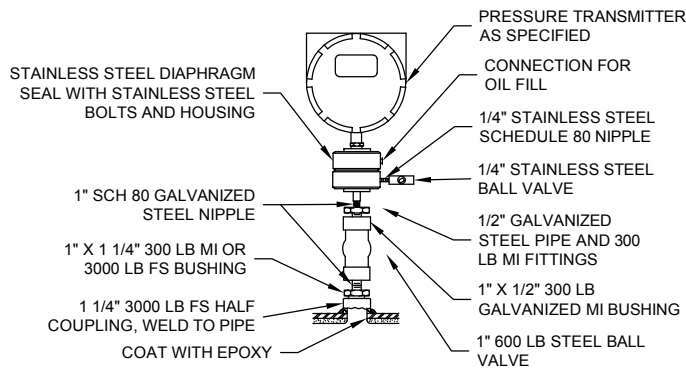
551
TYP **MAGNETIC FLOWMETER DETAIL**
SCALE: NONE



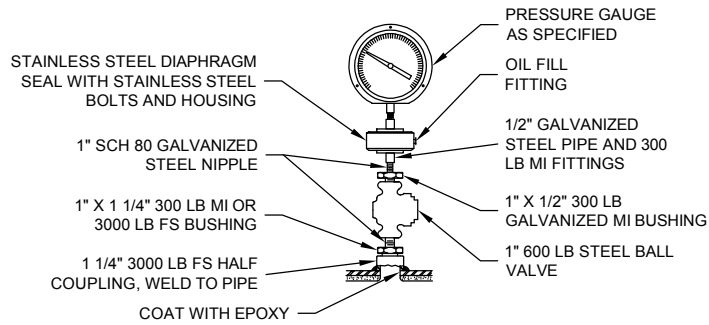
553
TYP **FLOW SWITCH DETAIL**
SCALE: NONE



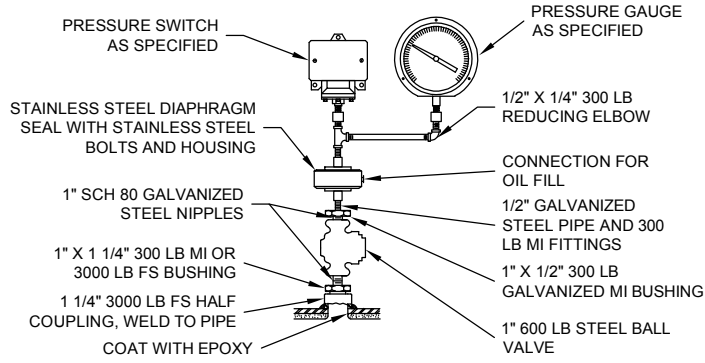
583
TYP **THERMAL TRANSMITTER
WITH THERMOWELL**
SCALE: NONE



591
TYP **PRESSURE TRANSMITTER**
SCALE: NONE



593
TYP **PRESSURE GAUGE**
SCALE: NONE



594
TYP **PRESSURE SWITCH/GAUGE**
SCALE: NONE

DRAWING IS TO SCALE IF BAR MEASURES: 1" = FULL SCALE 1/2" = HALF SCALE		ORIGINAL		DESIGN		DRAWN		CHECKED		REVISIONS	
NO.	DATE	DESIGN	DRAWN	CHECKED	MT	DCL	MPJ	MT	DCL	MPJ	
0	09/20/22										

MOUNTAIN GREEN SEWER IMPROVEMENT DISTRICT
5455 WEST OLD HWY ROAD MORGAN, UT 84050
BNR WASTEWATER TREATMENT 2022
INSTRUMENTATION - DETAILS
DETAILS

skm
533 W 2600 S, Suite 25
Bountiful, Utah 84010
Phone: (801) 677-0011
www.skmeng.com

DRAWING NO.

1901

SHEET

INSTRUMENT SCHEDULE

DRAWING NO.

SHEET

MOUNTAIN GREEN SEWER IMPROVEMENT DISTRICT

TYPICAL PLC PANEL DRAWINGS

PLC-PB & PLC-HW

SKM Project Number: 002191.P

August, 2022

FILENAME	SH	DWGDESC
I001	1	PLC PANEL DRAWINGS
I002	2	PLC PANEL DRAWINGS
I003	3	PLC PANEL DRAWINGS
I004	4	PLC PANEL DRAWINGS
I005	5	PLC PANEL DRAWINGS
I101	6	PLC PANEL DRAWINGS
I301	7	PLC PANEL DRAWINGS
I302	8	PANEL LAYOUT
I401	9	PLC PANEL DRAWINGS
I501	10	PLC PANEL DRAWINGS
I601	11	PANEL LAYOUT
I701	12	PANEL LAYOUT
I801	13	PANEL LAYOUT
I901	14	PLC PANEL DRAWINGS

ORIGINAL				
NO.	DATE	DESIGN	DRAWN	CHECKED
0	00/00/0000	MT	MGJ	MT
REVISIONS				

skm

533 W 2600 S, Suite 25
Bountiful, Utah 84010
Phone: (801) 677-0011
www.skmeng.com

MOUNTAIN GREEN SEWER IMPROVEMENT DISTRICT

5455 WEST OLD HWY ROAD MORGAN, UT 84050

PLC PANEL DRAWINGS

COVER SHEET

THIS DRAWING IS PROPERTY OF SKM ENGINEERING AND IS TRANSMITTED IN CONFIDENCE. NEITHER RECEIPT NOR POSSESSION CONFERS OR TRANSFERS ANY RIGHTS TO REPRODUCE, USE, OR DISCLOSE, IN WHOLE OR IN PART, DATA CONTAINED HEREIN FOR ANY PURPOSE WITHOUT THE WRITTEN PERMISSION OF SKM ENGINEERING. © COPYRIGHTED 2018 BOUNTIFUL, UTAH

01/21

DRAWING IS TO SCALE
IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

SHEET 1 OF 14

I001

8/19/2022 C:\USERS\MICHAEL_JOHNSON\AQUA ENGINEERING\MG\SID - 002191.P MGSID 1 AND C DESIGN\050 DRAFTING\998 INSTRUMENTATION\TYPICAL PANEL\1002.DWG

SCHEMATIC LINETYPES					ABBREVIATIONS					NOTES																																																	
MANUFACTURER/SHOP WIRE TYPICALLY INSTALLED OFF-SITE EXISTING OR FUTURE MANUFACTURER/SHOP WIRE EXISTING OR FUTURE FIELD/CONTRACTOR INSTALLED WIRE FIELD/CONTRACTOR INSTALLED WIRE					A AFF AI AIC AO AS ATS C CB CL2 CPT CTC CTC CU CV DCS DI DO DP DS DV/DT DWG ETM EOL FE FLA FOC FOR FS FVNR GFCI GFP GND GPM GRS H2S HMI HOA HOR I IC IO ISC J LAN LCP LOS LP LR LS LTC M MA MC MCB MCC MCP MFR(S) MGD MH MOV MTU NEC NOTC NPW NTS NTU OIT OL OO OR AMPERE ABOVE FINISHED FLOOR ANALOG INPUT AMPS INTERRUPTING CAPACITY ANALOG OUTPUT AIR SUPPLY AUTOMATIC TRANSFER SWITCH CONDUIT CIRCUIT BREAKER CHLORINE CONTROL POWER TRANSFORMER COMMUNICATIONS TERMINATION CABINET COPPER, BARE CONTROL VALVE DISTRIBUTED CONTROL SYSTEM DISCRETE INPUT DISCRETE OUTPUT DISTRIBUTION PANEL DISCONNECT SWITCH DIFFERENTIAL VOLTAGE/TIME DRAWING ELAPSED TIME METER ELECTRONIC OVERLOAD FLOW ELEMENT FULL LOAD AMPS FIBER OPTIC CABLE FORWARD-OFF-REVERSE FLOW SWITCH FULL VOLTAGE NON-REVERSING GROUND FAULT CIRCUIT INTERRUPTER GROUND FAULT PROTECTION GROUND GALLONS PER MINUTE GALVANIZED RIGID STEEL HYDROGEN SULFIDE HUMAN MACHINE INTERFACE HAND-OFF-AUTO HAND-OFF-REMOTE CURRENT INSTRUMENTATION CABLE INPUT/OUTPUT SHORT CIRCUIT CURRENT JUNCTION BOX LOCAL AREA NETWORK LOCAL CONTROL PANEL LOCK-OUT-STOP LIGHTING PANEL LOCAL/REMOTE LEVEL SWITCH LIQUIDTIGHT FLEXIBLE METAL CONDUIT MOTOR MANUAL/AUTO MILLIAMPS MANUFACTURER'S CABLE MAIN CIRCUIT BREAKER MOTOR CONTROL CENTER MOTOR CIRCUIT PROTECTOR MANUFACTURER(S) MILLION GALLONS PER DAY MANHOLE MOTOR OPERATED VALVE MASTER TELEMETRY UNIT NATIONAL ELECTRICAL CODE NORMALLY OPEN TIMED CLOSED NON-POTABLE WATER NOT TO SCALE TURBIDITY OPERATOR INTERFACE TERMINAL OVERLOAD ON/OFF (MAINTAINED) OFF-REMOTE PB PC PFR PLC PNL PPM PR P PS PSI PV RCP RF RIO RST RTD RTU RVSS SEQ SES SLOS SMC SO2 SP SPD SS ST TC TS TYP UG V VA VFD W WP XFMR ZS PULL BOX PERSONAL COMPUTER PHASE/POWER FAILURE RELAY PROGRAMMABLE LOGIC CONTROLLER PANEL PARTS PER MILLION PAIR PRESSURE PRESSURE SWITCH POUNDS PER SQUARE INCH PROCESS VARIABLE REMOTE CONTROL PANEL RADIO FREQUENCY REMOTE INPUT OUTPUT RESET RESISTANCE TEMPERATURE DETECTOR REMOTE TELEMETRY UNIT REDUCED VOLTAGE SOFT STARTER SERVICE ENTRANCE EQUIPMENT SERVICE ENTRANCE SECTION START-LOCK-OFF-STOP SUBMERSIBLE MANUFACTURER CABLE SULFUR DIOXIDE SET POINT/SPARE SURGE PROTECTION DEVICE START/STOP SHUNT TRIP TELEPHONE CABLE TEMPERATURE SWITCH TYPICAL UNDERGROUND VOLT VOLTAMP VARIABLE FREQUENCY DRIVE WATT, WIRE WEATHERPROOF TRANSFORMER POSITION SWITCH					1. THE COMPLETED INSTALLATION SHALL COMPLY WITH APPLICABLE FEDERAL, STATE, AND LOCAL CODES, ORDINANCES, AND REGULATIONS. ALL WORK SHALL BE COMPLETED IN A NEAT, WORKMANLIKE MANNER IN ACCORDANCE WITH THE LATEST NEC STANDARDS OF INSTALLATION UNDER COMPETENT SUPERVISION. INSTALL GROUNDING PER NEC. 2. ALL MATERIALS SHALL BE NEW AND OF THE BEST QUALITY, MANUFACTURED IN ACCORDANCE WITH NEMA, ANSI, UL, OR OTHER APPLICABLE STANDARDS. THE USE OF MANUFACTURERS' NAMES, MODELS, AND NUMBERS IS INTENDED TO ESTABLISH STYLE, QUALITY, APPEARANCE, USEFULNESS, AND BID PRICE. 3. PROTECT ALL ELECTRICAL MATERIAL AND EQUIPMENT INSTALLED AGAINST DAMAGE BY OTHER TRADES, WEATHER CONDITIONS, OR ANY OTHER PREVENTABLE CAUSES. EQUIPMENT DAMAGED DURING SHIPPING OR CONSTRUCTION, PRIOR TO ACCEPTANCE BY THE ENGINEER OR THE OWNER, WILL BE REJECTED AS DEFECTIVE. 4. ALL COMPONENTS SHALL BE FREE OF DUST, GRIT AND FOREIGN MATERIALS, LEFT AS NEW BEFORE FINAL ACCEPTANCE OF WORK. DAMAGED PAINT AND FINISHES SHALL BE TOUCHED UP OR REPAINTED WITH MATCHING COLOR PAINT AND FINISH. 5. CIRCUIT CONDUCTORS #6 AWG OR SMALLER SHALL BE THWN STRANDED COPPER. #4 AWG THROUGH #2 AWG SHALL BE XHHW STRANDED COPPER. #1 AWG OR LARGER SHALL BE XHHW-2 STRANDED COPPER. MINIMUM POWER CONDUCTOR SIZE SHALL BE #12 AWG WITH #12 AWG GROUND. ALL WIRE TO BE SIZED PER NEC TABLE 316-10, 75° C BASED ON A 30° C AMBIENT. 6. SAFETY SWITCHES, ELECTRICAL DISTRIBUTION EQUIPMENT, CONTROL PANELS, AND OTHER ELECTRICAL DEVICES SHALL BE UL LISTED, AND RATED FOR HEAVY DUTY SERVICE. 7. WIRING DEVICES SHALL BE SPECIFICATION GRADE. 8. TYPICAL DETAILS SHALL APPLY IN ALL CASES, WHETHER SPECIFICALLY REFERRED TO OR NOT.																																																	
SCHEMATIC SYMBOLS					TB'S & PLC SYMBOLS																																																						
○ LUG OR TERMINAL ● SCHEMATIC POINT OF CONNECTION CIRCUIT BREAKER 100AF 50AT MCP FRAME SIZE TRIP RATING BREAKER TYPE FUSE 30A R AMPERE RATING FUSE TYPE GROUND CONNECTION MOTOR STARTER, CONTACTOR, RELAY OR TIMER COIL ○ ○ NORMALLY OPEN CONTACT ○ /○ NORMALLY CLOSED CONTACT ○/○ SOLENOID VALVE EQUIPMENT PROGRAMMING CONSOLE OFF ON XO 2 POSITION SELECTOR SWITCH POSITION LEGEND: X=CLOSED O=OPEN H O A XOO 3 POSITION SELECTOR SWITCH HAND - OFF - AUTO POSITION LEGEND: X=CLOSED O=OPEN O C A XOO 3 POSITION SELECTOR SWITCH OPEN - CLOSE - AUTO POSITION LEGEND: X=CLOSED O=OPEN F O R XOO 3 POSITION SELECTOR SWITCH FORWARD - OFF - REVERSE POSITION LEGEND: X=CLOSED O=OPEN STOP OLO NORMALLY CLOSED PUSH BUTTON START OLO NORMALLY OPEN PUSH BUTTON TYPICAL SWITCH CONFIGURATION FLOAT SWITCH - MAKE ON FALL FLOAT SWITCH - MAKE ON RISE FLOAT SWITCH - BREAK ON FALL FLOAT SWITCH - BREAK ON RISE SWITCH TYPE SYMBOL (SEE BELOW) ○ LEVEL SWITCH Δ PRESSURE SWITCH ℓ FLOW OR TORQUE SWITCH ℒ TEMPERATURE SWITCH ↗ LIMIT SWITCH NOTC XO TIMER RELAY CONTACT NORMALLY OPEN TIME DELAY CLOSE					LOCAL PANEL OR DEVICE TERMINAL BLOCK TERMINAL LABEL PLC PANEL TERMINAL BLOCK TERMINAL LABEL MCC TERMINAL BLOCK TERMINAL LABEL DEVICE TERMINAL BLOCK TERMINAL LABEL																																																						
<table><tr><th colspan="5">ORIGINAL</th></tr><tr><td>NO.</td><td>DATE</td><td>DESIGN</td><td>DRAWN</td><td>CHECKED</td></tr><tr><td>0</td><td>00/00/0000</td><td>MT</td><td>MGJ</td><td>MT</td></tr><tr><th colspan="5">REVISIONS</th></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr></table>					ORIGINAL					NO.	DATE	DESIGN	DRAWN	CHECKED	0	00/00/0000	MT	MGJ	MT	REVISIONS																									skm 533 W 2600 S, Suite 25 Bountiful, Utah 84010 Phone: (801) 677-0011 www.skmeng.com					MOUNTAIN GREEN SEWER IMPROVEMENT DISTRICT 5455 WEST OLD HWY ROAD MORGAN, UT 84050 PLC PANEL DRAWINGS NOTES & SYMBOLS					THIS DRAWING IS PROPERTY OF SKM ENGINEERING AND IS TRANSMITTED IN CONFIDENCE. NEITHER RECEIPT NOR POSSESSION CONFERS OR TRANSFERS ANY RIGHTS TO REPRODUCE, USE, OR DISCLOSE, IN WHOLE OR IN PART, DATA CONTAINED HEREIN FOR ANY PURPOSE WITHOUT THE WRITTEN PERMISSION OF SKM ENGINEERING. © COPYRIGHTED 2018 BOUNTIFUL, UTAH 0 1/2 1 DRAWING IS TO SCALE IF BAR MEASURES: 1" = FULL SCALE 1/2" = HALF SCALE SHEET 2 OF 14 1002				
ORIGINAL																																																											
NO.	DATE	DESIGN	DRAWN	CHECKED																																																							
0	00/00/0000	MT	MGJ	MT																																																							
REVISIONS																																																											

8/19/2022 C:\USERS\MICHAEL JOHNSON\AQUA ENGINEERING\MGSID - 002191.P\MGSD1 / AND C DESIGN\050 DRAFTING\998 INSTRUMENTATION\TYPICAL PANEL\1003.DWG

Item	Manufacturer	Part Number	Description	Qty	Notes
PLC EQUIPMENT					
1	AI LINK BRATLEY	1555-1-000R	COMBAT 1000 PROCESSOR MODULE	1	
2	AI LINK BRATLEY	1555-RT1-M-SOR-2	COMBAT 1000 I/O TERMINAL BOARD WITH 16 ANALOG INPUTS	1	
3	AI LINK BRATLEY	1555-1-000R	COMBAT 1000 I/O TERMINAL BOARD WITH 16 ANALOG INPUTS	1	
4	AI LINK BRATLEY	1555-1-000R	COMBAT 1000 I/O TERMINAL BOARD WITH 16 ANALOG INPUTS	1	
5	AI LINK BRATLEY	1555-1-000R	COMBAT 1000 I/O TERMINAL BOARD WITH 16 ANALOG INPUTS	1	
6	AI LINK BRATLEY	1555-1-000R	COMBAT 1000 I/O TERMINAL BOARD WITH 16 ANALOG INPUTS	1	
POWER DISTRIBUTION EQUIPMENT					
11	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
12	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
13	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
14	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
15	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
16	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
17	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
18	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
19	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
20	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
21	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
22	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
23	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
24	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
25	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
26	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
27	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
28	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
29	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
30	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
31	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
32	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
33	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
34	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
35	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
36	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
37	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
38	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
39	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
40	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
41	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
42	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
43	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
44	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
45	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
46	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
47	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
48	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
49	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
50	PHOENIX CONTACT	2841001	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
PANEL EQUIPMENT					
60	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
61	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
62	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
63	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
64	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
65	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
66	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
67	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
68	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
69	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
70	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
71	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
72	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
73	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
74	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
75	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
76	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
77	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
78	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
79	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
80	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
81	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
82	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
83	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
84	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
85	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
86	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
87	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
88	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
89	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
90	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
91	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
92	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
93	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
94	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
95	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
96	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
97	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
98	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
99	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
100	SAGINAW	801-1000-000	120V 100A FUSE TERMINAL BLOCK WITH 16 POSITIVE TERMINALS	1	
NETWORK EQUIPMENT					
101	AI LINK BRATLEY	1555-1-000R	COMBAT 1000 PROCESSOR MODULE	1	
102	AI LINK BRATLEY	1555-1-000R	COMBAT 1000 I/O TERMINAL BOARD WITH 16 ANALOG INPUTS	1	
103	AI LINK BRATLEY	1555-1-000R	COMBAT 1000 I/O TERMINAL BOARD WITH 16 ANALOG INPUTS	1	

ORIGINAL				
NO.	DATE	DESIGN	DRAWN	CHECKED
0	00/00/0000	MT	MGJ	MT
REVISIONS				



533 W 2600 S, Suite 25
Bountiful, Utah 84010
Phone: (801) 677-0011
www.skmeng.com

MOUNTAIN GREEN SEWER IMPROVEMENT DISTRICT

5455 WEST OLD HWY ROAD MORGAN, UT 84050

PLC PANEL DRAWINGS

TYPICAL BILL OF MATERIALS

THIS DRAWING IS PROPERTY OF SKM ENGINEERING AND IS TRANSMITTED IN CONFIDENCE. NEITHER RECEIPT NOR POSSESSION CONFERS OR TRANSFERS ANY RIGHTS TO REPRODUCE, USE, OR DISCLOSE, IN WHOLE OR IN PART, DATA CONTAINED HEREIN FOR ANY PURPOSE WITHOUT THE WRITTEN PERMISSION OF SKM ENGINEERING. © COPYRIGHTED 2018 BOUNTIFUL, UTAH

0 1/2 1

DRAWING IS TO SCALE IF BAR MEASURES: 1" = FULL SCALE 1/2" = HALF SCALE

SHEET 3 OF 14

1003

[illegible]

ORIGINAL				
NO.	DATE	DESIGN	DRAWN	CHECKED
0	00/00/0000	MT	MGJ	MT
REVISIONS				

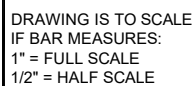
**533 W 2600 S, Suite 25
Bountiful, Utah 84010
Phone: (801) 677-0011
www.skmeng.com**

5455 WEST OLD HWY ROAD MORGAN, UT 84050

PLC PANEL DRAWINGS

PLC-PB IO SCHEDULE

THIS DRAWING IS PROPERTY OF
SKM ENGINEERING AND IS
TRANSMITTED IN CONFIDENCE
NEITHER RECEIPT NOR
POSSESSION CONFERS OR
TRANSFERS ANY RIGHTS TO
REPRODUCE, USE,
OR DISCLOSE, IN WHOLE OR IN
PART, DATA CONTAINED HEREIN
FOR ANY PURPOSE WITHOUT THE
WRITTEN PERMISSION OF SKM
ENGINEERING. © COPYRIGHTED
2018 BOUNTIFUL, UTAH



SHEET 4 OF 14

1004

[illegible]

DISCRETE INPUTS			
ID	ADDRESS	TAG	DESCRIPTION
RPS001			
RPS002			
RPS003			
RPS004			
RPS005			
RPS006			
RPS007			
RPS008			
RPS009			
RPS010			
RPS011			
RPS012			
RPS013			
RPS014			
RPS015			
RPS016			
RPS017			
RPS018			
RPS019			
RPS020			
RPS021			
RPS022			
RPS023			
RPS024			
RPS025			
RPS026			
RPS027			
RPS028			
RPS029			
RPS030			
RPS031			
RPS032			
RPS033			
RPS034			
RPS035			
RPS036			
RPS037			
RPS038			
RPS039			
RPS040			
RPS041			
RPS042			
RPS043			
RPS044			
RPS045			
RPS046			
RPS047			
RPS048			
RPS049			
RPS050			
RPS051			
RPS052			
RPS053			
RPS054			
RPS055			
RPS056			
RPS057			
RPS058			
RPS059			
RPS060			
RPS061			
RPS062			
RPS063			
RPS064			
RPS065			
RPS066			
RPS067			
RPS068			
RPS069			
RPS070			
RPS071			
RPS072			
RPS073			
RPS074			
RPS075			
RPS076			
RPS077			
RPS078			
RPS079			
RPS080			
RPS081			
RPS082			
RPS083			
RPS084			
RPS085			
RPS086			
RPS087			
RPS088			
RPS089			
RPS090			
RPS091			
RPS092			
RPS093			
RPS094			
RPS095			
RPS096			
RPS097			
RPS098			
RPS099			
RPS100			
RPS101			
RPS102			
RPS103			
RPS104			
RPS105			
RPS106			
RPS107			
RPS108			
RPS109			
RPS110			
RPS111			
RPS112			
RPS113			
RPS114			
RPS115			
RPS116			
RPS117			
RPS118			
RPS119			
RPS120			
RPS121			
RPS122			
RPS123			
RPS124			
RPS125			
RPS126			
RPS127			
RPS128			
RPS129			
RPS130			
RPS131			
RPS132			
RPS133			
RPS134			
RPS135			
RPS136			
RPS137			
RPS138			
RPS139			
RPS140			
RPS141			
RPS142			
RPS143			
RPS144			
RPS145			
RPS146			
RPS147			
RPS148			
RPS149			
RPS150			
RPS151			
RPS152			
RPS153			
RPS154			
RPS155			
RPS156			
RPS157			
RPS158			
RPS159			
RPS160			
RPS161			
RPS162			
RPS163			
RPS164			
RPS165			
RPS166			
RPS167			
RPS168			
RPS169			
RPS170			
RPS171			
RPS172			
RPS173			
RPS174			
RPS175			
RPS176			
RPS177			
RPS178			
RPS179			
RPS180			
RPS181			
RPS182			
RPS183			
RPS184			
RPS185			
RPS186			
RPS187			
RPS188			
RPS189			
RPS190			
RPS191			
RPS192			
RPS193			
RPS194			
RPS195			
RPS196			
RPS197			
RPS198			
RPS199			
RPS200			
RPS201			
RPS202			
RPS203			
RPS204			
RPS205			
RPS206			
RPS207			
RPS208			
RPS209			
RPS210			
RPS211			
RPS212			
RPS213			
RPS214			
RPS215			
RPS216			
RPS217			
RPS218			
RPS219			
RPS220			
RPS221			
RPS222			
RPS223			
RPS224			
RPS225			
RPS226			
RPS227			
RPS228			
RPS229			
RPS230			
RPS231			
RPS232			
RPS233			
RPS234			
RPS235			
RPS236			
RPS237			
RPS238			
RPS239			
RPS240			
RPS241			
RPS242			
RPS243			
RPS244			
RPS245			
RPS246			
RPS247			
RPS248			
RPS249			
RPS250			
RPS251			
RPS252			
RPS253			
RPS254			
RPS255			
RPS256			
RPS257			
RPS258			
RPS259			
RPS260			
RPS261			
RPS262			
RPS263			
RPS264			
RPS265			
RPS266			
RPS267			
RPS268			
RPS269			
RPS270			
RPS271			
RPS272			
RPS273			
RPS274			
RPS275			
RPS276			
RPS277			
RPS278			
RPS279			
RPS280			
RPS281			
RPS282			
RPS283			
RPS284			
RPS285			
RPS286			
RPS287			
RPS288			
RPS289			
RPS290			
RPS291			
RPS292			
RPS293			
RPS294			
RPS295			
RPS296			
RPS297			
RPS298			
RPS299			
RPS300			
RPS301			
RPS302			
RPS303			
RPS304			
RPS305			
RPS306			
RPS307			
RPS308			
RPS309			
RPS310			
RPS311			
RPS312			
RPS313			
RPS314			
RPS315			
RPS316			
RPS317			
RPS318			
RPS319			
RPS320			
RPS321			
RPS322			
RPS323			
RPS324			
RPS325			
RPS326			
RPS327			
RPS328			
RPS329			
RPS330			
RPS331			
RPS332			
RPS333			
RPS334			
RPS335			
RPS336			
RPS337			
RPS338			
RPS339			
RPS340			
RPS341			
RPS342			
RPS343			
RPS344			
RPS345			
RPS346			
RPS347			
RPS348			
RPS349			
RPS350			
RPS351			
RPS352			
RPS353			
RPS354			
RPS355			
RPS356			
RPS357			
RPS358			
RPS359			
RPS360			
RPS361			
RPS362			
RPS363			
RPS364			
RPS365			
RPS366			
RPS367			
RPS368			
RPS369			
RPS370			
RPS371			
RPS372			
RPS373			
RPS374			
RPS375			
RPS376			
RPS377			
RPS378			
RPS379			
RPS380			
RPS381			
RPS382			
RPS383			
RPS384			
RPS385			
RPS386			
RPS387			
RPS388			
RPS389			
RPS390			
RPS391			
RPS392			
RPS393			
RPS394			
RPS395			
RPS396			
RPS397			
RPS398			
RPS399			
RPS400			
RPS401			
RPS402			
RPS403			
RPS404			
RPS405			
RPS406			
RPS407			
RPS408			
RPS409			
RPS410			
RPS411			
RPS412			
RPS413			
RPS414			
RPS415			
RPS416			
RPS417			
RPS418			
RPS419			
RPS420			
RPS421			
RPS422			
RPS423			
RPS424			
RPS425			
RPS426			
RPS427			
RPS428			
RPS429			
RPS430			
RPS431			
RPS432			
RPS433			
RPS434			
RPS435			
RPS436			
RPS437			
RPS438			
RPS439			
RPS440			
RPS441			
RPS442			
RPS443			
RPS444			
RPS445			
RPS446			
RPS447			
RPS448			
RPS449			
RPS450			
RPS451			
RPS452			
RPS453			
RPS454			
RPS455			
RPS456			
RPS457			
RPS458			
RPS459			
RPS460			
RPS461			
RPS462			
RPS463			
RPS464			
RPS465			
RPS466			
RPS467			
RPS468			
RPS469			
RPS470			
RPS471			
RPS472			
RPS473			
RPS474			
RPS475			
RPS476			
RPS477			
RPS478			
RPS479			
RPS480			
RPS481			
RPS482			
RPS483			
RPS484			
RPS485			
RPS486			
RPS487			
RPS488			
RPS489			
RPS490			
RPS491			
RPS492			
RPS493			

ANA LOG INPUTS		
IO ADDRESS	TAG	DESCRIPTION
RIS-100	11-01	PLANT ELECTRICAL SYSTEM 1 FUEL
RIS-101	11-01	PLANT ELECTRICAL SYSTEM
RIS-102	Z1-001	GAS TO ENCLAVE VALVE POSITION
RIS-103	01-000	GAS TO ENCLAVE FLOW
RIS-104	Z1-011	WAS TO CLUSTERS VALVE POSITION
RIS-105	01-001	WAS TO CLUSTERS FLOW
RIS-106	A-001	AEROBIC DIGESTER 1 INSSO VIBROCYCLE 1
RIS-107	A-002	AEROBIC DIGESTER 1 INSSO VIBROCYCLE 2
RIS-108	A-001	AEROBIC DIGESTER 2 INSSO VIBROCYCLE 1
RIS-109	A-002	AEROBIC DIGESTER 2 INSSO VIBROCYCLE 2
RIS-110		
RIS-111		
RIS-112		
RIS-113		
RIS-114		
RIS-115		
RIS-116		
RIS-117		
RIS-118		
RIS-119		
RIS-120		

ANA LOG OUTPUTS		
IO ADDRESS	TAG	DESCRIPTION
RIS-200	Z0-001	GAS TO ENCLAVE VALVE POSITION COMMAND
RIS-201	Z0-000	WAS TO CLUSTERS VALVE POSITION COMMAND
RIS-202		
RIS-203		

ORIGINAL				
NO.	DATE	DESIGN	DRAWN	CHECKED
0	00/00/0000	MT	MGJ	MT
REVISIONS				

skm

**533 W 2600 S, Suite 25
Bountiful, Utah 84010
Phone: (801) 677-0011
www.skmeng.com**

MOUNTAIN GREEN SEWER IMPROVEMENT DISTRICT

5455 WEST OLD HWY ROAD MORGAN, UT 84050

PLC PANEL DRAWINGS

PLC-HW IO SCHEDULE

THIS DRAWING IS PROPERTY OF
SKM ENGINEERING AND IS
TRANSMITTED IN CONFIDENCE
NEITHER RECEIPT NOR
POSSESSION CONFERS OR
TRANSFERS ANY RIGHTS TO
REPRODUCE, USE,
OR DISCLOSE, IN WHOLE OR IN
PART, DATA CONTAINED HEREIN
FOR ANY PURPOSE WITHOUT THE
WRITTEN PERMISSION OF SKM
ENGINEERING. © COPYRIGHTED
2018 BOUNTIFUL, UTAH

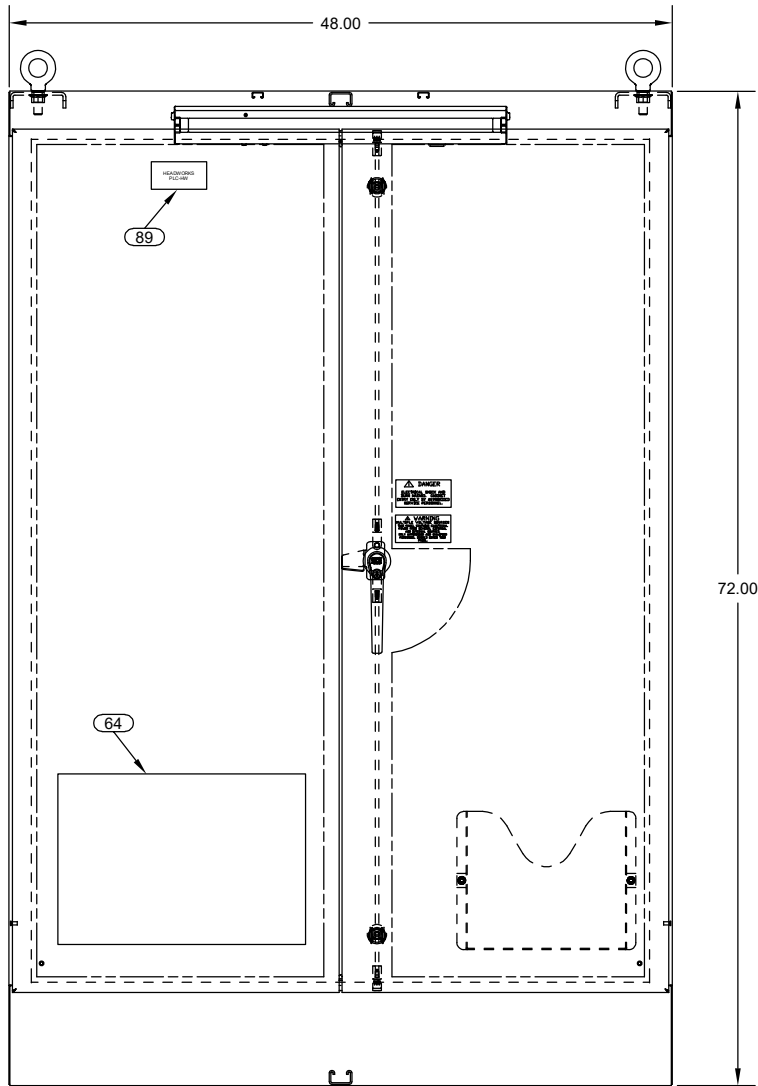


DRAWING IS TO SCALE
IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

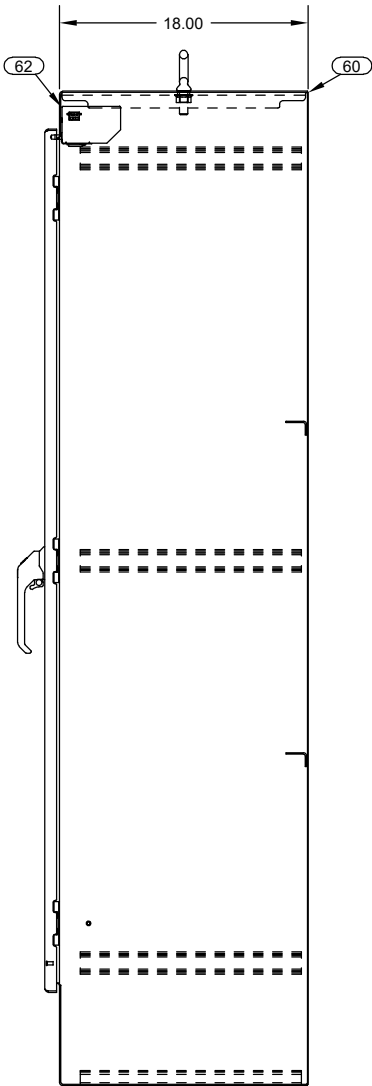
SHEET 5 OF 14

1005

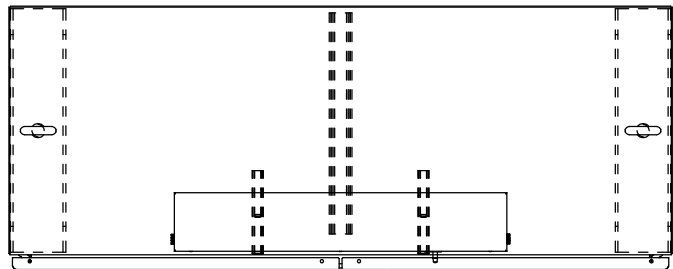
8/19/2022 C:\USERS\MICHAEL_JOHNSON\AQUA ENGINEERING\WG\SID - 002191.P MGSID / AND C DESIGN\050 DRAFTING\998 INSTRUMENTATION\TYPICAL PANEL\I101.DWG



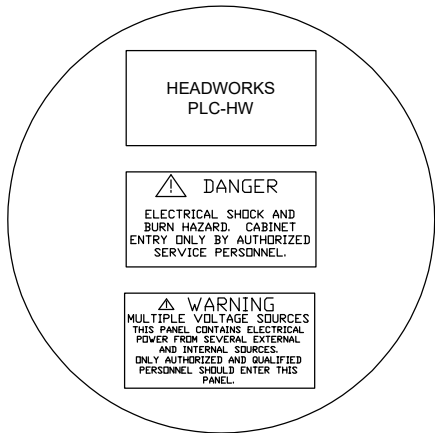
PANEL FRONT VIEW



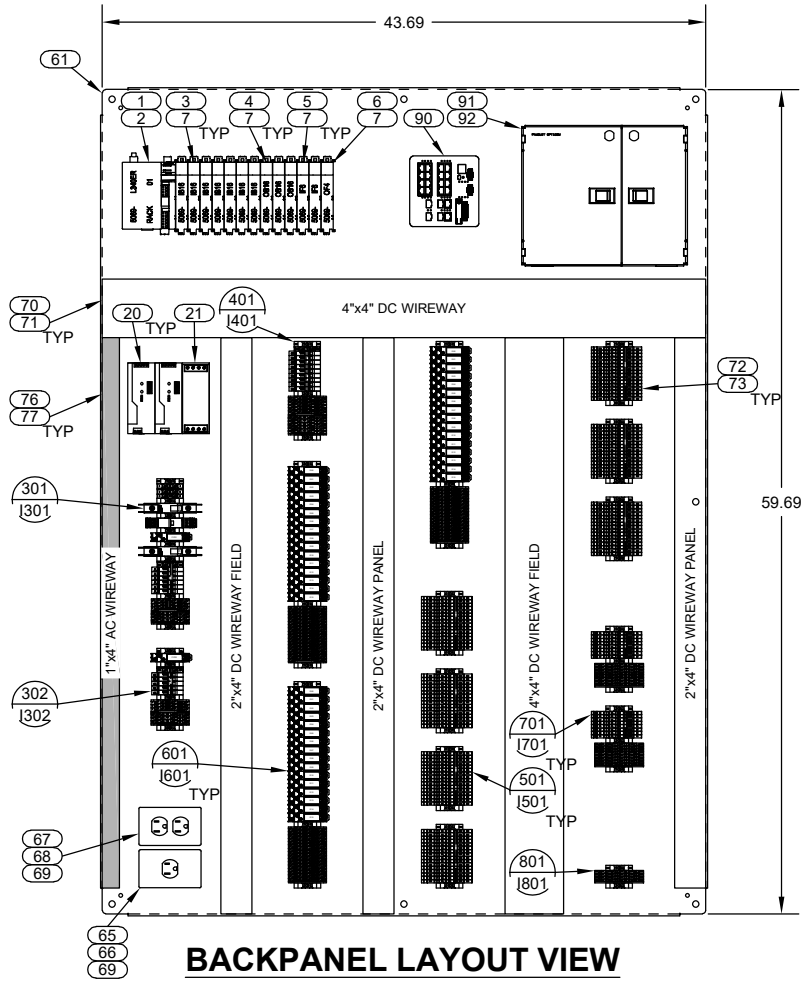
PANEL SIDE VIEW



PANEL TOP VIEW



PANEL LABELS



BACKPANEL LAYOUT VIEW

ORIGINAL				
NO.	DATE	DESIGN	DRAWN	CHECKED
0	00/00/0000	MT	MGJ	MT
REVISIONS				

skm

533 W 2600 S, Suite 25
Bountiful, Utah 84010
Phone: (801) 677-0011
www.skmeng.com

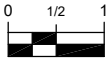
MOUNTAIN GREEN SEWER IMPROVEMENT DISTRICT

5455 WEST OLD HWY ROAD MORGAN, UT 84050

PLC PANEL DRAWINGS

PANEL LAYOUT

THIS DRAWING IS PROPERTY OF SKM ENGINEERING AND IS TRANSMITTED IN CONFIDENCE. NEITHER RECEIPT NOR POSSESSION CONFERS OR TRANSFERS ANY RIGHTS TO REPRODUCE, USE, OR DISCLOSE, IN WHOLE OR IN PART, DATA CONTAINED HEREIN FOR ANY PURPOSE WITHOUT THE WRITTEN PERMISSION OF SKM ENGINEERING. © COPYRIGHTED 2018 BOUNTIFUL, UTAH

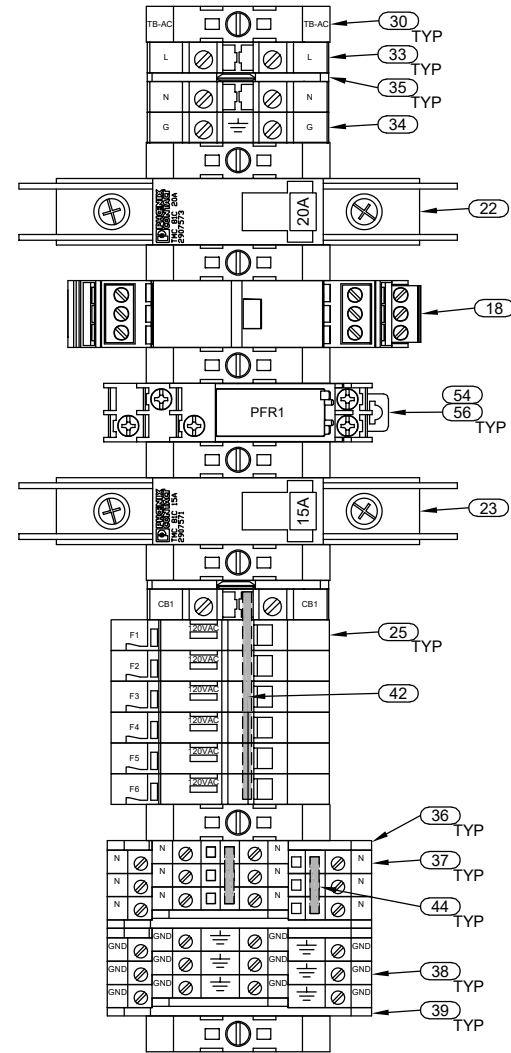
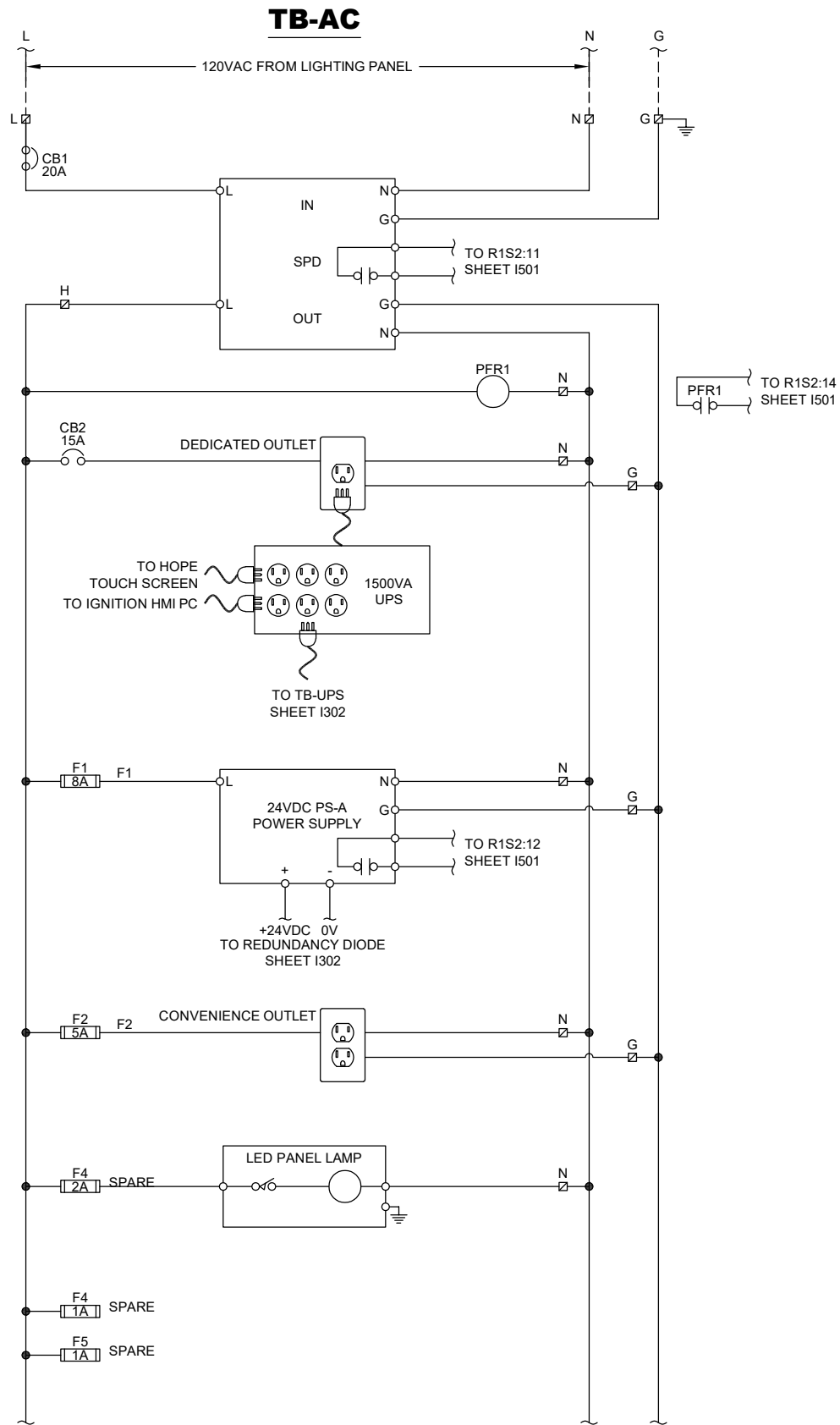


DRAWING IS TO SCALE
IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

SHEET 6 OF 14

I101

8/19/2022 C:\USERS\MICHAEL_JOHNSON\AQUA ENGINEERING\MGSID - 002191.P MGSID I AND C DESIGN\050 DRAFTING\998 INSTRUMENTATION\TYPICAL PANEL\I301.DWG



**TYPICAL TB-AC
TERMINAL BLOCK LAYOUT**

ORIGINAL				
NO.	DATE	DESIGN	DRAWN	CHECKED
0	00/00/0000	MT	MGJ	MT
REVISIONS				

skm

533 W 2600 S, Suite 25
Bountiful, Utah 84010
Phone: (801) 677-0011
www.skmeng.com

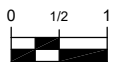
MOUNTAIN GREEN SEWER IMPROVEMENT DISTRICT

5455 WEST OLD HWY ROAD MORGAN, UT 84050

PLC PANEL DRAWINGS

PANLE AC POWER WIRING DIAGRAM

THIS DRAWING IS PROPERTY OF SKM ENGINEERING AND IS TRANSMITTED IN CONFIDENCE. NEITHER RECEIPT NOR POSSESSION CONFERS OR TRANSFERS ANY RIGHTS TO REPRODUCE, USE, OR DISCLOSE, IN WHOLE OR IN PART, DATA CONTAINED HEREIN FOR ANY PURPOSE WITHOUT THE WRITTEN PERMISSION OF SKM ENGINEERING. © COPYRIGHTED 2018 BOUNTIFUL, UTAH

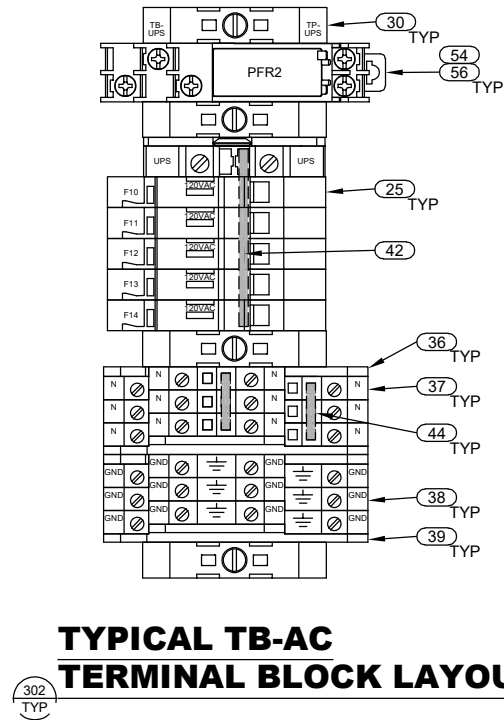
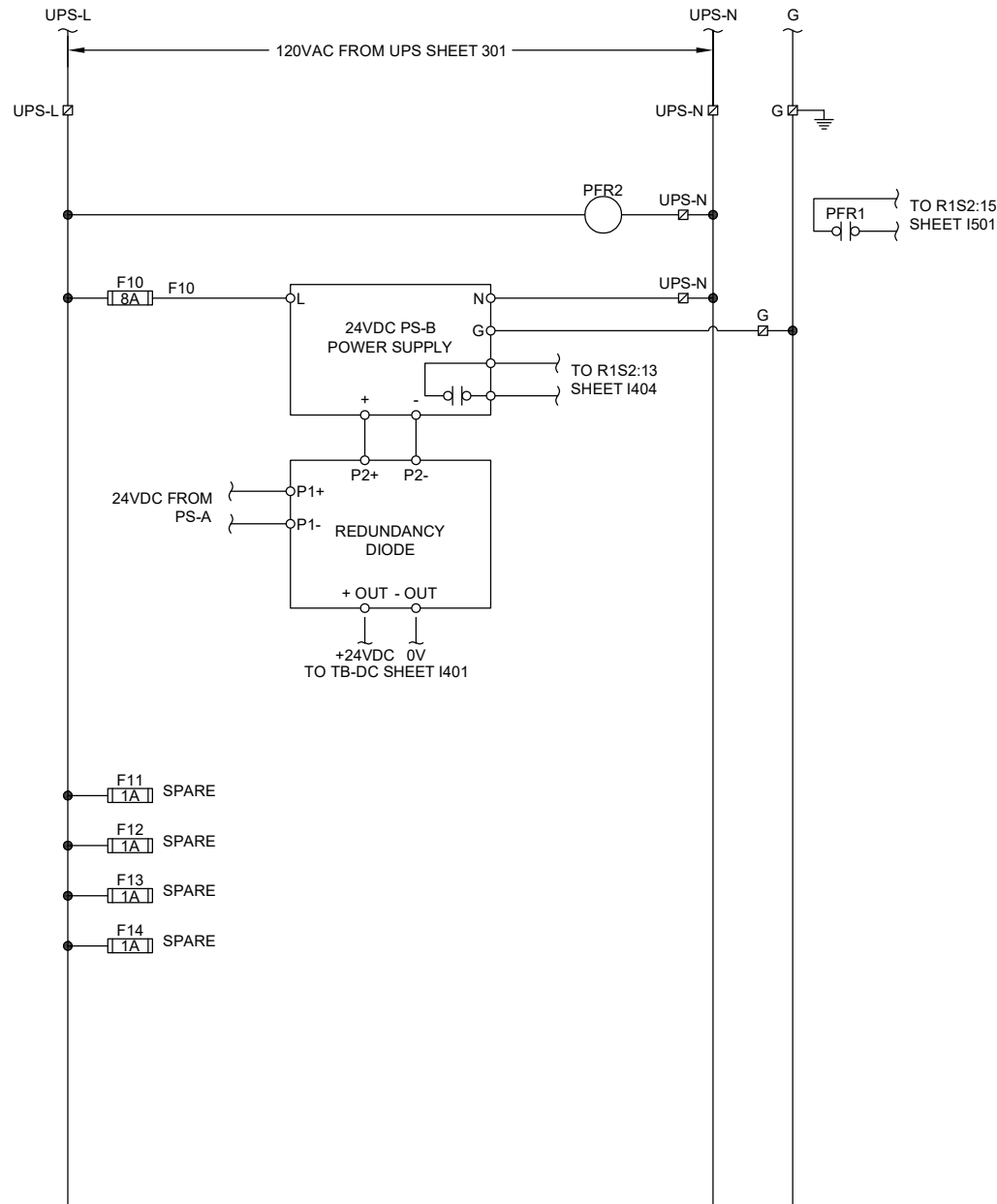


DRAWING IS TO SCALE
IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

SHEET 7 OF 14

I301

8/19/2022 C:\USERS\MICHAEL_JOHNSON\AQUA ENGINEERING\MGSID - 002191.P MGSID / AND C DESIGN\050 DRAFTING\998 INSTRUMENTATION\TYPICAL PANEL\302.DWG



ORIGINAL				
NO.	DATE	DESIGN	DRAWN	CHECKED
0	00/00/0000	MT	MGJ	MT
REVISIONS				

skm

533 W 2600 S, Suite 25
Bountiful, Utah 84010
Phone: (801) 677-0011
www.skmeng.com

MOUNTAIN GREEN SEWER IMPROVEMENT DISTRICT

5455 WEST OLD HWY ROAD MORGAN, UT 84050

PANEL LAYOUT

PANEL UPS POWER WIRING DIAGRAM

THIS DRAWING IS PROPERTY OF SKM ENGINEERING AND IS TRANSMITTED IN CONFIDENCE. NEITHER RECEIPT NOR POSSESSION CONFERS OR TRANSFERS ANY RIGHTS TO REPRODUCE, USE, OR DISCLOSE, IN WHOLE OR IN PART, DATA CONTAINED HEREIN FOR ANY PURPOSE WITHOUT THE WRITTEN PERMISSION OF SKM ENGINEERING. © COPYRIGHTED 2018 BOUNTIFUL, UTAH

0 1/2 1

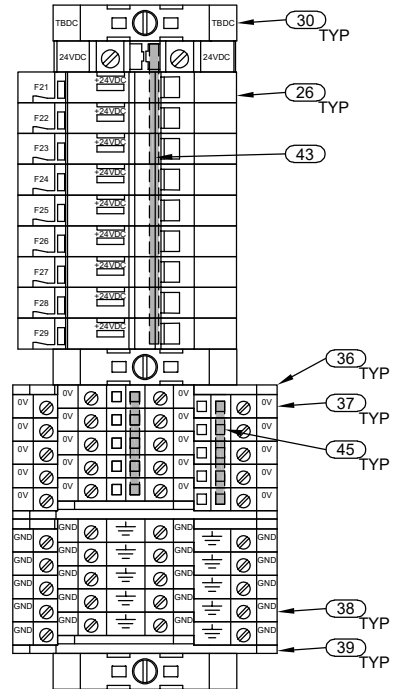
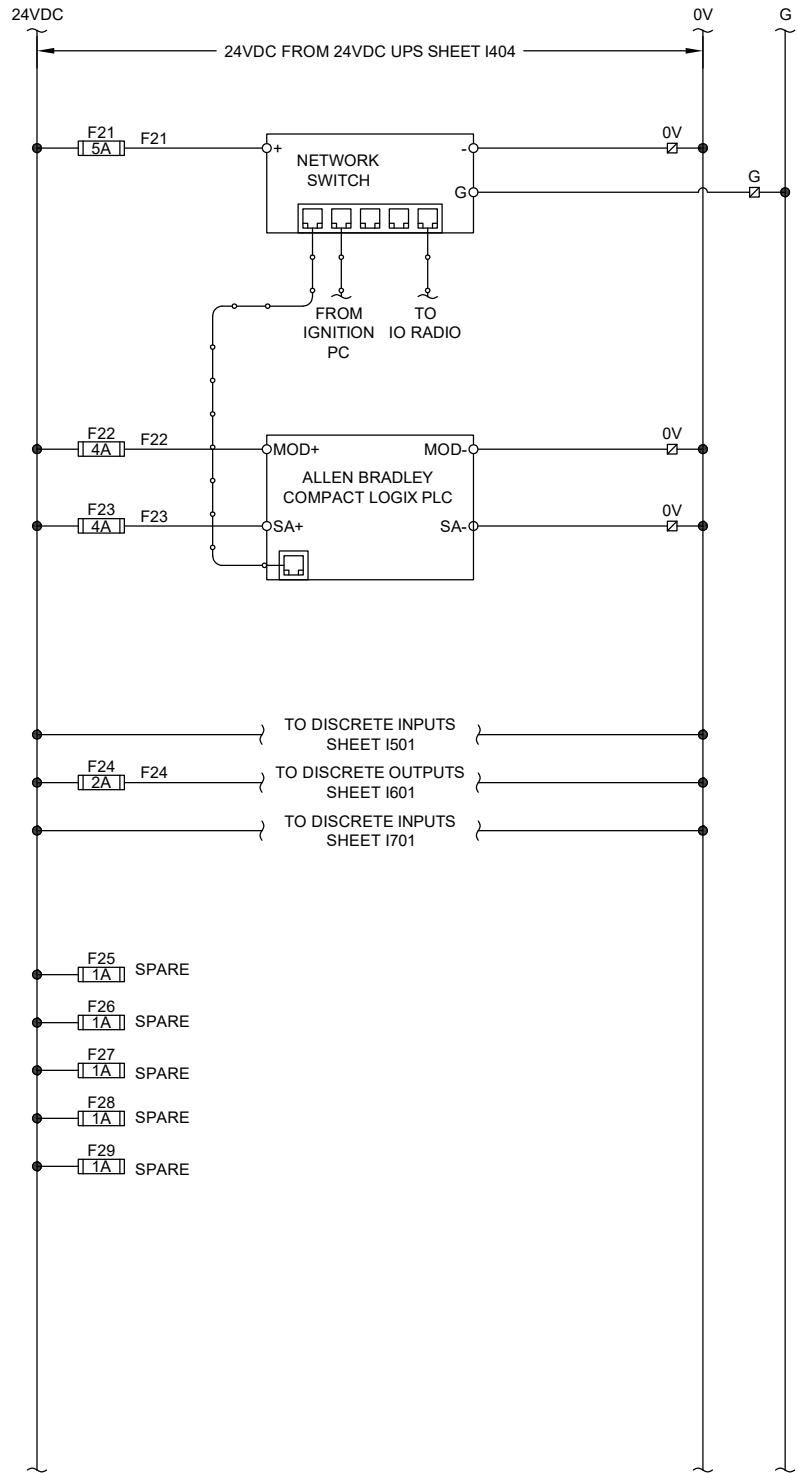
DRAWING IS TO SCALE IF BAR MEASURES: 1" = FULL SCALE 1/2" = HALF SCALE

SHEET 8 OF 14

I302

C:\USERS\MICHAEL_JOHNSON\AQUA ENGINEERING\WG\SID - 002191.P MGSID / AND C DESIGN\050 DRAFTING\998 INSTRUMENTATION\TYPICAL PANEL\I401.DWG 8/19/2022

TB-DC



TYPICAL TB-DC
TERMINAL BLOCK LAYOUT

401
TYP

ORIGINAL				
NO.	DATE	DESIGN	DRAWN	CHECKED
0	00/00/0000	MT	MGJ	MT
REVISIONS				

skm

533 W 2600 S, Suite 25
Bountiful, Utah 84010
Phone: (801) 677-0011
www.skmeng.com

MOUNTAIN GREEN SEWER IMPROVEMENT DISTRICT

5455 WEST OLD HWY ROAD MORGAN, UT 84050

PLC PANEL DRAWINGS

PANEL DC POWER WIRING DIAGRAM

THIS DRAWING IS PROPERTY OF SKM ENGINEERING AND IS TRANSMITTED IN CONFIDENCE. NEITHER RECEIPT NOR POSSESSION CONFERS OR TRANSFERS ANY RIGHTS TO REPRODUCE, USE, OR DISCLOSE, IN WHOLE OR IN PART, DATA CONTAINED HEREIN FOR ANY PURPOSE WITHOUT THE WRITTEN PERMISSION OF SKM ENGINEERING. © COPYRIGHTED 2018 BOUNTIFUL, UTAH

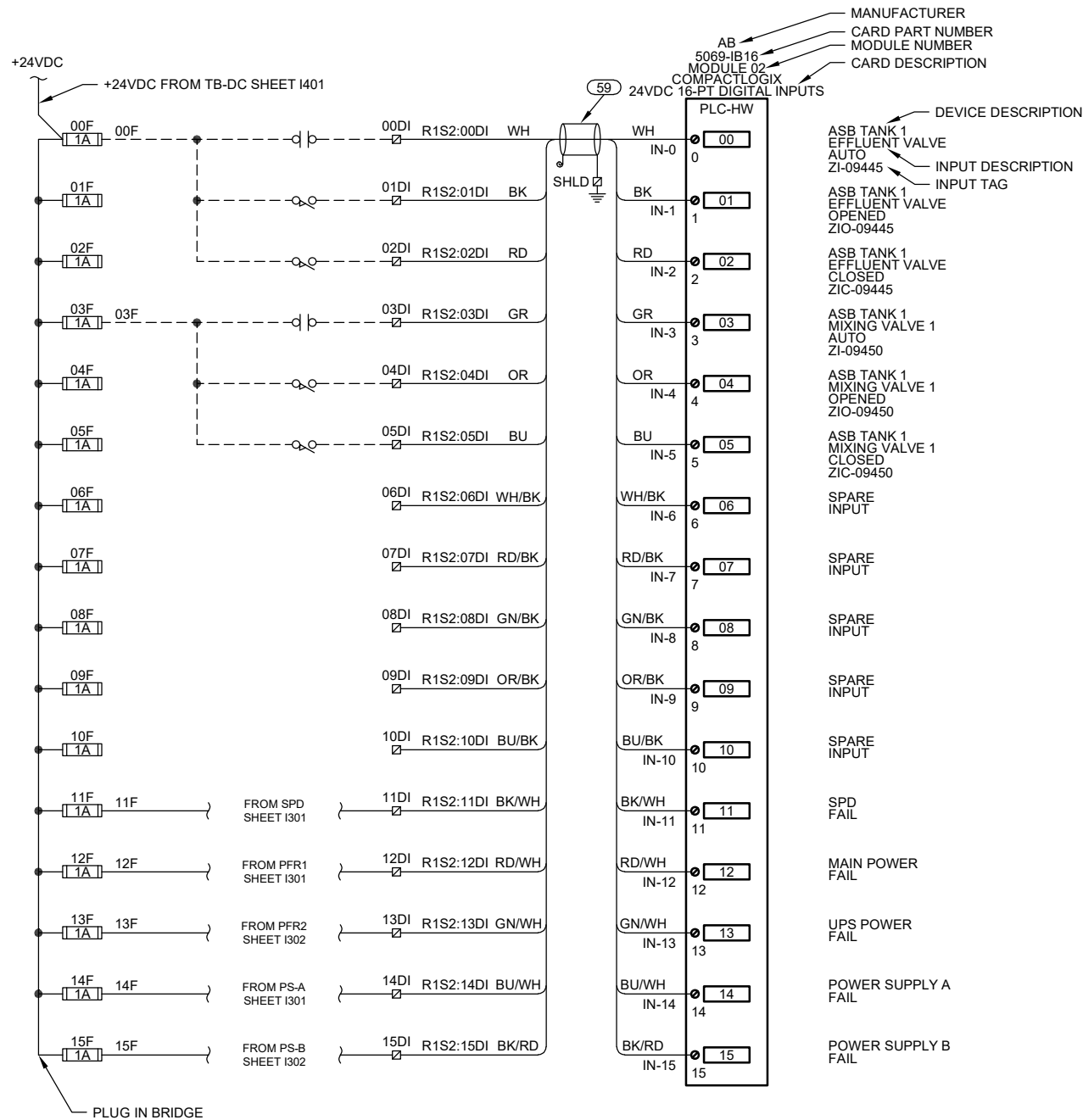


DRAWING IS TO SCALE
IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

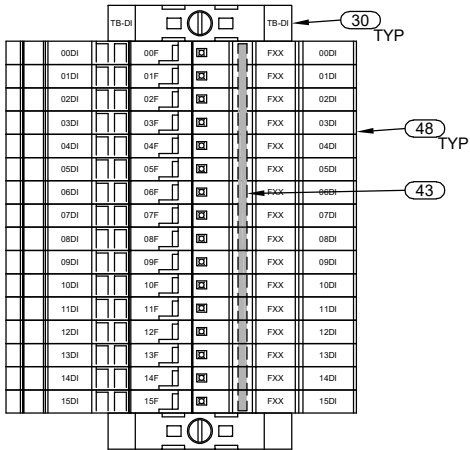
SHEET 9 OF 14

I401

8/19/2022 C:\USERS\MICHAEL_JOHNSON\AQUA ENGINEERING\WG51D - 002191.P MGSID / AND C DESIGN\050 DRAFTING\998 INSTRUMENTATION\TYPICAL PANEL\501.DWG



TYPICAL 16PT 24VDC DIGITAL INPUT WIRING DIAGRAM



501 TYP TYPICAL 16PT TB-DI TERMINAL BLOCK LAYOUT

ORIGINAL				
NO.	DATE	DESIGN	DRAWN	CHECKED
0	00/00/0000	MT	MGJ	MT
REVISIONS				

skm

533 W 2600 S, Suite 25
Bountiful, Utah 84010
Phone: (801) 677-0011
www.skmeng.com

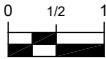
MOUNTAIN GREEN SEWER IMPROVEMENT DISTRICT

5455 WEST OLD HWY ROAD MORGAN, UT 84050

PLC PANEL DRAWINGS

DESCRETE INPUTS WIRING DIAGRAM 1

THIS DRAWING IS PROPERTY OF SKM ENGINEERING AND IS TRANSMITTED IN CONFIDENCE. NEITHER RECEIPT NOR POSSESSION CONFERS OR TRANSFERS ANY RIGHTS TO REPRODUCE, USE, OR DISCLOSE, IN WHOLE OR IN PART, DATA CONTAINED HEREIN FOR ANY PURPOSE WITHOUT THE WRITTEN PERMISSION OF SKM ENGINEERING. © COPYRIGHTED 2018 BOUNTIFUL, UTAH

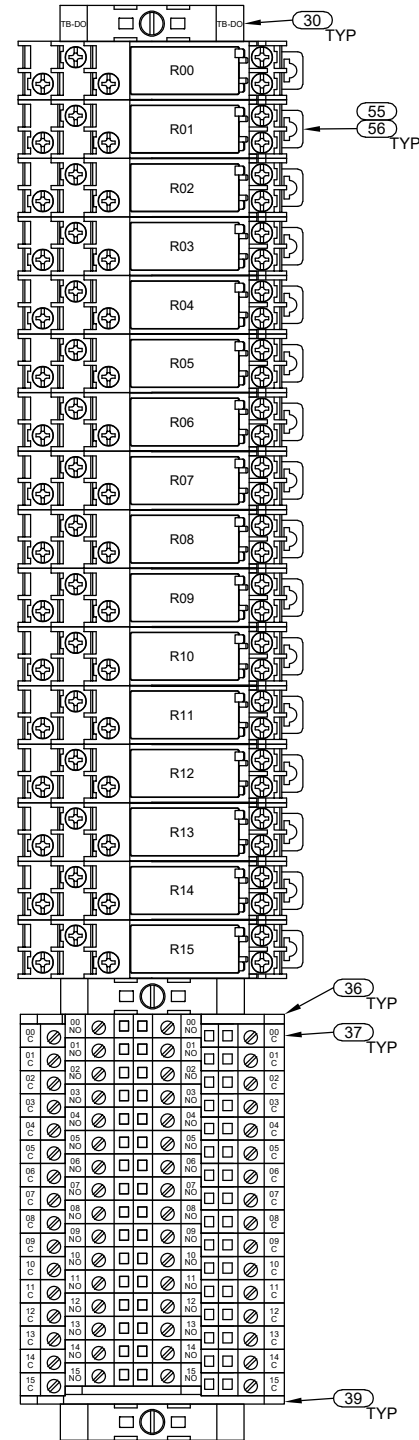
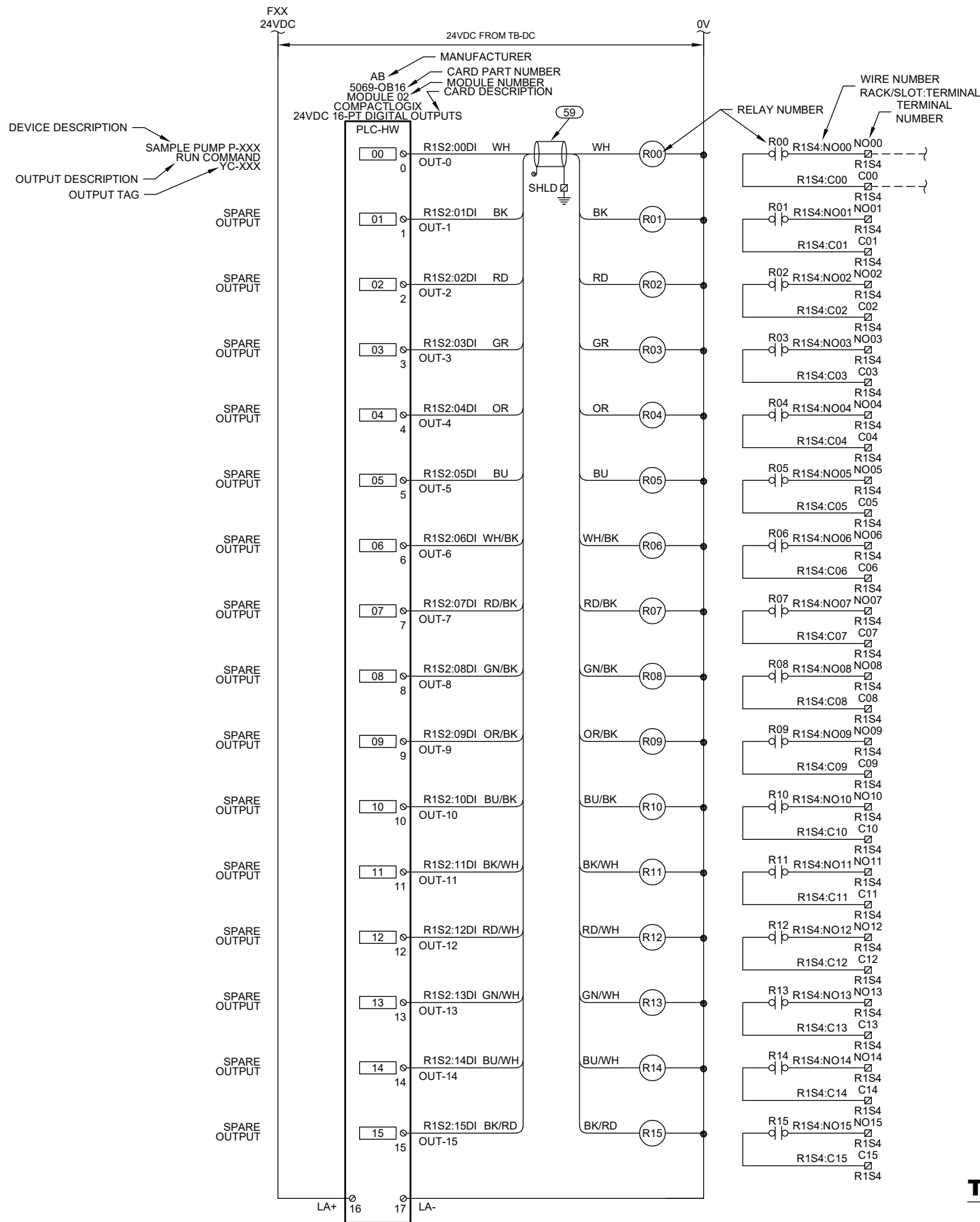


DRAWING IS TO SCALE
IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

SHEET 10 OF 14

I501

8/19/2022 C:\USERS\MICHAEL_JOHNSON\AQUA ENGINEERING\WG5ID - 002191.P MGSID / AND C DESIGN\050 DRAFTING\998 INSTRUMENTATION\TYPICAL PANEL\I601.DWG



**TYPICAL 16PT TB-D0
TERMINAL BLOCK LAYOUT**

TYPICAL 16PT 24VDC DIGITAL OUTPUT WIRING DIAGRAM

ORIGINAL				
NO.	DATE	DESIGN	DRAWN	CHECKED
0	00/00/0000	MT	MGJ	MT
REVISIONS				

skm

533 W 2600 S, Suite 25
Bountiful, Utah 84010
Phone: (801) 677-0011
www.skmeng.com

MOUNTAIN GREEN SEWER IMPROVEMENT DISTRICT

5455 WEST OLD HWY ROAD MORGAN, UT 84050

PANEL LAYOUT

DESCRETE OUTPUTS WIRING DIAGRAM

THIS DRAWING IS PROPERTY OF SKM ENGINEERING AND IS TRANSMITTED IN CONFIDENCE. NEITHER RECEIPT NOR POSSESSION CONFERS OR TRANSFERS ANY RIGHTS TO REPRODUCE, USE, OR DISCLOSE, IN WHOLE OR IN PART, DATA CONTAINED HEREIN FOR ANY PURPOSE WITHOUT THE WRITTEN PERMISSION OF SKM ENGINEERING. © COPYRIGHTED 2018 BOUNTIFUL, UTAH



DRAWING IS TO SCALE
IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

SHEET 11 OF 14

I601



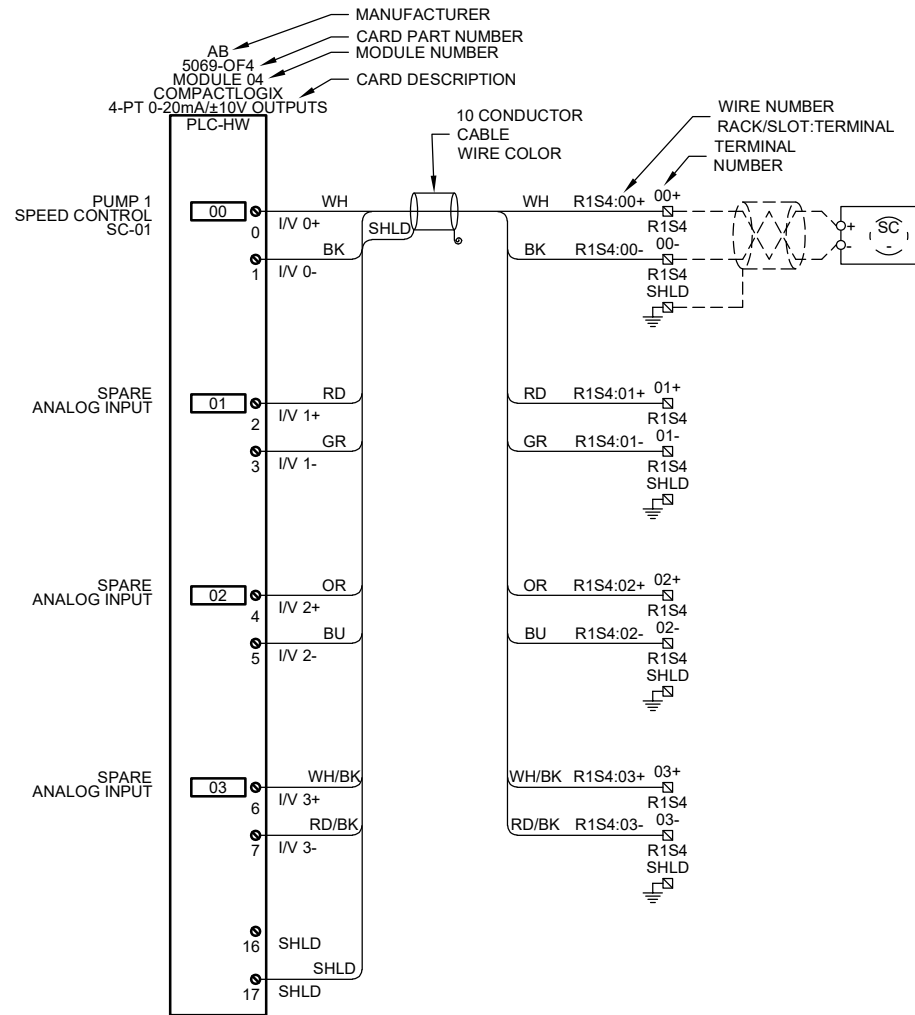
1701

ORIGINAL				
NO.	DATE	DESIGN	DRAWN	CHECKED
0	00/00/0000	MT	MGJ	MT
REVISIONS				

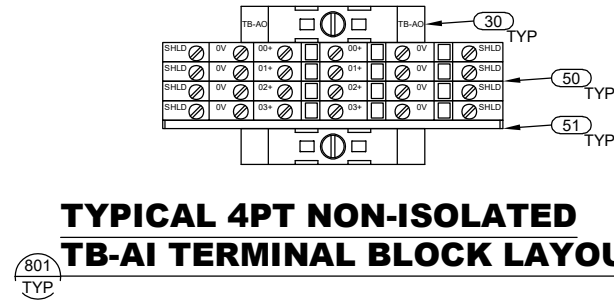
skm

**533 W 2600 S, Suite 25
Bountiful, Utah 84010
Phone: (801) 677-0011
www.skmeng.com**

C:\USERS\MICHAEL_JOHNSON\AQUA ENGINEERING\WG\SID - 002191.P MGSID 1 AND C DESIGN\050 DRAFTING\998 INSTRUMENTATION\TYPICAL PANEL\801.DWG 8/19/2022



TYPICAL 4PT ANALOG OUTPUT WIRING DIAGRAM



TYPICAL 4PT NON-ISOLATED TB-AI TERMINAL BLOCK LAYOUT

ORIGINAL				
NO.	DATE	DESIGN	DRAWN	CHECKED
0	00/00/0000	MT	MGJ	MT
REVISIONS				

skm

533 W 2600 S, Suite 25
Bountiful, Utah 84010
Phone: (801) 677-0011
www.skmeng.com

MOUNTAIN GREEN SEWER IMPROVEMENT DISTRICT

5455 WEST OLD HWY ROAD MORGAN, UT 84050

PANEL LAYOUT

ANALOG OUTPUTS WIRING DIAGRAM

THIS DRAWING IS PROPERTY OF SKM ENGINEERING AND IS TRANSMITTED IN CONFIDENCE. NEITHER RECEIPT NOR POSSESSION CONFERS OR TRANSFERS ANY RIGHTS TO REPRODUCE, USE, OR DISCLOSE, IN WHOLE OR IN PART, DATA CONTAINED HEREIN FOR ANY PURPOSE WITHOUT THE WRITTEN PERMISSION OF SKM ENGINEERING. © COPYRIGHTED 2018 BOUNTIFUL, UTAH

0 1/2 1

DRAWING IS TO SCALE IF BAR MEASURES: 1" = FULL SCALE 1/2" = HALF SCALE

SHEET 13 OF 14

I801

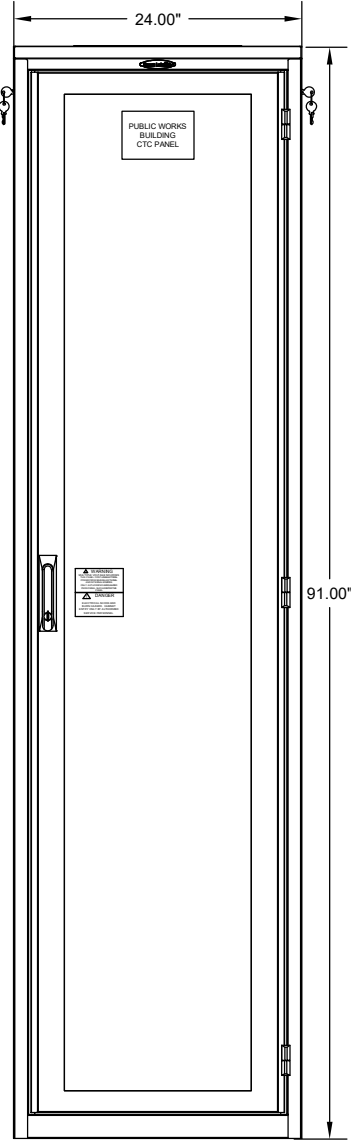
C:\USERS\MICHAEL_JOHNSON\AQUA ENGINEERING\WGSD - 002191.P\MGSD1 / AND C DESIGN\050 DRAFTING\998 INSTRUMENTATION\TYPICAL PANEL\901.DWG 8/19/2022

⚠ DANGER
ELECTRICAL SHOCK AND
BURN HAZARD. CABINET
ENTRY ONLY BY AUTHORIZED
SERVICE PERSONNEL.

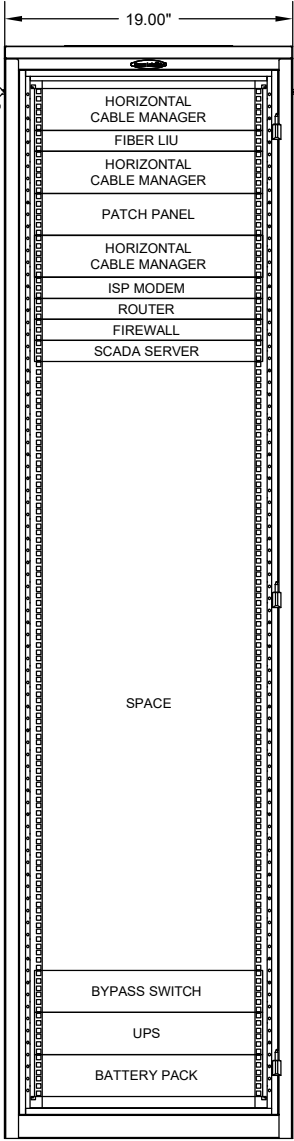
⚠ WARNING
MULTIPLE VOLTAGE SOURCES
THIS PANEL CONTAINS ELECTRICAL
POWER FROM SEVERAL EXTERNAL
AND INTERNAL SOURCES.
ONLY AUTHORIZED AND QUALIFIED
PERSONNEL SHOULD ENTER THIS
PANEL.

**PUBLIC WORKS
BUILDING
CTC PANEL**

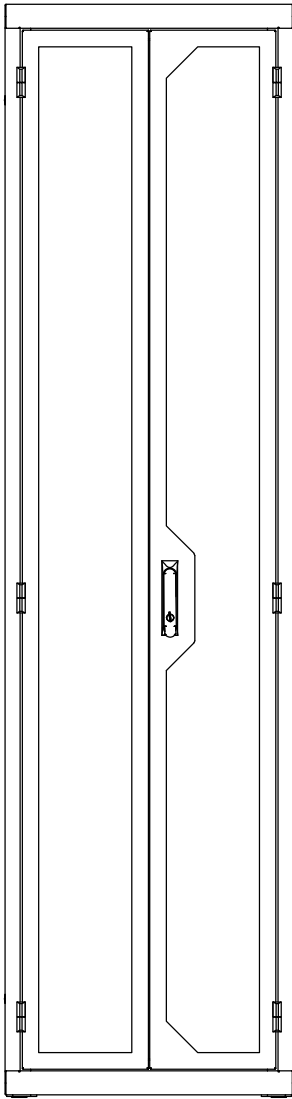
PANEL LABELS
NOT TO SCALE



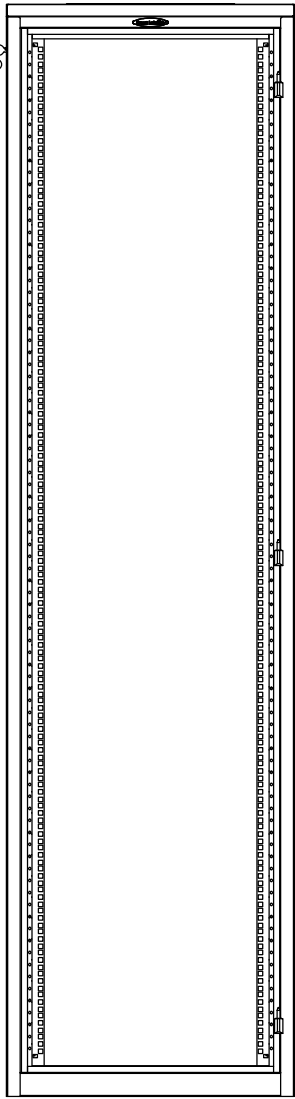
FRONT VIEW
NOT TO SCALE



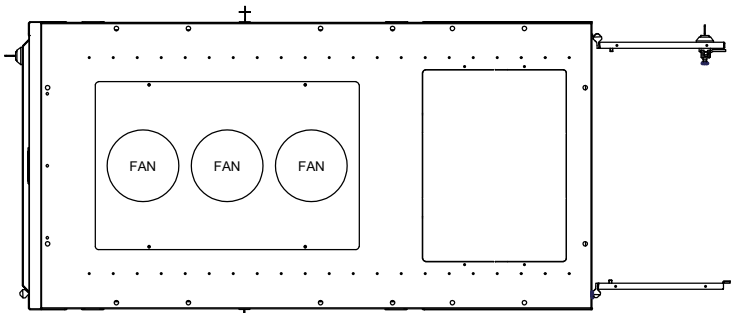
FRONT VIEW WITHOUT DOOR
NOT TO SCALE



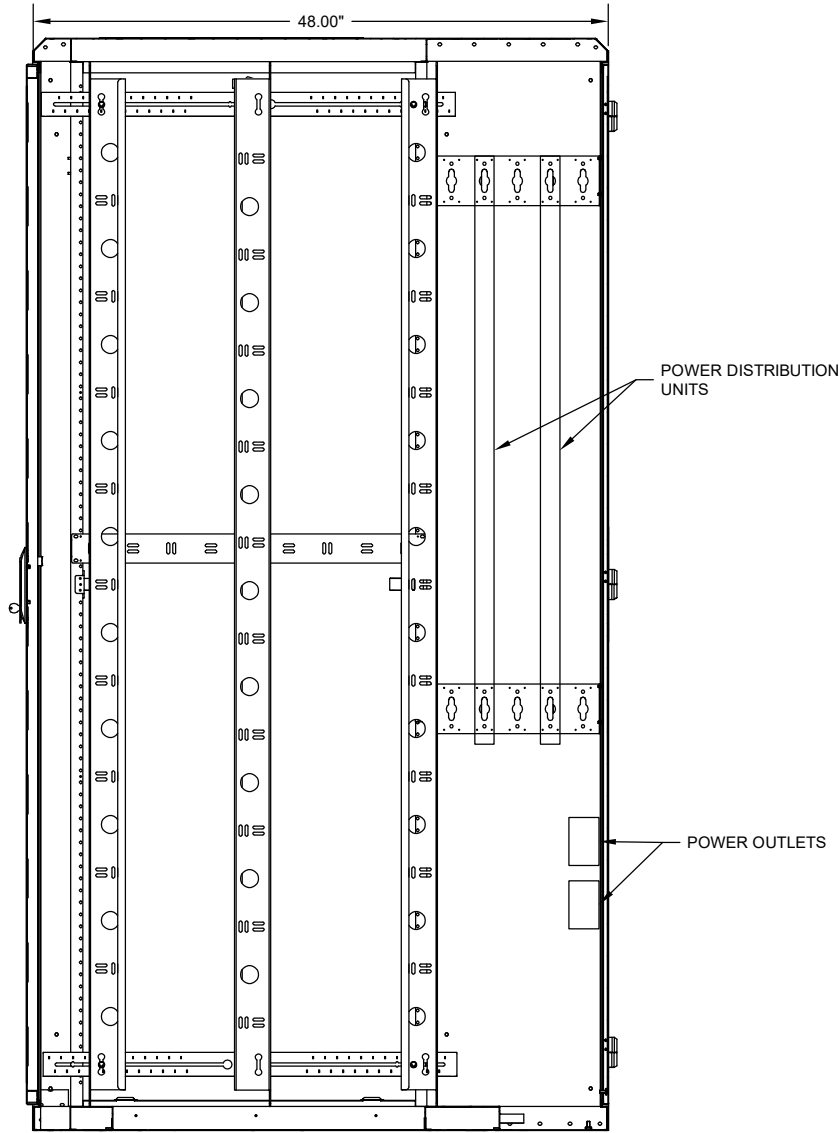
BACK MESH DOOR
NOT TO SCALE



BACK VIEW WITHOUT DOOR
NOT TO SCALE



TOP VIEW W/FANS
NOT TO SCALE



SIDE VIEW
NOT TO SCALE

ORIGINAL				
NO.	DATE	DESIGN	DRAWN	CHECKED
0	00/00/0000	MT	MGJ	MT
REVISIONS				

skm

533 W 2600 S, Suite 25
Bountiful, Utah 84010
Phone: (801) 677-0011
www.skmeng.com

MOUNTAIN GREEN SEWER IMPROVEMENT DISTRICT
5455 WEST OLD HWY ROAD MORGAN, UT 84050
PLC PANEL DRAWINGS
TYPICAL CTC PANEL LAYOUT

THIS DRAWING IS PROPERTY OF
SKM ENGINEERING AND IS
TRANSMITTED IN CONFIDENCE
NEITHER RECEIPT NOR
POSSESSION CONFERS OR
TRANSFERS ANY RIGHTS TO
REPRODUCE, USE,
OR DISCLOSE, IN WHOLE OR IN
PART, DATA CONTAINED HEREIN
FOR ANY PURPOSE WITHOUT THE
WRITTEN PERMISSION OF SKM
ENGINEERING. © COPYRIGHTED
2018 BOUNTIFUL, UTAH



DRAWING IS TO SCALE
IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

SHEET 14 OF 14

1901